



January 31, 2023

ADDENDUM NO. 3

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

Bidders are directed to revise and incorporate into their bid the following change(s) in bid specifications:

REVISION & CLARIFICATION:

1. The bid closing date has been extended from Tuesday , February 7, 2023, at 2:00 p.m. until **Thursday, February 9, 2023, at 2:00 p.m.**
2. Replace **Bid Form**, pages 12 and 19, with the attached revised Bid Form
3. Utilize Barn World 16' Long Cattle Guard without wings or approved equal.
4. Excel spreadsheet of bid proposal will be posted when available.
5. Incorporate attached revised plan sheets.

QUESTIONS & ANSWERS:

Question 51: Please confirm if full depth recycled backfill is required for pipes that are removed.

Response: For this project, flexible base will not be required beyond pipe spring line per detail.

Clean fill (native material) may be used above that spring line to top of trench.

Question 52: Please specify the bottom of wall elevations for Retaining Wall (Cast-In-Place) under the Trail Plan

Response: Walls will be constructed per details or manufacturer's recommendations and pay items will include areas below surface.

Question 53 Follow-up to question #10 - Plan Sheet 233 "Combination Rail Texas Classic Type C411(MOD) which window type A, B or C is to be used on the project?

Response: Type A window.

Question 54: Follow-up to Question #40 - Please provide quantities and a bid item for the cement stabilized backfill. Please indicate which option is used under TX Dot standard CSAB

Response: Use Item 108, FLOWABLE BACKFILL, and follow TxDOT Item 401.

Question 55: Follow-up Question 34 - When will a bid item be created for the removal of the old bridge abutment, as it was not in Addendum #2?

Response: A bid item has been created.

Question 56: On page 13 of 137 of the contract documents it specifies that item 47 has 550 LF of Handrail. Item 48 has 2,000 LF of Pedestrian Rail (Trail) as well. I cannot find these items in the drawings. Please clarify where these items are located.

Response: See sheet 86 for Handrail and see sheets 141 and 189 for Pedestrian Rail (Bridge/Trail).

Question 57: The Retaining Wall Section A on Sheet #84 shows a Pedestrian Rail (Trail) with a top rail, handrail, and posts. The sheet refers you to sheet TR-3 (Sheet #86) for Mesquite handrail and guardrail details. Sheet #86 references Sheet #189 for the Top Railing and plate connection details. However, Sheet #189 shows a completely different architectural pedestrian rail type that's to be installed on the bridges. Is this the intention of the City to install the same bridge pedestrian rail on the trails as well?

Response: The Pedestrian Rail item on the trails and sidewalk is the same as the bridge except it will not include the stone columns.

Question 58: Are the existing cross sections available in an electronic file?

Response: No. Additional files for cross sections will be available for construction.

Question 59: What are the heights and profiles for the retaining wall on sheet 84?

Response: Top of wall shall follow sidewalk. Approximate heights can be determined from sidewalk profile and topography on plan.

Question 60: We are missing the left profiles of the driveway walls, are we to assume they are identical to the provided right driveway wall profiles?

Response: Yes. Wall profiles may be adjusted in the field.

Question 61: Will a profile be provided for the pavestone retaining wall?

Response: No. Wall profiles will be laid out in the field based on final slopes and adjacent trees.

Question 62: The 4"-6" rip rap against the retaining wall on sheet 84 does not give a clear area of where it needs to be placed, how wide will the area be? Does it follow the entire length of wall?

Response: The plans show for a combination of grouted rock riprap and about 6' wide V-shaped concrete flume running the length of the sidewalk. The precise locations of each will be determined in the field. Bid on quantities shown for each.

Question 63: What is the thickness of the existing concrete driveways?

Response: Assume 4"-6" thickness for existing driveways.

Question 64: What is the thickness of the existing concrete pavement?

Response: Assume 8" thickness for existing concrete pavement.

Question 65: What is the thickness of the existing stabilized base under the current asphalt/concrete pavement?

Response: Assume 4" thickness for stabilized base. Entire thickness of stabilized base does not have to be removed with asphalt.

If you should have any other questions, do not hesitate to contact the Purchasing Office at 972-216-6201.

Ryan Williams

Ryan Williams
Manager of Purchasing

ACCEPTANCE:

We, the undersigned, do hereby acknowledge receipt of this Addendum No. 3 to Bid No. 2023-029; **Faithon P. Lucas Boulevard Paving And Drainage Reconstruction (McKenzie Road To E. Cartwright Road)**, and agree to the instructions herein written.

Company Name

Authorized Signature

Date

**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	\$	\$
9A	16,500	SY	MILL/REMOVE ASPHALTIC PAVEMENT AND STABILIZED BASE	\$	\$
10	1,300	SY	REMOVE CONCRETE INC. SIDEWALK/ RIPRAP/ MOWSTRIP/BRICK PAVERS	\$	\$
11	20	EA	REMOVE SMALL CONCRETE STRUCTURES INC. INLETS/ HEADWALLS	\$	\$
11A	1	LS	REMOVE LARGE CONCRETE STRUCTURE- OLD BRIDGE ABUTMENT	\$	\$
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)	\$	\$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
22	56,000	SY	LIME TREATED SUBGRADE (8" THICK) (TYPE A) (DENSITY CONTROL)	\$	\$
23	1,232	TN	LIME (TYPE A) (SLURRY)	\$	\$
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)	\$	\$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
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)	\$	\$
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')	\$	\$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
81	166	LF	REINFORCED CONCRETE BOX CULVERT (12' x 8')	\$	\$
82	100	LF	PVC DRAINAGE PIPE (8")	\$	\$
83	1	EA	STANDARD CURB INLET (5')	\$	\$
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 DRAIN 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	\$	\$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
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 (BS-EJCP)	\$	\$
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	100	CY	STRUCTURE APPROACH 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	16	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) FOUNDATION	\$	\$
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)	\$	\$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
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)	\$	\$
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)	\$	\$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
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	\$	\$
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 ENCASUREMENT (20" DIA)	\$	\$
S.1	55	LF	INSTALL 2" SDR 26 SANITARY SEWER	\$	\$
S.2	313	LF	INSTALL 8" SDR 26 SANITARY SEWER	\$	\$

ITEM NO	BID QTY	UNITS	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
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)	\$	\$
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.



NOTE:
CONSTRUCT PEDESTALS AT THESE LOCATIONS TO ACCEPT PLACEMENT OF LIGHT POLES AS SHOWN ON PEDESTRIAN RAIL DETAIL SHEET. PEDESTALS TO BE 18" DIA. AND 48" HIGH. PEDESTALS TO BE 18" DIA. AND 48" HIGH. PEDESTALS TO BE 18" DIA. AND 48" HIGH. PEDESTALS TO BE 18" DIA. AND 48" HIGH.

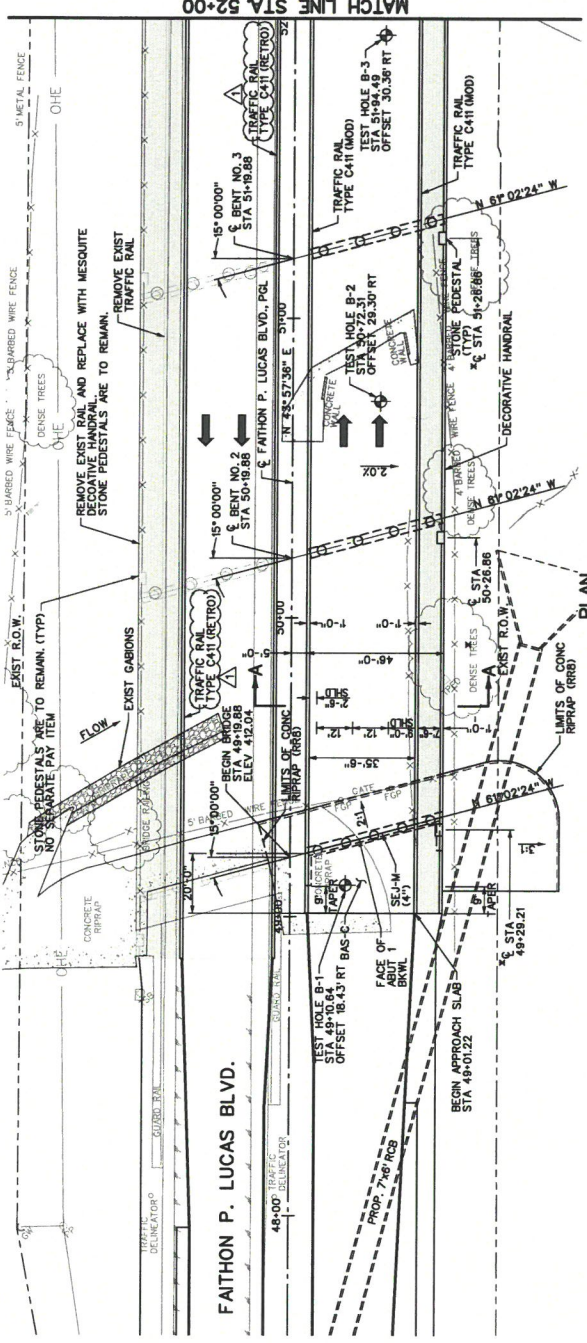
VERTICAL CURVE DATA

NPI STA 52+14.00
 EL. = 300.00'
 VC = 111.12
 (C) 1:500

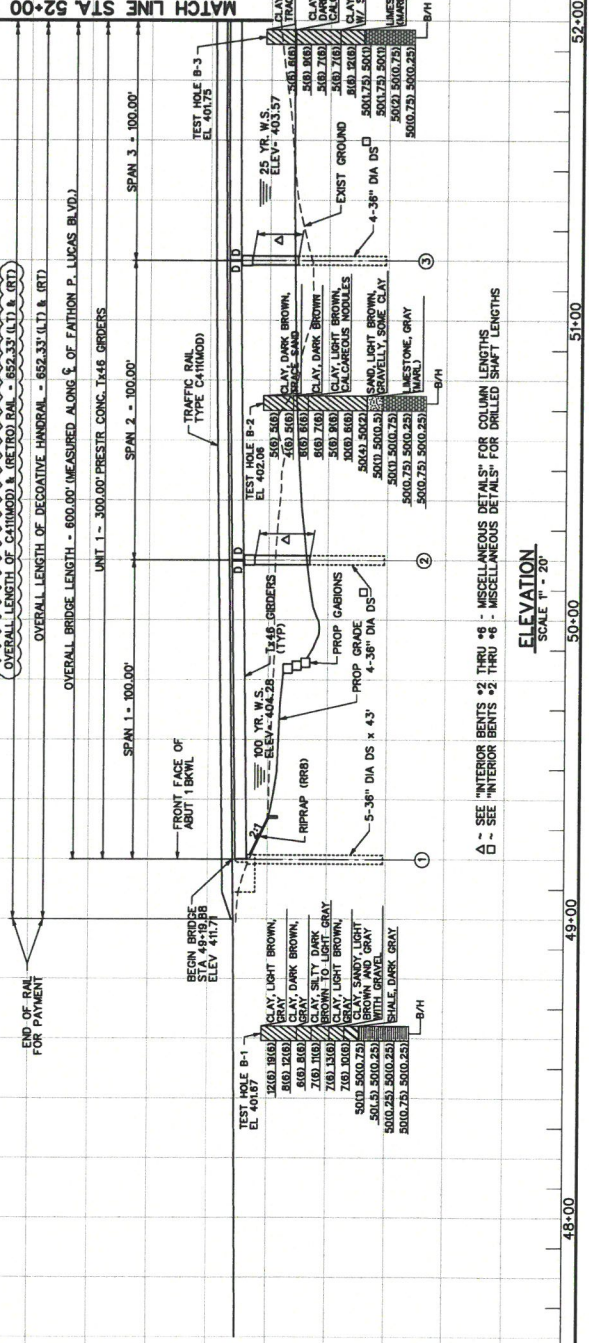
DESIGN NOTES:
 BRIDGE DESIGNED FOR HS 13 LOADINGS IN ACCORDANCE WITH ASHTO LRFD BRIDGE SPECIFICATIONS, 4TH EDITION.
 Design Speed = 45 MPH
 AOT = 2450 (2003)
 FUNCTIONAL CLASS = MINOR ARTERIAL

NOTE:
 1. SEE SHEET 130 OF 252 FOR SECTION A-A.

NEW NBB 18-057-0-0353-04-432



SCALE 1" = 20'



SCALE 1" = 20'

SEE "INTERIOR BENTS #2 THRU #6 - MISCELLANEOUS DETAILS" FOR COLUMN LENGTHS
 SEE "INTERIOR BENTS #2 THRU #6 - MISCELLANEOUS DETAILS" FOR DRILLED SHAFT LENGTHS

REV. NO.	DATE	REVISIONS	BY	TFT
1	1-27-23	REVISED CALLOUT		

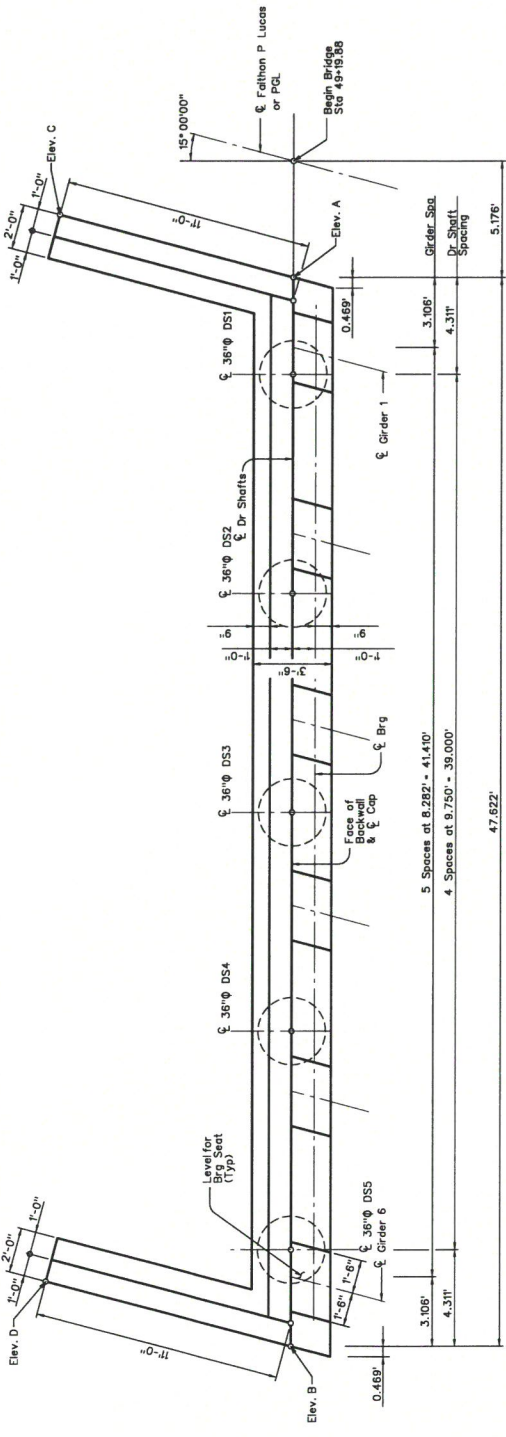


REFERENCES:
 ENGINEERING PROFESSIONAL MAP SHEET NO. 38 N 99
 ENGINEERING DIV. SHEET MAP SHEET NO. 38 N 99
APM & Associates, Inc.
 CIVIL CONTRACT NO. 2020-055
 FAITHON P. LUCAS BLVD.
 FROM MCKENZIE RD. TO CARTWRIGHT RD.
 BRIDGE LAYOUT
CITY OF MESQUITE, TEXAS
 DESGN. DRAWN. DATE. REV. SHEET
 JAW. BBS. 003-009-000 128 OF 252



GENERAL NOTES:

Designed according to ASHTO LRFD Specifications.
 Concrete strength $f_c = 3,600$ psi.
 Allowable soil bearing capacity shall be Grade 60 steel reinforcing steel.
 See Bridge Layout for header slope and girder locations.
 See Girder Layout sheet for girder angles and locations.
 Include the reinforcing extending half extra flat turns top and bottom.
 Include the reinforcing extending half extra flat turns top and bottom.
 Finish bearing seats with a wood form.
 Drilled Shaft reinforcing shall be Grade 60 steel.
 Minimum Depth Drilled Shaft Foundation Load = 94 Tons/D.S.



PLAN

GIRDERS BEARING SEAT ELEVATIONS

Girder	1	2	3	4	5	6
Elev.	406.61	408.49	406.35	406.23	406.10	405.97

TOP OF DRILLED SHAFT ELEVATIONS

DS-1	DS-2	DS-3	DS-4	DS-5
403.85	403.80	403.65	403.50	403.35

CONTROL ELEVATIONS

A	B	C	D
411.63	410.89	411.43	410.70

HL 93 LOADING

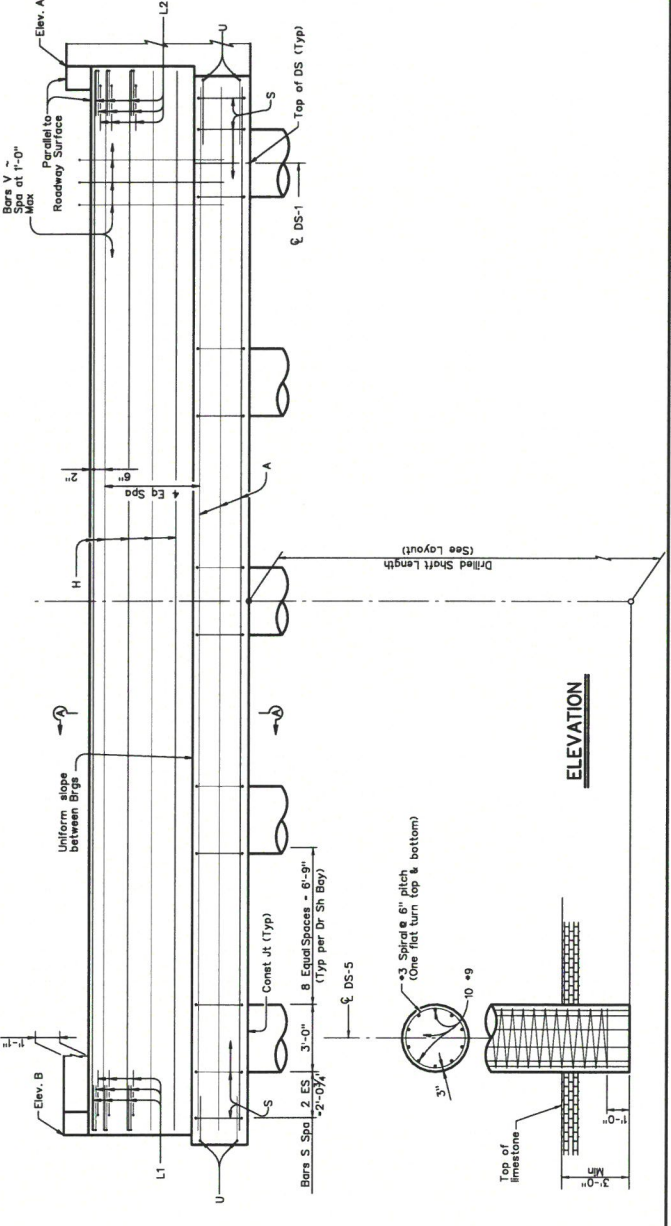
REV. NO.	DATE	BY	REVISION
1	1-27-23	TFT	REVISED GENERAL NOTE

ENGINEERING DW. WATER MAP
 SHEET NO. 281 & 29
 ENGINEERING DW. WATER MAP
 SHEET NO. 28 & 29

APM APM & Associates, Inc.
 CITY CONTRACT NO. 2022-065
 FAITHON P. LUCAS BLVD.
 FROM MCKENZIE RD. TO CARTWRIGHT RD.
 ABUTMENT #1

CITY OF MESQUITE, TEXAS

DESIGNER: DATE: CITY OF MESQUITE, TEXAS
 DRAWN: RECORD DWG. INDEX NO. SHEET
 APPROVED: APM: 2023: EXEC-058-102 132 OF 252

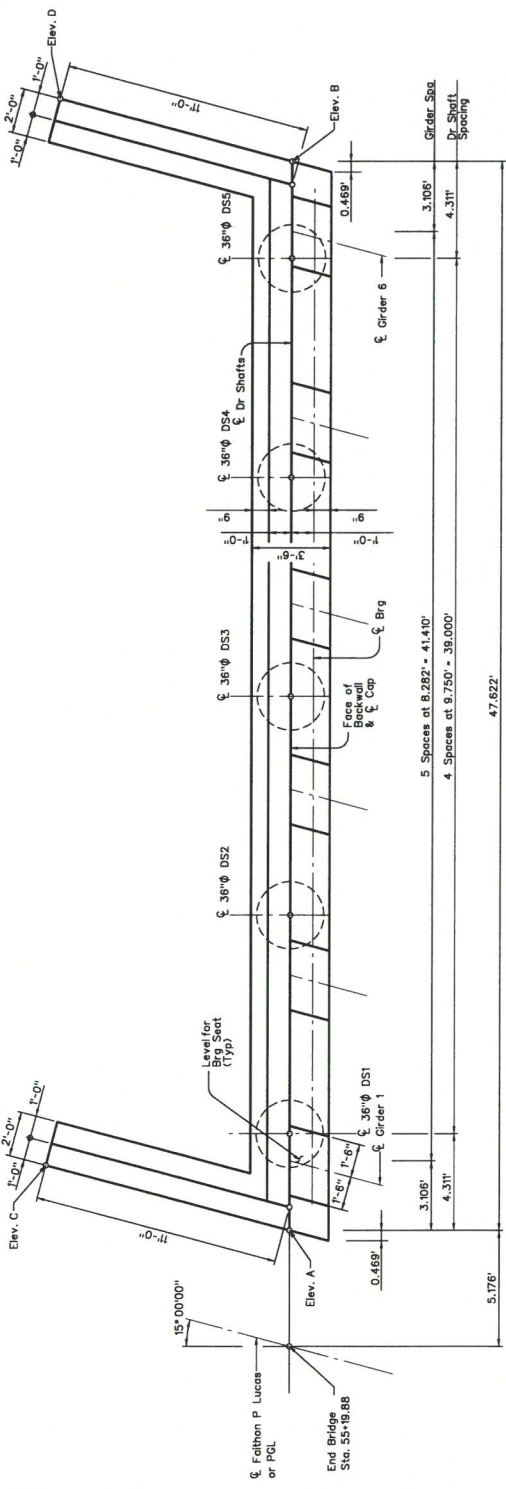


ELEVATION



GENERAL NOTES:

Designed according to ASHTO LRFD Specifications.
 Concrete strength $f_c = 3,500$ psi.
 Steel yield strength shall be Grade 60.
 See Bridge Layout for header slope and locations.
 See Girder Layout sheet for girder ends and locations.
 Reinforcing shall be provided with one and a half extra flat turns top and bottom.
 Include the reinforcing extending into the abutment.
 Price bid per foot of drilled shaft.
 Finish bearing seats with a wood grade 60.
 Drilled Shaft reinforcing shall be Grade 60.
 - 94, Tony/D.S.



PLAN

GIRDERS BEARING SEAT ELEVATIONS

Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6
406.34	406.15	405.95	405.76	405.57	405.38

TOP OF DRILLED SHAFT ELEVATIONS

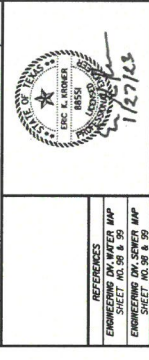
DS-1	DS-2	DS-3	DS-4	DS-5
403.67	403.44	403.22	402.99	402.77

CONTROL ELEVATIONS

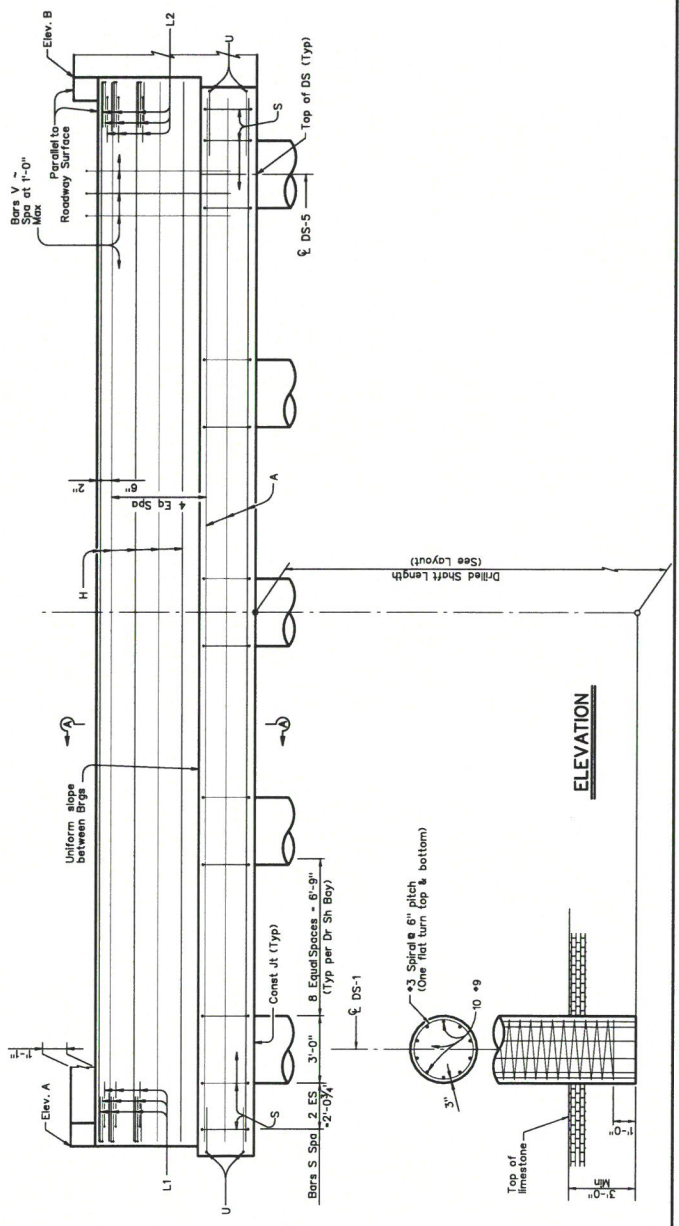
A	B	C	D
411.38	410.27	411.18	410.08

HL93 LOADING

REV. NO.	DATE	DESCRIPTION	BY
1	1-27-23	REVISED GENERAL NOTE	TFT
2			TFT



REFERENCES
 ENGINEERING DIV. WATER MAP SHEET NO. 58 & 59
 ENGINEERING DIV. WATER MAP SHEET NO. 58 & 59
 CITY CONTRACT NO. 2022-085
 FROM MCKENZIE RD. TO CARTWRIGHT RD. ABUTMENT #7
 CITY OF MESQUITE, TEXAS
 DRAWN DATE RECORD DWG INDEX NO. SHEET
 APW 2023 2023-085-24 134 OF 252



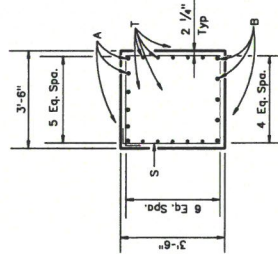
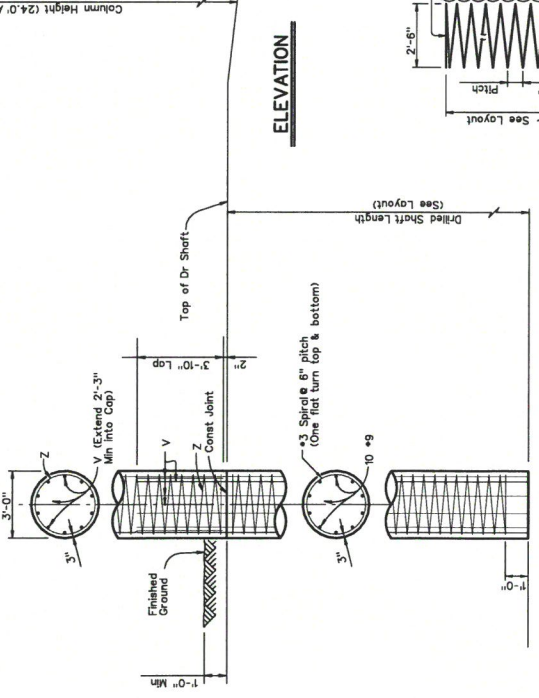
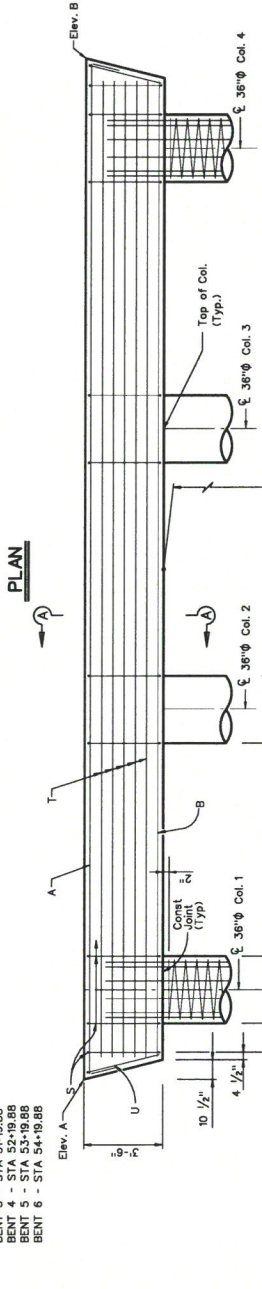
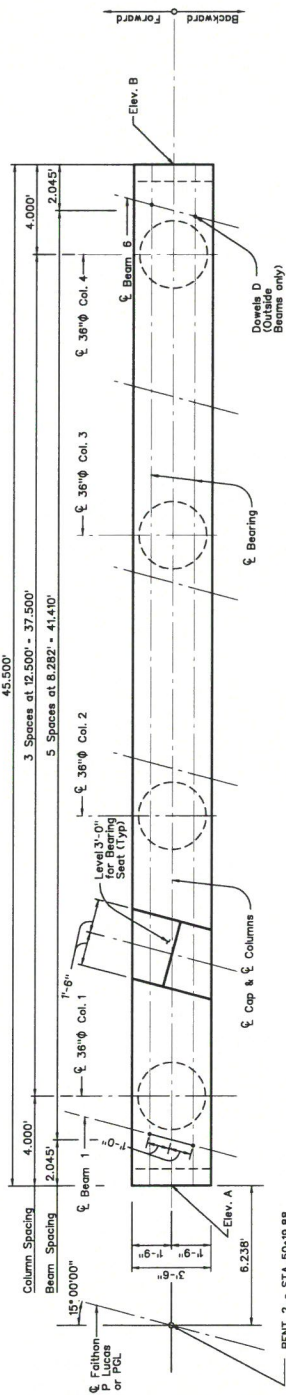
ELEVATION

TABLE OF ESTIMATED QUANTITIES—ONE CAP

Bar No.	Size	Length	Weight
A	#11	45'-0"	1,435
B	#11	43'-6"	1,566
D	4	1/2"Ø	218
S	#6	45	1211
T	#10	45	454
U	#2	45	20
Sub Total			4,304
Reinforcing Steel			4,304
Class "C" Concrete (Cap)			20.5

□ - For Contractor's information only.

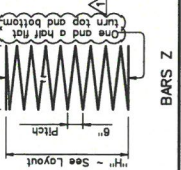
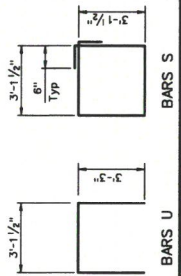
NOTES:
 1. Design according to AASHTO LRFD
 2. Concrete strength $f'_c = 3,600$ psi.
 3. Steel yield strength $f_y = 60,000$ psi.
 4. All reinforcing steel shall be Grade 60.
 5. For Max. Foundation Load, see Foundation Load Table.
 6. Provide bent-up bars with one and a half extra flat turns at each end.
 7. See girder Layout Sheet for girder angles & location.
 8. See Bearing Seat Elev., Top of Col. Elev., Control Elev., and other Details and Quantities for other details.
 9. Bent-up bars shall be #2 thru #6 Miscellaneous bars.



SECTION A-A

BEARING SEAT DETAIL (TYPE IV BEAM)

Dowels D - 1 1/2" Dia. x 1'-8" only (See bridge layout for location)
 (Bearing surface shall be clean and free of all loose material before placing bearing pad.)



HL93 LOADING

REV. NO.	DATE	DESCRIPTION	BY
1	1-27-23	REV GENERAL NOTE & CALLOUT	TFT

REVISED

REFERENCES
 ENGINEERING DRAWING MAP SHEET NO. 58 & 59
 ENGINEERING DRAWING MAP SHEET NO. 58 & 59

APM APM & Associates, Inc.
 112713

CITY CONTRACT NO. 2020-095
FAYTHON P. LUCAS BLVD.
FROM MCKENZIE RD. TO CARTWRIGHT RD.
INTERIOR BENTS #2 THRU #6

CITY OF MESQUITE, TEXAS

DESIGN	DRAWN	DATE	CITY OF MESQUITE	SHEET
				136 OF 252

FOUNDATION LOAD (Tons/D.S.)

BENT 2	BENT 3	BENT 4	BENT 5	BENT 6
226	225	224	224	224

COLUMN SCHEDULE ~ ONE COLUMN

COLUMN HEIGHT, H FT	BARS V ~ 10-#9		BARS Z ~ #3 Spiral		GLASS "C" CONCRETE (MASS PLACE/HP)	EST. QUANT. ~4 Col.
	LENGTH	WEIGHT	LENGTH	WEIGHT		
14	16'-3"	553	23'	87	3.7	840
15	17'-3"	587	24'	93	3.9	880
16	18'-3"	621	25'	99	4.2	920
17	19'-3"	655	27'	105	4.5	960
18	20'-3"	689	29'	111	4.7	1000
19	21'-3"	723	31'	117	5.0	1040
20	22'-3"	757	32'	122	5.2	1080
21	23'-3"	791	34'	128	5.5	1120
22	24'-3"	825	35'	134	5.8	1160

Adjust spiral length by 7.9 ft. and bars V length by 0.5 ft. for each 0.5 ft. variation in "H" value.
Adjust Estimated Quantity of Concrete for each column by 0.1 CY for each 0.5 ft. variation in "H" value.
Adjust Estimated Quantity of Reinforcing Steel for each column by 20.0 LB for each 0.5 ft. variation in "H" value.

COLUMN LENGTHS (FT)

BENT NO.	COL. 1	COL. 2	COL. 3	COL. 4
2	19.0	19.5	20.0	21.0
3	15.5	15.5	16.0	15.5
4	15.5	15.5	15.5	15.5
5	15.0	15.0	15.0	15.5
6	15.0	15.5	16.0	16.5

DRILLED SHAFT LENGTHS (FT)

BENT NO.	D.S. 1	D.S. 2	D.S. 3	D.S. 4
2	25.0	24.0	23.0	22.0
3	30.0	29.0	28.0	29.0
4	24.0	24.0	24.0	23.0
5	25.0	25.0	24.0	24.0
6	24.0	23.0	22.0	21.0

ESTIMATED QUANTITY

ITEM	UNIT	QUANTITY					
		BENT 2	BENT 3	BENT 4	BENT 5	BENT 6	
DRILL SHAFT (36")	LF	94	117	95	98	90	
CL. C. CONC (BENT)	CY	41.3	36.7	36.5	36.2	36.9	
REINF. STL	LB	7800	7124	7104	7044	7124	

□ - For Contractor's information only.

BEAMS BEARING SEAT ELEVATIONS

BENT	BEAM					
	BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6
BENT #2	FORWARD	408.11	407.99	407.86	407.73	407.60
	BACKWARD	408.08	407.96	407.83	407.70	407.57
BENT #3	FORWARD	408.43	408.29	408.15	408.01	408.87
	BACKWARD	409.41	408.27	408.13	408.99	408.85
BENT #4	FORWARD	409.83	408.67	408.51	408.34	408.18
	BACKWARD	409.83	408.67	408.51	408.35	408.18
BENT #5	FORWARD	409.23	408.05	408.86	408.68	408.49
	BACKWARD	409.25	408.07	408.88	408.70	408.51
BENT #6	FORWARD	407.81	407.62	407.42	407.23	407.04
	BACKWARD	407.84	407.65	407.45	407.26	407.07

TOP OF COLUMN ELEVATIONS

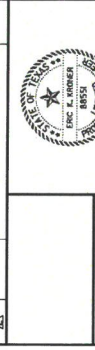
BENT	COL. 1	COL. 2	COL. 3	COL. 4
BENT #2	404.44	404.25	404.06	403.86
BENT #3	405.76	405.55	405.34	405.12
BENT #4	406.17	405.92	405.68	405.43
BENT #5	405.57	405.29	405.01	404.74
BENT #6	404.15	403.86	403.57	403.28

CONTROL ELEVATIONS

BENT	ELEV. A	ELEV. B
BENT #2	408.80	407.30
BENT #3	409.33	408.55
BENT #4	409.75	408.85
BENT #5	409.16	408.15
BENT #6	407.75	406.69

HL 93. LOADING

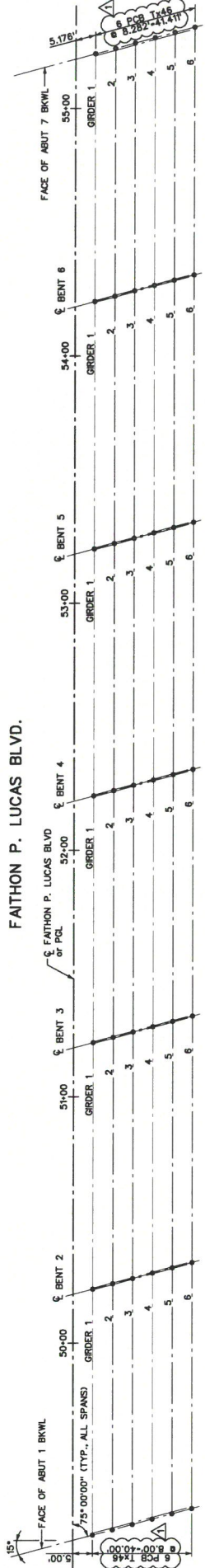
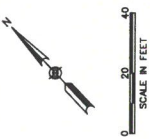
REV. NO.	DATE	DESCRIPTION	BY
1	1-27-23	REVISED BENT 2 REINF. STL LB	TFT



REFERENCES:
ENGINEERING DIV. WATER MAP
SHEET NO. 28 & 29
ENGINEERING DIV. WATER MAP
SHEET NO. 28 & 29

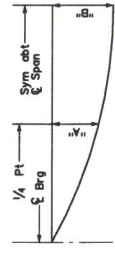
APM APM & Associates, Inc. 2885-2885
11111 W. LUCAS BLVD. SUITE 100
GIT CONTRACT NO. 2885-2885
FAITHON P. LUCAS BLVD.
FROM MCKENZIE RD. TO CARTWRIGHT RD.
INTERIOR BENTS #2 THRU #6
MISCELLANEOUS DETAILS
CITY OF MESQUITE, TEXAS

DESIGN	DATE	JAN 2023	RECORD DATE	NO.
APN	APN	2885-098-07		137 OF 252



FAITHON P. LUCAS BLVD.

PROPOSED GIRDER LAYOUT
SCALE: 1"=20'



DEAD LOAD DEFLECTION DIAGRAM

Calculated deflections shown are due to the concrete slab on interior girders only. For exterior girders and if optional slab forming is used, these values may require field verification.

TABLE OF DEAD LOAD DEFLECTIONS

SPAN	GIRDER	"A"	"B"
		FT	FT
1-6	1	0.058	0.081
1-6	2-5	0.068	0.092
1-6	6	0.058	0.081

TABLE OF GIRDER ANGLES & LENGTHS

SPAN	GIRDER	GIRDER ANGLE	DISTANCE C-C BENT	DISTANCE C-C BRG	TRUE GIRDER LENGTH	GIRDER LENGTH BOTTOM FLANGE	GIRDER SLOPE
1	1-6	75° 00' 00.00"	100.00'	97.93'	99.49'	0.0150	
2	1-6	75° 00' 00.00"	100.00'	97.93'	99.49'	0.0130	
3	1-6	75° 00' 00.00"	100.00'	97.93'	99.49'	0.0036	
4	1-6	75° 00' 00.00"	100.00'	97.93'	99.49'	-0.0085	
5	1-6	75° 00' 00.00"	100.00'	97.93'	99.49'	-0.0144	
6	1-6	75° 00' 00.00"	100.00'	97.93'	99.49'	-0.0150	
				TOTAL	3,581.64'		

HL93 LOADING

REV. NO.	DATE	DESCRIPTION	BY
1	1-27-23	REVISED CALLOUT TO T446	TFT

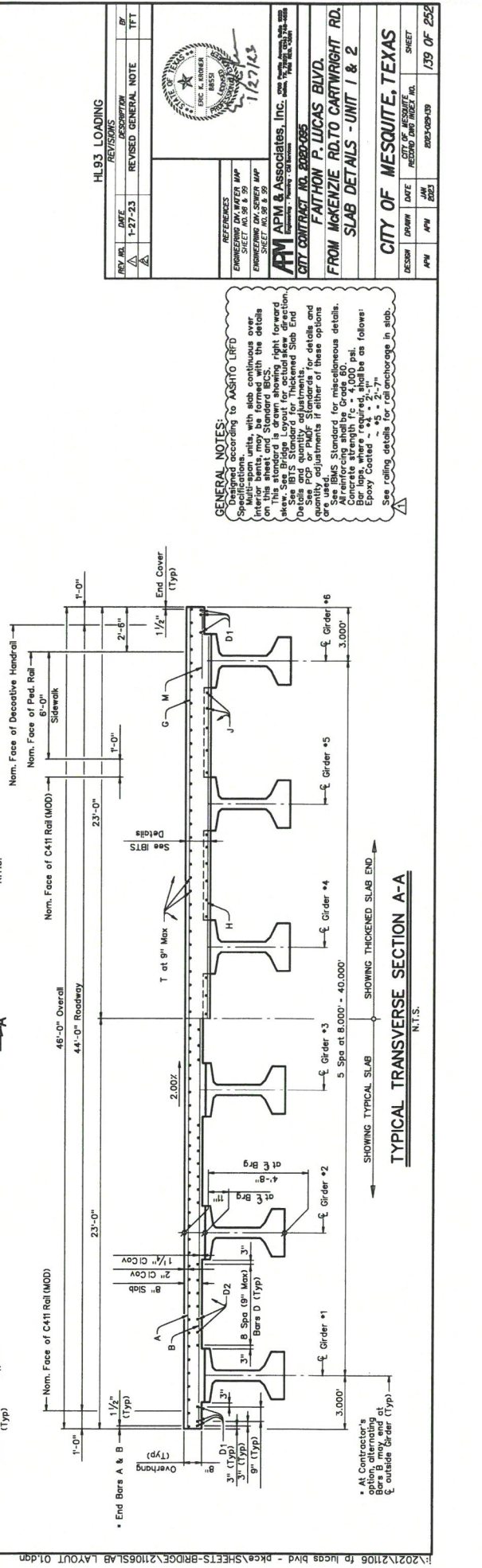
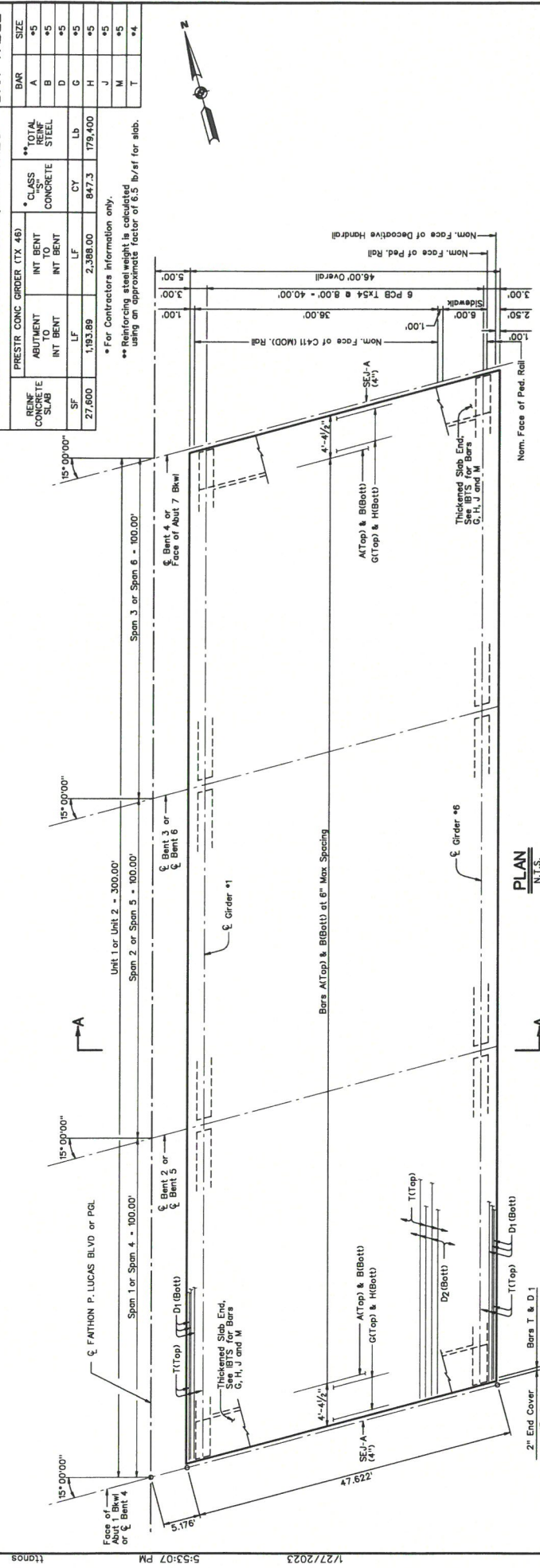
ENGINEERING ON WATER MAP SHEET NO. 58 & 59
 ENGINEERING ON WATER MAP SHEET NO. 58 & 59
 1/27/23
APM APM & Associates, Inc. 1000 West Loop South, Suite 200, Houston, Texas 77027
 CITY CONTRACT NO. 2020-085
 FAITHON P. LUCAS BLVD.
 FROM MCKENZIE RD. TO CARTWRIGHT RD.
 GIRDER LAYOUT

DESIGN	DRAWN	DATE	CITY OF MESQUITE RECORD DWG INDEX NO.	SHEET
APM	APM	02/23	022-029-138	138 OF 252

CITY OF MESQUITE, TEXAS

TABLE OF ESTIMATED QUANTITIES						BAR TABLE						
PRESTR CONCR GREDER (TX 46)			CLASS OF CONCRETE			TOTAL REBAR STEEL			BAR			SIZE
REINFC CONCRETE SLAB		INT BENT	CONCRETE		CY	REBAR		CY	A		A	#5
SF		LF			CY	B			B		B	#5
		LF				C			C		C	#5
						D			D		D	#5
						E			E		E	#5
						F			F		F	#5
						G			G		G	#5
						H			H		H	#5
						I			I		I	#5
						J			J		J	#5
						K			K		K	#5
						L			L		L	#5
						M			M		M	#5
						N			N		N	#5
						O			O		O	#5
						P			P		P	#5
						Q			Q		Q	#5
						R			R		R	#5
						S			S		S	#5
						T			T		T	#5

* For Contractors information only.
 ** Reinforcing steel weight is calculated using an approximates factor of 6.5 lb/sf for slab.



REV. NO.	DATE	DESCRIPTION	BY
1-27-23		REVISED GENERAL NOTE	TFT

HL93 LOADING
 REVISED



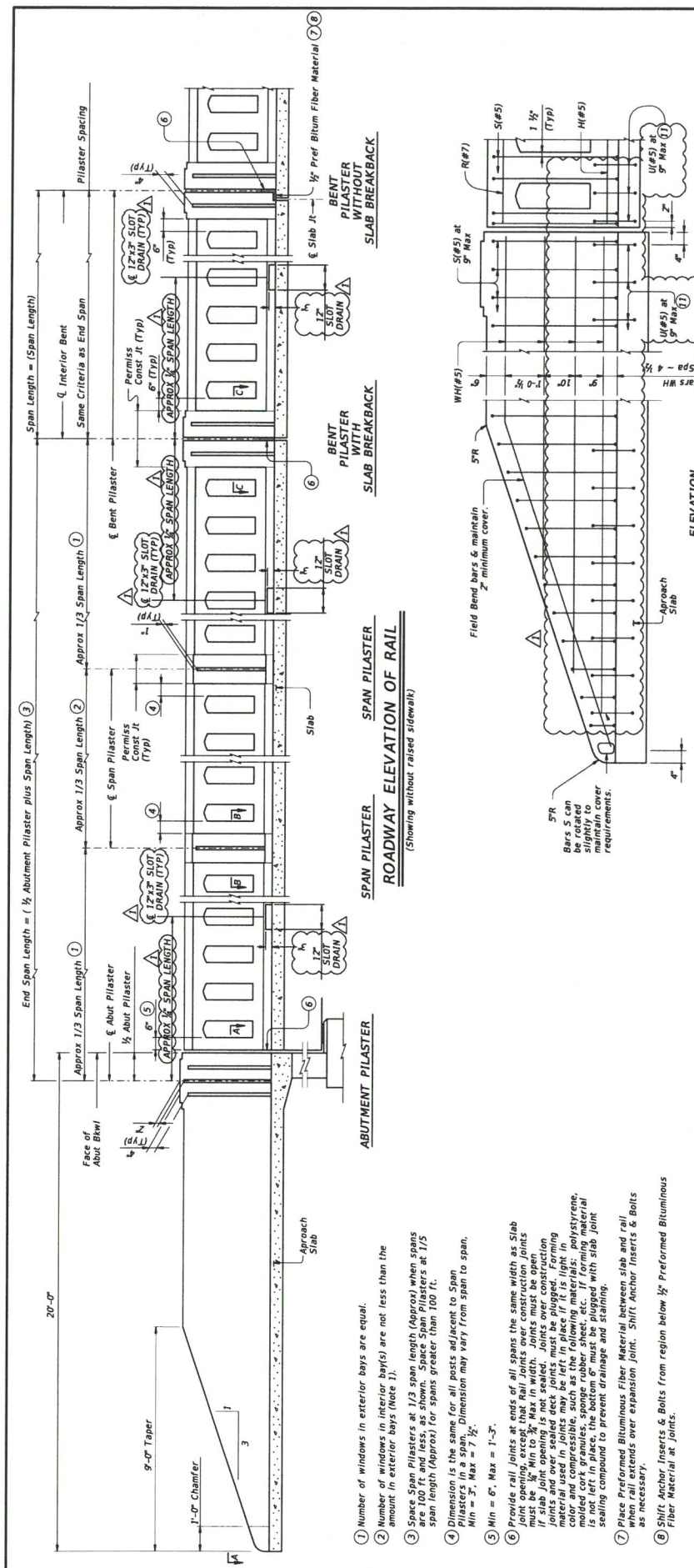
ENGINEERING DRAWING MAP
 SHEET NO. 28 & 29
 ENGINEERING DRAWING MAP
 SHEET NO. 28 & 29

APM & Associates, Inc.
 1200 W. FAITHON P. LUCAS BLVD.
 CITY CONTRACT NO. 2020-095

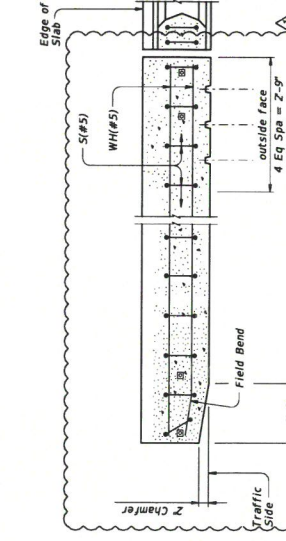
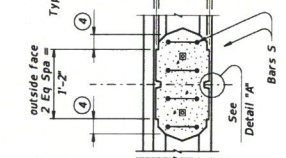
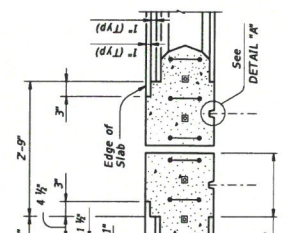
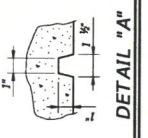
FROM MCKENZIE RD. TO CARTWRIGHT RD.
 SLAB DETAILS - UNIT 1 & 2

CITY OF MESQUITE, TEXAS
 DESIGNED: DATE CITY OF MESQUITE SHEET
 DRAWN: DATE APR 2024 REVISED: DATE 09/18/2024 BY: TFT

GENERAL NOTES:
 1. Designed according to AASHTO LRFD
 2. Multi-span units, with slab continuous over interior bents, may be formed with the details on this standard is drawn showing right forward skew. See Bridge Layout for actual skew direction.
 3. See Notes for Reinforcing Steel Slab End Details and quantity adjustments.
 4. See PCI or PCIQC Standards for details and quantity adjustments if either of these options are used.
 5. See IBCS Standard for miscellaneous details.
 6. Bar laps, where required, shall be as follows:
 Epoxy Coated: #5 - 2'-7"
 #6 - 3'-0"
 #7 - 3'-6"
 #8 - 4'-0"
 #9 - 4'-6"
 See calling details for callout/catch in sub.



ELEVATION SHOWING TYPICAL REINFORCING PLACEMENT
(Showing without raised sidewalk)



The use of this railing is restricted to speeds of 45 mph or less.

SHEET 1 OF 3

REV. NO.	DATE	DESCRIPTION	BY
1	1-27-23	MODIFIED RAIL	TFT

Bridge Division Standard

Texas Department of Transportation

COMBINATION RAIL TEXAS CLASSIC

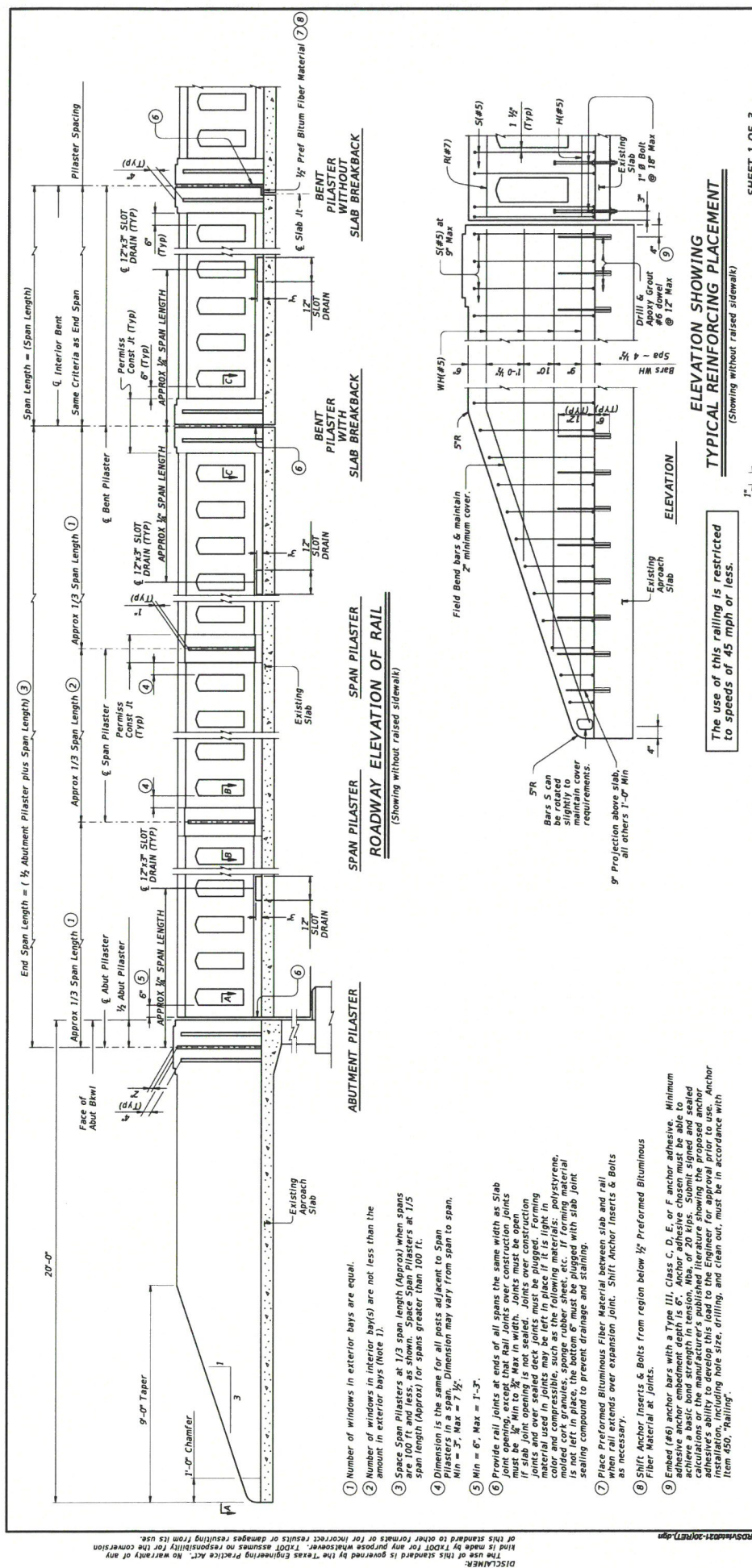
TYPE C411 (MOD)

REVISED: 2019
DATE: September 2019
PROJECT: 190401-20-APP
SHEET NO. 231



DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any purposes whatsoever. TxDOT assumes no responsibility for the consequences of this standard or for incorrect results or damages resulting from its use.

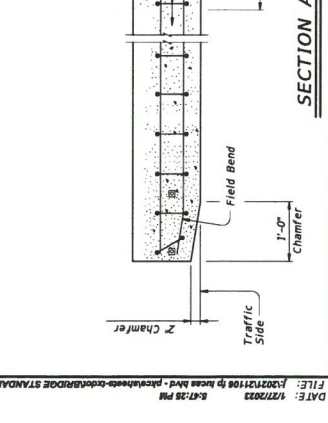
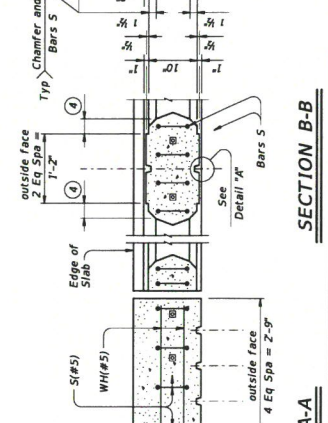
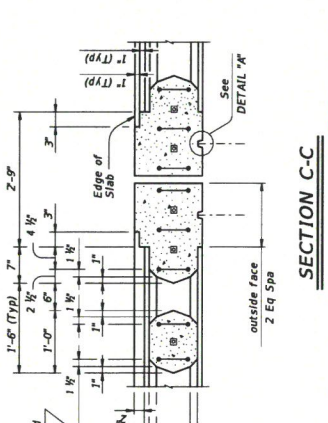
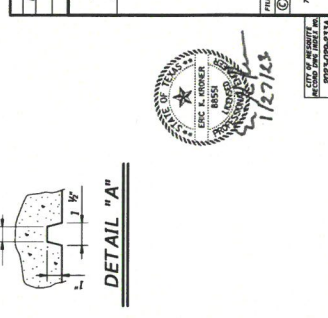
FILE: 190401-20-APP 190401-20-APP-231-201909.dgn



REV. NO.	DATE	DESCRIPTION	BY
1	1-27-23	ADDED SHEET	TFT

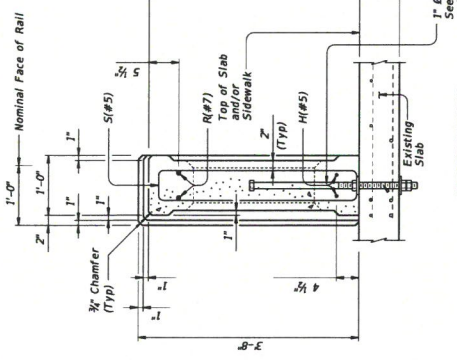
Texas Department of Transportation
COMBINATION RAIL
TEXAS CLASSIC

SHEET NO. 233A
 PROJECT NO. 190331-26-00
 CONTRACT NO. 1-27-23
 DATE 1/27/23

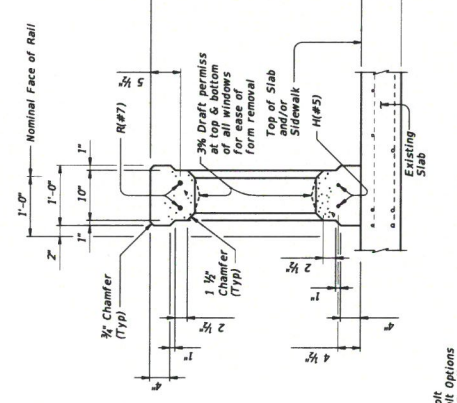


- Number of windows in exterior bays are equal.
- Number of windows in interior bays (Note 1).
- Space Span Pilasters at 1/3 span length (Approx) when spans are 100 ft and less, as shown. Space Span Pilasters at 1/5 span length (Approx) for spans greater than 100 ft.
- Dimension is the same for all posts adjacent to Span Pilasters in a span. Dimension may vary from span to span. Min = 3', Max = 7 1/2'.
- Min = 6', Max = 1'-3".
- Provide rail joints at ends of all spans the same width as Slab Joint opening, except that Rail Joints over construction Joints shall be staggered. If slab joint opening is not sealed, joints over construction material used in joints may be left in place if it is light in weight and does not contain any loose material. If forming material is not left in place, the bottom 6" must be plugged with slab joint sealing compound to prevent drainage and staining.
- Place Preformed Bituminous Fiber Material between slab and rail when rail extends over expansion joint. Shift Anchor Inserts & Bolts as necessary.
- Shift Anchor Inserts & Bolts from region below 1/2' Preformed Bituminous Fiber Material at joints.
- Embed (#6) anchor bars with a Type III, Class C, D, E, or F anchor adhesive. Minimum adhesive anchor embedment depth is 6". Anchor adhesive chosen must be able to achieve a basic bond strength in tension, Min. of 20 kips. Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor design. The proposed design must include the proposed anchor design, anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "hauling".

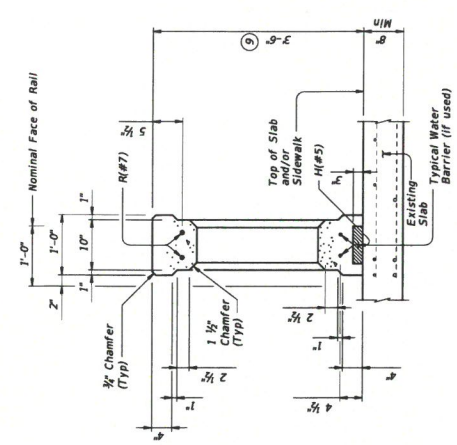
DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any liability for incorrect results or damages resulting from its use.



SECTION THRU POST ON BRIDGE SLAB
(Showing Pilaster)

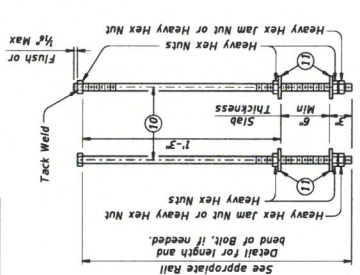


SECTION THRU WINDOW ON BRIDGE SLAB



AT SLOT DRAIN OPEN ON BRIDGE SLAB

SECTIONS THRU RAIL WITHOUT RAISED SIDEWALK



ANCHOR BOLT OPTIONS AND ASSEMBLY DETAILS


- ⑩ 3/4" Dia ASTM F1554 Gr 55 Anchor Bolt or Threaded Rod. Nuts must conform to ASTM A563 requirements.
- ⑪ Plate Washer 3/8" x 3 x 3 ASTM A36 with 1 1/8" Dia Hole centered.
- ⑫ Galvanize anchor bolts, nuts and plate washers.


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SHEET 2 OF 3

REV. NO.	DATE	DESCRIPTION	BY
1	1-27-23	ADDED SHEET	TFT


COMBINATION RAIL
TEXAS CLASSIC


TYPE C411 (RETRO)

REV. NO.	DATE	DESCRIPTION	BY
1	1-27-23	ADDED SHEET	TFT

CITY OF HOUSTON
 RECORDS AND INFO
 2825-0292-0338
 1/27/23

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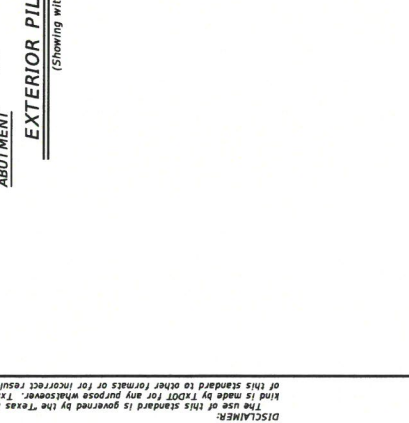
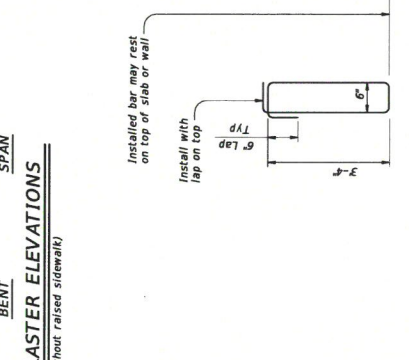
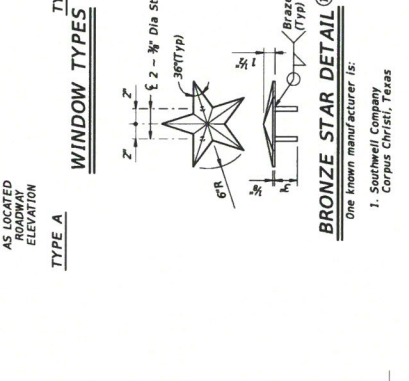
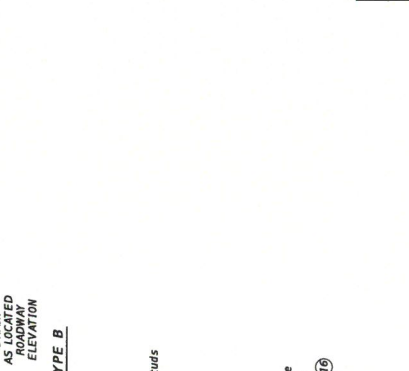
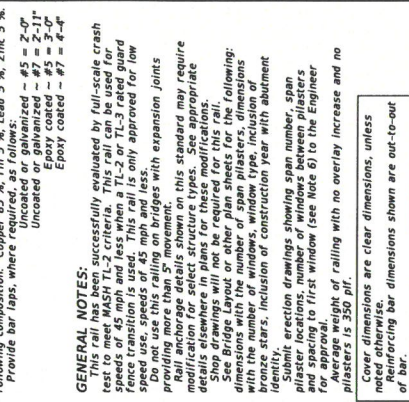
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CONSTRUCTION NOTES:
 Attach Bronze Star with a Type III Class C, D, E, or F epoxy adhesive to the concrete as shown in this set. Remove any visible epoxy "squeeze out" from under the star.
 Face of rail and pilasters, parapet must be plumb unless otherwise approved.
 Epoxy must be applied to all railing surfaces unless otherwise shown elsewhere on the plans.

MATERIAL NOTES:
 Provide Class "C" (HPC) concrete if shown elsewhere in the plans.
 Provide Grade 60 reinforcing steel.
 Epoxy coat or galvanize all reinforcing steel if slab bars are used.
 Bronze Star must be cast of architectural bronze having the following composition: Copper 85%, Tin 5%, Lead 5%, Zinc 5%.
 Provide bar laps, where required, as follows:
 Uncoated or galvanized - #5 = 2'-11"
 Epoxy coated - #5 = 3'-0"
 Epoxy coated - #7 = 4'-0"
 Epoxy coated - #8 = 4'-4"

GENERAL NOTES:
 This rail has been successfully evaluated by full-scale crash test to meet MASH TL-2 criteria. This rail can be used for impact protection on bridges with a design speed of 45 mph and less.
 Do not use this railing on bridges with expansion joints.
 Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.
 See Bridge Layout or other plan sheets for the following: dimensions with the number of span pilasters, dimensions with the number of windows, window type, inclusion of expansion joints, inclusion of construction year with abutment identity.
 Submit erection drawings showing span number, span pilaster locations, number of windows between pilasters and location of first window (see Note 6) to the Engineer for approval.
 Average weight of railing with no overlay increase and no pilasters is 350 pcf.

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.



PLAN OF RAIL AT EXPANSION JOINTS
 Example showing Slab Expansion Joints without breakbacks.

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SHEET 3 OF 3

Revisions

REV. NO.	DATE	DESCRIPTION	BY
1	1-27-23	ADDED SHEET	TFT

Bridge Division Standard

Texas Department of Transportation

COMBINATION RAIL

TEXAS CLASSIC

TYPE C411 (RETRO)

FILE NO.	PROJECT NO.	DATE	COUNTY
11007	1500001-2000	September 2019	

7-20: Always refer to the plan sheet for details.

233C

6 Provide rail joints at ends of all spans the same width as Slab joint opening, except that Rail Joints over construction Joints must be open. If slab joint opening is not sealed, joints must be open. Joints and over sealed deck joints must be plugged. Forming material used in joints may be left in place if it is light in weight and does not absorb water. If using polystyrene, it is not left in place, plug the bottom 6" with slab joint sealing compound to prevent drainage and staining.

8 Construction year (use if shown elsewhere on plans) 3" High "Piantin Bold" Typeface with 1/8" recess. Placed at one Abutment only or as directed by the Engineer.

9 Dimensions must be the same on each side of joint.

10 Bronze Star dimensions of the final product can be slightly smaller due to shrinkage after casting.

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