CITY OF
FAYETTEVILLE
ARKANSAS

113 W Mountain Street
Fayetteville, AR 72701

Transportation Committee Agenda

(Immediately Following City Council Agenda Session)
City Hall Room 101 / Virtual Meeting Via Zoom
Tuesday, June 30, 2026
5:30 PM

Members
Council Member Sarah Moore, Chair
Council Member Robert "Bob" Stafford
Council Member Sarah Bunch
Council Member Min. Monique Jones

City Staff
Public Works Director Chris Brown
Assistant Public Works / Transportation Services Director Terry Gulley
City Engineer Justin Bland

Zoom Information

Webinar ID:
Registration Link:

A. Call to Order

B. Roll Call

C.1. Sunset Woods-Review of POA Request

Review of a request from the Sunset Woods POA for the City to take over maintenance of streets in the Sunset Woods neighborhood.

D. New Business

D.1. Joyce Blvd. - Conceptual Design Review

D.2. Plainview Ave. Construction Manager Contract

D.3. Bid #26-37 Millsap & College Int. Improvements:
A resolution to award Bid 26-37 and authorize a contract with APAC-Central, Inc. in the amount of $3,568,811.20 for construction of the Millsap Road and College Avenue Intersection and North Hemlock Avenue Project, to approve a project contingency in the amount of $357,000.00, to authorize acceptance of a Surface Transportation Block Grant in the amount of $3,600,000.00 awarded by the Northwest Arkansas Planning Commission, and to approve a budget amendment. (2026-2254)

D.4. Millsap & College Intersection - Supplemental Agreement #1:
A resolution to approve Supplemental Agreement No. 1 to the contract with Burns & McDonnell Engineering Company, Inc. in the amount of $93,785.00 for additional engineering services associated with the Millsap Road & College Avenue Intersection and Hemlock Avenue Improvement Project. (2026-2255)

E. Reports and Presentations

E.1. Transportation Workplan Update

Quarterly Update of Transportation Division activities.

E.2. Transit Service Discussion

Update on changes to transit services.

F. Informational Items

G. Adjournment

CITY OF FAYETTEVILLE ARKANSAS

Transportation Committee Memo

2026-2250

Meeting of June 30, 2026

To: Transportation Committee

Thru: Chris Brown, Public Works Director

From: Justin Bland, City Engineer

Subject: **Review of recomendations for Joyce Blvd. corridor**

Recommendation:

Engineering Staff recommends full implementation of the proposed streetscape section for Joyce Blvd. This includes roundabouts, the addition of divider medians in critical areas, street trees, new buffered sidewalks, lighting and other improvements.

Background:

The proposed improvements to this corridor result from several years of public feedback and master planning. In addition, a $25 million Safe Streets for All (SS4A) grant was awarded for five projects, including the Joyce Blvd. corridor between College Ave. and Crossover Rd. This grant includes funding for the design and construction of safety improvements for each corridor. The city selected Kimley Horn as the civil engineering consultant for the work.

Discussion:

After performing a corridor survey, traffic study, and safety review, the consultant prepared a proposed concept plan of the corridor for review. This design addresses many current safety concerns, including poor sidewalks, a lack of crosswalks, and the lack of a turn lane. This corridor has historically had a high number of angle/side swipe and rear end collisions due to the lack of a turn lane. The proposed design will greatly enhance safety by not allowing left turns in critical areas with the addition of a median. In addition, the construction of trails/sidewalk facilities will improve the safety of pedestrians and cyclists.

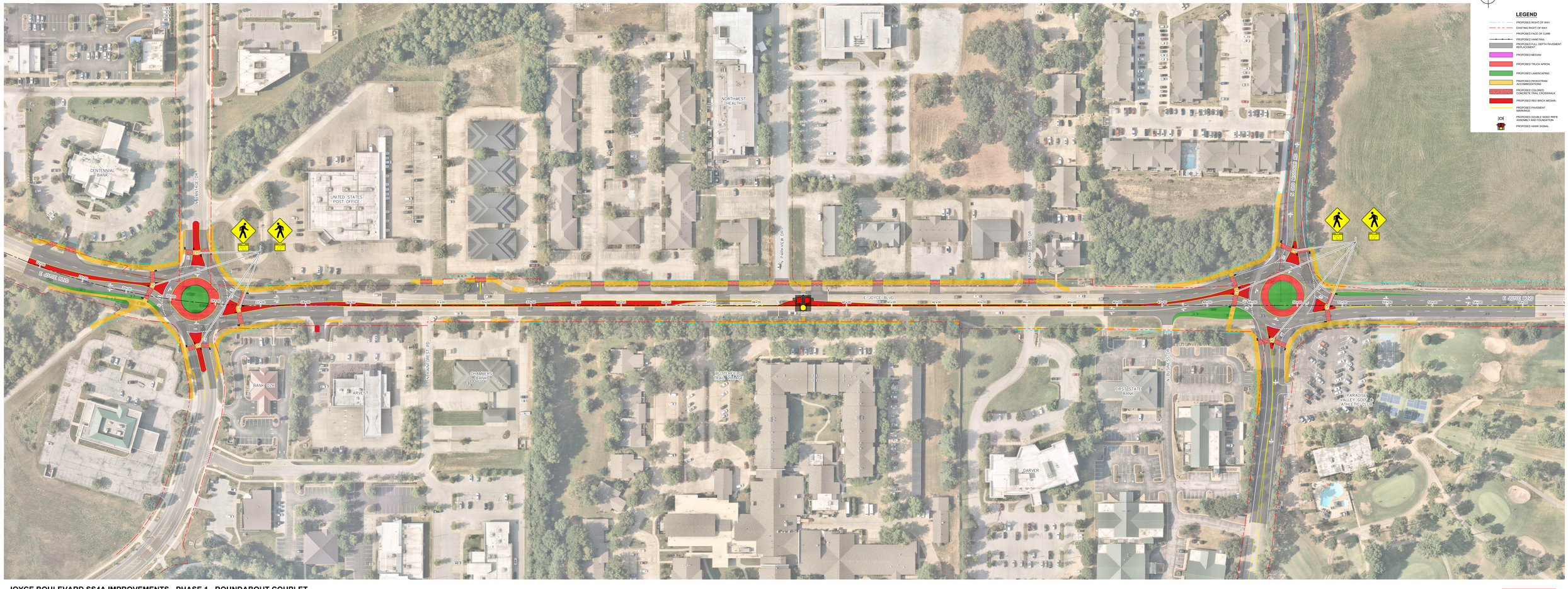
The first phase of the project will focus on the area between Vantage Dr. and Old Missouri Rd. An additional future phase will include the sections between College Ave. and Vantage Dr. and between Old Missouri Rd. and Crossover Rd.

Budget/Staff Impact:

Attachments: Joyce 30% Plans, 2026-05 Joyce Blvd Public Engagement Meeting Summary Package-Rev

JOYCE BOULEVARD SS4A IMPROVEMENTS - OVERALL

Kimley»Horn



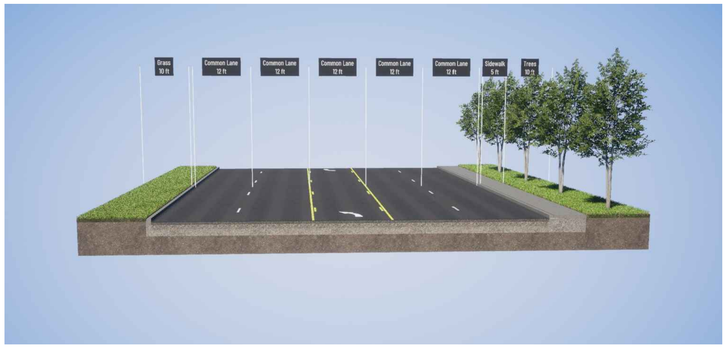
JOYCE BOULEVARD SS4A IMPROVEMENTS - PHASE 1 - ROUNDABOUT COUPLET

Kimley»Horn

JOYCE BOULEVARD SS4A IMPROVEMENTS - PHASE 2

Kimley»Horn

E. JOYCE BOULEVARD
AT N. COLLEGE AVENUE
STA. 6+00 TO STA. 24+00



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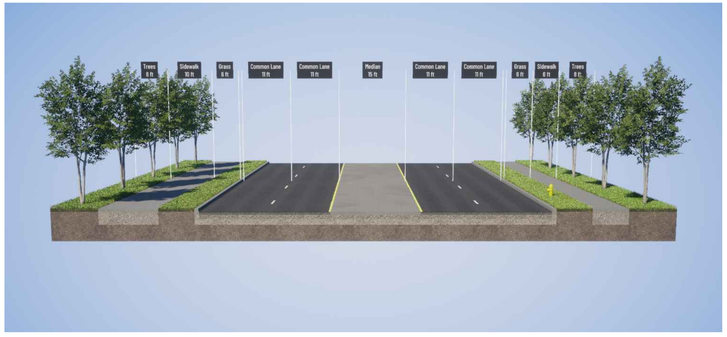
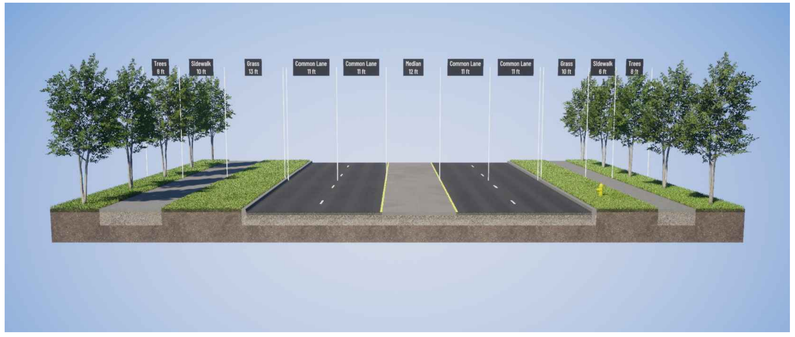


PROPOSED TYPICAL SECTION

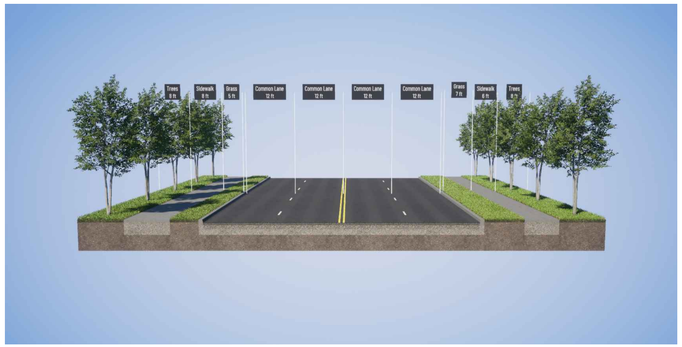
E. JOYCE BOULEVARD
AT N. PARKVIEW DRIVE
STA. 28+00 TO STA. 46+00

EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTION

E. JOYCE BOULEVARD
AT N. CROSSOVER ROAD
STA. 52+00 TO STA. 79+00



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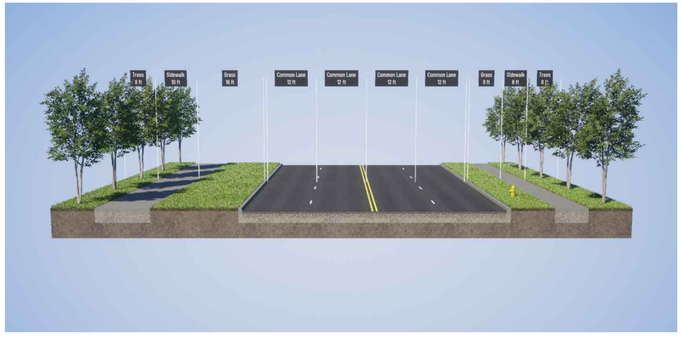


PROPOSED TYPICAL SECTION

Fayetteville SS4A Public Engagement Meeting Summaries

Joyce Boulevard – 71B to Crossover Road
May 14, 2026 | Rock Annex Building
May 21, 2026 | Butterfield Trail Village Community

I. N College Avenue Intersection

a. An overpass (college over Joyce) seems like a safer crossing.
b. Raised crossing.
c. Consider tunnel.
d. No turn on red is very helpful for bikers and pedestrians.
e. If striping out lane, might as well move curb and reduce length of crosswalk by over half.
f. It would take minutes for an elderly person to cross at street level.
g. Tunnel or overpass preferred.

II. Near STA 6+00

a. Convert neutral area into cobbled pavers to discourage typical use or mountable curb.

III. N Bellafont Boulevard Intersection

a. Time light that shuts off after 6pm?
b. Add nose to form pedestrian refuge island.

IV. N Vantage Drive Intersection

a. One of the worst pedestrian intersections now.
b. Could see traffic not stopping at a roundabout ever. Worse.

V. Near STA 35+00 and 36+00

a. Trees; keep all BTV B16 trees!
b. BTV main entrance. Think about old people turning in and needing to get out, think about fire trucks and ambulances.
c. Some tree plantings would be nice in medians where we have space.
d. The trails this close to a roadway, traffic crosses and blocks trail without looking for users.

e. Please install the turn lanes to stop/reduce rear end collisions.

VI. N Parkview Drive Intersection

a. Consider mid-block pedestrian signal (instead of HAwK).
b. Need a light here, it is too dangerous.
c. Please put stoplight (name and number was left).

VII. Near STA 41+00 and 42+00

a. Confirm entrance
b. Access?
c. Main entrance for firetrucks, ambulances and deliveries to BTV.
d. Suggest modifying section to maximize space between road and sidewalk so there is a wide space for trees which will also protect the trail users and shade road better.

VIII. Near STA 44+00 and 45+00

a. Turn lane!
b. Access?

IX. N Old Missouri Road Intersection

a. Right turn merge lane.
b. Add stop sign for BTV (Fargo and Old Missouri).
c. Improve proposed geometry of trail on SW corner of this intersection. Angular and impractical.

X. Near STA 63+50

a. Turn lane needed.

XI. Near STA 81+00

a. Extend back left turn lane, traffic backs up past Christian Brothers Automotive.

XII. N Crossover Road Intersection

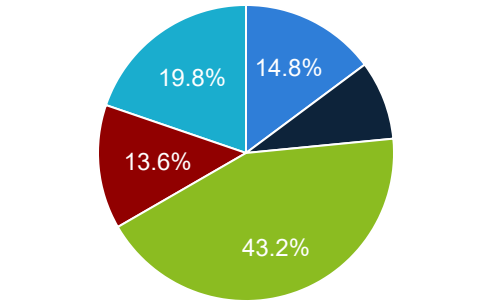
a. Could use two left turn lanes.

JOYCE BOULEVARD SS4A IMPROVEMENTS - OVERALL

Kimley»Horn

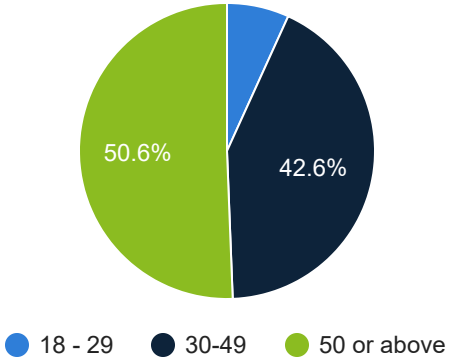
Joyce

Are you a Fayetteville resident? (select one)



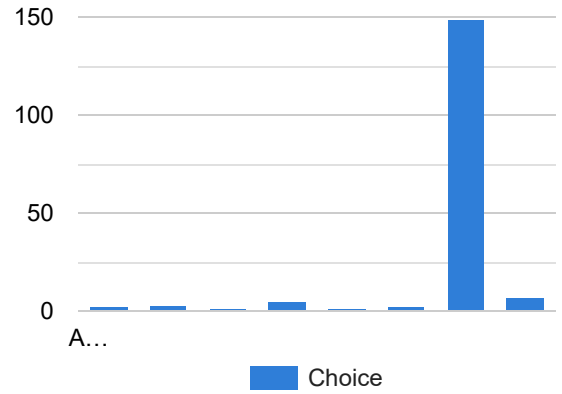
Yes, Ward One	24
Yes, Ward Two	14
Yes, Ward Three	70
Yes, Ward Four	22
No, I am not a Fayetteville resident.	32

What is your age?



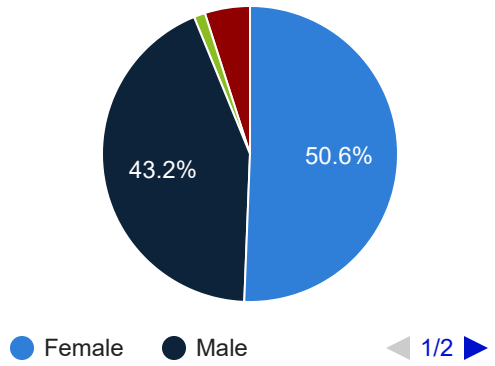
18 - 29	11
30-49	69
50 or above	82

What is your race and/or ethnicity? (select all that apply)



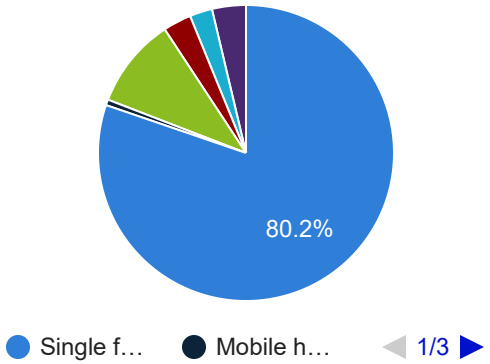
American Indian or Alaska Native	2
Asian	3
Black or African American	1
Hispanic or Latino	5
Middle Eastern or North African	1
Native Hawaiian or Other Pacific Islander	2
White	149
Other (please specify)	7

What is your gender? (select one)



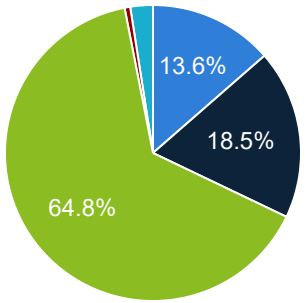
Female	82
Male	70
Non-binary	2
Prefer not to answer	8

In what type of housing do you live?



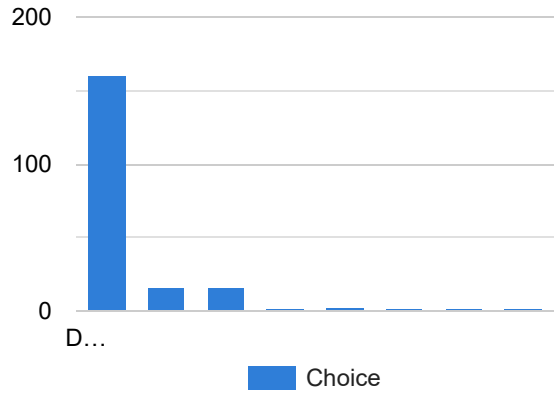
Single family	130
Mobile home	1
Apartment	16
Condominium/townhouse	5
Duplex	4
Other (please specify)	6

Which of the following best describes your relationship to the project site?



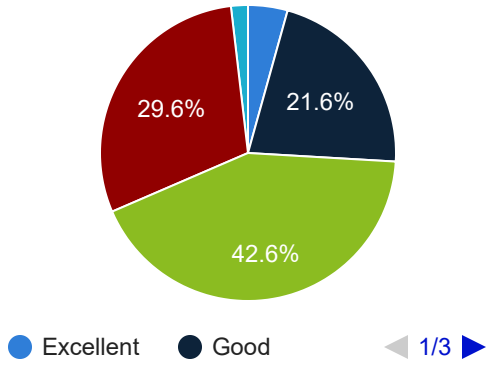
I live along Joyce Blvd.	22
I work along Joyce Blvd.	30
I travel on Joyce Blvd on a regular basis.	105
I do not visit Joyce Blvd regularly, but I own property there.	1
None of the above.	4

How do you use Joyce Blvd most often? (select all that apply)



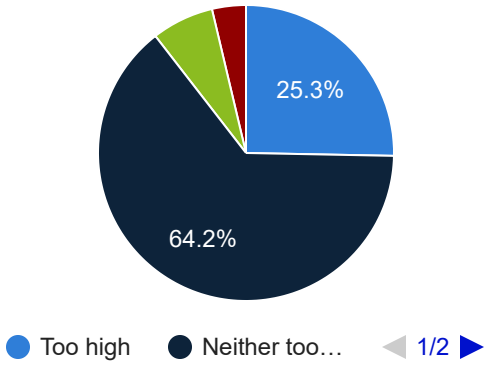
Driving	160
Walking	17
Biking	17
Wheelchair or mobility device	1
Motorcycle	2
E-scooter	1
Public transit	1
Other (please specify)	1

How would you rate current safety conditions on E Joyce Blvd. between Crossover Hwy and N. College Ave?



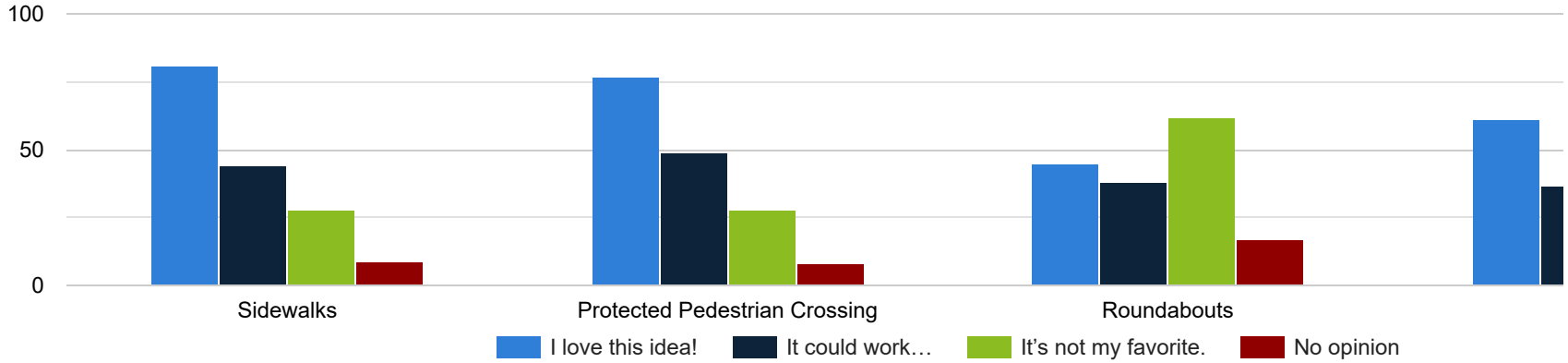
Excellent	7
Good	35
Fair	69
Poor	48
Not sure	3

Do you feel the current speed limit of 40 MPH on E. Joyce Blvd is appropriate and safe for all road users?



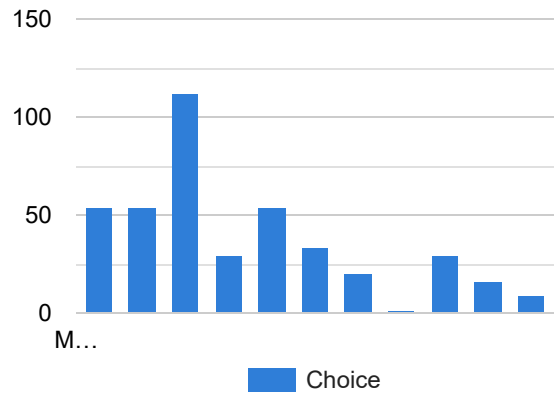
Too high	41
Neither too high nor too low	104
Too low	11
Not sure	6

What are your thoughts on some of the proposed improvements for Joyce Blvd? Use the table to record your responses.



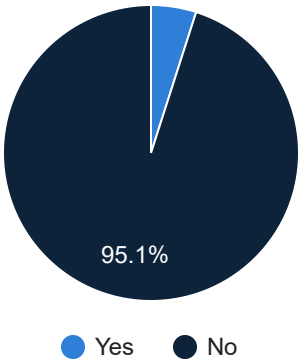
	I love this idea!	It could work…	It's not my favorite.	No opinion
Sidewalks	81	44	28	9
Protected Pedestrian Crossing	77	49	28	8
Roundabouts	45	38	62	17
Medians	61	37	49	15

What are the top improvements/changes do you feel would most benefit Joyce Blvd? (select up to 3)



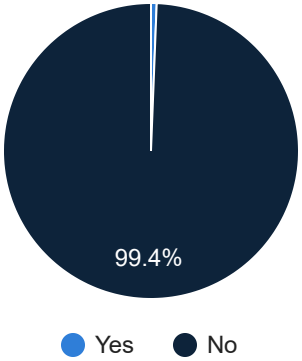
Medians	54
Sidewalks	54
Turn lanes/additional lanes	112
Lighting	30
Crosswalks	54
Street trees	34
Bus shelters	20
Parking	1
Bicycle paths	30
Amenities - parklets, planters, public art displays, etc.	16
Other (please specify)	9

Does your property present any limitations to the project, such as drainage utilities, that design teams need to consider?



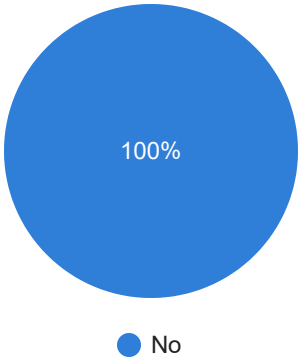
Yes	8
No	154

Are you aware of any historical sites, family cemeteries, or archaeological sites in the project area?



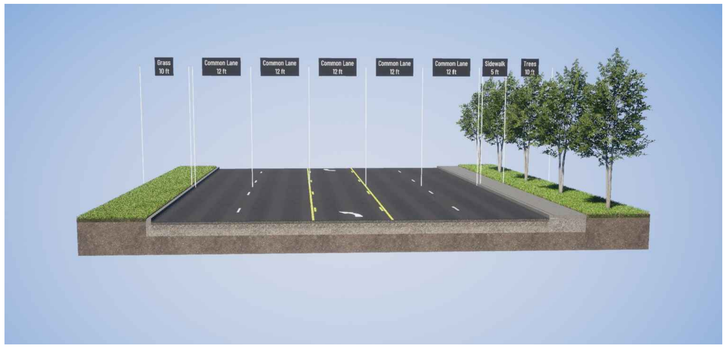
Yes	1
No	161

Are you aware of any environmental constraints (endangered species, hazardous waste sites, existing or former landfills, parks or public lands) in the project area?



No	162

E. JOYCE BOULEVARD
AT N. COLLEGE AVENUE
STA. 6+00 TO STA. 24+00



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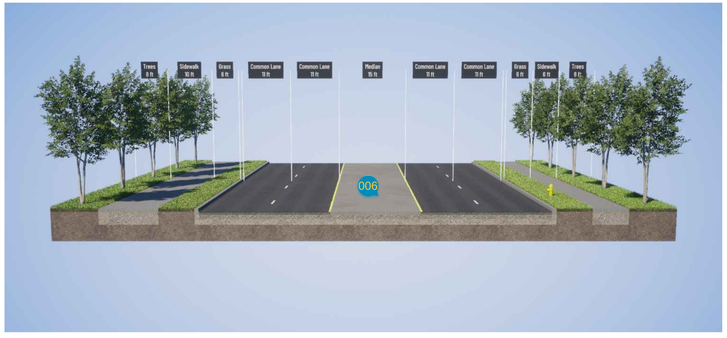

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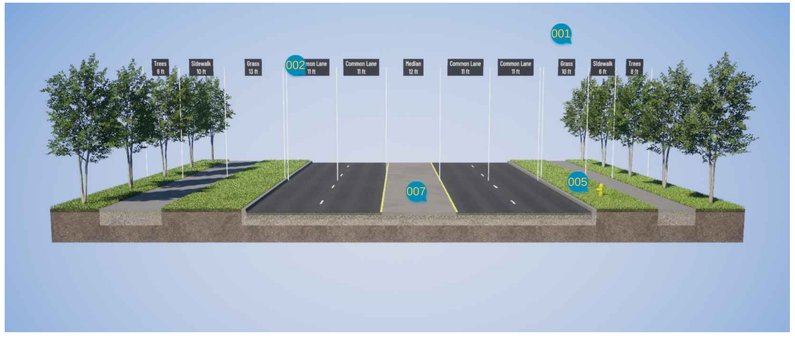

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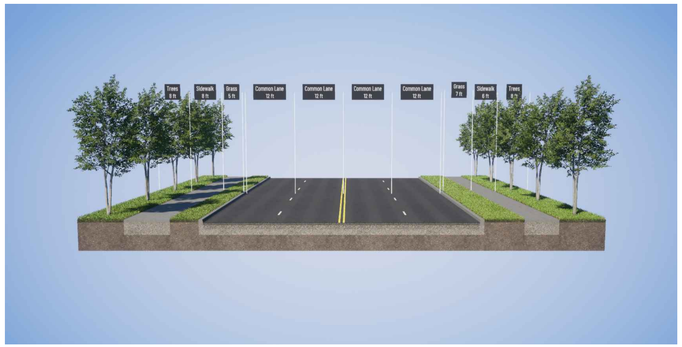

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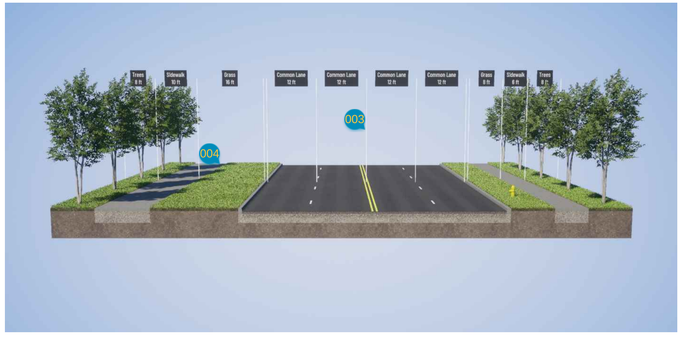


PROPOSED TYPICAL SECTION

E. JOYCE BOULEVARD SS4A IMPROVEMENTS

#001

Posted by **David Renfroe** on **05/18/2026** at **1:19pm** [Comment ID: 1415] - Link
Question
Agree: 0, Disagree: 0
How much wider will the street be in front of Butterfield Trail village be? Will the expansion affect the big oak trees at the front of the property? The trees appear to be far back from the existing curb. If the width of the street increases the width of the median, then it would be expected that only about 6' back from the current curb will be taken. If that is true then the big oaks should not be affected. We hope that is true.

#002

Posted by **Joseph** on **05/15/2026** at **5:04pm** [Comment ID: 1400] - Link
Question
Agree: 1, Disagree: 0
Can you make these files larger so we can read the dimensions?

#003

Posted by **Jill** on **05/20/2026** at **3:19pm** [Comment ID: 1426] - Link
Question
Agree: 0, Disagree: 0
I see no difference between the existing cross section and the proposed cross section

#004

Posted by **Shelby** on **05/15/2026** at **3:23pm** [Comment ID: 1390] - Link
Agree: 0, Disagree: -2
Why put so many trees in new areas when you are cutting down all the old historic trees for FPS

#005

Posted by **K** on **05/13/2026** at **8:19am** [Comment ID: 1312] - Link
Agree: 2, Disagree: 0
The additional grass space would definitely make me feel safer. I like this.

#006

Posted by **Hugh Brewer** on **05/15/2026** at **11:51am** [Comment ID: 1360] - Link
Suggestion
Agree: 1, Disagree: 0
Please add landscaping to the medians

#007

Posted by **K** on **05/13/2026** at **8:23am** [Comment ID: 1332] - Link
Question
Agree: 1, Disagree: 0
Are medians going to be landscaped at all?

JOYCE BOULEVARD SS4A IMPROVEMENTS - OVERALL

Kimley»Horn

#001

Posted by **Nick** on **05/14/2026** at **10:06pm** [Comment ID: 1342] - Link
Suggestion
Agree: 4, Disagree: -2
Remove dangerous "slip lane" but maintain the extra turn only lane. Provide right turn signal timed with southbound College/71B turning to eastbound Joyce.

#002

Posted by **Jeff** on **05/15/2026** at **8:55am** [Comment ID: 1348] - Link
Question
Agree: 0, Disagree: 0
Will N Frontage not be accessible from E Joyce to turn right here (West turning North)?

#003

Posted by **Jeff** on **05/15/2026** at **8:41am** [Comment ID: 1346] - Link
Suggestion
Agree: 6, Disagree: 0
With placing roundabouts along E Joyce, I strongly suggest revising the timing on this light for all directions to ensure efficient traffic flow. With the roundabouts it creates non-stop traffic along the corridor which also turns into this light being heavily backed up from the east. Also, if there is a way to allow E and W Joyce to turn at the same time as well as N and S to turn at the same time that would allow this intersection more efficient and minimize time spent at this light, if space allows.

#004

Posted by **Jeff** on **05/15/2026** at **8:31am** [Comment ID: 1344] - Link
Suggestion
Agree: 1, Disagree: 0
I believe with closing down the turn lane on Joyce this can still be a 2-lane right turn. Traffic will get backed up in this area and onto N College with reducing the right turn lanes down to one. Placing the raised median will keep accidents to a minimum and keep those on the inside lane, coming from N College, from cutting over to turn left onto N Frontage Rd. I've had WAY too many close calls here.

#005

Posted by **Ben** on **05/15/2026** at **8:36am** [Comment ID: 1345] - Link
Suggestion
Agree: 5, Disagree: 0
This needs to remain a 2-lane right hand turn only yield. It used to be a 1 lane right turn stop sign and traffic would back significantly up into college. Once it changed to the 2-lane yield, it immediately solved this problem.

#006

Posted by **Joshua** on **05/15/2026** at **9:45am** [Comment ID: 1353] - Link
Suggestion
Agree: 1, Disagree: -4
I'm in favor of this being one lane. I've seen more than one person go from the right turn lane to the median on Joyce to turn left on Frontage.

#007

Posted by **anonymous 2** on **05/15/2026** at **2:59pm** [Comment ID: 1388] - Link
Suggestion
Agree: 6, Disagree: 0
This jughandle was initially designed in the 70s to allow for U-turns (northbound-to-southbound). Since this is no longer needed, consider replacing with traditional right-turn lane (which can still be channelized closer to the intersection). Although an additional cost, the benefits may include (1) allowing more weaving distance for Fulbright Expressway northbound traffic that desire to go east on Joyce, (2) improve the pedestrian experience by having a protected/signalized crossing closer to the intersection, and (3) provide opportunities to reallocate this prime real estate (>1 acre) in coordination with the state.

#008

Posted by **Jeff** on **05/15/2026** at **9:08am** [Comment ID: 1349] - Link
Suggestion
Agree: 0, Disagree: 0
Consider extending the raised median here past 9+25 or further, if possible, to ensure people trying to turn left out of N Front St. do not block E traffic flow on E Joyce while also trying to avoid the median, oncoming traffic, and westbound traffic. Same issue is occurring in Bentonville along 14th street west of exit 86 (I-49) with how the design shows currently where people block oncoming traffic trying to "cut-through" trying to avoid the median, avoid oncoming traffic and get in with the traffic flow in their desired direction of travel.

#009

Posted by **Shelby 1** on **05/29/2026** at **1:54pm** [Comment ID: 1436] - Link
Suggestion
Agree: 0, Disagree: 0
May not be included in the project boundary for this project and I'm sure the City has to be aware already but I have to state it - the merging required after exiting Fulbright Expressway to get on E Joyce is a major pain point.

#010

Posted by **Mance** on **05/15/2026** at **1:30pm** [Comment ID: 1369] - Link
Suggestion
Agree: 1, Disagree: 0
Adding street lights as part of this project will be very beneficial.

#011

Posted by **Clark** on **05/26/2026** at **8:33pm** [Comment ID: 1431] - Link
Suggestion
Agree: 0, Disagree: 0
No roundabouts. They would need to be bigger in order to work and bigger is not better. The roundabouts don't work here. Example a: Zion Rd. Example B: Rupple Road.
A turn lane is needed. Don't repair that horrible bouncy house concrete section. Rip it up and start new with a different material.

#012

Posted by **David Hill** on **05/15/2026** at **9:44am** [Comment ID: 1352] - Link
Suggestion

Agree: 1, Disagree: -3
All improvements should be considered in light of the improvements at Milsap and College, as well as the future improvements at Sain/College/Fulbright which will alleviate some of the current rush-hour conditions present. What's happening now won't be the case in five years. Yes to medians and roundabouts. The street will be much safer.

> Reply by **Joseph** on **05/15/2026** at **1:19pm** [Comment ID: 1366] - Link
> *Suggestion*
> *Agree: 2, Disagree: 0*
> There will be more traffic here if anything. There's a a school and 2/3 subdivisions going in immediately east of here.
>
> Also I doubt there will be any improvement in those areas from the plans I've seen.

#013

Posted by **anonymous 2** on **05/15/2026** at **3:38pm** [Comment ID: 1394] - Link
Suggestion
Agree: 2, Disagree: 0
This might be beyond the project scope, but there seems like quite a bit of southbound right-turning traffic. Would be nice to have a right-turn lane.

#014

Posted by **Gerry Harris** on **05/15/2026** at **12:10pm** [Comment ID: 1361] - Link
Agree: 0, Disagree: 0
None

#015

Posted by **I Dacus** on **05/18/2026** at **10:33pm** [Comment ID: 1420] - Link
Suggestion
Agree: 1, Disagree: 0
Why is this section not addressed? This is going to be an area of concern with the new school. Should enforce mandatory busing of Woodland Jr High students. Parents dropping their kids off at school creates unnecessary congestion and wastes tax dollars already being spent on buses.

#016

Posted by **Sam** on **05/15/2026** at **2:54pm** [Comment ID: 1386] - Link
Suggestion
Agree: 3, Disagree: 0
Putting a school here was the worst idea ever.

> Reply by **Joseph** on **05/15/2026** at **5:21pm** [Comment ID: 1402] - Link
> *Suggestion*
> *Agree: 1, Disagree: -1*
> The Ramay location might actually be worse for different reasons.
>
> But agreed that adding traffic to this intersection and not addressing the roads east of here is criminally negligent.

#017

Posted by **Greg Merrell** on **05/15/2026** at **11:27am** [Comment ID: 1356] - Link
Question
Agree: 1, Disagree: 0
You've gone to great lengths to accomodate cross-turning traffic between 71b and Old Missouri.
How are you planning to address eastbound left-turning traffic between Old Missouri and 265?
There are businesses and private schools (Grace, O2B preschool) which will be generating lots of of turn-in traffic during typically busy times of day.

#018

Posted by **anonymous 2** on **05/15/2026** at **3:13pm** [Comment ID: 1389] - Link
Suggestion
Agree: 1, Disagree: 0
Careful consideration for bicycle users that frequently cross from Vantage to Mud Creek Trail and vice versa. This appears to propose RRFBs on a multi-lane roundabout to replace the current protected signalized crossing. There will be trade-offs.

#019

Posted by **Kelsey** on **05/27/2026** at **1:03pm** [Comment ID: 1433] - Link
Agree: 0, Disagree: 0
This is a major crossing for the Greenway to get from Mud Creek Trail to Lake Fay and then North. A roundabout here would making it nearly impossible for bikes and people to cross

#020

Posted by **Nick** on **05/14/2026** at **10:04pm** [Comment ID: 1341] - Link
Suggestion
Agree: 3, Disagree: 0
Would it be possible to reduce the number of driveways here between N Parkview Drive and N Park Oaks Drive and have these parking lots be interconnected? Especially considering the major pedestrian crossing planned at Parkview.

#021

Posted by **I Dacus** on **05/18/2026** at **10:25pm** [Comment ID: 1418] - Link
Suggestion
Agree: 1, Disagree: -1
Several drivers are unsure about entering roundabouts and don't pay attention to pedestrians or bikers. I think an actual stoplight provides more safety for a major crossing.

#022

Posted by **Nick** on **05/14/2026** at **9:59pm** [Comment ID: 1340] - Link

Suggestion
Agree: 4, Disagree: 0
What about removing these two driveways and incentivizing the property owner to only provide access from N Sunbeat Place?

#023

Posted by **anonymous** on **05/15/2026** at **11:26am** [Comment ID: 1355] - Link
Suggestion
Agree: 2, Disagree: 0
I have crossed at this intersection many times. Adding a more prominent pedestrian crossing as illustrated here will improve pedestrian safety for those biking and walking up from Mud Creek Trail to Mellow Mushroom, Flyway, etc.

#024

Posted by **Mance** on **05/15/2026** at **1:30pm** [Comment ID: 1370] - Link
Suggestion
Agree: 2, Disagree: 0
Any sidewalks along Joyce should be built to be multi-use (e.g., pedestrians and bikes) similar to Zion Road.

#025

Posted by **Nick** on **05/14/2026** at **10:11pm** [Comment ID: 1343] - Link
Suggestion
Agree: 6, Disagree: 0
Why are there so many driveways on the north side of Joyce between Vantage and Parkview? I'd recommend finding ways to consolidate these and make things safer for pedestrians, bicyclists, and drivers alike.

#026

Posted by **anonymous 2** on **05/15/2026** at **3:37pm** [Comment ID: 1393] - Link
Question
Agree: 1, Disagree: 0
Has new 2027 feeder pattern traffic for upcoming Woodland been considered?

#027

Posted by **I Dacus** on **05/18/2026** at **10:20pm** [Comment ID: 1417] - Link
Suggestion
Agree: 0, Disagree: 0
There needs to be a middle turn lane from Vantage to Crossover. It backs up traffic when cars stop and make a left turn into the businesses.
Unfortunately, Zion Rd wasn't built out to remove some of the congestion off of Joyce St. The new school will make traffic worse.

#028

Posted by **Joseph** on **05/15/2026** at **1:44pm** [Comment ID: 1377] - Link
Question
Agree: 1, Disagree: 0
Are these roundabouts going to accommodate busses taking children to school and semis delivering products to nearby businesses?

#029

Posted by **Charles** on **05/17/2026** at **11:35am** [Comment ID: 1410] - Link
Suggestion
Agree: 2, Disagree: 0
Given the high traffic flows on Joyce I can foresee it being very difficult to cross Joyce on a bike or on foot at the roundabouts. Would it be possible to install a tunnel under the roundabout crossing Joyce?

#030

Posted by **Joseph** on **05/15/2026** at **1:43pm** [Comment ID: 1376] - Link
Suggestion
Agree: 4, Disagree: -1
There is no way this design will meet current peak traffic demands, let alone increased traffic when the school and new subdivisions go in.

#031

Posted by **Sam** on **05/15/2026** at **2:54pm** [Comment ID: 1385] - Link
Suggestion
Agree: 0, Disagree: 0
Please make a turn lane in front of Buffington Homes! It is about to get even crazier over here with the middle school and the daycare being built

#032

Posted by **K** on **05/13/2026** at **8:10am** [Comment ID: 1306] - Link
Suggestion
Agree: 9, Disagree: -1
Public art could really liven up this area that has a very corporate feel to it. Make it more "Fayetteville"

#033

Posted by **Jeff** on **05/15/2026** at **8:49am** [Comment ID: 1347] - Link
Suggestion
Agree: 1, Disagree: 0
Same thing for this intersection.
With placing roundabouts along E Joyce, I strongly suggest revising the timing on this light for all directions to ensure efficient traffic flow to reduce time spent at this light. With the roundabouts it creates non-stop traffic along the corridor which also turns into this light being heavily backed up from the west.

#034

Posted by **Aaron Caldwell** on **05/15/2026** at **11:51am** [Comment ID: 1359] - Link
Suggestion
Agree: 1, Disagree: -1
I assume this is a HAWK crossing? Please don't make this a traditional HAWK crossing light, they are confusing and no driver understands them. Just use the same setup as on North for the Razorback greenway. You can program a conventional light to have the blinking phase just like a HAWK too. Alternatively, a Puffin Crossing style would be great (Mesa, AZ does them so it is US compliant)

#035

Posted by **Erin** on **05/16/2026** at **4:57pm** [Comment ID: 1408] - Link
Suggestion
Agree: 4, Disagree: 0
Would love to see something done about the left turn lane here. Traffic backs up turning left all of the time and those trying to go straight through the light are either cutting in from the far right lane or held up through lights while the left turn line shrinks. This will only become worse when the new school opens as many more people will need to go straight.

#036

Posted by **anonymous 2** on **05/15/2026** at **3:40pm** [Comment ID: 1395] - Link
Suggestion
Agree: 2, Disagree: 0
Quite a bit of conflict in this area with adjacent driveways. A median with targeted turn lanes could be helpful if it could be squeezed in.

#037

Posted by **anonymous 2** on **05/15/2026** at **3:35pm** [Comment ID: 1392] - Link
Question
Agree: 2, Disagree: 0
No median or turn lanes on this stretch of Joyce?

> Reply by **Joseph** on **05/15/2026** at **5:19pm** [Comment ID: 1401] - Link
> *Suggestion*
> *Agree: 1, Disagree: 0*
> This is the most dangerous section. Not sure why there is nothing being done here

> Reply by **turnlanesplease** on **05/18/2026** at **9:54am** [Comment ID: 1412] - Link
> *Suggestion*
> *Agree: 0, Disagree: 0*
> A turn lane is needed here for people turning into these businesses. The hill down to crossover limits the view of the drivers. Stopping in the road to turn into a steep driveway is not safe.

#038

Posted by **Joseph** on **05/15/2026** at **1:40pm** [Comment ID: 1374] - Link
Suggestion
Agree: 2, Disagree: 0
The changes in elevation are the biggest problem in this part of the road. Limiting the number of curb cuts and leveling the road would make it much safer.

#039

Posted by **I Dacus** on **05/18/2026** at **10:27pm** [Comment ID: 1419] - Link
Suggestion
Agree: 2, Disagree: 0
Left turn lane needs to be longer. The middle lane has no room to go through the light traveling east. This causes more congestion waiting in the left lane waiting for the opportunity to move forward.

#040

Posted by **Joseph** on **05/15/2026** at **1:51pm** [Comment ID: 1380] - Link
Suggestion
Agree: 6, Disagree: -1
This should be 4 lanes divided with a median. Reducing lanes here in light of the new school and 2/3 subdivisions going in just east of here is criminal.

#041

Posted by **anonymous** on **05/15/2026** at **11:28am** [Comment ID: 1357] - Link
Suggestion
Agree: 2, Disagree: -2
In my opinion and as someone who regularly travels to and from Old Missouri onto Joyce, this roundabout will be a positive improvement and will improve traffic flow - especially during busy periods when traffic backs up on Joyce at this light.

#042

Posted by **Mance** on **05/15/2026** at **1:29pm** [Comment ID: 1368] - Link
Suggestion
Agree: 1, Disagree: -3
The roundabouts will make this road safer and force cars to slow down.

#043

Posted by **David Hill** on **05/15/2026** at **9:41am** [Comment ID: 1351] - Link
Suggestion
Agree: 2, Disagree: -1
Love the roundabout idea and the ability to make a quick "u-turn" to limit left-turns in traffic.

#044

Posted by **Joseph** on **05/15/2026** at **1:48pm** [Comment ID: 1379] - Link

Question
Agree: 0, Disagree: 0
Is this design going to be able to accommodate traffic backed up to Hwy 71?

#045

Posted by **anonymous 2** on **05/15/2026** at **3:34pm** [Comment ID: 1391] - Link
Question
Agree: 1, Disagree: 0
Is there room for a northbound right-turn lane with the roundabout? Has the 2027 school year feeder pattern been considered with the new Woodland location to the east?

#046

Posted by **Betty Morris** on **05/15/2026** at **8:56pm** [Comment ID: 1404] - Link
Agree: 4, Disagree: 0
I don't see how bikes or pedestrians could ever cross Joyce if there were round a bouts there. We live on Zion and have a hard time crossing at the roundabout . Usually have to go to the crossing with blinking lights, and that sometimes takes a few minutes for people to stop.

#047

Posted by **Rick G** on **05/15/2026** at **2:10pm** [Comment ID: 1383] - Link
Agree: 2, Disagree: -1
This plan will at best carry half of the traffic that the existing street now handles. If your plan is to force most of the drivers that have to use Joyce to another route it looks great. Hopefully the contractor who got the bid for east Zion will get the bid. (sarcasm)

#048

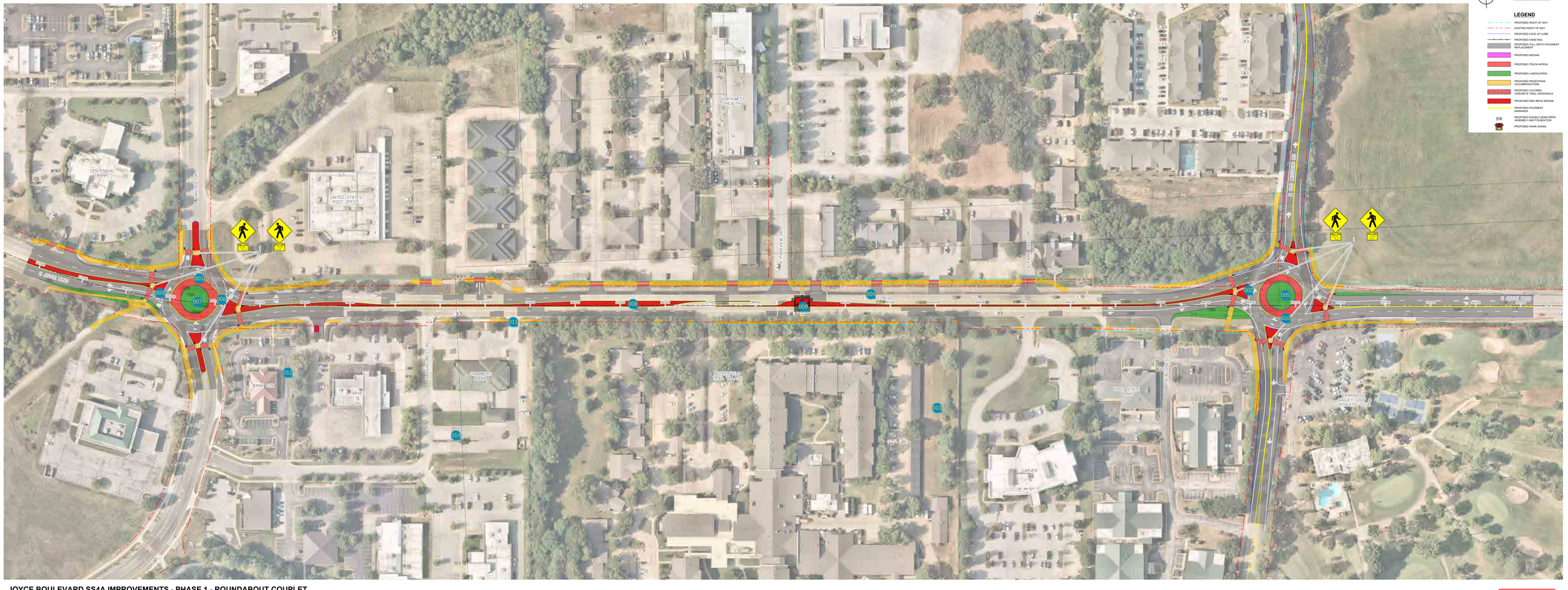
Posted by **Shelby 1** on **05/29/2026** at **1:40pm** [Comment ID: 1435] - Link
Suggestion
Agree: 0, Disagree: 0
Consider a new driveway from Paradise Valley Country Club onto Joyce. Vehicles turning left into the CC parking lot get stuck here which could cause a backup at the roundabout.

#049

Posted by **Joseph** on **05/15/2026** at **1:27pm** [Comment ID: 1367] - Link
Suggestion
Agree: 0, Disagree: 0
You need a connection to Shiloh in here

#050

Posted by **anonymous** on **05/15/2026** at **11:31am** [Comment ID: 1358] - Link
Suggestion
Agree: 0, Disagree: 0
Thank you for your work on this. I would ask the City to consider also prioritizing the closure of Front Street and opening up the alternative connection point further East on Millsap; that would facilitate traffic flow in this area, along with resetting the light at Millsap and College.



JOYCE BOULEVARD SS4A IMPROVEMENTS - PHASE 1 - ROUNDABOUT COUPLET

#001

Posted by **Sam** on **05/15/2026** at **2:57pm** [Comment ID: 1387] - Link
Agree: 1, Disagree: -1
Guys roundabouts do not fix every problem.

#002

Posted by **Sara** on **05/15/2026** at **2:03pm** [Comment ID: 1381] - Link
Suggestion
Agree: 3, Disagree: -1
I love a good round about when it is done well. However, can we please stop putting the s-curve/jog in the lanes upon entering a round-a-bout??! The Rupple Rd ones are perfect examples of what not to do. I have almost been side swiped, and almost accidently side-swiped others because the lanes are too narrow for this tight jog - even at extraordinarily slow speeds. I understand they are to slow traffic coming into the round about, but it creates more of a hazard than it does any good. Rupple Rd is not terribly busy yet, so not much has come of that issue. But Joyce is already is super busy. If the goal is to keep traffic moving smoothly, we need to consider all barriers to that, including jogs/thought curves in the road where any larger vehicle will have a hard time traversing it. Also, PLEASE ensure these are large enough! The small ones at Zion & Old Missouri and on East Saint St are great examples.of ones that are too small and defeat the purpose of smooth progression of traffic. If one has to all but come to a stop in order to enter the roundabout, this defeats the purpose.

#003

Posted by **Charles** on **05/17/2026** at **11:01am** [Comment ID: 1409] - Link
Suggestion
Agree: 0, Disagree: 0
I don't know if the traffic count on Joyce prevents this, but I think two travel lanes and a center turn lane would work better than four travel lanes and no turn lane. I think a treatment similar to the proposed Gregg ave treatment would be much better here. It would also make the roundabout simpler and safer. If the four lanes are necessary for traffic flow, this roundabout seems like a great improvement. The traffic lights are what make driving on Joyce a huge pain.

#004

Posted by **Holly** on **05/15/2026** at **11:12am** [Comment ID: 1354] - Link
Suggestion
Agree: 1, Disagree: 0
This area has needed a turning lane for years. If a median is added, it will be even more difficult to get out of business parking lots. There are too many businesses over here to make one way turning a priority. There is no access behind our building so there won't be an alternative route. It will also be incredibly difficult for emergency vehicles to get to Butterfield. This happens on a daily basis (I work across the street) so please consider this and speak with them prior to making these changes.

#005

Posted by **Clark** on **05/26/2026** at **8:19pm** [Comment ID: 1430] - Link
Suggestion
Agree: 0, Disagree: 0
No roundabouts. I know studies say they are better traffic lights but I don't think they help pedestrians. In my experience with the current roundabouts in Fayetteville they seem to make things worse for pedestrians trying to cross.

#006

Posted by **Georgena Duncan** on **05/15/2026** at **6:14pm** [Comment ID: 1403] - Link
Suggestion
Agree: 1, Disagree: -2
Round abouts would not work well with this volume of traffic. They would need to be VERY large. Are you aware that about 10-15% of all drivers just blast through a round about without checking other cars---the road is mine attitude. This earns round abouts the title of 'a wreck waiting to happen." Yes, a round about would slow traffic and create even more annoyance in traveling on Joyce. I use the round about on Zion, which is annoyingly off center to the street and requires great viligance to use if you are circling to Old Missouri Road. There are plance where round abouts are NOT a good idea.

#007

Posted by **Chris** on **05/15/2026** at **12:21pm** [Comment ID: 1362] - Link
Suggestion
Agree: 6, Disagree: -4
Whoever thought of putting roundabouts here should lose their job

#008

Posted by **anonymous 1** on **05/15/2026** at **12:50pm** [Comment ID: 1364] - Link
Suggestion
Agree: 1, Disagree: 0
Possible to put trees in the median here?

#009

Posted by **anonymous 1** on **05/15/2026** at **12:49pm** [Comment ID: 1363] - Link
Agree: 0, Disagree: 0
love this crosswalk

#010

Posted by **Dr. Barry Wetsell** on **05/27/2026** at **10:58am** [Comment ID: 1432] - Link
Suggestion
Agree: 0, Disagree: 0
Hello and thx for allowing public feedback. I have traveled this route for over 20 years. 265 was then a two lane highway and definitely became unsustainable. Not sure if y'all travel this much but i can easily say that the volume of traffic is way too voluminous for traffic circles. Most people never understand how they work, anyway. As much as you want to reduce vehicular traffic by a certain date, it's not going to happen. Just because you want more people riding bikes, walking, skateboarding, using wheelchairs, skating, etc, it's not going to happen. We actually need more lanes and turn lanes for the ever increasing population and subsequent increase in vehicular traffic. Or you can make it prohibitive for people to want to frequent the city which then will spend their tax dollars in another nearby town. Simply put, Americans by and large want to use their vehicles safely on well designed streets and not be forced to walk or to ride a bike because of bad decisions. If so, they will go elsewhere. Maybe that's the plan. Any insight would be helpful. Many of the roads that have suffered lane reduction and now have bike lanes, I travel daily and rarely see bikers or walkers. I have seen people driving in the bike lane however.

#011

Posted by **Kathy** on **05/16/2026** at **9:01am** [Comment ID: 1407] - Link
Question
Agree: 0, Disagree: 0
Where can I find the design to view the options? This survey does not let you view. Or anywhere else on your Website. The survey format does not work good. It was better before.

> Reply by **KaciBlack** on **05/19/2026** at **9:00am** [Comment ID: 1425] - Link
> *Agree: 1, Disagree: 0*
> Hi Kathy, once you complete the survey, there is a drop down at the bottom of the page where you can view all 4 documents. If you are having trouble with this, you can email us at longrangeplanning@fayetteville-ar.gov or call or text 479-601-3332.

#012

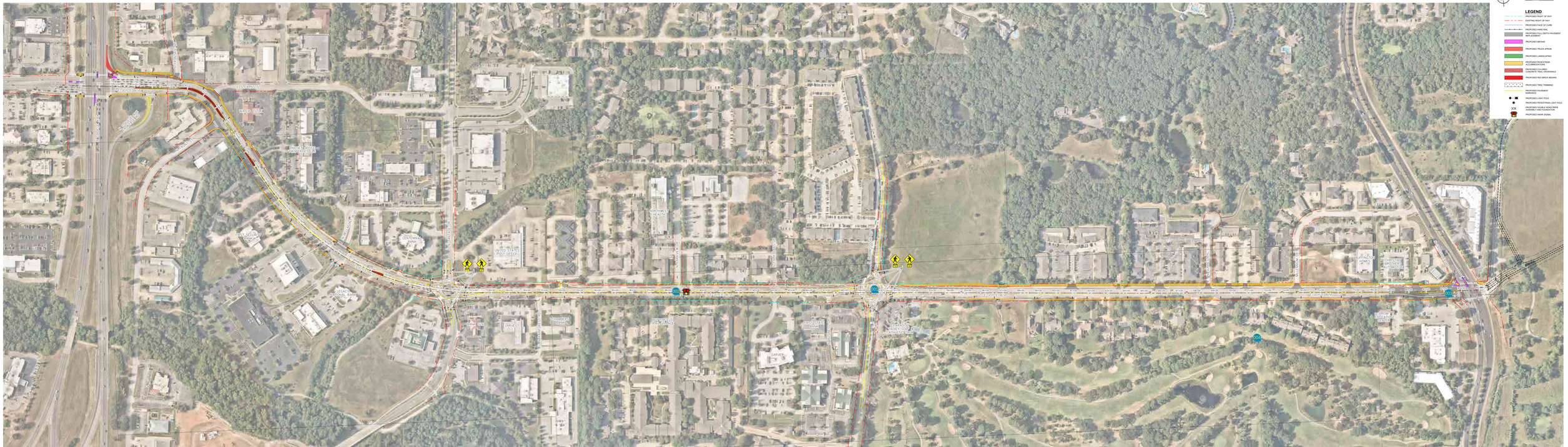
Posted by **Patty Goyette** on **05/18/2026** at **8:57pm** [Comment ID: 1416] - Link
Suggestion
Agree: 0, Disagree: -1
Your city planning has allowed a huge apartment complex on Vantage with no easy access to 71 or I49. As a result, we will have a huge traffic problem at Joyce & Vantage and an even worse problem at Joyce and 71B. A traffic circle will be total gridlock at rush-hour peak traffic. Even now traffic backs up beyond the Vantage & Joyce intersection trying to turn left onto 71B every morning and every evening. Traffic circles are a very bad, poorly considered idea for Joyce Blvd.

#013

Posted by **Carla crawley** on **05/17/2026** at **2:19pm** [Comment ID: 1411] - Link
Question
Agree: 0, Disagree: 0
How will my safety be guaranteed while crossing Joyce on Vantage?

#014

Posted by **Bill Ross** on **05/16/2026** at **1:31am** [Comment ID: 1406] - Link
Question
Agree: 0, Disagree: -1
I think I see two lanes each way. There should be. I do not d see a turning lane. There should be a turning lane all of the way



JOYCE BOULEVARD SS4A IMPROVEMENTS - PHASE 2

Kimley»Horn

#001

Posted by **John Huneycutt** on **05/15/2026** at **12:52pm** [Comment ID: 1365] - Link
Suggestion
Agree: 3, Disagree: 0
I'm all in favor of traffic circles - however they need to be a wide enough of a diameter to accommodate all sizes of cars trucks and driving patterns. As a reference, the traffic circle on Zion is too small.

#002

Posted by **Allen Carney** on **05/18/2026** at **11:44am** [Comment ID: 1414] - Link
Suggestion
Agree: 0, Disagree: 0
Without a left hand turn lane these modifications will not help with the overall traffic flow.

#003

Posted by **Paul Pahulu** on **05/15/2026** at **11:18pm** [Comment ID: 1405] - Link
Suggestion
Agree: 3, Disagree: 0
The straight and left turn lanes on eastbound Joyce at Crossover intersection get backed up quite a bit. It seems like this will be an even bigger issue once the new Woodland Jr High School opens. Typically you have a number of cars turning left and that queue extends such that it blocks the straight lane. Then you have motorists swerving in and out of the right turn lane to get into the straight lane. Some consideration should be given to extending the queue distance of the left turn lane to help traffic flow more smoothly there.

#004

Posted by **Jan Gosnell** on **05/18/2026** at **10:45am** [Comment ID: 1413] - Link
Agree: 0, Disagree: 0
I think roundabouts on Joyce will cut down on entrance from side streets during rush hours. There are also people in Fayetteville who drive over the speed limit and do not stop at "yield" signs.

CITY OF FAYETTEVILLE ARKANSAS

Transportation Committee Memo

2026-2251

Meeting of June 30, 2026

To: Transportation Committee

Thru: Chris Brown, Public Works Director

From: Justin Bland, City Engineer

Subject: **Plainview Ave. Construction Manager Contract**

Recommendation:

Engineering Staff recommends approval of the Preconstruction Services Proposal from Emery Sapp & Sons in the amount of $50,500 for the Plainview Ave. project.

Background:

The construction of the Plainview Ave. project is expected to have some complexity with respect to maintaining traffic through the Fiesta Square shopping center and the intersection of College Ave. and Rolling Hills Dr. Due to this, staff is proposing to use a Construction Manager method of project delivery rather than the traditional design-bid process. A Construction Manager will allow for more involvement with the contractor during the design of the project. In addition, the Construction Manager will be able to be more responsive to requests from property owners/tenants during construction.

Discussion:

Since Construction Managers are considered a professional service, staff posted a request for qualifications for the Plainview Ave. project. Staff received four responses to this request, of which three firms were selected to be interviewed. After the interview, the selection committee chose Emery Sapp & Sons (ESS) for this work. ESS has reviewed the project documents and provided the attached document for pre-construction services. This scope of work will allow them to begin collaborating with the civil engineering consultant on the final design, prepare bid packages and begin site exploration for utility and geotechnical concerns. Once the project is bid, ESS will propose a guaranteed maximum price for the project which staff will present to the Transportation Committee and City Council for approval.

Budget/Staff Impact:

These fees will be paid from the 2019 bond program funds.

Attachments: Plainview Avenue CMAR - Preconstuction Proposal

EMERY SAPP & SONS

100% EMPLOYEE OWNED
5184 North Oak| Springdale, AR 72764 | o 417-833-9915

Plainview Avenue Extension CMAR

Preconstruction Proposal

Attn: *Chase Webb, P.E.*				
Proposal Submitted To: **City of Fayetteville**	Phone	Fax		Date 6 / 24 / 26
Street **125 W Mountain St.**	Job Name **Plainview Avenue Extension**			
City, State, & Zip Code **Fayetteville, AR 72701**	Job Location **Fayetteville, AR**			
E-Mail chwebb@fayetteville-ar.gov	Architect / Engineer ***Garver***	Date of Plans 6/1/26	**Addendums Acknowledged**	

ITEM #	*ITEM DESCRIPTION*	*Qty*	*Units*	*$/Units*	*Amount*
1	**Preconstruction Services**	**1**	**LS**	**$ 30,000.00**	**$ 30,000.00**
	- Initial Budget Pricing for Current Pricing Verification				
	- VE Process with Garver, If Needed				
	- Development of Bid Manual and Scope Packages				
	- Evaluation of Bids Through the City of Fayetteville Bid Software and Recommendation to the City				
2	**Hydro-Excavation & Utility Locates**	**1**	**LS**	**$ 10,500.00**	**$ 10,500.00**
	- Hydrovac and Locate Potential Utility Conflicts				
	- Hydrovac and Verify with GPS Water & Sewer Relocations				
	- Coordinate with Utility Companies if Conflicts Arise				
3	**Geotechnical Exploration & Testing**	**1**	**LS**	**$ 10,000.00**	**$ 10,000.00**
	- Geotechnical Samples and Recommendations				
	- ESS Test Pits for Soil Examination				
Total:			**TOTAL CHANGE ORDER AMOUNT:**		**$50,500.00**
			PRECONTRUCTION CALENDAR DAYS:		**0**

Change Order Proposal Inclusions & Clarifications

NOTES

Change Order Proposal Exclusions

NOTES

Submitted by:

Cody Vandegriffe, Project Manager, Sr.
Emery Sapp & Sons, Inc.
Phone: (479)844-5030
Mobile: (573)881-7894

Acceptance of Proposal

The above prices, specifications, and conditions are satisfactory and are hereby accepted.
You are authorized to do the work as specified. Payment will be made as outlined above.

Authorized Signature **Date**

Owner Initials: _____ ESS Rep Initials: _____

CITY OF FAYETTEVILLE ARKANSAS

CITY COUNCIL MEMO
2026-2254

MEETING OF JUNE 30, 2026

TO: Mayor Rawn and City Council

THROUGH: Keith Macedo, Chief of Staff
Chris Brown, Public Works Director
Justin Bland, City Engineer

FROM: Paul Libertini, Staff Engineer

SUBJECT: **Bid #26-37 Millsap Rd & College Ave Intersection Improvements – APAC-Central, Inc. Construction Contract Award**

RECOMMENDATION:
A Resolution to award Bid #26-37 and authorize a contract with APAC-Central, Inc. in the amount of $3,568,811.20 for the construction of the Millsap Rd & College Ave Intersection and N. Hemlock Ave project, approve a project contingency of $357,000, recognize $3,600,000 of Surface Transportation Block Grant Program – Attributable (STBGP-A) funds awarded by the Northwest Arkansas Regional Planning Commission (NWARPC), and approve a Budget Amendment.

BACKGROUND:
This project includes improvements to Millsap Road near the intersection with College Avenue. The improvements to Millsap Road include an additional lane west of College Avenue to provide additional left turning capacity, realignment of lanes on both sides of College Avenue, signalization timing and phasing improvements and installation of crosswalks and pedestrian signals. It also includes new construction of the continuation of a 2-lane N. Hemlock Ave. from Sain St. to Millsap Rd. Lastly, relocation of water and sewer lines to allow for the construction will be completed as part of the construction project.

The City received authorization from the Arkansas Department of Transportation (ARDOT) to advertise this project for construction bids on April 24, 2026. The bid opening was held on July 10, 2026.

DISCUSSION:
A total of one bid was received from APAC-Central, Inc. in the amount of $3,568,811.20. The Engineers' opinion of probable cost was $3,321,479.75. The City has received a letter from our consultant, Burns & McDonnell, recommending award of this contract to APAC-Central, Inc. The contract time is 360 calendar days for final completion.

Please note that as part of the Federal-aid process, the Mayor will be submitting the required Certification Letter to ARDOT requesting their review of the bid tabulations and concurrence in award of the contract to APAC-Central, Inc. The actual execution of the construction agreement will occur after receipt of ARDOT concurrence.

BUDGET/STAFF IMPACT:

This project is based on an Agreement of Understanding with ARDOT in which Federal-aid money will pay 80% of the contract amount and the City will pay a 20% match for the street improvements. The City will make payments to the Contractor and then submit the required paperwork to ARDOT requesting 80% reimbursement. The City 20% matching funds for the roadway improvements will be paid from the Street Projects 2024 Bonds. The water and sewer relocations totaling $321,994 are not part of this 80/20 matching grant and will be fully paid from Water and Sewer funds.

ATTACHMENTS: 3. Staff Review Form, 4. Budget Amendment, 5. NWARPC STBGP-A Award Letters, 6. Millsap-College 00500 Agreement - APAC, 7. Bid #26-37 Recommendation of Award, 8. Bid #26-37, City Bid Tab, 9. Bid #26-37, Bid Submittal - APAC-Central, Inc, 10. Bid 26-37, City Issued Bid

113 West Mountain Street
Fayetteville, AR 72701
(479) 575-8323

File #: 2026-2254

A RESOLUTION TO AWARD BID 26-37 AND AUTHORIZE A CONTRACT WITH APAC-CENTRAL, INC. IN THE AMOUNT OF $3,568,811.20 FOR CONSTRUCTION OF THE MILLSAP ROAD AND COLLEGE AVENUE INTERSECTION AND NORTH HEMLOCK AVENUE PROJECT, TO APPROVE A PROJECT CONTINGENCY IN THE AMOUNT OF $357,000.00, TO AUTHORIZE ACCEPTANCE OF A SURFACE TRANSPORTATION BLOCK GRANT IN THE AMOUNT OF $3,600,000.00 AWARDED BY THE NORTHWEST ARKANSAS PLANNING COMMISSION, AND TO APPROVE A BUDGET AMENDMENT

WHEREAS, this project proposes improvements to Millsap Road near the intersection with College Avenue, signalization timing and phasing improvements, installation of crosswalks and pedestrian signals, continuation of a 2-lane North Hemlock Avenue from Sain Street to Millsap Road, and relocation of water and sewer lines.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FAYETTEVILLE, ARKANSAS:

Section 1: That the City Council of the City of Fayetteville, Arkansas hereby awards Bid 26-37 and authorizes a contract with APAC-Central, Inc. in the amount of $3,568,811.20 for construction of the Millsap Road and College Avenue intersection and North Hemlock Avenue project and further approves a project contingency in the amount of $357,000.00.

Section 2: That the City Council of the City of Fayetteville, Arkansas hereby authorizes Mayor Rawn to sign the required Certification Letter and any other documents necessary to accept a Surface Transportation grant in the amount of $3,600,000.00 awarded by the Northwest Arkansas Planning Commission.

Section 3: That the City Council of the City of Fayetteville, Arkansas hereby approves a budget amendment, a copy of which is attached to this Resolution.

City of Fayetteville Staff Review Form

2026-2044

Item ID

7/7/2026

City Council Meeting Date - Agenda Item Only
N/A for Non-Agenda Item

Paul Libertini	6/16/2026	ENGINEERING (621)
Submitted By	**Submitted Date**	**Division / Department**

Action Recommendation:

A Resolution to award Bid #26-37 and authorize a contract with APAC-Central, Inc. in the amount of $3,568,811.20 for the construction of the Millsap Rd & College Ave Intersection and N. Hemlock Ave Improvement project, approve a project contingency of $357,000, recognize $3,600,000 of Surface Transportation Block Grant Program – Attributable (STBGP-A) funds awarded by the Northwest Arkansas Regional Planning Commission (NWARPC), and to approve a Budget Amendment.

Budget Impact:

Account Number	Fund
4601.860.7227-5809.00	Bond Program Grant Matching
4802.860.7227-5809.00	Street Projects 2024 Bonds
5400.860.5600-5808.00	Water & Sewer

Project Number	Project Title
46020.7227	Streets Bond Projects - Millsap/College Intersection Impr
11011.2019.7227	W&S Relocations - Bond Issue Projects - Millsap/College

Budgeted Item?	Yes	Total Amended Budget	$	938,100.00
		Expenses (Actual+Encum)	$	263,491.00
		Available Budget	$	**674,609.00**
Does item have a direct cost?	Yes	Item Cost	$	3,925,811.20
Is a Budget Adjustment attached?	Yes	Budget Adjustment	$	3,496,986.00
		Remaining Budget	$	**245,783.80**

V20221130

Purchase Order Number: _____

Previous Ordinance or Resolution # 66-23

Change Order Number: _____

Approval Date: _____

Original Contract Number: _____

Comments:

City of Fayetteville, Arkansas - Budget Amendment/Adjustment (Agenda)

Budget Year	Division /Org2	ENGINEERING (621)	BA Number
2026	**Requestor:**	Paul Libertini	

BUDGET AMENDMENT/ADJUSTMENT DESCRIPTION:

A Resolution to award Bid #26-37 and authorize a contract with APAC-Central, Inc. in the amount of $3,568,811.20 for the construction of the Millsap Rd & College Ave Intersection and N. Hemlock Ave Improvement project, approve a project contingency of $357,000, recognize $3,600,000 of Surface Transportation Block Grant Program – Attributable (STBGP-A) funds awarded by the Northwest Arkansas Regional Planning Commission (NWARPC), and to approve a Budget Amendment. APAC contract = $3,246,817.20 roadway + $321,994 W&S

RESOLUTION/ORDINANCE

COUNCIL DATE: 7/7/2026

ITEM ID#: **2026-2044**

Holly Black 6/16/26

Budget Division Date

TYPE: **D - (City Council)**

JOURNAL #:

GLDATE:

CHKD/POSTED: /

v.2026611

TOTAL	3,496,986	3,496,986				
	Increase / (Decrease)		Project.Sub#			
Account Number	Expense	Revenue	Project	Sub.Detl	AT	Account Name
4601.860.7227-4309.00		1,300,000	46020	7227	RE	Federal Grants - Capital
4601.860.7227-4309.00		1,900,000	46020	7227	RE	Federal Grants - Capital
4601.860.7227-4309.00		400,000	46020	7227	RE	Federal Grants - Capital
4601.860.7227-5805.00	400,000	-	46020	7227	EX	Land - Acquisition
4601.860.7227-5809.00	3,200,000	-	46020	7227	EX	Improvements - Street
4802.860.7227-5805.00	180,000	-	46020	7227	EX	Land - Acquisition
4802.860.7227-5809.00	775,247	-	46020	7227	EX	Improvements - Street
4802.860.7227-5860.02	24,753	-	46020	7227	EX	Capital Prof Svcs - Engineering/Architectura
4802.860.7999-5899.00	(980,000)	-	46020	7999	EX	Unallocated - Budget
4601.860.7227-4309.00	-	(4,000)	46020	7227	RE	Federal Grants - Capital
4601.860.7227-4309.00	-	(99,014)	46020	7227	RE	Federal Grants - Capital
4601.860.7227-5809.00	(4,000)	-	46020	7227	EX	Improvements - Street
4601.860.7227-5860.02	(99,014)	-	46020	7227	EX	Capital Prof Svcs - Engineering/Architectura
4802.860.7227-5805.00	(180,000)	-	46020	7227	EX	Land - Acquisition
4802.860.7227-5809.00	(1,000)	-	46020	7227	EX	Improvements - Street

	Increase / (Decrease)		Project.Sub#			
Account Number	Expense	Revenue	Project	Sub.Detl	AT	Account Name
4802.860.7227-5860.02	(24,753)	-	46020	7227	EX	Capital Prof Svcs - Engineering/Architectura
4802.860.7227-5809.00	(475,385)	-	46020	7227	EX	Improvements - Street
4802.860.7999-5899.00	681,138	-	46020	7999	EX	Unallocated - Budget
4601.860.7227-5809.00	(118,610)	-	46020	7227	EX	Improvements - Street
4601.860.7227-5911.99	118,610	-	46020	7227	EX	Contingency - Capital Project
4802.860.7227-5809.00	(206,390)	-	46020	7227	EX	Improvements - Street
4802.860.7227-5911.99	206,390	-	46020	7227	EX	Contingency - Capital Project
5400.720.5600-5808.00	(94,602)		11011	1	EX	Improvements - Water Line
5400.720.5600-5911.99	(259,392)		11011	2102	EX	Contingency - Capital Project
5400.860.5600-5808.00	321,994		11011	2019.7227	EX	Improvements - Water Line
5400.860.5600-5911.99	32,000		11011	2019.7227	EX	Contingency - Capital Project

NWA Regional Planning Commission

NORTHWEST ARKANSAS REGIONAL PLANNING COMMISSION

1311 Clayton St., Springdale, Arkansas, 72762

• (479) 751 7125 • Fax: (479) 751 7150 • http://nwarpc.org

August 29, 2023

Mayor Lioneld Jordan
City of Fayetteville
113 West Mountain Street
Fayetteville, AR 72701

Re: Millsap Rd. & College Ave. Intersection and N. Hemlock – ROW/Utilities
FFY 2024 Surface Transportation Block Grant Program – Attributable (STBGP-A)
Total NWARPC Federal Funds Awarded to College Ave. $1,620,000

Dear Mayor Jordan:

I am pleased to inform you the Millsap Rd. & College Ave. Inter. and N. Hemlock Project was selected by the Northwest Arkansas Regional Planning Commission on August 23, 2023, for Federal Fiscal Year (FFY) 2024 STBGP-A funding. The awarded STBGP-A funds and the required local match are shown below:

NWARPC STBGP-A	**$1,300,000 (80% Federal)**
City Match	**$ 325,000 (20% Local Match)**
Total	**$1,625,000**

The STBGP-A funding is subject to an obligation limitation and the total available funds may change after final FFY 2024 funding is published by the Federal Highway Administration (FHWA).

These funds are required to be obligated by the end of the Federal Fiscal Year which ends on September 30, 2024. All required ARDOT submittals and required approvals for this project should be completed by August 15, 2024, to allow sufficient time to obligate the STBGP-A funds for this project.

Please note that STBGP-A projects "...must comply with applicable provisions in Title 23, such as project agreements, authorization to proceed prior to incurring costs, prevailing wage rates (Davis-Bacon), competitive bidding, and other contracting requirements, regardless of whether the projects are located within the right-of-way of a Federal-aid highway."

Training for this program is being provided by ARDOT **on September 12, 2023, from 10:00-11:30** at the NWARPC office. Please send the appropriate staff member(s).

Please let us know if you have any questions or need additional information regarding this program.

Sincerely,

Tim Conklin
Executive Director

Cc: Ms. Keli Wylie, ARDOT
Ms. Erica Adams, ARDOT
Mr. Travis Brooks, ARDOT
Mr. David Siskowski, ARDOT
Ms. Minghua Qiu Miller, ARDOT
Mr. Sunny Farmahan, ARDOT
Mr. Anthony Hunter, ARDOT
Mr. Chris Brown, Public Works Director
Mr. Paul Libertini, Staff Engineer

NORTHWEST ARKANSAS REGIONAL PLANNING COMMISSION
1311 Clayton St., Springdale, Arkansas, 72762
• (479) 751 7125 • Fax: (479) 751 7150 • http://nwarpc.org

June 6, 2024

Mayor Lioneld Jordan
City of Fayetteville
113 W Mountain
Fayetteville, AR 72701

Re: Millsap Rd/College Ave Inters Impvts & N Hemlock Ave Imrpvts (Job No. 040943) – Construction
NWARPC FFY 2025 Surface Transportation Block Grant Program – Attributable (STBGP-A)
Total NWARPC Federal Funds Awarded to Job 040943: $3,520,000

Dear Mayor Jordan:

I am pleased to inform you the Millsap Rd/College Ave Inters Impvts & N Hemlock Ave Imrpvts (Job No. 040943) was selected by the Northwest Arkansas Regional Planning Commission on May 22, 2024, for Federal Fiscal Year (FFY) 2025 NWARPC Surface Transportation Block Grant Program – Attributable (STBGP-A) funding.

The awarded FY2025 NWARPC STBGP-A funds and the required local match are shown below:

NWARPC STBGP-A	**$1,900,000**	**(80% Federal)**
City Match	**$ 475,000**	**(20% Local Match)**
Total	**$2,375,000**	

The NWARPC STBGP-A funding is subject to an obligation limitation and the total available funds may change after final FFY 2025 funding is published by the Federal Highway Administration (FHWA).

These funds are required to be obligated by the end of the Federal Fiscal Year that ends on September 30, 2025. All required submittals to Arkansas Department of Transportation (ARDOT) and required approvals for this project should be completed by August 15, 2025, to allow sufficient time to obligate the STBGP-A funds for this project.

ARDOT administers the Local Public Agency (LPA) program, including oversight support for the federal-aid project delivery and applicable provisions in Title 23, U.S.C., and processes reimbursement requests for the NWARPC funding award. Please refer to the ARDOT Local Public Agency Project Manual for more information. Required training for this program is being provided by ARDOT **on Thursday, July 18, 2024, from 9:00 am to 10:00 am** at the NWARPC office. Please send the appropriate staff member(s).

Please let us know if you have any questions or need additional information regarding this program.

Sincerely,

Tim Conklin
Executive Director

Cc: David Siskowski, ARDOT
Minghua Qiu Miller, ARDOT
Carlos Meredith, ARDOT
Ashley Smith, ARDOT
Sunny Farmahan, ARDOT
Anthony Hunter, ARDOT
Chris Brown, Fayetteville Public Works Director/City Engineer
Paul Libertini, Fayetteville Staff Engineer
Matt Casey, Fayetteville Staff Engineer

NORTHWEST ARKANSAS REGIONAL PLANNING COMMISSION
1311 Clayton St., Springdale, Arkansas, 72762
• (479) 751 7125 • http://nwarpc.org

June 16, 2026

Mayor Molly Rawn
City of Fayetteville
113 W Mountain
Fayetteville, AR 72701

Re: Millsap Rd/College Ave Inters Impvts & N Hemlock Ave Impvts. (Job No. 040943) – Construction
NWARPC FFY 2027 Surface Transportation Block Grant Program – Attributable (STBGP-A)
Total NWARPC Federal Funds Awarded to Project to Date: $3,920,000

Dear Mayor Rawn:

I am pleased to inform you that the Millsap Rd/College Ave Inters Impvts & N Hemlock Ave Impvts. (Job No. 040943) was selected by the Northwest Arkansas Regional Planning Commission on May 27, 2026, for Federal Fiscal Year (FFY) 2027 NWARPC Surface Transportation Block Grant Program – Attributable (STBGP-A) funding.

The awarded FY2027 NWARPC STBGP-A funds and the required local match are shown below:

NWARPC STBGP-A	**$400,000**	**(80% Federal)**
City Match	**$100,000**	**(20% Local Match)**
Total	**$500,000**	

The NWARPC STBGP-A funding is subject to an obligation limitation and the total available funds may change after final FFY 2027 funding is published by the Federal Highway Administration (FHWA), subject to Congressional reauthorization and appropriation.

These funds are required to be obligated by the end of the Federal Fiscal Year that ends on September 30, 2027. All required submittals to the Arkansas Department of Transportation (ARDOT) and required approvals for this project should be completed by August 15, 2027, to allow sufficient time to obligate the STBGP-A funds for this project.

ARDOT administers the Local Public Agency (LPA) program, providing oversight for federal-aid project delivery and ensuring compliance with applicable provisions of Title 23, U.S.C. ARDOT also processes reimbursement requests for NWARPC funding awards. For more details, please refer to the ARDOT Local Public Agency Project Manual. Required training for this program will be conducted by ARDOT on **Thursday, August 20, 2026, from 8:30 a.m. to 9:30 a.m. at the NWARPC office**. Please ensure the appropriate staff member(s) attend.

Please let us know if you have any questions or need additional information regarding this program.

Sincerely,

Tim Conklin
Executive Director

Cc: David Siskowski, ARDOT
Minghua Qiu Miller, ARDOT
Whitnee V. Bullerwell, ARDOT
ARDOT LPA Staff
Sunny Farmahan, ARDOT
Anthony Hunter, ARDOT
Chris Brown, Fayetteville Public Works Director
Justin Bland, Fayetteville City Engineer
Paul Libertini, Fayetteville Staff Engineer

DOCUMENT 00500 – AGREEMENT

BETWEEN OWNER AND CONTRACTOR

Contract Name/Title: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.

Bid No.: 26-37, Construction

THIS AGREEMENT is dated as of the _____ day of _____ in the year 2026 by and between The City of Fayetteville, Arkansas (which may hereinafter be called City) and APAC-Central, Inc. (hereinafter called Contractor).

ARTICLE 1 - WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The work under this Contract includes, but is not limited to:

The construction of improvements to the intersection of Millsap Road/College Avenue and improvements to Hemlock Avenue in Fayetteville, Arkansas. The project is split into two separate packages consisting of approximately:

Package 1 will be constructed first and will consist of a 700 foot extension of N. Hemlock Avenue from Sain Street to Millsap Road. This new road connection will connect to the existing street stub out provided south of the recently completed roundabout on Sain Street and will become the new connection between Millsap and Sain Street as Front Street is disconnected. Improvements will consist of new curb and gutter, new sidewalk on the west side of the road, and new drainage infrastructure

Package 2 will be constructed second and will consist of improvements to the intersection that extends approximately 350 feet east and west of College Avenue. Left turn lanes will be added to the east and west bound legs of the intersection as well as, new curb and gutter, new sidewalks and pedestrian accommodations, new drainage infrastructure, and traffic signal modifications. To improve safety and traffic flow, Front Street will be disconnected from Millsap Road. There will also be some waterline relocation included in Package 2.

During Stage 1 construction of Package 2, AT&T will be on site to relocate and lower a portion of existing fiber duct bank that crosses Millsap, east of College Avenue. The total duration of this work is anticipated to be one week. Contractor shall coordinate with AT&T and their utility subcontractor for scheduling of this work in conjunction with excavating road subgrade, relocation of watermain, and installation of new storm drainage pipe.

Any use of a third-party dumpster or roll off container shall be procured from the City of Fayetteville Recycling and Trash Collection Division. Use of a Non-City dumpster or roll off container is not allowed.

Open burning is not allowed on City projects.

Blasting is not allowed on City projects.

Contractor shall obtain all permits required for the Work. Fees for City-issued permits shall be waived, but Contractor remains responsible for obtaining and paying for all non-City permits, licenses, approvals, inspections, and authorizations unless expressly stated otherwise in the Contract Documents.

The Contract includes work in City of Fayetteville Right-of-way and in General Utility Easements.

Refer to Section 00400-Bid Form for quantities.

ARTICLE 2 - ENGINEER

2.01 A portion of the Contract Documents associated with this Agreement have been prepared by the City of Fayetteville Engineering Division. City of Fayetteville Engineering Division assumes all duties and responsibilities, and has the rights and authority assigned to City of Fayetteville Engineering Division in those Contract Documents it has prepared in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 3 - CONTRACT TIME

3.01 TIME OF THE ESSENCE:

A. All time limits for milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

3.02 DATES FOR SUBSTANTIAL COMPLETION AND FINAL PAYMENT:

A. The Work shall be Substantially Completed within 300 calendar days after the date when the Contract Times commence to run as provided in the GENERAL CONDITIONS, and final completion and ready for final payment in accordance with the GENERAL CONDITIONS within 360 calendar days after the date when the Contract Times commence to run.

3.03 LIQUIDATED DAMAGES:

A. The City of Fayetteville and Contractor recognize that time is of the essence of this Agreement and that the City will suffer financial loss (including, but not limited to, administrative costs, engineering costs, inspection costs, public inconvenience, disruption to City operations, and loss of use) if the Work is not completed within the time specified above, plus any extensions thereof allowed in accordance with the GENERAL CONDITIONS. The parties also recognize the delays, expense, and difficulties involved in proving the actual loss suffered by The City of Fayetteville if the Work is not Substantially Completed on time. Accordingly, instead of requiring any such proof, The City of Fayetteville and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay The City of Fayetteville Three Thousand Dollars ($3,000.00) for each calendar day that expires after the time specified above in Paragraph 3.02 for Substantial Completion until the Work is Substantially Complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the time specified in Paragraph 3.02 for completion and readiness for final payment or any proper extension thereof granted by The City of Fayetteville, Contractor shall pay The City of Fayetteville Two Thousand Dollars ($2,000.00) for each calendar day that expires after the time specified for completion and readiness for final payment.

ARTICLE 4 - CONTRACT PRICE

4.01 The CITY OF FAYETTEVILLE agrees to pay, and the CONTRACTOR agrees to accept, as full and final compensation for all work done under this agreement, the amount based on the unit prices bid in the Proposal (BID FORM) which is hereto attached, for the actual amount accomplished under each pay item, said payments to be made in lawful money of the United States at the time and in the manner set forth in the Specifications.

4.02 As provided in the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by ENGINEER as provided in the General Conditions. Unit prices have been computed as provided in the General Conditions.

4.03 Changes, modifications, or amendments in scope, price or fees to this contract shall not be allowed without a prior formal contract amendment approved by the Mayor and the City Council in advance of the change in scope, cost or fees.

1. There shall be no changes without prior written approval of the Engineer of Record and/or the City's designated Professional Engineer.
2. Minor variations may be authorized in the form of Field Order as provided in the General Conditions and do not require formal contract amendments.

ARTICLE 5 - PAYMENT PROCEDURES

5.01 SUBMITTAL AND PROCESSING OF PAYMENTS:

A. Contractor shall submit Applications for Payment in accordance with the GENERAL CONDITIONS. Applications for Payment will be processed by Engineer as provided in the GENERAL CONDITIONS.

5.02 PROGRESS PAYMENTS, RETAINAGE:

A. The City of Fayetteville shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment as recommended by Engineer, on or about the 15th day of each month during construction. All such payments will be measured by the schedule of values established in the GENERAL CONDITIONS (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of payments previously made and less such amounts as Engineer shall determine, or The City of Fayetteville may withhold, in accordance with the GENERAL CONDITIONS.

a. 95% of Work Completed (with the balance being retainage). If Work has been 50% completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to The City of Fayetteville

and Engineer, The City of Fayetteville on recommendation of Engineer, may determine that as long as the character and progress of the Work subsequently remain satisfactory to them, there will be no additional retainage on account of Work subsequently completed, in which case the remaining progress payments prior to Substantial Completion will be an amount equal to 100% of the Work Completed less the aggregate of payments previously made; and

b. 100% of Equipment and Materials not incorporated in the Work but delivered, suitably stored, and accompanied by documentation satisfactory to The City of Fayetteville as provided in the GENERAL CONDITIONS.

5.03 FINAL PAYMENT:

A. Upon final completion and acceptance of the Work in accordance with the GENERAL CONDITIONS, The City of Fayetteville shall pay the remainder of the Contract Price as recommended by Engineer and as provided in the GENERAL CONDITIONS.

ARTICLE 6 - CONTRACTOR'S REPRESENTATIONS

6.01 In order to induce The City of Fayetteville to enter into this Agreement, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents including the Addenda and other related data identified in the Bid Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, performance, and furnishing of the Work.

C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance, and furnishing of the Work.

D. Contractor has carefully studied all:

(1) Reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site; and

(2) Reports and drawings of a Hazardous Environmental Condition, if any, at the Site. Contractor acknowledges that The City of Fayetteville and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents with respect to Underground Facilities at or contiguous to the Site.

E. Contractor has obtained and carefully studied (or assumes responsibility of having done so) all such additional supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise which may affect cost, progress,

performance, and furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto.

F. Contractor does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the performing and furnishing of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents. Nothing in this article shall be construed to waive Contractor's rights, if any, under the Contract Documents regarding differing or unforeseen site or subsurface conditions, concealed conditions, hazardous environmental conditions, or changes in the Work.

G. Contractor is aware of the general nature of work to be performed by The City of Fayetteville and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

I. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to Contractor.

J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 7 - CONTRACT DOCUMENTS

7.01 CONTENTS:

A. The Contract Documents which comprise the entire Agreement between The City of Fayetteville and Contractor concerning the Work consist of the following and may only be amended, modified, or supplemented as provided in the GENERAL CONDITIONS:

1. This Agreement.
2. Exhibits to this Agreement (enumerated as follows):
   a. Notice to Proceed.
   b. Contractor's Bid.
   c. Documentation submitted by Contractor prior to Notice of Award.
3. Performance, Payment, and other Bonds.
4. General Conditions.
5. Supplementary Conditions.
6. Specifications consisting of divisions and sections as listed in table of contents of Project Manual.

7. Drawings consisting of a cover sheet and sheets as listed in the table of contents thereof, with each sheet bearing the following general title: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.
8. Addenda numbers 1 to 2 inclusive.
9. The following which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto: All Written Amendments and other documents amending, modifying, or supplementing the Contract Documents pursuant to the GENERAL CONDITIONS.

B. ORDER OF PRECEDENCE:

In the event of a conflict, inconsistency, or ambiguity among the Contract Documents, the documents shall govern in the following order unless otherwise required by law: written amendments and change orders; this Agreement; Specifications; Drawings; Addenda; Supplementary Conditions; General Conditions; contractor's bid; and other exhibits.

ARTICLE 8 - MISCELLANEOUS

8.01 TERMS:

A. Terms used in this Agreement which are defined in the GENERAL CONDITIONS shall have the meanings stated in the GENERAL CONDITIONS.

8.02 ASSIGNMENT OF CONTRACT:

A. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by Law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

8.03 SUCCESSORS AND ASSIGNS:

A. The City of Fayetteville and Contractor each binds itself and its successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

8.04 MUTUAL CONSTRUCTION:

A. The parties acknowledge and agree that this Agreement has been negotiated, reviewed, and mutually drafted by the parties, each of whom has had the opportunity to consult with legal counsel. Accordingly, no provision of this Agreement shall be

construed against either party on the basis that such party drafted or proposed the provision.

8.05 SEVERABILITY:

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon The City of Fayetteville and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

8.06 DISPUTES:

A. This Agreement shall be governed by the laws of the State of Arkansas. Disputes shall be resolved in accordance with the provisions of Article 16 of the General Conditions. Venue for any legal action arising from this Agreement shall be in a court of competent jurisdiction in Washington County, Arkansas.

8.07 NO WAIVER:

A. Nothing in this Agreement or the Contract Documents shall be construed as a waiver of the City's sovereign immunity, defenses, limitations of liability, or protections available under Arkansas law.

8.08 FREEDOM OF INFORMATION ACT:

A. City contracts and documents prepared while performing city contractual work are subject to the Arkansas Freedom of Information Act, Ark. Code Ann. § 25-19-101, et seq. If a Freedom of Information Act request is presented to the City of Fayetteville, the contractor shall promptly provide the documents in Contractor's possession that are responsive to the request as prescribed in the Arkansas Freedom of Information Act. Only legally authorized photocopying costs pursuant to the FOIA may be assessed for this compliance.

8.09 LIENS:

A. **No liens against this construction project are allowed.** Arkansas law (A.C.A. §§18-44-501 through 508) prohibits the filing of any mechanics' or materialmen's liens in relation to this public construction project. Arkansas law requires and the contractor promises to provide and file with the Circuit Clerk of Washington County separate payment and performance bonds each in an amount equal to the amount of this contract. Any subcontractor or materials supplier may bring an action for non-payment of labor or material on the bond. The contractor shall notify every subcontractor and materials supplier for this project of this paragraph and obtain written acknowledgement of such notice before that subcontractor or supplier begins work or provides materials.

DOCUMENT 00500 – AGREEMENT (continued)

IN WITNESS WHEREOF, The City of Fayetteville and Contractor have signed this Agreement in quadruplicate. One counterpart each has been delivered to Contractor. Three counterparts each has been retained by The City of Fayetteville. All portions of the Contract Documents have been signed, initialed, or identified by The City of Fayetteville and Contractor.

This Agreement will be effective on _____, 2026 which is the Effective Date of the Agreement.

CONTRACTOR: APAC-Central, Inc.	CITY OF FAYETTEVILLE
By: Murry Cline	By: Molly Rawn
(Type or legibly print)	
(Signature)	(Signature)
Title: Vice President	Title: Mayor

Contractor shall attach evidence of authority to sign.
If Contractor is a corporation, corporate entity or LLC, Contractor shall attach Corporate Resolution authorizing Contractor's signature and execution of Agreement.
Further if Contractor is a corporation, corporate entity or LLC, Contractor shall also attach a copy of the Contractor's Articles of Incorporation and a copy form the Arkansas State Secretary of State to document that the corporation, corporate entity or LLC is in current "Good Standing" with the State of Arkansas and such entity is permitted to perform work in the State of Arkansas.

(SEAL)	(SEAL)
Attest _____	Attest _____

APAC - CENTRAL, INC. CORPORATE SEAL 1980 DELAWARE

DOCUMENT 00500 – AGREEMENT (continued)

Address for giving notices

755 E Millsap Rd

Fayetteville, AR 72703

Address for giving notices

113 W. Mountain St.

Fayetteville, AR 72701

License No. 0011840427

Agent for Service of process

Murry Cline

(Type or legibly print)

Contractor shall attach evidence of authority of Agent for Service process to sign. If Contractor is a corporation, corporate entity or LLC, Contractor shall attach Corporate Resolution authorizing Agent for Service process authority to sign.

(If Contractor is a corporation, corporate entity or LLC, attach evidence of authority to sign.)

END OF DOCUMENT 00500

ACTION BY WRITTEN CONSENT
OF THE BOARD OF DIRECTORS
OF
APAC-CENTRAL, INC.

The undersigned, being all of the members of the Board of Directors of APAC-Central, Inc., a Delaware corporation (the "***Corporation***"), do hereby, pursuant to applicable Delaware statute, give this written consent to the taking of the following actions, such actions to have the same force and effect had a meeting been duly called and held:

RESOLVED, that effective February 25, 2026, all previous elections of officers are terminated, and the following persons be, and hereby are, elected to serve as officers of the Corporation (each individually, an ***"Officer"*** and collectively, the ***"Officers"***) in the capacities set forth opposite their respective names until such time as their successors shall be elected and qualified:

Brandon LeFevre	President
Murry E. Cline	Vice President/Secretary
Michael J. Dugan	Vice President/Assistant Secretary
Kristopher P. McClanahan	Vice President/Assistant Secretary
Michael J. Eshleman	Vice President/Assistant Secretary
Richard Neubert	Vice President/Assistant Secretary
Travis Morris	Treasurer
Brandon Beam	Assistant Secretary
David M. Toolan	Assistant Secretary
Tim P. George	Assistant Secretary

FURTHER RESOLVED, that the Officers be, and each of them hereby is, authorized to execute and deliver agreements, contracts, documents, certificates, and other instruments, under the seal of the Corporation if required, for the purpose of conducting the Corporation's business, including without limitation, selling products and securing construction work, and to take such other action, as they may deem necessary, advisable, convenient, or appropriate to carry out and fully perform duties incident to the office or offices so appointed, and such other duties as may be prescribed by the Board of Directors from time to time;

FURTHER RESOLVED, that effective February 25, 2026, previous appointments of authorized employees are terminated, and that the following persons be and each of them hereby is appointed to serve as an authorized employee of the Corporation (each individually, an ***"Authorized Employee"*** and collectively, the ***"Authorized Employees"***), which persons shall be authorized to execute and deliver such agreements, contracts, documents, certificates and other instruments, under the seal of the Corporation if required, for the purpose of conducting the Corporation's business including, without limitation, selling products and securing construction work:

Brian A. Verkamp	Nick Burt
Darrin Beeson	David Foreman
Douglas Fronick	Douglas Luetjen
James Hawkins	Joshua W. Davis
Ted B. Craft	David L. Foster
Shannon Holley	

FURTHER RESOLVED, that the President of the Corporation may, from time to time, without further action by the Board of Directors, appoint other persons to serve as authorized employees, or remove any individuals from this capacity, and to direct those appointed to take such action, as he may deem necessary, advisable, convenient or appropriate to carry out and fully perform the duties incident to the office of President;

FURTHER RESOLVED, that the activities and operations of the Corporation may be carried on in any of the following manners or styles as may from time-to-time be deemed necessary or appropriate:

Arkhola Sand & Gravel Co.
McClinton-Anchor Co.
APAC-Central, Inc.

FURTHER RESOLVED, that all actions previously taken by any Officer or Authorized Employee of the Corporation appointed hereunder in his/her capacity as such Officer or Authorized Employee be, and each of them hereby is, adopted, ratified, confirmed and approved in all respects as the authorized acts and deeds of the Corporation;

FURTHER RESOLVED, that each undersigned agrees that electronic signatures, whether digital or encrypted, of the Board of Directors are intended to authenticate this consent and to have the same force and effect as manual signatures. As used in the previous sentence, the term "electronic signatures" means any electronic sound, symbol or process attached to or logically associated with this consent and executed and adopted by a member of the Board of Directors with the intent to sign such consent, including, but not limited to, e-mail electronic signatures executed through DocuSign Services; and

FURTHER RESOLVED, that this Consent, following execution by the Board of Directors, be filed in appropriate order in the minute book of the Corporation.

Signed by:
9945E30E1BD4459...
Nathan Creech

Signed by:
53B0F66EAABD417...
Aylwyn Bryan

June 11, 2026

Mr. Paul Libertini, PE
City of Fayetteville
113 West Mountain Street
Fayetteville, AR 72701

Re: Bid #26-37, Construction – Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave. Impvts. - Recommendation of Award

Dear Mr. Libertini:

Bids were received Wednesday, June 10, 2026 for the Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave. Impvts. project. A total of one bid was received from APAC-Central, Inc. with a total bid of $3,568,811.20.

A copy of the certified bid tabulation showing the completed bids is included for your reference. The engineer's opinion of probable construction cost for the project, prior to receipt of bids, was $3,321,479.75.

We have reviewed the Bidders Qualifications Statement submitted by APAC-Central, Inc. and based upon the information provided, we believe them to be qualified to successfully complete this project. Therefore, we recommend that the City award this contract to APAC-Central, Inc. in the bid amount of $3,568,811.20.

The contract documents require the furnishing of 100 percent performance and payment bonds prior to authorization of the Notice to Proceed. Completion of the project is to be within 360 days from the date of the issuance of the Notice to Proceed.

If you have any questions, please do not hesitate to contact us.

Sincerely,
BURNS & McDONNELL

Jonathan Ely, PE
Project Manager

enclosures

cc: Mr. Trevel Young – City of Fayetteville Procurement Agent
Mr. Kenny Fitch – City of Fayetteville Senior Procurement Agent
Mr. William Pattengill, PE – Burns & McDonnell Resident Project Representative

6576 Lynch's Prairie Cove, Suite B \ Springdale, AR 72762
O 479-384-5092 \ **C** 479-936-1833 \ burnsmcd.com

Certified Bid Tabulation
Bid 26-37, Construction - Millsap/College Intersection and
Hemlock Improvements
Bid Opening Date: June 10, 2026

CONTRACT				ENGINEER'S OPCC		APAC-CENTRAL, INC.	
ITEM NO.	ITEM DESCRIPTION	QTY.	PAY UNIT	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL
	SCHEDULE A (BASE BID ITEMS)						
1.1	MOBILIZATION	1	LS	$ 151,500.00	$ 151,500.00	$ 145,000.00	$ 145,000.00
1.2	BONDS & INSURANCE	1	LS	$ 30,000.00	$ 30,000.00	$ 20,500.00	$ 20,500.00
1.3	TRENCH & EXCAVATION SAFETY	1	LS	$ 25,000.00	$ 25,000.00	$ 30,000.00	$ 30,000.00
SUBTOTAL CONSTRUCTION COST SCHEDULE A (BASE BID ITEMS)				**$**	**206,500.00**	**$**	**195,500.00**
	SCHEDULE B (PACKAGE 1 - HEMLOCK)						
2.1	ROADWAY CONSTRUCTION CONTROL	1	LS	$ 25,000.00	$ 25,000.00	$ 45,000.00	$ 45,000.00
2.2	CLEARING, GRUBBING, AND DEMOLITION	1	LS	$ 40,000.00	$ 40,000.00	$ 60,000.00	$ 60,000.00
2.3	UNCLASSIFIED EXCAVATION (PLAN QUANTITY)	1883	CY	$ 24.00	$ 45,192.00	$ 45.25	$ 85,205.75
2.4	EMBANKMENT (PLAN QUANTITY)	427	CY	$ 27.00	$ 11,529.00	$ 18.50	$ 7,899.50
2.5	SELECT EMBANKMENT (PLAN QUANTITY)	1468	CY	$ 32.00	$ 46,976.00	$ 39.00	$ 57,252.00
2.6	UNDERCUT AND BACKFILL (IF AND WHERE DIRECTED)	200	CY	$ 40.00	$ 8,000.00	$ 108.00	$ 21,600.00
2.7	ROCK EXCAVATION (ALLOWANCE)	10	CY	$ 500.00	$ 5,000.00	$ 580.00	$ 5,800.00
2.8	SUBGRADE PREPARATION	2218	SY	$ 3.00	$ 6,654.00	$ 3.60	$ 7,984.80
2.9	4" TOPSOIL PLACEMENT (SOD + SEEDING AREAS)	1552	SY	$ 6.00	$ 9,312.00	$ 5.90	$ 9,156.80
2.10	18" REINFORCED CONCRETE PIPE (CLASS III) UNDER PAVEMENT	51	LF	$ 200.00	$ 10,200.00	$ 170.00	$ 8,670.00
2.11	24" REINFORCED CONCRETE PIPE (CLASS III) - UNDER PAVEMENT	20	LF	$ 235.00	$ 4,700.00	$ 194.00	$ 3,880.00
2.12	18" REINFORCED CONCRETE PIPE (CLASS III)	58	LF	$ 175.00	$ 10,150.00	$ 120.00	$ 6,960.00
2.13	24" REINFORCED CONCRETE PIPE (CLASS III)	26	LF	$ 210.00	$ 5,460.00	$ 137.50	$ 3,575.00
2.14	18" R.C. FLARED END SECTION	1	EA	$ 1,950.00	$ 1,950.00	$ 1,250.00	$ 1,250.00
2.15	24" R.C. FLARED END SECTION	1	EA	$ 2,500.00	$ 2,500.00	$ 1,350.00	$ 1,350.00
2.16	4'X4' DROP INLETS (TYPE D2)	3	EA	$ 8,000.00	$ 24,000.00	$ 11,000.00	$ 33,000.00
2.17	4' DIA. DROP INLETS (TYPE D1)	2	EA	$ 9,000.00	$ 18,000.00	$ 11,100.00	$ 22,200.00
2.18	4' DROP INLET EXTENSION	2	EA	$ 3,100.00	$ 6,200.00	$ 2,225.00	$ 4,450.00
2.19	DRAINAGE STRUCTURE BACK OPENING	1	EA	$ 1,600.00	$ 1,600.00	$ 5,000.00	$ 5,000.00
2.20	CONCRETE FLUME	2	SY	$ 175.00	$ 350.00	$ 1,250.00	$ 2,500.00
2.21	LANDSCAPE ROCK DRAINAGE SWALE	60	LF	$ 100.00	$ 6,000.00	$ 55.50	$ 3,330.00
2.22	SCOUR TRANSITION MAT	32	SF	$ 60.00	$ 1,920.00	$ 30.00	$ 960.00
2.23	SELECT PIPE BACKFILL (CLASS 67)(IF AND WHERE DIRECTED)	50	CY	$ 110.00	$ 5,500.00	$ 109.50	$ 5,475.00
2.24	6" DEPTH AGGREGATE BASE COURSE	2218	SY	$ 35.00	$ 77,630.00	$ 13.30	$ 29,499.40
2.25	P.C.C. PAVEMENT (6" UNIFORM THICKNESS), INCLUDING MONOLITHIC CURB (TYPE A)	2032	SY	$ 250.00	$ 508,000.00	$ 173.00	$ 351,536.00
2.26	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	40	TON	$ 230.00	$ 9,200.00	$ 290.00	$ 11,600.00
2.27	U OF A PROPERTY - APRON (PAVERS)	185	SF	$ 150.00	$ 27,750.00	$ 66.75	$ 12,348.75
2.28	U OF A PROPERTY - MODIFIED CURB (2")	43	LF	$ 30.00	$ 1,290.00	$ 94.75	$ 4,074.25
2.29	U OF A PROPERTY- CONCRETE CURB AND GUTTER (TYPE A)	81	LF	$ 35.00	$ 2,835.00	$ 65.25	$ 5,285.25
2.30	U OF A PROPERTY - FLUSH CONCRETE HEADER	18	LF	$ 25.00	$ 450.00	$ 125.00	$ 2,250.00
2.31	U OF A PROPERTY - 8" DEPTH AGGREGATE BASE	162	SY	$ 35.00	$ 5,670.00	$ 57.00	$ 9,234.00
2.32	U OF A PROPERTY - 3" THICKNESS ACHM SURFACE COURSE	23	TON	$ 200.00	$ 4,600.00	$ 275.00	$ 6,325.00
2.33	U OF A PROPERTY - PRIME COAT	136	SY	$ 18.00	$ 2,448.00	$ 4.75	$ 646.00
2.34	U OF A PROPERTY - 6" CONCRETE SIDEWALK THRU DRIVEWAY	21	SY	$ 80.00	$ 1,680.00	$ 178.00	$ 3,738.00
2.35	U OF A PROPERTY - CONCRETE SIDEWALK WITH TURN DOWN EDGE (MATCH EXISTING)	8	SY	$ 70.00	$ 560.00	$ 680.00	$ 5,440.00
2.36	U OF A PROPERTY - RELOCATE LIGHT POLE	1	EA	$ 3,500.00	$ 3,500.00	$ 11,625.00	$ 11,625.00
2.37	U OF A PROPERTY - CHAIN LINK SECURITY FENCE	35	LF	$ 50.00	$ 1,750.00	$ 110.00	$ 3,850.00
2.38	4" THICK CONCRETE SIDEWALK	477	SY	$ 100.00	$ 47,700.00	$ 82.00	$ 39,114.00
2.39	SOLID SOD	1552	SY	$ 15.00	$ 23,280.00	$ 4.65	$ 7,216.80
2.40	ADDITIONAL WATERING	1	MG	$ 90.00	$ 90.00	$ 545.00	$ 545.00
2.41	4" PAVEMENT MARKING (THERMOPLASTIC)	80	LF	$ 2.00	$ 160.00	$ 3.30	$ 264.00
2.42	6" PAVEMENT MARKING (THERMOPLASTIC)	1150	LF	$ 2.50	$ 2,875.00	$ 3.55	$ 4,082.50
2.43	24" PAVEMENT MARKING (THERMOPLASTIC)	20	LF	$ 25.00	$ 500.00	$ 21.90	$ 438.00
2.44	STREET SIGN INSTALLATION	6	EA	$ 350.00	$ 2,100.00	$ 382.50	$ 2,295.00
2.45	EROSION CONTROL	1	LS	$ 20,000.00	$ 20,000.00	$ 11,675.00	$ 11,675.00
2.46	TRAFFIC CONTROL AND MAINTENANCE	1	LS	$ 10,000.00	$ 10,000.00	$ 96,000.00	$ 96,000.00
2.47	AGGREGATE BASE FOR ROADWAY MAINTENANCE	20	TON	$ 60.00	$ 1,200.00	$ 114.50	$ 2,290.00
2.48	CAST-IN-PLACE DETECTABLE WARNING PANEL	25	SF	$ 60.00	$ 1,500.00	$ 25.15	$ 628.75
2.49	HANDICAP ACCESS RAMP	23	SY	$ 120.00	$ 2,760.00	$ 257.25	$ 5,916.75
2.50	TREE PROTECTION FENCING	200	LF	$ 5.00	$ 1,000.00	$ 5.00	$ 1,000.00
SUBTOTAL CONSTRUCTION COST SCHEDULE B (PACKAGE 1 - HEMLOCK)				**$**	**1,056,721.00**	**$**	**1,031,416.30**
	SCHEDULE C (PACKAGE 2 - MILLSAP)						
3.1	ROADWAY CONSTRUCTION CONTROL	1	LS	$ 35,000.00	$ 35,000.00	$ 65,000.00	$ 65,000.00
3.2	CLEARING, GRUBBING, AND DEMOLITION	1	LS	$ 45,000.00	$ 45,000.00	$ 105,000.00	$ 105,000.00
3.3	UNCLASSIFIED EXCAVATION (PLAN QUANTITY)	1000	CY	$ 24.00	$ 24,000.00	$ 121.50	$ 121,500.00
3.4	EMBANKMENT (PLAN QUANTITY)	320	CY	$ 27.00	$ 8,640.00	$ 24.75	$ 7,920.00
3.5	SELECT EMBANKMENT (PLAN QUANTITY)	2150	CY	$ 32.00	$ 68,800.00	$ 40.60	$ 87,290.00
3.6	UNDERCUT AND BACKFILL (IF AND WHERE DIRECTED)	100	CY	$ 40.00	$ 4,000.00	$ 150.00	$ 15,000.00
3.7	ROCK EXCVATION (ALLOWANCE)	10	CY	$ 500.00	$ 5,000.00	$ 580.00	$ 5,800.00
3.8	SUBGRADE PREPARATION	2475	SY	$ 3.00	$ 7,425.00	$ 6.40	$ 15,840.00
3.9	4" TOPSOIL PLACEMENT	1850	SY	$ 6.00	$ 11,100.00	$ 5.90	$ 10,915.00
3.10	18" REINFORCED CONCRETE PIPE (CLASS III) - UNDER PAVEMENT	90	LF	$ 200.00	$ 18,000.00	$ 120.00	$ 10,800.00
3.11	23"X14" HERCP (CLASS III) - UNDER PAVEMENT	184	LF	$ 300.00	$ 55,200.00	$ 151.50	$ 27,876.00
3.12	24" REINFORCED CONCRETE PIPE (CLASS III) - UNDER PAVEMENT	23	LF	$ 235.00	$ 5,405.00	$ 148.50	$ 3,415.50
3.13	18" REINFORCED CONCRETE PIPE (CLASS III)	111	LF	$ 175.00	$ 19,425.00	$ 125.25	$ 13,902.75
3.14	24" REINFORCED CONCRETE PIPE (CLASS III)	23	LF	$ 210.00	$ 4,830.00	$ 148.50	$ 3,415.50
3.15	24" R.C. FLARED END SECTION	1	EA	$ 2,500.00	$ 2,500.00	$ 1,350.00	$ 1,350.00
3.16	4'X4' DROP INLETS (TYPE D2)	4	EA	$ 8,000.00	$ 32,000.00	$ 10,000.00	$ 40,000.00
3.17	5'X5' JUNCTION BOXES (TYPE D4)	1	EA	$ 9,000.00	$ 9,000.00	$ 13,500.00	$ 13,500.00

Continues Next Page

Certified Bid Tabulation
Bid 26-37, Construction - Millsap/College Intersection and
Hemlock Improvements
Bid Opening Date: June 10, 2026

ITEM NO.	ITEM DESCRIPTION	QTY.	PAY UNIT	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL
	CONTRACT			ENGINEER'S OPCC		APAC-CENTRAL, INC.	
ITEM NO.	ITEM DESCRIPTION	QTY.	PAY UNIT	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL
3.18	4' DROP INLET EXTENSION	2	EA	$ 3,100.00	$ 6,200.00	$ 1,600.00	$ 3,200.00
3.19	8' DROP INLET EXTENSION	2	EA	$ 4,600.00	$ 9,200.00	$ 3,000.00	$ 6,000.00
3.20	DRAINAGE STRUCTURE BACK OPENING (SP #6)	1	EA	$ 1,350.00	$ 1,350.00	$ 5,000.00	$ 5,000.00
3.21	CONRETE FLUME (SP #7)	10	SY	$ 175.00	$ 1,750.00	$ 360.00	$ 3,600.00
3.22	SELECT PIPE BACKFILL (CLASS 67)(IF AND WHERE DIRECTED) (SP #8)	50	CY	$ 110.00	$ 5,500.00	$ 110.00	$ 5,500.00
3.23	PRIME COAT	2825	SY	$ 17.50	$ 49,437.50	$ 4.60	$ 12,995.00
3.24	2" ASPHALT CONCRETE HOT MIX SURFACE COURSE (ACHMSC)	360	TON	$ 210.00	$ 75,600.00	$ 195.00	$ 70,200.00
3.25	4" ASPHALT CONCRETE HOT MIX BINDER COURSE (ACHMBC)	550	TON	$ 180.00	$ 99,000.00	$ 175.00	$ 96,250.00
3.26	5" ASPHALT CONCRETE HOT MIX BASE COURSE (ACHMBC)	815	TON	$ 160.00	$ 130,400.00	$ 145.00	$ 118,175.00
3.27	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	40	TON	$ 230.00	$ 9,200.00	$ 460.00	$ 18,400.00
3.28	PORTLAND CEMENT CONCRETE BASE (4" UNIFORM THICKNESS) (ARDOT 308)	68	SY	$ 140.00	$ 9,520.00	$ 120.00	$ 8,160.00
3.29	PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS) (ARDOT 309)	120	SY	$ 150.00	$ 18,000.00	$ 140.00	$ 16,800.00
3.30	CONCRETE CURB AND GUTTER (TYPE A)	1545	LF	$ 30.00	$ 46,350.00	$ 47.25	$ 73,001.25
3.31	4" THICK CONCRETE SIDEWALK	712	SY	$ 100.00	$ 71,200.00	$ 91.00	$ 64,792.00
3.32	CONCRETE PEDESTRIAN REFUGE ISLANDS (SP #9)	41	SY	$ 225.00	$ 9,225.00	$ 300.00	$ 12,300.00
3.33	CONCRETE DRIVEWAY APRONS	365	SY	$ 170.00	$ 62,050.00	$ 115.50	$ 42,157.50
3.34	ASPHALT DRIVEWAY	295	SY	$ 40.00	$ 11,800.00	$ 60.00	$ 17,700.00
3.35	SOLID SOD	1850	SY	$ 15.00	$ 27,750.00	$ 4.65	$ 8,602.50
3.36	ADDITIONAL WATERING	1	MG	$ 90.00	$ 90.00	$ 550.00	$ 550.00
3.37	6" PAVEMENT MARKING (THERMOPLASTIC)	3278	LF	$ 2.50	$ 8,195.00	$ 4.95	$ 16,226.10
3.38	8" PAVEMENT MARKING (THERMOPLASTIC)	280	LF	$ 5.00	$ 1,400.00	$ 6.00	$ 1,680.00
3.39	10" PAVEMENT MARKING (THERMOPLASTIC)	318	LF	$ 10.00	$ 3,180.00	$ 13.10	$ 4,165.80
3.40	24" PAVEMENT MARKING (THERMOPLASTIC)	510	LF	$ 25.00	$ 12,750.00	$ 27.35	$ 13,948.50
3.41	PAVEMENT SYMBOLS (THERMOPLASTIC)	22	EA	$ 575.00	$ 12,650.00	$ 545.00	$ 11,990.00
3.42	PAVEMENT MARKING REMOVAL	250	SF	$ 20.00	$ 5,000.00	$ 2.20	$ 550.00
3.43	STREET SIGN INSTALLATION	17	EA	$ 350.00	$ 5,950.00	$ 382.50	$ 6,502.50
3.44	EROSION CONTROL	1	LS	$ 10,000.00	$ 10,000.00	$ 7,225.00	$ 7,225.00
3.45	TRAFFIC CONTROL AND MAINTENANCE	1	LS	$ 100,000.00	$ 100,000.00	$ 150,000.00	$ 150,000.00
3.46	AGGREGATE BASE FOR ROADWAY MAINTENANCE	80	TON	$ 60.00	$ 4,800.00	$ 41.50	$ 3,320.00
3.47	PORTABLE CHANGEABLE MESSAGE SIGN	1825	DAY	$ 25.00	$ 45,625.00	$ 27.25	$ 49,731.25
3.48	CAST-IN-PLACE DETECTABLE WARNING PANEL	160	SF	$ 60.00	$ 9,600.00	$ 22.30	$ 3,568.00
3.49	HANDICAP ACCESS RAMP	50	SY	$ 120.00	$ 6,000.00	$ 252.50	$ 12,625.00
3.50	PROJECT SIGNS	4	EA	$ 1,500.00	$ 6,000.00	$ 985.00	$ 3,940.00
3.51	COLD MILLING PAVEMENT	660	SY	$ 30.00	$ 19,800.00	$ 19.60	$ 12,936.00
3.52	GRAVITY BLOCK RETAINING WALL (SP #10)	745	SF	$ 185.00	$ 137,825.00	$ 82.25	$ 61,276.25
3.53	REMOVE AND REPLACE TREES (SP #11)	7	EA	$ 750.00	$ 5,250.00	$ 630.00	$ 4,410.00
3.54	IRRIGATION SYSTEM ADJUSTMENT (SP #12)	1	LS	$ 5,000.00	$ 5,000.00	$ 7,100.00	$ 7,100.00
3.55	TREE PROTECTION FENCING	200	LF	$ 5.00	$ 1,000.00	$ 5.00	$ 1,000.00
3.56	McCAIN ATC eX2 NEMA CONTROLLER TS2-TYPE 2 (SP #17 & ARDOT 701)	1	EA	$ 42,000.00	$ 42,000.00	$ 50,500.00	$ 50,500.00
3.57	SHIREEN ITEM #DC-1021, CAT 5E VIDEO CABLE OR EQUAL (SHIELDED) (SP #18)	1045	LF	$ 5.50	$ 5,747.50	$ 2.45	$ 2,560.25
3.58	EMERGENCY VEHICLE PREEMPTION SYSTEM RELOCATION (SP #33)	2	EA	$ 9,000.00	$ 18,000.00	$ 2,350.00	$ 4,700.00
3.59	TESCO CLASS 22 BBS (BATTERY BACKUP SYSTEM) (SP #19)	1	EA	$ 24,000.00	$ 24,000.00	$ 22,820.00	$ 22,820.00
3.60	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) (SP #20 & ARDOT 706)	9	EA	$ 1,450.00	$ 13,050.00	$ 1,760.00	$ 15,840.00
3.61	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY) (SP #20 & ARDOT 706)	3	EA	$ 1,750.00	$ 5,250.00	$ 2,615.00	$ 7,845.00
3.62	POLARA iCCU-S2 (INTELLIGENT CENTRAL CONTROL UNIT - SHELF MOUNT) INCLUDES BIU CAPABILITY (SP #31 & ARDOT 707)	1	EA	$ 6,500.00	$ 6,500.00	$ 5,525.00	$ 5,525.00
3.63	POLARA iNS2 3TN0-B, 9x15 APS PUSHBUTTON STATION (BLACK) (SP #31 & ARDOT 707)	8	EA	$ 1,950.00	$ 15,600.00	$ 1,650.00	$ 13,200.00
3.64	EAGLE 16" COUNTDOWN PEDESTRIAN SIGNAL HEAD (LED) (ALUMINUM) (SP #22 & ARDOT 707)	8	EA	$ 1,750.00	$ 14,000.00	$ 1,355.00	$ 10,840.00
3.65	TRAFFIC SIGNAL CABLE (5C/12 A.W.G.) (ARDOT 708)	1460	LF	$ 5.50	$ 8,030.00	$ 4.40	$ 6,424.00
3.66	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) (ARDOT 708)	1600	LF	$ 6.00	$ 9,600.00	$ 5.50	$ 8,800.00
3.67	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.) (ARDOT 708)	260	LF	$ 6.25	$ 1,625.00	$ 7.65	$ 1,989.00
3.68	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.) (ARDOT 708)	800	LF	$ 9.00	$ 7,200.00	$ 13.10	$ 10,480.00
3.69	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.) (SP #23)	940	LF	$ 3.00	$ 2,820.00	$ 2.75	$ 2,585.00
3.70	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.) (SP #23)	220	LF	$ 2.00	$ 440.00	$ 1.85	$ 407.00
3.71	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.) (SP #23)	220	LF	$ 6.00	$ 1,320.00	$ 7.50	$ 1,650.00
3.72	ELECTRICAL CONDUCTORS FOR LUMINAIRES (SP #29)	805	LF	$ 3.75	$ 3,018.75	$ 3.15	$ 2,535.75
3.73	GALVANIZED STEEL CONDUIT (2") (ARDOT 709)	20	LF	$ 65.00	$ 1,300.00	$ 89.00	$ 1,780.00
3.74	NON-METALLIC CONDUIT (2") (ARDOT 710)	295	LF	$ 35.00	$ 10,325.00	$ 46.50	$ 13,717.50
3.75	NON-METALLIC CONDUIT (3") (ARDOT 710)	600	LF	$ 50.00	$ 30,000.00	$ 62.30	$ 37,380.00
3.76	CONCRETE PULL BOX (TYPE 2) (ARDOT SS & 711)	5	EA	$ 2,000.00	$ 10,000.00	$ 2,225.00	$ 11,125.00
3.77	CONCRETE PULL BOX (TYPE 3) (ARDOT SS & 711)	1	EA	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00
3.78	CONCRETE PULL BOX (TYPE 2 HD) (ARDOT SS & 711)	2	EA	$ 2,300.00	$ 4,600.00	$ 2,400.00	$ 4,800.00
3.79	CONCRETE PULL BOX (TYPE 3 HD) (ARDOT SS & 711)	1	EA	$ 2,700.00	$ 2,700.00	$ 2,725.00	$ 2,725.00
3.80	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION (ARDOT SS & 711)	6	EA	$ 9,000.00	$ 54,000.00	$ 4,500.00	$ 27,000.00
3.81	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42') (ARDOT SS & 714)	3	EA	$ 45,000.00	$ 135,000.00	$ 43,000.00	$ 129,000.00
3.82	AUTOBAHN SERIES ATBM P40 LED LUMINAIRE ASSEMBLY (SP #24)	4	EA	$ 1,500.00	$ 6,000.00	$ 1,500.00	$ 6,000.00
3.83	SERVICE POINT ASSEMBLY (2 CIRCUITS) (SP #25)	1	EA	$ 8,200.00	$ 8,200.00	$ 5,500.00	$ 5,500.00
3.84	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT (SP #26)	1	LS	$ 17,000.00	$ 17,000.00	$ 5,500.00	$ 5,500.00
3.85	18" STREET NAME SIGN (SP #27)	4	EA	$ 1,500.00	$ 6,000.00	$ 950.00	$ 3,800.00
3.86	VIDEO DETECTOR RELOCATION (ARDOT 733)	2	EA	$ 650.00	$ 1,300.00	$ 820.00	$ 1,640.00
3.87	VIDEO DETECTOR ROTATION (SP #28)	4	EA	$ 500.00	$ 2,000.00	$ 820.00	$ 3,280.00
3.88	ITERIS VANTAGE NEXT VIDEO DETECTOR (SP #18 & ARDOT 733)	2	EA	$ 6,500.00	$ 13,000.00	$ 5,100.00	$ 10,200.00
3.89	ITERIS VANTAGE VECTOR HYBRID DETECTOR (SP #18 & ARDOT 733)	2	EA	$ 14,000.00	$ 28,000.00	$ 11,500.00	$ 23,000.00
3.90	INVID TECH, IMHD-10, HDMI VIDEO MONITOR (SP #18 & ARDOT 733)	1	EA	$ 1,950.00	$ 1,950.00	$ 1,600.00	$ 1,600.00

Continues Next Page

Certified Bid Tabulation
Bid 26-37, Construction - Millsap/College Intersection and
Hemlock Improvements
Bid Opening Date: June 10, 2026

ITEM NO.	ITEM DESCRIPTION	QTY.	PAY UNIT	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL
	CONTRACT			**ENGINEER'S OPCC**		**APAC-CENTRAL, INC.**	
ITEM NO.	**ITEM DESCRIPTION**	**QTY.**	**PAY UNIT**	**UNIT PRICE**	**TOTAL**	**UNIT PRICE**	**TOTAL**
3.91	ITERIS VANTAGE NEXT SHELF-MOUNT CCU (SP #18 & ARDOT 733)	1	EA	$ 8,500.00	$ 8,500.00	$ 56,000.00	$ 56,000.00
3.92	RELOCATION OF TRAFFIC SIGNAL HEAD (SP #21)	1	EA	$ 550.00	$ 550.00	$ 550.00	$ 550.00
SUBTOTAL CONSTRUCTION COST SCHEDULE C (PACKAGE 2 - MILLSAP)				**$**	**1,920,098.75**	**$**	**2,019,900.90**
	SCHEDULE D (WATER AND SEWER RELOCATION)						
4.1	CONSTRUCTION CONTROL AND LAYOUT	1	LS	$ 10,000.00	$ 10,000.00	$ 70,000.00	$ 70,000.00
4.2	6" DIA. WATER LINE (AWWA C900 DR14)	20	LF	$ 140.00	$ 2,800.00	$ 306.00	$ 6,120.00
4.3	8" DIA. WATER LINE (AWWA C900 DR14)	222	LF	$ 160.00	$ 35,520.00	$ 316.00	$ 70,152.00
4.4	TAPPING SLEEVE AND VALVE (8"X8")	1	EA	$ 8,500.00	$ 8,500.00	$ 14,000.00	$ 14,000.00
4.5	6" GATE VALVE	1	EA	$ 2,150.00	$ 2,150.00	$ 5,050.00	$ 5,050.00
4.6	8" GATE VALVE	2	EA	$ 2,800.00	$ 5,600.00	$ 6,500.00	$ 13,000.00
4.7	FIRE HYDRANT ASSEMBLY INSTALLED COMPLETE	1	EA	$ 7,600.00	$ 7,600.00	$ 23,500.00	$ 23,500.00
4.8	SINGLE WATER METER INSTALLED COMPLETE	2	EA	$ 3,000.00	$ 6,000.00	$ 9,100.00	$ 18,200.00
4.9	DOUBLE WATER METER INSTALLED COMPLETE	1	EA	$ 3,500.00	$ 3,500.00	$ 16,500.00	$ 16,500.00
4.10	DUCTILE IRON FITTINGS	164	LBS	$ 22.50	$ 3,690.00	$ 48.00	$ 7,872.00
4.11	CUT & CAP ABANDON EXISTING WATERLINE (6")	2	EA	$ 8,000.00	$ 16,000.00	$ 4,675.00	$ 9,350.00
4.12	FIRE HYDRANT ASSEMBLY REMOVAL	1	EA	$ 1,500.00	$ 1,500.00	$ 3,300.00	$ 3,300.00
4.13	2" DIA COATED COPPER PIPE AND FITTINGS	80	LF	$ 60.00	$ 4,800.00	$ 105.00	$ 8,400.00
4.14	8" DIA. REMOVE CLAY PIPE AND REPLACE WITH PVC	20	LF	$ 350.00	$ 7,000.00	$ 550.00	$ 11,000.00
4.15	16" DIAMETER STEEL CASING WITH W/MECHANICAL LINK END SEALS AND SPACERS (DIRECT BURY)	10	LF	$ 320.00	$ 3,200.00	$ 775.00	$ 7,750.00
4.16	SANITARY SEWER MANHOLE - REMOVE CONE, LOWER TO GRADE	2	EA	$ 2,500.00	$ 5,000.00	$ 4,500.00	$ 9,000.00
4.17	SANITARY SEWER MANHOLE - ADJUST RING TO GRADE	2	EA	$ 1,000.00	$ 2,000.00	$ 2,500.00	$ 5,000.00
4.18	FLOWABLE FILL - ABANDON 8" WATERLINE UNDER ROADWAY	410	LF	$ 30.00	$ 12,300.00	$ 45.00	$ 18,450.00
4.19	UTILITY ADJUSTMENT - WATER VALVE / METER	2	EA	$ 500.00	$ 1,000.00	$ 2,675.00	$ 5,350.00
SUBTOTAL CONSTRUCTION COST SCHEDULE D (WATER AND SEWER RELOCATION)				**$**	**138,160.00**	**$**	**321,994.00**
TOTAL BID (SUBTOTAL CONSTRUCTION COSTS OF SCHEDULE A + B + C + D)				**$**	**3,321,479.75**	**$**	**3,568,811.20**

Certified Correct: _____

Date: 6/11/2026

CITY OF FAYETTEVILLE ARKANSAS

BID TABULATION

Bid 26-37, Construction - Millsap/College Intersection & Hemlock Improvements

Deadline: Wednesday, June 10, 2026 at 2:00 PM

Certification of Funds: $4,900,000 *($6,125,000 maximum allowed)*

				APAC-Central, Inc.	
		Total		$3,568,811.20	
Line #	Description	QTY	UOM	Unit	Extended
1	**PACKAGE A - BASE BID ITEMS**				**$195,500.00**
1.1	MOBILIZATION	1	LS	$145,000.00	$145,000.00
1.2	BONDS & INSURANCE	1	LS	$20,500.00	$20,500.00
1.3	TRENCH & EXCAVATION SAFETY	1	LS	$30,000.00	$30,000.00
2	**PACKAGE B - HEMLOCK**				**$1,031,416.30**
2.1	ROADWAY CONSTRUCTION CONTROL	1	LS	$45,000.00	$45,000.00
2.2	CLEARING, GRUBBING, AND DEMOLITION	1	LS	$60,000.00	$60,000.00
2.3	UNCLASSIFIED EXCAVATION (PLAN QUANTITY)	1883	CY	$45.25	$85,205.75
2.4	EMBANKMENT (PLAN QUANTITY)	427	CY	$18.50	$7,899.50
2.5	SELECT EMBANKMENT (PLAN QUANTITY)	1468	CY	$39.00	$57,252.00
2.6	UNDERCUT AND BACKFILL (IF AND WHERE DIRECTED)	200	CY	$108.00	$21,600.00
2.7	ROCK EXCAVATION (ALLOWANCE)	10	CY	$580.00	$5,800.00
2.8	SUBGRADE PREPARATION	2218	SY	$3.60	$7,984.80
2.9	4" TOPSOIL PLACEMENT (SOD + SEEDING AREAS)	1552	SY	$5.90	$9,156.80
2.10	18" REINFORCED CONCRETE PIPE (CLASS III) UNDER PAVEMENT	51	LF	$170.00	$8,670.00
2.11	24" REINFORCED CONCRETE PIPE (CLASS III) - UNDER PAVEMENT	20	LF	$194.00	$3,880.00
2.12	18" REINFORCED CONCRETE PIPE (CLASS III)	58	LF	$120.00	$6,960.00
2.13	24" REINFORCED CONCRETE PIPE (CLASS III)	26	LF	$137.50	$3,575.00
2.14	18" R.C. FLARED END SECTION	1	EA	$1,250.00	$1,250.00
2.15	24" R.C. FLARED END SECTION	1	EA	$1,350.00	$1,350.00
2.16	4'X4' DROP INLETS (TYPE D2)	3	EA	$11,000.00	$33,000.00
2.17	4' DIA. DROP INLETS (TYPE D1)	2	EA	$11,100.00	$22,200.00
2.18	4' DROP INLET EXTENSION	2	EA	$2,225.00	$4,450.00
2.19	DRAINAGE STRUCTURE BACK OPENING	1	EA	$5,000.00	$5,000.00
2.20	CONCRETE FLUME	2	SY	$1,250.00	$2,500.00
2.21	LANDSCAPE ROCK DRAINAGE SWALE	60	LF	$55.50	$3,330.00
2.22	SCOUR TRANSITION MAT	32	SF	$30.00	$960.00
2.23	SELECT PIPE BACKFILL (CLASS 67)(IF AND WHERE DIRECTED)	50	CY	$109.50	$5,475.00
2.24	6" DEPTH AGGREGATE BASE COURSE	2218	SY	$13.30	$29,499.40
2.25	P.C.C. PAVEMENT (6" UNIFORM THICKNESS), INCLUDING MONOLITHIC CURB (TYPE A)	2032	SY	$173.00	$351,536.00
2.26	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	40	TON	$290.00	$11,600.00
2.27	U OF A PROPERTY - APRON (PAVERS)	185	SF	$66.75	$12,348.75
2.28	U OF A PROPERTY - MODIFIED CURB (2")	43	LF	$94.75	$4,074.25
2.29	U OF A PROPERTY- CONCRETE CURB AND GUTTER (TYPE A)	81	LF	$65.25	$5,285.25
2.30	U OF A PROPERTY - FLUSH CONCRETE HEADER	18	LF	$125.00	$2,250.00
2.31	U OF A PROPERTY - 8" DEPTH AGGREGATE BASE	162	SY	$57.00	$9,234.00
2.32	U OF A PROPERTY - 3" THICKNESS ACHM SURFACE COURSE	23	TON	$275.00	$6,325.00
2.33	U OF A PROPERTY - PRIME COAT	136	SY	$4.75	$646.00
2.34	U OF A PROPERTY - 6" CONCRETE SIDEWALK THRU DRIVEWAY	21	SY	$178.00	$3,738.00
2.35	U OF A PROPERTY - CONCRETE SIDEWALK WITH TURN DOWN EDGE (MATCH EXISTING)	8	SY	$680.00	$5,440.00
2.36	U OF A PROPERTY - RELOCATE LIGHT POLE	1	EA	$11,625.00	$11,625.00
2.37	U OF A PROPERTY - CHAIN LINK SECURITY FENCE	35	LF	$110.00	$3,850.00
2.38	4" THICK CONCRETE SIDEWALK	477	SY	$82.00	$39,114.00
2.39	SOLID SOD	1552	SY	$4.65	$7,216.80
2.40	ADDITIONAL WATERING	1	MG	$545.00	$545.00
2.41	4" PAVEMENT MARKING (THERMOPLASTIC)	80	LF	$3.30	$264.00
2.42	6" PAVEMENT MARKING (THERMOPLASTIC)	1150	LF	$3.55	$4,082.50
2.43	24" PAVEMENT MARKING (THERMOPLASTIC)	20	LF	$21.90	$438.00
2.44	STREET SIGN INSTALLATION	6	EA	$382.50	$2,295.00
2.45	EROSION CONTROL	1	LS	$11,675.00	$11,675.00
2.46	TRAFFIC CONTROL AND MAINTENANCE	1	LS	$96,000.00	$96,000.00
2.47	AGGREGATE BASE FOR ROADWAY MAINTENANCE	20	TON	$114.50	$2,290.00
2.48	CAST-IN-PLACE DETECTABLE WARNING PANEL	25	SF	$25.15	$628.75
2.49	HANDICAP ACCESS RAMP	23	SY	$257.25	$5,916.75
2.50	TREE PROTECTION FENCING	200	LF	$5.00	$1,000.00

3	PACKAGE C - MILLSAP				$2,019,900.90
3.1	ROADWAY CONSTRUCTION CONTROL	1	LS	$65,000.00	$65,000.00
3.2	CLEARING, GRUBBING, AND DEMOLITION	1	LS	$105,000.00	$105,000.00
3.3	UNCLASSIFIED EXCAVATION (PLAN QUANTITY)	1000	CY	$121.50	$121,500.00
3.4	EMBANKMENT (PLAN QUANTITY)	320	CY	$24.75	$7,920.00
3.5	SELECT EMBANKMENT (PLAN QUANTITY)	2150	CY	$40.60	$87,290.00
3.6	UNDERCUT AND BACKFILL (IF AND WHERE DIRECTED)	100	CY	$150.00	$15,000.00
3.7	ROCK EXCVATION (ALLOWANCE)	10	CY	$580.00	$5,800.00
3.8	SUBGRADE PREPARATION	2475	SY	$6.40	$15,840.00
3.9	4" TOPSOIL PLACEMENT	1850	SY	$5.90	$10,915.00
3.10	18" REINFORCED CONCRETE PIPE (CLASS III) - UNDER PAVEMENT	90	LF	$120.00	$10,800.00
3.11	23"X14" HERCP (CLASS III) - UNDER PAVEMENT	184	LF	$151.50	$27,876.00
3.12	24" REINFORCED CONCRETE PIPE (CLASS III) - UNDER PAVEMENT	23	LF	$148.50	$3,415.50
3.13	18" REINFORCED CONCRETE PIPE (CLASS III)	111	LF	$125.25	$13,902.75
3.14	24" REINFORCED CONCRETE PIPE (CLASS III)	23	LF	$148.50	$3,415.50
3.15	24" R.C. FLARED END SECTION	1	EA	$1,350.00	$1,350.00
3.16	4'X4' DROP INLETS (TYPE D2)	4	EA	$10,000.00	$40,000.00
3.17	5'X5' JUNCTION BOXES (TYPE D4)	1	EA	$13,500.00	$13,500.00
3.18	4' DROP INLET EXTENSION	2	EA	$1,600.00	$3,200.00
3.19	8' DROP INLET EXTENSION	2	EA	$3,000.00	$6,000.00
3.20	DRAINAGE STRUCTURE BACK OPENING (SP #6)	1	EA	$5,000.00	$5,000.00
3.21	CONRETE FLUME (SP #7)	10	SY	$360.00	$3,600.00
3.22	SELECT PIPE BACKFILL (CLASS 67)(IF AND WHERE DIRECTED) (SP #8)	50	CY	$110.00	$5,500.00
3.23	PRIME COAT	2825	SY	$4.60	$12,995.00
3.24	2" ASPHALT CONCRETE HOT MIX SURFACE COURSE (ACHMSC)	360	TON	$195.00	$70,200.00
3.25	4" ASPHALT CONCRETE HOT MIX BINDER COURSE (ACHMBC)	550	TON	$175.00	$96,250.00
3.26	5" ASPHALT CONCRETE HOT MIX BASE COURSE (ACHMBC)	815	TON	$145.00	$118,175.00
3.27	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	40	TON	$460.00	$18,400.00
3.28	PORTLAND CEMENT CONCRETE BASE (4" UNIFORM THICKNESS) (ARDOT 308)	68	SY	$120.00	$8,160.00
3.29	PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS) (ARDOT 309)	120	SY	$140.00	$16,800.00
3.30	CONCRETE CURB AND GUTTER (TYPE A)	1545	LF	$47.25	$73,001.25
3.31	4" THICK CONCRETE SIDEWALK	712	SY	$91.00	$64,792.00
3.32	CONCRETE PEDESTRIAN REFUGE ISLANDS (SP #9)	41	SY	$300.00	$12,300.00
3.33	CONCRETE DRIVEWAY APRONS	365	SY	$115.50	$42,157.50
3.34	ASPHALT DRIVEWAY	295	SY	$60.00	$17,700.00
3.35	SOLID SOD	1850	SY	$4.65	$8,602.50
3.36	ADDITIONAL WATERING	1	MG	$550.00	$550.00
3.37	6" PAVEMENT MARKING (THERMOPLASTIC)	3278	LF	$4.95	$16,226.10
3.38	8" PAVEMENT MARKING (THERMOPLASTIC)	280	LF	$6.00	$1,680.00
3.39	10" PAVEMENT MARKING (THERMOPLASTIC)	318	LF	$13.10	$4,165.80
3.40	24" PAVEMENT MARKING (THERMOPLASTIC)	510	LF	$27.35	$13,948.50
3.41	PAVEMENT SYMBOLS (THERMOPLASTIC)	22	EA	$545.00	$11,990.00
3.42	PAVEMENT MARKING REMOVAL	250	SF	$2.20	$550.00
3.43	STREET SIGN INSTALLATION	17	EA	$382.50	$6,502.50
3.44	EROSION CONTROL	1	LS	$7,225.00	$7,225.00
3.45	TRAFFIC CONTROL AND MAINTENANCE	1	LS	$150,000.00	$150,000.00
3.46	AGGREGATE BASE FOR ROADWAY MAINTENANCE	80	TON	$41.50	$3,320.00
3.47	PORTABLE CHANGEABLE MESSAGE SIGN	1825	DAY	$27.25	$49,731.25
3.48	CAST-IN-PLACE DETECTABLE WARNING PANEL	160	SF	$22.30	$3,568.00
3.49	HANDICAP ACCESS RAMP	50	SY	$252.50	$12,625.00
3.50	PROJECT SIGNS	4	EA	$985.00	$3,940.00
3.51	COLD MILLING PAVEMENT	660	SY	$19.60	$12,936.00
3.52	GRAVITY BLOCK RETAINING WALL (SP #10)	745	SF	$82.25	$61,276.25
3.53	REMOVE AND REPLACE TREES (SP #11)	7	EA	$630.00	$4,410.00
3.54	IRRIGATION SYSTEM ADJUSTMENT (SP #12)	1	LS	$7,100.00	$7,100.00
3.55	TREE PROTECTION FENCING	200	LF	$5.00	$1,000.00
3.56	McCAIN ATC eX2 NEMA CONTROLLER TS2-TYPE 2 (SP #17 & ARDOT 701)	1	EA	$50,500.00	$50,500.00
3.57	SHIREEN ITEM #DC-1021, CAT 5E VIDEO CABLE OR EQUAL (SHIELDED) (SP #18)	1045	LF	$2.45	$2,560.25
3.58	EMERGENCY VEHICLE PREEMPTION SYSTEM RELOCATION (SP #33)	2	EA	$2,350.00	$4,700.00
3.59	TESCO CLASS 22 BBS (BATTERY BACKUP SYSTEM) (SP #19)	1	EA	$22,820.00	$22,820.00
3.60	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) (SP #20 & ARDOT 706)	9	EA	$1,760.00	$15,840.00
3.61	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY) (SP #20 & ARDOT 706)	3	EA	$2,615.00	$7,845.00
3.62	POLARA iCCU-S2 (INTELLIGENT CENTRAL CONTROL UNIT - SHELF MOUNT) INCLUDES BIU CAPABILITY (SP #31 & ARDOT 707)	1	EA	$5,525.00	$5,525.00
3.63	POLARA iNS2 3TN0-B, 9x15 APS PUSHBUTTON STATION (BLACK) (SP #31 & ARDOT 707)	8	EA	$1,650.00	$13,200.00
3.64	EAGLE 16" COUNTDOWN PEDESTRIAN SIGNAL HEAD (LED) (ALUMINUM) (SP #22 & ARDOT 707)	8	EA	$1,355.00	$10,840.00
3.65	TRAFFIC SIGNAL CABLE (5C/12 A.W.G.) (ARDOT 708)	1460	LF	$4.40	$6,424.00
3.66	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) (ARDOT 708)	1600	LF	$5.50	$8,800.00
3.67	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.) (ARDOT 708)	260	LF	$7.65	$1,989.00
3.68	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.) (ARDOT 708)	800	LF	$13.10	$10,480.00
3.69	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.) (SP #23)	940	LF	$2.75	$2,585.00
3.70	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.) (SP #23)	220	LF	$1.85	$407.00
3.71	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.) (SP #23)	220	LF	$7.50	$1,650.00

3.72	ELECTRICAL CONDUCTORS FOR LUMINAIRES (SP #29)	805	LF	$3.15	$2,535.75
3.73	GALVANIZED STEEL CONDUIT (2") (ARDOT 709)	20	LF	$89.00	$1,780.00
3.74	NON-METALLIC CONDUIT (2") (ARDOT 710)	295	LF	$46.50	$13,717.50
3.75	NON-METALLIC CONDUIT (3") (ARDOT 710)	600	LF	$62.30	$37,380.00
3.76	CONCRETE PULL BOX (TYPE 2) (ARDOT SS & 711)	5	EA	$2,225.00	$11,125.00
3.77	CONCRETE PULL BOX (TYPE 3) (ARDOT SS & 711)	1	EA	$2,500.00	$2,500.00
3.78	CONCRETE PULL BOX (TYPE 2 HD) (ARDOT SS & 711)	2	EA	$2,400.00	$4,800.00
3.79	CONCRETE PULL BOX (TYPE 3 HD) (ARDOT SS & 711)	1	EA	$2,725.00	$2,725.00
3.80	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION (ARDOT SS & 711)	6	EA	$4,500.00	$27,000.00
3.81	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42') (ARDOT SS & 711)	3	EA	$43,000.00	$129,000.00
3.82	AUTOBAHN SERIES ATBM P40 LED LUMINAIRE ASSEMBLY (SP #24)	4	EA	$1,500.00	$6,000.00
3.83	SERVICE POINT ASSEMBLY (2 CIRCUITS) (SP #25)	1	EA	$5,500.00	$5,500.00
3.84	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT (SP #26)	1	LS	$5,500.00	$5,500.00
3.85	18" STREET NAME SIGN (SP #27)	4	EA	$950.00	$3,800.00
3.86	VIDEO DETECTOR RELOCATION (ARDOT 733)	2	EA	$820.00	$1,640.00
3.87	VIDEO DETECTOR ROTATION (SP #28)	4	EA	$820.00	$3,280.00
3.88	ITERIS VANTAGE NEXT VIDEO DETECTOR (SP #18 & ARDOT 733)	2	EA	$5,100.00	$10,200.00
3.89	ITERIS VANTAGE VECTOR HYBRID DETECTOR (SP #18 & ARDOT 733)	2	EA	$11,500.00	$23,000.00
3.90	INVID TECH, IMHD-10, HDMI VIDEO MONITOR (SP #18 & ARDOT 733)	1	EA	$1,600.00	$1,600.00
3.91	ITERIS VANTAGE NEXT SHELF-MOUNT CCU (SP #18 & ARDOT 733)	1	EA	$56,000.00	$56,000.00
3.92	RELOCATION OF TRAFFIC SIGNAL HEAD (SP #21)	1	EA	$550.00	$550.00
4	**PACKAGE D - WATER AND SEWER RELOCATION**				**$321,994.00**
4.1	CONSTRUCTION CONTROL AND LAYOUT	1	LS	$70,000.00	$70,000.00
4.2	6" DIA. WATER LINE (AWWA C900 DR14)	20	LF	$306.00	$6,120.00
4.3	8" DIA. WATER LINE (AWWA C900 DR14)	222	LF	$316.00	$70,152.00
4.4	TAPPING SLEEVE AND VALVE (8"X8")	1	EA	$14,000.00	$14,000.00
4.5	6" GATE VALVE	1	EA	$5,050.00	$5,050.00
4.6	8" GATE VALVE	2	EA	$6,500.00	$13,000.00
4.7	FIRE HYDRANT ASSEMBLY INSTALLED COMPLETE	1	EA	$23,500.00	$23,500.00
4.8	SINGLE WATER METER INSTALLED COMPLETE	2	EA	$9,100.00	$18,200.00
4.9	DOUBLE WATER METER INSTALLED COMPLETE	1	EA	$16,500.00	$16,500.00
4.10	DUCTILE IRON FITTINGS	164	LBS	$48.00	$7,872.00
4.11	CUT & CAP ABANDON EXISTING WATERLINE (6")	2	EA	$4,675.00	$9,350.00
4.12	FIRE HYDRANT ASSEMBLY REMOVAL	1	EA	$3,300.00	$3,300.00
4.13	2" DIA COATED COPPER PIPE AND FITTINGS	80	LF	$105.00	$8,400.00
4.14	8" DIA. REMOVE CLAY PIPE AND REPLACE WITH PVC	20	LF	$550.00	$11,000.00
4.15	16" DIAMETER STEEL CASING WITH W/MECHANICAL LINK END SEALS AND SPACERS (DIRECT BURY)	10	LF	$775.00	$7,750.00
4.16	SANITARY SEWER MANHOLE - REMOVE CONE, LOWER TO GRADE	2	EA	$4,500.00	$9,000.00
4.17	SANITARY SEWER MANHOLE - ADJUST RING TO GRADE	2	EA	$2,500.00	$5,000.00
4.18	FLOWABLE FILL - ABANDON 8" WATERLINE UNDER ROADWAY	410	LF	$45.00	$18,450.00
4.19	UTILITY ADJUSTMENT - WATER VALVE / METER	2	EA	$2,675.00	$5,350.00

* NOTICE: Bid award is contingent upon supplier meeting minimum specifications and formal authorization by City Officials.

Trevel Young, Procurement Agent

Kenny Fitch, Sr Procurement Agent

Bid 26-37 Addendum 2
APAC-Central, Inc.
Supplier Response

Event Information

Number:	Bid 26-37 Addendum 2
Title:	Construction - Millsap/College Intersection & Hemlock Improvements
Type:	Invitation to Bid
Issue Date:	5/17/2026
Deadline:	6/10/2026 02:00 PM (CT)
Notes:	The City of Fayetteville is accepting sealed bids from contractors for the construction of improvements to the intersection at Millsap Rd. and College Ave. including the relocation & construction of N. Hemlock Avenue. Improvements include roadway construction, curb & gutter, sidewalks, drainage, and traffic signal modifications. Questions regarding this bid should be addressed to Kenny Fitch, Sr. Procurement Agent at kfitch@fayetteville-ar.gov.

Contact Information

Contact:	Kenny Fitch - Sr Procurement Agent
Address:	Procurement City Hall Room 306 113 W. Mountain St. Fayetteville, AR 72701
Phone:	(479) 575-8258
Email:	kfitch@fayetteville-ar.gov

APAC-Central, Inc. Information

Contact: Doug Luetjen
Address: 755 E. Millsap Rd
Fayetteville, AR 72703
Phone: (479) 587-3300
Email: doug.luetjen@apac.com

By submitting your response, you certify that you are authorized to represent and bind your company.

Doug Luetjen
Signature

Doug.Luetjen@apac.com
Email

Submitted at 6/10/2026 11:04:26 AM (CT)

Requested Attachments

Signature Forms for Bid 26-37

Bid26-37_Bid Submittal_FINAL_APAC.pdf

Please attach your completed forms. These documents can be found in FILE #01 - PROJECT MANUAL in the Attachments tab. Please be sure to include ALL required information stated in the Project Manual.

Bid Bond for Bid 26-37

Millsap College Bid_APAC Bid Bond_EXECUTED.pdf

Please attach a signed and completed copy of your bid bond. **The Bid Bond must be signed by both the bidder and the surety company to be considered valid. An invalid Bid Bond shall be grounds for bid rejection.** Bid bonds in the form of a cashier's check shall be delivered to City Hall, Procurement Division before bid deadline and have a copy of the cashier's check uploaded with submittal.

Bid Attributes

1	**Arkansas Secretary of State Filing Number:** 100057210
2	**Arkansas Contractor License Number:** *Contractor's License must have a classification relating to the scope of this project.* 0011840427
3	**System for Award Management (SAM.gov) Registration Number** FTNNZLURMXZ5
4	**Check Yes or No:** Pursuant Arkansas Code Annotated §25-1-503, the Contractor agrees and certifies that they do not currently boycott Israel and will not boycott Israel during any time in which they are entering into, or while in contract, with any public entity as defined in §25-1-503. If at any time during contract the contractor decides to boycott Israel, the contractor must notify the contracted public entity in writing. ☑ Yes, I agree ☐ No, I don't agree

5 **Check Yes or No:**

Pursuant Arkansas Code Annotated §25-1-1002, the Contractor agrees and certifies that they do not currently boycott Energy,
Fossil Fuel, Firearms, and Ammunition Industries during any time in which they are entering into, or while in contract, with any
public entity as defined in §25-1-1002. If at any time during the contract the contractor decides to boycott Energy, Fossil Fuel,
Firearms, and/or Ammunition Industries, the contractor must notify the contracted public entity in writing.

☑ Yes, I agree

☐ No, I don't agree

6 **Addendum Acknowledgement:**

By selecting "I agree", you acknowledge that you have read and understand any addendums that have been issued for this bid.

☑ I agree

Bid Lines

1 **Package Header**

PACKAGE A - BASE BID ITEMS

Quantity: 1 UOM: EA Total: $195,500.00

Package Items

1.1 MOBILIZATION (SHALL NOT EXCEED 5% OF TOTAL BID PRICE, EXCLUDING BONDS & INSURANCE AND TRENCH & EXCAVATION SAFETY)

Quantity: 1 UOM: LS Price: $145,000.00 Total: $145,000.00

1.2 BONDS & INSURANCE

Quantity: 1 UOM: LS Price: $20,500.00 Total: $20,500.00

1.3 TRENCH & EXCAVATION SAFETY

Quantity: 1 UOM: LS Price: $30,000.00 Total: $30,000.00

2 **Package Header**

PACKAGE B - HEMLOCK

Quantity: 1 UOM: EA Total: $1,031,416.30

Package Items

2.1 ROADWAY CONSTRUCTION CONTROL

Quantity: 1 UOM: LS Price: $45,000.00 Total: $45,000.00

2.2 CLEARING, GRUBBING, AND DEMOLITION

Quantity: 1 UOM: LS Price: $60,000.00 Total: $60,000.00

2.3 UNCLASSIFIED EXCAVATION (PLAN QUANTITY)

Quantity: 1883 UOM: CY Price: $45.25 Total: $85,205.75

2.4 EMBANKMENT (PLAN QUANTITY)

Quantity: 427 UOM: CY Price: $18.50 Total: $7,899.50

2.5 SELECT EMBANKMENT (PLAN QUANTITY)

Quantity: 1468 UOM: CY Price: $39.00 Total: $57,252.00

2.6 UNDERCUT AND BACKFILL (IF AND WHERE DIRECTED)

Quantity: 200 UOM: CY Price: $108.00 Total: $21,600.00

2.7 ROCK EXCAVATION (ALLOWANCE)

Quantity: 10 UOM: CY Price: $580.00 Total: $5,800.00

2.8 SUBGRADE PREPARATION

Quantity: 2218 UOM: SY Price: $3.60 Total: $7,984.80

2.9 4" TOPSOIL PLACEMENT (SOD + SEEDING AREAS)

Quantity: 1552 UOM: SY Price: $5.90 Total: $9,156.80

2.10 18" REINFORCED CONCRETE PIPE (CLASS III) UNDER PAVEMENT

Quantity: 51 UOM: LF Price: $170.00 Total: $8,670.00

2.11 24" REINFORCED CONCRETE PIPE (CLASS III) - UNDER PAVEMENT

Quantity: 20 UOM: LF Price: $194.00 Total: $3,880.00

2.12 18" REINFORCED CONCRETE PIPE (CLASS III)

Quantity: 58 UOM: LF Price: $120.00 Total: $6,960.00

2.13 24" REINFORCED CONCRETE PIPE (CLASS III)

Quantity: 26 UOM: LF Price: $137.50 Total: $3,575.00

2.14 18" R.C. FLARED END SECTION

Quantity: 1 UOM: EA Price: $1,250.00 Total: $1,250.00

2.15 24" R.C. FLARED END SECTION

Quantity: 1 UOM: EA Price: $1,350.00 Total: $1,350.00

2.16 4'X4' DROP INLETS (TYPE D2)

Quantity: 3 UOM: EA Price: $11,000.00 Total: $33,000.00

2.17 4' DIA. DROP INLETS (TYPE D1)

Quantity: 2 UOM: EA Price: $11,100.00 Total: $22,200.00

2.18 4' DROP INLET EXTENSION

Quantity: 2 UOM: EA Price: $2,225.00 Total: $4,450.00

2.19 DRAINAGE STRUCTURE BACK OPENING

Quantity: 1 UOM: EA Price: $5,000.00 Total: $5,000.00

2.20 CONCRETE FLUME

Quantity: 2 UOM: SY Price: $1,250.00 Total: $2,500.00

2.21 LANDSCAPE ROCK DRAINAGE SWALE

Quantity: 60 UOM: LF Price: $55.50 Total: $3,330.00

2.22 SCOUR TRANSITION MAT

Quantity: 32 UOM: SF Price: $30.00 Total: $960.00

2.23 SELECT PIPE BACKFILL (CLASS 67)(IF AND WHERE DIRECTED)

Quantity: 50 UOM: CY Price: $109.50 Total: $5,475.00

2.24 6" DEPTH AGGREGATE BASE COURSE

Quantity: 2218 UOM: SY Price: $13.30 Total: $29,499.40

2.25 P.C.C. PAVEMENT (6" UNIFORM THICKNESS), INCLUDING MONOLITHIC CURB (TYPE A)

Quantity: 2032 UOM: SY Price: $173.00 Total: $351,536.00

2.26 ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

Quantity: 40 UOM: TON Price: $290.00 Total: $11,600.00

2.27 U OF A PROPERTY - APRON (PAVERS)

Quantity: 185 UOM: SF Price: $66.75 Total: $12,348.75

2.28 U OF A PROPERTY - MODIFIED CURB (2")

Quantity: 43 UOM: LF Price: $94.75 Total: $4,074.25

2.29 U OF A PROPERTY- CONCRETE CURB AND GUTTER (TYPE A)

Quantity: 81 UOM: LF Price: $65.25 Total: $5,285.25

2.30 U OF A PROPERTY - FLUSH CONCRETE HEADER

Quantity: 18 UOM: LF Price: $125.00 Total: $2,250.00

2.31 U OF A PROPERTY - 8" DEPTH AGGREGATE BASE

Quantity: 162 UOM: SY Price: $57.00 Total: $9,234.00

2.32 U OF A PROPERTY - 3" THICKNESS ACHM SURFACE COURSE

Quantity: 23 UOM: TON Price: $275.00 Total: $6,325.00

2.33 U OF A PROPERTY - PRIME COAT

Quantity: 136 UOM: SY Price: $4.75 Total: $646.00

2.34 U OF A PROPERTY - 6" CONCRETE SIDEWALK THRU DRIVEWAY

Quantity: 21 UOM: SY Price: $178.00 Total: $3,738.00

2.35 U OF A PROPERTY - CONCRETE SIDEWALK WITH TURN DOWN EDGE (MATCH EXISTING)

Quantity: 8 UOM: SY Price: $680.00 Total: $5,440.00

2.36 U OF A PROPERTY - RELOCATE LIGHT POLE

Quantity: 1 UOM: EA Price: $11,625.00 Total: $11,625.00

2.37 U OF A PROPERTY - CHAIN LINK SECURITY FENCE

Quantity: 35 UOM: LF Price: $110.00 Total: $3,850.00

2.38 4" THICK CONCRETE SIDEWALK

Quantity: 477 UOM: SY Price: $82.00 Total: $39,114.00

2.39 SOLID SOD

Quantity: 1552 UOM: SY Price: $4.65 Total: $7,216.80

2.40 ADDITIONAL WATERING

Quantity: 1 UOM: MG Price: $545.00 Total: $545.00

2.41 4" PAVEMENT MARKING (THERMOPLASTIC)

Quantity: 80 UOM: LF Price: $3.30 Total: $264.00

2.42 6" PAVEMENT MARKING (THERMOPLASTIC)

Quantity: 1150 UOM: LF Price: $3.55 Total: $4,082.50

2.43 24" PAVEMENT MARKING (THERMOPLASTIC)

Quantity: 20 UOM: LF Price: $21.90 Total: $438.00

2.44 STREET SIGN INSTALLATION

Quantity: 6 UOM: EA Price: $382.50 Total: $2,295.00

2.45 EROSION CONTROL

Quantity: 1 UOM: LS Price: $11,675.00 Total: $11,675.00

2.46 TRAFFIC CONTROL AND MAINTENANCE

Quantity: 1 UOM: LS Price: $96,000.00 Total: $96,000.00

2.47 AGGREGATE BASE FOR ROADWAY MAINTENANCE

Quantity: 20 UOM: TON Price: $114.50 Total: $2,290.00

2.48 CAST-IN-PLACE DETECTABLE WARNING PANEL

Quantity: 25 UOM: SF Price: $25.15 Total: $628.75

2.49 HANDICAP ACCESS RAMP

Quantity: 23 UOM: SY Price: $257.25 Total: $5,916.75

2.50 TREE PROTECTION FENCING

Quantity: 200 UOM: LF Price: $5.00 Total: $1,000.00

3 Package Header

PACKAGE C - MILLSAP

Quantity: 1 UOM: EA Total: $2,019,900.90

Package Items

3.1 ROADWAY CONSTRUCTION CONTROL

Quantity: 1 UOM: LS Price: $65,000.00 Total: $65,000.00

3.2 CLEARING, GRUBBING, AND DEMOLITION

Quantity: 1 UOM: LS Price: $105,000.00 Total: $105,000.00

3.3 UNCLASSIFIED EXCAVATION (PLAN QUANTITY)

Quantity: 1000 UOM: CY Price: $121.50 Total: $121,500.00

3.4 EMBANKMENT (PLAN QUANTITY)

Quantity: 320 UOM: CY Price: $24.75 Total: $7,920.00

3.5 SELECT EMBANKMENT (PLAN QUANTITY)

Quantity: 2150 UOM: CY Price: $40.60 Total: $87,290.00

3.6 UNDERCUT AND BACKFILL (IF AND WHERE DIRECTED)

Quantity: 100 UOM: CY Price: $150.00 Total: $15,000.00

3.7 ROCK EXCVATION (ALLOWANCE)

Quantity: 10 UOM: CY Price: $580.00 Total: $5,800.00

3.8 SUBGRADE PREPARATION

Quantity: 2475 UOM: SY Price: $6.40 Total: $15,840.00

3.9 4" TOPSOIL PLACEMENT

Quantity: 1850 UOM: SY Price: $5.90 Total: $10,915.00

3.10 18" REINFORCED CONCRETE PIPE (CLASS III) - UNDER PAVEMENT

Quantity: 90 UOM: LF Price: $120.00 Total: $10,800.00

3.11 23"X14" HERCP (CLASS III) - UNDER PAVEMENT

Quantity: 184 UOM: LF Price: $151.50 Total: $27,876.00

3.12 24" REINFORCED CONCRETE PIPE (CLASS III) - UNDER PAVEMENT

Quantity: 23 UOM: LF Price: $148.50 Total: $3,415.50

3.13 18" REINFORCED CONCRETE PIPE (CLASS III)

Quantity: 111 UOM: LF Price: $125.25 Total: $13,902.75

3.14 24" REINFORCED CONCRETE PIPE (CLASS III)

Quantity: 23 UOM: LF Price: $148.50 Total: $3,415.50

3.15 24" R.C. FLARED END SECTION

Quantity: 1 UOM: EA Price: $1,350.00 Total: $1,350.00

3.16 4'X4' DROP INLETS (TYPE D2)

Quantity: 4 UOM: EA Price: $10,000.00 Total: $40,000.00

3.17 5'X5' JUNCTION BOXES (TYPE D4)

Quantity: 1 UOM: EA Price: $13,500.00 Total: $13,500.00

3.18 4' DROP INLET EXTENSION

Quantity: 2 UOM: EA Price: $1,600.00 Total: $3,200.00

3.19 8' DROP INLET EXTENSION

Quantity: 2 UOM: EA Price: $3,000.00 Total: $6,000.00

3.20 DRAINAGE STRUCTURE BACK OPENING (SP #6)

Quantity: 1 UOM: EA Price: $5,000.00 Total: $5,000.00

3.21 CONRETE FLUME (SP #7)

Quantity: 10 UOM: SY Price: $360.00 Total: $3,600.00

3.22 SELECT PIPE BACKFILL (CLASS 67)(IF AND WHERE DIRECTED) (SP #8)

Quantity: 50 UOM: CY Price: $110.00 Total: $5,500.00

3.23 PRIME COAT

Quantity: 2825 UOM: SY Price: $4.60 Total: $12,995.00

3.24 2" ASPHALT CONCRETE HOT MIX SURFACE COURSE (ACHMSC)

Quantity: 360 UOM: TON Price: $195.00 Total: $70,200.00

3.25 4" ASPHALT CONCRETE HOT MIX BINDER COURSE (ACHMBC)

Quantity: 550 UOM: TON Price: $175.00 Total: $96,250.00

3.26 5" ASPHALT CONCRETE HOT MIX BASE COURSE (ACHMBC)

Quantity: 815 UOM: TON Price: $145.00 Total: $118,175.00

3.27 ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

Quantity: 40 UOM: TON Price: $460.00 Total: $18,400.00

3.28 PORTLAND CEMENT CONCRETE BASE (4" UNIFORM THICKNESS) (ARDOT 308)

Quantity: 68 UOM: SY Price: $120.00 Total: $8,160.00

3.29 PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS) (ARDOT 309)

Quantity: 120 UOM: SY Price: $140.00 Total: $16,800.00

3.30 CONCRETE CURB AND GUTTER (TYPE A)

Quantity: 1545 UOM: LF Price: $47.25 Total: $73,001.25

3.31 4" THICK CONCRETE SIDEWALK

Quantity: 712 UOM: SY Price: $91.00 Total: $64,792.00

3.32 CONCRETE PEDESTRIAN REFUGE ISLANDS (SP #9)

Quantity: 41 UOM: SY Price: $300.00 Total: $12,300.00

3.33 CONCRETE DRIVEWAY APRONS

Quantity: 365 UOM: SY Price: $115.50 Total: $42,157.50

3.34 ASPHALT DRIVEWAY

Quantity: 295 UOM: SY Price: $60.00 Total: $17,700.00

3.35 SOLID SOD

Quantity: 1850 UOM: SY Price: $4.65 Total: $8,602.50

3.36 ADDITIONAL WATERING

Quantity: 1 UOM: MG Price: $550.00 Total: $550.00

3.37 6" PAVEMENT MARKING (THERMOPLASTIC)

Quantity: 3278 UOM: LF Price: $4.95 Total: $16,226.10

3.38 8" PAVEMENT MARKING (THERMOPLASTIC)

Quantity: 280 UOM: LF Price: $6.00 Total: $1,680.00

3.39 10" PAVEMENT MARKING (THERMOPLASTIC)

Quantity: 318 UOM: LF Price: $13.10 Total: $4,165.80

3.40 24" PAVEMENT MARKING (THERMOPLASTIC)

Quantity: 510 UOM: LF Price: $27.35 Total: $13,948.50

3.41 PAVEMENT SYMBOLS (THERMOPLASTIC)

Quantity: 22 UOM: EA Price: $545.00 Total: $11,990.00

3.42 PAVEMENT MARKING REMOVAL

Quantity: 250 UOM: SF Price: $2.20 Total: $550.00

3.43 STREET SIGN INSTALLATION

Quantity: 17 UOM: EA Price: $382.50 Total: $6,502.50

3.44 EROSION CONTROL

Quantity: 1 UOM: LS Price: $7,225.00 Total: $7,225.00

3.45 TRAFFIC CONTROL AND MAINTENANCE

Quantity: 1 UOM: LS Price: $150,000.00 Total: $150,000.00

3.46 AGGREGATE BASE FOR ROADWAY MAINTENANCE

Quantity: 80 UOM: TON Price: $41.50 Total: $3,320.00

3.47 PORTABLE CHANGEABLE MESSAGE SIGN

Quantity: 1825 UOM: DAY Price: $27.25 Total: $49,731.25

3.48 CAST-IN-PLACE DETECTABLE WARNING PANEL

Quantity: 160 UOM: SF Price: $22.30 Total: $3,568.00

3.49 HANDICAP ACCESS RAMP

Quantity: 50 UOM: SY Price: $252.50 Total: $12,625.00

3.50 PROJECT SIGNS

Quantity: 4 UOM: EA Price: $985.00 Total: $3,940.00

3.51 COLD MILLING PAVEMENT

Quantity: 660 UOM: SY Price: $19.60 Total: $12,936.00

3.52 GRAVITY BLOCK RETAINING WALL (SP #10)

Quantity: 745 UOM: SF Price: $82.25 Total: $61,276.25

3.53 REMOVE AND REPLACE TREES (SP #11)

Quantity: 7 UOM: EA Price: $630.00 Total: $4,410.00

3.54 IRRIGATION SYSTEM ADJUSTMENT (SP #12)

Quantity: 1 UOM: LS Price: $7,100.00 Total: $7,100.00

3.55 TREE PROTECTION FENCING

Quantity: 200 UOM: LF Price: $5.00 Total: $1,000.00

3.56 McCAIN ATC eX2 NEMA CONTROLLER TS2-TYPE 2 (SP #17 & ARDOT 701)

Quantity: 1 UOM: EA Price: $50,500.00 Total: $50,500.00

3.57 SHIREEN ITEM #DC-1021, CAT 5E VIDEO CABLE OR EQUAL (SHIELDED) (SP #18)

Quantity: 1045 UOM: LF Price: $2.45 Total: $2,560.25

3.58 EMERGENCY VEHICLE PREEMPTION SYSTEM RELOCATION (SP #33)

Quantity: 2 UOM: EA Price: $2,350.00 Total: $4,700.00

3.59 TESCO CLASS 22 BBS (BATTERY BACKUP SYSTEM) (SP #19)

Quantity: 1 UOM: EA Price: $22,820.00 Total: $22,820.00

3.60 TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) (SP #20 & ARDOT 706)

Quantity: 9 UOM: EA Price: $1,760.00 Total: $15,840.00

3.61 TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY) (SP #20 & ARDOT 706)

Quantity: 3 UOM: EA Price: $2,615.00 Total: $7,845.00

3.62 POLARA iCCU-S2 (INTELLIGENT CENTRAL CONTROL UNIT - SHELF MOUNT) INCLUDES BIU CAPABILITY (SP #31 & ARDOT 707)

Quantity: 1 UOM: EA Price: $5,525.00 Total: $5,525.00

3.63 POLARA iNS2 3TN0-B, 9x15 APS PUSHBUTTON STATION (BLACK) (SP #31 & ARDOT 707)

Quantity: 8 UOM: EA Price: $1,650.00 Total: $13,200.00

3.64 EAGLE 16" COUNTDOWN PEDESTRIAN SIGNAL HEAD (LED) (ALUMINUM) (SP #22 & ARDOT 707)

Quantity: 8 UOM: EA Price: $1,355.00 Total: $10,840.00

3.65 TRAFFIC SIGNAL CABLE (5C/12 A.W.G.) (ARDOT 708)

Quantity: 1460 UOM: LF Price: $4.40 Total: $6,424.00

3.66 TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) (ARDOT 708)

Quantity: 1600 UOM: LF Price: $5.50 Total: $8,800.00

3.67 TRAFFIC SIGNAL CABLE (7C/14 A.W.G.) (ARDOT 708)

Quantity: 260 UOM: LF Price: $7.65 Total: $1,989.00

3.68 TRAFFIC SIGNAL CABLE (20C/14 A.W.G.) (ARDOT 708)

Quantity: 800 UOM: LF Price: $13.10 Total: $10,480.00

3.69 ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.) (SP #23)

Quantity: 940 UOM: LF Price: $2.75 Total: $2,585.00

3.70 ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.) (SP #23)

Quantity: 220 UOM: LF Price: $1.85 Total: $407.00

3.71 ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.) (SP #23)

Quantity: 220 UOM: LF Price: $7.50 Total: $1,650.00

3.72 ELECTRICAL CONDUCTORS FOR LUMINAIRES (SP #29)

Quantity: 805 UOM: LF Price: $3.15 Total: $2,535.75

3.73 GALVANIZED STEEL CONDUIT (2") (ARDOT 709)

Quantity: 20 UOM: LF Price: $89.00 Total: $1,780.00

3.74 NON-METALLIC CONDUIT (2") (ARDOT 710)

Quantity: 295 UOM: LF Price: $46.50 Total: $13,717.50

3.75 NON-METALLIC CONDUIT (3") (ARDOT 710)

Quantity: 600 UOM: LF Price: $62.30 Total: $37,380.00

3.76 CONCRETE PULL BOX (TYPE 2) (ARDOT SS & 711)

Quantity: 5 UOM: EA Price: $2,225.00 Total: $11,125.00

3.77 CONCRETE PULL BOX (TYPE 3) (ARDOT SS & 711)

Quantity: 1 UOM: EA Price: $2,500.00 Total: $2,500.00

3.78 CONCRETE PULL BOX (TYPE 2 HD) (ARDOT SS & 711)

Quantity: 2 UOM: EA Price: $2,400.00 Total: $4,800.00

3.79 CONCRETE PULL BOX (TYPE 3 HD) (ARDOT SS & 711)

Quantity: 1 UOM: EA Price: $2,725.00 Total: $2,725.00

3.80 TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION (ARDOT SS & 711)

Quantity: 6 UOM: EA Price: $4,500.00 Total: $27,000.00

3.81 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42') (ARDOT SS & 711)

Quantity: 3 UOM: EA Price: $43,000.00 Total: $129,000.00

3.82 AUTOBAHN SERIES ATBM P40 LED LUMINAIRE ASSEMBLY (SP #24)

Quantity: 4 UOM: EA Price: $1,500.00 Total: $6,000.00

3.83 SERVICE POINT ASSEMBLY (2 CIRCUITS) (SP #25)

Quantity: 1 UOM: EA Price: $5,500.00 Total: $5,500.00

3.84 REMOVAL OF TRAFFIC SIGNAL EQUIPMENT (SP #26)

Quantity: 1 UOM: LS Price: $5,500.00 Total: $5,500.00

3.85 18" STREET NAME SIGN (SP #27)

Quantity: 4 UOM: EA Price: $950.00 Total: $3,800.00

3.86 VIDEO DETECTOR RELOCATION (ARDOT 733)

Quantity: 2 UOM: EA Price: $820.00 Total: $1,640.00

3.87 VIDEO DETECTOR ROTATION (SP #28)

Quantity: 4 UOM: EA Price: $820.00 Total: $3,280.00

3.88 ITERIS VANTAGE NEXT VIDEO DETECTOR (SP #18 & ARDOT 733)

Quantity: 2 UOM: EA Price: $5,100.00 Total: $10,200.00

3.89 ITERIS VANTAGE VECTOR HYBRID DETECTOR (SP #18 & ARDOT 733)

Quantity: 2 UOM: EA Price: $11,500.00 Total: $23,000.00

3.90 INVID TECH, IMHD-10, HDMI VIDEO MONITOR (SP #18 & ARDOT 733)

Quantity: 1 UOM: EA Price: $1,600.00 Total: $1,600.00

3.91 ITERIS VANTAGE NEXT SHELF-MOUNT CCU (SP #18 & ARDOT 733)

Quantity: 1 UOM: EA Price: $56,000.00 Total: $56,000.00

3.92 RELOCATION OF TRAFFIC SIGNAL HEAD (SP #21)

Quantity: 1 UOM: EA Price: $550.00 Total: $550.00

4 Package Header

PACKAGE D - WATER AND SEWER RELOCATION

Quantity: 1 UOM: EA Total: $321,994.00

Package Items

4.1 CONSTRUCTION CONTROL AND LAYOUT

Quantity: 1 UOM: LS Price: $70,000.00 Total: $70,000.00

4.2 6" DIA. WATER LINE (AWWA C900 DR14)

Quantity: 20 UOM: LF Price: $306.00 Total: $6,120.00

4.3 8" DIA. WATER LINE (AWWA C900 DR14)

Quantity: 222 UOM: LF Price: $316.00 Total: $70,152.00

4.4 TAPPING SLEEVE AND VALVE (8"X8")

Quantity: 1 UOM: EA Price: $14,000.00 Total: $14,000.00

4.5 6" GATE VALVE

Quantity: 1 UOM: EA Price: $5,050.00 Total: $5,050.00

4.6 8" GATE VALVE

Quantity: 2 UOM: EA Price: $6,500.00 Total: $13,000.00

4.7 FIRE HYDRANT ASSEMBLY INSTALLED COMPLETE

Quantity: 1 UOM: EA Price: $23,500.00 Total: $23,500.00

4.8 SINGLE WATER METER INSTALLED COMPLETE

Quantity: 2 UOM: EA Price: $9,100.00 Total: $18,200.00

4.9 DOUBLE WATER METER INSTALLED COMPLETE

Quantity: 1 UOM: EA Price: $16,500.00 Total: $16,500.00

4.10 DUCTILE IRON FITTINGS

Quantity: 164 UOM: LBS Price: $48.00 Total: $7,872.00

4.11 CUT & CAP ABANDON EXISTING WATERLINE (6")

Quantity: 2 UOM: EA Price: $4,675.00 Total: $9,350.00

4.12 FIRE HYDRANT ASSEMBLY REMOVAL

Quantity: 1 UOM: EA Price: $3,300.00 Total: $3,300.00

4.13 2" DIA COATED COPPER PIPE AND FITTINGS

Quantity: 80 UOM: LF Price: $105.00 Total: $8,400.00

4.14 8" DIA. REMOVE CLAY PIPE AND REPLACE WITH PVC

Quantity: 20 UOM: LF Price: $550.00 Total: $11,000.00

4.15 16" DIAMETER STEEL CASING WITH W/MECHANICAL LINK END SEALS AND SPACERS (DIRECT BURY)

Quantity: 10 UOM: LF Price: $775.00 Total: $7,750.00

4.16 SANITARY SEWER MANHOLE - REMOVE CONE, LOWER TO GRADE

Quantity: 2 UOM: EA Price: $4,500.00 Total: $9,000.00

4.17 SANITARY SEWER MANHOLE - ADJUST RING TO GRADE

Quantity: 2 UOM: EA Price: $2,500.00 Total: $5,000.00

4.18 FLOWABLE FILL - ABANDON 8" WATERLINE UNDER ROADWAY

Quantity: 410 UOM: LF Price: $45.00 Total: $18,450.00

4.19 UTILITY ADJUSTMENT - WATER VALVE / METER

Quantity: 2 UOM: EA Price: $2,675.00 Total: $5,350.00

Response Total: $3,568,811.20

CITY OF
FAYETTEVILLE
ARKANSAS

City of Fayetteville, Arkansas
Procurement Division – Room 306
113 W. Mountain
Fayetteville, AR 72701
Phone: 479.575.8256
TDD (Telecommunication Device for the Deaf): 479.521.1316

INVITATION TO BID

Bid 26-37, Construction – Millsap/College Intersection & Hemlock Improvements

DEADLINE: Wednesday, June 10, 2026 before 2:00 PM, Local Time
PRE-BID MEETING: Wednesday, May 27, 2026 at 11:00 AM
SR. PROCUREMENT AGENT: Kenny Fitch, kfitch@fayetteville-ar.gov
DATE OF ISSUE & ADVERTISEMENT: 05/17/2026 & 05/24/2026

No late bids shall be accepted. Bids shall be submitted in one of the following methods: (1) through the City's third-party electronic bidding platform or (2) delivering in person via sealed envelope to the City of Fayetteville Procurement Division. Submitting through the City's electronic bidding platform is strongly encouraged. All bids shall be submitted in accordance with the attached City of Fayetteville specifications and bid documents attached hereto. Each bidder is required to fill in every blank and shall supply all information requested; failure to do so may be used as basis of rejection.

NOTICE TO ALL BIDDERS:

All interested parties can obtain files for this project by going to http://fayetteville-ar.gov/bids. Bid documents shall be distributed electronically from the City of Fayetteville Procurement Division only.

BID PACKAGE INCLUDES THE FOLLOWING FILES WHICH SHALL BE LISTED UNDER "ATTACHMENTS":

FILE #01: PROJECT MANUAL – **688 Total Pages**
FILE #02: PLANS – **92 Plan Sheets**

*Additional files added as addendums are issued. Addendums will be uploaded and posted to the City's electronic bidding platform.

***PLAN HOLDER LISTINGS: A listing of vendors who have received documents can be found in the City's electronic bidding platform under the project section tab titled 'Plan Holders'.**

Bidder shall assume all responsibility for receiving updates and any addenda issued to this project by monitoring http://fayetteville-ar.gov/bids. Failure to acknowledge addenda issued as instructed could result in bid rejection.

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CITY OF
FAYETTEVILLE
ARKANSAS

Advertisement

City of Fayetteville, Arkansas
INVITATION TO BID
Bid 26-37, Construction – Millsap/College Intersection & Hemlock Improvements

The City of Fayetteville is accepting sealed bids from contractors for the construction of improvements to the intersection at Millsap Rd. and College Ave. including the relocation & construction of N. Hemlock Avenue. Improvements include roadway construction, curb & gutter, sidewalks, drainage, and traffic signal modifications. Questions regarding this bid should be addressed to Kenny Fitch, Sr. Procurement Agent at kfitch@fayetteville-ar.gov.

A non-mandatory pre-bid meeting will be held Wednesday, May 27, 2026, at 11:00 AM. Details regarding the pre-bid meeting are available on the project page of the City's electronic bidding platform. All interested parties are encouraged to attend.

Bidding documents, plans, plan holders, and addenda shall be obtained at the City of Fayetteville Procurement Division's electronic bidding platform at www.fayetteville-ar.gov/bids. All bids shall be received by Wednesday, June 10, 2026, before 2:00 PM local time, utilizing the electronic bidding software or by submitting a sealed bid to the City of Fayetteville Procurement Division. Submitting a bid electronically is strongly encouraged. A public bid opening will be conducted shortly after the deadline and livestreamed on Zoom.

Each bid exceeding $50,000 shall be accompanied by a cashier's check from a bank doing business in the State of Arkansas or a corporate bid bond for five (5) percent of the amount bid. In the event a bidder opts to submit a cashier's check for a bid bond, the actual physical cashier's check shall be delivered to the City prior to the deadline. One hundred percent (100%) performance and payment bonds are required after the contract award. This amount includes any approved contingency.

Bidders shall have a valid State of Arkansas Contractor's License, have a valid registration and be in good standing with the Arkansas Secretary of State, and have an active registration with the System for Award Management (SAM.gov) at the time of the contract award.

Pursuant to Arkansas Code Annotated §22-9-203 The City of Fayetteville encourages all *qualified* small, minority and women business enterprises to bid on and receive contracts for goods, services, and construction. Also, City of Fayetteville encourages all general contractors to subcontract portions of their contract to *qualified* small, minority and women business enterprises.

The City of Fayetteville hereby notifies all bidders that this contract is subject to applicable labor laws, non-discrimination provisions, wage rate laws and other federal laws including the Fair Labor Standards Acts of 1938. The Work Hours Act of 1962 and Title VI of the Civil Rights Act of 1964 also apply. Build America, Buy America provisions apply to this project.

The City of Fayetteville reserves the right to waive irregularities, reject bids, and postpone the award of any Contract for a period which shall not exceed beyond ninety (90) days from the bid opening date.

City of Fayetteville
By: Kenny Fitch
Sr. Procurement Agent
479.578.8258 kfitch@fayetteville-ar.gov
TDD (Telecommunications Device for the Deaf): (479) 521-1316
Date of advertisement: 05.17.26 & 05.24.26
This publication was paid for by the Procurement Division of the City of Fayetteville, Arkansas.
Amount paid: $496.12

Project Manual

CITY OF
FAYETTEVILLE
ARKANSAS

Engineering Division
113 West Mountain Street
Fayetteville, Arkansas
72701

MILLSAP RD. / COLLEGE AVE. INTERS. IMPVTS. & N. HEMLOCK AVE. IMPVTS.

CERTIFICATE OF AUTHORIZATION
BURNS & McDONNELL ENGINEERING COMPANY, INC.
No.17
ARKANSAS-ENGINEER

BID # 26-37, Construction
Date: May, 2026

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14032
JONATHAN ELY
5/14/2026

CITY OF
FAYETTEVILLE
ARKANSAS

Bid Check List

Bid 26-37 , Job 040943, MILLSAP/COLLEGE INTERSECTION IMPRVMNT PROJECT

This checklist is for the Bidder's use in preparing & submitting a bid. It is not intended to include all details necessary to prepare a bid and shall not be used as a substitute for the requirements of the bid documents. Information is shown below only as a matter of convenience. Use of this checklist does not relieve the Bidder from the responsibility of meeting all requirements of the Specifications concerning the preparation of an acceptable bid. Bidders are welcome to use this form as a coversheet for a sealed envelope; however, using this form itself is NOT a requirement.

- [x] 5% Bid Bond of the amount bid accompanied by required documentation (Power of Attorney, etc.)
  - In lieu of a bid bond, the bidder may submit a cashier's check for at least five percent (5%) of the amount bid (inclusive of any deductive alternates). Cashiers checks shall be made payable to the City of Fayetteville, AR.
- [x] All addenda shall be signed, acknowledged, and submitted on the appropriate forms (submitting the actual addendums or marking acknowledgement on other bid pages).
- [x] All line items shall be appropriately filled out and extended to reveal the line item price as well as the total bid price.

All bidders shall submit the following forms with each bid:

- [x] Bidder's Qualification Statement (pages 11 - 14),
- [x] Bid Form (pages 26 - 31),
- [x] Bid Bond (pages 32 - 33),
- [x] List of Subcontractors (page 34),
- [x] Sponsor Supplement to Proposal - Anti-Collusion and Debarment (pages 680 - 681),
- [x] Sponsor Supplement to Proposal - Certification (pages 682 - 683)

CITY OF
FAYETTEVILLE
ARKANSAS

Bid Check List

Bid 26-37 , Job 040943, MILLSAP/COLLEGE INTERSECTION IMPRVMNT PROJECT

☑ **All pages** provided with signature lines shall be appropriately signed, dated accordingly, and included with submitted bid documents.

A State of Arkansas Contractor's License is **not** required to bid on the project; however, no contractor shall submit a bid prior to submitting an initial application (which does not require a full audit) for licensure, and no construction contract shall be executed until the successful bidder has furnished an appropriate license issued by the State of Arkansas Contractor's Licensing Board.

CONTRACTOR NAME: APAC-Central, Inc.

ARKANSAS CONTRACTORS LICENSE NUMBER: 0011840427

(This is a Federal Aid Project and therefore a License Number is **not** required for bidding)

CITY OF
FAYETTEVILLE
ARKANSAS

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MILLSAP RD./COLLEGE AVE. INTERS. IMPVTS. & N. HEMLOCK AVE. IMPVTS.

CONTRACT DOCUMENTS

TECHNICAL SPECIFICATIONS

CITY OF FAYETTEVILLE STANDARD SPECIFICATIONS FOR STREET AND DRAINAGE CONSTRUCTION

CITY OF FAYETTEVILLE STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2022 EDITION

ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION *(REFERENCE ONLY. GO TO https://ardot.gov/divisions/construction/standard-specifications/ FOR FULL DOCUMENTS)*

ERRATA FOR THE 2014 ARKANSAS DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION *(REFERENCE ONLY. GO TO https://ardot.gov/divisions/construction/standard-specifications/ FOR FULL DOCUMENTS)*

SPECIAL PROVISIONS

ARDOT/FHWA SPECIAL PROVISIONS

END OF DOCUMENT 00010

DIVISION 00 – BID & AGREEMENT

DOCUMENT 00140 – BIDDER'S QUALIFICATION STATEMENT

Contract Name: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave. Impvts.
Bid #: 26-37, Construction
Date: 6-10-2026

SUBMITTED TO:

The City of Fayetteville, Arkansas

113 West Mountain Street

Fayetteville, Arkansas 72701

SUBMITTED BY:

Company APAC-Central, Inc.

Name Doug Luetjen

Address 755 E. Millsap Rd. Fayetteville AR 72703

Principal Office Same as above

Corporation, partnership, individual, joint venture, other Corporation

Arkansas State General Contractor's License Number
0011840427

(Type or legibly print)

EXPERIENCE STATEMENT

✓ 1. Bidder has been engaged as a General Contractor in construction for 40+ years and has performed work of the nature and magnitude of this Contract for 40+ years. Bidder has been in business under its present name for 15+ years.

✓ 2. Bidder now has the following bonded projects under contract: (On a separate sheet, list project name, owner, name of owner contact, engineer / architect, name of engineer/architect contact, amount of contract, surety, and estimated completion date.) Attached

✓ 3. Bidder has completed the following (list minimum of 3) contracts consisting of work similar to that proposed by this Contract: (On a separate sheet, list project name, owner, name of owner contact, engineer / architect, name of engineer/architect contact, amount of contract, surety, and date of completion and percentage of the cost of the Work performed with Bidder's own forces.) Separate Sheet Attached

✓ 4. Has Bidder ever failed to complete any project? If so, state when, where, and why.

NO

5. Bidder normally performs the following work with his own forces:

Pipe, Excavation, Earthwork, ACHM Paving Base, concrete flatwork/paving, curb, MOT Surveying & staking, demo, clear & grubbing

6. Construction experience of key individuals in the organization is as follows (continued on attached sheets if needed):

Scott Beeks - Construction Manager - 34 years
Doug Luetjen - Operations Manager - 13 years
Murry Cline - General Manager - 35 years
Grant Ferguson - Estimating/PM - 8 years

7. In the event the Contract is awarded to Bidder, the required surety Bonds will be furnished by the following surety company and name and address of agent:

Kimberly Leonard
Marsh USA [redacted] LLC / Fidelity & Deposit Company of Maryland
[redacted] 973-401-5381
445 South Street, Suite 210, Morristown NJ 07960

8. Bidder's Workmen's Compensation Experience Modifier Factor is: 0.55 (2025)

FINANCIAL STATEMENT

B. If requested by the City of Fayetteville during the evaluation of bids the bidder shall provide to the City of Fayetteville the following additional information:

Bidder possesses adequate financial resources as indicated by the following:

1. Assets and Liabilities: Attach a financial statement, audited if available, including Bidder's latest balance sheet and income statements showing the following items:

At request only

a. Current assets (cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory, and prepaid expenses).

b. Net fixed assets.

c. Other assets.

DOCUMENT 00140 – BIDDER'S QUALIFICATION STATEMENT (continued)

d. Current liabilities (accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries, and accrued payroll taxes).

at request only

e. Other liabilities (capital, capital stock, authorized and outstanding shares par values, earned surplus, and retained earnings).

f. Name of firm preparing financial statement and date thereof:

If financial statement is not for identical organization named herein, explain relationship and financial responsibility of the organization furnished.

2. Current Judgments: The following judgements are outstanding against Bidder:

	Judgment Creditors	Where Docketed and Date	Amount
a.	N/A		$
b.			$

Bidder hereby represents and warrants that all statements set forth herein are true and correct.

Date: 6/10/2026, 2026.

(OFFICIAL SEAL)

Name of Organization: Corporation
APAC-Central, Inc.

By Doug Luetjen

(Type or legibly print)

By _____

(Signature)

Title Operations Manager

(Type or legibly print)

(If Bidder is a partnership, the partnership name shall be signed, followed by the signature of at least one of the partners. If Bidder is a corporation, the corporate name shall be signed, followed by the signature of a duly-authorized officer and with the corporate seal affixed.)

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END OF DOCUMENT 00140

DOCUMENT 00200 – INSTRUCTIONS TO BIDDERS

ARTICLE 1 - INTRODUCTORY INFORMATION

1.01 DEFINED TERMS:

A. Terms used in these Instructions to Bidders and which are defined in the GENERAL CONDITIONS, have the meanings assigned to them in the GENERAL CONDITIONS.

B. Bid Documents shall include the following:
   1. Bidding Requirements:
      a. Invitation to Bid.
      b. Instructions to Bidders.
      c. Bid Form.
      d. Bid Bond.
      e. Supplement to Proposal - Anti-Collusion and Debarment
      f. Supplement to Proposal - Certification
   2. Bidder's Forms:
      The Bidder's attention is called to the following additional forms which shall be completely filled out and submitted with the Bid:
      a. Bidder's Qualifications Statement
      b. List of Subcontractors
   3. Contract Forms:
      a. Agreement Between Owner and Contractor.
         The Bidder's attention is called to the evidence of authority to sign and other documents which shall be submitted with the Agreement as applicable to the Business entity and noted in the Agreement.
      b. Performance Bond.
      c. Labor and Material Payment Bond.
   4. Contract Conditions:
      a. General Conditions.
      b. Supplementary Conditions.
      c. Labor-Related Regulations.
   5. Specifications.
   6. Drawings.
   7. Addenda issued prior to receipt of Bids.

C. Certain additional items used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.
   1. Bidder – one who submits a Bid directly to Owner as distinct from a sub-bidder, who submits a Bid to a Bidder.
   2. Issuing Office – the office from which the Bid Documents are to be issued and where the bidding procedures are to be administered.
   3. Successful Bidder – the lowest, responsible, and responsive Bidder to whom Owner on the basis of Owner's evaluation as hereinafter provided makes an award.

1.02 COPIES OF BID DOCUMENTS:

A. Complete sets of the Bid Documents in the number and format as stated in the Invitation to Bid may be obtained from the City's Issuing Office.

B. Complete sets of Bid Documents shall be used in preparing Bids; neither Owner, nor Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bid Documents.

C. Owner and Engineer in making copies of Bid Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

1.03 QUALIFICATION OF BIDDERS:

A. Prequalification statements are not required. Owner will, however, evaluate the Bidder's qualifications following the opening of Bids. Evaluation criteria considered will include, but not be limited to:
   1. Experience and performance records on similar work.
   2. Financial responsibility.
   3. Ability to supply construction equipment and personnel to complete the Work within the Contract Time.
   4. The Successful Bidder shall possess an Arkansas Contractor's License, hold a registration in good standing with the Arkansas Secretary of State, and have an active registration with the System for Award Management (SAM.gov) prior to contract award.

B. Bidders may be requested to submit financial statement and other information relating to experience and financial responsibility after bids are received and before awarding a contract.

C. Only those Bids will be considered which are submitted by Bidders who show satisfactory completion of work of type and size comparable to the Work required by these Bid Documents.
   1. A list of comparable projects, including pertinent information and identification of the owners, shall be submitted with the Bid.
   2. See ARTICLE 5 – AWARD OF CONTRACT herein for additional requirements after opening of Bids.

D. Bidders shall not be debarred from doing business with any government entity.

1.04 EXAMINATION OF CONTRACT DOCUMENTS AND SITE:

A. Before submitting a Bid, it is the responsibility of each Bidder:
   1. To thoroughly examine the Contract Documents and other related data identified in the Bid Documents (including "technical data" referred to below).
   2. To visit the Site to become familiar with and satisfy Bidder as to the general, local, and Site conditions that may in any manner affect cost, progress, and performance of the Work.
   3. To consider federal, state, and local laws, ordinances, rules, and regulations that may in any manner affect cost, progress, performance, and furnishing of the Work.

4. To study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related data.
5. To promptly notify Engineer of all conflicts, errors, ambiguities, or discrepancies which Bidder has discovered in or between the Contract Documents and such other related documents.

B. Before submitting a Bid, each Bidder shall be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise, which may affect cost, progress, performance, and furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder, including safety precautions and programs incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. This shall include local shipping facilities and availability of lands if applicable.

C. In the preparation of the Contract Documents, neither reports of explorations nor tests of any Hazardous Environmental Condition at the Site of the Work have been prepared.

D. Access to the Site:
1. On request, Owner will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as each Bidder deems necessary for submission of his Bid. Bidder shall fill all holes, clean up, and restore the Site to its former conditions upon completion of such explorations, investigations, tests, and studies.
2. The lands upon which the Work is to be performed, rights-of-way, and easements for access thereto and other lands designated for use by Contractor in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of Materials and Equipment to be incorporated in the Work are to be obtained and paid for by Contractor. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Contract Documents.
3. Property owners affected by the Work are named on the Drawings where known, but the accuracy of such ownership is not guaranteed. Bidders shall verify and make their own arrangements with such property owners for any access needed in connection with the preparation of Bids.

E. The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this paragraph "Examination of Contract Documents and Site," and that the Bid Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

1.05 INTERPRETATIONS, MODIFICATIONS, AND ADDENDA:

A. Any Bidder who discovers ambiguities, inconsistencies, or errors or is in doubt as to the meaning or intent of any part of the Bid Documents shall promptly request an interpretation from Engineer. Interpretations or clarifications considered necessary by

Engineer in response to such requests will be issued by Addenda mailed or delivered to all parties recorded by the City of Fayetteville Procurement Department as having received the Bid Documents.

B. Addenda may also be issued to modify the Bid Documents as deemed advisable by Owner or Engineer.

C. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

1.06 PREBID CONFERENCE:

A non-mandatory, pre-bid meeting will be held at a time and location indicated on the City of Fayetteville's procurement website. All interested parties are strongly encouraged to attend. Please contact the City of Fayetteville Procurement Department with any questions.

1.07 LABOR-RELATED REGULATIONS:

A. Pursuant to Arkansas Code Annotated 22-9-203, the City of Fayetteville encourages all qualified minority and women business enterprises to bid on and receive contracts for goods, services, and construction. Also, City of Fayetteville encourages all general contractors to subcontract portions of their contract to qualified, small, minority, and women business enterprises.

ARTICLE 2 - BASIS OF BIDDING

2.01 SPECIFIED EQUIPMENT AND MATERIALS:

A. Substitutions will be considered only after the Effective Date of the Agreement and as set forth in the GENERAL CONDITIONS.

2.02 INDIRECT COSTS:

A. Taxes:
   1. All applicable sales, use, compensating, or other taxes to be paid or withheld by Bidder, now imposed by any taxing authority, on Equipment and Materials to be incorporated in the Work, and on any or all other cost items entering into the Contract Price, shall be included in the Bid price.
   2. The Bidder shall include all such taxes except those on Equipment and Materials, if any, furnished by Owner or others, or exempted by the state, and Bidder shall furnish taxing authorities any information or reports pertaining thereto as required.

B. The cost of all construction licenses, building and other permits, and governmental inspections required by public authorities for performing the Work, which are applicable at the time Bids are opened and which are not specified to be obtained by Owner, shall be included in the Bid price. Fees for permits issued by the City will be waived, but permits are still required where necessary

C. The cost of all royalties and license fees on Equipment and Materials to be furnished and incorporated in the Work shall be included in the Bid price.

D. Tests, inspections, and related activities called for throughout the Bid Documents are a responsibility of Contractor unless specified otherwise. The Bid shall include all costs arising from such responsibility.

E. The cost of all electrical, water, gas, telephone, sanitary, and similar facilities and services required by Contractor in performing the Work shall be included in the Bid price unless specified otherwise.

2.03 SUBCONTRACTORS:

A. No Bid shall be based upon aggregate of Subcontractors performing more than 60 percent of the total Work.

B. The experience, past performance, and ability of each proposed Subcontractor will be considered in the evaluation of Bids. Any Subcontractor so requested shall be required to furnish experience statements prior to the Notice of Awards.

C. No Contractor shall be required to employ any Subcontractor, other person, or organization against whom Contractor has reasonable objection. Owner or Engineer may accept or reject Subcontractors in accordance with Paragraph 6.05 of the GENERAL CONDITIONS.

2.04 CONTRACT TIMES:

A. The number of days within which, or the dates by which, the Work is to achieve Substantial Completion and also final completion and be ready for final payment shall be as stated in the Agreement.

B. Provisions for liquidated damages, if any, are as set forth in the Agreement.

ARTICLE 3 - BIDDING PROCEDURE

3.01 PREPARATION OF BID:

A. One set of unbound documents included with the officially provided set of drawings and specifications shall be used for the Bid.

B. The Bid Forms shall be filled out in detail and signed by the Bidder. Forms shall not be removed from the bound document.

C. Bids by partnerships shall be executed in the partnership name and signed by a partner whose title shall appear under his signature, and the official address of the partnership shall be shown below the signature.

D. Bids by corporations and/or LLC's shall be executed in the corporate name by the president or a vice president (or other corporate officer accompanied by evidence of authority to sign), and the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

E. Names of all persons signing shall be printed below their signatures.

F. A power of attorney shall accompany the signature of anyone not otherwise authorized to bind the Bidder.

G. The Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

H. The address to which communications regarding the Bids are to be directed shall be shown.

3.02 METHOD OF BIDDING:

A. Bids will be received on a Unit Prices basis as set forth on the City of Fayetteville's procurement website.

B. Firm Bids are required.

C. Schedule of Unit Prices:

1. The Bidder shall complete the "Schedule of Unit Prices" included in the Bid (and shall accept all fixed Unit Prices listed therein.)
2. The total Bid price will be determined as the sum of the products of the estimated quantity of each item and the Unit Price set forth in the "Schedule of Unit Prices." The final Contract Price shall be subject to adjustment according to final measured, used, or delivered quantities, and the Unit Prices set forth in the "Schedule of Unit Prices" will apply to such final quantities except that if quantities vary more than 25 percent above or below estimated quantities, Unit Prices will be subject to change by Change Order.

3.03 SUBCONTRACTORS INFORMATION SUBMITTED WITH BID:

A. Bidders shall submit to Owner with the Bid, the List of Subcontractors contained in the Project Manual as Document 00430, completed with names of all such Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work for which such identification is required. The list shall be supplemented by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person, or organization, if requested by Engineer. If, after due investigation, Owner or Engineer has reasonable objection to any proposed Subcontractor, Supplier, or other person or organization, Owner may, before the Notice of Award is given, request the apparent Successful Bidder to submit an acceptable substitute without an increase in the Bid. If the apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, and other persons and organizations. The declining to make requested substitutions will not constitute grounds for sacrificing the bid security of any Bidder. Any Subcontractor, Supplier, or other person or organization listed and to whom Owner or Engineer does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation as provided in Paragraph 6.05 of the General Conditions.

3.04 MANUFACTURERS SUBMITTED WITH BID:

Not applicable this specific project.

3.05 FORMS TO BE SUBMITTED:

A. The following forms shall be completed and submitted with the Bid:
   1. DOCUMENT 00140 BIDDER'S QUALIFICATIONS STATEMENT
   2. DOCUMENT 00400 BID FORM
   3. Bid Security as bank cashier's check FROM A FINANCIAL INSTITUTION LOCATED IN THE STATE OF Arkansas, or Bid Bond (DOCUMENT 00410)
   4. DOCUMENT 00430, LIST OF SUBCONTRACTORS
   5. SUPPLEMENT TO PROPOSAL - ANTI-COLLUSION AND DEBARMENT
   6. SUPPLEMENT TO PROPOSAL - CERTIFICATION

3.06 BID SECURITY:

A. Each Bid shall be accompanied by a Bid security, payable to Owner, of 5% of the amount bid.

B. The required security shall be in the form of a bank cashier's check from a financial institution located in the state of Arkansas or a Bid Bond on the form prescribed by the AIA, Document A310, or on similar form attached.

C. Bid Bond shall be executed by both the surety and the bidder meeting the requirements set forth for "Surety Bonds" in the GENERAL CONDITIONS. A Bid Bond lacking a signature from either the surety or the bidder shall be considered an invalid Bid Bond and be grounds for bid rejection.

D. Bid security of the Successful Bidder will be retained until Bidder has executed the Agreement and furnished the required surety Bonds as set forth in the GENERAL CONDITIONS, whereupon Bid security will be returned. Bid security of the Successful Bidder will be retained until Bidder has delivered the required performance and payment bonds. If the Successful Bidder fails to deliver the performance and payment bonds within 15 days after the date of the Notice of Award, Owner may choose to annul the Notice of Award, and the Bid security of that bidder will be forfeited to Owner.

3.07 SUBMISSION OF BID:

A. Bids shall be submitted at the time and place designated in the Invitation to Bid.

B. When submitting a physical bid, Bid Documents with accompanying Bid security and other required information shall be enclosed in an opaque sealed envelope marked with the following:
   1. Project name.
   2. Bid number.
   3. Name and address of Bidder.
   4. Contractor's license number (Not required for this federally funded project).

C. If the Bid is sent by mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "Sealed Bid Enclosed" on the face thereof.

3.08 MODIFICATION OR WITHDRAWAL OF PHYSICAL BIDS:

A. Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

B. If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of his Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, that Bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

ARTICLE 4 - OPENING OF BIDS

4.01 OPENING OF BIDS:

A. Bids will be opened and (unless obviously non-responsive) read aloud publicly at the place indicated on the City of Fayetteville's procurement website. An abstract of the amounts of the base Bids will be made available to Bidders after the opening of Bids.

B. All Bids shall remain open for a period of 90 days after Bids are opened, but Owner may, at his sole discretion, release any Bid and return the Bid security at any time prior to that date.

ARTICLE 5 - AWARD OF CONTRACT

5.01 OWNER'S RIGHT TO REJECT BIDS:

A. Owner reserves the right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, non-responsive, unbalanced, or conditional Bids and to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. Owner also reserves the right to waive all informalities not involving price, times, or changes in the Work and to negotiate Contract terms with the Successful Bidder. (Discrepancies between the multiplication of units of Work and Unit Prices will be resolved in favor of the Unit Prices.) Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

B. All Bidders must agree that such rejection shall be without liability on the part of the Owner nor shall the Bidders seek recourse of any kind against the Owner because of such rejections. The filing of any Bid shall constitute an agreement of the Bidder to these conditions.

5.02 EVALUATION OF BIDS:

A. In evaluating Bids, Owner will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements (and such Alternates, Unit Prices) and other data, as may be requested in the Bid Form or prior to the Bid's Acceptance. Owner must accept Alternates in numerical order.

B. Owner may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations is requested per Paragraph 5.02E of this document.

C. Owner may conduct such investigations as he deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of the Bidders, proposed Subcontractors, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.

D. Owner reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to Owner's satisfaction.

E. Within 10 days after Bids are opened, and if requested by the Owner or the Engineer, the apparent Successful Bidder, and any other Bidder so requested, shall submit supplemental information including an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person, or organization, proposed by the Bidder for consideration as specified in ARTICLE 3 paragraph 3.03 above. The use of Subcontractors listed by Bidder (Document 00430) and accepted by Owner prior to the Notice of Award will be required in the performance of the Work.

F. Within 10 days after the Bids are opened, the apparent Successful Bidder, and any other Bidder so requested, shall submit an itemized breakdown of any lump sum portion of its Bid. This breakdown must include a separate item for each major category of work and each major piece of equipment. This breakdown may or may not be reflected in subsequent time schedule submittals.

G. The award of the Contract, if it is awarded, will be to the lowest, responsive, responsible Bidder whose evaluation by Owner indicates to Owner that the award will be in the best interest of Project and Owner.

5.03 ACCEPTANCE OF BID:

A. After considering the basis of award and evaluation of Bids, if the Contract is to be awarded, Owner shall within 90 days after the date of opening Bids notify the Successful Bidder of acceptance of his Bid (indicating which, if any, Alternate Bids have been accepted).

ARTICLE 6 - SIGNING OF AGREEMENT

6.01 When Owner gives Notice of the Bid's Acceptance to Successful Bidder, Engineer will issue the required number of unbound, unsigned counterparts of the Agreement and other Contract Documents to Successful Bidder.

6.02 Within 15 days thereafter, Contractor (Successful Bidder) shall sign all copies of the Agreement shall sign the agreement and return the signed agreement to the Owner.

6.03 Upon receiving the signed agreement from the Contractor, City staff will route all contract documents to Fayetteville City Council for review and project approval. Following Council's approval, the City will deliver a copy of the executed contract to the Contractor. The delivery of the fully executed contract to the Contractor shall serve as the Notice of Award.

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END OF DOCUMENT 00200

DOCUMENT 00400 – BID FORM

Contract Name: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave. Impvts.

Bid Number: 26-37, Construction

BID TO:

Owner: The City of Fayetteville, Arkansas

113 West Mountain Street

Fayetteville, Arkansas 72701

BID FROM:

Bidder: APAC - Central, Inc.
755 E. Millsap Rd
Fayetteville, AR 72703
479 - 587 - 3300

ARTICLE 1 - INTENT

1.01 For clarification, the City will award this contract to one General Contractor (There is no intent to award different phases of the work to different contractors.) The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with Owner in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid price and within the Bid time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

ARTICLE 2 - TERMS AND CONDITIONS

2.01 Bidder accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the day of Bid opening. Bidder will sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required by the Bidding Requirements within 15 days after the date of Owner's Notice of Award.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents, as more fully set forth in the Agreement, that:

A. Bidder has examined and carefully studied the Bid Documents, and the following Addenda, receipt of all which is hereby acknowledged:

Number	Date
001	05/29/26
002	06/08/26

N/A

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, performance, and furnishing of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance, and furnishing of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site; and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site. Bidder acknowledges that such reports and drawings are not Contract Documents and may not be complete for Bidder's purposes. Bidder acknowledges that Owner and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bid Documents with respect to Underground Facilities at or contiguous to the Site.

E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder and safety precautions and programs incident thereto.

F. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performing and furnishing of the Work in accordance with the times, price, and other terms and conditions of the Contract Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.

I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.

K. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly

induced or solicited any other Bidder to submit a false or sham bid; Bidder has not solicited or induced any person, firm, or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over Owner.

L. Bidder will perform the Work in compliance with all applicable trench safety standards set forth in Occupational Safety and Health Administration (OSHA) Part 1926 - Subpart P - Excavations.

ARTICLE 4 - BID PRICE

Bidders are required to provide pricing for all line items, including deductive alternate items. Failure to provide deductive alternate pricing can result in bid rejection.

The City intends to award this contract to the lowest qualified responsive responsible bidder based on the total base bid as long as the base bid amount falls within the amount of funds certified for the project plus 25%.

In the event no bid falls within the amount of funds certified for the project plus 25%, the City will utilize the deductive alternates in order to further evaluate bids until a bid received falls within the amount certified, plus 25%.

In the event all deductive alternates are subtracted from the total base bid and no bid falls within the amount certified, plus 25%, all bids shall be rejected and become confidential.

In no case shall the amount bid for the item of "mobilization" exceed 5% of the total contract amount for all items listed in the proposal or bid excluding Insurance & Bonding and Trench & Excavation Safety Systems. Should the amount entered into the proposal or bid for this item exceed 5%, the bid shall be rejected.

Bidder shall complete the work in accordance with the Contract Documents for the price(s) submitted by the Bidder.

ARTICLE 5 - CONTRACT ITEMS

5.01 Bidder agrees that the Work will be substantially completed and completed and ready for final payment within the number of calendar days indicated in the Agreement.

5.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement.

ARTICLE 6 - BID CONTENT

6.01 The following documents are attached to and made a condition of this Bid:

✓ A. Required 5% Bid security in the form of a cashier's check from a bank located in the State of Arkansas or a Bid Bond in the amount of 5% Dollars ($ 5%).

B. A tabulation of Subcontractors and other persons and organizations required to be identified in this Bid.

DOCUMENT 00400 – BID FORM (continued)

ARTICLE 7 - COMMUNICATIONS

7.01 Communications concerning this Bid shall be addressed to the Bidder as follows:

APAC-Central, Inc.
755 E. Millsap Rd
Fayetteville, AR 72703
Email: Doug.Luetjen@APAC.com
Phone No. 479-652-9840
Fax No. N/A

7.02 Required Bidder Information:

Arkansas State Contractor License No. (or date of application):

CO11840427

Arkansas Secretary of State Filing No. (or date of application):

100057210

System for Award Management (SAM.gov) Registration No. (or date of application):

FTNNZLURMXZ5

If Bidder is:

An Individual

Name (type or printed): _____

By: _____ (SEAL)
(Individual's Signature)

Doing business as: _____

Business address: _____

_____

Phone No. _____ Fax No. _____

Email address: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner - attach evidence of authority to sign)

Name (type or printed): _____

Business address: _____

_____

Phone No. _____ Fax No. _____

Email address: _____

A Corporation or LLC

Corporation Name: APAC-Central, Inc. (SEAL)

State of Incorporation: Delaware

Type (General Business, Professional, Service, Limited Liability): Inc.

By: _____
(Signature of general partner - attach evidence of authority to sign)

Name (type or printed): Doug Luetjen

Title: Operations Manager

(CORPORATE SEAL)

Attest: _____
(Signature of Corporate Secretary)

Phone No. 479-652-9840 Fax No. N/A

Email address: Doug.Luetjen@APAC.com

Tax ID Number (TIN): 58-1401469

UEI # FTNNZLURMXZ5

Cage Code: 5VCZ5

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END OF DOCUMENT 00400

Attached Seperate

DOCUMENT 00410 – BID BOND

KNOW ALL MEN BY THESE PRESENTS: that we

_____

_____

_____

as Principal, hereinafter called the Principal, and

_____

_____

_____

a corporation duly organized under the laws of the State of _____ as Surety, hereinafter called Surety, are held and firmly bound unto

City of Fayetteville, Arkansas

113 West Mountain Street

Fayetteville, Arkansas 72701

as Obligee, hereinafter called Owner, in the sum of _____ _____ Dollars ($_____), for the payment of which sum, well and truly to be made, Principal and said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has submitted a Bid for:

Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.

NOW, THEREFORE, if the Owner shall accept the Bid of Principal and the Principal shall enter into a Contract with the Owner in accordance with the terms of such Bid, and give such Bond or Bonds as may be specified in the Bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of Principal to enter such Contract and give such Bond or Bonds, if the Principal shall pay to the Owner the difference not to exceed the penalty hereof between the amount specified in said Bid and such larger amount for which the Owner may in good faith contract with another party to perform the Work covered by said Bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Attached Sparks

DOCUMENT 00410 –BID BOND (continued)

Signed and sealed this _____ day of _____ 20___.

PRINCIPAL (CORPORATE SEAL)

_____

By _____

_____

SURETY

_____

By _____

_____

ATTORNEY-IN-FACT (CORPORATE SEAL)

_____

_____

(This Bond shall be accompanied with
Attorney-in-Fact's authority from Surety)

END OF DOCUMENT 00410

DOCUMENT 00430 – LIST OF SUBCONTRACTORS

In compliance with the Instructions to Bidders and other Contract Documents, the undersigned submits the following names of Subcontractors to be used in performing the Work for:

Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.

Bidder certifies that all Subcontractors listed are eligible to perform the Work.

Subcontractor's Work	Subcontractor's Name and Address	Expected Percentage or Value
Clearing/Demolition	APAC - Central 755 Millsap Fayetteville AR	< 10%
SWPPP/Erosion Control	Second Nature Landscapes 211 Hwy 264, Springdale AR	< 10%
Asphalt	APAC - Central 755 Millsap Fayetteville AR	< 15%
Concrete	APAC - Central 755 Millsap Fayetteville AR	≈ 25%
Landscaping	Second Nature Landscapes 211 Hwy 264, Springdale AR	< 10%
Material Testing	McClelland Engineering 1580 E. Stearns St. Fayetteville	< 2%
Other (designate)	Electrical/Signals - TLS 13305 Santa Fe Ave, OKC, OK	15%
Utilities	Steep Creek of Garrett X	< 10%

NOTE: This form must be submitted in accordance with the Instructions to Bidders.

Bidder's Signature

APAC - CENTRAL, INC. CORPORATE SEAL 1980 DELAWARE

Striping/Signage	Time Striping, Inc. 4963 Alma Hwy, Van Buren, AR	< 10%

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END OF DOCUMENT 00430

SPONSOR

SUPPLEMENT TO PROPOSAL

ANTI-COLLUSION AND DEBARMENT CERTIFICATION

FAILURE TO EXECUTE AND SUBMIT THIS CERTIFICATION SHALL RENDER THIS BID NONRESPONSIVE AND NOT ELIGIBLE FOR AWARD CONSIDERATION.

As a condition precedent to the acceptance of the bidding document for this project, the bidder shall file this Affidavit executed by, or on behalf of the person, firm, association, or corporation submitting the bid. The original of this Affidavit shall be filed with the SPONSOR **at the time proposals are submitted**.

AFFIDAVIT

I hereby certify, under penalty of perjury under the laws of the United States and/or the State of Arkansas, that the bidder listed below has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the submitted bid for this project, is not presently barred from bidding in any other jurisdiction as a result of any collusion or any other action in restraint of free competition, and that the foregoing is true and correct.

Further, that except as noted below, the bidder, or any person associated therewith in the capacity of owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of Federal funds:

a. is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;

b. has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;

c. does not have a proposed debarment pending; and

d. has not been indicted, convicted, or had an adverse civil judgment rendered by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

SPONSOR

SUPPLEMENT TO PROPOSAL

ANTI-COLLUSION AND DEBARMENT CERTIFICATION

FAILURE TO EXECUTE AND SUBMIT THIS CERTIFICATION SHALL RENDER THIS BID NONRESPONSIVE AND NOT ELIGIBLE FOR AWARD CONSIDERATION.

EXCEPTIONS: N/A

APPLIED TO	INITIATING AGENCY	DATES OF ACTION

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. Providing false information may result in criminal prosecution or administrative sanctions.

APAC-CENTRAL, INC. CORPORATE SEAL 1980 DELAWARE

Job No. ARDOT # 040943

F.A.P. No. STPU - 9142(54)

6/10/2024
(Date Executed)

APAC-Central, Inc.
(Name of Bidder)

(Signature)

Operations Manager
(Title of Person Signing)

The following Notary Public certification is **OPTIONAL** and may or may not be completed at the contractor's discretion.

State of Arkansas)
County of Washington)ss.

Doug Lueken, being duly sworn, deposes and says that he is

Operations Manager (Title) of APAC-Central, Inc. (Name of Bidder)

and that the above statements are true and correct.

Subscribed and Sworn to before me this 10 day of June, 2024.
My commission expires: 2/3/29

AMANDA MENKE NOTARY PUBLIC SEBASTIAN COUNTY - ARKANSAS MY COMMISSION EXPIRES 02-03-2029 COMM. #12369707

Amanda Menke
(Notary Public)

(NOTARY SEAL)

SPONSOR

SUPPLEMENT TO PROPOSAL

CERTIFICATION

The prospective contractor certifies, by signing and submitting this proposal, to the best of his or her knowledge and belief, that:

1 No Federal appropriated funds have been paid or will be paid, by or on his or her behalf, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or any employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2 If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal-Aid contract, the prospective contractor shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities", in accordance with its instructions. (Available from Arkansas State Highway and Transportation Department, Programs and Contracts Division).

This Certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. This Certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U. S. Code.

During the period of performance of this contract, the contractor and all lower tier subcontractors must file a Form-LLL at the end of each calendar year quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any previously filed disclosure form. Any person who fails to file the required Certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each failure.

The prospective contractor also agrees by submitting his or her proposal that he or she shall require that the language of this Certification be included in all lower tier subcontracts which exceed $100,000 and that all such subcontractors shall certify and disclose accordingly.

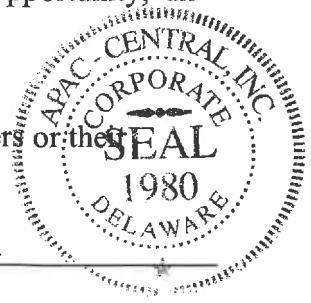
SPONSOR

SUPPLEMENT TO PROPOSAL

CERTIFICATION

THIS CERTIFICATION SHALL BE COMPLETED BY THE BIDDER AS PART OF THIS PROPOSAL

The bidder APAC-Central, Inc., proposed subcontractor _____, hereby certifies that he has ✓, has not _____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that he has ✓, has not _____, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.



(Currently, Standard Form 100 [EEO-1] is the only report required by the Executive Orders or their implementing regulations.)

JOB NO. ArDOT 040943

F.A.P. NO. STPU - 9142(54)

6/10/2026
(Date Executed)

APAC-Central, Inc.
(Company)

By: _____
(Signature)

Operations Manager
(Title of Person Signing)

NOTE: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7 (b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U. S. Department of Labor.

Document A310™ – 2010

Conforms with The American Institute of Architects AIA Document 310

Bond Number: 06102026

Bid Bond

CONTRACTOR:
(Name, legal status and address)

APAC-Central, Inc.
755 E. Millsap Road
Fayetteville, AR 72703

SURETY:
(Name, legal status and principal place of business)
Fidelity and Deposit Company of Maryland
1299 Zurich Way
Schaumburg, IL 60196-1056
State of Inc: Illinois

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:
(Name, legal status and address)
City of Fayetteville
113 W. Mountain Street
Fayetteville, AR 72701

BOND AMOUNT: 5%

PROJECT:
(Name, location or address, and Project number, if any)
Bid 26-37 (Addendum 2) (Construction - Millsap/College Intersection & Hemlock Improvements)
City of Fayetteville, AR

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 10 day of June , 2026

APAC-Central, Inc.

(Witness)

(Principal) (Seal)

(Title)

Fidelity and Deposit Company of Maryland

(Witness)

(Surety) (Seal)

(Title) Doug Luetjen, Attorney-In-Fact

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Illinois, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Illinois (herein collectively called the "Companies"), by **Robert D. Murray, Vice President**, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Brandon Lefevre, Murry Cline, Michael Dugan, Kristopher McClanahan, Michael Eshleman, Doug Luetjen, James Hawkins, Joshua Davis and Doug Fronick, all of Fayetteville, Arkansas**, EACH, its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: Any and all bid bonds issued on behalf of **APAC - Central, Inc. of Fayetteville, Arkansas** each in a penalty not to exceed the sum of $1,000,000, **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 3rd day of January, A.D. 2023.

ATTEST:
ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: Robert D. Murray
Vice President

By: Dawn E. Brown
Secretary

State of Maryland
County of Baltimore

On this 3rd day of January, A.D. 2023, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **Robert D. Murray, Vice President and Dawn E. Brown, Secretary** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Iva Bethea
Notary Public
My Commission Expires September 30, 2023

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 10 day of June, '26.

By: Mary Jean Pethick
Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT A COMPLETE DESCRIPTION OF THE CLAIM INCLUDING THE PRINCIPAL ON THE BOND, THE BOND NUMBER, AND YOUR CONTACT INFORMATION TO:

Zurich Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056
Ph: 800-626-4577

If your jurisdiction allows for electronic reporting of surety claims, please submit to:
reportsfclaims@zurichna.com

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/21/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Liberty Mutual Insurance Co. National Insurance East
500 N 3rd St, Suite 300
Wausau, WI 54403

www.LibertyMutual.com

CONTACT NAME: Named Insured / CRH Operating Company
PHONE (A/C, No, Ext): **FAX (A/C, No):**
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Liberty Mutual Fire Insurance Company	23035
INSURER B : Liberty Insurance Corporation	42404
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
APAC-Central, Inc. (207-FAY)
PO Box 9208
Fayetteville AR 72703

COVERAGES **CERTIFICATE NUMBER:** 88024956 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	✓ COMMERCIAL GENERAL LIABILITY	✓	✓	TB2-C81-004095-115	9/1/2025	9/1/2026	EACH OCCURRENCE	$2,000,000
	☐ CLAIMS-MADE ☑ OCCUR			XCU Coverage Included			DAMAGE TO RENTED PREMISES (Ea occurrence)	$300,000
	✓ Primary/Non-Contributory						MED EXP (Any one person)	$50,000
	✓ Separation of Insured						PERSONAL & ADV INJURY	$2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$2,000,000
	POLICY ☑ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$2,000,000
	OTHER:							$
A	AUTOMOBILE LIABILITY	✓	✓	AS2-C81-004095-125	9/1/2025	9/1/2026	COMBINED SINGLE LIMIT (Ea accident)	$2,000,000
	✓ ANY AUTO						BODILY INJURY (Per person)	$
A	OWNED AUTOS ONLY ☐ SCHEDULED AUTOS HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY			AS2-C81-054502-525 Physical Damage only: Comprehensive Ded $10,000 Collision Ded $10,000	9/1/2025	9/1/2026	BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	DED ☐ RETENTION $							$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N		✓	WA7-C8D-004095-025 All except OH, ND, WA, WY	9/1/2025	9/1/2026	✓ PER STATUTE ☐ OTH-ER	
	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N	N/A					E.L. EACH ACCIDENT	$1,000,000
B	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			WC7-C81-004095-015 WI, MN	9/1/2025	9/1/2026	E.L. DISEASE - EA EMPLOYEE	$1,000,000
							E.L. DISEASE - POLICY LIMIT	$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Bid: Millsap College intersection impv.

CERTIFICATE HOLDER

City of Fayetteville
113 W. Mountain Street
Fayetteville AR 72701

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Valerie Reece

APAC-Central, Inc.

Shaun Long
Estimator

755 Millsap Road
Fayetteville, AR 72702
Tel: 479 587-3300
Fax: 479 521-2826
Shaun.Long@apac.com

Equipment Description
Air compressor, all portable
CAT Asphalt 10' Track Paver
CAT Asphalt 8' Wheel Paver
Wirtgen Asphalt Milling Machine
Broom, 4 wheel self-propelle
Crane, Stinger Truck mounted
Concrete Curb Machine
Concrete Paver, Slipform
Crane, Linkbelt LS-118-60ton
Crane, GroveRT59S- 20 ton
Crane, Grove AT400-30-45 ton
Crawler,Track loader- Cat963
Dozer, JD 450G - Small
Dozer, D-3C & JD 550 G & H
Dozer, Kmtsu D53A -81-95 HP
Dozer, D-6H, D65 Kom.
Dozer, D-7H- 201 - 270 HP
Dozer, D-8R, D-8N- Large
Asphalt Distibutor Truck
Asp. Roller- IR DD-24 Vibr.
Asp Roller - IR DD-90 & 110
Stump Trailer w/Truck
Service Truck Conc. Flatbed
10-Wheeler Dump Truck
Tri-Axle Dump Truck
Dump Truck w/ Demo Bed
Trackhoe Kobel. SK210, small
Kobelco 220 / 250
Trackhoe w/ Hydraulic Hammer
Kobelco 290 / 300, CAT 330
Komatsu 300 w/ Hyd. Hammer
CAT 350L
Trackhoe - Hitachi 800
Forklift, Case 584 & 586E
Farm tractor, to 40 HP
Farm tractor, 41-65 HP
Hydroseeder - Finn T110
Volvo Articulating Dump 30 T
Volvo Articulating Dump 40 T
End Dump pit truck to 40 ton
Terex 45 Ton End Dump
Rubber Tire Backhoe
Message Board / Radar Trlr.
Motor Grader, CAT 12G
Motor Grader, CAT 140G/140H

Equipment Description
Boom lift, gas or diesel RT
Boom Lift Over 60'
Material Transfer Veh. - MTV

Pump, centrifugal - 6 inch &
Dirt Roller Vibr Padfoot Sm.
Dirt Roller Vibr Padfoot Lrg
Dirt Roller Vibr Padft 12 TN
Roller, Padfoot, CAT 815B
Truck, pickup 1/2 ton
Truck, pickup 3/4 ton
Wheel loader- Small- Kaw 65Z
Wheel loader- yard- Kaw 95 Z
Wheel loader-Pit - Cat 988
Asp Rbr. Tire Roller- Static
Road widener, self-propelled
Scraper 18 to 29 cy -Cat 621
Base/Dirt Roller Vibr.- Sm.
Base/Dirt Roller Vibr.- Lge.
Scraper Paddlewheel Cat 613B
Scraper Paddlewheel Cat 615
Skid steer loader, Bob Cat
Skid Steer, Cat 236 w/ Rake
Asphalt Service Truck
Box Blade Tractor Front Load
Trench Roller, Vibr Pad Foot
Low Boy Trailer w/Truck
Truck, pickup 1 ton
Ford F450/F550, GMC 5500
Water truck 1,001-2,000 gall
Water Truck 2000 - 7000 gal
Off-Rd Water Truck 7,000 gal

License No. 0011840427

ID #2781

State of Arkansas

Commercial Contractors Licensing Board

APAC-CENTRAL. INC.
PO BOX 9208
FAYETTEVILLE, AR 72703

This is to Certify That APAC-CENTRAL. INC.

is duly licensed under the provisions of Ark. Code Ann. § 17-25-101 et. seq. as amended and is entitled to practice Contracting in the State of Arkansas within the following classifications/specialties:

HIGHWAY, RAILROAD, AIRPORT CONSTRUCTION
MUNICIPAL & UTILITY CONSTRUCTION

This contractor has an unlimited suggested bid limit.

from April 24, 2026 **until** April 30, 2027 **when this Certificate expires.**

Witness our hands of the Board, dated at North Little Rock, Arkansas

GREAT SEAL OF THE STATE OF ARKANSAS

CHAIRMAN

SECRETARY

April 24, 2026 - dsa

APAC-CENTRAL, INC.

ATTACHMENT A-2

Listed below is a partial list of the organization's current projects in progress and their estimated completion dates.

CONTRACT AMOUNT	REFERENCE	TYPE OF WORK	ESTIMATED COMPLETION DATE	PERCENT COMPLETE	LOCATION CITY/COUNTY STATE	PROJECT'S OWNER'S NAME AND ADDRESS
$ 99,982,313.86	203638. - ARDOT 040846 MLK/I-49 CMGC	Interchange Improvements & Street Widening	1-Aug-2028	41.00%	Gravette, AR	ARDOT
$ 577,107.00	203671. - ARDOT 090580 - I49 Welcome Center	Base & Paving	1-Dec-2026	47.00%	Gravette, AR	ARDOT
$ 9,470,865.00	203673. - N. 56th St. Improvements	Roadway Construction: base/paving/curb/sidewalks/storm drain/etc.	30-Dec-2027	8.00%	Springdale, AR	Crossland Heavy Contractors - City of Springdale
$ 389,425.00	203676. - Maple St Improvements	Asphalt Paving	22-Aug-2026	51.00%	Fayetteville, AR	Flintco - City of Fayetteville
$ 296,576.00	203677. - Stadium Drive Reconstruction	Asphalt Paving	22-Aug-2026	80.00%	Fayetteville, AR	Flintco - City of Fayetteville
$ 298,313.00	203683. - E. Joyce Blvd Ext. - Paving	Asphalt Paving	22-Aug-2026	83.00%	Fayetteville, AR	Precision Sitework - City of Fayetteville
$ 284,000.00	203695. - MLK Utility Relocation	Asphalt Patching	20-Jun-2027	80.00%	Fayetteville, AR	Nabholz - City of Fayetteville
$ 7,041,302.00	203696. - Don Tyson Pkwy Extension	Roadway Construction: base/paving/curb/sidewalks/storm drain/etc.	1-Nov-2026	48.00%	Springdale, AR	City of Springdale
$ 395,778.00	203699. - 2025 Tontitown Overlay	Asphalt Overlay - Fog Seal	15-Jul-2026	44.00%	Tontitown, AR	City of Tontitown
$ 1,012,885.00	203704. - Maddison Heights Subdivision	Base/Curb/Paving	30-Jul-2026	46.00%	Bentonville, AR	First Star Construction
$ 43,941,618.00	203711. - ARDOT 040746 HWY 112 Truckers Drive-Howard Nickell	Roadway Construction: base/paving/curb/sidewalks/storm drain/etc.	30-Apr-2028	1.00%	Fayetteville, AR	ARDOT

APAC-CENTRAL, INC.

ATTACHMENT A-1

Listed below is a partial list of similar projects completed within the last five years.

CONTRACT AMOUNT	TYPE OF WORK	WHEN COMPLETED	LOCATION CITY/COUNTY AND STATE	REFERENCE Name , Work Location (City, county or state)	PROJECT OWNER'S NAME AND ADDRESS
4,944,199	Grading, Concrete, Drainage, Aggregate, Asphalt	2015	Benton County, AR	202704. - XNA Reconstruction Runway 16	Northwest AR Reg Airport 1 Airport Blvd Bentonville AR 72712
16,410,071	Grading, Concrete, Drainage, Aggregate, Asphalt	2015	Benton County, AR	203228. - AHTD 090292 Bella Vista Bypass	AHTD PO Box 1262 Little Rock AR 72203
1,003,158	Grading, Concrete, Drainage, Aggregate, Asphalt	2015	Bentonville, Benton County, AR	203273. - NW 2nd ST & SW A to Walton Blvd	City of Bentonville 117 W Central Bentonville AR 72712
608,364	Drainage, Mill, Asphalt Overlay	2015	Bentonville, Benton County, AR	203290. - City of Bentonville Overlay	City of Bentonville 117 W Central Bentonville AR 72712
240,956	Asphalt Overlay	2015	Huntsville, Madison County, AR	203303. - AHTD C44091 Huntsville Overlay	AHTD PO Box 1262 Little Rock AR 72203
80,879	Asphalt Overlay	2015	Avoca, Benton County, AR	203305. - Town of Avoca Street Overlay	Town of Avoca PO Box 160 Avoca AR 72711-0160
153,396	Asphalt Overlay	2015	Lincoln, Washington Co, Arkansas	203322. - SA7294 Rd 11 Lincoln Overlay	AHTD PO Box 1262 Little Rock AR 72203
1,519,819	Grading, Concrete, Drainage, Aggregate, Asphalt	2015	Tulsa County, Oklahoma	403013. - COT PROJECT 104317	City of Tulsa 2317 South Jackson Ave. Tulsa, OK 74107
1,255,425	Grading, Structures, Pipe, Asph. Paving	2015	Tulsa County, Oklahoma	403047. - Yorktown III	Yorktown Holdings, LLC, 5711 E. 71st Street, Ste 120, Tulsa, OK 74136
1,429,486	Asphalt Paving	2015	Creek County, Oklahoma	403042. - T-MC-114 Sub To Koss	Koss Construction, 6830 SW Drury Ln, Topeka, KS 66604
2,878,011	Grading, Concrete, Drainage, Aggregate, Asphalt	2015	Tulsa County, Oklahoma	403014. - COT Proj. 104021-5 Mill/Overlay	City of Tulsa 2317 South Jackson Ave. Tulsa, OK 74107
1,879,618	Grading, Concrete, Drainage, Aggregate, Asphalt	2015	Tulsa County, Oklahoma	403027. - COT Project 104619 4th and Sheridan	City of Tulsa 2317 South Jackson Ave. Tulsa, OK 74107
4,877,847	Asphalt Paving	2016	Osage County, Oklahoma	403044. - NHPPY-257N(020) Osage Hwy - 60	Sherwood Construction, 1640 S. 101st E. Ave., Tulsa, OK 74128
3,061,913	Grading, Aggregate, Asphalt	2015	Joplin, Jasper Co., MO	603913 - Mercy Replacement Hospital, Joplin, MO	Mercy Hospital, Joplin, MO
1,982,497	Asphalt Paving	2015	Joplin, Jasper Co., MO	603995 - Jasper County Overlay, Carthage, MO	Jasper County Comm., Jasper County Courthouse, Carthage, MO 64836
1,019,670	Grading, Aggregate, Asphalt	2015	Neosho, Newton Co., MO	604021 - Love's Truck Stop, Neosho, MO	Love's Truck Stop, Neosho, MO
1,214,562	Site Prep., Aggregate, Milling, Asphalt	2015	Joplin, Jasper Co., MO	604023 - Joplin Airport, Joplin, Jasper Co., MO	City of Joplin, 602 S. Main Street, Joplin, MO 64801
1,151,788	Highway Construction	2015	Rt. 65 & Battlefield, Greene Co., MO	604024 - Rt. 65 & Battlefield, Greene Co., MO	MODOT, Jefferson City, MO
307,012	Asphalt Patching & Overlay	2015	Joplin, Jasper Co., MO	604026 - Tamko High Street Plt., Joplin, MO	Tamko Building Products, PO Box 1404, Joplin, MO
6,498,006	Highway Construction	2015	Rt. 49, Barton, Vernon Co., MO	604036 - Rt. 49, J7P2200, Barton, Vernon Co., MO	MODOT, Jefferson City, MO
1,895,668	Highway Construction	2015	Rt. Loop 44 & 13, Greene Co, MO	604037 - Rt. Loop 44, 13, J8P2264C, Greene, MO	MODOT, Jefferson City, MO
2,783,716	Highway Construction	2015	Rt. Bus. 60 Newton & Rt. HH Barry Co.	604038 - Rt. 60 & HH, Newton, Barry Co., MO	MODOT, Jefferson City, MO
1,486,729	Highway Construction	2015	Rt. 14, Douglas Co., MO	604039 - Rt. 14, J8S2480, Douglas Co., MO	MODOT, Jefferson City, MO
3,445,471	Highway Construction	2015	Rt. 54 & 254, Cedar, St. Clair, Hickory Co., MO	604042 - Rt. 54 & 254, Var. Counties, MO	MODOT, Jefferson City, MO
349,622	Concrete C & G, Milling, Asphalt	2015	Nevada, Vernon Co., MO	604044 - City of Nevada, Vernon Co., MO	City of Nevada, 110 S. Ash Street, Nevada, MO 64772
2,715,064	Highway Construction	2015	Rt. 60, Newton Co., MO	604047 - Rt. 60, J7O3068, Newton Co., MO	MODOT, Jefferson City, MO
615,752	Highway Construction	2015	Rt. 160, Greene Co., MO	604048 - Rt 160, J8S0890B, Greene Co., MO	MODOT, Jefferson City, MO
374,476	Grading, Aggregate, Asphalt	2015	Republic, Greene Co., MO	604049 - Republic Bus Barn, Republic, Greene, MO	Republic School Dist., Republic, MO
376,998	Removals, Grading, Aggr., Conc. C & G, Asphalt	2015	Springfield, Greene Co., MO	604051 - Moore Parking Lot, Springfield, MO	Jordan Valley Community Health Ctr., PO Box 5681, Springfield, MO
316,662	Grading, Aggregate, Asphalt	2015	Springfield, Greene Co., MO	604053 - Greene Co. FR 178, Springfield, MO	Greene County Highway Dept., Springfield, MO
240,577	Asphalt Paving	2015	Lamar, Barton Co., MO	604067 - City of Lamar Overlay, Barton Co., MO	City of Lamar, 1104 Broadway Street, Lamar, MO 64759
6,690,371	Grading, Concrete, Drainage, Aggregate, Asphalt	2016	Centerton, Benton Co., AR	203246. - AHTD-090174-Hwy 102 Centerton	AHTD PO Box 1262 Little Rock AR 72203
1,701,612	Asphalt Paving	2016	Bella Vista, Benton Co., AR	203255. - AHTD-090293-Bella Vista Bypass (Kolb)	Kold Grading 5731 St. Charles MO 63304
1,385,003	Asphalt Paving	2016	Fayetteville, Washington Co. Arkansas	203259. - AHTD-040489-Hwy 112- Sub to Sweetser	Sweetser Construcion 590 W Poplar Fayetteville AR 72703
374,621	Asphalt Paving and Pavement Marking	2016	Rogers, Benton County, AR	203260. - AHTD-090383- Hwy 62 Rogers East & West Overlay	AHTD PO Box 1262 Little Rock AR 72203
1,235,976	Grading, Concrete, Drainage, Aggregate, Asphalt	2016	Johnson, Washington County, AR	203279. - AHTD BB0412 Johnson Mill Blvd Interchng Impvts	AHTD PO Box 1262 Little Rock AR 72203
1,142,939	Grading, Concrete, Drainage, Aggregate, Asphalt	2016	Siloam Springs, Benton Co, Arkansas	203280. - AHTD 090269 Kenwood St Siloam Springs	AHTD PO Box 1262 Little Rock AR 72203
170,745	Asphalt Paving	2016	Huntsville, Madison County, AR	203304. - Harmony Road - City of Huntsville	City of Huntsville PO Box 549 Huntsville AR 72740
16,580	Asphalt Paving	2016	Greenland, Washington County, AR	203306. - City of Greenland - Additional Asphalt Pving	City of Greenland 8 E Ross St Greenland AR 72737
229,955	Asphalt Paving	2016	Bentonville, Benton County, AR	203310. - J Street Warehouse Paving - Bentonville	Crossland Construction Co 833 S East Ave Columbus KS 66725
55,031	Asphalt Paving	2016	Fayetteville, Washington Co. Arkansas	203311. - Quarry Trace Subdivision Fayetteville	Sweetser Construcion 590 W Poplar Fayetteville AR 72703
65,419	Grading, Asphalt Paving	2016	Fayetteville, Washington Co. Arkansas	203313. - AHTD 040646 - I-49 Median Cable (Sub to Time Striping)	Time Striping Inc PO Box 1236 Van Buren AR 72957
6,690,371	Grading, Concrete, Drainage, Aggregate, Asphalt	2016	Centerton, Benton Co., AR	203246. - AHTD-090174-Hwy 102 Centerton	AHTD PO Box 1262 Little Rock AR 72203
1,701,612	Asphalt Paving	2016	Bella Vista, Benton Co., AR	203255. - AHTD-090293-Bella Vista Bypass (Kolb)	Kold Grading 5731 St. Charles MO 63304
1,385,003	Asphalt Paving	2016	Fayetteville, Washington Co. Arkansas	203259. - AHTD-040489-Hwy 112- Sub to Sweetser	Sweetser Construcion 590 W Poplar Fayetteville AR 72703
374,621	Asphalt Paving and Pavement Marking	2016	Rogers, Benton County, AR	203260. - AHTD-090383- Hwy 62 Rogers East & West Overlay	AHTD PO Box 1262 Little Rock AR 72203
1,235,976	Grading, Concrete, Drainage, Aggregate, Asphalt	2016	Johnson, Washington County, AR	203279. - AHTD BB0412 Johnson Mill Blvd Interchng Impvts	AHTD PO Box 1262 Little Rock AR 72203
1,142,939	Grading, Concrete, Drainage, Aggregate, Asphalt	2016	Siloam Springs, Benton Co, Arkansas	203280. - AHTD 090269 Kenwood St Siloam Springs	AHTD PO Box 1262 Little Rock AR 72203
170,745	Asphalt Paving	2016	Huntsville, Madison County, AR	203304. - Harmony Road - City of Huntsville	City of Huntsville PO Box 549 Huntsville AR 72740
16,580	Asphalt Paving	2016	Greenland, Washington County, AR	203306. - City of Greenland - Additional Asphalt Pving	City of Greenland 8 E Ross St Greenland AR 72737
229,955	Asphalt Paving	2016	Bentonville, Benton County, AR	203310. - J Street Warehouse Paving - Bentonville	Crossland Construction Co 833 S East Ave Columbus KS 66725
55,031	Asphalt Paving	2016	Fayetteville, Washington Co. Arkansas	203311. - Quarry Trace Subdivision Fayetteville	Sweetser Construcion 590 W Poplar Fayetteville AR 72703
65,419	Grading, Asphalt Paving	2016	Fayetteville, Washington Co. Arkansas	203313. - AHTD 040646 - I-49 Median Cable (Sub to Time Striping)	Time Striping Inc PO Box 1236 Van Buren AR 72957
3,788,770	Grading, Curb, Sidewalk, Aggregates, Asphalt	2016	Tulsa, Oklahoma	403052. - COT Project 104020 Various Streets	City of Tulsa 2317 South Jackson Ave. Tulsa, OK 74107
1,891,105	Asphalt Paving	2016	Craig Co., OK	403054. - US-59 STPY-115S(067) Craig County	ODOT, 200 NE 21st Street, OKC, OK 73105
906,959	Grading, Curb, Sidewalk, Aggregates, Asphalt	2016	Tulsa, Oklahoma	403066. - COT Project 144020	City of Tulsa 2317 South Jackson Ave. Tulsa, OK 74107
1,752,791	Mill & Asphalt Overlay	2016	Craig Co., OK	403073. - SH-66 SSR-218C(045)SR Craig	ODOT, 200 NE 21st Street, OKC, OK 73105
582,610	Grading, Aggr., Concrete C & G, Asphalt	2016	Springfield, Greene Co., MO	604045. - Crossway Baptist Church, Springfield, Greene Co., MO	Crossway Baptist Church, Springfield, MO
1,739,318	Highway Construction	2016	Rt. 65 DDI Christian Co., MO	604060. - Rt. 65 DDI, Christian Co., MO	MODOT, Jefferson City, MO
2,210,892	Highway Construction	2016	Rt. 54 Hickory, St. Clair Co., MO	604078. - Rt. 54 Hickory, St. Clair Co., MO	MODOT, Jefferson City, MO
1,112,154	Highway Construction	2016	Rt. 65 Benton Co., MO	604079. - Rt. 65 Benton Co., MO	MODOT, Jefferson City, MO
216,719	Asphalt Paving	2016	Springfield, Greene Co., MO	604082. - Fremont Elementary School, Springfield, Greene Co., MO	Springfield School Dist., Springfield, MO
175,758	Asphalt Paving	2016	Republic, Greene Co., MO	604105. - Woodland Park Estates, Republic, Greene Co., MO	BT & TD Investments, 910 E. Dade #161, Everton, MO 65646
534,065	Asphalt Overlay	2016	Bolivar, Polk Co., MO	604115. - Various Rds., Polk Co., MO	County of Polk, 102 E. Broadway Str., Bolivar, MO 65613
90,450	Asphalt Paving	2016	Clever, Christian Co., MO	606150. - Street Improvements, Clever, Christian Co., MO	City of Clever, PO Box 52, Clever, MO 65631
90,337	Asphalt Overlay	2016	Neosho, Newton Co., MO	606170. - Various Rds., Neosho, Newton Co., MO	Neosho Special Rd. Dist., PO Box 51, Neosho, MO 64850
63,000	Asphalt Paving	2016	Osceola, St. Clair Co., MO	606182. - Osceola First Baptist Church, Osceola, St. Clair Co., MO	Osceola First Baptist Church, PO Box 385, Osceola, MO 64776
5,626,890	Grading, Concrete, Drainage, Aggregate, Asphalt	2017	Springdale, Washington Co., AR	203250. - AHTD-040490-Hwy 265 Springdale	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
9,727,686	Grading, Concrete, Drainage, Aggregate, Asphalt	2017	Johnson-Springdale, Washington Co., AR	203251. - CP-0808-Johnson Road Springdale	City of Springdale, 201 Spring St., Springdale, AR 72764

APAC-CENTRAL, INC.

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Listed below is a partial list of similar projects completed within the last five years.

CONTRACT AMOUNT	TYPE OF WORK	WHEN COMPLETED	LOCATION CITY/COUNTY AND STATE	REFERENCE Name , Work Location (City, county or state)	PROJECT OWNER'S NAME AND ADDRESS
120,778	Asphalt, Drainage, Concrete	2017	Siloam Springs, Benton Co., AR	203258. - AHTD-090268-Sager Creek-Sub to Manhattan	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
5,344,701	Asphalt Paving	2017	Fayetteville, Washington Co., AR	203271. - AHTD 8040605 Hwy 16W Porter Rd Pace	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
15,681,579	Grading, Concrete, Drainage, Aggregate, Asphalt	2017	Bethel Heights, Benton Co., AR	203275. - AHTD 090331 I-540 at Wagon Wheel Rd	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
4,402,702	Grading, Concrete, Drainage, Aggregate, Asphalt	2017	Fayetteville, Washington Co., AR	203278. - Van Asche Dr. Gregg St Garland Ave	City of Fayetteville, 113 W. Mountain, Fayetteville, AR 72701
384,516	Asphalt Paving	2017	Springdale, Washington Co., AR	203298. - AHTD # 040581 HWY 180 LEROY POND DR	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
1,149,112	Asphalt Overlay	2017	Springdale, Washington Co., AR	203316. - City of Springdale Street Paving 2015	City of Springdale, 201 Spring St., Springdale, AR 72764
2,773,777	Grading, Concrete, Drainage, Aggregate, Asphalt	2017	Springdale, Washington Co., AR	203320. - 040619 - Johnson Road Phase 2 CO 4	City of Springdale, 201 Spring St., Springdale, AR 72764
12,125	Concrete	2017	Johnson, Washington County, AR	203323. - City of Johnson Ditch Paving - McGuire Street	City of Johnson, 2904 Main Dr., Johnson 72737
75,392	Asphalt Paving	2017	Rogers, Benton County, AR	203330. - Grand Points Subdivision - Rogers	J. Johnson Construction Company, Inc., 1309 Morsani Dr., Rogers, AR 72756
1,294,277	Asphalt Overlay	2017	Madison/Washington Co. Line, AR	203334. - AHTD 090444 WASHINGTON CO LINE HWY 16E OL	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
15,811	Asphalt Overlay	2017	St. Paul, Madison Co., AR	203340. - Oak Street Add-on St. Paul	Town of Saint Paul, PO Box 19, Saint Paul, AR 72760
22,366	Concrete Paving, Asphalt Paving	2017	Fayetteville, Washington Co., AR	203341. - Dr. Bryan Abernathy Driveway - Prepaid	Bryan Abernathy, 1806 N. Crossover Rd., Suite 4, Fayetteville, AR 72701
158,559	Asphalt Paving	2017	Fayetteville, Washington Co., AR	203349. - Mountain Ranch Subdivision - Phase 3	Trufove Construction, LLC, P.O. Box 182, Berryville, AR 72616
331,681	Asphalt Overlay	2017	Siloam Springs, Benton Co, AR	203358. - AHTD 090483 - Hwy 43 OL	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
290,347	Asphalt Paving	2017	Fayetteville, Washington Co., AR	203366. - Collier's Race Track	Sweetser Construction 590 W Poplar Fayetteville AR 72703
3,011,251	Grading, Concrete, Drainage, Aggregate, Asphalt	2017	Tulsa, Oklahoma	403036. - COT Project 104231 33rd West Ave. Tulsa, OK	City of Tulsa 2317 South Jackson Ave. Tulsa, OK 74107
3,629,266	Mill & Asphalt Overlay	2017	SH-28, Rogers County, OK	403055. - SH-28 SSR-253C(028)SR/SSR-266C(034)SR ROGERS	ODOT, 200 NE 21st Street, OKC, OK 73105
3,744,016	Mill & Asphalt Overlay	2017	Will Rogers Turnpike, Craig County, OK	403076. - WR-MC-129	Oklahoma Turnpike Authority, P.O. Box 11357, OKC, OK 73136
869,369	Mill & Asphalt Overlay	2017	Avant, Osage County, OK	403078. - CO 450 STP-257B(046) 3P OSAGE (Avant)	ODOT, 200 NE 21st Street, OKC, OK 73105
869,244	Mill & Asphalt Overlay	2017	Wyandotte, SH-10, Ottawa County, OK	403089. - SSR-253C(025)SR Ottawa SH-10 Wyandotte	ODOT, 200 NE 21st Street, OKC, OK 73105
5,035,676	Grading, Concrete, Drainage, Aggregate, Asphalt	2017	Joplin, Jasper Co., MO	603961. - Malden Lane Widening, Joplin, MO	City of Joplin, 602 S. Main Street, Joplin, MO 64801
2,839,631	Grading, Concrete, Aggregate, Asphalt	2017	Rt. 60 Newton Co., MO	604047. - Rt. 60 Newton Co., MO	MODOT, Jefferson City, MO
2,756,291	Grading, Concrete, Aggregate, Asphalt	2017	Rt. 60 Barry, Lawrence Co., MO	604076. - Rt. 60 Barry, Lawrence Co., MO	MODOT, Jefferson City, MO
3,869,808	Grading, Concrete, Aggregate, Asphalt	2017	Rt. 65 Benton, Dallas, Hickory Co., MO	604077. - Rt. 65 Benton, Dallas, Hickory Co., MO	MODOT, Jefferson City, MO
142,282	Grading, Concrete, Aggregate, Asphalt	2017	Springfield, Greene Co., MO	604083. - Loren Cook Addition, Springfield, Greene Co., MO	Loren Cook, Springfield, MO
304,363	Grading, Concrete, Aggregate, Asphalt	2017	City of Aurora, Lawrence, Co., MO	604087. - White Park Trail, Aurora, Lawrence Co., MO	City of Aurora, PO Box 30, Aurora, MO 65605
4,444,970	Grading, Concrete, Aggregate, Asphalt	2017	Rt. 60 Wright Co., MO	604090. - Rt. 60 Wright Co., MO	MODOT, Jefferson City, MO
4,030,673	Grading, Concrete, Aggregate, Asphalt	2017	Rt. 13 Henry, St. Clair Co., MO	604094. - Rt. 13 Henry, St. Clair Co., MO	MODOT, Jefferson City, MO
730,322	Grading, Concrete, Drainage, Aggregate, Asphalt	2017	Springfield, Greene Co., MO	604097. - Packer Rd. Ext. & Cedarbrook, Springfield, Greene Co., MO	New Prime Inc., PO Box 4208, Springfield, MO 65808
452,235	Concrete C&G, Asphalt Paving	2017	Nevada, Vernon Co., MO	604100. - City Streets, Nevada, Vernon Co., MO	City of Nevada, 110 S. Ash Street, Nevada, MO 64772
845,978	Grading, Concrete, Drainage, Aggregate, Asphalt	2017	Springfield, Greene Co., MO	604106. - Pilot Flying J, Springfield, Greene Co., MO	Pilot Travel Ctrs., LLC, PO Box 10146, Knoxville, TN 37939
1,186,573	Grading, Aggregate, Asphalt	2017	Ozark, Christian Co., MO	604108. - Street Overlay, Ozark, Christian Co., MO	City of Ozark, PO Box 295, Ozark, MO 65721
380,637	Aggregate, Asphalt Paving	2017	Neosho, Newton Co., MO	604113. - Neosho Jr. High, Neosho, Newton Co., MO	Neosho R-5 School Dist., 418 Fairground Rd., Neosho, MO 64850
1,153,157	Grading, Concrete, Drainage, Aggregate, Asphalt	2017	Springfield, Greene Co., MO	604117. - Springfield-Branson Airport, Springfield, Greene Co., MO	City of Springfield, 216 E. Central, Springfield, MO 65802
214,436	Remove & Replace Concrete	2017	Hollister, Taney Co., MO	604121. - UPS, Hollister, Taney Co., MO	UPS, 5501 Fourche Dam Pike, Little Rock, AR 72206
343,247	Grading, Concrete, Aggregate, Asphalt	2017	Springfield, Greene Co., MO	604126. - Springfield Grocer, Springfield, Greene Co., MO	Springfield Grocer, Springfield, MO
199,800	Earthwork, Drainage, Asphalt Paving	2017	Mountain Grove, Wright Co., MO	604141. - Mountain Grove Campus, Mountain Grove, Wright Co., MO	Missouri State University, 901 S. National Ave., Springfield, MO 65897
628,901	Asphalt paving	2018	Winslow, Washington, AR	203328. - AHTD #040207 Devils Den-West (Pace)	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
1,476,112	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2018	Siloam Springs, Benton, AR	203361. - AHTD 090406 Hwy 43 KCS Railroad Overpass	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
270,035	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2018	Bella Vista, Benton, AR	203365. - AHTD C04010 Bella Vista Cedar Crest Dr Surfacing	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
631,060	Millings and asphalt paving.	2018	Alma, Crawford, AR	203375. - AHTD C17006 - Alma & Kibler OL	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
143,612	Mill and asphalt with driveways	2018	Bentonville, Benton, AR	203376. - NW 3rd St Phase 3	City of Bentonville, 117 W. Central Ave., Bentonville, AR 72712
369,963	Excavation, base, drainage, concrete, signage	2018	Bella Vista, Benton, AR	203379. - Suite-Us Drive Improvements Bella Vista	City of Bella Vista, 616 W. Lancashire Blvd., Bella Vista, AR 72714
5,915,033	Concrete Patching, Asphalt Paving	2018	Tulsa, OK	403097. - NHPP-272A(126)B/SSP-272N(203)SS/STP-272S(174)B	ODOT, 200 NE 21st Street, OKC, OK 73105
2,280,226	Asphalt Milling and Asphalt Paving, Airport Runway	2018	Claremore, OK	403106. - Claremore Runway and Taxiway Rehab	City of Claremore, 104 South Muskogee Ave., Claremore, OK 74019
578,451	Fine Grade, Asphalt Paving, Concrete Curb & Gutter, Drainage	2018	Jenks, OK	403107. - Yorktown Phase 5	Yorktown Holdings, LLC., 5741 E. 71st St Suite 120, Tulsa, OK 74136
1,270,176	Grading, Aggregate, Asphalt Paving	2019	Springfield, Greene Co., MO	604187. - Menards East Non-Public Portion	Menards, Inc., Springfield, MO
150,013	Asphalt Paving	2019	Springfield, Greene Co., MO	604188. - Menards East Public Portion	Menards, Inc., Springfield, MO
998,245	Grading, Aggregate, Asphalt	2019	Var. Rts., Jasper Co., MO	604194. - Rt. HH, AA, VV Jasper Co. J7S3055	MODOT Southwest Dist., PO Box 868, Springfield, MO 65801
416,958	Asphalt Paving	2019	Rt. 43 Newton Co, MO	604195. - Rt. 43 Newton Co. J7S2227D	MODOT Southwest Dist., PO Box 868, Springfield, MO 65801
739,126	Asphalt Paving	2019	Rt. 66, Jasper Co., MO	604196. - Rt. 66 Jasper Co., J7S3118	MODOT Southwest Dist., PO Box 868, Springfield, MO 65801
378,352	Asphalt Paving	2019	Rt. TT, Jasper Co., MO	604197. - Rt. TT Jasper Co., J7S3162	MODOT Southwest Dist., PO Box 868, Springfield, MO 65801
129,796	Grading, Aggregate, Concrete, Asphalt	2019	Springfield, Greene Co., MO	604199. - Hickman Woods, Springfield	Hawkins & Sons, LLC, 3606 E. Gasconade, Springfield, MO 65809
103,548	Excavation, Asphalt Paving	2019	Joplin, Jasper Co., MO	604200. - Owens Corning / Joplin Mineral Wool Plant	Owens Corning Sales, LLC, PO Box 13950, Durham, NC 27709
13,461,621	Grading, Aggregate, Asphalt	2019	Rt. 44, Jasper, Lawrence Co., MO	604203. - Rt. 44 Jasper, Lawrence J7I3073	MODOT Southwest Dist., PO Box 868, Springfield, MO 65801
3,710,311	Asphalt paving	2019	Rogers, Benton, AR	203360. - AHTD 090376 8th St Interchange	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
4,977,105	Asphalt paving	2019	Creek County, OK	403103. - T-MC-107C1 Turner Turnpike	Dult Construction, P.O. Box 3788, Edmond, OK 73083
2,376,552	Grading, Aggregate, Drainage, Concrete, Asphalt	2019	Rt. 65 Greene Co., MO	604163. - MODOT Rt. 65 Greene Co. J8P3036	MODOT Southwest Dist., PO Box 868, Springfield, MO 65801
2,122,664	Excavation, Grading, Aggregate, Drainage, Concrete, Asphalt	2019	Rt. 360 & 60 Greene Co., MO	604169. - MODOT Rt. 360 & 60 Greene Co., J8P3102	MODOT Southwest Dist., PO Box 868, Springfield, MO 65801
3,658,849	Grading, Aggregate, Asphalt	2019	Rt. 13 St. Clair Co., MO	604177. - Rt. 13 St. Clair Co., J7S2232	MODOT Southwest Dist., PO Box 868, Springfield, MO 65801
212,857	Aggregate, Asphalt	2019	Rt. 76 Taney Co., MO	604184. - Rt. 76 Taney Co., 3 Bridges Ends J7S3067, B, C	MODOT Southwest Dist., PO Box 868, Springfield, MO 65801
335,091	Grading, Aggregate, Asphalt Paving	2019	Springfield, Greene Co., MO	604190. - 3M Site Package	3M Company, PO Box 3428, St. Paul, MN 55133
6,899,198	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2020	Springdale, Washington, AR	203418. - Gene George Blvd (56th St.) - Section 1	City of Springdale, 201 Spring St., Springdale, AR 72764
1,209,148	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2020	Bentonville, Benton, AR	203420. - Hwy 102-SW "I" Street	City of Bentonville, 117 W. Central Ave., Bentonville, AR 72712
1,045,551	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2020	Centerton, Benton, AR	203412. - Hwy 102B-Seba Road	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72204
8,490,898	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2019	Rogers, Benton, AR	203378. - Bellview Road South Improvements	City of Rogers, 301 W. Chestnut, Rogers, AR 72756
10,243,392	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2019	Springdale, Washington, AR	203383. - ArDOT 012007 Randall Wobbe-264 Hwy 265	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
3,754,094	Milling, Asphalt Paving, Concrete	2020		203433. - ArDOT 090561 Hwy 12 - I-49 (71B OL)	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
428,784	Asphalt paving	2019	Bentonville, Benton, AR	203440. - Bentonville Street OL 2019	City of Bentonville, 117 W. Central Ave., Bentonville, AR 72712

APAC-CENTRAL, INC.

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CONTRACT AMOUNT	TYPE OF WORK	WHEN COMPLETED	LOCATION CITY/COUNTY AND STATE	REFERENCE Name , Work Location (City, county or state)	PROJECT OWNER'S NAME AND ADDRESS
8,498,764	Milling, Asphalt Paving, Aggregate	2020	Waldron, Scott, AR	203445. - ArDOT A40002 Waldron - Yell Co	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
2,497,437	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2019	Ottawa County, OK	403121. - STATE LINE ROAD OTTAWA COUNTY	Ottawa County, 102 E. Central, Miami, OK 74354
2,462,453	Milling, Asphalt Paving	2019	Tulsa County, OK	403127. - Taxiway J North Reconstruction ESS	Tulsa International Airport / Emory Sapp & Sons, 2301 I-70 Drive, Columbia, MO
7,430,589	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2020	Tulsa,Tulsa County, OK	403130. - COT 170965 MINGO RD	City of Tulsa 2317 South Jackson Ave. Tulsa, OK 74107
7,966,930	Milling, Asphalt Paving, guardrail	2019	Springdale, Washington, AR	403134 - NHPP-0072(57) ARDOT 040774 US 412	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72203
4,935,148	Grading, Aggregate, Drainage, Concrete, Asphalt	2020	Rt. 160 Christian Co., MO	604242. - Rt. 160 & 13 Christian Stone J7S3133/MODOT S.W. Dist.	MODOT Southwest Dist., PO Box 868, Springfield, MO 65801
6,299,102	Excavation, Grading, Aggregate, Drainage, Concrete, Asphalt	2020	Rt. 160 Christian Co., MO	604257. - Rt. 160 Christian Greene J8O3141/MODOT SW Dist.	MODOT Southwest Dist., PO Box 868, Springfield, MO 65801
26,934,336	Excavation,Bridge,Drainage,Asphalt,Traffic Signalization	2020	Rogers, Benton, AR	203401. - ArDOT BB0903 - I-49/Hwy 71B Interchange	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72202
53,385,838	Milling, Asphalt Paving, Bridge deck modifications, guardrail	2020	Ft. Smith, Crawford, AR	203415. - ArDOT BB0401 - I-405-540	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72204
1,645,342	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2021	Tontitown, AR	203453 - Fletcher Avenue Improvements	City of Tontitown, Henri De Tonti Blvd, Tontitown, AR
687,387	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2021	Farmington, AR	203467 - ArDOT C72003 Farmington Double Springs Rd Impry.	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72204
947,629	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2020	Fayetteville, AR	203469 - Wallin Mountain Road Rehab	Washington County Road Department, Fayetteville Arkansas 72701
214,012	Milling, Asphalt Paving	2020	Jasper, AR	203471 - ArDOT SA4438, Madison County	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72204
802,269	Milling, Asphalt Paving, Aggregate	2020	Fayetteville, AR	203477 - ArDOT 7299 Co. Road 30&32	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72204
6,097,916	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2021	Fayetteville, AR	203478 - ArDOT 040579 College Ave - Huntsville Rd	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72204
1,487,625	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2021	Springdale, AR	203480 - ArDOT EF7211 Spring Creek Str. & Approaches	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72204
3,128,001	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2021	Rogers, AR	203481 - Rogers Airport Taxilane PH 2	City of Rogers, 301 W. Chestnut, Rogers, AR 72756
9,000,000	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2022	Springdale, AR	203497 - 64th Street Improvements	City of Springdale, 201 Spring St., Springdale, AR 72764
350,000	Milling, Asphalt Paving, Aggregate	2022	Fayetteville, AR	203499 - Sain Street Extension	City of Fayetteville, W Mountain Street, Fayetteville AR
3,500,000	Milling, Asphalt Paving, Aggregate	2022	Bella Vista, AR	2034500 - ArDOT A80007 - Mo St Line - Hwy 279	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72204
250,000	Asphalt Paving & Base Laydown	2022	Rogers, AR	2034501 - Independence Plaza Retail	PROJECT'S OWNER'S
300,000	Milling, Asphalt Paving, Aggregate	2021	Goshen, AR	203508 - C72013 - Goshen Overlay	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72204
1,200,000	Milling, Asphalt Paving, Aggregate	2021	Dry Fork, AR	203509 - ArDOT A80008 - Hwy 412 Overlay	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72204
15,000,000	Excavation/subsurface, Drainage, Aggregate, Concrete, Asphalt	2023	Fayetteville, AR	203504 - ArDOT 040847 Wedington Interchange	Arkansas Department of Transportation PO Box 1262, Little Rock, AR 72204
8,000,000	Milling, Asphalt Paving, Aggregate	2023	Bentonville, AR	203511 - Water Tower Road/8th Street Improvements	City of Bentonville

Document A310™ – 2010

Conforms with The American Institute of Architects AIA Document 310

Bond Number: 06102026

Bid Bond

CONTRACTOR:
(Name, legal status and address)

APAC-Central, Inc.
755 E. Millsap Road
Fayetteville, AR 72703

SURETY:
(Name, legal status and principal place of business)
Fidelity and Deposit Company of Maryland
1299 Zurich Way
Schaumburg, IL 60196-1056
State of Inc: Illinois

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:
(Name, legal status and address)
City of Fayetteville
113 W. Mountain Street
Fayetteville, AR 72701

BOND AMOUNT: 5%

PROJECT:
(Name, location or address, and Project number, if any)
Bid 26-37 Addendum 2 (Construction - Millsap/College Intersection & Hemlock Improvements)
City of Fayetteville, AR

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 10 day of June , 2026

	APAC-Central, Inc.
(Witness)	*(Principal)* (Seal)
	(Title)
	Fidelity and Deposit Company of Maryland
(Witness)	*(Surety)* (Seal)
	(Title) Doug Luetjen, Attorney-In-Fact

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Illinois, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Illinois (herein collectively called the "Companies"), by **Robert D. Murray, Vice President**, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Brandon Lefevre, Murry Cline, Michael Dugan, Kristopher McClanahan, Michael Eshleman, Doug Luetjen, James Hawkins, Joshua Davis and Doug Fronick, all of Fayetteville, Arkansas**, EACH, its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: Any and all bid bonds issued on behalf of **APAC - Central, Inc. of Fayetteville, Arkansas** each in a penalty not to exceed the sum of $1,000,000, **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 3rd day of January, A.D. 2023.

ATTEST:
ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: Robert D. Murray
Vice President

By: Dawn E. Brown
Secretary

State of Maryland
County of Baltimore

On this 3rd day of January, A.D. 2023, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **Robert D. Murray, Vice President and Dawn E. Brown, Secretary** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Iva Bethea
Notary Public
My Commission Expires September 30, 2023

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 10 day of June ; 26 .

M J Pethick

By: Mary Jean Pethick
Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT A COMPLETE DESCRIPTION OF THE CLAIM INCLUDING THE PRINCIPAL ON THE BOND, THE BOND NUMBER, AND YOUR CONTACT INFORMATION TO:

Zurich Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056
Ph: 800-626-4577

If your jurisdiction allows for electronic reporting of surety claims, please submit to:
reportsfclaims@zurichna.com

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

City of Fayetteville, Arkansas
Procurement Division – Room 306
113 W. Mountain
Fayetteville, AR 72701
Phone: 479.575.8256
TDD (Telecommunication Device for the Deaf): 479.521.1316

INVITATION TO BID

Bid 26-37, Construction – Millsap/College Intersection & Hemlock Improvements

DEADLINE: Wednesday, June 10, 2026 before 2:00 PM, Local Time
PRE-BID MEETING: Wednesday, May 27, 2026 at 11:00 AM
SR. PROCUREMENT AGENT: Kenny Fitch, kfitch@fayetteville-ar.gov
DATE OF ISSUE & ADVERTISEMENT: 05/17/2026 & 05/24/2026

No late bids shall be accepted. Bids shall be submitted in one of the following methods: (1) through the City's third-party electronic bidding platform or (2) delivering in person via sealed envelope to the City of Fayetteville Procurement Division. Submitting through the City's electronic bidding platform is strongly encouraged. All bids shall be submitted in accordance with the attached City of Fayetteville specifications and bid documents attached hereto. Each bidder is required to fill in every blank and shall supply all information requested; failure to do so may be used as basis of rejection.

NOTICE TO ALL BIDDERS:

All interested parties can obtain files for this project by going to http://fayetteville-ar.gov/bids. Bid documents shall be distributed electronically from the City of Fayetteville Procurement Division only.

BID PACKAGE INCLUDES THE FOLLOWING FILES WHICH SHALL BE LISTED UNDER "ATTACHMENTS":

FILE #01: PROJECT MANUAL – 688 Total Pages
FILE #02: PLANS – 92 Plan Sheets

*Additional files added as addendums are issued. Addendums will be uploaded and posted to the City's electronic bidding platform.

*PLAN HOLDER LISTINGS: A listing of vendors who have received documents can be found in the City's electronic bidding platform under the project section tab titled 'Plan Holders'.

Bidder shall assume all responsibility for receiving updates and any addenda issued to this project by monitoring http://fayetteville-ar.gov/bids. Failure to acknowledge addenda issued as instructed could result in bid rejection.

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Advertisement

City of Fayetteville, Arkansas
INVITATION TO BID
Bid 26-37, Construction – Millsap/College Intersection & Hemlock Improvements

The City of Fayetteville is accepting sealed bids from contractors for the construction of improvements to the intersection at Millsap Rd. and College Ave. including the relocation & construction of N. Hemlock Avenue. Improvements include roadway construction, curb & gutter, sidewalks, drainage, and traffic signal modifications. Questions regarding this bid should be addressed to Kenny Fitch, Sr. Procurement Agent at kfitch@fayetteville-ar.gov.

A non-mandatory pre-bid meeting will be held Wednesday, May 27, 2026, at 11:00 AM. Details regarding the pre-bid meeting are available on the project page of the City's electronic bidding platform. All interested parties are encouraged to attend.

Bidding documents, plans, plan holders, and addenda shall be obtained at the City of Fayetteville Procurement Division's electronic bidding platform at www.fayetteville-ar.gov/bids. All bids shall be received by Wednesday, June 10, 2026, before 2:00 PM local time, utilizing the electronic bidding software or by submitting a sealed bid to the City of Fayetteville Procurement Division. Submitting a bid electronically is strongly encouraged. A public bid opening will be conducted shortly after the deadline and livestreamed on Zoom.

Each bid exceeding $50,000 shall be accompanied by a cashier's check from a bank doing business in the State of Arkansas or a corporate bid bond for five (5) percent of the amount bid. In the event a bidder opts to submit a cashier's check for a bid bond, the actual physical cashier's check shall be delivered to the City prior to the deadline. One hundred percent (100%) performance and payment bonds are required after the contract award. This amount includes any approved contingency.

Bidders shall have a valid State of Arkansas Contractor's License, have a valid registration and be in good standing with the Arkansas Secretary of State, and have an active registration with the System for Award Management (SAM.gov) at the time of the contract award.

Pursuant to Arkansas Code Annotated §22-9-203 The City of Fayetteville encourages all *qualified* small, minority and women business enterprises to bid on and receive contracts for goods, services, and construction. Also, City of Fayetteville encourages all general contractors to subcontract portions of their contract to *qualified* small, minority and women business enterprises.

The City of Fayetteville hereby notifies all bidders that this contract is subject to applicable labor laws, non-discrimination provisions, wage rate laws and other federal laws including the Fair Labor Standards Acts of 1938. The Work Hours Act of 1962 and Title VI of the Civil Rights Act of 1964 also apply. Build America, Buy America provisions apply to this project.

The City of Fayetteville reserves the right to waive irregularities, reject bids, and postpone the award of any Contract for a period which shall not exceed beyond ninety (90) days from the bid opening date.

City of Fayetteville
By: Kenny Fitch
Sr. Procurement Agent
479.578.8258 kfitch@fayetteville-ar.gov
TDD (Telecommunications Device for the Deaf): (479) 521-1316
Date of advertisement: 05.17.26 & 05.24.26
This publication was paid for by the Procurement Division of the City of Fayetteville, Arkansas.
Amount paid: $496.12

Project Manual

CITY OF
FAYETTEVILLE
ARKANSAS

Engineering Division
113 West Mountain Street
Fayetteville, Arkansas
72701

MILLSAP RD. / COLLEGE AVE. INTERS. IMPVTS. & N. HEMLOCK AVE. IMPVTS.

CERTIFICATE OF AUTHORIZATION
BURNS & McDONNELL ENGINEERING COMPANY, INC.
No.17
ARKANSAS-ENGINEER

BID # 26-37, Construction
Date: May, 2026

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14032
JONATHAN ELY
5/14/2026

Bid Check List

Bid 26-37 , Job 040943, MILLSAP/COLLEGE INTERSECTION IMPRVMNT PROJECT

This checklist is for the Bidder's use in preparing & submitting a bid. It is not intended to include all details necessary to prepare a bid and shall not be used as a substitute for the requirements of the bid documents. Information is shown below only as a matter of convenience. Use of this checklist does not relieve the Bidder from the responsibility of meeting all requirements of the Specifications concerning the preparation of an acceptable bid. Bidders are welcome to use this form as a coversheet for a sealed envelope; however, using this form itself is NOT a requirement.

☐ 5% Bid Bond of the amount bid accompanied by required documentation (Power of Attorney, etc.)

- In lieu of a bid bond, the bidder may submit a cashier's check for at least five percent (5%) of the amount bid (inclusive of any deductive alternates). Cashiers checks shall be made payable to the City of Fayetteville, AR.

☐ All addenda shall be signed, acknowledged, and submitted on the appropriate forms (submitting the actual addendums or marking acknowledgement on other bid pages).

☐ All line items shall be appropriately filled out and extended to reveal the line item price as well as the total bid price.

All bidders shall submit the following forms with each bid:

☐ Bidder's Qualification Statement (pages 11 - 14),

☐ Bid Form (pages 26 - 31),

☐ Bid Bond (pages 32 - 33),

☐ List of Subcontractors (page 34),

☐ Sponsor Supplement to Proposal - Anti-Collusion and Debarment (pages 680 - 681),

☐ Sponsor Supplement to Proposal - Certification (pages 682 - 683)

Bid Check List

Bid 26-37 , Job 040943, MILLSAP/COLLEGE INTERSECTION IMPRVMNT PROJECT

☐ **All pages** provided with signature lines shall be appropriately signed, dated accordingly, and included with submitted bid documents.

A State of Arkansas Contractor's License is **not** required to bid on the project; however, no contractor shall submit a bid prior to submitting an initial application (which does not require a full audit) for licensure, and no construction contract shall be executed until the successful bidder has furnished an appropriate license issued by the State of Arkansas Contractor's Licensing Board.

CONTRACTOR NAME: _____

ARKANSAS CONTRACTORS LICENSE NUMBER: _____

(This is a Federal Aid Project and therefore a License Number is **not** required for bidding)

TABLE OF CONTENTS

MILLSAP RD./COLLEGE AVE. INTERS. IMPVTS. & N. HEMLOCK AVE. IMPVTS.

CONTRACT DOCUMENTS

TECHNICAL SPECIFICATIONS

CITY OF FAYETTEVILLE STANDARD SPECIFICATIONS FOR STREET AND DRAINAGE CONSTRUCTION

CITY OF FAYETTEVILLE STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2022 EDITION

ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION *(REFERENCE ONLY. GO TO https://ardot.gov/divisions/construction/standard-specifications/ FOR FULL DOCUMENTS)*

ERRATA FOR THE 2014 ARKANSAS DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION *(REFERENCE ONLY. GO TO https://ardot.gov/divisions/construction/standard-specifications/ FOR FULL DOCUMENTS)*

SPECIAL PROVISIONS

SP #1 COORDINATION OF WORK
SP #2 TRENCH AND EXCAVATION SAFETY SYSTEMS
SP #3 STORM WATER POLLUTION PREVENTION PLAN
SP #4 MAINTENANCE OF TRAFFIC
SP #5 SHORING FOR CULVERTS
SP #6 DRAINAGE STRUCTURE BACK OPENING
SP #7 CONCRETE FLUME
SP #8 SELECT PIPE BACKFILL (CLASS 67)
SP #9 PEDESTRIAN REFUGE ISLANDS
SP #10 GRAVITY BLOCK RETAINING WALL
SP #11 REMOVE AND REPLACE TREES
SP #12 IRRIGATION SYSTEM ADJUSTMENT
SP #13 LANDSCAPE ROCK DRAINAGE SWALE
SP #14 SCOUR TRANSITION MAT
SP #15 P.C.C. PAVEMENT (6” UNIFORM THICKNESS), INCLUDING MONLITHIC CURB (TYPE A)
SP #16 U OF A PROPERTY CONSTRUCTION
SP #17 McCAIN ATC eX2 NEMA CONTROLLER TS2-TYPE 2
SP #18 HYBRID VIDEO/RADAR DETECTION SYSTEM
SP #19 EMERGENCY BATTERY BACKUP SYSTEM INSTALLATION
SP #20 LED TRAFFIC SIGNAL HEAD
SP #21 NOT USED
SP #22 LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
SP #23 ELECTRICAL CONDUCTORS-IN-CONDUIT (TRAFFIC SIGNAL)
SP #24 LED LUMINAIRE ASSEMBLY
SP #25 SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
SP #26 REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
SP #27 STREET NAME SIGN (MAST ARM MOUNTED)
SP #28 VIDEO DETECTOR ROTATION
SP #29 ELECTRICAL CONDUCTORS FOR LUMINAIRES (TRAFFIC SIGNAL)
SP #30 RETROREFLECTIVE BACKPLATES
SP #31 ACCESSIBLE PEDESTRIAN SIGNAL (APS)
SP #32 CABINET DRAWER ASSEMBLY

ARDOT/FHWA SPECIAL PROVISIONS

END OF DOCUMENT 00010

DIVISION 00 – BID & AGREEMENT

DOCUMENT 00140 – BIDDER'S QUALIFICATION STATEMENT

Contract Name: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave. Impvts.
Bid #: 26-37, Construction
Date: _____

SUBMITTED TO:

The City of Fayetteville, Arkansas

113 West Mountain Street

Fayetteville, Arkansas 72701

SUBMITTED BY:

Company _____

Name _____

Address _____

Principal Office _____

Corporation, partnership, individual, joint venture, other _____

Arkansas State General Contractor's License Number _____

(Type or legibly print)

EXPERIENCE STATEMENT

1. Bidder has been engaged as a General Contractor in construction for _____ years and has performed work of the nature and magnitude of this Contract for _____ years. Bidder has been in business under its present name for _____ years.

2. Bidder now has the following bonded projects under contract: (On a separate sheet, list project name, owner, name of owner contact, engineer / architect, name of engineer/architect contact, amount of contract, surety, and estimated completion date.)

3. Bidder has completed the following (list minimum of 3) contracts consisting of work similar to that proposed by this Contract: (On a separate sheet, list project name, owner, name of owner contact, engineer / architect, name of engineer/architect contact, amount of contract, surety, and date of completion and percentage of the cost of the Work performed with Bidder's own forces.)

4. Has Bidder ever failed to complete any project? If so, state when, where, and why.

5. Bidder normally performs the following work with his own forces:

_____

_____

_____

_____

6. Construction experience of key individuals in the organization is as follows (continued on attached sheets if needed):

_____

_____

_____

_____

7. In the event the Contract is awarded to Bidder, the required surety Bonds will be furnished by the following surety company and name and address of agent:

_____

_____

_____

_____

8. Bidder's Workmen's Compensation Experience Modifier Factor is: _____.

FINANCIAL STATEMENT

B. If requested by the City of Fayetteville during the evaluation of bids the bidder shall provide to the City of Fayetteville the following additional information:

Bidder possesses adequate financial resources as indicated by the following:

1. Assets and Liabilities: Attach a financial statement, audited if available, including Bidder's latest balance sheet and income statements showing the following items:

   a. Current assets (cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory, and prepaid expenses).

   b. Net fixed assets.

   c. Other assets.

d. Current liabilities (accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries, and accrued payroll taxes).

e. Other liabilities (capital, capital stock, authorized and outstanding shares par values, earned surplus, and retained earnings).

f. Name of firm preparing financial statement and date thereof:

If financial statement is not for identical organization named herein, explain relationship and financial responsibility of the organization furnished.

2. Current Judgments: The following judgements are outstanding against Bidder:

	Judgment Creditors	Where Docketed and Date	Amount
a.	_____	_____	$_____
b.	_____	_____	$_____

Bidder hereby represents and warrants that all statements set forth herein are true and correct.

Date: _____, 20____.

(OFFICIAL SEAL)

Name of Organization:

_____

By _____

(Type or legibly print)

By _____

(Signature)

Title _____

(Type or legibly print)

(If Bidder is a partnership, the partnership name shall be signed, followed by the signature of at least one of the partners. If Bidder is a corporation, the corporate name shall be signed, followed by the signature of a duly-authorized officer and with the corporate seal affixed.)

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END OF DOCUMENT 00140

DOCUMENT 00200 – INSTRUCTIONS TO BIDDERS

ARTICLE 1 - INTRODUCTORY INFORMATION

1.01 DEFINED TERMS:

A. Terms used in these Instructions to Bidders and which are defined in the GENERAL CONDITIONS, have the meanings assigned to them in the GENERAL CONDITIONS.

B. Bid Documents shall include the following:
   1. Bidding Requirements:
      a. Invitation to Bid.
      b. Instructions to Bidders.
      c. Bid Form.
      d. Bid Bond.
      e. Supplement to Proposal - Anti-Collusion and Debarment
      f. Supplement to Proposal - Certification
   2. Bidder's Forms:
      The Bidder's attention is called to the following additional forms which shall be completely filled out and submitted with the Bid:
      a. Bidder's Qualifications Statement
      b. List of Subcontractors
   3. Contract Forms:
      a. Agreement Between Owner and Contractor.
         The Bidder's attention is called to the evidence of authority to sign and other documents which shall be submitted with the Agreement as applicable to the Business entity and noted in the Agreement.
      b. Performance Bond.
      c. Labor and Material Payment Bond.
   4. Contract Conditions:
      a. General Conditions.
      b. Supplementary Conditions.
      c. Labor-Related Regulations.
   5. Specifications.
   6. Drawings.
   7. Addenda issued prior to receipt of Bids.

C. Certain additional items used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.
   1. Bidder – one who submits a Bid directly to Owner as distinct from a sub-bidder, who submits a Bid to a Bidder.
   2. Issuing Office – the office from which the Bid Documents are to be issued and where the bidding procedures are to be administered.
   3. Successful Bidder – the lowest, responsible, and responsive Bidder to whom Owner on the basis of Owner's evaluation as hereinafter provided makes an award.

1.02 COPIES OF BID DOCUMENTS:

A. Complete sets of the Bid Documents in the number and format as stated in the Invitation to Bid may be obtained from the City's Issuing Office.

B. Complete sets of Bid Documents shall be used in preparing Bids; neither Owner, nor Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bid Documents.

C. Owner and Engineer in making copies of Bid Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

1.03 QUALIFICATION OF BIDDERS:

A. Prequalification statements are not required. Owner will, however, evaluate the Bidder's qualifications following the opening of Bids. Evaluation criteria considered will include, but not be limited to:
   1. Experience and performance records on similar work.
   2. Financial responsibility.
   3. Ability to supply construction equipment and personnel to complete the Work within the Contract Time.
   4. The Successful Bidder shall possess an Arkansas Contractor's License, hold a registration in good standing with the Arkansas Secretary of State, and have an active registration with the System for Award Management (SAM.gov) prior to contract award.

B. Bidders may be requested to submit financial statement and other information relating to experience and financial responsibility after bids are received and before awarding a contract.

C. Only those Bids will be considered which are submitted by Bidders who show satisfactory completion of work of type and size comparable to the Work required by these Bid Documents.
   1. A list of comparable projects, including pertinent information and identification of the owners, shall be submitted with the Bid.
   2. See ARTICLE 5 – AWARD OF CONTRACT herein for additional requirements after opening of Bids.

D. Bidders shall not be debarred from doing business with any government entity.

1.04 EXAMINATION OF CONTRACT DOCUMENTS AND SITE:

A. Before submitting a Bid, it is the responsibility of each Bidder:
   1. To thoroughly examine the Contract Documents and other related data identified in the Bid Documents (including "technical data" referred to below).
   2. To visit the Site to become familiar with and satisfy Bidder as to the general, local, and Site conditions that may in any manner affect cost, progress, and performance of the Work.
   3. To consider federal, state, and local laws, ordinances, rules, and regulations that may in any manner affect cost, progress, performance, and furnishing of the Work.

4. To study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related data.
5. To promptly notify Engineer of all conflicts, errors, ambiguities, or discrepancies which Bidder has discovered in or between the Contract Documents and such other related documents.

B. Before submitting a Bid, each Bidder shall be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise, which may affect cost, progress, performance, and furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder, including safety precautions and programs incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. This shall include local shipping facilities and availability of lands if applicable.

C. In the preparation of the Contract Documents, neither reports of explorations nor tests of any Hazardous Environmental Condition at the Site of the Work have been prepared.

D. Access to the Site:
1. On request, Owner will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as each Bidder deems necessary for submission of his Bid. Bidder shall fill all holes, clean up, and restore the Site to its former conditions upon completion of such explorations, investigations, tests, and studies.
2. The lands upon which the Work is to be performed, rights-of-way, and easements for access thereto and other lands designated for use by Contractor in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of Materials and Equipment to be incorporated in the Work are to be obtained and paid for by Contractor. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Contract Documents.
3. Property owners affected by the Work are named on the Drawings where known, but the accuracy of such ownership is not guaranteed. Bidders shall verify and make their own arrangements with such property owners for any access needed in connection with the preparation of Bids.

E. The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this paragraph "Examination of Contract Documents and Site," and that the Bid Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

1.05 INTERPRETATIONS, MODIFICATIONS, AND ADDENDA:

A. Any Bidder who discovers ambiguities, inconsistencies, or errors or is in doubt as to the meaning or intent of any part of the Bid Documents shall promptly request an interpretation from Engineer. Interpretations or clarifications considered necessary by

Engineer in response to such requests will be issued by Addenda mailed or delivered to all parties recorded by the City of Fayetteville Procurement Department as having received the Bid Documents.

B. Addenda may also be issued to modify the Bid Documents as deemed advisable by Owner or Engineer.

C. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

1.06 PREBID CONFERENCE:

A non-mandatory, pre-bid meeting will be held at a time and location indicated on the City of Fayetteville's procurement website. All interested parties are strongly encouraged to attend. Please contact the City of Fayetteville Procurement Department with any questions.

1.07 LABOR-RELATED REGULATIONS:

A. Pursuant to Arkansas Code Annotated 22-9-203, the City of Fayetteville encourages all qualified minority and women business enterprises to bid on and receive contracts for goods, services, and construction. Also, City of Fayetteville encourages all general contractors to subcontract portions of their contract to qualified, small, minority, and women business enterprises.

ARTICLE 2 - BASIS OF BIDDING

2.01 SPECIFIED EQUIPMENT AND MATERIALS:

A. Substitutions will be considered only after the Effective Date of the Agreement and as set forth in the GENERAL CONDITIONS.

2.02 INDIRECT COSTS:

A. Taxes:
   1. All applicable sales, use, compensating, or other taxes to be paid or withheld by Bidder, now imposed by any taxing authority, on Equipment and Materials to be incorporated in the Work, and on any or all other cost items entering into the Contract Price, shall be included in the Bid price.
   2. The Bidder shall include all such taxes except those on Equipment and Materials, if any, furnished by Owner or others, or exempted by the state, and Bidder shall furnish taxing authorities any information or reports pertaining thereto as required.

B. The cost of all construction licenses, building and other permits, and governmental inspections required by public authorities for performing the Work, which are applicable at the time Bids are opened and which are not specified to be obtained by Owner, shall be included in the Bid price. Fees for permits issued by the City will be waived, but permits are still required where necessary

C. The cost of all royalties and license fees on Equipment and Materials to be furnished and incorporated in the Work shall be included in the Bid price.

D. Tests, inspections, and related activities called for throughout the Bid Documents are a responsibility of Contractor unless specified otherwise. The Bid shall include all costs arising from such responsibility.

E. The cost of all electrical, water, gas, telephone, sanitary, and similar facilities and services required by Contractor in performing the Work shall be included in the Bid price unless specified otherwise.

2.03 SUBCONTRACTORS:

A. No Bid shall be based upon aggregate of Subcontractors performing more than 60 percent of the total Work.

B. The experience, past performance, and ability of each proposed Subcontractor will be considered in the evaluation of Bids. Any Subcontractor so requested shall be required to furnish experience statements prior to the Notice of Awards.

C. No Contractor shall be required to employ any Subcontractor, other person, or organization against whom Contractor has reasonable objection. Owner or Engineer may accept or reject Subcontractors in accordance with Paragraph 6.05 of the GENERAL CONDITIONS.

2.04 CONTRACT TIMES:

A. The number of days within which, or the dates by which, the Work is to achieve Substantial Completion and also final completion and be ready for final payment shall be as stated in the Agreement.

B. Provisions for liquidated damages, if any, are as set forth in the Agreement.

ARTICLE 3 - BIDDING PROCEDURE

3.01 PREPARATION OF BID:

A. One set of unbound documents included with the officially provided set of drawings and specifications shall be used for the Bid.

B. The Bid Forms shall be filled out in detail and signed by the Bidder. Forms shall not be removed from the bound document.

C. Bids by partnerships shall be executed in the partnership name and signed by a partner whose title shall appear under his signature, and the official address of the partnership shall be shown below the signature.

D. Bids by corporations and/or LLC's shall be executed in the corporate name by the president or a vice president (or other corporate officer accompanied by evidence of authority to sign), and the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

E. Names of all persons signing shall be printed below their signatures.

F. A power of attorney shall accompany the signature of anyone not otherwise authorized to bind the Bidder.

G. The Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

H. The address to which communications regarding the Bids are to be directed shall be shown.

3.02 METHOD OF BIDDING:

A. Bids will be received on a Unit Prices basis as set forth on the City of Fayetteville's procurement website.

B. Firm Bids are required.

C. Schedule of Unit Prices:

1. The Bidder shall complete the "Schedule of Unit Prices" included in the Bid (and shall accept all fixed Unit Prices listed therein.)
2. The total Bid price will be determined as the sum of the products of the estimated quantity of each item and the Unit Price set forth in the "Schedule of Unit Prices." The final Contract Price shall be subject to adjustment according to final measured, used, or delivered quantities, and the Unit Prices set forth in the "Schedule of Unit Prices" will apply to such final quantities except that if quantities vary more than 25 percent above or below estimated quantities, Unit Prices will be subject to change by Change Order.

3.03 SUBCONTRACTORS INFORMATION SUBMITTED WITH BID:

A. Bidders shall submit to Owner with the Bid, the List of Subcontractors contained in the Project Manual as Document 00430, completed with names of all such Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work for which such identification is required. The list shall be supplemented by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person, or organization, if requested by Engineer. If, after due investigation, Owner or Engineer has reasonable objection to any proposed Subcontractor, Supplier, or other person or organization, Owner may, before the Notice of Award is given, request the apparent Successful Bidder to submit an acceptable substitute without an increase in the Bid. If the apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, and other persons and organizations. The declining to make requested substitutions will not constitute grounds for sacrificing the bid security of any Bidder. Any Subcontractor, Supplier, or other person or organization listed and to whom Owner or Engineer does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation as provided in Paragraph 6.05 of the General Conditions.

3.04 MANUFACTURERS SUBMITTED WITH BID:

Not applicable this specific project.

3.05 FORMS TO BE SUBMITTED:

A. The following forms shall be completed and submitted with the Bid:
   1. DOCUMENT 00140 BIDDER'S QUALIFICATIONS STATEMENT
   2. DOCUMENT 00400 BID FORM
   3. Bid Security as bank cashier's check FROM A FINANCIAL INSTITUTION LOCATED IN THE STATE OF Arkansas, or Bid Bond (DOCUMENT 00410)
   4. DOCUMENT 00430, LIST OF SUBCONTRACTORS
   5. SUPPLEMENT TO PROPOSAL - ANTI-COLLUSION AND DEBARMENT
   6. SUPPLEMENT TO PROPOSAL - CERTIFICATION

3.06 BID SECURITY:

A. Each Bid shall be accompanied by a Bid security, payable to Owner, of 5% of the amount bid.

B. The required security shall be in the form of a bank cashier's check from a financial institution located in the state of Arkansas or a Bid Bond on the form prescribed by the AIA, Document A310, or on similar form attached.

C. Bid Bond shall be executed by both the surety and the bidder meeting the requirements set forth for "Surety Bonds" in the GENERAL CONDITIONS. A Bid Bond lacking a signature from either the surety or the bidder shall be considered an invalid Bid Bond and be grounds for bid rejection.

D. Bid security of the Successful Bidder will be retained until Bidder has executed the Agreement and furnished the required surety Bonds as set forth in the GENERAL CONDITIONS, whereupon Bid security will be returned. Bid security of the Successful Bidder will be retained until Bidder has delivered the required performance and payment bonds. If the Successful Bidder fails to deliver the performance and payment bonds within 15 days after the date of the Notice of Award, Owner may choose to annul the Notice of Award, and the Bid security of that bidder will be forfeited to Owner.

3.07 SUBMISSION OF BID:

A. Bids shall be submitted at the time and place designated in the Invitation to Bid.

B. When submitting a physical bid, Bid Documents with accompanying Bid security and other required information shall be enclosed in an opaque sealed envelope marked with the following:
   1. Project name.
   2. Bid number.
   3. Name and address of Bidder.
   4. Contractor's license number (Not required for this federally funded project).

C. If the Bid is sent by mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "Sealed Bid Enclosed" on the face thereof.

3.08 MODIFICATION OR WITHDRAWAL OF PHYSICAL BIDS:

A. Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

B. If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of his Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, that Bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

ARTICLE 4 - OPENING OF BIDS

4.01 OPENING OF BIDS:

A. Bids will be opened and (unless obviously non-responsive) read aloud publicly at the place indicated on the City of Fayetteville's procurement website. An abstract of the amounts of the base Bids will be made available to Bidders after the opening of Bids.

B. All Bids shall remain open for a period of 90 days after Bids are opened, but Owner may, at his sole discretion, release any Bid and return the Bid security at any time prior to that date.

ARTICLE 5 - AWARD OF CONTRACT

5.01 OWNER'S RIGHT TO REJECT BIDS:

A. Owner reserves the right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, non-responsive, unbalanced, or conditional Bids and to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. Owner also reserves the right to waive all informalities not involving price, times, or changes in the Work and to negotiate Contract terms with the Successful Bidder. (Discrepancies between the multiplication of units of Work and Unit Prices will be resolved in favor of the Unit Prices.) Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

B. All Bidders must agree that such rejection shall be without liability on the part of the Owner nor shall the Bidders seek recourse of any kind against the Owner because of such rejections. The filing of any Bid shall constitute an agreement of the Bidder to these conditions.

5.02 EVALUATION OF BIDS:

A. In evaluating Bids, Owner will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements (and such Alternates, Unit Prices) and other data, as may be requested in the Bid Form or prior to the Bid's Acceptance. Owner must accept Alternates in numerical order.

B. Owner may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations is requested per Paragraph 5.02E of this document.

C. Owner may conduct such investigations as he deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of the Bidders, proposed Subcontractors, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.

D. Owner reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to Owner's satisfaction.

E. Within 10 days after Bids are opened, and if requested by the Owner or the Engineer, the apparent Successful Bidder, and any other Bidder so requested, shall submit supplemental information including an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person, or organization, proposed by the Bidder for consideration as specified in ARTICLE 3 paragraph 3.03 above. The use of Subcontractors listed by Bidder (Document 00430) and accepted by Owner prior to the Notice of Award will be required in the performance of the Work.

F. Within 10 days after the Bids are opened, the apparent Successful Bidder, and any other Bidder so requested, shall submit an itemized breakdown of any lump sum portion of its Bid. This breakdown must include a separate item for each major category of work and each major piece of equipment. This breakdown may or may not be reflected in subsequent time schedule submittals.

G. The award of the Contract, if it is awarded, will be to the lowest, responsive, responsible Bidder whose evaluation by Owner indicates to Owner that the award will be in the best interest of Project and Owner.

5.03 ACCEPTANCE OF BID:

A. After considering the basis of award and evaluation of Bids, if the Contract is to be awarded, Owner shall within 90 days after the date of opening Bids notify the Successful Bidder of acceptance of his Bid (indicating which, if any, Alternate Bids have been accepted).

ARTICLE 6 - SIGNING OF AGREEMENT

6.01 When Owner gives Notice of the Bid's Acceptance to Successful Bidder, Engineer will issue the required number of unbound, unsigned counterparts of the Agreement and other Contract Documents to Successful Bidder.

6.02 Within 15 days thereafter, Contractor (Successful Bidder) shall sign all copies of the Agreement shall sign the agreement and return the signed agreement to the Owner.

6.03 Upon receiving the signed agreement from the Contractor, City staff will route all contract documents to Fayetteville City Council for review and project approval. Following Council's approval, the City will deliver a copy of the executed contract to the Contractor. The delivery of the fully executed contract to the Contractor shall serve as the Notice of Award.

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END OF DOCUMENT 00200

DOCUMENT 00400 – BID FORM

Contract Name: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave. Impvts.

Bid Number: 26-37, Construction

BID TO:

Owner: The City of Fayetteville, Arkansas

113 West Mountain Street

Fayetteville, Arkansas 72701

BID FROM:

Bidder: _____

_____

_____

_____

ARTICLE 1 - INTENT

1.01 For clarification, the City will award this contract to one General Contractor (There is no intent to award different phases of the work to different contractors.) The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with Owner in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid price and within the Bid time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

ARTICLE 2 - TERMS AND CONDITIONS

2.01 Bidder accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the day of Bid opening. Bidder will sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required by the Bidding Requirements within 15 days after the date of Owner's Notice of Award.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents, as more fully set forth in the Agreement, that:

A. Bidder has examined and carefully studied the Bid Documents, and the following Addenda, receipt of all which is hereby acknowledged:

Number	Date
_____	_____
_____	_____

_____ _____

_____ _____

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, performance, and furnishing of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance, and furnishing of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site; and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site. Bidder acknowledges that such reports and drawings are not Contract Documents and may not be complete for Bidder's purposes. Bidder acknowledges that Owner and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bid Documents with respect to Underground Facilities at or contiguous to the Site.

E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder and safety precautions and programs incident thereto.

F. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performing and furnishing of the Work in accordance with the times, price, and other terms and conditions of the Contract Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.

I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.

K. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly

induced or solicited any other Bidder to submit a false or sham bid; Bidder has not solicited or induced any person, firm, or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over Owner.

L. Bidder will perform the Work in compliance with all applicable trench safety standards set forth in Occupational Safety and Health Administration (OSHA) Part 1926 - Subpart P - Excavations.

ARTICLE 4 - BID PRICE

Bidders are required to provide pricing for all line items, including deductive alternate items. Failure to provide deductive alternate pricing can result in bid rejection.

The City intends to award this contract to the lowest qualified responsive responsible bidder based on the total base bid as long as the base bid amount falls within the amount of funds certified for the project plus 25%.

In the event no bid falls within the amount of funds certified for the project plus 25%, the City will utilize the deductive alternates in order to further evaluate bids until a bid received falls within the amount certified, plus 25%.

In the event all deductive alternates are subtracted from the total base bid and no bid falls within the amount certified, plus 25%, all bids shall be rejected and become confidential.

In no case shall the amount bid for the item of "mobilization" exceed 5% of the total contract amount for all items listed in the proposal or bid excluding Insurance & Bonding and Trench & Excavation Safety Systems. Should the amount entered into the proposal or bid for this item exceed 5%, the bid shall be rejected.

Bidder shall complete the work in accordance with the Contract Documents for the price(s) submitted by the Bidder.

ARTICLE 5 - CONTRACT ITEMS

5.01 Bidder agrees that the Work will be substantially completed and completed and ready for final payment within the number of calendar days indicated in the Agreement.

5.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement.

ARTICLE 6 - BID CONTENT

6.01 The following documents are attached to and made a condition of this Bid:

A. Required 5% Bid security in the form of a cashier's check from a bank located in the State of Arkansas or a Bid Bond in the amount of _____ Dollars ($ _____).

B. A tabulation of Subcontractors and other persons and organizations required to be identified in this Bid.

ARTICLE 7 - COMMUNICATIONS

7.01 Communications concerning this Bid shall be addressed to the Bidder as follows:

_____

_____

_____

Email: _____

Phone No. _____

Fax No. _____

7.02 Required Bidder Information:

Arkansas State Contractor License No. (or date of application):

_____

Arkansas Secretary of State Filing No. (or date of application):

_____

System for Award Management (SAM.gov) Registration No. (or date of application):

_____

If Bidder is:

An Individual

Name (type or printed): _____

By: _____ (SEAL)
(Individual's Signature)

Doing business as: _____

Business address: _____

_____

Phone No. _____ Fax No. _____

Email address: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner - attach evidence of authority to sign)

Name (type or printed): _____

Business address: _____

_____

Phone No. _____ Fax No. _____

Email address: _____

A Corporation or LLC

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature of general partner - attach evidence of authority to sign)

Name (type or printed): _____

Title: _____

(CORPORATE SEAL)

Attest: _____
(Signature of Corporate Secretary)

Phone No. _____ Fax No. _____

Email address: _____

Tax ID Number (TIN): _____

UEI # _____

Cage Code: _____

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END OF DOCUMENT 00400

DOCUMENT 00410 – BID BOND

KNOW ALL MEN BY THESE PRESENTS: that we

_____

_____

_____

as Principal, hereinafter called the Principal, and

_____

_____

_____

a corporation duly organized under the laws of the State of _____ as Surety, hereinafter called Surety, are held and firmly bound unto

City of Fayetteville, Arkansas

113 West Mountain Street

Fayetteville, Arkansas 72701

as Obligee, hereinafter called Owner, in the sum of _____ _____ Dollars ($_____), for the payment of which sum, well and truly to be made, Principal and said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has submitted a Bid for:

Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.

NOW, THEREFORE, if the Owner shall accept the Bid of Principal and the Principal shall enter into a Contract with the Owner in accordance with the terms of such Bid, and give such Bond or Bonds as may be specified in the Bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of Principal to enter such Contract and give such Bond or Bonds, if the Principal shall pay to the Owner the difference not to exceed the penalty hereof between the amount specified in said Bid and such larger amount for which the Owner may in good faith contract with another party to perform the Work covered by said Bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

DOCUMENT 00410 –BID BOND (continued)

Signed and sealed this _____ day of _____ 20___.

PRINCIPAL (CORPORATE SEAL)

_____

By _____

_____

SURETY

_____

By _____

_____

ATTORNEY-IN-FACT (CORPORATE SEAL)

_____

_____

(This Bond shall be accompanied with
Attorney-in-Fact's authority from Surety)

END OF DOCUMENT 00410

DOCUMENT 00430 – LIST OF SUBCONTRACTORS

In compliance with the Instructions to Bidders and other Contract Documents, the undersigned submits the following names of Subcontractors to be used in performing the Work for:

Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.

Bidder certifies that all Subcontractors listed are eligible to perform the Work.

Subcontractor's Work	Subcontractor's Name and Address	Expected Percentage or Value
Clearing/Demolition		
SWPPP/Erosion Control		
Asphalt		
Concrete		
Landscaping		
Material Testing		
Other (designate)		

NOTE: This form must be submitted in accordance with the Instructions to Bidders.

_____
Bidder's Signature

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END OF DOCUMENT 00430

DOCUMENT 00500 – AGREEMENT

BETWEEN OWNER AND CONTRACTOR

Contract Name/Title: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.

Bid No.: 26-37, Construction

THIS AGREEMENT is dated as of the _____ day of _____ in the year 2026 by and between The City of Fayetteville, Arkansas (which may hereinafter be called City) and _____ (hereinafter called Contractor).

ARTICLE 1 - WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The work under this Contract includes, but is not limited to:

The construction of improvements to the intersection of Millsap Road/College Avenue and improvements to Hemlock Avenue in Fayetteville, Arkansas. The project is split into two separate packages consisting of approximately:

Package 1 will be constructed first and will consist of a 700 foot extension of N. Hemlock Avenue from Sain Street to Millsap Road. This new road connection will connect to the existing street stub out provided south of the recently completed roundabout on Sain Street and will become the new connection between Millsap and Sain Street as Front Street is disconnected. Improvements will consist of new curb and gutter, new sidewalk on the west side of the road, and new drainage infrastructure

Package 2 will be constructed second and will consist of improvements to the intersection that extends approximately 350 feet east and west of College Avenue. Left turn lanes will be added to the east and west bound legs of the intersection as well as, new curb and gutter, new sidewalks and pedestrian accommodations, new drainage infrastructure, and traffic signal modifications. To improve safety and traffic flow, Front Street will be disconnected from Millsap Road. There will also be some waterline relocation included in Package 2.

During Stage 1 construction of Package 2, AT&T will be on site to relocate and lower a portion of existing fiber duct bank that crosses Millsap, east of College Avenue. The total duration of this work is anticipated to be one week. Contractor shall coordinate with AT&T and their utility subcontractor for scheduling of this work in conjunction with excavating road subgrade, relocation of watermain, and installation of new storm drainage pipe.

Any use of a third-party dumpster or roll off container shall be procured from the City of Fayetteville Recycling and Trash Collection Division. Use of a Non-City dumpster or roll off container is not allowed.

Open burning is not allowed on City projects.

Blasting is not allowed on City projects.

Contractor shall obtain all permits required for the Work. Fees for City-issued permits shall be waived, but Contractor remains responsible for obtaining and paying for all non-City permits, licenses, approvals, inspections, and authorizations unless expressly stated otherwise in the Contract Documents.

The Contract includes work in City of Fayetteville Right-of-way and in General Utility Easements.

Refer to Section 00400-Bid Form for quantities.

ARTICLE 2 - ENGINEER

2.01 A portion of the Contract Documents associated with this Agreement have been prepared by the City of Fayetteville Engineering Division. City of Fayetteville Engineering Division assumes all duties and responsibilities, and has the rights and authority assigned to City of Fayetteville Engineering Division in those Contract Documents it has prepared in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 3 - CONTRACT TIME

3.01 TIME OF THE ESSENCE:

A. All time limits for milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

3.02 DATES FOR SUBSTANTIAL COMPLETION AND FINAL PAYMENT:

A. The Work shall be Substantially Completed within 300 calendar days after the date when the Contract Times commence to run as provided in the GENERAL CONDITIONS, and final completion and ready for final payment in accordance with the GENERAL CONDITIONS within 360 calendar days after the date when the Contract Times commence to run.

3.03 LIQUIDATED DAMAGES:

A. The City of Fayetteville and Contractor recognize that time is of the essence of this Agreement and that the City will suffer financial loss (including, but not limited to, administrative costs, engineering costs, inspection costs, public inconvenience, disruption to City operations, and loss of use) if the Work is not completed within the time specified above, plus any extensions thereof allowed in accordance with the GENERAL CONDITIONS. The parties also recognize the delays, expense, and difficulties involved in proving the actual loss suffered by The City of Fayetteville if the Work is not Substantially Completed on time. Accordingly, instead of requiring any such proof, The City of Fayetteville and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay The City of Fayetteville Three Thousand Dollars ($3,000.00) for each calendar day that expires after the time specified above in Paragraph 3.02 for Substantial Completion until the Work is Substantially Complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the time specified in Paragraph 3.02 for completion and readiness for final payment or any proper extension thereof granted by The City of Fayetteville, Contractor shall pay The City of Fayetteville Two Thousand Dollars ($2,000.00) for each calendar day that expires after the time specified for completion and readiness for final payment.

ARTICLE 4 - CONTRACT PRICE

4.01 The CITY OF FAYETTEVILLE agrees to pay, and the CONTRACTOR agrees to accept, as full and final compensation for all work done under this agreement, the amount based on the unit prices bid in the Proposal (BID FORM) which is hereto attached, for the actual amount accomplished under each pay item, said payments to be made in lawful money of the United States at the time and in the manner set forth in the Specifications.

4.02 As provided in the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by ENGINEER as provided in the General Conditions. Unit prices have been computed as provided in the General Conditions.

4.03 Changes, modifications, or amendments in scope, price or fees to this contract shall not be allowed without a prior formal contract amendment approved by the Mayor and the City Council in advance of the change in scope, cost or fees.

1. There shall be no changes without prior written approval of the Engineer of Record and/or the City's designated Professional Engineer.
2. Minor variations may be authorized in the form of Field Order as provided in the General Conditions and do not require formal contract amendments.

ARTICLE 5 - PAYMENT PROCEDURES

5.01 SUBMITTAL AND PROCESSING OF PAYMENTS:

A. Contractor shall submit Applications for Payment in accordance with the GENERAL CONDITIONS. Applications for Payment will be processed by Engineer as provided in the GENERAL CONDITIONS.

5.02 PROGRESS PAYMENTS, RETAINAGE:

A. The City of Fayetteville shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment as recommended by Engineer, on or about the 15th day of each month during construction. All such payments will be measured by the schedule of values established in the GENERAL CONDITIONS (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of payments previously made and less such amounts as Engineer shall determine, or The City of Fayetteville may withhold, in accordance with the GENERAL CONDITIONS.

a. 95% of Work Completed (with the balance being retainage). If Work has been 50% completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to The City of Fayetteville

and Engineer, The City of Fayetteville on recommendation of Engineer, may determine that as long as the character and progress of the Work subsequently remain satisfactory to them, there will be no additional retainage on account of Work subsequently completed, in which case the remaining progress payments prior to Substantial Completion will be an amount equal to 100% of the Work Completed less the aggregate of payments previously made; and

b. 100% of Equipment and Materials not incorporated in the Work but delivered, suitably stored, and accompanied by documentation satisfactory to The City of Fayetteville as provided in the GENERAL CONDITIONS.

5.03 FINAL PAYMENT:

A. Upon final completion and acceptance of the Work in accordance with the GENERAL CONDITIONS, The City of Fayetteville shall pay the remainder of the Contract Price as recommended by Engineer and as provided in the GENERAL CONDITIONS.

ARTICLE 6 - CONTRACTOR'S REPRESENTATIONS

6.01 In order to induce The City of Fayetteville to enter into this Agreement, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents including the Addenda and other related data identified in the Bid Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, performance, and furnishing of the Work.

C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance, and furnishing of the Work.

D. Contractor has carefully studied all:

(1) Reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site; and

(2) Reports and drawings of a Hazardous Environmental Condition, if any, at the Site. Contractor acknowledges that The City of Fayetteville and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents with respect to Underground Facilities at or contiguous to the Site.

E. Contractor has obtained and carefully studied (or assumes responsibility of having done so) all such additional supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise which may affect cost, progress,

performance, and furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto.

F. Contractor does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the performing and furnishing of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents. Nothing in this article shall be construed to waive Contractor's rights, if any, under the Contract Documents regarding differing or unforeseen site or subsurface conditions, concealed conditions, hazardous environmental conditions, or changes in the Work.

G. Contractor is aware of the general nature of work to be performed by The City of Fayetteville and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

I. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to Contractor.

J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 7 - CONTRACT DOCUMENTS

7.01 CONTENTS:

A. The Contract Documents which comprise the entire Agreement between The City of Fayetteville and Contractor concerning the Work consist of the following and may only be amended, modified, or supplemented as provided in the GENERAL CONDITIONS:

1. This Agreement.
2. Exhibits to this Agreement (enumerated as follows):
   a. Notice to Proceed.
   b. Contractor's Bid.
   c. Documentation submitted by Contractor prior to Notice of Award.
3. Performance, Payment, and other Bonds.
4. General Conditions.
5. Supplementary Conditions.
6. Specifications consisting of divisions and sections as listed in table of contents of Project Manual.

7. Drawings consisting of a cover sheet and sheets as listed in the table of contents thereof, with each sheet bearing the following general title: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.
8. Addenda numbers ____ inclusive.
9. The following which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto: All Written Amendments and other documents amending, modifying, or supplementing the Contract Documents pursuant to the GENERAL CONDITIONS.

B. ORDER OF PRECEDENCE:

In the event of a conflict, inconsistency, or ambiguity among the Contract Documents, the documents shall govern in the following order unless otherwise required by law: written amendments and change orders; this Agreement; Specifications; Drawings; Addenda; Supplementary Conditions; General Conditions; contractor's bid; and other exhibits.

ARTICLE 8 - MISCELLANEOUS

8.01 TERMS:

A. Terms used in this Agreement which are defined in the GENERAL CONDITIONS shall have the meanings stated in the GENERAL CONDITIONS.

8.02 ASSIGNMENT OF CONTRACT:

A. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by Law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

8.03 SUCCESSORS AND ASSIGNS:

A. The City of Fayetteville and Contractor each binds itself and its successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

8.04 MUTUAL CONSTRUCTION:

A. The parties acknowledge and agree that this Agreement has been negotiated, reviewed, and mutually drafted by the parties, each of whom has had the opportunity to consult with legal counsel. Accordingly, no provision of this Agreement shall be

construed against either party on the basis that such party drafted or proposed the provision.

8.05 SEVERABILITY:

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon The City of Fayetteville and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

8.06 DISPUTES:

A. This Agreement shall be governed by the laws of the State of Arkansas. Disputes shall be resolved in accordance with the provisions of Article 16 of the General Conditions. Venue for any legal action arising from this Agreement shall be in a court of competent jurisdiction in Washington County, Arkansas.

8.07 NO WAIVER:

A. Nothing in this Agreement or the Contract Documents shall be construed as a waiver of the City's sovereign immunity, defenses, limitations of liability, or protections available under Arkansas law.

8.08 FREEDOM OF INFORMATION ACT:

A. City contracts and documents prepared while performing city contractual work are subject to the Arkansas Freedom of Information Act, Ark. Code Ann. § 25-19-101, et seq. If a Freedom of Information Act request is presented to the City of Fayetteville, the contractor shall promptly provide the documents in Contractor's possession that are responsive to the request as prescribed in the Arkansas Freedom of Information Act. Only legally authorized photocopying costs pursuant to the FOIA may be assessed for this compliance.

8.09 LIENS:

A. **No liens against this construction project are allowed.** Arkansas law (A.C.A. §§18-44-501 through 508) prohibits the filing of any mechanics' or materialmen's liens in relation to this public construction project. Arkansas law requires and the contractor promises to provide and file with the Circuit Clerk of Washington County separate payment and performance bonds each in an amount equal to the amount of this contract. Any subcontractor or materials supplier may bring an action for non-payment of labor or material on the bond. The contractor shall notify every subcontractor and materials supplier for this project of this paragraph and obtain written acknowledgement of such notice before that subcontractor or supplier begins work or provides materials.

DOCUMENT 00500 – AGREEMENT (continued)

IN WITNESS WHEREOF, The City of Fayetteville and Contractor have signed this Agreement in quadruplicate. One counterpart each has been delivered to Contractor. Three counterparts each has been retained by The City of Fayetteville. All portions of the Contract Documents have been signed, initialed, or identified by The City of Fayetteville and Contractor.

This Agreement will be effective on _____, 2026 which is the Effective Date of the Agreement.

CONTRACTOR:	CITY OF FAYETTEVILLE
By: _____	By: Molly Rawn
(Type or legibly print)	
_____	_____
(Signature)	(Signature)
Title:_____	Title: Mayor

Contractor shall attach evidence of authority to sign.
If Contractor is a corporation, corporate entity or LLC, Contractor shall attach Corporate Resolution authorizing Contractor's signature and execution of Agreement.
Further if Contractor is a corporation, corporate entity or LLC, Contractor shall also attach a copy of the Contractor's Articles of Incorporation and a copy form the Arkansas State Secretary of State to document that the corporation, corporate entity or LLC is in current "Good Standing" with the State of Arkansas and such entity is permitted to perform work in the State of Arkansas.

(SEAL)	(SEAL)
Attest _____	Attest _____

Address for giving notices	Address for giving notices
_____	113 W. Mountain St.
_____	Fayetteville, AR 72701

License No. _____

Agent for Service of process

_____

(Type or legibly print)

Contractor shall attach evidence of authority of Agent for Service process to sign. If Contractor is a corporation, corporate entity or LLC, Contractor shall attach Corporate Resolution authorizing Agent for Service process authority to sign.

(If Contractor is a corporation, corporate entity or LLC, attach evidence of authority to sign.)

END OF DOCUMENT 00500

DOCUMENT 00550 – NOTICE TO PROCEED

TO: _____

_____

_____

Contract Name/Title: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave. Impvts.

Contract No: 26-37, Construction

Owner: City of Fayetteville, Arkansas

You are notified that the Contract Time(s) under the above Contract will commence to run on Click or tap here to enter text.. By that date, you are to start performing your obligations under the Contract Documents. In accordance with the Agreement between Owner and Contractor, the date(s) of Substantial Completion and final completion ready for final payment are Click or tap here to enter text. and Click or tap here to enter text.respectively.

Before you may start any work at the Site, the General Conditions provide that you and Owner must each deliver to the other, (with copies to Engineer and other identified additional insureds) certificates of insurance, which each is required to purchase and maintain in accordance with the Contract Documents. Also before you may start any work at the Site, you must submit the following:

1. Preliminary construction progress schedule.
2. Preliminary schedule of Submittals.
3. Satisfactory evidence of insurance in accordance with the requirements of the General Conditions.
4. Temporary erosion control requireiments as specified.
5. Maintenance of Traffic as specified.

You are required to return an acknowledgement copy of this Notice to Proceed to the Owner.

Dated Click or tap here to enter text..

OWNER

City of Fayetteville

By: Paul Libertini

Signature: _____

Title: Staff Engineer

Date: Click or tap here to enter text.

ACCEPTANCE OF NOTICE TO PROCEED

CONTRACTOR

By: _____

Signature: _____

Title_____

Date _____, 20_____

END OF DOCUMENT 00550

DOCUMENT 00610 – PERFORMANCE BOND:

KNOW ALL MEN BY THESE PRESENTS: that

_____

_____

_____

as Principal, hereinafter called Contractor, and

_____

_____

_____

as Surety, hereinafter called Surety, are held and firmly bound unto

City of Fayetteville, Arkansas

113 West Mountain Street

Fayetteville, Arkansas 72701

as Obligee, hereinafter called Owner, in the amount of **$_____**, for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written Agreement dated _____, 20____, entered into a contract with Owner for Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts. which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the Owner.
Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the Owner having performed Owner's obligations, thereunder, the Surety may promptly remedy the default, or shall promptly:

A. Complete the Contract in accordance with its terms and conditions, or

B. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the Owner elects, upon determination by the Owner and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof.

The term "balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the amount properly paid by Owner to Contractor.

Any suit under this Bond must be instituted before the expiration of two years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators, or successors of the Owner.

Signed and sealed this _____ day of _____ 20____.

CONTRACTOR (CORPORATE SEAL)

_____

By:_____

_____

SURETY COUNTERSIGNED: Resident Agent

State of Arkansas

_____ _____

By _____ By _____

_____ _____

ATTORNEY-IN-FACT (CORPORATE SEAL)

_____

_____

(This Bond shall be accompanied with Attorney-in-Fact's authority from Surety)

Approved as to Form:

_____

_____

Attorney for _____

END OF DOCUMENT 00610

DOCUMENT 00611 – LABOR AND MATERIAL PAYMENT BOND

This Bond is issued simultaneously with Performance Bond in favor of Owner conditioned on the full and faithful performance of the Contract.

KNOW ALL MEN BY THESE PRESENTS: that

. _____

_____

_____

as Principal, hereinafter called Contractor, and

_____

_____

_____

as Surety, hereinafter called Surety, are held and firmly bound unto

City of Fayetteville, Arkansas

113 West Mountain Street

Fayetteville, Arkansas 72701

as Obligee, hereinafter called Owner, for the use and benefit of claimants as hereinbelow defined, in the amount of **$**_____, for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written Agreement dated _____, 20___, entered into a contract with Owner for Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts. which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

A. A claimant is defined as one having a direct contract with the Contractor or with a Subcontractor of the Contractor for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental of equipment directly applicable to the Contract.

B. The above named Contractor and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period

of 90 days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this Bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.

C. No suit or action shall be commenced hereunder by any claimant:

1. Unless claimant other than one having a direct contract with Principal, shall have given written notice to any two of the following: the Contractor, the Owner, or the Surety within 90 days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to Contractor, Owner or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid Project is located, save that such service need not be made by a public officer.

2. After the expiration of one year following the date on which Contractor ceased Work on the Contract, it being understood, however, that if any limitation embodied in this Bond is prohibited by any Law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such Law.

3. Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.

D. The amount of this Bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this Bond.

Signed and sealed this _____ day of _____ 20____.

CONTRACTOR (CORPORATE SEAL)

_____

By _____

_____

SURETY

_____

By _____

_____

ATTORNEY-IN-FACT

_____

_____

(This Bond shall be accompanied with
Attorney-in-Fact's authority from Surety)

COUNTERSIGNED: Resident Agent

State of Arkansas

_____

By _____

_____

(CORPORATE SEAL)

Approved as to Form:

_____

_____

Attorney for _____

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END OF DOCUMENT 00611

DOCUMENT 00700 – GENERAL CONDITIONS

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TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

DOCUMENT 00700 – GENERAL CONDITIONS:

This document is based upon Engineers Joint Contract Documents Committee "Standard General Conditions of the Construction Contract," with modifications.

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 CONTRACT DOCUMENTS:

1. The Contract Documents establish the rights and obligations of the parties and shall consist of the documents listed in DOCUMENT 00500, AGREEMENT.

B. Reports and drawings of subsurface and physical conditions and approved Submittals by Contractor are not Contract Documents.

C. Only printed or hard copies of items listed in subparagraph 1.01A are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by Owner to Contractor are not Contract Documents.

1.02 DEFINITIONS:

A. Wherever used in these General Conditions or elsewhere in the Contract Documents, the following terms have the meanings indicated below, which are applicable to both the singular and plural thereof:

1. "Addenda" - written or graphic changes or interpretations of the Contract Documents issued by Owner prior to the opening of Bids.
2. "Agreement" - the written agreement between Owner and Contractor covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.
3. "Application for Payment" - the form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress and final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
4. "Asbestos" - any material that contains more than 1% asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
5. "Bid" - the formal offer of the Bidder submitted on the prescribed Bid Form together with the required Bid security and all information submitted with the Bid that pertains to performance of the Work.
6. "Bidder" - any person, firm, or corporation submitting a Bid for the Work or their duly authorized representatives.
7. "Change Order" - a written document signed by Owner and Engineer authorizing an addition, deletion, or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued on or after execution of the Agreement.
8. "Contract Drawings" - drawings and other data designated as Contract Drawings prepared by Engineer for this Contract which show the character and scope of the Work to be performed and are referred to in the Contract Documents.
9. "Contract Price" - the total monies payable to Contractor under the Contract Documents as stated in the Agreement.
10. "Contract Times" - the number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is

ready for final payment as evidenced by Engineer's written recommendations of final payment.

11. "Contractor" - the person, firm or corporation with whom Owner has entered into the Agreement.
12. "Date of Contract", "Effective Date of the Agreement" - the date of the City Council Approval also indicated in the Agreement.
13. "Engineer" or "Engineer-Architect" - Architect, engineer, or other licensed professional who is either employed or has contracted with Owner to serve in a design capacity and whose consultants, members, partners, employees, or agents have prepared and sealed the Drawings and Specifications.
14. "Engineer's Consultant" - an individual or entity having a contract with Engineer to furnish services as Engineer's independent professional associate or consultant with respect to the Project.
15. "Equipment" - a product with operational or nonoperational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.
16. "Field Order" - a written order issued by Engineer which orders minor changes in the Work in accordance with Paragraph 9.05 but which does not involve a change in the Contract Price or the Contract Times.
17. "General Requirements" - Sections of DIVISION 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.
18. "Hazardous Waste" - the term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
19. "Law" - law of the place of the Project which shall govern the performance hereunder.
20. "Laws and Regulations," "Laws or Regulations" - laws, rules, regulations, ordinances, codes and/or orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
21. "Lien" - charges, security interests, or encumbrances on Project funds, real property, or personal property.
22. "Materials" - products substantially shaped, cut, worked, mixed, finished, refined, or otherwise fabricated, processed, or installed to form a part of the Work.
23. "Notice of Award" - the written notice by Owner to the apparent successful Bidder stating that upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, Owner will sign and deliver the Agreement.
24. "Notice to Proceed" - the written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform Contractor's obligation under the Contract Documents.
25. "Owner" - the City of Fayetteville, Arkansas, a constitutionally chartered municipal corporation , with which the Contractor has entered into the Agreement and for whom the Work is to be provided.
26. "Partial Utilization" - placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion of all the Work.
27. "PCBs" - Polychlorinated biphenyls.

28. "Petroleum" - petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60° Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Wastes and crude oils.
29. "Program Manager" – NOT USED.
30. "Project" - the total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.
31. "Project Manual" - The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
32. "Radioactive Material" - source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
33. "Resident Project Representative" - the authorized representative of Engineer who is assigned to the construction Site or any part thereof.
34. "Reference Drawings" - drawings not specifically prepared for, nor a part of, this Contract, but which contain information pertinent to the Work.
35. "Samples" - physical examples of Equipment, Materials, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
36. "Shop Drawings" - all drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
37. "Site" - lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
38. "Specifications" - those portions of the Contract Documents consisting of written technical descriptions of the Work, and covering the Equipment, Materials, workmanship, and certain administrative details applicable thereto.
39. "Subcontractor" - an individual, firm, or corporation having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
40. "Submittals" - all Shop Drawings, product data, and Samples which are prepared by Contractor, a Subcontractor, manufacturer, or Supplier, and submitted by Contractor to Engineer as a basis for approval of the use of Equipment and Materials proposed for incorporation in the Work or needed to describe proper installation, operation and maintenance, or technical properties.
41. "Substantial Completion" - the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer as evidenced by his definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be used for the purposes for which it was intended.
42. "Supplementary Conditions" – part of the Contract Documents which amends and/or supplements these General Conditions.

43. "Supplier" - a manufacturer, fabricator, supplier, distributor, material man, or vendor.
44. "Underground Facilities" - all pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems, or water.
45. "Unit Price Work" - Work to be paid on the basis of Unit Prices.
46. "Work" - the entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, the furnishing of Bonds and insurance, furnishing labor, and furnishing and incorporating Materials and Equipment into the construction, all as required by the Contract Documents.
47. "Work Change Directive" - a written directive to Contractor, issued on or after the effective Date of the Agreement and signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in Article 4 or to emergencies under Paragraph 6.13. A Work Change Directive will not change the Contract Price or the Contract Times, but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times as provided in Paragraph 10.01B.
48. "Written Amendment" - a written amendment to the Contract Documents, signed by Owner and Contractor on or after the Effective Date of the Agreement, and normally dealing with the nonengineering or nontechnical rather than strictly Work-related aspects of the Contract Documents.
49. "Year 2000 Compliance" or "Year 2000 Compliant" – means that equipment, devices, items, systems, software, hardware, and firmware included in the Work or used to produce the Work shall properly, appropriately, and consistently function and accurately process date and time data (including without limitation: calculating, comparing, and sequencing) on and after December 31, 1999, including leap year calculations.

1.03 TERMINOLOGY:

A. Whenever used in these General Conditions or elsewhere in the Contract Documents, the following terminology shall have the intent and meaning specified below:
   1. The words "as indicated" refer to the Drawings and "as specified" refer to the remaining Contract Documents.
   2. The terms "responsible" or "responsibility" mean that the party to which the term applies shall assume all responsibilities thereto.
   3. The term "approve", when used in response to Submittals, requests, applications, inquiries, reports and claims by Contractor, will be held to limitations of Engineer's responsibilities and duties or specified in these General Conditions. In no case will "approval" by Engineer be interpreted as

a release of Contractor from responsibilities to fulfill requirements of Contract Documents.

4. When applied to Equipment and Materials, the words "furnish", "install", and "provide" shall mean the following:
   a. The word "provide" shall mean to furnish, pay for, deliver, assemble, install, adjust, clean and otherwise make Materials and Equipment fit for their intended use.
   b. The word "furnish" shall mean to secure, pay for, deliver to Site, unload and uncrate Equipment and Materials.
   c. The word "install" shall mean to assemble, place in position, incorporate in the Work, adjust, clean, and make fit for use.
   d. The phrase "furnish and install" shall be equivalent to the word "provide."
5. The word "day" shall constitute a calendar day of twenty-four hours measured from midnight to the next midnight.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 DELIVERY OF BONDS:

A. When Contractor delivers the executed Agreements to Owner, Contractor shall also deliver to Owner such Bonds as Contractor may be required to furnish in accordance with Paragraph 5.01.

2.02 COPIES OF DOCUMENTS:

A. Owner will furnish to Contractor copies of the Contract Documents as stated in the General Requirements.

2.03 COMMENCEMENT OF CONTRACT TIMES; NOTICE TO PROCEED:

A. The Contract Times will commence to run on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time mutually agreed upon by the Contractor and the Owner within 60 days after the Effective Date of the Agreement upon completion of required executed documents. In no event will the Contract Times commence to run later than the 60th day after the Effective Date of the Agreement.

2.04 STARTING THE PROJECT:

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run, but no Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 BEFORE STARTING CONSTRUCTION:

A. Before starting construction and undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby; however, Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, or discrepancy in the Contract Documents, unless Contractor had actual knowledge thereof or should reasonably have known thereof.

B. Within twenty days after the Effective Date of the Agreement, not before Contractor starts the Work at the Site, Contractor shall submit items as noted in Document 00550 – Notice to Proceed (and as specified) to Engineer for review.

C. Further, before any Work at the Site is started, Contractor shall deliver to Owner, with a copy to Engineer, certificates and other evidence of insurance requested by Owner which Contractor is required to purchase and maintain in accordance with Paragraph 5.02 (and Owner shall deliver to Contractor certificates and other evidence of insurance requested by Contractor which Owner is required to purchase and maintain in accordance with Paragraph 5.02).

2.06 PRECONSTRUCTION CONFERENCE:

A. Within 20 days after the Effective Date of the Agreement, but before Contractor starts the Work at the Site, a conference attended by Contractor, Engineer, and others as appropriate will be held to discuss the schedules referred to in Paragraph 2.05B, to discuss procedures for handling Submittals, processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

2.07 FINALIZING SCHEDULES:

A. A schedule shall be finalized in accordance with Specification SECTION 01321. The finalized construction progress schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times, but such acceptance will neither impose on Engineer responsibility for the progress or scheduling of the Work nor relieve Contractor from full responsibility therefor. The finalized schedule of Submittal submissions will be acceptable to Engineer if it provides a workable arrangement for processing the submissions.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 INTENT:

A. The Contract Documents comprise the entire agreement between Owner and Contractor concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the Law of the place of the Project.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, Materials, or Equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for, at no additional cost to the Owner.

1. When words which have a well-known technical or trade meaning are used to describe Work, Materials, or Equipment, such words shall be interpreted in accordance with that meaning.
2. Reference to standard specifications, manuals, or codes of any technical society, organization, or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual, or code (whether or not specifically incorporated by

reference in the Contract Documents) shall be effective to change the duties and responsibilities of Owner, Contractor, or Engineer, or any of their consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to Engineer, or any of Engineer's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of the Contract Documents.

3. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Paragraph 9.04.

C. If, during the performance of the Work, Contractor finds a conflict, error, or discrepancy in the Contract Documents, Contractor shall so report to Engineer in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from Engineer, however, Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof or should reasonably have known thereof.

D. Applicable codes and standards referenced in these Contract Documents establish minimum requirements for Equipment, Materials, and Work and are superseded by more stringent requirements of Contract Documents when and where they occur.

E. The Specifications are separated into Divisions and Sections for convenience in defining the Work. Contract Drawings are separated according to engineering disciplines and other classifications. This sectionalizing and the arrangement of Contract Drawings shall not control the Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

3.02 AMENDING AND SUPPLEMENTING CONTRACT DOCUMENTS:

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

1. A formal Written Amendment.
2. A Change Order (pursuant to Paragraph 10.01D).

B. As indicated in Paragraphs 11.01B and 12.01A, Contract Price and Contract Times may only be changed by a Change Order or Written Amendment.

C. In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in the following way:

1. A Field Order (pursuant to Paragraph 9.05).
2. Engineer's written interpretation or clarification (pursuant to Paragraph 9.04).

3.03 OWNERSHIP AND REUSE OF DOCUMENTS:

A. All Contract Documents and copies thereof furnished by Engineer shall be the property of the Owner.

B. Neither Contractor nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with Owner shall have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing

the seal of Engineer; and they shall not reuse any of the documents on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

4.01 AVAILABILITY OF LANDS:

A. Owner shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of Contractor. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by Owner, unless otherwise provided in the Contract Documents.

B. If Contractor believes that any delay in Owner's furnishing these lands, rights-of-way, or easements entitles Contractor to an extension of the Contract Times, Contractor may make a claim therefor as provided in Article 12.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

D. Contractor shall confine his operations to the construction limits indicated.

4.02 UNFORESEEN SUBSURFACE CONDITIONS:

A. Contractor shall promptly notify Engineer in writing of any subsurface or latent physical conditions encountered at the Site which differ materially from those specified or indicated, or which could be reasonably interpreted from examination of the Site and available subsurface information at the time of bidding.

B. Engineer will promptly investigate those conditions and advise Owner if further surveys or subsurface tests are necessary. Promptly thereafter, Engineer will obtain the necessary additional surveys and tests and furnish copies of results to Contractor and Owner.

C. If Engineer and Owner find that the subsurface or latent physical conditions encountered at the Site differ materially from those specified or indicated, or which could have been reasonably interpreted from examination of the Site and available subsurface information at the time of bidding, then a Change Order will be issued by the Owner incorporating the necessary revisions.

4.03 PHYSICAL CONDITIONS - UNDERGROUND FACILITIES:

A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities or by others. Unless it is otherwise expressly provided:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and,
2. Contractor shall have full responsibility for reviewing and checking all such information and data, for locating all Underground Facilities shown or indicated in the Contract Documents, for coordination of the Work with the owners of such Underground Facilities during construction, for the safety and protection thereof as provided in Paragraph 6.12 and repairing any damage

thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

B. Not Shown or Indicated: If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated in the Contract Documents and which Contractor could not reasonably have been expected to be aware of, Contractor shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency as permitted by Paragraph 6.13), identify the owner of such Underground Facility and give written notice thereof to that owner and Engineer. Engineer will promptly review the Underground Facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility as provided in Paragraph 6.12. Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, to the extent that they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract Documents and which Contractor could not reasonably have been expected to be aware of. If the parties are unable to agree as to the amount or length thereof, Contractor may make a claim therefor as provided in Articles 11 and 12.

4.04 REFERENCE POINTS:

A. Engineer will provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work (unless otherwise specified in the General Requirements), shall protect and preserve the established reference points, and shall make no changes or relocations without the prior written approval of Engineer. Contractor shall report to Engineer whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel. Contractor shall be responsible for any mistakes or loss of time that may result from their loss or disturbance.

B. Contractor shall make such surveys as are required for establishing pay limits and determining quantities for progress pay estimates. He shall furnish Engineer with one copy each of all field notes of such surveys.

4.05 ASBESTOS, PCBS, PETROLEUM, HAZARDOUS WASTE, OR RADIOACTIVE MATERIAL:

A. Owner shall be responsible for any Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the Site. Owner shall not be responsible for any such materials brought to the Site by Contractor, Subcontractor, Suppliers, or anyone else for whom Contractor is responsible.

B. Contractor shall immediately: (i) stop all Work in connection with such hazardous condition and in any area affected thereby (except in an emergency as required by

Paragraph 6.13), and (ii) notify Owner and Engineer (and thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such hazardous condition or take corrective action, if any. Contractor shall not be required to resume Work in connection with such hazardous condition or in any such affected area until after Owner has obtained any required permits related thereto and delivered to Contractor special written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of such Work stoppage or such special conditions under which Work is agreed by Contractor to be resumed, either party may make a claim therefor as provided in Articles 11 and 12.

C. If after receipt of such special written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order such portion of the Work that is in connection with such hazardous condition or in such affected area to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a claim therefor as provided in Articles 11 and 12. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

D. The provisions of Paragraphs 4.02 and 4.03 are not intended to apply to Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 PERFORMANCE AND OTHER BONDS:

A. Following the Notice of Award, the Contractor shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price (inclusive of any anticipated contingency) as security for the faithful performance and payment of all Contractor's obligations under the Contract Documents. The bonds shall either include the total amount approved by the City Council or include a rider for the continency amount above the Contract Price. These Bonds shall remain in effect at least until two years after the date when final payment is approved by Owner, except as otherwise provided by Law or Regulation or by the Contract Documents. Contractor shall also furnish such other Bonds as are required by the Contract Documents. All Bonds shall be in the forms prescribed by Law or Regulation or by the Contract Documents and be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds shall be signed by an Arkansas Agent.

B. The Bonds shall be automatically increased in amount and extended in time without formal and separate amendments to cover full and faithful performance of the Contract in the event of Change Orders, regardless of the amount of time or money involved. It

is Contractor's responsibility to notify his surety of any changes affecting the general scope of the Work or change in the Contract Price or Contract Times.

C. Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

D. Date of Bonds shall be the same as the Effective Date of the Agreement.

E. If at any time during the continuance of the Contract, the surety on any Bond becomes unacceptable to Owner for financial reasons, Owner has the right to require additional and sufficient sureties which Contractor shall furnish to the satisfaction of Owner within ten days after notice to do so.

1. If the surety on any Bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01A, Contractor shall within five days thereafter substitute another Bond and surety, both of which must be acceptable to Owner.

F. The Bonds shall be provided to the City after the bonds are filed and file marked at the Washington County Circuit Clerk's office.

5.02 INSURANCE:

A. Contractor's Liability Insurance:

1. Contractor and all of his subcontractors shall purchase and maintain such liability and other insurance as is appropriate for the Work being furnished and performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's furnishing and performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
   a. Claims under workers' compensation, disability benefits, and other similar employee benefit acts;
   b. Claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
   c. Claims for damages because of bodily injury, sickness, or disease, or death of any person other than Contractor's employees;
   d. Claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or (ii) by any other person for any other reason;
   e. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use therefrom;
   f. Claims arising out of operation of Laws or Regulations for damages because of bodily injury or death of any person or for damage to property; and
   g. Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle.

2. The insurance required by this paragraph shall include the specific coverages, and be written for not less than the limits of liability specified or required by Law, whichever is greater.

a.	Umbrella General Liability	$5,000,000
b.	Workers' compensation	Statutory (State and Federal Limits)
	Employer's Liability	$500,000 each accident
c.	Commercial General Liability	
	(1) General Aggregate	$2,000,000
	(2) Products-Completed Operations Aggregate	$2,000,000
	(3) Personal & Advertising Injury Limit	$1,000,000
	(4) Each Occurrence Limit	$1,000,000
	(5) Fire Damage Limit	$ 100,000
	(6) Medical Expense Limit	$ 5,000
d.	Business Automobile Liability	
	(1) Any one loss or accident	$1,000,000

B. The policies of insurance so required by paragraph 5.02A to be purchased and maintained shall:

1. with respect to insurance required by Paragraphs 5.02A.1.c through 5.02A.1.g inclusive, include as additional insureds by endorsement (subject to customary exclusion in respect of professional liability) Owner, Engineer, and Engineer's Consultants, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
2. include at least the specific coverages and be written for not less than the limits of liability specified in Paragraph 5.02A.2 or required by Laws and Regulations, whichever is greater;
3. with respect to insurance required by paragraphs 5.02A1.c through 5.02A1.g inclusive, include premises/operations, products, completed operations, independent contractors, and personal injury insurance,;
4. include in the Commercial General Liability policy, contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.06, 6.10, and 6.16, and written for not less than the limits of liability and coverages specified above;
5. contain a provision or endorsement that the coverage afforded will not be cancelled, materially changed, or renewal refused until at least 30 days' prior written notice by certified mail has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued;
6. provide Broad Form Property Damage coverage and contain no exclusion (commonly referred to as XC&U exclusion) relative to blasting, earthquake, flood, explosion, collapse of buildings, or damage to underground property;
7. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07;
8. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after

final payment and Contractor shall furnish Owner and each other specified additional insured to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter;

9. include Independent Contractors Protective Liability coverage; and
10. with respect to the Commercial General Liability policy, the maximum deductible allowed shall be $5, 000.
11. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies required by Paragraph 5.02A and any other liability insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, Engineer, Engineer's Consultants, and all other individuals or entities endorsed as insureds or additional insureds (and the officers, directors, partners, employees, agents and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. As required by Paragraph 6.05D, each subcontract between Contractor and a Subcontractor shall contain similar waiver provisions by the Subcontractor in favor of Owner, Contractor, Engineer, Engineer's Consultants, and all other parties endorsed as insureds or additional insureds. None of the above waivers shall extend to the rights that any of the insured parties may have to proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued. with respect to the Commercial General Liability policy, the maximum deductible allowed shall be $5,000.

C. Owner's Protective Liability Insurance:
   1. Contractor shall be responsible for purchasing and maintaining Owner's Protective Liability insurance with Owner, and Engineer as named insureds.
   2. This insurance shall have the same limits of liability as the Commercial General Liability insurance and shall protect Owner and Engineer against any and all claims and liabilities for injury to or death of persons, or damage to property caused in whole or in part by, or alleged to have been caused in whole or in part by, negligent acts or omissions of Contractor or Subcontractors or any agent, servant, worker, or employee of Contractor or Subcontractors arising from the operations under the Contract Documents.
   3. This insurance may be provided by endorsement to Contractor's Commercial General Liability insurance policy.

D. Property Insurance:
   1. Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full insurable value thereof (subject to such deductible amounts as follows) or as required by Laws or Regulations. This insurance shall:
      a. be on the completed value form and include the interests of Owner, Contractor, Subcontractors, Engineer, and Engineer's Consultants, and the officers, directors, partners, employees, agent, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

b. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and Equipment and Materials, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, terrorism, and such other perils (as flood, earthquake, explosions, collapse, underground hazard) or causes of loss as may be specifically required in the Contract Documents;
c. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals);
d. cover Equipment and Materials stored at the Site or at another location that was agreed to in writing by Engineer prior to being incorporated in the Work, provided that such Equipment and Materials have been included in an Application for Payment recommended by Engineer;
e. allow for partial utilization of the Work by Owner;
f. include testing and startup;
g. be maintained in effect until final payment (or the Owner assumes beneficial occupancy and agrees to provide insurance coverage for the facilities so occupied) is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days' written notice to each other additional insured to whom a certificate of insurance has been issued; and
h. have a deductible amount of $ 10,000.

2. Contractor shall purchase and maintain such boiler and machinery insurance or additional property insurance as required by Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, Engineer, and Engineer's Consultants in the Work, each of whom is deemed to have an insurable interest and shall be listed as insured or additional insured parties.
3. All policies of insurance required to be purchased and maintained in accordance with Paragraph 5.02D will contain a provision or endorsement that the coverage afforded will not be cancelled or materially changed or renewal refused until at least 30 days' prior notice by certified mail has been given to Owner and Contractor and to each additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.02F below.
4. Copies of the policies shall be furnished for property insurance. Certificates will not be acceptable.

E. Transit Insurance:
1. Transit insurance shall be furnished by Contractor to protect Contractor and Owner from all risks of physical loss or damage to Equipment and Materials, not otherwise covered under other policies, during transit from point of origin to the Site of installation or erection.
2. This insurance shall be written on an "All Risk" basis with additional coverages applicable to the circumstances that may occur in the particular Work included in this Contact.

3. This insurance shall be in an amount not less than 100% of the manufactured or fabricated value of items exposed to risk in transit at any one time.
4. This insurance shall contain a waiver of rights of subrogation the insurer may have or acquire against Engineer.

F. Waiver of Rights:

1. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.02D will protect Owner, Contractor, Subcontractors, Engineer, Engineer's Consultants, and other individuals or entities endorsed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage, the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder; and if the insurers require separate waiver forms to be signed by Engineer or Engineer's Consultants, Owner will obtain the same, and if such waiver forms are required of any Subcontractor, Contractor shall obtain the same.
2. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies required by Paragraph 5.02D and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, Engineer, Engineer's Consultants, and all other individuals or entities endorsed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. As required by Paragraph 6.05D, each subcontract between Contractor and a Subcontractor shall contain similar waiver provisions by the Subcontractor in favor of Owner, Contractor, Engineer, Engineer's Consultants, and all other parties endorsed as insureds or additional insureds. None of the above waivers shall extend to the rights that any of the insured parties may have to proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

G. Receipt and Application of Insurance Proceeds:

1. Any insured loss under the policies of insurance required by Paragraph 5.02D will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.02G.2. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied to account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.
2. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such

objection is made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties upon the occurrence of an insured loss.

H. Acceptance of Insurance:

1. If Owner has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by Contractor in accordance with Paragraph 5.02 on the basis of non-conformance with the Contract Documents, Owner shall so notify Contractor in writing thereof within 10 days of the date of delivery of such certificates and other evidence of insurance to Owner required by Paragraph 2.05C.
2. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request If either party does not purchase or maintain all of the insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

I. Partial Utilization, Acknowledgment of Property Insurer:

1. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.06, no such use or occupancy shall commence before the insurers providing property insurance pursuant to Paragraph 5.02D have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be cancelled or lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 SUPERVISION AND SUPERINTENDENCE:

A. Contractor shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work, but Contractor shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence, or procedure of construction which is indicated in and required by the Contract Documents. Contractor shall be responsible to see that the finished Work complies accurately with the Contract Documents.

B. Contractor shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to Owner and

Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to the superintendent shall be as binding as if given to Contractor.

C. When manufacturer's field services in connection with the erection, installation, start-up, or testing of Equipment furnished under this Contract, or instruction of Owner's personnel thereon are specified, Contractor shall keep on the Work, during its progress or as specified, competent manufacturer's field representatives and any necessary assistants.

6.02 LABOR, EQUIPMENT, AND MATERIALS:

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site. Except in connection with the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and Contractor will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without Engineer's written consent.

B. Unless otherwise specified in the General Requirements, Contractor shall furnish and assume full responsibility for all Equipment and Materials, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up, and completion of the Work.

C. All Equipment and Materials shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by Engineer, Contractor shall furnish to Engineer satisfactory evidence (including reports of required tests) as to the kind and quality of Equipment and Materials. All Equipment and Materials shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to Engineer, or any of Engineer's consultants, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.10C and 9.10D.

D. All Equipment and Materials incorporated in the Work shall be designed to meet the applicable safety standards of federal, state, and local Laws and Regulations.

E. Domestic Product Procurement: As further specified elsewhere in these or referenced documents.

6.03 ADJUSTING PROGRESS SCHEDULE:

A. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) adjustments in the progress schedule to reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

6.04 SUBSTITUTES OR "OR-EQUAL" ITEMS:

A. Whenever an item of Equipment or Material is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitute is permitted, other items of Equipment or Material of other Suppliers may be submitted by Contractor to Engineer for review under the circumstances described below.

1. "Or-Equal" Items: If in Engineer's sole discretion an item of Equipment or Material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For purposes of this Paragraph 6.04A.1, a proposed item of Equipment or Material will be considered functionally equal to an item so named if:
   a. In the exercise of reasonable judgment Engineer determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;
   b. Contractor certifies that: (i) there is no increase in cost to Owner; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.
   c. "Or-Equal" will not be considered until after Award of Contract.
2. Substitute Items:
   a. If in Engineer's sole discretion an item of Equipment or Material proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.04A.1, it will be considered a proposed substitute item.
   b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of Equipment or Material proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of Equipment or Materials will not be accepted by Engineer from anyone other than Contractor.
   c. The procedure for review by Engineer will be as set forth in Paragraph 6.04A.2.d, as may be supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.
   d. Contractor shall first make written application to Engineer for review of a proposed substitute item of Equipment or Material that Contractor seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute will prejudice

Contractor's achievement of Substantial Completion on time; whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for work on the Project) to adapt the design to the proposed substitute item; and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by Engineer in evaluating the proposed substitute item. Engineer may require Contractor to furnish additional data about the proposed substitute item.

e. Substitute items will not be considered until after Award of Contract.

B. If a specific means, method, technique, sequence, or procedure of construction is indicated in or required by the Contract Documents, Contractor may furnish or use a substitute means, method, sequence, technique, or procedure of construction acceptable to Engineer, if Contractor submits sufficient information to allow Engineer to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by Engineer will be similar to that provided in Paragraph 6.04A.2 as applied by Engineer and as may be supplemented in the General Requirements.

C. Engineer will be allowed a reasonable time within which to evaluate each proposed substitute or "or-equal" item. Engineer will be the sole judge of acceptability, and no substitute or "or-equal" will be ordered, installed, or used until Engineer's review is complete, which will be evidenced by either (i) a Change Order for a substitute, or (ii) an approved Submittal for an "or-equal." Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

D. Engineer will record time required by Engineer and, Engineer's Consultants, in evaluating substitute proposed or submitted by Contractor pursuant to Paragraphs 6.04A.2 and 6.04B and in making changes in the Contract Documents or in the provisions of any other direct contract with Owner for work on the Project occasioned thereby. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of, Engineer, and Engineer's Consultants for evaluating each such proposed substitute.

6.05 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS:

A. Contractor shall not employ any Subcontractor, Supplier, or other person or organization (including those acceptable to Owner and Engineer as indicated in Paragraph 6.05B), whether initially or as a substitute, against whom Owner or Engineer may have reasonable objection. Contractor shall not be required to employ

any Subcontractor, Supplier, or other person or organization to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Contract Documents require the identity of certain Subcontractors, Suppliers, or other persons or organizations (including those who are to furnish the principal items of Equipment and Materials) to be submitted to Owner within the required time after Bid opening prior to the Effective Date of the Agreement for acceptance by Owner and Engineer and if Contractor has submitted a list thereof, Owner's or Engineer's 'acceptance (either in writing or by failing to make written objection thereto) of any such Subcontractor, Supplier, or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case Contractor shall submit an acceptable substitute, the Contract Price will be increased by the difference in the cost occasioned by such substitution, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by Owner or Engineer of any such Subcontractor, Supplier, or other person or organization shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with Contractor just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between Owner, or Engineer and any such Subcontractor, Supplier, or other person or organization, nor shall it create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other person or organization except as may otherwise be required by Laws and Regulations.

D. All Work performed for Contractor by a Subcontractor will be pursuant to an appropriate agreement between Contractor and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer and contains waiver provisions as required by Paragraph 5.02F. Contractor shall pay each Subcontractor a just share of any insurance moneys received by Contractor on account of losses under policies issued pursuant to Paragraph 5.02D.

6.06 PATENT FEES AND ROYALTIES:

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. Contractor shall indemnify and hold harmless Owner and Engineer and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorneys' fees and court and arbitration costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

6.07 PERMITS:

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids. Fees for permits issued by the City will be waived and the Permits issued by the City necessary for the work are required. Contractor shall pay all charges of utility owners for connections to the Work, and Owner shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

6.08 LAWS AND REGULATIONS:

A. Contractor shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor observes that the Specifications or Drawings are at variance with any Laws or Regulations, Contractor shall give Engineer prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in Paragraph 3.02. If Contractor performs any Work knowing or having reason to know that it is contrary to such Laws or Regulations, and without such notice to Engineer, Contractor shall bear all costs arising therefrom; however, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

C. DIGITAL ACCCESSIBLITY REQUIREMENTS: if applicable, Contractor shall provide accessibility conformance reports (ACRs) for any software provided by the Contractor that will be accessible by the public upon delivery, whether developed by the Contractor or a third-party. Visit the link for more information: https://www.fayettevillear.gov/DocumentCenter/View/39767/Web-Accessibility-Requirements-for-Vendors-and-Technology-Addendum. Contractor must address all accessibility issues in any software provided or licensed by the Contractor and delivered to the City, as well as any documents delivered by the Contractor. Contractor must ensure that end user deliverables adhere to the WCAG 2.1 AA standard as defined by Title II of the Americans with Disabilities Act. Deliverables are defined as any web platform or mobile application, or documents that may be hosted on a web or mobile platform. This includes documents, spreadsheets or presentations regardless of format (Microsoft Office products, PDF, etc.). Contractor must ensure accessibility is addressed during all stages of a project, from commencement to implementation. Contractor must meet with City staff at the City's discretion to review accessibility issues. If Contractor deliverables fail to comply with WCAG 2.1 Level AA standard, the Contractor shall provide the City with a credit to cover the cost of additional accessibility testing and resolution. Such credits shall not exceed 5% of either (1) the total fixed price due to the Contractor under the contract or (2) the total not-to-exceed amount of the contract if entered under a time and materials basis.

6.09 TAXES:

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid or withheld by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.10 USE OF PREMISES:

A. Contractor shall confine construction equipment, the storage of Equipment and Materials, and the operations of workers to the Project Site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits, and easements, and shall not unreasonably encumber the premises with construction equipment or other equipment and materials. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against Owner or Engineer by any such owner or occupant because of the performance of the Work, Contractor shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at Law. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold Owner and Engineer harmless from and against all claims, damages, losses, and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals, and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against Owner or Engineer to the extent based on a claim arising out of Contractor's performance of the Work.

B. During the progress of the Work, Contractor shall keep the premises free from accumulations of waste materials, rubbish, and other debris resulting from the Work. At the completion of the Work, Contractor shall remove all waste materials, rubbish, and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the Site clean and ready for occupancy by Owner. Contractor shall restore to original condition all property not designated for alteration by the Contract Documents.

C. Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.11 RECORD DOCUMENTS:

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Test Records, Field Orders, and written interpretations and clarifications (issued pursuant to Paragraph 9.04) in good order and annotated to show all changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Submittals shall be available to Engineer for reference. Upon completion of the Work, these record documents and Submittals shall be delivered to Engineer for Owner.

B. Receipt and acceptance of record documents will be a prerequisite for final payment on the Contract.

6.12 SAFETY AND PROTECTION:

A. Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. All employees on the Work and other persons and organizations who may be affected thereby;
2. All the Work and Materials and Equipment to be incorporated therein, whether in storage on or off the Site; and
3. Other property at the Site or adjacent thereto, including trees shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury or loss to any property referred to in Paragraph 6.12A.2 or 6.12A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor). Contractor's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.09A that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

C. Contractor shall designate a responsible representative at the Site whose duty shall be the prevention of accidents. This person shall be Contractor's superintendent unless otherwise designated in writing by Contractor to Owner and Engineer.

6.13 EMERGENCIES:

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor, without special instruction or authorization from Engineer or Owner, is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If Engineer determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a Change Order will be issued to document the consequences of the changes or variations.

6.14 SUBMITTALS:

A. After checking and verifying all field measurements and after complying with applicable procedures specified in the General Requirements, Contractor shall submit to Engineer for review and acceptance by Engineer, in accordance with the accepted schedule of submissions, copies of Submittals which will bear the required information that Contractor has satisfied Contractor's responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as Engineer may require. The data shown on Submittals will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to enable Engineer to review the information as required.

B. Before submission of each Submittal, Contractor shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and reviewed or coordinated each Submittal with other Submittals and with the requirements of the Work and the Contract Documents.

C. At the time of each submission, Contractor shall give Engineer specific written notice of each variation that the Submittal may have from the requirements of the Contract Documents, and in addition, shall cause a specific notation to be made on each Submittal submitted to Engineer for review and approval of each such variation.

D. Engineer will review Submittals with reasonable promptness, but Engineer's review and acceptance will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences, or procedures of construction (except where a specific means, method, technique, sequence, or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. Contractor shall make corrections required by Engineer, and shall return the required number of corrected copies of Submittals and resubmit as required for review and acceptance. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

E. Engineer's review and acceptance of Submittals shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents. Contractor shall in writing call Engineer's attention to each and every variation at the time of submission. Engineer will show approval of each such variation by a specific written notation thereof incorporated in or accompanying the Submittal. Acceptance by Engineer shall not relieve Contractor from responsibility for errors or omissions in the Submittals.

F. Where a Submittal is required by the Specifications, any related Work performed prior to Engineer's review and acceptance of the pertinent submission will be the sole expense and responsibility of Contractor.

6.15 CONTINUING THE WORK:

A. Contractor shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with Engineer or Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.03 or as Contractor and Owner may otherwise agree in writing.

6.16 INDEMNIFICATION:

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, Engineer, Engineer's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, damages, losses and expenses, direct, indirect, or consequential (including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and court and arbitration costs) arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss, or expense:

1. Is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom, and
2. Is caused in whole or in part by any negligent act or omission of Contractor, any Subcontractor, any person, or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder or arises by or is imposed by Laws and Regulations regardless of the negligence of any such party.

B. In any and all claims against Owner or Engineer or any of their consultants, agents, or employees by any employee of Contractor, any Subcontractor, any person, or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.16A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts, or other employee benefit acts.

C. The obligations of Contractor under Paragraph 6.16A shall not extend to the liability of Engineer, Engineer's Consultants, agents, or employees arising out of:

1. The preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs, or specifications.
2. The giving of or the failure to give communications by Engineer, their agents, or employees provided such giving or failure to give is the primary cause of injury or damage.

D. If necessary for enforcement of any indemnification and hold harmless requirement herein, or if applicable law requires the Contractor to obtain specified limits of insurance to insure any indemnity obligation; then Contractor shall obtain such applicable coverage with minimum limits not less than any specified in Paragraph 5.02B herein, the cost to be recovered and included in the Contract Price, and any indemnity attributable to the negligence of any indemnified party shall be limited to such insurance.

ARTICLE 7 - OTHER WORK

7.01 RELATED WORK AT SITE:

A. Owner may perform other work related to the Project at the Site by Owner's own forces, have other work performed by utility owners, or let other direct contracts therefor which shall contain General Conditions similar to these. If the fact that such

other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to Contractor prior to starting any such other work; and, if Contractor believes that such performance will involve additional expense to Contractor or requires additional time and the parties are unable to agree as to the extent thereof, Contractor may make a claim therefor as provided in Articles 11 and 12.

B. Contractor shall afford each utility owner and other contractor who is a party to such a direct contract (or Owner, if Owner is performing the additional work with Owner's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs; Contractor shall do all cutting, fitting, and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected.

C. If any part of Contractor's Work depends for proper execution or results upon the work of any such other contractor or utility owner or Owner, Contractor shall inspect and promptly report to Engineer in writing any delays, defects, or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. Contractor's failure so to report will constitute an acceptance of the other work as fit and proper for integration with Contractor's Work except for latent or nonapparent defects and deficiencies in the other work.

7.02 COORDINATION:

A. If Owner contracts with others for the performance of other work on the Project at the Site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the General Requirements, and the specific matters to be covered by such authority and responsibility will be itemized, and the extent of such authority and responsibilities will be provided.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 COMMUNICATIONS:

A. Owner shall issue all communications to Contractor through Engineer.

8.02 CHANGE OF ENGINEER :

A. In case of termination of the employment of Engineer, Owner shall appoint, subject to the requirements of Section 00001 CERTIFICATIONS and Arkansas State Law an engineer against whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer. Any dispute in connection with such appointment shall be addressed as discussed in Article 16.

8.03 REQUIRED DATA:

A. Owner shall furnish the data required of Owner under the Contract Documents promptly and shall make payments to Contractor promptly after they are due as provided in Paragraphs 14.04A and 14.09A.

8.04 LANDS AND EASEMENTS:

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.04.

8.05 INSURANCE:

A. Owner's responsibilities in respect of purchasing and maintaining insurance are set forth in Paragraph 5.02.

8.06 CHANGE ORDERS:

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.01.

8.07 INSPECTIONS AND TESTS:

A. Owner's responsibility in respect of certain inspections, tests and approvals is set forth in Paragraph 13.03B.

8.08 STOPPING THE WORK:

A. In connection with Owner's right to stop Work or suspend Work, see Paragraphs 13.06 and 15.02. Paragraph 15.02A deals with Owner's right to terminate services of Contractor under certain circumstances.

8.09 LIMITATIONS ON OWNER'S RESPONSIBILITIES:

A. Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 OWNER'S REPRESENTATIVE:

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of Owner and Engineer.

B. Owner and Contractor are reminded of the requirements of Arkansas State Law **§22-9-101.** Observation by registered professionals required.

9.02 VISITS TO SITE:

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous on-Site inspections to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-Site

observations as an experienced and qualified design professional, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defects and deficiencies in the Work.

9.03 PROJECT REPRESENTATION:

A. Engineer may furnish Resident Project Representative and assistants to assist Owner and Engineer in observing the performance of the Work.
   1. Communications pertaining to Submittals, written interpretations, and Change Orders shall be directed to Engineer at his home office.
   2. Communications pertaining to day-to-day operations at the Site shall be directed to Resident Project Representative.
   3. Resident Project Representative and his assistants will conduct observations of the Work in progress to assist Engineer in determining that the Work is proceeding in accordance with the Contract Documents.
   4. Resident Project Representative will not have authority to permit any deviation from the Contract Documents, except with concurrence of Owner and Engineer.

9.04 CLARIFICATIONS AND INTERPRETATIONS:

A. Engineer will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of drawings or otherwise) as Engineer may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If Contractor believes that a written clarification or interpretation justifies an increase in the Contract Price or an extension of the Contract Times and the parties are unable to agree to the amount or extent thereof, Contractor may make a claim therefor as provided in Article 11 or Article 12.

9.05 AUTHORIZED VARIATIONS IN WORK:

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner, and also on Contractor who shall perform the Work involved promptly.

9.06 REJECTING DEFECTIVE WORK:

A. Engineer will have authority to disapprove or reject Work which Engineer believes to be defective, and will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.05B, whether or not the Work is fabricated, installed, or completed.

B. Resident Project Representative will have authority, subject to final decision of Engineer, to disapprove or reject any defective workmanship, Equipment, or Material.

9.07 SUBMITTALS, CHANGE ORDERS, AND PAYMENTS:

A. In connection with Engineer's responsibility for Submittals, see Paragraph 6.14.

B. In connection with Engineer's responsibilities as to Change Orders, see Articles 10, 11, and 12.

C. In connection with Engineer's responsibilities in respect of Applications for Payment, see Article 14.

9.08 DETERMINATIONS FOR UNIT PRICES:

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon to the Owner. Engineer will provide approval by recommendation of an Application for Payment to the Owner or return Application to Engineer for further review.

B. Engineer's written decisions thereon will be final and binding upon Owner and Contractor, unless, within ten days after the date of any such decision, either Owner or Contractor delivers to the other party to the Agreement and to Engineer written notice of intention to appeal such a decision.

9.09 DECISIONS ON DISPUTES:

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes, and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 11 and 12 in respect of changes in the Contract Price or Contract Times will be referred initially to Engineer in writing with a request for a formal decision in accordance with this Paragraph, which Engineer will render in writing within a reasonable time. Written notice of each such claim, dispute, and other matter will be delivered by the claimant to Engineer and the other party to the Agreement promptly (but in no event later than 30 days) after the occurrence of the event giving rise thereto, and written supporting data shall be delivered to Engineer and the other party within 60 days after such occurrence unless Engineer allows an additional period of time to ascertain more accurate data in support of the claim. Owner may request written review by Engineer of claims, disputes, and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents.

B. When functioning as interpreter and judge under Paragraphs 9.08 and 9.09A, Engineer will not show partiality to Owner or Contractor and Engineer will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by Engineer with respect to any such claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in Paragraph 14.11) will be a condition precedent to any exercise by Owner or Contractor of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute, or other matter.

9.10 LIMITATIONS ON ENGINEER'S RESPONSIBILITIES:

A. Neither Engineer's authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of Engineer to Contractor, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

B. Whenever in the Contract Documents the terms "as directed", "as required", "as allowed", "as approved", or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review, or judgment of Engineer as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraphs 9.10C or 9.10D.

C. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

D. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

E. The presence or absence of Engineer, or any of their representatives will not act to relieve Contractor of any responsibility or of any guarantee of his performance. Neither will observation by Engineer, or any of their representatives in any way be understood to relieve Contractor of any responsibility for proper supervision of the Work at all times.

F. Review by Engineer of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.08A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

G. The limitations upon authority and responsibility set forth in this Paragraph 9.10 shall also apply to Engineer's Consultants, Resident Project Representative, and assistants.

ARTICLE 10 - CHANGES IN THE WORK

10.01 GENERAL:

A. Without invalidating the Agreement and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work; these will be authorized by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which shall be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

1. There shall be no changes without prior written approval of the Engineer of Record and/or the City's designated Professional Engineer.

B. If Owner and Contractor are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or a shortening of the Contract Times that should be allowed as a result of a Work Change Directive, a claim may be made therefore as provided in Article 11 or 12.

C. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents as amended, modified, and supplemented as provided in Paragraphs 3.02A and 3.02C, except in the case of an emergency as provided in Paragraph 6.13 and except in the case of uncovering Work as provided in Paragraph 13.05B.

D. Owner and Contractor shall execute appropriate Change Orders (or Written Amendments) covering:
   1. Changes in the Work which are ordered by Owner pursuant to Paragraph 10.01A, are required because of acceptance of defective Work under Paragraph 13.09 or correcting defective Work under Paragraph 13.10, or are agreed to by the parties;
   2. Changes in the Contract Price or Contract Times which are agreed to by the parties; and
   3. Changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 9.09A, provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the progress schedule as provided in Paragraph 6.15.

E. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be Contractor's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 11 - CHANGE OF CONTRACT PRICE

11.01 GENERAL:

A. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to Contractor for performing the Work. All duties, responsibilities, and obligations assigned to or undertaken by Contractor shall be at his expense without change in the Contract Price.

B. The Contract Price may only be changed by a Change Order or a Written Amendment. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to Engineer promptly (but in no event later than 30 days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within 60 days after such occurrence (unless Engineer allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the claimant is entitled as a result of the occurrence of said

event. All claims for adjustment in the Contract Price shall be determined by Engineer in accordance with Paragraph 9.09A if Owner and Contractor cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this Paragraph 11.01B.

C. The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:
   1. Where the Work involved is covered by Unit Prices contained in the Contract Documents, by application of Unit Prices to the quantities of the items involved (subject to the provisions of Paragraphs 11.05A through 11.05C, inclusive).
   2. By mutual acceptance of a lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.03A.2.a.
   3. On the basis of the Cost of the Work (determined as provided in Paragraphs 11.02A and 11.02B) plus a Contractor's Fee for overhead and profit (determined as provided in Paragraphs 11.03A and 11.03B).

11.02 COST OF THE WORK:

A. The term Cost of the Work means the sum of all costs necessarily incurred and paid by Contractor in the proper performance of the Work. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in Paragraph 11.02B.
   1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation, and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the Site. The expenses of performing Work after regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
   2. Cost of all Equipment and Materials furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds, and all returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
   3. Payments made by Contractor to the Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from Subcontractors acceptable to Contractor and shall deliver such bids to Owner who will then determine, with the advice of Engineer, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the

Work shall be determined in the same manner as Contractor's Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
   a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
   b. Costs, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of Contractor.
   c. Rentals of all construction equipment and machinery and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, installation, dismantling, and removal thereof - all in accordance with terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
   d. Sales, consumer, use, or similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.
   e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
   f. Losses and damages not compensated by insurance or otherwise, to the Work or otherwise sustained by Contractor in connection with the performance and furnishing of the Work provided they have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable; shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the cost of the Work for the purpose of determining Contractor's fee. If, however, any such loss or damage requires reconstruction and Contractor is placed in charge thereof, Contractor shall be paid for services a fee proportionate to that stated in Paragraph 11.03A.2.
   g. The cost of utilities, fuel, and sanitary facilities at the Site.
   h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.
   i. Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts established by Owner in accordance with Paragraph 5.02D.4.

B. The term Cost of the Work shall not include any of the following:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor whether at the Site or in Contractor's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.02A.1 or specifically covered by Paragraph 11.02A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work, and charges against Contractor for delinquent payments.
4. Cost of premiums for all Bonds and for all insurance whether or not Contractor is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 11.02A.5.i above).
5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
6. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 11.02A.

11.03 CONTRACTOR'S FEE:

A. The Contractor's Fee allowed to Contractor for overhead and profit shall be determined as follows:

1. A mutually acceptable fixed fee; or if none can be agreed upon,
2. A fee based on the following percentages of the various portions of the Cost of the Work:
   a. For costs incurred under Paragraphs 11.02A.1 and 11.02A.2, the Contractor's Fee shall be 10%(negotiable with Owner);
   b. For costs incurred under Paragraph 11.02A.3, the Contractor's Fee shall be 5%; and if a subcontract is on the basis of Cost of the Work Plus a Fee, the maximum allowable to Contractor on account of overhead and profit of all Subcontractors shall be 10%(negotiable with Owner);
   c. Where one or more tiers of subcontracts are on the basis of the Cost of the Work Plus a Fee and no fixed fee is agreed upon, the intent of Paragraphs 11.03A and 11.02A.1 through A.3 is that the Subcontractor who actually performs or furnishes the Work, at whatever tier, will be paid a fee of ten percent (10%) of the costs incurred by such Subcontractor under Paragraphs 11.02A.1 and 11.02A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent (5%) of the amount paid to the next lower tier Subcontractor.
   d. No fee shall be payable on the basis of costs itemized under Paragraph 11.02A.4, 11.02A.5 and 11.02B;

e. The amount of credit to be allowed by Contractor to Owner for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in Contractor's Fee by an amount equal to 10% of the net decrease; and

f. When both additions and credits are involved in any one change, the adjustment in Contractor's Fee shall be computed on the basis of the net change in accordance with Paragraphs 11.03A.2.a through 11.03A.2.d, inclusive.

B. Whenever the cost of any Work is to be determined pursuant to Paragraph 11.02A or 11.02B, Contractor will submit in form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.04 CASH ALLOWANCES:

A. Not applicable.

11.05 UNIT PRICE WORK:

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established Unit Prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer in accordance with Paragraph 9.08.

B. Each Unit Price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

C. Where the quantity of any item of Unit Price Work performed by Contractor exceeds the estimated quantity of such item indicated in the Agreement by twenty-five percent or more and there is no corresponding adjustment with respect to any other item of Work and if Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may make a claim for an increase in the Contract Price in accordance with Article 11 if the parties are unable to agree as to the amount of any such increase.

11.06 RIGHT OF AUDIT:

A. Owner shall have the right to inspect and audit all of Contractor's books, records, correspondence, instructions, drawings, receipts, payment records, vouchers, and memoranda relating to the Work, and Contractor shall preserve all such records and supporting documentation for a period of three years after date of Final Payment. Contractor hereby grants to Owner the authority to enter Contractor's premises for the purpose of inspection of such records and supporting documentation or, at Contractor's option, Contractor may make such records and supporting documentation available to Owner at a location satisfactory to Owner.

B. All of the records and supporting documentation shall be open to inspection and subject to audit and reproduction by Owner or its authorized representative for any and all purposes, including but not limited to (i) compliance with the Contract Documents;

(ii) proper pricing of Change Orders; and (iii) claims submitted by or against Contractor or any Subcontractor or Supplier in connection with any performance under the Contract Documents.

ARTICLE 12 - CHANGE OF CONTRACT TIMES

12.01 GENERAL:

A. The Contract Times may only be changed by a Change Order or a Written Amendment. Contractor, in undertaking to complete the Work within the Contract Times, shall take into consideration and make allowances for all of the ordinary delays and hindrances incident to such Work, whether growing out of delays in securing equipment or materials or workmen or otherwise.

B. Adjustments to the Contract Times will be made for delays in completion of the Work from causes beyond Contractor's control, including the following:

1. Federal embargoes, priority orders, or other restrictions imposed by the United States Government.
2. Unusual delay in fabrication or shipment of Equipment or Materials required in the Work, whether ordered by Contractor or furnished by Owner or others under separate contract.
3. Strikes and other labor disputes.
4. Delays caused by court proceedings.
5. Change Orders.
6. Neglect, delay, or default of any other contractor employed by Owner.
7. Unusual construction delays resulting from weather conditions abnormal to the geographical area and to the season of the year such as above normal continuous days of precipitation, above normal amount of precipitation within a 24 hour period, or above normal days of extreme cold or hot temperature conditions affecting installation / application due to manufacturers or specifications limitations. These conditions will not be cause for extensions of time if abnormal weather conditions do not affect the stage of construction. All claims for extension of time due to abnormal weather conditions must be substantiated with evidence from a weather bureau or other authoritative source. Weather conditions normal to the geographical area and to the season of the year shall be taken into consideration in the Bid. Normal conditions shall be defined as the average number of days, amounts, or both over a 5-year period averaged per season.
8. Conflicts, errors or discrepancies in the Contract Documents reported to Engineer as provided in these General Conditions.
9. Any failure or delay by Contractor in supplying equipment, materials, work, or services that are Year 2000 compliant or failure or delay by Contractor's Subcontractors or Suppliers in providing equipment, materials, work, or services as a result of Subcontractors' or Suppliers' lack of Year 2000 compliance in their own operations, systems, or processes used to provide or deliver equipment, material, work, or services shall not be considered to be caused by events beyond Contractor's control. Such Year 2000 compliance problems shall not constitute a basis for delay in completion of the Work, adjustment to the Contract Times, or an excuse for Contract nonperformance.

C. Owner shall award extensions of the Contract Times on account of such causes of delay, provided that adequate evidence is presented to enable Engineer to determine with exactness the extent and duration of delay for each item involved.

D. No extension to the Contract Times will be granted for delays involving only portions of the Work, or which do not directly affect the time required for completion of the entire Work.

E. Any claim for an extension to the Contract Times shall be delivered in writing to Owner and Engineer within ten days of the occurrence of the event giving rise to the claim. All claims for adjustment to the Contract Times will be determined by Engineer if Owner and Contractor cannot otherwise agree. Any change to the Contract Times resulting from any such claim will be incorporated in a Change Order or a Written Amendment.

F. All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 12 shall not exclude recovery for damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and court and arbitration costs) for delay by either party.

ARTICLE 13 - WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

13.01 WARRANTY AND GUARANTEE:

A. Contractor warrants and guarantees to Owner and Engineer that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to Contractor. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 13.

B. No provision in the Contract Documents nor any specified guarantee time limit shall be held to limit Contractor's liability for defects to less than the legal limit of liability in accordance with the Law.

C. All Equipment and Materials furnished by Contractor for the Work shall carry a written guarantee from the manufacturer or Supplier of such items when called for in the Specifications. Written guarantees shall be submitted to Engineer with other Submittals. Engineer will transmit such guarantees to Owner for review.

13.02 ACCESS TO THE WORK:

A. Engineer and Engineer's representatives, other representatives of Owner, testing agencies, and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide proper and safe conditions for such access.

13.03 TESTS AND INSPECTIONS:

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
   1. for inspections, tests, or approvals covered by Paragraphs 13.03C and 13.03D below;
   2. that costs incurred in connections with tests or inspections conducted pursuant to Paragraph 13.05B shall be paid as provided in said Paragraph 13.05B; and
   3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) to specifically be inspected, tested, or approved, Contractor shall assume full responsibility therefor, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection, testing, or approval.

D. Contractor shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with Owner's or Engineer's acceptance of a Supplier of Materials or Equipment proposed to be incorporated in the Work, or of Materials or Equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

E. All inspections, tests, or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to Owner and Contractor (or by Engineer if so specified).

F. If any Work (including the work of others) that is to be inspected, tested, or approved is covered without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation. Such uncovering shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

G. Neither observations by Engineer nor inspections, tests, or approvals by others shall relieve Contractor from Contractor's obligations to perform the Work in accordance with the Contract Documents.

13.04 DEFECTIVE WORK:

A. The term "defective" is used in these documents to describe Work that is unsatisfactory, faulty, not in conformance with the requirements of the Contract Documents, or not meeting the requirements of any inspection, test, approval, or acceptance required by Law or the Contract Documents.

B. Any defective Work may be disapproved or rejected by Engineer at any time before final acceptance even though it may have been overlooked and included in a previous Application for Payment.

C. Prompt notice will be given by Engineer to Contractor of defects as they become evident.

13.05 UNCOVERING WORK:

A. If any Work is covered contrary to the written request of Engineer, it shall, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as

Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, Contractor shall bear all direct, indirect, and consequential costs of such uncovering, exposure, observation, inspection, and testing and of satisfactory reconstruction, (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals); and Owner shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefor as provided in Article 11. If, however, such Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, Contractor may make a claim therefor as provided in Articles 11 and 12.

13.06 OWNER MAY STOP THE WORK:

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor or any other party.

13.07 CORRECTION OR REMOVAL OF DEFECTIVE WORK:

A. If required by Engineer, Contractor shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by Engineer, remove it from the Site and replace it with nondefective Work. Contractor shall bear all direct, indirect, and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals) made necessary thereby.

13.08 TWO-YEAR WARRANTY AND CORRECTION PERIOD:

A. Before final acceptance of the project, the contractor shall provide a maintenance bond in accordance with section 158.03 of the City of Fayetteville Unified Development Code. The bond shall be in the amount of 25% of the total contract price for a period of two years from the date of Substantial Completion. If within two years after the Date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such defective Work, or, if it has been rejected by Owner, remove it from the Site and replace it with nondefective Work. If Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect, and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals) will be paid by Contractor. In special circumstances

where a particular item of Equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

13.09 ACCEPTANCE OF DEFECTIVE WORK:

A. If, instead of requiring correction or removal and replacement of defective Work, Owner and, prior to Engineer's recommendation of final payment, also Engineer prefers to accept it, Owner may do so. Contractor shall bear all direct, indirect, and consequential costs attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys, and other professionals). If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, Owner may make a claim therefor as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.10 OWNER MAY CORRECT DEFECTIVE WORK:

A. If Contractor fails within a reasonable time after written notice of Engineer to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.07, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days' written notice to Contractor, correct and remedy any such deficiency. In exercising the rights and remedies under this Paragraph, Owner shall proceed expeditiously.

B. To the extent necessary to complete corrective and remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work, and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment, and machinery at the Site and incorporate in the Work all Equipment and Materials stored at the Site or for which Owner has paid Contractor but which are stored elsewhere.

C. Contractor shall allow Owner, Owner's representatives, agents, and employees such access to the Site as may be necessary to enable Owner to exercise the rights and remedies under this Paragraph.

D. All direct, indirect, and consequential costs of Owner in exercising such rights and remedies will be charged against Contractor in an amount approved as to reasonableness by Engineer,, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, Owner may make a claim therefor as provided in Article 11. Such direct, indirect, and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court and arbitration costs, and all costs of repair and replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

E. Contractor shall not be allowed an extension of the Contract Times because of any delay in performance of the Work attributable to the exercise by Owner of Owner's rights and remedies hereunder.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 SCHEDULE OF VALUES:

A. The schedule of values established will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 APPLICATION FOR PROGRESS PAYMENT:

A. Not later than the 15th day of each month, or on the next business day thereafter, (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

B. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

C. If payment is requested on the basis of Equipment and Materials not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the Equipment and Materials free and clear of all liens, charges, security interests, and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the Equipment and Materials are covered by appropriate property insurance and other arrangements to protect Owner's interest therein, all of which will be satisfactory to Owner.

D. The amount of retainage with respect to progress payments will be as stipulated in Paragraph 14.04G.

14.03 CONTRACTOR'S WARRANTY OF TITLE:

A. Contractor warrants and guarantees that title to all Work, Materials, and Equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 REVIEW OF APPLICATION FOR PROGRESS PAYMENT:

A. Engineer will, within seven days after receipt of each Application For Payment, either indicate in writing a recommendation of payment and present the Application to Owner (subject to the provisions of the last sentence of Paragraph 14.04D), or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application. After the required internal reviews and processing by the Owner, the Owner will diligently proceed to make payment to the

Contractor, in accordance with the approved payment request, within 30 days. All efforts will be made to make payments within the 30 day period, but the Owner cannot guarantee the 30 days maximum time.

B. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's on-Site observations of the Work in progress as experienced and qualified design professionals and on Engineer's review of the Application for Payment and the accompanying data and schedules that the Work has progressed to the point indicated; that, to the best of Engineer's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.08, and to any other qualifications stated in the recommendation); and that Contractor is entitled to payment of the amount recommended. However, by recommending any such payment, Engineer will not thereby be deemed to have represented that exhaustive or continuous on-Site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents, or that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or Owner to withhold payment to Contractor.

C. Engineer's recommendation of final payment will constitute an additional representation by Engineer to Owner that the conditions precedent to Contractor's being entitled to final payment as set forth in Paragraph 14.09 have been fulfilled.

D. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make such representations to Owner. Engineer may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

1. The Work is defective, or completed Work has been damaged requiring correction or replacement.
2. Written claims have been made against Owner or Liens have been filed in connection with the Work.
3. The Contract Price has been reduced by Written Amendment or Change Order
4. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.10,
5. Of Engineer's 'actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02B.
6. Of Contractor's unsatisfactory prosecution of the Work in accordance with the Contract Documents.
7. Contractor's failure to make payment to Subcontractors, or for labor, Materials, or Equipment, or
8. Engineer shall not certify payments requesting more than eighty (80) percent of the Contract amount until such time as all operation, maintenance, repair, and replacement manuals, and product data has been furnished by the Contractor to the Owner.

E. Owner may refuse to make payment of the full amount recommended by Engineer because claims have been made against Owner on account of Contractor's performance of furnishing of the Work, or Liens have been filed in connection with the Work, or there are other items entitling Owner to a set-off against the amount recommended, but Owner must give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action.

F. When all grounds for withholding payment are removed, payment will be made in the amounts withheld because of them.

G. Progress payments will be in the amount of 95% of the amount of the Work completed and 100% of Equipment and Materials suitably stored and documented as indicated on the Application for Payment less the sum of all previous payments. The owner may forego withholding retainage of the progress payments if the construction contract is fifty-percent (50%) complete and the contractor has provided the work in a satisfactory manner.

14.05 SUBSTANTIAL COMPLETION:

A. When Contractor considers the entire Work ready for its intended use, Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Within a reasonable time thereafter, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving his reasons therefor. If Engineer considers the Work substantially complete, Engineer will prepare and deliver to Owner a tentative certificate of Substantial Completion which will fix the Date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment.

C. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within fourteen days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said fourteen days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, maintenance, heat, utilities, insurance, and warranties.

E. Unless Owner and Contractor agree otherwise in writing and so inform Engineer prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

F. Owner shall have the right to exclude Contractor from the Work after the Date of Substantial Completion, but Owner shall allow Contractor reasonable access to complete or correct items on the tentative list.

14.06 PARTIAL UTILIZATION:

A. Use by Owner of any finished part of the Work, which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and useable part of the Work that can be used by Owner without significant interference with Contractor's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

1. Owner at any time may request Contractor in writing to permit Owner to use any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If Contractor agrees, Contractor will certify to Owner and Engineer that said part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.05 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
2. Owner may at any time request Contractor in writing to permit Owner to take over operation of any such part of the Work although it is not substantially complete. A copy of such request will be sent to Engineer and within a reasonable time thereafter, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If Contractor does not object in writing to Owner and Engineer that such part of the Work is not ready for separate operation by Owner, Engineer will finalize the list of items to be completed or corrected and will deliver such list to Owner and Contractor together with a written recommendation as to the division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, maintenance, utilities, insurance, warranties, and guarantees for that part of the Work, which will become binding upon Owner and Contractor at the time when Owner takes over such operation (unless they shall have otherwise agreed in writing and so informed Engineer). During such operation and prior to Substantial Completion of such part of the Work, Owner shall allow Contractor reasonable access to complete or correct items on said list and to complete other related Work.

3. No occupancy or separate operation of part of the Work will be accomplished prior to compliance with the requirements of Paragraph 5.02I in respect of property insurance.

14.07 FINAL INSPECTION:

A. Upon written notice from Contractor that the Work or an agreed portion thereof is complete, Engineer will make a final inspection with Owner, Engineer, and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to remedy such deficiencies.

14.08 FINAL APPLICATION FOR PAYMENT:

A. After Contractor has completed all such corrections to the satisfaction of Engineer and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents, and other documents - all as required by the Contract Documents, and after Engineer has indicated that the Work is acceptable (subject to the provisions of Paragraph 14.11), Contractor may make application for final payment following the procedure for progress payments.

B. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to Owner) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by Owner, Contractor may furnish receipts or releases in full; an affidavit of Contractor that the releases and receipts include all labor, services, Material, and Equipment for which a Lien could be filed, and that all payrolls, Equipment and Material bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or Supplier fails to furnish a release or receipt in full, Contractor may furnish a Bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

14.09 FINAL PAYMENT AND ACCEPTANCE:

A. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation -- all as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within fourteen days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application to Owner for payment. Thereupon, Engineer will give written notice to Owner and Contractor that the Work is acceptable (subject to the provisions of Paragraph 14.11). Otherwise, Engineer will return the Application to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application. Thirty days after presentation to Owner of the Application and accompanying documentation, in appropriate form and substance, and with Engineer's recommendation and notice of acceptability, the amount recommended by Engineer will become due and will be paid by Owner to Contractor.

B. If, through no fault of Contractor, final completion of the Work is significantly delayed and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment and recommendation of Engineer, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. The written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

C. The Final Pay Estimate will include all sums remaining to be paid.

14.10 CONTRACTOR'S CONTINUING OBLIGATION:

A. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by Engineer, nor the issuance of a certificate of Substantial Completion, nor any payment by Owner to Contractor under the Contract Documents, nor any use or occupancy of the Work or any part thereof by Owner, nor any act of acceptance by Owner nor any failure to do so, nor any review and approval of a Submittal, nor the issuance of a notice of acceptability by Engineer pursuant to Paragraph 14.09, nor any correction of defective Work by Owner will constitute an acceptance of Work not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents (except as provided in Paragraph 14.11).

14.11 WAIVER OF CLAIMS: The making and acceptance of final payment will constitute:

A. A waiver of all claims by Owner against Contractor, except claims arising from unsettled Liens, from defective work appearing after final inspection pursuant to Paragraph 14.07, or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by Owner of any rights in respect of Contractor's continuing obligations under the Contract Documents; and

B. A waiver of all claims by Contractor against Owner other than those previously made in writing and still unsettled.

14.12 INTEREST: NOT APPLICABLE.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 OWNER MAY SUSPEND WORK:

A. Owner may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than 90 days by notice in writing to Contractor, and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to any suspension if Contractor makes an approved claim therefor as provided in Articles 11 and 12.

15.02 OWNER MAY TERMINATE:

A. Upon the occurrence of any one or more of the following events:

1. If Contractor commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if Contractor takes any equivalent or similar action by filing a petition or otherwise under any other federal or state Law in effect at such time relating to the bankruptcy or insolvency;
2. If a petition is filed against Contractor under any chapter of the bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against Contractor under any other federal or state Law in effect at the time relating to bankruptcy or insolvency;
3. If Contractor makes a general assignment for the benefit of creditors;
4. If a trustee, receiver, custodian, or agent of Contractor is appointed under applicable Law or under contract, whose appointment or authority to take charge of property of Contractor is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of Contractor's creditors;
5. If Contractor admits in writing an inability to pay its debts generally as they become due;
6. If Contractor persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable Equipment or Materials or failure to adhere to the progress schedule established under Paragraph 2.07 as revised from time to time);
7. If Contractor disregards Laws or Regulations of any public body having jurisdiction;
8. If Contractor disregards the authority of Engineer; or
9. If Contractor otherwise violates in any substantial way any provisions of the Contract Documents;

B. Owner may, after giving Contractor (and the surety, if there be one) ten days' written notice and to the extent permitted by Laws and Regulations, terminate the services of Contractor, exclude Contractor from the Site and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion), incorporate in the Work all Equipment and Materials stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and finish the Work as Owner may deem expedient. In such case, Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect, and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and court and arbitration costs), such excess will be paid to Contractor. If such costs exceed such unpaid balance, Contractor shall pay the difference to Owner. Such costs incurred by Owner will be approved as to reasonableness by Engineer and incorporated in a Change Order, but when exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

C. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due to Contractor by Owner will not release Contractor from liability.

D. Upon ten days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, Contractor shall be paid for all Work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect, and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals, and court and arbitration costs).

15.03 CONTRACTOR MAY STOP WORK OR TERMINATE:

A. If, through no act or fault of Contractor, the Work is suspended for a period of more than 90 days by Owner or under an order of court or other public authority, or Engineer fails to act on any Application for Payment within 30 days after it is submitted, or Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon ten days' written notice to Owner and Engineer, terminate the Agreement and recover from Owner payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if Engineer has failed to act on an Application for Payment or Owner has failed to make any payment as aforesaid, Contractor may upon ten days' written notice to Owner and Engineer stop the Work until payment of all amounts then due. The provisions of this Paragraph shall not relieve Contractor of the obligations under Paragraph 6.15 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with Owner.

ARTICLE 16 - RESOLUTION OF DISPUTES

16.01 RESOLUTION OF CLAIMS AND DISPUTES

A. Contractor's claims against Owner will be reviewed by Engineer, who shall take one or more of the following actions within ten (10) days after receipt of a claim:
   1. Request additional supporting data from the claimant;
   2. Submit a schedule to Contractor indicating reasonable time within which Engineer expects to take action;
   3. Reject the Claim in whole or in part, stating reasons for rejection;
   4. Recommend approval of the claim; or
   5. Suggest a compromise.

B. Owner's claims against Contractor will be reviewed by Contractor who shall take one or more of the following actions within ten (10) days after receipt of the Claim:
   1. Request additional supporting data from Engineer;
   2. Submit a schedule to the Engineer indicating a reasonable time within which Contractor expects to take action;
   3. Deny the claim in whole or in part, stating reasons for denial;
   4. Recommend approval of the claim; or
   5. Suggest a compromise.

C. If a claim has been resolved, the Owner will prepare or obtain appropriate documentation.

D. If a claim has been denied or if no action has been taken in the manner provided in Paragraphs 16.01A or 16.01B, then the claimant, within ten (10) days thereafter, may notify the Owner, the other party, and Contractor's surety that Engineer and Contractor have been unable to resolve the claim. In that event, the Owner, pursuant to Paragraph 16.01E shall review the claim and make a decision on the claim.

E. If a claim is presented to the Owner, then the Owner shall review the claim and make a decision within fourteen (14) days.

F. Disputes that cannot be settled through negotiation or the procedures in Paragraphs 16.01A through 16.01E above, shall be settled as mutually agreed or in a court of competent jurisdiction in Washington County, Arkansas.

G. Neither arbitration nor binding mediation shall be used in the settlement of disputes.

ARTICLE 17 - MISCELLANEOUS

17.01 GIVING NOTICE:

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 COMPUTATION OF TIME:

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the Law of the applicable jurisdiction, such day will be omitted from the computation.

B. A calendar day of 24 hours measured from midnight to the next midnight shall constitute a day.

17.03 CLAIMS, CUMULATIVE REMEDIES:

A. Should Owner or Contractor suffer injury or damage to person or property because of any error, omission, or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this Paragraph shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

B. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon Contractor by Paragraphs 6.16A, 13.01, 13.08, 13.10, 14.03, and 15.02A and all of the rights and remedies available to Owner and Engineer thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and

remedy to which they apply. All representations, warranties, and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

17.04 FREEDOM OF INFORMATION ACT:

A. City contracts and documents prepared while performing City contractual work are subject to the Arkansas Freedom of Information Act. If a Freedom of Information Act request is presented to the City of Fayetteville, the contactor shall do everything possible to provide the documents in a prompt and timely manner as prescribed in the Arkansas Freedom of Information Act (A.C.A. §25-19-101 et. seq.) Only legally authorized photocopying costs pursuant to the FOIA may be assessed for this compliance.

END OF DOCUMENT 00700

DOCUMENT 00800 – SUPPLEMENTARY CONDITIONS:

ARTICLE 1 - LABOR RELATED REGULATIONS

1.01 SUPERSESSION:

A. These Supplemental Conditions supersede any conflicting provisions of the Contract Documents.

1.02 TRENCH AND EXCAVATION SAFETY:

A. Compliance with the provisions of 29 CFR Subpart P, OSHA Standard for Excavation and Trenches Safety System is required during prosecution of the project.

B. A copy of Subpart P is included in this section.

1.03 SUBMIT WITH PROGRESS PAYMENT:

A. The following items shall be submitted along with applications for progress payment:
   1. Current progress schedule.
   2. Summary of requests for extensions to the Contract Times during payment period.
   3. Construction photographs according to Section 01325.
   4. Stormwater Pollution Prevention Plan Inspection and Maintenance Report Forms completed during payment period.

1.04 CONTRACT TIMES

A. No extension to the Contract Times will be allowed for delays on Saturday, Sunday, or any legal holiday without prior approval to work on the day.

B. Time will be assessed for each day on which, in the judgement of the Engineer, conditions allow the Contractor to effectively utilize 60% of normal forces and equipment to prosecute the work required at that time, for at least 60% of the Contractor's normal work hours, regardless of whether the Contractor actually works.

END OF DOCUMENT 00800

Subpart P—Excavations

AUTHORITY: Sec. 107, Contract Worker Hours and Safety Standards Act (Construction Safety Act) (40 U.S.C. 333); Secs. 4, 6, 8, Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, 657); Secretary of Labor's Order No. 12–71 (36 FR 8754), 8–76 (41 FR 25059), or 9–83 (48 FR 35736), as applicable, and 29 CFR part 1911.

SOURCE: 54 FR 45959, Oct. 31, 1989, unless otherwise noted.

§ 1926.650 Scope, application, and definitions applicable to this subpart.

(a) *Scope and application.* This subpart applies to all open excavations made in the earth's surface. Excavations are defined to include trenches.

(b) *Definitions applicable to this subpart.*

Accepted engineering practices means those requirements which are compatible with standards of practice required by a registered professional engineer.

Aluminum Hydraulic Shoring means a pre-engineered shoring system comprised of aluminum hydraulic cylinders (crossbraces) used in conjunction with vertical rails (uprights) or horizontal rails (walers). Such system is designed, specifically to support the sidewalls of an excavation and prevent cave-ins.

Bell-bottom pier hole means a type of shaft or footing excavation, the bottom of which is made larger than the cross section above to form a belled shape.

Benching (Benching system) means a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

Cave-in means the separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

Competent person means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Cross braces mean the horizontal members of a shoring system installed perpendicular to the sides of the excavation, the ends of which bear against either uprights or wales.

Excavation means any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

Faces or *sides* means the vertical or inclined earth surfaces formed as a result of excavation work.

Failure means the breakage, displacement, or permanent deformation of a structural member or connection so as to reduce its structural integrity and its supportive capabilities.

Hazardous atmosphere means an atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

Kickout means the accidental release or failure of a cross brace.

Protective system means a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

Ramp means an inclined walking or working surface that is used to gain access to one point from another, and is constructed from earth or from structural materials such as steel or wood.

Registered Professional Engineer means a person who is registered as a professional engineer in the state where the work is to be performed. However, a professional engineer, registered in any state is deemed to be a "registered professional engineer" within the meaning of this standard when approving designs for "manufactured protective systems" or "tabulated data" to be used in interstate commerce.

Sheeting means the members of a shoring system that retain the earth in position and in turn are supported by other members of the shoring system.

Shield (Shield system) means a structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Additionally, shields can be either premanufactured or job-built in accordance with §1926.652 (c)(3) or (c)(4). Shields used in trenches are usually referred to as "trench boxes" or "trench shields."

Shoring (Shoring system) means a structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

Sides. See "Faces."

Sloping (Sloping system) means a method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.

Stable rock means natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed. Unstable rock is considered to be stable when the rock material on the side or sides of the excavation is secured against caving-in or movement by rock bolts or by another protective system that has been designed by a registered professional engineer.

Structural ramp means a ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock are not considered structural ramps.

Support system means a structure such as underpinning, bracing, or shoring, which provides support to an adjacent structure, underground installation, or the sides of an excavation.

Tabulated data means tables and charts approved by a registered professional engineer and used to design and construct a protective system.

Trench (Trench excavation) means a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet (4.6 m). If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet (4.6 m) or less

(measured at the bottom of the excavation), the excavation is also considered to be a trench.

Trench box. See "Shield."

Trench shield. See "Shield."

Uprights means the vertical members of a trench shoring system placed in contact with the earth and usually positioned so that individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with or interconnected to each other, are often called "sheeting."

Wales means horizontal members of a shoring system placed parallel to the excavation face whose sides bear against the vertical members of the shoring system or earth.

§ 1926.651 Specific excavation requirements.

(a) *Surface encumbrances.* All surface encumbrances that are located so as to create a hazard to employees shall be removed or supported, as necessary, to safeguard employees.

(b) *Underground installations.* (1) The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation.

(2) Utility companies or owners shall be contacted within established or customary local response times, advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation. When utility companies or owners cannot respond to a request to locate underground utility installations within 24 hours (unless a longer period is required by state or local law), or cannot establish the exact location of these installations, the employer may proceed, provided the employer does so with caution, and provided detection equipment or other acceptable means to locate utility installations are used.

(3) When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means.

(4) While the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard employees.

(c) *Access and egress*—(1) *Structural ramps.* (i) Structural ramps that are used solely by employees as a means of access or egress from excavations shall be designed by a competent person. Structural ramps used for access or egress of equipment shall be designed by a competent person qualified in structural design, and shall be constructed in accordance with the design.

(ii) Ramps and runways constructed of two or more structural members shall have the structural members connected together to prevent displacement.

(iii) Structural members used for ramps and runways shall be of uniform thickness.

(iv) Cleats or other appropriate means used to connect runway structural members shall be attached to the bottom of the runway or shall be attached in a manner to prevent tripping.

(v) Structural ramps used in lieu of steps shall be provided with cleats or other surface treatments on the top surface to prevent slipping.

(2) *Means of egress from trench excavations.* A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are 4 feet (1.22 m) or more in depth so as to require no more than 25 feet (7.62 m) of lateral travel for employees.

(d) *Exposure to vehicular traffic.* Employees exposed to public vehicular traffic shall be provided with, and shall wear, warning vests or other suitable garments marked with or made of reflectorized or high-visibility material.

(e) *Exposure to falling loads.* No employee shall be permitted underneath loads handled by lifting or digging equipment. Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped, in accordance with § 1926.601(b)(6), to provide adequate protection for the operator during loading and unloading operations.

(f) *Warning system for mobile equipment.* When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system shall be utilized such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

(g) *Hazardous atmospheres*—(1) *Testing and controls.* In addition to the requirements set forth in subparts D and E of this part (29 CFR 1926.50–1926.107) to prevent exposure to harmful levels of atmospheric contaminants and to assure acceptable atmospheric conditions, the following requirements shall apply:

(i) Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation shall be tested before employees enter excavations greater than 4 feet (1.22 m) in depth.

(ii) Adequate precautions shall be taken to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or ventilation in accordance with subparts D and E of this part respectively.

(iii) Adequate precaution shall be taken such as providing ventilation, to prevent employee exposure to an atmosphere containing a concentration of a flammable gas in excess of 20 percent of the lower flammable limit of the gas.

(iv) When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, testing shall be conducted as often as necessary to ensure that the atmosphere remains safe.

(2) *Emergency rescue equipment.* (i) Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment shall be attended when in use.

(ii) Employees entering bell-bottom pier holes, or other similar deep and confined footing excavations, shall wear a harness with a life-line securely attached to it. The lifeline shall be separate from any line used to handle materials, and shall be individually attended at all times while the employee wearing the lifeline is in the excavation.

(h) *Protection from hazards associated with water accumulation.* (1) Employees shall not work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation. The precautions necessary to protect employees adequately vary with each situation, but could include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline.

(2) If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operations shall be monitored by a competent person to ensure proper operation.

(3) If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains will require an inspection by a competent person and compliance with paragraphs (h)(1) and (h)(2) of this section.

(i) *Stability of adjacent structures.* (1) Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning shall be provided to ensure the stability of such structures for the protection of employees.

(2) Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably

expected to pose a hazard to employees shall not be permitted except when:

(i) A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure; or

(ii) The excavation is in stable rock; or

(iii) A registered professional engineer has approved the determination that the structure is sufficently removed from the excavation so as to be unaffected by the excavation activity; or

(iv) A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees.

(3) Sidewalks, pavements, and appurtenant structure shall not be undermined unless a support system or another method of protection is provided to protect employees from the possible collapse of such structures.

(j) *Protection of employees from loose rock or soil.* (1) Adequate protection shall be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material; or other means that provide equivalent protection.

(2) Employees shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least 2 feet (.61 m) from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

(k) *Inspections.* (1) Daily inspections of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard increasing occurrence. These inspections are only required when employee exposure can be reasonably anticipated.

(2) Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

(l) Walkways shall be provided where employees or equipment are required or permitted to cross over excavations. Guardrails which comply with §1926.502(b) shall be provided where walkways are 6 feet (1.8 m) or more above lower levels.

[54 FR 45959, Oct. 31, 1989, as amended by 59 FR 40730, Aug. 9, 1994]

§ 1926.652 Requirements for protective systems.

(a) *Protection of employees in excavations.* (1) Each employee in an excavation shall be protected from cave-ins by an adequate protective system designed in accordance with paragraph (b) or (c) of this section except when:

(i) Excavations are made entirely in stable rock; or

(ii) Excavations are less than 5 feet (1.52m) in depth and examination of the ground by a competent person provides no indication of a potential cave-in.

(2) Protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

(b) *Design of sloping and benching systems.* The slopes and configurations of sloping and benching systems shall be selected and constructed by the employer or his designee and shall be in accordance with the requirements of paragraph (b)(1); or, in the alternative, paragraph (b)(2); or, in the alternative, paragraph (b)(3), or, in the alternative, paragraph (b)(4), as follows:

(1) *Option (1)—Allowable configurations and slopes.* (i) Excavations shall be sloped at an angle not steeper than one and one-half horizontal to one vertical

(34 degrees measured from the horizontal), unless the employer uses one of the other options listed below.

(ii) Slopes specified in paragraph (b)(1)(i) of this section, shall be excavated to form configurations that are in accordance with the slopes shown for Type C soil in Appendix B to this subpart.

(2) *Option (2)—Determination of slopes and configurations using Appendices A and B.* Maximum allowable slopes, and allowable configurations for sloping and benching systems, shall be determined in accordance with the conditions and requirements set forth in appendices A and B to this subpart.

(3) *Option (3)—Designs using other tabulated data.* (i) Designs of sloping or benching systems shall be selected from and be in accordance with tabulated data, such as tables and charts.

(ii) The tabulated data shall be in written form and shall include all of the following:

(A) Identification of the parameters that affect the selection of a sloping or benching system drawn from such data;

(B) Identification of the limits of use of the data, to include the magnitude and configuration of slopes determined to be safe;

(C) Explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data.

(iii) At least one copy of the tabulated data which identifies the registered professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system. After that time the data may be stored off the jobsite, but a copy of the data shall be made available to the Secretary upon request.

(4) *Option (4)—Design by a registered professional engineer.* (i) Sloping and benching systems not utilizing Option (1) or Option (2) or Option (3) under paragraph (b) of this section shall be approved by a registered professional engineer.

(ii) Designs shall be in written form and shall include at least the following:

(A) The magnitude of the slopes that were determined to be safe for the particular project;

(B) The configurations that were determined to be safe for the particular project; and

(C) The identity of the registered professional engineer approving the design.

(iii) At least one copy of the design shall be maintained at the jobsite while the slope is being constructed. After that time the design need not be at the jobsite, but a copy shall be made available to the Secretary upon request.

(c) *Design of support systems, shield systems, and other protective systems.* Designs of support systems shield systems, and other protective systems shall be selected and constructed by the employer or his designee and shall be in accordance with the requirements of paragraph (c)(1); or, in the alternative, paragraph (c)(2); or, in the alternative, paragraph (c)(3); or, in the alternative, paragraph (c)(4) as follows:

(1) *Option (1)—Designs using appendices A, C and D.* Designs for timber shoring in trenches shall be determined in accordance with the conditions and requirements set forth in appendices A and C to this subpart. Designs for aluminum hydraulic shoring shall be in accordance with paragraph (c)(2) of this section, but if manufacturer's tabulated data cannot be utilized, designs shall be in accordance with appendix D.

(2) *Option (2)—Designs Using Manufacturer's Tabulated Data.* (i) Design of support systems, shield systems, or other protective systems that are drawn from manufacturer's tabulated data shall be in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer.

(ii) Deviation from the specifications, recommendations, and limitations issued or made by the manufacturer shall only be allowed after the manufacturer issues specific written approval.

(iii) Manufacturer's specifications, recommendations, and limitations, and manufacturer's approval to deviate from the specifications, recommendations, and limitations shall be in written form at the jobsite during construction of the protective system. After that time this data may be stored off the jobsite, but a copy shall

be made available to the Secretary upon request.

(3) *Option (3)—Designs using other tabulated data.* (i) Designs of support systems, shield systems, or other protective systems shall be selected from and be in accordance with tabulated data, such as tables and charts.

(ii) The tabulated data shall be in written form and include all of the following:

(A) Identification of the parameters that affect the selection of a protective system drawn from such data;

(B) Identification of the limits of use of the data;

(C) Explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data.

(iii) At least one copy of the tabulated data, which identifies the registered professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system. After that time the data may be stored off the jobsite, but a copy of the data shall be made available to the Secretary upon request.

(4) *Option (4)—Design by a registered professional engineer.* (i) Support systems, shield systems, and other protective systems not utilizing Option 1, Option 2 or Option 3, above, shall be approved by a registered professional engineer.

(ii) Designs shall be in written form and shall include the following:

(A) A plan indicating the sizes, types, and configurations of the materials to be used in the protective system; and

(B) The identity of the registered professional engineer approving the design.

(iii) At least one copy of the design shall be maintained at the jobsite during construction of the protective system. After that time, the design may be stored off the jobsite, but a copy of the design shall be made available to the Secretary upon request.

(d) *Materials and equipment.* (1) Materials and equipment used for protective systems shall be free from damage or defects that might impair their proper function.

(2) Manufactured materials and equipment used for protective systems shall be used and maintained in a manner that is consistent with the recommendations of the manufacturer, and in a manner that will prevent employee exposure to hazards.

(3) When material or equipment that is used for protective systems is damaged, a competent person shall examine the material or equipment and evaluate its suitability for continued use. If the competent person cannot assure the material or equipment is able to support the intended loads or is otherwise suitable for safe use, then such material or equipment shall be removed from service, and shall be evaluated and approved by a registered professional engineer before being returned to service.

(e) *Installation and removal of support*—(1) *General.* (i) Members of support systems shall be securely connected together to prevent sliding, falling, kickouts, or other predictable failure.

(ii) Support systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapses, or from being struck by members of the support system.

(iii) Individual members of support systems shall not be subjected to loads exceeding those which those members were designed to withstand.

(iv) Before temporary removal of individual members begins, additional precautions shall be taken to ensure the safety of employees, such as installing other structural members to carry the loads imposed on the support system.

(v) Removal shall begin at, and progress from, the bottom of the excavation. Members shall be released slowly so as to note any indication of possible failure of the remaining members of the structure or possible cave-in of the sides of the excavation.

(vi) Backfilling shall progress together with the removal of support systems from excavations.

(2) *Additional requirements for support systems for trench excavations.* (i) Excavation of material to a level no greater than 2 feet (.61 m) below the bottom of the members of a support system shall be permitted, but only if the system is designed to resist the forces calculated for the full depth of the trench, and

there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the support system.

(ii) Installation of a support system shall be closely coordinated with the excavation of trenches.

(f) *Sloping and benching systems.* Employees shall not be permitted to work on the faces of sloped or benched excavations at levels above other employees except when employees at the lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment.

(g) *Shield systems*—(1) *General.* (i) Shield systems shall not be subjected to loads exceeding those which the system was designed to withstand.

(ii) Shields shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads.

(iii) Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields.

(iv) Employees shall not be allowed in shields when shields are being installed, removed, or moved vertically.

(2) *Additional requirement for shield systems used in trench excavations.* Excavations of earth material to a level not greater than 2 feet (.61 m) below the bottom of a shield shall be permitted, but only if the shield is designed to resist the forces calculated for the full depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the shield.

APPENDIX A TO SUBPART P OF PART 1926—SOIL CLASSIFICATION

(a) *Scope and application*—(1) *Scope.* This appendix describes a method of classifying soil and rock deposits based on site and environmental conditions, and on the structure and composition of the earth deposits. The appendix contains definitions, sets forth requirements, and describes acceptable visual and manual tests for use in classifying soils.

(2) *Application.* This appendix applies when a sloping or benching system is designed in accordance with the requirements set forth in §1926.652(b)(2) as a method of protection for employees from cave-ins. This appendix also applies when timber shoring for excavations is designed as a method of protection from cave-ins in accordance with appendix C to subpart P of part 1926, and when aluminum hydraulic shoring is designed in accordance with appendix D. This Appendix also applies if other protective systems are designed and selected for use from data prepared in accordance with the requirements set forth in §1926.652(c), and the use of the data is predicated on the use of the soil classification system set forth in this appendix.

(b) *Definitions.* The definitions and examples given below are based on, in whole or in part, the following: American Society for Testing Materials (ASTM) Standards D653–85 and D2488; The Unified Soils Classification System, The U.S. Department of Agriculture (USDA) Textural Classification Scheme; and The National Bureau of Standards Report BSS–121.

Cemented soil means a soil in which the particles are held together by a chemical agent, such as calcium carbonate, such that a hand-size sample cannot be crushed into powder or individual soil particles by finger pressure.

Cohesive soil means clay (fine grained soil), or soil with a high clay content, which has cohesive strength. Cohesive soil does not crumble, can be excavated with vertical sideslopes, and is plastic when moist. Cohesive soil is hard to break up when dry, and exhibits significant cohesion when submerged. Cohesive soils include clayey silt, sandy clay, silty clay, clay and organic clay.

Dry soil means soil that does not exhibit visible signs of moisture content.

Fissured means a soil material that has a tendency to break along definite planes of fracture with little resistance, or a material that exhibits open cracks, such as tension cracks, in an exposed surface.

Granular soil means gravel, sand, or silt, (coarse grained soil) with little or no clay content. Granular soil has no cohesive strength. Some moist granular soils exhibit apparent cohesion. Granular soil cannot be molded when moist and crumbles easily when dry.

Layered system means two or more distinctly different soil or rock types arranged in layers. Micaceous seams or weakened planes in rock or shale are considered layered.

Moist soil means a condition in which a soil looks and feels damp. Moist cohesive soil can easily be shaped into a ball and rolled into small diameter threads before crumbling. Moist granular soil that contains some cohesive material will exhibit signs of cohesion between particles.

Plastic means a property of a soil which allows the soil to be deformed or molded without cracking, or appreciable volume change.

Saturated soil means a soil in which the voids are filled with water. Saturation does not require flow. Saturation, or near saturation, is necessary for the proper use of instruments such as a pocket penetrometer or sheer vane.

Soil classification system means, for the purpose of this subpart, a method of categorizing soil and rock deposits in a hierarchy of Stable Rock, Type A, Type B, and Type C, in decreasing order of stability. The categories are determined based on an analysis of the properties and performance characteristics of the deposits and the environmental conditions of exposure.

Stable rock means natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.

Submerged soil means soil which is underwater or is free seeping.

Type A means cohesive soils with an unconfined compressive strength of 1.5 ton per square foot (tsf) (144 kPa) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A. However, no soil is Type A if:

(i) The soil is fissured; or

(ii) The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or

(iii) The soil has been previously disturbed; or

(iv) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or

(v) The material is subject to other factors that would require it to be classified as a less stable material.

Type B means:

(i) Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa); or

(ii) Granular cohesionless soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and, in some cases, silty clay loam and sandy clay loam.

(iii) Previously disturbed soils except those which would otherwise be classed as Type C soil.

(iv) Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or

(v) Dry rock that is not stable; or

(vi) Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

Type C means:

(i) Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; or

(ii) Granular soils including gravel, sand, and loamy sand; or

(iii) Submerged soil or soil from which water is freely seeping; or

(iv) Submerged rock that is not stable, or

(v) Material in a sloped, layered system where the layers dip into the excavation or a slope of four horizontal to one vertical (4H:1V) or steeper.

Unconfined compressive strength means the load per unit area at which a soil will fail in compression. It can be determined by laboratory testing, or estimated in the field using a pocket penetrometer, by thumb penetration tests, and other methods.

Wet soil means soil that contains significantly more moisture than moist soil, but in such a range of values that cohesive material will slump or begin to flow when vibrated. Granular material that would exhibit cohesive properties when moist will lose those cohesive properties when wet.

(c) *Requirements*—(1) *Classification of soil and rock deposits.* Each soil and rock deposit shall be classified by a competent person as Stable Rock, Type A, Type B, or Type C in accordance with the definitions set forth in paragraph (b) of this appendix.

(2) *Basis of classification.* The classification of the deposits shall be made based on the results of at least one visual and at least one manual analysis. Such analyses shall be conducted by a competent person using tests described in paragraph (d) below, or in other recognized methods of soil classification and testing such as those adopted by the America Society for Testing Materials, or the U.S. Department of Agriculture textural classification system.

(3) *Visual and manual analyses.* The visual and manual analyses, such as those noted as being acceptable in paragraph (d) of this appendix, shall be designed and conducted to provide sufficient quantitative and qualitative information as may be necessary to identify properly the properties, factors, and conditions affecting the classification of the deposits.

(4) *Layered systems.* In a layered system, the system shall be classified in accordance with its weakest layer. However, each layer may be classified individually where a more stable layer lies under a less stable layer.

(5) *Reclassification.* If, after classifying a deposit, the properties, factors, or conditions affecting its classification change in any way, the changes shall be evaluated by a competent person. The deposit shall be reclassified as necessary to reflect the changed circumstances.

(d) *Acceptable visual and manual tests.*—(1) *Visual tests.* Visual analysis is conducted to determine qualitative information regarding the excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil taken as samples from excavated material.

(i) Observe samples of soil that are excavated and soil in the sides of the excavation. Estimate the range of particle sizes and the relative amounts of the particle sizes. Soil that is primarily composed of fine-grained

material is cohesive material. Soil composed primarily of coarse-grained sand or gravel is granular material.

(ii) Observe soil as it is excavated. Soil that remains in clumps when excavated is cohesive. Soil that breaks up easily and does not stay in clumps is granular.

(iii) Observe the side of the opened excavation and the surface area adjacent to the excavation. Crack-like openings such as tension cracks could indicate fissured material. If chunks of soil spall off a vertical side, the soil could be fissured. Small spalls are evidence of moving ground and are indications of potentially hazardous situations.

(iv) Observe the area adjacent to the excavation and the excavation itself for evidence of existing utility and other underground structures, and to identify previously disturbed soil.

(v) Observe the opened side of the excavation to identify layered systems. Examine layered systems to identify if the layers slope toward the excavation. Estimate the degree of slope of the layers.

(vi) Observe the area adjacent to the excavation and the sides of the opened excavation for evidence of surface water, water seeping from the sides of the excavation, or the location of the level of the water table.

(vii) Observe the area adjacent to the excavation and the area within the excavation for sources of vibration that may affect the stability of the excavation face.

(2) *Manual tests.* Manual analysis of soil samples is conducted to determine quantitative as well as qualitative properties of soil and to provide more information in order to classify soil properly.

(i) *Plasticity.* Mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as ⅛-inch in diameter. Cohesive material can be successfully rolled into threads without crumbling. For example, if at least a two inch (50 mm) length of ⅛-inch thread can be held on one end without tearing, the soil is cohesive.

(ii) *Dry strength.* If the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is granular (any combination of gravel, sand, or silt). If the soil is dry and falls into clumps which break up into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand or silt. If the dry soil breaks into clumps which do not break up into small clumps and which can only be broken with difficulty, and there is no visual indication the soil is fissured, the soil may be considered unfissured.

(iii) *Thumb penetration.* The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. (This test is based on the thumb penetration test described in American Society for Testing and Materials (ASTM) Standard designation D2488—"Standard Recommended Practice for Description of Soils (Visual—Manual Procedure).") Type A soils with an unconfined compressive strength of 1.5 tsf can be readily indented by the thumb; however, they can be penetrated by the thumb only with very great effort. Type C soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb, and can be molded by light finger pressure. This test should be conducted on an undisturbed soil sample, such as a large clump of spoil, as soon as practicable after excavation to keep to a miminum the effects of exposure to drying influences. If the excavation is later exposed to wetting influences (rain, flooding), the classification of the soil must be changed accordingly.

(iv) *Other strength tests.* Estimates of unconfined compressive strength of soils can also be obtained by use of a pocket penetrometer or by using a hand-operated shearvane.

(v) *Drying test.* The basic purpose of the drying test is to differentiate between cohesive material with fissures, unfissured cohesive material, and granular material. The procedure for the drying test involves drying a sample of soil that is approximately one inch thick (2.54 cm) and six inches (15.24 cm) in diameter until it is thoroughly dry:

(A) If the sample develops cracks as it dries, significant fissures are indicated.

(B) Samples that dry without cracking are to be broken by hand. If considerable force is necessary to break a sample, the soil has significant cohesive material content. The soil can be classified as a unfissured cohesive material and the unconfined compressive strength should be determined.

(C) If a sample breaks easily by hand, it is either a fissured cohesive material or a granular material. To distinguish between the two, pulverize the dried clumps of the sample by hand or by stepping on them. If the clumps do not pulverize easily, the material is cohesive with fissures. If they pulverize easily into very small fragments, the material is granular.

APPENDIX B TO SUBPART P OF PART 1926—SLOPING AND BENCHING

(a) *Scope and application.* This appendix contains specifications for sloping and benching when used as methods of protecting employees working in excavations from cave-ins. The requirements of this appendix apply when the design of sloping and benching protective systems is to be performed in accordance with the requirements set forth in §1926.652(b)(2).

(b) *Definitions.*

Actual slope means the slope to which an excavation face is excavated.

Distress means that the soil is in a condition where a cave-in is imminent or is likely

to occur. Distress is evidenced by such phenomena as the development of fissures in the face of or adjacent to an open excavation; the subsidence of the edge of an excavation; the slumping of material from the face or the bulging or heaving of material from the bottom of an excavation; the spalling of material from the face of an excavation; and ravelling, i.e., small amounts of material such as pebbles or little clumps of material suddenly separating from the face of an excavation and trickling or rolling down into the excavation.

Maximum allowable slope means the steepest incline of an excavation face that is acceptable for the most favorable site conditions as protection against cave-ins, and is expressed as the ratio of horizontal distance to vertical rise (H:V).

Short term exposure means a period of time less than or equal to 24 hours that an excavation is open.

(c) *Requirements*—(1) *Soil classification.* Soil and rock deposits shall be classified in accordance with appendix A to subpart P of part 1926.

(2) *Maximum allowable slope.* The maximum allowable slope for a soil or rock deposit shall be determined from Table B–1 of this appendix.

(3) *Actual slope.* (i) The actual slope shall not be steeper than the maximum allowable slope.

(ii) The actual slope shall be less steep than the maximum allowable slope, when there are signs of distress. If that situation occurs, the slope shall be cut back to an actual slope which is at least ½ horizontal to one vertical (½H:1V) less steep than the maximum allowable slope.

(iii) When surcharge loads from stored material or equipment, operating equipment, or traffic are present, a competent person shall determine the degree to which the actual slope must be reduced below the maximum allowable slope, and shall assure that such reduction is achieved. Surcharge loads from adjacent structures shall be evaluated in accordance with §1926.651(i).

(4) *Configurations.* Configurations of sloping and benching systems shall be in accordance with Figure B–1.

TABLE B-1

MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V)[1] FOR EXCAVATIONS LESS THAN 20 FEET DEEP [3]
STABLE ROCK TYPE A [2] TYPE B TYPE C	VERTICAL (90°) 3/4 : 1 (53°) 1:1 (45°) 1½: 1 (34°)

NOTES:

1. Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.
2. A short-term maximum allowable slope of 1/2H:1V (63°) is allowed in excavations in Type A soil that are 12 feet (3.67 m) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 m) in depth shall be 3/4H:1V (53°).
3. Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

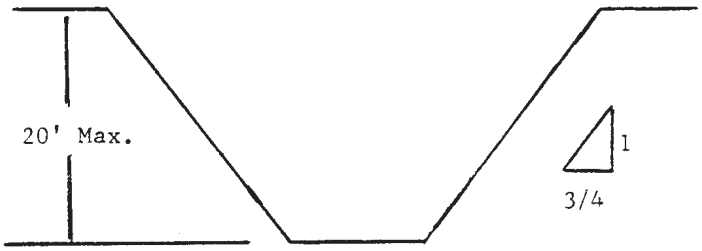
Figure B–1

Slope Configurations

(All slopes stated below are in the horizontal to vertical ratio)

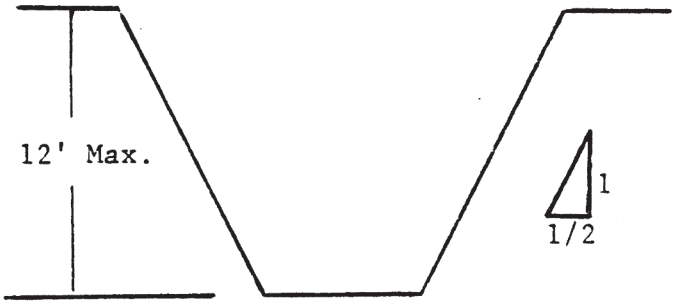
B–1.1 Excavations made in Type A soil.

1. All simple slope excavation 20 feet or less in depth shall have a maximum allowable slope of ¾:1.



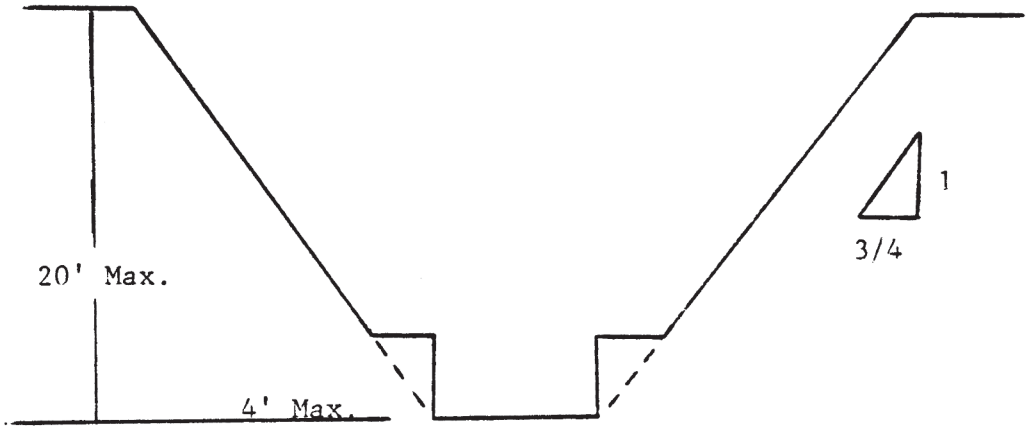
SIMPLE SLOPE—GENERAL

Exception: Simple slope excavations which are open 24 hours or less (short term) and which are 12 feet or less in depth shall have a maximum allowable slope of ½:1.

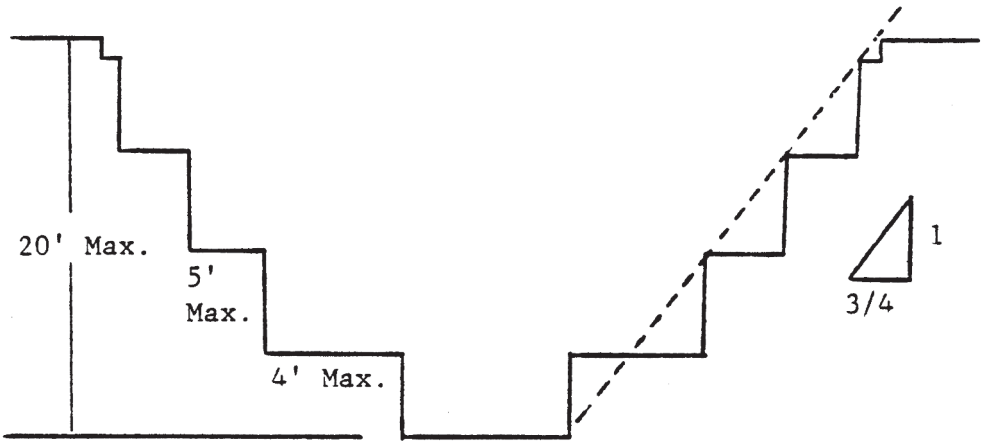


SIMPLE SLOPE—SHORT TERM

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of ¾ to 1 and maximum bench dimensions as follows:

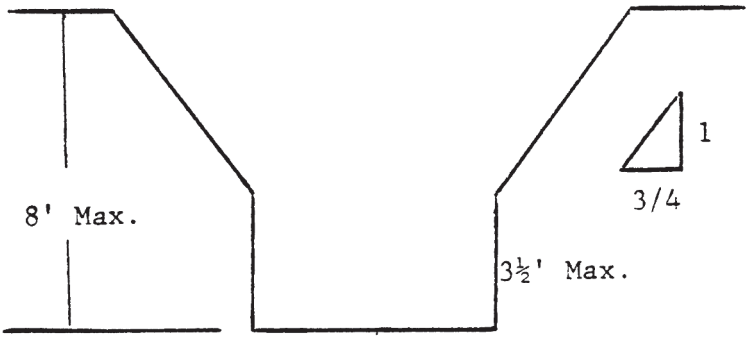


SIMPLE BENCH



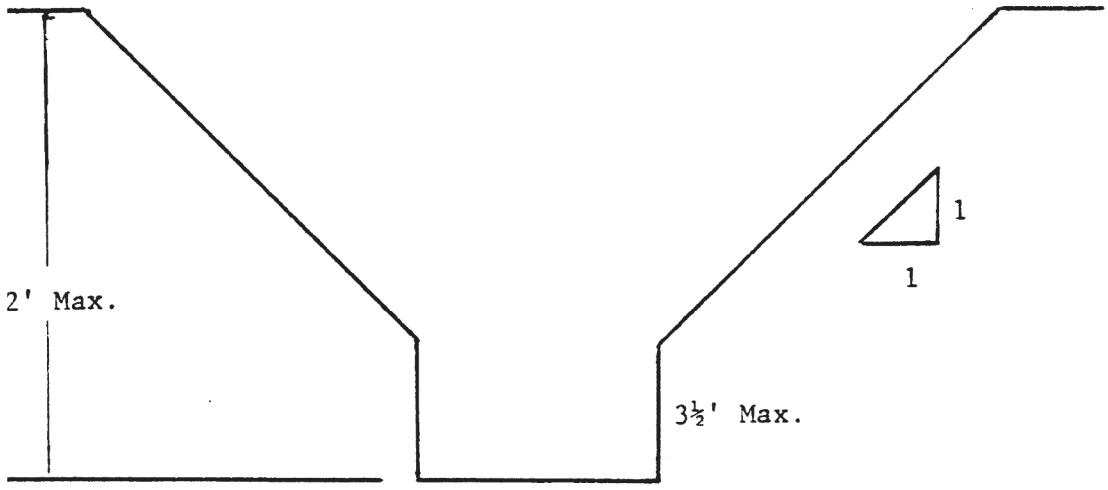
MULTIPLE BENCH

3. All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical side of 3½ feet.



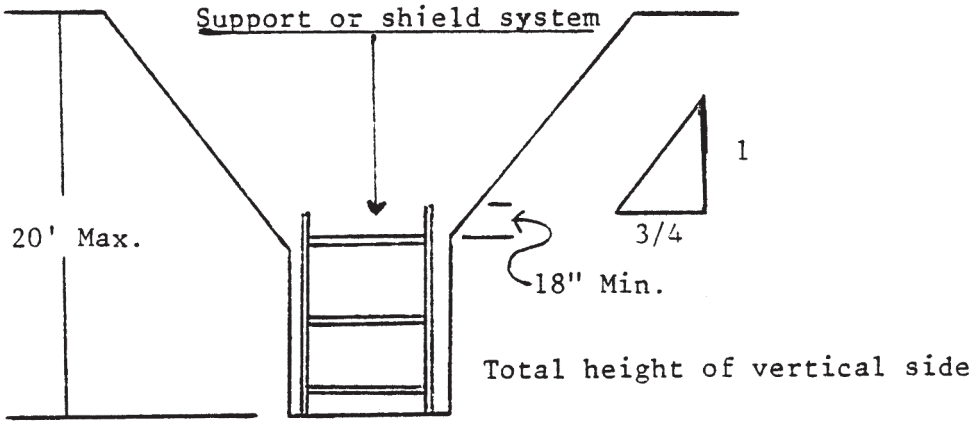
UNSUPPORTED VERTICALLY SIDED LOWER PORTION—MAXIMUM 8 FEET IN DEPTH

All excavations more than 8 feet but not more than 12 feet in depth which unsupported vertically sided lower portions shall have a maximum allowable slope of 1:1 and a maximum vertical side of 3½ feet.



UNSUPPORTED VERTICALLY SIDED LOWER PORTION—MAXIMUM 12 FEET IN DEPTH

All excavations 20 feet or less in depth which have vertically sided lower portions that are supported or shielded shall have a maximum allowable slope of ¾:1. The support or shield system must extend at least 18 inches above the top of the vertical side.

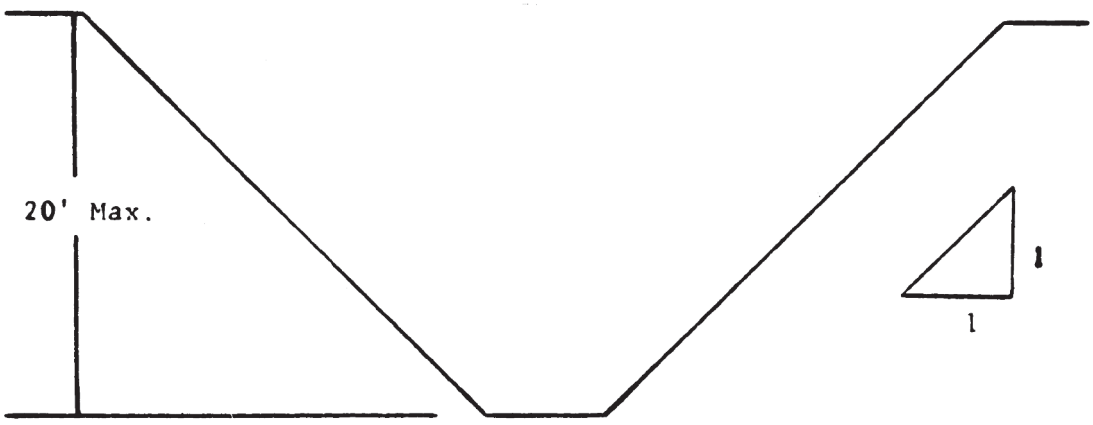


SUPPORTED OR SHIELDED VERTICALLY SIDED LOWER PORTION

4. All other simple slope, compound slope, and vertically sided lower portion excavations shall be in accordance with the other options permitted under §1926.652(b).

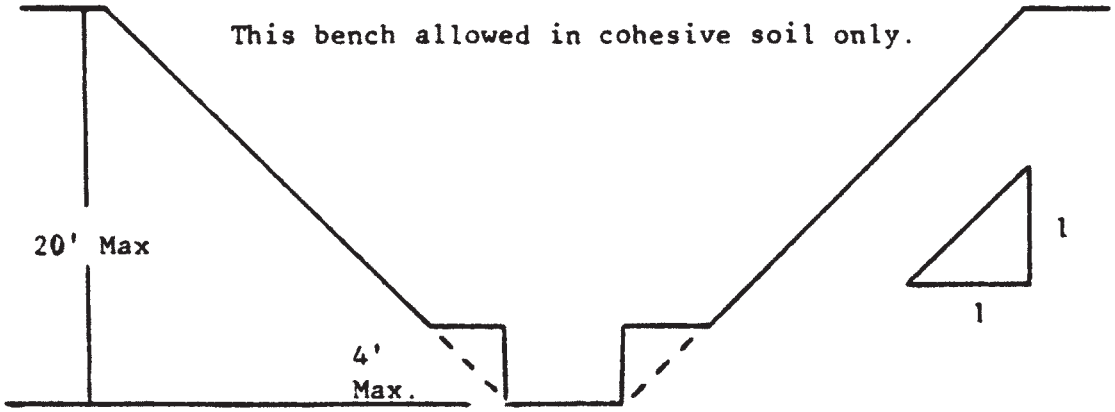
B–1.2 Excavations Made in Type B Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.

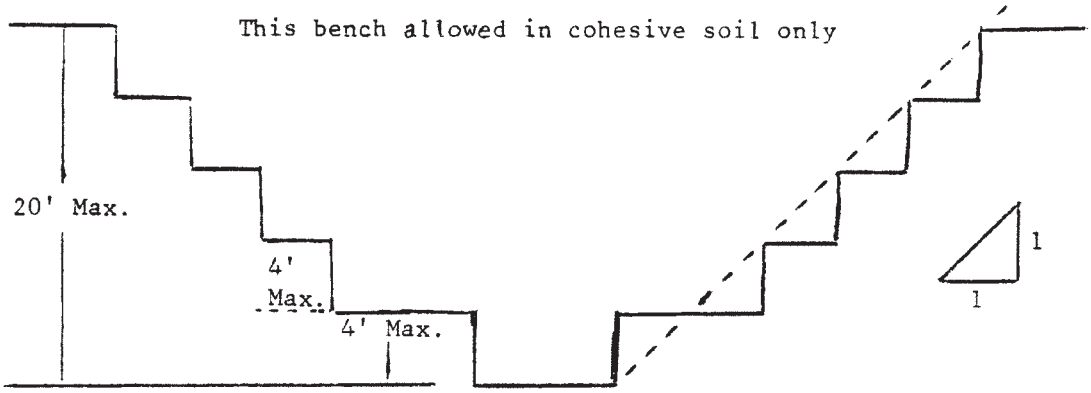


SIMPLE SLOPE

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions as follows:

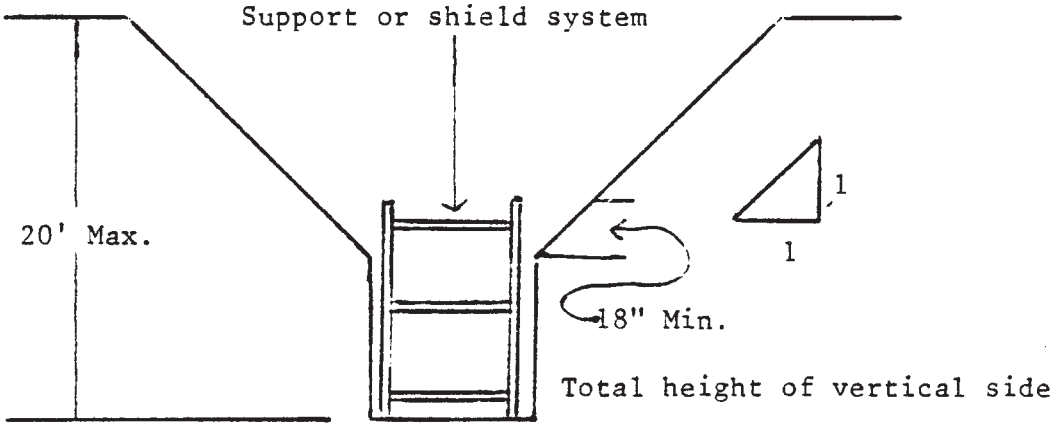


SINGLE BENCH



MULTIPLE BENCH

3. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1:1.

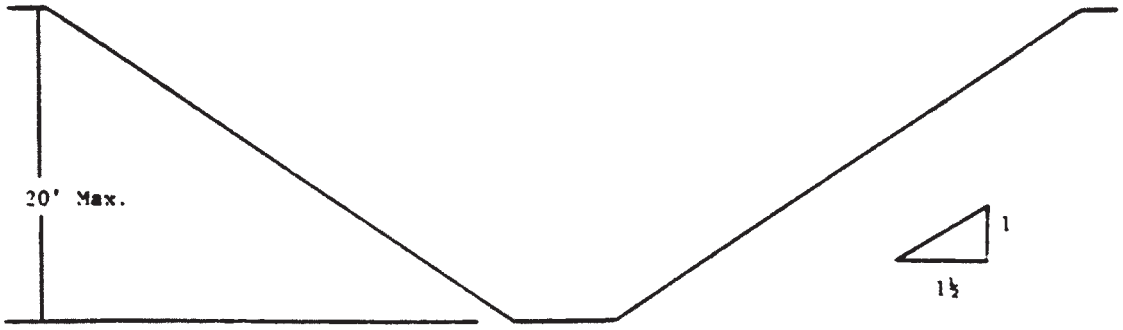


VERTICALLY SIDED LOWER PORTION

4. All other sloped excavations shall be in accordance with the other options permitted in §1926.652(b).

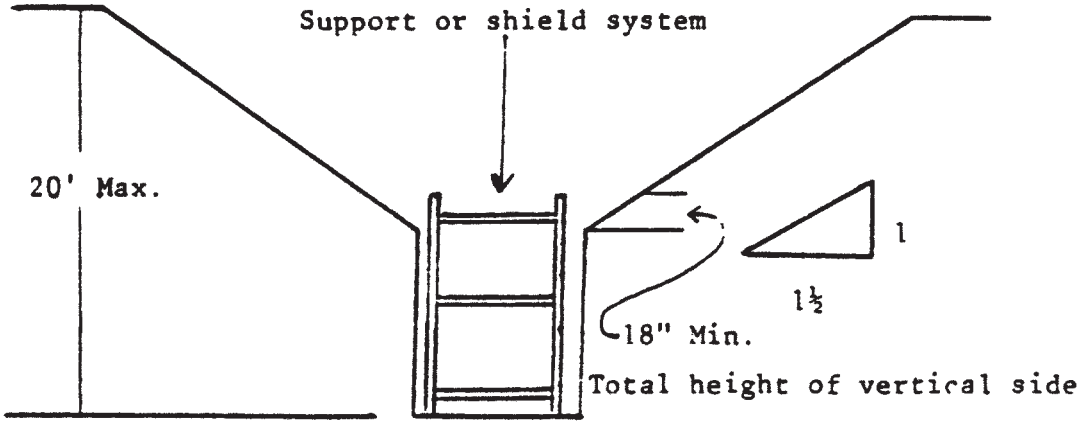
B–1.3 EXCAVATIONS MADE IN TYPE C SOIL

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½:1.



SIMPLE SLOPE

2. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1.

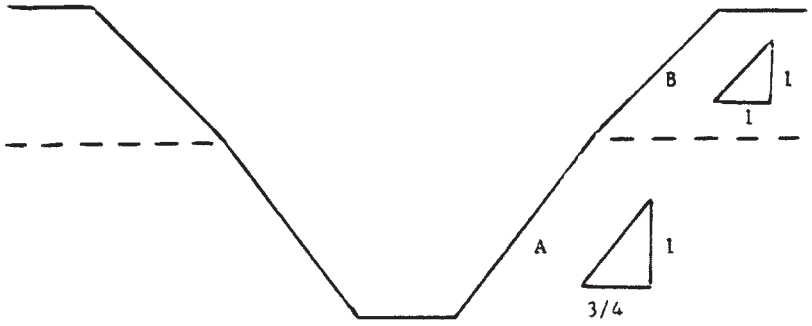


VERTICAL SIDED LOWER PORTION

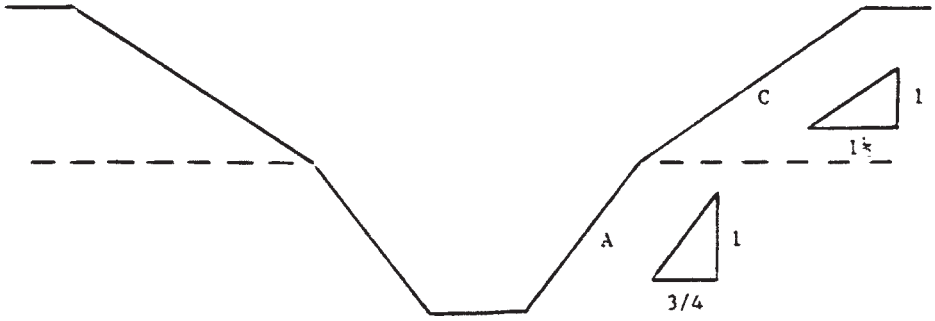
3. All other sloped excavations shall be in accordance with the other options permitted in §1926.652(b).

B–1.4 Excavations Made in Layered Soils

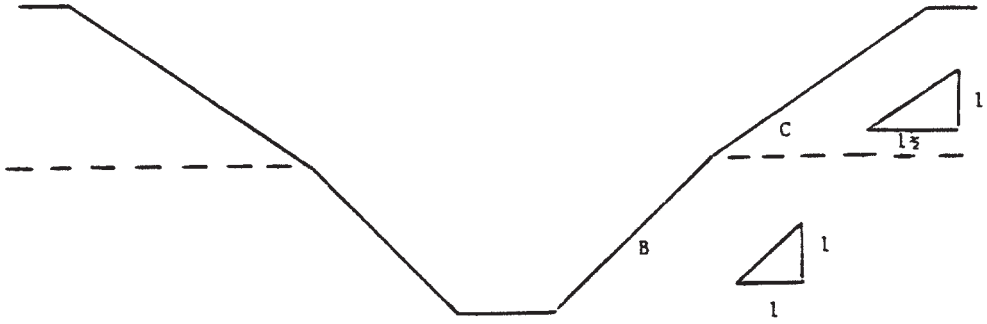
1. All excavations 20 feet or less in depth made in layered soils shall have a maximum allowable slope for each layer as set forth below.



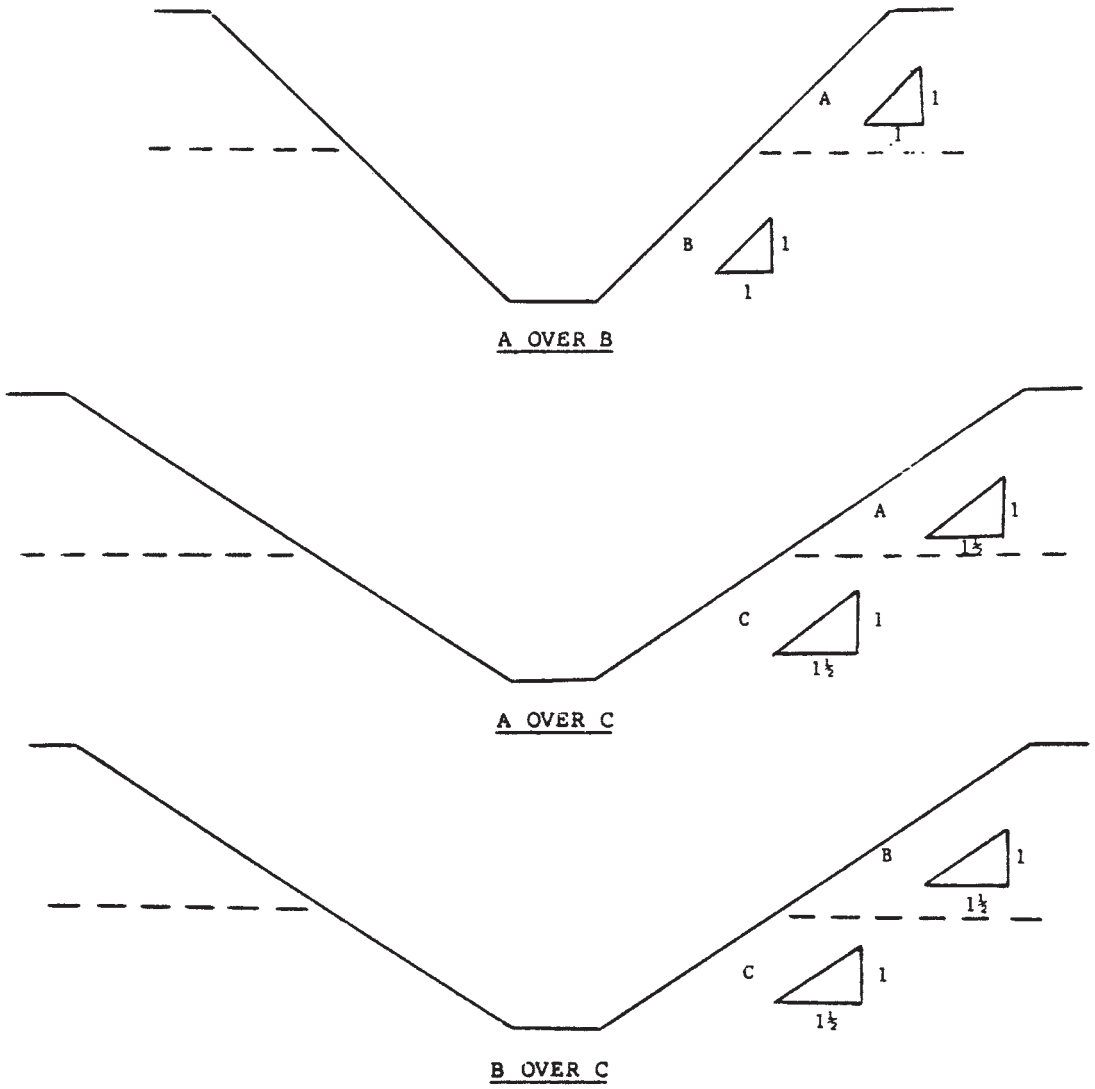
B OVER A



C OVER A



C OVER B



2. All other sloped excavations shall be in accordance with the other options permitted in §1926.652(b).

APPENDIX C TO SUBPART P OF PART 1926—TIMBER SHORING FOR TRENCHES

(a) *Scope.* This appendix contains information that can be used timber shoring is provided as a method of protection from cave-ins in trenches that do not exceed 20 feet (6.1 m) in depth. This appendix must be used when design of timber shoring protective systems is to be performed in accordance with §1926.652(c)(1). Other timber shoring configurations; other systems of support such as hydraulic and pneumatic systems; and other protective systems such as sloping, benching, shielding, and freezing systems must be designed in accordance with the requirements set forth in §1926.652(b) and §1926.652(c).

(b) *Soil Classification.* In order to use the data presented in this appendix, the soil type or types in which the excavation is made must first be determined using the soil classification method set forth in appendix A of subpart P of this part.

(c) *Presentation of Information.* Information is presented in several forms as follows:

(1) Information is presented in tabular form in Tables C–1.1, C–1.2, and C–1.3, and Tables C–2.1, C–2.2 and C–2.3 following paragraph (g) of the appendix. Each table presents the minimum sizes of timber members to use in a shoring system, and each table contains data only for the particular soil type in which the excavation or portion of

the excavation is made. The data are arranged to allow the user the flexibility to select from among several acceptable configurations of members based on varying the horizontal spacing of the crossbraces. Stable rock is exempt from shoring requirements and therefore, no data are presented for this condition.

(2) Information concerning the basis of the tabular data and the limitations of the data is presented in paragraph (d) of this appendix, and on the tables themselves.

(3) Information explaining the use of the tabular data is presented in paragraph (e) of this appendix.

(4) Information illustrating the use of the tabular data is presented in paragraph (f) of this appendix.

(5) Miscellaneous notations regarding Tables C–1.1 through C–1.3 and Tables C–2.1 through C–2.3 are presented in paragraph (g) of this Appendix.

(d) *Basis and limitations of the data.*—(1) *Dimensions of timber members.* (i) The sizes of the timber members listed in Tables C–1.1 through C–1.3 are taken from the National Bureau of Standards (NBS) report, "Recommended Technical Provisions for Construction Practice in Shoring and Sloping of Trenches and Excavations." In addition, where NBS did not recommend specific sizes of members, member sizes are based on an analysis of the sizes required for use by existing codes and on empirical practice.

(ii) The required dimensions of the members listed in Tables C–1.1 through C–1.3 refer to actual dimensions and not nominal dimensions of the timber. Employers wanting to use nominal size shoring are directed to Tables C–2.1 through C–2.3, or have this choice under §1926.652(c)(3), and are referred to The Corps of Engineers, The Bureau of Reclamation or data from other acceptable sources.

(2) *Limitation of application.* (i) It is not intended that the timber shoring specification apply to every situation that may be experienced in the field. These data were developed to apply to the situations that are most commonly experienced in current trenching practice. Shoring systems for use in situations that are not covered by the data in this appendix must be designed as specified in §1926.652(c).

(ii) When any of the following conditions are present, the members specified in the tables are not considered adequate. Either an alternate timber shoring system must be designed or another type of protective system designed in accordance with §1926.652.

(A) When loads imposed by structures or by stored material adjacent to the trench weigh in excess of the load imposed by a two-foot soil surcharge. The term "adjacent" as used here means the area within a horizontal distance from the edge of the trench equal to the depth of the trench.

(B) When vertical loads imposed on cross braces exceed a 240-pound gravity load distributed on a one-foot section of the center of the crossbrace.

(C) When surcharge loads are present from equipment weighing in excess of 20,000 pounds.

(D) When only the lower portion of a trench is shored and the remaining portion of the trench is sloped or benched unless: The sloped portion is sloped at an angle less steep than three horizontal to one vertical; or the members are selected from the tables for use at a depth which is determined from the top of the overall trench, and not from the toe of the sloped portion.

(e) *Use of Tables.* The members of the shoring system that are to be selected using this information are the cross braces, the uprights, and the wales, where wales are required. Minimum sizes of members are specified for use in different types of soil. There are six tables of information, two for each soil type. The soil type must first be determined in accordance with the soil classification system described in appendix A to subpart P of part 1926. Using the appropriate table, the selection of the size and spacing of the members is then made. The selection is based on the depth and width of the trench where the members are to be installed and, in most instances, the selection is also based on the horizontal spacing of the crossbraces. Instances where a choice of horizontal spacing of crossbracing is available, the horizontal spacing of the crossbraces must be chosen by the user before the size of any member can be determined. When the soil type, the width and depth of the trench, and the horizontal spacing of the crossbraces are known, the size and vertical spacing of the crossbraces, the size and vertical spacing of the wales, and the size and horizontal spacing of the uprights can be read from the appropriate table.

(f) *Examples to Illustrate the Use of Tables C–1.1 through C–1.3.*

(1) *Example 1.*

A trench dug in Type A soil is 13 feet deep and five feet wide.

From *Table C–1.1,* for acceptable arrangements of timber can be used.

Arrangement #B1

Space 4 4 crossbraces at six feet horizontally and four feet vertically.

Wales are not required.

Space 3 8 uprights at six feet horizontally. This arrangement is commonly called "skip shoring."

Arrangement #B2

Space 4 6 crossbraces at eight feet horizontally and four feet vertically.

Space 8 8 wales at four feet vertically.

Space 2 6 uprights at four feet horizontally.

Arrangement #B3

Space 6 6 crossbraces at 10 feet horizontally and four feet vertically.
Space 8 10 wales at four feet vertically.
Space 2 6 uprights at five feet horizontally.

Arrangement #B4

Space 6 6 crossbraces at 12 feet horizontally and four feet vertically.
Space 10 10 wales at four feet vertically.
Spaces 3 8 uprights at six feet horizontally.

(2) *Example 2.*

A trench dug in Type B soil in 13 feet deep and five feet wide. From Table C–1.2 three acceptable arrangements of members are listed.

Arrangement #B1

Space 6 6 crossbraces at six feet horizontally and five feet vertically.
Space 8 8 wales at five feet vertically.
Space 2 6 uprights at two feet horizontally.

Arrangement #B2

Space 6 8 crossbraces at eight feet horizontally and five feet vertically.
Space 10 10 wales at five feet vertically.
Space 2 6 uprights at two feet horizontally.

Arrangement #B3

Space 8 8 crossbraces at 10 feet horizontally and five feet vertically.
Space 10 12 wales at five feet vertically.
Space 2 6 uprights at two feet vertically.

(3) *Example 3.*

A trench dug in Type C soil is 13 feet deep and five feet wide.

From Table C–1.3 two acceptable arrangements of members can be used.

Arrangement #B1

Space 8 8 crossbraces at six feet horizontally and five feet vertically.
Space 10 12 wales at five feet vertically.
Position 2 6 uprights as closely together as possible.
If water must be retained use special tongue and groove uprights to form tight sheeting.

Arrangement #B2

Space 8 10 crossbraces at eight feet horizontally and five feet vertically.
Space 12 12 wales at five feet vertically.
Position 2 6 uprights in a close sheeting configuration unless water pressure must be resisted. Tight sheeting must be used where water must be retained.

(4) *Example 4.*

A trench dug in Type C soil is 20 feet deep and 11 feet wide. The size and spacing of members for the section of trench that is over 15 feet in depth is determined using Table C–1.3. Only one arrangement of members is provided.

Space 8 10 crossbraces at six feet horizontally and five feet vertically.
Space 12 12 wales at five feet vertically.
Use 3 6 tight sheeting.

Use of Tables C–2.1 through C–2.3 would follow the same procedures.

(g) *Notes for all Tables.*

1. Member sizes at spacings other than indicated are to be determined as specified in §1926.652(c), "Design of Protective Systems."

2. When conditions are saturated or submerged use Tight Sheeting. Tight Sheeting refers to the use of specially-edged timber planks (e.g., tongue and groove) at least three inches thick, steel sheet piling, or similar construction that when driven or placed in position provide a tight wall to resist the lateral pressure of water and to prevent the loss of backfill material. Close Sheeting refers to the placement of planks side-by-side allowing as little space as possible between them.

3. All spacing indicated is measured center to center.

4. Wales to be installed with greater dimension horizontal.

5. If the vertical distance from the center of the lowest crossbrace to the bottom of the trench exceeds two and one-half feet, uprights shall be firmly embedded or a mudsill shall be used. Where uprights are embedded, the vertical distance from the center of the lowest crossbrace to the bottom of the trench shall not exceed 36 inches. When mudsills are used, the vertical distance shall not exceed 42 inches. Mudsills are wales that are installed at the toe of the trench side.

6. Trench jacks may be used in lieu of or in combination with timber crossbraces.

7. Placement cf crossbraces. When the vertical spacing of crossbraces is four feet, place the top crossbrace no more than two feet below the top of the trench. When the vertical spacing of crossbraces is five feet, place the top crossbrace no more than 2.5 feet below the top of the trench.

TABLE C-1.1

TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS *

SOIL TYPE A P_a = 25 X H + 72 psf (2 ft Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (ACTUAL) AND SPACING OF MEMBERS **														
	CROSS BRACES							WALES		UPRIGHTS					
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)					VERT. SPACING (FEET)	SIZE (IN)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)					
		UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15				CLOSE	4	5	6	8
5 TO 10	UP TO 6	4X4	4X4	4X6	6X6	6X6	4	Not Req'd	---				2X6	
	UP TO 8	4X4	4X4	4X6	6X6	6X6	4	Not Req'd	---					2X8
	UP TO 10	4X6	4X6	4X6	6X6	6X6	4	8X8	4			2X6		
	UP TO 12	4X6	4X6	6X6	6X6	6X6	4	8X8	4				2X6	
10 TO 15	UP TO 6	4X4	4X4	4X6	6X6	6X6	4	Not Req'd	---				3X8	
	UP TO 8	4X6	4X6	6X6	6X6	6X6	4	8X8	4		2X6			
	UP TO 10	6X6	6X5	6X6	6X8	6X8	4	8X10	4			2X6		
	UP TO 12	6X6	6X6	6X6	6X8	6X8	4	10X10	4				3X8	
15 TO 20	UP TO 6	6X6	6X6	6X6	6X8	6X8	4	6X8	4	3X6				
	UP TO 8	6X6	6X6	6X6	6X8	6X8	4	8X8	4	3X6				
	UP TO 10	8X8	8X8	8X8	8X8	8X10	4	8X10	4	3X6				
	UP TO 12	8X8	8X8	8X8	8X8	8X10	4	10X10	4	3X6				
OVER 20	SEE NOTE 1													

* Mixed oak or equivalent with a bending strength not less than 850 psi.
** Manufactured members of equivalent strength may by substituted for wood.

TABLE C-1.2

TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS *

SOIL TYPE B $P_a = 45 \times H + 72$ psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (ACTUAL) AND SPACING OF MEMBERS**													
	CROSS BRACES						WALES		UPRIGHTS					
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)					VERT. SPACING (FEET)	SIZE (IN)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)				
		UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15				CLOSE	2	3		
5 TO 10	UP TO 6	4X6	4X6	6X6	6X6	6X6	5	6X8	5			2X6		
	UP TO 8	6X6	6X6	6X6	6X8	6X8	5	8X10	5			2X6		
	UP TO 10	6X6	6X6	6X6	6X8	6X8	5	10X10	5			2X6		
	See Note 1													
10 TO 15	UP TO 6	6X6	6X6	6X6	6X8	6X8	5	8X8	5		2X6			
	UP TO 8	6X8	6X8	6X8	8X8	8X8	5	10X10	5		2X6			
	UP TO 10	8X8	8X8	8X8	8X8	8X10	5	10X12	5		2X6			
	See Note 1													
15 TO 20	UP TO 6	6X8	6X8	6X8	8X8	8X8	5	8X10	5	3X6				
	UP TO 8	8X8	8X8	8X8	8X8	8X10	5	10X12	5	3X6				
	UP TO 10	8X10	8X10	8X10	8X10	10X10	5	12X12	5	3X6				
	See Note 1													
OVER 20	SEE NOTE 1													

* Mixed oak or equivalent with a bending strength not less than 850 psi.
** Manufactured members of equivalent strength may by substituted for wood.

TABLE C-1.3

TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS *

SOIL TYPE C P_a = 80 X H + 72 psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (ACTUAL) AND SPACING OF MEMBERS**											
	CROSS BRACES							UPRIGHTS				
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)					VERT. SPACING (FEET)	SIZE (IN.)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET) (See Note 2)		
		UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15				CLOSE		
5 TO 10	UP TO 6	6X8	6X8	6X8	8X8	8X8	5	8X10	5	2X6		
	UP TO 8	8X8	8X8	8X8	8X8	8X10	5	10X12	5	2X6		
	UP TO 10	8X10	8X10	8X10	8X10	10X10	5	12X12	5	2X6		
	See Note 1											
10 TO 15	UP TO 6	8X8	8X8	8X8	8X8	8X10	5	10X12	5	2X6		
	UP TO 8	8X10	8X10	8X10	8X10	10X10	5	12X12	5	2X6		
	See Note 1											
	See Note 1											
15 TO 20	UP TO 6	8X10	8X10	8X10	8X10	10X10	5	12X12	5	3X6		
	See Note 1											
	See Note 1											
	See Note 1											
OVER 20	SEE NOTE 1											

* Mixed Oak or equivalent with a bending strength not less than 850 psi.
** Manufactured members of equivalent strength may be substituted for wood.

TABLE C-2.1

TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS *

SOIL TYPE A P_a = 25 X H + 72 psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (S4S) AND SPACING OF MEMBERS **													
	CROSS BRACES						WALES		UPRIGHTS					
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)				VERT. SPACING (FEET)	SIZE (IN.)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)				
		UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15				CLOSE	4	5	6	8
5 TO 10	UP TO 6	4X4	4X4	4X4	4X4	4X6	4	Not Req'd	Not Req'd				4X6	
	UP TO 8	4X4	4X4	4X4	4X6	4X6	4	Not Req'd	Not Req'd					4X8
	UP TO 10	4X6	4X6	4X6	6X6	6X6	4	8X8	4			4X6		
	UP TO 12	4X6	4X6	4X6	6X6	6X6	4	8X8	4				4X6	
10 TO 15	UP TO 6	4X4	4X4	4X4	6X6	6X6	4	Not Req'd	Not Req'd				4X10	
	UP TO 8	4X6	4X6	4X6	6X6	6X6	4	6X8	4		4X6			
	UP TO 10	6X6	6X6	6X6	6X6	6X6	4	8X8	4			4X8		
	UP TO 12	6X6	6X6	6X6	6X6	6X6	4	8X10	4		4X6		4X10	
15 TO 20	UP TO 6	6X6	6X6	6X6	6X6	6X6	4	6X8	4	3X6				
	UP TO 8	6X6	6X6	6X6	6X6	6X6	4	8X8	4	3X6	4X12			
	UP TO 10	6X6	6X6	6X6	6X6	6X8	4	8X10	4	3X6				
	UP TO 12	6X6	6X6	6X6	6X8	6X8	4	8X12	4	3X6	4X12			
OVER 20	SEE NOTE 1													

* Douglas fir or equivalent with a bending strength not less than 1500 psi.

** Manufactured members of equivalent strength may be substituted for wood.

TABLE C-2.2

TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS *

SOIL TYPE B P_a = 45 X H + 72 psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (S4S) AND SPACING OF MEMBERS **														
	CROSS BRACES						WALES		UPRIGHTS						
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)					VERT. SPACING (FEET)	SIZE (IN.)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)					
		UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15				CLOSE	2	3	4	6	
5 TO 10	UP TO 6	4X6	4X6	4X6	6X6	6X6	5	6X8	5			3X12 4X8		4X12	
	UP TO 8	4X6	4X6	6X6	6X6	6X6	5	8X8	5		3X8		4X8		
	UP TO 10	4X6	4X6	6X6	6X6	6X8	5	8X10	5			4X8			
	See Note 1														
10 TO 15	UP TO 6	6X6	6X6	6X6	6X8	6X8	5	8X8	5	3X6	4X10				
	UP TO 8	6X8	6X8	6X8	8X8	8X8	5	10X10	5	3X6	4X10				
	UP TO 10	6X8	6X8	8X8	8X8	8X8	5	10X12	5	3X6	4X10				
	See Note 1														
15 TO 20	UP TO 6	6X8	6X8	6X8	6X8	8X8	5	8X10	5	4X6					
	UP TO 8	6X8	6X8	6X8	8X8	8X8	5	10X12	5	4X6					
	UP TO 10	8X8	8X8	8X8	8X8	8X8	5	12X12	5	4X6					
	See Note 1														
OVER 20	SEE NOTE 1														

* Douglas fir or equivalent with a bending strength not less than 1500 psi.

** Manufactured members of equivalent strength may be substituted for wood.

TABLE C-2.3

TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS *

SOIL TYPE C P_a = 80 X H + 72 psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	SIZE (S4S) AND SPACING OF MEMBERS **												
	CROSS BRACES						WALES		UPRIGHTS				
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)				VERT. SPACING (FEET)	SIZE (IN)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)				
		UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15			CLOSE				
5 TO 10	UP TO 6	6X6	6X6	6X6	6X6	8X8	5	8X8	5	3X6			
	UP TO 8	6X6	6X6	6X6	8X8	8X8	5	10X10	5	3X6			
	UP TO 10	6X6	6X6	8X8	8X8	8X8	5	10X12	5	3X6			
	See Note 1												
10 TO 15	UP TO 6	6X8	6X8	8X8	8X8	8X8	5	10X10	5	4X6			
	UP TO 8	8X8	8X8	8X8	8X8	8X8	5	12X12	5	4X6			
	See Note 1												
	See Note 1												
15 TO 20	UP TO 6	8X8	8X8	8X8	8X10	8X10	5	10X12	5	4X6			
	See Note 1												
	See Note 1												
	See Note 1												
OVER 20	SEE NOTE 1												

* Douglas fir or equivalent with a bending strength not less than 1500 psi.
** Manufactured members of equivalent strength may be substituted for wood.

APPENDIX D TO SUBPART P OF PART 1926—ALUMINUM HYDRAULIC SHORING FOR TRENCHES

(a) *Scope.* This appendix contains information that can be used when aluminum hydraulic shoring is provided as a method of protection against cave-ins in trenches that do not exceed 20 feet (6.1m) in depth. This appendix must be used when design of the aluminum hydraulic protective system cannot be performed in accordance with §1926.652(c)(2).

(b) *Soil Classification.* In order to use data presented in this appendix, the soil type or types in which the excavation is made must

first be determined using the soil classification method set forth in appendix A of subpart P of part 1926.

(c) *Presentation of Information.* Information is presented in several forms as follows:

(1) Information is presented in tabular form in Tables D–1.1, D–1.2, D–1.3 and E–1.4. Each table presents the maximum vertical and horizontal spacings that may be used with various aluminum member sizes and various hydraulic cylinder sizes. Each table contains data only for the particular soil type in which the excavation or portion of the excavation is made. Tables D–1.1 and D–1.2 are for vertical shores in Types A and B soil. Tables D–1.3 and D1.4 are for horizontal waler systems in Types B and C soil.

(2) Information concerning the basis of the tabular data and the limitations of the data is presented in paragraph (d) of this appendix.

(3) Information explaining the use of the tabular data is presented in paragraph (e) of this appendix.

(4) Information illustrating the use of the tabular data is presented in paragraph (f) of this appendix.

(5) Miscellaneous notations (footnotes) regarding Table D–1.1 through D–1.4 are presented in paragraph (g) of this appendix.

(6) Figures, illustrating typical installations of hydraulic shoring, are included just prior to the Tables. The illustrations page is entitled "Aluminum Hydraulic Shoring; Typical Installations."

(d) *Basis and limitations of the data.*

(1) Vertical shore rails and horizontal wales are those that meet the Section Modulus requirements in the D–1 Tables. Aluminum material is 6061–T6 or material of equivalent strength and properties.

(2) Hydraulic cylinders specifications. (i) 2-inch cylinders shall be a minimum 2-inch inside diameter with a minimum safe working capacity of no less than 18,000 pounds axial compressive load at maximum extension. Maximum extension is to include full range of cylinder extensions as recommended by product manufaturer.

(ii) 3-inch cylinders shall be a minimum 3-inch inside diameter with a safe working capacity of not less than 30,000 pounds axial compressive load at extensions as recommended by product manufacturer.

(3) Limitation of application.

(i) It is not intended that the aluminum hydraulic specification apply to every situation that may be experienced in the field. These data were developed to apply to the situations that are most commonly experienced in current trenching practice. Shoring systems for use in situations that are not covered by the data in this appendix must be otherwise designed as specified in §1926.652(c).

(ii) When any of the following conditions are present, the members specified in the Tables are not considered adequate. In this case, an alternative aluminum hydraulic shoring system or other type of protective system must be designed in accordance with §1926.652.

(A) When vertical loads imposed on cross braces exceed a 100 Pound gravity load distributed on a one foot section of the center of the hydraulic cylinder.

(B) When surcharge loads are present from equipment weighing in excess of 20,000 pounds.

(C) When only the lower portion or a trench is shored and the remaining portion of the trench is sloped or benched unless: The sloped portion is sloped at an angle less steep than three horizontal to one vertical; or the members are selected from the tables for use at a depth which is determined from the top of the overall trench, and not from the toe of the sloped portion.

(e) *Use of Tables D–1.1, D–1.2, D–1.3 and D–1.4.* The members of the shoring system that are to be selected using this information are the hydraulic cylinders, and either the vertical shores or the horizontal wales. When a waler system is used the vertical timber sheeting to be used is also selected from these tables. The Tables D–1.1 and D–1.2 for vertical shores are used in Type A and B soils that do not require sheeting. Type B soils that may require sheeting, and Type C soils that always require sheeting are found in the horizontal wale Tables D–1.3 and D–1.4. The soil type must first be determined in accordance with the soil classification system described in appendix A to subpart P of part 1926. Using the appropriate table, the selection of the size and spacing of the members is made. The selection is based on the depth and width of the trench where the members are to be installed. In these tables the vertical spacing is held constant at four feet on center. The tables show the maximum horizontal spacing of cylinders allowed for each size of wale in the waler system tables, and in the vertical shore tables, the hydraulic cylinder horizontal spacing is the same as the vertical shore spacing.

(f) *Example to Illustrate the Use of the Tables:*

(1) Example 1:

A trench dug in Type A soil is 6 feet deep and 3 feet wide. From Table D–1.1: Find vertical shores and 2 inch diameter cylinders spaced 8 feet on center (o.c.) horizontally and 4 feet on center (o.c.) vertically. (See Figures 1 & 3 for typical installations.)

(2) Example 2:

A trench is dug in Type B soil that does not require sheeting, 13 feet deep and 5 feet wide. From Table D–1.2: Find vertical shores and 2 inch diameter cylinders spaced 6.5 feet o.c. horizontally and 4 feet o.c. vertically. (See Figures 1 & 3 for typical installations.)

(3) A trench is dug in Type B soil that does not require sheeting, but does experience some minor raveling of the trench face. The

trench is 16 feet deep and 9 feet wide. From Table D–1.2: Find vertical shores and 2 inch diameter cylinder (with special oversleeves as designated by footnote #B2) spaced 5.5 feet o.c. horizontally and 4 feet o.c. vertically, plywood (per footnote (g)(7) to the D–1 Table) should be used behind the shores. (See Figures 2 & 3 for typical installations.)

(4) Example 4: A trench is dug in previously disturbed Type B soil, with characteristics of a Type C soil, and will require sheeting. The trench is 18 feet deep and 12 feet wide. 8 foot horizontal spacing between cylinders is desired for working space. From Table D–1.3: Find horizontal wale with a section modulus of 14.0 spaced at 4 feet o.c. vertically and 3 inch diameter cylinder spaced at 9 feet maximum o.c. horizontally. 3 12 timber sheeting is required at close spacing vertically. (See Figure 4 for typical installation.)

(5) Example 5: A trench is dug in Type C soil, 9 feet deep and 4 feet wide. Horizontal cylinder spacing in excess of 6 feet is desired for working space. From Table D–1.4: Find horizontal wale with a section modulus of 7.0 and 2 inch diameter cylinders spaced at 6.5 feet o.c. horizontally. Or, find horizontal wale with a 14.0 section modulus and 3 inch diameter cylinder spaced at 10 feet o.c. horizontally. Both wales are spaced 4 feet o.c. vertically. 3 12 timber sheeting is required at close spacing vertically. (See Figure 4 for typical installation.)

(g) *Footnotes, and general notes, for Tables D–1.1, D–1.2, D–1.3, and D–1.4.*

(1) For applications other than those listed in the tables, refer to §1926.652(c)(2) for use of manufacturer's tabulated data. For trench depths in excess of 20 feet, refer to §1926.652(c)(2) and §1926.652(c)(3).

(2) 2 inch diameter cylinders, at this width, shall have structural steel tube (3.5 3.5 0.1875) oversleeves, or structural oversleeves of manufacturer's specification, extending the full, collapsed length.

(3) Hydraulic cylinders capacities. (i) 2 inch cylinders shall be a minimum 2-inch inside diameter with a safe working capacity of not less than 18,000 pounds axial compressive load at maximum extension. Maximum extension is to include full range of cylinder extensions as recommended by product manufacturer.

(ii) 3-inch cylinders shall be a minimum 3-inch inside diameter with a safe work capacity of not less than 30,000 pounds axial compressive load at maximum extension. Maximum extension is to include full range of cylinder extensions as recommended by product manufacturer.

(4) All spacing indicated is measured center to center.

(5) Vertical shoring rails shall have a minimum section modulus of 0.40 inch.

(6) When vertical shores are used, there must be a minimum of three shores spaced equally, horizontally, in a group.

(7) Plywood shall be 1.125 in. thick softwood or 0.75 inch. thick, 14 ply, arctic white birch (Finland form). Please note that plywood is not intended as a structural member, but only for prevention of local raveling (sloughing of the trench face) between shores.

(8) See appendix C for timber specifications.

(9) Wales are calculated for simple span conditions.

(10) See appendix D, item (d), for basis and limitations of the data.

ALUMINUM HYDRAULIC SHORING
TYPICAL INSTALLATIONS

FIGURE NO. 1
VERTICAL ALUMINUM HYDRAULIC SHORING (SPOT BRACING)

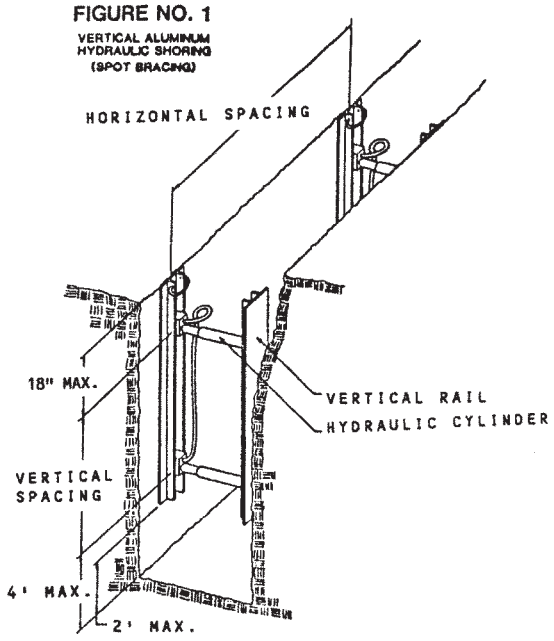


FIGURE NO. 2
VERTICAL ALUMINUM HYDRAULIC SHORING (WITH PLYWOOD)

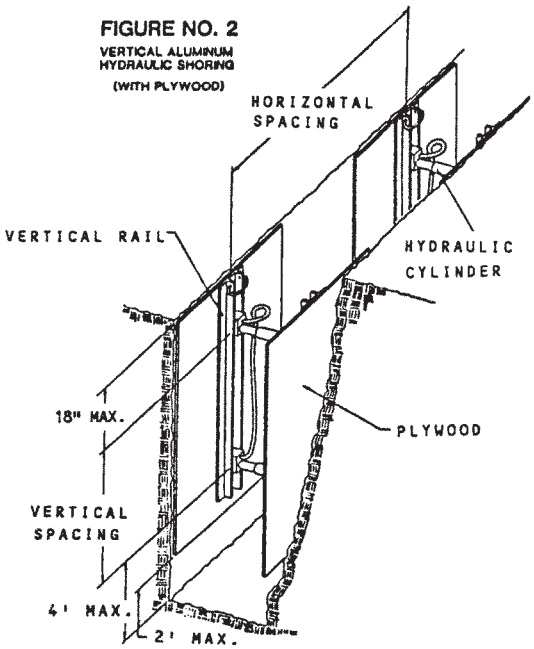


FIGURE NO. 3
VERTICAL ALUMINUM HYDRAULIC SHORING (STACKED)

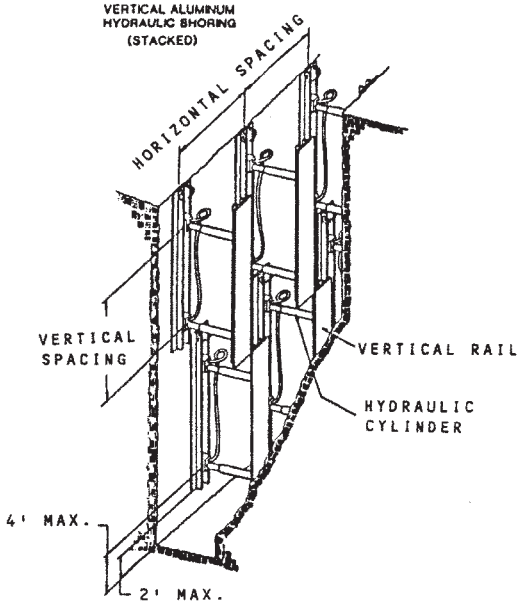


FIGURE NO. 4
ALUMINUM HYDRAULIC SHORING WALER SYSTEM (TYPICAL)

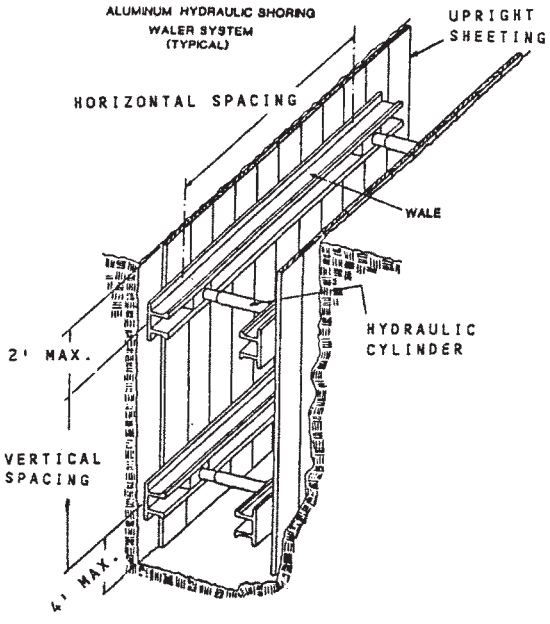


TABLE D - 1.1
ALUMINUM HYDRAULIC SHORING
VERTICAL SHORES
FOR SOIL TYPE A

DEPTH OF TRENCH (FEET)	HYDRAULIC CYLINDERS				
	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)	WIDTH OF TRENCH (FEET)		
			UP TO 8	OVER 8 UP TO 12	OVER 12 UP TO 15
OVER 5 UP TO 10	8	4	2 INCH DIAMETER	2 INCH DIAMETER NOTE (**2**)	3 INCH DIAMETER
OVER 10 UP TO 15	8				
OVER 15 UP TO 20	7				
OVER 20	NOTE (**1**)				

Footnotes to tables, and general notes on hydraulic shoring, are found in Appendix D, Item (g)
Note (**1**): See Appendix D, Item (g) (1)
Note (**2**): See Appendix D, Item (g) (2)

TABLE D - 1.2
ALUMINUM HYDRAULIC SHORING
VERTICAL SHORES
FOR SOIL TYPE B

DEPTH OF TRENCH (FEET)	HYDRAULIC CYLINDERS			
	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)	WIDTH OF TRENCH (FEET)	
			UP TO 8	OVER 8 UP TO 12	OVER 12 UP TO 15
OVER 5 UP TO 10	8	4	2 INCH DIAMETER	2 INCH DIAMETER NOTE (2)	3 INCH DIAMETER
OVER 10 UP TO 15	6.5				
OVER 15 UP TO 20	5.5				
OVER 20	NOTE (1)				

Footnotes to tables, and general notes on hydraulic shoring, are found in Appendix D, Item (g)
Note (**1**): See Appendix D, Item (g) (1)
Note (**2**): See Appendix D, Item (g) (2)

TABLE D - 1.3
ALUMINUM HYDRAULIC SHORING
WALER SYSTEMS
FOR SOIL TYPE B

DEPTH OF TRENCH (FEET)	WALES		HYDRAULIC CYLINDERS						TIMBER UPRIGHTS		
	VERTICAL SPACING (FEET)	* SECTION MODULUS (IN^3)	WIDTH OF TRENCH (FEET)						MAX.HORIZ.SPACING (ON CENTER)		
			UP TO 8		OVER 8 UP TO 12		OVER 12 UP TO15		SOLID SHEET	2 FT.	3 FT.
			HORIZ. SPACING	CYLINDER DIAMETER	HORIZ. SPACING	CYLINDER DIAMETER	HORIZ. SPACING	CYLINDER DIAMETER			
OVER 5 UP TO 10	4	3.5	8.0	2 IN	8.0	2 IN NOTE(2)	8.0	3 IN	—	—	3x12
		7.0	9.0	2 IN	9.0	2 IN NOTE(2)	9.0	3 IN			
		14.0	12.0	3 IN	12.0	3 IN	12.0	3 IN			
OVER 10 UP TO 15	4	3.5	6.0	2 IN	6.0	2 IN NOTE(2)	6.0	3 IN	—	3x12	—
		7.0	8.0	3 IN	8.0	3 IN	8.0	3 IN			
		14.0	10.0	3 IN	10.0	3 IN	10.0	3 IN			
OVER 15 UP TO 20	4	3.5	5.5	2 IN	5.5	2 IN NOTE(2)	5.5	3 IN	3x12	—	—
		7.0	6.0	3 IN	6.0	3 IN	6.0	3 IN			
		14.0	9.0	3 IN	9.0	3 IN	9.0	3 IN			
OVER 20	NOTE (1)										

Footnotes to tables, and general notes on hydraulic shoring, are found in Appendix D, Item (g)
Notes (1): See Appendix D, item (g) (1)
Notes (2): See Appendix D, Item (g) (2)
* Consult product manufacturer and/or qualified engineer for Section Modulus of available wales.

TABLE D - 1.4
ALUMINUM HYDRAULIC SHORING
WALER SYSTEMS
FOR SOIL TYPE C

DEPTH OF TRENCH (FEET)	WALES		HYDRAULIC CYLINDERS						TIMBER UPRIGHTS		
	VERTICAL SPACING (FEET)	* SECTION MODULUS (IN^3)	WIDTH OF TRENCH (FEET)						MAX.HORIZ SPACING (ON CENTER)		
			UP TO 8		OVER 8 UP TO 12		OVER 12 UP TO 15		SOLID SHEET	2 FT.	3 FT.
			HORIZ. SPACING	CYLINDER DIAMETER	HORIZ. SPACING	CYLINDER DIAMETER	HORIZ. SPACING	CYLINDER DIAMETER			
OVER 5 UP TO 10	4	3.5	6.0	2 IN	6.0	2 IN NOTE(2)	6.0	3 IN	3x12	—	—
		7.0	6.5	2 IN	6.5	2 IN NOTE(2)	6.5	3 IN			
		14.0	10.0	3 IN	10.0	3 IN	10.0	3 IN			
OVER 10 UP TO 15	4	3.5	4.0	2 IN	4.0	2 IN NOTE(2)	4.0	3 IN	3x12	—	—
		7.0	5.5	3 IN	5.5	3 IN	5.5	3 IN			
		14.0	8.0	3 IN	8.0	3 IN	8.0	3 IN			
OVER 15 UP TO 20	4	3.5	3.5	2 IN	3.5	2 IN NOTE(2)	3.5	3 IN	3x12	—	—
		7.0	5.0	3 IN	5.0	3 IN	5.0	3 IN			
		14.0	6.0	3 IN	6.0	3 IN	6.0	3 IN			
OVER 20	NOTE (1)										

Footnotes to tables, and general notes on hydraulic shoring, are found in Appendix D, Item (g)
Notes (1): See Appendix D, item (g) (1)
Notes (2): See Appendix D, Item (g) (2)
* Consult product manufacturer and/or qualified engineer for Section Modulus of available wales.

APPENDIX E TO SUBPART P OF PART 1926—ALTERNATIVES TO TIMBER SHORING

Figure 1. Aluminum Hydraulic Shoring

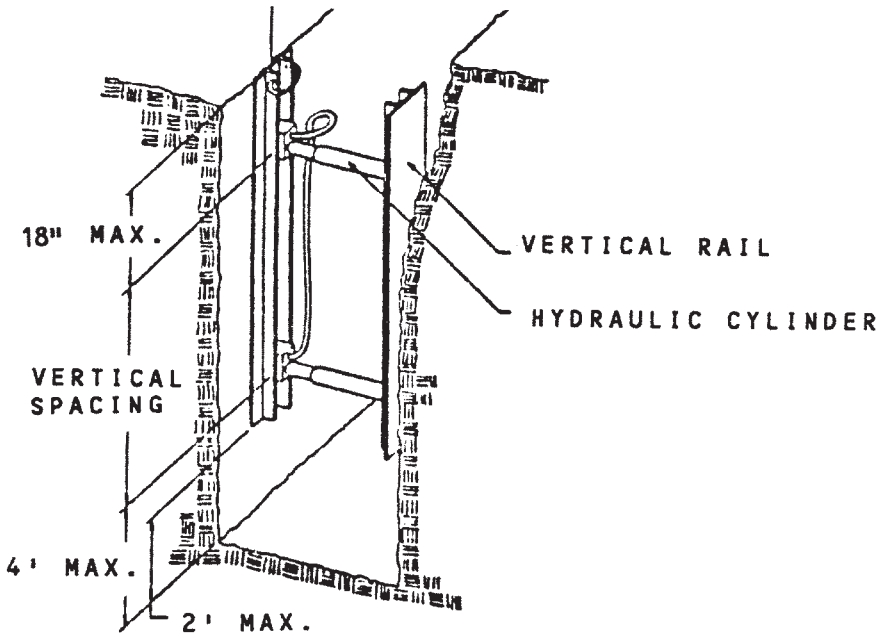


Figure 2. Pneumatic/hydraulic Shoring

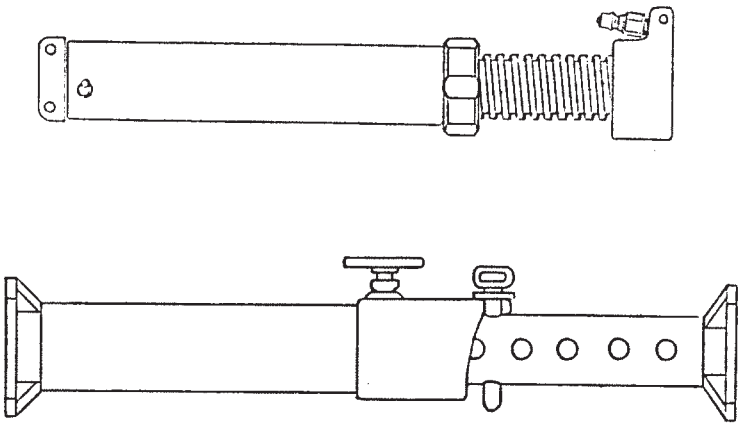


Figure 3. Trench Jacks (Screw Jacks)

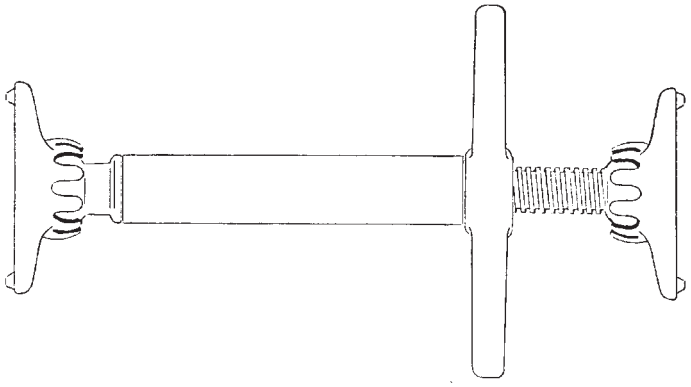
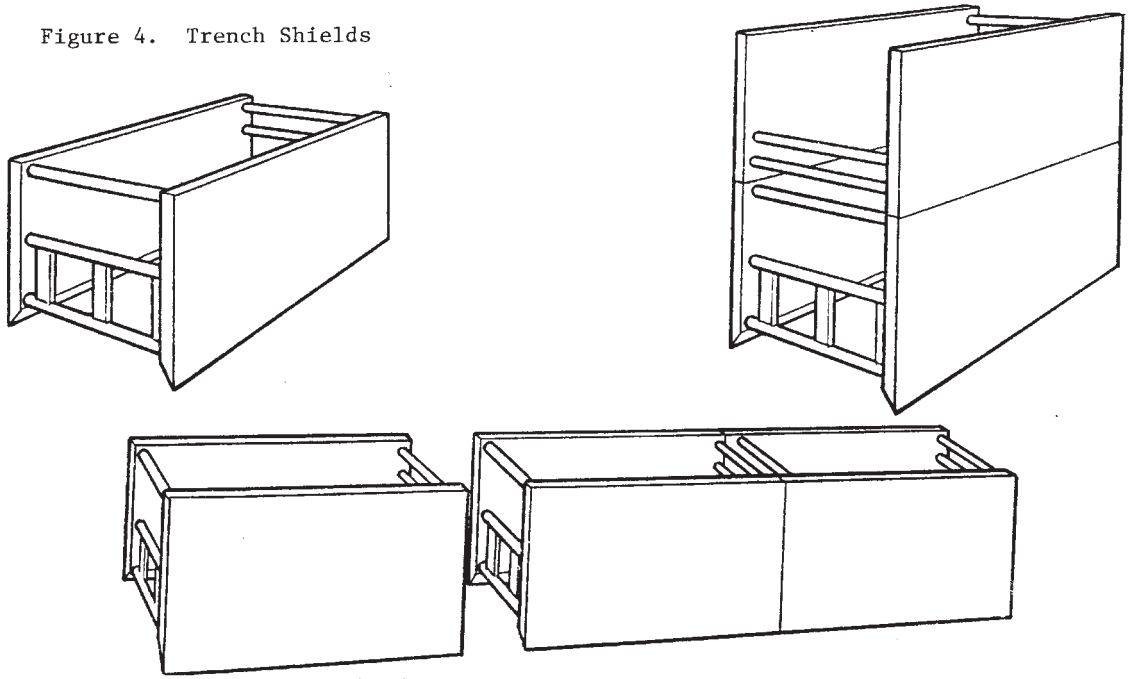


Figure 4. Trench Shields



APPENDIX F TO SUBPART P OF PART 1926—SELECTION OF PROTECTIVE SYSTEMS

The following figures are a graphic summary of the requirements contained in subpart P for excavations 20 feet or less in depth. Protective systems for use in excavations more than 20 feet in depth must be designed by a registered professional engineer in accordance with §1926.652 (b) and (c).

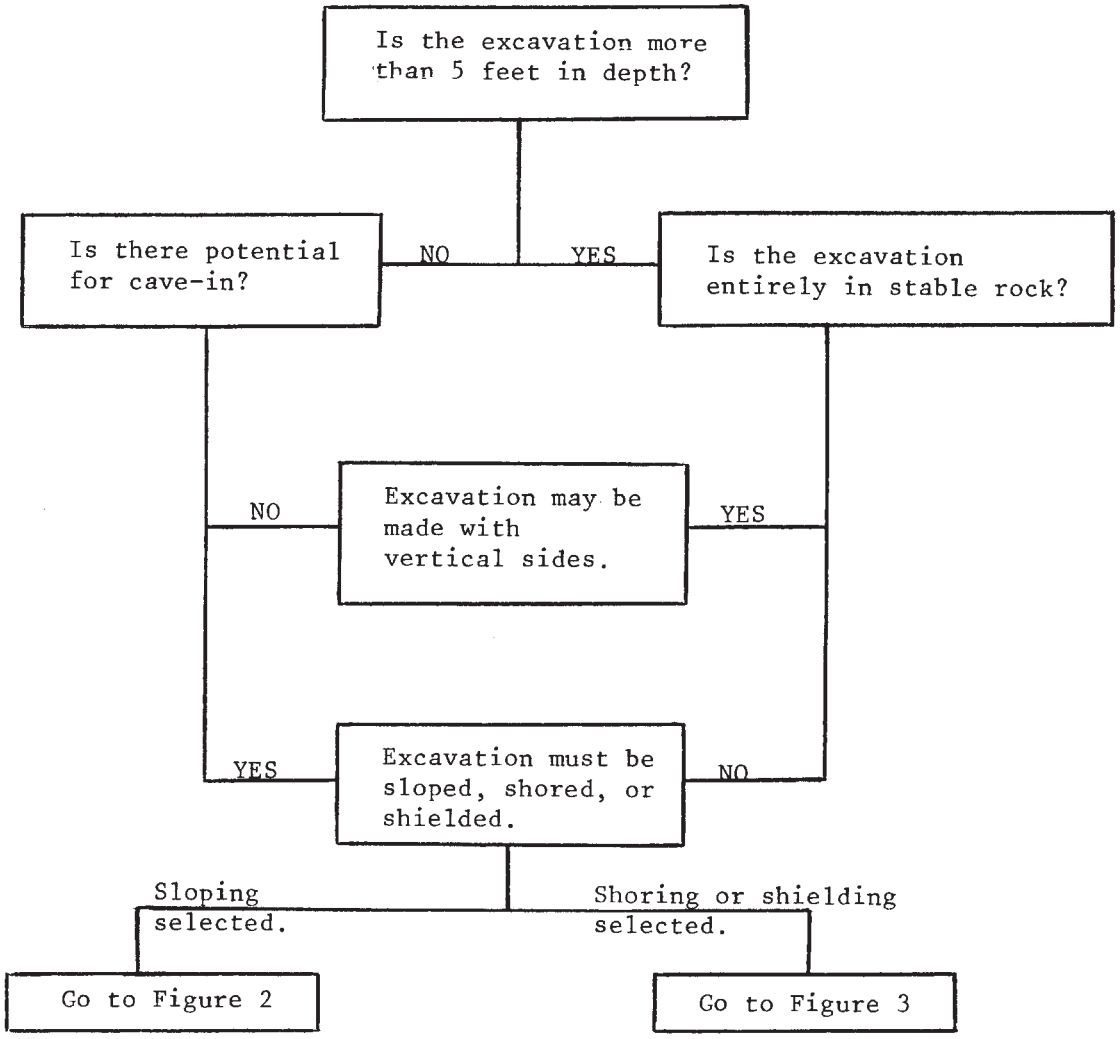


FIGURE 1 - PRELIMINARY DECISIONS

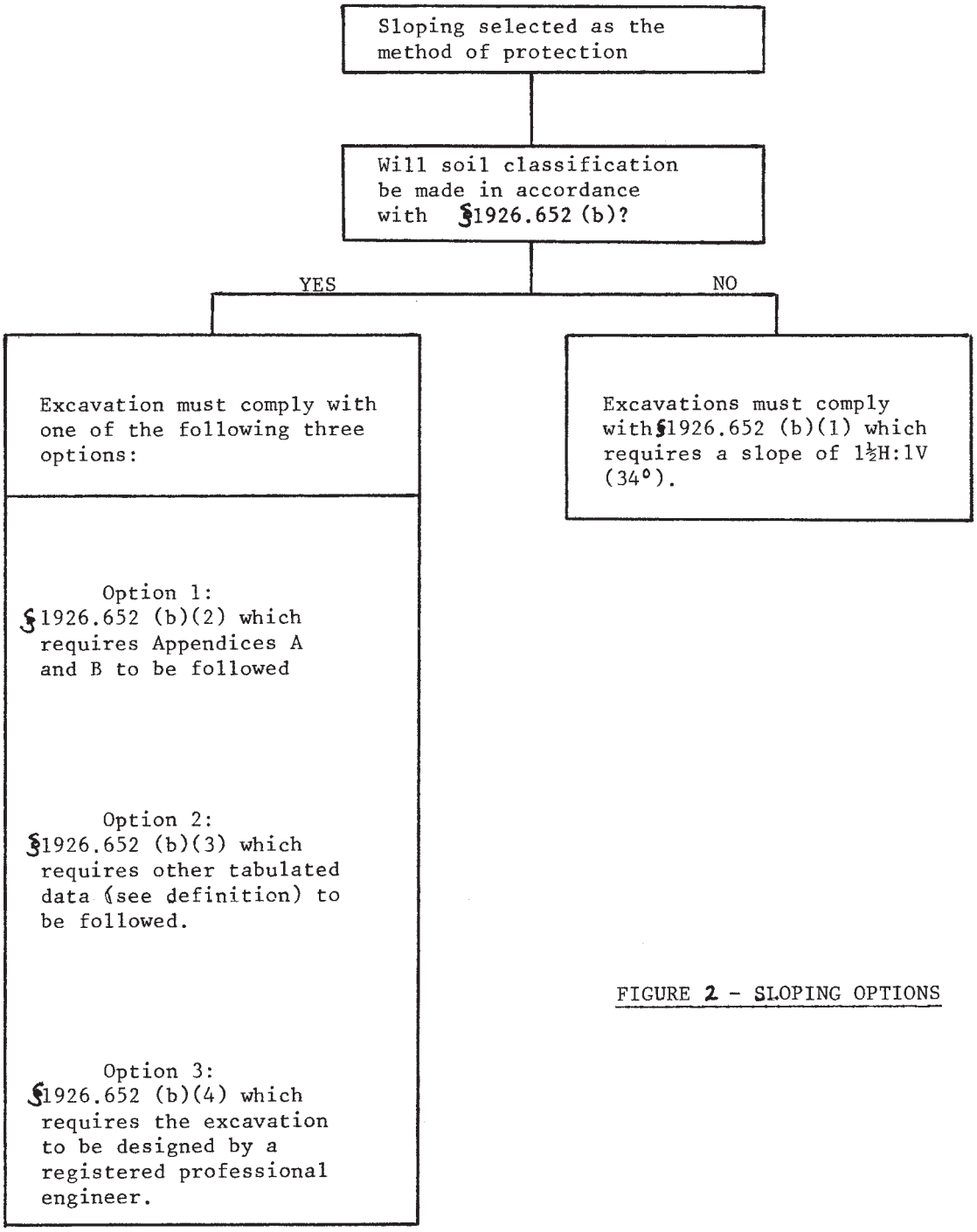


FIGURE 2 - SLOPING OPTIONS

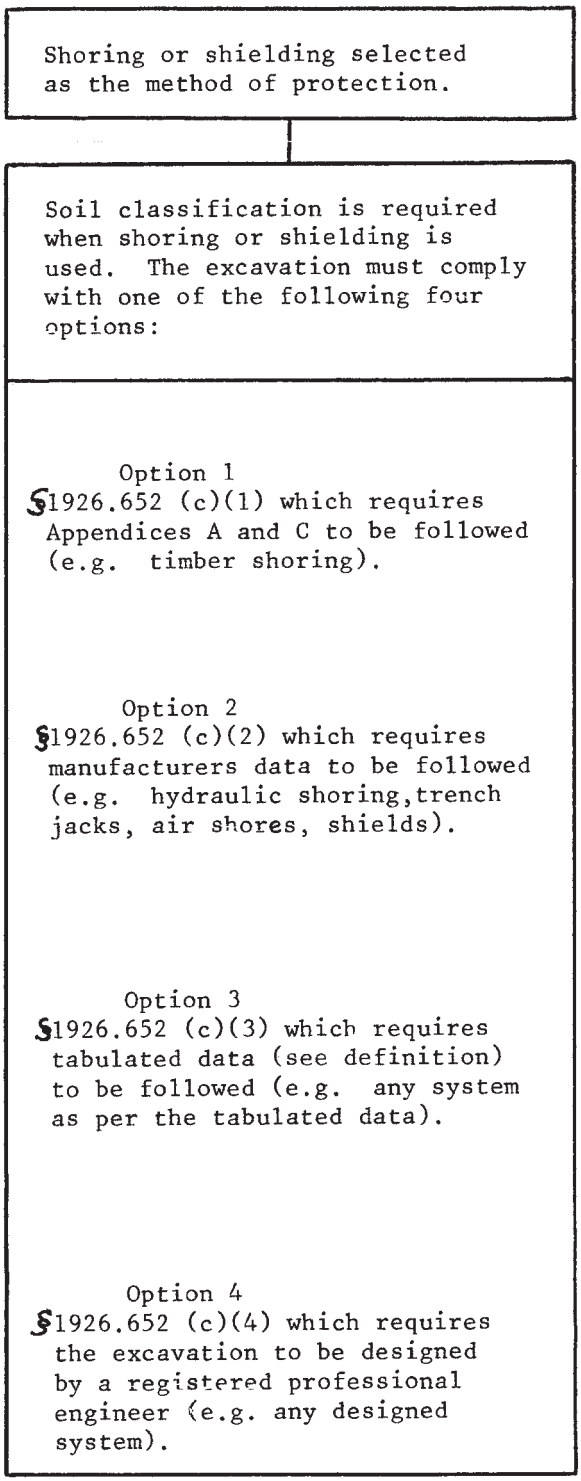


FIGURE 3 - SHORING AND SHIELDING OPTIONS

DIVISION 01 – GENERAL REQUIREMENTS

DIVISION 1 – GENERAL REQUIREMENTS

SECTION 01110 – SUMMARY OF WORK

PART 1 - GENERAL

1.01 SUMMARY:

A. This Section summarizes the Work covered in detail in the complete Contract Documents.

B. Owner: The City of Fayetteville, Arkansas, 113 West Mountain Street, Fayetteville, AR 72701 is contracting for Work described in the Contract Documents.

1. Contract Identification: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.
2. Location: Fayetteville, Arkansas.

C. Engineer: The Contract Documents were prepared by Burns & McDonnell Engineering Company, Inc., 6576 Lynch's Prairie Cove, Suite B, Springdale, AR 72762.

1.02 PROJECT DESCRIPTION:

THE WORK UNDER THIS CONTRACT INCLUDES, BUT IS NOT LIMITED TO:

The construction of improvements to the intersection of Millsap Road and College Avenue in Fayetteville, Arkansas. The project is split into two separate packages.

Package 1 will be constructed first and will consist of a 700 foot extension of N. Hemlock Avenue from Sain Street to Millsap Road. This new road connection will connect to the existing street stub out provided south of the recently completed roundabout on Sain Street and will become the new connection between Millsap and Sain Street as Front Street is disconnected. Improvements will consist of new curb and gutter, new sidewalk on the west side of the road, and new drainage infrastructure

Package 2 will be constructed second and will consist of improvements to the intersection that extends approximately 350 feet east and west of College Avenue. Left turn lanes will be added to the east and west bound legs of the intersection as well as, new curb and gutter, new sidewalks and pedestrian accommodations, new drainage infrastructure, and traffic signal modifications. To improve safety and traffic flow, Front Street will be disconnected from Millsap Road. There will also be some waterline relocation included in Package 2.

1.03 WORK BY OTHERS:

A. Work Under Other Contracts: None.

B. Work by Owner: None.

C. Other Activities: Utility Relocations by AT&T, Ritter Communications, Cox Communications, AEP/SWEPCO, and Black Hills Energy. Adjacent Development.

During Stage 1 construction of Package 2, AT&T will be on site to relocate and lower of a portion of existing fiber duct bank that crosses Millsap, east of College Avenue. The total duration of this work is anticipated to be one week. Contractor shall coordinate with AT&T and their utility subcontractor for scheduling of this work in conjunction with excavating road subgrade, relocation of watermain, and installation of new storm drainage pipe.

1.04 CONTRACTOR'S USE OF PREMISES:

A. Exclusive Use: During the construction period, Contractor shall have full use of the premises for execution of the Work. Use of premises is limited only by Owner's right to perform duties and functions as stated in the GENERAL CONDITIONS and in this Section.

1.05 OWNER'S USE OF PREMISES:

A. Partial Owner Occupancy: The Owner reserves the right to occupy completed areas of the contract, prior to Substantial Completion provided that such occupancy does not interfere with completion of the Work. Such partial occupancy shall not constitute acceptance of the total Work.

1.06 WORK SEQUENCE:

A. Package 1 shall be constructed first and shall be substantially complete prior to starting on Package 2.

B. General: Construction sequence within each package shall be determined by Contractor subject to Owner's need for continuous operation of existing facilities, and subject to the requirements as indicated or specified.

C. Continuous Service of Existing Facilities: Exercise caution and schedule operations to ensure that functioning of present facilities will not be disrupted. Shutdown of Owner's operating facilities to perform the Work shall be held to a minimum length of time and shall be coordinated with Owner who shall have control over the timing and schedules of such shutdowns.

1.07 PREORDERED EQUIPMENT AND MATERIALS:

None.

1.08 MEASUREMENT AND PAYMENT:

A. Unit Price Contracts: All Work indicated on the Contract Drawings and specified in the Contract Documents shall be included in the "Unit Price Schedule" in the Agreement. A Unit Price is an amount proposed by Contractor and stated in the Agreement as a price per unit of measurement for materials or services.

B. Specific Items: Measurement and payment of specific items shall be as specified in each applicable Section of the TECHNICAL SPECIFICATIONS.

1.09 COPIES OF DOCUMENTS:

A. Furnished Copies: After execution of Agreement, Contractor will be furnished at no cost, a maximum of three (3) sets of Contract Documents consisting of full-size Contract Drawings including revised Drawings and the Project Manual, in addition to those used in execution of the Agreement.

B. Additional Copies: Additional copies of above documents will be supplied by Engineer upon request of Contractor and approval of Owner.

1.10 LIST OF DRAWINGS (AND SCHEDULES):

A. Contract Drawings:
   1. Each sheet of the Contract Drawings bears the following general title: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.
   2. Individual sheet numbers and titles are as stated on SHEET INDEX.

B. Reference Drawings:
   1. Reference Drawings included with the set of Contract Drawings are as stated on SHEET INDEX.

1.11 SCHEDULE OF OWNER-SUPPLIED EQUIPMENT AND MATERIALS:

None.

PART 2 - PRODUCTS – NOT APPLICABLE.

PART 3 - EXECUTION – NOT APPLICABLE.

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END OF SECTION 01110

SECTION 01250 – CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Minor changes in the Work.
   2. Proposal request.
   3. Work Change Directive.

B. Related Sections:
   1. DOCUMENT 00700 – GENERAL CONDITIONS.
   2. Supplementary Conditions.

1.02 MINOR CHANGES IN THE WORK

A. Engineer will advise Contractor of minor changes in Work not involving an adjustment to Contract Price or Contract Times as authorized by the DOCUMENT 00700 – GENERAL CONDITIONS, Subparagraph 9.05 by issuing Field Orders.

1.03 PROPOSAL REQUEST

A. Owner-Initiated Proposal Requests:
   1. ENGINEER may issue a Proposal Request, including detailed descriptions of proposed changes in the Work that may require adjustment to the Contract Price or the Contract Time.
      a. If necessary, the description will include supplemental or revised Drawings and Specifications.
      b. Proposal Requests issued by ENGINEER are for information only. Do not consider them instructions either to stop Work in progress or to execute the proposed change.
   2. CONTRACTOR shall submit cost proposal, including any request for an extension in Contract Times, within 14 days of receipt of Proposal Request.
   3. In order to facilitate checking of CONTRACTOR's proposals for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of cost including labor, materials, and Subcontracts. Labor and materials shall be itemized in a manner acceptable to the Engineer. Where major cost items are Subcontracts, they shall be itemized also. Document each proposal for a change in cost or time with sufficient data to support computations, including the following:
      a. Include list of quantities of Products, labor, and equipment required or eliminated and unit costs, with total amount of purchases and credits to be made.
      b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
      c. Indicate amounts for insurance and bonds.
      d. Indicate amounts for Contractor's overhead and profit.
      e. Include justification for any change in Contract Time.
      f. Include credit for deletions from Contract, similarity documented.
      g. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity

duration, start and finish times, and activity relationship.

(1) Use available total float before requesting an extension of the Contract Time.

4. On Owner's approval of a proposal request, Engineer will issue Change Orders for signatures by Owner and Contractor as provided in the DOCUMENT 00700 – GENERAL CONDITIONS.
   a. Upon execution of a Change Order, Contractor shall promptly revise Construction Progress Schedule and Schedule of Values accordingly.

1.04 WORK CHANGE DIRECTIVE

A. Engineer may issue a Work Change Directive, signed by Owner and Engineer, including detailed descriptions of changes, and identifying method for determining any change in Contract Price or Contract Time, instructing Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
   1. Contractor shall promptly execute the change.
   2. Work Change Directives shall be issued on Owner's standard form.

B. Contractor shall maintain detailed records for changes in the Work performed on a time and material basis.
   1. Submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

C. Engineer will issue Change Order CONDITIONS.

D. Upon execution of a Change Order, Contractor shall promptly revise Construction Progress Schedule and Schedule of Values for signatures by Owner and Contractor as provided in DOCUMENT 00700 – GENERAL accordingly.

PART 2 - PRODUCTS NOT USED

PART 3 - PART 3 – EXECUTION NOT USED

END OF SECTION 01250

SECTION 01270 – UNIT PRICES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Submission procedures.
   2. Changes of Contract Sum.
   3. Description of Unit Prices.

B. Related Sections:
   1. DOCUMENT 00400– BID FORM.
   2. DOCUMENT 00500 –AGREEMENT.
   3. DOCUMENT 00700 – GENERAL CONDITIONS.

1.02 SUBMISSION PROCEDURES

A. Insert on DOCUMENT 00400 – BID FORM, Unit Prices for Work or materials listed in this Section.
   1. Such Unit Prices shall apply for additions and deletions.

1.03 CHANGES TO CONTRACT SUM

A. Unit Prices shall constitute full compensation or credit, as the case may be, for the complete provision, fabrication, and installation of each item listed in this Section based solely on Work in place, including all necessary labor, product, tools, equipment, transportation, services and incidentals, appurtenances, and connections required to complete the Work in place, and including insurance, overhead, profit and supervision.

B. The Unit Prices are listed on DOCUMENT 00400 – BID FORM, and will apply to the net change on any given change to the scope of Work.

C. Unit Prices accepted by the Owner and Contractor shall be identified in the Owner-Contractor Agreement.

D. Contractor shall take measurements and compute quantities for which Unit Price items are applicable.
   1. Engineer will verify measurements and quantities.
      a. Contractor shall assist Engineer by providing necessary equipment, workers, and survey personnel as the Engineer requires.
   2. Final payment for Work governed by Unit Prices will be made on the basis of the actual measurements and quantities accepted by the Engineer multiplied by the Unit Price for Work which is incorporated in or made necessary by the Work.
   3. Payment will not be made for any of the following:
      a. Products wasted or disposed of in a manner unacceptable to Engineer.
      b. Products which Engineer determines as unacceptable before or after installation.
      c. Product not completely unloaded from the transporting vehicle.
      d. Products installed beyond the lines and levels of the required Work.
      e. Products not installed after completion of Work.
      f. Loading, hauling, and disposing of rejected Products.

1.04 DESCRIPTION OF UNIT PRICES

Measurement and Payment of specific items shall be as specified in each applicable section of the TECHNICAL SPECIFICATIONS.

PART 2 - PART 2 – PRODUCTS

NOT USED

PART 3 - PART 3 – EXECUTION

NOT USED

END OF SECTION 01270

SECTION 01271 – MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes delineation of measurement and payment criteria applicable to unit price work related to water and sewer, whether the unit price items are part of a unit price contract or are part of a Stipulated Price contract.

B. Defect assessment and non-payment for rejected work.

1.2 AUTHORITY

A. Measurement methods are delineated for each individual bid item under this section.

B. The Engineer will take all measurements and compute quantities accordingly.

C. Contractor shall assist by providing necessary equipment, workers, and survey personnel as required.

1.3 UNIT QUANTITIES SPECIFIED

A. Quantities and measurements indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Engineer shall determine payment.

B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit prices contracted.

1.4 MEASUREMENT OF QUANTITIES

A. Measurement by Weight: Items measured by weight will use specified standard handbook weights unless otherwise specified in this section for an individual item.

B. Measurement by Volume: Unless herein noted differently, volume shall be measured by cubic dimension using mean length, width and height or thickness with survey chain, steel tape, approved distance meter, or by use of Total Surveying Stations and Engineering Software, as approved by Engineer.

C. Measurement by Area: Unless herein noted differently, area shall be measured by square dimension using mean length and width or radius, with survey chain, steel tape, approved distance meter, or by use of Total Surveying Stations and Engineering Software, as approved by Engineer.

D. Linear Measurement: Unless herein noted differently, linear measurements shall be measured at the item centerline or mean chord, with survey chain, steel tape, approved distance meter, or by use of Total Surveying Stations and Engineering Software, as approved by Engineer.

E. Stipulated Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

1.5 PAYMENT

A. Payment Includes: Except as modified herein, payment shall be full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

B. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Engineer multiplied by the unit price for Work which is incorporated in or made necessary by the Work.

1.6 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct the following remedy:

1. The defective Work will be repaired to the instructions of the Engineer, and the unit price will be adjusted to a new price at the discretion of the Engineer.

C. The authority of the Engineer to assess the defect and identify payment adjustment is final.

1.7 NON-PAYMENT FOR REJECTED PRODUCTS

A. Payment will not be made for any of the following:

1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from the transporting vehicle.
4. Products placed beyond the lines, levels or boundaries of the required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling and disposing of rejected Products.
7. Work performed beyond the specified limits unless authorized by the Engineer.

1.8 BID ITEMS (SCHEDULE C)

ITEM NO.	ITEM DESCRIPTION
C1	INSURANCE AND BONDING – "Insurance and Bonding" for item number C1 is intended to cover those insurance and bonding costs associated directly with water and/or sewer work shown in the contract. Requirements, Measurements and Payment is defined by Section 103 of the City of Fayetteville – Standard Street and Drainage Specifications.
C2	CONSTRUCTION CONTROL AND LAYOUT – "Construction Control and Layout" shall conform to the Construction Requirements shall be those listed in Section 111.03 Construction Requirements of the City of Fayetteville – Standard Street and Drainage Specifications. Work completed, accepted and measured will be paid for at the contract lump sum (LS) price bid, which price shall be full compensation for furnishing and maintaining all necessary lines, grades, and measurements; and for furnishing all engineering personnel, equipment, materials, tools, and incidentals to complete the work. No adjustments in the lump sum price bid will be made for Roadway Construction Control required due to normal increases or decreases in Contract quantities. Partial payments for Construction Control and Layout will be made in proportion to the amount of work accomplished on this item. No additional payment will be made for re-staking needed to maintain the control.

C3 TRENCH AND EXCAVATION SAFETY SYSTEMS – "Trench and Excavation Safety Systems" that comply with OSHA Standards 29 CFR 1926 Safety and Health Regulations for Construction Subpart P shall be paid for on a lump sum (LS) basis at the unit price listed on the Unit Price Schedule. After contract award, the Contractor shall submit to the Owner a cost breakdown for the work involved in the lump sum price bid for Trench and Excavation Safety System for all water and sanitary sewer facilities and shall, with each periodic payment request, submit a certification by the "competent person" as defined in 29 CFR 1926.650(b) that the Contractor has complied with the provisions of the OSHA Standard for Excavation and Trench Safety Systems, 29 CFR 1926 Subpart P, for work for which payment is requested. Periodic payments will be made in proportion to the amount of work accomplished, as determined by the Owner, and will be full compensation for trench and excavation safety, including all materials, labor, and incidentals necessary to perform the work.

C4 MOBILIZATION – "Mobilization" for item number C4 is intended to cover those mobilization costs associated directly with water and/or sewer work shown in the contract. Requirements, Measurements and Payment is defined by Section 511 of the City of Fayetteville – Standard Street and Drainage Specifications.

C5, C6 X" DIA. WATER LINE (AWWA C900 DR14) – "X" Dia. Water Line (AWWA C900 DR14)" shall be paid for on a linear foot (LF) basis at the unit price listed on the Unit Price Schedule. Work performed and accepted under this item will be measured along the center of the excavated trench. Payment will be for all excavation, dewatering, pipe, placement of bedding/embedment, backfill, tracer wire, safety marker tape, joint restraint systems, connections to existing pipes, testing and disinfecting, surface restoration, and all other materials, labor, and incidentals necessary to perform work. Excavation shall include, but not be limited to soil, stones, stumps, debris, concrete, structures, footings, foundations, and any other obstacles that may obstruct the work.

TYPE
6" DIA. WATER LINE (AWWA C900 DR14)
8" DIA. WATER LINE (AWWA C900 DR14)

C7 TAPPING SLEEVE AND VALVE (8" x 8") – "Tapping Sleeve and Valve (8" X 8") shall be paid for by each (EA) basis at the unit price listed on the Unit Price Schedule. Payment shall be full compensation for all complete sleeve and valve assemblies including excavation, concrete thrust blocking, polywrap, placement of bedding/embedment, backfill, surface restoration and all other materials and equipment required to complete the tapping operation and all other related items needed to provide a product as intended by the Contract Documents.

C8, C9 X" GATE VALVE – "X" Gate Valve" shall be paid for by each (EA) valve installed complete at the unit price listed on the Unit Price Schedule. Payment shall be full compensation for furnishing and installing the valve, valve box and lid, valve nut extension with set screw, "Mega-Lug" type restrained joint glands, mechanical joint plugs, tracer wire, polywrap, thrust blocking, testing, concrete slabs around the top of the valve boxes, and all other equipment, tools, labor, and incidentals necessary to complete the work.

TYPE
6" GATE VALVE
8" GATE VALVE

C10 FIRE HYDRANT ASSEMBLY INSTALLED COMPLETE – "Fire Hydrant Assembly Installed Complete" shall be paid for by each (EA) fire hydrant assembly installed complete. Payment shall be full compensation for all fire hydrants, risers as required, auxiliary valve, valve box and lid, locked hydrant adapters, thrust blocking, "Mega-Lug" type restrained joint glands, tracer wire, concrete slab around the valve box, paint, granular material for hydrant drainage, and all other materials, equipment, tools, labor, and incidentals necessary to complete the fire hydrant installation.

C11, C12 WATER METER INSTALLED COMPLETE – "Water Meter Installed Complete" shall be paid for by each (EA) basis for the size shown and at the unit price listed on the Unit Price Schedule. Payment shall be full compensation for furnishing and installing all materials and appurtenant work required to install settings and to connect the new meter to the existing service line. Work shall include all excavation, backfilling, tracer wire, safety marking tape, pavement repair, installing meter box, furnishing and installing tapping saddle, corporation stop, tapping of water line, pavement repair, and all cleanup and every other item of work necessary to provide a product as intended by the Contract Documents.

TYPE
SINGLE WATER METER INSTALLED COMPLETE
DOUBLE WATER METER INSTALLED COMPLETE

C13 DUCTILE IRON FITTINGS– "Ductile Iron Fittings" shall be paid for per pound (LB) of fitting at the unit price listed on the Unit Price Schedule. Work performed and accepted under this item will be measured and based on standard AWWA C153/A21.53 weight tables for compact mechanical joint fittings. Payment will be for furnishing and installing and wrapping the fittings, and the required concrete reaction backing (with straps and/or stainless steel all thread as required), and all other materials, labor, and incidentals necessary to perform work.

C14 CUT, CAP, AND ABANDON EXISTING WATER LINE (X") – "Cut, Cap, and Abandon Existing Water Line (X")" shall be paid for by each (EA) basis at the unit price listed on the Unit Price Schedule. Payment shall be full compensation for furnishing and installing all materials and necessary work required to install the restrained mechanical joint caps, timber or post with wedges, concrete, forming, pouring, excavation (including rock removal if necessary), backfilling, and surface restoration in conformance with details found in the City of Fayetteville Standard Detail W28 found in Construction Plans and on the City's website.

TYPE
CUT, CAP AND ABANDON WATER LINE (6")

C15 FIRE HYDRANT ASSEMBLY REMOVAL – "Fire Hydrant Assembly Removal" shall be paid for by each (EA) fire hydrant assembly removed complete at the unit price listed on the Unit Price Schedule. Work performed shall include removal of the

existing hydrant, valves and fittings, capping of the existing main, excavation (including rock removal if necessary), backfilling, delivery of the removed materials to the City as requested, and all related materials and work necessary to provide a product as intended by the Contract Documents.

C16 2" DIA. COATED COPPER PIPE AND FITTINGS – "2" DIA. Coated Copper Pipe and Fittings" shall be paid for on a linear foot (LF) basis at the unit price listed on the unit price schedule. Work performed and accepted under this item will be measured along the center of the excavated and/or bored trench. Payment will be for all excavation, boring, dewatering, pipe, placement of bedding/embedment, backfill, tracer wire, safety marker tape, joint restraint systems, connections to existing pipes, all fittings, testing and disinfecting, surface restoration, and all other materials, labor, and incidentals necessary to perform work. Excavation shall include, but not be limited to soil, stones, stumps, debris, concrete, structures, footings, foundations, and any other obstacles that may obstruct the work.

C17 8" DIA. – REMOVE CLAY PIPE, REPLACE WITH PVC – "8" Dia. – Remove Clay Pipe, Replace with PVC" shall be paid for by lump sum (LS) for work completed to remove clay pipe and replace with PVC as described in the plans. Lump Sum shall include removal of existing pipe, installation of new pipe, reinforced flexible coupling (per City of Fayetteville Detail S18) at each end of the section to be replaced, reconnection of new pipe to existing manhole and all other incidentals necessary to complete the work, including but not limited to pump around operations while the sewer line is taken out of service. Payment shall be made at the unit price listed on the Unit Price Schedule. Payment shall be for all excavation, dewatering, concrete, fittings, tracer wire, formwork, pipe, polywrap, backfill, testing, surface restoration, and all other materials, labor, and incidentals necessary to perform work. Excavation shall include, but not be limited to soil, stones, stumps, debris, concrete, structures, footings, foundations, and any other obstacles that may obstruct the work. A temporary pump around may be necessary to complete this work. Flows shall be monitored and coordinated with the City of Fayetteville prior to scheduling the work to determine if the line can be plugged and taken out of service temporarily, or if a pump around will be required.

C18 16" DIAMETER STEEL CASING W/MECHANICAL LINK END SEALS AND SPACERS (DIRECT BURY) – "16" DIA. Steel Casing w/Mechanical Link End Seals and Spacers (Direct Bury)" shall be paid for on a linear foot (LF) basis at the unit price listed on the Unit Price Schedule. Work performed and accepted under this item will be measured along the center of the excavated trench. Payment will be for all excavation, dewatering, casing pipe including field welding and coating, placement of bedding/embedment, backfill, installation of carrier pipe including joint restraint systems, casing spacers, and end seals, polywrap, surface restoration, and all other materials, labor, and incidentals necessary to perform work. Excavation shall include, but not be limited to soil, stones, stumps, debris, concrete, structures, footings, foundations, and any other obstacles that may obstruct the work.

C19 SANITARY SEWER MANHOLE – REMOVE CONE, LOWER TO GRADE – "Sanitary Sewer Manhole – Remove Cone, Lower to Grade" shall be paid for by each

(EA) complete sanitary sewer manhole (SSMH) lowered to grade per City of Fayetteville Detail S12, at the unit price listed on the Unit Price Schedule. Payment shall be for all excavation, dewatering, concrete, MH Adaptors, tracer wire, formwork, frame and cover, backfill, testing, surface restoration, and all other materials, labor, and incidentals necessary to perform work. Excavation shall include, but not be limited to soil, stones, stumps, debris, concrete, structures, footings, foundations, and any other obstacles that may obstruct the work.

C20 SANITARY SEWER MANHOLE – ADJUST RING TO GRADE – "Sanitary Sewer Manhole – Adjust Ring to Grade" shall be paid for by each (EA) complete sanitary sewer manhole (SSMH) adjusted to grade per City of Fayetteville Detail S12, at the unit price listed on the Unit Price Schedule. Payment shall be for all excavation, dewatering, concrete, MH Adaptors, tracer wire, formwork, frame and cover, backfill, testing, surface restoration, and all other materials, labor, and incidentals necessary to perform work. Excavation shall include, but not be limited to soil, stones, stumps, debris, concrete, structures, footings, foundations, and any other obstacles that may obstruct the work.

C21 FLOWABLE FILL ABANDON 8" WATER LINE UNDER ROADWAY – "Flowable Fill Abandon 8" Waterline Under Roadway" shall be paid for on a linear foot (LF) basis at the unit price listed on the Unit Price Schedule. Payment shall be full compensation to excavate (including rock removal if necessary), saw cut the pipe, and fully grout fill and abandon the entire existing waterline.

C22 UTILITY ADJUSTMENT – WATER VALVE / METER – "Utility Adjustment – Water Valve / Meter" shall be paid for by each (EA) complete water valve or meter adjusted to grade per City of Fayetteville specifications and details, at the unit price listed on the Unit Price Schedule. Payment shall be for all excavation, dewatering, concrete, adaptors, tracer wire, formwork, valve box, meter box and cover, backfill, testing, surface restoration, and all other materials, labor, and incidentals necessary to perform work. Excavation shall include, but not be limited to soil, stones, stumps, debris, concrete, structures, footings, foundations, and any other obstacles that may obstruct the work.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION 01271

SECTION 01290 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Schedule of values.
   2. Applications for payment.

B. Related Sections:
   1. DOCUMENT 00700 – GENERAL CONDTIONS.

1.02 APPLICATIONS FOR PAYMENT

A. Format: Document 01290.01 supported by Document 01290.02 or other approved format.
   1. Owner will provide Contractor an electronic copy of Documents 01290.01 and 01290.02.

B. Payment Period: As specified under DOCUMENT 00700 – GENERAL CONDITONS Article 14.

C. Preparation of Applications:
   1. Present required information in typewritten form.
   2. Execute application by signature of authorized officer of Contractor's firm.
   3. Indicate dollar value in each column of each line item for portion of Work completed through the last day of the application period, and for products properly stored in accordance with the Contract Documents through the last day of the previous application period.
   4. Round off dollar values to nearest dollar.
   5. Complete every entry on form.
   6. Indicate each authorized Change Order as separate items on continuation sheet.
      a. List by appropriate Change Order Number.
      b. Indicate dollar value breakdown of each Change Order by each applicable Project Manual Section.

D. Submittal Procedure:
   1. Comply with DOCUMENT 00700 - GENERAL CONDITIONS Article 14.
   2. Submit 5 copies of each Application for Payment.
   3. Submit an updated Construction Progress Schedule with each Application for Payment.
   4. Submit waivers of mechanics liens from Contractor, Subcontractors, sub-subcontractors, and Material and Equipment Suppliers for amounts certified by Engineer for construction period covered by previous application for payment.
      a. Submit on form acceptable to Owner.
   5. Substantiating data:
      a. When Owner or Engineer requires substantiating information to support Contractor's application for payment, submit data justifying dollar amounts which are in question.

b. Provide 1 copy of data with cover letter for each copy of Application for Payment.
   (1) Indicate application number and date.
   (2) List each item in question by continuation sheet identification.

6. Submit application for final payment in accordance with DOCUMENT 00700 – GENERAL CONDITIONS Article 14.

PART 2 - PRODUCTS NOT USED

PART 3 - EXECUTION NOT USED

END OF SECTION 01290

PAY ESTIMATE #__
City of Fayetteville
Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.

Construction Period:			
Date of Estimate:			
NTP Issued:		#DIV/0!	Contract Time Used
Revised Substantial Completion:		#REF!	Work Complete (% of Contract $'s)
Cal. Days			
C/O Days			
Total Days	0		

Submitted By:

The contractor certifies that (1) title to all Work, materials, and equipment incorporated in the work, or otherwise listed in or covered by this and all previous Pay Estimates will pass to the Owner at time of payment free and and clear of all liens, claims, security interests and encumbrances (except such as are covered by Bond acceptable to Owner indemnifying Owner against any such lien, claim, security interest or encumbrance), and (2) all Work covered by this Pay Estimate is in accordance with the Contract Documents and is not defective.

Contractor:

Signature and Date

Approved By: City of Fayetteville (Engineering Division)

Signature and Date

Original Contract Amount:	
Approved Change Orders:	
Current Contract Amount:	$ -

Total Work to Date:	#REF!
Initial Stored Materials:	$ -
Less Materials Used:	$ -
Subtotal:	#REF!

Amount Due:	**#REF!**

Retainage Previous Periods	
Retainage This Period	#REF!
Less Total Retainage (5%)	**#REF!**

Previous Payments	
Less Total Previous Payments	**$ -**

Due and Payable This Period:	**#REF!**

CITY OF FAYETTEVILLE ARKANSAS

CERTIFICATE OF SUBSTANTIAL COMPLETION

Contract Number: 26-37
Contract Title: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave. Impvts.

CONTRACTOR: _____

DATE OF ISSUANCE: _____

PROJECT OR DESIGNATED PORTION SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found, to the Engineer's best knowledge, information and belief, to be substantially complete. Substantial Completion is the state in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of Project or portion thereof designated above is hereby established as _____ which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

A list of items to be completed or corrected is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

ENGINEER	BY	DATE

The Contractor will complete or correct the Work on the list of items attached hereto within _____ days from the above date of Substantial Completion.

CONTRACTOR	BY	DATE

The Owner accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at _____ (time) on _____(date).

OWNER'S REPRESENTATIVE	BY	DATE

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END OF DOCUMENT 01290.12

CONTRACTOR AFFIDAVIT FOR FINAL PAYMENT

Contract Number: 26-37

Contract Title Contract Title: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave Impvts.

STATE OF _____)
)SS
COUNTY OF _____)

The Undersigned, _____ of lawful
(Name)

age, being first duly sworn, states under oath as follows:

1. I am the _____ of _____who is the general
(Title) (Contractor)
contractor for the City on Contract No. 26-37 and Contract Name/Title: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave. Impvts.

2. All payrolls, material bills, use of equipment and other indebtedness connected with the Work for this Contract have been paid and all claims of whatever nature have been satisfied, as required by the Contract.

3. Contractor certifies that each Subcontractor has received full payment for its respective work in connection with the Contract.

4. This affidavit is made in behalf of the Contractor for the purpose of securing from the City of Fayetteville, Arkansas, the certification of completion of the Contract and receiving payment therefore.

CONTRACTOR_____

By _____
(Signature)

Title _____

On this _____ day of _____, _____, before me

appeared _____, to me personally known to be the

_____of the_____,

and who executed the foregoing instrument and acknowledged that (s)he executed the same on behalf of

the _____ as its free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on the day and year first above written.

My commission expires:

_____ _____
Notary Public

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END OF DOCUMENT 01290.14

CITY OF FAYETTEVILLE ARKANSAS

SUBCONTRACTOR AFFIDAVIT FOR FINAL PAYMENT

Contract Number: 26-37

Contract Title: Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave. Impvts.

STATE OF _____)
)SS
COUNTY OF _____)

The Undersigned, _____ of lawful age, being first duly sworn,
(Name)
states under oath as follows:

1. I am the _____ of _____hereinafter "Subcontractor"
(Title) (contractor)
to _____, general contractor on 26-37, Millsap Rd./College Ave. Inters. Impvts. & N. Hemlock Ave. Impvts.
(Name of Contractor) (Contract Number and Title)

2. All payrolls, material bills, use of equipment and other indebtedness connected with the work for this project have been paid and all claims of whatever nature have been satisfied.

3. A total of $_____has been received as full compensation for: _____
performed in connection with the contract. (area / scope of work)

4. This affidavit is made in behalf of the Contractor for the purpose of securing from Fayetteville, Arkansas, the certification of completion of the project and receiving payment therefore.

SUBCONTRACTOR_____

By _____
(Signature)

Title _____

On this _____ day of _____, _____, before me

appeared _____, to me personally known to be the

_____of the_____,

and who executed the foregoing instrument and acknowledged that (s)he executed the same on behalf of the

_____ as its free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on the day and year first above written.

My commission expires:

_____ _____
Notary Public

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END OF DOCUMENT 01290.15

SECTION 01320 – PROJECT MEETINGS, SCHEDULES, AND REPORTS

PART 1 - GENERAL

1.01 Summary: This Section includes the following administrative and procedural requirements:

A. Project Meetings:
   1. Preconstruction conference.
   2. Progress meetings.

B. Schedules and Reports:
   1. Comply with GENERAL CONDITIONS

C. Related Work Specified Elsewhere:
   1. For Schedules: SECTION 01321.

1.02 PROJECT MEETINGS:

A. Preconstruction Conference:
   1. Engineer will conduct a meeting within 60 days after the Effective Date of the Agreement, to review items stated in the following agenda and to establish a working understanding between the parties as to their relationships during performance of the Work.
   2. Preconstruction conference shall be attended by:
      a. Contractor and his superintendent.
      b. Engineer and Resident Project Representative if any.
      c. Representative(s) of Owner.
      d. At Engineer's option, representatives of principal Subcontractors and Suppliers.
   3. Meeting Agenda:
      a. Construction schedules.
      b. Critical Work sequencing.
      c. Designation of responsible personnel.
      d. Project coordination.
      e. Procedures and Processing of:
         (1) Field decisions.
         (2) Substitutions.
         (3) Submittals.
         (4) Change Orders.
         (5) Applications for Payment.
         (6) Proposal Requests.
         (7) Contract Closeout.
         (8) Requests for Interpretation.
         (9) Field Orders.
         (10) Work Change Directives.
      f. Procedures for testing.
      g. Procedures for maintaining record documents.
      h. Use of Premises:
         (1) Office, work, and storage areas.
         (2) Owner's requirements.
      i. Construction facilities, controls, and construction aids.
      j. Temporary utilities.

k. Safety and first-aid.
l. Security.
m. Requirements for start-up of equipment.
n. Inspection and acceptance of equipment put into service during construction period.
o. Distribution of Contract Documents

4. Location of Meeting: At or near the Project Site.
5. Reporting:
   a. Within 7 working days after the meeting, Engineer will prepare and distribute minutes of the meeting to Owner and Contractor.
   b. Contractor shall provide copies to Subcontractors and major Suppliers.

B. Progress Meetings:
1. Contractor shall provide weekly updates to City staff throughout the duration of the project following the Notice to Proceed. Each update shall include all reports, photographs, schedules, and any other documentation as may be requested or specified by the City. The Contractor shall submit such updates in the format and manner directed by the City and within the deadlines established by City staff. With Engineer's concurrence, Contractor may request attendance by representatives of Subcontractors, Suppliers, or other entities concerned with current program or involved with planning, coordination, or performance of future activities. All participants in the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.
   a. Contractor and each Subcontractor represented shall be prepared to discuss the current construction progress report and any anticipated future changes to the schedule.
2. Location of Meetings: At or near Project Site.
3. Reporting:
   a. Within 7 working days after each meeting, Engineer shall prepare and distribute minutes of the meeting to Owner and Contractor.
   b. Contractor shall distribute copies to principle Subcontractors and Suppliers.

PART 2 - PRODUCTS – Not Applicable.

PART 3 - EXECUTION – Not Applicable.

END OF SECTION 01320

SECTION 01321 – SCHEDULE

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes procedural requirements for preparation, submittal, and updating of Contractor's construction progress schedules.

B. Related Work:

1. Documents affecting work of this Section include, but are not limited to: General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Section 01290 – Payment Procedures.
3. Section 01320 – Project Meetings, Schedules, and Reports.

1.02 FORMAT

A. Prepare Schedules as a Gantt chart with separate bar for each major portion of Work or operation, identifying first work day of each week.

B. Sequence of Listings: The chronological order of the start of each item of Work.

C. Scale and Spacing: To provide space for notations and revisions.

D. Sheet Size: Minimum multiples of 8-1/2 x 11 inches.

1.03 CONTENT

A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction. The schedule shall clearly indicate the sequence of construction for the various items that involve either existing and/or potentially relocated utilities. This schedule shall have the least negative impact on the adjacent property owners and provide an orderly sequence that will produce the least disruptive action for utilities and their customers.

B. Identify work of separate stages and other logically grouped activities.

C. Provide sub-schedules to define critical portions of the entire Schedule.

D. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the cut-off date for each monthly pay estimate.

1.04 SUBMITTALS

A. Submit a finalized construction progress schedule within fifteen (15) days after date of Notice of Award or at least seven (7) days prior to the pre-construction conference, whichever occurs first. After review, resubmit required revised data within ten (10) days.

B. Submit monthly revisions with each pay estimate in the number of opaque reproductions that Engineer requires, plus two copies, which will be retained by Engineer.

1.05 REVISIONS TO SCHEDULES

A. Indicate progress of each activity to date of submittal, and projected completion date of each activity.

B. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.

C. Provide narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect.

1.06 DISTRIBUTION

A. Distribute copies of reviewed Schedules to project site file, Subcontractors, suppliers, and other concerned parties.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in Schedules.

PART 2 - PRODUCTS: NOT APPLICABLE

PART 3 - EXECUTION: NOT APPLICABLE

END OF SECTION 01321

SECTION 01325 – CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.01 SUMMARY:

A. This Section specifies administrative and procedural requirements for construction photographs.

1.02 SUBMITTALS:

A. Submit photographs, tapes, films and electronic media as specified in SECTION 01330 - SUBMITTALS and in PART 3 – this Section.

1.03 QUALITY ASSURANCE:

A. Photographs may be taken by Contractor personnel provided the photographs are of sufficient quality, clarity, and content to adequately indicate the status and detail of the Work. If the quality and detail of the photographs taken by Contractor personnel is not adequate to clearly show the condition of the Work, the Contractor shall retain the services of a qualified and established commercial photographer experienced in construction photography. Engineer will make the final determination of the adequacy of the photographs.

B. Audiovisual tapes or digital recordings may be taken by Contractor personnel provided they are of sufficient quality, clarity, and content to adequately and clearly indicate the status and detail of the Work as well as conditions before and after the construction activities. If the quality and detail of the recordings is not adequate to clearly show the condition and detail of the Work as well as conditions before and after the construction activities, Contractor shall retain the services of an established professional electrographer experienced in the production of color audio/video tape documentation of the construction industry. Engineer will make the final determination of the adequacy of the tapes and recordings.

PART 2 - PRODUCTS

2.01 PHOTOGRAPHIC REQUIREMENTS: Specified in PART 3, this Section.

PART 3 - EXECUTION

3.01 PROGRESS SITE PHOTOGRAPHS:

A. Contractor shall be responsible for photographs of the Site to show the existing and general progress of the Work. Engineer will advise as to which views are of interest. Photographs shall be taken of the following areas and at the following times.
   1. Existing Site conditions before Site work is started. Number of views shall be adequate to cover the Site.
   2. Progress of the Work from clearing throughout construction. There shall be four (4) different views taken no more than five days before the date of the periodic Payment Application.
   3. Finished Project after completion of Work. Number of views shall be adequate to show the finished Work.

4. If Project is not completed during the Contract Times or authorized extensions, photographs shall continue to be taken at no increase in Contract Price.

B. Construction photographs may be either photographic prints or digital images.

C. Photographic Prints:
1. All prints shall be color, smooth glossy finish, 5" x 7" in size taken with full frame 35 mm camera, and inserted into archival quality polypropylene photographic binder pages punched for insertion into a standard 3-ring binder. Provide binders identified by Contract name and Contract number.

D. Digital Images:
1. Submit a complete set of digital image electronic files with each submittal of photographic prints.
   a. Provide images in JPEG format, with minimum sensor size of 3.0 megapixels.
   b. Submit images that have same aspect ratio as the sensor, uncropped.

E. Print Negatives:
1. Negatives for 5" x 7" prints shall be protected by roll in negative sleeves. Negative sleeves shall be identified with Contract name and Contract number, date of exposure, roll number, or other general identifying information, and name of Contractor.

F. Identification:
1. Identify each photographic print on the reverse side with a label which contains the Contract name and Contract number, date of exposure, and description of view. Prints shall also bear the photographer's name or trademark.
2. Identify electronic media with date digital photographs were taken. Provide a separate reference document which contains the Contract name and Contract number, date of exposure, and description of each referenced view.

G. Provide three prints of each view.

H. Deliver prints and electronic media files to Engineer.

I. Deliver photographic negatives to Engineer.

3.02 AUDIO / VIDEO TAPE RECORDINGS:

A. Audio / video recordings shall be made of the entire Site showing the condition of the Site or terrain previous to any alterations by Contractor and before disturbing of the Site is started. Existing utilities shall be marked and construction staking shall be in place before taping begins. A second audio / video recording shall be produced after completion of all construction operations, showing the same view or views as close as possible, to illustrate "before" and "after" conditions. This is the responsibility of Contractor. Three days' notice shall be given to Engineer and Owner prior to this Work to allow them to accompany electrographer.

B. All required equipment, accessories, materials, and labor for the timely production of this documentation shall be arranged/furnished through Contractor.
The audio / video system shall be capable of producing bright, sharp, clear visual images which render accurate colors free from imperfections and distortions that might obscure recorded information during playback. The simultaneous audio record shall

be made directly onto the original tapes, and shall record narration of the electrographer clearly and audibly, with adequate volume, free from unnecessary interruptions and distortions that might eliminate recorded information during playback.

C. Zone of Influence: Unless otherwise indicated by Engineer or Owner, the area which might be affected by the construction operations and, therefore, shall be documented in these tape recordings, shall be whichever of the following includes the greatest area.
   1. All areas within the temporary construction right-of-ways and grading limits, as indicated on the Contract Drawings.
   2. The permanent easement for the completed improvements, as indicated on the Contract Drawings.
   3. All areas within 35 feet of the proposed improvements with an additional 20 feet of supplemental coverage in residential areas.
   4. All areas within the Project Site.

D. Audio / Video Tape Production Procedures:
   1. It is required that the audio / video tape recordings be produced while actually walking the construction route or site - NOT through the use of wheeled vehicles.
   2. All video tape recordings shall display digital information continuously; this information shall include the current time and date, showing the month, day, and year. This information shall be audibly acknowledged by the electrographer at appropriate times during recording sequences.
   3. Each recording tape shall begin with a visual of the professional electrographer's name or business trademark, followed by the current date and time on digital display, plus audible (and visual, if possible) indication of Contract name and numbers, municipality, name of Contractor, and other pertinent information. Thereafter, each recording sequence shall begin with the current time and date, followed by the location of the electrographer, direction of view, and description of the scene being recorded. Continuous updates of this information, plus other pertinent comments, shall be given throughout the recording sequence. Such audio and video records shall include, but not be limited to, conditions of existing pavement, curbs, sidewalks, driveways, culverts, headwalls, retaining walls, ditches, roadways, mailboxes, fences, trees, shrubs and landscaping, major structural conditions of residences and commercial buildings, fences, signs, headwalls, general terrain, and similar items. Particular and detailed attention shall be given to any defects noted, such as cracks, disturbed areas, damaged areas, or as may be required by Engineer.
   4. Representatives of Engineer and Contractor shall accompany the electrographer during recording sessions, to assist with location of the alignment and areas of construction activity, and identification of items and conditions to be recorded.
   5. All recordings shall be completed during periods of adequate lighting and visibility. Sufficient lighting must be available to provide proper illumination of shadowed areas, and proper exposure adjustments shall be made where required. No taping shall be completed during precipitation, mist, fog, or when more than 10% of the ground surface has snow cover.
   6. Houses and buildings shall be identified visually by house number, when visible, in such a manner that structures of the proposed system, i.e., manholes

on a sewer system and hydrants on a water system, may be located by reference.

7. Original audio / video tape recordings shall be furnished to Owner and a copy furnished to Engineer before the start of any construction. One copy shall be retained by Contractor.
8. Any portion of the videotape recording not conforming to the Specifications will be rejected.
9. Any taped coverage not acceptable to Owner shall be refilmed at no additional cost to Owner within five (5) days after notification of taping inadequacy.

E. Ownership and Authenticity of Original Tapes:

1. All original audio / video tape recordings shall become the property of Owner, plus one duplicate of each shall be provided to Engineer. Each tape shall be provided in a protective sleeve or case, identified as to Contract name and number, production date of original recording, name of Contractor, and electrographer's name or trademark. A legible copy of the log shall be included.

3.03 ADDITIONAL PHOTOGRAPHS:

A. From time to time Engineer may issue requests for additional photographs, in addition to periodic photographs specified. Additional photographs will be paid for by Change Order, and are not included in the Contract Price or an Allowance.

1. Engineer will give the photographer 3 days' notice, where feasible.
2. In emergency situations, the photographer shall take additional photographs within 24 hours of Engineer's request.
3. Circumstances that could require additional photographs include, but are not limited to:
   a. Substantial Completion of a major phase or component of Work.
   b. Owner's or Engineer's request for special publicity photographs.
   c. Special events planned at Project Site.
   d. Immediate follow-up when on-site events result in construction damage or losses.
   e. Photographs to be taken at fabrication locations away from Project Site.
   f. Extra record photographs at time of final acceptance.

END OF SECTION 01325

SECTION 01420 – DEFINITIONS AND STANDARDS

PART 1 - GENERAL

1.01 SUMMARY:

A. Definitions:
   1. Basic contract definitions used in the Contract Documents are defined in the GENERAL CONDITIONS. Definitions and explanations are not necessarily either complete or exclusive, but are general for the Work.
   2. General Requirements are the provisions or requirements of DIVISION 1 Sections, and which apply to the entire Work of the Contract.

B. Related Information Specified Elsewhere: Specification standards and associations applicable to the Work are specified in each Section.

1.02 SPECIFICATION FORMAT AND CONTENT EXPLANATIONS:

A. Specification Format: The Specifications are organized into two (2) major divisions of CONTRACT DOCUMENTS and TECHNICAL SPECIFICATIONS.

B. Specification Content:
   1. These Specifications apply certain conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
      a. Imperative and Streamlined Language: These Specifications are written in imperative and abbreviated form. This imperative language of the technical Sections is directed at the Contractor, unless specifically noted otherwise. Incomplete sentences shall be completed by inserting "shall," "the Contractor shall," and "shall be," and similar mandatory phrases by inference in the same manner as they are applied to notes on the Drawings. The words "shall be" shall be supplied by inference where a colon (:) is used within sentences or phrases. Except as worded to the contrary, fulfill (perform) all indicated requirements whether stated imperatively or otherwise.
      b. Specifying Methods: The techniques or methods of specifying requirements varies throughout text, and may include "prescriptive," "compliance with standards," "performance," "proprietary," or a combination of these. The method used for specifying one unit of Work has no bearing on requirements for another unit of Work.
      c. Overlapping and Conflicting Requirements: Where compliance with two or more industry standards or sets of requirements is specified, and overlapping of those different standards or requirements establishes different or conflicting minimums or levels of quality, notify Engineer for a decision as specified in GENERAL CONDITIONS.
      d. Abbreviations: Throughout the Contract Documents are abbreviations implying words and meanings which shall be appropriately interpreted. Specific abbreviations have been established, principally for lengthy technical terminology and in conjunction with coordination of Specification requirements with notations on Drawings and in schedules. These are normally defined at first instance of

use. Organizational and association names and titles of general standards are also abbreviated.

C. Assignment of Specialists: In certain instances, Specification text requires that specific Work be assigned to specialists in the operations to be performed. These specialists shall be engaged for performance of those units of Work, and assignments are requirements over which Contractor has no choice or option. These assignments shall not be confused with, and are not intended to interfere with, enforcement of building codes and similar regulations governing the Work, local trade and union jurisdictions, and similar conventions. Nevertheless, final responsibility for fulfillment of Contract requirements remains with Contractor.

D. Trades: Except as otherwise specified or indicated, the use of titles such as "carpentry" in Specification text, implies neither that the Work must be performed by an accredited or unionized tradesperson of corresponding generic name (such as "carpenter"), nor that specified requirements apply exclusively to work by tradespersons of that corresponding generic name.

1.03 DRAWING SYMBOLS:

A. Except as otherwise indicated, graphic symbols used on Drawings are those symbols recognized in the construction industry for purposes indicated. Refer instances of uncertainty to Engineer for clarification.

1.04 INDUSTRY STANDARDS:

A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference and are stated in each Section.

1. Referenced standards, referenced directly in Contract Documents or by governing regulations, have precedence over nonreferenced standards which are recognized in industry for applicability to the Work.
2. Where compliance with an industry standard is required, standard in effect shall be as stated in GENERAL CONDITIONS.
3. Where an applicable code or standard has been revised and reissued after the date of the Contract Documents and before performance of Work affected, the Engineer will decide whether to issue a Change Order to proceed with the updated standard.
4. In every instance the quantity or quality level shown or specified shall be the minimum to be provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values, as noted, or appropriate for the context of the requirements. Refer instances of uncertainty to the Engineer for a decision before proceeding.
5. Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction

activity. Copies of applicable standards are not bound with the Contract Documents.

a. Where copies of standards are needed for performance of a required construction activity, Contractor shall obtain copies directly from the publication source.

B. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision.

PART 2 - PRODUCTS – Not Applicable.

PART 3 - EXECUTION – Not Applicable.

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END OF SECTION 01420

SECTION 01530 – TEMPORARY BARRIERS AND CONTROLS

PART 1 - GENERAL

1.01 SUMMARY:

A. This Section includes General Requirements for:
   1. Safety and protection of Work.
   2. Safety and protection of existing property.
   3. Barriers.
   4. Security.
   5. Environmental controls.
   6. Access roads and parking areas.
   7. Traffic control and use of roadways.
   8. Railroad service.

B. Related Work Specified Elsewhere:
   1. Temporary Utilities and Facilities: SECTION 01560.

PART 2 - PRODUCTS – Not Applicable.

PART 3 - EXECUTION

3.01 SAFETY AND PROTECTION OF WORK AND PROPERTY:

A. General:
   1. Provide for the safety and protection of the Work as set forth in GENERAL CONDITIONS. Provide protection at all times against rain, wind, storms, frost, freezing, condensation, or heat so as to maintain all Work and Equipment and Materials free from injury or damage. At the end of each day, all new Work likely to be damaged shall be appropriately protected.
   2. Notify Engineer immediately at any time operations are stopped due to conditions which make it impossible to continue operations safely or to obtain proper results.
   3. Construct and maintain all necessary temporary drainage and do all pumping necessary to keep excavations, floors, pits, trenches, manholes, and ducts free of water.

B. Property Other than Owner's:
   1. Provide for the safety and protection of property as set forth in the GENERAL CONDITIONS. Report immediately to the owners thereof and promptly repair damage to existing facilities resulting from construction operations.
   2. Names and telephone numbers of representatives of agencies and utilities having jurisdiction over streets and utilities in the Work area can be obtained from Engineer for the agencies listed below. Concerned agencies or utilities shall be contacted a minimum of 24 hours prior to performing Work, closing streets and other traffic areas, or excavating near underground utilities or pole lines.
      a. Water.
      b. Gas.
      c. Sanitary sewers.
      d. Storm drains.

e. Pipeline companies.
f. Telephone.
g. Electric.
h. Municipal streets.
i. State highways.
j. City engineer.
k. Fire.
l. Police.

3. Operation of valves or other appurtenances on existing utilities, when required, shall be by or under the direct supervision of the owning utility.
4. Where fences are to be breached on private property, the owners thereof shall be contacted and arrangements made to ensure proper protection of any livestock or other property thus exposed.
5. The applicable requirements specified for protection of the Work shall also apply to the protection of existing property of others.
6. Before acceptance of the Work by Owner, restore all property affected by Contractor's operations to the original or better condition.

3.02 BARRIERS:

A. General:
1. Furnish, install, and maintain suitable barriers as required to prevent public entry, protect the public, and to protect the Work, existing facilities, trees, and plants from construction operations. Remove when no longer needed or at completion of Work.
2. Materials may be new or used, suitable for the intended purpose, but shall not violate requirements of applicable codes and standards or regulatory agencies.
3. Barriers shall be of a neat and reasonable uniform appearance, structurally adequate for the required purposes.
4. Maintain barriers in good repair and clean condition for adequate visibility. Relocate barriers as required by progress of Work.
5. Repair damage caused by installation and restore area to original or better condition. Clean the area.

B. Tree and Plant Protection:
1. Preserve and protect existing trees and plants at the Site which are designated to remain and those adjacent to the Site.
2. Provide temporary barriers around each, or around each group of trees and plants. Unless indicated or specified otherwise, construct to a height of 6 feet around trees, and to a height to adequately protect plants.
3. Consult with Engineer and remove agreed-on roots and branches which will interfere with construction. Employ qualified tree surgeon to remove and to treat cuts.
4. Protect root zones of trees and plants as follows:
a. Do not allow vehicular traffic or parking.
b. Do not store materials or products.
c. Prevent dumping of refuse or chemically injurious materials or liquids.
d. Prevent puddling or continuous running water.

5. Carefully supervise excavating, grading and filling, and subsequent construction operations to prevent damage.
6. Remove and replace, or suitably repair, trees and plants which are damaged or destroyed due to construction operations, and which were designated to remain.

3.03 ENVIRONMENTAL CONTROLS:

A. Noise Control: OSHA requirements shall be adhered to for this contract.

B. Dust Control:
1. Provide positive methods and apply dust control materials to minimize raising dust from construction operations; and to prevent airborne dust from dispersing into the atmosphere.
2. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.
3. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

C. Water and Erosion Control:
1. Provide methods to control surface water to prevent damage to the Project, the Site, or adjoining properties.
2. Plan and execute construction and earthwork by methods to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.
   a. Hold the areas of bare soil exposed at one time to a minimum.
   b. Provide temporary control measures such as berms, dikes, and drains.
3. Control fill, grading, and ditching to direct surface drainage away from excavations, pits, tunnels, and other construction areas; and to direct drainage to proper runoff.
4. Provide, operate, and maintain hydraulic equipment of adequate capacity to control surface and groundwater.
5. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the Site or to adjoining areas.
6. Provide temporary drainage where the roofing or similar waterproof deck construction is completed prior to the connection and operation of the permanent drainage piping system.
7. Comply with all other requirements indicated or specified.

D. Debris Control and Clean-Up:
1. Keep the premises free at all times from accumulations of debris, waste materials, and rubbish caused by construction operations and employees. Responsibilities shall include:
   a. Adequate trash receptacles about the Site, emptied promptly when filled.
   b. Periodic cleanup to avoid hazards or interference with operations at the Site and to maintain the Site in a reasonably neat condition.
   c. The keeping of construction materials such as forms and scaffolding neatly stacked.
   d. Immediate cleanup to protect the Work by removing splattered concrete, asphalt, oil, paint, corrosive liquids, and cleaning solutions from walls, floors, and metal surfaces before surfaces are marred.

2. Prohibit overloading of trucks to prevent spillages on access and haul routes. Provide periodic inspection of traffic areas to enforce requirements.
3. Final cleanup is specified in SECTION 01780 - CONTRACT CLOSEOUT.

E. Pollution Control:
1. Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by the discharge of hazardous or toxic substances from construction operations.
2. Provide equipment and personnel, perform emergency measures required to contain any spillages, and remove contaminated soils or liquids. Excavate and dispose of any contaminated earth off-Site in approved locations, and replace with suitable compacted fill and topsoil.
3. Take special measures to prevent harmful substances from entering public waters, sanitary, or storm sewers.
4. Adhere to the Spill Prevention Control and Countermeasures Plan (SPCCP) requirements as stated in 40 CFR Part 112.

3.04 ACCESS ROADS AND PARKING AREAS:

A. New Temporary On-Site Roads and Parking Areas:
1. Locate roads, drives, walks, and parking facilities to provide access to construction offices, mobilization, Work, storage areas, and other areas required for execution of the Contract.
   a. Consult with Engineer regarding any desired deviation therefrom.
   b. Size of parking facilities shall be adequate to provide for needs of Contractor's personnel, Resident Project Representatives, and visits to Site by Engineer and Owner.
2. Provide access for emergency vehicles. Maintain driveways a minimum of 15 feet wide between and around combustible materials in storage and mobilization areas.
3. Maintain traffic areas free of excavated materials, construction equipment, snow, ice, and debris.
4. Construct temporary bridges and culverts to span low areas and allow unimpeded drainage.
5. Keep fire hydrants and water control valves free from obstruction and accessible for use.
6. Construction:
   a. Clear areas required.
   b. Fill, compact, and grade areas as necessary to provide suitable support for vehicular traffic under anticipated loadings. Materials and construction shall be as indicated or specified.
   c. Provide for surface drainage of facilities and surrounding areas.
   d. Maintain roads, walks, and parking areas in a sound, clean condition. Repair or replace portions damaged during progress of Work.
7. Removal:
   a. Completely remove temporary materials and construction when construction needs can be met by use of permanent installation, unless construction is to be integrated into permanent construction. Remove and

dispose of compacted materials to depths required by various conditions to be met in completed Work.

b. Restore areas to original, better, or specified condition at completion of Work.

3.05 TRAFFIC CONTROL AND USE OF ROADWAYS:

A. Traffic Control:

1. The Contractor shall plan and execute the work so that interference with the flow of traffic and the passage of pedestrians will be the minimum possible.
2. The Contractor shall be responsible for making provisions for the safe and free passage of persons and vehicles by, over, or around the work until the project is completed. Such provisions shall be satisfactory with the Owner and State, County and local authority having jurisdiction in the area of work.
3. Provide, operate, and maintain equipment, services, and personnel, with traffic control and protective devices, as required to expedite vehicular traffic flow on haul routes, at Site entrances, on-Site access roads, and parking areas. This includes traffic signals and signs, flagmen, flares, lights, barricades, and other devices or personnel as necessary to adequately protect the public.
4. Remove temporary equipment and facilities when no longer required. Restore grounds to original, better, or specified condition when no longer required.
5. When required by the State, County or local authority that traffic be maintained over any construction work in a public or private highway, street, road, or other vehicle traffic path, and such traffic cannot be maintained on the alignment of the original roadbed or pavement, the Contractor shall, at his own expense, provide and/or construct and maintain a detour around the work. Such detours shall be satisfactory to the Owner and to State, County, or local authority. The Contractor shall provide and maintain all barricades, signs, torches, lights and markers around the work as may be required by the various agencies having jurisdiction in the work area. The Contractor shall also provide qualified flagmen to direct traffic while working upon a highway, street or road over which traffic must pass.
6. Excavated areas within the traffic lanes of highways, streets or roads and pedestrian walkways shall be backfilled as soon as possible and the area opened to traffic.
7. Bridge over open trenches where necessary to maintain traffic.
8. Consult with governing authorities to establish public thoroughfares which will be used as haul routes and Site access. All operations shall meet the approval of owners or agencies having jurisdiction.
9. The Contractor shall obtain permission from the applicable State, County or local authority(ies) before closing or obstructing any public highway, street or road. This shall include, but not necessarily be limited to, coordination with Fire Departments, 911 services, and other emergency services.
10. The Contractor shall make the same provisions as described above for the passage of vehicular and pedestrian traffic between private property and public highways, streets and roads or other provisions that are satisfactory to the Owner and the property owners involved.

B. Maintenance of Roadways:
   1. Repair roads, walkways, and other traffic areas damaged by operations. Keep traffic areas as free as possible of excavated materials and maintain in a manner to eliminate dust, mud, and hazardous conditions.
   2. All operations and repairs shall meet the approval of owners or agencies having jurisdiction.

3.06 RAILROAD SERVICE:

A. Maintenance:
   1. Schedule operations and exercise care to avoid any interruption to continuous service over the railroads within or adjacent to the Work area.
   2. Before transporting Equipment and Materials across railroad tracks or performing Work within any railroad right-of-way, obtain permission or any necessary permits from the railroads.
   3. The Work shall be subject to all supervision, inspection, and other conditions required by the affected railroads.

END OF SECTION 01530

SECTION 01560 – TEMPORARY UTILITIES AND FACILITIES

PART 1 - GENERAL

1.01 SUMMARY:

A. This Section includes requirements of a temporary nature not normally incorporated into final Work. It includes the following:
   1. Utility services.
   2. Construction and support facilities.
   3. Construction aids.
   4. Safety and health.
   5. Fire protection.

B. Related Work Specified Elsewhere:
   1. Temporary Barriers and Controls: SECTION 01530.

1.02 REFERENCES:

A. American National Standards Association (ANSI):
   1. A10 Series – Safety Requirements for Construction and Demolition.

B. National Electrical Contractors Association (NECA):
   1. Electrical Design Library – Temporary Electrical Facilities.

C. National Fire Protection Association (NFPA):
   1. 10 – Portable Fire Extinguishers.
   2. 70 – National Electrical Code.
   3. 241 – Safeguarding Construction, Alterations, and Demolition Operations.

D. National Electrical Manufacturers Association (NEMA).

E. Underwriters Laboratories (UL).

1.03 SUBMITTALS:

A. Temporary Utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.

B. Implementation and Termination Schedule: Submit a schedule indicating implementation and termination of each temporary utility within 15 days of the date established for commencement of the Work.

1.04 QUALITY ASSURANCE:

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:
   1. Building Code requirements.
   2. Health and safety regulations.
   3. Utility company regulations.
   4. Police, Fire Department, and rescue squad rules.
   5. Environmental protection regulations.

B. Standards:
   1. Comply with NFPA 10 and 241, and ANSI A10 Series standards "Temporary Electrical Facilities."

2. Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70.

C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.05 PROJECT CONDITIONS:

A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of the permanent service.

B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous, dangerous, unsanitary conditions, or public nuisances to develop or persist on the Site.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT:

A. Provide new materials and equipment. If acceptable to Engineer, undamaged previously used materials and equipment in serviceable condition may be used. Provide materials and equipment suitable for the use intended, of capacity for required usage, and meeting applicable codes and standards. Comply with requirements of the TECHNICAL SPECIFICATIONS.

B. Water: Provide potable water approved by local health authorities.

C. Water Hoses: Provide 3/4-inch (19-mm), heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet (30 m) long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.

D. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120V plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.

E. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

F. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.

G. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.

H. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.01 TEMPORARY UTILITIES:

A. General:

1. Engage the appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.
2. Provide adequate utility capacity at each stage of construction. Prior to availability of temporary utilities at the site, provide trucked-in services as required for start-up of construction operations.
3. Obtain and pay for temporary easements required to bring temporary utilities to the Project Site, where the Owner's permanent easement cannot be used for that purpose.
4. Furnish, install, and maintain temporary utilities required for adequate construction, safety, and security. Modify, relocate, and extend systems as Work progresses. Repair damage caused by installation or use of temporary facilities. Grade the areas of Site affected by temporary installations to required elevations and grades, and clean the area. Remove on completion of Work or until service or facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
5. The types of temporary construction utilities and facilities required include, but not by way of limitation, water distribution, drainage, dewatering equipment, enclosure of Work, heat, ventilation, electrical power distribution, lighting, hoisting facilities, stairs, ladders, and roads.
6. Inspect and test each service before placing temporary utilities in use. Arrange for required inspections and tests by governing authorities, and obtain required certifications and permits for use.
7. Materials used for temporary service shall not be used in the permanent system unless so specified or acceptable to Engineer.

3.02 TEMPORARY ELECTRICITY AND LIGHTING:

A. New Service:

1. Arrange with utility company and provide service required for power and lighting.
2. Connect temporary service in a manner directed by utility company officials. Provide separate meter for metering of power used by all entities authorized to be at or perform Work at the Project Site.

3. The electric service shall be of sufficient capacity and characteristics for the various construction tools, machinery, lights, heating and air conditioning, pumps, and other tools required by Contractor and his Subcontractors.
4. Provide weatherproof, grounded, power distribution system sufficient to accommodate construction operations requiring power, use of power tools, electrical heating, and lighting. Provide overload protection. Locate multiple outlets spaced so that entire area of construction can be reached by power tools on a single extension cord of 100-foot maximum length. Supply power for electric welding, if any, from either temporary power distribution system or by engine-driven, power-generator sets at Contractor's option.
5. Provide all necessary temporary wiring, panelboards, switches, outlets, and other devices so that power and lighting is available throughout the construction area. Include meters, transformers, overload protection disconnects, automatic ground fault interrupters, and main distribution switch gear. Include overcurrent protection on all conductors of the temporary system.
6. Provide adequate artificial lighting for all areas of Work when natural light is not adequate for Work.
    a. Sufficient light shall be provided for general construction areas and floor areas, with additional sufficient lighting for specific tasks and to meet safety requirements.

B. Use of Existing System:
1. Owner's existing system shall not be used for temporary electricity.

C. Use of Permanent System:
1. Prior to use of permanent system (facilities being constructed by Contractor) for construction purposes, obtain written permission of Owner.
2. Maintain permanent system as specified for temporary facilities.

D. Costs of Installation and Operation:
1. Pay fees and charges for permits and applications.
2. Pay costs of installation, maintenance, removal of temporary services, and restoration of any permanent facilities used.
3. Pay costs of electrical power used.
4. Obtain and pay costs for temporary easements required across properties other than that of Owner.

3.03 TEMPORARY WATER:

A. New Service:
1. Arrange with utility service company to provide water for construction purposes.
2. Connect service to water main in a manner directed by utility company officials. Provide with meter and shut off valve near connection to the water main.
3. Size water service to provide adequate volume for all anticipated construction uses, and to maintain minimum required pressure.
4. Install piping with outlets located so that water is available throughout the construction area.

5. Prevent freezing of water distribution system. Maintain hose connections and outlet valves in leakproof condition.
6. Sterilize temporary water piping prior to use.

B. Use of Existing System:
1. Owner's existing system may be used for temporary water.
2. Make connections to existing facilities to provide water for construction purposes.
   a. Water Source: Make connections to Owner's service located at point indicated or where instructed by Owner.
3. Modify, supplement, and extend system as necessary to meet temporary water requirements and prevent overloading of existing system.
4. Regulate system to prevent interference with Owner's usage.

C. Use of Permanent System:
1. Prior to use of permanent system for construction purposes, obtain written permission of Owner.
2. Prior to Use of System for Drinking Water:
   a. Disinfect piping.
   b. Obtain inspection and approval of governing authority.

D. Costs of Installation and Operation:
1. Pay all costs for installation, maintenance, and removal.
2. Pay all costs for water used.

3.04 TEMPORARY SANITARY FACILITIES:

A. Contractor-Furnished Facilities:
1. Furnish, install, and maintain temporary sanitary facilities for use through construction period. Remove on completion of Work.
2. Provide for all construction workers under this Contract and representatives at the Site.
3. Toilet facilities shall be of the chemical, aerated recirculation, or combustion type, properly vented, and fully enclosed with a glass- fiber-reinforced polyester shell or similar nonabsorbent material.
4. Water and sewer connected facilities may be installed to extent permitted by governing regulations.
   a. Provide lavatories, mirrors, urinals (where applicable), and water closets in water and sewer connected units. Provide only potable water at lavatories. Provide individual compartments for water closets where the unit is intended for occupancy by more than one person. Provide suitable enclosure with nonabsorbent sanitary finish materials and adequate heat, ventilation and lighting.
   b. Provide separate toilet facilities for male and female construction personnel as required.
5. Wash Facilities: Install potable water-supplied wash facilities at locations convenient to construction personnel involved in the handling of compounds and materials where wash-up is necessary to maintain a safe, healthy and sanitary condition. Where recommended or required by governing authorities and regulations or recognized standards provide emergency safety showers, emergency eye-wash fountains, showers, and similar facilities. Dispose of

drainage properly. Supply soap and other cleaning compounds appropriate for each condition.

6. Drinking Water Fixtures: Provide containerized tap-dispenser type drinking water units. Provide drinking water fountains if piped potable water is reasonably accessible from permanent or temporary lines.
7. Supply and maintain toilet tissue, paper towels, paper cups and similar disposable materials as appropriate for each facility. Provide appropriate covered waste containers for used material.

B. Use of Existing Facilities:
   1. Not applicable.

3.05 SEWERS AND DRAINAGE:

A. General: Where sewers or drainage facilities are not available for discharge of effluent, provide containers to remove and dispose of effluent off the Site in a lawful manner. If existing sewers are available for temporary drainage near the Site prior to completion of permanent sewers, provide temporary connections to remove effluent that can be lawfully discharged into the sewers. If existing sewers cannot be used for discharge, provide drainage ditches, dry wells, waste stabilization ponds, and similar discharge facilities to remove effluent that can be lawfully discharged in that manner.

B. Connect temporary sewers to the municipal sewer systems in the manner directed by the sewer department officials.

C. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy usage, restore to normal conditions promptly. Provide and maintain temporary earthen embankments and similar barriers in and around construction excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rain storms.

3.06 TEMPORARY CONSTRUCTION AIDS:

A. General:
   1. Provide construction aids and equipment required by personnel and to facilitate the execution of the Work; scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes, and other such facilities and equipment.
   2. Materials may be new or used, must be suitable for the intended purpose, and meet the requirements of applicable codes, regulations, and standards.
   3. When permanent stair framing is in place, provide temporary treads, platforms, and railings for use by construction personnel.

3.07 TEMPORARY SAFETY AND HEALTH:

A. General: Contractor shall be responsible for development of safety and health programs for personnel at Project Site as specified in the GENERAL CONDITIONS.

3.08 TEMPORARY FIRE PROTECTION:

A. General:
1. Contractor shall be responsible for development of a fire prevention and protection program for all Work under this Contract.
2. The program shall comply with the applicable provisions for safety and protection as set forth in the GENERAL CONDITIONS and with applicable parts of the NFPA 10 and 241.
3. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near such usable stairwell.
4. Store combustible materials in containers in fire-safe locations.
5. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
6. Provide supervision of welding operations and similar sources of fire ignition.
7. Post warning and instructions at each extinguisher location, and instruct construction personnel on proper use of extinguishers and other available facilities at Project Site. Post local fire department telephone number on or near each telephone instrument at Project Site.

B. Permanent Fire Protection:
1. Complete each fire protection facility at earliest reasonable date, place into operation, and make ready for emergency use.
2. Instruct personnel at Site on availability and proper use.

3.09 INSTALLATION AND REMOVAL:

A. Relocation: Relocate construction aids as required by progress of construction, storage limitations, or Work requirements and to accommodate requirements of Owner and other contractors at the Site.

B. Removal: Remove temporary materials, equipment, and services when construction needs can be met and allowed by use of permanent construction, or at completion of the Project.

C. Repair: Clean and repair damage caused by installation or by use of temporary facilities.
1. Remove foundations and underground installations for construction aids.
2. Grade the areas of the Site affected by temporary installations to required elevations and clean the area.

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END OF SECTION 01560

SECTION 01580 – PROJECT IDENTIFICATION SIGNS

PART 1 - GENERAL

1.01 SUMMARY:

A. This Section includes basic requirements for temporary Project identification and informational signs required during construction.

B. Related Work Specified Elsewhere:
   1. Submittals: Section 105, Standard Specifications for Street and Drainage Construction
   2. Traffic Control signs specified elsewhere.

1.02 QUALITY ASSURANCE:

A. Design sign and structure to withstand wind and environmental conditions of locality. Provide with finish adequate to withstand weathering, fading, chipping, and peeling for duration of construction.

1.03 SUBMITTALS:

A. Submit as specified in Section 105, Standard Specifications for Street and Drainage Construction

B. Includes, but not limited to, the following:
   1. Shop Drawings and product data as applicable.
   2. Show content, layout, lettering, colors, structure, and foundation.

PART 2 - PRODUCTS

2.01 IDENTIFICATION SIGNS:

A. Project Identification:
   1. Construct structure and framing of wood or metal, structurally adequate to resist design requirements of locality.
   2. Construct sign surface of minimum 3/4 inch thickness exterior grade plywood with medium density overlay. Panels shall be of size to minimize joints. Overall size shall be 4’ x 8’.
   3. Rough hardware shall be galvanized or aluminum.
   4. Coating: Paint-colors selected by Owner.
   5. Information Content:
      a. Project title, logo, and name of Owner as shown on Contract Documents.
      b. Names and titles of authorities.
      c. Name, title and address of Engineer.
      d. Name of prime Contractor and major Subcontractors.
      e. Any additional information requested by Owner.

B. Contractor Identification: If not part of Project identification sign, provide and install Contractor’s standard sign.

2.02 INFORMATIONAL SIGNS:

A. Construction:
1. This includes signs for traffic, construction workers, and general public in regards to directions, warnings, hazards, locations of areas, facilities, equipment, and others of a similar nature.
2. Provide signs of design, size, color, and lettering as required by regulatory agencies. Signs shall be painted metal, wood, plastic, or fiberglass and of materials suitable for the conditions in which they are placed, such as weathering and fading.
3. Construct structure and framing of wood or metal, structurally adequate to resist design requirements of area of Project.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Project and Contractor Identification Sign:
1. Install in appropriate location so as not to obstruct traffic, pedestrians, or construction operations.
2. Erect on framing or foundation, and rigidly brace.
3. Maintain sign in good repair, in a clean and neat condition.
4. Remove upon completion of Project.

B. Informational Signs:
1. Install at appropriate locations and in sufficient quantities to assure visibility. Relocate as required by progress of Work.
2. Maintain signs in good repair, in a neat, clean, readable condition.
3. Remove all signs, framing, supports, and foundations upon completion of Project.

END OF SECTION 01580

DIVISION 02 – TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATION

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

All Work shall be performed in accordance with the latest edition of the City of Fayetteville *Standard Specifications for Street and Drainage Construction* and the 2022 edition of the City of Fayetteville *Standard Specifications for Design and Construction of Water Lines and Sewer Lines*, unless otherwise noted.

Where notes, details, or special provisions reference Arkansas Department of Transportation standards, the Arkansas Department of Transportation *Standard Specifications for Highway Construction, 2014 Edition* shall be applied. When applied, Section 101, Definition and Terms of the Standard Specifications shall be used for the application of the referenced Divisions, Sections, and Special Provisions to the Work with the following modifications:

> "Commission", "Department", and "Director" shall refer to the "Owner" as defined in the CONTRACT DOCUMENTS.
>
> "Engineer" and "Resident Engineer" shall refer to the "Engineer" as defined in the CONTRACT DOCUMENTS.

Where conflicts between these Technical Specifications and the CONTRACT DOCUMENTS exist, the CONTRACT DOCUMENTS shall govern.

STANDARD SPECIFICATIONS

FOR

STREET AND DRAINAGE CONSTRUCTION

CITY OF
FAYETTEVILLE
ARKANSAS

DIVISION 100. GENERAL PROVISIONS

Section 101. Definitions and Terms

101.01 Abbreviations and Definitions. Whenever the following abbreviations are used in these specifications or on the plans, they are to be construed the same as the respective expressions represented:

(a) Industry Abbreviations.

ACI	American Concrete Institute
AASHTO	American Association of State Highway and Transportation Officials
ADPCE	Arkansas Department of Pollution Control and Ecology
AGC	Associated General Contractors of America
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
ARA	American Railway Association
ARDOT	Arkansas Department of Transportation
AREA	American Railway Engineering Association
ARTBA	American Road and Transportation Builders Association
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
ATSSA	American Traffic Safety Service Association
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
CoE	U.S. Army Corps of Engineers
CRSI	Concrete Reinforcing Steel Institute
FHWA	Federal Highway Administration
FSS	Federal Specifications and Standards, General
ITE	Institute of Traffic Engineers
MIL	Military Specifications
MUTCD	Manual on Uniform Traffic Control Devices for Streets and Highways
NEMA	National Electrical Manufacturers Association
OSHA	Occupational Safety and Health Administration
SAE	Society of Automotive Engineers
SSPC	Steel Structures Painting Council
UL	Underwriter's Laboratory
USC	United States Code

(b) Contract Abbreviations for Construction Work

AC	Asphalt Cement	ACHM	Asphalt Concrete Hot Mix
ACTD	Actuated	ADJ	Adjusted
AGG	Aggregate(s)	ALUM	Aluminum
APPL	Application	APPR	Approach
ASPH	Asphalt	ASSY	Assembly
AST	Asphalt Surface Treatment	AUTO	Automatic
BIND	Binder	BIT	Bituminous
BLDG	Building(s)	BLDG	Building(s)
BLKT	Blanket	BNG(S)	Bearing(s)
BR	Bridge(s)	BST	Bituminous Surface Treatment
C & G	Curb and Gutter	CA	Corrugated Aluminum
cc	cubic centimeter(s)	CD	Compacted Depth
CEM	Cement	CL	Class
CLVT(S)	Culvert(s)	CM	Corrugated Metal
CMBN	Combination	CNTL	Control, Controller
COMP	Compaction, Controller	CONC	Concrete
		CONST	Construction
CONT	Continuous, Continuously	CORR	Corrugated
		CR	Crushed
CRS	Course(s)	CS	Corrugated Steel
CTD	Coated	CU,cu	Cubic
DBL	Double	DI	Drop Inlet(s)
DWY(S)	Driveway(s)		
EMUL	Emulsified	EWK	Earthwork
EXC	Excavation	EXP	Expansion
F & I	Furnish and Install	FDN	Foundation
FES	Flared End Section(s)	FNC	Fence(s)
FURN	Furnish, Furnishing		
GA	Gage, Gauge	GALV	Galvanized
GR	Grade, Graded	GRVL	Gravel
ha	hectare(s)	HI	High Intensity
HM	Hot Mix	HMA	Hot Mix Asphalt
HMAS	Hot Mix Asphalt Stabilized		
INST	Install, Installing, Installation		
j	joule(s)		
kg	kilogram(s)	kL	kilometer(s)
km/h	kilometers per hour	KPa	kilopascal(s)
L	liter(s)	LAB	Laboratory
m	meter(s)	mm	millimeter(s)
MA	Mineral Aggregate	MAINT	Maintenance
MATL	Material(s)	MES	Mitered End Section(s)
MET	Metal	MG	1000 Gallons
MIN	Mineral	MOB	Mobilization

MOD	Modified	MPa	MegaPascal(s)
MRK	Marking(s)	msta	metric station
mton	1000 kilograms		
NO	Number(s)	NON MET	Non-Metallic
NON REINF	Non-Reinforced	NPDES	National Pollutant Discharge Elimination System
OCT	Octagonal	OFF	Office
Pa	Pascal(s)	PC	Portland Cement
PIL	Piles, Piling	PM	Plant Mixed
ppm	parts per million	PRCST	Precast
PRFMD	Preformed	PROC	Process, Processing
PVC	Polyvinylchloride	PVMT	Pavements(s)
PVNG	Paving		
QPL	Qualified Products List	QUAD	Quadruple
QUINT	Quintuple		
R & D	Removal and Disposal	RC	Reinforced Concrete
RDWY	Roadway(s)	RECOMP	Recompact(ed), Recompaction
RECON	Reconstruct(ed)		
REFL	Reflectorized	REHAB	Rehabilitate, Rehabilitation
RELOC	Relocate, Relocation	REMV	Removal, Removing, Removed
RELP	Replace, Replacing		
RESTOR	Restoration	RESTEEL	Reinforcing Steel
RMC	Rigid Metallic Conduit	RNMC	Rigid Non-Metallic Conduit
SCAR	Scarify, Scarifying	SGNL(S)	Signal(s)
SHLD(S)	Shoulder(s)	SPEC	Special
sq	Square	Sta	Station (100 feet)
STAB	Stabilized, Stabilization	STKPL	Stockpile, Stockpiling
STL	Steel	STN	Stone
STR(S)	Structure(s)	STRL	Structural
SURF	Surface, Surfacing	SWPPP	Storm Water Pollution Prevention Plan
SYS	System, Systems		
TEMP	Temporary	TERM	Terminal
THERMPL	Thermoplastic	TMBR	Timber
TRAF	Traffic	TRPL	Triple
TRMT	Treatment	TRTD	Treated
TY	Type		
UNCL	Unclassified	UNTRTD	Untreated
UT	Uniform Thickness	VAR	Variable
VEH	Vehicle(s)		
μm	micrometer (1×10^{-6} m)		

(c) Definitions. Whenever in these specifications or in other contract documents the following terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as follows:

Addenda. Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the bidding documents or the Contract Documents.

Advertisement. The public announcement, as required by law, inviting bids for work to be performed or materials to be furnished.

ARDOT Standard Specifications. The Standard Specifications for HIGHWAY CONSTRUCTION, Arkansas Department of Transportation, Edition of 2014 or latest version, unless version date indicated otherwise.

Agreement. The written agreement between Owner and Contractor covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein. The terms Agreement and Contract are used interchangeably.

Award. The acceptance by the City of a proposal.

Bid. The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed. The terms Bid and Proposal are used interchangeably.

Bid Bond. The security furnished with a bid to guarantee that the bidder will enter into the Contract if the bid is accepted.

Bidder. An individual, partnership, corporation or joint venture submitting a bid for the advertised work. (The terms “Bidder” and “Contractor” are frequently used synonymously.)

Bid Proposal Form. The approved form on which the Owner requires bids to be prepared and submitted for the work.

Business Day. Any calendar day except Saturdays, Sundays, and City recognized holidays. If a holiday falls on Saturday or Sunday, the observed day shall be the Friday preceding the Saturday or the Monday following the Sunday.

Calendar Day. Any day shown on the calendar, beginning and ending at midnight. If a day is not identified by any other modifier, it shall be considered a calendar day.

Change Order. A written order issued by the Owner to the Contractor, covering changes in the plans or quantities or both, within the scope of the Contract and establishing the basis of payment and time adjustments for the work affected by the changes.

City. The City of Fayetteville, Arkansas, including authorized representatives.

City Engineer. An Engineer employed by the City responsible for construction administration and inspection of projects for which the City is the Owner.

Construction Field Change. A written order issued by the Owner covering minor changes in the work, but which does not involve a change in the Contract Price or the Contract Time.

Construction Observer. The Engineer's or City's designated personnel appointed to observe the Work. Multiple construction observers may be designated.

Contract. The written agreement between the City and the Contractor setting forth the obligations of the parties thereunder, including, but not limited to, the performance of the work, the furnishing of labor and materials, and the basis of payment. (The Contract includes the contract form; the contract schedule of prices; the payment and performance bonds; specifications, supplemental specification, and special provisions; general and detailed plans; and any change orders and agreements that are required to complete the construction of the work in an acceptable manner, including authorized extensions thereof, all of which constitute one instrument.)

Contract Documents. The Contract Documents includes the executed Agreement; Addenda (which pertain to the Contract Documents); Advertisement for Bids; Information for Bidders, Contractor's Bid (including documentation accompanying the Bid and any Post-Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement; List of proposed Subcontractors; the Bonds; the Specifications; Special Provisions, Supplementary Conditions, Certificates of Insurance; the Plans (Drawings) as the same are more specifically identified in the Agreement; together with all written modifications, Change Orders and Engineer's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics and the like that may be furnished by Owner to Contractor are not Contract Documents.

Contract Item (Pay Item). A specifically described unit of work for which a price is provided in the Contract.

Contract Time. The number of working days allowed for completion of the Contract. If a fixed date of completion is shown in the proposal, the Contract shall be completed by that calendar date.

Contractor. The individual, partnership, corporation, or any combination thereof, or joint venture contraction with the City for the prescribed work. (The terms "Contractor" and "Bidder" are frequently used synonymously.)

Culvert. Any structure not classified as a bridge that provides an opening under the roadway.

Defective. An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents or does not

meet the requirements of any inspection, test or approval referred to in the Contract Documents, or has been damaged prior to final payment.

Effective Date of Agreement. The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

Engineer. The Engineer of record, acting directly or through duly authorized representatives, whose engineering seal appears on the plans and specifications.

Equipment. All machinery and equipment, together with the necessary supplies for upkeep and maintenance, and tools and apparatus necessary for the proper construction and acceptable completion of the work.

Extra Work. An item of work not provided for in the Contract as awarded but found essential to the satisfactory completion of the Contract within its intended scope.

Extra Work Order. A change order concerning the performance of work or furnishing of materials involving extra work. (Such extra work may be performed at agreed prices or on a force account basis as provided elsewhere in these specifications.)

Holidays. The City observes the following legal holidays: New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and the following day, Christmas Eve, December 24; and Christmas Day, December 25. If a holiday falls on Saturday or Sunday, the observed day shall be the Friday preceding the Saturday or the Monday following the Sunday.

Incidental item. Work shown on the plans but for which there is no bid item included. This work shall not be paid for separately; rather the cost of the work is considered to be included in the contract amount bid for the project.

Laboratory. The Quality Control Testing Laboratory of the City or any other testing laboratory that may be designated by the City.

Materials. Any substances specified for use in the construction of the project and its appurtenances.

Milestone. A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work for which liquidated damages may or may not apply.

Notice of Award. The written notice by Owner to the apparent successful Bidder stating that upon timely compliance by the apparent successful Bidder with the conditions listed therein, Owner will sign and deliver the Agreement.

Notice to Contractors. The advertisement for proposals for all work or materials on which bids are required indicating with reasonable accuracy the quantity and location of the work to be done, or the character and quantity of the materials to be furnished; and the time and place of the opening of proposals.

Notice to Proceed. A written notice given by Owner to Contractor fixing the date on which the Contract Time will commence to run and on which Contractor shall start to perform his obligation under the Contract Documents. Notice to Proceed is also referred to as Work Order.

Observer. See Construction Observer.

Owner. The City of Fayetteville, Arkansas, and/or the duly authorized agent of the City of Fayetteville, Arkansas, with whom Contractor has entered in the Agreement and for whom the Work is to be performed.

Pavement Structure. The combination of subbase, base course, and surface course placed on a subgrade to support the traffic load and distribute it to the roadbed.

Payment Bond. The approved form of security, executed by the Contractor and his/her Surety or Sureties, guaranteeing the payment of all legal debts of the Contractor pertaining to the construction of the project.

Performance Bond. The approved form of security, executed by the Contractor and his/her Surety or Sureties, guaranteeing complete performance of the Contract and all supplemental agreements thereto.

Plans. The approved plans, profiles, typical cross-sections, working drawing, and supplemental drawings, or exact reproductions thereof, which show the location, character, dimensions, and details of the work to be done. (The Title Sheet of the plans is provided for general information only and is not to be taken as an all-inclusive description of the work. Other work and/or locations may be included in the Project as described by the plans, specifications, supplemental specifications, and special provisions.) The term Drawings and Plans are used interchangeably.

Profile Grade. Unless otherwise shown on the plans, the trace of a vertical plane intersecting the top surface of the proposed wearing surface, usually along the longitudinal centerline of the roadbed. (Profile grade means either the elevation or gradient of such trace according to the context.)

Project. The specific section of the highway together with all appurtenances and construction to be performed thereon under the Contract.

Proposal. The offer of a bidder, on the prescribed form, to perform the work and to furnish the labor and materials at the unit prices quoted.

Proposal Form. The approved form on which the City requires bids to be prepared and submitted for the work.

Proposal Guaranty. The security furnished with a bid to guarantee that the bidder will enter into the Contract if the bid is accepted.

Prospective Bidder. An individual, partnership, corporation, or joint venture who has requested and been issued a proposal form from the City.

Qualified Products List. A list of products that are approved for use in Highway Contracts with the Arkansas Department of Transportation. The QPL is maintained by ARDOT.

Registered Professional Engineer. An Engineer registered in the State of Arkansas by the Arkansas State Board of Registration for Professional Engineers and Land Surveyors. All details, drawings, calculations, and reports submitted by the registrant as required by these specifications shall be certified, signed, and stamped with the seal or facsimile thereof as authorized by the Board.

Registered Professional Land Surveyor. A Land Surveyor registered in the State of Arkansas by the Arkansas State Board of Registration for Professional Engineers and Land Surveyors. All details, drawings, calculations, and reports submitted by the registrant as required by these specifications shall be certified, signed, and stamped with the seal or facsimile thereof as authorized by the Board.

Registered Scale Mechanic. A person registered with the Arkansas Bureau of Standards, Division of Weights and Measures, as being qualified by training and experience to make adjustments and repairs to commercial scales and performs such work as a skilled trade.

Right-of-Way. A general term denoting land, property, or interest therein, acquired for or devoted to highway purposes.

Road. A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Roadbed. The graded portion of a highway within top and side slopes, prepared as a foundation for the pavement structure and shoulders.

Roadside. A general term denoting the area adjoining the outer edge of the roadway. (Extensive areas between the roadways of a divided highway may also be considered roadside.)

Roadway. The portion of a highway within limits of construction, or as defined in other sections.

Shop Drawings. All drawings, diagrams, illustration, schedules and other data which are specifically prepared by Contractor, Subcontractor, manufacturer, fabricator, supplier or distributor to illustrate some portion of the Work.

Shoulder. The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles for emergency use, and for lateral support of base and surface courses.

Sidewalk. That portion of the roadway constructed primarily for the use of pedestrians.

Sieve. U.S.A. Standard Series, as defined in AASHTO M 92. Percent passing or retained is by weight.

Special Provisions. Additions and revisions to the standard and supplemental specifications covering conditions peculiar to an individual project.

Specifications. A general term applied to all directions, provisions, and requirements pertaining to performance of the work.

Standard Specifications. This printed book of Standard Specifications for Street and Drainage Construction. Unless otherwise noted, the Edition in effect on the date of advertisement.

Station. A station when used as a definition or term of measurement will be 100 linear feet measured horizontally.

Street. A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Structures. Bridges, culverts, catch basins, drop inlets, retaining walls, cribbing, manholes, endwalls, buildings, sewers, service pipes, underdrains, foundation drains, and other features that may be encountered in the work and not otherwise classed herein.

Subcontractor. An individual, firm, or corporation to whom the Contractor sublets part of the work.

Subgrade. The top surface of a roadbed upon which the pavement structure and shoulders are constructed.

Substantial Completion. A condition upon which the work has progressed to the point that it can be utilized for the purposes intended; as evidenced by a Certificate issued by the Engineer under the authority of the City. If no such certificate is issued, Substantial Completion shall be when the work is complete and ready for final payment.

Substantial Completion Date. The time at which the Work has progressed to the point where, in the opinion of the Owner, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can to utilized for the purposes for which it was intended without further disruption to the public or occupants of the facility.

Substructure. All of that part of the structure below the bearings of simple and continuous spans, skewbacks of arches and tops of footings of rigid frames, together with the backwalls, wingwalls, and wing protection railings.

Superintendent. The Contractor's authorized representative in responsible charge of the work, present at the work site at all times during the progress to supervise and direct construction, to receive and fulfill instructions from the Owner's representative, and to accept orders for changed and extra work.

Superstructure. The entire structure except the substructure.

Supplemental Agreement. A written negotiated agreement constituting a modification of the originally executed Contract and covering the performance of work beyond its general scope. (The items of work contained therein will be included in an approved Change Order.)

Supplemental Specifications. Revisions to the Standard Specifications that are adopted subsequent to issuance of the printed book of Standard Specifications.

Surety. The company, other than the Contractor, executing a bond furnished by the Contractor.

Titles (Or Headings). The titles or headings of the sections and subsections herein are intended for convenience of reference and shall not be considered as having any bearing on their interpretation.

Ton. 2000 pounds.

Traveled Way. The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

Unit Price Work. Work to be paid for on the basis of unit prices.

Work. The furnishing of all materials, labor, equipment, tools, and incidentals necessary or convenient to the successful completion of the project and the carrying out of the duties and obligations imposed by the Contract.

Working Day. A calendar day during which normal construction operations could proceed; normally excludes Saturdays, Sundays, and City recognized holidays.

Working Drawings. Stress sheets, shop drawings, erection plans, falsework plans, framework plans, cofferdam plans, or any other supplementary plans or similar data that the Contractor is required to submit to the Engineer for informational and record purposes or for approval.

Work Order. Written notice from the Engineer directing the Contractor to begin prosecution of the work.

101.02 Specification Language. To avoid cumbersome and confusing repetition of expressions in these specifications, it is provided that whenever anything is, or is to be, done, if, as, when, or where "contemplated, required, determined, directed, specified, authorized, ordered, given, designated, indicated, considered necessary, deemed necessary, permitted, reserved, suspended, established, approval, approved, disapproved, acceptable, unacceptable, suitable,

accepted, satisfactory, unsatisfactory, sufficient, insufficient, rejected, or condemned," it shall be understood as if the expression were followed by the words "by the Engineer/City Engineer" or "to the Engineer/City Engineer".

Section 102. ARDOT Standard Specifications by Reference (Current Edition)

102.01 ARDOT Standard Specifications. The standard specifications of the Arkansas Department of Transportation (ARDOT) are bound in a book titled Standard Specifications for Highway Construction. These specifications are referred to herein as "Standard Specifications" or "ARDOT Specifications". The latest edition, as well as all Supplemental Specifications, shall apply. A copy of these Standard Specifications can be obtained from the Arkansas Department of Transportation, Little Rock, Arkansas, at their customary charge.

102.02 Purpose. The Standard Specifications, including Supplemental Specifications, shall be used for description, quality control and acceptance testing, material specifications, construction methods, method of measurement, and basis of payment unless otherwise stated in these City of Fayetteville Standard Specifications for Street and Drainage Construction.

102.03 Modifications. Reference in the ARDOT Standard Specifications to the "Department" are herein changed to the "Owner".

Section 103. Insurance and Bonding

103.01 Requirements of Bonds and Insurance.

(a) Bonds. At the time of execution of the Contract, the successful Bidder shall furnish performance and payment bonds, each in the amount at least equal to the Contract Price, as security for the faithful performance and payment of all Contractors obligations under the contract documents. Contractor shall have the performance and payment bonds recorded at the Washington County Circuit Clerk office before submitting to the City. A Purchase Order cannot be issued by the City until the recorded bonds have been received.

Prior to final acceptance of the project, the Contractor shall provide a maintenance bond in accordance with Section 158.03, Maintenance, of the Unified Development Code of the City of Fayetteville. The bond shall be in the amount of 25% of the total contract price for a period of two years from the date of Substantial Completion.

(b) Liability Insurance. The Contractor shall procure and maintain its own General Public Liability Insurance in accordance with Subsection 105.02.

103.02 Method of Measurement. Insurance and Bonding will be measured as a complete unit.

103.03 Basis of Payment. Insurance and Bonds completed and accepted as provided above will be paid for at the contract lump sum price bid for Insurance and Bonding, which price shall be full compensation for furnishing all necessary insurance and bonds required by the contract documents.

Payment will be made under:

Pay Item	Pay Unit
Insurance and Bonding	LS

Section 104. Scope of Work

104.01 Intent of Contract. The intent of the Contract is to provide for the construction and completion in every detail of the work described. The Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work according to the plans, specifications, and terms of the Contract.

104.02 Alteration of Plans or Character of Work.

(a) General. The City shall have the right to increase or decrease the extent of the work or to change the location, gradient, or the dimensions of any part of the work, provided that the length of the improvement is not increased or decreased in excess of 25% of the contract length, or that the quantities of work to be done or the materials to be furnished are not increased or decreased in money value in excess of 25% of the total Contract. Such changes shall not be considered as a waiver of any conditions of the Contract nor invalidate any of the provisions thereof. The Contractor shall perform the work as increased or decreased within the qualifying limits named and no allowance will be made for anticipated profits on increases or decreases so incurred.

If changes in the work require an adjustment in unit prices already established, or if additional work for which unit prices have not already been established by the contract is necessary, the contract price shall be adjusted according to the General Conditions of the Contract and this Section. If additional work is performed before an adjustment is made in the contract, the additional work will be paid for at unit prices already established for similar work, if such additional work is deemed necessary by the Engineer/City Engineer. If the Contractor performs additional work without authorization from the City and without an agreed Contract adjustment for such work, no payment for such additional work will be made.

(b) Significant Changes in the Character of Work. The City reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the Contract nor release the Surety, and the Contractor agrees to perform the work as altered.

If the alterations or changes in quantities significantly change the character of the work under the Contract, whether or not changed by any such different quantities or alterations, an adjustment, excluding loss of anticipated profits, will be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the Contractor in such amount as the Engineer/City Engineer may determine to be fair and equitable. If the alterations or changes in quantities do not significantly change the character of the work to be performed under the Contract, the altered work will be paid for as provided elsewhere in the Contract.

The term "significant change" shall be construed to apply only to the following circumstances:

1) When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction, or
2) When a major item of work is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity. Any adjustment due to an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work performed. A major item of work is defined as any bid item for which the original contract value is more than 10 percent of the total original contract value.

104.03 If and Where Directed Items. The plans and the proposal may specify one or more items to be incorporated into the project "if and where directed" by the Engineer/City Engineer. The Engineer/City Engineer shall have discretion in determining whether and to what extent such items will be incorporated into the project. The Engineer/City Engineer may order incorporation of such items at any location within the project and at any time during the work. These items may or may not be located on the plans. The estimated quantities set out in the proposal for such items are presented solely for the purpose of obtaining a representative bid price. The actual quantities employed may be only a fraction of, or many times the estimated quantities. The Contractor shall make no claim for additional compensation because of any increase, decrease, or elimination of such items.

Section 105. Control of Work

105.01 Authority and Direction.

(a) Direction and Control by the Contractor.

(1) General. The detailed manner and method of performing the work shall be under the direction and control of, and by, the Contractor, but all work performed shall at all times be subject to the observation of the Engineer/City Engineer or his authorized representative to ascertain its conformance with the Contract Documents. The Contractor shall furnish all reasonable aid and assistance required by the Engineer for the proper observation and examination of the work and all parts thereof.

The Engineer and Owner are not responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction, or safety precautions and programs incident thereto.

The Contractor shall be responsible for the proper fitting of all work and for the coordination of the operations of all trades, Subcontractors, or materialmen engaged upon this Contract. He shall be prepared to guarantee to each of his Subcontractors the locations and measurements which they may require for the fitting of their work to all surrounding work.

Observers may be appointed by the Engineer or Owner. Observers shall have no authority to permit any deviation from the Plans and Specifications except on written order from the Engineer/City Engineer and the Contractor will be liable for any deviation except on such written order. Observers

shall have authority, subject to the final decision of the Engineer/City Engineer, to condemn and reject any defective work and to suspend the work when it is not being performed properly.

The observer shall in no case act as superintendent or foreman or perform other duties for the Contractor, nor interfere with the management of the work by the latter. Any advice which the observer may give the Contractor shall in no way be construed as binding to the Engineer/City Engineer or Owner in any way or releasing the Contractor from fulfilling all of the terms of the Contract.

Any defective work may be rejected by the Engineer/City Engineer at any time before final acceptance of the work, even though the same may have been previously overlooked and estimated for payment and payment therefore made by the Owner.

(2) Accident Prevention. The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, which occur as a result of his prosecution of the work. The safety provisions of applicable laws and building and construction codes, including applicable parts of the Arkansas Department of Labor Safety Code, shall be observed. The Contractor shall take or cause to be taken such safety and health measures, additional to those herein required, as he may deem necessary or desirable. Machinery, equipment, and all hazards shall be guarded in accordance with the safety provisions of the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, Inc., to the extent that such provisions are not in conflict with applicable local laws.

The Contractor shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the Contract. The Contractor shall promptly furnish the Owner with reports concerning these matters.

The Contractor shall indemnify and save harmless the Owner, and the Engineer, from any claims for damages resulting from personal injury and/or death suffered or alleged to have been suffered by any person as a result of any work conducted under this Contract.

(b) Authority of the Engineer. As the direct representative of the Owner, the Engineer has immediate charge of the engineering details of each construction project; is responsible for the general administration of the Project; and has the authority to reject unacceptable material or work and to suspend any work that is being improperly performed.

The Owner, with input from the Engineer, will decide all questions that may arise as to the quality and acceptability of materials furnished and work performed and as to the rate of progress of the work; all questions that may arise as to the interpretation of the plans and specifications; and all questions as to the acceptable fulfillment of the Contract by the Contractor.

The Engineer, with concurrence by Owner, will have the authority to suspend the work wholly or in part due to the failure of the Contractor to correct conditions unsafe for the workers or the

general public; for failure to carry out provisions of the Contract; for failure to carry out orders; for such periods as deemed necessary due to unsuitable weather; for conditions considered unsuitable for the prosecution of the Work; or for any other condition or reason deemed to be in the public interest.

Any unresolved disputes arising under the Contract shall be submitted by the Contractor in writing to the Engineer. Disputes claiming additional compensation shall contain the information set forth in Subsection 109.10 "Claims for Adjustment and Disputes." The Engineer shall render a written decision within 60 calendar days of receipt of the Contractor's letter and information. Should a dispute not be resolved by the written decision of the Engineer, subsequent appeal by the Contractor shall be submitted in writing within 60 calendar days of the decision of the Engineer, and shall be addressed directly to the Owner.

105.02 Plans and Submittals.

(a) Plans. Plans will show lines, grades, details of all structures, typical cross sections, and a summary of items appearing on the proposal. Work may be provided for on the Plans that is not located within the limits of the project as shown on the plan sheets. Work of this nature may include but is not limited to removal of existing items, obliteration, grading, base and surfacing, transitions, etc., and is considered a part of the project. The Plans will be supplemented by such working drawings or sketches issued by the Engineer as are necessary to adequately control the Work.

(b) Submittals. Shop drawings, mix designs, vendor data, testing reports, certifications, calculations and working drawings for structures shall be furnished by the Contractor as required herewith. They shall consist of such data and detailed plans as may be required to adequately control the work and are not included on the plans furnished by the Owner. They shall include stress sheets, shop drawings, erection plans, falsework plans, cofferdam plans, or any other supplementary plans or similar data required of the Contractor.

Where calculations, plans or design are a requirement of any submittal, such shall be prepared and sealed by a Professional Engineer competent in the applicable field of practice and Licensed in the State of Arkansas.

All submittals shall be submitted to the Engineer for informational and record purposes or for approval as specified for the item of work involved. Contractor shall, in writing, call Engineer's attention to any deviation that the Submittal may have from the requirements of the Contract Documents. The Contractor should anticipate a review period of 15 - 30 calendar days from receipt by the Engineer of submittals. The review of submittals by the Engineer will be limited to checking for general agreement with the plans and specifications, and shall in no way relieve the Contractor of responsibility for errors and omissions contained therein, nor shall such review or approval operate to waive or modify any provisions contained in the Specifications or Drawings. It is mutually agreed that the Contractor shall be responsible for agreement of dimensions and details as well as conformity of its submittal with the Contract plans and specifications.

(1) Where a Shop Drawing or sample is required by the Specifications, no related work shall commence until the submittal has been reviewed and approved by Engineer.

Any Shop Drawings submitted without the Contractor's stamp of approval will not be considered and will be returned to him for proper resubmission. If any Drawings show variations from the requirements of the Contract because of standard shop practice or other reason, the Contractor shall make specific mention of such variation in his letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment of Contract price and/or time; otherwise, the Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract even though the Drawings have been reviewed.

The review of Shop Drawings by the Engineer shall be considered an accommodation to the Contractor to assist him in the execution of the Contract. The Engineer's review of such Drawings shall not relieve the Contractor of his responsibility to perform the work in strict accordance with the Plans and Specifications, and approved changes.

If the Shop Drawing is in accordance with the Contract or involves only a minor adjustment in the interest of the Owner not involving a change in Contract price or time, the Engineer shall so stamp the Drawing and shall contain in substance the following:

> "Corrections or comments made on the shop drawings during this review do not relieve Contractor from compliance with requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner."

(2) The Contractor shall submit all material, product, or equipment samples, descriptions, certificates, affidavits, etc., as called for in the Contract Documents or required by the Engineer, promptly after award of the Contract and acceptance of the Contractor's bond. No such material or equipment shall be manufactured or delivered to the site, except at the Contractor's own risk, until the required samples or certificates have been approved in writing by the Engineer. Any delay in the work caused by late or improper submission of samples or certificates for approval shall not be considered just cause for an extension of the Contract time. Submit four (4) copies of data for Engineer's review.

Each sample submitted by the Contractor shall carry a label giving the name of the Contractor, the project for which it is intended, and the name of the producer. The accompanying certificate or letter from the Contractor shall state that the sample complies with Contract requirements, shall give the name and brand of the product, its place of origin, the name and address of the producer, and all specifications or other detailed information which will assist the Engineer in passing upon the acceptability of the sample promptly. It shall also include the statement that all materials or equipment furnished for use in the project will comply with the samples and/or certified statements.

Approval of any materials shall be general only and shall not constitute a waiver of the Owner's right to demand full compliance with Contract requirements. After actual deliveries, the Engineer will have such check tests made as he deems necessary in each instance and may reject materials and equipment and accessories for cause, even though such materials and articles have been given general approval. If materials, equipment or accessories which fail to meet check tests have been incorporated in the work, the Engineer will have the right to cause their removal and replacement by proper materials or to demand and secure such reparation by the Contractor as is equitable, at the Contractor's expense.

Except as otherwise specifically stated in the Contract, the costs of sampling and testing will be divided as follows:

1) The Contractor shall furnish without extra cost, including packing and delivery charges, all samples required for testing purposes, except those samples taken on the project by the Engineer;
2) The Contractor shall assume all costs of re-testing materials which fail to meet Contract requirements;
3) The Contractor shall assume all costs of testing materials offered in substitution for those found deficient.

The contract price will include the cost of furnishing all required working drawings, record drawings and other submittals.

105.03 Conformity with Plans and Specifications. All work performed and all materials furnished shall be in reasonably close conformity with the lines, grades, cross sections, dimensions, and material requirements, including tolerances, shown on the plans or indicated in the specifications.

Unless otherwise specified, in the event the materials or the finished product in which the materials are used is not within reasonably close conformity with the plans and specifications but reasonably acceptable work has been produced, the Engineer/City Engineer shall determine if the work shall be accepted and remain in place. If the work is accepted, the Engineer/City Engineer will document the basis of acceptance by Contract modification that will provide for an appropriate adjustment in the contract cost for such work or materials.

In the event the materials or the finished product in which the materials are used or the work performed is found not to be in reasonably close conformity with the plans and specifications and have resulted in an inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected at no cost to the City.

105.04 Coordination of Plans, Specifications, and Special Conditions. These Specifications including General Provisions and Technical Specifications, the Plans, Supplementary Conditions, Special Provisions and all other supplementary documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work.

The Contractor shall be responsible for the proper fitting of all work and for the coordination of the operations of all trades, Subcontractors, or materialmen engaged upon this Contract. He shall be prepared to guarantee to each of his Subcontractors the locations and measurements which they may require for the fitting of their work to all surrounding work.

In addition, the Specifications include references to the Arkansas Department of Transportation's Standard Specifications for Highway Construction Edition of 1996, 2003, and 2014 (ARDOT Standard Specifications). The portions of the ARDOT Standard Specifications, which are referenced in these specifications, are hereby incorporated by reference.

All work shall conform to applicable sections of the City of Fayetteville Code of Ordinances and to the City of Fayetteville Minimum Street Standards. In case of discrepancy, the most stringent requirements will apply. The City of Fayetteville Code of Ordinances and Minimum Street Standards are hereby incorporated by reference.

The Contractor shall not take advantage of any apparent error or omission on the plans or in the Contract Documents. The party discovering such error or omission shall notify the other party when the discovery is made. The Engineer will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the plans and specifications.

105.05 Cooperation by Contractor. The Contractor will be supplied with a minimum of two sets of approved plans and Contracts, one set of which shall be kept available on the project at all times.

The Contractor shall give the work the attention necessary to facilitate the progress thereof and shall cooperate fully with the Engineer/City Engineer, inspectors, and other Contractors.

The Contractor shall have on the project at all times an agent who is a competent superintendent capable of reading and thoroughly understanding the plans and specifications and thoroughly experienced in the type of work being performed. The Superintendent shall be satisfactory to the Owner and the Engineer, on the project at all times during working hours with full authority to supervise and direct the work and who shall be the Contractor's agent responsible for the faithful discharge of the Contractor's obligations under the Contract. During working hours, the Contractor's superintendent shall be equipped with a mobile phone or other communication device suitable to the Engineer for contact by the Engineer or Owner. The superintendent shall receive instructions from the Engineer/City Engineer and shall have full authority to execute orders or directions of the Engineer/City Engineer without delay and to promptly supply such materials, labor, equipment, tools, and incidentals as may be required. Such superintendent shall be furnished regardless of the amount of work sublet.

The Owner shall have the authority to require the Contractor to remove from the work any incompetent or insubordinate superintendent.

105.06 Coordination and Cooperation Between Contractors. The Owner reserves the right at any time to contract for and perform other or additional work on or near the work covered by the Contract.

When separate contracts are let adjacent to or within the limits of any one project, the work of each Contractor shall be conducted so as not to interfere with or hinder the progress or completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other.

It is understood and agreed that the Contractor considered in the bid the status of the existing Contract or Contracts at the time of bidding and will arrange to coordinate and schedule the work jointly with the other affected Contractors in order to complete the work within the time allowed in the Contract.

If, through acts of neglect or through failure to comply with any applicable Government regulations by the Contractor, any other Contractor or any Subcontractor shall suffer loss or damage on the work, the Contractor shall settle with such other Contractor or Subcontractor by agreement or arbitration, if such other Contractor or Subcontractor will so settle. If such other Contractor or Subcontractor shall assert any claim against the Owner on account of any damage alleged to have been so sustained, the Owner will notify this Contractor, who shall defend at his own expense any suit based upon such claim, and, if any judgment or claims against the Owner shall be allowed, the Contractor shall pay or satisfy such judgment or claim and pay all costs and expenses in connection therewith.

Contractors involved shall assume all liability, financial or otherwise, in connection with their own Contracts and shall protect and save harmless the City of Fayetteville from any and all damages or claims that may arise because of inconvenience, delay, or loss experienced because of the presence and operations of other Contractors working within the limits of the same project.

Contractors shall arrange their work and shall place and dispose of the materials being used so as not to interfere with the operations of the other Contractors within the limits of the same project, and shall join their work with that of the others in an acceptable manner, and shall perform it in proper sequence with that of the others.

105.07 Cooperation with Utilities. The Plans indicate various utility items, some of which are to be relocated or adjusted by the utility owner, and others that are to be relocated or adjusted by the Contractor. The City will notify all known utility companies, all known pipeline owners, or other known parties affected, and endeavor to have all necessary adjustments of the public or private utility fixtures, pipe lines, and other appurtenances within or adjacent to the limits of construction made before construction begins.

Water lines, gas lines, wire lines, service connections, water and gas meter boxes, water and gas valve boxes, light standards, cableways, signals, and all other utility appurtenances within the limits of the proposed construction that are to be relocated or adjusted are to be moved by the owners of such facilities except as otherwise provided for in the Contract or as noted on the plans.

The Contractor shall consider in the bid all of the permanent and temporary utility facilities and appurtenances in their present, relocated, or proposed positions. No additional monetary compensation will be allowed for any delays, inconveniences, or damages sustained due to any interference from the utilities or appurtenances or from the operations of relocating them.
It is the Contractor's responsibility to have all utility lines located before construction begins. Any costs incurred due to damaged utility lines shall be borne by the Contractor with no exceptions.

All work in this contract shall be in accordance with the Arkansas Underground Facilities Damage Prevention Act. The Contractor shall abide by the most current edition of this Act.

105.08 Inspection and Observation of Work. All materials and each part or detail of the Work shall be subject to inspection by the Owner. All materials and each part or detail of the Work shall be subject to observation by the Engineer. The Engineer and Owner and their designated representatives shall be provided acceptable access to all parts of the Work and shall be furnished with such information and assistance by the Contractor as is necessary to for the Engineer's observation and/or the Owner's observation and inspection. Neither observations by Engineer/City Engineer nor inspection, tests or approvals by others shall relieve Contractor from his obligation to perform the work in accordance with the Contract Documents.

The Contractor shall notify the Engineer sufficiently in advance of backfilling or concealing any facilities to permit proper observation. If the facilities are concealed without approval or consent of the Engineer, the Contractor shall uncover for observation and recover such facilities all at his own expense, when so requested by the Engineer.

Observation of materials and appurtenances to be incorporated in the Improvements embraced in this Contract may be made at the place of production, manufacture or shipment, whenever the quantity justifies it, and such observation and acceptance, unless otherwise stated in the Technical Specifications, shall be final, except as regards (1) latent defects, (2) departures from specific requirements of the Contract, (3) damage or loss in transit, or (4) fraud or such gross mistakes as amount to fraud. Subject to the requirements contained in the preceding sentence, the observation of materials as a whole or in part will be made at the project site.

All condemned or rejected work shall be promptly taken out and replaced by satisfactory work. Should the Contractor fail or refuse to comply with the instructions in this respect, the Owner may, upon certification by the Engineer, withhold payment, proceed to terminate the Contract, or perform work as provided herein.

When requested by the Engineer/City Engineer at any time before acceptance of the Work, the Contractor shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications.

Should the work thus exposed or examined prove acceptable, the uncovering or removing and the replacing of the covering or making good of the parts removed will be paid for as extra work.

Should the work so exposed or examined prove unacceptable, the uncovering or removing and the replacing of the covering or making good of the parts removed shall be at the Contractor's expense.

Any work performed or materials used without inspection by the Engineer/City Engineer may be ordered exposed, and/or removed and replaced, at no cost to the Owner unless the Engineer/City Engineer or inspector failed to inspect after having been given reasonable notice that the work was to be performed.

When any unit of government, political subdivision, railroad corporation, or other agency is to pay a portion of the cost of the Work covered by the Contract, its respective representatives shall have the right to inspect the Work. Such inspection shall in no sense make any unit of government, political subdivision, railroad corporation, or other agency a party to the Contract, and shall in no way interfere with the rights of either party thereunder.

105.09 Removal of Unacceptable or Unauthorized Work. All work that does not comply with the requirements of the Contract will be considered unacceptable. Unacceptable work, whether the result of poor workmanship, use of unacceptable materials, damage through carelessness, negligence, or any other cause, found to exist before the final acceptance of the Work, or during the warranty period specified in Subsection 109.18 "Warranty and Guarantee", shall be removed and replaced in an acceptable manner at no cost to the Owner. Work performed contrary to any instructions of the Engineer/City Engineer; work performed beyond the lines shown on the plans or as established, except as herein specified; or any extra work performed without authority will be considered as unauthorized and will not be paid for under the provisions of the Contract. Work so performed may be ordered removed or replaced at no cost to the Owner.

Should the Contractor fail to comply with any order of the Engineer/City Engineer, the Engineer/City Engineer will have the authority to cause unauthorized work to be removed and unacceptable work to be corrected or removed and replaced and to deduct the costs from any moneys due or to become due the Contractor.

105.10 Authorized Changes. All changes to the Plans performed in the field shall be reviewed, approved and authorized by the Owner prior to proceeding with the work. Any changes to the Plans without authorization may result in removal of such item at the Contractor's expense and/or nonpayment for the work, at the discretion of the Owner.

Verbal authorized changes to the Plans in the field will not be considered for additional quantities or compensation, unless they are followed by written documentation within 24 hours. Any authorized changes to the Plans which are approved by the Owner for additional compensation shall be in written form indicating all items of work involved and the cost for each item, and will be submitted to the Owner prior to proceeding with the work involved.

105.11 Substitution of Materials and Equipment. If the Contractor desires to use a material, method or type of equipment other than those specified in the Contract, authority from the Engineer/City Engineer to do so must be requested. The request shall be in writing and shall

include a full description of the materials, methods and equipment proposed to be used and an explanation of the reasons for desiring to make the change.

Prior to proposing any substitute material, method or type of equipment, the Contractor shall satisfy itself that the material, method or type of equipment proposed is, in fact, equal to that specified, that such material or type of equipment will fit into the space allocated, that such material or type of equipment affords comparable ease of operations, maintenance and service, that the appearance, longevity and that by reason of cost savings, reduced construction time, or similar demonstrable benefit, the substitution material, method or type of equipment will be in Owner's interest.

The burden of proof of equality of a proposed substitution for a specified material, method or type of equipment shall be upon the Contractor. Contractor shall support its request in writing with sufficient test data and other means to permit the Owner to make a fair and equitable decision on the merits of the proposal. Contractor shall submit drawings, samples, data and certificates for proposed substitute materials. Any material or type of equipment by a manufacturer other than those specified or brand name or model number or of generic species other than those specified will be considered a substitution. The Owner will be the sole judge of whether or not the substitution is equal in quality, utility and economy to that specified.

Approval of a substitution shall not relieve the Contractor from responsibility for compliance with all requirements of the Contract. Contractor shall bear the expense for any changes in the parts of the Work caused by any substitutions.

Substitutions will not be permitted in those instances where the product is intended to accommodate artistic design, specific function or economy of maintenance.

No change will be made in basis of payment for the construction items involved nor in contract time as a result of an authorized change in methods or equipment under these provisions.

105.12 Construction Layout. The Engineer/City Engineer will establish a limited number of control points and associated benchmarks for the contractor's use in establishing lines, grades, profiles, structures, and other associated items of work. In general, the control points will be located approximately 500 feet apart along the project. All other construction staking will be the responsibility of the Contractor. The Contractor shall provide a sufficient workforce skilled in construction layout to establish all lines, slopes, profiles, and structure locations necessary to construct the project according to the plans.

When Section 111, "Roadway Construction Control" is included in the proposal then the Contractor shall comply with the requirements and provisions of such.

105.13 Maintenance During Construction. The Contractor shall maintain the work during construction and until the project is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces, to the end that the roadway or structures are kept in satisfactory condition at all times.

The Contractor shall be responsible for the maintenance of existing drainage ditches and channels within the right-of-way limits, including construction easements if any, from the date all work is begun on the project to the date of its final acceptance. This is not a requirement that the Contractor improve existing drainage ditches and channels, except as shown on the plans or directed by the Engineer/City Engineer. The Contractor shall maintain waterways in such condition that damage to the work or to abutting property will not result from the Contractor's operations. Obstruction of natural flow in waterways by stockpiling or storing materials, or by placement of equipment or supplies without provision for adequate bypassing of such natural flow, will not be permitted. Collections of sediment or debris that prohibits or inhibits normal function of drainage facilities shall be removed promptly.

All costs of maintenance work during construction and before the project is accepted will not be paid for separately, but full compensation therefore will be considered included in the contract unit prices bid for the various items in the Contract.

If the Contractor, at any time, fails to comply with the provisions of this subsection, the City will immediately notify the Contractor of such noncompliance. If the Contractor fails to remedy unsatisfactory maintenance within 24 hours after receipt of such notice, the City may immediately proceed to maintain the project and the entire cost of this maintenance will be deducted from moneys due or to become due the Contractor on the Contract.

All roadway cuts shall be temporarily or permanently repaired in accordance with Section 405, "Asphalt Concrete Patching for Maintenance of Traffic" within 24 hours of the completion of trench backfill for the work, or segment of work, which required the excavation and/or cut.

Section 106. Control of Material

106.01 Quality Requirements. The materials used in the work shall meet all quality requirements of the Contract. Quality control, to ensure that materials and workmanship, prior to and after, being incorporated into the work meets the requirements of the Contract, is the sole responsibility of the Contractor. Testing required for Contractor's quality control, certificates of compliance, mix designs and manufacturing of materials, and as needed for Contractor's operations shall be provided by the Contractor and the costs therefore will not be paid separately but full compensation will be considered included in the contract unit prices bid for associated items.

All Quality Assurance testing, to ensure that the materials and workmanship as a final product meets the requirements of the Contract, will be accomplished and paid for by the Owner. The costs for any retesting required in areas failing to meet the specified requirements shall be paid for by the Contractor.

The materials furnished and used shall be new, except as may be provided elsewhere in these specifications, on the plans or in the Special Conditions. The materials shall be manufactured, handled, and used in a workmanlike manner to ensure completed work in accordance with the plans and specifications.

106.02 Sources of Supply. To expedite the inspection and testing of materials, the Contractor shall notify the Engineer/City Engineer of proposed sources of materials before delivery. The Contractor shall furnish without charge such samples as may be required. Inspection and tests may be performed by the Engineer or Owner's designated testing firm, but it is understood that such inspections and tests, if made at any point other than the point of incorporation in the work, in no way shall be considered as a guarantee of acceptance of such materials nor of continued acceptance of material presumed to be similar to that upon which inspections and tests have been made.

The Contractor shall assume full responsibility for ordering materials of the quality and quantity required and for the delivered costs of such materials. Materials needed in the work shall be furnished by the Contractor unless otherwise stated in the Contract.

106.03 Samples, Tests, and Cited Specifications. All materials will be inspected and tested by the supplier or Contractor as required by these specifications before incorporation in the Work. Work in which untested materials are used without the approval or written permission of the Engineer/City Engineer shall be treated as provided in Subsection 105.09 "Removal of Unacceptable or Unauthorized Work."

Whenever a reference is made in the specifications to a Federal Specification, or to a specification or test designation of the American Association of State Highway and Transportation Officials, the American Society for Testing and Materials, American Water Works Association, or any other recognized national organization, it shall mean the year of adoption or latest revision of the specification or test designation in effect on the day the advertisement for bids is dated. When a specific reference is made to a dated specification or test designation, the revision in effect on that date shall apply.

When requested, the Contractor shall furnish a complete certified statement of the origin, composition, and/or manufacture of materials that are to be used in the Work.

106.04 Certification of Compliance. The Engineer/City Engineer may permit use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificates of Compliance stating that such materials or assemblies fully comply with the requirements of the Contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the Project must be accompanied by a Certificate of Compliance and clearly identified.

Materials or assemblies used on the basis of Certificates of Compliance may be sampled and tested and if found not in conformity with Contract requirement will be subject to rejection whether in place or not.

The form and distribution of Certificates of Compliance shall be as approved by the Engineer/City Engineer.

106.05 Plant Inspection. The Engineer/City Engineer may undertake the observation of materials at the source. In the event plant observation is undertaken the following conditions shall be met:

1) The Engineer/City Engineer shall have the cooperation and assistance of the Contractor and of the producers of materials for the Work.
2) The Engineer/City Engineer shall have full entry at all times to such parts of the plant as may concern the manufacture or production of the materials being furnished.

Adequate safety measures shall be provided and maintained.

It is understood that the Engineer/City Engineer reserves the right to retest all materials prior to incorporation into the Work which have been tested and accepted at the source of supply after the sample have been delivered and to reject all materials which, when retested, do not meet the requirements of these specifications or contract documents.

106.06 Storage of Materials. Materials shall be so stored as to assure the preservation of their quality and fitness for the work and in accordance with requirements of the Specifications; or if not covered in the Specifications, in accordance with the manufacturer's recommendations. Stored materials, even though approved before storage, may again be inspected before their use in the work. Stored materials shall be located so as to facilitate their prompt inspection. Portions of the right-of-way not required for public travel may be used for storage purposes and for the placing of the Contractor's plant and equipment, if approved by the Engineer, but any additional space required therefore must be provided by the Contractor, and at no cost to the Owner. Private property shall not be used for storage purposes without written permission of the owner or lessee, and if requested by the Engineer, copies of such written permission shall be furnished. All storage sites shall be restored to their original condition by Contractor at his expense. Construction materials may not be stored in the roadway for more than five (5) days after unloading.

106.07 Handling Materials. All materials shall be handled in such manner as to preserve their quality and fitness for the work. Aggregates shall be transported from the storage site to the Work in tightly covered vehicles so constructed as to prevent loss or segregation of materials after loading and measuring so that there may be no inconsistencies in the quantities of materials intended for incorporation in the Work as loaded and the quantities as actually received at the place of operations.

106.08 Unacceptable Material. All materials not conforming to the requirements of the specifications at the time they are used shall be considered as unacceptable and all such materials will be rejected and shall be removed immediately from the site of the work unless otherwise instructed by the Engineer/City Engineer. No rejected material, the defects of which have been corrected, shall be used until approval has been given.

106.09 Owner-Furnished Material. The Contractor shall furnish all materials required to complete the Work, except those specified to be furnished by the Owner. Material furnished by

the Owner will be delivered or made available to the Contractor at the points specified in the Special Provisions.

The cost of handling and placing all materials after they are delivered to the Contractor will not be paid for separately, but full compensation therefore will be considered included in the contract unit price(s) bid for the item(s) with which they are used.

The Contractor will be held responsible for all material delivered by the Owner through this arrangement. Deductions will be made from any moneys due the Contractor to make good any shortages and deficiencies, from any cause whatsoever; for any damage that may occur after such delivery; and for any demurrage charges.

106.10 Salvaged Materials. All salvaged materials in reusable condition, including pavement millings, water and drainage pipe, valves, fittings and other items, remain the property of the City of Fayetteville. Contractor shall deliver items to location directed by Engineer/City Engineer or designated in specifications. Items not considered of value shall be disposed of by the Contractor at his expense.

106.11 Automatically Controlled Equipment. Whenever a breakdown or malfunction of the automatic controls occurs on scales, scale printers, batch plants, or mixing plants, the equipment may be operated manually or by other methods for a period not to exceed two working days, provided that such alternate methods of operation produce results otherwise meeting the Specifications.

Section 107. Quality Control Requirements

107.01 Description. This section shall set forth the requirements for Quality Control, including material testing and submittal requirements.

107.02 Submittal Requirements. Submittals shall comply with subsection 105.02, “Plans and Submittals” and the following:

All submittals required by the contract shall be submitted and approved before associated work is begun. Sufficient copies shall be submitted for the Engineer to retain two copies, the City to receive two copies and the Contractor to receive a minimum of one approved copy.

The following submittals are required:

1) Project Schedule
2) Concrete Mix Design(s)
3) Asphalt Mix Design(s)
4) Concrete Pipe Certifications
5) Precast Box Culvert Shop Drawings and Hydraulic Design
6) Listings of Project Personnel and Contact Phone Numbers
7) Traffic Control Plan
8) Striping Material
9) Reinforcing Steel Fabrication Drawings

10) Signal Equipment
11) Other Submittals as requested by the Engineer/City Engineer

The Engineer/City Engineer will review all submittals promptly and notify the contractor of their approval or denial. The contractor shall have approved submittals before beginning any associated work. Any work accomplished before approved submittals are received is subject to rejection and removal from the job at the contractor's expense.

107.03 Material Submittals. As a minimum, the following material submittals will be required:

1) Samples of on-site soils, if these soils are to be used as fill in the roadway. The Engineer/City Engineer will determine the number of samples to be taken.
2) Samples of soils to be used as borrow material.
3) Samples of material to be used as aggregate base under the roadway. One sample will be required initially. Additional samples will be taken during placement of aggregate base if deemed necessary by the Engineer/City Engineer.
4) Samples of material to be used as topsoil. Alternatively, the Engineer/City Engineer will inspect the site from which the topsoil is to be taken to determine its acceptability. All material samples shall be taken in the presence of a representative from the Quality Assurance (QA)/Quality Control (QC) Laboratory. Other submittals may be required as determined by the Engineer/City Engineer.

107.04 Testing, Observation and Inspection Requirements

(a) Field Observations and Inspections. The Construction Observer will be on-site during all work which is to be paid for under the contract. The contractor shall provide one person as its on-site representative to receive instructions from the Engineer/City Engineer. This person shall be qualified and experienced in job superintendence.

The Contractor's representative shall be on-site during all work that is to be paid for under the contract. If the Contractor's representative is not on-site, the Engineer/City Engineer may order all work be stopped until such time as the contractor's superintendent returns to the job site.

The Contractor shall provide at least 24 hours of advance notice for any concrete placement.

Unless otherwise specified, the City will provide, at its expense, an independent quality assurance/quality control (QA/QC) laboratory to accomplish quality assurance testing. All testing will be scheduled with the QA/QC lab and the Contractor by the City or Engineer. The Contractor shall provide or make available samples of all material as required by these specifications as well as any other materials deemed necessary by the Engineer/City Engineer.

(b) Testing Requirements. The Contractor shall inform the Construction Observer at least 24 hours in advance of any required testing. The following is the minimum sampling and testing frequency required:

1) **Cross Drain Backfill:** minimum of one density test per layer of material placed per pipe or box culvert location.
2) **Storm drain/utility pipe backfill:** minimum of one density test per 500 lineal feet of pipe or portion thereof when the pipe is located in the street or under the curb and gutter.
3) **Embankment:** minimum of one density test per layer per 500 lineal feet of roadway or portion thereof.
4) **Subgrade:** minimum of one density test per 500 feet of roadway with a minimum of three density tests per project, and one sieve analysis and plasticity index test per project per material type for subgrade soil classification.
5) **Imported Embankment and Subgrade Materials.**
   (1) One moisture/density relationship test (AASHTO T-99 with Note 7, or AASHTO T-180 with Note 8) shall be taken at the beginning of the project, and one additional moisture/density relationship test shall be taken for every 5000 cubic yards of imported material. ASTM testing methods for moisture/density relationships may not be used for embankment and subgrade materials.
   (2) For every 20 density tests performed in accordance with the testing frequency for subgrade and embankments, a one-point moisture/density test shall be taken per AASHTO T 272.
6) **Aggregate base course:** minimum of one density test and one depth measurement (depth sounding) per 500 lineal feet of roadway, with a minimum of three density tests and three depth measurements per project; minimum of one gradation test per project.
7) **Asphalt Concrete Hot Mix.** Testing shall be as specified in Section 403. Core holes shall be filled with non-shrink grout mix by the Contractor. All holes shall be protected from traffic until the grout has cured.
8) **Concrete for Drainage Structures and Sewer Manholes.** A minimum of one set of three concrete cylinders per day's concrete placement will be required for drop inlets, junction boxes, and manholes. Other placements will be sampled at the rate of 1 set of cylinders per 30 cubic yards of concrete placed. Slump and air entrainment tests will be conducted at the time of cylinder preparation. One cylinder will be broken at seven days and the other two will be broken at 28 days.
9) **Concrete for Curb and Gutter.** A minimum of one set of three concrete cylinders per 500 lineal feet of curb and gutter or portion thereof. One cylinder will be broken at seven days and the other two will be broken at 28 days.
10) **Concrete Pavement.** A minimum of one set of three concrete cylinders per 500 lineal feet of pavement or portion thereof, with a minimum of one set per project. The set shall be broken in seven and 28 days as described above. Also, one core and depth measurement per 500 lineal feet of complete pavement with a minimum of one per project. Core holes shall be filled with non shrink grout mix. All holes shall be protected from traffic until the grout has cured.

(c) Provisions for Acceptance of Nonspecification Materials. This section provides for corrective actions to be taken when test results indicate nonspecification materials or workmanship have been incorporated into the project. Any penalties, which are assessed, will be deducted from the contract price.

1) **Density** for Embankment, Subgrade, Pipe Backfill, and Crushed Stone Base Course: Recompact until the minimum density is obtained.
2) **Depth of Crushed Stone Base Course:** The depth of the crushed stone base shall be within plus or minus one-half inch (± ½") of the required depth. If the deficient depth is greater than one-half inch (½"), additional material shall be added to reach the required depth. This material shall be incorporated into the existing material by the use of rippers or other equipment extending a minimum of 3 inches into the existing material.
3) **Depth and Density of ACHM Binder and Surface:** Depth and density requirements shall be as specified in Section 403 "Asphalt Concrete Hot Mix" of these specifications.
4) **Surface Tolerance of ACHM Surface:** Surface tolerance of ACHM Surface shall be as specified in Section 403 "Asphalt Concrete Hot Mix" of these specifications.
5) **Concrete Strength:** The average 28-day compressive strength of the two cylinders of a set shall be at least the required strength of the concrete specified. If the average strength is lower, the following penalties will be assessed:

% of Minimum Strength	% Reduction in Contract Price
92-100	10
85-92	25
Below 85%	Remove and Replace

6) **Concrete Pavement Depth:** The concrete pavement depths shall be within plus or minus three-eighths inch (± 3/8") of the required depth plus any additional depth required as a result of a deficient subbase depth. The average of all depth measurements shall not be less than the required depth, and any depth in excess of plus three-eighths inch (± 3/8") will not be used in computing the average depth. If the average depth is less than the required depth, the following penalties shall be assessed:

Deficient Depth	% Reduction in Contract Price
Req. depth to 1/8 inch	1
1/8 inch to 1/4 inch	3
1/4 inch to 3/8 inch	7
3/8 inch to 1/2 inch	15
1/2 inch to 5/8 inch	25
5/8 inch to 3/4 inch	40
More than 3/4 inch	Remove and Replace

7) **Concrete Pavement Surface:** The finished pavement surface shall have a maximum deviation of ¼" when tested with a 10' straight edge parallel to the flow of traffic. Pavement cross slope shall vary by no more than 1/8" in 10' when tested with a straightedge.

Grinding shall be performed, if necessary, to remove any deviations in excess of ¼". The grinding equipment shall be power driven and specifically designed to smooth and texture portland cement concrete by means of diamond blades. Areas that have been ground shall be re-grooved by grooving in accordance with subsection 601.16 for Class 7 surface finish, to provide a uniform texture equal in roughness to the surrounding pavement.

In addition to these requirements, if any individual test falls below the minimum requirements, the area represented by this test shall be assessed the appropriate penalty under the applicable section above.

107.05 Testing and Material Specification. These Specifications reference AASHTO Standards for testing and material. Unless specifically stated otherwise, the corresponding ASTM Standard will be allowed in lieu of the AASHTO Standard.

Section 108. Legal Relations and Responsibility to the Public

108.01 General. The Contractor shall keep fully informed of all Federal and State laws, all local laws, ordinances, and regulations, and all orders and decrees of bodies or tribunals having any jurisdiction or authority which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. Further, the Contractor shall at all times observe and comply with all such laws, ordinances, regulations, quarantines, orders, and decrees; and shall protect and indemnify the City and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees.

All work pertaining to Electrical, Plumbing, and/or Building Crafts shall be performed in strict accordance with governing Federal, State, City, and Local Codes and Ordinances, with particular attention to the current editions of the Arkansas State Plumbing Code and the National Electrical Code as adopted by the National Fire Protection Association.

The Contractor shall comply with applicable Federal, State, and local laws governing safety, health, and sanitation. The Contractor shall provide safeguards, safety devices, and protective equipment and take any other action necessary to protect the life and health of employees on the project and the safety of the public and to protect property in connection with the performance of the work covered by the Contract.

Unless specified elsewhere in these specifications, the work involved or the delay or cost incident to compliance with these regulations will not be paid for separately, but full compensation therefore will be considered included in the contract unit prices bid for the various items of the Contract.

108.02 Hazardous Substance. If the release of a suspect hazardous substance has occurred, the Contractor shall notify the Engineer/City Engineer. This will not relieve the Contractor or responsible parties of the obligation to notify other appropriate agencies and will not relieve responsible parties of any liability.

Commonly used materials which could be potentially hazardous substances if they are spilled or enter waterbodies are: asphalt materials, concrete, cement, paint, solvents, petroleum products, fertilizers, concrete curing compound, lime, linseed oil, asphalt additives, and concrete additives. This list is not all inclusive.

Notification should be made if, at any time, there is an indication of a spill. Indicators could be:

1) Leaking or empty containers, surface staining, chemical odors, vegetation damage, etc.
2) Oil, grease or petrochemical substances, which produce residue, coat the banks and/or bottoms of a waterbody, or produce a visible, colored film on the surface.
3) Distinctly visible solids, scum, or foam of a persistent nature, or slime, bottom deposits, or sludge banks in a waterbody.

108.03 Permits, Licenses, and Taxes. Unless specified otherwise in these Specifications, the Contractor shall procure all permits and licenses, pay all charges, fees and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work. These costs will not be paid for directly, but will be considered included in the contract unit prices bid for the various items of the Contract.

The Owner will obtain any railroad and Arkansas Department of Transportation permits when required.

The Contractor shall obtain and pay for all permits, design fees and related costs resulting from a request by the Contractor to substitute materials or designs for those shown on the drawings or specified in these specifications.

108.04 Patented Devices, Materials, and Process. Contractors employing any design, device, material, or process covered by letters of patent or copyright shall provide for such use by suitable legal agreement with the patentee or owner. Contractors and their Sureties shall indemnify and save harmless the Owner, any affected third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material, or process, or any trademark or copyright, and shall indemnify the City of Fayetteville for any costs, legal expenses, and damages that it may incur by reason of any infringement, at any time during the prosecution of or after the completion of the work.

108.05 Restoration of Surfaces Opened by Permit. The right to construct or reconstruct any utility service in the highway or street, or to grant permits for such work, at any time, is hereby expressly reserved by the City of Fayetteville or the proper authorities of the political entity in whose jurisdiction the work is done and the Contractor shall not be entitled to any damages either for the digging up of the street or for any delay occasioned thereby.

Any individual, firm, or corporation wishing to make an opening in the roadway must secure a permit from the proper authority. The Contractor shall allow parties bearing such permits, and only those parties, to make openings in the roadway. When ordered by the Owner, the Contractor shall make in an acceptable manner all necessary surface repairs due to such openings and such necessary work will be paid for as extra work, or as provided in these specifications, and will be subject to the same conditions as original work performed.

108.06 Sanitary Provisions. The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of the employees as may be necessary to comply with the requirements of the State and local Boards of Health, or of other bodies or tribunals having jurisdiction. Drinking water shall be provided from an approved source, so piped or

transported as to keep it safe and fresh and served from single service containers or satisfactory types of sanitary drinking stands or fountains. All such facilities and services shall be furnished in strict accordance with existing and governing health regulations.

108.07 Public Safety and Convenience. The Contractor's work shall at all times be conducted so as to assure the least possible obstruction to traffic. The safety and convenience of the general public and the residents along the street and the protection of persons and property shall be provided for by the Contractor as specified by these Specifications and as directed by the Owner.

All roadway cuts shall be temporarily or permanently repaired in accordance with Section 405, "Asphalt Concrete Patching For Maintenance of Traffic" within 24 hours of the completion of trench backfill for the work, or segment of work, which required the excavation and/or cut.

The Contractor shall be responsible for providing a fence to control livestock and pets in areas where existing fencing is altered under the Contract. The City may elect to include temporary fencing as a pay item under subsection 512, "Fences" of these Specifications. If temporary fencing is not included as a pay item within the proposal, then temporary fencing that is suitable for the required use shall be supplied, shall be a subsidiary item, and no separate payment shall be made for this temporary fencing. Additionally, if temporary fencing is not included as a pay item within the proposal then permanent fence if included within the plans and/or the proposal may be constructed initially, or in lieu of temporary fencing.

The Contractor shall not create a public nuisance while performing the various operations of the work. Excessive noise between the hours of 10 P.M. and 6 A.M., dust from haul roads, County roads, or State roads, and mud tracked onto City, County or State roads or streets by equipment may be considered by the City to be a public nuisance.

The Contractor will be responsible for maintaining U.S. mailboxes within the project limits in such a manner that the public may receive continuous mail service according to U.S. Postal Service regulations. Unless otherwise provided, upon completion of the project, mailboxes will be replaced as near as practicable to their original location.

108.08 Railway Provisions. All work on railroad property shall be accomplished in strict compliance with the plans, these specifications, and such Special Provisions as are appropriate to the Contract. If the work near the railway requires a permit, the Contractor shall be responsible for acquiring this permit and adhering to the permit requirements.

All work to be performed by the Contractor in construction on the railroad right-of-way shall be performed at such times and in such manner as not to unnecessarily interfere with the movement of trains or traffic upon the track of the Railway Company. The Contractor shall use all care and precaution to avoid accidents, damage, or unnecessary delay or interference with the Railway Company's trains or other property.

Plans for all sheeting or cofferdams for foundation work adjacent to operated track, and plans of falsework, staging, protective sheeting, or other temporary construction near the operated track

shall be approved by the Railway Company. The Contractor shall construct the work according to the approved plans.

108.09 Work Within Regulated Floodways. All work within regulated floodways shall be accomplished within the requirements of all permits issued by the Federal Emergency Management Agency (FEMA), Corps of Engineers (COE), The State of Arkansas, the City, or other applicable agencies, and with Section 110 of the ARDOT Standards "Protection of Water Quality and Wetlands."

(a) Responsibility for FEMA Permit. Within regulatory floodways all permanent and temporary fills/structures must be in accordance with FEMA and local governmental requirements. The Owner obtains all required permits and/or variances for essential work in the regulated floodway before the Contract is awarded. The Owner will apply for Contractor requested variances which it determines are necessary. The Contractor should be aware that requested temporary fills/structures may not be approved or may require mitigation.

(b) Corps of Engineers Section 404 Permit Requirements. Placement of temporary fills/structures within a regulatory floodway may also require alteration of the existing COE 404 Permit.

(c) Compensation and Extension of Contract Time. The Contractor will not be granted additional compensation or contract time due to requested floodway variances that are considered by the Engineer/City Engineer to be for the convenience of the Contractor. If, however, due to no fault of the Contractor, a floodway variance is deemed by the Engineer/City Engineer to be necessary, additional contract time and/or compensation may be considered according to the provisions of Subsection 109.10 "Claims for Adjustment and Disputes."

All permits issued to the Contractor by the U.S. Army Corps of Engineers, or other applicable agencies, for the convenience of the Contractor in accomplishing the Work, shall be complied with in full and the Project will not be accepted until the permittor has accepted the work covered by permit. The Contractor will be responsible for obtaining a release from the permittor before acceptance.

108.10 Use of Explosives. When the use of explosives is necessary for the prosecution of the work, the Contractor shall exercise the utmost care not to endanger life or property, including new work. The Contractor shall comply with all laws and ordinances regarding the use of explosives; further, the Contractor shall be responsible for all damage resulting from the use of explosives.

All explosives shall be stored in a secure manner in compliance with all laws and ordinances, and all such storage places shall be clearly marked. Where no local laws or ordinances apply, storage shall be provided satisfactory to the City and in accordance with the Occupational Safety and Health Act of 1970, and the Safety and Health Regulations for Construction promulgated thereunder, but not closer than 1,000' from the road or from any building or camping area or place of human occupancy.

The Contractor shall notify the Fire Marshal of any explosive storage sites.

The Contractor shall notify each public utility company having structures in proximity to the site of the work of any intention to use explosives. Such notice shall be given sufficiently in advance to enable the companies to take such steps as they may deem necessary to protect their property from injury.

108.11 Protection and Restoration of Property and Landscape. The Contractor shall be responsible for the preservation of all public and private property and shall protect carefully from disturbance or damage all land monuments and property marks until the Engineer/City Engineer has witnessed or otherwise referenced their location, and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character:

1) during the prosecution of the work, resulting from any act, omission, neglect, or misconduct in the manner or method of executing the work, or;
2) at any time, due to defective work or materials, and said responsibility will not be released until the project has been completed and accepted.

Property shall include but not be limited to street and roadway signs, right-of-way monuments, roadway lighting, traffic signal equipment, and any conduits and wiring. Should it become evident that any item, such as listed above, is in conflict with the proposed work, the Contractor will notify the Engineer/City Engineer so that proper steps can be taken to adjust, remove, or otherwise eliminate the conflict.

Trees located outside of the easements or as indicated on the plans shall be retained and protected. Any roots 2” or larger in diameter are to be clean cut with a hand saw where they conflict with excavation work.

When or where any direct or indirect damage or injury is done to public or private property by or as a result of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof, the Contractor shall restore, or bear the expense of restoring, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring as may be directed, or shall make good such damage or injury in an acceptable manner. Failure to do so within a period of time deemed reasonable by the Owner shall constitute noncompliance, and the City may cause the entire cost of the restoration to be deducted from moneys due or to become due the Contractor on the Contract.

108.12 Load Restrictions. The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads being maintained for the traveling public. A special permit will not relieve the Contractor of liability for damage that may result from construction equipment operations. The operation of equipment of such weight or so loaded as to cause damage to structures or the roadway or to any other type of construction will not be permitted.

When hauling materials over the base or surface courses under construction, the Contractor shall limit the hauling as necessary to prevent damage. No loads will be permitted on bases, pavements, or structures before the expiration of the specified curing period controlling such operations. The Contractor shall be responsible for repair of all damage resulting from construction operations. No separate payment will be made for such repairs.

108.13 Opening Section of Roadway to Traffic. Whenever any roadway, or portion thereof, is in an acceptable condition for travel, it shall be opened to traffic, as may be directed, and such opening shall not be held to be in any way an acceptance of the roadway, or any part of it, or as a waiver of any of the provisions of these specifications and the Contract. Necessary repairs or renewals made on any section of the roadway opened to travel under instructions from the Engineer/City Engineer, due to defective material or work, or to natural causes, other than normal wear and tear, pending completion and acceptance of the roadway, shall be performed at no cost to the Owner.

If the Contractor is dilatory in completing shoulders, drainage structures, or other features of the work, the Engineer may give notification in writing and establish therein a reasonable period of time in which the work should be completed. If the Contractor is dilatory or fails to make a reasonable effort toward completion in this period of time, the Engineer/City Engineer may take action as provided in subsection 105.01 “Authority of the Engineer.” On such sections that are so ordered to be opened, the Contractor shall conduct the remaining construction operations so as to cause the least obstruction to traffic and shall not receive any added compensation due to the added cost of the work by reason of opening such section to traffic.

108.14 Contractor’s Responsibility for Work. Until final acceptance of the project by the City, the Contractor shall have the charge and care thereof and shall take every precaution against injury, theft, or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries, thefts, or damages to any portion of the work occasioned by any of the above causes before final acceptance, and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God, of the public enemy, or of governmental authorities.

In case of suspension of work from any cause whatever, the Contractor shall be responsible for the project and shall take such precautions as may be necessary to prevent damage to the project, provide for normal drainage and maintenance of the traveled way, and shall erect any necessary temporary structures, signs, or other facilities. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established plantings, seedings, and soddings furnished under the Contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

The protection of the work shall be accomplished at no cost to the City.

In case of errors or negligence on the part of the Contractor, any expenses incurred by the City for engineering, observation, inspection, testing, design, or evaluation relative to correction of the work will be assessed against the Contractor.

108.15 Contractor's Responsibility for Utility Facilities and Services. At points where the Contractor's operations are adjacent to railroad or utility facilities, damage to which may result in loss or inconvenience, work shall not begin until all arrangements necessary for the protection thereof have been made.

The Contractor shall cooperate with the owners of any utility facilities in their removal and rearrangement operations so that these operations may progress in a reasonable manner, that duplication of rearrangement work may be reduced to a minimum, and that services rendered by those parties will not be unnecessarily interrupted.

In the event of interruption of utility services, as a result of accidental breakage or as a result of being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate with the said authority in the restoration of service. If utility service is interrupted, repair work shall be continuous until the service is restored. No work shall be undertaken around fire hydrants until provisions for continued service have been approved by the Owner.

108.16 Furnishing Right-of-Way. The City will be responsible for the securing of all necessary rights of way in advance of construction within the limits indicated on the plans. Acquisition of right-of-way by the City does not include areas required by the Contractor for material sources (borrow, gravel, topsoil, sod, etc.), plant sites, equipment storage, stockpiles, disposal of waste or excess material, or any other areas required for the proper prosecution of the work. The Contractor is responsible for obtaining, at no cost to the City, areas outside the right-of-way required for such purposes and shall, at the City's request, furnish copies of agreements with the property owners. The Contractor may, with the approval of the City, use areas within the right-of-way that are outside the construction limits for these purposes. Erosion control, prevention of water pollution, and restoration of all such areas, both inside and outside the right-of-way, shall be performed by the Contractor according to the specifications and at no cost to the City.

108.17 Personal Liability of Public Officials. In carrying out any of the provisions of these specifications, or in exercising any power or authority granted to them by or within the scope of the Contract, there shall be no liability upon the City or its authorized representatives, either personally or as officials of the City, it being understood that in all such matters they act solely as agents or representatives of the City of Fayetteville.

108.18 No Waiver of Legal Rights. Final acceptance according to Subsection 109.15(b) "Final Acceptance" shall not preclude the City from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the City be precluded from recovering from the Contractor or the Surety, or both, such overpayment as it may sustain, or by failure on the part of the Contractor to fulfill obligations under the Contract. A waiver on the part of the City of any breach of any part of the Contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the Contract, shall be liable to the City for any or all of the following: fraud or such gross mistakes as may amount to fraud, the City's rights under any warranty or guaranty, or any latent defects in the work.

Section 109. Prosecution and Progress

109.01 Subletting of Contract. The Contractor will be permitted to sublet a portion of the Contract, except that work amounting to not less than 40% of the total Contract amount must be performed by the Contractor's organization. If the Bidder intends to sublet any portion of the Work, the Bidder shall furnish a list of subcontractors as a material part of his sealed proposal on the form provided, listing the description of work to be performed by each subcontractor. The experience, past performance, and ability of each proposed Subcontractor will be considered in the evaluation of bids. Upon request, the bidder shall furnish experience statements, with reference to any requested Subcontractor, prior to Notice of Award. If there being no objection in writing by the Owner to the listed subcontractors prior to the award of the Contract, the subcontractors will be deemed acceptable to the Owner. If bidder does not intend to sublet any part of the work, he shall insert the word "NONE" on the form provided. The Contractor shall not sublet, sell, transfer, assign, or otherwise dispose of the contract or any portion thereof, of his right, title, or interest therein, without prior written consent of the Owner and of the surety. The Contractor shall not remove and/or substitute the listed subcontractors without prior written consent of the Owner.

Consent to sublet, assign, or otherwise dispose of any portion of the contract shall not be construed to relieve the Contractor of his liability under the contract and bonds.

The Contractor shall perform with his own organization, unless otherwise authorized by the Special Conditions, work amounting to not less than 40% of the total Contract amount. No subcontractor shall further subcontract any portion of the work without the written consent of the Contractor and acknowledgement of the Owner.

The Owner will not recognize any subcontractor on the Work as a party to the contract. Nothing contained in any subcontract shall create any contractual relation between the subcontractor and the Owner. The Contractor will be held responsible for the progress of the sublet work in accordance with the contract progress required.

109.02 Prosecution and Progress. Contractor shall be responsible for planning, scheduling and reporting the progress of the work to ensure timely completion of the Contract. For Contracts under $2 million, or where specified in the Special Conditions, the following schedule requirements shall apply: Prior to or at the Preconstruction Conference, the Contractor shall submit two copies of his proposed schedule of operations for acceptance by the Engineer/City Engineer. The proposed Schedule shall be a bar chart or schematic (arrow) diagram showing the work stages and operations for all major activities required by the Contract, including the starting and completion of date of each part, and shall include dates of any proposed road closure, and any significant or required milestone events. Unless approved by the Engineer/City Engineer, activities shown on the Schedule shall not exceed 15 working days in length. The Schedule shall be of sufficient detail to allow day-to-day monitoring of Contractor's progress.

For Contracts over $2 million, the following Critical Path Schedule requirements shall apply: Prior to or at the Preconstruction Conference, the Contractor shall submit a preliminary network analysis system defining the Contractor's planned operations during the first sixty calendar days after the date of the Notice to Proceed. The Contractor's general approach to the remainder of the Project shall be indicated. Within 30 calendar days of the Notice To Proceed, the Contractor shall submit a complete network analysis system, consisting of logic diagrams, computer mathematical analysis, calendar, and narration, to cover the Contractor's anticipated time schedule for the complete Project. As a minimum, the network analysis system shall include the following features:

1) Shall be time-scaled in calendar days with activities plotted on their early start and finish dates. Unless approved by the Engineer/City Engineer, activities shown on the Schedule shall not exceed 30 working days in length.
2) Network diagram shall show the order and interdependence of activities and the proposed sequence in which the work is to be accomplished as planned by the Contractor in coordination with all subcontractors. The sequence and logic shall be clear. The critical path activities shall be prominently distinguished.
3) Network diagram shall show for each activity the preceding and following activity, activity description, the total float, and the duration of the activity.
4) Activities shown shall include, in addition to construction activities, such tasks as submittal review and delivery times for long-lead time items, franchise utility work, subcontractor work, and owner-furnished equipment delivery.

The Contractor shall submit monthly updated Schedules with their pay estimate requests. The Contractor shall indicate on such updated Schedule actual construction progress, extra work added to Contract, and any proposed changes to the operation sequence. If the progress of the Work is significantly behind schedule, the updated Schedule shall also reflect any revised operation sequence, changes in equipment, labor forces, or working shifts, or other pertinent factors by which insufficient progress will be made up to allow the Contract completion within the time set forth in the Contract, including time extensions granted to date.

All submitted schedules and updated schedules shall be reviewed and accepted by the Engineer/City Engineer. If after review, the Engineer/City Engineer determines that the schedule is not acceptable per the requirements listed above, the Contractor shall make adjustments and resubmit the schedule within 30 calendar days. Failure of the Contractor to submit an acceptable Schedule or monthly updated Schedule as required will be grounds for Owner to withhold an additional ten percent on the monthly progress payments, in addition to the normal retention, until Contractor is in compliance. Additional money withheld will be paid, upon compliance, in the next scheduled monthly estimate.

Acceptance of Contractor's schedules by Engineer/City Engineer shall not be construed as relieving Contractor of the obligation to complete the Work within the Contract Time; or as granting, rejecting, or in any other way acting on Contractor's requests for adjustments to the date for completing Contract Work, or claims for additional compensation. Such requests shall be processed in strict compliance with other relevant provisions of the Contract.

No measurement or direct payment will be made for Contractor costs relating to preparation and submission of schedules, updates and revisions thereto, the cost being considered as included in the prices paid for Contract items.

Contractor shall carry on the work and maintain the progress schedule during all disputes or claims with Engineer/City Engineer. No work shall be delayed or postponed pending resolution of any disputes or claims, except as Contractor and the Owner may otherwise agree in writing.

Float time is not for the exclusive use or benefit of either the Owner or Contractor. Extension of time for performance may be granted, as allowed in subsection 109.08, for delays caused solely by action or inaction by the Owner to the extent that equitable time adjustment for the activity affected exceeds the total float of the project, or where an impact on the contract completion date can be shown.

109.03 Limitations of Operations. The Contractor shall conduct the work at all times in such a manner and in such sequence as will assure the least interference with traffic and utility services. Due regard shall be given to the location of detours, bypasses, and to the provisions for handling traffic and utility services. No work shall be opened up to the prejudice or detriment of work already started. The Engineer/City Engineer may require the Contractor to finish a section on which work is in progress before work is started on any additional sections if the opening of such section is essential to public convenience. For roadway overlay projects and drainage projects, each individual street or section of drainage must be completed, including all site restoration, within 45 days of the start of work operations within that street or section, unless otherwise authorized by the Engineer/City Engineer.

Except in connection with the safety or protection of persons or the work or property at the site, and except as otherwise indicated in the Contract Documents, all work that requires inspection shall be performed during City of Fayetteville regular working hours, and Contractor will not permit overtime work or the performance of work on Saturday, Sunday, or any legal holiday as designated in Subsection 101(c) “Definitions” without Engineer/City Engineer’s written consent. Contractor to submit a written request to the Engineer/City Engineer for non-regular working hours 48 hours in advance of the start of such work.

109.04 Character of Workers, Methods, and Equipment. The Contractor shall at all times provide sufficient materials, equipment, and labor to guarantee the completion of the Project according to the Plans and Specifications within the contract time. The Contractor shall advance the Work so that the available time is appropriately utilized in order to complete the Work within the contract time.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform all work properly and satisfactorily.

Any person employed by the Contractor or by any subcontractor who, in the opinion of the Engineer, does not perform work in a proper and skillful manner, or is intemperate, belligerent or disorderly shall, at the written request of the Engineer, be removed forthwith by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without the approval of the Engineer.

Should the Contractor fail to remove such person or persons as required above, or fail to furnish suitable and sufficient personnel for the proper prosecution of the Work, the Owner may suspend the work by written notice and withhold moneys due until such orders are complied with.

All equipment that is proposed to be used on the Work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the project shall be such that no injury to the roadway, adjacent property, or other facilities will result from its use.

When the methods and equipment to be used by the Contractor in accomplishing the construction are not prescribed in the Contract, the Contractor is free to use any methods or equipment that are demonstrated to the satisfaction of the Engineer as being capable of accomplishing the Contract work in conformity with the requirements of the Contract.

When the Contract specifies that the construction be performed by using certain methods and/or equipment, such methods and/or equipment shall be used unless others are authorized by the Engineer in accordance with Subsection 105.11 “Substitution of Materials and Equipment.”

109.05 Determination of Contract Time.

(a) General. The time allowed for the completion of the Work included in the Contract will be stated in the Proposal and Contract, and will be known as the "Contract Time". The contract time will be specified as a fixed completion date or as calendar days.

The Contractor shall take into consideration all normal conditions considered unfavorable to the normal progress of the Work and place a sufficient work force and equipment on the project to ensure completion of the Work within the contract time.

The Engineer/City Engineer will determine the date upon which the Contract is substantially complete and time assessment will cease. In the event cleanup is necessary or items found at the final inspection are to be corrected, the Contractor shall complete this work in a timely manner or the Engineer/City Engineer will resume time charges.

(b) Fixed Completion Date. When the contract time is specified as a fixed date, it will be the date on which all work on the project shall be substantially complete.

(c) Calendar Day. Calendar day contract time includes delays for normal weather-related events, such as rain, snow, and freezing temperatures that may affect the progress of the construction in the following amounts on a per-month basis as hereinafter set out. Only weather-related delays in excess of these amounts will be considered for time extensions, if requested by

the Contractor. Days Included in Contract Times for Normal Weather-Related Events, on a monthly basis, are:

Month	Days
January	11
February	9
March	8
April	8
May	8
June	8
July	7
August	7
September	7
October	7
November	7
December	8

No changes in contract times will be allowed for any reason without a request in writing from the contractor. This request shall include reasons for the request with supporting documentation as proof of extraordinary delays beyond the contractor's control. Normal rainfall amounts and soil conditions will not be considered as reasons for extensions of time, nor will workload of the Contractor. The request must be submitted for to the Engineer/City Engineer within 5 days of the end of the month to be considered. No compensation will be made for monetary damages due to weather delay(s).

(d) Working Day. Only when the contract time is specified in working days, the provisions of Section 109.08(d) shall apply.

Time will be assessed for each day on which, in the judgment of the Engineer/City Engineer and subject to the limitations below, conditions allow the Contractor to effectively utilize 60% of normal forces and equipment to prosecute the work required at that time, for at least 60% of the Contractor's normal working hours, regardless of whether the Contractor actually works.

The Engineer/City Engineer will not assess a working day when conditions exist beyond the control and without the fault of the Contractor that prevent the utilization of forces and equipment as defined above. Also, for the purpose of assessment of working days, inaccessibility to a portion of the work due to utility conflict or utility work, either of which prevents utilization of forces and equipment as defined above, will be considered as an adverse working condition for the time exceeding that specified in the Contract for the utility adjustment. The ability of vendors, suppliers, and subcontractors to provide materials and/or services is considered within the Contractor's control for the purpose of assessment of working days.

Time from December 21 through January 15, inclusive, will not be assessed against the contract time.

Saturdays and City recognized holidays, other than those designated above, which may be declared by the City for certain special or unusual circumstances, will be optional to the Contractor as working days, and time will not be assessed unless work is performed that requires inspection. If work is performed, contract time assessment will be based upon the same conditions as a normal working day.

Contract time will not be assessed during a full suspension of the work as ordered by the Engineer/City Engineer. During a partial suspension of the work as ordered by the Engineer/City Engineer, the contract time will be assessed in direct proportion to the ratio of the money value of the items not suspended to the total contract amount.

Each pay estimate will state the each working day charged during the preceding period and the total number of working days charged to date. If the Contractor disagrees with the working days charged by the Engineer/City Engineer, then the Contractor shall, within 10 calendar days of signing the pay estimate, give the Engineer/City Engineer written notice of such disagreement and the reasons therefore. If the Contractor does not provide written notice within 10 calendar days of signing the pay estimate, no subsequent request for review will be considered.

109.06 Rights in and Use of Materials Found on the Work. The Contractor, with the approval of the Engineer, may use on the Project such stone, gravel, sand, or other material, determined suitable by the Engineer, as may be found in the planned excavation and will be paid both for the excavation of such materials at the corresponding contract unit price and for the pay item for which the excavated material is used. However, the Contractor shall replace with other acceptable material at no cost to the Owner all of that portion of the excavation material so removed and used that was needed for use in the embankments, backfills, approaches, or otherwise. No charge for the material so used will be made against the Contractor. The Contractor shall not excavate or remove any material from within the roadway location that is not within the grading limits, as indicated by the slope and grade lines, without written authorization from the Engineer.

Planned excavation, for the purposes of this subsection, is defined as all excavation shown on the plans and/or as changed by the Engineer for any purpose other than obtaining additional material lying within the planned typical sections and slopes. Planned excavation also includes any excavation made beyond the ends of the Project for the purpose of blending the new construction into the existing roadway.

Unless otherwise provided, any material from any existing structures designated salvageable that is to remain the property of the owner, may be used temporarily by the Contractor in the erection of the new structure. Such material shall not be cut or otherwise damaged. Material thus used and subsequently cut or damaged by the Contractor's action or inaction shall be replaced in kind with new material of like dimension at no cost to the Owner.

109.07 Final Clean Up. Upon completion of the Work and before acceptance and final payment will be made, the Contractor shall remove from the right-of-way, from any temporary plant sites, and from any temporary equipment and material storage sites, all construction equipment, falsework, discarded material, rubbish, debris, temporary structures, footings, and all

surplus material. The Contractor shall restore in an acceptable manner all property, both public and private, that has been damaged during the prosecution of the work and shall leave the waterways unobstructed and the roadway in a neat and presentable condition throughout the length of the work under contract.

No burning will be permitted on City of Fayetteville property, right-of-way, or easement without an approved burn permit issued by the City of Fayetteville Fire Department and concurred with by the Engineer. It is the Contractor's responsibility to determine prior to bidding whether or not a burn permit will be approved and issued. When perishable material is burned, it shall be under the constant care of a competent watcher. Burning shall be accomplished at such times and in such manner that the surrounding vegetation, adjacent property, or anything designated to remain on the right-of-way will not be jeopardized. Contractor shall cease all burning when meteorological conditions are unsuitable for burning operations. Materials and debris that cannot be burned shall be removed from the right-of-way and disposed of at locations off the project.

Contractor shall have proposed dump sites for waste material approved by the City of Fayetteville prior to disposition of any waste onto these sites.

The materials, labor, equipment, and expense of the final cleaning up of the Project will not be paid for separately, but full compensation therefore will be considered included in the contract unit prices bid for the various items in the Contract.

109.08 Failure to Complete Work on Time. Time is an essential element of the Contract and it is important that the Work be pressed vigorously to completion. The cost to the Owner of the administration of the Contract, including engineering, inspection, and supervision, will be increased as the time occupied in the Work is lengthened. The public is subject to detriment and inconvenience when full use cannot be made of the Project.

The Owner shall be entitled to recover from the Contractor all ascertainable damages arising from the delay in completion. Said damages shall include, without limitation, all engineering, inspection, supervision, and legal expenses directly incurred by the Owner because of such delay.

Additionally, Contractor agrees that the Owner and/or public will suffer other damage or financial loss if the Work is not completed on time or within any time extensions allowed in accordance with the Contract Documents. Contractor and Owner agree that proof of the exact amount of any such damage or loss is difficult to determine. Accordingly, Contractor agrees to pay the sums stated in the proposal and Contract as liquidated damages and not as penalty for each calendar day or part thereof that the Work remains uncompleted after the contract time has expired.

Should the amount otherwise due the Contractor be less than the amount of such damages provided above, the Contractor and the Surety shall be liable to the Owner for such deficiency.

Permitting the Contractor to continue and finish the Work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the Owner of any of its rights under the Contract.

Section 110. Measurement and Payment

110.01 Measurement of Quantities. Work acceptably completed under the Contract will be measured by the Engineer/City Engineer according to United States Standard measures. Only actual quantities will be paid for unless otherwise specified. Unless otherwise specified, the following listed methods will be used:

1) For computing volumes of excavated materials specified for measurement by the cubic yard, the average end area method will be used.

2) Structures will be measured to the neat lines as shown on the plans or as finally constructed at the direction of the Engineer/City Engineer.

3) Items that are measured by the linear foot, such as pipe culverts, guardrail, underdrains, etc., will be measured parallel to the base or foundation upon which such structures are placed.

4) In determining the area for items bid on a square yard or acre basis, except as noted below, the longitudinal measurement will be made along the actual surface of the item and not horizontally, and transverse measurements shall conform to the dimensions shown on the plans or as directed by the Engineer/City Engineer.

5) In determining the area for all seeding and mulch cover items bid on an acre basis, when the area is a strip of varying width running approximately parallel to the centerline of the roadway, the longitudinal dimension will be measured horizontally and the transverse dimension will be measured parallel to the surface of the area seeded and/or mulched. For other areas of seeding and mulch cover items, all measurements will be made parallel to the surface of the area seeded and/or mulched. The area will be computed to the nearest 0.01 acre.

6) Materials that are specified for measurement by the ton shall be hauled in approved vehicles bearing a plainly legible identification number and weighed on accurate, approved scales furnished by the Contractor and inspected by a registered scale mechanic at least once a year and before their use after each move. Scales shall be located at the loading point or other approved location.

7) The scales shall be an automatic weighing system, with digital or springless dials, and equipped with an automatic ticket printer. An automatic ticket printer is defined as a device connected to the weighing system in such manner that it automatically detects the weight determined by the system. It shall store and recall the TARE weight when the operator enters the truck identification. It shall print the following information on the ticket:

- **a)** Gross, Tare, and Net weights.
- **b)** Identification of the truck.
- **c)** Current date.
- **d)** For asphalt mixtures, the time of loading or weighing.
- **e)** A unique ticket number (may be preprinted on the tickets).

The NET weight should be computed by the weighing system; however, it may be computed manually and keyed in for printing. When the net weight of the material is determined by batch weights, the scales used shall meet all applicable requirements specified for truck scales, including automatic ticket printing, except that the GROSS and TARE weights will not be required. The ticket shall accompany each load delivered to the project. In addition to the items shown above that must be printed by the ticket printer, the following information shall also be shown on each ticket:

a) Identification of the project.
b) Identification of the material being delivered, including mix design numbers for asphalt mixtures. The ton shall be the short ton of 2000 pounds. Vehicles used to haul materials measured by weight shall be weighed empty for each load, or shall be weighed daily or from time to time during the day as the Engineer may direct, to establish the tare weight of each load. The scales furnished shall be capable of weighing the entire loaded vehicle at one time. Deduction will be made for the weight of moisture in aggregates in excess of 5% of the oven-dry weight of the material.

8) A station when used as a definition or term of measurement will be 100 linear feet measured horizontally.
9) The term "lump sum" when used as an item of payment will mean complete payment for the work described in the Contract.
10) When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.
11) When mutually agreed, the plan quantity of any item may be taken as the Final Contract Quantity. Items to be paid at plan quantity shall be agreed upon in writing before work begins.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

Of necessity the items described and shown as components are discussed in a general manner only, describing the major pieces of equipment and/or materials. Any item and/or appurtenance not specifically mentioned shall be considered a portion of the bid item to which, in the opinion of the Engineer, its function is most directly related. Failure to list all items and/or appurtenances does not relieve the Contractor from furnishing all apparatus, devices, labor or materials of whatever nature required for a complete installation in accordance with the intent of the Drawings, approved Shop Drawings and these Specifications.

The successful Contractor shall, as soon as possible after award of the Contract, submit a list itemizing the components of each lump sum bid item and their respective costs to be used as an aid in the preparation of partial payments.

110.02 Scope of Payment. Payments to the Contractor will be made for the actual quantities of contract items completed and accepted according to the plans and specifications and if, upon completion of the construction, these actual quantities show either an increase or decrease from the quantities given in the proposal schedule, the contract unit prices will still prevail, except as provided in Subsection 110.03, "Payment and Compensation for Altered Quantities" below.

The Contractor will receive and accept the compensation herein provided as full payment for furnishing all materials, labor, equipment, tools, and incidentals necessary to the completed work; for performing all work contemplated and embraced under the Contract; for all loss or damage arising out of the nature of the work, or from the action of the elements, or from any unforeseen difficulties or obstructions that may arise or be encountered during the prosecution of the work until its final acceptance by the City; for all risks of every description connected with the prosecution of the work; for all expenses incurred by, or in consequence of, the temporary suspension or discontinuance of the work as herein specified; for any infringement of patent, trade mark, or copyright; for all costs of permits, licenses, fees, and taxes; and for completing the work in an acceptable manner according to the plans and specifications. The payment of current or final estimate, or of retained percentage, shall in no degree prejudice or affect the obligation of the Contractor, at no cost to the City, to repair, correct, renew, or replace any defects or imperfections in the construction of the roadway and its appurtenances, or in the strength of or quality of materials used therein or thereabouts, or relieve the Contractor from the payment of all damages due to such defects; provided such defects, imperfections, or damages shall be discovered on or before the final inspection or acceptance of the entire work. No retained percentage payable under the Contract, or any part thereof, shall become due and payable, if the City so elects, until the City is satisfied that the Contractor has fully settled or paid for all materials and equipment used in or upon the work, and for all labor done in connection therewith, and the City, if it so elects, may pay any or all such accounts wholly or in part and deduct the amount or amounts so paid from the final estimate.

Any overpayments made to the Contractor or Surety, from whatever cause, are due and payable to the City upon receipt by the Contractor or Surety of a request setting forth the particulars, regardless of pending claims or intention of the Contractor or Surety to file a claim.

110.03 Payment and Compensation for Altered Quantities. When alterations in plans or quantities of work not requiring a change order are ordered and performed as provided in Subsection 104.02, "Alterations of Plans or Character of Work" or 104.03, "If and Where Directed Items" and when such alterations result in an increase or a decrease of the quantity of work to be performed, the Contractor shall accept payment in full at the contract unit prices for the actual quantities of work accomplished, except as provided in Subsection 104.02, "Alterations of Plans or Character of Work" or 104.03, "If and Where Directed Items", and no allowance will be made for anticipated profits, organization or overhead expense, or interest.

Increased or decreased work involving change orders will be paid for as stipulated in such change orders.

Section 111. Roadway Construction Control

111.01 Description. When this item is included in the proposal, it shall consist of furnishing and maintaining all lines, grades, and measurements necessary for the proper execution of the roadway work under the Contract, all according to the plans and specifications.

111.02 Materials. The Contractor shall furnish all stakes, templates, straightedges, surveying equipment, and other devices necessary for establishing, setting, checking, marking, and maintaining points, lines, grades, and layout of the work called for on the plans and in the specifications.

111.03 Construction Requirements.

(a) City Responsibilities. The Engineer/City Engineer will establish the benchmarks and horizontal control points referenced on the plans, certified correct by the Engineer, and furnish the data to the Contractor at the beginning of work.

Any additional information provided by the Engineer shall be verified by the Contractor before use and the Contractor shall accept full responsibility for any costs incurred as the result of the use of such additional information. Any checking performed by the Engineer/City Engineer will not relieve the Contractor of the responsibility for the final results.

The City will be responsible for taking all measurements to establish both current estimate and final estimate pay quantities, including any horizontal and vertical control points necessary to complete such measurements. When making these measurements, the Engineer/City Engineer may use any points, stakes, lines, or elevations that have been set by the Contractor.

(b) Contractor Requirements. Roadway Construction Control shall include use by the Contractor of the plans and the vertical and horizontal control points established by the City as described above to perform all required construction surveying and layout. The Contractor shall make all necessary calculations and set all stakes including, but not limited to: centerline stakes; offset stakes; reference point stakes; additional bench marks as needed; slope stakes; pavement lines; curb lines; grade stakes; roadway drainage; pipe culverts; box culverts; underdrains; clearing and grubbing limits; guardrail; fence; blue tops for subgrade, subbase, and base courses; and any other points, lines, or elevations deemed necessary for proper control of the work.

On projects that include an ACHM overlay and/or Asphalt Surface Treatment, the Contractor shall mark the stationing by setting a stake at least every 200 feet along the roadway. These stakes shall be placed on the shoulder or slope so that they will not interfere with the construction operations, but will be usable for determining locations along the roadway. On projects with widening sections where a grade line is not shown on the plans, the Contractor shall profile the existing pavement at the centerline and edges of pavement. This profile data shall be furnished to the Engineer/City Engineer for use in the establishment of the finished grade line. This finished grade line will be furnished to the Contractor for use in computing and setting all grades required to construct the finished roadway section. The Contractor shall be responsible for joining the work to contiguous roadways and/or bridges in an acceptable manner.

This shall include making minor adjustments to the plan grade and/or typical section as necessary to construct a smooth transition from the new work to match the existing roadway.

The Contractor shall provide sufficient qualified personnel to complete the work accurately. The supervision of the Contractor's surveying and personnel shall be the responsibility of the Contractor, and any errors resulting from the operations of such personnel shall be adjusted or corrected by the Contractor at no cost to the City.

The Contractor shall maintain adequate survey notes as the work progresses and make them available to the Engineer/City Engineer on request. Copies of survey notes designated by the Engineer/City Engineer shall be provided for the City's permanent project records. The Contractor shall be responsible for the accuracy and uniformity of the construction stakes, lines, grades, and layouts. Any errors in the work constructed due to errors in the Contractor's Roadway Construction Control shall be adjusted or corrected by the Contractor at no cost to the City.

111.04 Method of Measurement. Roadway Construction Control will be measured as a complete unit.

111.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract lump sum price bid for Roadway Construction Control, which price shall be full compensation for furnishing and maintaining all necessary lines, grades, and measurements; and for furnishing all engineering personnel, equipment, materials, tools, and incidentals necessary to complete the work.

No adjustments in the lump sum price bid will be made for Roadway Construction Control required due to normal increases or decreases in Contract quantities. However, if the amount of Roadway Construction Control required is increased or decreased in connection with a Change Order, compensation will be adjusted accordingly.

Partial payments for Roadway Construction Control will be made in proportion to the amount of work accomplished on this item. No additional payment will be made for re-staking needed to maintain the control.

Payment will be made under:

Pay Item	Pay Unit
Roadway Construction Control	LS

Section 112. Trench and Excavation Safety Systems

112.01 Description. This item covers trench and excavation safety systems required for constructing improvements that necessitate open excavations on the project. All work under this item shall be in accordance with the current edition of the "Occupational Safety and Health Administration Standard for Excavation and Trenches Safety System, 29 CFR 1926, Subpart P", a copy of which may be purchased from the Superintendent of Documents, U.S. Government

Printing Office, Washington, D.C. 20402. This document is hereby incorporated into the Specifications.

112.02 Notifications Required. The Contractor, prior to beginning any excavation, shall notify the State Department of Labor (Safety Division) that work is commencing on a project with excavations greater than five feet.

The contractor shall notify all Utility Companies and Owners in accordance with OSHA Administration 29 CFR 1926.651(b)(2) for the purpose of locating utilities and underground installations.

112.03 Existing Structures and Utilities. Where the trench or excavation endangers the stability of a building, wall, street, highway, utilities or other installation, the Contractor shall provide support systems such as shoring, bracing, or underpinning to ensure the stability of such structure or utility.

The Contractor may elect to remove and replace or relocate such structures or utilities with the written approval of the owner of the structure or utility and the Engineer/City Engineer.

112.04 Method of Measurement. After award of the contact, the Contractor shall submit to the Engineer/City Engineer a breakdown of costs for work involved in the lump sum price bid for "Trench and Excavation Safety Systems" and shall, with each periodic payment request, submit a certification by the Contractor's "competent person" as defined in Subpart P 1926.650(b) that the Contractor has complied with the provisions of "Occupational Safety and Health Administration Standard for Excavation and Trenches Safety System", 29 CFR 1926 Subpart P for work which payment is requested.

112.05 Basis of Payment. The work required by this item will be paid for at the lump sum price for "Trench and Excavation Safety Systems".

Payment will be made under:

Pay Item	**Pay Unit**
Trench and Excavation Safety Systems	LS

DIVISION 200. EARTHWORK

Section 201. Clearing, Grubbing, and Demolition

201.01 Description. This work consists of clearing, grubbing, removing, and disposing of all vegetation, obstructions and debris within designated limits of the Right-of-Way and easement areas. Vegetation and objects designated to remain shall be preserved free from injury or damage.

201.02 Definitions. Clearing, Grubbing, and Demolition shall be defined as follows:

Clearing shall consist of cutting, removing, and disposing of trees, snags, stumps, shrubs, brush, limbs, and other vegetative growth. Clearing shall also include the preservation of trees, shrubs, and vegetative growth, which are not designated for removal.

Grubbing shall consist of the removal and disposal of wood or root matter below the ground surface remaining after clearing and shall include stumps, trunks, roots, or root systems greater than 2 inches in diameter to a depth of two feet below the natural ground surface.

Demolition shall consist of removal and disposal of existing fences, drainage structures, abandoned pipelines or utilities, paving, curbs and gutters, which are not designated to remain. The work may also include demolishing and/or removing from the site building structures or portions thereof, which are more particularly described in the plans and Special Provisions, together with all appurtenances, including canopies, porches, and awnings.

201.03 Construction Requirements. All surface objects, trees, stumps, roots, and other protruding obstructions designated for removal shall be cleared and grubbed, including required mowing. Trees not shown for removal on the plans, but are in direct conflict of construction, shall also be cleared and grubbed. Undisturbed and sound stumps and nonperishable solid objects located more than two feet below subgrade and slope of embankments may remain in place. When authorized, stumps and nonperishable solid objects that are located more than 1 foot below the ground line may remain if they are located outside the construction limits of excavation and embankment areas.

Trees and other vegetation to be preserved shall be carefully protected from abuse, marring, or damage during construction operations. Repair of damage to bark, limbs, or roots of trees or vegetation designated to remain shall be repaired by corrective pruning or other appropriate methods.

Low hanging, unsound, or unsightly branches shall be removed from trees or shrubs designated to remain. Trees extending over the roadway shall be trimmed to provide a clear height of 18 feet about the pavement elevation. All trimming shall be accomplished with skilled workers and in accordance with good tree surgery practices. Before cutting, removing, or trimming any tree within the City of Fayetteville, the owner and supervisory personnel of each business performing commercial tree work shall obtain a city issued commercial tree pruner/service certificate.

Parking and servicing equipment under branches of trees designated to remain is not allowed.

Existing pipes, culverts, bridges, and other drainage structures shall be removed to the natural stream bottom and those parts outside the stream shall be removed to 1 foot below natural ground surface. Materials designated as City salvaged material shall be dismantled without damage and stored at designated locations. All other structures shall be removed from the Right-of-Way.

All concrete pavement, base course, sidewalks, curbs, gutters, buildings, foundations, slabs, ballast, gravel, bituminous material, and pavement materials shall be disposed of unless specifically stated otherwise in the Plans or by the Engineer/City Engineer.

Moveable buildings to be demolished may be removed from the right-of-way intact if the contractor so elects.

Concrete designated for use as rip rap shall be broken into pieces not to exceed 150 pounds and stockpiled at designated locations or promptly placed where specified on the project.

Ballast, gravel, bituminous material, or other surfacing or pavement materials designated for salvage shall be stockpiled at designated locations without contaminating the material with dirt or foreign materials. Old concrete pavement, sidewalks, curbs, gutters, and similar structures to be left in place shall be sawed to a straight and true vertical line or removed to an existing joint as shown on the plans or as directed by the Engineer/City Engineer.

In embankment areas, cavities resulting from removal of obstructions shall be backfilled and compacted with suitable material under Subsection 202.03.

Disposal of material and debris shall be done under applicable Federal, State, County, and City laws, ordinances, and regulations. Perishable material if burned shall be under constant care of a watchman so the surrounding vegetation, adjacent property, and anything designated to remain is not jeopardized.

Materials and debris may be disposed of by burial at locations acceptable to the City within the project limits, if at least 12 inches of cover material is provided and the area is graded, shaped, and seeded according to these specifications or otherwise restored to present a pleasing appearance. Said burial and restoration shall be at the Contractor's expense.

201.04 Measurement and Payment. No measurement of this item will be made. Payment will be made on a lump sum basis.

Pay Item	**Pay Unit**
Clearing, Grubbing, and Demolition	LS

Section 202. Excavation and Embankment

202.01 Description. This work consists of excavation, hauling, disposal, placement, consolidation and compaction of all materials encountered within the limits of the work that is not covered under another item. For purposes of this section, roadway shall be defined as all locations within 1 foot of the back of curbs and gutters that define the edges of public streets.

Excavation will be classified as one of the following:

(a) Unclassified Excavation. Unclassified Excavation consists of the removal and disposal of all material of whatever character encountered in the work not covered under other items. This shall include removal of material in existing ditch lines along roadways to a depth of 1 foot below existing grade in the ditches. This shall also include stripping and excavation of existing material as required up to a depth of one (1) foot below existing grade in embankment areas.

(b) Rock Excavation. Rock Excavation includes removal and disposal of rock material that by actual demonstration cannot be excavated with a Caterpillar Model No. 215D LC track-mounted hydraulic excavator equipped with two rippers or similarly approved equipment. Rock excavation also includes boulders one-half cubic yard or more in volume.

(c) Undercut Excavation. Undercut excavation includes removal and disposal of material not suitable for use as embankment material that is below the proposed subgrade elevation and that is more than one foot (1') below existing ground within the roadway.
Embankment will be classified as one of the following:

(1) Select Embankment. Select Embankment includes all material placed within the limits of the proposed roadway within 24 inches of the top of subgrade elevation. Select Embankment material may include approved on-site or approved off-site material meeting the requirements of section 202.02 (c) below.

(2) Embankment. Embankment includes material other than select embankment that is placed within the limits of construction to achieve planned grades.

202.02 Materials.

(a) General. Samples of material to be used as embankment material shall be submitted for approval per the requirements of these specifications. All material shall meet the requirements The City of Fayetteville Code of Ordinances.

(b) Stone backfill. Stone backfill shall be as defined and specified in subsection 205, Undercut and Stone Backfill.

(c) Embankment. Embankment shall consist of soil, or a mixture of soil and stone or gravel or other acceptable material, reasonably free from sod, stumps, logs, roots or other perishable or deleterious matter, and shall be capable of forming a stable embankment when compacted.

Material placed within 24 inches of the proposed top of subgrade elevation shall meet the following requirements.

1) Material classified by the AASHTO Soil Classification System as A-1, A-2, or A-3, having a maximum of 35 percent of the material passing the number 200 sieve, and having a CBR equal to or greater than 8.
2) Material not meeting the above requirements for AASHTO Classification and gradation, but having a CBR equal to or greater than 8 and a Liquid Limit and Plasticity Index of less than or equal to 40 and 15, respectively.
3) Material not meeting the above requirements for liquid limit and plasticity index may be used if chemically modified by the use of lime, fly ash, or cement. The type and amount of treatment shall be determined by a material testing lab approved by the City. The chemically modified soil must meet all requirements of Section 2 above.

202.03 Construction Requirements.

(a) General. Excavations and embankments shall be finished to smooth and uniform surfaces. No excavation material shall be wasted without permission of the Engineer/City Engineer. Excavation and embankment operations shall be conducted without disturbing material outside the staked construction limits. Before beginning excavation, grading, and embankment operations, all necessary clearing, grubbing and top soil removal in that area shall be completed.

Excess or unsuitable excavated material, including topsoil, rock and boulders, shall be disposed of at locations acceptable to the Engineer/City Engineer. All approved surplus material shall be used to uniformly widen embankments and flatten slopes within the Right-of-Way. Rocks and boulders shall be covered with a minimum of one (1) foot of embankment material.

Demolition of old roadways shall include filling of all ditches and grading to restore the original contour of the ground producing a pleasing appearance by forming natural, rounded slopes. Removal and disposal of pavements and base courses shall be performed under Section 201.

(b) Rock Excavation. Material classified as rock shall be excavated to a minimum depth of 6 inches and a maximum depth of 12 inches below proposed subgrade within the limits of the roadbed. The excavation shall be backfilled and compacted with material designated in the Contract or approved by the Engineer/City Engineer. Rock excavation removed in excess of 12 inches below subgrade will not be measured and paid for. Rock excavation backfill of the depth in excess of 12 inches below proposed subgrade is at the Contractor’s expense.

Undrained pockets shall not be left in the rock surface. Depressions shall be drained. Bore holes shall be drilled along the slope line, maintaining the drill holes at the angle designated on the plans and ensuring that all drill holes are in the same plane. The diameter, spacing, and loading of presplit holes shall result in a neat break. The presplitting holes shall be drilled for the full depth of the ledge. The initial presplitting of a geological formation shall be accomplished utilizing a 100-foot test section. After drilling, loading, and shooting this test section, the material shall be removed to determine if the diameter, spacing, and loading of the presplit holes are adequate to give an acceptable backslope. If the results are determined to be acceptable, the

presplitting may continue throughout the geological formation using those methods and procedures. If the presplitting is determined to be unsatisfactory, adjustments shall be made in the spacing, diameter and loading of the presplit holes utilizing another 100-foot test section.

Presplitting holes shall be loaded with explosives as per the manufacturer's recommendations. The cost of presplitting shall be included in the unit bid price for rock excavation.

(c) Undercut Excavation. If and where directed by the Engineer/City Engineer, unsuitable material encountered at the proposed subgrade elevation shall be removed to the depth specified or directed by the Engineer/City Engineer and backfilled and compacted with approved off-site material, in accordance with this section or in accordance with subsection 205, Stone Backfill as indicated or directed. Excavation operations shall be conducted so necessary measurements can be taken before replacing unsuitable material with approved backfill.

No payment will be made for this item if:

1) The contractor does not notify the Engineer/City Engineer of potential areas requiring undercut before excavating these areas.
2) An area that was previously stable becomes unstable due to actions of the contractor. These causes include, but are not limited to, ponding of water and construction traffic.
3) The Contractor does not allow the Engineer/City Engineer sufficient time to measure the undercut excavation volume before placing backfill material.

In addition, no payment will be made to remove and replace any embankment material placed on unsuitable soil that subsequently requires removal and replacement.

(d) Embankment Construction. Embankment construction includes the preparation of the areas where embankments are placed, placement and compaction of approved embankment material for replacement of unsuitable material, and placement and compaction of embankment material in all cavities and depressions within the roadway area.

Rocks, broken concrete, and other solid materials shall not be placed in embankment areas where piling is to be placed or driven.

Benching shall be required when embankment is placed on hillsides or against existing embankment with slopes that are steeper than 6-to-1 when measured at right angles to the roadway and shall be continuously benched in loose lifts not to exceed 12 inches. Benching shall be wide enough to permit the operations of placement and compaction equipment. All horizontal cuts shall begin at the intersection of the ground line and the vertical side of the previous bench. Existing slopes shall also be stepped to prevent wedging action of the embankment against structures. Excavation from benching shall be compacted with the new embankment material and the cost for benching and recompaction shall be included in the unit bid price for excavation.

When natural ground is within 4 feet of the subgrade, all sod and vegetable matter shall be removed from the surface where embankment is placed. The cleared surface shall be completely broken up by plowing, scarifying, or stepping to a minimum depth of 6 inches and shall then be

compacted to the specified embankment density. Sod not requiring removal shall be thoroughly disked prior to embankment construction. Wherever a compacted road surface containing granular material lies within 3 feet of the subgrade, the old road surface shall be scarified to a minimum depth of 6 inches and compacted to the specified embankment density.

If embankment can only be placed on one side of abutments, wing walls, piers, or culvert headwalls, compaction shall be accomplished without overturning of or placing excessive pressure against the structure. The fill adjacent to the end bent of a bridge shall not be placed higher than the bottom of the backwall until the superstructure is in place. When embankment is placed on both sides of a concrete wall or box-type structure, the embankment shall be brought up equally on both sides of the structure. Embankment that is adjacent to structures or inaccessible to normal compaction equipment shall be placed in 4" loose lifts and compacted with mechanical equipment to 95% of maximum density as determined by AASHTO T99.

Roadway embankment shall be placed in horizontal lifts not to exceed 8 inches (loose measurement) and compacted to the specified density before the next lift is placed. Spreading equipment shall be used to obtain uniform lift thickness prior to compaction. As the compaction progresses, leveling and manipulating shall be continuous to assure uniform density. Moisture content shall be increased or decreased as necessary to obtain the required density and stability. Construction equipment shall be routed uniformly over the entire embankment surface.

When the excavated material consists predominantly of rock too large to be placed in 8-inch lifts, the material may be placed in thicknesses up to the average rock dimension not to exceed 3 feet. Each lift shall be leveled and smoothed by distribution of spalls and finer fragments of earth. Rock shall not be end dumped directly on the previously completed lift of embankment. Rock shall be dumped in the lift of embankment being constructed and pushed into place. The lifts shall not be constructed above an elevation 2 feet below the finished subgrade.

A minimum of 2 feet of compacted embankment shall be placed over structures before rock is placed.

(e) Moisture and Density Requirements. All lifts in embankment areas shall be compacted to not less than 95 percent of the maximum density. The moisture content of the material shall be uniformly increased or decreased to within 3% of optimum moisture content before compaction.

Maximum density will be determined using AASHTO T99 (Standard Proctor). In-place field density measurements shall be determined using AASHTO T 191, T233, or T 310.

Density requirements do not apply to portions of embankments constructed of materials such as rock that cannot be tested by approved testing methods.

202.04 Method of Measurement.

(a) Undercut and Backfill will be measured by the cubic yard of material placed and compacted according to the specifications and as directed by the Engineer/City Engineer. Measurements of the excavated area will be taken by the Engineer/City Engineer after excavation and before

backfilling. The quantity of Undercut and Backfill will be measured as In Place quantities. Measurement for undercut will begin at subgrade elevation or one (1) foot below existing ground, whichever is lower.

(b) Rock Excavation will be measured by the cubic yard of rock in place actually removed according to the specifications. Measurements taken after the rock is removed and before any associated backfilling will be used to calculate rock excavation quantities.

(c) Unclassified Excavation will not be measured and the plan quantity will be considered the final quantity for purposes of final payment, unless changes to the original design are made. In such case, the revised quantity shall be agreed upon prior to beginning any work associated with the change.

(d) Embankment and Select Embankment will not be measured and the plan quantity will be considered the final quantity for purposes of final payment, unless changes to the original design are made. In such case, the revised quantity shall be agreed upon prior to beginning any work associated with the change.

202.05 Basis of Payment. Quantities of earthwork completed, accepted and measured as provided above will be paid for at the Contract Price bid as follows:

(a) Undercut Excavation shall be paid for at the Contract Price bid per cubic yard (CY) for Undercut and Backfill. Said price shall be full compensation for excavation, disposal, furnishing, hauling, placing, and compacting approved off-site material according to the plans and specifications. This price shall not include final compaction and finish grading to subgrade elevation. Final compaction and finish grading will be paid for under the item "Subgrade Preparation."

(b) Rock excavation shall be paid for at the Contract Price bid per cubic yard (CY) for Rock Excavation. Said price shall be full compensation for rock removal and disposal to the lines and depths shown on the plans and according to these specifications, and for furnishing, hauling, placing, and compacting approved material in the excavated area as required.

(c) All earthwork not paid for under other items will be paid for under the separate items (1) Unclassified Excavation or (2) Embankment as follows:

1) Excavation shall be paid for at the Contract Price bid per cubic yard (CY) for Excavation. Said price shall be full compensation for excavation, hauling off, and disposal of all materials on the project that are not required for completion of the project; and any other excavation, grading or other miscellaneous earthwork items not included in other items of work. The plan quantity will be considered the final quantity for purposes of final payment, unless changes to the original design are made.
2) Embankment shall be paid for at the Contract Price bid per cubic yard (CY) for Embankment. Said price shall be full compensation for placement of materials on the jobsite, whether from on-site or off-site sources, to establish the lines and grades shown on the plans; placement of embankment as backfill for excavated areas to 1 foot below

existing ground in roadway areas; and any other embankment, grading or other miscellaneous earthwork items not included in other items of work. The plan quantity will be considered the final quantity for purposes of final payment, unless changes to the original design are made.

Pay Item	Pay Unit
Undercut and Backfill	CY
Rock Excavation	CY
Unclassified Excavation	CY (Plan Quantity)
Select Embankment	CY (Plan Quantity)
Embankment	CY (Plan Quantity)

Section 203. Subgrade Preparation

203.01 Description. This work consists of preparing the subgrade for placement of the base course, curb and gutter, and asphalt courses. The intent of this specification is to provide a stable subgrade consisting of approved material compacted as specified.

203.02 Materials. Materials not specified.

203.03 Construction Requirements. Material at subgrade will receive one or a combination of the following treatments as directed by the Engineer/City Engineer:

(a) Unsuitable material will be excavated to a depth as directed by the Engineer/City Engineer, disposed of, and replaced with off-site material approved by the Engineer/City Engineer. This material shall be placed and compacted to conform to Subsection 202.03.

(b) If the material is acceptable for use as subgrade material, the subgrade will be scarified to a depth of 8 inches and recompacted to conform to Subsection 202.03 of these Specifications.

(c) In areas requiring fill to achieve subgrade elevation, the subgrade shall consist of approved on-site or off-site material meeting the requirements of Subsection 202.02 and compacted in accordance with Subsection 202.03 of these Specifications.

The subgrade shall be shaped for its full width to the required grade and cross section. The finished subgrade shall not vary at any point by more than .02 foot from the prescribed elevation.

Finished sections damaged by construction operations shall be corrected by the contractor at no cost to the City.

203.04 Method of Measurement. Measurement for this item will be as follows:

(a) Excavation and backfill of any areas of subgrade requiring undercut will be measured as specified in Section 202.04.

(b) Subgrade Preparation will be measured by the square yard. Measurement will include all subgrade area including areas up to 1’ behind proposed back of curbs or to the edge of the

roadway pavement where curb is not specified. Measurement will include areas of undercut, areas that receive scarification and recompaction of existing acceptable material, and areas where fill material is required to achieve subgrade elevation. The plan quantity will be considered the final quantity for purposes of final payment, unless changes to the original design are made. In such case, the revised quantity shall be agreed upon prior to beginning any work associated with the change.

(c) Fill material required to achieve subgrade elevation will be measured as specified in Section 202.4.

203.05 Basis of Payment. Quantities of earthwork completed, accepted and measured as provided above will be paid for at the Contract Price bid as follows:

(a) Undercut Excavation shall be paid for as stated in Section 202.5a. This price shall not include final compaction and finish grading to subgrade elevation. Final compaction and finish grading will be paid for under the item "Subgrade Preparation."

(b) Subgrade preparation will be paid for at the Contract Price per square yard (SY) for Subgrade Preparation. Said price shall be full compensation for scarification (if required), compaction, and finish grading of subgrade areas.

Pay Item	**Pay Unit**
Subgrade Preparation	SY (Plan Quantity)

Section 204. Select Grading and Topsoil

204.01 Description. This work consists of excavating, placing, and compacting material between the back of the roadway curb and the limits of the work. It also includes grading and placing topsoil in this area or other disturbed areas.

204.02 Materials.

(a) General. Material used for backfilling curbs and grading for sidewalk shall be free of trash, organics, and other deleterious materials.

(b) Topsoil. Topsoil may be obtained from sources outside the right-of-way limits or from areas within the project limits that will be occupied by cuts and/or embankments. When topsoil is furnished from sources outside the right-of-way, the Contractor shall be responsible for locating and obtaining the material and for performing all work, including erosion control, prevention of water pollution, and restoration, according to the specifications. The cost of such work will be considered included in the contract unit price bid for Topsoil Furnished and Placed. At the request of the City, the Contractor shall furnish copies of agreements with the property owners.

Topsoil shall be good quality, fertile, friable, surface soil and consist of loamy sand, sandy loam, clay loam, or sandy clay loam and shall be clean, rich, dark soil that contains adequate organic material. River sand will not be accepted as topsoil. Topsoil shall be reasonably free from subsoil, slag, weeds, grasses, roots, or stones greater than:

1) 1/4 inch for residential/commercial lawn areas, garden areas, or landscaped areas, or;
2) 1 inch for all other areas.

Topsoil shall have a pH suitable for intended use areas. Topsoil shall be obtained only from naturally well-drained sites where topsoil occurs in depths greater than 4". Topsoil shall not be obtained from bogs, marshes or steep clayey slopes. Topsoil shall not be stripped, collected, or deposited while wet.

In no case shall topsoil be excavated more than 12" from the original ground level. Brush and other vegetation that will not be incorporated with the soil during handling operations shall be cut and removed. Ordinary sods and herbaceous growth, such as grass and weeds, shall not be removed but shall be thoroughly broken up and intermixed with the soil during handling operations.

204.03 Construction Requirements.

(a) Curb Backfill and Grading. After curbs have set sufficiently, they shall be backfilled with approved material and graded so that no ponding will occur. Areas on which sidewalk or driveways are to be constructed shall be compacted to 90% of maximum density as measured by AASHTO T99 or ASTM D698 (Standard Proctor).

Upon completion of the construction of sidewalks, driveways, and other items of construction within the construction limits, all areas to receive topsoil shall be excavated, graded, backfilled and compacted as necessary to remove all depressions, ridges, soft areas, waste concrete, and other items that will interfere with placement of the topsoil layer. All slopes shall be excavated to a maximum slope of 1 vertical foot in 3 horizontal feet unless otherwise noted in the plans or directed by the Engineer.

(b) Topsoil Placement. After the areas to receive topsoil have been prepared to the satisfaction of the Engineer/City Engineer, topsoil placement may begin.

Topsoil shall be placed on all earth areas to a minimum depth of 4 inches unless shown otherwise on the plans or directed by the Engineer/City Engineer. Topsoil shall be graded to within 1 inch of finished elevation, and lightly compacted. Before placing seed all topsoiled areas shall be lightly scarified and raked to remove rocks, sticks, roots, and other undesirable materials as outlined in Section 204.02b.

204.04 Method of Measurement.

(a) Curb Backfill and Grading. Backfilling of curbs and grading of areas between the back of curb and the construction limits will not be measured and is considered subsidiary to excavation and embankment items.

(b) Topsoil. Topsoil furnished and placed will be measured by the square yard based on the location. Measurement will be made to the permanent street right-of-way or permanent easement

or to the toe or top of slopes as shown on the plans. Areas outside these limits disturbed by the Contractor restored in accordance with these Specifications at no cost to the City.

204.05 Basis of Payment. Quantities completed, accepted, and measured as provided above will be paid for at the Contract Price bid as follows:

(a) Topsoil will be paid for at the unit price bid per square yard (SY). Said price shall be full compensation for excavating, stockpiling, hauling, placing, grading, and all other labor, tools, and equipment to provide a layer of topsoil in accordance with the specifications.

Pay Item	Pay Unit
4" Topsoil Placement (Yard Areas)	SY
4" Topsoil Placement (Other Areas)	SY

Section 205. Undercut and Stone Backfill

205.01 Description. This item shall consist of excavation and disposal of unsuitable materials and furnishing, hauling, placing, spreading, consolidating and compacting stone materials as specified at locations designated on the Plans or as designated by the Engineer/City Engineer.

If and where directed by the Engineer/City Engineer, unsuitable material encountered at the proposed subgrade elevation shall be removed to the depth specified or directed by the Engineer/City Engineer and backfilled with Stone Backfill as further defined herein.

205.02 Materials.

(a) Stone Backfill. Stone for Stone Backfill shall be hard, durable, crushed stone aggregate, as manufactured by local quarries, ranging in size from 11/2" (40mm) minimum to 6" (150mm) maximum. Stone Backfill shall not contain more than 5% by weight of shale, slate or other deleterious matter. The stone shall be uniformly graded and the amount passing the 11/2" (37.5 mm) sieve shall be not more than 10% by weight.

(b) Aggregate Base Course Cap. When backfilling with Stone Backfill to subgrade elevation, or to an elevation below subgrade when directed by the Engineer/City Engineer, the top 4" to 6" (100 mm to 150 mm) shall be material complying with subsection 401, "Aggregate Base Course" for Class 7 Aggregate Base Course.

205.03 Construction Requirements.

(a) Excavation. Excavation operations shall be conducted so necessary measurements can be taken before replacing unsuitable material with approved backfill.

(b) Stone Backfill. The area shall be excavated and the Stone Backfill shall be placed within the limits shown on the Plans or as designated by the Engineer/City Engineer. The excavated materials shall be disposed of by the Contractor in compliance with these Specifications. The stone may be dumped into the areas undercut without regard to depth of layer. The stone shall be spread, shaped, and consolidated to the line and grade determined in the field by the Engineer to

provide a firm and unyielding foundation for the subgrade and/or subbase course and/or base course.

(c) Aggregate Base Course Cap. The Class 7 Aggregate Base Course Cap shall be compacted per the requirements of subsection 401, "Aggregate Base Course".

205.04 Method of Measurement.

(a) Undercut and Stone Backfill will be measured by the ton of material placed and consolidated or compacted according to the specifications and as directed by the Engineer/City Engineer. Measurements of the excavated area will be taken by the Engineer/City Engineer after excavation and before backfilling. The quantity of Undercut and Backfill will be measured as In Place quantities. Measurement for undercut will begin at subgrade elevation or one (1) foot below existing ground, whichever is lower.

(b) Aggregate Base Course Cap shall not be measured for separate payment but shall be measured and paid for as Stone Backfill.

205.05 Basis of Payment.

(a) Undercut Excavation and Stone Backfill shall be paid for at the Contract Bid Price per ton for Undercut and Stone Backfill. Said price shall be full compensation for excavation and disposal of unsuitable material; for furnishing, hauling, placing, shaping and consolidating or compacting material according to the plans and specifications; and for all labor, equipment, tools, and incidentals necessary to complete the work. Excavation and backfill authorized by the Engineer/City Engineer that is in excess of the volume occupied by the Stone Backfill will be measured and paid for under the appropriate subsections of these Specifications for the appropriate classifications of material.

(b) No payment will be made for this item if:

The contractor does not notify the Engineer/City Engineer of potential areas requiring undercut before excavating these areas.

An area that was previously stable becomes unstable due to actions of the contractor. These causes include, but are not limited to, ponding of water and construction traffic.

The Contractor does not allow the Engineer/City Engineer sufficient time to measure the undercut excavation volume before placing backfill material.

In addition, no payment will be made to remove and replace any embankment material placed on unsuitable soil that subsequently requires removal and replacement.

Pay Item	**Pay Unit**
Undercut and Stone Backfill	Ton

DIVISION 300. STORM DRAINAGE

Section 301. Storm Drainage Pipe

301.01 Description. This work consists of the construction or reconstruction of pipe culverts, including excavation and backfill of storm sewer trenches.

301.02 Materials. All materials supplied under the requirements of this section shall meet the requirements of Section 606 of ARDOT Specifications. All reinforced concrete pipe shall be Class III unless otherwise shown on the Plans or directed in the Specifications. Sizes and gauges of corrugated metal pipe shall be as shown on the plans.

301.03 Construction Requirements.

(a) General. Unsuitable material excavated for storm sewer placement shall be disposed of under Subsection 202.03(a). Suitable surplus excavated material shall be used in the construction of embankments. Unsuitable excavated material below the designed bottom of pipe elevation shall be replaced and compacted using approved material. Rock, hardpan, and other unyielding material shall be excavated below the designed grade for a depth of 6 inches minimum and 8 inches maximum. This extra depth excavation shall be backfilled with approved bedding material. Trenches shall be excavated to a minimum width that allows for proper jointing of the pipe and compaction of backfill material under and around the pipe. The completed trench bottom shall be firm for its full length and width.

(b) Bedding. All storm sewer pipe shall be bedded with a minimum of 4 inches of approved granular material. Bedding shall be placed to the required depth and shaped to conform to the bottom configuration of the pipe.

(c) Laying Pipe. Pipe placement shall begin at the downstream end. Pipe shall be in contact with the shaped bedding throughout its full length. Bell or groove ends of concrete pipe and outside circumferential laps of flexible pipe shall be placed facing upstream. Flexible pipe shall be placed with longitudinal laps or seams at the sides.

Paved or partially lined pipe shall be laid so the longitudinal centerline of the paved segment coincides with the flow line. Elliptical pipe shall be installed so the orientation of a vertical plane through the longitudinal axis of the conduit does not vary more than 5 degrees from the design orientation.

Pipe that is not in true alignment or that shows settlement after placement shall be removed and re-laid at no cost to the City.

(d) Joining Pipe. The method of joining pipe sections shall be such that the ends are fully entered and the inner surfaces are reasonably flush and even.

Pipe protruding through structure walls shall be cut off flush with the inside face of wall and grouted.

All surfaces of the joint upon or against which joint seal gaskets may bear shall be smooth, free of spalls, cracks, fractures, and imperfections that would adversely affect the performance of the joint. A primer shall be applied if recommended by the manufacturer.

When preformed rubber gasket is selected by the Contractor, the gasket shall be the sole element depended upon to make the joint flexible and watertight. The gasket shall be a continuous ring that fits snugly into the annular space between the overlapping surfaces of the assembled pipe joint to form a flexible watertight seal.

The gasket shall not be stretched more than 30% of its original circumference when seated on the spigot or tongue end of the pipe.

When bitumen/butyl plastic gasket is selected by the Contractor, the following procedure shall be used. The protective wrapping shall be removed from one side of the gasket. The gasket shall be pressed firmly to the vertical shoulder of the pipe joint, end to end continuing around the entire circumference of the joint. The remaining protective wrapping shall be removed and the pipe forced into connection until material fills the joint space.

For either type of gasket used and to ensure an even and well filled joint, the final joining of the pipe shall be accomplished by either pushing or pulling, by approved mechanical means, each joint of the pipe as it is laid. In cold weather, when directed, the joint material shall be warmed in a hot water bath, or by other approved methods, to the extent required to keep the material pliable for placement without breaking or cracking.

(e) Backfilling. The pipe shall be backfilled with bedding material in 4-inch compacted lifts to the springline. Pipe placed under roadways or driveways will then be backfilled with aggregate base material meeting the requirements of Section 401 placed in 4-inch lifts compacted to 98% of maximum density near optimum moisture as determined by AASHTO T180 or ASTM D1557.

Flowable fill in accordance with these specifications may be used as an alternate to the aggregate base material. For the purpose of this section, roadway shall be defined as back of curb to back of curb.

All other areas shall be backfilled with material free from lumps or clods placed in layers not to exceed 6” at or near optimum moisture content and compacted with mechanical equipment to 90% of the maximum density, as determined by AASHTO T 99 or ASTM D698, to the limits shown on the plans. Pipe damaged during construction operations shall be replaced at no cost to the City.

When the existing material excavated for the pipe trench is declared by the Engineer/City Engineer as unsuitable for pipe backfill, this material shall be placed at other locations on the job and used to backfill behind curbs and/or placed on the fill slopes. If the Engineer/City Engineer determines that no suitable location exists on the job to utilize this material, the Engineer/City Engineer may approve the material to be wasted at an appropriate location outside the job limits. Material declared unsuitable for backfill shall be replaced with suitable material from roadway excavation and/or off-site sources.

(f) Curtain walls for Flared End Sections. The foundation for curtain walls shall be prepared to the required depth. For cast-in-place curtain walls, the forming, placement of reinforcing steel, and placement, finishing, and curing of concrete shall be according to the applicable requirements of subsections 601' "Cast-in-Place Concrete" and 602, "Reinforcing Steel". Precast curtain walls shall be installed according to the applicable requirements for laying concrete pipe. Curtain walls shall not be measured for separate payment but shall be included with and subsidiary to Flared End Sections.

(g) Temporary Repairs for Roadway Cuts. All roadway cuts shall be temporarily or permanently repaired in accordance with Section 405, "Asphalt Concrete Patching For Maintenance of Traffic" within 24 hours of the completion of trench backfill for the work, or segment of work, which required the excavation and/or cut.

301.04 Method of Measurement. Storm drainage pipe of the type and size specified will be measured by the linear foot (LF) measured parallel to the flowline of the pipe. Where inlets, junction boxes, or other structures are included in lines of pipe, that length of pipe extending to and flush with the inside of the structure wall will be included for measurement but no other portion of the structure length or width will be so included. Whenever possible, the lengths shown on the plans may be adjusted by the Engineer/City Engineer to accommodate the pipe lengths available from the supplier that most nearly match the plan lengths. Flared end sections for pipe culverts will be measured by the unit and will include the curtain wall, complete in place.

301.05 Basis of Payment. Work completed, accepted, and measured as provided above will be paid for at the Contract Price bid as follows:

(a) Pipe will be paid for at the unit price per linear foot (LF) for each type and size of pipe and type of backfill specified; which price shall be full compensation for furnishing, hauling, and installing the pipe; for material including joint filler for concrete pipe and connection bands for metal pipe; for excavation and backfilling, including Class 7 base as required, and for all other labor, tools, and equipment necessary to complete the work.

(b) Flared End Sections (FES) will be paid for at the unit price per each (EA) for the type and size of the flared end section specified; which price shall be full compensation for furnishing, hauling, and installing the flared end sections; for material including joint filler for concrete pipe and connection bands for metal flared end sections; for curtain walls complete in place; for excavation and backfilling, including compacted backfill, and for all other labor, tools, and equipment necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
__" (Pipe Type and Material) Under Pavement	LF
__" (Pipe Type and Material)	LF
__" (FES Type and Material)	EA

Section 302. Drop Inlets and Junction Boxes

302.01 Description. This item shall consist of the construction of drop inlets, junction boxes, and drop inlet extensions with rings and covers or grates and frames.

302.02 Materials.

(a) All concrete for this section shall conform to the requirements for Class 1 Concrete as provided in Section 601.

(b) Reinforcing steel shall conform to the requirements of Section 602.

(c) Steel for welded steel grates and frames shall conform to the requirements of ASTM A 36.

(d) Iron castings for rings and covers, grates and frames, and other appurtenances shall conform to the requirements of ASTM A 48, Class 30A. Bearing surfaces between rings and covers or grates and frames shall be cast or machined with such precision that uniform bearing shall be provided throughout the perimeter area of contact. Castings shall be of the weight shown on the plans. Minimum weight of ring and lid shall be 275 pounds. The lid shall include the standard City of Fayetteville logo according to the Standard Details.

(e) Precast concrete units of the type, size, and designation shown on the plans may not be used unless written permission is given by the City. Precast units shall be subject to the requirements of AASHTO M 199. Units so manufactured must be certified by a professional engineer registered in the State of Arkansas that they have been designed and manufactured according to AASHTO M199 and that they meet the requirements for HS20 loading. Joint materials shall conform to Subsection 301.02.

(f) Curing Materials. Curing materials shall meet the requirements of Subsection 601.15.

302.03 Construction Requirements. Drop inlets, junction boxes, and drop inlet extensions shall be constructed with either reinforced or non-reinforced concrete, as shown on the plans.

Concrete shall not be placed until the Engineer/City Engineer has inspected the forms and the placement of reinforcing steel and rings or frames.

Round monolithic drop inlets may have the floors cast monolithically with the walls. All other concrete floors shall be placed at least 24 hours before beginning construction of the walls. A longer period of time may be required if weather conditions make it necessary.

When completed, the concrete shall be cured as specified in Subsection 601.15.

Walls shall be constructed to form a tight joint with the floor and around the inlet and outlet pipes. Pipes shall be cut flush with the inside surfaces of the wall.

Utility lines that are carried through the walls shall be protected in an approved manner to avoid damage.

Faces of drop inlets and drop inlet extensions shall be placed as a part of the curb in order to preserve the proper alignment.

Precast concrete drop inlets or junction boxes may be used only by special permission of the City. Inlet and extension tops and throats will be cast-in-place with no exceptions.

Precast reinforced concrete drop inlet or junction box sections shall be carefully set with joints conforming to the requirements of Subsection 301.03(d).

Metal rings or frames shall be set accurately to the finished elevations so that no subsequent adjustments will be necessary. They shall be set in a full mortar bed with firm bearing on the walls or securely fastened to the forms so that no movement will occur when concrete is placed around them.

Welded steel grates and frames shall be welded with ¼" fillet welds, and painted in accordance with the plans.

302.04 Backfilling. Backfill around inlets and junction boxes shall be with approved material as defined in the following paragraphs. Backfilling of inlets and junction boxes shall not begin until results of concrete cylinder tests demonstrate that concrete has reached 75% of specified strength. Backfill material shall be placed in layers not to exceed 4" in depth and shall be compacted to 98% of maximum density as measured by AASHTO T 99 for soil materials or by AASHTO T 180 for aggregate base materials.

All structures or parts of structures that fall within the limits of the roadway (defined as centerline to 1' behind the backs of curbs) shall be backfilled with aggregate base material unless otherwise allowed in writing by the Engineer/City Engineer.

Structures in other areas shall be backfilled with approved material provided from on-site or off-site areas.

Structures shall be cleaned of any accumulation of silt, debris, or foreign matter of any kind, and shall be reasonably free of such accumulations at the time of final inspection.

302.05 Method of Measurement. Drop inlets, junction boxes, and drop inlet extensions will be measured by the unit. One drop inlet extension unit is measured at a 4' length. Each unit shall consist of the concrete frame, the ring and grate, and any pipe required to form the vertical portion of the drain including a standard elbow or tee.

302.06 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid each for Drop Inlets, Drop Inlet Extensions, or Junction Boxes, of the size and type specified, which price shall be full compensation for constructing drop inlets, drop inlet extensions, or junction boxes; for furnishing, installing, and painting (if required), of rings and covers or grates and frames; for excavation and backfill; and for all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
(Size) Drop Inlets (Type)	EA
(Size) Junction Boxes (Type)	EA
(Size) Drop Inlet Extension	EA

Section 303. Concrete Box Culverts

303.01 Description. This work consists of constructing reinforced concrete box culverts, in accordance with the details shown on the plans, and to the lines, grades, and dimensions shown on the plans. This work also includes associated wingwalls and aprons at the ends of the box culvert.

303.02 Materials. Concrete for reinforced concrete box culverts shall be Class 1 in accordance with Section 601 unless specified otherwise. Reinforcing steel shall be in accordance with Section 602. Precast concrete box culverts shall be subject to the requirements of AASHTO M 259-98 and AASHTO M 273-00. Units so manufactured must be designed and certified by a professional engineer registered in the State of Arkansas that the precast culvert(s) have been designed and manufactured according to AASHTO M 259-988 and/or AASHTO M 273-00 for the site-specific conditions and the requirements for minimum HS20 live load.

303.03 Construction Requirements. Concrete box culverts shall be constructed on firm, unyielding material. Unsuitable material found at the planned elevation of the box bottom shall be removed and replaced with material acceptable to the Engineer/City Engineer to provide an adequate foundation for construction of the box culvert. No concrete shall be placed before approval of the subgrade by the Engineer/City Engineer.

Reinforcing steel and concrete for box culverts shall be provided and placed in accordance with Sections 601 and 602 and as detailed on the plans. All concrete shall be placed in the dry unless otherwise directed by the Engineer/City Engineer.

Precast box culverts shall be placed in accordance with Section 301.03.

Backfill material placed within the roadway limits (defined as centerline of roadway to 1’ behind the back of curb) or under driveways and parking lots shall be ARDOT Class 7 aggregate base material or gravelly clay material, generally known as “hillside”. Aggregate base shall be placed in layers not to exceed 4” loose depth and shall be compacted to 98% of maximum density as determined by AASHTO T 180 or ASTM D1557. “Hillside” material shall be placed in layers

not to exceed 8" loose depth and shall be compacted to 95% of maximum density as determined by AASHTO T 99 or ASTM D698.

Backfill material placed in other areas shall be "hillside" material or other material that may be approved by the Engineer/City Engineer. Backfill in these areas shall be placed in layers not to exceed 8" loose depth and shall be compacted to 90% of maximum density as determined by AASHTO T 99 or ASTM D698.

No backfill shall be placed against box culvert walls or on box culvert tops until the concrete has cured for 14 days and until test cylinders show that the minimum specified strength has been obtained.

Backfill shall be placed and compacted on both sides of the box culvert simultaneously.

Structures shall be cleaned of any accumulation of silt, debris, or foreign matter of any kind, and shall be reasonably free of such accumulations at the time of final inspection.

303.04 Method of Measurement. Measurement will be by one of the following methods as detailed below. The method to be used will be stated in the bid form.

(a) Lump Sum Method. No measurement will be made for this item. Payment will be on a lump sum basis.

(b) Unit Price Method. Concrete box culverts will be measured by the linear foot (LF) of box culvert constructed. Measurement will be taken at the centerline of the box culvert. Wingwalls, headwalls, and other appurtenances will not be measured under this item but will be considered as a separate lump sum item.

303.05 Basis of Payment.

(a) Lump Sum Method. Payment using this method will be on a lump sum basis. The lump sum price shall include all labor, materials, equipment, and incidentals necessary to completely construct each box culvert. Payment shall also include construction of all wingwalls, headwalls, and other appurtenances, as shown on the plans, excavation, backfill, and over excavation as necessary to provide a stable subgrade for box culvert construction.

(b) Unit Price Method. Payment using this method will be made at the per linear foot price (LF) for box culvert completed, accepted and measured as provided above. The per lineal foot price shall include all labor, materials, equipment, and incidentals necessary to completely construct each box culvert. Payment shall also include excavation, backfill, and over excavation as necessary to provide a stable subgrade for box culvert construction. This per linear foot price shall not include construction of headwalls, wingwalls, and other appurtenances. They will be paid on a lump sum basis for each box culvert.

Payment will be made under:

Pay Item	Pay Unit
(Size) Cast-in-Place Concrete Box Culvert	LS or LF
(Size) Precast Concrete Box Culvert	LS or LF
Wingwalls & Appurtenances	LS

Section 304. Vacant

Section 305. Open Channels

305.01 Description. This work consists of construction of open channels, including earthen and concrete channels.

305.02 Channel Excavation. Channels shall be excavated to the lines and grades shown on the plans. All constructed grades and slopes shall be within ± 0.1 feet of the plan grade. Ponding or standing water in the constructed channel will not be allowed.

305.03 Earthen Channel Finishes. Earthen channels shall receive a 4" minimum layer of topsoil meeting the requirements of Section 204. Topsoil shall be firmly compacted, then the surface scarified in preparation for seed or sod. All rocks and clods larger than 1 inch in diameter shall be removed before seeding or sodding operations begin. Seeding or sodding as specified on the plans shall be accomplished according to the requirements of Section 505. Erosion control fabric, if specified, shall be placed according to manufacturer's specifications. Fabric shall be of the type specified unless an alternate type is approved in writing by the City. The Contractor shall submit a sample of the alternate fabric type along with specifications before such approval is granted.

305.04 Concrete Ditch Paving.

(a) Materials. Concrete for ditch paving shall be Class 1 concrete in accordance with section 601.

(b) Construction Requirements.

1) **Subgrade.** The subgrade shall be excavated or filled to the required grade. Soft and yielding material shall be removed and replaced with suitable material and the entire subgrade shall be thoroughly compacted.
2) **Forms.** Forms shall be constructed of metal or wood, free from warp, and of sufficient strength to resist springing during the process of depositing concrete. They shall be securely staked, braced, set, and held firmly to the required line and grade. Forms shall be cleaned and oiled before concrete is placed against them.
3) **Placing and Finishing.** The concrete shall be deposited in the forms upon a wetted subgrade to such depth that when it is compacted and finished, the flow line shall be at the required elevation and the sides at required widths, slopes, and thicknesses. The concrete shall be thoroughly compacted and the edges along the forms spaded to prevent honeycomb. The flow lines and sides shall be struck off with a straightedge and tamped

sufficiently to flush mortar to the surface, after which it shall be finished with a wood float to a smooth and even surface. Edges shall be rounded with a ¼" edger.

Transverse joints ¼" wide shall be tooled or sawed perpendicular to the flow line at intervals not greater than 15' measured longitudinally along the flow line. Joints shall continue across the bottom and up the slope to form a continuous joint. 3" diameter weepholes shall be spaced at 10' intervals along the channel. These weepholes shall be constructed in both channel walls a minimum of 6 inches and a maximum of 1 foot above the channel flowline. Weepholes will not be required if the channel wall is less than 1' tall.

When completed, the concrete shall be cured as specified in Section 601.

4) **Backfilling.** Immediately after the forms have been removed, the spaces on each side of the paving shall be backfilled with suitable material and compacted with mechanical equipment. Solid sodding shall be placed in conjunction with backfill when provided on the plans.
5) **Expansion Joints.** When a section of ditch paving terminates at a drop inlet or other structure, a space not less than ½" wide shall be left between the end of the paving and the structure. This space shall be filled with joint filler conforming to the requirements of AASHTO M 213. Expansion joints shall also be placed between successive placements or as directed by the Engineer/City Engineer
6) **Placement on Slopes.** Slope paving shall begin at the toe of the slope and be constructed to the lines and dimensions as shown on the plans or as directed.
7) **Toewalls.** Concrete toewalls shall be constructed at the ends of all paved channels that do not terminate at a concrete structure. Toewalls shall be a minimum of 8" thick and 3' deep below the flowline of the channel, and shall be placed monolithically with the concrete channel.

305.05 Method of Measurement.

(a) Excavation for earthen or concrete channels shall be measured by the cubic yard (CY) of material removed. Quantities will be measured by cross sections taken before and after excavation operations. Payment for plan quantity of channel excavation will be made unless a change in the channel profile or cross section is made.

(b) Concrete channels will be measured by the square yard (SY) of concrete placed.

(c) Erosion control fabric will be measured by the square yard (SY) of area covered by fabric. Overlaps, splices, and other additional fabric required for proper placement of fabric according to manufacturers' specifications will not be measured.

305.06 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract unit price per square yard for concrete channels and per square yard for erosion control fabric. Said price shall be full compensation for placement and finishing of concrete as specified, placement of erosion control fabric per manufacturer's specifications,

and all other labor, equipment, and materials necessary for a complete installation of each item as detailed on the plans.

Excavation will be paid on a CY basis. The plan quantity will be considered the final quantity for purposes of final payment, unless changes to the original design are made. Payment for excavation shall include excavation and removal of material as required, grading to proposed elevations, and all other items of work required to prepare proposed channel areas for concrete or topsoil as required. Topsoil, seeding, and sodding as specified or shown on the plans will be paid for under other items of work.

Payment will be made under:

Pay Item	**Pay Unit**
Channel Excavation	CY (Plan Quantity)
Concrete Ditch Paving	SY
Erosion Control Fabric	SY

Section 306. Filter Blanket and Riprap

306.01 Description. This item consists of a protective layer of riprap, including filter blanket.

306.02 Materials. Stone for riprap shall be from an approved source and shall consist of a durable material with a percent of wear not greater than 45 by the Los Angeles Abrasion Test (AASHTO T96). Riprap stone shall have angular or fractured faces, and shall not weigh less than 140 pounds per cubic foot.

Riprap stone shall be well graded to produce a minimum of voids. The maximum size of each piece shall be no greater than 18" in any dimension, and approximately 50% of material shall consist of pieces weighing 35 pounds or more.

Filter blanket material shall consist of crushed stone reasonably well graded from coarse to fine as approved by the Engineer/City Engineer, or shall be a synthetic geotextile filter fabric meeting the requirements of AASHTO M288 for Erosion Control Class A.

306.03 Construction Requirements.

(a) General. Prior to placing filter blanket and riprap, the slopes shall be shaped as shown on the plans. When rock or hard shale is encountered at the toe of the slope, the riprap shall be keyed into this material the depth of the riprap.

Riprap shall be placed immediately following construction of the embankment in order to provide slope protection.

(b) Filter Blanket. Granular filter blanket material shall be spread uniformly on the previously prepared and approved surface to the thickness and location shown on the plans. Placement of the material by methods that will cause segregation or cause damage to the surface will not be

permitted. Compaction of filter blanket will not be required, but it shall be finished to present a reasonably even surface free from mounds or windrows.

When fabric is used in lieu of granular material, it shall be placed directly on the prepared surface. Fabric sections may be placed vertically or horizontally on the slope. Adjacent fabric sections shall be joined by overlapping a minimum of 2' at the edges and pinning the overlapped strip with U-shaped wire pins, single shaped steel pins with metal disc heads, or similar fasteners. The fasteners shall be 6" or more in length and shall hold the fabric firmly in place. Fasteners shall be inserted through both strips of overlapped fabric at intervals of approximately 4' along the overlap. Additional pins shall be installed as necessary to prevent displacement of the fabric.

Fabric shall be overlapped in the direction of water flow. The fabric shall be turned down and buried approximately 12" at the exterior limits.

No construction equipment will be permitted directly on the fabric.

(c) Dumped Riprap. Stone or broken concrete for dumped riprap shall be placed in such a manner as to produce a reasonably well graded mass of rock with the minimum practicable percentage of voids and shall be constructed to the lines and grades shown on the plans or as directed by the Engineer/City Engineer. Unless otherwise specified, the minimum rip-rap depth shall be 18 inches. Material shall be placed in such a manner as to avoid displacing the underlying material. The larger pieces shall be well distributed throughout the entire mass and the finished riprap shall be free from objectionable pockets of small or large pieces. Hand placing, to a limited extent, may be required, but only to the extent necessary to secure the results specified above. Placing riprap by dumping into chutes or by similar methods likely to cause segregation of various sizes will not be permitted.

Riprap stone shall not be deposited in a manner that will cause damage to the filter blanket. Any damage to fabric during placement of riprap shall be corrected by the Contractor at no cost to the City prior to proceeding with the work. Damaged fabric shall be repaired by placing a piece of fabric large enough to cover the damaged area, overlapping, and pinning in accordance with this section.

306.04 Measurement and Payment. Quantities of 18" thick rip-rap will be measured by the square yard (SY). Filter blanket will not be measured.

Payment for quantities of rip-rap completed and accepted and measured as provided above will be paid for at the unit contract price bid per square yard. Said price shall be full compensation for excavation and grading, placement of filter fabric, and placement of the rip-rap to the lines, grades, and depth specified.

Payment will be made under:

Pay Item	Pay Unit
Rip Rap	SY

Section 307. Flowable Select Material

307.01 Description. This item shall consist of the furnishing, mixing, and placing a flowable mixture of portland cement, fly ash, sand, and water for backfilling bridge abutments, pipe culverts, box culverts, structural plate pipe and arches, or other uses as approved by the Engineer/City Engineer. The material shall be placed in close conformity with the lines, grades, dimensions, and details shown on the plans or established by the Engineer.

307.02 Materials. The materials used in the flowable select material shall conform to the applicable requirements of Section 601. The portland cement, fly ash, and chemical admixtures shall be listed on the QPL.

(a) Mix Design. The mix design will be prepared by the Contractor. The mixture will be proportioned to produce a flowable mixture without segregation. Material for one cubic yard, absolute volume, shall be as follows:

Cement 80 - 100 lbs.
Fly ash 220 - 300 lbs.
Sand Variable to equal one cubic yard
Water Approximately 65 gallons

The minimum flow of the mixture shall be 8" as determined by the test method described herein. The unit weight shall be a minimum of 110 lbs./cubic foot. The mix design shall be accompanied by the following documentation:

1) A listing of the weights of all components of the proposed mix (water and admixtures may be measured by volume);
2) Certified test results for flow and unit weight.

When unsatisfactory results or other conditions make it necessary, a new mix design will be established.

(b) Sampling and Testing. Sampling and testing will be performed by the City. The flow test shall consist of filling a 3" diameter x 6" high open-ended cylinder to the top with the flowable material mixture. If necessary, the top of the mixture will be struck off level. The cylinder will then be pulled straight up and the flow will be measured by the approximate diameter of the mixture. There shall be no evidence of segregation in the mixture. The unit weight shall be determined according to AASHTO T 121, except that rodding and tapping shall not be done.

307.03 Construction Requirements. The Contractor shall provide sufficient supervision, labor, equipment, tools, and materials to assure proper production, delivery, and placement. When deemed necessary by the Engineer/City Engineer, the flowable select material shall be

contained within the designated area by metal or wood forms that are sufficiently tight as to keep the loss of material to a minimum, or by other means as approved by the Engineer/City Engineer. The flowable select material shall be discharged from the mixer and conveyed into the space to be filled according to Section 601. The fill material shall be brought up uniformly to the fill line shown on the plans or as directed by the Engineer/City Engineer. Placing of other material over flowable select material may begin after the flowable select material has taken its initial set, is stable, and does not displace under equipment.

307.04 Method of Measurement. Flowable Select Material will be measured by the cubic yard. The quantities shown included in the proposal will be considered the final quantities and no further measurement will be made unless, in the opinion of the Engineer or upon evidence furnished by the Contractor, substantial variations exist between the planned quantities and actual quantities due to changes in alignment or dimensions or to apparent errors.

307.05 Basis of Payment. Work completed, accepted, and measured as provided above will be paid for at the contract unit price bid per cubic yard for Flowable Select Material, which price shall be full compensation for designing the mix; for furnishing, mixing, and placing the material; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Flowable Select Material	CY

DIVISION 400. BASE AND PAVING

Section 401. Aggregate Base Course

401.01 Description. This work consists of preparing an aggregate base course on a prepared foundation.

401.02 Materials. Materials for aggregate base course shall meet the requirements of the ARDOT Standard Specifications (2014) Section 303 for Class 7.

401.03 Construction Requirements. The base course material shall be placed on a completed and approved subgrade or existing base that has been bladed to substantially conform to the grade and cross section shown on the plans.

The subgrade shall be prepared as specified in Section 203 and shall be free from an excess or deficiency of moisture at the time of placing base course material. The subgrade shall also comply, where applicable, with the requirements of other items that may be contained in the Contract that provide for the construction, reconstruction, or shaping of the subgrade or the reconstruction of the existing base course. Base course material shall not be placed on a frozen subgrade or subbase.

The aggregate shall be placed on the subgrade or other base course material and spread uniformly to such depth and lines that when compacted it will have the thickness, width, and cross section shown on the plans. Unless otherwise specified or directed, base material shall extend full depth to 1’ beyond the planned back of curb line.

If the specified compacted depth of the base course exceeds 8” the base shall be constructed in two or more layers of approximately equal thickness.

The material shall be spread the same day that it is hauled. Spreading shall be performed in such a manner that no segregation of coarse and fine particles nor nests or hard areas caused by dumping the aggregate on the subgrade will exist. Care shall be taken to prevent mixing of subgrade or unspecified material with the base course material in the blading and spreading operation.

When the base course is placed adjacent to an existing or newly constructed asphalt surface course or portland cement concrete pavement, the aggregate shall not be dumped or mixed on the pavement surface. Mechanical spreading equipment shall be used, if necessary, to place the base course on the subgrade.

Each course shall be thoroughly mixed for the full depth of the course and shall be compacted by any satisfactory method that will produce the density specified. The aggregate shall be maintained substantially at optimum moisture during the mixing, spreading, and compacting operations. The specified grade and cross section shall be maintained by blading throughout the compaction operation. The material in each course shall be compacted to a density, not less than 98% of the maximum density determined in the laboratory by AASHTO T 180 or ASTM D1557. The aggregate shall be compacted across the full width of application.

The compacted base course shall be tested for depth and any deficiencies corrected by scarifying, placing additional material, mixing, reshaping, and recompacting to the specified density, as directed. The base course shall be shaped for its full width to the required grade and cross section. The finished base course layer shall not vary at any point by more than .02 foot from the prescribed elevation.

The Contractor shall maintain the base course in a satisfactory condition until accepted.

401.04 Method of Measurement. Aggregate base course will be measured in square yards of material in place per the plans. Measurement will include areas up to 1' behind the backs of curbs if required on the plans. Aggregate base course placed beyond 1' behind the back of curbs will not be measured.

401.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per square yard for Aggregate Base Course, which price shall be full compensation for preparing the subgrade; for furnishing material; for spreading; finishing, watering, manipulating, and compacting; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Pay Item	Pay Unit
(Depth) Aggregate Base Course	SY

Section 402. Prime and Tack Coats

402.01 Description. This work consists of preparing and treating an existing surface with asphalt or emulsified petroleum products and, if required, blotter material.

402.02 Materials.

(a) Asphalt. Asphalt cement shall meet the requirements of AASHTO M 20 or M 226.

(b) Emulsified Asphalt. Emulsified asphalt shall meet the requirements of AASHTO M 140 or M 208.

(c) Emulsified Petroleum Products. Emulsified petroleum products, "EPR-1 Prime" or approved equal, may be used as the Prime Coat when indicated on the Plans or approved by the Engineer/City Engineer.

(d) Blotter Material. Aggregate for blotter material shall meet the requirements of AASHTO M 43 for size 10.

Asphalt will be conditionally accepted at the source. Blotter material may be accepted in the stockpile, at the source, or at the roadway prior to placement.

402.03 Construction Requirements.

(a) Weather Limitations. Prime coat shall not be applied on a wet surface, when the surface temperature is below 45°F, or when weather conditions would prevent the proper construction of the prime coat.

Tack coat shall not be applied unless weather conditions meet the requirements for laying asphalt courses.

(b) Equipment. The contractor shall provide equipment for heating the asphalt and uniformly applying the asphalt and blotter material. The distributor shall be capable of uniformly distributing prime and tack coats at even temperatures on variable surface widths at readily determined and controlled rates from 0.05 to 2.0 gallons per square yard. Distributor equipment shall include a tachometer, pressure gages, volume measuring devices or a calibrated tank, and a thermometer for measuring temperatures of tank contents.

(c) Preparation of Surface. Surfaces to be primed shall be shaped to the required grade and section, free from all ruts, corrugations, segregated material, or other irregularities and uniformly compacted and broomed. Surfaces to receive tack coat shall be free of dirt, gravel, and other debris and shall be thoroughly washed and broomed to produce a clean and dry surface.

(d) Application of Asphalt. Asphalt shall be applied by a pressure distributor in a uniform, continuous spread. When traffic is maintained, not more than ½ the width of the section shall be treated in one application. Care shall be taken so the application of asphalt at the junctions of spreads is not in excess of the specified amount. Excess asphalt shall be squeegeed from the surface. Skipped areas or deficiencies shall be corrected. Building paper shall be placed over the end of the previous applications, and the joining application shall start on the building paper. Building paper used shall be removed and satisfactorily disposed of.

When traffic is maintained, one-way traffic shall be permitted on the untreated portion of the roadbed. After the asphalt has been absorbed by the surface and will not pick up, traffic shall be transferred to the treated portion and the remaining width of the section shall be primed.

The quantities, rate of application, temperatures, and areas to be treated shall be approved before application of the prime or tack coat.

(e) Emulsified petroleum products. Emulsified petroleum products, “EPR-1 Prime” or approved equal, where indicated on the Plans or approved by the Engineer/City Engineer as the Prime Coat shall be installed per the Manufacturer’s recommendations and as follows:

1) Required Field Dilution Rate – 3 parts water to 1 part EPR-1 PRIME (Note: Verification samples will be obtained prior to dilution); (b) Minimum required Application Rate – 0.30 gallons per square yard.

(f) Application of Blotter Material. If the prime coat fails to penetrate within the time specified and the roadway must be used by traffic, blotter material shall be spread in the quantities required to absorb any excess asphalt.

(g) Prime Coats not required. Unless indicated or directed otherwise, prime coats will not be required when the initial asphalt course placed upon the aggregate is a minimum of 4 inches in thickness.

402.04 Measurement and Payment. Prime coat, when required, will be measured and paid for per square yard of material placed at the required application rate. Tack coat will not be measured and will be subsidiary to other items. Blotter material will not be measured but will be subsidiary to other items.

Pay Item	Pay Unit
Prime Coat	SY

Section 403. Asphalt Concrete Hot Mix

403.01 Description. This item consists of furnishing and placing asphalt concrete hot mix of the type specified on a prepared foundation.

403.02 Materials, Design, and Quality Control of Superpave Mixes.

(a) Materials. Materials for Asphalt Concrete Binder Course shall meet the requirements of Section 406 of the ARDOT Standard Specifications Edition of 2014. Materials for Asphalt Concrete Surface Course shall meet the requirements of Section 407 of the ARDOT Standard Specifications Edition of 2014, modified as follows:

All surface courses serving as wearing courses shall fully comply with Section 409 of the ARDOT Standard Specifications Edition 2014. If and where so indicated in the Plans and the Bid for Unit Price Contract, and where the surface course is installed by two or more lifts, then the surface course(s) which shall be installed beneath the final lift of the wearing course may be an all limestone course aggregate mix otherwise complying with Section 409 of the ARDOT Standard Specifications Edition 2014 and subject to the review and acceptance by the Engineer and Owner.

(b) Design and Quality Control Requirements. Design and quality control of Superpave mixes shall be as specified in Section 404 of the ARDOT Standard Specifications Edition of 2014. Marshall mixes may be allowed in certain instances. See Section 6.4.4, Asphalt Concrete Hot Mix, of the City of Fayetteville Minimum Street Standards for requirements.

(c) Materials and Equipment for Asphalt Concrete Plant Mix Courses. Materials and equipment for asphalt concrete plant mix courses shall meet the requirements of Section 409 of the ARDOT Standard Specifications Edition of 2014, except for the requirements of Section 409.04(b) is at the contractor's option. If a material transfer device is used, the requirements of Section 409.04(b) shall apply.

403.03 Construction Requirements.

(a) Description. The methods employed in performing the work shall be at the Contractor's option. When the production and/or placement of the material does not comply with the specifications, the Contractor shall make the changes necessary to bring the work into compliance.

(b) Pre-Placement Conference. Unless waived by the Engineer, prior to the start of paving operations the Contractor shall conduct a Pre-Placement Conference involving the Contractor's personnel and the Engineer and City's personnel. The Contractor's proposed plant, delivery, laydown, compaction, and equipment shall be discussed and, if deemed necessary by the City, all the equipment inspected. The accepted mix designs and materials to be used shall be discussed. The proposed mixing and compaction temperatures, sampling and testing plan, haul route, rolling pattern, and other pertinent information shall be discussed. The Pre-Placement Conference and all items discussed shall be documented by the Contractor and furnished to the Engineer within ten calendar days after the Pre-Placement Conference.

(c) Preparation of Mixture. The aggregates, mineral filler, and asphalt binder shall be measured separately and accurately mixed in the proper proportions according to the mix design. The aggregates shall be thoroughly coated and the mixture shall not show an excess or deficiency of asphalt binder, injury or damage due to burning or overheating, or an improper combination of aggregates. The continuous production of ACHM shall be within plus or minus 25°F (14°C) of the mixing temperature shown on the approved mix design. Momentary temperature spikes shall be kept to a minimum.

(d) Preparation of Base or Existing Surface. Newly constructed base courses or subgrade shall be prepared as set forth in the specification item covering such items.

Prior to placing asphalt base, binder, or surface courses, all required corrections of the existing pavement or base, such as filling potholes, sags, and depressions, or alterations of the existing pavement crown, shall be made. Such corrections shall be accomplished by placing asphalt binder or surface course mixtures at the location and in a manner as directed by the Engineer/City Engineer. Asphalt material used for wedging or leveling courses, or for fillings holes, may be placed by hand, blade grader, or mechanical spreader methods. The mixture shall be featheredged to a smooth and even surface around the edges of these areas.

Prior to arrival of the mixture on the work, the prepared surface shall be cleaned of all loose and foreign materials and primed or tack coated as specified. Excessive joint and crack filler shall be removed before application of the prime or tack coat. The mixture shall not be placed on a surface that shows evidence of free moisture.

Contact surfaces of curbing, gutters, manholes, and other structures shall be painted with a thin coating of rapid curing cutback asphalt or emulsified asphalt. No direct compensation will be made for this work.

If the earlier course has been contaminated with dirt or other foreign materials, or when the time lapse between courses is in excess of 8 hours, the earlier course shall be cleaned and given a tack coat prior to placing the succeeding course. The maximum amount of time between the application of tack coat and the placement of an asphalt course shall not exceed 8 hours. If more than 8 hours has lapsed since tack coat application, the surface shall be re-tacked prior to the placement of any successive asphalt course. If directed by the Engineer/City Engineer, a tack coat shall be used even though the lapsed time has been less than 8 hours.

(e) Transporting. The mixture shall be transported from the mixing plant to the work in vehicles with clean tight beds.

When the mixture is being hauled more than 15 miles or when the mixture is being placed between November 1 and April 1, the beds of the vehicles shall be covered with canvas or other suitable material to retard loss of heat. The cover shall extend over the sides and ends or the truck bed and shall be securely fastened. When the mixture is being hauled less than 15 miles the cover shall be stored on the truck at all times to be utilized when overtaken by sudden rains.

No loads shall be sent so late in the day as to interfere with spreading and compacting the mixture during daylight hours unless adequate artificial lighting is provided.

Sufficient haul vehicles and plant production rate shall be maintained to the project to provide a continuous operation on the roadway.

Only non-petroleum release agents approved by the Engineer/City Engineer shall be used in haul trucks.

(f) Spreading and Finishing. The mixture shall be placed on an approved surface, spread, and struck off to the line, grade, and elevation established. The mixture shall be placed only on a base that shows no evidence of free moisture, and only when weather conditions are suitable.

The mixture from all types of plants should be delivered to the paver within the recommended compaction temperature range as shown on the approved job mix design. These recommended temperatures should be used in placing and compacting the material. In addition, surface and binder course mixtures shall not be placed on the roadway at a temperature lower than 250° F.

The paver shall uniformly distribute and compact the mixture in front of the screed for the full width being paved. The screed or strike-off assembly shall effectively produce a finished surface of smooth and uniform texture without tearing, shoving, or gouging the mixture. The paver shall be operated at forward speeds consistent with satisfactory laying of the mixture. The speed of the paver shall be matched with the plant production rate and number of hauling units. Stop and go operation of the paver is to be avoided.

The longitudinal joint in one layer shall offset that in the layer immediately below by approximately 6”. In general, the joint in the top layer shall be at the centerline of the pavement if the asphalt is placed in 2 passes or less, or at lane lines if the asphalt is placed in more than 2 passes.

(g) Rolling and Density Requirements and Joints. The mixture, after being spread, shall be thoroughly compacted by rolling as soon as it will bear the weight of the rollers without undue displacement.

At the beginning of placement of each mix design, the Contractor shall establish an optimum rolling pattern that will achieve the specified density for the mix being placed. The Contractor may continue with paving operations while the optimum rolling pattern is being established. The established rolling pattern shall be used for compacting all mix placed unless a change in the job mix formula occurs or unacceptable results are obtained. Whenever a change in the job mix formula occurs, or when the compaction method or equipment is changed, or when unacceptable results are obtained, a new optimum rolling pattern shall be established.

The number, weight, and type of rollers, and the optimum rolling pattern shall be such that the specified density and surface requirements are consistently attained while the mixture is in a workable condition. Final approval of the rollers and the rolling pattern will be based upon satisfactory performance and the ability to compact the mixture to the specified density and surface requirements. Rollers that produce excessive crushing of aggregate particles will not be permitted.

When using vibratory rollers, the Contractor shall exercise due caution to prevent any deterioration of the material caused by excessive rolling or vibration. Vibratory rollers shall be operated in such a manner that overlap of adjacent passes shall be held to a minimum. Vibration shall not be used on courses less than 1-½" thick.

Rolling shall start longitudinally at the low edge and proceed toward the higher portion of the mat. When paving in echelon or abutting the previously placed lane, the longitudinal joint shall be rolled first followed by the regular rolling procedure. Alternate passes of the roller shall be terminated at least 3' from any preceding stop. Rolling on superelevated curves shall progress from the low side. Rollers shall not be stopped perpendicular to the centerline of the traveled way.

The speed of the roller shall be slow enough to avoid displacement of the hot mixture, and in no case more than 3 mph. The roller shall be operated in such a manner that no displacement of the mat will occur. Rolling shall proceed continuously until the required density is attained and all roller marks are eliminated, leaving the surface smooth and uniform and the required density attained. To prevent adhesion of the asphalt mixture to the rollers, the rollers shall be kept moist for the full width of the rollers, but excess water will not be permitted.

Rollers shall not pass over the unprotected end of a freshly laid mixture. Transverse joints shall be formed by cutting back on the previous run to expose the full depth of the course. A brush coat of asphalt material shall be used on contact surfaces of transverse joints just before additional mixture is placed against the previously placed material.

(h) Weather Limitations. Hot mix asphalt materials shall not be mixed or placed when the surface temperature is below 40° F or when there is frost in the base or subgrade, or at any other time when weather conditions are unsuitable for the type of material being placed.

Regardless of the temperatures herein specified, paving will not be allowed unless specific density, either by percent of field mold density or by rolling procedure, can be achieved before the bituminous mixture cools to 175° F.

403.04 Acceptance of Pavement and Adjustments in Payment.

(a) Superpave Mixes Acceptance of asphalt payment designed using Superpave Methods shall be according to Section 410.09 of the ARDOT Standard Specifications Edition of 2014 except as modified herein.

403.05 Modifications and Augmentations of ARDOT Standard Specifications.

Modifications and augmentations of ARDOT Standard Specifications detailed in this subsection apply to 2014 Edition of the Standard Specifications.

Samples for all properties except density, thickness, and the investigation of segregation shall be obtained from trucks at the plant. The contractor/testing agency shall clearly mark the load ticket of each sampled truck to indicate that the load has been sampled.

The Contractor shall provide the straight-edge for use in pavement smoothness testing.

Sublot sizes for density and depth measurements will be 500 tons, and lot sizes will be 3000 tons. Locations for cores to be taken for density and depth testing will be determined using ARDOT Test Method #465.

Compliance, price reduction, and rejection limits for density will be in accordance with Table 410-1 of the ARDOT Standard Specifications. Calculations of price reductions will be in accordance with 410.09(d)(5) of the ARDOT Standard Specifications. For asphalt that is outside the limits shown as lot rejection limits but within the limits shown as sublot rejection limits in Table 410-1, the City shall determine if that mix shall be removed at the contractor's expense or left in place without pay to contractor.

All asphalt that is outside the limits shown as sublot rejection limits shall be removed in accordance with this section.

For small projects (less than 1500 tons total) price reduction amounts shall be reduced to 50% of the amounts specified in Section 410 of the ARDOT Standard Specifications.

Thickness of the finished asphalt will be monitored by measuring the thickness of the density cores taken. The average of all depth measurements shall not be less than the required depth shown on the plans. Depth of any core in excess of plus one-quarter inch (+ 1/4") will not be used in computing the average depth. If the average depth is less than the required depth, it will

be corrected by overlaying with additional ACHM surface, or as directed by the Engineer/City Engineer.

In addition, thickness of individual cores shall not be greater than 1/4" less than the plan depth.

The absolute minimum pavement thickness for any core shall be 3 inches. When pavement design thickness is less than 3 inches, the minimum thickness for each core that will be accepted shall be the design thickness.

The method for determining the limits of removal for density or depth is as follows: If a single core test falls outside of the limits shown as "Sublot Rejection Limits" in 410-1, two additional tests shall be run in close proximity (within three feet). If the average of these three tests is within the sublot rejection limits in Table 410-1, then this average shall become the value for the density of this sublot. If the average of the three tests is still outside of the sublot rejection limits, tests shall be run at 50-foot intervals in both directions until results are found that are within the sublot rejection limits.

All asphalt that is outside of the limits shown as sublot rejection limits as determined by the above method shall be removed and replaced. After replacement, a core shall be taken in the replacement asphalt and the density determined. The average of this density test and the two isolation tests shall become the density for the sublot.

The contractor shall do all coring and testing for density and depth at no additional cost to the City. The City may require additional cores cut for verification of the contractor's test. Verification testing will be paid for by the City.

When lots and sublot divisions for initial and final courses do not coincide, the Contractor may be required to take additional samples (full-depth) at his expense to determine asphalt thickness. Locations of such cores shall be approved by the Engineer.

Section 410.10 of the ARDOT Standard Specifications will not be used under this contract.

403.06 Method of Measurement. Measurement will be by one of the following methods as detailed below. The method to be used will be stated in the bid form.

Asphalt concrete hot mix (ACHM) will be measured by either the ton or square yard of material in place and as indicated on the Plans and the Bid for Unit Price Contract.

Asphalt concrete hot mix (ACHM) where indicated to be measured by the ton will be substantiated by weight tickets, which shall be submitted to the City at the time of asphalt delivery. Deductions for asphalt placed in areas not designated in the plans and not directed by the Engineer/City Engineer or for asphalt placed at depths more than 1/8" over plan depth will be made at the discretion of the Engineer/City Engineer. Measurement of these deductions will be by a method deemed appropriate by the Engineer/City Engineer.

Asphalt concrete hot mix (ACHM) where indicated to be measured by the square yard (SY) will be substantiated by surface area measurements of asphalt concrete hot mix in place. Deductions for asphalt placed in areas not designated in the plans and not directed by the Engineer/City Engineer will be made at the discretion of the Engineer/City Engineer. Measurement of these deductions will be by a method deemed appropriate by the Engineer/City Engineer.

403.07 Basis of Payment. Payment will be based upon the method of measurements and by one of the following methods as detailed below.

Asphalt concrete hot mix will be paid for by either:

(a) Per ton: at the contract unit price bid per ton of material placed in plan locations; said price shall include furnishing mix designs, furnishing material, for heating, mixing, hauling, placing, rolling, finishing, and for all other labor, equipment, tools, and incidentals necessary to complete the work, or

(b) Square yard (SY): at the contract unit price bid per (depth asphalt concrete hot mix) square yard (SY) of material placed in plan locations; said price shall include furnishing mix designs, furnishing material, for heating, mixing, hauling, placing, rolling, finishing, and for all other labor, equipment, tools, and incidentals necessary to complete the work, as indicated on the Plans and the Bid for Unit Price Contract.

Payment will be made under:

Pay Item	**Pay Unit**
Asphalt Concrete Hot Mix Binder Course (ACHMBC)	Ton
Asphalt Concrete Hot Mix Surface Course (ACHMSC)	Ton

OR

Pay Item	**Pay Unit**
(Depth) Asphalt Concrete Hot Mix Binder Course (ACHMBC)	SY
(Depth) Asphalt Concrete Hot Mix Surface Course (ACHMSC)	SY

Section 404. Asphalt Concrete Hot Mix Base Course

404.01 Description. This item shall consist of a base course constructed on an accepted course according to these specifications and in substantial conformity with the lines, grades, and typical cross sections shown on the plans.

404.02 Materials. The materials and equipment shall comply with the requirements of Asphalt Concrete Hot Mix Base Course (Section 405 of the ARDOT Standard Specifications).

404.03 Construction Requirements. Construction requirements shall comply with the requirements of Asphalt Concrete Hot Mix Base Course (Section 405 of the ARDOT Standard Specifications).

404.04 Method of Measurement. Measurement will be by one of the following methods as detailed below. The method to be used will be stated in the bid form.

Asphalt concrete hot mix base course will be measured by either the ton or square yard of material in place and as indicated on the Plans and the Bid for Unit Price Contract.

Asphalt concrete hot mix base course where indicated to be measured by the ton will be substantiated by weight tickets, which shall be submitted to the City at the time of asphalt delivery. Deductions for asphalt placed in areas not designated in the plans and not directed by the Engineer/City Engineer or for asphalt placed at depths more than 1/8" over plan depth will be made at the discretion of the Engineer/City Engineer. Measurement of these deductions will be by a method deemed appropriate by the Engineer/City Engineer.

Asphalt concrete hot mix base course where indicated to be measured by the square yard (SY) will be substantiated by surface area measurements of asphalt concrete hot mix in place. Deductions for asphalt placed in areas not designated in the plans and not directed by the Engineer/City Engineer will be made at the discretion of the Engineer/City Engineer. Measurement of these deductions will be by a method deemed appropriate by the Engineer/City Engineer.

404.05 Basis of Payment. Payment will be based upon the method of measurements and by one of the following methods as detailed below.

Asphalt concrete hot mix base course will be paid for by either:

(a) Per ton: at the contract unit price bid per ton of material placed in plan locations; said price shall include furnishing mix designs, furnishing material, for heating, mixing, hauling, placing, rolling, finishing, and for all other labor, equipment, tools, and incidentals necessary to complete the work, or

(b) Square yard (SY): at the contract unit price bid per (depth asphalt concrete hot mix) square yard (SY) of material placed in plan locations; said price shall include furnishing mix designs, furnishing material, for heating, mixing, hauling, placing, rolling, finishing, and for all other labor, equipment, tools, and incidentals necessary to complete the work, as indicated on the Plans and the Bid for Unit Price Contract.

Payment will be made under:

Pay Item	**Pay Unit**
Asphalt Concrete Hot Mix Base Course	Ton

OR

Pay Item	**Pay Unit**
(Depth) Asphalt Concrete Hot Mix Base Course	SY

Section 405. Asphalt Concrete Patching for Maintenance of Traffic

405.01 Description. This item shall consist of an asphalt concrete material composed of mineral aggregate and asphalt binder for use in patching to maintain traffic including temporary repairs for roadway cuts. This item shall be placed for all roadway cuts unless directed otherwise by the Engineer/City Engineer. This item will be placed for other maintenance of traffic if and where directed on the plans or by the Engineer/City Engineer.

405.02 Materials and Composition. Materials and equipment shall conform to the requirements of ACHM Surface Course (Standard Specification Section 403) or Asphalt Concrete Cold Plant Mix (Section 411 of ARDOT Standard Specifications).

405.03 Construction Requirements. Construction requirements shall conform, insofar as possible, to Section 406 and as follows:

All roadway cuts shall be temporarily or permanently repaired within 24 hours of the completion of trench backfill for the work, or segment of work, which required the excavation and/or cut.

Temporary roadway cut repairs shall be a minimum of two (2) inches and a maximum of three (3) inches of asphalt and shall comply with Specification Section 405 and 406.

Permanent roadway cut repairs shall comply with the plans and specifications and as directed by the Engineer/City Engineer.

Temporary roadway cut repairs shall be maintained by the contractor.

Temporary roadway cut repairs shall be removed and disposed of by the Contractor as necessary during installation of permanent roadway cut repairs or new roadway construction.

405.04 Method of Measurement. Asphalt Concrete Patching for Maintenance of Traffic will be measured by the ton of mix placed as directed by the Engineer/City Engineer. In no case shall measurement of the Temporary Repairs for Roadway Cut extend beyond the pay limit shown on the details on the Plans. Temporary Repairs for Roadway Cut with depths less than two (2) inches and all depths greater than three (3) inches shall not be measured for payment.

405.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per ton for Asphalt Concrete Patching for Maintenance of Traffic, which price shall be full compensation for furnishing materials; for heating, mixing, hauling, placing, and compacting; and for all labor, equipment, tools, and incidentals necessary to complete the work. No payment will be made for:

1) Material placed without authorization of Engineer/City Engineer.
2) Material placed beyond the pay limits shown on the detail for each type of pavement repair.
3) Material placed to repair previously patched areas unless approved by the Engineer/City Engineer.

Payment will be made under:

Pay Item	Pay Unit
Asphalt Concrete Patching for Maintenance of Traffic	Ton

Section 406. Asphalt Concrete Hot Mix Patching of Existing Roadway

406.01 Description. This item shall consist of patching the existing roadway using asphalt concrete material composed of mineral aggregate and asphalt binder.

406.02 Materials and Composition. Materials shall conform to the requirements of Section 402, Tack Coat and Section 403.

406.03 Construction Requirements. Unstable areas in existing roadways and shoulders, designated by the Engineer/City Engineer to be repaired, shall be removed to provide firm vertical sides and a firm, stable, bottom generally parallel with the existing surface. All loose or foreign material shall be removed from the hole. A tack coat of emulsified asphalt shall be applied to the sides of the hole. Asphalt Concrete Hot Mix Binder or Surface Course shall be placed in the hole in uniform layers, not to exceed 4 inches loose measurement. Compaction, satisfactory to the Engineer/City Engineer, shall be accomplished with a mechanical tamper or other approved methods. The finished surface shall be smooth and level with the surrounding surface.

406.04 Method of Measurement. Asphalt Concrete Hot Mix Patching of Existing Roadway will be measured by the ton of mix.

406.05 Basis of Payment. Work completed and accepted and measured as provided above, will be paid for at the contract unit price bid per ton for ACHM Patching of Existing Roadway, which price shall be full compensation for excavation of the existing roadway; for removal and disposal of excavated material; for compacting and tacking the excavated area; for furnishing materials; for heating, mixing, hauling, placing, and compacting the materials; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Asphalt Concrete Hot Mix Patching of Existing Roadway	Ton

DIVISION 500. MISCELLANEOUS CONSTRUCTION

Section 501. Concrete Curb and Gutter

501.01 Description. This item shall consist of the construction of integral curb, concrete curb, or concrete combination curb and gutter according to these specifications and in conformity with the locations, lines, and grades shown on the plans or as directed.

501.02 Materials. The Concrete shall be Class 1 Concrete as provided in Section 601. The maximum allowable slump shall be 4 inches.

When an extrusion machine is used, the Contractor may modify the concrete mix design, upon approval of the Engineer/City Engineer, to improve workability while maintaining the requirements for Class 1 Concrete.

Material for joint filler shall comply with AASHTO M 213.

501.03 Construction Requirements.

(a) Subgrade. The subgrade shall be shaped to the required depth below the finished surface, according to the dimensions shown on the plans, and shall be compacted to a firm, even surface. Where curb is to be placed as part of a street, the compaction requirements of the street shall apply to the subgrade and base course underneath the curb.

(b) Placing and Finishing.

1) **Integral Curb.** After the concrete pavement has been struck off, the curb forms shall be clamped or otherwise securely fastened in place to the slab form and additional concrete for the curb shall then be deposited and thoroughly tamped. The concrete shall be placed within 30 minutes after the pavement slab has been finished and care shall be taken to secure monolithic construction. The concrete shall be spaded or vibrated sufficiently to eliminate voids and shall be tamped to bring the mortar to the surface. It shall then be finished smooth and even with a wood float and given a Class 6 finish according to Section 601.16. The edges shall be rounded with an approved finishing tool to the radius shown on the plans.
2) **Concrete Curb or Concrete Combination Curb and Gutter.** The concrete shall be deposited in the forms upon wetted subgrade and vibrated and spaded until mortar entirely covers the surface, after which it shall be finished smooth and even by means of a wood float and given a Class 6 finish according to Section 601.16. Edges shall be rounded as shown on the plans while the concrete is still plastic.

(c) Joints. Expansion joints for concrete curb or concrete combination of curb and gutter shall be installed at stationary structures such as catch basins, drop inlets, etc., and at ends of curb returns. Where curb and gutter is constructed adjacent to or on rigid pavements, the location and width of joints shall coincide with those in the pavement, where practicable. Expansion joints shall have a thickness of ½" and shall be filled with joint filler according to Section 601.11 shaped to the cross section of the curb and constructed at right angles to the curb line.

Contraction joints for concrete curb or concrete combination curb and gutter shall be 1/8" to 3/8" wide x 1-½" deep and shall be constructed at 15' intervals. They shall be constructed at right angles to the centerline and perpendicular to the surface of the curb and gutter. Where curb and gutter is constructed adjacent to or on rigid pavements, the location and width of joints shall coincide with those in the pavement, where practicable. Contraction joints shall be formed by sawing, unless otherwise specified, and filled according to the requirements for Joint Seals as specified in Section 601.11, or with a commercially available silicone product approved by the City.

(d) Surface Tests. Before the concrete is given the final finishing, the surface of the gutter and the top of the curb shall be true to line and grade. The maximum variation in 10' shall not exceed 3/8".

(e) Curing. When completed, the concrete shall be cured as specified in Section 601.15.

(f) Backfilling. After the concrete has set sufficiently, the space behind the curb shall be refilled to the required elevation with suitable material, free from topsoil, leaves, twigs, or other organic material, trash, large rocks, or other deleterious materials. This material shall be firmly compacted to 90% of the material's maximum density as determined by AASHTO T99 or ASTM D698 by means of approved mechanical equipment and neatly graded.

501.04 Method of Measurement. Curbing will be measured by the linear foot (LF) along the face of the curb at the gutter line. Integral curb placed with concrete pavement will not be measured separately, but shall be included in the price bid for concrete pavement. Modified curbs across driveways and streets will be measured as curb.Curbs placed as part of commercial asphalt driveway construction will also be measured as curb.

501.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per linear foot (LF) for Concrete Curb or Concrete Curb and Gutter, which price shall be full compensation for furnishing materials, including joint filler; for forms; for mixing, placing, and finishing concrete; and for excavation and backfilling when not included in other items.

Pay Item	Pay Unit
Concrete Curb and Gutter	LF
Concrete Curb	LF

Section 502. Concrete Sidewalks

502.01 Description. This item shall consist of the construction of concrete walks according to these specifications and in conformity with the dimensions, locations, lines, and grade shown on the plans or as directed.

502.02 Materials. Concrete shall comply with the requirements for Class 1 Concrete as provided in Section 601. The maximum allowable slump shall be 4 inches. Aggregate base shall meet the requirements of Section 401.

502.03 Construction Requirements.

(a) Subgrade. The subgrade shall be excavated or filled to the required grade. Unacceptable material shall be removed and replaced with suitable material, free from topsoil, leaves, twigs, or other organic material, trash, large rocks, or other deleterious materials, and the entire subgrade shall be thoroughly compacted with approved mechanical equipment to not less than 90% of the material's maximum density as determined by AASHTO T99 or ASTM D698.

(b) Aggregate Base Course. Class 7 aggregate base meeting the requirements of Section 401 shall be installed on the approved subgrade to a minimum depth of 4 inches outside of driveway areas and a minimum depth of 6 inches across driveways, and compacted to 95% of Modified Proctor Density as determined by AASHTO T 180 or ASTM D1557.

(c) Placing and Finishing. The concrete shall be deposited in the forms upon the wetted aggregate base to such depth that when it is compacted and finished, the top shall be at the required elevation. It shall be thoroughly consolidated and the edges along the forms spaded to prevent honeycomb. The top shall then be struck off with a straightedge and tamped or vibrated sufficiently to flush mortar to the surface, after which it shall be given a Class 6 finish according to Section 601.16. Edges shall be rounded with a ¼" radius, including edges at joints.

Concrete thickness shall be 4 inches outside of driveway areas and 6 inches across driveways unless otherwise specified.

Transverse joints in the walks shall be cut with a ¼" jointer at intervals not greater than the width of the walk being constructed, or as directed. This joint pattern shall be continuous through driveways.

When completed, the concrete shall be cured as specified in Section 601.15.

(d) Backfilling. After the forms have been removed, the spaces on each side of the walk shall be backfilled with suitable material, which shall be firmly compacted and neatly graded. Topsoil meeting the requirements of Section 204 shall be used when areas adjacent to the sidewalk are to be seeded or sodded.

(e) Expansion Joints. A space not less than ½" wide shall be left between the sidewalks and adjacent structures, except that no space shall be left between the sides of the walks and adjacent curbs. This space shall be filled with approved joint filler complying with AASHTO M 213.

502.04 Method of Measurement. Concrete sidewalk of the specified thickness will be measured by the square yard (SY).

502.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per square yard (SY) for Concrete Sidewalks of the thickness specified, which price shall be full compensation for furnishing materials, including concrete, aggregate base, and joint filler; constructing the concrete sidewalk; for excavation and

backfilling where not included in other contract items; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
4" Thick Concrete Sidewalk	SY
6" Thick Concrete Sidewalk	SY

Section 503. Driveway Construction or Reconstruction

503.01 Description. This work consists of reconstructing existing driveways or constructing new driveways with concrete, asphalt, aggregate base course, or other materials as shown on the Plans or as directed by the Engineer/City Engineer.

503.02 Materials. Concrete for driveway reconstruction shall be Class 1 according to the requirements of Section 601. Asphalt shall be Surface Course per the requirements of Section 403. Aggregate base course shall meet the requirements of Section 401. All other materials shall be as specified or as directed by the Engineer/City Engineer.

503.03 Construction Requirements.

(a) General. Aprons and driveways shall be constructed in the locations, to the lines and grades, and of the material type shown on the Plans, or as directed by the Engineer/City Engineer. Construction of driveways with greater than 12% slope perpendicular to the street will not be allowed except as approved by the Engineer. Driveway widths shall match widths of existing driveways, with a minimum driveway width of 10' and a maximum width of 40' for commercial driveways and 24' for residential driveways. All driveways designated as commercial driveways shall be constructed with concrete curb and gutter along each side of the driveway.

Driveways and aprons shall be constructed on a compacted subgrade consisting of material approved by the Engineer/City Engineer.

(b) Driveway Removal. Existing driveways shall be removed to the locations shown on the plans or as directed by the Engineer to create a smooth transition from the roadway to the adjacent property. The back limit of the driveway shall be sawed if required to produce a neat line.

(c) Concrete Apron. Concrete apron shall be constructed on all driveways beginning at the back of curbs and extending to the front edge of the sidewalk. Concrete aprons shall be of a residential or commercial type as shown on the plans. The apron thickness shall be as shown on the Plans, but not less than six inches (6"). Mixing, placement, and finishing of concrete shall be as required in Section 601. Contraction joints shall be constructed so that slabs are no more than 15' in any dimension. One half-inch (½") expansion material meeting the requirements of Section 601.11 shall be placed between the backs of curbs and the apron. Joints shall be tooled or sawed at 10' intervals perpendicular to the street. These saw joints shall be filled with joint sealant meeting the requirements of Section 601.11.

(d) Concrete Driveways. Concrete driveways shall be constructed where shown on the Plans or as directed by the Engineer/City Engineer. The driveway thickness shall be as shown on the Plans, but not less than six inches (6”). Mixing, placement, and finishing of concrete shall be as required in Section 601. Contraction joints shall be constructed so that slabs are no more than 15’ in any dimension. When concrete driveways are constructed monolithically with concrete apron, a contraction joint shall be constructed at the interface between the apron and the driveway. All joints shall be sealed according to Section 601.11.

(e) Asphalt Driveways. Asphalt driveways shall consist of approved Surface Mix. Construction of asphalt driveways shall meet the requirements of Section 403. The thickness of the asphalt driveway section shall be as shown on the Plans, but in no case shall be less than 2” of asphalt constructed on 6” of aggregate base course.

(f) Aggregate Base Driveways. All existing driveways constructed of soil or gravel shall be reconstructed with aggregate base meeting the requirements of Section 401. Placement of base material shall be according to the lines and grades shown on the plans or as directed by the Engineer/City Engineer. Thickness of base shall be as shown on the plans, but in no case shall be less than 6”. Compaction requirements are as specified in Section 401.

503.04 Method of Measurement. If specifically included as a pay item, asphalt or concrete driveway removal shall be measured by the square yard (SY) from the existing roadway edge to the limits of the driveway removal. Removal of other driveways will not be measured. Concrete aprons and all driveways shall be measured by the square yard (SY). Curb constructed as part of concrete aprons or concrete driveways will be measured as driveway. Curb for asphalt driveways will not be measured as part of this item.

503.05 Basis of Payment. Work completed and measured as provided above will be paid for at the contract unit price bid per square yard for the various items. This price shall be full compensation for furnishing and placing materials, for excavation and subgrade preparation; for shaping and finishing; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Concrete Driveway Aprons	SY
Concrete Driveway	SY
Asphalt Driveway	SY
Aggregate Base Course Driveway	SY
Asphalt/Concrete Driveway Removal	SY

Section 504. Headwalls and Retaining Walls

504.01 Description. This item consists of constructing concrete headwalls and retaining walls at the locations and to the lines and grades shown on the plans. Modular Block retaining walls, and/or Mechanically Stabilized Earth retaining structures with facing, when so indicated in the

plans or the proposal shall be specified in a Special Provision supplemental to these Standard Specifications.

504.02 Materials. Concrete shall meet the requirements of Section 601 for Class 1 for headwalls, and Class 1 for retaining walls.

Reinforcing steel shall meet the requirements of Section 602.

504.03 Construction Requirements. The subgrade on which the footing is to be placed shall be prepared by excavating to the required grade and thoroughly compacting the existing material. If the existing material at the elevation of the bottom of the footing is soft and yielding, and the Engineer/City Engineer so directs, it shall be removed and replaced with suitable material according to Section 202.

Reinforcing steel shall be placed as shown on the plans. Weepholes of the size shown on the plans shall be set in the forms before concrete is placed.

Concrete shall be furnished, placed, finished, and cured according to the requirements of Section 601.

504.04 Method of Measurement. Concrete headwalls and concrete retaining walls will be measured by the cubic yard of concrete placed and accepted. Concrete, reinforcing steel, filter fabric, compacted drainage stone backfill, expansion joint materials, weepholes, weephole screens, compacted earth backfill and all other items indicated on the Plans or required for a complete headwall and/or retaining wall shall not be measured for separate payment but will be considered subsidiary to the items involved.

Additional undercut excavation as required under footings will be measured by the cubic yard compacted in place.

504.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per each for Concrete Headwalls and per linear foot for Concrete Retaining Walls. Said price shall be full compensation for furnishing all materials, including reinforcing steel; for structural excavation and compaction; for all forming and bracing; for mixing, transporting, placing, finishing, and curing; and for all equipment, tools, labor, and incidentals necessary to complete the work.

Additional excavation and embankment under footings will be paid for at the unit price bid for Undercut Excavation. No payment for additional excavation will be made unless such excavation is directed by the Engineer/City Engineer.

Payment will be made under:

Pay Item	Pay Unit
Concrete Headwalls	EA
Concrete Retaining Walls	LF
Modular Block Retaining Walls	SF

Section 505. Seeding and Sodding

505.01 Description. This item shall consist of furnishing and applying lime, fertilizer, seed, mulch cover, and water according to these Specifications at locations shown on the plans or as directed.

The work under this item shall be accomplished as soon as practicable after the grading in an area has been completed in order to deter erosion of the roadway and siltation of streams.

505.02 Materials.

(a) Lime. Lime shall be agricultural grade ground limestone or equivalent as approved by the City.

(b) Fertilizer. Fertilizer shall be a commercial grade, uniform in composition, free flowing, and suitable for application with mechanical equipment. It shall be delivered to the site in labeled containers conforming to current Arkansas fertilizer laws and bearing the name, trademark, and warranty of the producer.

(c) Seed. Except as modified herein, the seed shall comply with the current rules and regulations of the Arkansas State Plant Board and the germination test shall be valid on the date the seed is used. It shall have a minimum of 98% pure seed and 85% germination by weight, and shall contain no more than 1% weed seeds. A combined total of 50 noxious weed seeds shall be the maximum amount allowed per pound of seed with the following exceptions: Johnson grass seed, wild onion seed, wild garlic seed, field bindweed seed, nut grass seed, sickle pod seed, sesbania seed, indigo seed, morning-glory seed, and cocklebur seed will not be allowed in any amount. Seed shall be furnished in sealed, standard containers. Seed that has become wet, moldy, or otherwise damaged in transit or in storage will not be acceptable.

Seed planted between June 16 and August 31 may require more water than that specified in Subsection 505.03 in order to survive. Therefore, watering shall continue after germination until growth is established.

The seeding mixture may be altered if authorized or directed by the Engineer/City Engineer. The actual mix and varieties used shall be submitted to the City before seed is placed.

Seed shall be provided at the following mix and rates:

SEED TYPE	LB/AC
MARCH 15 – JUNE 15	
Turf Fescue	250
Bermuda Grass (common) unhulled	10
Annual Rye	50
JUNE 15 – AUGUST 31	
Turf Fescue	200
Bermuda Grass (common) hulled	5
Bermuda Grass (common) unhulled	10
AUGUST 31 – MARCH 15	
Turf Fescue	250
Annual Rye	50

At the Contractor's option, annual rye only may be seeded at a minimum rate of 30 pounds per acre between the dates of October 31 to March 15. The Contractor shall return between the dates of March 15 and May 1 and reseed with the mix specified for the March 15 to June 15 time period. Preparation for reseeding shall be in accordance with Section 204.

(d) Sod. Sod shall be composed of either field grown grass or approved nursery grown grass and shall consist of a densely rooted growth of grass substantially free from noxious weeds and undesirable grasses. Sod type shall be as specified on the plans. When sod is placed to repair damaged areas, the sod shall be of the same type and variety as the existing grass.

The sod shall be sufficiently thick to secure a dense stand of live grass. The sod shall be live, fresh, and uninjured at the time of placing. It shall have a soil mat of sufficient thickness adhering firmly to the roots to withstand all necessary handling. It shall be placed as soon as possible after being cut and shall be kept moist from the time it is cut until it is placed in its final position.

The source of field grown sod shall be inspected and approved by the City before being cut for use in the work. After approval, the area from which the sod is to be harvested shall be closely mowed and raked as necessary to remove excessive top growth and debris.

Approved devices, such as sod cutters, shall be used for cutting the sod and due care shall be exercised to retain the native soil intact. The sod shall be cut in uniform strips approximately 300 mm (12") in width and not less than 300 mm (12") in length, but not longer than can be conveniently handled and transported.

(e) Mulch. Mulch cover shall consist of straw from threshed rice, oats, wheat, barley, or rye; of wood excelsior; or of hay obtained from various legumes or grasses, such as lespedeza, clover, vetch, soybeans, bermuda, carpet sedge, bahia, fescue, or other legumes or grasses; or a

combination thereof. Mulch shall be dry and reasonably free from Johnson grass or other noxious weeds, and shall not be excessively brittle or in an advanced state of decomposition. All material will be inspected and approved prior to use.

(f) Tackifiers. Tackifiers used in mulch anchoring shall be of such quality that the mulch cover will be bound together to form a cover mat that will stay intact under normal climactic conditions.

All tackifiers used shall have prior approval or be listed on the ARDOT Qualified Products List (QPL). The type and brand of tackifier to be used shall be submitted to the City for approval.

(g) Water. Water shall be of irrigation quality and free of impurities that would be detrimental to plant growth.

505.03 Construction Requirements.

(a) Seeding. Areas to be seeded shall be dressed to the shape and section shown on the plans. A 4" layer of topsoil, if required, shall be furnished, placed, and prepared as specified in Section 204.

Fertilizer shall be applied at the rate of 800 pounds per acre of 10-20-10, or the equivalent amount of plant food. Fertilizer shall be uniformly incorporated into the soil alone or in conjunction with the required lime. If the Contractor so elects, the fertilizer may be combined with the seed in the hydro-seeding operation.

Broadcast sowing may be accomplished by hand seeders or by approved power equipment. Either method shall result in uniform distribution and no work shall be performed during high winds. The area seeded shall be lightly firmed with a cultipacker immediately after broadcasting.

If a hydro-seeder is used for seeding, fertilizer and seed may be incorporated into one operation but a maximum of 800 pounds of fertilizer shall be permitted for each 1500 gallons of water. If the Contractor so elects, the fertilizer may be applied during preparation of the seedbed. The area shall be lightly firmed with a cultipacker immediately before hydro-seeding.

Mulch cover shall be applied immediately after seeding and shall be spread uniformly over the entire area. If the Contractor so elects, an approved mulching machine may be used whereby the application of mulch cover and tackifier may be combined into one operation. Mulch shall be placed so that the ground is completely covered to a thickness of approximately 2 inches. Care shall be taken to prevent tackifier materials from discoloring or marking structures, pavements, utilities, or other plant growth. Removal of any objectionable discoloration shall be at no cost to the City.

Immediately following or during the application of the mulch cover on seeded areas, the mulch shall be anchored by one of the following methods:

Tracking or Roller Method. The mulch shall be effectively pressed into the soil using steel cleated track or cleated roller equipment. The anchoring shall be performed so that the grooves formed are perpendicular to the flow of water down backslopes and foreslopes. The equipment and method used shall produce acceptable results.

Other Tackifiers. An approved tackifier shall be applied according to the rates recommended by the manufacturer. Asphalt tackifier will not be allowed.

The method used shall be at the Contractor's option unless otherwise specified or directed. In lieu of separate application of tackifiers, the Contractor may use equipment that combines the application of mulch and tackifier into one operation. Application shall be at the specified rates.

After application of the mulch cover, water shall be applied in sufficient quantity, as directed by the Engineer/City Engineer, to thoroughly moisten the soil to the depth of pulverization and then as necessary to germinate the seed.

When directed by the Engineer/City Engineer, the Contractor shall apply water in an amount such that, in conjunction with any rainfall, the seeded and mulched areas will receive an amount equivalent to a minimum of 1" of water each week beginning the week after seeding and continuing for a minimum of three (3) weeks. Water applied at this rate will not be paid for separately but shall be considered subsidiary to seeding. If directed by the Engineer/City Engineer, additional water shall be applied to sustain grass growth.

Failure to meet this requirement will result in a partial withholding and/or recovery of payments for the seeding and mulch cover. Additional work and materials required due to the Contractor's negligence in maintaining completed work or failure to water grass as directed shall be accomplished at no cost to the City.

For all areas seeded, final acceptance will be delayed until an acceptable stand of grass of uniform color and density is established to the satisfaction of the City. Before final acceptance, the Contractor shall repair or replace any seeding or mulching that is defective or damaged. If the defect or damage is due to the Contractor's negligence, the work shall be done at no additional cost to the City. If the damage or defect is not the Contractor's fault, the work will be measured and paid for according to these Specifications.

(b) Sod. Areas to be sodded shall be dressed to the shape and section shown on the plans and the top and bottom of slopes shall be rounded to a radius of approximately 3' unless otherwise directed. The finished slopes shall be prepared with 4" of topsoil meeting the requirements of Section 204. Water may be applied before, during, and after slope preparation, as directed by the Engineer/City Engineer, in order to maintain the desired moisture content in the soil
Immediately before placement of sod, fertilizer shall be broadcast at the rate of 250 pounds per acre of 10-20-10, or the equivalent amount of plant food, and incorporated into the top 1" of soil.

Sod shall be moist and shall be placed on a moist earth bed. Sod strips shall be laid along contour lines, by hand, commencing at the base of the area to be sodded and working upward. The transverse joints of sod strips shall be broken, and the sod carefully laid to produce tight joints.

At the top of slopes the sod shall be turned into the embankment slightly and a layer of earth placed over it and compacted to conduct surface water over and onto the sod. The sod shall be firmed, watered, and refirmed immediately after it is placed. The firming shall be accomplished by use of a lawn roller or approved tamper, with care being taken to avoid tearing end strips of sod.

When sodding is completed, the sodded areas shall be cleared of loose sod, excess soil, or other foreign material; a thin application of topsoil shall be scattered over the sod as a top dressing; and the areas thoroughly moistened. Water shall be applied as necessary at the direction of the Engineer/City Engineer for a period of at least 3 weeks. The time required for application of water will not be included in the computation of contract time for completion of the project provided all other work under the Contract has been completed.

The Contractor shall maintain sodded areas from the time of completion until final acceptance of the project by the City. Additional work and materials required because of the Contractor's negligence in maintaining the work shall be accomplished at no cost to the City.

505.04 Method of Measurement. Seeding will be measured by the acre of actual area covered located within the construction limits as shown on the plans. Sod will be measured by the SY of actual area covered located within the construction limits as shown on the plans. Additional watering if so directed will be measured by thousands of gallons (MG) applied.

505.05 Basis of Payment. Seeding completed and accepted and measured as provided above will be paid for at the contract unit price bid per acre for Seeding, which price shall be full compensation for seedbed preparation; for furnishing and applying fertilizer, lime, seed, mulch, and tackifier; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payments for seeding will be made according to the following schedule:

1) 50 % On the first regularly scheduled estimate after the Seeding and Mulch Cover are completed.
2) 25% On the next regularly scheduled estimate, provided that the Engineer/City Engineer determines that the seeded and mulched areas have received at least the amount of water specified in Section 505.03 above.
3) 25% On the succeeding regularly scheduled estimate, provided that the Engineer/City Engineer determines that a dense lawn of permanent grass has been established.

Sodding completed and accepted and measured as provided above will be paid for at the contract unit price bid per square yard for Sodding, which price shall be full compensation for bed preparation; for furnishing and applying fertilizer, topsoil, and sod; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Additional watering above and beyond the 1" per week for the first three weeks will be paid for at the unit price per thousand gallons (M.G.) of water applied. This work will be paid for only when directed to by the Engineer/City Engineer. Any watering to be paid for under this item shall be conducted in the presence of the Engineer/City Engineer.

Payment will be made under:

Pay Item	Pay Unit
Seeding and Mulching	Acre
Solid Sod	SY
Additional Watering	MG

Section 506. Mailboxes

506.01 Description. This item shall consist of furnishing and erecting mailbox posts and installing existing mailboxes on the new posts. When required, it shall also include furnishing and installing new mailboxes. It shall also include maintenance of existing mailboxes during construction to ensure uninterrupted mail service in the construction limits.

506.02 Materials. The mailbox post shall be either metal or coniferous wood. All mailbox posts placed under the contract shall be of the same type. Wood posts shall be 4"x 4" square and shall be pressure treated with creosote, pentachlorophenol or chromated copper arsenate. Metal posts shall be 2" in diameter and shall be galvanized.

Mailbox support hardware, including shelf, platform and bracket shall be as shown on the plans. Anti-twist plate, clamps, spacers, nuts, bolts, and washers shall be galvanized steel.

New mailboxes, when specified on the plans or directed by the Engineer/City Engineer, shall comply with the U.S. Postal Service and shall be the same size as the existing mailbox.

506.03 Construction Methods. Mailboxes shall be constructed in the same locations as the existing mailboxes. It is the Contractor's responsibility to note the locations of existing mailboxes before construction begins. The bottom of the box shall be set at an elevation 3'-6" above the roadway surface. The roadside face of the box shall be 6" from the face of the curb. Where a mailbox is located at a driveway entrance, it shall be placed on the far side of the driveway in the direction of the delivery route. Where a mailbox is located at an intersecting road, it shall be located a minimum of 100' beyond the center of the intersecting road in the direction of the delivery route. If requested by the local postmaster, height and placement of mailboxes may vary slightly as directed by the Engineer/City Engineer.

No more than two mailboxes may be mounted on one post. Post spacing for multiple mailbox installations shall be a maximum of 36".

The mailbox post shall be embedded a minimum of 24" into the ground. A metal post shall have an anti-twist plate that extends no more than 10" below the ground surface.

The existing mailbox shall be separated from the existing post and attached to the new post. If the existing mailbox is damaged beyond repair by the Contractor, the mailbox shall be replaced at no cost to the City. If the existing mailbox cannot physically be removed from the existing post and re-used, the mailbox shall be replaced under the item Mailboxes. When a mailbox is

replaced, the Contractor shall be responsible for placing identification markings on the new mailbox corresponding to the markings on the original mailbox.

Unless otherwise specified, all existing mailbox supports shall be removed and replaced with new supports. If directed by the Engineer/City Engineer, the existing mailbox shall be restored under the Contract item Remove and Replace Mailboxes. If directed by the Engineer/City Engineer, the existing support and mailbox shall be removed and protected until placement in its planned location. This work shall be paid for under the item Mailbox/Support Relocation.

506.04 Method of Measurement. Mailbox Supports, Mailboxes, Remove and Replace Mailboxes, and Mailbox/Support Relocation will be measured by the unit.

506.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per each for Mailbox Supports of the type specified, for Mailboxes, or for Remove and Replace Mailboxes, or for Mailbox/Support Relocation; which price shall be full compensation for furnishing all materials: for setting posts; for removing and reattaching existing mailboxes; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Mailbox Supports (single)	EA
Mailbox Supports (double)	EA
Mailboxes	EA
Remove and Replace Mailboxes	EA
Mailbox/Support Relocation	EA

Section 507. Pavement Markings

507.01 Description. This item shall consist of furnishing and placing pavement markings, including words, arrows, and emblems, of the color, type and material specified, in accordance with these specifications and to the dimensions and at the locations shown on the plans or as directed.

The markings are to be placed under existing traffic conditions. The work shall meet the requirements of the MUTCD except as modified by these specifications.

507.02 Materials.

(a) Paint. Paint shall be a ready mixed white and yellow paint suitable for application on concrete and bituminous pavements. All paints used for this application shall be listed on the ARDOT Qualified Products List (QPL). The manufacturer shall furnish a certification for each lot certifying that the materials supplied conform to all the requirements specified and stating that the material is formulated the same as the material tested for QPL listing.

(b) Thermoplastic Material. Thermoplastic material used shall meet all requirements of Section 719.02 of the ARDOT Standard Specifications.

(c) Pavement Marking Tape. Pavement marking tape shall be a preformed tape conforming to Section 720.02 of the ARDOT Standard Specifications for Type 5.

507.03 Construction Requirements.

(a) General Requirements. All pavement markings shall be applied to clean, dry surfaces. If necessary, the Contractor shall clean the surface of the pavement to receive markings before beginning marking operations. Cleaning of the pavement is considered subsidiary to other items of work and will not be paid for separately.

Pavement markings shall be placed at the locations shown on the plans, or as directed by the Engineer/City Engineer. All markings shall have well defined edges, shall be uniform in thickness, and shall be straight and true. No stripe shall be less than the specified width. Any corrections of variations in width or alignment of the stripes shall not be made abruptly. Markings that cannot be corrected to meet these requirements shall be removed at the Contractor's expense and will not be paid for.

Removal of markings shall be performed in such a manner that no conflicting pavement marking will be left in place. Removal of the pavement marking by a means that will gouge the surface will not be permitted.

(b) Reflectorized Paint. Reflectorized paint shall be applied at a minimum wet film thickness of 15 mils (a minimum of 16.5 gallons per mile of 4" line). The painted line shall be uniform in thickness and appearance across the width of the stripe. Glass beads shall be placed on the surface of the wet paint in the amount of not less than 6 pounds per gallon.

(c) Thermoplastic Markings. The thermoplastic compound shall be screed or ribbon extruded to the pavement surface unless a specific application method is specified.

The thermoplastic material shall be dispensed at a temperature recommended by the manufacturer. The applicator shall include a cutoff device remotely controlled to provide clean, square stripe ends and to provide a method for applying skip lines.

Beads applied to the surface of the completed stripe shall be applied by an automatic bead dispenser attached to the pavement marking equipment in such a manner that the beads are immediately dispensed upon the completed line. The bead dispenser shall be equipped with an automatic cutoff control, synchronized with the cutoff of the pavement marking equipment.

Thermoplastic markings shall not be applied to the pavement surface when the pavement surface temperature is less than 50° F or when the pavement shows evidence of moisture.

On pavements where no pavement markings exist or where the existing pavement markings are paint or thermoplastic and do not conflict with the proposed pavement markings, blasting with

water or sand or a combination thereof will be required to remove any curing compound, oxidized paint or thermoplastic, or dirt to ensure a good bond. This blasting is considered surface preparation and will not be paid for separately.

Conflicting pavement markings that exist shall be removed by blasting with water and/or sand or by grinding. This blasting or grinding is considered pavement marking removal.

The thickness of all thermoplastic markings above the roadway surface shall be 90 mils (a minimum of 1584 pounds per mile of 4" line). The minimum thickness will be measured in the center of the line. The minimum ½" from the edges shall not be less than 75% of the thickness required in the center. Maximum thickness of markings is 3/16".

On concrete pavements, paint pavement markings meeting the requirements of this section shall be applied as a primer for the thermoplastic markings, except where thermoplastic markings are to be applied over existing thermoplastic markings. Paint applied to concrete pavement solely as a primer will not be measured or paid for separately, but full compensation therefore will be considered included in the contract unit prices bid for the various items of Thermoplastic Pavement Markings. A primer other than paint may be used when recommended by the thermoplastic manufacturer.

(d) Pavement Marking Tape. The placement of the pavement marking tape shall comply with the manufacturer's recommendations.

Air temperature shall be a minimum of 60° F and rising or the road temperature shall be a minimum of 70° F before installation of marking tape will be allowed.

The roadway surface shall be cleaned by the Contractor with high pressure air or by sweeping. The roadway shall then be marked where the pavement marking polymer is to be applied.

The polymer can then be applied by hand or with a manual or mechanical highway tape applicator designed for that purpose. Only butt splices will be allowed with no overlapping.
After application, the tape shall be firmly tamped with a minimum 200 lb. Load or by slowly (2-3 mph) driving over the tape with a vehicle tire. The Contractor shall ensure that all edges are firmly adhered.

507.04 Method of Measurement and Basis of Payment. Pavement markings will be measured as follows:

(a) Center lines, skip lines, lane lines, edge lines, crosswalk bars, and stop bars will be measured by the linear foot (LF) of markings actually placed.

(b) Words, arrows, and other symbols will be measured by the unit.

(c) Pavement marking removal, when specified on the plans, will be measured by the square foot of marking actually removed.

Work completed, accepted, and measured as provided above will be paid for at the contract price bid per linear foot for lines of widths specified, per each for symbols, and per square foot for pavement marking removal.

Payment will be made under:

Pay Item	Pay Unit
__" Pavement Marking (Thermoplastic)	LF
Pavement Symbols (Thermoplastic)	EA
Pavement Marking Removal	SF

Section 508. Street Signs

508.01 Description. This item shall consist of installing new signs and supports, and/or relocating existing signs, complete with posts, supports, and concrete bases, where required, according to these Specifications and to the dimensions and details and at the locations shown on the Plans or as directed by the Engineer/City Engineer.

508.02 Materials and Fabrication.

(a) Signs. Materials used in the fabrication of street signs shall comply with the latest edition of the ARDOT Standard Specifications Section 723, ARDOT Standard Drawings, and the MUTCD. Signs and equipment manufactured in accordance with the above mentioned specification will not be required to be submitted for approval.

(b) Supports. Materials used for new and relocated street sign supports shall be U-section channel or galvanized steel pipe as indicated in the plans.

508.03 Construction Requirements. The Contractor shall install new signs at the locations as shown in the plans or as directed by the Engineer/City Engineer. The Contractor will maintain existing signs during construction, and relocate the signs to permanent locations as shown in the plans or as directed by the Engineer/City Engineer. Should the sign or support become damaged during construction, the Contractor will furnish the replacement.

Any sign not indicated to be relocated as shown on the plans, or as directed by the Engineer/City Engineer shall be salvaged and delivered to the City.

Signs shall be erected at the specified location, plumb, and to the specified vertical and horizontal clearances.

Roadside directional signs shall be erected at a minimum height of 7' above the pavement edge, measured to the bottom of the sign. If a secondary sign is mounted below the primary sign, the primary sign shall be erected a minimum of 8' above the pavement edge and the secondary sign a minimum of 5' above the pavement edge. Route markers, warning signs, and regulatory signs shall be erected a minimum height of 6' above the pavement edge. All heights measured to the bottom of the sign.

The minimum horizontal clearance to any ground mounted sign shall be 2' beyond the edge of the roadway shoulder or unmountable curb face.

Signs shall normally be erected so that the sign face is vertical and at 93° away from the center of the lane that the sign serves and away from the direction of travel. Where lanes divide, or on curves, sign faces shall be oriented so as to be most effective both day and night, and to avoid the possibility of specular reflection.

Field drilling of holes in any part of the sign support structure shall be done only when specified on the plans or as directed by the Engineer.

After sign installation is complete, the signs will be inspected at night by the Engineer. If specular reflection is apparent on any sign, its position shall be adjusted by the Contractor to eliminate this condition.

508.04 Method of Measurement. Signs that are relocated or installed new shall be measured by a complete unit in place (including required footings).

No payment will be made for salvaged signs delivered to the City.

508.05 Basis of Payment. Work completed and accepted under this item and measured as provided above shall be paid for at the Contract unit price bid for each sign, which price shall be full compensation for the relocation, or erection of each sign, including new support and footing; and for tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Street Sign Installation	EA

Section 509. Erosion Control

509.01 Description. This item shall consist of Temporary Erosion Control Measures to limit, control, and contain fill materials, soil erosion, sedimentation, and other wastes resulting from construction activities that could result in harm to private properties as well as public properties, streams and waterways.

This item shall also include the requirement of the Contractor to implement and maintain the Stormwater Pollution Prevention Plan (SWP3/SWPPP) and to comply with all necessary approvals and permits.

509.02 Standards.

All work for this item shall comply with all Federal and State requirements including the Clean Water Act (33 U.S.C. 1251 et seq.), the National Pollutant Discharge Elimination System (NPDES), and the Arkansas Water and Air Pollution Control Act (Act 472 of 1949 , as amended, Ark. Code Ann. 8-4-101 et seq.) and the regulations, orders or decrees issues pursuant thereto.

All work for this item shall further comply with all Local and Municipal requirements including the City of Fayetteville Code Chapter 170, "STORMWATER MANAGEMENT, DRAINAGE, AND EROSION CONTROL" except as modified or augmented herein.

509.03 Application.

The City will develop the SWP3 and will obtain the permit from the Arkansas Department of Environmental Quality (ADEQ) for discharge of stormwater from construction activities for the project.

The requirements of this item shall apply to all construction activities under the Contract. The Contractor shall implement and maintain the SWP3 for all construction activities under the contract without regard to size of land area disturbance.

The Contractor's operations on lands located off the right-of-way, such as borrow pits, plant sites, waste sites, or other facilities, may require compliance with this specification and/or NPDES permit, and may require that additional permits be obtained. Any such additional permits will be the responsibility of the Contractor. Determination may be based upon location, jurisdiction and area of land disturbance.

509.02 Responsibilities of the Contractor.

(a) General. The Contractor shall comply with City of Fayetteville Code Chapter 170, except as modified or augmented herein.

The Contractor shall comply with all applicable Federal, State, Local and Municipal regulations and requirements.

The Contractor shall stabilize the land and comply with requirements of all permits issued for the project including any additions or revisions thereto.

Upon completion of the construction activities, the Contractor shall file a Notice of Termination with the City.

(b) NPDES Requirements. Construction activities that will disturb soil or remove vegetation on one (1) or more acres of land during the life of the construction project shall also comply with the applicable NPDES Permit requirements as administrated by ADEQ.

Construction activities authorized under NPDES GENERAL PERMIT NO. ARR150000 with the ADEQ shall comply with Section 509.02. "Responsibilities of the Contractor" (a) General (above), and the following:

The City will prepare and file the appropriate applications, information, Notice of Intent, SWP3 (SWPPP) and other information as required by NPDES GENERAL PERMIT NO. ARR150000 with the ADEQ.

The Contractor shall comply with all NPDES Permit requirements, including, but not limited to, implementation, maintenance, and modification of the SWP3 as circumstances require, and documented inspections of erosion and sediment control systems.

The City will submit to the Contractor one copy of the NPDES Permit and/or other correspondence received from ADEQ. The Contractor shall post this information on site in accordance with the NPDES Permit, and have the current SWP3, inspection logs, and other required information on site at all times and available for inspection by ADEQ, the City, or other regulatory agencies as applicable.

The Contractor shall file the Notice of Termination with ADEQ when the site has been finally stabilized and all storm water discharges from construction activities authorized by the NPDES Permit are eliminated.

509.03 Construction Methods

Where temporary erosion control measures are shown on the plans and in the SWP3, such temporary erosion control measures are provided to the Contractor as minimum controls and guidance. The Contractor shall be responsible to incorporate and expand as necessary the temporary erosion control measures where shown in the plans in accordance with the approved SWP3. The Contractor shall modify the SWP3 as necessary in order to fully comply with the NPDES Permit.

All work required due to the violation of provisions of Corps of Engineers (COE) Section 404 Permits, NPDES Permits, or other requirements of these specifications which results from Contractor negligence, carelessness, or failure to perform work as scheduled, shall be performed by the Contractor at no cost to the City. In addition, the Contractor will be assessed the amounts of any and all fines and penalties assessed against and costs incurred by the City which are the result of the Contractor's failure to comply with a COE Section 404 Permit or NPDES Permit.

The City will not be responsible for any delays or costs due to the Contractor's failure to comply with the conditions of the COE Section 404 Permit or NPDES Permit. The Contractor will not be granted additional compensation or contract time due to loss of Permits for noncompliance.

In the event that pollutant spills occur which are the result of the Contractor's actions or negligence, the cleanup shall be performed by the Contractor at no cost to the City.

509.04 Method of Measurement and Basis of Payment.

No measurement of this item will be made.

Temporary erosion control acceptably completed will be paid for at the contract lump sum price bid for "Erosion Control", which prices shall be full compensation for furnishing all materials, tools, equipment, labor, incidentals and all other items necessary to implement, maintain and complete the work. Payment for "Erosion Control" shall also include implementing, maintaining,

and complying with the Stormwater Pollution Prevention Plan (SWP3/SWPPP); including design, inspections, fees, report preparation, housekeeping practices, cleaning, maintenance and all other actions necessary to execute the SWP3 (SWPPP). Periodic payments will be made under this item in proportion to the amount of work accomplished as determined by the Engineer/City Engineer.

Deductions to this item will be made in the amount of any fines levied on the City by ADEQ or other regulatory agencies as a result of the failure by the Contractor to comply with the provisions of COE Section 404 or NPDES Permits.

Payment will be made under:

Pay Item	**Pay Unit**
Erosion Control	LS

Section 510. Traffic Control and Maintenance

510.01 Description. This work consists of furnishing, installing, and maintaining necessary traffic signs, barricades, lights, signals, cones, concrete barriers, pavement marking, and other traffic control devices and shall include flagging, pilot car operations, and other means for guidance of traffic through the work zone. The work shall be done according to the MUTCD, ARDOT Standards, the Standard Specifications and the Contractor's approved Traffic Control plan. An approved Traffic Control plan provided by the Contractor shall be required before any construction begins. This item shall also include maintenance of roadway surface.

This item shall also include the temporary relocation of traffic and street signs, the maintenance of the temporarily relocated signs through the construction of the project, and the permanent relocation of any sign relocated due to construction signage after the construction is complete. Permanent relocation of any salvaged signs shall consist of furnishing new sign post, new support hardware, and new concrete bases, where required, in accordance with the dimensions and details shown in the Plans and at the locations shown in the Plans, or as directed by the Engineer. New sign posts shall comply with the Standard Specifications and Standard Drawings.

(a) Contractor's Plan. Traffic Control or Maintenance of Traffic when shown in the Plans is provided to the Contractor as guidance. The Contractor shall prepare and submit for approval a detailed Traffic Control or Maintenance of Traffic Plan including adherence to the specified schedule of construction phases when so indicated in the Contract Documents to the Engineer and Owner. The Contractor's Traffic Control or Maintenance of Traffic Plan shall include and expand as necessary the Traffic Control or Maintenance of Traffic when indicated in the Plans and Specifications, and shall be complete with all proposed traffic control or traffic maintenance devices including proposed temporary roadway widening. The Contractor shall prepare and submit the detailed Maintenance of Traffic Plan to the Engineer and Owner 7 days prior to the preconstruction conference and in accordance with these Specifications.

Upon approval of the Contractor's Maintenance of Traffic Plan by the Owner in writing, the Contractor shall supply the City Engineer, the Fire Chief and the Police Chief one (1) copy each for their files. Two (2) copies shall be supplied to the Engineer.

The Contractor shall initiate and maintain all necessary labor and materials necessary to construct the project in a manner which will guarantee public safety with a minimum of inconvenience. Additional work, at no additional costs to the Owner, shall be performed by the Contractor during construction as directed by the Owner or Engineer if necessary to insure the above standards.

(b) Contractor Personnel. The Contractor shall designate a traffic control supervisor to furnish continuous surveillance over traffic control operations. This supervisor shall be available at night and weekends to respond to calls involving traffic control. The name of the traffic control supervisor shall be provided at the preconstruction conference and to local police.

The Contractor's personnel who are used to maintain traffic flow, such as flagmen or any other person, who verbally communicates with or gives directions to the motorized public, shall speak English fluently.

(c) Driveways. Maintenance of driveways shall be as approved by the Engineer/City Engineer. Unless indicated otherwise, it shall be the Contractor's responsibility to maintain adequate access to private and commercial property at all times, except as required for construction across the driveway as approved by the Engineer. During the construction of driveways or at any time that a property owner cannot use his driveway, the Contractor shall notify the property owner (one week in advance, minimum) when the driveway will be closed and the approximate length of time that it will be closed. The intent of this section of the Specifications is to cause as little inconvenience as possible to private property owners.

(d) Relocation and Replacement of Traffic Signs and Pavement Striping. During the construction of the project, the temporary relocation of street signs and traffic control signs will be performed by the Contractor. The Contractor shall maintain the signs at highly visible locations as near as practicable to the original locations. The latest edition of the Manual of Uniform Traffic Control Devices published by the Federal Highway Administration shall be used as a guide to the placement of signs during construction.

Immediately after the construction of any part of the project reaches a stage of completion such that the relocation of the street signs and traffic control signs is no longer necessary, the Contractor shall permanently relocate the street signs and traffic control signs. Removing any construction signage must be approved by the Engineer.

Street signs and traffic control signs shall be removed from such area of work as necessary to permit work on the project. Each sign shall be temporarily relocated in a secure manner by driving the sign into the ground with equipment approved by the Engineer, or otherwise installed as approved to prevent damage to underground utilities. Street signs no longer necessary shall be salvaged in good condition and restored to their original use or returned to the Owner if no longer needed.

Existing striping shall be removed and new temporary stripes and other pavement markings shall be provided by the Contractor. Work shall be performed in accordance with SECTION 720 (for Type 4) – PERMANENT PAVEMENT MARKING TAPE of the Standard Specifications. Pavement markings not necessary to the phased construction patterns shall be removed or obliterated with

black paint, as approved by the Engineer. Striping shall be maintained and restored as necessary during construction.

(e) Suspension of Work. If the Owner or the Engineer determines that provisions for safe traffic control are not being provided or maintained, the work will be suspended. In cases of serious or willful disregard for safety of the public or construction workers, the Owner will place the traffic control devices in proper condition and deduct the costs from monies due the Contractor.

510.02 Maintenance Requirements. Unless approved otherwise by the City, the road, while undergoing improvements, shall be kept open by the Contractor to all traffic. When so provided on the plans, or the Contractor's approved plan, the Contractor may bypass traffic over an approved detour route. The Contractor shall keep the portion of the project being used by public traffic, whether it is through or local traffic, in such condition that will permit the safe, continuous flow of two-way traffic at all times. When a part of the plans or when approved by the City, areas where the nature of the work restricts or prohibits two-way flow, one-way operation may be maintained by using flaggers or timed signalization. The Contractor shall also provide and maintain in a safe condition temporary approaches, crossings and intersections with trails, roads, streets, businesses, parking lots, residences, garages, farms, etc.

As part of regular traffic maintenance, the Contractor shall remove all snow and ice accumulated on the traveled roadway. Exposed soil that becomes muddy due to rains or other precipitation shall be removed or covered with aggregate base material to the satisfaction of the City. Dust shall be controlled at all times. In the event that watering does not satisfactorily control the dust, other methods of dust control will be required.

Necessary traffic control devices shall be properly placed and in operation before starting construction. When work of a progressive nature is involved, such as resurfacing, the appropriate traffic control devices shall be kept current and placed only in the areas of actual work activities. All traffic control devices shall meet the requirements of the ARDOT Standard Specifications Section 604.02 and the most current version of the MUTCD.

If the City determines that provisions for safe traffic control are not being provided or maintained, the work will be suspended. In cases of serious or willful disregard for safety of the public or construction workers, the City will place the traffic control devices in proper condition and deduct the costs from monies due the Contractor.

Types of barricade supports or devices not specifically described in the MUTCD shall not be used. The methods used to control traffic for lane changes or other diversions shall meet the MUTCD and the traffic control plan.

Portable changeable message signs meeting the requirements of Section 604 of the ARDOT Standard Specifications shall be used if and where directed by the City.

510.03 Method of Measurement. Aggregate base for traffic maintenance, if specifically included as a bid item, will be measured by the ton of material placed for traffic control. No payment will be made under this item unless base placement is specifically directed by the

Engineer/City Engineer. No base so directed shall be placed without the Engineer/City Engineer or authorized representative present. The tonnage of material placed shall be substantiated by truck tickets delivered along with the base material and presented to the Engineer/City Engineer at the time of base placement. If an item for aggregate base for traffic control is not included, it shall be considered subsidiary to other items.

When directed or approved for use by the City, portable changeable message signs meeting the requirements of Section 604 of the ARDOT Standard Specifications will be measured for payment by the number of days each sign is required and authorized by the City. Payment for a full day will be made for any portion of a day that the panel or sign is used, but the measurement shall not exceed one per sign on any calendar day.
No other traffic control items will be measured.

510.04 Basis of Payment. Payment for aggregate base for roadway maintenance as measured above will be made at the unit price bid per ton.

All other traffic control and maintenance materials and activities will be paid for at the lump sum price bid for traffic control.

Payment will be made under:

Pay Item	Pay Unit
Traffic Control and Maintenance	LS
Aggregate Base for Roadway Maintenance	Ton
Portable Changeable Message Sign	Day

Section 511. Mobilization

511.01 Description. This item shall consist of preparatory work and operations, including those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site.

This item shall also include other work and operations that must be performed, or for expenses incurred, before beginning work on the various Contract items on the project site. It shall also include pre-construction costs which are necessary direct costs to the project and are of a general nature rather than directly attributable to other pay items under the Contract.

511.02 Measurement and Payment. Mobilization will be measured as a complete unit and will be paid for at the contract lump sum price bid. In computing the allowable partial payments from the schedule below, the percentage of the original Contract earned will be based on all items exclusive of the item of Mobilization, and payment for this item at any of the listed stages of completion will be made on the basis of the percentage of the item allowed less all payments made.

PARTIAL PAYMENT SCHEDULE

Percent of Original Contract Amount Earned	Percent of Bid Price for Mobilization Allowed
First Pay Estimate	25%
10%	50%
25%	100%

This item will be paid for on regular estimates. Payments on percentages of the original Contract amount other than those set out above will not be considered. No adjustment in the amount bid for this item will be made for additional quantities or items of work required to satisfactorily complete the Contract.

IN NO CASE SHALL THE AMOUNT BID FOR THE ITEM OF "MOBILIZATION" EXCEED 5% OF THE TOTAL CONTRACT AMOUNT FOR ALL OTHER ITEMS LISTED IN THE PROPOSAL. Should the amount entered in the Proposal for this item exceed 5%, the bid shall be rejected.

Payment will be made under:

Pay Item	Pay Unit
Mobilization	LS

Section 512. Fences

512.01 Description. This item shall consist of furnishing and erecting wire fence, chain link fence, wood privacy fence and gates according to the plans and these specifications, and in reasonably close conformity to the lines, grades, and alignment shown on the plans or as directed.

512.02 Materials.

(a) General. All materials used shall be new and shall comply with the requirements for the class and type of material specified. Previously used materials will be allowed for temporary fencing.

Concrete for setting posts shall comply with Section 601 for Class 1 Concrete.

(b) Wire Fence. Wood posts and braces shall be pressure treated, seasoned, sound, and reasonably straight southern pine or Douglas Fir of the West Coast Region. The posts shall be round and free from excessive end splits. Before pressure treatment, the posts and braces shall have the bark removed, the knots trimmed flush, and the ends cut square. Posts that are to be driven shall have the small end tapered. Posts shall be treated by a standard empty cell or full cell process according to AWPA practice using creosote and retaining a minimum of 8 pounds per cubic foot of wood; or using pentachlorophenol, or chromated copper arsenate and retaining a minimum of 0.4 pounds per cubic foot of wood.

Metal posts and braces shall be of good commercial quality iron or steel and may be tubular, T, U, Y, or other shape manufactured for use as fence posts or braces.

Woven Wire Farm Fence shall be AASHTO Design Number 1047-6-11 AASHTO M 279 or ASTM A116, Class 3 galvanizing.

Barbed wire shall be 12 ½ gauge with 4-point barbs and shall comply with AASHTO M 280, Class 3 galvanizing.

As an alternate to the barbed wire specified above, high tensile wire having the same galvanizing and breaking strength as Class 3, 12 ½ gauge wire, and complying with the remaining requirements of AASHTO M 280 for a four point barb may be used.

The minimum gauge of the high tensile barbed wire shall be as follows:

1) Strand wire gage: 15 ½
2) Barb wire gage: 17

Staples used to attach the wire fencing to wood posts shall be galvanized 9 gauge, 38 mm (1-½") in length.

Steel line posts shall be galvanized or painted and comply with AASHTO M 281. Tubular steel posts shall comply with Grade 1 or Grade 2 of AASHTO M 181, or an approved alternate of Grade 2.

Hardware and fittings shall comply with ASTM F 626. Any miscellaneous hardware or fittings not mentioned in ASTM F 626 shall be galvanized according to the applicable requirements of AASHTO M 111 or M 232.

(c) Chain Link Fence. Material for chain link fence shall comply with AASHTO M 181 Types I, II, or III. Steel members for posts, rails, expansion sleeves, and gate frames may be either Grade 1 or Grade 2. The shape, size, and length of posts and rails, and the height of fabric shall be as shown on the plans.

Hardware and Fittings shall comply with ASTM F 626. Any miscellaneous hardware or fittings not mentioned shall be galvanized according to AASHTO M 111 or M 232. Tension wire shall be minimum 7 gauge.

Aluminum alloy fabric shall be used only with aluminum posts. Aluminum coated steel fabric and galvanized steel fabric, Class C, shall be used only with Grade 1 or Grade 2 steel posts. Fence fabric shall be minimum 9 gauge wire for 6' fencing and 12 gauge wire for 4' fencing.

Frames for gates shall be galvanized steel or aluminum of the type and length shown on the plans. Frames shall be Grade 1 or Grade 2. Welds shall be galvanized.
Commercial gates may be used if they are equal to or better than the planned gates as determined and approved by the Engineer/City Engineer.

The gate fabric shall be of the same type material and be in accordance with the same specifications as the adjoining fence.

(d) Wood Privacy Fence. All pine wood material shall be pressure treated with pentachlorophenol or chromated copper arsenate and shall retain a minimum of 0.4 pounds per cubic foot of wood. Cedar panels shall be reasonably straight and free from knots, warping, and other defects.

(e) Temporary Fencing. Materials for temporary fencing shall be appropriate for the use intended.

512.03 Construction Requirements.

(a) General. The fence shall be erected parallel to the right-of-way line, or as directed. Unless otherwise specified, the fence shall be a minimum of 6" and a maximum of 1' behind the right-of-way line. The fence grade shall generally follow the ground contour, but shall present a uniform appearance. Minor grading along the fence line may be necessary to obtain the desired uniformity in fence grade. The fence alignment may be adjusted by the Engineer/City Engineer to preserve trees, land monuments, and property corner markers.

(b) Wire Fence. Line posts and pull assemblies shall be spaced as shown on the plans. Wood corner, gate, and pull posts may be driven in place provided the driving does not damage the post; or they may be set in dug holes and set in concrete. Metal corner, gate, end, and pull posts shall be set in concrete. Wire shall not be stretched onto posts set in concrete until seven days after placement of posts. Posts shall be set plumb.

The Contractor has the option of using wood or steel posts and braces unless otherwise specified, but shall use the same material on the entire project. Wood end, corner, and pull posts may be used with steel line posts.

When solid rock is encountered, the posts shall be set into the rock a minimum of 10" for line posts and 16" for end, corner, gate, and pull posts. The hole in the rock shall have a minimum cross section dimension 1" greater than the post to be set. The posts shall be cut before setting to give the proper length above ground surface. The hole shall be filled with Concrete or a grout consisting of 1 part portland cement and 3 parts concrete sand.

Wire tension braces for wood pull, end, and corner assemblies shall consist of a 9 gauge wire passed around the posts to form a double wire. The wire shall be fastened to each post and the ends fastened together to form a continuous wire. The wires shall then be twisted together until the wire is in tension.

Where the new fence joins an existing fence, the two shall be attached in a satisfactory manner, with end posts being set as directed. Where the proposed fence intersects an existing fence, the end post shall be set for the existing fence clear of the proposed fence line as shown on the plans. The wire of the existing fence shall be stapled to the end post.

Pull post assemblies shall be placed at intervals of not more than 300’ in straight alignment on level or uniformly sloping ground. Pull posts shall also be placed at all sharp vertical angle points in the line.

Corner post assemblies shall be placed at all horizontal angle points of 15° or more in the fence. When the distance from a corner post to the next corner or pull post is less than 165’, one approach span on the corner assembly may be omitted.

End post assemblies at fence ends, gates, bridge abutments, and on banks of streams shall be erected in the same manner as corner construction. Extra length posts shall be provided for crossing small streams, ditches, ravines, or soft ground. Additional depth of set shall be secured in soft ground as directed.

The wire shall be attached to the face of the post away from the street. The wire shall be attached to wood line posts with staples driven at right angles to the grain and at a slight downward angle to attain the best anchorage. The staples shall not be driven tightly against the wire but shall leave free space for adjustment in tension due to changes in temperature. Wire shall be attached to steel line posts with approved galvanized clips. All barbed wire and alternate line wires of woven fabric shall be fastened to each line post. Barbed wire and all line wires of woven fabric shall be fastened to end, corner, and pull posts by wrapping the wire around the posts and tying the wire back on itself with not less than 3 tightly wrapped twists. Splicing of barbed wire and woven wire shall be done according to the plans. Gates of the same width and material type shall be placed at locations of existing gates as shown on the plans. Gates may be re-used if they have not been damaged during the construction period. If existing gates are not in satisfactory conditions for reuse, they shall be replaced at no cost to the City.

(c) Chain Link Fence. All posts shall be set in concrete as shown on the plans, plumb, and true to line and grade. Concrete shall comply with Section 601 for Class 1 and shall be thoroughly tamped around the posts. The posts shall be equally spaced in the line of fence not to exceed a spacing of 10 feet. The top of the footing shall be domed to drain water away from the post. Concrete in post footings shall be at least 7 days old before stretching and securing fabric to posts, bracing, or hanging gates.

Top rails shall pass through post caps and shall be securely fastened to end, brace, pull, and corner posts. Joints in top rails shall be made with expansion sleeve couplings to provide a substantial connection and allow for expansion and contraction of the rail.

Before the fence fabric is placed, the tension wire shall be placed at the proper location; stretched taut; securely anchored to each end, corner, or intermediate brace post; and satisfactorily fastened to each line post.

The fence fabric shall be attached to the face of the post facing the street.

The end of the fabric shall be attached to the posts by means of a stretcher bar threaded through the end loops of the fabric and secured to the posts with clamps and bolts. The fabric shall be

stretched to remove all slack with approved stretching equipment. The stretched fabric shall be secured to line posts, top rail, braces, and tension wire with specified fabric fasteners. Fabric fasteners shall be placed on line posts at not greater than 24" centers. Stretching operations shall be repeated at approximately every 100' for each run of fence. The use of trucks, tractors, and similar equipment will not be permitted in the stretching operation, except as anchors.

Splicing of the fabric shall be done by interweaving a wire picket through each end loop of each piece of fabric in a manner that will neatly and securely fasten the lengths of fabric together.

(d) Wood Privacy Fence. Wood privacy fence shall be constructed at all locations where existing privacy fence is required to be removed, at other locations shown on the plans, or as directed by the Engineer/City Engineer.

Wood privacy fence shall be constructed as shown on the plans or shall match the existing fence in materials and configuration as closely as possible. Materials and workmanship of wood privacy fences, including gates, shall be of the same or better quality as the existing fence.

(e) Gates. Gates of the length and type of existing gates shall be constructed at the locations shown on the plans or as directed.

(f) Temporary Fencing. Temporary fencing shall be installed as required to contain livestock, pets, and to maintain safety and security of adjacent properties. Fences shall be installed and maintained that their intended purpose is accomplished.

512.04 Method of Measurement.

(a) Fence will be measured by the linear foot in place along the midpoint in height of the fence from outside to outside of the end posts. The lengths of gates will be excluded from this measurement.

(b) Gates will be measured by the Linear Foot.

(c) Temporary fencing, if included as a bid item, will be measured by the linear foot (LF). If this item is not included as a pay item, temporary fencing will be considered subsidiary to other items and will not be measured.

512.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for as follows:

Barbed Wire Fence will be paid for at the contract unit price bid per linear foot for Barbed Wire Fence. Barbed and Woven Wire Fence will be paid for at the unit contract price per linear foot for Woven and Barbed Wire Fence. Chain Link Fence will be paid for at the contract unit price bid per linear foot for Chain Link Fence of the height specified. Wood Privacy Fence will be paid for at the contract unit price bid per linear foot for Wood Privacy Fence of the height specified. Gates will be paid for at the contract unit price bid per linear foot for Gates of the type

and dimensions specified. Temporary fencing will be for at the contract price per linear foot for temporary fencing of appropriate materials and heights.

The contract unit prices mentioned above shall be full compensation for clearing, grading, setting posts, erecting fence, and removing temporary fences; for excavation and backfill; for furnishing materials; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Barbed Wire Fence	LF
Woven and Barbed Wire Fence	LF
Woven Wire Fence	LF
Chain Link Fence	LF
Chain Link Gates	LF
Wood Privacy Fence	LF
Gates for Wood Privacy Fence	LF
Temporary Fencing	LF

Section 513. Handicap Ramps

513.01 Description. This item shall consist of the construction of handicap ramps in accordance with these specifications and the Standard Drawings at the locations shown on the plans or as directed by the Engineer/City Engineer.

513.02 Materials. Concrete used shall meet the requirements for Class 1 Concrete as provided in Section 601. The maximum allowable slump shall be 4 inches. The maximum water-cement ratio for the mix selected shall not be exceeded.

Cast-in-place detectable warning panels used shall be composed of a vitrified polymer composite material. The color of the panels shall conform to Federal Color No. 33538, and shall be homogeneous throughout the product. The panels shall be cast into the wet concrete. Surface applied products shall not be allowed. The cast-in-place detectable warning panels shall meet the size and spacing requirements shown in the plans.

513.03 Construction Requirements. When a ramp is to be constructed on an existing sidewalk, any items that are planned to be retained but are damaged during the removal or construction operations shall be repaired at no cost to the City.

Handicap Ramps shall be constructed in accordance with Section 502 and the current City of Fayetteville Standard Drawings. Cast-in-place detectable warning panels shall be installed into the wet concrete per the manufacturer's specifications.

513.04 Method of Measurement. Cast-in-place detectable warning panels will be measured by the square foot. Concrete used in Handicap Ramps will be measured by the square yard. Limits of measurement will include the ramp, landing and wings.

513.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per square foot for Cast-in-Place Detectable Warning Panels and per square yard for Handicap Ramp Concrete of the type specified, which price shall be full compensation for excavation and backfilling; for furnishing materials including joint filler, aggregate base and concrete; for constructing the ramp, for furnishing and placing cast-in-place detectable warning panels; and for all equipment, tools, labor, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Cast-in-Place Detectable Warning Panel	SF
Handicap Access Ramp	SY

Section 514. Project Signs

514.01 Description. This item shall consist of installing new project signs and supports furnished by the Contractor as shown on the plans, or as directed by the Engineer/City Engineer. The layout of the sign must be submitted to the Engineer for approval prior to installation.

514.02 Materials and Sign Layout. The structure and frame of project signs shall be wood or metal and shall structurally adequate to support the sign. Rough hardware shall be galvanized or aluminum.

The sign surface shall be constructed of minimum ¾-inch thickness exterior grade plywood with medium density overlay. Panels shall be of size to minimize joints. Overall size shall be 4’ x 8’ unless otherwise specified.

Paint colors will be selected by Owner. Information Content shall be as follows:

1) Project title, logo, and name of Owner as shown on Contract Documents.
2) Names and titles of authorities.
3) Name, title and address of Engineer.
4) Name of prime Contractor and major Subcontractors.
5) Any additional information requested by Owner.

514.03 Construction Requirements. The Contractor will furnish new project signs and supports and shall install the signs at the locations as shown in the plans or as directed by the Engineer/City Engineer. The Contractor will maintain the signs during construction. Should the sign or support become damaged during construction, the Contractor will furnish the replacement. The project signs shall be installed within two days after commencement of mobilization. Project signs are to be removed following the announcement of the project’s Final Completion by the Engineer/City Engineer. Final payment will be withheld until project signs have been removed.

514.04 Method of Measurement and Basis of Payment. Projects signs will be measured on a per each basis. Payment will be made for each sign constructed and installed according to the Plans and Specifications in the locations designated by the City. The price bid for each sign will be full compensation for all construction, installation, and maintenance of the signs.

Payment will be made under:

Pay Item	Pay Unit
Project Signs	EA

Section 515. Handrail

515.01 Description. This item shall consist of furnishing and erecting galvanized steel handrail on box culverts, headwalls, retaining walls, sidewalks, or steps, where shown on the Plans, or as directed by the Engineer/City Engineer, in accordance with the details shown on the Plans and with these specifications.

515.02 Materials.

(a) General. All materials used shall be new and shall comply with the requirements for the class and type of material specified.

All handrail materials shall be galvanized, powder coated steel, coated at the rate of 2.0 ounces of zinc per square foot of surface coated with a 3 mil dry film thickness of powder coating top coat suitable for exterior application. The powder coating color shall be selected by the owner from a color chart provided by the contractor.

515.03 Construction Requirements.

(a) General. All welding shall be in accordance with current provisions of Specifications for Welded Highway and Railroad Bridges, American Welding Society. Welding shall be done by the shielded arc method and shall be done only by certified welders. Welding rods shall be low hydrogen suitable for use with the metal being welded. Welds joining sections of handrail shall be ground smooth prior to touch up painting. All damaged coatings shall be repaired in accordance with paint manufacturer recommendations and to the satisfaction of the City.

Other galvanizing and painting methods may be used if approved by the Engineer/City Engineer.

Prior to installation, the Contractor shall contact the Engineer/City Engineer for his inspection of the Handrail.

515.04 Method of Measurement.

(a) Galvanized steel handrail will be measured by the linear foot, completed and accepted.

515.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for as follows:

Steel handrail acceptably completed and measured as provided above, will be paid for at the contract unit price per linear foot bid for "Steel Handrail," which price shall be full compensation for furnishing and installing all materials, including sleeves with plates, grout; and for all equipment, tools, labor, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Steel Handrail	LF

Section 516. Cold Milling Pavement

516.01 Description. This item shall consist of cold milling the asphalt or concrete pavement at the locations designated on the plans or by the Engineer/City Engineer and removing the resulting material from the street right-of-way. Unless otherwise provided, the reclaimed pavement shall become the property of the Contractor. The pavement remaining after milling shall provide a surface suitable for maintaining traffic.

516.02 Equipment. The Contractor shall provide self-propelled equipment with sufficient power, traction, and stability to maintain an accurate depth of cut and slope. The equipment shall be capable of accurately and automatically establishing profile grade along each edge of the machine by referencing from the existing pavement by means of a ski or matching shoe, or from and independent grade control and shall have an automatic system for controlling cross slope at a given rate. The milling machine shall have an effective means for preventing dust resulting from the operation from escaping into the air.

Provision shall be made, either integrally with the milling machine, or by the use of additional equipment, to remove the material being cut from the surface of the roadway.

516.03 Construction Requirements. The existing pavement shall be cold milled to a minimum depth as shown on the plans.

516.04 Method of Measurement. Cold Milling Pavement will be measured by the square yard (SY) of pavement milled to the depth specified.

No separate payment will be made for repair or replacement of manholes, valve boxes, or other appurtenances which are located and identified in advance of the cold milling operation and which are damaged by the Contractor.

516.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per square yard for Cold Milling Pavement, which price shall be full compensation for all work as prescribed herein, and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Cold Milling Pavement	SY

Section 517. Tree Protection Fencing

517.01 Description. This item shall consist of providing, installing, and maintaining tree protection fencing per the detail in the Drawings at all the locations indicated on the Drawings and/or as directed by the Engineer.

517.02 Materials.

517.03 Construction Requirements. Tree protection fencing shall be installed at locations shown on the Plans, or as directed by the Engineer prior to any construction operations within the vicinity. Fencing shall be installed in accordance with the details on the plans, and shall be maintained so that it provides adequate protection throughout the Project. Fencing shall be removed after all work has been completed or when directed by the Engineer.

517.04 Method of Measurement. Tree Protection Fencing shall be measured by the linear foot (LF) of Tree Protection Fencing actually installed.

517.05 Basis of Payment. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per Linear Foot for Tree Protection Fencing, which price shall be full compensation for providing, installing, maintaining, and removing tree protection fencing, and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Tree Protection Fencing	LF

DIVISION 600. MATERIALS

Section 601. Cast-in-Place Concrete

601.01 Description. This item shall consist of concrete in pavements, culverts, and miscellaneous structures, prepared and constructed in accordance with these specifications and conforming to the lines, grades, dimensions, and designs shown on the plans. Concrete shall consist of approved portland cement, fine aggregate, coarse aggregate, water, and any approved chemical admixtures mixed in the proportions specified for the various classes of concrete. All concrete shall be from a supplier approved by the Arkansas Department of Transportation.

601.02 Materials. The materials used in concrete shall conform to the requirements of ARDOT Standard Specifications Section 802.02. Coarse aggregate gradation shall conform to the requirements for Class A, S, S(AE), and Seal Concrete in Section 802.02.

Admixtures shall be used to improve certain characteristics of the concrete when specified on the plans. They may also be used when requested by the Contractor and approved by the City. The Contractor's request shall be supported with the manufacturer's certified formulation of the proposed admixture and with sufficient evidence that the proposed admixture has given satisfactory results on other similar work. Permission to use the admixture may be withdrawn at any time by the City when satisfactory results are not being obtained.

Admixtures shall be approved by the City. Admixtures shall be compatible with each other, as advised by the manufacturer. The admixture dosage rate range as recommended by the manufacturer shall be used. Should the dosage rate for any admixture not yield desirable characteristics in the concrete, the dosage of admixture used shall be based on test results obtained by trial batches.

Admixtures shall be added to the mixing water by means of a mechanical dispenser that will accurately meter the additive throughout the mix water cycle. The dispenser shall be constructed and connected so that the Engineer/City Engineer can readily determine the amount of admixture entering the mixing water.

Fly ash may be used as a partial cement replacement not exceeding 20% by weight of the cement when approved by the City. When fly ash is used, the total weight of both cement and fly ash will be used in design calculations. Fly ash used in concrete shall meet the requirements of ASTM C 618, Class C or F. Mixing of Class C and Class F fly ashes will not be permitted. Use of fly ash shall be discontinued immediately, as directed by the Engineer/City Engineer, when such use is determined to be causing the production of concrete that does not meet Specifications.

601.03 Classes of Concrete. One class of concrete is provided for in these specifications. The appropriate class of concrete shall be used as specified below or where designated by the Engineer/City Engineer.

The following requirements shall govern unless otherwise shown on the plans:

Class 1 concrete shall be used in curb and gutter, sidewalks, drop inlets, junction boxes, box culverts, bridges, concrete pavement, and miscellaneous concrete items.

This class of concrete shall not be used if concrete is to be placed underwater. Concrete to be placed under water shall meet ARDOT Specifications for Seal Concrete.

601.04 Classification and Proportioning. The concrete mixture shall be proportioned to insure a workable and durable concrete, as specified in the following table:

Characteristic	**Class 1**
Minimum Compressive Strength (psi at 28 days)	4000
Minimum Cement Content (bags per cu. yd.)	6
Maximum Water/Cement Ratio	0.45
Slump Range (Inches)	1-4*
Air Content Range (%)	4-7
Maximum Fly Ash Content	20%

*Maximum slump shall be 2" when slip form paving methods are used.

For all classes of concrete, the concrete materials shall be using the Absolute Volumes method in accordance with the requirements for the class specified.

The Contractor shall submit a mix design meeting the requirements of these Specifications. Certification that all materials used in the concrete mix meet the requirements of these Specifications shall be included with the mix design. No concrete shall be placed until a mix design is approved by the City.

Compressive strengths for all classes of concrete will be determined from test cylinders made in accordance with AASHTO T 23. If the strength required for the class of concrete being produced is not obtained with the minimum cement content specified, additional cement shall be used at no extra cost to the City.

601.05 Sampling and Testing. During the progress of work, concrete test specimens will be made by the City or its authorized representative in accordance with American Concrete Institute testing procedures. Sampling frequency will be as specified in Section 107.

Slump will be determined using AASHTO T 119. Air content will be determined using AASHTO T 152. Compressive strength specimens will be made in accordance with AASHTO T 23 and tested in accordance with AASHTO T 22.

Specimens for determining when forms may be removed, when a structure may be put in service, or when concrete piling may be driven will be cured, as nearly as practicable, in the same manner as the concrete in the structure and in accordance with AASHTO T 23.

601.06 Measurement of Materials. Materials will be measured by weighing, except as otherwise specified or where other methods are specifically authorized by the Engineer/City Engineer. Aggregates shall be measured separately and accurately by weight. Measuring devices

shall be operated in a manner that will consistently weigh the cement within ± 1% and the individual aggregates within ± 2% of the required weight. Measuring devices shall be so designed and plainly marked that the weights can be accurately and conveniently verified for the quantities of each component actually being used.

Cement in standard packages (sack) need not be weighed, but bulk cement shall be weighed.
The mixing water shall be measured by weight or by volume. The water measuring device shall be accurate to within 1%.

When the aggregates contain more water than the quantity necessary to produce a saturated surface-dry condition, representative samples shall be taken and the moisture content determined for each kind of aggregate.

601.07 Mixing Concrete. Concrete shall be thoroughly mixed in a mixer of an approved size and type that will insure a uniform distribution of the materials throughout the mass.

The concrete shall be mixed only in the quantity required for immediate use. Concrete that has developed an initial set shall not be used. Re-tempering concrete will not be permitted.

Mixers and agitators shall not be charged in excess of the manufacturer's rated capacity. Concrete shall be delivered and discharged from the truck mixer or agitator into the forms within 1½ hours after the introduction of the mixing water to the cement. In hot weather, or under other conditions contributing to quick setting of the concrete, the maximum allowable time may be reduced by the Engineer/City Engineer. Each mixture shall be accompanied by a truck ticket issued at the batch plant. This ticket shall include the following information:

1) Unique ticket number.
2) Identification of the truck.
3) Date and time of batching.
4) Total weights and/or volumes of each component.
5) Total volume of mix.
6) Total quantity of water added after batching.
7) Time of discharge.

Plants and transit mix trucks shall be equipped with adequate water storage and a device for accurately measuring and controlling the amount of water used in each batch.

Truck mixers shall be capable of combining the ingredients of the concrete into a thoroughly mixed and uniform mass, and of discharging the concrete within the specified range of consistency. The concrete shall be mixed not less than 70 nor more than 100 revolutions of the drum or blades at the rate of rotation specified by the manufacturer as the mixing speed. The pick-up and throw-over blades in the drum of all mixers shall be maintained in satisfactory condition to assure thoroughly mixed concrete.

If additional mixing water is required to maintain the specified slump, approximately 20 revolutions of the mixer drum at mixing speed shall be required before discharge of any concrete. No additional water shall be added without approval of the Engineer/City Engineer.

601.08 Handling and Placing Concrete.

(a) General. The Contractor shall provide sufficient supervision, manpower, equipment, tools, and materials and shall assure proper production, delivery, placement, and finishing of the concrete for each placement in accordance with the specifications.

The time interval between batches of concrete in a continuous placement shall not exceed 20 minutes. The minimum placement rate shall be 20 cubic yards per hour in bridges, box culverts, and retaining walls.

In preparation for the placing of concrete, construction debris and extraneous matter shall be removed from the interior of forms. Struts, stays, and braces, serving temporarily to hold the forms in correct shape and alignment pending the placing of concrete, shall be removed when the concrete placement has reached an elevation rendering their service unnecessary.

(b) Conveying. Concrete shall be placed to avoid segregation of the materials and the displacement of the reinforcement. The use of long troughs, chutes, and pipes for conveying the concrete to the forms will be permitted only when authorized by the Engineer/City Engineer. In case an inferior quality of concrete is produced by the use of such conveyors, the Contractor shall cease the use of that conveyor until such corrections in procedure are made to insure work of the quality specified.

Open troughs and chutes shall be of metal or metal lined. Where steep slopes are required, the chutes shall be equipped with baffles or be in short lengths that reverse the direction of movement. Aluminum chutes, troughs, and pipes shall not be used for depositing concrete.
Chutes, troughs, and pipes shall be kept clean and free from coatings of hardened concrete by thoroughly flushing with water after each run. Water used for flushing shall be discharged clear of the structure.

When placing operations involve dropping the concrete more than 5', it shall be deposited through approved pipes. Walls of 10" thickness or less may be placed without the use of pipes, provided the concrete can be placed without segregation.

(c) Placing. Concrete shall be placed in horizontal layers not more than 18" thick except as hereinafter provided. When less than a complete layer is placed, it shall be terminated in a vertical bulkhead. Each layer shall be placed and consolidated before the preceding batch has taken initial set to prevent injury to the green concrete and avoid surfaces of separation between the batches. Each layer shall be consolidated so as to avoid the formation of a construction joint with a preceding layer that has not taken initial set.

Concrete in footings shall be placed in the dry unless natural conditions prohibit. In that case, concrete shall be placed in accordance with Subsection 601.10. In order to separate water from

the concrete, it will be permissible to utilize polyethylene sheeting or tarpaulins to maintain a physical barrier between the water and the concrete.

When the placing of concrete is temporarily discontinued, the concrete, after becoming firm enough to retain its form, shall be cleaned of laitance and other objectionable material to a sufficient depth to expose sound concrete. To avoid visible joints as far as possible upon exposed faces, the top surface of the concrete adjacent to the forms shall be smoothed with a trowel. Where a "feather edge" might be produced at a construction joint, an inset form shall be used to produce an edge thickness of not less than 6 inches.

Immediately following the discontinuance of placing concrete, accumulations of mortar splashed upon the reinforcing steel and the surfaces of forms should be removed. Dried mortar chips and dust shall not be puddled into the concrete. If the accumulations are not removed prior to the concrete becoming set, care shall be exercised not to damage or break the concrete-steel bond at or near the surface of the concrete while cleaning reinforcing steel.
After initial set of the concrete, the forms shall not be jarred and no strain shall be placed on the ends of projecting reinforcing bars.

Concrete in walls and top slabs of box culverts shall not be placed less than 24 hours after the concrete in previous placements has set. Provision shall be made for bonding the walls to the bottom slab or footing and the top slab to the walls by means of roughened longitudinal keys. Before concrete is placed in the walls or top slabs, the bottom slab, footing, or walls shall be thoroughly cleaned of extraneous material. No horizontal construction joints will be allowed in any wall of a box culvert unless provided on the plans or approved by the Engineer/City Engineer.

(d) Consolidating. All concrete, during and immediately after depositing, shall be thoroughly consolidated. This shall be accomplished by mechanical vibration subject to the following provisions:

1) The vibration shall be internal unless special authorization of other methods is given by the Engineer/City Engineer.
2) Vibrators shall be of a type and design approved by the Engineer/City Engineer. They shall be capable of transmitting vibration to the concrete at rated frequencies of not less than 4500 impulses per minute.
3) The intensity of vibration shall be such as to visibly affect a mass of concrete over a radius of at least 18 inches.
4) The Contractor shall provide a sufficient number of vibrators to properly compact each batch immediately after it is placed in the forms and shall have in reserve at all times sufficient vibratory equipment to guard against shut down of the work because of the failure of the equipment in operation.
5) Vibrators shall be manipulated to thoroughly work the concrete around the reinforcement and embedded fixtures and into the corners and angles of the forms.
6) Vibration shall be applied at the point of deposit and in the area of freshly deposited concrete. The vibrators shall be inserted and withdrawn out of the concrete slowly. The vibration shall be of sufficient duration and intensity to thoroughly consolidate the

concrete, but shall not be continued so as to cause segregation. Vibration shall not be continued at any one point to the extent that localized areas of grout are formed. Application of vibrators shall be at points uniformly spaced and not farther apart than twice the radius over which the vibration is visibly effective.

7) Vibration shall not be applied directly or through the reinforcement to sections or layers of concrete that have hardened to the degree that the concrete ceases to be plastic under vibration. It shall not be used to make concrete flow in the forms over distances so great as to cause segregation, and vibrators shall not be used to transport concrete in the forms.

8) Vibration shall be supplemented by such spading as is necessary to ensure smooth surfaces and dense concrete along form surfaces and in corners and locations impossible to reach with the vibrators.

These provisions shall apply to precast products except that, if approved by the Engineer/City Engineer, the manufacturer's methods of vibration may be used.

601.09 Pumping. Concrete may be placed by pumping. The equipment for pumping shall be arranged and operated so that no vibrations result that might damage freshly placed concrete.

The Contractor will be permitted to furnish coarse aggregate for concrete that is to be pumped in a size smaller than that specified provided that a suitable mix can be produced that will conform to the requirements for the class specified.

Where concrete is conveyed and placed by mechanically applied pressure, the equipment shall be adequate in capacity for the work. The operation of the pump shall be such that a continuous stream of concrete without air pockets is produced. When pumping is completed, the concrete remaining in the pipe, if it is to be used, shall be ejected in such a manner that there will be no contamination of the concrete or separation of the ingredients.

Concrete for slump and air content requirements shall be obtained at the discharge end of the pipe.

The use of aluminum pipe as a conveyance for the concrete will not be permitted.

601.10 Depositing Concrete Under Water. Concrete shall not be deposited in water except when shown on the plans or with the approval of the Engineer/City Engineer. No concrete shall be placed underwater without an approved mix design which meets the ARDOT requirements for Seal Concrete.

The supply of concrete shall be maintained at the rate necessary to raise the elevation over the entire seal by a minimum of 1' per hour or an approved retarder shall be used as necessary for lesser placement rates.

For parts of structures under water, seal concrete shall be placed continuously from start to finish. The surface of the concrete shall be kept as nearly horizontal as practicable. The Contractor shall provide equipment and personnel to sound the top of the seal in the presence of

the Inspector in order to verify the location of the seal at all times. Previously placed seal concrete shall not have taken its initial set prior to the placement of adjacent concrete.

Concrete shall be carefully placed by means of a tremie or other approved method. Still water shall be maintained at the point of deposit. Concrete shall be deposited in such a manner that the planned horizontal concrete flow shall be no more than 15 feet.

A tremie shall consist of a tube having a diameter of not less than 10", constructed in sections having flanged couplings fitted with gaskets and an approved foot valve. The tremie shall be supported so as to permit rapid lowering when necessary to retard or stop the flow of concrete. The discharge end shall be closed at the start of the work so as to prevent water from entering the tube and shall be entirely sealed. The tremie tube shall be kept sufficiently full to prevent the loss of the concrete seal. When a batch is dumped into the tube, the flow of concrete shall be induced by slightly raising the discharged end, always keeping it in the deposited concrete. If at any time the seal is lost, the tremie shall be raised, the discharge end closed for a new start, and then lowered into position with the discharge end in the previously deposited concrete. Aluminum tremies will not be permitted.

Dewatering may proceed when the seal concrete has been allowed to cure for a minimum of 72 hours at a water temperature above 45° F. All laitance or other unsatisfactory materials shall be removed from the exposed surfaces that are to support other structural loads.

601.11 Joints.

(a) Construction joints. Construction joints shall be made only where located on plans or shown in the placement schedule, unless otherwise approved by the Engineer/City Engineer.

The placing of concrete shall be carried continuously from joint to joint. The face edges of all joints that are exposed to view shall be carefully finished true to line and elevation.

The surface of the hardened concrete shall be roughened in a manner that will not leave loosened particles of aggregates or damaged concrete at the surface. It shall be thoroughly cleaned of foreign matter and laitance and saturated with water.

If not detailed on the plans, or in the case of emergency, construction joints shall be placed as directed by the Engineer/City Engineer. Shear keys or inclined reinforcement shall be used where necessary to transmit shear or bond the two sections together. When shear keys or inclined reinforcement is not provided, the concrete shall be roughened as directed.

(b) Expansion and Fixed Joints. Joints shall be constructed according to the details shown on the plans.

1) **Open Joints.** Open joints shall be placed in the locations shown on the plans and shall be constructed by the insertion and subsequent removal of a wood strip, metal plate, or other approved material. The insertion and removal of the template shall be accomplished

without chipping or breaking the corners of the concrete. Reinforcement shall not extend across an open joint unless specified on the plans.

2) **Filled Joints.** Poured expansion joints shall be constructed similar to open joints. When premolded types are specified, the filler shall be in the correct position when the concrete on the second side of the joint is placed. An approved joint sealer meeting the requirements of Subsection 601.11(d) is required in addition to the joint filler. The cavity for the sealer shall be formed by the insertion and subsequent removal of a wood strip, metal plate, or other approved material.

All faces of the joint to be sealed shall be thoroughly cleaned by sand blasting, water blasting, or other approved methods prior to placing the joint seal material.

Preformed expansion joint filler, non-extruding and resilient types, shall meet the requirements of AASHTO M 153. Type 2 (sponge rubber) shall be required to have a minimum expansion of 125% and be within ± 0.1" of the specified plan thickness.

Other types of joint fillers may be allowed if approved by the Engineer/City Engineer.

(c) Contraction Joints. Contraction joints shall be constructed according to the dimensions specified in the plans and these specifications. The joints shall continue continuously across the full width of the concrete surface. Contraction joints shall be 1/8" to 3/8" wide and shall extend to a depth equal to ¼ to 1/3 of the thickness of the concrete being placed. All contraction joints shall be sealed with an approved sealant meeting the requirements of Subsection 601.11(d) for types 3, 4 or 5.

(d) Joint Materials. Materials for filling and sealing joints shall be as shown on the plans and shall comply with the following requirements, as applicable:

Type 1. A joint filler that is a uniform mixture of sawdust and asphalt material in the proportion of one part asphalt to four parts sawdust, by volume. Asphalt material used shall be either MC-250 or SS-1. When this material is specified, the joint shall be filled to within 25 mm (1") of the pavement surface. The top 1" shall be sealed with a material complying with the requirements of AASHTO M 173.

Type 2. A joint filler that is preformed, non-extruding, and resilient type, complying with AASHTO M 153 Type I (sponge rubber).

The material for filling and sealing longitudinal, warping, contraction, and other specified joints shall be as shown on the plans and shall comply with the following requirements:

1) Backer rod filler for Types 3, 4, and 5 joint shall be of resilient material approximately 3 mm (1/8") larger in diameter than the width of the joint to be sealed. All components of the joint sealant system, including the backer rod, shall be compatible. No bond shall occur between the backup material and the sealant system for types 3 and 4 joint sealer.

Type 3. A joint sealer that is a one part silicone formulation that does not require a primer for bond to concrete. The compound shall be compatible with concrete. Acetic acid cure sealants are not acceptable. The material shall be one that has been approved by the Engineer.

Type 4. A joint sealer that is a one part silicone formulation that does require a primer for bond to concrete. The compound shall be compatible with concrete. Acetic acid cure sealants are not acceptable. The material shall be one that has been approved by the Engineer.

Type 5. A joint sealer that is a hot poured elastomeric joint sealant. The material shall comply with AASHTO M 282. The appendix of that specification shall be considered a part of this specification.

Type 6. A joint sealer that is a 2 component, cold poured, synthetic polymer, complying with ASTM D 1850 with the exception of penetration, which shall not exceed 100, and resilience, both original cured sample and oven aged, which shall be a minimum of 70%.

Type 7. A joint sealer that is a hot poured elastic type complying with AASHTO M 173.

601.12 Forms. Forms shall be mortar-tight and of sufficient rigidity to prevent distortion due to the pressure of the concrete and other loads incident to the construction operations. Forms shall be constructed and maintained so as to prevent warping and the opening of joints due to shrinkage of the lumber.

The forms shall be substantial and unyielding and shall be so designed that the finished concrete will conform to the proper dimensions and contours. The design of the forms shall take into account the effect of vibration of concrete as it is placed.

Forms for exposed surfaces shall be made of dressed lumber or plywood of uniform thickness, steel, or other approved materials that will provide a smooth surface, and shall be mortar-tight. Forms shall have a ¾" chamfer at all sharp corners unless otherwise directed. In the case of projections, such as girders and copings, forms shall be given a bevel or draft to insure easy removal.

Metal snap-ties within the forms shall be so constructed as to permit their removal to a depth of at least 1" from the face of the concrete. Metal inserts or anchorages within the forms shall be so constructed as to permit their removal to a depth of at least 1" from the face of the concrete or be covered by being embedded a minimum of 1" in the concrete. In case ordinary wire ties are permitted, all wires, upon removal of the forms, shall be cut back at least ¼" from the face of the concrete. All cavities shall be filled with cement mortar and the surface left sound, smooth, even, and uniform in color.

Forms shall be set and maintained true to the line designated until the concrete is sufficiently hardened. Before depositing new concrete on or against concrete that has hardened, the forms shall be re-tightened. Forms shall remain in place for the periods specified in Subsection 601.13. When forms appear to be unsatisfactory in any way, either before or during the placing of

concrete, the Engineer/City Engineer shall order the work stopped until the defects have been corrected.

The shape, strength, rigidity, watertightness, and surface smoothness of re-used forms shall be maintained at all times. Any warped or bulged lumber must be re-sized before being re-used.

Forms shall be cleaned before being set to line and grade and shall be oiled prior to placing reinforcing steel in the vicinity of the forms. Materials or methods used in oiling the forms shall not result in the discoloration of the concrete.

601.13 Removal of Forms. In the determination of the time for the removal of forms and the discontinuance of heating, consideration shall be given to the location and character of the structure, the weather and other conditions influencing the setting of the concrete, and the materials used in the mix.

Removal of forms shall be in accordance with the following schedule:

Item	Minimum Time	Strength Requirement
Top Slabs of RC Box Culverts	7 days	80% Specified
Forms for Columns and Vertical Walls	24 hours	N /A
Side Forms for Parapets, Median Barriers, and Curb Faces	6 hours	N/A

Forms on surfaces that will require a Class 2 finish in accordance with Subsection 601.16 shall be removed at the earliest time permitted under these Specifications in order to begin finishing operations.

Forms and their supports shall not be removed without the approval of the Engineer/City Engineer. Supports shall be removed in such a manner as to permit the concrete to uniformly and gradually take the stresses due to its own weight. Methods of form removal likely to cause overstressing of or damage to the concrete shall not be used.

601.14 Weather and Temperature Limitations.

(a) Hot Weather. When the internal temperature of the plastic concrete reaches 85° F, the Contractor shall take the necessary precautions to ensure that the temperature of succeeding batches does not exceed 90° F. Concrete batches with temperatures in excess of 90° F will be rejected. The method used to control the concrete temperature shall be approved in writing by the Engineer. The temperature of the plastic concrete shall be determined immediately prior to its being deposited in the forms by inserting a thermometer to a depth consistent with the capabilities of the thermometer being used to obtain a true reading. Prior to beginning placement, the Contractor shall insure that sufficient materials, labor, and equipment are available during placement to implement the previously approved cooling process.

(b) Cold Weather. Concreting operations will not be permitted when a descending air temperature falls below 40° F nor resumed until an ascending air temperature reaches 35° F without specific authority from the Engineer/City Engineer. Under no circumstances will the placing of concrete on a frozen subgrade be permitted. No concrete shall be placed unless the temperature of the concrete is more than 50° F when placed. If heating of the ingredients is necessary to meet this criterion, it shall be accomplished by a method such as dry heat or steam and not by direct flame. Water shall not be heated to more than 180° F, and shall be combined with the aggregate before the addition of cement. Frozen aggregates may not be used.

After concrete is placed, it shall be protected by insulated forms, blankets, enclosing and heating, and/or any other method approved by the Engineer/City Engineer that will maintain the temperature adjacent to the concrete at a minimum of 50° F for at least 5 days. Concrete that has been frozen or damaged due to weather conditions shall be removed and replaced by the Contractor at no cost to the City.

(c) Protection Against Rain. In order that concrete may be properly protected against the effects of rain before the concrete is sufficiently hardened, the Contractor shall have available at all times materials for the protection of the edges and surface of the unhardened concrete. Such protective materials shall consist of standard metal forms or wood planks having a nominal thickness of not less than 2" and a nominal width of not less than the thickness of the pavement at its edge for the protection of the pavement edges, and covering material such as burlap or cotton mats, or plastic sheeting material for the protection of the surface of the pavement. When rain appears imminent, all paving operations shall stop and all available personnel shall begin protection of the sides of the pavement and covering the surface of the unhardened concrete with the protective covering. Any surface finish damaged by rain shall be repaired or replaced to the satisfaction of the City at no cost to the City.

601.15 Curing Concrete.

(a) Materials. Materials used in curing concrete shall conform to one of the following types:
Burlap-polyethylene sheeting shall meet the requirements of AASHTO M 171.

Polyethylene sheeting shall meet the requirements of AASHTO M 171.

Copolymer/synthetic blanket shall meet the requirements of AASHTO M 171. Copolymer/synthetic blankets shall be a composite of a copolymer membrane material coated over a layer of absorbent nonwoven synthetic fabric weighing at least 6 ounces per square yard, uniform in appearance, and free from visible defects.

Other approved sheeting materials shall meet the requirements of AASHTO M 171.

Membrane curing compound shall meet the requirements of AASHTO M 148, Type 1-D or Type 2.

(b) Application. The exposed concrete, immediately after finishing, shall be covered with one of the curing materials listed above and shall be kept continuously and thoroughly wet for a period

of not less than 5 days after the concrete is placed. Membrane curing does not require the application of additional moisture.

Membrane curing compound shall not be used on surfaces requiring a Class 2 finish.

When membrane curing is used, the exposed concrete shall be thoroughly sealed by applying the membrane curing solution immediately after the free water has left the surface. The concrete inside the forms shall be sealed immediately after the forms are removed and necessary finishing has been done. For uniform application in the field on vertical concrete surfaces, the specified rate of application may be achieved by two coats applied at an interval of approximately 1 hour.

The Contractor shall provide satisfactory equipment and means to properly control and assure the direct application of the curing solution on the concrete surface so as to result in a uniform coverage at the rate of 1 gallon for each 125 square feet of area.

If rain falls on the newly coated concrete before the film has dried sufficiently to resist damage, or if the film is damaged in any other manner, a new coat of the solution shall be applied to the affected portions equal in curing value to that specified above.

601.16 Finishing Concrete Surfaces. Surface finishes shall be classified as follows:

Class 1. Ordinary Surface finish.
Class 2. Rubbed finish.
Class 3. Sprayed finish.
Class 4. Exposed Aggregate finish.
Class 5. Tined Surface finish.
Class 6. Broomed finish.
Class 7. Grooved finish.

All concrete shall be given a Class 1, Ordinary Surface Finish. In addition, if further finishing is required, such other types of finish will be as specified herein.

Payment for finishes will be considered a part of the applicable item of concrete used.

The following surfaces shall be given a Class 2 finish except when a Class 3 finish is specified in the plans:

1) Exposed surfaces of retaining walls and box culvert wingwalls, surfaces of concrete rails, rail posts, rail end posts, rail bases, and parapets, including the outside face.
2) At the option of the Contractor, a Class 3 finish may be used on all surfaces requiring a Class 2 finish provided the same class of finish is used on the entire job.
3) Sidewalks, curbs, exposed horizontal surfaces of inlets and junction boxes, and exposed horizontal faces of miscellaneous concrete items shall be given a Class 6 finish.
4) Concrete pavement surfaces shall be given a Class 5 finish.

The various classes of surface finish are defined as follows:

(1) Class 1, Ordinary Surface Finish. Immediately following the removal of forms, fins and irregular projections shall be removed from all surfaces except from those that are not to be exposed or are not to be waterproofed. On all surfaces, the cavities produced by form ties and all other holes, broken corners or edges, and other defects shall be thoroughly cleaned, and after having been thoroughly saturated with water, shall be carefully pointed and trued with a mortar of cement and fine aggregate mixed in the proportion of 1:2. Mortar used in pointing shall be not more than 1 hour old. The concrete shall then be rubbed or sprayed, if required, and cured as specified under Subsection 601.15. Construction and expansion joints in the completed work shall be left carefully tooled and free of mortar and concrete. The joint filler shall be left exposed for its full length with clean and true edges.

The resulting surfaces shall be true and uniform. Repaired surfaces, the appearance of which is not satisfactory to the City, shall be rubbed as specified under Class 2 finish.

Exposed surfaces not protected by forms shall be struck off with a straightedge and finished with a wood float to a true and even surface. The use of additional mortar to provide a plastered or grout finish will not be permitted.

The tops of caps in the area of the bridge seat shall be finished with a steel trowel or by grinding to a smooth finish and true slope at the proper elevation.

(2) Class 2, Rubbed Finish. After removal of forms, the rubbing of concrete shall be started as soon as its condition will permit. Immediately before starting this work the concrete shall be thoroughly saturated with water. Sufficient time shall have elapsed before the wetting down to allow the mortar used in the pointing of rod holes and defects to thoroughly set. Surfaces to be finished shall be rubbed with a medium coarse carborundum stone, using a small amount of mortar on its face. The mortar shall be composed of cement and fine sand mixed in proportions used in the concrete being finished. Rubbing shall be continued until form marks, projections, and irregularities have been removed, voids filled, and a uniform surface has been obtained. The paste produced by this rubbing shall be left in place at this time.

After concrete above the surface being treated has been cast, the final finish shall be obtained by rubbing with a fine carborundum stone and water. This rubbing shall be continued until the entire surface is of a smooth texture and uniform color.

After the final rubbing is complete and the surface has dried, it shall be rubbed with burlap to remove loose powder and shall be left free from all unsound patches, paste, powder, and objectionable marks.

(3) Class 3, Sprayed Finish. The material furnished for sprayed finish shall be a commercial paint type texturing product produced specifically for this purpose, and shall consist of a synthetic non-alkyd resin containing mica, perlite, non-biodegradable fibers, and durable tinting pigments. The material shall be approved by the City. Unless otherwise specified in the Contract,

the color of the sprayed finish shall be concrete gray, equal or close to Shade 36622 of the Federal Color Standard 595 A.

Surfaces to be coated shall be free from efflorescence, flaking, coatings, dirt, oil, and other foreign substances. The sprayed finish shall not be applied over surfaces cured with membrane curing compound until 30 days has elapsed from application of the membrane. Prior to application of spray finish, the surfaces shall be free of moisture, as determined by sight and touch, and in a condition consistent with the manufacturer's published recommendations.

The spray finish shall be applied at a rate as recommended by the manufacturer and as approved by the Engineer/City Engineer. The spray finish shall be applied with heavy duty spray equipment capable of maintaining a constant pressure as necessary for proper application.

The completed finish shall be tightly bonded to the structure and shall present a uniform appearance and texture equal to or better than that required for rubbed finish. If necessary, an additional coat or coats shall be applied to produce the desired surface texture and uniformity. Upon failure to adhere positively to the structure without chipping or cracking, or to attain the desired surface appearance, the coating shall be removed from the structure and the surface given a rubbed finish, or another approved finish satisfactory to the City.

(4) Class 4, Exposed Aggregate Finish. This type of finish shall be produced by scrubbing the surface of green concrete with stiff wire or fiber brushes, using a solution of muriatic acid in the proportion of 1 part acid to 4 parts water, or by sand blasting, until the cement film or surface is completely removed and the aggregate particles are exposed. The amount of aggregate exposure will be specified on the plans or designated by the Engineer/City Engineer. Any surface treated with muriatic acid shall be thoroughly washed with water to which a small amount of ammonia has been added to remove all traces of the acid. The resulting surface shall be an even pebbled texture.

(5) Class 5, Tined Roadway Surface Finish. The concrete roadway surface shall be given a finish with a burlap drag, followed by tining.

The surface shall be finished by dragging a seamless strip of damp burlap over the full width of the roadway surface. The burlap drag shall consist of sufficient layers of burlap and have sufficient length in contact with the concrete to slightly groove the surface, and shall be moved forward with a minimum bow of the lead edge. The drag shall be kept damp, clean, and free of particles of hardened concrete.

The final finish shall be accomplished by using the drag finish as described above with the further application of a metal tine finishing device. The tine shall be approximately 0.032" by 0.125" of steel flat wire, 2" to 5" in length, and spaced on ½" to ¾" centers. The grooves produced in the concrete shall be substantially from 1/8" to 3/16" in depth. The grooves shall be transverse to the centerline of the surface. The metal tine device shall be operated by approved mechanical or manual means. Other texturing equipment may be approved by the Engineer/City Engineer provided it produces a texture equivalent to that produced by the metal tine.

The tining shall be terminated with a transition in depth 18" from the gutter line. The outer 18" of the tined surface shall receive a Class 6, broomed finish.

(6) Class 6, Broomed Finish. After the concrete has been deposited in place, it shall be consolidated and the surface shall be struck off by means of a strike board, floated, and broomed. An edging tool shall be used on edges and expansion joints. The surface shall not vary more than ¼" under a 10' straightedge. The surface shall have a granular or matte texture.

(7) Class 7, Grooved Finish. The roadway surface shall be grooved perpendicular to the centerline with grooves extending across the slab to within 18" of the gutter line. The grooves shall be cut using a mechanical sawing device that will leave grooves 1/8" to 3/16" in depth and spaced on ½" to ¾" centers.

Section 602. Reinforcing Steel

602.01 Description. This item shall consist of reinforcing steel and miscellaneous accessories of the quality, type, size, and quantity designated, which shall be furnished and placed in concrete according to these specifications and in conformity with the details shown on the plans, or as directed.

602.02 Materials.

(a) Bar Reinforcement. Bar reinforcement for concrete in sizes up to and including #18 shall conform to the requirements of AASHTO M 31 or M 53.

(b) Wire and Wire Fabric. Wire, when used as reinforcement in concrete, shall conform to the requirements of AASHTO M 32 or M 225.

(c) Bar Mat Reinforcement. Bar mat reinforcement for concrete shall conform to the requirements of AASHTO M 54.

(d) Epoxy Coating. When specified, reinforcing steel bars shall be coated according to AASHTO M 284 using a coating material that meets the requirements of Annex A1 of AASHTO M 284.

The Contractor shall supply to the Engineer a written certification that properly identifies the number of each batch of coating material used in the order; the material, quantity represented, date of manufacture, and name and address of the manufacturer; and a statement that the supplied coating material meets the requirements of Annex A1 of AASHTO M 284.

Patching material, compatible with coating material, inert in concrete, and meeting the requirements of Annex A1 of AASHTO M 284, shall be provided by the epoxy coating manufacturer.

602.03 Bar Lists and Bending Diagrams. All reinforcing steel shall be fabricated to conform to the details shown on the plans. Pins used for bending reinforcing steel shall be equal to or larger than that shown on the plans. Bar lists and bending diagrams for reinforcing steel and

bar supports will not be reviewed or approved by the Engineer. The Contractor shall be responsible for the accuracy of the fabricated reinforcing steel.

602.04 Fabrication. Bar reinforcement shall be bent to the shapes shown on the plans.

Bars shall be bent cold, unless otherwise permitted by the Engineer. No bars partially embedded in concrete shall be field bent, except as shown on the plans or specifically permitted by the Engineer.

Radii for bends shall be as shown on the plans. When not shown on the plans, radii bends on the inside of bars shall be as specified below:

Bar Number	**Minimum Radii**
Stirrups and Ties	4 bar diameters
3,4,5,6,7, or 8	6 bar diameters
9,10, or 11	8 bar diameters
14 or 18	10 bar diameters

The Engineer/City Engineer or his representative shall have free access to the shop for inspection, and every facility shall be extended to him for this purpose. On a random basis, samples of bars, other than the additional test bars, may be taken by the Engineer.

Epoxy coating applicators shall be CRSI certified. The Contractor shall inform the Engineer, in writing, at least 10 days prior to performing any of the cleaning or coating operations. The Contractor shall furnish to the Engineer the coating applicator's certification certifying that all materials used, the preparation of the bars, coating, and curing were done according to these specifications and that no bars contain more than six holidays per yard. The certification shall include or have attached specific results of tests of coating thickness and flexibility of coating.

602.05 Shipping, Handling, and Protection of Material. Bar reinforcement shall be shipped in standard bundles, tagged and marked according to the *Code of Standard Practice* of the Concrete Reinforcement Steel Institute.

Steel reinforcement shall be protected from damage. When placed in the work, it shall be free from dirt, detrimental rust or scale, paint, oil, or other foreign substance. Steel reinforcement shall be stored above the ground on skids, platforms, or other supports. Epoxy coated reinforcing steel that is not incorporated into the work within 90 calendar days after delivery to the project shall be protected from exposure to the sun.

Epoxy coating damaged during fabrication, shipping, or installation shall be repaired according to AASHTO M 284. Damaged areas less than 0.10 square inch need not be repaired but all areas larger than 0.10 square inch shall be repaired. The maximum amount of damage shall not exceed 2% of the surface area of each bar. All damaged areas shall be repaired according to the manufacturer's instructions. Repairs will be required on all sheared or cut ends of bars, end areas left bare during the coating process, and any areas where the entire coating is removed. All

repairs shall be completed as soon as practicable and, in the case of bare end areas and sheared ends, before visible oxidation of the surface occurs. Epoxy coated bars shall not be flame cut.

The Contractor shall exercise caution when placing and vibrating concrete to prevent any damage to epoxy coated bars. In order to prevent the vibrator from damaging the coated bars, the head shall be covered with a sheet of rubber or a similar material as approved by the Engineer/City Engineer.

602.06 Placing and Fastening. Steel reinforcement shall be accurately placed in the positions shown on the plans and firmly held during the placing and setting of concrete. Bars shall be tied at all intersections except where spacing is less than 12" in each direction, in which case alternate intersections shall be tied. Bundled bars shall be tied together at not more than 6' centers.

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers, or other approved devices. Reinforcing steel shall not be welded unless detailed on the plans or authorized in writing by the Engineer. Metal bar supports that are in contact with the exterior surface of the concrete shall have protection conforming with the CRSI Specifications, Class 1 for Plastic Protected Bar Supports or Class 2 for Stainless Steel Bar Supports, with the further provision that the plastic protection may be applied either by a dipping operation or by the addition of premolded plastic tips to the legs of the supports. Epoxy Coated Bar Supports that are coated according to the provisions of AASHTO M 284 using a coating material meeting the requirements of Annex A1 of AASHTO M 284 may be substituted for Plastic Protected Bar Supports or Stainless Steel Bar Supports. All high chairs and bar bolsters shall be metal. Any bar supports that deform under foot traffic or other construction activities shall not be used.

When concrete is to rest on an excavated surface, layers of bars shall be supported above the surface by metal chairs or by precast mortar or concrete blocks. The use of rocks, pieces of stone or brick, pipe, wooden blocks, or chunks of concrete will not be permitted as bar supports or spacers.

Reinforcement shall be placed by the Contractor and inspected and approved by the Engineer/City Engineer before the placing of concrete begins. Concrete placed in violation of this provision may be rejected and removal required. Unless otherwise shown on the plans, the spacing of supports shall conform to the recommendations of CRSI.

Epoxy coated bars shall be placed on plastic coated or epoxy coated metal supports and shall be held in place by use of plastic coated tie wires or molded plastic clips especially fabricated for this purpose. Bar supports for epoxy coated bars shall be fully coated metal supports. Epoxy coated bar supports shall be coated according to the provisions of AASHTO M 284 using a coating material meeting the requirements of Annex A1. In placing epoxy coated bars, care shall be maintained to prevent coated bars from being damaged.

After the coated bars are secured to bar supports, a final visual inspection shall be made and all uncoated or damaged areas coated or repaired as required by the Engineer/City Engineer.

602.07 Splicing. Reinforcing steel shall be furnished in the full lengths specified on the plans. Bars spliced as a result of unforeseen construction conditions or sequences will require the written approval of the Engineer. Splices shall meet the requirements of the current edition of the AASHTO *Standard Specifications for Highway Bridges.*

Secondary reinforcing used for distribution of loads, such as longitudinal bars in box culverts and retaining walls may be lapped 32 bar diameters minimum if bars are #6 or smaller. Primary reinforcing for columns and retaining walls which require splicing as a result of the lowering of footings shall be spliced at the upper end of the original bars. Required lengths of splices for primary reinforcing will be determined by the Engineer.

In lapped splices, the bars shall be placed in contact and fastened together in such a manner as to maintain the minimum distance to the surface of the concrete as shown on the plans.

Sheets of wire fabric or bar mat reinforcement shall overlap each other sufficiently to maintain a uniform strength and shall be securely fastened at the ends and edges. The lap shall be not less than one space of wire fabric or bar.

STANDARD SPECIFICATIONS
FOR DESIGN AND CONSTRUCTION
OF WATER LINES AND SEWER LINES

CITY OF
FAYETTEVILLE
ARKANSAS

2022 EDITION

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STANDARD SPECIFICATIONS
FOR DESIGN AND CONSTRUCTION
OF WATER LINES AND SEWER LINES

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STANDARD SPECIFICATIONS
FOR DESIGN AND CONSTRUCTION
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SECTION 0001 CERTIFICATION AND STATEMENT

1.01 INTENT

A. The intent of this publication is to simplify and expedite the process of water and sewer design and construction within the jurisdiction of the City of Fayetteville.

1.02 REQUIREMENTS

All rules, regulations and requirements of the Arkansas Department of Health (ADH Rules Pertaining to Public Water Systems) are the minimum standard of all plan requirements and construction and development practices to be approved by the City of Fayetteville. In such case as the Standard Specifications herein set forth exceeds the Arkansas Department of Health requirements, then this Standard Specification as approved by the City Council Fayetteville, Arkansas governs.

The Utilities Director and/or the City Engineer are responsible to the extent possible as a function of their supervisory position within the City to require compliance with the Arkansas State Board of Health, Department of Health Center for Local Public Health Environmental Health Branch, Engineering Section, Rules and Regulations Pertaining to Public Water Systems, latest edition, aka "Rules and Regulations Pertaining to Public Water Systems".

All rules, regulations and requirements of the Arkansas Board of Licensure For Professional Engineers and Professional Surveyors shall be the minimum standard for professional surveying and for professional engineering.

Standard construction details prepared by the City of Fayetteville Engineering Division are available from the City Engineer. In the case of a conflict between the Standard construction details prepared by the City of Fayetteville Engineering Division and the text of these Standard Specifications, then the text of these Standard Specifications govern unless an exception or variance is otherwise granted.

Nothing within this Standard Specification is intended to, or can, replace any latest edition minimum requirement by City Ordinance or Arkansas State Rules, Law or Regulations or any Federal Law or Regulation.

The Engineer of Record is responsible for their design and compliance with City of Fayetteville Specifications, ADH Rules Pertaining to Public Water Systems and State of Arkansas Rules, Regulations and Laws and any Federal Law, Rule or Regulation.

These Specifications do not replace the Engineer of Record's specifications and contract documents, however these specifications set forth the minimum requirements for design and construction of all water and sanitary sewer within the jurisdiction of the City of Fayetteville.

The City of Fayetteville, and the City of Fayetteville Utilities Engineer, accept no liability arising from any use or reuse of these specifications.

1.03 CITY STANDARDS

The basis for the STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2022 Edition is as follows:

A. Previous editions of City of Fayetteville water and/or sewer standards.

   The following previous editions of Water and Sanitary Sewer minimum standards were found in the files and utilized in the current edition.

   1. City of Fayetteville 1994 Minimum Requirements for Water, Sewer, Streets, Drainage and Inspection by Donald Bunn, P.E., City Engineer.

   2. City of Fayetteville Water and Sewer standards 1995 by Donald Bunn, P.E., City Engineer.

   3. City of Fayetteville 1996 Standard Water Line Specifications 1996 Donald Bunn, P.E., City Engineer, as further approved by the City's Water and Sewer Committee and the City Council by Resolution 46-96 on April 2, 1996.

   4. STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2017 Edition

B. Other published City Standard Specifications utilized in our region, with specific acknowledgement to the City of Bentonville.

C. Meetings and review with City of Fayetteville Engineering Division staff, the Utilities Director, the Utitlies Operation Manager, and the Utilities Field Supervisors.

D. Public review available at the City of Fayetteville website, at the City of Fayetteville Water and Sewer Committee meetings, and at the City of Fayetteville City Council meeting.

E. Review and Approval by the Arkansas Department of Health.

END OF SECTION 0001

SECTION 1000 GENERAL REQUIREMENTS

1.01 GENERAL

A. The intent of this publication is to simplify and expedite the process of water and sewer design and construction with the jurisdiction of the City of Fayetteville.

All rules, regulations and requirements of the Arkansas Department of Health (ADH Rules Pertaining to Public Water Systems) are the minimum standard of all plan requirements and construction and development practices to be approved by the City of Fayetteville. In such case as the Standard Specifications herein set forth exceeds the Arkansas Department of Health requirements, then this Standard Specification as approved by the City Council Fayetteville, Arkansas shall govern.

Additionally, this Standard Specification includes the requirement that the minimum standards of design and construction specified herein, that directly affects health and safety, must further comply with the recommendations of both (1) the 10 States Standards (GLUMRB) and (2) the American Water Works Association (AWWA). Any conflict that directly affects health and safety between these Standard Specifications and the recommendations from the 10 States Standards, or the recommendations from AWWA, must be resolved to provide the greatest protection of health and safety.

Incorporation by reference: The Arkansas State Board of Health, Department of Health Center for Local Public Health Environmental Health Branch, Engineering Section, Rules and Regulations Pertaining to Public Water Systems, lasted edition, aka "Rules and Regulations Pertaining to Public Water Systems"; and the National Primary Drinking water Regulations found in 40 CFR Parts 141, 142 and 143 are incorporated by reference into this Standard Specification.

All rules, regulations and requirements of the Arkansas Board of Licensure For Professional Engineers and Professional Surveyors shall be the minimum standard for professional surveying and for professional engineering.

Special conditions may arise on projects that are not covered in these Specifications. Such special conditions must be submitted to the City Engineer or Utilities Division for review and approval.

Standard construction details prepared by the City of Fayetteville Engineering Division are available from the City Engineer. In the case of a conflict between the Standard construction details prepared by the City of Fayetteville Engineering Division and the text of these Standard Specifications, then the text of these Standard Specifications govern unless an exception or variance is granted.

B. This Standard Specification applies to all water and sewer design and construction within the jurisdiction of the City of Fayetteville and as follows:

This publication specifically applies, but is not limited to "Subdivision", "Large Scale Development" and other development as defined by City ordinances.

This publication provides the minimum standards to be utilized by the Engineer of Record in producing project specific specifications for a Capital Project (a.k.a. Capital Improvement Program/Project or CIP). The Engineer of Record for a Capital Project may use or adapt these Standard Specifications by express permission only. The Engineer of Record for a Capital Project shall prepare and provide project specific technical specifications.

Maintenance performed by City forces "in-house" shall utilize these specifications under the direction of the Utilities Director.

The Utilities Director and/or the City Engineer are responsible to the extent possible as a function of their supervisory position within the City to require compliance with the Arkansas State Board of Health, Department of Health Center for Local Public Health Environmental Health Branch, Engineering Section, Rules and Regulations Pertaining to Public Water Systems, lasted edition, aka "Rules and Regulations Pertaining to Public Water Systems".

Nothing within this Specifications is intended to, or can, replace any minimum requirement by City Ordinance or State Law.

This standard specification is not intended to cover all operation, maintenance, purchasing, warehousing, and emergency scenarios that arise in the City's operation of a public water distribution system and public sewer collection system, but rather intended to apply to new construction within the City's service boundary.

C. The Engineer of Record is responsible for their design and compliance with latest edition City of Fayetteville Ordinances and Specifications, ADH Rules Pertaining to Public Water Systems and State of Arkansas Rules, Regulations and Laws, or any Federal Law, Rule or Regulation.

These Specifications do not replace the Engineer of Record's specifications and contract documents, however these specifications set forth the minimum requirements for design and construction of all water and sanitary sewer within the jurisdiction of the City of Fayetteville. These specifications may be included by reference only in the Engineer of Record's documents.

D. The Engineer of Record for public, private and City-forces "in-house" projects designed and constructed under the requirements of these Specifications, shall provide to the Utilities engineer and copy to the City Engineer a sealed (PE) letter report stating that the design and construction of the water and/or sewer improvements met the minimum requirements of these Specifications. This sealed letter report will also contain documentation of any special conditions or additions to these Specifications for the specific project.

E. These specifications shall not be copied, reproduced or physically included within any private or public project documents without the prior written consent of the City of Fayetteville.

The City, and the Utilities Engineer, accept no liability arising from any use or reuse of these specifications.

F. Comprehensive construction observation services shall be provided by, or under the direction of, a professional engineer as defined by AR §17-30-101.

G. The City Engineer's office is responsible for the issuance of construction permits for the installation of water and sewer facilities constructed in the City of Fayetteville as required by the City of Fayetteville Unified Development Code. The City's Utilities Engineer is responsible to assist the City Engineer's office as directed by the Utilities Director.

The City's Utilities Engineer is responsible for review and recommendations, or assisting the City Engineer with review and recommendations, of the City's Capital Improvement Projects requiring City Council approval.

All water and/or sewer capital project design, including water and/or sewer included in other capital projects such as roadway improvements, designed by consultant or by City engineers, will be reviewed and approved by the Utilities Director or the Utilities Engineer as appropriate.

H. The City of Fayetteville is not responsible, nor bears any liability for the Contractor's means, methods, techniques, sequences, procedures of construction or the safety precautions and programs incident thereto in performing or furnishing any of the work.

I. Maintenance Bond: Once the City accepts the project for ownership, the Owner shall be responsible for the provision to the City of a two (2) year maintenance bond for 25 percent of the construction cost of water lines and sewer lines, which shall cover defects in materials and workmanship. A walk-through shall be performed at the end of the two year period and all deficiencies corrected prior to release of the bond. City maintenance shall begin after release of the Two (2) year Maintenance Bond.

J. Change's or addendums to this document shall require formal approvals and addendums in compliance with professional standards of practice and Arkansas Professional Engineering rules and regulations.

K. Administration, Appeals, Variances and Exceptions:

Administration, Appeals and Variances are defined in Chapters 152, 155 and 156 of the City of Fayetteville Unified Development Code and as follows:

When the Utilities Director and/or the City Engineer determines that application of the standards within this Standard Specification would cause undue hardship, or unnecessary

practical problems for a specific project, then an exception or variance to this Standard Specification may be reviewed on a case by case basis and may be granted by the Utilities Director and/or City Engineer. An exception or variance that is granted may be conditioned by requiring other standards to safeguard the purposes of this Standard Specification.

No exception or variance can violate minimum Arkansas Health Department requirements, or the Arkansas Board of Licensure for Professional Engineers and Professional Surveyors Board Laws and Rules, City Ordinances or State or Federal Law.

Requests that are Professional Engineering shall be submitted by and reviewed by a licensed Professional Engineer.

Such exception or variance request will be approved or denied by written communication by the Utilities Director and/or City Engineer as appropriate to existing regulations. Engineering plans reviewed and approved by the City do not grant or imply a variance to these Specifications. Variances must be requested by the Engineer of Record and approved in writing by the City of Fayetteville prior to start of work.
If an exception or variance is granted then a copy of the exception or variance must be provided by the Engineer of Record to the Arkansas Department of Health.

L. Questions and comments concerning theses Specifications should be directed to the Utilities Director, 113 W. Mountain St., Fayetteville, Arkansas, 72701 (479) 575-8386.

1.02 DEFINITIONS

A. City – The City of Fayetteville. Throughout this document, the name City of Fayetteville applies for all entities in the City of Fayetteville water and/or sewer service and jurisdiction areas.

B. City of Fayetteville Utilities Department –The Utilities Department is comprised of 4 major divisions with a common goal of providing vital city services to the citizens of Fayetteville:

Utilities Management and Capital Projects
Wastewater Treatment
Water and Sewer Operations Division
Water & Sewer Service Set Up & Billing

C. City of Fayetteville Engineering Division - The Engineering Division:

Provides design and project management for city infrastructure projects.
Reviews development proposals for compliance with city criteria such as water, sewer, streets, drainage, grading and other technical requirements.
Manages the planning, design, and permitting of trails projects and oversees construction of trails by the Transportation Division or private contractors.
Assists in the acquisition and sale of city property, right of way, easements, etc.
Manages miscellaneous stormwater and water quality initiatives.
Is responsible for ensuring compliance with

The City's NPDES Stormwater Permit issued through the Arkansas Department of Environmental Quality.
The City's floodplain regulations.

D. Engineer, and/or Engineer of Record – A qualified Professional Engineer licensed in the State of Arkansas, for the Owner, City or Governmental agency.

E. STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2022 Edition – also referred to as "standards" or "minimum standards" or "specifications" or "Standard Specification(s)" within this document.

F. Design – Includes, but is not limited to, all requirements of:

1. Arkansas State Law Title 22 - Public Property Chapter 9 – Public Works Subchapter 1 – General Provisions 22-9-101 -Observation by registered professionals required.

2. Arkansas Board of Licensure for Professional Engineers and Professional Surveyors, Board Laws and Rules Handbook.

3. Arkansas Department of Health requirements, including but not limited to, "Rules and Regulations Pertaining to Public Water Systems" XXI. Submission of Plans and Specifications.

G. Comprehensive construction observation services -

1. Observation and inspection services must comply with Arkansas State Law Title 22 - Public Property Chapter 9 – Public Works Subchapter 1 – General Provisions 22-9-101 - Observation by registered professionals required.

2. As required by the City of Fayetteville. Observation and inspection includes, but is not limited to, periodic visits to construction site to observe the progress and quality of the executed work to determine compliance with approved plans and specifications and the standards or requirements as set forth in the project approval or permit.

If deemed necessary by the City of Fayetteville, the Engineer of Record shall provide qualified full time Resident Inspection during part or all of the executed work for the project.

3. As required by the Arkansas Department of Health.

4. As further defined in this Standard Specification.

H. Owner – Any Individual, partnership, firm, corporation or other entity who, as property owner, is initiating the work.

I. Provide – Furnish and install, complete in place, operating, tested and approved.

J. Products – The materials, systems, and equipment provided by the Contractor.

K. 10 States Standards – The recommended standards and polices prepared by Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (GLUMB). Standards include: Recommended Standards for Waterworks and Recommended Standards for Wastewater Facilities, latest editions.

1.03 LAWS, REGULATIONS AND ORDINANCES

A. All Federal, State, County and Municipal Laws, Regulations, or Ordinances shall be complied with on all projects. Where the requirements of another jurisdictional authority having influence on work outside the purview of the City of Fayetteville are greater than that provided by these Specifications, the work shall conform to the greater requirement of that respective jurisdictional authority.

1.04 PERMITS AND LICENSES

A. City of Fayetteville construction permits for Development projects shall be obtained from the City Engineer's Office for the installation of all water and/or sewer facilities in accordance with the City Ordinances, City Engineering standards and these Specifications.

B. All other permits required to accomplish the work shall be the responsibility of the owner or engineer. Such permits may include but are not limited to permits for work within Highway Department R/W, railroad crossing permits, "Notice of Intent" for Erosion Control (Arkansas Department of Environmental Quality). Work shall not be started without the appropriate permit(s) in place.

1.05 DOMESTIC USA MANUFACTURE

A. Domestic United States of America (USA) manufacture. Product-specific requirements for Domestic manufacture are noted within the “product” sections of this specification for each product.

B. American Iron and Steel (AIS) requirements.

a. The American Iron and Steel (AIS) requirements of the Consolidated Appropriations Act of 2014 Public Law 113-76 and further requirements including, but not limited to P.L. 113-121, 114-113 and 608 of Title 33 of the United States Code and latest codes/laws as may be provided, are a separate and additional consideration to these Specifications based upon Clean Water and Safe Water SRF Federal and State funding sources.

1.06 PLANS AND SPECIFICATIONS - SUBMITTAL AND APPROVAL

A. Detailed plans and specifications shall be required for all water and/or sewer extensions, facilities or modifications and shall be prepared by a qualified professional engineer

registered to do business in the State of Arkansas. These detailed plans and specifications shall be submitted to the City for review and approval.

B. The plans and specifications shall be first approved in writing by the City Engineer or Utilities Engineer as applicable for the project and then shall be forwarded to the Arkansas Department of Health by the Engineer of Record for their (ADH) approval. In no case shall any water or sewer construction be allowed before the City has written approval from the Arkansas Department of Health.

C. The Engineer of Record must approve all material prior to installation.

D. The Owners of the project are responsible for acquiring and recording all easements and giving all notices necessary and incidental to the work.

E. Private water lines constructed for fire prevention purposes which have no metering device or backflow prevention device at the point of tie-in to the City main shall be treated as a public line and be subject to these Standard Specifications as far as engineering, construction techniques, materials, testing, and inspections are concerned.

F. For projects which require formal erosion control plans by ordinance or standards, the construction may not begin without an approved erosion control plan on file with the City. Minimum erosion control measures are required for all projects. It is the responsibility of the owner and contractor to comply with the Arkansas Department of Environmental Quality (ADEQ) requirements.

G. A pre-construction conference involving the Engineer of Record, Contractor, and the City is required prior to beginning construction. One full set of construction drawings will be provided to the Water and Sewer Department prior to the pre-construction meeting.

H. Provide legible, professional documents meeting the requirements of Ten States Standards and as follows to City Engineering and/or the Utilities for review and approval.

Plans should be drawn to a scale suitable for adequately showing the facilities proposed as stipulated herein.

All proposed water mains, sewer mains, water meters, water services, sewer services, valves, hydrants, sewer manholes, lift stations and other appurtenances are to be clearly represented on the plans.

All water and sewer mains shall include plan and profile sheets with the plan and profile on the same sheet.

I. Engineering work, including plan and profile sheets, shall be sealed and dated by a Professional Engineer licensed in the State of Arkansas and in compliance with the requirements of the Arkansas Board of Licensure for Professional Engineers.

1.07 EASEMENTS

A. The Owners of the project are responsible for acquiring and recording all easements and giving all notices necessary and incidental to the work.

1.08 UTILITY COORDINATION

A. The plans shall show the location of existing overhead and underground utility lines, existing water and sewer lines and the proposed water and/or sewer improvements according to the best information presented and available.

B. It is the responsibility of the Owner or his authorized representative to coordinate with and get approval from the various UTILITIES, including other Departments of the City. Further, it is the responsibility of the Owner to get authorization to encroach upon any other utilities' easement(s) and secure such recorded encroachment as a requirement for dedication of the water and/or sewer lines and system.

C. It is the responsibility of the owner or his authorized representative to comply with the "Arkansas Underground Facilities Damage Prevention Act".

1.09 PUBLIC TRAVEL

A. When requested by the City, and project specific, the Engineer will provide a maintenance of traffic plan for City review and approval.

B. The contractor will plan and execute the work to assure minimal interference with normal flow of traffic and pedestrians.

C. The contractor will be reasonable for making provisions for the safe and free passage of persons and vehicles over or around the construction site, both during and after working hours. Such provisions will be satisfactory to the City, County or State authority having jurisdiction within the work area.

D. The contractor will notify and obtain applicable approvals and permits from City, County or State authorities before closing or obstructing any public highway, street, road, trail or sidewalk.

E. The contractor will provide and maintain necessary barricades, signs, lights, roadway trench covering, fencing, personal safety equipment and markers around or at the construction area to avoid any property damage or personal injury. The contractor will provide qualified flagmen to direct traffic while working upon or in a highway, street or road over which traffic must pass.

F. Excavated area within traffic lanes of highways, streets, roads, trails and walks will be backfilled with compacted class 7 aggregate base course immediately following pipe installation and the area opened to traffic. Where indicated or when requested by the City

an additional course of asphalt concrete hot or cold mix will be provided as the travel surface. Excavated areas shall be brought to the adjacent/contiguous paved surface elevations and constantly maintained by the contractor.

1.10 MATERIALS SUBMITTALS

A. Submittals sent to the City shall be in PDF format.

B. The Engineer of Record shall be responsible to review and approve the materials submittal(s) to ensure compliance with these specifications. The City of Fayetteville generally will not review and approve material submittals for private development projects, but will rather check materials in the field to ensure they comply with these specifications.. Once the Engineer of Record has reviewed and approved the material submittals, they shall submit those to the City of Fayetteville where they will be kept on file for reference.

C. Submit the manufacturer's certificate that the products/materials meets the Specification requirements including material testing requirements.

D. Construction procedures other than those outlined in these specifications shall be submitted for review and approval by the City of Fayetteville.

1.11 CONSTRUCTION LAYOUT

A. The layout and staking of the construction work shall be by trained and qualified survey personnel under the supervision of the Engineer. Construction layout shall consist of staking (physical monuments) necessary to determine alignment and elevations to properly construct the proposed facilities. The use of a pipe laser is required for gravity sewer construction.

1.12 INSPECTION, OBSERVATION AND TESTING

A. Comprehensive construction observation services shall be provided by a professional engineer as defined by AR §17-30-101.

B. Only authorized personnel from the City of Fayetteville Water & Sewer Department are permitted to operate valves on the existing water system. Under no circumstance shall the Contractor operate any valve on the existing water system.

C. All field tests and inspections required for a project shall be witnessed by the City in the presence of the Engineer of Record or their authorized representative and the Contractor. Water Testing is further defined in Section 5300. The tests required for sewer lines, manholes and service lines are further specified in Section 5200. The tests for pump stations will be determined for each project based upon the final design and Section 3500.

On a case by cases bases for work after hours (or other similar circumstances), the City Engineer or Utility Engineer may authorize testing without city personnel when the Engineer of Record or their authorized representative is present.

D. The City representative will be determined at, or prior to, the pre-construction meeting.

E. In no case shall a test be made without the presence of the Engineer of Record's representative and the Contractor. It is the responsibility of the Engineer of Record and/or the Contractor to coordinate the scheduling of tests with the City and with the other parties involved.

F. All equipment, materials, and labor required for testing shall be furnished by the Contractor at his expense.

G. Generally, no Contractor or Engineer of Record involvement is required in the taking of samples for the Bac-T test except that the Contractor is responsible for the proper flushing of the line prior to samples being taken by the City. However, the City may require the presence of the Contractor or Engineer of Record when questions have been raised as to the methodology or techniques used in the sampling process.

H. Bac-T samples are sent to the Arkansas Department of Health for testing. Results are available on-line at the ADH website. Results obtained by the City may be forwarded to the Engineer of Record either by email, fax, or mail upon request of the contractor.

I. Lines failing the Bac-T tests shall be re-sampled as soon as practicable. If a line fails two (2) consecutive Bac-T tests, the line must be re-chlorinated before Bac-T samples can be taken again. The City shall not be responsible for rescheduling Bac-T tests.

J. The fire hydrant test shall consist of checking the operation of the fire hydrant valve and flowing the fire hydrant. This test will be performed jointly by Contractor and City forces. This test will be done after the pressure test has been completed. The fire hydrant valve shall be left in the open position during the test and after the test is completed.

1.13 "AS-BUILT" or "RECORD DRAWINGS"

Upon completion of the project, the Engineer shall provide to City Engineering for record purposes "as-built" or "record drawings". The minimum requirements include:

A. <u>DATUM REQUIREMENTS</u>

1. Horizontal Datum: NAD83 (1986) Arkansas State Plane, North Zone, US foot (Grid System).
2. Vertical Datum: NAVD88 (feet)

B. <u>TOLERANCES</u>

1. Horizontal: +/- 0.5 feet
2. Vertical: +/- 0.05 feet

C. Water drawings submitted as record ("as-built") drawings shall indicate the location where the water line was installed and have the following items surveyed during/after construction and shown on the drawings:

1. Fire hydrant, location and top operating nut elevation
2. Water valves, location
3. Water fittings, location
4. Water service saddle, location
5. Water service saddles used for testing, location
6. Water meters, location
7. Tapping sleeves, location
8. Any other pipe penetrations, location
9. Steel encasements, location
10. Details shall be provided for all vertical offset water lines, profile drawing

D. Manufacturing data shall be collected for pipe, valves, and hydrants as follows:

1. Pipe
   a. Manufacturer
   b. Material: DI, PVC or other – specify.
   c. Diameter
   d. Production run code or lot code
   e. DR or Thickness class
   f. Pressure class
2. Valves
   a. Manufacturer
   b. Model number
   c. Year manufactured
   d. Type (gate, butterfly, ball, etc.)
   e. Diameter
3. Hydrants
   a. Manufacturer
   b. Model number
   c. Year manufactured
   d. Depth of bury, including extensions

E. Sanitary sewer drawings submitted as record ("as-built") drawings shall indicate the location where the sewer line was installed and have the following items surveyed during/after construction and shown on the drawings:

1. Manholes, location and rim elevation
2. Pipe material, diameter, and invert elevations
3. Sewer main percent slope (calculated and setting from pipe laser)
4. Lateral connections. Lateral measurements shall be indicated by their distance from the downstream manhole in the form of stationing. Lateral stationing shall begin at 0+00 at each downstream manhole.
5. Location of capped service lines

6. Cleanouts (if installed during construction)
7. Location of fittings, valves, and valve boxes on force mains
8. Location of steel encasements
9. CCTV video (Digital Media format, USB drive preferred) and logs shall be delivered to the City of Fayetteville.

F. All sheets shall have the phrase "as-built" or "record drawing" boldly printed on them with the as constructed date, and shall be stamped and signed by a professional engineer registered in the State of Arkansas. Record drawings shall be submitted in hard copy, .dwg electronic format, and .pdf electronic format.

1.14 FINAL ACCEPTANCE BY THE CITY

A. The City will be deemed to have accepted water and sewer lines and appurtenances for ownership upon completion of the following.

1. Acceptable physical site Final Inspection by the following:
    a. A representative of the City Engineer's Office
    b. A representative of the Fayetteville Water and Sewer Department
    c. The Engineer of Record
    d. The Contractor

2. Acceptable walk-through by the Meter Foreman for location, grade, and condition of water meter settings
3. Acceptable walk-through by the City representative for all other items of water or sewer construction.
4. Construction Cost is received by the City and subsequently approved in writing.
5. Maintenance Bond is received by the City
6. Record Drawings are received by the City
7. Engineer of Record Certification is received by the City.
8. Contractor furnished statement of estimated water quantity used during construction, testing, flushing and final acceptance, total gallons.
9. The Engineer of Record shall provide to the Utilities engineer and copy to the City engineer a sealed (PE) letter report stating that the design and construction of the water and/or sewer improvements met the minimum requirements of these Specifications including certification that the project was constructed in accordance with the engineering plans and specifications as approved by the Arkansas Department of Health. This sealed letter report will also contain documentation of any special conditions or additions to these Specifications for the specific project.
10. Letter of Final Acceptance is provided by the City to the Engineer.

B. No water meter shall be set until all final acceptance requirements are met and the line is accepted by the City.

C. No sewer shall be utilized until all final acceptance requirements are met and the line is accepted by the City.

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END OF SECTION 1000

SECTION 2001 DESIGN STANDARDS - WATER

PART 1 – GENERAL

1.01 WATER LINE (MAIN) MATERIALS

A. Unless specified or detailed otherwise, materials for water line mains up to and including 12 inch diameter shall be PVC as further specified within these Standard Specifications. Ten (10) inch diameter pipe is not permitted for water mains.

B. Ductile iron pipe (DIP) shall be used for all pipe greater than 12-inches in diameter and as further specified within these Standard Specifications.

C. Unless requested otherwise by the City's designated engineer, all fire hydrant leads shall be of the same pipe material as the attached water main as recommended in AWWA M17 latest edition.

D. All buried iron pipe, valves, and fittings shall be double poly wrapped in accordance with these Standard Specifications.

E. Polyethylene (PE) pressure pipe is not permitted as publically (City) maintained water main or water service lines.

F. Pipe and fittings for nominal pipe diameters/sizes greater than 18-inch are not a Standard Specification. Projects including pipe and fittings for nominal pipe sizes greater than 18-inch will be considered on specific case by case basis in accordance with Section 1000 General Requirements.

G. Any and all work for, on, or connecting to the City's concrete pressure water pipe (Prestressed Concrete Cylinder Pipe, PCCP) is not permitted as a Standard Specification. Work for, on or connecting to the City's PCCP will be considered on specific case by case basis in accordance with Section 1000 General Requirements.

1.02 REQUIREMENTS TO EXTEND WATER SERVICE

A. Unless approved otherwise by City Council, new developments and/or water extensions to serve existing lots, are required to extend water service to that development at the owner's expense in accordance with City Ordinance Chapter 51: Water and Sewers. Water lines shall be extended to each property to be served by City of Fayetteville water. Water service shall include providing adequate domestic water flows as well as fire protection with hydrants spaced in accordance with the local and state fire codes.

City Council approved cost share projects, including defined infill projects, may be further considered in accordance with City Council guidance or policy and paragraph 1.05.

B. Water service lines shall extend perpendicular to the water main and extended to the property

being served where an appropriately sized water meter will be installed.

C. On subdivision or large scale development water systems, water lines shall be extended through all the development to the property line so that future development(s) can tie on without disrupting the service to or property of any existing customers or owners. Dead end lines shall be avoided whenever possible.

D. All water lines with dead ends shall be installed with an upstream valve, one full joint of pipe with a MJ restraining gland, concrete anchor collar, a MJ cap with restraint, and a blow off assembly. The seat of the MJ restraining gland on the pipe shall face the valve.

E. Subdivision developments greater than lot splits as defined in UDC Chapter 166: Development will:

a. Connect into the existing water system at a minimum of two locations.

b. Provide water line extensions off of the development property to loop with the existing water distribution system.

The extension and second connection to the water system is required to better maintain water quality and to maintain water service in the event of a water line break in the immediately vicinity. An inline valve shall be installed on the existing water line between the two points of connection if one is not currently installed.

Construction of off-site extensions will be at the expense of the developer, subject to "rough proportionality" as further noted in Chapter 155 of the City of Fayetteville Unified Development Code.

Other developments, including Large Scale Developments, may be required by Planning Commission or City Council to tie to the existing water system at a minimum of two locations and provide off-site water extensions to maintain water quality and maintain water service in the event of a water line break in the immediately vicinity.

F. At other locations easements may be required to facilitate future extension of lines to adjacent properties.

G. The requirements to extend water service and provide lines adequate for both domestic and fire demands shall apply to all subdivisions regardless of whether they are inside the City Limits or not. Where subdivisions are outside the City Limits, the placement of fire hydrants shall be optional and in no case shall hydrants be installed outside the City unless a) a fire flow of at least 500 gallons per minute can be obtained at the hydrant, and b) the residents being served by the hydrant have a contract for fire protection with the City of Fayetteville and/or with a Washington County Rural Fire Department having a mutual aid agreement with the Fayetteville Fire Department.

1.03 MINIMUM SIZE OF WATER LINES

A. The minimum sized water line that may be installed in the water system as a "Water System Improvement" shall be eight (8) inch diameter as defined in Chapter 151 of the City of Fayetteville Unified Development Code. Unless documented and approved otherwise by the City, the minimum size water main installed by development shall be eight (8) inch diameter.

Minimum water line sizes less than eight (8) inch diameter will receive special consideration in situations such as existing areas of six (6) inch water lines. Such special consideration will be based upon engineering calculations for domestic and fire flow demands, existing infrastructure, water modeling, water age and water quality and as follows.

Four (4) inch diameter lines shall be the minimum water line size that may be approved for special conditions such as "short" cul-de-sacs as determined by the City or rural water extensions, provided such lines could not be reasonably extended in the future to provide service to adjacent property and where a larger line is not needed to provide either fire protection or adequate domestic flows.

Two (2) inch domestic water service extensions may be granted by the Utilities Director.

All water lines less than eight (8) inches in diameter require approval from the Utilities Director and subsequently the ADH.

B. The minimum line size requirement for the provision of fire protection shall be based upon fire flow calculations including the flow for the private fire line/sprinklers in addition to the flow required at fire hydrants, water modeling calculations and as follows. The minimum line size requirement for the provision of fire protection shall a looped six (6) inch line or, in the event of a dead end line, an eight (8) inch. This minimum requirement shall apply regardless of the theoretical flow capacities existing in the system. Lines larger than six (6) inch looped and eight (8) inch dead end may be required if larger lines are needed to provide domestic and/or fire flow demands based upon engineering calculations and/or water modeling.

C. The latest Water System Study has recommended a twelve (12) inch water line grid not to exceed a spacing of 1/2 of a mile in both the north-south and east-west direction. In the event that the maximum size water line for a development is less than twelve (12) inches, the City may participate in "cost sharing" for the installation of twelve (12) inch water lines as recommended by the latest Water System Study. The extent of the "cost share" will be for pre-approved and verified installation cost differences. Refer to Paragraph 1.05 – City Participation in Water Line Costs.

1.04 WATER SYSTEM STUDY/MASTER PLAN

A. The City's latest Water System Study (or Master Plan) and current water model will be the primary basis for decisions made in regard to required line sizes, water line locations, location of water pump stations, water tank sizes and location, and any other matter relating to the water distribution system.

1. The latest Water System Study is a published document on file at the City Engineer's Office and at the Utility.

2. The current water model is located at the City's Utility (Water/Sewer).

It is the intent of these Standards that the City Utility, subject to other City and Utility priorities, will provide the modeling of proposed water mains using the City's current software and model. However, there may be specific projects that due to the size or complexity, the Utility's current priorities, or the requirements of a Professional Engineering sealed report, that such projects will require water modeling by the Engineer of Record and review by the City.

B. The Utilities Director and City Engineer have the discretion to alter the published Water System Study (Master Plan) priorities and recommendations based upon current City requirements.

1.05 CITY PARTICIPATION IN WATER LINE COSTS

A. In cases where the City desires to have a larger sized water line in place than is required under Paragraph 1.02 of these Standard Specifications, or in cases where the City desires to extend a water line under Paragraphs 1.02 and 1.03 of these Standard Specifications, in accordance with City Ordinance Chapter 51: Water and Sewers, the City may enter into an agreement with the developer to provide for the construction of the larger sized line, or the extension of the designed water line. City participation in water line costs will be based upon current City Council guidance.

B. Upon City Council or Mayoral approval, the City will be responsible for the pre-approved and verified installation cost difference between the water line required for the development and the water line desired by the City.

C. The cost involved in up-sizing, or extending the water line shall be determined by the developer's engineer by the taking of bids, and shall be approved by the City Engineer or Utilities Director, and then approved by the City Council prior to construction.

1.06 WATER SERVICE LINES

A. Water service connections shall be made on 12-inch and smaller water lines.

B. Service lines serving single meters sets and double meter sets shall be 1- inch coated copper pipe in accordance with these Standard Specifications.

C. In areas where it is determined by the City Engineer that installation of irrigation systems is likely, service lines that cross roads and serve double meter sets shall be 2" services ending in a 2" x 1" x 1" x 1" splitter. The middle leg of the splitter shall feed the double meter set, with the other two legs containing a ball valve, and being intended to serve future irrigation meters. The meter box shall be no greater than two feet from the splitter.

D. Service lines serving 1-1/2 and 2 inch meter sets shall be 2-inch coated copper pipe, or 2-inch restrained joint PVC (main) in accordance with these Standard Specifications.

E. Water services lines installed across city streets shall be encased back of curb to back of curb, or state highway right-of-way to right-of-way. 1-inch lines shall be encased in minimum 2 inch HDPE SDR9 tubing. 2-inch lines shall be encased in minimum 4-inch HDPE SDR9 tubing. Larger diameter encasement tubing will be provided by the contractor as required.

F. Service lines serving 3-inch and larger meter sets shall be PVC or DIP in accordance with these Standard Specifications.

G. Meter arrays for multiple meters fed from a single 2-inch tap shall be made per the standard details. These must be approved on a case-by-case basis, and may be required by the City to reduce the number of taps on a public main.

1.07 WATER METER SIZE

A. Water meters serving flows up to 10 gpm continuous (15 gpm intermittent) shall be 5/8" water meter.

B. Facilities that use flush valve style (tankless) toilets shall use a minimum 1" water meter.

C. Water meters serving flows up to 25 gpm continuous (40 gpm intermittent) shall be 1" water meter.

D. Water meters serving flows greater than 25 gpm continuous shall be approved by the City of Fayetteville Meter Department during the plan review process.

1. For reference only, meter flow ranges may be as follows:

a.	1-1/2" meter	up to 65 gpm continuous (100 gpm intermittent)
b.	2" meter	up to 150 gpm continuous (200 gpm intermittent)
c.	3" meter	up to 350 gpm continuous (500 gpm intermittent)
d.	4" meter	up to 800 gpm continuous (1000 gpm intermittent)

1.08 BACKFLOW PREVENTION

A. The City of Fayetteville water distribution system shall be protected from the possibility of backflow by the use of a reduced-pressure principal backflow prevention assembly (RP), a double check valve assembly (DC), or an air gap in accordance with the City Ordinance 51.146 Backflow Prevention and the Arkansas State Plumbing Code (ASPC), latest edition.

B. The City of Fayetteville Utilities shall review and sign off on all proposed backflow prevention installations.

1.09 EASEMENTS

A. For water lines that are up to 10 feet deep, easements shall be at least 20 feet in width with the water line in the center of the easement. For water lines that are greater than 10 feet deep, easements shall be 1 foot per foot of depth to the bottom of the pipe on each side of the water

line.

B. Lines sized 12-inches through 18-inches shall not be placed in easements of less than 25 feet. Lines larger than 18-inches shall be placed in an easement of no less than 30 feet. Wider easements may be required, depending on the specific circumstances involved.

C. Easements for 12-inch and smaller lines may be exclusive or general utility. Any line above 12-inches in diameter must be an exclusive water/sewer easement unless approved otherwise by the Utilities Division.

D. New developments that contain existing water lines must modify the existing easements as necessary to meet the above requirements for widths in relation to pipe location and size, including increasing the size of the easement if proposed fill will cause the depth of bury to exceed ten feet.

E. Easements of a lesser width will be considered when adjacent to another easement or under other special circumstances.

1.10 LOCATION OF WATER LINES

A. Water lines shall be placed on public streets either in the right of way or in an easement adjacent to the street right of way except that lines can go between lots when there is no other reasonable way to access a line or provide for future service. In no case shall lines intended for individual services be placed in the rear of lots or along back property lines.

B. When not adjacent to right of way or other easements, waterlines shall be centered in the easement.

C. Water lines shall be located a minimum of 36-inches from any other parallel utilities or structures.

D. Trees shall not be planted within 5-feet of any waterline, water service line, meter, valve, hydrant or water system appurtenance. Larger waterlines may require further separation.

E. Water lines shall be offset 10-feet from any buildings, structures, overhangs, balconies, etc. If an easement of more than 20-feet is warranted due to depth or diameter, the building offset shall increase accordingly, to half the easement width.

1.11 LOCATION OF WATER METERS

A. Water meters shall be located in non-paved areas and readily accessible to the Meter Department without going through fences or gates.

B. Water meters shall be free of obstructions for a minimum of a 3-foot radius from the center of the water meter box.

C. Water meters shall typically be located on the Owner’s side of the property line (edge of

easement or right-of-way). If a water meter cannot feasibly be located 1-foot behind sidewalk as per standard details, meter location must be approved in advance of construction. Otherwise, the meter must be relocated at the developers' expense to the proper location. Consideration for meters between curb and sidewalk (in greenspace) will be made on a case-by-case basis at the discretion of the City.

D. Double meter sets shall be located on the common property line between the two properties being served.

E. Where multiple meters serve units of a common building, the meters must be set to read left-to-right in ascending unit numbers, with irrigation meters placed at the end, in a single yoke.

1.12 VALVE MARKERS

A. In all rural settings and where requested by the City, except those in cleaned yards, when valve boxes, bends, air release valves, blow-offs, meter boxes and other similar hardware are installed in an easement location, water system marker signs shall be installed so that the items may be more easily found.

1.13 WATER LINE DEPTH

A. Minimum depth to the top of pipe for all water main lines less than 12- inches diameter shall be 3.0 feet.

B. Minimum depth to the top of pipe for water lines 12 - inch diameter and greater shall be 4.0 feet.

C Maximum water line cover shall be 5.0 feet under normal conditions. Cover greater than 5.0 feet shall be allowed for short distances where required by field conditions and approved by the City.

D. Minimum depth of all water service lines from the main to the water meter shall be 30-inches.

1.14 WATER PRESSURE

A. The water distribution system shall be designed to maintain a minimum working water pressure of 45 psi at the water meter.

B. Design of new construction that results in less than 45 psi working pressure at the water meter shall be approved by the Utilities Director on a case by case basis.

C. Under no circumstances shall the working pressure of the water distribution system be below 20 psi.

D. When new development extends public mains in excess of 150-psi static pressure, the City reserves the right to require additional valving and easements to accommodate pressure reduction vaults and appurtenances in the future. On dead-end extensions, pressure reducing

mainline valves may be required, properly constructed in a vault, to be reviewed on a case-by-case basis.

1.15 VELOCITIES

A. Velocities in the water distribution system shall be designed such that velocities will be no greater than five (5) feet per second during normal operation conditions.

B. Velocities in the water distribution system during fire flow conditions shall be designed not to exceed ten (10) feet per second.

1.16 VALVES

A. Valves for 4-inch through 8-inch water distribution shall be resilient seat gate valves. Ten (10) inch diameter pipe is not permitted for water mains.

B. Valves 12-inch and larger shall be butterfly valves.

C. Valve spacing in the water distribution system shall not exceed 500 feet in commercial districts and not more than one block or 800 feet intervals in other districts.

D. Valves at "tees" shall be provided to isolate water mains for maintenance or repairs and to limit outages. Valves may be required on multiple legs of tees as designed by the Engineer of Record and approved by the designated City engineer.

E. Valves shall also be located on each side of stream crossing as determined by the designated City engineer.

1.17 90 DEGREE BENDS

A. Ninety degree (90°) bends shall only be used on a by-exception basis, and must each be specifically approved by the City. Forty-five degree (45°) bends separated by a twenty-four (24) inch swivel adapter shall be used in locations where 90° bends would otherwise be considered.

1.18 FIRE FLOW DESIGN

A. Fire flow design for single family dwellings and duplexes shall be 1,500 gpm for a duration of two (2) hours or as determined and documented by the City's Fire Chief.

B. Fire flow design for apartment complexes, commercial structures, and industrial structures shall be as required by the International Fire Code latest edition, or as determined and documented by the City's Fire Chief.

1.19 FIRE HYDRANT SPACING AND PLACEMENT

A. Fire hydrants for single family dwellings and duplexes shall be installed so that (1) the distance

between two consecutive fire hydrants does not exceed 500 feet, and (2) no lot is more than 250 feet from a fire hydrant. The Fire Chief shall have the authority to require additional fire hydrants upon a determination that such additional fire hydrants are necessary to provide adequate fire protection as outlined in the International Fire Code, latest edition.

B. Fire hydrants in areas for apartment complexes, commercial structures, and industrial structures shall be installed so that the distance between two consecutive fire hydrants does not exceed 400 feet. The Fire Chief shall have the authority to require additional fire hydrants upon a determination that such additional fire hydrants are necessary to provide adequate fire protection as outlined in the International Fire Code, latest edition.

C. Fire hydrants shall be free of obstructions for a minimum of a 3-foot radius from the center of the fire hydrant. Fire hydrants shall be placed outside of any fence.

1.20 FIRE LINES

A. Fire lines, backflow prevention, and FDC shall be installed and inspected the same as water lines.

B. Fire lines shall be constructed of ductile iron pipe or C900 PVC .

C. All valves on fire lines shall have the word "FIRE" on the valve box lid, this includes the valve on the water main.

D. Post Indicator Valves, or underground valves in a roadway box, as determined by the Fire Chief or the City Engineer in compliance with NFPA 24 and City ordinances, shall be installed on all fire lines to demarcate ownership. Post indicator valves shall match the valve manufacturer.

1.21 AIR RELEASE VALVES

A. Air release valves shall be required on uphill, dead-end lines or on other specific applications to protect the water distribution system at the discretion of the City.

1.22 STEEL ENCASEMENTS

A. Water lines under culverts, creeks, concrete channels, retaining walls, or other difficult and/or dangerous to maintain areas shall be encased in a smooth steel encasement pipe. The steel encasement shall extend 5 feet either side of the area.

B. Water lines through steel encasement shall be installed with three spacers per joint such that the spacers are equally spaced along the length of the pipe.

C. Bell restraints shall be used for all joints inside the encasement pipe and for the first joint in each direction outside the encasement pipe.

D. End Seals shall be used on all encasement pipes.

E. Restrained and blocked ductile iron water pipe or restrained and blocked C900 PVC will be used in situations where fittings are required on either side of the steel encasement to change direction or overcome varying field conditions. Additional joint restraints and the use of anchor collars shall be designed by the Engineer of Record and submitted to the City for review.

1.23 PLANNED WATER OUTAGES

A. Under no circumstances shall water be shut off to any active service in the course of new construction without written permission from the City of Fayetteville Water & Sewer Department. If water pressure needs to be reduced to facilitate construction, a preconstruction meeting shall be held. The work shall be performed as described in Section 4200 – Water Line Pressure Reduction Procedures.

1.24 PROTECTION OF WATER SUPPLIES

A. Only authorized personnel from the City of Fayetteville Water & Sewer Department are permitted to operate valves on the existing water system.

B. There shall be no physical connections between a public or private water supply system and a sanitary sewer or appurtenances thereto which would permit the passage of any polluted water into the potable supply. Sanitary sewers shall be laid at least ten (10) feet horizontally from any existing or proposed water line. The distance shall be measured edge to edge of pipes and where applicable to the outside of any appurtenances such as fire hydrants or sewer manholes. In cases where it is not practical to maintain a ten (10) foot separation, the appropriate reviewing agency may allow an exception on a case-by-case basis if supported by data from the design engineer. Such exception may allow installation of the sewer closer to a water main provided that the design and construction meets the more stringent requirements of the ADH Rules Pertaining to Public Water Systems, Ten States Standards and City of Fayetteville requirements which may include full encasement of the water main, and special trench, fill and drainage requirements.

C. Sewer lines installed under a water line must have a clear distance between pipes of at least eighteen (18) inches.

D. The sewer line shall be installed such that a joint of pipe is centered along the water line and the joints are as far as possible from the water line.

E. If 18-inches of clearance cannot be provided or when the water main must pass under the sewer main, either the sanitary sewer main or the water main shall be encased in twenty (20) feet of watertight encasement pipe, centered over the point of crossing. Crossings that are not perpendicular will require more than twenty (20) feet of encasement. The encasement shall extend a minimum of ten (10) feet perpendicular from the outside edges of the line that is not being encased. The ends of the encasement pipe shall be sealed watertight. If the water main passes under the sewer main, 18-inches of clearance is still required between pipes. Refer to Section 3400 – Steel Encasement Pipe.

END OF SECTION 2001

SECTION 2002 DESIGN STANDARDS – SEWER

1.01 REQUIREMENTS TO EXTEND SEWER SERVICE

A. Unless approved otherwise by City Council, new developments and/or sewer extensions to serve existing lots, are required to extend sewer services to that development at the owner's expense in accordance with City Ordinance Chapter 51: Water and Sewers.

Sewer lines shall be extended to each property to be served by City of Fayetteville sewer. Sewer service lines shall extend perpendicular to the sewer main and extended to the property being served. Sewer service lines will not cross property lines.

City Council approved cost share projects, including defined infill projects, and/or oversizing of mains, may be further considered in accordance with City Council guidance or policy and similar to Section 1100 paragraph 1.05 in accordance with City Ordinance Chapter 51: Water and Sewers, or as requested by the City Council.

Construction of off-site extensions will be at the expense of the developer, subject to "rough proportionality" as further noted in Chapter 155 of the City of Fayetteville Unified Development Code.

B. Connection to a public sewer system shall be as required, or permitted, by City of Fayetteville Ordinances and ADH Rules Pertaining to Public Water Systems.

1.02 DESIGN CRITERIA

A. GENERAL

All sanitary sewers shall be designed to carry the estimated flow from the area ultimately contributing to the respective reach of the sanitary sewer. The required capacity shall either be established by the City or at the City's option by means of a basin study developed by the Owner or his authorized engineer/designer. In no instance shall a gravity sewer, other than a building sewer, be less than eight (8) inches in diameter.

The following design standards for gravity sewers within or contributing to the City of Fayetteville Sanitary Sewer System have been established:

1. Population Density

Population density shall be in accordance with the Comprehensive Plan for Fayetteville projected by the Division of Planning for the City of Fayetteville or actual count or character of proposed development, whichever is greatest.

2. Average Family

For the purposes of design the average family unit is considered to be 3.0 persons per single family home.

3. Design Flow

The design of all sanitary sewer facilities shall be based on future area population growth and land development characteristics and figures provided by the Department of Planning including the servicing of existing contiguous developed areas not currently served by sanitary sewers. The values of Average and Peak Flow and Design Population hereby shall be the values which include the future flows and population. The City reserves the right to review and determine the appropriateness and/or applicability of the estimated flow volumes provided.

The following shall be used as a guide:

a. Average Design Flows:

1) Single Family Residential: The average design flow for single family dwellings shall be one hundred (100) gallons per person per day.

2) Multifamily/Commercial/Industrial/Institutional: Based upon Table 1 Section 2002-1.10 within these specifications unless modified by technical information either submitted by the Owner and approved by the City, or developed by the City. These flow volume guidelines may be modified at the City's discretion as project location specific.

b. Peak Design Flow

1) Single Family and Multifamily Residential: The peak design flow for a single family development shall be calculated as follows:

$$PeakFlow = (Avg.Flow)\left[\frac{18+\sqrt{P}}{4+\sqrt{P}}\right]$$

Where P is equal to the total Design Population in thousands.

2) Commercial/Industrial/Institutional: The peak design flow from commercial, industrial or institutional developments shall be the average daily flow determined multiplied by 2.5. The peak design flow shall not be less than 90% of the peak water demand or exceed the flow limits of the water meter supplying the facility.

c. Inflow and Infiltration

1) When requested by the City, the design engineer will also utilize current City Masterplan(s) and/or SSES Studies.

4. Design Capacities: Collector and trunk sewers shall be designed on the following basis:

a. Collector Sewers Twelve (12) Inches and Smaller

Peak design flow capacities shall be based on sewers flowing two-thirds (2/3) full based on depth.

b. Trunk Sewers Fifteen (15) Inches and Larger

Peak design flow capacities for trunk or interceptor sewers shall be based on sewers flowing 90% full based on depth, without head, using the design population density and appropriate land use determined by the Division of Planning; and shall include an allowance for infiltration which will be reviewed on a case-by-case basis and is subject to the approval of the City.

B. SEWER COMPREHENSIVE STUDY REQUIREMENTS

A study/engineering report of the applicable sewerage drainage basin(s) is required. This study may include in addition to the proposed project or development, the upstream and downstream basins and existing or proposed lift/pump stations. The size and location of the project will determine the information required in the study/engineering report for the proposed project.

If requested by the designated City Engineer, the Engineer of Record (EOR) shall provide a detailed analysis and PE sealed report including:

The proposed design

The effects of the proposed project, and coordination with any required improvements, to existing sewer facilities including pipe lines and existing or proposed lift/pump stations.

The designated City engineer shall coordinate between the EOR and the City's waste water operations contractor.

Other as determined by the designated City engineer.

C. USE OF CITY SEWER MODEL

In lieu of the aforementioned calculations, the developer or engineer may consult directly with the City's contract engineer to analyze the development and downstream capacities/impacts using the hydraulic model of the City's sewerage system. A stamped technical memo from the City's contract engineer shall be provided to the City for review and acceptance. The City reserves the right to require either methodology and is not bound by the findings or recommendations of this sewer modelling exercise. Furthermore, the City may require that the hydraulic model be utilized due to the complexities of a particular sewer basin in question.

1.03 MINIMUM PIPE SIZES AND STANDARDS

A. PIPE DIAMETER

1. The required diameter of gravity sewers shall be determined by Manning's formula using a roughness coefficient, "n" of 0.013 or the pipe manufacturer's recommendation, whichever is greater. The minimum pipe diameter for gravity sewers lines shall be eight (8) inches.

B. MINIMUM SLOPES AND VELOCITIES

1. All sanitary collector and trunk sewers shall be designed and constructed to provide a minimum velocity when flowing full of two (2) feet per second. The slope of the sewer pipe shall be such that these minimum velocity requirements are attained. The minimum acceptable slopes for the design and construction of sanitary sewers are as follows:

2. THESE ARE MINIMUM SLOPES REQUIRED OF THE DESIGN. AS CONSTRUCTED SANITARY SEWERS FOUND TO HAVE LESS THAN THIS MINIMUM SLOPE SHALL NOT BE ACCEPTED.

Pipe Size* (inches)	Minimum Slope** (Feet per 100 Feet, %)
8	0.40
10	0.28
12	0.22
15	0.15
18	0.12

*4" and 6" lines are allowed for building sewers only (services).
** Minimum pipe slopes for diameters 8 inch through 18 inch are based upon the

Ten States Standards 2014 Edition of the Recommended Standards for Wastewater Facilities.

** Slopes for pipe diameters greater than 18 inch require specific City approvals.

C. MINIMUM DEPTH

1. For the protection of the sanitary sewer lines from damage caused by utilities installed after the sanitary sewer has been constructed, the minimum depth to crown of all gravity sanitary sewers shall be 3.0 feet, and the minimum depth to crown of all force main sanitary sewers shall be 3.0 feet.

D. BUILDING SEWERS

1. Building sewers shall conform to the latest edition of the Uniform Plumbing Code, the requirements of the City's Building Safety Division and to these Standards.

2. The building sewer shall connect to the public sewer at a mainline fitting. Sewer service connections shall be made on 12-inch and smaller sewer lines. Connections to manholes shall only be allowed at upstream terminating manholes or by approval of the City. Inside drop connections to manholes are not allowed.

3. Building sewers requiring a 6-inch or larger sewer connection shall be connected at a manhole. If an existing manhole is not available, a new manhole must be constructed.

4. Homes or buildings where the lowest elevation to have gravity sewer service is less than 1 foot above the cover of either the first upstream or downstream manhole on the sewer main shall have a cleanout with a pop-up type, non-locking cover at an elevation no less than 6-inches below the lowest sanitary facility in the structure.

5. Homes or buildings with a slope from the lowest sanitary facility to the public sewer main less than 1 percent shall be served with a pump system. The system shall be purchased, installed, and maintained by the owner.

6. Building sewers within the right-of-way or easement shall be a minimum of four (4) inches in diameter. Building sewers shall have a wye cleanout located within three (3) feet of the building's exterior wall and extended to 3-inches above grade and shall have a watertight, removable cap.

7. Cleanouts installed under concrete or asphalt paving shall be made accessible by a short bodied cast iron valve box.

8. If cleanouts are determined during city review or construction to pose a risk of damage due to location or grade, the city may require on a case-by-case basis the use of a protective shroud cone housing and post indicator. Product shall be Utility Defender or approved equal.

9. Building sewers installed for future connections shall be terminated at the right-of-way or easement and plugged to ensure 100 percent water tightness. Mark wyes for future connections using marking tape, tracer wire, yellow nylon rope, and 1/2" x 4' rebar or fence tee-post.

1.04 SEWER LINE MATERIALS

A. Materials for sewer line mains shall be PVC unless approved otherwise by the City of Fayetteville or otherwise indicated in these specifications.

1.05 LOCATION OF SEWER LINES

A. Sewer lines shall be placed on public streets either in the right of way or in an easement adjacent to the street right of way except that lines can go between lots when there is no other reasonable way to access a line or provide for future service. Sewer lines located in easements behind houses without a dedicated, paved alley shall have the manholes located adjacent to the nearest street right-of-way.

B. When not adjacent to right of way or other easements, sewer lines shall be centered in the easement.

C. Sewer lines shall be located a minimum of 36-inches from any other parallel utilities or structures.

D. Trees shall not be planted within 5-feet of any sewer line, sewer service line, or sewer system appurtenance. Larger sewerlines may require further separation.

E. Sewer lines shall be offset 10-feet from any buildings, structures, overhangs, balconies, etc. If an easement of more than 20-feet is warranted due to depth or diameter, the building offset shall increase accordingly, to half the easement width.

F. Easements for 12-inch and smaller lines may be exclusive or general utility. Any line above 12-inches in diameter must be an exclusive water/sewer easement unless approved otherwise by the Utilities Division.

1.06 SEWER STRUCTURES

A. <u>MANHOLES</u>

1. General

a. Manholes shall be installed at the end of each line; at all changes in grade, size, materials or alignment; at all sewer intersections and at the following intervals:

Pipe Diameter (inches)	Maximum Interval Between Manholes (feet)
8 to 18	400

b. Manholes shall be located such that they are readily accessible to sewer cleaning equipment. Access drives will be provided as required by the City of Fayetteville. Access drives will be a minimum 10' wide all weather drive surface designed for maintenance truck traffic. 10' wide double gates shall be provided for all fences where manhole access is required. Sewer mains located in easements behind houses without a dedicated, paved alley shall have the manholes located adjacent to the nearest street right-of-way.

c. The minimum inside diameter of manholes shall be as stated in Section 3300-Manholes.

d. Flow channels shall be shaped and formed in each manhole to provide a smooth transition of flow from all inlets to the outlet. The bench wall shall be formed from the center of the manhole to the outlet pipe in the shape of a "U" as shown in the City Engineer's Standard Details.

e. At changes in sewer alignment and/or sizes, the energy gradient elevation shall not increase. This shall be accomplished by keeping the crown elevation continuous where possible for changes in sewer sizes.

f. Connections to manholes on trunk sewer lines shall be installed at such elevations that will not cause a backup in the collector sewer. Trunk sewers are designed to flow completely full during peak operation. Therefore, connections should not be made below the crown of the trunk sewer line pipe.

g. Minimum drop across the manhole from inlet invert to outlet invert for size on size pipes shall be 0.10' for 0 up to 45 degree change in direction, and 0.20' for 45 to 90 degree change in direction.

h. Manholes proposed to be installed in unpaved areas shall be designed and constructed such that the top of the casting is a minimum of three (3) inches and a maximum of five (5) inches above the finished grade to prevent ponding of water over the casting. Positive drainage away from the manhole shall be provided.

i. Manholes constructed within a 100-yr floodplain shall be constructed such that the rim elevation is a minimum of 2-feet above the flood elevation or be constructed with hinged and gasketed covers. Manholes that are within the 100-yr floodplain and also within the ROW shall have hinged and gasketed covers.

j. Manholes located on 15-inch and larger sewer lines or manholes on sewer lines

within 100 feet of a 15-inch and larger sewer line shall be epoxy coated on the interior. Capital Improvement Projects shall be a separate pay item for epoxy coating or lining as further defined in the subsequent measurement and payment specifications prepared by the Engineer of Record.

k. If requested by the City, manholes shall be provided with composite (non-metallic) ring and lid to avoid corrosion. Exact product must be reviewed and approved prior to installation, on a case-by-case basis. Lid must be capable of locking shut and have metal tracing element.

2. Outside Drop Connections

a. Outside drop pipe connections shall be provided for all sanitary sewers entering a manhole at an elevation greater than twenty-four (24) inches above the invert of the manhole.

b. In areas where future residential, commercial, and/or industrial growth can occur, all new manholes 15 feet deep or deeper shall be equipped with up to two (2) outside drop connections of a size and at an elevation to be determined by the City at the time of design to allow for future connections at these points. The drops shall extend from the base to within 10 feet of the final graded surface elevation.

NOTE: THIS SHOULD NOT IMPLY THAT EVERY MANHOLE SHALL BE PROVIDED WITH 2 OUTSIDE DROP CONNECTIONS.

B. SEWER PUMP STATIONS

1. A construction permit shall not be issued for a sanitary sewer pump station until an economic analysis proves to the satisfaction of the City that the pump station exhibits a lower 20-year life cycle cost than extending a gravity sewer to the development.

2. The analysis shall be per latest standard practice for least cost (life cycle) as developed by ASTM C1131 and evaluate labor costs, maintenance costs (including parts replacements), operation costs and rehabilitation costs. The analysis shall take into consideration both interest and inflation rates.

3. The following minimum assumptions shall be made when calculating life cycle costs.

a. Pump Station Construction Costs = Actual cost
b. SCADA System = $7,500 in 2017 and is subject to annual revision by the Utilities Director
c. Pump Station Routine O&M labor = 50 hrs/year @ $40/hr
d. Effective Energy Costs = $0.25/kW·hr
e. Interest Rate = 5%
f. Inflation Rate = 3%

g. Replace pumps in year 11

4. In the event that a pump station is more cost effective than gravity sewer, the operation and maintenance expenses for the pump station must be paid in addition to the monthly sewer service charges paid by the benefiting customers. The estimated service life shall be 20 years.

5. If a pump station is more cost effective, the City of Fayetteville reserves the right to cost share with the developer to pay for a gravity sewer extension in lieu of a pump station.

1.07 EASEMENTS

A. GENERAL

1. Whenever possible, sanitary sewers shall be constructed within the public right-of-way. Should the construction be outside the limits of the public right-of-way, recorded sewer easements shall be acquired, dedicated and recorded solely for the benefit of the City. Easement boundaries shall be so shown on the plans and specifications as "Water and Sewer Easement" in lieu of "Utility Easement". Sanitary sewers may be constructed within "platted" utility easements if the work is performed in conjunction with a development approved by the City.

2. The minimum permanent easement widths to be dedicated to the City are as follows:

Depth of Sewer from Finished Grade	Easement (ft)
up to 10 feet	20
> 10 feet to 20 feet	25
greater than 20 feet	30

3. All sanitary sewers shall be centered in the easement. For those sanitary sewers constructed in the public right-of-way, the easement shall extend the distance outside the right-of-way necessary to provide the required easement width. Sewers not centered in the easements shall have an easement width equal to 1/2 that designated above on each side of the easement.

4. A minimum 50 foot by 50 foot deeded property shall be provided for all submersible lift stations with wet wells up to 20 feet deep. Deeds for lift stations with wet wells greater than 20 foot deep and/or wet well/dry pit lift stations shall be handled on a case by case basis.

5. The sewer easements shall be exclusively under the discretion and control of the City. Ingress and egress shall be available to the City's crews at all times. No utility companies are allowed to use the sewer easements for installation of their utility lines without the expressed written permission of the City. All plan sheets shall clearly identify the sanitary sewer easement and the location of all other proposed utilities.

The horizontal and vertical plans shall identify all utilities proposed to cross the sanitary sewer easement.

1.08 PROTECTION OF WATER SUPPLIES

A. Comply with Section 2001 1.24.

1.09 STEEL ENCASEMENTS

A. For maintenance purposes, sanitary sewers will be encased in steel encasement pipe wherever the sanitary sewer crosses significant utilities, significant drainage way(s), or other significant obstacles as determined by the design provided by the Engineer of Record or as requested by the designated City engineer.

B. Sewer lines through steel encasement shall be installed with three spacers per joint such that the spacers are equally spaced along the length of the pipe.

C. Bell restraints shall be used for all joints inside the encasement pipe and for the first joint in each direction outside the encasement pipe.

D. End Seals shall be used on all encasement pipes. Refer to Section 3400 – Steel Encasement Pipe.

E. Force mains shall also include joint restraints, blocking and the use of anchor collars as designed by the Engineer of Record and submitted to the City for review.

1.10 TABLE 1 MINIMUM DESIGN FLOWS

Multifamily/Commercial/Industrial/Institutional:

	Type of Establishment*	Gallons Per Person of Wastewater Per Day Unless Otherwise Noted
1.	Institutions other than hospitals	180 – 120
2.	Schools (without gym and showers)	15
3.	Schools (with gyms and showers)	25
4.	Organization camps only	
	a. With showers and handwashing facilities	20 +
	b. With toilets, showers and handwashing facilities	40 +
	+ Cooking or central food service included.	
5.	Campgrounds	
	a. With individual sewer connections (per site)	100
	b. With community building only (per site)	50
6.	Mobile home parks (per mobile home park space)	200
7.	Motels and hotels (per room)	100
8.	Restaurants along an interstate or major highway; 24-hour operation (per seat)	70
9.	Restaurants; 24-hour operation (per seat)	50
10.	Restaurants; less than 24-hour operation (per seat)	35
11.	Bars and cocktail lounges (per seat)	35
12.	Bowling alleys (per alley)	100
13.	Places of employment (does not include industrial waste, per employee per shift)	15-35
14.	Day workers at offices	15
15.	Picnic parks and areas	5
16.	Drive-in theaters (per ramp parking space)	7
17.	Service stations (per vehicle served)	10

	Type of Establishment*	Gallons Per Person of Wastewater Per Day Unless Otherwise Noted
18.	Swimming pool bathhouse (per person)	10
19.	Private dwelling (per dwelling)	300
20.	Apartments	
	a. One bedroom (per apartment)	200
	b. Two bedroom or more (per bedroom)	150
21.	Shopping center (where stores are not known) per square foot building area	0.45
22.	Churches	
	a. Without kitchen (per sanctuary seat)	3
	b. With kitchen (per sanctuary seat)	5
23.	Beauty salon	35
24.	Day care center	20

* The flows listed indicate a reasonable approach for the type of establishment referenced. Additional considerations, including the ADH Rules and Regulations pertaining to Onsite Wastewater Systems Appendix B or other applicable technical data will be necessary in some cases.

Source: Section 1200 of the "Standard Specifications for Design and Construction of Water Lines and Sewer Lines, 2012 Edition"

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END OF SECTION 2002

SECTION 2003 TRENCH SAFETY/PROTECTIVE SYSTEMS

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Comply with OSHA (Occupational Safety and Health Administration) Standards 29 CFR 1926 Safety and Health Regulations for Construction Subpart P, Excavations, Standard 1926.650, of the Code of Federal Regulations and as follows.

B. The Contractor is responsible for ensuring that safe working conditions exist and safety procedures are being followed at the work site. The Contractor is responsible to comply with all Federal, State and City laws, rules or regulations stated or not stated within these specifications.

C. If the Contractor is working for any Arkansas public body (state agency, county, municipality, school district, or other local tax unit or improvement district), and has entered into a contact under the provisions of Arkansas Code Title 22. Public Property §§ 22-9-202-204, then the engineer and the contractor shall comply with Arkansas Code Title 22. Public Property § 22-9-212 Public improvements generally - Trench or excavation safety systems.

The requirements include, but are not necessarily not be limited to:

> 22-9-212. Public improvements generally -- Trench or excavation safety systems.
>
> (a) Whenever any agency of this state or of any county, municipality, or school district, or other local taxing unit or improvement district, enters into a contract covered by the provisions of 22-9-202 -- 22-9-204 for the making of repairs or alterations or the erection of buildings or for the making of any other improvements, or for the construction or improvement of highways, roads, streets, sidewalks, curbs, gutters, drainage or sewer projects, or for any other construction project in which the public work or public improvement construction project involves any trench or excavation which equals or exceeds five feet (5') in depth, the agency, county, municipality, school district, local taxing unit, or improvement district shall require:
>
> (1) That the current edition of Occupational Safety and Health Administration Standard for Excavation and Trenches Safety System, 29 CFR 1926, Subpart P, be specifically incorporated into the specifications for the project; and
>
> (2) That the contract bid form include a separate pay item for trench or excavation safety systems to be included in the base bid.
>
> (b) In the event a contractor fails to complete a separate pay item in accordance with the applicable provisions of subsection (a) of this section, the agency, county,

municipality, school district, local taxing unit, or improvement district shall declare that the bid fails to comply fully with the provisions of the specifications and bid documents and will be considered invalid as a nonresponsive bid. The owners of the above-stated project shall notify the Safety Division of the Department of Labor of the award of a contract covered by this section.

The engineer and the contractor are responsible for compliance with the latest version of this Code (Arkansas Code Title 22. Public Property § 22-9-212 Public improvements generally - Trench or excavation safety systems).

D. Protective Systems - The Contractor shall design or provide an engineered design, and shall install, and maintain Protective Systems in strict compliance with OSHA (Occupational Safety and Health Administration) Standards 29 CFR 1926 – Construction, of the Code of Federal Regulations and all other applicable Federal, State, and local requirements.

1.02 29 CFR 1926, SUBPART P, INCORPORATED

A. The current edition of Occupational Safety and Health Administration Standard for Excavation and Trenches Safety System, 29 CFR 1926, Subpart P, is incorporated by reference into these Standard specifications.

B. Additional information may be found at:

United states Department of Labor, Occupational Safety and Health Administration, Regulations (Standards – 29 CFR) Construction Standard Number 1926 – Safety and Health Regulations for Construction.

https://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=STANDARDS&p_toc_level=1&p_keyvalue=1926

Trenching and Excavation Safety OSHA 2226-10R 2015 Booklet at:

https://www.osha.gov/Publications/osha2226.pdf

END OF SECTION 2003

SECTION 2004 CONFINED SPACES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Comply with OSHA (Occupational Safety and Health Administration) Standards 29 CFR 1910 Occupational Safety and Health Standards including Subpart J, General Environmental Controls Excavations, Standard 1910, including but not limited to 29 CFR 1910.146, Permit-required Confined Spaces of the Code of Federal Regulations and as follows.

B. The Contractor is responsible for ensuring that safe working conditions exist and safety procedures are being followed at the work site. The Contractor is responsible to comply with all Federal, State and City laws, rules or regulations stated or not stated within these specifications. The Contractor is responsible to notify OSHA of the commencement of all water or sewer construction.

C. The Contractor is responsible to notify the City Engineer or Utilities Director, and the Engineer, when personnel are to work in, or near, a Permit-Required Confined Space and contractor shall coordinate such work with the City Engineer or Utilities Director, and the Engineer.

D. Contractor shall inform the City Engineer or Utilities Director, and the Engineer, of type of Permit-Required Confined Space documentation, permit and program used by the contractor.

E. Contractor shall inform the City Engineer or Utilities Director, and the Engineer, of any hazards confronted or created in a Permit-Required Confined Space.

F. The Contractor is responsible to notify the City Engineer or Utilities Director, and the Engineer, when personnel are to work in, or near, a Non-Permit-Required Confined Space and contractor shall coordinate such work with the City Engineer or Utilities Director, and the Engineer.

G. Contractor shall inform the City Engineer or Utilities Director, and the Engineer, of type of Non-Permit-Required Confined Space documentation and program used by the contractor.

H. Contractor shall inform the City Engineer or Utilities Director, and the Engineer, of any hazards confronted or created in a Non-Permit-Required Confined Space.

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END OF SECTION 2004

SECTION 2005 PUBLIC EMPLOYEES RIGHT TO KNOW ACT

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Comply with OSHA (Occupational Safety and Health Administration) Standards 29 CFR 1910 Occupational Safety and Health Standards including Subpart H, Hazardous Materials, Standard 1910.120, of the Code of Federal Regulations and as follows.

B. Comply with State of Arkansas Act 556 of 1991, Arkansas Code Ann. Sec 8-7-1101 et. Seq.: Public Employees Chemical Right to Know Act, and as follows.

C. The Contractor is responsible for ensuring that safe working conditions exist and safety procedures are being followed at the work site. The Contractor is responsible to comply with all Federal, State and City laws, rules or regulations stated or not stated within these specifications.

D. The Contractor shall provide to the City Engineer or Utilities Director, and the Engineer, a list of all hazardous chemicals and a copy of the appropriate Safety Date Sheets (SDS) (previously aka Material Safety Data Sheets) brought onto the property. This information is required prior to any work being started.

E. The City will provide to the contractor a list of hazardous chemicals at any City facility where work is being performed. The locations and SDS information will be provided prior to any work starting. The contractor is responsible for disseminating this information to its employees.

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END OF SECTION 2005

SECTION 2006 ASBESTOS PIPE

PART 1 - GENERAL

1.01 WORK INCLUDED

A. If asbestos pipe is indicated on the plans for removal, tapping, connection to or other work, or if asbestos pipe is discovered on the project site, then the Owner shall have prepared an asbestos pipe work plan or an asbestos pipe mediation plan. The Owner will submit the asbestos pipe work plan or an asbestos pipe mediation plan to the City for review and approval prior to work beginning that includes asbestos pipe.

B. Comply with U.S. Environmental Protection Agency (EPA) 40 Code of Federal Regulations (CFR) Part 61, Subpart M, National Emission Standards for Asbestos.

C. Comply with OSHA (Occupational Safety and Health Administration) Standards 29 CFR 1926 Safety and Health Regulations for Construction Subpart Z, Toxic and Hazardous Substances, Standard 1926.1101-Asbestos, of the Code of Federal Regulations and as follows.

D. Comply with Arkansas Department of Environmental Quality (ADEQ) regulations including Regulation 21, The Arkansas Asbestos Abatement Regulation.

When required by ADEQ Regulations, provide the Notice of Intent to remove asbestos to ADEQ and copy to the City, Owner and Contractor or Engineer of Record.

E. The Contractor is responsible for ensuring that safe working conditions exist and safety procedures are being followed at the work site. The Contractor is responsible to comply with all Federal, State and City laws, rules or regulations stated or not stated within these specifications.

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END OF SECTION 2006

SECTION 2100 EROSION AND SEDIMENT CONTROL

PART 1 – GENERAL

A. All projects shall include erosion and sediment control features.

B. Comply with the published City Engineering regulations and standards and as follows.

1.01 WORK INCLUDED

A. For Capital Improvement Projects, and other projects where required by Ordinance or standards, the Engineer shall submit an erosion control plan for the Work to the City for review and approval.

The Contractor shall accomplish temporary and permanent erosion protection in accordance with approved plans and project specific specifications, City Ordinances, manuals and standards, and State and Federal regulations.

City requirements include, but are not limited to:

ITILE XV Unified Development Code (UDC)
Chapter 167: Tree Preservation and Protection
Chapter 169: Physical Alteration of Land
Chapter 170: Stormwater management, drainage and erosion Control,
Chapter 168: Flood Damage Prevention- section 168.12 Streamside Protection Code

Streamside Protection Best Management Practices (BMP) Manual

Drainage Criteria Manual dated July 1, 2014

City of Fayetteville City Engineer's office Standard Specifications, Manuals and Standard Details, City of Fayetteville, are found at:

http://www.fayetteville-ar.gov/445/Engineering-Specs-Details

B. The Contractor is responsible for implementing and maintaining Best Management Practices (BMPs) during construction activities, including, but not limited to, sediment and erosion control structures and achievement of final stabilization upon completion of construction activities.

C. The Contractor shall be responsible for implementing all applicable requirements of the ADEQ General Stormwater Permit for Construction Activity, the Spill Prevention Control and Countermeasures Plan (SPCCP), as required by USEPA, local Municipal Separate

Storm Sewer requirements, and all other environmental regulatory requirements that are associated with the construction activities that they are contracted to perform. The Contractor is responsible for managing all materials, equipment, and activities at the work site in a manner that is in compliance with local, State, and Federal environmental regulations.

PART 2 – PRODUCTS

2.01 PRODUCTS/MATERIALS

A. Refer to City of Fayetteville City Engineer's office Standard Specifications, Manuals and Standard Details, City of Fayetteville.

PART 3 – EXECUTION

3.01 TEMPORARY EROSION CONTROL

A. Comply with Section 8.2 Erosion, Runoff and Sediment Controls for Construction Sites, of the City of Fayetteville Drainage Criteria Manual (2014 edition), the City Engineer's office Standard Erosion Control Details and as follows:

B. Water removed from open pits and/or trenches shall have silt removed prior to leaving the immediate site of construction. Silt shall be removed by natural vegetation, a straw bale trench dewatering inlet device, settling pond, filter bag, a rock/geotextile fabric sediment trap/basin, or other appropriate sediment control measure. Water filtered through a basin shall not violate any water quality standard and shall have efficient sediment/silt removal prior to discharging to a waterbody.

C. Contractor shall be responsible for providing adequate number of pumps for prompt and efficient dewatering. Ends of discharge hoses shall be provided with flow dispersion and filtration devices to prevent scouring of surface soils, discharge of turbid water, and/or washout of stream banks. Discharges from dewatering activities shall not be conveyed into or upon any roadside ditch, curb and gutter, street or publicly used thoroughfare.

D. The direct discharge of silty/muddy water to a stream, offsite, or across areas of equipment access points and/or construction haul roads is strictly prohibited.

3.02 OTHER CONTROLS

A. A dedicated concrete truck wash out area shall be maintained to include adequate containment to prevent runoff of concrete truck wash water. Concrete truck drivers shall be notified to use wash out area.

B. Contractor shall follow the appropriate waste storage and disposal practices, as per applicable environmental regulatory requirements. Solid waste dumpsters/roll-offs, or

other appropriate waste receptacles will be maintained and used at the site. Good housekeeping practices will preclude trash, construction wastes, and debris to be dumped or scattered on the construction site. There shall be no open burning of any waste material. No solid materials, including building materials, shall be discharged to waters of the State.

C. No liquid waste chemicals, fuels, and/or oils are to be leaked or spilled on ground surfaces. Bulk storage of liquid chemical wastes will be provided with secondary containment with a capacity sufficient to contain the volume of the largest container within the secondary containment. All waste materials shall be stored in a manner to prevent releases and should be disposed of by a qualified waste disposal firm at an acceptable waste disposal facility. Records of the disposal of all solid, hazardous, non-hazardous, and liquid wastes are to be maintained by the Contractor. Contractor shall notify the Engineer of any spills or leaks that occur in spite of the preventive measures taken. Contractor will prepare a report of any spills or leaks in accordance with the reporting and recordkeeping measures described in the BMPs. No contaminants from fuel storage areas, hazardous waste storage and truck wash areas shall be discharged to waters of the State. These areas should not be located near a water body.

D. Contractor shall maintain compliance with applicable State and/or local sanitary sewer, septic system, and waste disposal regulations.

E. Off-site vehicle tracking of sediments and the generation of dust must be minimized. Measures such as stone at construction access points, parking areas, and unpaved roads, providing entrance wash racks or stations for trucks, and/or street sweeping shall be implemented where appropriate. Application of water to construction haul roads should be done, as appropriate, to control dust generation. Application of excessive levels of water that create mud should be avoided.

F. The Contractor shall be responsible for maintaining the site and adjoining paved surfaces in a dust free condition. Fugitive dust control is the sole responsibility of the Contractor.

3.03 PERMANENT EROSION CONTROL

A. The Contractor shall incorporate permanent erosion control features into the project at the earliest practicable time as the construction progresses all in accordance with the approved plans and project specifications, City Ordinances, City manuals and standards.

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END OF SECTION 2100

SECTION 2200 SITE PREPARATION

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Excavation, grading, cutting and removal of trees, shrubs and underbrush, and the removal of any debris existing above natural ground surface and within the cleared area necessary for the construction of the improvements.

PART 2 - PRODUCTS

A. Not used

PART 3 - EXECUTION

3.01 GENERAL

A. For Development Projects, the Owner and his contractor are responsible for all costs incurred by reason of the requirements of this section. For Capital Improvement Projects, it shall be the responsibility of each bidder to examine the site carefully and make his own calculations as to costs to be incurred by reason of the requirements of this section.

B. The Contractor shall not remove or disturb any vegetation except that required for the execution of the work.

C. Trees, shrubs, underbrush and debris removed will be disposed of by the Contractor in a manner approved by the City.

D. If access roads are required and not indicated on the plans, then the Contractor will be required to submit a plan for construction of access roads for review and approval by the Engineer.

3.02 SITE PREPARATION

A. Clear areas as indicated or only as necessary for performance of the work. Confine operations to that area provided through easements, documented agreements and rights-of-way.

For Capital Improvement Projects, entrance upon any lands outside of that area provided by easements or public rights-of-way, shall require documented written approvals with copies provided by the Contractor to the City.

B. For Capital Improvement Projects, do not occupy any portion of the project site prior to the date established in the Notice to Proceed without prior approval of the Owner.

C. The engineer will notify the contractor of requirements by individual property owners as stipulated in easement documents pertaining to the project.

D. Remove, relocate, reconstruct or work around natural obstructions, existing facilities and improvements encountered during site preparation as herein specified. Take care while performing site preparation work adjacent to facilities intended to remain in place. Promptly repair damage to existing facilities. Dispose of waste materials in a satisfactory manner off the work site.

E. Protect, move, or brace public and private utilities as required by the affected utility.

F. Maintain mailboxes in the manner that the Postal Service requires to prevent interruption of mail delivery.

G. Site preparation includes the removal of trees, shrubs, brush, crops, and other vegetation within the limits of the easements (right-of-way), or as may be provided for in licenses, permits and agreements. For Capital Improvement Projects, all efforts shall be made to retain existing landscaping. For development projects these requirements will follow the Owner's agreements and City Ordinances and City regulations. In the event that trees, shrubbery, and hedges cannot be saved, then prior approval of the property owner and the City's Representative must be obtained before the existing landscaping is removed.

1. Trees
    a. Comply with Chapter 167: Tree Preservation and Protection of the City's UDC. All trees shall be saved unless removal is approved by the Engineer and the City. Trim trees in accordance with the City's regulations including the City of Fayetteville Tree Preservation, Protection, and Landscape Manual.

2. Shrubbery
    a. Shrubbery shall be saved unless removal is approved by the Engineer and the City. Make reasonable efforts to save all shrubbery by trimming, in accordance with acceptable pruning practices, and treating wound surfaces with a commercial pruning compound.

3. Small Plants and Flowers
    a. At least two weeks prior to the start of construction, notify property owners of the proposed starting date so that the property owners can remove any small plants or flowers.

4. Protection of Existing Facilities

    a. The Contractor shall notify all property owners in the immediate vicinity of the construction area that may be affected by the construction activities a minimum of 24-hours before starting work in that area. The notification

shall include a description of the work, work hours, and a 24-hour contact name and number for the contractor.

b. Fences interfering with construction, and located within public rights-of-way or as may be allowed for in permits or agreements, may be removed only if the opening is provided with a temporary gate which will be maintained in a closed position except to permit passage of equipment and vehicles, unless otherwise herein specified. Fences within temporary construction easements may be removed provided that temporary fencing is installed in such a manner as to serve the purpose of the fencing removed.

c. Fencing removed shall be restored or replaced to the condition existing prior to construction unless otherwise specified. Temporary fencing meeting the requirements of the land owner will be provided when requested by the land owner, Engineer or Owner. The Contractor is solely liable for the straying of any animals protected or corralled, or other damage caused by any fence so removed.

d. Driveways and driveway approaches removed or damaged during construction shall be restored to the original or better condition.

e. Make every reasonable effort to protect private sewer facilities. Private sewer facilities may not be shown on the Plans.

f. Preserve property corners, pins and markers. In the event any property corners, pins, or markers are removed by the Contractor, such property points shall be replaced at the Contractor's expense and shall be re-set by competent surveyors properly licensed to do such work. In the event such points are section corners or Federal land corners, they shall be referenced and filed with the appropriate authority.

g. Where existing utilities and service lines are encountered, notify the owner thereof at least 48 hours (not including weekends and/or holidays) in advance of performing any work in the vicinity.

h. Excavate, install pipeline and backfill in the vicinity of such utilities in the manner required by the respective owner and, if requested, under his direct supervision. The Contractor shall be responsible for damages to a public or private utility that may occur as the result of the construction.

i. Protect, move, or brace public and private utilities as required by the affected utility.

j. Make a reasonable effort to ascertain the existence of obstructions and locate obstructions by digging in advance of machine excavation where definite information is not available as to their exact location. Where such

facilities are unexpectedly encountered and damaged, notify responsible officials and other affected parties and arrange for the prompt repair and restoration of service.

END OF SECTION 2200

SECTION 2300 EXCAVATION, BACKFILLING AND COMPACTION

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Excavation, backfilling, and compaction for water lines, sewer lines, appurtenances, and incidental construction.

1.02 GENERAL

A. Comply with the recommendations of AWWA C600 and AWWAC605 latest editions, except as modified or limited within these specifications.

1.03 QUALITY ASSURANCE

A. When requested by the City's designated engineer, the Engineer of Record will provide:

1. One moisture/density relationship test (AASHTO T-99, or AASHTO T-180) taken at the beginning of the project, and one additional moisture/density relationship test taken for every 5,000 cubic yards of imported material.

2. The field density of adjacent undisturbed soil in accordance with ASTM D2922 (Standard Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods, Shallow Depth) locations as determined by the City.

3. A minimum of one density test per street crossing and/or one density test per 500 lineal feet of pipe or portion thereof when the pipe is located in the street, under pavement, under the curb and gutter, under sidewalks or trails or other locations as determined by the City.

4. Other project specific tests as required by supplemental specifications provided by the Engineer of Record.

B. Provide submittals as specified or as requested by the City's designated engineer.

1.04 UTILITIES PROTECTION

A. The Work included in this Project may require excavation and related activities in close proximity to existing buried and aerial utility lines and facilities, such as water lines, sewer lines, storm drains, natural gas lines, electrical power lines, telephone cables, and TV cables. Where their presence is known, the approximate location of such utilities is shown on the Drawings, but all such utilities and individual service lines are not shown. The Contractor shall be aware of the potential for such utility lines to conflict with intended construction efforts, and the Contractor shall use appropriate precautionary measures to locate and protect such utility lines and services so as to avoid damage and interruptions to

service.

B. The Contractor shall contact the owners of the various existing utilities lines and services as may be affected by the construction and solicit their assistance in identifying, locating, marking, and protecting these facilities prior to the beginning of any excavation or other work which might endanger the existing utilities. If such utilities are damaged or impaired because of the Contractor's actions or omissions, the Contractor shall be responsible for the cost of repairs or replacements of the affected or damaged utility or service line.

C. The Contractor shall comply with the "Arkansas Underground Facilities Damage Prevention Act" including latest amendments, the Arkansas One-Call System, and shall alert potentially conflicting utility systems accordingly.

D. The Contractor is responsible for protecting public and private property. The Contractor is responsible for the Contractor's safety plan and implementation.

1.05 SEDIMENT CONTROL

A. The Contractor shall be responsible for all sediment control in accordance with Section 2100 – Erosion and Sediment Control.

B. The Contractor shall be responsible for maintaining the site and adjoining properties and adjoining paved surfaces in a dust free condition.

PART 2 – PRODUCTS

2.01 FOUNDATION MATERIALS

A. Foundation materials for trench over excavation shall be Class 7 Aggregate Base Course (ABC), "B" stone with class 7 aggregate cap, or concrete as designed by the Engineer of Record.

2.02 EMBEDMENT MATERIALS

A. Embedment materials are restricted to materials specified below. The Engineer of Record shall provide as a submittal the gradation sieve analysis of the embedment materials proposed for each specific project.

B. Without regard to the pipe material, all embedment materials include: bedding, pipe zone (including haunching), and initial backfill from six (6) inches below the bottom of the pipe to six (6) inches above the top of the pipe the full trench width with a minimum of six (6) inches of embedment materials all around the exterior of the pipe.

C. Special design considerations, including supplemental trench drains, geotechnical fabric, and/or specific aggregate, and/or filter gradations as recommended in AWWA C605 and

ASTM D2321 may be required to prevent migration of embedment particles. The Engineer of Record is responsible to design the embedment system as needed for the specific project.

D. Embedment materials for water lines. The maximum aggregate size shall be 3/4 inch. The Engineer of Record will design the installation using embedment materials as ASTM C33 gradation #7 or ASTM C33 gradation 67 as modified and described below:

1. Crushed aggregate conforming to ASTM C 33, gradation 7 as follows:

ASTM gradation Size 7 (not class 7)

Crushed aggregate sized from nominal 1/2 inch to No. 8 sieves:

100 percent passing the 3/4 inch sieve
90 to 100 percent passing the 1/2 inch sieve
40 to 70 percent passing the 3/8 inch sieve
0 to 15 percent passing the No. 4 sieve
0 to 5 percent passing the No 8 sieve

2. Crushed aggregate conforming to the ASTM C 33, gradation 67 and as follows:

Crushed aggregate sized from maximum 3/4 inch to No. 8 sieves:

100 percent passing the 3/4 inch sieve (maximum aggregate size 3/4 inch)
20 to 55 percent passing the 3/8 inch sieve
0 to 10 percent passing the No. 4 sieve
0 to 5 percent passing the No 8 sieve

The required modification of the ASTM C 33, gradation 67 is the clarification and potential additional requirement of 100 percent passing the 3/4 inch sieve. Some aggregate suppliers for Fayetteville projects are currently meeting this requirement (maximum, not nominal, aggregate size 3/4 inch) as required in the 2012 Standard Specifications.

D. Embedment materials for sewer lines shall be a Class I crushed aggregate material in accordance with ASTM D2321 meeting the gradation requirements of ASTM C 33, gradation 7 as specified above for water lines, or the same crushed aggregate material conforming to a modification of the ASTM C 33, gradation 67 as specified above for water lines, or ASTM Class 67 stone. The Engineer of Reocrd is responsible to design the embedment and to verify the proper use of embedment materials for water and sewer installation.

2.03 BACKFILL MATERIALS

A. AGGREGATE MATERIAL

Aggregate material for select backfill across streets, roads, driveways, and for placement of "gravel" or aggregate surfaced areas, shall be Class 7 Aggregate Base Course (ABC) material conforming to the Standard Specifications of the Arkansas Highway & Transportation Department, latest edition.

B. SELECT NATIVE BACKFILL MATERIAL

Select native material shall be suitable on-site materials or imported good earth, sand, or gravel that is free from large rocks or hard lumpy materials. Never use materials of perishable, frozen, spongy or otherwise unsuitable nature as select material.

Initial backfill when consisting of select native materials, shall be free of rocks, stones or particles greater than 3 inches in diameter.

C. FLOWABLE SELECT MATERIAL

Flowable select materials, aka flowable fill or controlled low strength materials, for select backfill where indicated on plans across streets, roads, and driveways shall be Flowable Select Material conforming to the Standard Specifications of the Arkansas Highway & Transportation Department, latest edition.

D. CHERTY RED CLAY aka “HILLSIDE”

Locally available red clay chert material with a minimum of 55 percent retained on the #4 sieve prior to compaction, CBR of eight or greater and classified as GM or GC. The Engineer of Record shall provide as a submittal the geotechnical analysis of the proposed “Hillside” cherty red clay material for each specific project.

E. RIPRAP

1. Riprap material is not permitted as a Standard Specification.

2. Riprap material will be considered on specific case by case basis and in accordance with Sections 1000 General Conditions.

3. Riprap material, if approved, shall be designed in accordance with the City of Fayetteville Drainage Criteria Manual dated July 1, 2014.

PART 3 – EXECUTION

3.01 PROTECTIVE SYSTEMS - EXCAVATIONS AND TRENCHES

A. Comply with all Federal, State and Local requirements.

B. Comply with the requirements as specified elsewhere with these Specifications.

C. The Contractor is responsible for the Contractor's safety plan and implementation.

3.02 EXCAVATION - GENERAL

A. Excavation shall be carried accurately to the line and grade indicated on the drawings and as established by the Engineer.

B. When the bottom of the excavation is at subgrade and found to be unstable or includes ashes, refuse or other organic materials, or large pieces of inorganic material, that in the judgement of the engineer should be removed, the contractor will remove all such material (over-excavate) to the extent required by the engineer.

Over-excavation will be backfilled with foundations materials per 2.01 B and as directed by the engineer.

C. Dewater all excavations as required and as follows:

1. Comply with Section 2100 EROSION AND SEDIMENT CONTROL.
2. Prevent groundwater contamination.
3. Dewater to the extent that water or sewer pipe can be placed on a dry and firm trench bottom. Never place pipe in a wet or unstable trench.
4. When requested by the City, the Contractor, or the Engineer of Record, will provide a dewatering plan based upon the Engineer of Record's dewatering engineered design.

3.03 DISPOSAL OF EXCAVATED MATERIALS

A. The Contractor shall be responsible for disposal of excess material, or disposal of excavated material unsuitable for backfilling.

B. Disposal of excess material on private property shall only be allowed with written permission of the owner of the property. A copy of the written permission must be forwarded to the Engineer along with any permits as may be required by the governing authority, city or county. Grading permits are required for any disposal within the City of Fayetteville city limits.

3.04 EXPLOSIVES

A. The use of explosives/blasting materials is not permitted as a Standard Specification.

B. The use of explosives will be considered only on specific case by case basis in accordance with Section 1000 General Conditions. Approval will be project specific and requires approval from both the Utilities Director, Fire Chief and the designated City engineer.

3.05 EXCAVATION –TRENCHES

A. Trench For Water or Sewer Line - During excavation, all pipe to be replaced shall be properly removed and properly disposed of offsite at a suitable landfill. Trench excavation for water or sewer lines shall be kept within the maximum width limits specified below. The specified maximum trench width from the bottom of the trench to 24-inches above the outside top of the pipe shall not be exceeded unless authorized by the Engineer.

Refer also to SECTION 2006 ASBESTOS PIPE.

B. Trench For Water or Sewer Line in Paved Area additional requirements – Prior to excavation in paved areas, the Contractor shall saw-cut (or other acceptable method approved by the Engineer) the existing pavement to minimize the destruction of the existing pavement outside the limits of the trench. The maximum trench width for the installation of water or sewer lines, up to 12-inches in diameter, in paved areas shall not exceed 36-inches without written approval from Engineer. The pavement shall be repaired in accordance with Section 6000 – Pavement Repair. Contractor is responsible for damage to paved areas by construction equipment outside the limits of trench excavation.

C. The bottom of the trench shall be prepared to provide a uniform and continuous bearing and support for the pipe on solid or compacted soil. Further, shallow depressions shall be made in the trench bottom to accommodate bellends. It is a requirement for bell or coupling holes to be excavated where no part of the load is supported bells couplings or fittings.

D. Standard Trench Widths:

Refer to the Standard details prepared by the City of Fayetteville Engineering Division.

Minimum	Maximum
Outside pipe diameter + 12 inches	Outside pipe diameter + 24 inches

Notes:

(1) Pipe diameters larger than 24 inches may require specific project trench design
(2) Site specific soil conditions may require specific project trench design
(3) Trench widths may vary per specific project trench design to comply with Section 2003 TRENCH SAFETY/PROTECTIVE SYSTEMS

E. Unless approved otherwise by the designated City engineer, limit trench excavation to one hundred (100) feet ahead of the completed pipe work and backfill. The City, or the Engineer of Record, may lower this limit in traffic or congested areas.

3.06 EMBEDMENT AND BACKFILLING - GENERAL

A. Install all water and sewer pipe using approved embedment materials only.

B. Structure foundation subbase or structure concrete sub-foundations require project specific design.

C. Backfilling includes refilling and compacting the fill in the excavation to the elevations indicated. Backfilling includes initial back fill, final backfill and surface materials.

D. All backfill shall be placed in layers of appropriate thickness and compacted using a mechanical, hydraulically-powered vibratory trench compactor or other equivalent equipment.

E. Unless designed otherwise by the Engineer of Record, use select native materials for backfilling in unpaved areas (only).

F. Where trenches are to be located beneath existing or proposed streets, drives, and parking areas, all backfilling procedures shall be in accordance with the Standard details prepared by the City of Fayetteville Engineering Division.

G. Compaction testing will be provided by the contractor utilizing an independent testing agency approved by the City.

3.07 EMBEDMENT AND BACKFILLING PIPE ADDITIONAL REQIREMENTS

A. A continuous and uniform embedment shall be provided in the trench for buried pipe. Embedment materials shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe.

B. Install embedment materials in no greater than eight (8) inch compacted lifts. Install embedment materials from six (6) inches below the bottom of the pipe to six (6) inches above the top of the pipe. Shovel slice bedding beneath the pipe haunches.

C. Unless approved otherwise by the designated City engineer, compact all embedment material to a minimum density of 90% standard proctor as outlined in AASHTO T-99.

D. Unless designed otherwise by the Engineer of Record for deep bury/installation the tracer wire will be installed on top of the pipe to a maximum of six (6) inches above the top of pipe.

E. Pipe marking tape shall be provided in all trenches for water or sewer line construction. Installation shall be per manufacturer's recommendations and shall be as close as practical to finished grade while maintaining a required minimum of 18 inches between the marking tape and the top of any pipe line.

F. Provide a minimum cover of thirty-six (36) inches over the top of sewer pipe.

G. Provide the following cover for water pipe:

1. Minimum depth to the top of pipe for all water main lines less than 12- inches diameter shall be 3.0 feet.

2. Minimum depth to the top of pipe for water lines 12 –inches diameter and greater shall be 4.0 feet.

3. Maximum water line cover shall be 5.0 feet under normal conditions. Cover greater than 5.0 feet shall be allowed for short distances where required by field conditions and approved by the City.

4. Minimum depth of all water service lines from the main to the water meter shall be 30-inches.

H. The maximum depth of bury for PVC pipe as a standard specification is sixteen (16) feet. Any depths of bury greater than sixteen (16) feet require project specific design by the Engineer of Record or the use of ductile iron pipe.

I. Install pipe in accordance with Section 3100 and Section 4100.

J. Backfill and compact the excavation.

K. Maintain all temporary surfaces in good condition until permanent repairs are complete.

3.08 MISCELLANEOUS STRUCTURES

A. Excavate a sufficient distance from walls and footings to allow for forms, protective systems and observation.

B. Backfill as indicated on Standard details prepared by the City of Fayetteville Engineering Division or project specific drawings.

3.09 BORES/PIPE BORING

A. Bores, pipe boring, pipe jacking and similar installations of encasement and carrier pipes are indicated in SECTION 3400 BORES AND STEEL ENCASEMENT PIPE.

END OF SECTION 2300

SECTION 2400 GENERAL INSTALLATION INFORMATION AND PROCEDURE

1.01 GENERAL

A. Before installation of pipe and appurtenances, the trench bottom shall be graded so uniform support of the pipe and appurtenances are provided per Section 2300 Excavation, Backfilling and Compaction.

B. Comply with the recommendations of AWWA C600 and AWWAC605 latest editions, except as modified, limited and/or further specified within these specifications.

C. Additional sewer specific and water specific requirements are found in Sections 3100 and 4100 respectfully.

1.02 HANDLING PIPE MATERIALS

A. The Contractor shall handle the material with the utmost care and in a manner to prevent damage to the materials, material coating and lining during loading, hauling, unloading, and installation operations. Hooks, chains, or cables shall not come into contact with the exterior/interior of pipeline materials. It is recommended to use approved nylon straps or approved clamps to handle pipeline material. Material damaged shall be replaced at the contractor's expense.

B. Hooks shall not be in contact with the pipe interior and to the extent possible the interior of the pipeline materials shall be kept free from dirt and foreign matter.

C. Pipeline materials, including valves, hydrants and fittings shall be drained and stored in a manner to protect them from damage by freezing. Under no circumstances shall pipe or accessories be dropped or dumped into the trench.

D. Proper implements, tool and facilities shall be provided and used by the Contractor for the safe execution of the work.

E. All foreign matter or dirt shall be removed from the inside of the pipe and appurtenances before lowering into the trench and the pipe interior shall be kept clean during and after laying. A swab shall be kept in the water line as long as the pipe is being laid. Care shall be taken to prevent dirt from entering the joint space. When pipe laying is not in progress, the open ends of the pipe shall be closed by installing a plug or cap of sufficient design to prevent trench water, foreign matter and dirt from entering the pipe.

F. Cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat and workman like manner without damage to the pipe or pipe lining. Torch cutting is not permitted. All pipe shall be cut at 90 degrees to the pipe centerline. Cutting at other angles to provide greater deflections at joints shall not be permitted. Field welding or welding except by the pipe manufacture shall not be permitted.

G. Cut ends shall be beveled according to the manufacturer's recommendation to prevent damage to the bell gasket.

1.03 PIPE INSTALLATION - GENERAL

A. Install PVC pipe and DIP as recommended by the manufacturer and as follows.

B. Inspect each joint of pipe carefully internally and externally before it is placed in the trench. Plainly mark and separate from the remaining pipe any joint found to be cracked, warped, or otherwise damaged. Remove these damaged joints from the project site as soon as possible.

C. Unless otherwise designed by the Engineer of Record and approved by the City, all pipe shall be laid with bell ends facing the direction of progress such that spigots are pushed into bells, not bells pushed onto spigots; and for lines on appreciable slopes, bells shall face upgrade.

D. No pipe shall be laid in water, or when the trench condition or the weather is unsuitable for such work.

E. The pipe, fittings, valves, fire hydrants, meter boxes, manholes and other appurtenances shall be constructed to conform to the location, line size and material and grades specified or indicated on the approved plans.

F. When necessary to deflect PVC pipe from a straight line in either the horizontal or vertical plan to avoid obstructions, the pipe may be deflected in the joint the least of the manufacturer's recommendations, or a maximum of one degree (1°) (equal to 4 inches per 20 feet).

G. When necessary to deflect DIP pipe from a straight line in either the horizontal or vertical plan to avoid obstructions, the pipe may be deflected in the joint the least of the manufacturer's recommendations, or a maximum of three degree (3°) (equal to 12 inches per 20 feet).

H. Pipe barrel bending shall not be allowed.

I. All buried iron pipes, valves, and fittings shall be double poly wrapped.

J. Valves and fire hydrants shall be set with operating stem and nut plumb.

1.04 JOINTING PVC AND DUCTILE IRON PIPE AND FITTINGS

A. Make all pipe joints in strict accordance with the manufacturer's recommendation and as follows for the particular type of connection. Make all joints watertight in accordance with the latest ASTM Standards.

B. Prior to jointing the pipe, and/or fittings, the plain ends of the pipe and the bells of the pipe and fittings shall be thoroughly cleaned using a soapy water and cloth or brush, removing all foreign materials from the bells, especially the gasket seats. Any burrs or imperfections in that part of the plain end or bell, which will be in contact with the gasket, shall be removed.

C. The clean rubber gasket shall be inserted in the bell and a thin film of lubricant shall be applied per the manufacturer's recommendations. Pipe lubricants specified by the pipe manufacturer shall be used. For water lines the contractor shall lubricate the gaskets and/or spigots with the manufacturer's recommended and NSF-61 approved lubricant.

D. The cleaned plain end shall initially be entered into the bell straight. The plain end shall be pushed inside the gasket and bell until it strikes the end of the interior if the bell, after which the end of the pipe will be moved sideways or as specified by the manufacturer's requirements to move the pipe slightly away from the home position to allow for expansion and to provide flexibility for the complete pipeline.

E. When connecting the pipe or fittings according to manufacturer's requirements, care shall be taken to avoid damage to where the pushing device or machine contacts the pipe. A wood block or suitable pad shall be placed between the pipe and that part of the pushing device which contacts the pipe or fitting.

F. All plain ends that enter a push-on bell shall be beveled as specified by manufacturer requirements. All cut pieces or ends of pipe of other classifications shall be so beveled.

G. All buried iron pipes, valves, and fittings shall be double poly wrapped.

1.05 JOINTING FLANGED PIPE AND FITTINGS

A. The faces of all flanges shall be thoroughly cleaned and all burrs or imperfections removed with a steel brush.

B. Surface coating or lining touch up shall be provided to match original coating or lining.

C. Gaskets shall be AWWA approved of 1/16 inch minimum thickness.

D. All bolts and nuts shall be cleaned and lubricated prior to tightening. Bolts on opposite sides shall be tightened alternatively to the torque recommended by the manufacturer.

1.06 JOINTING MECHANICAL JOINT PIPE AND FITTINGS

A. Comply with AWWA C600 Table I latest edition and the manufacturer's recommendations.

The range of torque for pipe size and bolt size varies per application. The Engineer of Record shall furnished to the City as a submittal the project specific materials used and the range of torque required for the assembly and materials.

The AWWA C600 Table 1 Mechanical-joint bolt torque includes:

Joint Size In.	Bolt Size In.	Range of Torque ft-lbs
3	5/8	45-60
4-24	3/4	75-90
30-36	1	100-120
42-48	1 1/4	120-150

B. The spigot end of the pipe, the bell of the connecting pipe, and the rubber gasket shall be thoroughly cleaned using soapy water and cloth, removing all foreign materials from the bells, especially the gasket seats as specified for push-on joints. Clean the gland in a similar manner. An approved pipe lubricant shall be applied to the spigot end of the pipe and the gasket.

C. After the gland and gasket are placed on the spigot end of the pipe, a sufficient distance from the end to avoid fouling the bell, insert the spigot end in the fitting bell to the point of firm contact with the bell shoulder. Then advance the rubber gasket into the bell and seat in the gasket seat. Hammering the gasket into the seat is not permitted. Exercise care to center the spigot end within the bell. Bring the gland into contact with the gasket, enter all bolts, and make all nuts hand tight. Exercise continued care to keep the spigot centered in the bell.

D. Make the joints tight by turning the nuts with a torque wrench: First partially tighten a nut, then partially tighten the nut 180 degrees away from it. Work around the pipe with uniformly applied tension until the required torque is applied to all nuts.

E. The Contractor shall provide a torque wrench suitable for measuring tension on bolts.

F. Proper actuation of the gripping wedges for restraining glands shall be ensured with torque limiting twist off nuts. Tightening sequence shall be as follows. First partially tighten a nut, then partially tighten the nut 180 degrees away from it. Work around the pipe with uniformly applied tension until the required torque is applied to all nuts. Failure to follow proper the proper tightening sequence will result in the disassembly of the joint, removal of the current restraining gland, and installation of a new restraining gland. Any damage to PVC pipe shall be removed as well.

G. All buried iron pipes, valves, and fittings shall be double poly wrapped.

H. The rubber gasket and joint bolts of mechanical joint retainer glands shall be installed in accordance with the above section. Set screws shall be tightened evenly to approximately 75 ft-lbs or as recommended by the manufacturer.

1.07 TRACER WIRE

A. Comply with Arkansas Law Section § 14-271-111 (a)(2) which includes: "In addition to the foregoing, all underground facilities installed after January 1, 1996, shall be permanently marked with tracing wires of appropriate durability or in other manner which will enable the operator to trace the specific course of the underground facility.", and as follows:

B. Tracer wire shall be installed on all buried pipelines including water mains, water leads and water service lines without regard to pipe material. Tracer wire shall be installed on all buried sewer gravity mains, sewer force mains and gravity or pressure sewer services/sewer laterals without regard to pipe material.

C. Unless designed otherwise by the Engineer of Record for deep bury/installation the tracer wire shall be installed directly on, to 6-inches above, the top of the pipe for sanitary sewer and 6-inches above pipe for waterlines.

D. As designed by the Engineer of Record and approved by the designated City engineer or Utilities Director, the tracer wire will terminate and/or connect at:

1. An approved site specific application tracer wire box as manufactured by Copperhead Industries, LLC. or approved equal or,
2. Interior to sewer manhole, passing just below the frame or,
3. Terminate in a valve box as designed by the Engineer of Record and approved by the designated City engineer or Utilities Director.

E. Unless approved otherwise by the Engineer of Record and the City's designated engineer, all tracer wire installation will include a grounding anode at the termination and/or connection locations.

1.08 MARKING TAPE

A. Marking tape shall be installed on all buried water or sewer pipelines without regard to pipe material. This includes gravity sewer mains, sewer force mains, gravity sewer laterals, water mains and water services.

1. Marking tape shall be installed 18-inches above the top of pipe.

1.09 CONCRETE MITIGATION DAM

A. Water and sanitary sewer designs shall include the effects of the trench functioning as drainage or groundwater conveyance.

Where indicated on the approved plans, or determined by the Engineer in the field, concrete dams or concrete dams with slotted drainage pipe will be constructed at each connection location of new sewer pipe to the existing sewer system. Concrete dams with, or without slotted drainage pipe will be provided to help control the migration of groundwater from the new sewer trench to the exiting sewer system or adjacent property.

Concrete dams shall be constructed in the sewer trench, outside the limits of excavation for manholes. Slotted drainage pipe where used will terminate in an approved drainage conveyance.

B. Hand excavate around the sewer pipe into undisturbed earth a minimum of six inches into bottom of the trench and the trench wall perpendicular to the pipe. The hand excavated void around the pipe shall be filled with concrete and a form shall be used to hold the concrete in place. The form may be left in place after backfilling and restoration. The concrete dam shall be 8-inches thick, non-reinforced and extend to the elevation indicated on the approved plans.

C. Slotted drainage pipe ("trench drains) shall also be provided at concrete dams or low points from the bedding to defined drainage when required by the City.

1.10 INSTALLATION OF POLYETHYLENE PROTECTION MATERIAL

A. Comply with the recommendations of AWWA C105 latest edition and as follows.

B. Two layers ("double wrapped") of polyethylene material minimum 8 mils thickness, either in tubing form or in the form of flat sheet or rolls shall be placed around all buried mechanical joints of pipe and fittings, valves, fire hydrants, and all saddles, sleeves, and couplings, tapping saddles, and any other appurtenance with exposed bolts. Any and all iron or steel components installed below ground shall be wrapped with the polyethylene material.

Tape for field taping of polywrapped pipe, fittings, etc. or field repair of missing polyethylene encasement material shall be Polyken #900, Scotchrap #50 or equal. Each of the two polywrap layers shall be independently taped.

C. Ductile iron and steel pipe and appurtenances shall be completely encased in polyethylene tubing material. It is not the intent that the material form an enclosure that is absolutely air or water tight, but to prevent pipe to soil contact.

D. All tongs, cables, or chains that are used for lifting pipe and appurtenances that have been encased in polyethylene material shall be adequately padded to prevent damage to the material.

E. Repair any rips, punctures, or other damage to the polyethylene with tape or with a short length of polyethylene tube cut open, wrapped around the pipe and secured in place.

F. Polyethylene material shall be stored on the job site in such a manner that it is not exposed to direct sunlight. Exposure during installation shall not exceed forty-eight (48) hours.

G. Backfill material shall be the same as specified for pipe without polyethylene wrapping. Special care shall be taken to prevent damage to the polyethylene wrapping when placing backfill. Backfill material shall be free from cinders, refuse, boulders, rocks, stones, and/or other material that could damage polyethylene.

END OF SECTION 2400

SECTION 3000 SEWER PIPE, FITTINGS AND MATERIALS
1

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section covers pipe, pipe joints, and fittings and other materials for sanitary sewer pipelines and sewer service lines.

B. Use only pipe, fittings, adapters and appurtenances approved by the City of Fayetteville.

C. Use bends, tees, plugs, wyes, or other approved fittings constructed from the same material as the pipe in which they are installed. Use only standard, approved fittings.

D. The Standard Specification includes pipe and fitting in diameters up to and including 18-inch diameter. Pipe and fittings for nominal pipe diameters/sizes greater than 18-inch are not a Standard Specification. Projects including pipe and fittings for nominal pipe sizes greater than 18-inch will be considered on specific case by case basis in accordance with Section 1000 General Requirements.

1.02 SUBMITTALS

A. Use of materials other than those specifically listed below is prohibited.

B. Submit the manufacturer's certificate that the materials meet with these Specification requirements including material testing requirements.

PART 2 – PRODUCTS/MATERIALS

2.01 PROHIBITED PIPE MATERIALS

A. The following materials are specifically forbidden for use either in city sewers or service lines:
1. Asphalt impregnated fiber tube pipe.
2. Clay pipe.
3. Concrete pipe.
4. Open profile PVC pipe as defined in ASTM F794.
5. “No Hub” cast iron soil pipe or other non bell and spigot pipe.

2.02 SERVICE LINES AND FITTINGS

A. Service lines shall typically be four (4) inches in diameter PVC pipe and PVC fittings. Six (6) inch PVC services may be approved when constructed to the same standards as sewer main lines.

B. Four (4) inch PVC pipe and PVC fittings for service lines shall be SCH 40, glue joints, and shall be completely bedded as required for larger diameter PVC pipe.

2.03 CLEANOUTS

A. Cleanouts shall be two-way opposing, SCH 40 PVC "Memphis Code" style. The riser pipe shall be topped off with a screw type plug.

B. Cleanouts shall not be installed in areas of surface depressions or features that pond water.

C. All cleanouts installed in asphalt or concrete shall be protected by a cast iron short bodied valve box, Model 70 as manufactured by East Jordan Iron Works.

All cleanouts installed in areas other than asphalt or concrete including but not limited to lawn areas, will have the cleanout and cap protected from damage by a cast iron short bodied valve box, meter box or other method approved by Utilities Director.

D. On a case-by-case basis, the City may require a 6-inch thick, 24-inch square concrete collar to be poured around a sewer cleanout for protection in greenspaces.

E. On a case-by-case basis, the City may require a below-grade cleanout with protective vault (Utility Defender or approved equal).

2.04 POLYVINYL CHLORIDE (PVC) GRAVITY SEWER PIPE (Solid Wall)

A. PVC pipe for gravity sewer mains or force mains shall be green in color and imprinted with "SEWER".

B. Pipe fifteen (15) inches in diameter and less: conform to ASTM D 3034. Maximum standard dimension ratio (SDR) shall be twenty six (SDR 26).

C. Pipe greater than (15) inches in diameter: conform to the requirements of ASTM F 679 with pipe stiffness designed for the specific site and project. Sanitary sewer larger than 15 inch diameter requires specific review and approval from the City.

D. Joint connections for internal or external pressure less than 25-ft head: push on, flexible watertight elastomeric gaskets conforming to ASTM D 3212. Joint connections for internal or external pressure equal to or greater than 25-ft head require specific project design and City approval.

E. Marking In addition to "SEWER" provide: The date of manufacture, class of pipe, specification designation, size of pipe, name or trademark of manufacturer, and identification of plant/location shall be legibly marked on the outside of each pipe section in accordance with the ASTM D-3034.

F. Minimum length of a cut section of pipe shall be 5 feet.

2.05 DUCTILE IRON PIPE FOR GRAVITY MAINS

A. Gravity Sanitary Sewer ASTM A 746: Ductile Iron Pipe Gravity Sewer Pipe

B. Minimum Pressure Class shall be as follows:

1.	18-inch and smaller	350 psi
2.	24-inch	250 psi
3.	30-inch and greater	200 psi

C. Joint connections, pipe and fittings:

1. Push on and mechanical rubber gasket joints: ANSI/AWWA C111/A21.11.
2. Flanged: ANSI/AWWA C115/A21.15, ANSI B16.1.
3. Grooved and shouldered ANSI/AWWA C606.

D. Weights and Marking: Weights of pipe and fittings shall conform strictly to the requirements of ANSI Specifications. The class designations for the various classes of pipe and fittings shall be cast onto fittings in raised numerals, and cast or stamped on the outside of each joint of pipe. Weights shall be plainly and conspicuously painted in white on the outside of each joint of pipe and each fitting after the exterior coating has hardened.

E. Corrosion Control:

1. Interior:

All Ductile Iron Pipe and fittings used for sewer shall have an epoxy ceramic interior protective lining and exterior protective coating. The ceramic epoxy lining will be Tnemec Series 431 Perma-Shield, or Protecto 401 as determined by the Engineer of Record and approved by the City for the specific project.

2. Exterior:

Where requested by the City, or indicated in the specific design by the Engineer, all Ductile Iron Pipe and fittings used for sewer shall have in addition the interior ceramic epoxy lining an ceramic epoxy exterior coating meeting the same requirements of the ceramic epoxy interior protective lining, Tnemec Series 431 Perma-Shield, or Protecto 401 as determined by the Engineer of Record and approved by the City for the specific project.

Ductile Iron Pipe and fittings not required to have an epoxy ceramic exterior coating shall be supplied with manufacturer's standard 1 mil thickness asphaltic exterior coating per ANSI/AWWA C151/A21.51. Per the Ductile Iron Pipe Research Association (DIPRA) the 1 mil asphaltic coating is not a corrosion control method but furnished by the manufacturers to minimize atmospheric oxidation for aesthetic reasons (https://www.dipra.org/ductile-iron-pipe-resources/frequently-asked-questions/corrosion-control).

3. Ductile Iron Pipe and fittings shall be double wrapped in polyethylene tube or sheet materials conforming to the requirements of ANSI/AWWA C105/A21.5.

4. Additional corrosion control methods including cathodic protection may be required for specific sites and projects as requested by the City or designed by the Engineer and in accordance with DIPRA publication "The Design Decision Model for Corrosion Control of Ductile Iron Pipe" latest edition.

F. Minimum length of a cut section of pipe shall be 5 feet.

2.06 DUCTILE IRON FITTINGS

A. All ductile iron fittings for Ductile Iron Pipe (DIP) and PVC pipe shall conform to the requirements of ANSI/AWWA C153/A21.53, latest revision, for Ductile Iron Compact Fittings. All fittings shall be MJ x MJ. All ductile iron fittings shall have an interior ceramic epoxy lining suitable for sewer service.

2.07 INTERIOR CERAMIC EPOXY LINING FOR DUCTILE IRON PIPE AND FITTINGS

A. Provide a minimum 40 mil nominal dry film thickness protective lining consisting of a ceramic epoxy specifically designed for wastewater environments. The ceramic epoxy will contain at least 20% by volume ceramic material.

The ceramic epoxy lining will be Tnemec Series 431 Perma-Shield, or Protecto 401 as determined by the Engineer of Record and approved by the City for the specific project.

B. All cut ends and other areas requiring repair shall be immediately repaired with a manufacturers supplied field ceramic epoxy touch-up kit.

2.08 POLYETHYLENE ENCASEMENT (PIPE WRAP)

A. Polyethylene encasement shall be in conformance to ANSI/AWWA C105, latest revision. The virgin linear low-density polyethylene film shall have a minimum normal thickness of .008 inches (8 mils), and shall be provided in either flat tube or sheet form.

B. The color shall be black with nominal 2% carbon black UV inhibitor and printed per the AWWA C105 standard.

C. Tape for field taping of polywrapped pipe, fittings, etc. or field repair of missing polyethylene encasement material shall be Polyken #900, Scotchrap #50, at least 2-inches wide, and installed as per the Polyethylene Encasement Installation Guide published by DIPRA. Duct Tape is not permitted.

D. All buried iron pipe and fittings shall be double poly wrapped.

2.09 CENTRIFUGALLY CAST FIBERGLASS GRAVITY SEWER PIPE

A. Fiberglass gravity sewer pipe is not a Standard Specification.

B. Fiberglass gravity sewer pipe will be considered on specific case by case basis in accordance with Sections 1000 1.01 B and 1000 1.07 A. Approval will be project specific and requires approval from the Utilities Director.

2.10 REINFORCED FLEXIBLE RUBBER COUPLINGS

A. Materials: Chemical resistant rubber. Flexible rubber coupling shall be Fernco or MaxAdaptor (Raptor).

B. Flexible rubber coupling shall be reinforced with a stainless steel shear ring.

C. Clamping bands: two (2) each stainless steel bands.

D. Dimensions: Inside diameter to fit the outside diameter of the different pipe materials being connected: take care that proper alignment is maintained and the spacing between pipes does not exceed 1/2 inch as shown in the City Engineering Standard Detail Drawings.

2.11 SERVICE SADDLES

A. A composite saddle using a virgin SBR compound gasket (ASTM D-2000) and a ductile iron saddle casting (ASTM A 536), by Romac.

B. All saddles shall be approved by the Engineer prior to installation.

2.12 SERVICE WYES

A. The wye material and joint type must match that of the mainline pipe.

B. Wyes shall terminate in a bell suitable for connection of a 4 inch SCH 40 PVC service line pipe as specified herein.

2.13 MECHANICAL JOINT RETAINER GLANDS

A. Restraint devices for mechanical joint fittings and appurtenances for nominal pipe sizes greater than 18-inch are not a Standard Specification. Restraint devices for mechanical joint fittings and appurtenances for nominal pipe sizes greater than 18-inch will be considered on specific case by case basis in accordance with Section 1000 General Requirements.

B. Restraint devices for mechanical joint fittings and appurtenances for nominal pipe sizes 3-inch through 18-inch shall consist of multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ANSI/AWWA C110/A21.10.

C. Mechanical joint retainer glands shall be made from ductile iron and shall be designed for a working pressure of at least 350-psi for 3-inch through 16-inch ductile iron pipe, at least 305-psi for 3-inch through 12-inch PVC, and at least 250-psi for 18-inch ductile iron pipe.

D. Retainer glands shall have an approved coating system for corrosion resistance equivalent to EBBA MEGA-BOND® and manufacturing traceability. Retainer glands shall be manufactured by EBAA Iron, Inc. (USA only), Smith-Blair, Inc. (USA only), or Star Pipe Products (USA only).

1. Retainer glands for pipe sizes 3-inch through 12-inch shall be manufactured by EBAA Iron, Inc. (USA only), Smith-Blair, Inc. (USA only), or Star Pipe Products (USA only).

2. Retainer glands for pipe sizes greater than 12-inches shall be manufactured by EBAA Iron, Inc. (USA only), or Star Pipe Products (USA only).

2.14 PIPE BELL RESTRAINTS

A. Bell restraint devices for nominal pipe sizes greater than 18-inch are not a Standard Specification. Bell restraint devices for nominal pipe sizes greater than 18-inch will be considered on specific case by case basis in accordance with Section 1000 General Requirements, and as follows.

B. Bell restraints for AWWA C900 PVC sizes 4-inch through 12-inch shall be Series 1900 Restraint Harness, as manufactured by EBAA Iron, Inc. Devices shall have an approved coating system for corrosion resistance equivalent to MEGA-BOND® and manufacturing traceability.

C. Bell restraints for SDR26 PVC sizes 6-inch through 18-inch shall be provided as required. Devices shall have an approved coating system for corrosion resistance equivalent to MEGA-BOND® and manufacturing traceability.

D. Bell restraints for Ductile Iron Pipe sizes 4-inch through 18-inch shall be Series 1700 Restraint Harness, as manufactured by EBAA Iron, Inc. Devices shall have an approved coating system for corrosion resistance equivalent to MEGA-BOND® and manufacturing traceability.

E. When all-thread attachments are required, **eye-bolt style attachments are not acceptable**. Romac "Ductile Lug" style attachments shall be used. All-threads shall be made of 316 stainless steel.

2.15 BOLTS

A. All bolts and nuts for valves, fittings, and restraints shall be 316 stainless steel unless specified otherwise. **Anti-seize lubricant shall be used when assembling all stainless steel hardware to reduce galling.**

2.16 FORCE MAIN MATERIALS

A. Each material acceptable for force main construction is described below. **The Engineer shall submit a design fatigue analysis to determine which material will be used.**

B. The City may require that force main be constructed in such a fashion that they may be converted to gravity sewer lines at a later date with the only modification to be adding manholes.

2.17 POLYVINYL CHLORIDE (PVC) PIPE FOR FORCE MAINS

A. PVC pipe less than 4 inches in size shall be manufactured in accordance with ASTM D-2241 and be SDR 13.5.

B. PVC pipe 4 inches through 12 inches in size shall be manufactured in accordance with AWWA C900, latest revision, and shall be DR 14.

C. PVC pipe, couplings, and fabricated fittings shall be made from virgin PVC resin that has been compounded to provide physical and chemical properties that equal or exceed cell class 12454 as defined in ASTM D1784, latest revision. Clean, reworked material generated from the manufacturer's own production shall be acceptable as long as the pipe produced meets all the requirements of the Specifications.

D. Joints for PVC pipe shall conform to ASTM Specification D-3139, latest revision.

E. Nominal laying length shall be 20 feet. Minimum length of a cut section of pipe shall be 5 feet.

F. Marking on pipe shall include the following and shall be applied at intervals of not more than 5 feet.

1. Nominal size in inches and OD base (for example, 4 CI).
2. PVC.
3. Dimension ratio (for example, DR 14).
4. AWWA pressure class (for example, PC 305).
5. Test pressure for hydrotested pipe (for example, T330) or if not tested, "NOT HYDROSTATIC PROOF TESTED."
6. AWWA designation number for this standard (ANSI/AWWA C900 or ASTM D-2241).
7. Manufacturer's name or trademark and production run record or lot code.

8. Seal (mark) of the testing agency verifying the suitability of the pipe material for potable-water service.
9. “SEWER”.

2.18 DUCTILE IRON PIPE FOR FORCE MAINS

A. Ductile Iron Pipe shall conform to the requirements of "Ductile-Iron Pipe, Centrifugally Cast" AWWA Standard C151/A21.51, latest revision.

B. Ductile iron pipe shall be designed in accordance with the requirements of "Thickness Design of Ductile-Iron Pipe", ANSI/AWWA C150/A21.50, latest revision. Minimum pressure class shall be 250 psi.

C. Joint connections, pipe and fittings (latest revision):

1. Push on and mechanical rubber gasket joints: ANSI/AWWA C111/A21.11.
2. Flanged: ANSI/AWWA C115/A21.15, ANSI B16.1.
3. Grooved and shouldered ANSI/AWWA C606.

D. Nominal laying length shall be 20 feet. Minimum length of a cut section of pipe shall be 5 feet.

E. Weights and Marking: Weights of pipe and fittings shall conform strictly to the requirements of ANSI Specifications. The weight, class or nominal thickness, and casting period shall be shown on each pipe. The manufacturer’s mark, country where cast, year in which the pipe was produced, and the letters “DI” or “DUCTILE” shall be cast or metal stamped on the pipe, and letters and numerals on pipe sizes 14 in. (356 mm) and larger shall be not less than 1/ 2 in. (13 mm) in height.

F. Corrosion Control

1. Interior:

All Ductile Iron Pipe and fittings used for sewer shall have an epoxy ceramic interior protective lining and exterior protective coating. The ceramic epoxy lining will be Tnemec Series 431 Perma-Shield, or Protecto 401 as determined by the Engineer of Record and approved by the City for the specific project.

2. Exterior:

Where requested by the City, or indicated in the specific design by the Engineer, all Ductile Iron Pipe and fittings used for sewer shall have in addition the interior ceramic epoxy lining an ceramic epoxy exterior coating meeting the same requirements of the ceramic epoxy interior protective lining, Tnemec Series 431 Perma-Shield, or Protecto 401 as determined by the Engineer of Record and approved by the City for the specific project.

Ductile Iron Pipe and fittings not required to have an epoxy ceramic exterior coating shall be supplied with manufacturer's standard 1 mil thickness asphaltic exterior coating per ANSI/AWWA C151/A21.51. Per the Ductile Iron Pipe research Association (DIPRA) the 1 mil asphaltic coating is not a corrosion control method but furnished by the manufacturers to minimize atmospheric oxidation for aesthetic reasons.

3. Ductile Iron Pipe and fittings shall be double wrapped in polyethylene tube or sheet materials conforming to the requirements of ANSI/AWWA C105/A21.5 and SECTION 3000 2.06 of this specification.

4. Additional corrosion control methods including cathodic protection may be required for specific sites and projects as requested by the City or designed by the Engineer and in accordance with DIPRA publication "The Design Decision Model for Corrosion Control of Ductile Iron Pipe" latest edition.

All cut ends and other areas requiring repair shall be immediately repaired with a manufacturers supplied field ceramic epoxy touch-up kit.

2.19 VALVES FOR FORCE MAINS

A. Gate valves up to 8-inch shall be the same as water valves as specified in Section 4000.

B. Valves greater than 8 inches require project specific design and City approval.

C. Full port (100% area) plug valves shall be AWWA C517, latest revision shall be manufactured by Val-Matic or Dezurik PEC.

D. Valves shall be installed along the length of the force main, not to exceed 1000' unless a variance is approved by the City for long force mains. The City will determine if plug or gate valves are appropriate. All valve boxes shall be marked sewer. An empty valve box shall be installed in the vicinity of the discharge manhole and at fittings that cause a change in direction where the tracer wire can be brought to grade for a point of connection to aid in tracing the force main. A 2-inch SCH-40 PVC pipe shall be installed in the empty valve box. The pipe shall have a pipe marker label affixed and further labeled "No Valve, Tracer Wire Only." All lids shall have the word "SEWER" and a concrete pad with a minimum of 18 inches square or round dimension as appropriate. This shall be for both paved and unpaved applications.

2.20 AIR / VACUUM RELIEF VALVES

A. Sanitary sewer force mains shall be designed to avoid the need for air or vacuum release lines. If possible, force mains shall be designed without high points and with the top of the force main below the hydraulic grade line at the minimum pumping rate so that relief valves will not be needed.

B. If high points in the force main cannot be eliminated, a stainless steel A.R.I. Flow Control Accessories sewage air release valve shall be installed at each significant high point where air could become trapped. The air release valve shall be installed in a manhole structure in accordance with the requirements of Section 3300-Manholes, and provisions shall be required for draining the structure. A high point shall be considered significant if it is 2 feet or more above the minimum hydraulic grade line, or, when pumping is intermittent, above the static head line.

2.21 TRACER WIRE

A. Tracer wire shall be 12-gauge solid coated copper or coated copper clad steel for underground burial.

B. Jacket color shall be GREEN, and made of High Density Polyethylene (HDPE) or High Molecular Weight Polyethylene (HMWPE) designed for direct burial.

C. Connectors shall be used for all splices or repairs. Connectors shall be moisture displacement style as manufactured by 3M DBR. Wire shall be twisted and bent, without the use of a wire nut prior to insertion into the gel cap.

D. A locate or conductivity test shall be performed prior to signing off on the project.

E. The tracer wire will terminate and/or connect at:

1. An approved site specific application tracer wire box as manufactured by Copperhead Industries, LLC. or approved equal or,
2. Interior to sewer manhole, passing just below the frame or,
3. Terminate in a valve box as designed by the Engineer of Record and approved by the designated City engineer or Utilities Director.

2.22 MARKING TAPE

A. Non-metallic sanitary sewer marking tape shall be warning tape as manufactured by Rhino Marking and Protection Systems, Harris Industries, Inc.

B. Tape shall have a minimum thickness of 4 mils and manufactured with heavy metal-free polyethylene tape that is impervious to all known alkalis, acids, chemical reagents, and solvents found in soil. The minimum overall width of the tape shall not be less than 3-inches. Standard rolls shall be 1000’ length.

C. The tape shall be color coded Safety Green and imprinted with the following message: Caution – Buried Sewer Line Below.

2.23 SEWER LINE MARKERS

A. Sewer line markers shall be TriView Marking System by Rhino Marking and Protection Systems or Carsonite International Dual-Sided Utility Marker (CIB-380). All markers shall

be installed according to the manufacturer's recommendations. The uppermost portion of the Carsonite marker shall be made of Visibility Enhancer (CVE-360), and must be bolted to the utility marker. TriView markers do not require visibility enhancers. The utility marker shall read as follows: "CAUTION, SEWER PIPELINE", "City of Fayetteville", and "Before Digging Call 1-800-482-8998". The label shall also include the official City Logo and be white in color with green and black lettering. The label shall be affixed to two sides of the marker. **An additional white 1" wide reflective tape (3M) shall be placed around the full circumference of the top of the marker.** Concrete shall be placed 6-inches around and 1-foot deep around the base of each marker.

B. Sewer line pipeline markers shall be installed beside all manholes that are located in easements and backyards. Manholes located in front yards and in streets do not require markers.

C. Sewer line pipeline markers shall be installed along sewer force mains at valves and at significant fittings that cause a change in direction.

PART 3 - EXECUTION

3.01 INSTALLATION

A. General Installation: refer to Section 2400

B. Sanitary Sewer Pipelines: Refer to Section 3100

C. Sanitary Sewer Service Lines: Refer to Section 3200

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END OF SECTION 3000

SECTION 3100 INSTALLATION OF SEWER PIPE, FITTINGS, AND MATERIALS

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Installation of sanitary sewer pipelines.

B. Installation of sanitary sewer service lines.

C. Point repairs on existing sanitary sewer pipelines.

1.02 DEFINITIONS

A. New Sewer Lines – Sewer lines installed in such a manner that there is no sewage flow during construction.

B. Replacement Sewer Lines – Sewer lines installed in a trench while there is a flow from "live" service connections.

C. Point Repairs - Replacement of a short section (less than 50 feet in length) in an existing sewer lines.

D. Force Mains - Sewer pipelines that transport wastewater under pressure from a pump station to a discharge point.

E. City Sewer Main - A public sanitary sewer in which all owners of abutting properties have equal rights and is maintained and controlled by the City of Fayetteville. No sewer line smaller than six (6) inches in diameter is a city sewer.

F. Service Line - The sewer which conveys the discharge from a building's plumbing system or other approved waste system to the city sanitary sewer system. The service line begins at the connection to the city sanitary sewer and ends at the building foundation.

1.03 GENERAL REQUIREMENTS

A. As specified elsewhere within these Specifications.

1.04 QUALITY ASSURANCE

A. Inspect all service lines per Section 5200 - Inspection and Testing of Sanitary Sewer Pipelines, Manholes, and Service Lines.

1.05 ADDITIONAL REQUIREMENTS

A. SHALLOW BURY

Ductile iron pipe for sewer shall be required when the existing grade or the proposed finish grade, whichever is less, provides less than 36 inches of cover. The ductile iron pipe shall extend from manhole to manhole. The ductile iron pipe shall meet the requirements of Section 3000 – Sewer Pipe, Fittings, and Materials, of these Specifications.

B. MAXIMUM DEPTH BURY PVC

The maximum depth of bury for PVC pipe is sixteen (16) feet. Any depths greater than sixteen (16) feet require ductile iron pipe. The ductile iron pipe shall extend from manhole to manhole. The ductile iron pipe shall meet the requirements of Section 3000 – Sewer Pipe, Fittings, and Materials, of these Specifications.

C. PIERS AND AERIAL CROSSINGS

1. Aerial crossings and sewer pipe on piers shall be encased.

2. Aerial crossings, sewer pipe on piers and piers shall be designed by the Engineer of Record for the specific project and included within the project documents submitted to the City for review and approval.

3. Install concrete piers as indicated on the approved plans and per Section 3600 - Cast-In-Place Concrete.

D. GRADES EXCEEDING 15%

1. Whenever the grade of the sewer line exceeds 15% (percent), ductile iron pipe shall be required. The ductile iron pipe shall meet the requirements of Section 3000 – Sewer Pipe, Fittings, and Materials, of these Specifications.

2. Sewers on 15 percent pipe slope or greater shall be anchored securely with concrete anchors in accordance with the Water Standard details prepared by the City of Fayetteville Engineering Division and spaced as follows:

1. Not over 36 feet center to center on grades 15 percent and up to 35 percent.

2. Not over 24 feet center to center on grades 35 percent and up to 50 percent.

3. Not over 16 feet center to center on grades 50 percent and over.

4. Anchor collars should be placed on downstream side of bell.
Where no bell is available, a retainer gland shall be installed.

E. COLD WEATHER INSTALLATION

1. The City reserves the right to order pipe installation discontinued whenever, in its opinion, there is danger of the quality of work being impaired because of cold weather. The Contractor shall be responsible for heating the pipe and jointing material so as to prevent freezing of joints. Do not lay any pipe on frozen ground. No flexible or semi-rigid pipe shall be laid when the air temperature is less than 32° F unless proper precautions per the manufacturer's recommendations are taken by the Contractor and the method is approved by the Engineer and City.

2. When pipes with rubber gaskets or resilient-type joints are to be laid in cold weather, sufficiently warm the gasket or joint material so as to facilitate making a proper joint.

D. Reinforced Flexible Rubber Couplings

1. Install reinforced flexible rubber coupling only where dissimilar pipe materials are connected.

2. Take care that proper alignment is maintained and a maximum spacing between pipes does not exceed one-half inch.

3. Encase reinforced flexible rubber coupling in Class 1 concrete as shown on the City Engineering Standard Details.

PART 2 - PRODUCTS

A. Specified elsewhere within these Standards.

PART 3 – EXECUTION

3.01 WYE FITTINGS FOR SERVICE CONNECTIONS

A. Use in-line wye fittings for all service connections except on ductile iron pipe and polyethylene pipe.

B. The wye material and joint type must match that of the mainline pipe.

C. Use taps instead of wyes only on ductile iron pipe and polyethylene pipe.

D. Install wye branches at the location of live services or as indicated on the construction plans. Install wye connections for services in accordance with the manufacturer's recommendations.

E. Place Class "1" concrete under each wye branch to prevent cracking or twisting under earth loads.

F. Mark wyes for future connections using marking tape, tracer wire, yellow nylon rope, and 1/2" x 4' rebar or fence tee-post.

G. Terminate wyes for future connections in a bell suitable for connection of a four-inch SCH-40 PVC service line. Securely plug all wyes and service stubs for future connections.

H. For Service Wye Details, see the City Engineering Standard Detail Drawings.

3.02 CLEANOUTS FOR SERVICE CONNECTIONS

A. Install cleanouts on service lines at the property line where the main line is in the paved right-of-way, as required by plumbing code, or as indicated on the construction plans and as further specified in Section 3200.

B. For Cleanout Details, see the City Engineering Standard Detail Drawings.

3.03 BACKFILLING AND INSPECTION

A. Before backfilling, place concrete encasement at transitions between different types of pipe and around all flexible rubber couplings as shown on the Drawings. Use Class 1 concrete per Section 3600-Cast-In-Place Concrete.

B. Before backfilling, install concrete anchor collars in accordance with the City Engineering or project specific details at the location and interval and shown on the Drawings. Use Class 1 concrete and reinforce with steel bars per Section 3600-Cast-In-Place Concrete.

C. After the pipeline is installed and visually inspected by the Engineer, backfill the trench per Section 2300-Excavation, Backfilling, and Compacting.

D. Test the pipeline per Section 5200-Inspection and Testing of Sewer Lines, Manholes, and Service Lines.

E. Repair all pavements per Section 6000-Pavement Repair.

F. Repair all incidental damage to buildings, structures, utilities, pavements, landscaping, etc.

G. Repair sodded and grass areas to original condition.

3.04 CONNECTION OF NEW SEWER LINES TO EXISTING SEWER LINES

A. Construct, clean, test, and obtain City's approval for sewer lines and manholes before connecting new sewer lines to the existing sewer.

B. If, in the opinion of the Engineer, conditions exist which require connection prior to final line acceptance, plug all lines entering the manhole connecting to the existing system until the new system is accepted. In addition, plug the line leaving the first manhole upstream. Never allow water being used to flush the new lines to enter the existing system.

C. All new sewer lines must connect to the existing system at a new or existing manhole. If a new manhole is built over an existing sewer line, do not break out the top of the existing pipe until the new line is accepted. If existing sewer line is not PVC or DIP, replace section of line first per City Engineering details.

D. If a new sewer line is to discharge into an existing manhole, divert the sewage flow around the existing manhole while the tie-in is under construction. Intercept the sewage flow at the existing manhole first upstream from the tie-in construction. Provide suitable pumping equipment and re-routing conduit to pump the sewage around the tie-in construction. Discharge into an appropriate manhole downstream from the construction.

E. Connection to an existing manhole shall be made by core drilling. A concrete manhole adapter shall be installed on the sewer pipe, and the annular space grouted in accordance to Section 3300 – Manholes.

F. Connect new sewer lines to existing manholes in a neat, workmanlike manner, to ensure a watertight connection.

3.05 GRAVITY SEWER LINE INSTALLATION – LIVE SEWER LINES AND POINT REPAIRS

A. Install sewer lines and point repairs as detailed above for new sewer lines with the following exceptions:

1. Divert all upstream flow around the section to be replaced with plugs or pumps. The bedding must be kept dry during installation. If trench bottom is too wet, excavate wet portion and replace with bedding material.

2. Make transitions to original pipe using materials and procedures specified. Take care that replacement pipe is aligned properly with no offsets. Install concrete encasement around transitions. Take care that no concrete from the encasement enters the existing pipeline. If this occurs, remove the concrete.

3. At the end of each day's work, and when for any reason the laying of pipe will be discontinued for an appreciable period, place a temporary section of pipe in the live line.

4. Pressure testing is not required. Visual and television testing are required.

5. Mandrel testing is required.

6. Service line pressure testing is not required.

7. A temporary debris catcher, as shown in the City Engineering Standard Detail Drawings, shall be used in the downstream manhole.

3.06 FORCE MAIN PIPE INSTALLATION

A. Install all pipe and fittings to the line and grade as detailed on the Drawings. All bolted valves, fittings, etc. shall be installed the same as water lines. Refer to Section 4100.

B. The force main shall have tape marked sewer wrapped around the pipe with complete revolutions not to exceed six feet (6'). Tape marked sewer shall also be installed in the trench 18" above the top of the sewer force main.

C. Remove all dirt and other foreign matter from the inside of pipe and fittings before they are lowered into the trench. Keep pipe and fittings clean during and after laying. Take care to keep dirt out of the bells. Plug all pipe openings at the end of each day's work or when pipe laying is discontinued.

D. Use proper equipment for lowering sections of pipe into trenches. Lower pipe carefully into the trench so the spigot and bell will not become contaminated.

E. Cut pipe in a neat and workmanlike manner without damage to pipe or pipe lining when trimming joint length.

F. Install pipe with bell ends facing in the direction of laying. Face bells upgrade on lines on an appreciable slope.

G. When necessary to deflect pipe from a straight line in either the horizontal or vertical plan to avoid obstructions, the pipe may be deflected in the joint the least of the manufacturer's recommendations, or a maximum of one degree (1°) (equal to 4 inches per 20 feet).

H. Pipe barrel bending shall not be allowed.

I. Before backfilling, install concrete thrust blocking and anchor collars in accordance with the project specific and/or City Engineering Standard Details on Plans and in accordance with SECTION 4100 Installation of Water Pipe, Fittings and Materials. Thrust blocking shall be designed based on pressures of at least 25 percent greater than the maximum pump design shutoff head plus a water hammer allowance with an appropriate factor of safety.

J. All force mains shall be equipped with a Pig Launch & Retrieval System. Refer to City Engineering Standard Details.

K. Sewer line pipeline markers shall be installed beside all manholes and valve boxes that are located in easements and backyards. Manholes and valve boxes located in front yards and in streets do not require markers.

L. Test the pipeline per Section 5200-Inspection and Testing of Sewer Lines, Manholes, and Service Lines.

M. After the pipeline is installed and visually inspected by the Engineer, backfill the trench per Section 2300-Excavation, Backfilling, and Compacting. Repair all pavements per Section 6000-Pavement Repair. Repair all incidental damage to buildings, structures, utilities, pavements, landscaping, etc.

N. Repair sodded and grass areas to original condition.

3.07 WATER LINE CROSSINGS

A. Sewer lines installed under a water line must have a clear distance between pipes of at least eighteen (18) inches.

B. The sewer line shall be installed such that a joint of pipe is centered along the water line and the joints are as far as possible from the water line.

C. If 18-inches of clearance cannot be provided or when the water main must pass under the sewer main, either the sanitary sewer main or the water main shall be encased in twenty (20) feet of watertight encasement pipe, centered over the point of crossing. Crossings that are not perpendicular will require more than twenty (20) feet of encasement. The encasement shall extend a minimum of ten (10) feet perpendicular from the outside edges of the line that is not being encased. The ends of the encasement pipe shall be sealed watertight. If the water main passes under the sewer main, 18-inches of clearance is still required between pipes. Refer to Section 3400 – Steel Encasement Pipe.

3.08 STORM SEWER CROSSINGS

A. For maintenance purposes, sanitary sewers will be encased in steel encasement pipe wherever the sanitary sewer crosses significant utilities, significant drainage way(s), or other significant obstacles as determined by the design provided by the Engineer of Record or as requested by the designated City engineer.

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END OF SECTION 3100

SECTION 3200 INSTALLATION OF SEWER SERVICE LINES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section covers:

1. Installation of sanitary sewer service lines.

2. Point repairs on existing sanitary sewer service lines.

1.02 DEFINITIONS

A. City Sewer Main - A public sanitary sewer in which all owners of abutting properties have equal rights and is maintained and controlled by the City of Fayetteville. No sewer line smaller than six (6) inches in diameter is a city sewer.

B. Service Line - The sewer which conveys the discharge from a building's plumbing system or other approved waste system to the city sanitary sewer system. The service line begins at the connection to the city sanitary sewer and ends at the building foundation.

1.03 GENERAL REQUIREMENTS

A. Comply with the Arkansas Plumbing Code, the City of Fayetteville Codes and requirements and as specified elsewhere within these Specifications.

1.04 QUALITY ASSURANCE

A. Inspect all service lines per Section 5200 - Inspection and Testing of Sanitary Sewer Pipelines, Manholes, and Service Lines.

1.05 REFERENCES

A. Arkansas State Plumbing Code.

B. City of Fayetteville Ordinance Chapter 173 BUILDING REGULATIONS including but not limited to 173.06 Plumbing Code.

PART 2 - PRODUCTS

A. Specified elsewhere within these Standards.

PART 3 - EXECUTION

3.01 ADDITIONAL REQUIREMENTS

A. Bends

1. Avoid using short radius ninety degree bends on 4" service lines.
2. Use only long sweep bends where bends are absolutely necessary.

B. Cleanouts

1. At the building foundation.
2. On lines longer than one hundred (100) feet, cleanouts are required at one hundred (100) foot spacing.
3. Install cleanouts adjacent to any ninety degree bend.
4. Install pipe on cleanout riser up to finish grade.
5. The cleanout shall be the same diameter as the pipe on which it is installed.
6. On a case-by-case basis, the City may require a 6-inch thick, 24-inch square concrete collar to be poured around a sewer cleanout for protection in greenspaces.
7. On a case-by-case basis, the City may require a below-grade cleanout with protective vault (Utility Defender or approved equal).

C. Backwater Traps (Sewage check valve)

1. Provide backwater traps as required by Section 715 – Backwater Valves of the Arkansas Plumbing Code or as shown on the Drawings.
2. Place backwater traps in a meter box to allow periodic servicing.

D. Aerial Crossings and Piers

1. Comply with Section 3100.

E. Service line installation.

1. Lay the service line on a straight alignment and at a constant slope. Install pipe at a minimum slope of one percent (1.00%); this equal's one-eighth inch fall per lineal foot (1/8" / LF).

2. Install bends on 4" service lines at all changes in alignment and slope. Cleanouts are required at 90 degree bends and every 100 feet on lines longer than 100 feet. Bends on 6" and larger service lines are only permitted within 5 feet of the building foundation and 2 feet of the manhole being connected to; if longer than 150 feet, bends are not allowed and manholes must be built.

3. "No-Hub" type pipe connections are not permitted.

F. Reinforced Flexible Rubber Couplings

1. Install a reinforced flexible rubber coupling only where dissimilar pipe materials are mated.
2. Take care that proper alignment is maintained.
3. Encase reinforced flexible rubber coupling in Class 1 concrete as shown on the City Engineering Standard Details.

G. Tracer wire shall be installed from the public main to the building foundation and as further specified elsewhere.

3.02 SERVICE LINE CONNECTIONS TO CITY SEWER PIPELINES

A. Wye connection - Use existing wye or other prefabricated outlet if one has been left in the city sewer for sewer service to a lot unless it can be shown that the dwelling unit or building cannot drain by gravity to the wye.

B. Taps

1. Where a wye or other prefabricated outlet in the city sewer is not available to serve a lot, a tap connection shall be installed at a location approved by the City to connect the building sewer to the city sewer.
2. The City shall install all taps using approved materials and equipment after the tap fee has been paid.

C. Manhole Taps

1. Manhole taps are only permitted on end-of-line manholes. Make manhole tap connections into existing manholes as indicated on the Drawings.
2. Install manhole taps no more than twenty-four (24) inches above the manhole invert.
3. Make manhole tap watertight and flush with inside surface of manhole.
4. Manhole taps are considered as part of the service line and are subject to inspection.

3.03 SERVICE LINE REPLACEMENT/REPAIRS

A. Obtain permit per City of Fayetteville requirements.

B. When possible, the existing tap or wye should be used to connect a repaired or replaced service line.

C. When the existing wye or tap cannot be used, then the Contractor shall seal original wye or tap (to prevent entrance or rainwater or debris into the city sewer) and contact the City of Fayetteville to arrange for inspection of seal.

D. Repair damaged portion in accordance with these specifications.

E. If reinforced flexible rubber couplings are required, be sure to encase them in Class 1 Concrete as shown in the City Engineering Standard Details.

F. Contact the City of Fayetteville to arrange for inspection of service line repair.

3.04 RELOCATE SERVICE EXIT

A. Obtain Plumbing Permit from the City of Fayetteville.

B. Relocate where the sanitary sewer line exits the structure and plug the old sewer line where it was cut to be rerouted.

C. Coordinate the inspection of the work with the City Plumbing Inspector.

END OF SECTION 3200

SECTION 3300 MANHOLES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section covers the materials and procedures used in the construction and repair of sanitary sewer manholes.

1.02 SUBMITTALS

A. Furnish Shop Drawings and Submittal Data for approval prior to the delivery of any pre-cast manhole sections.

B. Submit all materials for approval.

1.03 MANHOLE DIMENSIONS AND LAYOUT

A. The required dimensions on manholes are:

1. Cone section height: 24 inches, minimum; 36 inches, maximum.

2. Throat section height: 18 inches, maximum.

B. Locate the manhole so the centerlines of all pipelines entering and leaving pass through the center of the manhole.

C. The following are minimum manhole diameters for sanitary sewers entering/exiting a manhole at the following range of angles:

MANHOLE DIAMETERS

Pipe Size	Pipes Entering/Leaving at 0° - 45° Bend	Pipes Entering/Leaving at 45° - 90° Bend
8” - 15”	48”	48”
16” - 30”	60”	60”
33” - 42”	72”	72”

PART 2 - PRODUCTS

2.01 WATER FOR MORTAR AND GROUT

A. Water: Potable water free from injurious amounts of acids, alkalis, oils, sewage, vegetable matter, and dirt.

2.02 CEMENT

A. Portland Cement, conforming to AASHTO M 85, Type I.

2.03 MANHOLE GROUT

A. Cementitious non-shrink grout for use in manholes shall be one specially formulated for stopping active infiltration and filling voids in manholes and similar locations. Grout mix shall provide a quick-setting, volume-stable, cementitious product suitable for patching the interior of manholes when mixed and applied according to the manufacturer's recommendations. Grout mix shall be Strong Seal QSR.

2.04 CAST-IN-PLACE MANHOLES

A. Construct with Class 1 concrete only as outlined in Section 3600 - Cast-In-Place Concrete.

B. Reinforcement shall be as outlined in Section 3600 - Cast-In-Place Concrete.

C. The frame for the cover shall be installed when the manhole is constructed.

2.05 PRECAST CONCRETE MANHOLES

A. Conform to the latest requirements of ASTM C478.

B. Never transport sections to the site until they have achieved a minimum strength of 3,200 psi (80% of 4,000 psi design) as determined by a concrete cylinder test for the concrete batch.

C. Mark each piece plainly with manhole numbers and date of manufacture so it can be installed in the proper location, as shown on the plans.

D. Make sure factory-installed cutouts in the bottom section are appropriate for the pipe being laid.

E. Pipe connections at manhole - Cutouts should be equipped with rubber boots to ensure a watertight connection. Material shall be A-Lok compression connector or A-Lok G3 Boot System, as manufactured by A-Lok Products, Inc.

F. Joint Sealant - Flexible rubber sealant for joints in pre-cast manhole sections shall provide permanently flexible watertight joints, shall remain workable over a wide temperature range and shall not shrink, harden or oxidize upon aging. Material shall be RFS Prelubricated Gaskets by Press-Seal Gasket Corporation and shall meet ASTM C 443 and ASTM C 1619 (Classes C and E) requirements.

G. No supplemental joint sealant material is permitted.

H. All manhole joints shall be sealed with a 9-inch wide butyl external joint wrap material. Material shall be Infi-Shield® Gator Wrap by Sealing Systems, Inc.

I. The frame for the cover shall be installed after the cone section is installed in the field.

1. Joint surfaces between the frame, adjustments, and cone section shall be free of dirt, stones, debris, and voids to ensure a watertight seal. Place a flexible butyl gasket joint material, E-Z STIK as manufactured by Press-Seal Gasket Corporation, minimum 1/2 inch thick, in two concentric rings along the inside and outside edge of each joint. Position the butt joint for each length of joint material on opposite sides of the manhole. No steel shims, wood, stones, or any material not specifically accepted by the Engineer may be used to obtain final surface elevation of the manhole frame.

2. All grade adjustments, the exterior surfaces of the frame base, and four inches below the top of the manhole cone shall be cleaned with a wire brush and then waterproofed with trowelable bitumastic gasket material, Trowelable EZ-STIK #3 as manufactured by Press-Seal Gasket Corporation, or equal, in accordance with the manufacturer's specifications. A protective polyethylene cover shall be placed over the waterproofing material when backfilling, following sealing of the frame to the manhole. Trowelable bitumastic gasket material is not required if no grade adjustment rings are used.

3. When grade adjustment rings are placed on the manhole structure to obtain proper grade, no more than 18 vertical inches from the top of the frame to the top of the manhole cone may be used.

J. <u>REJECTION OF PRECAST MANHOLE SECTIONS</u>

Precast reinforced concrete manholes, risers and tops shall be subject to rejection for failure to conform to any of the following specification requirements:

1. Fractures or cracks passing through the shell, except for a single end crack that does not exceed the depth of the joint;
2. Defects that indicate imperfect proportioning, mixing and molding;
3. Surface defects indicating honeycombed or open texture;
4. Damaged ends, where such damage would prevent making a satisfactory joint;
5. Infiltration into manhole exceeding allowed limits;
6. The internal diameter of the manhole section shall not vary more than one (1) percent from the nominal diameter;
7. Not clearly marked date of manufacturer, trade name, size designation part number, and ASTM number;
8. Having a deviation more than 1/4" from the straight edge at any point across the top of manhole cone section or riser ring; and/or
9. Having any visible steel bars along inside or outside surface of the manhole except for reinforcement stirrups or spacers used to position the cage during manufacture.

2.06 CORROSION PROTECTION

A. Manholes located on 15-inch and larger sewer lines shall be epoxy coated on the interior.

B. Manholes on sewer lines within 100 feet of a 15-inch and larger sewer line shall be epoxy coated on the interior.

C. The products shall only be applied by personnel thoroughly familiar with handling of the coating material, and in accordance with the manufacturer's specifications, recommendations and requirements.

1. Raven Ultra High-Build Epoxy Coating, designated as Raven 405, with an average thickness of 100 mils and a minimum thickness of 80 mils.

2. Warren Environmental Systems, designated as S-301, with an average thickness of 100 mils and a minimum thickness of 80 mils.

3. Tnemec Permasheild series systems may be submitted by the Engineer of Record for City review and approval.

3. All epoxies shall meet the following minimum requirements:

Flexural Strength	ASTM D790	6,000 psi
Compressive Strength	ASTM D695	8,000 psi
Tensile Strength	ASTM D638	4,000 psi
Tensile Elongation	ASTM D638	4%
Adhesion	ASTM D4541	Concrete Substrate Failure

D. Any damage to an epoxy system on existing manholes shall be repaired by the City at the expense of the contractor.

E. The installation of the interior manhole corrosion epoxy for Capital Improvement Projects shall be a separate pay item further defined in the subsequent measurement and payment specifications prepared by the Engineer of Record.

2.07 MANHOLE DROP

A. Drop on the outside of the manhole: Concrete encased PVC pipe and fittings as specified in Section 3000 – Sewer Pipe, Fittings, and Materials.

2.08 STANDARD MANHOLE FRAME AND COVER

A. Covers located on manholes owned by the City of Fayetteville, generally within the Fayetteville City Limits, shall have the words FAYETTEVILLE ARKANSAS SANITARY

SEWER and PERMIT REQUIRED CONFINED SPACE cast in the top. Also, include two closed pick holes in top side of cover.

B. Covers located on manholes operated and maintained by the City of Fayetteville, generally outside the Fayetteville City Limits, shall have the words SANITARY SEWER and PERMIT REQUIRED CONFINED SPACE cast in the top. Also, include two closed pick holes in top side of cover.

C. Minimum combined weights of the manhole frame and cover is 210 pounds. Minimum cover weight is 110 pounds. Minimum frame weight is 100 pounds.

D. All casting shall be Traffic- rated meeting the requirements of AASHTO M306 latest edition proof load representing a 2.5 safety factor over H-20 and HS-20 loading.

E. All castings shall be cast with the approved foundry's name, manufacturing foundry mark, part number, and production date in mm/dd/yy format. All castings shall be manufactured in the USA and shall be clearly marked "Made in USA."

F. All castings: Free from porosity, blowholes, hard spots, shrinkage, distortion and other defects; smooth and well cleaned by sandblasting; manufactured true to pattern.

G. Frame and cover dimensions: Refer also to the City Engineering Standard Detail Drawings. Final casting dimensions may vary one-half the maximum shrinkage possessed by the metal or no more than +/- 1/16 inch per foot.

H. Cover and frame bearing surface: smooth finish, non-rocking design or machined bearing surfaces to prevent rocking and rattling under traffic.

I. Cast Iron: ASTM A 48, Class 35B.

J. Ductile Iron: ASTM A 536, Grade 80-55-06.

K. Approved manufacturers East Jordan Iron Works and Neenah/Deeter Foundry.

K. If requested by the City, manholes shall be provided with composite (non-metallic) ring and lid to avoid corrosion. Exact product must be reviewed and approved prior to installation, on a case-by-case basis. Lid must be capable of locking shut and have metal tracing element.

2.09 HINGED AND GASKETED MANHOLE FRAME AND COVER

A. Manhole frame shall be cast or ductile iron. Manhole cover shall be ductile iron. Seal shall be by replaceable t-gasket. T-gaskets are required.

B. Covers located on manholes owned by the City of Fayetteville, generally within the Fayetteville City Limits, shall have the words FAYETTEVILLE ARKANSAS SANITARY

SEWER and PERMIT REQUIRED CONFINED SPACE, or CONFINED SPACE ENTRY PERMIT REQUIRED cast in the top.

C. Covers located on manholes operated and maintained by the City of Fayetteville, generally outside the Fayetteville City Limits, shall have the words SANITARY SEWER and PERMIT REQUIRED CONFINED SPACE or CONFINED SPACE ENTRY PERMIT REQUIRED cast in the top.

D. Hinged and gasketed manhole frame and cover shall open to, or past, 90° and have a safety stop at 90°.

E. All casting shall be Traffic- rated meeting the requirements of AASHTO M306 latest edition proof load representing a 2.5 safety factor over H-20 and HS-20 loading.

F. All castings shall be cast with the approved foundry's name, manufacturing foundry mark, part number, and production date in mm/dd/yy format. All castings shall be manufactured in the USA and shall be clearly marked "Made in USA."

G. All castings: Free from porosity, blowholes, hard spots, shrinkage, distortion and other defects; smooth and well cleaned by sandblasting; manufactured true to pattern.

H. Frame and cover dimensions: Refer to the City Engineering Standard Detail Drawings for EJIW, Neenah similar. Final casting dimensions may vary one-half the maximum shrinkage possessed by the metal or no more than +/- 1/16 inch per foot.

I. Cover and frame bearing surface: smooth finish, non-rocking design or machined bearing surfaces to prevent rocking and rattling under traffic.

J. Cast Iron: ASTM A 48, Class 35B.

K. Ductile Iron: ASTM A 536, Grade 80-55-06.

L. Frame shall be anchored to the manhole cone per the City Engineering Standard Detail.

M. Approved products are East Jordan Iron Works Ergo and Neenah Liftmate.

2.10 MANHOLE STEPS

A. Manhole steps shall NOT be installed in any manholes.

2.11 RUBBER WATERSTOP GASKETS

A. Waterstop gaskets shall be required at **ALL** manhole connections. Manhole seals shall be concrete manhole adapter by Fernco, A-Lok, or approved equal.

2.12 MANHOLE RISER RING

A. Manhole riser rings shall be compatible with the size and type of manhole cover with which it will be used.

B. A maximum of 6 inches of riser rings shall be permitted. Adjustments greater than 6 inches will require grade adjustment rings.

2.13 MANHOLE GRADE ADJUSTMENT RINGS

A. Grade adjustment rings shall be required to adjust the frame and cover to grade as required.

B. Sloped grade adjustment rings may be required to match the slope of paved areas.

C. Grade adjustment rings shall be concrete or injection molded, recycled HDPE as manufactured by Ladtech, Inc.

2.14 RAIN STOPPERS (MANHOLE INSERT)

Rain stoppers shall be installed in all manholes that are located on 15-inch and larger sewer mains when such manholes do not utilize hinged covers complete with gaskets.

Rain stoppers shall be installed in other manholes in locations subject to inflow and infiltration as directed by the City's Utilities Director.

A. Polyethylene Insert

1. The manhole insert shall be of corrosion-proof high density polyethylene that meets or exceeds the requirements of ASTM D1248, Category 5, Type III with a minimum impact brittleness temperature of -180°F.
2. The minimum thickness of the manhole insert shall be 3/16".
3. The manhole insert shall have a strap for removing the insert. The strap shall be made of minimum 1" wide woven polypropylene or nylon webbing, with the ends treated to prevent unraveling, Stainless steel hardware shall be used to securely attach strap to the insert.
4. The manhole insert shall have one or more vent holes or valves to release gases and allow water inflow at a rate no greater than 5 gallons per 24 hours. The valve shall be installed by the manufacturer at the factory.
5. There shall be a minimum 10-year warranty on the body of the dish and a 5-year warranty on all other parts of the insert.
6. The insert shall have proof of durability in traffic impact loads and shall have an Engineer certified proof test passing H-20 loading.

B. Stainless Steel

1. Stainless steel inserts shall be installed at locations with pipe size diameters of outfalls 15 inches or greater where a hinged/gasketed lid is not present.

2. Insert shall be 304 stainless steel.
3. The manhole insert shall be as manufactured by “No Flow In FLOW” located in San Antonio, Texas.

PART 3 - EXECUTION

3.01 MANHOLES – GENERAL

A. Perform excavation and prepare base area in accordance with Section 2300 - Excavation, Backfilling, and Compacting.

B. Never install base in a water filled excavation.

C. Place base per the City Engineering Standard Detail Drawings and Section 3600 - Cast-In-Place Concrete. Extend base a minimum of six inches beyond finished sides of manhole.

D. Extend all pipes entirely through the manhole wall so that a joint occurs no closer than 24 inches outside the manhole wall.

E. Pipe installed for future extensions shall have one full joint of pipe installed.

F. After manhole is constructed, wait no less than 48 hours, then backfill per Section 2300 - Excavation, Backfilling, and Compacting.

3.02 CAST-IN-PLACE MANHOLES

A. Dimension and layout: Per City of Fayetteville Engineering Detail Drawings and Tables. The top section or cone must be concentric with the barrel unless otherwise noted.

B. The frame shall be set in accordance with City of Fayetteville Engineering Details. The frame shall be installed to match the slope of paved areas.

C. Install rubber waterstop gaskets in the walls around all pipes.

D. Interior finish: Smooth, free of fins or sharp edges.

E. Flow channels shall be shaped and formed in each manhole to provide a smooth transition of flow from all inlets to the outlet. The bench wall shall be formed from the center of the manhole to the outlet pipe in the shape of a "U" as shown in the City Engineering Standard Details.

F. Care should be taken to prevent the end of the pipe from deflecting, due to loads imposed by the weight of the concrete.

G. Construction joints on manholes of excessive depth shall be connected with reinforcement approved by the Engineer.

3.03 PRECAST MANHOLES

A. Dimension and layout: Per City Engineering Detail Drawings. The top section or cone must be concentric with the barrel unless otherwise noted.

B. The bottom section for pre-cast manholes shall be manufactured as an integral part of the manhole base slab.

C. Install remaining sections in a truly vertical plane.

D. The frame shall be set in accordance with City Engineering Details. The frame shall be installed to match the slope of paved areas. In greenspaces, grout around the outside of frame per standard details.

E. Fill space between pipe and periphery of cutout on the interior of the manhole with non-shrink grout from the bottom of the invert to the spring line of the sewer pipe (1/2 pipe depth).

F. Grout joints between sections, interior only.

G. Interior finish: smooth, free of fins or sharp edges.

H. Flow channels shall be shaped and formed in each manhole to provide a smooth transition of flow from all inlets to the outlet. The bench wall shall be formed from the center of the manhole to the outlet pipe in the shape of a "U" as shown in the City Engineering Standard Details.

I. Grout and/or plug lifting holes for manholes.

J. All manhole joints shall be sealed with an external joint wrap material.

3.04 DROP MANHOLES

A. Install a drop manhole when the vertical difference between the pipe entering and leaving the manhole exceeds two (2) feet.

B. Construct manhole base, barrel, and top per the requirements for cast-in-place or pre-cast manholes.

C. Construct drop of PVC pipe and fittings per City Engineering Standard Details.

D. Encase the pipe and fittings in Class 1 concrete as per City Engineering Standard Details.

3.05 MANHOLE FRAME AND COVER

A. Set the manhole frame for Cast-In-Place manholes in Class 1 concrete as shown on the Standard Details as an integral part of the manhole construction.

B. Set manhole frame and cover top level and to the elevation shown on the Drawings. In public rights-of-way, set the ring and cover flush with pavements, sidewalks, or other paved surfaced areas.

3.06 MANHOLE INVERT

A. Invert depth at the flow line: the same as the pipe diameter.

B. In curved inverts, make curves with the longest possible radius to facilitate smooth flow and the insertion of cleaning and televising equipment.

C. Flow channels shall be shaped and formed in each manhole to provide a smooth transition of flow from all inlets to the outlet. The bench wall shall be formed from the center of the manhole to the outlet pipe in the shape of a "U" as shown in the City Engineering Standard Details.

D. Invert materials and finish: Class 1 Concrete, smooth finish.

E. Invert grade: Constant, smooth grade; no offsets.

F. Bench: Slope grout upward from the edge of the invert to the manhole wall.

G. Form a flow channel in the bench for any services stubbed into manhole. Form invert and finish per above.

H. Cut the upper half of any pipe extending inside the manhole wall flush with the wall. Smooth rough edges with grout.

3.07 MANHOLE REPAIRS

A. Make all repairs in accordance with these specifications.

B. Use manhole grout in patching around new taps.

C. Plaster all brickwork with mortar.

3.08 MANHOLE ADJUSTMENTS

A. Manhole riser rings may be used to raise manhole covers to grade.

B. Manhole riser rings shall be sealed with Adeka P-201 or Manus-Bond 75AM to create a water tight seal.

C. Adjustments greater than 6 inches will require grade adjustment rings in accordance with project specific approved details.

D. The exterior surfaces of the frame base, and four inches below the top of the manhole cone shall be cleaned with a wire brush and then waterproofed with trowelable bitumastic gasket material, Trowelable EZ-STIK #3 as manufactured by Press-Seal Gasket Corporation, 9-inch wide butyl external joint wrap material in accordance with the manufacturer's specifications. A protective polyethylene cover shall be placed over the trowelable waterproofing material when backfilling, following sealing of the frame to the manhole.

E. The throat section height shall not exceed 18 inches. The throat section shall be defined as the distance from the bottom of the integral cast manhole ring to the top of the manhole cover.

F. If a manhole cannot be raised to grade using riser rings or grade adjustment rings then the manhole must be cut-off below the existing cone section and raised to grade using cast-in-place methods. A 1-inch square keyway shall be cut into the cold joint surface, and #4 rebar placed every 12-inches around circumference of cold joint. The rebar shall be doweled and epoxied 6-inch depth in to existing manhole and 6-inches into new poured section. See standard details.

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END OF SECTION 3300

SECTION 3400 BORES AND STEEL ENCASEMENT PIPE

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Provide encasement pipe jacked through bored tunnel for crossing of utility pipe lines under roadways, railroads and at other locations as indicated on the approved drawings.

B. Provide encasement pipe by open cut construction where shown on the Drawings.

C. Pulling or jacking carrier pipe through encasement pipe.

D. Providing end seals at ends of encasement pipe.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A139 Specification for Electric-Fusion (Arc) - Welded Steel Pipe (sizes 4" and over).

2. ASTM A211 Specifications for Spiral-welded Steel or Iron Pipe.

B. American Welding Society (AWS):

1. AWS D1.1 Structural Welding Code.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Encasement pipe: Smooth wall steel pipe conforming to ASTM A-53 / ASTM A283 / ASTM A-135, Grade B, CW, physical tests only (no hydrostatic test required). The pipe shall have beveled ends prepared for welded joints. The pipe steel shall have a minimum yield strength of 35,000 psi.

B. Welding materials: Type required for materials being welded and conforming to applicable AWS Specifications.

C. Grout: Cementitious grout shall consist of a preblend of lightweight aggregate, cement, fly ash and admix to prevent segregation and promote expansion upon setting. Loose bulk density for the dry mix materials shall be 30 to 35 pounds per cubic foot. Grout shall equal or exceed Strong-Seal Grout 250 - Product Code 2133 and shall be packaged in 2 cubic foot bags.

D. Flowable Fill: Flowable fill shall conform to Section 206 – Flowable Select Material of the Arkansas State Highway and Transportation Department's Standard Specifications for Highway Construction, latest edition.

E. Casing Spacers: Shall be stainless steel, Cascade Model CCS as manufactured by Cascade Waterworks Mfg. Co., BWM Company.

F. Casing End Seals: Casing end seals shall be watertight, interconnected mechanical-type, interior to the encasement between the encasement and carrier pipe. Casing End Seals shall be Link-Seal by GPT Industries, or Wrap-It Link by CCI Piping Systems..

G. Polyethylene Encasement: Polyethylene encasement shall be in conformance to ANSI/AWWA C105/A21.5, latest revision.

2.02 MINIMUM THICKNESS

A. The encasement pipe shall be capable of supporting all traffic and earth loads. The Contractor shall submit design calculations supporting the selection of the encasement pipe thickness used.

B. Minimum thickness for encasement shall be as follows:

Diameter of Casing Pipe	Minimum Thickness
20" OR LESS	.250"
24" – 30"	.375"
36"	.500"
48" – 60"	.625"
72"	.750"

Sizes not listed above shall be determined on an as-needed basis by the City.

C. When boring under railroad right-of-way, minimum thickness shall be determined by railroad standards.

2.03 MINIMUM DIAMETER

A. The minimum diameter for encasement pipe shall be such that the carrier pipe, along with casing spacers and joint restraints, will not bind against the inside of the encasement pipe during installation. The minimum diameter of encasement pipe shall be as follows:

Diameter of Carrier Pipe	Diameter of Encasement
2"	5"

3”	6”
4”	8”
6”	12”
8”	16”
10”	20”
12”	24”
14” – 16”	30”
18” – 20”	36”
24”	42”
30”	48”
36”	54”
42”	60”
48”	72”

3.01 EXCAVATION

A. The contractor shall inspect the location where encasement structures are to be installed and become familiar with the conditions under which the work will be performed and with all necessary details as to the orderly prosecution of the work.

B. The contractor shall satisfy themselves of soil conditions by means they deem necessary including but not limited to exploratory boring or exploratory pit excavations at tunnel/bore ends. All such exploratory work will be coordinated with City and the engineer of Record. All such exploratory work shall be performed in a manner not to endanger highway, railroad or street fill and embankments and shall be satisfactorily backfilled and restored.

C. Highway Bore: Do not set up equipment or begin excavating pit on state highway without written permission/permit received from the Arkansas Highway and Transportation Department District Engineer or his authorized representative.

D. Railroad Bore: Do not set up equipment or begin excavating pit on or near railroad property without written permission/permit of the respective railroad company.

E. Highway and railroad permits for Capital Improvement Projects will be obtained by the City or the City’s designated representative.

3.02 INSTALLATION, ENCASEMENT PIPE

A. General.

1. Install encasement pipe at grade and alignment shown on Drawing. Allow for height of casement spacers when establishing grade for gravity line encasement pipe. Refer to City Engineering Standard Details.

2. When indicated on the approved plans or project specifications all street, roadway and highway crossings for water or sewer pipelines installed by jacking and bore methods shall be accordance with AHTD standards.

3. Excavation of bore pits and trenches within street right-of-way, roadways or highways shall be of sufficient distance from paving to permit traffic to safely pass without interference. The Engineer of Record shall be responsible to design the location of bore pits to permit traffic to safely pass without interference.

B. Bores:

1. Excavate pits and trenches required at each side of crossing to minimum width and length indicated or necessary for boring and jacking operation and carrier pipe installation.
2. Carefully set steel guide rails in pit to attain specified grade and alignment.
3. Keep pit pumped free of standing water. Maintain pit bottom to provide stable base for rails and equipment and firm footing for workmen.
4. Provide Trench Safety/Protective Systems meeting Federal requirements and these Specifications.
5. Bore tunnel and simultaneously jack encasement pipe forward one section at a time. Connect sections by full penetration butt welding performed in accordance with AWS D1.1.
6. Remove excavated soil from boring operation as it enters pit and dispose of it offsite.
7. Voids between the encasement pipe and the surrounding soil shall be pressure filled with grout.
8. Cathodic protection shall be installed on the steel encasement pipe. Use 17# HP magnesium anodes bonded to the steel encasement pipe.
9. End seal shall be installed after the carrier pipe has been installed.

C. Open Cut:

1. Excavate trench as required.
2. Steel encasement pipe shall be installed, bedded, and backfilled the same as ductile iron pipe.
3. Steel encasement pipe shall be double poly wrapped.
4. Cathodic protection shall be installed on the steel encasement pipe. Use 17# HP magnesium anodes bonded to the steel encasement pipe.
5. End seal shall be installed after the carrier pipe has been installed.

3.03 INSTALLATION, CARRIER PIPE

A. Joint pipe as specified in Section 3100 or 4100. Pull or jack carrier pipe through encasement pipe. Do not allow cables or jacks to be in direct contact with carrier pipe while pulling or jacking pipe. Use timber or padded steel member.

B. A minimum of three casing spacers shall be installed on pipe up to 20-foot pipe joints.

C. All carrier pipe installed through the encasement shall be fully restrained. Over-belling of the carrier pipe shall be prevented.

3.04 BACKFILL

A. Prior to backfill, seal ends of encasement pipe with end seal as shown in the City Engineering Standard Details.

B. Use material excavated from pit.

C. Backfill against ends of encasement pipe.

D. Backfill pit and carrier pipe in same manner as specified in Section 2300 – Excavation, Backfilling, and Compacting.

3.05 CLEANUP

A. Backfill in same manner as specified for line work in Section 2300 - Excavation, Backfilling and Compacting.

B. Cleanup and restoration as specified in Sections 6000 PAVEMENT REPAIR and 6100 LAWN AND GRASS RESTORATION.

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END OF SECTION 3400

SECTION 3500 SEWER PUMP (aka LIFT) STATIONS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. This Section pertains to the minimum requirements for the design and construction of submersible type pump (aka lift) stations, which are the primary type constructed as part of private development. Sewer pump stations installed by private development will meet or exceed the minimum standards within this section and as otherwise specified within these Standards.

Comply with the "Ten States Standards" and modifications and/or additional requirements as specified herein.

Sewer pump stations, for City Capital Projects will comply with this section and any other requirements determined necessary by the Engineer of record, or Utilities Director, or the City's designated engineer. Sewer pump stations for City Capital Projects will further be considered on specific case by case basis in accordance with Section 1000 General Requirements. Approval will be project specific and requires approval from both the Utilities Director and the designated City engineer.

B. A registered Civil Engineer shall seal the civil portion of the drawings. A registered Electrical Engineer shall seal the electrical portion of the drawings. All engineers shall be registered in the State of Arkansas.

C. These Standard Specifications provide the minimum requirements for sewer pump stations. The pump station dimensions, equipment, controls, etc. will be approved only upon the submittal of plans and specifications to the City, and upon the City's written approval.

D. Pump Stations, in general, shall be submersible type pump capable of passing a 3 inch (minimum) sphere. Multiple pumps shall be provided. Where only two pumps are provided, the pumps shall be of the same size with one (pump and motor) designated as duty and one (pump and motor) designated as stand-by with each pump capable of pumping the design flow for the proposed development (including provisions for future phases of the initial proposed development) with a minimum pumping capacity of 100 gpm each under site operating conditions. Firm capacity and one minimum standby pump shall be provided, pumps shall have the capacity such that with any one pump out of service the remaining pump(s) will have the capacity to pump the design hourly flow. Further the pump station will include: wet basin, separate valve pit, valves, piping, hatches, guide rails, pump removal components, control center, level controls, remote monitor package, interconnecting electrical wiring, incoming power and communications supply, and all other features regularly and normally required as a part of a complete and functional facility. All work shall be in accordance with site requirements, details in the Drawings, the Engineer of Record's design, these Standards and the manufacturer's recommendations.

E. All Pump Stations shall be designed for and operate on 480 V, three (3) phase power. No deviation from this requirement shall be permitted without the express prior written approval of the City.

F. The station shall be equipped with a remote monitor capable of monitoring the status of the lift station and communicating with the City's existing SCADA system housed at the Noland and West Side WWTP. This system shall be purchased and installed by the City at the developer's or contractor's expense.

G. All of the mechanical and electrical equipment shall be an integral package supplied by the pump manufacturer with local representation so as to provide undivided responsibility. Pumps, motors and appurtenance mechanical and electrical equipment shall be Fairbanks Morse Pump equipment or Flygt Pump equipment and further comply with other specific requirements set forth herein and in the approved plans.

H. The Contractor shall submit to the City for review and approval three (3) sets of shop drawings, detailed specifications, pump warranty, and performance characteristics for all of the equipment and fixtures to be furnished and installed. The Shop Drawings and equipment data shall be submitted with a cover letter, Contractor’s stamp of approval, and Engineer’s stamp of approval indicating that he has reviewed, checked, and approved the data submitted. The City will review the submittal and render a decision in writing as to the acceptability of the equipment. Without prior written City approval, the item of work may not be accepted.

I. Any exceptions to this Standard or associated approved Plans shall be submitted in writing and clearly stated. The exceptions must be approved by the City prior to proceeding with the work.

J. All mounting and fastening hardware shall be stainless steel.

K. All components of the pump station that are exposed to weather shall be constructed of material that is resistant to corrosion and will not require surface protection throughout the expected life of the lift station. In general, these materials are stainless steel, aluminum, fiberglass reinforced polyester (FRP), and ultraviolet stabilized PVC.

L. All valves and ductile iron fittings shall be ceramic epoxy coated inside and out. All ductile iron piping coming in contact with wastewater or installed in the wet well, dry well or valve pit shall be coated with epoxy inside and out. Acceptable interior epoxy for ductile iron pipe shall be specifically designed for wastewater environments and shall be Tnemec Series 431 Perma-Shield, or Protecto 401 as determined by the Engineer of Record and approved by the City for the specific project.

M. All stainless steel hardware and accessories shall be protected from field applied coating of the epoxy.

N. Wet well access/hatches shall include an integral safety grate and integral safety chain/rail

system or a separate safety rail system designed by, or selected by, the engineer of Record and approved by the City.

O. Mixers. If the City determines the need for wet well mixing, then the developer's engineer shall accommodate the City's purchase and installation of the mixer and controls, wiring, hoses, and mixer appurtenances (only) within, and connected to, the developer's installed pump station.

1.02 PUMP STATION SITE

A. The pump station site shall have minimum dimensions of 50' x 50' with a maximum cross slope of 5%. The site shall be an all-weather surface consisting of asphalt or concrete. Additional site area may be required depending on the diameter and depth of the wet well and other accessories. Final dimensions of the site shall be determined by the City Engineer.

B. The City of Fayetteville must own the land, by deed and not by plat, on which sewer pump stations are located or anticipated to be constructed.

C. The pump station shall be provided with an access drive to the nearest public road. The access drive shall be an all-weather surface with a stabilized gravel base and asphalt or concrete surface. If the slope is greater than 10%, the surface shall be constructed in such a way that the surface material cannot creep down slope. The drive shall enter the public road at a curb cut.

D. The pump station site shall be secured by a minimum 6' high wooden fence. Posts shall be a minimum of 3" SCH 40 galvanized steel. Gate posts shall be a minimum of 4" SCH 40 galvanized steel. Rails shall be 16-gauge aluminum or galvanized steel, 2" x 4" nominal dimensions. Pressure treated wood shall be installed in the rails to anchor the pickets. All pickets shall be constructed of cedar, and shall be a minimum of 1"x6"x6'. All hardware used to anchor the cedar pickets to the steel rails shall be designated for use with cedar. A 12' wide double gate with lockable hasp shall be provided.

1.03 OPERATING CONDITIONS

A. The characteristics and operating conditions of the lift station and pumps shall be provided in detail as part of the ENGINEER'S design and submitted for approval to the City.

B. Prior to installation the Contractor shall submit the following information for each pump to the City for review and approval:

1. Pump capacity in gallons per minute;
2. Total dynamic head (TDH) and operating RPM; Use C=120 and C=140
3. Motor horsepower;
4. Motor rpm;
5. Motor voltage, phase and cycle;
6. Make and model number; and

7. Pump curves for the pumps to be provided.

C. Pump station acceptance will be based upon pump drawdown tests. The acceptable range is +10% and -5% of the reported pump capacity in GPM. Pump flows outside of this range will result in non-compliance of the standard and the pump station will not be accepted.

1.04 NOTES TO DESIGN ENGINEER

A. SIZING OF WET BASIN

1. The wetwell storage depth below the lowest inlet shall be a minimum of 5'-0" and shall also meet the following criteria:

   a. All pumps OFF shall be set at the pump manufacturer's recommended level but no less than 1'-6" from the bottom of the wet well.

   b. The distance between all pumps OFF and the lead pump ON shall be set to provide storage capacity equal to:

$$\frac{15 \times \text{RATED PUMP GPM}}{4}$$

   (i.e. 15 minute cycle minimum)

   c. Designs utilizing multiple pumps will include the lag pump ON set a minimum of 6" above the lead pump ON and a minimum of 12" below the lowest inlet invert.

   d. The high water alarm float shall be set a minimum of 6" above the lag pump ON and minimum of 6" below the lowest inlet invert.

   e. All level control elevations shall be set below the lowest inlet invert.

1.05 SMALL DIAMETER PRESSURE SEWERS

A. Small diameter pressure sewer systems are not permitted as a Standard Specification.

B. Small diameter pressure sewer systems will be considered on specific case by case basis in accordance with Sections 1000 1.01 B and 1000 1.07 A. Approval will be project specific and requires approval from the Utilities Director.

1.06 PUMP STATION WARRANTY

A. Pump station warranty shall be two (2) years from the date of acceptance per City maintenance bond requirements.

PART 2 – PRODUCTS

2.01 PUMPING EQUIPMENT

A. Pumps shall be of the submersible type for handling raw unscreened sewage. Pump volute, motor and seal housing are to be high quality gray cast iron. Impeller shall be either cast iron or cast bronze of a non-clog design capable of handling minimum three (3) inch sphere solids, fibrous material, heavy sludge, and other matter found in normal sewage applications. Impeller shall have pump-out vanes on the back shroud of the impeller to keep pumped material away from the seal area and increase operating life. Impeller shall be either slip fit or taper fit with key to securely lock the impeller to the driving shaft. The pump volute shall be fit with a replaceable bronze wear ring to minimize wear on the impeller and help achieve longer balanced operating life. All fasteners shall be of stainless steel.

B. All mating surfaces where watertight sealing is required shall be machined and fitted with nitrile rubber O-rings. Sealing shall be accomplished when metal-to-metal contact is made, resulting in controlled compression of the rubber O-rings without requirement of a specific torque limit.

C. The pump shall be provided with a mechanical rotating shaft seal system running in an oil reservoir having separate, constantly lubricated lapped seal faces. The lower seal unit between the pump and oil chamber shall consist of one (1) stationary seat and one (1) rotating ring held in place by its own spring. The lower seal shall be removable without disassembling the seal chamber. The upper seal between the motor and the seal chamber shall be of the same design with its own separate spring system. The seals shall require neither maintenance nor adjustment, but shall be easily inspected and replaceable. The shaft sealing system shall be capable of operating submerged to pressures equivalent to two hundred (200) feet. No seal damage shall result from operating the pump unit out of its liquid environment. The seal system shall not rely upon the pumped media for lubrication.

D. The seal chamber shall also be equipped with a seal failure sensor probe which will sense water intrusion through the lower seal. This sensor is to be connected to an alarm in the control panel to indicate lower seal failure.

E. The stator winding, rotor and bearings are to be mounted in a sealed submersible type housing. Insulation utilized in the stator windings shall be Class H with maximum temperature capability of 155EC. Motor housing shall be filled with a high dielectric oil to give superior heat transfer and allow the bearing to run in a clean, well lubricated environment; or the housing shall be air filled with grease lubricated bearings. The pump and motor are to be specifically designed so that they may be operated partially or completely submerged in the liquid being pumped. The pump should not require cooling water jackets. Stator shall be securely held in place with a removable end ring and threaded fasteners so that it may be easily removed in the field without use of heat or press. Shaft shall be of stainless steel and supported by ball bearings. Motor shall be provided with

heat sensing units attached to the motor windings which shall be connected to the control panel to shut down pump if overheating occurs.

F. Pump motor cable and heat sensor/seal failure sensor cable shall be suitable for submersible pump applications and this shall be indicated by a code or legend permanently embossed on the cable. Cable sizing shall conform to NEC specifications for pump motors and shall be of adequate size to allow motor voltage conversion without replacing the cable. Cable of the proper length shall be provided to eliminate need for splices or junction boxes between pump and "control center". The cable shall enter the motor through a cord cap assembly which is double sealed allowing disassembly and disconnect of the wires and the motor and still not damage the sealed characteristics of the motor housing. Each individual conductor shall be color coded in accordance with generally accepted industry standards. The color coding shall designate the application of the conductor.

G. The pump mounting base shall include adjustable guide rail supports and a discharge connection with a one hundred twenty-five (125) pound standard flange. The base and the discharge piping shall be permanently mounted in place. The base plates shall be anchored in place utilizing epoxy type anchors with stainless steel studs and nuts as manufactured by HILTI Fasteners, Inc.

H. A rail system shall be provided for easy removal of the pump and motor assembly for inspection and service. The system shall not require a man to enter the wetwell to remove the pump and motor assembly. Two (2) rails of two (2) inch stainless steel pipe shall be provided for each pump. The guide rails shall be positioned and supported by the pump mounting base. The guide rails shall be aligned vertically and supported at the top by attachment to the access hatch frame. One (1) intermediate guide rail support is required for each fifteen (15) feet of guide rail length for stainless steel pipe.

I. The pumps shall be equipped with sliding brackets or rail guides. To insure easy removal of the pumps, the rail guides attached to each pump shall not encircle the rails. A stainless steel lifting chain or manufacturer's pump removal system (Flygt Lift) of adequate length for the basin depth shall be provided for each pump. Each pump shall be equipped with a permanent, stationary lifting handle with a minimum clearance of 12" between the top of pump and bottom of handle.

J. The rails and the rail guides shall function to allow the complete weight of the pumping unit to be lifted on dead center without binding and stressing the pump housing. The rail system shall function to automatically align the pumping unit to the discharge connection by a simple downward movement of the pump. No twisting or angle approach will be considered acceptable. The actual sealing of the discharge interface may be of the metal-to-metal contact. No sealing gaskets will be permitted.

K. Pump warranty shall be provided by the pump manufacturer and shall warrant the units being supplied to the Owner against defects in workmanship and materials for a period of five (5) years under normal use, operation and service. The warranty shall be in printed form and apply to all similar units. A copy of the warranty statement shall be submitted

with the approval drawings.

2.02 BASIN, VALVE PIT AND ACCESSORIES

A. The basin and valve pit are to be constructed of precast concrete meeting the requirements of ASTM C-478. Cast-in-place monolithic structures may be substituted with the prior written approval of the City. Minimum valve vault and wetwell diameter shall be 6'-0'. The actual arrangement of the structures are to be as shown in the approved Plans. The wetwell basin top shall be provided with a six (6) inch stainless steel vent having a downward pointing inlet and screen over the inlet opening.

B. The basin, valve pit, flat tops, and base slabs are to be constructed of precast or cast-in-place reinforced concrete manhole sections conforming to ASTM C-478. All joints between precast sections shall be made with an approved rubber O-Ring in accordance with ASTM C-443 and a 1/2 inch diameter non-asphaltic mastic conforming to AASHTO M-198 and Federal Specification SS-521-A. All manhole joints shall be sealed with an external joint wrap material. Material shall be 9-inch width Infi-Shield® Gator Wrap by Sealing Systems, Inc. In addition, the outside wall below grade is to be coated with bituminous waterproofing material. The top and bottom of the chambers shall be precast or may be poured in place concrete if approved by the City Engineer.

C. The wetwell pump basin and the valve pit chamber shall be enclosed at grade level with a reinforced concrete pad rectangular in shape and extending a minimum of 1'-0' from the chambers outside dimension.

D. All concrete surfaces within the wet well shall be coated with one of the products listed below. These products shall only be applied by personnel thoroughly familiar with handling of the coating material, and in accordance with the manufacturer's specifications, recommendations and requirements.

1. Raven Ultra High-Build Epoxy Coating, designated as Raven 405, with an average thickness of 100 mils and a minimum thickness of 80 mils.

2. Warren Environmental Systems, designated as S-301, with an average thickness of 100 mils and a minimum thickness of 80 mils.

3. The above epoxies shall meet the following minimum requirements:

Flexural Strength	ASTM D790	6,000 psi
Compressive Strength	ASTM D695	8,000 psi
Tensile Strength	ASTM D638	4,000 psi
Tensile Elongation	ASTM D638	4%
Adhesion	ASTM D4541	Concrete Substrate Failure

4. A Tnemec system to include Tnemec Series 434 Permashield with a topcoat of Tnemec Series 435 Perma Glaze will be reviewed on specific projects as an approved equal.

E. The pump supplier shall provide an aluminum two (2) door access hatch frame and door assembly to be installed in the concrete basin top. This door assembly shall provide access for removal of the pumps and shall support the guide rails. The doors shall be provided with lifting handle, safety latch to hold door in the open position and a hasp suitable for padlock. The doors shall have a nonskid finish and be designed for light, medium, or heavy duty, depending on the location of the pumping station.

F. An aluminum single door access hatch frame and door assembly similar to the one described above shall be provided for use as entry to the valve pit. Minimum opening for the valve box entry shall be thirty-six (36) inch by thirty-six (36) inch.

G. A swing check valve with external swing arm and a full port (100% area) eccentric plug valve shall be installed in the valve pit in each pump's discharge piping. A minimum clearance of twelve (12) inches shall be allowed from the bottom of the valves to invert of the pit. A drain pipe and p-trap shall be installed to drain the valve pit back to the wet basin but not allow the wet basin liquid to enter the valve pit. In addition, a 1/2" NPT tap and ball valve shall be provided on the discharge side of the pumps past the valves to facilitate pressure readings for the pump discharge.

H. All yard piping within the pump station site shall be centrifugally cast ductile iron and shall conform to ANSI Specifications A21.51 and AWWA C-151, latest revision and shall be Pressure Class 350, 300, 250, or 200 wall thickness dependent upon site conditions. All direct buried ductile iron pipe and fittings shall be double poly-wrapped.

I. Force main pipe downstream of the pig launch structure shall be DIP or PVC in accordance with these Standards. All force main pipe shall have tracer wire installed along its entire length. Gate valves (up to 10-inch) or full-port plug valves (12-inch) shall be installed along its length, not to exceed 1000' unless a variance is approved by the City for long force mains, and shall be marked sewer. An empty valve box shall be installed in the vicinity of the discharge manhole and at fittings that cause a change in direction where the tracer wire can be brought to grade for a point of connection to aid in tracing the force main. The valve box shall be marked sewer. A 2-inch SCH-40 PVC pipe shall be installed in the empty valve box. The pipe shall have a pipe marker label affixed and further labeled "No Valve, Tracer Wire Only." The force main shall have tape marked sewer wrapped around the pipe with complete revolutions not to exceed 6'. Tape marked sewer shall also be installed in the trench 18" above the top of the sewer force main.

J. Sewer line markers shall be TriView Marking System by Rhino Marking and Protection Systems, Carsonite International Dual-Sided Utility Marker (CIB-380). All markers shall be installed according to the manufacturer's recommendations. The uppermost portion of the Carsonite marker shall be made of Visibility Enhancer (CVE-360) and must be bolted to the utility marker. TriView markers do not require visibility enhancers. The utility marker shall read as follows: "CAUTION, SEWER PIPELINE", "City of Fayetteville", and "Before Digging Call 1-800-482-8998". The label shall also include the official City Logo and be white in color with green and black lettering. The label shall be affixed to two sides of the marker. An additional white 1" wide reflective tape (3M) shall be placed

around the full circumference of the top of the marker. Concrete shall be placed 6-inches around and 1-foot deep around the base of each marker.

K. All force mains shall be equipped with a pig launch within the pump station site. A fire hydrant is required to be located within 100' of the site to facilitate pigging of the force main.

2.03 GENERAL ELECTRICAL

A. A single main fusible or breaker disconnect switch of adequate size to provide power for the "control center" and its related components shall be provided by the Contractor.

B. The disconnect switch shall be housed in a NEMA 4X stainless steel enclosure with an external operation handle capable of being locked in the ON position.

C. The pump station site shall include a GFI convenience outlet with 20 amp breaker and suitable transformer or power supply to provide 110 volt single phase power to the convenience outlet.

D. A minimum four (4) inch and two (2) inch PVC schedule 40 wall conduits shall be provided from the wetwell basin to the control center which will allow the pump power cables, sensor cables and level controls to be pulled through without difficulty and allow the use of one (1) piece cables from the pumps and level controls to the control center. The conduit shall be sealed at the control center to avoid entrance of sewer gases into the control panel.

E. A minimum three-quarter (3/4) inch and two (2) inch PVC schedule 40 wall conduits shall be provided from the valve vault to the control center for future remote monitoring of the swing check valves.

F. All vertical conduit and transitions from horizontal to vertical runs shall be rigid metallic conduit. Horizontal, below grade, conduit runs may be either Schedule 40 PVC or rigid metallic conduit.

G. All electric components shall be properly labelled per NFPA 70E requirements.

2.04 CONTROL CENTER

A. The control center shall be built in a NEMA 4X stainless steel enclosure and shall be suitable for the specified horsepower and voltage for the pumping equipment. Enclosure size must be verified by City prior to ordering to ensure all components will fit properly. The outer door of the panel shall be hinged dead front with provisions for locking with a padlock. Inside shall be a separate hinged panel to protect all electrical components. H-O-A switches, run lights, circuit breakers, etc. shall be mounted such that only the faces protrude through the inside swing panel and no wiring is connected to the back side of the inside swing panel. The control center shall be located so as to provide safe access to the panel while wetwell hatch doors are opened, and shall be positioned so as not to be between the access drive and the wetwell.

B. A circuit breaker and magnetic starter with three (3) leg overload protection and manual reset shall be provided for each pump. Starters shall have auxiliary contacts to operate both pumps on override condition. A separate circuit breaker shall be supplied for power to the control circuit. The control center shall include an extra circuit breaker of adequate size to provide 115 volt, single phase power for the remote monitor panel (PLC cabinet). The control center shall include a control voltage transformer to reduce supply voltage 115 volt, the float circuit and associated relays which shall be provided with 24 volt control voltage. A green run light and H-O-A switch shall be provided for each pump. A terminal strip shall be provided to make field connections of pump power leads, level control, seal sensor leads, heat sensor leads, and remote monitor panel interconnections.

C. The control center shall incorporate connections for heat sensors which are installed in the pumps. The connection shall disconnect the starter upon high temperature signal and will automatically reconnect when condition has been corrected.

D. The control center shall incorporate connections for seal failure sensors which are installed in the pumps. The panel will have a seal failure alarm light for each pump. This alarm indicates failure of the lower mechanical seal in the pump. This will be an alarm light only and will not shut down the pump.

E. The control center shall include an hour meter for each pump to register the elapsed operating time of each pump.

F. The control center shall have a high water alarm built into the main enclosure. The high water alarm shall consist of a flashing alarm light with red Lexan plastic cover or red glass globe with metal guard mounted above the top of the enclosure such that it is visible from all directions. An alarm horn shall be mounted on the side of the enclosure. A push to test horn and light button as well as a push to silence horn button shall be provided and mounted on the side of the enclosure. Unistrut or other means shall be used to avoid a penetration in the building for these features.

G. The control center shall include a condensate heater to protect against condensation inside the enclosure. The heater shall be placed so as not to damage any other component or wiring in the control center.

H. The control center shall include lightning protection and a phase monitor relay to shut down the control circuit and protect the equipment due to loss of phase or phase reversal. The three (3) phase sequence voltage relay shall be of the 8-pin connector type.

I. The control center shall be suitable for connection to a remote monitor package as described in the section titled "Remote Monitor Package". The main control must include the following interconnection capability:

1. Circuit breaker to power remote monitor panel as described above.
2. Relay dry contact to signal power failure to panel
3. Relay dry contact to signal phase failure

4. Relay dry contact to signal generator fault alarm
5. Relay dry contact to signal generator run status, i.e. ON or OFF
6. Relay dry contact to signal transfer switch status on utility power
7. Relay dry contact to signal transfer switch status on generator power
8. Relay dry contact to signal drywell flood (if applicable)
9. Relay dry contact to signal site or vault intrusion alarm (if applicable)
10. Relay dry contacts to signal float status in wetwell (low, lead, lag, high floats)
11. Relay dry contact to signal pump(s) HOA switch in hand
12. Relay dry contact to signal pump(s) HOA switch in automatic
13. Relay dry contact to signal pump(s) running status, i.e. ON or OFF
14. Relay dry contact to signal pump(s) tripping of the overload
15. Relay dry contact to signal pump(s) seal failure (if applicable)
16. Relay dry contact to signal pump(s) over temperature failure
17. Analog input signaling the wetwell level
18. Relay dry contacts for the PLC to call for the pump(s) to be turned ON/OFF

J. All component of the control center shall be American made and available from local sources. In particular, items such as circuit breakers, overload protection, relays, etc. shall be available and in stock by local sources.

K. Pump control shall be achieved by the use of a pressure transducer. The Controller shall be an Automation Direct Productivity 2000 with the following components:
1. Seven slot base model P2-07B
2. Power supply 110VAC model P2-01AC
3. CPU model P2-550
4. Digital input card model P2-16ND3-1 (quantity 2 for two pumps, quantity 3 for 3-4 pumps)
5. Isolated Relay output card model P2-08TRS
6. Analog input card model P2-08AD-1
7. Model P2-FILL to cover remaining open I/O cards

The Contractor will provide all hardware and wiring, City will provide PLC Software and programming.

L. In addition to the pressure transducer, a backup float system shall be provided to monitor wet well level. System should consist of low/off, lead, lag, and high-level floats and should be installed such that the system can operate the pumps in the event the pressure transducer fails or the PLC fails.

2.05 SCADA REMOTE MONITOR PACKAGE

A. The station shall be equipped with a remote monitor capable of monitoring the status of the lift station and communicating with the City's existing SCADA system housed at the Noland WWTP. This system shall be purchased and installed by the City at the developer's or contractor's expense. The costs of the SCADA system

charged to the developer or contractor will be the actual costs based on site-specific design as approved by the City.

2.06 SPARE PARTS

A. The Contractor shall supply one set of spare parts for each pump for each station, including at a minimum the following:

1. Impeller;
2. Upper seal assembly;
3. Lower seal assembly;
4. Upper bearing assembly;
5. Lower bearing assembly;
6. Wear rings; and
7. O-Rings and gaskets (two (2) sets).

2.07 OPERATION AND MAINTENANCE MANUALS

A. Three (3) operation and maintenance manuals shall be submitted to the City

B. Manuals shall include, at a minimum:

1. Operation instructions;
2. Maintenance instructions;
3. Recommended spare parts list;
4. Lubrication schedules;
5. Structural diagrams;
6. As-built wiring diagrams; and
7. Bill of materials.
8. Copy of design engineer's pump operating point calculations, population assumptions, average daily flow, and peaking factor

2.08 GENERATOR SET

A. GENERAL

1. The pump station shall include an on-site backup power generator. The generator and lift station combination must include switching and control gear such that the backup power source is activated automatically without human action. The fuel source shall be natural gas. In the event that natural gas is unavailable, propane, or diesel shall be used with a minimum fuel tank/storage sized to run all pumps at full load for 48 hours. The generator must be capable of operating the lift station at full capacity, i.e., with the largest pumps, impellers, and motors, and the greatest number of pumps, that the lift station can physically contain, with all of the above operating at full speed simultaneously.

B. EQUIPMENT

1. The generator set shall be minimally rated at the kW rating as indicated on the drawings when operating at 277/480 volts, 0.8 lagging power factor. The generator set shall be capable of this rating while operating in an ambient temperature condition of 122°F (50°C).

2. The generator set shall be capable of starting motor loads as indicated on the drawings along with a minimum station load of 5 kW and a maximum voltage dip of 25%.

3. The engine shall deliver power at a governed speed of 1800 rpm.

4. Sound Attenuated Weather Protective Enclosure

   a. Manufacturer shall have a minimum five years experience in the design and construction of weather-protected generator-set enclosures.

   b. The enclosure panels shall be assembled with modular, bolt-together construction.

   c. Enclosure shall include the following features:

      1) Foam insulation on all interior surfaces
      2) Sound level not to exceed 68 dba within 7 meters of enclosure surface in any direction
      3) All exterior and interior surfaces finished with baked-on powder-coat
      4) Bottom flange with multiple mounting holes
      5) Stainless steel door hardware and lift-off hinges
      6) Lockable doors
      7) Gasketed access doors

5. Automatic Transfer Switch (ATS)

   a. It is the intent of this specification to secure automatic transfer switches that have been prototype tested, factory built, production tested, and site tested, together with all accessories necessary for a complete installation as shown on the plans and drawings and specified herein. Automatic transfer switches with number of poles, voltage and current ratings as shown on the plans shall be provided. Each ATS shall consist of an inherently double-throw power transfer switch unit and a control module interconnected to provide complete automatic operation. All equipment shall be new and of current production by an international firm which manufactures the generator, controls, and transfer switch. The company selected will assemble the standby generator set and system as a matched unit so that there is one-source responsibility for warranty, parts and service through a local representative with factory-trained personnel.

b. ATS shall be sized as indicated on the drawings, 480 volt, 3 phase, 4 wire, 3 pole with solid neutral.
c. ATS shall have dry contacts necessary to send status to SCADA (i.e., transfer switch on utility and transfer switch on generator).

6. Submit motor starting calculations and generator sizing calculations for approval.

7. The generator set shall provide the following status signals to the SCADA package:

a. Generator status
b. Generator general alarm

8. Generac.

PART 3 – EXECUTION

3.01 SYSTEM OPERATION

A. On wet well level rise, the lead pump shall start at the lead pump ON elevation. With the lead pump operating, the wet well level shall lower to all pumps OFF and turn off the pump.

B. If the wet well level continues to rise when lead pump is operating, the override switch shall energize and start the lag pump. Both lead and lag pumps shall operate together until low level switch turns off both pumps. If level continues to rise when both pumps are operating, alarm level switch shall energize and signal the alarm.

C. If one pump should fail for any reason, the second pump shall operate on the override switch.

D. If the pumps fail to turn off for any reason after receiving the signal for all pumps OFF, a low level alarm shall signal.

E. All level controls shall be adjustable for level setting from the surface.

3.02 SYSTEM TESTING AND ACCEPTANCE

A. The City will provide the contractor and owner with a Lift Station Startup Checklist, updated periodically, explaining expectations for lift station testing and demonstrations onsite prior to the system receiving live sewerage and transferring operational ownership to the City.

END OF SECTION 3500

SECTION 3600 CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section covers cast-in-place concrete materials, reinforcing steel, forms, and finishing in conjunction with water and sewer construction.

B. Use specification defined “Class 1” 4,000-psi concrete for miscellaneous non-structural bedding, thrust blocking, anchor collars, and cast-in-place manholes.

D. Structural concrete for building and environmental structures shall comply with the applicable requirements of ACI 318 and ACI 350 latest editions. Concrete for structures is not a Standard Specification and shall require submittal, review and approval for specific case by case basis and in accordance with Sections 1000 General Conditions.

1.02 QUALITY ASSURANCE

A. If requested by the City, or the Engineer of Record, the concrete shall be tested as required in Table 11-1 , City of Fayetteville Arkansas Minimum Street Standards, as follows.

1.03 SUBMITTALS

A. Submit mix design, equipment details, and vendor name for field batched concrete.

Table 11-1 Materials Testing

	AASHTO	ASTM	Frequency
Subgrade			
Sampling	R58	D420	Per soil type encountered
Soil Classification	M145	D3282/D2488/D2487	
Standard Proctor	T99/T310	D698	
Modified Proctor	T180/T310	D1557	
Density & Moisture Content	T191/T233/T310	D6938	1 per 300 LF lane (minimum 1 per lane)
Aggregate Base Course			
Gradation	T27	C136	1 per source
Standard Proctor	T99	D698	
Modified Proctor	T180	D1557	
Density & Moisture Content	T310	D6938	1 per 300 LF lane (minimum 1 per lane)
Asphalt Concrete Hot Mix			
Sampling	T168	D979	-
Density (Nuclear)	-	D2950	As directed by City
Density (Coring)	T166	D2726	1 per 500 LF paved (minimum 2 total)
Portland Cement Concrete			
Sampling	T141	C172	1 per 100 CY 1 per 1000 LF (curb) (minimum 1 per day)
Mold and Cure	T23	C31	
Cylinder Transport	T23	C31	
Slump	T119	C143	
Air Content	T152	C231	See **Table 11-2** for Mix Design
Compressive Strength	T22	C39	
Compressive Strength (Coring)	T24	C42	As directed by City

Table 11-2 Concrete Mix Design

Concrete Properties	Class 1
28-Day Compressive Strength (psi)	4000
Portland Cement (bags)	6.0
Max. Water/Cement Ratio	0.45
Slump Range (inches)	1-4
Air Entrainment (%)	4-7
Maximum Fly Ash Content (%)	20

PART 2 - PRODUCTS

2.01 CONCRETE

A. Concrete: composed of Portland cement; fine and coarse aggregate; water; and, an air entraining agent. Provide either Class 1 concrete as described below.

B. For Class 1 concrete use ready-mixed concrete; conform to ASTM C 94, latest edition; deliver and place within one hour after all materials have been placed in the mixing drum.

C. The concrete mix shall be designed so that the proportions will produce results that will meet the requirements of Class 1 concrete. Proportion components, except water, by weight. Water may be measured by volume. One sack of Portland Cement consists of one cubic foot or 94 pounds. Proportion components to meet these requirements:

1. Class 1 Concrete:

   a. Maximum net water/cement ratio = 0.45
   b. Portland cement (bags) 6.0 minimum
   c. Slump range: 1 - 4 inches
   d. Minimum 28 day compressive strength: 4,000 PSI
   e. Air Content: 4 - 7

D. Before beginning any concrete work, the Contractor shall have the concrete mix designed and the ingredients selected and proportioned by an approved independent testing laboratory meeting the requirements of ASTM E 329. Certified copies of all laboratory trial mix reports shall be sent to the Engineer from the testing laboratory for review. Do not place concrete prior to the Engineer's review and acceptance in writing of the concrete mix design.

E. Cement: Portland Cement conforming to AASHTO M 85, Type I. Use Type III cement (high early strength) only if approved by the Engineer.

F. Fly ash: Fly ash may be used as a partial cement replacement not exceeding 20% by weight of the cement when approved by the City. When fly ash is used, the total weight of both cement and fly ash will be used in design calculations.

G. Water: potable water free from injurious amounts of acids, alkalis, oils, sewage, vegetable matter and dirt.

H. Air entraining agent: use in all Class 1 concrete as required; conform to AASHTO M 154; add to the mixing water in solution; proportion to provide four (4) to seven (7) percent air in the concrete.

I. Fine aggregate: clean, hard, durable particles of natural sand free from injurious amounts of organic impurities; conform to the graduation requirements of AASHTO T 27.

J. Coarse aggregate: clean, hard and durable crushed stone or washed gravel; reasonably well graded from course to fine; per AASHTO T 27.

2.02 REINFORCING STEEL

A. Steel bars: deformed, conforming to ASTM A 615 or A 617.

B. Steel wire: conform to ASTM A 82, Cold-Drawn Steel Wire for Concrete Reinforcement.

C. Wire mesh: conform to ASTM A 185; gauge and mesh per plans.

D. Submit reinforcing steel bars shop drawings for approval.

E. All steel reinforcement: free from rust, scale, mortar, dirt, or other objectionable coatings.

PART 3 – EXECUTION

3.01 GENERAL

A. Perform excavation per Section 2300 - Excavation, Backfilling, and Compacting.

B. Build forms neat, square, and flat so concrete will have smooth finish when forms are pulled. Construct forms to provide finished concrete to dimensions shown on plans.

C. Place reinforcing steel accurately in accordance with details shown on the plans and properly secure in position.

D. Concrete shall not be placed when the temperature is below 40° F and dropping or below 35° F if the temperature is rising, unless approved by the Engineer.

E. Vibrate all structural concrete as it is placed using internal vibrators capable of transmitting vibration to the concrete at frequencies not less than 4,500 impulses per minute. Do not use form vibrators. Limit vibration to provide satisfactory consolidation without causing segregation. Do not insert vibrator more than six (6) inches into the lower courses previously vibrated. Use vibrators in a substantially vertical position; insert at uniformly spaced points no farther apart than the visible effectiveness of the vibrator.

F. Allow concrete to cure for at least 48 hours before stripping forms. If concrete is in a structural member, do not remove forms until the concrete can withstand safely all superimposed loads.

G. On all exposed surfaces, remove all fins and projections so the surface is smooth. Cut out and fill with grout any honeycombed areas. Extensive honeycombing is not allowable.

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END OF SECTION 3600

SECTION 4000 WATER PIPE, FITTINGS AND MATERIALS

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section covers pipe, pipe joints, fire hydrants, fittings, and other materials for water lines and service lines.

B. Use only materials approved by the City of Fayetteville.

C. The Standard Specifications include pipe and fitting in diameters up to and including 18-inch diameter. Pipe and fittings for nominal pipe diameters/sizes greater than 18-inch are not a Standard Specification. Projects including pipe and fittings for nominal pipe sizes greater than 18-inch will be considered on specific case by case basis in accordance with Section 1000 General Requirements.

D. Any and all work for, on, or connecting to the City's concrete pressure water pipe (Prestressed Concrete Cylinder Pipe, PCCP) is not permitted as a Standard Specification. Work for, on or connecting to the City's PCCP will be considered on specific case by case basis in accordance with Section 1000 General Requirements.

1.02 SUBMITTALS

A. The Engineer of Record shall approve all materials.

B. Submittals will further include the manufacturer's certificate that the materials meet with these Specification requirements including material testing requirements.

1.03 LEAD-FREE BRASS

A. All brass shall be manufactured in accordance with the Safe Drinking Water Act (SWDA latest edition and as amended) to be LEAD-FREE brass.

1.04 LEAD-FREE PIPES, FITTINGS, FIXTURES, SOLDER and FLUX

A. Comply with the Safe Drinking Water Act (SWDA) latest edition and as amended.

PART 2 – PRODUCTS

2.01 GENERAL

A. DOMESTIC UNITED STATES OF AMERICA (USA) MANUFACTURE

Comply with SECTION 1000 GENERAL REQUIREMENTS 1.05.A DOMESTIC USA MANUFACTURE.

B. MINIMUM WORKING PRESSURE

Unless approved otherwise in writing by both the Utilities Director and the designated City ‘s engineer, all pipe, fittings, materials, and appurtenances used in potable water line installation and repair will be rated for a minimum working pressure of 250 psi. Additional, higher than 250 psi requirements, apply to individual items as specified.

2.02 POLYVINYL CHLORIDE (PVC) PIPE FOR WATER LINES

A. PVC pipe for water lines shall be blue in color.

B. PVC pipe less than 4 inches is not permitted for water mains/lines per the Standard Specifications.

PVC pipe for water service extensions less than 4 inches diameter will be considered only on specific case by case basis in accordance with Section 1000 General Requirements and Section 2001 Design Standards – Water. PVC pipe for water service extensions less than 4 inch diameter, if approved, shall be ASTM D-2241 SDR 13.5 and further meeting all requirements of these Standards.

C PVC pipe 4 inches through 12 inches in size shall be manufactured in accordance with AWWA C900, latest revision, and shall be DR 14. Ten (10) inch diameter water main/pipe is not permitted.

D. PVC pipe, couplings, and fabricated fittings shall be made from virgin PVC resin that has been compounded to provide physical and chemical properties that equal or exceed cell class 12454 as defined in ASTM D1784, latest revision. Clean, reworked material generated from the manufacturer's own production shall be acceptable as long as the pipe produced meets all the requirements of the Specifications.

E. Joints for PVC pipe shall conform to ASTM Specification D-3139, latest revision.

F. Nominal laying length shall be 20 feet. Minimum length of a cut section of pipe shall be 5 feet.

G. Marking on pipe shall include the following and shall be applied at intervals of not more than 5 feet.

1. Nominal size in inches and OD base (for example, 8 DI).
2. PVC.
3. Dimension ratio (for example, DR 14).
4. AWWA pressure class (for example, PC 305).

5. Test pressure for hydrotested pipe (for example, T330) or if not tested, “NOT HYDROSTATIC PROOF TESTED.”
6. AWWA designation number for this standard (ANSI/AWWA C900, or ASTM D-2241).
7. Manufacturer’s name or trademark and production run record or lot code.
8. Seal (mark) of the testing agency verifying the suitability of the pipe material for potable-water service.

2.03 DUCTILE IRON PIPE FOR WATER LINES

A. Ductile Iron Pipe shall conform to the requirements of "Ductile-Iron Pipe, Centrifugally Cast" AWWA Standard C151/A21.51, latest revision.

B. Ductile iron pipe shall be designed in accordance with the requirements of "Thickness Design of Ductile-Iron Pipe", ANSI/AWWA C150/A21.50, latest revision. Minimum pressure class shall be 250 psi.

C. Joint connections, pipe and fittings (latest revision):

1. Push on and mechanical rubber gasket joints: ANSI/AWWA C111/A21.11.
2. Flanged: ANSI/AWWA C115/A21.15, ANSI B16.1.
3. Grooved and shouldered ANSI/AWWA C606.

D. Nominal laying length shall be 20 feet. Minimum length of a cut section of pipe shall be 5 feet.

E. Weights and Marking: Weights of pipe and fittings shall conform strictly to the requirements of ANSI Specifications. The weight, class or nominal thickness, and casting period shall be shown on each pipe. The manufacturer’s mark, country where cast, year in which the pipe was produced, and the letters “DI” or “DUCTILE” shall be cast or metal stamped on the pipe, and letters and numerals on pipe sizes 14 in. (356 mm) and larger shall be not less than 1/ 2 in. (13 mm) in height.

F. Interior Lining Required

The interior lining for use under normal conditions shall be a cement–mortar lining without seal coat in accordance with the latest revision of ANSI/AWWA C104/A21.4, latest revision and NSF 61.

G. Exterior Corrosion Control

Outside coating shall be manufacturer’s standard 1 mil thickness asphaltic exterior coating per ANSI/AWWA C151/A21.51. Per the Ductile Iron Pipe Research Association (DIPRA) the 1 mil asphaltic coating is not a corrosion control method but furnished by the manufacturers to minimize atmospheric oxidation for aesthetic reasons.

Ductile Iron Pipe and fittings shall be double wrapped in polyethylene tube or sheet materials conforming to the requirements of ANSI/AWWA C105/A21.5.

Additional corrosion control methods, including but not limited to cathodic protection and/or zinc coating, may be required for specific sites and projects as requested by the City or designed by the Engineer and in accordance with DIPRA publication "The Design Decision Model for Corrosion Control of Ductile Iron Pipe" latest edition.

H. All ductile iron pipe shall be Made in USA.

2.04 POLYETHYLENE (PE) PRESSURE PIPE AND TUBING

A. Polyethylene (PE) pressure pipe is not permitted as publically (City) maintained water main or water service lines.

2.05 COATED COPPER PIPE/SERVICE TUBING

A. Coated Copper Pipe 1" – 2":

Coated copper pipe shall be Type "K", soft tempered, seamless, annealed, copper pipe suitable for use for underground water service installation, in accordance with ASTM B88, and with an approved polyethylene coating system (minimum 25 mil). Coated copper pipe shall meet or exceed NSF-61 requirements.

Damage to the polyethylene coating for the coated copper pipe must be repaired with Polyken Tape Coating or Denso paste and tape, or as recommended by the coated copper pipe manufacturer's engineer.

B. Connections to ductile iron pipe (DIP) main lines including fittings for coated copper pipe to DIP main lines shall be double poly wrapped (polyethylene encasement) a minimum of three feet beyond the DIP main pipe onto the coated copper service line.

C. Copper shall be joined using ProPress fittings by Viega and feature green dot Smart Connect markings.

D. Coated copper pipe under roadways shall be encased in SDR9 polyethylene, ASTM D-2241 SDR13.5 pipe sleeve, or C900 PVC.

E. Polyethylene pressure pipe and tubing (PE or HDPE or variations) shall not be used for publically maintained water service materials.

2.06 POLYETHYLENE ENCASEMENT (PIPE WRAP)

A. Polyethylene encasement shall be in conformance to ANSI/AWWA C105/A21.5, latest revision. The virgin linear low-density polyethylene film shall have a minimum normal thickness of .008 inches (8 mils), and shall be provided in either flat tube or sheet form.

B. The color shall be black with nominal 2% carbon black UV inhibitor and printed per the AWWA C105 standard.

C. Tape for field taping of polywrapped pipe, fittings, etc. or field repair of missing polyethylene encasement material shall be Polyken #900 or Scotchrap #50, at least 2-inches wide, and installed as per the Polyethylene Encasement Installation Guide published by DIPRA. Duct Tape is not permitted.

D. All buried iron pipe, valves, and fittings shall be double wrapped.

2.07 DUCTILE IRON FITTINGS

A. All ductile iron fittings shall conform to the requirements of ANSI/AWWA C153/A21.53, latest revision, for Ductile Iron Compact Fittings. All fittings shall be MJ x MJ. All fittings shall be fusion-bonded epoxy coated inside and outside in accordance with ANSI/AWWA C116/A21.16.

B. All ductile iron fittings shall be Made in USA.

2.08 FOSTER ADAPTERS

A. Compact MJ restraints shall be Foster Adapter by Infact Corporation. Made in USA.

2.09 SWIVEL ADAPTERS AND HYDRANT TEES

A. Swivel adapters and hydrant tees shall be designed for a working pressure of at least 250-psi and to fit standard mechanical joint fittings (AWWA C111). One end of the swivel adapter and the branch of the hydrant tee shall be provided with a gland that may be rotated 360 degrees on the fitting. Lengths of swivel adapters shall be as specified.

2.10 MECHANICAL JOINT RETAINER GLANDS

A. Restraint devices for mechanical joint fittings and appurtenances for nominal pipe sizes 3-inch through 24-inch shall consist of multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ANSI/AWWA C110/A21.10.

B. Mechanical joint retainer glands shall be made from ductile iron and shall be designed for a working pressure of at least 350-psi for 3-inch through 16-inch ductile iron pipe, at least 305-psi for 3-inch through 8-inch PVC, and at least 250-psi for 12- 24 inch ductile iron pipe.

C. Retainer glands shall have an approved coating system for corrosion resistance equivalent to MEGA-BOND® and manufacturing traceability. Retainer glands shall be manufactured by EBAA Iron, Inc. (USA only), Smith-Blair, Inc. (USA only), or Star Pipe Products (USA only).

1. Retainer glands for pipe sizes 3-inch through 12-inch shall be manufactured by EBAA Iron, Inc. (USA only), Smith-Blair, Inc. (USA only), or Star Pipe Products (USA only).
2. Retainer glands for pipe sizes greater than 12-inches shall be manufactured by EBAA Iron, Inc.(USA only), or Star Pipe Products (USA only).

2.11 PIPE RESTRAINTS

A. Bell restraints for AWWA C900 PVC sizes 4-inch through 8-inch shall be Series 1900 Restraint Harness, as manufactured by EBAA Iron, Inc. (USA Only). Devices shall have an approved coating system for corrosion resistance equivalent to MEGA-BOND® and manufacturing traceability.

B. Bell restraints for Ductile Iron Pipe sizes 4-inch through 24-inch shall be Series 1700 Restraint Harness, as manufactured by EBAA Iron, Inc. (USA Only). Devices shall have an approved coating system for corrosion resistance equivalent to MEGA-BOND® and manufacturing traceability.

C. When all-thread attachments are required, eye-bolt style attachments are not permitted. Romac “Ductile Lug” style attachments shall be used. All-threads shall be made of 316 stainless steel.

2.12 RESTRAINED FLANGED COUPLING ADAPTERS

A. Flanged coupling adapters used to transition from plain end pipe to a flanged fitting, above ground, shall be EBAA Iron Series 2100 or Romac. Made in USA.

B. Pressure rating shall be a minimum of 250 psi and be fusion bonded epoxy coated.

2.13 RESTRAINED COUPLINGS

A. Restrained couplings to connect two pieces of pipe, size on size, shall be Made in USA, EBAA Iron Series 3800 Restrained Coupling or Romac 400RG.

B. Restrained coupling pressure rating shall be a minimum of 250 psi and be fusion bonded epoxy coated.

2.14 BOLTS AND NUTS

A. All bolts and nuts for valves, fittings, and restraints shall be 316 stainless steel unless specified otherwise. Anti-seize lubricant shall be used when assembling all stainless steel hardware to reduce galling.

2.15 GATE VALVES

A. Gate valves 4-inch through 8-inch nominal pipe size shall be resilient-seated type, non-rising stem gate valves, in conformance with the requirements of AWWA C509 or AWWA C515, latest revision. Ten (10) inch pipe and gate valves are not permitted for water main/pipe.

B. Gate valves shall be Made in USA and shall be Mueller Series 2360, American Flow Control Series 2500, American AVK Company Series 25 or Series 45, or Clow 2638

C. All gate valves shall be designed for a minimum of 250 psi working pressure. All gate valves shall have 304 stainless steel bolts.

D. All gate valves shall have O-ring stem seals. The O-ring stem seal shall be so designed that the seal above the stem collar can be replaced with the valve under pressure in the full-open position.

E. Gate valves shall have standard mechanical joint ends unless otherwise indicated on the approved Drawings.

F. Buried gate valves shall be designed for operation with a nominal 2-inch square operating nut. The standard direction of opening shall be open left as viewed from the top.

G. Handwheels for gate valves shall be in conformance to AWWA C515, latest revision.

H. The interior and exterior of the valve body and bonnet shall have factory applied fusion bonded epoxy coating meeting AWWA C550, latest revision.

I. Valves shall be tested in accordance with AWWA C515, latest revision.

J. Markings shall be cast on the bonnet or body, or stamped on a permanently affixed corrosion-resistant tag of each valve.

1. Manufacturer's name or mark.
2. Year the valve casting was made.
3. Size of the valve.
4. Letters C509 or C515
5. Working water pressure (e.g. 250W)

2.16 BUTTERFLY VALVES

A. Butterfly valves are required for pipe 12-inch and larger. Butterfly valves shall be Made in USA. Butterfly valves shall conform to the requirements of AWWA C504, latest revision, for Rubber-Seated Butterfly Valves.

B. Butterfly valves shall be Pratt HP250II or Dezurik BAW.

C. Butterfly valves shall be designed for a minimum of 250 psi working pressure. Butterfly valves shall have 304 stainless steel bolts.

D. Butterfly valves shall be of the tight closing, synthetic rubber-seat type, as follows.

1. Valves 20 inches (nominal diameter) and smaller shall have bonded seats which are simultaneously molded in, vulcanized and bonded to the body. Seat bond must withstand 75 pounds pull under test procedure ASTM D429, Method B.

2. On valves 24 inches and larger, all seats shall be of a synthetic rubber compound. Seats shall be retained in the valve body by mechanical means without retaining rings, segments, screws or hardware of any kind in the flow stream. Seats shall be a full 360° without interruption and have a plurality of grooves mating with a spherical disc edge seating surface. Valve seats shall be field adjustable around the full 360° circumference and replaceable without dismantling operator, disc or shaft and without removing the valve from the line.

E. Valve discs shall utilize an on-center shaft and symmetrical design and be cast from Ductile Iron ASTM A536 Gr. 65-45-12. The disc edge shall be stainless steel type 316.

F. Butterfly valves shall have standard mechanical joint ends unless otherwise indicated on the Drawings.

G. Buried butterfly valves shall be designed for operation with a nominal 2-inch square operating nut. The standard direction of opening shall be open left as viewed from the top. The valve shaft shall be constructed of stainless steel and the bearings shall be corrosion resistant and self-lubricating. The valves shall be equipped with a totally enclosed type operator, fully gasketed and grease packed, suitable for direct burial.

H. The interior and exterior of the valve body and bonnet shall have factory applied epoxy coating system meeting AWWA C550, latest revision.

I. Valves shall be tested in accordance with AWWA C504, latest revision.

J. Markings shall be cast on the bonnet or body, or stamped on a permanently affixed corrosion-resistant tag of each valve.

1. Manufacturer’s name or mark.

2. Year the valve casting was made.
3. Size of the valve.
4. Class (e.g. 250B)

K. Materials for 12 inch water mains will be PVC , except that ductile iron pipe may be required on each side of certain fittings and appurtenances including, but not limited to, 12-inch Butterfly Valves (BFV). This detail shall be provided by the Engineer of Record.

2.17 BALL VALVES

A. Ball valves shall be made in USA, and shall be Ford B11-777-NL or James Jones E1900, with "tee-head" style operating nut.

2.18 VALVE BOXES

A. Valve boxes shall be Made in USA, and shall be East Jordan Iron Works 8550 Series or Tyler Union 6850 Series, screw type, and shall be of correct length to match the bury of the main.

B. The valve box and appurtenances shall include a base and a top section with a drop lid. The lid shall be marked with the word "WATER". All lids shall have a concrete pad with a minimum of 18 inches square or round dimension as appropriate.

C. Lids on valves on fire lines shall be marked with the word "FIRE" and painted red.

D. Lids on 2" valves shall be marked with the words "2" VALVE".

E. Markings shall be cast on each part:

1. Manufacturer's name or mark.
2. Model number
3. Year the casting was made.
4. Material of construction
5. USA

F. A valve box alignment device shall be provided and installed for each valve box installation. The device shall be of HDPE or Glass Filled Polypropylene construction. It shall be furnished in two pieces that will lock together under the operating nut of the valve without requiring the removal of the operating nut. The device shall not affect the operation of the valve. The device shall be AFC Alignment Ring as manufactured by American Flow Control.

2.19 OPERATING NUT EXTENSIONS

A. Operating nut extensions shall be used when the top of the operating nut is greater than 4 feet from the top of finished surface.

B. The stem shall be 1" SCH40 steel pipe with a 2-inch square bar steel operating nut attached to the upper end. The stem extension shall be of adequate length to reach from the valve operating nut to a point within 24-inches to 12-inches of the finished surface. A box wrench, 2 1/8" I.D. square, made from steel 3/16-inches thick shall be welded to the lower end of the stem extension which will fit over the valve operating nut. Two-inch valves with a tee-head operating nut will require a rectangular shaped box wrench on the end of the valve stem extension. The extension shall be secured to the valve operating nut by two 3/8" set screws. A round center guide made from 1/8-inch or 3/16-inch steel plate shall be placed on the valve stem extension approximately 6-inches from the upper end. The diameter of the guide shall be slightly less than the inside diameter of the valve box. The guide shall be affixed to the stem extension in such a way that it can rotate freely on the stem. Welds on stem extensions (top and bottom nut) shall be 1/8" - 3/16" fillet weld around full circumference.

C. Shop drawings shall be submitted to the City of Fayetteville for approval prior to installing the stem extension pieces.

2.20 FIRE HYDRANTS

A. Fire hydrants shall be dry barrel hydrants in conformance with AWWA C502, latest revision. Fire hydrants shall be designed for a working pressure of 250 pounds per square inch gauge. Fire hydrants shall be three-way, and painted white with reflective glass beads above the ground line. Coating system shall be compatible with Sherwin Williams SHER-CRYL™ HPA – High Performance Acrylic B66-300 Series that is used to color code the fire hydrants. Permitted fire hydrants are (only) American Flow Control 5-1/4" Waterous Pacer WB67-250, Mueller Super Centurion 250 hydrants, and CLOW Medallion Dry-Barrel. No approved equals. Made in USA only.

B. Hydrants shall have a 6 inch mechanical joint inlet in conformance to the dimensions shown in ANSI/AWWA C110/A21.10, latest revision. Three-way hydrants shall have a 5-1/4 inch valve opening.

C. Fire hydrants shall be equipped with a two-piece barrel with a safety stem coupling and a break-a-way flange at the ground line and shall be designed for a 48-inch bury.

D. Hydrants shall be equipped with two 2-1/2 inch hose nozzles and one 5-1/4 inch pumper nozzle. The operating nut shall be a nominal 1-1/2 inch pentagon, National Standard operating nut designed to open left (counterclockwise).

E. Hydrants shall be supplied WITHOUT nozzle cap chains.

F. Fire hydrants in non-paved areas shall be installed with a 24" x 24" square, 12" thick concrete pad, reinforced with 2 layers of #5 rebar, around the lower barrel of the hydrant six inches below the bottom of the break-away flange.

G. A fire hydrant extension shall be installed in all locations where the centerline of the pumper nozzle is less than 18-inches above the finished grade elevation. The extension shall bring the centerline of the pumper nozzle between 18-inches and 24-inches above the finished grade elevation. The centerline of the pumper nozzle shall be 24-inches above rough grade elevations where sidewalks and yards will be installed in the future, in new subdivisions only. Extensions shall be Waterous K562, Clow 2500, or Mueller A-320, with no more than one extension allowed per hydrant.

H. Identification tags shall be installed indicating the depth of bury of all hydrants. Additional tags shall be installed indicating the length of any extension installed.

2.21 BLOW-OFFS

A. Blow-offs shall have a 2-1/2" hose nozzle, traffic break-away, locking cover and be designed for 48-inch bury. Blow-offs shall be Mainguard #77 as manufactured by The Kupferle Foundry Company.

2.22 AIR RELIEF VALVES

A. All water mains shall have 1"-2" single bodied air and or combination air and vacuum valves or 3"-10" dual bodied combination air and vacuum valve where indicated on the drawings. Valves shall have fiberglass reinforced nylon body or epoxy coated and lined cast iron bodies with stainless steel or non-metallic internal parts. Valve shall have rolling seal mechanism to allow full or partial opening and sealing of orifice or metal to metal stainless steel seating. The 1" – 2" valves float shall be made of foamed polypropylene and shall disrupt vortex and allow float to remain open until a 11 psi differential is achieved. Valves shall have a 250 psi working pressure. Valves shall be listed under NSF-61 and shall have ISO 9001 certificate. Valves shall be supplied with a male thread outlet or flanged outlet. All nipples and isolation valves for 1"-2" valves shall be brass or stainless steel. Ball style isolation valve shall be full port. Isolation valves for 3"-10" shall conform to Paragraph 2.12 – Gate Valves.

B. Air release valves shall be A.R.I. Model D-040 for 1" and 2" or A.R.I. Model D-060-C HF NS for 3" – 10".

2.23 SERVICE SADDLES

A. Service saddles for 1" and 2" NPT service taps shall be sized for use on C900 PVC. Service saddles shall be Romac 101NS.

2.24 TAPPING SLEEVES

A. Tapping sleeves shall be designed for a minimum 250 psi working pressure and the material being tapped. All bolts and nuts shall be stainless steel.

1. Tapping sleeves for 4-inch through 24-inch shall be stainless steel and shall be 100% domestic made in the USA. Tapping sleeves shall have an MJ outlet.

2. Tapping sleeves shall be Ford FAST, Romac, JCM 439, or Smith Blaire. Made in USA.
3. Tapping sleeves larger than 24-inch are not a standard specification and will require independent review and approval by the Utilities Engineer.

2.25 SERVICE CONNECTION MATERIALS, FITTINGS AND BRASS

A. All service connection materials, fittings and brass shall be 100% domestic USA. All service connection materials, fittings and brass shall be manufactured in accordance with the Safe Drinking Water Act (SWDA latest edition and as amended) to be LEAD-FREE brass (aka No-Lead).

If a specific item is listed in the following table(s) insert the designation required for 100% domestic USA and Lead-Free (or No-Lead). All service connection materials, fittings and brass shall be designed for a minimum working pressure of 250 psi.

B. All service connection materials, fittings and brass shall be manufactured by Ford Meter Box Company, Inc. or Mueller Company and as further specified below. Equivalent cross referencing for corporation stops and meter setters shall be permitted if approved in writing by the City of Fayetteville's designated City engineer.

C. Materials proposed for all service connection materials, fittings and brass shall be submitted to the designated City engineer for review after the Engineer of Record's review and recommended approval.

D. Materials for standard meter sets 5/8", 1", 1-1/2", and 2" are indicated in the following tables. Materials and standards for larger meters (3" and greater) are not listed in the standard specifications. Larger meter installations require a site specific design. Please contact the City of Fayetteville Meter Department for information concerning meter size 3" or greater. Please contact the City of Fayetteville Engineering Department for standard drawings that may be incorporated for meter size 3" or greater.

E. Design for 1-1/2" and 2" meter locations require project specific design of the piping from the main to the meter to avoid stress of the 2" coated copper pipe and to avoid excessive fittings. Alternate ductile iron piping and fittings (4 inch and greater) may be required for elevation changes between the water main and the 2" coated copper. All water service piping for meters settings greater than 1" shall be further designed by the Engineer of Record and submitted to the designated City engineer for review.

F. Meter arrays for multiple meters fed from a single 2-inch tap shall be made per the standard details. These must be approved on a case-by-case basis, and may be required by the City to reduce the number of taps on a public main.

Single Meter Set

main diameter x 1" saddle	Romac 101NS
1" corporation stop	Ford FB1000-4-Q-NL
	Mueller B25008N
1" coated copper – City side	
5/8" x 3/4" x 12" meter yolk	Ford VB72-12W-44-43-SQ-NL
	Mueller 238B2567-R--93N
1/2" x 16" SCH 40 PVC brace	
3/4" coated copper tail piece 4' long	
18" diameter x 24" deep SDR51 PVC meter box	
18" Composite Meter Lid	DFW Model: DFW1820CP-AF1EF2 SMALL FAY-LID

Double Meter Set

main diameter x 1" saddle	Romac 101NS
1" corporation stop	Ford FB1000-4-Q-NL
	Mueller B25008N
1" coated copper – City side	
1" x 7.5" x 3/4" U branch	Ford U48-43-7.5-Q-NL
	Ford multipurpose end C31-23-NL (x2)
	Mueller H15363N (1" compression inlet)
	Mueller end connection H14222N (x2)
5/8" x 3/4" x 12" meter yolk x 2	Ford VB72-12W-14-33-Q-NL
	Mueller 238B2567-RN
1/2" x 16" SCH"40 PVC brace	
3/4" coated copper tail piece 4' long	
18" diameter x 24" deep SDR51 PVC meter box	
18" Composite Meter Lid	DFW Model: DFW1820CP-AF1EF2 SMALL FAY-LID

1-inch Meter Set

main diameter x 1" saddle	Romac 101NS
1" corporation stop	Ford FB1000-4-Q-NL
	Mueller B25008N
1" coated copper – City side	
1" x 12" meter yolk	Ford VB74-12W-44-44-Q-NL
	Mueller B24701RN
3/4" x 16" SCH40 PVC brace	
1" coated copper tail piece 4' long	
24" diameter x 24" deep SDR51 PVC meter box	
24" cast iron flat meter lid	East Jordan 111, w/ Fayetteville logo (35108004)

1-1/2 inch and 2-inch Meter Set

main diameter x 2" saddle	Romac 101NS
2" brass close nipple	
2" ball valve	Ford B11-777-NL
2" MIP x quick joint	Ford C84-77-Q-NL
	Mueller H15428N
2” coated copper – City side	
2" MIP x quick joint	Ford C84-77-Q-NL
	Mueller H15428N
2" meter setter	Ford Custom setter Item VBB77-95082-110-NL
1" x 24" SCH40 PVC brace (x2)	
2" coated copper tail piece 2’ long	
36" diameter x 36" deep composite meter box w/ top ring	East Jordan 8428 Assembly (38003636A01)
28" outer cover, w/ lock	East Jordan 8428E, w/ Fayetteville lettering (00842845A01)
11" inner cover, w/o lock	East Jordan D Meter Cover (32193001)

2.26 TRACER WIRE

A. Tracer wire shall be 12-gauge solid coated copper or coated copper clad steel for underground burial.

B. Jacket color shall be BLUE, and made of High Density Polyethylene (HDPE) or High Molecular Weight Polyethylene (HMWPE) designed for direct burial.

C. Connectors shall be used for all splices or repairs. Connectors shall be moisture displacement style as manufactured by 3M DBR. Wire shall be twisted and bent, without the use of a wire nut prior to insertion into the gel cap.

D. A locate or conductivity test shall be performed prior to signing off on the project.

2.27 MARKING TAPE

A. Non-metallic water marking tape shall be warning tape as manufactured by Rhino Marking and Protection Systems, Harris Industries, Inc.

B. Tape shall have a minimum thickness of 4 mils and manufactured with heavy metal-free polyethylene tape that is impervious to all known alkalis, acids, chemical reagents, and solvents found in soil. The minimum overall width of the tape shall not be less than 3-inches. Standard rolls shall be 1000' length.

C. The tape shall be color coded Safety Blue and imprinted with the following message:
Caution – Buried Water Line Below

2.28 WATER LINE MARKERS

A. Water line markers shall be TriView Marking System by Rhino Marking and Protection Systems, Carsonite International Dual-Sided Utility Marker (CIB-380). All markers shall be installed according to the manufacturer's recommendations. The uppermost portion of the Carsonite marker shall be made of Visibility Enhancer (CVE-360)and must be bolted to the utility marker. TriView markers do not require visibility enhancers. The utility marker shall read as follows: "CAUTION, WATER PIPELINE", "City of Fayetteville", and "Before Digging Call 1-800-482-8998". The label shall also include the official City Logo and be white in color with blue and black lettering. The label shall be affixed to two sides of the marker. An additional white 1" wide reflective tape (3M) shall be placed around the full circumference of the top of the marker. Concrete shall be placed 6-inches around and 1-foot deep around the base of each marker.

B. Markers in rural areas shall be placed adjacent to valves and hydrants and spaced along the length of the water line a maximum of 500 feet.

PART 3 - EXECUTION

3.01 INSTALLATION

A. General Installation Section 2400
B. Water Lines: Refer to Section 4100
C. Water Service Lines: Refer to Section 4100

END OF SECTION 4000

SECTION 4100 INSTALLATION OF WATER PIPE, FITTINGS, AND MATERIALS

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Installation of water lines.

B. Installation of water service lines.

1.02 WORK EXCLUDED

A. Any and all work for, on or connecting to the City's concrete pressure water pipe (Prestressed Concrete Cylinder Pipe, PCCP) is not permitted as a Standard Specification.

B. Any and all work for, on, or connecting to the City's concrete pressure water pipe (Prestressed Concrete Cylinder Pipe, PCCP) will be considered only on specific case by case basis in accordance with Section 1000 General Requirements. Approval will be project specific and requires approval from the Utilities Director.

PART 2 – ADDITIONAL REQUIREMENTS

2.01 ADDITONAL REQUIREMENTS

A. PIERS

1. Water pipe on piers shall be Ductile Iron Pipe. The ductile iron pipe shall meet the requirements of Section 4000 – Water Pipe, Fittings, and Materials, of these Specifications.

2. Piers shall be designed by the Engineer of Record for the specific project and submitted per Section 1000 General Requirements.

3. Install concrete piers as indicated on the approved plans and per Section 3600 - Cast-In-Place Concrete.

B. COLD WEATHER INSTALLATION

1. The City reserves the right to order pipe installation discontinued whenever, in its opinion, there is danger of the quality of work being impaired because of cold weather. Do not lay any pipe on frozen ground. No water pipe shall be installed when the air temperature is less than 32º F unless proper precautions per the manufacturer's recommendations are taken by the Contractor and the method is approved by the Engineer and City.

2. When pipes with rubber gaskets or resilient-type joints are to be laid in cold weather, sufficiently warm the gasket or joint material per manufacturer's recommended methods to facilitate making a proper joint.

C. SOLID SLEEVE INSTALLATION

1. Solid sleeves shall be installed the same as mechanical joint connections for pipe installation.

2. The maximum gap between the two pipes being connected by a solid sleeve shall be one-half (1/2) inch.

PART 3 – EXECUTION

3.01 VALVE INSTALLATION

A. Valves shall be jointed in accordance with the methods of jointing pipe as specified elsewhere herein. Valve stems shall be plumb and there shall not be any obstructions that will prohibit the installation of valve boxes directly over the stem. Mechanical joint retainer glands shall be installed on all valves with mechanical joint ends.

B. All valves shall be firmly supported from below with compacted crushed stone up to and including 8-inch valves, or concrete for all valves greater than 8-inches.

C. All valves shall be double poly wrapped

D. Valve boxes shall be installed over the operating nut of each valve and be of adequate length to reach the finished ground or paved surface. Valve boxes shall be installed with a HDPE Valve Box Alignment Device of the proper size and manufacture to fit the valve and the valve box. Boxes shall be firmly supported, plumb, and centered over the valve operating nut. No part of the box shall rest on the valve. The box cover shall be flush with the finished surface.

E. Operating nut extensions shall be used when the top of the operating nut is greater than 4 feet from the top of finished surface. The stem extension shall be of adequate length to reach from the valve operating nut to a point within 24-inches to 12-inches of the finished surface.

F. Tracer wire shall be brought up on the OUTSIDE of the valve box. A hole or notch shall be made through the valves box approximately 4-inches below the top. The tracer wire shall be pushed through the hole or notch. Approximately 12-inches of wire shall be coiled inside the valves box for traceability. The tracer wire shall not interfere with the insertion of the lid onto the valve box.

G. All lids shall have a concrete pad with a minimum dimension of 18 inches square or round as appropriate. A concrete pad with a minimum dimension of 36 inches square or round as appropriate shall be installed for all valves 24-inches and larger.

3.02 FIRE HYDRANT INSTALLATION

A. Pipe used to install fire hydrants from the required auxiliary valve on the water main to the fire hydrant shall be fully restrained. An additional valve for maintenance may be required for significantly long fire hydrant leads as determined by the designated City engineer.

B. Hydrants shall be thoroughly cleaned before setting, removing all dirt and foreign matter from the barrel and bottom section up to the main valve. The main valve shall be in the "closed" position and the waste outlet shall be free of any obstructions.

C. The Contractor shall take great care to protect the factory applied coating system. Means and methods for the protection of the fire hydrant are the responsibility of the Contractor. At no time shall chains or other abrasive materials come into contact with the factory applied coating system.

D. Minor touchup for “incidental” scratches is permitted using factory provided touchup kits.

E. When the factory applied coating system (from the bury line up), as identified by the City of Fayetteville, has damage other than “minor scratches,” a new upper barrel section shall be ordered and delivered from the factory, inclusive of all internal working parts up to the operating stem breakaway. The upper barrel shall be replaced, and the damaged upper barrel returned to the factory at no cost to the City of Fayetteville. This includes, but is not limited to, excessive scratches, appearance of rust, or other aesthetic flaws. Field repainting of new fire hydrant installations is not permitted.

F. Hydrants shall be located a safe distance from driveways, roadways and narrow type sidewalks and in a manner to provide complete accessibility, and they shall stand plumb with nozzles at proper elevation. The hydrant’s “bury line” shall be set at or no more than four (4) inches above the finished grade elevation; therefore the bottom of hydrant nozzles shall be 18 to 22 inches above the finished grade elevation.

G. Installation of fire hydrant extensions shall be made in the presence of the Engineer or the Engineer’s representative and shall be per the manufacturer’s instructions. The breakable flange and breakable stem coupling shall be removed and installed above ground level.

H. The Contractor shall, if necessary, rotate the hydrant barrel or nozzle section at the flanged joint to obtain the desired nozzle position as specified by the Engineer. The pumper nozzle shall be at a right angle to and face the street unless otherwise directed by the Engineer.

I. The bowl or bottom of the hydrant shall be supported firmly on the bottom and shall be braced against unexcavated earth at the end of the trench with concrete reaction backing. Solid

concrete blocks may be used to support the bottom of the hydrant. If considered necessary by the Engineer, the hydrant shall be tied to the branch pipe with suitable Series 300 STAINLESS STEEL rods or clamps. These rods or clamps shall be furnished by the Contractor without additional compensation.

J. A drainage bed shall be provided under and around the base of the hydrant of at least six (6) cubic feet in volume and extending at least six inches (6") above the drain outlet and shall consist of approved embedment aggregate material. Under no circumstances shall the drain outlet on the hydrant or the drainage bed be connected to a sewer.

K. Backfilling and tamping around hydrant barrels shall be continuous in operation.

L. Fire hydrants, immediately after installation, shall be covered and wrapped with a heavy cloth, water-resistant sack, or black polyethylene sheeting, well taped in place around the hydrant, to identify the hydrant as being "not in service".

M. All fire hydrants installed within the City of Fayetteville water operational territory shall be painted white with glass reflective beads above the ground line. Factory coating system shall be compatible with Sherwin Williams SHER-CRYL™ HPA – High Performance Acrylic B66-300 Series that is used to color code the fire hydrants. Sherwin Williams DTM ACRYLIC COATING shall be used for the Safety Orange color only, as it is not available in HPA.

N. All fire hydrant nozzle caps, bonnets and operating nuts shall be painted with two coats of paint according to the following table:

Flow Under Fire Conditions	Color	Color Specification
More than 1500 gpm	Light Blue	Robotic Blue SW4063
1000 to 1499 gpm	Green	Safety Green SW4085
500 to 999 gpm	Orange	Safety Orange SW4083
Less than 500 gpm	Red	Safety Red SW4081

O. The City of Fayetteville may provide the flow under fire conditions for each new fire hydrant installation based upon the current water modeling software or the Engineer of Record may furnish flow data based upon a current fire hydrant fire flow test performed in the area. Developer is responsible for fees associated with hydrant flow tests conducted by the City.

3.03 METER SETTINGS

A. Meter settings shall be installed where shown on the Drawings and/or as directed by the City. Installation shall be as per the City Engineering Standard Details. Meter setters shall be

installed in a horizontal and plumb position within the meter box and at a depth to provide the required space between the top of the meter and the bottom of the meter box lid.

B. A drainage bed consisting of approved embedment aggregate material shall be placed a minimum of 6-inches thick and 6-inches outside the edge of the bottom of the meter box. Non-woven filter fabric consisting of 8 oz/sy shall be placed on top of the drainage bed. The filter fabric shall extend 12-inch outside the edge of the bottom of the meter box. After the installation of the water service line, meter setter, meter box, and lid, the filter fabric shall be wrapped up the meter box and service line penetrations and taped securely to the meter box to provide a "dirt seal" before backfilling.

C. Tracer wire shall be brought up on the INSIDE of the meter box with the water service line. Sufficient tracer wire shall be provide such that approximately 12-inches of wire will extend beyond the top of the box when pulled taut. The tracer wire shall be loosely coiled and place inside the meter box. Do not wrap the tracer wire around the meter setter. An additional tracer wire shall be installed at the appropriate time from the meter to the building.

D. The bottom of the meter setter connections shall be visible at the bottom of the meter box at the time of testing and of final inspection. Any dirt or debris in the bottom of the meter box shall be removed before the project is released for final payment and/or acceptance.

E. The final grade at the meter box location shall be determined by the Engineer of Record and the meter box shall be placed at that grade. Final grade should take into account probable future installation of topsoil and/or sod. Any boxes falling in driveways or sidewalks shall be relocated at the expense of the developer or lot owner. No meters shall be set by the City until the meter box is adjusted to the proper grade.

F. Where PVC is used for 2-inch water service lines, any joint within 20-feet of the City's side of the meter vault must be mechanically restrained.

3.04 BLOW-OFF INSTALLATION

A. Blow-off hydrants shall be thoroughly cleaned before setting, removing all dirt and foreign matter from the barrel and bottom section up to the main valve. The main valve shall be in the "closed" position and the waste outlet shall be free of any obstructions.

B. Blow-offs shall be so located that the distribution system may be properly flushed, and so that danger of contamination of the water line by backflow will be eliminated. No blow-off shall be connected to any sewer or storm drain, submerged in any surface water or installed in any manner that will permit backsiphonage into the distribution system. The discharge of the blow-off shall be located above natural grade, and be screened, capped or plugged.

C. Blow-off hydrants shall be installed in such a manner to provide complete accessibility, and they shall stand plumb with nozzles at proper elevation. The discharge nozzle shall be a minimum of 24-inches above finished grade elevation.

D. The bowl or bottom of the blow-off hydrant shall be supported firmly on the bottom and shall be well braced against unexcavated earth on the backside of the blow-off hydrant. Solid concrete blocks, or other suitable material may be used to block the blow-off hydrant.

E. A drainage bed shall be provided under and around the base of the blow-off hydrant of at least six (6) cubic feet in volume and extending at least six inches (6") above the drain outlet and shall consist of ASTM #67 gravel. Under no circumstances shall the drain outlet on the hydrant or the drainage bed be connected to a sewer.

F. Backfilling and tamping around blow-off hydrant barrels shall be continuous in operation.

G. Blow-off hydrants, immediately after installation, shall be covered and wrapped with a heavy cloth, water-resistant sack, or black polyethylene sheeting, well taped in place around the hydrant, to identify the hydrant as being "not in service".

3.05 TAPPING SADDLE INSTALLATION

A. Tapping saddles shall be used for 1-inch and 2-inch service taps.

B. The pipe shall be free of dirt and other debris before attaching tapping saddle. That part of the pipe barrel, other than concrete pipe, which will be in contact with the gasket of tapping saddles, shall be smooth. All rough areas on the pipe barrel shall be smoothed. The Contractor shall field verify all pipe and fitting dimensions. Tapping saddles shall be installed at least twenty-four (24) inches from bell joints, fittings, end of pipe joint, or another tap.

C. Tapping saddles shall be bolted securely to the pipe. The face of the outlet shall be zero to ten (0-10) degrees from horizontal. The bolts for tapping saddles shall be alternately tightened "snug" and then alternately tightened to a torque as recommended by the manufacturer.

D. The tapping valve shall be attached securely to the tapping saddle to provide a water tight seal. Proper tools for installing brass hardware shall be used.

E. The pilot drill and shell cutter shall be in good condition. The pilot, shell cutter, and any other component of the tapping machine that will or may come into contact with the interior of the tap valve or potable water pipe, shall be thoroughly sterilized with straight bleach or super-chlorinated solution. The shell cutter shall be the size required to cut the full opening specified and with a sufficient depth greater than the wall thickness of the pipe being tapped.

F. After the tap is complete and the tapping machine has been removed, the bolts for the tapping saddle must be re-torqued per the manufacturer's specifications to ensure a proper seal.

G. The tapping saddle shall be double poly wrapped.

H. The contractor will follow the manufacturer's requirements and follow the current version of the "Tapping Guide for PVC Pressure Pipe", UNI-PUB-8, by the Uni-Bell PVC Pipe Association. The Contractor shall provide the removed pipe coupon to the City.

3.06 TAPPING SLEEVE INSTALLATION

A. The pipe shall be free of dirt and other debris before attaching tapping sleeve. That part of the pipe barrel that will be in contact with the gasket of tapping sleeve, shall be smooth. All rough areas on the pipe barrel shall be smoothed. The Contractor shall field verify all pipe and fitting dimensions. Tapping sleeves shall be installed at least twenty-four (24) inches from bell joints, fittings, end of pipe joint, or another tap.

B. Tapping sleeves shall be bolted securely to the pipe. The face of the outlet shall be plumb. Mechanical joint glands for tapping sleeves shall be installed in accordance with Paragraph 3.06 herein. The bolts for tapping sleeves shall be alternately tightened "snug" and then alternately tightened to a torque as recommended by the manufacturer.

C. The tapping valve shall be bolted securely to the tapping sleeve. The tapping valve shall be adequately supported from beneath. The weight of the tapping valve shall not be supported by the tapping sleeve. A concrete "mud slab" at least six (6) inches thick shall be poured under the location of all tapping valves 12 inches and larger and the weight of the valve shall be supported by the mud slab. The tapping machine shall be bolted securely to the valve.

D. After installation of the tapping sleeve and the tapping valve and before drilling through the pipe, the assembly shall be hydrostatically tested at the pressure specified in Section 5300, herein, by introducing water through the sleeve test tap.

E. The pilot drill and shell cutter shall be in good condition. The pilot, shell cutter, and any other component of the tapping machine that will or may come into contact with the interior of the tap valve or potable water pipe, shall be thoroughly sterilized with straight bleach or super-chlorinated solution. The shell cutter shall be the size required to cut the full opening specified and with a sufficient depth greater than the wall thickness of the pipe being tapped.

F. Openings in the pipe barrel for tapping saddles installed on dry pipe shall be cut with a pilot drill and shell cutter. Torch cutting is not permitted.

G. Tapping operations must not commence before inspection by the Engineer or his authorized representative. Tapping operations must not commence before the tapping assembly has passed a pressure test as detailed in Section 5300 herein.

H. Only qualified operators shall operate the tapping machine. The "coupon" shall be withdrawn and be given to the Engineer for inspection. Care shall be exercised to avoid drilling or cutting

the backside of the pipe by carefully assuring the engagement of the pilot drill and shell cutter shaft.

I. After the tap is complete and the tapping machine has been removed, the bolts for the tapping sleeve must be re-torqued per the manufacturer's specifications to ensure a proper seal.

J. All taps 12-inch and larger shall require the installation of a butterfly valve immediately after the tapping valve. The tapping valve shall be fully opened and abandoned in place.

K The tapping sleeve shall be double poly wrapped.

L. Tapping sleeves shall be adequately thrust blocked with concrete.

3.07 CONCRETE THRUST BLOCKS AND ANCHOR COLLARS

A. Concrete thrust blocks and anchor collars shall be provided along the water line in accordance with the construction details, plan sheets, or as directed by the Engineer. The concrete mix (as defined in Section 3600 herein) shall be Class "1" for anchor collars and Class "1" for thrust blocks. All bends, tees, caps, plugs, and fire hydrants shall be thrust blocked unless specifically detailed in the construction drawings that no thrust blocking is required. All vertical bends shall be both fully restrained and fully thrust blocked. Horizontal bends will be both fully retrained and fully thrust blocked when required by the City.

B. Concrete for thrust blocks and anchor collars shall be placed against undisturbed soil. The excavation shall be hand shaped and free of loose material. Forms shall be used to confine the concrete in areas other than that part that is in contact with undisturbed soil in the direction of the thrust.

C. No concrete shall be placed around any part of a joint or placed so that it interferes with the removal of any joint accessories such as bolts, followers, threads, collars, couplings, etc. Fire hydrant drains shall not be restricted.

D. The top of the concrete thrust block or anchor collar shall be struck off with a wood straight edge or float.

E. Concrete shall not be placed when the temperature is below 40° F and dropping or below 35° F if the temperature is rising, unless approved by the Engineer.

F. Admixtures are not to be used without the approval of the Engineer.

G. All reinforcement shall be inspected by the Engineer prior to placement of concrete. All placement of concrete must be in the presence of the Engineer or his representative. The Contractor is cautioned that he may be required to remove, without compensation, any concrete placed in the absence of the Engineer or his representative.

H. Backfill over concrete thrust blocks or anchor collars shall not be placed before the concrete has attained initial set.

I. No thrust blocks shall be less than six inches (6") thick between the pipeline or appurtenances and undisturbed soil in the direction of thrust on pipes 12-inch diameter and smaller. On larger pipes, the thickness of thrust blocks shall be as directed by the Engineer. A thrust block with any component of its length to width to depth ratio exceeding two (2) shall be reinforced with steel reinforcement bars as directed by the Engineer. The Engineer will consider the size of the thrust block, the size of the water main, and the system pressure in the determination of the size and spacing of the steel reinforcement.

J. The excavation shall be free of water before concrete is placed. Steel reinforcement shall be placed as specified on the drawings.

K. The pipe or appurtenances to be in direct contact with concrete shall be cleaned before placing the concrete.

L The area of contact of the thrust blocks and anchor collars shall be sufficient to resist the thrust. This will vary depending on the safe bearing value of the soil.

The Engineer of Record is required to design the thrust blocks, anchors and other restraints and submit to the City for review and approval.

If requested by the City, the engineer of record shall provide a geotechnical report to include soil valves for thrust blocking design.

N. Thrust blocks for vertical bends shall be adequate to resist the thrust by mass alone when the thrust is upward.

O. Thrust blocks and anchor collars shall be adequate to restrain the pipeline and appurtenances at design pressure equal to 150% of the static pressure at the lowest point with a minimum pressure of 200 psi. The Engineer of Record shall provide calculations for review for all thrust blocks, anchor collars and other thrust restraints.

P. Concrete thrust blocks and anchor collars on 12-inch and smaller pipelines shall have a minimum curing time of three days (72 hours) before any pressure is placed against the block or collar. Concrete thrust blocks and anchor collars on 14-inch and larger pipelines shall have a minimum curing time of seven days before any pressure is placed against the block or collar.

Q. Concrete thrust blocks or anchor collars that fail to restrain the pipe or appurtenances shall be replaced by the Contractor at his expense.

R. Reducers receiving an anchor collar shall be long bodied fittings.

S. All water lines with dead ends shall be installed with an upstream valve, one full joint of pipe with a MJ restraining gland, concrete anchor collar, a MJ cap with restraint, and a blow off assembly. The seat of the MJ restraining gland on the pipe shall face the valve.

T. Anchor collars subject to two-way thrust shall have two identical "A"/"B" reinforcement steel mats as shown in the City Engineering or project specific detailed drawings. Anchor collars for 18" and smaller diameter pipe with two-way thrust shall have two (2) Mega-Lug retaining glands placed back-to-back, spaced just inside the two reinforcing steel mats.

U. The use of wood or any material that may deteriorate is strictly prohibited.

3.08 BACKFILLING AND INSPECTION

A. Before backfilling, install concrete thrust blocks and anchor collars in accordance with the plans and details at the location and interval as shown on the Drawings. Use concrete as specified in Section 3600-Cast-In-Place Concrete.

B. After the pipeline is installed and visually inspected by the Engineer, backfill the trench per Section 2300-Excavation, Backfilling, and Compacting.

C. Test the pipeline per Section 5300-Inspection and Testing of Water Lines and Service Lines.

D. Repair all pavements per Section 6000-Pavement Repair.

E. Repair all incidental damage to buildings, structures, utilities, pavements, landscaping, etc.

F. Repair sodded and grass areas to original condition per Section 6100-Lawn and Grass Restoration.

3.09 WATER LINE INSTALLATION - AERIAL CROSSINGS

A. Construct piers as shown on the approved Drawings.

B. Install encasement pipe on piers as shown on the approved Drawings.

C. Insulate encasement as required by the City.

3.10 SEWER LINE CROSSINGS

A. Sewer lines installed under a water line must have a clear distance between pipes of at least eighteen (18) inches.

B. The sewer line shall be installed such that a joint of pipe is centered along the water line and the joints are as far as possible from the water line.

C. If 18-inches of clearance cannot be provided or when the water main must pass under the sewer main, either the sanitary sewer main or the water main shall be encased in twenty (20) feet of watertight encasement pipe, centered over the point of crossing. Crossings that are not perpendicular will require more than twenty (20) feet of encasement. The encasement shall extend a minimum of ten (10) feet perpendicular from the outside edges of the line that is not being encased. The ends of the encasement pipe shall be sealed watertight. If the water main passes under the sewer main, 18-inches of clearance is still required between pipes. Refer to Section 3400 – Steel Encasement Pipe.

3.11 STORM SEWER CROSSINGS

A. All water lines crossing under all concrete storm drains, or any storm drain 30-inch diameter and larger, or all storm drains with multiple pipe runs, shall be steel encased a minimum of 5 feet either side of the storm drain.

3.12 CUT AND CAP

A. Water lines that are to be abandoned shall be cut and capped as shown on the CIty Engineering standard details.

B. Mechanical joint restraints and concrete shall be used to resist thrust loads.

3.13 ABANDON CORPORATION STOP

A. All corporation stops used for testing and/or chlorination need to be properly abandoned by fully closing the corporation stop, removing all service line materials, installing a solid copper disk, and reinstalling the corporation nut resulting in a water tight seal in the event that the corporation valve fails.

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END OF SECTION 4100

SECTION 4200 WATER LINE PRESSURE REDUCTION PROCEDURES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section covers the procedures associated with reducing water line pressure for construction.

1.02 PROCEDURES

A. Water lines may need to have the pressure significantly reduced to facilitate construction in a project area, i.e. tie-ins or cut and caps.

B. Water pressure reductions shall be approved and coordinated with the City of Fayetteville Water & Sewer Department.

C. The maximum amount of time that the line is permitted to be shut down shall be determined by the City of Fayetteville Water & Sewer Department.

D. The Contractor shall have sufficient materials, labor, and necessary backup provisions in place prior to initiating water line pressure reduction to ensure that construction activities can be completed within the time determined by the City of Fayetteville Water & Sewer Department.

E. A minimum of 72-hour notice shall be provided to each affected customer using the attached water pressure reduction notice.

F. The Contractor shall distribute the notices and generate a list of each address that the notices are delivered to. The list shall be given to the City of Fayetteville Water & Sewer Department for their files.

1.02 CONSTRUCTION REQUIREMENTS

A. The excavation in the project area shall be dewatered prior to pressure in the water main being reduced.

B. All water pipe, fittings, and materials shall be disinfected per AWWA C651, latest revision.

C. Immediately after construction is complete, the existing water lines shall be flushed thoroughly and background chlorine levels re-established.

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CITY OF FAYETTEVILLE ARKANSAS

WATER SYSTEM NOTICE TO THE CUSTOMER

WATER PRESSURE REDUCTION

DATE: _____

Due to scheduled water system maintenance in your area, the contractor listed below, under supervision of the engineer listed below, must significantly reduce the water pressure in the area serving your business or residence. The water pressure will be reduced at the following time:

DATE TURNED DOWN: _____

TIME TURNED DOWN (approximate): _____

TIME TURNED BACK ON (approximate): _____

The pressure will probably be reduced such that you will not have water available in your residence or business. We are attempting to make the repairs in this way to avoid having to put your home or business on a precautionary boil order. Your water will be perfectly safe to drink as soon as full pressure is restored.

If the repair does not work as we expect and a boil order becomes necessary, you will be notified, in writing, when the need for the boil order is identified.

If you need to draw water for use, please do so before the time we will be reducing pressure.

If you have any questions, please call one of the following:

Engineer: _____ _____
Company and Contact Name Phone

Contractor: _____ _____
Company and Contact Name Phone

Thank you for your patience and consideration.

Water & Sewer Division
479-575-8386

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END OF SECTION 4200

SECTION 5000 SEWER LINE CLEANING

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This Section covers the cleaning of sewer lines.

1.02 SUBMITTALS

A. The Contractor shall submit for approval manufacturer's brochures and specifications for his proposed cleaning equipment. The equipment and methods selected for cleaning shall be approved by the City and the Engineer of Record.

PART 2 - PRODUCTS

2.01 EQUIPMENT

A. Equipment selected for cleaning shall be of a type generally recognized by the trade for the purpose being used and that has proved satisfactory. The equipment shall be capable of removing all roots, dirt, grease, rock and other deleterious material and obstructions from the sewer lines and manholes that would prevent efficient use of the inspection equipment.

1. Hydraulic cleaning equipment shall be of a movable dam type and shall be constructed in such a way that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the sewer. Sewer cleaning balls or other such equipment which cannot be collapsed instantly will not be considered acceptable cleaning equipment. The moveable dam shall be of the same diameter as the pipe being cleaned and shall provide a flexible scraper around the outer periphery to insure total removal of grease. If a line segment is found to be completely stopped up or plugged or heavily intruded with roots, then a mechanical root cutter shall be used.

2. High velocity hydro-cleaning equipment shall be truck mounted for ease of operation. The equipment shall have minimum of 600 feet of 1 inch I.D. high pressure hose with a selection of two or more high velocity nozzles. The nozzles shall have a capacity of 60 GPM at a minimum working pressure of 1000 pounds per square inch (psi). The nozzles shall be capable of producing a scouring action from 15 degrees to 45 degrees in all size lines designated to be cleaned. Equipment shall also have a high velocity gun for washing and scouring manhole walls and floor. The equipment shall carry its own water tank capable of holding corrosive or caustic cleaning or sanitizing chemicals, auxiliary engines, pump and a hydraulically driven hose reel. All controls shall be located so that equipment can

be operated above ground with minimal interference to traffic and/or danger to the operator.

3. Mechanical cleaning equipment shall be used to remove heavy accumulations of silt, sludge, etc., and roots. Bucket machines shall be operated in pairs with each machine powered by an engine with a minimum of 16 horsepower (HP) to ensure sufficient pulling power. Machines shall be capable of operating at least two speeds to match job conditions. Sufficient accessories and tools shall be furnished to accomplish the required cleaning in a complete and efficient manner.

4. Power rodding machines shall be of a continuous rod type, capable of holding a minimum of 1000 feet of rod. The rod shall be specifically treated steel. The machine shall have a positive rod drive and produce a 2000 pound rod pull. To insure safe operation, the machine shall have a fully enclosed body and an automatic safety throw-out clutch.

5. Cleaning equipment shall be provided that includes an air conveying vacuum system to provide for the simultaneous removal of the debris flushed to the manhole.

6. A temporary debris catcher, as approved by the Engineer, shall be used in the downstream manhole.

2.02 PERSONNEL

A. Contractor personnel shall be thoroughly familiar with all phases of sewer line cleaning to insure satisfactory end results without causing damage to the sewer lines or adjacent property.

PART 3 - EXECUTION

3.01 CLEANING EQUIPMENT

A. Since the success of related work depends a great deal upon the cleanliness of the lines, the importance of the cleaning operation cannot be too strongly emphasized. The equipment selected for cleaning shall be capable of removing all dirt, grass, rocks and other deleterious materials from the sewer lines and manholes. Particular emphasis is placed on the removal of grease accumulations so that cracks and breaks can be observed during television inspection and so that joints can be isolated during testing and sealing operations.

B. The Contractor shall make an inspection of the lines to be cleaned in order to determine the type of cleaning equipment that is required. It is anticipated that hydraulic cleaning will be adequate for most of the line segments.

3.02 CLEANING REQUIREMENTS

A. Prior to inspection, the designated sewer lines, as shown on the project drawings, will be thoroughly cleaned as specified below:

1. The sewer lines shall be cleaned by using standard mechanically powered or hydraulically propelled cleaning tools or combinations thereof, such as rodding machines, boring machines, hydraulic balls, cones, ferrets, or other similar devices.

2. All roots, sludge, dirt, sand, rock, grease and other solid or semi-solid material resulting from the cleaning operations shall be removed at the downstream manhole without passing the material from section to section, which could cause stoppage of the lines or accumulation in the wet well and damage to pumping equipment. When cleaning equipment is used, a debris catch riser as shown in the project specific or City engineering standard details shall be used in the downstream manhole so that both solids and water shall be trapped. All solids or semi-solids resulting from the cleaning operations shall be removed from the site and disposed of at no additional cost to the Owner. It the responsibility of the Contractor to secure a legal dump site for the disposal of this material.

3. Satisfactory precautions shall be taken to protect the sewer lines from damage that might be inflicted by the improper use of cleaning equipment. Whenever hydraulically propelled cleaning tools, which depend upon water pressure to provide their cleaning force or any tools which retard the flow of water in the sewer lines are used, precautions shall be taken to insure that the water pressure created does not cause any damage or flooding to public or private property being served by the manhole section involved. The flow of sewage present in the sewer lines shall be utilized to provide necessary fluid for hydraulic cleaning devices whenever possible. When additional quantities of water from fire hydrants are necessary to avoid delay in normal working procedures, the water shall be conserved and not used unnecessarily. No fire hydrant shall be obstructed or used when there is a fire in the area. Before using any water from the City water supply system, the Contractor shall obtain a hydrant meter from the Meter Department. The Contractor shall be responsible for the water meter and related charges for the setup, including the water usage bill. All expenses shall be considered incidental to cleaning.

4. UNDER NO CIRCUMSTANCES SHALL SEWAGE OR SOLIDS REMOVED THEREFROM BE DUMPED ONTO STREETS OR INTO DITCHES, CATCH BASINS, STORM DRAINS OR SANITARY SEWER MANHOLES.

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END OF SECTION 5000

SECTION 5100 SEWER LINE TELEVISION INSPECTION

PART 1 - GENERAL

1.01 WORK INCLUDED

A. All new sewer lines constructed shall be inspected via internal television inspection.

B. This section covers the television inspection (closed circuit television inspection – CCTV) of sewer lines.

1. The inspection of each line shall be by a television (TV) camera especially designed to accurately show the condition of the lines from the interior and with the ability determine the depth of water in the event of any pooling and to pinpoint the locations of line faults and necessary repairs.

2. A sewer line joint means the junction of two adjacent lengths of sewer pipe, and a fault is any crack too small to warrant pipe replacement. The term "manhole section" as used in these specifications shall mean the length of pipe connecting two manholes.

1.02 SUBMITTALS

A. The Contractor shall submit for approval manufacturer's brochures and specifications for proposed TV equipment.

1.03 INSPECTION

A. Immediately upon cleaning the sewer line in one location, it shall be televised to determine the condition of the line and location of existing service connections, etc.

B. The sewer lines shall be visually inspected by TV camera. The section being inspected shall be suitably isolated from the remainder of the sewer line as necessary.

C. The camera shall be moved through the line in either direction at a uniform slow rate not to exceed 60 feet per minute, by means of cable winches, or similar mechanisms. Under no circumstances shall the camera be tethered to a hydraulically propelled or high-velocity jet cleaning device while the cleaning device is on.

D. The camera shall stop at each service connection and provide a view up the service line.

E. Telephone, or similar suitable means of communications, shall be set up between the two winches, the pumping unit and the monitor control.

F. Under certain conditions, it may be impossible for inspection equipment to pass through a manhole section due to damaged pipe or other obstructions not correctable by internal methods. In such cases, the Engineer will be notified.

G. TV inspection will be done one manhole section at a time and the flow in the section being inspected will be suitably controlled. Sewer flow will not exceed those shown below as measured in the manhole:

6” - 10” Pipe	1 inch
12” - 14” Pipe	2 inches
14” - 24” Pipe	3 inches
Over 24” Pipe	4 inches

H. The Contractor will make all provisions for pumping or bypassing the flow around the manhole section and the cost shall be incidental to TV inspection. Contractor shall not be allowed to float the camera unless permitted by the City.

I. It is possible that some sections of the sewer line cannot be televised; therefore, house or building connection lines will have to be located on the ground by the Contractor. All cost for locating these service lines shall be included in the cost bid for house or building service line reconnection.

PART 2 - PRODUCTS

2.01 TELEVISION INSPECTION EQUIPMENT

A. The television camera and monitoring equipment shall be specifically designed and constructed to perform the work as specified. The camera shall be operative in conditions of 100% humidity and/or under water. The camera shall be small enough to pass through a 6 inch diameter sewer and shall be waterproof with a self contained lighting system capable of producing enough light to produce clear, bright, sharp pictures on the monitor.

The lighting and camera quality shall be suitable to allow a clear, in focus picture of a minimum of 6 linear feet of the entire inside periphery of the sewer pipe and the measuring device to determine the depth of water in the event of any pooling. Picture quality and definition shall be to the satisfaction of Engineer; otherwise, the equipment shall be removed from the line without pay.

B. The monitor shall be located within a temperature controlled television unit that will accommodate three people to watch the sewer line inspection. The monitor will have a 12-inch minimum viewing screen. The Engineer will have access to view the television monitor at all times.

C. The camera must be capable of measuring depth (in inches) of pooled water within the pipe. This shall be accomplished by measuring equipment mounted directly to the camera in view of the lens, or other methods as approved by the Utilities Director.

PART 3 - EXECUTION

3.01 TELEVISION INSPECTION BY THE CONTRACTOR

A. The Contractor shall furnish video media of the lines televised to the Engineer for review and comments, which may require up to thirty (30) calendar days from the date submittal to the City. Unless approved otherwise by the City, the video media shall be DVD format. Video shall play in a standard DVD player without the need of viewing software. Each video media shall be permanently labeled with the following information furnished:

1. Project Job Number
2. Manhole to Manhole Designation
3. Name of Contractor
4. Date Televised

B. The following information shall be recorded and visible onscreen for 10 seconds immediately before the start of televising each line segment:

1. Project Job Number
2. Manhole to Manhole Designation (Number, Pipe Material, Size of Line, and Direction of Televising)
3. Name of Contractor
4. Date Televised
5. Street and or Easement Location
6. Drawing Sheet Number

C. A continuous uninterrupted recording of distance from the insertion manhole shall be visible at the lower left corner of the screen at all times during inspection.

D. The following information shall be provided in hard copy to accompany each tape:

1. Project Job Number
2. Name of Contractor
3. Date Televised
4. Street or Other Location
5. Upstream Manhole Designation
6. Downstream Manhole Designation
7. Pipe Material

8. Pipe Diameter
9. Direction of Televising (Downstream or Upstream)
10. Continuous Time Log Designating Start and Finish of Each Line Segment Televised. Time shall begin at 0hr 0min 0sec at the beginning of each tape.
11. Location of Service Connections

E. Media will become the property of the City. If the video is of such poor quality that the Engineer is unable to evaluate the condition of the sewer line or to locate service connections, the Contractor will be required to retelevise and provide a good video of the line at no additional cost to the City.

PART 4 - PASS/FAIL CRITERIA

4.01 CRITERIA

A. The PASS/FAIL decision will not be made in the field.

B. The following items will be reviewed during the inspection:

1. Pipe bell ends facing downstream
2. Manhole Inverts:
   Geometry compared to city details. Invert shape, size, and roughness.
3. Service Connections
   Proper placement and connection to pipe per city details and specifications.
4. Loose or missing pipe joint gaskets
5. Pipe Joints not fully seated, or over-inserted.
6. Pipe integrity
   Crushed (or out of round)
   Damaged pipe (cracks, chips, etc.)
7. Pooling of water in the pipe.
   Any pooling of water that is deeper than ¾" will require the sewer main line to be adjusted to eliminate the problem.
8. Debris / Sediment.
   The line should be clear of all sediment and debris.

END OF SECTION 5100

SECTION 5200 INSPECTION AND TESTING OF SEWER LINES, MANHOLES, AND SERVICE LINES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section covers the inspection and testing of sewer lines, manholes, and service lines. Holiday testing shall be required on all epoxy lined manholes and sewer wet wells. Testing is required before final acceptance of sewer lines and service lines by the City.

B. If more than two (2) repairs are necessary on any 100-foot segment of sewer line (gravity or force main) then the repairs may not commence until the Engineer of Record has provided a report explaining the deficiencies and outlining a custom plan of repair, remediation, or replacement. This document must be approved by the City of Fayetteville prior to further disturbances to the utility.

1.02 SCOPE OF WORK

A. All pipelines shall be inspected and tested before final acceptance. The methods to be used are as follows:

1. New Gravity Sewer Lines

    a. Visual inspection during installation and before backfill.
    b Low pressure air test.
    c. Television inspection.
    d. Mandrel test (Flexible pipes only)
    e. Final Visual Inspection
    f. Infiltration/exfiltration
    g. Tracer wire continuity test.

2. Manholes

    a. Visual inspection during installation and before backfill.
    b. Vacuum testing.
    c. Final visual inspection.
    d. Holiday test (epoxy coatings).
    e. Cored connection dye-testing

3. Replacement Sewer Lines and Point Repairs

    a. Visual inspection during installation and before backfill.
    b. Low pressure air test/exfiltration, infiltration.
    c. Television inspection.
    d. Mandrel test.
    e. Final visual inspection.

4. Force Mains

   a. Visual inspection during installation and before backfill.
   b. Hydrostatic pressure test.
   c. Tracer wire continuity test.

5. Service Lines

   a. Visual inspection during installation and before backfill.
   b. Low pressure air test.
   c. Exfiltration test.

1.03 DELIVERABLES

A. The Engineer shall provide a complete and comprehensive testing report summary complete with all inspection and testing dates and results.

PART 2 - PRODUCTS

A. As specified elsewhere within these Standards.

PART 3 - EXECUTION

3.01 VISUAL INSPECTION DURING INSTALLATION AND BEFORE BACKFILL

A. The Engineer shall be responsible for inspecting sewer lines, manholes, and service lines during all phases of construction. The Engineer shall provide comprehensive inspection services. All work not conforming to these specifications that is discovered during this inspection phase will be corrected by the Contractor.

3.02 PRESSURE TEST FOR GRAVITY SEWER PIPELINES

A. The Contractor will perform pressure tests on all gravity sewer lines.

B. Lines will not be accepted until they pass all required tests.

C. Perform the tests in the presence of the City representative. Provide at least 48 hours' notice before beginning testing.

D. The primary test method is the Low Pressure Air Loss test.

3.03 LOW PRESSURE AIR LOSS PROCEDURE FOR GRAVITY SEWER PIPELINES

A. Plug all pipe outlets with suitable test plugs. Brace each plug securely.

B. Pipe air supply to pipeline to be tested so that air supply may be shut off, pressure observed, and air pressure released from the pipe without entering the manhole. Install a valved

branch in the supply line past the shut-off valve terminating in a 1/4" female pipe thread for installation of the test gauge.

C. Add air slowly to portion of pipe under test until test gauge reads at least 4 psig, but less than 5 psig.

D. Shut air supply valve and allow at least two minutes for internal pressure to stabilize.

E. The pressure shall then be decreased to 3.5 psig.

F. Upon reaching 3.5 psig, the time in minutes, seconds for the pressure to fall 1 psig so that pressure at the end of time of the test is at least 2.5 psig shall be observed.

G. Compare observed time with minimum allowable times in the following chart for pass/fail determination.

TEST CHART FOR AIR TESTING SEWERS
Leakage Testing of Sewers by Low Pressure Air Loss
(Time Pressure Drop Method)

Table 1 - Minimum Test Times in Minutes.Seconds for 1 psig drop (3.5 psig to 2.5 psig)										
Distance Between Manholes	Nominal Pipe Diameter (inches)									
	8	10	12	15	18	21	24	30	36	42
100	7.33	9.26	11.20	14.10	17.00	19.49	22.47	35.36	51.17	69.48
150	7.33	9.26	11.20	14.10	17.00	26.1	34.11	53.25	76.55	104.42
200	7.33	9.26	11.23	17.48	25.38	34.54	45.35	71.13	102.34	139.36
250	7.33	9.53	14.14	22.15	32.03	43.37	56.59	89.02	128.12	174.3
300	7.35	11.52	17.05	26.42	38.27	52.21	68.22	106.5	153.51	209.24
350	8.51	13.51	19.56	31.09	44.52	61.04	79.46	124.39	179.29	244.19
400	10.07	15.49	22.47	35.36	51.17	69.48	91.10	142.27	205.08	279.13
450	11.23	17.48	25.38	40.04	57.41	78.31	102.34	160.16	230.47	314.07
500	12.39	19.47	28.29	44.31	64.06	87.15	113.58	178.04	256.25	349.01
550	13.55	21.45	31.20	48.58	70.31	95.58	125.21	195.52	282.04	383.55
600	15.11	23.44	34.11	53.25	76.55	104.42	136.45	213.41	307.42	418.49

H. Where groundwater level is above the crown of the pipe being tested, increase test pressure at the rate of 1 psi for every 2.5 feet of water above the crown.

I. Air Testing Safety Requirements:

1. Securely brace plugs used to close the sewer pipe for the air test; this is to prevent the unintentional release of a plug which can become a high velocity projectile. For example: four pounds (gauge) air pressure develops a force against the plug in a

12" diameter pipe of approximately 450 pounds; this force can propel a 12-inch plug weighing 10 pounds to supersonic speeds.

2. Locate gauges, air piping manifolds, and valves at the top of the ground. Entry by anyone into a manhole where a plugged pipe is under pressure is strictly prohibited.

3.04 HOLIDAY TESTING FOR EPOXY LININGS

A. High voltage holiday detection for coating systems installed in corrosive environments, when it can be safely and effectively employed, shall be performed to ensure monolithic protection of the substrate. After the coating product(s) have cured in accordance with manufacturer recommendations, all surfaces shall be inspected for holidays in accordance with NACE RPO 188-99, Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates. All detected holidays shall be marked and repaired according to the coating product(s) manufacturer's recommendations.

B. Test voltage shall be a minimum of 100 volts per mil of coating system thickness.

C. Detection of a known or induced holiday in the coating product shall be confirmed to ensure proper operation of the test unit.

D. All areas repaired shall be retested following cure of the repair material(s).

E. In instances where high voltage holiday detection is not feasible a close visual inspection shall be conducted and all possible holidays shall be marked and repaired as described above.

F. Documentation of areas tested, equipment employed, results, and repairs made shall be submitted to the City/Engineer by Contractor.

3.05 TELEVISION INSPECTION

A. The Contractor shall televise all newly installed sewer mains as follows:

1. Television inspection shall be performed no less than 30-days after the pipe has been backfilled. Inspection shall be performed after mandrel testing, if applicable.
2. The Contractor shall clean all lines thoroughly prior to the start of televising.
3. Prior to performing the video test, 5 gallons of clean water per 100 feet of sewer line shall be poured down the sewer main in order to highlight low spots.
4. The Contractor shall televise each segment of pipe.
5. The Contractor shall review the video for possible defects in material or workmanship.
6. The Contractor shall correct any defects discovered during the television inspection at the Contractor's expense.
7. The Contractor shall deliver to the Engineer final video and logs after all defects have been repaired.

3.06 MANDREL TEST

A. Mandrel testing shall be performed no less than 30-days after the pipe has been backfilled.

B. The maximum allowable pipe deflection is five (5) percent of the inside pipe diameter.

C. Any sewer pipe which fails the mandrel test prior to final acceptance will not be accepted by the City until the defects are corrected.

D. All mandrel tests shall be performed by the Contractor while observed by City personnel.

3.07 SUPPLEMENTAL MANDREL TESTING

A. The City may at any time after final acceptance perform supplemental mandrel testing on pipelines constructed of flexible pipe material. These supplemental tests will be performed as detailed above with a maximum allowable long term deflection of five percent (5%).

B. Any sewer pipe which fails the mandrel test prior to expiration of the maintenance bond will be corrected by the Contractor at the Contractor's expense. If the Contractor fails to correct these defects after a reasonable time, the City will correct the defects and file a claim with the bonding company.

3.08 FINAL VISUAL INSPECTION

A. Upon completion of the above tests the Engineer will perform a final visual inspection of sewer lines and manholes.

B. A punch list of defects (including obvious running leaks) will be prepared and sent to the Contractor for correction at the Contractors' expense.

3.09 INSPECTION FOR SERVICE LINES

A. All building sewer installations shall be inspected and approved by an authorized City inspector.

B. Backfill may only be placed on the completed portions of a building sewer following inspection. No approval certificate shall be issued until all portions of a building sewer from the main connection to the building foundation have been inspected and approved by an authorized inspector. At the time of inspection, the pipe should be in place in the trench with the top half of the pipe barrel exposed. No approval will be given for building sewers all or a portion of which are covered at the time of inspection.

C. All building sewers are subject to testing to insure water tightness. All tests must be performed in the presence of the Engineer. Tests may be either by:

1. Water Loss Test Procedure; or,

2. Low Pressure Air Loss Procedure.

D. If, in the opinion of the Engineer, the line in question is properly installed and free from open joints and breaks, building sewers constructed entirely of cast iron soil pipe may be connected to the city sewer without testing.

E. Low Pressure Air Loss Procedure

1. Plug securely both ends of the line to be tested.
2. Charge the line with air to a pressure of 4.5 psig.
3. Allow at least five minutes for the temperature in the pipe to stabilize.
4. Measure the time required for a one (1.0) psi drop in pressure.
5. The minimum time for a one psi loss is 28.5 x d seconds where d = the nominal diameter in inches of the pipe being tested.

3.10 PRESSURE TEST FOR FORCE MAINS

A. Perform hydrostatic leakage tests for force mains the same as water pipe, see Section 5300, by filling the force main with water and increasing the pressure to a testing pressure of 150% of the working pressure with a minimum of 100 psi and a maximum pressure of 250 psi.

B. The duration of the leakage test shall be two hours.

C. The maximum allowable leakage rate shall be 1 gallon per foot diameter of pipe per 1000 feet of force main for the duration of the 2 hour test.

D. The force main will not be accepted until the actual leakage is equal to or less than the allowable. In addition, all obvious leaks shall be repaired.

3.11 MANHOLE TESTING

A. The Contractor shall vacuum test all new manholes constructed.

B. Precast manholes shall be vacuum tested prior to backfill.

C. The Contractor shall vacuum test all manholes that have been sealed (waterproofed).

D. The Contractor shall vacuum test all manholes that have been epoxy lined.

E. Manholes shall be tested in accordance with ASTM C 1244, latest edition. Vacuum test shall not be performed earlier than 7 days after construction for cast in place manholes. The Contractor shall provide all testing equipment, pump, hosing, seal, and other incidentals. Vacuum test head shall be positioned at the top of the casting (the surface on which the manhole cover rests, to include grade rings) in accordance with the equipment

manufacturer's instructions. A vacuum of 10-inches of mercury shall be drawn and the vacuum pump isolated by the shut-off valve on the test head connection. When valve is closed, time measurement shall commence, and the time required for vacuum drop to 9-inches of mercury shall be observed and recorded. Manholes shall pass if the time for the vacuum reading to drop from 10-inches of mercury to 9-inches of mercury meets or exceeds the time values in seconds in the following table.

Table 2 - Minimum Test Times for Various Manhole Diameters (seconds)

Depth (feet)	Diameter (inches)								
	30	33	36	42	48	54	60	66	72
<10	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	39	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	29	34	40	46	57	58	67
18	25	27	32	38	45	52	59	65	73
20	28	30	35	42	50	53	65	72	81
22	31	33	39	46	55	64	72	79	89
24	33	36	42	51	59	70	78	87	97
26	36	39	46	55	64	75	85	94	105
28	39	42	49	59	69	81	91	101	113
30	42	45	53	63	74	87	98	108	121

F. Manholes showing greater than the allowable leakage shall be repaired and re-tested until a satisfactory leakage result is obtained.

G. If a main or service line connection is cored or cut into a new or existing manhole, this connection must be dye-tested to verify no infiltration/inflow is permitted at the connection. A biodegradable, non-hazardous food-grade dye must be utilized. Dye must encompass the new connection, on the outside of the manhole for a period of 1-hour without any dye entering the manhole, based on visual inspection. If a vacuum test can be performed on the manhole, no dye test will be required at the new connection.

3.12 TRACER WIRE CONTINUITY TESTING

A. Contractor shall perform a continuity test on all tracer wire in the presence of the Engineer or the Engineers' representative. If the tracer wire is found to be not continuous during testing, Contractor shall repair or replace the failed segment of wire at their own expense.

B. A final continuity test shall be performed by a Water and Sewer Department representative before the project will be accepted by the City. If the tracer wire is found to be not continuous during testing, Contractor shall repair or replace the failed segment of wire at his own expense.

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END OF SECTION 5200

SECTION 5300 INSPECTION AND TESTING OF WATER LINES AND SERVICE LINES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section covers the inspection/observation and testing of water lines and services lines. Testing is required before final acceptance of water lines and service lines by the City.

B. If more than two (2) repairs are necessary on any 100-foot segment of water line then the repairs may not commence until the Engineer of Record has provided a report explaining the deficiencies and outlining a custom plan of repair, remediation, or replacement. This document must be approved by the City of Fayetteville prior to further disturbances to the utility.

1.02 SCOPE OF WORK

A. All pipelines shall be inspected and tested before final acceptance. The methods to be used are as follows:

1. New Water Pipelines

    a. Visual inspection during installation and before backfill.
    b Hydrostatic pressure test.
    c. Disinfection.
    d. Bacteriological sampling.
    e. Final Visual Inspection.
    f. Tracer wire continuity test.

2. Water Meter Setters

    a. Visual inspection during installation and before backfill.
    b. Final Visual Inspection.

3. Service Lines

    a. Visual inspection during installation and before backfill.
    b Hydrostatic pressure test.
    c. Final Visual Inspection
    d. Tracer wire continuity test.

1.03 DELIVERABLES

A. The Engineer shall provide a complete and comprehensive testing report summary complete with all inspection and testing dates and results.

PART 2 - PRODUCTS

A. As specified elsewhere within these Standards.

PART 3 - EXECUTION

3.01 VISUAL INSPECTION DURING INSTALLATION AND BEFORE BACKFILL

A. The Engineer shall be responsible for observing/inspecting water lines, water meter setters, and service lines during all phases of construction. The Engineer shall provide comprehensive observation/inspection services. All work not conforming to these specifications that is discovered during this inspection phase will be corrected by the Contractor.

3.02 PRESSURE TEST FOR TAPPING SLEEVES

A. The contractor shall provide all pumps or other equipment necessary to test the tapping sleeve before making a tap. The duration of the hydrostatic leakage test on tapping sleeves shall be thirty (30) minutes at 225 psi with zero leakage.

3.03 PRESSURE TEST FOR WATER PIPELINES AND SERVICE LINES

A. After completion of construction of all water lines or sections thereof, the Contractor shall flush, test and disinfect the new water lines in accordance with the Engineer of Record's plan and as described below.

B. Flushing

1. All water for flushing, testing and disinfecting water lines shall be supplied and paid for by the Contractor. Water meters shall be obtained from the City of Fayetteville Meter Division. Water used for high rate flushing shall not be metered through a contractor issued water meter. Actual water flow rates used during flushing operations shall be determined by the City of Fayetteville by using either pitot style gauges or high rate water meters. Volume shall be determined by multiplying the measured flow rate times the duration of flushing in minutes. Water used for flushing shall be billed to the contractor at the current wholesale water rate plus applicable taxes.

2. The work shall be coordinated to ensure that it will not be carried on during periods of high water usage. Water valves or other appurtenances on the existing water system, new tapping valves, or valves or appurtenances that have been accepted by the City, shall only be operated by a City employee who has a valid ADH Water Operator's License and under the direct supervision of the City of Fayetteville Water & Sewer Maintenance Division.

3. The Contractor shall fill and flush the newly constructed lines and visually check all combination air release and vacuum valves, blow-off valve assemblies, line valves, fire hydrants, and meter setters to assure proper operation.

4. The Engineer of Record shall develop a flushing plan to ensure that all lines are properly flushed. The plan should specify the sequence in which valves and hydrants are to be opened and the duration thereof, ensuring complete flushing and protecting the City's water system from construction contaminated water. The volume to be flushed shall be no less than three (3) but no more than five (5) times the volume of the main to be flushed, and shall be metered by the City. The flow shall be such that a flushing velocity of not less than 2.5 feet per second and preferably 3.5 feet per second or greater is attained.

C. Hydrostatic Testing

1. All pipe shall be tested as set out in AWWA C600, latest revision. Tests will be conducted only after the line is completed, including all taps and meter settings as required and the backfill completed. These tests shall be performed by the Contractor in the presence of the City Inspectors and the Engineer of Record. The Contractor shall furnish all necessary pressure gauges, meters, and pumps and make all taps and connections.

2. Each valved section of pipe shall be slowly filled with water and the specified test pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. Before applying the test pressure, all air shall be expelled from the pipe by permanent taps or corporation cocks where necessary.

3. Test pressure shall be either 150 percent of the static pressure at the lowest points or 200 psi, whichever is greater, not to exceed 250 psi at the lowest point. The contractor shall provide all pumps or other equipment necessary to maintain the test pressure within +/-5 psi at the test point for a period of two (2) hours. All interior valves including guardian valves on fire hydrants and other appurtenances shall be open during all tests.

4. The test pressure shall not vary by more than ± five (5) psi for the duration of the test. During the duration of the two hour test, if the test pressure drops more than 5.0 psi from the start pressure, the test shall be terminated and considered failure due to assumed leaks in the tested pipe section. If the pressure rises beyond the allowed 5 psi variance, the test shall be terminated and remaining air shall be purged from the pipeline.

D. Leakage

1. The leakage test shall be conducted concurrently with the pressure test. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure within 5 psi of the above

specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water.

2. The maximum allowable leakage volume shall be per AWWA standards for PVC and Ductile Iron pipes. For PVC pipe see AWWA C605 Table 2, for Ductile Iron pipe see AWWA C600 Table 4.A.

3. Upon completion of a two hour test where the test pressure did not vary by more than ± five (5) psi, the CONTRACTOR shall determine the leakage amount by measuring the amount of "make-up" water necessary to restore the original starting pressure.

4. Should any test of pipe laid disclose leakage greater than that specified, the leak(s) shall be located and repaired and the line shall be re-tested at the Contractor's expense. All visible leaks shall be repaired regardless of the amount of leakage. It may be necessary to utilize leak detection equipment to locate not visible leaks at the Contractor's expense.

3.04 DISINFECTION

A. After successful pressure testing, the line(s) shall be flushed at a velocity equal to or greater than 2.5 feet per second. The line shall then be disinfected in accordance with AWWA C651, latest revision, for Disinfecting Water Mains, continuous feed method, except that the placing of hypochlorite granules into the main during construction will not be permitted.

B. The Contractor shall provide a test/chlorine tap no greater than 10' downstream from the beginning of the new water line. All excavation, installation, use of and proper abandonment of the test tap is the responsibility of the Contractor.

C. The final concentration of chlorine inside the main shall be 25 parts per million (ppm) at all locations and shall be maintained for a minimum of 24 hours. The chlorine residual at the end of the 24 hour period shall not be less than 10 ppm. The contractor shall supply all test kits necessary to verify chlorine concentrations.

D. The contractor shall operate all valves and hydrants in the treated section of water line during the initial 24 hours to ensure disinfection of the appurtenances.

E. The contractor shall take great care when flushing the line to assure proper drainage is available to prevent harm at any adjacent downstream location.

F. Disposal of the disinfecting water shall be in a manner that will protect the public and the receiving waters from harmful concentrations of chlorine. Decholorination of the disinfecting water shall be in accordance with AWWA C655, Field Dechlorination, latest edition. A dechlorination plan shall be prepared by the Engineer of Record.

G. After disinfection is complete, the Contractor shall then flush the disinfecting solution from the lines to a point that the chlorine concentration is back down to the same level as the treated water from the distribution system. The treated water lines will then be tested before being placed into service.

3.05 BACTERIOLOGICAL SAMPLES

A. Bacteriological samples shall be taken by City personnel only. Samples shall be taken on two consecutive days and shall be taken only on Monday, Tuesday, Wednesday, or Thursday. Before a line is placed in service, two consecutive series of samples which are not collected on the same day and are taken no more than 4 days apart must show that the water is bacteriologically safe for drinking purposes.

3.06 FINAL VISUAL INSPECTION

A. Upon completion of the above tests the Engineer will perform a final visual inspection of water pipelines and meters.

B. A punch list of defects (including obvious running leaks) will be prepared and sent to the Contractor for correction at the Contractors' expense.

3.07 TRACER WIRE CONTINUITY TESTING

A. Contractor shall perform a continuity test on all tracer wire in the presence of the Engineer or the Engineers' representative. If the tracer wire is found to be not continuous during testing, Contractor shall repair or replace the failed segment of wire at their own expense.

B. A final continuity test shall be performed by a Water and Sewer Department representative before the project will be accepted by the City. If the tracer wire is found to be not continuous during testing, Contractor shall repair or replace the failed segment of wire at his own expense.

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END OF SECTION 5300

SECTION 6000 PAVEMENT REPAIR

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section covers the materials and procedures used in the repair of roads, streets, or other public rights-of-way where a water lines, sewer lines or appurtenances are constructed as part of private or development projects.

B. Capital Improvement Projects and City maintenance projects are not a standard specification. Capital Improvement Projects and City maintenance projects will be considered only on specific case by case basis in accordance with Section 1000 General Requirements.

1.02 REGULATIONS AND STANDARDS

A. All permanent repairs of streets, roads, trails, sidewalks, other public rights-of-way, private drives, private parking lots, etc. shall comply with the requirements shown on the City Engineering Standard Detail Drawings and as further defined in the City's Minimum Street Standards and details. Also refer to:

http://www.fayetteville-ar.gov/445

B. The Contractor is responsible for following the requirements of all State or local Ordinances, Regulations, or Codes governing the repairs to roads, streets, or other public rights of way. In particular:

1. Repair of State Highways: per requirements of the Arkansas Department of Transportation.

2. Repair of county roads: per requirements of the Washington County Road Department.

3. Repair of City of Fayetteville streets, sidewalks, and driveways: per the requirements of the City of Fayetteville.

4. Permit for street cut and repairs shall be furnished by the Contractor.

C. Temporary Repairs: Comply with Section 1000 General Requirements and as follows.

1. Per requirements of the governmental agency having jurisdiction and these specifications.

1.03 TRAFFIC CONTROL

A. Comply with Section 1000 General Requirements and as follows.

A. Whenever traffic flow restrictions of any kind are anticipated, the Contractor will be required to contact the City of Fayetteville Engineering Division to be given permission to obstruct traffic flow.

B. Street closing permits must be obtained from proper government agencies.

C. Construction signs shall be placed immediately adjacent to the Work, at such locations as traffic demands.

D. Contractor will be required to submit a Traffic Control Plan to City of Fayetteville and the Engineer.

END OF SECTION 6000

SECTION 6100 LAWN AND GRASS RESTORATION

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This Section covers the replacement of native grass or sod in lawns disturbed by the construction.

B. Consists of furnishing and applying fertilizer, seed, mulch cover, and water at all other locations disturbed by the construction.

C. Maintenance service.

1.02 SCOPE OF WORK

A. This Section covers the furnishing and placing of sod to form solid mats on areas shown on the Drawings (generally lawns or commercial green spaces) or seed and mulch all other areas disturbed by the Contractor.

B. It covers the furnishing and applying of water.

C. It covers the furnishing and placing of four (4) inches of topsoil on all areas disturbed during construction.

D. It covers the furnishing and placing of fertilizer.

E. All work shall be in accordance with details shown on the Drawings and within these Specifications.

F. The Contractor is responsible for following the requirements of all local Ordinances, Regulations, or Codes governing re-vegetation and slope stabilization,

1.03 WARRANTY

A. Provide one year warranty from date of final acceptance.

B. Replace areas found dead, or not in a healthy growing condition.

PART 2 - PRODUCTS

2.01 TOPSOIL

A. Topsoil shall be reasonably free from subsoil, clay, lumps, brush, objectionable weeds and/or other litter and shall be free from roots and toxic substances or other material or substances that might be harmful to plant growth or be a hindrance to grading, planting and maintenance operations.

2.02 FERTILIZER

A. Fertilizer shall be a standard commercial product complying with State and Federal laws and with the requirements issued by proper authorities.

B. Fertilizer shall be delivered to the site in the manufacturer's original container, on which shall be plainly marked the manufacturer's name and the guaranteed chemical analysis.

C. Except as noted in the following sentence, fertilizer shall contain not less than the percentages by weight of ingredients as follows:

Nitrogen	- 13 percent
Phosphorus, P205	- 13 percent
Potash, K2	- 13 percent

Other 1:1:1 ratio fertilizers may be used, provided the available plant food remains the same as herein specified.

D. All fertilizer shall be solid and shall be in a condition which will permit proper distribution.

2.03 SOD

A. Solid sod shall be cut from well-established viable Bermuda, Zoysia or St. Augustine grass. Sod type shall match that established in the disturbed areas.

2.04 SEED

A. Contractor shall apply seed mixture appropriate for the season and disturbed area.

B. Contractor shall apply a mixture of various annuals and perennials to provide overlapping times of seasonal peak vegetative cover. Seeding shall only be done just prior to the vegetation’s peak season for best results. Seeding shall be used when there is sufficient time in the season to ensure adequate vegetation establishment and erosion control.

C. To optimize soil stabilization, Contractor shall utilize a nurse crop of quick growing annuals within a mix of perennials appropriate for the season. The nurse crop germinates and grows rapidly, holding the soil until the slower-growing perennial seedlings become established. Permanent vegetation shall not be considered established until a ground cover of perennial vegetation is achieved that is uniform and mature enough to survive and be of sufficient density to preclude erosion.

D. Contractor shall conduct seeding activities to achieve stabilization that are generally congruent with the following schedule:

Dormant Cold Season Temporary Stabilization (November 1 – February 28)

Seeding at this time of the year typically does not produce successful results, as cold temperatures inhibit seed germination. Contractor shall be responsible for achieving temporary stabilization via mulching, erosion control blankets, matting, compost, and/or other appropriate structural/nonstructural methods for temporary stabilization until seasonal weather conditions become more conducive to establishment of permanent perennial vegetative cover. Fertilizers shall be added at this time in preparation for seeding. Contractor shall be responsible for achieving temporary stabilization at all areas that are unstable and subject to erosion. Contractor shall apply temporary seeding, as follows:

Dormant Cool Season Temporary Cover Crop Seed Mix (November 1 – February 28)

Plant Species	Growth Season/ Life Cycle	Seeding Rate
Winter rye (*Secale cereale)*	cool season annual	75 lb/ac
Perennial Ryegrass *(Lolium perenne)*	cool season perennial	75 lb/ac

Pre Warm Season (Spring) Seeding (March 1 – May 31)

As the growing season approaches, Contractor shall apply a mix of quick germinating cool season species combined with warm season species listed below. The cool season species will serve to hold the soil until warmer weather arrives stimulating the warm season species to germinate.

Pre Warm Season (Spring) Seed Mix (March 1 – May 31)

Plant Species	Growth Season/ Life Cycle	Seeding Rate
Oats (*Avena sativa)*	cool season annual	20 lb/ac
Perennial Ryegrass (*Lolium perenne)*	cool season perennial	20 lb/ac
White clover (*Trifolium repens)**	cool season perennial	20 lb/ac
Korean (Kobe) lespedeza (*Kummerowia stipulacea)**	warm season annual	20 lb/ac
Bermuda (*Cynodon dactylon)*	warm season perennial	30 lbs/ac
Bahiagrass (*Paspalum notatum)*	warm season perennial	30 lbs/ac
Weeping love grass (*Eragrostis curvula)*	warm season perennial	30 lbs/ac

*All legume seed must be properly inoculated with appropriate inoculant.

Warm Season Seeding (June 1 – August 31)

In the midst of the growing season, Contractor shall apply a mix of warm season annuals and perennials, as follows:

Warm Season Seed Mix (June 1 – August 31)

Plant Species	Growth Season/ Life Cycle	Seeding Rate
Sudan grass *(Sorghum bicolor)*	warm season annual	20 lb/ac
Alyce clover *(Alysicarpus ovalifolius)*	warm season annual	20 lb/ac
Brown-top millet *(Panicum ramosum)*	warm season annual	20 lb/ac
Bermuda (*Cynodon dactylon)*	warm season perennial	25 lbs/ac
Bahiagrass (*Paspalum notatum)*	warm season perennial	25 lbs/ac
Weeping love grass (*Eragrostis curvula)*	warm season perennial	25 lbs/ac
Buffalo grass (*Bouteloua dactyloides)*	warm season perennial	25 lbs/ac

Late Season Seeding (September 1 – October 31)

During late summer to early fall, Contractor shall apply the following mix:

Late Season Seed Mix (September 1 – October 31)

Plant Species	Growth Season/ Life Cycle	Seeding Rate
Oats (*Avena sativa)*	cool season annual	30 lb/ac
Winter rye (*Secale cereale)*	cool season annual	30 lb/ac
White clover (*Trifolium repens)**	cool season perennial	25 lb/ac
Perennial Ryegrass *(Lolium perenne)*	cool season perennial	50 lb/ac
Virginia wildrye (*Elymus virginicus)*	cool season perennial	25 lb/ac

*All legume seed must be properly inoculated with appropriate inoculant.

E. Contractor has option of adding warm season perennials to Late Season Seed Mix (September 1 – October 31) and/or Dormant Cool Season Temporary Cover Crop Seed Mix (November 1 – February 28) or seeding with warm season perennials during other seeding periods. This is to be determined on a site-specific basis. Contractor shall confer with City of Fayetteville prior to seeding activities to determine specific seed mix.

F. Contractor shall submit all labels/tags from seed bags and seed purchase invoices to the City of Fayetteville.

2.05 MULCH

A. Mulching shall be used in conjunction with both temporary and permanent seeding practices to enhance their success by providing erosion protection prior to the onset of vegetative growth. Straw mulching shall be of oat, wheat, or rice straw mulch. Hay mulch shall be prairie grass, Bermuda grass, or other hay as approved. Mulch shall be dry and reasonably free from Johnson grass or other noxious weeds, and shall not be excessively brittle or in an advanced state of decomposition. All material will be inspected and approved prior to use.

B. Mulching shall be spread in a uniform continuous blanket, at a rate of 1 to 3 tons per acre (air dried weight) or to a uniform 2-inch depth. Mulch shall be spread by hand or by an

approved blower type mulch spreader. Care shall be taken to remove all wire and/or twine from baled hay/straw when the control structures are removed from the site. Mulch shall be anchored in the soil to a depth of two to three inches to form a soil-binding mulch to prevent loss or bunching, or held in place with a tackifier.

2.06 WATER

A. Water shall be free from any substances, in solution or in suspension, which would inhibit the rapid growth of grass.

PART 3 - EXECUTION

3.01 FERTILIZER APPLICATION

A. Fertilizers shall be applied at appropriate agronomic rate. If necessary to achieve final stabilization, fertilizer shall be applied at a minimum rate of 250 pounds per acre (0.0057 pounds per square foot) in advance of tilling/seedbed preparation operations. When soil samples are not practical, fertilizer shall consist of 13-13-13 (nitrogen, phosphorus, and potassium content). The fertilizer distributor box shall be equipped with baffle plates to prevent downward movement of fertilizer when operating on a slope. The fertilizer shall be raked in and thoroughly mixed with the soil to a depth of approximately 2 inches prior to the application of seed or mulch.

3.02 SEEDING

A. Areas to be seeded shall be dressed to natural shape.

B. The Contractor shall obtain an approved topsoil from any available source and place uniformly on the designated areas and spread evenly to a minimum thickness of four (4) inches. Irregularities in the surface shall be corrected so as to prevent formation of depressions where water will stand. TOPSOIL SHALL NOT BE PLACED WHEN THE SUBGRADE IS FROZEN, EXCESSIVELY WET, OR IN A CONDITION DETRIMENTAL TO THE PROPOSED PLANTING AND PROPER GRADING.

C. Broadcast sowing of seed may be accomplished by hand seeders or by approved power equipment. Either method shall result in uniform distribution and no work shall be performed during high winds. The area seeded shall be lightly firmed with a cultipacker immediately after broadcast.

D. The contractor shall water and maintain seeded areas from time of completion until final acceptance of the project.

E. The contractor shall be responsible for establishing ground cover on all disturbed areas. Repeated seeding shall be required if necessary throughout the warranty period.

3.03 SOD PLACEMENT

A. In this paragraph, "Solid Sod" is interchangeable with the word "sod."

B. Solid sod or topsoil shall not be placed until all other items of work are complete.

C. Prior to placing the sod and topsoil in the areas designated, the ground surface shall be cleared of materials that might hinder proper grading, tillage, or subsequent maintenance operations such as stumps, stones, roots, cable, wire, grade stakes, etc., and brought to four (4) inches below the finished grade. The areas shall then be thoroughly tilled to a depth of at least two (2) inches by plowing, disking, harrowing or other acceptable means.

D. The Contractor shall then obtain an approved topsoil from any available source and place uniformly on the designated areas and spread evenly to a minimum thickness of four (4) inches. Irregularities in the surface shall be corrected so as to prevent formation of depressions where water will stand. TOPSOIL SHALL NOT BE PLACED WHEN THE SUBGRADE IS FROZEN, EXCESSIVELY WET, OR IN A CONDITION DETRIMENTAL TO THE PROPOSED PLANTING AND PROPER GRADING.

E. After the topsoil has been spread and graded, the surface shall be cleared of stones, stumps or other objects that might hinder planting or maintenance preparations. Paved areas over which hauling operations are conducted shall be kept clean.

F. Where any portion of the surface becomes gullied or otherwise damaged, the affected areas shall be repaired to the aforementioned condition.

G. Areas to be sodded shall be shaped in such manner that they will, after placement of sod, conform to the typical sections.

3.04 WATERING

A. Prior to placement of seed or sod, areas shall be sprinkled with water sufficiently to make them moist, but not muddy. The initial application of water may be omitted if the area is sufficient moist from rainfall.

B. Immediately following the placing and tamping of sod, the covered area shall be wetted thoroughly. **Subsequent applications of water shall be as required**.

C. Immediately following the application of the mulch cover for seeding, water shall be applied in sufficient quantity to thoroughly moisten the soil to the depth of pulverization and then as necessary to germinate the seed and maintain growth.

3.05 COMPLETENESS

A. The lawn and grass operations shall not be considered complete until a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 80% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures.

3.06 INTERMITTENT CLEANUP

A. Immediately following the lawn and grass restoration operations, all gutters, sidewalks, driveways, street pavement, yard or other areas shall be cleaned of all debris, excess sod, topsoil or other objectionable matter. All such cleanup operations shall be completed before sodded areas are measured for payment.

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END OF SECTION 6100

SECTION 6200

REPORTING FORMS

The following forms may be revised and/or additional forms added as determined by the Utilities Director or City engineer.

It is the Contractor's responsibility to request the latest edition of Reporting Forms.

Fire Hydrant Information Sheet

City of Fayetteville

Hydrant ID: _____ (Assigned by Water/Sewer)

Manufacturer: _____ (Mueller, Waterous, Other)

Address: _____ (Nearest House Number)

Model: _____

Street: _____ (Street Name)

Year: _____

Cross Street: _____ (Nearest Cross Street)

Installation Date: _____

Main Diameter: _____

Installed By: _____ (City or Contractor Name)

Feeder Diameter: _____

Static Pressure: _____ psi

Depth of Bury: _____ (Include Extensions)

Ownership: _____ (City, Private, WWA, Other)

Number of Nozzles: 3 2 Other:____

Nozzle Diameters: 4 1/2"-_____; 2 1/2"-_____; Other-_____

Fire Flow Data

Pitot Pressure: _____ psi

Measured Flow: _____ gpm

20 psi Residual Flow: _____ gpm

Current Color: Blue Green Orange Red Other:_____

Residual Flow is 1500 gpm > - Blue; 1000 to 1499 - Green; 500 to 999 - Orange; < 500 - Red

Correct Color: _____

Secondary Fire Hydrant for Test

Hydrant ID: _____

Static Pressure: _____ psi

Residual Pressure: _____ psi

Date of Flow Test: _____

Initials of Testor: _____

Date of Inspection: _____

Initials of Inspector: _____

Date of Maintenance: _____

Intitials of Maint.: _____

Notes: _____

Water Line Flushing Form

City of Fayetteville

Test Date:	Contractor / Superintendent:
Project Name:	
City Project Number:	Engineer / Inspector:
Location:	

Pipe Diameter (inches)	Total Length of Pipe (feet)	Volume (gallons)	Start Time	Flushing Rate min. 2.5 fps (gpm)	Measured Flushing Rate (gpm)	End Time	Volume (gallons)

Diameter (inches)	Volume (1000')	gpm at 2.5 fps
2	163	24
3	367	55
4	653	98
6	1469	220
8	2611	392
12	5875	881

City of Fayetteville

Water Pressure and Leakage Test Form

City of Fayetteville

Test Date:	Contractor / Superintendent:
Project Name:	
City Project Number:	Engineer / Inspector:
Location:	

Pipe Diameter (inches)	Total Length of Pipe (feet)	Test Pressure (psi)	Allowable Leakage (gallons)	Start Time	Start Pressure (psi)	End Time	End Pressure (psi)	Make-up Volume (gallons)	Pass or Fail

D (inches)	Allowable per 1000'
6	0.50
8	0.67
10	0.83
12	1.00
14	1.17
16	1.33
18	1.50
20	1.67
24	2.00
36	3.00
42	3.50

City of Fayetteville

Water Line Disinfection Form

City of Fayetteville

Test Date: _____ Contractor / Superintendent: _____

Project Name: _____

City Project Number: _____ Engineer / Inspector: _____

Location: _____

Pipe Diameter (inches)	Total Length of Pipe (feet)	Volume of Water (gallons)	Make-up Water Chlorine (ppm)	Chlorine Residual (ppm)	Date and Time	Chlorine Residual after 24 Hours (ppm)	Date and Time

After chlorine residual in the water line has been achieved at a minimum of 25 ppm, all valves and hydrants in the treated section of water line shall be operated during the initial 24 hours to ensure disinfection of the appurtenances.

Diameter (inches)	Volume (1000')
2	163
3	367
4	653
6	1469
8	2611
12	5875

City of Fayetteville

Manhole Vacuum Test Form

City of Fayetteville

Test Date: _____ Contractor / Superintendent: _____

Project Name: _____

City Project Number: _____ Engineer / Inspector: _____

Location: _____

Drawing Sheet Number	Manhole ID	Manhole Sta. Number	Start Time	Start Pressure (inches of Hg)	End Time	End Pressure (inches of Hg)	Pass or Fail

_____

City of Fayetteville

Sewer Line Low Pressure Air Test Form

City of Fayetteville

Test Date: _____ Contractor / Superintendent: _____

Project Name: _____

City Project Number: _____ Engineer / Inspector: _____

Location: _____

Plan Sheet Number	Upstream Manhole	Upstream Sta. Number	Downstream Manhole	Downstream Sta. Number	Start Time	Start Pressure (psi)	End Time	End Pressure (psi)	Pass or Fail

City of Fayetteville

Sewer Line Mandrel Test Form

City of Fayetteville

Test Date: _____ Contractor / Superintendent: _____

Project Name: _____

City Project Number: _____ Engineer / Inspector: _____

Location: _____

Plan Sheet Number	Upstream Manhole	Upstream Sta. Number	Downstream Manhole	Downstream Sta. Number	Pass or Fail

City of Fayetteville

CITY OF FAYETTEVILLE, ARKANSAS
POLICY AND PROCEDURE

Subject:	**SEWER SERVICE LINE AND CONNECTION POLICY**
Policy Number:	**OP-01**
Original Policy Date:	**June 23, 1988**
Effective Date of New/Revised Policy:	**August 1, 2005**
Revision Dates:	**July 21, 2005**
Custodian: (Division)	**WATER AND WASTEWATER**
Mayor's Signature and Date	

OP-1.0 PURPOSE:

To establish a uniform policy concerning sewer service connections and sewer service lines.

OP-1.1 POLICY:

General. There have been numerous pipe configurations installed underground since the City of Fayetteville's sewer system was first designed and installed in 1889. This policy is correct and appropriate for over 99% of the situations found. It does not eliminate using sound judgment for the remaining 1% of the cases. Judgment calls shall be the responsibility of the Mayor or his designated representative, who is currently the Water/Sewer Maintenance Superintendent. Grandfather clauses do not apply in cases where public health and safety is compromised, and thus do not apply for sewer issues. Ordinance references are based on the City of Fayetteville Code of Ordinances as in effect on 1 April, 2003.

1. Connection permit required. [Section 51.035, City of Fayetteville Code of Ordinances]. *"No unauthorized person shall uncover, make any connection with or opening into, use, alter, or disturb, any public sewer or appurtenance thereof without first obtaining a written permit from the approving authority. No permit shall be issued to allow any person to tie his property to the sewer system until the connection fee prescribed by Section 51.114 as presently amended or as may be amended in the future is paid."*

2. Separate building sewer provided for every building;, exceptions. [Section 51.039, City of Fayetteville Code of Ordinances]. *"A separate building sewer shall be provided for every building except as follows:*

(A) Where multiple buildings are constructed in an apartment complex or condominium on a single lot or tract of land which cannot be subsequently subdivided and sold in parcels, the individual buildings may be connected to a collector building sewer, provided that only one person is responsible for maintenance of the building sewer.

(B) Temporary buildings, mobile homes, or similar portable structures may be connected to a building sewer installed to serve a previously constructed permanent building, provided that both the permanent and temporary buildings are located on the same lot."

The temporary status is null and void if the structure is in place for more than 365 days. At that time, a separate building sewer must be provided.

Two buildings, or two parts of one building which may have different owners (i.e., townhouses) may not be attached to one 4" or 6" private service line. This has never been legally allowed. If two buildings, or two parts of one building which may have different owners, are attached to a single private service line, this situation must be corrected by the owners and each structure must have a dedicated tap onto the main. The only exceptions are listed above. Multiple structures hooked to one sewer service line are not covered by any grandfather clause, and the situation must be corrected.

Condominiums and other structures which can have separate ownership must each have their own dedicated sewer service line which remains on the same lot/property as the building or portion of the building which it serves.

3. Service Line Crossing Adjacent Lots. Sewer service lines must run directly from the lot which they serve to the main without crossing another lot. The service may cross street right of way and/or the easement to access the main. It may not run parallel to the main, but can run at an angle between 45° to and perpendicular to the main if the main is already installed prior to the development of said land and said service line will be no more than 60' in length within the combined easement/right of way area. Ownership is not the deciding factor; lot lines or parcel lines are the issue. Thus, if one Owner owns two adjacent lots, and builds on one lot, the service for this structure and lot cannot cross the other lot. If the service line would have to be more that 60' in length within the combined easement/right of way area, then the main must be extended so the service line can connect at a 90° angle to the main.

4. Sewer Mains Accessing Every Lot. Sewer mains shall be installed so as to adjoin each lot such that all service lines meet the above requirements. Sewer main extensions are the responsibility of the owner of the lot receiving the service.

5. Sewer Easements for Private Lines. Sewer line easements for private lines to cross adjacent lots are prohibited except in very rare cases. In general, these are when a given

private residence tandem lot, containing only one structure which requires sewer service, is "landlocked" from a sewer main, all adjacent lots have legal access to a main, and the sewer line easement is collocated with an above ground access easement. Private easements shall not be used in cases where sewer main extensions are in the public best interest, such as where a sewer main shall be made accessible to other lots or where a future main may be required.

6. City and Owner Service Line Maintenance and Repair Responsibilities.

There are two general situations which cover sewer service line configurations in the City of Fayetteville. The following two paragraphs explain City and Customer responsibilities for each of these situations.

A. Situation 1, No City Cleanout is Present.

If no City cleanout is present, the Customer owns the service lateral all the way to the main. They are responsible for any and all repairs, clearing any blockages, etc., with the following caveat. If there is a blockage under the paved or concreted portion of the street (from a vertical line drawn at the back of curb to the back of curb, or from the actual edge of the asphalt if no curb is present) which cannot be cleared via rodding or washing, then the City will repair the pipe under the street. If the blockage is determined to be caused by anything which should not be placed in a sewer line (grease, paper towels, toys, croquet balls, cleanout caps, sticks, gravel, kitty litter, or any other materials which are not allowed per the sewer use ordinance) then the Customer will be billed for the work. The burden of proof of the location of the blockage rests on the Customer. The City will meet the Customer or their representative (plumber, rooter, etc.) and try to help them determine the location of the blockage. The City will not place a City owned rod, camera, tape, or other item into the Customer's cleanout or sewer system to determine the location of a blockage- anything placed inside the pipe at this time must belong to or be working for the Customer. If the combined forces determine beyond a reasonable doubt that the blockage is under the street, then we will investigate as necessary to determine what type of repair is necessary. This is the only time we will place City tools inside the Customer's piping system. If there used to be a City cleanout and the cleanout has been removed or damaged, then the situation is the same as when there is no City cleanout present.

If the blockage is outside the area of the paved or concreted portion of the street (from a vertical line drawn at the back of curb to the back of curb, or from the actual edge of the asphalt if no curb is present), then the City grants the property owner who owns the service line the right to perform maintenance on said service line within the easement and/or right of way. This includes work performed on both sides of the road or right of way, to include work performed under a sidewalk.

B. Situation 2, City Cleanout is Present.

A City cleanout is defined as a 4" cleanout located behind the curb or at the easement line (for back yard lines). These cleanouts are typically within 10' of the edge of the roadway or within 10' of the main, respectively. Cleanouts smaller than 4" are never City cleanouts, and are always the responsibility of the property owner.

When a City cleanout is present, the City assumes ownership and responsibility for any blockages between the City cleanout and the main, and which can be cleared by rodding from the City cleanout. If the blockage is determined to be caused by anything which should not be placed in a sewer line (paper towels, toys, croquet balls, cleanout caps, sticks, gravel, kitty litter, or any other materials which are not allowed per the sewer use ordinance) then the owner will be billed for the work. Any blockages prior to the City cleanout shall be the Customer's responsibility. This includes any work to attach to the Customer's side of the tee or wye where the cleanout riser ties to the service lateral.

7. Billing. If a bill is required, the bill will be processed through the accounts receivable process, rather than by being added to the Customer's utility bill. If the bill is not paid or payment terms negotiated within 60 days of first issuance, then the bill will be transferred to the utility bill. Job costs will be based on an actual time and materials basis. Personnel rates will include the full hourly salary costs.

8. Use of old building sewers with new buildings. [Section 51.040, City of Fayetteville Code of Ordinances]. *"Old building sewers, or portions thereof, may be used in connection with new buildings only when they are found on examination and test by the approving authority to meet all requirements of this subchapter."*

Complete remodeling is included in the definition of "new building" if the remainder of the plumbing system is being replaced and must meet current plumbing codes, or if the value of the renovation is equal or grater than 50% of the value of the structure.

The cost of this examination and test is borne by the Owner. Current Environmental Protection Agency regulatory requirements and plumbing codes require that the lines be completely water tight and capable of passing a test with pressurized air. In these cases, a new tap shall be purchased, with the note that the Owner would like to use the existing service lateral. If the latter is determined to be acceptable, then the Owner will be reimbursed the tapping fee less the actual cost of the inspection and testing. It is the owner's responsibility to identify the location of the service lateral.

9. Separation Between Water and Sewer Services. City sewer connections shall be made at least ten feet away from water connections. The sewer service shall have ten (10) feet of separation from the City portion of the water service, measured from the outside of the respective pipes.

10. Service Line Unusual Installation Requirements.

A. Exposed Ditch or Creek Crossings. To protect such service lines from the hazards of water flow, debris damage, freezing, leakage, drainage system maintenance, vandalism, and other factors, sewer service lines which are exposed or which have less than 12 inches of cover where they pass through or under a drainage ditch, creek, swale, intermittent stream, or any other feature whereby they have insufficient cover and/or are exposed shall have special protection in these areas. Sewer service lines in these circumstances shall be installed in a continuous smooth steel encasement across the entire exposed or shallow area. Water tight boots shall be installed on both ends of the steel encasement. Where the line is exposed, the encasement shall be anchored by concrete no less than two feet long along the length of the pipe and surrounding the pipe by six inches in all directions inside the bank. The concrete shall be placed against undisturbed soil in the same fashion as blocking on water lines.

B. Pump Systems. Pump systems are sometimes required in the City of Fayetteville to provide sewer service to facilities which are physically lower than the sewer main which provides them service or in other special cases. Pumps for these type systems shall be grinder or solids handling type pumps specifically designed to handle sanitary sewage, the flow volume, and to pump against the head for the specific circumstance in which the pump is installed. Pumps designed for use with septic systems and for ground water sumps shall not be used for sanitary sewer uses. If physically possible, the service lines that come from these pumps shall flow to a gravity section of service lateral prior to entering the sewer main so as to enter the main with a standard four inch gravity flow service lateral connection.

11. Tapping Procedures.

A. Making Taps. The City will make all taps on existing sewer mains, either by contract supervised by the City or by City crews.

B. The City will provide a wooden stake that is marked “sewer”. Please drive this stake in the ground at your property line where you need the service connection. If this is not done, the connection will not be made. Failure to place the stake promptly could delay your construction process.

C. Write the desired depth of the service connection on the stake in feet and inches. (Note: Due to the depth of the sewer main, conflicts with other existing utilities, and other underground circumstances, it may not be possible at all times to achieve the desired depth, in which case the Owner and/or plumber will be notified by the City personnel). It is the owner’s responsibility to determine if the depth is adequate for the service line. The City will not determine grades on either the service or the mains for purposes of determining whether a structure can tie onto a main using a gravity line.

D. It is safer to wait for the service connection to be installed by the City so that the yard line’s grade can be adjusted accordingly. This will assure that unnecessary

bends will not be needed at the point of connection. Also, the plumber will have the exact depth to work with. The builder and/or plumber are responsible for determining grades and building elevations for service. The grade on the City installed portion of the service line can be affected by a number of factors which cannot be identified prior to installation, to include location and depth of other utilities, etc.

E. The City service connection will terminate at the property line. However, the customer will be responsible for maintenance of that service line from the building to the City main.

F. If the service connection exceeds sixty (60) feet in length (as in a street right-of-way crossing) the property owner will be charged for the excess footage. Prior arrangements must be made for long service connections. All other sewer service connections will consist of one joint of pipe or approximately ten (10) feet. In no case will the line stub out beyond the easement or right-of-way line.

G. If the excavation for the tap exceeds eight (8) feet in depth, the property owner may be charged for excess time required to make the connection. Prior arrangements must be made for deep service connections.

H. Permanently marking the location of the sewer service connection for future reference shall be the responsibility of the property owner. Unless the customer's plumber is on site, the City will backfill their entire excavation, to include the end of the stubbed out pipe, immediately.

I. The stubbed out piece of service pipe (coming from the new tap on the main) will be left plugged when installed. The customer's plumber is required to connect the customer's yard line to this piece of pipe. City crews will not connect the stub out from the tap to the customer's service line.

J. If the City crews have to return to the site to make any adjustments which are necessitated because of the property owner's change of plans, the labor, materials, and equipment will be charged to the owner.

K. A new sewer connection could take as long as four to six weeks or more. All connections are made on a first-come first-served basis, and the demand can fluctuate greatly. Jobs adjacent to or on Arkansas State Highway rights of way require a permit from the Arkansas Highway and Transportation Department, which generally add an additional four weeks. Please allow enough time in your construction plans.

12. Taps Installed When Areas Are Developed. Sewer lines are generally installed when land is developed. Taps, with a section of private service line attached, are generally made for each lot at this time. The City and the lot owner rely on accurate information from the developer, his Engineer, and his contractor as to the location and grade of these taps and service lines.

A. If a tap for a lot is installed when the sewer main is installed, the building on that lot is required to use the tap installed for that lot.

B. If the service line coming off the main cannot be found by the owner or his representatives, then the owner is responsible to buy a tap from the City using the process described in this document. The Water/Sewer Superintendent will then determine if it is optimal to make a new tap or to televise to find the tap that is supposed to be present. If televising is performed and the cost of the televising is less than that of the purchased tap, then the difference between the two costs shall be reimbursed to the owner. If a tap is found by televising, the City will mark the location of the tap (at the main) for the owner. If no tap is found, the cost of the televising will not be added to the tapping fee.

C. If a tap is not in the most desirable location due to slope, building design, etc., then all expenses related to making a different connection shall be paid by the owner. This includes installation of the new tap and proper abandonment of the tap which is not used. The latter involves excavating at the point of connection to the main and removing the connection to the main. The owner shall purchase a new tap paying the normal tap fee, and will pay the actual costs of abandoning the unused connection.

D. Owners are responsible for hooking to the correct tap for that lot, as shown on the developer's as-built plans. If there is a discrepancy between the as-built drawings and the actual installation on the ground, that discrepancy must be resolved between the lot owner and the developer. If an owner inadvertently connects to a tap which is designated for an adjacent lot, then all costs of remediation for all involved lots shall be borne by the owner of the lot which connected to the incorrect tap. No additional taps shall be made until the lot which does not have a connection purchases a tap through the city Engineer's office, using the process described in this document.

13. Taps Prohibited on Transmission Mains Force Mains, and on Sewer Pump Station or Detention Basin Sites. For public health and building safety reasons, individual user or structure sewer taps shall not be made on transmission mains, defined as any sewer main 15" and larger, or any pressurized force mains. Dead end main line extensions off of transmission mains shall only be approved on a case by case basis, and may be rejected. Individual user sewer taps shall not be made on sewer pump station or detention basin sites. Taps for lots adjacent to these sites shall only be made on the collection (as opposed to transmission) mains outside these sites.

14. Control of Extraneous/Illegal Flows. It violates federal, state and local regulations to have any extraneous flows in the sewer system. These flows include but are not limited to rain water, ground water, sump pump water, water from area drains exposed to outside weather (including external stairwell drains, loading docks, etc.), defective pipe joints, defective cleanouts, cellar drains, catch basins, foundation drains, yard drains, and roof down spouts. These flows must be routed to the storm water system, and cannot be routed to the sewer system. Owners are responsible for maintaining their portion of the sewer system in such a way that these flows are prevented from entering the sewer system.

A. Cleanout caps must be properly installed and must meet current plumbing codes. Caps shall not be removed to allow extraneous flows (ponded yard water, etc.) into the sanitary sewer system.

B. If caps are removed such that they allow extraneous flows to enter the sewer system, the City shall replace the cap at the owner's expense.

C. If the cap is removed after the first time the City replaces the cap, then a riser will be installed in the cleanout so that extraneous flows cannot enter the sewer system through the cleanout. All associated work will be billed to the owner.

15. Grease Control. Grease is a significant problem in our sewer system. Many people assume that running grease down the drain is okay, as long as they use plenty of hot water. Unfortunately, the hot water cools in the pipes, and the grease coagulates further down the line. Sometimes people assume that putting grease in the line through the garbage disposal or with cleansers is acceptable. These do not prevent the grease from coagulating in the pipes. No amounts of grease, cooking oil, animal fat grease or byproducts, cooking fats or solid animal fat or meat products can be put down any part of the sewer system. These materials should be disposed of in the trash. Grease covered pans or dishes should be wiped down first with a paper towel or rag, which should then be disposed of in the trash.

16. Items Which Are Allowed To Go Down the Sewer.

A. Water from showers, bath tubs, dishwashers, laundry facilities, sinks and non-basement floor drains.

B. Body wastes from toilets.

C. Toilet paper.

D. Household chemicals that are specifically designated for use in sinks, showers, and toilets.

17. Items Which Are Not Allowed To Go Down the Sewer. The following cannot be placed in a sewer system under any circumstances. Repair costs incurred due to a blockage caused by any of these items being placed in a sewer line, either intentionally or unintentionally, will be billed to the customer who owns or resides in the building to which the sewer line provides service.

A. Grease of any type, to include cooking oil, cooking grease, cooked animal fats, etc. Grease should be handled as specified above.

B. Meat, meat by products, animal fats.

C. Paper towels.

D. Feminine Hygiene Products, including those that claim to be "flushable."

E. Any items greater than ½" in any measured dimension except body wastes and toilet tissue.

F. Chewing gum.

G. Household chemicals other than those specifically designated for use in sinks, showers, and toilets.

H. Baby wipes and other similar wipes, including those that claim to be "flushable."

I. Kitty litter.

J. Animal wastes.

K. Diapers.

L. Foreign materials such as toys, sticks, cleanout caps, gravel, etc.

M. Air conditioner condensate.

N. Uncontaminated cooling water from cooling towers. If said water is too hot to be discharged into the storm drain, the owner is responsible to hold the water until it cools enough to be discharged into the storm drain. Cooling tower water which is treated, and is thus contaminated, shall be discharged to the sanitary sewer.

O. Clean or uncontaminated natural water to include but are not limited to rain water, ground water, sump pump water, water from area drains exposed to outside weather (including external stairwell drains, loading docks, etc.), defective pipe joints, defective cleanouts, cellar drains, catch basins, foundation drains, yard drains, and roof down spouts. These flows must be routed to the storm water system, and cannot be routed to the sewer system. Owners are responsible for maintaining their portion of the sewer system in such a way that these flows are prevented from entering the sewer system.

P. Automobile or engine mechanical lubricant liquids, semi-liquid materials or solids.

Q. Wastewater having a pH less than 5.0 or more thean 12.5, or otherwise causing corrosive structural damage to the wastewater collection system, the wastewater plant or equipment.

R. Wastewater having a temperature greater than 150 degrees Fahrenheit (65^{o} C).

S. Pollutants which create a fire or explosive hazard, to include but not limited to liquids with a closed-cup flashpoint of less than 140 degrees Fahrenheit (60^{o} C).

T. Pollutants which result in the presence of toxic gasses, vapors, or fumes within the collection system or wastewater treatment plant which may cause the potential for acute worker health and safety problems.

U. Wastewater which imparts color which cannot be removed by the treatment process, to include but not limited to dye, wastes and vegetable tanning solutions which consequently impart color to the treatment plant's effluent.

V. Any radioactive wastes or isotopes except in compliance with applicable federal or state regulations and approved by the City.

W. Medical wastes.

18. Access to Easements. The City of Fayetteville is required by federal law to properly operate and maintain its utilities. Doing this requires periodic work on said utility system to include but not limited to clearing easements, adjusting manholes to grade, inspecting manholes and cleanouts, installing and inspecting marking signs, locating lines, testing lines with dye and smoke, televising lines, washing lines, and more. In order to do this work, City employees and contractors working for the City are required by law to access the pipe. This often requires crossing private property to get to our easement. By having

an easement on a lot, these workers are granted the legal right to cross said lot to get to the utility easement. Lots containing an easement shall have a double wide gate installed to allow vehicular access to the main.

CITY OF FAYETTEVILLE, ARKANSAS
POLICY AND PROCEDURE

Subject:	**WATER SERVICE LINE AND CONNECTION POLICY**
Policy Number:	**OP-02**
Original Policy Date:	**June 23, 1988**
Effective Date of New/Revised Policy:	**August 1, 2005**
Revision Dates:	**July 21, 2005**
Custodian: (Division)	**WATER AND WASTEWATER**
Mayor's Signature and Date	

OP-2.0 PURPOSE:

To establish a uniform policy concerning water service lines and water service connections.

OP-2.1 POLICY

General. There have been numerous pipe configurations installed underground since the City of Fayetteville's water system was first designed and installed in 1889. This policy is correct and appropriate for over 99% of the situations found. It does not eliminate using sound judgment for the remaining 1% of the cases. Judgment calls shall be the responsibility of the Mayor or his designated representative, who is currently the Water/Sewer Maintenance Superintendent. Grandfather clauses do not apply in cases where public health and safety is compromised, and thus do not apply for water system issues.

1. Tapping Procedures.

A. Making Taps. The City will make or supervise all taps on existing water mains, either by City crews making the tap or by contract supervised by the City Engineering inspectors.

B. When the tap is purchased, the City will provide a wooden stake that is marked "water" and with the size of the connection to be made. Please drive this stake in the ground on the City side of your property line where the center of the meter box is to

be located. If this is not done, the connection will not be made. Failure to place the stake promptly could delay your construction process.

C. Double water service connections should be placed at the common property line for the two addresses being served, when applicable.

D. The meter box will be installed at the existing grade unless otherwise specified. If special instructions are necessary, please make an appointment with a Water and Sewer Division service representative and give instructions at that time. Making a special note and attaching it to the tap paperwork when the tap is purchased will reduce potential delays for special requirements. The owner is responsible for knowing the final grade, as required by the owner's work or ordinances which govern the grade for sidewalks and trails, and areas parallel to streets, drainage ways, etc.

E. Meter boxes are generally located on the City side of the property line (edge of easement and/or right of way). If you have a special situation, consult with a Water/Sewer Department service representative. Deviations are only approved on a case-by-case basis, and may not be approved. If the Water/Sewer Department feels the meter box needs to be located at a different location other than where staked, a field representative will contact the individual who purchased the tap.

F. When locating your meter box, please avoid the following: driveways, sidewalks, parking lots, enclosed areas, drainage ditches, flower beds, and low areas where water stands. Meters shall not be installed in or allowed to remain in driveways or areas where meter readers cannot easily get to the meter box to read the meter. They will not be installed in locations where the meter box will regularly be filled with ground water, nor in places where it is difficult for a meter reader to get to the meter to read it. When driveways are constructed or created with either gravel, asphalt, concrete, or any other similar material, existing water meters shall be moved out of the driveway area at the owner's expense.

G. The connection to the customer's side of the meter is done by the customer's plumber after the meter loop and box is in place. The plumber will tie the yard line to the service pipe that is stubbed out of the meter box, City crews will not make this connection. Pressure regulators shall be installed no closer than 5 feet from the water meter box.

H. Connections are made on a first come first served basis, and could take three to six weeks or more to be installed, depending on workload. In cases of connections in or adjacent to Arkansas State Highways or railroads, a permit must first be obtained which often takes up to an additional six weeks. This will greatly lengthen the tap process.

I. City water connections shall be made at least ten (10) feet away from sewer connections. The City portion of the water service shall have ten (10) feet of separation from the sewer service, measured from the outside of the respective pipes.

J. Connections shall not be made in circumstances where they will degrade the operating pressure or flow available to existing domestic or building water meters. In these cases, the owners requiring the connection shall be responsible for increasing the capacity on the City's water distribution system such that the required capacity is available.

2. Water Meter Adjustments. If City crews have to return to the site to make any adjustments on the meter box which are necessitated because of the property owner's change of plans, such as landscaping, driveway location, grade, etc., all labor, materials and equipment costs shall be charged to the owner. This also applies to meters which are installed by a developer when a development is first constructed and to preexisting meters.

3. Service Line Depth. A water service line must have at least 24" of ground cover to prevent freezing. If the grade is changed such that the service line does not have sufficient cover, the service line must be lowered so that it does have sufficient cover. The labor, materials and equipment costs will be charged to the owner.

4. Access to and Visibility of Water Meters.

A. Brush, landscaping or other items which cause the meter box to be difficult to see from the right-of-way or easement, or which causes difficulty for meter readers to get to the box, shall be removed at the owner's expense. This includes plants, decorative landscaping, retaining walls, private side walks, stairs, decks, large decorative rocks, concrete statues, and other similar items. These shall not be placed over the City's portion of the service line or within two feet of the box on the customer's side of the box, three feet of the box parallel to the edge of the right of way or easement, or at all on the City's side of the right of way or easement.

B. Meters shall be accessible without going through fences or gates except in special circumstances.

C. Meters shall be placed on the City side of any private retaining walls of any type, including those constructed immediately beside the sidewalk. The City portion of the service line shall not go under any type of private wall or other structure.

5. Owner Responsibility. The owner is responsible for the service line from the outside edge of the meter box to the home. This includes the point where the plumber hooks up to the tail piece which comes out of the meter loop, and any pressure regulator or other hardware installed on the owner's side of the meter box.

6. Irrigation Taps. The City reserves the right to refuse to make irrigation taps, if said tap has the potential to degrade the operating pressure or flow available to domestic or building water meters. In general, irrigation taps shall not be made on mains which are 3" or smaller. Irrigation meters and irrigation systems shall not be installed on double

meters servicing another residence, as this can degrade the other residence's water pressure. The City must maintain positive control over the amount of flow on marginal irrigation installations, The City shall not rely on verbal or written commitments from the owner, as owners change and companies and individuals operating and maintaining irrigation systems can not be reasonably expected to pass information regarding agreed upon flow restrictions through the life of the irrigation system. Flow tests shall not be used to change this policy, as the water line flow will gradually degrade with time and with peak usage, and the flow test represents only the best case situation.

7. Two Inch Taps. Two inch taps shall not be made on any mains 3" or smaller. If a customer requires a two inch (2") tap and if said tap has the potential to degrade the operating pressure or flow available to other domestic or business meters, then the customer, at his expense, shall be responsible to reinforce the water distribution system such that the point demand from the two inch meter shall not degrade the operating pressure or flow available to other domestic or business meters.

8. Sewer Service Required. Water services can not be installed until after the lot has legal, approved and installed access to public sewer or an a septic system approved by the Arkansas Department of Health.

9. Relocating Existing Meters. Meters are typically located on the City side of the easement or right of way. In the past, some meter boxes were placed further in the property than the easement or right of way. These meters shall be moved to the property line at such time as the City side of the meter loop needs work or needs to be replaced. The existing yard line will remain in service as long as it meets the current plumbing codes and has had no documented problems. The new meter location will conform to this policy. Meters shall be placed on the City side of any private retaining walls of any type, including those constructed immediately beside the sidewalk. The City portion of the service line shall not go under any type of private wall, sign, or other structure. Meters shall not be allowed to remain in a driveway.

10. Site Restoration. In the event maintenance work is required on a service line, meter, or meter box, the site restoration will match that done for main line repairs. The utility shall repair only the following in an easement area or within two feet of the meter box: grass, asphalt, normal (standard) concrete, irrigation systems which are damaged, mail boxes which are damaged, and/or private wiring (such as for on-premises lighting, etc.) which is damaged. The City shall not pay for relocation, repair, or damage caused to any landscaping, unusual concrete, plants, planters, playground equipment, decorative rock, rip rap, and other items placed on the easement or within two feet of the meter box. The latter items can be removed by the City, at the owner's expense, if their movement is required to make a repair.

11. Water Service Line Location.

A. Crossing Public Easements or Rights of Way. The customer's portion of a water service line shall not be installed in a public easement or right of way, except for the last two feet required to access the meter box.

B. Service Line Crossing Adjacent Lots. Water service lines must run directly from the lot which they serve to the main without crossing another lot. The service may cross street right of way and/or the easement to access the main. It may not run parallel to the main, but can run at an angle between 45° to and perpendicular to the main. Ownership is not the deciding factor; lot lines and separate property parcels are the deciding factor. Thus, if one owner owns two adjacent lots, and builds on one lot, the service for this structure and lot cannot cross the other lot.

12. Water Mains Accessing Every Lot. Water distribution mains shall be installed so as to adjoin each lot such that all service lines meet the above requirements. Installing and paying for water main extensions is the responsibility of the owner of the lot receiving the service.

13. More Than One Water Main Available. In cases where more than one water main is available to a given lot, the City reserves the right to decide which main may be used to provide service to that lot. This is required in cases where some mains are on different pressure planes, where some lines have a longer life expectancy than others, etc.

14. Water Easements for Private Lines. Water line easements for private lines to cross adjacent lots are prohibited except in very rare cases. In general, these are when a given for private residence tandem lot containing only one structure which requires water service, wherein the lot is "landlocked" from a water main, all adjacent lots have legal access to a main, and the water line easement is collocated with an above ground access easement. Private easements shall not be used in cases where water main extensions are in the public best interest, such as where a water line shall be made accessible to other lots, where a future main may be required, where a water main loop is desirable to provide better public service, or where fire protection is required.

15. Use of old building water service lines with new or renovated buildings. Old building water service lines may be used in connection with new buildings only when they are found on examination and test by the approving authority to meet all current plumbing requirements.

Complete remodeling is included in the definition of "new building" if the remainder of the plumbing system is being replaced and must meet current plumbing codes, or if the value of the renovation is equal or grater than 50% of the value of the structure.

The cost of this examination and test is borne by the Owner. In these cases, a new tap should be purchased, with a note that the Owner would like to use the existing service line. If the latter is determined to be acceptable, then the Owner will be reimbursed the

tapping fee less the actual cost of the inspection and testing. It is the owner's responsibility to identify the location of the service line.

16. Taps Prohibited on Transmission Mains and on Water Tank or Pump Station Sites. Individual user water taps shall not be made on transmission mains, defined as any water main 16" and larger. Main line extensions off of transmission mains shall only be approved on a case by case basis, and may be rejected. Individual user water taps shall not be made on water tank or pump station sites. Taps for lots adjacent to these sites shall only be made on the distribution (as opposed to transmission) mains outside these sites.

17. Water Pressure Provided.

A. The City shall provide normal operating water pressure of at least 25 pounds per square inch (psi) at the City's side of the meter loop. The City does not guarantee this water pressure at all times, as the pressure will occasionally be lowered or the mains may have to be turned off for scheduled and unscheduled maintenance. It is possible that some customers at some locations shall need a pump on their side of the meter to provide the pressure desire for their water use. These pump systems cannot have such capacity that they reduce pressure on the City's main such that degrade the operating pressure or flow available to existing customers.

B. Taps shall not be made for locations where there is not a reasonable expectation of the City being able to provide 25 psi operating pressure at the City's side of the meter under summer high flow operating conditions.

C. The water pressure at the City's side of the meter may exceed that for which domestic plumbing is designed. If the pressure at the City's side of the meter exceeds 70 psi, the owner is required to install a pressure regulator on his system on his side of the meter. The pressure regulator is the owner's property and responsibility.

18. Access to Easements. The City of Fayetteville is required by federal law to properly operate and maintain its utilities. Doing this requires periodic work on said utility system to include but not limited to clearing easements, checking valve boxes, raising, exercising and operating valves, installing and inspecting marking signs, locating lines and more. In order to do this work, City employees and contractors working for the City are required by law to access the pipe. This often requires crossing private property to get to our easement. By having an easement on a lot, these workers are granted the legal right to cross said lot to get to the utility easement. Lots containing an easement shall have a gate installed to allow vehicular access to the main.

SPECIAL PROVISION #1

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

COORDINATION OF WORK
ARDOT STANDARD SPECIFICATIONS

DESCRIPTION: This item shall consist of specifications relative to the coordination of work during construction operations at the beginning, and/or intermediate points, and/or end of contracts or jobs and shall be supplementary to Section 105, Control of Work, of the Standard Specifications, Edition of 2014.

Coordination of work will be necessary with the Contractor(s) for jobs listed below and with any other contractors that may have active jobs adjacent to this project during the construction period.

1. Franchise Utility Relocations
    a. Black Hills Energy
    b. AT&T
    c. Cox Communications
    d. Ritter Communications
    e. Ozarks Electric
    f. University of Arkansas Fiber

CONSTRUCTION: Contractor shall perform construction activities and schedule operations such that work on the project will progress in an expeditious manner.

The Contractor shall furnish the Engineer and Owner a schedule of proposed work, including anticipated dates and milestones for various construction activities on each construction package and each stage of the project. Contractor shall inform Engineer and Owner of any schedule delays or impacts that might affect project completion.

Package 1 – Hemlock construction shall occur first, with substantial completion being achieved prior to the start of Package 2 – Millsap.

Specific items that will require coordination include, but may not be limited to, the following:

- Coordination with franchise utilities and their contractors for any relocation efforts associated with ARDOT Job. No. 040943.
- During Stage 1 construction of Package 2, AT&T will be on site to relocate and lower of a portion of existing fiber duct bank that crosses Millsap, east of College Avenue. The total duration of this work is anticipated to be one week. Contractor shall coordinate with AT&T and their utility subcontractor for scheduling of this work in conjunction with excavating road subgrade, relocation of watermain, and installation of new storm drainage pipe.

SPECIAL PROVISION #2

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

TRENCH AND EXCAVATION SAFETY SYSTEMS
ARDOT STANDARD SPECIFICATIONS

DESCRIPTION: This item covers trench and excavation safety systems required for constructing improvements that necessitate open excavation on the project. All work under this item shall be in accordance with the current edition of the "Occupational Safety and Health Administration Standard for Excavation and Trenched Safety System, 29 CFR 1926, Subpart P", a copy of which may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

NOTIFICATIONS REQUIRED: The contractor, prior to beginning any excavation, shall notify the State Department of Labor (Safety Division) that work commencing on a project with excavations greater than five feet.

The Contractor shall notify all Utility Companies and Owners in accordance with OSHA Administration 29 CFR 1926.651(b)(2) for the purpose of locating utilities and underground installations.

EXISTING STRUCTURES AND UTILTIES: Where the trench or excavation endangers the stability of a building, wall, street, highway, utilities, or other installation, the Contractor shall provide support systems such as shoring, bracing, or underpinning to ensure the stability of such structure or utility.

METHOD OF MEASUREMENT: After award of the contract, the Contractor shall submit to the Engineer/City Engineer a breakdown of costs for work involved in the lump sum price bid for "Trench and Excavation Safety Systems" and shall, with each periodic payment request, submit a certification by the contractor's "competent person" as defined in Subpart P 1926.650(b) that the contractor has compiled with the provisions of "Occupational Safety and Health Administration Standard for Excavation and Trenched Safety System, 29 CFR 1926, Subpart P" for work which payment is requested.

BASIS OF PAYMENT: The work required by this item will be paid for at the lump sum price for "Trench and Excavation Safety Systems".

Payment will be made under:

Pay Item	Pay Unit
Trench and Excavation Safety Systems	LS

SPECIAL PROVISION #3

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

STORM WATER POLLUTION PREVENTION PLAN
ARDOT STANDARD SPECIFICATIONS
National Pollution Discharge Elimination System
General Permit # ARR150000

Prepared for:

ARKANSAS DEPARTMENT OF TRANSPORTATION

Date: December 2025

GENERAL INFORMATION:

A Storm Water Pollution Prevention Plan (SWPPP) has been developed by the ARDOT for this construction project in accordance with good engineering practice. Various items constitute the SWPPP for the project and should be provided for persons requesting to view the SWPPP, including:

a) *The ARDOT Standard Specifications for Highway Construction, 2014 Edition,* (Standard Specifications). The following sections are in reference to water quality or sediment and erosion control: Sections 107, 110, 620, 621, 622, 623, 624, 626, and other sections pertaining to storm water controls.
b) The Construction Plans contain temporary and permanent erosion controls and permanent storm water management measures.
c) Contract documents provide the Contractor and ARDOT with additional specifications. These may include Supplemental Specifications and Special Provisions. Parts of the SWPPP that may be in the Contract include this Special Provision, *Storm Water Pollution Prevention Plan*.
d) Project records including SWPPP inspection reports, the authorized Site Manager daily work report, and various pay quantity documentation, all of which detail the progression of work on the project, when erosion control measures were taken, when the Contractor was given instructions to install or maintain the erosion and sediment control (E&SC) items, and the timing and details of E&SC installation. The Contractor identification form and the Inspector identification form are included as part of the project records.
e) Construction site posting.
    i. For large construction sites (all sites five acres or above) – The first page of the *e-Portal* ADEQ Notice of Intent (NOI) submission, if ten business days have passed since the NOI was deemed complete, to be replaced by the completed Arkansas Department of Environmental Quality (ADEQ) Authorization Letter to Discharge Storm Water when it is sent by ADEQ.
    ii. For small construction sites under five acres (automatic coverage sites) - the completed ADEQ Notice of Coverage for small sites from the ADEQ website.

PROJECT NAME AND LOCATION:

Millsap / College Intersection Improvement Project
Package 1 – Hemlock
Package 2 – Millsap
ArDOT Job No. 040943

SPECIAL PROVISION #3

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

STORM WATER POLLUTION PREVENTION PLAN
ARDOT STANDARD SPECIFICATIONS

OPERATOR NAME AND ADDRESS:
City of Fayetteville, Arkansas

Name of Engineer Burns & McDonnell Engineering Company, Inc.

Address of Engineer
6576 Lynch's Prairie Cove, Suite B, Springdale, Arkansas 72762

Name of Resident Engineer (Contact Person) William Pattengill, P.E.

Contact Number 479-936-1833

A. Site Description

1) Pre-construction Topographic view: Refer to the plan and profile sheets for topographic and waterbody information.

2) Project Description and Intended Use after Notice of Termination (NOT) is filed:
Package 1 – Hemlock is a new street extension to connect Hemlock Avenue between Sain Street and Millsap Road. This part of the project will include approximately 750 linear feet of new 2-lane road with curb and gutter on each side, and sidewalk on one side.

Package 2 – Millsap includes widening of Millsap Road to accommodate new turning lanes, as well as new sidewalks and crosswalks. This part of the project will extend approximately 350 linear feet east and west of College Avenue.

3) Sequence of Activities:

The sequence of Major Soil Disturbing Activities is shown below. **Be aware that the sequence below is provided as a general course of action for the progression of construction activities. Actual sequence of construction will be determined by the Contractor's schedule and field conditions.**

a. Installation of stormwater pollution prevention and erosion control measures for Construction of Package 1 - Hemlock.
b. Construction of Package 1 – Hemlock to provide a new connection between Sain Street and Millsap. This is necessary to provide an alternate route before starting construction at the main intersection.
c Installation of stormwater pollution prevention and erosion control measures for Construction of Package 2 - Millsap
d. Package 2 – Millsap, Stage 1: Includes constructing the portions of the project east of College Avenue, and the northern portion of the project on the west side of College Avenue.
e Package 2 – Millsap, Stage 2: Includes shifting traffic and constructing the middle section of the road improvements on the west side of College Avenue.
f. Package 2 – Millsap, Stage 3: Includes shifting traffic and constructing the southern

SPECIAL PROVISION #3

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

STORM WATER POLLUTION PREVENTION PLAN
ARDOT STANDARD SPECIFICATIONS

section of the road improvements on the west side of College Avenue.

4) Total Acres Available: 2.29 Total Disturbed Area: 2.29

(*Note: Any off-site borrow or waste areas are operated by the Contractor, who is responsible for obtaining any required NPDES permits for the sites. The "total acres available" and "total disturbed areas" shown here do not include areas covered under permits obtained by another operator. The Contractor is also responsible for meeting local regulations regarding these sites, including those of a Qualifying Local Program).

5) Existing Site Information:

a. Runoff Coefficient Based on attachment C:

Before construction starts, the site has a runoff coefficient of 0.80

After construction is completed, the site will have a runoff coefficient of 0.85

b. Soil Information Captina silt loam, Clarksville extremely gravelly silt loam, Nixa very gravelly silt loam

B. Responsible Parties-General Contractors, Inspectors, etc:

Refer to Contractor identification form in Section Q and the Inspector identification form in Section R. This information will be completed after the Pre-construction conference.

C. Receiving Waters: (Permit Pg. 3 of Part II)

1) Location of Surface Water on Construction Site:

The following surface waters are located on the construction site. List them by name with Station Numbers.

a. NA

b.

c.

2) The following bodies of water receive runoff from the construction site:

Name of Operator of Municipal Storm Sewer and/or Receiving Stream: City of Fayetteville

Narrative Description of Nearest Water: Mud Creek is located approximately 1,000 feet downstream from Package 1 – Hemlock. Mud Creek is located approximately 3,400 feet downstream from Package 2 – Millsap.

Name of Ultimate Receiving Water: Clear Creek / Illinois River / Arkansas River

Waterbodies that would require the fifty (50) foot buffer zone are Extraordinary Resource Waters (ERW), Ecologically Sensitive Waterbodies (ESW), Natural and Scenic Waterways

SPECIAL PROVISION #3

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MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

STORM WATER POLLUTION PREVENTION PLAN
ARDOT STANDARD SPECIFICATIONS

(NSW), waterbodies with approved TMDLs, waterbodies on the 303(d) list, and/or other uses at the discretion of the Director of ADEQ.

Above categorized waterbodies, if any on project, list both waterbody and qualifier:
None located on the project.

D. TMDL and 303(d) list can be found at:
(http://www.adeq.state.ar.us/water/planning/integrated/**)**

1) 303(d) Listed Waters - Select the following appropriate statement utilizing information received from the Environmental Division.

Statement 1:

X Storm water discharges from this site do not enter a waterbody on the list of waters impaired for turbidity or other pollutant which could be impacted by roadway construction on the 303(d) list.

Statement 2:

_____ Storm water discharges from this construction site enter a waterbody on the list of impaired waterbodies (303d list) for turbidity and/or other pollutant. The SWPPP has been developed with BMPs which are designed to minimize the discharge of these pollutants to the maximum extent practicable. Condition of sediment control BMPs will be monitored during regular inspections to ensure this goal is met.

2) TMDL Waters - Select the following appropriate statement utilizing information received from the Environmental Division.

Statement 1:

X Storm water discharges from this site do not enter a waterbody with an approved TMDL for turbidity or other pollutant which could be impacted by roadway construction.

Statement 2:

_____ Storm water discharges from this construction site enter a waterbody with an established TMDL allocation for turbidity and/or other pollutant. A TMDL has been written for the waterbody that is applicable to the construction project. The following information documents the construction projects compliance with the TMDL:

1.) List TMDL assumptions and allocations: _____

_____

2.) List measures taken to ensure that the discharge of pollutants from the site is consistent with the assumptions and allocations of the TMDL. _____

_____

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E. Attainment of Water Quality Standards after Authorization: (Permit Pg. 4 of Part II)

BMPs have been selected and will be installed and maintained at the construction site that will minimize the discharge of pollutants as necessary to meet applicable water quality standards.

F. Site Map: See Attachment A for items to be included. All of these items should be marked on the job plans maintained for the SWPPP.

G. Storm Water Controls

1. Initial Site Stabilization, Erosion, & Sediment Controls: (Permit Pg. 5 of Part II)

Complete descriptions and specifications for control measures may be found in the ARDOT's Standard Specifications for Highway Construction, Supplemental Specifications, Special Provisions, Construction Contract, and Construction Plans. **All controls are designed and installed with the primary goal of retaining sediment on site to the maximum extent practicable**.

Insert a description below of the construction activities that are a part of the initial site disturbance and stabilization, along with the appropriate controls measures and time of installation for that activity. This information should be provided by the Contractor at the Pre-construction meeting.

Be aware that the list is general. Actual timing of erosion control installations will be determined daily based upon the construction activity occurring and actual field conditions.
(Construction Activity/Control/Timing)

Installation of stormwater pollution prevention and erosion control measures for Construction of Package 1 - Hemlock.
Construction of Package 1 – Hemlock to provide a new connection between Sain Street and Millsap. This is necessary to provide an alternate route before starting construction at the main intersection.
Installation of stormwater pollution prevention and erosion control measures for Construction of Package 2 - Millsap
Package 2 – Millsap, Stage 1: Includes constructing the portions of the project east of College Avenue, and the northern portion of the project on the west side of College Avenue.
Package 2 – Millsap, Stage 2: Includes shifting traffic and constructing the middle section of the road improvements on the west side of College Avenue.
Package 2 – Millsap, Stage 3: Includes shifting traffic and constructing the southern section of the road improvements on the west side of College Avenue.

2. Stabilization Practices: (Permit Pg. 5 of Part II)

List of Stabilization Practices to be utilized and scheduling of implementation for that practice:

X Dust control - wet down dusty areas as needed/ongoing

_____ Erosion control matting - _____

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_____ Geotextiles - _____

X Limiting disturbed area - will be limited by Engineer as discussed in Subsection 110.05(d) of Standard Specifications/ongoing

_____ Mulches - _____

_____ Mulch control netting - _____

X Off-site tracking controls (Either stabilized exits and/or wheel washing)*

X Preserving existing vegetation - as shown on the job plans/ongoing

X Sod stabilization - All disturbed areas are planned to be sodded upon completion of grading activities.

X Temporary and permanent seeding - will be initiated within 14 days of temporarily ceasing construction activity on a portion of the site or immediately initiated where construction activities have permanently ceased.

_____ Natural buffer zone – (Will be established along waterbodies with at least 25 feet for any unnamed streams, creeks, rivers, lakes, or other waterbodies and at least 50 feet for an established TMDL waterbody, streams listed on the 303d list, an ERW, ESW, NSW, and any others at the discretion of the Director of ADEQ.

If encroachment is necessary within these required buffer zones, briefly describe the reason why.)
When encroachment occurs, additional measures will be taken to protect the waterbody, and the contractor will be required to stabilize the disturbed area within the buffer zone within 5 business days of completion of work.

_____ Slope Tracking - _____

_____ Other - _____

*Stabilized exits will use either suitable sized rock as directed by the Engineer or manufactured devices designed to minimize the amount of soil being tracked off-site.

3. Structural Practices: (Permit Pg. 6 of Part II)

List of Structural Practices to be utilized and scheduling of implementation for that practice:

_____ Sediment basins* (to be utilized whenever 10 or more acres drain from common drainage locations on the site based upon 3600 cubic feet per acre or sized based on the runoff volume of a 10 year, 24 hours storm, unless not attainable. If not attainable, briefly describe reason(s) that a basin was not used) _____

X Curb & gutter - as shown on the job plans

X Ditch checks** - as shown on the job plans or directed by Engineer

X Diversion ditches - as shown on the job plans or directed by Engineer

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- **X** Drainage swales - as shown on the job plans or directed by Engineer
- **X** Drop inlet silt fences - as shown on the job plans or directed by Engineer
- _____ Erosion Control Matting - _____
- _____ Gabions - _____
- **X** Inlet & outlet protection - as shown on the job plans or directed by Engineer
- **X** Silt fences - as shown on the job plans or directed by Engineer
- _____ Slope drains - _____
- **X** Storm sewer - as shown on the job plans
- _____ Retaining walls - _____
- **X** Temporary Silt Dikes - as shown on the job plans or directed by Engineer
- **X** Wattles/Sediment Logs - as shown on the job plans or directed by Engineer
- **X** Filter Socks - as shown on the job plans or directed by Engineer
- _____ Other - _____

*Sediment will be removed from basins when design capacity is reduced by 50%. In addition, when a sediment basin is utilized per permit requirements, the procedures for the removal of a sediment basin can be found in the Standard Specifications Subsection 621.03.
**Hay/Straw bales will not be used in areas of concentrated flow.

H. Other Controls: In addition to erosion control and storm water management, our plan will include measures to properly manage solid wastes, hazardous wastes, dust generation, and all other activities that will generate wastes during the construction phase. (Permit Pg. 7 of Part II)

1) Solid material control, debris, and wastes:

   All solid materials discharged to waters of the United States shall be in accordance with Section 110 of the Standard Specifications, the applicable Section 404 Special Provisions in the Job Contract, the plans, and as authorized by a USA Corps of Engineers Section 404 Permit. Litter and construction debris will be prevented from becoming a pollutant source for storm water discharges. Any debris which inadvertently enters a water of the state will be removed daily.

2) Offsite vehicle tracking:

   Each vehicle exit from the construction site must either be stabilized or use wheel washing to prevent the tracking of material onto the public roadway. (If sediment escapes the construction site through tracking, it will be removed by sweeping frequently enough to minimize off-site impacts to waterbodies.)

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3) Temporary sanitary facilities:

Facilities will be provided and properly maintained by the Contractor in accordance with Subsection 107.06 of the Standard Specifications.

4) Concrete waste area:

Designated concrete washout waste area(s) will be established and utilized to prevent liquid concrete waste from being discharged to a water of the state.

5) Fuel storage, hazardous materials, and truck washing areas:

The following is a list of materials which could be potential sources of pollution in storm water runoff: asphalt materials, concrete, cement, concrete wash water, paint, solvents, petroleum products, fertilizers, concrete curing compound, lime, linseed oil, asphalt additives, concrete additives, and sewage. Handling of the above materials or other potential pollutants shall be in accordance with Subsection 110.06, Pollutants, of the Standard Specifications.

I. Non-Storm Water Discharges: (Permit Pg. 11-12 of Part I)

List of Anticipated Allowable Non-Storm Water Discharges*:

1) Water used to wash vehicles (where detergents or other chemicals are not used) or control dust in accordance with Part II.A.4.H.2
2) Landscape Irrigation
3) Pavement wash waters where spills or leaks of toxic or hazardous material have not occurred (unless all spilled material have been removed) and where detergents or other chemicals are not used.
4) Uncontaminated springs, excavation dewatering, and groundwater (Part I.B.13.C). If dewatering is necessary and turbidity exists, the discharge will be managed with appropriate devices such as a sediment bag or basin prior to discharge.

*Other Allowable Non-Storm Water Discharges are listed in the Permit Part I.B.10, but there is no reasonable anticipation of these discharges at this time.

J. Post-Construction Storm Water Management: (Permit Pg. 7 of Part II)

Permanent Storm Water Management - List of devices to be utilized for storm water infiltration and management:

____	Channel linings	**X**	Concrete ditch paving
X	Culverts	**X**	Curb and gutter
____	Detention basins	**X**	Drop inlets
____	Dumped riprap	____	Floodgates
____	Gabions	**X**	Grassed swale
X	Inlet & outlet protection	____	Permanent seeding
____	Retention pond	**X**	Riprap
X	Solid sodding	**X**	Storm sewer

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X	Topsoil replacement		Underdrains
X	Velocity dissipators		Wetland creation
	Other-list		

Velocity dissipation devices:

	Concrete spillways		Grouted riprap
	Permanent seeding & mulch		Underdrains
X	Solid sodding	X	Concrete ditch paving
	Dumped riprap		Detention basins
X	Velocity dissipators		Wetland infiltration
X	Other-list Scour Mat		

K. State or Local Programs: (Permit Pg. 8 of Part II)

The Arkansas State Highway Commission and the Arkansas Department of Transportation have the exclusive authority over the state highway system (See Ark. Code Ann. § 27-67-101, et al), therefore no local agencies would have authority or jurisdiction over the lands owned, controlled, and maintained by the ARDOT. The ARDOT will make every effort to address any concerns of local entities concerning storm water discharges from the state highway right of way.

This authority does not extend to the Contractor's off-site operations. The Contractor is responsible for complying with all State and Local Programs in accordance with Subsection 107.01 of the Standard Specifications.

L. Inspections: (Permit Pg. 8 of Part II)

Inspections will be conducted by a qualified inspector at the following frequency:

X **Every 7 days or**

_____ **Every 14 Days and within 24 hours after a ¼ inch or greater rainfall event**.

A report of the inspection will summarize the scope of the inspection, the name of the inspector, the date of inspection, and any damages observed and repairs made to any control measure. Completed inspection forms will be kept with the SWPPP.

The following are the minimum inspection, maintenance, and reporting practices that will be used to maintain erosion and sediment controls at the construction site:

1. Inspection form (Attachment B).
2. All erosion and sediment control measures will be maintained in good working order. If repair is necessary, it will be completed **within three (3) business days of discovery**.
3. All controls will be inspected to ensure that they meet the manufacturer's specifications.
4. Controls will be replaced or modified if periodic inspections reveal the device is not performing as intended.
5. Approximate times of beginning and duration of storm events.
6. Sediment basins and sediment traps will be cleaned out when they reach 50% of the original capacity.

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7. A description of any discharges during inspections.
8. Inspections are not required if snow cover exists over the entire site for an extended period of time. If there is any runoff from the site at any time during snow cover, melting conditions would be considered to be existent at the site then inspections would need to be resumed.
9. All site entrances and exits will be checked to ensure no off-site tracking.
10. All components of the SWPPP and inspection reports will be maintained for a minimum of 3 years after permit termination.
11. In addition to inspection, records will be kept of the following:
    a. Dates when major grading activities occur,
    b. Dates when construction activities cease in an area, temporarily or permanently,
    c. Dates when an area is stabilized, temporarily or permanently.

M. Maintenance: All erosion and sediment control measures will be maintained in good working order. If a repair is necessary, it will be completed **within three (3) business days of discovery**. (Permit Pg. 9 of Part II)

However, if conditions do not permit large equipment to be used, a longer time frame is allowed if the condition is thoroughly documented on the inspection form as stated in the Permit Part II.4.M.

N. Adverse Weather Conditions: Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms, or situations that otherwise make inspections impractical, such as extended frozen conditions. When adverse weather conditions prevent the inspection of the site, an inspection should be completed as soon as safe and feasible. If adverse weather conditions prevent compliance with the permit, documentation of the beginning and ending date of adverse weather condition should be included. **This information will be documented in the Site Manager Program job records.**

O. Endangered Species: Endangered species clearance is obtained during the National Environmental Policy Act (NEPA) process for all ARDOT projects and is conducted in accordance with Section 7 of the Endangered Species Act. Further information about this process can be obtained by contacting the ARDOT Environmental Division at (501) 569-2522, or the U.S. Fish and Wildlife Service at (501) 513-4489.

P. Employee Training: ARDOT employees who perform inspections have received formal training in NPDES Storm Water requirements and SWPPP implementation. Training records will be available electronically or will be maintained with the SWPPP after the project commences.

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ARDOT STANDARD SPECIFICATIONS

Contractors: (Permit Pg. 3 of Part II)
All contractors should be identified in the plan. (a page should be included for each subcontractor).

THE CERTIFICATION BELOW SHALL BE COMPLETED AND INCLUDED IN EACH SUBCONTRACT. Copies of these certifications must be inserted at this location.

The Contractor/Subcontractor indicated below shall have responsibility for implementation of the pay items as listed below.

Item	Item

All Contractors operating on the site shall have the responsibility for compliance with Section 110 of the Standard Specifications for their operations, including, but not limited to: Good housekeeping practices, spill prevention, spill reporting and clean-up, and product specific practices such as limiting the discharge of concrete waste water to areas specified in the SWPPP.

Contractor Printed Name: _____

Signature: _____ Title: _____

Company Name: _____ Date: _____

Company Address: _____

Telephone Number: _____ ARDOT Job Number: 040943

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Q. Inspectors: (Permit Pg. 3 of Part II)

Site inspectors should be identified in the plan.

ARDOT inspectors performing the erosion and sediment control inspection must complete the information below.

Printed Name of ARDOT Inspector	Signature	Contact Number	Date

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R. Plan Certification: (Permit Pg. 9 of Part II) (To be completed by a duly authorized representative or the cognizant official.)

"I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Note: For this permit only, "this document" refers to the Storm Water Pollution Prevention Plan, "attachments" refers to the site map and inspection forms, and "system" is referencing the project site.

Printed Name: Jonathan Ely

Printed Title: Project Manager

Signature: _____

Date: _____

SPECIAL PROVISION #4

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

MAINTENANCE OF TRAFFIC
ARDOT STANDARD SPECIFICATIONS

Section 603 Maintenance of Traffic of the Standard Specifications, Edition of 2014, is hereby expanded as follows:

The Contractor shall provide additional traffic control through the project as defined below, in order to provide a safe and convenient traffic flow at all times throughout the limits of each work zone and the approaches thereto.

The Contractor shall assume full responsibility for the safe and efficient movement of traffic through the construction area for the duration of the project. Prior approval by the Engineer shall be required for any alterations of traffic patterns shown on the plans.

All traffic control devices shall be in accordance with the details shown in the plans or on Standard Drawings TC-1, TC-2, TC-3, TC-4, and TC-5. The Contractor will be responsible for furnishing, placing, maintaining, relocating, and subsequent removal of all traffic control devices within the limits of the project.

The Contractor shall notify the Engineer a minimum of 5 full business days prior to closing a lane. If the Contractor fails to give the proper notification, the lane closure will not be allowed until 5 full business days after the notification was given.

The Contractor shall not close any portion of a lane unless active work will begin immediately. In addition, when gainful work is not being accomplished in an area where a lane has been previously closed, steps shall be taken to return traffic to normal conditions - that is, all lanes open to traffic in each direction within 72 hours after construction operations have ceased. All additional labor, materials, and incidentals needed to return the traffic to normal conditions shall be provided, maintained, removed, and replaced, if necessary, at no cost to the City.

The Contractor shall schedule his work so that no main lane closures exist and no work requiring main lane closures will be performed for the time period of the day before the Holiday through the day after the Holiday for the following Legal Holidays:

- New Year's Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day & the Following Day
- Christmas Eve & Christmas Day
- Other local events such as Sporting Events, Fairs, Carnivals, to be determined by the Owner.

If the Legal Holiday is immediately prior to a weekend or immediately following a weekend, the weekend will be considered a part of the Holiday.

Special events or occurrences could cause traffic to become congested. When this occurs, the Contractor shall immediately modify the work schedule, working methods, or procedures to lessen the impact of the work on traffic or as directed by the Engineer.

SPECIAL PROVISION #4

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

MAINTENANCE OF TRAFFIC
ARDOT STANDARD SPECIFICATIONS

The Contractor will regulate the access of work vehicles and equipment to the work area while insuring safety to the traveling public and minimum damage to highway facilities. Any damage to the highway facility or vegetation caused by the Contractor shall be repaired at no cost to the Department. Unless operating within the area closed to traffic, the Contractor's work vehicles shall travel in the direction of the normal traffic flow. Only those vehicles necessary for the work shall be allowed in the work zone. All other vehicles shall be parked at a safe location outside the work zone, as approved by the Engineer.

General equipment storage areas or operations centers will be allowed within the limits of the right of way only where permitted by the Engineer. At the end of the work day, equipment shall be either shielded from traffic by an approved positive barrier or placed so it is not within 15 feet of any lane carrying traffic.

The Contractor shall conduct his operations so that no equipment or personnel shall occupy any portion of the roadway that remains designated for the passage of traffic.

METHOD OF MEASUREMENT: Maintenance of Traffic will be measured by the lump sum and shall include traffic control supervision, construction and removal of temporary improvements, and installation, maintenance, and removal of temporary traffic control devices required to complete the work.

BASIS OF PAYMENT: Work completed and accepted under the item Maintenance of Traffic and measured as provided above will be paid for at the contract lump sum price bid for Maintenance of Traffic, which price shall be for full compensation for furnishing, placing, maintaining and removing traffic control devices; for ordinary maintenance of existing roads and culverts; for the application of water and other approved materials to alleviate dust conditions; for furnishing flaggers, pilot vehicles, and sentinels, as necessary; for furnishing, installing, maintaining, replacing, and removing all traffic control devices; for maintaining a smooth and stable passageway; for maintaining and re-erecting all existing street signs; and for all materials, labor equipment, tools, and incidentals necessary to safely maintain traffic during the construction period.

There shall be no direct payment for fulfilling the requirements of the Special Provision, but compensation shall be considered included in the price bid for Maintenance of Traffic.

SPECIAL PROVISION #5

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

SHORING FOR CULVERTS
ARDOT STANDARD SPECIFICATIONS

DESCRIPTION: Work under this item shall consist of the design, construction, and removal of a shoring or bracing system that may be required to retain the existing, temporary, or new roadway embankment and to maintain traffic during construction of culverts. The shoring system shall provide sufficient clearance for excavation and construction work and shall ensure the safety of the traveling public and workmen at all times.

WORK TO BE PERFORMED: Prior to construction of the shoring system, the Contractor shall submit the design and details of the system to the Engineer for informational and record purposes. Such submission shall include the design calculations, the kind and condition of materials to be used, working drawings showing all dimensions, and the procedure for installation of the system. The design and details submitted shall be prepared and/or approved by a Professional Engineer registered in Arkansas.

The Contractor shall be responsible for the adequacy of the temporary shoring during the entire period of construction. The Contractor shall be responsible for any and all damages and/or claims, including injury or death, arising out of the construction and use of temporary shoring.

The Contractor shall construct the shoring in accordance with the details submitted to the Engineer for informational purposes. Unless otherwise permitted by the Engineer, all components of the shoring system shall be removed upon completion of their use and shall remain the property of the Contractor.

PAYMENT: No direct payment will be made for work described in this special provision (which includes preparation of necessary design details and drawings, construction and removal of shoring, and for all materials, labor, tools, equipment, and incidentals necessary to complete the work) but shall be considered subsidiary to other pay items in the contract.

SPECIAL PROVISION #6

JOB NO. 040943
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DRAINAGE STRUCTURE BACK OPENING

DESCRIPTION. This item shall consist of construction of the Drainage Structure Back Opening at locations and per detail shown in the plans.

MATERIALS. The concrete and reinforcing steel used in construction of the Drainage Structure Back Opening shall conform to requirements of Section 302 of the City of Fayetteville Standard Street and Drainage Specifications.

METHOD OF MEASUREMENT. Drainage Structure Back Opening will be measured by each (EA) per Drainage Structure Back Opening.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid at the contract unit price shown below, which price shall be full compensation for furnishing all materials, equipment, tools, labor and incidentals necessary to complete the work as described herein and shown in the Construction Plans.

Payment will be made under:

Pay Item	Pay Unit
Drainage Structure Back Opening	EA

SPECIAL PROVISION #7

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

CONCRETE FLUME

DESCRIPTION. This item shall consist of construction of the Concrete Flume at locations and per detail shown in the plans.

MATERIALS. The concrete and reinforcing steel used in construction of the Concrete Flume shall conform to requirements of Section 302 of the City of Fayetteville Standard Street and Drainage Specifications.

METHOD OF MEASUREMENT. Concrete Flume will be measured by square yard (SY) for the area of concrete flume constructed.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid at the contract unit price shown below, which price shall be full compensation for furnishing all materials, equipment, tools, labor and incidentals necessary to complete the work as described herein and shown in the Construction Plans.

Payment will be made under:

Pay Item	Pay Unit
Concrete Flume	SY

SPECIAL PROVISION #8

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

SELECT PIPE BACKFILL (CLASS 67)

DESCRIPTION. This item shall consist of the furnishing and installing of Select Pipe Backfill (Class 67) if and where directed by the Engineer in instances where it is necessary to expedite backfill of utility lines to reduce impacts to traffic and improve access to driveways. The quantity of this material is an allowance only, and may be used if and where directed by the Engineer to backfill utility lines such as water, sanitary sewer, electrical and/or fiber conduit, drainage pipes and structures.

MATERIALS. The material used shall be crushed aggregate conforming to the ASTM C 33, gradation 67 and as follows:

Crushed aggregate sized from maximum ¾ inch to No. 8 sieve:

100 percent passing the ¾ inch sieve (maximum aggregate size ¾ inch)
20 to 55 percent passing the 3/8 inch sieve
0 to 10 percent passing the No. 4 sieve
0 to 5 percent passing the No 8 sieve.

SUBMITTAL REQUIREMENTS. Contractor shall submit information to the Engineer that enables Engineer to confirm proposed material meets these specifications.

METHOD OF MEASUREMENT. Select Pipe Backfill (Class 67) will be measured by the cubic yard (CY) of material installed. Prior to placement, the Engineer must confirm the size of trench and location for the material to be used and must also authorize the use of this material in lieu of traditional backfill prior to placement.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid for Select Pipe Backfill (Class 67), which price shall be full compensation for furnishing and installing backfill; for all labor, equipment, tools, and incidentals necessary to complete the work as described herein and shown in the Construction Plans.

Payment will be made under:

Pay Item	Pay Unit
Select Pipe Backfill (Class 67)	CY

SPECIAL PROVISION #9

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

PEDESTRIAN REFUGE ISLANDS

DESCRIPTION. This item shall consist of Pedestrian Refuge Islands constructed of Portland Cement Concrete constructed in one course on the prepared subgrade or on a completed and accepted base course according to these specifications and conforming to the lines, grades, thickness, and details shown in the plans.

MATERIALS & CONSTRUCTION REQUIREMENTS. Materials and construction requirements shall comply with Section 601, Cast-in-Place Concrete. Type C Curb Face shall be constructed on all exposed edges.

METHOD OF MEASUREMENT. Measurement will be made by the square yard (SY) basis of completed in place concrete at the unit price listed on the Unit Price Schedule. Detectable warnings, and other signal equipment located in these areas will be paid for by separate item(s).

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract unit price shown below, which price shall be full compensation for furnishing all materials, equipment, tools, labor and incidentals necessary to complete the work as described herein and shown in the Construction Plans.

Payment will be made under:

Pay Item	Pay Unit
Pedestrian Refuge Islands	SY

SPECIAL PROVISION #10

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

GRAVITY BLOCK RETAINING WALL

DESCRIPTION. This item shall consist of the construction of a gravity block retaining wall system in accordance with these specifications and in conformity with the locations, dimensions, lines and grades shown on the plans. All references to Division, Section, and Subsection refer to the Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition).

GENERAL. The retaining wall system shall provide for the stability of the retained soil thru the use of gravity forces from the weight of blocks and any in-fill material without the use of soil reinforcements or tie-backs. The same type retaining wall system shall be used at all locations unless noted otherwise on the plans. The Contractor shall submit to the Engineer for approval a precast concrete gravity block retaining wall system that conforms to the following:

1. The retaining wall design shall be in accordance with the current edition of the AASHTO LRFD Bridge Design Specifications and this Special Provision and shall be designed by an Arkansas Registered Professional Engineer. All details, drawings, and calculations required by this Special Provision shall be certified, signed, and stamped with the Engineer's seal.
2. The basic wall geometry, including top and bottom of wall face, grade lines, and length and limits of walls shall be as shown on the plans and as directed by the Engineer.
3. Structural elements of the wall shall not interfere with the location of roadway drainage structures or other buried structural elements as shown on the plans.
4. The wall system design shall comply with requirements for global stability as determined by the Department. The passive resistance of the soil at the front face of the wall shall be neglected in the analysis of external stability for sliding.
5. The individual blocks shall have a concrete or steel interlock between the top and bottom surfaces of the blocks capable of keeping them in the intended alignment and provide shear resistance between block units.
6. Bearing resistance for the wall shall be determined by the design engineer for the retaining wall. This may be coordinated with owner and their construction materials testing firm for recommendations on existing soil conditions prior to construction of the wall.
7. Drainage shall be provided behind the wall with granular material and perforated pipe.

GRAVITY BLOCK RETAINING WALL

MATERIALS.

(a) Gravity Block Units. Gravity block units and cap units shall have a minimum dry weight density of 140 lbs per cubic foot. The minimum block thickness for the main wall units shall be twenty-four inches. The minimum thickness for cap units and corner/transition units may be reduced if approved by the Design Engineer. The units shall have a weathered rock face finish in angular tri-plane or straight face configuration unless otherwise noted in the plans. All units shall have a concrete gray face color unless otherwise noted on the plans. Exposed surfaces of units shall be free of chips, cracks, or other imperfections when viewed from a distance of 10 feet under diffused lighting. Any metallic attachment devices shall be galvanized in accordance with AASHTO M 111 and provide for a 75 year maintenance free life expectancy.

(b) Concrete. The Contractor shall submit a concrete mix design to the Resident Engineer for approval. The Portland cement concrete shall have a minimum 3500 psi compressive strength at 28 days; an air content of 6% ±2%, and a maximum aggregate size of 1 inch. The manufacturer shall have a Quality Control program whereby representative samples of raw materials are tested and/or reviewed for conformity. In addition, quality control tests (compressive strength and air content) shall be conducted in accordance with the Department's Manual of Field Sampling and Testing Procedures. The frequency of quality control tests shall be a minimum of one (1) set of tests per pouring day. Records of materials used in the manufacture of wall units and quality control test shall be maintained by the manufacturer. The Department shall reserve the right to review records for compliance with all applicable specifications and to reject any non-conforming units.

(c) Filter Fabric. Geotextile filter fabric meeting the requirements of Subsection 625.02, Type 2 is required at the interface of the drainage material and both the backfill material and the gravity block wall. The geotextile fabric used in the wall construction shall be able to resist deterioration when exposed to the backfill material selected. Geotextile fabric shall be protected from sunlight during storage.

(d) Drainage Fill Material. Drainage fill material placed immediately behind the wall shall conform to the requirements of a Class 3 mineral aggregate as specified in Subsections 403.01 and 403.02 or coarse aggregate meeting the Standard or Alternative Gradation as specified in Section 802.02(c) of the Standard Specifications.

(e) Select Granular Backfill. All backfill material shall be granular having an angle of internal friction greater than 28 degrees as determined by the standard direct shear test AASHTO T-236 on the portion finer than the No. 10 sieve, using a sample of the material compacted to 95 percent of AASHTO T-99 and shall have no cohesion. Aggregates meeting the material requirements of Section 302 for Selected Material (Class SM-1) or the material requirements of Section 303 for Aggregate Base Course (Class 7) are acceptable backfill materials.

The Contractor shall sample and test the backfill material prior to wall construction to verify that the angle of internal friction used in the wall system design does not exceed the angle of internal friction of the backfill material. The Contractor shall conduct one additional shear test on a sample taken during the wall construction at a location as determined by the Engineer. Also, if the backfill material source changes and/or material properties change during wall construction from the original sample tested, the angle of internal friction shall be re-verified. If either the

GRAVITY BLOCK RETAINING WALL

additional test result or the re-verified test result is less than the design value utilized in the design of the wall, the material shall be removed and replaced with acceptable backfill material.

WORKING DRAWINGS. At least 30 calendar days prior to fabrication of the gravity blocks, the Contractor shall submit four (4) copies of design calculations, working drawings, and material and construction specifications to the Engineer for review. This will be used to verify compliance with design requirements. The drawings shall include details that provide for flexibility, differential settlement and aesthetics at changes in direction of the wall alignment.

The above verification process shall not relieve the Contractor of any responsibility under the contract for the successful completion of the work.

GRAVITY BLOCK FACE FINISH. Before shipment of the gravity blocks, approval of the face finish will be required. Approval will be based on a sample block submitted to the Engineer. In lieu of a sample block, the Engineer may accept proof of previous work performed with identical blocks and finishes.

CONSTRUCTION REQUIREMENTS. The Contractor will be required to have a manufacturer's representative experienced and knowledgeable in the design and construction of the retaining wall system available throughout the construction period.

The Contractor shall furnish a certification that the components of the wall system were manufactured in compliance with the approved design and that the materials furnished comply with the specifications.

Prior to wall construction, the foundation shall be compacted as directed by the Engineer. Any unsuitable foundation material shall be excavated and backfilled according to the undercutting requirements of this special provision. At each foundation level, an unreinforced concrete or crushed stone leveling pad shall be provided. Concrete leveling pads shall be in place a minimum of 24 hours before gravity block elements are placed. Leveling pads shall have a minimum earth cover as shown on the plans. Crushed stone for leveling pads shall comply with the requirements of Section 303 for Aggregate Base Course (Class 7) or other material as required by the wall supplier's construction requirements, and compacted in accordance with Subsection 210.10. Concrete for leveling pads shall comply with the requirements of Section 802 for Class A or higher class concrete as required by the wall supplier's construction requirements.

Individual gravity blocks shall be placed so that their final position is near vertical. The tolerance for the completed wall shall be within 2 degrees of the batter shown on the plans. As drainage and backfill material are placed behind the blocks, the blocks shall be maintained in position according to the wall supplier's recommendations.

As shown on the plans, drainage fill material shall be placed for a minimum width of 12 inches behind the wall, for the full height of the wall, in 10 inch loose lifts and compacted in such a manner as to avoid any damage or distortion of wall materials or wall alignment. The Contractor shall perform quality control and acceptance sampling and testing of the backfill in accordance with Section 306, with the exception that the minimum frequency of acceptance testing shall be one lot test for gradation and decantation loss for each 500 cubic yards of drainage fill material.

GRAVITY BLOCK RETAINING WALL

Select Granular Backfill shall be placed and compacted in accordance with Subsections 210.07, 210.09, and 210.10 of the Standard Specifications. The Contractor shall perform quality control and acceptance sampling and testing of the backfill in accordance with Section 306, with the exception that the minimum frequency of acceptance testing shall be one lot test for density, moisture content, gradation, and plasticity index for each 3000 cubic yards of backfill material placed except that at least one set of tests for density and moisture content shall be performed on each layer of backfill.

Backfill shall be placed in such a manner as to avoid any damage or disturbance of the wall materials or misalignment of the facing blocks. Any damage or distortion of the wall materials during backfill placement shall be corrected at the Contractor's expense.

The Contractor shall be responsible for preventing surface water or rainwater from damaging the retaining walls during construction. This shall include shaping the backfill to prevent water from ponding or flowing on the backfill or against the wall face. Any damage or movement caused by erosion, sloughing, or saturation of the retaining wall or embankment backfill shall be repaired at the Contractor's expense.

All the material within any undercut areas shown in the plans shall be excavated to the limits shown. Additional soft and unstable materials shall be excavated as directed by the Engineer. All undercut areas shall be backfilled with granular material meeting the requirements specified in the plans. The granular backfill material shall be placed and compacted in accordance with Subsections 210.07, 210.09 and 210.10. The Contractor shall perform quality control and acceptance sampling and testing of the backfill in accordance with Section 306, with the exception that the minimum frequency of acceptance testing shall be one lot test for density, moisture content, gradation and plasticity index for each 3000 cubic yards of backfill material placed except that at least one set of tests for density and moisture content shall be performed on each layer of backfill.

METHOD OF MEASUREMENT. Retaining walls will be measured by the square foot of front surface area between the top of the leveling pad at the face of the wall and the top of the wall including any cap units required.

All excavation within the limits of the gravity wall units and drainage fill material, for the leveling pad, within the limits of any undercut areas, and directly over any undercut areas will be measured as Unclassified Excavation. All other excavation will not be measured.

All backfill within the limits of any undercut areas will be measured as shown in the plans. All backfill (not including drainage fill) directly over the limits of any undercut areas will be measured as Compacted Embankment. Drainage fill material and all other backfill will not be measured.

BASIS OF PAYMENT. Retaining walls completed, accepted and measured as provided above will be paid for at the contract unit price bid per square foot front face of Gravity Block Retaining Wall, which price shall be full compensation for designing; for quality control and acceptance sampling and testing; for furnishing all materials including drainage fill and any in-fill materials; pipe underdrains and joint materials; for furnishing and installing Geotextile Fabric, for

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constructing the leveling pad, the wall, and the cap units; and for all labor, equipment, tools, and incidentals necessary to complete the work.

All excavation within the limits of the gravity block wall units and drainage fill material, for the leveling pad, within the limits of any undercut areas, and directly over any undercut areas will be paid for as Unclassified Excavation in accordance with Section 210. All other excavation will not be paid for directly but will be considered subsidiary to the unit price bid per square foot for Gravity Block Retaining Wall.

All backfill within the limits of any undercut areas, including quality control and acceptance sampling and testing, will be paid for as shown in the plans. All backfill (not including drainage fill) directly over the limits of any undercut areas, including quality control and acceptance sampling and testing, will be paid for as Compacted Embankment in accordance with Section 210. All other backfill will not be paid for directly but will be considered subsidiary to the unit price bid per square foot for Gravity Block Retaining Wall.

The Contractor shall comply with applicable Federal, State, and local laws governing safety in accordance with Subsection 107.01(b) in any and all excavation and/or shoring operations. Any shoring will not be paid for directly but will be considered subsidiary to the unit price bid per square foot for Gravity Block Retaining Wall.

Payment will be made under:

Pay Item	**Pay Unit**
Gravity Block Retaining Wall	SF (Square Foot)

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JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

REMOVE AND REPLACE TREES

DESCRIPTION. This item shall consist of removing and replacing the existing trees on the Valvoline property as shown in the plans.

CONSTRUCTION REQUIREMENTS. The existing trees shall be removed as shown on the plans to accommodate construction. New 2" DBH trees of the same species as those removed shall be planted in locations shown on the plans. Trees shall be planted in accordance with City of Fayetteville planting details.

METHOD OF MEASUREMENT. Remove and Replace Trees will be measured by each (EA) basis at the unit price listed on the Unit Price Schedule. One unit includes removal of one tree, and planting of one new tree.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract unit price shown below, which price shall be full compensation for, furnishing and installing all plans, soils, mulch, other materials and appurtenant work required to remove and replace trees, and for all labor, equipment, tools, and incidentals necessary to complete the work as described herein and shown in the Construction documents.

Payment will be made under:

Pay Item	Pay Unit
Remove and Replace Trees	EA

SPECIAL PROVISION #12

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

IRRIGATION SYSTEM ADJUSTMENT

DESCRIPTION. This item shall consist of adjustments to existing irrigation systems located on Parcel 765-15715-000 (Valvoline Instant Oil Change) at the southeast corner of the intersection between Millsap and College Ave.

The location and extent for underground irrigation systems is unknown, except for what can be seen at the surface such as backflow preventers, valves and irrigation heads.

It is the intent of this special provision to remove portions of existing irrigation systems that may be in conflict with proposed improvements and adjust those irrigation systems to provide a complete functioning system of the same type, functionality and quality for the affected property owner. Irrigation components expected to require adjustment include (but not limited to) backflow preventers, RPZ, valves, yard lines, and nozzles.

SUBMITTAL REQUIREMENTS. Prior to making any adjustments to an existing irrigation system, the contractor shall notify the engineer and schedule a site visit to review and document the location, extents and specifics of the system. Once impacts are determined, the contractor shall submit a plan to the engineer describing necessary adjustments to the existing irrigation system to resolve conflicts with proposed improvements. This information will be used to coordinate and schedule work with the owner of the irrigation system.

MATERIALS

When possible, materials shall match the materials of the existing system. If those materials are no longer available, the following guidance shall be used as required.

Pipe Materials:

1. Plastic Pipe: Provide PVC, pressure rated pipe for sizes 2-1/2 inches or less meeting the requirements of ASTM D 2241, PVC 1120 compound, SDR 21. Provide plastic pipe 3 inches and larger meeting the requirements of ASTM D 1785, PVC 1120 compound, Schedule 40.
    a. The pipe shall be homogeneous throughout and free from visible cracks, holes, foreign materials, blisters, deleterious, wrinkles, and dents.
    b. All pipe shall be continuously and permanently marked with the following information: Manufacturer's name or trademark, size, schedule and type of pipe, working pressure at 73 degrees F. and National Sanitation Foundation (N.S.F.) approval.

2. Plastic Pipe Fittings: Provide molded plastic pipe fittings manufactured of the same material as the pipe and shall be suitable for solvent weld, slip joint ring-tite seal or threaded connections.
    a. PVC Socket Fittings: ASTM D 2466, Schedules 40 and 80.
    b. PVC Threaded Fittings: ASTM D 2464, Schedule 80.
    c. PVC Socket Unions: Construction similar to MSS SP-107, except both headpiece and tailpiece shall be PVC with socket ends.
    d. Size slip fitting socket taper so that a dry unsoftened pipe end can be inserted no more than halfway into the socket. Plastic saddle and flange fittings will not be permitted. Only schedule 80 pipe may be threaded.
    e. When connection is plastic to metal, plastic male adaptors shall be used. The male adaptor shall be hand tightened, plus one turn with a strap wrench.

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f. Pipe-Flange Gasket Materials: AWWA C110, rubber, flat face, 1/8-inch-thick unless otherwise indicated; full-face or ring type unless otherwise indicated.
g. Metal, Pipe-Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.

3. Polyethylene Pipe: ASTM F 771, PE 3408 compound; SIDR 11.5.

4. Polyethylene Pipe Fittings: Provide insert fittings for PE Pipe: ASTM D 2609, nylon or propylene plastic with barbed ends. Include bands or other fasteners.

5. Pipe Sleeves: Provide Schedule 40 PVC pipe with solvent welded joints under pavements.

6. Copper Pipe: Use Type "K" rigid conforming to ASTM Standard B88. Use wrought copper or cast bronze fittings, soldered or threaded per the installation details. Use a dielectric union wherever a copper-based metal (copper, brass, bronze) is joined to a iron-based metal (iron, galvanized steel, stainless steel).

Pipe Joining Materials:

1. Solvent Cements for Joining PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.

2. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer unless otherwise indicated.

Valves:

1. PVC Ball Valves: Union type, with full-port ball, socket or threaded detachable end connectors, and pressure rating not less than 150 psig (1035 kPa). PVC ball valves may be used for sizes 2-1/2" and smaller, brass or bronze ball valves are required for sizes 3" or larger.

2. Electric Control Valves: Molded-plastic body, normally closed, diaphragm type with manual-flow adjustment, and operated by 24-V ac epoxy-sealed solenoid for commercial/institutional applications.

Valve Boxes:

1. General: All remote-control valves, manual control valves, zone shut-off valves, gate valves or globe valve filters and drains unless otherwise indicated, shall be installed in valve access box of proper size as required for easy access to the valve.

2. Plastic Control-Valve Boxes: Box and cover, with open bottom and openings for piping; designed for installing flush with grade. Include size as required for valves and service. Electric control valves must be placed in square valve boxes with polyethylene sidewall and cover materials. Lettering on the cover will be "IRRIGATION."

Specialties:

1. Control Cable: All electrical control and ground wire shall be low voltage-direct burial irrigation control cable, 14 gauge unless otherwise indicated on the drawings. All

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wiring to be used for connecting automatic remote control valves to the automatic controller shall be Type "UF," 600 volt, stranded or solid copper, single conductor wire with PVC insulation and bear UL approval for direct underground burial feeder cable.

a. Insulation shall be 4/64-inch thick minimum covering of ICC-100 compound for positive waterproofing protection. All control or "hot" wires shall be of one color (black) and all common or "ground" wires shall be of another color (white). Verification of wire size and types and installation procedures shall conform to local codes, applications and length of runs.
b. All splices are to be completed within valve boxes using one-piece, jelly-filled, water-proof wire connectors with 20 expansion coils per splice.

2. All other materials, not specifically described but required for a complete and proper irrigation system installation, shall match existing, shall be new, first quality of their respective kinds, and subject to the approval of the Owner's Representative.

Construction Methods

1. Surface Conditions:
    a. Inspection: Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
        i. Verify that irrigation system may be installed in strict accordance with all pertinent codes and regulations, the original design, the referenced standards, and the manufacturer's recommendations.
    b. Discrepancies: In the event of discrepancy, immediately notify the Owner's Representative.
        i. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.
    c. Field Measurements: Make all necessary measurements in the field to ensure precise fit of items in accordance with the original design.

2. Installation of Piping:
    a. General: Layout the piping system in accordance with the plans.
        i. Where piping is shown on the plans to be under paved areas but running parallel and adjacent to planted areas, the intention is to install the piping in the planted areas.
    b. Line Clearance: All lines shall have a minimum clearance of 4 inches from each other, and 6 inches from lines of other trades, except through pipe sleeves.
        i. Parallel lines shall not be installed directly over one another.

3. Inspection of Pipe and Fittings: Carefully inspect all pipe and fittings before installation, removing all dirt, scale, and burrs and reaming as required; install all pipe with all markings up for visual inspection and verification.

4. Plastic Pipe: Plastic pipe shall be installed in a manner so as to provide for expansion and contraction as recommended by the manufacturer.
    a. All plastic joints shall be solvent-weld joints or slip seal joints. Only the solvent cement recommended by the pipe manufacturer shall be used. All plastic pipe and fittings shall be installed as outlined and instructed by the pipe

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manufacturer and it shall be the Contractor's responsibility to make arrangements with the pipe manufacturer for any field assistance that may be necessary. The Contractor shall assume full responsibility for the correct installation.

i. All plastic to metal joints shall be made with plastic male adaptors.
ii. The solvent-weld joints shall be made dry.
iii. The solvent-weld joints shall be allowed to set at least 24 hours before pressure is applied to the system on PVC pipe.

5. Pipe Pulling: Pulling of pipe is acceptable for the installation of lateral lines only. Contractor has the option to pull or trench laterals.
    a. Pull pipe to the depth as required on the Drawings.

6. Trenching and Backfilling.
    a. General: Perform all trenching required for the installation of items where the trenching is not specifically described in other sections of these specifications.
        i. Make all trenches in accordance with OSHA Requirements with sufficient width to provide free working space at both sides of the trench and around the installed item as required for gluing, joining, backfilling, and compacting while minimizing width of trenches.
    b. Depth: Trench as required to provide the elevations shown on the Plans.
        i. Trench to sufficient depth to give a minimum of 18 inches of fill above the top of the pipe measured from the adjacent finished grade under driveways and sidewalks.
        ii. All mainline shall have a minimum cover of 18 inches above the pipe. All laterals shall have a minimum cover of 12 inches above the pipe. All drip laterals shall have a minimum cover of 8 inches above the pipe.
        iii. All sleeves shall be installed at a depth on line and grade with existing or proposed irrigation lines. Sleeves with excessive or shallow invert depth will be rejected.
    c. Correction of Faulty Grades: Where trench excavation is inadvertently carried below proper elevations, backfill with material approved by the Owner's Representative and then compact to provide a firm and unyielding subgrade to the approval of the Owner's Representative and at no additional cost to the Owner.
    d. Trench Bracing: Properly support all trenches in strict accordance with all pertinent rules and regulations.
        i. Brace, sheet, and support trench walls in such a manner that they will be safe and that the ground alongside the excavation will not slide or settle, and that all existing improvements of every kind will be fully protected from damage.
        ii. In the event of damage to such improvements, immediately make all repairs and replacements necessary to the approval of the Owner's Representative and at no additional cost to the Owner.
        iii. Arrange all bracing, sheeting and shoring so as to not place stress on any portion of the completed work until the general construction thereof has proceeded far enough to provide sufficient strength.

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e. Removal of Trench Bracing: Exercise care in the driving and removal of sheeting, shoring, bracing, and timbering to prevent collapse or caving of the excavation faces being supported.
f. Grading and Stockpiling Trenched Material: Control the stockpiling of trenched material in a manner to prevent water running into the excavations.
    i. Do not obstruct surface drainage but provide means whereby storm and waste waters are diverted into existing gutters, other surface drains, or temporary drains.
g. Methods: All trench excavation shall be made by open cut. During excavation, material suitable for backfilling shall be piled in an orderly manner, a sufficient distance from the banks of the trench to avoid overloading, and to prevent slides or cave-ins. All material not required for backfill or not suitable for backfill, shall be removed from the site by the Contractor. Banks of trenches shall be kept as nearly vertical as possible and shall be properly sheeted and braced as may be necessary to prevent caving.
    i. Trench widths in paved streets or in areas where proximity to other structures require vertical cuts, shall not be wider than is required for proper handling, jointing and bedding of the pipe.
    ii. The bottom of the trenches shall be accurately graded to line and grade and provide uniform bearing and support for each section of the pipe on undisturbed soil, at every point along its entire length. Depressions for joints shall be dug after the trench bottom has been graded, and shall be only of such length, depth and width as required for properly making the particular type joint. Care shall be taken not to excavate below the depths indicated.
    iii. Where rock occurs in trench excavation, the rock shall be removed to a depth of six (6) inches below the established grade line, and to a width of twelve (12) inches greater than the outside diameter of the pipe to be installed in the trench.
h. Pavement Removal: Where excavation of trenches requires the removal of pavement, the pavement shall be cut in a straight line along the edge of the excavation by use of a spade-bitted air hammer, concrete saw or similar approved equipment to obtain straight, square and clean break; and, after backfilling and subgrade preparations are completed, the pavement section and surfacing shall be replaced.
    i. Excess material, including rock, broken concrete, bituminous materials, debris or other materials not suitable for backfill, shall be removed from the site and disposed of by the Contractor.

7. Boring:
    a. Locations: Boring shall be used to route pipe, wiring, or both under structures such as walks or curbs where trenching is impractical. <u>Sleeves shall be installed in all bored holes.</u>
    b. Method: Boring shall be accomplished with a drill, auger, water jet, or any other instrument approved by the Owner's Representative capable of producing a precise hole. Boring shall not disturb overlaying structures or cause settlement and damage to those structures.

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8. Sleeves:
    a. Locations: Install sleeves where noted on plans, or wherever routing of a pipe, wiring, or both crosses a paved area or passes through a bored hole.
    b. Methods: Sleeves laid in open trenches shall be uniformly and evenly supported by undisturbed soil on the trench bottom. Backfill shall conform to standards hereinafter specified.
        i. Sleeves installed in borings shall be forced through and have a snug fit throughout the length of the bored hole. Sleeves cracked or broken shall not be accepted.
        ii. Installation of pipe for sleeving shall occur where pipe lines run under or through pavements or structures and as shown on the plans. Sleeve inverts shall be laid at the grade of the lines it will carry and sloped to drain. All permanent sleeves shall be laid side by side in all locations unless noted otherwise. Inverts in and out shall be permanently marked in the field and on the as built drawings.
    c. Materials: Pipe for sleeving must be a minimum strength of SDR 35.

9. Backfill.
    a. Inspection: The trenches shall not be backfilled until inspection has been completed and the pipe installation, including the grade, alignment and jointing has been found to be in compliance with the requirements of the plans and specifications.
    b. Around and Over Pipe: Select backfill material consisting of sand, fine gravel or select earth, free of large lumps or rocks larger than 3/4 inch shall be used in backfilling around and over the installed pipe.
        i. The select material shall be obtained from the excavation material removed from the trench and shall be processed by screening, sifting, or selective sorting, so as to produce the type of backfill herein specified. The Contractor may at his option and expense provide an acceptable imported material.
        ii. This backfill material shall be carefully deposited around and over the pipe in layers not more than six inches thick, loose measurement, unless otherwise permitted by the Owner's Representative, wetted to optimum moisture content and uniformly compacted to at least 95 percent of the maximum density obtainable at optimum moisture content as determined by ASTM D698 (latest revision), until the pipe has a cover depth of at least one (1) foot.
    c. Remainder of Trench Backfill: The remaining depth of the trench shall be backfilled with excavation material removed from the trench, which shall be wetted or dried to near optimum moisture content.
        i. Inclusion of a limited amount of stones and rocks will be permitted. Stones and rocks shall in no case be larger than 1 inch, and they shall be placed so that each piece is completely surrounded with material compacted to the density specified. The size and amount of rocks used in backfill shall be such that they will not interfere with proper compaction.
        ii. This material shall be carefully deposited in layers of a thickness suitable to the equipment selected by the Contractor for proper compaction and compacted to at least 95 percent of the maximum

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density as determined by ASTM D698 (latest revision) under pavements and structures. The method of compaction selected by the Contractor shall not cause damage of any nature to the installed pipe. In planted areas compact to 85 percent of maximum density at optimum moisture.

iii. The use of water settlement for this portion of the trench backfilling is permissible if the specified density can be obtained and the backfill material is suitable for this type of trench compaction.

10. Installation of Equipment.
    a. General: All fittings, valves, etc., shall be carefully placed in the trenches with concrete thrust blocks to be placed where required, or at angle points as shown on the plans and details.
        i. All sprinklers, having adjustable nozzles, shall be adjusted for proper and adequate distribution of the water over the coverage pattern of the sprinkler.
        ii. All nozzles on pop-up sprinklers or spray heads shall be tightened after installation. All sprinklers shall be adjusted as required for the proper arc of coverage, radius, diameter and/or gallonage discharge.
        iii. Provide a laminated tag indicating the zone number for each electric control valve. Secure the tag using a zip tie.
    b. Sprinkler Heads: Install sprinkler heads where indicated on the plans and in strict accordance with the manufacturer's recommendations or as necessary to provide complete uniform coverage.
        i. All heads on slopes where runoff may occur shall be installed with check valves if slope between heads exceeds 2 feet and install check valves on all pop-up heads on slopes that exceed 6:1.
        ii. Set all heads to final grades, accounting for sod depths and mulch.
    c. Control Wire: Bundle control wires where two or more are in the same trench. Bundle with pipe wrapping tape spaced at 10-foot intervals.
        i. Provide 24-inch excess length of wire in an 8-inch diameter loop at each 90-degree change of direction, at both ends of sleeves and at 100-foot intervals along continuous runs of wiring. Do not tie wiring loop. Coil 24-inch length of wire within each remote-control valve box.
        ii. Install common ground wire and one control wire for each remote-control valve. Multiple valves on a single control wire are not permitted. Install wire parallel with and below PVC mainline pipe.

11. Testing:
    a. Flushing: Before backfilling the mainline, and with all control valves in place, but before lateral pipes are connected, completely flush and test the mainline and repair for all leaks; flush out each section of lateral pipe before sprinkler heads are attached.
    b. Testing: Make all necessary provisions for thoroughly bleeding the line of air and debris.
        i. Pipelines jointed with solvent-welded PVC joints must be cured at least 24 hours before testing.
        ii. Subsections of mainline pipe may be tested independently, subject to the review of the Owner’s Representative.

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iii. Furnish clean, clear water, pumps, labor, fittings and equipment necessary to conduct tests.

c. Hydrostatic Pressure Test:
   i. Subject mainline pipe to a hydrostatic pressure of 150 PSI for two hours. Test with mainline components installed. A 2 PSI pressure variation is allowed. Backfill to prevent pipe from moving under pressure. Expose couplings and fittings.
   ii. Leakage will be detected by visual inspection. Replace defective pipe, fitting, joint, valve or appurtenance. Repeat the test until the pipe passes the test.
   iii. Cement or caulking to seal leaks is prohibited.

d. Operational Test:
   i. Activate each remote-control valve in sequence from controller. The Owner's Representative will visually observe operation, water application patterns and leakage.
   ii. Replace defective remote-control valve, solenoid, wiring or appurtenance to correct operational deficiencies.
   iii. Replace, adjust or move water emission devices to correct operational or coverage deficiencies.
   iv. Replace defective pipe, fitting, joint, valve, sprinkler or appurtenance to correct leakage problems. Cement or caulking to seal leaks is prohibited. Repeat test until each lateral passes all tests.

12. Cleanup and Protection:
    a. Cleanup: Upon completion of the work, the entire site shall be cleared of all debris, and ground surfaces shall be finished to smooth, uniform slopes and shall present a neat and workmanlike appearance. Replace all obstructions remove during construction to a condition at least equal to their existing condition.

13. Irrigation Maintenance:
    a. Maintenance: The Contractor shall, for a period of one (1) year after completion and final acceptance of the work, maintain and repair any trench or boring settlement which may occur, and shall make suitable repairs to any pavements, sidewalks, or other structures which may become damaged as a result of settlement. All such maintenance and repair shall be at the Contractor's expense.

14. Record Drawings:
    a. Record Drawings: Maintain as-built drawings on site at all times. Record accurately on one set of black and white prints of the site plan all installed work including both pressure and non-pressure lines.
       i. Upon completion of each increment of work, transfer all such information and dimensions to the print. The dimensions shall be recorded in a legible and workmanlike manner.
       ii. Dimension from two permanent points of reference (buildings, monuments, sidewalks, curbs, pavement, etc.). Locations shown on

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IRRIGATION SYSTEM ADJUSTMENT

as-built drawings shall be kept day to day as the project is being installed. All dimensions noted on drawings shall be 1/8-inch in size (minimum).

iii. Show locations and depths of the following items: Point of connection, routing of sprinkler pressure lines (dimension maximum 100 feet along routing), isolation valves, electric control valves, underground wire splices, quick coupling valves, routing of control wires, sprinkler heads, drip lines and other related equipment.

b. Provide the Owner's Representative as-built drawings both electronically on a CD and in print. In addition, the field set must be provided to the Owner's Representative.

METHOD OF MEASUREMENT. Irrigation System Adjustment will be measured at a Lump Sum (LS) basis at the price listed on the Unit Price Schedule. A complete unit for this item will include all adjustments required to adjust and restore functionality of the irrigation system.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract unit price shown below, which price shall be full compensation for furnishing all materials, equipment, tools, labor and incidentals necessary to complete the work as described herein and shown in the Construction Plans.

Payment will be made under:

Pay Item	Pay Unit
Irrigation System Adjustment	LS

SPECIAL PROVISION #13

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LANDSCAPE ROCK DRAINAGE SWALE

DESCRIPTION. This item shall consist of construction of the Landscape Rock Drainage Swale at locations and per detail shown in the plans.

MATERIALS. The materials shall conform to Landscape Rock Drainage Swale detail provided in the construction drawings.

METHOD OF MEASUREMENT. Landscape Rock Drainage Swale will be measured by the linear foot (LF) basis of completed in place drainage swale, measured along the flow line of the drainage swale.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid at the contract unit price shown below, which price shall be full compensation for furnishing all materials, equipment, tools, labor and incidentals necessary to complete the work as described herein and shown in the Construction Plans.

Payment will be made under:

Pay Item	Pay Unit
Landscape Rock Drainage Swale	LF

SPECIAL PROVISION #14

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MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

SCOUR TRANSITION MAT

DESCRIPTION. This item shall consist of construction of the Scour Transition Mat at locations and per detail shown in the plans.

MATERIALS.

TRANSITION MAT

1. The transition mat shall be manufactured for the purpose of permanent scour protection and erosion control in high stress or flow areas. The transition mat shall be made from 100% synthetic material (high density polyethylene) and contain no biodegradable or photodegradable components or materials. The transition mat shall contain a minimum of 15% HDPE recycled content as measured by mass per unit area.

2. The transition mat shall be a dimensionally stable and resilient mat providing mechanical protection for soil covers that hold soil particles and sediment in place. The transition mat shall provide permanent, uniform adherence of the soil covers to the soil profile. It shall have 50% open space available for vegetative establishment.

3. The transition mat shall be a semi-rigid mat which provides impact resistance and high tensile strength. When anchored the transition mat maintains intimate soil contact while providing a minimum of 40 lbs of holding capacity per square foot to resist uplift forces due to high velocity.

4. The transition mat shall meet the requirements of Table 1. Proposed equals must be approved by the engineer for a minimum of 30 days prior to bid date. Test results documenting that the transition mat has been tested under controlled flow conditions for hydraulic performance characteristics in accordance with ASTM D-6460 must be submitted along with the manufacturer's certification that the transition mat's design and components meet or exceed all of the requirements set forth in this specification.

TABLE 1 - PERMANENT TRANSITION MAT

Property	**Test Method**	**Units**	**Value (MARV or Typical)**
Physical			
Mass/Unit Area	ASTM D 6566	lb/sf	0.93 MARV
Thickness	ASTM D 6525	inches	0.437 MARV
Wide Width Tensile (MD/TD)	ASTM D 4595	lb/ft	2600 MARV
Percent Open Area	Calculated	%	50 Typical
Density/Specific Gravity	ASTM D 792	g/cm3	0.938 MARV
UV Stability	ASTM D 4355	%	90 MARV
Performance			
Velocity Day 1 Performance Fully Vegetated	Flume Testing ASTM D-6460	ft/sec	19.0 31.0
Shear Day 1 Performance Fully Vegetated	Flume Testing ASTM D-6460	lb/ft2	13.0 16.0
Culvert Outfall Test Exit Velocity Discharge	Prototype	fps cfs	16 90

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SCOUR TRANSITION MAT

ACCESSORIES

1. Anchoring Devices
    a. The anchoring devices shall be provided and installed in accordance with the manufacturer's recommendations.

EXECUTION

1. Preparation
    a) The installation site shall be prepared by clearing, grubbing, and excavating or filling the area to the design grade.

    b) The surface to receive the soil cover(s) and transition mat shall be prepared to relatively smooth conditions free of obstructions, depressions, debris and soft or low density pockets of material. The material shall be capable of supporting a vegetative cover.

    c) Erosion features such as rills, gullies, etc. must be graded out of the surface before the soil cover(s) and transition mat deployment. Smooth roll drum compaction may be required before deploying the soil cover and transition mat to make sure they maintain intimate contact with the soil.

    d) Anchor trenches, termination trenches and longitudinal anchor trenches for the chosen soil cover material shall be installed per manufacturer's recommendations.

    e) Prior to final placement of the transition mat and soil cover(s) the prepared surface should be inspected and approved by the Engineer.

2. Installation
    a) Soil cover(s) and transition mat's are shown on the drawings to depict the locations and portions of the work where they are to be installed. The transition mats shall be placed on the soil cover(s) in such a manner as to produce a relatively planar surface.

    b) Each transition mat shall be placed longitudinally end to end (overlapped when appropriate) in the configuration specified so as to incur minimal waste. All placement of transition mat panels shall be in accordance with the manufacturer's recommendations and the Contractor's approved shop drawings unless otherwise specified by the Engineer.

    c) When overlapping successive transition mat panels, the panels shall be overlapped upstream over downstream, and/or upslope over downslope. Each transition mat panel shall be secured to the soil cover(s)and ground with bullet anchors driven 12" to 36" deep as per manufacturer's recommendation.

    d) Install anchors at the recommended rate based upon manufacturer's requirements for engineered hydraulic events and different soil types (cohesive or non cohesive).

    e) Care shall be taken during installation so as to avoid damage occurring to the soil cover(s) and the transition mat as a result of the installation process. Should the soil

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SCOUR TRANSITION MAT

cover(s) material be damaged during installation, a soil cover(s) patch shall be installed extending 3' beyond the perimeter of the damaged area. New transition mat panels and anchors shall be placed over the damaged area when the damaged transition mat material cannot be reused.

f) The designated soil cover(s) material shall always be installed under the transition mats and may extend downstream of the transition mat panels the distance and width specified for each location in the plans. Soil cover(s) shall be installed both per the manufacturer's specifications and per the transition mat specifications.

METHOD OF MEASUREMENT. Scour Transition Mat will be measured by the square foot (SF) basis of completed in place Scour Transition Mat.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid at the contract unit price shown below, which price shall be full compensation for furnishing all materials, equipment, tools, labor and incidentals necessary to complete the work as described herein and shown in the Construction Plans.

Payment will be made under:

Pay Item	Pay Unit
Scour Transition Mat	SF

SPECIAL PROVISION #15

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

P.C.C. PAVEMENT (6" UNIFORM THICKNESS), INCLUDING MONOLITHIC CURB (TYPE A)

DESCRIPTION. This item shall consist of Portland Cement Concrete (P.C.C.) Pavement constructed in one course on the prepared subgrade or on a completed and accepted base course according to these specifications and conforming to the lines, grades, thickness, and details shown in the plans.

MATERIALS AND CONSTRUCTION REQUIREMENTS.

P.C.C. Pavement shall comply with the City of Fayetteville Standard Specifications for Street and Drainage Construction.

Specific sections are (but not limited to):

- Section 107. Quality Control, for all submittal, testing, observation and inspection requirements.
- Section 601, Cast-in-Place Concrete, for specific concrete material and construction requirements.
- Section 602, Reinforcing Steel, for dowel bars and tie bars where shown in the plans and details.

Concrete shall be Class 1.

Finishing for concrete surfaces shall be as follows:

- Class 5 Tined Finish for travel lanes (from face-of-curb to face-of-curb)
- Class 6 Broomed finish for curbs.

METHOD OF MEASUREMENT. Measurement will be made by the square yard (SY) basis of completed in place concrete at the unit price listed on the Unit Price Schedule. Measurement will extend from Back-of-Curb to Back-of-Curb across the width of the roadway and along the centerline alignment as described on the plans. No separate measurement shall be made for joint reinforcement (tie bars and/or dowels), joint filler, backer rod, joint sealant or any other incidental material required to complete the concrete paving.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract unit price shown below, which price shall be full compensation for furnishing all materials, equipment, tools, labor and incidentals necessary to complete the work as described herein and shown in the Construction Plans.

Payment will be made under:

Pay Item	Pay Unit
P.C.C. Pavement (6” Uniform Thickness), including Monolithic Curb (Type A)	SY

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U OF A PROPERTY CONSTRUCTION

DESCRIPTION. This item shall consist of construction items proposed on U of A (University of Arkansas) property as shown on the construction plans. Items generally include those necessary to remove and reconstruct the driveway, and parking lot, as well as miscellaneous items needed to relocate signs, fences and light poles and sidewalks.

CONSTRUCTION REQUIREMENTS.

U of A Property – Apron (Pavers)

- Construction for U of A Property - Apron shall be in accordance with the plans and details.
    - Pavers shall be Hanover 5”x12”x3” Asphalt Pavers, Matrix A80010 with Ground Finish.
    - 1” Thick Sand Bed shall be per manufacturer’s recommendations
    - 6” Thick concrete base shall be Class 1 Concrete per City of Fayetteville Standard Specifications for Street and Drainage Construction.
    - 4” Thick Aggregate Base Course (CL. 7) per City of Fayetteville Standard Specifications for Street and Drainage Construction.
    - Contractor shall submit material cut sheets for review and approval prior to ordering material.

U of A Property – Modified Curb (2”)

U of A Property – Concrete Curb and Gutter (Type A)

U of A Property – Flush Concrete Header

U of A Property – 8” Depth Aggregate Base

U of A Property – 3” Thickness ACHM Surface Course

U of A Property – Prime Coat

U of A Property – 6” Concrete Sidewalk Thru Driveway

U of A Property – Concrete Sidewalk with Turn Down Edge

- Construction shall be in accordance with the plans and details.
    - Class 1 Concrete per City of Fayetteville Standard Specifications for Street and Drainage Construction.

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U OF A PROPERTY CONSTRUCTION

U of A Property – Relocate Light Pole

- Contractor shall coordinate with the University of Arkansas and the Owner to relocate the existing parking lot light pole to a new location.
- The contractor shall take care to preserve all existing materials during removal of the existing light pole.
- Materials that are not in a condition to be moved or materials that are damaged during removal shall be evaluated in the field and replaced by serviceable material of the same type and size.
- Replacement material shall be furnished by the Contractor and be satisfactory to the Engineer.
- The existing foundation shall be removed.
- Conduit shall be cut at the edge of the excavation needed to remove the foundation. Conduit shall then be extended to the new foundation location.
- Conductors shall be removed an new conductors shall be installed from the nearest light pole. No splicing will be allowed.
- A new foundation shall be constructed matching the size, and dimensions of the existing foundation, including anchor bolts. Exact location to be determined in the field with coordination from the University of Arkansas and the Engineer. Location will be within the project limits.
- The existing pole and fixture shall be installed on the new foundation and tested to ensure functionality.
- Any materials or fixtures damaged during removal, storage or reinstallation shall be evaluated and replaced as determined by the engineer at no cost to the owner.

U of A Property – Chain Link Security Fence

- Contractor shall coordinate with the University of Arkansas and the Owner prior to removal and relocation of existing chain link security fence.
- The contractor shall take care to preserve all existing materials during removal of the existing fence.
- Materials that are not in a condition to be moved or materials that are damaged during removal shall be evaluated in the field and replaced by serviceable material of the same type and size. Including footings and/or foundations.
- Replacement material shall be furnished by the Contractor and be satisfactory to the Engineer.
- Utilizing existing materials where possible the contractor shall reinstall the fence in locations shown on the plan.
- Where posts or other materials are not suitable for reuse, new materials shall be provided that match the existing materials and sizes.

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U OF A PROPERTY CONSTRUCTION

- New corner posts shall be installed where the new fence is shown to connect to existing.
- All new posts shall be set in concrete 1' diameter x 3' deep.

METHOD OF MEASUREMENT. The method of measurement for various bid items under this special provision will be as shown below at the unit price listed on the Unit Price Schedule.

The measurement for U of A Property - Apron (Pavers) shall include the pavers, sand setting bed, 6" thick concrete, 4" crushed aggregate base course, and all necessary subgrade preparation.

The measurement for U of A Property – Relocate Light Pole shall include all materials and labor to provide a complete and operational parking lot light pole in a new location, and to remove all foundations, equipment and materials from the existing location.

The measurement for U of A Property – Chain Link Security Fence shall include all materials and labor to provide a complete fencing system of the same style and type that currently exists.

BASIS OF PAYMENT. Work completed and accepted and measured will be paid for as at the contract unit price shown below, which price shall be full compensation for furnishing and installing all materials and for all labor, equipment, tools, and incidentals necessary to complete the work as described herein and shown in the Construction documents.

Measurement and Payment will be made under:

Pay Item	Pay Unit
U of A Property – Apron (Pavers)	SF
U of A Property – Modified Curb (2")	LF
U of A Property – Concrete Curb and Gutter (Type A)	LF
U of A Property – Flush Concrete Header	LF
U of A Property – 8" Depth Aggregate Base	SY
U of A Property – 3" Thickness ACHM Surface Course	TON
U of A Property – Prime Coat	SY
U of A Property – 6" Concrete Sidewalk Thru Driveway	SY
U of A Property – Concrete Sidewalk with Turn Down Edge	SY
U of A Property – Relocate Light Pole	EA
U of A Property – Chain Link Security Fence	LF

SPECIAL PROVISION #17

JOB NO. 040943
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McCAIN ATC eX2 NEMA CONTROLLER TS2-TYPE 2

DESCRIPTION. This item shall consist of furnishing and installing at locations shown on the plans or as directed, McCain ATC eX2 NEMA Controller TS2-TYPE 2. All requirements of Standard Specifications for Highway Construction, Edition of 2014, Division 700 Traffic Control Facilities, and specifically Section 701 Actuated Controller, shall apply.

Portions of the standard specifications may be superseded by these special provisions.

A. General. The system consists of an McCain ATC eX2 NEMA Controller TS2-TYPE 2 traffic control system. All equipment shall be completely compatible with the traffic control system, hardware and software.

MATERIALS AND CONSTRUCTION. (Other Special Provisions in this contract may also apply). The cabinet facilities and installation, in addition to standard requirements for Section 701 Actuated Controller, shall incorporate the provisions listed in this special provision in order to accomplish the following:

A. Expandability. All traffic controllers (timers) shall be not less than 8 Phases. This does not apply to cabinet facilities and conflict monitor which shall conform to the summary of quantities or other provisions in this contract. Detector wiring harnesses or rack mount detector channel slots shall, as a minimum, be wired for future connection for the number of phases as described in the Summary of Quantities or plan sheets (whichever is greater); for a minimum of 8 system detectors; or as governed by other provisions in this contract.

B. Controller Manuals and Documentation. All documentation and software shall be provided a minimum of 14 calendar days before commencement of the 30-day trial period. The 30-day trial period will not start until this as well as other requirements for system operation have been met. Controller manuals (software and software manuals), must be provided 14 calendar days prior to placing intersection into operation.

Two sets (no photo-copies) of controller manuals shall be provided, one copy to the City or County and one copy to the Department's Maintenance Division.

C. System Timing and Operation Test. The 30-day performance test shall not commence on any portion of the system until all test have been performed by the contractor to the satisfaction of the Engineer in the presence of the Department. Timing data will be provided by the Department's Maintenance Division. The contractor shall give the Engineer a minimum of 14 calendar days' notice to requiring timing data for testing and setup. Contractor shall be responsible for verification that data provided shall be functional and shall notify the Department's Maintenance Division of any changes necessary prior to installation.

In the event that the contractor is not qualified to perform these test and verification, contractor will be responsible for seeing that a manufacturer's representative is present on the day of testing.

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McCAIN ATC eX2 NEMA CONTROLLER TS2-TYPE 2

METHOD OF MEASUREMENT. Completed and accepted items will be measured as follows:

A. McCain ATC eX2 NEMA Controller TS2-TYPE 2 will be measured by the unit.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid at the contract unit price shown below, which price shall be full compensation for furnishing all materials, equipment, tools, labor and incidentals necessary to complete the work as described herein and shown in the Construction Plans.

Payment will be made under:

Pay Item	Pay Unit
McCain ATC eX2 NEMA Controller TS2-TYPE 2	EA

SPECIAL PROVISION #18

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

HYBRID VIDEO/RADAR DETECTION SYSTEM

Section 733 Video Detector with Radio Interface of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 733.01, Description. is deleted and the following substituted therefore:

This item consists of furnishing and installing a Multi-Sensor Detection System (MSDS), Central Control Unit (CCU), Video Cable, Video Monitor, Communication Interface, 8 Port SDLC Hub, harness, any hardware or accessories required, and software in accordance with these specifications, and modification or remote video monitoring site(s), at the locations shown on the plans or as directed by the Engineer, for the purpose of providing actuation to a traffic signal controller and for live video monitoring of traffic conditions at the site.

The Hybrid Video/Radar Detectors (MSDS) shall utilize two different sensors of different technologies, video imaging and radar, to detect and track vehicles on a lane-by-lane basis at a distance up to 600 feet from the sensor, CCU, Video Cable, and other associated equipment and shall detect vehicle information from the two sensors to provide highly accurate and precise detection for simultaneous stop line presence, advanced, and special detection by the means described, process the information and provide vehicle actuation to an actuated controller, system local controller, or other device as outlined in the plans or Contract. In addition, where communications are specified, live video shall be transmitted back to a central site by means of that communication. MSDS equipment and its associated components shall also meet the environmental and electrical requirements in Section 701.

Subsection 733.02, Materials is hereby amended by **adding** the following:

(h) Hybrid/Video Detector – The Hybrid/Video Detector(s) shall consist of the following:

- Iteris Vantage Next Video Detector
- Iteris Vantage Vector Hybrid Detector

(i) Central Control Unit – The CCU shall consist of the following:

- Iteris Vantage Next Shelf-Mount CCU

(j) Video Cable (Exterior Cat 5E) - The Ethernet Cable shall consist of the following:

- Shireen Item #DC-1021, CAT 5E Video Cable or Equal (Shielded)
- The plug connectors shall follow the manufacturer’s instructions to insure proper connection.

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HYBRID VIDEO/RADAR DETECTION SYSTEM

(k) Video Monitor – Where called or in the plans, a video monitor consisting of the following shall be provided:

- INVID TECH, IMHD-10, HDMI Video Monitor

(l) 8 Port SDLC Hub – An 8 port SDLC hub shall be provided to support all needs of the system. The 8 port SDLC hub as be compatible with TS-2 NEMA cabinets. The 8 port SDLC hub shall be supplied from the same manufacturer as the detectors.

(m) Harness – This shall be any harness or wiring for the system to work properly. Any harness used shall be supplied from the same manufacturer as the detectors.

(n) Manufacturer's Warranty – The following shall be provided:

- The supplier shall provide a limited three-year warranty and shall apply with time extensions applied to materials. The contractor shall provide a written manufacturer's guarantee to the Agency (City, County or etc.) who provides electrical service and maintenance of the intersection.

- During the warranty period, technical support shall be available from the supplier via telephone with 4 business hours of the time a call is made by the user, and this support shall be available from factory-certified personnel or factory-certified installers.

- The supplier shall maintain an adequate inventory of parts to support maintenance and repair of the detection system.

- During the warranty period, updates to the system software shall be available from the supplier without charge.

Subsection 733.03 Construction Requirements (C) Software is hereby **deleted** and the following substituted therefore: Subsection 733.03 Construction Requirements (C) Software is hereby deleted and the following substituted:

(C) Software – Software required for monitoring, setup, and programming of the system shall be supplied as subsidiary to this special provision for the item "Iteris Vantage Next Shelf-Mount CCU", of the number of channels specified. Two licensed copies shall be required for the job. Software shall be Windows based and operate from and IBM compatible, laptop with Windows XP or later operating system. If other programming devices are required, one unit shall be supplied and shall be considered subsidiary to this special provision.

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HYBRID VIDEO/RADAR DETECTION SYSTEM

Subsection 733.04 Method of Measurement is hereby amended by **adding** the following:

(i) Iteris Vantage Next Video Detector shall be measured by the unit.

(j) Iteris Vantage Vector Hybrid Detector shall be measured by the unit

(k) Iteris Vantage Next Shelf-Mount CCU

(l) Shireen Item #DC-1021, CAT 5E Video Cable or Equal (Shielded) shall be measured by the linear foot.

(m) Invid Tech, IMHD-10, HDMI Video Monitor shall be measured by the unit.

(n) 8 Port SDLC Hub is included in other items of the contract.

(o) Harness is included in other items of the contract.

Subsection 733.05 Basis of Payment. is hereby amended by **adding** the following:

Work completed and accepted under this item and measured as provided above, shall be paid for at the contract unit price as shown below; which price shall be full compensation for providing and installing the device, wiring, configuring, and testing the device; and shall also be for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Iteris Vantage Next Video Detector	Each
Iteris Vantage Vector Hybrid Detector	Each
Iteris Vantage Next Shelf-Mount CCU	Each
Shireen Item #DC-1021, CAT 5E Video Cable or Equal (Shielded)	Linear Foot
Invid Tech, IMHD-10, HDMI Video Monitor	Each

SPECIAL PROVISION #19

JOB NO. 040943

MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

EMERGENCY BATTERY BACKUP SYSTEM INSTALLATION

1. **DESCRIPTION.** This item consists of installing an Emergency Battery Backup System (BBS) with fully conditioned power, for a traffic signal control and communications equipment with batteries, mounted inside a separate equipment cabinet of the type and size called for at the location shown on the plans, or as directed by the Engineer, and shall conform to the following specifications. Power output to equipment shall be fully conditioned whether operating on line voltage or battery backup. No meter base is required.

2. **MATERIALS.** The Battery Backup System (BBS) shall consist of the following:

   - TESCO Class 22 Battery Backup System.

   A. Mounting and Configuration.

   1. A mounting pad shall be constructed as shown on the plans.
   2. The complete BBS, including batteries, shall fit inside a typical, fully equipped and approved stand-alone cabinet on a separate mounting pad. This cabinet/enclosure shall include vent, fan and thermostat.

   B. Maintenance, Displays, Controls and Diagnostics.

   1. Manufacturer shall include a set of equipment lists, operation and maintenance manuals, and board-level schematic and wiring diagrams of the BBS, and the battery data sheets.

   C. Quality Assurance.

   1. Each system shall be visually inspected for any exterior physical damage or assembly anomalies. Any defects shall be cause for rejection.

3. **CONSTRUCTION REQUIREMENTS.** The BBS shall be installed on a separated mounting pad in the vicinity of the service point and controller cabinet as shown on the plans.

4. **METHOD OF MEASUREMENT.** Battery Backup System Installation will be measured by the unit.

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EMERGENCY BATTERY BACKUP SYSTEM INSTALLATION

5. BASIS OF PAYMENT. Work completed and accepted under this item and measured as provided above will be paid for at the contract unit price bid for each Battery Backup System Installation; which price shall be full compensation for furnishing the cabinet and battery backup system; for mounting of the cabinet; for installing, wiring, and testing the battery backup system; for excavation and backfilling; for construction of the mounting pad; and for all materials, labor, equipment, tools, and incidentals necessary to complete the work.

Payment shall be made under:

Pay Item	Pay Unit
TESCO Class 22 BBS (Battery Backup System)	EA

SPECIAL PROVISION #20

JOB NO. 040943
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LED TRAFFIC SIGNAL HEAD

1. **DESCRIPTION.** This item shall consist of furnishing and installing 300 mm (12") diameter Traffic Signal Heads and components based on Light Emitting Diode (LED) technology according to these specifications as well as **Section 706 Traffic Signal Head** of the Standard Specifications for Highway Construction, Edition of 2014, to approval of the engineer. Portions of the standard specifications will be superseded by these special provisions.

2. **MATERIALS.** The LED modules shall be suitable for span wire and mast arm mounted signals. Units must meet the following specifications to be accepted.

   (A) Physical and Mechanical. LED traffic signal modules designed shall not require special tools for installation. Retrofit replacement LED signal modules shall fit into existing traffic signal housings built to the VTCSH Standard without modification to the housing. Installation of a retrofit replacement LED signal module into an existing signal housing shall only require the removal of the existing optical unit components, i.e., lens, lamp, and gaskets; shall be weather tight and fit securely in the housing; and shall connect directly to existing electrical wiring utilizing spade connectors. It shall not be necessary to remove reflector or lamp module. Reflector and lamp module is not required where new housings are provided.

   (B) Optical Requirements. The RED and GREEN modules shall be measured per ITE specifications and are required to meet luminous values that are a minimum of 115 percent greater than the required minimum values in the specifications at the time of production. The YELLOW modules shall be tested for luminous output at 25°C, allowing the modules to achieve thermal equilibrium for 60 minutes, while the modules are energized at nominal operating voltage, at a 8.3% (or 1/12) duty cycle or 5 sec on/55 sec off). The yellow modules shall meet all other ITE specifications.

   (C) Optical Unit. LED signal modules shall meet the following requirements:

   Optical unit replacement - The LED module shall be constructed to allow the replacement of the outer lens and/or the light engine when needed.

   Lens Surface - The external lens shall be smooth on the outside to prevent excessive dirt/dust buildup.

   Tinting - The RED, YELLOW and optionally on GREEN lens shall be tinted or shall use transparent film or materials with similar characteristics.

   Chromaticity - The measured coordinates of LED signal modules shall conform to the chromaticity requirements of Section 8.04 and Figure 1 of the VTCSH standard.

   Environment - The LED signal module shall be rated for use in the ambient operating temperature range, measured at the exposed rear of the module, of -40° C (-40° F) to +74°C (+165° F). The LED sign module shall be protected against dust and moisture intrusion per the requirements of NEMA Standard 250-1991, sections 4.7.2.1 and

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LED TRAFFIC SIGNAL HEAD

4.7.3.2, for Type 4 enclosures to protect all internal LED, electronic, and electrical components. The LED signal module lens shall be UV Stabilized.

Preassembly - The LED signal module shall be a single, self-contained device, not requiring on-site assembly for installation into an existing traffic signal housing. The power supply for the LED signal module may be either integral or packaged as a separate module. The power supply may be designed to fit and mount inside the traffic signal housing adjacent to the LED signal module. The assembly and manufacturing process for the LED signal assembly shall be designed to assure all internal LED and electronic components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

LED Drive Circuitry (parallel) - The individual LED light sources shall be wired so that a catastrophic failure of one LED light source will result in the loss of only that one LED light source, and the loss of no more than 1% of the total LED'S within the LED signal module.

Material Composition - Materials used for the lens and signal module construction shall conform to ASTM specification for the materials where applicable. Enclosures containing either the power supply or electronic components of the signal modules shall be made of UL94VO flame retardant materials. The lens of the signal module is excluded from this requirement.

Identification Markings - Each individual LED signal module shall be identified for warranty purposes. Each LED signal module shall be identified on the backside with the manufacturer's name and serial number. The following operating characteristics shall be identified: nominal operating voltage, power consumption, and Volt-Ampere. Modules shall have a prominent and permanent vertical indexing indicator, i.e. UP ARROW or the word UP or TOP, for correct indexing and orientation inside a signal housing. Modules conforming to this specification may have the following statement: "Manufactured in Conformance with the Interim Purchase Specification of the ITE for LED vehicle Traffic Signal Modules" on an attached label.

The first sentence of Subsection 706.02, Materials. (d) is deleted and the following substituted therefore:

The Contractor shall furnish and install the proper signs adjacent to signal heads controlling an exclusive left turn lane:

- Traffic Signal Head (3 Sec., 1-Way) (Red Arrow, Yellow Arrow, and Green Arrow) for protect only shall include a MUTCD R10-10 sign (30" x 36") (LEFT TURN SIGNAL).
- Traffic Signal Head (3 Sec., 1-Way) (Red Arrow, Yellow Arrow, and Flashing Yellow Arrow) for permitted only shall include a MUTCD R10-12a sign (30" x 36") (LEFT TURN YIELD ON FLASHING YELLOW ARROW).

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LED TRAFFIC SIGNAL HEAD

- Traffic Signal Head (4 Sec., 1-Way) (Red Arrow, Yellow Arrow, Flashing Yellow Arrow, and Green Arrow) for protected-permitted shall include a MUTCD R10-12a sign (30" x 36") (LEFT TURN YIELD ON FLASHING YELLOW ARROW).
- Traffic Signal Head (5 Sec., 1-Way) (Red Ball, Yellow Ball, Green Ball, Yellow Arrow, and Green Arrow) for protected-permitted shall include a MUTCD R10-12 sign (30" x 36") (LEFT TURN YIELD ON GREEN (symbolic green ball)).

The sign type, size, and layout for any additional signs shall be furnished and installed as shown in the plans. All signs shall comply with Section 723. Unless otherwise specified, the sheeting shall be by Type III or IV.

(E) Manufacturer's Warranty. The standard contract warranty shall apply with time extensions applied to materials. The contractor shall provide a written manufacturer's guarantee to the Agency (City, County or etc.) who provides electrical service and maintenance of the intersection. Warranty shall provide the following stipulations:

- Isolated Failures Warranty Period not less than 7 Years
- Design Failure Warranty Period not less than 5 Years

Warranty for isolated lens failure shall include replacement LED module at no cost for materials and shipping for a period of 7 years from the date the intersection is considered substantially complete by the engineer. An LED module shall be considered failed when the luminosity drops below the ITE requirements listed above.

A product "Design Failure" is considered to have occurred if, within a period of 5 years or less, a total of ten percent (10%) of the LED modules supplied on a particular Job are considered failed as described above. The supplier shall then "recall" the entire shipment at no cost to the agency maintaining the equipment. This shall include labor and equipment necessary to replace the units.

3. CONSTRUCTION REQUIREMENTS. Construction shall be in accordance with the standard specifications. No distinction is made for span-wire installations, post mount, mast arm mount, or other mounting methods as described on the plan sheet(s).

Whether complete head assembly is replaced, or existing head is retrofitted with new lenses, contractor shall be responsible for aligning head properly with approach lanes. This does not include relocating head and bracket but adjusting the alignment of the head to achieve maximum visibility to motorists.

4. METHOD OF MEASUREMENT. Units are bid as "3 Section", "4 Section" or "5 Section". A 3 Section unit consists of one each: Red Ball, Yellow Ball, and Green Ball or Red Arrow, Yellow Arrow, and Green Arrow or Red Arrow, Yellow Arrow, and Flashing Yellow Arrow. A 4 Section unit consists of one each: Red Ball, Yellow Ball, Green Ball, and Green Arrow or Red Arrow, Yellow Ball, Flashing Yellow Arrow, and Green Arrow. A 5 Section unit consists

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LED TRAFFIC SIGNAL HEAD

of one each: Red Ball, Yellow Ball, Green Ball, Yellow Arrow, and Green Arrow. No distinction shall be made in the unit based on the orientation of the arrow indications.

A. Traffic Signal Head, LED. Work completed and accepted and measured as provided above will be measured by unit.

B. Traffic Signal Head, LED Lens, Retrofit (Ret). Work completed and accepted and measured as provided above will be measured by unit.

5. BASIS OF PAYMENT.

A. LED Traffic Signal Head. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per each for Traffic Signal Head, LED of the type, display and size specified, which price shall be full compensation for furnishing and installing all materials and signs; and for all labor, equipment, tools, and incidentals necessary to complete the work.

B. LED Traffic Signal Lens Ret. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per each for Traffic Signal Head, LED Lens, Retrofit of the type, number of sections, color and display specified, which price shall be full compensation for removing existing unnecessary hardware and modifying existing housing; and for furnishing and installing all materials; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Traffic Signal Head, LED, (___Section, 1 Way)	Each
Traffic Signal Head, LED Lens, Retrofit (___Section, 1 Way)	Each

SPECIAL PROVISION #22

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

LED COUNTDOWN PEDESTRIAN SIGNAL HEAD

1. **DESCRIPTION.** This item shall consist of furnishing and installing Countdown Pedestrian Signal Heads and components based on Light Emitting Diode (LED) technology according to these specifications as well as **Section 707 Pedestrian Signal Head** of the Standard Specifications for Highway Construction, Edition of 2014, subject to approval of the engineer. The basic configuration consists of the "filled", symbolic single section design. Portions of the standard specifications will be superseded by these special provisions.

2. **MATERIALS.** The LED Countdown Pedestrian Signal Head shall consist of the following:

    - Eagle 16" Countdown Pedestrian Signal Head (LED)(Aluminum).

    (A) Physical and Mechanical. LED pedestrian signal modules designed shall not require special tools for installation. Retrofit replacement LED signal modules shall fit into existing pedestrian signal housings built to the VTCSH Standard without modification to the housing. Installation of a retrofit replacement LED signal module into an existing signal housing shall only require the removal of the existing optical unit components, i.e., lens, lamp, and gaskets; shall be weather tight and fit securely in the housing; and shall connect directly to existing electrical wiring utilizing spade connectors. It shall not be necessary to remove reflector or lamp module. Reflector and lamp module is not required where new housings are provided.

    The countdown feature will be displayed only during the flashing "Don't Walk" segment of the pedestrian phase. This feature should be able to restart at the correct part of the signal cycle after a power outage or a signal pre-emption has been activated.

    (B) Identification Markings - Each individual LED signal module shall be identified for warranty purposes. Each LED signal module shall be identified on the backside with the manufacturer's name and serial number. The following operating characteristics shall be identified: nominal operating voltage, power consumption, and Volt-Ampere. Modules shall have a prominent and permanent vertical indexing indicator, i.e. UP ARROW or the word UP or TOP, for correct indexing and orientation inside a signal housing. Modules conforming to this specification may have the following statement: "Manufactured in Conformance with the Interim Purchase Specification of the ITE for LED vehicle Pedestrian signal Modules" on an attached label.

    (C) Manufacturer's Warranty. The standard contract warranty shall apply with time extensions applied to materials. The contractor shall provide a written manufacturer's guarantee to the Agency (City, County or etc.) who provides electrical service and maintenance of the intersection. Warranty shall provide the following stipulations:

    - Isolated Failures Warranty Period not less than 7 Years
    - Design Failure Warranty Period not less than 5 Years

    Warranty for isolated lens failure shall include replacement LED module at no cost for materials and shipping for a period of 7 years from the date the intersection is considered substantially complete by the engineer. An LED module shall be considered failed when the luminosity drops below the ITE requirements listed above.

    A product "Design Failure" is considered to have occurred if, within a period of 5 years or less, a total of ten percent (10%) of the LED modules supplied on a particular Job are

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LED COUNTDOWN PEDESTRIAN SIGNAL HEAD

considered failed as described above. The supplier shall then "recall" the entire shipment at no cost to the agency maintaining the equipment. This shall include labor and equipment necessary to replace the units.

3. **CONSTRUCTION REQUIREMENTS.** Construction shall be in accordance with the standard specifications. No distinction is made for span-wire installations, post mount, mast arm mount, or other mounting methods as described on the plan sheet(s).

4. **METHOD OF MEASUREMENT.**

   A. **Eagle 16" Countdown Pedestrian Signal Head (LED) (Aluminum).** Work completed and accepted and measured as provided above will be measured by unit.

5. **BASIS OF PAYMENT.**

   A. **Eagle 16" Countdown Pedestrian Signal Head (LED) (Aluminum).** Work completed and accepted and measured as provided above will be paid for at the contract unit price bid as shown below, which price shall be full compensation for furnishing and installing all materials and signs; and for all labor, equipment, tools, and incidentals necessary to complete the work.

   Payment will be made under:

Pay Item	Pay Unit
Eagle 16" Countdown Pedestrian Signal Head (LED) (Aluminum)	EA

SPECIAL PROVISION #23

JOB NO. 040943
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ELECTRICAL CONDUCTORS-IN-CONDUIT (TRAFFIC SIGNAL)

DESCRIPTION. This item consists of furnishing and installing electrical conductors from point to point as indicated on the plan sheets.

MATERIALS. The electrical conductors shall consist of cables of the gauge and number of conductors specified on the plan sheets and shall be USE rated (single conductor) or UF rated (two conductor) with cross-link polyethylene (XLP) insulation, 600-volt rating, and suitable for underground duct installation in wet or dry locations. Electrical conductors shall be UL Listed, and shall comply with ASTM B3, B8, B787, and UL Standard 854. Multiple single conductor cables shall not be twisted. Electrical conductors shall be solid or stranded copper unless otherwise approved by the Engineer.

Where specified "With Ground" (WG), included shall be a copper safety ground of either bare copper or green insulated; of not less than two sizes less than the load carrying conductors, whichever is greater.

Where specified "Equipment Ground Conductor" (E.G.C.), conductor shall be a copper safety ground of either bare copper or green insulated of the size and quantity shown.

CONSTRUCTION REQUIREMENTS. Splices are allowed at pole bases or as approved by the Engineer. Unless waterproof quick disconnects are used, splicing methods considered acceptable are: Soldered, compression connectors of proper size employing cyclic crimping devices, terminal strips, or other method approved by the Engineer. Splices on terminal strips shall utilize proper spade lugs. All splices shall be waterproof. When taping is required, the wire shall be covered with six (6) layers of plastic electrical tape and sealed with "Scotch-Coat" or other similar electrical sealing material. Where wire nuts are used, soldering, taping and sealing is still required. Electrical insulating putty may be used to round off sharp corners of wire or connectors before applying tape. Slack cable (3 ft. min.) shall remain at each splice location.

METHOD OF MEASUREMENT. Electrical Conductors-In-Conduit shall be measured by the linear foot. Multiple conductors shall be measured together, not measured singularly.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per linear foot for Electrical Conductors-In-Conduit of the type and size called for on the plans, which price shall be full compensation for furnishing materials, splicing, and connections and for all tools, equipment, labor, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Electrical Conductors-In-Conduit (_c/_ A.W.G.,_)	Linear Foot

SPECIAL PROVISION #24

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

LED LUMINAIRE ASSEMBLY

1. **DESCRIPTION.** This work shall consist of furnishing and installing LED luminaire assemblies on traffic signal poles, including the accessories, in accordance with these specifications and at the locations shown on the plans or as directed.

2. **MATERIALS AND CONSTRUCTION REQUIREMENTS.**

   A. Luminaire. Each luminaire assembly shall consist of a Autobahn Series ATBM P40 LED Luminaire Assembly.

3. **METHOD OF MEASUREMENT.** Completed and accepted Autobahn Series ATBM P40 LED Luminaire Assembly will be measured by the unit.

4. **BASIS OF PAYMENT.** Work completed and accepted under this item and measured as provided above shall be paid for at the contract unit price bid for each Autobahn Series ATBM P40 LED Luminaire Assembly, which price shall be full compensation for furnishing and installing the luminaires, lamps of the type described herein, driver, photocell, and all materials, equipment, tools, labor, and incidentals necessary to complete the work.

   Payment will be made under:

Pay Item	Pay Unit
Autobahn Series ATBM P40 LED Luminaire Assembly	EA

SPECIAL PROVISION #25

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

SERVICE POINT ASSEMBLY
(TRAFFIC CONTROL DEVICES)

DESCRIPTION. This item consists of furnishing and installing a distribution panel, circuit breaker, lightning arrestor, weatherhead, clamps, wiring, ground rod, and miscellaneous fittings at locations designated on the plans and in accordance with the latest version of the National Electrical Code.

Lightning arrestor shall be SPD Type 2 (load side) per NEC and UL Code 1449.

All construction and wiring shall be in compliance with local electrical codes. The Contractor shall perform all necessary liaisons with local power companies in order to ascertain such specific requirements as the power company may apply to each location.

MATERIALS AND CONSTRUCTION REQUIREMENTS. Height of the service riser weatherhead shall be 20 feet or greater depending on street crossings or other obstructions, unless otherwise approved by the Engineer.

The required weatherhead, conduit nipples, couplings, clamps and other fittings exposed to the weather shall be hot dipped galvanized steel and shall be attached to the pole in such a manner as to facilitate the final steel conduit connecting weatherhead. Service disconnect, distribution cabinet and tie to underground circuits is paid for by Service Point Assembly. Galvanized steel conduit for riser shall be paid as a separate item.

The Contractor shall furnish and install service feeder wire from the distribution cabinet to the main breaker and from the main breaker past the weatherhead. Tie-in and splicing of the service feeder wire to the secondaries supplied by the local utility will be performed by others and shall not be considered a part of this contract. Grounding shall be as shown on the Standard Drawing SD-9 (Service Point).

Mounted at the service location shall be NEMA 3R enclosure(s), circuit breaker, distribution panel and main breaker of a design and model number suitable to the local power company and as approved by the Engineer. The circuit breaker shall be magnetic trip only and sized in accordance with the plans. If required, a meter base provided by the utility company shall be installed above the distribution panel. All enclosures and circuit breakers shall be rated for 240 V.A.C. or greater, unless otherwise designated on the plan sheets. A 30 amp breaker shall be provided.

Where lighting is included in the signal installation for intersection lighting, a 20 amp breaker shall be provided.

The Contractor shall submit to the Engineer two (2) printed copies of the applicable brochures containing the design criteria for the equipment which the Contractor proposes to install for approval. The specific items that are proposed for use shall be clearly marked in the applicable brochures. A list shall be attached to identify the item and contain the manufacturer, quantity,

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SERVICE POINT ASSEMBLY
(TRAFFIC CONTROL DEVICES)

model, and identifying descriptions of each item. The items to be submitted: load centers and enclosures, lightning arrestor, and all circuit breakers.

METHOD OF MEASUREMENT. Completed and accepted Service Point Assembly will be measured by the unit.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid each for Service Point Assembly for the number of circuits specified, which price shall be full compensation for furnishing and installing a treated wood pole, enclosure(s), circuit breaker(s), main breaker, distribution panel, steel conduit, conduit fittings, wiring and ground rod; for testing the service point assembly; and for all materials, equipment, tools, labor, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Service Point Assembly (____ Circuit(s))	Each

SPECIAL PROVISION #26

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

REMOVAL OF TRAFFIC SIGNAL EQUIPMENT

DESCRIPTION. Under this item, the contractor shall remove traffic signal heads, traffic signal poles, traffic signal pole foundations, span wire assemblies, traffic controllers and all other existing signal equipment at locations shown on the plans or as ordered by the Engineer.

MATERIALS. The contractor shall provide all equipment and tools necessary to remove the signal equipment at locations shown on the plans or as designated by the Engineer.

CONSTRUCTION REQUIREMENTS. The contractor shall maintain the existing signal operations as much as possible throughout construction until the completion of the contract. Control of the intersection shall be by police officers, flagmen, or as determined by the Engineer at anytime that the signals are not in operation.

The contractor shall remove the traffic signal pole foundations and all appurtenances such as reinforcing steel, conduit, anchor bolts and cable to a depth of 18 inches below grade. The concrete foundations shall be broken up and the material disposed of outside of the limits of the project by the contractor. The contractor shall fill with earth all holes where concrete foundations or wooden span wire poles have been removed under this item. The earth in the hole shall be thoroughly compacted until it is as firm and unyielding as the surrounding material. Concrete or asphalt surfaces shall be restored to existing conditions.

All equipment shall remain the property of the City and the contractor shall notify the City 24 hours in advance of the removal. All unused traffic signal equipment shall be removed and returned to the city's Traffic Shop located at 1525 S. Happy Hollow Road, Fayetteville, AR 72701.

METHOD OF MEASUREMENT. Removal of traffic signal equipment will be measured by the lump sum.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract lump sum price bid for Removal of Traffic Signal Equipment, which price shall be full compensation for furnishing all materials, equipment, tools, labor, delivery of unused equipment to the city traffic shop and incidentals necessary to complete the work as described herein.

Payment will be made under:

Pay Item	Pay Unit
Removal of Traffic Signal Equipment	Lump Sum

SPECIAL PROVISION #27

JOB NO. 040943
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STREET NAME SIGN
(MAST ARM MOUNTED)

DESCRIPTION. This item consists of furnishing and installing a Street Name Sign mounted on a traffic signal mast arm at locations designated on the plan sheets or as directed by the Engineer. All construction and materials shall be in accordance with the Standard Specifications for Highway Construction, Edition of 2014, with applicable supplemental specifications.

MATERIALS AND CONSTRUCTION REQUIREMENTS. Contractor shall provide all mounting hardware, sign blank, sheeting, tools, equipment and labor necessary to complete the installation. Sign design and construction shall be as shown on the plan sheets or as directed by the Engineer.

METHOD OF MEASUREMENT. Completed and accepted Street Name Sign shall be measured by the unit.

BASIS OF PAYMENT. Work completed, accepted and measured as provided above will be paid at the contract unit price bid for Street Name Sign which price shall be full compensation for furnishing the sign, mounting hardware, equipment, tools, labor, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
__” Street Name Sign	Each

SPECIAL PROVISION #28

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

VIDEO DETECTOR ROTATION

DESCRIPTION. This item consists of rotating the existing video detectors to aim at new video zones at various locations as shown on the plans and directed by the Engineer.

MATERIALS. No additional materials should be needed for the rotation.

METHOD OF MEASUREMENT. Video detector rotation shall be measured by the unit.

BASIS OF PAYMENT. Work completed, accepted and measured as provided above will be paid for at the contract unit price bids for each video detector rotated; which price shall be full compensation for equipment tools, and labor and incidentals necessary to complete the work.

Payment will be made under:

Pay item	Pay Unit
Video Detector Rotation	Each

SPECIAL PROVISION #29

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

ELECTRICAL CONDUCTORS FOR LUMINAIRES (TRAFFIC SIGNAL)

DESCRIPTION. This item consists of furnishing and installing electrical conductors as noted on the plans. This shall include conductors from the luminaire service point to the luminaire disconnect point and from the luminaire disconnect point to luminaires mounted on the traffic signal poles. Circuit breakers and weatherproof breaker boxes are considered subsidiary to "Electrical Conductors for Luminaires" and shall be provided and installed by the Contractor at the luminaire disconnect point.

MATERIALS. The electrical conductors shall consist of two conductor cables (#12 A.W.G.). Electrical conductors shall be stranded or solid copper UF rated 600-volt, suitable for underground duct installation in wet or dry locations. Electrical conductors shall comply to ASTM Specification B3, B-8 or B-787. The insulation shall be a color coded premium grade flame retardant PVC (polyvinyl chloride). The jacket shall be polyamide nylon. Circuit breakers shall be rated at 20 amps.

CONSTRUCTION REQUIREMENTS. The Contractor shall furnish and install a luminaire disconnect (20-amp circuit breaker assembly and weatherproof box) at the location designated on the plans that meets the requirements of the local utility company. The Contractor shall connect the circuit breaker assembly to the line side of the service point supplying the controller. Conductors for luminaires shall run directly from load side of luminaire disconnect to luminaires mounted on signal poles. Disconnect or trip of luminaire disconnect shall not effect power to controller. Luminaire disconnect shall be clearly labeled as "Street Light" circuit.

Splices are allowed at pole bases or as approved by the Engineer. Splicing methods considered acceptable are: Soldered, compression connectors of proper size employing cyclic crimping devices, terminal strips, or other method approved by the Engineer. Splices on terminal strips shall utilize proper spade lugs. All splices shall be waterproof. When taping is required, the wire shall be covered with six (6) layers of plastic electrical tape and sealed with "Scotch-Coat" or other similar electrical sealing material. Where wire nuts are used, soldering, taping and sealing is still required. Electrical insulating putty may be used to round off sharp corners of wire or connectors before applying tape. Slack cable (3 ft. min.) shall remain at each splice location or at end of luminaire arm when luminaire is not to be installed by contractor. Final connection of power from the local utility to the service point will be made by others.

METHOD OF MEASUREMENT. Electrical Conductors for Luminaires will be measured by the linear foot. Multiple conductors shall be measured together, not measured singularly.

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ELECTRICAL CONDUCTORS FOR LUMINAIRES (TRAFFIC SIGNAL)

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per linear foot for Electrical Conductors for Luminaires of the type and size called for on the plans, which price shall be full compensation for furnishing materials, splicing and connections and for all tools, equipment, labor, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Electrical Conductors for Luminaires	Linear Foot

SPECIAL PROVISION #30

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

RETROREFLECTIVE BACKPLATES

Section 706 Traffic Signal Head of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The ninth paragraph of **Subsection 706.02 Materials (c) Housing** is hereby deleted and the following substituted therefore:

> Visors and backplates for metal signal sections shall be made from 0.050" (1.25 mm) minimum thickness aluminum alloy sheet.
>
> - The minimum thickness of 0.050" does not include the retroreflective border.
> - Backplates shall not be flexible nor of the hinged design.
> - The backplate shall be louvered.
> - A louvered backplate shall include louvers with no louvers closer than 0.5" from the inner or 2.5" from the outer edge. Sides are defined on how the signal head is oriented in the plans.
> - The backplate shall have a 2" wide yellow (non-fluorescent) retroreflective sheeting border, placed flush with the outer edge of the backplate and placed no closer than 0.5" from all louvers. No sheeting is allowed over any louvered area.
> - Sheeting shall be applied in such a manner to provide wrinkle and bubble free surfaces. Application of sheeting shall be in accordance with this special provision otherwise will be cause for rejection of materials due to workmanship.
> - The sheeting shall be Type VIII, Type IX, or Type XI in accordance with ASTM D4956 or ASTM D4956-05 and listed on ARDOT's qualified product list.
> - All applicable brochures containing the design criteria for the retroreflective sheeting border shall be submitted by the Contractor for approval.
> - The sheeting shall be applied in the orientation for the maximum angularity according to the manufacturer's recommendations to project rectangular appearance at night.
> - All backplates types shall be securely attached to the signal-head as recommended by the manufacture's specifications and methods.

The tenth paragraph of **Subsection 706.02 Materials (c) Housing** is hereby deleted and the following substituted therefore:

> Visors and backplates for plastic signal faces shall be either formed from sheet plastic or assembled from one or more injection, rotational, or blow molded plastic sections with a minimum thickness of 0.10" (2.5 mm).
>
> - The minimum thickness of 0.10" does not include the retroreflective border.
> - Backplates shall not be flexible nor of the hinged design.
> - The backplate shall be non-louvered.

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RETROREFLECTIVE BACKPLATES

- The backplate shall have a 2” wide yellow (non-fluorescent) retroreflective sheeting border, placed flush with the outer edge of the backplate.
- The sheeting shall be Type VIII, Type IX, or Type XI in accordance with ASTM D4956 or ASTM D4956-05 and listed on ARDOT’s qualified product list.
- All applicable brochures containing the design criteria for the retroreflective sheeting border shall be submitted by the Contractor for approval.
- The sheeting shall be applied in the orientation for the maximum angularity according to the manufacturer’s recommendations to project rectangular appearance at night.
- All backplates types shall be securely attached to the signal-head as recommended by the manufacture’s specifications and methods.

SPECIAL PROVISION #31

JOB NO. 040943

MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

ACCESSIBLE PEDESTRIAN SIGNAL (APS)

1. **DESCRIPTION.** This item shall include furnishing and installing at locations shown on the plans or as directed, an Audible-Tactile Pedestrian Signal System and shall consist of all electronic control equipment, mounting hardware, and push button stations which are designed to provide both a push button with a raised vibrating tactile arrow on the button, along with a variety of audible indications for differing pedestrian signal functions. This work shall be done in accordance with this special provision, the "LED Countdown Pedestrian Signal Head" special provision, and the Standard Specifications for Highway Construction, Edition of 2014, **Section 707 Pedestrian Signal Head**.

2. **MATERIALS AND CONSTRUCTION.**

   A. **Accessible Pedestrian Signal (APS).** The Accessible Pedestrian Signal shall consist of

   B. **Central Control Unit (CCU) - The CCU is the power supply and control unit that provides power and data for the Push Button Stations.** The CCU shall consist of Polara iCCU-S2 (Intelligent Central Control Unit – Shelf Mount) Includes BIU Capability.

   C. **Pole Mounting Assembly -** This equipment is typically mounted on a pole near the start of a crossing. It is commonly referred to as the "Pedestrian Pushbutton Station" or "PBS"). The Pole Mounting Assembly shall consist of Polara iNS2 3TN0-B, 9x15 APS Pushbutton Station (Black).

      1. A push button extender shall be supplied and installed on traffic signal poles with mast arms and pedestrian signal poles that are 10 foot or taller. To ensure the push button orientation, height requirements are met, and that side reach from the edge of sidewalk is not more than 10 inches.
      2. The APS shall be installed in accordance with the manufacturer's recommendations.
      3. A field test of the APS shall be performed in the presence of the Engineer. If a unit fails to pass testing, the Contractor shall replace the unit to ensure a fully operational system at their expense.

   D. **Programming -** The APS shall be programmable and adjustable.

      1. Programming and adjustments shall be made using a laptop computer or smart device. No additional hardware or equipment shall be required. The system shall be fully compatible with the three latest versions of the Windows operating platform.
      2. Shall be password protected.

3. **METHOD OF MEASUREMENT.** Completed and accepted items will be measured as follows:

   A. **Polara iCCU-S2 (Intelligent Central Control Unit – Shelf Mount) Includes BIU Capability** will be measured by the unit.

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ACCESSIBLE PEDESTRIAN SIGNAL (APS)

B. Polara iNS2 3TN0-B, 9x15 APS Pushbutton Station (Black) will be measured by the unit.

4. **BASIS OF PAYMENT.** Work completed and accepted and measured as provided above will be paid for at the contract unit price bid as follows:

   A. Polara iCCU-S2 (Intelligent Central Control Unit – Shelf Mount) Includes BIU Capability - Price bid for Polara iCCU-S2 (Intelligent Central Control Unit – Shelf Mount) Includes BIU Capability and associated equipment specified, shall be full compensation for furnishing all equipment listed above; meeting all functional requirements listed above, for installing, programming, wiring, and testing the unit; and for all materials, equipment, tools, labor, and incidentals necessary to complete the work.

   B. Polara iNS2 3TN0-B, 9x15 APS Pushbutton Station (Black) - Price bid for Polara iNS2 3TN0-B, 9x15 APS Pushbutton Station (Black) shall be full compensation for furnishing the Pedestrian Pushbutton Station with all items including but not restricted to materials, equipment, tools, programming, software, labor, and incidentals necessary to complete the work.

   Payment shall be made under:

Pay Item	Pay Unit
Polara iCCU-S2 (Intelligent Central Control Unit – Shelf Mount) Includes BIU Capability	EA
Polara iNS2 3TN0-B, 9x15 APS Pushbutton Station (Black)	EA

SPECIAL PROVISION #32

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

CABINET DRAWER ASSEMBLY

Section 701 Actuated Controller of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 701.02 (d) (10) Wiring Diagrams and Controller Manual is hereby deleted and the following substituted therefore:

> Three copies of the Cabinet Wiring Diagram and one copy of the controller manual shall be supplied with each cabinet. One diagram and the manual shall be placed in the "Cabinet Drawer Assembly". The "Cabinet Drawer Assembly" shall be fabricated to the approximate dimensions shown on the plans. Included with the "Cabinet Drawer Assembly" will be all hardware necessary to fasten and install the Assembly to the underside of a cabinet shelf roughly at the midpoint of the Cabinet vertically. One diagram shall be delivered to the City or County before final inspection of the intersection. One diagram shall be given to the Engineer.
>
> The "Cabinet Drawer Assembly" shop drawing shall be included in the traffic equipment submittal.

SPECIAL PROVISION #33

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

PREEMPTION SYSTEM

1. **DESCRIPTION.** This item consists of furnishing and installing a GPS Preemption System in the controller cabinet of the type called for, at each intersection, or as directed by the Engineer, and shall conform to the following specifications.

2. **MATERIALS.** The Preemption System shall be either the existing preemption that is being retained and reused or a Global Traffic Technologies Opticom GPS Preemption System and that includes, but is not limited to the following:

   - Mutlimode Phase Selector Model 764
   - Auxiliary Interface Panel Model 768
   - GPS Card Rack Model 1040
   - GPS Radio Unit Model 3100 containing a GPS receiver with antenna and a 2.4 GHz spread spectrum transceiver with antenna
   - GPS Installation Cable Model 1070

3. **CONSTRUCTION REQUIREMENTS.** Existing preemption system shall be installed per manufacturer's recommendations.

4. **METHOD OF MEASUREMENT.** Emergency Vehicle Preemption System Relocation will be measured by the unit

5. **BASIS OF PAYMENT.** When an existing Emergency Vehicle Preemption System already exists at an intersection that is being modified, all work associated with modifying that system for the new intersection configuration will be paid for at the contract unit price bid for Emergency Vehicle Preemption System Relocation. This shall be full compensation for furnishing all materials, fittings, brackets, clamps, equipment, tools, labor, and incidentals necessary to complete the work including but not limited to relocating the detectors, installing the system in the new controller cabinet and any cables or portions of the existing system that are not fit to be reused.

   Payment will be made under:

Pay Item	Pay Unit
Emergency Vehicle Preemption System Relocation	Each

SPECIAL PROVISIONS #34

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

DIFFERING SITE CONDITIONS AND TEMPORARY SUSPENSIONS OF WORK

Arkansas Department of Transportation, Standard Specifications, 2014 Edition
Section 104.02(c) – Differing Site Conditions

During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the Contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and general recognized as inherent in the work provided for in the Contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before they are disturbed and before the affected work is performed.

Upon written notification, the Engineer will investigate the conditions. If the Engineer determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment, excluding loss of anticipated profits, will be made and the Contract modified in writing accordingly. The Engineer will notify the Contractor of the determination whether or not an adjustment of the Contract is warranted.

No Contract adjustment that results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

No Contract adjustment will be allowed under this clause for any effects caused on unchanged work.

Arkansas Department of Transportation, Standard Specifications, 2014 Edition
Section 108.05 – Temporary Suspension of Work

The Engineer will have the authority to suspend the work wholly or in part for such period or periods necessary, due to unsuitable weather or other conditions unfavorable for the suitable prosecution of the work. If it should become necessary to stop work for an indefinite period, the Contractor shall store all materials in such manner that they will not obstruct or impede the traveling public nor become damaged in any way, and shall take every reasonable precaution to prevent damage or deterioration of the work performed; provide suitable drainage of the roadway by opening ditches and shoulder drains; maintain the traveled way; erect temporary structures where directed; etc.

The Contractor shall not suspend the work nor remove any equipment or materials essential to the completion of the current phase of the project without the permission of the Engineer.

If the performance of all or any portion of the work is suspended or delayed by the Engineer in writing for a period of time not originally anticipated, customary, or inherent to the construction industry and the Contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the Contractor shall submit to the Engineer in writing a request for adjustment within ten (10) business days of the receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.

Upon receipt, the Engineer will evaluate the Contractor's request. If the Engineer agrees that the cost and/or time required for the performance of the Contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the Contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the Engineer will make an adjustment (excluding profit) and modify the Contract in writing accordingly. The Engineer will notify the Contractor of a determination whether or not an adjustment of the Contract is warranted.

No Contract adjustment will be allowed unless the Contractor has submitted the request for adjustment within the time prescribed.

No Contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any other term or condition of the Contract.

NOTE: As defined in Section 101.01(c) of the Department's Standard Specifications, the "Engineer" is defined as "The Chief Engineer of the Department, acting directly or through duly authorized representatives, who is responsible for engineering supervision of the construction." This role may vary in name and title by the agency utilizing this Special Provision. Additional definitions may also be found in Section 101.01(c).

SPECIAL PROVISION #35

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

BUY AMERICA - CONSTRUCTION MATERIALS

Description: **Section 106, Control of Material**, of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added as **Subsection 106.01(c) Construction Materials**

Buy America – Construction Materials. (1) General. The Bipartisan Infrastructure Law (BIL) was enacted on November 15, 2021 (BIL Build America, Buy America Act Publication L. No. 117-58). This provision expands the Buy America requirements beyond what was only required for steel and iron products. The steel and iron provisions have not changed with the new law. Buy America requirements are in effect only on Federal-Aid contracts and all construction materials shall be produced/manufactured in the United States. Items specifically excluded from this requirement are cement and cementitious materials; aggregates such as stone, sand, or gravel; aggregate binding agents or additives (including asphalt binders). All other materials permanently incorporated into the project will be subject to Buy America requirements.

(2) Definitions. A construction material includes an article, material, or supply that is or consists primarily of:

- non-ferrous metals;
- plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cable);
- glass (including optic glass);
- lumber; or
- drywall.

Items manufactured through a combination of either two or more materials listed above, or at least one of the materials listed above and a material not listed shall be considered as a manufactured product, rather than as a construction material.

Build America, Buy America provisions specified for manufactured products in Section 70912(6)(B) of the Infrastructure Investment and Jobs Act (IIJA) do not apply to federal-aid construction projects per FHWA's existing statutory requirement applicable to manufactured products. A "manufactured product" is considered to be an item that undergoes one or more manufacturing processes before the item can be used on a construction project.

All construction materials shall be produced in the United States. This means all manufacturing processes to produce the construction materials shall occur in the United States. All manufacturing processes for construction materials shall mean the final manufacturing process and the immediately preceding manufacturing stage for the construction material.

(3) Compliance. The Contractor shall ensure that all manufacturing processes for each covered product comply with this Buy America Provision. Non-conforming products shall be replaced at no expense to the Department. It is the contractor's responsibility to assure all submittals required for Buy America are submitted to the Engineer prior to the products and or materials being incorporated into the project.

Buy America requirements do not apply to temporary elements not permanently incorporated into a project. This includes falsework, temporary sheet piling, detour bridges, temporary elements left in place at the contractor's convenience, unless the contract plans and specifications require steel or iron components or imply that the item be left in place, or items that are simply moved from one place to another within the same project. Buy America only applies to construction

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MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

BUY AMERICA - CONSTRUCTION MATERIALS

materials that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, removed at or before completion of the project.

(4). Certification. The contractor shall provide a certification from the supplier for each construction material, stating that it meets the provisions of this specification or the Build America/Buy America act, prior to incorporating any construction material into the project. The supplier certifying may be the original manufacturer, fabricator, or vendor provided the supplier has sufficient control and knowledge of the manufacturing process to accept responsibility and certify full and complete conformance with the certification.

(5). Examples of Pay Items Affected. The following are items from the Standard Specifications that must meet the requirements of this specification. This list is provided for bidders' information and is not to be considered as all-inclusive as other items covered by the standard specifications, supplemental specifications, and special provisions may also fall under these requirements:

Non-Ferrous Metals	
Item	**Specification Section**
Aluminum Pipe Culverts	606
Aluminum Chain Link Fence	619
Aluminum Gates	619
Mailboxes	637
Electrical Conductors	700, 708
Ground Rods	701, 712, 714, 715
Loop Wiring	704
Feeder Wire	704
Traffic Signal Cable	708
Sign Supports	724, 730
Sign Panels	723, 725, 726, 727, 728
Video Cable	733
Metal Bridge Railing	806
Bridge Name Plates	812

Plastic/Polymer Based Products	
Item	**Specification Section**
Polyethylene Pipe Culverts	606
PVC Pipe Culverts	606
RC Pipe Culvert Gaskets	606
Drop Inlet Steps	609, 610, 640
ABS or Polyethylene Pipe for Underdrains	611
PVC Pipe for Underdrain Laterals	611
Filter Fabrics	611, 625, 629, 816
Geotextile Fabrics	625
Tactile Panels for Wheelchair Ramps	641
Non-Metallic Conduit (PE & PVC)	710
Sand Barrels/Lids for Impact Attenuation Barriers	731

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BUY AMERICA - CONSTRUCTION MATERIALS

Glass	
Item	**Specification Section**
Glass Beads (drop on application)	718, 719
Fiber Optic Cable	Job SP
Windows in Building Construction	Job SP

Lumber	
Item	**Specification Section**
Wood Guard Rail Posts	617, 639
Wood Block Outs for Guardrail	617,639
Wood Posts for Guard Cable	618
Fence Posts and Braces (Type A, B, C and D)	619
Mailbox Supports	637
Treated Wood Poles	716
Treated Lumber	817
Treated Bridge Timbers	817
Timber Piling	818
Framing Lumber, Plywood, Trim Lumber in Building Construction	Job SP

Drywall	
Item	**Specification Section**
Drywall in Building Construction	Job SP

SPECIAL PROVISION
JOB 040943

DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES

Although this contract does not have a Disadvantaged Business Enterprise (DBE) Goal, in accordance with Subsection 103.08(a) of the Standard Specifications all payments made to DBE Contractors, suppliers, manufacturers, and/or non-construction service firms must be reported by the Prime Contractor.

As required by Subsection 103.08(h), the Prime Contractor must use the appropriate DBE Payment Log form included in this Special Provision during the progress of the Contract. Listed below are the instructions on when each form is required to be submitted.

- The Prime DBE Payment Log (page 3) must be submitted by the Prime Contractor when he/she is a certified DBE Contractor and work was performed by their own forces or money was earned by the DBE Prime Contractor for work performed by a Subcontractor during the estimate period.
- The DBE Subcontractor Payment Log (page 2) must be submitted by the Prime Contractor when a Subcontractor is a certified DBE Contractor and work was performed by a Subcontractor or money was earned by a Subcontractor for work performed by a Second-tier Subcontractor during the estimate period.
- The 2nd Tier DBE Payment Log (page 4) must be submitted by the Prime Contractor when a 2nd Tier Subcontractor is a certified DBE Contractor and work was performed by a 2nd Tier Subcontractor during the estimate period.
- The 2nd Tier DBE Payment Log (page 4) must be submitted by the Prime Contractor when payments are made to a Department Certified DBE supplier, manufacturer, and/or non-construction service firm by the Prime Contractor or any Subcontractor or 2nd Tier Subcontractor during the estimate period.

A separate DBE Payment Log form is required for each DBE firm receiving payments for work completed or services provided during each estimate period. The DBE Payment Log forms, along with instructions for their use, are available on the Department's website at:

http://ardot.gov/Construc/DBE_Log.xls

All certifications of payments must be received by the Resident Engineer within thirty-five (35) calendar days following the end of each estimate period. Facsimile or scanned copies of the completed original payment log forms are acceptable to fulfill this requirement.

Upon completion of the contract, a final certificate of payments to all DBE firms -- page 5 of this Special Provision -- is required by Subsection 103.08 (h). The final amount paid to each DBE firm shall match the total to date reported on the last DBE payment log submitted for each firm. If necessary, an additional DBE payment log shall be submitted with the certificate of payment itemizing all payments made to DBE firms since the last estimate period. A signed, original of the Final Certificate of Payment must be furnished to the Resident Engineer.

DBE Subcontractor Payment Log

Job Number _____ Prime Contractor _____

Estimate No. _____ DBE Subcontractor _____

Estimate Ending Date_____ Date Payment Made to DBE _____

Item Code*	Item Description	Subcontract Unit Price	2nd Tier Unit Price	Quantity	Value Earned By Subcontractor

* Item Codes for pay items are shown on the estimate voucher

Total This Estimate	
Retainage Withheld This Estimate	
Net Total This Estimate	
___% Retainage Previous Total	
Total To Date	

DBE Payment Log must be received within 35 calendar days of the ending date of the estimate.

The Prime Contractor certifies that the payment listed has been made to the DBE Subcontractor and that the documentation of this payment is available for inspection upon request.

Authorized Signature_____ Title _____

Typed or Printed Name_____ Date _____

Department Use Only

Received By _____ Date _____

Verified By _____ Date _____ RE Initials _____

Rev. 9-6-17

DBE Prime Contractor Payment Log

Job Number _____ DBE Prime Contractor _____

Estimate No. _____

Estimate Ending Date_____

Item Code*	Item Description	Contract Unit Price	Sub Unit Price	Quantity	Value Earned By DBE Prime

* Item Codes for pay items are shown on the estimate voucher

Total This Estimate	
Previous Total	
Total To Date	

DBE Payment Log must be received within 35 calendar days of the ending date of the estimate.

The Prime Contractor certifies that the information shown above is correct and represents the value earned by the DBE Prime Contractor during the above estimate period.

Authorized Signature_____ Title _____

Typed or Printed Name_____ Date _____

Department Use Only

Received By _____ Date _____

Verified By _____ Date _____ _____ RE Initials

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DBE 2nd Tier Payment Log

Job Number _____ Prime Contractor _____

Estimate No. _____ Subcontractor _____

Estimate Ending Date_____ DBE 2nd Tier Subcontractor _____

Date Payment Made to DBE _____

Item Code*	Item Description	2nd Tier Unit Price	Quantity	Value Earned by 2nd Tier

* Item Codes for pay items are shown on the estimate voucher

Total This Estimate	
Retainage Withheld This Estimate	
Net Total This Estimate	
Previous Total	
Total To Date	

DBE Payment Log must be received within 35 calendar days of the ending date of the estimate.

___% Retainage

The Prime Contractor certifies that the payment listed has been made to the DBE 2nd Tier Subcontractor and that the documentation of this payment is available for inspection upon request.

Authorized Signature_____ Title _____

Typed or Printed Name_____ Date _____

Department Use Only

Received By _____ Date _____

Verified By _____ Date _____ _____ RE Initials

Rev. 9-6-17

CERTIFICATE OF PAYMENT

JOB _____ **F.A.P.** _____

JOB NAME _____

ORIGINAL CONTRACT AMOUNT $_____ **DBE GOAL $**_____*
(Contract Commitment)

DBE CONTRACT GOAL ___%

FINAL PAYMENT TO DBEs

The undersigned Contractor on the above mentioned project hereby certifies that the following amount(s) were paid to:

DBE Subcontractor(s)	Amount Paid
	$
	$
	$
	$
	$
	$
	$
	$
	$
	$
	$
	$
Total Paid to DBEs	$

Only payments related to work, services, or material actually provided by DBE firms should be shown. Payments under second tier subcontracts from DBE firms to non-DBE firms should not be included.
DBE prime Contractors should include the value of work performed by its own forces.

Contractor:			
Signature:			
Typed or Printed Name:			
Title:		Date:	

THIS "CERTIFICATE OF PAYMENT" IS TO BE SUBMITTED TO THE RESIDENT ENGINEER PRIOR TO PROJECT ACCEPTANCE.

* If goal not met, brief explanation: _____

_____

_____

_____

SPECIAL PROVISION #38

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT

In accordance with the requirements of 2 CFR 200.216, equipment utilized on this project for telecommunications and video surveillance services or equipment shall not be produced by:

1) Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

2) Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

Title VI CONTRACT PROVISIONS
APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(1) Compliance with Regulations: The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

(2) Nondiscrimination: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

(3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Nondiscrimination on the grounds of race, color, or national origin.

(4) Information and Reports: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

(5) Sanctions for Noncompliance: In the event of a contractor's noncompliance with the Nondiscrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

(a) Withholding of payments to the contractor under the contract until the contractor complies, and/or

(b) Cancelling, terminating or suspending a contract, in whole or in part.

(6) Incorporation of Provisions: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Revised: 5-11-16

TITLE VI CONTRACT PROVISIONS
APPENDIX E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non- discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.

- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);

- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);

- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;

- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);

- Airport and Airway Improvement Act of 1982, (49 USC§ 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);

- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);

- Titles II and Ill of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;

- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681et seq).

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

> "It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to *DBAconformance@dol.gov*. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to *DBAconformance@dol.gov*, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)
This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

FHWA-1273 SUPPLEMENTAL SPECIFICATION

EQUAL EMPLOYMENT OPPORTUNITY – NOTICE TO CONTRACTORS

Elsewhere in this contract are three Supplemental Specifications on Equal Employment Opportunity designated as PR-1273 Supplements. They are (1) Specific Equal Employment Opportunity Responsibilities (23 U.S.C. 140), (2) Equal Employment Opportunity – Goals and Timetables, and (3) Equal Employment Opportunity – Federal Standards. This notice is to clarify the responsibilities for review of compliance and enforcement for these separate supplemental specification requirements.

The first of the Supplemental Specifications cited above covers the requirements for the equal employment opportunity program under Title 23 for which the sponsor is responsible. The sponsor performs the necessary compliance review and enforcement of this supplemental Specification which is applicable to all contractors holding Federal-aid highway contracts.

The latter two Supplemental Specifications are for the specific equal opportunity requirements for Executive Order 11246 which is the sole responsibility of the Office of Federal Contract Compliance Programs (OFCCP), Department of Labor. Review and enforcement under these Supplemental Specifications is performed by OFCCP.

OFCCP has, under Paragraph 8 of the EEO Federal Standards Supplemental Specification, recognized the Arkansas AGC Heavy Highway Affirmative Action Plan as meeting the provisions of that Supplemental Specification and Supplemental Specification (2) cited above. With this recognition, those contractors signatory to the AGC Plan have been waived from individual review by OFCCP. However, OFCCP retains the right to review any such contractors whenever circumstances warrant. Also, contractors non-signatory to the AGC Plan are subject to OFCCP review under EO 11246.

AHTD and OFCCP have agreed to work towards eliminating duplicative reviews on individual contractors; however, each agency may make reviews at any time notwithstanding the cited agreement.

FHWA-1273 SUPPLEMENTAL SPECIFICATION

SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)

1. General.

a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 1137S are set forth in Required Contract Provisions (Form FHWA-1273 and Supplements) and these Special Provisions which are imposed pursuant to Section 140 of Title 23, U.S.C., as established by Section 22 of the Federal-Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions. The initial measure of the contractor's good faith efforts to comply with these Special Provisions shall be its efforts to meet the goals set forth in the 'Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)' for minority and female participation expressed in percentage terms for the contractor's work force in each trade on this project.

b. The contractor will work with the sponsor and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.

c. The contractor and all his/her subcontractors holding subcontracts not including material suppliers, of $10,000 or more, will comply with the following minimum specific requirement activities of equal employment opportunity: (The equal employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection I of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The contractor will include these requirements in every subcontract of $10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

2. Equal Employment Opportunity Policy.

The contractor will accept as his operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex, age, disability, or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program:

It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, age, disability, or national origin. Such action shall include: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training.

3. Equal Employment Opportunity Officer.

The contractor will designate and make known to the sponsor contracting officers an equal employment opportunity officer (hereinafter referred to as the EEO Officer) who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

4. Dissemination of Policy.

a. All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's equal employment opportunity policy and contractual responsibilities to provide equal employment opportunity in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

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(23 U.S.C. 140)

(1) Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

(2) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official covering all major aspects of the contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the contractor.

(3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official in the contractor's procedures for locating and hiring minority and female employees.

b. In order to make the contractor's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the contractor will take the following actions:

(1) Notices and posters setting forth the contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment, and potential employees.

(2) The contractor's equal employment opportunity policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

5. <u>Recruitment</u>

a. When advertising for employees, the contractor will include in all advertisements for employees the notation: 'An Equal Opportunity Employer.' All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

b. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority and female applicants, including, but not limited to, State employment agencies, schools. colleges, and minority group organizations. To meet this requirement, the contractor will, through his EEO Officer, identify sources of potential minority and female employees, and establish with such identified sources procedures whereby minority and female applicants may be referred to the contractor for employment consideration.

In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with equal employment opportunity contract provisions. (The U.S. Department of Labor has held that where implementation of such agreements has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority and female applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In, addition, information and procedures with regard to referring minority and female applicants will be discussed with employees.

6. <u>Personnel Actions</u>.

Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race,

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SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES
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color, religion, sex, age, disability, or national origin. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

7. Training and Promotion.

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training, In the event the Optional Training Special Provision is provided under this contract, this subparagraph will be superseded by that Special Provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

8. Unions.

If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the union and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below,

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an equal employment opportunity clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, age, disability, or national origin.

c. The contractor is to obtain information as to the referral practices and policies of the labor union, except that to the extent such information is within the exclusive ion of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the sponsor and shall set forth what efforts have been made to obtain such information.

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d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, age, disability, or national origin, making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the sponsor.

9. Subcontracting.

a. The contractor's attention is called to the Special Provision on Disadvantaged Business Enterprises in Federal-Aid Highway Construction.

b. The contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

10. Records and Reports.

a. The contractor will keep such records as are necessary to determine compliance with the contractor's equal employment opportunity obligations. The records kept by the contractor will be designed to indicate:

(1) the number of minority and non-minority group members and women employed in each work classification on the project,

(2) the progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women (applicable only to contractors who rely in whole or in part on unions as a source of their work force),

(3) the progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and

(4) the progress and efforts being made in securing the services of Disadvantaged Business Enterprises or subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the sponsor and the Federal Highway Administration.

c. The contractors will submit an annual report to the State Highway agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. Ibis information is to be reported on Form PR 1391.

11. Corrective Action Plans.

The contractor understands that a designated representative of the sponsor will periodically review compliance by the contractor with all contractual provisions incorporated pursuant to Executive Order 11246, as amended, and Federal Highway Administration Equal Employment Opportunity Special Provisions implementing the Federal-Aid Highway Act of 1968, where applicable.

In the event that the designated representative of the sponsor finds that the contractor has failed to comply with any of the aforementioned contractual provisions, he will notify the contractor of this finding in writing A declaration of default will result in the suspension of all future payments. No declaration of default will be made if the sponsor and the contractor formally agree to enter into a corrective action plan setting out the specified steps and timetables the contractor will be contractually obligated to perform in order to re-establish his

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compliance. 'Ibis collective action plan, in order to be accepted by the sponsor, shall include the following mandatory enforcement language:

"If, at any time in the future, the Office of Federal Contract Compliance Programs or the Federal Highway Administration or the Arkansas State Highway Commission or their successor(s) believe that (name of contractor) has violated any portion of this agreement, (name of contractor) shall be promptly notified of the fact in writing. This notification shall include a statement of the facts and circumstances relied upon in forming that belief. In addition, the notification shall provide (name of contractor) with 15 days to respond in writing to the notification except where the Office of Federal Contract Compliance Programs, the Federal Highway Administration or the Arkansas State Highway Commission alleges that such delay would result in irreparable injury. It is understood that enforcement proceedings for violation of this agreement may be initiated at any time after the 15-day period has elapsed (or sooner if irreparable injury is alleged) without issuance of a show cause notice."

"It is recognized that where the Office of Federal Contract Compliance Programs and/or the Federal Highway Administration and/or the Arkansas State Highway Commission believes that (name of contractor) has breached this agreement, evidence regarding the entire scope of (name of contractor) alleged noncompliance from which this agreement resulted, in addition to evidence regarding (name of contractor) alleged violation of this agreement, may be introduced at the enforcement proceeding."

"Violation of this agreement may subject (name of contractor) to sanctions pursuant to the Arkansas State Highway Commission contract administration procedures. It is further recognized that liability for violation of this agreement may also subject (name of contractor) to sanctions set forth in Section 209 of Executive Order 11246, as amended, and/or appropriate relief."

The contractor will submit quarterly reports to the sponsor as a result of any deficiencies cited during an equal employment opportunity compliance review. The reports will indicate the affirmative action steps taken to correct the deficiencies. Instructions for submission of the reports will be furnished by the Equal Employment Opportunity Section.

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EQUAL EMPLOYMENT OPPORTUNITY – GOALS & TIMETABLES

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Bidder's attention is called to the 'Equal Opportunity Clause' and the ‘Standard Federal Equal Employment Specifications’ set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the contractor’s aggregate workforce in each trade on all construction work in covered area, are as follows:

MINORITIES

COUNTY

Arkansas	16.4%	Lee	26.5%
Ashley	16.4%	Lincoln	16.4%
Baxter	3.3%	Little River	19.7%
Benton	3.3%	Logan	6.6%
Boone	3.3%	Lonoke	16.4%
Bradley	16.4%	Madison	3.3%
Calhoun	16.4%	Marion	3.3%
Carroll	3.3%	Miller	19.7%
Chicot	16.4%	Mississippi	26.5%
Clark	16.4%	Monroe	16.4%
Clay	26.5%	Montgomery	16.4%
Cleburne	16.4%	Nevada	20.2%
Cleveland	16.4%	Newton	3.3%
Columbia	20.2%	Ouachita	16.4%
Conway	16.4%	Perry	16.4%
Craighead	26.5%	Phillips	26.5%
Crawford	5.6%	Pike	20.2%
Crittenden	32.3%	Poinsett	26.5%
Cross	26.5%	Polk	6.6%
Dallas	16.4%	Pope.	16.4%
Desha	16.4%	Prairie	16.4%
Drew	16.4%	Pulaski	15.7%
Faulkner	16.4%	Randolph	26.5%
Franklin	6.6%	Saline	15.7%
Fulton	16.4%	Scott	6.6%
Garland	16.4%	Searcy	3.3%
Grant	16.4%	Sebastian	5.6%
Greene	26.5%	Sevier	20.2%
Hempstead	20.2%	Sharp	16.4%
Hot Spring	16.4%	Stone	16.4%
Howard -	20.2%	St. Francis	26.5%
Independence	16.4%	Union	16.4%
Izard	16.4%	Van Buren	16.4%
Jackson	16.4%	Washington	3.3%
Jefferson	31.2%	White	16.4%
Johnson	16.4%	Woodruff	16.4%
Lafayette	20.2%	Yell	16.4%
Lawrence	26.5%		

FEMALES
Statewide – 6.9%

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EQUAL EMPLOYMENT OPPORTUNITY – GOALS & TIMETABLES

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in the Notice, and in the contract resulting from this solicitation, the 'covered area' is as described in the Proposal Form for this project.

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EQUAL EMPLOYMENT OPPORTUNITY – FEDERAL STANDARDS

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:

a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs United States Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

d. "Minority" includes:

i. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
ii. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
iii. Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
iv. American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations and on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall Good Faith performance by other Contractors or subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective

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EQUAL EMPLOYMENT OPPORTUNITY – FEDERAL STANDARDS

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bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees before the start of work and then not less often than once every six months; and by posting the company EEO policy on bulletin

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boards accessible to all employees at each location where construction work is performed.

g. Review the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site and then not less often than once every six months. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above describing the openings, screening procedures, and test to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from disadvantaged business enterprise construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the

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employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even thou-h the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, national origin, age or disability.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Employment Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee. helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

16. In addition to the reporting requirements set forth elsewhere in this contract, the contractor and the subcontractors holding subcontracts not including material suppliers, of $10,000 or more, shall submit for every month of July during which work is performed employment data as contained under Form PR-1391 (Appendix C to 23 CFR, Part 230), and in accordance with the instructions included thereon.

FHWA-1273 SUPPLEMENTAL SPECIFICATION

POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS

	POSTER OR DOCUMENT REQUIRED	REQUIRED BY	WHERE TO OBTAIN
1.	Equal Employment Opportunity – Know Your Rights	U.S. Department of Labor (OFCCP)	ARDOT Resident Engineer
2.	Company EEO Policy (prepared by the Contractor on the Company's letterhead)	U. S. Department of Labor (OFCCP) *Union Contractors Only	Contractor to Prepare: a. EEO policy statement. b. Notice encouraging employees to refer minority and female applicants for employment. c. Notice informing employees of an available training program and the entrance requirements. d. Complaint procedures. e. Notice identifying company EEO officer by name, including address and telephone number where EEO officer can be located. f. Work environment statement. g. Certification of nonsegregated facilities. *h. Notice to unions disseminating EEO commitments and responsibilities and requesting their cooperation.
3.	Current Wage Rates (PR-1273 Supplement) or SS Revisions of PR-1273 for Off-System Projects	U. S. Department of Labor	Contained in contract. Extra copies may be obtained from Program Management - ARDOT

FHWA-1273 SUPPLEMENTAL SPECIFICATION

POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS

	POSTER OR DOCUMENT REQUIRED	REQUIRED BY	WHERE TO OBTAIN
4.	"Employee Rights Under the Davis-Bacon Act" (WH 1321)	U. S. Department of Labor	ARDOT Resident Engineer
5.	"Employee Rights Under the Davis-Bacon Act" (WH 1321 SPA)	U. S. Department of Labor	ARDOT Resident Engineer
6.	Minimum Wage Rate (WH 1088)	U. S. Department of Labor	ARDOT Resident Engineer
7.	"NOTICE" Federal Aid Projects (PR-1022)	U. S. Department of Transportation (FHWA)	ARDOT Resident Engineer
8.	Job Safety and Health Protection OSHA 3165	U. S. Department of Labor (OSHA)	ARDOT Resident Engineer
9.	Job Safety and Health Protection OSHA 3167 SPA	U. S. Department of Labor (OSHA)	ARDOT Resident Engineer
10.	Emergency Phone Numbers of Doctors, Hospital and Ambulance near Job Site for referring injured employees.	U. S. Department of Labor (OSHA)	ARDOT Resident Engineer
11.	WCC Form AR-P Workers Compensation Notice and Instructions to Employers and Employees	State of Arkansas	Insurance Carrier
	Self-Insurer	State of Arkansas	Administrator - Self-Insured Group

FHWA-1273 SUPPLEMENTAL SPECIFICATION

POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS

	POSTER OR DOCUMENT REQUIRED	REQUIRED BY	WHERE TO OBTAIN
12.	Log and Summary of Occupational Injuries and Illnesses (OSHA Form 300) The Summary portion must be posted from February 1 to April 30, of the year following the year covered by the form.	U. S. Department of Labor (OSHA) Public Law 91-596	ARDOT Resident Engineer
13.	Family and Medical Leave Act of 1993 (WH-1420) Employers who employ 50 or more employees for at least 20 workweeks in the current or preceding calendar year.	U. S. Department of Labor	ARDOT Resident Engineer
14.	Employee Polygraph Protection Act (WH-1462)	U. S. Department of Labor	ARDOT Resident Engineer
15.	Your Rights Under USERRA (The Uniformed Services Employment and Reemployment Rights Act)	U. S. Department of Labor	ARDOT Resident Engineer
16.	Arkansas Department of Labor Notice to Employer & Employee	Arkansas Department of Labor	ARDOT Resident Engineer
17.	Pay Transparency Nondiscrimination Provision	U. S. Department of Labor (OFCCP)	ARDOT Resident Engineer

SPONSOR

SUPPLEMENT TO PROPOSAL

ANTI-COLLUSION AND DEBARMENT CERTIFICATION

FAILURE TO EXECUTE AND SUBMIT THIS CERTIFICATION SHALL RENDER THIS BID NONRESPONSIVE AND NOT ELIGIBLE FOR AWARD CONSIDERATION.

As a condition precedent to the acceptance of the bidding document for this project, the bidder shall file this Affidavit executed by, or on behalf of the person, firm, association, or corporation submitting the bid. The original of this Affidavit shall be filed with the SPONSOR **at the time proposals are submitted**.

A F F I D A V I T

I hereby certify, under penalty of perjury under the laws of the United States and/or the State of Arkansas, that the bidder listed below has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the submitted bid for this project, is not presently barred from bidding in any other jurisdiction as a result of any collusion or any other action in restraint of free competition, and that the foregoing is true and correct.

Further, that except as noted below, the bidder, or any person associated therewith in the capacity of owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of Federal funds:

a. is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;

b. has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;

c. does not have a proposed debarment pending; and

d. has not been indicted, convicted, or had an adverse civil judgment rendered by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

SPONSOR

SUPPLEMENT TO PROPOSAL

ANTI-COLLUSION AND DEBARMENT CERTIFICATION

FAILURE TO EXECUTE AND SUBMIT THIS CERTIFICATION SHALL RENDER THIS BID NONRESPONSIVE AND NOT ELIGIBLE FOR AWARD CONSIDERATION.

EXCEPTIONS:

APPLIED TO	INITIATING AGENCY	DATES OF ACTION

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. Providing false information may result in criminal prosecution or administrative sanctions.

Job No. _____ _____
(Name of Bidder)

F.A.P. No. _____ _____
(Signature)

_____ _____
(Date Executed) (Title of Person Signing)

The following Notary Public certification is **OPTIONAL** and may or may not be completed at the contractor's discretion.

State of _____)
County of _____)ss.

_____, being duly sworn, deposes and says that he is

_____ of _____
(Title) (Name of Bidder)

and that the above statements are true and correct.

Subscribed and Sworn to before me this _____ day of _____, 20_____.
My commission expires:_____

_____
(Notary Public)

(NOTARY SEAL)

SPONSOR

SUPPLEMENT TO PROPOSAL

C E R T I F I C A T I O N

The prospective contractor certifies, by signing and submitting this proposal, to the best of his or her knowledge and belief, that:

1 No Federal appropriated funds have been paid or will be paid, by or on his or her behalf, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or any employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2 If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal-Aid contract, the prospective contractor shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities", in accordance with its instructions. (Available from Arkansas State Highway and Transportation Department, Programs and Contracts Division).

This Certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. This Certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U. S. Code.

During the period of performance of this contract, the contractor and all lower tier subcontractors must file a Form-LLL at the end of each calendar year quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any previously filed disclosure form. Any person who fails to file the required Certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each failure.

The prospective contractor also agrees by submitting his or her proposal that he or she shall require that the language of this Certification be included in all lower tier subcontracts which exceed $100,000 and that all such subcontractors shall certify and disclose accordingly.

SPONSOR

SUPPLEMENT TO PROPOSAL

C E R T I F I C A T I O N

THIS CERTIFICATION SHALL BE COMPLETED BY THE BIDDER AS PART OF THIS PROPOSAL

The bidder _____, proposed subcontractor _____, hereby certifies that he has _____, has not _____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that he has _____, has not _____, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

(Currently, Standard Form 100 [EEO-1] is the only report required by the Executive Orders or their implementing regulations.)

JOB NO. _____ _____
(Company)

F.A.P. NO. _____ By: _____
(Signature)

_____ _____
(Date Executed) (Title of Person Signing)

NOTE: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7 (b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U. S. Department of Labor.

"General Decision Number: AR20260173 01/02/2026

Superseded General Decision Number: AR20250173

State: Arkansas

Construction Type: Highway

County: Washington County in Arkansas.

HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/02/2026

SUAR2014-045 07/21/2014

	Rates	Fringes
CARPENTER, Includes Form Work	$ 15.40	0.00
CEMENT MASON/CONCRETE FINISHER	$ 15.33	0.00
ELECTRICIAN, Includes Traffic Signalization	$ 20.40	0.00
FENCE ERECTOR	$ 11.27	0.00
HIGHWAY/PARKING LOT STRIPING: Operator (Striping Machine)	$ 13.25	0.00
HIGHWAY/PARKING LOT STRIPING: Painter	$ 21.75	0.00
INSTALLER - GUARDRAIL	$ 17.12	0.00
IRONWORKER, REINFORCING	$ 14.22	0.00
IRONWORKER, STRUCTURAL	$ 17.52	0.00
LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor	$ 14.68	0.00
LABORER: Common or General	$ 13.17	0.00
LABORER: Mason Tender - Cement/Concrete	$ 14.77	0.00
LABORER: Pipelayer	$ 14.33	0.00
OPERATOR: Asphalt Spreader	$ 15.80	0.00
OPERATOR: Backhoe/Excavator/Trackhoe	$ 17.01	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader	$ 16.06	0.00
OPERATOR: Broom/Sweeper	$ 12.00	0.00
OPERATOR: Bulldozer	$ 17.08	0.00

OPERATOR: Crane.....$ 22.58 0.00

OPERATOR: Drill.....$ 14.85 0.00

OPERATOR: Grade Checker.....$ 16.36 0.00

OPERATOR: Grader/Blade.....$ 16.67 0.00

OPERATOR: Hydroseeder.....$ 10.79 0.00

OPERATOR: Loader.....$ 15.01 0.00

OPERATOR: Mechanic.....$ 20.28 0.00

OPERATOR: Milling Machine.....$ 16.77 0.00

OPERATOR: Oiler.....$ 19.29 0.00

OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....$ 19.95 0.00

OPERATOR: Post Driver (Guardrail/Fences).....$ 16.97 0.00

OPERATOR: Roller.....$ 15.46 0.00

OPERATOR: Scraper.....$ 16.50 0.00

OPERATOR: Screed.....$ 16.90 0.00

OPERATOR: Tractor.....$ 17.61 0.00

TRAFFIC CONTROL: Flagger.....$ 15.77 0.00

TRAFFIC CONTROL: Laborer-Cones/ Barricades/Barrels - Setter/Mover/Sweeper.....$ 12.44 0.00

TRUCK DRIVER: Dump Truck.....$ 18.56 0.00

TRUCK DRIVER: Flatbed Truck.....$ 21.03 0.00

TRUCK DRIVER: Lowboy Truck.....$ 17.96 0.00

TRUCK DRIVER: Servicer.....$ 16.36 0.00

TRUCK DRIVER: Water Truck.....$ 14.73 0.00

TRUCK DRIVER: Semi/Trailer Truck.....$ 12.50 0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this

contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can

be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on
a wage determination matter
d) an initial conformance (additional classification
and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

Bid 26-37, Addendum 1

Date: Friday, May 29, 2026

To: All Prospective Vendors

From: Kenny Fitch – 479.575.8258 – kfitch@fayetteville-ar.gov

RE: Bid 26-37, Construction – Millsap/College Intersection & Hemlock Improvements

This addendum is hereby made a part of the contract documents to the same extent as though it were originally included therein. Interested parties should indicate their receipt of same in the appropriate blank of the Bid.

BIDDERS SHALL ACKNOWLEDGE THIS ADDENDUM ON THE DESIGNATED LOCATION ON THE BID FORM.

1. CLARIFICATIONS:
    a. Hemlock will be constructed and open prior to starting on Millsap in order to facilitate the maintenance of traffic.
    b. Due to lowering a portion of the road on the east side of College Ave, a section of waterline replacement is included in the project.
    c. A gravity block retaining wall is included in the project with a maximum height of 7'. This will require coordination with the block manufacturer.
    d. Easement and right of way acquisition has been completed.
    e. Utility relocation is ongoing in the area. Pending relocations include Cox Communications moving to new SWEPCO poles, Black Hills relocating a gas line, and AT&T lowering fiber duct. This will be coordinated during the construction of the roadway.
    f. Stormwater improvements will be included on Hemlock and Millsap (east of College). This will include new pipes, inlet structures, junctions, etc.
    g. Traffic control will be critical. The City anticipates one stage of construction for Hemlock, one stage for the eastern portion of Millsap, and two stages for the western portion of Millsap. Message boards are included in the bid and will be utilized throughout construction.
    h. The Bank of Oklahoma Financial site at the northeast corner of Front St and Millsap has plans for redevelopment. Existing buildings will be removed and new buildings will be constructed. The exact timing of the project is unknown at this time but could overlap with this project to some extent. The development plans have not yet been approved by the City.
    i. Coordination with ARDOT will be required. Most of the scope exists within the City's right of way, but the project is being funded by grants administered by ARDOT.
    j. The drainage scope for the Hemlock connection includes a drainage swale with landscape rock to convey runoff around the existing University of Arkansas Maintenance Building.
    k. The pavement section for Hemlock is concrete due to steep grades.

Telecommunications Device for the Deaf TDD (479) 521-1316 113 West Mountain - Fayetteville, AR 72701

l. The Table of Contents from the Project Manual has been updated and reissued as an attachment to this addendum to include Special Provision #21 (SP #21) – Relocation of Traffic Signal Head.

m. Plan sheets C-500 and C-505 have been revised and included as an attachment to this addendum to reflect the changes made to the item descriptions and quantities.

2. QUESTIONS:

a. Could a line item be added for Traffic Signal Pedestal Poles?

- Line item 3.80 has been updated. See the description of the change in the Line Item section below.

b. The is a line item for a 40' traffic signal pole and mast arm, but all the arms appear to be 42' according to the plans. Also, the line item for the 42' mast arm structures has a quantity of 2 each. Can you provide clarification?

- The line item for the 40' traffic signal pole and mast arm was incorrect. All arms shall be 42'. The line items and quantities have been updated to reflect the correct items and quantities. See the description of the change in the Line Item section below.

c. Could a line item be added for traffic signal head relocation?

- Yes, a line item for this has been added. See the description of the change in the Line Item section below. Additionally, Special Provision 21 (SP #21) has been reissued as an attachment to this addendum to provide more detailed information for this line item.

3. LINE ITEMS:

a. 3.80) Traffic Signal Pedestal Pole with Foundation (ARDOT SS & 711): This line item description has been updated from "Traffic Signal Mast Arm and Pole with Foundation (40') and the quantity has been updated from 1EA to 6EA.

b. 3.81) Traffic Signal Mast Arm and Pole Foundation (42') (ARDOT SS & 711): This line item quantity has been updated from 2EA to 3EA.

c. 3.92) Relocation of Traffic Signal Head (SP #21): This line item has been added with a quantity of 1EA.

4. ATTACHMENTS:

a. Attachment A: Pre-Bid Meeting Sign-In Sheet

b. Attachment B: Revised Table of Contents

c. Attachment C: Revised Special Provision #21 (SP #21)

d. Attachment D: Revised Plan Sheets C-500 and C-505

Attachment A: Pre-Bid Meeting Sign-In Sheet

CITY OF FAYETTEVILLE ARKANSAS

City of Fayetteville, Arkansas

Attendance Sheet

(BID)/RFP/RFQ #: 26-37

Description: CONSTRUCTION - MILLSAP/COLLEGE INTERSECTION & MILLSAP IMPROVEMENTS

Function (circle one): Bid Opening, Selection Committee Meeting, Pre-Bid, Interview

Date: 5/27/26 Time: 11:00am

City staff e-mail includes "@fayetteville-ar.gov"

	Name	Company	Title	Phone	Email
1	KENNY FITCH	COF	SR PROC AGENT	575-8258	kfitch@
2	Trevel Young	CoF	Proc Agent	575-8289	tyoung@
3	WILLIAM PATTENGILL	BURNS & McDONNELL	SR CIVIL ENG	479-936-1833	WPATTENGILL
4	PAUL LIBERTINI	COF	STAFF ENG	479-531-9796	PLIBERTINI@FAY...
5	LUIS Malo	ELLIOT	G. Foreman	405 563 6154	lmalo@dhec.com.
6	JONATHAN ELY	BURNS + McDONNELL	PROJ. MGR.	479-866-4022	jmely@burnsmcd.com
7	Charlie Miller	Sweetser	Estimator	479-443-3086	CMARTIC@SWEETSERCONSTRUCTION.COM
8					
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18					

Meeting Notes, Decision, Description of Handouts, etc:

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MILLSAP RD./COLLEGE AVE. INTERS. IMPVTS. & N. HEMLOCK AVE. IMPVTS.

CONTRACT DOCUMENTS

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CITY OF FAYETTEVILLE STANDARD SPECIFICATIONS FOR STREET AND DRAINAGE CONSTRUCTION

CITY OF FAYETTEVILLE STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2022 EDITION

ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION *(REFERENCE ONLY. GO TO https://ardot.gov/divisions/construction/standard-specifications/ FOR FULL DOCUMENTS)*

ERRATA FOR THE 2014 ARKANSAS DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION *(REFERENCE ONLY. GO TO https://ardot.gov/divisions/construction/standard-specifications/ FOR FULL DOCUMENTS)*

SPECIAL PROVISIONS

SP #1 COORDINATION OF WORK
SP #2 TRENCH AND EXCAVATION SAFETY SYSTEMS
SP #3 STORM WATER POLLUTION PREVENTION PLAN
SP #4 MAINTENANCE OF TRAFFIC
SP #5 SHORING FOR CULVERTS
SP #6 DRAINAGE STRUCTURE BACK OPENING
SP #7 CONCRETE FLUME
SP #8 SELECT PIPE BACKFILL (CLASS 67)
SP #9 PEDESTRIAN REFUGE ISLANDS
SP #10 GRAVITY BLOCK RETAINING WALL
SP #11 REMOVE AND REPLACE TREES
SP #12 IRRIGATION SYSTEM ADJUSTMENT
SP #13 LANDSCAPE ROCK DRAINAGE SWALE
SP #14 SCOUR TRANSITION MAT
SP #15 P.C.C. PAVEMENT (6" UNIFORM THICKNESS), INCLUDING MONLITHIC CURB (TYPE A)
SP #16 U OF A PROPERTY CONSTRUCTION
SP #17 McCAIN ATC eX2 NEMA CONTROLLER TS2-TYPE 2
SP #18 HYBRID VIDEO/RADAR DETECTION SYSTEM
SP #19 EMERGENCY BATTERY BACKUP SYSTEM INSTALLATION
SP #20 LED TRAFFIC SIGNAL HEAD
SP #21 RELOCATION OF TRAFFIC SIGNAL HEAD
SP #22 LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
SP #23 ELECTRICAL CONDUCTORS-IN-CONDUIT (TRAFFIC SIGNAL)
SP #24 LED LUMINAIRE ASSEMBLY
SP #25 SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
SP #26 REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
SP #27 STREET NAME SIGN (MAST ARM MOUNTED)
SP #28 VIDEO DETECTOR ROTATION
SP #29 ELECTRICAL CONDUCTORS FOR LUMINAIRES (TRAFFIC SIGNAL)
SP #30 RETROREFLECTIVE BACKPLATES
SP #31 ACCESSIBLE PEDESTRIAN SIGNAL (APS)
SP #32 CABINET DRAWER ASSEMBLY

ARDOT/FHWA SPECIAL PROVISIONS

END OF DOCUMENT 00010

SPECIAL PROVISION #21

JOB NO. 040943
MILLSAP / COLLEGE INTERSECTION IMPROVEMENT PROJECT

RELOCATION OF TRAFFIC SIGNAL HEAD

DESCRIPTION. This item consists of removing and reinstalling a mast arm pole mounted signal head as shown in the plans or as directed by the Engineer.

MATERIALS. Contractor shall be paid the unit price bid for furnishing and installing signal cable necessary for relocation of the designated signal head.

CONSTRUCTION REQUIREMENTS. Contractor shall be allowed to splice signal cable inside pole bases. A separate multiple conductor traffic signal cable shall be installed from the pole base to each signal head on the pole unless otherwise directed.

METHOD OF MEASUREMENT. Signal head relocation shall be measured by the unit.

BASIS OF PAYMENT. Work completed, accepted and measured as provided above will be paid for at the contract unit price bid for each signal head removed and reinstalled; which price shall be full compensation for furnishing equipment, tools, labor and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Relocation of Traffic Signal Head	Each

Attachment D: Revised Plan Sheets C-500 and C-505

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

ITEM	QUANTITY	UNIT
McCAIN ATC eX2 NEMA CONTROLLER TS2-TYPE 2 (SP #17 & ARDOT 701)	1	EACH
SHIREEN ITEM #DC-1021, CAT 5E VIDEO CABLE OR EQUAL (SHIELDED) (SP #18)	1045	LIN. FT.
EMERGENCY VEHICLE PREEMPTION SYSTEM RELOCATION (SP #33)	2	EACH
TESCO CLASS 22 BBS (BATTERY BACKUP SYSTEM) (SP #19)	1	EACH
TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) (SP #20 & ARDOT 706)	9	EACH
TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY) (SP #20 & ARDOT 706)	3	EACH
POLARA iCCU-S2 (INTELLIGENT CENTRAL CONTROL UNIT - SHELF MOUNT) INCLUDES BIU CAPABILITY (SP #31 & ARDOT 707)	1	EACH
POLARA iNS2 3TN0-B, 9x15 APS PUSHBUTTON STATION (BLACK) (SP #31 & ARDOT 707)	8	EACH
EAGLE 16" COUNTDOWN PEDESTRIAN SIGNAL HEAD (LED) (ALUMINUM) (SP #22 & ARDOT 707)	8	EACH
TRAFFIC SIGNAL CABLE (5C/12 A.W.G.) (ARDOT 708)	1460	LIN. FT.
TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) (ARDOT 708)	1600	LIN. FT.
TRAFFIC SIGNAL CABLE (7C/14 A.W.G.) (ARDOT 708)	260	LIN. FT.
TRAFFIC SIGNAL CABLE (20C/14 A.W.G.) (ARDOT 708)	800	LIN. FT.
ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.) (SP #23)	940	LIN. FT.
ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.) (SP #23)	220	LIN. FT.
ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.) (SP #23)	220	LIN. FT.
ELECTRICAL CONDUCTORS FOR LUMINAIRES (SP #29)	805	LIN. FT.
GALVANIZED STEEL CONDUIT (2") (ARDOT 709)	20	LIN. FT.
NON-METALLIC CONDUIT (2") (ARDOT 710)	295	LIN. FT.
NON-METALLIC CONDUIT (3") (ARDOT 710)	600	LIN. FT.
CONCRETE PULL BOX (TYPE 2) (ARDOT SS & 711)	5	EACH
CONCRETE PULL BOX (TYPE 3) (ARDOT SS & 711)	1	EACH
CONCRETE PULL BOX (TYPE 2 HD) (ARDOT SS & 711)	2	EACH
CONCRETE PULL BOX (TYPE 3 HD) (ARDOT SS & 711)	1	EACH
TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION (ARDOT SS & 715)	3	EACH
TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42') (ARDOT SS & 714)	4	EACH
AUTOBAHN SERIES ATBM P40 LED LUMINAIRE ASSEMBLY (SP #24)	6	EACH
SERVICE POINT ASSEMBLY (2 CIRCUITS) (SP #25)	1	EACH
REMOVAL OF TRAFFIC SIGNAL EQUIPMENT (SP #26)	1	LUMP SUM
18" STREET NAME SIGN (SP #27)	4	EACH
VIDEO DETECTOR RELOCATION (ARDOT 733)	2	EACH
VIDEO DETECTOR ROTATION (SP #28)	2	EACH
ITERIS VANTAGE NEXT VIDEO DETECTOR (SP #18 & ARDOT 733)	2	EACH
ITERIS VANTAGE VECTOR HYBRID DETECTOR (SP #18 & ARDOT 733)	2	EACH
INVID TECH, IMHD-10, HDMI VIDEO MONITOR (SP #18 & ARDOT 733)	1	EACH
ITERIS VANTAGE NEXT SHELF-MOUNT CCU (SP #18 & ARDOT 733)	1	EACH
RELOCATION OF TRAFFIC SIGNAL HEAD (SP #21)	1	EACH

1

Scale For Microfilming
Millimeters
Inches

no.	date	by	ckd	description
00	04-24-26	TRN	JME	ISSUED FOR BID
01	05-28-26	EMW	JME	REVISION 1

ISSUED FOR BID

BURNS McDONNELL
6576 LYNCH'S PRAIRIE COVE, STE B
SPRINGDALE, AR 72762

date	detailed
5/28/26	NMF
designed	checked
BJC	RWC

CITY OF FAYETTEVILLE
MILLSAP/COLLEGE
INTERSECTION IMPROVEMENTS

SUMMARY OF TRAFFIC
SIGNAL QUANTITIES
SIGNAL PLANS - 1

project	contract
136268	040943
drawing	rev.
C-500	01

sheet 20 of 64 sheets
file 136268_TRF.dwg

STAGE 1 TRAFFIC SIGNAL QUANTITIES

ITEM	QUANTITY	UNIT
McCAIN ATC eX2 NEMA CONTROLLER TS2-TYPE 2 (SP #17 & ARDOT 701)	1	EACH
SHIREEN ITEM #DC-1021, CAT 5E VIDEO CABLE OR EQUAL (SHIELDED) (SP #18)	980	LIN. FT.
EMERGENCY VEHICLE PREEMPTION SYSTEM RELOCATION (SP #33)	1	EACH
TESCO CLASS 22 BBS (BATTERY BACKUP SYSTEM) (SP #19)	1	EACH
TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) (SP #20 & ARDOT 706)	5	EACH
TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY) (SP #20 & ARDOT 706)	2	EACH
POLARA iCCU-S2 (INTELLIGENT CENTRAL CONTROL UNIT - SHELF MOUNT) INCLUDES BIU CAPABILITY (SP #31 & ARDOT 707)	1	EACH
POLARA iNS2 3TN0-B, 9x15 APS PUSHBUTTON STATION (BLACK) (SP #31 & ARDOT 707)	6	EACH
EAGLE 16" COUNTDOWN PEDESTRIAN SIGNAL HEAD (LED) (ALUMINUM) (SP #22 & ARDOT 707)	6	EACH
TRAFFIC SIGNAL CABLE (5C/12 A.W.G.) (ARDOT 708)	1460	LIN. FT.
TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) (ARDOT 708)	1315	LIN. FT.
TRAFFIC SIGNAL CABLE (7C/14 A.W.G.) (ARDOT 708)	175	LIN. FT.
TRAFFIC SIGNAL CABLE (20C/14 A.W.G.) (ARDOT 708)	800	LIN. FT.
ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.) (SP #23)	880	LIN. FT.
ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.) (SP #23)	220	LIN. FT.
ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.) (SP #23)	220	LIN. FT.
ELECTRICAL CONDUCTORS FOR LUMINAIRES (SP #29)	805	LIN. FT.
GALVANIZED STEEL CONDUIT (2") (ARDOT 709)	20	LIN. FT.
NON-METALLIC CONDUIT (2") (ARDOT 710)	265	LIN. FT.
NON-METALLIC CONDUIT (3") (ARDOT 710)	590	LIN. FT.
CONCRETE PULL BOX (TYPE 2) (ARDOT SS & 711)	4	EACH
CONCRETE PULL BOX (TYPE 3) (ARDOT SS & 711)	1	EACH
CONCRETE PULL BOX (TYPE 2 HD) (ARDOT SS & 711)	2	EACH
CONCRETE PULL BOX (TYPE 3 HD) (ARDOT SS & 711)	1	EACH
TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42') (ARDOT SS & 714)	2	EACH
AUTOBAHN SERIES ATBM P40 LED LUMINAIRE ASSEMBLY (SP #24)	3	EACH
TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION (ARDOT SS & 715)	5	EACH
SERVICE POINT ASSEMBLY (2 CIRCUITS) (SP #25)	1	EACH
REMOVAL OF TRAFFIC SIGNAL EQUIPMENT (SP #26)	0.67	LUMP SUM
18" STREET NAME SIGN (SP #27)	4	EACH
ITERIS VANTAGE NEXT VIDEO DETECTOR (SP #18 & ARDOT 733)	2	EACH
ITERIS VANTAGE VECTOR HYBRID DETECTOR (SP #18 & ARDOT 733)	2	EACH
INVID TECH, IMHD-10, HDMI VIDEO MONITOR (SP #18 & ARDOT 733)	1	EACH
ITERIS VANTAGE NEXT SHELF-MOUNT CCU (SP #18 & ARDOT 733)	1	EACH

STAGE 1
INSTALL PERMANENT POLES A, B, E, F, G, J, & K AND ALL SUPPORTING TRAFFIC EQUIPMENT ALONG WITH DETECTORS V1 AND V3, PERMANENT SIGNAL HEADS 1, 2, 3, 6, 11, 13 AND TEMPORARY SIGNAL HEAD 22. ALIGN SIGNAL HEADS 11, 12, AND 13 AND BAG UNTIL WESTBOUND TRAFFIC IS OPENED IN STAGE 2. INSTALL PEDESTRIAN SIGNAL HEADS 14, 15, 16, 17, 18, & 21, AND BAG EXISTING SIGNAL HEAD 23 UNTIL WESTBOUND TRAFFIC IS OPENED IN STAGE 2. BAG PEDESTRIAN SIGNAL HEADS DURING CONSTRUCTION. RUN NEW CABLE AND CONDUIT TO EXISTING POLES D AND C. REMOVE EXISTING VIDEO DETECTORS AND INSTALL NEW DETECTORS V2 AND V4. MAINTAIN AND REUSE THE EXISTING EMERGENCY PREEMPTION SYSTEM. ONCE ALL NEW TRAFFIC EQUIPMENT IS INSTALLED, SWITCH INTERSECTION TO THE NEW CONTROLLER. AFTER NEW TRAFFIC EQUIPMENT IS IN OPERATION, REMOVE EXISTING POLES L AND M. ONCE NEW TRAFFIC SIGNAL EQUIPMENT IS IN PLACE, ALL UNUSED TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED AND RETURNED TO THE CITY'S TRAFFIC SHOP LOCATED AT 1525 S. HAPPY HOLLOW ROAD, FAYETTEVILLE, AR 72701.
MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 1 TRAFFIC SIGNAL PLANS.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS.)

STAGE 2 TRAFFIC SIGNAL QUANTITIES

ITEM	QUANTITY	UNIT

STAGE 2
NO NEW NEW SIGNAL EQUIPMENT THIS STAGE. UNBAG SIGNAL HEADS 11, 12, 13 AND 23.
MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 2 TRAFFIC SIGNAL PLANS.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS.)

STAGE 3 TRAFFIC SIGNAL QUANTITIES

ITEM	QUANTITY	UNIT
SHIREEN ITEM #DC-1021, CAT 5E VIDEO CABLE OR EQUAL (SHIELDED) (SP #18)	65	LIN. FT.
EMERGENCY VEHICLE PREEMPTION SYSTEM RELOCATION (SP #33)	1	EACH
TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) (SP #20 & ARDOT 706)	3	EACH
TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY) (SP #20 & ARDOT 706)	1	EACH
RELOCATION OF TRAFFIC SIGNAL HEAD (SP #21)	1	EACH
POLARA iNS2 3TN0-B, 9x15 APS PUSHBUTTON STATION (BLACK) (SP #31 & ARDOT 707)	2	EACH
EAGLE 16" COUNTDOWN PEDESTRIAN SIGNAL HEAD (LED) (ALUMINUM) (SP #22 & ARDOT 707)	2	EACH
TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) (ARDOT 708)	200	LIN. FT.
TRAFFIC SIGNAL CABLE (7C/14 A.W.G.) (ARDOT 708)	85	LIN. FT.
ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.) (SP #23)	60	LIN. FT.
NON-METALLIC CONDUIT (2") (ARDOT 710)	30	LIN. FT.
NON-METALLIC CONDUIT (3") (ARDOT 710)	10	LIN. FT.
CONCRETE PULL BOX (TYPE 2) (ARDOT SS & 711)	1	EACH
TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42') (ARDOT SS & 714)	1	EACH
AUTOBAHN SERIES ATBM P40 LED LUMINAIRE ASSEMBLY (SP #24)	1	EACH
TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION (ARDOT SS & 715)	1	EACH
REMOVAL OF TRAFFIC SIGNAL EQUIPMENT (SP #26)	0.33	LUMP SUM
VIDEO DETECTOR RELOCATION (ARDOT 733)	2	EACH

STAGE 3
INSTALL PERMANENT POLES H AND I, PEDESTRIAN SIGNAL HEADS 19 AND 20, AND ALL ASSOCIATED TRAFFIC SIGNAL EQUIPMENT. REMOVE SIGNAL HEAD 22. RELOCATE SIGNAL HEAD 6 AND VIDEO DETECTOR V3. INSTALL PERMANENT SIGNAL HEADS 4, 7, 8, 9, AND 10. RELOCATE EXISTING EMERGENCY PREEMPTION SYSTEM AND DETECTOR V2 FROM EXISTING POLE C TO PERMANENT POLE I. ONCE NEW TRAFFIC SIGNAL EQUIPMENT IS IN PLACE, REMOVE POLE C AND UNUSED TRAFFIC SIGNAL EQUIPMENT AND RETURN TO THE CITY'S TRAFFIC SHOP LOCATED AT 1525 S. HAPPY HOLLOW ROAD, FAYETTEVILLE, AR 72701.
MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 3 TRAFFIC SIGNAL PLANS.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS.)

TRAFFIC SIGNAL QUANTITIES

ITEM	QUANTITY	UNIT
TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) (SP #20 & ARDOT 706)	1	EACH
TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) (ARDOT 708)	85	LIN. FT.
VIDEO DETECTOR ROTATION (SP #28)	2	EACH

PERMANENT TRAFFIC SIGNAL:
INSTALL SIGNAL HEAD 5 AND RELOCATE SIGNAL HEADS 6 AND 7 TO THEIR PERMANENT LOCATION.
NOTES
(REFER TO PERMANENT TRAFFIC SIGNAL PLANS.)

1

no.	date	by	ckd	description
00	04-24-26	TRN	JME	ISSUED FOR BID
01	05-28-26	EMW	JME	REVISION 1

ISSUED FOR BID

BURNS McDONNELL
6576 LYNCH'S PRAIRIE COVE, STE B
SPRINGDALE, AR 72762

date	detailed
5/28/26	NMF
designed	checked
BJC	RWC

CITY OF FAYETTEVILLE
MILLSAP/COLLEGE
INTERSECTION IMPROVEMENTS

TRAFFIC SIGNAL QUANTITIES
SIGNAL PLANS - 6

project	contract
136268	040943

drawing	rev.
C-505	01

sheet 25 of 64 sheets
file 136268_TRF.dwg

Scale For Microfilming
Millimeters
Inches

Bid 26-37, Addendum 2

CITY OF FAYETTEVILLE ARKANSAS

Date: Monday, June 8, 2026

To: All Prospective Vendors

From: Kenny Fitch – 479.575.8258 – kfitch@fayetteville-ar.gov

RE: Bid 26-37, Construction – Millsap/College Intersection & Hemlock Improvements

This addendum is hereby made a part of the contract documents to the same extent as though it were originally included therein. Interested parties should indicate their receipt of same in the appropriate blank of the Bid.

BIDDERS SHALL ACKNOWLEDGE THIS ADDENDUM ON THE DESIGNATED LOCATION ON THE BID FORM.

1. CLARIFICATIONS:
    a. Asphalt mix designs shall be submitted after the project has been awarded. The following asphalt mixes will be utilized on this project.
        - Millsap (Refer to Section 403.04(a) in City of Fayetteville's Standard Specifications for Street and Drainage Construction):
            i. ACHM Surface- PG70-22, Surface Course 12.5mm(1/2"), ArDOT 2014 Spec
            ii. ACHM Binder - PG70-22, Binder Course 25.0mm(1"), ArDOT 2014 Spec
            iii. ACHM Base – PG70-22, Base Course 37.5mm(1.5"), ArDOT 2014 Spec
        - UofA Parking Lot and Driveways (Refer to Section 503.03(e) in City of Fayetteville's Standard Specifications for Street and Drainage Construction):
            i. Type II Surface Course (1/2")
2. QUESTIONS:
    a. Can the City confirm the quantities for Unclassified Excavation? The plans indicate 1,000CY for Millsap and 1,833 for Hemlock.
        - The quantities for Line Item 2.3 and Line Item 3.3 have been confirmed to be correct. Please note that both quantities are considered "Plan Quantity". Refer to Section 202.04(c) in City of Fayetteville's Standard Specifications for Street and Drainage Construction.
    b. An ARDOT specified barrier wall will be needed in all phases due to a drop off height greater that 24". Will this be a Line Item or should it be included with MOT?
        - The pricing should be included within Line Item 3.45 – Traffic Control and Maintenance. Please refer to Section 510 in City of Fayetteville's Standard Specifications for Street and Drainage Construction.

Telecommunications Device for the Deaf TDD (479) 521-1316 113 West Mountain - Fayetteville, AR 72701

CITY OF FAYETTEVILLE ARKANSAS

CITY COUNCIL MEMO
2026-2255

MEETING OF JUNE 30, 2026

TO: Mayor Rawn and City Council

THROUGH: Keith Macedo, Chief of Staff
Chris Brown, Public Works Director
Justin Bland, City Engineer

FROM: Paul Libertini, Staff Engineer

SUBJECT: **Millsap Rd & College Ave Intersection Improvements – Design Supplemental Agreement No. 1 with Burns & McDonnell Engineering Company, Inc.**

RECOMMENDATION:
A Resolution to approve Supplemental Design Agreement No. 1 with Burns & McDonnell Engineering Company in the amount of $93,785.00 for additional engineering services associated with the Millsap Rd & College Ave Intersection and Hemlock Ave Improvement project.

BACKGROUND:
The original design agreement with Burns & McDonnell Engineering Company, Inc. in the amount of $300,000 was executed on July 20, 2021. This project includes improvements to Millsap Road near the intersection with College Avenue. The improvements to Millsap Road include an additional lane west of College Avenue to provide additional left turning capacity, realignment of lanes on both sides of College Avenue, signalization timing and phasing improvements and installation of crosswalks and pedestrian signals. It also includes the design of the new 2-lane road extension of N. Hemlock Ave. from Sain St. to Millsap Rd.

DISCUSSION:
The design was finally completed in 2026, and the City held a bid opening on July 10, 2026. This has been a very difficult project working with the Arkansas Department of Transportation (ARDOT) and reacting to the many different levels of review comments especially in acquiring right of way. This project was required to obtain a second set of land appraisals and subsequent additional land acquisition from the same property owners. This supplemental design agreement covers redoing the legal descriptions, the land acquisition exhibits, coordinating with property owners, relocating a traffic signal pole, providing a water line relocation plan, and additional coordination with 5 franchise utilities which was not anticipated in the original scope.

BUDGET/STAFF IMPACT:
The additional professional services will be paid from the Street Projects 2024 Bonds fund.

ATTACHMENTS: 3. Staff Review Form, 4. 2026-2045 Burns McDonnell Supp Agr #1

113 West Mountain Street
Fayetteville, AR 72701
(479) 575-8323

File #: 2026-2255

A RESOLUTION TO APPROVE SUPPLEMENTAL AGREEMENT NO. 1 TO THE CONTRACT WITH BURNS & MCDONNELL ENGINEERING COMPANY, INC. IN THE AMOUNT OF $93,785.00 FOR ADDITIONAL ENGINEERING SERVICES ASSOCIATED WITH THE MILLSAP ROAD & COLLEGE AVENUE INTERSECTION AND HEMLOCK AVENUE IMPROVEMENT PROJECT

WHEREAS, on July 20, 2021, the City entered into the original design Agreement with Burns & McDonnell Engineering Company, Inc. to develop improvements to Millsap Road near the intersection with College Avenue; and

WHEREAS, this project was required to obtain a second set of land appraisals and subsequent additional land acquisition from the same property owners; and

WHEREAS, Supplemental Agreement No. 1 will cover redrafting the legal descriptions and land acquisition exhibits, coordinating with property owners, relocating a traffic signal pole, providing a water line relocation plan, and additional coordination with 5 franchise utilities which was not anticipated in the original scope.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FAYETTEVILLE, ARKANSAS:

Section 1: That the City Council of the City of Fayetteville, Arkansas hereby authorizes Mayor Rawn to sign Supplemental Agreement No. 1 to the agreement with Burns & McDonnell Company, Inc. in the amount of $93,785.00 for additional engineering services associated with the Millsap Road & College Avenue Intersection and Hemlock Avenue Improvement project.

City of Fayetteville Staff Review Form

2026-2045

Item ID

7/7/2026

City Council Meeting Date - Agenda Item Only
N/A for Non-Agenda Item

Paul Libertini	6/16/2026	ENGINEERING (621)
Submitted By	**Submitted Date**	**Division / Department**

Action Recommendation:

A Resolution to approve Supplemental Design Agreement No. 1 with Burns & McDonnell Engineering Company in the amount of $93,785.00 for additional engineering services associated with the Millsap Rd & College Ave Intersection and Hemlock Ave Improvement project.

Budget Impact:

4802.860.7227-5860.02	Street Projects 2024 Bonds
Account Number	Fund
46020.7227	Millsap/College Intersection Improvements
Project Number	Project Title

Budgeted Item?	Yes	Total Amended Budget	$	584,106.00
		Expenses (Actual+Encum)	$	263,491.00
		Available Budget	**$**	**320,615.00**
Does item have a direct cost?	Yes	Item Cost	$	93,785.00
Is a Budget Adjustment attached?	No	Budget Adjustment		
		Remaining Budget	**$**	**226,830.00**

V20221130

Purchase Order Number:

Previous Ordinance or Resolution # 189-21

Change Order Number:

Approval Date:

Original Contract Number:

Comments:

BURNS McDONNELL

AMENDMENT TO AGREEMENT FOR PROFESSIONAL SERVICES

AMENDMENT No. 1 **Date: April 20, 2026**

THIS AMENDMENT modifies the Agreement dated July 20, 2021, made by and between **Burns & McDonnell Engineering Company, Inc.,** (hereinafter called ENGINEER), and City of Fayetteville, Arkansas (hereinafter called CITY OF FAYETTEVILLE) for the following Project: MILLSAP ST/COLLEGE AVE INTERSECTION IMPROVEMENTS. For good and valuable consideration, the sufficiency of which is acknowledged, the parties agree to make the following changes to their Agreement.

1. The parties agree that the ENGINEER's Scope of Services is amended to include the following additions to Appendix A of the original Agreement:

WATERLINE RELOCATION DESIGN & PLANS

A. ENGINEER will develop construction documents to relocate approximately 300' of 8" water main along Millsap Rd, east of College Avenue. Documents to include the following:
   i. Plan and Profile sheet of the new water main, detailing extents of relocation. Services, valves, hydrants and other appurtances needed to relocate the water main to remove conflicts with the roadway construction.
   ii. Standard details relative to the scope of relocation work.
   iii. Update bid documents and project manual to include water main relocation scope of work.
   iv. Update opinion of probable construction cost to include water main relocation scope of work.

TRAFFIC SIGNAL DESIGN CHANGES

A. ENGINEER will update the construction documents to remove and replace the existing traffic signal pole and equipment loated in the SW quadrant of the intersection between Millsap and College. Updates will include revisions to 15 traffic signal sheets consisting of 3 different stages of construction and the permanent signal plans as well as updating the project manual, and opinion of probable construction cost.

PROJECT COORDINATION

The following scope items are hereby added due to coordination and project oversight by Arkansas Department of Transportation (ARDOT) now that the project has been awarded grant funds which will be administered by ARDOT.

A. ENGINEER will support CITY OF FAYETTEVILLE in project reviews by ARDOT, including but not limited to:
   i. Plan reviews – Revise drawings (as directed by the CITY OF FAYETTEVILLE), and provide responses to comments received from ARDOT.
   ii. Project manual updates – Revise and coordinate updates to project manual regarding items such as: ARDOT standard forms and special regulations, DBE goals, etc.
B. ENGINEER will support the CITY OF FAYETTEVILLE in resolution of ARDOT's comments regarding permanent easements and right of way by:
   i. Attend meetings with the CITY OF FAYETTEVILLE and ARDOT to discuss requriements and potential options to resolve comments.
   ii. Providing plan views of the project that show limits and areas of new permanent easements and right of way.
   iii. Provide cross section views of the project that support limits of new permanent easements and right of way.
C. ENGINEER will provide updated legal descriptions and exhibits for permanent easement and right-of-way acquisition resulting from the changes required by ARDOT. Legal descriptions and exhibits will be provided to CITY OF FAYETTEVILLE Land Agents for use in acquisition documents.
D. Project schedule and duration extended to accommodate Environmental Clearance (comp, and ARDOT project reviews)

FRANCHISE UTILITY RELOCATION – ADMINISTRATION ASSISTANCE

The following scope items are hereby added at the request of CITY OF FAYETTEVILLE.

A. ENGINEER will assist the CITY OF FAYETTEVILLE in administration of franchise utility relocations associated with this project by performing the following tasks:
   i. ENGINEER will communicate with 5 (five) franchise utility providers (AT&T, Cox Communications, Ritter Communications, AEP/SWEPCO, and Black Hills Energy), which have facilities that, based on what is readily visible at the ground surface, may require relcoation associated with this project.
   ii. ENGINEER will provide each franchise utility provider with a copy of the plans and DWG files for the project for use by the franchise utility provider to review and determine whether relocation of its facilities are necessary. ENGINEER is not responsible for a franchise utility provider failing to notify ENGINEER of a need for its facilities to be relocated.
   iii. ENGINEER will review relocation plans prepared by the franchise utility providers for general conformance with the project. ENGINEER will not perform a detailed review nor exhaustive conflict detection of the franchise utility provider's plans. CITY OF FAYETTEVILLE agrees that each franchise utility provider is solely responsible to design the relocation of their facilities in order to fully accommodate the project and ENGINEER is not liable for any conflicts discovered during construction.
   iv. ENGINEER will collect information from franchise utility providers regarding cost of relocations, reimbursement amounts, and schedules for work. ENGINEER assumes no liability for the accuracy of the cost estimates or schedules provided.
   v. ENGINEER will communicate with franchise utility providers to develop relocation agreements, and utility relocation work orders for the CITY OF FAYETTEVILLE review and authorization.
   vi. ENGINEER will perform monthly check-in with each franchise utility representative to determine status/progress of utility relocations for up to 6 (six) months, following issuance of work orders and Notice to Proceed by the CITY OF FAYETTEVILLE.

2. The following adjustments are made to the ENGINEER's compensation. The Lump Sum amount shall be **increased** by **$93,785,** to a total of **$393,785**.

3. The period of service and project schedule shall be **extended** to July 31, 2026, to accommodate project delays associated with project funding changes, ARDOT oversight, and additional services performed. It is anticipated that all scope of work, including project procurement, will be completed within this timeframe.

4. The terms of this AMENDMENT supersede any contrary terms of the Agreement. This AMENDMENT will be deemed a part of, and be subject to, all other terms and conditions of the Agreement. Except as modified above, the Agreement will remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this AMENDMENT on the day and year first written above.

OWNER: City of Fayetteville, Arkansas	**ENGINEER: Burns & McDonnell Engineering Company, Inc.**
By: _____	By: _____ Digitally signed by Steven Beam Date: 2026.04.30 13:52:34-05'00'
Name: Molly Rawn	Name: Steven Beam, P.E.
Title: Mayor	Title: Director

Attachment A-2A - Justification of Costs and Fees
April 20, 2026
Millsap St / College Ave Intersection Improvements

DESIGN CHANGES and ADDITIONAL TITLE I SCOPE

MANHOURS

TASK	PD	PM	SE	STFE	DES	ASST	TOTAL
#1 - Design, Relocation of 8" Water main on Millsap (east of College Ave) (Approx. 300 LF)		8		12	40		60
#2 - Design change to remove and replace existing traffic signal pole @ SW Quadrant of Intersection		24	48		24		96
After completion of 90% design, changes were requested to remove and replace the existing signal pole located in the SW corner of the intersection where previous design direction was to preserve it. This includes updates to 15 traffic signal sheets, consisting of 3 different stages, and permanent signal plans. Updating project manual, and opinion of probable construction cost.							
#2 - ARDOT Coordination and Project Oversight (Reviews, Comments, Responses, Design Changes, Project Manual, etc)		12		12	48		72
When the project was awarded grant funds, the project requirements were also changed. In support of this coordination with CITY OF FAYETTEVILLE, and ARDOT, ENGINEER performed multiple design updates and reviews, and produced supporting documents, etc.							
#3 - ARDOT Additional Right of Way and Permanent Easement Coordination (Responses, markups, meetings)		16			24		40
After ROW documents were approved, and acquisition was complete, ARDOT required acquisition of permanent grading easements along the corridor. This is the scope of work associated with supporting the city in these discussions regarding the new right of way requirements and permanent easements for the project. Multiple meetings, emails, phone calls, markups, responses, etc.							
#4 - ARDOT Additional Right of Way and Permanent Easement Legals and Esmt Exhibits)		8			40		48
This scope of work is associated with producing new easement exhibits and some new legal descriptions for areas where there was originally no TCE planned, such as the area along frontage of Raising Canes.							
#5 - Extended Schedule and project duration (original Project Duration 10 months)		20				20	40
The original project schedule was 10 months. The receipt of grant funds for the project, then subsequent environmental clearance and additional project reviews caused significant delays for the project, resulting in a current project duration of 4 years. This scope of work represents the additional project management and project administration needed to maintain and coordinate the project over that extended duration.							
#6 - Franchise Utility Relocation - Admin Assistance (5 Utility companies required to relocate)		75		50			125
Review Relocation Plans, Adapt ARDOT standard forms for use by CITY OF FAYETTEVILLE for Reimbursement. Reimbursement Breakdown, Relocation Agreement, Relocation Permit/Work Order (estimating 25 hours per utility)							
TOTAL MH - DESIGN CHANGES and ADDITIONAL TITLE I SCOPE	0	163	48	74	176	20	481

LABOR COSTS

Category - Description	Rate	MH	Amount
PD - Project Director	$275.00	0	$0
PM - Project Manager	$245.00	163	$39,935
SE - Senior Civil Engineer	$205.00	48	$9,840
STFE - Staff Civil Engineer	$175.00	74	$12,950
DES - Designer	$160.00	176	$28,160
ASST - Project Assistant	$145.00	20	$2,900
		Subtotal Labor Costs	**$93,785**

EXPENSES

ITEM	Quantity	Unit	Rate	Amount
			Subtotal Expenses	$0
			TOTAL COSTS - DESIGN CHANGES and ADDITIONAL TITLE I SCOPE	**$93,785**

BASIS OF ESTIMATE

Description

CITY OF
FAYETTEVILLE
ARKANSAS

TRANSPORTATION QUARTERLY PROGRESS REPORT

Asphalt Paving Program

04/01/2026 – 04/30/2026:

Crews continued efforts to complete the Ward 3 streets associated with Water and Sewer's water main replacement project. Prior to experiencing equipment issues, they successfully completed E. Ridgeway Dr., W. Ridgeway Dr., and N. Crestwood Dr.

Work was subsequently delayed when the asphalt tack truck suffered a major mechanical failure, placing it out of service for approximately 1.5 months.

While the asphalt tack truck was being repaired, crews remained productive by performing important facility maintenance activities, including cleaning and improving the exterior of the salt storage building. This work enhanced the appearance of the facility, improved site conditions, and helped preserve City assets while equipment repairs were underway.

Additionally, crews worked on service requests such as filling potholes, dipping ditches, cleaning drain boxes and storm pipes.

There were approximately 200 potholes repaired during the month of April.

Picture 1: N. Viewpoint Dr. & W. Ridgeway Dr.

Picture 2: N. Crestwood Dr. & W. Ridgeway Dr.

05/01/2026 – 05/31/2026:

The asphalt tack truck remained out of service throughout the month of May. Despite this setback, crews remained productive by performing a variety of maintenance activities, including pothole repairs, ditch regrading, cleaning of drainage inlets and storm pipes, and crack sealing.

During the month of May, crews repaired approximately 85 potholes and completed approximately 7,200 linear feet of crack sealing, helping to preserve roadway conditions and extend pavement service life.

Picture 3: Typical Pothole Repair

Picture 4: Crack Sealing

06/01/2026 – 06/30/2026:

By the beginning of June, the asphalt tack truck had been repaired, allowing paving operations to resume. They completed paving on N. Viewpoint Dr. and E. Applebury Dr. before moving to Monitor Rd. in Springdale, where a Water and Sewer transmission-line failure had caused significant roadway damage. Throughout the remainder of June, crews continued to focus on repairing streets damaged by water main failures.

Work planned for next quarter includes a Water and Sewer street repair on W. Dowell Dr., a mill and overlay on Cleveland St. as part of the Cleveland St. Sidewalk Improvement Project, and continued effort of the paving plan, with a particular focus on Ward 1.

Picture 5: E. Applebury Dr. (1)

Picture 6: E. Applebury Dr. (2)

Trails Program

04/01/2026 – 04/30/2026:

The trail crew continued work on the Hamstring Trail Project, focusing on the extension of N. Salem Rd. and the replacement of approximately 335 linear feet of existing asphalt trail. Installation of the new trail segment along Hamstring Creek could not proceed pending approval of the required flood study and issuance of the associated permit. Construction is anticipated to resume in late July or early August.

Picture 7: Salem Rd. Extension

Picture 8: Hamstring Trail Asphalt Replacement

05/01/2026 – 05/31/2026:

The trail crew started work on the Wedington Trail Project between N. Futrall Dr. and N. West End Ave. The crew replaced approximately 435 linear feet of existing 5-foot-wide sidewalk with a 10-foot-wide multi-use trail along W. Wedington Dr. Work was temporarily halted just short of N. West End Ave. to accommodate an ongoing utility project.

Picture 9: Wedington Trail (1)

Picture 10: Wedington Trail (2)

06/01/2026 – 06/30/2026:

The trail crew began work on the Alberta Trail Project. Construction started at W. Serviceberry Dr. and progressed west to S. Holland Dr., completing approximately 1,050 linear feet of the planned 1,816 linear feet of trail.

In late June, the crew returned to the Wedington Trail Project and completed the final connection to N. West End Ave., marking the completion of the project.

Picture 11: Alberta Trail (1)

Picture 12: Alberta Trail (2)

Picture 13: Alberta Trail (3)

Picture 14: Alberta Trail (4)

Next quarter, the crew will continue work on the Alberta Trail Project until the flood study is approved and the permit for the Hamstring Trail Project is issued. Once the permit is received, the crew will transition to the Hamstring Trail Project, where they are expected to remain for several months.

Sidewalk Program

04/01/2026 – 04/30/2026:

Up until mid-April, the sidewalk crew continued work on the Stephen Carr Memorial Project. Following completion of the memorial in mid-April, the crew returned to W. Cleveland St., where they continued installing drainage pipe, drop inlets, sidewalk, and curb and gutter improvements.

Picture 15: N. Willis Ave.

Picture 16: W. Cleveland St. and N. Willis Ave.

05/01/2026 – 05/31/2026:

The crew continued work on the W. Cleveland St. Sidewalk Project. As construction progressed, large sections of the project were cleaned and restored to allow property owners to regain access to their properties as quickly as possible. The crew worked diligently to maintain a clean, safe, and accessible job site throughout the duration of the project.

Picture 17: W. Cleveland St. & N. Willis Ave.

Picture 18: W. Cleveland St. & N. Belle Ave.

06/01/2026 – 06/30/2026:

By mid-June, the Cleveland St. Sidewalk Project was complete. The crews installed approximately:

- 532 linear feet of storm pipe
- 6 storm inlets
- 927 linear feet of curb and gutter
- 806 linear feet of sidewalk
- 5500 square feet of sod and topsoil

Picture 19: W. Cleveland St. & N. Leverett Ave.

Picture 20: W. Cleveland St. Sidewalk

Following the completion of the Cleveland St. Sidewalk Project, the crew shifted its focus to several high-priority service requests that had accumulated during construction. One of these requests involved replacing approximately 20 linear feet of guardrail that had been damaged in a vehicular accident.

Picture 21: W. 7th St. & Spout Spring Branch (1)

Picture 22: W. 7th St. & Spout Spring Branch (2)

Next quarter, the crew will begin work on W. Center St., where they will install approximately 290 linear feet of 8-foot-wide sidewalk. Following completion of that work, the crew will shift its focus to citizen-submitted maintenance requests.

Transit Stop Improvements

04/01/2026 – 04/30/2026:

The University of Arkansas received a shipment of 25 bus shelters from Brasco, which are currently being stored at the Razorback Transit yard. Assembly of the shelters began shortly after delivery with assistance from City staff.

Picture 23: Bus Shelter Assembly (1)

Picture 24: Bus Shelter Assembly (2)

05/01/2026 – 05/31/2026:

Progress slowed in May with the assembly of 4 bus shelters.

Picture 25: Bus Shelter Assembly (3)

Picture 26: Assembled Bus Shelters

06/01/2026 – 06/30/2026:

During the month of June, bus benches were installed by the local community group **Fayetteville Strong** at the following locations:

- College Ave. at Hobby Lobby
- Gregg Ave. & Township St.
- School Ave. & 7th St.
- School Ave. & 13th St.
- MLK Blvd. & Mashburn Ave.
- Huntsville Rd. & Morningside Dr.
- MLK Blvd. & College Ave.
- Fayetteville Library
- Dickson St. & Locust Ave.

Picture 26: Huntsville Rd. (1)

Picture 27: M.L.K. Blvd.(2)

Picture 28: School Ave.

Lastly, the City Council approved the contract with NEC Contractors Inc. for the installation of concrete bus pads.

In late June, NEC Contractors began the first round of bus pad installations. The following locations were included in this phase because of their close geographic proximity, allowing the contractor to complete the work more efficiently. This first round of installations is expected to be completed within one to two weeks.

- North Hills Blvd.
- Futrall Dr. & Wimberly Dr.
- Millsap Rd. & Plainview Ave.
- College Ave. & Masonic Dr.
- 7-Brew
- KJ Sushi
- College Ave. & Hobby Lobby
- Fiesta Square
- College Ave. & Med Express

Next quarter, we anticipate constructing 21 concrete bus pads and installing 25 bus shelters.

Bridge & Culvert Maintenance

Between November 2025 and March 2026, crews successfully completed maintenance activities on 17 bridges and culverts throughout Fayetteville. Work included joint sealing, streambank stabilization, mowing, brush removal, box culvert cleaning, and guardrail and foundation repairs.

Following March 2026, non-emergency bridge and culvert maintenance activities were suspended as crews were reassigned to focus on their individual work plans and seasonal priorities. Bridge and culvert maintenance operations are scheduled to resume in November 2026.

Attachments

2026-2027 Concrete Construction Work Plan

2026-2027 Paving Plan

2026 Proposed Shared-Use Paved Trail Construction Projects Plan

Projects highlighted in green are complete and projects highlighted in yellow are under construction or will be soon.

CITY OF FAYETTEVILLE ARKANSAS

2026-2027 CONCRETE CONSTRUCTION WORK PLAN

(196 WORKING DAYS)

2026 Sidewalk Design Projects

Project Street	From	To	Placement	Type	Length Feet	Width Feet	Ward	Construction Time (Days)
Nettleship St.	Eastern Ave.	Graham Ave.	South Side	New	320	6	1	TBD
Oakland Ave.	Cleveland St.	Douglas St.	East Side	Rep./ New	290	6	2	TBD

2026 Primary Sidewalk Construction Projects

Project Street	From	To	Placement	Type	Length Feet	Width Feet	Ward	Construction Time (Days)
Cleveland St.	Leverett Ave.	Willis Ave.	North Side	New	806	6	2	88
15th St.	College Ave.	Kelly Lynn Driveway	South Side	New	501	5	1	24
							SUBTOTAL	112

2026 Sidewalk Maintenance from Service Requests

Address	Ward	Description	Construction Time (Days)
4380 W. Pecan St.	1	Replace sidewalk 25 ft.	2
2133 S. Clover Dr.	1	Replace sidewalk 25 ft.	2
520 N. Washington Ave.	2	Replace sidewalk 75 ft.	4
311 W. Ila St.	2	Replace sidewalk 45 ft.	4
413 W. Center St.	2	Replace sidewalk 12 ft.	2
303 E. Sutton St.	2	Replace sidewalk 60 ft. & Replace curb 15 ft.	3
526 E. Lafayette St.	2	Replace sidewalk 40 ft.	3
251 E. Sycamore St.	2	Replace sidewalk 15 ft.	2
327 N. Willow Ave.	2	Install 4 ADA ramps	4
127 W. Mountain St.	2	Replace sidewalk 50 ft.	3
1018 N. Canterbury Rd.	3	Replace sidewalk 32 ft.	2
461 E. Fairway Ln.	3	Replace sidewalk 50 ft.	3
2507 N. Jimmie Ave.	3	Replace sidewalk 150 ft.	3
2531 N. Jimmie Ave.	3	Replace sidewalk 149 ft.	3
2515 E. Lancer St.	3	Replace sidewalk 25 ft.	2
E. Arapaho Dr.	3	Replace sidewalk 50 ft.	3
4677 W. Franciscan Trl.	4	Replace sidewalk 40 ft.	4
3103 N. Verona Ln.	4	Replace sidewalk 24 ft.	3
W. Ika Ln.	4	Replace sidewalk 40 ft.	3
2979 W. Ika Ln.	4	Replace sidewalk 42 ft.	3
3103 Verona Ln.	4	Replace sidewalk 25 ft.	3
E. Albright Rd.	4	Replace sidewalk 15 ft.	3
		SUBTOTAL	64

2026 Misc. Maintenance from Service Requests

Address	Ward	Description	Construction Time (Days)
841 W. Lorena Ln.	1	Replace curb 45 ft.	3
1815 W. Arrowhead St.	1	Replace curb 40 ft.	3
275 S. Duncan Ave.	2	Replace curb 6 ft.	2
1039 E. Bonnie Ln.	3	Replace curb 250 ft.	5
2838 W. Vanike Dr.	4	Replace curb 2 ft.	1
		SUBTOTAL	14
		TOTAL (*Days*)	190

2026 Unplanned Service Requests

Address	Ward	Description	Construction Time (Days)
W. 4th St.	1	Replace 50 ft. of sidewalk and curb	3
E. 7th St.	1	Replace curb 20 ft. & wingwall	3
W Persimmon St.	2	Replace 10 ft. sidewalk	2
W. Mountain St.	2	Replace 15 ft. sidewalk (Tree Well)	3
W. Mountain St.	2	Replace bollard seals	1
W. Sunrise Mountain	1	Inlet thoat repair	1
E. 28th Circle	1	Curb repair	1
		TOTAL	14

2027 Sidewalk Design Projects

Project Street	From	To	Placement	Type	Length Feet	Width Feet	Ward	Construction Time (Days)
Lindell Ave.	Hughs St.	Eagle St.	East Side	New	185	5	2	TBD
Leverett Ave.	Sycamore St.	Poplar St.	West Side	Rep.	1,325	6	2	TBD

2027 Primary Sidewalk Construction Projects

Project Street	From	To	Placement	Type	Length Feet	Width Feet	Ward	Construction Time (Days)
Nettleship St.	Eastern Ave.	Graham Ave.	South Side	New	320	6	1	TBD
Oakland Ave.	Cleveland St.	Douglas St.	East Side	Rep./ New	290	6	2	TBD

2026-2027 Secondary Sidewalk Construction Projects

Project Street	From	To	Placement	Type	Length Feet	Width Feet	Ward	Construction Time (Days)
Center St.	West Ave.	Razorback Greenway	South Side	New	288	8	2	24
Stearns St.	Joyce Ave.	Vantage Dr.	North Side	New	276	6	3	TBD
Hackberry Dr.	Amber Dr.	Overcrest St.	North Side	New	202	6	3	TBD

WARD 1												
Project ID	On Street	From Street	To Street	Pavement Width (ft)	Pavement Length (ft)	Pavement Area (yd2)	Current Segment PCI (CPCI)	Project Length (ft)	Project Current PCI	Rehab Activity	Average Unit Rate ($/yd2)	Segment Total Cost ($)	Whole Project Cost ($)
15441	S COBALT AVE	NORTH END	E PEACEFUL DR	20	109	254	80.8	852	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$4,636.00	$47,360.00
15441	S COBALT AVE	E PEACEFUL DR	E ROYAL DR	27	298	939	71.9	852	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$17,137.00	$47,360.00
15441	S COBALT AVE	E ROYAL DR	ALLEY 2443	27	119	376	72.8	852	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$6,862.00	$47,360.00
15441	S COBALT AVE	ALLEY 2443	E HISTORY ST	27	157	495	75.9	852	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$9,034.00	$47,360.00
15441	S COBALT AVE	E HISTORY ST	ALLEY 2547	27	168	531	74.5	852	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$9,691.00	$47,360.00
15631	S CHURCH AVE	W ROCK ST	W SOUTH ST	25	618	1,801	59.7	618	60	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$32,868.00	$32,868.00
3620	E HISTORY ST	S SUGARBUSH AVE	S DEAD HORSE MOUNTAIN RD	20	207	482	78	207	78	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$8,797.00	$8,797.00
3630	E HISTORY ST	S COBALT AVE	S SUGARBUSH AVE	27	555	1,747	74	756	75	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$31,883.00	$40,442.00
3630	E HISTORY ST	S DEAD HORSE MOUNTAIN RD	S SUGARBUSH AVE	20	201	469	78	756	75	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$8,559.00	$40,442.00
4900	E PEACEFUL DR	WEST END	S COBALT AVE	19	126	280	73	989	70	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$5,110.00	$48,563.00
4900	E PEACEFUL DR	S COBALT AVE	S SUGARBUSH AVE	25	668	1,948	70	989	70	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$35,551.00	$48,563.00
4900	E PEACEFUL DR	S SUGARBUSH AVE	S DEAD HORSE MOUNTAIN RD WC 55	19	195	433	71	989	70	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$7,902.00	$48,563.00
5300	E ROYAL DR	WEST END	S COBALT AVE	20	131	306	81	744	76	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$5,585.00	$39,512.00
5300	E ROYAL DR	S COBALT AVE	S SUGARBUSH AVE	26	613	1,859	75	744	76	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$33,927.00	$39,512.00
17660	S SUGARBUSH AVE	E PEACEFUL DR	E ROYAL DR	20	252	587	75.7	548	75	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$10,713.00	$22,704.00
17660	S SUGARBUSH AVE	E ROYAL DR	ALLEY 2443	19	144	319	78.2	548	75	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$5,822.00	$22,704.00
17660	S SUGARBUSH AVE	ALLEY 2443	E HISTORY ST	19	153	338	70	548	75	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$6,169.00	$22,704.00
											TOTAL	$240,246.00	0.89 MILES

WARD 2												
Project ID	On Street	From Street	To Street	Pavement Width (ft)	Pavement Length (ft)	Pavement Area (yd2)	Current Segment PCI (CPCI)	Project Length (ft)	Project Current PCI	Rehab Activity	Average Unit Rate ($/yd2)	Segment Total Cost ($)	Whole Project Cost ($)
9310	N GREGG AVE	W PROSPECT ST	W CLEBURN ST	26	310	939	79.1	617	86	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$17,137.00	$30,222.00
9310	N GREGG AVE	W CLEBURN ST	W HAWTHORN ST	20	307	717	94.5	617	86	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$13,085.00	$30,222.00
9320	N GREGG AVE	W HAWTHORN ST	W ADAMS ST	25	341	993	55.8	710	43	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$18,122.00	$44,895.00
9320	N GREGG AVE	W ADAMS ST	W NORTH ST	34	370	1,467	33.9	710	43	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$26,773.00	$44,895.00
3820	E JOHNSON ST	N OLIVE AVE	ALLEY 534	21	190	466	58	537	56	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$8,505.00	$21,809.00
3820	E JOHNSON ST	ALLEY 534	N MISSION BLVD	18	347	729	55	537	56	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$13,304.00	$21,809.00
11750	N PORTER RD	W WEDINGTON DR	W VALLEY DR	21	418	1,025	68.9	3081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$18,706.00	$156,166.00
11750	N PORTER RD	W VALLEY DR	W HATFIELD ST	20	55	127	70.6	3081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$2,318.00	$156,166.00
11750	N PORTER RD	W HATFIELD ST	W HOLLY ST	25	358	1,044	80.1	3081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$19,053.00	$156,166.00
11750	N PORTER RD	W HOLLY ST	W LAWSON ST	24	182	509	80	3,081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$9,289.00	$156,166.00
11750	N PORTER RD	W LAWSON ST	W CORNERSTONE PL	26	169	512	80.6	3081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$9,344.00	$156,166.00
11750	N PORTER RD	W CORNERSTONE PL	W MEGAN DR	24	342	959	60	3081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$17,502.00	$156,166.00
11750	N PORTER RD	W MEGAN DR	W SKYLER DR	25	276	804	66	3,081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$14,673.00	$156,166.00
11750	N PORTER RD	W SKYLER DR	W HOUSTON ST	25	508	1,482	82	3,081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$27,047.00	$156,166.00
11750	N PORTER RD	W HOUSTON ST	W SYCAMORE ST	25	334	975	88	3,081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$17,794.00	$156,166.00
11750	N PORTER RD	W SYCAMORE ST	DS@306N W SYCAMORE ST	24	306	856	82.7	3081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$15,622.00	$156,166.00
11750	N PORTER RD	DS@306N W SYCAMORE ST	ROUNDABOUT 1010	19	66	147	92.5	3081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$2,683.00	$156,166.00
11750	N PORTER RD	ROUNDABOUT 1010	N PORTER RD	15	67	117	95.1	3081	77	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$2,135.00	$156,166.00
14550	N WILSON AVE	W MAPLE ST	W ILA ST	24	379	1,062	22.8	379	23	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$19,382.00	$19,382.00
	ALLEY 444	E JOHNSON ST	E GUNTER ST	20	320	712		320		Pave Gravel Alley	$18.25	$12,994.00	$12,994.00
	ALLEY 456	E JOHNSON ST	E GUNTER ST	20	320	712		320		Pave Gravel Alley	$18.25	$12,994.00	$12,994.00
											TOTAL	$298,462.00	1.13 MILES

WARD 3												
Project ID	On Street	From Street	To Street	Pavement Width (ft)	Pavement Length (ft)	Pavement Area (yd2)	Current Segment PCI (CPCI)	Project Length (ft)	Project Current PCI	Rehab Activity	Average Unit Rate ($/yd2)	Segment Total Cost ($)	Whole Project Cost ($)
1970	E APPLEBURY DR	E HOPE ST	WEST END	27	294	935	32.9	294	33	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$17,064.00	$17,064.00
8100	N CRESTWOOD DR	W RIDGEWAY DR	W RIDGEWAY DR	26	1,856	5,631	89.2	1856	89	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$102,766.00	$102,766.00
5180	E RIDGEWAY DR	W RIDGEWAY DR	E SHADOWRIDGE DR	18	518	1,087	83.9	3052	89	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$19,838.00	$125,232.00
5180	E RIDGEWAY DR	E SHADOWRIDGE DR	PUBLIC 1350	20	1,332	3,108	89	3,052	89	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$56,721.00	$125,232.00
5180	E RIDGEWAY DR	PUBLIC 1350	W RIDGEWAY DR	19	1,203	2,667	92	3,052	89	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$48,673.00	$125,232.00
22560	W RIDGEWAY DR	N SHREWSBURY LN	E RIDGEWAY DR	24	136	380	80	863	84	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$6,935.00	$42,140.00
22560	W RIDGEWAY DR	E RIDGEWAY DR	N CRESTWOOD DR	21	473	1,159	88	863	84	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$21,152.00	$42,140.00
22560	W RIDGEWAY DR	N CRESTWOOD DR	N VIEWPOINT DR	26	254	770	81.7	863	84	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$14,053.00	$42,140.00
22570	W RIDGEWAY DR	N VIEWPOINT DR	E HAMMOND ST	19	1,289	2,856	89	1,808	88	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$52,122.00	$72,015.00
22570	W RIDGEWAY DR	E HAMMOND ST	E RIDGEWAY DR	18	519	1,090	85	1,808	88	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 50-60)	$18.25	$19,893.00	$72,015.00
12290	N ROSEWOOD DR	SOUTH END	N SHERYL AVE	38	269	1,199	87.3	269	87	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$21,882.00	$21,882.00
12821	N SHERYL AVE	N ROSEWOOD DR	WEST END	33	594	2,285	75.9	1033	79	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$41,701.00	$68,821.00
12821	N SHERYL AVE	N ROSEWOOD DR	E OAKS MANOR DR	29	439	1,486	82.7	1033	79	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$27,120.00	$68,821.00
	N OLD WIRE RD & N OLD MISSOURI RD INTERSECTION					2,500				EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$45,625.00	$45,625.00
											TOTAL	$495,545.00	1.74 MILES

WARD 4												
Project ID	On Street	From Street	To Street	Pavement Width (ft)	Pavement Length (ft)	Pavement Area (yd2)	Current Segment PCI (CPCI)	Project Length (ft)	Project Current PCI	Rehab Activity	Average Unit Rate ($/yd2)	Segment Total Cost ($)	Whole Project Cost ($)
12540	N SALEM RD	W WEDINGTON DR	PRIVATE 3400	45	377	1,978	68.7	3526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$36,099.00	$228,382.00
12540	N SALEM RD	PRIVATE 3400	W MICA ST	30	403	1,411	79	3,526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$25,751.00	$228,382.00
12540	N SALEM RD	W MICA ST	N TIMBERLINE DR	28	654	2,135	76	3,526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$38,964.00	$228,382.00
12540	N SALEM RD	N TIMBERLINE DR	W VASSAR ST	29	95	320	74	3,526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$5,840.00	$228,382.00
12540	N SALEM RD	W VASSAR ST	W CORNELL ST	30	269	940	81.1	3526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$17,155.00	$228,382.00
12540	N SALEM RD	W CORNELL ST	W PRINCETON ST	29	272	920	80.6	3526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$16,790.00	$228,382.00
12540	N SALEM RD	W PRINCETON ST	W YALE ST	29	270	912	79.6	3526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$16,644.00	$228,382.00
12540	N SALEM RD	W YALE ST	W HARVARD ST	29	268	908	79.1	3526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$16,571.00	$228,382.00
12540	N SALEM RD	W HARVARD ST	W BUCKEYE ST	28	273	892	83.4	3526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$16,279.00	$228,382.00
12540	N SALEM RD	W BUCKEYE ST	W ESSEX DR	27	267	841	62.6	3526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$15,348.00	$228,382.00
12540	N SALEM RD	W ESSEX DR	W FAIRFAX ST	29	274	926	51	3526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$16,900.00	$228,382.00
12540	N SALEM RD	W FAIRFAX ST	NORTH END	27	105	331	81.5	3526	74	EM/FWM + Moderate Overlay (2.0 - 3.0) + SP (PCI 40-50)	$18.25	$6,041.00	$228,382.00
											TOTAL	$228,382.00	0.67 MILES

	Length (mi)	% Length	Cost	% Cost
Ward 1	0.89	20.16%	$240,246.00	19.03%
Ward 2	1.13	25.51%	$298,462.00	23.64%
Ward 3	1.74	39.25%	$495,545.00	39.25%
Ward 4	0.67	15.08%	$228,382.00	18.09%
Total	4.43	100%	$1,262,635.00	100%

CITY OF FAYETTEVILLE ARKANSAS

2026 Proposed Shared-Use Paved Trail Construction Projects

2026

		Prioritization Score*	Funding	Rank	Ward	Feet	Miles
Hamestring Creek Trail	Salem Rd. to Rupple Rd. (1 Bridge)	45.5	Trail CIP	13	4	2,386	0.45
Wedington Trail	Futrall Dr. to West End	N/A	Trail CIP	N/A	2	593	0.11
Alberta Trail	Connection to Farmington Trails	36.3	Trail CIP	22	1	1,816	0.34
Drake Trail Extension to Gordon Long (Contractor)	Gordon Long Park to College Ave. (Includes a bridge over Scull Creek)	49.5	TAP Grant	11	3	4,535	0.86
Maple Street Cycle Track (Contractor)	Razorback Greenway to Garland Ave.	53.8	Safe Streets For All / U of A	3	2	2,699	0.51
Garland Avenue (Contractor)	Poplar to Drake St.	N/A	Trans. Bond & ARDOT	N/A	2	4,554	0.86
Highway 112 (Garland Ave./Howard Nickell) (ARDOT Project)	Truckers Drive to Howard Nickell Includes Clabber Creek Tunnel	N/A	ARDOT & Grants	N/A	4	6,373	1.21
Tsa La Gi Trail (Hwy 62 MLK & I-49) ARDOT Project	Best Way to Lefler Ln. & Shiloh Trail from MLK to 15th St. overpass to Town Branch	56.7	ARDOT & Grants	1	1	9,102	1.72
White River Greenway (River Commons)	St. Paul Trail to Dead Horse Mtn.	N/A	CPRG Grant Funded	N/A	1	12,856	2.43