

**ADDENDUM NO. 02**  
**February 16, 2026**

**PROJECT: CITY OF JOSHUA**  
**VEATCH STREET DRAINAGE IMPROVEMENTS**

**BID DATE: February 24, 2026 (Per this Addendum)**

The following changes and/or additions shall be made to the Plans, Specifications, and Contract Documents for the above referenced project. Bidder shall acknowledge receipt of this Addendum by signing below and returning this Addendum with the Bid.

- 1) **GENERAL**
  - a) **Bid Date is changed to February 24, 2026 at 2:00 PM.**
  
- 2) **PLAN SHEETS**
  - a) **Blank sheets have been corrected and replaced with the correct TxDOT Details.**
  
- 3) **SPECIFICATIONS**

\_\_\_\_\_  
**Bidder's Acknowledgment**

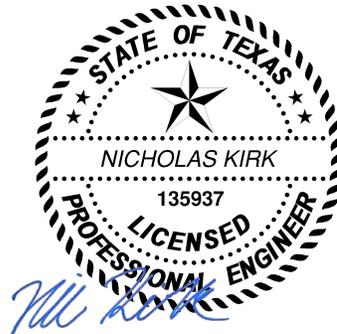
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**Date**

**Prepared by:**  
**Nic Kirk, P.E.**



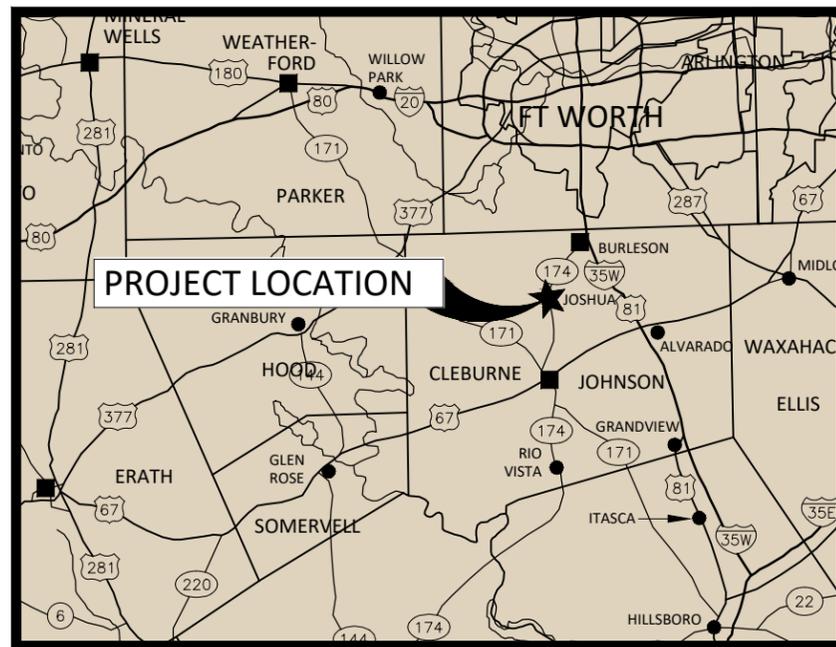
**JACOB | MARTIN**

**TBPE Firm No. 2448**



# PLANS FOR CITY OF JOSHUA, TEXAS VEATCH STREET ROADWAY IMPROVEMENTS SEPTEMBER 2025

REVISIONS:	
DESCRIPTION	DATE
▲ REVISIONS PER TxDOT COMMENTS	9/19/2025
▲ SHEET CORRECTIONS	02/13/2026



VICINITY MAP  
NTS



PROJECT LOCATION MAP  
SCALE: 1"=250'

SHEET INDEX	
Sheet Number	Sheet Title
01	COVER
02	GENERAL NOTES
03	STA. 0+00 - 2+25
04	STA. 2+25-END
05	BAR DITCH GRADING PLAN
06	EXISTING DRAINAGE MAP
07	PROPOSED DRAINAGE MAP
08	GENERAL DETAILS
09	TXDOT STANDARD DETAIL CP-TEP (FTW)
10	TXDOT STANDARD DETAIL CPTD (FTW)
11	TXDOT STANDARD DETAIL CCCG (FTW)
12	TXDOT STANDARD DETAIL CDD (FTW)
13	TXDOT STREET CONNECTION DETAIL
14	TXDOT SAFETY END TREATMENT DETAIL
15	TXDOT PRECAST SET RIPRAP DETAIL
16	TXDOT EROSION CONTROL EC(1)-16
17	TXDOT EROSION CONTROL EC(3)-16
18	TXDOT TCP(2-1)-18
19	TXDOT TCP(2-2)-18
20	TXDOT TEMPORARY RUMBLE STRIPS WZ(RS)-16
21-32	TXDOT BARRICADE AND CONSTRUCTION STANDARD DETAILS BC(1)-21 - BC(12)-21

## COUNCIL MEMBERS

SCOTT KIMBLE.....	MAYOR
DUSTIN DEES	MIKE KIDD
ANGELA NICHOLS	MERLE BREITENSTEIN
DAKOTA MARSHALL	SHELLY ANDERSON
MIKE PEACOCK.....	CITY MANAGER
AARON MALDONADO.....	ASSISTANT CITY MANAGER

**JACOB MARTIN**  
FIRM # F-2448

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806-368-6375

**DEREK TURNER**  
LICENSED PROFESSIONAL ENGINEER  
94843

02-13-2026

**GENERAL NOTES**

- ACCESS TO RESIDENCES AND BUSINESS SHALL BE PROVIDED AT ALL TIMES. COST ASSOCIATED WITH THE CONSTRUCTION AND MAINTENANCE OF THIS ACCESS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO OTHER BID ITEMS. THE WORK PERFORMED ON THIS CONTRACT WILL BE PERFORMED UNDER TRAFFIC AND IT IS IMPERATIVE THAT THE CONTRACTOR HAVE THE EQUIPMENT AND MANPOWER AVAILABLE AT ALL TIMES TO ENSURE THAT ACCESS IS AVAILABLE. THE CONTRACTOR IS TO MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES.
- THE CONTRACTOR SHALL APPOINT, IN WRITING, A SUPERINTENDENT FOR THIS PROJECT. SAID SUPERINTENDENT SHALL BE HIRED BY THE CONTRACTOR AND BE FULLY RESPONDENT TO THE ADMINISTRATION OF THE CONTRACT. HE/SHE WILL BE ON THE PROJECT DAILY. SHOULD THIS SUPERINTENDENT LEAVE THE EMPLOYER OR MOVE TO ANOTHER PROJECT, THE CONTRACTOR IS TO APPOINT ANOTHER SUPERINTENDENT IMMEDIATELY.
- THE CONTRACTOR WILL ENSURE THAT ALL EXISTING DRAINAGE WILL REMAIN UNALTERED UNLESS GRADES ARE SHOWN TO BE ADJUSTED AND OR DRAINAGE STRUCTURES ADDED OR ALTERED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL AND REMOVAL OF SURPLUS MATERIAL OFF-SITE AT HIS OWN EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGES TO EXISTING BUILDINGS, UTILITIES, PAVEMENT, OR CURBS.
- CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT OR LIMITS OF THE DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
- CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO; WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRIC, DUCT BANKS, LANDSCAPING IRRIGATION FACILITIES AND GAS LINES, ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGES TO EXISTING UTILITIES SHALL BE THE CONTRACTORS SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THE PLANS OR NOT. **ALL EXISTING UTILITIES SHALL BE POTHOLED TO DETERMINE DEPTH PRIOR TO BEGINNING ANY ROADWAY EXCAVATION. THE EXTENT OF POTHOLING SHALL BE AS NECESSARY TO ADEQUATELY IDENTIFY ANY POTENTIAL CONFLICTS, BUT NO LESS THAN ONE (1) PER 200' OF EACH LOCATED UTILITY.**
- ALL CONSTRUCTION SHALL CONFORM TO THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION (LATEST-EDITIONS) UNLESS OTHERWISE NOTED. THE TECHNICAL SPECIFICATIONS CONTAINED IN THE CONTRACT DOCUMENTS OR OTHER SPECIFIC REFERENCE SHALL TAKE PRECEDENCE OVER NCTCOG STANDARDS.
- THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES A COPY OF ANY REQUIRED CONSTRUCTION PERMITS, EROSION CONTROL PLANS, SW3P WITH INSPECTION REPORTS, AND THE CONTRACT DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, AND SPECIAL CONDITIONS.
- CONTRACTOR SHALL VERIFY BENCHMARKS AND DATUM PRIOR TO COMMENCING CONSTRUCTION OR STAKING OF IMPROVEMENTS.
- BARRICADES, SIGNS, AND TRAFFIC HANDLING.** THIS PROJECT REQUIRES THE CONTRACTOR TO INSTALL CONSTRUCTION BARRICADES, SIGNS, AND TRAFFIC HANDLING ON THIS PROJECT. THERE MAY BE OTHER MINOR SIGNS AND/OR TRAFFIC MARKINGS THAT ARE DEEMED NECESSARY TO PROTECT THE TRAVELING PUBLIC AND CONSTRUCTION EMPLOYEES. PAYMENT FOR MISCELLANEOUS MINOR SIGNS WILL BE INCLUDED IN THE PRICE BID FOR THIS ITEM.  
ALL MARKERS, TRAFFIC CONTROL PLAN, AND OR OTHER TRAFFIC RELATED INCIDENTALS SHALL BE AS OUTLINED IN THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR IS REQUIRED TO CONTROL TRAFFIC BY FLAG MEN WHEN PLACING CONCRETE OR USING EQUIPMENT IN THE TRAFFIC AREAS. PAY FOR THIS WILL BE SUBSIDIARY TO THE TRAFFIC HANDLING ITEM. FLAG MEN SHALL HAVE A LEGAL STOP/SLOW PADDLE (STANDARD) OR RED FLAG (ALTERNATE) AND WEAR A REFLECTIVE VEST WHILE PERFORMING THIS WORK. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER AND OWNER. MESSAGE BOARDS SHALL BE INSTALLED BEFORE BOTH ENDS OF THE WORK ZONE STATING CONSTRUCTION AND CLOSURE TIMES.
- SIGN LOCATIONS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH NCTCOG STANDARDS. THE CONTRACTOR SHALL REVIEW LOCATION OF ALL TRAFFIC CONTROL DEVICES WITH THE OWNER PRIOR TO INSTALLATION.
- CONTRACTOR SHALL SUBMIT A SEQUENCE OF WORK PLAN AND A CONSTRUCTION SCHEDULE FOR APPROVAL AT THE PRE-CONSTRUCTION CONFERENCE. UPDATED CONSTRUCTION SCHEDULES WILL BE REQUIRED MONTHLY PRIOR TO PROGRESS PAYMENTS.
- THE CONTRACTOR SHALL REPAIR AND RESTORE ALL SURFACES DISTURBED TO A CONDITION EQUAL TO OR BETTER THAN THE CONDITION BEFORE WORK BEGAN.
- THE CONTRACTOR SHALL ADJUST ALL EXISTING UTILITIES AND APPURTENANCES TO MATCH FINISH GRADES I.E. MANHOLE COVERS, VALVES BOXES, METER BOXES, POWER POLES, GUY WIRES, ETC.
- THE CONTRACTOR SHALL RESET OR RELOCATE ANY TRAFFIC SIGNS THAT CONFLICT WITH CONSTRUCTION.
- THE CONTRACTOR SHALL RELOCATE MAILBOXES AS NECESSARY. RELOCATION OF NON-MASONRY MAILBOXES SHALL BE CONSIDERED A SUBSIDIARY ITEM AT NO ADDITIONAL PAY. MASONRY MAILBOXES SHALL BE RELOCATED OR RECONSTRUCTED IN AS GOOD OR BETTER CONDITION THAN THE EXISTING.

**CONCRETE PAVING NOTES**

- PORTLAND CEMENT SHALL BE AS PER NCTCOG ITEM 303.2.2 SPECIFICATIONS.
- AGGREGATES SHALL BE AS PER NCTCOG ITEM 303.2 SPECIFICATIONS.
- CONCRETE FOR ALL PAVING SHALL HAVE A MINIMUM STRENGTH OF 3,600 PSI WHEN TESTED AT 28 DAYS.
- FOR HAND FORMED PAVING, ALLEYS, SIDEWALKS, AND DRIVEWAYS SLUMP SHALL BE AN AVERAGE OF FOUR INCHES WITH A MAXIMUM OF FIVE INCHES. REFER TO NCTCOG ITEM 303.3.4.4 SPECIFICATIONS.
- THE CONTRACTOR SHALL USE A LIQUID MEMBRANE-FORMING COMPOUND AS PER NCTCOG ITEM 303.2.13.1.1 SPECIFICATIONS.
- CONCRETE PAVEMENT SHALL BE CLASS C (3,600 PSI MIN.) AS SPECIFIED IN THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) PUBLIC WORKS CONSTRUCTION STANDARD SPECIFICATIONS ITEM 303. PORTLAND CEMENT CONCRETE PAVEMENT WITH A MAXIMUM WATER/CEMENT RATIO OF 0.53 AND A MAXIMUM COARSE AGGREGATE SIZE OF 1-1/2".
- SLUMP FOR SLIP FORM PAVING SHALL BE AN AVERAGE OF 3-INCHES WITH A MAXIMUM OF 4-INCHES.
- ALL REINFORCING STEEL FOR PAVING SHALL BE GRADE 60 BARS PER NCTCOG ITEM 303.2.9 AND SUPPORTED WITH THE APPROPRIATE BAR CHAIRS PER NCTCOG ITEM 303.2.11. WHERE REINFORCING BARS ARE SPLICED, A 30 DIAMETER LAP SHALL BE USED.
- WITH APPROVAL OF THE OWNER, FLY ASH CONFORMING TO ASTM C618 MAY BE USED IN ALL CLASSES OF CONCRETE TO REPLACE A PORTION OF THE PORTLAND CEMENT IN THE MIX DESIGN UP TO A MAXIMUM OF 25% BY WEIGHT PER CUBIC YARD OF CONCRETE.
- EXPANSION JOINTS IN PAVEMENT SHALL BE LOCATED AT INTERSECTION P.C.'S AND P.T.'S AND ALL STRUCTURES OR MANHOLES PROTRUDING THROUGH OR ADJACENT TO THE PAVEMENT. EXPANSION JOINTS SHALL BE SPACED AT 500 FEET MAXIMUM.
- SAWED CONTRACTION JOINTS SHALL BE SPACED BETWEEN 15 AND 20 FEET IN PAVEMENT. JOINTS SHALL SAWED INTO THE COMPLETED PAVEMENT SURFACE AS SOON AFTER INITIAL CONCRETE SET AS POSSIBLE SO THAT SOME RAVELING OF THE GREEN CONCRETE IS OBSERVED IN ORDER FOR THE SAWING PROCESS TO PREVENT UNCONTROLLED SHRINKAGE CRACKING.
- ALL JOINTS SHALL BE SEALED WITH HOT POURED POLYMER OR READY-MIXED COLD-APPLIED SEALANT CONFORMING TO NCTCOG ITEM 302.2.14.
- EXISTING ASPHALT SHALL BE REMOVED AND HAULED OFF AS NECESSARY TO MEET THE FINAL PAVEMENT GRADE. EXISTING EXCAVATED BASE SHALL BE USED AS FILL UNDER CONCRETE PAVEMENT AS NECESSARY.
- INITIAL DENSITY AND CONCRETE TESTING SHALL BE PROVIDED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RETESTING AFTER FAILED TESTS.

**CONSTRUCTION AND GRADING NOTES**

- PROPOSED GRADE LINES ARE INDICATED ON THE PLANS AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. A MINIMUM OF 3:1 SLOPE SHALL BE MAINTAINED IN ALL LOCATIONS.
- MANHOLES SHALL BE ADJUSTED AS NECESSARY TO MEET PROPOSED GRADES.
- VALVE BOXES SHALL BE ADJUSTED AS NECESSARY TO MEET PROPOSED GRADES.
- EXCAVATED BASE MATERIAL FROM THE ROADWAY MAY BE USED TO FILL BELOW PROPOSED PAVEMENT.
- EXCAVATED MATERIAL (EXCLUDING ASPHALT) FROM THE ROADWAY, AS AVAILABLE, MAY BE USED TO FILL IN THE RIGHT-OF-WAY TO 2" BELOW FINISHED GRADE. REMOVE AND REPLACE AND/OR HAUL IN TOP SOIL TO COMPLETE TO FINISHED GRADE.

**EROSION AND POLLUTION CONTROL NOTES**

- ALL CONTRACTORS SHALL COMPLY WITH THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM AS FURTHER DESCRIBED IN THE SPECIAL TECHNICAL SPECIFICATIONS.
- THE CONTRACTOR SHALL INSTALL EROSION AND POLLUTION CONTROL MEASURES AS INDICATED ON THE PLANS AND AS FIELD CONDITIONS WARRANT TO PREVENT OFF-SITE MIGRATION OF SOILS OR OTHER POLLUTANTS BY VEHICULAR TRACKING OR IN STORM WATER RUNOFF. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY, INSTALLATION OF CONTROL MEASURES, REPAIRS OR MODIFICATIONS OF THE MEASURES WILL BE MADE BY THE CONTRACTOR IF THE CONTROL MEASURES PROVE INEFFECTIVE OR IF ADDITIONAL CONTROL MEASURES ARE NECESSARY.
- ALL STOCKPILED SOILS SHALL BE MAINTAINED IN A MANNER TO PROPERLY CONTROL SEDIMENT RUNOFF.
- THE CONTRACTOR SHALL CONSTRUCT A BERM OR OTHER SPILL PROTECTION MEASURE FOR ANY TEMPORARY FUEL STORAGE TANK(S) ON SITE.
- IF SUMP PUMPS ARE USED TO REMOVE WATER FROM EXCAVATED AREAS, THE DISCHARGE SHALL BE CONTAINED, FILTERED OR DISCHARGED TO A SETTLING BASIN TO REMOVE SEDIMENT AND OTHER POLLUTANTS BEFORE THE WATER ENTERS A STORM DRAIN OR LEAVES THE SITE.
- THE CONTRACTOR SHALL STABILIZE, WITH SOME FORM OF GROUND COVER, ANY AREA WHERE CONSTRUCTION ACTIVITY IS TO BE CEASED (TEMPORARILY OR PERMANENTLY) FOR MORE THAN TWENTY-ONE (21) DAYS. RE-VEGETATION OF ALL DISTURBED SOIL SHALL BE INITIATED WITHIN TWENTY-ONE (21) DAYS OF FINAL CONSTRUCTION OPERATIONS.
- AT THE CONCLUSION OF THE PROJECT, ALL CHANNELS, DRAINAGE WAYS AND BORROW DITCHES IN THE WORK ZONE SHALL BE CLEARED OF ANY SEDIMENT AND DEBRIS GENERATED BY THE PROJECT OR DEPOSITED AS A RESULT OF THE EROSION AND POLLUTION CONTROL MEASURES.
- CONTRACTOR SHALL INSTALL EROSION CONTROL DEVICES ON UPSTREAM SIDE OF ALL CULVERTS, INLETS AND AT DOWNSTREAM GUTTER FLOW EXIT POINTS. EROSION CONTROL DEVICES WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS. LOCATIONS FOR EROSION CONTROL DEVICES ARE THE MINIMUM REQUIRED. REFER TO THE PROJECT STORM WATER POLLUTION PREVENTION PLAN FOR DETAILS.
- CONTRACTOR SHALL HYDROMULCH ALL DISTURBED AREAS AFTER FINAL GRADING PER SPECIFICATION 32 92 13.

**LEGEND**

W	EXISTING WATER LINE	---	EASEMENT
⊗	EXISTING GATE VALVE	---	PROPERTY LINE
⊗	EXISTING VALVE	[Pattern]	EXISTING GRAVEL
⊗	EXISTING FLUSH VALVE / FIRE HYDRANT	[Pattern]	EXISTING CONCRETE
⊗	EXISTING WATER METER	[Pattern]	EXISTING ASPHALT
⊗	POWER POLE	[Pattern]	PROPOSED ASPHALT
⊗	AIR VALVE	—OE—	OVERHEAD ELECTRIC
⊗	TREE	⊗	ELECTRIC METER
→	GUY WIRE	⊗	ELECTRIC BOX
X	FENCE LINE	—UE—	UNDERGROUND ELECTRIC
⊗	SANITARY SEWER MANHOLE	—GAS—	GAS LINE
⊗	COMMUNICATIONS MANHOLE	⊗	GAS METER
UT	UNDERGROUND TELEPHONE		
⊗	TELEPHONE PEDESTAL		
⊗	SIGN AND POST		

**ASPHALT PAVING NOTES**

- PULVERIZED (ROAD-MIXED) ASPHALT AND BASE MATERIAL.** THIS ITEM SHALL CONFORM TO TXDOT SPECIFICATION ITEM 260. STRENGTH REQUIREMENTS WILL BE STRENGTH 0. MICRO-CRACKING WILL BE REQUIRED FOR THIS ITEM. THE LIME STABILIZED BASE MATERIAL SHALL BE MOIST CURED FOR 3 DAYS AFTER COMPACTION. THE UNIT PRICE FOR THIS ITEM SHALL INCLUDE ALL LABOR, EQUIPMENT, LIME, AND MATERIALS NECESSARY TO COMPLETE THE WORK.
- HOT MIX ASPHALT CONCRETE PAVEMENT.** THE HOT-MIX DESIGN FOR THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR. IF THE WEATHER CONDITIONS ARE FAVORABLE, THE CONTRACTOR MAY STOCKPILE HOT-MIX AND RE-HANDLE IT. CARE SHOULD BE EXERCISED, HOWEVER, TO PREVENT THE MIX FROM COOLING BELOW 200 DEGREES F. ASPHALT PAVEMENT WILL NOT BE PLACED IN STOCKPILES ON ANY OF THE NEWLY PLACED SURFACES. A STOCKPILE AREA INDEPENDENT OF THIS PROJECT WILL BE SELECTED. STOCKPILING WILL NOT BE PERMITTED AND TRUCKS MUST BE COVERED AFTER NOVEMBER 1ST THRU MAY 1ST. THE CONTRACTOR WILL CONTROL THE WORKMAN SO THAT NO WALKING ON THE UNCOMPACTED MIX WILL BE PERMITTED. CLOSE ATTENTION IS CALLED TO THE REQUIREMENTS FOR SPECIFIED EQUIPMENT TO PLACE HOT-MIX. THE CONTRACTOR SHALL ADJUST EQUIPMENT SO THAT EXCESS RAKING WILL NOT BE REQUIRED. LARGE RAKED AREAS WILL NOT BE PERMITTED. TAKE OFF AT JOINTS THAT RISE OR SINK WILL NOT BE RAKED BUT WILL BE PICKED UP AND RE-LAID. NO JOINTS WILL BE PERMITTED IN WHEEL PATHS. CONTRACTOR SHALL CORE ROADWAY AFTER CONSTRUCTION IS COMPLETE AT A RATE OF 1 CORE PER 1000' OF ROADWAY. CORE AND REPAIR COST IS SUBSIDIARY TO BID ITEM FOR HMAC. SEE ALSO THE TESTING REQUIREMENTS. ANY EXCESS ASPHALT MATERIAL WILL REMAIN THE PROPERTY OF THE CONTRACTOR.

**TESTING REQUIREMENTS PER TXDOT**

TXDOT ITEM #	REQUIREMENTS
310	TXDOT PREQUALIFIED SOURCE
340	TEX 207 IN PLACE AIR VOIDS (MAY USE CALIBRATED GAUGE WITH ENGINEERS APPROVAL) 2 PER 500 TON=22 TEX 236 ASPHALT CONTENT & GRADATION 1 PER 500 TON=11 *CONTRACTOR SHALL PROVIDE 1-B CERTIFIED TECHNICIAN FOR ALL PAVING OPERATIONS.
360 & 420	TEX 415A SLUMP - 1 TEST PER 60 CY, 3.1 TEX 418A COMPRESSIVE STRENGTH 4 CYLINDERS PER 60 CY OR EACH DAY-12.4 TEX 422A TEMPERATURE - 1 TEST PER 60 CY, 3.1
810	TXDOT PRE-QUALIFIED SOURCE



3465 CURYRY LANE  
451160E, TX 75006  
825-695-1070  
1508 SANTA FE DR, STE 204  
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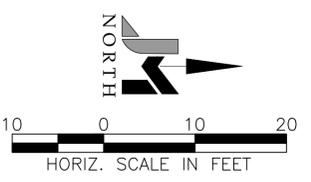
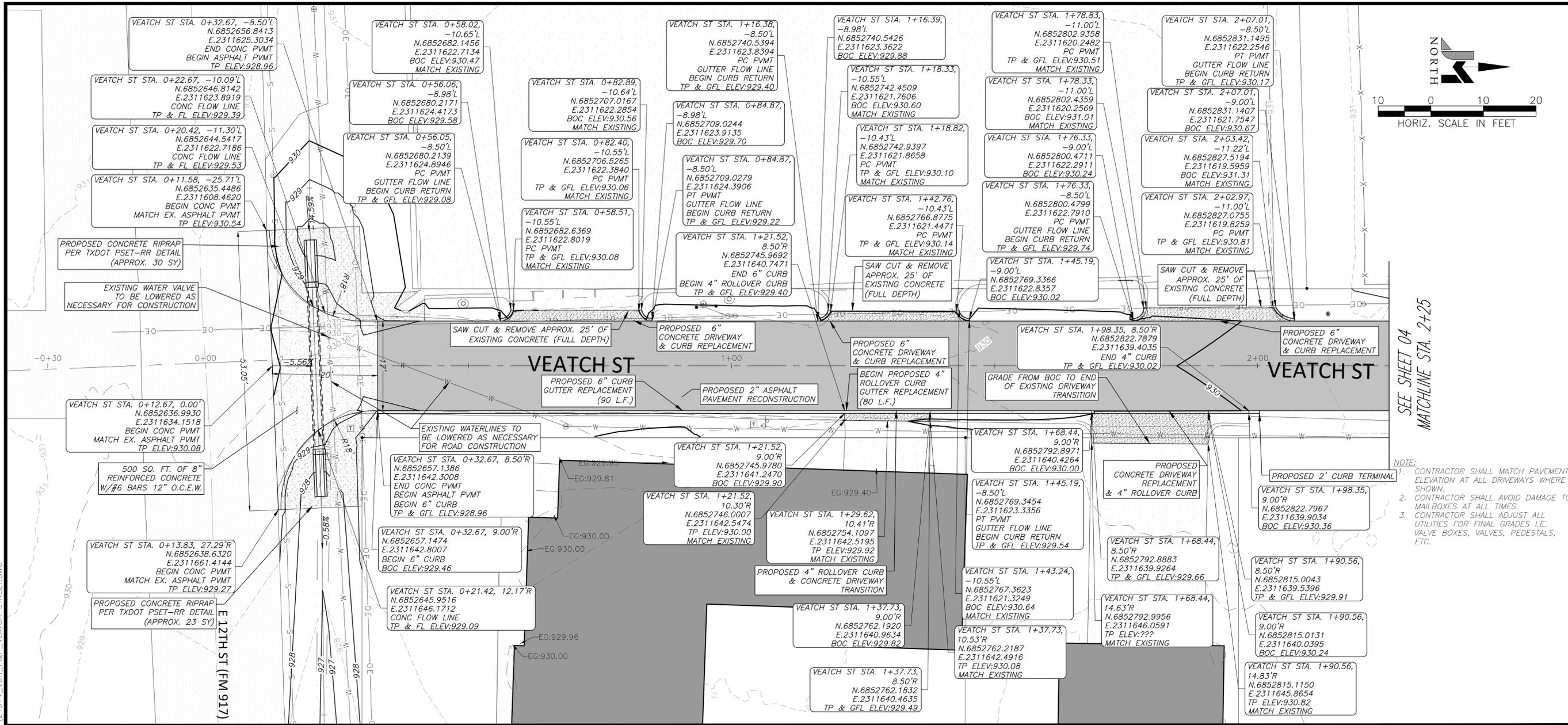
CITY OF JOSHUA, TEXAS  
**VEATCH STREET ROADWAY IMPROVEMENTS**  
CONSTRUCTION DRAWINGS  
GENERAL NOTES

NO.	REVISION	DATE	SCALE	N.T.S.	PROJECT # 21314	DESIGNED C.T.S.	DRAWN C.T.S.	CHECKED A.D.T.
SHEET 02								
SEQ. 02 OF 32								

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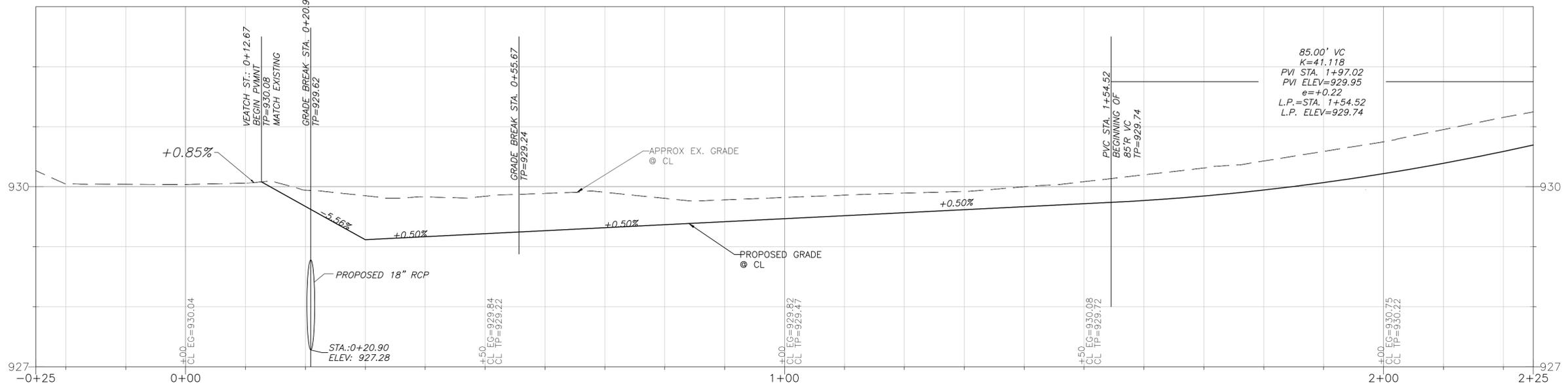
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SEE SHEET 04  
 MATCHLINE STA. 2+25

- NOTE:
- CONTRACTOR SHALL MATCH PAVEMENT ELEVATION AT ALL DRIVEWAYS WHERE SHOWN.
  - CONTRACTOR SHALL AVOID DAMAGE TO MAILBOXES AT ALL TIMES.
  - CONTRACTOR SHALL ADJUST ALL UTILITIES FOR FINAL GRADES I.E. VALVE BOXES, VALVES, PEDESTALS, ETC.

VEATCH ST. STA. 0+00 - 2+25



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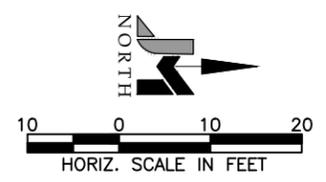
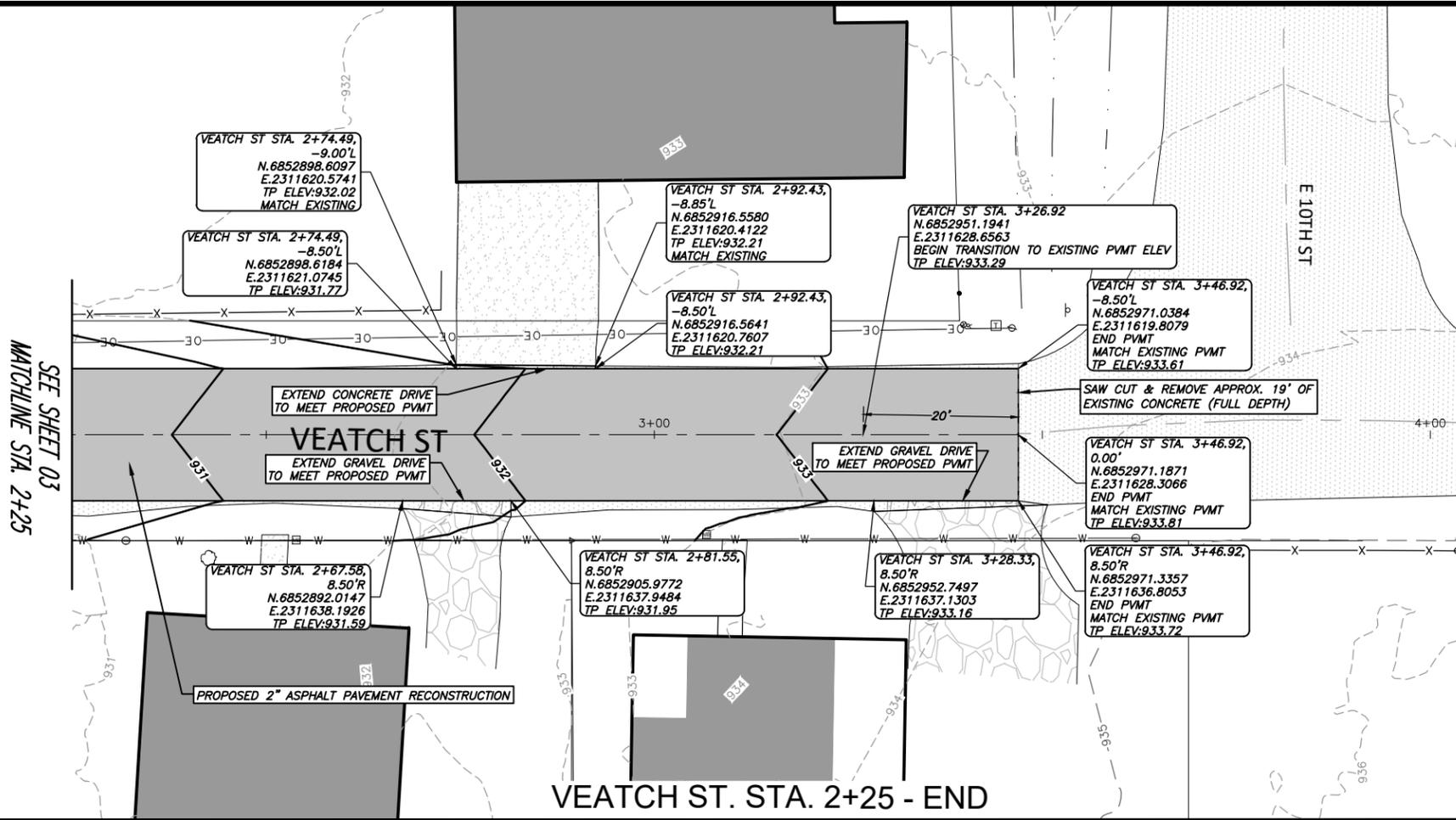
**JACOB MARTIN**  
 CONSTRUCTION DRAWINGS

CITY OF JOSHUA, TEXAS  
 VEATCH STREET ROADWAY IMPROVEMENTS  
 CONSTRUCTION DRAWINGS  
 STA. 0+00 - 2+25

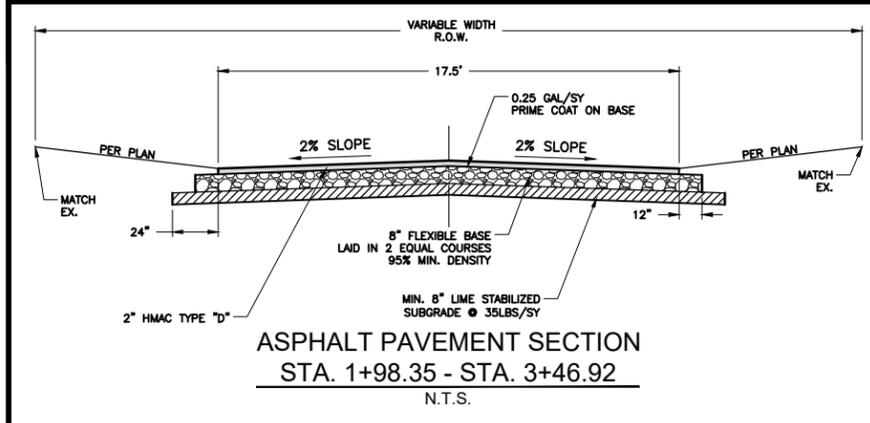
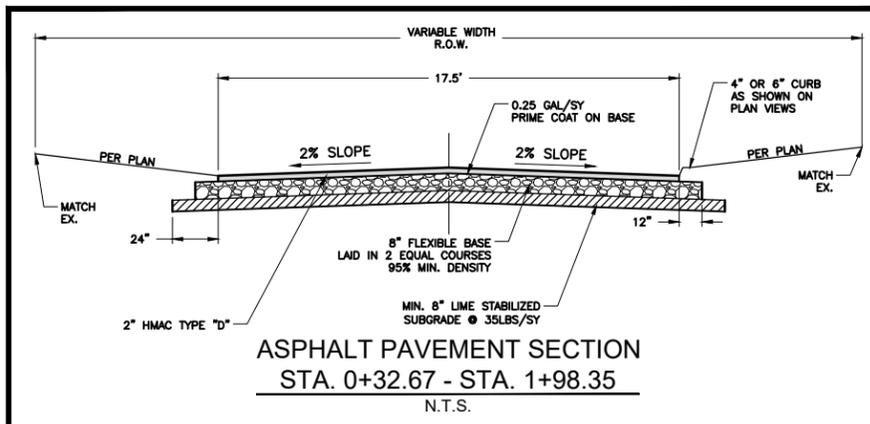
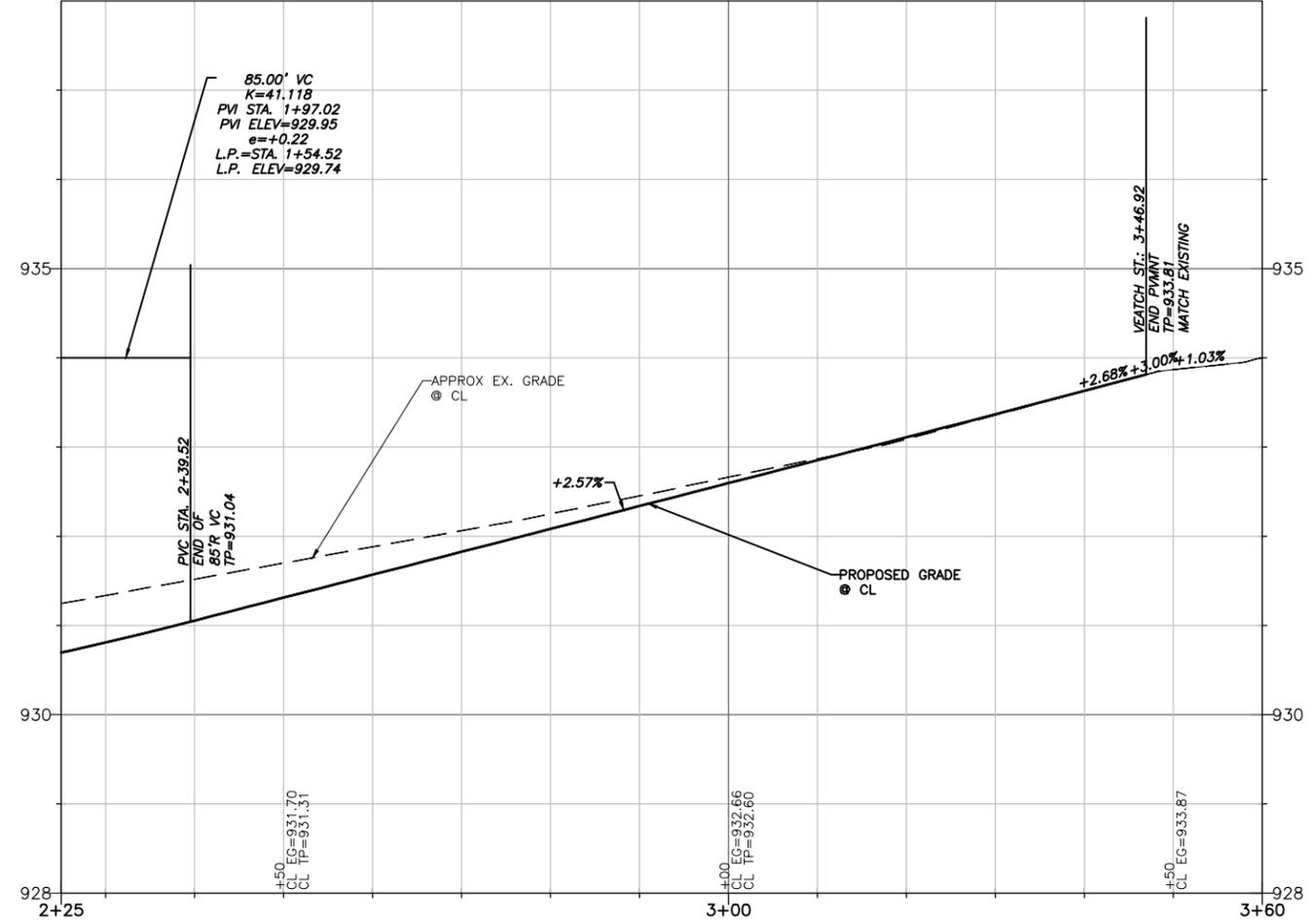
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PROJECT # 21314  
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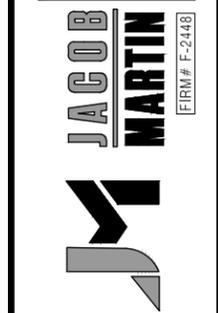
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- NOTE:**
- CONTRACTOR SHALL MATCH PAVEMENT ELEVATION AT ALL DRIVEWAYS WHERE SHOWN.
  - CONTRACTOR SHALL AVOID DAMAGE TO MAILBOXES AT ALL TIMES.
  - CONTRACTOR SHALL ADJUST ALL UTILITIES FOR FINAL GRADES I.E. VALVE BOXES, VALVES, PEDESTALS, ETC.



8485 CUPRY LANE  
 AUSTIN, TX 78766  
 325-695-1070  
 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880  
 1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-365-6375



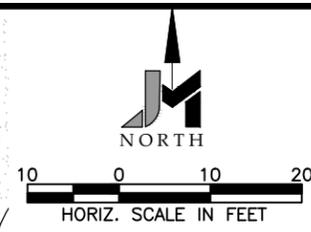
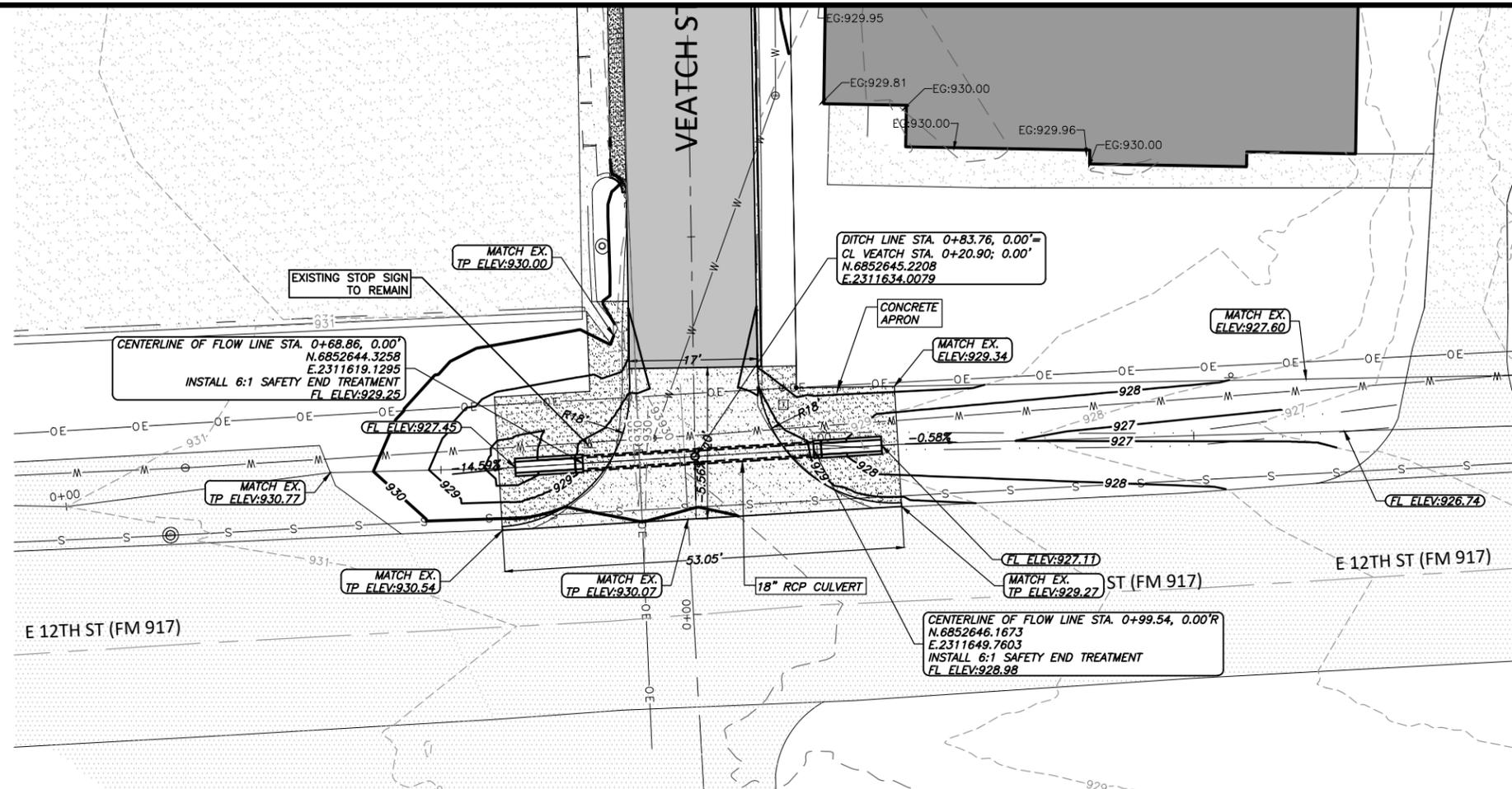
CITY OF JOSHUA, TEXAS  
**VEATCH STREET ROADWAY IMPROVEMENTS**  
 CONSTRUCTION DRAWINGS  
 STA. 2+25-**END**

SCALE	H:1"=10'	V:1"=10'
PROJECT #	21314	
DESIGNED	C.T.S.	
DRAWN	C.T.S.	
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NO.	REVISION	DATE
SHEET 04		
SEQ. 04 OF 32		

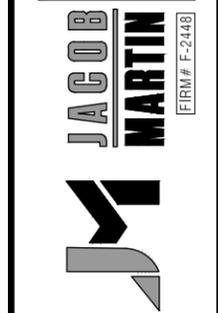
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 LUBBOCK, TX 79401  
 806-365-6375

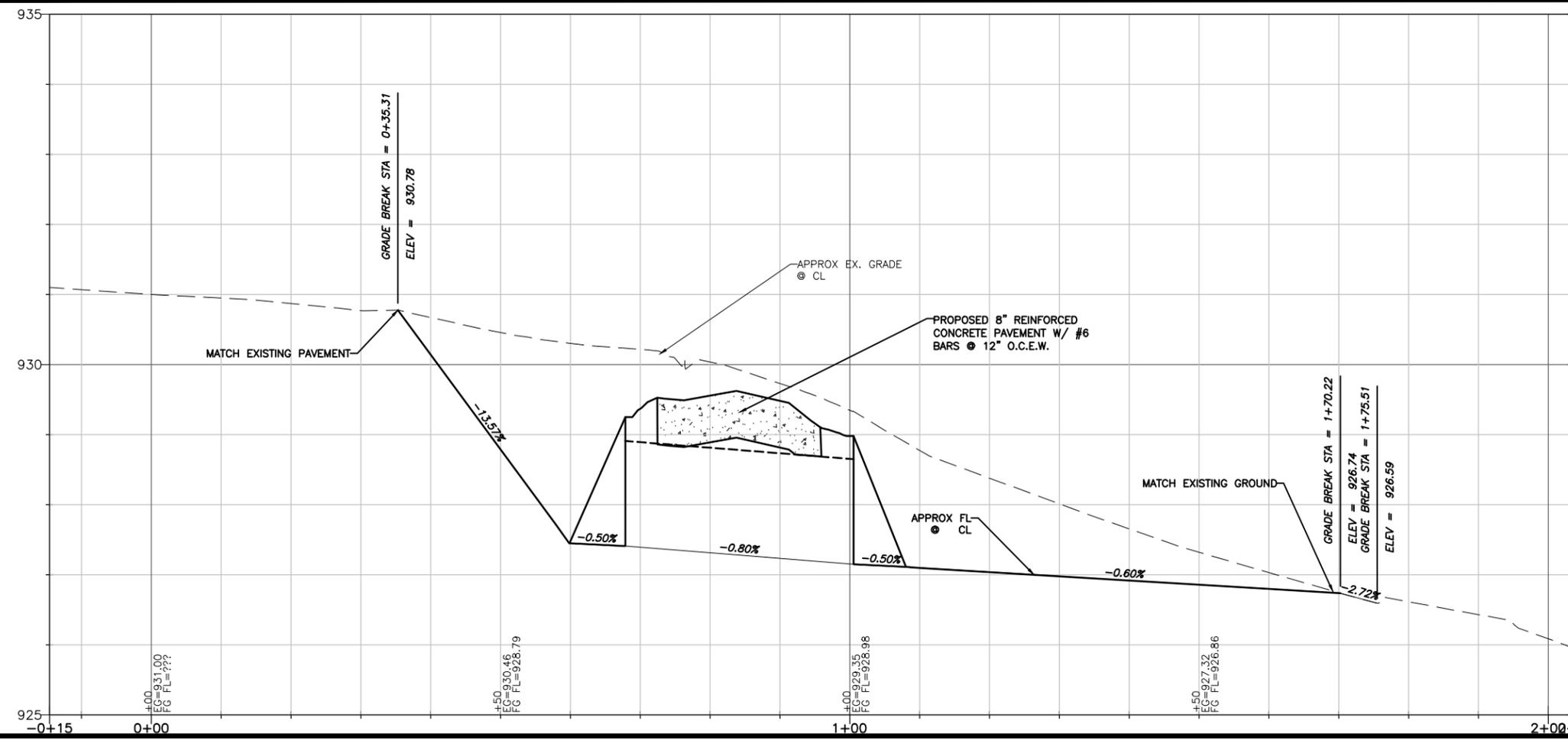


CITY OF JOSHUA, TEXAS  
**VEATCH STREET ROADWAY IMPROVEMENTS**  
 CONSTRUCTION DRAWINGS  
**BAR DITCH GRADING PLAN**

NO.	REVISION	DATE	SCALE	H:1"=10'	V:1"=10'	PROJECT #	DESIGNED	C.T.S.	DRAWN	C.T.S.	CHECKED	A.D.T.
						21314						

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.  
 CHECK SCALE & ADJUST ACCORDINGLY.

SHEET 05  
 SEQ. 05 OF 32

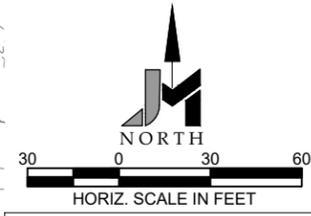


- NOTE:**
1. CONTRACTOR SHALL MATCH PAVEMENT ELEVATION AT ALL DRIVEWAYS WHERE SHOWN.
  2. CONTRACTOR SHALL AVOID DAMAGE TO MAILBOXES AT ALL TIMES.
  3. CONTRACTOR SHALL ADJUST ALL UTILITIES FOR FINAL GRADES I.E. VALVE BOXES, VALVES, PEDESTALS, ETC.

01-15-2026

### EXISTING RUNOFF CALCULATIONS

Drainage Area #	Area (Acres)	Runoff Coeff. "C"	Time (concl. minutes) T <sub>c</sub>	Intensity (in./hr.) "I <sub>2</sub> "	Intensity (in./hr.) "I <sub>5</sub> "	Intensity (in./hr.) "I <sub>10</sub> "	Intensity (in./hr.) "I <sub>25</sub> "	Intensity (in./hr.) "I <sub>50</sub> "	Intensity (in./hr.) "I <sub>100</sub> "	Discharge (c.f.s.) "Q <sub>2</sub> "	Discharge (c.f.s.) "Q <sub>5</sub> "	Discharge (c.f.s.) "Q <sub>10</sub> "	Discharge (c.f.s.) "Q <sub>25</sub> "	Discharge (c.f.s.) "Q <sub>50</sub> "	Discharge (c.f.s.) "Q <sub>100</sub> "
A1	0.12	0.74	10	4.58	5.71	6.66	7.99	9.02	10.10	0.4	0.5	0.6	0.8	1.0	1.2
A2	0.65	0.70	15	3.79	4.73	5.51	6.60	7.44	8.31	1.7	2.2	2.5	3.3	4.1	4.8
A3	0.05	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	0.2	0.3	0.3	0.4	0.5	0.6
A4	0.39	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	1.7	2.1	2.5	3.3	4.1	4.7
A5	0.05	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	0.2	0.3	0.3	0.4	0.5	0.6
A6	0.20	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	0.9	1.1	1.3	1.7	2.1	2.4
A7	0.53	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	2.3	2.9	3.4	4.4	5.5	6.4
<b>Total</b>										<b>7.5</b>	<b>9.4</b>	<b>10.9</b>	<b>14.4</b>	<b>17.7</b>	<b>20.7</b>



**LEGEND**

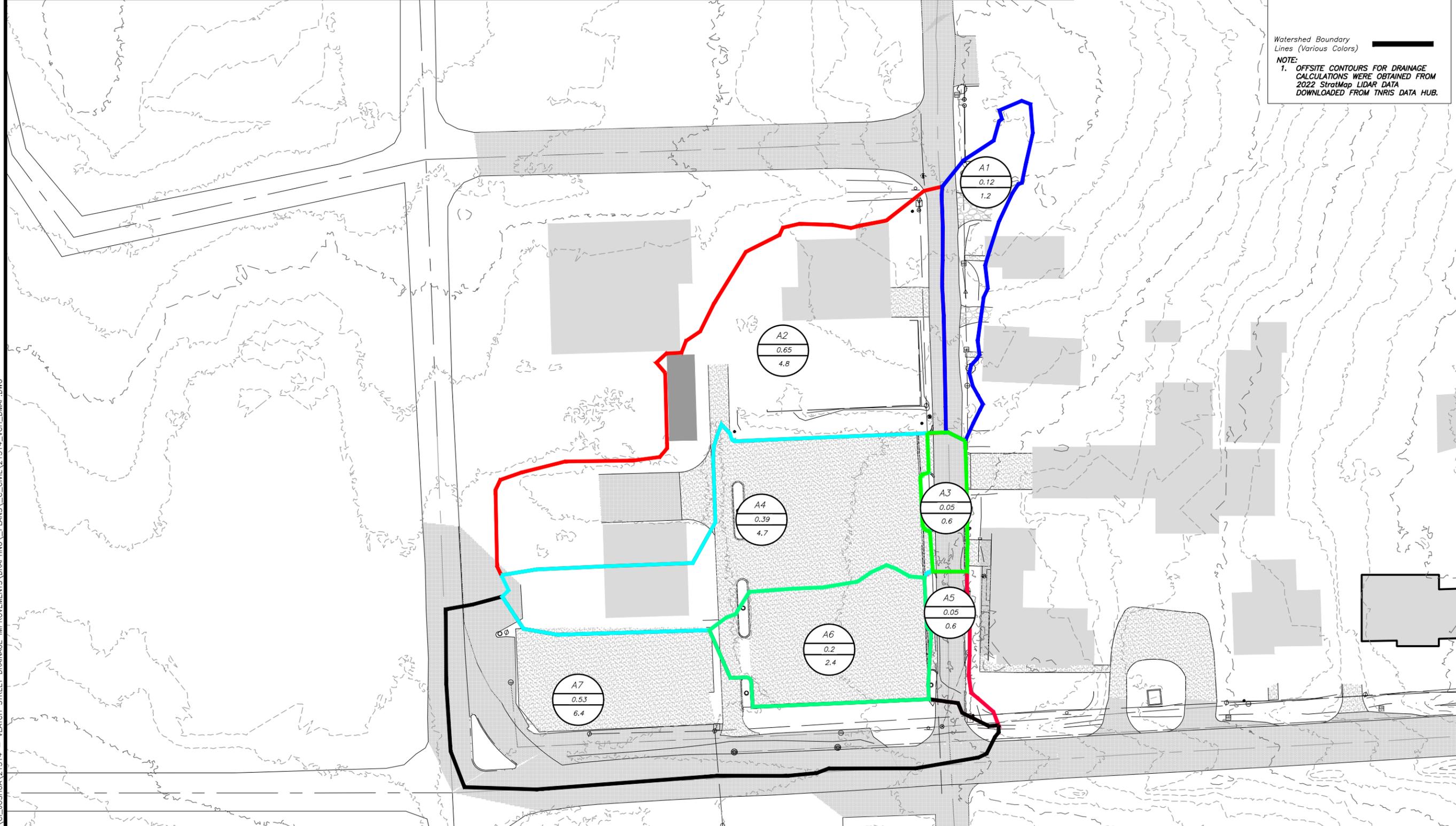
Watershed Designation: A

Area in Acres: 00.00

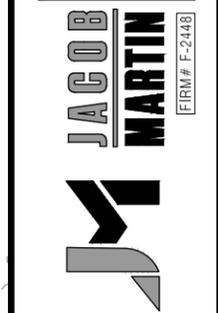
100-Yr Flow in CFS: 00.00

Watershed Boundary Lines (Various Colors):

**NOTE:**  
1. OFFSITE CONTOURS FOR DRAINAGE CALCULATIONS WERE OBTAINED FROM 2022 StratMap LIDAR DATA DOWNLOADED FROM TNRIS DATA HUB.



3465 CUPRY LANE  
APT 1602, 79606  
325-695-1070  
1508 SANTA FE DR, STE 204  
WEATHERFORD, TX 76086  
817-594-9880  
1014 BROADWAY STREET  
LUBBOCK, TX 79401  
806-366-6375



CITY OF JOSHUA, TEXAS  
**VEATCH STREET ROADWAY IMPROVEMENTS**  
CONSTRUCTION DRAWINGS  
EXISTING DRAINAGE MAP

NO.	REVISION	DATE	SCALE	H:1"=30'	PROJECT #	DESIGNED	C.T.S.	DRAWN	D.J.A.	CHECKED	A.D.T.
					21314						
SHEET <b>06</b>											
SEQ. <b>32</b>											

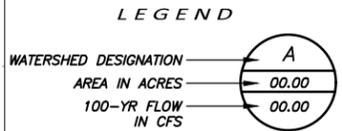
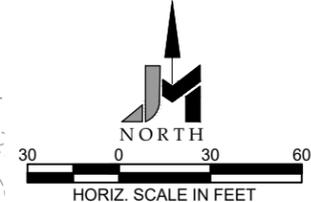
PLOTTED ON: 2/16/2026 9:02 AM  
 X:\C:\JOSHUA\21314 - VEATCH STREET DRAINAGE IMPROVEMENTS\DRAWING\PLANS\C\_CIVIL\21314\_VCH\_DMWP.DWG

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.  
 CHECK SCALE & ADJUST ACCORDINGLY.

01-15-2026

# PROPOSED RUNOFF CALCULATIONS

Drainage Area #	Area (Acres)	Runoff Coeff. "C"	Time(conc. minutes) T <sub>c</sub>	Intensity (in./hr.) "I <sub>2</sub> "	Intensity (in./hr.) "I <sub>5</sub> "	Intensity (in./hr.) "I <sub>10</sub> "	Intensity (in./hr.) "I <sub>25</sub> "	Intensity (in./hr.) "I <sub>50</sub> "	Intensity (in./hr.) "I <sub>100</sub> "	Discharge (c.f.s.) "Q <sub>2</sub> "	Discharge (c.f.s.) "Q <sub>5</sub> "	Discharge (c.f.s.) "Q <sub>10</sub> "	Discharge (c.f.s.) "Q <sub>25</sub> "	Discharge (c.f.s.) "Q <sub>50</sub> "	Discharge (c.f.s.) "Q <sub>100</sub> "
A1	0.12	0.74	10	4.58	5.71	6.66	7.99	9.02	10.10	0.4	0.5	0.6	0.8	1.0	1.2
A2	0.65	0.70	15	3.79	4.73	5.51	6.60	7.44	8.31	1.7	2.2	2.5	3.3	4.1	4.8
A3	0.02	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	0.1	0.1	0.2	0.2	0.3	0.3
A4	0.39	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	1.7	2.1	2.5	3.3	4.1	4.7
A5	0.04	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	0.2	0.2	0.2	0.3	0.4	0.5
A6	0.20	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	0.9	1.1	1.3	1.7	2.1	2.4
A7	0.50	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	2.2	2.7	3.2	4.2	5.2	6.0
A8	0.02	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	0.1	0.1	0.1	0.2	0.2	0.3
A9	0.04	0.95	10	4.58	5.71	6.66	7.99	9.02	10.10	0.2	0.2	0.3	0.4	0.4	0.5
<b>Total</b>										<b>7.5</b>	<b>9.4</b>	<b>10.9</b>	<b>14.4</b>	<b>17.7</b>	<b>20.7</b>



Watershed Boundary Lines (Various Colors)

NOTE:  
1. OFFSITE CONTOURS FOR DRAINAGE CALCULATIONS WERE OBTAINED FROM 2022 StratMap LIDAR DATA DOWNLOADED FROM TNRIS DATA HUB.

## Culvert Report

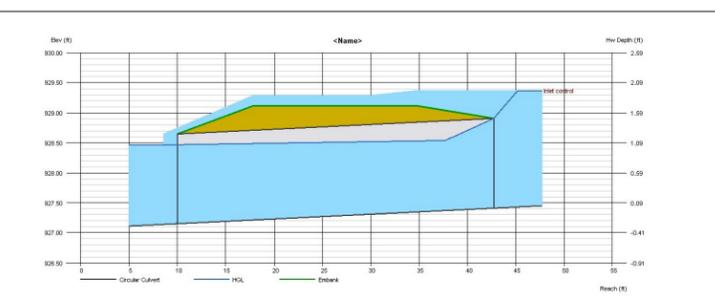
Hydralflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Jan 3 2023

**Circular Culvert**

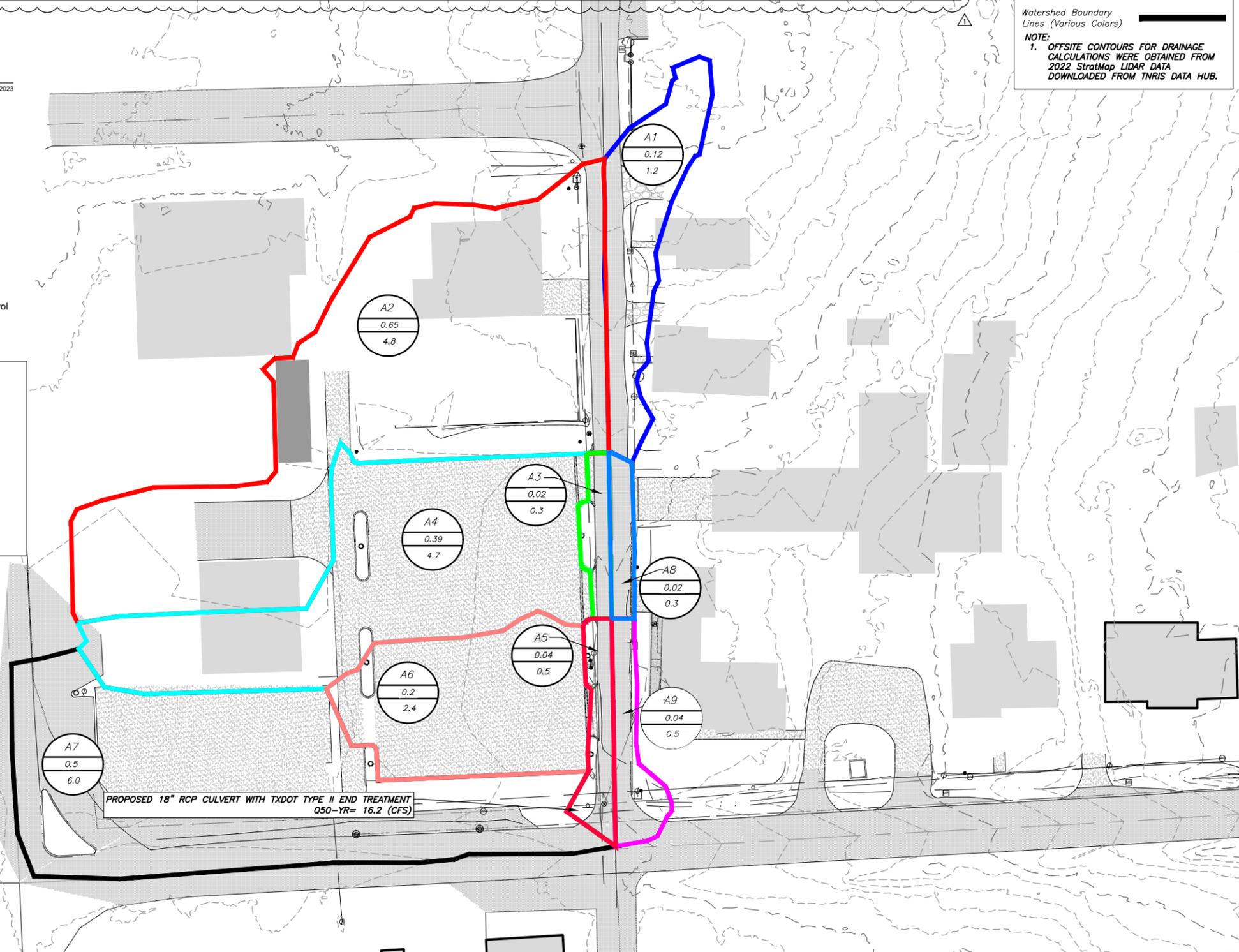
Invert Elev Dn (ft) = 927.15	Calculations Qmin (cfs) = 16.20
Pipe Length (ft) = 32.69	Qmax (cfs) = 16.20
Slope (%) = 0.80	Tailwater Elev (ft) = (dc+D)/2
Invert Elev Up (ft) = 927.41	
Rise (in) = 18.0	
Shape = Circular	
Span (in) = 18.0	Highlighted Qtotal (cfs) = 16.20
No. Barrels = 1	Qpipe (cfs) = 8.71
n-Value = 0.013	Qovertop (cfs) = 7.49
Culvert Type = Circular Concrete	Veloc Dn (ft/s) = 5.28
Culvert Entrance = Square edge w/headwall (C)	Veloc Up (ft/s) = 6.02
Coeff. K,M,c,Y,k = 0.0098, 2, 0.0398, 0.67, 0.5	HGL Dn (ft) = 928.47
	HGL Up (ft) = 928.55
	Hw Elev (ft) = 929.37
	Hw/D (ft) = 1.31
	Flow Regime = Inlet Control

**Embankment**

Top Elevation (ft) = 929.12
Top Width (ft) = 17.00
Crest Width (ft) = 20.00



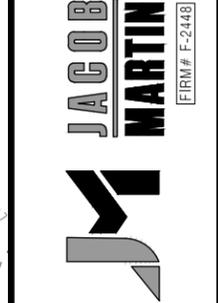
NOTE:  
1. THE 50-YEAR STORM WILL OVERTOP VEATCH STREET AND CONTINUE TO DRAIN PARALLEL TO FM 917 BUT THE STORM WILL NOT OVERTOP THE TXDOT ROW BECAUSE THE WATER SURFACE ELEVATION AT THE CULVERT INLET IS 929.37' AND THE EDGE OF PAVEMENT ELEVATION FOR FM 917 AT THE SAME LOCATION IS 930.54'.  
2. DRAINAGE FOR THIS DEVELOPMENT WILL BE DESIGNED SUCH THAT THERE WILL BE NO ADVERSE IMPACTS ON THE CAPACITY, FUNCTION, OR INTEGRITY OF TEXAS DEPARTMENT OF TRANSPORTATION RIGHT OF WAY DRAINAGE FACILITIES.



3485 CURYRY LANE  
APT 1602, 79606  
325-695-1070  
1508 SANTA FE DR, STE 204  
WEATHERFORD, TX 76086  
817-594-9880

1014 BROADWAY STREET  
LUBBOCK, TX 79401  
806-365-6375

**JACOB MARTIN**  
Professional Engineer  
FIRM# F-2148



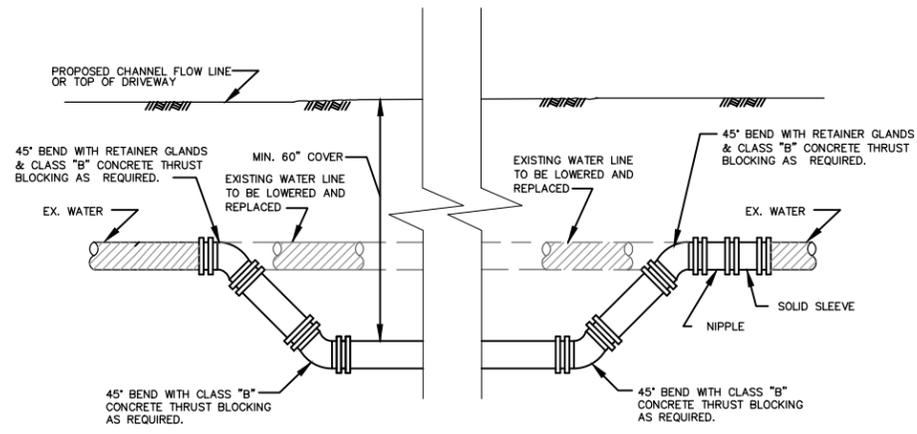
CITY OF JOSHUA, TEXAS  
**VEATCH STREET ROADWAY IMPROVEMENTS**  
CONSTRUCTION DRAWINGS  
PROPOSED DRAINAGE MAP

NO. REVISION	DATE	SCALE	H:1"=30'
1	9/19/2025		
REVISIONS PER TXDOT COMMENTS	PROJECT # 21314	DESIGNED	C.T.S.
		DRAWN	D.J.A.
		CHECKED	A.D.T.
BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE & ADJUST ACCORDINGLY.			
SHEET			07
SEQ.			32

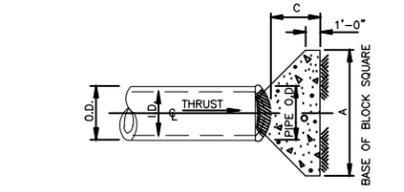
PLOTTED ON: 2/16/2026 9:02 AM  
X:\C\JOSHUA\21314 - VEATCH STREET DRAINAGE IMPROVEMENTS\DRAWING\PLANS\C\_CIVIL\21314\_VCH\_DMAP.DWG

PRINTED BY: SARAH ATALIG

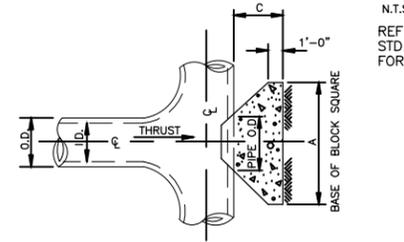
PLOTTED ON: 2/16/2026 9:02 AM  
 X:\C\JOSHUA\21314 - VEATCH STREET DRAINAGE IMPROVEMENTS\DRAWING\PLANS\C\_CIVIL\21314\_VCH\_DETAILS.DWG



**WATER LINE LOWERING DETAIL**  
 N.T.S.



**PLAN OF PLUG THRUST BLOCK**  
 N.T.S.

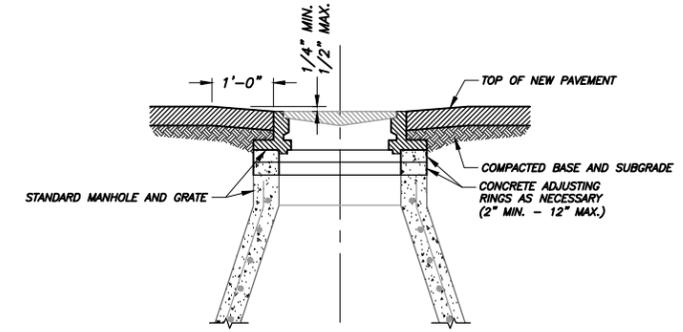


**PLAN OF TEE THRUST BLOCK**  
 N.T.S.

N.T.S.  
 REFER TO  
 STD. DWG. No. 4040  
 FOR GENERAL NOTES.

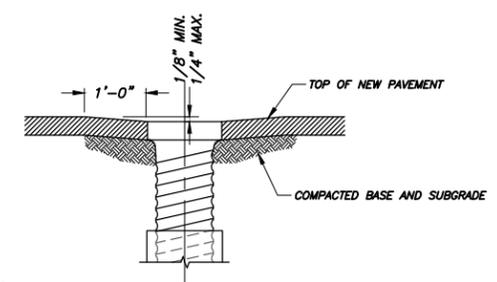
I.D. (IN.)	THRUST (TONS)	EARTH		ROCK	
		C (FT.)	A (FT.)	A (FT.)	VOL. (C.Y.)
4,6,8	5.1	1.5	2.5	0.3	2.0
10,12	11.3	1.5	3.5	0.6	2.5
16,18	25.5	2.0	5.5	1.6	4.0
20	31.5	2.0	8.0	1.9	4.0
24	45.2	2.5	7.0	3.1	5.0
30	53.0	3.0	7.5	4.1	5.5
36	76.3	4.0	9.0	7.3	6.5
42	104.0	4.5	10.5	11.0	7.5
48	136.0	5.0	12.0	15.8	8.5
54	172.0	5.5	13.5	21.4	9.5
60	212.0	6.0	15.0	28.4	10.5
66	257.0	6.5	16.5	36.8	11.5
72	305.0	7.5	17.5	47.2	12.5
78	358.0	8.0	19.0	58.0	13.5
84	416.0	8.5	20.5	72.3	14.5
90	477.0	9.0	22.0	87.7	15.5
96	543.0	9.5	23.5	104.8	16.5

**HORIZONTAL THRUST BLOCK  
 AT TEES AND PLUGS**  
 N.T.S.



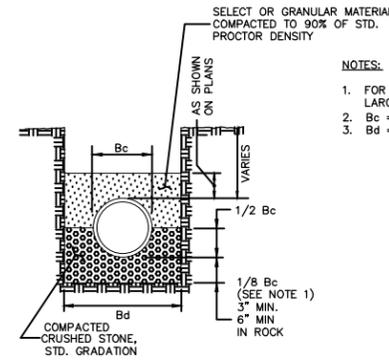
NOTES:  
 1. ADJUST MANHOLES UPWARD WITH ADJUSTING RINGS UNDER FRAME.  
 2. ADJUST MANHOLES DOWNWARD BY REMOVING CONE AND BARREL SECTIONS AS NECESSARY AND REPLACING WITH SECTIONS OF LENGTH REQUIRED TO MATCH GRADE.  
 3. SLOPE MANHOLE FRAME AS REQUIRED TO MATCH SLOPE OF STREET.  
 4. MAKE FINAL MANHOLE ADJUSTMENTS BEFORE PAVING.

**MANHOLE ADJUSTMENT DETAIL**  
 N.T.S.



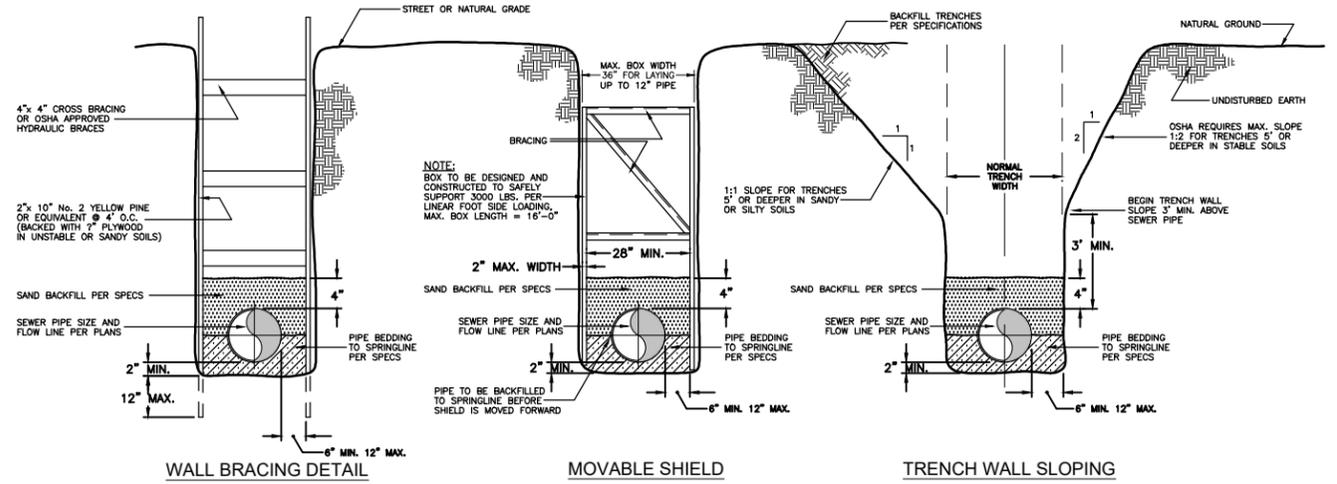
NOTES:  
 1. ADJUST WATER VALVES UPWARD OR DOWNWARD AS REQUIRED.  
 2. MAKE FINAL ADJUSTMENTS BEFORE PAVING.

**VALVE BOX ADJUSTMENT DETAIL**  
 N.T.S.

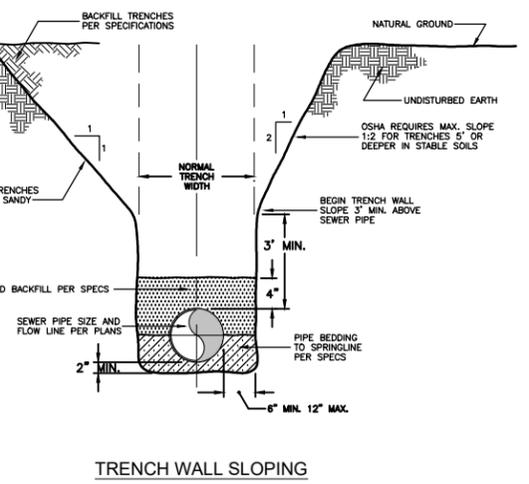
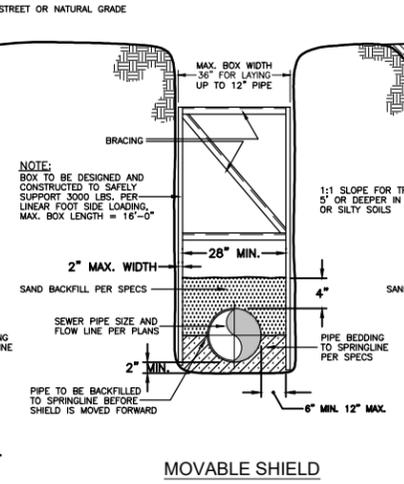
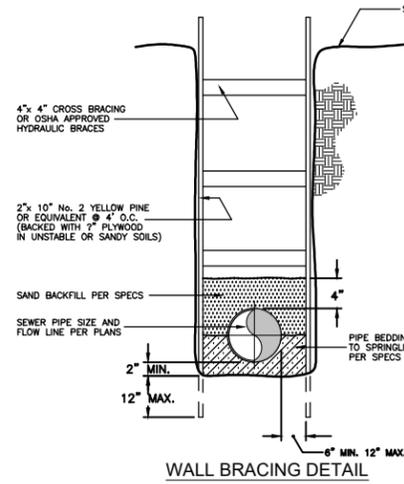


NOTES:  
 1. FOR MAINS 42" DIAMETER AND LARGER LARGER, 1/8 Bc SHALL BE TAKEN AS 6".  
 2. Bc = OUTSIDE DIAMETER OF PIPE  
 3. Bd = TRENCH WIDTH = PIPE DIAMETER + 12" MIN. (24" MAX.)

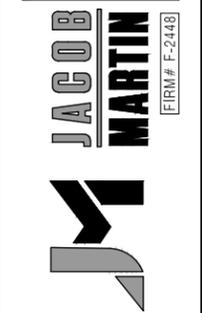
**CLASS "B" EMBEDMENT**  
 [NCTCOG]  
 N.T.S.



**TRENCH WALL PROTECTION**  
 N.T.S.



3465 CUPRY LANE  
 APT 1602, 779606  
 825-695-1070  
 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880  
 1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-365-6375

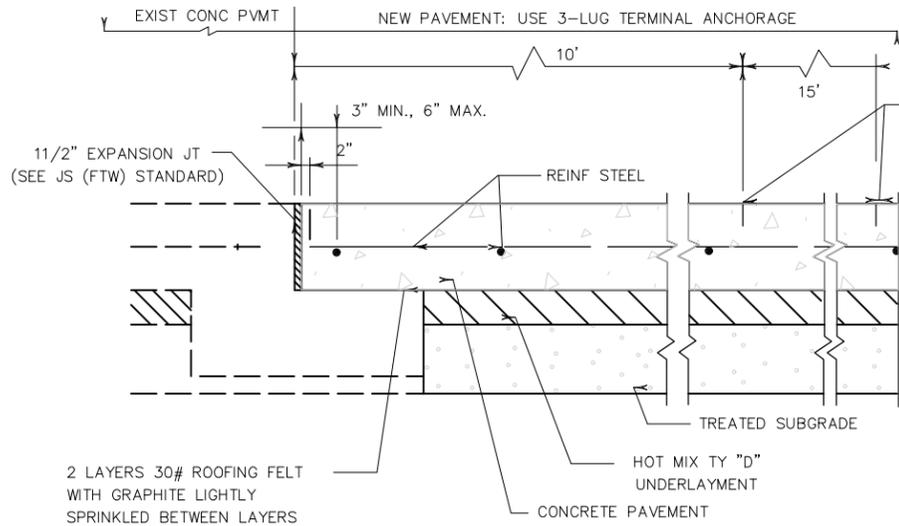


CITY OF JOSHUA, TEXAS  
**VEATCH STREET ROADWAY IMPROVEMENTS**  
 CONSTRUCTION DRAWINGS  
 GENERAL DETAILS

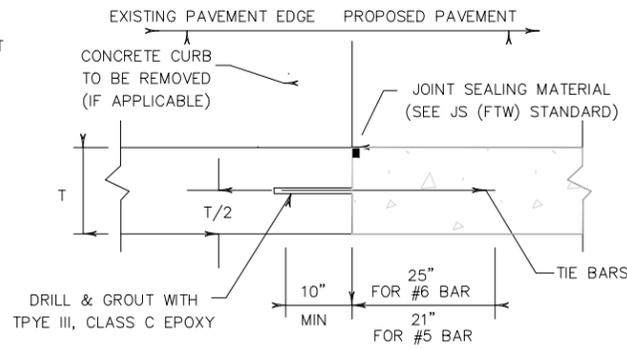
NO.	REVISION	DATE	SCALE	PROJECT #	DESIGNED	C.T.S.	DRAWN	C.T.S.	CHECKED	A.D.T.
				21314						

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.  
 CHECK SCALE & ADJUST ACCORDINGLY.

SHEET 08  
 SEQ. 08 OF 32

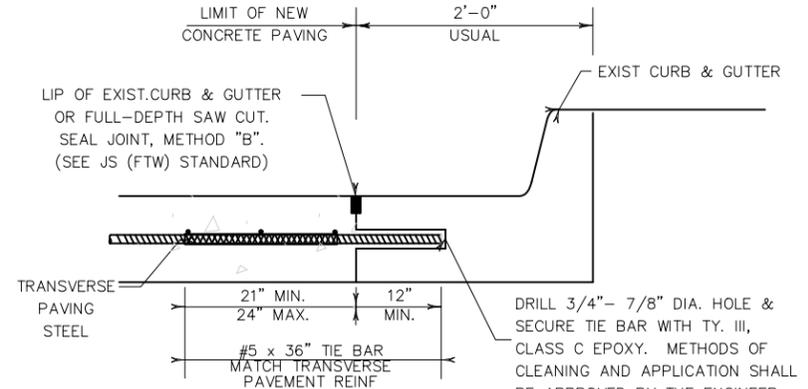


TIE TO EXIST. CONCRETE PAVEMENT  
(TRANSVERSE JOINTS W/EXISTING "SLEEPER" SLAB)  
N.T.S.



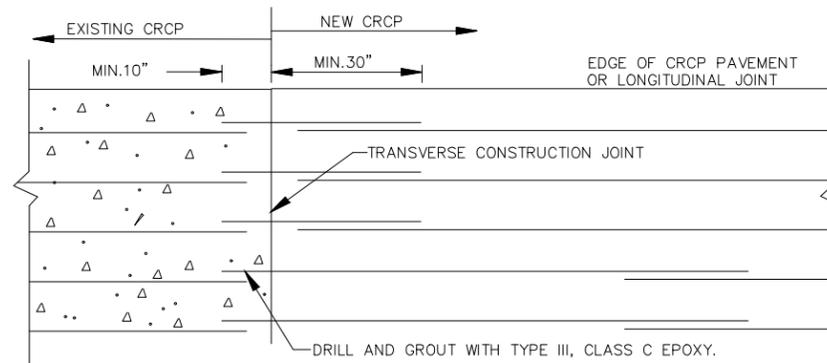
1. BEFORE WIDENING WORK, DEMONSTRATE THAT THE BOND STRENGTH OF THE EPOXY-GROUTED TIE BARS MEETS THE REQUIREMENTS OF PULL-OUT TEST SPECIFIED IN ITEM 361.
2. SPACE TIE BARS AT 24" SPACING. USE #6 TIE BARS FOR 8" AND THICKER SLABS, USE #5 TIE BARS FOR LESS THAN 8" THICK SLABS.

LONGITUDINAL WIDENING JOINT DETAIL  
N.T.S.

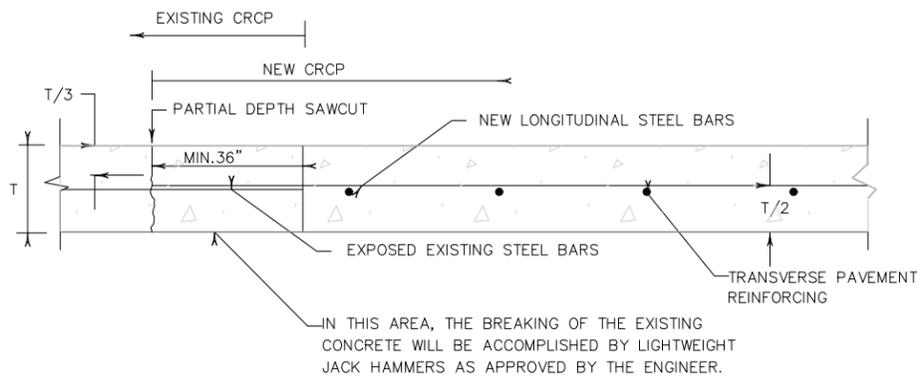


TIE TO EXIST. CONC. CURB & GUTTER  
N.T.S.

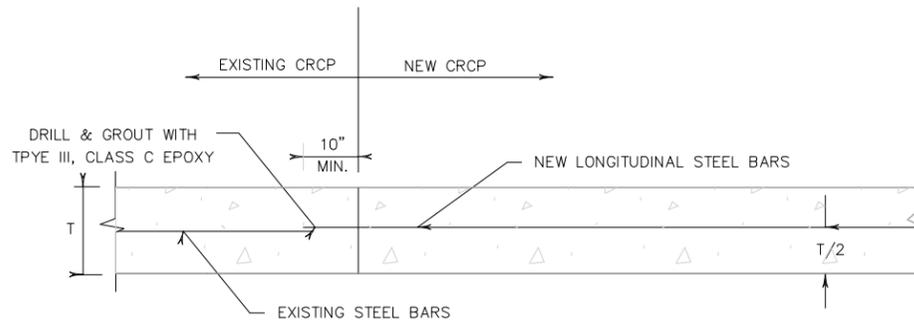
NOTE:  
SAWING OF PAVEMENT AND REMOVAL OF EXISTING CONC. WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE SUBSIDIARY TO THE VARIOUS BID ITEMS.



NOTE:  
TIE BAR SIZE AND SPACING TO MATCH LONGITUDINAL REINFORCING. FOR LONGITUDINAL BAR SIZE AND SPACING, REFER TO CONCRETE PAVEMENT STANDARDS.  
IF, IN THE OPINION OF THE ENGINEER, THE LENGTH OF AREA OF NEW PAVEMENT DOES NOT WARRANT STAGGERED LAPPING AS SHOWN, THIS REQUIREMENT MAY BE WAIVED.



TIED TRANSVERSE CONSTRUCTION JOINT DETAIL  
EXISTING CRCP TO NEW CRCP  
BREAKBACK AND LAP  
N.T.S.



TIED TRANSVERSE CONSTRUCTION JOINT DETAIL  
EXISTING CRCP TO NEW CRCP  
DRILL AND EPOXY  
N.T.S.

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GENERAL NOTES

TIE BARS SHALL BE SECURED INTO THE EXISTING CONCRETE THE MINIMUM LENGTHS SHOWN, USING TY III EPOXY, CLASS "C" AND MUST MEET THE REQUIREMENTS OF THE PULL-OUT TEST SPECIFIED IN ITEM 361.

ALL HOLES FOR TIE BARS OR CONCRETE ANCHORS SHALL BE DRILLED WITH A CORE OR ROTARY DRILL. THE USE OF HAMMER DRILLS WILL NOT BE PERMITTED.

SEE JS (FTW) STANDARD FOR JOINT DETAILS.

SEE CONCRETE PAVEMENT STANDARD FOR ADDITIONAL INFORMATION

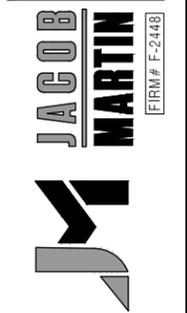
**Texas Department of Transportation** Fort Worth District Standard

### CONCRETE PAVEMENT TIES TO EXISTING PAVEMENT CP-TEP (FTW)

ORIGINAL DRAWING: 05/2019	cp-tep-ftw.dgn	FED. DIV. NO. 6	PROJECT NO.	SHEET NO.
DATE	REVISIONS	STATE	STATE DIST. NO.	COUNTY
05/2019	NEW STANDARD	TEXAS	FTW	
06/2020	ADD LONGITUDINAL AND TRAVERSE JOINTS	CONT.	SECT.	JOB
11/2020	ADD DRILL AND EPOXY TRANSVERSE JOINT DETAIL, REVISED JOINT NOMENCLATURE, ADD REFERENCE TO CONC PAVING STANDARDS			HIGHWAY NO.



3465 CURRY LANE  
APT 1601, 76006  
1508 SANTA FE DR, STE 204  
WEATHERFORD, TX 76086  
817-594-9880



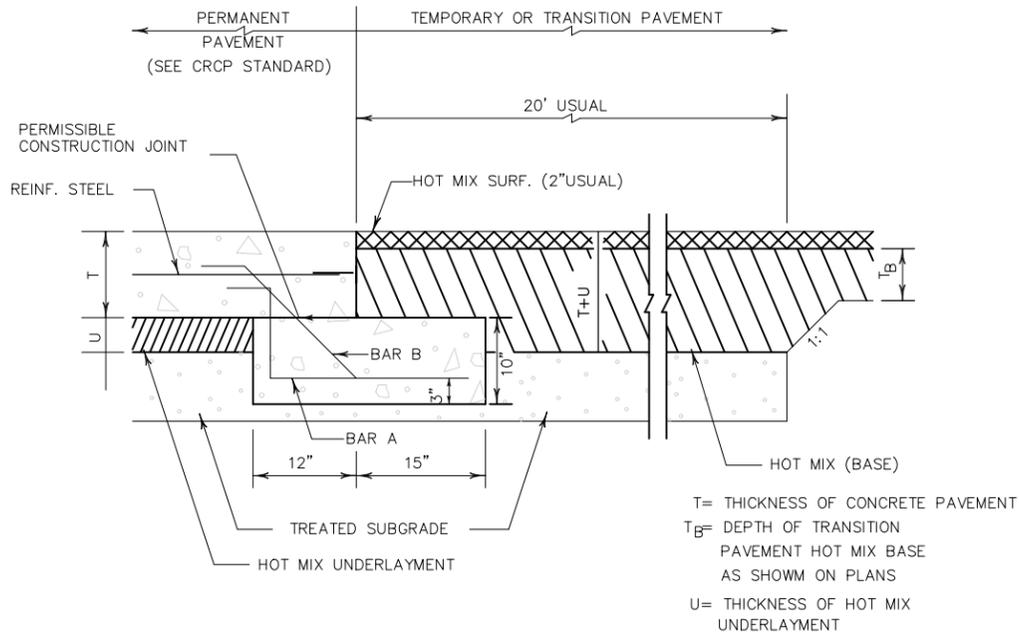
CITY OF JOSHUA, TEXAS  
VEATCH STREET ROADWAY IMPROVEMENTS  
CONSTRUCTION DRAWINGS  
TXDOT STANDARD DETAIL CP-TEP (FTW)

SCALE	PROJECT # 21314	DESIGNED C.T.S.	DRAWN C.T.S.	CHECKED A.D.T.
DATE				
NO.	REVISION	BARS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE & ADJUST ACCORDINGLY.		
SHEET 09				
SEQ. 09 OF 32				

PLOTTED ON: 2/16/2026 9:02 AM  
X:\C\JOSHUA\21314 - VEATCH STREET DRAINAGE IMPROVEMENTS\DRAWING\PLANS\C\_CIVIL\21314\_VCH\_TXDOT\_DETAILS.DWG

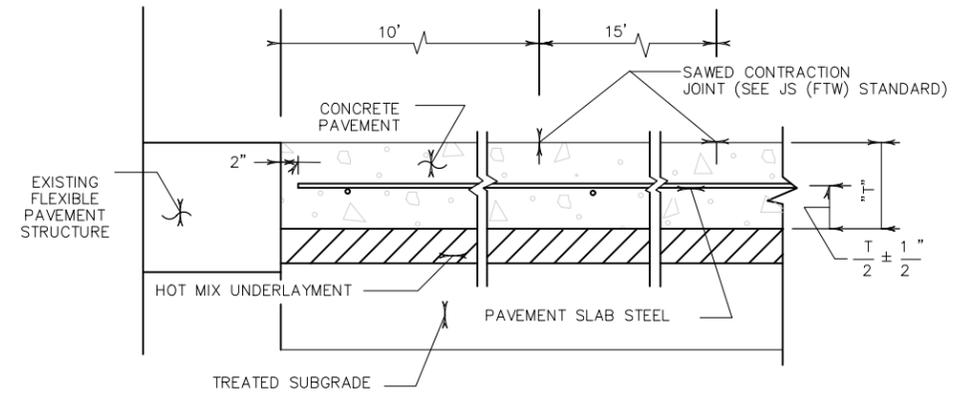
01-15-2026

PLOTTED ON: 2/16/2026 9:02 AM  
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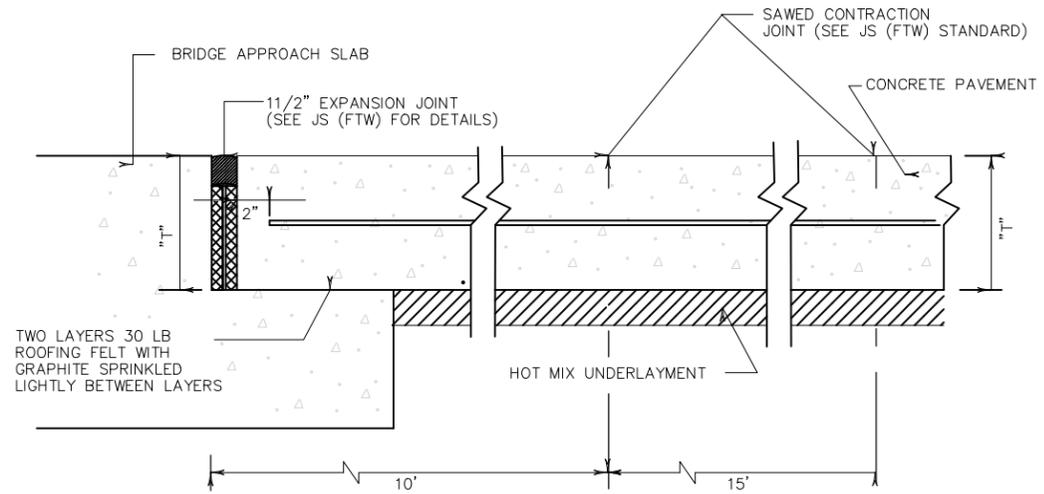


CONCRETE PAVEMENT TERMINUS  
AT HOT MIX TRANSITION OR TEMPORARY PAVEMENT  
N.T.S.

T = THICKNESS OF CONCRETE PAVEMENT  
 $T_B$  = DEPTH OF TRANSITION PAVEMENT HOT MIX BASE AS SHOWN ON PLANS  
 U = THICKNESS OF HOT MIX UNDERLAYMENT

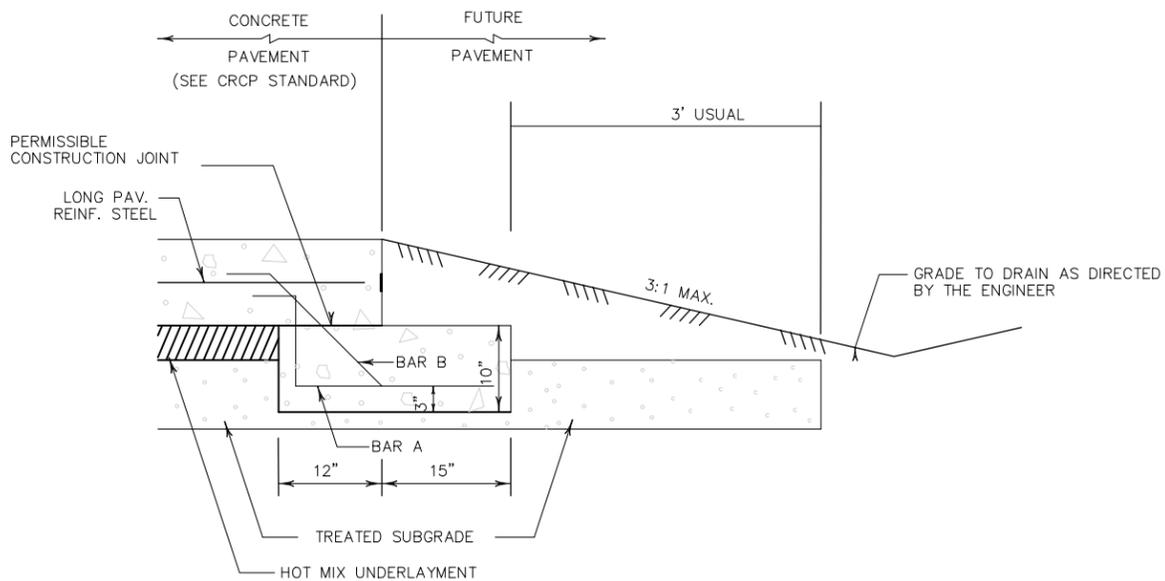


CONCRETE PAVEMENT TERMINUS  
AT FLEXIBLE PAVEMENT  
N.T.S.

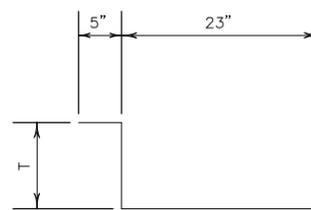


CONCRETE PAVEMENT TERMINUS  
AT BRIDGE APPROACH SLAB  
N.T.S.

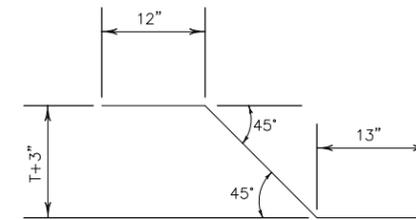
"T" = THICKNESS OF CONCRETE PAVEMENT AND BRIDGE APPROACH SLAB (8" MIN.). THICKNESS TO BE SHOWN ELSEWHERE IN THE PLANS. IF NORMAL PAVEMENT THICKNESS IS LESS THAN 8", 10' ADJACENT TO BRIDGE APPROACH SLAB TO BE 8" THICK, TAPERING TO NORMAL PAVEMENT THICKNESS OVER NEXT 15'. NO ADJUSTMENT IN PAY WILL BE MADE DUE TO INCREASED DEPTH OF CONCRETE PAVEMENT.



CONCRETE PAVEMENT TERMINUS  
W/O HOT MIX TRANSITION OR TEMPORARY PAVEMENT  
N.T.S.



BAR "A" (#5)  
@12" C-C



BAR "B" (#5)  
@12" C-C

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Fort Worth District Standard

## CONCRETE PAVEMENT TERMINUS DETAILS

### CPTD (FTW)

ORIGINAL DRAWING: 05/2019	cptd-ftw.dgn	FED. RD. DIV. NO. 6	PROJECT NO.	SHEET NO.
DATE	REVISIONS	NO. REVISION		
05/2019	REPLACES CP-TD-03(FW)	STATE: TEXAS	STATE DIST. NO.: FTW	COUNTY:
		CONT.	SECT.	JOB
				HIGHWAY NO.

BARS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE & ADJUST ACCORDINGLY.



3485 CUNRY LANE  
 ASHLEIGH, TX 79606  
 825-695-1070  
 1508 SANTA FE DR, STE 204  
 WEAATHERFORD, TX 76086  
 817-594-9880  
 1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-365-6375

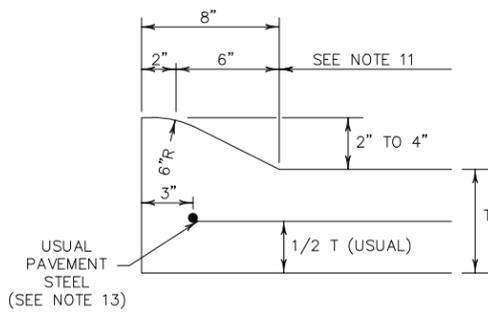


CITY OF JOSHUA, TEXAS  
**VEATCH STREET ROADWAY IMPROVEMENTS**  
 CONSTRUCTION DRAWINGS  
**TXDOT STANDARD DETAIL CPTD (FTW)**

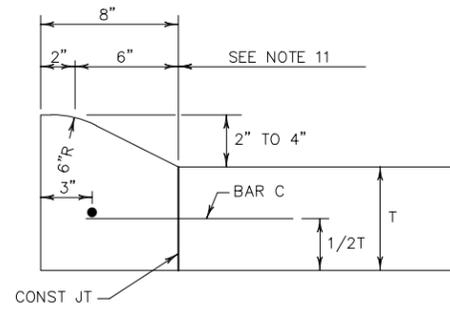
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DATE				
NO.				
SHEET	10			
SEQ.	10 OF 32			

01-15-2026

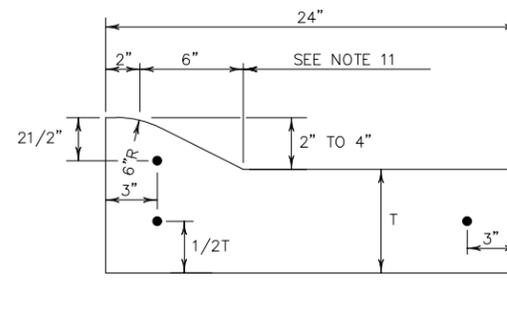
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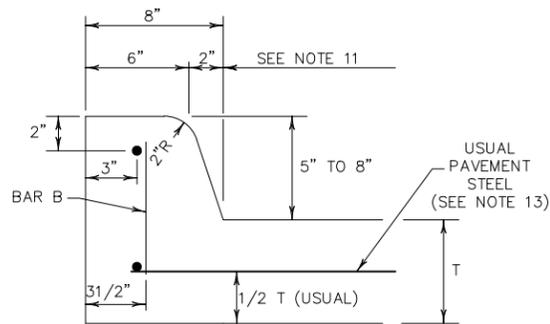
TYPE I CURB (MONOLITHIC)  
2" - 4" HEIGHT



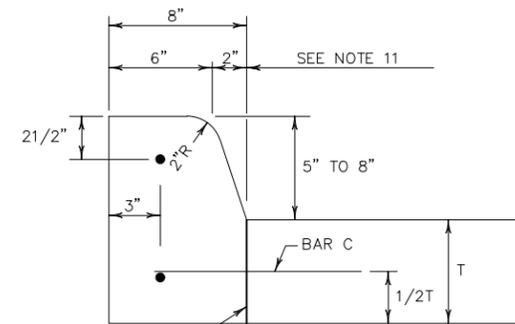
TYPE I CURB  
2" - 4" HEIGHT  
DOWELED VERTICAL JOINT



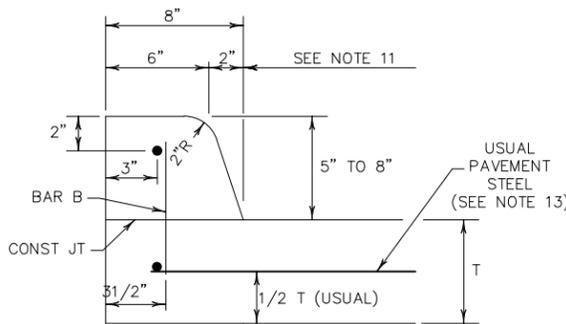
TYPE I CURB AND GUTTER  
2" - 4" HEIGHT



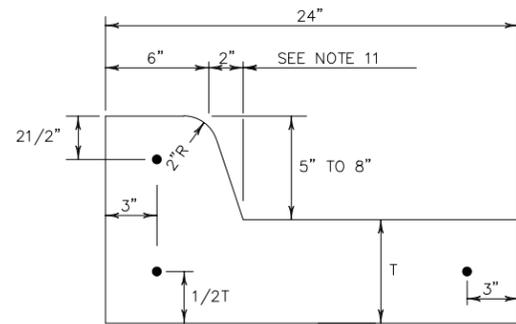
TYPE II CURB (MONOLITHIC)  
5" - 8" HEIGHT



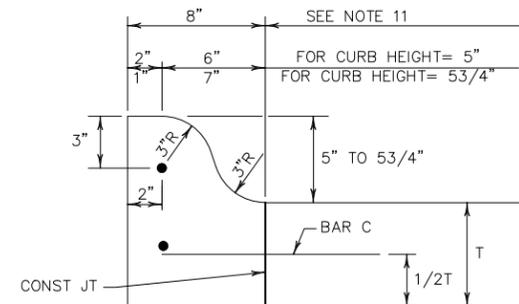
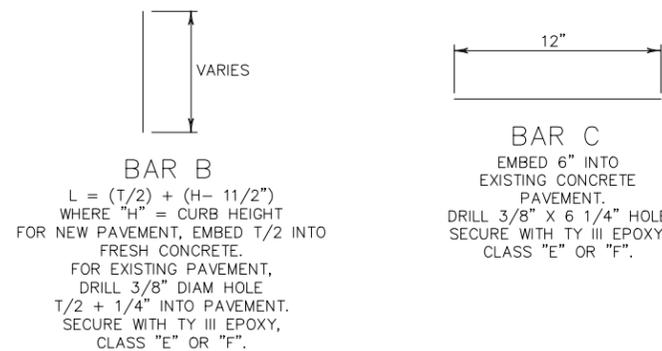
TYPE II CURB  
5" - 8" HEIGHT  
DOWELED VERTICAL JOINT



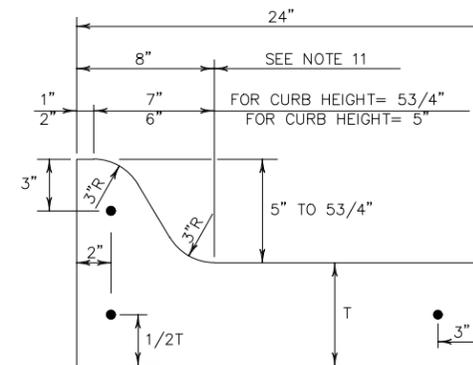
TYPE II CURB  
5" - 8" HEIGHT  
DOWELED HORIZONTAL JOINT



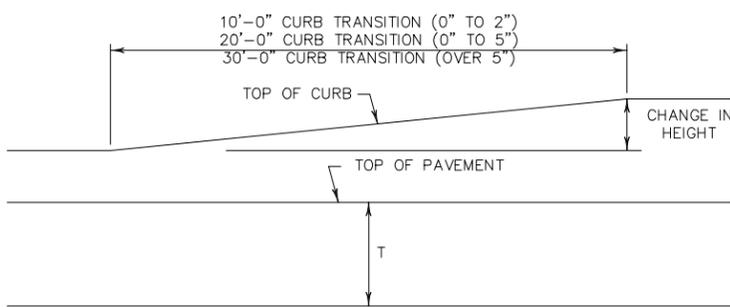
TYPE II CURB AND GUTTER  
5" - 8" HEIGHT



TYPE IIA CURB  
5" - 5 3/4" HEIGHT

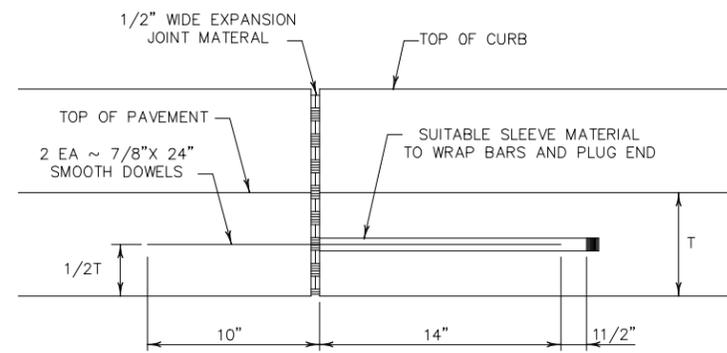


TYPE IIA CURB AND GUTTER  
5" - 5 3/4" HEIGHT



CURB TRANSITION

NOTE: TO BE PAID FOR AS HIGHEST CURB



EXPANSION JOINT DETAIL

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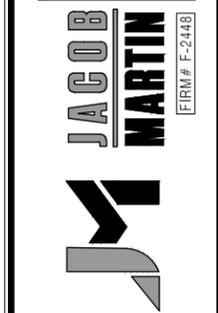
GENERAL NOTES

- ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ITEM 529, "CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER".
- ALL CONCRETE SHALL BE CLASS "A".
- ALL REINFORCING BARS SHALL BE #4, UNLESS OTHERWISE SHOWN.
- CURB HEIGHT SHALL BE AS SHOWN ON TYPICAL SECTIONS OR PLAN-PROFILE SHEETS.
- ROUND EXPOSED SHARP EDGES WITH A ROUNDING TOOL, TO A MINIMUM RADIUS OF 1/4".
- ALL EXISTING CURBS AND DRIVEWAYS TO BE REMOVED SHALL BE SAW CUT FULL DEPTH OR REMOVED AT EXISTING JOINTS.
- WHERE CONCRETE CURB IS PLACED ON EXISTING CONCRETE PAVEMENT, THE PAVEMENT SHALL BE DRILLED AND THE REINFORCING BARS GROUTED OR EPOXIED IN PLACE.
- EXPANSION AND CONTRACTION JOINTS SHALL BE CONSTRUCTED TO MATCH PAVEMENT JOINTS IN ALL CURBS OR CURB AND GUTTER ADJACENT TO JOINTED CONCRETE PAVEMENT. WHERE PLACEMENT OF CURB OR CURB AND GUTTER IS NOT ADJACENT TO CONCRETE PAVEMENT, EXPANSION JOINTS SHALL BE PROVIDED AT STRUCTURES, CURB RETURNS AT STREETS OR DRIVEWAYS, AND AT LOCATIONS DIRECTED BY THE ENGINEER.
- VERTICAL AND HORIZONTAL DOWEL BARS AND TRANSVERSE REINFORCING BARS SHALL BE PLACED AT 4' C-C.
- DIMENSION "T" SHOWN IS THE THICKNESS OF ADJACENT CONCRETE PAVEMENT, OR, WHEN CURB IS INSTALLED ADJACENT TO FLEXIBLE PAVEMENT, "T" IS 6" MINIMUM, 8" MAXIMUM.
- USUAL PROFILE GRADE LINE. REFER TO TYPICAL SECTIONS AND PLAN-PROFILE SHEETS FOR EXACT LOCATIONS.
- A SEALED, 1/2" EXPANSION JOINT SHALL BE PROVIDED WHERE CURB AND GUTTER IS ADJACENT TO SIDEWALK OR RIPRAP.
- LONGITUDINAL AND TRANSVERSE PAVEMENT STEEL SHALL BE PLACED IN ACCORDANCE WITH PAVEMENT DETAILS SHOWN ELSEWHERE IN THE PLANS.

		<b>Fort Worth District Standard</b>	
<h2>CONCRETE CURB AND GUTTER DETAILS</h2> <h3>CCCG (FTW)</h3>			
ORIGINAL DRAWING: 05/2019	cccg-ftw.dgn	FED. RD. DIV. NO. 6	PROJECT NO.
DATE	REVISIONS	STATE	STATE DIST. NO.
05/2019	REPLACES CC-CG(FTW)	TEXAS	FTW
		CONT.	SECT.
		JOB	HIGHWAY NO.



3465 CURRY LANE  
 APT 106, 79606  
 825-695-1070  
 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880  
 1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-365-6375



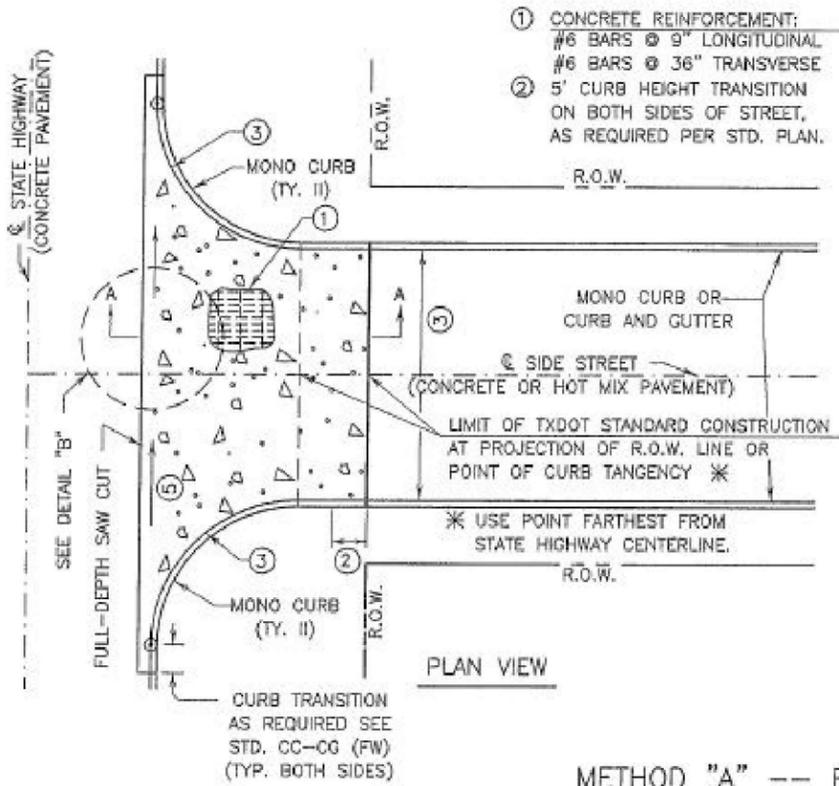
CITY OF JOSHUA, TEXAS  
**VEATCH STREET ROADWAY IMPROVEMENTS**  
 CONSTRUCTION DRAWINGS  
**TXDOT STANDARD DETAIL CCCG (FTW)**

SCALE	PROJECT # 21314	DESIGNED C.T.S.	DRAWN C.T.S.	CHECKED A.D.T.
DATE				
NO.	REVISION	BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE & ADJUST ACCORDINGLY.		
SHEET	11			
SEQ.	11 OF 32			

01-15-2026



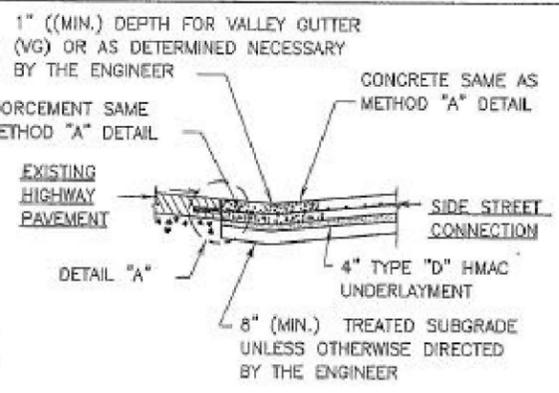
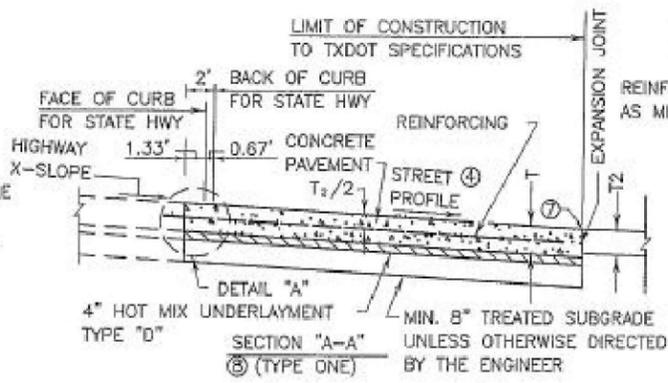
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**METHOD "A" -- FULL CONCRETE STREET CONNECTION DETAILS**

TIE BAR SPACING	
PAVEMENT THICKNESS	BAR SPACING
8"	9
9"	8
10"	7
11"	6.5
≥12"	6

\*\* TIE BARS SHALL BE INSERTED INTO THE EXISTING CONCRETE THE MINIMUM LENGTHS SHOWN, AND MUST MEET THE REQUIREMENTS OF THE PULL-OUT TEST SPECIFIED IN ITEM 361, WHEN REQUIRED BY THE ENGINEER.



**DETAIL "B" -- CONCRETE PAVEMENT VALLEY GUTTER FOR SIDE STREET CONNECTION (TYPE TWO) @**

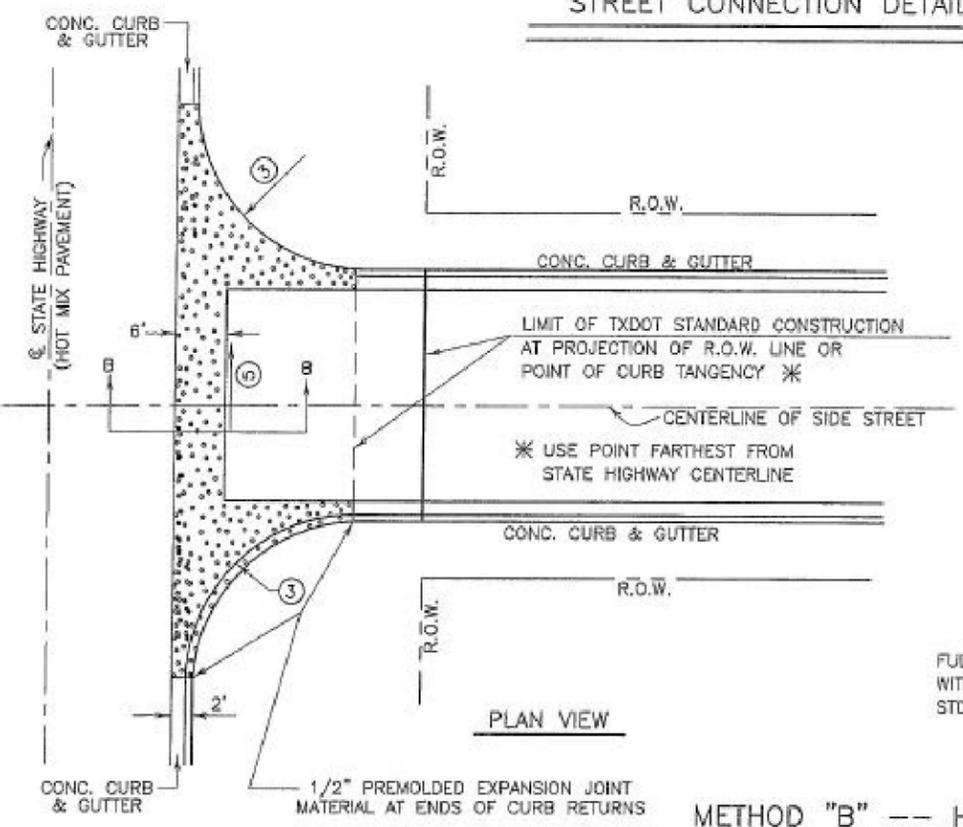
**LEGEND OF CONCRETE THICKNESS**  
 T = THICKNESS OF EXIST. HIGHWAY PAVEMENT (8" MIN)  
 T2 = THICKNESS OF STREET PAVEMENT - SHOWN ELSEWHERE

**REQUIRED SUBGRADE TREATMENT ON STATE RIGHT OF WAY**

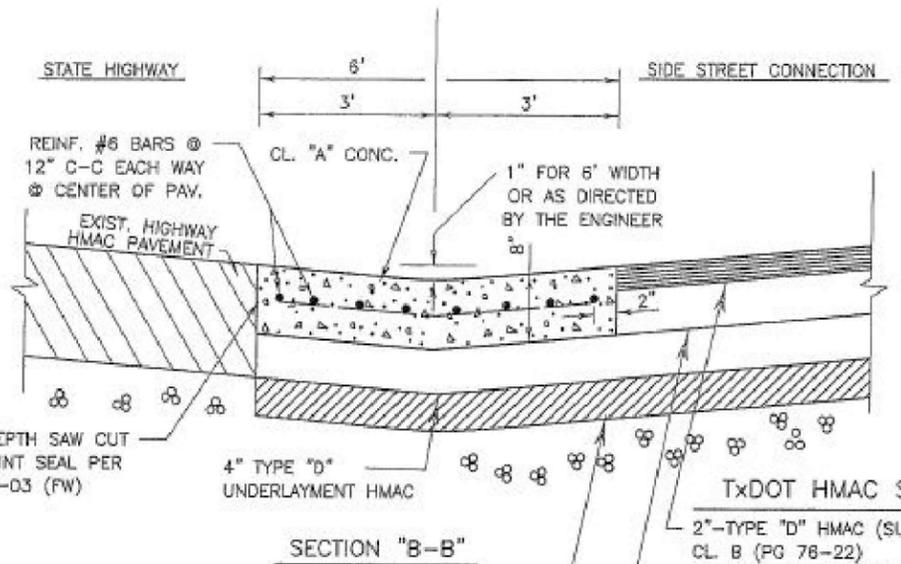
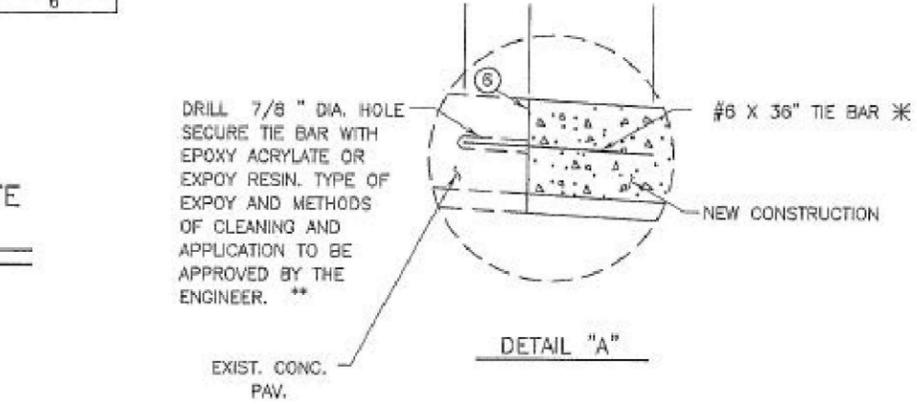
SUBGRADE P.I.	TREATMENT METHOD
>15	LIME
<15	CEMENT

**TREATMENT METHODS DEFINED:**  
 >>> LIME @ 150/CY. (TY. "A") (APPLY LIME AS SLURRY)  
 >>> CEMENT @ 75LBS/CY.

- GENERAL NOTES:**
- CONCRETE PAVING SHALL MEET THE REQUIREMENTS OF ITEM 366 OR ITEM 421, CLASS "A" CONCRETE.
  - CURB HEIGHT TO MATCH TXDOT FACILITY.
  - FOR SIDEWALK DETAILS IN STATE R.O.W., SEE CSDD (FW).
  - FOR SIDEWALK RAMP DETAILS, SEE STD. PED-XX.



**METHOD "B" -- HMAC W/ VALLEY GUTTER STREET CONNECTION DETAILS**



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Texas Department of Transportation  
 Fort Worth District

**PERMIT CONSTRUCTION STREET CONNECTION DETAILS**

ORIG. DRAW	AUG 2003	STATE	STATE DISTRICT	COUNTY
REVISIONS:		TEXAS	FTW	
		CONF.	SECT.	HIGHWAY NO. SHEET

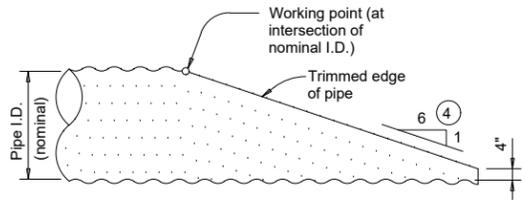
NO. REVISION  
 SHEET CORRECTIONS  
 DATE 02/13/26  
 SCALE  
 PROJECT # 21314  
 DESIGNED C.T.S.  
 DRAWN C.T.S.  
 CHECKED A.D.T.  
 SHEET 13  
 SEQ. 13 OF 32

CITY OF JOSHUA, TEXAS  
 VEATCH STREET ROADWAY IMPROVEMENTS  
 CONSTRUCTION DRAWINGS  
 TXDOT STREET CONNECTION DETAIL

3465 CUPRY LANE  
 ASHLEIGH, TX 79606  
 825-695-1070  
**JACOB MARTIN**  
 LICENSED PROFESSIONAL ENGINEER  
 FIRM # F-2148  
 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880  
 1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-368-6375

TEXAS PROFESSIONAL ENGINEER  
 DEREK TURNER  
 LICENSE # 6846  
 02-13-2026

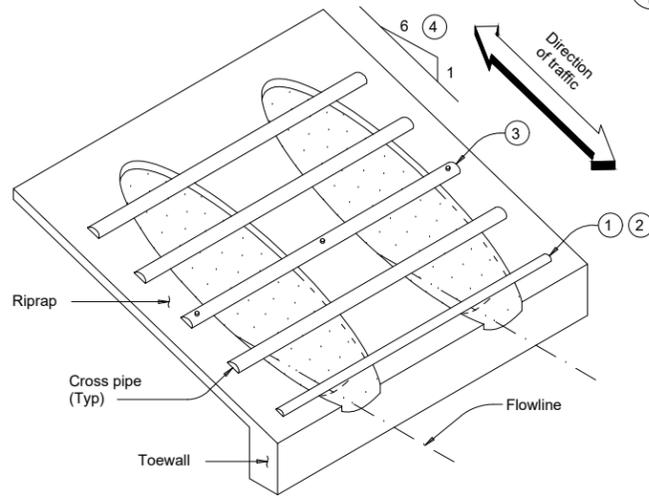
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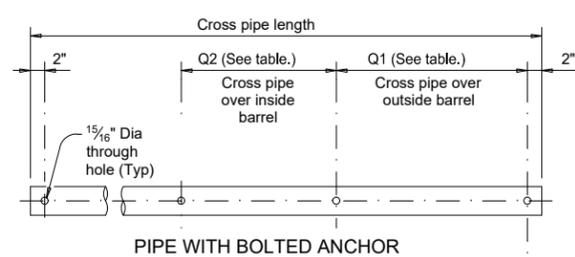
NOTE: All cross pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

### SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

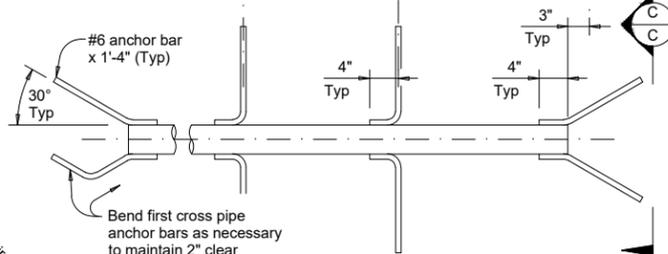
(Showing corrugated metal pipe (CMP) culvert. Details at reinforced concrete pipe (RCP) culvert are similar.)



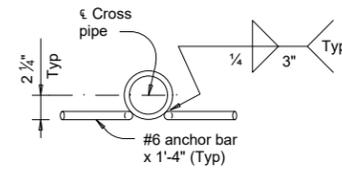
### ISOMETRIC VIEW OF TYPICAL INSTALLATION



#### PIPE WITH BOLTED ANCHOR

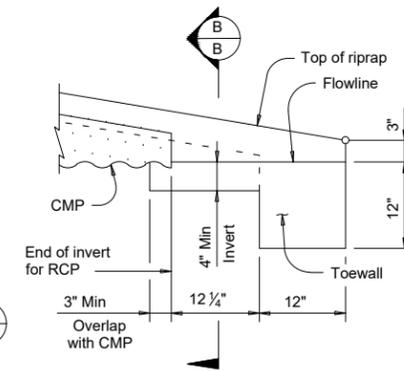


#### PIPE WITH ANCHOR BARS



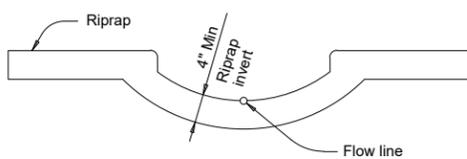
#### SECTION C-C

### CROSS PIPE DETAILS



#### DETAIL "A"

(Showing invert with corrugated metal pipe (CMP) culvert. Reinforced concrete pipe (RCP) culvert details are similar. Cross pipes not shown for clarity.)



#### SECTION B-B

(Cross pipes not shown for clarity.)

### CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES

Nominal Culvert I.D.	Conc Riprap (CY) (6)	Pipe Culvert Spa ~ G	Single Barrel ~ Q1	Multi-Barrel ~ Q1	Q2	Conditions for Use of Cross Pipes	Cross Pipe Sizes
12"	0.6	0' - 9"	N/A	2' - 1"	1' - 9"	3 or more pipe culverts	3" Std (3.500" O.D.)
15"	0.7	0' - 11"	N/A	2' - 5"	2' - 2"		
18"	0.8	1' - 2"	N/A	2' - 10"	2' - 8"		
21"	0.9	1' - 4"	N/A	3' - 2"	3' - 1"		
24"	0.9	1' - 7"	N/A	3' - 6"	3' - 7"	3 or more pipe culverts	3 1/2" Std (4.000" O.D.)
27"	1.0	1' - 8"	N/A	3' - 10"	3' - 11"		
30"	1.1	1' - 10"	N/A	4' - 2"	4' - 4"		
33"	1.2	1' - 11"	4' - 2"	4' - 5"	4' - 8"	2 or more pipe culverts	3 1/2" Std (4.000" O.D.)
36"	1.3	2' - 1"	4' - 5"	4' - 9"	5' - 1"	All pipe culverts	
42"	1.5	2' - 4"	4' - 11"	5' - 5"	5' - 10"	All pipe culverts	4" Std (4.500" O.D.)
48"	1.7	2' - 7"	5' - 5"	6' - 0"	6' - 7"		
54"	2.0	3' - 0"	5' - 11"	6' - 9"	7' - 6"	All pipe culverts	5" Std (5.563" O.D.)
60"	2.2	3' - 3"	6' - 5"	7' - 4"	8' - 3"		
66"	2.4	3' - 3"	6' - 11"	7' - 10"	8' - 9"		
72"	2.7	3' - 4"	7' - 5"	8' - 5"	9' - 4"		

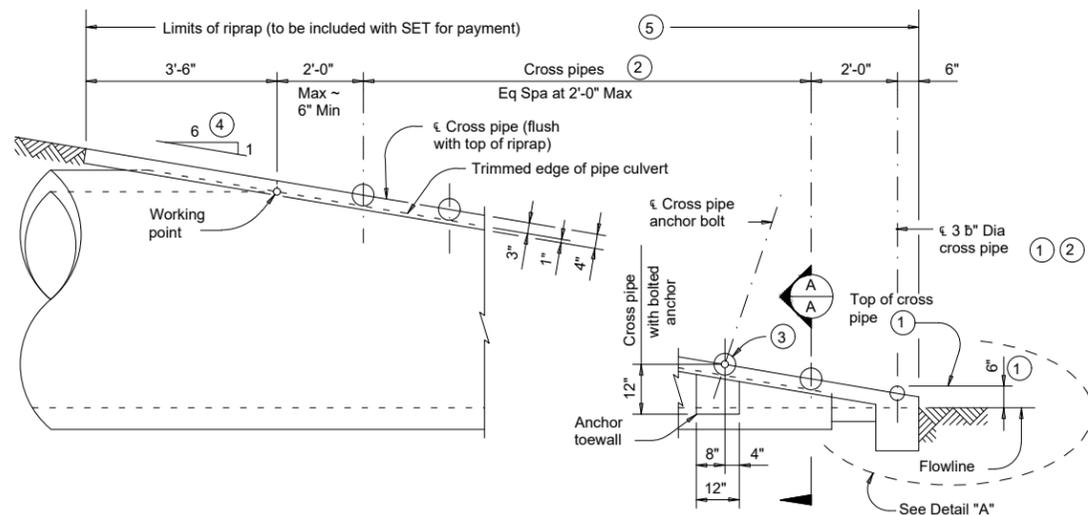
- The proper installation of the first cross pipe is critical for vehicle safety. Place the top of the first cross pipe no more than 6" above the flowline.
- Provide cross pipes, except the first bottom pipe, of the size shown in the table. Provide a 3 #2" standard pipe (4" O.D.) for the first bottom pipe.
- Install the third cross pipe from the bottom of the culvert using a bolted connection. Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, install all other cross pipes using the bolted connection details.
- Match cross slope as shown elsewhere in the plans. Cross slope of 6:1 or flatter is required for vehicle safety.
- Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".
- Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for contractor's information only.

#### MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise. Provide cross pipes that meet the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 (Gr B), or API 5LX52. Provide ASTM A307 bolts and nuts. Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

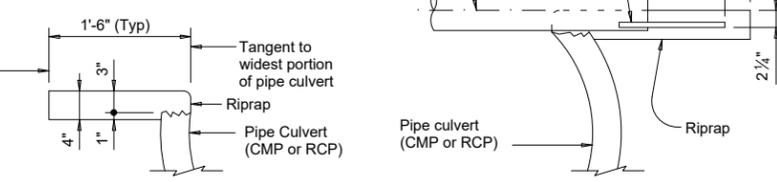
#### GENERAL NOTES:

Cross pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981. Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes. Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap". Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

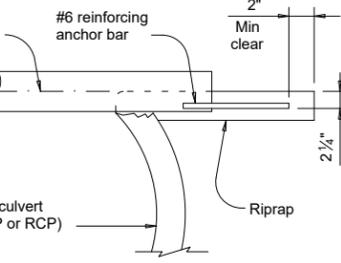


### SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

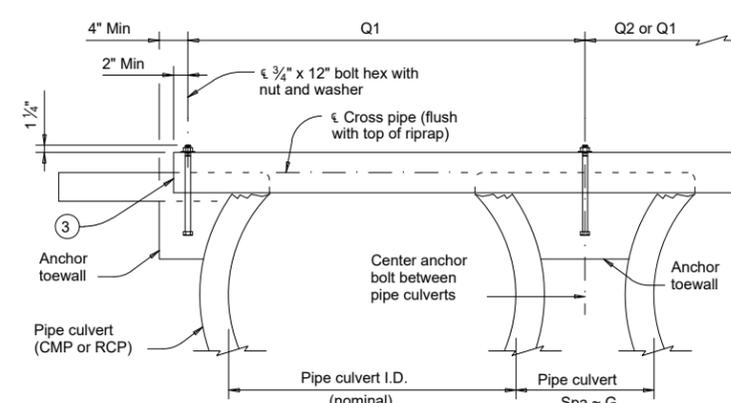
(Showing reinforced concrete pipe (RCP) culvert. Details at corrugated metal pipe (CMP) culvert are similar.)



#### SHOWING TYPICAL PIPE CULVERT AND RIPRAP



#### SHOWING CROSS PIPE WITH ANCHOR BAR



#### SHOWING CROSS PIPE WITH BOLTED ANCHOR

#### SECTION A-A

**SAFETY END TREATMENT**  
 FOR 12" DIA TO 72" DIA  
 PIPE CULVERTS  
 TYPE II ~ PARALLEL DRAINAGE

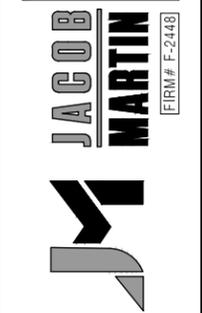
**SETP-PD**

Bridge Division Standard

FILE: setppdse-20.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
NO. REVISION	SHEET CORRECTIONS			
NO.	DIST	COUNTY	SHEET NO.	



8485 CULRY LANE  
 APT 1605-1070  
 325-695-1070  
 1508 SANTA FE DR, STE 204  
 WEAHERFORD, TX 76066  
 817-594-9880  
 1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-368-6375



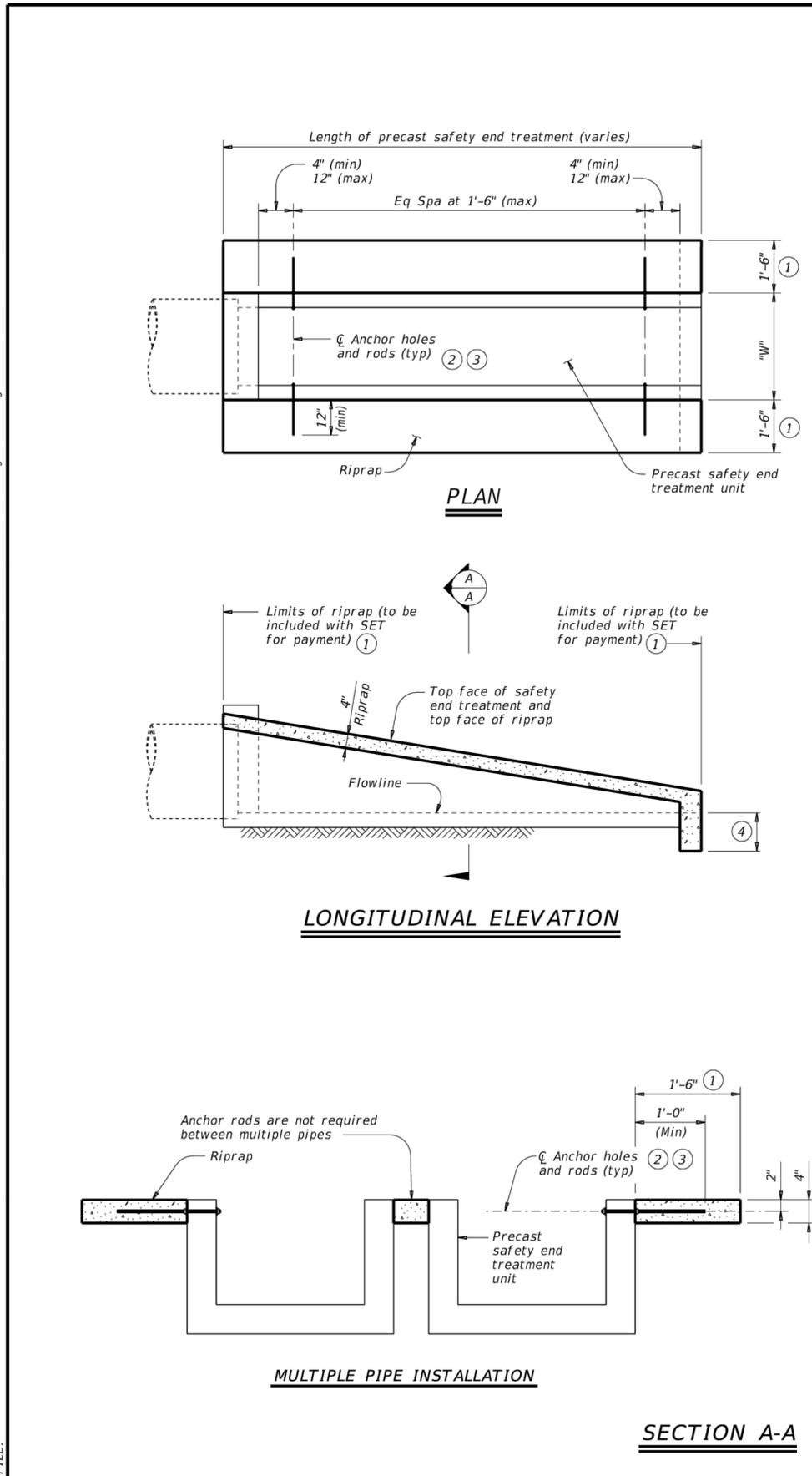
CITY OF JOSHUA, TEXAS  
 VEATCH STREET ROADWAY IMPROVEMENTS  
 CONSTRUCTION DRAWINGS  
 TXDOT SAFETY END TREATMENT DETAIL

SCALE	PROJECT # 21314	DESIGNED C.T.S.	DRAWN C.T.S.	CHECKED A.D.T.
DATE 02/13/26				
NO. REVISION	SHEET CORRECTIONS			
NO.	DIST	COUNTY	SHEET NO.	
SHEET	14			
SEQ.	14 OF 32			

02-13-2026

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DATE:  
 FILE:



ESTIMATED CONCRETE RIPRAP QUANTITIES (CY) (5)

Nominal Culvert (Pipe) I.D.	PSET-SC and PSET-SP Standards			PSET-RC and PSET-RP Standards				
	Unit Width "W"	Side Slope			Unit Width "W"	Side Slope		
		3:1	4:1	6:1		3:1	4:1	6:1
12"	23.0"	0.1	0.2	0.2	16.0"	0.1	0.1	0.2
15"	26.5"	0.2	0.2	0.3	19.5"	0.1	0.2	0.2
18"	30.0"	0.2	0.2	0.3	23.0"	0.2	0.2	0.3
24"	37.0"	0.3	0.3	0.5	30.0"	0.2	0.3	0.4
30"	44.5"	0.3	0.4	0.6	37.0"	0.3	0.3	0.5
36"	51.5"	0.4	0.5	0.7	44.0"	0.3	0.4	0.6
42"	58.5"	0.5	0.6	0.8	51.0"	0.4	0.5	0.7

- Riprap placed beyond the limits shown will be paid as concrete riprap in accordance with Item 432, "Riprap". When riprap is cast integrally with the precast safety end treatment, this dimension is 1'-0" minimum.
- 1#2" Dia ASTM A307 Gr A threaded anchor rod with 2 nuts and 2 washers. Galvanize all components in accordance with Item 445, "Galvanizing". Repair galvanizing that is damaged during transport or construction in accordance with the specifications.
- 3#4" through holes in walls of safety end treatment for riprap anchor rods may be drilled with rotary (coring or masonry) type drilling equipment or may be formed. Do not use percussive (star) type drilling equipment. If holes are drilled, patch spalls in the inside face of the wall exceeding 1#2" from the holes.
- Provide riprap toe wall when dimension is shown elsewhere in the plans or when field conditions require a toe wall.
- Quantities shown are for one end of one reinforced concrete pipe culvert. For multiple pipe culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only. Quantities are based on the minimum unit lengths shown on the Precast Safety End Treatment (SET) standard sheets.

**MATERIAL NOTES:**

Provide Class "B" riprap in accordance with Item 432, "Riprap". Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise. The anchor rods shown are always required.

**GENERAL NOTES:**

Precast safety end treatment for reinforced concrete pipe may be used for TYPE II end treatment as specified in Item 467, "Safety End Treatment". Refer to PSET-SC or PSET-SP standard sheets for details of square safety end treatments not shown. Refer to PSET-RC or PSET-RP standard sheets for details of round safety end treatments not shown. For precast units with integrally cast riprap, substitute reinforcing steel in the amount of 0.26 in./ft. minimum for the threaded anchor rods shown. When requested, submit sealed engineering drawings for approval prior to construction. Shop drawings will not be required. Note that a proprietary precast unit with integral riprap is available from L&R Precast Concrete Works, Inc. (956) 583-6293 or www.lrpccast.com. Payment for riprap and toewalls is included in the price bid for each safety end treatment.

These riprap details are only applicable when notes that require placement of riprap with precast safety end treatments are shown elsewhere in the plans.

Precast units with integrally cast riprap are permitted unless noted otherwise on the plans.

**Texas Department of Transportation**  
 Bridge Division Standard

**PRECAST SAFETY END TREATMENT TYPE II RIPRAP DETAILS**  
 PSET-RR

FILE: psetrrse-20.dgn    DN: GAF    CK: TXDOT    DW: JRP    CK: GAF  
 ©TXDOT February 2020    CONT    SECT    JOB    HIGHWAY

NO. REVISION    SHEET CORRECTIONS    DATE    SCALE    PROJECT # 21314    DESIGNED C.T.S.    DRAWN C.T.S.    CHECKED A.D.T.

REVISIONS    DIST    COUNTY    SHEET NO.

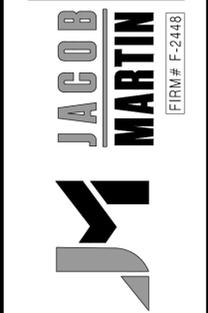
BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE & ADJUST ACCORDINGLY.



3465 CURRY LANE  
 ADDLE, TX 79006  
 828-685-1070

1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880

1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-365-6375

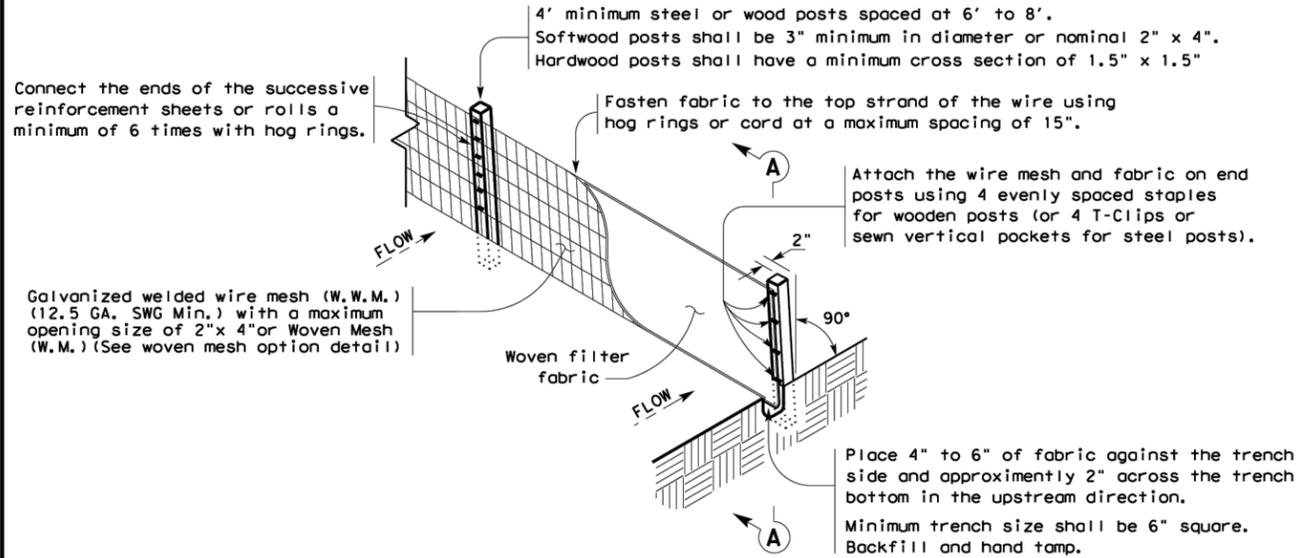


CITY OF JOSHUA, TEXAS

VEATCH STREET ROADWAY IMPROVEMENTS

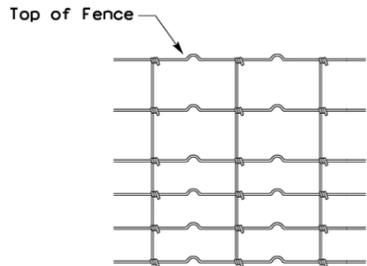
CONSTRUCTION DRAWINGS

TXDOT PRECAST SET RIPRAP DETAIL



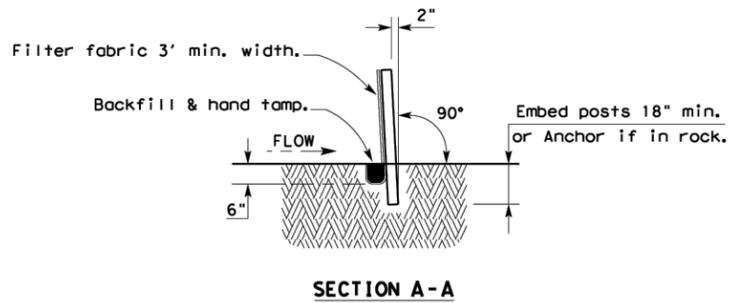
**TEMPORARY SEDIMENT CONTROL FENCE**

SCF



**HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL**

Galvanized hinge joint knot woven mesh (12.5 GA. SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.



**SEDIMENT CONTROL FENCE USAGE GUIDELINES**

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT<sup>2</sup>. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

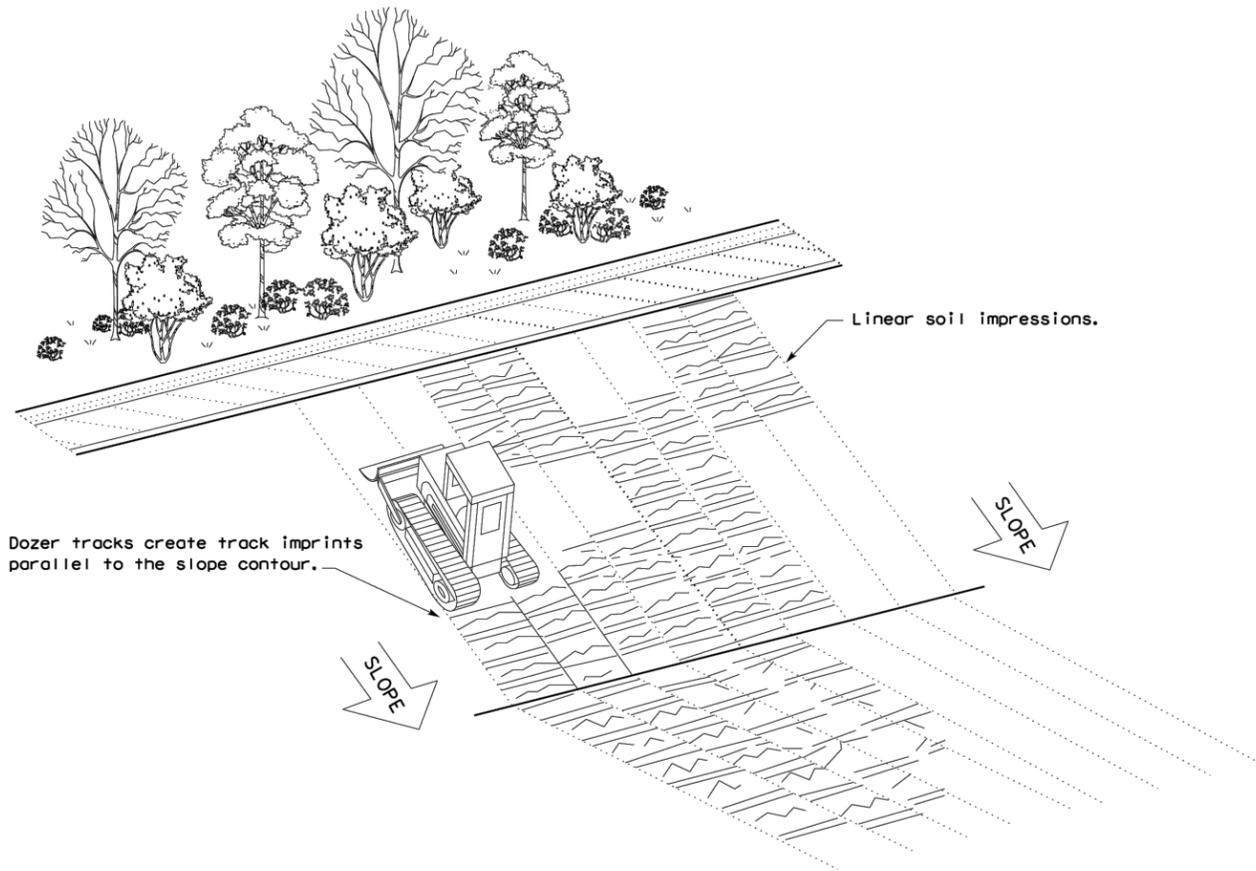
**LEGEND**

Sediment Control Fence

SCF

**GENERAL NOTES**

- Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
- Perform vertical tracking on slopes to temporarily stabilize soil.
- Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
- Do not exceed 12" between track impressions.
- Install continuous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.

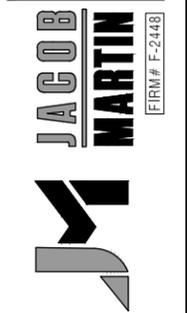


**VERTICAL TRACKING**

		Design Division Standard	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE &amp; VERTICAL TRACKING EC(1)-16</b>			
FILE: ec116	DN: TXDOT	CK: KM	DW: VP
© TXDOT: JULY 2016	CONT	SECT	JOB
REVISIONS	DIST	COUNTY	SHEET NO.



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 APT 1606, 779606  
 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880

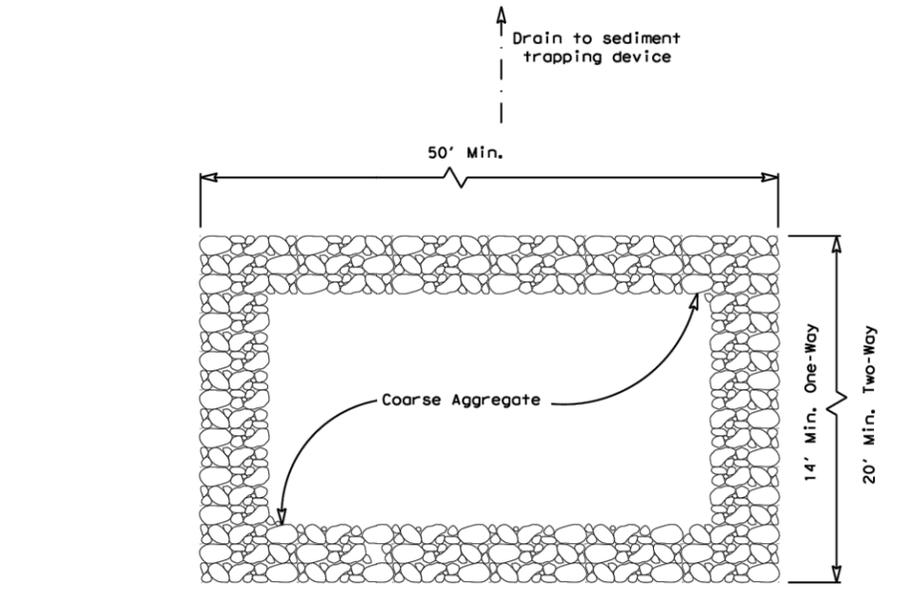


CITY OF JOSHUA, TEXAS  
**VEATCH STREET ROADWAY IMPROVEMENTS**  
 CONSTRUCTION DRAWINGS  
**TXDOT EROSION CONTROL EC(1)-16**

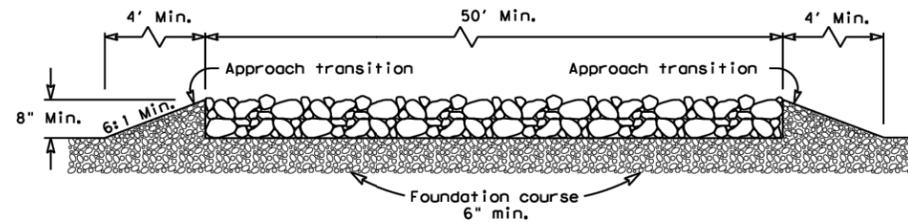
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1	SHEET CORRECTIONS	02/13/26		21314						

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DATE: \$DATES\$  
 FILE: \$FILES\$



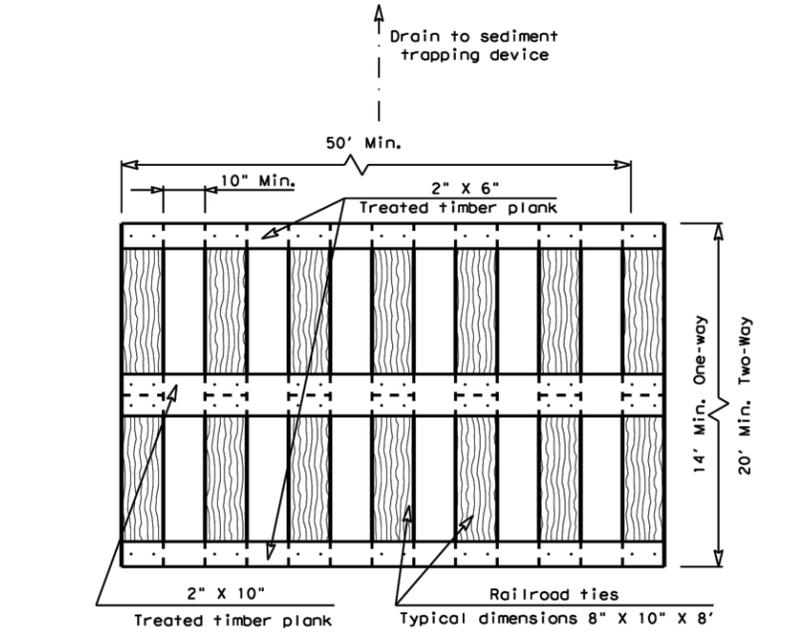
PLAN VIEW



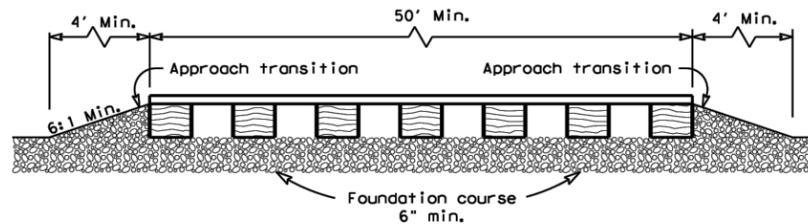
ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 1)  
ROCK CONSTRUCTION (LONG TERM)

- GENERAL NOTES (TYPE 1)**
- The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
  - The coarse aggregate should be open graded with a size of 4" to 8".
  - The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
  - The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materials approved by the Engineer.
  - The construction exit shall be graded to allow drainage to a sediment trapping device.
  - The guidelines shown hereon are suggestions only and may be modified by the Engineer.
  - Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



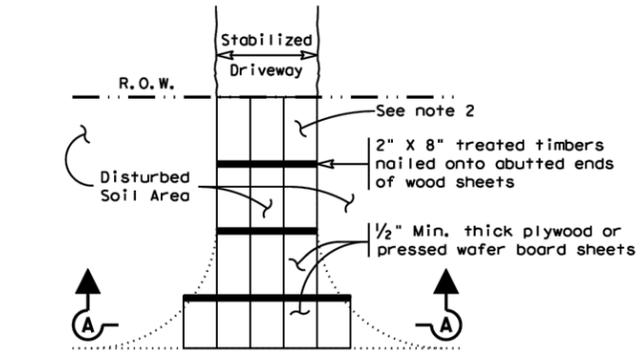
PLAN VIEW



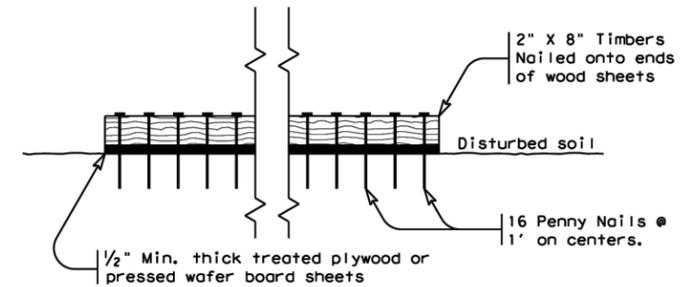
ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 2)  
TIMBER CONSTRUCTION (LONG TERM)

- GENERAL NOTES (TYPE 2)**
- The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
  - The treated timber planks shall be attached to the railroad ties with 1/2" x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
  - The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
  - The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
  - The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
  - The construction exit should be graded to allow drainage to a sediment trapping device.
  - The guidelines shown hereon are suggestions only and may be modified by the Engineer.
  - Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW



SECTION A-A  
CONSTRUCTION EXIT (TYPE 3)  
SHORT TERM

- GENERAL NOTES (TYPE 3)**
- The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
  - The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
  - The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
  - The guidelines shown hereon are suggestions only and may be modified by the Engineer.

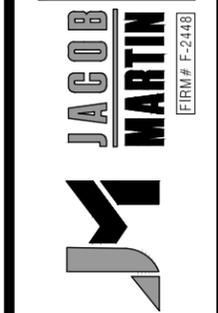
Design Division Standard

TEMPORARY EROSION,  
 SEDIMENT AND WATER  
 POLLUTION CONTROL MEASURES  
 CONSTRUCTION EXITS  
 EC(3)-16

FILE: ec316	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	\$CS\$	\$SS\$	\$JS\$	\$HWYS\$
NO. REVISION	DIST	COUNTY	SHEET NO.	
1	\$DST\$	\$CTYS\$	\$EC(3A-1	

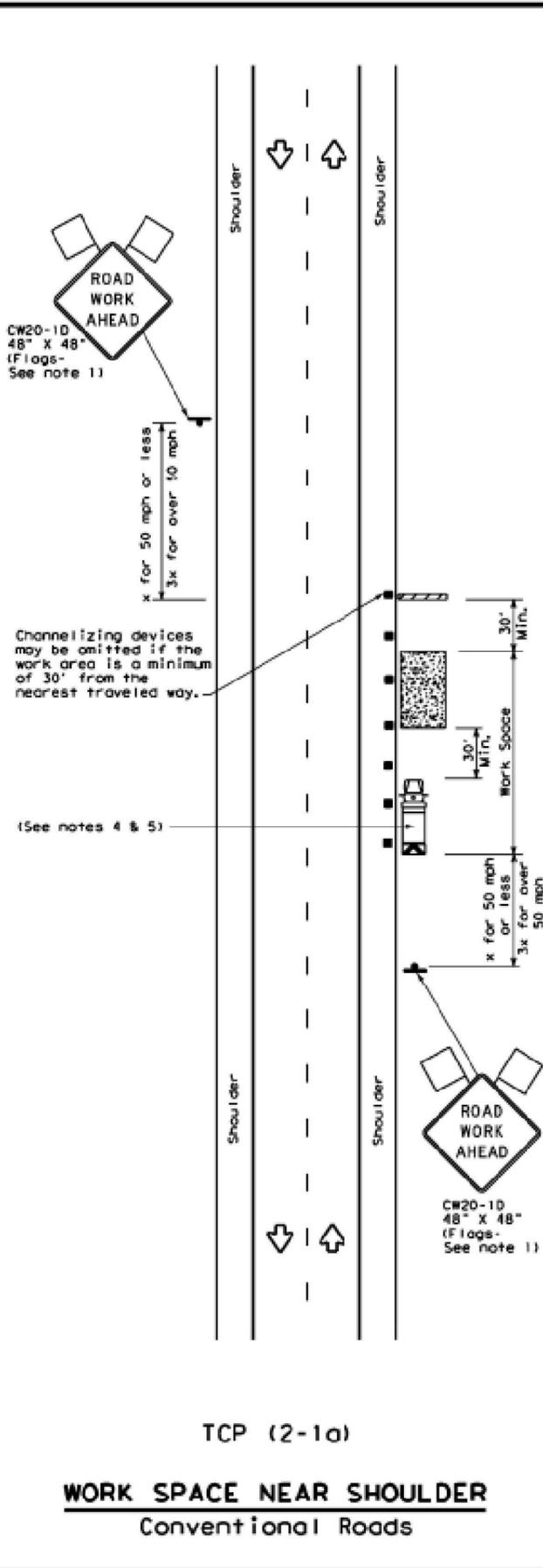


3465 CURRY LANE  
 AUSTIN, TX 78706  
 325-695-1070  
 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880

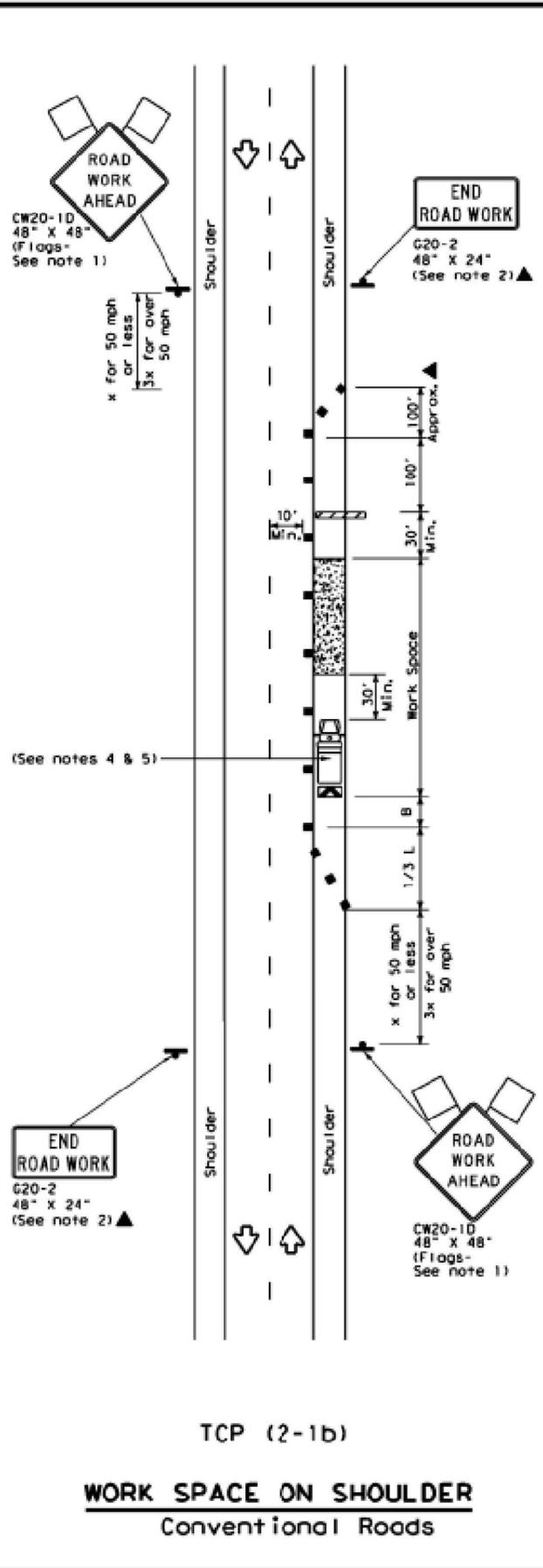


CITY OF JOSHUA, TEXAS  
 VEATCH STREET ROADWAY IMPROVEMENTS  
 CONSTRUCTION DRAWINGS  
 TXDOT EROSION CONTROL EC(3)-16

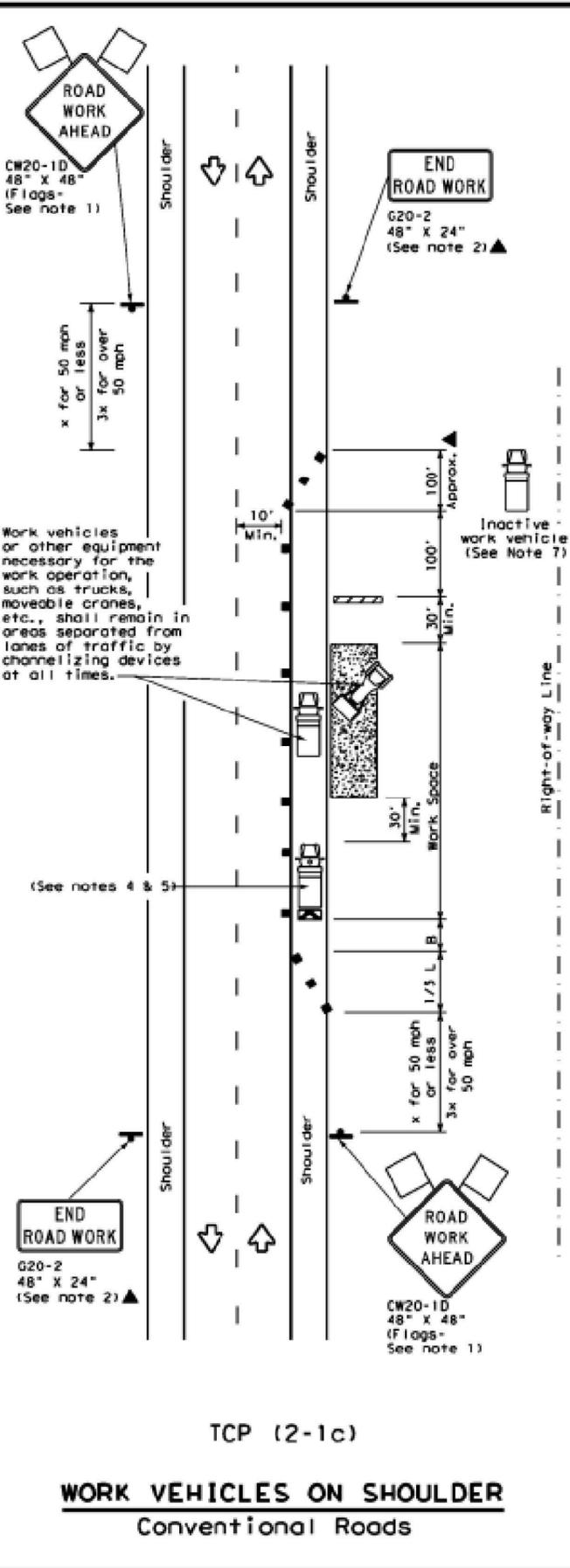
SCALE	PROJECT # 21314	DESIGNED	C.T.S.
DATE 02/13/26		DRAWN	C.T.S.
		CHECKED	A.D.T.
SHEET 17 SEQ. 17 OF 32			



**TCP (2-1a)**  
**WORK SPACE NEAR SHOULDER**  
 Conventional Roads



**TCP (2-1b)**  
**WORK SPACE ON SHOULDER**  
 Conventional Roads



**TCP (2-1c)**  
**WORK VEHICLES ON SHOULDER**  
 Conventional Roads

**LEGEND**

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

**TYPICAL USAGE**

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
  - Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
  - Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
  - See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
  - Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
  - CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

**TRAFFIC CONTROL PLAN**  
**CONVENTIONAL ROAD**  
**SHOULDER WORK**  
**TCP (2-1) - 18**

FILED: tcp2-1-18.dgn	DATE: 02/13/26	SCALE:	PROJECT # 21314
DESIGNED: C.T.S.	DRAWN: C.T.S.	CHECKED: A.D.T.	NO. REVISION: 1
REVISED: 2-94 4-98	REVISED: 8-95 2-12	REVISED: 1-97 2-18	NO. SHEET CORRECTIONS: 1
CONTRACT NO.:	SHEET NO.:	COUNTY:	PROJECT NAME:

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.  
 CHECK SCALE & ADJUST ACCORDINGLY.

3465 CURY LANE  
 SUITE 100, 7506  
 DALLAS, TEXAS 75243  
 817-968-1070

1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880

1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-365-6375

CITY OF JOSHUA, TEXAS

VEATCH STREET ROADWAY IMPROVEMENTS

CONSTRUCTION DRAWINGS

TXDOT TCP(2-1)-18

DATE: 02/13/26

SCALE:

PROJECT # 21314

DESIGNED: C.T.S.

DRAWN: C.T.S.

CHECKED: A.D.T.

NO. REVISION: 1

NO. SHEET CORRECTIONS: 1

SHEET: 18

SEQ. 18 OF 32

TRAFFIC OPERATIONS DIVISION STANDARD

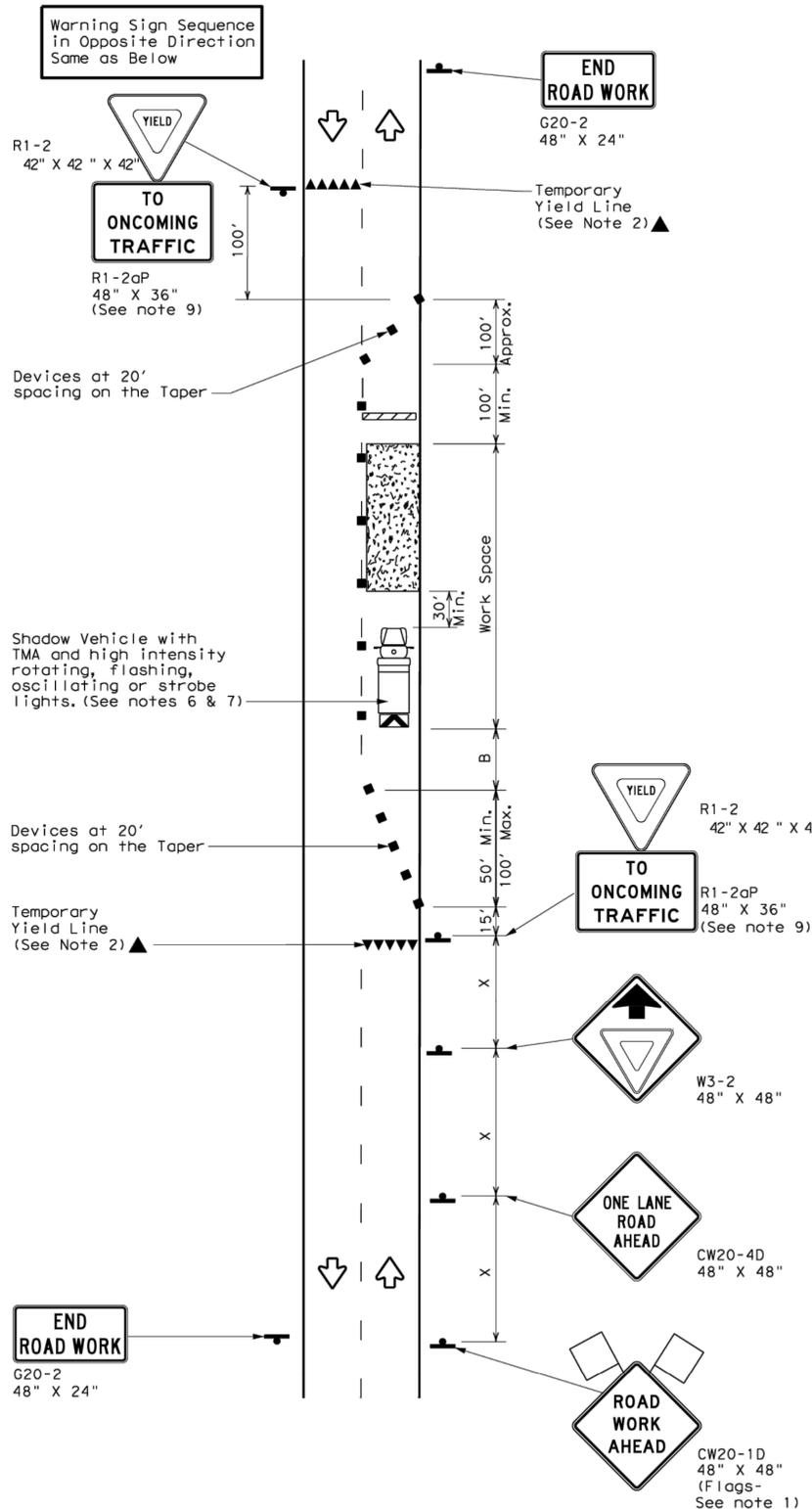
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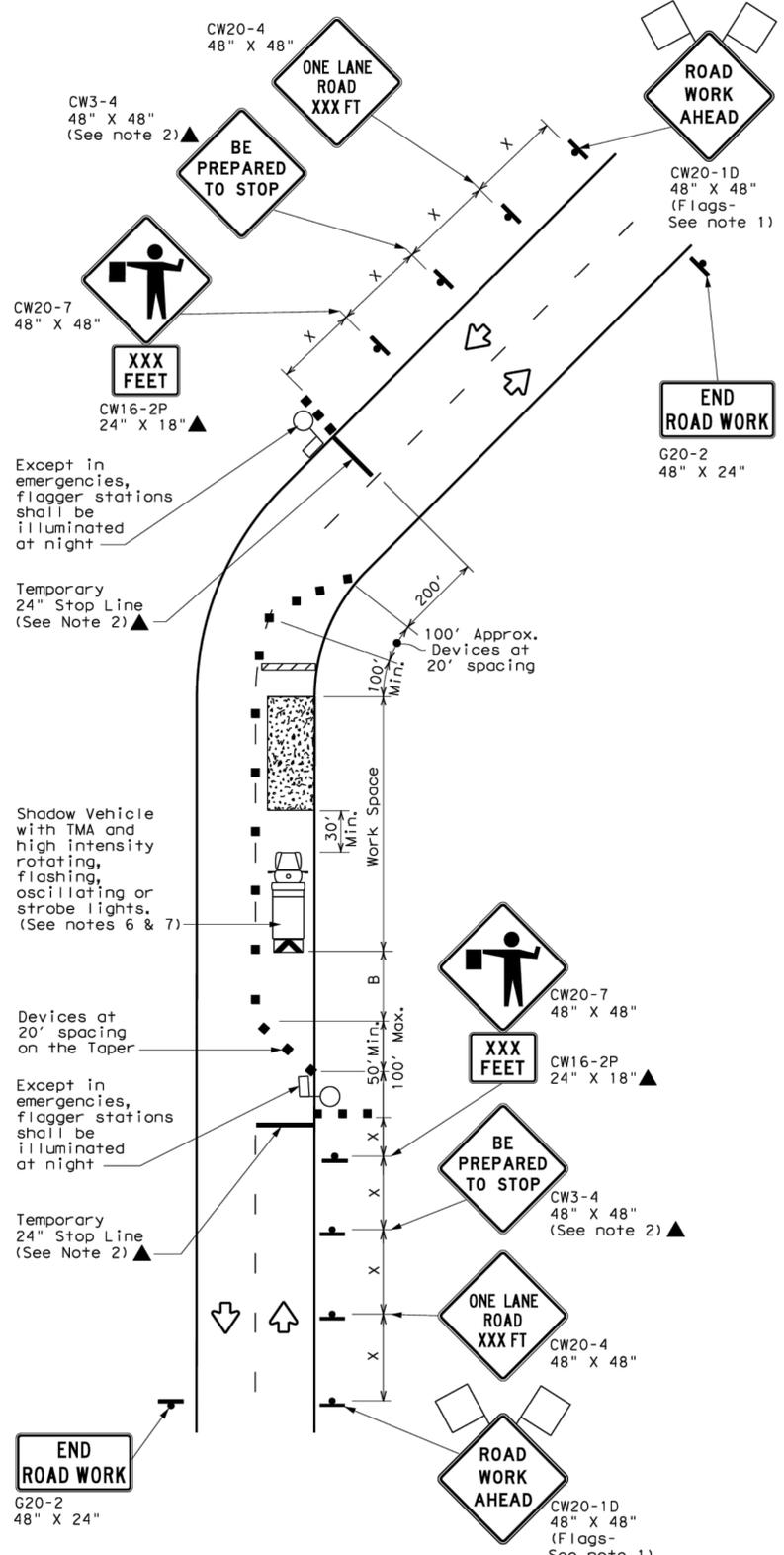
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DATE: FILE:



TCP (2-2a)  
 2-LANE ROADWAY WITHOUT PAVED SHOULDERS  
 ONE LANE TWO-WAY  
 CONTROL WITH YIELD SIGNS  
 (Less than 2000 ADT - See Note 9)



TCP (2-2b)  
 2-LANE ROADWAY WITHOUT PAVED SHOULDERS  
 ONE LANE TWO-WAY  
 CONTROL WITH FLAGGERS

**LEGEND**

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L = WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70	700'	770'	840'	70'	140'	800'	475'	730'	
75	750'	825'	900'	75'	150'	900'	540'	820'	

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

**TYPICAL USAGE**

	MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
		✓	✓	✓	

**GENERAL NOTES**

- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
  - Flaggers should use two-way radios or other methods of communication to control traffic.
  - Length of work space should be based on the ability of flaggers to communicate.
  - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-2a)**
- The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
  - The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.
- TCP (2-2b)**
- Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
  - If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
  - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

**Texas Department of Transportation**  
 Traffic Operations Division Standard

**TRAFFIC CONTROL PLAN**  
**ONE-LANE TWO-WAY**  
**TRAFFIC CONTROL**

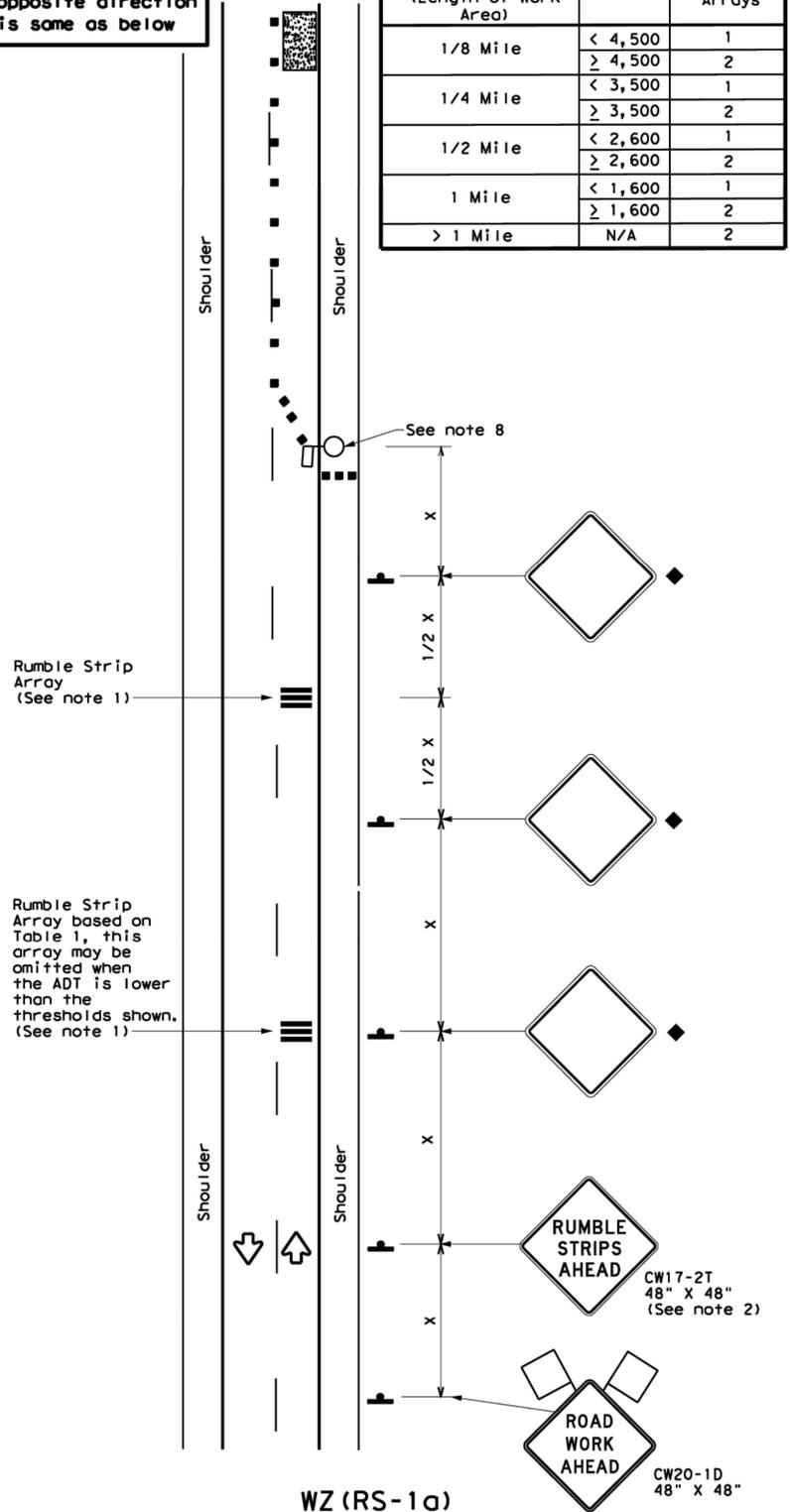
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© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS				
8-95	3-03			
1-97	2-12			
4-98	2-18			
DIST	COUNTY	SHEET NO.		

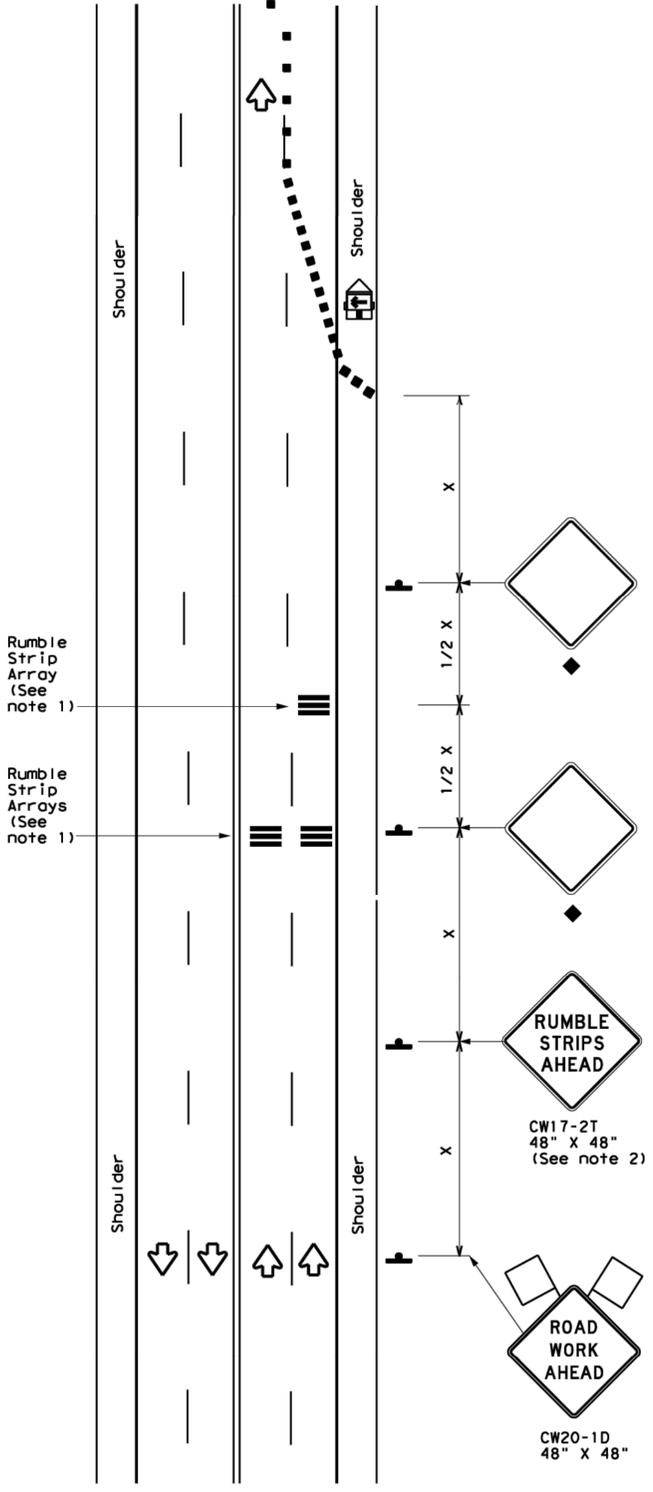
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Warning sign and rumble strip sequence in opposite direction is same as below

Flagger to Flagger (Length of Work Area)	ADT	# of Rumble Strip Arrays
1/8 Mile	< 4,500	1
	≥ 4,500	2
1/4 Mile	< 3,500	1
	≥ 3,500	2
1/2 Mile	< 2,600	1
	≥ 2,600	2
1 Mile	< 1,600	1
	≥ 1,600	2
> 1 Mile	N/A	2



WZ(RS-1a)  
 75 mph or Less  
**RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION**



WZ(RS-1b)  
 75 mph or Less  
**RUMBLE STRIPS FOR LANE CLOSURE ON CONVENTIONAL ROADWAY**

**GENERAL NOTES**

- Each Rumble Strip Array should consist of three rumble strips spaced center to center at the spacing shown in Table 2, placed transverse across the lane at locations shown.
- The CW17-2T "RUMBLE STRIPS AHEAD" sign should be located after the CW20-1D "ROAD WORK AHEAD" sign and spaced as shown. If traffic is observed to be queuing, or is expected to queue beyond the Rumble Strips, the CW17-2T sign and the first Rumble Strip Array may be located upstream of the CW20-1D sign as necessary to provide needed warning.
- Temporary Rumble Strips will be considered subsidiary to Item 502, and shall be a product listed on the Compliant Work Zone Traffic Control Devices.
- Removal of the Temporary Rumble Strips should be accomplished before removing the advance warning signs.
- Temporary Rumble Strips should not be used on horizontal curves, loose gravel, soft or bleeding asphalt, heavily rutted pavements or unpaved surfaces.
- Temporary Rumble Strips shall be installed and maintained as per manufacturer's recommendations.
- This standard sheet shall be used in conjunction with other appropriate TCP standard, TMUTCD typical application or project specific detail for the project.
- The one-lane two-way application may utilize a flagger, an AFAD or a portable traffic signal.
- Temporary Rumble Strips may be used on freeways or expressways based on engineering judgment.

Speed	Approximate distance between strips in an Array
≤ 40 MPH	10'
> 40 MPH & ≤ 55 MPH	15'
> 55 MPH	20'

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Panel		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40	L = WS	265'	295'	320'	40'	80'	240'	155'
45		450'	495'	540'	45'	90'	320'	195'
50	L = WS	500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60	L = WS	600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70	L = WS	700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT)  
 S=Posted Speed (MPH)

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

◆ Signs are for illustrative purposes only. Signs required may vary depending on the TCP, TMUTCD Typical Application, or project specific details for the project.

Texas Department of Transportation  
 Traffic Operations Division Standard

## TEMPORARY RUMBLE STRIPS

### WZ(RS) - 16

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4-16				

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**BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:**

- The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
- The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
- The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
- Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
- When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
- The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
- The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
- Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.
- Traffic control devices should be in place only while work is actually in progress or a definite need exists.
- The Engineer has the final decision on the location of all traffic control devices.
- Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

**WORKER SAFETY NOTES:**

- Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.
- Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

**COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES**

- Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
- Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

<p align="center"><b>THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT</b>  <a href="http://www.txdot.gov">http://www.txdot.gov</a></p>
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

**SHEET 1 OF 12**





**BARRICADE AND CONSTRUCTION  
 GENERAL NOTES  
 AND REQUIREMENTS**

**BC (1) - 21**

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-03 7-13 9-07 8-14 5-10 5-21				
NO. REVISION	SHEET CORRECTIONS		COUNTY	SHEET NO.
95				

CITY OF JOSHUA, TEXAS

VEATCH STREET ROADWAY IMPROVEMENTS

CONSTRUCTION DRAWINGS  
 TXDOT BARRICADE AND CONSTRUCTION  
 STANDARD DETAILS BC(1)-21

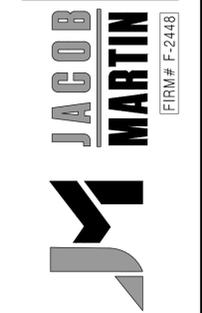
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02/13/26		21314	C.T.S.	C.T.S.	
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8465 CURRY LANE  
 ADDLEFORD, TX 76006  
 817-594-9880

1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880

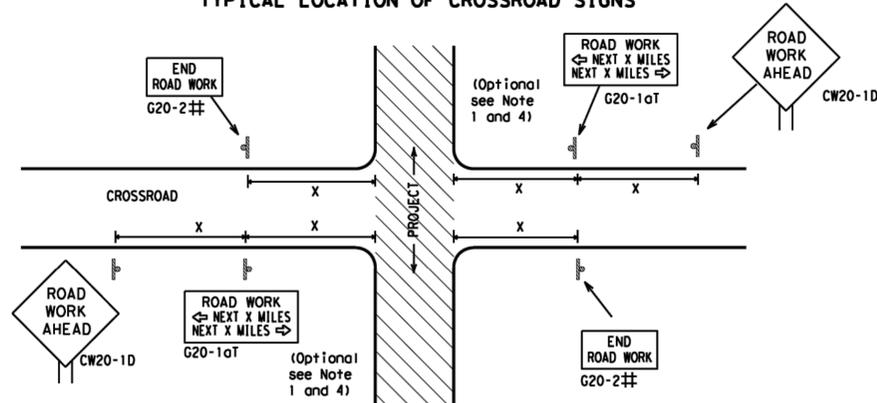
1014 BROADWAY STREET  
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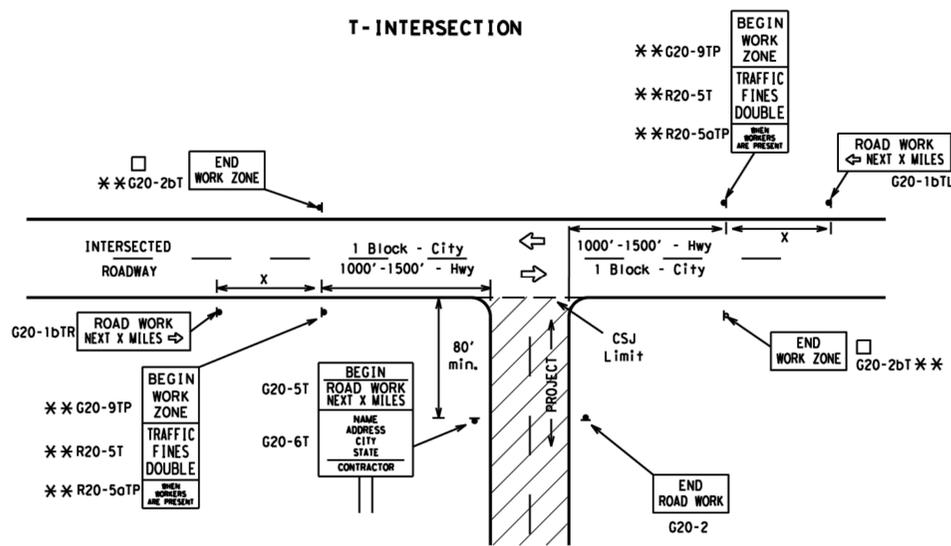
**TYPICAL LOCATION OF CROSSROAD SIGNS**



## May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)

- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
- The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
- Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
- The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
- Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
- When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

**T-INTERSECTION**



**CSJ LIMITS AT T-INTERSECTION**

- The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
- If construction closes the road at a T-intersection, the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR) signs shall be replaced by the detour signing called for in the plans.

**TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING<sup>1,5,6</sup>**

Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/Freeway	Posted Speed MPH	Sign Spacing "x" (Feet (Apprx.))
CW20 <sup>4</sup>	48" x 48"	48" x 48"	30	120
CW21			35	160
CW22			40	240
CW23			45	320
CW25			50	400
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"	55	500 <sup>2</sup>
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"	60	600 <sup>2</sup>
			65	700 <sup>2</sup>
			70	800 <sup>2</sup>
			75	900 <sup>2</sup>
			80	1000 <sup>2</sup>
			*	* <sup>3</sup>

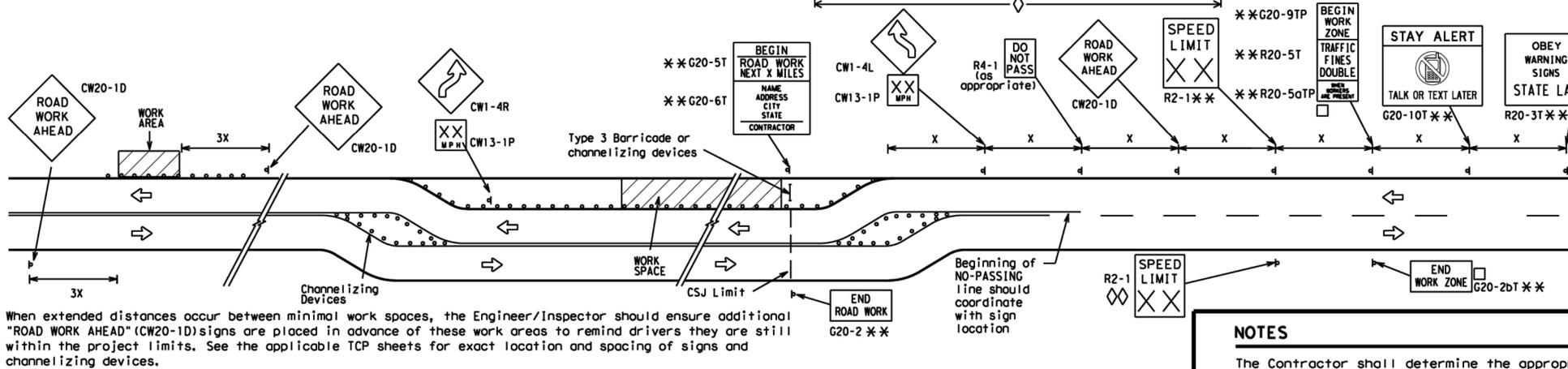
\* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

**GENERAL NOTES**

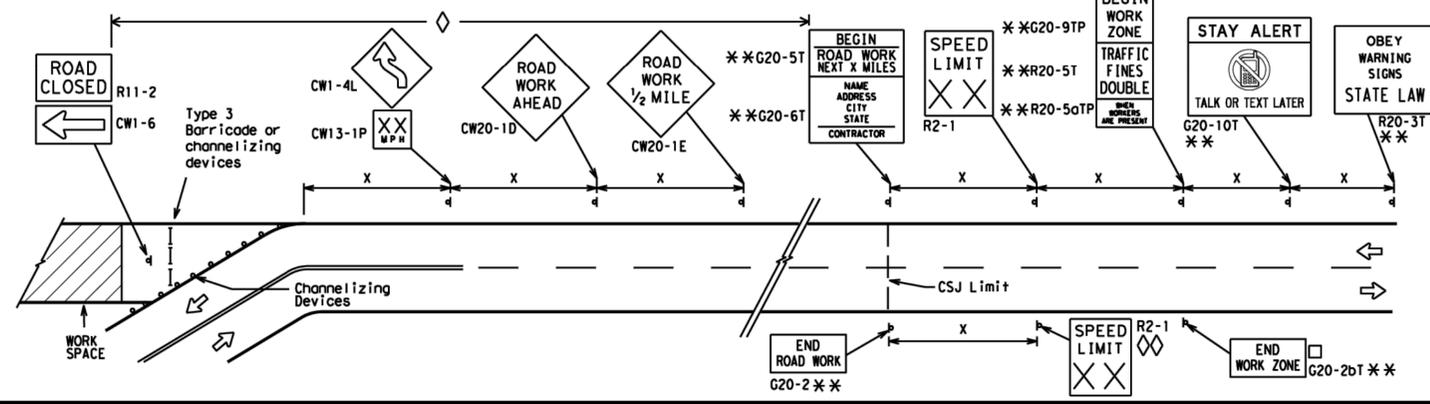
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
- Only diamond shaped warning sign sizes are indicated.
- See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

**WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS**



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

**SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS**



**NOTES**

- The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "x" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.
- The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
- CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.
- Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.
- Contractor will install a regulatory speed limit sign at the end of the work zone.

**LEGEND**

—	Type 3 Barricade
○ ○ ○	Channelizing Devices
—	Sign
x	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

SHEET 2 OF 12

**BARRICADE AND CONSTRUCTION PROJECT LIMIT**

**BC(2)-21**

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
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7-13	5-21			
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02-13-2026

CITY OF JOSHUA, TEXAS

VEATCH STREET ROADWAY IMPROVEMENTS

CONSTRUCTION DRAWINGS

TXDOT BARRICADE AND CONSTRUCTION

STANDARD DETAILS BC(2)-21

NO.	REVISION	DATE	SCALE	DESIGNED	C.T.S.	DRAWN	C.T.S.	CHECKED	A.D.T.
1	SHEET CORRECTIONS	02/13/26							
2									

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

SHEET 22 OF 32

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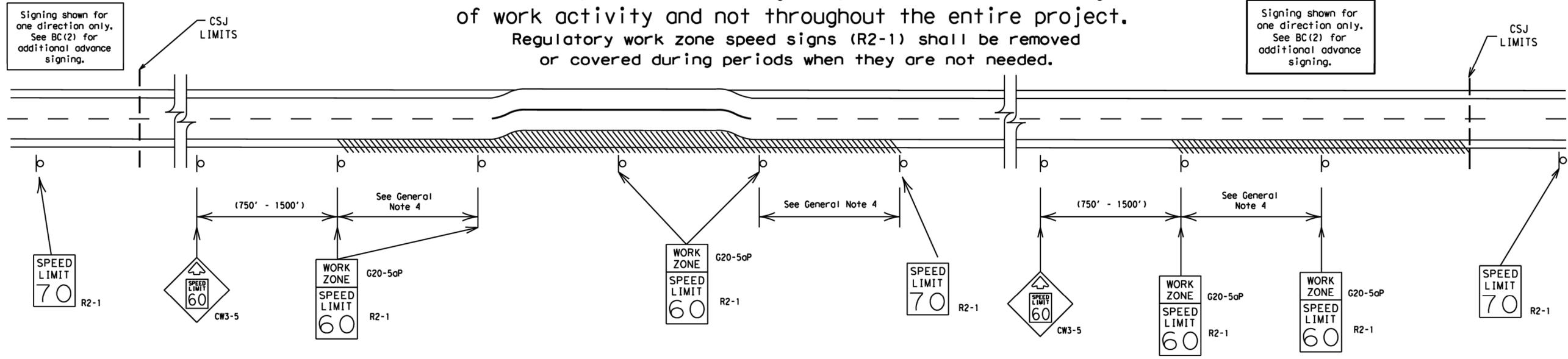
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# TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project. Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



## GUIDANCE FOR USE:

### LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires

- a reduced speed for motorists to safely negotiate the work area, including:
- rough road or damaged pavement surface
  - substantial alteration of roadway geometrics (diversions)
  - construction detours
  - grade
  - width
  - other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

### SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered. (See Removing or Covering on BC(4)).

### GENERAL NOTES

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- Frequency of work zone speed limit signs should be:
 

40 mph and greater	0.2 to 2 miles
35 mph and less	0.2 to 1 mile
- Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
- Fabrication, erection and maintenance of the "ADVANCE SPEED LIMIT" (CW3-5) sign, "WORK ZONE" (G20-5aP) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
- Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
- Techniques that may help reduce traffic speeds include but are not limited to:
  - Law enforcement.
  - Flagger stationed next to sign.
  - Portable changeable message sign (PCMS).
  - Low-power (drone) radar transmitter.
  - Speed monitor trailers or signs.
- Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
- For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

SHEET 3 OF 12

**BARRICADE AND CONSTRUCTION  
WORK ZONE SPEED LIMIT**

**BC (3) - 21**

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9-07 8-14	DIST		COUNTY	SHEET NO.
7-13 5-21				



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DALLAS, TX 75206  
817-688-1070

1508 SANTA FE DR, STE 204  
WEATHERFORD, TX 76086  
817-594-9880

1014 BROADWAY STREET  
LUBBOCK, TX 79401  
806-365-6375



CITY OF JOSHUA, TEXAS

VEATCH STREET ROADWAY IMPROVEMENTS

CONSTRUCTION DRAWINGS

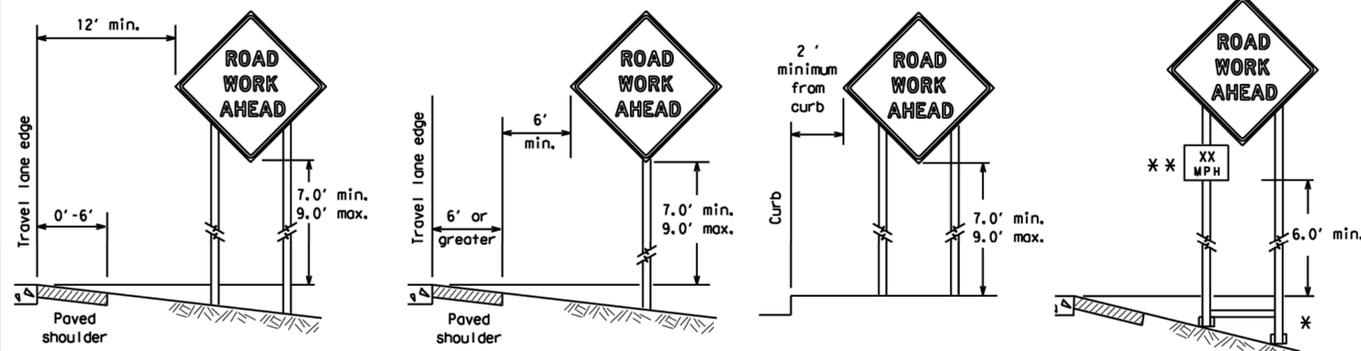
TXDOT BARRICADE AND CONSTRUCTION

STANDARD DETAILS BC(3)-21

SCALE	PROJECT # 21314	DESIGNED C.T.S.	CHECKED A.D.T.
DATE 02/13/26		DRAWN C.T.S.	
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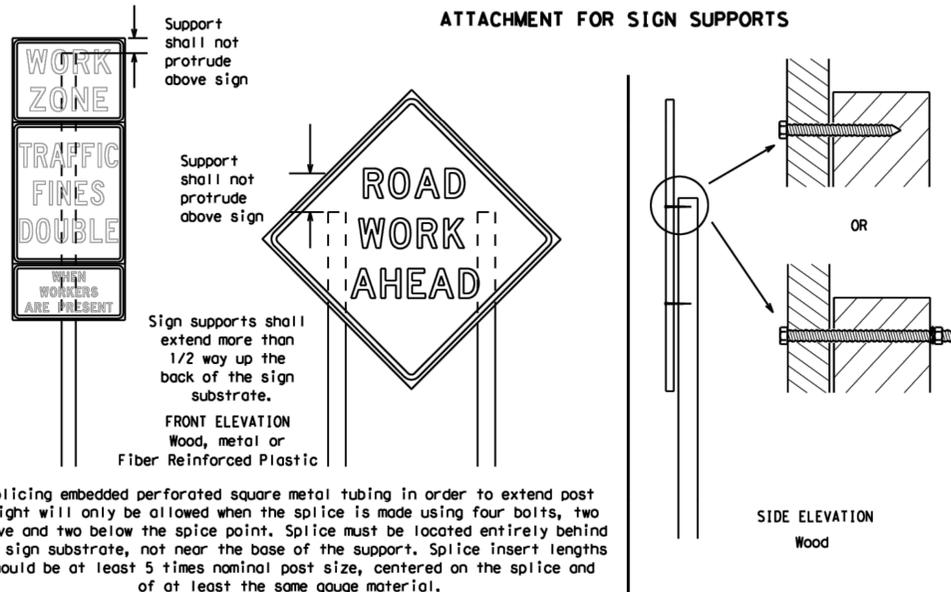
### TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



\* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

\*\* When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

### ATTACHMENT FOR SIGN SUPPORTS



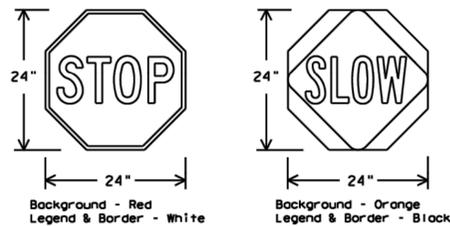
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

**Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.**

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the splice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

### STOP/SLOW PADDLES

- STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
- STOP/SLOW paddles shall be retroreflectORIZED when used at night.
- STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
- Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B <sub>FL</sub> OR C <sub>FL</sub> SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

### CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

- Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
- When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
- If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
- Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

### GENERAL NOTES FOR WORK ZONE SIGNS

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Wooden sign posts shall be painted white.
- Barricades shall NOT be used as sign supports.
- All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
- The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
- The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
- The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
- Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
- The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

### DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

- The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
  - Long-term stationary - work that occupies a location more than 3 days.
  - Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
  - Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
  - Short, duration - work that occupies a location up to 1 hour.
  - Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

### SIGN MOUNTING HEIGHT

- The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
- The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
- Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
- Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
- Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

### SIZE OF SIGNS

- The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

### SIGN SUBSTRATES

- The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
- "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
- All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

### REFLECTIVE SHEETING

- All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
- White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
- Orange sheeting, meeting the requirements of DMS-8300 Type B<sub>FL</sub> or Type C<sub>FL</sub>, shall be used for rigid signs with orange backgrounds.

### SIGN LETTERS

- All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

### REMOVING OR COVERING

- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
- Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
- Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
- When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
- Burlap shall NOT be used to cover signs.
- Duct tape or other adhesive material shall NOT be affixed to a sign face.
- Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

### SIGN SUPPORT WEIGHTS

- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
- Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
- Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
- Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
- Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
- Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

### FLAGS ON SIGNS

- Flags may be used to draw attention to warning signs. When used, the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

SHEET 4 OF 12

<h2>BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES</h2>			
<h3>BC (4) - 21</h3>			
FILE:	bc-21.dgn	DW:	TxDOT
CON:	TxDOT	CK:	TxDOT
REV:	November 2002	DW:	TxDOT
REV:	November 2002	CK:	TxDOT
REV:	November 2002	DW:	TxDOT
REV:	November 2002	CK:	TxDOT
REV:	November 2002	DW:	TxDOT
REV:	November 2002	CK:	TxDOT

CITY OF JOSHUA, TEXAS

VEATCH STREET ROADWAY IMPROVEMENTS

CONSTRUCTION DRAWINGS

BARRICADE AND CONSTRUCTION

STANDARD DETAILS BC(4)-21

DATE: 02/13/26

SCALE: PROJECT # 21314

DESIGNED: C.T.S.

DRAWN: C.T.S.

CHECKED: A.D.T.

SHEET: 24

SEQ. 24 OF 32

3465 CUNY LANE  
LUBBOCK, TX 79606  
829-695-1070

1508 SANTA FE DR, STE 204  
WEATHERFORD, TX 76086  
817-594-9880

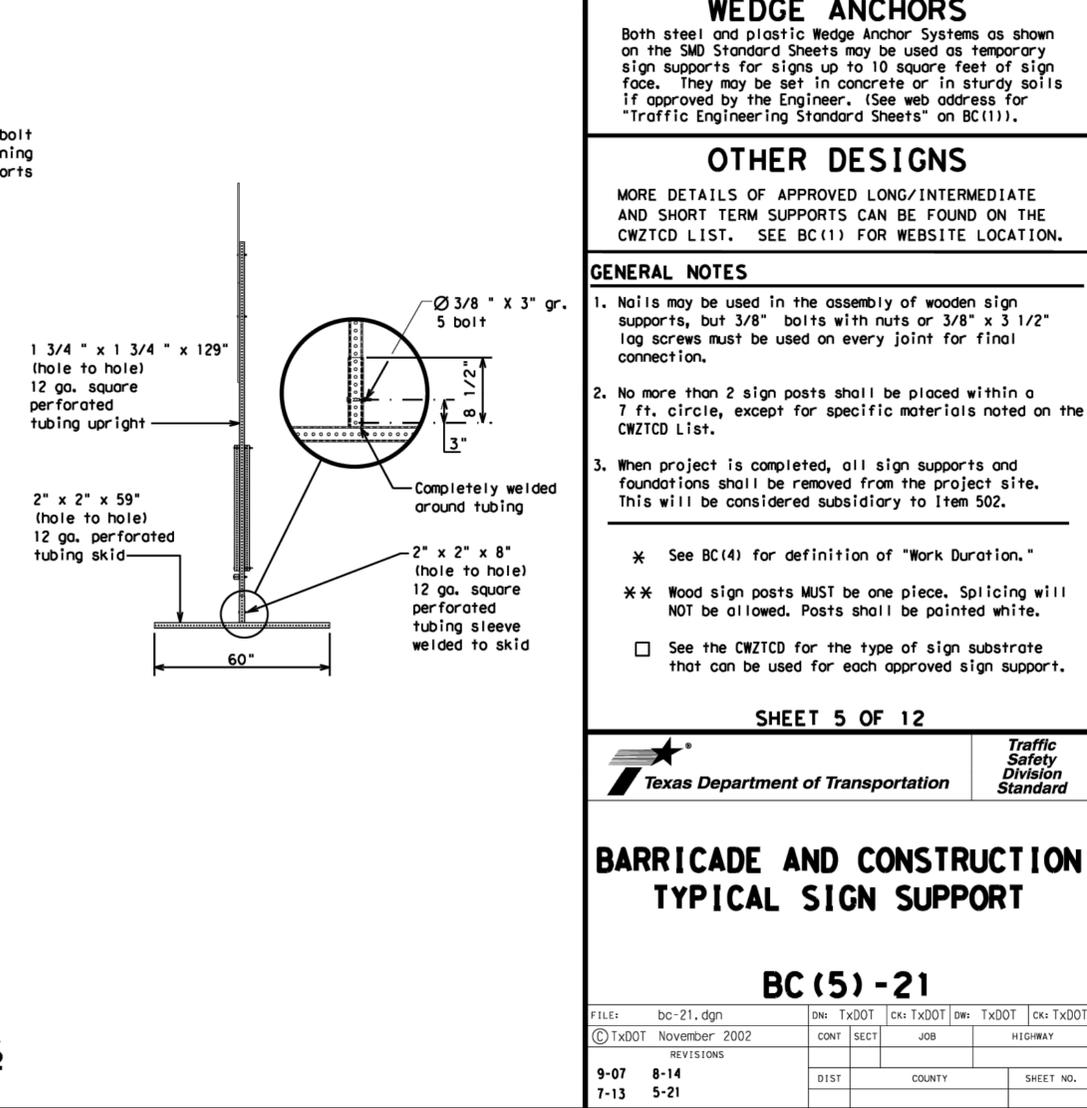
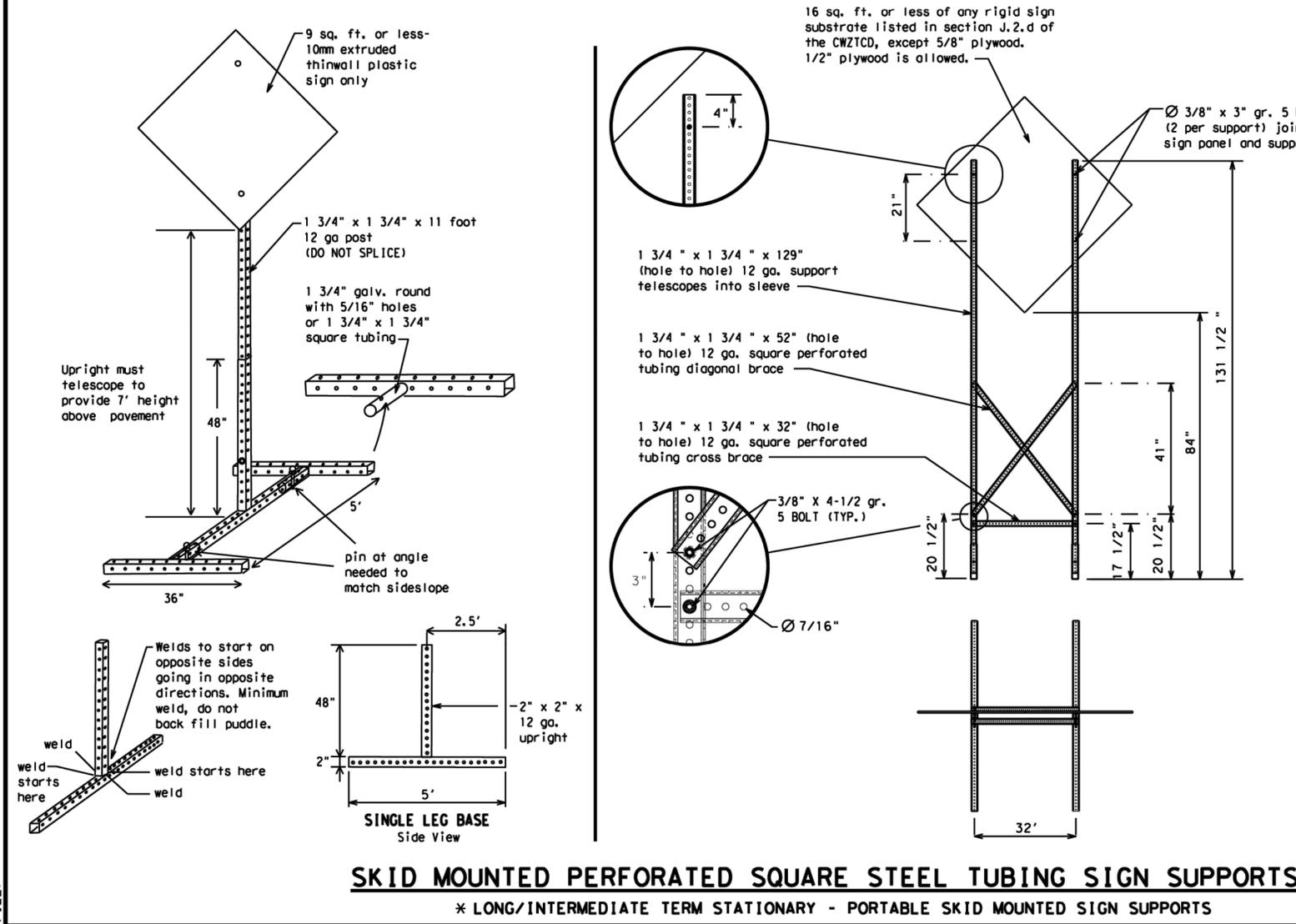
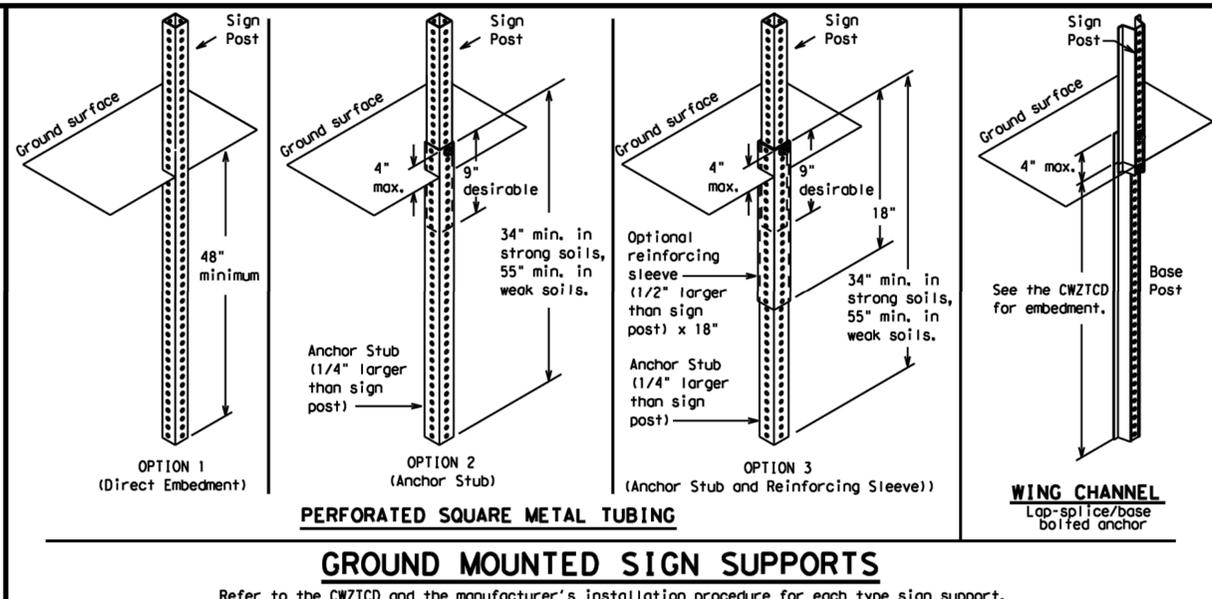
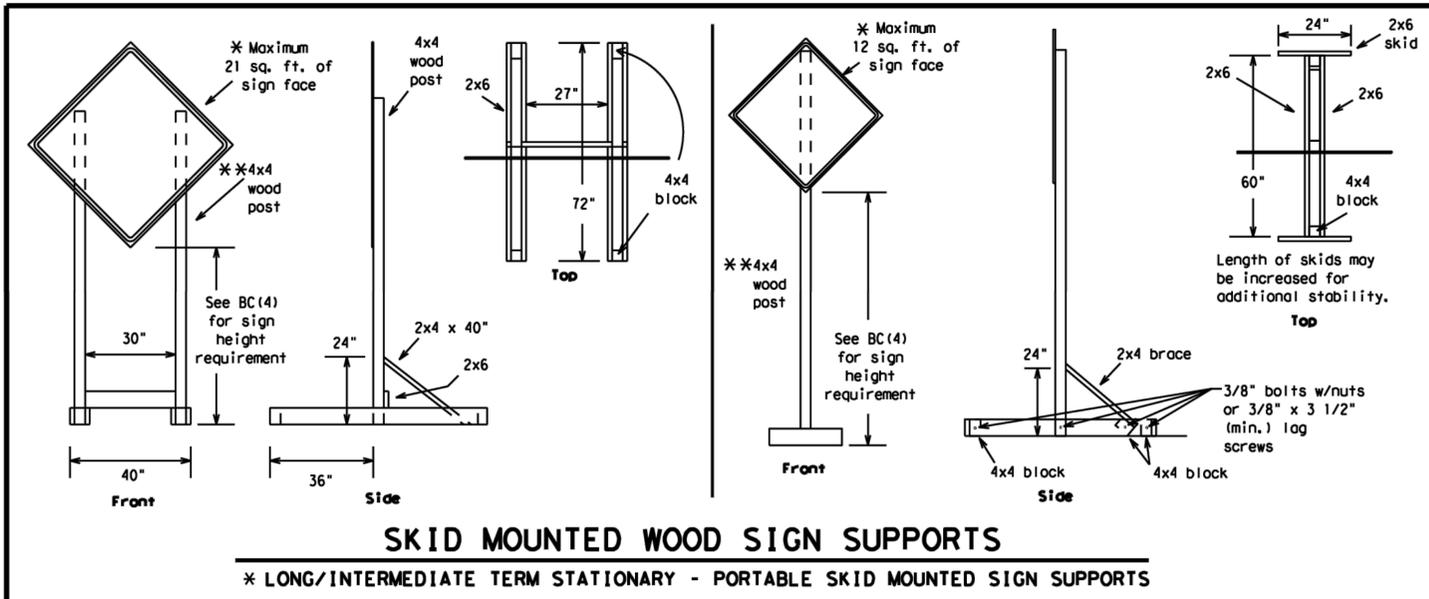
1014 BROADWAY STREET  
LUBBOCK, TX 79401  
806-365-6375

**JACOB MARTIN**  
[FIRM# F-2148]

02-13-2026

PLOTTED ON: 2/16/2026 9:03 AM  
 X:\C\JOSHUA\21314 - VEATCH STREET DRAINAGE IMPROVEMENTS\DRAWING\PLANS\CIVIL\21314\_VCH\_TXDOT\_DETAILS.DWG  
 PRINTED BY: SARAH ATALIG  
 FILE:

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**SHEET 5 OF 12**

**BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT**

**BC (5) - 21**

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07	8-14			
7-13	5-21			
	DIST	COUNTY	SHEET NO.	

NO. REVISION SHEET CORRECTIONS  
 DATE 02/13/26  
 SCALE  
 PROJECT # 21314  
 DESIGNED C.T.S.  
 DRAWN C.T.S.  
 CHECKED A.D.T.

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE & ADJUST ACCORDINGLY.

**JACOB MARTIN**  
 [FIRM# F-2148]

3465 CURRY LANE  
 ADDLETTON, TX 79606  
 935-669-1070  
 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880  
 1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-365-6375

CITY OF JOSHUA, TEXAS  
 VEATCH STREET ROADWAY IMPROVEMENTS  
 CONSTRUCTION DRAWINGS  
 TXDOT BARRICADE AND CONSTRUCTION  
 STANDARD DETAILS BC(5)-21

SHEET 25  
 SEQ. 25 OF 32

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DATE: FILE:

WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

**PORTABLE CHANGEABLE MESSAGE SIGNS**

- The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
- Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
- Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
- Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
- Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
- When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
- The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
- The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
- Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
- Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
- Do not use the word "Danger" in message.
- Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
- Do not display messages that scroll horizontally or vertically across the face of the sign.
- The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
- PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
- Each line of text should be centered on the message board rather than left or right justified.
- If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION	WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD	Major	MAJ
Alternate	ALT	Miles	MI
Avenue	AVE	Miles Per Hour	MPH
Best Route	BEST RTE	Minor	MNR
Boulevard	BLVD	Monday	MON
Bridge	BRDG	Normal	NORM
Cannot	CANT	North	N
Center	CTR	Northbound	(route) N
Construction Ahead	CONST AHD	Parking	PKING
CROSSING	XING	Road	RD
Detour Route	DETOUR RTE	Right Lane	RT LN
Do Not	DONT	Saturday	SAT
East	E	Service Road	SERV RD
Eastbound	(route) E	Shoulder	SHLDR
Emergency	EMER	Slippery	SLIP
Emergency Vehicle	EMER VEH	South	S
Entrance, Enter	ENT	Southbound	(route) S
Express Lane	EXP LN	Speed	SPD
Expressway	EXPWY	Street	ST
XXXX Feet	XXXX FT	Sunday	SUN
Fog Ahead	FOG AHD	Telephone	PHONE
Freeway	FRWY, FWY	Temporary	TEMP
Freeway Blocked	FWY BLKD	Thursday	THURS
Friday	FRI	To Downtown	TO DWNTN
Hazardous Driving	HAZ DRIVING	Traffic	TRAF
Hazardous Material	HAZMAT	Travelers	TRVLRs
High-Occupancy	HOV	Tuesday	TUES
Vehicle	HWY	Time Minutes	TIME MIN
Highway	HR, HRS	Upper Level	UPR LEVEL
Hour(s)	HR, HRS	Vehicles (s)	VEH, VEHS
Information	INFO	Warning	WARN
It Is	ITS	Wednesday	WED
Junction	JCT	Weight Limit	WT LIMIT
Left	LFT	West	W
Left Lane	LFT LN	Westbound	(route) W
Lane Closed	LN CLOSED	West Pavement	WET PVMT
Lower Level	LWR LEVEL	Will Not	WONT
Maintenance	MAINT		

Roadway designation # IH-number, US-number, SH-number, FM-number

**RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES**  
 (The Engineer may approve other messages not specifically covered here.)

**Phase 1: Condition Lists**

Road/Lane/Ramp Closure List		Other Condition List	
FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED	ROADWORK XXX FT	ROAD REPAIRS XXXX FT
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT	FLAGGER XXXX FT	LANE NARROWS XXXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT	RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
RIGHT X LANES CLOSED	RIGHT X LANES OPEN	MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
CENTER LANE CLOSED	DAYTIME LANE CLOSURES	LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XXXX FT
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE	ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
EXIT CLOSED	RIGHT LN TO BE CLOSED	BUMP XXXX FT	US XXX EXIT X MILES
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XXXX FT	LANES SHIFT
XXXXXXXXX BLVD CLOSED			

\* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

**Phase 2: Possible Component Lists**

Action to Take/Effect on Travel List	Location List	Warning List	** Advance Notice List
MERGE RIGHT	AT FM XXXX	SPEED LIMIT XX MPH	TUE-FRI XX AM-X PM
DETOUR NEXT X EXITS	BEFORE RAILROAD CROSSING	MAXIMUM SPEED XX MPH	APR XX-XX X PM-X AM
USE EXIT XXX	NEXT X MILES	MINIMUM SPEED XX MPH	BEGINS MONDAY
STAY ON US XXX SOUTH	PAST US XXX EXIT	ADVISORY SPEED XX MPH	BEGINS MAY XX
TRUCKS USE US XXX N	XXXXXXXXX TO XXXXXXXX	RIGHT LANE EXIT	MAY X-X XX PM - XX AM
WATCH FOR TRUCKS	US XXX TO FM XXXX	USE CAUTION	NEXT FRI-SUN
EXPECT DELAYS		DRIVE SAFELY	XX AM TO XX PM
REDUCE SPEED XXX FT		DRIVE WITH CARE	NEXT TUE AUG XX
USE OTHER ROUTES			TONIGHT XX PM-XX AM
STAY IN LANE			

\*\* See Application Guidelines Note 6.

**APPLICATION GUIDELINES**

- Only 1 or 2 phases are to be used on a PCMS.
- The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
- A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
- A Location Phase is necessary only if a distance or location is not included in the first phase selected.
- If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
- For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

**WORDING ALTERNATIVES**

- The words RIGHT, LEFT and ALL can be interchanged as appropriate.
- Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
- EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
- Highway names and numbers replaced as appropriate.
- ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
- AHEAD may be used instead of distances if necessary.
- FT and MI, MILE and MILES interchanged as appropriate.
- AT, BEFORE and PAST interchanged as needed.
- Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

**FULL MATRIX PCMS SIGNS**

- When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
- When symbol signs, such as the "Flagger Symbol" (CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
- When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
- A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

SHEET 6 OF 12

**Texas Department of Transportation**  
**Traffic Safety Division Standard**

**BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)**  
**BC (6) - 21**

FILE: bc-21.dgn DNE: TxDOT CK: TxDOT DWE: TxDOT CK: TxDOT  
 November 2002 CONT: SECT: JOB: HIGHWAY: SHEET NO.:  
 REVISIONS: 9-07 8-14 7-13 5-21  
 DIST: COUNTY: SHEET NO.:  
 NO. REVISION SHEET CORRECTIONS  
 DATE 02/13/26  
 SCALE  
 PROJECT # 21314  
 DESIGNED C.T.S.  
 DRAWN C.T.S.  
 CHECKED A.D.T.

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE & ADJUST ACCORDINGLY.

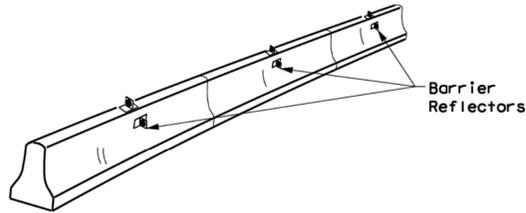


3465 CURY LANE  
 95116-1700  
 325-665-1070  
**JACOB MARTIN**  
 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880  
 1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-365-6375  
 [FIRM# F-2148]

CITY OF JOSHUA, TEXAS  
 VEATCH STREET ROADWAY IMPROVEMENTS  
 CONSTRUCTION DRAWINGS  
 TXDOT BARRICADE AND CONSTRUCTION  
 STANDARD DETAILS BC(6)-21

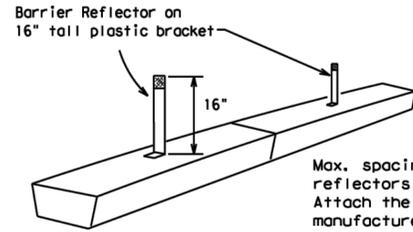
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



**CONCRETE TRAFFIC BARRIER (CTB)**

- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
- Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
- When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
- Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
- Maximum spacing of Barrier Reflectors is forty (40) feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
- Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
- Single slope barriers shall be delineated as shown on the above detail.



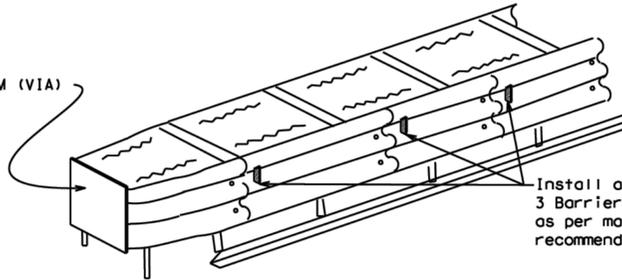
**LOW PROFILE CONCRETE BARRIER (LPCB)**

**LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES**

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

See D & OM (VIA)



Install a minimum of 3 Barrier Reflectors as per manufacturer's recommendations.

**DELINEATION OF END TREATMENTS**

**END TREATMENTS FOR CTB'S USED IN WORK ZONES**

End treatments used on CTB's in work zones shall meet the appropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

**BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS**

**WARNING LIGHTS**

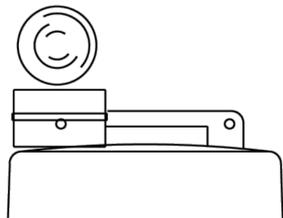
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B<sub>1</sub> or C<sub>1</sub> Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
- Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

**WARNING LIGHTS MOUNTED ON PLASTIC DRUMS**

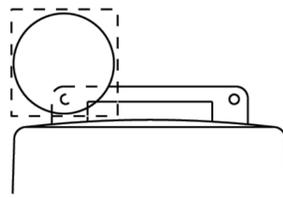
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
- Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

**WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS**

- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
- The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
- Round reflectors shall be fully reflectorized, including the area where attached to the drum.
- Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
- The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
- When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
- The warning reflector should be mounted on the side of the handle nearest approaching traffic.
- The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.

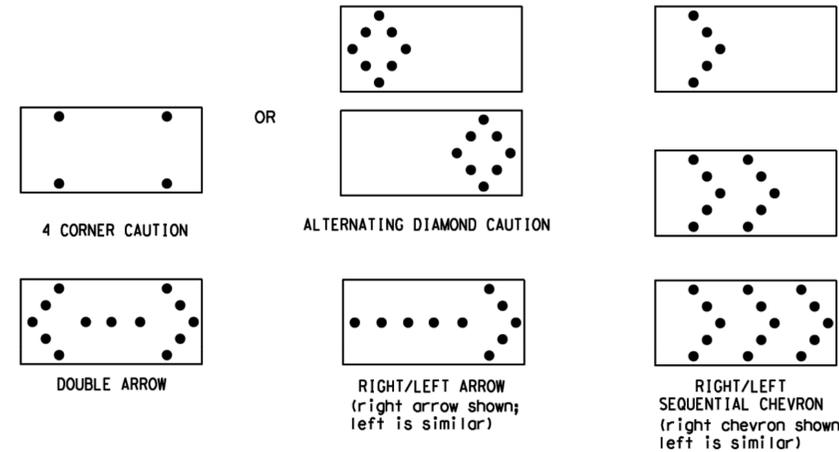


Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

DATE: FILE:

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

- The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
- Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
- The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
- The Flashing Arrow Board should be able to display the following symbols:



- The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
- The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
- A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
- Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

**ATTENTION**  
Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

**FLASHING ARROW BOARDS**

**TRUCK-MOUNTED ATTENUATORS**

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.



**BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR**

**BC (7) - 21**

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
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REVISIONS				
9-07 8-14	DIST	COUNTY	SHEET NO.	
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 25116-1070  
 WEATHERFORD, TX 76086  
 817-594-9880

1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880

1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-366-6375



CITY OF JOSHUA, TEXAS

VEATCH STREET ROADWAY IMPROVEMENTS

CONSTRUCTION DRAWINGS  
 TXDOT BARRICADE AND CONSTRUCTION  
 STANDARD DETAILS BC(7)-21

NO.	REVISION	DATE	SCALE	PROJECT #	DESIGNED	C.T.S.	DRAWN	C.T.S.	CHECKED	A.D.T.
1	21	02/13/26		21314						
SHEET 27										
SEQ. 27 OF 32										

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**GENERAL NOTES**

- For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
- For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
- For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
- Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
- The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

**GENERAL DESIGN REQUIREMENTS**

Pre-qualified plastic drums shall meet the following requirements:

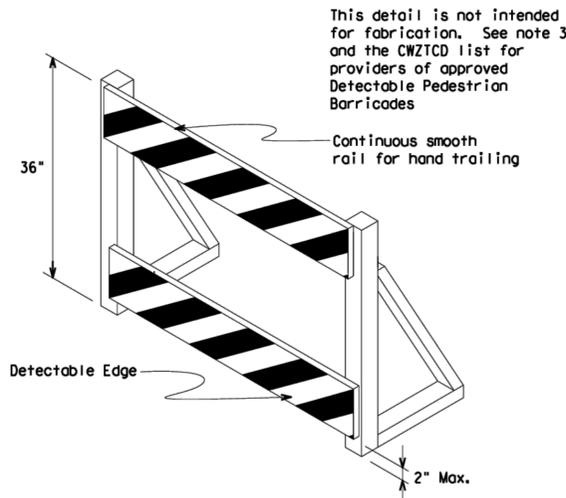
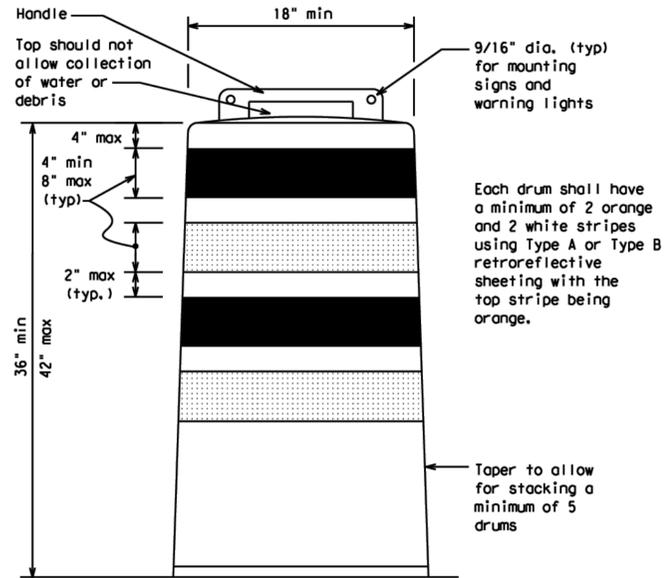
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
- Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
- Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
- The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
- The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectORIZED space between any two adjacent stripes shall not exceed 2 inches in width.
- Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
- Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
- Drum body shall have a maximum unballasted weight of 11 lbs.
- Drum and base shall be marked with manufacturer's name and model number.

**RETROREFLECTIVE SHEETING**

- The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
- The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

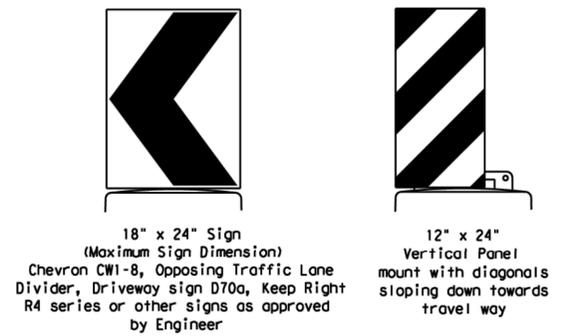
**BALLAST**

- Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
- Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
- Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
- The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
- When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
- Ballast shall not be placed on top of drums.
- Adhesives may be used to secure base of drums to pavement.



**DETECTABLE PEDESTRIAN BARRICADES**

- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
- Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
- Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
- Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

**SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS**

- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- Chevrons and other work zone signs with an orange background shall be manufactured with Type B<sub>FL</sub> or Type C<sub>FL</sub> Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
- Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
- Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
- Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
- R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

SHEET 8 OF 12

## BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

### BC (8) - 21

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REVISIONS				
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9-07 5-21				
7-13				
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02-13-2026

CITY OF JOSHUA, TEXAS

VEATCH STREET ROADWAY IMPROVEMENTS

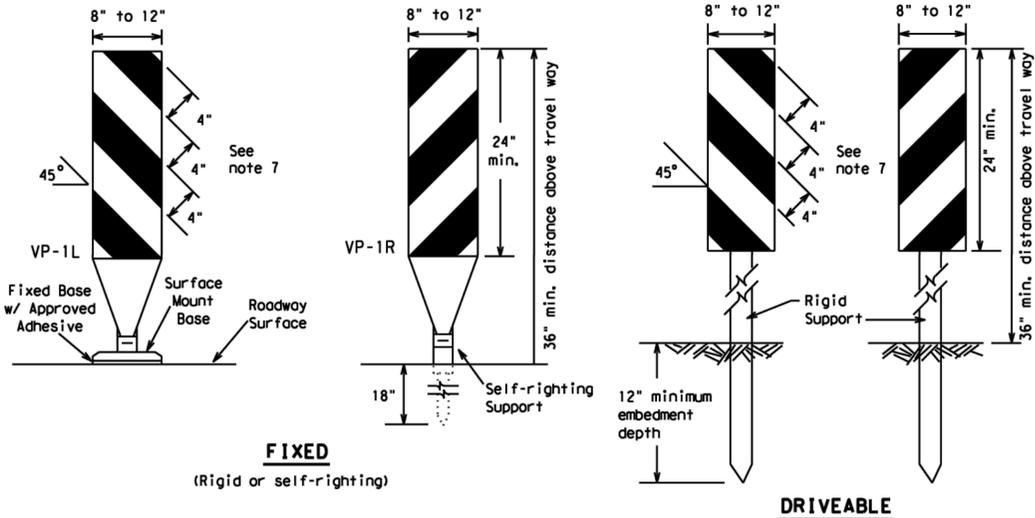
CONSTRUCTION DRAWINGS  
 TXDOT BARRICADE AND CONSTRUCTION  
 STANDARD DETAILS BC(8)-21

NO. REVISION	DATE	SCALE	PROJECT #	DESIGNED	C.T.S.	DRAWN	C.T.S.	CHECKED	A.D.T.
1	02/13/26		21314						

SHEET 28

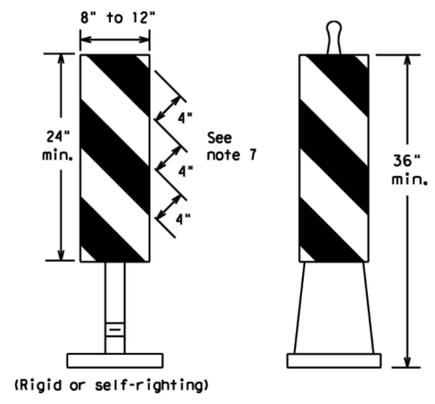
SEQ. 28 OF 32

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**FIXED**  
(Rigid or self-righting)

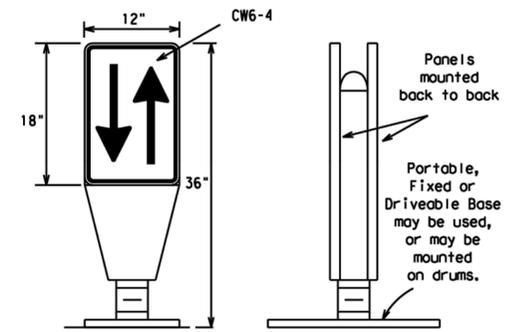
**DRIVEABLE**



**PORTABLE**

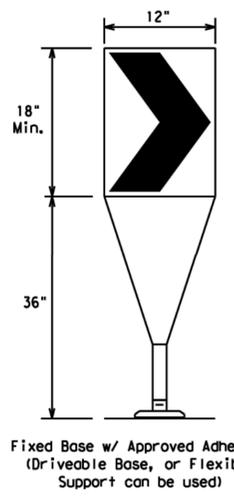
**VERTICAL PANELS (VPs)**

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
- VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
- VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
- Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.



**OPPOSING TRAFFIC LANE DIVIDERS (OTLD)**

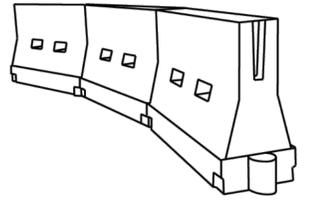
- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
- The OTLD may be used in combination with 42" cones or VPs.
- Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
- The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B<sub>FL</sub> or Type C<sub>FL</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.



Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
- Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
- To be effective, the chevron should be visible for at least 500 feet.
- Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B<sub>FL</sub> or Type C<sub>FL</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
- For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

**CHEVRONS**



**LONGITUDINAL CHANNELIZING DEVICES (LCD)**

- LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

**WATER BALLASTED SYSTEMS USED AS BARRIERS**

- Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
- Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
- Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long cones and the top of the unit shall not be less than 32 inches in height.

**HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS**

**GENERAL NOTES**

- Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
- Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
- The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

Posted Speed	Formula	Minimum Desirable Taper Lengths			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

\*\*Taper lengths have been rounded off.  
 L=Length of Taper (FT.) W=Width of Offset (FT.)  
 S=Posted Speed (MPH)

**SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS**

SHEET 9 OF 12

Traffic Safety Division Standard

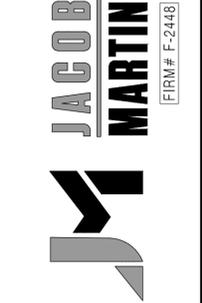
**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (9) - 21**

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 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880



CITY OF JOSHUA, TEXAS  
 VEATCH STREET ROADWAY IMPROVEMENTS  
 CONSTRUCTION DRAWINGS  
 TXDOT BARRICADE AND CONSTRUCTION  
 STANDARD DETAILS BC(9)-21

NO.	REVISION	DATE	SCALE	PROJECT #	DESIGNED	C.T.S.	DRAWN	C.T.S.	CHECKED	A.D.T.
1	SHEET CORRECTIONS	02/13/26		21314						

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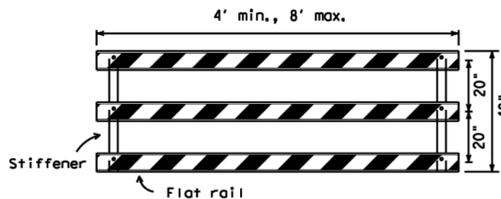
**TYPE 3 BARRICADES**

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road, striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



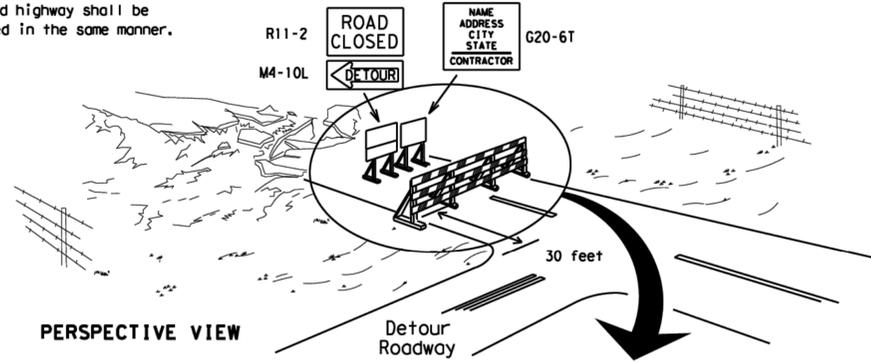
**TYPICAL STRIPING DETAIL FOR BARRICADE RAIL**



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

**TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES**

Each roadway of a divided highway shall be barricaded in the same manner.

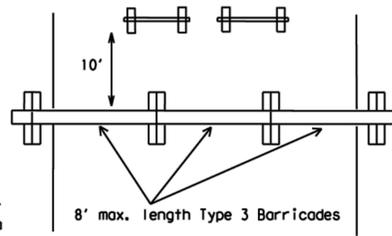


PERSPECTIVE VIEW

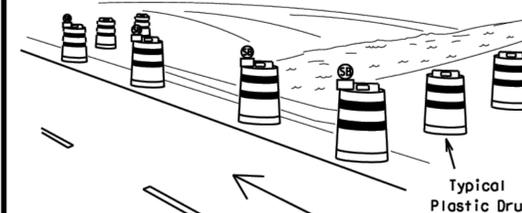
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.

1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

**TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION**

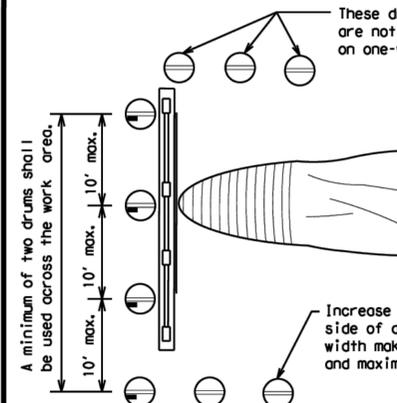


PLAN VIEW



PERSPECTIVE VIEW

These drums are not required on one-way roadway

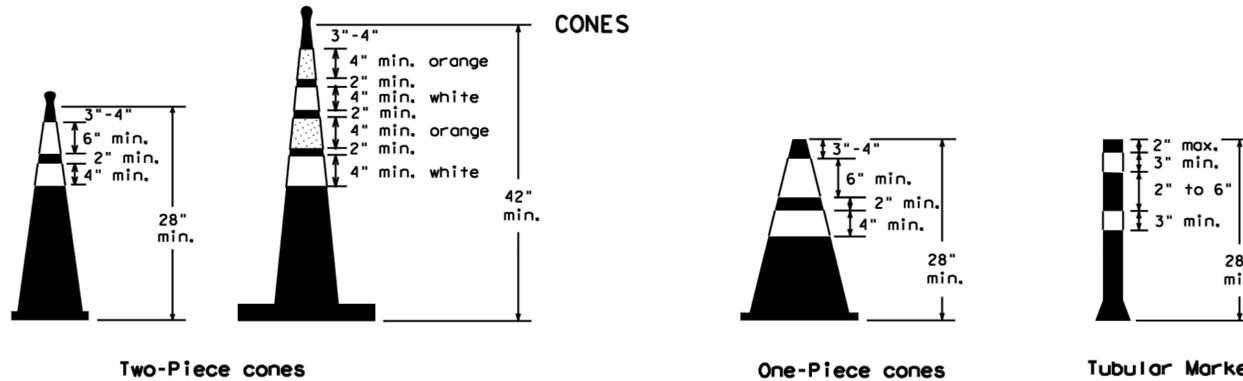


PLAN VIEW

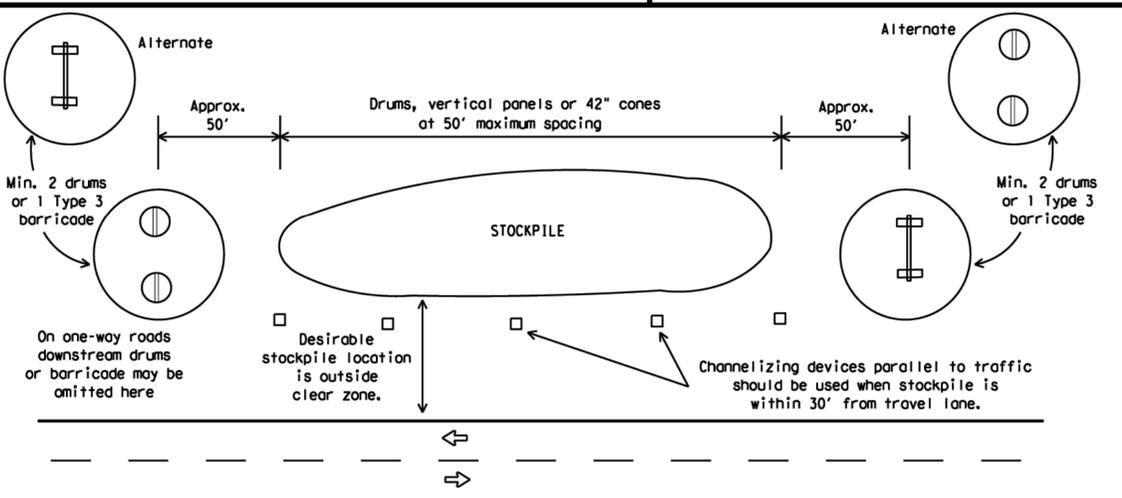
Increase number of plastic drums on the side of approaching traffic if the crown width makes it necessary. (minimum of 2 and maximum of 4 drums)

LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
	Steady burn warning light or yellow warning reflector

**CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS**



28" Cones shall have a minimum weight of 9 1/2 lbs.  
 42" 2-piece cones shall have a minimum weight of 30 lbs. including base.



**TRAFFIC CONTROL FOR MATERIAL STOCKPILES**

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.

SHEET 10 OF 12

Texas Department of Transportation  
 Traffic Safety Division Standard

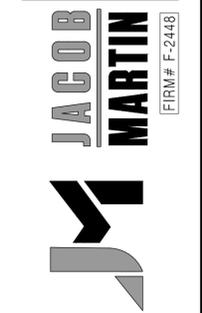
**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (10) -21**

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
TXDOT November 2002	CONT	SECT	JOB	HIGHWAY
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21				



3465 CURRY LANE  
 SUITE 100, TX 76066  
 817-685-1070  
 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880  
 1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-365-6375



CITY OF JOSHUA, TEXAS  
 VEATCH STREET ROADWAY IMPROVEMENTS  
 CONSTRUCTION DRAWINGS  
 TXDOT BARRICADE AND CONSTRUCTION  
 STANDARD DETAILS BC(10)-21

NO. REVISION	DATE	SCALE	PROJECT #	DESIGNED	C.T.S.	DRAWN	C.T.S.	CHECKED	A.D.T.
1	02/13/26		21314						
SHEET 30 OF 32									

**WORK ZONE PAVEMENT MARKINGS**

**GENERAL**

- The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
- Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Additional supplemental pavement marking details may be found in the plans or specifications.
- Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
- When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
- When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
- All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

**RAISED PAVEMENT MARKERS**

- Raised pavement markers are to be placed according to the patterns on BC(12).
- All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

**PREFABRICATED PAVEMENT MARKINGS**

- Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
- Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

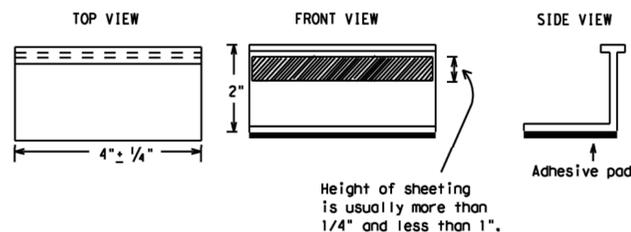
**MAINTAINING WORK ZONE PAVEMENT MARKINGS**

- The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
- Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
- The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
- Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

**REMOVAL OF PAVEMENT MARKINGS**

- Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
- The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
- Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
- The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
- Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
- Blast cleaning may be used but will not be required unless specifically shown in the plans.
- Over-painting of the markings SHALL NOT BE permitted.
- Removal of raised pavement markers shall be as directed by the Engineer.
- Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
- Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

**Temporary Flexible-Reflective Roadway Marker Tabs**



**STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE**

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
  - Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
  - Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

**RAISED PAVEMENT MARKERS USED AS GUIDEMARKS**

- Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
- All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
- Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:  
 YELLOW - (two amber reflective surfaces with yellow body).  
 WHITE - (one silver reflective surface with white body).

**DEPARTMENTAL MATERIAL SPECIFICATIONS**

PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

SHEET 11 OF 12



**BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS**

**BC(11)-21**

FILE: bc-21.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS				
2-98	9-07	5-21		
1-02	7-13			
11-02	8-14			
DIST	COUNTY	SHEET NO.		



3465 CURRY LANE  
 325 LEBLANC, TX 79606  
 817-594-9880  
 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880  
 1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-365-6375



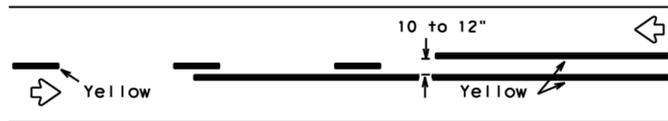
CITY OF JOSHUA, TEXAS  
 VEATCH STREET ROADWAY IMPROVEMENTS  
 CONSTRUCTION DRAWINGS  
 AND CONSTRUCTION  
 STANDARD DETAILS BC(1)-21

NO.	REVISION	DATE	SCALE	PROJECT #	DESIGNED	C.T.S.	DRAWN	C.T.S.	CHECKED	A.D.T.
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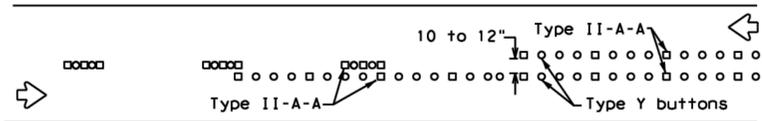
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02-13-2026

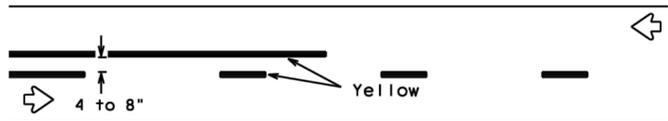
### PAVEMENT MARKING PATTERNS



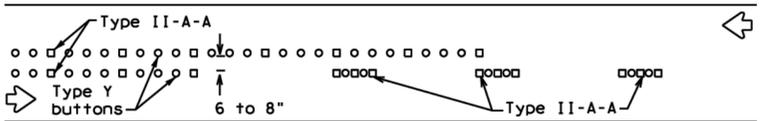
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



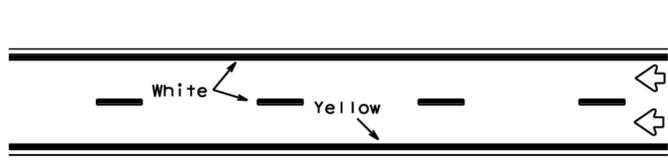
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



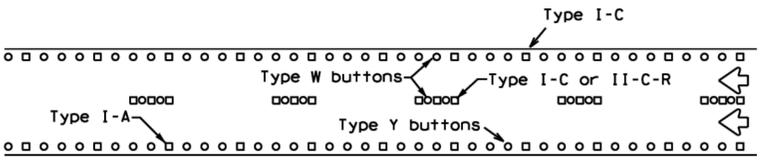
RAISED PAVEMENT MARKERS - PATTERN B

Pattern A is the TxDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectORIZED pavement markings.

### CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



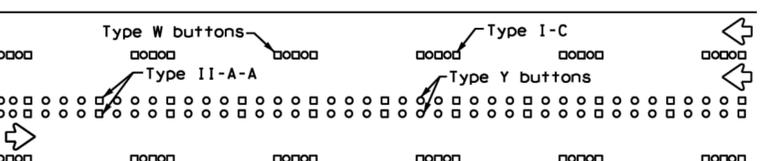
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectORIZED pavement markings.

### EDGE & LANE LINES FOR DIVIDED HIGHWAY



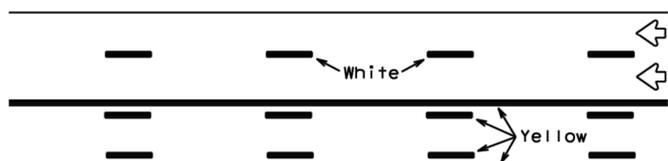
REFLECTORIZED PAVEMENT MARKINGS



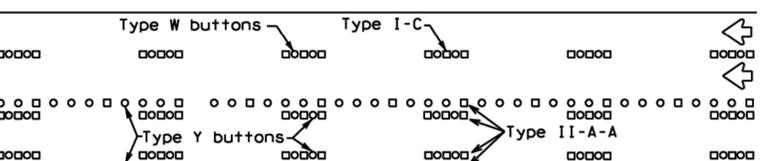
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectORIZED pavement markings.

### LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

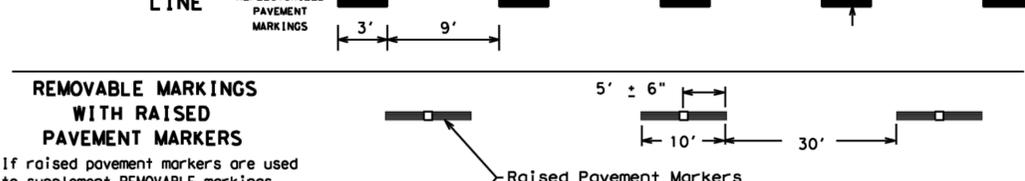
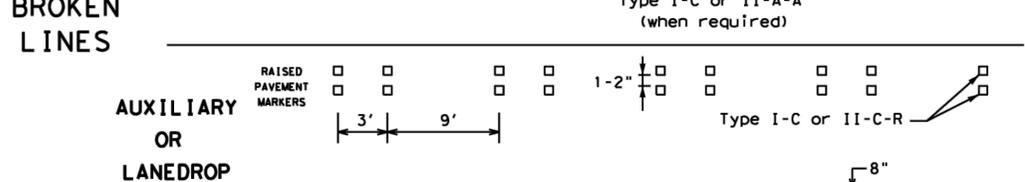
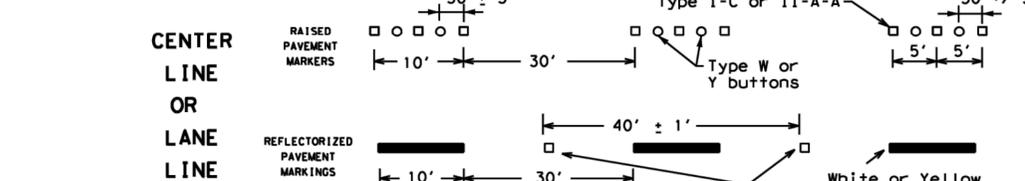
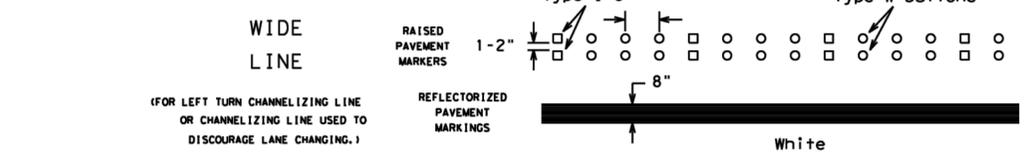
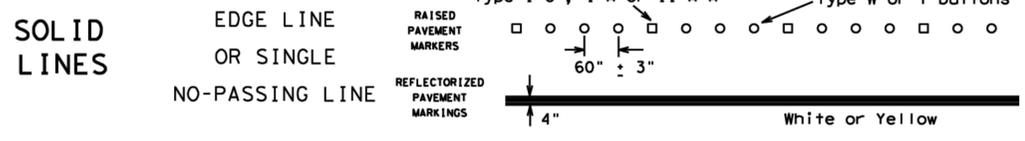
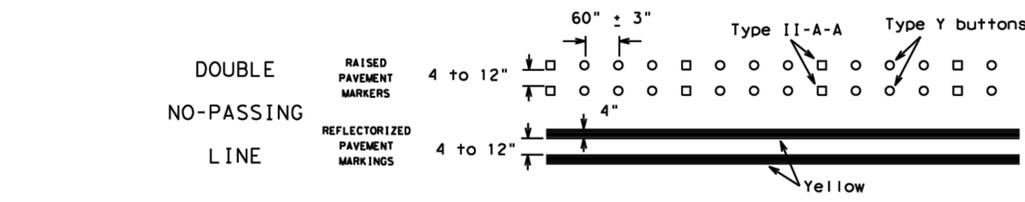


RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectORIZED pavement markings.

### TWO-WAY LEFT TURN LANE

### STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.

**TEXAS** Department of Transportation  
Traffic Safety Division Standard

**BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS**

**BC(12)-21**

FILE: bc-21.dgn  
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REVISIONS:  
1-97 9-07 5-21  
2-98 7-13  
11-02 8-14

NO. REVISION SHEET CORRECTIONS

DATE: 02/13/26

SCALE: PROJECT # 21314

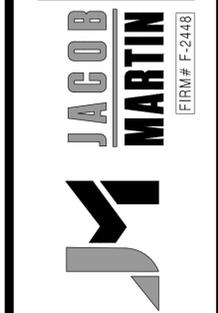
DESIGNED: C.T.S.  
DRAWN: C.T.S.  
CHECKED: A.D.T.

NO. 106

Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."



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325-665-1070  
1508 SANTA FE DR, STE 204  
WEATHERFORD, TX 76086  
817-594-9880  
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STANDARD DETAILS BC(12)-21

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