CONTRACT DOCUMENTS
AND
SPECIFICATIONS
FOR

FAITHON P. LUCAS BOULEVARD PAVING AND DRAINAGE RECONSTRUCTION
(MCKENZIE ROAD TO E. CARTWRIGHT ROAD)
CITY CONTRACT NO. 2023-029

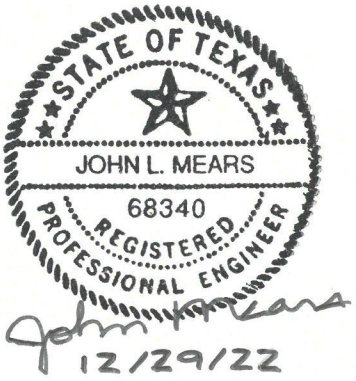
FOR THE CITY OF MESQUITE, TEXAS
PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION

MESQUITE
TEXAS
Real. Texas. Service.

Prepared by:

CITY OF MESQUITE
PUBLIC WORKS DEPARTMENT

BID OPENING: FEBRUARY 7, 2023



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TENTATIVE SCHEDULE

FOR

FAITHON P. LUCAS BOULEVARD

PAVING AND DRAINAGE RECONSTRUCTION

(MCKENZIE ROAD TO E. CARTWRIGHT ROAD)

City Contract No. 2023-029

1st Public Advertisement	Thursday, January 5, 2023
2nd Public Advertisement	Thursday, January 12, 2023
Pre-Bid Conference	2:00 p.m., Tuesday, January 17, 2023
Questions	3:00 p.m., Tuesday, January 24, 2023
Open Bids *(Bid openings are held on Tuesdays and Thursdays)*	2:00 p.m., Tuesday, February 7, 2023
Council Awards Contract (**Assumes no bidding irregularities or other issues with the low bidder requiring extensive checking of Qualifications)**	April 17, 2023
Notice to Proceed - Start Construction **(Assumes rapid execution of contract documents by the Contractor with proper insurance and bonds)**	May 22, 2023
Substantial Completion (570 Calendar Day Contract)	December 12, 2024

ADVERTISEMENT FOR BIDS

City Contract No. 2023-029

Sealed competitive bids or proposals as set forth and required in the plans and specifications (either of which shall hereinafter be referred to as the "Bid") addressed to the Mayor and City Council of the City of Mesquite, Texas will be received at the office of Ryan Williams, Manager of Purchasing at City Hall-Purchasing Division, 2nd Floor, 757 N. Galloway Ave., Mesquite, Texas 75149 until ***2:00 p.m. on Tuesday, February 7, 2023***, for the following: ***Faithon P. Lucas Boulevard Paving and Drainage Reconstruction (McKenzie Road to E. Cartwright Road)***
As set forth in the plans and specifications, the 1.59 mile project is to construct approximately 50,000 square yards of 10" thick concrete pavement over lime treated subgrade, 8,500 square yards of concrete trail, 4,000 square yards of concrete sidewalk, and 2,100 square yards of concrete driveway. The project includes approximately 7,200 linear feet of various size drainage RCP and RCBC, 4,400 linear feet of 6" to 18" water line, and 400 linear feet of various size sanitary sewer line. Also included is a 27,600 square foot concrete bridge with prestressed concrete beams.

A pre-bid conference will be held at 2:00 p.m. on Tuesday, January 17, 2023, at the City of Mesquite Arts Center located at 1527 N. Galloway Avenue, Mesquite, Texas 75149, in the Rehearsal Hall (first floor).

Instruction to Bidders: proposal forms, plans and specifications (the "Bid Documents") may be obtained from the Purchasing Department Website and from Periscope Holdings.

The Bid shall be submitted on the form provided in the Bid Documents. Vendors should check the Mesquite Purchasing Department website, http://www.cityofmesquite.com/674/Bid-Openings-Specifications-Conferences, and Periscope Holdings, https://www.cityofmesquite.com/678/Periscope-Bid-Openings, to view documents relating to this Bid. Questions shall be submitted through Periscope Holdings and response will be posted through Periscope Holdings.

Bidder must submit, with their Bid, a Cashier's check, Certified check or a Bid Bond from an approved surety company, in the amount of five percent (5%) of their Bid as a guarantee that the Bidder will enter into a contract and guarantee forms, if required, within 10 days after notice of award of contract.

The successful bidder must furnish both a Performance Bond and a Payment Bond, each in the amount of one hundred percent (100%) of the contract price, from an approved Surety company holding a permit from the State of Texas to act as surety, and acceptable according to the latest list of companies holding Certificates of Authority from the Secretary of the Treasury of the United States, or another Surety acceptable to the City.

Further information concerning the procurement may be obtained **by email only** from the City of Mesquite Engineering Division – *John Mears, PE, CFM, City Engineer, jmears@cityofmesquite.com.*

The right is reserved by the City of Mesquite to reject any and all bids.

CITY OF MESQUITE, TEXAS

_____

Sonja Land
City Secretary

CITY CONTRACT NO.: 2023-029
Publish: January 5, 2023
January 12, 2023

INSTRUCTIONS TO BIDDERS

1. If you have questions regarding the preparation of your bid, you may contact Ryan Williams, Manager of Purchasing, City of Mesquite, telephone 972-216-6201. For technical questions **send an email** to ***John Mears, PE, CFM email address jmears@cityofmesquite.com of assigned City Project Manager***.

2. Mailed bids must be submitted in sufficient time to be received and time-stamped at the location in the advertisement on or before the published date and time shown on the Advertisement for Bids. The City of Mesquite is not responsible for mail delivered from the post office. Bids received after the published date and time will not be considered and will be returned unopened.

3. The Bidder/Contractor shall at all times observe and comply with all Federal, State and local laws, ordinances and regulations which in any manner affect the Contract or the work and shall indemnify and save harmless the City against any claim arising from the violation of any such laws, ordinances and regulations whether by the Bidder/Contractor or his employees.

4. Prices shall be filled in and extended on the bid sheets. In case of discrepancy between unit price and the extension, the unit price will govern. Contractors may utilize the Microsoft Excel spreadsheet bid form available on the City's Purchasing Division web site. No other electronic forms will be accepted. A hard copy printout is required with the bid.

5. Bidder shall complete all information requested and blanks provided shall be filled in beside or under each bid item. Failure to completely describe the item being bid may result in rejection of the bid.

6. Prices quoted in the bid shall prevail for the entire term of the contract.

7. The Contract, Performance Bond and Payment Bond forms are included for Bidders information so that Bidders may be familiar with their contents and requirements. ***Bidder shall not fill in or execute these forms at time of bid submittal.***

8. The City of Mesquite reserves the right to reject any and all bids, waive formalities and to make award of bid as may be deemed to the best advantage of the City. No bid may be withdrawn within one hundred and fifty (150) days after date of opening. The City may, at its sole discretion, release any Bidder and return the bid security prior to that date.

9. The City of Mesquite reserves the right to evaluate variations from these specifications. If exceptions are made, bidder shall state wherein the bid item fails to meet these specifications. Failure to completely describe the item being bid may result in rejection of your bid.

10. Any ambiguity in the bid as a result of omission, error, lack of clarity or non-compliance by the Bidder with specifications, instructions and all conditions shall be construed in favor of the City.

11. Quantities are estimated. It is specifically understood and agreed that these quantities are approximate and any increase or decrease in quantities may result in contract adjustments per General Provision 104.2.

12. Disadvantaged business/HUB vendors listed with the Office of Small Business Assistance of the General Services Commission are requested to provide a copy of their current certificate with the bid.

13. Bidders shall complete the non-collusion statement included in the bid.

14. All BIDDERS must submit **with the bid**, either a Bid Bond provided herein, Cashier's Check or Certified Check in the amount of 5% of the total bid per General Provision Section 102.5.

15. Bidders shall fill out the following forms, as noted in the bid and attach them to their bid and mail or deliver them prior to the bid closing date and time to the City of Mesquite Purchasing Division, 1515 N. Galloway, Mesquite, Texas 75149:

- ❑ Bid Form (Proposal).
- ❑ Disadvantaged Business Enterprises (DBE) Information.
- ❑ Prohibition On Contracts with Companies Boycotting Israel – House Bill 89.
- ❑ Non-Collusion Statement.
- ❑ Conflict of Interest Questionnaire (CIQ).
- ❑ Bid Bond.

16. The **apparent low bidder** shall complete and deliver to the Engineering Division and City's Consulting Engineer **within 48-hours after the bid opening**, the following **Bidder's Qualification Information** documents:

- ❑ Qualification Statement of Bidder. If additional space is needed, please use attachments.
- ❑ Reference Statement of Bidder's Surety.
- ❑ Bidder's Release of Qualification Information.
- ❑ Bidder's List of Proposed Sub-contractors.
- ❑ Financial Statement Reviewed or Audited by an Independent Certified Public Accountant (CPA) in accordance with Generally Accepted Accounting Principles (GAAP), prepared in the last 12-months for the bidder's company.
- ❑ Non-Exclusion Affidavit – System for Award Management (SAM).
- ❑ Certificate of Interested Parties (Form 1295)
- ❑ IRS W9 Form – a pdf version of this form can be downloaded from the IRS website.
- ❑ Secretary of State Filing Certificate.

All nine (9) documents shall be delivered to the Engineering Division and City's Consulting Engineer as a single, complete package. No one form or statement will be accepted individually.

If a project is a "joint venture", all partners in the joint venture shall complete the qualification forms.

END OF SECTION

STANDARDS OF CONDUCT

The City of Mesquite conducts business with the public, business partners, vendors and contractors under a set of rules to ensure that all City officials and employees discharge their duties in a manner designed to promote public trust and confidence in our city. This code of ethics, titled Standards of Conduct, is taken from the Mesquite City Code, Chapter 2, Article IV, Sec 2-123.

The City wants you to be aware of the rules that its employees are required to follow while performing their services to you. A violation of state or federal statutes may occur if these rules are broken. It is hoped that by outlining these rules for you, your experience in dealing with the City of Mesquite will be both rewarding and satisfactory.

Acceptance of Gifts or Gratuities

Accepting gifts or gratuities by employees in consideration for the performance of their duties, or as an appreciation for their performance, is strictly prohibited.

- Please do not offer employees any gift, loans or any other thing of value.
- Employees may not receive any fee or compensation for their services from any sources other than the City, so please don't offer.
- Please do not offer to buy meals for employees.
- Employees may accept coffee, tea, soft drinks, snacks, etc. when attending meetings in your office.
- Letters to supervisors for exceptional service by employees are always welcome.

Conflicts of Interest

Employees are prohibited from engaging in any outside activities that conflict with, or have the appearance of conflicting with, the duties assigned to them in the employment of the City.

- Please do not ask employees for any special favor or consideration that is not available to every other citizen.
- Please do not ask an employee to disclose any information that is not available to every other citizen through normal public information channels.
- Please do not offer to compensate the employee by offering to hire, or do business with any business entity of the employee or family member
- Do not ask employees to represent you or your company or make any recommendations on your behalf other than those that are a part of their official duties with the City.
- Please do not ask employees to endorse the products or services of your company.
- Please do not ask employees to hand out or post advertising materials.

Solicitation by City Employees

Employees may not solicit gifts, loans, or any other items of value from people doing City business that will be used by them personally.

- If you are asked to pay a fee for services that you believe is improper or illegal, please contact the City's ethic's officer at **972-329-8723**. (Payments should only be made to designated cashiers or clerks.)
- Employees are prohibited from taking retaliatory action against you for failing to comply with any request unless the request is within the scope of the employee's official duties for the City.

Use of City Equipment, Facilities and Resources

Use of City equipment, facilities and resources is authorized only for City purposes and for those activities permitted by City ordinance and policy.

- Please do not ask employees to use City equipment to run errands or perform tasks for your benefit.
- Employees may not perform tasks, nor conduct any business not related to their official duties while on City time.

Your Rights and Expectations

When dealing with employees of the City of Mesquite you have the right to honest, fair and impartial treatment. You may expect prompt, courteous and professional service from our employees who are expected to understand and practice good customer service skills. Employees are tasked to uphold the public trust through the ethical performance of their duties. We understand that the enforcement of regulatory guidelines and codes may sometimes be a cause for concern; however, you may rest assured that we are responsible to all of the citizens of Mesquite and our goal is to serve them to the best of our ability.

Should you have any concerns or questions concerning this information or the conduct of any of our employees please contact the City's ethics officer at 972-329-8723. All calls to the City's ethics officer are confidential and your name (or any other identifying information) will not be disclosed.

Cliff Keheley
City Manager

BID SUBMITTAL

PROPOSAL

To: The Honorable Mayor and City Council Members
Purchasing Office – Municipal Center
City of Mesquite
1515 N. Galloway Avenue
Mesquite, Texas, 75149

Pursuant to the Advertisement for Bid, Proposal, Contract, Bond(s), General Provisions, Special Provision(s), and Requirements and the Plans and Technical Specifications, the undersigned Bidder hereby proposes to do all the work and furnish all necessary superintendence, labor, machinery, equipment, tools and materials, and to complete all the work upon which he bids, as provided by the Specifications, and binds himself, on acceptance of the proposal, to execute a contract and bonds, according to the City of Mesquite forms, for performing and completing the said work within the required time, and furnish all guarantees, for the following prices, and the undersigned certifies that the bid prices contained in this proposal have been carefully checked and are submitted as correct and final, to wit:

FAITHON P. LUCAS BOULEVARD PAVING AND DRAINAGE RECONSTRUCTION (MCKENZIE ROAD TO E. CARTWRIGHT ROAD)

CITY CONTRACT NO. 2023-029

BID FORM

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with CITY in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

2. Bidder accepts all of the terms and conditions of the Advertisement for Bids and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for one hundred and fifty days (150) after the Bid opening date, or for such longer period of time that Bidder may agree to in writing upon request of CITY.

3. In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

   A. Bidder has examined and carefully studied the Bidding Documents and the other related data identified in the Bidding Documents.

   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, and performance 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 and performance of the Work.

   D. Bidder has carefully studied all 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.

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

   F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the prices bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

   G. Bidder is aware of the general nature of work to be performed by CITY and others at the Site that relates to the Work as indicated in the Bidding Documents.

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

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

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

4. Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity 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 individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over CITY.

5. Bidder will complete the Work in accordance with the Contract Documents for the following prices:

FAITHON P. LUCAS BOULEVARD PAVING AND DRAINAGE RECONSTRUCTION
(MCKENZIE ROAD TO E. CARTWRIGHT ROAD)

CITY CONTRACT NO. 2023-029

MESQUITE, TEXAS

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
1	93	STA	PREPARING RIGHT-OF-WAY	$	$
2	1	LS	MOBILIZATION (MAX 5% OF BID TOTAL)	$	$
3	20	MO	TRAFFIC CONTROL PLAN, BARRICADES, SIGNS, AND TRAFFIC HANDLING PER TMUCD (DEVELOP AND IMPLEMENT)	$	$
4	2,000	SY	ASPHALT DETOUR PATCHING/ OVERLAY (2” THICK)	$	$
5	60	DAY	ELECTRONIC MESSAGE DISPLAY BOARD	$	$
6	1,000	LF	CONCRETE TRAFFIC BARRIERS (PORTABLE) (LOW PROFILE) (FURNISH, INSTALL & REMOVE)	$	$
7	1	LS	REMOVE TREES (12”-24” DIA.) (APRX. 200)	$	$
8	1	LS	REMOVE TREES (GREATER THAN 24” DIA.) (APRX. 100)	$	$
9	14,000	SY	REMOVE CONCRETE PAVEMENT INC. DRIVEWAY/CURB/ASPHALT OVERLAY	$	$
10	1,300	SY	REMOVE CONCRETE INC. SIDEWALK/ RIPRAP/ MOWSTRIP/BRICK PAVERS	$	$
11	20	EA	REMOVE SMALL CONCRETE STRUCTURES INC. INLETS/ HEADWALLS	$	$
12	2,300	LF	REMOVE DRAINAGE PIPE	$	$
13	600	LF	REMOVE CONCRETE BOX CULVERT	$	$
14	1,304	LF	REMOVE TRAFFIC RAIL FROM BRIDGE STRUCTURE	$	$
15	652	LF	REMOVE PEDESTRIAL RAIL FROM BRIDGE STRUCTURE (EXCLUDING STONE COLUMNS)	$	$
16	500	LF	REMOVE METAL BEAM GUARD FENCE	$	$
17	1	EA	REMOVE CATTLE GUARD	$	$
18	1	EA	REMOVE ODOR ELIMINATOR, COMPLETE	$	$
19	1	ALW	SITE INVESTIGATION FOR UTILITIES	$20,000.00	$20,000.00
20	1	LS	EXCAVATION (ROADWAY) (55,278 CY)	$	$
21	1	LS	EMBANKMENT (FINAL) (TY D) (DENSITY CONTROL) (63,906 CY)	$	$
22	56,000	SY	LIME TREATED SUBGRADE (6” THICK) (TYPE A) (DENSITY CONTROL)	$	$
23	1,232	TN	LIME (TYPE A) (SLURRY)	$	$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
24	1,000	SY	FLEX BASE (COMPLETE IN PLACE) (6” THICK) (TY D) (GRADE 1) (CLASS 5) FOR ACCESS	$	$
25	900	SY	HOT MIX ASPHALTIC CONCRETE PAVEMENT (TYPE “B”) (4” THICK)	$	$
26	900	SY	HOT MIX ASPHALTIC CONCRETE PAVEMENT (TYPE “D”) (2” THICK)	$	$
27	51,000	SY	CONCRETE PAVEMENT (10” THICK) (#5 REINFORCEMENT @ 18” O.C.E.W.) (4000 PSI)	$	$
28	400	SY	CONCRETE PAVEMENT (COLORED/STAMPED) (10” THICK) (#5 REINFORCEMENT @ 18” O.C.E.W.) (4000 PSI)	$	$
29	700	SY	CONCRETE PAVEMENT (8” THICK) (#4 REINFORCEMENT @ 18” O.C.E.W.) (4000 PSI)	$	$
30	700	SY	CONCRETE PAVEMENT (6” THICK) (#4 REINFORCEMENT @ 18” O.C.E.W.) (4000 PSI)	$	$
31	462	LF	CONCRETE PAVEMENT REINFORCED STREET HEADER	$	$
32	31,000	LF	CONCRETE MONOLITHIC CURB (6”)	$	$
33	368	LF	CONCRETE MOUNTABLE CURB (3”)	$	$
34	180	LF	CONCRETE MOUNTABLE CURB (6”)	$	$
35	140	SY	CONCRETE MONOLITHIC MEDIAN NOSE	$	$
36	5,000	SY	CONCRETE MEDIAN/PARKWAY (COLORED/ STAMPED) (4” THICK)	$	$
37	1,300	SY	CONCRETE DRIVEWAYS (6” THICK)	$	$
38	800	SY	CONCRETE DRIVEWAYS (8” THICK)	$	$
39	6,200	SY	CONCRETE SIDEWALK (4” THICK)	$	$
40	100	SF	CONCRETE SIDEWALK CURB (UP TO 12”)	$	$
41	10	CY	CONCRETE SIDEWALK WITH RETAINING WALL	$	$
42	3,000	SF	CONCRETE SIDEWALK THICKENED EDGE (12” THICK)	$	$
43	800	SF	CONCRETE SIDEWALK THICKENED EDGE FOR PED. RAIL (18” THICK)	$	$
44	10,500	SY	CONCRETE TRAIL (6” THICK)	$	$
45	30	CY	CONCRETE TRAIL WITH RETAINING WALL	$	$
46	24	SF	TRAIL SAFETY PLATE	$	$
47	550	LF	HANDRAIL	$	$
48	2,000	LF	PEDESTRIAN RAIL (TRAIL)	$	$
49	10	EA	REMOVABLE PIPE BOLLARD (5” DIA MIN)	$	$
50	6	EA	CONCRETE CURB RAMP (TY 1)	$	$
51	2	EA	CONCRETE CURB RAMP (TRAIL) (TY 1)	$	$
52	10	EA	CONCRETE CURB RAMP (TY 7)	$	$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
53	10	EA	CONCRETE CURB RAMP (TRAIL) (TY 7)	$	$
54	6	EA	CONCRETE CURB RAMP (TY 10)	$	$
55	6	EA	CONCRETE CURB RAMP (TY 20)	$	$
56	2	EA	CONCRETE CURB RAMP (TRAIL) (TY 20)	$	$
57	10	CY	CONCRETE RETAINING WALL (DRIVEWAY)	$	$
58	200	CY	CONCRETE RETAINING WALL (36” HEIGHT OR LESS)	$	$
59	100	CY	CONCRETE RETAINING WALL (GREATER THAN 36” HEIGHT)	$	$
60	1,000	SF	PAVESTONE RETAINING WALL	$	$
61	1	EA	CATTLE GUARD (16’)	$	$
62	12	EA	ADJUST MANHOLE TOP	$	$
63	15	EA	ADJUST WATER VALVE STACK TOP	$	$
64	2	EA	ADJUST GROUND BOX (SMALL)	$	$
65	2	EA	ADJUST GROUND BOX (LARGE)	$	$
66	956	LF	REINFORCED CONCRETE PIPE (24”) (CLASS III)	$	$
67	142	LF	REINFORCED CONCRETE PIPE (27”) (CLASS III)	$	$
68	225	LF	REINFORCED CONCRETE PIPE (30”) (CLASS III)	$	$
69	67	LF	REINFORCED CONCRETE PIPE (36”) (CLASS III)	$	$
70	65	LF	REINFORCED CONCRETE PIPE (42”) (CLASS III)	$	$
71	64	LF	REINFORCED CONCRETE PIPE (48”) (CLASS III)	$	$
72	1,255	LF	REINFORCED CONCRETE PIPE (54”) (CLASS III)	$	$
73	769	LF	REINFORCED CONCRETE PIPE (60”) (CLASS III)	$	$
74	209	LF	REINFORCED CONCRETE PIPE (72”) (CLASS III)	$	$
75	182	LF	REINFORCED CONCRETE PIPE (36”) (CLASS IV)	$	$
76	279	LF	REINFORCED CONCRETE PIPE (42”) (CLASS IV)	$	$
77	54	LF	REINFORCED CONCRETE PIPE (54”) (CLASS IV)	$	$
78	616	LF	REINFORCED CONCRETE PIPE (72”) (CLASS IV)	$	$
79	35	LF	REINFORCED CONCRETE BOX CULVERT (6’ x 6’)	$	$
80	2,106	LF	REINFORCED CONCRETE BOX CULVERT (7’ x 6’)	$	$
81	166	LF	REINFORCED CONCRETE BOX CULVERT (12’ x 8’)	$	$
82	100	LF	PVC DRAINAGE PIPE (8”)	$	$
83	1	EA	STANDARD CURB INLET (5’)	$	$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
84	2	EA	STANDARD CURB INLET (10')	$	$
85	1	EA	RECESSED CURB INLET (10') (COMPLETE)	$	$
86	23	EA	RECESSED CURB INLET (20') (COMPLETE)	$	$
87	2	EA	DOUBLE SPECIAL TYPE "Y" INLET	$	$
88	1	EA	TYPE "B" STORM DRAIN MANHOLE (4' x 4')	$	$
89	1	EA	TYPE "B" STORM DRAIN MANHOLE (5' x 4')	$	$
90	6	EA	TYPE "B" STORM DRIAN MANHOLE (6' x 4')	$	$
91	1	EA	TYPE "B" STORM DRAIN MANHOLE (7' x 4')	$	$
92	1	EA	TYPE "B" STORM DRAIN JUNCTION BOX (8' x 4')	$	$
93	1	EA	TYPE "B" STORM DRAIN JUNCTION BOX (8' x 5')	$	$
94	1	EA	TYPE "B" STORM DRAIN JUNCTION BOX (8' x 6')	$	$
95	1	EA	TYPE "B" STORM DRAIN JUNCTION BOX (8' x 8')	$	$
96	1	EA	TYPE "B" STORM DRAIN JUNCTION BOX (15' x 10')		
97	1	EA	CONCRETE HEADWALL (TxDOT PW) (3:1) (6' x 6' RCBC)	$	$
98	1	EA	CONCRETE WINGWALL (TxDOT FW) (3:1) (7' x 6' RCBC)	$	$
99	2	EA	CONCRETE WINGWALL (TxDOT SW) (4:1) (12' x 8' RCBC)	$	$
100	2	EA	TYPE "B" HEADWALL (36")	$	$
101	1	EA	SLOPING HEADWALL (SET) (TY II) (42") (4:1)	$	$
102	300	SY	CONCRETE RIPRAP (5" THICK)	$	$
103	10	SY	CONCRETE FLUME (6" THICK)	$	$
104	700	SY	GROUTED ROCK RIPRAP (TY R)	$	$
105	100	SY	ROCK RIPRAP (DRY) (TY R) (18")	$	$
106	100	CY	GABION BASKETS (3' x 3')	$	$
107	500	SY	FLEX-A-MAT	$	$
108	100	CY	FLOWABLE BACKFILL	$	$
109	7,290	LF	TRENCH EXCAVATION PROTECTION (PLAN AND IMPLEMENT) (DRAINAGE)	$	$
110	900	LF	DRILLED SHAFT FOUNDATION (36" DIA) (BRIDGE)	$	$
111	252	CY	CLASS C CONCRETE (BRIDGE)	$	$
112	27,600	SF	REINFORCED CONCRETE SLAB	$	$
113	3,582	LF	PRESTRESSED CONCRETE BEAMS (Tx46)	$	$
114	2,961	SY	CONCRETE SURFACE TREATMENT	$	$
115	103	CY	RIPRAP (CL B CONC.) (BRIDGE)	$	$
116	210	LB	SIDEWALK COVER PLATE	$	$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
117	2,610	LF	RAILING (TYPE C411-MOD)	$	$
118	1,306	LF	PEDESTRIAN RAIL (BRIDGE) INCLUDING SEVEN STONE COLUMNS	$	$
119	116	LF	SEJ-M (4”)	$	$
120	255	CY	STRUCTURE APPOACH SLAB	$	$
121	4	EA	METAL BEAM GUARD FENCE TRANSITION SECTION	$	$
122	100	LF	METAL BEAM GUARD FENCE	$	$
123	4	EA	METAL BEAM GUARD FENCE SGT-7	$	$
124	4,000	LF	TEMPORARY 5-STRAND WIRE FENCE W/METAL POSTS	$	$
125	2,000	LF	5-STRAND BARBED WIRE FENCE W/METAL POSTS	$	$
126	4,000	LF	GALVANIZED WOVEN WIRE FENCE W/ TWO STRANDS BARBED WIRE AND WOOD POSTS (TY “B”) (WF (1)-10)	$	$
127	200	LF	CHAIN LINK FENCE (5’) (BLACK PVC COATED)	$	$
128	2	EA	METAL GATE (TY 1) (WF (1)-10)	$	$
129	4	EA	METAL GATE (TY 2) (6” MESH) (WF (1)-10)	$	$
130	1	ALW	FENCE REPAIR/ INSTALLATION ALLOWANCE	$100,000.00	$100,000.00
131	1	ALW	IRRIGATION AND LANDSCAPING REPAIR/ INSTALLATION ALLOWANCE	$100,000.00	$100,000.00
132	8,500	LF	CONDUIT (PVC) (SCH 40) (2”)	$	$
133	100	LF	CONDUIT (PVC) (SCH 40) (2”) (BORE)	$	$
134	1,050	LF	CONDUIT (PVC) (SCH 40) (4”)	$	$
135	625	LF	CONDUIT (PVC) (SCH 40) (4”) (BORE)	$	$
136	7	EA	GROUND BOX (TY C) (W/APRON)	$	$
137	4	EA	ONCOR GROUND BOX	$	$
138	8	EA	IRRIGATION GROUND BOX		
139	2	EA	ELECTRICAL SERVICE (TY D) (120/240) (070(NS)SS(E)PS(U))	$	$
140	58	EA	ROADWAY LIGHTING ASSEMBLY (LED RECTANGULAR)	$	$
141	80	EA	SMALL ROAD SIGN ASSEMBLY & SUPPORT	$	$
142	10,000	SY	TEMPORARY DETOUR PAVEMENT (4” FLEX BASE/4” ASPHALT AS SPECIFIED), COMPLETE	$	$
143	2,000	EA	WORK ZONE PAVEMENT MARKINGS (4” TWO-WAY REFLECTIVE WHITE BUTTONS)	$	$
144	4,000	EA	WORK ZONE PAVEMENT MARKINGS (4” TWO-WAY REFLECTIVE YELLOW BUTTONS)	$	$
145	270	LF	WORK ZONE PAVEMENT MARKINGS (4” REFLECTIVE WHITE) (DOT)	$	$
146	110	LF	WORK ZONE PAVEMENT MARKINGS (4” REFLECTIVE YELLOW) (DOT)	$	$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
147	320	LF	WORK ZONE PAVEMENT MARKINGS (6” OR 8” REFLECTIVE WHITE) (SOLID)	$	$
148	25	LF	WORK ZONE PAVEMENT MARKINGS (12” REFLECTIVE WHITE) (SOLID)	$	$
149	360	LF	WORK ZONE PAVEMENT MARKINGS (FIRE LANE) (SOLID)	$	$
150	1	EA	WORK ZONE PAVEMENT MARKINGS (ARROW)	$	$
151	1	EA	WORK ZONE PAVEMENT MARKINGS (WORD)	$	$
152	2,168	LF	REFLECTORIZED PAVEMENT MARKINGS (TY I & II) (4” WIDE) (WHITE) (SOLID)	$	$
153	1,113	LF	REFLECTORIZED PAVEMENT MARKINGS (TY I & II) (6” WIDE) (WHITE) (SOLID)	$	$
154	1,556	LF	REFLECTORIZED PAVEMENT MARKINGS (TY I & II) (8”” WIDE) (WHITE) (SOLID)	$	$
155	414	LF	REFLECTORIZED PAVEMENT MARKINGS (TY I & II) (12”” WIDE) (WHITE) (SOLID)	$	$
156	175	LF	REFLECTORIZED PAVEMENT MARKINGS (TY I & II) (18”” WIDE) (WHITE) (BROKEN)	$	$
157	197	LF	REFLECTORIZED PAVEMENT MARKINGS (TY I & II) 24”” WIDE) (WHITE) (SOLID)	$	$
158	12	EA	REFLECTORIZED PAVEMENT MARKINGS (TY I & II) (WHITE) (ARROW)	$	$
159	6	EA	REFLECTORIZED PAVEMENT MARKINGS (TY I & II) (WHITE) (WORD)	$	$
160	20	EA	REFLECTORIZED PAVEMENT MARKINGS (TY I & II) (WHITE) (YIELD)	$	$
161	2,680	EA	RAISED PAVEMENT MARKER (TY II-C-R)	$	$
162	24	EA	RAISED PAVEMENT MARKER (TY Y)	$	$
163	66	EA	RAISED PAVEMENT MARKER (TY II-A-A)	$	$
164	10	EA	RAISED PAVEMENT MARKER (TY II-B-B)	$	$
165	42	EA	RAISED PAVEMENT MARKER (TY II-C-C)	$	$
166	1	LS	SWPPP PREPARATION AND IMPLEMENTATION	$	$
167	11,000	LF	INSTALL TEMPORARY SEDIMENT CONTROL FENCE W/PLASTIC CAPS	$	$
168	11,000	LF	REMOVE TEMPORARY SEDIMENT CONTROL FENCE	$	$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
169	550	LF	INSTALL TEMPORARY SEDIMENT CONTROL INLET PROTECTION	$	$
170	550	LF	REMOVE TEMPORARY SEDIMENT CONTROL INLET PROTECTION	$	$
171	250	SY	INSTALL CONSTRUCTION EXITS (ROCK) (TY I)	$	$
172	250	SY	REMOVE CONSTRUCTION EXITS	$	$
173	250	LF	INSTALL ROCK FILTER DAMS (TY II)	$	$
174	250	LF	REMOVE ROCK FILTER DAMS	$	$
175	2,000	SF	SPECIAL SHORING	$	$
176	50,000	SY	BERMUDA SOD (COMMON)	$	$
177	200,000	SF	BERMUDA HYDROMULCH (COMMON)	$	$
W.1	230	LF	INSTALL 6” C900 (DR 18) PVC WATER LINE	$	$
W.2	622	LF	INSTALL 8” C900 (DR 18) PVC WATER LINE	$	$
W.3	2,141	LF	INSTALL 12” C900 (DR 18) PVC WATER LINE	$	$
W.4	149	LF	INSTALL 16” C900 (DR 18) PVC WATER LINE	$	$
W.5	1,214	LF	INSTALL 18” C151 (CLASS 52) DUCTILE IRON WATER PIPE	$	$
W.6	6	TON	EXTRA DUCTILE IRON FITTINGS NOT SHOWN ON PLANS	$	$
W.7	10	EA	FIRE HYDRANT ASSEMBLY	$	$
W.8	8	EA	REMOVE AND SALVAGE EXISTING FIRE HYDRANT	$	$
W.9	10	EA	6” GATE VALVE	$	$
W.10	6	EA	8” GATE VALVE	$	$
W.11	8	EA	12” GATE VALVE	$	$
W.12	1	EA	16” GATE VALVE	$	$
W.13	3	EA	18” GATE VALVE	$	$
W.14	8	EA	CONNECT TO EX. 12” W.L.	$	$
W.15	1	EA	CONNECT TO EX. 16” W.L.	$	$
W.16	1	EA	CONNECT TO EX. 20” W.L.	$	$
W.17	8	EA	CUT & PLUG EX. 12” W.L.	$	$
W.18	1	EA	CUT & PLUG EX. 16” W.L.	$	$
W.19	1	EA	CUT & PLUG EX. 18” W.L.	$	$
W.20	1	EA	REMOVE AIR RELEASE VALVE	$	$
W.21	1	EA	AIR RELEASE VALVE ASSEMBLY	$	$
W.22	1	EA	WATER SERVICE (SHORT)	$	$
W.23	6	EA	WATER SERVICE (LONG)	$	$
W.24	60	LF	STEEL PIPE ENCASEMENT (20” DIA)	$	$
S.1	55	LF	INSTALL 2” SDR 26 SANITARY SEWER	$	$
S.2	313	LF	INSTALL 8” SDR 26 SANITARY SEWER	$	$
S.3	2	EA	REMOVE EX. MANHOLE		
S.4	1	EA	SANITARY SEWER MANHOLE (5’ DIA)	$	$
S.5	1	EA	SANITARY SEWER DROP MANHOLE (5’ DIA)	$	$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
S.6	1	EA	CONNECT SANITARY SEWER LINE TO EX. MANHOLE (REPAIR & SEAL CONNECTIONS)	$	$
S.7	6	EA	CONNECT SANITARY SEWER LINE TO PROP. MANHOLE (REPAIR & SEAL CONNECTIONS)	$	$
S.8	1	EA	CUT & PLUG EX. 6” S.S.	$	$
S.9	313	LF	GROUT ABANDONMENT OF EX. 6” S.S.	$	$
S.10	313	LF	TV INSPECTION OF NEW SANITARY SEWER LINE	$	$
S.11	1	LS	ODOR ELIMINATOR (HIGH FLOW VENTSORB) WITH CONCRETE FOUNDATION AND 6’ BOARD ON BOARD WOOD FENCE W/GATE	$	$
S.12	4,724	LF	TRENCH EXCAVATION PROTECTION (PLAN AND IMPLEMENT) (UTILITIES)	$	$

TOTAL BASE BID (Items 1 to S.12) **$ _____**

1. Materials incorporated into the Project: $ _____

2. All other charges: $ _____

NOTE: Materials and all other charges incorporated into the **FAITHON P. LUCAS BOULEVARD PAVING AND DRAINAGE RECONSTRUCTION (MCKENZIE ROAD TO E. CARTWRIGHT ROAD) CONTRACT NO. 2023-029** must equal base bid amount.

Pre-bid Inspection
The undersigned declares that he has personally inspected the site where the work is to be performed and that he has informed himself of all:

(1) surface and subsurface conditions, constraints, and facilities which may in any way affect the work, in terms of cost, time, and/or constructability;
(2) quantities, types, and nature(s) of materials to be incorporated into the work;
(3) types and specialties of equipment, tools, labor, and superintendence required to perform the work;
(4) other matters which in any way will affect the work and/or the performance of the work;
(5) project plans, specifications and other project documents.

Commencement and Execution
The undersigned bidder agrees to commence the work on or before the date so stated in the written notice to proceed and to diligently perform all of the work and to substantially complete the work **within 570 calendar days**. Time shall commence on the first day of move-in, but in no case later than the date so stated in the written notice to proceed.

The Time of Construction as given above shall include all work related to this project. Included in the above Time and Construction shall be the necessary utility work involved with the franchise utility companies (i.e. Natural Gas, Telecommunications, Cable Television, Electrical Power, etc.).

The right is reserved by the City as is advantageous to the City, to reject any and all bids, award a contract based upon submitted bids, or to re-bid the contract and to waive any and all formalities. Bidder understands and agrees that the unit prices provided above shall be used for all additions and deletions from the accepted option.

Bidder submits as guarantee that he will execute and issue the required contracts, bonds, insurance, and other required agreements and documents, as set forth under the contract, and general and special provisions of agreement, cashier's check or bid bond payable in full without conditions and upon demand to the City of Mesquite in the amount of:

_____ ($_____),
representing 5% of the Bidder's total base bid price.
Bidder understands and agrees that, should he fail to execute and issue the contract, bonds, insurance, other agreements, and other documents as set forth under the general and special provisions of agreement for that certain contract known as the **FAITHON P. LUCAS BOULEVARD PAVING AND DRAINAGE RECONSTRUCTION (MCKENZIE ROAD TO E. CARTWRIGHT ROAD), CITY CONTRACT NO. 2023-029** the City will cash or demand payment under the bid bond for payment of agreed upon liquidated damages. Bidder understands and agrees that, for bidding purpose only, liquidated damages shall be 5% of the Bidder's bid proposal, and that upon execution of the Contract, liquidated damages shall be as stated in the General Provisions.

Addenda
Contractor acknowledges receipt and incorporation into the bid of addendums as listed below:

Addendum No. 1 – Acknowledgement of Receipt: _____ ***(initial)***

Addendum No. 2 – Acknowledgement of Receipt: _____ ***(initial)***

Addendum No. 3 – Acknowledgement of Receipt: _____ ***(initial)***

Addendum No. 4 – Acknowledgement of Receipt: _____ ***(initial)***

Proposal Approval:

Company Name

Signature: Printed Name:

Title: Company Address

Telephone City State Zip Code

(If Bidder is a Corporation Seal Proposal with Corporate Seal)

SEAL

DISADVANTAGED BUSINESS ENTERPRISE (DBE) INFORMATION

Disadvantaged Business Enterprises (DBEs) are encouraged to participate in City of Mesquite's bid. The Purchasing Office will provide additional clarification on specifications, assistance with Bid Proposal Forms and further explanation of bidding procedures to those DBEs who request it.

Representatives from DBE companies should identify themselves as such and submit a copy of the Certification.

The City of Mesquite recognizes the certifications of both the State of Texas General Services Commission HUB Program and the North Central Texas Regional Certification Agency. All companies seeking information concerning DBE certification are urged to contact

State of Texas HUB Program General Services Commission PO Box 13047 Austin, TX 78711-3047 512-463-5872	OR	North Central Texas ***Regional Certification Agency*** 624 Six Flags Drive, Suite 216 Arlington, TX 76011 817-640-0606

If your company is already certified, attach a copy of your certification to this form and return with your bid.

_____
FIRM NAME SUBMITTING THE BID

_____ _____
REPRESENTATIVE TITLE OF AUTHORIZED REPRESENTATIVE

_____ _____
ADDRESS CITY, STATE, ZIP

_____ _____
TELEPHONE NUMBER FACSIMILE NUMBER

Indicate all that apply:

□ Minority-Owned Business Enterprise

□ Women-Owned Business Enterprise

□ Disadvantaged Business Enterprise

PROHIBITION ON CONTRACTS WITH COMPANIES BOYCOTTING ISRAEL

House Bill 89, effective September 1, 2017, amended the Texas Government Code to add Chapter 2270, Prohibition on Contracts with Companies Boycotting Israel. Effective September 1, 2017, a state agency and a political subdivision (which includes a city) may not enter a contract with a company for goods or services unless the contract contains a written verification from the company that: (i) it does not Boycott Israel; and (ii) will not Boycott Israel during the term of the contract.

"Boycott Israel" is defined to mean refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes. "Company" is defined to mean a for-profit organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company, or affiliate of those entities or business associations that exists to make a profit. The term "Company" does not include sole proprietorship.

I, _____, the _____
(Name of Certifying Official) (Title or Position of Certifying Official)

of _____,
(Name of Company)

does hereby verify on behalf of said company to the City of Mesquite that said company does not Boycott Israel and will not Boycott Israel during the term of this contract.

_____
Signature of Certifying Official

_____
Title

_____
Date of Certification

NON-COLLUSION STATEMENT

The undersigned affirms that they are duly authorized to execute this contract, that this company, corporation, firm, partnership or individual has not prepared this bid in collusion with any other bidder and that the contents of this bid as to prices, terms or conditions of said bid have not been communicated by the undersigned nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this bid.

Name of Company _____

Address _____

_____

Phone _____

Email _____

Fax _____

Bidder (Signature) _____

Bidder (Print Name) _____

Position with Company _____

Signature of
Company Official
Authorizing This Bid _____

Company Official
(Printed Name) _____

Official Position _____

SUBSCRIBED AND SWORN TO BEFORE ME, this _____ day of _____, 20___.

_____
(Notary Public in and for the State of Texas)

_____
(Printed Name of Notary)

My commission expires _____

CONTRACTING WITH THE CITY OF MESQUITE
Updated: January 8, 2016

Conflict of Interest Questionnaire
And Disclosure of Interested Parties (Form 1295)

YOU WILL BE REQUIRED TO COMPLY WITH THE FOLLOWING:

Chapter 176 of the Texas Local Government Code is an ethics law that was initially enacted by the Texas Legislature with HB 914 in 2005 that requires disclosure of employment and business relationships local government officers may have with contractors, consultants and vendors who conduct business with local government entities. The law applies to any written contract for the sale or purchase of real property, goods or services. Further information regarding Texas Conflict of Interest laws and the ***Conflict of Interest Questionnaire*** (Form CIQ) can be found at the Texas Ethics Commission web site at the following web address:

https://www.ethics.state.tx.us/filinginfo/conflict_forms.htm
PLEASE COMPLETE THE ATTACHED FORM CIQ AND SUBMIT WITH YOUR RESPONSE.

Section 2252.908 of the Texas Government Code was enacted in 2015, by the Texas Legislature pursuant to HB 1295, which provides that a governmental entity may not enter into certain contracts with a business entity on or after January 1, 2016, unless the business entity submits a disclosure of interested parties (Form 1295) to the governmental entity at the time the business entity submits the signed contract to the governmental entity. Further information regarding the disclosure of interested parties law and Form 1295 can be found at the Texas Ethics Commission web site at the following web address:

https://www.ethics.state.tx.us/filinginfo/1295/
PLEASE DO NOT COMPLETE FORM 1295 UNTIL YOU HAVE BEEN NOTIFIED OF CONTRACT AWARD AND REQUESTED TO ELECTRONICALLY FILE FORM 1295 WITH THE TEXAS ETHICS COMMISSION.

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of vendor who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 **Name of local government officer about whom the information is being disclosed.**

_____
Name of Officer

4 **Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.**

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes ☐ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

5 **Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.**

6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

_____ _____
Signature of vendor doing business with the governmental entity Date

Form provided by Texas Ethics Commission www.ethics.state.tx.us Revised 11/30/2015

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

***

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

BID BOND

Bond No.: _____
(by Surety)

STATE OF TEXAS §
§ **KNOW ALL MEN BY THESE PRESENTS:**
COUNTY OF DALLAS §

THAT _____, of the City of _____, _____County, State of Texas (hereinafter referred to as "Principal"), and _____, authorized under the laws of the State of Texas to act as Surety on bonds for principals (hereinafter referred to as "Surety") are held and firmly bound unto the City of Mesquite (hereinafter referred to as "City") in the penal sum of $_____ (an amount equal to 5% of the approximate total amount of the bid or if the bid is based upon alternates and/or addenda, at least 5% of the greatest amount bid by the bidder or Principal herein as evidenced in the Bid Proposal) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, by these presents;

WHEREAS the Principal has submitted on or about this date, a bid proposal offering to perform the following: **FAITHON P. LUCAS BOULEVARD PAVING AND DRAINAGE RECONSTRUCTION (MCKENZIE ROAD TO E. CARTWRIGHT ROAD) CITY CONTRACT NO. 2023-029** in accordance with the specifications and terms and conditions related thereto, to which reference is hereby made;

NOW, THEREFORE, the condition of this obligation is such that if the said Principal's offer as stated in the bid proposal is accepted by the City, and the said Principal executes and returns to the City the number of original counterparts of the contract required by the City, on the forms provided by the City, for the materials, equipment and/or services described herein and also executes and returns the same number of Performance, Payment and Maintenance Bonds, if required, on the forms provided by the City, within the time provided in the specifications, then this obligation is null and void, otherwise, it is to remain in full force and effect;

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument on this _____ day of _____, 20___.

PRINCIPAL:

_____
Signature

_____
Typed or Printed Name

Title:_____

Company:_____

Address:_____

_____

SURETY:

_____
Signature

_____
Typed or Printed Name

Title:_____

Company:_____

Address:_____

_____

SURETY'S DALLAS COUNTY REGISTERED AGENT FOR SERVICE (REQUIRED):

_____
Type or Printed Name

_____
Street Address (P.O. Box is not acceptable)

_____
City, State, and Zip Code

_____
Dallas County Telephone No.

BIDDER'S QUALIFICATION INFORMATION
(APPARENT LOW BIDDER)

1. The **apparent low bidder** shall complete and deliver to the Engineering Division and City's Consulting Engineer **within 48-hours after the bid opening**, the following **Bidder's Qualification Information** documents:

   - ❑ Qualification Statement of Bidder. If additional space is needed, please use attachments.
   - ❑ Reference Statement of Bidder's Surety.
   - ❑ Bidder's Release of Qualification Information.
   - ❑ Bidder's List of Proposed Sub-contractors.
   - ❑ Financial Statement Reviewed or Audited by an Independent Certified Public Accountant (CPA) in accordance with Generally Accepted Accounting Principles (GAAP), prepared in the last 12-months for the bidder's company.
   - ❑ Non-Exclusion Affidavit – System for Award Management (SAM).
   - ❑ Certificate of Interested Parties (Form 1295)
   - ❑ IRS W9 Form – a pdf version of this form can be downloaded from the IRS website.
   - ❑ Secretary of State Filing Certificate.

All nine (9) documents shall be delivered to the Engineering Division and City's Consulting Engineer as a single, complete package. No one form or statement will be accepted individually.

2. If the 48-hours deadline falls on a weekend or holiday, Bidder shall deliver the eight (8) documents to the Engineering Division and City's Consulting Engineer the next workday after the 48-hours.

3. If a project is a "joint venture", all partners in the joint venture shall complete the pre-qualification forms.

4. The low bidder shall be required to submit evidence that they have a practical knowledge and experience of the particular work bid upon and that they have the financial resources to complete the proposed work.

5. In determining the contractor's qualifications, the following factors will be considered: Work previously completed by the contractor; adequate plant and equipment to do the work properly and expeditiously; financial resources to meet all obligations incidental to the work; technical expertise and safety record.

QUALIFICATION STATEMENT OF BIDDER

Engineering Division
City of Mesquite
1515 N. Galloway Avenue
Mesquite, Texas 75149

Bidder: _____

Circle One: Sole Proprietor Partnership Corporation Joint Venture

Name: _____ Partner: _____

Address: _____ Address: _____

City: _____ City: _____

Phone: _____ Phone: _____

Principal Place of Business: Principal Place of Business:

_____ _____
County & State County & State

If the Bidder is a corporation, fill out the following:

State and County of Incorporation: _____

Location of Principal Office: _____

Contact Person(s) at Office: _____ Phone: _____

List Officers of the Corporation and person(s) authorized to execute Contracts on Behalf of the Corporation:

Name: _____ Title: _____

Name: _____ Title: _____

Name: _____ Title: _____

Name: _____ Title: _____

How many years has your organization been in business as a General Contractor? _____

Greatest number of contracts in excess of $100,000 under construction at one time in company's history: _____

Greatest number of contracts in excess of $500,000 under construction at one time in company's history: _____

Total approximate value of incomplete work outstanding: $ _____

List major projects of the type of work qualifying for or similar work completed in the last three years, give the following information for each project:

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Date of Completion: _____ Contract Price: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Date of Completion: _____ Contract Price: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Date of Completion: _____ Contract Price: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Date of Completion: _____ Contract Price: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Date of Completion: _____ Contract Price: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Date of Completion: _____ Contract Price: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Date of Completion: _____ Contract Price: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Date of Completion: _____ Contract Price: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Date of Completion: _____ Contract Price: _____

(If Necessary - List Additional Projects by Using Attachments)

List **incomplete** projects, including the following information for each incomplete project listed:

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Value of Incomplete Work: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Value of Incomplete Work: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Value of Incomplete Work: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Value of Incomplete Work: _____

Project: _____

Owner/Engineer: _____

Contact Person: _____ Phone: _____

Value of Incomplete Work: _____

(If Necessary - List Additional Projects by Using Attachments)

If company is under new management, please list names of staff and qualification and/or experience of said persons. (Please use attachments).

Have you or any present partner(s) or officer(s) failed to complete a contract? _____
If so, name of owner and/or surety:

Contact Person: _____ Phone: _____

List any unsatisfied demands upon you as to your accounts payable, please use attachments.

Bank Reference:

Bank: _____ City: _____

Address: _____ Phone: _____

Contact Officer: _____

Other Credit References:

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Phone: _____ Phone: _____

Municipal Reference:

City: _____

Contact Person: _____ Title: _____

Address: _____ Phone: _____

REFERENCE STATEMENT OF BIDDER'S SURETY

Bidder: _____

Address: _____

1. For this Bidder, how many contracts **that are now complete** has this surety furnished contract bonds? _____

2. For this Bidder, how many **incomplete contracts** has this surety furnished contract bonds? _____

3. What is the maximum bonding capacity of this Bidder? $ _____

4. Does the current financial information on this Bidder indicate solvency and a financial ability to complete this contract? _____

5. Does the information available to this surety indicate that the contractor pays accounts when due? _____

   If not, give details: _____

6. Is it the surety's opinion that the bidder has sufficient experience and financial resources to satisfactorily perform the contract? _____

7. Provided this bidder does not assume other commitments or that this surety does not acquire further information that in your opinion will materially affect the bidder's capacity to perform this contract, will you furnish the bonds as specified: _____

REMARKS:

_____

_____

_____

Surety: _____

Signed: _____

Title: _____

Address: _____ (Local office in Dallas County)

_____
City State Zip

Phone: _____

BIDDER'S RELEASE OF QUALIFICATION INFORMATION

Pursuant to advertisement for bids and in conformance with Instructions to Bidders for types of work outlined in Bidder's Statement of Qualifications, the undersigned is submitting information as required with the understanding that the purpose is for the City's confidential use, only to assist in determining the qualifications of Bidder's organization to perform the type and magnitude of work designated, and further, Bidder guarantees the truth and accuracy of all statements made, and will accept the City's determination of qualifications without prejudice. The surety herein named, any other bonding company(s), bank(s), subcontractor(s), supplier(s), or any other person(s), firm(s) or corporation(s) with whom Bidder has done business, or who have extended any credit to Bidder is (are) hereby authorized to furnish the City with any information the City may request concerning performance on previous work and Bidder's credit standing with any of them; and Bidder hereby releases any and all such parties from any legal responsibility whatsoever on account of having furnished such information to the City:

Signed: _____ Title: _____

Printed Name: _____ Email: _____

Bidder: _____ Date: _____

LOCATION OF LOCAL UNDERWRITING OFFICE OF PROPOSED SURETY (MUST BE IN DALLAS COUNTY)

Name: _____ Phone: _____

Printed Name: _____ Email: _____

Address: _____ City: _____ State: _____

BIDDER'S LIST OF PROPOSED SUB-CONTRACTORS

1. Sub-Contractor / Material Supplier:

Company Name: _____

Type of Work to Be Performed: _____

Contact Person: _____ Title: _____

Email: _____ Phone: _____

---

2. Sub-Contractor / Material Supplier:

Company Name: _____

Type of Work to Be Performed: _____

Contact Person: _____ Title: _____

Email: _____ Phone: _____

---

3. Sub-Contractor / Material Supplier:

Company Name: _____

Type of Work to Be Performed: _____

Contact Person: _____ Title: _____

Email: _____ Phone: _____

---

4. Sub-Contractor / Material Supplier:

Company Name: _____

Type of Work to Be Performed: _____

Contact Person: _____ Title: _____

Email: _____ Phone: _____

---

5. Sub-Contractor / Material Supplier:

Company Name: _____

Type of Work to Be Performed: _____

Contact Person: _____ Title: _____

Email: _____ Phone: _____

---

6. Sub-Contractor / Material Supplier:

Company Name: _____

Type of Work to Be Performed: _____

Contact Person: _____ Title: _____

Email: _____ Phone: _____

---

7. Sub-Contractor / Material Supplier:

Company Name: _____

Type of Work to Be Performed: _____

Contact Person: _____ Title: _____

Email: _____ Phone: _____

---

8. Sub-Contractor / Material Supplier:

Company Name: _____

Type of Work to Be Performed: _____

Contact Person: _____ Title: _____

Email: _____ Phone: _____

---

9. Sub-Contractor / Material Supplier:

Company Name: _____

Type of Work to Be Performed: _____

Contact Person: _____ Title: _____

Email: _____ Phone: _____

---

10. Sub-Contractor / Material Supplier:

Company Name: _____

Type of Work to Be Performed: _____

Contact Person: _____ Title: _____

Email: _____ Phone: _____

NON-EXCLUSION AFFIDAVIT - SYSTEM FOR AWARD MANAGEMENT (SAM)

Federal, state, and local government agencies, not-profits, and other organizations that use federal money to fund all or part of any program or project are required to follow specific requirements regarding the use of such federal funds. One of these requirements is that no contract, subcontract, grant, financial assistance, or other forms of assistance provided using federal funds may be awarded to individuals or entities that have been suspended, debarred, or otherwise excluded from participation in federally funded programs.

The U.S. federal government maintains a Web site known as the "System for Award Management" (SAM) at www.sam.gov. One of the purposes of the SAM Web site is to provide a comprehensive list of all individuals, firms, and other entities that have been suspended, debarred, or otherwise excluded from participation in federally funded contracts, subcontracts, grants, etc. SAM provides a simple means of helping government, non-profit agencies, and other organizations ensure that they do not award federally-funded grants, contracts, subcontracts, or other financial or non-financial benefits to any individual, firm, or other entity that has been excluded by any agency from participation in such federally funded activities.

I, _____ ***(Contractor Representative)***, hereby certify that neither I nor _____ ***(Name of the company or organization I represent)*** nor any subcontractors that I or said company may employ to work on any federally funded activity have been suspended, debarred, or otherwise excluded by any federal agency from participation in any federally funded activity. I further acknowledge my understanding that, before entering into a contract with me or with the company or organization I represent, City of Mesquite staff will perform a search on www.sam.gov to verify whether I, the organization I represent, or any subcontractors I may employ to work on any federally funded activity, have been excluded from participation in any federally funded activity.

_____ _____

Signature of Contractor Representative Date

Notary

Sworn to and subscribed before me this _____ day of _____, 20___

_____

Notary Public in and for _____ County, _____ (Insert State Name).

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties. Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.	**OFFICE USE ONLY**
1 **Name of business entity filing form, and the city, state and country of the business entity's place of business.**	
2 **Name of governmental entity or state agency that is a party to the contract for which the form is being filed.**	

3 **Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the goods or services to be provided under the contract.**

4 **Name of Interested Party**	**City, State, Country (place of business)**	**Nature of Interest (check applicable)**	
		Controlling	**Intermediary**

5 **Check only if there is NO Interested Party.** ☐

6 **AFFIDAVIT**

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

_____
Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said _____, this the _____ day of _____, 20 _____, to certify which, witness my hand and seal of office.

_____ _____ _____
Signature of officer administering oath | Printed name of officer administering oath | Title of officer administering oath

ADD ADDITIONAL PAGES AS NECESSARY

Form provided by Texas Ethics Commission www.ethics.state.tx.us Adopted 10/5/2015

CONTRACT AND BOND FORMS

NOTICE TO BIDDERS

The following blank spaces in the contract and bonds **are not to be filled in** by the Bidder at the time of submitting his proposal.

The contract and bond forms are submitted at this time to familiarize the Bidder with the form of contract and bonds that the successful Bidder will be required to execute.

CONTRACT CHECKLIST

City contracts must be checked to ensure they are ready for review and signature.

CHECK	CONTRACT ITEM:
	Are all blanks filled in, except for the signatures of the Mayor (or City Manager), City Secretary and City Attorney?
	The date the Contract is “made and entered into” should be the meeting date the bid was awarded by City Council (for contracts over $50,000), or the date of City Manager approval (for contracts under $50,000). Is the date of the contract correct?
	units x unit price = amount
	individual amounts = total base bid
	total bid = amount awarded by Council
	Company name is consistent throughout all contractual documents
	If the contractor is a corporation, the President or Vice-President of the corporation should sign the Contract. The Secretary of the corporation must then attest the signature and seal the Contract unless the contract form used provides for an acknowledgment by a notary.
	Contract total matches the awarded amount by Council
	Signed by authorized person for the company
	Printed name matches signed name
	The name of the person signing the Contract on behalf of the contractor and the City must be typed on the appropriate lines as well as their respective titles.
	If the Contract is revised by the striking-out or inserting of new language, both parties should initial the change.
	PERFORMANCE AND PAYMENT BONDS
	Performance Bond = 100% of Contract Amount (City Form) Includes a 1-year warranty period after City Acceptance for materials and workmanship.
	Check that the company name is identical to name listed in contract
	Check for same contract date (reference in top paragraphs)
	The name of the surety on the bond must appear the same on each page of the bond.
	Check for issuance date (date of contract or after)
	Check for same signature & title throughout bond.
	Check for typed name and title of the person signing bond and for legible signature.
	Check for agent in Dallas County.
	The items listed as work to be done must exactly match the improvements listed on the Contract.
	The surety’s seal (which is the seal of the bond company) must appear under the surety’s signature (not a notary’s seal). All corporate sureties have seals. The seal may be a legible facsimile seal, unless the instrument states otherwise.
	Payment Bond = 100% of contract amount (City form)
	Check that the company name is identical to name listed in contract
	Check for same contract date (reference in top paragraphs)
	The name of the surety on the bond must appear the same on each page of the bond.
	Check for issuance date (date of contract or after)
	Check for same signature & title throughout bond
	Check for typed name and title of the person signing bond and for legible signature.
	Check for agent in Dallas County
	The items listed as work to be done must exactly match the improvements listed on the Contract.

CHECK	CONTRACT ITEM:
	The surety's seal (which is the seal of the bond company) must appear under the surety's signature (not a notary's seal). All corporate sureties have seals. The seal may be a legible facsimile seal, unless the instrument states otherwise.
	INSURANCE-GENERAL
	Certificate of Insurance (ACORD form)
	Certificate of Insurance Supplemental Form
	Check that the company name is identical to name listed in contract
	Check the expiration date on policy to ensure it is current.
	Check for City of Mesquite listed as additional insured under General and Auto Liability Policies.
	Check for a waiver of subrogation in favor of the City of Mesquite under General and workers Compensation/Employers Liability.
	Workers Compensation $100,000 per occurrence
	INSURANCE-CONSTRUCTION
	Commercial Liability $500,000 per person/$1,000,000 per occurrence
	Contractual Liability property damage $500,000 per occurrence with general aggregate of $1,000,000
	Automobile combined single limit $500,000
	OTHER
	Filled out Certificate of Interested Parties - Form 1295
	Fill out and Submit Conflict of Interest Questionnaire (CIQ)
	IRS W9 Form Submitted for Setting Up Vendor Account and Processing Payment

Checked by: _____

Date: _____

Reset Form

INSURANCE CERTIFICATE ADMINISTRATORS	**Supplement to ACORD® 25 (Construction)**	DATE:	

Insured:	Certificate Holder(s):

Yes	No		
Commercial General Liability:			
		C-1	Provide, in the space below, the appropriate form number(s) of the Additional Insured endorsement(s): Ongoing Operations Completed Operations Attach a copy of the endorsement(s).
		C-2	Does the Other Insurance clause or an endorsement to the policy state that the CGL policy is primary for the Additional Insured if "agreed in writing in a contract or agreement that this insurance would be primary" or does it contain similar wording? If so, provide a copy of such similar wording clearly highlighting or referencing the applicable language.
		C-3	Does the Other Insurance clause or an endorsement to the policy state that the CGL policy is non-contributory for the Additional Insured if "agreed in writing in a contract or agreement that this insurance...would not seek contribution from any other insurance available to the additional insured " or does it contain similar wording? If so, provide a copy of such similar wording clearly highlighting or referencing the applicable language.
		C-4a	Does the definition of "insured contract" contain the words or phrase "caused in whole or in part by" or "sole negligence"? If YES, attach the policy definition clearly highlighting or referencing the applicable language.
		C-4b	Does the contractual liability provision contain a reference to "residential construction"? If YES, attach a copy clearly highlighting or referencing the applicable language.
		C-5	Is coverage under the policy limited to work performed within certain described operations and/or classification codes? If YES, attach the operations and/or classification codes.
		C-6	Is there a pollution exclusion in the "policy form"?
		C-6a	If C-6 is NO, has a pollution exclusion been added by endorsement?
		C-6b	If C-6 is YES, has a pollution endorsement been added?
Are the following specifically excluded?			
		C-7	Independent Contractors?
		C-8	Explosion? (X)?
		C-9	Collapse? (C)?
		C-10	Underground? (U)?
		C-11	Punitive Damages (other than Terrorism)?
		C-12	Third Party Over Actions?
		C-13	Residential Construction Operations? If YES, attach a copy of the exclusion.
		C-14	Prior Work? If YES, attach a copy of the exclusion.
Workers Compensation:			
Yes	No		
		C-1	Does Part 3 provide coverage for "All States"(other than monopolistic states) or list specific states? If specific states are listed, provide a list of the states.
		C-2	Is the Alternate Employer endorsement attached to the policy?
Excess/Umbrella Liabilities:			
The Excess/Umbrella policy is excess over which of the following primary policies?			
		C-1	Commercial General Liability Insurance
		C-2	Automobile Liability Insurance
		C-3	Employers Liability Insurance
		C-4	Pollution Liability Insurance (If provided by separate policy)
Yes	No		
		C-5	Does the policy include language addressing reduced or exhausted primary limits over which the policy is excess, frequently referred to as drop-down? If YES, provide a copy of such wording clearly highlighting or referencing the applicable language.
Notice of Cancellation:			
		C-1	Do all policies certified on the attached ACORD® 25 provide at least a 30 day notice to the certificate holder for cancellation (other than non-payment of premium)?

It is agreed that the coverages, endorsements and conditions shown on these pages are in effect and apply, as indicated, to the coverages certified on the attached ACORD® certificate of insurance. This form neither affirmatively nor negatively amends, extends nor alters the coverage afforded by the policy summarized hereon and is qualified by reference to the policy itself. This form does not constitute a contract between the issuing insurer(s), authorized representatives or producer, and the certificate holder.	**Signature:**

A25 01C (03-13)

CONTRACT

STATE OF TEXAS §
§ **KNOW ALL MEN BY THESE PRESENTS:**
COUNTY OF DALLAS §

THIS CONTRACT is made and entered into on _Insert Date_, 20___ by and between the **CITY OF MESQUITE, TEXAS**, a municipal corporation, of the County of Dallas and State of Texas, acting through Cliff Keheley, City Manager, hereinafter termed the CITY, and _**ENTITY NAME**_, a _What Type of Legal Entity_, with offices located at ___Full Street Address, City, State Zip Code___, hereinafter termed the CONTRACTOR.

WITNESSETH: That for and in consideration of the mutual covenants hereinafter set forth, the CITY and CONTRACTOR agree as follows:

I. DESCRIPTION OF WORK

The CONTRACTOR shall perform all of the work as specified in the contract documents such work generally described as:

FAITHON P. LUCAS BOULEVARD PAVING AND DRAINAGE RECONSTRUCTION (MCKENZIE ROAD TO E. CARTWRIGHT ROAD), CITY CONTRACT NO. 2023-029

Plans and Specifications prepared by:

ENGINEERING DIVISION, PUBLIC WORKS DEPARTMENT

All work shall be performed at the CONTRACTOR'S own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, bonds and other accessories and services necessary to complete the work, in accordance with the Contract documents.

II. CONTRACT DOCUMENTS

The Contract documents shall consist of the following:

1. this Contract;
2. all addenda issued prior to award of Contract;
3. the bid specifications including the advertisement for bid, instruction to bidders, bidder's bid form, plans, and drawings (if any);
4. the City of Mesquite General Design Standards;
5. the Standard Specifications for Public Works Construction (North Central Texas Fifth Edition November 2017), Division 100, as amended and supplemented by the City of Mesquite by Addendum (hereinafter referred to as the "General Provisions");
6. a Performance Bond in the sum of ONE HUNDRED PERCENT (100%) of the total Contract price, which Bond shall be in a form acceptable to the City, shall guarantee the work in accordance with the plans and specifications for a period of one (1) year after acceptance by the City, and shall provide for repair or replacement of all defects due to faulty material and/or workmanship that appear within a period of one (1) years from the date of

acceptance by the City;

7. A Payment Bond in the sum of ONE HUNDRED PERCENT (100%) of the total Contract price; and
8. the Contractor's bid/proposal and any other documents identified as pertaining to this Contract, all of which have been identified by the CITY and the CONTRACTOR.

These Contract documents constitute the entire agreement between the CITY and CONTRACTOR, and all are fully incorporated herein. The Contract documents are complementary and what is called for by one shall be as binding as if called for by all. In the event of an inconsistency in any of the provisions of the Contract documents, the inconsistency shall be resolved by giving precedence to the Contract documents in the order in which they are listed above. The Contract may be altered, amended or modified only as provided in the general or special provisions. These Contract Documents supersede all oral or written previous contemporaneous agreements between the parties relating to matter sin this Contract.

III. TIME OF COMMENCEMENT, COMPLETION AND LIQUIDATED DAMAGES

The work to be performed under this Contract shall be commenced by the CONTRACTOR upon final execution of this Contract and notice from the CITY to proceed. All work to be performed under this Contract shall be substantially completed within **570 calendar days** of the date of commencement of the work, subject to extensions of time provided in accordance with the Contract documents. Time is of the essence in this Contract and it is understood by the CONTRACTOR and CITY that actual damages caused by the failure of the CONTRACTOR to complete the work within the stated time are impractical or extremely difficult to fix or ascertain, and that per diem deduction from the Contract price shall be retained by the CITY as payment by the CONTRACTOR of liquidated damages, and not as penalty for such failure. Such liquidated damages to be assessed and retained are set forth in the General Provisions.

IV. CONTRACT PRICE

The CITY shall pay the CONTRACTOR for the performance of the work, subject to additions and deductions by change order or as otherwise provided in the provisions of this Contract, in current funds the Contract sum, which has been bid as a separated contract in compliance with the Texas Tax Code, as follows:

Total sum: **INSERT CONTRACT AMOUNT IN WORDS**
($ INSERT IN NUMBERS)

V. CONTRACT ADMINISTRATION

This Contract shall be administered on behalf of the CITY by **the Public Works Department** (referred to herein as "City Representative") and the CONTRACTOR shall fully comply with any and all instructions from said City Representative. With execution and delivery of the Contract, the CONTRACTOR shall furnish and file with the CITY in the amounts herein required, performance and payment bonds in accordance with the provisions of V.T.C.A. Government Code, Chapter 2253 if this is a public work contract in excess of fifty thousand dollars ($50,000.00).

VI. LABOR CLASSIFICATION AND MINIMUM WAGE SCALE

The CONTRACTOR is required to follow all provisions of Chapter 2258 of the Texas Government Code in the hiring and payment of all skilled and unskilled labor used on this contract. The CONTRACTOR must pay the prevailing wage rates as shown on the attached Wage Decision.

VII. DISCLOSURE OF CONFLICTS OF INTEREST AND COMPLIANCE WITH OTHER APPLICABLE LAWS

The CONTRACTOR shall at all times observe and comply with all Federal, State and local laws, ordinances and regulations including all amendments and revisions thereto, which in any manner affect the CONTRACTOR or the services and/or items to be provided, specifically and not limited to any ethics laws. In particular, the CONTRACTOR is put on notice that the CITY will require the CONTRACTOR to comply with Chapter 176 of the Texas Local Government Code by completing the attached Conflict of Interest questionnaire (FORM CIQ) and returning the completed FORM CIQ to the CITY. Additionally, CONTRACTOR must comply with Section 2252.908 of the Texas Government Code, which was enacted in 2015 by the Texas Legislature pursuant to HB 1295, providing that a governmental entity may not enter into certain contracts with a business entity on or after January 1, 2016, unless the business entity submits a disclosure of interested parties (FORM 1295) to the governmental entity at the time the business entity submits the signed contract to the governmental entity. Further information regarding the disclosure of interested parties law and instructions on filing FORM 1295 can be found at the Texas Ethics Commission web site at the following web address:

https://www.ethics.state.tx.us/filinginfo/1295/

VIII. INSURANCE

The CONTRACTOR agrees to provide and to maintain the types and amounts of insurance set forth in the General Provisions and to include the CITY as an additional insured in all policies providing coverage for the term of this Contract.

IX. CHOICE OF LAW, VENUE AND CONTRACT INTEPRETATION

The obligations of the Parties to this Contract shall be performable in Dallas County, Texas, and if legal action is necessary in connection with or to enforce rights under this Contract, exclusive venue shall lie in Dallas County, Texas

This Contract shall be governed by and construed in accordance with the laws and court decisions of the State of Texas, without regard to conflict of law or law principles of Texas or any other State. Although this Contract is drafted by the CITY, should any part be in dispute, the parties agree this Contract shall not be construed more favorably for either Party.

X. SEVERABILITY

If any part of this Contract shall be stricken for any reason whatsoever or found to be invalid or unenforceable, that part will be severed and the remainder of this Contract will continue in full force and effect.

XI. SURVIVAL

Any liabilities or obligations of a Party for acts or omissions prior to the cancellation or termination of this Contract, and any other provisions of this Contract which, by their terms, are contemplated to survive (or to be performed after) termination of this Contract, shall survive cancellation or termination thereof.

XII. MISCELLANEOUS

Pursuant to Section 2271.002, Texas Government Code, CONTRACTOR hereby (i) represents that it does not boycott Israel, and (ii) subject to or as otherwise required by applicable federal law, including without limitation 50 U.S.C. Section 4607, agrees it will not boycott Israel during the term of the Agreement. As used in the immediately preceding sentence, “boycott Israel” shall have the meaning given such term in Section 2271.001, Texas Government Code.

CONTRACTOR further represents that (i) it does not engage in business with Iran, Sudan or any foreign terrorist organization and (ii) it is not listed by the Texas Comptroller under Section 2252.153, Texas Government Code, as a company known to have contracts with or provide supplies or services to a foreign terrorist organization. As used in the immediately preceding sentence, “foreign terrorist organization” shall have the meaning given such term in Section 2252.151, Texas Government Code.

Pursuant to Texas Government Code Chapter 2274, unless otherwise exempt, if CONTRACTOR employs at least ten (10) fulltime employees and this Contract has a value of at least $100,000 that is paid wholly or partly from public funds of the governmental entity, CONTRACTOR represents that: (i) the CONTRACTOR does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and (ii) the CONTRACTOR will not discriminate during the term of the contract against a firearm entity or firearm trade association.

Pursuant to Texas Government Code Chapter 2274, unless otherwise exempt, if the CONTRACTOR is a company with at least ten (10) or more full-time employees and has value of at least $100,000 or more that is paid wholly or partly from public funds of the governmental entity, the CONTRACTOR represents that: (i) the CONTRACTOR does not boycott energy companies; and (ii) will not boycott energy companies during the term of the Contract.

XIII. AUTHORITY TO SIGN

The undersigned officers and/or agents of the parties hereto are the properly authorized officials and have the necessary authority to execute this Contract on behalf of the parties hereto.

IN WITNESS WHEREOF, the CITY and CONTRACTOR have executed this Contract in the year and day first written above.

CITY OF MESQUITE
(CITY)

By: _____
Cliff Keheley
City Manager

ATTEST:

By: _____
Sonja Land, City Secretary

APPROVED AS TO FORM:

By: _____
City Attorney or Designee

_____
(CONTRACTOR)

BY: _____
(signature)

TYPED NAME: _____

TITLE: _____

ATTEST:

_____

WAGE RATE

General Decision Number: TX20220025 01/07/2022

Superseded General Decision Number: TX20210025

State: Texas

Construction Type: Highway

Counties: Archer, Callahan, Clay, Collin, Dallas, Delta, Denton, Ellis, Grayson, Hunt, Johnson, Jones, Kaufman, Parker, Rockwall, Tarrant and Wise Counties in Texas.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022, Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least $15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022, Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least $11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/07/2022

* SUTX2011-007 08/03/2011

	Rates	Fringes
CONCRETE FINISHER (Paving and Structures)	$ 14.12	

ELECTRICIAN	$ 19.80
FORM BUILDER/FORM SETTER	
Paving & Curb	$ 13.16
Structures	$ 13.84
LABORER	
Asphalt Raker	$ 12.69
Flagger	$ 10.06
Laborer, Common	$ 10.72
Laborer, Utility	$ 12.32
Pipelayer	$ 13.24
Work Zone Barricade Servicer	$ 11.68
POWER EQUIPMENT OPERATOR:	
Asphalt Distributor	$ 15.32
Asphalt Paving Machine	$ 13.99
Broom or Sweeper	$ 11.74
Concrete Pavement Finishing Machine	$ 16.05
Concrete Saw	$ 14.48
Crane Operator, Lattice Boom 80 Tons or Less	$ 17.27
Crane Operator, Lattice Boom over 80 Tons	$ 20.52
Crane, Hydraulic 80 Tons or Less	$ 18.12
Crawler Tractor	$ 14.07
Excavator, 50,000 pounds or less	$ 17.19
Excavator, over 50,000 pounds	$ 16.99
Foundation Drill, Truck Mounted	$ 21.07
Foundation Drill, Crawler Mounted	$ 17.99
Front End Loader 3 CY or Less	$ 13.69
Front End Loader, over 3 CY	$ 14.72
Loader/Backhoe	$ 15.18
Mechanic	$ 17.68
Milling Machine	$ 14.32
Motor Grader, Fine Grade	$ 17.19
Motor Grader, Rough	$ 16.02
Pavement Marking Machine	$ 13.63
Reclaimer/Pulverizer	$ 11.01
Roller, Asphalt	$ 13.08
Roller, Other	$ 11.51
Scraper.	$ 12.96
Small Slipform Machine	$ 15.96
Spreader Box	$ 14.73
Servicer	$ 14.58
Steel Worker (Reinforcing)	$ 16.18
TRUCK DRIVER	
Lowboy-Float	$ 16.24
Off Road Hauler	$ 12.25
Single Axle	$ 12.31
Single or Tandem Axle Dump Truck.	$ 12.62
Tandem Axle Tractor with Semi Trailer	$ 12.86
Transit-Mix	$ 14.14

WELDER	$14.84

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 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) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union, which 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of 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. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Division National Office Branch of Wage Surveys. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write 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 the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write 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 by 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

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

PERFORMANCE BOND

Bond No. _____

STATE OF TEXAS §
§ **KNOW ALL MEN BY THESE PRESENTS:**
COUNTY OF DALLAS §

THAT _____, an _____, duly authorized to transact business in the State of Texas (hereinafter referred to as "Principal"), and _____ (hereinafter referred to as "Surety"), authorized under the laws of the State of Texas to act as Surety on bonds for principals are held and firmly bound unto the **City of Mesquite** (hereinafter referred to as "City") in the penal sum of **$_____** (not less than 100% of the approximate total amount of the Contract as evidenced in the Proposal) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, by these presents:

WHEREAS the Principal has entered into a certain written contract with the City, dated the _____ day of _____, 20__, for the **FAITHON P. LUCAS BOULEVARD PAVING AND DRAINAGE RECONSTRUCTION (MCKENZIE ROAD TO E. CARTWRIGHT ROAD), CITY CONTRACT NO. 2023-029** to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein;

NOW, THEREFORE, the condition of this obligation is such that if the said Principal fully and faithfully executes the work and performance of the Contract, as amended, in accordance with the Plans, Specifications and Contract Documents, including any extensions thereof, and according to the true intent and meaning of said Contract and the Plans and Specifications hereto annexed, then this obligation shall be void; otherwise, to remain in full force and effect.

PROVIDED, HOWEVER, that this Bond is executed pursuant to the provisions of V.T.C.A. Government Code Chapter 2253, Public Work Performance and Payment bonds, as amended, and Article 53.201 of the Property Code, and all liabilities on this Bond shall be determined in accordance with the provisions of said articles to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that the Bond shall automatically be increased by the amount of any change order or supplemental agreement which increases the Contract price with or without notice to the Surety and that no change, extension of time, alteration or addition to the terms of the Contract, or to the work performed thereunder, or the Plans, Specifications or Drawings accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder.

Surety must be approved by the Texas State Board of Insurance under Article 7.19-1 of the Insurance Code and authorized under the laws of Texas to act a surety on bonds for principals.

Surety agrees that the bond provides for the repairs and/or replacement of all defects due

to faulty materials and workmanship that appear within a period of **one (1) year** from the date of completion and acceptance of all the improvements by the City.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument on this the _____ day of _____, 20__.

PRINCIPAL:	**SURETY:**
_____	_____
Signature	Signature
_____	_____
Printed Name	Printed Name
_____	_____
Title	Title
_____	_____
Company	Company
_____	_____
Street Address	Street Address *(P. O. Box is not acceptable)*
_____	_____
City State Zip Code	City State Zip Code
_____	
Phone Number *(Dallas Telephone Number)*	

SURETY'S DALLAS COUNTY REGISTERED AGENT FOR SERVICE (REQUIRED):

Printed Name: _____

Title: _____

Company: _____

Street Address: _____
(P. O. Box is not acceptable)

_____
City State Zip Code

Phone Number: _____
(Dallas County Telephone Number)

(Attach dated Power of Attorney for Surety)

PAYMENT BOND

Bond No. _____

STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF DALLAS §

THAT _____, an _____, duly authorized to transact business in the State of Texas (hereinafter referred to as "Principal"), and _____ (hereinafter referred to as "Surety"), authorized under the laws of the State of Texas to act as Surety on bonds for principals are held and firmly bound unto the **City of Mesquite** (hereinafter referred to as "City") in the penal sum of **$_____** (not less than 100% of the approximate total amount of the Contract as evidenced in the Proposal) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, by these presents:

WHEREAS the Principal has entered into a certain written contract with the City, dated the _____ day of _____, 20__, for the **FAITHON P. LUCAS BOULEVARD PAVING AND DRAINAGE RECONSTRUCTION (MCKENZIE ROAD TO E. CARTWRIGHT ROAD), CITY CONTRACT NO. 2023-029** to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein;

NOW, THEREFORE, the condition of this obligation is such that the bond guarantees the full and proper protection of all claimants supplying labor and material in the prosecution of the work provided for in said Contract and for the use of each claimant, and that conversely should the Principal faithfully perform said Contract and in all respects duly and faithfully observe and perform all and singular the covenants, conditions and agreements in and by said Contract agreed to by the Principal, and according to the true intent and meaning of said Contract, and the claims and specifications hereto annexed, then this obligation shall be void; otherwise, to remain in full force and effect.

PROVIDED, HOWEVER, that this Bond is executed pursuant to the provisions of V.T.C.A. Government Code Chapter 2253, Public Work Performance and Payment bonds, as amended, and Article 53.201 of the Property Code, and all liabilities on this Bond shall be determined in accordance with the provisions of said articles to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work performed thereunder, or the Plans, Specifications or Drawings accompanying same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder.

Surety must be approved by the Texas State Board of Insurance under Article 7.19-1 of the Insurance Code and authorized under the laws of Texas to act a surety on bonds for principals.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument on this the _____ day of _____, 20__.

PRINCIPAL:	**SURETY:**
_____	_____
Signature	Signature
_____	_____
Printed Name	Printed Name
_____	_____
Title	Title
_____	_____
Company	Company
_____	_____
Street Address	Street Address *(P. O. Box is not acceptable)*
_____	_____
City State Zip Code	City State Zip Code
_____	
Phone Number *(Dallas Telephone Number)*	

SURETY'S DALLAS COUNTY REGISTERED AGENT FOR SERVICE (REQUIRED):

Printed Name: _____

Title: _____

Company: _____

Street Address: _____
(P. O. Box is not acceptable)

_____
City State Zip Code

Phone Number: _____
(Dallas County Telephone Number)

(Attach dated Power of Attorney for Surety)

CONTRACTOR'S AFFIDAVIT OF FINAL PAYMENT AND RELEASE

(This form will be prepared by the City and executed by the Contractor after project completion)

STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF DALLAS §

BEFORE ME, the undersigned authority, on this day personally appeared _Insert Name of Authorized Company Officer_ ("Affiant"), who, after being by me duly sworn, deposes and says that he is _Insert Title_ of _Insert Formal Company Name)_, a _Insert Company Business Organization such as corporation, partnership, etc.._ _Insert County_ of County, State of Texas (the "Contractor"), which said Contractor was awarded the contract dated the _____ day of _Insert Date of Contract_, 20__ for the construction of **FAITON P. LUCAS BOULEVARD PAVING AND DRAINAGE RECONSTRUCTION (MCKENZIE ROAD TO E. CARTWRIGHT ROAD)**, **CITY CONTRACT 2023-029** (the "Work"), for a total consideration of _Insert Sum of Total Work in Place as Calculated on Final Estimate_ ??/100 Dollars ($?,???,???.??) to be paid to the said Contractor (the "Contract"), and that Affiant has full power of authority to make this affidavit.

That City of Mesquite, Texas, (the "City") has approved the final estimate on said Work, and that the said Contractor has fully satisfied and paid any and all claims that may be covered by Chapter 53 of the Texas Property Code, and Chapter 2253 of the Texas Government Code, or any other applicable statutes or charter provisions, and that all just bills for labor and materials have been paid and discharged by said Contractor insofar as they pertain to the Work in question.

That in addition to any funds which may have been previously paid by the City, the Contractor hereby accepts the amount of _**Remaining Payment plus Retainage, minus liquidated damages or other penalties both written out and in numeric_ , ??/100 Dollars ($???,???.??)** as **FULL AND FINAL PAYMENT** under the aforementioned Contract, and hereby waives and releases any right Affiant and/or the Contractor may have to pursue claims of any nature against the City arising out of or in any manner connected with the performance of the Work and/or the Contract, including but not limited to claims of third parties that supplied material and/or labor for the Work for or through the Contractor ("Subcontractors"), as well as claims for delay, additional compensation, or for recovery of liquidated damages which may have been withheld by the City. The Contractor shall defend, hold harmless, and indemnify the Owner from any such claims of such Subcontractors. The Contractor further releases the City from any claim or liability arising from any act or neglect of the City related to or connected with the Contract. This affidavit is given pursuant to the final payment provisions of the Contract, and shall not be deemed to alter or modify the terms and provisions of said Contract.

By:

_____ _____
(Affiant) (Contractor's Signature) (Title)

_____
(Printed Name)

SUBSCRIBED AND SWORN TO BEFORE ME, this _____ day of _____, 20__.

_____
(Notary Public in and for the State of Texas)

_____
(Printed Name of Notary)

My commission expires _____

SECTION GP

CONTRACT GENERAL PROVISIONS

For this Contract, the City of Mesquite has adopted the *North Central Texas Council of Governments Public Works Construction Standards, Fifth Edition (November 2017), Division 100 General Provisions* with modifications by addendum. The modifications to the above referenced Division 100 General Provisions are contained in the below City of Mesquite Addendum.

CITY OF MESQUITE

ADDENDUM
TO
DIVISION 100, GENERAL PROVISIONS

OF SECTION 1, STANDARD SPECIFICATIONS

OF THE

PUBLIC WORKS CONSTRUCTION STANDARDS
NORTH CENTRAL TEXAS
Fifth Edition

This addendum to Division 100, “General Provisions,” of Section I, “Standard Specifications,” of the *Public Works Construction Standards, North Central Texas, Fifth Edition, dated November 2017* sets forth exceptions or requirements of the City of Mesquite and thereby takes precedence over any conditions or requirements of the *Public Works Construction Standards, North Central Texas, Standard Specifications, Division 100 General Provisions* with which it is in conflict.

The comments are itemized by the ***Public Works Construction Standards, North Central Texas, Standard Specifications, Division 100 General Provisions*** section reference number followed by specific comments.

101.1. DEFINITIONS

Add the following definitions:

Apparent Low Bidder: The bidder determined to have the numerically lowest bid as a result of the tabulation of bids by the OWNER.

Award: The City Council's formal acceptance of the Bidder's bid for a proposed contract that authorizes the OWNER to enter into a contract.

Bid Bond: The approved form of bid/proposal guarantee furnished by the Bidder and Bidder's surety as security for compliance with all conditions of such bid/proposal as set forth in the General Provisions.

City: The City of Mesquite, Texas, a home rule municipal corporation, acting by and through (a) its governing body, (b) its Mayor, or (c) its City Manager, each of whom is required by Charter to perform specific duties.

Claim: Compensation for any alleged damage by reason of the acts or omissions of the OWNER.

CONTRACTOR's Qualification Information: Qualification forms completed by a Bidder reflecting a Bidder's financial data and experience.

Effective Start Date: The date indicated in the Notice to Proceed as the date of commencement of Work which is the date from which the start of Contract Time is measured.

Field Order: A written order issued by the OWNER's Representative which orders minor changes or clarifications in the Work which do not involve a change in the Contract Time or Contract Price.

General Design Standards: The General Design Standards developed, adopted and published by the City of Mesquite - Engineering Division, as may be amended.

Holiday: Official City-recognized holidays, the Wednesday before Thanksgiving, and December 31st (New Year's Eve). The list of official City-recognized holidays will be provided by the Director of Public Works upon request.

Product: The term "product" includes materials, systems, and equipment.

Proposal Guaranty: The security designated in the advertisement and proposal, to be furnished by each Bidder as a guaranty of good faith to enter into a contract with the OWNER and execute the required bonds for the work contemplated after the work is awarded to the Bidder and payment of damages upon the Bidder's failure to enter into the contract incompliance with Section 102.5.

Provide: The term "provide" means to both furnish and install.

Request for Information (RFI): A written request from the CONTRACTOR to the OWNER's Representative for plan or specification interpretation or clarification.

Shop Drawings or Submittals: All drawings, diagrams, illustrations schedules, and other data which are specifically prepared by or for the CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, manufacturer's data, diagrams, and other information submitted by the CONTRACTOR to the OWNER's Representative for approval (reference Section 105.3).

Standard Details: Standard details developed, adopted and published by the City of Mesquite Engineering Division as may be amended, or the standard details developed by other agencies or engineers that are included in the project plans or specifications.

Substantially Complete: In the opinion of the Engineer, that the Work has been made suitable for use or occupancy, or is serving its full intended purpose, but may require minor miscellaneous work or adjustment as evidenced by issuance of a Certification of Substantial Completion by the OWNER's Representative.

Working Hours: The hours in which Work shall be done, and unless otherwise indicated in any special provisions, Working Hours are the hours of 7:00 a.m. to 6:00 p.m. central time. No work shall be done during other hours, Sundays, or Holidays unless advance written permission is given by the OWNER's Representative.

Written Notice: A notice, in writing, either: (1) hand delivered to the individual, or if to a legal entity, to a member of the firm or officer of the legal entity; or (2) if delivered at or sent by registered mail, to the last business address designated in the Contract for the Work.

Replace the definitions of "OWNER", "OWNER's Representative", and "Proposal" with the following:

OWNER: The City of Mesquite, Texas, a home rule municipal corporation.

OWNER's Representative: The City Engineer of the City of Mesquite or the person designated by the City Engineer to represent the City, or such other person as authorized by the City in the contract documents.

Proposal: The written statement(s)and any other documents duly filed with the Purchasing Agent, whether in the form of a sealed bid, proposal, quotation or other form, of the person, persons, partnership, company, firm, association or corporation proposing to do the work contemplated in accordance with the provisions of the plans and specifications, special and general provisions, and all contract documents.

Add to the end of the Section the following Subsection:

102.1.1. Pay Items. Items not listed in the bid proposal shall be considered subsidiary to the construction and under no circumstance shall the OWNER provide additional compensation for said subsidiary items.

102.3. EXAMINATION OF PLANS, SPECIFICATIONS AND SITE OF THE WORK
Add to End of Section the Following Subsections:

102.3.1. Addenda. Bidders desiring further information, or interpretation of the plans and specifications, must make request for such information in writing to the OWNER's Representative five (5) working days prior to the date of the bid opening. Answers to such requests will be given in writing to all bidders by Addendum and such Addendum shall be made a part of the Contract Documents. No other explanation or interpretation will be considered official or binding. Should a Bidder find discrepancies in the plans, specifications or quantities, or should the bidder be in doubt as to their meaning, the Bidder shall at once notify the OWNER's Representative in order that a written Addendum may be sent to all Bidders. Any Addendum issued prior to twenty-four (24) hours before the opening of bids will be delivered by facsimile or email to all plan holders on record with the City of Mesquite. The proposal as submitted by the Bidder will be so constructed as to include any Addendum issued by the OWNER's Representative prior to twenty-four (24) hours before the opening of bids.

The Bidder must acknowledge in the proposal bid forms that all Addenda have been received.

102.3.2. Pre-Bid Inspection. Bidder shall inspect the site prior to bidding and prior to move in. Bidder's inspection shall include but not be limited to observation and verification of existing grades, topographic conditions, surface and subsurface soil conditions and surface and subsurface water drainage conditions, observation and verification of any existing utility, appurtenance, or structure as it may relate to the contract. This shall include but not be limited to:

- ❑ Water and sewer appurtenances.
- ❑ Storm sewer structures and appurtenances.
- ❑ Concrete structures and appurtenances.
- ❑ Petroleum pipeline systems and appurtenances.
- ❑ Natural Gas pipeline systems and appurtenances.
- ❑ Telecommunications systems and appurtenances.
- ❑ Electrical systems and appurtenances.
- ❑ Television cable systems and appurtenances.
- ❑ Irrigation systems and appurtenances.

102.3.3. Geotechnical Data. Soil Borings, soil profiles, ground water elevations, and underground utilities shown on the plans have been obtained for use in preparation of the plans. The OWNER makes no representation or warranty regarding the accuracy of this geotechnical data.

102.3.4. Quantity Verification. Bidders shall verify all quantities included in the bid proposal prior to submitting their bid. Should any quantity discrepancy between stated bid quantities and Bidder's estimate be found, Bidder shall notify the OWNER's Representative in writing, prior to submitting bid, and obtain a clarification and/or correction to the stated bid quantity. By submitting a bid, Bidder represents that estimates were performed and no quantity discrepancies were found.

102.3.5. Subsidiary Cost: It is the intent of the Contract Documents, Technical Specifications, Supplemental Specifications, and plans to describe the construction and subsidiary activities and materials necessary to furnish and install a complete in place project, ready for its intended use, accepted by the OWNER's Representative. Those materials and work necessary to furnish and install a complete in place project, conforming to the plans and specifications, that are not specifically identified in the bid proposal, technical specifications, or the supplemental technical specifications as pay items shall be considered as subsidiary to the contract as a whole, and as such shall not be submitted for individual payment by the CONTRACTOR. The cost of those subsidiary items shall be reflected in the prices stated in the bid proposal. It shall be the responsibility of the Bidder to review the bid proposal, plans, technical specifications, and supplemental technical specifications and site conditions to determine those materials and work which are not specifically identified but which shall be necessary to furnish and install a complete project in place.

102.4. PREPARATION OF PROPOSAL

Change: Replace first three sentences with the following:

The bidder shall submit its proposal on the forms furnished or approved by the OWNER. The bidder shall submit Bid Proposals on Bid Forms in the contract document or from computer generated forms supplied by the OWNER. Modifications or revisions to the OWNER-supplied form or the creation of a new computer generated form shall be considered an irregular proposal and may disqualify the bidder. Unit prices shown on the Bid Proposals shall state the prices for which the bidder proposes to perform the work or supply the required material. Bidder shall fill in all blank spaces in the form and shall numerically state the bid prices. All costs in connection with the proper and successful completion of the Work, including furnishing all materials, equipment, supplies, and appurtenances; providing all construction plant, equipment, and tools; and performing all necessary labor and supervision to fully complete the Work, shall be included in the unit and lump sum prices bid. All Work not specifically set forth as a pay item in the Bid Form shall be considered a subsidiary obligation of CONTRACTOR and all costs in

connection therewith shall be included in the prices bid. All prices shall be written in ink distinctly and legibly or submitted electronically if allowed by OWNER.

102.5 PROPOSAL GUARANTY
Add to the end of the section: An acceptable Surety per the terms of GP Section 103.3 SURETY BONDS shall execute the Bidder's surety bond, together with the bidder, as Principal. In addition, the Bidder and its agents shall have no financial interest in the Surety.

102.7. WITHDRAWING PROPOSALS
Change: In the last sentence, change "90 days" to "150 days".

Add after the last sentence: After the 150-day period, if agreed to in writing between Bidder and OWNER, the bid will stay in effect, without change, for a period agreed to between the Bidder and OWNER.

102.8 OPENING PROPOSALS
Delete the last sentence of this section.

102.9. CONSIDERATION OF PROPOSAL
Add after the last sentence: When required by the bid documents, within 48-hours of the bid opening, the apparent low Bidder must submit to the OWNER, the Bidder's Qualification Information on the forms provided in the bid documents providing evidence that the Bidder is capable of properly executing the work.

102.10. IRREGULAR PROPOSALS
Add: After the words "irregular if" add ", in the sole opinion of the OWNER,".

102.12. DISQUALIFICATION OF BIDDERS
Add:
(12) The bidder being in arrears on any existing contract or other financial obligation or debt.
(13) Lack of a current financial report as required in the Bidder's Qualification Information submission requirements.
(14) The quality, availability and adaptability of the supplies, materials, equipment or contractual services, to the particular use required.
(15) For request for proposals, the number and scope of conditions attached to the proposal.
(16) Whether the bidder can perform the contract or provide the service promptly, or within the time required, without delay or interference.
(17) The previous and existing compliance by the bidder with laws relating to the contract or service.
(18) The ability of the bidder to provide future maintenance, repair parts, and service for the subject contract.
(19) Evidence that CONTRACTOR, subcontractor have been suspended, debarred, or otherwise excluded from participation in federally funded programs.

103.2. AWARD OF CONTRACT
Change: In the first sentence, change "90 days" to "120 days".

103.3.3. Sureties.
Delete second to last sentence and Replace with: The surety shall designate an agent in Dallas County, Texas who is acceptable to the OWNER to whom any requisite notices may be delivered and on whom service of process may be had in matters arising out of such suretyship. Legal venue for enforcement of the bonds shall lie exclusively in Dallas County, Texas.

103.4 INSURANCE

Delete entire subsection 103.4.1. CONTRACTOR's Insurance, including subsections and Replace with:

103.4.1 CONTRACTOR's Insurance. The CONTRACTOR and his subcontractor(s) shall not commence work on any contract in the City of Mesquite until the CONTRACTOR has obtained, for himself and all subcontractors, all of the insurance required under this paragraph, and such insurance has been approved by the OWNER.

The CONTRACTOR and his subcontractor(s) shall provide and maintain the following types and amounts of insurance, which may be satisfied by any combination of primary, excess or umbrella liability insurance, for the term of this Contract:

Amounts and Types of Insurance:

	Type	Amount	
1	Workers Compensation/Employer's Liability	Statutory	
2	Employer's Liability	No less than $100,000 Limit Ea. Occ/Disease/Aggregate	City shall be an Additional Insured with Waiver of Subrogation
3	Commercial (Public) Liability, including, but not limited to: A. Premises/Operations B. Independent Contractors C. Personal Injury D. Products/Completed Operations E. Contractual Liability (insuring the indemnity provisions in the contract) F. Explosion or Cave-in	No less than $1,000,000 per Occurrence and Aggregate Limits	All insurance policies shall be written on a primary basis and be non-contributory with any other coverages carried by the City. City is to be an Additional Insured with Waiver of Subrogation.
4	Automobile Policy	The OWNER shall be an Additional Insured at No less than Combined Single Limit - $500,000.00	City shall be an Additional Insured

The required limits may be satisfied by any combination of Primary, Excess or Umbrella liability coverage. The preceding amounts notwithstanding, OWNER reserves the right to decrease or increase the minimum required insurance either as provided in the contract documents or after thirty (30) days' notice is sent to the CONTRACTOR's address as shown on CONTRACTOR's Proposal. The CONTRACTOR may pass through to the OWNER all costs for obtaining the increase in the insurance coverage.

The CONTRACTOR understands that it is its sole responsibility to provide Certificates of each policy before any work is started and that failure to timely comply with the stated policy endorsements and special conditions hereinafter specified shall be a cause for termination of this Contract. Prior to the effective date of cancellation of any coverage, the CONTRACTOR must deliver to the OWNER a replacement Certificate or proof of reinstatement. In addition to the Certificates, all Policies shall be subject to examination and approval by City Risk Management for their adequacy as to form, content, form of protection and the providing company.

The proof will include completed/current Certificate(s) of Insurance, endorsements, exclusions, and/or relevant extracts from the insurance policy, or copies of policies. The City shall have no duty to pay or perform under this contract until the proof of insurance has been delivered to and approved by the CITY's Risk Management Department. No officer or employee other than the CITY's Risk Manager shall have authority to waive this requirement.

Insurance required by this Contract for the OWNER as additional insured shall be primary insurance and not contributing with any other insurance available to the OWNER, under any third party liability policy.

Delete entire subsection 103.4.2. OWNER's Protective Liability Insurance and Replace with:

103.4.2 Worker's Compensation Insurance. The OWNER shall require workers' compensation insurance coverage as defined in Section 401.011(44) of the Texas Labor Code as may be amended, from any contractor before entering into a building or construction contract to prove in writing that the CONTRACTOR and all subcontractors shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements set forth in Section 406.096 of the Texas Labor Code as may be amended, for all persons providing services on the project, for the duration of the project. The City shall be an Additional Insured, and, with a Waiver of Subrogation.

103.4.5.1 Endorsements.
Delete 103.4.5.1(1) and Replace with:
(1) With the exception Professional Liability coverage, the Certificate of Insurance must state that "The City of Mesquite-Texas, its trustees, officers, agents and employees are Additional Insureds as their interests appear relating to the contractually stipulated service, project or product";

103.4.5.2(2) Insurance Requirements.
Add to the end of the sentence: and rated at least "A-" in A.M. Best's Key Rating Guide; and with a financial strength of VII or greater

103.6 NOTICE TO PROCEED AND COMMENCEMENT OF WORK
Replace last sentence with: Prior to the start of work, the OWNER may arrange a Pre-Construction Conference with the CONTRACTOR and appropriate OWNER staff. The Pre-Construction Conference shall be scheduled no later than 10 days after the Contract is fully executed. The Notice to Proceed (NTP) shall state the date upon which the Contract time (the Effective Start date) shall start. The Effective Start date will be within 10 days after the Pre-Construction Conference for the Project is held unless requested otherwise in writing by the OWNER's Representative.

Add The Following Section:
103.9. COST BREAKDOWN (SCHEDULE OF VALUES FOR LUMP SUM BIDS OR BID ITEMS)
The CONTRACTOR shall prepare and submit for approval to the OWNER's Representative, prior to the start of construction, a breakdown of lump sum items, identified by the OWNER, for the various parts and classes of work to be performed under the Contract.

105.1.1 Priority of Contract Documents.
Delete numbers (1) through (9) of subsection 105.1.1 and Replace with:
In case of conflict between Contract documents, priority of interpretation shall be in the following order:

1. signed Contract Agreement;
2. properly authorized change orders;
3. any listed and numbered addenda;
4. special provisions;
5. construction drawings;
6. project specific details;

7. Division 100 of the Public Works Construction Standards, North Central Texas, Fifth Edition, dated November 2017 with City of Mesquite Addendum;
8. technical specifications;
9. City of Mesquite Standard Details;
10. the OWNER's written notice to proceed to the CONTRACTOR;
11. the CONTRACTOR's bid proposal;
12. the Performance and Payment Bonds;
13. City of Mesquite General Design Standards
14. Public Works Construction Standards, North Central Texas, Fifth Edition, dated November 2017
15. Texas Department of Transportation (TxDOT) Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, 2014

105.1.3. Contract Drawings and Specifications.
Add at the end of the first paragraph: The only plans authorized for use are stamped:

RELEASED FOR CONSTRUCTION
CITY OF MESQUITE
ENGINEERING DIVISION
(DATE)
THESE PLANS SHALL
BE ON THE JOB SITE AT ALL TIMES

105.3. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES
Delete: The last sentence in the last paragraph.

105.4. CONSTRUCTION STAKES
Delete: Entire first paragraph of section.
Add: The CONTRACTOR is responsible for furnishing, at CONTRACTOR's expense, all construction staking necessary to establish line and grade. The Consulting Engineer will provide one-time location of survey control points for the CONTRACTOR's surveyor. Prior to construction, the CONTRACTOR shall field-verify elevations and locations of tie-in points for existing utilities. If discrepancies are discovered between field conditions and plan elevations, the CONTRACTOR shall notify the OWNER immediately of the discrepancies. All construction staking is subject to checking and verification by the OWNER's Representative.

105.6. SUPERVISION BY CONTRACTOR
Add: The CONTRACTOR superintendent and general foreman shall both be fluent in speaking, reading, and writing English.

105.7.1 Authority of the Engineer
Add: The Engineer has the authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the Contract.

105.7.2. OWNER's Representative's Final Determination
Add: Should the CONTRACTOR object to any order by any subordinate of the OWNER's Representative (i.e. City inspector), the CONTRACTOR may, within six days make written appeal to the OWNER's Representative for his decision.

105.9 INSPECTION
Add: The OWNER's Inspector shall not have the power to waive the obligations of this Contract for the furnishing by the CONTRACTOR of good material, and of his performing good work as herein described, and in full accordance with the plans and specifications. No failure or omission of the OWNER's Inspector to condemn any defective work or material shall release the CONTRACTOR from the

obligation to at once remove and properly replace the same at any time prior to OWNER's final acceptance upon the discovery of said defective work or material.

105.9.1. Removal of Defective and Unauthorized Work.
Delete the first sentence and Replace with the following:
(1) Except as provided in Paragraph (2) of this 105.9.1, all work which has been rejected or condemned shall be repaired, or if it cannot be repaired satisfactorily, it shall be removed and replaced at the CONTRACTOR's expense.

Add after first paragraph: (2) If the OWNER prefers to accept Work which is defective and/or not in accordance with the requirements of the Contract Documents, the OWNER's Representative may accept Work instead of requiring its removal and correction, prior to recommendation of final payment. Work found to be defective and accepted by the OWNER shall be, at the discretion of the OWNER and without recourse by the CONTRACTOR, subject to partial or non-payment. CONTRACTOR shall bear all direct, indirect, and consequential costs attributable to the OWNER's evaluation of any determination to accept such defective work (such costs to be approved by the OWNER's Representative as to reasonableness, and to include, but not be limited to, fees and charges of engineers, inspectors, architects, attorneys, laboratories and other professionals). If any such acceptance occurs prior to the OWNER's Representative'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 the OWNER shall be entitled to an appropriate decrease in the Contract Price. If the acceptance occurs after such recommendation, an appropriate amount will be paid by the CONTRACTOR to the OWNER.

105.9.3. Inspection Overtime
Delete the second and third sentences in the first paragraph and Replace with the following: The CONTRACTOR will be required to reimburse the OWNER or its designated representative for the cost of all inspection overtime which may be necessary for the successful and expeditious prosecution of the work included in this contract. Inspector's normal working hours are 7:30 a.m. to 11:30 a.m. and 12:30 p.m. to 4:30 p.m., Monday through Friday with the exclusion of Holidays. **The CONTRACTOR will reimburse the OWNER for all Inspection overtime outside the Inspector's normal working hours.** To arrange for inspection outside Inspector's normal working hours, a written request for overtime inspection must be communicated to the OWNER's Inspector two working days in advance. Work on Sundays and Holidays is prohibited except in the case of emergency and authorized, in writing, by the OWNER's Representative. Work between the hours of 6:00 P.M. and 7:00 A.M. must be approved by the OWNER's Representative. Overtime inspection shall be charged portal to portal. There is a two-hour minimum charge for inspection on weekends or Holidays. The CONTRACTOR will be charged a 2-hour minimum overtime charge if the CONTRACTOR schedules inspection on weekends or Holidays but then cancels work without notice to the Public Works Construction Inspector before the inspector shows up to the project.

Delete: The last paragraph.

Add: Inspection overtime will be reimbursed to the OWNER by the CONTRACTOR at the rate of time-and-one-half plus workman's compensation, F.I.C.A. and other normal City benefits and any other additional rates paid to the inspector by the City. The CONTRACTOR will be billed monthly by the City for overtime charges. The OWNER will not release final payment or give final acceptance of a project until inspector overtime charges are paid.

106.4. OFF-SITE STORAGE
Delete the second paragraph including (1) through (6), and Replace with:
The costs incurred in storage of materials or equipment away from the project site will not be made by the OWNER. All costs incurred shall be the full responsibility of the CONTRACTOR and included in the CONTRACTOR's bid.

106.5 SAMPLES AND TESTS OF MATERIALS
Delete the first paragraph and Replace with:
Where called for in the specifications or, in the opinion of the OWNER, tests and retests of materials or completed work are necessary, such tests will be made **at the sole expense of the CONTRACTOR** unless otherwise specified.

Add at the end of the last paragraph:
The CONTRACTOR shall designate and pay a City Approved testing laboratory to perform all testing, if any, for this project. Such designation is subject to the approval of the OWNER's Representative. The hiring of the testing laboratory shall comply with Article 2254.004 of the Texas Governmental Code (Professional Services Procurement Act) and other applicable laws.

The Testing Laboratory must furnish the inspector with one field copy of the test results. A typed paper copy must be mailed to the OWNER's Representative identified at the Pre-Construction Conference. The OWNER's Representative may approve the submission of final test reports to the OWNER by electronic means.

Collection of potable water samples for bacterial sampling will be accomplished by the CONTRACTOR. The CONTRACTOR must prepare the sample point and assist the City Public Works Construction Inspector in collecting the sample. All work and materials used for the sampling point and taking the samples must conform to the latest version of the American Water Works Association Standards. Delivery of the potable water sample to the testing laboratory and testing of the potable water sample will be at the OWNER's expense.

107.3. INDEMNIFICATION
Add the following subsections:

107.3.1 CONTRACTOR's Responsibility. CONTRACTOR further agrees that it shall at all times exercise reasonable precautions on behalf of, and be solely responsible for, the safety of its officers, agents, employees, subcontractors, licensees, invitees, and other persons, as well as their property, while in the vicinity where the improvements are being made. It is expressly understood and agreed that OWNER shall not be liable or responsible for the negligence of the CONTRACTOR, including but not limited to its officers, agents, employees, subcontractors, licensees, invitees, and other persons.

107.3.2 Premise Defects. Further, OWNER assumes no responsibility or liability for harm, injury, or any damaging events which are directly or indirectly attributable to premise defects, real or alleged, in improvements constructed by CONTRACTOR which may now exist or which may hereafter arise upon the premises, responsibility for any and all such defects being expressly assumed by CONTRACTOR. CONTRACTOR understands and agrees that this indemnity provision shall apply to any and all claims, suits, demands, and/or actions based upon or arising from any such premise defects or conditions, including but not limited to any such claim asserted by or on behalf of CONTRACTOR, including but not limited to its officers, agents, employees, subcontractors, licensees, invitees, and other persons.

107.3.3 Notice of Claim. It is further agreed with respect to the above indemnity that OWNER and CONTRACTOR will provide the other prompt and timely notice of any event covered which in any way, directly or indirectly, consequently or otherwise, affects or might affect the CONTRACTOR or OWNER, and OWNER shall have the right to compromise and defend the same to the extent of its own interests.

107.13 LABOR AND MATERIALS
Add the following subsection:

107.13.1. LABOR CLASSIFICATION AND MINIMUM WAGE SCALE
In compliance with Texas state law, the CONTRACTOR is required to pay all employees, and is required to make all subcontractors pay their employees, for the construction of any public work project not less

than the general prevailing rate of per diem wages in the locality for work of a similar character as determined by the City. The City, as provided by law, has adopted the prevailing wage rates as determined by the U.S. Department of Labor in accordance with the Federal Davis Bacon Act for this Contract.

Attention is called to the fact that the inclusion of a minimum scale of wages to be paid to employees engaged in the work under this Contract does not release the CONTRACTOR from compliance with any Federal or State Wage Law that may be applicable to the project. The CONTRACTOR shall abide by Federal and State Wage and Hour Laws and must not pay less than the wages legally prescribed as set forth therein. In order to verify compliance with Federal or State wage laws and regulations, the CONTRACTOR may be required to submit a weekly certified payroll of all workers on the project listing name, social security number, labor classification, wage rates, hours worked and compensation paid.

Under the provisions of the Texas Government Code, Title 10, Subchapter F, Section 2258.023, the CONTRACTOR shall forfeit as a penalty to the City on whose behalf the Contract is made or awarded, Sixty Dollars ($60.00) for each laborer, workman or mechanic employed, for each calendar day or portion thereof that such laborer, workman or mechanic is paid less than the said stipulated rates for any work under the Contract, by him or by any subcontractor under him.

Such wage determinations must be for projects in Dallas County, Texas dated no more than 3 years prior to the date this Contract was advertised for bid.

In addition, the CONTRACTOR is required to obtain skilled and unskilled labor used on the work, when qualified, fit and available, first from residents within the City and secondly, from residents of Dallas County, if practical and available. However, the CONTRACTOR may bring his superintendent, foreman, sub-foreman, machine operators and sufficient key men to round his organization.

107.14 EQUAL EMPLOYMENT OPPORTUNITY

107.14.5 Reports
Add at the end of the first sentence: “if required by the OWNER.”

Add the following subsections:
107.14.6. Protection of Resident Workers: The OWNER actively supports the immigration and Nationality Act (INA), which includes provisions addressing employment eligibility, employment verification, and nondiscrimination. Under the INA, employers may hire only persons who may legally work in the United States (i.e., citizens and nationals of the U.S.) and aliens authorized to work in the U.S. The employer must verify the identity and employment eligibility of anyone to be hired, which includes completing the Employment Eligibility Verification Form (I-9). The CONTRACTOR shall establish appropriate procedures and controls so no services or products under the Contract Documents will be performed or manufactured by any worker who is not legally eligible to perform such services or employment.

107.14.7. Handicapped Discrimination Regulations:
The handicapped discrimination regulations mandate equal opportunity and require that outside organizations such as labor unions and contractors who provide services to the local governments must not discriminate against qualified handicapped persons in employment decisions.

107.14.8. Non-Compliance with Equal Employment Opportunity Provisions
In the event of the CONTRACTOR's non-compliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the CONTRACTOR may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

107.15 STATE AND LOCAL SALES AND USE TAXES
Add at the end of the section:
If the CONTRACTOR performs under a separated contract as defined by Texas Administrative Code Rule 3.291 by obtaining the necessary permit or permits from the State Comptroller's office allowing the purchase of materials for incorporation in this project without having to pay the Limited Sales and Use Tax at the time of purchase, the CONTRACTOR shall identify separately from all other charges the total agreed contract price for materials incorporated into the project. Total materials shall include only materials physically incorporated into the project.

If the CONTRACTOR operates under a "separated contract," the City of Mesquite Purchasing Division will furnish the CONTRACTOR with an exemption certificate for the applicable materials. In order to comply with the requirements of Texas Administrative Code Rule 3.291, as mentioned above, Bidder shall obtain a sales tax permit. It shall be necessary that the Bidder issue resale certificates to suppliers.

Sales tax application for a sales tax permit and information regarding resale certificates may be obtained by writing to:

Texas Comptroller of Public Accounts
Capitol Station
Austin, Texas 78774

The CONTRACTOR may also receive information or request sales tax permit applications by calling the State Comptroller's local Mesquite office at **(214) 289-3400**.

Subcontractors are eligible for sales tax exemption if the subcontract is made in such a manner that the charge for materials is separated from all other charges. The procedure described above will effect a satisfactory separation. When subcontracts are handled in this manner, the CONTRACTOR shall issue a resale certificate to the subcontractor, who in turn, must issue a resale certificate to his supplier.

107.17 COMPLIANCE WITH LAWS
Add at the end of the section:
THE CONTRACTOR SHALL INDEMNIFY AND SAVE HARMLESS THE OWNER AGAINST ANY CLAIMS ARISING FROM THE VIOLATION OF ANY SUCH LAW, ORDINANCES AND REGULATIONS.

107.19 PUBLIC CONVENIENCE AND SAFETY
Add the following subsections:

107.19.1. Temporary Water and Sanitary Sewer Service. When existing water or sanitary sewer mains or services have to be taken up or removed, the CONTRACTOR shall, at his own cost and expense, provide and maintain temporary outlets and connections for all private or public water, sanitary sewer and drain connections affected. The CONTRACTOR shall also take care of all sewage and drainage that will be received from these sanitary sewers and drains; and for this purpose, he shall provide and maintain, at his own expense, adequate pumping facilities and temporary outlets or diversions. The CONTRACTOR, at his own expense, shall construct such piping, troughs, or other necessary structures, and be prepared at all times to dispose of sanitary sewer and drainage received from these temporary connections until such time as the permanent connections are built and in service. The existing water, sanitary sewer and drain connections shall be kept in service and maintained under the Contract, except where specified or ordered to be abandoned by the OWNER’s Representative. All water, sewage or drainage shall be disposed of in a legal and satisfactory manner so that no nuisance is created and the work under construction adequately protected.

107.19.2. Explosives. Explosives shall not be used under any circumstances in relation to this project.

Add at the end of section 107.19:
In order to document site conditions and assist in resolving claims for construction damage the CONTRACTOR shall take digital pictures and/or digital video recordings of the site before construction. In addition, the CONTRACTOR shall, during the course of construction, periodically record site conditions using digital pictures and/or digital video recordings. The CONTRACTOR shall make these recordings at least monthly or more frequently if the OWNER's Inspector so orders. Copies of all digital photographs and/or video recordings shall be burned to DVD or other digital media acceptable to the OWNER and provided to the OWNER's Inspector.

Add to end of section 107.20.2 the following subsection:

107.20.2.1. Access to Property. The CONTRACTOR shall schedule the work such that inconvenience to the public and adjoining property owner's shall be at a minimum. Access to all businesses shall be provided at all times during business hours.

The CONTRACTOR will schedule work through residential areas in a manner that would expedite construction operations and will restore drive approach access at the end of each working day during execution of the project (except during paving operations of the specific residential drive approach). The CONTRACTOR shall maintain temporary drive approaches to the satisfaction of the OWNER's Representative. Private drives to residences shall not be closed for more than 10 days at any one time during paving operations.

The CONTRACTOR will notify the OWNER's Representative Office in writing one (1) week prior to any street or driveway closure.

107.20.3.6. Payment for Trench Safety and Special Shoring.
Delete the first sentence and Replace with: Payment for trench safety shall be by the lineal feet of trench regardless of depth.

107.24.4. Utility Coordination and Protection
Delete the first sentence and Replace with:
No franchise utility relocations have taken place in preparation for the project, and the location of existing utilities may not be shown on the plans. It is the CONTRACTOR's responsibility to notify utility companies to arrange for exact locations at least 48 hours prior to beginning construction. The CONTRACTOR is fully responsible to coordinate necessary utility relocation with the utility companies and will make all efforts to coordinate necessary relocation of utilities with the utility owner. The OWNER shall not be held responsible by the CONTRACTOR for any delays created by a franchise utility company relocating their facilities. The time of construction given for the project includes all necessary utility work involved with franchise utility companies. The OWNER will make an effort to assist the CONTRACTOR in coordinating relocations before and during the project.

Delete: Table 107.24.4.(a) Utility Coordination and Replace with:

Entity	Contact Information
Texas One Call system	**811**
City of Mesquite Water/Sewer Locates	**972-216-6278** **972-216-6973** **972-216-8797**
City of Mesquite: Record Drawings	**GISHelpdesk@cityofmesquite.com**
City of Mesquite Traffic Signal Conduit & Loop Detectors	**972-216-6278**

Add to the end of section 107.24 the following subsections:

107.24.5. Arrangement and Charge for Water Furnished by the City. Where CONTRACTOR desires to use City water in connection with any construction work, he shall make prior arrangements with the Mesquite Water Accounting Division for so doing. Where meters are used, the charge for water will be at the regular established rate; where no meters are used, the charge will be as prescribed by ordinance; or, where no ordinance applies, payment shall be made on estimates made by the Mesquite Engineering Division.

107.24.6. Use of Fire Hydrants. No person shall open, turn off, interfere with, attach any pipe or hose to, or connect anything with any fire hydrant, stop valve or stopcock, or tap any water main belonging to the City, unless duly authorized to do so by the Mesquite Utilities Division.

107.24.7. Operation of Existing Valves. The CONTRACTOR is not permitted to operate any valve in the existing City of Mesquite water system. The valves must be operated by City of Mesquite Utility Division employees only.

107.27 RESTORATION OF PROPERTY
Add to the end of the section:
The CONTRACTOR shall exercise special care to minimize damage to trees, plants, shrubs and irrigation systems along the route of the work. The CONTRACTOR shall notify adjacent property owners before beginning construction operations adjacent to their property of trees, plants and shrubs that lie inside the right-of-way or easements lines and within the normal limits of work. The property owners shall be allowed to remove and protect their property, and all trees, plants and shrubs not so protected by the adjacent property owners shall be removed and disposed of by the CONTRACTOR, as directed by the OWNER's Representative.

107.28.1 Spill Prevention Plan
Add to beginning of first sentence: "When required by federal and/or state law, rules or regulations,"
107.28.5 Failure to Comply

Delete item (3) and Replace with:
(3) terminate the contract for default as provided in the Contract Documents; or

Add the following as Item (4):
(4) terminate the contract in any other applicable manner provided in the Contract Documents.

Add the following section to the end of Item 107:
107.29 ANTI-KICKBACK ACT
For any project funded by a Federal grant, the CONTRACTOR shall comply with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented by Department of Labor regulations (29 CFR, Part 3). This Act provides that each contractor or sub grantee shall be prohibited from inducing, by any means, any person employed in the construction, completion or repair of public work or to give up any part of the compensation to which he is otherwise entitled. The City shall report all suspected or reported violations to the grantor agency.

108.8.1 Liquidated Damages for Failure to Complete on Time.
Delete the entire subsection and replace with the following:
The time of completion is the essence of this Contract. For each day that any work shall remain uncompleted after the time specified in the proposal and the Contract, or the increased time granted by the OWNER, or as equitably increased by additional work or materials ordered after the Contract is signed, the sum per day given in the Schedule 108.8.1. (a) Liquidated Damages, unless otherwise specified, shall be deducted from the monies due the CONTRACTOR.

Schedule 108.8.1. (a) Liquidated Damages

Amount of Contract ($)	Amount of Liquidated Damages ($)
Less than 25,000.00	200.00 Per Day
100,000.00 to 999,999.99	500.00 Per Day
More than 1,000,000.00	1000.00 Per Day

The sum of money thus deducted for such delay, failure or noncompletion is not to be considered as a penalty, but shall be deemed, taken and treated as reasonable liquidated damages, per day that the CONTRACTOR shall be in default after the time stipulated in the Contract for completing the work. The said amounts are fixed and agreed upon by and between OWNER and CONTRACTOR because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the OWNER in such event would sustain; and said amounts are agreed to be the amount of damages which the OWNER would sustain and which shall be retained from the monies due, or that may become due, the CONTRACTOR under this Contract; and if said monies be insufficient to cover the amount owing, then the CONTRACTOR or its surety shall pay any additional amounts due.

In the event that the actual damages incurred by the OWNER exceed the amount of liquidated damages, OWNER shall be entitled to recover its actual damages.

109.1 PAYMENT FOR LABOR AND MATERIAL; NO LIENS
Add the following paragraph to this section:
The CONTRACTOR is not required to furnish payrolls and records unless this submittal is otherwise required by the Special Provisions or the Contract Documents. The CONTRACTOR is still required to comply with the minimum wage rates published by the OWNER.

109.2 PAYMENT FOR MATERIALS
109.2.1. Materials On-Hand. Delete the text of subsection and replace with the following: The OWNER will not pay for Materials on Hand unless otherwise specified in a Special Provision or the Contract Documents.

109.2.2. Materials Stored Off-Site. Delete entire subsection.

Re-number Subsection 109.2.3. "Measurement of Quantities" to 109.2.2.

109.5.1 MONTHLY ESTIMATE
Replace the second sentence of the first paragraph with the following: "The monthly estimate may include acceptable nonperishable materials if allowed by Special Provisions or the Contract Documents."

Replace the fourth sentence of the first paragraph with the following: "The monthly estimate may include acceptable nonperishable materials delivered to and stored at the work site or a storage facility accessible to the OWNER if allowed by Special Provisions or the Contract Documents."

109.5.4. Final Payment.
Revise the last sentence of the first paragraph to read as follows:
The amount of the final estimate, less any sums that have been previously paid, deducted or retained under the provisions of this Contract, shall be paid to the CONTRACTOR within a reasonable period of time (not to exceed 90 days) after final acceptance and the CONTRACTOR has provided to the OWNER:

(1) a consent of surety to final payment;

(2) the final CONTRACTOR's Report of SUBCONTRACTOR/Supplier Payment, evidencing that all indebtedness connected with the work and all sums of money due for any labor, materials, apparatus, fixtures or machinery furnished for or used in the performance of the work have been paid or otherwise satisfied, or that the person or persons to whom the same may be respectively due have consented to final payment;

(3) such other affidavits, lien waivers and other documentation as the OWNER may reasonably require to protect its interests; and

(4) a marked-up set of plans showing all changes, revisions and alterations to the original plans.

109.6 WIRE TRANSFERS

Delete entire text of Section 109.6 and Replace with:

The City of Mesquite has chosen the Paymode-X™ service through Bank of America to make electronic payments to contractors, vendors and suppliers.

The City of Mesquite recognizes the importance of expediting the payment process to CONTRACTOR's vendors and suppliers. Our Accounts Payable department utilizes Paymode-X to replace paper checks with electronic payments. We strongly encouraging our vendors and suppliers to enroll in Paymode-X so that future payments are made electronically. Contract the assigned OWNER's Inspector to receive further information on how to process online enrollment to the Paymode-X electronic payment system.

Delete entire ITEM 110. AIR QUALITY REQUIREMENT FOR EQUIPMENT

SPECIAL PROVISIONS

These Special Provisions are to be used in conjunction with the ***North Central Texas Council of Governments Public Works Construction Standards, Fifth Edition (November 2017), Division 100 General Provisions, as amended***. Should any discrepancies arise, the governing order shall be: Special Provisions, Plans, Technical Specifications, and General Provisions.

THE FOLLOWING SPECIAL PROVISIONS HEREBY MODIFY THE *North Central Texas Council of Governments Public Works Construction Standards, Fifth Edition (November 2017), Division 100 General Provisions*. Where reference is made in these specifications to specifications compiled by others, such reference is made for expediency and standardization, and such specifications referred to are hereby made a part of these specifications.

SP-1 PROJECT DESCRIPTION:

This project for the construction of approximately 50,000 square yards of 10" thick concrete pavement over lime treated subgrade, 8,500 square yards of concrete trail, 4,000 square yards of concrete sidewalk, and 2,100 square yards of concrete driveway. The project includes approximately 7,200 linear feet of various size drainage RCP and RCBC, 4,400 linear feet of 6" to 18" water line, and 400 linear feet of various size sanitary sewer line. Also included is a 27,600 square foot concrete bridge with prestressed concrete beams.

SP-2 BIDDERS QUALIFICATION INFORMATION:

The Bidder's Qualification Information shall be provided by the apparent low bidder as outlined within 48 hours of bidding opening or as otherwise agreed to.

SP-3 LIQUIDATED DAMAGES:

This project is a **570-calendar day contract**. Liquidated damages are per the provisions of GP 108.8, 108.8.1, and 108.8.1(a) listed as $1000/day for projects having a construction cost over $1M. Calendar days shall be charged Sunday through Saturday, including holidays, regardless of weather conditions , material availability, or other conditions not under control of the contractor.

SP-4 SUBMITTALS:

The Contractor shall provide submittals of the following items to the Owner's Representative at the pre-construction conference:

1. Comprehensive list of Subcontractors and Material Suppliers (including Material's Testing Laboratory and Surveyor for construction staking).
2. Submittals for all materials to be incorporated into the project unless expressly stated otherwise in the Contract Documents. A submittal is not required for an item if it is an item is listed on the City of Mesquite Approved Materials list by brand name and model number.
3. Concrete batch designs and paving equipment.
4. Project Baseline Schedule utilizing the Critical Path Methodology (CPM) clearly and accurately identifying critical path.
5. Listing of all testing required by the specifications and plans with frequency requirements.
6. Traffic Control Plans
7. Completed SWPPP (as required by TCEQ)
8. Construction Site Notice (CSN) and Notice of Intent (NOI) (as required by TCEQ)
9. Trench Safety Plan – signed and sealed by a registered professional engineer.
10. Affidavit of trained and certified "Competent Person" for Trench Safety Inspections
11. Contractor Contact List with listing of personnel for 24 hour – 7 days a week contact.
12. Construction Sequencing Plan
13. Other Items as requested by the Owner's Representative or required by contract documents, specifications or plans.

SP-5 CONSTRUCTION SEQUENCE:

The Contractor shall prepare a Construction Sequencing Plan which shows staging for the installation of the construction by street or other division of the work as requested by the Owner's Representative and submit it to the Owner's Representative at the Pre-Construction Conference. This Plan shall include maintaining one lane of traffic open in each direction, access to all adjacent properties/alleys/streets, and all water and sanitary sewer service.

SP-6 REMOVAL AND DISPOSAL OF TREES AND SHRUBS:

Lump Sum pay items are provided for the removal of trees 12" in diameter and greater based on the approximate number of identified trees. All removal of shrubs and trees under 12" in diameter or not included in approximate number of trees to be removed shall be considered subsidiary to Preparing Right-of-Way.

The City's compost facility at 3550 Lawson Road (Mapsco 60A-T) will accept trees and brush from the project under the following terms:

- Trees that have root balls will not be accepted.
- All brush must be cut.
- Tree trunks and limbs with a diameter larger than 18-inches must be cut in lengths no longer than three-feet.
- Tree trunks and limbs with a diameter smaller than 18-inches must be cut in lengths no longer than six-feet.
- The contractor will be charged by truck or trailer size and volume according to the attached Fee Schedule. There is an option for monthly billing if the contractor sets up an account with the City with a $100.00 non-refundable deposit.

(1)	Compost materials charge.		
	a.	Pick-up……..	$ 20.00
	b.	10-foot trailer…….	$ 25.00
	c.	12-foot trailer…….	$ 30.00
	d.	14-foot trailer…….	$ 34.00
	e.	16-foot trailer…….	$ 38.00
	f.	18-foot trailer…….	$ 42.00
	g.	20-foot trailer…….	$ 47.00
(2)	Chipped loads.		
	a.	10-cubic-yard box truck…….	$ 25.00
	b.	20-cubic-yard box truck…….	$ 45.00
	c.	30-cubic-yard box truck…….	$ 65.00
(3)	Roll-off containers and tract trailers.		
	a.	10-cubic-yard…….	$ 36.00
	b.	20-cubic-yard…….	$ 67.00
	c.	30-cubic-yard…….	$ 98.00
	d.	40-cubic-yard…….	$129.00
	e.	50-cubic-yard…….	$160.00
	f.	60-cubic-yard…….	$191.00

SP-7 DOCUMENT SITE CONDITIONS:

Contractor shall take digital pictures and/or digital video recordings of the site before construction begins. Special emphasis shall be on adjacent private property, including driveways, fences, etc. A copy of the photos and/or videos shall be furnished to the inspector for review and filing prior to any construction in that area. This shall be considered incidental to the project.

SP-8 COORDINATION WITH FRANCHISED AND CITY UTILITIES:
The Contractor shall be responsible for locating all utilities, both public and private, on this project prior to any construction, the location of which may or may not be shown on the plans. It is the Contractor's responsibility protect all existing utilities from damage during construction. The contractor will be required to cooperate with other contractors performing work and to schedule and sequence construction operations to facilitate utility adjustments and relocations working within this project. The time of construction given for the project includes all necessary coordination with franchise utility companies.

SP-9 RECORD DRAWINGS:
The Contractor will be furnished one set of plans on which he shall indicate all changes made during construction. All notes and comments necessary to give a clear conception of exactly how all items were constructed including location shall be shown. This set of plans shall be reviewed with the Owners representative at the completion of the project and returned to the Engineer at that time. This shall be considered incidental to the project.

SP-10 ESTIMATED QUANTITIES:
All estimated quantities stipulated in the Bid Form or other Contract Documents are approximate and are to be used only (a) as a basis for estimating the probable cost of the Work and (b) for the purpose of comparing the bids submitted for the Work. The actual amounts of work done and materials furnished under unit price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and materials furnished. Contractor agrees that it will make no claim for damages, anticipated profits, or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated amounts.

SP-11 STAGING AREAS:
Materials and equipment shall be safely stored during construction so that public roadways and/or access to adjacent properties are not obstructed. The City has not provided or identified specific staging areas for use by the Contractor during construction. There are several vacant properties within and near the project areas. The Contractor may negotiate with owners of those properties for use during construction. The City shall be provided a copy of permission letter obtained from property owner.

SP-12 IRRIGATION SYSTEMS:
Contractor shall protect all existing irrigation systems encountered during construction from damage. Any avoidable (as determined by the City) damage caused to irrigation systems by the contractor’s operation shall be repaired to the satisfaction of the City and property owner at the contractor’s expense. Any unavoidable damage caused to irrigation systems by the contractor’s operation shall be repaired to the satisfaction of the City and property owner at and shall be charged against the Irrigation Repair Allowance bid item. All irrigation repairs must be performed by a licensed irrigator.

SP-13 ADA & TAS REQUIREMENTS:
All work (including sidewalks AND ramps) must be in compliance with current ADA (Americans with Disabilities Act) & TAS (Texas Accessibility Standards) requirements.

SP-14 PROJECT SCHEDULE:
Project schedules are used to convey the Contractor’s intended work plan to the City. Prepare project schedules with a level of effort sufficient for the work being performed. Project schedules will not be used as a basis to establish the amount of work performed or for the preparation of the progress payments.

If continuous progress of an activity is interrupted for any reason except non-work periods (such as holidays, weekend, or interference from temperature or precipitation), then the schedule will show the actual finish date as that date of the start of the interruption and the activity will be broken into a subsequent activity (or activities, based on the number of interruptions) similarly numbered with successive alpha character as necessary. The original duration of the subsequent activity will be that of the remaining duration of the original activity. Relationships of the subsequent activity will match those of the original activity so that the integrity of the project schedule logic is maintained. Once established, the

original durations and actual dates of all activities must remain unchanged. Revisions to the schedule may be made as necessary. The project schedule must be revised when changes in construction phasing and sequencing occur or other changes that cause deviation from the original project schedule occur.

Monthly updating of the project schedule will include updating of:

1. The actual start dates for activities started;
2. The actual finish dates for activities completed;
3. The percentage of work completed and remaining duration for each activity started but not yet completed; and
4. The calendars to show days actual work was performed on the various work activities.

Monthly schedule updates are to be provided to the City. The cut-off day for recording monthly progress will be the last day of each month. Submit the updated project schedule no later than the 20th calendar day of the following month.

SP-15 CONSTRUCTION PHASING AND TRAFFIC SEQUENCING:

The City of Mesquite has provided a Traffic Control Plan (TCP) in the plan set as general guidance only. The TCP provided shall be modified and amended, subject to final City review and approval, by the Contractor after award of contract at no additional cost to the City. The Contractor provided TCP shall be signed and sealed by a licensed engineer registered in the State of Texas meeting the following requirements at a minimum:

Construction Phasing and Traffic Control Performance Specifications:

1. Meet TMUTCD Part VI requirements conforming to TxDOTs Compliant Work Zone Traffic Control Device List.

2. Complies with TxDOT Specification Item 502 - Barricades, Signs, and Traffic Handling

3. The City requires that a minimum of one vehicular lane of traffic must be open in each direction, at all times, for the duration of the project.

4. The TCP shall include details for allowable time and duration of lane closures, all detours, traffic control devices, striping, and signage applicable to each phase of construction. Information included in the TCPs shall be of sufficient detail to allow verification of design criteria and safety requirements, including typical sections showing lane width, concrete traffic barrier and barrel placement, alignment, striping layout, drop off conditions, and temporary drainage.

5. Throughout the duration of the Project, Contractor shall ensure all streets and intersections remain open to traffic to the greatest extent possible by constructing the project in phases except as shown on preapproved TCP. Contractor shall maintain access to all adjacent streets and shall provide for ingress and egress to public and private properties at all times during the project.

6. Contractor shall coordinate with the respective landowners and tenants and also secure written permission prior to disrupting access to parking facilities.

7. Contractor shall also notify the traveling public by placing changeable message signs a minimum of seven days in advance of actual roadway closure or major traffic modifications.

8. If at any time the City determines Contractor's traffic control operations do not meet the intent of the Contractors developed TCP, Contractor shall immediately revise or discontinue such operations to correct the deficient conditions.

9. Contractor shall provide to the City the name of s traffic coordinator and a backup coordinator in the event the primary coordinator is unavailable, and the phone number(s) where they can be reached 24 hours per day, seven days per week.

10. All temporary detour routes shall be reviewed and approved by the City prior to implementation. No detours shall be routed though through local subdivision neighborhood streets. All detour routes shall be identified in accordance with the TMUTCD, Part 6.

11. Contractor shall maintain the vehicular travel lanes, detours, transitions, and street conditions in a safe and traversable condition. This will be required for the entire length of the project Contract.

12. Temporary Detour Pavement pay item shall include 4" Flex Base and 4" Asphalt as specified in the Plans, complete in place.

SP-16 DISADVANTAGED BUSINESS ENTERPRISE (DBE) INFORMATION:

The Contractor is encouraged make a good faith effort to utilize DBE companies and use the DISADVANTAGED BUSINESS ENTERPRISE (DBE) INFORMATION form to identify themselves or potential subcontractors as DBE companies recognized by the certifications listed. A list of potential vendors can be obtained from the City's Purchasing Department. The low bidder shall submit DBE information as part of Bidder's qualifications.

SP-17 CONCRETE FINISHING:

Concrete street pavement shall be finished with metal tine device equipped with cross section approximately 1/32 in. thick x 1/12 in. wide. Provide tines for transverse tining equipment spaced at approximately 1 in., center-to-center.

SP-18 SPECIAL SHORING:

Contractor shall provide submittal to shore steep vertical slopes encountered during construction phasing as directed for review and approval.

SP-19 BRIDGE STRUCTURE SPECIFICATIONS:

Bridge construction work for this project shall be performed in accordance with the Texas Department of Transportation, 2014 Standard Specifications for Construction of Highways, Streets, and Bridges, including but not limited to the following Items:

Item 416- Drilled Shaft Foundations
Item 420- Concrete Structures
Item 421- Hydraulic Cement Concrete
Item 422- Concrete Superstructures
Item 425- Concrete Prestressed Concrete Structure Members
Item 427- Surface Finishes for Concrete
Item 428- Penetrating Concrete Surface Treatment
Item 432- Riprap
Item 434- Bridge Bearings
Item 440- Reinforcement of Concrete
Item 442- Metal for Structures
Item 450- Railing
Item 454- Bridge Expansion Joints
Item 540- Metal Beam Guard Fence

TECHNICAL SPECIFICATIONS

SECTION 10010

MOBILIZATION

1.1 PART 1 – GENERAL

1.2 DESCRIPTION

A. This item shall be for the procurement of payment and performance bonds, required insurance, full execution of contract documents, attendance at the project preconstruction meeting, submission of required submittals to the City Project Engineer, field office and other facilities at the project site and the movement of adequate personnel, construction equipment and materials to the project site and the Contractor beginning work on the contract items outlined in the contract documents.

PART 2 – MATERIALS AND EQUIPMENT

Not used.

PART 3 – EXECUTION

Not used.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. The maximum bid amount for this item shall be five percent (5%) of the total amount bid for the project.

4.2 PAYMENT

A. Payment shall be full compensation when all the items outlined in Part 1.1 above have been completed. The **total payment for mobilization shall not exceed 5% of the total bid** and shall be payable when in the opinion of the City Project Engineer all the items outlined in Part 1.1 above have been completed.

END OF SECTION

SECTION 10011

TRAFFIC CONTROL

PART 1 – GENERAL

1.1 DESCRIPTION

A. This item shall govern for traffic control & barricading in accordance with these specifications and as shown on the plans. This item includes the design, application, installation and implementation of traffic control.

PART 2 – MATERIALS AND EQUIPMENT

2.1 MATERIALS

A. All barricades, fences, lights, danger signals, and other precautionary devices and measures shall conform to the current edition of the Texas Manual on Uniform Traffic Control Devices.

PART 3 – EXECUTION

3.1 GENERAL

A. All work shall conform to the current edition of the Texas Manual on Uniform Traffic Control Devices.

B. The Contractor shall provide a traffic control plan at least 48 hours prior to any work in a City street. The City Project Engineer may require the traffic control plan to be designed and sealed by an engineer licensed in the State of Texas. The Contractor shall plan his work in accordance with the traffic control plan, and/or as indicated in the plans. Any revisions must receive the City's approval prior to beginning work. As deemed necessary, the City Representative may require the Contractor to provide and maintain additional traffic control devices at any time.

C. Prior to beginning work the Contractor shall designate, in writing, a competent person who will be responsible and available on the project site or in the immediate area to insure compliance with the traffic control plan.

D. The Contractor will not remove any regulatory signs, instructional signs, street name signs or other signs which have been erected by the City. If removal or relocation of traffic signs, traffic control equipment or other traffic control appurtenances is deemed necessary, the Contractor shall contact the City of Mesquite Traffic Engineering Division at (972) 216-4104.

E. All traffic control devices must be installed prior to beginning construction.

F. One lane in each direction is to be kept open at all times on existing streets, except as necessary for short-term, temporary vicinity construction operations which would warrant adequate signs, barricades and flagmen as required by the current Texas Manual on Uniform Traffic Control Devices. Unless approved in writing, access to adjacent properties, driveways, alleys and intersecting streets shall be maintained at all times.

G. If paving operations result in a vertical longitudinal face greater than 1” in depth between lanes or at shoulders, Contractor shall erect either sign CW8-11 (UNEVEN LANES) or sign CW8-9a (SHOULDER DROP OFF) in advance of the area in accordance with the Texas Manual on Uniform Traffic Control Devices.

H. Arrow boards are required and additional advance warning traffic control devices used where an arterial street has lane closures overnight. The effective placement of arrow boards is contingent on sight visibility; attention must be paid to the road geometry and speed of the roadway when determining placement. Arrow boards will be placed at the direction of the City Public Works Construction Inspector.

I. If the Contractor’s proposed plan of operation for handling traffic does not provide for safe, comfortable movement, the Contractor shall immediately change his operations to correct the unsatisfactory conditions. The Contractor will be held responsible for all damage to the work due to the failure of barricades, signs, lights, danger signals, watchmen, and other devices to protect it, and whenever evidence of such damage is found, the City Representative may order the Contractor to immediately remove and replace the damaged portion at his cost and expense.

J. The Contractor’s responsibility for maintenance of all traffic control devices shall not cease until the project is accepted by the City.

PART 4 – MEASUREMENT AND PAYMENT

A. Traffic control implementation and maintenance shall be paid based upon percent of contract time completed and shall be full compensation for all traffic control devices, maintenance of devices, moving, placing and removing of devices; and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

END OF SECTION

SECTION 10020

TESTING LABORATORY SERVICES

PART 1 – GENERAL

1.1 DESCRIPTION

A. The Contractor shall employ and pay for an independent testing laboratory, **APPROVED BY THE OWNER**, to perform testing of construction materials. Contractor shall submit the name of the testing laboratory prior to beginning of Work.

B. Contractor Shall coordinate all testing activities and shall assist in whatever manner necessary so that the testing laboratory may provide all testing services.

C. All re-testing costs for failed testing shall be at the expense of the Contractor.

D. The City's Representative may initiate any test.

E. The Contractor shall notify the assigned City Public Works Construction Inspector of all density testing 24 hours prior to the scheduled test. Copies of all test reports shall be sent to the Public Works Inspector for review and acceptance and inclusion in the City project file. Projects will not receive City acceptance until all test results are complete and satisfactory.

F. Materials and products incorporated in the Work, shall be inspected, tested and approved by the Contractor. Tests by the Contractor, Subcontractors or by Suppliers shall be performed by certified technicians using certified laboratories. Laboratory technicians shall hold current certification in accordance with ASTM E 329, Standard Practice for Use in Evaluation of Testing and Inspection Agencies as Used in Construction or have a nationally recognized certification acceptable to the Engineer. Work in which materials are used without prior test and approval may be ordered removed and replaced at the Contractor’s expense. The Contractor will be required to furnish such facilities and equipment as may be necessary to perform the tests and inspection and shall be responsible for calibration of all test equipment required. When requested, the Contractor shall furnish a complete written statement of the origin, composition, and/or manufacture of any or all materials that are to be used in the Work.

G. Contractor shall have testing laboratory include requested City personnel on email distribution list for all test reports. Testing reports must be submitted within five days after the test has been made. Construction shall not proceed where materials are to be placed upon materials previously placed and these previously placed materials have not been tested or the test results have not been made available to the Engineer.

H. The most current specifications for all specifications listed herein shall govern testing methods.

1.2 STANDARD TEST METHODS FOR COMPACTION AND MOISTURE CONTENT OF SOIL

A. Moisture and Compaction Testing Standards: Testing laboratory shall sample, test in laboratory, and test in field moisture content and compaction per the following ASTM designations:
   1. D-698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort.
   2. D-6938 - Density, in Place, by Nuclear Methods Shallow Depth Test.
   3. D-4318 - Liquid Limit Plastic Limit and Plasticity Index of Soils Test.
   4. D-1140 - Material Greater than #200 Sieve.
   5. D-2487 - Unified Soil Classification System

B. Test Report: Laboratory shall provide both field and final copies of test results to the Engineer, Owner and other parties as directed by the Contractor.

1.3 STANDARD TEST METHODS FOR CONCRETE AND CORING

A. Concrete
   1. Samples shall be drawn from mid-load or from point of discharge if concrete is pumped. Sampling and making of cylinders shall conform to ASTM C-172 and ASTM C-31, respectively.
   2. Field Test Methods: For concrete, laboratory shall perform field test(s) and provide the following information for each set of cylinders or beam:
      a. Contractor's name.
      b. Name of project.
      c. Exact location and description of area where concrete was placed.
      d. Date of sampling.
      e. Concrete supplier.
      f. Concrete batch design number.
      g. Minimum required strength.
      h. Ambient temperatures.
      i. Concrete temperature.
      j. Weather condition; e.g., raining, windy, cloudy, sunny, etc.
      k. Truck number.
      l. Ticket number.
      m. Any admixtures.
      n. Slump per ASTM C-143; visual inspection will not be accepted.
      o. Air content in percent per ASTM C-231.
   3. Tests and Standards for Concrete:
      a. ASTM C-172 - Sampling of Freshly Mixed Concrete.
      b. ASTM C-31 - Making and Curing of Concrete Test Specimens in the Field.
      c. ASTM C-143 - Slump of Portland Cement Concrete.
      d. ASTM C-231 - Concrete Air Content by Pressure Method (for Fresh Concrete) Test.
      e. ASTM C-39 - Concrete, Cylindrical, Compressive Strength Test.
      f. ASTM C-793 - Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Center Point Loading.)

g. ASTM A-1064 Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete

B. Coring

1. Tests and Standards for Concrete Coring:
   a. Samplings and tests of concrete cores shall conform to ASTM C-42 - Obtaining and Testing Drilled Cores Sawed Beams of Concrete.
   b. Should coring be required to demonstrate acceptable thickness, measuring of concrete cores shall conform to ASTM C-174 - Measuring Length of Drilled Concrete Cores.
   c. Testing for Comprehensive Strength shall be in accordance with ASTM C-39 Concrete Cylindrical Strength Test.

1.2 STANDARD TEST METHODS FOR WATER SYSTEMS

A. Bacterial Sampling

1. The City Public Works Construction Inspector shall supervise the taking of water samples from a suitable tap (not through a fire hydrant) for analysis by the North Texas Municipal Water District laboratory. The sample(s) shall be transported by City staff to the laboratory at 9:00 AM on Tuesdays and Thursdays. Samples may not be taken earlier than 3:00 PM on the day prior to delivery. The City Public Works Construction Inspector shall notify the Contractor of the results.
2. Microbiological sampling shall be done prior to connecting the new conduit into the existing distribution system in accordance with AWWA C651 Disinfecting Water Mains. Samples shall be tested in accordance with ***Standard Methods for the Examination of Water and Wastewater***. Samples for bacteriological analysis shall be collected in sterile bottles treated with sodium thiosulfate. At least one sample shall be collected from every 1,000-linear-feet of new water conduit, plus one set from the end of the line and at least one set from each branch. If trench water has entered the new conduit during construction or, if in the opinion of the City inspector, excessive quantities of dirt or debris have entered the new conduit, samples shall be taken at intervals of approximately 200-linear-feet. Samples shall be taken of water that has been in the new conduit for at least 16-hours.
3. Unsatisfactory test results shall require a repeat of the disinfection process and resampling as required above until a satisfactory sample is obtained.
4. In the event there are two unsatisfactory test results from the same sampling point, the Contractor must “poly-pig” the new water main and samples taken again until a satisfactory sample is obtained.

B. Hydrostatic (Pressure) Test

1. All water mains, fittings and services shall be tested with a hydraulic test pressure of not less than 200 psi over a period of not less than 2 hours. The allowable leakage, in gallons, of all pipe tested shall be calculated per the following equation:

$$Allowable\ Leakage = \frac{28.28 * L * D}{148{,}000}$$ where L is Length of Pipe, feet, D is Diameter of Pipe, inches

2. For a two hour pressure test at a pressure of 200 psi. If the tests indicate a leakage in excess of the acceptable rate, the Contractor shall be required to find and repair the leak. Even if the test requirements are met, all apparent leaks shall be repaired and stopped.
3. The hydrostatic pump shall be connected to a system where the amount of leakage can be determined by measurement or gauge. The 200-psi pressure shall be maintained at the highest point of the main being tested over the entire 2-hour test period. The leakage shall be determined by comparing the quantity of water in the measuring system at the beginning of the test and quantity of water at the end of the test. The difference in these quantities shall be the leakage. An alternate method is to add water to the measuring system during the test. At the end of the 2-hour test, the quantity of water added shall be the leakage.
4. Hydrostatic pressure test for HDPE pipe shall be per NCTCOG Standard Specifications.

C. Tapping Sleeve and Valve testing

1.3 STANDARD TEST METHODS FOR SANITARY SEWER SYSTEMS

A. Deflection Testing
1. Mains less than thirty-six (36) inches in diameter shall pass deflection mandrel test per NCTCOG Standard Specifications for Public Works Construction, Item 507.5.1.4 Flexible Pipe (Deflection) Testing and TCEQ regulations Chapter 217.57(b) Deflection Testing.
2. Alternate methods for measuring deflection for pipes larger than thirty six (36) inches in diameter subject to City approval. Testing of mains thirty six (36) inches and larger shall occur at least 30 days after installation and backfill.
3. Pipe with deflection exceeding the percentage allowed deflection per NCTCOG table 507.5.1.4.2(a) at the time of testing shall be uncovered and reinstalled. If deflection exceeds 7% at the time of testing, pipe shall be removed and replaced with new materials. All failed joints, pipes, sections or structures shall be retested upon completion of remedial actions. Failed sections shall be retested after the remedial construction has been in place for 30 days.

B. Air Testing
1. Mains less than thirty six (36) inches in diameter and laterals shall pass a Low Pressure Air Test per NCTCOG Standard Specifications for Public Works Construction, Item 507.5.1.3 Low Pressure Air Testing and TCEQ regulations 30 TAC Chapter 217.57(a)(1) Low Pressure Air Test.
2. Pipes 36-inches and larger may be tested per NCTCOG item 507.5.1.3.3 (individual joint air test method). Testing of mains thirty six (36) inches and larger shall occur at least 30 days after installation and backfill. All failed joints, pipes, sections or structures shall be retested upon completion of remedial actions. Failed sections shall be retested after the remedial construction has been in place for 30 days.

C. TV Camera Inspection

1. After the deflection mandrel and air pressure test, the contractor shall conduct a color television camera inspection of the interior of the installed sanitary sewer system. The main must be laced with enough water to fill any low points. A copy of the recording in digital format and storage device (DVD disk, flash drive, etc.) as specified by the City, with written log of the inspection, shall be provided to the Public Works Construction Inspector prior to final acceptance of the project.

D. Manhole Testing

1. All manholes shall be vacuum tested including grade rings and casting per NCTCOG Public Works Construction Standard 502.1.5.2 and meet TCEQ regulations 30 TAC 217 and ASTM C1244, "*Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill"*. The time for the vacuum to drop from 10 inches of mercury to 9 inches shall not be less than two (2) minutes.

1.4 FREQUENCY OF TESTS

A. Refer to City of Mesquite Standard Details and Project Specifications for the required frequency of tests.

PART 2 – MATERIALS AND EQUIPMENT

Not used.

PART 3 – EXECUTION

Not used.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. This section shall not be measured as a separate contract section.

4.2 PAYMENT

A. The work performed and materials furnished in accordance with this section will not be paid for directly but will be subsidiary to pertinent sections.

END OF SECTION

SECTION 20022

REMOVAL OF EXISTING PAVEMENT

PART 1 – GENERAL

1.1 DESCRIPTION

A. The work as specified in this section includes all labor, equipment and materials necessary to remove and dispose of existing pavement of all types (i.e. driveways, sidewalks, street, etc.) and materials (i.e. asphalt, concrete, etc.) in conformity with the plans and these specifications

PART 2 – MATERIALS AND EQUIPMENT

Not used.

PART 3 – EXECUTION

3.1 GENERAL

A. When removing portions of concrete pavement from existing pavement that will remain in place, Contractor shall delineate the line of removal neatly and accurately with a full-depth saw-cut to facilitate removal without damaging the remaining pavement. Saw-cut shall be considered incidental. Contractor shall ensure the removal methods do not chip or damage surrounding pavement or curb. If any existing concrete beyond the removal limits is damaged or destroyed, it shall be replaced at the Contractor's entire expense. Removed concrete pavement shall be disposed of off-site by the Contractor.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. This section shall be measured by each plan view square yard of pavement removed. Payment shall be full compensation for materials and installation including sawcutting, removal, excavation, haul off and lawful disposal of spoils, and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

END OF SECTION

SECTION 20030

REINFORCED CONCRETE PAVEMENT, CURB AND GUTTER AND SIDEWALK

PART 1 – GENERAL

1.1 DESCRIPTION

A. The work as specified in this section includes all labor, equipment and materials necessary to construct the reinforced concrete pavement of the thickness shown on the plans and in conformity with the plans and these specifications.

1.2 SUBMITTAL

A. The Contractor shall submit the proposed concrete mix design for approval and record.
B. Paving equipment
C. Pattern and color for stamped, colored concrete as applicable.
D. Submittals as required by Section 20010 Steel Reinforcement

1.3 QUALITY CONTROL

A. General
    1. Locations for testing will be determined by the City Public Works Construction Inspector.
B. Testing Requirements, reference Section 10020 Testing Laboratory Services
    1. Subgrade / Sub-base
        a. Moisture content and compaction shall be tested every 300 ft. per lane
    2. Concrete During Placement
        a. At least one test shall be made on fresh concrete each day for each class of concrete. On large placements, at least one test shall be made on each 150 cubic yards of concrete placed, per class of concrete. Each set of tests shall consist of one (1) slump test, one (1) air entrainment test, one (1) temperature test and three (3) compression test cylinders.
            i. One cylinder shall be broken at 7 days and the other two at 28 days or as instructed by the Public Works Construction Inspector.
            ii. The Contractor may have additional cylinders taken if desired to determine the strength of the concrete in addition to a 7-day break and 28-day break.
        b. Temperature shall be tested throughout the day on each load of concrete
    3. Concrete Cores (4” diameter)
        a. Tested for both thickness and 28-day strength
        b. Cores shall be taken at a rate of one per every 300 ft. per lane
    4. Reinforcement

a. Inspected by City Representative for layout prior to placing any concrete

1.4 INSPECTION

A. Reinforcing steel must be inspected and approved prior to placement of concrete
B. Any subgrade and/or base material testing required must be completed and shown to have passed requirements of project specifications prior to placement of concrete.

PART 2 – MATERIALS AND EQUIPMENT

2.1 GENERAL

A. All materials and requirements for concrete shall conform to the requirements of NCTSSPWC Item 303 “Portland Cement Concrete Pavement” with the exception of items specified herein.
B. Slip Form Paving Machine(s) equipped with external vibrators shall be used for all street pavements. Vibrating screeds will only be allowed for hand finished placement or if authorized by the engineer.

2.2 CONCRETE

A. Concrete shall have a 28-day minimum compressive strength of 4,000 psi, containing 6 sacks of cement per cubic yard minimum, with 1” to 3” slump for machine placement and 3” to 5” slump for hand placement.
B. Fly ash may be substituted for up to 20% of the cement content requirement at 1 to 1.25 cement to fly ash substitution rate.

2.3 REINFORCEMENT

A. Reinforcing shall conform to ASTM A 615 and be a minimum grade of 60 ksi per ASTM A 370. Reinforcement may be rejected for failure to meet the following: reinforcement exceeding the allowable variations; reinforcement with a coating of dirt, loose scale, paint, oil, or other foreign substance which would prevent the bonding of the concrete and reinforcement; reinforcement not bent in accordance with the standard details; or twisted bars. Reinforcement shall be stored above the ground surface upon skids, platforms, or other supports, and shall be protected from mechanical injury and surface deterioration caused by exposure to the conditions producing rust.
B. Reinforcement shall conform to Section 20010 Steel Reinforcement.

2.4 JOINTS

A. Joints shall be filled with hot-poured rubber joint sealing compound that conforms to ASTM D 3406 and meets the requirements of NCTSSPWC 303.2.14.1.1.(a) Hot Poured Polymer Sealant Requirements
B. Expansion joint materials shall consist of:
    1. Pre-molded asphalt board tested in accordance with ASTM D 545 Test Methods for Preformed Expansion Joint Fillers for Concrete Construction (Non-extruding and Resilient Types).

2. Redwood shall be prohibited on sidewalks and used on streets only when necessary for constructability

2.5 CURING MATERIALS

A. White Curing compound is to be applied, per manufacturer's recommendations, to all exposed concrete surfaces (including back-of-curbs) immediately after completion of finishing operations. Clear curing compound shall be used on stained concrete surfaces only. Curing compounds shall be ASTM C-309, Type 2 and shall be per NCTSSPWC Section 303.2.13.1.1. The compound shall be delivered to the jobsite in the manufacturer's original containers only, which shall be clearly labeled.

2.6 STAMPED CONCRETE

A. Pattern and color per plans. City shall be provided mold upon completion of project.

B. Prepare for approval a 9-sq. ft., 3-in. thick specimen for each color, pattern, and texture required before beginning work

PART 3 – EXECUTION

3.1 GENERAL

A. All requirements for concrete shall conform to the requirements of the current NCTSSPWC Item 303 "Portland Cement Concrete Pavement" with the exception of items specified herein.

3.2 JOINTS

A. Joints shall be used where shown on the plans or where directed by the Engineer. The plane of all joints shall make a right angle with the surface of the pavement. No joint shall have an error in alignment of more than one half (1/2) inch at any point. The concrete along the face of all joints, except dummy joints, shall be thoroughly consolidated by vibration to insure a surface which is free from honeycombing. All joints shall be constructed in accordance with Standard City of Mesquite Joint Details.

3.3 INTEGRAL CURB

A. Integral curb shall be constructed along the edge of the pavement as an integral part of the slab and of the same concrete as the slab. The concrete for the curb shall be deposited not more than thirty (30) minutes after the concrete in the slab.

B. If curb is formed by hand finishing a curb finish mule must be used to ensure a uniform cross-section.

C. Provide finished work with a well-compacted mass and a surface free from voids and honeycomb, in the required shape, line, and grade. Round exposed edges with an edging tool of the radius shown on the plans. Construct joints at locations shown on the plans. Cure for at least 72 hr.

D. Set and maintain a guideline that conforms to alignment data shown on the plans, with an outline that conforms to the details shown on the plans. Ensure that

changes in curb grade and alignment do not exceed 1/4 in. between any 2 contacts on a 10-ft. straightedge.

E. Conventionally Formed Concrete.
   1. Shape and compact subgrade, foundation, or pavement surface to the line, grade, and cross-section shown on the plans. Lightly sprinkle subgrade or foundation material immediately before concrete placement.
   2. Pour concrete into forms, and strike off with a template 1/4 to 3/8 in. less than the dimensions of the finished curb unless otherwise approved. After initial set, plaster surface with mortar consisting of 1 part hydraulic cement and 2 parts fine aggregate. Brush exposed surfaces to a uniform texture.
   3. Place curbs, gutters, and combined curb and gutters in 50-ft. maximum sections unless otherwise approved.

F. Extruded or Slipformed Concrete.
   1. Hand-tamp and sprinkle subgrade or foundation material before concrete placement. Provide clean surfaces for concrete placement. Coat cleaned surfaces, if required, with approved adhesive or coating at the rate of application shown on the plans or as directed. Place concrete with approved self-propelled equipment.
   2. The forming tube of the extrusion machine or the form of the slipform machine must be easily adjustable vertically during the forward motion of the machine to provide variable heights necessary to conform to the established gradeline.
   3. Attach a pointer or gauge to the machine so that a continual comparison can be made between the extruded or slipform work and the grade guideline. Other methods may be used when approved.
   4. Finish surfaces immediately after extrusion or slipforming.

3.4 REINFORCEMENT

A. Reinforcement shall be placed at locations and spacing shown on the plans, or as directed by the Engineer, and shall be supported above the sub-grade on chairs approved by the Engineer.

B. Placement and work methods shall conform to Section 20010 Steel Reinforcement

C. Contractor shall drill dowel holes using approved equipment that will ensure proper depth and alignment. Dowel holes shall be mechanically drilled at mid-depth of the slab. The holes shall be on alignment, level with the top surface of the slab, with minimal wandering. In some instances, dowel locations may have to be adjusted due to field conditions such as cracks, heavy mesh reinforcement, or other obstructions at the plan location for a dowel hole. After drilling holes, Contractor shall clean out the dowel holes with compressed air at a minimum 125 psi and then brush the holes out. Contractor shall insert the air nozzle to the back of the hole to force out all dust and debris, which might prevent the epoxy from bonding to the concrete. Contractor shall occasionally check the air for oil and moisture contamination from the compressor. To place the anchoring material, Contractor shall use a long nozzle that feeds the material to the back of the hole, assuring that the anchoring material will flow forward along the entire dowel embedment length during insertion. Contractor shall not use any method that attempts to pour

or push the anchoring material into the hole. The injection wand on the installation unit shall contain an auger-type mixing spindle that mixes the two-part epoxy. Contractor shall insert dowels by twisting the dowel about one full revolution to evenly distribute the material around the dowel's circumference. Contractor shall verify that the dowels are installed to the proper insertion depth and to the correct orientation (perpendicular to the vertical face of pavement). A plastic grout-retention disk shall be used to prevent the escape of epoxy. Some anchoring material shall be visible from the sides of the disk after installation to ensure proper amount of epoxy was placed in the hole. Dipping dowels into epoxy and inserting the dowel into the drilled hole is not acceptable.

D. Standard pavement reinforcing steel bar laps are to be 30 bar diameters or 15" per ACI 318, section 12.15, whichever is greater. All bars shall be wired at their intersections and at all laps or splices. All reinforcement necessary for a section of concrete shall be placed and approved by the Owner before any concrete is placed in the section. The pavement reinforcing steel shall be supported on chairs and care shall be exercised to keep all steel in its proper locations. After the reinforcing steel is securely installed above the subgrade, there shall be no loading imposed upon (or walking upon) the bar mats or individual bars before or during the placing or finishing of the concrete. When placed in the work, the reinforcement shall be free from dirt, loose rust, scale, painting, oil, or other foreign material.

3.5 CONCRETE PLACEMENT

A. The Contractor shall do all necessary filling, leveling, and fine grading required to bring the subgrade to the exact grades needed for repair.

B. Fill and Level Up: Approved fill and level-up material is crushed concrete Flexible Base per TXDOT Item No. 247, Grade 1, Type D. **Sand may not be used as fill or level-up material under any pavement.**

C. The subgrade shall be compacted using City approved vibratory sheep's foot rollers, or other mechanical compaction equipment approved by the City. The subgrade and all level-up material must be compacted to 95% standard proctor density with a moisture content of 0% to plus 6% of optimum moisture. Moisture level must be maintained by wetting, until placing of concrete. All fill and level-up shall have densities taken at the interval and locations determined by the City Public Works Construction Inspector.

D. Subgrade shall be prepared per plans and pass required testing prior to setting forms.

E. Placement of Concrete

1. Forms shall be straight, free of warp and kinks, and of a depth equal to the thickness of the finished work. Forms shall be a minimum of 10' in length for each individual form or of a section satisfactory to the Owner, securely staked to the line and grade, and maintained in a true position during the depositing of concrete. Forms shall be of ample strength and shall be provided with adequate devices for secure setting so that when in place they shall withstand the impact and vibration of equipment imposed thereupon without appreciable springing or settlement. Forms shall be

thoroughly cleaned and oiled before each use. Forms shall remain in place until the concrete has taken its final set. Removal of forms shall be followed immediately by banking earth against the sides of the slab and wetting it. Care shall be taken in removing forms to prevent spalling or other damage of the concrete. All forms showing a deviation of 1/8” in 10’ from a straight line shall be rejected.

F. Thickness of concrete shall be per plans.

G. Hot-Weather Concreting
   1. The temperature of concrete as delivered shall not exceed 95 degrees F. Take immediate corrective action or cease concrete production when the concrete temperature exceeds 95 degrees F.
   2. If concrete is to be placed before sunrise or after there is sufficient natural light the contractor must provide their own supplemental artificial lighting enough to do work safely and properly and in accordance with the City of Mesquite specifications.

H. Cold-Weather Concreting
   1. No concrete shall be placed on a frozen subgrade
   2. If the ambient air temperature is less than 40 degrees F and dropping concrete shall not be placed.
   3. If concrete is placed and there is an anticipated low temperature of less than 40 degrees F within 5 days after placement the concrete must be covered and kept at a temperature of no less than 50 degrees F.
   4. In all cases, concrete should not be kept at a temperature of less than 50 degrees F for a period of 5 days’ minimum.

3.6 FINISHING

A. Immediately after finishing all concrete surfaces, the surfaces shall be finished to a true, even surface and the required line, grade, and section with all surface voids filled. Finish all concrete street paving wider than 37’ with a tine finish (1”), perpendicular to traffic flow. Broom curb and gutter parallel to traffic 12” from curb. The edges of slabs and all joints requiring edging shall be carefully tooled with a suitable tool at the time the concrete begins to take its “initial set” and becomes non-workable. Before street pavement will be accepted and reopened, all foreign debris shall be removed and pavement cleaned.

B. Stamped Concrete: Contractor shall apply concrete stamping as shown on the plans. Upon completion, contractor shall provide concrete stamping mats used for construction to City.

3.7 SIDEWALKS

A. Shape and compact subgrade, foundation, or pavement surface to the line, grade, and cross-section shown on the plans. Lightly sprinkle subgrade or foundation material immediately before concrete placement. Hand-tamp and sprinkle foundation when placement is directly on subgrade or foundation materials. Remove and dispose of existing concrete. Provide a clean surface for concrete placement directly on the surface material or pavement.

B. Mix and place concrete in accordance with the pertinent Sections. Hand-finishing is allowed for any method of construction. Finish exposed surfaces to a uniform transverse broom finish surface. Curb ramps must include a detectable warning surface and conform to details shown on the plans. Install joints as shown on the plans. Ensure that abrupt changes in sidewalk elevation do not exceed 1/4 in., sidewalk cross slope does not exceed 2%, curb ramp grade does not exceed 8.3%, and flares adjacent to the ramp do not exceed 10% slope. Ensure that the sidewalk depth and reinforcement are not less than the driveway cross-sectional details shown on the plans where a sidewalk crosses a concrete driveway.

C. Provide finished work with a well-compacted mass, a surface free from voids and honeycomb, and the required true-to-line shape and grade.

3.8 PROTECTION OF PAVEMENT AND OPENING TO TRAFFIC

A. No vehicle traffic shall be permitted on newly paved areas for a minimum of seven days after placement or until 3000 psi has been achieved.

B. Contractor shall protect concrete during curing period. Any damage done to pavement shall be remedied at contractor’s expense.

3.9 PAVEMENT TOLERANCES

A. No concrete pavement with ponded or standing water over 1/8” deep will be accepted.

B. Contractor shall measure the transverse and lateral profile of the finished riding surface using a 10-ft straightedge to measure and evaluate the ride quality of the pavement surfaces. The texture and ride quality of the new pavement should closely match of that of the existing pavement to which it connects. Contractor shall use an approved grinding or other acceptable method to correct localized roughness and surface areas that have more than 1/8-in variation between any 2 contacts on a 10-ft straight edge. This shall be considered incidental to this bid item.

C. Comply with tolerances of ACI 117 and as follows:
   1. Elevation: 1/4 inch.
   2. Thickness: Plus 3/8 inch, minus 1/4 inch.
   3. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/4 inch.
   4. Joint Spacing: 3 inches.

3.10 CLEANUP

A. After the construction work has been completed, the Contractor shall remove all debris, trash, excess materials, forms, stakes, etc. from the premises. The site shall be left with a neat appearance. All excavation shall be backfilled, and all excess excavated materials shall be disposed of.

3.11 PENALTY FOR DEFICIENT PAVEMENT THICKNESS AND STRENGTH

A. Where the pavement is deficient in strength from that called for by the plans or specifications, as determined by the proper compressive strength testing, the

Contractor is responsible for addition testing to determine the actual strength deficiency.

B. Where the pavement thickness is deficient from that called for by the plans or specifications, as determined by core test set up in the contract, the Contractor is responsible for additional core tests to determine actual limits of deficient pavement thickness. The length of the area of such deficient thickness shall be determined by additional cores at intervals of 10 feet along the length of the pavement in each direction until cores are obtained which are at least plan thickness. The width of such area shall be the entire placement width.

C. Contract payment will be made at an adjusted rate based on the following tables. If area of pavement is deficient in both measurements, then the more stringent payment deduction will be in effect:

Percent Deficient from Required Strength	Percent of Contract Price Allowed
Greater than 0%- Not more than 5%	95%
Greater than 5%- Not more than 10%	90%
Greater than 10%- Not more than 15%	80%

Deficiency in Thickness Determined By Cores	Percent of Contract Price Allowed
0.00 – 0.20	100%
0.21 – 0.30	80%
0.31 – 0.40	70%
0.41 - .050	60%

D. Any area of pavement found deficient in strength by more than 15% or deficient in thickness by more than 0.50 inches shall be removed and replaced by the Contractor at his entire expense for the width of the street or alley and as directed by the Engineer.

3.12 REMOVAL OF DEFICIENT CONCRETE

A. If the above tests indicate that a particular batch of previously placed concrete has less than the design strength, the Engineer may direct that the defective concrete be removed and replaced.

1. The removal of the defective concrete shall also include the removal of concrete that has obtained the required strength if the Engineer deems this necessary to obtain structural or visible continuity when the concrete is replaced.
2. The removal, and replacement of any defective concrete, shall be made at no additional cost to the Owner. This shall include any formwork required and any reinforcing steel required. The Owner will not accept any additional costs for extra work required because of the failure of placed concrete to meet the minimum requirements.

PART 4 – MEASUREMENT AND PAYMENT

A. Concrete street pavement and sidewalks shall be measured by square yard of reinforced concrete street pavement and sidewalks in place and accepted for the depth specified in the plans. The area of concrete pavement includes the portion of the pavement slab extending beneath the curb. Payment shall be full compensation for concrete paving including reinforcement, joints, joint sealing, forms, base for level up, curing compound, testing, clean-up and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

B. Curb or curb and gutter shall be measured by linear foot of curb or curb and gutter in place and accepted. Payment shall be full compensation for concrete paving including reinforcement, joints, joint sealing, forms, base for level up, curing compound, testing, clean-up and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications

END OF SECTION

SECTION 30010

WATER UTILITIES

PART 1 – GENERAL

1.1 DESCRIPTION

A. All material, labor, equipment, tools, and superintendence necessary to furnish and install public water systems, water services from public waterline to meter and private fire sprinkler systems.

1.2 SUBMITTAL

A. Pipe material, fittings, valves, fire hydrants and appurtenances
B. Polyethylene tube wrap
C. Backfill material
D. Detector Tape
E. Flushing plan as required by City Engineer

1.3 QUALITY CONTROL

A. General
    1. Locations for testing will be determined by the City Public Works Construction Inspector.
    2. Materials must conform to City of Mesquite Approved Water Materials List.
B. Testing Requirements, reference Section 10020 Testing Laboratory Services and the City of Mesquite General Design Standards for Testing Procedures
    1. Waterlines – Prior to connecting water lines to active distribution system, water lines shall be tested for:
        a. Hydrostatic Pressure at the highest point in main
        b. Bacterial Sampling – one sample per 1,000 linear feet plus one sample from the end of the line and one from each branch
    2. Tapping sleeves and valves – Each tapping sleeve and valves shall be air tested prior to installation
    3. Backfill
        a. Moisture content and compaction shall be tested every lift, every 300 linear feet of trench

PART 2 – MATERIALS AND EQUIPMENT

2.1 MATERIALS

A. Where applicable, all of the following shall conform to the City of Mesquite General Design Standards for materials. Materials shall be from the City of Mesquite Approved Water Materials List.
B. Public Water Line Pipe:
    1. PVC Water Pipe (Including Fusible PVC Pipe): 4”-18” Diameter
        a. AWWA C-900, Class 305 (DR 14)
        b. Blue in color

c. Ductile iron pipe nominal dimensions (DIPS), integral bell and locked-in factory installed rubber gasket or thermal butt fused joint, as specified.

2. Ductile Iron Pipe: Larger than 12” Diameter
   a. AWWA Standard C151, thickness Class 52 for all sizes, designed for a minimum working pressure of 200 psi and HS-20 loading.
   b. Gauged pipe with consistent outside diameter
   c. Polyethylene Tube Wrap in accordance with AWWA C105 and blue in color. Installed in accordance with AWWA C105, Method A.
   d. Pipe Coatings in accordance with AWWA C104, standard interior cement mortar lining and exterior asphaltic coating.
   e. Joints:
      i. All joints and glands shall be ductile iron in accordance with AWWA C111 with a minimum pressure rating of 250 psi. Bolts and Nuts for all joints and glands shall be ASTM A 325 Type 3 Enhanced Corrosion Resistant steel, or stainless steel grade 304 or 316.
         a) Push on Joint: AWWA C111
         b) Flanged Joint: AWWA C115
         c) Mechanical Joints: AWWA C111
      ii. Internal bead shall be removed from fused pipe joints

3. Concrete Pressure Pipe: 16” or Larger Diameter
   a. Pipe: Concrete Pressure Pipe may be supplied for water systems for pipe diameters 16” and larger and shall conform to AWWA C303 and AWWA C304, designed for a minimum working pressure if 200 psi minimum field test pressure of 200 psi and an HS-20 live load.
   b. Fittings: All fitting and glands shall be designed and fabricated in accordance with AWWA C303 and AWWA C304 and shall be designed for a minimum working pressure of 200 psi minimum field test pressure of 200 psi and an HS-20 live load. All fittings and valves shall be mechanically restrained using full circle welds or equal as approved by the City Engineer. Bolts and Nuts for all fitting shall be ASTM A325 Type 3 Enhanced Corrosion Resistant Steel, or stainless steel Grade 304 or 316.

4. Fittings:
   a. All mechanical joint fittings, glands and restraints for Ductile Iron pipe or PVC pipe shall be Ductile Iron in accordance with AWWA C153 (compact fittings) & AWWA C111 with a minimum pressure rating of 350 psi. Flange fittings shall be ductile iron in accordance with ANSI/AWWA C110/A21.10 and 125# ANSI B16.1 faced and drilled. Fitting interior shall be cement lined and seal coated. The outside coating shall be bituminous coating. Bolts and Nuts for all fittings shall be stainless steel Grade 304 or 316 or ASTM A325 Type 3 Enhanced Corrosion Resistant steel. Stainless steel all-thread may be used in some applications with the approval of the City Engineer.

b. Joint Restraint: All fittings, including valves, shall be mechanically restrained using restrained fittings and meet requirements of ASTM F1674 (PVC) or U.L. Standard 194 (Ductile Iron). Restraint gland and body and wedge components shall be ductile iron material. For pipe diameters 12” or greater, waterline profile plan shall show length of joints to be restrained on each side of fittings. For pipe diameters less than 12”, all joints within 15-feet of fitting shall be restrained.

C. Fire Hydrant:
1. All fire hydrants supplied shall comply with AWWA C-502, with a minimum working pressure of 200 p.s.i.
2. 2 operating nut which turns counter clockwise to open.
3. Fire hydrants shall be installed without chains.
4. Valves - All valves shall be resilient seat gate valves (restrained) AWWA C509 or C515.

D. Air Release Valves and Combination Valves:
1. All air release valves and combination valve components shall be insulated.

E. Gate Valves:
1. All valves 4-inch to 36-inch diameter shall be resilient seated gate valves that comply with AWWA C509 or C515 with a minimum working pressure of 200 psi. The valve shall be full opening, ductile iron body, non-rising stem, resilient seated wedge type designed to have complete zero leakage with flow in either direction at pressures up to two hundred psi. The valves shall be designed for throttling if required.
2. All valves over 24-inch in diameter shall be designated for horizontal installation unless otherwise shown on plans. Valves shall be placed in vault.
3. Coating – Valves shall have all internal and external ferrous metal surfaces coated with an approved epoxy coating to provide a corrosion resistant barrier. The epoxy coating shall be holiday free with a minimum thickness of not less than ten mils.
4. Operating Stems - Valves shall have two (2) “O” ring stem seals. Valves shall have the thrust collar and bearing surfaces isolated from the waterway and be provided with continuous lubrication, or they shall be provided with non-corrosive thrust bearings above and below the thrust collar. All valves shall open by turning to the left (counter clockwise) and shall have a two (2) inch-operating nut. Hand-wheel operated valves shall only be installed if specifically shown on the plans or related general details.
5. Valve Ends - In general, all in-line valves supplied shall have mechanical joint ends unless otherwise specified.

F. Butterfly Valves:
1. General - With the approval of the City Engineer, valves larger than 24-inch diameter may be butterfly valves. Butterfly valves must comply with AWWA C504 pressure class 250B or approved equal. Seats must be in the valve body.

2. Gear Boxes – Butterfly valves shall be supplied with worm gear operators manufactured of hardened steel with open/closed indicators. Gearboxes shall be supplied with an operating nut unless otherwise specified.
3. Bolts, Bolt-studs and “T” Head Bolts - Bolts and “T” head bolts shall be long enough so that the ends project ¼ to ½ inch beyond outside surface of nuts. The ends of all bolts shall be chamfered or rounded. The threads on all bolts, bolt-studs and “T” head bolts shall have ANSI B1.1 coarse thread series, class 2A Fit. Bolt-studs may be threaded full length. Studs for tapped holes shall be threaded to match threading in holes. All bolts, bolt-studs and “T” head bolts (AWWA C111) shall be either A242 high strength low alloy steel with enhanced atmospheric corrosion resistance (ASTM A325 Type III) or Stainless Steel A151 304 or 316 high strength bolts. All nuts are to be A563 carbon alloy steel with a C3 grade and finish.
Exception: All-thread rod and nuts used in for joint restraint or thrust restraint shall be A151 304 or 316 stainless.
4. Valve Vaults and Manholes - All butterfly valves must be enclosed in manholes or vaults. The size of the manhole or vault and lid should be adequate to access and remove or service the valve, gear box and sleeve from the enclosure. The valve must be installed with a sleeve to allow removal of the valve and must be mechanically thrust anchored with stainless all-thread or other approved system. Direct bury of butterfly valves may be allowed with the approval of the City Engineer.

G. Tapping Sleeves and Valves:
1. Tapping Sleeve – Tapping sleeves shall be full body, and be completely constructed of type A151 304 stainless steel. The sleeve shall have a flange flat-faced outlet recessed for the tapping valve conforming to AWWA C207 Class D-ANSI 150 pound drilling and a ¾” inch N.P.T. test opening with plug for pressure test prior to tapping. All welds shall be fully passivated to restore the corrosion resistance of the stainless steel.
2. Tapping Valve – Tapping valves shall be a flange by MJ resilient seat gate valve unless otherwise specified. The gaskets shall be neoprene or other synthetic rubber, conforming to ASTM D2000 BA508.
3. Bolts and Nuts – All bolts shall be Grade 18-8, Type A151 304 Stainless steel with heavy hex nuts. Bolts will be fluorocarbon coated to prevent galling.
4. Gasket – Gasket shall be Buna-N rubber, conforming to ASTM D2000, BA508, with resistance to water, oil and hydrocarbon fluids. The gasket shall be of hydraulically loaded design to provide a positive seal against the pipe surface.

H. Standard Water Service: All water service lines 2-inch or smaller shall be Type K copper in accordance with AWWA C800.
1. Service Saddles - Service saddles shall meet requirements of AWWA C800 and be equipped with AWWA taper threads outlet. For ductile iron, cast iron and PVC water mains shall have a brass or bronze body with two bronze or 304L stainless steel straps. Epoxy coated ductile iron service saddles will not be allowed. Service saddles for AC water mains shall be a full body

tapped stainless steel repair clamp. Service connections to the main for services larger than 2-inches shall use factory tee fittings.

2. Corporation Valves - All corporations shall meet requirements of AWWA C800 and be equipped with ball valve, AWWA taper threads inlet and a stainless steel grip ring compression outlet and be rated for 200 psi service pressure. For ductile iron pipe, use threaded corporation with Teflon tape wrap. Factory tees shall be installed for all services larger than 2-inches.
3. Angle Meter Valve (Angle Curb Stop)- All angle meter valves shall meet requirements of AWWA C800 and be equipped with a ball valve with lock wing, rated for 200 psi service pressure. Angle meter valves of ¾-inch and 1-inch size shall be equipped with a stainless steel grip ring compression inlet connection x meter saddle-swivel nut outlet connection. Angle meter valves of 1-1/2-inch and 2-inch size shall be equipped with a stainless steel grip ring compression inlet connection and meter flange outlet connection.
4. Meter Box or Vault - A water meter box with locking lid shall be furnished and installed the Contractor after paving and fine grading is complete. When installing a water main, new meter boxes shall be furnished, installed and connected to the main. Meters larger than 2-inches in size shall be furnished and installed by the Contractor in concrete vaults in accordance with City details.

I. Concrete thrust block: 2,000 psi and 4-sack minimum cement content

PART 3 – EXECUTION

3.2 GENERAL

A. **Contractor shall not operate any valves in the existing water system nor operate any new valves that would allow connection the City water system.**

B. The Contractor shall coordinate and notify the City Public Works Construction Inspector 72-hours in advance to schedule a shut-down of the existing water system by City personnel. The City may require a night or weekend shut-down in order to maintain customer service. Notices to all affected customers shall be delivered by the contractor a minimum of 48-hours in advance of scheduled water shut-down.

3.3 REMOVAL/ABANDONMENT OF EXISTING WATERLINES AND APPURTENANCES

A. Any existing water main being replaced shall be cut and plugged or removed as directed by the City Engineer.

B. Abandoned Mains – The ends of the pipe to be abandoned shall be plugged with anchor plug

C. Valve stacks for abandoned mains shall be removed and/or filled with concrete as shown in the City of Mesquite General Design Standards.

3.4 DELIVERY, STORAGE AND HANDLING

A. Transport, handle, and store pipe and fittings as recommended by manufacturer.

B. If new pipe and fittings become damaged before or during installation, it shall be repaired as recommended by the manufacturer or replaced as required by the Engineer at the Contractor's expense, before proceeding further.
C. Deliver, store and handle other materials as required to prevent damage.
D. Pipe Delivery, Handling and Storage
    1. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.
    2. During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.
    3. If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to insure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks.
    4. Any length of pipe showing a crack or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the owner or engineer.
    5. Any scratch or gouge greater than 10% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the owner or engineer.
    6. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.
    7. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.
    8. If pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.
    9. Pipe shall be stored and stacked per the pipe supplier’s guidelines.

3.5 INSTALLATION

A. General
    1. All water pipe, valves, fire hydrants, and fittings shall be installed by the use of lifting straps. The use of chains is prohibited.
    2. Where applicable, all of the following will conform to the City of Mesquite General Design Standards for installation.
B. Waterline Pipe:

1. Open cut installation per NCTSSPWC Items 506.3-506.4 and 506.6 except as amended by this specification
    a. Water mains with a nominal diameter less than 14-inches shall have a minimum cover of 42”
    b. Water mains with a nominal diameter 14” or greater shall have a minimum cover of 60-inches
    c. Warning tape shall be installed 24” above the top of pipe or as otherwise directed by the City Engineer. The tape shall be a plastic, high stretch, 4” width tape, blue in color and have the words “Caution – Water Main Buried Below” imprinted on the tape.
2. Pipe Bursting – Install in accordance with Section 30050 Pipe Bursting

C. Excavating, backfilling and compacting shall be done in accordance with Section 10030 Trenching and Backfilling.

D. Concrete Thrust Blocking:
1. All fittings, valves, hydrants, etc. shall be blocked with 2,000 psi concrete, 4-sack minimum cement content. All blocking shall be poured to avoid nuts and bolts to allow easy access for maintenance. Excessive blocking shall not be allowed and shall be removed at the contractor’s expense. Sizing and construction of blocking shall be as shown in standard drawings 4010A to 4040 of the NCTSSPWC.

E. Valves:
1. Valves shall be anchored to adjacent fittings at Tee and Cross fittings and on fire hydrant leads.

F. Valves located within a right-of-way shall be indicated on the face of the curb, or where curbs do not exist, on a conspicuous location adjacent to the valve location. Markings are to be the cutting of a four (4) inch high and 1/8” deep letter **“V”** with the point of the **“V”** pointing towards the valve location. The **“V”** shall be cut into the curb or paving using an approved motor driven concrete saw. The completed cut and valve riser lids shall receive a coating of blue paint if a main line valve or red if a fire hydrant valve. Contractor shall coat the interior, and exterior of the cut to a width of one (1) inch.

G. Tapping waterline
1. Wet connections to existing water mains (6-inch through 12-inch in size), shall be made with a tapping sleeve and valve. **EXCEPTION:** In some cases, as judged by the City Engineer, the use of a cut-in sleeve and tee will be required.
2. Wet tapping is to be accomplished with no interruption of service. Facilities shall be provided for proper dewatering and for disposal of water removed from the water mains and excavations without damage to adjacent property. Special care shall be taken to prevent contamination of the existing potable water line when dewatering, cutting, and making connections with existing pipe. No trench water, mud, or other contaminating substances shall be permitted to enter the existing lines. The interior of all tapping sleeves, tapping machine cutter assemblies, and tapping gate valves installed in such connections, and the surface of the existing pipe at these connections,

shall be thoroughly cleaned and then swabbed with a solution having a chlorine content of 200 milligrams per liter.

H. Fire Hydrants

1. Fire hydrants shall be located to minimize interference with driveways and shall be located with sufficient clearance from drive and street radii to prevent the fire hydrant from being struck if a vehicle jumps the curb and/or takes a wide turn. Hydrants shall not be placed in intersection radii or other locations with a high probability of being damaged by traffic. A 3-foot clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved.
2. Mid-block fire hydrants shall be located on property lines (extended) to minimize interference with drives and on-street parking.
3. Hydrants shall be placed 2-feet to 10-feet from the back of curb and shall not interfere with sidewalks, driveways, etc. Hydrants shall be placed so the bury mark is at ground or paving level. Mounding of the ground or paving shall not be allowed to achieve this requirement. No more than one extension of 18 inches maximum will be allowed for grade adjustment. Hydrants shall have a barrel length of 4-feet to 6-feet unless approved by the City Engineer. All hydrants shall be surrounded by a concrete splash pad between the hydrant and the curb for flushing operations per City of Mesquite General Design Standards.
4. Bollards shall only be used to protect fire hydrants in low speed areas where speed limit is 10 mph or lower, such as around loading docks and in parking lots. Bollards are not a substitute for proper traffic flow layout and should only be used after options for relocation of the fire hydrant have proved infeasible. Bollards shall not be used in City street or alley right-of-way. Bollards that are installed shall meet the requirements of the appropriate General Design Standards.
5. Installation shall be of a type as detailed in these standards. All fire hydrant leads shall be from an MJ to Flanged tee and all valves and fittings from the tee to hydrant shall be flanged.
6. If a fire hydrant is out of service, for any reason, the contractor shall bag the fire hydrant with a black trash bag secured with duct tape and report hydrant to the Utility Dispatch office with the reason why it is out of service. This includes, but is not limited to, hydrants that are out of service for the following reasons:
    a. Water main valved-off and being abandoned but connected hydrant is not yet removed.
    b. New hydrant recently installed but not yet ready for service
    c. Hydrant temporarily out of service due to main shut down
7. The contractor shall place a Stimsonite Model 88-SSA blue fire hydrant marker in the street adjacent to the hydrant. The marker shall be located perpendicular to the curb, at the center of the driving lane closest to the fire hydrant. The marker shall be installed with a two-part epoxy adhesive per manufacturer’s instructions.

8. All fire hydrants are to be painted with a base coat consisting of two (2) coats of aluminum paint as specified below. Refer to City of Mesquite Approved Water Materials List for approved paint. When a color code other than aluminum is required, the top bonnet (from operating nut to underneath the uppermost flange) shall be painted two coats of the appropriate color in accordance with the following color code. Nozzle caps are not to be color-coded.
   a. Base undercoat: Two (2) coats of aluminum paint are required as a base coat on all hydrants.
   b. Overcoats: Two (2) additional coats of paint are required over the base coat. The colors shall conform as follows:

Main Size	Color
6”	Aluminum – Top & Bottom
8”	Blue Top – Aluminum Bottom
10” or larger	Yellow Top – Aluminum Bottom

3.6 WATER SERVICES

A. Contractor will be totally responsible for protecting service lines. If Contractor damages or removes a service line, Contractor must replace it, installing new copper tubing, and making new connections to the existing (or new) main and the meter. This includes new service saddles, corporation stops, and miscellaneous fittings. If Contractor damages a service line outside the scope of work, in the opinion of the Engineer, then the Contractor will be responsible for all repair at no additional pay

B. Contractor must not interrupt water service to customers for more than four (4) hours. Temporary services are required if the work involved will be longer than four (4) hours.

C. Service Taps - Domestic water service taps shall be off a looped main. Domestic water service taps shall not be shared, split or bullheaded with an irrigation tap and shall not tap to a fire hydrant lead. Irrigation meters may tap a fire hydrant lead. Utility contractor shall make the tap and install the service.

D. Location - Meters and services must be located within R.O.W. or easements in accordance with City approved plans and details. In residential developments, residential water meters and services are generally placed at the center of the lot in the grassed parkway. Water meters shall not be located in proposed driveways, sidewalks, parking lots or other paved areas. For narrow lots or front entry lots, the designer must design the location of the meters to make sure they are placed in an unpaved area. Meters in conflict with this requirement will be relocated by the developer/builder at their expense. In non-residential developments, water meters shall be located in unpaved islands. Meters should be set so that the meter face is 6-inches to 10-inches below finished grade.

E. Service Lines - All water services shall be continuous from the corporation valve at the water main to the angle meter valve in the meter box (No Couplings). Service line shall be “goose necked”. Crimping or excessive bending of the service line shall not be allowed. Service lines shall be continuous and shall have no fittings under any paving, unless approved by the City Engineer. Long copper service

lines that exceed the length of standard rolls of copper may be spliced in unpaved areas with a silver solder coupling. When installing a water main, the Contractor shall furnish and install new meter boxes. Service lines shall be poly-wrapped for the first 5-feet of copper service from the main. Water service mains shall have a minimum depth under paving of 36-inches (measured from surface of paving).

F. Marking - Each individual service location shall be marked on the face of the curb with a 4-inch high and 1/8 -inch deep scribe mark “I” cut in the curb using an approved motor driven concrete saw. The scribe mark “I” shall receive a coating of blue paint, which shall coat the interior and exterior of the cut to a width of 1-inch.

G. Blow-Off Valves - For 2-inch blow-off valves, use fittings for a standard 2-inch service configuration.

3.7 CONNECTION TO EXISTING WATER SYSTEM

A. Water required to fill the new main for hydrostatic pressure testing, disinfection, and flushing shall be supplied through a temporary connection between the distribution system and the new main. The temporary connection shall include an appropriate cross-connection control device and shall be disconnected during the hydrostatic pressure test. As an alternate, a connection to the existing distribution system is permitted provided a new valve is placed at the connection point. Do not test against an existing valve in the existing system

B. General Procedures and Precautions Taken During Construction:

1. Inspect materials prior to installation to ensure their cleanliness and integrity.
2. Keep interior of pipe dry and clean during storage and installation. Prevent contaminates from entering the water main during storage and construction.
3. If dirt enters the pipe during storage or installation, it shall be removed and the interior surface swabbed with a 1 to 5 percent hypochlorite disinfecting solution.
4. During construction, openings in the pipe shall be closed with a watertight plug when pipe laying is stopped at the close of each day’s work or for other reasons such as rest breaks and meals to prevent contaminants and animals from entering pipe
5. Remove, by flushing or other means, those materials that may have entered the water main.
6. Chlorinating any residual contamination that may remain, and flushing the chlorinated water from the main.
7. Protecting the existing distribution system from backflow caused by hydrostatic test and disinfection procedure.
8. Documenting that an adequate level of chlorine contacted each pipe to provide disinfection.
9. Once the contractor has been notified by the City Public Works Construction Inspector of a successful (negative result) laboratory bacteriological testing result, the contractor can make connection of the approved new water main to the active distribution system.

3.8 DISINFECTION

A. The inside of all pipe and fittings shall be kept clean during installation. The City Engineer may require swabbing or pigging of all new pipe if the pipe is installed in an unsanitary manor.

B. Flushing

1. Before the main is chlorinated, it shall be filled to eliminate air pockets and flushed to remove particulates. The flushing velocity in the main shall not be less than 3.0 ft/sec. Below is the required flow and openings needed to flush pipelines with a pressure of 40 psi

Pipe (Inch)	Flow (gpm)	1" Tap	1-1/2" Tap	2" Tap	2-1/2" Hydrant Outlets
4	120	1			1
6	260		1		1
8	470		2		1
10	730		3	2	1
12	1060			3	2
16	1880			5	2

C. Pigging

1. Pigging is accomplished by passing an appropriate sized pig through the pipe. A pig is a bullet-shaped, flexible sponge available in different sizes, densities, and degrees of roughness. All mains 12-inch and larger must be pigged prior to flushing and disinfection with chlorine.
2. The pig shall be inserted in the new conduit at the location where the new conduit is connected to the active distribution system.
3. Where expulsion of the pig is required through a dead-ended conduit, the Contractor shall make every effort to prevent back flow of the purged water into the conduit after passage of the pig. Backwater re-entry into the pipe can be prevented by the temporary installation of mechanical joint bends and pipe joints to provide a riser out of the trench.
4. After passage of the pig, flushing of all backwater from the pipe, and satisfactory test results, the Contractor shall secure the test location openings and then proceed with disinfection.
5. If thermal butt fused joints are specified (i.e. internal bead), Contractor shall confirm pigging procedure and sizing is in accordance with pipe manufacturers recommendations.

D. Disinfection

1. The Continuous-feed method must be used unless it is stated otherwise in the Contract Specifications.
2. The Contractor shall install and remove all pump-in, blow-off and sampling points.
3. Water from the existing system or other approved source shall be made to flow at a constant rate in the new main.
4. At a point no more than 10-ft downstream of the beginning of the new conduit, water entering the new conduit shall receive a dose of chlorine such that the water shall have not less than 100-mg/L (ppm) free chlorine. Chlorine application shall not cease until the entire conduit is filled with

heavily chlorinated water. 125 lbs of Calcium Hypochlorite (65% available chlorine) is required in 100,000 gal of water to produce 100 mg/L (ppm) Chlorine concentration.

5. The chlorinated water shall be retained in the conduit for at least 24 hours, during which time all valves and hydrants in the section treated shall be operated in order to disinfect the appurtenances. Every effort shall be made to prevent the flow of chlorinated water into conduits in active service. At the end of the 24-hour period, the treated water in all portions of the conduit shall have a residual of at least 10-mg/L (ppm) free chlorine.

E. Chlorine for Disinfection:

1. Calcium Hypochlorite in granular form conforming to ANSI/AWWA B300 must be used and must contain approximately 65 percent available chlorine by weight. The material should be stored in a cool, dry, and dark environment to minimize deterioration.
2. The heavily chlorinated water shall then be flushed from the conduit and disposed in a manner meeting the requirements set out below.
3. The chlorine residual shall be tested prior to flushing operations.

F. Disposal of Hyper-Chlorinated Water:

1. If the chlorine residual exceeds 4-mg/L (ppm) the water shall remain in the new water conduit until the chlorine residual is less than 4-mg/L (ppm). As an alternate, the Contractor may choose to evacuate the water into water trucks, or an approved storage facility (such as a detention pond until the chlorine residual is 4-mg/L (ppm) or less), or treat the water with Sodium Bisulfite or another dechlorination chemical (Sulfur Dioxide, Sodium Sulfite, Sodium Thiosulfate, or Ascorbic Acid) or method appropriate for potable water and approved by the Owner until the chlorine residual is reduced to 4-mg/L (ppm) or less. The heavily chlorinated water shall not be disposed of into the storm sewer system. After the specified chlorine residual is obtained, less than 4-mg/L (ppm), the water may then be discharged into the storm sewer system or utilized by the Contractor.
2. The requirement for discharge of heavily chlorinated water is found in the TPDES General Permit to Authorize the Discharge of Storm Water and Certain Non-Storm Water Discharges from Regulated Construction Activities Within the State of Texas.
3. The Contractor shall prepare the conduit for disinfection activities and secure same after chlorination is complete.
4. This shall consist of furnishing all equipment, material and labor to satisfactorily prepare the conduit for disinfection. The Contractor shall also be required to provide adequate provisions for sampling.
5. The Contractor shall make all necessary taps into the pipe to accomplish chlorination of a new line.
6. After satisfactory completion of the disinfection operation, the Contractor shall remove surplus pipe at the chlorination and sampling points, plug the remaining pipe, backfill, and complete all appurtenant work necessary to secure the conduit.

3.9 CORROSION PROTECTION

A. Contractor shall coat all bolts with anti-seize compound.

B. All cast and ductile iron pipe, fittings and valves shall be wrapped with polyethylene tube wrap in accordance with AWWA C105. The polyethylene wrap of pipe must be blue in color. The wrap shall be installed in accordance with AWWA C105, Method A.

PART 4 – MEASUREMENT AND PAYMENT

A. This section shall be measured by linear feet of waterline installed and accepted. Linear footage will be measured horizontally from center of fitting to center of fitting or end of pipe without any deduction for the length of the intermediate fittings or valves. Payment shall be full compensation for materials, installation, testing and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

B. This section shall be measured by each fire hydrant assembly installed and accepted. Payment shall be full compensation for materials, installation, testing of fire hydrant assembly including fire hydrant, valves, 6” piping, fittings, thrust restraint and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

C. This section shall be measured by each air release valve installed and accepted. Payment shall be full compensation for materials, installation, testing and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

D. This section shall be measured by each valve installed and accepted. Payment shall be full compensation for materials, installation, testing and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

E. This section shall be measured by each service connection installed and accepted. Payment shall be full compensation for materials, installation, testing, including corporation stop, saddle, copper, angle stop, meter can, meter adjustment and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications. A bid item for ‘short side’ shall mean a service connection where 10 or less linear feet of service line is laid. A bid item for ‘long side’ shall mean a service connection where more than 10 linear feet but less than 50 linear feet of service line is laid. A ‘long side’ service shall be by bore.

F. This section shall be measured by each plug installed. Payment shall be full compensation for materials, installation including cutting existing line, providing and installing plug, removal of waterline necessary to install plug and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

G. This section shall be measured by each valve abandoned. Payment shall be full compensation for removal of valve stack including removal and disposal of valve cover and stack, concrete fill, backfill and all manipulation, labor, tools, equipment

and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

H. Thrust blocks, fittings, bends, tees, joint restraints, appurtenances and any excavation, backfill, grading, compaction, testing will not be paid for directly but will be subsidiary to pertinent bid items.

I. Unless listed as separate bid item, temporary water service will be subsidiary to installation of waterlines.

END OF SECTION

SECTION 30030

SANITARY SEWER UTILITIES

PART 1 – GENERAL

1.2 DESCRIPTION

A. All material, labor, equipment, tools, and superintendence necessary to furnish and install public sanitary sewer systems and sanitary sewer services to property line.

1.3 SUBMITTAL

A. Pipe material, fittings, and appurtenances
B. Manhole shop drawings
C. Backfill material
D. Detector Tape
E. By-pass pumping plan

1.4 QUALITY CONTROL

A. General
    1. Locations for testing will be determined by the City Public Works Construction Inspector.
    2. Materials must conform to City of Mesquite Approved Sanitary Sewer Materials List.
B. Testing Requirements, reference Section 10020 Testing Laboratory Services and the City of Mesquite General Design Standards for Testing Procedures
    1. Sanitary Sewer Lines – Each new line shall have the following tests performed on the entire length:
        a. Deflection Testing
        b. Air testing
        c. Camera Inspection
    2. Manholes- Vacuum test each manhole
    3. Backfill
        a. Moisture content and compaction shall be tested every lift, every 300 linear feet of trench

PART 2 – MATERIALS AND EQUIPMENT

2.1 MATERIALS

A. Where applicable, all of the following shall conform to the City of Mesquite General Design Standards. Materials shall be from the City of Mesquite Approved Sanitary Sewer Materials List.
B. Public Sanitary Sewer Line
    1. Polyvinyl Chloride (PVC) Pipe (Including Fusible PVC Pipe): 4” – 27” Diameter

a. Gravity mains from four (4) inches through fifteen (15) inches in diameter shall conform to current ASTM D 3034, SDR 26. All bells shall be formed integrally with the pipe and shall contain a factory installed elastomeric gasket of the “Rieber” style that is mechanically restrained using a steel band or ring. No solvent cement joints shall be permitted unless specifically authorized in writing by the City Engineer. If Fusible PVC Pipe is specified, internal bead shall be removed prior to installation.

b. Gravity mains from eighteen (18) inches through twenty-seven (27) inches in diameter with burial depths less than fifteen (15) feet shall conform to current ASTM F 679, SDR 26, PS 115, manufactured with a 12364A resin (material PVC 1120) and must have a solid wall. Pipe with corrugated interior or exterior walls or voids in the wall will not be accepted.

c. All PVC sanitary sewer pipes shall be green in color.

2. Fiberglass Pipe: 30” or Larger Diameter

a. Shall be used for mains 30-inches and larger or as approved by the City Engineer. Fiberglass wastewater pipe shall conform to AWWA M45 and ASTM D3262-06. See the City of Mesquite Approved Sewer Materials List for approved manufacturers. Pipe shall have a minimum stiffness of 46 psi. The pipe manufacturer shall provide detailed design calculations sealed by a licensed professional engineer registered in the state of Texas in accordance with AWWA M45 and Appendix B Technical Memorandum for Pipe Loading showing the suitability of the pipe stiffness to the installation conditions specified and that the maximum specified pipe deflection is not exceeded. Direct buried pipe joints shall be either of the following: Integral Bell and spigot with rubber ring gasket or fiberglass coupling joints with two rubber seals. Joints shall be in accordance with AWWA M45 and ASTM D4161-01

3. Ductile Iron Pipe: Aerial Crossings

a. Only for use at aerial crossings and crossings where loading may be a concern.

b. AWWA C151, Thickness Class 54 with a Protecto 401 by Induron Protective Coatings ceramic epoxy lined interior. The dry coating thickness shall be a minimum of 40 mils. The interior coating shall be holiday tested and certified by a third party testing lab and any defects repaired. The exterior of the pipe shall have an asphaltic coating in accordance with AWWA C151 and AWWA C104.

4. Sanitary Service – SDR 26 PVC, green in color

C. Manholes

1. General - All portions of manholes including castings, lids, and flat top lids shall be designed to withstand an AASHTO HS-20 load.

2. **Pre- Cast -** Pre-cast manholes shall be used on all new construction unless an alternate is approved by the City Engineer. Pre-cast concrete shall conform to current ASTM designation C 478 (C 478M). Lifting eyes shall be

installed on manholes. Lifting holes are not allowed in pre-cast manholes. Shop drawing shall be submitted to the City Engineer for all pre-cast manholes.

3. **Cast In Place -** Cast-in-place concrete manholes shall only be allowed with special permission of the City Engineer. Generally the City Engineer will only grant permission for cast-in-place manholes for connections to existing mains carrying live sewer. When cast-in-place manholes are approved by the City Engineer, construction must conform to City of Mesquite General Design Standards.
4. Manholes must have a concentric top cone section. Eccentric cone manholes may be used in situations where conflicts with other facilities warrant it.
5. Brick or fiberglass manholes or any other type of manhole material other than concrete will not be allowed.
6. Ring and Cover –
    a. New construction manhole ring and covers shall have a 30-inch clear opening and shall be constructed of Ductile Iron and hinged with elastomeric T-gasket in the lid and infiltration plugs at the hinges. The manhole shall be scribed with the words Sanitary Sewer, with the City of Mesquite Logo and with the warning “Confined Space – Entrance by Permit Only”. The lid shall be equipped with a MPIC Pick Slot. All rings shall be bolted to the manhole cone section with a layer of mastic applied between the ring and cone section.
    b. Retrofit construction manhole ring and covers may have a 24-inch clear opening with other features the same as above. All manhole ring and covers on manholes with a connecting sanitary sewer main size of 15-inches or larger shall be coated with a City approved structural / high sulfide resistant coating
7. Grade Rings - Manhole rings and covers shall be adjusted by the use of approved grade rings with butyl sealant between grade rings, cover ring and manhole. Maximum adjustment is eight (8) inches. Grade rings may be HDPE or Rubber in accordance with NCTCOG Public Works Construction Standard 502.1.2.2 or 502.1.2.4. Concrete grade rings, bricks, steel, iron or broken concrete are not acceptable for adjustment.
8. Inverts - All manholes shall have full depth inverts to the depth of the largest entering main.
9. Ring Sealing to Manhole Cone/Flat Top - All manholes rings shall be sealed and contain an internal manhole chimney seal or approved external seal or wrap.
10. Coating - All manholes with a connecting pipe of fifteen (15) inches in diameter or larger shall be coated. Manholes shall be coated with a City approved structural/high sulfide resistant coating (see **City of Mesquite Approved Sewer Materials List).**. Coating application procedures shall conform to the recommendations of the coating manufacturer, including material handling, mixing, and environmental controls during application, safety, and equipment.

11. Cementitious patching – Quick-setting fiber reinforced calcium aluminate cementitious material shall be used as a patching material and is to be mixed and applied according to manufacturer's recommendations

PART 3 – EXECUTION

3.2 GENERAL

A. Without excluding other safety considerations, Contractor is advised that the sanitary sewer system, existing and proposed, may contain dangerous or deadly concentrations of gases.

B. Confined Space Entry; All entry into confined spaces conducted in accordance with 29 Code of Federal regulations (CFR), Part 1910.147 P and all other applicable State and City regulations. Prior to commencing any confined space entry, the Contractor shall submit to the City Engineer a copy of the confined space entry plan with a completed permit.

3.3 DELIVERY, STORAGE AND HANDLING

A. Transport, handle, and store pipe and fittings as recommended by manufacturer.

B. If new pipe and fittings become damaged before or during installation, it shall be repaired as recommended by the manufacturer or replaced as required by the Engineer at the Contractor's expense, before proceeding further.

C. Deliver, store and handle other materials as required to prevent damage.

D. Pipe Delivery, Handling and Storage

1. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.
2. During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.
3. If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to insure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks.
4. Any length of pipe showing a crack or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the owner or engineer.
5. Any scratch or gouge greater than 10% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the owner or engineer.
6. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.

7. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.
8. If pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.
9. Pipe shall be stored and stacked per the pipe supplier's guidelines.

3.4 INSTALLATION

A. Where applicable, all of the following will conform to the City of Mesquite General Design Standards for installation.
B. Sanitary Sewer Pipe:
   1. Pipe Bursting – Install in accordance with Section 30050 Pipe Bursting
   2. Open Cut – Install in accordance with NCTSSPWC Items 505.1 and 507.3-507.4 except as amended by this specification.
      a. Warning tape shall be installed 24" above the top of pipe or as otherwise directed by the City Engineer. The tape shall be a plastic, high stretch, 4-inch width tape, green in color and have the words "Caution – Sanitary Sewer Main Buried Below" imprinted on the tape.
C. Manhole:
   1. Conform to City of Mesquite General Design Standards.
   2. Conform to NCTSSPWC Item 502.1 except as amended by this specification
   3. Non shrink grout to fill voids
   4. Manholes with a connecting pipe of fifteen (15) inches in diameter or larger shall be coated. All voids shall be sealed using cementitious patching prior to spraying coating materials.
   5. Marking - Each manhole shall be marked on the face of the curb with a four (4) inch high and 1/8" deep mark "**MH**" cut in the curb using an approved motor driven concrete saw. The double mark "**MH**" shall receive a coating of green paint, which shall coat the interior and exterior of the cut to a width of one (1) inch.
D. Excavating, backfilling and compacting shall be done in accordance with Section 10030 Trenching and Backfilling.

3.5 EXISTING MANHOLES

A. For connections to existing manholes, all voids shall be filled using cementitious patching prior to spraying coating materials and invert repairs, if necessary.
B. Fill voids
   1. The area to be repaired must be free of all debris and free water. All loose brick, mortar and concrete must be removed using a mason's hammer and chisel if necessary. The surface being repaired must be damp.
   2. Patching shall be applied per manufacturer's recommendation.

3. After all preparation have been completed, remove all loose material and wash wall again. Any bench, invert or service line repairs shall be made at this time using quick setting patching mix and shall be used per manufacturer's recommendations. Invert repair shall be performed on all inverts with visible damage or where infiltration is present or when vacuum testing is specified. After blocking flow through the manhole and thoroughly cleaning invert, the quick-setting patch material shall be applied to the invert in an expeditious manner. The finished invert surfaces shall be smooth and free of ridges. The flow may be reestablished in the manhole within 30 minutes after placement of the material.

C. Lining:

1. Voids filled with patching shall be allowed a minimum of one (1) hour cure time before application of cementitious liner and shall not be finished to a smooth surface. Inverts and other areas not being covered with line material shall be troweled to a smooth surface and blended into surrounding material.
2. No application shall be made if ambient temperature is below 40 degrees Fahrenheit. No application shall be made to frozen surfaces or if freezing is expected to occur within the substrate within 24 hours after application. Precautions shall be taken to keep the mix temperatures at time of application below 90 degree Fahrenheit. Water temperature shall not exceed 80 degrees Fahrenheit. Chill with ice if necessary.

3.6 SANITARY SEWER SERVICES

A. Service fittings shall be a tee or wye fitting to be installed on the main. Saddle services are not allowed for new construction.

B. For rehabilitation of existing sanitary sewer lines, service laterals shall be connected by the use of a mechanical saddle. Mechanical saddles shall be rigid and made of polyethylene pipe compound that meets the requirements of ASTM D1248, Class C or polyvinyl chloride pipe compound that meets the requirements of ASTM D3034. Mechanical saddles shall have stainless steel straps and fasteners, neoprene gasket and backup plate. Mechanical saddles shall be Strap-On-Saddle Type or Tapping Saddle. Once the saddle is secured in place, drill hole full inside diameter of saddle outlet in pipe liner.

C. The Contractor shall be responsible for continuity of sanitary sewer service to each facility connected to the section of sewer during the execution of the work.

D. If sewage backup occurs and enters buildings, the Contractor shall be responsible for clean-up, repair, property damage cost and claims.

E. Each individual service location shall be marked on the face of the curb with a four (4) inch high and 1/8" deep double scribe mark "II" cut in the curb using an approved motor driven concrete saw. The double scribe mark "II" shall receive a coating of green paint, which shall coat the interior and exterior of the cut to a width of one (1) inch.

3.7 BYPASSING SEWAGE

A. By-Pass Pumping:

1. The Contractor, when and where required, shall provide diversion for the pipe bursting/replacement process. The pumps and by-pass lines shall be of adequate capacity and size to handle all flows. All costs for by-pass pumping, required during installation \of the pipe shall be subsidiary to the pipe reconstruction item. Contractor may pump and haul sewer via vacuum truck to a downstream manhole at Contractor's discretion.
2. Contractor shall provide 100% redundancy including providing a back-up generator and pump on site. All equipment must meet city noise ordinance.

3.8 POST CONSTRUCTION TELEVISION INSPECTION

A. General Approach
   1. Television inspection of pipelines shall be performed by experienced personnel trained in locating breaks, obstacles and service connections by closed circuit color television.
   2. The camera should be set at the appropriate height for the pipe size and shape (centered in the middle of the circular pipe +/- 10%)
   3. The camera shall be moved through the pipe at a steady pace not to exceed 30 feet per minute
   4. If the line needs to be flushed prior to TV inspection, a minimum of 1-hour time must lapse between flushing and TV inspection.
   5. All flows tributary to reach of sewer being inspected are to be completely by-passed around the reach during inspection if necessary and required by City.

B. Television inspection deliverables shall include the following:
   1. A digital copy of the video (post) with a written report to be submitted to the city as they are made. Video recordings to remain property of the city; Contractor to retain second copy for his use.
   2. Post construction video upon completion of reconstruction of each reach of sewer with the voice description, as appropriate with stationing of services indicated. Data and stationing to be on video.
   3. Should any portion of the inspection video be of inadequate quality or coverage, as determined by the City, the Contractor will have the portion inspected again and video documentation provided at no additional expense to the City.

PART 4 – MEASUREMENT AND PAYMENT

A. This section shall be measured by linear feet of sanitary sewer installed and accepted. Linear footage will be measured horizontally from center of manhole to center of manhole or dead end of pipe. Payment shall be full compensation for materials and installation including installation method, backfill, compaction, haul off and lawful disposal of excess trench spoils, any fittings, testing, by-pass pumping, television inspection and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

B. This section shall be measured by each precast or cast in place manhole installed and accepted. Payment shall be full compensation for materials and installation including backfill, compaction, haul off and lawful disposal of excess trench spoils, connector fittings, testing, by-pass pumping, and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

C. This section shall be measured by each sanitary sewer service installed and accepted. Payment shall be full compensation for materials and installation including excavation, factory wye, connection to the main, pvc sanitary service line, saddle, backfill, compaction, haul off and lawful disposal of excess trench spoils, any fittings, testing, by-pass pumping, television inspection and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications. A bid item for ‘short side’ shall mean a service connection where 10 or less linear feet of service line is laid. A bid item for ‘long side’ shall mean a service connection where more than 10 linear feet but less than 40 linear feet of service line is laid.

D. This section shall be measured by each sanitary sewer mainline cleanout, service cleanout and/or double service cleanout installed and accepted. Payment shall be full compensation for materials and installation including backfill, compaction, haul off and lawful disposal of excess trench spoils, any fittings and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

E. This section shall be measured by each new pipe connection to an existing sanitary sewer manhole. Payment shall be full compensation for materials and installation including coring into existing manhole, filling voids, patching inside of manhole and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

END OF SECTION

SECTION 30051

ADJUSTMENT OF UTILITY APPURTENANCES

PART 1 – GENERAL

1.5 DESCRIPTION

A. Adjustment of existing water valve covers to proposed grade.
B. Adjustment or replacement of existing meter boxes to proposed grade.
C. Adjustment of existing sanitary sewer manholes to proposed grade.

PART 2 – MATERIALS AND EQUIPMENT

2.2 MATERIALS

A. General: Materials shall be in accordance with City of Mesquite Standard Details and current approved materials as listed in the Engineering Design Manual.

PART 3 – EXECUTION

3.9 GENERAL

A. Contractor shall take care that all existing utilities remain in service during adjustment of appurtenances.

3.10 WATER VALVE COVER ADJUSTMENT

A. Contractor shall adjust the top of the water valve box to the proposed finished surface elevations by adjusting or lowering it to conform to the final grade in accordance with the plans. The existing valve box and cover, if in good condition, may be salvaged and reused. Where the valve box is of the adjustable type, the top section of the existing valve box shall be adjusted up or down as necessary within its adjustable limits. A valve box extension adapter also may be added to the top of the existing valve box. If the existing valve box is tilted/ and/or far enough off center on the valve nut to make valve operation difficult, the Contractor shall plumb and center the valve box over the valve nut prior to placement of adjacent material. The valve box lid ears shall be aligned parallel to the direction of water flow. Final adjustment of water valve shall be made after paving.

3.11 WATER METER ADJUSTMENT

A. Contractor shall adjust the top of the water meter box to the proposed finished surface elevations by adjusting or lowering it to conform to the final grade in accordance with the plans.
B. If meter box needs to be replaced, a new box will be provided by the City, unless otherwise specified that contractor shall provide new box.

3.12 SANITARY SEWER MANHOLE ADJUSTMENT

A. Contractor shall install a false bottom in the manhole prior to initiation of grading and/or liming operations. The false bottom shall be 3/4” plywood. Contractor shall remove and salvage existing manhole lid and ring. Contact areas shall be cleaned of all mortar and grease. Contractor shall adjust the existing manhole casting to proper grade. If the adjustment involves lowering the top of a manhole, a sufficient depth of concrete shall be removed to permit reconstruction on a batter if necessary to adjust the fixture to proposed new surface. If the adjustment involves raising the elevation of the top of the manhole, Contractor shall install grade rings as necessary to conform to the finished surface elevations. Installed grade rings shall fit within the existing casting without interference, shall not cause binding to the manhole lid, be immobile and watertight.

B. Contractor shall install a new bolt down type manhole lid and ring along with installing new anchor bolts to attach ring to cone. All manhole rings shall be sealed and contain a wrap as shown per the *City of Mesquite’s Approved Sanitary Sewer Materials List*. The space between risers and cone basin, between risers and cover frame, and between multiple risers shall be sealed with an approved mastic sealer. Concrete grade rings are not allowed.

PART 4 – MEASUREMENT AND PAYMENT

4.2 MEASUREMENT

A. This section shall be measured by each adjustment of existing water valve covers completed and accepted. Payment shall be full compensation for materials and installation including backfill, compaction, haul off and lawful disposal of spoils, and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

B. This section shall be measured by each adjustment and/or replacement of existing water meter boxes completed and accepted. Payment shall be full compensation for materials and installation including backfill, compaction, haul off and lawful disposal of spoils, and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

C. This section shall be measured by each adjustment of existing sanitary sewer manhole completed and accepted. Payment shall be full compensation for materials and installation including backfill, compaction, haul off and lawful disposal of spoils, grade rings, chimney seal and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

END OF SECTION

SECTION 30052

IRRIGATION AND WATER SERVICE REPAIR ALLOWANCE

PART 1 – GENERAL

1.6 DESCRIPTION

A. This item includes repair and/or replacement of existing irrigation systems and water services unavoidably damaged during construction activities.

1.7 SUBMITTAL

A. Licensed sub-contractor

PART 2 – MATERIALS AND EQUIPMENT

2.3 MATERIALS

A. General: Materials shall be in accordance with City of Mesquite Standard Details and current approved materials as listed in the Engineering Design Manual.

PART 3 – EXECUTION

3.13 GENERAL

A. Contractor shall protect all existing irrigation and water service systems encountered during construction from damage. Any avoidable (as determined by the City) damage caused to systems by the contractor's operation shall be repaired to the satisfaction of the City and property owner at the contractor's expense. Any unavoidable damage caused to systems by the contractor's operation shall be repaired to the satisfaction of the City and property owner at and shall be charged against the Irrigation and Water Service Repair Allowance.

3.14 IRRIGATION REPAIR

A. The Contractor must contact the Park Project Manager – Robert Blankenship at 972-216-6413 (office) prior to cutting, removing or altering City irrigation systems and to determine the location of any City sprinkler systems.

B. All irrigation repairs must be performed by a licensed irrigator.

C. Contractor shall follow TCEQ's laws and regulations for irrigation repair. Repair to City owned irrigation systems shall be per the City of Mesquite's Irrigation System Specifications (Section 02441) contained in the Engineering Design Manual. Inspection of the City owned irrigation system repair shall be by the Park Project Manager, at 972-216-6413.

3.15 WATER SERVICE REPAIR

A. All water service repairs must be performed by a licensed plumber.

B. All water service repairs shall adhere to City of Mesquite General Design Standards.

PART 4 – MEASUREMENT AND PAYMENT

D. This item will be paid from invoices paid by the contractor to a licensed irrigator for irrigation repair or licensed plumber for water service repair that was unavoidably damaged by the contractor. The amount of the invoices is subject to review and approval by the City. Once invoices are approved by the City Project Engineer, the amount of the invoice shall be paid against the contract allowance for this item. Payment shall be per an allowance as per the bid form. Invoices will be required that shows the cost of materials and labor. Payment shall be full compensation for materials and installation including backfill, compaction, haul off and lawful disposal of spoils, and all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

SECTION 40010

PAVEMENT STRIPING, MARKERS, AND BUTTONS

PART 1 – GENERAL

1.1 DESCRIPTION

A. All material, labor, equipment, tools, and superintendence necessary to furnish and install raised and/or retroreflectorized pavement markings.

B. Work shall be done in accordance with the current Texas Department of Transportation's Standard Specifications for Construction of Highways, Streets and Bridges, Item 662 "Work Zone Pavement Markings", Item 666 "Retroreflectorized Pavement Marking", Item 668 "Prefabricated Pavement Markings", Item 672 "Raised Pavement Marker", Item 677 "Eliminating Existing Pavement Marking and Markers" and Item 678 "Pavement Surface Preparation for Markings" with the exception of items specified herein.

PART 2 – MATERIALS AND EQUIPMENT

2.1 MATERIALS

A. Where applicable, all of the following shall conform to the City of Mesquite General Design Standards for materials. Materials shall be from the City of Mesquite Approved Materials List.

B. All pavement markings wider than 6" thick on concrete pavement shall be prefabricated material in accordance with TxDOT DMS-8240 and be "Premark" brand or approved equal.

C. All markings on asphalt pavement shall be hot applied thermoplastic, type I in accordance with TxDOT DMS-8220

PART 3 – EXECUTION

3.1 GENERAL

A. Surface shall be prepared prior to installation.

B. Contractor shall establish guide marks and the City shall verify the locations prior to installation.

PART 4 – MEASUREMENT AND PAYMENT

A. Raised pavement markers shall be measured by each installed and accepted for the size, type, and color and shall be full compensation for pavement preparation, installment and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

B. Pavement striping shall be measured by the Linear Foot of stripe installed and accepted for the size, type and color, and shall be full compensation for preparation, installment and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

C. Pavement markings shall be measured by each marking installed and accepted for the size, type and color and shall be full compensation for pavement preparation, installment and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

END OF SECTION

SECTION 40030

TRAFFIC SIGNS AND POSTS

PART 1 – GENERAL

3.10 DESCRIPTION

D. All material, labor, equipment, tools, and superintendence necessary to furnish and install regulatory, warning and guide signs and posts.

E. Work shall be done in accordance with the current Texas Manual on Uniform Traffic Control Devices (TMUTCD).

PART 2 – MATERIALS AND EQUIPMENT

2.1 MATERIALS

A. Sign Materials

1. Sign materials and fabrication shall conform to Texas Department of Transportation (TxDOT) Item 636, Aluminum Signs (Type A).
2. Aluminum sign blank substrates shall be 0.080 inch thick. Six (6) inch wide sign blades shall be extruded aluminum, and nine (9) inch wide sign blades shall be flat aluminum.
3. Regulatory and warning signs shall be Type III, high-intensity retroreflective sheeting, as defined by ASTM D 4956-95.
4. Guide signs, to include street name signs, shall be Type I, medium-intensity (engineer grade) retroreflective sheeting, as defined by ASTM D 4956-95.
5. Sign identification decals shall be coded and applied in accordance with TxDOT Item 643, "Sign Identification Decals" to the rear of each sign.
6. A manufacturer's warranty shall be provided to the City that warrants the sign against delamination and loss of retroreflectivity for seven (7) years.

B. Sign Posts

1. Sign posts shall be roll-formed from 12 gauge (0.105") strip steel per ASTM Spec. #A570-79 or per ASTM Spec. #A446, Grade A. Sign posts shall be comer induction welded so that neither weld nor flash interferes with the telescoping properties.
2. Sign post finish shall be in-line, hot dip galvanized zinc coating per ASSHTO M-120, or strips are pre-galvanized when roll formed from ASTM Spec. #A446, Grade A steel.
3. Sign post holes shall be seven-sixteenths inches (minimum diameter) plus tolerance of one sixty-fourth inch. Holes shall be on exact one-inch centers along the longitudinal centerline of each of the four faces of each section. Thus, each set of four holes on respective section faces will be in exact lateral alignment, at each one-inch increment, longitudinally along the center section length. The centers of the end holes in each section are to

be exactly one-half (1/2) inch from the section end. Each section therefore is to be in exact inch measurement with a tolerance of 0.025 inches.

4. Sign Post Tolerances shall be as follows:
    a. Outside tolerance at all sides, at comers, shall be plus or minus 0.010 inches per respective specified (O.D.) section size.
    b. The straightness tolerance shall be one-sixteenth of one inch per three (3) feet of section length.
    c. Outside comer radii shall be three sixteenths of one inch, plus or minus one sixteenth of one inch.
    d. Respective specified length tolerance shall be plus or minus one quarter of one inch
    e. Convexity and concavity tolerance measured in the center of each section face shall be plus or minus 0.005 inches.

C. Hardware and Fasteners
1. All hardware and fasteners shall be galvanized steel, stainless steel or dichromate sealed aluminum conforming to TxDOT Materials Specification D-9-7120. When dissimilar metals are used, the metals shall be so selected or insulated to prevent corrosion.
2. Comer bolts, flat washers, and nuts used to secure the 1 % inch post to the base shall be 5116 inches in diameter galvanized steel.
3. Signs shall be fastened with 3/8 inch diameter zinc plated steel drive rivets.
4. Extruded sign blade holders used to secure six-inch sign blades shall be cast aluminum with stainless steel set screws.
5. Nine inch sign blades shall be affixed using 5/16 inch stainless steel round head machine screws with self-locking nuts, Y, inch diameter nonferrous spacers, and nylon washers.

PART 3 – EXECUTION

3.1 INSTALLATION

A. The breakaway sign-support system (BS3) consists of dimensioned square section tubing secured together in a telescoped array to form. The system consists of three 12-gauge steel components; a 36 inch long anchor post of 2" x 2" O.D. square tubing, an 18 inch long anchor sleeve of 2-1/4" x 2-1/4" O.D. square tubing, and a sign post of 1-3/4" x 1-3/4" O.D. square tubing. The three components must be manufactured to tolerances that ensure telescoping of sections with minimal internal clearances that preclude excessive play between sections of the assembled support system.

B. The anchor post and anchor sleeve shall be driven into the ground as an assembly. Three holes shall remain visible above ground level for attachment of the 1 %inch sign post using two corner bolts.

C. Nine inch sign blades are installed along all arterial and secondary arterial streets as depicted on the current Thoroughfare Plan. Six inch sign blades are installed on all local and collector streets. Standard Construction Details- Signage- sheets T-1 and T-2 depict proper sign assembly and installation.

D. Street name blades may be affixed to streetlight poles with the approval of Oncor and the City. Street name blades will be attached to cast aluminum cantilever brackets with stainless steel set screws, and the cantilever bracket will be affixed to streetlight pole using stainless steel banding.

E. Ornamental Signage.

1. Standards for ornamental signage are determined on a case by case basis. In general, ornamental signage shall be compatible with Oncor street light poles and luminaires.
2. Standard Construction Details, Signage, sheets T-3 depicts proper sign placement on street light poles and free standing poles.

PART 4 – MEASUREMENT AND PAYMENT

A. Signs shall be measured by each installed and accepted for the size and type and shall be full compensation for post installation, sign installation and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

END OF SECTION

SECTION 50010

SODDING

PART 1 – GENERAL

2.2 DESCRIPTION

F. This item shall govern for furnishing, hauling, and placement of sod (Bermuda grass, St. Augustine grass, or other approved grass) as directed by the City and in accordance with the requirements of this specification.

2.3 SUBMITTALS

A. Sod Supplier

PART 2 – MATERIALS AND EQUIPMENT

2.1 MATERIALS

A. The sod placed by the contractor shall be live, growing grass with a healthy root system and dense matted roots throughout the sod for a minimum thickness of 1-inch. If turf exists adjacent to the disturbed area, the Contractor shall match type of sod to the existing turf. Sod shall be healthy, free of insects, disease, stones, undesirable foreign materials, and weeds detrimental to its growth or that might affect its livelihood or hardiness when transplanted. All sod shall be in a fertile soil with a high percentage of loamy topsoil. Sod, including the soil containing roots, shall be cut to uniform thickness. It shall be mowed to a height not to exceed three inches before the sod is lifted. Sod shall be protected from exposure to wind, sun, and freezing. If sod is stacked, it shall be kept moist. Sod shall not be planted when its moisture condition is so excessively wet or dry that its survival shall be affected. Grass sod with dried roots shall be considered unacceptable and rejected. Sod placed during dormancy shall be inspected by the City to verify that the grass is satisfactory. Broken or torn pads and uneven ends shall be rejected.

B. Water for sodded areas shall be potable, or otherwise free from harmful materials that might injure the sod.

C. Soil testing is not required. Fertilizer shall be 1-1-1 or 1-2-1 (N-P-K) ratio applied at a rate of 10 lbs fertilizer per 1,000 sq ft.

2.2 EQUIPMENT

A. Suitable equipment necessary for proper ground surface preparation and for the transporting and placing of all required materials shall be on hand, in good condition, and approved by the Owner before the various operations begin. Adequate watering equipment must also be on hand before sodding begins. A truck mounted pumping unit capable of injecting high density polyurethane material beneath the pavement. The pumping unit will be capable of controlling the rate of material as required to densify the soils.

PART 3 – EXECUTION

B. After the designated areas have been completed to the lines and grades required, areas to be sodded shall be tilled and free of large stones, sticks, and other debris that might interfere with sodding, livelihood of the grasses, or future maintenance of grass-covered areas. If any damage occurs after the grading of areas to be sodded and before the placement of sod, the Contractor shall repair such damage.

C. Sod shall be carefully placed by hand on the prepared areas. Sod shall be placed so that the entire designated areas are covered. The entire sodded area shall immediately be rolled and tamped with approved equipment to force the sod in firm contact with the underlying soil and form a solid mass and provide an even surface. Any voids left shall be filled with additional sod and tamped. Surfaces that in the opinion of the Owner may slide due to the height or slope of the surface, shall be stapled with steel turf staples driven through the sod and flush with the surface of the sod.

D. Fertilizing shall consist of providing and distributing fertilizer under the sod before placing in accordance with these specifications. The fertilizer shall be in acceptable condition for distribution and applied uniformly over the area. All fertilizer shall be delivered in bags or containers clearly labeled showing the analysis of the contents. A sample label or specification of proposed fertilizer shall be submitted to the Owner for approval prior to use.

E. Sodded areas shall be thoroughly watered immediately after they are planted and as directed by the City for two-weeks after placement. In all cases the sod shall be kept moist until it is established and watered in a manner that will avoid the application of excess quantities.

PART 4 – MEASUREMENT AND PAYMENT

A. Sodding shall be measured by the square yard of sodded area completed and accepted and shall be full compensation for furnishing and placing all materials required; for all staking, rolling and tamping; fertilizing; for all water; and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

END OF SECTION

SECTION 50020

EROSION CONTROL

PART 1 – GENERAL

1.1 DESCRIPTION

G. This item shall govern for the development and implementation of erosion control measures, storm water pollution prevention plan (SWPPP) and completion and posting of Construction Site Notice in accordance with the requirements of this specification.

1.2 SUBMITTALS

A. SWPPP

PART 2 – MATERIALS AND EQUIPMENT

Not used.

PART 3 – EXECUTION

A. SWPPP is not required to be signed and sealed by a registered professional engineer.

B. All work shall be in accordance with TCEQ requirements.

PART 4 – MEASUREMENT AND PAYMENT

A. Development and implementation of erosion control and SWPPP shall be paid based upon percent of contract time completed and shall be full compensation for development of plans, completion and posting of required forms, implementation of plans including furnishing and placing all materials required; and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and these specifications. Separate pay items may be provided for specific erosion control measures.

END OF SECTION

APPENDIX

DECORATIVE PEDESTRIAN RAIL
HIGH FLOW VENTSORB
GEOTECHNICAL REPORT

TO THE BIDDER / VENDOR

DID YOU REMEMBER TO?

- Abide by the General and Special Conditions
- Make note of the opening date and time. All bids must be submitted by 2:00 p.m.

Bids received after 2:00 p.m. will not be accepted.

- Fill in the **unit** and **extended price** on your bid proposal.
- Fill in the **total amount**.
- Fill in the **alternate bid amounts**, if requested.
- Fill in the terms, if requested.
- Acknowledge receipt of all addendums.
- Fill in the **delivery time** or the **calendar days** (if applicable).
- Fill in the **company name, address and phone number**.
- **Sign bid proposal**.
- Include on the front of your sealed envelope the following information: **Company name, address, bid number, opening date and time**.

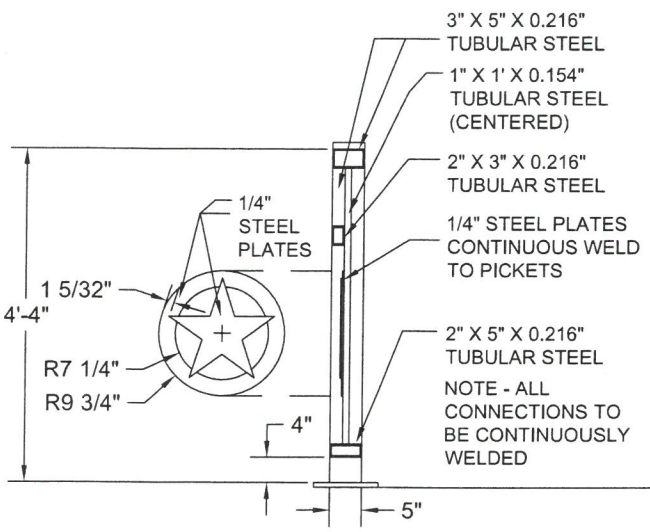
Mailing Address:

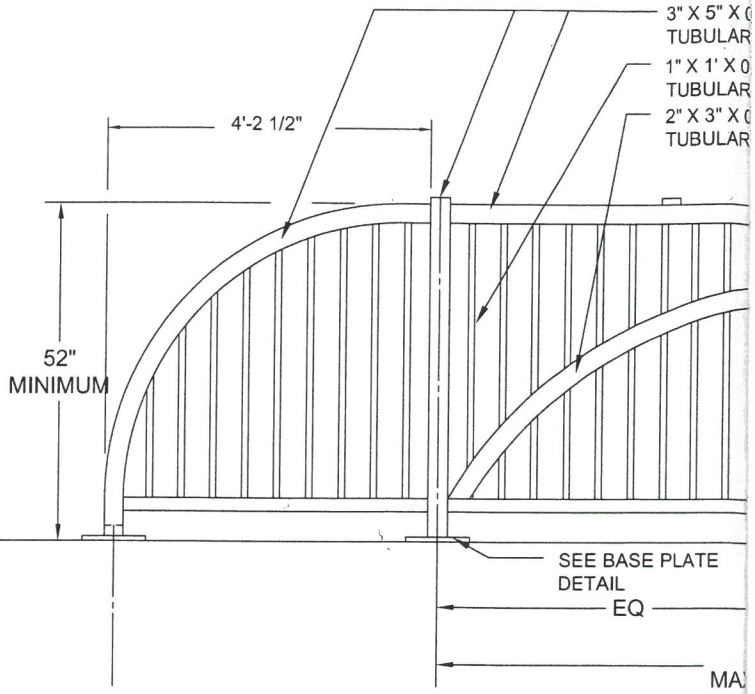
City of Mesquite
P.O. Box 850137
Mesquite, TX 75185-0137

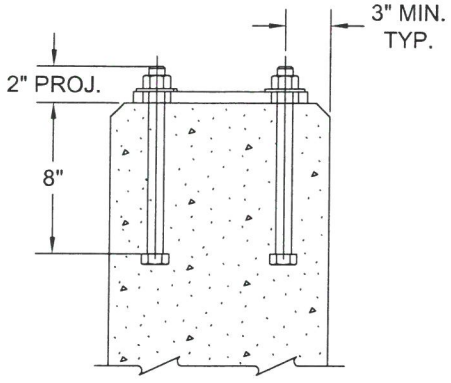
Purchasing Office
972-216-6201
972-216-6397 Fax

Physical Address:

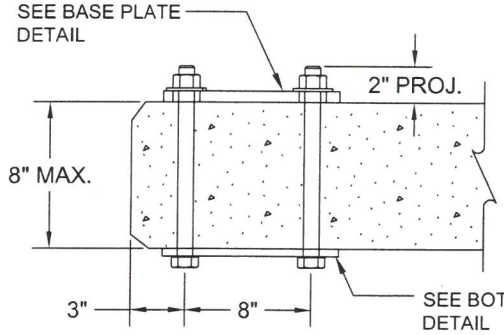
City of Mesquite
757 N. Galloway
Mesquite, TX 75149



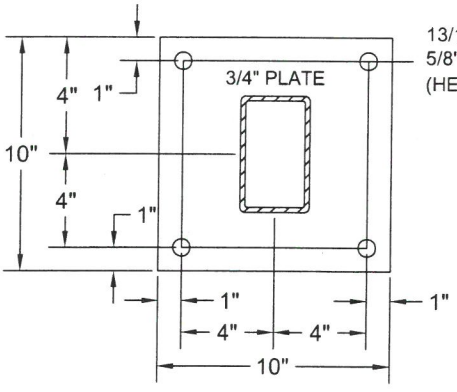




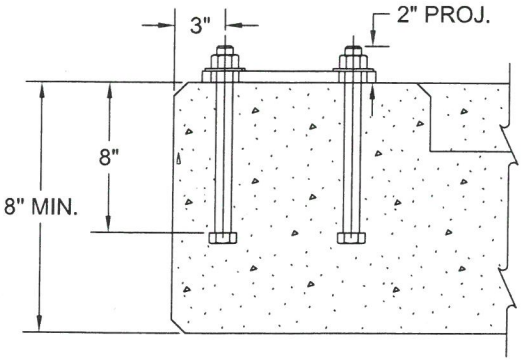
ON ABUT WING OR
CAP RETAINING WALL



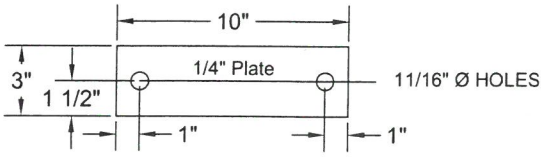
BASIC CONDITION



BASE PLATE DETAIL



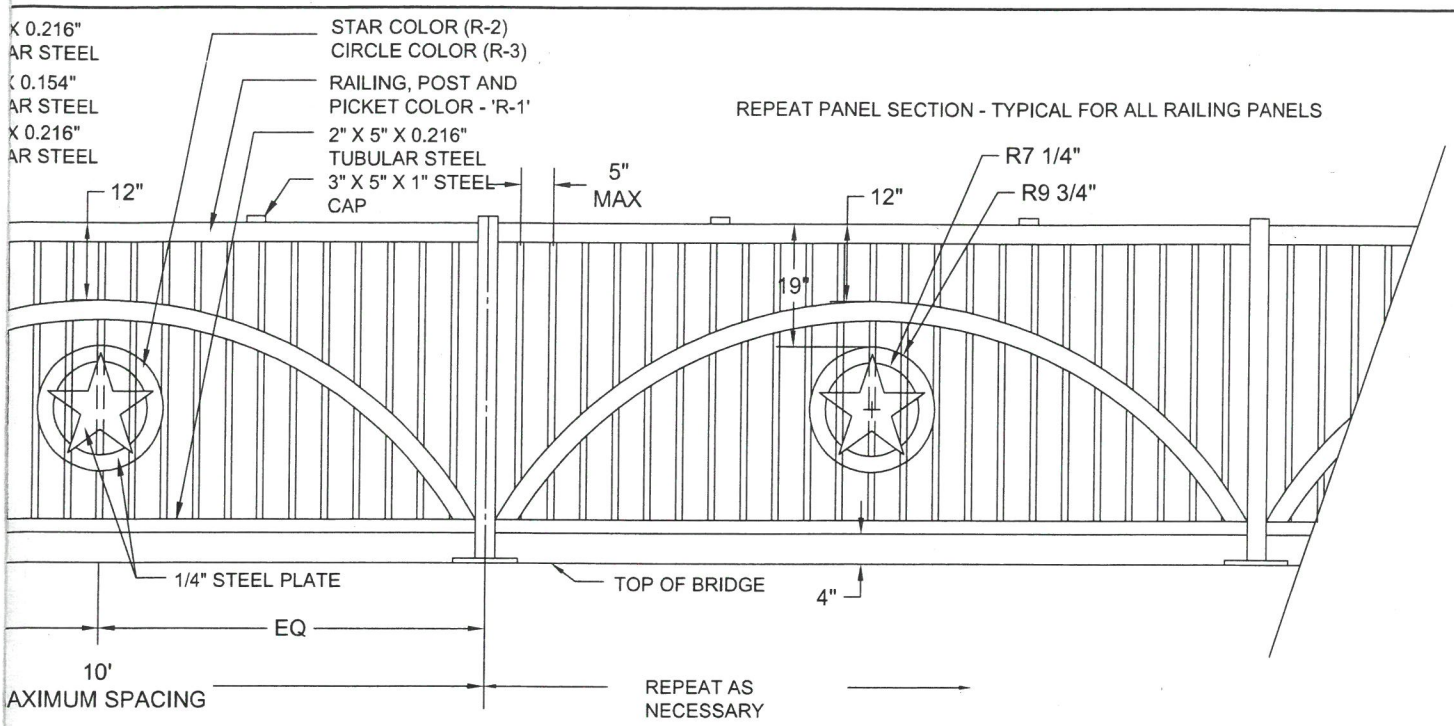
ON CULVERTS OR
SLABS OVER 8" THICK



BOTTOM PLATE DETAIL

GENERAL N

1. DESIGNED ACC
SPECIFICATIO
2. PIPE AND TUBE
B. OR A501. PL
3. ALL ANCHOR B
BE INCLUDED
4. ALL STEEL CO
A123 WITH A M
(COATING GRA
PLANS.
5. ANCHOR BOLT
STEEL TYPE 3C
6. FACE OF RAIL
UNLESS OTHE
SHALL BE PER
GROUT MAY BE
7. SHOP DRAWIN
FOR APPROVA
HORIZONTAL C
SHALL BE FABR
600' OR LESS.
ERECTION DRA
LOCATIONS, RA
SHALL BE SUB
8. SHOP DRAWIN
PROVIDED THE
9. EXPOSED EDG
CHAMFERED T
10. PROVIDE SEAL
DECORATIVE H
DRAWINGS ON
11. HANDRAIL TO C
FOR HIGHWAY
12. HANDRAIL POS
ON THE BRIDG



NOTES:

CCORDING TO CURRENT AASHTO STANDARD
ON FOR HIGHWAY BRIDGES.

BE FOR RAIL SHALL CONFORM TO ASTM A53 GRADE
PLATES SHALL BE ASTM A36.

BOLTS, NUTS, WASHERS AND BOTTOM PLATES TO
IN UNIT PRICE BID FOR RAILING.

OMPONENTS TO BE HOT-DIP GALVANIZED PER ASTM
MINIMUM COATING THICKNESS OF 2.0 MILS
RADE 50) UNLESS OTHERWISE SHOWN ON THE

LTS, NUTS, AND WASHERS SHALL BE STAINLESS
304 WITH MINIMUM YIELD STRENGTH OF 36 KSI.

L AND POSTS SHALL BE VERTICAL TRANSVERSELY
ERWISE APPROVED BY THE ENGINEER. POSTS
RPENDICULAR TO ADJACENT ROADWAY GRADE.
BE USED UNDER BASE PLATES IF NECESSARY.

INGS TO BE SUBMITTED TO THE BRIDGE ENGINEER
/AL WILL BE REQUIRED ONLY FOR RAILS ON
CURVES IN WHICH CASE THE RAIL MEMBERS
BRICATED TO THE REQUIRED RADIUS FOR RADII OF
. FOR RAILS NOT REQUIRING SHOP DRAWINGS,
RAWINGS SHOWING PANEL LENGTHS, SPLICE
RAIL POST SPACING AND ANCHOR BOLT SETTING
BMITTED TO THE AREA ENGINEER FOR APPROVAL.

INGS MAY BE SUBMITTED AS 11" X 17" PRINTS
HEY ARE CLEARLY LEGIBLE.

GES OF RAIL AND POSTS SHALL BE ROUNDED OR
TO APPROXIMATELY 1/16" BY GRINDING.

ALED ENGINEERING SHOP DRAWINGS OF THE
HANDRAIL BASED UPON THE CONCEPT
N THIS SHEET

CONFORM TO AASHTO LRFD SPECIFICATIONS
Y BRIDGES (4TH EDITION).

STS TO MATCH BOLT PATTERN SPACING SHOWN
GE PLANS AND DETAILS.

PAINTING:

1. PRIMER FOR ALL STEEL SURFACES - RUST-OLEUM HEAVY DUTY RUST-INHIBITIVE PRIMER - 1069 RED.
2. PAINT R-1 BRIDGE RAILING - BOLLARD: RUST-OLEUM INDUSTRIAL ENAMEL - 634402 HIGH GLOSS BLACK.
3. PAINT R-2 BRIDGE RAILING - STAR: RUST-OLEUM -1936 BRASS METALLIC OR 1910 GOLD METALLIC.
4. PAINT R-3 BRIDGE RAILING - STAR CIRCLE: RUST-OLEUM - INDUSTRIAL ENAMEL - 935402 VISTA GREEN.
5. PRIMER ALTERNATE: PRIMER FOR ALL STEEL SURFACES - SHERWIN WILLIAMS - MACROPOXY 646 FAST CURE EPOXY - GRAY COLOR.
6. PAINT ALTERNATE : R-1 BRIDGE RAILING - RAILING, POST AND PICKETS: SHERWIN WILLIAMS - HI SOLIDS POLYURETHANE B65B311 GLOSS BLACK.
7. PAINT ALTERNATE: R-2 BRIDGE RAILING - STAR: RUST-OLEUM 1936 BRASS METALLIC (SPRAY CAN).
8. PAINT ALTERNATE: R-3 BRIDGE RAILING - STAR CIRCLE: SHERWIN WILLIAMS - HI SOLIDS POLYURETHANE B65T304 HUNTER GREEN.

STATE OF TEXAS
THOMAS S. LACH
96234
LICENSED
PROFESSIONAL ENGINEER

REVISION TABLE		
NO.	REVISION	DATE

PEDESTRIAN BRIDGE RAIL		
ENGINEERING DIVISION		
GENERAL DESIGN STANDARDS		
City of Mesquite, Texas		
APPROVAL DATE	SCALE	DRAWN BY
7/7/2010	N.T.S.	TSL

CALGON CARBON CORPORATION

EQUIPMENT BULLETIN

HIGH FLOW VENTSORB

ODOR CONTROL SYSTEM FOR USE WITH CENTAUR® HSV GAC

GENERAL DESCRIPTION

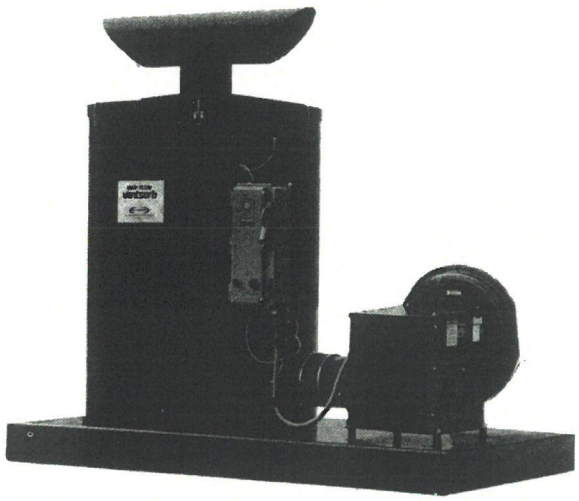
Calgon Carbon Corporation's HIGH FLOW VENTSORB system is an odor control system that combines Calgon Carbon Corporation's CENTAUR® HSV catalytic activated carbon with a proven equipment design.

The HIGH FLOW VENTSORB system with CENTAUR® HSV is designed to remove odorous H_2S and VOC emissions from:

- Municipal Wastewater Treatment Plants
- Remote Municipal Pumping and Lift Stations

The HIGH FLOW VENTSORB system is centered around a modular, prefabricated plastic canister filled with CENTAUR® HSV activated carbon. The HIGH FLOW VENTSORB contains all of the elements found in larger, traditional odor control systems: activated carbon, inlet connection, outlet connection, and drain connection. The HIGH FLOW VENTSORB system can be provided with a wide range of options, described in the following pages, allowing each user to customize their system according to their particular needs.

There are six models of the HIGH FLOW VENTSORB system. Each model is available either as a stand-alone canister or as a fully skid-mounted system. The HIGH FLOW VENTSORB system is capable of treating flows from 200 CFM to 3,300 CFM. See the Summary Table and System Drawing for details specific to each model.



HIGH FLOW VENTSORB - Skid-Mounted System:

"Purchase of this product from Calgon Carbon Corporation includes a licence under the following U.S. Patents. Numbers 5356849 and 5494869."

The HIGH FLOW VENTSORB system is designed for use with Calgon Carbon Corporation's CENTAUR® HSV activated carbon. The HIGH FLOW VENTSORB system's materials of construction and optional liquid-tight inlet valve allow for in-situ water washing of the CENTAUR® HSV to restore H_2S removal capacity.

FEATURES	BENEFITS
• Standard Carbon Fill is CENTAUR® HSV.	• Effective in treating a variety of odor causing compounds and organic contaminants.
	• Carbon can be regenerated with water to restore H_2S removal capacity, resulting in long operational life and significantly lower operating costs.
	• No chemical usage or storage required.
• System is available in six models, with numerous optional features.	• Flexibility, due to wide range of available options which allows the user the ability to customize the system.
• Canister system has no moving parts.	• Minimal operator attention required.
• Skid mounted system comes pre-assembled with canister, fan, and combination motor starter.	• Ease of installation. Simply place the system on a level surface, indoors or outdoors.
• All airstream components (canister, blower, valves) are manufactured from plastic.	• Excellent corrosion resistant properties for long service life.

CALGON CARBON CORPORATION • P.O. BOX 717 • PITTSBURGH, PA 15230-717 • PHONE 1-800-4CARBON

ENGINEERING DATA / GENERAL SPECIFICATIONS

ENGINEERING DATA

Model	Air Flow Capacity (CFM)	Carbon Capacity (lbs.)	Actual Pressure Loss at Max. Flow (in. WC)	Available Static Pressure from optional fan (in. WC)	Horsepower of optional fan	Maximum Weight - Canister only (lbs.)*	Maximum Weight - Skid Mounted System w/ fan (lbs.)*
HF-400	200 - 400	225	9	10.0	1.5	1,185	2,303
HF-600	400 - 600	675	12	13.8	5.0	2,710	4,061
HF-1000	600 - 1,000	1,125	11	13.0	7.5	4,732	6,733
HF-1500	1,000 - 1,500	1,800	10	13.0	7.5	7,367	9,458
HF-2000	1,500 - 2,000	2,250	9	13.0	10.0	10,346	12,880
HF-3000	2,000 - 3,300	3,825	11	13.0	15.0	16,252	19,343

Notes (*):Maximum weight based on canister filled with water during CENTAUR® HSV water wash procedure

SPECIFICATIONS:

Canister: Model HF-400 ..... Black Polyethylene exterior shell with removable top
Model HF-600 thru HF-3000 ..... Black Polypropylene exterior shell with removable top
(Note: top is not removable on HF-2000, HF-3000)

Canister Internals ..... FRP grating and Polyethylene screen
Pressure ..... 15 inches W.C. maximum
Vacuum ..... 15 inches W.C. maximum
Temperature Limit ..... 150° F

Carbon CENTAUR® HSV ..... Carbon shipped separately in 225 lb. drums

STANDARD FEATURES & OPTIONS: CANISTER (SEE FIGURE 1)

Standard Features:
- (1) Drain/Fill, 2" dia with PPL ball valve
- (1) Overflow, with plug,diameter "J"
- (1) Flanged inlet nozzle, ANSI 150, undrilled
- (1) Plain-end outlet nozzle
- (1) Lockable removable top (HF-400 to -1500)
- (1) Manway, (HF-2000,3000)

Available Options:
- (1) Pressure gage assembly
- (1) Ground rod assembly
- (1) Carbon sample assembly, 1.5" dia. with PPL ball valve
- (1) H_2S Bed Monitor
- (1) Raincap, PPL construction with birdscreen
- (1) Flanged outlet nozzle, ANSI, undrilled
- (1) Isolation valve on inlet nozzle, PVC construction (shipped loose)
- (1) Automated CENTAUR® HSV water wash package
- (1) Blind Flange for inlet nozzle

STANDARD FEATURES & OPTIONS: SKID-MOUNTED SYSTEM (SEE FIGURE 2)

Standard Features
- (1) Canister with all standard features plus:
  - (1) Pressure gage assembly
  - (1) Ground rod assembly
  - (1) Carbon sample assembly
- (1) Fan, FRP, with 3 ph/230-460V/60Hz TEFC motor. Graphite impregnated.
- (1) Isolation valve on inlet nozzle, PVC
- (1) Flexible connector, silicone
- (1) Combination motor starter, NEMA 4X
- (1) Skid, carbon steel with epoxy coating
- (4) Anchor bolt lugs

Available Options:
- (1) H_2S Bed Monitor
- (1) Flanged outlet nozzle, ANSI 150 or PS15-69
- (1) Raincap, PPL construction with birdscreen
- (1) Automated CENTAUR® HSV water wash package
- (1 set) Casters (HF-400, HF-600, HF-1000 only)
- (1 set) Fan acoustic enclosure
- (1) Mist eliminator / grease filter assembly (shipped loose)
- Replace: combination motor starter w/ local push-button station
- Replace: 3 ph TEFC fan motor with 3 ph TEXP motor
- Replace: 3 ph TEFC fan motor with 1 ph TEFC motor (HF-400)
- Replace: FRP fan with epoxy-coated metal fan
- Upgrade combination motor starter to NEMA 7/9

DRAWINGS:

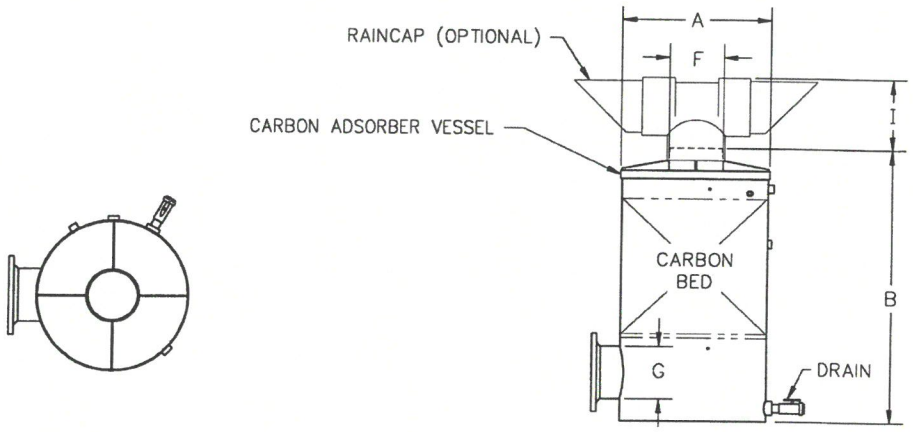


FIGURE 1. CANISTER W/STANDARD FEATURES ONLY

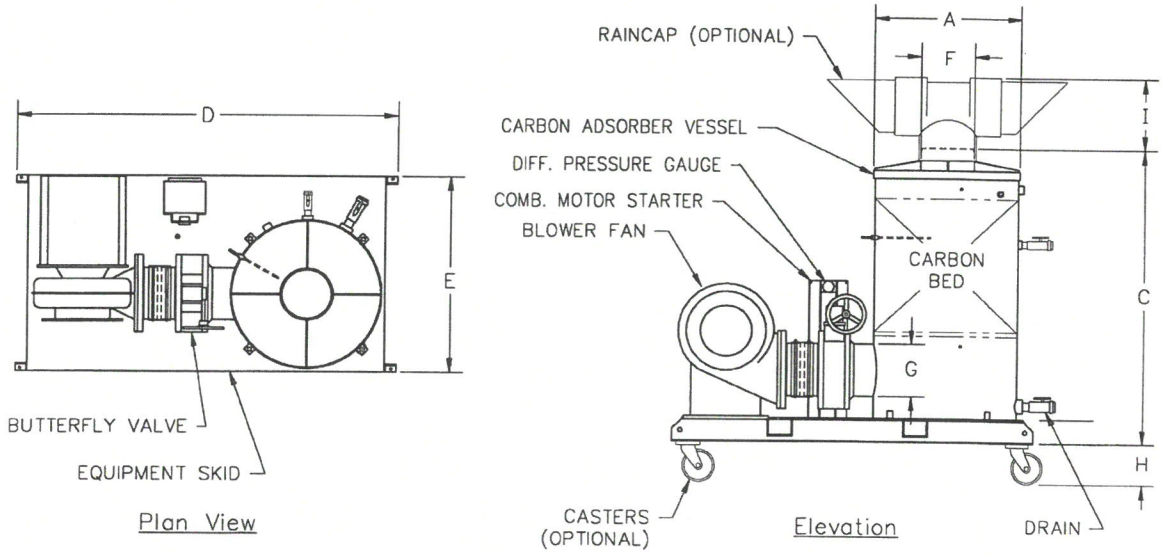


FIGURE 2. SKID–MOUNTED SYSTEM W/STANDARD FEATURES ONLY

DIMENSIONAL DATA

Model	A	B	C	D	E	F	G	H	I
HF-400	28.00"	51.00"	60.25"	72	48.00"	6.00"	6.00"	6.33"	7.31"
HF-600	36.00"	66.38"	72.63"	92	48.00"	12.00"	12.00"	9.50"	16.88"
HF-1000	48.00"	66.38"	72.63"	120	72.00"	10.00"	10.00"	9.50"	13.88"
HF-1500	60.00"	66.38"	74.63"	126	72.00"	12.00"	12.00"	10.50"	16.88"
HF-2000	72.00"	70.88"	79.13"	138	84.00"	12.00"	12.00"	10.50"	16.88"
HF-3000	90.00"	65.88"	74.13"	162	96.00"	24.00"	12.00"	10.50"	25.75"

LIMITATION OF LIABILITY

The Purchaser's exclusive remedy for any cause of action arising out of purchase and use of the HIGH FLOW VENTSORB system, including but not limited to breach of warranty, negligence and/or indemnification, is expressly limited to a maximum of the purchase price of the HIGH FLOW VENTSORB system as sold. All claims of whatsoever nature shall be deemed waived unless made in writing within forty-five (45) days of the occurrence giving rise to the claim. In no event shall Calgon Carbon Corporation for any reason be liable for incidental or consequential damages in excess of the purchase price of the HIGH FLOW VENTSORB system, loss of profits or fines imposed by Governmental agencies

WARRANTY

Calgon Carbon Corporation (Supplier) warrants that the HIGH FLOW VENTSORB system sold shall be free from defects in materials and workmanship for a period of one (1) year from the date of shipment. This warranty does not apply to problems associated with normal wear and tear, improper maintenance, misuse, abuse, or the failure to operate the equipment in strict accordance with the operating and maintenance plan provided. For those items provided by, but not directly manufactured by the Supplier, the manufacturer's warranty shall apply provided warranty coverage exceeds that which is provided by the Supplier. All other warranties, either express or implied, are hereby disclaimed including, but not limited to, the warranty of merchantability and fitness for a particular purpose.

SAFETY MESSAGE

Wet activated carbon preferentially removes oxygen from air. In closed or partially closed containers and vessel, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing carbon, appropriate sampling and work procedures for potentially low-oxygen spaces should be followed, including all applicable Federal and State requirements. For additional details, see Calgon Carbon Bulletin AB-006-08/94: Safety Considerations with Activated Carbon.

Local Representative:

If at any time our products or services do not meet your requirements or expectations, or if you would like to suggest any ideas for improvement, please call us at 1-800-548-1999. From outside the U.S. please call +1-412-787-6700.

CALGON

CALGON CARBON CORPORATION

CALGON

CALGON CARBON CORPORATION

PRODUCT BULLETIN

CENTAUR® HSV

GRANULAR ACTIVATED CARBON

DESCRIPTION

CENTAUR® HSV* is a vapor phase virgin activated carbon that has been developed specifically for odor removal from sewage treatment operations. This bituminous coal-based product is unique in that it provides high adsorption capacity for H_2S without chemical impregnants and adsorbs volatile organic compounds (VOCs) in an effective manner. CENTAUR HSV, by its catalytic functionality, oxidizes H_2S and converts it to water soluble sulfur compounds. As a result, H_2S capacity can be restored simply by water washing the carbon, eliminating safety concerns typically encountered with alkali impregnated carbons. CENTAUR HSV is capable of being thermally reactivated which eliminates the disposal concerns associated with alkali impregnated carbons.

APPLICATIONS

CENTAUR HSV can be utilized for odor removal in sewage treatment applications. The product is ideal for use at pump stations and treatment plants where H_2S and organic odors are a problem. On-site water regeneration and eventual thermal reactivation minimize operating and disposal costs.

REGENERATION

When odor breakthrough due to H_2S occurs, the spent carbon can be regenerated in place. The H_2S capacity can be restored by water washing of the CENTAUR HSV carbon. Regeneration efficiency and the number of regeneration cycles depend on the loadings of H_2S and VOCs. For details on regeneration and cycle determination, please contact Calgon Carbon Corporation in Pittsburgh, Pennsylvania.

DESIGN CONSIDERATIONS

Effective removal of H_2S requires the gas stream to contain at least an equivalent amount of oxygen and relative humidity above 10%. Condensation of water on the carbon will reduce its performance, and devices to prevent free condensation are recommended. Additionally, if CENTAUR HSV is used to control VOCs it is recommended that the relative humidity be controlled to below 50% to maximize carbon utilization.

CENTAUR HSV can be utilized in a typical fixed bed mode with superficial velocities up to 100 fpm. The bed depth can range from 12" to 36" depending on the on-stream time and water wash frequency desired. For assistance in the design of a carbon system, please contact Calgon Carbon Corporation in Pittsburgh, Pennsylvania.

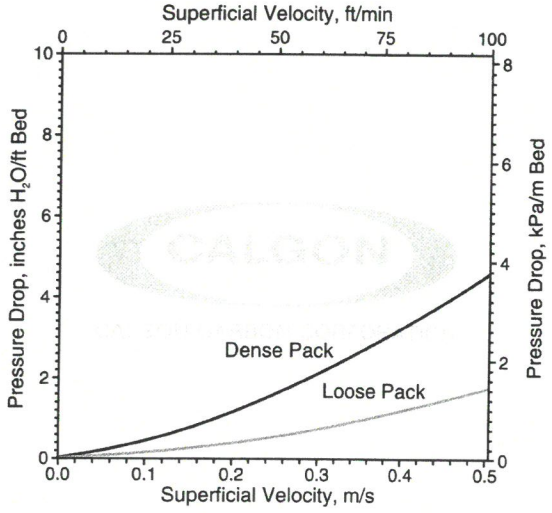
*Purchase of this product from Calgon Carbon Corporation includes a license under the following U.S. Patents. Numbers 5356849 and 5494869

PROPERTIES

H_2S Capacity, g H_2S/cc carbon*:	0.09 min
Butane Activity, weight %:	15.6 min
Iodine No, mg/g:	800 min
Ash, weight %:	7 max
Moisture, weight %, as packed:	4 max
Apparent Density, g/cc:	0.56 min
Hardness No:	97 min
Mean Particle Diameter:	3.7 mm
U.S. Sieve Series:	
Percent on 4 mesh	15 max
Percent through 7 mesh	8 max

*As determined by Calgon Carbon Corporation test TM-41 in which a moist air stream containing 1% H_2S (total flow rate of 1,450 cc/min) is passed through a 1.0 inch diameter, 9 inch long column of activated carbon and monitored to 50 ppm H_2S breakthrough.

PRESSURE DROP CURVE



MANUFACTURING

Catlettsburg, KY

PACKAGING

225 lb (102.3 kg) fiber drum

FEATURES	BENEFITS
• Not chemically impregnated	• Heat excursion potential caused by impregnants is eliminated thus making operations safer.
	• Organic capacity is significantly higher than impregnated carbons thus reducing operating costs.
• Metallurgical grade high purity coal	• Extreme hardness and abrasion resistance which reduces carbon attrition problems and pressure drop increase over time.
• Catalytic Activity	• Since multiple water washes are possible, Centaur HSV is capable of treating higher H_2S concentrations typically handled by chemical wet scrubbers.
• Pore volume not consumed by impregnant	• In contrast to impregnated carbons, Centaur HSV has organic capacity equal to or higher than other virgin coal based carbons.
• Enhanced adsorption pore volume	• Centaur HSV has been specifically designed to show enhanced organic capacity at low contaminant concentrations typically found in sewage treatment plants.
• Ability to be water washed	• In H_2S service, Centaur HSV can be field regenerated by water washing multiple times, thus eliminating safety concerns experienced with alkali regeneration and chemical handling.
• Ability to be thermally reactivated	• Centaur HSV can be thermally reactivated, thus spent carbon disposal problems are eliminated.

SAFETY MESSAGE

Wet activated carbon preferentially removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing carbon, appropriate sampling and work procedures for potentially low oxygen spaces should be followed, including all applicable federal and state requirements.

Local Representative:

Calgon Carbon Corporation's activated carbon products are continuously being improved and changes may have taken place since this publication went to press.

CALGON

CALGON CARBON CORPORATION

GEOTECHNICAL INVESTIGATION
PAVEMENT DESIGN AND BRIDGE ABUTMENT ANALYSIS
FOR FAITHON P LUCAS BLVD BETWEEN
MCKENZIE RD AND CARTWRIGHT RD,
MESQUITE, TEXAS

Prepared For:
Pacheco Koch, a Westwood Company
7557 Rambler Road # 1400, Dallas, TX 75231

Prepared by:
MAS-TEK ENGINEERING & ASSOCIATES, INC.
Geotechnical Consulting & Materials Testing
10625 Newkirk, Suite 800, Dallas, TX 75220

MTE Report No. 29-019G
December 05, 2022

MTE
MAS-TEK
ENGINEERING
10625 Newkirk, Suite 800
Dallas, TX 75220
p| 972.709.7384
f | 972.709.7385

December 05, 2022
MTE Project No. 29-019G

Mr. Christopher J. Cha, PE
Principal
Office: (817)-412-7155
E: ccha@pkce.com

Pacheco Koch, a Westwood Company
7557 Rambler Road # 1400, Dallas, TX 75231

Subject: **GEOTECHNICAL INVESTIGATION: PAVEMENT DESIGN AND BRIDGE ABUTMENT ANALYSIS FOR FAITHON P LUCAS BLVD, BETWEEN MCKENZIE RD AND CARTWRIGHT RD, MESQUITE, TEXAS**

Dear Mr. Cha:

This report presents the results of a geotechnical study performed for the referenced project in Dallas, Texas. This study was performed in accordance with our Proposal 10-07 G.

Our engineering analysis as well as the results of the field exploration and laboratory testing are included in this report. Our firm is interested in providing the construction material testing (CMT) that will be required during the construction phase of the project.

We appreciate the opportunity to be of assistance on this project. Please feel free to contact us if you have any questions or if we can be of further service.

Sincerely,

MAS-TEK ENGINEERING & ASSOCIATES, INC.
TBPE Firm Registration No. 1418

Syed A. Ahmed, P.E.
Senior Project Engineer

STATE OF TEXAS
Syed A. Ahmed
116204
LICENSED
PROFESSIONAL ENGINEER

Steve Mason
President

Copies Submitted: 1 pdf (via email)

TABLE OF CONTENTS

GEOTECHNICAL INVESTIGATION: PAVEMENT DESIGN AND BRIDGE ABUTMENT ANALYSIS FOR FAITHON P LUCAS BLVD, CITY OF MESQUITE, TEXAS

1 INTRODUCTION

1.1 PROJECT AND SITE DESCRIPTION

This report presents the results of the geotechnical study for the new pavement design and bridge abutment design and construction recommendations for Faithon P Lucas Blvd, between McKenzie Rd and Cartwright Rd, in Mesquite, Texas The "Vicinity Map" and "Site and Boring Plan", Figures 1 and 2, respectively, are included in the Appendix A.

At the time of our field exploration, we observed that Faithon P Lucas Blvd has single lane street each direction with an asphalt pavement.

1.2 PURPOSE AND SCOPE OF WORK

The purpose of this study was to evaluate the subsurface conditions at the site and to develop geotechnical engineering recommendations for the proposed pavement and bridge abutment foundation design and construction recommendations. To accomplish these intended purposes, the study has been conducted based on the following scope:

- Exploration and evaluation of the soil and rock strata at the boring locations;
- Evaluation of soil swell potential;
- Perform laboratory tests on selected samples to determine classification and engineering properties of the subsurface soil;
- Recommendations for bridge abutment foundation design parameters, and other geotechnical related design parameters;
- Recommendations for pavement sections; and
- Discussion of construction considerations.

2 FIELD EXPLORATION

The subsurface material at the project site were explored by drilling eight (8) pavement borings and two (2) bridge abutment foundation borings on October 12 & 13, 2022. The boring locations were selected by the client's design team. At the time of drilling and this report preparation, final bridge abutment and pavement layout plan drawings were not available.

The pavement borings were drilled to depths of 0 to 10 feet below the existing grade and bridge abutment foundation borings were drilled to a depth of 0 to 50 feet below the existing grade at the approximate location as shown on the Site and Boring Plan, Figure 2, in Appendix A. The Logs of Borings, and the terms and symbols used in the logs are provided in Figures 3 through 14.

Borings B-1 thru B-8 was drilled for the surface pavement and Borings B-9 & B-10 were drilled for the foundations for the new bridge abutment. Boring B-1 to B-10 was advanced using a truck-mounted drill rig employing dry sampling techniques.

Undisturbed cohesive soil samples were obtained using 3-inch diameter thin-walled tube samplers that were advanced into the soils by a continuous thrust of hydraulic rams on the drilling equipment. The undrained compressive strength of cohesive soils was estimated in the field using a calibrated pocket penetrometer.

Texas Department of Transportation Cone Penetration (TCP) tests were performed on the bridge abutment Borings B-9 & B-10 to examine the resistance of bedrock or harder materials to penetration and to augment information developed from the core borings. In this test a 3-inch diameter steel cone, driven by a 170-pound hammer freely falling 24 inches forms the basis for Texas Department of Transportation strength correlations. Depending on the resistance of the materials, either the number of blows of the hammer required to provide 12 inches of penetration, or the inches of penetration of the cone due to 100 blows of the hammer are recorded on the field log. Upon encountering rock, continuous rock coring and sampling were performed using N-size coring equipment.

The results of the pocket penetrometer and TCP tests are presented at the appropriate depths on the respective Log of Boring illustrations.

The thin-wall tube samples were extruded at the site and all samples were sealed in polyethylene bags and stored in sample boxes for transport to our laboratory. After completion of the field investigation, the borings were backfilled with soil cuttings till the surface and asphalt patch was used to match the existing pavement surface.

Soil strata boundaries shown on the Log of Boring illustrations are representative of the changes in soil and rock types in the immediate vicinity of each boring. Variation was observed between borings and should be anticipated away from each boring location.

Field boring logs were prepared by the drill crew as part of the drilling operations. The boring logs include visual classifications of the materials encountered during drilling and the driller's interpretation of the subsurface conditions between samples. The final boring logs included in this report represent the engineer's interpretation of the field logs and include modifications based on observations and testing of the samples in the laboratory. Soil strata boundaries shown on the boring logs are approximate. The stratification boundaries shown on the boring logs represent the approximate locations of the changes in the soil and rock types; in situ, the transition between material types may be gradual and indistinct.

The boring locations should be considered accurate only to the degree implied by the method used in its determination. If a greater degree of accuracy is required or desired, then a licensed land surveyor should be retained to record the coordinates of the borings.

3 LABORATORY TESTING

Samples of subsurface materials from the borings were visually examined and classified in the field. Modifications to the field classifications were made based on the results of the laboratory testing related to material classification according to the Unified Soil Classification System (USCS). These tests included moisture content, unit dry weight, Atterberg limits (Liquid Limit, LL and Plastic Limit, PL), Plasticity Index (PI) and the percent passing No. 200 sieve. Shear strengths of cohesive soils were estimated by field pocket penetrometer tests.

Unconfined Compression (Uc) strength tests were performed by Arias Geoprofessionals on selected soil samples to determine the strength parameters. The results of these tests are reported on the boring logs at respective depths.

Selected samples were subjected to Free Swell tests. Free Swell tests were performed by Arias Geoprofessionals on undisturbed soil samples to estimate soil volume change characteristics at the present moisture contents. Results of the swell tests are presented in Table 3.1 below.

TABLE 3.1 - SUMMARY OF SWELL TESTS

Boring No.	Depth (feet)	Liquid Limit (%)	Plasticty Index	Surcharge (psf)	Initial Moisture (%)	Final Moisture (%)	Swell (%)
B-8	2-4	59	45	375	16.6	19.8	0.5
B-9	8-10	63	46	1125	21.6	23.6	0.0

Eades and Grimm lime series (pH/lime series) test was performed on a selected soil sample to estimate an optimum percentage of hydrated lime required to treat and increase the strength of subgrade cohesive soils. For construction purposes, an additional 1 to 2 percent may be added to the optimum amount of hydrated lime as determined by using Eades and Grimm method. The results of the Eades and Grim lime series tests are presented in Table 3.2 below.

TABLE 3.2 – pH LIME SERIES TEST RESULTS

Boring No.	Depth (feet)	Material	LL	PL	PI	% Lime	pH
B-3	1-2	Fat Clay (CH), light brown, gary	53	14	39	0	7.2
						2	12.0
						4	12.0
						6	12.4
						8	12.4
						10	12.5

Soluble sulfate tests were performed on selected soil samples using TxDOT Method, Tex-145-E to measure the concentration of soluble sulfate present in the subsurface soils at the borehole locations. The concentration of the soluble sulfate is required to evaluate the sulfate induced heave potential of the pavement due to the presence of sulfate within subgrade soils underneath the pavement.

TABLE 3.3 – SUMMARY OF SOLUBLE SULFATE CONTENT TEST RESULTS

Boring Number	Sample Depth feet	Soil Description	*Soluble Sulfates Content ppm
B-1	2-4	Dark Brown, Dark Gray Fat Clay (CH)	1650
B-8	0-2	Brown, Gray Fat Clay (CH)	1770

4 SUBSURFACE CONDITIONS

4.1 GEOLOGY

Atlas maps published by the Bureau of Economic Geology at the University of Texas, Austin indicated that the project location, Fatham P Lucas Blvd is located within deposits of Fluviatile terrace deposits (Qt) that is of Quaternary age, Alluvium (Qal) and deposits of Ozon formation (Ko).

The Alluvium and Fluviatile deposits mainly consist of flood-plain deposits including gravel, sand, silt, silty clay, clay, and gravel in various degrees of proportions, with gravel more in older and higher terrace deposits.

Ozon formation consists of clay, calcareous silt and sand content increases upward with combination of hematile nodules and pyrite nodules. Some very thin limestone lenses are also present locally in lower parts of this formation. The subsurface materials encountered in the borings are summarized below

4.2 SUBSURFACE CONDITIONS

Specific types and depths of subsurface strata encountered in the borings are shown on the boring logs. The subsurface conditions encountered at the subject site can be generalized as shown below:

For the pavement borings B-1 thru B-8, Approximately 0 to 10 feet of dark brown, brown, gray, tan fat and lean clays were encountered below the existing ground surface.

For bridge abutment borings B-9 and B-10, Approximately 0 to 30 feet of dark brown, brown, light brown, gray, tan fat and lean clays were encountered below the existing ground surface. Below the fat/lean clays, unweathered gray shale was encountered at a depth of 28-30 feet, which extended to a termination depth of 50 feet in borings.

Generally, the soils encountered in the borings were stiff to hard fat and lean clays. Based on Atterberg Limits (Liquid Limit and Plastic Limit) test results, the upper dark brown, brown fat and lean clay soils encountered in the borings are considered to be moderately expansive.

Refer to the Logs of Borings in Appendix A for detailed subsurface descriptions. Note that demarcation lines between the strata are interpretive of the field conditions, and that actual strata transitions in the field may be gradual.

4.3 GROUNDWATER CONDITIONS

The borings were advanced using auger drilling and dry sampling methods in order to observe groundwater seepage levels. The ground water level was encounter for boring B-9 at a depth of 23 feet and was dry upon completion of drilling. It is not possible to accurately predict the magnitude of subsurface water fluctuations that might occur based upon short-term observations. The occurrence and variation of groundwater can vary due to many factors. These factors include seasonal changes, site topography, surface runoff, the layering and permeability of subsurface strata; water levels in any waterways, creeks, drainage channels, utilities, and other factors not evident at the time of this study. The possibility of groundwater and its fluctuation should be considered when developing this project.

5 ANALYSIS AND ENGINEERING RECOMMENDATIONS

At the time this report was written, the traffic data and finished grades were not available. The maximum column loads for the proposed new bridge abutment is anticipated to be about 50 kips to 400 kips. We assumed the maximum traffic volume of

500,000 ESAL's for Minor Arterial street pavement sections to perform the pavement analysis. We anticipate that the finished grade of the pavement will be within ±1 foot of the existing grade.

A deep foundation system, such as drilled pier foundation is recommended for the proposed new bridge abutment.

5.1 POTENTIAL VERTICAL RISE

The overburden clayey soils encountered in the borings at the subject site exhibited Plasticity Indices (PI) typically ranging between 32 and 56. These soils are moderately expansive that may exhibit shrink and swell behavior with changes in moisture conditions. The amount of shrink/swell behavior that can occur will depend upon moisture fluctuations of the subgrade soils that occur over the design life of the structure. Usually, the magnitude of soil's potential vertical rises or potential vertical movements (PVR's/PVM's) are dependent upon the moisture content, thickness and nature of the clayey soils present below finished grade at the time of construction, the preceding and prevailing atmospheric conditions, the overall drainage characteristics of the site surface, and the depth of the active moisture zone.

Based on the subsurface conditions encountered in the borings and considering the thickness of the expansive soils below existing grade, estimated PVR calculations for the for the new pavement were performed using the Texas Department of Transportation (TxDOT) Method 124-E. The estimated PVR using this method is on the order of 4.0 inches at the current (dry) moisture condition. The TxDOT method is empirical and is based on the Liquid and Plastic limits and moisture content of the subsurface soils.

5.2 STRAIGHT DRILLED PIERS

Due to the nature of subsurface soil conditions encountered at this site, and in view of the structural loads, we recommend that the structural loads for the proposed new bridge abutment be supported by auger excavated, straight, cast-in-place, reinforced concrete piers (straight drill shafts). These piers should be embedded in the gray hard unweathered shale. The piers may be designed using the following design values (Table 5.1):

TABLE 5.1 – DRILLED PIERS DESIGN VALUES

[1]Bearing Material	[2] Minimum Depth to Bearing Material, (ft.)	[3] Minimum Penetration (ft.)	Allowable Bearing Pressure (psf)	Allowable Skin Friction (psf)	
				Compression	Tension
Gray unweathered Shale	28-30	10	25,000	3,500	2,700

Notes:(1) The bearing stratum must be identified by experienced geotechnical personnel.
(2) Based on the depths to gray hard shale encountered in Borings B-9 to B-10; Depths are estimated below the existing grade and may vary depending on final grade.
(3) Drill Pier extended at least 10 feet for gray shale, or 2 shaft diameters (2D)

The drilled piers should be designed to transfer the column loads to the bearing stratum using a combination of end-bearing and skin friction. In order to develop the maximum end-bearing and skin friction, it is recommended that the drilled piers be socketed a minimum depth of 10 feet for gray unweathered shale or 2 shaft diameters below the recommended depth to bearing material presented in Table 5.1 above. Greater penetration depths may be required to develop the full bearing resistance required to support the axial column loads and for lateral resistance, and to resist the uplift due to the presence of expansive soils. The minimum depth of pier penetration into the bearing stratum and the pier design (such as pier diameter) should be based on the structural column loads, skin friction, end bearing, lateral resistance, uplift pressure and other related factors.

The recommended skin friction values apply only to that portion of the pier below the recommended minimum penetration depth into the bearing material, gray shale A reduction of the allowable frictions will be required if the drilled piers are placed closer than 2 pier diameters apart, measured edge to edge, depending on the number of piers and the final configuration of the cluster. In no case should piers be constructed less than one pier diameter apart, measured edge to edge. Skin friction values should be reduced 50 percent for piers constructed one diameter apart, with a linear interpolation of the reduction for piers between one and two diameters apart.

The piers should be provided with enough steel reinforcement to resist uplift pressures (due to the presence of moderately expansive soils) on the order of 1,000 pounds per square foot of pier area acting over a design depth of 10 feet. Uplift loads will be partially offset by the dead weight of the structure.

If any groundwater is encountered during construction phase, a temporary casing will be required during pier installations at this site.

Resistance against Lateral Loads - Foundations are subjected to lateral loads due to a variety of forces. As such, these forces must be considered as part of the overall foundation design. Forces transmitted to drilled piers will be resisted by the lateral resistance developed by the drilled pier interacting with the surrounding subsurface soils and bearing materials. The upper 6 feet of soil below the finished grade should be neglected in passive resistance to allow for soil shrinkage.

Based on the subsurface conditions encountered in the borings, the following parameters (Table 5.2) may be used for the lateral load analysis using a computer program with the p-y curve method such as LPILE (by ENSOFT Inc.).

TABLE 5.2 – LPILE (ENSOFT Inc.) DESIGN PARAMETERS

Stratum[1]	γ_e[2] (pci)	RQD3 (%)	C[4] (ksf)	Φ[5] (degree)	E_{50} [6]	k,Static[7] (pci)	UC[8] Strength (psi)	Er[9] (psi)
On-Site Clay	0.058	N/A	1.5	0	0.007	500	N/A	N/A
On-Site Soils (with Free Water)	0.036	N/A	1.5	0	0.007	500	N/A	N/A
Gray Unweathered Shale	0.081	95	10	0	0.00005	N/A	130	20,000

Notes: (1) On-site soils include fill and/or native stiff to hard brown lean/fat clays, and hard soils includes tan and gray Shale.
(2) γ_e is effective unit weight.
(3) RQD is the rock quality index.
(4) C is undrained cohesion.
(5) Φ is the internal Friction Angle.
(6) E_{50} is the strain at 50% of the soil strength (equivalent to K_{rm} for rock).
(7) k is soil modulus used with p-y curve model.
(8) UC is Uniaxial Compressive Strength.
(9) Er is Young's Modulus

Drilled pier foundation designed and constructed in accordance with the information provided in this report will have a factor of safety of 2.5 against a general shear failure, and will experience minimal settlement (less than 1 inch).

Piers Installation –

The construction of all piers should be observed by experienced geotechnical personnel during construction to ensure compliance with design assumptions and to verify: (1) the bearing stratum; (2) the minimum penetration; (3) the removal of all smear zones and cuttings; (4) that groundwater seepage is correctly handled; and (5) that the piers are vertical and are within the acceptable tolerance. If casing is required during construction phase, the casing should be installed to a sufficient depth to ensure that an adequate seal, preventing the inflow of water into the drilled pier excavation, is obtained. Typically, a casing penetration of one to two feet into the tan or gray Shale will provide a satisfactory seal.

Reinforcing steel and concrete should be placed immediately after the excavation has been completed and observed. In no event should a pier excavation be allowed to remain open for more than 8 hours. Concrete placed in excavation in excess of 10 feet should be placed in such a manner to prevent segregating the aggregates. Usually, a tremie pipe is used to facilitate this. Again, casing of the foundation piers is required.

5.3 SEISMIC SITE CLASS

Based on the subsurface conditions encountered at the site, review of the available geologic mapping, and site class definitions shown in Table 1613.5.2 of the 2009 International Building Code (IBC), it is our opinion that the site may be classified as site Class B with a soil profile name of "Rock" category.

Based on our experience in this area, we do not believe further studies to determine the Site Seismic Classification is warranted. However, if a definitive study is, nevertheless, needed, a cross-hole seismic study could be performed to determine the subsurface soil and rock shear wave velocities, which then would determine the site seismic classification.

6 EARTHWORK RECOMMENDATIONS

6.1 SITE PREPARATION

In general, all existing surface vegetation, any features within the construction area, organic topsoil, gravel surface, loose materials, loose fill, and/or any debris or deleterious matter should be removed. Following excavation, the exposed soil should be proofrolled to expose any weak, soft, wet, or otherwise unsuitable soils. The exposed subgrade should be proofrolled (under the observation of qualified personnel) with a loaded, tandem-axle dump truck weighing a minimum of 25 tons, or other heavy, rubber-tired construction vehicle, to locate any zones that are soft, loose or unstable. The proofrolling should consist of several overlapping passes in mutually perpendicular directions over a given area. The subgrade in areas where rutting or pumping occurs during proofrolling should be removed to hard ground and replaced with suitable fill, as described below, if it cannot be compacted in place. The exposed surface should be verified by a field representative of Geotechnical Engineer. Fill materials should be placed in six (6) to eight (8)-inch loose lifts at moisture contents within five (5) percent of optimum and each lift compacted to a minimum of 95 percent of its maximum dry density as defined by ASTM D 698. The site may then be filled to grade using on-site soils, or similar materials.

Following proofrolling, exposed surface, stabilized and unstabilized should then be scarified up to a minimum depth of 8 inches, watered as required and re-compacted to a minimum of 95 percent of the maximum dry density as defined by ASTM D 698 (Standard Proctor) at a moisture content between -1 to +3 percentage points of the optimum moisture content of the Standard Proctor.

Field density tests should be taken at the rate of one test per each 5,000 square feet or a minimum of three per lift in the area of all compacted fills. For areas where hand tamping is required, the testing frequency should be increased to approximately one test, per lift, per 100 linear feet of area.

Utility backfill up to a depth of 10 feet below grade should be compacted to a minimum 95 percent of the material's maximum dry density (ASTM D 698) at a moisture content within five (5) percentage points of optimum moisture content.

6.2 EXCAVATION

Excavations will encounter clay soils overlying sand and gray Shale. The clays can be excavated with conventional equipment. Applicable OSHA standards should be followed. During excavation soil type needs to be identified by the contractors "competent person" as defined by OSHA at the time of excavation. Excavations deeper than 20 feet will need to be engineered on a case-by-case basis according to OSHA standards. If construction starts during rainy season, seasonal seepage can occur above the shale. This is normally handled during construction by perimeter sumps and pumping.

7 SURFACE PAVEMENT RECOMMENDATIONS

7.1 PAVEMENT SUBGRADE

Pavement layout plan was not available during drilling and at the time of this report preparation. Based on the subsurface conditions encountered in Borings B-1 thru B-8 pavement subgrade materials at this site are anticipated to consist of fat to lean clays.

The subgrade is subject to loss of support with the moisture increases that can occur beneath paving. Clayey subgrade reacts with hydrated lime, which serves to improve and maintain their support value. Therefore, lime stabilization is recommended beneath Rigid (concrete) pavements as described in this report.

Based on pH lime series test results, a minimum of about 8 percent hydrated lime (TxDOT Item 264), by dry weight, or 48 pounds per square yard per 8-inch depth may be used for lime stabilization. The lime should be thoroughly mixed and blended with the top 8 inches of the subgrade in accordance with TxDOT, Item 260, Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, 2004 Edition. Stabilization should extend a minimum of one foot beyond the edge of the pavement. Because the cut and fill operations may change the existing subsurface soil conditions, the actual percentage of hydrated lime needed to stabilize the pavement subgrade soils should be confirmed/verified by laboratory tests at the time of construction.

Project should allow a curing period between initial and final mixing of the lime/soil mixture. After initial mixing, the lime treated subgrade should be lightly rolled and maintained at or within 3 percentage points above the soil's optimum moisture content until final mixing and compaction. We recommend a 3-day curing period for these soils.

The following graduation requirements are recommended for the stabilized materials prior to final compaction:

	Percent
Minimum Passing 1 3/4 inches Sieve	100
Minimum Passing 3/4 inches Sieve	85
Minimum Passing No. 4 Sieve	60

Upon completion of proofrolling as recommended in report section "EARTHWORK RECOMMENDATIONS", the pavement subgrade, stabilized and unstabilized, should be uniformly compacted to a minimum of 95 percent the maximum dry density as determined by Standard Proctor (ASTM D 698) between -1 to +3 percentage points of the optimum moisture content of the Standard Proctor. The subgrade should be protected and maintained in a moist condition until the pavement is placed. Pavement subgrade should be graded to prevent ponding and infiltration of excessive moisture on or adjacent to the pavement subgrade and surface.

7.2 PAVEMENT SECTIONS

We contemplated that Portland Cement Concrete (PCC) pavement (rigid pavement) and will be under consideration for this project. The proposed project may require 500,000 ESAL's for Minor Arterial street pavement.

The pavement thickness calculations for Minor Arterial street were performed using the following parameters that were developed based on assumed traffic data and design parameters, and the procedures outlined by the American Association of State Highway and Transportation Officials (AASHTO). Based on the assumed traffic data, the following types of pavement and corresponding ESAL's (Table 7.1) are considered for both the rigid pavement recommendations.

TABLE 7.1 – PAVEMENT DESIGN LOADING

Vehicle Type	Type of Pavement	Assumed ESAL[1]
Minor Arterial Street	Heavy-Duty	500,000

Note: (1) Equivalent Single Axle Load

The design parameters considered for the rigid pavement. When appropriate, the item listed in the parenthesis at the end of each bullet item refers to the source of the value.

- 20-year Design Life (anticipated, depending on periodic/regular maintenance)
- 85% Reliability (assumed, AASHTO)
- 0.35 Overall Deviation for rigid (AASHTO)
- 4,000 psi concrete strength at 28 days (minimum value recommended)
- 4,000,000 psi Concrete Elasticity Modulus (estimated from concrete strength)
- 3.0 Load Transfer Coefficient (based on edge support, AASHTO)
- 85 psi/in Modulus of Subgrade Reaction (assumed, AASHTO)
- Drainage Coefficient = 1.0 (assumed, AASHTO)
- 4.5 Initial Serviceability (AASHTO)
- 2.25 Terminal Serviceability (AASHTO)

Recommended pavement thickness values for rigid (concrete) pavement systems are provided in Table 7.2. The recommended rigid sections for minor arterial pavement type are considered equivalent with respect to pavement design loading data as presented in Table 7.1.

TABLE 7.2 RECOMMENDED PAVEMENT THICKNESSES

Material Designation	Portland Cement Concrete
	Minor Arterial Street (Heavy Duty)
Portland Cement Course	10 inches
Lime Stabilized Subgrade*	8 inches

*Minimum 8% Hydrated Lime, by dry weight, (About 48 pounds per square yard)

If ESAL's indicated in the actual traffic data are different than that listed in Table 7.1, then we should be contacted to revise the recommended pavement sections. The recommended pavement is intended to provide an adequate thickness of structural materials, such that wheel loads are distributed over a larger area. The pavement may be adequate from a structural standpoint, yet still experience cracking and deformation due to soil movements expected at this site beneath the pavement section. Therefore, moisture changes in the subgrade should be prevented. The pavement and adjacent areas should be well drained. Proper and regular maintenance should be performed on cracks in the pavement surface to prevent water passing through to the base or sub-base material. Even with these precautions, some movements and cracking may still occur, which will require periodic maintenance.

The new pavement section may be joined with the existing adjacent concrete pavement at the subject site. Care should be taken not to undermine the support of the existing pavement. Adequate and proper isolation joints should be used wherever the pavement will abut a structural element subject to a different magnitude of movement, e.g., light poles, retaining walls, existing pavements, or manholes, etc. Upon completion of pavement construction, the contraction, construction and isolation joints should be inspected periodically and resealed, as necessary. Consideration may be given to grading the subgrade and crowning the pavements so that surface runoff will rapidly drain away from the pavement and subgrade.

7.3 PAVEMENT MATERIAL SPECIFICATIONS

7.3.1 Pavement Material Specifications

Recommended material specifications for the recommended pavement sections are provided below.

Portland Cement Concrete - TxDOT Item 360 (Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, 2014 Edition), with a minimum flexural strength of 550 psi at 28 days; that corresponds to roughly 4,000-psi compressive strength. Concrete should be steel reinforced and include joints to control the formation of temperature and shrinkage related cracks. Concrete should include air entrainment to increase the resistance to temperature effects. As a general guide, the air entrainment should vary from 4 to 6

percent. Reinforcing steel should consist of no 5 bars placed at 18 inches on-center in two directions.

Lime Stabilization for Pavement Subgrade – As outlined in TxDOT Item 260, Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, 2014 Edition

7.4 PREVENTATIVE MAINTENANCE

Preventative maintenance should be planned because of the presence of active nature of clayey soils at this site. Differential soil movements can occur that can cause pavement cracking and opening of joints. Water entering joints can reduce the service life of the pavement. Preventative maintenance should be provided for through and on-going pavement management program to enhance future pavement performance. Preventative maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment.

Preventative maintenance consists of both localized maintenance (e.g. crack and joint sealing and patching) and global maintenance (e.g. surface sealing). Preventative maintenance is usually the first priority when implementing a planned pavement maintenance program and provides the highest return on investment for pavements. Also, thicker pavement sections could be used to reduce the required maintenance and extend the service life of the pavement. Signs should be placed at the entrances of the parking area to limit heavy trucks being on the automobile pavements. Prior to implementing any maintenance, additional engineering observation is recommended to determine the type and extent of preventative maintenance.

The subgrade is subject to loss of support with the moisture increases that can occur beneath paving.

Upon completion of proofrolling as recommended in report section "EARTHWORK RECOMMENDATIONS", the pavement subgrade, stabilized and unstabilized, should be uniformly compacted to a minimum of 95 percent the maximum dry density as determined by Standard Proctor (ASTM D 698) between -1 to +3 percentage points of the optimum moisture content of the Standard Proctor. The subgrade should be protected and maintained in a moist condition until the pavement is placed. Pavement

subgrade should be graded to prevent ponding and infiltration of excessive moisture on or adjacent to the pavement subgrade and surface.

8 LIMITATIONS

In preparation of this report, we have strived to perform our services in a manner consistent with that level of care and skill ordinarily exercised by other members of our profession currently practicing in the same locality under similar conditions and at the time the services are provided. The results, conclusions, opinions and recommendations provided in this report are directed at, and intended to be utilized within, the scope of work contained in the proposal and agreement executed by Mas-Tek Engineering and the client. These are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Mas-Tek Engineering makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

This report may be used only by the client and the registered design professional in responsible charge and only for the purposes stated for this specific engagement within a reasonable time from its issuance, but in no event later than two (2) years from the date of the report.

The scope of services was limited to the borings completed at the site. It should be recognized that definition and evaluation of subsurface conditions are difficult. Since some variation was found in subsurface conditions at the specific boring locations for this study, all readers should be aware that a greater variation could occur between the boring locations. Statements in the report as to subsurface variations across the site are intended only as estimations from the data obtained at specific boring locations.

The scope of services did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous substances in the soil, surface water, or groundwater at this site.

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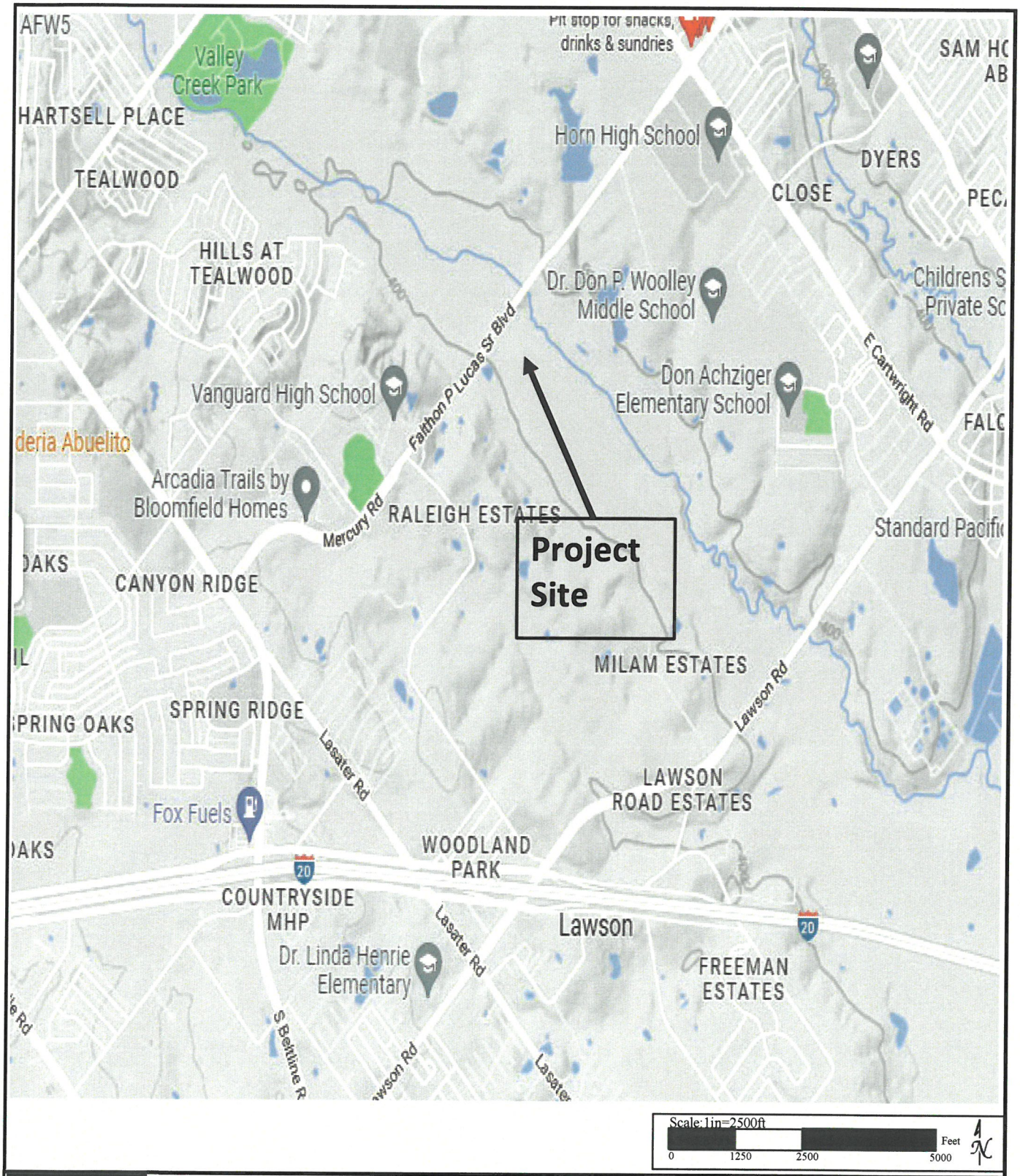
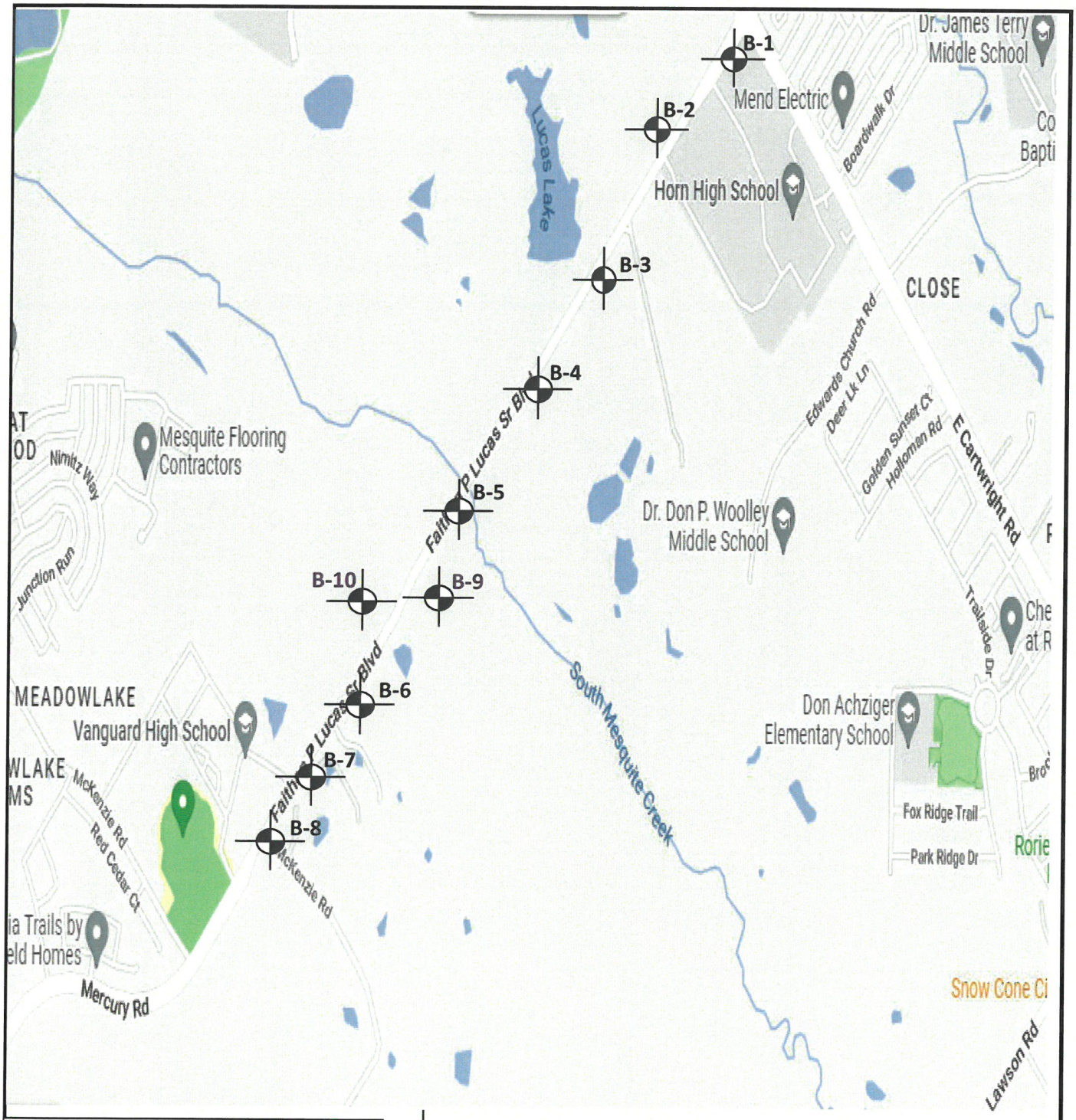
APPENDIX A



MAS-TEK ENGINEERING	Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd	VICINITY MAP
	Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas	
	Client: Pacheco Koch, a Westwood Company Project No.: 29-019 G	FIGURE: 1
	Source: Map Data ©2022 Google Date: 11-26-2022	



MAS-TEK ENGINEERING

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd

SITE & BORING PLAN

Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas

Client: Pacheco Koch, a Westwood Company Project No.: 29-019 G

Source: Map Data ©2022 Google Date: 11-26-2022

FIGURE: 2

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LOG OF BORING NO. B-1

FIGURE: 3

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			3.5	**FAT CLAY (CH) with sand,** light brown, gray with calcareous nodules, very stiff	26	61	17	44	72			
			3.5									
5'			2.0	**FAT CLAY (CH),** dark brown, gray with calcareous nodules, soft to stiff	28	74	18	56	90			
			1.0									
10'			1.5									
15'												
20'												
25'												
30'												
35'												
40'												

Completion Depth: 10'
Date Drilled: 10-13-2022
Water Level During Drilling: DRY
Water Level Upon Completion: DRY

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P: 972.709.7384
Fax:972.709.7385

LOG OF BORING NO. B-2

FIGURE: 4

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			4.0	**FAT CLAY (CH),** light brown, gray with calcareous nodules, very stiff to hard	11.0	67	17	50	86			
			4.5									
5'			4.5	**FAT CLAY (CH),** dark brown, gray with calcareous nodules, very stiff to hard	18	68	18	50	93			
			4.5									
10'			4.5									
15'												
20'												
25'												
30'												
35'												
40'												

Completion Depth: 10'
Date Drilled: 10-13-2022
Water Level During Drilling: DRY
Water Level Upon Completion: DRY

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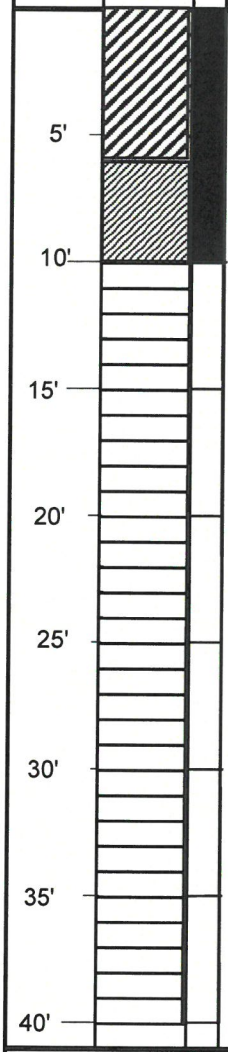
LOG OF BORING NO. B-3

FIGURE: 5

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company



Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			4.5+	**FAT CLAY (CH),** light brown, gray with calcareous nodules, very stiff to hard	12.0	53	14	39	91			
			4.5+									
5'			4.5									
			3.0	**Sandy LEAN CLAY (CL),** light brown, gray with calcareous nodules, very stiff	14	47	15	32	64			
10'			3.0									

Completion Depth: 10'
Date Drilled: 10-12-2022
Water Level During Drilling: DRY
Water Level Upon Completion: DRY

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LOG OF BORING NO. B-4

FIGURE: 6

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			4.5	**FAT CLAY (CH) with sand ,** dark brown, gray with calcareous nodules, very stiff t	18	52	14	38	80			
			4.5									
5'			4.5	**FAT CLAY (CH) with sand**, light brown, gray with calcareous nodules, very stiff	18	51	16	35	76			
			2.3									
10'			2.5									
15'												
20'												
25'												
30'												
35'												
40'												

Completion Depth: 10'
Date Drilled: 10-12-2022
Water Level During Drilling: DRY
Water Level Upon Completion: DRY

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LOG OF BORING NO. B-5

FIGURE: 7

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			4.5	**FAT CLAY (CH),** light brown, gray with calcareous nodules,very stiff to hard	18	55	15	40	94			
			2.5									
5'			4.0									
			4.0	**FAT CLAY (CH),** dark brown, gray with calcareous nodules,very stiff to hard	20	64	18	46	93			
10'			4.5									
15'												
20'												
25'												
30'												
35'												
40'												

Completion Depth: 10'
Date Drilled: 10-12-2022
Water Level During Drilling: DRY
Water Level Upon Completion: DRY

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LOG OF BORING NO. B-6

FIGURE: 8

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			4.5+	**FAT CLAY (CH),** light brown, gray with calcareous nodules, very stiff to hard	17	70	19	51	91			
			4.5									
5'			4.5									
			4.5		20	65	18	47	88	104.2		8.76
10'			4.5									
15'												
20'												
25'												
30'												
35'												
40'												

Completion Depth: 10'
Date Drilled: 10-13-2022
Water Level During Drilling: DRY
Water Level Upon Completion: DRY

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Fax:972.709.7385

LOG OF BORING NO. B-7

FIGURE: 9

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			4.5	**FAT CLAY (CH),** light brown, gray with calcareous nodules, very stiff to hard	22	67	20	47	95			
			4.5									
5'			4.5									
			4.5									
10'			4.5									
15'												
20'												
25'												
30'												
35'												
40'												

Completion Depth: 10'
Date Drilled: 10-13-2022
Water Level During Drilling: DRY
Water Level Upon Completion: DRY

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Fax:972.709.7385

LOG OF BORING NO. B-8

FIGURE: 10

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			4.5	**FAT CLAY (CH),** light brown, gray with calcareous nodules, very stiff to hard	14	59	14	45	93	102.7		4.1
			4.5									
5'			4.5	**FAT CLAY (CH)**, dark brown, gray with calcareous nodules, very stiff to hard								
			4.5		19	69	18	51	92			
10'			4.5									
15'												
20'												
25'												
30'												
35'												
40'												

Completion Depth: 10'
Date Drilled: 10-13-2022
Water Level During Drilling: DRY
Water Level Upon Completion: DRY

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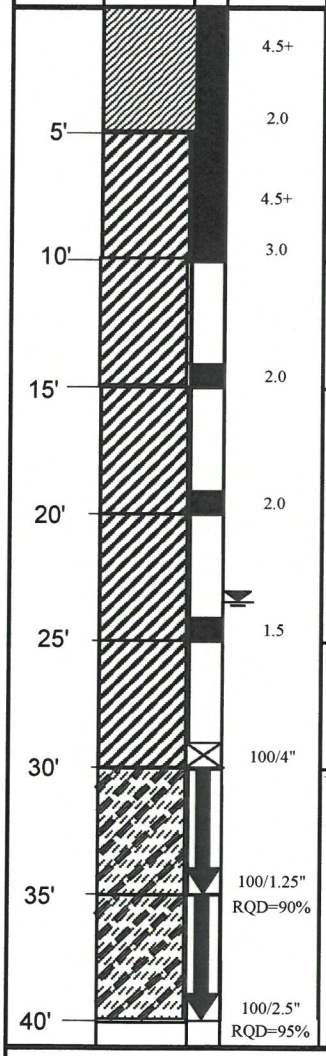
LOG OF BORING NO. B-9

FIGURE: 11

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company



Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			4.5+	**LEAN CLAY (CL),** dark, light brown with calcareous nodules, very stiff to hard	10	49	16	33	86			
5'			2.0									
			4.5+	**FAT CLAY (CH)**, tan, light brown with calcareous nodules, very stiff to hard	18	63	17	46	94			
10'			3.0									
			2.0	**FAT CLAY (CH)**, dark brown with calcareous nodules, very stiff to hard								
15'												
				FAT CLAY (CH), tan, light gray with calcareous nodules, very stiff to firm	19	56	12	44	87			
20'			2.0									
			1.5									
25'				**FAT CLAY (CH)**, light tan, light gray with calcareous nodules, very stiff to firm	19	62	20	42	96			
30'			100/4"	Unweathered, gray and light gray **SHALE**, hard								
35'			100/1.25" RQD=90%									
40'			100/2.5" RQD=95%									

Completion Depth: 50'
Date Drilled: 10-12-2022
Water Level During Drilling: 23 feet
Water Level Upon Completion: DRY

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LOG OF BORING NO. B-9

FIGURE: 11

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
45'			100/1.75" RQD=95%	Unweathered, gray and light gray **SHALE,**hard								
50'			100/1.5"									
55'												
60'												
65'												
70'												
75'												
80'												

Completion Depth: 50'
Date Drilled: 10-12-2022
Water Level During Drilling: 23 feet
Water Level Upon Completion: DRY

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LOG OF BORING NO. B-10

FIGURE: 12

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			2.0	**FAT CLAY (CH),** tan, light brown with calcareous nodules, soft to stiff	19	63	16	47	92			
			2.5									
5'			2.5									
			2.0	**FAT CLAY (CH)**, dark brown with calcareous nodules, soft to stiff	25	62	17	45	96			
10'			2.0									
					20	58	13	45	92	96.2		2.67
15'			2.5									
				FAT CLAY (CH), tan, light gray with calcareous nodules, soft to stiff								
20'			2.5		24	62	14	48	91			
25'			1.5									
				FAT CLAY (CH), light tan, light gray with calcareous nodules, soft to stiff								
				Unweathered, gray and light gray **SHALE**, hard								
30'			100/1.25"									
			RQD=85%									
35'			100/1.5"									
			RQD=100%									
40'			100/1.25"									

Completion Depth: 50'
Date Drilled: 10-13-2022
Water Level During Drilling: Dry
Water Level Upon Completion: DRY

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Fax:972.709.7385

LOG OF BORING NO. B-10

FIGURE: 12

Project Name: Geotechnical Investigation- Pavement Design and Bridge Abutment Analysis for Faithon P Lucas Blvd
Project Location: Faithon P Lucas Blvd between McKenzie Rd and Cartwright Rd, City of Mesquite, Texas
Project No.: 29-019 G
Client: Pacheco Koch, a Westwood Company

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/STP	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			RQD=100%	Unweathered, gray and light gray **SHALE,** hard								
45'			100/1.25"									
			RQD=100%									
50'			100/0.75"									
55'												
60'												
65'												
70'												
75'												
80'												

Completion Depth: 50'
Date Drilled: 10-13-2022
Water Level During Drilling: Dry
Water Level Upon Completion: DRY