FHWA TEXAS DIVISION	PROJECT NO.			SHEET NO.
	STP 2021(299)HES			1
STATE	DISTRICT	COUNTY		
TEXAS	ATL	BOWIE, ETC.		
CONTROL	SECTION	JOB	HIGHWAY NO.	
0085, ETC	03, ETC	017, ETC	FM 2735, ETC	

FOR INDEX OF SHEETS SEE SHEET 2
FOR LOCATION MAP SEE SHEET 3

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

FEDERAL AID PROJECT: STP 2021(299)HES

DESIGN SPEED = N/A
ADT (2019) = 968
ADT (2039) = 1162
RURAL MINOR COLLECTOR

FM 2735, ETC
BOWIE COUNTY, ETC.
FOR THE CONSTRUCTION OF HAZARD ELIMINATION AND SAFETY CONSISTING OF SAFETY TREAT FIXED OBJECTS

(1) CSJ 0085-03-017
FM 2735 BOWIE COUNTY
LIMITS: FROM: 8.3 MI. N. OF US 82 TO: US 82
NET LENGTH OF PROJECT = 43,470.240 FT = 8.233 MI.
EQUATION: CSJ 0085-03-015 FM 2735 STA 87.38.600(BACK) = STA 69+38.600(AHEAD) = 1,800 FT

(2) CSJ 1570-02-021
FM 2735 BOWIE COUNTY
LIMITS: FROM: US 259 TO: 8.3 MI. N. OF US 82
NET LENGTH OF PROJECT = 16,093.440 FT = 3.048 MI.
NO EQUATION: CSJ 1570-02-021 FM 2735

(3) CSJ 1226-01-016
FM 1000 TITUS COUNTY
LIMITS: FROM: US 67 TO: SH 49
NET LENGTH OF PROJECT = 31,558.560 FT = 5.977 MI.
EQUATION: CSJ 1226-01-001 FM 1000 STA 276+92.700 (BACK) = STA 275+34.500 = (AHEAD) = 158.200 FT

(4) CSJ 0734-02-019
FM 1001 TITUS COUNTY
LIMITS: FROM: FM 1993 TO: US 67
NET LENGTH OF PROJECT = 47,847.360 FT = 9.062 MI.
EQUATION: CSJ 0734-02-016 FM 1001 STA 102+38.100 (BACK) = STA 103+57.800 = (AHEAD) = -119.700 FT
EQUATION: CSJ 0734-02-016 FM 1001 STA 205+02.800 (BACK) = STA 204+06.900 = (AHEAD) = 95.900 FT
EQUATION: CSJ 0734-02-016 FM 1001 STA 325+34.900 (BACK) = STA 325+77.100 = (AHEAD) = -42.200 FT
EQUATION: CSJ 0734-02-016 FM 1001 STA 339+22.600 (BACK) = STA 8+00.000 = (AHEAD) = 33,122.600 FT
EQUATION: CSJ 0734-02-016 FM 1001 STA 118+92.100 (BACK) = STA 118+94.500 = (AHEAD) = -2.400 FT

(5) CSJ 0546-01-038
FM 71 TITUS COUNTY
LIMITS: FROM: FRANKLIN C/L TO: MORRIS C/L
NET LENGTH OF PROJECT = 99,010.56 FT = 18.752 MI.

(6) CSJ 0546-02-013
FM 71 MORRIS COUNTY
LIMITS: FROM: TITUS C/L TO: US 259
NET LENGTH OF PROJECT = 25,528.800 FT = 4.835 MI.

(7) CSJ 0330-03-030
FM 44 BOWIE COUNTY
LIMITS: FROM: US 259 TO: FM 561
NET LENGTH OF PROJECT = 44,552.640 FT = 8.438 MI.
EQUATION: CSJ 0330-03-001 FM 44 STA 652+82.150 (BACK) = STA 651+82.150 = (AHEAD) = 100.000 FT

RXR CROSSING: NONE EXCEPTIONS: NONE

CONTRACTOR NAME:_____

CONTRACTOR ADDRESS:_____

DATE WORK BEGAN:_____

DATE WORK COMPLETED:_____

DATE OF ACCEPTANCE:_____

LIST OF APPROVED FIELD CHANGES:_____

THE CONSTRUCTION WORK WAS PERFORMED IN SUBSTANTIAL COMPLIANCE WITH THE CONTRACT.

_____ P.E.
DATE

THE CONTRACTOR SHALL MAKE HIS OWN INVESTIGATIONS AND ARRANGEMENTS FOR DELIVERY OF MATERIALS.

CONSTRUCTION SIGN AND BARRICADE PLACEMENT SHALL BE IN ACCORDANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AS SHOWN ON THE BC STANDARDS, AND AS SPECIFIED HEREIN OR AS DIRECTED.

TEXAS DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR LETTING: 4/1/2021
DocuSigned by:
Deanne Simmons, P.E.
B29084EF4AF345A...
DIRECTOR OF TRANSPORTATION PLANNING AND DEVELOPMENT

APPROVED FOR LETTING: 4/1/2021
DocuSigned by:
0EAA5DC25E0F45E...
DISTRICT ENGINEER

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, MAY, 2012).

DATE: 3/9/2021 3:04:57 PM
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COUNTY HARRISON, ETC PROJ. NO. STP 2021(299)HES
HWY. NO. FM 2735,ETC LETTING DATE JUNE 2021
DATE ACCEPTED

		GENERAL
	1	TITLE SHEET
	2	INDEX OF SHEETS
	3	LOCATION MAP
	4, 4A-4B	GENERAL NOTES
	5, 5A	ESTIMATE & QUANTITY
	6-30	MISCELLANEOUS SUMMARIES
	30A-30B	OMITTED
#	31-42	BC(1)-14 THRU BC(12)-14
#	43	TCP (1-1)-18
#	44	TCP (1-2)-18
#	45	TCP (2-1)-18
#	46	WZ(RS)-16
	47	DRAINAGE DETAILS
	48	CONCRETE DRIVEWAY DETAILS
#	49	PSET-SP
#	50	SETP-PD
	51	TxDOT STORMWATER POLLUTION PREVENTION PLAN
	52	ENVIRONMENTAL PERMITS ISSUES AND COMMITMENTS

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE BY A '#'
HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

Harold E Naasz P.E. 04 01 2021
DATE

INDEX OF SHEETS

 Texas Department of Transportation

FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.		SHEET NO.
			2
STATE	DISTRICT	COUNTY	
TEXAS	ATL	BOWIE	
CONTROL	SECTION	JOB	HIGHWAY NO.
0085	03	017	FM 2735

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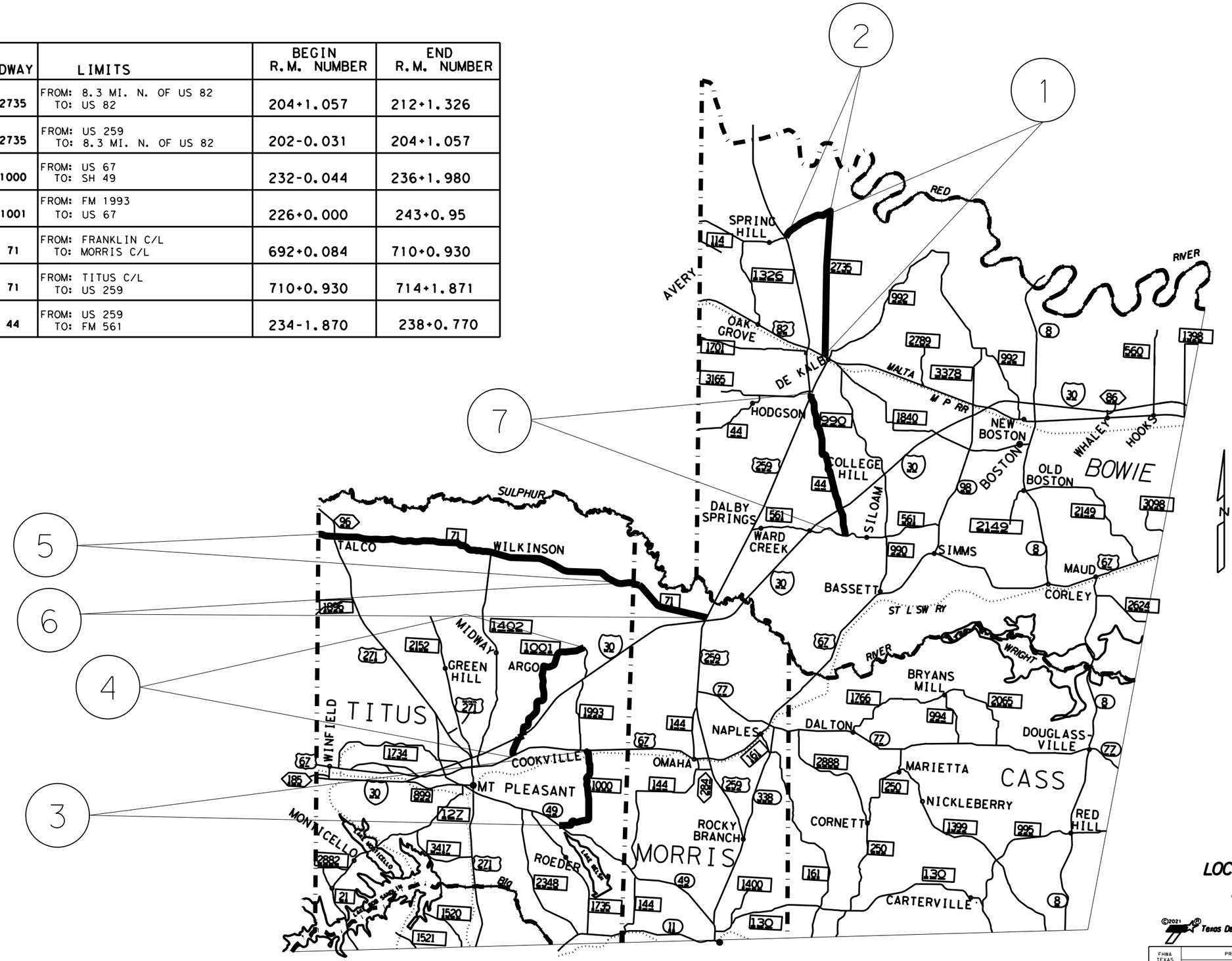
REF. NO.	CSJ	ROADWAY	LIMITS	BEGIN R.M. NUMBER	END R.M. NUMBER
1	0085-03-017	FM 2735	FROM: 8.3 MI. N. OF US 82 TO: US 82	204+1.057	212+1.326
2	1570-02-021	FM 2735	FROM: US 259 TO: 8.3 MI. N. OF US 82	202-0.031	204+1.057
3	1226-01-016	FM 1000	FROM: US 67 TO: SH 49	232-0.044	236+1.980
4	0734-02-019	FM 1001	FROM: FM 1993 TO: US 67	226+0.000	243+0.95
5	0546-01-038	FM 71	FROM: FRANKLIN C/L TO: MORRIS C/L	692+0.084	710+0.930
6	0546-02-013	FM 71	FROM: TITUS C/L TO: US 259	710+0.930	714+1.871
7	0330-03-030	FM 44	FROM: US 259 TO: FM 561	234-1.870	238+0.770



NOT TO SCALE

LOCATION MAP

Texas Department of Transportation

FHWA TEXAS DIVISION	PROJECT NO.		SHEET NO.
			3
STATE	DISTRICT	COUNTY	
TEXAS	ATL	BOWIE	
CONTROL	SECTION	JOB	HIGHWAY NO.
0085	03	017	FM 2735

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GENERAL NOTES:

GENERAL:

Contractor questions on this project are to be addressed to the following individuals:

Paul Wong, P.E. – Area Engineer
Paul.Wong@Txdot.gov
Dana Moore, P.E. – Assistant Area Engineer
Dana.Moore@txdot.gov

Contractor questions will be accepted through email, phone, and in person by the above individuals.

All contractor questions will be reviewed by the Engineer. Once a response is developed, it will be posted to TxDOT's Public FTP at the following Address:

https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting%20Responses/

All questions submitted that generate a response will be posted through this site. The site is organized by District, Project Type (Construction or Maintenance), Letting Date, CCSJ/Project Name.

A field office will not be required on this project.

ITEM 5:

Place construction points, stakes, and marks at intervals of no more than 100 ft., or as directed. Place stakes and marks so as not to interfere with normal maintenance operations.

ITEM 7:

This project is considered a maintenance activity and is exempt from the Construction General Permit (CGP) coverage.

Transmit copies of correspondence between Contractor and resource agencies as listed in Article 7.7 "Preservation of Cultural and Natural Resources and the Environment".

No significant traffic generator events.

ITEM 8:

Working days will be charged in accordance with Section 8.3.1.4, "Standard Workweek".

ITEM 132:

Test borrow sources and furnish results to the Engineer.

Remove deleterious material, organic matter and sediment, etc., from all ponds, lakes, sloughs, channels and existing roadway ditches prior to placement of embankment. This work will be subsidiary to this item.

ITEM 150:

Excavate to facilitate drainage as directed.

ITEM 164:

Finish slopes with a tracked vehicle running vertically up and down the slope.

Adjust the seeding mixture and rates if directed.

Inoculate crimson clover seed with a legume inoculant. Sow inoculated seed dry, with either hand operated or mechanical equipment, after the fertilizer is placed.

Do not use Bahia grass.

Use broadcast seeding for temporary erosion control, when and as directed. This will not be paid for directly but is subsidiary to the various bid items.

Use additional temporary seeding if permanent seeding is placed outside the optimum growing season shown for this item, if directed. This will not be paid for directly but is subsidiary to the various bid items.

Mow tall growing vegetation as directed, to provide optimum growing conditions for temporary or permanent seeded areas in accordance with Item 730 "Roadside Mowing" except for measurement and payment. This work will be subsidiary to pertinent bid items.

Repair mulch sod, damaged by causes other than the Contractor's operations, as directed using mulch sod, seeding, and fertilizer. This work will be measured and paid for in accordance with the applicable bid items of the contract.

PERMANENT PLANTING MIXTURE

Species and Rates
(lb. PLS/ac.)
(Season: February 1 to May 15)

Green Sprangletop	0.4
Bermudagrass	2.4
Sand Lovegrass	1.0
Lance-Leaf Coreopsis	1.25

(Season: September 1 to November 30)

Bermuda (Unhulled)	12
Crimson Clover	10

TEMPORARY SEEDING FOR EROSION CONTROL

Warm Season
(Season: May 15 to August 31)

Bermudagrass	6
Foxtail Millet	34

Cool Season
(Season: September 1 to November 30)

Tall Fescue	4.5
Oats	24
Wheat	34

ITEM 166:

When seeding between September 1 and January 1, place one-half of the amount of fertilizer specified for seeding with the seeds and place the remainder the following spring unless otherwise directed. When seeding is placed between January 1 and June 1, place one-half the amount of fertilizer specified for seeding with the seeds and place the remainder 30 days later unless otherwise directed.

* Apply fertilizer (13-13-13) at a rate of 300 lbs. /5000 sq. yds.

* FOR CONTRACTOR'S INFORMATION ONLY.

ITEM 420:

When unstable foundation materials are encountered, the Engineer will have the option of directing the placement of a foundation seal of Class "A" concrete instead of an undercut.

Chamfer or tool exposed edges or joints of concrete as directed.

ITEM 421:

The Department will furnish and maintain concrete compressive strength testing equipment.

ITEM 432:

Provide ½" expansion joint material with an area equal to the area of contact between the two concrete surfaces. The joint material will be visually inspected for approval.

ITEM 466 & 467:

Provide precast safety end treatments with a toewall measuring at least 12 inches. Construct toewalls for cast-in-place safety end treatments as shown in the plans.

Remove trees, bushes, and underbrush as directed. This work will be subsidiary to the pertinent bid items.

ITEM 502:

The Contractor Force Account "Safety Contingency" that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

The Contractor's responsible person (CRP) will be responsible for ensuring that the signs and traffic control devices are in place and functioning properly.

The CRP will inspect and ensure any deficiencies are corrected each and every day throughout the duration of this contract. Notify the Engineer in writing of the name, address, and telephone number of this employee or these employees.

Length of lane closures will be as directed based on the demonstrated ability to prosecute the work within the closed section.

Install temporary rumble strips in accordance with WZ(RS) wherever short duration or short term stationary lane closures are in place and workers are present.

Maintenance of driveways and intersections will not be paid for directly but is subsidiary to the pertinent bid items.

Restrict the movement of equipment across traffic lanes to an absolute minimum.

Use strobe lights or rotating beacons on all motorized equipment, operating on or adjacent to the road surface.

Place and maintain U.S. mailboxes within project limits in such a manner as to ensure continuous mail service. See BC Standard for more information.

ITEM 506:

Sprinkle water for dust control. Meet the requirements of Item 204, “Sprinkling” except for measurement and payment. Sprinkling will be considered subsidiary to this Item.

Place erosion or pollution control measures deemed necessary by the Engineer. Work performed for which there is no applicable pay items in the contract will be reimbursed in accordance with Article 9.7, “Payment for Extra Work and Force Account Method”.

ITEM 530:

Unless otherwise shown in the plans, furnish W2.9 x W2.9 welded wire reinforcing in all concrete driveways.

Meet the requirements of Item 110, “Excavation” and Item 132, “Embankment, Type “C”, except for measurement and payment, for construction of driveways and turnouts.

ITEM 6185:

The shadow vehicle with truck mounted attenuator (TMA) will not be optional but will be required as shown on the appropriate traffic control plan sheets.

A total of one (1) shadow vehicle with TMA will be required for work. The contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMA’s needed for the project.

SPECIFICATION DATA
TEST TO BE IN ACCORDANCE WITH DEPARTMENT OF TRANSPORTATION TEST METHODS

		GRADING REQUIREMENTS PERCENT RETAINED - SIEVES				SOIL CONSTANTS		
						L.L	P.I.	
ITEM	DESCRIPTION	2-1/2”	1-3/4”	No. 4	No. 40	MAX.	MAX.	MIN.
132	Embankment (Type C)					50	25	4

ESTIMATE & QUANTITY

CONTROLLING PROJECT ID 0085-03-017 **DISTRICT** Atlanta **COUNTY** Bowie, Morris, Titus
HIGHWAY FM 1000, FM 1001, FM 2735, FM 44, FM 71

				0085-03-017		0330-03-030		0546-01-038		0546-02-013		0734-02-019		1226-01-016	
		CONTROL SECTION JOB													
		PROJECT ID		A00066136		A00066658		A00066733		A00066734		A00066302		A00066290	
		COUNTY		Bowie		Bowie		Titus		Morris		Titus		Titus	
		HIGHWAY		FM 2735		FM 44		FM 71		FM 71		FM 1001		FM 1000	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	104-6017	REMOVING CONC (DRIVEWAYS)	SY	6.000		39.000		45.000				140.000		138.000	
	132-6021	EMBANKMENT (VEHICLE)(ORD COMP)(TY C)	CY	191.000		192.000		408.000		29.000		275.000		232.000	
	150-6001	BLADING	STA	50.000		46.800		101.500		7.250		69.000		65.000	
	164-6001	BROADCAST SEED (PERM) (RURAL) (SANDY)	SY	6,790.000		6,615.000		14,280.000		1,015.000		9,380.000		7,840.000	
	168-6001	VEGETATIVE WATERING	MG	108.640		94.640		241.080		16.240		148.960		125.420	
	400-6008	CUT & RESTORE ASPH PAVING	SY	91.000		109.000		394.000		21.000		385.000		386.000	
	432-6001	RIPRAP (CONC)(4 IN)	CY									4.000		3.000	
	464-6002	RC PIPE (CL III)(15 IN)	LF	112.000		124.000		104.000				214.000		305.000	
	464-6003	RC PIPE (CL III)(18 IN)	LF	992.000		128.000		426.000		116.000		1,476.000		1,366.000	
	464-6005	RC PIPE (CL III)(24 IN)	LF	262.000		52.000		89.000				96.000		36.000	
	464-6007	RC PIPE (CL III)(30 IN)	LF	40.000				4.000							
	467-6341	SET (TY II) (15 IN) (RCP) (6: 1) (P)	EA	28.000		16.000		6.000				20.000		50.000	
	467-6363	SET (TY II) (18 IN) (RCP) (6: 1) (P)	EA	130.000		161.000		368.000		25.000		232.000		172.000	
	467-6395	SET (TY II) (24 IN) (RCP) (6: 1) (P)	EA	32.000		6.000		30.000		4.000		16.000		12.000	
	467-6423	SET (TY II) (30 IN) (RCP) (6: 1) (P)	EA	8.000				2.000							
	496-6007	REMOV STR (PIPE)	LF	1,385.000		1,631.000		3,244.000		116.000		1,792.000		1,792.000	
	500-6001	MOBILIZATION	LS	40.00%		10.00%		10.00%		10.00%		10.00%		10.00%	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	3.000		4.000		6.000		3.000		2.000		1.000	
	530-6020	DRIVEWAYS (CONC)(TYPE 1)	SY	6.000		50.000		45.000				183.000		128.000	
	530-6028	DRIVEWAYS (CONC)(TYPE 2)	SY											45.000	
	6185-6002	TMA (STATIONARY)	DAY	21.000		50.000		99.000		7.000		31.000		59.000	
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	1.000											
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000											
1A	464-6003	RC PIPE (CL III)(18 IN)	LF			1,286.000		2,588.000							
	464-6005	RC PIPE (CL III)(24 IN)	LF			48.000		44.000							
1	4122-6010	THERMOPLASTIC PIPE(24 IN)(PP)(TYPE III)	LF			48.000		44.000							
	4122-6014	THERMOPLASTIC PIPE(18 IN)(PP)(TYPE III)	LF			1,286.000		2,588.000							

ESTIMATE & QUANTITY

CONTROLLING PROJECT ID 0085-03-017 **DISTRICT** Atlanta **COUNTY** Bowie, Morris, Titus
HIGHWAY FM 1000, FM 1001, FM 2735, FM 44, FM 71

						TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**1570-02-021**			
		PROJECT ID		**A00066135**			
		COUNTY		**Bowie**			
		HIGHWAY		**FM 2735**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	104-6017	REMOVING CONC (DRIVEWAYS)	SY			368.000	
	132-6021	EMBANKMENT (VEHICLE)(ORD COMP)(TY C)	CY	42.000		1,369.000	
	150-6001	BLADING	STA	10.500		350.050	
	164-6001	BROADCAST SEED (PERM) (RURAL) (SANDY)	SY	1,470.000		47,390.000	
	168-6001	VEGETATIVE WATERING	MG	23.520		758.500	
	400-6008	CUT & RESTORE ASPH PAVING	SY	15.000		1,401.000	
	432-6001	RIPRAP (CONC)(4 IN)	CY			7.000	
	464-6002	RC PIPE (CL III)(15 IN)	LF			859.000	
	464-6003	RC PIPE (CL III)(18 IN)	LF	226.000		4,730.000	
	464-6005	RC PIPE (CL III)(24 IN)	LF	4.000		539.000	
	464-6007	RC PIPE (CL III)(30 IN)	LF			44.000	
	467-6341	SET (TY II) (15 IN) (RCP) (6: 1) (P)	EA	4.000		124.000	
	467-6363	SET (TY II) (18 IN) (RCP) (6: 1) (P)	EA	36.000		1,124.000	
	467-6395	SET (TY II) (24 IN) (RCP) (6: 1) (P)	EA	2.000		102.000	
	467-6423	SET (TY II) (30 IN) (RCP) (6: 1) (P)	EA			10.000	
	496-6007	REMOV STR (PIPE)	LF	230.000		10,190.000	
	500-6001	MOBILIZATION	LS	10.00%		100.00%	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	2.000		21.000	
	530-6020	DRIVEWAYS (CONC)(TYPE 1)	SY			412.000	
	530-6028	DRIVEWAYS (CONC)(TYPE 2)	SY			45.000	
	6185-6002	TMA (STATIONARY)	DAY	14.000		281.000	
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS			1.000	
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS			1.000	
1A	464-6003	RC PIPE (CL III)(18 IN)	LF			3,874.000	
	464-6005	RC PIPE (CL III)(24 IN)	LF			92.000	
1	4122-6010	THERMOPLASTIC PIPE(24 IN)(PP)(TYPE III)	LF			92.000	
	4122-6014	THERMOPLASTIC PIPE(18 IN)(PP)(TYPE III)	LF			3,874.000	

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 2735 CSJ 0085-03-017

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)		PIPE RCP CL (III)				SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE					15"	18"	24"	30"	15"	18"	24"	30"				REMOVE	(TYPE 1)				
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF		EA	LF	LF	LF	EA	EA	EA	EA	1 CY/ SET OR AS NOTED CY	35 SY / SET	80 MG / 5000 SY	SY	SY		SY	LF	
	0+00																								FULTON ST CURB ENDS
1	0+32	RT	ACP	RCP	2	0.50	26			30				2			2	70	1.12				18	20	
2	4+58	RT	GRAVEL	RCP	1	0.50							2				2	70	1.12						
3	5+05	RT	ACP	RCP		0.50								2			2	70	1.12						
4	6+05	RT	ACP	RCP		0.50								2			2	70	1.12						
5	7+25	RT	ACP	RCP		0.50	4							2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT BACK STA
6	9+75	RT	ACP	CPP		0.50	20			20				2			2	70	1.12				18	20	
7	9+75	LT	ACP	RCP		0.50							2				2	70	1.12						
8	10+60	LT	GRASS	RCP		0.50							2				2	70	1.12						
9	10+85	LT	GRAVEL	RCP		0.50							2				2	70	1.12						
10	14+50	RT	ACP	RCP		0.50							2				2	70	1.12						
11	15+45	RT	GRAVEL	RCP		0.50	8			8				2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
12	16+45	RT	GRAVEL	CMP		0.50	22			22				2			2	70	1.12						
13	16+45	LT	GRAVEL	RCP		0.50								2			2	70	1.12						
14	17+40	LT	GRAVEL	RCP		0.50								2			2	70	1.12						
15	18+25	LT	GRAVEL	RCP		0.50									2		2	70	1.12						
16	18+70	XS	NA	NA																					NO WORK TO BE DONE
17	39+70	LT	ACP	CMP		0.50	30			30				2				70	1.12				18	20	
18	50+00	XS	NA	NA																					MUD CREEK BRIDGE CENTER OF BRIDGE
19	53+90	LT	GRAVEL	CPP		0.50	36								2		2	70	1.12						
20	59+40	LT	GRAVEL	RCP		0.50									2		2	70	1.12						
21	64+50	RM	212	NA																					
22	65+85	LT	GRAVEL	TILE		0.50	20					20				2	2	70	1.12						
23	67+40	RT	ACP	RCP		0.50									2		2	70	1.12						
24	68+20	LT	GRAVEL	RCP		0.50																			
25	69+50	LT	GRAVEL	CLAY		0.50	27				30				2		2	70	1.12						
26	71+40	LT	GRASS	RCP		0.50									2		2	70	1.12						
27	72+95	LT	GRASS	RCP		0.50								2			2	70	1.12						
28	75+75	XS	NA	NA																					NO WORK TO BE DONE
29	76+05	LT	GRAVEL	CLAY		0.50	25			24				2				70	1.12						
30	77+80	LT	GRAVEL	CLAY		0.50	18			18				2			2	70	1.12						
31	79+15	LT	ACP	RCP		0.50	8				8				2		2	70	1.12				8	8	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
32	79+60	LT	GRAVEL	CLAY		0.50	21			20				2			2	70	1.12						
33	85+65	RT	GRAVEL	CPP		0.50	20					20				2	2	70	1.12						
34	94+00	LT	GRASS	RCP		0.50	12			12				2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST 2 JOINTS.
35	103+45	RT	GRASS	CLAY		0.50	30				30				2		2	70	1.12						
36	106+35	LT	GRAVEL	CMP		0.50	25				30				2		2	70	1.12						
37	111+50	RT	GRASS	CMP		0.50	18			18				2			2	70	1.12						
38	137+28	XS	NA	NA																					NO WORK TO BE DONE
39	153+12	XS	NA	NA																					NO WORK TO BE DONE
40	179+52	NA	GRAVEL	NA																					NO WORK TO BE DONE
41	179+52	XS	NA	XS																					NO WORK TO BE DONE
42	205+92	NA	NA	NA																					NO WORK TO BE DONE
43	208+15	LT	ACP	CMP		0.50	22			24				2			2	70	1.12				12	14	CR 3214
44	209+40	LT	GRAVEL	CLAY		0.50	20			24				2			2	70	1.12						
45	211+35	LT	GRAVEL	CLAY		0.50	16			16				2			2	70	1.12						
46	216+10	RT	GRAVEL	RCP		0.50	4		4				2				2	70	1.12						REMOVE AND REPLACE FIRST JOINT BACK STA
47	216+10	XS	NA	MBC																					NO WORK TO BE DONE
48	219+95	LT	GRAVEL	2-CMP		1.00	48				48				4		4	140	2.24						CSJ 0085-03-002 STA 229+70
49	232+32	NA	NA	RCP																					SETS EXIST, NO WORK TO BE DONE
50																									OMITTED
SUBTOTAL 1 0085-03-017					**3**	**19.50**	**480**		**4**	**266**	**146**	**40**	**12**	**38**	**22**	**4**	**72**	**2660**	**42.56**				**74**		

[1] FOR CONTRACTOR INFORMATION ONLY
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[4] SEE DRAINAGE DETAILS SHEET

MISCELLANEOUS SUMMARIES

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		6

FILE: c:\txdot\pw_online\txdot5\hal.naasz\d0314328\[006-008 MISCELLANEOUS SUMMARIES 03 11 2021.xlsm]Plan Summary Sheet FM 71 (6)
DATE: 3/11/2021 10:50:27 AM

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 2735 CSJ 0085-03-017 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	RIPRAP (CONC) (4 IN) [3]	PIPE RCP CL (III)			SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE					15"	18"	24"	15"	18"	24"	30"				REMOVE	(TYPE 1)				
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	SY	EA	LF	LF	EA	EA	EA	EA	1 CY/ SET OR AS NOTED CY	35 SY / SET	80 MG / 5000 SY	SY	SY		SY	LF	
51	231+20	LT	GRASS	STEEL		0.50	27				30			2		2	70	1.12						
52	237+00	RT	GRAVEL	CPP		0.50	26			30			2			2	70	1.12						
53	249+50	LT	GRAVEL	STEEL		0.50	30				30			2		2	70	1.12						
54	251+40	XS	NA	NA																				NO WORK TO BE DONE
55	257+15	LT	GRAVEL	CPP		0.50	21			24														
56	263+45	LT	GRAVEL	CMP		0.50	49			50			2		2	2	70	1.12						CR 3301
57	275+35	XS	NA	NA																				NO WORK TO BE DONE
58	278+45	LT	GRAVEL	CLAY		0.50	10			10			2		2	2	70	1.12						
59	279+30	RT	RM 208	NA																				NO WORK TO BE DONE
60	281+35	LT	GRASS	RCP		0.50				18			2			2	70	1.12						
61	283+55	LT	GRAVEL	CLAY		0.50	18			18			2			2	70	1.12						
62	285+10	RT	GRAVEL	CMP		0.50	26				26			2		2	70	1.12						
63	285+40	LT	GRASS	CLAY		0.50	16			18			2			2	70	1.12						
64	286+50	RT	GRAVEL	RCP		0.50							2			2	70	1.12						
65	286+90	LT	GRAVEL	CLAY		0.50	19			18			2			2	70	1.12						
66	287+15	RT	GRASS	RCP		0.50							2			2	70	1.12						
67	288+20	RT	GRASS	CLAY		0.50	19			18			2			2	70	1.12						
68	289+60	LT	GRAVEL	CLAY		0.50	18			18			2			2	70	1.12						
69	289+80	RT	GRAVEL	RCP		0.50	4			4			2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT BACK STA
70	292+20	LT	GRAVEL	CLAY		0.50	24			24			2			2	70	1.12						
71	294+75	LT	GRAVEL	RCP		0.50	8			8			2			2	70	1.12						
72	296+30	RT	GRAVEL	CMP		0.50	22			24			2			2	70	1.12						
73	296+40	LT	GRAVEL	RCP		0.50	4			4			2			2	70	1.12						
74	298+25	RT	GRAVEL	CLAY		0.50	19			18			2			2	70	1.12						
75	299+35	RT	GRAVEL	CLAY		0.50	8		8			2				2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
76	299+35	LT	GRASS	RCP		0.50	8			8			2			2	70	1.12						
77	299+90	RT	GRAVEL	RCP		0.50	8		8			2				2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
78	301+75	RT	GRAVEL	RCP		0.50	4		4			2				2	70	1.12						REMOVE AND REPLACE FIRST JOINT BACK STA
79	303+15	LT	GRAVEL	RCP		0.50	8			8			2			2	70	1.12						
80	304+25	LT	GRASS	RCP		0.50	8			8			2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
81	308+70	RT	CON/GRAVEL	RCP		0.50	12			12			2			2	70	1.12	6	6				CONCRETE W1=W2=10' L=5', NO RADIUS
82	309+90	LT	ACP	CPP		0.50	20			20			2			2	70	1.12				9	10	
83	310+35	RT	GRAVEL	RCP		0.50	22			24			2			2	70	1.12						PLUGGED/SILTED IN
84	311+90	RT	GRAVEL	RCP		0.50	16			16			2			2	70	1.12						PLUGGED/SILTED IN
85	313+80	RT	GRASS	CLAY		0.50	12			12			2			2	70	1.12						OAK RIDGE BAPTIST CHURCH
86	313+95	LT	GRAVEL	RCP		0.50	8			8			2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
87	314+75	LT	GRAVEL	RCP		0.50								2		2	70	1.12						
88	316+10	RT	GRASS	RCP		0.50						2				2	70	1.12						
89	316+10	LT	GRASS	CLAY		0.50	18		18			2				2	70	1.12						
90	318+40	RT	ACP	CLAY		0.50	18		18			2				2	70	1.12				8	10	
91	321+60	LT	GRASS	RCP		0.50	8			8			2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
92	322+05	RT	GRAVEL	RCP		0.50							2			2	70	1.12						
93	324+10	XS	NA	NA																				NO WORK TO BE DONE
94	327+65	RT	GRAVEL	RCP		0.50							2			2	70	1.12						
95	328+40	RT	GRAVEL	CMP		0.50	24			24			2			2	70	1.12						
96	330+50	RT	GRAVEL	CLAY	1	0.50	17			18			2			2	70	1.12						
97	331+80	LT	CONCRTE	NA																				
98	339+90	RT	GRAVEL	NA																				
99	345+75	LT	GRAVEL	RCP		0.50	8			8			2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
100	346+05	RT	GRAVEL	CMP		0.50	30				30			2		2	70	1.12						
SUBTOTAL 2 0085-03-017					**1**	**22.00**	**617**		**56**	**478**	**116**	**12**	**64**	**10**	**4**	**86**	**3010**	**48.16**	**6**	**6**		**17**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		7

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 2735 CSJ 0085-03-017 CONTINUED

NO	LOCATION		EXISTING SURFACE	EXISTING PIPE	[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	RIPRAP (CONC) (4 IN)	PIPE RCP CL (III)				SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
									15"	18"	24"	30"	15"	18"	24"	30"				REMOVE	(TYPE 1)				
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	SY	LF	LF	LF	LF	EA	EA	EA	LF	1 CY/ SET OR AS NOTED CY	35 SY / SET	80 MG / 5000 SY	SY	SY		SY	LF	
101	346+80	XS	NA	NA																					BRIDGE
102	365+90	RT	GRAVEL	RCP		0.50	4			4				2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT BACK STA
103	367+00	RT	GRASS	RCP		0.50	8			8				2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
104	368+05	RT	GRAVEL	RCP		0.50	20			20				2			2	70	1.12						
105	372+15	RT	GRASS	CMP		0.50	20			20				2			2	70	1.12						
106	372+50	RT	GRASS	CMP		0.50	20			20				2			2	70	1.12						
107	374+40	RT	GRAVEL	RCP		0.50							2				2	70	1.12						
108	376+40	XS	NA	NA																					NO WORK TO BE DONE
109	376+85	RT	GRAVEL	CMP		0.50	20			20				2			2	70	1.12						
110	379+15	RT	GRAVEL	CLAY		0.25	20		26				1				1	35	0.56						JOIN PIPES. 1 CY ADDITIONAL EMBANKMENT.
111	379+50		GRAVEL	CLAY		0.25	20		26				1				2	35	0.56						
112	384+50	LT	RM 206	NA																					
113	389+70	RT	GRAVEL	CLAY		0.50	16			16				2			2	70	1.12						
114	394+55	XS	NA	NA																					NO WORK TO BE DONE
115	394+75	RT	GRASS	CLAY		0.50	16			16				2			2	70	1.12						
116	397+20	RT	RT	RCP / CLAY		0.50	18			18				2			2	70	1.12						
117	401+35	LT	NA	RCP																					SETS EXIST NO WORK TO BE DONE
118	401+55	RT	GRAVEL	NA																					NO PIPE EXIST
119	404+10	RT	GRASS	CLAY		0.50	18			18				2			2	70	1.12						
120	407+75	RT	GRAVEL	CLAY		0.50	18			18				2			2	70	1.12						
121	408+70	RT	GRASS	CMP		0.50	26			26				2			2	70	1.12						
122	408+70	LT	GRAVEL	RCP		0.50																			SETS EXIST NO WORK TO BE DONE
123	408+70	RT	GRAVEL	CMP		0.50	24			24				2			2	70	1.12						
124	414+20	XS	NA	NA																					
125	418+25	LT	GRAVEL	CPP		0.50	20			20				2			2	70	1.12						
126	433+60	NA	NA	NA																					END FM 2735 CSJ 0085-03-017 @ INTERSECTION COUNTY ROAD 3318 , 33°36'58.79", -94°37'1.95"
SUBTOTAL 3 0085-03-017						**8.50**	**288**		**52**	**248**			**4**	**28**			**33**	**1120**	**17.92**						
TOTAL 0085-03-017					**4.00**	**50.00**	**1385**		**112**	**992**	**262**	**40**	**28**	**130**	**32**	**8**	**191**	**6790**	**108.64**	**6**	**6**		**91**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**8**

FILE: c:\txdot\pw_online\txdot5\hal.naasz\d0314328\[006-008 MISCELLANEOUS SUMMARIES 03 11 2021.xlsm]Plan Summary Sheet FM 71 (8)
DATE: 3/11/2021 10:50:27 AM

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 2735 CSJ 1570-02-021

NO	LOCATION		EXISTING			BLADING	REMOVE STRUCTURE [2] (PIPE)		PIPE RCP CL (III)			SET (TYII) (RCP) (6:1)(P)			EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING				CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE					18"	24"		15"	18"	24"									
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL											1 CY/ SET OR AS NOTED CY	35 SY / SET	80 MG / 5000 SY						
						STA	LF		LF	LF		EA	EA	EA		SY	MG				SY	LF	
	00+00	NA	NA	NA																			BEGIN FM 2735 CSJ 1570-02-021 @ 33°36'58.79", -94°37'1.95", NO WORK
1	00+90	NA	NA	NA																			NO WORK TO BE DONE
2	3+95	XS	NA	XS																			NO WORK TO BE DONE
3	7+60	LT	GRAVEL	CPP		0.50	20		20			2			2	70	1.12						
4	7+60	RT	GRAVEL	CPP		0.50	20		20			2			2	70	1.12						
5	40+85	XS	NA	XS																			NO WORK TO BE DONE
6	43+75	LT	GRAVEL	RCP		0.50	4			4				2	2	70	1.12						REMOVE AND REPLACE FIRST JOINT BACK STA
7	50+90	LT	GRAVEL	RCP		0.50	8		8				2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
8	50+90	RT	GRAVEL	RCP		0.50	8		8				2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
9	54+90	RT	GRAVEL	CMP		0.50	22		22				2		2	70	1.12						
10	55+80	RT	NA	RM 204																			NO WORK TO BE DONE
11	57+55	LT	GRAVEL	RCP		0.50							2		2	70	1.12						
12	61+15	LT	GRASS	RCP		0.50							2		2	70	1.12						
13	67+25	LT	GRAVEL	RCP		0.50	8		8				2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
14	67+75	LT	GRASS	RCP		0.50	8		8				2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
15	78+50	LT	GRASS	CMP		0.50	30		30				2		2	70	1.12						
16	79+75	XS	NA	XS																			NO WORK TO BE DONE
17	88+65	LT	GRAVEL	NONE																			NO WORK TO BE DONE
18	89+75	RT	GRASS	NONE																			NO WORK TO BE DONE
19	91+55	RT	ACP	RCP		0.50							2		2	70	1.12						
20	92+05	XS	NA	XS																			NO WORK TO BE DONE
21	93+25	RT	ACP	CLAY		0.50	24		24				2		2	70	1.12				15	17	
22	100+80	RT	NA	NONE																			NO WORK TO BE DONE
23	100+80	LT	NA	NONE																			NO WORK TO BE DONE
24	102+15	XS	NA	XS																			NO WORK TO BE DONE
25	106+30	LT	GRAVEL	CMP		0.50	30		30				2		2	70	1.12						
26	108+80	RT	GRAVEL	NONE																			NO WORK TO BE DONE
27	123+60	XS	NA	XS																			NO WORK TO BE DONE
28	125+75	RT	GRASS	NONE																			NO WORK TO BE DONE
29	126+30	LT	GRAVEL	RCP		0.50	8		8				2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
30	135+10	LT	GRASS	RCP		0.50	8		8				2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
31	135+70	RT	GRASS	RCP		0.50	8		8				2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
32	137+70	RT	CONCRETE	RCP		0.50							2		2	70	1.12						
33	138+80	RT	GRASS	RCP		0.50	8		8				2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
34	140+00	LT	ACP	RCP		0.50	8		8				2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
35	146+60	XS	NA	XS																			NO WORK TO BE DONE
36	154+00	RT	GRAVEL	RCP		0.50	8		8				2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
37	159+40	LT	NA	RM202																			NO WORK TO BE DONE
38	160+40	XS	NA	XS																			NO WORK TO BE DONE
39	160+90	NA	NA	NA																			END FM 2735 CSJ 1570-02-021 @ US 259, 33°36'29.99", -94°39'38.33"
	TOTAL 1570-02-021					10.50	230		226	4		4	36	2	42	1470	23.52				15		

[1] FOR CONTRACTOR INFORMATION ONLY

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		9

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 1000 CSJ 1226-01-016

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL/ SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	RIPRAP (CONC) [3] (4 IN)	PIPE RCP CL (III)				SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE					15"	18"	24"	30"	15"	18"	24"	30"				REMOVE	(TYPE 1)	(TYPE2)			
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	CY	LF	LF	LF	LF	EA	EA	EA	EA	1 CY/ SET OR AS NOTED CY	35 SY / SET	80 MG / 5000 SY	SY	SY	SY	SY	LF	
	320+50		**NA**	**NA**																					**BEGIN FM 1000 CSJ 1226-01-016 @ SH 49,** NO WORK TO BE DONE
1	315+35		NA	NA																					33° 7'27.40" - 94°52'48.62", NO WORK TO BE DONE
2	314+30	L	GRAVEL	RCP		0.50								2			2	70	1.12						
3	313+05	L	GRAVEL	RCP		0.50	4				4				2		2	70	1.12						REMOVE AND REPLACE LAST JOINT.
4	312+35	XS	NA	NA		0.50																			NO WORK TO BE DONE
5	308+15	L	GRAVEL	CMP		0.50	26			26				2			2	70	1.12						
6	308+30	R	ACP	CMP		0.50	18			18				2			2	70	1.12				10	11	
7	307+00	L	GRASS	CMP		0.50	20			20				2			2	70	1.12						
8	307+15	R	GRASS	RCP		0.50							2				2	70	1.12						
9	305+70	L	ACP	CMP		0.50	24						2				2	70	1.12				13	15	
10	305+40	L	ACP	CMP		0.50	20			20				2			2	70	1.12				18	20	
11	305+40	R	ACP	RCP		0.50	8		8				2				2	70	1.12				7	8	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
12	304+55	L	GRAVEL	CMP		0.50	24			24				2			2	70	1.12						
13	303+50	R	ACP	CMP		0.50	20			20				2			2	70	1.12				10	11	
14	298+23	L	ACP	RCP		0.50	8		8				2				2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
15	297+25	L	GRAVEL	CMP		0.50	24			24				2			2	70	1.12						
16	300+05	R	GRAVEL	RCP		0.50	8			8				2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
17	299+80	R	GRAVEL	CPP		0.50	20			20				2			2	70	1.12						REMOVE AND REPLACE WITH 18" RCP.
18	299+25	L	GRAVEL	CPP		0.50	20			20				2			2	70	1.12						
19	297+15	XS	NA	NA		0.50																			NO WORK TO BE DONE
20	296+65	L	ACP	CMP		0.50	24			24				2			2	70	1.12						
21	296+60	R	NA	NA		0.50																			NO WORK TO BE DONE
22	295+35	XS	NA	NA		0.50																			NO WORK TO BE DONE
23	294+10	L	ACP	CPP		0.50	20			20				2			2	70	1.12						
24	293+80	R	GRAVEL	RCP		0.50	8		8				2				2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
25	290+80	L	GRAVEL	CMP		0.50	24			24				2			2	70	1.12						
26	290+75	R	GRAVEL	RCP	2	0.50	8			8				2			2	70	1.12						
27	289+65	L	GRAVEL	CMP		0.50	24			24				2			2	70	1.12						
28	289+05	R	ACP	STEEL/ RCP		0.50	20			20				2			2	70	1.12				11	12	
29	288+70	L	GRASS	CMP		0.50	24			24				2			2	70	1.12						
30	290+45	R	NA	RCP		0.50									2		2	70	1.12						NO WORK TO BE DONE
31	290+50	L	NA	NA		0.50																			C R 4355, NO WORK TO BE DONE
32	289+05	XS	NA	NA		0.50																			NO WORK TO BE DONE
33	288+65	R	NA	NA		0.50																			NO WORK TO BE DONE
34	283+60	XS	NA	NA		0.50																			NO WORK TO BE DONE
35	275+20	R	GRAVEL	CMP		0.50	16			16				2			2	70	1.12						
	275+35	EQUATION: CSJ 1226-01-001 FM 1000 STA 276+92.700 (BACK) = STA 275+34.500 = (AHEAD) = 158.200 FT																							EQUATION
	276+93																								
SUBTOTAL 1 1226-01-016					**2**	**17.00**	**412**		**24**	**360**	**4**		**10**	**38**	**4**		**52**	**1820**	**29.12**				**69**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**10**

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 1000 CSJ 1226-01-016 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL/ SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	RIPRAP (CONC) [3] (4 IN)	PIPE RCP CL (III)				SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			[1] [4] CUT ACP PAVEMENT LENGTH	CUT & RESTORING ASPHALT PAVEMENT	REMARKS / NOTES
			SURFACE	PIPE					15"	18"	24"	30"	15"	18"	24"	30"				REMOVE	(TYPE 1)	(TYPE2)			
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	CY	LF	LF	LF	LF	EA	EA	EA	EA	1 CY/ SET OR AS NOTED CY	35 SY / SET	80 MG / 5000 SY	SY	SY	SY	SY	LF	
	275+35																								
	276+93		EQUATION: CSJ 1226-01-001 FM 1000 STA 276+92.700 (BACK) = STA 275+34.500 = (AHEAD) = 158.200 FT																						EQUATION
36	276+30	LT	GRAVEL	RCP		0.50	8		8				2				2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
37	276+00	RT	GRASS	RCP		0.50	24		24				2				2	70	1.12						SILTED IN
38	275+30	LT	GRAVEL	RCP		0.50	18		18				2				2	70	1.12						12" PIPE SILTED IN
39	274+70	LT	GRAVEL	RCP		0.50	18		18				2				2	70	1.12						12" PIPE SILTED IN
40	271+55	RT	GRAVEL	RCP		0.50	4			4				2			2	70	1.12						REMOVE AND REPLACE LAST JOINT
41	256+45	RT\LT	NA	BRIDGE																					CENTER OF EXISTING BRIDGE, NO WORK TO BE DONE
42	249+75	RT	NA	NA																					
43	247+83	XS	NA	XS																					NO WORK TO BE DONE
44	244+40	LT	NA	NA																					NO WORK TO BE DONE
45	244+25	RT	GRAVEL	RCP/?		0.50	16			16				2			2	70	1.12						
46	243+90	LT	ACP	NA																					NO WORK TO BE DONE
47	240+90	RT	ACP	CMP		0.50	24			24				2			2	70	1.12				14	16	
48	239+20	RT	GRAVEL	RCP		0.50	4			4				2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
49	238+80	XS	NA	NA																					NO WORK TO BE DONE
50	238+40	RT	GRAVEL	RCP		0.50	8			8				2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
51	228+15	RT	ACP	RCP		0.50	22			22				2			2	70	1.12				16	18	
52	227+30	RT	GRAVEL			0.50	8			8				2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
53	225+15	LT	NA	NA																					NO WORK TO BE DONE
54	224+60	RT	GRAVEL	RCP		0.50	8			8				2			2	70	1.12				15	17	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
55	225+14	XS	NA	NA		0.50																			NO WORK TO BE DONE
56	223+90	RT	ACP	RCP		0.50	4			4				2			2	70	1.12				16	18	
57	214+65	LT	NA	NA																					COUNTY ROAD, NO WORK TO BE DONE
58	216+60	RT	RM 236	NA																					NO WORK TO BE DONE
59	215+65	LT	GRAVEL			0.50	4			4				2			2	70	1.12						REMOVE AND REPLACE LAST JOINT.
60	213+95	RT	GRAVEL	CMP		0.50	24			24				2			2	70	1.12						
61	211+85	LT	CONCRETE	CPP		0.50	20			20				2			2	70	1.12	39	47				L=17.5' X W2=18' CONCRETE DRIVE
62	211+35	XS	NA	NA																					NO WORK TO BE DONE
63	209+30	LT	CONCRETE	RCP		0.50					4				2		2	70	1.12						ADD 6' AHEAD STA
64	208+80	RT	ACP	RCP		0.50	8				12				2		2	70	1.12				8	8	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT. ADD 4' TO FIRST JOINT.
65	208+75	LT	ACP	RCP		0.50	8				8				2		2	70	1.12						
66	207+85	LT	GRASS	RCP		0.50	8				8				2		2	70	1.12						
67	204+85	RT	GRAVEL	RCP		0.50	8			8				2			2	70	1.12						
68	203+90	RT	GRASS	RCP		0.50	20			20				2			2	70	1.12						
69	203+15	RT	ACP	STEEL		0.50	18			18				2			2	70	1.12				11	13	
70	201+95	LT	GRAVEL	RCP		0.50	4		4				2				2	70	1.12						REMOVE AND REPLACE LAST JOINT.
71	198+75	LT	GRAVEL	CPP		0.50	27			27				2			2	70	1.12						
72	198+75	RT	GRAVEL	CPP		0.50	38			38				2			2	70	1.12						
73	197+05	RT	NA	NA																					
74	194+35	RT	ACP	STEEL		0.50	21		21				2				2	70	1.12				13	15	
75	192+75	RT	GRAVEL	NA																					
76	191+40	RT	CONCRETE	RCP		0.50								2			2	70	1.12						
77	189+95	RT	CONCRETE	RCP		0.50								2			2	70	1.12						
78	189+55	LT	ACP	CMP/MIX		0.50	36			36				2			2	70	1.12				12	14	
79	185+05	RT	GRAVEL	RCP		0.50	8		8				2				2	70	1.12						
80	184+15	RT	CONCRETE	CPP		0.50	37	3		37				2			2	70	1.12	52		45			L=17.5' BY .5*(W1=33' W2=13') CONCRETE DRIVE. 1.5 SY RIPRAP PER SET.
SUBTOTAL 2 1226-01-016						**16.50**	**455**	**3**	**101**	**330**	**32**		**14**	**42**	**8**		**64**	**2240**	**35.84**	**91**	**47**	**45**	**105**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		11

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 1000 CSJ 1226-01-016 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL/ SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	RIPRAP (CONC) [3] (4 IN)	PIPE RCP CL (III)				SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE					15"	18"	24"	30"	15"	18"	24"	30"				REMOVE	(TYPE 1)	(TYPE2)			
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	CY	LF	LF	LF	LF	EA	EA	EA	EA	1 CY/ SET OR AS NOTED CY	35 SY / SET	80 MG / 5000 SY	SY	SY	SY	SY	LF	
81	181+15	RT		CMP		0.50	24			24				2			2	70.0	1.12						
82	179+90	XS	NA	NA																					NO WORK TO BE DONE
83	175+30	RT		RCP		0.50	28			28				2			2	70.0	1.12						
84	173+90	RT		RCP		0.50	24			24				2			2	70.0	1.12						
85	175+40	RT	NA	NA																					NO WORK TO BE DONE
86	171+25	LT		RCP		0.50	8		8				2				2	70.0	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
87	170+20	RT		RCP		0.50	8			8				2			2	70.0	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
88	168+70	RT		RCP		0.50	8			8				2			2	70.0	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
89	167+75	LT	ACP	RCP		0.50	8			8				2			2	70.0	1.12				7	8	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
90	167+20	RT		RCP		1.50								2			2	70.0	1.12						
91	166+40	RT		RCP		0.50	8			8				2			2	70.0	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
92	165+55	LT		CPP		0.50	24			24				2			2	70.0	1.12						
93	162+85	LT	LIME	CMP		0.50	20			20				2			2	70.0	1.12				18	20	
94	162+86	R&L	NA	NA																					NO WORK TO BE DONE
95	158+56	XS	NA	NA																					NO WORK TO BE DONE
96	1158+30	RT	NA	NA																					NO WORK TO BE DONE
97	158+01	XS	NA	NA																					NO WORK TO BE DONE
98	152+25	LT	GRAVEL	RCP		1.50	27		28				2				2	70.0	1.12						
99	149+70	XS	NA	NA																					NO WORK TO BE DONE
100	149+60	RT		RCP		0.50	12			12				2			2	70.0	1.12						
101	148+00	RT		CMP		0.50	18			18				2			2	14.0	0.22						
102	146+55	RT		RCP		0.50	20			20				2			2	70.0	1.12				12	14	
103	145+50	RT		RCP		0.50							2				2	14.0	0.22						
104	145+50	RT	NA	NA																					NO WORK TO BE DONE
105	144+10	RT	NA	NA																					NO WORK TO BE DONE
106	144+85	XS	NA	NA																					NO WORK TO BE DONE
107	137+35	RT	NA	NA																					NO WORK TO BE DONE
108	11+83	RT	ACP			0.50	8			0				2			2	70.0	1.12				5	6	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
109	131+30	LT	CONCRETE	CMP		0.50	20			20				2			2	70.0	1.12	33	37				REPLACE 15' BY 20 WITH L=15' BY .5*(W2=12' W1=32') CONCRETE DRIVE.
110	118+16	XS	NA	NA																					
111	111+15	LT		RM 234																					
112	112+25	RT	ACP	RCP		0.50	4							2			2	70.0	1.12				4	4	REMOVE AND REPLACE FIRST JOINT.
113	112+25	LT	ASH	CPP		0.50	24			24				2			2	14.0	0.22				12	14	
114	108+00	RT	CONCRETE	NA																					
115	107+35	RT	NA	NA																					
116	103+60	RT	GRAVEL	CPP		0.50	20			20				2			2	70.0	1.12						
117	95+83	XS	NA	NA																					
118	90+35	LT	GRAVEL	RCP	2	0.50	8			8				2			2	14.0	0.22						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT AND EXISTING SETS.
119	86+40	RT		RCP		0.50								2			2	14.0	0.22						
120	85+65	LT	NA	NA																					NO WORK TO BE DONE
121	84+81	XS	NA	NA																					NO WORK TO BE DONE
122	64+15	LT	NA	NA																					NO WORK TO BE DONE
123	61+65	LT	NA	NA																					NO WORK TO BE DONE
124	61+20	RT	NA	NA																					NO WORK TO BE DONE
125	60+95	LT	NA	NA																					NO WORK TO BE DONE
126	55+65	LT	CONCRETE	RCP		0.50	38			38				2			2	70.0	1.12	14	44				REPLACE W=18' BY L=7' WITH L=14' BY .5* (W1=38'+ W2=18') CONCRETE DRIVE
127	54+65	LT	GRAVEL	CMP		0.50	18			18				2			2	70.0	1.12						
128	52+75	LT	GRAVEL	RCP		0.50	16			16				2			2	70.0	1.12						
129	48+15	LT	GRAVEL	RCP		0.50								2			2	70.0	1.12						
130	45+47	XS	NA	NA																					NO WORK TO BE DONE
SUBTOTAL 3 1226-01-016					**2**	**15.50**	**393**			**346**			**6**	**48**			**54**	**1610**	**25.74**	**47**	**81**		**58**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**12**

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 1000 CSJ 1226-01-016 CONTINUED

NO	LOCATION		EXISTING [1]		REMOVE STRUCTURE (HEADWALL/ SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	RIPRAP (CONC) (4 IN) [3]	PIPE RCP CL (III)				SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE					15"	18"	24"		15"	18"	24"					REMOVE	(TYPE 1)	(TYPE2)			
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	CY	EA	LF	LF		EA	EA	EA		1 CY/ SET OR AS NOTED	35 SY / SET	80 MG / 5000 SY	SY	SY	SY	SY	LF	
131	62+35	LT	NA	NA																					NO WORK TO BE DONE
132	60+35	XS	NA	NA																					NO WORK TO BE DONE
133	59+75	RT	GRASS	STEEL		0.75	16			16				2			2	70	1.12						SHIFT AND BLADE TO DRAIN TO CROSS STRUCTURE, STEEL AND RCP PIPE
134	59+35	LT	GRASS	RCP		1.00	4		4					2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT. BLADE TO DRAIN TO CROSS STRUCTURE.
135	57+70	RT	ACP	CMP		0.50	40		40				2				2	70	1.12				12	14	MOVE PIPE BACK FROM ROAD
136	55+20	LT	GRAVEL	NA																					
137	52+85	LT	GRASS	CMP		0.50	16		16				2				2	70	1.12						
138	47+40	RT	ACP	CMP	1	0.50	8			8				2			2	70	1.12				12	14	REMOVE AND REPLACE FIRST AND LAST JOINT.
139	45+45	XS	NA	NA																					
140	41+10	LT	GRAVEL	RCP		0.50	8			8				2			2	70	1.12						REMOVE AND REPLACE FIRST AND LAST JOINT.
141	40+75	LT	ACP	RCP		0.50	20			20				2			2	70	1.12				12	14	
142	40+20	RT	GRAVEL	RCP		0.50	4			4				2			2	70	1.12						REMOVE AND REPLACE LAST JOINT.
143	39+95	RT	ACP	STEEL		0.50	20			20				2			2	70	1.12				12	14	
144	38+45	LT	ACP	RCP		0.50	26			26				2			2	70	1.12				11	13	SILTED IN, REMOVE AND REPLACE.
145	38+15	RT	ACP	RCP		0.50	8							2			2	70	1.12				5	6	REMOVE AND RESET FIRST AND LAST JOINT.
146	37+50	LT	ACP	RCP		0.50	4							2			2	70	1.12						REMOVE AND RESET LAST JOINT.
147	36+85	RT	GRASS	RCP		0.50	20			20				2			2	70	1.12						
148	36+35	LT	ACP	RCP		0.50	20			20				2			2	70	1.12				11	12	SILTED IN, REMOVE AND REPLACE.
149	36+15	RT	ACP	RCP		0.50	22			22				2			2	70	1.12				11	12	12" PIPE, REMOVE AND REPLACE.
150	34+80	LT	GRAVEL	RCP		0.50	8			8				2			2	70	1.12						
151	34+40	LT	GRAVEL	RCP /CMP		0.50	22		12				2				2	70	1.12				10	12	
152	34+40	RT	NA	NA																					NO WORK TO BE DONE
153	33+30	RT	NA	NA																					NO WORK TO BE DONE
154	32+05	LT	NA	NA																					NO WORK TO BE DONE
155	31+75	RT	NA	NA																					NO WORK TO BE DONE
156	27+30	RT	ACP	RCP		0.50	24			24				2			2	70	1.12				14	16	
157	26+60	LT	ACP	RCP		0.50	22			22				2											15" PIPE, REMOVE AND REPLACE WITH 18" PIPE.
158	26+45	RT	ACP	RCP		0.50	20			20				2			2	70	1.12				12	14	SILTED PIPE, REMOVE AND REPLACE.
159	26+00	LT	ACP	RCP		0.50	24		24				2				2	70	1.12				12	14	12" PIPE, REMOVE AND REPLACE WITH 15" PIPE.
160	25+45	RT	GRAVEL	CMP		0.50	18			18				2			2	70	1.12						
161	25+45	LT	GRAVEL	CMP		0.50	16			16				2			2	70	1.12						
162	25+00	RT	GRAVEL	RCP		0.50	22			22				2			2	70	1.12						12" PIPE, REMOVE AND REPLACE WITH 18 PIPE
163	24+85	RT																							
164	22+75	RT	GRAVEL	RCP									2				2	70	1.12						
165	21+85	RT	ACP	RCP		0.50	8		8				2				2	70	1.12				2	2	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
166	21+85	LT	CONCRETE	RCP		0.50	8		8				2				2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
167	20+70	RT	ACP	RCP		1	28			28				2			2	70	1.12				14	16	
168	18+05	RT	ACP	RCP		1	8			8				2			2	70	1.12				4	4	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
169	16+75	XS	NA	NA																					NO WORK TO BE DONE
170	16+76	RRX	NA	RRX																					NO WORK TO BE DONE
171	15+70	LT	NA	NA																					NO WORK TO BE DONE
172	13+40	XS	NA	NA																					NO WORK TO BE DONE
173	13+35	RT	ACP	RCP		0.50	8		8				2				2	70	1.12						
174	12+15	RT	GRAVEL	CMP		0.50	30		30				2				2	70	1.12						CHURCH
175	11+35	RT	GRAVEL	CMP		0.50	30		30				2				2	70	1.12						CHURCH
176	10+55	LT	ACP	NA																					NO WORK TO BE DONE. COUNTY ROAD 4052
177	9+35	RT	ACP	NA																					NO WORK TO BE DONE. COUNTY ROAD 4045
178	9+35	LT	ACP	NA																					NO WORK TO BE DONE. COUNTY ROAD 4045
179	5+18	LT /RT	ACP	NA																					**END FM 1000 CSJ 1226-01-016 @ US 67, 33°11'11.01" - 94°51'17.24". NO WORK TO BE DONE**
SUBTOTAL 4 1226-01-016					**1**	**16**	**532**		**180**	**330**			**20**	**44**			**62**	**2170**	**34.72**				**154**		
TOTAL 1226-01-016					**5**	**65**	**1792**	**3**	**305**	**1366**	**36**		**50**	**172**	**12**		**232**	**7840**	**125.42**	**138**	**128**	**45**	**386**		

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[3] TO BE USED AS DIRECTED BY ENGINEER.
[4] SEE DRAINAGE DETAILS SHEET

MISCELLANEOUS SUMMARIES

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**13**

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 1001 CSJ 0743-02-019

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL/ SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	RIPRAP (CONC) [3] (4 IN)	PIPE RCP CL (III)			SET (TYII) (RCP) (6:1)(P)			EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE					15"	18"	24"	15"	18"	24"				REMOVE	(TYPE 1)				
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	CY	LF	LF	LF	EA	EA	EA	1 CY/ SET OR AS NOTED CY	35 SY / SET	80 MG / 5000 SY	SY	SY		SY	LF	
1	0+00	RT	NA	NONE																			BEGIN CSJ 0734-02-019, US 67 @ END OF CURB, 33°10'53.94" - 94°55'46.16"
2	0+20	RT	NA	RCP																			SETS EXIST. NO WORK TO BE DONE
3	0+40	LT	NA	RCP																			SETS EXIST. NO WORK TO BE DONE
4	1+65	LT	NA	RCP																			SETS EXIST. NO WORK TO BE DONE
5	1+90	RT	ACP	CMP		0.50	20			20			2		2	70	1.12						
6	3+45	RT	GRAVEL	RCP		0.50	8			8			2		2	70	1.12				11	12	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
7	3+65	LT	GRAVEL	RCP		0.50	28		28			2			2	70	1.12						PLUGGED/SILTED IN, REMOVE AND REPLACE.
8	4+45	RT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
9	5+55	RT	CONCRETE	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
10	6+35	RT	CONCRETE	CMP		0.50	24			24			2		2	70	1.12	19	31				REPLACE 12X14 CONCRETE WITH L=14 W1=30 W2=10.
11	7+00	LT	CONCRETE	NONE																			NO WORK TO BE DONE
12	7+65	RT	ACP	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
13	8+15	RT	CONCRETE	RCP		0.50							2		2	70	1.12						
14	9+05	RT	GRASS	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
15	9+15	LT	ACP	RCP		0.50	20			20			2		2	70	1.12				12	14	UNDERSIZED, REMOVE AND REPLACE.
16	10+45	LT	CONCRETE	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
17	10+80	RT	GRAVEL	RCP		0.50							2		2	70	1.12						
18	12+00	LT	CONCRETE	NONE																			NO WORK TO BE DONE
19	12+30	RT	CONCRETE	RCP		0.50	8			8			2		2	70	1.12	42	47				REPLACE 19X20 CONCRETE WITH L=20 W1=31 W2=11. .
20	14+20	RT	GRAVEL/ACP	RCP		0.50	24			24			2		2	70	1.12				11	12	
21	15+60	XS	NA	NA																			NO WORK TO BE DONE
22	16+15	RT	ACP	NONE																			NO WORK TO BE DONE
23	16+95	RT	GRAVEL/ACP	RCP		0.50							2		2	70	1.12						
24	18+25	RT	ACP	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
25	19+10	RT	ACP	NONE																			NO WORK TO BE DONE, COUNTY ROAD 3032
26	21+40	RT	ACP	RCP		0.50	24			24			2		2	70	1.12				16	18	UNDERSIZED, REMOVE AND REPLACE.
27	22+80	RT	ACP	RCP		0.50	20	1		20			2		2	70	1.12				11	12	
28	24+75	LT	ACP	RCP	2	0.50	8						2		2	70	1.12						REMOVE AND RESET FIRST JOINT AND LAST JOINT.
29	24+95	XS	NA	NA																			NO WORK TO BE DONE
30	25+55	LT	ACP	NONE																			NO WORK TO BE DONE
31	26+25	LT	GRAVEL	RCP		0.50	8			8			2		2	70	1.12				7	8	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
32	27+10	XS	NA	NA																			NO WORK TO BE DONE
33	27+90	LT	GRASS	RCP		0.50							2		2	70	1.12						
34	28+40	LT	GRASS	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
35	29+70	RT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE LAST JOINT.
36	30+10	LT	ACP	RCP		0.50	18			18			2		2	70	1.12				9	10	
37	31+40	LT	GRASS	RCP		0.50	12			12			2		2	70	1.12						
38	31+85	LT	CONCRETE	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE LAST JOINT.
39	33+30	LT	GRAVEL	RCP		0.50							2		2	70	1.12						
40	34+65	RT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
41	35+10	LT	ACP	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
42	36+55	LT	ACP	RCP		0.50	20			20			2		2	70	1.12				11	12	
43	37+45	LT	ACP	RCP		0.50	32		32			2			2	70	1.12				19	22	
44	37+60	RT	ACP	RCP		0.50	18			18			2		2	70	1.12				11	12	
45	38+75	LT	ACP	NONE																			NO WORK TO BE DONE
46	41+60	RT	GRAVEL	NONE																			NO WORK TO BE DONE
47	41+95	LT	ACP	RCP		0.50	20			20			2		2	70	1.12				12	14	
48	42+75	RT	GRASS	RCP		0.50							2		2	70	1.12						
49	48+15	RT	ACP	RCP		0.50		1						2	2	70	1.12						NEEDS RIPRAP FIRST JOINT (4/12X6X15)/27
50	49+20	RT	ACP	RCP		0.50	8				8			2	2	70	1.12						
SUBTOTAL 1 0743-02-019					**2**	**18.00**	**380**	**2**	**60**	**304**	**8**	**4**	**64**	**4**	**72**	**2520**	**40.32**	**61**	**78**		**130**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

9 OF 25'

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**14**

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 1001 CSJ 0743-02-019 CONTINUED

NO	LOCATION		EXISTING SURFACE	EXISTING PIPE	[1] REMOVE STRUCTURE (HEADWALL/ SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	RIPRAP (CONC) [3] (4 IN)	PIPE RCP CL (III)			SET (TYII) (RCP) (6:1)(P)			EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
									15"	18"	24"	15"	18"	24"				REMOVE	(TYPE 1)				
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	CY	LF	LF	LF	EA	EA	EA	1 CY/ SET OR AS NOTED CY	35 SY / SET	80 MG / 5000 SY	SY	SY		SY	LF	
51	49+50	LT	ACP	RCP		0.50	8			8			2		2	70	1.12						
52	50+55	XS	NA	RCP																			NO WORK TO BE DONE
53	51+70	LT	RM 234	NA																			NO WORK TO BE DONE
54	51+90	LT	GRAVEL	RCP		0.50	48				48			2	2	70	1.12						
55	53+75	R	ACP	RCP		0.50	22		22			2			2	70	1.12				12	14	
56	55+30	XS	NA	NA																			NO WORK TO BE DONE
57	55+85	RT	GRASS	CPP																			36" CPP UNDER 8' FILL IS OUT OF SCOPE OF PROJECT. NO WORK TO BE DONE
58	60+75	RT	GRAVEL	RCP		0.50	36			36			2		2	70	1.12						
59	63+55	RT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE LAST JOINT.
60	64+15	RT	GRAVEL	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
61	65+20	RT	GRASS	NONE																			NO WORK TO BE DONE
62	66+65	RT	CONCRETE	NA																	0		BEHIND FRONTAGE ROAD CURB. NO WORK TO BE DONE
63	68+35	LT	CONCRETE	NA																			EXIT RAMP I 30, NO WORK TO BE DONE
64	68+80	RT	CONCRETE	NA																			ENTRANCE RAMP I 30, NO WORK TO BE DONE
65	72+35	XS	CONCRETE	NA																			CENTER GRADE SEPARATION, NO WORK TO BE DONE
66	75+55	RT	CONCRETE	NA																			EXIT RAMP I 30, NO WORK TO BE DONE
67	75+70	LT	CONCRETE	NA																			ENTRANCE RAMP I 30, NO WORK TO BE DONE
68	77+20	LT	CONCRETE	NONE																			FRONTAGE ROAD I 30, NO WORK TO BE DONE
69	78+90	LT	ACP	RCP		0.50							2		2	70	1.12						
70	81+40	XS	NA	NA																			NO WORK TO BE DONE
71	83+85	XS	NA	NA																			NO WORK TO BE DONE
72	86+50	LT	ACP	RCP		0.50	8			8			2		2	70							REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
73	88+00	RT	GRASS	RCP		0.50	20			20			2		2	70	1.12						
74	88+80	LT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE LAST JOINT.
75	89+55	LT	GRAVEL	RCP		0.50							2		2	70	1.12						
76	90+40	LT	GRAVEL	RCP		0.50	20			20			2		2	70	1.12						
77	90+80	RT	ACP	RCP		0.50	28			28			2		2	70	1.12				18	20	
78	91+40	RT	ACP	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
79	91+80	LT	GRAVEL	RCP		0.50	26			26			2		2	70	1.12						
80	93+70	LT	CONCRETE	NONE																			NO WORK TO BE DONE
81	94+35	RT	GRASS	NONE																			NO WORK TO BE DONE
82	98+15	LT	ACP	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
83	102+03	RT	GRASS	RCP		0.50	8				8			2	2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
84	102+30	LT	GRASS	RCP		0.50	8				8			2	2	70	1.12						
85	104+40	RT	GRASS	CMP		0.50	20				20			2	2	70	1.12						
86	105+10	XS	NA	NA																			NO WORK TO BE DONE
87	106+50	LT	GRASS	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE LAST JOINT.
88	108+65	RT	GRASS	NONE																			NO WORK TO BE DONE
89	111+25	RT	GRASS	STEEL		0.50	16		16			2			2	70	1.12						
90	113+40	LT	ACP	RCP		0.50	42		42			2			2	70	1.12				15	18	
91	114+20	RT	GRAVEL	NONE																			NO WORK TO BE DONE
92	114+30	RT	GRAVEL	NONE																			NO WORK TO BE DONE
93	115+55	LT	ACP	RCP		0.50	8		8			2			2	70	1.12				3	4	
94	125+50	RT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
95	126+50	RT	ACP	RCP		0.50	12			12			2		2	70	1.12						REMOVE AND REPLACE 8' JOINTS AND LAST JOINT.
96	127+75	LT	GRAVEL	RCP		0.50	18			18			2			70	1.12						
97	129+40	XS	NA	NA																			NO WORK TO BE DONE
98	136+75	LT	ACP	NONE																			NO WORK TO BE DONE
99	136+85	RT	GRASS	NONE																			NO WORK TO BE DONE
100	143+20	XS	NA	NA																			NO WORK TO BE DONE
SUBTOTAL 2 0743-02-019						**13.00**	**384**		**88**	**212**	**84**	**8**	**36**	**8**	**50**	**1820**	**28.00**				**48**		

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Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**15**

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 1001 CSJ 0743-02-019 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL/ SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	RIPRAP (CONC) [3] (4 IN)	PIPE RCP CL (III)			SET (TYII) (RCP) (6:1)(P)			EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
	STATION	LT / RT	SURFACE: GRASS/ ACP/ GRAVEL/ CONCRETE	PIPE: CMP / RCP / CPP / STEEL					15"	18"	24"	15"	18"	24"				REMOVE	(TYPE 1)				
					EA	STA	LF	CY	LF	LF	LF	EA	EA	EA	1 CY/ SET OR AS NOTED CY	35 SY / SET	80 MG / 5000 SY	SY	SY		SY	LF	
101	144+15	RT	GRASS	RCP		0.50	8			12			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
102	144+55	LT	GRASS	NONE																			NO WORK TO BE DONE
103	148+75	XS	NA	NA																			NO WORK TO BE DONE
104	149+20	RT	GRAVEL	RCP		0.50		2						2	11	70	1.12						8X20X3 FILL AND 8X20 RIPRAP FIRST JOINT.
105	152+25	RT	ACP	RCP		0.50	4			4			2		2	70	1.12				2	2	REMOVE AND REPLACE LAST JOINT.
106	155+90	RT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						
107	156+80	RT	CONCRETE	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
108	159+55	RT	RM 232	NA																			NO WORK TO BE DONE
109	161+75	LT	ACP	RCP/CMP		0.50	32			32			2		2	70	1.12				16	18	
110	162+10	RT	ACP	RCP		0.50	16			16			2		2	70	1.12				12	14	REPAIR PIPE FAILURE AT FIRST JOINT + 8'. REMOVE AND REPLACE LAST JOINT.
111	163+05	LT	GRAVEL	CMP		0.50	16			16			2		2	70	1.12						
112	164+50	RT	ACP	RCP		0.50	4			4			2		2	70	1.12				4	4	REMOVE AND REPLACE FIRST JOINT.
113	164+60	LT	GRAVEL	CMP		0.50	20			20			2		2	70	1.12						
114	166+50	RT	GRAVEL	RCP		0.50							2		2	70	1.12						
115	166+95	XS	NA	NA																			NO WORK TO BE DONE
116	167+30	LT	CONCRETE	RCP		0.50	8			4			2		2	70	1.12	47	47				REPLACE 30X14 CONCRETE WITH L=14 W1=40 W2=20.
117	167+70	RT	GRAVEL	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
118	169+40	LT	GRAVEL	RCP		0.50							2		2	70	1.12						
119	170+55	RT	GRAVEL	RCP		0.50	16			16			2		2	70	1.12						
120	171+50	LT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE LAST JOINT.
121	172+10	LT	GRAVEL	RCP	2	0.50	8			8			2		2	70	1.12						
122	176+15	LT	ACP	RCP		0.50	8			8			2		2	70	1.12						
123	177+00	XS	NA																				
124	177+85	LT	ACP	RCP		0.50	4			4			2		2	70	1.12				2	2	REMOVE AND REPLACE LAST JOINT.
125	181+40	LT	ACP	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
126	182+55	RT	GRASS	CMP/RCP		0.50	22			22			2		2	70	1.12						
127	187+20	RT	GRASS	RCP		0.50	16			16			2		2	70	1.12						
128	187+40	LT	ACP	RCP		0.50	44			44			2		2	70	1.12				16	18	
129	188+65	XS	NA	NA																			NO WORK TO BE DONE
130	193+00	RT	GRASS	CMP		0.50	18			18			2		2	70	1.12				16	18	
131	193+15	LT	GRAVEL	CMP	2	0.50	32			32			2		2	70	1.12				16	18	
132	194+60	RT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
133	195+50	LT	ACP	RCP		0.50	20			20			2		2	70	1.12				12	14	
134	198+45	LT	ACP	NONE																			NO WORK TO BE DONE
135	200+65	LT	ACP	NONE																			NO WORK TO BE DONE
136	204+05	RT	GRAVEL	CPP		0.50	26			26			2		2	70	1.12						
137	205+70	RT	GRAVEL	CPP		0.50	24			24			2		2	70	1.12						
138	206+85	LT	GRASS	NONE																			NO WORK TO BE DONE
139	209+30	XS	NA																				NO WORK TO BE DONE
140	210+50	RT	GRAVEL	CPP		0.50	38			38			2		2	70	1.12						
141	211+55	RT	GRAVEL	CMP	2	0.50	28			28			2		2	70	1.12						
142	214+80	RT	ACP	NONE																			NO WORK TO BE DONE
143	218+35	LT	CONCRETE	CMP		0.50	18			18			2		2	70	1.12	16	29				REPLACE 12X12 CONCRETE WITH L=12 W1=32 W2=12.
144	219+45	LT	CONCRETE	CMP		0.50	24			24			2		2	70	1.12	16	29				REPLACE 12X12 CONCRETE WITH L=12 W1=32 W2=12. .
145	223+70	XS	NA																				NO WORK TO BE DONE
146	227+10	RT	ACP	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE LAST JOINT.
147	228+15	RT	GRASS	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
148	230+20	RT	GRAVEL	NONE																			NO WORK TO BE DONE
149	231+05	RT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
150	231+80	LT	GRASS	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
SUBTOTAL 3 0743-02-019					**6**	**18.50**	**514**	**2**		**514**			**72**	**2**	**83**	**2590**	**41.44**	**79**	**105**		**96**		

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[3] TO BE USED AS DIRECTED BY ENGINEER.
[4] SEE DRAINAGE DETAILS SHEET

MISCELLANEOUS SUMMARIES

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**16**

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 1001 CSJ 0743-02-019 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL/ SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	RIPRAP (CONC) [3] (4 IN)	PIPE RCP CL (III)			SET (TYII) (RCP) (6:1)(P)			EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
	STATION	LT / RT	SURFACE: GRASS/ ACP/ GRAVEL/ CONCRETE	PIPE: CMP / RCP / CPP / STEEL	EA	STA	LF	CY	15" LF	18" LF	24" LF	15" EA	18" EA	24" EA	1 CY/ SET OR AS NOTED CY	35 SY / SET SY	80 MG / 5000 SY MG	REMOVE SY	(TYPE 1) SY		SY	LF	
151	233+10	LT	GRAVEL	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
152	233+70	RT	ACP	CMP		0.50	20			20			2		2	70	1.12				12	14	
153	234+00	LT	GRASS	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
154	234+60	LT	GRASS	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
155	235+75	RT	ACP	NONE																			NO WORK TO BE DONE
156	237+20	XS	NA	NA																			NO WORK TO BE DONE
157	237+65	LT	NA	NONE																			NO WORK TO BE DONE
158	240+75	XS	NA	NA																			NO WORK TO BE DONE
159	246+30	RT	GRAVEL	NONE																			NO WORK TO BE DONE
160	247+75	XS	NA	NA																			NO WORK TO BE DONE
161	256+45	XS	NA	NA																			NO WORK TO BE DONE
162	261+45	LT	NA	NONE																			NO WORK TO BE DONE
163	262+90	LT	GRAVEL	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
164	264+55	RM	NA	NA																			NO WORK TO BE DONE, RM 230
165	266+80	LT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE LAST JOINT.
166	267+40	LT	GRAVEL	CMP		0.50	20			20			2		2	70	1.12						
167	267+85	XS	ACP	NA																			NO WORK TO BE DONE
168	268+80	LT	GRAVEL	CMP		0.50	40			40			2		2	70	1.12						
169	270+00	LT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
170	276+70	RT	ACP	CMP		0.50	36			36			2		2	70	1.12				24	27	CMP AND RCP PIPES
171	278+75	XS	NA	NA																			NO WORK TO BE DONE
172	280+70	RT	ACP	NONE																			NO WORK TO BE DONE
173	284+65	XS	NA	NA																			NO WORK TO BE DONE
174	287+50	LT	NA	NONE																			NO WORK TO BE DONE
175	294+15	LT	NA	NONE																			NO WORK TO BE DONE
176	294+15	RT	ACP	CMP		0.50	24			24			2		2	70	1.12				11	12	
177	295+45	RT	GRAVEL	RCP		0.50							2		2	70	1.12						
178	295+45	LT	ACP	RCP		0.50							2		2	70	1.12						
179	303+50	XS	ACP	NA																			NO WORK TO BE DONE
180	305+40	LT	GRAVEL	CPP		0.50	40			40			2		2	70	1.12						
181	308+90	LT	ACP	NONE																			NO WORK TO BE DONE
182	313+00	XS	NA	NA																			
183	313+60	RT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
184	314+90	RT	GRAVEL	RCP		0.50	4			4			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
185	315+90	LT	GRAVEL	RCP		0.50							2		2	70	1.12						
186	317+30	RT	GRAVEL	CPP		0.50	24			24			2		2	70	1.12						
187	318+75	RT	ACP	CMP	1	0.50	30			36			2		2	70	1.12				21	24	
188	320+90	LT	NA	NONE																			NO WORK TO BE DONE
189	321+45	LT	NA	NONE																			NO WORK TO BE DONE
190	321+70	RT	NA	NONE																			NO WORK TO BE DONE
191	322+85	LT	GRASS	RCP		0.50	4		4			2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT.
192	322+85	RT	GRAVEL	CPP		0.50	20			20			2		2	70	1.12				12	14	
193	324+05	LT	ACP	RCP		0.50							2		2	70	1.12						
194	325+45	LT	GRASS	RCP		2.50	20			20			2		2	70	1.12						BLADE TO DRAIN FIRST JOINT AND LAST JOINT: 2 STA.
195	328+00	LT	ACP	RCP		0.50							2		2	70	1.12						
196	328+25	XS	NA	NA																			NO WORK TO BE DONE
197	330+40	LT	ACP	NONE																			NO WORK TO BE DONE
198	331+35	RT	GRAVEL	RCP		0.50	24		24			2			2	70	1.12						
199	333+75	RT	ACP	NONE																			NO WORK TO BE DONE
200	333+75	RT	ACP	NONE																			NO WORK TO BE DONE
SUBTOTAL 4 0743-02-019					**1**	**14.50**	**350**		**28**	**328**		**4**	**46**		**50**	**1750**	**28.00**				**80**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		17

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 1001 CSJ 0743-02-019 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL)	BLADING	REMOVE STRUCTURE [2] (PIPE)	RIPRAP (CONC) [3] (4 IN)	PIPE RCP CL (III)			SET (TYII) (RCP) (6:1)(P)			EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
	STATION	LT / RT	SURFACE GRASS/ ACP/ GRAVEL/ CONCRETE	PIPE CMP / RCP / CPP / STEEL					15"	18"	24"	15"	18"	24"				REMOVE	(TYPE 1)				
					EA	STA	LF	CY	EA	LF	LF	EA	EA	EA	1 CY/ SET OR AS NOTED CY	35 SY / SET	80 MG / 5000 SY	SY	SY		SY	LF	
251	452+45	LT	GRAVEL	RCP		0.50	30		30			2			2	70	1.12						
252	455+95	RT	GRASS	RCP		0.50	8		8			2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
253	457+15	RT	GRASS	RCP		0.50	20			20			2		2	70	1.12						
254	457+65	LT	GRAVEL	RCP		0.50	8				4			2	2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
255	458+65	LT	ACP	CMP	2	0.50	24			24			2		2	70	1.12				18	19	
256	460+75	LT	ACP	RCP	2	0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
257	460+95	RT	ACP	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
258	465+65	RT	ACP	RCP		0.50	30			30			2		2	70	1.12				13	14	
259	465+90	LT	GRASS	RCP		0.50	8			8			2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
260	467+90	RT	NA	NONE																			NO WORK TO BE DONE
261	469+00	LT	NA	NONE																			NO WORK TO BE DONE
262	470+50	XS	NA	NA																			NO WORK TO BE DONE
263	471+45	LT	GRAVEL	STEEL		0.50	20			20			2		2	70	1.12						
264	473+55	RM 226	NA	NA																			END CSJ 0734-02-019, @ FM 1993 33°16'15.03" - 94°51'35.02"
SUBTOTAL 5 0743-02-019					**4**	**5.00**	**164**		**38**	**118**	**4**	**4**	**14**	**2**	**20**	**700**	**11.20**				**31**		
TOTAL 0743-02-019					**13**	**69.00**	**1792**	**4**	**214**	**1476**	**96**	**20**	**232**	**16**	**275**	**9380**	**148.96**	**140**	**183**		**385**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

13 OF 25'

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**18**

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 71 CSJ 0546-01-038

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	PIPE								SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE				RCP				RCP		THERMO														
								BASE BID				1A		1														
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL				15"	18"	24"	30"	18"	24"	18"	24"		18"	24"	30"	1 CY/ SET OR AS NOTED. CY	7 SY / SET	80 MG / 5000 SY	REMOVE	(TYPE 1)				
					EA	STA	LF	LF	LF	LF	LF	LF	LF	LF	LF		EA	EA	EA		SY	MG	SY	SY		SY	LF	
	00+00	NA	NA	NA																								BEGIN FM 71 CSJ0546-01-038 @ FRANKLIN TITUS COUNTY LINE, 33°21'38.74" - 95° 7'30.55"
1	3+55	LT	GRAVEL	RCP		0.50	42					42		42			2			2.0	70	1.12						
2	5+00	RT	GRAVEL	CMP		0.50	44					44		44			2			2.0	70	1.12						
3	8+05	LT	GRASS	CMP		0.50	40					40		40			2			2.0	70	1.12						
4	9+80	RT	GRAVEL	CMP		0.50	24					24		24			2			2.0	70	1.12						
5	13+85	L	GRAVEL	RCP		0.50	24					24		24			2			2.0	70	1.12						VERIFY IN FIELD
6	17+15	RT	GRAVEL	CMP		0.50	46					46		46			2			2.0	70	1.12						
7	23+35	RT	GRAVEL	CMP		0.50	40					40		40			2			2.0	70	1.12						
8	24+35	LT	GRAVEL	CMP		0.50	40					40		40			2			2.0	70	1.12						
9	27+85	XS	NA	NA																								NO WORK TO BE DONE
10	30+20	LT	GRASS	RCP		0.50	12					12		12			2			2.0	70	1.12						
11	30+75	LT	GRASS	RCP		0.50	4		4								2			2.0	70	1.12						REMOVE AND REPLACE LAST JOINT.
12	32+20	LT	GRASS	RCP		0.50	8		8								2			2.0	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
13	33+50	LT	GRASS	RCP		0.50	8		8								2			2.0	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
14	40+15	RT	GRASS	CMP		0.50	26					26		26			2			2.0	70	1.12						
15	41+70	LT	GRASS	CMP		0.50	30					30		30			2			2.0	70	1.12						
16	45+75	LT	GRASS	CMP		0.50	20					20		20			2			2.0	70	1.12						
17	47+05	LT	GRAVEL	RCP		0.25	4		4								1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
18	47+60	RT	GRAVEL	RCP																								NO WORK TO BE DONE
19	48+80	RT + LT	US 271	NA																								NO WORK TO BE DONE
20	87+35	LT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
21	87+35	RT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
22	88+45	RT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
23	89+20	LT	ACP	RCP		0.25												1		1.0	35	0.56						TREAT DEPARTURE END OF PIPE
24	90+00	LT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
25	90+00	RT	ACP	RCP		0.25												1		1.0	35	0.56						TREAT DEPARTURE END OF PIPE
26	90+85	LT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
27	91+85	LT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
28	91+85	RT	ACP	RCP		0.25												1		1.0	35	0.56						TREAT DEPARTURE END OF PIPE
29	92+15	LT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
30	93+20	LT	ACP	RCP		0.25	4		4								1			1.0	35	0.56						REMOVE AND REPLACE FIRST JOINT. TREAT DEPARTURE END OF PIPE
31	94+05	RT	ACP	RCP																								NO WORK TO BE DONE
32	95+25	LT	ACP	RCP																								NO WORK TO BE DONE
33	95+95	RT	GRAVEL	CMP		0.50	40					40		40			2			2.0	70	1.12						
34	98+50	RT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
35	99+60	LT	ACP	NONE																								NO WORK TO BE DONE
36	99+60	RT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
37	100+20	LT	ACP	NONE																								NO WORK TO BE DONE
38	101+95	LT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
39	104+15	RT	ACP	RCP		0.25	4				4								1	1.0	35	0.56						REMOVE AND REPLACE FIRST JOINT. TREAT DEPARTURE END OF PIPE
40	104+90	RT	ACP	RCP		0.25													1	1.0	35	0.56						TREAT DEPARTURE END OF PIPE
41	106+70	RT	ACP	CMP		0.50	24					24		24			2			2.0	70	1.12				13	15	
42	107+25	LT	RM 694	NA																								NO WORK TO BE DONE
43	107+65	LT	ACP	RCP		0.25	6		6									1		1.0	35	0.56						REMOVE AND REPLACE FIRST JOINT. TREAT DEPARTURE END OF PIPE
44	108+75	XS	NA	NA																								
45	112+50	RT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
46	113+30	RT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
47	113+30	LT	GRAVEL	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
48	114+80	RT	ACP	RCP		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
49	117+30	RT	ACP	RCP		0.50	56					56		56			2			2.0	70	1.12				12	14	
50	119+45	LT	ACP	NONE		0.25											1			1.0	35	0.56						TREAT DEPARTURE END OF PIPE
SUBTOTAL 1 0546-01-038						**14.75**	**546**	**0**	**34**	**0**	**4**	**508**	**0**	**508**	**0**	**0**	**53**	**4**	**2**	**59**	**2065**	**33.04**				**25**		

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MISCELLANEOUS SUMMARIES

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**19**

FILE: D:\0085-03-017 etc Hal Set job\[0019-026 MISCELLANEOUS SUMMARIES FM 71 Alt bid .xlsm]Plan Summary Sheet FM 71 (19)
DATE: 4/13/2021 1:18:32 PM

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 71 CSJ 0546-01-038 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	PIPE								SET (TYII) (RCP) (6:1)(P)			EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE				RCP				RCP		THERMO													
								BASE BID				1A		1													
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL				15"	18"	24"	30"	18"	24"	18"	24"		18"	24"	30"	1 CY/ SET OR AS NOTED. CY	35 SY / SET	80 MG / 5000 SY	REMOVE	(TYPE 1)			
					EA	STA	LF	LF	LF	LF	LF	LF	LF	LF	LF		EA	EA	EA		SY	MG	SY	SY		SY	LF	
51	12035	RT	ACP	NONE																								NO WORK TO BE DONE
52	12065	LT	ACP	NONE																								NO WORK TO BE DONE
53	12185	LT	ACP	NONE																								NO WORK TO BE DONE
54	12215	RT	ACP	RCP		0.25			4								1			1	35	0.56						EXTEND 4 ' AND TREAT DEPARTURE END OF PIPE
55	12300	LT	ACP	RCP													1			1	35	0.56						TREAT DEPARTURE END OF PIPE
56	12300	RT	ACP	RCP	1	0.50			4								2			2	70	1.12						REMOVE AND RESET APPROACH SET AND TREAT DEPARTURE END OF PIPE
57	12395	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
58	12470	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
59	12470	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
60	127575	RT	ACP	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
61	12600	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
62	12780	XS	NA	NA																								NO WORK TO BE DONE
63	12930	LT	ACP	RCP	1	0.50												2		2	70	1.12						REMOVE AND REPLACE FIRST SET. TREAT BOTH ENDS OF PIPE
64	13155	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
65	13260	LT	ACP	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
66	13375	LT	ACP	RCP		0.25											1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
67	13485	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
68	13615	LT	ACP	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
69	13680	LT	ACP	RCP																								SAME PIPE AS ABOVE NO WORK TO BE DONE ON APPROACH END.
70	13680	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
71	13855	RT	ACP	NA																								CR 1825 NO PIPE, NO WORK TO BE DONE.
72	13885	XS	NA	NA																								NO WORK TO BE DONE
73	14140	RT	ACP	RCP		0.25											1			1	35	0.56						NO WORK TO BE DONE
74	14235	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
75	14345	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
76	14455	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
77	14535	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
78	14545	RT	GRAVEL	CMP		0.50	48					48		48			2			2	70	1.12						
79	14920	LT	GRASS	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
80	14935	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
81	15090	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
82	15470	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
83	15505	LT	ACP	RCP		0.25												1		1	35	0.56						TREAT DEPARTURE END OF PIPE
84	15575	LT	ACP	RCP		0.25												1		1	35	0.56						TREAT DEPARTURE END OF PIPE
85	15745	XS	NA	NA																								NO WORK TO BE DONE
86	15835	LT	ACP	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
87	16070	LT	ACP	RCP		0.50	4		4								2			2	70	1.12						REMOVE AND REPLACE FIRST SET. TREAT BOTH ENDS OF PIPE
88	16505	XS	NA	NA																								NO WORK TO BE DONE
89	16680	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
90	16855	RT	ACP	NA																								NO PIPE, NO WORK TO BE DONE.
91	16935	LT	ACP	NA																								NO PIPE, NO WORK TO BE DONE.
92	16935	RT	ACP	NA																								NO PIPE, NO WORK TO BE DONE.
93	18020	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
94	17100	RT	ACP	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
95	17445	XS	NA	NA																								NO PIPE, NO WORK TO BE DONE.
96	17875	RT	ACP	NA																								NO PIPE, NO WORK TO BE DONE.
97	18290	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
98	18525	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
99	18585	LT	ACP	RCP		0.50												2		2	70	1.12						REMOVE AND REPLACE FIRST SET. TREAT BOTH ENDS OF PIPE
100	18730	XS	NA	NA																								NO WORK TO BE DONE
SUBTOTAL 2	**0546-01-038**				**2**	**9.75**	**72**	**0**	**32**	**0**	**0**	**48**	**0**	**48**	**0**		**34**	**6**		**40**	**1400**	**22.40**						

[1] FOR CONTRACTOR INFORMATION ONLY
[2] VERIFY IN FIELD
[3] TO BE USED AS DIRECTED BY ENGINEER.

Texas Department of Transportation

MISCELLANEOUS SUMMARIES

15 OF 25

CONT	SECT	JOB	HIGHWAY
85	3	17	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**20**

FILE: D:\0085-03-017 etc Hal Set job\[0019-026 MISCELLANEOUS SUMMARIES FM 71 Alt bid .xlsm]Plan Summary Sheet FM 71 (20)
DATE: 44300
44300

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 71 CSJ 0546-01-038 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE (PIPE) [2]	PIPE								SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] CUT ACP PAVEMENT [4] LENGTH	REMARKS / NOTES
								RCP				RCP		THERMO																
								BASE BID				1A		1																
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	PIPE CMP / RCP / CPP / STEEL				15"	18"	24"	30"	18"	24"	18"	24"	15"	18"	24"	30"				REMOVE	(TYPE 1)				
					EA	STA	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	1 CY/ SET OR AS NOTED. CY	35 SY / SET	80 MG / 5000 SY	SY	SY		SY	LF	
101	192+95	RT	ACP	NA																								NO PIPE,NO WORK TO BE DONE
102	193+25	LT	ACP	NA																								NO PIPE,NO WORK TO BE DONE
103	196+25	XS	NA	NA																								NO WORK TO BE DONE
104	198+25	LT	GRASS	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
105	199+95	LT	ACP	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
106	201+10	RT	GRAVEL	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
107	201+10	LT	GRASS	RCP		0.50	24					24		24			2			2	70	1.12						REMOVE AND REPLACE FIRST SET. TREAT BOTH ENDS OF PIPE
108	202+30	LT	GRASS	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
109	203+05	LT	GRASS	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
110	204+20	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
111	205+90	RT	ACP	NA																								NO PIPE,NO WORK TO BE DONE
112	206+05	LT	ACP	NA																								NO PIPE,NO WORK TO BE DONE
113	208+60	RT	GRAVEL	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
114	212+00	RT	NA	NA																								ROAD MARKER 696, NO WORK TO BE DONE
115	212+65	RT	GRAVEL	CMP		0.25											1			1	35	0.56						NO WORK TO BE DONE
116	214+65	LT	GRAVEL	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
117	214+90	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
118	216+90	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
119	217+60	XS	NA	NA																								NO WORK TO BE DONE
120	218+25	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
121	219+00	RT	ACP	RCP	1	0.25	24					24		24			1			1	35	0.56				16	18	REMOVE AND RESET FIRST SET, REPLACE PIPE AND TREAT DEPARTURE END OF PIPE
122	222+30	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
123	227+15	RT	ACP	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
124	228+95	LT	ACP	NA																								NO PIPE, NO WORK TO BE DONE
125	229+90	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
126	230+65	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
127	233+70	LT	GRASS	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
128	234+50	RT	GRAVEL	CMP		0.25	54					54		54			1			1	35	0.56						REMOVE AND RESET FIRST SET, REPLACE PIPE AND TREAT DEPARTURE END OF PIPE
129	240+50	LT	GRAVEL	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
130	241+25	XS	NA	NA																								NO WORK TO BE DONE
131	242+05	RT	GRASS	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
132	248+25	RT	GRASS	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' AND TREAT DEPARTURE END OF PIPE
133	249+55	LT	GRAVEL	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
134	252+50	XS	NA	NA																								NO WORK TO BE DONE
135	255+70	LT	GRAVEL	NONE																								NO WORK TO BE DONE
136	256+05	RT	GRAVEL	NONE																								NO WORK TO BE DONE
137	257+45	RT	GRAVEL	NONE																								NO WORK TO BE DONE
138	259+80	XS	NA	NA																								NO WORK TO BE DONE
139	264+00	LT	ACP	RCP													1			1	35	0.56						TREAT DEPARTURE END OF PIPE
140	266+00	XS	NA	NA																								NO WORK TO BE DONE
141	270+55	RT	NA	RCP		0.50	4		4								2			2	70	1.12						REPLACE 4 ' AND TREAT APPROACH END OF PIPE. TREAT DEPARTURE END OF PIPE.
142	278+55	XS	NA	NA																								NO WORK TO BE DONE
143	291+00	LT	GRAVEL	CMP		0.50	48					48		48			2			2	70	1.12						
144	295+30	LT	GRAVEL	CPP		0.50	30					30		30			2			2	70	1.12						
145	297+45	XS	NA	NA																								NO WORK TO BE DONE
146	299+80	RT	NA	RCP		0.50											2			2	70	1.12						
147	300+95	RT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
148	301+55	LT	NA	NONE																								NO PIPE,NO WORK TO BE DONE
149	306+05	LT	GRAVEL	CMP		0.50	28					27		27				2		2	70	1.12						
150	310+60	RT	ACP	CMP		0.50	18					18		18			2			2	70	1.12				11	12	
SUBTOTAL 3 0546-01-038					**1**	**9.25**	**254**	**0**	**28**	**0**	**0**	**225**	**0**	**225**	**0**	**0**	**36**	**2**	**0**	**38**	**1330**	**21.28**				**27**		

[1] FOR CONTRACTOR INFORMATION ONLY

[2] VERIFY IN FIELD

[3] TO BE USED AS DIRECTED BY ENGINEER.

[4] SEE DRAINAGE DETAILS SHEET

Texas Department of Transportation

MISCELLANEOUS SUMMARIES

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		21

FILE: D:\0085-03-017 etc Hal Set job\0019-026 MISCELLANEOUS SUMMARIES FM 71 Alt bid .xlsm]Plan Summary Sheet FM 71 (21)
DATE: 4/13/2021 1:37:16 PM

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 71 CSJ 0546-01-038 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	PIPE								SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE				RCP				RCP		THERMO															
								BASE BID				1A		1															
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL				15"	18"	24"	30"	18"	24"	18"	24"	15"	18"	24"	30"				REMOVE	(TYPE 1)				
					EA	STA	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	1 CY/ SET OR AS NOTED. CY	35 SY / SET	80 MG / 5000 SY	SY	SY		SY	LF	
151	312+20	XS	NA	NA																								NO WORK TO BE DONE.
152	315+00	RT	GRAVEL	CPP		0.50	20					20		20			2			2	70	1.12						
153	315+75	LT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
154	316+00	RT	GRASS	NONE																								NO PIPE,NO WORK TO BE DONE
155	316+20	LT	NA	NA																								ROAD MARKER 698, NO WORK TO BE DONE
156	322+05	XS	NA	NA																								NO WORK TO BE DONE, 2 PIPE, LEFT FORWARD SKEW.
157	326+70	RT	ACP	NONE																								NO PIPE,NO WORK TO BE DONE
158	328+70	LT	GRAVEL	CMP		0.50	30					30		30			2			2	70	1.12						
159	329+30	LT	GRASS	RCP		0.50	20					20		20			2			2	70	1.12						
160	331+25	XS	NA	NA																								NO WORK TO BE DONE
161	332+10	LT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
162	336+05	RT	GRAVEL	CMP		0.50	24					24		24			2			2	70	1.12						
163	336+35	RT	GRAVEL	CMP		0.50	68					68		68			2			2	70	1.12						
164	314+80	XS	NA	NA																								NO WORK TO BE DONE
165	344+70	LT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
166	345+40	LT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
167	347+20	LT	GRAVEL	CMP		0.50	40	40								2				2	70	1.12						3850 FM 71 W
168	349+00	XS	NA	NA																								NO WORK TO BE DONE
169	350+50	LT	GRASS	NONE																								NO PIPE,NO WORK TO BE DONE
170	357+75	LT	ACP	NONE																								NO PIPE,NO WORK TO BE DONE
171	352+17	XS	NA	MA																								NO WORK TO BE DONE
172	357+10	LT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
173	360+20	RT	GRAVEL	CMP		0.50	34					34		34			2			2	70	1.12						
174	365+10	LT	GRASS	CMP		0.50	18					18		18			2			2	70	1.12						
175	366+05	LT	GRASS	CMP		0.50	20					20		20			2			2	70	1.12						
176	367+90	XS	NA	NA																								NO WORK TO BE DONE.
177	368+50	LT	GRAVEL	RCP		0.50	4		4								2			2	70	1.12						REPLACE 4 ' OF APPROACH END OF PIPE.
178	370+65	LT	ACP	RCP		0.50	42					48		48			2			2	70	1.12				30	34	C R 1920
179	370+50	RT	GRAVEL	RCP		0.50	4		4								2			2	70	1.12						REPLACE 4 ' OF APPROACH END OF PIPE.
180	374+80	XS	NA	NA																								NO WORK TO BE DONE
181	375+35	LT	GRAVEL	CMP		0.50	20					20		20			2			2	70	1.12						
182	382+10	RT	GRASS	NONE																								NO PIPE,NO WORK TO BE DONE
183	382+10	LT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
184	384+55	RT	GRASS	CMP		0.50	20					20		20			2			2	70	1.12						
185	385+55	LT	GRASS	RCP		0.50	20					28		28			2			2	70	1.12						
186	386+65	LT	GRASS	RCP		0.50	8		8								2			2	70	1.12						REPLACE FRST AND LAST JOINT OF PIPE.
187	389+35	LT	GRAVEL	RCP		0.50	8		8								2			2	70	1.12						REPLACE FRST AND LAST JOINT OF PIPE.
188	389+50	RT	GRAVEL	RCP																								NO WORK TO BE DONE
189	394+45	RT	GRAVEL	CMP		0.50	48					48		48			2			2	70	1.12						
190	395+90	LT	GRAVEL	RCP		0.50												2		2	70	1.12						
191	397+80	XS	NA	NA																								NO WORK TO BE DONE
192	399+20	RT	GRAVEL	CMP		0.50	20					20		20			2			2	70	1.12						NO WORK TO BE DONE
193	401+05	LT	GRAVEL	RCP		0.50	40			8								2		2	70	1.12						REPLACE FRST AND LAST JOINT OF PIPE. MOVE PIPE BACK FROM THE ROAD.
194	404+05	RT	ACP	RCP		0.50				12								2		2	70	1.12				9	10	ADD 8' TO APPROACHEND AND ADD 4' TO DEPART END.
195	407+60	LT	GRASS	RCP		0.50						8		8			2			2	70	1.12						
196	411+10	LT	ACP	NONE																								NO WORK TO BE DONE
197	414+85	RT	ACP	RCP		0.50	38					44		44			2			2	70	1.12				30	34	
198	419+00	RT	RM 700	NONE																								. NO PIPE,NO WORK TO BE DONE.
199	424+15	XS	NA	NA																								NO WORK TO BE DONE
200	425+80	LT	GRASS	RCP		0.50	20.00					20		20			2			2	70	1.12						
SUBTOTAL 4 0546-01-038						**12.50**	**566**	**40**	**24**	**20**	**0**	**490**	**0**	**490**	**0**	**2**	**42**	**6**		**50**	**1750**	**28.00**				**69**		

[1] FOR CONTRACTOR INFORMATION ONLY
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[4] SEE DRAINAGE DETAILS SHEET

MISCELLANEOUS SUMMARIES

Texas Department of Transportation

2	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**22**

FILE: D:\0085-03-017 etc Hal Set job\[0019-026 MISCELLANEOUS SUMMARIES FM 71 Alt bid .xlsm]Plan Summary Sheet FM 71 (22)
DATE: 4/13/2021 1:39:14 PM

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 71 CSJ 0546-01-038 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	PIPE								SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ACPALT PAVEMENT	[1] [4] CUT ASPH PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE				RCP BASE BID				RCP 1A		THERMO 1										REMOVE	(TYPE 1)			
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	15" LF	18" LF	24" LF	30" LF	18" LF	24" LF	18" LF	24" LF	15" EA	18" EA	24" EA	30" EA	1 CY/ SET OR AS NOTED. CY	35 SY / SET SY	80 MG / 5000 SY MG	SY	SY		SY	LF	
201	426+10	RT	GRASS	NONE																								NO WORK TO BE DONE.
202	430+70	LT	GRASS	RCP		0.50	44					44		44			2			2	70	1.12						
203	431+40	LT	GRAVEL	STEEL		0.50	36					36		36			2			2	70	1.12						
204	431+45	RT	ACP	RCP		0.50	30	40								2				2	70	1.12				14	16	
205	436+35	RT	GRAVEL	RCP		0.50	20					20		20			2			2	70	1.12						
206	436+85	XS	NA	NA																								NO WORK TO BE DONE.
207	438+50	RT	ACP	RCP		0.50	20					20		20			2			2	70	1.12				11	12	
208	440+80	RT	GRASS	RCP		0.50	22					28		28			2			2	70	1.12						
209	442+60	RT	ACP	RCP		0.50	38					50		50			2			2	70	1.12				18	20	
210	444+00	LT	GRASS	NONE																								NO PIPE,NO WORK TO BE DONE
211	444+65	RT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
212	446+65	RT	GRAVEL	RCP		0.50	26					26		26			2			2	70	1.12						
213	447+45	LT	GRAVEL	RCP		0.50	24					24		24			2			2	70	1.12						
214	452+85	LT	GRASS	RCP		0.50	4		4								2			2	70	1.12						REPLACE 4 ' OF APPROACH END OF PIPE.
215	457+50	XS	NA	NA																								NO WORK TO BE DONE.
216	458+45	LT	GRAVEL	CMP		0.50	48					48		48			2			2	70	1.12						NO PIPE,NO WORK TO BE DONE
217	461+30	LT	ACP	RCP		0.50											2			2	70	1.12						CR 1932
218	462+00	RT	ACP	NA		0.50	4			4								2		2	70	1.12						REPLACE 4 ' OF APPROACH END OF PIPE.
219	465+05	RT	GRAVEL	RCP		0.50	10					10		10			2			2	70	1.12						
220	465+10	XS	NA	NA																								NO WORK TO BE DONE
221	466+60	LT	ACP	RCP		0.50	8		8								2			2	70	1.12				4	4	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
222	468+55	RT	GRASS	RCP		0.50	16					16		16			2			2	70	1.12						
223	469+10	LT	ACP	RCP	2	0.50	8		16								2			2	70	1.12				4	4	REMOVE 4' AND REPLACE WITH 8' (FIRST JOINT AND LAST JOINT).
224	476+50	LT	GRAVEL	RCP		0.50	20					20		20			2			2	70	1.12						
225	482+70	RT	GRAVEL	RCP		0.50	4		4								2			2	70	1.12						CR 1940 AND DRIVE HAVE ONE PIPE.
226	483+00																											REPLACE 4 ' OF APPROACH END OF PIPE.
227	484+75	RT	GRAVEL	RCP		0.50	4		4								2			2	70	1.12						REPLACE 4 ' OF DEPARTURE END OF PIPE.
228	485+30	RT	GRAVEL	RCP		0.50											2			2	70	1.12						
229	487+20	LT	GRASS	RCP		0.50	4		4								2			2	70	1.12						REPLACE 4 ' OF DEPARTURE END OF PIPE.
230	488+15	RT	ACP	RCP		0.50											2			2	70	1.12						
231	489+10	RT	ACP	RCP		0.50											2			2	70	1.12						
232	490+35	LT	ACP	STEEL		0.50	26					26		26			2			2	70	1.12				16	18	
233	491+40	LT	ACP	RCP		0.50	4		4								2			2	70	1.12						REPLACE 4 ' OF APPROACH END OF PIPE.
234	492+15	LT	GRAVEL	RCP		0.50	4		4								2			2	70	1.12						REPLACE 4 ' OF DEPARTURE END OF PIPE.
235	493+30	LT	GRAVEL	RCP		0.50											2			2	70	1.12						
236	494+10	RT	GRASS	RCP		0.50											2			2	70	1.12						
237	494+15	LT	GRASS	CMP		0.50	56					56		56			2			2	70	1.12						
238	496+70	XS	NA	NA																								NO WORK TO BE DONE
239	499+20	LT	ACP	RCP		0.50	4		4								2			2	70	1.12						
240	499+50	RT	GRAVEL	NONE		0.00																						NO WORK TO BE DONE
241	501+45	LT	ACP	RCP		0.50	24	24								2				2	70	1.12						
242	501+90	RT	ACP	RCP		0.50	24					24		24			2			2	70	1.12						NO WORK TO BE DONE
243	504+40	LT	GRAVEL	RCP		0.00																						NO WORK TO BE DONE
244	506+20	RT	ACP	RCP		0.50	20					20		20			2			2	70	1.12				11	12	
245	508+60	RT	GRAVEL	NONE																								NO WORK TO BE DONE
246	508+60	LT	GRAVEL	RCP																								
247	511+60	XS	NA	NA																								NO WORK TO BE DONE
248	512+85	LT	GRAVEL	CPP		0.50	20					20		20			2			2	70	1.12						
249	513+60	LT	CONCRETE	RCP		0.50	18					18		18			2			2	70	1.12	45	45				REPLACE 22.5X16 CONCRETE WITH W1=35 ,W2=15, L= 16
250	515+30	RT	GRAVEL	NONE																								NO WORK TO BE DONE
SUBTOTAL 5 0546-01-038					**2**	**18.00**	**590**	**64**	**52**	**4**	**0**	**506**	**0**	**506**	**0**	**4**	**66**	**2**	**0**	**72**	**2520**	**40.32**	**45**	**45**		**78**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

2	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**23**

FILE: D:\0085-03-017 etc Hal Set job\[0019-026 MISCELLANEOUS SUMMARIES FM 71 Alt bid .xlsm]Plan Summary Sheet FM 71 (23)
DATE: 4/13/2021 1:41:20 PM
(23)

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 71 CSJ 0546-01-038 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE (PIPE) [2]	RIPRAP (CONC) (4 IN) [3]	PIPE								SET (TYII) (RCP) (6:1)(P)			EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE					RCP				RCP		THERMO														
									BASE BID				1A		1														
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL					15"	18"	24"	30"	18"	24"	18"	24"		18"	24"	30"	1 CY/ SET OR AS NOTED. CY	35 SY / SET	80 MG / 5000 SY	REMOVE	(TYPE 1)				
					EA	STA	LF	CY	LF	LF	LF	LF	LF	LF	LF	LF		EA	EA	EA		SY	MG	SY	SY		SY	LF	
251	517+70	LT	GRAVEL	RCP		0.50	20						26		26			2			2	70	1.12					
252	520+20	LT	GRAVEL	CPP		0.50	30						30		30			2			2	70	1.12					
253	520+55	RT	GRAVEL	RCP		0.50												2			2	70	1.12					
254	521+60	RT	GRAVEL	RCP		0.50	4			4								2			2	70	1.12					REPLACE 4 ' OF APPROACH END OF PIPE.
255	522+65	LT	GRAVEL	CMP		0.50	26						26		26			2			2	70	1.12					
256	524+10	XS	NA	NA																								NO WORK TO BE DONE.
257	524+65	LT	NA	NA																								RM 702. NO WORK TO BE DONE.
258	525+60	RT	GRAVEL	NONE																								NO WORK TO BE DONE.
259	525+90	LT	ACP	RCP		0.50	22						28		28			2			2	70	1.12				9	10	
260	526+85	LT	ACP	CMP		0.50	24											2			2	70	1.12				11	12	
261	530+35	RT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
262	530+55	LT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
263	531+40	LT	GRAVEL	RCP		0.50	22						28		28			2			2	70	1.12				9	10	
264	533+40	LT	GRASS	RCP		0.50	4			4								2			2	70	1.12						REPLACE 4 ' OF APPROACH END OF PIPE.
265	534+00	XS	NA	NA																								NO WORK TO BE DONE.
266	537+55	RT	GRASS	RCP		0.50	8				8								2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
267	538+55	RT	GRAVEL	RCP		0.50	8				8							2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
268	538+55	LT	NA	NONE																								NO PIPE,NO WORK TO BE DONE
269	539+55	LT	ACP	RCP																								FM 1402, NO WORK TO BE DONE.
270	540+55	RT	GRAVEL	RCP		0.50												2			2	70	1.12					
271	540+85	LT	ACP	NONE																								NO PIPE, NO WORK TO BE DONE. CR 3920.
272	540+95	RT	GRASS	RCP		0.50	26				8								2		2	70	1.12				25	26	REMOVE AND RESET. EXTEND APPROACH 4' AND DEPARTURE 4'.
273	514+55	LT	GRASS	RCP		0.50	4			4								2			2	70	1.12						REPLACE 4 ' OF DEPARTURE END OF PIPE.
274	544+20	LT	GRAVEL	RCP		0.50	26						32		32			2			2	70	1.12					
275	547+35	RT	GRASS	RCP		0.50	18						24		24			2			2	70	1.12					
276	551+70	LT	ACP	RCP		0.50	4			4								2			2	70	1.12						REPLACE 4 ' OF DEPARTURE END OF PIPE.
277	555+00	XS	NA	NA																								NO WORK TO BE DONE.
278	557+00	RT	ACP	RCP		0.50	18						18		18			2			2	70	1.12				9	10	
279	557+60	RT	GRASS	RCP		0.50	8			8								2			2	70	1.12						REPLACE 4 ' OF APPROACH END OF PIPE.
280	557+75	LT	GRASS	RCP		0.50												2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
281	558+55	RT	ACP	STEEL		0.50	26						26		26			2			2	70	1.12				11	12	
282	559+30	RT	ACP	RCP		0.50												2			2	70	1.12						
283	561+10	RT	GRAVEL	RCP		0.50	4			4								2			2	70	1.12						REPLACE 4 ' OF APPROACH END OF PIPE.
284	561+90	RT	GRAVEL	RCP		0.50	4			4								2			2	70	1.12						REPLACE 4 ' OF DEPARTURE END OF PIPE.
285	562+50	LT	GRASS	RCP		0.50												2			2	70	1.12						
286	562+80	RT	GRAVEL	RCP		0.50	8			8								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
287	563+40	RT	GRAVEL	RCP		0.50	4			4								2			2	70	1.12						REPLACE 4 ' OF APPROACH END OF PIPE.
288	566+60	XS	NA	NA																								NO WORK TO BE DONE
289	568+50	LT	GRASS	NONE																								NO WORK TO BE DONE
290	568+85	RT	GRASS	NONE																								NO WORK TO BE DONE
291	572+80	XS	NA	NA																								NO WORK TO BE DONE
292	573+45	LT	ACP	RCP		0.50	8				8								2		2	70	1.12				4	4	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
293	573+40	RT	ACP	RCP		0.50	8			8								2			2	70	1.12				4	4	REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
294	581+00	LT	ACP	STEEL		0.50	22						20		20			2			2	70	1.12				11	12	
295	582+20	LT	GRAVEL	RCP		0.50	26						26		26			2			2	70	1.12				9	10	
296	582+90	RT	ACP	NONE																								NO PIPE,NO WORK TO BE DONE
297	583+15	LT	ACP	RCP		0.50	28						28		28			2			2	70	1.12				11	12	
298	585+10	LT	GRAVEL	CMP		0.50	30						30		30			2			2	70	1.12						
299	587+00	RT	GRAVEL	CPP		0.50	20						20		20			2			2	70	1.12						
300	590+15	XS	NA	NA																								NO WORK TO BE DONE
SUBTOTAL 6 0546-01-038						**17.00**	**460**		**0**	**52**	**32**	**0**	**362**	**0**	**362**	**0**	**0**	**62**	**6**		**68**	**2380**	**38.08**				**113**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

2	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**24**

FILE: D:\0085-03-017 etc Hal Set job\0019-026 MISCELLANEOUS SUMMARIES FM 71 Alt bid .xlsm]Plan Summary Sheet FM 71 (24)
DATE: 4/13/2021 1:50:51 PM

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 71 CSJ 0546-01-038 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	PIPE								SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE				RCP BASE BID				RCP 1A		THERMO 1										REMOVE	(TYPE 1)				
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	15" LF	18" LF	24" LF	30" LF	18" LF	24" LF	18" LF	24" LF	15" EA	18" EA	24" EA	30" EA	1 CY/ SET OR AS NOTED. CY	35 SY / SET SY	80 MG / 5000 SY MG	SY	SY		SY	LF	
301	590+85	RT	GRAVEL	RCP		0.50	8		8								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
302	592+10	LT	GRAVEL	CPP		0.50	16					16		16			2			2	70	1.12						
303	593+00	RT	GRAVEL	RCP		0.50	8		8								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
304	595+40	RT	NA	NONE																								NO PIPE,NO WORK TO BE DONE
305	599+50	RT	GRAVEL	CPP	2	0.50	24					24		24						2	70	1.12						REMOVE AMD RESET SETS WITH RCP CONNECTING.
306	607+45	XS	NA	NA																								NO WORK TO BE DONE.
307	614+75	LT	GRASS	RCP		0.50	22					22		22			2			2	70	1.12						
308	617+70	RT	GRAVEL	CMP		0.50	20					20		20			2			2	70	1.12						
309	620+90	XS	NA	NA																								REPLACE 4 ' OF DEPARTURE END OF PIPE.
310	624+55	RT	GRAVEL	RCP		0.50	4		4								2			2	70	1.12						REPLACE 4 ' OF DEPARTURE END OF PIPE.
311	628+85	RT	RM 704	NONE																								NO WORK TO BE DONE
312	634+50	XS	NA	NA																								NO WORK TO BE DONE
313	645+00	XS	NA	NA																								NO WORK TO BE DONE
314	647+40	RT	GRAVEL	RCP		0.50	24					24		24			2			2	70	1.12						
315	647+40	LT	GRAVEL	STEEL		0.50	18					24		24			2			2	70	1.12						
316	649+65	LT	ACP	NONE																								NO PIPE,NO WORK TO BE DONE
317	649+65	RT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
318	653+60	RT	GRAVEL	CMP		0.50	20					20		20			2			2	70	1.12						
319	654+05	LT	GRAVEL	CPP		0.50	24					24		24			2			2	70	1.12						FM 1402, NO WORK TO BE DONE.
320	655+50	RT	GRAVEL	RCP		0.50	4		4								2			2	70	1.12						REPLACE 4 ' OF DEPARTURE END OF PIPE.
321	655+90	XS	NA	NA																								NO WORK TO BE DONE
322	658+10	LT	GRAVEL	STEEL		0.50	38					38		38			2			2	70	1.12						
323	658+90	RT	GRASS	RCP		0.50	8		8								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
324	659+00	LT	GRAVEL	CMP		0.50	24					24		24			2			2	70	1.12						
325	666+70	RT	GRAVEL	RCP		0.50	8		8								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
326	667+75	LT	GRASS	RCP		0.50	20						20		20			2		2	70	1.12						
327	669+30	LT	GRAVEL	RCP		0.50	18					18		18			2			2	70	1.12						NO WORK TO BE DONE.
328	669+35	RT	GRAVEL	RCP		0.50	16					16		16			2			2	70	1.12						
329	671+70	LT	GRAVEL	CMP		0.50	20					20		20			2			2	70	1.12						
330	672+35	LT	GRAVEL	CMP		0.50	20					20		20			2			2	70	1.12						
331	673+75	LT	ACP	RCP		0.50	28											2		2	70	1.12				11	12	RESET AT EXISTING LOCATION
332	674+85	LT	ACP	CMP		0.50	20					20		20			2			2	70	1.12						
333	675+20	RT	ACP	RCP		0.50	8		8								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
334	675+80	LT	GRAVEL	CMP		0.50	24						24		24		2			2	70	1.12						
335	677+15	XS	NA	NA																								NO WORK TO BE DONE
336	687+60	RT	ACP	RCP		0.50	32					32		32			2			2	70	1.12				19	22	CR 3945
337	696+60	XS	NA	NA																								NO WORK TO BE DONE
338	709+15	LT	GRAVEL	CPP		0.50	18					18		18			2			2	70	1.12						
339	737+20	LT	GRASS	RCP		0.50	4		4								2			2	70	1.12						REPLACE 4 ' OF DEPARTURE END OF PIPE.
340	739+20	XS	NA	NA																								NO WORK TO BE DONE
341	742+80	LT	GRASS	RCP		0.50	24					24		24			2			2	70	1.12						
342	743+50	XS	NA	NA																								NO WORK TO BE DONE
343	747+75	RT	GRAVEL	RCP		0.50	30					30		30			2			2	70	1.12				4	4	
344	748+55	XS	NA	NA																								NO WORK TO BE DONE
345	749+75	RT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
346	750+20	LT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
347	755+80	XS	NA	NA																								NO WORK TO BE DONE
348	813+65	RT	GRAVEL	RCP		0.50	34					34		34			2			2	70	1.12						
349	814+20	LT	ACP	RCP		0.50	32					32		32			2			2	70	1.12				32	18	
350	820+70	XS	NA	NA																								NO WORK TO BE DONE
SUBTOTAL 7 0546-01-038					**2**	**16.00**	**618**	**0**	**52**	**0**	**0**	**500**	**44**	**500**	**44**	**0**	**58**	**4**	**0**	**64**	**2240**	**35.84**	**0**	**0**	**0**	**66**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

2	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**25**

FILE: D:\0085-03-017 etc Hal Set job\[0019-026 MISCELLANEOUS SUMMARIES FM 71 Alt bid .xlsm]Plan Summary Sheet FM 71 (25)
DATE: 4/13/2021 1:58:38 PM

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 71 CSJ 0546-01-038 CONTINUED

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	PIPE								SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
								RCP				RCP		THERMO															
								BASE BID				1A		1															
	STATION	LT / RT	SURFACE GRASS/ ACP/ GRAVEL/ CONCRETE	PIPE CMP / RCP / CPP / STEEL				15"	18"	24"	30"	18"	24"	18"	24"	15"	18"	24"	30"				REMOVE	(TYPE 1)				
					EA	STA	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	1 CY/ SET OR AS NOTED. CY	35 SY / SET	80 MG / 5000 SY	SY	SY		SY	LF	
351	823+90	RT	GRAVEL	NONE																								NO PIPE,NO WORK TO BE DONE
352	826+90	XS	NA	NA																								NO WORK TO BE DONE.
353	830+30	LT	GRASS	RCP		0.50	24					24		24			2			2	70	1.12						
354	830+30	RT	GRAVEL	CMP		0.50	48					48		48			2			2	70	1.12						
355	831+65	RT	ACP	NONE																								NO PIPE,NO WORK TO BE DONE
356	638+35	XS	NA	NA																								NO WORK TO BE DONE.
357	841+95	RT	RM 708	NA																								NO WORK TO BE DONE.
358	843+20	RT	GRASS	RCP		0.50	22					22		22			2			2	70	1.12						
359	849+45	RT	GRAVEL	NA																								NO PIPE,NO WORK TO BE DONE
360	851+30	XS	NA	NA																								NO WORK TO BE DONE.
361	860+70	XS	NA	NA																								NO WORK TO BE DONE
362	863+30	RT	ACP	RCP		0.50	28					28		28			2			2	70	1.12				16	18	
363	874+90	XS	NA	NA																								NO WORK TO BE DONE
364	919+60	RT	GRAVEL	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
365	934+70	XS	NA	NA																								NO WORK TO BE DONE
366	941+55	LT	GRASS	NONE		0.25	4		4								1			1	35	0.56						REPLACE 4 ' OF AND TREAT DEPARTURE END OF PIPE.
367	942+40	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
368	942+90	RT	ACP	CMP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
369	947+20	LT	RM 710	NA																								NO WORK TO BE DONE.
370	953+50	XS	NA	NA																								NO WORK TO BE DONE.
371	960+55	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
372	971+25	XS	NA	NA																								NO WORK TO BE DONE.
373	975+15	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
374	977+95	RT	ACP	RCP		0.25	4		4								1			1	35	0.56						REPLACE 4 ' OF AND TREAT DEPARTURE END OF PIPE.
375	979+40	RT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE.
376	996+65	LT	ACP	RCP		0.25											1			1	35	0.56						TREAT DEPARTURE END OF PIPE
	997+30	NA	NA	NA																								TITUS/MORRIS COUNTY LINE, 33°19'25.51"N, 94°48'34.16"W
	997+30																											**END FM 71 CSJ0546-01-038 @ TITUS/MORRIS COUNTY LINE, 33°19'25.54" - 94°48'33.94"**
SUBTOTAL 8 0546-01-038						**4.25**	**130**	**0**	**8**	**0**	**0**	**122**	**0**	**122**	**0**	**0**	**17**	**0**	**0**	**17**	**595**	**9.52**				**16**		
TOTAL 0546-01-038					**7**	**101.50**	**3236**	**104**	**282**	**56**	**4**	**2761**	**44**	**2761**	**44**	**6**	**368**	**30**	**2**	**408**	**14280**	**228.48**	**45**	**45**		**394**		

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MISCELLANEOUS SUMMARIES

Texas Department of Transportation

2	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**26**

FILE: D:\0085-03-017 etc Hal Set job\[0019-026 MISCELLANEOUS SUMMARIES FM 71 Alt bid .xlsm]Plan Summary Sheet FM 71 (26)
DATE: 4/13/2021 2:01:16 PM

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 71 CSJ 0546-02-013

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)		PIPE RCP CL (III)			SET (TYII) (RCP) (6:1)(P)			EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING				CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE					18"	24"		18"	24"										
	STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF		LF	LF		EA	EA		1 CY/ SET OR AS NOTED. CY	7 SY / SET	80 MG / 5000 SY				SY	LF	
1	**00+00**	NA	**NA**	**NA**																			**BEGIN FM 71 CSJ 0546-02-013 @ TITUS/MORRIS COUNTY LINE, 33°19'25.55" -94°48'33.91"**
2	22+70	LT	GRAVEL	RCP	1	0.50						2			2.0	70.0	1.12						REPLACE EXISTING SET
3	40+20	RT	GRAVEL	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
4	51+30	RT	RM 712	NA																			NO WORK TO BE DONE
5	60+35	LT	GRAVEL	RCP		0.25							1		1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
6	64+00	XS	NA	NA																			NO WORK TO BE DONE
7	72+90	LT	GRAVEL	RCP		0.25	4		4			1			1.0	35.0	0.56						REMOVE AND REPLACE FIRST JOINT. TREAT DEPARTURE END OF PIPE
8	73+55	XS	NA	NA																			NO WORK TO BE DONE
9	77+90	LT	GRAVEL	RCP		0.25	4		4			1			1.0	35.0	0.56						REMOVE AND REPLACE FIRST JOINT. TREAT DEPARTURE END OF PIPE
10	77+90	RT	GRAVEL	RCP		0.25	4		4			1			1.0	35.0	0.56						REMOVE AND REPLACE FIRST JOINT. TREAT DEPARTURE END OF PIPE
11	83+85	XS	NA	NA																			NO WORK TO BE DONE
12	86+80	RT	GRAVEL	RCP		0.25							1		1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
13	88+80	RT	GRAVEL	RCP		0.25							1		1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
14	111+55	RT	GRAVEL	RCP		0.25							1		1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
15	118+55	XS	NA	NA																			NO WORK TO BE DONE
16	121+00	LT	ACP	RCP		0.25	4		4			1			1.0	35.0	0.56						REMOVE AND REPLACE FIRST JOINT. TREAT DEPARTURE END OF PIPE
17	127+10	XS	NA	NA																			NO WORK TO BE DONE
18	127+65	RT	ACP	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
19	134+35	LT	ACP	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
20	135+60	RT	GRAVEL	CMP		0.50	24		24			2			2.0	70.0	1.12						
21	139+20	RT	GRASS	NONE																			NO PIPE. NO WORK TO BE DONE
22	144+10	RT	ACP	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
23	146+95	LT	ACP	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
24	156+45	LT	RM 714	NA																			NO WORK TO BE DONE
25	158+40	XS	NA	NA																			NO WORK TO BE DONE
26	163+75	RT	ACP	RCP		0.25	4		4			1			1.0	35.0	0.56						REMOVE AND REPLACE FIRST JOINT. TREAT DEPARTURE END OF PIPE
27	168+95	LT	ACP	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
28	170+30	XS	NA	NA																			NO WORK TO BE DONE
29	171+15	LT	GRASS	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
30	183+60	RT	ACP	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
31	184+60	XS	NA	NA																			NO WORK TO BE DONE
32	196+95	RT	ACP	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
33	202+45	RT	GRASS	RCP		0.25	6		6			1			1.0	35.0	0.56						REMOVE AND REPLACE FIRST 6 FEET. TREAT DEPARTURE END OF PIPE
34	203+85	LT	ACP	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
35	210+20	XS	NA	NA																			NO WORK TO BE DONE
36	220+25	RT	ACP	RCP	1	0.25	58		58			1			1.0	35.0	0.56				21	24	REMOVE AND RESET FIRST SET, REPLACE PIPE AND TREAT DEPARTURE END OF PIPE
37	232+30	LT	GRASS	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
38	233+20	XS	NA	NA																			NO WORK TO BE DONE
39	234+50	LT	ACP	RCP		0.25						1			1.0	35.0	0.56						TREAT DEPARTURE END OF PIPE
40	253+65	RT	ACP	RCP		0.25	4		4			1			1.0	35.0	0.56						REMOVE AND REPLACE FIRST JOINT. TREAT DEPARTURE END OF PIPE
41	254+20	RT	ACP	RCP		0.25	4		4			1			1.0	35.0	0.56						REMOVE AND REPLACE FIRST JOINT. TREAT DEPARTURE END OF PIPE
42	254+55	RT	NA	NA																			NO WORK TO BE DONE. CURB BEGINNING AHEAD ON STATION.
43		LT	NA	NA																			
44	255+20	LT & RT	NA	NA																			**END FM 71 CSJ 0546-02-013 @ US 259, 33°17'49.07" - 94°44' 8.13"**
TOTAL	**0546-02-013**				**2**	**7.25**	**116**		**116**			**25**	**4**		**29**	**1015.0**	**16.24**				**21**		

[1] FOR CONTRACTOR INFORMATION ONLY
[2] VERIFY IN FIELD
[3] TO BE USED AS DIRECTED BY ENGINEER.
[4] SEE DRAINAGE DETAILS SHEET

Texas Department of Transportation

MISCELLANEOUS SUMMARIES

22 OF 25'

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**27**

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 44 CSJ 0330-03-030

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	PIPE								SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
			SURFACE	PIPE				RCP				RCP		THERMO		SET (TYII) (RCP) (6:1)(P)				EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
								BASE BID				1A		1									REMOVE	(TYPE 1)				
	CONSTRUCTION CENTERLINE STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL				15"	18"	24"	30"	18"	24"	18"	24"	15"	18"	24"		1 CY/ SET OR AS NOTED	35 SY / SET	80 MG / 5000 SY						
					EA	STA	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA			SY	MG	SY	SY		SY	LF	
	0+00	NA																										BEGIN PROJECT 33°28'39.15 -94°38'1.57" @ END OF CURB AND GUTTER
1	1+00	L	GRAVEL	RCP		0.50	24	24								2				2	70	1.12						
2	2+10	L	GRAVEL	RCP		0.50	22					22		22			2			2	70	1.12						
3	6+00	XS	NA	NA																								
4	7+70	LT	GRAVEL	RCP		0.50	4		4								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT BACK STA
5	8+20	LT	ACP	RCP		0.50	4		4								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT BACK STA
6	18+20	XS	NA	NA																								NO WORK TO BE DONE
7	20+65	LT	GRAVEL	CLAY		0.50	22					22		22			2			2	70	1.12						CLAY & RCP PIPE
8	23+20	XS	NA	NA																								NO WORK TO BE DONE
9	25+65	LT	GRAVEL	RCP		0.50											2			2	70	1.12						
10	26+30	LT	ACP	RCP		0.50											2			2	70	1.12						
11	29+35	XS	NA	NA																								NO WORK TO BE DONE
12	32+55	LT	GRAVEL	RCP																								NO WORK TO BE DONE
13	34+00	XS	NA	NA																								NO WORK TO BE DONE
14	38+50	RT	GRASS	CLAY		0.50	16					16		16			2			2	70	1.12						
15	39+30	LT	GRAVEL	RCP		0.50	8		8								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
16	40+00	LT	GRAVEL	RCP		0.50	8		8								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
17	42+60	LT	GRAVEL	NA																								NO WORK TO BE DONE
18	43+45	RT	GRAVEL	CLAY		0.50	34					34		34			2			2	70	1.12						
19	55+65	RT	NA	NA																								NO WORK TO BE DONE, CR4231
20	55+90	LT	ACP	NA																								NO WORK TO BE DONE, CR4231
21	61+80	RT	GRAVEL	RCP		0.50										2				2	70	1.12						
22	61+80	LT	GRAVEL	RCP		0.50	4	4								2				2	70	1.12						REMOVE AND REPLACE FIRST JOINT AHEAD STA
23	62+42	RT	GRASS	RCP		0.50	4	4								2				2	70	1.12						REMOVE AND REPLACE FIRST JOINT BACK STA
24	62+75	LT	CONCRETE	CLAY		0.50	30					30		30			2			2	70	1.12	39.0	50.00				REPLACE 18 X19.5 CONCRETE WITH W1=35 W2= 15 18=L
25	67+70	XS	NA	NA																								NO WORK TO BE DONE
26	72+30	XS	NA	NA																								NO WORK TO BE DONE
27	79+80	XS	NA	NA																								NO WORK TO BE DONE
28	86+65	RT	GRASS	CMP		0.50	24					24		24			2			2	70	1.12						
29	88+05	RT	NA	NA																								NO WORK TO BE DONE, CR4250
30	89+15	RT	GRAVEL	RCP		0.50	8		8								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
31	89+68	XS	NA	NA																								NO WORK TO BE DONE
32	93+65	LT	GRASS	CMP		0.50	20					20		20			2			2	70	1.12						
33	97+10	LT	GRAVEL	CLAY		0.50	36					36		36			2			2	70	1.12						
34	97+35	LT	RM 234	NA																								
35	97+80	RT	GRASS	CLAY		0.50	24					24		24			2			2	70	1.12						
36	99+25	LT	GRAVEL	CLAY		0.50	26					26		26			2			2	70	1.12						
37	99+56	LT	GRAVEL	CMP		0.50	32					32		32			2			2	70	1.12						
38	99+56	RT	XS	NA																2		0.00						NO WORK TO BE DONE
39	100+35	LT	GRAVEL	RCP		0.50											2			2	70	1.12						
40	102+25	LT	GRASS	CMP		0.50	26					26		26			2			2	70	1.12						MIXED CMP & RCP EXISTS
41	103+45	LT	GRAVEL	RCP		0.50	20					20		20			2			2	70	1.12						
42	104+45	XS	NA	NA																								NO WORK TO BE DONE
	105+15																											OMITTED
43	105+65	LT	GRAVEL	CMP		0.50	20					20		20			2			2	70	1.12						CR 3214
44	107+45	XS	NA	NONE																								NO WORK TO BE DONE
45	112+35	LT	GRASS	NA																								NO WORK TO BE DONE
46	112+60	RT	GRASS	NONE																								NO WORK TO BE DONE
47	122+65	RT	GRAVEL	RCP		0.50										2				2	70	1.12						
48	123+30	LT	NA	NONE																								NO WORK TO BE DONE, CR 4232
49	123+70	RT	GRAVEL	CLAY		0.50	24					24		24			2			2	70	1.12						
50	124+85	LT	GRASS	RCP	2	0.50											2			2	70	1.12						OMITTED
51	126+15	RT	GRAVEL	RCP	2	0.50											2			2	70	1.12						
52	126+55	RT	GRAVEL	CLAY		0.50	30					30		30			2			2	70	1.12						
53	126+65	LT	GRAVEL	CMP	2	0.50	24					24		24			2			2	70	1.12						PARK LOT CURB W HEADWALLS
54	128+35	LT	GRAVEL	CMP		1.00	44						44		44			4		4	140	2.24						2 24" CMP
55	129+20	NA	XS	NA																								NO WORK TO BE DONE
SUBTOTAL 1 0330-03-030					**6**	**17.00**	**538**	**32**	**32**	**0**	**0**	**430**	**44**	**430**	**44**	**10**	**54**	**4**		**70**	**2380**	**38.08**	**39**	**50**				

[1] FOR CONTRACTOR INFORMATION ONLY

[2] VERIFY IN FIELD

[4] SEE DRAINAGE DETAILS SHEET

MISCELLANEOUS SUMMARIES

23 OF 25

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		28

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 44 CSJ 0330-03-030

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	PIPE								SET (TYII) (RCP) (6:1)(P)			EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)			CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
								RCP				RCP		THERMO									REMOVE	(TYPE 1)				
								BASE BID				1A		1														
								15"	18"	24"	30"	18"	24"	18"	24"	15"	18"	24"										
	CONSTRUCTION CENTERLINE STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	1 CY/ SET OR AS NOTED	35 SY / SET	80 MG / 5000 SY	SY	SY		SY	LF	
56	129+40	LT	GRAVEL	CMP		0.50	20					20		20			2		3	70	1.12						0.5 CY ADDITIONAL CY FILL NEEDED
57	131+55	RT	GRAVEL	CMP		0.05	20					20		20			2		2	70	1.12						
58	132+20	LT	GRAVEL	RCP		0.50											2		2	70	1.12						
59	133+15	RT	GRAVEL	CMP		0.50	20					20		20			2		2	70	1.12						
60	135+35	LT	GRASS	CMP		0.50	20					18		18			2		2	70	1.12						
61	137+45	RT	GRAVEL	CPP		0.50	22					22		22			2		2	70	1.12						
62	139+70	RT	GRAVEL	CPP		0.50	20					20		20			2		2	70	1.12						
63	141+80	RT	GRAVEL	CPP		0.50	20					20		20			2		2	70	1.12						
64	143+65	RT	GRAVEL	CPP		0.50	45					45		45			2		2	70	1.12						
65	145+15	XS	NA	NA																							NO WORK TO BE DONE
66	146+15	RT	GRAVEL	CPP		0.50	20					20		20			2		2	70	1.12						
67	150+65	LT	NA	NONE																							CR 4234, NO WORK TO BE DONE
68	150+65	RT	NA	NONE																							CR 4234, NO WORK TO BE DONE
69	151+75	LT	NA	NONE																							NO WORK TO BE DONE
70	152+20	RT	GRAVEL	NONE																							NO WORK TO BE DONE
71	154+80	XS	GRAVEL	NA																							NO WORK TO BE DONE, 32 26 12.67, -94 37 16.68
72	163+05	RT	GRASS	NONE																							NO WORK TO BE DONE
73	166+65	LT	GRAVEL	CLAY		0.50	24					24		24			2		2	70	1.12						RCP & CLAY PIPE
74	170+35	LT	GRAVEL	RCP		0.50											2		2	70	1.12						
75	172+40	LT	GRAVEL	CLAY		0.50	20					20		20			2		2	70	1.12						
76	172+65	RT	GRASS	RCP		0.50												2	2	70	1.12						
77	178+60	XS	NA	NA																							NO WORK TO BE DONE
78	178+80	RT	NA	NONE																							NO WORK TO BE DONE, CR 4249
79	181+40	LT	GRAVEL	RCP		0.50	8		8								2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
80	185+30	XS	NA	NA																							NO WORK TO BE DONE
81	189+15	XS	NA	NA																							NO WORK TO BE DONE
82	189+85	LT	GRAVEL	CLAY		0.50	24						24		24			2	2	70	1.12						
83	194+75	LT	GRASS	RCP		0.50	12		4								2		2	70	1.12						RESET 8'. REMOVE AND REPLACE FIRST JOINT.
84	197+85	RT	RM 236	NA																							NO WORK TO BE DONE
85	216+00	XS	NA	NA																							NO WORK TO BE DONE
86	215+70	LT	GRAVEL	RCP		0.50	4		4								2		2	70	1.12						REMOVE AND REPLACE LAST JOINT.
87	239+80	RT	CR 4249	NONE																							CR 4249, NO WORK TO BE DONE
88	241+80	XS	NA	NA																							NO WORK TO BE DONE
89	243+00	LT	CR 4235	NA																							NO WORK TO BE DONE
90	243+50	XS	NA	NA																							NO WORK TO BE DONE
91	246+40	LT	GRASS	RCP		0.50	8			8								2	2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
92	246+80	LT	GRAVEL	RCP																							SETs EXIST
93	247+60	RT	GRAVEL	CMP		0.50	30	34								2			2	70	1.12						
94	248+50	RT	GRAVEL	RCP		0.50	38					38		38			2		2	70	1.12						
95	249+75	RT	GRAVEL	RCP		0.50	??		??			??		??			2		2	70	1.12						
96	252+20	LT	GRAVEL	RCP		0.50	26					18		18			2		2	70	1.12						
97	254+70	LT	CR4236	NA																							NO WORK TO BE DONE
98	257+20	RT	CR4236	NA																							NO WORK TO BE DONE
99	258+80	RT	GRAVEL	RCP		0.50	8		8								2		2	70	1.12						REMOVE AND REPLACE LAST JOINT. #4844?
100	260+50	RT	GRASS	RCP		0.50	4		4								2		2	70	1.12						REMOVE AND REPLACE LAST JOINT.
101	260+85	LT	GRASS	RCP		0.50											2		2	70	1.12						
102	266+05	LT	GRASS	RCP		0.50	8	8								2			2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
103	268+70	XS	NA	NA															0								NO WORK TO BE DONE
104	271+45	RT	GRAVEL	RCP		0.50	8		8								2		2	70	1.12						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
105	274+25	RT	GRAVEL	CLAY		0.50	24					24		24			2		2	70	1.12						CLAY AND RCP PIPE.
106	274+25	LT	GRAVEL	RCP		0.50	18					18		18			2		2	70	1.12						
107	277+10	RT	GRAVEL	CLAY		0.50	20					20		20			2		2	70	1.12						
108	278+25	RT	GRAVEL	RCP		0.50	26					26		26			2		2	70	1.12						
109	282+60	RT	GRAVEL	CMP		0.50	30					30		30			2		2	70	1.12						CR 4265
110	283+12	XS	NA	NA																							NO WORK TO BE DONE
SUBTOTAL 2 0330-03-030						**16.05**	**547**	**42**	**36**	**8**	**0**	**423**	**24**	**423**	**24**	**4**	**56**		**67**	**2310**	**36.96**						

[1] FOR CONTRACTOR INFORMATION ONLY

[2] VERIFY IN FIELD

[4] SEE DRAINAGE DETAILS SHEET

Texas Department of Transportation

MISCELLANEOUS SUMMARIES

24 OF 25

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**29**

FILE: D:\0085-03-017 etc Hal Set jobalt bid\[028-030_ MISCELLANEOUS SUMMARIES 03 11 2021.xlsm]Plan Summary Sheet FM 44 (29)
DATE: 4/13/2021 2:01:16 PM

SUMMARY OF SIDE ROADS AND DRIVEWAYS: FM 44 CSJ 0330-03-030

NO	LOCATION		EXISTING		[1] REMOVE STRUCTURE (HEADWALL /SET)	BLADING	REMOVE STRUCTURE [2] (PIPE)	PIPE								SET (TYII) (RCP) (6:1)(P)			EMBANKMENT (VEHICLE) (ORD COMP) (TY C)	BROADCAST SEED (PERM) (RURAL) (SANDY)	VEGETATIVE WATERING	DRIVEWAYS: (CONC)		CUT & RESTORING ASPHALT PAVEMENT	[1] [4] CUT ACP PAVEMENT LENGTH	REMARKS / NOTES
								RCP				RCP		THERMO												
								BASE BID				1A		1												
								15"	18"	24"	30"	18"	24"	18"	24"	15"	18"	24"				REMOVE	(TYPE 1)			
	CONSTRUCTION CENTERLINE STATION	LT / RT	GRASS/ ACP/ GRAVEL/ CONCRETE	CMP / RCP / CPP / STEEL	EA	STA	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	1 CY/ SET OR AS NOTED	35 SY / SET	80 MG / 5000 SY	SY	SY	SY	LF	
111	280+55	LT	GRAVEL	CMP		0.50	25					25		25			2		2	70	1.12					
112	285+65	LT	GRAVEL	NONE																						NO WORK TO BE DONE
113	288+75	RT	ACP	RCP		0.50	40					40		40			2		2	70	1.12			25	28	
114	294+05	RT	GRAVEL	RCP		0.50	34					40		40			2		2	70	1.12					GERRALD ROAD
115	295+05	LT	GRAVEL	CMP		0.50	24					24		24			2		2	70	1.12					
116	300+50	LT	GRAVEL	CMP		0.50	26					26		26			2		2	70	1.12					NO WORK TO BE DONE
117	301+70	XS	NA	NA																						
118	302+80	LT	RM 238	NA																						NO WORK TO BE DONE
119	310+75	XS	NA	NA																						NO WORK TO BE DONE
120	318+40	XS	NA	NA																						NO WORK TO BE DONE
121	323+85	RT	ACP	CMP		0.50	36					36		36			2		2	70	1.12			22	25	CR 4262
122	323+85	LT	GRAVEL	RCP	2	0.50	26					26		26			2		2	70	1.12					
123	328+20	RT	GRAVEL	CLAY		0.50	16					16		16			2		2	70	1.12					
124	335+65	LT	GRAVEL	RCP		0.50	49	50								2			2	70	1.12					
125	338+30	LT	ACP	STEEL		0.50	40					48		48			2		2	70	1.12			28	32	RCP AND STEEL PIPE, CR 4263
126	339+85	RT	GRAVEL	RCP		0.50	8		8								2		2	70	1.12					REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
127	341+80	XS	NA	NA																						NO WORK TO BE DONE
128	347+10	LT	GRAVEL	RCP		0.50	24						24		24			2	2	70	1.12			11	12	
129	347+55	RT	GRAVEL	RCP		0.50	4		4								2		2	70	1.12					REMOVE AND REPLACE LAST JOINT.
130	350+05	RT	GRAVEL	RCP		0.50	8		8								2		2	70	1.12					REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
131	350+70	LT	GRAVEL	RCP		0.25	4		4								1		1	35	0.56					REMOVE AND REPLACE FIRST JOINT.
132	352+40	XS	NA	NA																						NO WORK TO BE DONE
133	357+80	NA	NA	NA																						NO WORK TO BE DONE, CR 4271
134	361+10	LT	GRAVEL	RCP		0.50	8		8								2		2	70	1.12					REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
135	361+10	RT	GRAVEL	RCP		0.50	20					20		20			2		2	70	1.12					
136	366+30	XS	BRIDGE	NA																						NO WORK TO BE DONE, BRIDGE
137	370+65	XS	BOX																							NO WORK TO BE DONE?, CR 4238
138	374+05	LT	GRAVEL	RCP		0.50	20					20		20			2		2	70	1.12					
139	379+00	LT	NA	NA																						NO WORK TO BE DONE, CR 4208
140	384+25	LT	ACP	CMP		0.50	21					20		20			2		2	70				11	13	
141	385+25	LT	GRAVEL	RCP		0.50	8		8								2		2	70						REMOVE AND REPLACE FIRST JOINT AND LAST JOINT.
142	389+25	RT	GRAVEL	CMP		0.50	30					30		30			2		2	70						
143	390+85	XS	NA	NA																						NO WORK TO BE DONE
144	392+45	RT	GRAVEL	RCP		0.50	4		4								2		2	70						REMOVE AND REPLACE FIRST JOINT.
145	392+45	LT	ACP	RCP		0.50	27					28		28			2		2	70				12	14	
146	398+70	RT	GRAVEL	RCP		0.50											2		2	70						
147	398+70	LT	GRAVEL	RCP		0.50	20					20		20			2		2	70						
148	409+05	XS	NA	NA																						NO WORK TO BE DONE
149	409+70	RT	RM 240	NA																						NO WORK TO BE DONE
150	410+20	RT	GRAVEL	RCP		0.50	4		4								2		2	70						REMOVE AND REPLACE FIRST JOINT, CR 4264.
151	424+95	XS	NA	NA																						NO WORK TO BE DONE
152	433+60	LT	GRAVEL	RCP																						NO WORK TO BE DONE, SETs EXIST
153	436+25	XS	NA	NA																						NO WORK TO BE DONE
154	438+75	RT	GRAVEL	RCP		0.50											2		2	70						
155	439+75	LT	GRAVEL	RCP		0.50	20					26		26			2		2	70						
																										END FM 44 CSJ 0330-03-030 @ INTERSECTION FM 561 , 33°21'49.46"N, -94°35'47.77"W
SUBTOTAL 3 0330-03-030					**2**	**10.75**	**361**	**50**	**48**	**0**	**0**	**445**	**24**	**445**	**24**	**2**	**39**	**2**		**1505**	**12.88**				**62**	
TOTAL 0330-03-030					**8**	**46.80**	**1631**	**124**	**116**	**8**	**0**	**1298**	**92**	**1298**	**92**	**16**	**161**	**6**	**192**	**6615**	**94.64**	**39**	**50**		**109**	

[1] FOR CONTRACTOR INFORMATION ONLY
[2] VERIFY IN FIELD
[4] SEE DRAINAGE DETAILS SHEET

Texas Department of Transportation

MISCELLANEOUS SUMMARIES

25 OF 25

CONT	SECT	JOB	HIGHWAY
0085	03	017	FM 2735
DISTRICT	COUNTY		SHEET
19	BOWIE		**30**

FILE: D:\0085-03-017 etc Hal Set job\alt bid\[028-030_ MISCELLANEOUS SUMMARIES 03 11 2021.xlsm]Plan Summary Sheet FM 44 (30)
DATE: 4/22/2021 9:26:57 AM

DATE: 2/3/2021 2:20:50 PM
FILE: D:\nal\s\0085-03-017 etc 06_22_2020-\031-042 BC (1)-14 THRU BC (12)-14.dgn

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. 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).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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.

10. As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER (see Sign Detail G20-10T) and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.

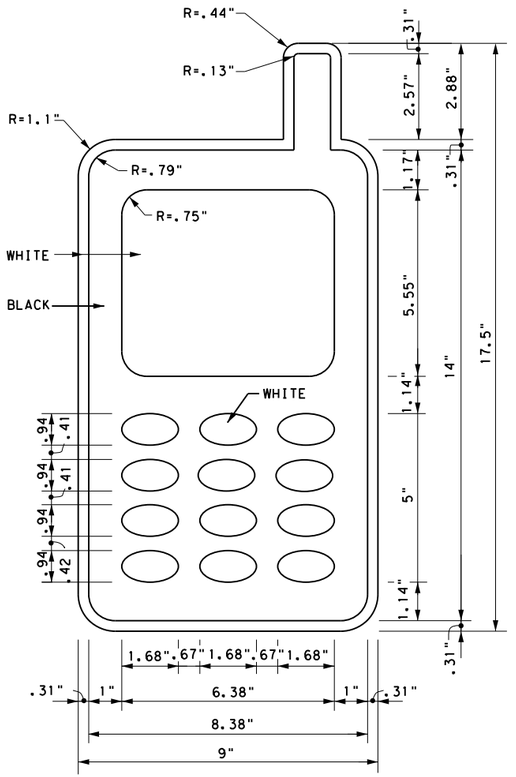
11. Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.

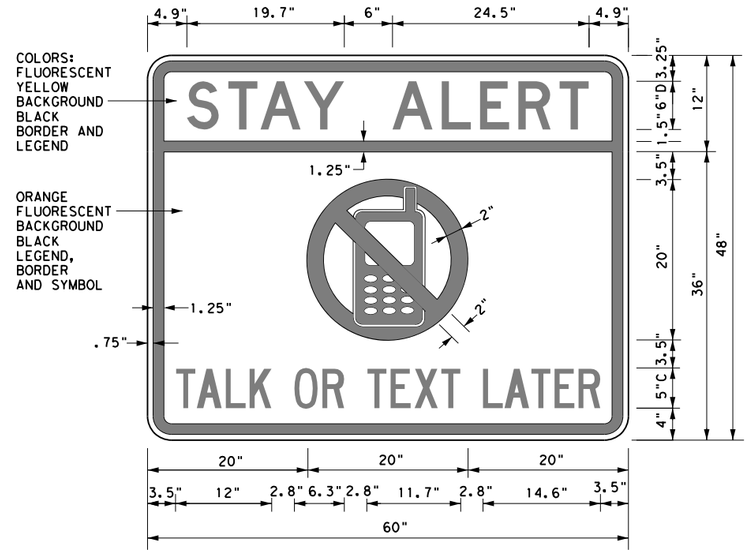
12. The Engineer has the final decision on the location of all traffic control devices.

13. 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 APPAREL NOTES:

1. 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.





3.0" Radius, 1.25" Border, 0.75" Indent, Black on Yellow;
[STAY ALERT] Font: D
3.0" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[TALK OR TEXT LATER] Font: C specified length;

SIGN DETAIL (G20-10T)

Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found on-line at the web address given below or by contacting:

Texas Department of Transportation
Traffic Operations Division - TE
Phone (512) 416-3118

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
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

Texas Department of Transportation | Traffic Operations Division Standard

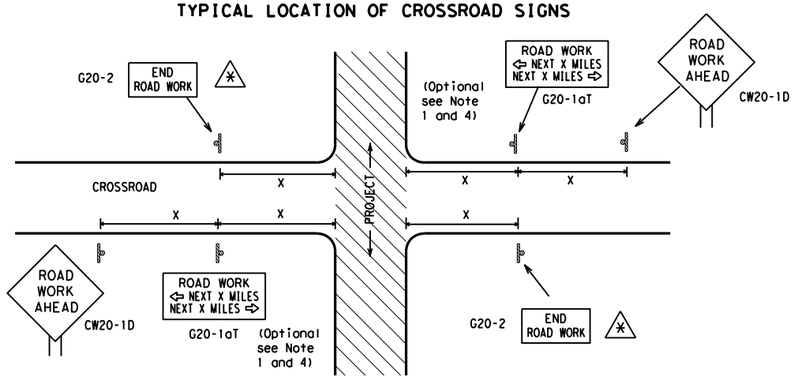
BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0085	03	017	FM 2735
4-03 5-10 8-14	DIST	COUNTY		SHEET NO.
9-07 7-13	ATL	BOWIE		31

DATE: 2/3/2021 2:20:51 PM
FILE: D:\dals\0085-03-017 etc 06_22_2020\031-042 BC (1)-14 THRU BC (12)-14.dgn

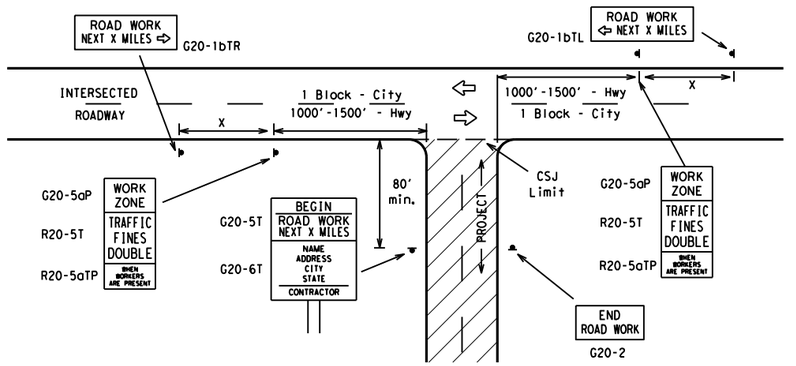
TYPICAL LOCATION OF CROSSROAD SIGNS



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

1. 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.
2. 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. This information shall be shown in the plans.
3. 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.
4. 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.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. 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

1. 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.
2. 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[1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign Spacing "X" △
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
✱	✱[3]

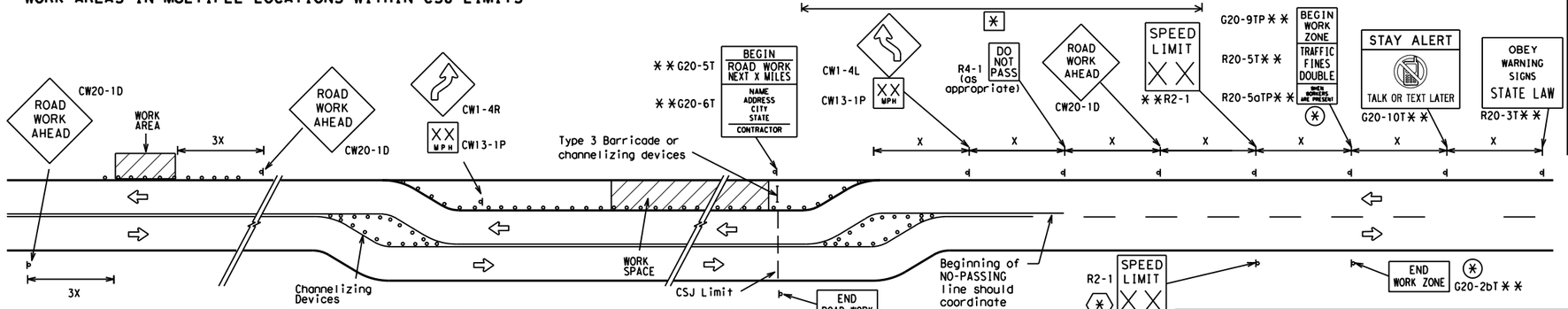
✱ For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. 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.

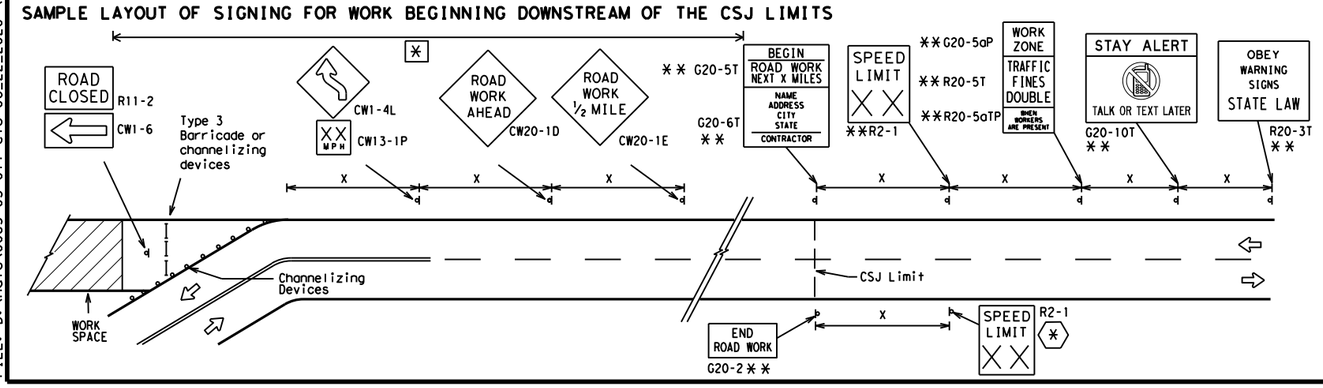
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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 AT THE CSJ LIMITS

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.

✱✱ Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.

[✱] 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.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0085	03	017	FM 2735
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13	ATL	BOWIE		32

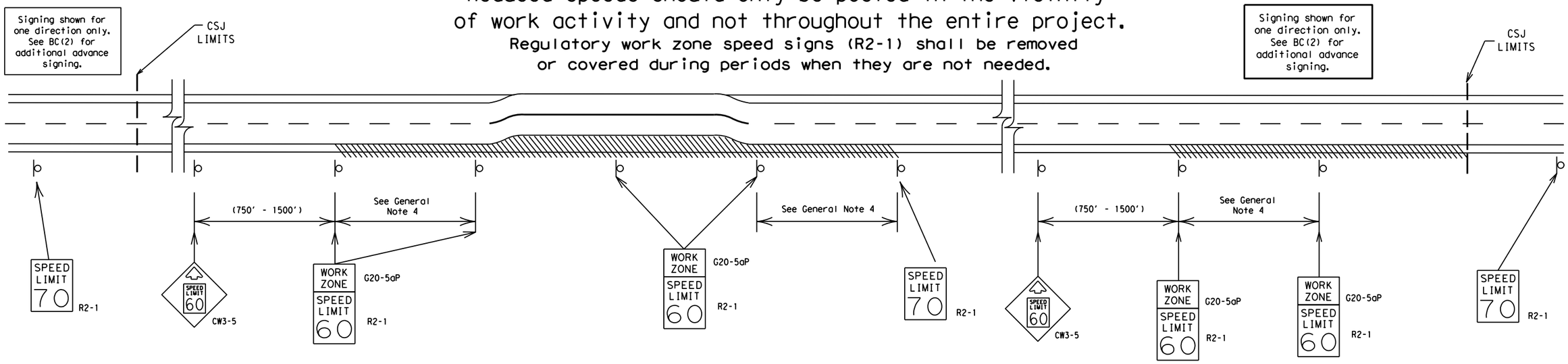
DATE: 2/3/2021 2:20:52 PM
FILE: D:\Dgls\0085-03-017 etc 06_22_2020-\031-042 BC (1)-14 THRU BC (12)-14.dgn

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:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) 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 travelled 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

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. 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
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. 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.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. 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.

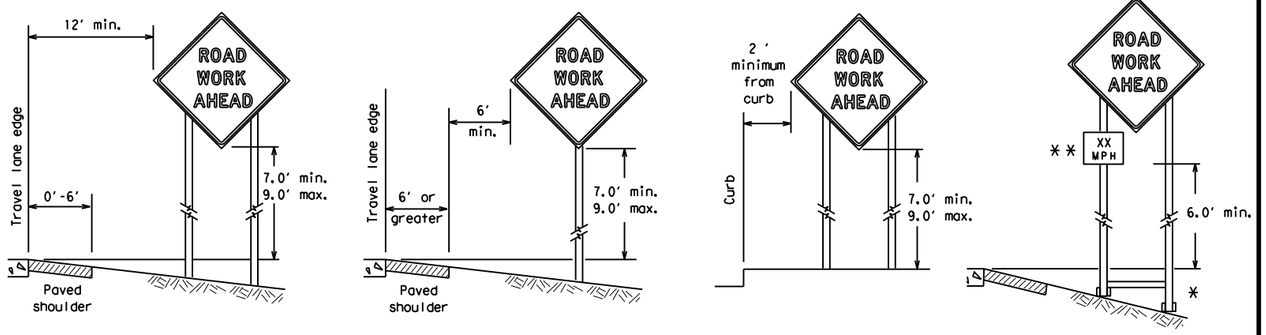
Texas Department of Transportation | Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 9-07 8-14 7-13	0085	03	017	FM 2735
	DIST	COUNTY		SHEET NO.
	ATL	BOWIE		33

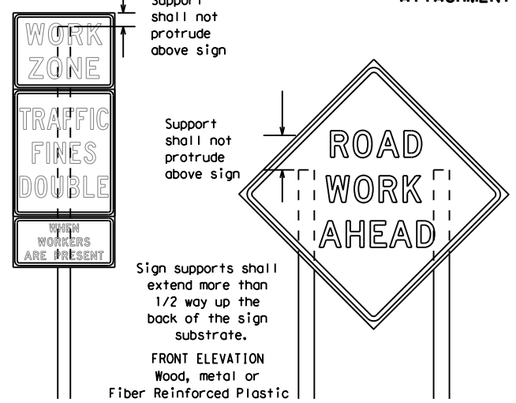
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



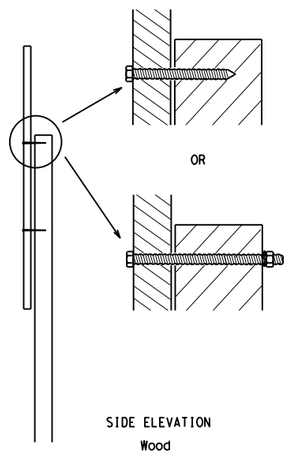
* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** 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



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 spice 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.

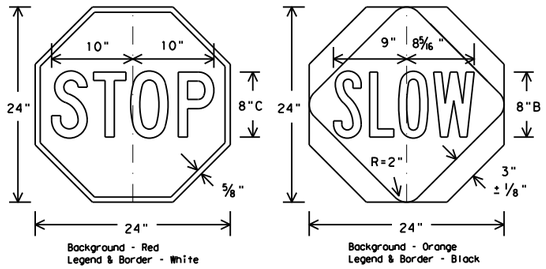


Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
2. When used at night, the STOP/SLOW paddle shall be retroreflectorized.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. 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.



CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. 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, 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.
2. 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.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. 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.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC sheets or the CWZTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. 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

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. 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.
5. 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.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). 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.
7. 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.
8. 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.
9. 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)

1. 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.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. 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.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. 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.
2. 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.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. 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.
5. 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

1. 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

1. 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.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. 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

1. 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).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. 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

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. 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.
3. 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.
4. 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.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. 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.
7. 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.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. 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.

Texas Department of Transportation | Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0085	03	017	FM 2735
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13	ATL	BOWIE		34

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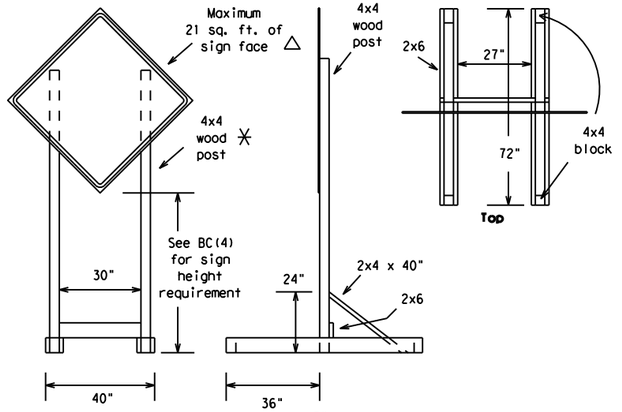
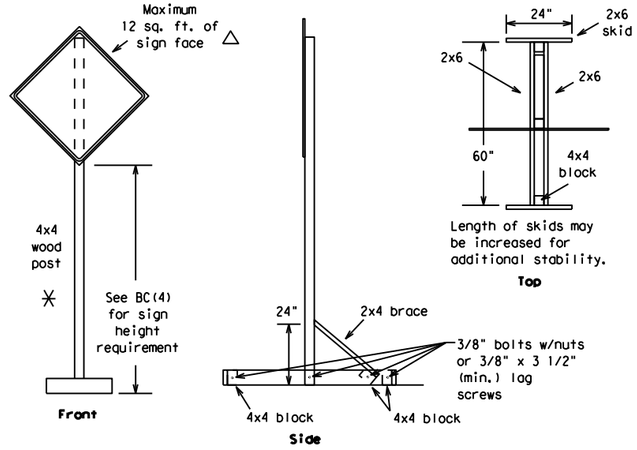
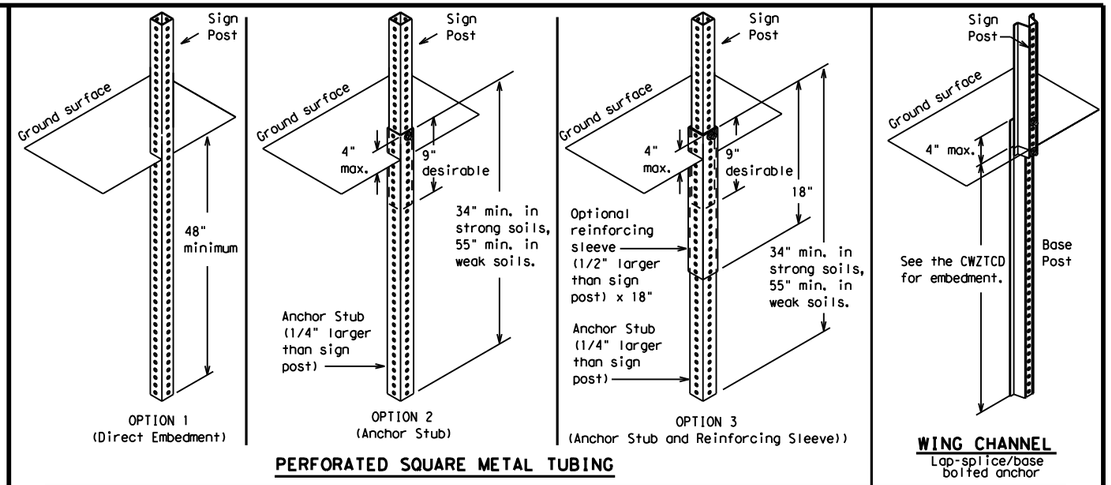




SKID MOUNTED WOOD SIGN SUPPORTS

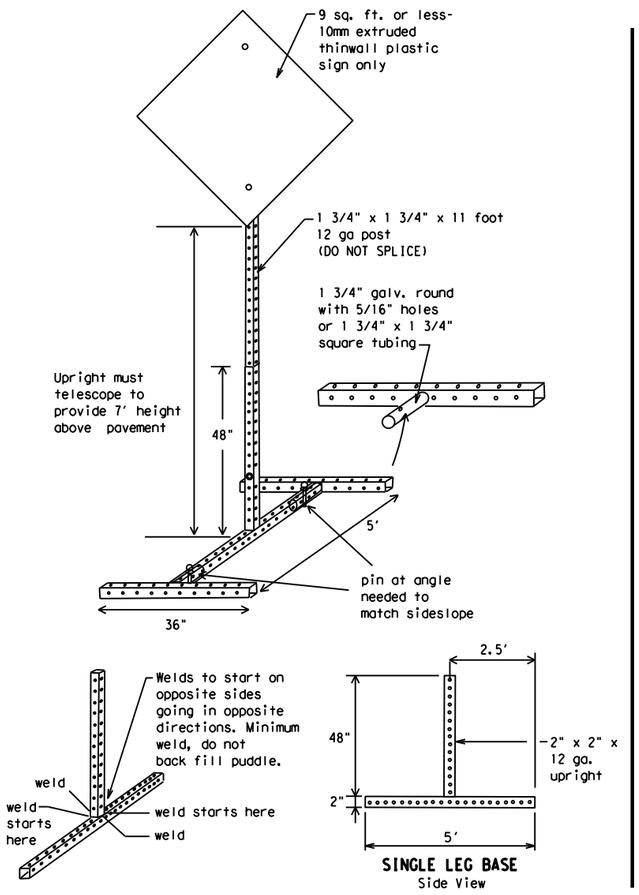
LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS □

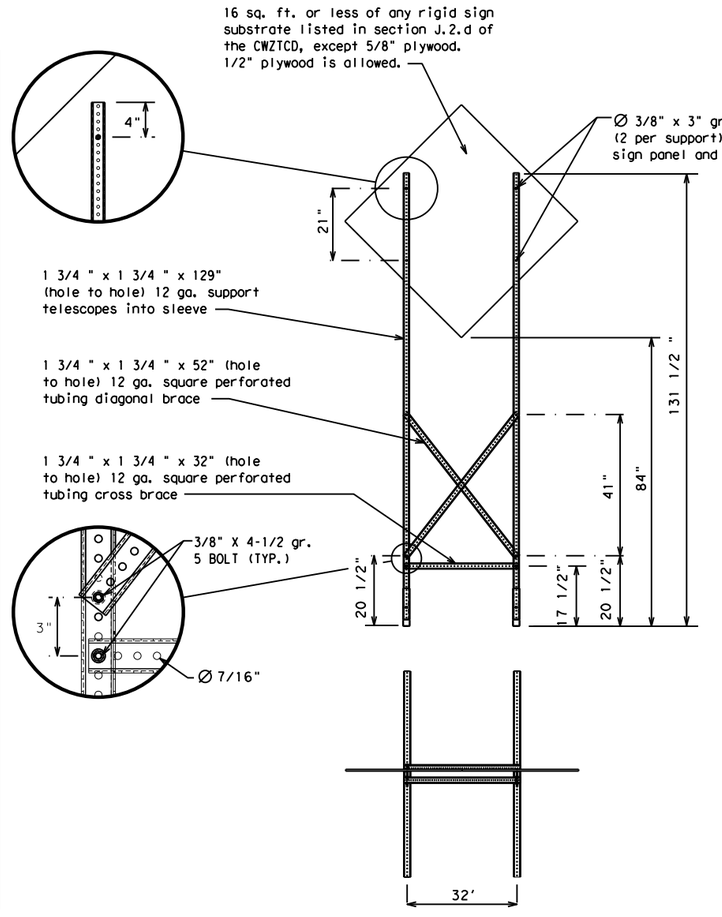


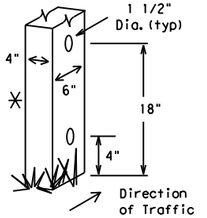
PERFORATED SQUARE METAL TUBING

GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support.
The maximum sign square footage shall adhere to the manufacturer's recommendation.
Two post installations can be used for larger signs.

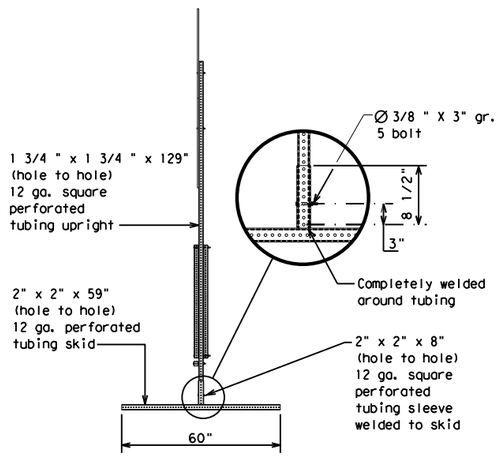






Nominal Post Size	Number of Posts	Maximum Sq. feet of Sign Face	Minimum Soil Embedment	Drilled Hole(s) Required
4 x 4	1	12	36"	NO
4 x 4	2	21	36"	NO
4 x 6	1	21	36"	YES
4 x 6	2	36	36"	YES

WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS



WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

□ See BC(4) for definition of "Work Duration."

✳ Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

△ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

Texas Department of Transportation — Traffic Operations Division Standard

SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13	ATL	BOWIE		35

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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

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. 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.
3. 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.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. 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.
8. 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.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. 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.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. 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.
15. 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.
16. Each line of text should be centered on the message board rather than left or right justified.
17. 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
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT

WORD OR PHRASE	ABBREVIATION
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

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

- FREEWAY CLOSED X MILE
- FRONTAGE ROAD CLOSED
- ROAD CLOSED AT SH XXX
- SHOULDER CLOSED XXX FT
- ROAD CLSD AT FM XXXX
- RIGHT LN CLOSED XXX FT
- RIGHT X LANES CLOSED
- RIGHT X LANES OPEN
- CENTER LANE CLOSED
- DAYTIME LANE CLOSURES
- NIGHT LANE CLOSURES
- I-XX SOUTH EXIT CLOSED
- VARIOUS LANES CLOSED
- EXIT XXX CLOSED X MILE
- EXIT CLOSED
- RIGHT LN TO BE CLOSED
- MALL DRIVEWAY CLOSED
- X LANES CLOSED TUE - FRI
- XXXXXXXX BLVD CLOSED

Other Condition List

- ROADWORK XXX FT
- ROAD REPAIRS XXXX FT
- FLAGGER XXXX FT
- LANE NARROWS XXXX FT
- RIGHT LN NARROWS XXXX FT
- TWO-WAY TRAFFIC XX MILE
- MERGING TRAFFIC XXXX FT
- CONST TRAFFIC XXX FT
- LOOSE GRAVEL XXXX FT
- UNEVEN LANES XXXX FT
- DETOUR X MILE
- ROUGH ROAD XXXX FT
- ROADWORK PAST SH XXXX
- ROADWORK NEXT FRI-SUN
- BUMP XXXX FT
- US XXX EXIT X MILES
- TRAFFIC SIGNAL XXXX FT
- LANES SHIFT *

* 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

- MERGE RIGHT
- FORM X LINES RIGHT
- DETOUR NEXT X EXITS
- USE XXXXX RD EXIT
- USE EXIT XXX
- USE EXIT I-XX NORTH
- STAY ON US XXX SOUTH
- USE I-XX E TO I-XX N
- TRUCKS USE US XXX N
- WATCH FOR TRUCKS
- WATCH FOR TRUCKS
- EXPECT DELAYS
- EXPECT DELAYS
- PREPARE TO STOP
- REDUCE SPEED XXX FT
- END SHOULDER USE
- USE OTHER ROUTES
- WATCH FOR WORKERS
- STAY IN LANE *

Location List

- AT FM XXXX
- BEFORE RAILROAD CROSSING
- NEXT X MILES
- PAST US XXX EXIT
- XXXXXXX TO XXXXXXX
- US XXX TO FM XXXX

Warning List

- SPEED LIMIT XX MPH
- MAXIMUM SPEED XX MPH
- MINIMUM SPEED XX MPH
- ADVISORY SPEED XX MPH
- RIGHT LANE EXIT
- USE CAUTION
- DRIVE SAFELY
- DRIVE WITH CARE

** Advance Notice List

- TUE-FRI XX AM- X PM
- APR XX-XX X PM-X AM
- BEGINS MONDAY
- BEGINS MAY XX
- MAY X-X XX PM - XX AM
- NEXT FRI-SUN
- XX AM TO XX PM
- NEXT TUE AUG XX
- TONIGHT XX PM- XX AM

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. 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.
6. 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

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. 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

1. 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.
2. 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.
3. 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.
4. 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.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13	ATL	BOWIE		36

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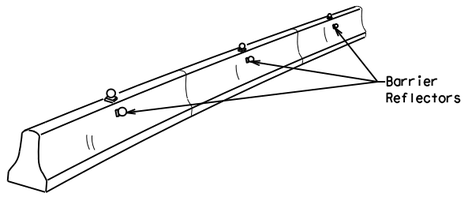
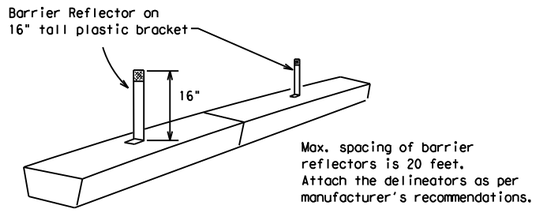
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost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

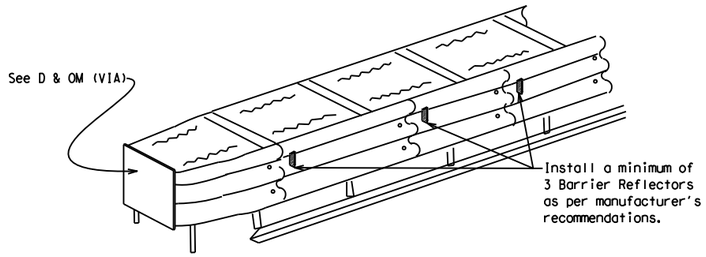


CONCRETE TRAFFIC BARRIER (CTB)

3. 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.
4. 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.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.



LOW PROFILE CONCRETE BARRIER (LPCB)

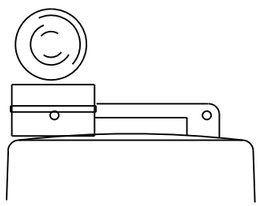


DELINEATION OF END TREATMENTS

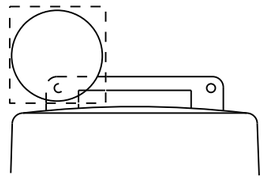
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet crashworthy standards as defined in the National Cooperative Highway Research Report 350. Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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

WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. 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_{FL} or C_{FL} Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
4. 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".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. 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.
7. 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.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

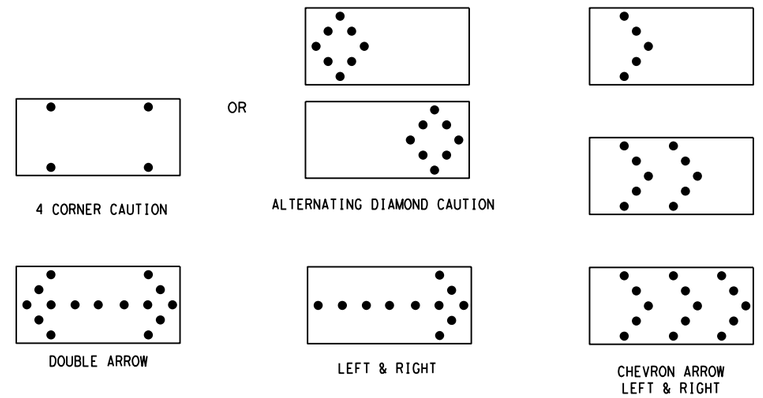
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing 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.
4. 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.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. 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

1. 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.
2. 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.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. 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.
6. 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.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

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.

1. 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.
2. 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.
3. 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.
4. The Flashing Arrow Board should be able to display the following symbols:



5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.
7. 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.
8. 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.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.
11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. 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.
14. 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

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. 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.
6. 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.

Texas Department of Transportation

Traffic Operations Division Standard

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

BC(7)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0085	03	017	FM 2735
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13	ATL	BOWIE		37

101

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GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. 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.
3. 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.
4. 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).
5. 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.
6. 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:

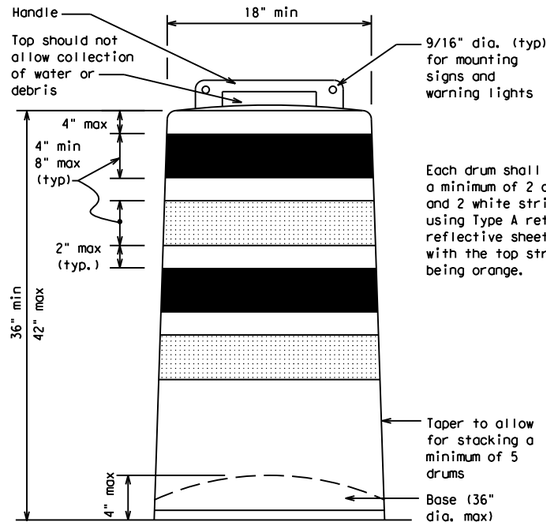
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

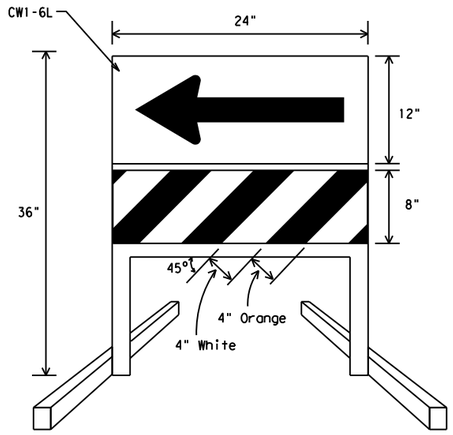
RETROREFLECTIVE SHEETING

1. 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 reflective sheeting shall be supplied unless otherwise specified in the plans.
2. 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

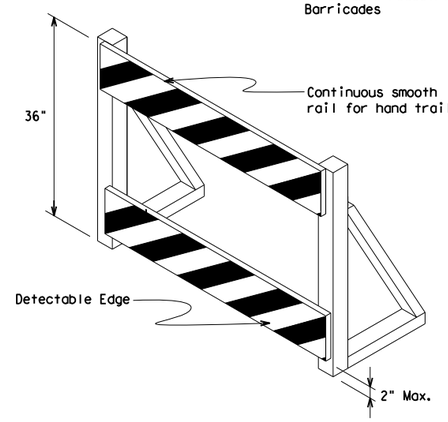
1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other 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.
2. 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.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. 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.
5. 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.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.





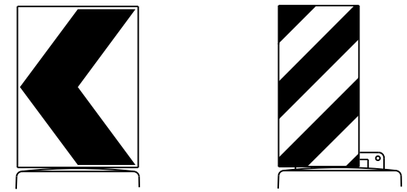
DIRECTION INDICATOR BARRICADE

1. The Direction Indicator Barricade may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.
2. If used, the Direction Indicator Barricade should be used in series to direct the driver through the transition and into the intended travel lane.
3. The Direction Indicator Barricade shall consist of One-Direction Large Arrow (CW1-6) sign in the size shown with a black arrow on a background of Type B_{FL} or Type C_{FL} Orange retroreflective sheeting above a rail with Type A retroreflective sheeting in alternating 4" white and orange stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. Sheeting types shall be as per DMS 8300.
4. Double arrows on the Direction Indicator Barricade will not be allowed.
5. Approved manufacturers are shown on the CWZTCD List. Ballast shall be as approved by the manufacturers instructions.



DETECTABLE PEDESTRIAN BARRICADES

1. 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.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
3. 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.
4. 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 for Buildings and Facilities (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades may 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.



18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer

12" x 24" Vertical Panel mount with diagonals sloping down towards travel way

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. 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.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. 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.
8. 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.

Texas Department of Transportation | Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0085	03	017	FM 2735
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	ATL	BOWIE		38

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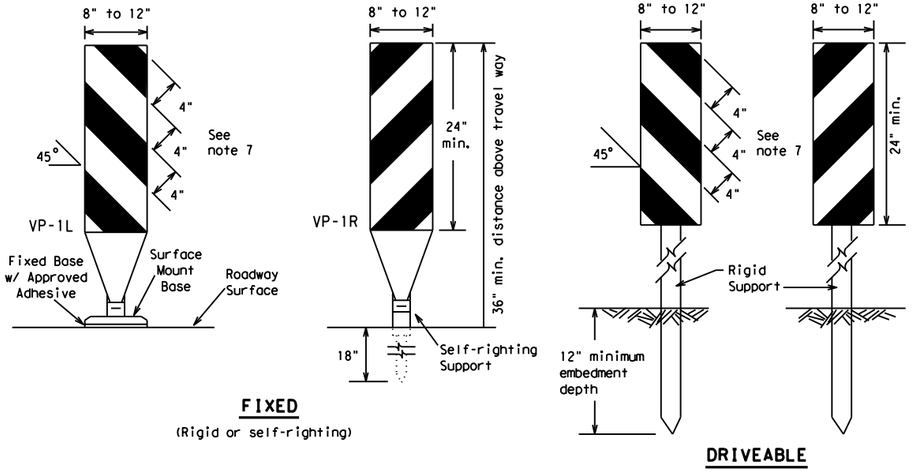
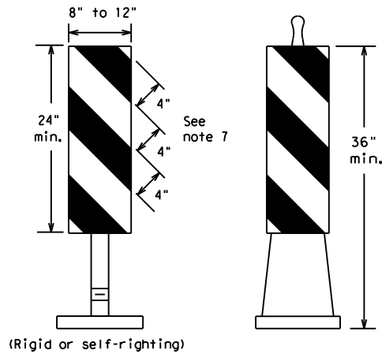


FIXED
(Rigid or self-righting)

DRIVEABLE

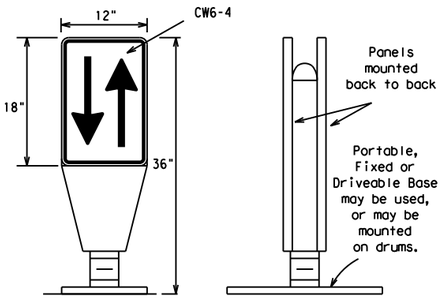


(Rigid or self-righting)

PORTABLE

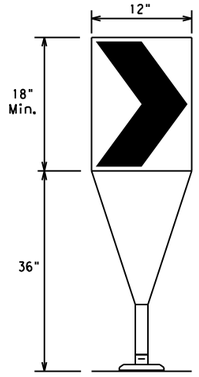
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual Appendix B "Treatment of Pavement Drop-offs in Work Zones" for additional guidelines on the use of VP's for drop-offs.
3. 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.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

VERTICAL PANELS (VPs)



1. 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.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

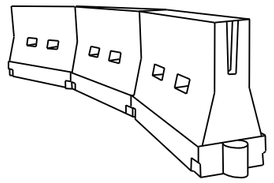
OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



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

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. 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.
3. 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.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. 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)

1. 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.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. 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) placed near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. 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 NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
2. 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.
3. 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.
4. 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.
5. 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 canes 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

1. 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).
2. 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.
3. 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).
4. 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.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. 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.
7. 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 ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent
30	$L = \frac{WS^2}{60}$	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

Texas Department of Transportation | Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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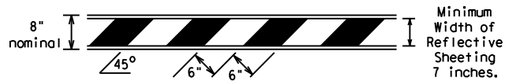
REVISIONS	0085	03	017	FM 2735
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13	ATL	BOWIE		39

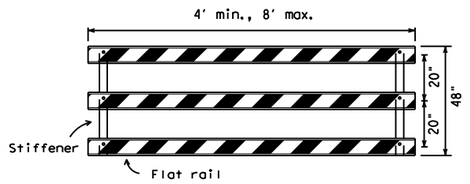
TYPE 3 BARRICADES

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 conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



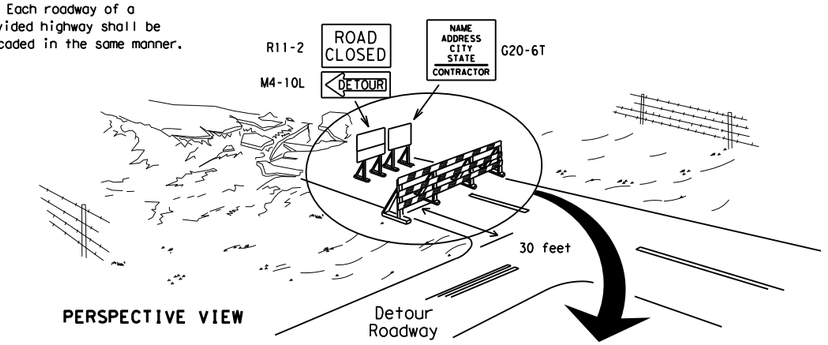
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

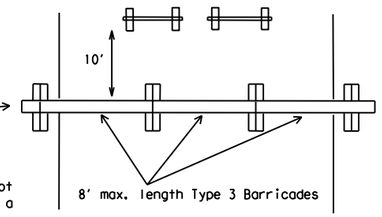
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

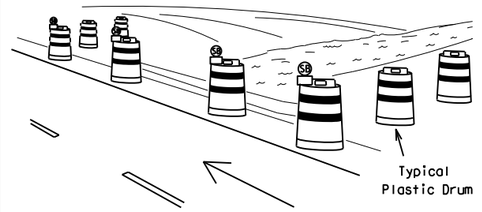
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

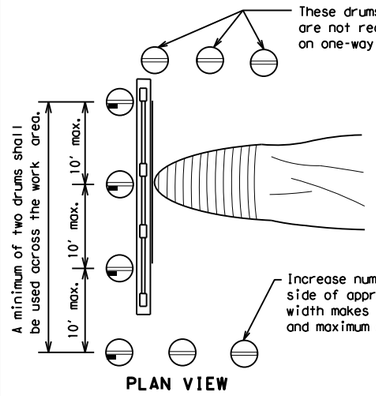
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

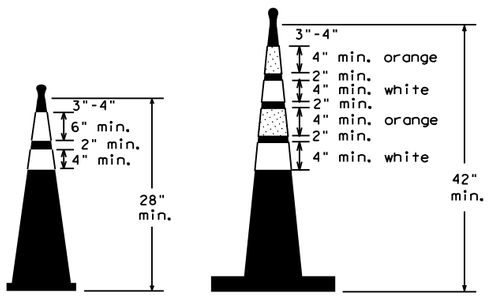
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.



PLAN VIEW

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

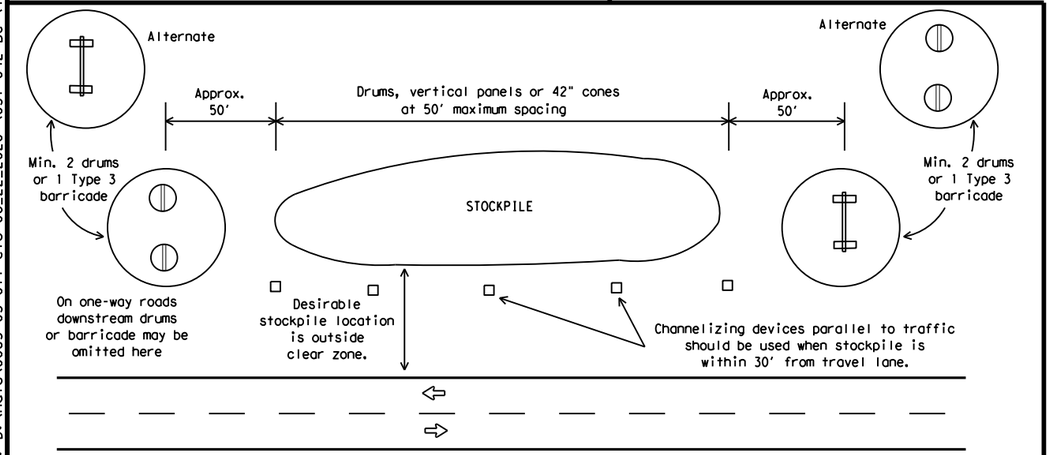
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



28" Cones shall have a minimum weight of 9 1/2 lbs.

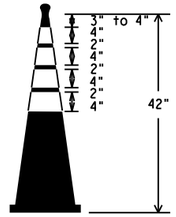
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

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 used at night 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.
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.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

THIS DEVICE SHALL NOT BE USED ON PROJECTS LET AFTER MARCH 2014.



EDGELINE CHANNELIZER

1. This device is intended only for use in place of a vertical panel to channelize traffic by indicating the edge of the travel lane. It is not intended to be used in transitions or tapers.
2. This device shall not be used to separate lanes of traffic (opposing or otherwise) or warn of objects.
3. This device is based on a 42 inch, two-piece cone with an alternate striping pattern: four 4 inch retroreflective bands, with an approximate 2 inch gap between bands. The color of the band should correspond to the color of the edgeline (yellow for left edgeline, white for right edgeline) for which the device is substituted or for which it supplements. The reflectorized bands shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.

Texas Department of Transportation — Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-14

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7-13	ATL	BOWIE		40

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WORK ZONE PAVEMENT MARKINGS

GENERAL

1. 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.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. 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).
6. 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.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. 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

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

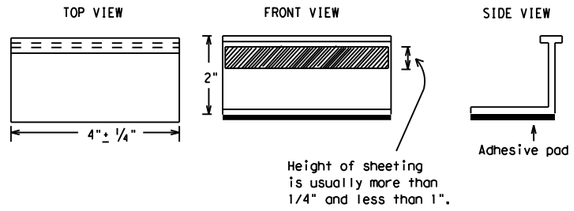
MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. 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.
3. 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.
4. 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

1. 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.
2. 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.
3. 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".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. 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.
10. 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

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. 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.
   A. 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.
   B. 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.
3. Small design variances may be noted between tab manufacturers.
4. 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

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. 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).

Texas Department of Transportation | Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-14

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11-02 8-14				

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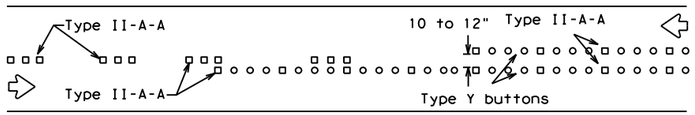
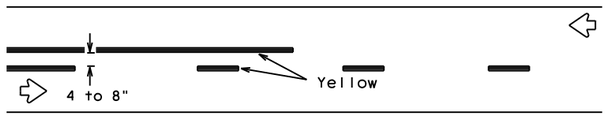
PAVEMENT MARKING PATTERNS

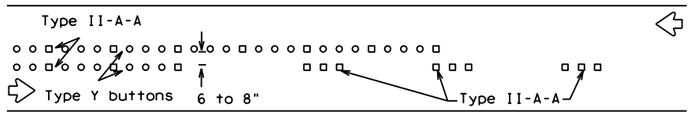
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



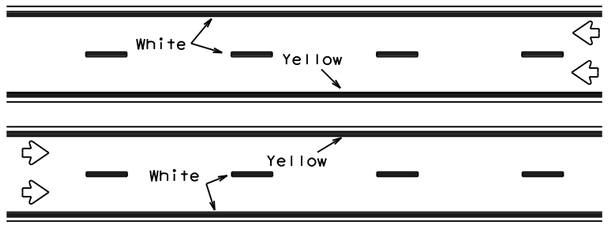
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



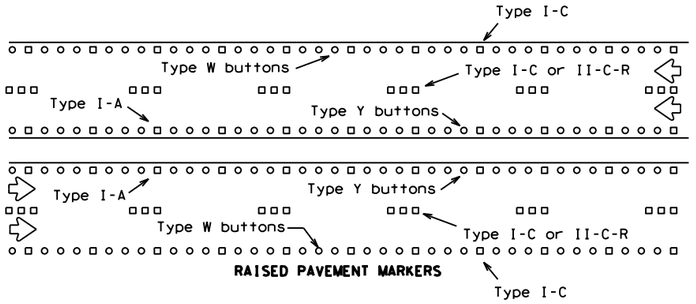
RAISED PAVEMENT MARKERS - PATTERN B

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



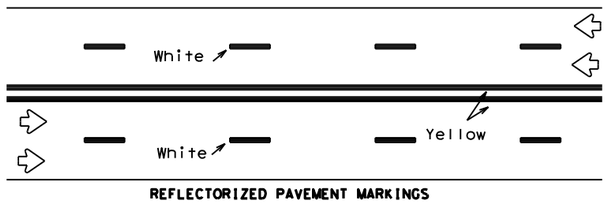
REFLECTORIZED PAVEMENT MARKINGS



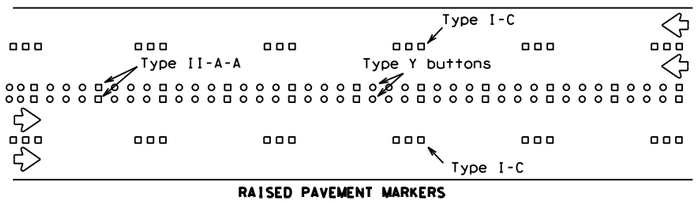
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



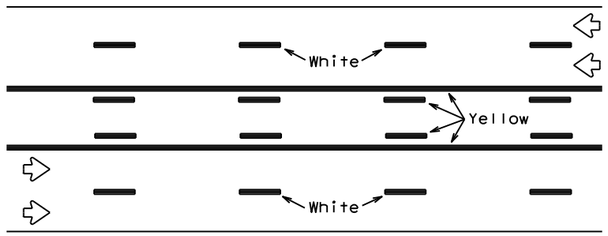
REFLECTORIZED PAVEMENT MARKINGS



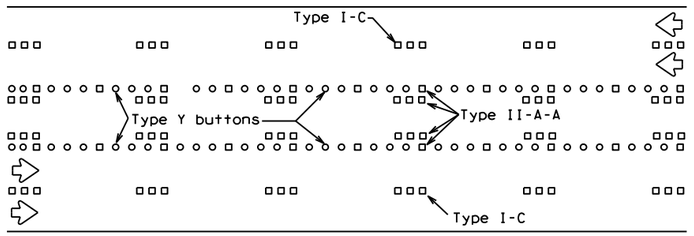
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

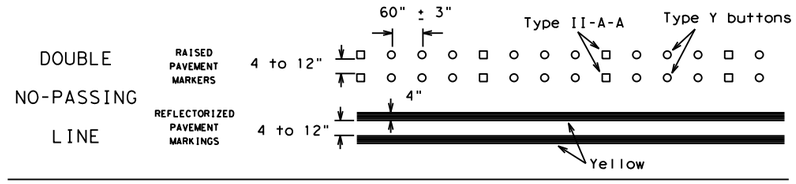
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

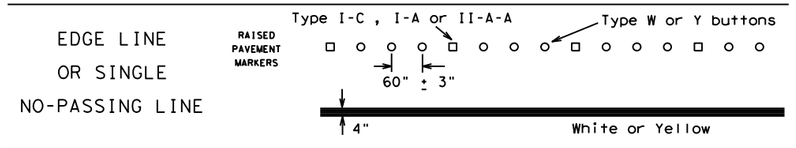
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

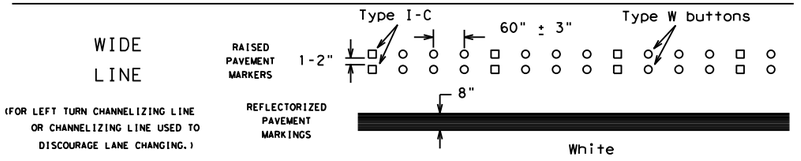


EDGE LINE OR SINGLE NO-PASSING LINE



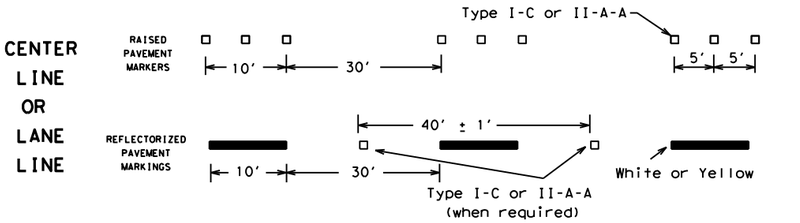
WIDE LINE

(FOR LEFT TURN CHANNELIZING LINE OR CHANNELIZING LINE USED TO DISCOURAGE LANE CHANGING.)

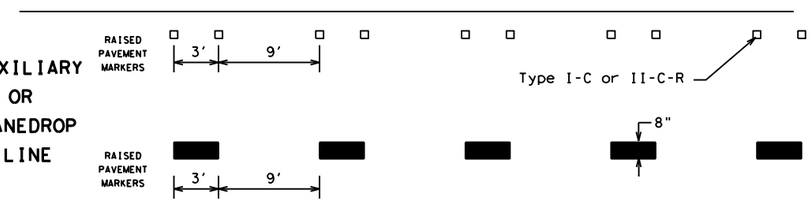


BROKEN LINES

CENTER LINE OR LANE LINE

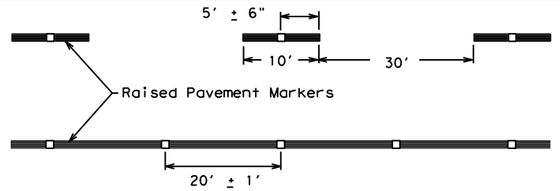


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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.



Centerline only - not to be used on edge lines

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."

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-14

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2-98 7-13	ATL	BOWIE		42
11-02 8-14				

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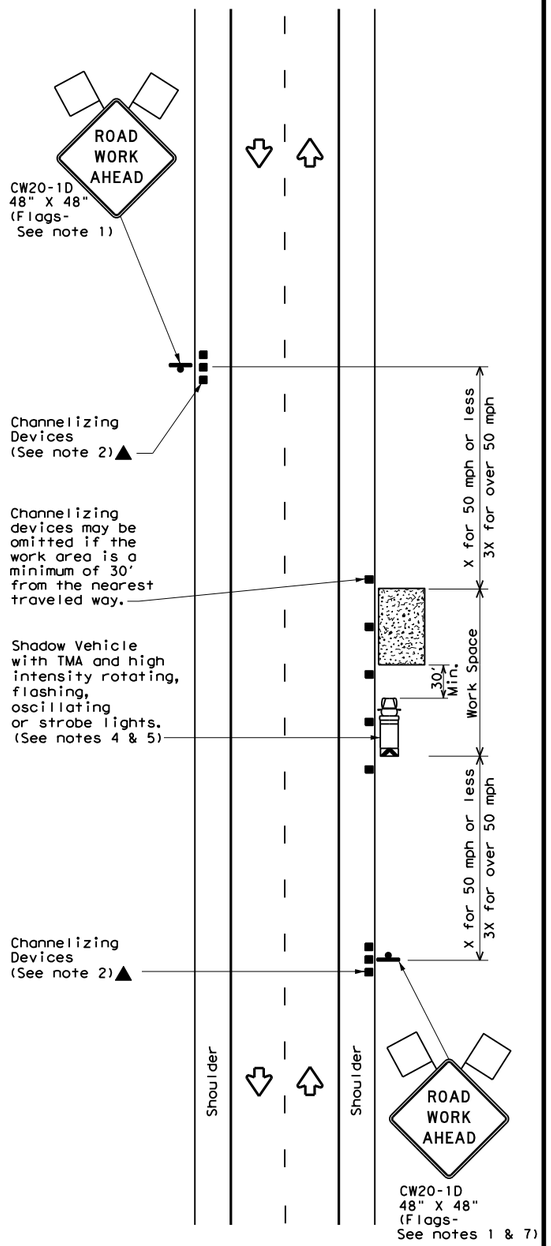
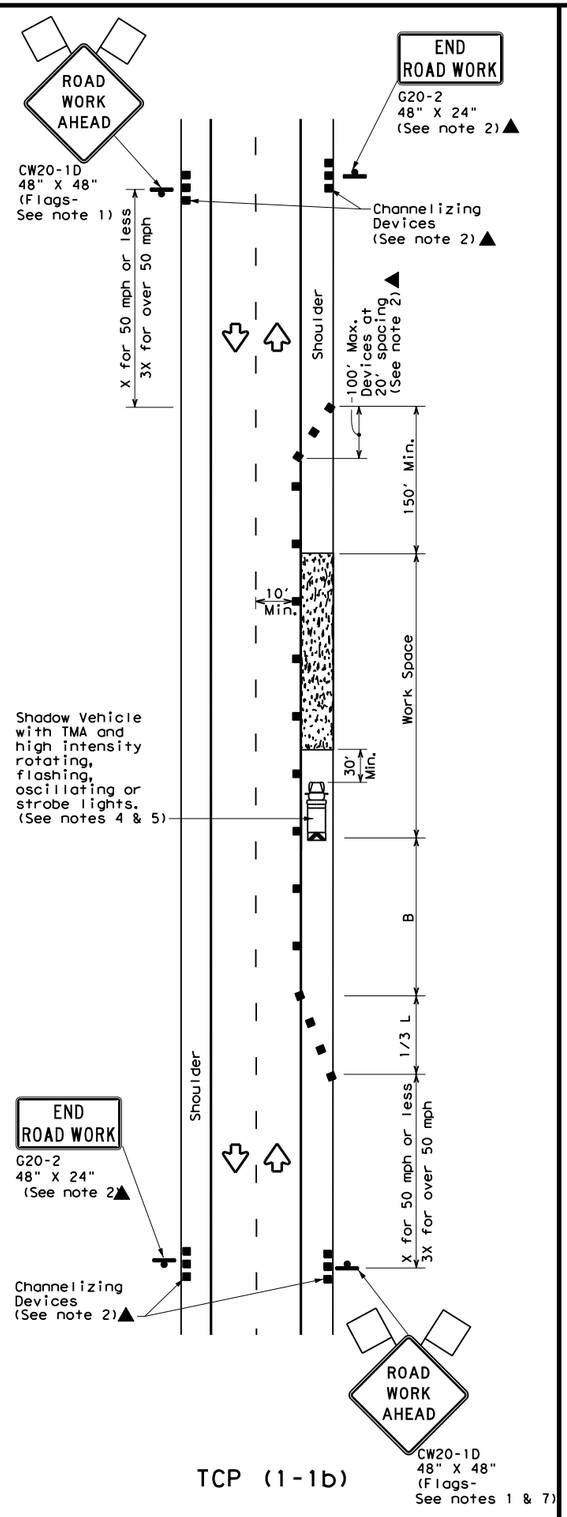


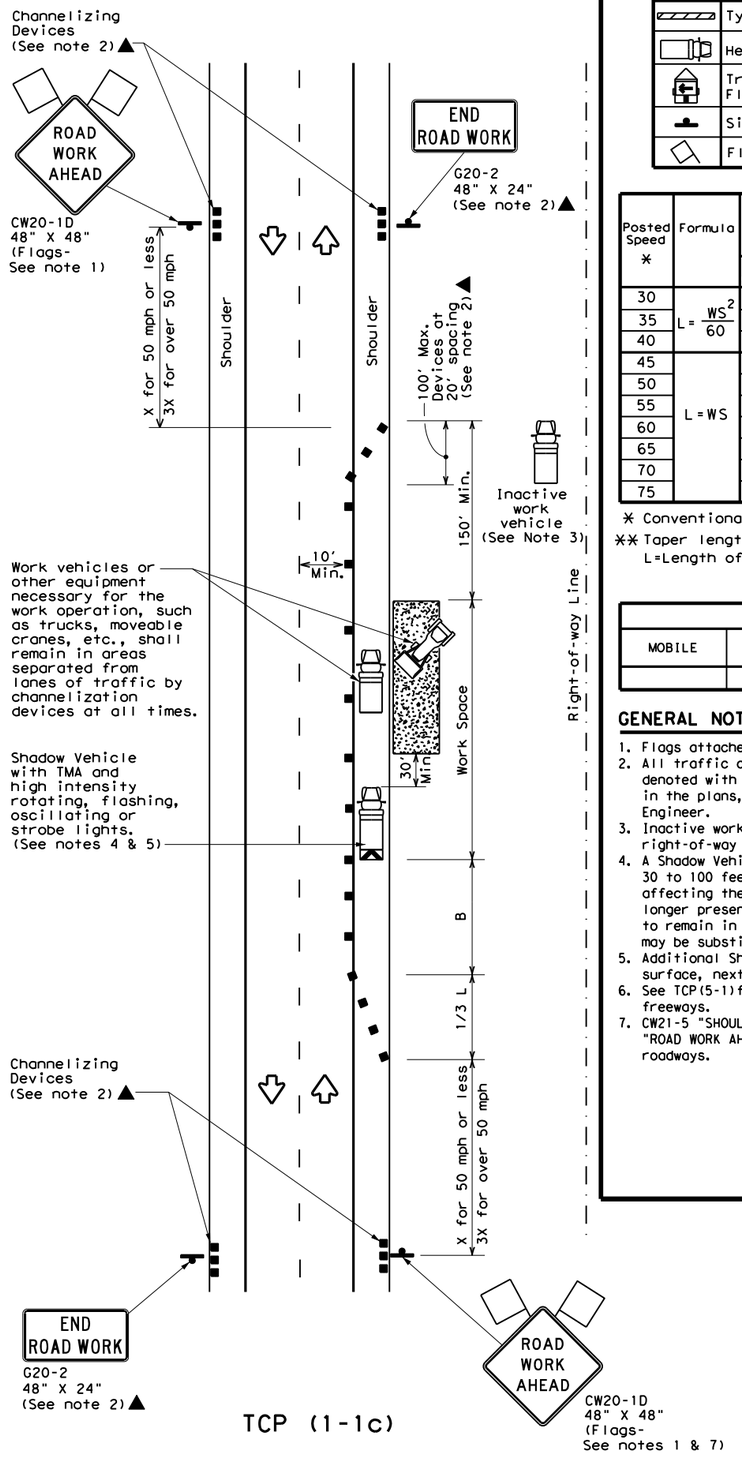
TCP (1-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
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

1. Flags attached to signs where shown are REQUIRED.
2. 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.
3. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
4. 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.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
6. See TCP(5-1)for shoulder work on divided highways, expressways and freeways.
7. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(1-1)-18

FILE: tcp1-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0085	03	017	FM 2735
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	ATL	BOWIE		43
1-97 2-18				

151

DATE: 2/3/2021 11:40:05 AM
FILE: D:\hals\0085-03-017 etc 06_22_2020-\043 TCP(1-1)-18.dgn

DATE: 2/3/2021 11:44:59 AM
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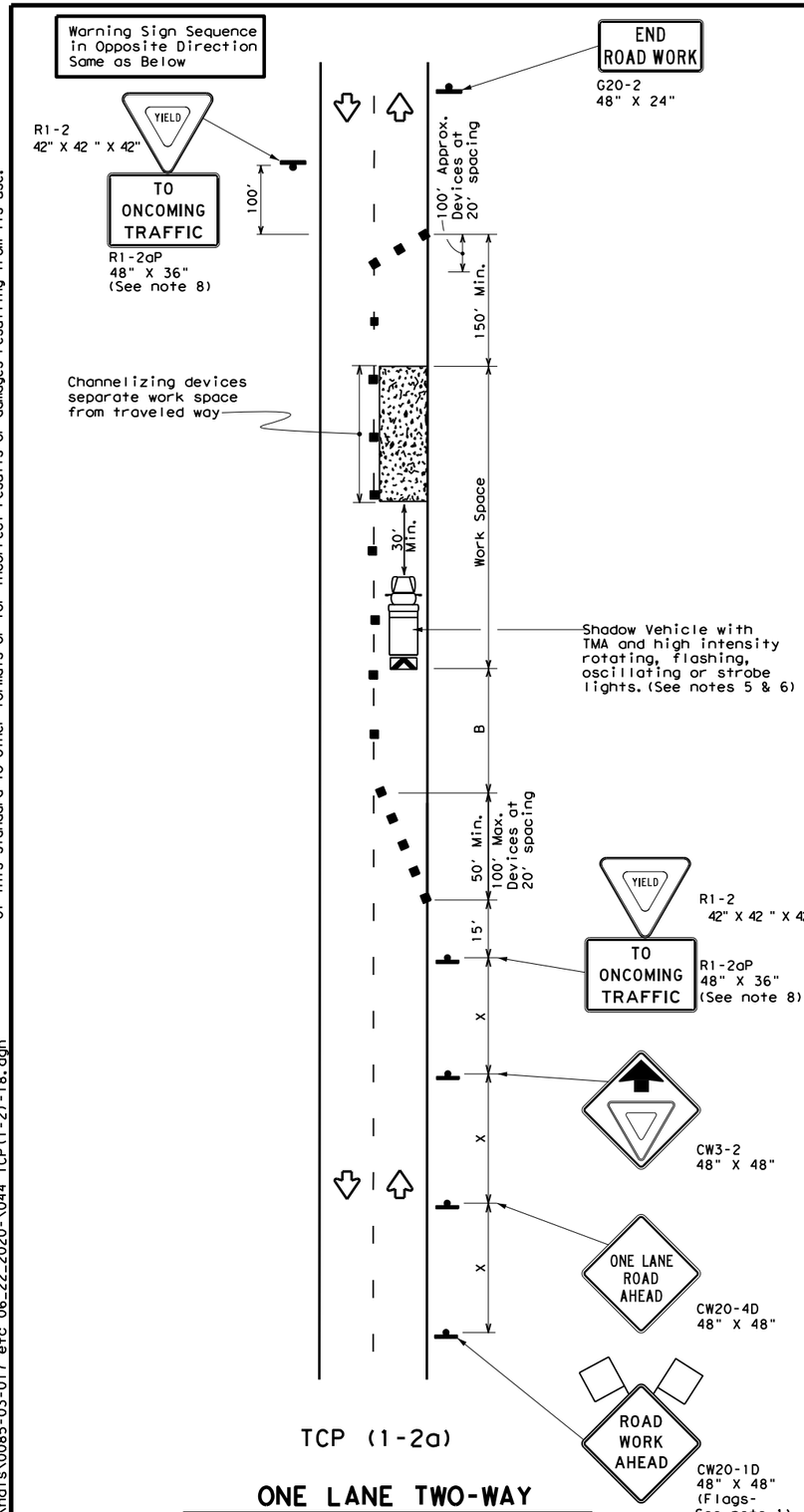
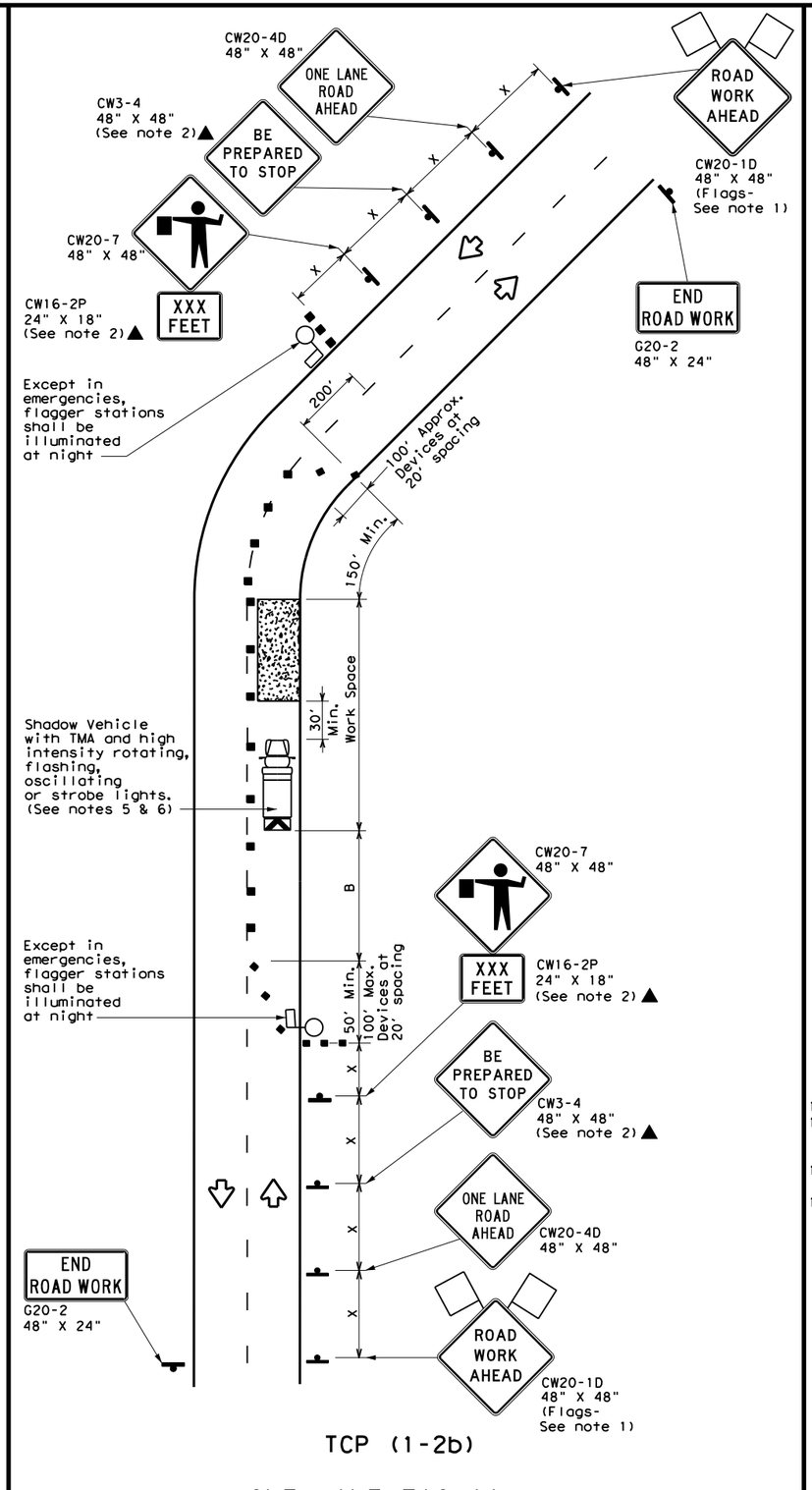


TCP (1-2a)

ONE LANE TWO-WAY CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See note 7)



TCP (1-2b)

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	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L = \frac{WS^2}{60}$	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

1. Flags attached to signs where shown are REQUIRED.
2. 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.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
5. 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.
6. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-2a)

7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
8. R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

TCP (1-2b)

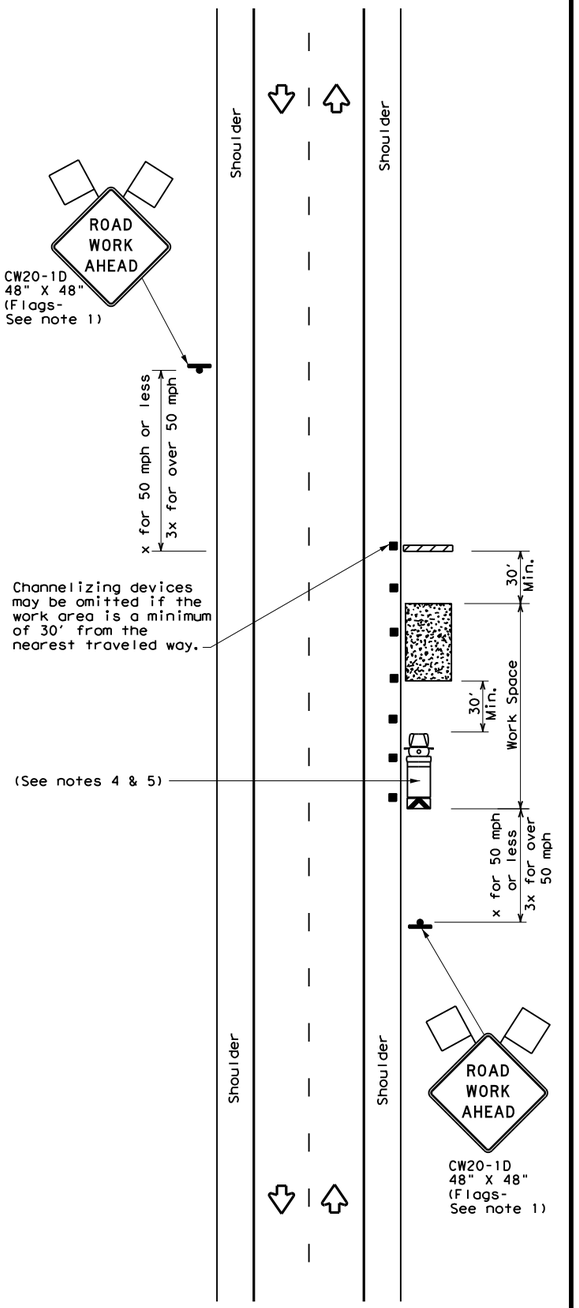
9. Flaggers should use two-way radios or other methods of communication to control traffic.
10. Length of work space should be based on the ability of flaggers to communicate.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
12. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
13. 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

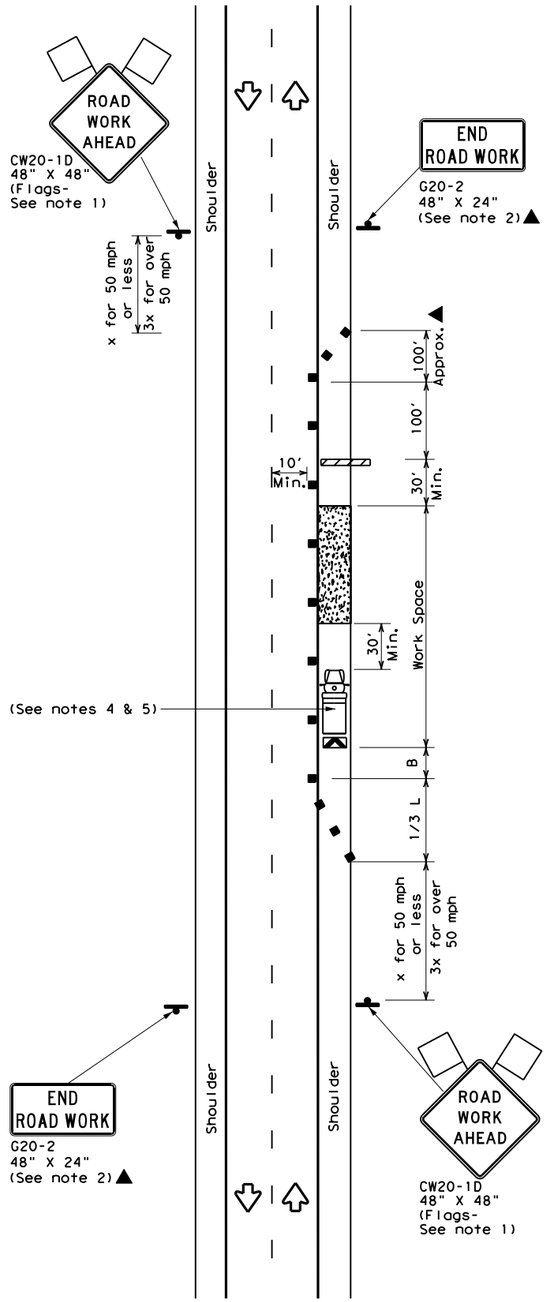
TCP(1-2)-18

FILE: tcp1-2-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-90 4-98 2-94 2-12 1-97 2-18	0085	03	017	FM 2735
	DIST	COUNTY		SHEET NO.
	ATL	BOWIE		44



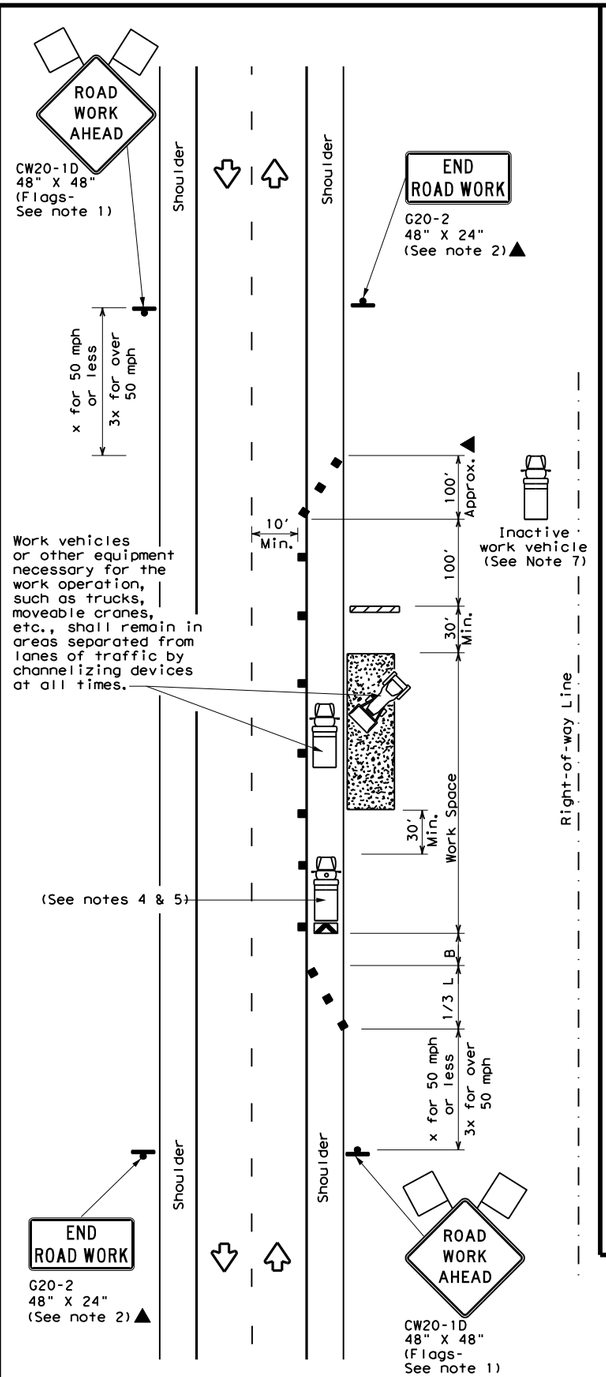
TCP (2-1a)

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	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
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

1. Flags attached to signs where shown, are REQUIRED.
2. 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.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
4. 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.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

Traffic Operations Division Standard

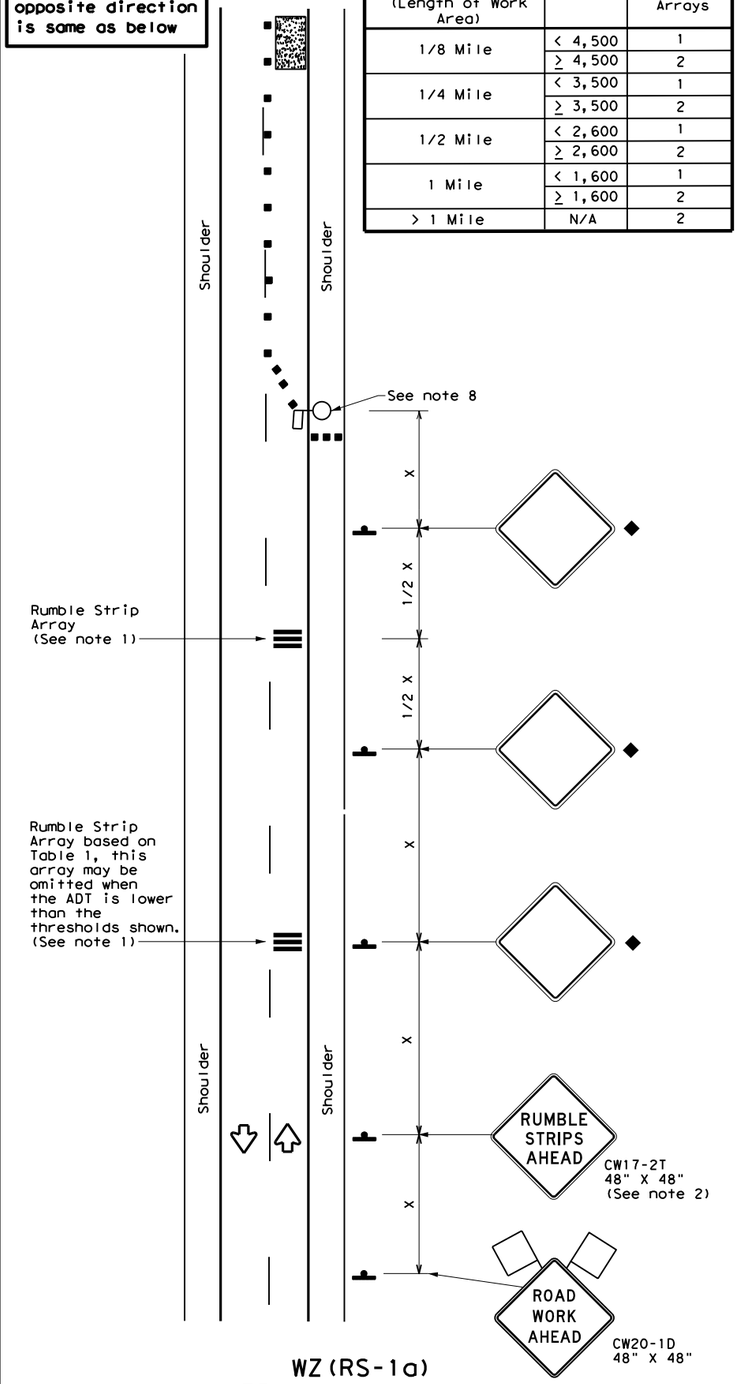
TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-18

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0085	03	017	FM 2735
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	ATL	BOWIE		45
1-97 2-18				

DATE: 2/3/2021 10:56:09 AM
FILE: D:\hals\0085-03-017 etc 06_22_2020-\045 TCP(2-1)-18.dgn

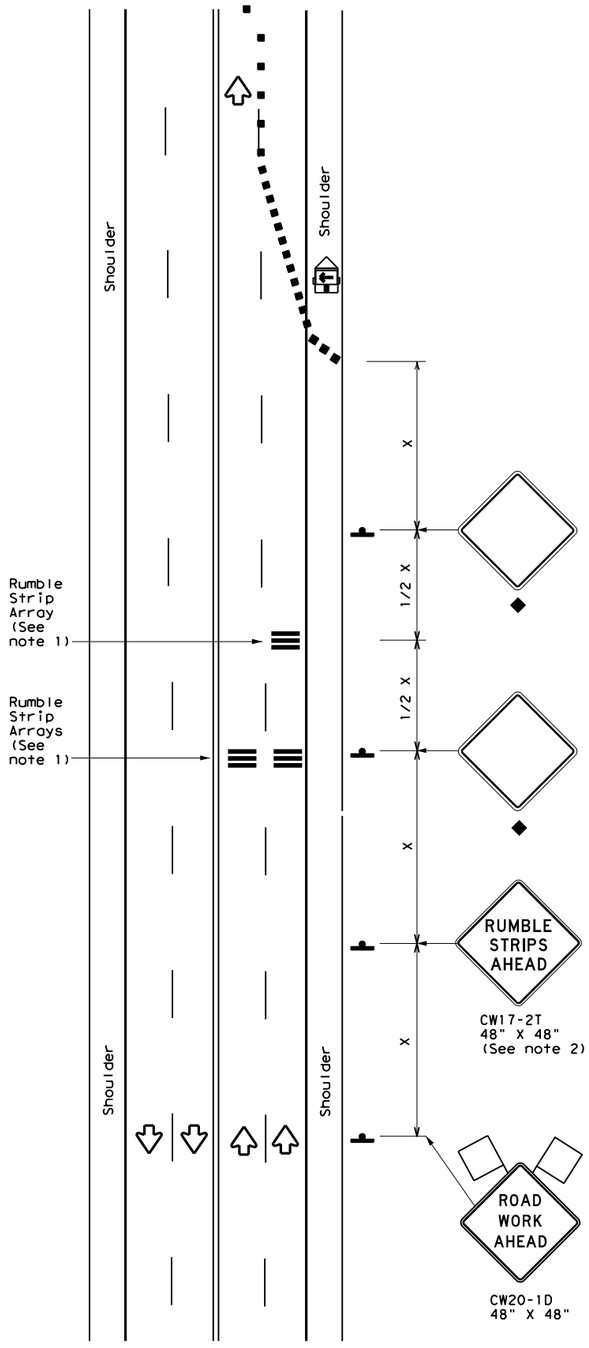
Warning sign and rumble strip sequence in opposite direction is same as below



WZ(RS-1a)
75 mph or Less

RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION

TABLE 1		
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-1b)
75 mph or Less

RUMBLE STRIPS FOR LANE CLOSURE ON CONVENTIONAL ROADWAY

GENERAL NOTES

1. 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.
2. 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.
3. Temporary Rumble Strips will be considered subsidiary to Item 502, and shall be a product listed on the Compliant Work Zone Traffic Control Devices.
4. Removal of the Temporary Rumble Strips should be accomplished before removing the advance warning signs.
5. Temporary Rumble Strips should not be used on horizontal curves, loose gravel, soft or bleeding asphalt, heavily rutted pavements or unpaved surfaces.
6. Temporary Rumble Strips shall be installed and maintained as per manufacturer's recommendations.
7. This standard sheet shall be used in conjunction with other appropriate TCP standard, TMUTCD typical application or project specific detail for the project.
8. The one-lane two-way application may utilize a flagger, an AFAD or a portable traffic signal.
9. Temporary Rumble Strips may be used on freeways or expressways based on engineering judgment.

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
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
	✓	✓		

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

TABLE 2	
Speed	Approximate distance between strips in an Array
≤ 40 MPH	10'
> 40 MPH & ≤ 55 MPH	15'
> 55 MPH	20'

Texas Department of Transportation

Traffic Operations Division Standard

TEMPORARY RUMBLE STRIPS

WZ(RS)-16

FILE: wzrs16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS	0085	03	017	FM 2735
2-14	DIST	COUNTY		SHEET NO.
4-16	ATL	BOWIE		46

DATE: 2/3/2021 10:49:47 AM
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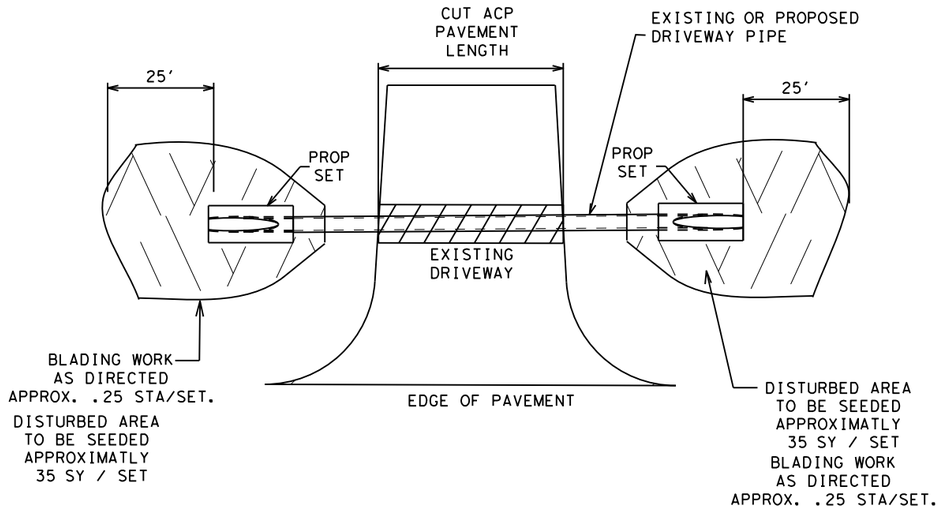
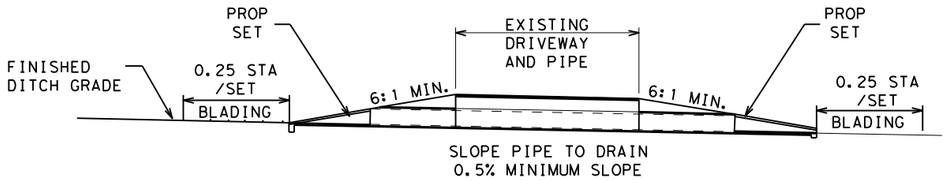
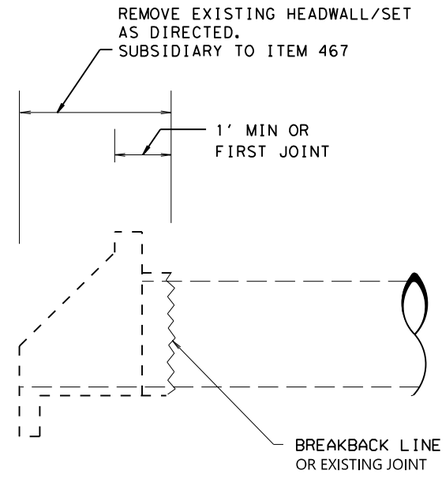


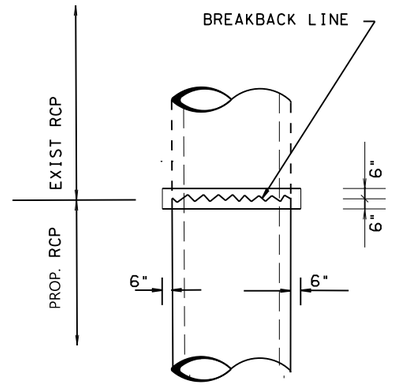


NOTE: SEE SUMMARY SHEETS FOR LOCATIONS AND QUANTITIES OF EXTENDED PIPE, SETS AND EMBANKMENT.

SET DRIVEWAY DETAIL

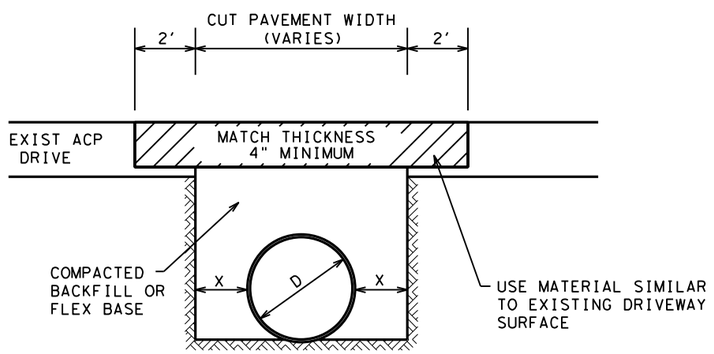


DETAIL OF REMOVE STRUCTURE (HEADWALL)



SUBSIDIARY TO ITEM 467

CONCRETE COLLAR DETAIL



D = DIAMETER OF PIPE

FOR PIPE $\leq$ 42" DIA. X= 1'

FOR PIPE $>$ 42" DIA. X= 2'

NOTE: ACP AND FLEX BASE FOR CUT & RESTORE PAVEMENT MAY BE OBTAINED FROM A COMMERCIAL SOURCE. SAMPLING AND TESTING WILL BE AS DIRECTED.

CUT AND RESTORE PAVEMENT DETAIL

STATE OF TEXAS
HAROLD E. NAASZ
106192
REGISTERED PROFESSIONAL ENGINEER

Harold E Naasz
03 09 2021

DRAINAGE DETAILS

NOT TO SCALE

FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.		SHEET NO.
			47
STATE	DISTRICT	COUNTY	
TEXAS	ATL	BOWIE	
CONTROL	SECTION	JOB	HIGHWAY NO.
0085	03	017	FM 2735

FILE: c:\txdot\pw*online\txdot5\hal.naasz\d0314328\047 DRAINAGE DETAILS 03 05 2021.dgn
DATE: 3/9/2021 3:16:47 PM

NOTES: REMOVAL OF PORTIONS OF EXISTING CONCRETE DRIVEWAYS WILL BE DONE BY SAW CUTTING TO NEAT LINES UNLESS OTHERWISE DIRECTED.

PAYMENT FOR CONCRETE DRIVEWAYS WILL BE IN ACCORDANCE ITEM 530.

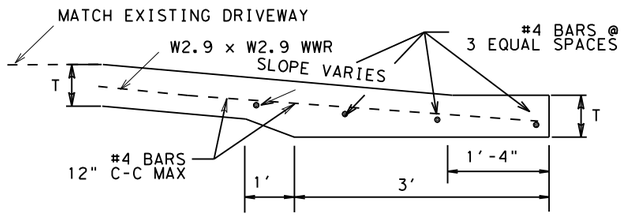
ALL OTHER WORK AND MATERIALS NECESSARY TO TIE EXISTING DRIVEWAYS TO THE PROPOSED EDGE OF PAVEMENT WILL BE AS APPROVED. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE PERTINENT BID ITEMS.

PROVIDE 4" FOR TYPE 1 DRIVEWAY, 8" FOR TYPE 2 DRIVEWAY, AND 6 X 12 - W2.9 X W2.9 WELDED WIRE REIFORCING IN ALL CONCRETE DRIVEWAYS.

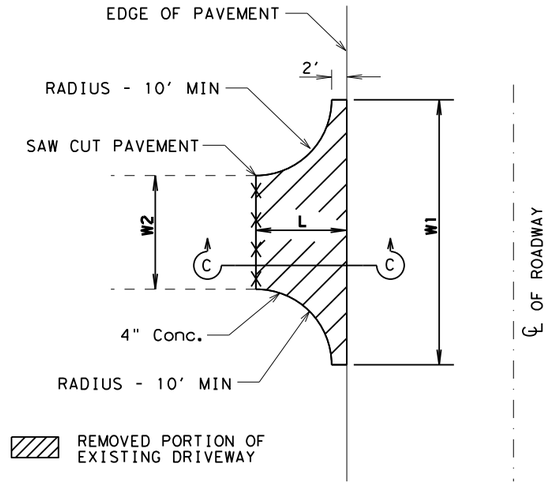
DRILL AND GROUT 6" DEPTH WITH A #4 REBAR INTO EXISTING SLAB.

SEE MISCELLANEOUS SUMMARIES FOR MORE INFORMATION.

DIMENSION "T" SHALL BE THICKNESS OF PAVEMENT STRUCTURE, UNLESS OTHERWISE SHOWN IN THE PLANS. IN NO CASE SHALL IT BE LESS THAN 4" FOR TYPE 1 DRIVEWAY AND 8" FOR TYPE 2 DRIVEWAY.



SECTION C-C



CONCRETE DRIVEWAY DETAIL

STATE OF TEXAS
HAROLD E. NAASZ
106192
REGISTERED
PROFESSIONAL ENGINEER

Harold E Naasz
03 09 2021

CONCRETE DRIVEWAY DETAILS

NOT TO SCALE

FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.		SHEET NO.
			48

STATE	DISTRICT	COUNTY	
TEXAS	ATL	BOWIE	
CONTROL	SECTION	JOB	HIGHWAY NO.
0085	03	017	FM 2735

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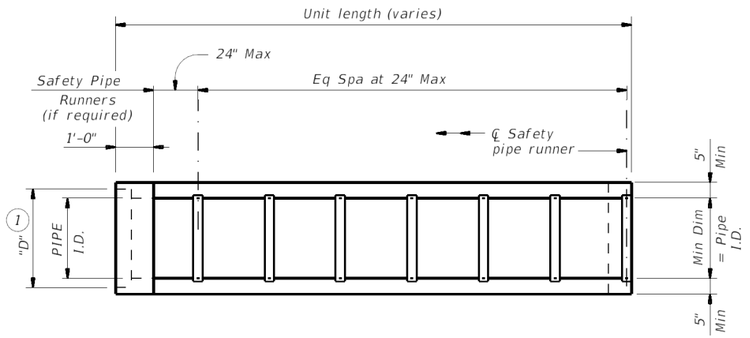
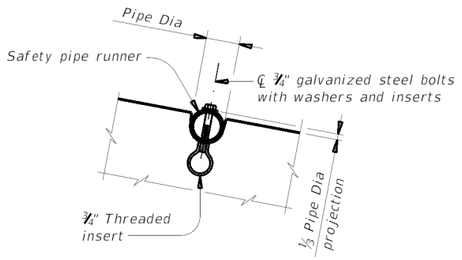


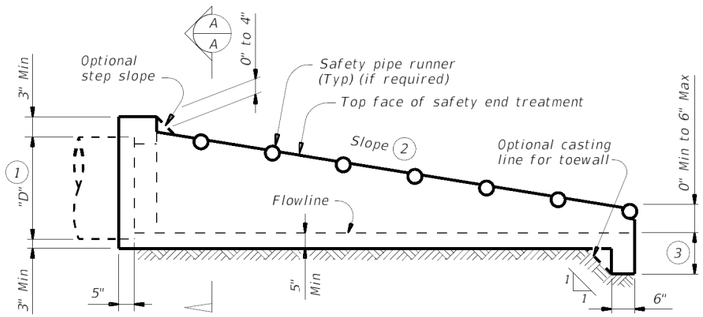
PLAN

(Showing bell end connection.)



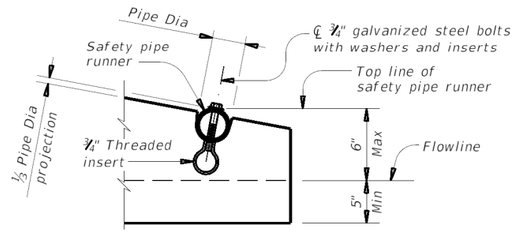
INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(If required)

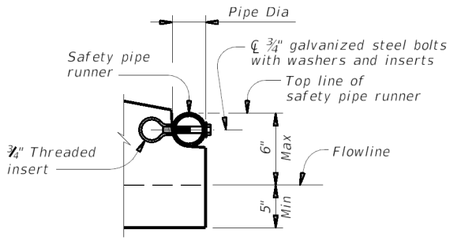


LONGITUDINAL ELEVATION

(Showing bell end connection.)



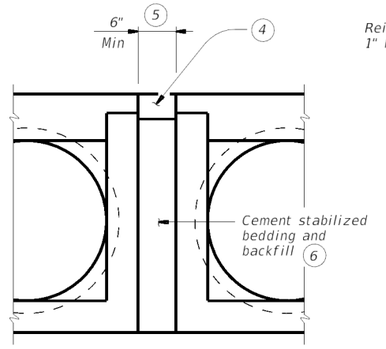
OPTION A



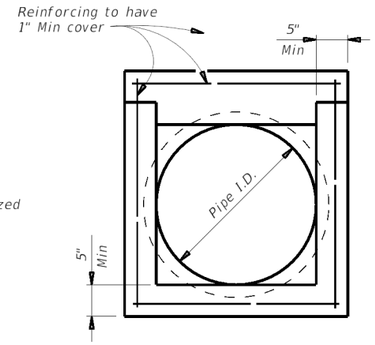
OPTION B

END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS

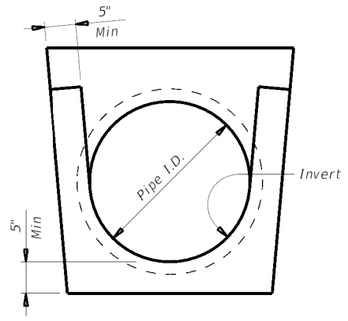
(If required)



MULTIPLE PIPE INSTALLATION

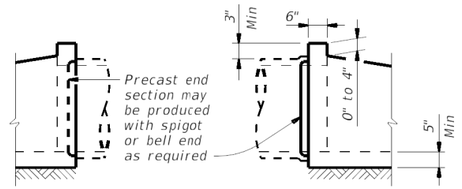


OPTION WITH SQUARE BOTTOM



OPTION WITH INVERT BOTTOM

SECTION A-A



OPTIONAL JOINT FOR RCP

(Showing joint between RCP and precast safety end treatment.)

REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	RCP Wall "B" Thickness	TP Wall Thickness (7)	"D" (1)	Slope	Min Length	Pipe Runners Required		Required Pipe Runner Size		
						Single Pipe	Multiple Pipe	Nominal Dia.	O.D.	I.D.
12"	2"	1.15"	17.00"	6:1	4' – 9"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
15"	2 ¼"	1.30"	20.50"	6:1	6' – 5"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
18"	2 ½"	1.60"	24.00"	6:1	8' – 0"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
24"	3"	1.95"	31.00"	6:1	11' – 3"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
30"	3 ½"	2.65"	38.50"	6:1	14' – 8"	No	Yes	4" STD	4.500"	4.026"
36"	4"	2.75"	45.50"	6:1	17' – 11"	Yes	Yes	4" STD	4.500"	4.026"
42"	4 ½"	N/A	52.50"	6:1	21' – 2"	Yes	Yes	4" STD	4.500"	4.026"

(1) Dimension "D" is based on reinforced concrete pipe (RCP) meeting the requirements of ASTM C–76, Class III, (RCP Wall "B" thickness). Adjust "D' for any other wall thickness used. For thermoplastic pipe (TP) take into account the annular space requirements for grouted connections.

(2) Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.

(3) Toewall to be used only when dimension is shown elsewhere in the plans.

(4) Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item 467, "Safety End Treatment".

(5) Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.

(6) Provide cement stabilized bedding and backfill in accordance with the Item 400, "Excavation and Backfill for Structures". Bedding and backfill is considered subsidiary to the Item 467, "Safety End Treatment". When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.

(7) Thermoplastic pipe wall thickness may vary. Adjust accordingly. Thermoplastic pipe requires the safety end treatments to have a bell end for grouted connections.

GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe (RCP), and thermoplastic pipe (TP) may be used for TYPE II end treatment as specified in Item "Safety End Treatment".

When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.

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.

Manufacture this product in accordance with Item 467, "Safety End Treatment" except as noted below :

A. Provide minimum reinforcing of #4 at 6" (Grade 40) or #4 at 9" (Grade 60) each way or 6"x6" – D12 x D12 or 5"x5" – D10 x D10 welded wire reinforcement (WWR).

B. For precast (steel formed) sections, provide Class "C" concrete (f'c = 3,600 psi).

At the option and expense of the Contractor the next larger size of safety end treatment may be furnished; as long as the "D" dimension cast is that of the required size of pipe.

Pipe runners are designed for a traversing load of 10,000 Lbs at yield as recommended by Research Report 280–2F, "Safety Treatment of Roadside Parallel–Drainage Structures", Texas Transportation Institute, March 1981.

Provide pipe runners meeting the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Galvanize all steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

Connect RCP using the Optional Joint for RCP detail shown or in accordance with Item 464, "Reinforced Concrete Pipe". Connect TP by grouting. See PBGC standard for grouted connections with TP and precast safety end treatment.

Texas Department of Transportation

Bridge Division Standard

PRECAST SAFETY END TREATMENT

TYPE II ~ PARALLEL DRAINAGE

PSET-SP

FILE: psetspss-20.dgn	DN: RLW	CK: KLR	DW: JTR	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0085	03	017	FM 2735
	DIST	COUNTY		SHEET NO.
	ATL	BOWIE		49

DATE: 3/11/2021 9:42:49 AM
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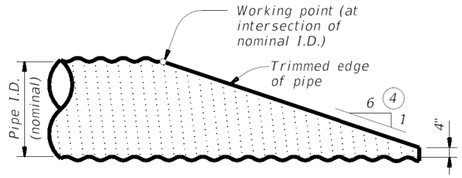
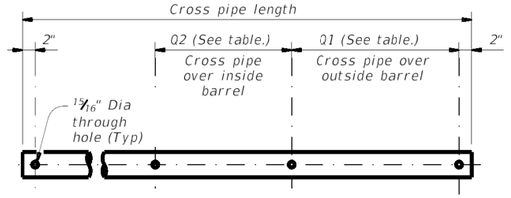


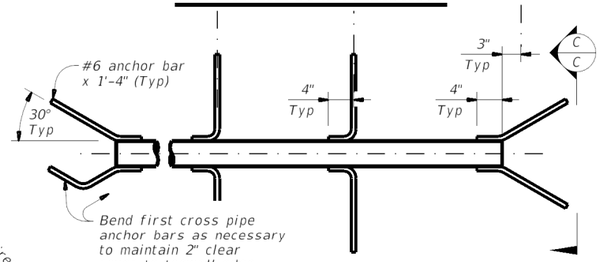
NOTE: All cross pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

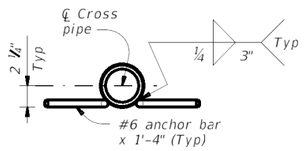
(Showing corrugated metal pipe (CMP) culvert Details at reinforced concrete pipe (RCP) culvert are similar.)



PIPE WITH BOLTED ANCHOR

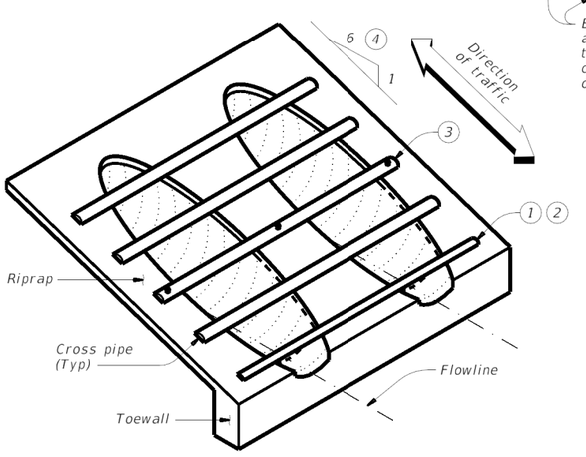


PIPE WITH ANCHOR BARS

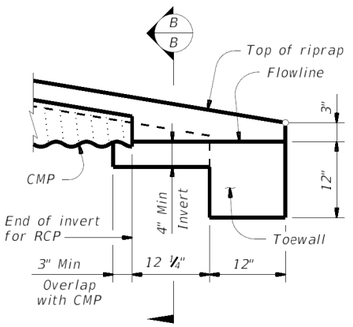


SECTION C-C

CROSS PIPE DETAILS

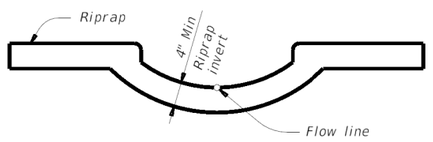


ISOMETRIC VIEW OF TYPICAL INSTALLATION



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 (2)

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"		
27"	1.0	1' - 8"	N/A	3' - 10"	3' - 11"	3 or more pipe culverts	3 1/2" Std (4.000" O.D.)
30"	1.1	1' - 10"	N/A	4' - 2"	4' - 4"	2 or more pipe culverts	
33"	1.2	1' - 11"	4' - 2"	4' - 5"	4' - 8"	All pipe culverts	
36"	1.3	2' - 1"	4' - 5"	4' - 9"	5' - 1"	All pipe culverts	4" Std (4.500" O.D.)
42"	1.5	2' - 4"	4' - 11"	5' - 5"	5' - 10"		
48"	1.7	2' - 7"	5' - 5"	6' - 0"	6' - 7"	All pipe culverts	5" Std (5.563" O.D.)
54"	2.0	3' - 0"	5' - 11"	6' - 9"	7' - 6"		
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"		

(1) 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 flow line.

(2) Provide cross pipes, except the first bottom pipe, of the size shown in the table. Provide a 3 1#2" standard pipe (4" O.D.) for the first bottom pipe.

(3) 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.

(4) Match cross slope as shown elsewhere in the plans. Cross slope of 6:1 or flatter is required for vehicle safety.

(5) Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".

(6) 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.

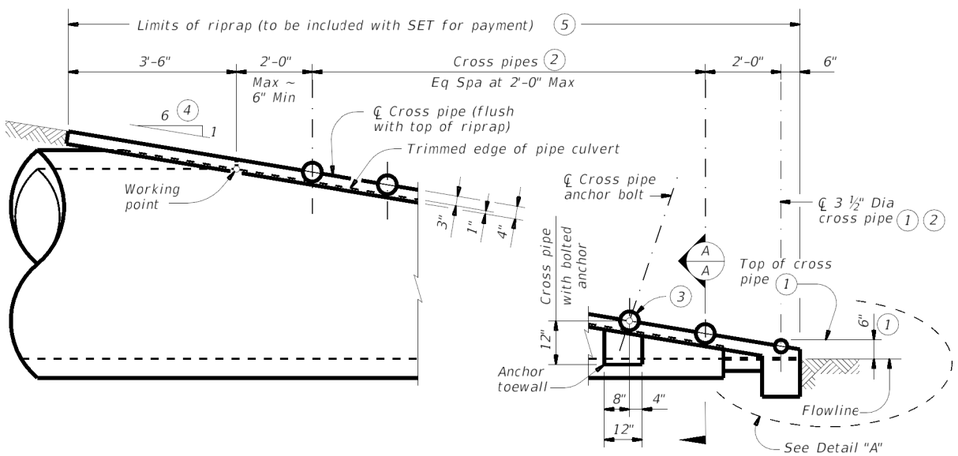
GENERAL NOTES:

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.

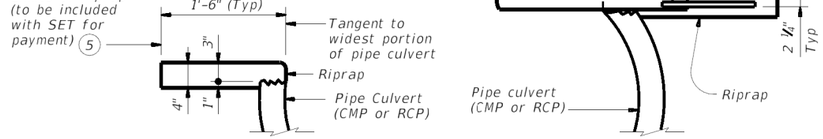
Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap".

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.



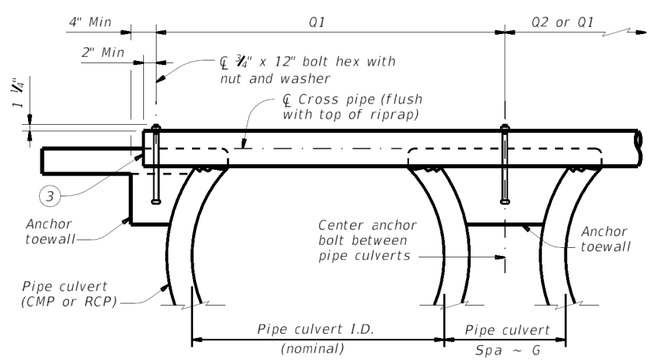
SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(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

Texas Department of Transportation

Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 72" DIA
PIPE CULVERTS
TYPE II ~ PARALLEL DRAINAGE

SETP-PD

FILE: setppdse-20.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0085	03	017	FM 2735
	DIST	COUNTY		SHEET NO.
	ATL	BOWIE		50

DATE: 4/1/2021 11:31:41 AM
FILE: c:\txdot\pw_online\txdot5\hal.naasz\d0314328\051 TxDOT STORM WATER POLLUTION PREVENTION PLAN 04 01 2021.dgn

SITE DESCRIPTION

PROJECT LIMITS: VARIOUS LOCATIONS IN BOWIE, MORRIS AND TITUS COUNTYS

PROJECT DESCRIPTION: FOR THE CONSTRUCTION OF SAFETY TREAT FIXED OBJECTS
CONSISTING OF SAFETY TREAT FIXED OBJECTS

MAJOR SOIL DISTURBING ACTIVITIES:
NONE, THIS PROJECT IS CONSIDERED A MAINTENANCE ACTIVITY

TOTAL PROJECT AREA: NA

TOTAL AREA TO BE DISTURBED: NA

EXISTING CONDITION OF SOIL & VEGETATIVE
COVER AND % OF EXISTING VEGETATIVE COVER: THE EXISTING SOIL IS IN GOOD CONDITION WITH APPROXIMATELY 95% COVERAGE WITH NATIVE GRASSES

NAME OF RECEIVING WATERS: N/A

ANTICIPATED EFFECT OF STORM WATER ON THREATENED
AND ENDANGERED SPECIES AND WILDLIFE HABITAT: *REFER TO EPIC SHEET*

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

1. THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES, AS DIRECTED BY THE ENGINEER PRIOR TO ANY WORK WHICH DISTURBS THE EXISTING SOIL.
2. THE CONTRACTOR SHALL BE A RESPONSIBLE PARTY IN IDENTIFYING, APPLYING, AND MAINTAINING APPROPRIATE EROSION CONTROL MEASURES.
3. REMOVAL OF EROSION CONTROL MEASURES WILL BE DONE AFTER APPROVAL BY THE ENGINEER. AREAS DISTURBED BY THE REMOVAL SHALL BE SEEDED AGAIN.

STORM WATER MANAGEMENT:
STORM WATER DRAINAGE WILL BE PROVIDED BY EXISTING DITCHES AND STRUCTURES. THE CURRENT SYSTEM PROVEDES ADEQUATE DRAINAGE WITHIN THE ROW LIMITS.

DETAILED SITE MAP OR LAYOUT INDICATING THE FOLLOWING: (SEE SWP3 SITE MAP OR LAYOUT)
N/A

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- [X] PERMANENT PLANTING, SODDING, OR SEEDING
- [ ] TEMPORARY SEEDING
- [ ] MULCHING
- [ ] SOIL RETENTION BLANKET
- [ ] BUFFER ZONES
- [X] PRESERVATION OF NATURAL RESOURCES
- [ ] SLOPE TEXTURING

N/A

STRUCTURAL PRACTICES:

- [ ] SILT FENCES
- [ ] HAY BALES
- [ ] ROCK BERMS
- [ ] PAVED FLUMES
- [ ] CHANNEL LINERS
- [ ] SEDIMENT TRAPS
- [ ] FILTER DAMS
- [ ] CURBS AND GUTTERS
- [ ] STORM SEWERS
- [ ] ROCK BEDDING AT CONSTRUCTION EXIT
- [ ] TIMBER MATTING AT CONSTRUCTION EXIT
- [ ] DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- [ ] DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- [ ] DIVERSION DIKE AND SWALE COMBINATIONS
- [ ] STORM INLET SEDIMENT TRAP
- [ ] VELOCITY CONTROL DEVICES
- [ ] EROSION CONTROL LOGS

OTHER:

MAINTENANCE: *N/A*

INSPECTION: ITEM 506
N/A

OFFSITE VEHICLE TRACKING:
N/A

CONCRETE TRUCK WASHOUT AREAS: *N/A*

WASTE MATERIALS

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): *AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES ARE CONSIDERED TO BE HAZARDOUS: PAINTS, ACIDS FOR CLEANING MASONRY SURFACES, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SOIL STABILIZATION, CONCRETE CURING COMPOUNDS AND ADDITIVES OR MOTOR OIL. MATERIALS SHALL BE STORED IN ACCORDANCE WITH APPLICABLE REGULATIONS. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS, IMMEDIATELY REPORT SPILL IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.*

WASTE MATERIALS: *THE BURYING OF CONSTRUCTION WASTE MATERIAL ON SITE WILL NOT BE PERMITTED. DISPOSAL OF WASTE MATERIALS SHALL MEET ALL STATE AND LOCAL SOLID WASTE MANAGMENT REGULATIONS. WASTE MATERIALS STORED ON SITE SHALL BE COLLECTED IN A METAL DUMPSTER WITH A LOCKING, SECURE COVER AND A DRAIN PLUG IN PLACE.*

SANITARY WASTE: *ALL SANITARY WASTE WILL BE DISPOSED OF IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS. SPECIFIC LOCATIONS OF PORTABLE UNITS MUST BE SHOWN ON THE SWP3 SITE MAP OR LAYOUT.*

REMARKS: *DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT MAY ENTER RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, WATERBODY OR STREAMBED.*
CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS.
ALL WATERWAYS SHALL BE CLEARED AS SOON AS PRACTICAL OF TEMPORARY EMBANKMENT, TEMPORARY BRIDGES, MATTING FALSEWORK, PILING, DEBRIS OR OTHER OBSTRUCTIONS PLACED DURING CONSTRUCTION OPERATIONS THAT ARE NOT A PART OF THE FINISHED WORK.

NOTES: *THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SUBCONTRACTORS ARE AWARE OF AND COMPLY WITH ALL COMPONENTS OF THE SWP3.*

STATE OF TEXAS
HAROLD E. NAASZ
106192
REGISTERED
PROFESSIONAL ENGINEER

Harold E Naasz
04 01 2021

Texas Department of Transportation

TxDOT STORM WATER POLLUTION PREVENTION PLAN

SWP3

FILE: swp3lesslacre.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
Revisions	CONT	SECT	JOB	HIGHWAY
May 2017	0085	03	017	FM 2735
	DIST	COUNTY		SHEET NO.
	ATL	BOWIE		51

DATE: 3/10/2021 1:05:28 PM
FILE: c:\txdot\pw_online\txdot5\thal.naosz\d0314328\052 ENVIRONMENTAL PERMITS ISSUES AND COMMITMENTS.dgn

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

List MS4 Operator(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

1. The project is not located within the boundary of an MS4.

2.

☐ No Action Required ☒ Required Action

Action No.

1. This project is considered a maintenance activity and is exempt from the requirements of TPDES TXR 150000.

Commitment No.

1. Refer to the SWP3 Plan Sheet, BMPs, and Detail. It will address sweeping, chemical storage, sanitary waste, and all other management practices.

II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):

☒ No Permit Required

☐ Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)

☐ Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)

☐ Individual 404 Permit Required

☐ Other Nationwide Permit Required: NWP# _____

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post-project TSS.

1.

2.

3.

4.

The elevation of the ordinary high water marks of any areas requiring work to be performed in the waters of the US requiring the use of a nationwide permit can be found on the Bridge Layouts.

Best Management Practices:

Erosion	Sedimentation	Post-Construction TSS
☐ Temporary Vegetation	☐ Silt Fence	☐ Vegetative Filter Strips
☐ Blankets/Matting	☐ Rock Berm	☐ Retention/Irrigation Systems
☐ Mulch	☐ Triangular Filter Dike	☐ Extended Detention Basin
☐ Sodding	☐ Sand Bag Berm	☐ Constructed Wetlands
☐ Interceptor Swale	☐ Straw Bale Dike	☐ Wet Basin
☐ Diversion Dike	☐ Brush Berms	☐ Erosion Control Compost
☐ Erosion Control Compost	☐ Erosion Control Compost	☐ Mulch Filter Berm and Socks
☐ Mulch Filter Berm and Socks	☐ Mulch Filter Berm and Socks	☐ Compost Filter Berm and Socks
☐ Compost Filter Berm and Socks	☐ Compost Filter Berm and Socks	☐ Vegetation Lined Ditches
	☐ Stone Outlet Sediment Traps	☐ Sand Filter Systems
	☐ Sediment Basins	☐ Grassy Swales

III. CULTURAL RESOURCES

Refer to TxDOT Standard Specifications in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical.
Contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751, 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediate area, and contact the Engineer immediately.

LIST OF ABBREVIATIONS

BMP:	Best Management Practice	SPCC:	Spill Prevention Control and Countermeasure
CGP:	Construction General Permit	SW3P:	Storm Water Pollution Prevention Plan
DSHS:	Texas Department of State Health Services	PCN:	Pre-Construction Notification
FHWA:	Federal Highway Administration	PSL:	Project Specific Location
MOA:	Memorandum of Agreement	TCEQ:	Texas Commission on Environmental Quality
MOU:	Memorandum of Understanding	TPDES:	Texas Pollutant Discharge Elimination System
MS4:	Municipal Separate Stormwater Sewer System	TPWD:	Texas Parks and Wildlife Department
MBTA:	Migratory Bird Treaty Act	TxDOT:	Texas Department of Transportation
NOT:	Notice of Termination	T&E:	Threatened and Endangered Species
NWP:	Nationwide Permit	USACE:	U.S. Army Corps of Engineers
NOI:	Notice of Intent	USFWS:	U.S. Fish and Wildlife Service

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act.

Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:

* Dead or distressed vegetation (not identified as normal)
* Trash piles, drums, canister, barrels, etc.
* Undesirable smells or odors
* Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?

☐ Yes ☒ No

If "No", then no further action is required.
If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

☐ Yes ☐ No

If "Yes", then TxDOT must retain a DSHS licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

Any other evidence indicating possible hazardous materials or contamination discovered on site. Hazardous Materials or Contamination Issues Specific to this Project:

☐ No Action Required ☐ Required Action

Action No.

1.

2.

3.

VII. OTHER ENVIRONMENTAL ISSUES

(includes regional issues such as Edwards Aquifer District, etc.)

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

Texas Department of Transportation

Design Division Standard

ENVIRONMENTAL PERMITS ISSUES AND COMMITMENTS

EPIC

FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR	
©TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY	
REVISIONS 12-12-2011 (DS) 05-07-14 ADDED NOTE SECTION IV. 01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	0085	03	017	FM 2735	
	DIST	COUNTY		SHEET NO.	
	ATL	BOWIE		52	