

**INDEX OF SHEETS**

SEE SHEET NO 2

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

REQUIRED SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT BARRICADE AND CONSTRUCTION OR BC SHEETS AND THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

**STATE OF TEXAS  
DEPARTMENT OF TRANSPORTATION**

**PLANS OF PROPOSED  
STATE HIGHWAY IMPROVEMENT**

FEDERAL AID PROJECT NO. STP 2021(287)HES

**FM 248, ETC.  
CASS COUNTY, ETC.**

FOR THE CONSTRUCTION OF HAZARD ELIMINATION AND SAFETY  
CONSISTING OF SAFETY TREAT FIXED OBJECTS

FEDERAL AID PROJECT NO.			
STP 2021(287)HES			
CONT	SECT	JOB	HIGHWAY
0138	10	029, etc.	FM 248, etc.
DIST	COUNTY		SHEET NO.
ATL	CASS, etc.		1

FINAL PLANS

LETTING DATE: \_\_\_\_\_  
 DATE CONTRACTOR BEGAN WORK: \_\_\_\_\_  
 DATE WORK WAS COMPLETED & ACCEPTED: \_\_\_\_\_  
 FINAL CONTRACT COST: \$ \_\_\_\_\_  
 CONTRACTOR: \_\_\_\_\_  
 CONTRACTOR ADDRESS: \_\_\_\_\_  
 LIST OF APPROVED FIELD CHANGES: \_\_\_\_\_

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

P. E.

DATE

CSJ 0138-10-029

FM 248 CASS CO.  
 LIMITS: FROM: SH 43  
 TO: MARION C/L  
 NET LENGTH OF PROJECT = 59,072.640 FT = 11.188 MI.  
 BEGIN REF MRK: 242-0.031  
 END REF MRK: 252+1.181

CSJ 0138-11-031

FM 248 MARION CO.  
 LIMITS: FROM: CASS C/L  
 TO: SH 49  
 NET LENGTH OF PROJECT = 38,765.760 FT = 7.342 MI.  
 BEGIN REF MRK: 252+1.188  
 END REF MRK: 260+1.288

CSJ 0277-05-012

FM 250 CASS CO.  
 LIMITS: FROM: SH 77  
 TO: FM 1399  
 NET LENGTH OF PROJECT = 6,124.800 FT = 1.160 MI.  
 BEGIN REF MRK: 244-0.038  
 END REF MRK: 244+1.130

CSJ 2919-01-006

FM 2888 CASS CO.  
 LIMITS: FROM: SH 77  
 TO: FM 250  
 NET LENGTH OF PROJECT = 41,041.440 FT = 7.773 MI.  
 BEGIN REF MRK: 230-0.047  
 END REF MRK: 236+1.745

CSJ 0546-09-043

FM 125 CASS CO.  
 LIMITS: FROM: SH 43  
 TO: LOUISIANA S/L  
 NET LENGTH OF PROJECT = 54,764.160 FT = 10.372 MI.  
 BEGIN REF MRK: 740+2.277  
 END REF MRK: 752+0.680

CSJ 0812-01-035

FM 251 CASS CO.  
 LIMITS: FROM: FM 1841  
 TO: FM 125  
 NET LENGTH OF PROJECT = 29,340.960 FT = 5.557 MI.  
 BEGIN REF MRK: 246+1.403  
 END REF MRK: 252+0.964

CSJ 0946-01-045

FM 250 CASS CO.  
 LIMITS: FROM: FM 1399  
 TO: FM 130  
 NET LENGTH OF PROJECT = 52,029.120 FT = 9.854 MI.  
 BEGIN REF MRK: 244+1.131  
 END REF MRK: 254+1.009

CSJ 1216-01-008

FM 9940 CASS CO.  
 LIMITS: FROM: FM 1766  
 TO: SH 77  
 NET LENGTH OF PROJECT = 16,505.280 FT = 3.126 MI.  
 BEGIN REF MRK: 228-0.052  
 END REF MRK: 230+1.117

CSJ 1573-01-018

FM 130 CASS CO.  
 LIMITS: FROM: FM 250  
 TO: SH 11  
 NET LENGTH OF PROJECT = 70,144.800 FT = 13.285 MI.  
 BEGIN REF MRK: 718-0.262  
 END REF MRK: 730+1.104

CSJ 1758-01-012

FM 1841 CASS CO.  
 LIMITS: FROM: SH 43  
 TO: FM 251  
 NET LENGTH OF PROJECT = 20,618.400 FT = 3.905 MI.  
 BEGIN REF MRK: 738-0.895  
 END REF MRK: 738+1.010

CSJ 1957-01-009

FM 1766 CASS CO.  
 LIMITS: FROM: SH 77  
 TO: FM 994  
 NET LENGTH OF PROJECT = 35,016.960 FT = 6.632 MI.  
 BEGIN REF MRK: 714-0.047  
 END REF MRK: 720+0.607

CSJ 2339-02-012

FM 1841 CASS CO.  
 LIMITS: FROM: FM 251  
 TO: FM 249  
 NET LENGTH OF PROJECT = 44,325.600 FT = 8.395 MI.  
 BEGIN REF MRK: 738+2.010  
 END REF MRK: 746+2.338

CSJ 2576-01-014

FM 1841 CASS CO.  
 LIMITS: FROM: US 59  
 TO: SH 43  
 NET LENGTH OF PROJECT = 52,118.880 FT = 9.871 MI.  
 BEGIN REF MRK: 726-0.047  
 END REF MRK: 734+1.877

NO EXCEPTIONS  
 NO RAILROAD CROSSINGS  
 EQUATIONS

CSJ 0546-09-043	STA. 232+92.60=232+95.30 (-2.7')
CSJ 1573-01-018	STA. 29+53.4=29+65.4 (-12')
	STA. 273+66.8=273+71.3 (-16.5)
CSJ 0138-10-029	STA. 625+28+2=625+66.0 (+37.8)
CSJ 0946-01-045	STA. 298+43.2=298+57.8 (-14.6)
	STA. 438+00.0=437+00.0 (+100.0)
CSJ 2339-02-012	STA. 70+72.3=70+73.2 (-0.9)
	STA. 173+00.1=179+00.5 (-0.4)
CSH 2919-01-006	STA. 218+75.9=218+85.9 (-10.0)

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: \$DATE\$ \$TIME\$  
 FILE: \$FILES\$

COUNTY: CASS, ETC. PROJ. NO. STP 2021(287)HES  
 HWY. NO. FM 248, ETC. LETTING DATE: APRIL 2021  
 DATE ACCEPTED



RECOMMENDED FOR LETTING: 2/4/2021

DocuSigned by:  
*Deanne Simmons, P.E.*  
 929084EF4AF345A...  
 DISTRICT DIRECTOR OF TRANSPORTATION  
 PLANNING AND DEVELOPMENT

APPROVED FOR LETTING: 2/5/2021

DocuSigned by:  
*Jack Wilks P.E.*  
 0EAA5DC25F0F45E...  
 DISTRICT ENGINEER

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

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

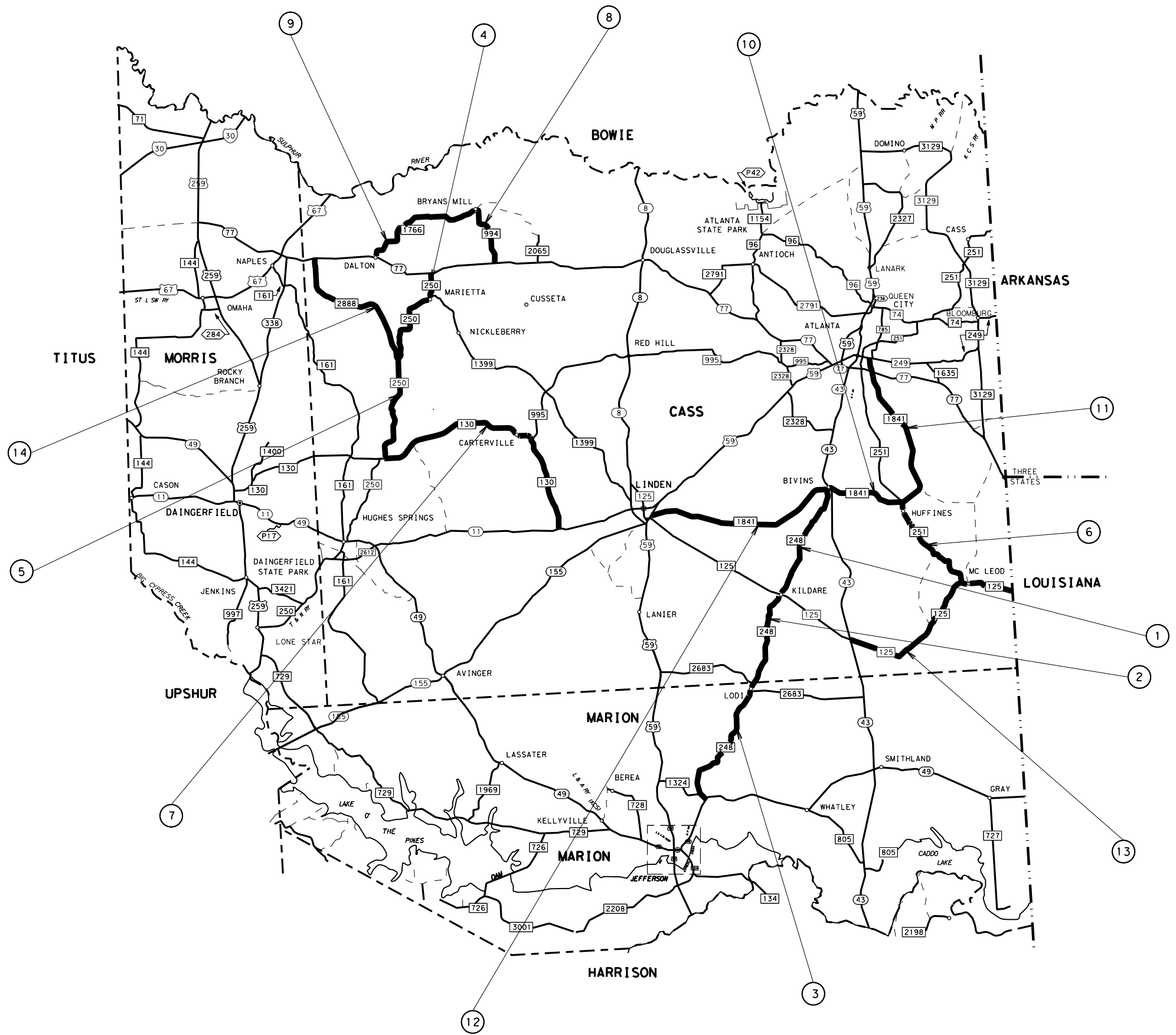
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OF  
SHEETS**



FHWA		FEDERAL AID PROJECT NO.		SHEET	
TEXAS		STP 2021 (287) HES		2	
STATE	DISTRICT	COUNTY			
TEXAS	ATL	BOWIE			
CONTROL	SECTION	JOB	HIGHWAY NO.		
0138	10	0029, ETC	FM 248, ETC		

PROJECT LOCATIONS

REF. NO.	CSJ	BEGINNING STATION	ENDING STATION
1	0138-10-029 A	0+00	329+77
2	0138-10-029 B	387+67	645+95
3	0138-11-031	0+00	387+67
4	0277-05-012	0+00	82+44
5	0946-01-045	262+68	786+40
6	0812-01-035	10+00	308+02
7	1573-01-018	0+00	704+00
8	1216-01-008	9+00	175+54
9	1957-01-009	0+00	352+20
10	1758-01-012	0+00	207+47
11	2339-02-012	0+00	444+09
12	2576-01-014	0+00	523+92
13	0546-09-043	0+00	549+91
14	2919-01-006	0+00	415+00



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



PROJECT LOCATION MAP

© 2021 Texas Department of Transportation			
FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.	SHEET NO.	
	STP 2021(287)HES	3	
STATE	DISTRICT	COUNTY	
TEXAS	ATL	CASS, ETC.	
CONTROL SECTION	JOB	HIGHWAY NO.	
0138	10 029, ETC.	FM 248, ETC.	

**Control:** 0138-10-029, etc.

**Sheet:**

**Highway:** FM 248, etc.

**County:** Cass, etc.

## 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 Responses/>

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.

It is the Contractor's responsibility to verify the accuracy of any department provided control points prior to use.

When a precast or cast-in-place concrete element is included in the plans, a precast concrete alternate may be submitted in accordance with "Standard Operating Procedure for Alternate Precast Proposal Submission" found online at <https://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/publications/bridge.html#design>. Acceptance or denial of an alternate is at the sole discretion of the Engineer. Impacts to the project schedule and any additional costs resulting from the use of alternates are the sole responsibility of the Contractor.

**Control:** 0138-10-029, etc.

**Sheet: 4**

**Highway:** FM 248, etc.

**County:** Cass, etc.

### 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 100:

Do not burn trash, debris, etc. within any City limits without prior written city approval.

### ITEM 110:

As cut slopes are constructed, round off the tops of back slopes to blend into the natural ground.

Flare ditches to prevent erosion of the toe of slope in areas of transition from cut to fill. Excavated materials not meeting the requirements for Type C embankment will be considered waste. Dispose of as directed.

### 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.

Control: 0138-10-029, etc.

Sheet:

Highway: FM 248, etc.

County: Cass, etc.

Do not use Bahia grass.

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.

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

**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.

**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.

When a curing tank is provided the following information must be provided. All items must be clearly legible and visible from all directions at all times.

Control: 0138-10-029, etc.

Sheet: 4A

Highway: FM 248, etc.

County: Cass, etc.

- Post and maintain the message "Caution Lime Solution, Eye and Skin Irritant".
- Provide a copy of the SDS sheet for the lime in use.
- Provide the personal protective equipment (PPE) listed below for Department use only: Face shield, a pair of chemical gloves at least 18 inches in length and a chemical apron. Store the SDS sheet and PPE in a clean dry location adjacent to the curing tank.
- Provide an eye wash station capable of providing a 15 minute flush as required by the United States Occupational Safety and Health Administration (OSHA). The eye wash station shall be located within ten feet of the curing tank. When a tank heater is required ensure that all electrical wiring, receptacles, and devices meet National Electrical Code and Underwriters Laboratories Inc. requirements.

**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 464:**

Backfill driveway culverts to obtain a minimum cover of 6 inches. Place backfill in accordance with section 132.3.4.1 "Ordinary Compaction" using approved equipment.

The Engineer will determine flow lines of pipes under private driveways.

Contact Gulf South Pipeline Company Representative before work can be performed at Station 414+46 on FM 1841 CSJ: 2339-02-012 (903-576-1147).

**ITEM 466 & 467:**

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

Remove any additional 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.

**Control:** 0138-10-029, etc.

**Sheet:**

**Highway:** FM 248, etc.

**County:** Cass, etc.

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. Use 2 arrays, regardless of ADT.

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

Maintain access to abutting property at all times using approved materials and methods. Work required to maintain ingress and egress within the limits of this project 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.

Provide the following Item(s), as directed, to be used for erosion and water pollution control measures and any additional erosion or water pollution control measure deemed necessary by the Engineer:

Temporary sediment control fence

Provide and install additional erosion or water pollution control measures deemed necessary by the Engineer as prescribed by this item and in accordance with the appropriate specification. Payment for erosion control measures for which applicable pay items are not included in the Contract shall be made 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.

**Control:** 0138-10-029, etc.

**Sheet: 4B**

**Highway:** FM 248, etc.

**County:** Cass, etc.

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 658:**

Install only round posts meeting the requirements of DMS-4400 or as directed.

**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.

**BASIS OF ESTIMATE**

ITEM	DESCRIPTION	RATE	UNIT	QUANTITY
*166	Fertilizer (13-13-13)	300 lb./5,000 sq. yd. of Seed	ton	2.6

\*FOR CONTRACTOR'S INFORMATION ONLY.

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

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



CONTROLLING PROJECT ID 0138-10-029

DISTRICT Atlanta

COUNTY Cass, Marion

HIGHWAY FM 125, FM 130, FM 1766, FM 1841, FM 248, FM 250, FM 251, FM 2888, FM 994

# ESTIMATE & QUANTITY

CONTROL SECTION JOB				0138-10-029		0138-11-031		0277-05-012		0546-09-043		0812-01-035		0946-01-045	
PROJECT ID				A00066128		A00066129		A00133185		A00066711		A00066056		A00066052	
COUNTY				Cass		Marion		Cass		Cass		Cass		Cass	
HIGHWAY				FM 248		FM 248		FM 250		FM 125		FM 251		FM 250	
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	100-6006	PREP ROW (TREE)(LESS THAN 24" DIA)	EA					1.000		4.000					
	100-6007	PREP ROW (TREE)(GREATER THAN 24" DIA)	EA												
	104-6017	REMOVING CONC (DRIVEWAYS)	SY	85.000		12.000		29.000		90.000				25.000	
	132-6021	EMBANKMENT (VEHICLE)(ORD COMP)(TY C)	CY	48.000		267.000		32.750		51.500		37.000		262.500	
	150-6001	BLADING	STA	42.000		85.000		16.750		44.000		28.000		104.000	
	164-6054	BOND FBR MTRX SEED (PERM)(RURAL)(SAND)	SY	6,020.000		10,335.000		2,320.000		6,440.000		4,060.000		14,100.000	
	168-6001	VEGETATIVE WATERING	MG	96.320		164.460		37.120		103.040		63.840		225.600	
	400-6008	CUT & RESTORE ASPH PAVING	SY	15.000		176.000		36.000		88.000		113.000		204.000	
	420-6009	CL A CONC (COLLAR)	EA			3.000		1.000							
	432-6001	RIPRAP (CONC)(4 IN)	CY	15.000		11.000		4.000		15.000		9.000		12.000	
	432-6031	RIPRAP (STONE PROTECTION)(12 IN)	CY			26.000								48.000	
	432-6039	BEDDING MATERIAL (6 IN)	CY			13.000								24.000	
	464-6003	RC PIPE (CL III)(18 IN)	LF	802.000		1,109.000		267.000		1,199.000		950.000		914.000	
	464-6005	RC PIPE (CL III)(24 IN)	LF	10.000		222.000		24.000		32.000		46.000			
	464-6007	RC PIPE (CL III)(30 IN)	LF			28.000									
	464-6008	RC PIPE (CL III)(36 IN)	LF												
	464-6010	RC PIPE (CL III)(48 IN)	LF							48.000					
	466-6134	HEADWALL (CH - PW - S) (DIA= 36 IN)	EA												
	467-6005	SET (TY I) (24 IN) (3: 1) (C)	EA			2.000									
	467-6008	SET (TY I) (30 IN) (3: 1) (C)	EA			2.000								8.000	
	467-6014	SET (TY I) (36 IN) (3: 1) (C)	EA												
	467-6018	SET (TY I) (42 IN) (3: 1) (C)	EA											4.000	
	467-6356	SET (TY II) (18 IN) (RCP) (3: 1) (C)	EA			12.000		2.000						10.000	
	467-6363	SET (TY II) (18 IN) (RCP) (6: 1) (P)	EA	160.000		136.000		46.000		170.000		110.000		154.000	
	467-6388	SET (TY II) (24 IN) (RCP) (3: 1) (C)	EA			18.000								42.000	
	467-6395	SET (TY II) (24 IN) (RCP) (6: 1) (P)	EA	6.000		12.000		2.000		2.000		2.000			
	467-6417	SET (TY II) (30 IN) (RCP) (3: 1) (C)	EA			6.000								6.000	
	467-6423	SET (TY II) (30 IN) (RCP) (6: 1) (P)	EA												
	467-6448	SET (TY II) (36 IN) (RCP) (3: 1) (C)	EA			10.000								10.000	
	467-6461	SET (TY II) (42 IN) (RCP) (3: 1) (C)	EA											6.000	
	467-6474	SET (TY II) (48 IN) (RCP) (3: 1) (C)	EA					8.000							
	467-6480	SET (TY II) (48 IN) (RCP) (6: 1) (P)	EA							2.000					
	480-6001	CLEAN EXIST CULVERTS	EA			4.000		1.000						5.000	
	496-6007	REMOV STR (PIPE)	LF	20.000											
	500-6001	MOBILIZATION	LS							50.00%					
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	870.000		1,700.000		340.000		890.000		550.000		2,210.000	



# ESTIMATE & QUANTITY

CONTROLLING PROJECT ID 0138-10-029

DISTRICT Atlanta

COUNTY Cass, Marion

HIGHWAY FM 125, FM 130, FM 1766, FM 1841, FM 248, FM 250, FM 251, FM 2888, FM 994

CONTROL SECTION JOB				0138-10-029		0138-11-031		0277-05-012		0546-09-043		0812-01-035		0946-01-045	
PROJECT ID				A00066128		A00066129		A00133185		A00066711		A00066056		A00066052	
COUNTY				Cass		Marion		Cass		Cass		Cass		Cass	
HIGHWAY				FM 248		FM 248		FM 250		FM 125		FM 251		FM 250	
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	870.000		1,700.000		340.000		890.000		550.000		2,210.000	
	530-6004	DRIVEWAYS (CONC)	SY	85.000		12.000		29.000		90.000				25.000	
	658-6099	INSTL OM ASSM (OM-2Z)(WFLX)GND	EA			46.000		4.000						66.000	
	6185-6002	TMA (STATIONARY)	DAY												
	18	SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000											
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	1.000											





CONTROLLING PROJECT ID 0138-10-029

DISTRICT Atlanta

COUNTY Cass, Marion

HIGHWAY FM 125, FM 130, FM 1766, FM 1841, FM 248, FM 250, FM 251, FM 2888, FM 994

# ESTIMATE & QUANTITY

CONTROL SECTION JOB				1216-01-008		1573-01-018		1758-01-012		1957-01-009		2339-02-012		2576-01-014	
PROJECT ID				A00066264		A00066713		A00066131		A00066330		A00066132		A00066130	
COUNTY				Cass		Cass		Cass		Cass		Cass		Cass	
HIGHWAY				FM 994		FM 130		FM 1841		FM 1766		FM 1841		FM 1841	
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	100-6006	PREP ROW (TREE)(LESS THAN 24" DIA)	EA							1.000		10.000			
	100-6007	PREP ROW (TREE)(GREATER THAN 24" DIA)	EA	1.000								1.000			
	104-6017	REMOVING CONC (DRIVEWAYS)	SY			29.000		58.000				126.000		19.000	
	132-6021	EMBANKMENT (VEHICLE)(ORD COMP)(TY C)	CY	57.000		53.500		128.500		33.000		176.750		344.000	
	150-6001	BLADING	STA	28.500		46.500		46.000		29.000		70.750		19.000	
	164-6054	BOND FBR MTRX SEED (PERM)(RURAL)(SAND)	SY	1,540.000		6,930.000		5,920.000		4,270.000		12,250.000		3,130.000	
	168-6001	VEGETATIVE WATERING	MG	24.640		110.880		94.720		68.320		196.000		50.080	
	400-6008	CUT & RESTORE ASPH PAVING	SY			23.000				31.000		132.000			
	420-6009	CL A CONC (COLLAR)	EA			3.000									
	432-6001	RIPRAP (CONC)(4 IN)	CY	5.000		15.000		8.000		10.000		18.000		10.000	
	432-6031	RIPRAP (STONE PROTECTION)(12 IN)	CY									6.000		132.000	
	432-6039	BEDDING MATERIAL (6 IN)	CY									3.000		66.000	
	464-6003	RC PIPE (CL III)(18 IN)	LF	182.000		800.000		269.000		332.000		1,201.000		192.000	
	464-6005	RC PIPE (CL III)(24 IN)	LF	140.000		44.000		6.000		150.000		108.000		16.000	
	464-6007	RC PIPE (CL III)(30 IN)	LF											76.000	
	464-6008	RC PIPE (CL III)(36 IN)	LF					54.000							
	464-6010	RC PIPE (CL III)(48 IN)	LF	36.000											
	466-6134	HEADWALL (CH - PW - S) (DIA= 36 IN)	EA					12.000							
	467-6005	SET (TY I) (24 IN) (3: 1) (C)	EA					4.000							
	467-6008	SET (TY I) (30 IN) (3: 1) (C)	EA												
	467-6014	SET (TY I) (36 IN) (3: 1) (C)	EA					6.000							
	467-6018	SET (TY I) (42 IN) (3: 1) (C)	EA												
	467-6356	SET (TY II) (18 IN) (RCP) (3: 1) (C)	EA												
	467-6363	SET (TY II) (18 IN) (RCP) (6: 1) (P)	EA	30.000		175.000		92.000		98.000		252.000		38.000	
	467-6388	SET (TY II) (24 IN) (RCP) (3: 1) (C)	EA	12.000				10.000							
	467-6395	SET (TY II) (24 IN) (RCP) (6: 1) (P)	EA	10.000		4.000		4.000		14.000		30.000		16.000	
	467-6417	SET (TY II) (30 IN) (RCP) (3: 1) (C)	EA	6.000				4.000							
	467-6423	SET (TY II) (30 IN) (RCP) (6: 1) (P)	EA											26.000	
	467-6448	SET (TY II) (36 IN) (RCP) (3: 1) (C)	EA	6.000											
	467-6461	SET (TY II) (42 IN) (RCP) (3: 1) (C)	EA												
	467-6474	SET (TY II) (48 IN) (RCP) (3: 1) (C)	EA	4.000											
	467-6480	SET (TY II) (48 IN) (RCP) (6: 1) (P)	EA	2.000											
	480-6001	CLEAN EXIST CULVERTS	EA	5.000				5.000							
	496-6007	REMOV STR (PIPE)	LF												
	500-6001	MOBILIZATION	LS			40.00%				10.00%					
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO					16.000							
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	150.000		920.000		810.000		560.000		1,420.000		450.000	



DISTRICT	COUNTY	CCSJ	SHEET
Atlanta	Cass	0138-10-029	5B



# ESTIMATE & QUANTITY

CONTROLLING PROJECT ID 0138-10-029

DISTRICT Atlanta

COUNTY Cass, Marion

HIGHWAY FM 125, FM 130, FM 1766, FM 1841, FM 248, FM 250, FM 251, FM 2888, FM 994

CONTROL SECTION JOB				1216-01-008		1573-01-018		1758-01-012		1957-01-009		2339-02-012		2576-01-014	
PROJECT ID				A00066264		A00066713		A00066131		A00066330		A00066132		A00066130	
COUNTY				Cass		Cass		Cass		Cass		Cass		Cass	
HIGHWAY				FM 994		FM 130		FM 1841		FM 1766		FM 1841		FM 1841	
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	150.000		920.000		810.000		560.000		1,420.000		450.000	
	530-6004	DRIVEWAYS (CONC)	SY			29.000		58.000				126.000		19.000	
	658-6099	INSTL OM ASSM (OM-2Z)(WFLX)GND	EA	18.000				22.000							
	6185-6002	TMA (STATIONARY)	DAY					304.000							
	18	SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												



CONTROLLING PROJECT ID 0138-10-029

DISTRICT Atlanta

COUNTY Cass, Marion

HIGHWAY FM 125, FM 130, FM 1766, FM 1841, FM 248, FM 250, FM 251, FM 2888, FM 994

# ESTIMATE & QUANTITY

CONTROL SECTION JOB				2919-01-006		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00066423			
COUNTY				Cass			
HIGHWAY				FM 2888			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	100-6006	PREP ROW (TREE)(LESS THAN 24" DIA)	EA	10.000		26.000	
	100-6007	PREP ROW (TREE)(GREATER THAN 24" DIA)	EA			2.000	
	104-6017	REMOVING CONC (DRIVEWAYS)	SY			473.000	
	132-6021	EMBANKMENT (VEHICLE)(ORD COMP)(TY C)	CY	208.500		1,700.000	
	150-6001	BLADING	STA	97.500		657.000	
	164-6054	BOND FBR MTRX SEED (PERM)(RURAL)(SAND)	SY	9,154.000		86,469.000	
	168-6001	VEGETATIVE WATERING	MG	146.460		1,381.480	
	400-6008	CUT & RESTORE ASPH PAVING	SY			818.000	
	420-6009	CL A CONC (COLLAR)	EA			7.000	
	432-6001	RIPRAP (CONC)(4 IN)	CY	12.000		144.000	
	432-6031	RIPRAP (STONE PROTECTION)(12 IN)	CY	10.000		222.000	
	432-6039	BEDDING MATERIAL (6 IN)	CY	5.000		111.000	
	464-6003	RC PIPE (CL III)(18 IN)	LF	426.000		8,643.000	
	464-6005	RC PIPE (CL III)(24 IN)	LF	4.000		802.000	
	464-6007	RC PIPE (CL III)(30 IN)	LF			104.000	
	464-6008	RC PIPE (CL III)(36 IN)	LF	28.000		82.000	
	464-6010	RC PIPE (CL III)(48 IN)	LF			84.000	
	466-6134	HEADWALL (CH - PW - S) (DIA= 36 IN)	EA			12.000	
	467-6005	SET (TY I) (24 IN) (3: 1) (C)	EA	2.000		8.000	
	467-6008	SET (TY I) (30 IN) (3: 1) (C)	EA	4.000		14.000	
	467-6014	SET (TY I) (36 IN) (3: 1) (C)	EA	14.000		20.000	
	467-6018	SET (TY I) (42 IN) (3: 1) (C)	EA			4.000	
	467-6356	SET (TY II) (18 IN) (RCP) (3: 1) (C)	EA			24.000	
	467-6363	SET (TY II) (18 IN) (RCP) (6: 1) (P)	EA	134.000		1,595.000	
	467-6388	SET (TY II) (24 IN) (RCP) (3: 1) (C)	EA	44.000		126.000	
	467-6395	SET (TY II) (24 IN) (RCP) (6: 1) (P)	EA	4.000		106.000	
	467-6417	SET (TY II) (30 IN) (RCP) (3: 1) (C)	EA	8.000		30.000	
	467-6423	SET (TY II) (30 IN) (RCP) (6: 1) (P)	EA			26.000	
	467-6448	SET (TY II) (36 IN) (RCP) (3: 1) (C)	EA	6.000		32.000	
	467-6461	SET (TY II) (42 IN) (RCP) (3: 1) (C)	EA	8.000		14.000	
	467-6474	SET (TY II) (48 IN) (RCP) (3: 1) (C)	EA			12.000	
	467-6480	SET (TY II) (48 IN) (RCP) (6: 1) (P)	EA			4.000	
	480-6001	CLEAN EXIST CULVERTS	EA	5.000		25.000	
	496-6007	REMOV STR (PIPE)	LF			20.000	
	500-6001	MOBILIZATION	LS			100.00%	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO			16.000	
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	1,300.000		12,170.000	



DISTRICT	COUNTY	CCSJ	SHEET
Atlanta	Cass	0138-10-029	5D



CONTROLLING PROJECT ID 0138-10-029

DISTRICT Atlanta

COUNTY Cass, Marion

HIGHWAY FM 125, FM 130, FM 1766, FM 1841, FM 248, FM 250, FM 251, FM 2888, FM 994

# QUANTITY SHEET

CONTROL SECTION JOB				2919-01-006		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00066423			
COUNTY				Cass			
HIGHWAY				FM 2888			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	1,300.000		12,170.000	
	530-6004	DRIVEWAYS (CONC)	SY			473.000	
	658-6099	INSTL OM ASSM (OM-2Z)(WFLX)GND	EA	58.000		214.000	
	6185-6002	TMA (STATIONARY)	DAY			304.000	
	18	SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS			1.000	
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS			1.000	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 248 CSJ 0138-10-029

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES																								
																												STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	REMOVING CONC (DRIVEWAYS) SY	EMBANKMENT (VEHICLE (ORD COM) (TY C) CY	BLADING STA	CUT & RESTORE ASPH PAVING SY	CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)				
		18"	24"																																							30"	36"	48"	18"	24"	30"	36"	48"		
CSJ 0138-10-029 (STATIONS INCREASE FROM NORTH TO SOUTH)(SH 43 TO FM 125)																																																			
FM 248 @ SH 43																																																			
0+00																																																			
2+75	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																							
4+35	LT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 20' OF 18" CPP																							
5+12	X-DRAIN	N/A	2-24" RCP																									FOR LOCATION REFERENCE ONLY																							
11+62	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM																							
16+50	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																							
22+16	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM																							
24+00	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																							
31+06	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM																							
36+84	X-DRAIN	N/A	2-48" RCP																									FOR LOCATION REFERENCE ONLY																							
61+28	LT	N/A	18" CMP	-	-	-	54	-	-	0.50	0.50	-	-	54	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 54' OF 18" CMP																							
65+23	X-DRAIN	N/A	2-24" RCP																									FOR LOCATION REFERENCE ONLY																							
69+16	RT	N/A	24" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																							
71+20	RT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	8	-	ADD 3' 45" BEND UP & REM 8' DWNSTRM																							
86+25	LT	N/A	24" RCP	-	-	-	6	2	-	0.50	0.50	-	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	REM HDWLS AND 3' UP & DOWNSTREAM																							
87+07	X-DRAIN	N/A	2-36" RCP																									FOR LOCATION REFERENCE ONLY																							
88+50	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM																							
89+10	X-DRAIN	N/A	37"X24" ARCH																									FOR LOCATION REFERENCE ONLY																							
95+62	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UPSTREAM																							
96+95	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																							
100+46	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM																							
103+38	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																							
104+70	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM																							
149+70	X-DRAIN	N/A	SPAN BRIDGE																									FOR LOCATION REF ONLY (FRAZIER CRK)																							
165+15	X-DRAIN	N/A	SPAN BRIDGE																									FOR LOC REF ONLY (FRAZIER CRK RELIEF)																							
115+26	LT	N/A	18" CMP	-	-	-	50	-	-	0.50	0.50	-	-	50	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 50' 18" CMP																							
115+60	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																							
126+22	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	CR 2419																							
182+15	X-DRAIN	N/A	SPAN BRIDGE																									FOR LOCATION REF ONLY (CAMP CREEK)																							
203+34	X-DRAIN	N/A	30" RCP																									FOR LOCATION REFERENCE ONLY																							
208+55	X-DRAIN	N/A	3-30" RCP																									FOR LOCATION REFERENCE ONLY																							
230+20	RT	ACP	18" CMP	-	16	-	28	-	-	0.50	0.50	15	-	28	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 28' CMP																							
242+10	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																							
247+83	X-DRAIN	N/A	48" RCP																									FOR LOCATION REFERENCE ONLY																							
248+50	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM																							
260+50	X-DRAIN	N/A	3-48" RCP																									FOR LOCATION REFERENCE ONLY																							
269+50	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																							
277+69	X-DRAIN	N/A	42" RCP																									FOR LOCATION REFERENCE ONLY																							
278+92	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																							
282+26	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UPSTREAM																							
283+98	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	-	ADD 3' UP & DOWNSTREAM																							
284+98	RT	CONC	18" CMP	13	12	20	28	-	24	0.50	0.50	-	-	34	-	-	-	-	-	2	-	-	-	-	-	24	-	REMOVE 28' OF 18" CMP & REPLACE 34'																							
286+92	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																							
289+75	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM																							
293+85	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																							
295+02	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																							
297+00	X-DRAIN	N/A	2-37"X21" ARCH																									FOR LOCATION REFERENCE ONLY																							
299+52	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																							
300+02	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM																							
301+00	X-DRAIN	N/A	2-37"X21" ARCH																									FOR LOCATION REFERENCE ONLY																							
<b>CSJ 0138-10-029 (SHEET 1 OF 3) SUBTOTALS:</b>							<b>241</b>	<b>2</b>	<b>24</b>	<b>14.50</b>	<b>14.50</b>	<b>15</b>	<b>0</b>	<b>236</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>24</b>	<b>-</b>																								

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 1 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	
DISTRICT	COUNTY	HIGHWAY	6
ATL	CASS	FM 248, etc.	

## SUMMARY OF DRIVEWAY PIPES: FM 248 CSJ 0138-10-029 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES
18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	LF	SY																
				FT	FT	FT	LF	LF	SY	CY	STA	SY	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LF	SY		
<b>0138-10-029 (STATIONS INCREASE FROM NORTH TO SOUTH)(SH 43 TO FM 125)</b>																											
302+84	RT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	8	-	-	-	-	-	2	-	-	-	-	-	-	REM & REP 4' DWNSTRM & ADD 4' DWNSTRM
303+44	RT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	REM & REP 4' DWNSTRM & ADD 4' DWNSTRM
305+45	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
308+32	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM
309+52	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
313+50	RT	N/A	18" RCP	-	-	-	24	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
314+45	X-DRAIN	N/A	37"X21" ARCH																								FOR LOCATION REFERENCE ONLY
316+14	RT	N/A	18" CPP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CPP
316+94	RT	N/A	18" CPP	-	-	-	3	-	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM
319+65	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
323+64	RT	N/A	18" RCP	-	-	-	16	-	-	0.50	0.50	-	-	16	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 16' 18" CMP
326+30	RT	N/A	18" CMP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM
327+10	RT	N/A	24" RCP	-	-	-	3	-	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM
327+60	RT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP
328+12	RT	N/A	18" RCP	-	-	-	12	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	12	-	REMOVE 12' DOWNSTREAM & PLACE SET
328+45	X-DRAIN	N/A	37"X21" ARCH																								FOR LOCATION REFERENCE ONLY
<b>0138-10-029 (STATIONS INCREASE FROM SOUTH TO NORTH)(CASS / MORRIS COUNTY LINE TO FM 125)</b>																											
371+00																											FM 248 @ CASS / MORRIS COUNTY LINE
377+00	X-DRAIN	N/A	SPAN BRIDGE																								FOR LOCATION REFERENCE ONLY
397+44	RT	N/A	12" CMP	-	-	-	40	-	-	0.50	0.50	-	-	40	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 40' 12" CMP
399+15	X-DRAIN	N/A	2-6"X4' MBC																								FOR LOCATION REFERENCE ONLY
401+42	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
407+40	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
407+40	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
409+40	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
411+26	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
412+05	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
413+66	LT	N/A	18" RCP	-	-	-	11	-	9	2.00	0.50	-	-	11	-	-	-	-	-	2	-	-	-	-	-	9	REM & REP 3' UP / ADD 4' UP & DWNSTRM
418+62	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 24' OF 18" CMP
423+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
424+05	RT	N/A	18" CMP	-	-	-	42	-	-	0.50	0.50	-	-	42	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 42' 18" CMP
426+30	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
434+80	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
439+75	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM
443+00	RT	N/A	18" CMP	-	-	-	32	-	-	0.50	0.50	-	-	32	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 32' 18" CMP
449+94	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
453+94	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM
456+32	RT	N/A	18" CMP	-	-	-	48	-	-	0.50	0.50	-	-	48	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 48" 18" CMP
460+92	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM
466+76	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
468+46	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
469+45	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
471+40	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
478+56	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
479+44	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
481+25	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
486+20	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	-
486+58	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	-
488+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
510+00	X-DRAIN	N/A	SPAN BRIDGE																								FOR LOCATION REFERENCE ONLY
<b>CSJ 0138-10-029 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>354</b>	<b>0</b>	<b>9</b>	<b>21.00</b>	<b>19.50</b>	<b>0</b>	<b>0</b>	<b>302</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>74</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>9</b>	<b>-</b>	

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 2 OF 64

CONT	SECT	JOB	SHEET
FM 248, etc.	10	029, etc.	
DISTRICT	COUNTY	HIGHWAY	7
ATL	CASS	FM 248, etc.	

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## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 248 CSJ 0138-10-029 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES
									6017	6021	6001	6008	6009	6003	6005	6007	6008	6010	6363	6395	6423	6454	6480	6007	6004		
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)		
				FT	FT	FT	LF	LF	SY	CY	STA	EA	EA	18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	EA	EA	EA	
0138-10-029 (STATIONS INCREASE FROM SOUTH TO NORTH)(CASS / MORRIS COUNTY LINE TO FM 125)																											
515+60	X-DRAIN	N/A	SPAN BRIDGE																								FOR LOCATION REFERENCE ONLY
523+36	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
531+80	X-DRAIN	N/A	2-24" RCP																								FOR LOCATION REFERENCE ONLY
539+42	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM
546+50	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
553+26	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
555+75	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM
558+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
559+02	RT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CPP
571+16	X-DRAIN	N/A	24"																								FOR LOCATION REFERENCE ONLY
574+60	X-DRAIN	N/A	30"																								FOR LOCATION REFERENCE ONLY
583+47	X-DRAIN	N/A	3-30" RCP																								FOR LOCATION REFERENCE ONLY
586+46	RT	CONC	18" CPP	18	15	12	20	-	25	0.50	0.50	-	-	20	-	-	-	-	-	2	-	-	-	-	-	25	REMOVE & REPLACE 20' 18" CPP
586+95	RT	CONC	18" CPP	22	14	12	20	-	27	0.50	0.50	-	-	20	-	-	-	-	-	2	-	-	-	-	-	27	REMOVE & REPLACE 20' 18" CPP
600+95	RT	N/A	18" CPP	-	-	-	36	-	-	0.50	0.50	-	-	36	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 36' 18" CPP
601+40	LT	N/A	18" CMP	-	-	-	16	-	-	0.50	0.50	-	-	16	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 16' 18" CMP
605+05	RT	N/A	18" RCP	-	-	-	-	-	-	5.00	0.50	-	-	10	-	-	-	-	-	2	-	-	-	-	-	-	ADD 4' UPSTREAM & 6' DOWNSTREAM
609+81	X-DRAIN	N/A	2-8'X5' MBC																								FOR LOCATION REFERENCE ONLY
621+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
621+46	RT	N/A	18" CMP	-	-	-	46	1	-	0.50	0.50	-	-	46	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 46' 18" CMP
623+65	RT	N/A	18" CMP	-	-	-	48	2	-	0.50	0.50	-	-	48	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 48' 18" CMP
624+22	RT	N/A	18" CMP	-	-	-	36	-	-	0.50	0.50	-	-	36	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 36' 18" CMP
624+30	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
631+00	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 4' UPSTREAM
631+88	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
634+86	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
<b>CSJ 0138-10-029 (SHEET 3 OF 3) SUBTOTALS:</b>							<b>254</b>	<b>3</b>	<b>52</b>	<b>12.50</b>	<b>8.00</b>	<b>0</b>	<b>0</b>	<b>264</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>52</b>	
<b>CSJ 0138-10-029 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>354</b>	<b>0</b>	<b>9</b>	<b>21.00</b>	<b>19.50</b>	<b>0</b>	<b>0</b>	<b>302</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>74</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>9</b>	
<b>CSJ 0138-10-029 (SHEET 1 OF 3) SUBTOTALS:</b>							<b>241</b>	<b>2</b>	<b>24</b>	<b>14.50</b>	<b>14.50</b>	<b>15</b>	<b>0</b>	<b>236</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>24</b>	
<b>CSJ 0138-10-029 TOTALS:</b>							<b>849</b>	<b>5</b>	<b>85</b>	<b>48.00</b>	<b>42.00</b>	<b>15</b>	<b>0</b>	<b>802</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>160</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>85</b>	

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NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 3 OF 64

CONT	SECT	JOB	SHEET
0138	10	029, etc.	
DISTRICT	COUNTY	HIGHWAY	8
ATL	CASS	FM 248, etc.	

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## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 248 CSJ 0138-11-031

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3 420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES					
																											STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L
				FT	FT	FT	LF	LF	SY	CY	STA	SY	EA	18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	EA	EA		EA	EA	EA	LF	SY
CSJ 0138-11-031 (STATIONS INCREASE FROM SOUTH TO NORTH)(SH 49 TO MORRIS / CASS COUNTY LINE)																															
0+00																												FM 248 @ SH 49			
0+77	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY			
4+13	X-DRAIN	N/A	18" RCP																									FOR LOCATION REFERENCE ONLY			
4+57	X-DRAIN	N/A	18" RCP																									FOR LOCATION REFERENCE ONLY			
8+90	RT	N/A	15" STL	-	-	-	40	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 40' STEEL PIPE				
11+27	X-DRAIN	N/A	18" RCP																									FOR LOCATION REFERENCE ONLY			
12+10	RT	N/A	18" CMP	-	-	-	60	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 60' 18" CMP				
14+68	RT	N/A	15" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	GROUT 18" SET ONTO 15" RCP				
17+15	X-DRAIN	N/A	30" RCP																									FOR LOCATION REFERENCE ONLY			
21+65	RT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP				
26+75	X-DRAIN	N/A	30" RCP																									FOR LOCATION REFERENCE ONLY			
27+22	LT	N/A	24" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 24" CMP				
31+49	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY			
32+55	RT	N/A	24" CMP	-	-	-	60	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 60' 24" CMP				
37+70	LT	N/A	24" CMP	-	-	-	40	-	-	1.00	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 40' 24" CMP				
38+28	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	ADD 4' DOWNSTREAM				
42+20	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM				
44+22	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM				
46+58	LT	N/A	18" CMP	-	-	-	40	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 40' 18" CMP				
47+22	RT	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TREATED (NO WORK AT THIS LOCATION)				
49+64	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-				
50+22	LT	N/A	18" RCP	-	-	-	6	-	-	1.00	0.50	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	ADD 6' DWNSTRM TO CONNECT WITH 50+55				
50+55	LT	N/A	18" RCP	-	-	-	3	-	-	1.00	0.50	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM				
53+26	LT	N/A	12" RCP	-	-	-	18	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 18' 12" RCP				
60+20	LT	ACP	12" RCP	-	11	-	24	-	-	0.50	0.50	10	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 12" RCP				
60+25	RT	ACP	18" CMP	-	36	-	42	-	-	0.50	0.50	33	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REM & REP 42' 18" CMP (ARKLA RD)				
61+76	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY			
62+68	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-				
65+40	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM				
68+88	RT	N/A	18" CMP	-	-	-	58	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 54' 18" CMP				
75+32	LT	ACP	12" RCP	-	34	-	34	-	-	0.50	0.50	31	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 34' 12" RCP				
83+38	RT	N/A	18" CMP	-	-	-	78	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 78' 18" CMP				
83+56	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-				
84+58	LT	N/A	15" RCP	-	-	-	40	-	-	2.00	0.50	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	REM & REP 15" RCP & ADD 14' CON TO 85+02				
85+02	LT	N/A	18" CMP	-	-	-	28	-	-	2.00	0.50	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	REMOVE & REPLACE 28' 18" CMP				
99+20	X-DRAIN	N/A	36" RCP																									FOR LOCATION REFERENCE ONLY			
99+50	LT	N/A	18" RCP	-	-	-	3	-	-	5.00	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM				
101+95	RT	N/A	12" RCP	-	-	-	14	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 14' 12" RCP				
103+12	LT	CONC	18" CMP	8	8	13	20	-	-	12	0.50	0.50	-	-	-	-	-	2	-	-	-	-	-	-	-	12	SAWCUT DRWY / REM & REP 20' 18" RCP				
103+45	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY			
108+70	LT	N/A	12" RCP	-	-	-	18	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 18' 12" RCP				
108+88	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-				
109+38	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY			
109+90	LT	N/A	18" CPP	-	-	-	16	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 16' 18" CPP				
112+62	LT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP				
114+36	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM				
119+87	X-DRAIN	N/A	SPAN BRIDGE																									FOR LOCATION REFERENCE ONLY			
122+05	RT	ACP	18" CMP	-	24	-	-	-	-	0.50	0.50	22	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 26' 18" CMP				
128+25	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY			
130+80	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM				
<b>CSJ 0138-11-031 (SHEET 1 OF 3) SUBTOTALS:</b>							<b>745</b>	<b>0</b>	<b>12</b>	<b>26.50</b>	<b>17.50</b>	<b>96</b>	<b>0</b>	<b>579</b>	<b>130</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>-</b>				

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 4 OF 64



CONT	SECT	JOB	SHEET
0138	10	029, etc.	9
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

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DATE: 1/28/2021



## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 248 CSJ 0138-11-031 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES																										
																												STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)
																																										18"	24"	30"	36"	48"	18"	24"	30"	36"	48"		
				FT	FT	FT	LF	LF	SY	CY	STA	SY	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LF	SY																												
CSJ 0138-11-031 (STATIONS INCREASE FROM SOUTH TO NORTH)(SH 49 TO MORRIS / CASS COUNTY LINE)																																																					
133+42	LT	N/A	12" RCP	-	-	-	18	-	-	0.50	0.50	-	-	18	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 18' 12" RCP																									
134+68	RT	ACP	24" CMP	-	20	-	32	-	-	0.50	0.50	20	-	-	32	-	-	-	-	2	2	-	-	-	-	-	-	REMOVE & REPLACE 32' 24" CMP																									
135+96	LT	N/A	15" RCP	-	-	-	12	-	-	0.50	0.50	-	-	12	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 12' 15" RCP																										
137+52	LT	N/A	15" RCP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 15" RCP																										
138+88	LT	N/A	15" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
139+05	RT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CPP																										
141+18	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM																										
143+70	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
146+50	RT	N/A	15" CPP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 15" CPP																										
146+74	LT	N/A	12" RCP	-	-	-	22	-	-	0.50	0.50	-	-	22	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 22' 12" RCP																										
147+96	LT	N/A	15" CLAY	-	-	-	14	-	-	0.50	0.50	-	-	14	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 14' 15" CLAY PIPE																										
151+55	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
172+28	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
196+76	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
198+36	LT	N/A	12" RCP	-	-	-	30	-	-	0.50	0.50	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 12" RCP																										
205+55	LT	ACP	12" RCP	-	25	-	30	-	-	0.50	0.50	23	-	30	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 12" RCP																										
206+72	LT	N/A	24" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 24' 24" CMP																										
217+44	X-DRAIN	N/A	18" RCP																								FOR LOCATION REFERENCE ONLY																										
218+72	RT	N/A	18" CMP	-	-	-	16	-	-	0.50	0.50	-	-	16	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 16' 18" CMP																										
240+67	X-DRAIN	N/A	SPAN BRIDGE																								FOR LOCATION REFERENCE ONLY																										
242+77	X-DRAIN	N/A	18" RCP																								FOR LOCATION REFERENCE ONLY																										
263+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
277+77	X-DRAIN	N/A	30" RCP																								FOR LOCATION REFERENCE ONLY																										
282+42	RT	ACP	18" CMP	-	12	-	20	-	-	0.50	0.50	11	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP																										
284+21	X-DRAIN	N/A	18" RCP																								FOR LOCATION REFERENCE ONLY																										
291+88	X-DRAIN	N/A	18" RCP																								FOR LOCATION REFERENCE ONLY																										
300+05	X-DRAIN	N/A	30" RCP																								E CC ROAD																										
300+30	LT	N/A	24" RCP	-	-	-	6	-	-	10.00	1.00	-	3	-	-	16	-	-	-	-	-	-	-	-	-	-	SEE ROADWAY DETAILS																										
305+18	LT	ACP	18" RCP	-	18	-	46	-	-	0.50	0.50	17	-	46	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 46' 18" CPP																										
307+88	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
315+13	X-DRAIN	N/A	18" RCP																								FOR LOCATION REFERENCE ONLY																										
316+34	LT	N/A	18" CPP	-	-	-	30	-	-	0.50	0.50	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CPP																										
318+14	RT	ACP	12" STL PIPE	-	10	-	20	-	-	0.50	0.50	9	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 12" STEEL PIPE																										
329+90	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
330+05	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
331+56	RT	N/A	24" CMP	-	-	-	22	-	-	0.50	0.50	-	-	-	22	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 22' 24" CMP																										
333+46	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
335+88	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	ADD 4' DOWNSTREAM																										
340+40	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
342+27	X-DRAIN	N/A	2-36" RCP																								FOR LOCATION REFERENCE ONLY																										
343+50	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	8	-	-	-	-	2	-	-	-	-	-	-	-	ADD 4' UP & DOWNSTREAM																										
345+00	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' OF 18" CMP																										
349+90	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
353+26	RT	N/A	18" CMP	-	-	-	36	-	-	0.50	0.50	-	-	42	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 36' 18" CMP / ADD 6' UPSTRM																										
354+56	RT	N/A	18" CPP	-	-	-	38	-	-	0.50	0.50	-	-	38	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 38' 18" CPP																										
356+85	X-DRAIN	N/A	2-36" RCP																								FOR LOCATION REFERENCE ONLY																										
361+56	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
362+59	X-ROAD	N/A	N/A																								FM 248 @ FM 2683																										
362+66	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
367+30	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
<b>CSJ 0138-11-031 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>508</b>	<b>0</b>	<b>0</b>	<b>26.50</b>	<b>17.50</b>	<b>80</b>	<b>3</b>	<b>442</b>	<b>78</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>																										

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NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 5 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	
DISTRICT	COUNTY	HIGHWAY	10
ATL	CASS	FM 248, etc.	

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DATE: 1/28/2021

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 248 CSJ 0138-11-031 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES		
STATION	LT / RT / CROSS STRUCT DIM	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY			
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"					
															FT	FT	FT	LF	LF	SY	EA	EA	EA	EA				EA	
CSJ 0138-11-031 (STATIONS INCREASE FROM SOUTH TO NORTH)(SH 49 TO MORRIS / CASS COUNTY LINE)																													
367+30	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
368+12	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
368+26	RT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP	
369+62	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP	
<b>CSJ 0138-11-031 (SHEET 3 OF 3) SUBTOTALS:</b>							<b>44</b>	<b>0</b>	<b>0</b>	<b>2.00</b>	<b>2.00</b>	<b>0</b>	<b>0</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		
<b>CSJ 0138-11-031 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>508</b>	<b>0</b>	<b>0</b>	<b>26.50</b>	<b>17.50</b>	<b>80</b>	<b>3</b>	<b>442</b>	<b>78</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 0138-11-031 (SHEET 1 OF 3) SUBTOTALS:</b>							<b>745</b>	<b>0</b>	<b>12</b>	<b>26.50</b>	<b>17.50</b>	<b>96</b>	<b>0</b>	<b>579</b>	<b>130</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	
<b>CSJ 0138-11-031 TOTALS:</b>							<b>1,341</b>	<b>0</b>	<b>12</b>	<b>57.00</b>	<b>39.00</b>	<b>176</b>	<b>3</b>	<b>1,109</b>	<b>208</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>136</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 250 CSJ 0277-05-012

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY		
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"				
															FT	FT	FT	LF	LF	SY	EA	EA	EA	EA				EA
CSJ 0277-05-012 (SH 77 TO FM 1399)(STATIONS INCREASE NORTH TO SOUTH)																												
0+00																												FM 250 @ SH77
1+60	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
3+48	LT	N/A	12" STL PIPE	-	-	-	18	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 18' 12" STEEL PIPE
3+65	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
5+00	LT	N/A	18" RCP	-	-	-	-	-	-	0.25	0.25	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	PLACE SET ON UPSTREAM ONLY
5+24	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 3' 18" RCP UP & DOWNSTREAM
6+02	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
6+58	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 3' 18" RCP DOWNSTREAM
8+90	LT	ACP	12" RCP	-	20	-	32	-	-	0.50	0.50	18	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 32' 12" RCP
13+66	LT	N/A	18" RCP	-	-	-	6	-	-	2.00	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 6' UP AND ADD 6' DOWNSTREAM
15+37	X-DRAIN	N/A	18" RCP																									FOR LOCATION REFERENCE ONLY
20+12	LT	N/A	18" CPP	-	-	-	22	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 22' 18" CPP
21+38	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
22+28	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
24+22	LT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP
24+40	LT	ACP	18" CMP	-	19	-	24	-	-	0.50	0.50	18	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 24' 18" CMP (CR 2727)
26+12	RT	N/A	18" RCP	-	-	-	12	-	-	2.00	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	ADD 6' UP & DOWNSTREAM
26+14	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UPSTREAM
28+84	LT	N/A	18" CMP	-	-	-	28	-	-	5.00	0.50	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	REM & REP 28' 18" CMP / ADD 10' TO CONNECT TO STATION 29+00
29+00	LT	N/A	18" CMP	-	-	-	16	-	-	0.50	0.50	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	CONNECT TO STATION 29+00
34+07	X-DRAIN	N/A	4-48" RCP																									FOR LOCATION REFERENCE ONLY
39+42	RT	CONC	24" CMP	18	12	24	24	-	29	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	29	SAWCUT DRVWY / REM & REP 24' 24" CMP	
44+96	LT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UP & DOWNSTREAM
46+06	RT	N/A	12" RCP	-	-	-	20	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 12" RCP
52+84	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
53+85	RT	N/A	18" RCP	-	-	-	-	-	-	3.00	0.50	-	-	1	16	-	-	-	-	1	-	-	-	-	-	-	-	SEE ROADWAY DETAILS (STEVENS STREET)
54+29	X-DRAIN	N/A	18" RCP																									FOR LOCATION REFERENCE ONLY
54+40	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
57+50	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	WOMMACK STREET
60+14	RT	N/A	15" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
82+20	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
82+44																												FM 250 @ FM 1399
<b>CSJ 0277-05-012 TOTALS:</b>							<b>247</b>	<b>0</b>	<b>29</b>	<b>22.75</b>	<b>12.75</b>	<b>36</b>	<b>1</b>	<b>255</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29</b>	

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLDING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 6 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	
DISTRICT	COUNTY	HIGHWAY	11
ATL	CASS	FM 248, etc.	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 250 CSJ 0946-01-045

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES																						
																												SURFACE	PIPE	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)				
		N/A / ACP / CONCRETE	STRUCTURE / CMP / RCP / CPP																																					FT	FT	FT	LF	LF	SY	CY	STA	SY	EA
CSJ 0946-01-045 (FM 1399 TO FM 130)(STATIONS INCREASE FROM SOUTH TO NORTH)																																																	
262+68																												FM 250 @ FM 130 (EAST)																					
263+84	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
263+05	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																					
268+80	LT	ACP	12" RCP	-	16	-	22	-	-	0.50	0.50	15	-	22	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 22' 12" RCP																					
280+83	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																					
287+40	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
296+10	LT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP																					
296+55	LT	N/A	18" CMP	-	-	-	18	-	-	0.50	0.50	-	-	18	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 18' 18" CMP																					
299+66	X-DRAIN	N/A	3-36" RCP																									FOR LOCATION REFERENCE ONLY																					
300+05	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP (CR 2965)																					
323+59	X-DRAIN	N/A	2-6"X4' MBC																									FOR LOCATION REFERENCE ONLY																					
327+80	RT	N/A	24" CMP	-	-	-	24	-	-	50.00	2.00	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 24" CMP																					
340+86	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																					
346+43	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																					
349+80	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UPSTREAM																					
350+10	RT	CONC	18" CPP	14	11	26	24	2	25	0.50	0.50	-	-	24	-	-	-	-	-	-	-	-	-	-	-	25	-	REMOVE & REPLACE 24' 12" CPP																					
351+44	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM																					
352+66	RT	ACP	12" CMP	-	19	-	24	-	-	0.50	0.50	18	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 12" CMP																					
353+94	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM																					
355+72	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
356+72	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
365+82	LT	ACP	18" RCP	-	2	-	3	-	-	0.50	0.50	2	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM																					
370+75	X-DRAIN	N/A	2-30" RCP																									FOR LOCATION REFERENCE ONLY																					
377+84	RT	ACP	2-18" CMP	-	25	-	72	-	-	0.50	0.50	29	-	72	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 72' 18" CMP (CR 2931)																					
382+50	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																					
385+46	LT	N/A	18" CMP	-	-	-	58	-	-	0.50	0.50	-	-	58	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 58' 18" CMP																					
386+75	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
390+06	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
390+55	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM																					
390+60	RT	ACP	18" CMP	-	28	-	36	-	-	0.50	0.50	26	-	36	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 28' 18" CMP (CR 2932)																					
392+32	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
392+90	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM																					
398+25	LT	N/A	12" RCP	-	-	-	18	-	-	0.50	0.50	-	-	18	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 18' 12" RCP																					
399+60	LT	N/A	18" CMP	-	-	-	14	-	-	0.50	0.50	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 14' 18" CMP																					
400+32	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM																					
401+60	LT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP																					
404+50	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
404+96	LT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP																					
406+48	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																					
408+20	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
411+40	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
412+75	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
417+80	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
418+71	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																					
419+88	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
427+32	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																					
454+45	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																					
455+00	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																					
465+45	X-DRAIN	N/A	SPAN BRIDGE																									FOR LOCATION REFERENCE ONLY																					
471+00	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																					
<b>CSJ 0946-01-045 (SHEET 1 OF 3) SUBTOTALS:</b>							<b>432</b>	<b>2</b>	<b>25</b>	<b>67.00</b>	<b>19.00</b>	<b>90</b>	<b>0</b>	<b>432</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>72</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>-</b>																					

- 1 FOR CONTRACTOR INFORMATION ONLY
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NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 7 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	
DISTRICT	COUNTY	HIGHWAY	12
ATL	CASS	FM 248, etc.	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 250 CSJ 0946-01-045 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES																										
																												STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)
																																										18"	24"	30"	36"	48"	18"	24"	30"	36"	48"		
CSJ 0946-01-045 (FM 1399 TO FM 130)(STATIONS INCREASE FROM SOUTH TO NORTH)																																																					
480+20	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM																								
481+48	RT	N/A	18" CMP	-	-	-	18	-	-	0.50	0.50	-	-	-	18	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 18' 18" CMP																								
481+89	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																								
487+26	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																								
489+75	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																								
492+53	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																								
500+42	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																								
503+21	X-DRAIN	N/A	2-24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																								
517+50	LT	N/A	12" RCP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 12" RCP																								
522+92	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																								
523+28	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM																								
527+05	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																								
529+34	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																								
532+86	RT	N/A	18" RCP	-	-	-	4	-	-	2.00	0.50	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	REM & REP 4' DS / ADD 6' TO CON TO 533+16																								
533+16	RT	N/A	18" RCP	-	-	-	3	-	-	2.00	0.50	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM																								
540+60	X-DRAIN	N/A	4-30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																								
550+06	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																								
551+80																													FM 250 @ FM 2888																								
557+89	X-DRAIN	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																								
565+46	LT	ACP	18" CMP	-	18	-	20	-	-	0.50	0.50	17	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP																							
568+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
570+34	RT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP																							
576+48	X-DRAIN	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
583+02	LT	N/A	18" CMP	-	-	-	28	-	-	0.50	0.50	-	-	-	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 28' 18" CMP																							
585+50	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
586+95	RT	N/A	18" CMP	-	-	-	48	-	-	0.50	0.50	-	-	-	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 48' 18" CMP																							
594+75	X-DRAIN	N/A	3-42" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
603+63	X-DRAIN	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
609+17	X-DRAIN	N/A	3-5'X3' MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
628+65	X-DRAIN	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
630+14	LT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP																							
635+32	LT	ACP	18" CMP	-	22	-	24	-	-	0.50	0.50	20	-	-	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REM & REP 24' 18" CMP/ADD 4' UP & DNSTM																							
637+50	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
647+08	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
655+92	X-DRAIN	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
660+96	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																							
665+07	X-DRAIN	N/A	2-42" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
671+22	RT	N/A	18" CMP	-	-	-	28	-	-	0.50	0.50	-	-	-	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 28' 18" CMP																							
675+20	RT	ACP	12" RCP	-	14	-	20	-	-	0.50	0.50	13	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 12" RCP																							
679+86	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM																							
680+85	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM																							
681+26	RT	N/A	12" RCP	-	-	-	14	-	-	0.50	0.50	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 14' 12" RCP																							
682+08	LT	ACP	18" CMP	-	17	-	24	-	-	2.00	0.50	16	-	-	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REM & REP 24' 18" CMP/ADD 4' UP & DNSTM																							
687+45	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
689+05	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																							
696+20	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
703+98	LT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP																							
706+31	X-DRAIN	N/A	2-6'X6' MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
708+06	LT	ACP	18" CMP	-	24	-	32	-	-	0.50	0.50	22	-	-	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 32' 18" CMP (CR 2731)																							
710+24	X-DRAIN	N/A	2-36" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																							
<b>CSJ 0946-01-045 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>366</b>	<b>0</b>	<b>0</b>	<b>18.00</b>	<b>13.50</b>	<b>88</b>	<b>0</b>	<b>390</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>52</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>																							

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

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 250 CSJ 0946-01-045 (Continued)

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES			
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY				
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"						
															LF	LF	LF	LF	LF	EA	EA	EA	EA	EA						
CSJ 0946-01-045 (FM 1399 TO FM 130)(STATIONS INCREASE FROM SOUTH TO NORTH)																														
716+28	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY		
724+70	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	
730+60	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM	
732+60	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	
745+36	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM	
746+38	X-DRAIN	N/A	3-5'X4' MBC																										FOR LOCATION REFERENCE ONLY	
751+00	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM	
754+40	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	-	ADD 4' DOWNSTREAM	
756+60	RT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	-	8	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UP & DOWNSTREAM	
757+70	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM	
759+68	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	
761+88	LT	N/A	12" RCP	-	14	-	30	-	-	0.50	0.50	13	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 12" RCP	
764+10	LT	N/A	15" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	
765+16	LT	ACP	18" RCP	-	2	-	6	-	-	0.50	0.50	2	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 6' 18" RCP	
769+72	LT	ACP	12" RCP	-	12	-	20	2	-	0.50	0.50	11	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" RCP	
772+65	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM	
773+80	X-DRAIN	N/A	2-24" RCP																										FOR LOCATION REFERENCE ONLY	
775+98	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	
<b>CSJ 0946-01-045 (SHEET 3 OF 3) SUBTOTALS:</b>							<b>92</b>	<b>2</b>	<b>0</b>	<b>7.50</b>	<b>7.50</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		
<b>CSJ 0946-01-045 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>366</b>	<b>0</b>	<b>0</b>	<b>18.00</b>	<b>13.50</b>	<b>88</b>	<b>0</b>	<b>0</b>	<b>390</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>52</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 0946-01-045 (SHEET 1 OF 3) SUBTOTALS:</b>							<b>432</b>	<b>2</b>	<b>25</b>	<b>67.00</b>	<b>19.00</b>	<b>90</b>	<b>0</b>	<b>0</b>	<b>432</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>72</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	
<b>CSJ 0946-01-045 TOTALS:</b>							<b>890</b>	<b>4</b>	<b>25</b>	<b>92.50</b>	<b>40.00</b>	<b>204</b>	<b>0</b>	<b>0</b>	<b>914</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>154</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 251 CSJ 0812-01-035

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES		
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY			
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"					
															LF	LF	LF	LF	LF	EA	EA	EA	EA	EA					
CSJ 0812-01-035 (FM 1841 TO FM 125)(STATIONS INCREASE FROM NORTH TO SOUTH)																													
10+00																													FM 251 @ FM 1841
22+85	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY
27+18	LT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP
27+80	LT	ACP	18" CMP	-	21	-	38	2	-	0.50	0.50	18	-	-	38	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 38' 12" RCP
29+40	RT	ACP	12" RCP	-	10	-	14	-	-	0.50	0.50	9	-	-	14	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 14' 12" RCP
30+94	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
31+25	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY
32+94	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	CR 4338
39+15	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	CR 4335
43+50	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
44+24	RT	N/A	18" CMP	-	-	-	60	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 60' 18" CMP
46+84	LT	N/A	18" RCP	-	-	-	6	-	-	5.00	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM
49+78	X-DRAIN	N/A	5'X5' BC																										FOR LOCATION REFERENCE ONLY
52+20	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
52+25	LT	N/A	18" CMP	-	-	-	50	-	-	0.50	0.50	-	-	-	50	-	-	-	-	2	-	-	-	-	-	-	-	-	REMOVE & REPLACE 50' 18" CMP
59+55	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	-	REM & REP 3' 18" RCP UP & DOWNSTREAM
62+26	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY
<b>CSJ 0812-01-035 (SHEET 1 OF 3) SUBTOTALS:</b>							<b>204</b>	<b>2</b>	<b>0</b>	<b>10.50</b>	<b>6.00</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>144</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLDING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 9 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	14
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 251 CSJ 0812-01-035 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES	
																												STATION
18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	LF	EA	EA	EA	EA	EA	LF	SY											
CSJ 0812-01-035 (FM 1841 TO FM 125)(STATIONS INCREASE FROM NORTH TO SOUTH)																												
67+20	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
70+70	LT	N/A	18" CPP	-	-	-	32	-	-	0.50	0.50	-	-	-	32	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 32' 18" CPP
71+80	LT	N/A	12" RCP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 20' 12" RCP
72+74	LT	N/A	12" RCP	-	-	-	28	-	-	0.50	0.50	-	-	-	28	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 28' 12" RCP
78+42	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
83+28	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
90+30	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
96+50	LT	N/A	24" CMP	-	34	-	46	-	-	0.50	0.50	33	-	-	46	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 46' 24" CMP
105+35	X-DRAIN	N/A	24" RCP									[p																FOR LOCATION REFERENCE ONLY
110+88	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
113+90	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
120+05	RT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP
123+68	RT	N/A	18" CMP	-	-	-	28	-	-	0.50	0.50	-	-	-	28	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 28' 18" CMP
125+64	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
126+64	RT	N/A	18" CMP	-	-	-	42	-	-	0.50	0.50	-	-	-	42	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 42' 18" CMP
127+20	RT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP
128+80	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
135+50	RT	N/A	18" CMP	-	-	-	60	-	-	0.50	0.50	-	-	-	60	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 60' 18" CMP
137+12	LT	N/A	18" RCP	-	-	-	2	-	-	0.50	0.50	-	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM
142+50	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
144+44	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
146+40	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
150+00	LT	N/A	18" CPP	-	-	-	36	-	-	0.50	0.50	-	-	-	36	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 36' 18" CPP
150+58	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
151+40	LT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CPP
154+56	RT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CPP
154+60	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
157+18	RT	ACP	18" CMP	-	22	-	40	-	-	0.50	0.50	20	-	-	40	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 40' 18" CMPI
161+20	RT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP
165+10	RT	N/A	18" STL PIPE	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" STEEL PIPE
168+90	LT	N/A	18" STL PIPE	-	-	-	26	-	-	0.50	0.50	-	-	-	26	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 26' 18" STEEL PIPE
171+40	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM
188+50	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
194+16	X-DRAIN	N/A	18"X24" ARCH CMP																									FOR LOCATION REFERENCE ONLY
204+80	RT	ACP	18" CMP	-	15	-	28	-	-	0.50	0.50	14	-	-	28	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 28' 18" CMP
204+90	LT	N/A	18" RCP	-	-	-	-	-	-	5.00	0.50	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	ADD 4' DOWNSTREAM
206+34	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
208+50	LT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & RESTORE 20' 18" CPP
209+98	X-DRAIN	N/A	24"X36" ARCH CMP																									FOR LOCATION REFERENCE ONLY
211+00	RT	N/A	18" CPP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & RESTORE 30' 18" CPP
215+45	LT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & RESTORE 30' 18" CMP
218+24	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
219+32	X-DRAIN	N/A	30" CMP																									FOR LOCATION REFERENCE ONLY
219+72	LT	N/A	8" STL PIPE	-	-	-	32	-	-	0.50	0.50	-	-	-	32	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 32' 8" STEEL PIPE
242+30	RT	N/A	18" CMP	-	-	-	26	-	-	0.50	0.50	-	-	-	26	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 26' 18" CMP
244+04	X-DRAIN	N/A	30" RCP																									FOR LOCATION REFERENCE ONLY
246+20	RT	ACP	18" CMP	-	14	-	30	-	-	0.50	0.50	13	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP
260+76	RT	N/A	18" CMP	-	-	-	38	-	-	0.50	0.50	-	-	-	38	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 38' 18" CMP
271+54	X-DRAIN	N/A	30" CMP																									FOR LOCATION REFERENCE ONLY
282+28	RT	N/A	12" RCP	-	-	-	14	-	-	0.50	0.50	-	-	-	14	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 14' 12" RCP
<b>CSJ 0812-01-035 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>761</b>	<b>0</b>	<b>0</b>	<b>23.00</b>	<b>18.50</b>	<b>80</b>	<b>0</b>	<b>693</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>72</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLDING, AND RCP.

### MISCELLANEOUS SUMMARIES

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	15
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

FILE: c:\bdo\pw\_online\tdot\mark\_pippen\0314228\Miscellaneous Summaries.xlsx\PS 10  
DATE: 1/28/2021

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 251 CSJ 0812-01-035 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES		
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY			
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"					
															FT	FT	FT	LF	LF	EA	EA	EA	EA	EA					
CSJ 0812-01-035 (FM 1841 TO FM 125)(STATIONS INCREASE FROM NORTH TO SOUTH)																													
284+04	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	2	-	-	-	-	-	-	-	FM 248 @ SH 49	
285+56	LT	N/A	12" CMP	-	-	-	46	-	-	0.50	0.50	-	-	-	46	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 46' 12" CMP	
287+20	LT	N/A	12" STL PIPE	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 12" STEEL PIPE	
288+55	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
289+62	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP	
291+50	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
293+02	RT	ACP	18" STL PIPE	-	6	-	20	-	-	0.50	0.50	6	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" STEEL PIPE	
306+00	X-DRAIN	N/A	30" CMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY	
308+02																												FM 251 @ FM 125	
CSJ 0812-01-035 (SHEET 3 OF 3) SUBTOTALS:							113	0	0	3.50	3.50	6	0	113	0	0	0	0	0	14	0	0	0	0	0	0	0		
CSJ 0812-01-035 (SHEET 2 OF 3) SUBTOTALS:							761	0	0	23.00	18.50	80	0	693	46	0	0	0	0	72	2	0	0	0	0	0	0	0	
CSJ 0812-01-035 (SHEET 1 OF 3) SUBTOTALS:							204	2	0	10.50	6.00	27	0	144	0	0	0	0	0	24	0	0	0	0	0	0	0	0	
CSJ 0812-01-035 TOTALS:							1,078	2	0	37.00	28.00	113	0	950	46	0	0	0	0	110	2	0	0	0	0	0	0	0	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 130 CSJ 1573-01-018

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES	
STATION	LT / RT / CROSS STRUCT DIM	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	*L	*W1	*W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY		
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"				
															FT	FT	FT	LF	LF	EA	EA	EA	EA	EA				
CSJ 1573-01-018 (SH 11 TO FM 250)(STATION INCREASE EAST TO WEST)																												
0+00																												FM 130 @ FM 250 (NORTH)
7+56	RT	N/A	18" RCP	-	-	-	-	-	-	2.00	0.50	-	-	-	8	-	-	-	-	2	-	-	-	-	-	-	-	ADD 4' UP & DOWNSTREAM
9+23	X-DRAIN	N/A	3-8'X6' MBC																									FOR LOCATION REFERENCE ONLY
13+56	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
13+60	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
19+30	LT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	-	8	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UP & DOWNSTREAM
21+00	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
24+45	LT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	-	8	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UP & DOWNSTREAM
39+60	X-DRAIN	N/A	3-8'X6' MBC																									FOR LOCATION REFERENCE ONLY
50+30	LT	N/A	24" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM
54+34	RT	ACP	18" CMP	-	11	-	-	-	-	0.50	0.50	10	-	-	18	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 18' 18" CMP
56+00	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
57+70	LT	N/A	18" CPP	-	-	-	18	-	-	0.50	0.50	-	-	-	36	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 36' 18" CPP
61+06	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	CR 1341
70+20	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM
74+44	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
94+91	X-DRAIN	N/A	SPAN BRIDGE																									FOR LOCATION REFERENCE ONLY
104+10	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM
107+82	RT	N/A	18" RCP	-	-	-	8	-	-	2.00	0.50	-	-	-	8	-	-	-	-	1	-	-	-	-	-	-	-	ADD 8' UPSTREAM TO CONNECT TO 108+12
108+12	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	1	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM
108+98	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM
110+32	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
116+30	RT	N/A	18" CPP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CPP
116+50	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM
133+71	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
CSJ 1573-01-018 (SHEET 1 OF 4) SUBTOTALS:							88	0	0	11.50	8.50	10	0	132	4	0	0	0	0	28	2	0	0	0	0	0	0	

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLDING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 11 OF 64

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	16
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	





## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 130 CSJ 1573-01-018 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES																										
																												STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)
																																										18"	24"	30"	36"	48"	18"	24"	30"	36"	48"		
				FT	FT	FT	LF	LF	SY	CY	STA	SY	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LF	SY																												
CSJ 1573-01-018 (SH 11 TO FM 250)(STATION INCREASE EAST TO WEST)																																																					
350+52	RT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CPP FOR REFERENCE LOCATION ONLY																										
355+85	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP FOR REFERENCE LOCATION ONLY																										
356+92	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP FOR REFERENCE LOCATION ONLY																										
361+14	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 6' DOWNSTREAM (CR 1457) FOR REFERENCE LOCATION ONLY																										
364+85	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
374+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
381+55	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM FOR REFERENCE LOCATION ONLY																										
388+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
389+64	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	CR 1450																										
395+55	LT	N/A	18" RCP	-	-	-	12	-	-	0.50	0.50	-	-	12	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UP & DOWNSTREAM FOR REFERENCE LOCATION ONLY																										
398+46	RT	N/A	18" CMP	-	-	-	40	-	-	0.50	0.50	-	-	40	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 40' 18" CMP FOR REFERENCE LOCATION ONLY																										
401+23	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
404+02	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
411+70	X-DRAIN	N/A	2-24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
422+00	X-DRAIN	N/A	2-36" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
425+80	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	CR 1451																										
451+56	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
451+62	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
459+94	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
475+12	X-DRAIN	N/A	42" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
475+88	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
491+00	X-DRAIN	N/A	42" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
518+70	X-DRAIN	N/A	2-6'X6' MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
533+25	X-DRAIN	N/A	SPAN BRIDGE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
538+91	X-DRAIN	N/A	4-9'X9' MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
542+28	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP FOR REFERENCE LOCATION ONLY																										
543+50	LT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP FOR REFERENCE LOCATION ONLY																										
552+12	LT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	8	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UP & DOWNSTREAM FOR REFERENCE LOCATION ONLY																										
554+98	RT	N/A	18" CMP	-	-	-	40	-	-	0.50	0.50	-	-	40	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 40' 18" CMP FOR REFERENCE LOCATION ONLY																										
555+08	LT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP FOR REFERENCE LOCATION ONLY																										
559+85	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
564+26	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
564+72	RT	N/A	18" RCP	-	-	-	3	-	-	2.00	0.50	-	-	11	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 3' UP / ADD 4' UP & DOWNSTREAM FOR REFERENCE LOCATION ONLY																										
567+90	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
576+80	RT	CONC	18" CMP	20	38	38	60	2	29	0.50	0.50	-	-	60	-	-	-	-	2	-	-	-	-	-	29	REMOVE & REPLACE 60' 18" CMP FOR REFERENCE LOCATION ONLY																											
586+74	X-DRAIN	N/A	30' CMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
595+90	X-DRAIN	N/A	24" CMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
602+66	LT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP FOR REFERENCE LOCATION ONLY																										
605+40	LT	N/A	18" CMP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	CR 2924																										
607+65	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	CR 2929																										
609+80	RT	N/A	18" RCP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP FOR REFERENCE LOCATION ONLY																										
611+10	X-DRAIN	N/A	2-48" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
612+10	RT	ACP	18" CMP	-	14	-	24	-	-	0.50	0.50	13	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP FOR REFERENCE LOCATION ONLY																										
613+88	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	CROSSROADS MBC																										
618+08	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UPSTREAM FOR REFERENCE LOCATION ONLY																										
624+75	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP FOR REFERENCE LOCATION ONLY																										
625+54	LT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	3	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP FOR REFERENCE LOCATION ONLY																										
629+80	RT	N/A	8" STL PIPE	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 8" STEEL PIPEN FOR REFERENCE LOCATION ONLY																										
634+50	LT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP FOR REFERENCE LOCATION ONLY																										
637+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR REFERENCE LOCATION ONLY																										
<b>CSJ 1573-01-018 (SHEET 3 OF 4) SUBTOTALS:</b>							<b>467</b>	<b>2</b>	<b>29</b>	<b>17.00</b>	<b>15.50</b>	<b>13</b>	<b>0</b>	<b>448</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>-</b>																											

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 13 OF 64



CONT	SECT	JOB	SHEET
0138	10	029, etc.	18
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

FILE: c:\txdot\pw\_online\txdot\mark.pippen\0314228\Miscellaneous Summaries.xlsm\PS 13  
DATE: 1/28/2021

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 130 CSJ 1573-01-018 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES		
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY			
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"					
															FT	FT	FT	LF	LF	EA	EA	EA	EA	EA					
CSJ 1573-01-018 (SH 11 TO FM 250)(STATION INCREASE EAST TO WEST)																													
641+46	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM FOR LOCATION REFERENCE ONLY	
647+00	X-DRAIN	N/A	4-8"X8" MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
649+25	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
659+45	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY	
666+15	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY	
670+95	RT	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
678+20	RT	N/A	18" CMP	-	-	-	14	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 14' 18" CMP / ADD 6' UPSTRM FOR LOCATION REFERENCE ONLY	
679+05	X-DRAIN	N/A	2-6"X4" MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY	
680+90	LT	N/A	18" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	ADD 4' UPSTREAM	
681+68	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
685+10	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
686+00	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
697+00	X-DRAIN	N/A	2-30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY	
<b>CSJ 1573-01-018 (SHEET 4 OF 4) SUBTOTALS:</b>							<b>17</b>	<b>0</b>	<b>0</b>	<b>4.50</b>	<b>4.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		
<b>CSJ 1573-01-018 (SHEET 3 OF 4) SUBTOTALS:</b>							<b>467</b>	<b>2</b>	<b>29</b>	<b>17.00</b>	<b>15.50</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>448</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29</b>	
<b>CSJ 1573-01-018 (SHEET 2 OF 4) SUBTOTALS:</b>							<b>160</b>	<b>0</b>	<b>0</b>	<b>20.50</b>	<b>18.50</b>	<b>0</b>	<b>3</b>	<b>193</b>	<b>40</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>69</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 1573-01-018 (SHEET 1 OF 4) SUBTOTALS:</b>							<b>88</b>	<b>0</b>	<b>0</b>	<b>11.50</b>	<b>8.50</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>132</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 1573-01-018 TOTALS:</b>							<b>732</b>	<b>2</b>	<b>29</b>	<b>53.50</b>	<b>46.50</b>	<b>23</b>	<b>3</b>	<b>800</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>175</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29</b>	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 994 CSJ 1216-01-008

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY		
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"				
															FT	FT	FT	LF	LF	EA	EA	EA	EA	EA				
SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 994 CSJ 1216-01-008 (CONTINUED)																												
9+00																												FM 994 @ FM 1766 & CR 2472
11+20	RT	N/A	24" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
16+36	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
16+64	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' DOWNSTREAM
17+56	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
19+46	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
21+75	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
23+30	RT	N/A	24" CMP	-	-	-	36	-	-	0.50	0.50	-	-	-	-	36	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 36' 24" CMP
28+32	LT	N/A	18" CMP	-	-	-	34	-	-	0.50	0.50	-	-	-	34	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 34' 18" CMP
41+50	RT	N/A	48" CMP	-	-	-	36	-	-	2.00	0.50	-	-	-	-	-	-	-	36	-	-	-	-	2	-	-	-	REMOVE & REPLACE 36' 48" CMP
41+90	X-DRAIN	N/A	3-8"X7" MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
45+42	X-DRAIN	N/A	4-8"X6" MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
61+03	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
63+08	X-DRAIN	N/A	2-30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
68+10	LT	N/A	18" CPP	-	-	-	40	-	-	0.50	0.50	-	-	-	40	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 40' 18" CPP
69+40	LT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	-	-	24	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP W/24" RCP
71+94	LT	N/A	18" CPP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CPP
80+38	RT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP
80+50	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
88+98	RT	N/A	24" CMP	-	-	-	46	-	-	0.50	0.50	-	-	-	-	46	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 46' 24" CMP
90+34	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
<b>CSJ 1216-01-008 (SHEET 1 OF 2) SUBTOTALS:</b>							<b>262</b>	<b>0</b>	<b>0</b>	<b>9.00</b>	<b>7.50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>124</b>	<b>106</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>20</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>		

- 1 FOR CONTRACTOR INFORMATION ONLY
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NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 14 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	19
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 994 CSJ 1216-01-008 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY		
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"				
															LF	LF	LF	LF	LF	EA	EA	EA	EA	EA				
CSJ 1216-01-008 (FM 1766 TO SH 77)(STATION INCREASE NORTH TO SOUTH)																												
91+16	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
104+13	X-DRAIN	N/A	2-24" RCP																									FOR LOCATION REFERENCE ONLY
105+80	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM (CR 2469)
114+80	X-DRAIN	N/A	3-36" RCP																									FOR LOCATION REFERENCE ONLY
137+51	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
139+02	LT	N/A	24" CPP	-	-	-	34	-	-	0.50	0.50	-	-	-	34	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 34' 24" CPP
142+78	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
147+50	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
150+96	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
157+15	RT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CPP
167+70	RT	N/A	18" CPP	-	-	-	32	-	-	0.50	0.50	-	-	-	32	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 32' 18" CPP
167+69	X-DRAIN	N/A	2-48" RCP																									FOR LOCATION REFERENCE ONLY
<b>CSJ 1216-01-008 (SHEET 2 OF 2) SUBTOTALS:</b>							<b>92</b>	<b>0</b>	<b>0</b>	<b>3.00</b>	<b>3.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>58</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 1216-01-008 (SHEET 1 OF 2) SUBTOTALS:</b>							<b>262</b>	<b>0</b>	<b>0</b>	<b>9.00</b>	<b>7.50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>124</b>	<b>106</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>20</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 1216-01-008 TOTALS:</b>							<b>354</b>	<b>0</b>	<b>0</b>	<b>12.00</b>	<b>10.50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>182</b>	<b>140</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>30</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1766 CSJ 1957-01-009

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY		
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"				
															LF	LF	LF	LF	LF	EA	EA	EA	EA	EA				
CSJ 1957-01-009 (SH 77 TO FM 994)(STATION INCREASE WEST TO EAST)																												
0+00																												FM 1766 @ SH 77
3+40	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
3+50	RT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CPP
10+85	X-DRAIN	N/A	36" RCP																									FOR LOCATION REFERENCE ONLY
12+34	LT	N/A	24" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM
13+44	LT	ACP	18" RCP	-	-	-	6	-	-	0.50	0.50	5	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 6' UPSTREAM (CR 2595)
13+50	LT	N/A	24" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM
13+60	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
24+62	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
25+00	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
26+64	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
34+00	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
41+00	X-DRAIN	N/A	2-48" RCP																									FOR LOCATION REFERENCE ONLY
48+50	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
50+81	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
65+06	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
68+50	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
74+12	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
81+10	RT	N/A	18" CMP	-	-	-	22	-	-	0.50	0.50	-	-	-	22	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 22' 18" CMP
82+00	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
91+08	X-DRAIN	N/A	30" RCP																									FOR LOCATION REFERENCE ONLY
97+10	X-DRAIN	N/A	2-30" RCP																									FOR LOCATION REFERENCE ONLY
110+96	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
<b>CSJ 1957-01-009 (SHEET 1 OF 3) SUBTOTALS:</b>							<b>60</b>	<b>0</b>	<b>0</b>	<b>7.00</b>	<b>7.00</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

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### MISCELLANEOUS SUMMARIES

SHEET 15 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	20
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1766 CSJ 1957-01-009 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES																										
																												STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)
																																FT	FT	FT	LF	LF	SY	CY	STA	SY	EA	18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	EA	EA
CSJ 1957-01-009 (SH 77 TO FM 994)(STATION INCREASE WEST TO EAST)																																																					
113+50	LT	N/A	2-24" CMP	-	-	-	68	-	-	2.00	0.50	-	-	-	68	-	-	-	-	-	4	-	-	-	-	-	-	REMOVE & REPLACE 68' 24" CMP																									
119+09	X-DRAIN	N/A	6-9'X8" MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
143+12	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
154+14	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
161+80	RT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP																										
171+10	LT	N/A	18" CPP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CPP																										
178+00	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
181+95	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																										
192+24	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																										
192+58	X-DRAIN	N/A	24" CMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
199+71	X-DRAIN	N/A	30" CMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
203+17	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
214+91	X-DRAIN	N/A	42" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
219+50	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
220+00	RT	N/A	24" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																										
223+52	LT	N/A	24" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 24' 24" CMP																										
226+08	RT	N/A	24" RCP	-	-	-	-	-	-	2.00	0.50	-	-	-	12	-	-	-	-	2	-	-	-	-	-	-	ADD 6' UP & DOWNSTREAM																										
229+64	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
231+90	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
240+30	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	CR 2593																										
251+62	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
253+70	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
260+62	X-DRAIN	N/A	3-42" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
267+88	RT	N/A	18" RCP	-	-	-	-	-	-	1.00	0.50	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	ADD 6' DOWNSTREAM																										
275+26	X-DRAIN	N/A	24" CMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
276+92	LT	N/A	18" CMP	-	-	-	40	-	-	0.50	0.50	-	-	40	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 40' 18" CMP																										
282+66	RT	N/A	18" RCP	-	-	-	-	-	-	1.00	0.50	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	ADD 6' UPSTREAM																										
286+68	X-DRAIN	N/A	24" CMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
290+54	RT	N/A	18" RCP	-	-	-	12	-	-	0.50	0.50	-	-	12	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UP & DOWNSTREAM																										
293+50	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
293+75	RT	N/A	12" RCP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 12" RCP																										
294+54	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
295+32	X-DRAIN	N/A	24" CMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
297+32	RT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" RCP																										
300+84	LT	N/A	18" CMP	-	-	-	40	-	-	0.50	0.50	-	-	40	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 40' 18" CMP																										
303+70	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM																										
303+85	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
304+46	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
308+62	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' DOWNSTREAM																										
306+82	X-DRAIN	N/A	42" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
311+78	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
318+80	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
318+18	LT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP																										
321+00	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
322+79	X-DRAIN	N/A	30" CMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
324+88	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
326+32	LT	ACP	18" CMP	-	12	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP																										
331+12	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																										
339+12	RT	N/A	18" RCP	-	-	-	12	-	-	0.50	0.50	-	-	12	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UP & DOWNSTREAM																										
343+30	RT	N/A	18" RCP	-	-	-	12	-	-	0.50	0.50	-	-	12	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UP & DOWNSTREAM																										
<b>CSJ 1957-01-009 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>364</b>	<b>0</b>	<b>0</b>	<b>21.00</b>	<b>17.00</b>	<b>11</b>	<b>0</b>	<b>284</b>	<b>104</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>																											

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 16 OF 64



CONT	SECT	JOB	SHEET
0138	10	029, etc.	
DISTRICT	COUNTY	HIGHWAY	21
ATL	CASS	FM 248, etc.	

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DATE: 1/28/2021

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1766 CSJ 1957-01-009 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES			
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	REMOVING CONC (DRIVEWAYS) SY	EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	BLADING STA	CUT & RESTORE ASPH PAVING SY	CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY					
														18"	24"	30"	36"	48"	18"	24"	30"	36"	48"							
														FT	FT	FT	LF	LF	SY	CY	STA	SY	EA			LF		LF	LF	LF
CSJ 1957-01-009 (SH 77 TO FM 994)(STATION INCREASE WEST TO EAST)																														
345+78	RT	N/A	15" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-		
346+54	RT	N/A	15" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-		
346+68	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-		
347+45	LT	N/A	15" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-		
347+92	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-		
348+80	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-		
349+62	RT	N/A	18" RCP	-	16	-	26	-	-	1.00	1.00	15	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	REM 26' 18" RCP REP 40' 24" RCP TO CONNECT TO STA 349+90	
349+90	RT	N/A	24" RCP	-	-	-	-	-	-	1.00	1.00	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY	
351+00	X-DRAIN	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
CSJ 1957-01-009 (SHEET 3 OF 3) SUBTOTALS:							26	0	0	5.00	5.00	15	0	0	40	0	0	0	14	0	0	0	0	0	0	0	0	0	-	
CSJ 1957-01-009 (SHEET 2 OF 3) SUBTOTALS:							364	0	0	21.00	17.00	11	0	284	104	0	0	0	60	10	0	0	0	0	0	0	0	0	0	-
CSJ 1957-01-009 (SHEET 1 OF 3) SUBTOTALS:							60	0	0	7.00	7.00	5	0	48	6	0	0	0	24	4	0	0	0	0	0	0	0	0	0	-
CSJ 1957-01-009 TOTALS:							450	0	0	33.00	29.00	31	0	332	150	0	0	0	98	14	0	0	0	0	0	0	0	0	-	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1841 CSJ 2339-02-012

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES		
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	REMOVING CONC (DRIVEWAYS) SY	EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	BLADING STA	CUT & RESTORE ASPH PAVING SY	CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY				
														18"	24"	30"	36"	48"	18"	24"	30"	36"	48"						
														FT	FT	FT	LF	LF	SY	CY	STA	SY	EA			LF		LF	LF
CSJ 2339-02-012 (FM 251 TO FM 249)(STATION INCREASE NORTH TO SOUTH)																													
0+00				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FM 1841 @ FM 249	
1+80	LT	N/A	18" CPP	-	-	-	36	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 36' 18" CPP FOR LOCATION REFERENCE ONLY	
2+40	X-DRAIN	N/A	2-7'X-5' MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY	
3+00	LT	N/A	24" RCP	-	-	-	-	-	-	5.00	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
3+00	RT	N/A	24" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
4+06	RT	N/A	24" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM	
4+80	LT	N/A	24" RCP	-	-	-	-	-	-	4.00	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
6+00	LT	N/A	24" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
6+78	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
7+45	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	THOMAS STREET	
7+45	LT	N/A	18" RCP	-	-	-	-	-	-	3.00	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
8+30	LT	N/A	18" RCP	-	-	-	12	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UP & DOWNSTREAM	
8+50	RT	N/A	18" RCP	-	-	-	3	-	-	2.00	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 3' UP & DWNSTRM / ADD 8' DS	
8+85	LT	N/A	18" RCP	-	-	-	10	-	-	2.00	0.50	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	ADD 10' UPSTREAM TO CONNECT TO 8+85	
9+25	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
9+28	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
10+00	RT	N/A	18" RCP	-	-	-	-	-	-	2.00	0.50	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	ADD 6' UPSTREAM
10+50	LT	N/A	18" RCP	-	-	-	-	-	-	2.00	0.50	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	ADD 4' UPSTREAM TO CONNECT TO 10+70
10+65	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
10+70	LT	N/A	18" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	ADD 4' UPSTREAM TO CONNECT TO 10+90
10+95	LT	N/A	18" RCP	-	-	-	-	-	-	3.00	0.50	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	CONNECT TO 10+70 (DRISKELL STREET)
11+95	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
12+17	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
12+57	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
13+65	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
14+70	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	
CSJ 2339-02-012 (SHEET 1 OF 4) SUBTOTALS:							67	0	0	31.50	12.00	0	0	86	6	0	0	0	33	10	0	0	0	0	0	0	0	0	-

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 17 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	22
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1841 CSJ 2339-02-012 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES																										
																												STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)
																																										18"	24"	30"	36"	48"	18"	24"	30"	36"	48"		
CSJ 2339-02-012 (FM 251 TO FM 249)(STATION INCREASE NORTH TO SOUTH)																																																					
15+25	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																									
17+25	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																									
18+17	RT	N/A	18" RCP	-	-	-	-	-	-	3.00	0.50	-	-	6	-	-	-	-	-	1	-	-	-	-	-	-	-	ADD 6' UPSTREAM TO CONNECT TO 18+35																									
18+35	RT	N/A	18" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-																									
18+40	LT	N/A	18" CMP	-	-	-	55	-	-	5.00	0.50	-	-	55	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 55' 18" CMP																									
19+64	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
19+70	LT	N/A	18" RCP	-	-	-	-	-	-	5.00	0.50	-	-	12	-	-	-	-	-	2	-	-	-	-	-	-	-	ADD 12' DOWNSTREAM																									
20+53	RT	N/A	18" RCP	-	-	-	3	-	-	10.00	0.50	-	-	28	-	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 3' DS / ADD 12' UP & 16' DWNSTRM																									
20+58	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	KENSEY STREET																									
21+65	RT	N/A	18" RCP	-	-	-	-	2	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
21+80	RT	N/A	18" CMP	22	10	16	24	-	11	10.00	0.50	-	-	46	-	-	-	-	-	2	-	-	-	-	-	11	-	REM & REP 24' 18" CMP / ADD 16' UP & 6' DS																									
22+35	RT	N/A	18"	20	10	32	48	-	16	0.50	0.50	-	-	48	-	-	-	-	-	2	-	-	-	-	-	16	-	REMOVE & REPLACE 48' 18" RCP																									
38+52																												FM 1841 @ SH77																									
46+00	X-DRAIN	N/A	2-30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																									
46+44	LT	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NO WORK AT THIS LOCATION (TREATED)																									
52+57	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
54+64	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	SLEEPY HOLLOW DRIVE																									
54+95	RT	N/A	18" RCP	-	-	-	-	-	-	0.25	0.25	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-																									
56+62	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
60+62	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
62+25	RT	ACP	18" CMP	-	24	-	32	-	-	0.50	0.50	22	-	32	-	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 24' 18" CMP / ADD 4' UP & DS																									
63+71	X-DRAIN	N/A	36" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																									
64+65	LT	N/A	18" RCP	-	-	-	-	-	-	3.00	0.50	-	-	12	-	-	-	-	-	2	-	-	-	-	-	-	-	ADD 12' DOWNSTREAM																									
65+25	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
67+35	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
69+58	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
73+08	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
73+85	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
74+82	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
75+84	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
76+98	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
77+50	RT	ACP	18" RCP	-	-	-	8	-	-	2.00	0.50	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	-	REM 4' AND REP 10' UP & DOWNSTREAM																									
77+70	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
78+72	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
80+46	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
83+70	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
84+10	LT	N/A	18" CMP	-	-	-	36	-	-	0.50	0.50	-	-	36	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 36' 18" CMP																									
84+72	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
85+05	RT	N/A	18" RCP	-	-	-	-	-	-	2.00	0.50	-	-	10	-	-	-	-	-	2	-	-	-	-	-	-	-	-	ADD 10' DOWNSTREAM																								
89+90	LT	CONC	18" CMP	32	22	54	40	-	46	0.50	0.50	-	-	40	-	-	-	-	-	2	-	-	-	-	-	46	-	REMOVE & REPLACE 40' 18" CMP																									
92+32	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
84+05	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																									
96+25	RT	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NO WORK THIS LOCATION (TREATED)																									
99+78	LT	ACP	18" CMP	-	15	-	40	-	-	0.50	0.50	14	-	40	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 40' 18" CMP																									
101+50	LT	N/A	18" RCP	-	-	-	3	-	-	1.00	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE 3' & REPLACE 6' UPSTREAM																									
102+65	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
102+94	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
104+22	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
106+70	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
106+90	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																									
<b>CSJ 2339-02-012 (SHEET 2 OF 4) SUBTOTALS:</b>							<b>289</b>	<b>2</b>	<b>73</b>	<b>58.25</b>	<b>21.25</b>	<b>36</b>	<b>0</b>	<b>391</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>83</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>73</b>	<b>-</b>																									

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 18 OF 64



CONT	SECT	JOB	SHEET
0138	10	029, etc.	23
DISTRICT			

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1841 CSJ 2339-02-012 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES																										
																												STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)
																																										18"	24"	30"	36"	48"	18"	24"	30"	36"	48"		
				FT	FT	FT	LF	LF	SY	CY	STA	SY	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LF	SY																												
CSJ 2339-02-012 (FM 251 TO FM 249)(STATION INCREASE NORTH TO SOUTH)																																																					
109+40	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																									
110+70	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																									
117+68	RT	N/A	18" CPP	-	-	-	32	-	-	0.50	0.50	-	-	-	32	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 32' 18" CPP																									
117+72	LT	ACP	24" CMP	-	14	-	30	-	-	0.50	0.50	14	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 24" CMP																									
122+90	RT	N/A	18" CMP	-	20	-	24	-	-	0.50	0.50	18	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP																									
124+14	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
125+26	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
126+85	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
128+05	RT	N/A	18" CMP	-	-	-	44	-	-	0.50	0.50	-	-	-	44	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 44' 18" CMP																									
129+50	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																									
141+23	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																									
148+06	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
148+92	LT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP																									
150+70	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
150+80	LT	N/A	18" CPP	16	11	26	30	-	11	0.50	0.50	-	-	-	30	-	-	-	-	-	2	-	-	-	-	-	11	REMOVE & REPLACE 30' 18" CPP																									
152+42	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
155+42	RT	N/A	18" RCP	-	-	-	-	-	-	10.00	0.50	-	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	ADD 12' UP & DOWNSTREAM																									
162+85	LT	N/A	18" RCP	-	-	-	-	-	-	5.00	0.50	-	-	-	12	-	-	-	-	-	1	-	-	-	-	-	-	ADD 12' DWNSTRM TO CONNECT TO 163+16																									
163+16	LT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	-	1	-	-	-	-	-	-	REMOVE & REPLACE 24" CMP																									
166+12	RT	N/A	24" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-																									
166+36	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
168+65	RT	N/A	24" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-																									
173+80	LT	ACP	24" CLAY PIPE	-	24	-	48	-	-	2.00	0.50	24	-	-	24	-	-	-	-	-	4	-	-	-	-	-	-	REMOVE & REPLACE 48' 24" CLAY PIPE																									
177+26	RT	N/A	24" CMP	-	-	-	24	-	-	1.00	0.50	-	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 24" 24" CMP																									
178+76	RT	N/A	24" CMP	-	-	-	22	-	-	1.00	0.50	-	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 24" 24" CMP																									
181+18	X-DRAIN	N/A	7-10'X8 MBC																									FOR LOCATION REFERENCE ONLY																									
187+36	RT	N/A	18" CMP	-	-	-	12	-	-	0.50	0.50	-	-	-	12	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 12' 18" CMP																									
191+10	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
198+04	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
199+90	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
199+95	LT	N/A	18" RCP	-	-	-	-	-	-	10.00	0.50	-	-	-	12	-	-	-	-	-	2	-	-	-	-	-	-	ADD 6' UP & DOWNSTREAM																									
201+35	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
203+75	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY																									
210+40	RT	N/A	18" CPP	-	-	-	24	-	-	10.00	0.50	-	-	-	36	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE 24' 18" CPP & REPLACE 36' 18" RCP																									
216+25	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
217+26	RT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CPP																									
221+20	X-DRAIN	N/A	2-7'X5' MBC																									FOR LOCATION REFERENCE ONLY																									
222+75	LT	N/A	2-18" RCP	-	-	-	12	-	-	2.00	0.50	-	-	-	12	-	-	-	-	-	4	-	-	-	-	-	-	REM & REP 12' UPSTREAM (CR 4674)																									
224+16	RT	CONC	18" CPP	20	12	30	30	-	16	4.00	0.50	-	-	-	42	-	-	-	-	-	2	-	-	-	-	-	16	REMOVE 30' 18" CPP & REPLACE 42' 18" RCP																									
227+90	LT	N/A	18" RCP	-	-	-	-	-	-	6.00	0.50	-	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	ADD 10' UP & DOWNSTREAM																									
228+05	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
237+90	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
239+41	X-DRAIN	N/A	30" RCP																									FOR LOCATION REFERENCE ONLY																									
242+02	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
248+56	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
252+10	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
252+68	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
255+28	LT	CONC	18" CMP	22	10	30	36	-	13	0.50	0.50	-	-	-	36	-	-	-	-	-	2	-	-	-	-	-	13	REMOVE & REPLACE 36' 18" CMP																									
255+70	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
256+16	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																									
<b>CSJ 2339-02-012 (SHEET 3 OF 4) SUBTOTALS:</b>							<b>442</b>	<b>0</b>	<b>40</b>	<b>68.50</b>	<b>21.50</b>	<b>56</b>	<b>0</b>	<b>410</b>	<b>102</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>74</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>-</b>																										

- 1 FOR CONTRACTOR INFORMATION ONLY
- 2 VERIFY IN FIELD
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NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 19 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1841 CSJ 2339-02-012 (CONTINUED)

LOCATION		EXISTING		[1]			[2]		104	132	150	400	[3]	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES				
		STATION	LT / RT / CROSS STRUCT DIM	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	*L	*W1	*W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)		DRIVEWAYS (CONC)			
FT	FT					FT	LF	LF	SY	CY	STA	SY	EA	18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	EA	EA	EA		EA	EA	LF	SY
CSJ 2339-02-012 (FM 251 TO FM 249)(STATION INCREASE NORTH TO SOUTH)																															
257+70	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
261+20	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
261+60	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
261+80	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	CR 4670				
271+40	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
273+17	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY				
274+82	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
278+70	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
280+50	RT	N/A	24" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
284+92	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
285+60	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM				
298+69	X-DRAIN	N/A	SPAN BRIDGE																								FOR LOCATION REFERENCE ONLY				
320+54	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY				
340+54	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	CR 4667				
340+73	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM				
341+85	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY				
350+08	RT	N/A	18" CPP	-	-	-	24	-	-	1.00	0.50	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE 24' 18" CPP & REPLACE 30' 18" RCP				
357+56	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
364+08	X-DRAIN	N/A	3-8'X7' MBC																								FOR LOCATION REFERENCE ONLY				
364+48	LT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	2	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP				
371+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY				
374+36	LT	N/A	18" CPP	-	-	-	30	-	-	0.50	0.50	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CPP				
375+14	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
376+06	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
382+14	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
392+32	LT	N/A	18" CMP	-	-	-	50	-	-	0.50	0.50	-	-	50	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 50' 18" CMP				
395+00	LT	N/A	15" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
401+60	RT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CPP				
412+62	LT	CONC	18" CPP	16	13	30	20	-	13	0.50	0.50	-	-	20	-	-	-	-	-	2	-	-	-	-	-	13	REMOVE & REPLACE 20' 18" CPP				
414+46	LT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	REM & REP 20' 18" CPP				
419+16	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
426+82	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
429+30	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-				
430+00	LT	N/A	18" RCP	-	-	-	12	-	-	2.00	0.50	-	-	12	-	-	-	-	-	2	-	-	-	-	-	-	ADD 6' UP & DOWNSTREAM				
432+08	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY				
433+12	RT	ACP	18" STL PIPE	-	12	-	30	-	-	0.50	0.50	11	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" STEEL PIPE				
433+12	LT	ACP	18" STL PIPE	-	16	-	30	-	-	0.50	0.50	15	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" STEEL PIPE				
434+54	LT	ACP	18" STL PIPE	-	15	-	28	-	-	0.50	0.50	14	-	28	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 28' 18" STEEL PIPE				
437+40	RT	N/A	18" STL PIPE	-	-	-	30	-	-	0.50	0.50	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" STEEL PIPE				
440+28	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY				
<b>CSJ 2339-02-012 (SHEET 4 OF 4) SUBTOTALS:</b>							<b>326</b>	<b>0</b>	<b>13</b>	<b>18.50</b>	<b>16.00</b>	<b>40</b>	<b>0</b>	<b>314</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>				
<b>CSJ 2339-02-012 (SHEET 3 OF 4) SUBTOTALS:</b>							<b>442</b>	<b>0</b>	<b>40</b>	<b>68.50</b>	<b>21.50</b>	<b>56</b>	<b>0</b>	<b>410</b>	<b>102</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>74</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>			
<b>CSJ 2339-02-012 (SHEET 2 OF 4) SUBTOTALS:</b>							<b>289</b>	<b>2</b>	<b>73</b>	<b>58.25</b>	<b>21.25</b>	<b>36</b>	<b>0</b>	<b>391</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>83</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>73</b>		
<b>CSJ 2339-02-012 (SHEET 1 OF 4) SUBTOTALS:</b>							<b>67</b>	<b>0</b>	<b>0</b>	<b>31.50</b>	<b>12.00</b>	<b>0</b>	<b>0</b>	<b>86</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 2339-02-012 TOTALS:</b>							<b>1,124</b>	<b>2</b>	<b>126</b>	<b>176.75</b>	<b>70.75</b>	<b>132</b>	<b>0</b>	<b>1,201</b>	<b>108</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>252</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>126</b>		

[1] FOR CONTRACTOR INFORMATION ONLY

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

[2] VERIFY IN FIELD

[3] TO BE USED AS DIRECTED BY ENGINEER

[4] CONTACT GULF SOUTH PIPELINE COMPANY REPRESENTATIVE BEFORE WORK CAN BE PERFORMED AT STATION 414+46 ON FM 1841 / CALL 903-576-1147

### MISCELLANEOUS SUMMARIES

SHEET 20 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	25
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	



## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1841 CSJ 1758-01-012

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES
									6017	6021	6001	6008	6009	6003	6005	6007	6008	6010	6363	6395	6423	6454	6480	6007	6004		
		STATION	LT / RT / CROSS STRUCT						SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	REMOVING CONC (DRIVEWAYS) SY	EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	BLADING STA	CUT & RESTORE ASPH PAVING SY	CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)	
												18"	24"	30"	36"	48"	18"	24"	30"	36"	48"						
												EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
CSJ 1758-01-012 (SH 43 TO FM 251)(STATION INCREASE WEST TO EAST)																											
0+00																											FM 1841 @ SH 43
1+35	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
1+80	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP
1+90	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 4' 18" RCP
4+44	RT	N/A	18" RCP	-	-	-	-	-	-	2.00	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	ADD 6' 18" RCP UPSTREAM
6+15	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
6+70	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
7+52	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
13+68	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
15+70	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
18+18	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
31+65	RT	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NO WORK TO BE DONE (TREATED)
32+14	LT	N/A	18" RCP	-	-	-	-	-	-	2.00	0.50	-	-	-	8	-	-	-	-	2	-	-	-	-	-	-	ADD 4' UP & DOWNSTREAM
32+70	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM
33+55	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 4' UPSTREAM
34+60	LT	N/A	18" RCP	-	-	-	-	-	-	4.00	0.50	-	-	-	12	-	-	-	-	2	-	-	-	-	-	-	ADD 6' UP & DOWNSTREAM
37+08	LT	N/A	18" RCP	-	-	-	-	-	-	2.00	0.50	-	-	-	8	-	-	-	-	2	-	-	-	-	-	-	ADD 4' UP & DOWNSTREAM
38+48	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 6' DOWNSTREAM
40+62	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
41+30	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
41+46	LT	N/A	18" RCP	-	-	-	-	1	-	4.00	0.50	-	-	-	12	-	-	-	-	2	-	-	-	-	-	-	ADD 6' UP & DOWNSTREAM
44+60	LT	N/A	18" RCP	-	-	-	-	1	-	2.00	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	ADD 6' UPSTREAM
44+70	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
46+00	X-DRAIN	N/A	3-6'X5' MBC																								FOR LOCATION REFERENCE ONLY
50+15	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	CR 4235
54+98	LT	CONC	18" CMP	14	10	19	24	-	8	0.50	0.50	-	-	-	24	-	-	-	-	2	-	-	-	-	-	8	REMOVE & REPLACE 24' 18" CMP
56+44	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
61+10	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM
63+76	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
63+96	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
71+35	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
73+72	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
75+86	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
78+56	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
80+14	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
84+50	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
86+44	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
87+70	X-DRAIN	N/A	2-24" RCP																								FOR LOCATION REFERENCE ONLY
89+26	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	CR 4227
91+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
91+54	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	10	-	-	-	-	2	-	-	-	-	-	-	REMOVE 4' & REPLACE 10' DOWNSTREAM
95+40	LT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP
97+55	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
103+85	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
109+90	LT	N/A	18" RCP	-	-	-	-	-	-	2.00	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	ADD 6' UPSTREAM
110+95	RT	N/A	18" CMP	-	-	-	18	-	-	0.50	0.50	-	-	-	18	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 18' 18" CMP
112+50	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
113+40	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
114+50	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
117+26	LT	N/A	18" RCP	-	-	-	-	1	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
<b>CSJ 1758-01-012 (SHEET 1 OF 2) SUBTOTALS:</b>							<b>126</b>	<b>3</b>	<b>8</b>	<b>34.00</b>	<b>19.50</b>	<b>0</b>	<b>0</b>	<b>190</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>78</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>-</b>

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 21 OF 64



CONT	SECT	JOB	SHEET
0138	10	029, etc.	26
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

FILE: c:\xdot\pw\_online\tdot6\mark.pippen\0314228\Miscellaneous\_Summaries\_xls\mPS 21 DATE: 1/28/2021

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1841 CSJ 1758-01-012 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES																										
																												STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)
																																										18"	24"	30"	36"	48"	18"	24"	30"	36"	48"		
				FT	FT	FT	LF	LF	SY	CY	STA	SY	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LF	SY																												
CSJ 1758-01-012 (SH 43 TO FM 251)(STATION INCREASE WEST TO EAST)																																																					
120+25	X-DRAIN	N/A	3-36" RCP																								FOR LOCATION REFERENCE ONLY																										
121+34	LT	N/A	18" RCP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP																										
124+88	LT	N/A	24" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 6' 24" RCP UPSTREAM																										
132+44	RT	N/A	24" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																										
134+00	X-DRAIN	N/A	3-36" RCP																							FOR LOCATION REFERENCE ONLY																											
144+72	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																										
145+92	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-																										
150+40	X-DRAIN	N/A	2-30" RCP																							FOR LOCATION REFERENCE ONLY																											
165+35	X-DRAIN	N/A	24" RCP																							FOR LOCATION REFERENCE ONLY																											
170+45	RT	N/A	18" CPP	-	-	-	30	-	-	0.50	0.50	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CPP																										
175+84	LT	CONC	18" CPP	25	12	24	25	-	50.00	0.50	0.50	-	-	25	-	-	-	-	2	-	-	-	-	-	50	-	REMOVE & REPLACE 25' 18" CPP																										
176+74	X-DRAIN	N/A	2-36" RCP																							FOR LOCATION REFERENCE ONLY																											
179+85	X-DRAIN	N/A	3-36" RCP																							FOR LOCATION REFERENCE ONLY																											
185+62	X-DRAIN	N/A	30" RCP																							FOR LOCATION REFERENCE ONLY																											
194+15	X-DRAIN	N/A	2-24" RCP																							FOR LOCATION REFERENCE ONLY																											
197+20	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
202+58	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																										
207+00	X-DRAIN	N/A	24" RCP																							FOR LOCATION REFERENCE ONLY																											
207+22	X-DRAIN	N/A	24" RCP																							FOR LOCATION REFERENCE ONLY																											
<b>CSJ 1758-01-012 (SHEET 2 OF 2) SUBTOTALS:</b>							<b>85</b>	<b>0</b>	<b>50</b>	<b>4.50</b>	<b>4.50</b>	<b>0</b>	<b>0</b>	<b>79</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>																												
<b>CSJ 1758-01-012 (SHEET 1 OF 2) SUBTOTALS:</b>							<b>126</b>	<b>3</b>	<b>8</b>	<b>34.00</b>	<b>19.50</b>	<b>0</b>	<b>0</b>	<b>190</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>78</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>																												
<b>CSJ 1758-01-012 TOTALS:</b>							<b>211</b>	<b>3</b>	<b>58</b>	<b>38.50</b>	<b>24.00</b>	<b>0</b>	<b>0</b>	<b>269</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>92</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>58</b>																												

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1841 CSJ 2576-01-014

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES																										
																												STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)
																																										18"	24"	30"	36"	48"	18"	24"	30"	36"	48"		
				FT	FT	FT	LF	LF	SY	CY	STA	SY	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LF	SY																												
CSJ 2576-01-014 (US 59 TO FM 248)(STATION INCREASE WEST TO EAST)																																																					
0+00																											FM 1841 @ US 59																										
12+00	LT	N/A	24" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	ADD 4' UPSTREAM																										
12+25	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
19+60	LT	N/A	24" CPP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NO WORK (OUT OF CLEAR ZONE)																										
24+75	LT	N/A	2-24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NO WORK (OFF ROW)																										
25+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
28+35	LT	N/A	2-24" RCP	-	-	-	-	-	-	320.00	2.00	-	-	-	12	-	-	-	-	12	-	-	-	-	-	-	ADD 12' UPSTREAM																										
34+80	X-DRAIN	N/A	4-10'X9' MBC																								FOR LOCATION REFERENCE ONLY																										
40+60	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
58+28	X-DRAIN	N/A	3-36" RCP																								FOR LOCATION REFERENCE ONLY																										
68+30	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
76+00	X-DRAIN	N/A	3-42" RCP																								FOR LOCATION REFERENCE ONLY																										
99+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
103+30	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
112+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY																										
122+00	X-DRAIN	N/A	30" RCP																								FOR LOCATION REFERENCE ONLY																										
126+00	X-DRAIN	N/A	30" RCP																								FOR LOCATION REFERENCE ONLY																										
<b>CSJ 2576-01-014 (SHEET 1 OF 3) SUBTOTALS:</b>							<b>0</b>	<b>0</b>	<b>0</b>	<b>321.00</b>	<b>2.50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>																												

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 22 OF 64

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	27
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1841 CSJ 2576-01-014 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES
									6017	6021	6001	6008	6009	6003	6005	6007	6008	6010	6363	6395	6423	6454	6480	6007	6004		
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)		
				FT	FT	FT	LF	LF	SY	CY	STA	SY	EA	18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	EA	EA	EA	
CSJ 2576-01-014 (US 59 TO FM 248)(STATION INCREASE WEST TO EAST)																											
139+00	X-DRAIN	N/A	42" RCP																								FOR LOCATION REFERENCE ONLY
153+45	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
160+25	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
170+00	X-DRAIN	N/A	2-36" RCP																								FOR LOCATION REFERENCE ONLY
181+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
190+40	X-DRAIN	N/A	36" RCP																								FOR LOCATION REFERENCE ONLY
197+42	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
210+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
224+31	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
231+68	X-DRAIN	N/A	30" RCP																								FOR LOCATION REFERENCE ONLY
252+17	X-DRAIN	N/A	3-8'X6' MBC																								FOR LOCATION REFERENCE ONLY
259+80	LT	N/A	18" RCP	-	-	-	-	-	-	2.00	0.50	-	-	12	-	-	-	-	2	-	-	-	-	-	-	-	ADD 6' UP & DOWNSTREAM
260+95	RT	N/A	18" CMP	-	-	-	-	-	-	0.50	0.50	-	-	22	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 22' 18" CMP
265+30	X-DRAIN	N/A	2-30" RCP																								FOR LOCATION REFERENCE ONLY
266+56	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
267+58	RT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP
275+64	X-DRAIN	N/A	36" RCP																								FOR LOCATION REFERENCE ONLY
282+78	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
283+16	RT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM
286+84	X-DRAIN	N/A	2-30" RCP																								FOR LOCATION REFERENCE ONLY
291+08	RT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP
291+50	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
298+00	X-DRAIN	N/A	30" RCP																								FOR LOCATION REFERENCE ONLY
301+24	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
302+10	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	CR 1927
304+12	RT	CONC	18" RCP	25	13	28	20	-	19	0.50	0.50	-	-	20	-	-	-	-	2	-	-	-	-	-	-	19	REM & REP 20' DAMAGED 18" RCP
307+24	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
308+90	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' DOWNSTREAM
313+00	X-DRAIN	N/A	30" RCP																								FOR LOCATION REFERENCE ONLY
319+96	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
320+10	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
323+12	X-DRAIN	N/A	30" RCP																								FOR LOCATION REFERENCE ONLY
323+94	LT	N/A	24" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
329+02	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
329+50	RT	N/A	18" RCP	-	-	-	6	-	-	2.00	0.50	-	-	18	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 6' UP / ADD 6' UP & DOWNSTREAM
329+73	X-DRAIN	N/A	36" RCP																								FOR LOCATION REFERENCE ONLY
334+69	X-DRAIN	N/A	36" RCP																								FOR LOCATION REFERENCE ONLY
338+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
346+00	X-DRAIN	N/A	36" RCP																								FOR LOCATION REFERENCE ONLY
353+50	X-DRAIN	N/A	36" RCP																								FOR LOCATION REFERENCE ONLY
364+50	X-DRAIN	N/A	2-6'X3' MBC																								FOR LOCATION REFERENCE ONLY
678+47	X-DRAIN	N/A	SPAN BRIDGE																								FOR LOCATION REFERENCE ONLY
393+65	X-DRAIN	N/A	3-8'X7' MBC																								FOR LOCATION REFERENCE ONLY
405+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
408+47	X-DRAIN	N/A	2-42" RCP																								FOR LOCATION REFERENCE ONLY
409+20	LT	N/A	18" CMP	-	-	-	36	-	-	0.50	0.50	-	-	36	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 36' 18" CMP
413+38	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
418+64	LT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24" 18" CMP
422+50	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
428+65	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY
<b>CSJ 2576-01-014 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>146</b>	<b>0</b>	<b>19</b>	<b>13.50</b>	<b>10.00</b>	<b>0</b>	<b>0</b>	<b>192</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>-</b>	

- 1 FOR CONTRACTOR INFORMATION ONLY
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- 3 TO BE USED AS DIRECTED BY ENGINEER

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 23 OF 64

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	28
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 1841 CSJ 2339-02-012 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104	132	132	150	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	132 6021 BLADING STA	150 6001 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY		
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"				
															LF	LF	LF	LF	LF	EA	EA	EA	EA	EA				
CSJ 2339-02-012 (FM 251 TO FM 249)(STATION INCREASE NORTH TO SOUTH)																												
437+66	X-DRAIN	N/A	30" RCP																									FOR LOCATION REFERENCE ONLY
441+90	X-DRAIN	N/A	48" RCP																									FOR LOCATION REFERENCE ONLY
445+42	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
454+60	X-DRAIN	N/A	2-42" RCP																									FOR LOCATION REFERENCE ONLY
456+25	LT	N/A	30" CPP	-	-	-	30	-	-	2.00	0.50	-	-	-	-	30	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 30' 30" CPP
457+52	RT	N/A	18" CMP	-	-	-	28	-	-	0.50	0.50	-	-	-	-	28	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 28' 18" CMP
458+95	RT	N/A	18" RCP	-	-	-	-	-	-	2.00	0.50	-	-	-	-	12	-	-	-	-	2	-	-	-	-	-	-	ADD 6' UP & DOWNSTREAM
461+08	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
465+71	X-DRAIN	N/A	30" RCP																									FOR LOCATION REFERENCE ONLY
470+54	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
475+00	X-DRAIN	N/A	24" RCP																									FOR LOCATION REFERENCE ONLY
477+86	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
479+24	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
479+90	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM
481+70	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
488+56	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
497+56	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
499+74	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
501+40	X-DRAIN	N/A	36" RCP																									FOR LOCATION REFERENCE ONLY
508+64	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
509+63	X-DRAIN	N/A	2-30" RCP																									FOR LOCATION REFERENCE ONLY
516+15	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
523+99	X-DRAIN	N/A	2-24" RCP																									FOR LOCATION REFERENCE ONLY
<b>CSJ 2576-01-014 (SHEET 3 OF 3) SUBTOTALS:</b>							<b>64</b>	<b>0</b>	<b>0</b>	<b>9.50</b>	<b>6.50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 2576-01-014 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>146</b>	<b>0</b>	<b>19</b>	<b>13.50</b>	<b>10.00</b>	<b>0</b>	<b>0</b>	<b>192</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	
<b>CSJ 2576-01-014 (SHEET 1 OF 3) SUBTOTALS:</b>							<b>0</b>	<b>0</b>	<b>0</b>	<b>321.00</b>	<b>2.50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 2576-01-014 TOTALS:</b>							<b>210</b>	<b>0</b>	<b>19</b>	<b>344.00</b>	<b>19.00</b>	<b>0</b>	<b>0</b>	<b>192</b>	<b>16</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>16</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 125 CSJ 0546-09-043

LOCATION		EXISTING		1	1	1	2	2	104	132	150.00	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES	
STATION	LT / RT / CROSS STRUCT DIM	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	*L	*W1	*W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150.00 6001.00 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY		
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"				
															LF	LF	LF	LF	LF	EA	EA	EA	EA	EA				
CSJ 0546-09-043 (SH 43 TO LOUISIANA STATE LINE)(STATION INCREASE WEST TO EAST)																												
0+00																												FM 125 @ SH 43
1+80	RT	N/A	18" RCP	-	-	-	15	-	-	0.50	0.50	-	-	-	15	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 12' UP & 3' DOWNSTREAM
2+00	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
2+98	RT	N/A	18" RCP	-	-	-	12	-	-	0.50	0.50	-	-	-	12	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UP & DOWNSTREAM
6+80	RT	N/A	18" RCP	-	-	-	12	-	-	0.50	0.50	-	-	-	12	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UP & DOWNSTREAM
7+35	LT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP
8+78	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
9+71	X-DRAIN	N/A	24" CGM																									FOR LOCATION REFERENCE ONLY
17+26	RT	N/A	18" STL PIPE	-	-	-	18	-	-	0.50	0.50	-	-	-	18	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 18' 18" STEEL PIPE
22+18	RT	N/A	18" STL PIPE	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" STEEL PIPE
22+62	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
<b>CSJ 0546-09-043 (SHEET 1 OF 4) SUBTOTALS:</b>							<b>111</b>	<b>0</b>	<b>0</b>	<b>4.50</b>	<b>4.50</b>	<b>0</b>	<b>0</b>	<b>111</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT, BLADING, AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 24 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	29
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 125 CSJ 0546-09-043 (CONTINUED)

LOCATION		EXISTING		1		2		104 6017		132 6021		150 6001		400 6008		3 420 6009		464					467					496		530		REMARKS / NOTES																																								
																		6003					6005					6007					6008					6010					6363					6395					6423					6454					6480					6007		6004		
																		STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	REMOVING CONC (DRIVEWAYS) SY	EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	BLADING STA	CUT & RESTORE ASPH PAVING SY	CL A CONC (COLLAR) EA		RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY																												
18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	EA	EA	EA															EA	EA	EA	EA	EA																																				
CSJ 0546-09-043 (SH 43 TO LOUISIANA STATE LINE)(STATION INCREASE WEST TO EAST)																																																																								
24+56	RT	N/A	18" RCP	-	-	-	-	-	-	2.00	0.50	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	ADD 6' DOWNSTREAM TO CONNECT TO STAT ION 24+90																																							
24+90	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-																																								
27+72	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																								
29+92	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																																							
33+55	LT	N/A	18" RCP	-	-	-	8	-	-	2.00	0.50	-	-	-	8	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	ADD 4' UP & DOWNSTREAM																																							
36+70	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																																							
39+78	LT	N/A	18" CMP	-	-	-	32	-	-	1.00	0.50	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 32' 24" CMP																																							
43+56	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP																																							
45+25	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																																							
47+98	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-																																							
56+06	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-																																							
56+55	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-																																							
61+00	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-																																							
65+85	RT	ACP	18" CMP	-	14	-	22	-	-	0.50	0.50	13	-	-	22	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 22' 18" CMP (CR 1785)																																						
66+05	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REM & REP 4' DOWNSTREAM (CR 1887)																																						
67+67	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																																							
73+18	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UPSTREAM																																							
73+70	RT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	-	8	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UP & DOWNSTREAM																																							
73+98	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM																																							
74+40	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-																																							
74+50	RT	N/A	18" CPP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CPP																																						
74+72	LT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP																																						
80+20	LT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP																																						
84+91	X-DRAIN	N/A	2-30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																																							
93+93	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																																							
102+30	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-																																							
102+40	RT	N/A	18" RCP	-	-	-	10	-	-	0.50	0.50	-	-	-	10	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REM & REP 6' UP & 4' DWNSTRM (CR 1786)																																						
104+54	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-																																							
106+76	LT	N/A	18" CMP	-	-	-	34	-	-	0.50	0.50	-	-	-	34	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 34' 18" CMP																																						
109+02	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-																																							
111+70	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-																																							
126+20	LT	N/A	18" CMP	-	-	-	20	-	-	1.00	0.50	-	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE 20' 18" CMP & REPLACE 24'																																						
129+50	X-DRAIN	N/A	4-30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																																						
133+80	RT	ACP	18" STL PIPE	-	14	-	26	-	-	0.50	0.50	13	-	-	26	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 26' STEEL PIPE																																						
139+05	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM																																						
139+60	RT	N/A	18" RCP	-	-	-	12	-	-	0.50	0.50	-	-	-	12	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UP & DOWNSTREAM																																						
141+90	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-																																							
146+65	RT	N/A	18" CMP	-	-	-	44	-	-	0.50	0.50	-	-	-	44	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 44' 18" CMP																																						
152+50	RT	N/A	18" CMP	-	-	-	50	-	-	0.50	0.50	-	-	-	50	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 50' 18" CMP																																						
156+46	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																																						
161+00	LT	N/A	30" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-																																							
165+94	LT	N/A	18" RCP	-	-	-	28	-	-	2.00	0.50	-	-	-	36	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REM & REP 28' 18" CPP / ADD 4' UP & DS																																						
175+30	X-DRAIN	N/A	3-7'X5- MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																																						
198+00	X-DRAIN	N/A	2-8'X6' MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																																						
201+40	X-DRAIN	N/A	30" CMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY																																						
212+48	LT	N/A	2-48" CMP	-	-	-	48	-	-	2.00	0.50	-	-	-	-	-	-	-	-	-	48	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 48' 48" CMP TREAT UPSTRM ONLY																																						
219+17	X-DRAIN	N/A	5-10'X7' MBC	-</																																																																				

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 125 CSJ 0546-09-043 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES																										
																												STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)
																																										18"	24"	30"	36"	48"	18"	24"	30"	36"	48"		
CSJ 0546-09-043 (SH 43 TO LOUISIANA STATE LINE)(STATION INCREASE WEST TO EAST)																																																					
250+60	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																								
253+60	X-DRAIN	N/A	3-24" RCP																										FOR LOCATION REFERENCE ONLY																								
256+95	X-DRAIN	N/A	4-36" RCP																										FOR LOCATION REFERENCE ONLY																								
266+42	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY																								
270+19	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY																								
274+95	X-DRAIN	N/A	2-24" RCP																										FOR LOCATION REFERENCE ONLY																								
278+86	RT	N/A	18" CPP	-	-	-	60	-	-	0.50	0.50	-	-	-	60	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 60' 18" CPP																								
282+29	X-DRAIN	N/A	18" CMP																										FOR LOCATION REFERENCE ONLY																								
288+34	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY																								
290+06	LT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	-	8	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UP & DOWNSTREAM																								
299+16	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY																								
303+65	RT	N/A	18: CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP																								
308+49	X-DRAIN	N/A	36" CMP																										FOR LOCATION REFERENCE ONLY																								
314+10	X-DRAIN	N/A	2-24" RCP																										FOR LOCATION REFERENCE ONLY																								
317+24	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' DOWNSTREAM																								
317+72	LT	N/A	18" CMP	-	-	-	50	-	-	0.50	0.50	-	-	-	50	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 50' 18" CMP																								
328+64	LT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP																								
329+80	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY																								
336+20	X-DRAIN	N/A	2-42" RCP																										FOR LOCATION REFERENCE ONLY																								
340+10	X-DRAIN	N/A	3-24" RCP																										FOR LOCATION REFERENCE ONLY																								
349+10	X-DRAIN	N/A	42" RCP																										FOR LOCATION REFERENCE ONLY																								
354+82	RT	N/A	12" STL PIPE	-	-	-	28	-	-	0.50	0.50	-	-	-	28	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 12" STEEL PIPE																								
357+11	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY																								
360+77	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY																								
366+75	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																								
366+90	RT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	-	8	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UP & DOWNSTREAM																								
373+60	X-DRAIN	N/A	2-8'X5' MBC																										FOR LOCATION REFERENCE ONLY																								
378+80	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																								
381+20	RT	N/A	18" CPP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CPP																								
382+48	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP																								
384+58	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM																								
396+03	X-DRAIN	N/A	24" CMP																										FOR LOCATION REFERENCE ONLY																								
403+08	X-DRAIN	N/A	36" RCP																										FOR LOCATION REFERENCE ONLY																								
409+30	LT	ACP	18" CMP	-	24	-	42	-	-	0.50	0.50	22	-	-	42	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 42' 18" CMP																								
411+78	LT	N/A	18" RCP	-	-	-	8	-	-	0.50	0.50	-	-	-	8	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UP & DOWNSTREAM																								
412+23	X-DRAIN	N/A	36" RCP																										FOR LOCATION REFERENCE ONLY																								
412+98	RT	CONC	18" CPP	20	26	49	40	-	-	84	0.50	0.50	-	-	40	-	-	-	-	-	2	-	-	-	-	-	-	84	REMOVE & REPLACE 40' 18" CPP																								
415+00	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																								
422+54	X-DRAIN	N/A	36"X20" CMP																										FOR LOCATION REFERENCE ONLY																								
422+66	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE 2 HEADWALLS & PLACE SETS																								
424+75	RT	CONC	18" CMP	6	4	12	-	-	-	6	0.50	0.50	-	-	12	-	-	-	-	-	2	-	-	-	-	-	-	6	REMOVE & REPLACE 12' 18" CMP																								
427+14	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																								
427+90	RT	N/A	18" STL PIPE	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" STEEL PIPE																								
429+58	RT	ACP	18" CMP	-	28	-	44	-	-	0.50	0.50	26	-	-	44	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 44' 18" CMP																								
430+78	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																								
437+68	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY																								
438+74	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM																								
444+30	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM																								
444+78	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-																								
452+63	X-DRAIN	N/A	24" RCP																										FOR LOCATION REFERENCE ONLY																								
<b>CSJ 0546-09-043 (SHEET 3 OF 4) SUBTOTALS:</b>							<b>421</b>	<b>2</b>	<b>90</b>	<b>13.50</b>	<b>13.50</b>	<b>48</b>	<b>0</b>	<b>433</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>90</b>	<b>-</b>																										

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 26 OF 64



CONT	SECT	JOB	SHEET
0138	10	029, etc.	31
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

FILE: c:\dotpw\_online\dotpw\mark.pippen\0314228\Miscellaneous Summaries.xlsm\PS 26  
DATE: 1/28/2021

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 125 CSJ 0546-09-043 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES					
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY						
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"								
															LF	LF	LF	LF	LF	EA	EA	EA	EA	EA								
CSJ 0546-09-043 (SH 43 TO LOUISIANA STATE LINE)(STATION INCREASE WEST TO EAST)																																
452+90	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	7	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 3' AND ADD 4' DOWNSTREAM				
457+45	RT	N/A	18" CMP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP				
464+76	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY				
467+26	RT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP				
473+02	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UP & DOWNSTREAM				
477+20	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-				
477+60	RT	N/A	8" STL PIPE	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 8" STEEL PIPE				
478+70	LT	N/A	12" RCP	-	-	-	32	-	-	0.50	0.50	-	-	-	32	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 32' 12" RCP				
480+68	LT	N/A	18" CMP	-	-	-	18	-	-	0.50	0.50	-	-	-	18	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 18' 18" CMP				
483+46	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY				
485+75	LT	ACP	12" RCP	-	15	-	30	-	-	0.50	0.50	14	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 12" RCP				
489+74	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY				
491+25	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-				
499+55	RT	N/A	18" CMP	-	-	-	36	-	-	0.50	0.50	-	-	-	36	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 36' 18" CMP				
505+28	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY				
514+68	LT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP				
527+46	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY				
529+26	RT	N/A	18" CMP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-				
533+60	RT	N/A	18" CMP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UPSTREAM				
538+62	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY				
543+96	LT	N/A	18" CPP	-	-	-	20	-	-	0.50	0.50	-	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CPP				
545+26	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY				
546+30	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-				
CSJ 0546-09-043 (SHEET 4 OF 4) SUBTOTALS:							247	0	0	8.00	8.00	14	0	251	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	-		
CSJ 0546-09-043 (SHEET 3 OF 4) SUBTOTALS:							421	2	90	13.50	13.50	48	0	433	0	0	0	0	54	0	0	0	0	0	0	0	0	0	0	0	90	-
CSJ 0546-09-043 (SHEET 2 OF 4) SUBTOTALS:							466	0	0	25.50	18.00	26	0	404	32	0	0	48	66	2	0	0	2	0	0	0	0	0	0	0	0	-
CSJ 0546-09-043 (SHEET 1 OF 4) SUBTOTALS:							111	0	0	4.50	4.50	0	0	111	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	-
CSJ 0546-09-043 TOTALS:							1,245	2	90	51.50	44.00	88	0	1,199	32	0	0	48	170	2	0	0	2	0	0	0	0	0	0	0	90	-

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 2888 CSJ 2919-01-006

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES			
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	L	W1	W2	REMOVE STRUCTURE (PIPE) LF	REMOVE STRUCTURE (HDWL) LF	104 6017 REMOVING CONC (DRIVEWAYS) SY	132 6021 EMBANKMENT (VEHICLE) (ORD COM) (TY C) CY	150 6001 BLADING STA	400 6008 CUT & RESTORE ASPH PAVING SY	3	420 6009 CL A CONC (COLLAR) EA	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE) LF	DRIVEWAYS (CONC) SY				
															18"	24"	30"	36"	48"	18"	24"	30"	36"	48"						
															LF	LF	LF	LF	LF	EA	EA	EA	EA	EA						
CSJ 2919-01-006 (SH 77 TO FM 250)(STATION INCREASE NORTH TO SOUTH)																														
0+00																												FM 2888 @ SH 77		
0+35	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY		
8+48	RT	N/A	18" CPP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CPP		
12+40	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-		
16+48	LT	N/A	18" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	8	-	-	-	-	2	-	-	-	-	-	-	-	ADD 4' UP & DOWNSTREAM		
17+12	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-		
18+85	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-		
19+90	LT	N/A	18" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	ADD 4' UPSTREAM		
20+00	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-		
23+60	X-DRAIN	N/A	2-7'X4' MBC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY		
24+20	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-		
CSJ 2919-01-006 (SHEET 1 OF 3) SUBTOTALS:							30	0	0	5.00	4.00	0	0	42	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	-

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

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 27 OF 64

© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	
DISTRICT	COUNTY	HIGHWAY	32
ATL	CASS	FM 248, etc.	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 2888 CSJ 2919-01-006 (CONTINUED)

LOCATION		EXISTING		1	1	1	2	2	104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES						
									6017	6021	6001	6008	6009	6003	6005	6007	6008	6010	6363	6395	6423	6454	6480	6007	6004								
									REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)								
STATION	LT / RT / CROSS STRUCT	SURFACE	PIPE	L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	SY	CY	STA	SY	EA	18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	EA	EA	EA	EA	EA	LF	SY			
																															N/A / ACP / CONCRETE	STRUCTURE / CMP / RCP / CPP	FT
CSJ 2919-01-006 (SH 77 TO FM 250)(STATION INCREASE NORTH TO SOUTH)																																	
26+85	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-		
27-98	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-		
35+04	X-DRAIN	N/A	2-24" RCP																													FOR LOCATION REFERENCE ONLY	
39+15	X-DRAIN	N/A	30" RCP																													FOR LOCATION REFERENCE ONLY	
39+73	X-DRAIN	N/A	36" RCP																													FOR LOCATION REFERENCE ONLY	
40+55	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	
46+36	LT	N/A	18" CMP	-	-	-	26	-	-	1.00	0.50	-	-	-	32	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REM & REP 26' 18" CMP / ADD 6' DWNSTRM	
48+98	RT	N/A	18" CMP	-	-	-	24	-	-	0.50	0.50	-	-	-	24	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP	
53+24	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	
60+08	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	
60+20	RT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP	
64+56	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM	
66+00	X-DRAIN	N/A	2-24" RCP																														FOR LOCATION REFERENCE ONLY
66+10	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	
71+45	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM	
76+24	RT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UPSTREAM	
77+85	X-DRAIN	N/A	2-36" RCP																														FOR LOCATION REFERENCE ONLY
79+54	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	
84+50	X-DRAIN	N/A	24" RCP																														FOR LOCATION REFERENCE ONLY
92+78	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	
95+75	X-DRAIN	N/A	42" RCP																														FOR LOCATION REFERENCE ONLY
101+24	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	
105+00	X-DRAIN	N/A	24" RCP																														FOR LOCATION REFERENCE ONLY
108+95	LT	N/A	18" RCP	-	-	-	-	-	-	1.00	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	ADD 6' DOWNSTREAM	
112+72	LT	N/A	18" CMP	-	-	-	30	-	-	0.50	0.50	-	-	-	30	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 30' 18" CMP	
116+88	X-DRAIN	N/A	4-8'X5' MBC																														FOR LOCATION REFERENCE ONLY
122+72	LT	N/A	18" RCP	-	-	-	3	-	-	0.50	0.50	-	-	-	3	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 3- DOWNSTREAM	
125+14	RT	N/A	15" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	
125+40	LT	N/A	18" RCP	-	-	-	4	-	-	0.50	0.50	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 4' DOWNSTREAM	
136+25	X-DRAIN	N/A	24" RCP																														FOR LOCATION REFERENCE ONLY
138+24	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
142+98	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
147+04	X-DRAIN	N/A	2-9'X9' MBC																														FOR LOCATION REFERENCE ONLY
152+40	RT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM	
155+55	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
159+30	X-DRAIN	N/A	24" RCP																														FOR LOCATION REFERENCE ONLY
160+58	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
172+00	X-DRAIN	N/A	30" RCP																														FOR LOCATION REFERENCE ONLY
182+44	X-DRAIN	N/A	36" RCP																														FOR LOCATION REFERENCE ONLY
183+40	LT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
186+62	RT	N/A	18" RCP	-	-	-	26	-	-	0.50	0.50	-	-	-	26	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 26' 18" CMP
187+06	RT	N/A	18" CMP	-	-	-	20	2	-	0.50	0.50	-	-	-	20	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP
196+30	RT	N/A	18" CMP	-	-	-	36	-	-	20.00	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 36' 18" CMP
196+33	X-DRAIN	N/A	3-36" RCP																														FOR LOCATION REFERENCE ONLY
203+30	X-DRAIN	N/A	2-10'X6' MBC																														FOR LOCATION REFERENCE ONLY
205+40	RT	N/A	24" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
214+42	X-DRAIN	N/A	24" RCP																														FOR LOCATION REFERENCE ONLY
223+20	RT	N/A	18" RCP	-	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	CR 2752
223+72	X-DRAIN	N/A	30" RCP																														FOR LOCATION REFERENCE ONLY
226+30	LT	N/A	18" RCP	-	-	-	6	-	-	0.50	0.50	-	-	-	6	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UPSTREAM
<b>CSJ 2919-01-006 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>223</b>	<b>2</b>	<b>0</b>	<b>36.50</b>	<b>16.00</b>	<b>0</b>	<b>0</b>	<b>193</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>

- 1 FOR CONTRACTOR INFORMATION ONLY
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- 3 TO BE USED AS DIRECTED BY ENGINEER

NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 28 OF 64



CONT	SECT	JOB	SHEET
0138	10	029, etc.	
DISTRICT	COUNTY	HIGHWAY	33
ATL	CASS	FM 248, etc.	

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## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 2888 CSJ 2919-01-006 (CONTINUED)

LOCATION		EXISTING		1		2		104	132	150	400	3	420	464	464	464	464	464	467	467	467	467	467	496	530	REMARKS / NOTES		
				L	W1	W2	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	6017	6021	6001	6008	6009	6003	6005	6007	6008	6010	6363	6395	6423	6454	6480	6007	6004			
				FT	FT	FT	LF	LF	SY	CY	STA	SY	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA		EA	LF
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	1		2		REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)				
				L	W1	W2	REMOVE STRUCTURE (PIPE)						REMOVE STRUCTURE (HDWL)	18"	24"	30"	36"	48"	18"	24"	30"	36"			48"			
CSJ 2919-01-006 (SH 77 TO FM 250)(STATION INCREASE NORTH TO SOUTH)																												
231+58	X-DRAIN	N/A	2-24" RCP																								FOR LOCATION REFERENCE ONLY	
232+58	RT	N/A	18" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
233+70	RT	N/A	18" CMP	-	-	-	24	-	0.50	0.50	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP	
234+10	LT	N/A	18" CMP	-	-	-	20	-	0.50	0.50	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP	
236+02	LT	N/A	18" CMP	-	-	-	24	-	0.50	0.50	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" CMP	
236+60	RT	N/A	18" CMP	-	-	-	20	-	0.50	0.50	-	-	20	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 20' 18" CMP	
241+50	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY	
241+56	RT	N/A	18" RCP	-	-	-	6	-	0.50	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' DOWNSTREAM	
246+72	RT	N/A	18" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
257+00	X-DRAIN	N/A	24" RCP																								FOR LOCATION REFERENCE ONLY	
264+76	RT	N/A	18" RCP	-	-	-	6	-	0.50	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	-	REM & REP 6' UPSTREAM (CR 2755)	
279+72	RT	N/A	18" RCP	-	-	-	12	-	0.50	0.50	-	-	12	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' UP & DOWNSTREAM	
285+00	X-DRAIN	N/A	36" RCP																								FOR LOCATION REFERENCE ONLY	
296+20	X-DRAIN	N/A	42" RCP																								-	
298+00	RT	N/A	18" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
310+70	RT	N/A	18" RCP	-	-	-	-	2	1.00	0.50	-	-	8	-	-	-	-	-	2	-	-	-	-	-	-	-	ADD 4' UP & DOWNSTREAM	
311+00	LT	N/A	18" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
311+80	X-DRAIN	N/A	2-24" RCP																								FOR LOCATION REFERENCE ONLY	
313+48	LT	N/A	18" RCP	-	-	-	24	2	0.50	0.50	-	-	24	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 24' 18" RCP	
317+74	X-DRAIN	N/A	2-30" RCP																								FOR LOCATION REFERENCE ONLY	
326+30	X-DRAIN	N/A	2-42" RCP																								FOR LOCATION REFERENCE ONLY	
330+56	LT	N/A	18" RCP	-	-	-	-	2	0.50	5.00	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
330+88	RT	N/A	24" RCP	-	-	-	-	-	1.00	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
332+75	RT	N/A	18" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
333+00	LT	N/A	18" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
339+75	X-DRAIN	N/A	30" RCP																								FOR LOCATION REFERENCE ONLY	
348+41	X-DRAIN	N/A	2-24" RCP																								FOR LOCATION REFERENCE ONLY	
352+26	RT	N/A	18" RCP	-	-	-	4	-	0.50	0.50	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 4' UPSTREAM	
355+10	RT	N/A	18" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
356+32	LT	N/A	18" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
358+28	X-DRAIN	N/A	2-24" RCP																								FOR LOCATION REFERENCE ONLY	
361+30	LT	N/A	18" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
367+12	X-DRAIN	N/A	2-24" RCP																								FOR LOCATION REFERENCE ONLY	
374+77	X-DRAIN	N/A	2-24" RCP																								FOR LOCATION REFERENCE ONLY	
384+12	RT	N/A	18" RCP	-	-	-	-	-	1.00	0.50	-	-	8	-	-	-	-	-	2	-	-	-	-	-	-	-	ADD 4' UP & DOWNSTREAM	
390+62	RT	N/A	18" RCP	-	-	-	-	-	1.00	0.50	-	-	8	-	-	-	-	-	2	-	-	-	-	-	-	-	ADD 4' UP & DOWNSTREAM	
394+26	LT	N/A	18" RCP	-	-	-	6	-	0.50	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 6' DOWNSTREAM	
395+48	RT	N/A	18" RCP	-	-	-	3	-	0.50	0.50	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' DOWNSTREAM	
396+96	RT	N/A	18" RCP	-	-	-	6	-	0.50	0.50	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 3' UP & DOWNSTREAM	
402+60	RT	N/A	24" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CORNETT METHODIST CHURCH	
403+50	X-DRAIN	N/A	2-36" RCP																								FOR LOCATION REFERENCE ONLY	
408+00	LT	N/A	18" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
408+58	RT	N/A	18" RCP	-	-	-	-	-	0.50	0.50	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	
408+20	RT	N/A	12" CMP/12" RCP	-	-	-	12	-	0.50	0.50	-	-	12	-	-	-	-	-	2	-	-	-	-	-	-	-	REMOVE & REPLACE 12' 12" CMP/12" RCP	
<b>CSJ 2919-01-006 (SHEET 3 OF 3) SUBTOTALS:</b>							<b>167</b>	<b>6</b>	<b>0</b>	<b>17.00</b>	<b>19.50</b>	<b>0</b>	<b>0</b>	<b>191</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		
<b>CSJ 2919-01-006 (SHEET 2 OF 3) SUBTOTALS:</b>							<b>223</b>	<b>2</b>	<b>0</b>	<b>36.50</b>	<b>16.00</b>	<b>0</b>	<b>0</b>	<b>193</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 2919-01-006 (SHEET 1 OF 3) SUBTOTALS:</b>							<b>30</b>	<b>0</b>	<b>0</b>	<b>5.00</b>	<b>4.00</b>	<b>0</b>	<b>0</b>	<b>42</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 2919-01-006 TOTALS:</b>							<b>420</b>	<b>8</b>	<b>0</b>	<b>58.50</b>	<b>39.50</b>	<b>0</b>	<b>0</b>	<b>426</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>134</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

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NOTE: SEE MISCELLANEOUS SHEETS 61-64 FOR ADDITIONAL QUANTITIES FOR EMBANKMENT AND RCP.

### MISCELLANEOUS SUMMARIES

SHEET 29 OF 64

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	
DISTRICT	COUNTY	HIGHWAY	34
ATL	CASS	FM 248, etc.	

## SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: PROJECT TOTALS

PROJECT TOTALS	2	2	104 6017	132 6021	150 6001	400 6008	3	420 6009	464 6003	464 6005	464 6007	464 6008	464 6010	467 6363	467 6395	467 6423	467 6454	467 6480	496 6007	530 6004	REMARKS / NOTES			
	REMOVE STRUCTURE (PIPE)	REMOVE STRUCTURE (HDWL)	REMOVING CONC (DRIVEWAYS)	EMBANKMENT (VEHICLE) (ORD COM) (TY C)	BLADING	CUT & RESTORE ASPH PAVING	3	CL A CONC (COLLAR)	RC PIPE CL (III)					SET (TYII) (RCP) (6:1)(P)					REMOVE STR (PIPE)	DRIVEWAYS (CONC)				
	LF	LF	SY	CY	STA	SY	EA	EA	18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	EA	EA		EA	EA	EA
<b>PROJECT TOTALS</b>																								
<b>CSJ 0138-10-029 TOTALS:</b>	849	5	85	48.00	42.00	15	0	802	10	0	0	0	160	6	0	0	0	20	85					
<b>CSJ 0138-11-031 TOTALS:</b>	1,341	0	12	57.00	39.00	176	3	1,109	208	16	0	0	136	12	0	0	0	0	12					
<b>CSJ 0277-05-012 TOTALS:</b>	247	0	29	22.75	12.75	36	1	255	24	0	0	0	46	2	0	0	0	0	29					
<b>CSJ 0946-01-045 TOTALS:</b>	890	4	25	92.50	40.00	204	0	914	0	0	0	0	154	0	0	0	0	0	25					
<b>CSJ 0812-01-035 TOTALS:</b>	1,078	2	0	37.00	28.00	113	0	950	46	0	0	0	110	2	0	0	0	0	0					
<b>CSJ 1573-01-018 TOTALS:</b>	732	2	29	53.50	46.50	23	3	800	44	0	0	0	175	4	0	0	0	0	29					
<b>CSJ 1216-01-008 TOTALS:</b>	354	0	0	12.00	10.50	0	0	182	140	0	0	36	30	10	0	0	2	0	0					
<b>CSJ 1957-01-009 TOTALS:</b>	450	0	0	33.00	29.00	31	0	332	150	0	0	0	98	14	0	0	0	0	0					
<b>CSJ 2339-02-012 TOTALS:</b>	1,124	2	126	176.75	70.75	132	0	1,201	108	0	0	0	252	30	0	0	0	0	126					
<b>CSJ 1758-01-012 TOTALS:</b>	211	3	58	38.50	24.00	0	0	269	6	0	0	0	92	4	0	0	0	0	58					
<b>CSJ 2576-01-014 TOTALS:</b>	210	0	19	344.00	19.00	0	0	192	16	76	0	0	38	16	26	0	0	0	19					
<b>CSJ 0546-09-043 TOTALS:</b>	1,245	2	90	51.50	44.00	88	0	1,199	32	0	0	48	170	2	0	0	2	0	90					
<b>CSJ 2919-01-006 TOTALS:</b>	420	8	0	58.50	39.50	0	0	426	0	0	0	0	134	4	0	0	0	0	0					
<b>PROJECT TOTALS</b>	<b>9,151</b>	<b>28</b>	<b>473</b>	<b>1,025.00</b>	<b>445.00</b>	<b>818</b>	<b>7</b>	<b>8,631</b>	<b>784</b>	<b>92</b>	<b>0</b>	<b>84</b>	<b>1,595</b>	<b>106</b>	<b>26</b>	<b>0</b>	<b>4</b>	<b>20</b>	<b>473</b>					

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### MISCELLANEOUS SUMMARIES

SHEET 30 OF 64

CONT	SECT	JOB	SHEET
0138	10	029, etc.	35
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

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## SUMMARY OF EROSION CONTROL: FM 248 CSJ 0138-10-029

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES
				6006	6007	6054	6001	6001	6031	6039	6038	6039	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	3 RIPRAP (CONC) (4 IN)	3 RIPRAP (STONE PROTECTION) (12 IN)	3 BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				CSJ 0138-10-029 (STATIONS INCREASE FROM NORTH TO SOUTH)(SH 43 TO FM 125)									
0+00													FM 248 @ SH 43
2+75	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
4+35	LT	N/A	18" CPP	-	-	70	1.12				10	10	-
5+12	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
11+62	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
16+50	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
22+16	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
24+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
31+06	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
36+84	X-DRAIN	N/A	2-48" RCP										FOR LOCATION REFERENCE ONLY
61+28	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
65+23	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
69+16	RT	N/A	24" RCP	-	-	70	1.12				10	10	-
71+20	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
86+25	LT	N/A	24" RCP	-	-	70	1.12				10	10	-
87+07	X-DRAIN	N/A	2-36" RCP										FOR LOCATION REFERENCE ONLY
88+50	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
89+10	X-DRAIN	N/A	37"X24" ARCH										FOR LOCATION REFERENCE ONLY
95+62	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
96+95	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
100+46	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
103+38	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
104+70	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
149+70	X-DRAIN	N/A	SPAN BRIDGE										FOR LOCATION REFERENCE ONLY
165+15	X-DRAIN	N/A	SPAN BRIDGE										FOR LOCATION REFERENCE ONLY
115+26	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
115+60	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
126+22	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
182+15	X-DRAIN	N/A	SPAN BRIDGE										FOR LOCATION REFERENCE ONLY
203+34	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
208+55	X-DRAIN	N/A	3-30" RCP										FOR LOCATION REFERENCE ONLY
230+20	RT	ACP	18" CMP	-	-	70	1.12				10	10	-
242+10	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
247+83	X-DRAIN	N/A	48" RCP										FOR LOCATION REFERENCE ONLY
248+50	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
260+50	X-DRAIN	N/A	3-48" RCP										FOR LOCATION REFERENCE ONLY
269+50	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
277+69	X-DRAIN	N/A	42" RCP										FOR LOCATION REFERENCE ONLY
278+92	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
282+26	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
283+98	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
284+98	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
286+92	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
289+75	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
293+85	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
295+02	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
297+00	X-DRAIN	N/A	2-37"X21" ARCH										FOR LOCATION REFERENCE ONLY
299+52	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
300+02	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
301+00	X-DRAIN	N/A	2-37"X21" ARCH										FOR LOCATION REFERENCE ONLY
<b>CSJ 0138-10-029 (SHEET 1 OF 3 SUBTOTAL:</b>				<b>0</b>	<b>0</b>	<b>2,030</b>	<b>32.48</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>290</b>	<b>290</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

### MISCELLANEOUS SUMMARIES

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	36
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

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## SUMMARY OF EROSION CONTROL: FM 248 CSJ 0138-10-029 (CONTINUED)

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES
				6006	6007	6054	6001	6001	6031	6039	6038	6039	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING 80 MG/5000 SY	3 RIPRAP (CONC) (4 IN)	3 RIPRAP (STONE PROTECTION) (12 IN)	3 BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				0138-10-029 (STATIONS INCREASE FROM NORTH TO SOUTH)(SH 43 TO FM 125)									
302+84	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
303+44	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
305+45	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
308+32	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
309+52	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
313+50	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
314+45	X-DRAIN	N/A	37"X21" ARCH										FOR LOCATION REFERENCE ONLY
316+14	RT	N/A	18" CPP	-	-	70	1.12				10	10	-
316+94	RT	N/A	18" CPP	-	-	70	1.12				10	10	-
319+65	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
323+64	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
326+30	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
327+10	RT	N/A	24" RCP	-	-	70	1.12				10	10	-
327+60	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
328+12	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
328+45	X-DRAIN	N/A	37"X21" ARCH								10	10	-
0138-10-029 (STATIONS INCREASE FROM SOUTH TO NORTH)(CASS / MORRIS COUNTY LINE TO FM 125)													
371+00			SPAN BRIDGE										FM 248 @ CASS / MORRIS COUNTY LINE
377+00	X-DRAIN	N/A	SPAN BRIDGE								10	10	-
397+44	RT	N/A	12" CMP	-	-	70	1.12				10	10	-
399+15	X-DRAIN	N/A	2-6'X4' MBC										FOR LOCATION REFERENCE ONLY
401+42	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
407+40	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
407+40	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
409+40	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
411+26	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
412+05	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
413+66	LT	N/A	18" RCP	-	-	140	2.24				10	10	-
418+62	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
423+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
424+05	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
426+30	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
434+80	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
439+75	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
443+00	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
449+94	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
453+94	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
456+32	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
460+92	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
466+76	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
468+46	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
469+45	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
471+40	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
478+56	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
479+44	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
481+25	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
486+20	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
486+58	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
488+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
510+00	X-DRAIN	N/A	SPAN BRIDGE										FOR LOCATION REFERENCE ONLY
<b>CSJ 0138-10-029 (SHEET 2 OF 3) SUBTOTAL:</b>				<b>0</b>	<b>0</b>	<b>2,800</b>	<b>44.80</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>410</b>	<b>410</b>	<b>-</b>

3 TO BE USED AS DIRECTED BY ENGINEER

### MISCELLANEOUS SUMMARIES

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	37
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

**SUMMARY OF EROSION CONTROL: FM 248 CSJ 0138-10-029 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE  N/A / ACP/ CONCRETE	PIPE  STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
0138-10-029 (STATIONS INCREASE FROM SOUTH TO NORTH)(CASS / MORRIS COUNTY LINE TO FM 125)													
515+60	X-DRAIN	N/A	SPAN BRIDGE	-	-	70	1.12				10	10	-
523+36	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
531+80	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
539+42	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
546+50	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
553+26	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
555+75	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
558+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
559+02	RT	N/A	18" CPP	-	-	70	1.12				10	10	-
571+16	X-DRAIN	N/A	24"										FOR LOCATION REFERENCE ONLY
574+60	X-DRAIN	N/A	30"										FOR LOCATION REFERENCE ONLY
583+47	X-DRAIN	N/A	3-30" RCP										FOR LOCATION REFERENCE ONLY
586+46	RT	CONC	18" CPP	-	-	70	1.12				10	10	-
586+95	RT	CONC	18" CPP	-	-	70	1.12				10	10	-
600+95	RT	N/A	18" CPP	-	-	70	1.12				10	10	-
601+40	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
605+05	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
609+81	X-DRAIN	N/A	2-8'X5' MBC										FOR LOCATION REFERENCE ONLY
621+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
621+46	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
623+65	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
624+22	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
624+30	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
631+00	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
631+88	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
634+86	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
<b>CSJ 0138-10-029 (SHEET 3 OF 3 SUBTOTALS):</b>				<b>0</b>	<b>0</b>	<b>1,190</b>	<b>19.04</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>170</b>	<b>170</b>	
<b>CSJ 0138-10-029 (SHEET 2 OF 3 SUBTOTALS):</b>				<b>0</b>	<b>0</b>	<b>2,800</b>	<b>44.80</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>410</b>	<b>410</b>	
<b>CSJ 0138-10-029 (SHEET 1 OF 3 SUBTOTALS):</b>				<b>0</b>	<b>0</b>	<b>2,030</b>	<b>32.48</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>290</b>	<b>290</b>	
<b>CSJ 0138-10-029 TOTALS:</b>				<b>0</b>	<b>0</b>	<b>6,020</b>	<b>96.32</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>870</b>	<b>870</b>	

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

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**MISCELLANEOUS  
SUMMARIES**

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	38
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

## SUMMARY OF EROSION CONTROL: FM 248 CSJ 0138-11-031

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES
				6006	6007	6054	6001	6001	6031	6039	6038	6039	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING 80 MG/5000 SY	3 RIPRAP (CONC) (4 IN)	3 RIPRAP (STONE PROTECTION) (12 IN)	3 BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				CSJ 0138-11-031 (STATIONS INCREASE FROM SOUTH TO NORTH)(SH 49 TO MORRIS / CASS COUNTY LINE)									
0+00													FM 248 @ SH 49
0+77	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	NO WORK AT THIS LOCATION
4+13	X-DRAIN	N/A	18" RCP	-	-	-	-	-	-	-	-	-	NO WORK AT THIS LOCATION
4+57	X-DRAIN	N/A	18" RCP	-	-	-	-	-	-	-	-	-	NO WORK AT THIS LOCATION
8+90	RT	N/A	15" STL	-	-	70	1.12	-	-	-	10	10	-
11+27	X-DRAIN	N/A	18" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
12+10	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
14+68	RT	N/A	15" RCP	-	-	70	1.12	-	-	-	10	10	-
17+15	X-DRAIN	N/A	30" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
21+65	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
26+75	X-DRAIN	N/A	30" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
27+22	LT	N/A	24" CMP	-	-	70	1.12	-	-	-	10	10	-
31+49	X-DRAIN	N/A	24" RCP	-	-	250	4.00	2	1	-	40	40	SEE CROSS DRAIN SUMMARIES
32+55	RT	N/A	24" CMP	-	-	70	0.22	-	-	-	10	10	-
37+70	LT	N/A	24" CMP	-	-	70	1.12	-	-	-	10	10	-
38+28	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
42+20	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
44+22	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
46+58	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
47+22	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
49+64	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
50+22	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
50+55	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
53+26	LT	N/A	12" RCP	-	-	70	1.12	-	-	-	10	10	-
60+20	LT	ACP	12" RCP	-	-	70	1.12	-	-	-	10	10	-
60+25	RT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
61+76	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
62+68	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
65+40	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
68+88	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
75+32	LT	ACP	12" RCP	-	-	70	1.12	-	-	-	10	10	-
83+38	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
83+56	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
84+58	LT	N/A	15" RCP	-	-	70	1.12	-	-	-	10	10	-
85+02	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
99+20	X-DRAIN	N/A	36" RCP	-	-	250	4.00	24	12	-	40	40	SEE CROSS DRAIN SUMMARIES
99+50	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
101+95	RT	N/A	12" RCP	-	-	70	1.12	-	-	-	10	10	-
103+12	LT	CONC	18" CMP	-	-	70	1.12	-	-	-	10	10	-
103+45	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
108+70	LT	N/A	12" RCP	-	-	70	1.12	-	-	-	10	10	-
108+88	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
109+38	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
109+90	LT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
112+62	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
114+36	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
119+87	SPAN BRIDGE	N/A	SPAN BRIDGE	-	-	-	-	-	-	-	40	40	FOR LOCATION REFERENCE ONLY
122+05	RT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
128+25	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
130+80	LT	N/	18" RCP	-	-	70	1.12	-	-	-	10	10	-
<b>CSJ 0138-11-031 (SHEET 1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>4,770</b>	<b>75.42</b>	<b>5</b>	<b>26</b>	<b>13</b>	<b>760</b>	<b>760</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

### MISCELLANEOUS SUMMARIES

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	39
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

**SUMMARY OF EROSION CONTROL: FM 248 CSJ 0138-11-031 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (IN) (4)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				CSJ 0138-11-031 (STATIONS INCREASE FROM SOUTH TO NORTH)(SH 49 TO MORRIS / CASS COUNTY LINE)									
133+42	LT	N/A	12" RCP	-	-	35	0.56	-	-	-	10	10	-
134+68	RT	ACP	24" CMP	-	-	35	0.56	-	-	-	10	10	-
135+96	LT	N/A	15" RCP	-	-	35	0.56	-	-	-	10	10	-
137+52	LT	N/A	15" RCP	-	-	35	0.56	-	-	-	10	10	-
138+88	LT	N/A	15" RCP	-	-	35	0.56	-	-	-	10	10	-
139+05	RT	N/A	18" CPP	-	-	35	0.56	-	-	-	10	10	-
141+18	RT	N/A	18" RCP	-	-	35	0.56	-	-	-	10	10	-
143+70	LT	N/A	18" RCP	-	-	35	0.56	-	-	-	10	10	-
146+50	RT	N/A	15" CPP	-	-	35	0.56	-	-	-	10	10	-
146+74	LT	N/A	12" RCP	-	-	35	0.56	-	-	-	10	10	-
147+96	LT	N/A	15" CLAY	-	-	35	0.56	-	-	-	10	10	-
151+55	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
172+28	LT	N/A	18" RCP	-	-	35	0.56	-	-	-	10	10	-
196+76	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
198+36	LT	N/A	12" RCP	-	-	35	0.56	-	-	-	10	10	-
205+55	LT	ACP	12" RCP	-	-	35	0.56	-	-	-	10	10	-
206+72	LT	N/A	24" CMP	-	-	35	0.56	-	-	-	10	10	-
217+44	X-DRAIN	N/A	18" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
218+72	RT	N/A	18" CMP	-	-	35	0.56	-	-	-	10	10	-
240+67	X-DRAIN	N/A	SPAN BRIDGE	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
242+77	X-DRAIN	N/A	18" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
263+00	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
277+77	X-DRAIN	N/A	30" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
282+42	RT	ACP	18" CMP	-	-	35	0.56	-	-	-	10	10	-
284+21	X-DRAIN	N/A	18" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
291+88	X-DRAIN	N/A	18" RCP	-	-	42+AB+L41:AG	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
300+05	X-DRAIN	N/A	30" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
300+30	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
305+18	LT	ACP	18" RCP	-	-	70	1.12	-	-	-	10	10	-
307+88	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
315+13	X-DRAIN	N/A	18" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
316+34	LT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
318+14	RT	ACP	12" STL PIPE	-	-	70	1.12	-	-	-	10	10	-
329+90	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
330+05	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
331+56	RT	N/A	24" CMP	-	-	70	1.12	-	-	-	10	10	-
333+46	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
335+88	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
340+40	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
342+27	X-DRAIN	N/A	2-36" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
343+50	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
345+00	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
349+90	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
353+26	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
354+56	RT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
356+85	X-DRAIN	N/A	2-36" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
361+56	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
362+59	X-ROAD	N/A	N/A	-	-	250	4.00	-	-	-	-	-	FM 248 @ FM 2683
362+66	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
367+30	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
<b>CSJ 0138-11-031 (SHEET 2 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>5,535</b>	<b>88.56</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>900</b>	<b>900</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

**MISCELLANEOUS  
SUMMARIES**

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	40
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

FILE: 5:40:09 PM  
DATE: 1/28/2021

### SUMMARY OF EROSION CONTROL: FM 248 CSJ 0138-11-031 (CONTINUED)

LOCATION		EXISTING		100	100	164	168.00	432	432	432	506	506	REMARKS / NOTES
				6006	6007	6054	6001.00	6001	6031	6039	6038	6039	
STATION	LT / RT / CROSS STRUCT DIM	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	3 RIPRAP (CONC) (4 IN)	3 RIPRAP (STONE PROTECTION) (12 IN)	3 BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 0138-11-031 (STATIONS INCREASE FROM SOUTH TO NORTH)(SH 49 TO MORRIS / CASS COUNTY LINE)													
367+30	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
368+12	LT	N/A	18" RCP	-	-	70	1.12	1			10	10	-
368+26	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
369+62	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
<b>CSJ 0138-11-031 (SHEET 3 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>280</b>	<b>4.48</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>40</b>	
<b>CSJ 0138-11-031 (SHEET 2 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>5,535</b>	<b>88.56</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>900</b>	<b>900</b>	
<b>CSJ 0138-11-031 (SHEET 1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>4,770</b>	<b>75.42</b>	<b>5</b>	<b>26</b>	<b>13</b>	<b>760</b>	<b>760</b>	
<b>CSJ 0138-11-031 TOTALS:</b>				<b>0</b>	<b>0</b>	<b>10,585</b>	<b>168.46</b>	<b>11</b>	<b>26</b>	<b>13</b>	<b>1700</b>	<b>1700</b>	

### SUMMARY OF EROSION CONTROL: FM 250 CSJ 0277-05-012

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES
				6006	6007	6054	6001	6001	6031	6039	6038	6039	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	3 RIPRAP (CONC) (4 IN)	3 RIPRAP (STONE PROTECTION) (12 IN)	3 BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 0277-05-012 (SH 77 TO FM 1399)(STATIONS INCREASE NORTH TO SOUTH)													
0+00													FM 250 @ SH 77
1+60	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
3+48	LT	N/A	12" STL PIPE	-	-	70	1.12				10	10	-
3+65	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
5+00	LT	N/A	18" RCP	1	-	70	1.12				10	10	-
5+24	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
6+02	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
6+58	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
8+90	LT	ACP	12" RCP	-	-	70	1.12				10	10	-
13+66	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
15+37	X-DRAIN	N/A	18" RCP	-	-	-	-				-	-	FOR LOCATION REFERENCE ONLY
20+12	LT	N/A	18" CPP	-	-	70	1.12				10	10	-
21+38	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
22+28	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
24+22	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
24+40	LT	ACP	18" CMP	-	-	70	1.12	4			10	10	-
26+12	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
26+14	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
28+84	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
29+00	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
34+07	X-DRAIN	N/A	4-48" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
39+42	RT	CONC	24" CMP	-	-	70	1.12				10	10	-
44+96	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
46+06	RT	N/A	12" RCP	-	-	70	1.12				10	10	-
52+84	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
53+85	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
54+29	X-DRAIN	N/A	18" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
54+40	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
57+50	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
60+14	RT	N/A	15" RCP	-	-	70	1.12				10	10	-
82+20													FM 250 @ FM 1399
<b>CSJ 0277-05-012 TOTALS:</b>				<b>1</b>	<b>0</b>	<b>2,320</b>	<b>37.12</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>340</b>	

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

### MISCELLANEOUS SUMMARIES

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	41
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	





## SUMMARY OF EROSION CONTROL: FM 250 CSJ 0946-01-045

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES
				6006	6007	6054	6001	6001	6031	6039	6038	6039	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING 80 MG/5000 SY	3 RIPRAP (CONC) (4 IN)	3 RIPRAP (STONE PROTECTION) (12 IN)	3 BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 0946-01-045 (FM 1399 TO FM 130)(STATIONS INCREASE FROM SOUTH TO NORTH)													
													FM 250 @ FM 130 (EAST)
262+68													
263+84	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
263+05	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
268+80	LT	ACP	12" RCP	-	-	70	1.12				10	10	-
280+83	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
287+40	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
296+10	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
296+55	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
299+66	X-DRAIN	N/A	3-36" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
300+05	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
323+59	X-DRAIN	N/A	2-6' X 4' MBC	-	-	-	-				40	40	FOR LOCATION REFERENCE ONLY
327+80	RT	N/A	24" CMP	-	-	140	2.24		48	24	50	50	-
340+86	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
346+43	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
349+80	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
350+10	RT	CONC	18" CPP	-	-	70	1.12				10	10	-
351+44	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
352+66	RT	ACP	12" CMP	-	-	70	1.12				10	10	-
353+94	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
355+72	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
356+72	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
365+82	LT	ACP	18" RCP	-	-	70	1.12				10	10	-
370+75	X-DRAIN	N/A	2-30" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
377+84	RT	ACP	2-18" CMP	-	-	70	1.12				10	10	-
382+50	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
385+46	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
386+75	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
390+06	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
390+55	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
390+60	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
392+32	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
392+90	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
398+25	LT	N/A	12" RCP	-	-	70	1.12				10	10	-
399+60	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
400+32	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
401+60	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
404+50	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
404+96	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
406+48	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
408+20	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
411+40	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
412+75	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
417+80	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
418+71	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
419+88	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
427+32	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
454+45	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
455+00	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
465+45	X-DRAIN	N/A	SPAN BRIDGE	-	-	-	-				-	-	FOR LOCATION REFERENCE ONLY
471+00	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
<b>CSJ 0946-01-045 (SHEET 1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>5,520</b>	<b>88.32</b>	<b>5</b>	<b>48</b>	<b>24</b>	<b>910</b>	<b>910</b>	<b>-</b>

3 TO BE USED AS DIRECTED BY ENGINEER

### MISCELLANEOUS SUMMARIES

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	42
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

## SUMMARY OF EROSION CONTROL: FM 250 CSJ 0946-01-045 (CONTINUED)

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES
				6006	6007	6054	6001	6001	6031	6039	6038	6039	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 0946-01-045 (FM 1399 TO FM 130)(STATIONS INCREASE FROM SOUTH TO NORTH)													
480+20	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
481+48	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
481+89	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
487+26	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
489+75	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
492+53	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
500+42	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
503+21	X-DRAIN	N/A	2-24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
517+50	LT	N/A	12" RCP	-	-	70	1.12	-	-	-	10	10	-
522+92	X-DRAIN	N/A	30" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
523+28	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
527+05	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
529+34	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
532+86	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
533+16	RT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
540+60	X-DRAIN	N/A	4-30" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
550+06	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
551+80													FM 250 @ FM 2888
557+89	X-DRAIN	N/A	18" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
565+46	LT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
568+00	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
570+34	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
576+48	X-DRAIN	N/A	18" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
583+02	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
585+50	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
586+95	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
594+75	X-DRAIN	N/A	3-42" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
603+63	X-DRAIN	N/A	18" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
609+17	X-DRAIN	N/A	3-5'X3' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
628+65	X-DRAIN	N/A	18" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
630+14	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
635+32	LT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
637+50	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
647+08	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
655+92	X-DRAIN	N/A	18" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
660+96	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
665+07	X-DRAIN	N/A	2-42" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
671+22	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
675+20	RT	ACP	12" RCP	-	-	70	1.12	-	-	-	10	10	-
679+86	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
680+85	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
681+26	RT	N/A	12" RCP	-	-	70	1.12	-	-	-	10	10	-
682+08	LT	ACP	18" CMP	-	-	140	2.24	-	-	-	10	10	-
687+45	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
689+05	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
696+20	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
703+98	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
706+31	X-DRAIN	N/A	2-6'X6' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
708+06	LT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
710+24	X-DRAIN	N/A	2-36" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
<b>CSJ 0946-01-045 (SHEET 2 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>7,030</b>	<b>112.48</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1070</b>	<b>1070</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

### MISCELLANEOUS SUMMARIES

SHEET 38 OF 64

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	43
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

### SUMMARY OF EROSION CONTROL: FM 250 CSJ 0946-01-045 (CONTINUED)

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES
				6006	6007	6054	6001	6001	6031	6039	6038	6039	
STATION	LT / RT / CROSS STRUCT DIM	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	3 RIPRAP (CONC) (4 IN)	3 RIPRAP (STONE PROTECTION) (12 IN)	3 BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				CSJ 0946-01-045 (FM 1399 TO FM 130)(STATIONS INCREASE FROM SOUTH TO NORTH)									
716+28	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
724+70	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
730+60	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
732+60	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
745+36	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
746+38	X-DRAIN	N/A	3-5'X4' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
751+00	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
754+40	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
756+60	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
757+70	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
759+68	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
761+88	LT	N/A	12" RCP	-	-	70	1.12	-	-	-	10	10	-
764+10	LT	N/A	15" RCP	-	-	70	1.12	-	-	-	10	10	-
765+16	LT	ACP	18" RCP	-	-	70	1.12	-	-	-	10	10	-
769+72	LT	ACP	12" RCP	-	-	70	1.12	-	-	-	10	10	-
772+65	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
773+80	X-DRAIN	N/A	2-24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
775+98	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
<b>CSJ 0946-01-045 (SHEET 3 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>1,550</b>	<b>24.80</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>230</b>	<b>230</b>	
<b>CSJ 0946-01-045 (SHEET 2 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>7,030</b>	<b>112.48</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1070</b>	<b>1070</b>	
<b>CSJ 0946-01-045 (SHEET 1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>5,520</b>	<b>88.32</b>	<b>5</b>	<b>48</b>	<b>24</b>	<b>910</b>	<b>910</b>	
<b>CSJ 0946-01-045 TOTALS:</b>				<b>0</b>	<b>0</b>	<b>14,100</b>	<b>225.60</b>	<b>12</b>	<b>48</b>	<b>24</b>	<b>2210</b>	<b>2210</b>	

### SUMMARY OF EROSION CONTROL: FM 251 CSJ 0812-01-035

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES
				6006	6007	6054	6001	6001	6031	6039	6038	6039	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	3 RIPRAP (CONC) (4 IN)	3 RIPRAP (STONE PROTECTION) (12 IN)	3 BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				CSJ 0812-01-035 (FM 1841 TO FM 125)(STATIONS INCREASE FROM NORTH TO SOUTH)									
10+00													FM 251 @ FM 1841
22+85	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
27+18	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
27+80	LT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
29+40	RT	ACP	12" RCP	-	-	70	1.12	-	-	-	10	10	-
30+94	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
31+25	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
32+94	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
39+15	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
43+50	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
44+24	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
46+84	LT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
49+78	X-DRAIN	N/A	5' X 5' BC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
52+20	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
52+25	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
59+55	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
62+26	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
<b>CSJ 0812-01-035 (SHEET 1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>910</b>	<b>14.56</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>120</b>	<b>120</b>	

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

### MISCELLANEOUS SUMMARIES

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	44
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

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**SUMMARY OF EROSION CONTROL: FM 251 CSJ 0812-01-035 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG 80 MG/5000 SY	CY	CY	CY	LF	LF	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 0812-01-035 (FM 1841 TO FM 125)(STATION INCREASE NORTH TO SOUTH)													
67+20	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
70+70	LT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
71+80	LT	N/A	12" RCP	-	-	70	1.12	-	-	-	10	10	-
72+74	LT	N/A	12" RCP	-	-	70	1.12	-	-	-	10	10	-
78+42	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
83+28	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
90+30	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
96+50	LT	N/A	24" CMP	-	-	70	1.12	-	-	-	10	10	-
105+35	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
110+88	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
113+90	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
120+05	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
123+68	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
125+64	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
126+64	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
127+20	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
128+80	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
135+50	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
137+12	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
142+50	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
144+44	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
146+40	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
150+00	LT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
150+58	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
151+40	LT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
154+56	RT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
154+60	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
157+18	RT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
161+20	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
165+10	RT	N/A	18" STL PIPE	-	-	70	1.12	-	-	-	10	10	-
168+90	LT	N/A	18" STL PIPE	-	-	70	1.12	-	-	-	10	10	-
171+40	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
188+50	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
194+16	X-DRAIN	N/A	18" X 30" ARCH CMP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
204+80	RT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
204+90	LT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
206+34	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
208+50	LT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
209+98	X-DRAIN	N/A	18" X 30" ARCH CMP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
211+00	RT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
215+45	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
218+24	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
219+32	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
219+72	LT	N/A	8" STL PIPE	-	-	70	1.12	-	-	-	10	10	-
242+30	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
244+04	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
246+20	RT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
260+76	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
271+54	X-DRAIN	N/A	30" CMP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
282+28	RT	N/A	12" RCP	-	-	70	1.12	-	-	-	10	10	-
<b>CSJ 0812-01-035 (SHEET 2 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>2,660</b>	<b>41.44</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>360</b>	<b>360</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

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SUMMARIES**  
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CONT	SECT	JOB	SHEET
0138	10	029, etc.	45
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

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**SUMMARY OF EROSION CONTROL: FM 251 CSJ 0812-01-035 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG 80 MG/5000 SY	CY	CY	CY	LF	LF	
CSJ 0812-01-035 (FM 1841 TO FM 125)(STATION INCREASE NORTH TO SOUTH)													
284+04	RT	N/A	18" RCP	-	-	70	1.12	2	-	-	10	10	-
285+56	LT	N/A	12" CMP	-	-	70	1.12		-	-	10	10	-
287+20	LT	N/A	12" STL PIPE	-	-	70	1.12		-	-	10	10	-
288+55	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-
289+62	RT	N/A	18" CMP	-	-	70	1.12		-	-	10	10	-
291+50	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-
293+02	RT	ACP	18" STL PIPE	-	-	70	1.12		-	-	10	10	-
306+00	X-DRAIN	N/A	30" CMP	-	-	-	-		-	-	-	-	-
308+02	N/A	-	-	-	-	-	-		-	-	-	-	-
<b>CSJ 0812-01-035 (SHEET 3 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>490</b>	<b>7.84</b>		<b>2</b>	<b>0</b>	<b>0</b>	<b>70</b>	<b>70</b>
<b>CSJ 0812-01-035 (SHEET 2 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>2,660</b>	<b>41.44</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>360</b>	<b>360</b>	
<b>CSJ 0812-01-035 (SHEET 1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>910</b>	<b>14.56</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>120</b>	<b>120</b>	
<b>CSJ 0812-01-035 TOTALS:</b>				<b>0</b>	<b>0</b>	<b>4,060</b>	<b>63.84</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>550</b>	<b>550</b>	

**SUMMARY OF EROSION CONTROL: FM 130 CSJ 1573-01-018**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)		
				EA	EA	SY	MG 80 MG/5000 SY	CY	CY	CY	LF	LF		
CSJ 1573-01-018 (SH 11 TO FM 250)(STATION INCREASE EAST TO WEST)														
0+00													FM 130 @ FM 250 (NORTH)	
7+56	RT	N/A	18" RCP	-	-	140	2.24	3	-	-	10	10	-	
9+23	X-DRAIN	N/A	3-8"X6" MBC	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY
13+56	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
13+60	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
19+30	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
21+00	X-DRAIN	N/A	24" RCP	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY
24+45	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
39+60	X-DRAIN	N/A	3-8"X6" MBC	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY
50+30	LT	N/A	24" RCP	-	-	70	1.12		-	-	10	10	-	
54+34	RT	ACP	18" CMP	-	-	70	1.12		-	-	10	10	-	
56+00	X-DRAIN	N/A	24" RCP	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY
57+70	LT	N/A	18" CPP	-	-	70	1.12		-	-	10	10	-	
61+06	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
70+20	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
74+44	X-DRAIN	N/A	24" RCP	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY
94+91	X-DRAIN	N/A	SPAN BRIDGE	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY
104+10	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
107+82	RT	N/A	18" RCP	-	-	140	2.24		-	-	10	10	-	
108+12	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
108+98	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
110+32	RT	N/A	18" RCP	-	-	70	1.12	-	-	10	10	-		
116+30	RT	N/A	18" CPP	-	-	70	1.12	-	-	10	10	-		
116+50	LT	N/A	18" RCP	-	-	70	1.12	-	-	10	10	-		
133+71	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY	
<b>CSJ 1573-01-018 (SHEET 1 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>1,330</b>	<b>21.28</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>170</b>	<b>170</b>		

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

**MISCELLANEOUS  
SUMMARIES**

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	46
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

**SUMMARY OF EROSION CONTROL: FM 130 CSJ 1573-01-018 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				CSJ 1573-01-018 (SH 11 TO FM 250)(STATION INCREASE EAST TO WEST)									
137+36	RT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
137+70	RT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
139+28	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
141+40	X-DRAIN	N/A	36" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
147+46	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
148+10	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
152+58	X-DRAIN	N/A	4-8'X8' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
163+66	RT	N/A	24" CPP	-	-	70	1.12	-	-	-	10	10	-
168+02	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
170+50	X-DRAIN	N/A	2-24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
176+60	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
183+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
195+65	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
206+25	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
211+36	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
214+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
218+12	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
219+55	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
220+66	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
221+16	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
233+22	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
234+18	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
243+00													FOR LOCATION REFERENCE ONLY
248+43	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
248+76	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
249+76	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
252+95	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
255+98	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
260+00	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
263+60	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
266+04	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
271+58	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
275+60	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
286+00	X-DRAIN	N/A	SPAN BRIDGE	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
294+13	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
294+92	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
297+36	RT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
305+85	X-DRAIN	N/A	36" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
308+52	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
309+98	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
310+00	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
316+25	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
323+84	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
329+12	RT	N/A	12" RCP	-	-	140	2.24	-	-	-	10	10	-
331+26	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
333+24	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
337+48	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
339+78	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
343+15	X-DRAIN	N/A	2-36" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
344+98	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
<b>CSJ 1573-01-018 (SHEET 2 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>2,730</b>	<b>43.68</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>360</b>	<b>360</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

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SUMMARIES**  
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CONT	SECT	JOB	SHEET
0138	10	029, etc.	47
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

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## SUMMARY OF EROSION CONTROL: FM 130 CSJ 1573-01-018 (CONTINUED)

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES
				6006	6007	6054	6001	6001	6031	6039	6038	6039	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP / CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	3 RIPRAP (CONC) (4 IN)	3 RIPRAP (STONE PROTECTION) (12 IN)	3 BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				CSJ 1573-01-018 (SH 11 TO FM 250)(STATION INCREASE EAST TO WEST)									
350+52	RT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
355+85	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
356+92	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
361+14	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
364+85	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
374+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
381+55	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
388+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
389+64	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
395+55	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
398+46	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
401+23	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
404+02	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
411+70	X-DRAIN	N/A	2-24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
422+00	X-DRAIN	N/A	2-36" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
425+80	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
451+56	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
451+62	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
459+94	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
475+12	X-DRAIN	N/A	42" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
475+88	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
491+00	X-DRAIN	N/A	42" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
518+70	X-DRAIN	N/A	2-6'X6' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
533+25	X-DRAIN	N/A	SPAN BRIDGE	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
538+91	X-DRAIN	N/A	4-9'X9' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
542+28	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
543+50	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
552+12	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
554+98	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
555+08	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
559+85	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
564+26	RT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
564+72	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
567+90	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
576+80	RT	CONC	18" CMP	-	-	70	1.12	-	-	-	10	10	-
586+74	X-DRAIN	N/A	30' CMP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
595+90	X-DRAIN	N/A	24" CMP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
602+66	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
605+40	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
607+65	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
609+80	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
611+10	X-DRAIN	N/A	2-48" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
612+10	RT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
613+88	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
618+08	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
624+75	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
625+54	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
629+80	RT	N/A	8" STL PIPE	-	-	70	1.12	-	-	-	10	10	-
634+50	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
637+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
<b>CSJ 1573-01-018 (SHEET 3 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>2,240</b>	<b>35.84</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>310</b>	<b>310</b>	<b>-</b>

3 TO BE USED AS DIRECTED BY ENGINEER

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	48
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

### SUMMARY OF EROSION CONTROL: FM 130 CSJ 1573-01-018 (CONTINUED)

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES						
				6006	6007	6054	6001	6001	6031	6039	6038	6039							
STATION	LT / RT / CROSS STRUCT DIM	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW	PREP ROW	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE	RIPRAP (CONC) (4 IN)	RIPRAP (STONE PROTECTION) (12 IN)	BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)							
				(TREE LESS THAN 24" DIA)	(TREE GREATER THAN 24" DIA)		80 MG/5000 SY							MG	CY	CY	CY	LF	LF
				EA	EA		SY							MG	CY	CY	CY	LF	LF
CSJ 1573-01-018 (SH 11 TO FM 250)(STATION INCREASE EAST TO WEST)																			
641+46	LT	N/A	18" RCP	-	-	70	1.12	2	-	-	10	10	-						
647+00	X-DRAIN	N/A	4-8'X8' MBC	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY					
649+25	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-						
659+45	X-DRAIN	N/A	24" RCP	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY					
666+15	X-DRAIN	N/A	24" RCP	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY					
670+95	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-						
678+20	RT	N/A	18" CMP	-	-	70	1.12		-	-	10	10	-						
679+05	X-DRAIN	N/A	2-6'X4' MBC	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY					
680+90	LT	N/A	18" RCP	-	-	140	2.24		-	-	10	10	-						
681+68	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-						
685+10	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-						
686+00	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-						
697+00	X-DRAIN	N/A	2-30" RCP	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY					
<b>CSJ 1573-01-018 (SHEET 4 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>630</b>	<b>10.08</b>		<b>2</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>80</b>						
<b>CSJ 1573-01-018 (SHEET 3 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>2,240</b>	<b>35.84</b>		<b>5</b>	<b>0</b>	<b>0</b>	<b>310</b>	<b>310</b>						
<b>CSJ 1573-01-018 (SHEET 2 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>2,730</b>	<b>43.68</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>360</b>	<b>360</b>							
<b>CSJ 1573-01-018 (SHEET 1 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>1,330</b>	<b>21.28</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>170</b>	<b>170</b>							
<b>CSJ 1573-01-018 TOTALS:</b>				<b>0</b>	<b>0</b>	<b>6,930</b>	<b>110.88</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>920</b>	<b>920</b>							

### SUMMARY OF EROSION CONTROL: FM 994 CSJ 1216-01-008

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES						
				6006	6007	6054	6001	6001	6031	6039	6038	6039							
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW	PREP ROW	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE	RIPRAP (CONC) (4 IN)	RIPRAP (STONE PROTECTION) (12 IN)	BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)							
				(TREE LESS THAN 24" DIA)	(TREE GREATER THAN 24" DIA)		80 MG/5000 SY							MG	CY	CY	CY	LF	LF
				EA	EA		SY							MG	CY	CY	CY	LF	LF
SUMMARY OF SIDE ROADS & DRIVEWAY PIPES: FM 994 CSJ 1216-01-008 (CONTINUED)																			
9+00								3					FM 994 @ FM 1766 & CR 2472						
11+20	RT	N/A	24" RCP	-	-	70	1.12		-	-	10	10	-						
16+36	X-DRAIN	N/A	30" RCP	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY					
16+64	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-						
17+56	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-						
19+46	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-						
21+75	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-						
23+30	RT	N/A	24" CMP	-	-	70	1.12		-	-	10	10	-						
28+32	LT	N/A	18" CMP	-	-	70	1.12		-	-	10	10	-						
41+50	RT	N/A	48" CMP	-	-	140	2.24		-	-	10	10	-						
41+90	X-DRAIN	N/A	3-8'X7' MBC	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY					
45+42	X-DRAIN	N/A	4-8'X6' MBC	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY					
61+03	X-DRAIN	N/A	24" RCP	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY					
63+08	X-DRAIN	N/A	2-30" RCP	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY					
68+10	LT	N/A	18" CPP	-	-	70	1.12		-	-	10	10	-						
69+40	LT	N/A	18" CMP	-	-	70	1.12	-	-	10	10	-							
71+94	LT	N/A	18" CPP	-	-	70	1.12	-	-	10	10	-							
80+38	RT	N/A	18" CMP	-	-	70	1.12	-	-	10	10	-							
80+50	LT	N/A	18" RCP	-	-	70	1.12	-	-	10	10	-							
88+98	RT	N/A	24" CMP	-	-	70	1.12	-	-	10	10	-							
90+34	LT	N/A	18" RCP	-	-	70	1.12	-	-	10	10	-							
<b>CSJ 1216-01-008 (SHEET 1 OF 2) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>1,120</b>	<b>17.92</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>150</b>	<b>150</b>							

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	49
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	



**SUMMARY OF EROSION CONTROL: FM 994 CSJ 1216-01-008 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168.00 6001.00	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	RIPRAP (CONC) IN) (4	RIPRAP (STONE PROTECTION) (12 IN)	BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG						
CSJ 1573-01-018 (SH 11 TO FM 250)(STATION INCREASE EAST TO SOUTH)													
91+16	X-DRAIN	N/A	24" RCP	-	1	-	-	-	-	-	-	-	-
104+13	X-DRAIN	N/A	2-24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
105+80	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	-	-	-
114+80	X-DRAIN	N/A	3-36" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
137+51	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
139+02	LT	N/A	24" CPP	-	-	70	1.12	-	-	-	-	-	-
142+78	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	-	-	-
147+50	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
150+96	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	-	-	-
157+15	RT	N/A	18" CPP	-	-	70	1.12	-	-	-	-	-	-
167+70	RT	N/A	18" CPP	-	-	70	1.12	-	-	-	-	-	-
167+69	X-DRAIN	N/A	2-48" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
<b>CSJ 1216-01-008 (SHEET 1 OF 2) SUBTOTALS:</b>				<b>0</b>	<b>1</b>	<b>420</b>	<b>6.72</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>CSJ 1216-01-008 (SHEET 2 OF 2) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>1,120</b>	<b>17.92</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>150</b>	<b>150</b>	
<b>CSJ 1216-01-008 TOTALS:</b>				<b>0</b>	<b>1</b>	<b>1,540</b>	<b>24.64</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>150</b>	<b>150</b>	

**SUMMARY OF EROSION CONTROL: FM 1766 CSJ 1957-01-009**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	RIPRAP (CONC) (4 IN)	RIPRAP (STONE PROTECTION) (12 IN)	BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG						
CSJ 1957-01-009 (SH 77 TO FM 994)(STATION INCREASE WEST TO EAST)													
0+00													FM 1766 @ SH 77
3+40	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
3+50	RT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
10+85	X-DRAIN	N/A	36" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
12+34	LT	N/A	24" RCP	-	-	70	1.12	-	-	-	10	10	-
13+44	LT	ACP	18" RCP	-	-	70	1.12	-	-	-	10	10	-
13+50	LT	N/A	24" RCP	-	-	70	1.12	-	-	-	10	10	-
13+60	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
24+62	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
25+00	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
26+64	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
34+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
41+00	X-DRAIN	N/A	2-48" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
48+50	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
50+81	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
65+06	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
68+50	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
74+12	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
81+10	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
82+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
91+08	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
97+10	X-DRAIN	N/A	2-30" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
110+96	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
<b>CSJ 1957-01-009 (SHEET 1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>980</b>	<b>15.68</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>140</b>	<b>140</b>	

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	50
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

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**SUMMARY OF EROSION CONTROL: FM 1766 CSJ 1957-01-009 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 1957-01-009 (SH 77 TO FM 994)(STATION INCREASE WEST TO EAST)													
113+50	LT	N/A	2-24" CMP	1.00	-	140	2.24				10	10	-
119+09	X-DRAIN	N/A	6-9"X8" MBC										FOR LOCATION REFERENCE ONLY
143+12	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
154+14	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
161+80	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
171+10	LT	N/A	18" CPP	-	-	70	1.12				10	10	-
178+00	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
181+95	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
192+24	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
192+58	X-DRAIN	N/A	24" CMP										FOR LOCATION REFERENCE ONLY
199+71	X-DRAIN	N/A	30" CMP										FOR LOCATION REFERENCE ONLY
203+17	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
214+91	X-DRAIN	N/A	42" RCP										FOR LOCATION REFERENCE ONLY
219+50	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
220+00	RT	N/A	24" RCP	-	-	70	1.12				10	10	-
223+52	LT	N/A	24" CMP	-	-	70	1.12				10	10	-
226+08	RT	N/A	24" RCP	-	-	140	2.24				10	10	-
229+64	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
231+90	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
240+30	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
251+62	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
253+70	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
260+62	X-DRAIN	N/A	3-42" RCP										FOR LOCATION REFERENCE ONLY
267+88	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
275+26	X-DRAIN	N/A	24" CMP										FOR LOCATION REFERENCE ONLY
276+92	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
282+66	RT	N/A	18" RCP	-	-	140	2.24				10	10	-
286+68	X-DRAIN	N/A	24" CMP										FOR LOCATION REFERENCE ONLY
290+54	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
293+50	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
293+75	RT	N/A	12" RCP	-	-	70	1.12				10	10	-
294+54	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
295+32	X-DRAIN	N/A	24" CMP										FOR LOCATION REFERENCE ONLY
297+32	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
300+84	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
303+70	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
303+85	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
304+46	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
308+62	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
306+82	X-DRAIN	N/A	42" RCP										FOR LOCATION REFERENCE ONLY
311+78	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
318+80	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
318+18	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
321+00	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
322+79	X-DRAIN	N/A	30" CMP										FOR LOCATION REFERENCE ONLY
324+88	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
326+32	LT	ACP	18" CMP	-	-	70	1.12				10	10	-
331+12	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
339+12	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
343+30	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
<b>CSJ 1957-01-009 (SHEET 2 OF 3) SUBTOTALS:</b>				<b>1</b>	<b>0</b>	<b>2,590</b>	<b>41.44</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>340</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

**MISCELLANEOUS  
SUMMARIES**  
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CONT	SECT	JOB	SHEET
0138	10	029, etc.	51
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

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**SUMMARY OF EROSION CONTROL: FM 1766 CSJ 1957-01-009 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (GREATER) (LESS THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)		
				EA	EA		80 MG/5000 SY MG	CY	CY	CY	LF	LF		
CSJ 1957-01-009 (SH 77 TO FM 994)(STATION INCREASE WEST TO EAST)														
345+78	RT	N/A	15" RCP	-	-	70	1.12	2	-	-	10	10	-	
346+54	RT	N/A	15" RCP	-	-	70	1.12		-	-	10	10	-	
346+68	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
347+45	LT	N/A	15" RCP	-	-	70	1.12		-	-	10	10	-	
347+92	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
348+80	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
349+62	RT	N/A	24" RCP	-	-	140	2.24		-	-	10	10	-	
349+90	RT	N/A	-	-	-	140	2.24		-	-	10	10	-	
351+00	X-DRAIN	N/A	18" RCP	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY
<b>CSJ 1957-01-009 (SHEET 3 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>700</b>	<b>11.20</b>		<b>2</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>80</b>	
<b>CSJ 1957-01-009 (SHEET 2 OF 3) SUBTOTALS:</b>				<b>1</b>	<b>0</b>	<b>2,590</b>	<b>41.44</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>340</b>		
<b>CSJ 1957-01-009 (SHEET 1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>980</b>	<b>15.68</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>140</b>	<b>140</b>		
<b>CSJ 1957-01-009 TOTALS:</b>				<b>1</b>	<b>0</b>	<b>4,270</b>	<b>68.32</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>560</b>	<b>560</b>		

**SUMMARY OF EROSION CONTROL: FM 1841 CSJ 2339-02-012**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (GREATER) (LESS THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)		
				EA	EA		SY	MG	CY	CY	CY	LF		LF
CSJ 2339-02-012 (FM 251 TO FM 249)(STATION INCREASE NORTH TO SOUTH)														
0+00													FM 1841 @ FM 249	
1+80	LT	N/A	18" CPP	-	-	70	1.12	3	-	-	10	10	-	
2+40	X-DRAIN	N/A	2-7'X-5' MBC	-	-	-	-		-	-	-	-	-	FOR LOCATION REFERENCE ONLY
3+00	LT	N/A	24" RCP	1	-	140	2.24		2	1	10	10	-	
3+00	RT	N/A	24" RCP	-	-	70	1.12		-	-	10	10	-	
4+06	RT	N/A	24" RCP	-	-	70	1.12		-	-	10	10	-	
4+80	LT	N/A	24" RCP	-	-	140	2.24		2	1	10	10	-	
6+00	LT	N/A	24" RCP	-	-	70	1.12		-	-	10	10	-	
6+78	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
7+45	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
7+45	LT	N/A	18" RCP	-	-	140	2.24		-	-	10	10	-	
8+30	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
8+50	RT	N/A	18" RCP	-	-	140	2.24		-	-	10	10	-	
8+85	LT	N/A	18" RCP	-	-	140	2.24		-	-	10	10	-	
9+25	LT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
9+28	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
10+00	RT	N/A	18" RCP	-	-	140	2.24		-	-	10	10	-	
10+50	LT	N/A	18" RCP	-	-	140	2.24		-	-	10	10	-	
10+65	RT	N/A	18" RCP	-	-	70	1.12		-	-	10	10	-	
10+70	LT	N/A	18" RCP	-	-	140	2.24		-	-	10	10	-	
10+95	LT	N/A	18" RCP	-	-	140	2.24		-	-	10	10	-	
11+95	RT	N/A	18" RCP	-	-	70	1.12	-	-	10	10	-		
12+17	LT	N/A	18" RCP	-	-	70	1.12	-	-	10	10	-		
12+57	RT	N/A	18" RCP	-	-	70	1.12	-	-	10	10	-		
13+65	LT	N/A	18" RCP	-	-	70	1.12	-	-	10	10	-		
14+70	RT	N/A	18" RCP	-	-	70	1.12	-	-	10	10	-		
<b>CSJ 2339-02-012 (1 OF 4) SUBTOTALS:</b>				<b>1</b>	<b>0</b>	<b>2,310</b>	<b>36.96</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>240</b>	<b>240</b>		

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

**MISCELLANEOUS  
SUMMARIES**  
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© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	52
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

**SUMMARY OF EROSION CONTROL: FM 1841 CSJ 2339-02-012 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 2339-02-012 (FM 251 TO FM 249)(STATION INCREASE NORTH TO SOUTH)													
15+25	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
17+25	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LCOATION REFERENCE ONLY
18+17	RT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
18+35	RT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
18+40	LT	N/A	18" CMP	-	1	140	2.24	2	1	1	10	10	-
19+64	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
19+70	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
20+53	RT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
20+58	LT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
21+65	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
21+80	RT	N/A	18" CMP	-	-	140	2.24	-	-	-	10	10	-
22+35	RT	N/A	18"	-	-	70	1.12	-	-	-	10	10	-
38+43													FM 1841 @ SH 77
46+00	X-DRAIN	N/A	2-30" RCP	-	-	-	-	-	-	-	-	-	FOR LCOATION REFERENCE ONLY
49+44	LT	N/A	18" RCP	-	-	-	-	-	-	-	-	-	-
52+57	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
54+64	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
54+95	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
56+62	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
60+62	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
62+25	RT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
63+71	X-DRAIN	N/A	36" RCP	-	-	-	-	-	-	-	-	-	FOR LCOATION REFERENCE ONLY
64+65	LT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
65+25	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
67+35	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
69+58	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
73+08	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
73+85	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
74+82	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
75+84	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
76+98	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
77+50	RT	ACP	18" RCP	-	-	140	2.24	-	-	-	10	10	-
77+70	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
78+72	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
80+46	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
83+70	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
84+10	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
84+72	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
85+05	RT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
89+90	LT	CONC	18" CMP	-	-	70	1.12	-	-	-	10	10	-
92+32	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
84+05	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LCOATION REFERENCE ONLY
96+25	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
99+78	LT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
101+50	LT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
102+65	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
102+94	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
104+22	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
106+70	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
106+90	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
<b>CSJ 2339-02-012 (2 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>1</b>	<b>3,780</b>	<b>60.48</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>430</b>	<b>430</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

**MISCELLANEOUS  
SUMMARIES**

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© 2021



CONT	SECT	JOB	SHEET
0138	10	029, etc.	53
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	029, etc.	

**SUMMARY OF EROSION CONTROL: FM 1841 CSJ 2339-02-012 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 2339-02-012 (FM 251 TO FM 249)(STATION INCREASE NORTH TO SOUTH)													
109+40	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
110+70	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
117+68	RT	N/A	18" CPP	-	-	70	1.12				10	10	-
117+72	LT	ACP	24" CMP	-	-	70	1.12				10	10	-
122+90	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
124+14	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
125+26	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
126+85	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
128+05	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
129+50	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
141+23	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
148+06	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
148+92	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
150+70	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
150+80	LT	N/A	18" CPP	-	-	70	1.12				10	10	-
152+42	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
155+42	RT	N/A	18" RCP	-	-	140	2.24				10	10	-
162+85	LT	N/A	18" RCP	-	-	140	2.24				10	10	-
163+16	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
166+12	RT	N/A	24" RCP	-	-	70	1.12				10	10	-
166+36	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
168+65	RT	N/A	24" RCP	-	-	140	2.24				10	10	-
173+80	LT	ACP	24" CLAY PIPE	-	-	70	1.12				10	10	-
177+26	RT	N/A	24" CMP	-	-	140	2.24				10	10	-
178+76	RT	N/A	24" CMP	-	-	140	2.24				10	10	-
181+18	X-DRAIN	N/A	7-10'X8' MBC										FOR LOCATION REFERENCE ONLY
187+36	RT	N/A	18" CMP	8	-	70	1.12				10	10	-
191+10	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
198+04	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
199+90	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
199+95	LT	N/A	18" RCP	-	-	140	2.24				10	10	-
201+35	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
203+75	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
210+40	RT	N/A	18" CPP	-	-	140	2.24				10	10	-
216+25	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
217+26	RT	N/A	18" CPP	-	-	70	1.12				10	10	-
221+20	X-DRAIN	N/A	2-7'X5' MBC										FOR LOCATION REFERENCE ONLY
222+75	LT	N/A	2-18" RCP	-	-	140	2.24				10	10	-
224+16	RT	CONC	18" CPP	-	-	140	2.24				10	10	-
227+90	LT	N/A	18" RCP	-	-	140	2.24				10	10	-
228+05	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
237+90	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
239+41	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
242+02	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
248+56	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
252+10	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
252+68	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
255+28	LT	CONC	18" CMP	-	-	70	1.12				10	10	-
255+70	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
256+16	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
<b>CSJ 2339-02-012 (3 OF 4) SUBTOTALS:</b>				<b>8</b>	<b>0</b>	<b>3,710</b>	<b>59.36</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>430</b>	<b>430</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

**MISCELLANEOUS  
SUMMARIES**

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	54
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

**SUMMARY OF EROSION CONTROL: FM 1841 CSJ 2339-02-012 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 2339-02-012 (FM 251 TO FM 249)(STATION INCREASE NORTH TO SOUTH)													
257+70	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
261+20	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
261+60	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
261+80	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
271+40	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
273+17	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
274+82	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
278+70	LT	N/A	18" RCP	1	-	70	1.12	-	-	-	10	10	-
280+50	RT	N/A	24" RCP	-	-	140	2.24	-	-	-	10	10	-
284+92	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
285+60	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
298+69	X-DRAIN	N/A	SPAN BRIDGE	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
320+54	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
340+54	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
340+73	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
341+85	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
350+08	RT	N/A	18" CPP	-	-	140	2.24	-	-	-	10	10	-
357+56	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
364+08	X-DRAIN	N/A	3-8'X7" MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
364+48	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
371+00	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
374+36	LT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
375+14	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
376+06	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
382+14	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
392+32	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
395+00	LT	N/A	15" RCP	-	-	70	1.12	-	-	-	10	10	-
401+60	RT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
412+62	LT	CONC	18" CPP	-	-	70	1.12	-	-	-	10	10	-
414+46	LT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
419+16	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
426+82	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
429+30	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
430+00	LT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
432+08	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
433+12	RT	ACP	18" STL PIPE	-	-	70	1.12	-	-	-	10	10	-
433+12	LT	ACP	18" STL PIPE	-	-	70	1.12	-	-	-	10	10	-
434+54	LT	ACP	18" STL PIPE	-	-	70	1.12	-	-	-	10	10	-
437+40	RT	N/A	18" STL PIPE	-	-	70	1.12	-	-	-	10	10	-
440+28	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
<b>CSJ 2339-02-012 (4 OF 4) SUBTOTALS:</b>				<b>1</b>	<b>0</b>	<b>2,450</b>	<b>39.20</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>320</b>	<b>320</b>	
<b>CSJ 2339-02-012 (3 OF 4) SUBTOTALS:</b>				<b>8</b>	<b>0</b>	<b>3,710</b>	<b>59.36</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>430</b>	<b>430</b>	
<b>CSJ 2339-02-012 (2 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>1</b>	<b>3,780</b>	<b>60.48</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>430</b>	<b>430</b>	
<b>CSJ 2339-02-012 (1 OF 4) SUBTOTALS:</b>				<b>1</b>	<b>0</b>	<b>2,310</b>	<b>36.96</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>240</b>	<b>240</b>	
<b>CSJ 2339-02-012 TOTALS:</b>				<b>10</b>	<b>1</b>	<b>12,250</b>	<b>196.00</b>	<b>18</b>	<b>6</b>	<b>3</b>	<b>1420</b>	<b>1420</b>	

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

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DATE: 1/28/2021 5:40:09 PM

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	55
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

## SUMMARY OF EROSION CONTROL: FM 1841 CSJ 1758-01-012

LOCATION		EXISTING		100	100	164	168	432	432	432	506	506	REMARKS / NOTES
				6006	6007	6054	6001	6001	6031	6039	6038	6039	
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW	PREP ROW	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE	3	3	3	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				(TREE) (LESS THAN 24" DIA)	(TREE) (GREATER THAN 24" DIA)		WATERING						
				EA	EA	SY	MG/5000 SY	CY	CY	CY	LF	LF	
CSJ 1758-01-012 (SH 43 TO FM 251)(STATION INCREASE WEST TO EAST)													
													FM 1841 @ SH 43
0+00													
1+35	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
1+80	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
1+90	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
4+44	RT	N/A	18" RCP	-	-	140	2.24				10	10	-
6+15	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
6+70	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
7+52	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
13+68	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
15+70	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
18+18	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
31+65	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
32+14	LT	N/A	18" RCP	-	-	140	2.24				10	10	-
32+70	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
33+55	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
34+60	LT	N/A	18" RCP	-	-	140	2.24				10	10	-
37+08	LT	N/A	18" RCP	-	-	140	2.24				10	10	-
38+48	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
40+62	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
41+30	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
41+46	LT	N/A	18" RCP	-	-	140	2.24				10	10	-
44+60	LT	N/A	18" RCP	-	-	140	2.24				10	10	-
44+70	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
46+00	X-DRAIN	N/A	3-6'X5' MBC	-	-	-	-				-	-	FOR LOCATION REFERENCE ONLY
50+15	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
54+98	LT	CONC	18" CMP	-	-	70	1.12				10	10	-
56+44	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
61+10	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
63+76	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
63+96	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
71+35	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
73+72	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
75+86	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
78+56	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
80+14	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
84+50	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
86+44	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
87+70	X-DRAIN	N/A	2-24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
89+26	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
91+00	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
91+54	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
95+40	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
97+55	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
103+85	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
109+90	LT	N/A	18" RCP	-	-	140	2.24				10	10	-
110+95	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
112+50	X-DRAIN	N/A	24" RCP	-	-	250	4.00				40	40	SEE CROSS DRAIN SUMMARIES
113+40	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
114+50	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
117+26	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
<b>CSJ 1758-01-012 (1 OF 2) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>5,290</b>	<b>84.64</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>720</b>	<b>720</b>	<b>-</b>

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0138	10	029, etc.	56
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

**SUMMARY OF EROSION CONTROL: FM 1841 CSJ 1758-01-012 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	80 MG/5000 SY MG	CY	CY	CY	LF	LF	
				CSJ 1758-01-012 (SH 43 TO FM 251)(STATION INCREASE WEST TO EAST)									
120+25	X-DRAIN	N/A	3-36" RCP										FOR LOCATION REFERENCE ONLY
121+34	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
124+88	LT	N/A	24" RCP	-	-	70	1.12				10	10	-
132+44	RT	N/A	24" RCP	-	-	70	1.12				10	10	-
134+00	X-DRAIN	N/A	3-36" RCP										FOR LOCATION REFERENCE ONLY
144+72	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
145+92	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
150+40	X-DRAIN	N/A	2-30" RCP										FOR LOCATION REFERENCE ONLY
165+35	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
170+45	RT	N/A	18" CPP	-	-	70	1.12	3			10	10	-
175+84	LT	CONC	18" CPP	-	-	70	1.12				10	10	-
176+74	X-DRAIN	N/A	2-36" RCP										FOR LOCATION REFERENCE ONLY
179+85	X-DRAIN	N/A	3-36" RCP										FOR LOCATION REFERENCE ONLY
185+62	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
194+15	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
197+20	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
202+58	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
207+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
207+22	X-DRAIN	N/A	24" RP										FOR LOCATION REFERENCE ONLY
<b>CSJ 1758-01-012 (2 OF 2) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>630</b>	<b>10.08</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>90</b>	<b>90</b>	
<b>CSJ 1758-01-012 (1 OF 2) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>5,290</b>	<b>84.64</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>720</b>	<b>720</b>	
<b>CSJ 1758-01-012 TOTALS:</b>				<b>0</b>	<b>0</b>	<b>5,920</b>	<b>94.72</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>810</b>	<b>810</b>	

**SUMMARY OF EROSION CONTROL: FM 1841 CSJ 2576-01-014**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	80 MG/5000 SY MG	CY	CY	CY	LF	LF	
				CSJ 2576-01-014 (US 59 TO FM 248)(STATION INCREASE WEST TO EAST)									
0+00													FM 1841 @ US 59
12+00	LT	N/A	24" RCP	-	-	70	1.12				20	20	-
12+25	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
19+60	LT	N/A	24" CPP	-	-	-	-				-	-	NO WORK (OUT OF CLEAR ZONE)
24+75	LT	N/A	2-24" RCP	-	-	-	-				-	-	NO WORK (OFF ROW)
25+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
28+35	LT	N/A	2-24" RCP	-	-	400	6.40						-
34+80	X-DRAIN	N/A	4-10"X9" MBC								100	100	FOR LOCATION REFERENCE ONLY
40+60	X-DRAIN	N/A	24" RCP					2					FOR LOCATION REFERENCE ONLY
58+28	X-DRAIN	N/A	3-36" RCP										FOR LOCATION REFERENCE ONLY
68+30	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
76+00	X-DRAIN	N/A	3-42" RCP										FOR LOCATION REFERENCE ONLY
99+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
103+30	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
112+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
122+00	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
126+00	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
<b>CSJ 2576-01-014 (1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>470</b>	<b>7.52</b>	<b>2</b>	<b>132</b>	<b>66</b>	<b>120</b>	<b>120</b>	

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

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0138	10	029, etc.	57
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	



**SUMMARY OF EROSION CONTROL: FM 1841 CSJ 2576-01-014 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	3 RIPRAP (CONC) (4 IN)	3 RIPRAP (STONE PROTECTION) (12 IN)	3 BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				CSJ 2576-01-014 (US 59 TO FM 248)(STATION INCREASE WEST TO EAST)									
139+00	X-DRAIN	N/A	42" RCP										FOR LOCATION REFERENCE ONLY
153+45	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
160+25	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
170+00	X-DRAIN	N/A	2-36" RCP										FOR LOCATION REFERENCE ONLY
181+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
190+40	X-DRAIN	N/A	36" RCP										FOR LOCATION REFERENCE ONLY
197+42	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
210+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
224+31	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
231+68	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
252+17	X-DRAIN	N/A	3-8'X6' MBC										FOR LOCATION REFERENCE ONLY
259+80	LT	N/A	18" RCP	-	-	140	2.24				10	10	-
260+95	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
265+30	X-DRAIN	N/A	2-30" RCP										FOR LOCATION REFERENCE ONLY
266+56	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
267+58	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
275+64	X-DRAIN	N/A	36" RCP										FOR LOCATION REFERENCE ONLY
282+78	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
283+16	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
286+84	X-DRAIN	N/A	2-30" RCP										FOR LOCATION REFERENCE ONLY
291+08	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
291+50	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
298+00	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
301+24	RT	N/A	18" RCP	-	-	70	1.12	5			10	10	-
302+10	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
304+12	RT	CONC	18" RCP	-	-	70	1.12				10	10	-
307+24	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
308+90	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
313+00	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
319+96	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
320+10	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
323+12	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
323+94	LT	N/A	24" RCP	-	-	140	2.24				10	10	-
329+02	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
329+50	RT	N/A	18" RCP	-	-	140	2.24				10	10	-
329+73	X-DRAIN	N/A	36" RCP										FOR LOCATION REFERENCE ONLY
334+69	X-DRAIN	N/A	36" RCP										FOR LOCATION REFERENCE ONLY
338+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
346+00	X-DRAIN	N/A	36" RCP										FOR LOCATION REFERENCE ONLY
353+50	X-DRAIN	N/A	36" RCP										FOR LOCATION REFERENCE ONLY
364+50	X-DRAIN	N/A	2-6'X3' MBC										FOR LOCATION REFERENCE ONLY
678+47	X-DRAIN	N/A	SPAN BRIDGE										FOR LOCATION REFERENCE ONLY
393+65	X-DRAIN	N/A	3-8'X7' MBC										FOR LOCATION REFERENCE ONLY
405+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
408+47	X-DRAIN	N/A	2-42" RCP										FOR LOCATION REFERENCE ONLY
409+20	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
413+38	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
418+64	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
422+50	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
428+65	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
<b>CSJ 2576-01-014 (2 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>1,610</b>	<b>25.76</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>200</b>	<b>200</b>	<b>-</b>

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	58
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

**SUMMARY OF EROSION CONTROL: FM 1841 CSJ 2576-01-014 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 2339-02-012 (FM 251 TO FM 249)(STATION INCREASE NORTH TO SOUTH)													
437+66	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
441+90	X-DRAIN	N/A	48" RCP										FOR LOCATION REFERENCE ONLY
445+42	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
454+60	X-DRAIN	N/A	2-42" RCP										FOR LOCATION REFERENCE ONLY
456+25	LT	N/A	30" CPP	-	-	140	2.24				10	10	-
457+52	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
458+95	RT	N/A	18" RCP	-	-	140	2.24				10	10	-
461+08	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
465+71	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
470+54	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
475+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
477+86	RT	N/A	18" RCP	-	-	70	1.12	3			10	10	-
479+24	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
479+90	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
481+70	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
488+56	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
497+56	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
499+74	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
501+40	X-DRAIN	N/A	36" RCP										FOR LOCATION REFERENCE ONLY
508+64	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
509+63	X-DRAIN	N/A	2-30" RCP										FOR LOCATION REFERENCE ONLY
516+15	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
523+99	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
<b>CSJ 2576-01-014 (3 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>1,050</b>	<b>16.80</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>130</b>	<b>130</b>	
<b>CSJ 2576-01-014 (2 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>1,610</b>	<b>25.76</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>200</b>	<b>200</b>	
<b>CSJ 2576-01-014 (1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>470</b>	<b>7.52</b>	<b>2</b>	<b>132</b>	<b>66</b>	<b>120</b>	<b>120</b>	
<b>CSJ 2576-01-014 TOTALS:</b>				<b>0</b>	<b>0</b>	<b>3,130</b>	<b>50.08</b>	<b>10</b>	<b>132</b>	<b>66</b>	<b>450</b>	<b>450</b>	

**SUMMARY OF EROSION CONTROL: FM 125 CSJ 0546-09-043 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 0546-09-043 (SH 43 TO LOUISIANA STATE LINE)(STATION INCREASE WEST TO EAST)													
0+00													FM 1841 @ SH 43
1+80	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
2+00	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
2+98	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
6+80	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
7+35	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
8+78	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
9+71	X-DRAIN	N/A	24" CGM										FOR LOCATION REFERENCE ONLY
17+26	RT	N/A	18" STL PIPE	-	-	70	1.12				10	10	-
22+18	RT	N/A	18" STL PIPE	-	-	70	1.12				10	10	-
22+62	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
<b>CSJ 0546-09-043 (1 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>630</b>	<b>10.08</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>90</b>	<b>90</b>	

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

**MISCELLANEOUS  
SUMMARIES**

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	59
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

**SUMMARY OF EROSION CONTROL: FM 125 CSJ 0546-09-043 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				CSJ 0546-09-043 (SH 43 TO LOUISIANA STATE LINE)(STATION INCREASE WEST TO EAST)									
24+56	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
24+90	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
27+72	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
29+92	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
33+55	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
36+70	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
39+78	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
43+56	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
45+25	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
47+98	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
56+06	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
56+55	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
61+00	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
65+85	RT	ACP	18" CMP	-	-	70	1.12	-	-	-	10	10	-
66+05	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
67+67	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
73+18	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
73+70	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
73+98	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
74+40	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
74+50	RT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
74+72	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
80+20	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
84+91	X-DRAIN	N/A	2-30" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
93+93	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
102+30	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
102+40	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
104+54	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
106+76	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
109+02	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
111+70	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
126+20	LT	N/A	18" CMP	-	-	140	2.24	-	-	-	10	10	-
129+50	X-DRAIN	N/A	4-30" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
133+80	RT	ACP	18" STL PIPE	-	-	70	1.12	-	-	-	10	10	-
139+05	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
139+60	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
141+90	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
146+65	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
152+50	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
156+46	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
161+00	LT	N/A	30" RCP	-	-	140	2.24	-	-	-	10	10	-
165+94	LT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
175+30	X-DRAIN	N/A	3-7'X5- MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
198+00	X-DRAIN	N/A	2-8'X6' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
201+40	X-DRAIN	N/A	30" CMP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
212+48	LT	N/A	2-48" CMP	4.00	-	140	2.24	-	-	-	20	20	-
219+17	X-DRAIN	N/A	5-10'X7' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
228+93	X-DRAIN	N/A	4-5'X4'	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
235+81	X-DRAIN	N/A	SPAN BRIDGE	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
246+60	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
<b>CSJ 0546-09-043 (2 OF 4) SUBTOTALS:</b>				<b>4</b>	<b>0</b>	<b>2,800</b>	<b>44.80</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>370</b>	<b>370</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

**MISCELLANEOUS  
SUMMARIES**

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	60
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

**SUMMARY OF EROSION CONTROL: FM 125 CSJ 0546-09-043 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 0546-09-043 (SH 43 TO LOUISIANA STATE LINE)(STATION INCREASE WEST TO EAST)													
250+60	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
253+60	X-DRAIN	N/A	3-24" RCP										FOR LOCATION REFERENCE ONLY
256+95	X-DRAIN	N/A	4-36" RCP										FOR LOCATION REFERENCE ONLY
266+42	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
270+19	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
274+95	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
278+86	RT	N/A	18" CPP	-	-	70	1.12				10	10	-
282+29	X-DRAIN	N/A	18" CMP										FOR LOCATION REFERENCE ONLY
288+34	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
290+06	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
299+16	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
303+65	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
308+49	X-DRAIN	N/A	36" CMP										FOR LOCATION REFERENCE ONLY
314+10	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
317+24	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
317+72	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
328+64	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
329+80	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
336+20	X-DRAIN	N/A	2-42" RCP										FOR LOCATION REFERENCE ONLY
340+10	X-DRAIN	N/A	3-24" RCP										FOR LOCATION REFERENCE ONLY
349+10	X-DRAIN	N/A	42" RCP										FOR LOCATION REFERENCE ONLY
354+82	RT	N/A	12" STL PIPE	-	-	70	1.12				10	10	-
357+11	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
360+77	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
366+75	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
366+90	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
373+60	X-DRAIN	N/A	2-8'X5' MBC										FOR LOCATION REFERENCE ONLY
378+80	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
381+20	RT	N/A	18" CPP	-	-	70	1.12				10	10	-
382+48	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
384+58	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
396+03	X-DRAIN	N/A	24" CMP										FOR LOCATION REFERENCE ONLY
403+08	X-DRAIN	N/A	36" RCP										FOR LOCATION REFERENCE ONLY
409+30	LT	ACP	18" CMP	-	-	70	1.12				10	10	-
411+78	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
412+23	X-DRAIN	N/A	36" RCP										FOR LOCATION REFERENCE ONLY
412+98	RT	CONC	18" CPP	-	-	70	1.12				10	10	-
415+00	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
422+54	X-DRAIN	N/A	36"X20" CMP										FOR LOCATION REFERENCE ONLY
422+66	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
424+75	RT	CONC	18" CMP	-	-	70	1.12				10	10	-
427+14	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
427+90	RT	N/A	18" STL PIPE	-	-	70	1.12				10	10	-
429+58	RT	ACP	18" CMP	-	-	70	1.12				10	10	-
430+78	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
437+68	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
438+74	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
444+30	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
444+78	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
452+63	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
<b>CSJ 0546-09-043 (3 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>1,890</b>	<b>30.24</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>270</b>	<b>270</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

**MISCELLANEOUS  
SUMMARIES**  
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CONT	SECT	JOB	SHEET
0138	10	029, etc.	61
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	



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**SUMMARY OF EROSION CONTROL: FM 125 CSJ 0546-09-043 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				CSJ 0546-09-043 (SH 43 TO LOUISIANA STATE LINE)(STATION INCREASE WEST TO EAST)									
452+90	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
457+45	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
464+76	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
467+26	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
473+02	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
477+20	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
477+60	RT	N/A	8" STL PIPE	-	-	70	1.12	-	-	-	10	10	-
478+70	LT	N/A	12" RCP	-	-	70	1.12	-	-	-	10	10	-
480+68	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
483+46	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
485+75	LT	ACP	12" RCP	-	-	70	1.12	-	-	-	10	10	-
489+74	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
491+25	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
499+55	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
505+28	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
514+68	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
527+46	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
529+26	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
533+60	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
538+62	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
543+96	LT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
545+26	X-DRAIN	N/A	30" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
546+30	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
<b>CSJ 0546-09-043 (4 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>1,120</b>	<b>17.92</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>160</b>	<b>160</b>	
<b>CSJ 0546-09-043 (3 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>1,890</b>	<b>30.24</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>270</b>	<b>270</b>	
<b>CSJ 0546-09-043 (2 OF 4) SUBTOTALS:</b>				<b>4</b>	<b>0</b>	<b>2,800</b>	<b>44.80</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>370</b>	<b>370</b>	
<b>CSJ 0546-09-043 (1 OF 4) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>630</b>	<b>10.08</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>90</b>	<b>90</b>	
<b>CSJ 0546-09-043 TOTALS:</b>				<b>4</b>	<b>0</b>	<b>6,440</b>	<b>103.04</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>890</b>	<b>890</b>	

**SUMMARY OF EROSION CONTROL: FM 2888 CSJ 2919-01-006**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				CSJ 2919-01-006 (SH 77 TO FM 250)(STATION INCREASE NORTH TO SOUTH)									
0+00													FM 2888 @ SH 77
0+35	X-DRAIN	N/A	24" RCP	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
8+48	RT	N/A	18" CPP	-	-	70	1.12	-	-	-	10	10	-
12+40	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
16+48	LT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
17+12	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
18+85	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
19+90	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
20+00	RT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
23+60	X-DRAIN	N/A	2-7'X4' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
24+20	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
<b>CSJ 2919-01-006 (1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>700</b>	<b>11.20</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>80</b>	

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

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SUMMARIES**

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	62
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

**SUMMARY OF EROSION CONTROL: FM 2888 CSJ 2919-01-006 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE  N/A / ACP/ CONCRETE	PIPE  STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 2919-01-006 (SH 77 TO FM 250)(STATION INCREASE NORTH TO SOUTH)													
26+85	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
27-98	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
35+04	X-DRAIN	N/A	2-24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
39+15	X-DRAIN	N/A	30" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
39+73	X-DRAIN	N/A	36" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
40+55	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
46+36	LT	N/A	18" CMP	-	-	140	2.24	-	-	-	10	10	-
48+98	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
53+24	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
60+08	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
60+20	RT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
64+56	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
66+00	X-DRAIN	N/A	2-24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
66+10	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
71+45	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
76+24	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
77+85	X-DRAIN	N/A	2-36" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
79+54	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
84+50	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
92+78	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
95+75	X-DRAIN	N/A	42" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
101+24	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
105+00	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
108+95	LT	N/A	18" RCP	-	-	140	2.24	-	-	-	10	10	-
112+72	LT	N/A	18" CMP	-	-	70	1.12	-	-	-	10	10	-
116+88	X-DRAIN	N/A	4-8'X5' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
122+72	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
125+14	RT	N/A	15" RCP	-	-	70	1.12	-	-	-	10	10	-
125+40	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
136+25	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
138+24	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
142+98	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
147+04	X-DRAIN	N/A	2-9'X9' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
152+40	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
155+55	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
159+30	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
160+58	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
172+00	X-DRAIN	N/A	30" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
182+44	X-DRAIN	N/A	36" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
183+40	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
186+62	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
187+06	RT	N/A	18" CMP	-	-	14	0.22	-	-	-	10	10	-
196+30	RT	N/A	18" CMP	6	-	140	2.24	10	-	5	10	10	-
196+33	X-DRAIN	N/A	3-36" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
203+30	X-DRAIN	N/A	2-10'X6' MBC	-	-	-	-	-	-	-	-	-	FOR LOCATION REFERENCE ONLY
205+40	RT	N/A	24" RCP	-	-	70	1.12	-	-	-	10	10	-
214+42	X-DRAIN	N/A	24" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
223+20	RT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
223+72	X-DRAIN	N/A	30" RCP	-	-	250	4.00	-	-	-	40	40	SEE CROSS DRAIN SUMMARIES
226+30	LT	N/A	18" RCP	-	-	70	1.12	-	-	-	10	10	-
<b>CSJ 2919-01-006 (2 OF 3) SUBTOTALS:</b>				<b>6</b>	<b>0</b>	<b>6,144</b>	<b>98.30</b>	<b>5</b>	<b>10</b>	<b>5</b>	<b>920</b>	<b>920</b>	<b>-</b>

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	63
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

**SUMMARY OF EROSION CONTROL: FM 2888 CSJ 2919-01-006 (CONTINUED)**

LOCATION		EXISTING		100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
STATION	LT / RT / CROSS STRUCT	SURFACE N/A / ACP/ CONCRETE	PIPE STRUCTURE / CMP / RCP / CPP	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING	<sup>3</sup> RIPRAP (CONC) (4 IN)	<sup>3</sup> RIPRAP (STONE PROTECTION) (12 IN)	<sup>3</sup> BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
				EA	EA	SY	MG	CY	CY	CY	LF	LF	
CSJ 2919-01-006 (SH 77 TO FM 250)(STATION INCREASE NORTH TO SOUTH)													
231+58	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
232+58	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
233+70	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
234+10	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
236+02	LT	N/A	18" CMP	-	-	70	1.12				10	10	-
236+60	RT	N/A	18" CMP	-	-	70	1.12				10	10	-
241+50	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
241+56	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
246+72	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
257+00	X-DRAIN	N/A	24" RCP										FOR LOCATION REFERENCE ONLY
264+76	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
279+72	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
285+00	X-DRAIN	N/A	36" RCP										FOR LOCATION REFERENCE ONLY
296+20	X-DRAIN	N/A	42" RCP										FOR LOCATION REFERENCE ONLY
298+00	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
310+70	RT	N/A	18" RCP	-	-	140	2.24				10	10	-
311+00	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
311+80	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
313+48	LT	N/A	18" RCP	4.00	-	70	1.12				10	10	-
317+74	X-DRAIN	N/A	2-30" RCP										FOR LOCATION REFERENCE ONLY
326+30	X-DRAIN	N/A	2-42" RCP										FOR LOCATION REFERENCE ONLY
330+56	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
330+88	RT	N/A	24" RCP	-	-	70	1.12				10	10	-
332+75	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
333+00	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
339+75	X-DRAIN	N/A	30" RCP										FOR LOCATION REFERENCE ONLY
348+41	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
352+26	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
355+10	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
356+32	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
358+28	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
361+30	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
367+12	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
374+77	X-DRAIN	N/A	2-24" RCP										FOR LOCATION REFERENCE ONLY
384+12	RT	N/A	18" RCP	-	-	140	2.24				10	10	-
390+62	RT	N/A	18" RCP	-	-	140	2.24				10	10	-
394+26	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
395+48	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
396+96	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
402+60	RT	N/A	24" RCP	-	-	70	1.12				10	10	-
403+50	X-DRAIN	N/A	2-36" RCP										FOR LOCATION REFERENCE ONLY
408+00	LT	N/A	18" RCP	-	-	70	1.12				10	10	-
408+58	RT	N/A	18" RCP	-	-	70	1.12				10	10	-
408+20	RT	N/A	12" CMP/12" RCP	-	-	70	1.12				10	10	-
<b>CSJ 2919-01-006 (3 OF 3) SUBTOTALS:</b>				<b>4</b>	<b>0</b>	<b>2,310</b>	<b>36.96</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>300</b>	<b>300</b>	
<b>CSJ 2919-01-006 (2 OF 3) SUBTOTALS:</b>				<b>6</b>	<b>0</b>	<b>6,144</b>	<b>98.30</b>	<b>5</b>	<b>10</b>	<b>5</b>	<b>920</b>	<b>920</b>	
<b>CSJ 2919-01-006 (1 OF 3) SUBTOTALS:</b>				<b>0</b>	<b>0</b>	<b>700</b>	<b>11.20</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>80</b>	
<b>CSJ 2919-01-006 TOTALS:</b>				<b>10</b>	<b>0</b>	<b>9,154</b>	<b>146.46</b>	<b>12</b>	<b>10</b>	<b>5</b>	<b>1,300</b>	<b>1,300</b>	

<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

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SUMMARIES**

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	64
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

### SUMMARY OF EROSION CONTROL: PROJECT TOTALS

PROJECT TOTALS	100 6006	100 6007	164 6054	168 6001	432 6001	432 6031	432 6039	506 6038	506 6039	REMARKS / NOTES
	PREP ROW (TREE) (LESS THAN 24" DIA)	PREP ROW (TREE) (GREATER THAN 24" DIA)	BOND FBR MTRX SEED (PERM)(RURAL) (SAND)	VEGETATIVE WATERING  80 MG/5000 SY	3 RIPRAP (CONC) (4 IN)	3 RIPRAP (STONE PROTECTION) (12 IN)	3 BEDDING MATERIAL (6 IN)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	
	EA	EA	SY	MG	CY	CY	CY	LF	LF	
<b>PROJECT TOTALS</b>										
<b>CSJ 0138-10-029 TOTALS:</b>	0	0	6,020	96.32	15	0	0	870	870	
<b>CSJ 0138-11-031 TOTALS:</b>	0	0	10,335	164.46	11	26	13	1700	1700	
<b>CSJ 0277-05-012 TOTALS:</b>	1	0	2,320	37.12	4	0	0	340	340	
<b>CSJ 0946-01-045 TOTALS:</b>	0	0	14,100	225.60	12	48	24	2,210	2,210	
<b>CSJ 0812-01-035 TOTALS:</b>	0	0	4,060	63.84	9	0	0	550	550	
<b>CSJ 1573-01-018 TOTALS:</b>	0	0	6,930	110.88	15	0	0	920	920	
<b>CSJ 1216-01-008 TOTALS:</b>	0	1	1,540	24.64	5	0	0	150	150	
<b>CSJ 1957-01-009 TOTALS:</b>	1	0	4,270	68.32	10	0	0	560	560	
<b>CSJ 2339-02-012 TOTALS:</b>	10	1	12,250	196.00	18	6	3	1420	1420	
<b>CSJ 1758-01-012 TOTALS:</b>	0	0	5,920	94.72	8	0	0	810	810	
<b>CSJ 2576-01-014 TOTALS:</b>	0	0	3,130	50.08	10	132	66	450	450	
<b>CSJ 0546-09-043 TOTALS:</b>	4	0	6,440	103.04	15	0	0	890	890	
<b>CSJ 2919-01-006 TOTALS:</b>	10	0	9,154	146.46	12	10	5	1,300	1,300	
<b>PROJECT TOTALS:</b>	26	2	86,469	1,381.48	144	222	111	12,170	12,170	

3 TO BE USED AS DIRECTED BY ENGINEER

### CSJ 1758-01-012 TMA SUMMARY

LOCATION	6185 6002 TMA (STATIONARY)
VARIES	DAY 304

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	65
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	



**SUMMARY OF CROSS DRAINAGE STRUCTURES: FM 248 CSJ 0138-11-031**

STATION	EXISTING STRUCTURE	<sup>1</sup> <sup>2</sup>	<sup>1</sup> <sup>2</sup>	<sup>1</sup> <sup>2</sup>	132 6021	150 6001	464 6003	464 6005	464 6007	464 6008	464 6009	464 6010	466 6134	467 6005	467 6008	467 6014	467 6018	467 6356	467 6388	467 6417	467 6448	467 6461	467 6474	<sup>3</sup> 480 6001	658 6099	COMMENTS
		REMOVE HEADWALL	PIPE LENGTH REMOVED	REQUIRED PIPE LENGTH	EMBANKMENT (VEHICLE) (ORD COMP) (TY-C)	BLADING	<sup>2</sup> RC PIPE (CL III)						HEADWALL (CH-PW-S) (DIA=36 IN)	SET (TY I)(3:1) (C)				<sup>3</sup> SET (TYII) (RCP) (3:1) (C)					CLEAN EXISTING CULVERT	INSTL OM ASSM (OM-2Z) (WFLX) GND		
		EA	LF	LF	CY	STA	18"	24"	30"	36"	42"	48"	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
0+00	X-ROAD																									FM 248 @ SH 49
0+77	24" RCP																									NO WORK AT THIS LOCATION
4+13	18" RCP																									NO WORK AT THIS LOCATION
4+57	18" RCP																									NO WORK AT THIS LOCATION
11+27	18" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2 TURN UP TOE WALL 1'
<sup>4</sup> 17+15	30" RCP 45" RFS	-	-	12	10.00	2.00	-	-	12	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2 2'X2' 15" BEND/TURN UP TOE WALL 1'
26+75	30" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2 TURN UP TOE WALL 1'
31+49	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 TURN UP TOE WALL 1' / PLACE RIP RAP
61+76	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 TURN UP TOE WALL 1'
99+20	36" RCP	-	-	-	60.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2 TURN UP TOE WALL 1' / PLACE RIP RAP
103+45	24" RCP	-	-	-	20.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 TURN UP TOE WALL 1' / PLACE RIP RAP
109+38	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
119+87	SPAN BRIDGE																									NO WORK AT THIS LOCATION
128+25	24" RCP	-	4	4	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 TURN UP TOE WALL 1'
151+55	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 TURN UP TOE WALL 1'
196+76	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 TURN UP TOE WALL 1'
217+44	18" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 TURN UP TOE WALL 1'
240+67	SPAN BRIDGE																									NO WORK AT THIS LOCATION
242+77	18" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
263+00	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
277+77	30" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2 TURN UP TOE WALL 1'
284+21	18" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
291+88	18" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 TURN UP TOE WALL 1'
300+05	30" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2
307+88	24" RCP	-	-	-	5.00	2.00	-	2	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 TURN UP TOE WALL 1'
315+13	18" RCP	-	4	4	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 TURN UP TOE WALL 1'
342+27	2-36" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	2 TURN UP TOE WALL 1'
356+85	2-36" RCP	-	-	-	20.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	2 TURN UP TOE WALL 1'
362+59	X-ROAD																									FM 248 @ FM 2683
<sup>4</sup> 362+66	24" RCP 45" RFS	-	-	12	10.00	2.00	-	12	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2 2'X2' 15" BEND/TURN UP TOE WALL 1'
<b>CSJ 0138-11-031 TOTALS</b>		<b>0</b>	<b>8</b>	<b>32</b>	<b>210.00</b>	<b>46.00</b>	<b>0</b>	<b>14</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>18</b>	<b>6</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>46</b>	<b>-</b>

**SUMMARY OF CROSS DRAINAGE STRUCTURES: FM 250 CSJ 0277-05-012**

STATION	EXISTING STRUCTURE	<sup>1</sup> <sup>2</sup>	<sup>1</sup> <sup>2</sup>	<sup>1</sup> <sup>2</sup>	132 6021	150 6001	464 6003	464 6005	464 6007	464 6008	464 6009	464 6010	466 6134	467 6005	467 6008	467 6014	467 6018	467 6356	467 6388	467 6417	467 6448	467 6461	467 6474	<sup>3</sup> 480 6001	658 6099	COMMENTS	
		REMOVE HEADWALL	PIPE LENGTH REMOVED	REQUIRED PIPE LENGTH	EMBANKMENT (VEHICLE) (ORD COMP) (TY-C)	BLADING	<sup>2</sup> RC PIPE (CL III)						HEADWALL (CH-PW-S) (DIA=36 IN)	SET (TY I)(3:1) (C)				<sup>3</sup> SET (TYII)(RCP)(3:1)(C)					CLEAN EXISTING CULVERT	INSTL OM ASSM (OM-2Z) (WFLX) GND			
		E A	LF	LF	CY	STA	18"	24"	30"	36"	42"	48"	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA		EA
0+00	X-ROAD																									FM 250 @ SH 77	
15+37	18"X18" BC																										NO WORK AT THIS LOCATION
34+07	4-48" RCP	-	32	32	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	2	
54+29	18" RCP	-	-	-	5.00	2.00	12	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 STEVENS STREET	
82+20	24" RCP																									NO WORK AT THIS LOCATION	
<b>CSJ 0277-05-012 TOTALS</b>		<b>0</b>	<b>32</b>	<b>32</b>	<b>10.00</b>	<b>4.00</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>4</b>	<b>-</b>

<sup>1</sup> FOR CONSTRUCTOR'S INFORMATION ONLY  
<sup>2</sup> VERIFY IN FIELD  
<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER  
<sup>4</sup> USE SETP-FW-30

**MISCELLANEOUS SUMMARIES**

SHEET 61 OF 64

CONT	SECT	JOB	SHEET
0138	10	029, etc.	
DISTRICT	COUNTY	HIGHWAY	66
ATL	CASS	FM 248, etc.	



FILE: c:\dotopw\_online\dotopw\mark.pippen\0314228\Cross Drain Summaries.xlsm\Xdrain 1  
 DATE: 1/29/2021

**SUMMARY OF CROSS DRAINAGE STRUCTURES: FM 250 CSJ 0946-01-045**

STATION	EXISTING STRUCTURE	<sup>1</sup> <sup>2</sup>	<sup>1</sup> <sup>2</sup>	<sup>1</sup> <sup>2</sup>	132 6021	150 6001	464 6003	464 6005	464 6007	464 6008	464 6009	464 6010	466 6134	467 6005	467 6008	467 6014	467 6018	467 6356	467 6388	467 6417	467 6448	467 6461	467 6474	<sup>3</sup> 480 6001	658 6099	COMMENTS
		REMOVE HEADWALL	PIPE LENGTH REMOVED	REQUIRED PIPE LENGTH	EMBANKMENT (VEHICLE) (ORD COMP) (TY-C)	BLADING	<sup>2</sup> RC PIPE (CL III)						HEADWALL (CH-PW-S) (DIA=36 IN)	SET (TY I)(3:1)(C)				<sup>3</sup> SET (TYII) (RCP) (3:1) ( C )						CLEAN EXISTING CULVERT	INSTL OM ASSM (OM-2Z) (WFLX) GND	
		EA	LF	LF	CY	STA	18"	24"	30"	36"	42"	48"	EA	24"	30"	36"	42"	EA	EA	EA	EA	EA	EA	EA	EA	
262+68	X-ROAD																									FM 250 @ FM 130
263+05	24" RCP																									NO WORK AT THIS LOCATION
280+83	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
299+66	3-36" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	2	TURN UP TOE WALL 1'
323+59	2-6'X4' MBC																									NO WORK AT THIS LOCATION
340+86	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
346+43	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
370+75	2-30" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	2	TURN UP TOE WALL 1'
382+50	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
406+48	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
418+71	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
427+32	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
439+00	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
444+44	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
465+45	SPAN BRIDGE																									NO WORK AT THIS LOCATION
471+00	24" RCP																									NO WORK AT THIS LOCATION
481+89	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
492+53	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	-
503+21	2-24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	2	-
522+92	30" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2	-
527+05	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
540+60	4-30" RCP 15" LFS	-	-	-	10.00	2.00	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	2	SEE SETP-FW-15 STANDARD
551+80	X-ROAD																									FM 250 @ FM 2888
557+89	18" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2	TURN UP TOE WALL 1'
568+00	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
576+48	18" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2	TURN UP TOE WALL 1'
585+50	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
594+75	3-42" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	2	TURN UP TOE WALL 1'
603+63	18" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
609+17	3-5'X3' MBC																									NO WORK AT THIS LOCATION
628+65	18" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2	TURN UP TOE WALL 1'
637+50	24" RCP	-	8	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
647+08	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
655+92	18" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2	TURN UP TOE WALL 1'
665+07	2-42" RCP 15" LFS	-	-	-	10.00	2.00	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	2	SEE SETP-FW-15 STANDARD
687+45	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
696+20	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
706+31	2-6'X6' MBC																									NO WORK AT THIS LOCATION
710+24	2-36" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	2	TURN UP TOE WALL 1'
716+28	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	TURN UP TOE WALL 1'
746+38	3-5'X4' MBC																									NO WORK AT THIS LOCATION
773+80	2-24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	2	TURN UP TOE WALL 1'
<b>CSJ 0946-01-045 TOTAL</b>		<b>0</b>	<b>8</b>	<b>0</b>	<b>170.00</b>	<b>64.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>10</b>	<b>42</b>	<b>6</b>	<b>10</b>	<b>6</b>	<b>0</b>	<b>5</b>	<b>66</b>	<b>-</b>

<sup>1</sup> FOR CONSTRUCTOR'S INFORMATION ONLY  
<sup>2</sup> VERIFY IN FIELD  
<sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER

**MISCELLANEOUS SUMMARIES**

SHEET 62 OF 64

CONT	SECT	JOB	SHEET
0138	10	029, etc.	67
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	



FILE: 128/2021  
 DATE: 12/29/2021

**SUMMARY OF CROSS DRAINAGE STRUCTURES: FM 994 CSJ 1216-01-008**

STATION	EXISTING STRUCTURE	1	2	3	132	150	464	464	464	464	464	464	466	467	467	467	467	467	467	467	467	467	480	658	COMMENTS	
		REMOVE HEADWALL	PIPE LENGTH REMOVED	REQUIRED PIPE LENGTH	EMBANKMENT (VEHICLE) (ORD COMP) (TY-C)	BLADING	2 RC PIPE (CL III)						HEADWALL (CH-PW-S) (DIA=36 IN)	SET (TY I)(3:1)(C)				3 SET (TYII)(RCP)(3:1)(C)				CLEAN EXISTING CULVERT	INSTL OM ASSM (OM-2Z) (WFLX) GND			
		EA	LF	LF	CY	STA	18"	24"	30"	36"	42"	48"	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA		EA
9+00	X-ROAD																								FOR LOCATION REFERENCE ONLY	
16+36	30" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	TURN UP TOE WALL 1'	
41+90	3-8'X7' MBC																								NO WORK AT THIS LOCATION	
45+42	4-8'X6' MBC																								NO WORK AT THIS LOCATION	
61+03	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-		
63+08	2-30" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	2	-		
91+16	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	TURN UP TOE WALL 1'		
104+13	2-24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	2	-	TURN UP TOE WALL 1'		
114+80	3-36" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	2	-		
137+51	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	TURN UP TOE WALL 1'		
147+50	24" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	TURN UP TOE WALL 1'		
167+69	2-48" RCP	-	-	-	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	-		
<b>CSJ 1216-01-008 TOTAL</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>45.00</b>	<b>18.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>18</b>	<b>-</b>

**SUMMARY OF CROSS DRAINAGE STRUCTURES: FM 1841 CSJ 1758-01-012**

STATION	EXISTING STRUCTURE	1	2	3	132	150	464	464	464	464	464	464	466	467	467	467	467	467	467	467	467	467	480	658	COMMENTS	
		REMOVE HEADWALL	PIPE LENGTH REMOVED	REQUIRED PIPE LENGTH	EMBANKMENT (VEHICLE) (ORD COMP) (TY-C)	BLADING	2 RC PIPE (CL III)						HEADWALL (CH-PW-S) (DIA=36 IN)	SET (TY I) (3:1)(C)				3 SET (TYII)(RCP)(3:1)(C)				CLEAN EXISTING CULVERT	INSTL OM ASSM (OM-2Z) (WFLX)			
		EA	LF	LF	CY	STA	18"	24"	30"	36"	42"	48"	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA		EA
0+00	X-ROAD																								FOR LOCATION REFERENCE ONLY	
6+15	24" RCP	2	8	8	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2	-	TURN UP TOE WALL 1'	
13+68	24" RCP	2	8	8	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2	-	TURN UP TOE WALL 1'	
46+00	3-6'X5' MBC																								NO WORK AT THIS LOCATION	
71+35	24" RCP																								NO WORK AT THIS LOCATION	
75+86	24" RCP	2	8	8	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2	-	TURN UP TOE WALL 1'	
84+50	24" RCP																								NO WORK AT THIS LOCATION	
87+70	2-24" RCP																								NO WORK AT THIS LOCATION	
91+00	24" RCP																								NO WORK AT THIS LOCATION	
112+50	24" RCP	2	8	8	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2	-	-	
4 120+25	3-36" RCP 45" RFS	2	18	36	10.00	2.00	-	-	-	18	-	-	-	-	6	-	-	-	-	-	-	-	5	2	2'X2' 15" BEND	
134+00	3-36" RCP 30" RFS	2	18	48	20.00	2.00	-	-	-	30	-	-	6	-	-	-	-	-	-	-	-	-	2	-	-	
150+40	2-30" RCP	2	16	16	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	2	-	-	
165+35	24" RCP																								NO WORK AT THIS LOCATION	
176+74	2-36" RCP																								NO WORK AT THIS LOCATION	
176+74	2-36" RCP																								NO WORK AT THIS LOCATION	
179+85	3-36" RCP 30" LFS	2	18	24	20.00	2.00	-	-	-	6	-	-	6	-	-	-	-	-	-	-	-	-	2	-	-	
185+62	30" RCP																								NO WORK AT THIS LOCATION	
194+15	2-24" RCP	1	8	8	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2	-	TURN UP TOE WALL 1' / DS TRTD	
4 207+00	24" RCP 30" RFS	2	6	6	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	
4 207+22	24" RCP 30" LFS	2	6	6	5.00	2.00	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2	-	-	
<b>CSJ 1758-01-012 TOTAL</b>		<b>21</b>	<b>122</b>	<b>176</b>	<b>90.00</b>	<b>22.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>4</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>22</b>	<b>-</b>

1 FOR CONSTRUCTOR'S INFORMATION ONLY  
 2 VERIFY IN FIELD  
 3 TO BE USED AS DIRECTED BY ENGINEER  
 4 USE SETP-FW-30

**MISCELLANEOUS SUMMARIES**

CONT	SECT	JOB	SHEET
0138	10	029, etc.	68
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	



**SUMMARY OF CROSS DRAINAGE STRUCTURES: FM 2888 CSJ 2919-01-006**

STATION	EXISTING STRUCTURE	<sup>1</sup> <sup>2</sup>	<sup>1</sup> <sup>2</sup>	<sup>1</sup> <sup>2</sup>	132 6021	150 6001	464 6003	464 6005	464 6007	464 6008	464 6009	464 6010	466 6134	467 6005	467 6008	467 6014	467 6018	467 6356	467 6388	467 6417	467 6448	467 6461	467 6474	<sup>3</sup> 480 6001	658 6099	COMMENTS	
		REMOVE HEADWALL	PIPE LENGTH REMOVED	REQUIRED PIPE LENGTH	EMBANKMENT (VEHICLE) (ORD COMP) (TY-C)	BLADING	<sup>2</sup> RC PIPE (CL III)						HEADWALL (CH-PW-S) (DIA=36 IN)	SET (TY I)(3:1)(C)				<sup>3</sup> SET (TYII) (RCP) (3:1) ( C )						CLEAN EXISTING CULVERT	INSTL OM ASSM (OM-22) (WFLX) GND		
		EA	LF	LF	CY	STA	18"	24"	30"	36"	42"	48"	EA	24"	30"	36"	42"	18"	24"	30"	36"	42"	48"	EA	EA		EA
0+00	X-ROAD																									FM 2888 @ SH 77	
0+35	24" RCP																										NO WORK AT THIS LOCATION
23+60	2-7'X4' MBC																										NO WORK AT THIS LOCATION
35+04	2-24" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	2	-
4   39+15	30" RCP 30" LFS	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2	-
4   39+73	36" RCP 30" LFS	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2	-
66+00	2-24" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	2	-
77+85	2-36" RCP	2	24	24	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	2	-
84+50	24" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2	-
95+75	42" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-
105+00	24" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2	-
116+88	4-8'X5' MBC																										NO WORK AT THIS LOCATION
136+25	24" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2	-
147+04	2-9'X9' MBC																										NO WORK AT THIS LOCATION
159+30	24" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2	-
172+00	30" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2	-
182+44	36" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	-
4   196+33	3-36" RCP 45" RFS	2	18	24	10.00	2.00	-	-	-	24	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	2	2'X2' 15" BEND
203+30	2-10'X6' MBC																										NO WORK AT THIS LOCATION
214+42	24" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2	-
223+72	30" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2	-
231+58	2-24" RCP	2	24	24	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	2	-
4   241+50	24" RCP 45" LFS	2	6	8	5.00	2.00	-	4	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2	2'X2' 15" BEND
257+00	24" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2	-
4   285+00	36" RCP 45" LFS	2	6	8	5.00	2.00	-	-	-	4	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2	2'X2' 15" BEND
296+20	42" RCP	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-
311+80	2-24" RCP	2	24	24	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	2	-
317+74	2-30" RCP	2	24	24	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	2	-
326+30	2-42" RCP	2	24	24	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	2	-
4   339+75	30" RCP 30" RFS	2	6	6	5.00	2.00	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2	TURN TOE WALL UP 1'
348+41	2-24" RCP	2	24	24	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	2	-
258+24	2-24" RCP	2	24	24	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	2	-
367+12	2-24" RCP	2	24	24	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	2	-
374+77	2-24" RCP	2	24	24	5.00	2.00	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	2	-
4   403+50	2-36" RCP 30" RFS	2	12	12	5.00	2.00	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	2	-
<b>CSJ 2919-01-006 TOTALS</b>		<b>58</b>	<b>444</b>	<b>454</b>	<b>150.00</b>	<b>58.00</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>44</b>	<b>8</b>	<b>6</b>	<b>8</b>	<b>0</b>	<b>5</b>	<b>58</b>		
<b>CSJ 0138-11-031 TOTALS</b>		<b>0</b>	<b>8</b>	<b>32</b>	<b>210.00</b>	<b>46.00</b>	<b>0</b>	<b>14</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>18</b>	<b>6</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>46</b>		
<b>CSJ 0277-05-012 TOTALS</b>		<b>0</b>	<b>32</b>	<b>32</b>	<b>10.00</b>	<b>4.00</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>4</b>		
<b>CSJ 0946-01-045 TOTALS</b>		<b>0</b>	<b>8</b>	<b>0</b>	<b>170.00</b>	<b>64.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>10</b>	<b>42</b>	<b>6</b>	<b>10</b>	<b>6</b>	<b>0</b>	<b>5</b>	<b>66</b>		
<b>CSJ 1216-01-008 TOTALS</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>45.00</b>	<b>18.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>18</b>			
<b>CSJ 1758-01-012 TOTALS</b>		<b>21</b>	<b>122</b>	<b>176</b>	<b>90.00</b>	<b>22.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>4</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>22</b>		
<b>PROJECT TOTALS</b>		<b>79</b>	<b>614</b>	<b>694</b>	<b>675.00</b>	<b>212.00</b>	<b>12</b>	<b>18</b>	<b>12</b>	<b>82</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>8</b>	<b>14</b>	<b>20</b>	<b>4</b>	<b>24</b>	<b>126</b>	<b>30</b>	<b>32</b>	<b>14</b>	<b>12</b>	<b>25</b>	<b>214</b>		

- <sup>1</sup> FOR CONSTRUCTOR'S INFORMATION ONLY
- <sup>2</sup> VERIFY IN FIELD
- <sup>3</sup> TO BE USED AS DIRECTED BY ENGINEER
- <sup>4</sup> USE SETP-FW-30

**MISCELLANEOUS SUMMARIES**

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CONT	SECT	JOB	SHEET
0138	10	029, etc.	69
DISTRICT	COUNTY	HIGHWAY	
ATL	CASS	FM 248, etc.	

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DATE: #

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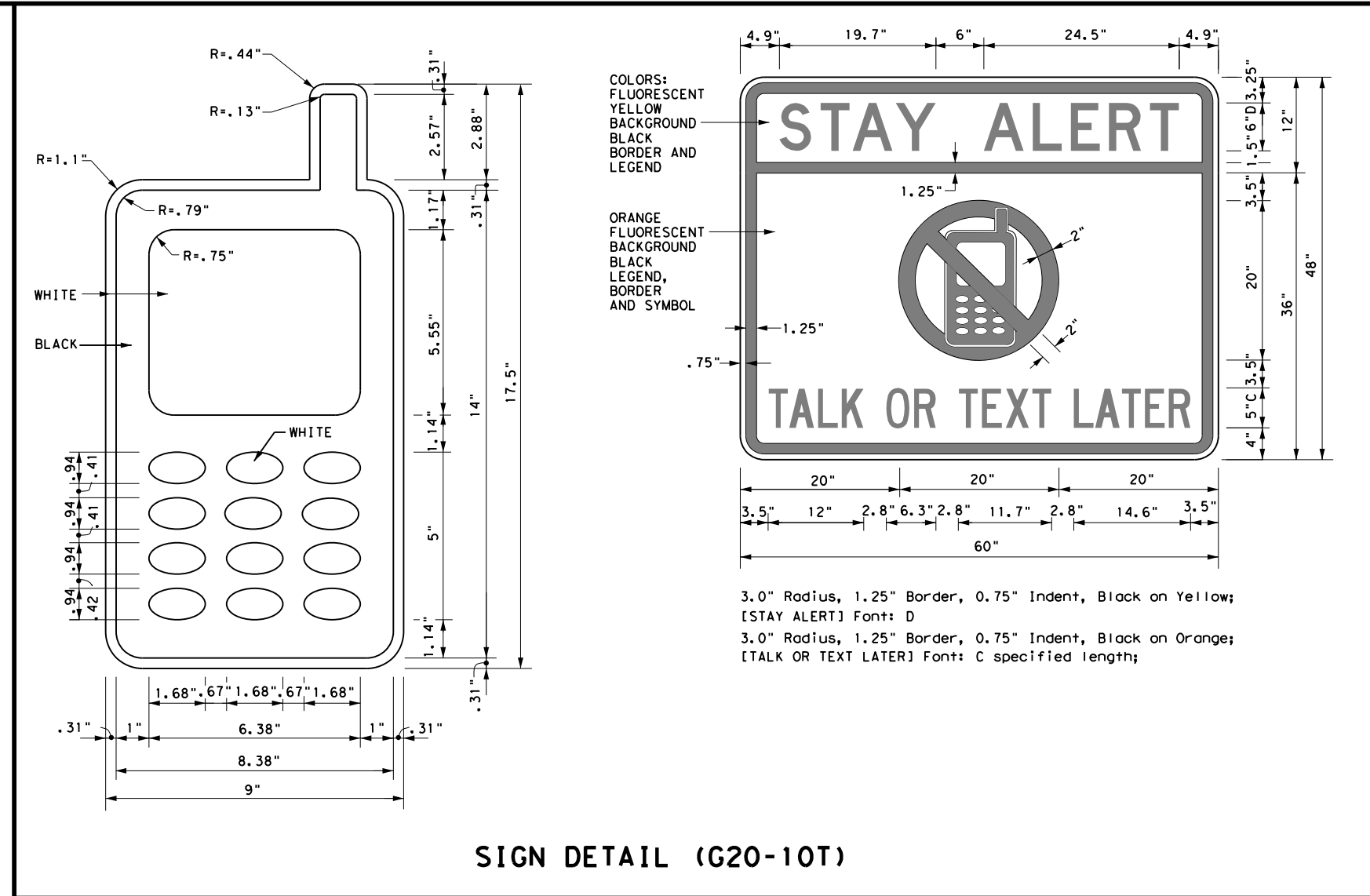
**BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:**

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

**WORKER SAFETY APPAREL NOTES:**

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

DATE:  
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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

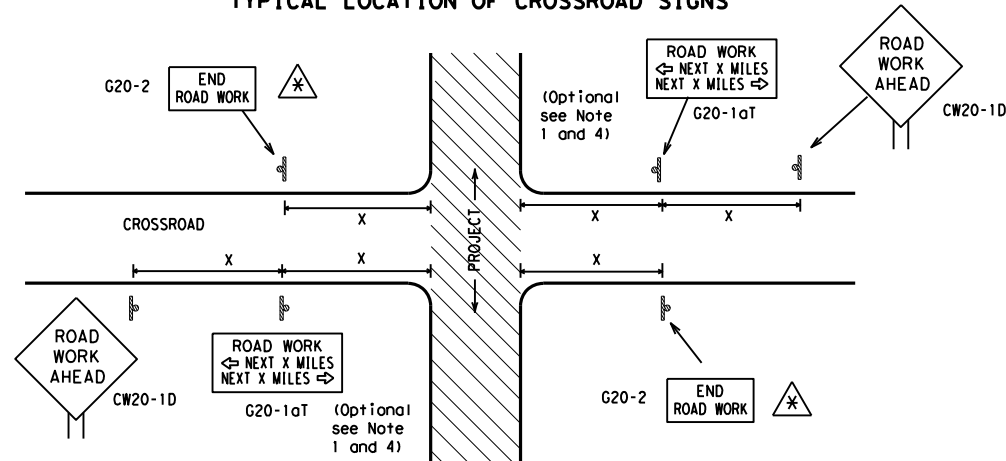
<b>THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT</b> <a href="http://www.txdot.gov">http://www.txdot.gov</a>
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD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

SHEET 1 OF 12

		<i>Traffic Operations Division Standard</i>
<b>BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS</b>		
<b>BC (1) - 14</b>		
FILE: bc-14.dgn	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT: 0138	SECT: 10
REVISIONS	DATE	BY
4-03	5-10	8-14
9-07	7-13	
DIST: ATL	COUNTY: CASS, ETC.	SHEET NO.: 70

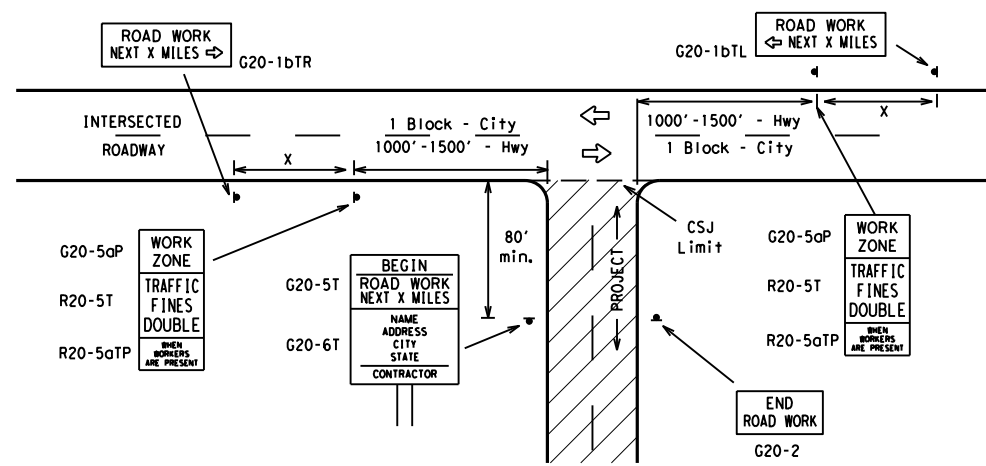
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**TYPICAL LOCATION OF CROSSROAD SIGNS**



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

**T-INTERSECTION**



**CSJ LIMITS AT T-INTERSECTION**

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

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

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

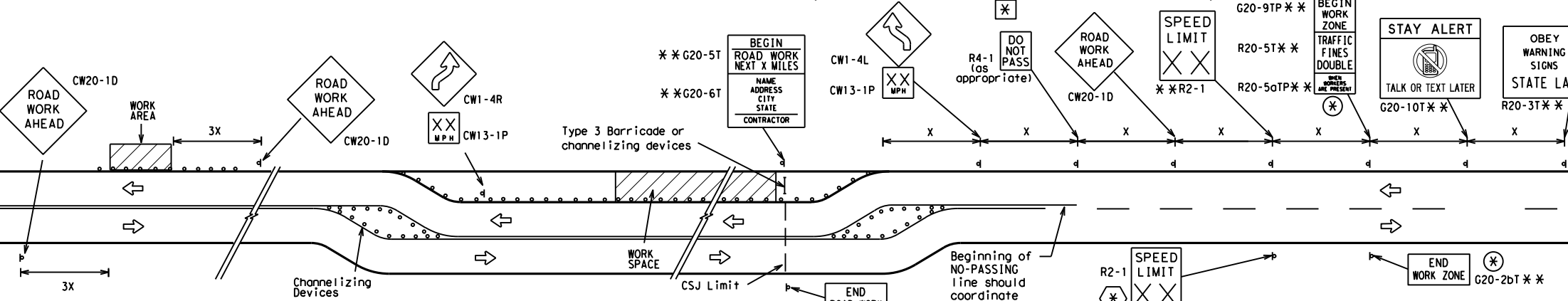
\* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

**GENERAL NOTES**

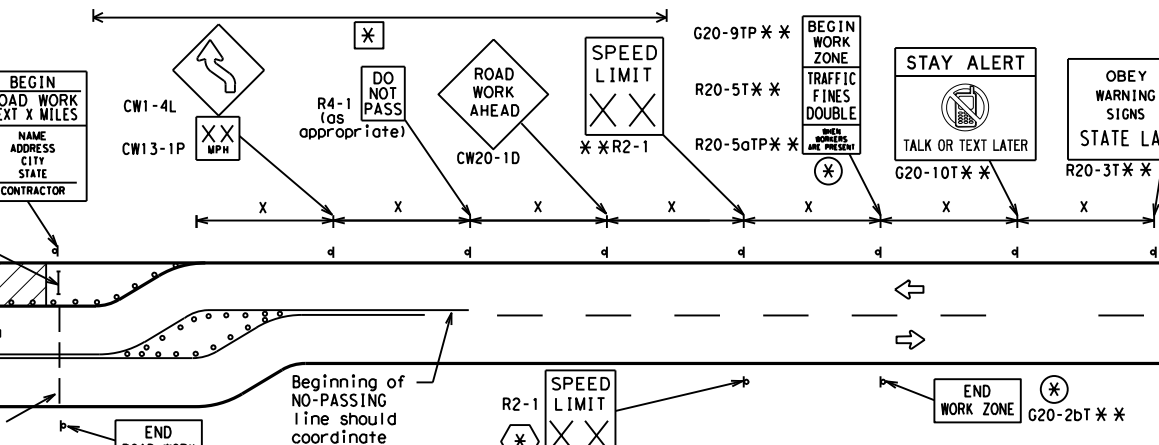
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be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

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

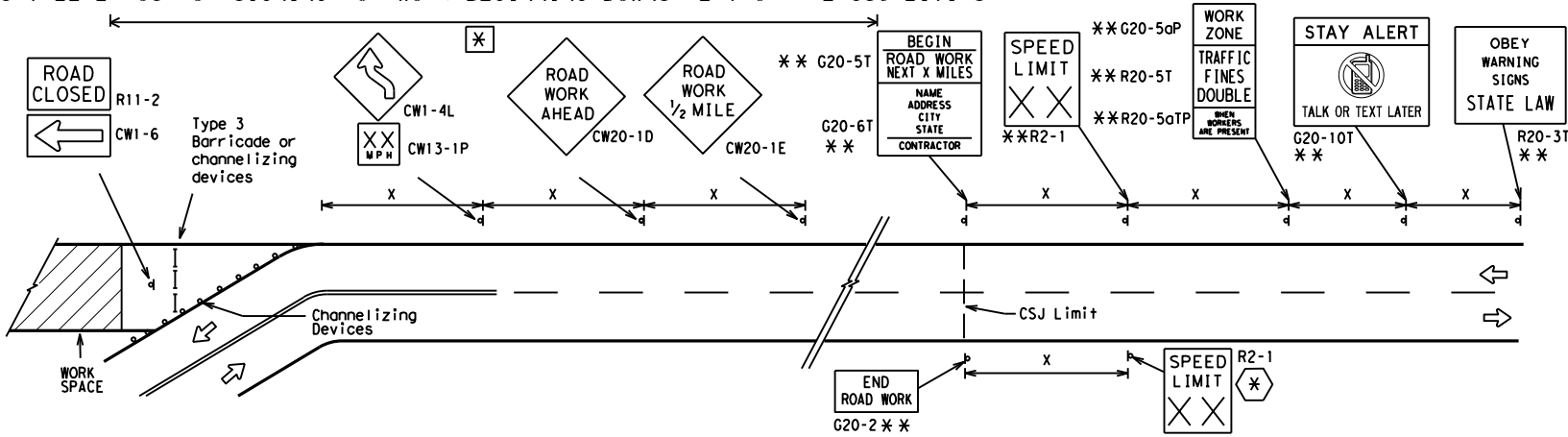


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

**SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING 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.

SHEET 2 OF 12

Texas Department of Transportation Traffic Operations Division Standard

**BARRICADE AND CONSTRUCTION PROJECT LIMIT**

BC(2)-14

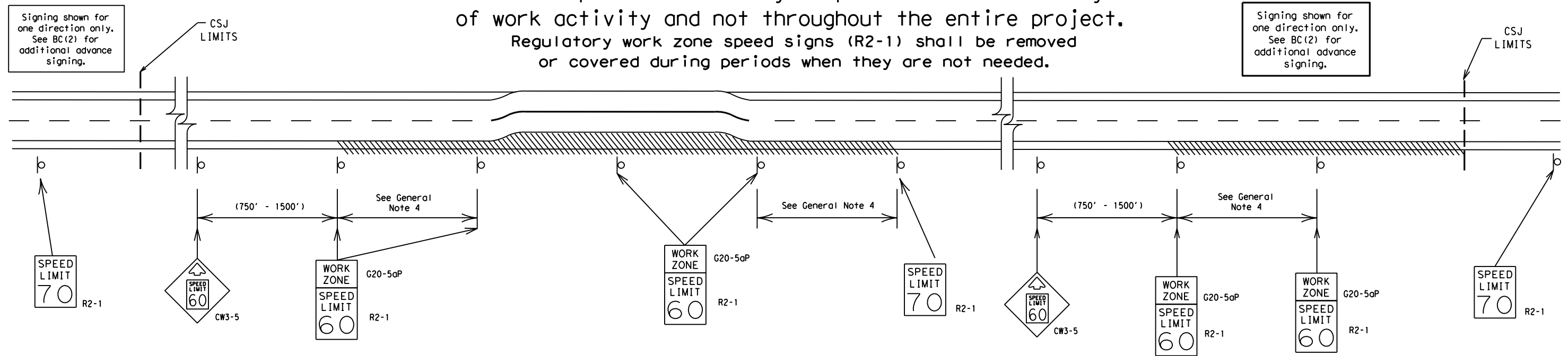
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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13	ATL	CASS, ETC.	71	

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# TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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



## GUIDANCE FOR USE:

### LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

- rough road or damaged pavement surface
- substantial alteration of roadway geometrics (diversions)
- construction detours
- grade
- width
- other conditions readily apparent to the driver

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

### SHORT TERM WORK ZONE SPEED LIMITS

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

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

## GENERAL NOTES

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

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

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SHEET 3 OF 12

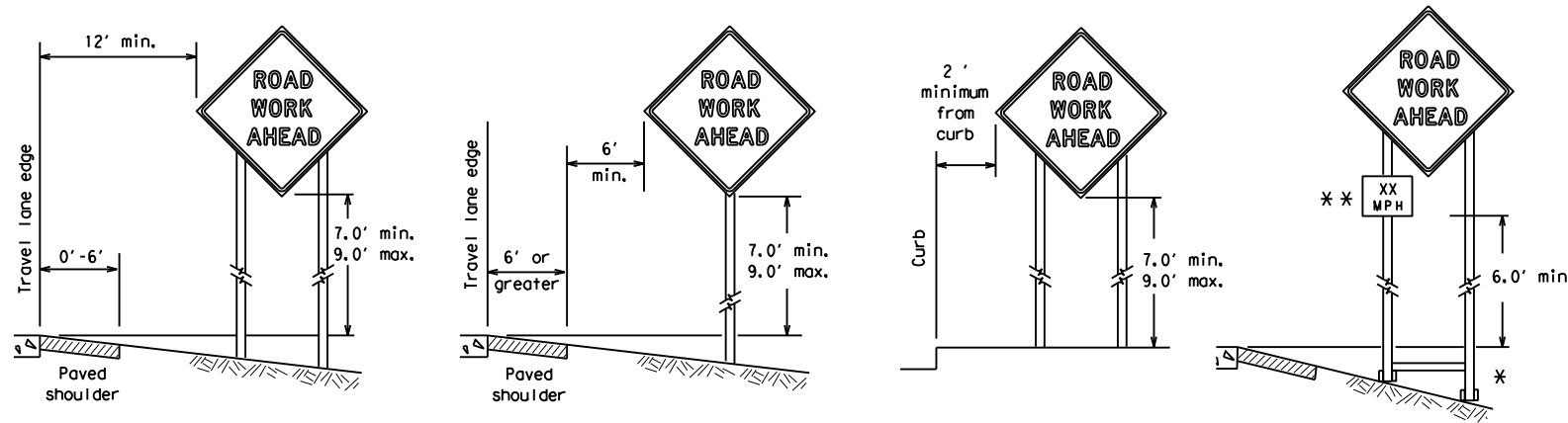


## BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3) - 14

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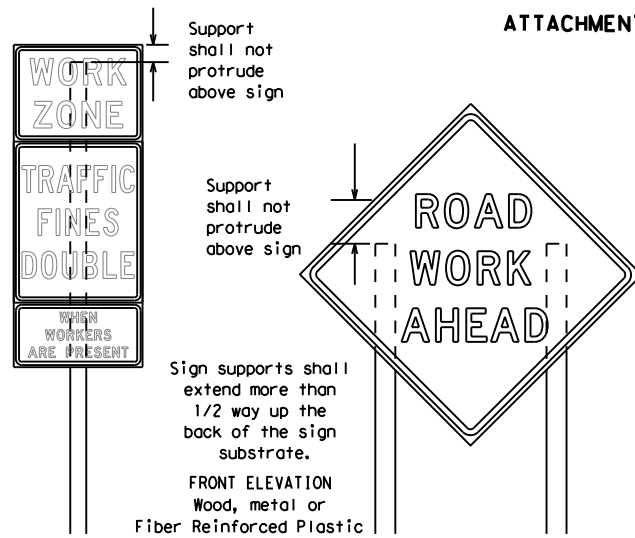
**TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS**



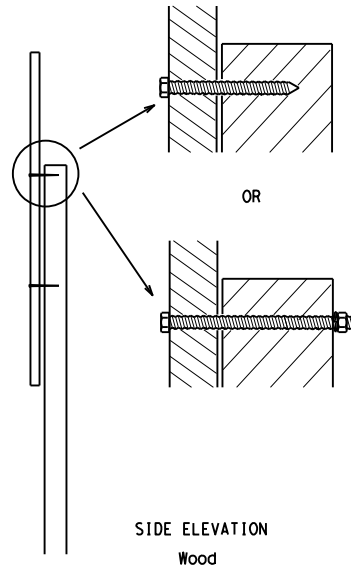
\* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

**ATTACHMENT FOR SIGN SUPPORTS**



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

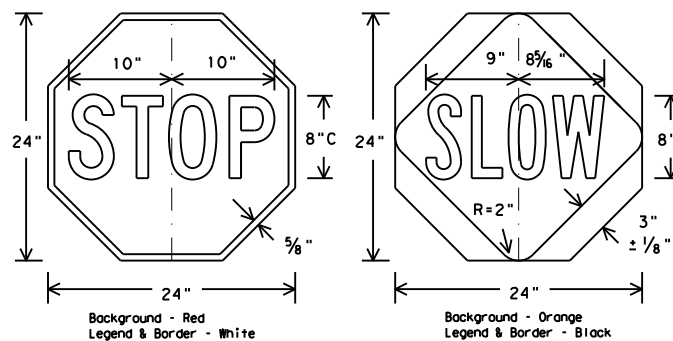


**Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.**

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

**STOP/SLOW PADDLES**

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<sub>FL</sub> or Type C<sub>FL</sub>, 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.

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**BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES**

**BC (4) - 14**

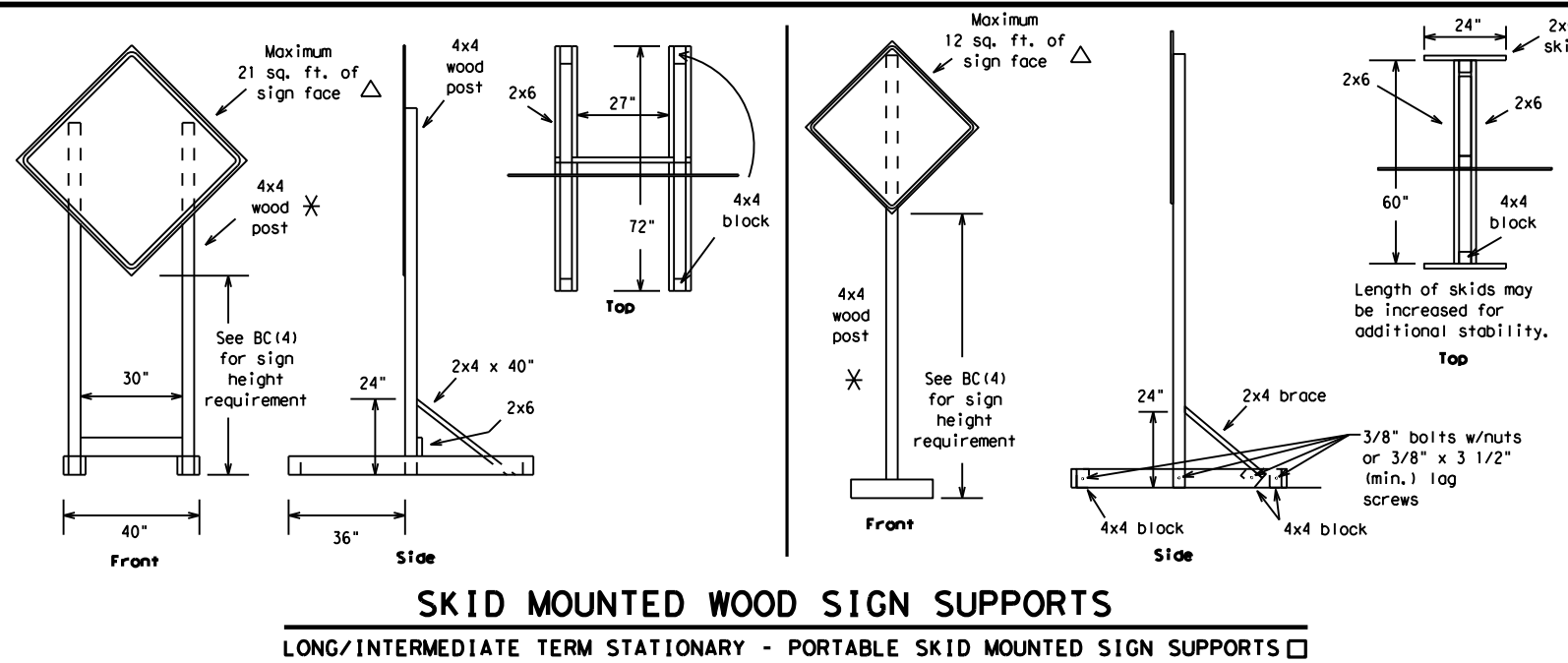
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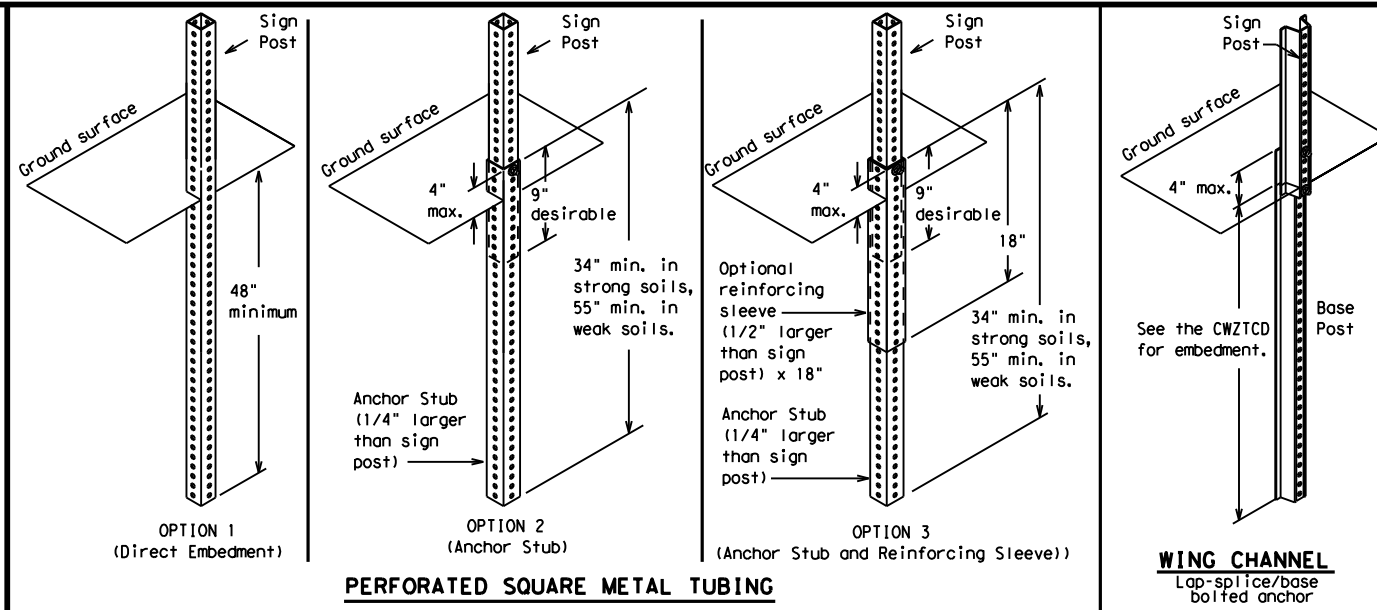


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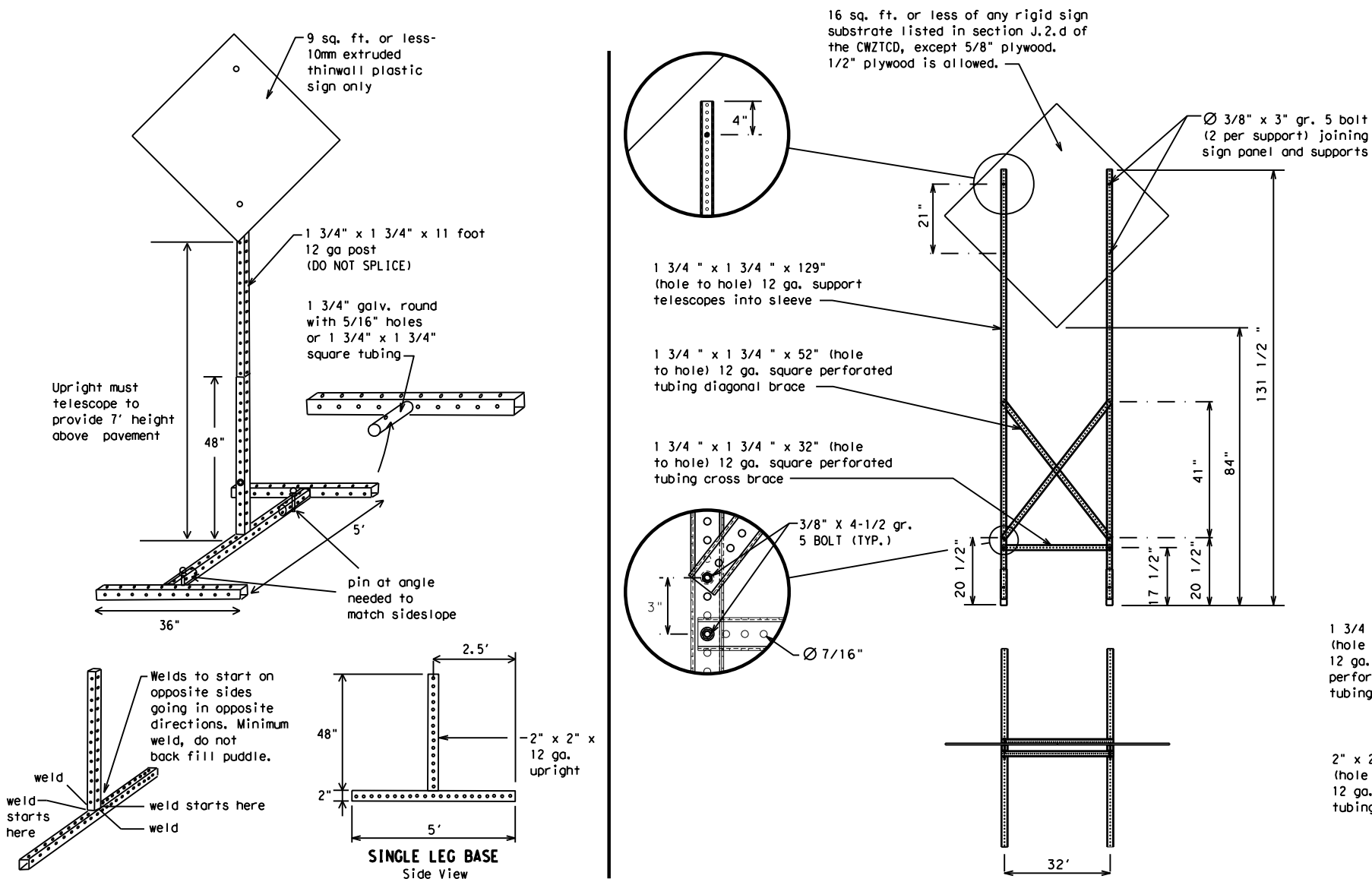
**SKID MOUNTED WOOD SIGN SUPPORTS**

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

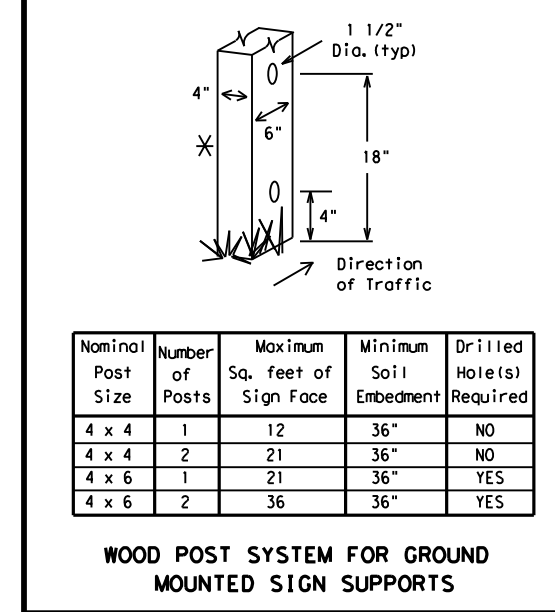


**GROUND MOUNTED SIGN SUPPORTS**

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.



**SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS**



**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**
- 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.
  - No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
  - 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.

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**BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT**

BC(5) - 14

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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

# RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

## PORTABLE CHANGEABLE MESSAGE SIGNS

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

## Phase 1: Condition Lists

### Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE
ROAD CLOSED AT SH XXX
ROAD CLSD AT FM XXXX
RIGHT X LANES CLOSED
CENTER LANE CLOSED
NIGHT LANE CLOSURES
VARIOUS LANES CLOSED
EXIT CLOSED
MALL DRIVEWAY CLOSED
XXXXXXXX BLVD CLOSED

### Other Condition List

FRONTAGE ROAD CLOSED
SHOULDER CLOSED XXX FT
RIGHT LN CLOSED XXX FT
RIGHT X LANES OPEN
DAYTIME LANE CLOSURES
I-XX SOUTH EXIT CLOSED
EXIT XXX CLOSED X MILE
RIGHT LN TO BE CLOSED
X LANES CLOSED TUE - FRI

ROADWORK XXX FT
FLAGGER XXXX FT
RIGHT LN NARROWS XXXX FT
MERGING TRAFFIC XXXX FT
LOOSE GRAVEL XXXX FT
DETOUR X MILE
ROADWORK PAST SH XXXX
BUMP XXXX FT
TRAFFIC SIGNAL XXXX FT

ROAD REPAIRS XXXX FT
LANE NARROWS XXXX FT
TWO-WAY TRAFFIC XX MILE
CONST TRAFFIC XXX FT
UNEVEN LANES XXXX FT
ROUGH ROAD XXXX FT
ROADWORK NEXT FRI-SUN
US XXX EXIT X MILES
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
DETOUR NEXT X EXITS
USE EXIT XXX
STAY ON US XXX SOUTH
TRUCKS USE US XXX N
WATCH FOR TRUCKS
EXPECT DELAYS
REDUCE SPEED XXX FT
USE OTHER ROUTES
STAY IN LANE *

FORM X LINES RIGHT
USE XXXXX RD EXIT
USE EXIT I-XX NORTH
USE I-XX E TO I-XX N
WATCH FOR TRUCKS
EXPECT DELAYS
PREPARE TO STOP
END SHOULDER USE
WATCH FOR WORKERS

### Location List

AT FM XXXX
BEFORE RAILROAD CROSSING
NEXT X MILES
PAST US XXX EXIT
XXXXXXXX TO XXXXXX
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

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

## WORDING ALTERNATIVES

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

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

## FULL MATRIX PCMS SIGNS

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

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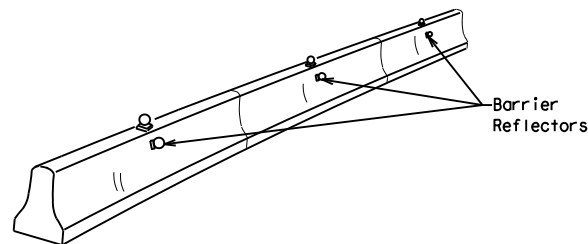
WORD OR PHRASE	ABBREVIATION	WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD	Major	MAJ
Alternate	ALT	Miles	MI
Avenue	AVE	Miles Per Hour	MPH
Best Route	BEST RTE	Minor	MNR
Boulevard	BLVD	Monday	MON
Bridge	BRDG	Normal	NORM
Canal	CANT	North	N
Center	CTR	Northbound	(route) N
Construction Ahead	CONST AHD	Parking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

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

<h3>BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)</h3>			
<h2>BC (6) - 14</h2>			
FILE: bc-14.dgn	DN: TxDOT	CR: TxDOT	DW: TxDOT
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7-13	ATL	CASS, ETC.	75

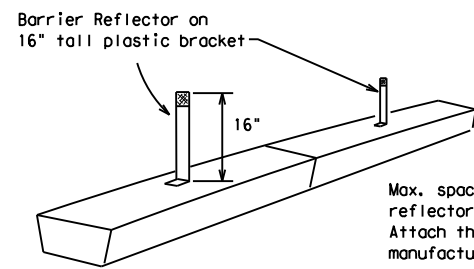
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors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



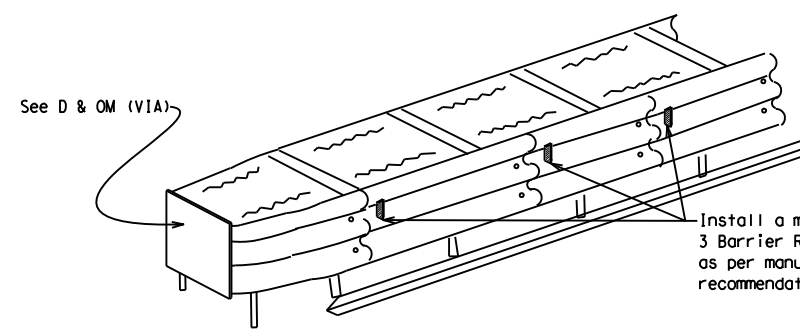
**CONCRETE TRAFFIC BARRIER (CTB)**

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



**LOW PROFILE CONCRETE BARRIER (LPCB)**

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



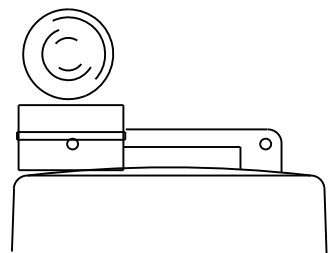
**DELINEATION OF END TREATMENTS**

**END TREATMENTS FOR CTB'S USED IN WORK ZONES**  
 End treatments used on CTB's in work zones shall meet 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**

**WARNING LIGHTS**

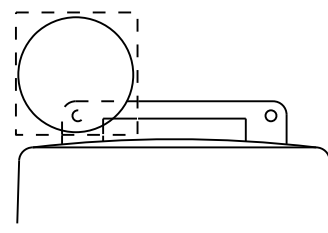
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet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



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

**WARNING LIGHTS MOUNTED ON PLASTIC DRUMS**

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



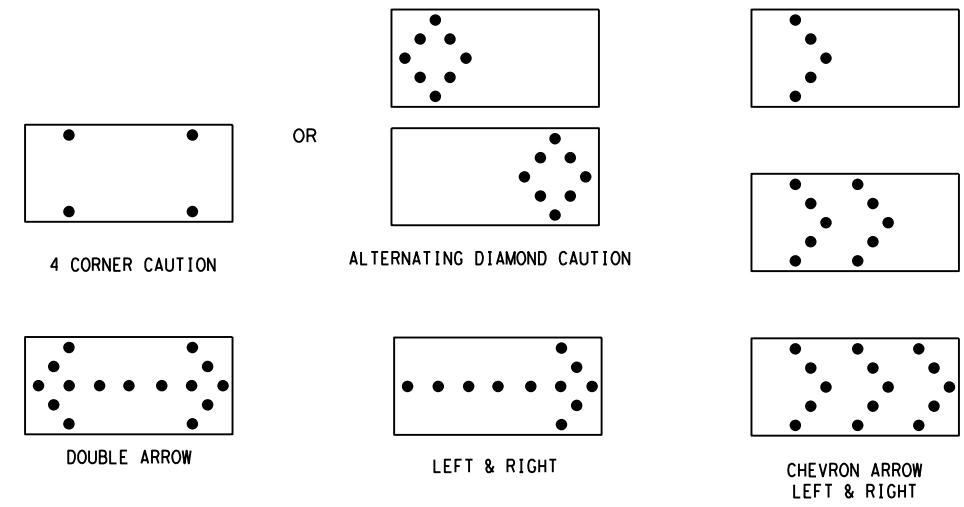
Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

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

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

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

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



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

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

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

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

**FLASHING ARROW BOARDS**

SHEET 7 OF 12

**TRUCK-MOUNTED ATTENUATORS**

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



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

**BC (7) - 14**

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© TxDOT	November 2002	CONT:	SECT:	JOB:	HIGHWAY:				
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7-13		ATL:	CASS, ETC.	76					

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**GENERAL NOTES**

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

**GENERAL DESIGN REQUIREMENTS**

Pre-qualified plastic drums shall meet the following requirements:

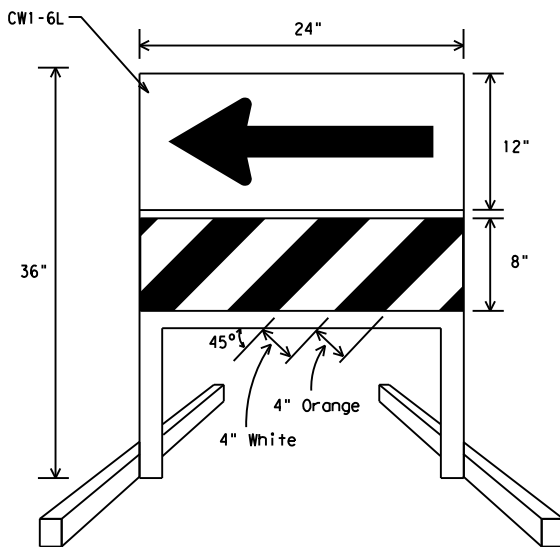
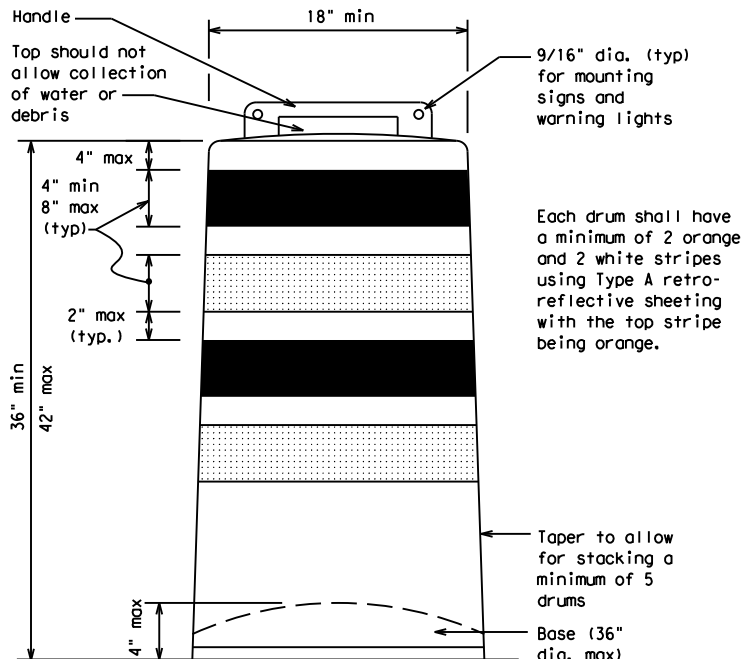
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

**RETROREFLECTIVE SHEETING**

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

**BALLAST**

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



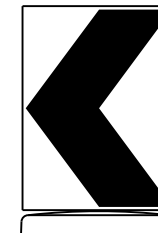
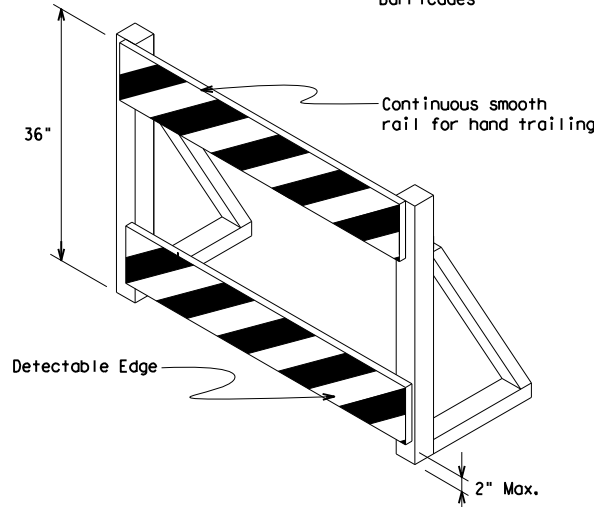
**DIRECTION INDICATOR BARRICADE**

- The Direction Indicator Barricade may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.
- If used, the Direction Indicator Barricade should be used in series to direct the driver through the transition and into the intended travel lane.
- The Direction Indicator Barricade shall consist of One-Direction Large Arrow (CWI-6) sign in the size shown with a black arrow on a background of Type B<sub>FL</sub> or Type C<sub>FL</sub> 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. Sheetting types shall be as per DMS 8300.
- Double arrows on the Direction Indicator Barricade will not be allowed.
- Approved manufacturers are shown on the CWZTCD List. Ballast shall be as approved by the manufacturers instructions.

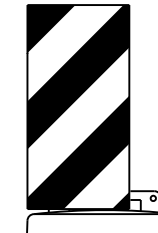
**DETECTABLE PEDESTRIAN BARRICADES**

- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
- 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.
- Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
- Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades 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.

This detail is not intended for fabrication. See note 3 and the CWZTCD list for providers of approved Detectable Pedestrian Barricades



18" x 24" Sign  
(Maximum Sign Dimension)  
Chevron CWI-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**

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

SHEET 8 OF 12



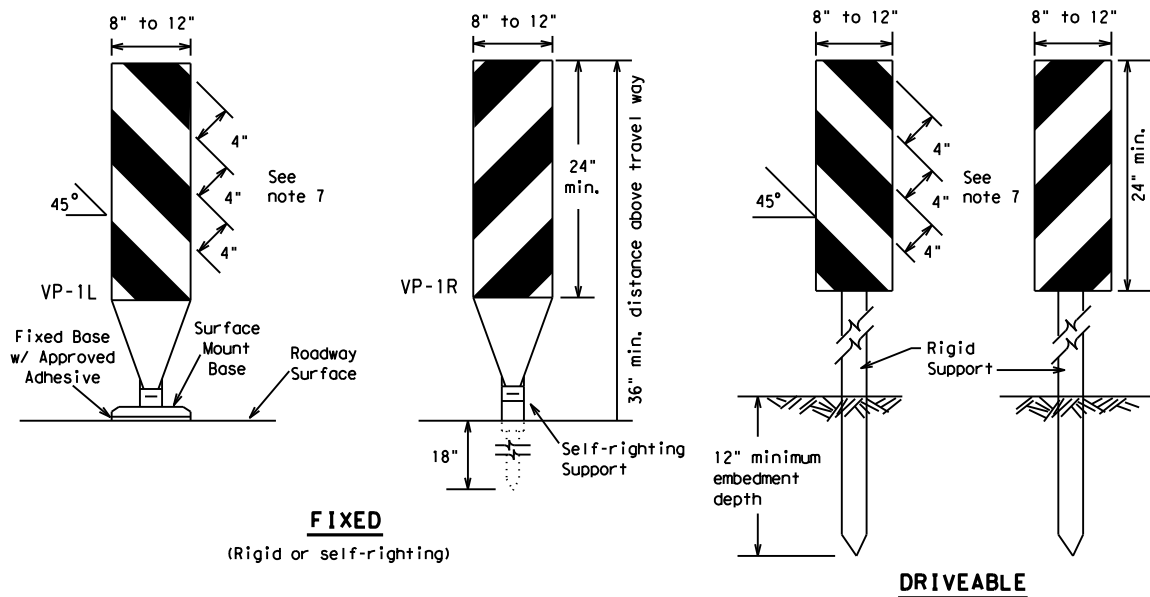
**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (8) - 14**

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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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9-07 8-14	ATL	CASS, ETC.	77	

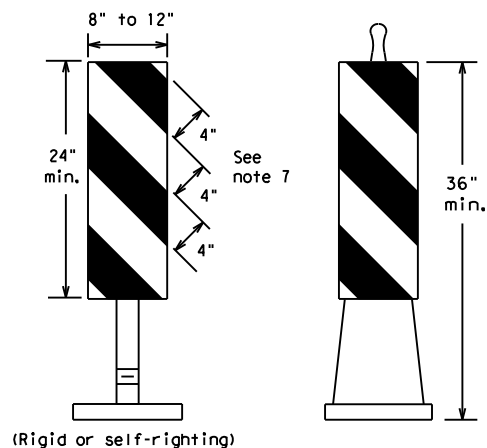
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**FIXED**  
(Rigid or self-righting)

**DRIVEABLE**

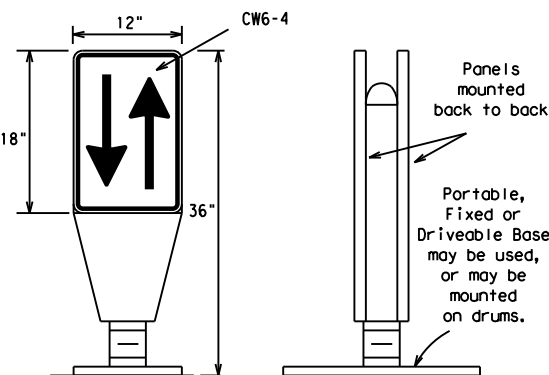


(Rigid or self-righting)

**PORTABLE**

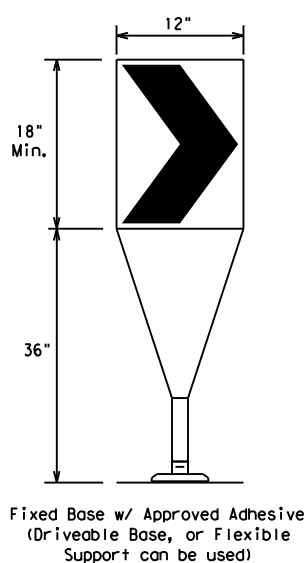
**VERTICAL PANELS (VPs)**

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



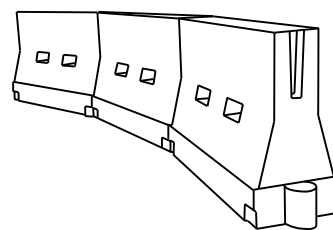
**OPPOSING TRAFFIC LANE DIVIDERS (OTLD)**

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



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

**CHEVRONS**



**LONGITUDINAL CHANNELIZING DEVICES (LCD)**

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

**WATER BALLASTED SYSTEMS USED AS BARRIERS**

- Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
- Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
- Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long 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**

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

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



**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (9) - 14**

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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0138	10	029, ETC.	FM 248, ETC.
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13	ATL	CASS, ETC.	78	

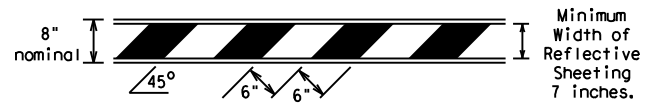
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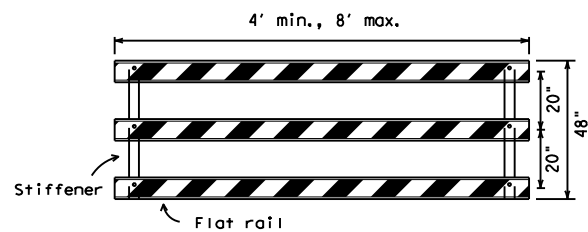
**TYPE 3 BARRICADES**

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

Barricades shall NOT be used as a sign support.

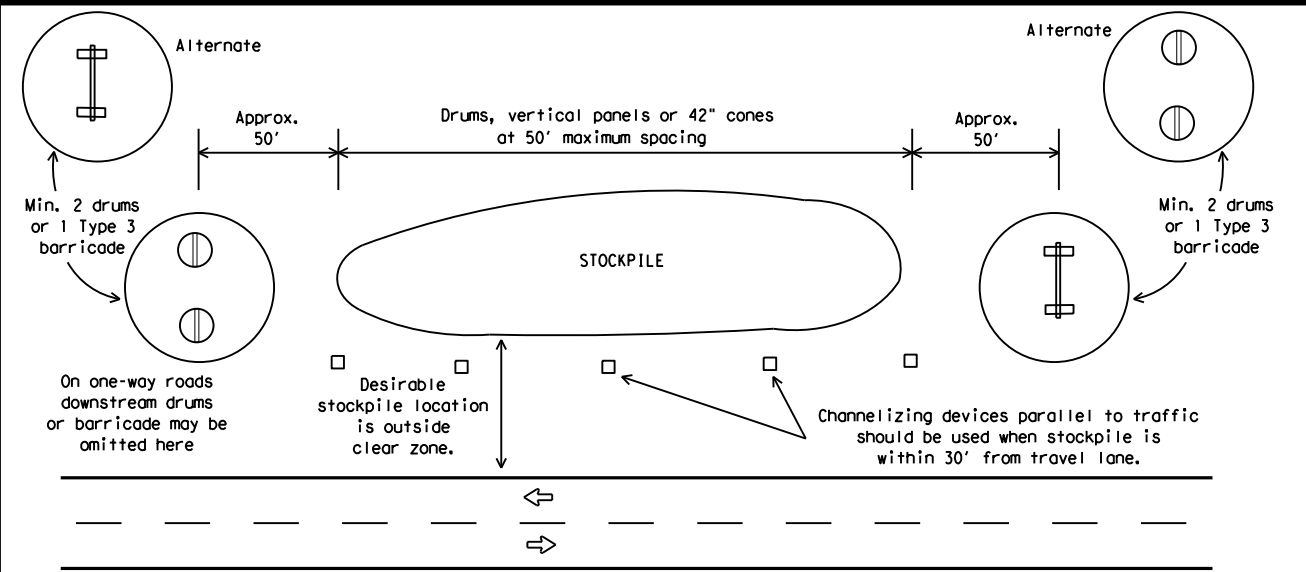


**TYPICAL STRIPING DETAIL FOR BARRICADE RAIL**



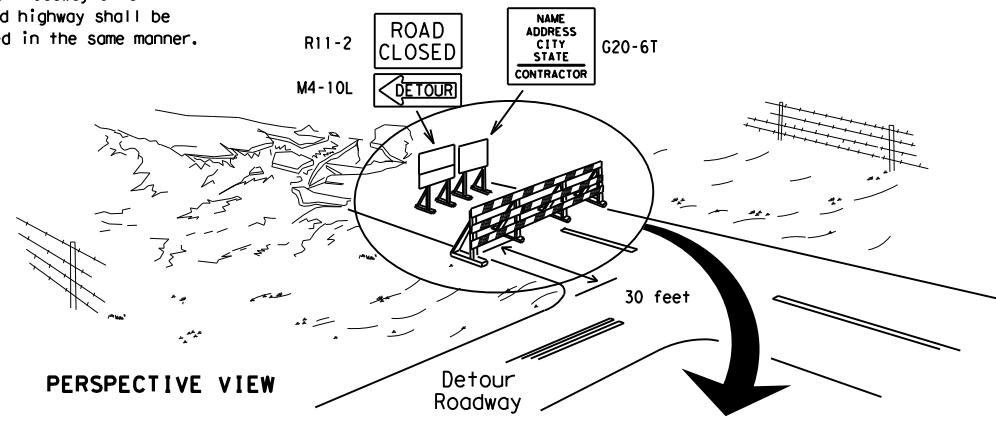
Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

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



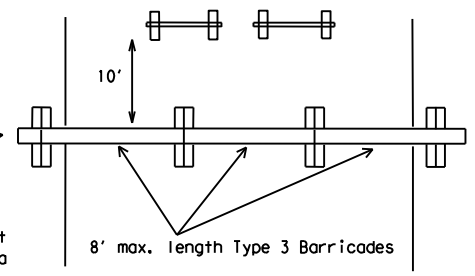
**TRAFFIC CONTROL FOR MATERIAL STOCKPILES**

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



**PERSPECTIVE VIEW**

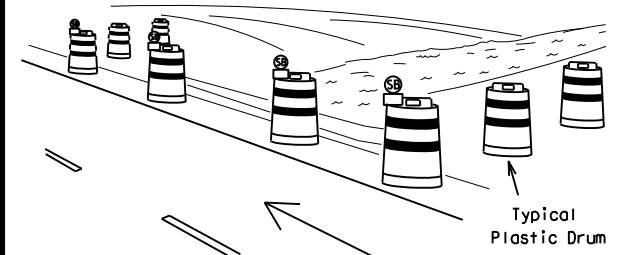
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



**PLAN VIEW**

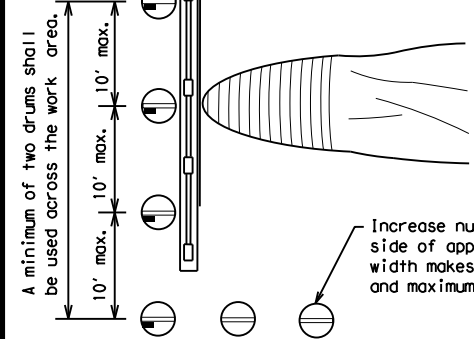
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

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



**PERSPECTIVE VIEW**

These drums are not required on one-way roadway



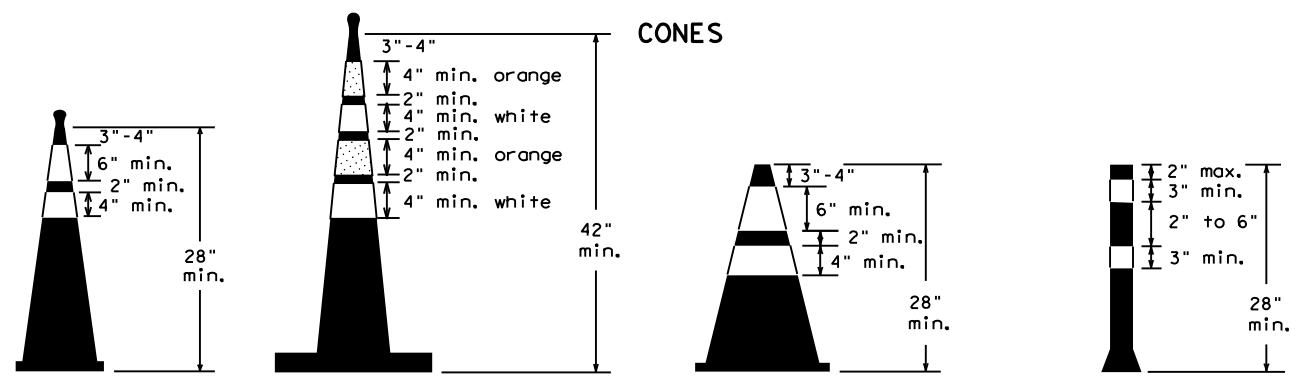
**PLAN VIEW**

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

1. Where positive redirection 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.

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

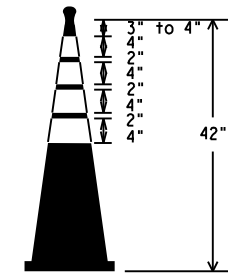
**CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS**



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

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.

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



**EDGE LINE 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.

**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (10) - 14**

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9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13	ATL	CASS, ETC.	79	

DATE: FILE:

## WORK ZONE PAVEMENT MARKINGS

### GENERAL

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

### RAISED PAVEMENT MARKERS

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

### PREFABRICATED PAVEMENT MARKINGS

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

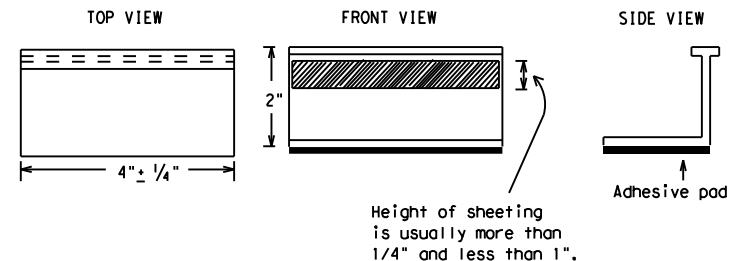
### MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

### REMOVAL OF PAVEMENT MARKINGS

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

## Temporary Flexible-Reflective Roadway Marker Tabs



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

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

### RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

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SHEET 11 OF 12



## BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

**BC(11) - 14**

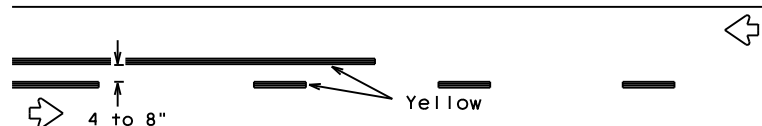
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REVISIONS		0138	10	029, ETC. FM 248, ETC.
2-98	9-07	DIST	COUNTY	SHEET NO.
1-02	7-13	ATL	CASS, ETC.	80
11-02	8-14			

105

## PAVEMENT MARKING PATTERNS

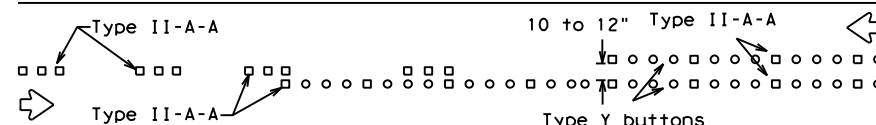


REFLECTORIZED PAVEMENT MARKINGS - PATTERN A

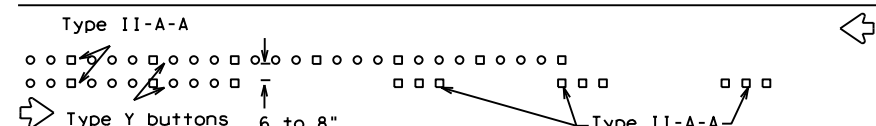


REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

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.

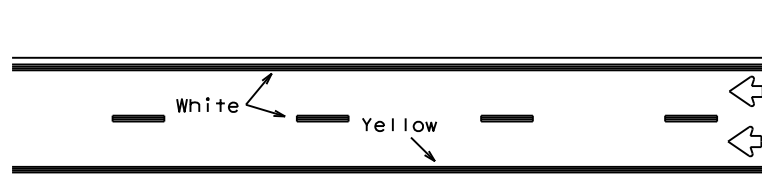


RAISED PAVEMENT MARKERS - PATTERN A



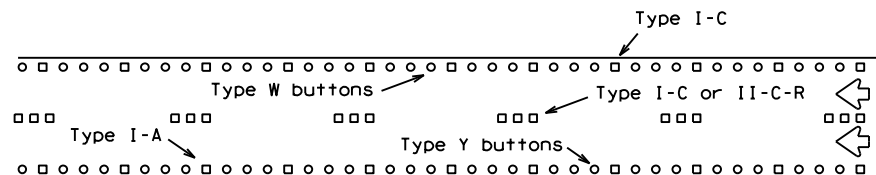
RAISED PAVEMENT MARKERS - PATTERN B

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



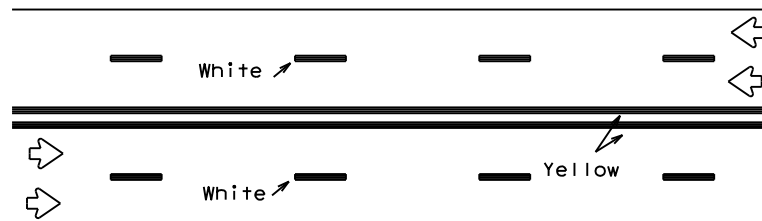
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



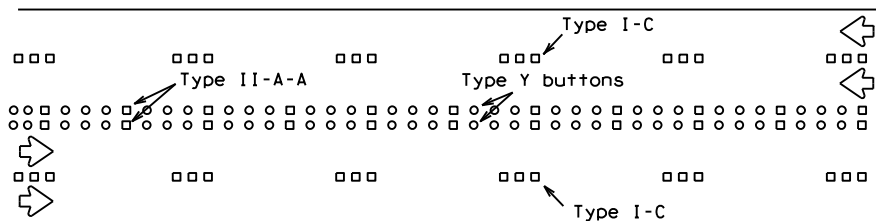
RAISED PAVEMENT MARKERS

## EDGE & LANE LINES FOR DIVIDED HIGHWAY



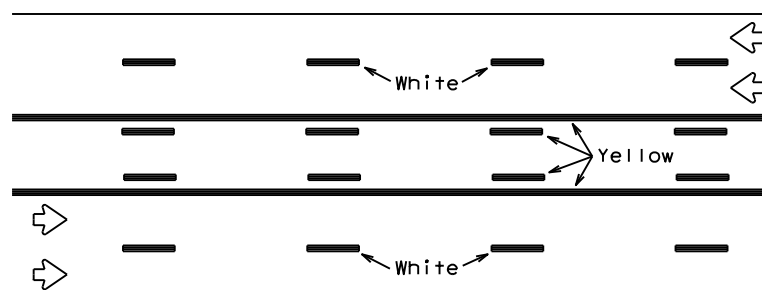
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



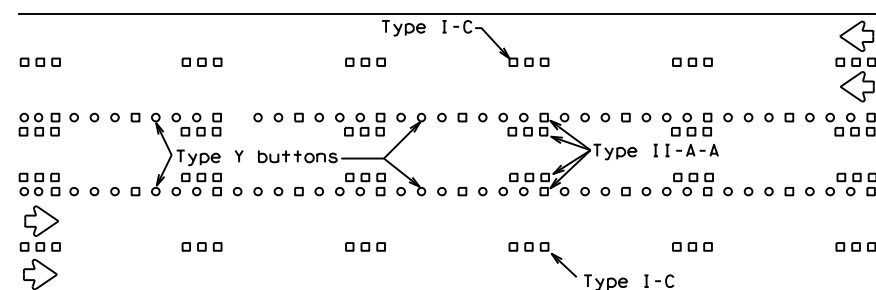
RAISED PAVEMENT MARKERS

## LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

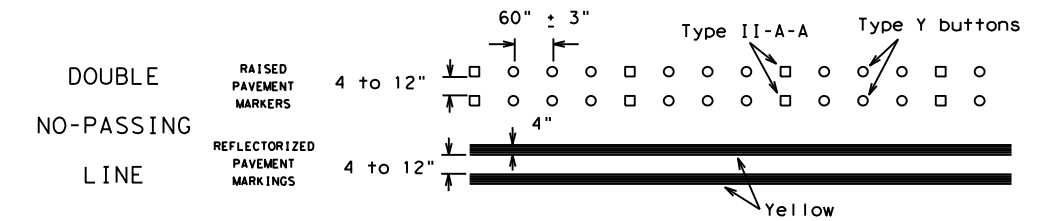
Prefabricated markings may be substituted for reflectorized pavement markings.



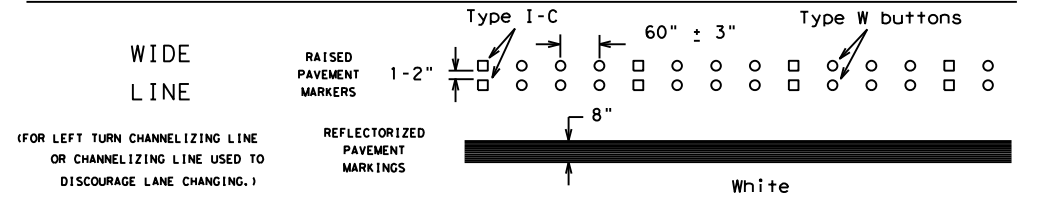
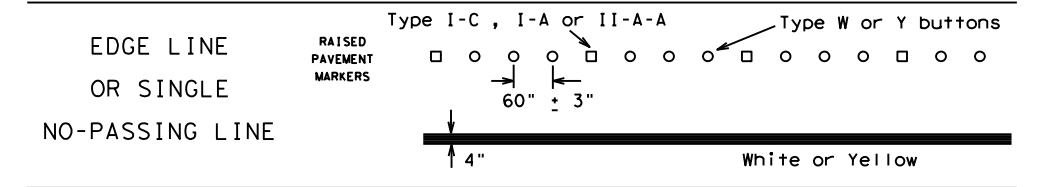
RAISED PAVEMENT MARKERS

## TWO-WAY LEFT TURN LANE

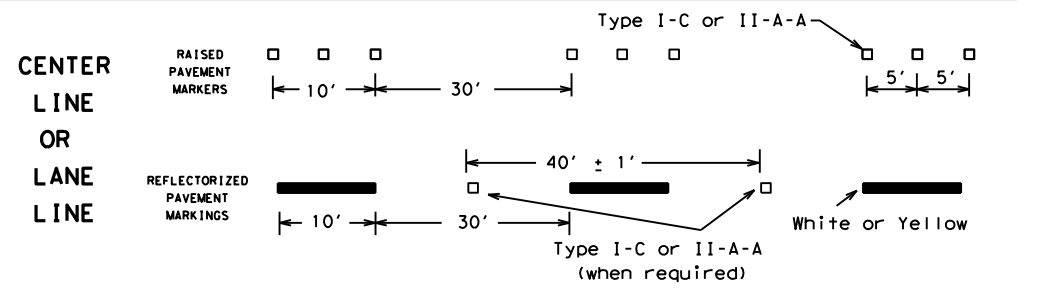
## STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



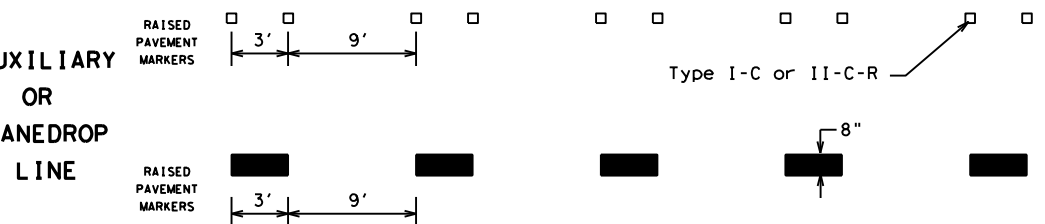
### SOLID LINES



### BROKEN LINES

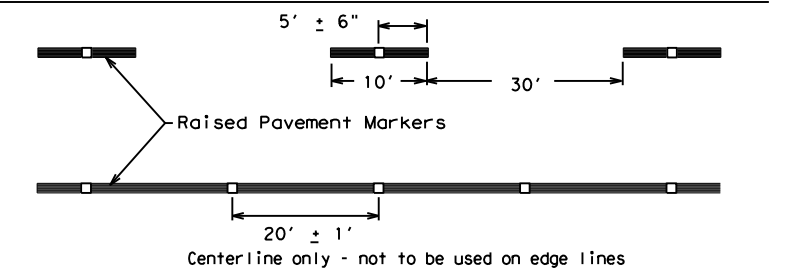


### AUXILIARY OR LANEDROP LINE



### 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.



SHEET 12 OF 12



## BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC (12) - 14

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2-98 7-13	DIST	COUNTY	SHEET NO.	
11-02 8-14	ATL	CASS, ETC.	81	

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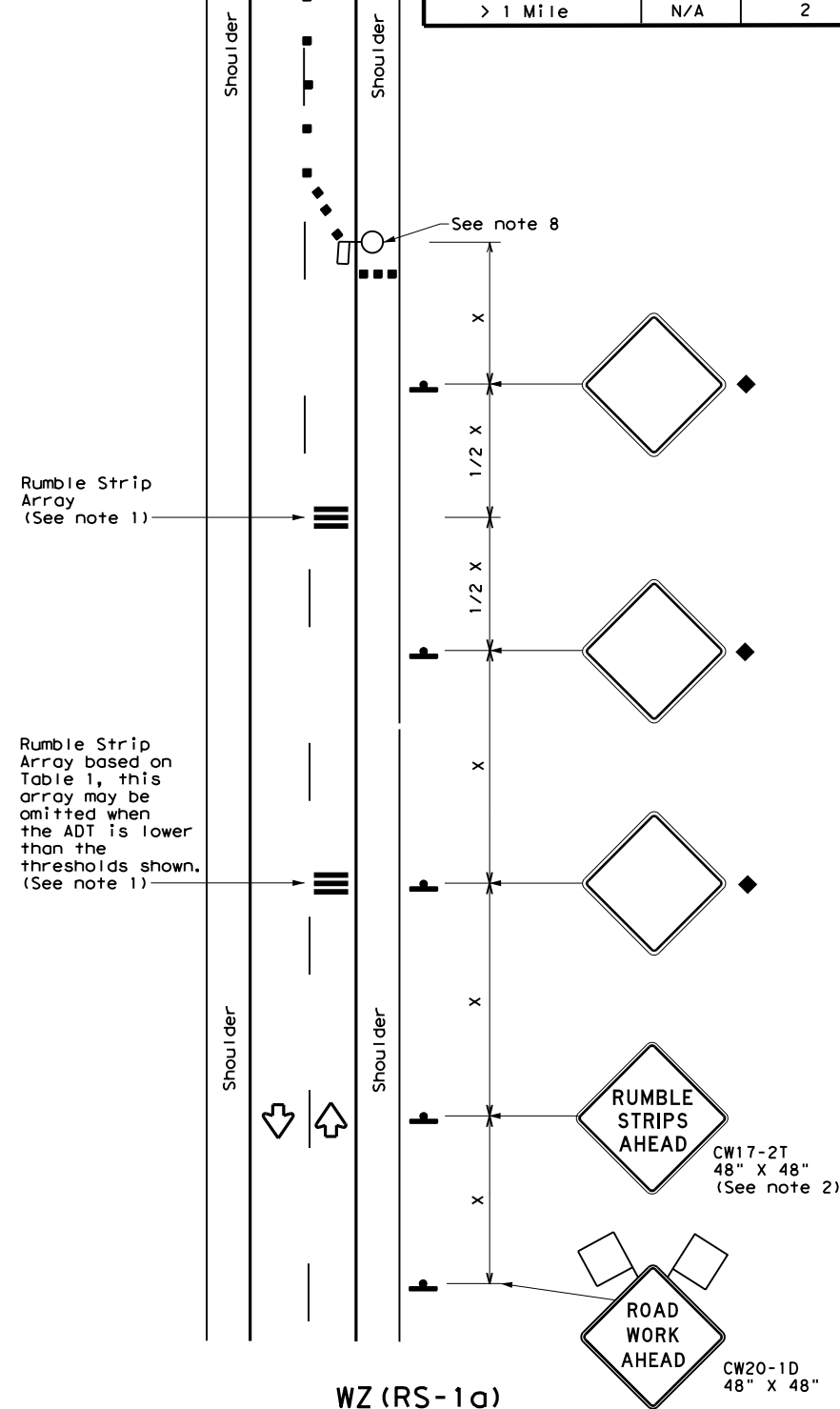
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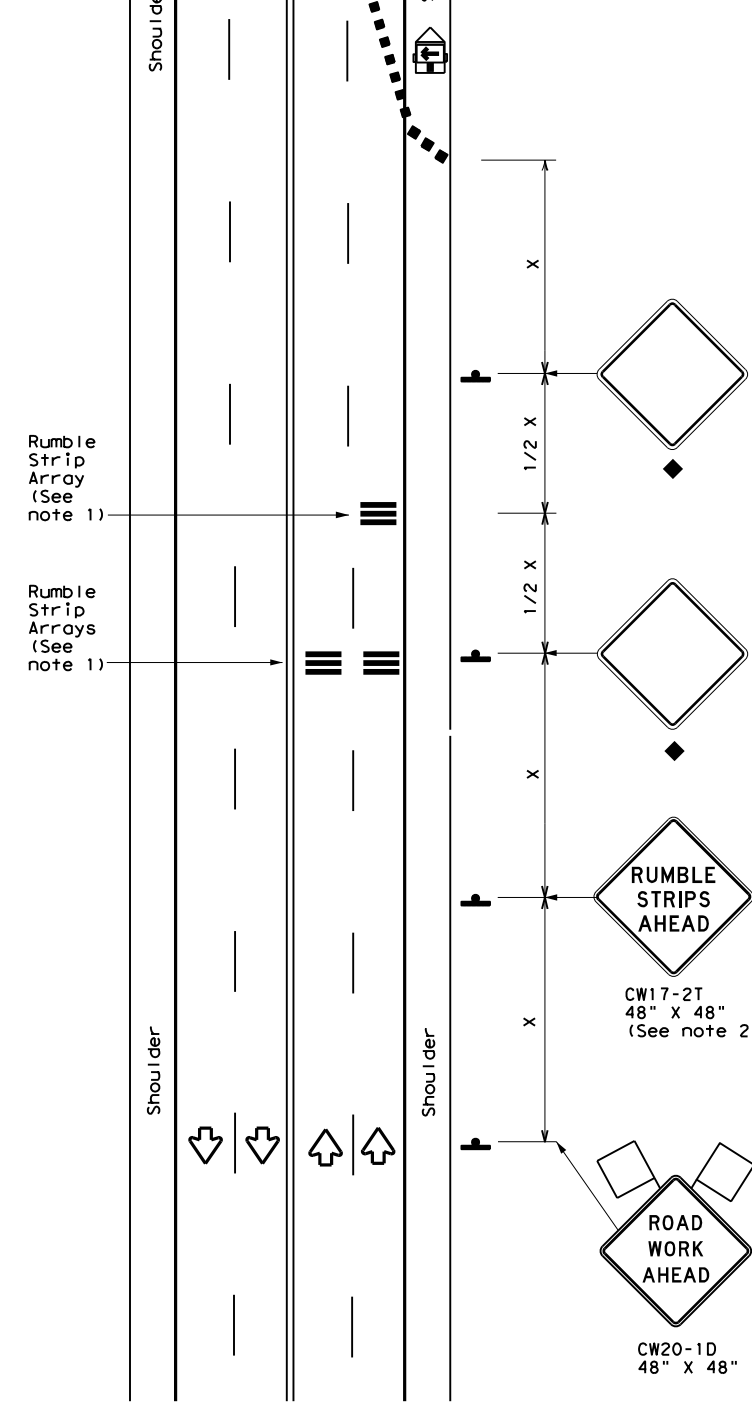
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Warning sign and rumble strip sequence in opposite direction is same as below

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



**RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION**



**RUMBLE STRIPS FOR LANE CLOSURE ON CONVENTIONAL ROADWAY**

**GENERAL NOTES**

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

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

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		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)

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

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

Texas Department of Transportation Traffic Operations Division Standard

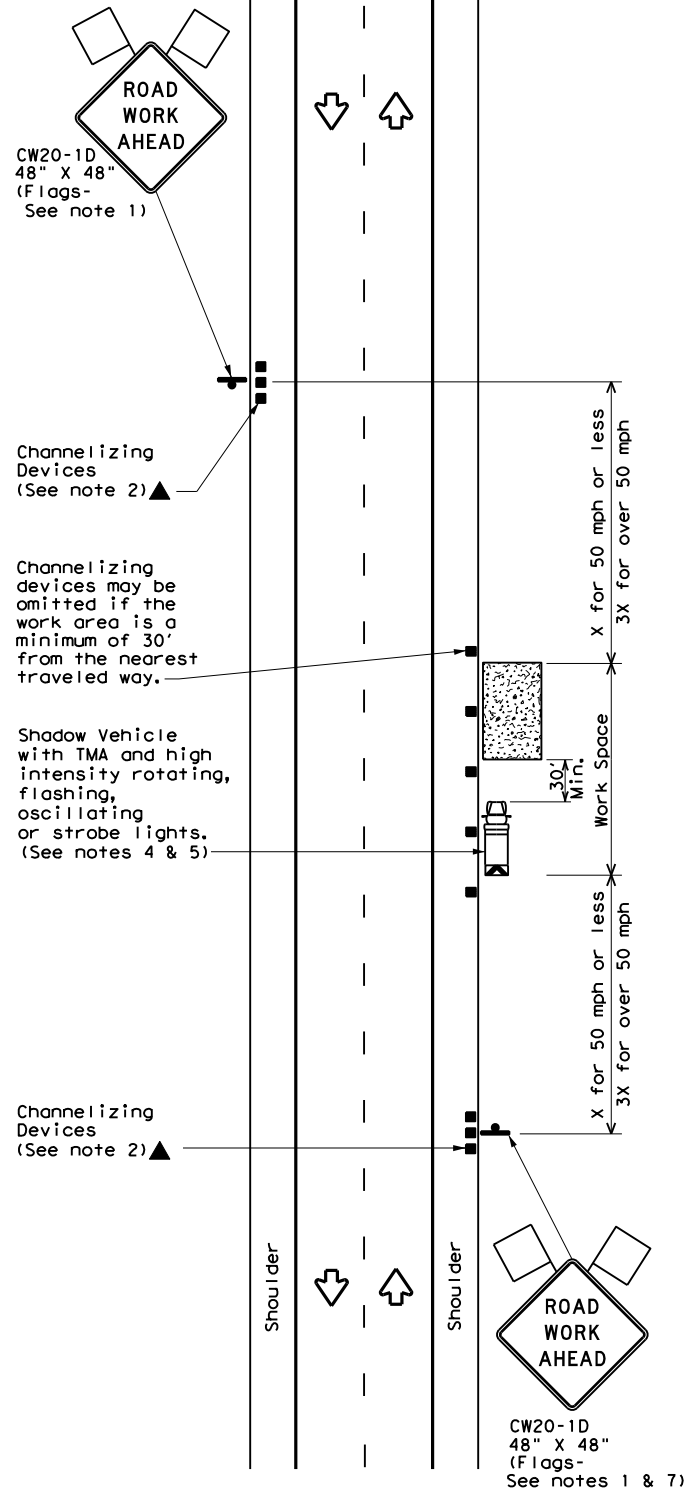
**TEMPORARY RUMBLE STRIPS**

**WZ (RS) - 16**

FILE: wzrs16.dgn DWN: TxDOT CK: TxDOT DW: TxDOT CK: TxDOT  
 © TxDOT November 2012 CONT SECT JOB HIGHWAY  
 REVISIONS 0138 10 029, ETC.FM 248, ETC.  
 2-14 DIST COUNTY SHEET NO.  
 4-16 ATL CASS, ETC. 82

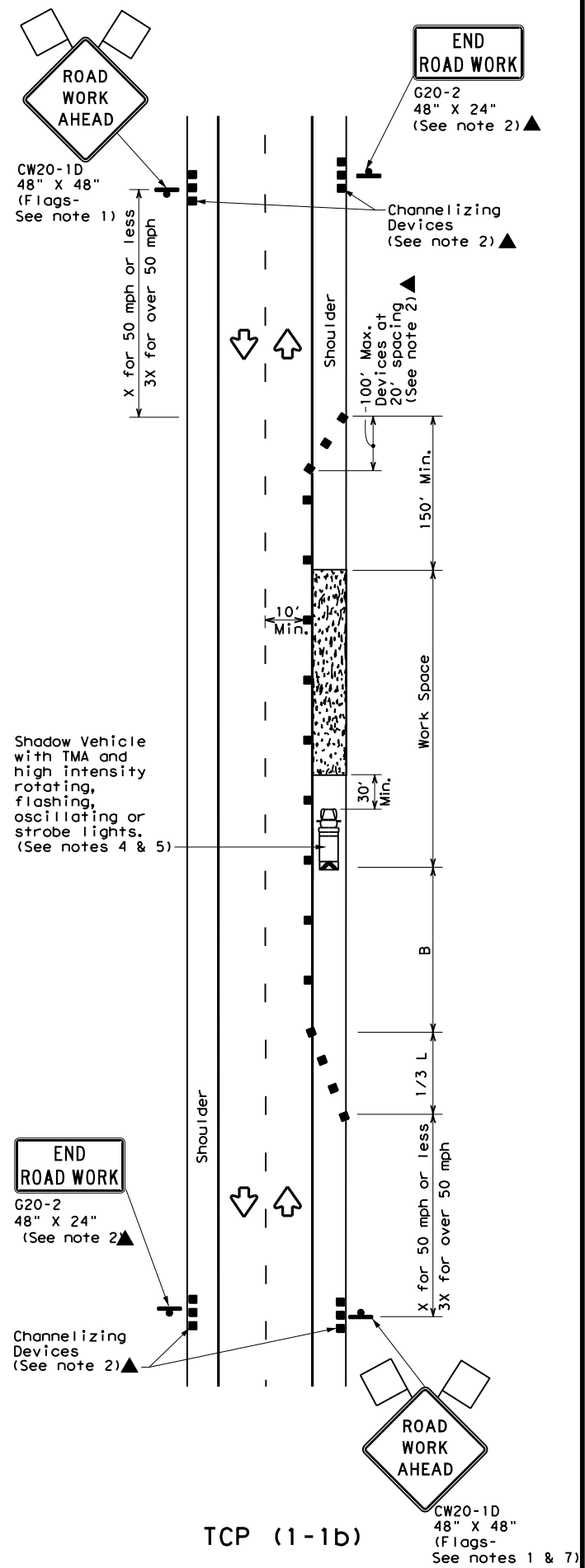
DATE:  
FILE:

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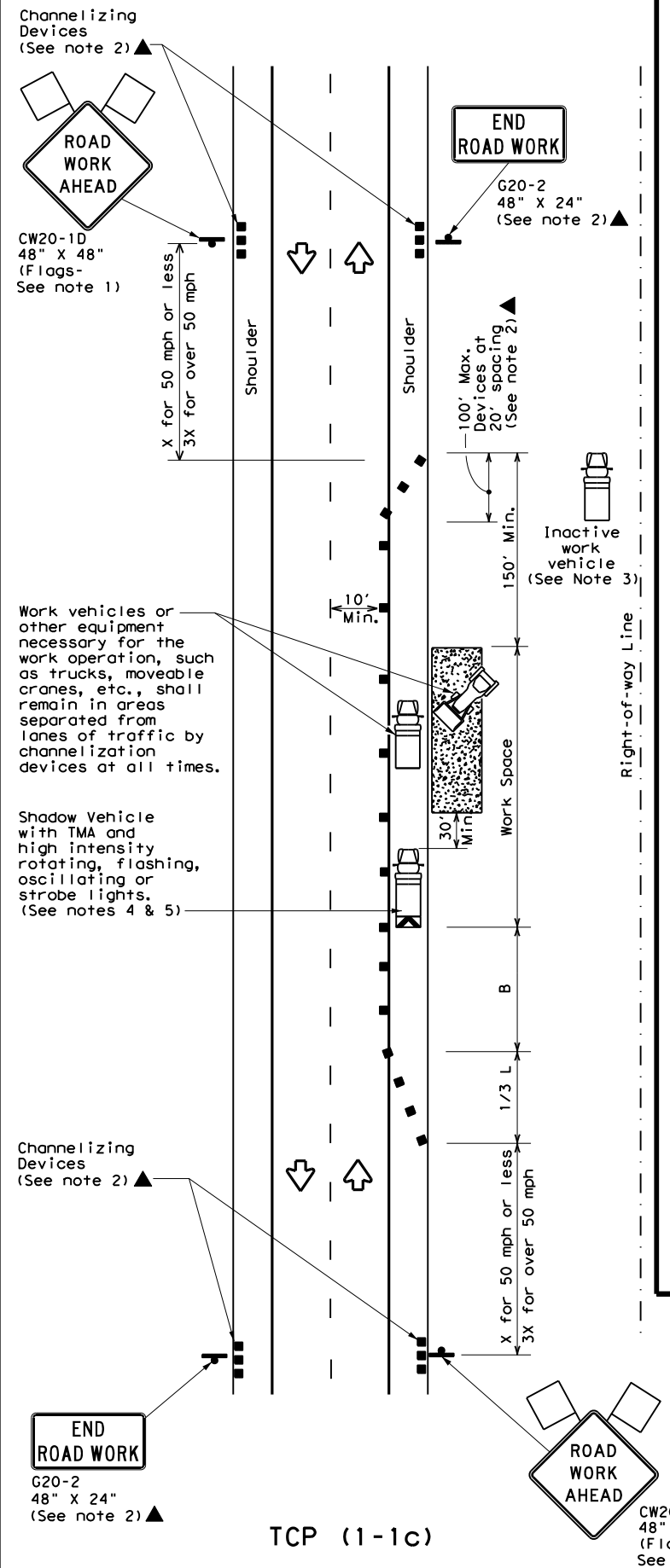
TCP (1-1a)

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

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

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

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

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

**TRAFFIC CONTROL PLAN**  
**CONVENTIONAL ROAD**  
**SHOULDER WORK**

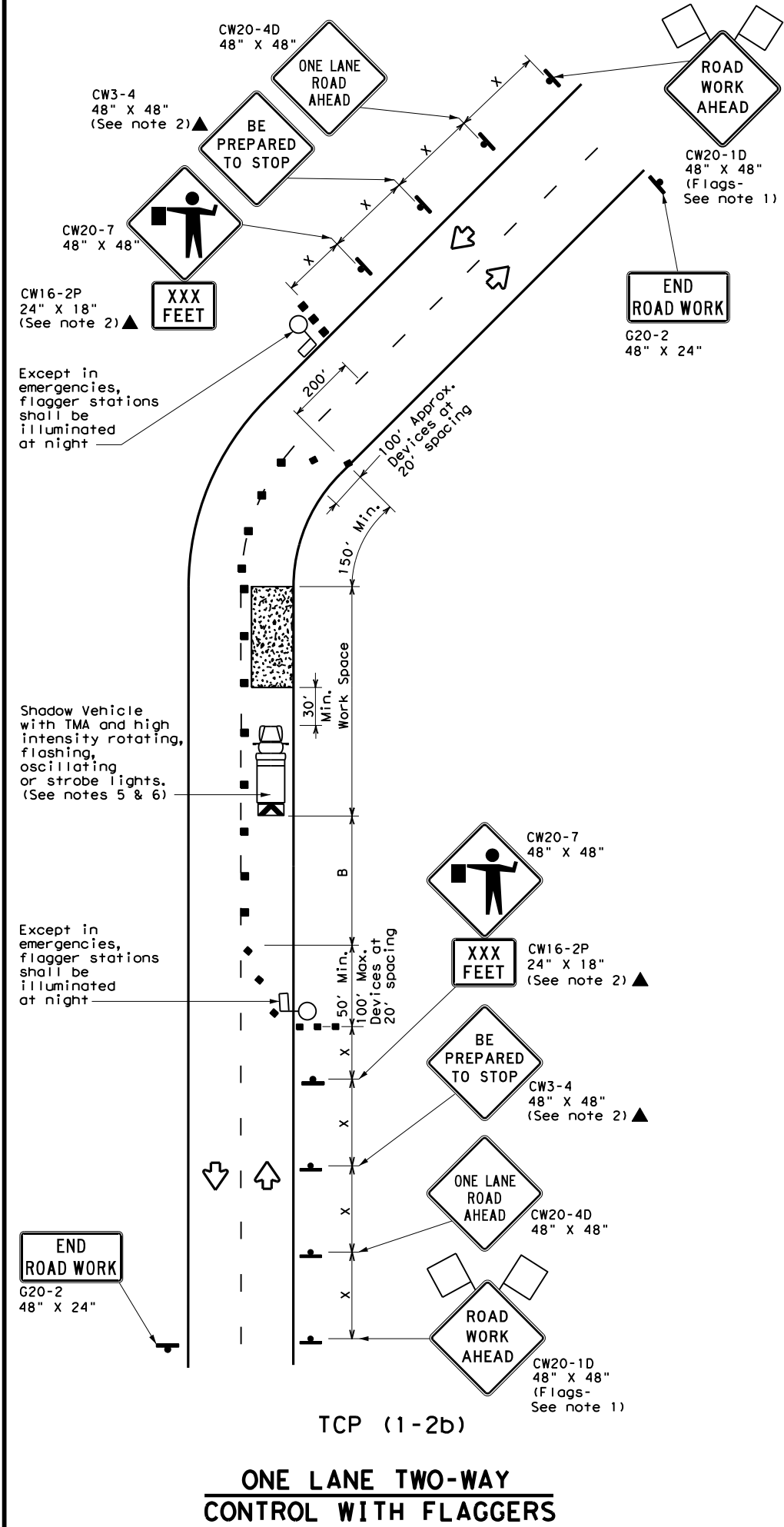
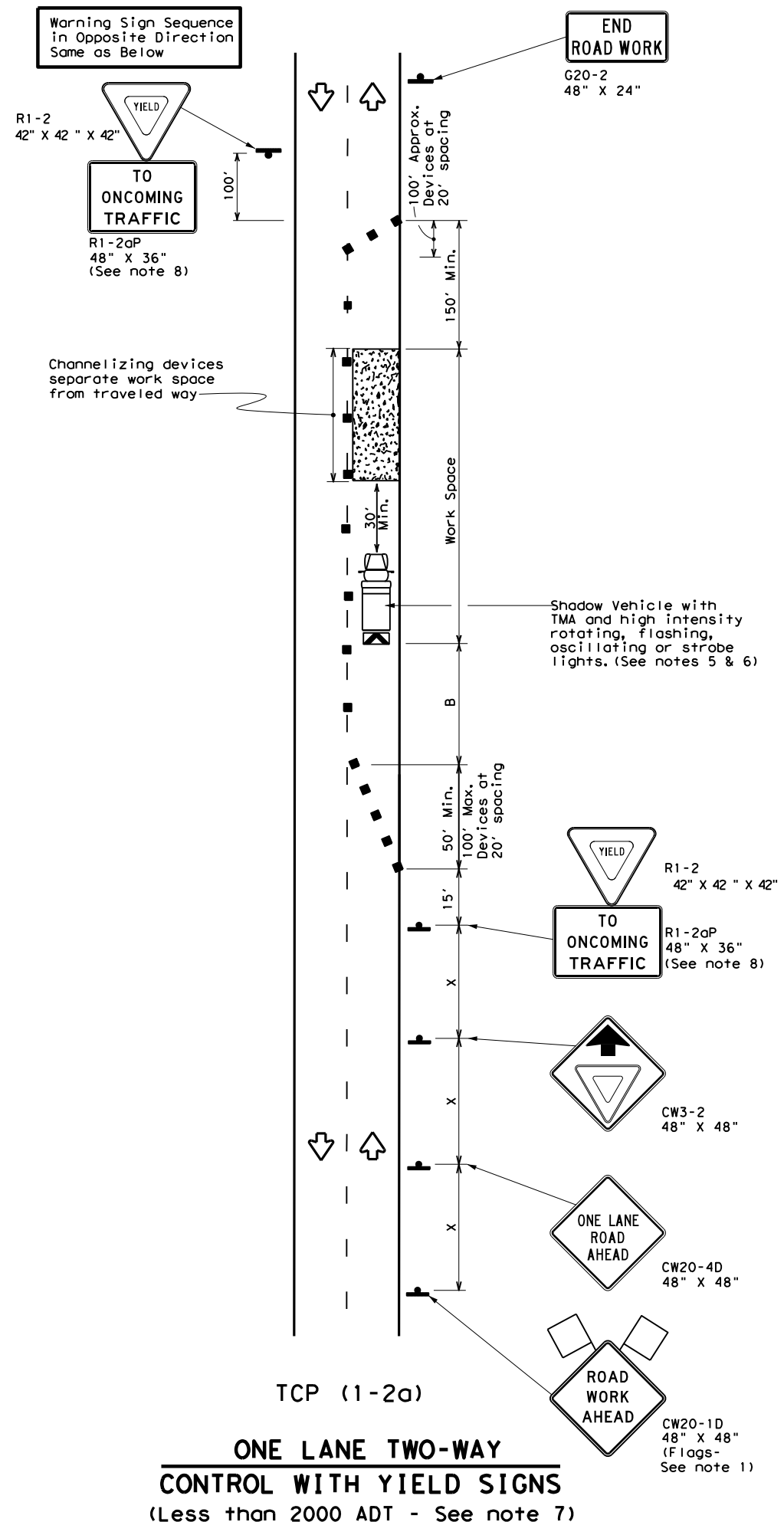
**TCP (1-1) - 18**

FILE: tcp1-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0138	10	029, ETC.	FM 248, ETC.
2-94 4-98	DIST	COUNTY	SHEET NO.	
8-95 2-12	ATL	CASS, ETC.	83	
1-97 2-18				

DATE:  
FILE:

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DATE: FILE:



**LEGEND**

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

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

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

**TYPICAL USAGE**

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

**GENERAL NOTES**

- Flags attached to signs where shown are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
- 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.
- A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

**TCP (1-2a)**

- 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.
- 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)**

- Flaggers should use two-way radios or other methods of communication to control traffic.
- Length of work space should be based on the ability of flaggers to communicate.
- 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).
- Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
- Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

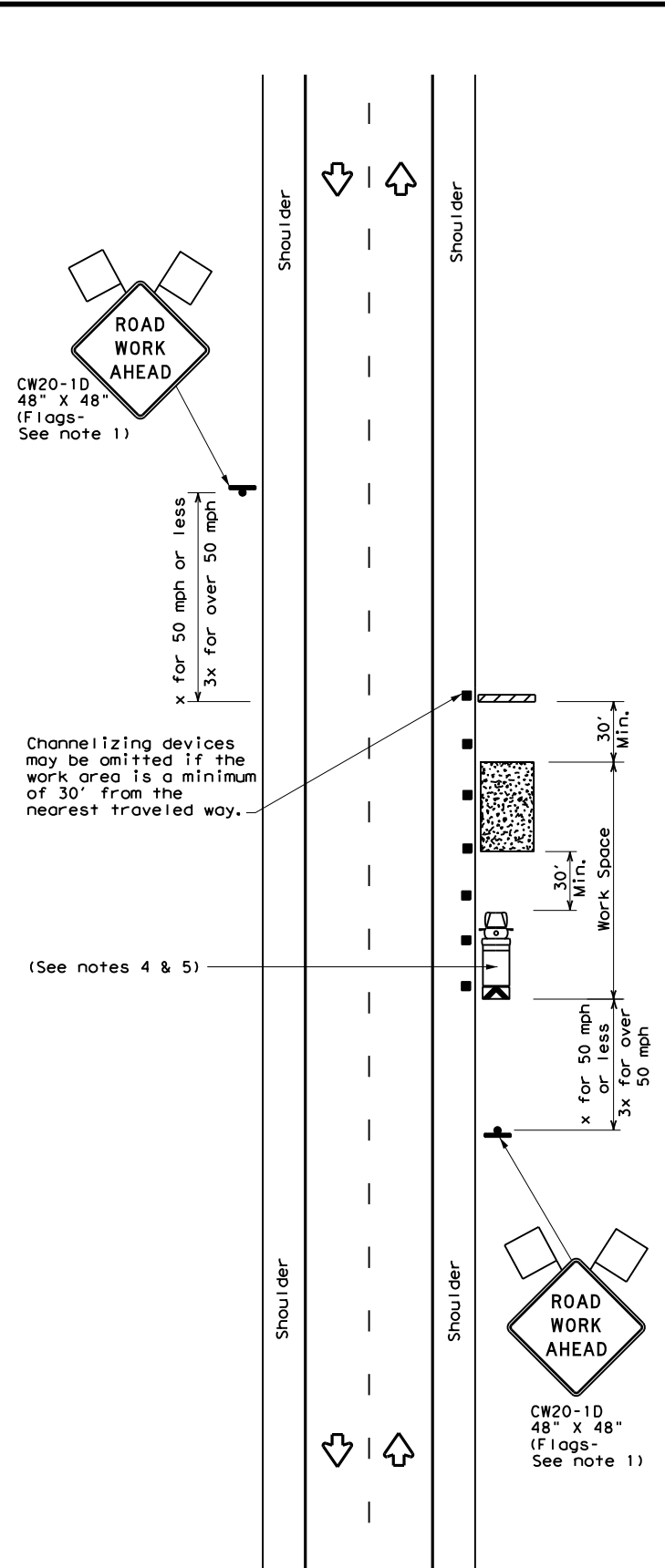
**Texas Department of Transportation** Traffic Operations Division Standard

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

**TCP (1-2) - 18**

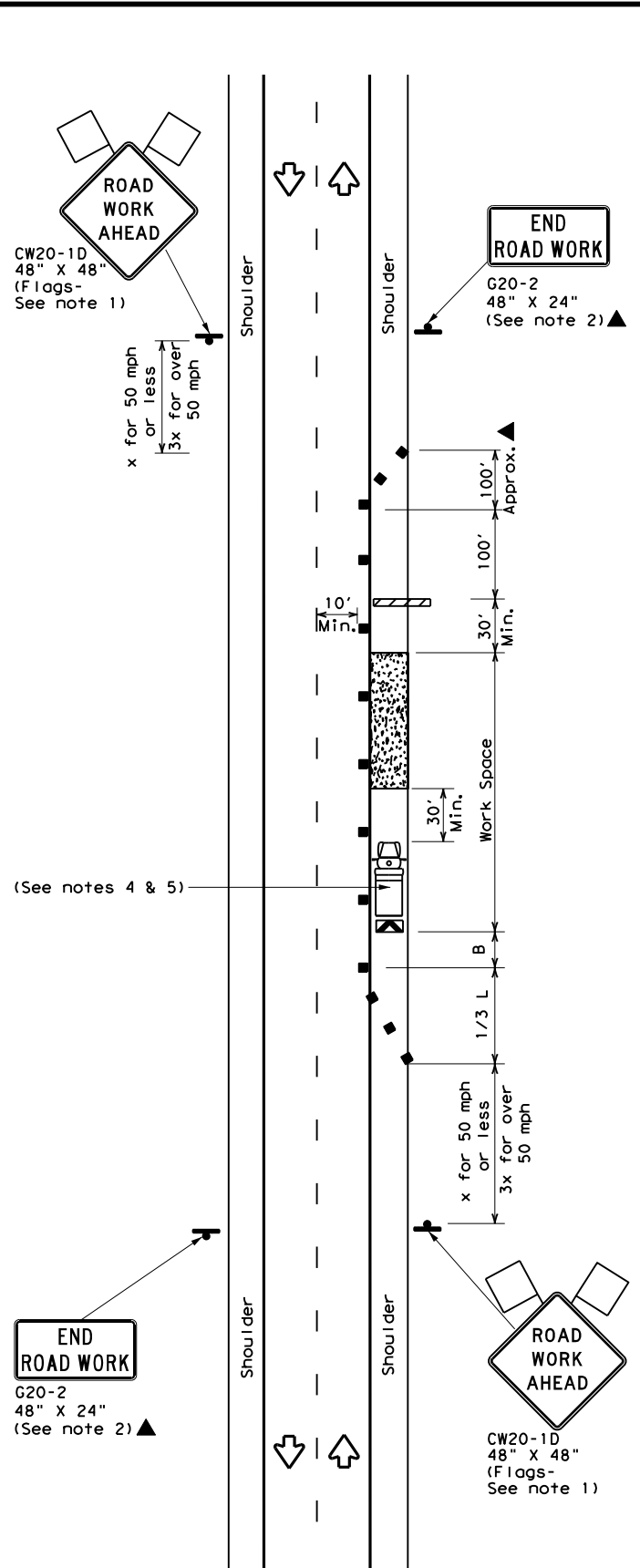
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© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0138	10	029, ETC.	FM 248, ETC.
4-90 4-98	DIST	COUNTY	SHEET NO.	
2-94 2-12	ATL	CASS, ETC.	84	
1-97 2-18				

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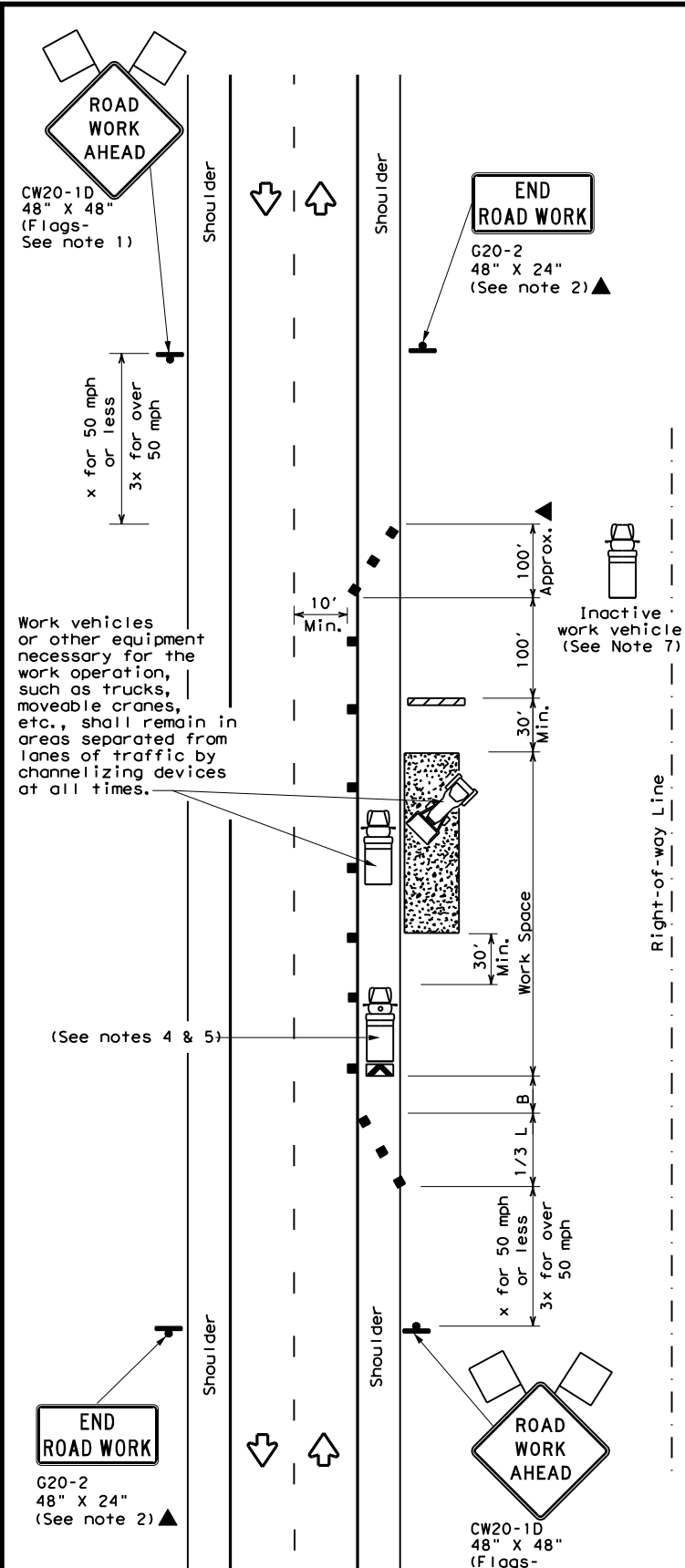
TCP (2-1a)

**WORK SPACE NEAR SHOULDER**  
Conventional Roads



TCP (2-1b)

**WORK SPACE ON SHOULDER**  
Conventional Roads



TCP (2-1c)

**WORK VEHICLES ON SHOULDER**  
Conventional Roads

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

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

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

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

**GENERAL NOTES**

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



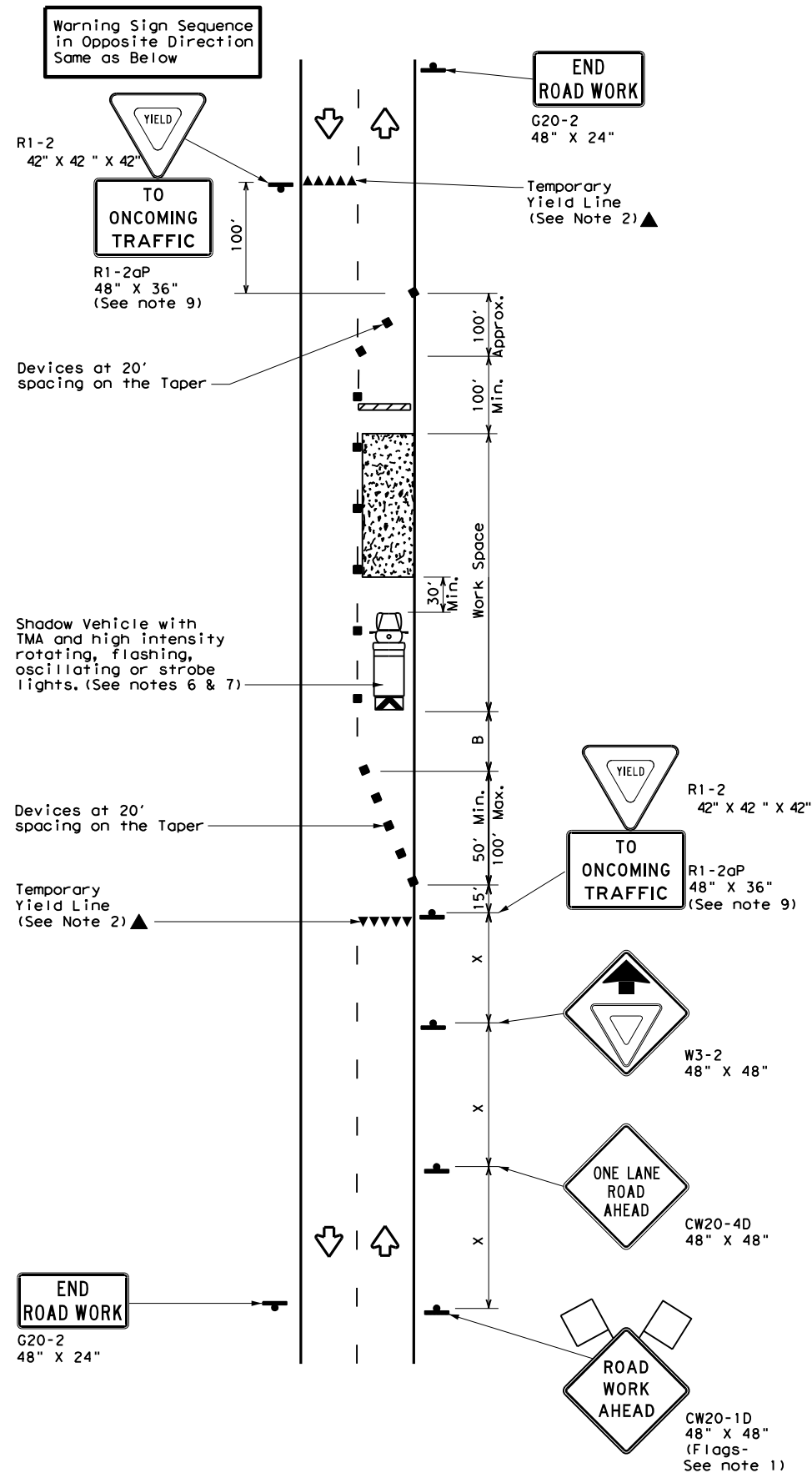
**TRAFFIC CONTROL PLAN**  
**CONVENTIONAL ROAD**  
**SHOULDER WORK**

**TCP (2-1) - 18**

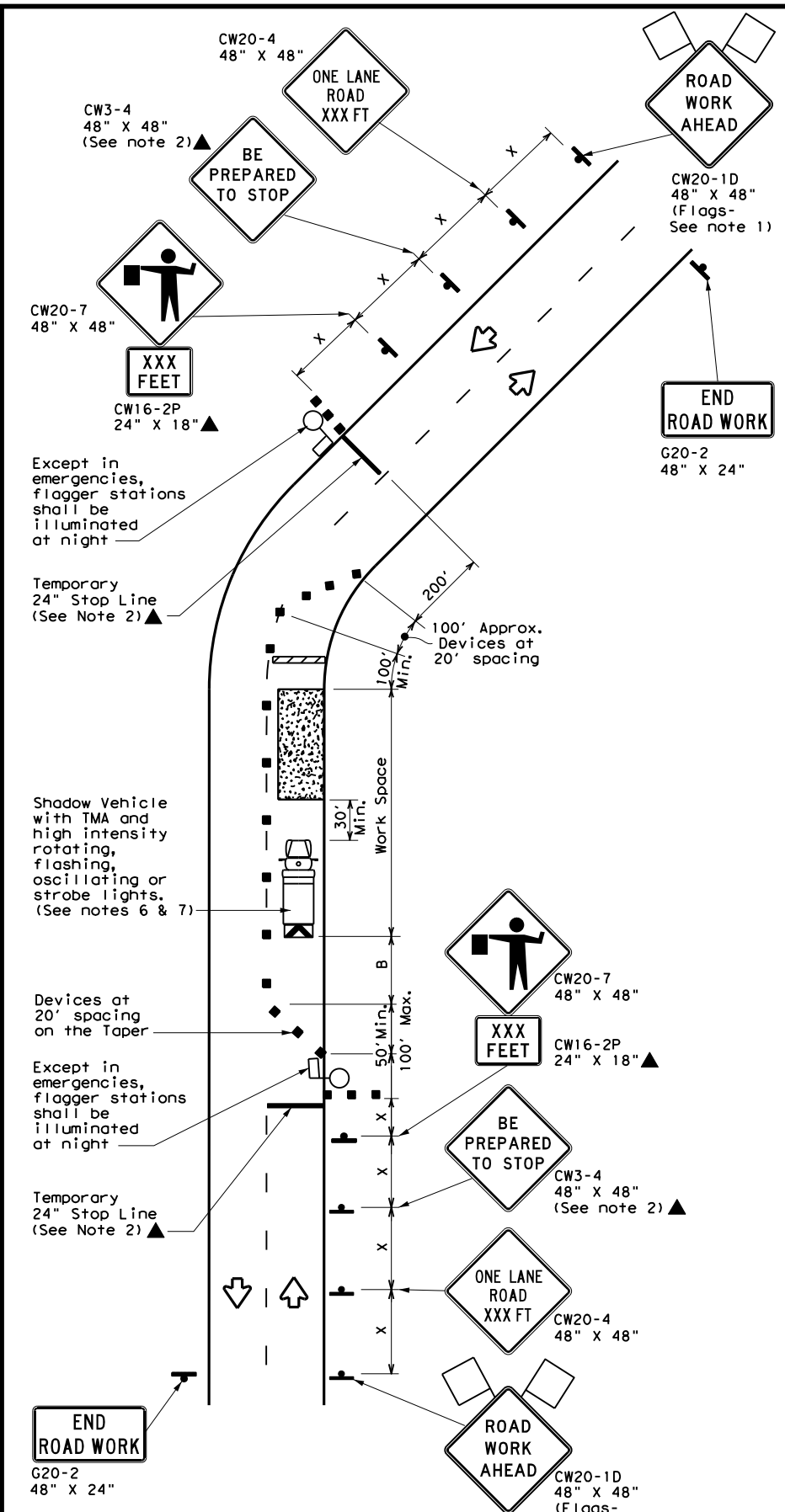
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© TxDOT December 1985	CON:	SECT:	JOB:	HIGHWAY:
REVISIONS	0138 10		029, ETC.FM 248, ETC.	
2-94 4-98				
8-95 2-12				
1-97 2-18				
	DIST:	COUNTY:	SHEET NO.:	
	ATL	CASS, ETC.	85	

DATE:  
FILE:

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



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

**LEGEND**

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

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

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

**TYPICAL USAGE**

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

**GENERAL NOTES**

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

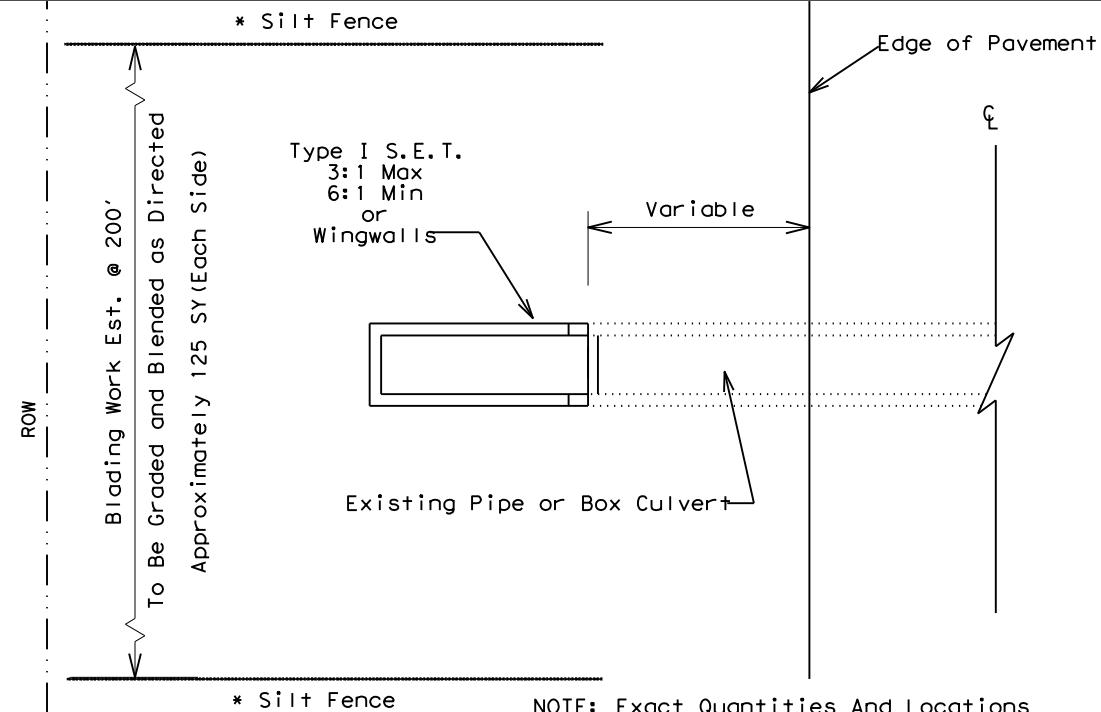
Texas Department of Transportation  
 Traffic Operations Division Standard

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

**TCP (2-2) - 18**

FILE: tcp2-2-18.dgn	DN:	CK:	DW:	CK:
© TxDOT	REVISIONS	CON	SECT	JOB
8-95 3-03	0138 10	029, ETC.	FM 248, ETC.	HIGHWAY
1-97 2-12	DIST	COUNTY	SHEET NO.	
4-98 2-18	ATL	CASS, ETC.	86	

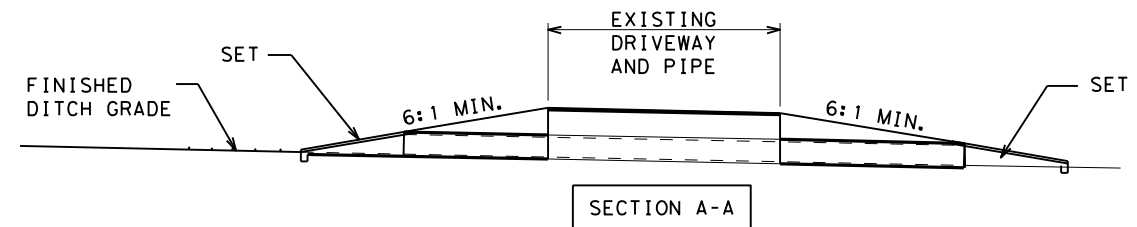
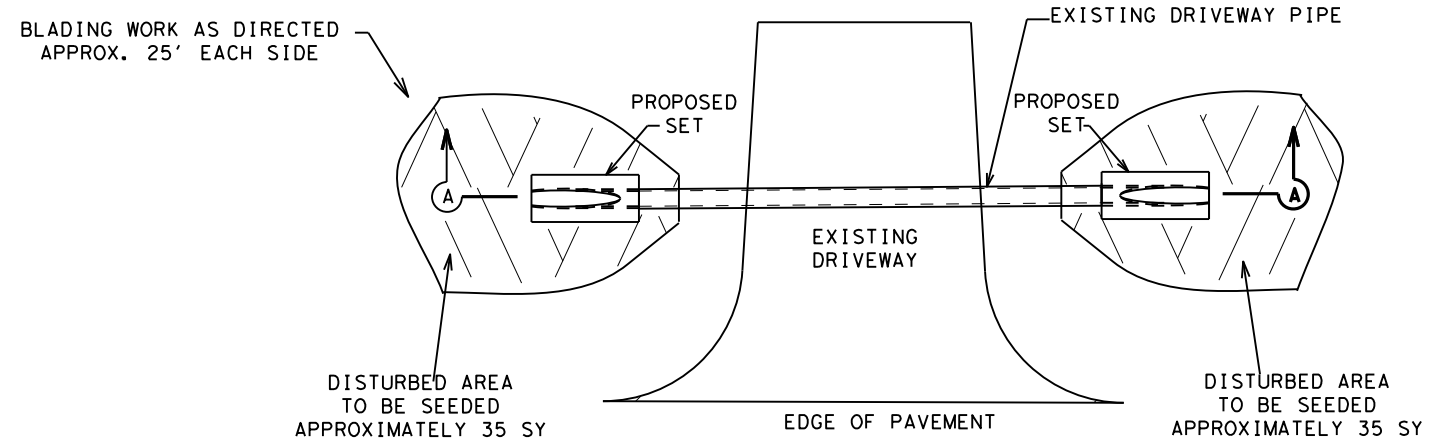
DATE:  
FILE:



NOTE: Exact Quantities And Locations Of SWP3 Items To Be Determined In The Field. Place Rock Filter Dams at Culvert Outfall if Directed.

\* If Directed

**SET CROSS DRAINAGE DETAIL**



**SET DRIVEWAY DETAIL**

NOTE: SEE DRIVEWAY SUMMARY SHEETS FOR LOCATIONS & QUANTITIES OF EXTENDED PIPE & EMBANKMENT.

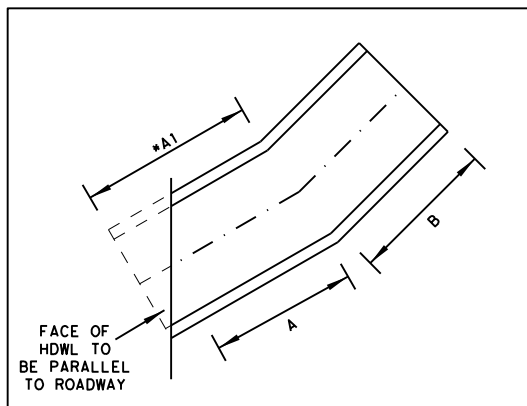
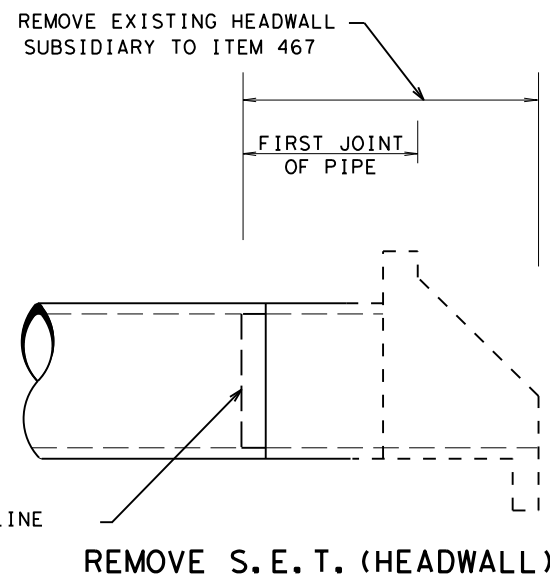


TABLE OF DIMENSIONS					
FM 248 CSJ 0138-11-031					
LOCATION	EXISTING STRUCTURE	*A1	A	B	15° PIPE BEND
STA 17+15 (BOTH)	30" RCP 45° RFS	4'	2'	2'	✓
STA 362+66 (BOTH)	24" RCP 45° RFS	4'	2'	2'	✓
FM 1841 CSJ 1758-01-012					
STA 120+25 (BOTH)	3-36" RCP 45° RFS	4'	2'	2'	✓
FM 2888 CSJ 2919-01-006					
STA 196+33 (BOTH)	36" RCP 45° RFS	4'	2'	2'	✓
STA 241+50 (BOTH)	24" RCP 45° LFS	4'	2'	2'	✓
STA 285+00 (BOTH)	36" RCP 45° LFS	4'	2'	2'	✓

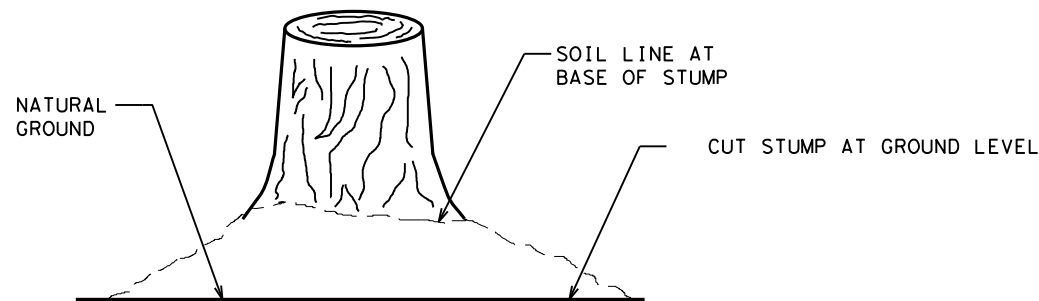
NOTE: SEE CH-PW-S FOR HEADWALL DIMENSIONS

\* DIMENSIONS ARE FOR APPROXIMATE LENGTHS NEEDED TO ACQUIRE DESIRED 15° PIPE BEND LENGTHS.

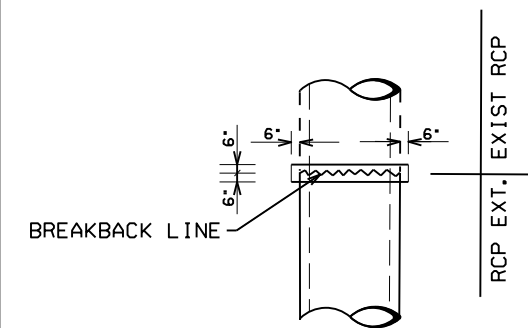
**PIPE BEND DETAIL**



**REMOVE S.E.T. (HEADWALL)**



**STUMP GRINDING DETAIL**

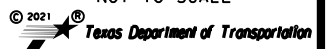


**CONCRETE COLLAR DETAIL**

**PLACE COLLAR DETAIL**

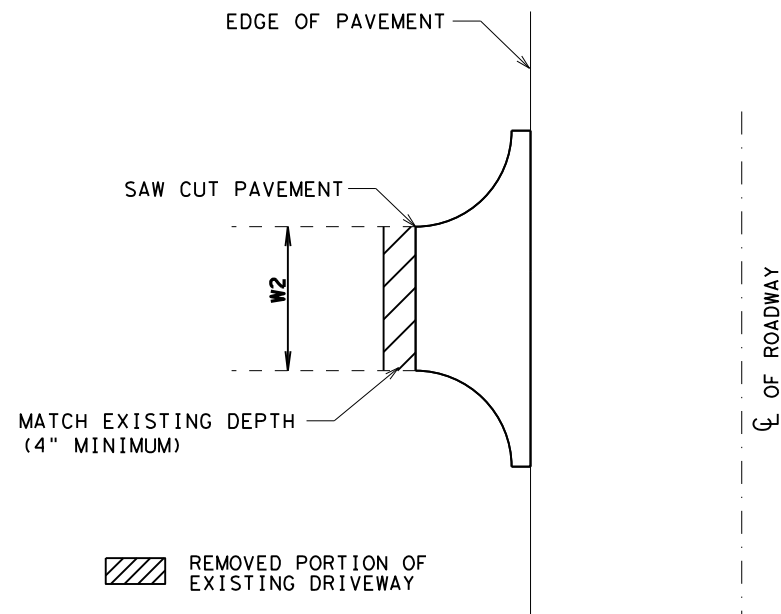
**ROADWAY DETAILS**

SHEET 1 OF 3  
NOT TO SCALE



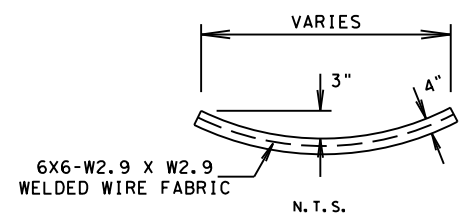
STATE	DISTRICT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.
TEXAS	ATL	CASS, ETC.		87
CONTROL	SECTION	JOB	HIGHWAY NO.	
0138	10	029, ETC.	FM 248, ETC.	

FILE: \$FILE\$ \$TIMES\$  
DATE: \$DATE\$

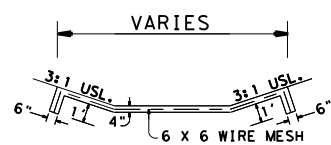


ACP DRIVEWAY DETAIL

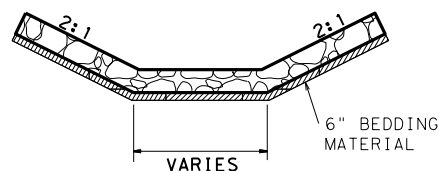
NOTE: LOCATION AND PLACEMENT OF RIPRAP TO BE DETERMINED BY THE ENGINEER.



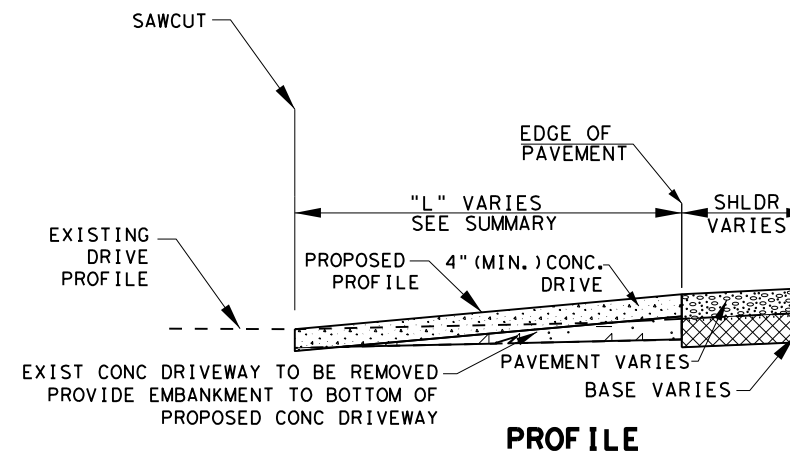
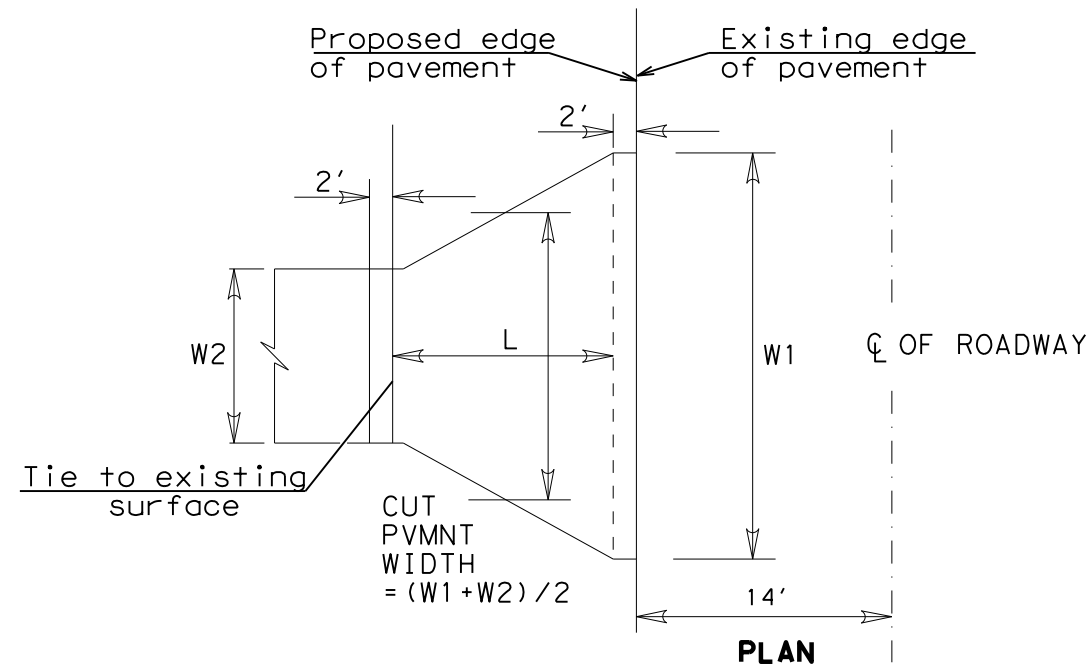
DITCH CONCRETE RIPRAP DETAIL



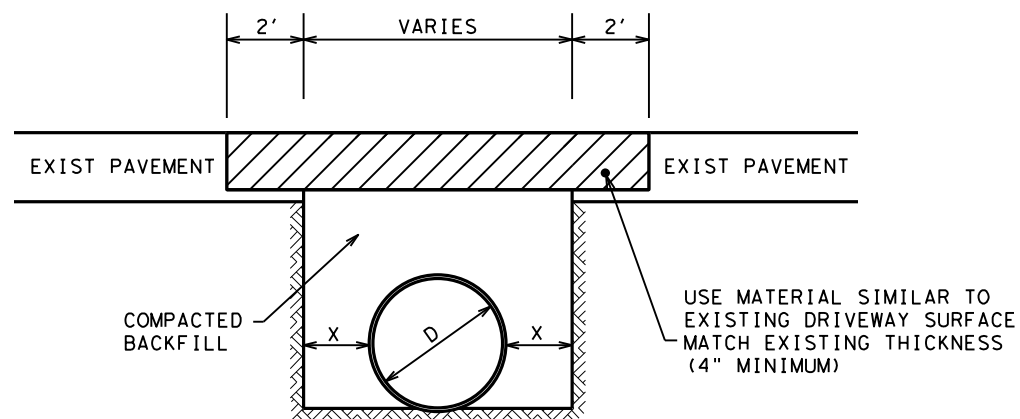
FLAT BOTTOM DITCH RIPRAP DETAIL



STONE PROTECTION DETAIL



TYPICAL CONCRETE DRIVEWAY DETAIL



D = DIAMETER OF PIPE  
 FOR PIPE ≤ 42" DIA. X= 1.4'  
 FOR PIPE > 42" DIA. X= 2.6'

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

CUT AND RESTORE PAVEMENT DETAIL

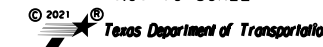
1) SEE "MISCELLANEOUS SUMMARIES" SHEETS FOR LOCATIONS AND QUANTITIES.

2) REMOVE PORTIONS OF EXISTING CONCRETE DRIVEWAYS BY SAWCUTTING TO NEAT LINES UNLESS OTHERWISE DIRECTED. THIS REMOVAL WILL BE PAID UNDER ITEM 530.

EXCAVATION, EMBANKMENT, BROOMING, MATERIALS AND WORK NECESSARY TO TIE EXISTING DRIVEWAYS TO PROPOSED EDGE OF PAVEMENT WILL BE AS APPROVED, WILL NOT BE PAID FOR SEPARATELY AND WILL BE SUBSIDIARY TO PERTINENT BID ITEMS.

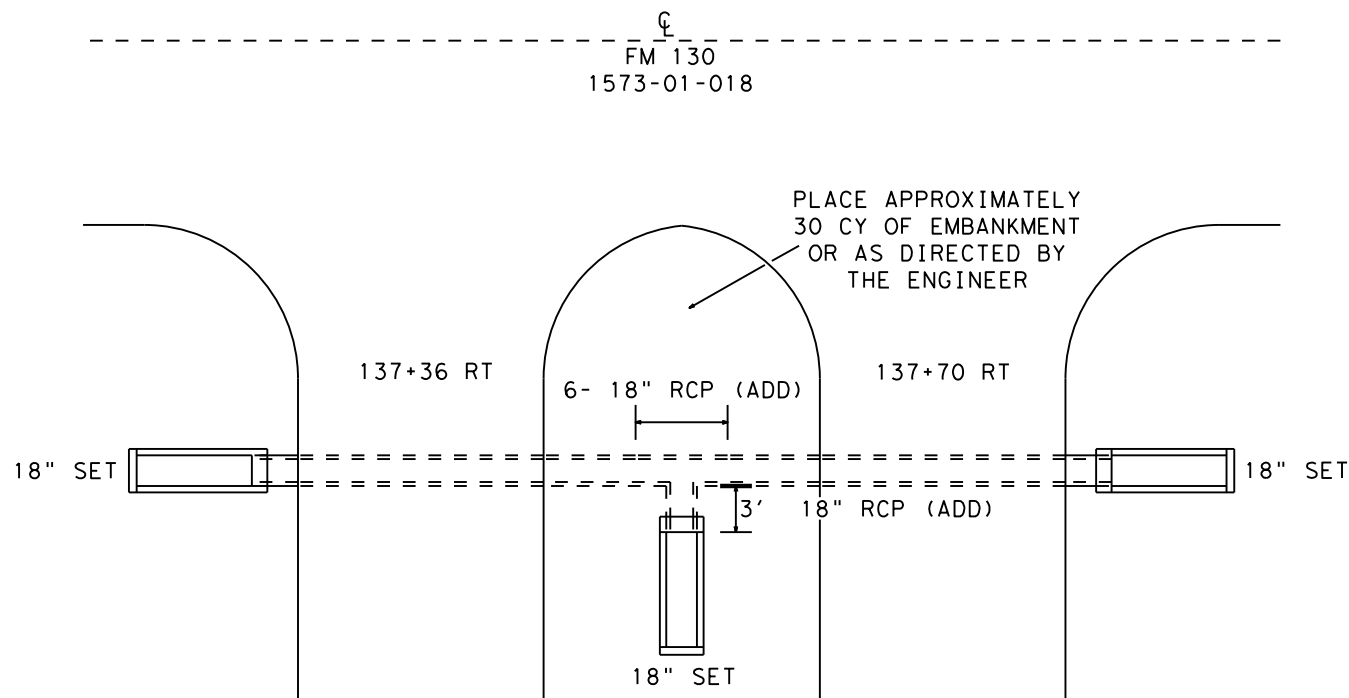
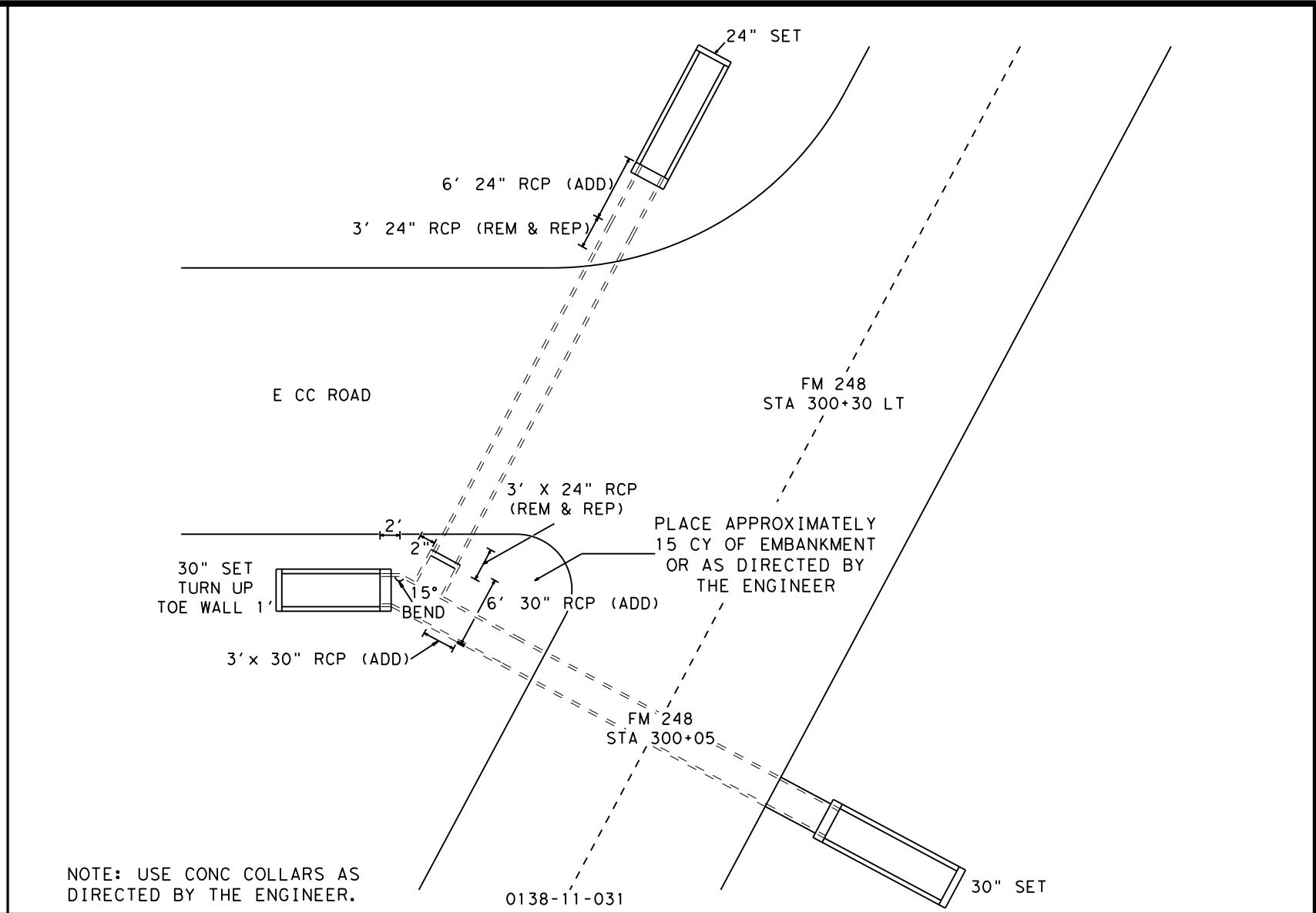
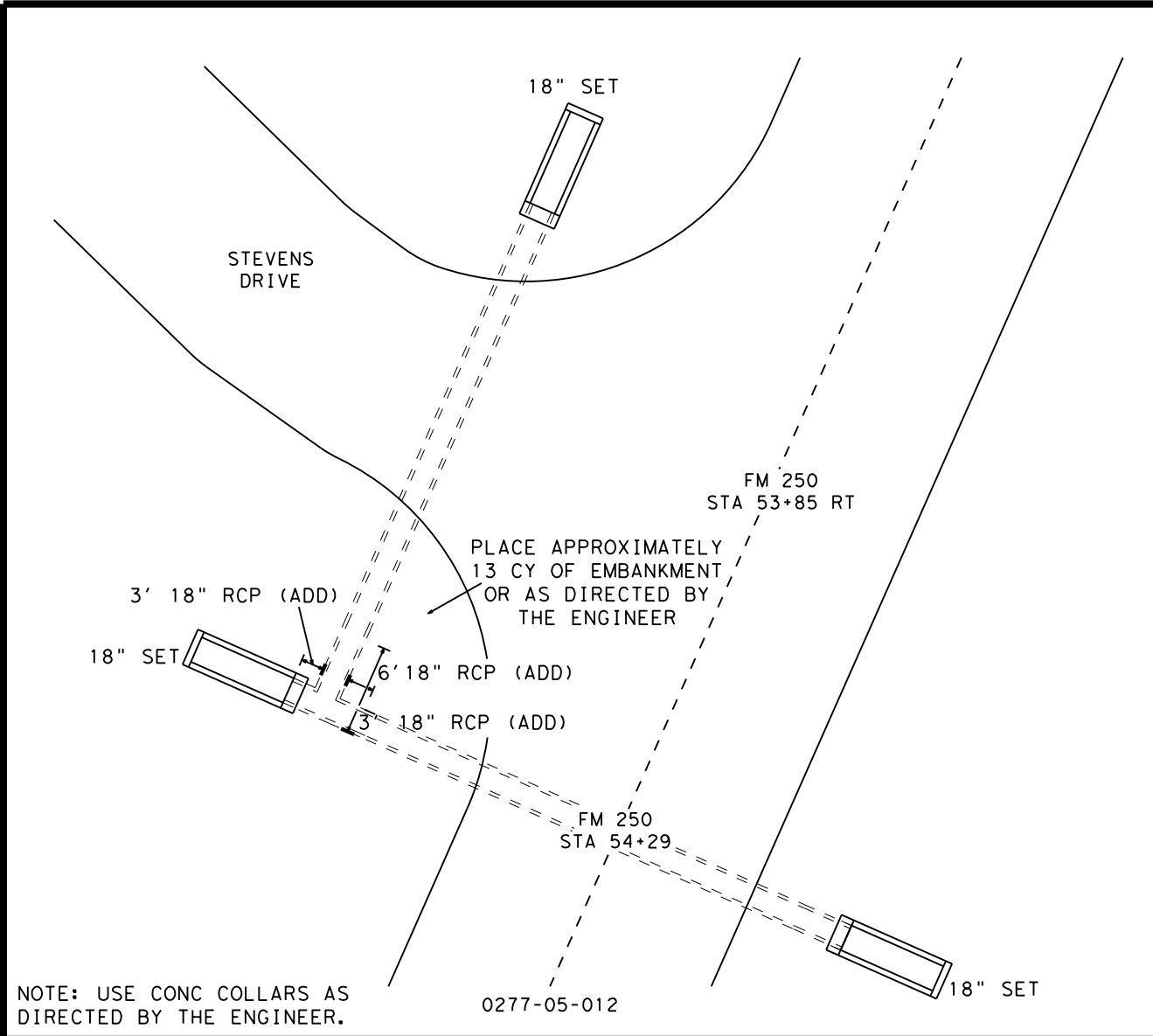
ROADWAY DETAILS

SHEET 2 OF 3  
 NOT TO SCALE



FEDERAL AID PROJECT NO.		SHEET NO.	
		88	
STATE	DISTRICT	COUNTY	
TEXAS	ATL	CASS, ETC.	
CONTROL SECTION	JOB	HIGHWAY NO.	
0138	10	029, ETC. FM 248, ETC.	

FILE: \$FILE\$ DATE: \$DATE\$ \$TIMES\$



NOT TO SCALE

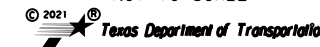
NOTE: USE CONC COLLARS AS DIRECTED BY THE ENGINEER.

FILE: \$FILE\$ DATE: \$DATE\$

\$TIMES

**ROADWAY DETAILS**

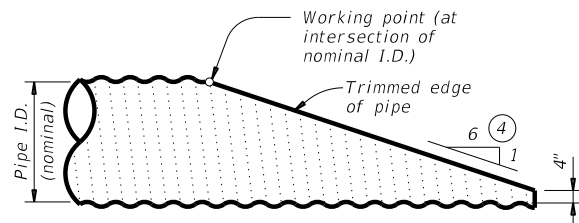
SHEET 3 OF 3  
NOT TO SCALE



FHWA TEXAS DIVISION		FEDERAL AID PROJECT NO.		SHEET NO. 89
STATE	DISTRICT	COUNTY		
TEXAS	ATL	CASS, ETC.		
CONTROL	SECTION	JOB	HIGHWAY NO.	
0138	10	029, ETC.	FM 248, ETC.	



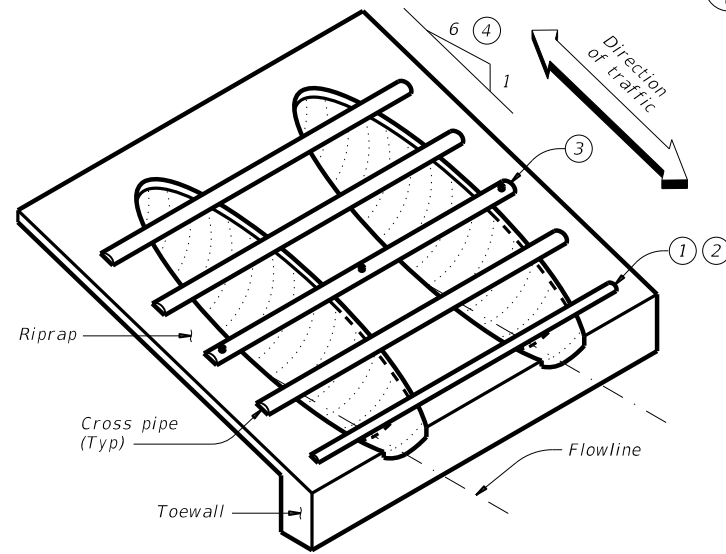
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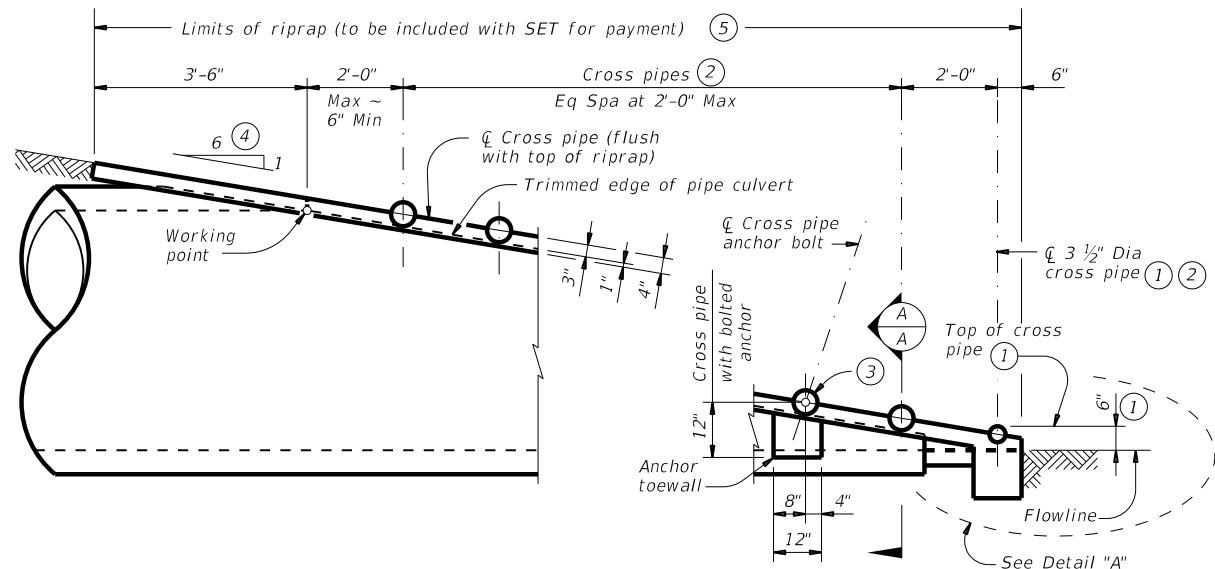
NOTE: All cross pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

### SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

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

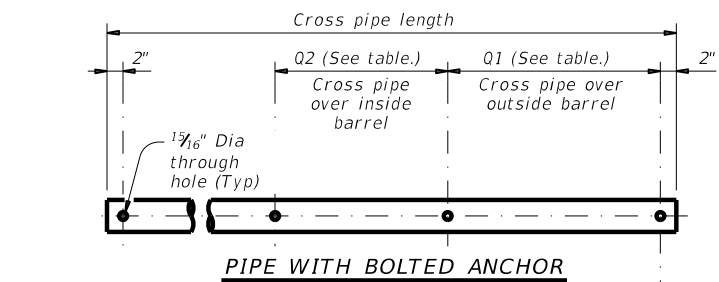


### ISOMETRIC VIEW OF TYPICAL INSTALLATION

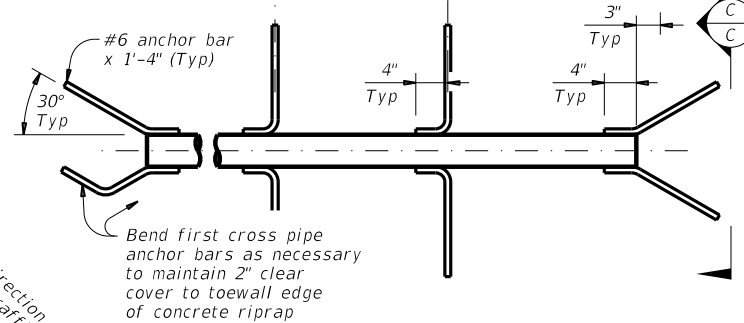


### SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

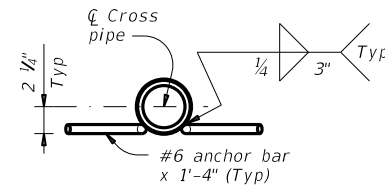
(Showing reinforced concrete pipe (RCP) culvert. Details at corrugated metal pipe (CMP) culvert are similar.)



### PIPE WITH BOLTED ANCHOR

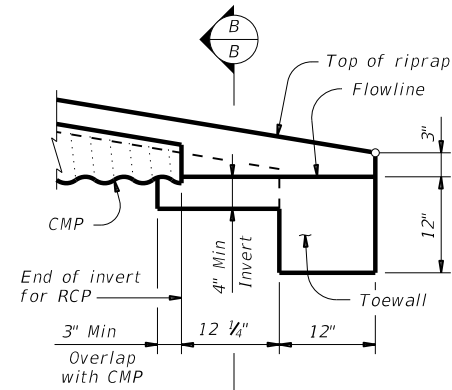


### PIPE WITH ANCHOR BARS



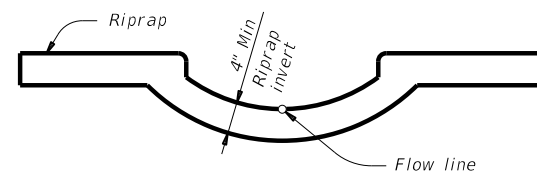
### SECTION C-C

### CROSS PIPE DETAILS



### DETAIL "A"

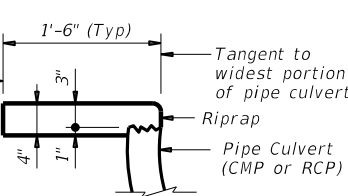
(Showing invert with corrugated metal pipe (CMP) culvert. Reinforced concrete pipe (RCP) culvert details are similar. Cross pipes not shown for clarity.)



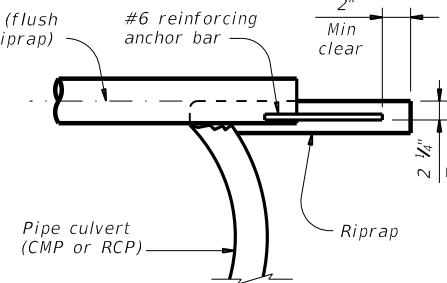
### SECTION B-B

(Cross pipes not shown for clarity.)

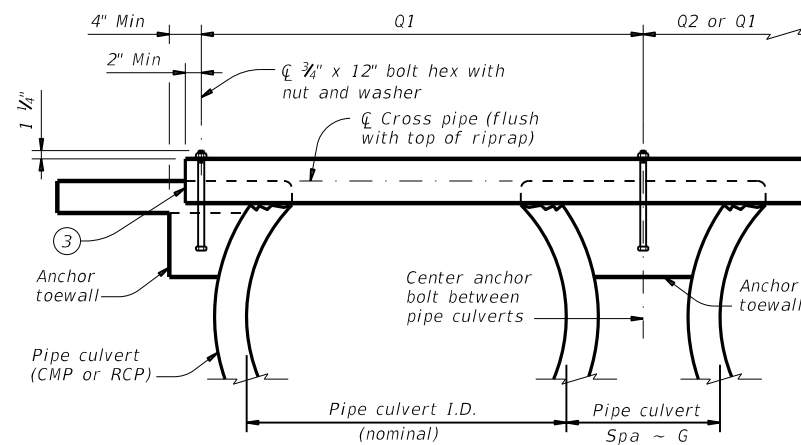
Limits of riprap (to be included with SET for payment) ⑤



### SHOWING TYPICAL PIPE CULVERT AND RIPRAP



### SHOWING CROSS PIPE WITH ANCHOR BAR



### SHOWING CROSS PIPE WITH BOLTED ANCHOR

### SECTION A-A

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

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

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

#### MATERIAL NOTES:

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

#### GENERAL NOTES:

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

Bridge Division Standard

## SAFETY END TREATMENT

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

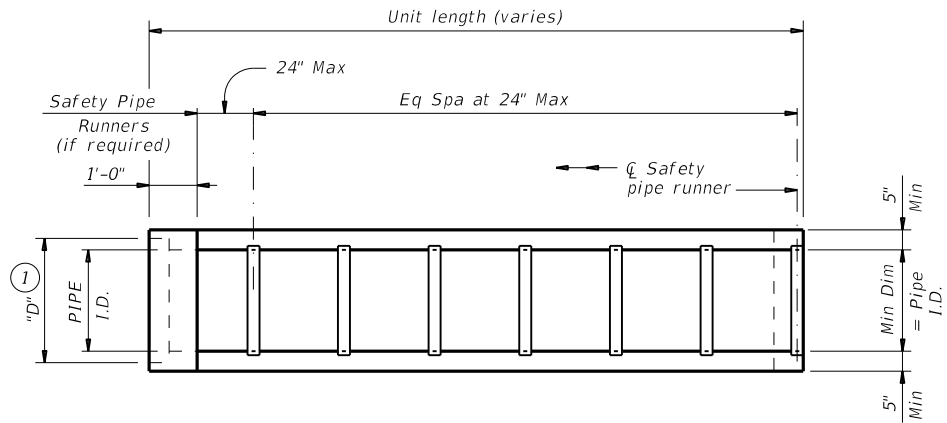
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©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0138	10	029, ETC.	FM 248, ETC.
	DIST	COUNTY	SHEET NO.	
	ATL	CASS, ETC.	90	

DATE: FILE:

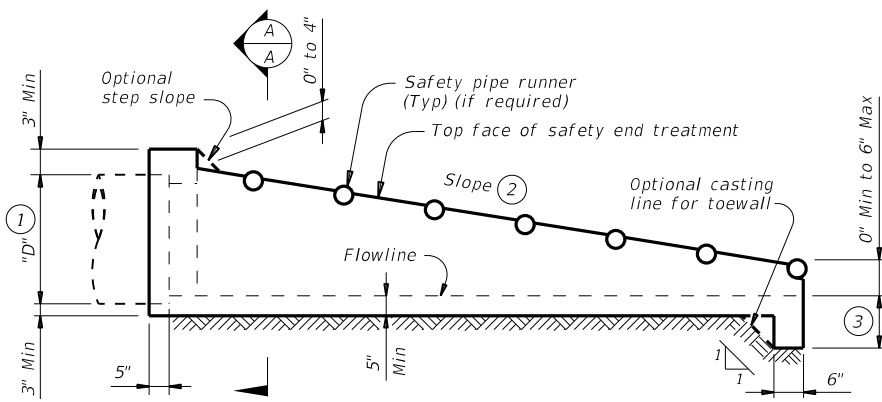
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DATE: FILE:



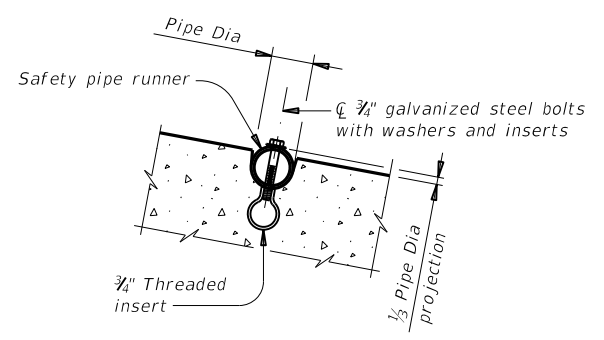
**PLAN**

(Showing bell end connection.)



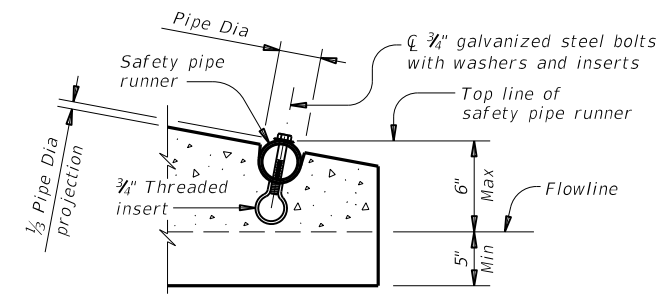
**LONGITUDINAL ELEVATION**

(Showing bell end connection.)

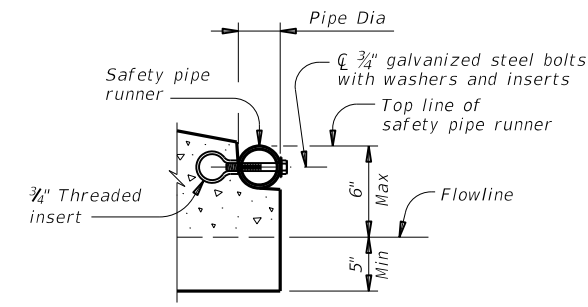


**INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS**

(If required)



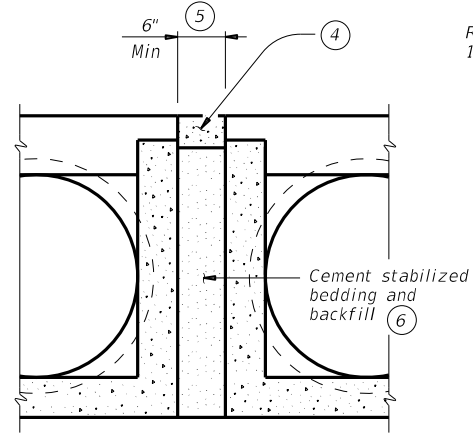
**OPTION A**



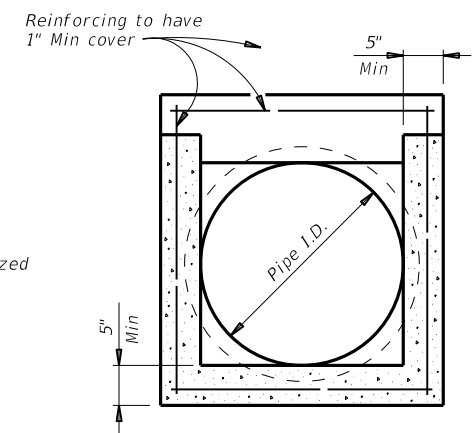
**OPTION B**

**END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS**

(If required)

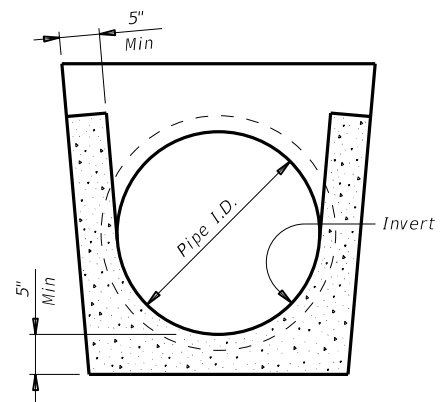


**MULTIPLE PIPE INSTALLATION**

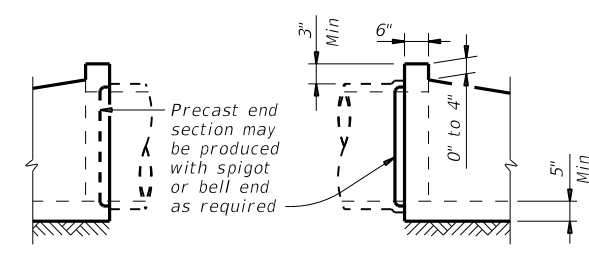


**OPTION WITH SQUARE BOTTOM**

**SECTION A-A**



**OPTION WITH INVERT BOTTOM**



**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 1/4"	1.30"	20.50"	6:1	6' - 5"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
18"	2 1/2"	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 1/2"	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 1/2"	N/A	52.50"	6:1	21' - 2"	Yes	Yes	4" STD	4.500"	4.026"

- 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.
- Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.
- Toewall to be used only when dimension is shown elsewhere in the plans.
- 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".
- Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.
- 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.
- 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  
**PRECAST SAFETY END TREATMENT**  
**TYPE II ~ PARALLEL DRAINAGE**  
**PSET-SP**

Bridge Division Standard

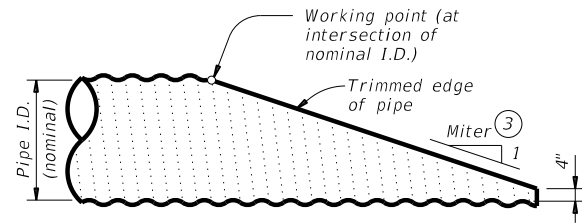
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©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0138	10	029, ETC.	FM 248, ETC.
	DIST	COUNTY	SHEET NO.	
	ATL	CASS, ETC.	91	

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DATE: FILE:

## CROSS PIPE LENGTHS AND PIPE RUNNER LENGTHS ① ②

Nominal Culvert I.D.	Pipe Culvert Spa ~ G	Cross Pipe Length	Pipe Runner Length											
			3:1 Side Slope				4:1 Side Slope				6:1 Side Slope			
			0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
24"	1' - 7"	3' - 5"	N/A	N/A	N/A	5' - 10"	N/A	N/A	N/A	8' - 1"	N/A	N/A	N/A	12' - 9"
27"	1' - 8"	3' - 8"	N/A	N/A	5' - 5"	6' - 11"	N/A	N/A	7' - 7"	9' - 7"	N/A	N/A	11' - 11"	14' - 11"
30"	1' - 10"	3' - 11"	N/A	N/A	6' - 4"	8' - 0"	N/A	N/A	8' - 9"	11' - 0"	N/A	N/A	13' - 8"	17' - 0"
33"	1' - 11"	4' - 2"	6' - 2"	6' - 5"	7' - 3"	9' - 1"	8' - 6"	8' - 10"	10' - 0"	12' - 5"	13' - 3"	13' - 9"	15' - 5"	19' - 2"
36"	2' - 1"	4' - 5"	6' - 11"	7' - 3"	8' - 2"	10' - 2"	9' - 6"	9' - 11"	11' - 2"	13' - 10"	14' - 9"	15' - 3"	17' - 2"	21' - 3"
42"	2' - 4"	4' - 11"	8' - 6"	8' - 10"	9' - 11"	12' - 4"	11' - 7"	12' - 0"	13' - 6"	16' - 8"	17' - 9"	18' - 5"	20' - 8"	25' - 7"
48"	2' - 7"	5' - 5"	10' - 1"	10' - 5"	11' - 9"	N/A	13' - 7"	14' - 2"	15' - 10"	N/A	20' - 9"	21' - 6"	24' - 2"	N/A
54"	3' - 0"	5' - 11"	11' - 8"	12' - 1"	N/A	N/A	15' - 8"	16' - 3"	N/A	N/A	23' - 10"	24' - 8"	N/A	N/A
60"	3' - 3"	6' - 5"	13' - 3"	N/A	N/A	N/A	17' - 9"	N/A	N/A	N/A	26' - 10"	N/A	N/A	N/A



NOTE: All pipe runners, 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 of reinforced concrete pipe (RCP) culvert are similar.)

### TYPICAL PIPE CULVERT MITERS ③

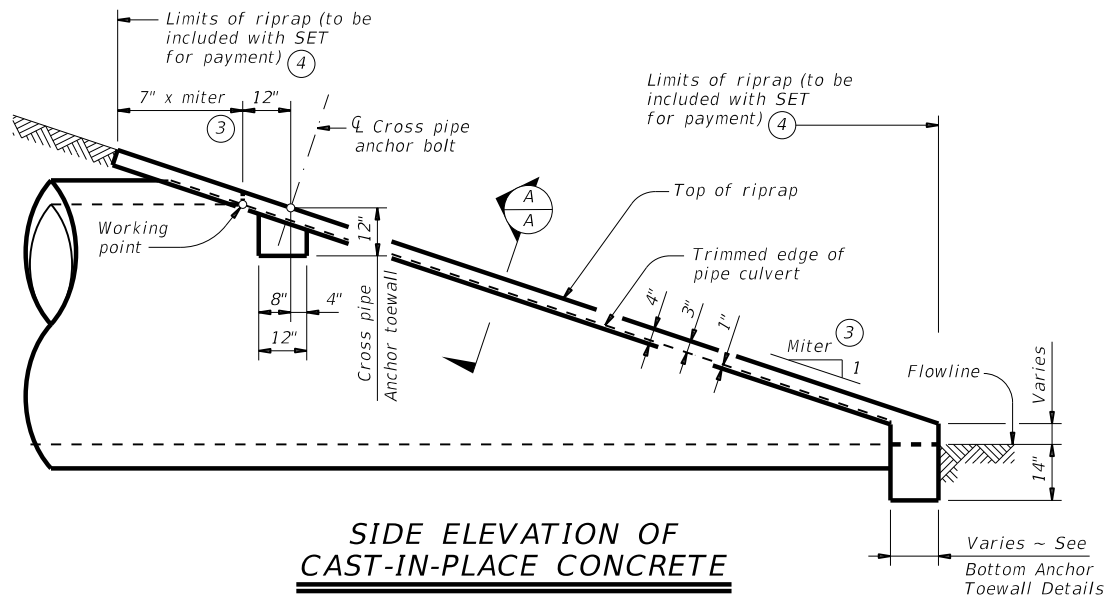
Side Slope	0° Skew	15° Skew	30° Skew	45° Skew
3:1	3:1	3.106:1	3.464:1	4.243:1
4:1	4:1	4.141:1	4.619:1	5.657:1
6:1	6:1	6.212:1	6.928:1	8.485:1

### CONDITIONS WHERE PIPE RUNNERS ARE NOT REQUIRED ②

Nominal Culvert I.D.	Single Pipe Culvert	Multiple Pipe Culverts
12" thru 21"	Skews thru 45°	Skews thru 45°
24"	Skews thru 45°	Skews thru 30°
27"	Skews thru 30°	Skews thru 15°
30"	Skews thru 15°	Skews thru 15°
33"	Skews thru 15°	Always required
36"	Normal (no skew)	Always required
42" thru 60"	Always required	Always required

### STANDARD PIPE SIZES AND MAX PIPE RUNNER LENGTHS ①

Pipe Size	Pipe O.D.	Pipe I.D.	Max Pipe Runner Length
2" STD	2.375"	2.067"	N/A
3" STD	3.500"	3.068"	10' - 0"
4" STD	4.500"	4.026"	19' - 8"
5" STD	5.563"	5.047"	34' - 2"

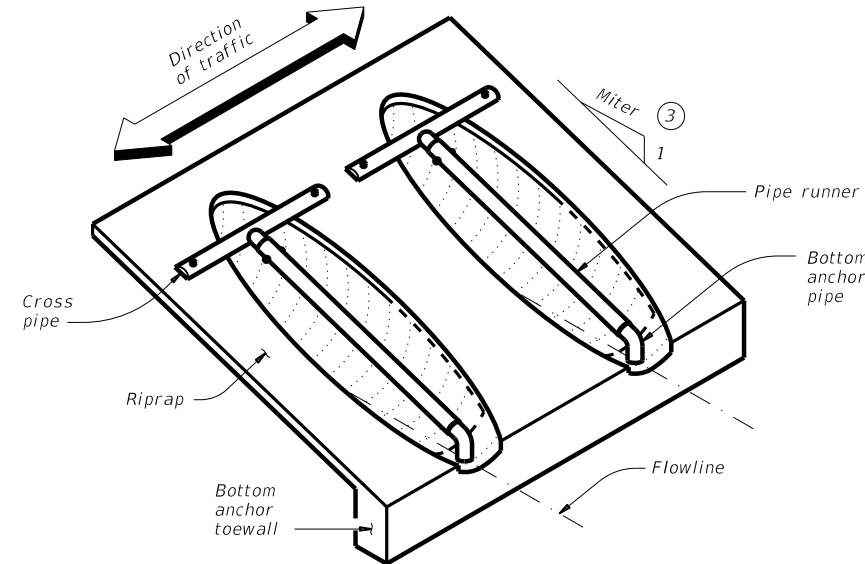


### SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing reinforced concrete pipe (RCP) culvert. Details of corrugated metal pipe (CMP) culvert are similar. Pipe runners not shown for clarity.)

### ESTIMATED CONCRETE RIPRAP QUANTITIES (CY) ⑤

Nominal Culvert I.D.	3:1 Side Slope				4:1 Side Slope				6:1 Side Slope			
	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
12"	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.8
15"	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9
18"	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	1.0
21"	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9	0.9	0.9	1.0	1.2
24"	0.6	0.7	0.7	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.1	1.3
27"	0.7	0.7	0.8	0.9	0.8	0.9	0.9	1.1	1.1	1.1	1.2	1.4
30"	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.2	1.2	1.2	1.3	1.6
33"	0.8	0.8	0.9	1.0	1.0	1.0	1.1	1.3	1.3	1.4	1.5	1.7
36"	0.9	0.9	0.9	1.1	1.1	1.1	1.2	1.4	1.4	1.5	1.6	1.8
42"	1.0	1.0	1.1	1.3	1.2	1.3	1.3	1.6	1.6	1.7	1.8	2.1
48"	1.1	1.1	1.2	N/A	1.4	1.4	1.5	N/A	1.9	1.9	2.1	N/A
54"	1.3	1.3	N/A	N/A	1.6	1.6	N/A	N/A	2.1	2.1	N/A	N/A
60"	1.4	N/A	N/A	N/A	1.7	N/A	N/A	N/A	2.3	N/A	N/A	N/A



### ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing installation with no skew.)

① Provide pipe runner of the size shown in the tables. Provide cross pipe of the same size as the pipe runner. Provide cross pipe stub out and bottom anchor pipe of the next smaller size pipe as shown in the Standard Pipe Sizes and Max Pipe Runner Lengths table.

② This standard allows for the placement of only one pipe runner across each culvert pipe opening. In order to limit the clear opening to be traversed by an errant vehicle, the following conditions must be met:

- For 60" culvert pipes, the skew must not exceed 0°.
- For 54" culvert pipes, the skew must not exceed 15°.
- For 48" culvert pipes, the skew must not exceed 30°.
- For all culvert pipe sizes 42" and less, the skew must not exceed 45°.

If the above conditions cannot be met, the designer should consider using a safety end treatment with flared wings. For further information, refer to the TxDOT Roadway Design Manual.

③ Miter = slope of mitered end of pipe culvert.

④ Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".

⑤ 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.

SHEET 1 OF 2

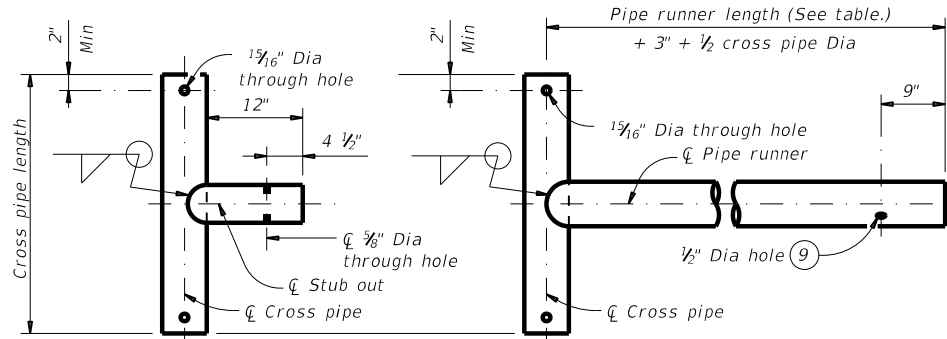


## SAFETY END TREATMENT FOR 12" DIA TO 60" DIA PIPE CULVERTS TYPE II ~ CROSS DRAINAGE

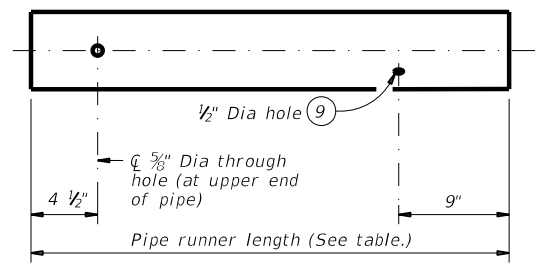
### SETP-CD

FILE: setpcdse-20.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0138	10	029, ETC.	FM 248, ETC.
	DIST	COUNTY	SHEET NO.	
	ATL	CASS, ETC.	92	

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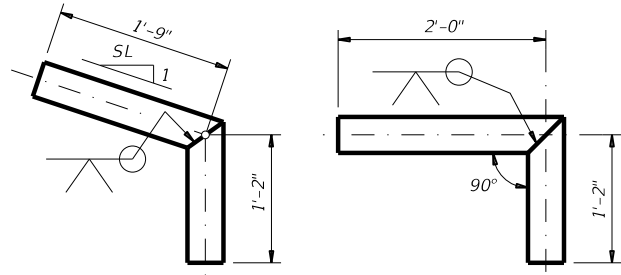


**OPTION A1**                      **OPTION A2**  
**CROSS PIPE AND CONNECTIONS DETAILS**

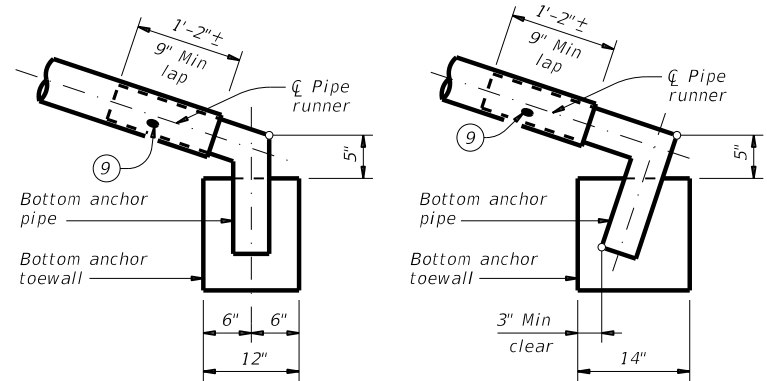


NOTE: The separate pipe runner shown is required when Cross Pipe Connection Option A1 is used.

**PIPE RUNNER DETAILS**



**OPTION B1**                      **OPTION B2**  
**BOTTOM ANCHOR PIPE DETAILS** ⑩

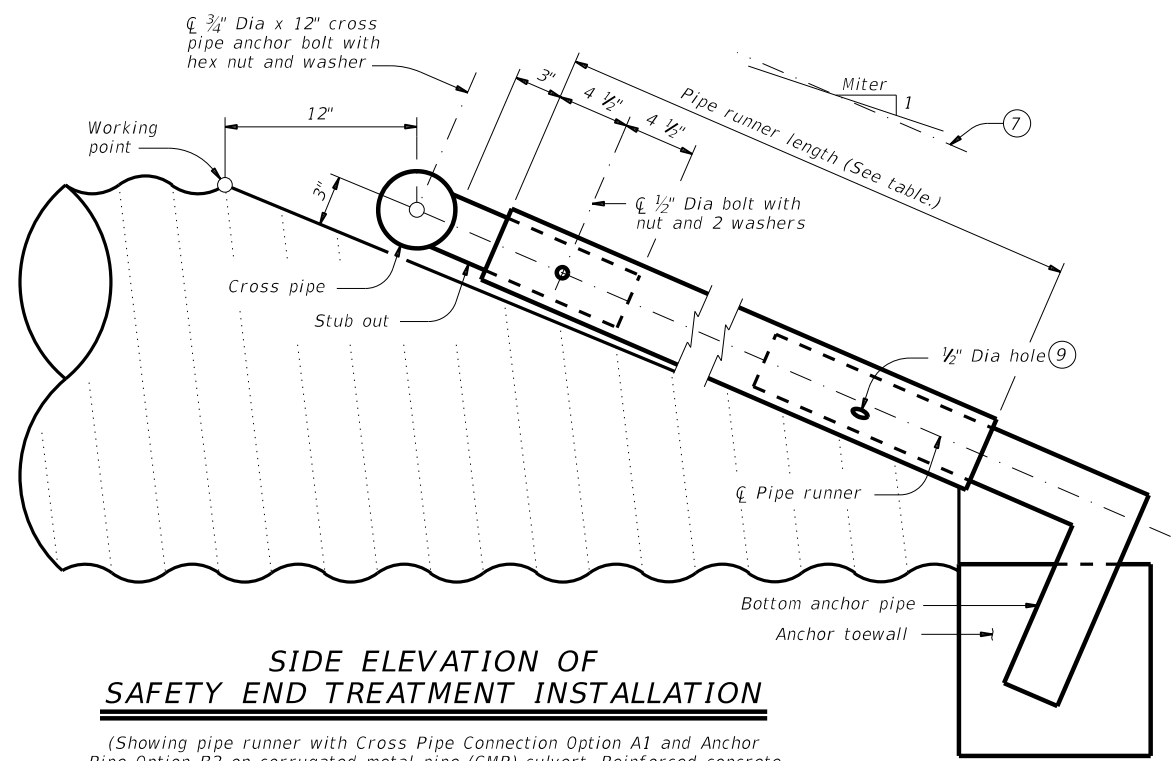


**OPTION B1**                      **OPTION B2**  
**BOTTOM ANCHOR TOEWALL DETAILS**

(Culvert and riprap not shown for clarity.)

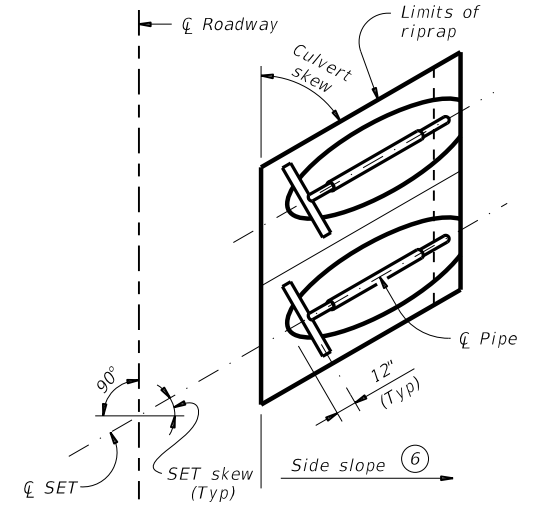
**MATERIAL NOTES:**  
 Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.  
 Provide pipe runners, cross pipes, and anchor pipes conforming to the requirements of ASTM A53 (Type E or S, 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:**  
 Pipe runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-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 pipe runners.  
 Payment for riprap and toewall is included in the price bid for each safety end treatment.  
 Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap".

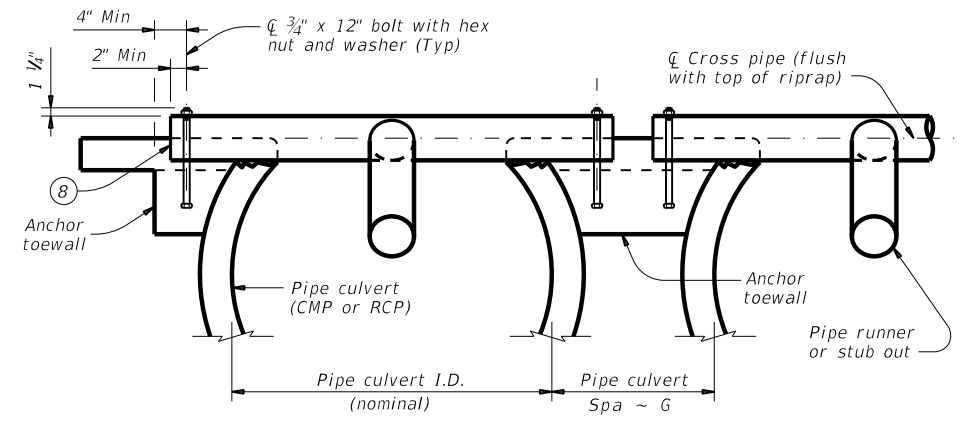


**SIDE ELEVATION OF SAFETY END TREATMENT INSTALLATION**

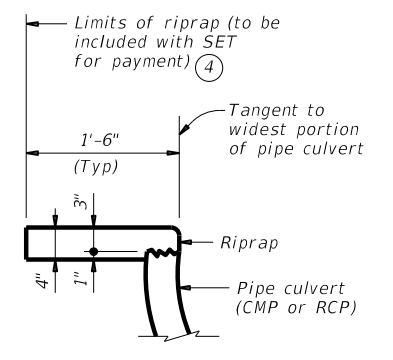
(Showing pipe runner with Cross Pipe Connection Option A1 and Anchor Pipe Option B2 on corrugated metal pipe (CMP) culvert. Reinforced concrete pipe culvert (RCP) details are similar. Riprap not shown for clarity)



**PLAN OF SKEWED INSTALLATION**



**SECTION A-A**  
 SHOWING CROSS PIPE AND ANCHOR TOEWALL



**SHOWING TYPICAL PIPE CULVERT AND RIPRAP**

- ④ Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".
- ⑥ Recommended values of side slope are 3:1, 4:1, and 6:1. All quantities, calculations, and dimensions shown herein are based on these recommended values. Slope of 3:1 or flatter is required for vehicle safety.
- ⑦ Note that actual slope of pipe runner may vary slightly from side slope of riprap and trimmed culvert pipe edge.
- ⑧ Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access.
- ⑨ After installation, inspect the 1/2 inch hole to ensure that the lap of the pipe runner with the bottom anchor pipe is adequate.
- ⑩ At fabricator's option, a heat bend to a smooth 5" radius or a manufactured elbow (of the same material as the runner) may be substituted for the mitered and welded joint in the bottom anchor pipe.

		<b>Bridge Division Standard</b>	
<b>SAFETY END TREATMENT</b> FOR 12" DIA TO 60" DIA PIPE CULVERTS TYPE II ~ CROSS DRAINAGE			
<b>SETP-CD</b>			
FILE: setpcdse-20.dgn	DN: GAF	CK: CAT	DW: JRP
©TxDOT February 2020	CONT SECT	JOB	HIGHWAY
REVISIONS	0138	10	029, ETC. FM 248, ETC.
	DIST	COUNTY	SHEET NO.
	ATL	CASS, ETC.	93

DATE:  
FILE:

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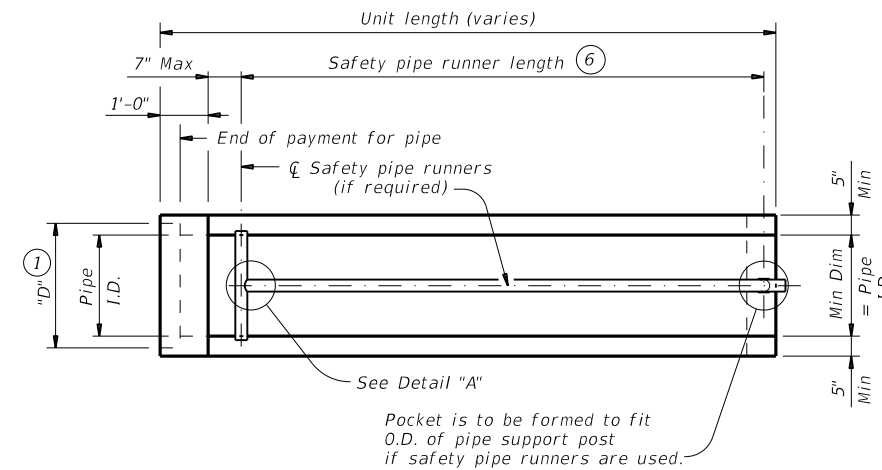
DATE: FILE:

## REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	RCP Wall "B" Thickness	TP Wall Thickness (8)	"D" (1)	Slope	Min Length of Unit	Single Pipe		Multiple Pipes		
						Skew	Pipe Runners Required	Skew	Pipe Runners Required	
12"	2"	1.15"	17.00"	3:1	2' - 11"	≤ 45°	No	≤ 45°	No	
					4:1					3' - 6"
					6:1					4' - 9"
15"	2 1/4"	1.30"	20.50"	3:1	3' - 8"	≤ 45°	No	≤ 45°	No	
					4:1					4' - 7"
					6:1					6' - 5"
18"	2 1/2"	1.60"	24.00"	3:1	4' - 6"	≤ 45°	No	≤ 45°	No	
					4:1					5' - 8"
					6:1					8' - 0"
24"	3"	1.95"	31.00"	3:1	6' - 2"	≤ 45°	No	= 30°	No	
					4:1					7' - 10"
					6:1					11' - 3"
30"	3 1/2"	2.65"	38.50"	3:1	7' - 10"	= 15°	No	= 15°	No	
					4:1					10' - 1"
					6:1					14' - 8"
36"	4"	2.75"	45.50"	3:1	9' - 5"	= 0°	No	≥ 0°	Yes	
					4:1					12' - 3"
					6:1					17' - 11"
42"	4 1/2"	N/A	52.50"	3:1	11' - 1"	≥ 0°	Yes	≥ 0°	Yes	
					4:1					14' - 5"
					6:1					21' - 2"

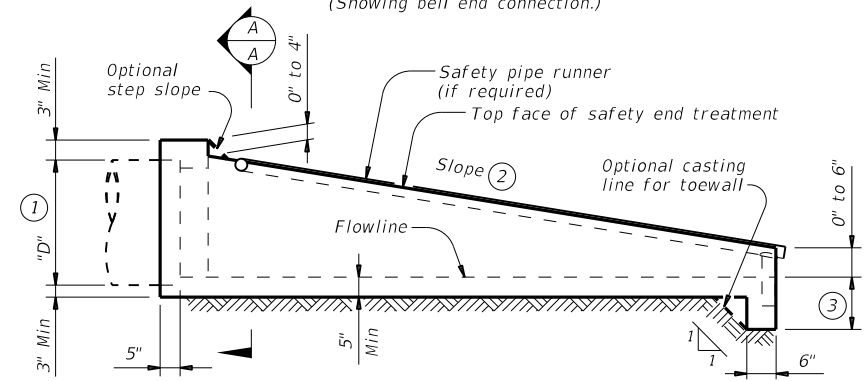
## SAFETY PIPE RUNNER DIMENSIONS

Max Safety Pipe Runner Length	Required Pipe Runner Size		
	Pipe Size	Pipe O.D.	Pipe I.D.
11' - 2"	3" STD	3.500"	3.068"
15' - 6"	3 1/2" STD	4.000"	3.548"
20' - 10"	4" STD	4.500"	4.026"
35' - 4"	5" STD	5.563"	5.047"



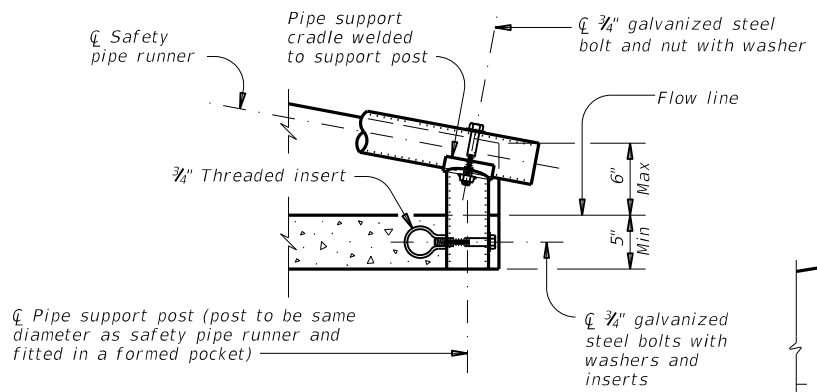
### PLAN

(Showing bell end connection.)



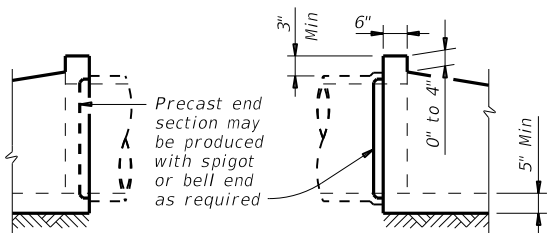
### LONGITUDINAL ELEVATION

(Showing bell end connection.)



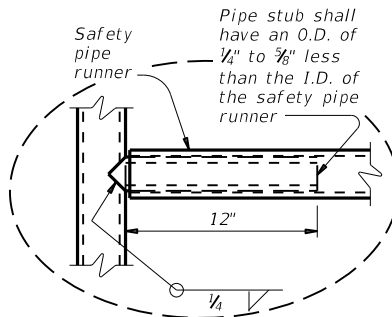
### END DETAIL FOR INSTALLATION OF SAFETY PIPE RUNNERS

(If required)

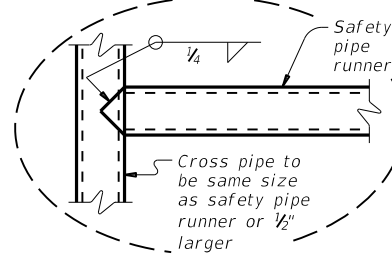


### OPTIONAL JOINT FOR RCP

(Showing joint between RCP and precast safety end treatment)



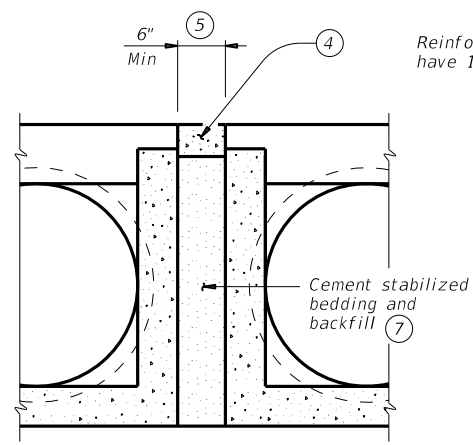
### OPTION A



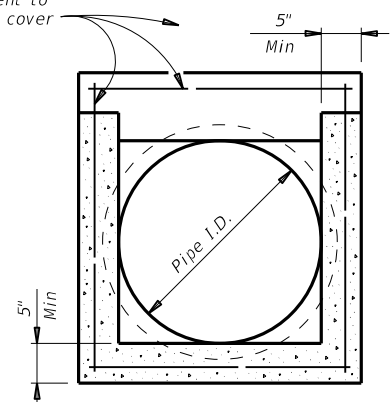
### OPTION B

### DETAIL A

(If required)

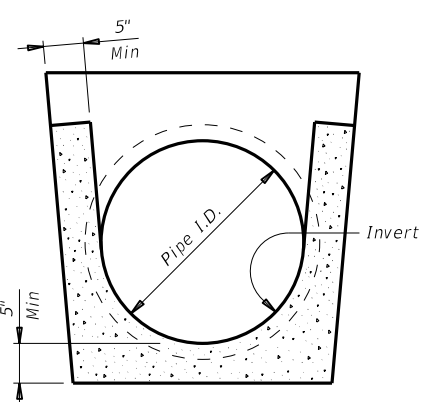


### MULTIPLE PIPE INSTALLATION

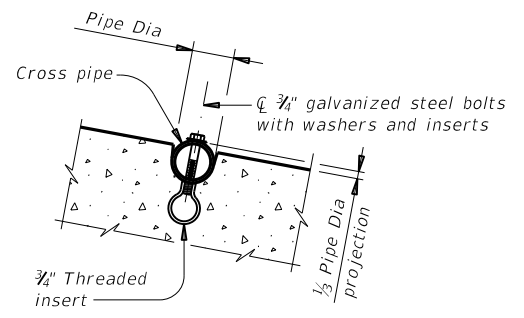


### OPTION WITH SQUARE BOTTOM

### SECTION A-A



### OPTION WITH INVERT BOTTOM



### INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(If required)

- 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 plans. Slope of 3:1 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 Measured along slope.
- 7 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.
- 8 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 1,800 Lbs at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.

Provide safety pipe runners, cross pipes, pipe support posts, and pipe stubs 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 ~ CROSS DRAINAGE

### PSET-SC

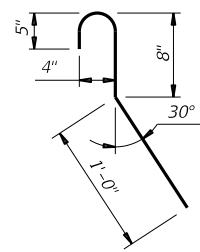
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REVISIONS	CONT	SECT	JOB	HIGHWAY
0138	10		029, ETC.	FM 248, ETC.
	DIST	COUNTY	SHEET NO.	
	ATL	CASS, ETC.	<b>94</b>	

**TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL** (5)

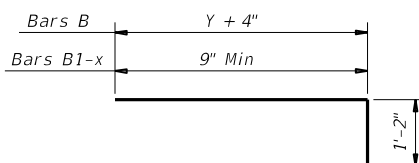
Slope	Dia of Pipe (D)	Values for One Pipe					Values to be Added for Each Add'l Pipe			
		W	X	Y	L	Reinf (Lbs)	Conc (CY)	X and W	Reinf (Lbs)	Conc (CY)
3:1	24"	7'-2"	4'-0 3/4"	7'-3"	8'-4 1/2"	202	1.8	3'-8 1/2"	59	0.8
	27"	7'-11"	4'-4 1/2"	8'-0"	9'-2 3/4"	223	2.1	4'-0 3/4"	68	0.9
	30"	8'-7 3/4"	4'-8"	8'-9"	10'-1 1/4"	258	2.4	4'-5 3/4"	79	1.1
	33"	9'-4 1/2"	4'-11 3/4"	9'-6"	10'-11 3/4"	280	2.7	4'-10"	86	1.3
	36"	10'-1 1/4"	5'-3 1/4"	10'-3"	11'-10"	311	3.1	5'-3 1/4"	97	1.5
	42"	11'-7"	5'-10 1/2"	11'-9"	13'-6 3/4"	377	3.9	6'-0 1/2"	122	1.9
	48"	13'-5 3/4"	6'-5 3/4"	14'-0"	16'-2"	463	5.2	6'-9 3/4"	152	2.5
	54"	14'-11 1/2"	7'-1"	15'-6"	17'-10 3/4"	542	6.2	7'-9 1/4"	190	3.1
	60"	16'-5"	7'-8 1/4"	17'-0"	19'-7 1/2"	614	7.3	8'-6 1/2"	224	3.7
	66"	17'-10 3/4"	8'-3 1/2"	18'-6"	21'-4 1/4"	699	8.5	9'-0 3/4"	248	4.2
	72"	19'-4 1/4"	8'-10 3/4"	20'-0"	23'-1 1/4"	784	9.8	9'-8"	281	4.7
	4:1	24"	8'-6 3/4"	4'-0 3/4"	9'-8"	11'-2"	262	2.4	3'-8 1/2"	68
27"		9'-5 1/4"	4'-4 1/2"	10'-8"	12'-3 3/4"	290	2.8	4'-0 3/4"	79	1.1
30"		10'-4"	4'-8"	11'-8"	13'-5 3/4"	331	3.2	4'-5 3/4"	91	1.4
33"		11'-2 1/2"	4'-11 3/4"	12'-8"	14'-7 1/2"	366	3.7	4'-10"	104	1.6
36"		12'-1"	5'-3 1/4"	13'-8"	15'-9 1/4"	409	4.2	5'-3 1/4"	115	1.8
42"		13'-10"	5'-10 1/2"	15'-8"	18'-1"	493	5.3	6'-0 1/2"	144	2.3
48"		16'-2 1/4"	6'-5 3/4"	18'-8"	21'-6 3/4"	610	7.2	6'-9 3/4"	183	3.1
54"		17'-11 1/4"	7'-1"	20'-8"	23'-10 1/4"	727	8.6	7'-9 1/4"	231	3.8
60"		19'-8 3/4"	7'-8 1/4"	22'-8"	26'-2"	822	10.1	8'-6 1/2"	270	4.6
66"		21'-5 1/2"	8'-3 1/2"	24'-8"	28'-5 3/4"	945	11.8	9'-0 3/4"	305	5.2
72"		23'-2 1/2"	8'-10 3/4"	26'-8"	30'-9 1/2"	1,058	13.6	9'-8"	342	5.9
6:1		24"	11'-4 1/4"	4'-0 3/4"	14'-6"	16'-9"	375	3.8	3'-8 1/2"	83
	27"	12'-6 1/4"	4'-4 1/2"	16'-6"	18'-5 3/4"	426	4.5	4'-0 3/4"	98	1.5
	30"	13'-8 1/4"	4'-8"	17'-6"	20'-2 1/2"	486	5.2	4'-5 3/4"	113	1.8
	33"	14'-10 1/4"	4'-11 3/4"	19'-0"	21'-11 1/4"	549	6.0	4'-10"	130	2.1
	36"	16'-0 1/4"	5'-3 1/4"	20'-6"	23'-8"	604	6.8	5'-3 1/4"	145	2.5
	42"	18'-4 1/2"	5'-10 1/2"	23'-6"	27'-1 1/2"	738	8.7	6'-0 1/2"	184	3.2
	48"	21'-6 3/4"	6'-5 3/4"	28'-0"	32'-4"	944	11.8	6'-9 3/4"	240	4.3
	54"	23'-10 3/4"	7'-1"	31'-0"	35'-9 1/2"	1,122	14.2	7'-9 1/4"	303	5.3
	60"	26'-2 3/4"	7'-8 1/4"	34'-0"	39'-3"	1,276	16.9	8'-6 1/2"	358	6.4

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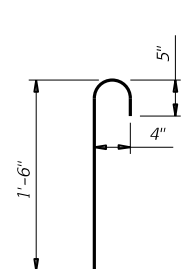
- Quantities shown are for concrete pipe and will increase slightly for metal pipe installation.
- For vehicle safety, reduce curb heights, if necessary, to provide a maximum 3" projection above finished grade. No changes will be made in quantities and no additional compensation will be allowed for this work.
- Provide a 1'-0" footing as shown where required to maintain 4" minimum cover for pipes.
- Dimensions shown are usual and maximum.
- Quantities shown are for one structure end. (One headwall)
- Min Length =  $6" + 3" \times \left( \frac{12 \times H - 7}{12 \times L} \right)$   
 Max Length =  $12 \times H - 3" \times \left( \frac{12 \times H - 7}{12 \times L} \right) - 1"$
- Lengths of wings based on SL:1 slope along this line.



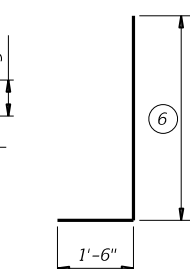
**BARS CL**  
(Length = 2'-5")



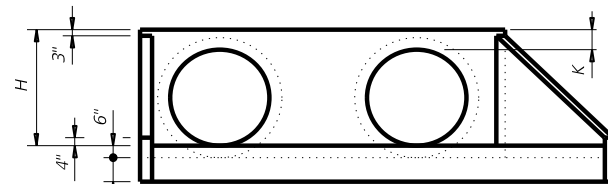
**BARS B and B1-x**



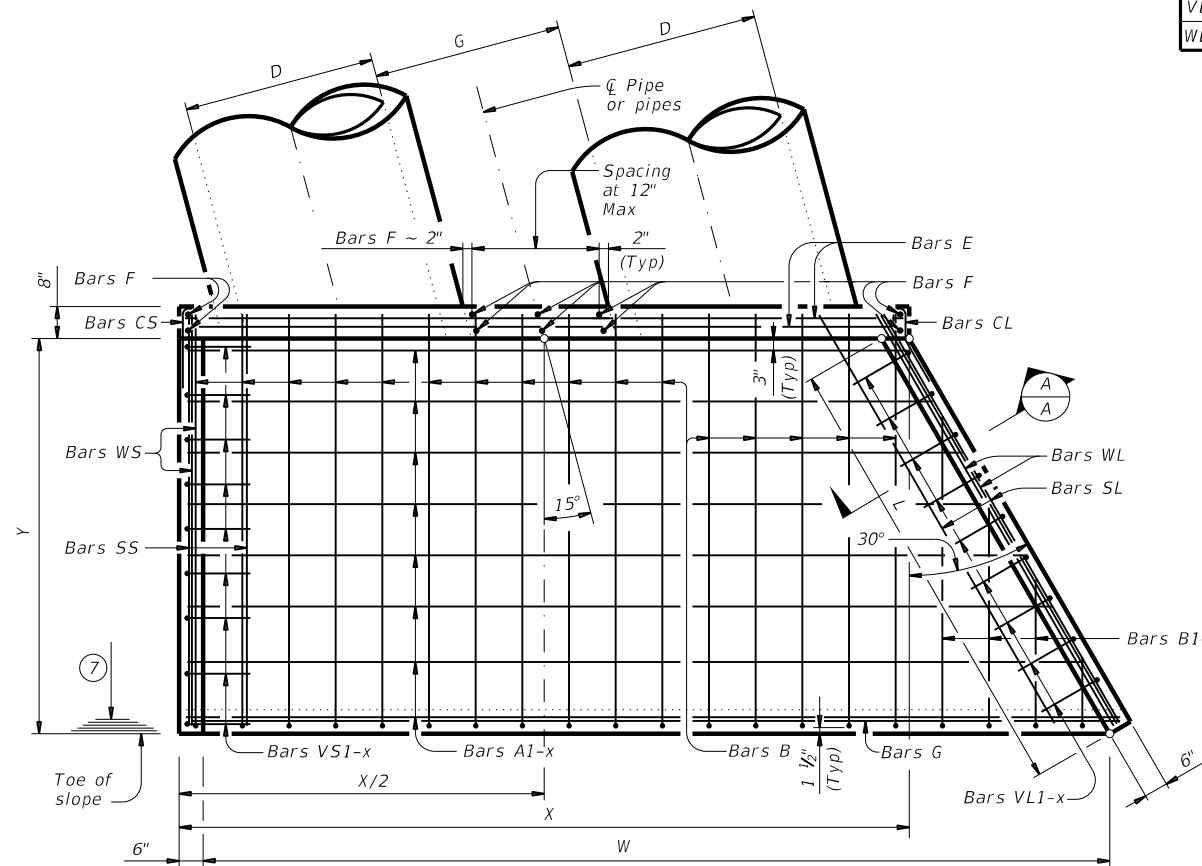
**BARS CS**  
(Length = 2'-3")



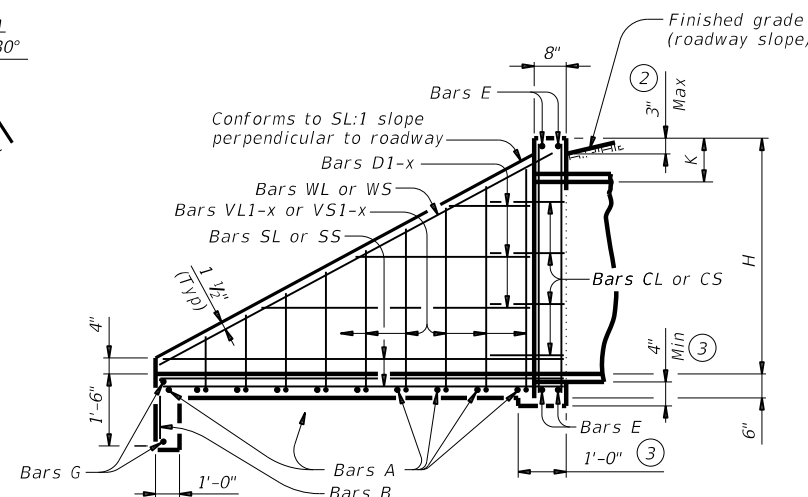
**BARS VL and VS**



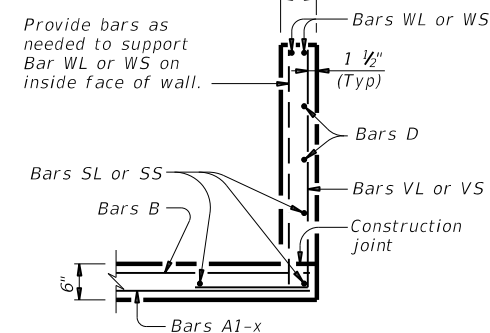
**ELEVATION**  
(Showing dimensions.)



**PLAN**



**TYPICAL WING ELEVATION**



**SECTION A-A**

**TABLE OF REINFORCING STEEL** (5)

Bar	Size	Spa	No.
A	#4	1'-0"	~
B	#3	1'-6"	~
CL & CS	#4	1'-0"	~
D	#3	1'-0"	~
E	#5	~	4
F	#5	~	~
G	#3	~	2
SL & SS	#4	~	6
VL & VS	#4	1'-0"	~
WL & WS	#5	~	4

**TABLE OF CONSTANT DIMENSIONS**

Dia of Pipe (D)	G	K (4)	H
24"	1'-7"	1'-0"	3'-0"
27"	1'-8"	1'-0"	3'-3"
30"	1'-10"	1'-0"	3'-6"
33"	1'-11"	1'-0"	3'-9"
36"	2'-1"	1'-0"	4'-0"
42"	2'-4"	1'-0"	4'-6"
48"	2'-7"	1'-3"	5'-3"
54"	3'-0"	1'-3"	5'-9"
60"	3'-3"	1'-3"	6'-3"
66"	3'-3"	1'-3"	6'-9"
72"	3'-4"	1'-3"	7'-3"

**MATERIAL NOTES:**

Provide Grade 60 reinforcing steel.  
 Provide galvanized reinforcing steel, if required elsewhere in the plans.  
 Adjust reinforcing bars, as necessary, to provide a minimum clear cover of 1 1/2".  
 Provide Class C concrete (f'c = 3,600 psi).  
 Provide pipe runners 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.  
 Provide ASTM A36 steel plates.  
 Galvanize all steel components, except reinforcing unless required elsewhere in the plans, after lubrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.  
 For optional adhesive anchors, install adhesive anchorages in accordance with the manufacturer's instructions including hole size, drilling equipment and method, hole cleaning equipment and method, mixing and dispensing adhesive, and anchor insertion. Do not alter the manufacturer's mixing nozzle or dispenser. Anchorage rods must be clean and free of grease, oil, or any other foreign material. Demonstrate hole cleaning method to the Engineer for approval and continue the approved process for all anchorage locations. Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.

**GENERAL NOTES:**

Designed according to AASHTO LRFD Bridge Design Specifications.  
 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 pipe runners.  
 The safety pipe runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.  
 All bolts, nuts, washers, brackets, angles and pipe runners are considered parts of the safety end treatment for payment.

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

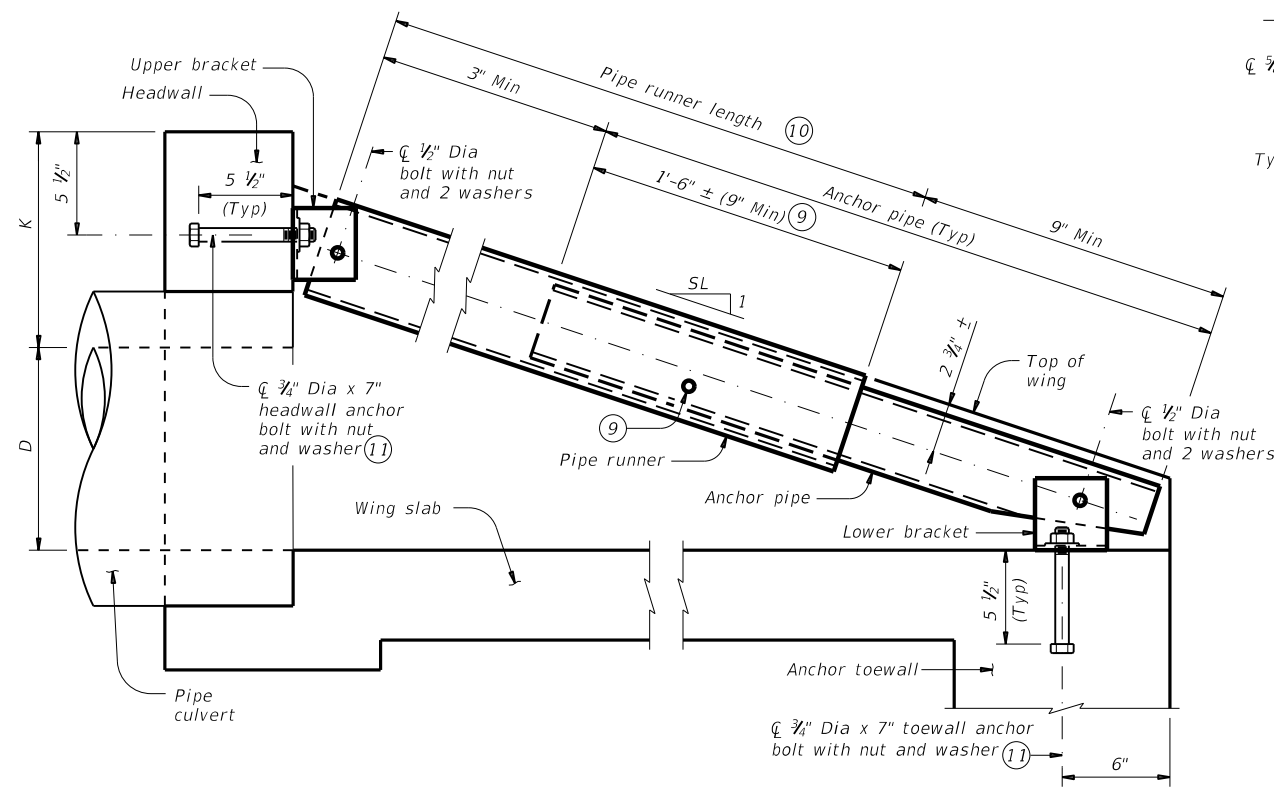
SHEET 1 OF 3

<b>SAFETY END TREATMENT WITH FLARED WINGS</b> FOR 15° SKEW PIPE CULVERTS TYPE I ~ CROSS DRAINAGE			
<b>SETP-FW-15</b>			
FILE: stp15se-20.dgn	DN: GAF	CK: CAT	DW: BWH
REVISIONS	CONT	SECT	JOB
0138	10	029, ETC.	FM 248, ETC.
DIST	COUNTY	SHEET NO.	
ATL	CASS, ETC.	95	

DATE: FILE:

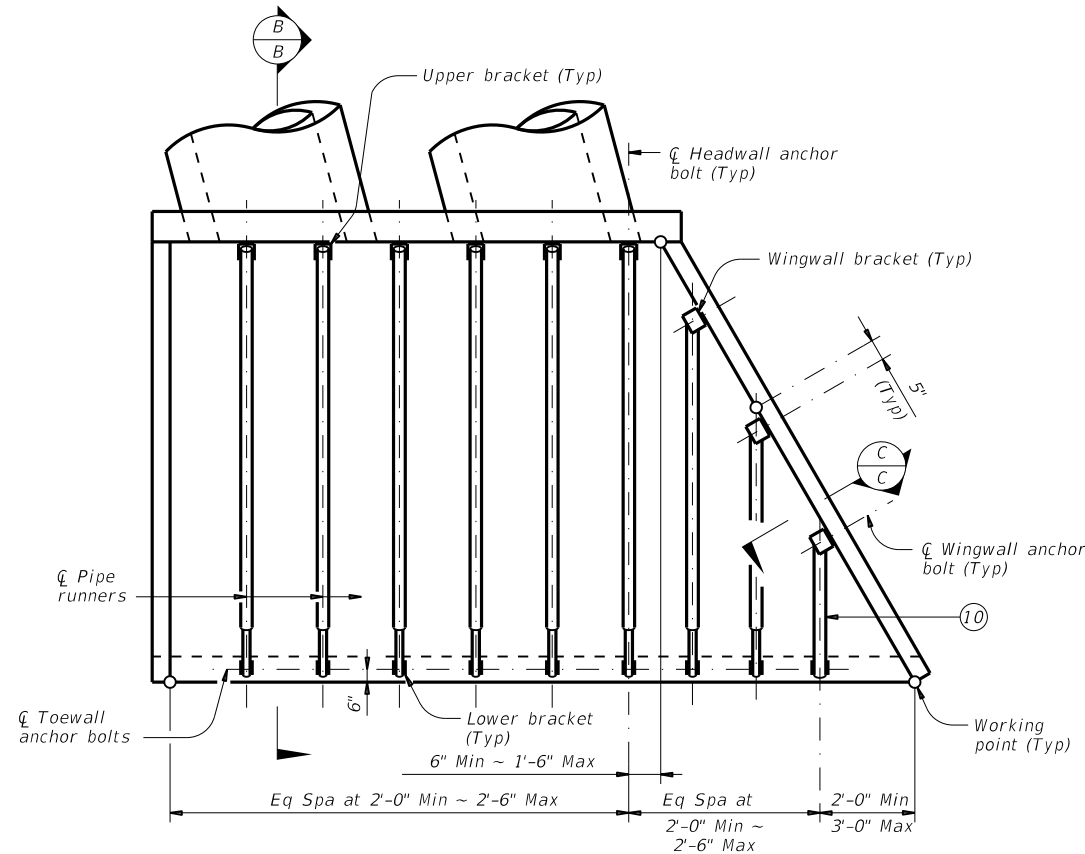
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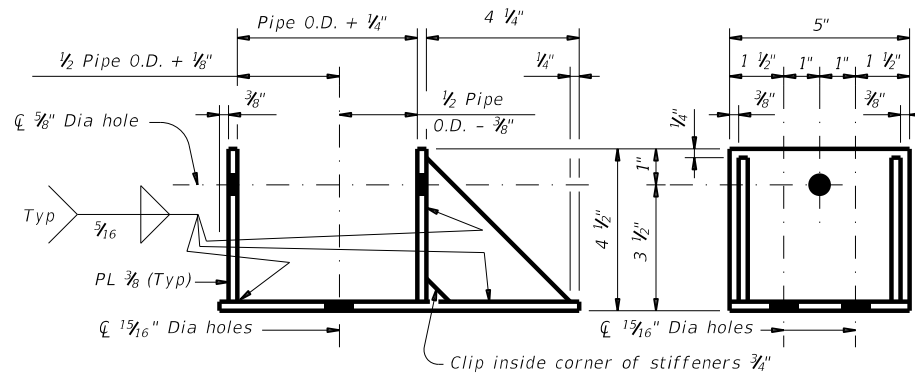


**SECTION B-B**

(Showing headwall pipe runner. Except for upper bracket, wingwall pipe runners are similar.)



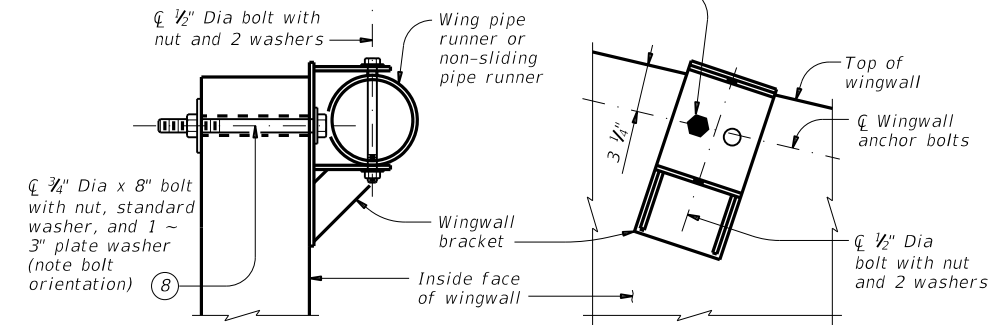
**PIPE RUNNER PLAN**



**ELEVATION**

**SIDE VIEW**

Install 3/4 anchor bolt in hole nearest to the culvert curb. Other bolt hole is intended for use on the opposite hand wingwall.



**SECTION C-C**

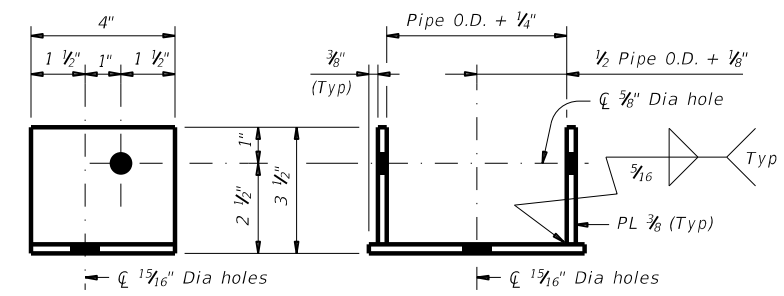
(Showing installed bracket.)

**ELEVATION**

(Showing installed bracket normal to wall. Pipe not shown for clarity.)

NOTE: Match the wingwall bracket to the upper bracket size.

**WINGWALL BRACKET DETAILS**

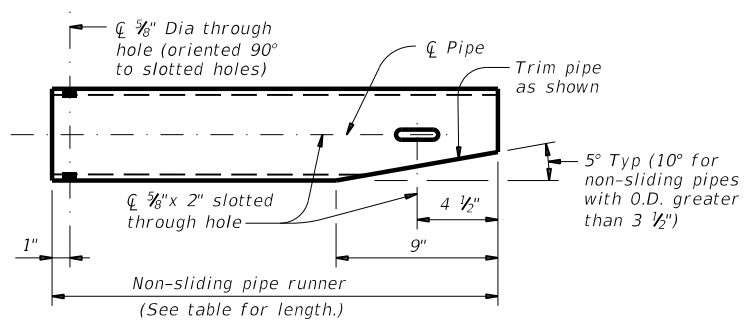


**SIDE VIEW**

**ELEVATION**

NOTE: Match upper and lower brackets, except for the brackets used with non-sliding pipe runners, with the required pipe diameters as shown in the table.

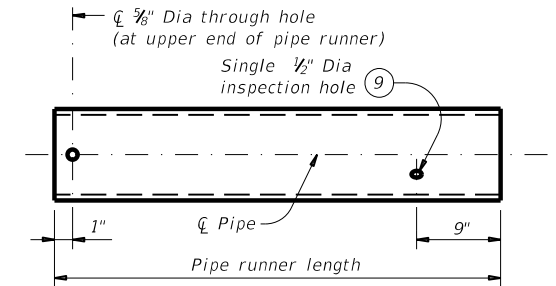
**UPPER AND LOWER BRACKET DETAILS**



Note: Pipe size is the same as required for headwall pipe runner. Adjust the corresponding lower bracket accordingly.

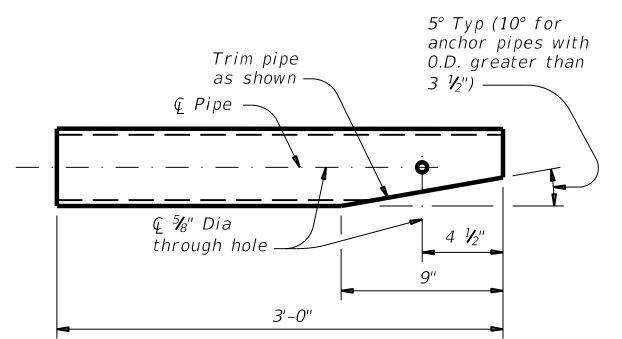
**NON-SLIDING PIPE RUNNER DETAILS**

- 8 At Contractor's option, 1/2 diameter hole may be formed or cored drilled. Percussion drilling is not permitted. Adjust placement of reinforcing steel as necessary to avoid bolt holes.
- 9 After installation of the pipe runner, use the 1/2 inspection hole to ensure that the lap of the anchor pipe with the pipe runner is adequate.
- 10 Non-sliding pipe runners are used for those installations that would require pipe runner lengths of 1'-9" or less. The non-sliding pipe runner, when required, replaces the outermost pipe runner and anchor pipe. See table on Sheet 3 of 3 to determine if the non-sliding pipe runner is required.
- 11 At Contractor's option, an adhesive anchor may be used. Provide adhesive anchors that are 3/4 Dia ASTM A307 Grade A fully threaded rods. Embed threaded rods into curb, wingwalls, and/or toewall using a Type III, Class C, D, E, or F anchor adhesive. Minimum embedment depth is 5 1/2". Anchor adhesive chosen must be able to achieve a basic bond strength in tension, Nba, of 20 kips. Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use.



Note: Use pipe diameter required for headwall pipe runner for wingwall pipe runner.

**PIPE RUNNER DETAILS**



**ANCHOR PIPE DETAILS**

SHEET 2 OF 3

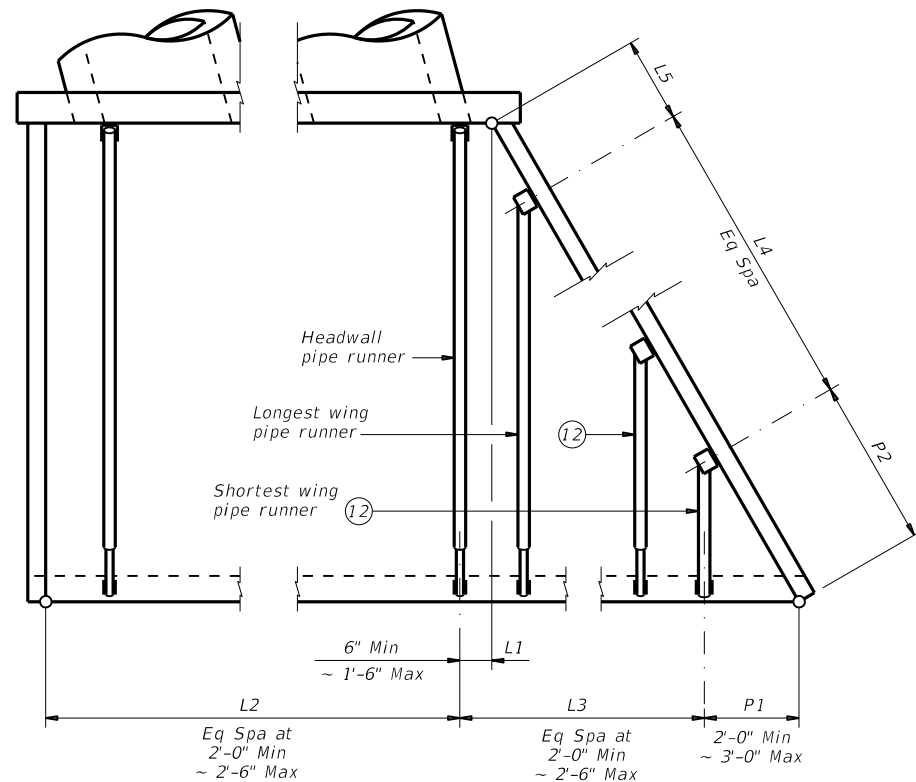
		<b>Bridge Division Standard</b>	
<b>SAFETY END TREATMENT WITH FLARED WINGS</b>			
<b>FOR 15° SKEW PIPE CULVERTS TYPE I ~ CROSS DRAINAGE</b>			
<b>SETP-FW-15</b>			
FILE: stp15se-20.dgn	DN: GAF	CK: CAT	DW: TxDOT
REVISIONS	CONT	SECT	JOB
0138	10	029, ETC.	FM 248, ETC.
DIST	COUNTY	SHEET NO.	
ATL	CASS, ETC.	96	

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DATE: FILE:

Pipe Culvert Dia	No. of Pipe Culverts	No. of L2 Spaces	L2 Overall Dimension	No. of Headwall Pipes
24"	1	1	2'-5 3/4"	1
	2	3	6'-2 1/4"	3
	3	4	9'-10 3/4"	4
	4	6	13'-7 1/4"	6
	5	7	17'-3 3/4"	7
	6	9	21'-0 1/4"	9
27"	1	1	2'-6 1/2"	1
	2	3	6'-7 1/4"	3
	3	5	10'-8"	5
	4	6	14'-8 3/4"	6
	5	8	18'-9 1/2"	8
	6	10	22'-10 1/4"	10
30"	1	1	2'-4"	1
	2	3	6'-9 3/4"	3
	3	5	11'-3 1/2"	5
	4	7	15'-9 1/4"	7
	5	9	20'-3"	9
	6	10	24'-8 3/4"	10
33"	1	1	2'-4 3/4"	1
	2	3	7'-2 3/4"	3
	3	5	12'-0 3/4"	5
	4	7	16'-10 3/4"	7
	5	9	21'-8 3/4"	9
	6	11	26'-6 3/4"	11
36"	1	2	3'-8 1/4"	2
	2	4	8'-11 1/2"	4
	3	6	14'-2 3/4"	6
	4	8	19'-6"	8
	5	10	24'-9 1/4"	10
	6	12	30'-0 1/2"	12
42"	1	2	4'-3 1/2"	2
	2	5	10'-4"	5
	3	7	16'-4 1/2"	7
	4	10	22'-5"	10
	5	12	28'-5 1/2"	12
	6	14	34'-6"	14
48"	1	2	4'-10 3/4"	2
	2	5	11'-8 1/2"	5
	3	8	18'-6 1/4"	8
	4	11	25'-4"	11
	5	13	32'-1 3/4"	13
	6	16	38'-11 1/2"	16
54"	1	2	5'-0"	2
	2	6	12'-9 1/4"	6
	3	9	20'-6 1/2"	9
	4	12	28'-3 3/4"	12
	5	15	36'-1"	15
	6	18	43'-10 1/4"	18
60"	1	3	6'-1 1/4"	3
	2	6	14'-7 3/4"	6
	3	10	23'-2 1/4"	10
	4	13	31'-8 3/4"	13
	5	17	40'-3 1/4"	17
	6	20	48'-9 3/4"	20
66"	1	3	6'-8 1/2"	3
	2	7	15'-9 1/4"	7
	3	10	24'-10"	10
	4	14	33'-10 3/4"	14
	5	18	42'-11 1/2"	18
	6	21	52'-0 1/4"	21
72"	1	3	7'-3 3/4"	3
	2	7	16'-11 3/4"	7
	3	11	26'-7 3/4"	11
	4	15	36'-3 3/4"	15
	5	19	45'-11 3/4"	19
	6	23	55'-7 3/4"	23

Pipe Culvert Dia	L1	P1	No. of Spaces in L3	L3 Overall Dimension	P2	No. of Spaces in L4	L4 Overall Dimension	Headwall Pipe Runner Length	No. of Wing Pipes (13)	Longest Wingwall Pipe Runner Length	Shortest Wingwall Pipe Runner Length	Non-Sliding Pipe Length	Pipe Runner Size (14)	Total Length of Wingwall Pipe Runners (13)
24"	0'-6"	2'-3"	1	2'-5 1/4"	4'-1"	0	N/A	5'-11 1/2"	1	2'-0 1/2"	N/A	N/A	3" STD	2'-0 1/2"
27"	0'-9"	3'-0"	1	2'-4 1/2"	5'-7"	0	N/A	6'-9"	1	3'-5"	N/A	N/A	3" STD	3'-5"
30"	1'-3"	2'-0"	2	4'-3 1/2"	3'-7"	1	4'-3 1/2"	7'-6 1/2"	2	5'-6 1/4"	N/A	3'-1"	3" STD	8'-7 1/4"
33"	1'-6"	2'-0"	2	4'-11 3/4"	3'-7"	1	4'-11 3/4"	8'-4"	2	6'-1 3/4"	N/A	3'-1"	3" STD	9'-2 3/4"
36"	0'-6"	2'-0"	2	4'-5"	3'-7"	1	4'-5"	9'-1 1/2"	2	5'-7 1/2"	N/A	3'-1"	3" STD	8'-8 1/2"
42"	0'-6"	2'-6"	2	4'-9 1/2"	4'-7"	1	4'-9 1/2"	10'-8 1/4"	2	6'-10 1/2"	2'-6"	N/A	4" STD	9'-4 1/2"
48"	0'-6"	2'-0"	3	6'-7"	3'-7"	2	8'-9 1/4"	13'-0 3/4"	3	9'-7 1/4"	5'-7 1/4"	3'-1"	4" STD	18'-3 1/2"
54"	1'-0"	2'-6"	3	7'-5 1/2"	4'-7"	2	9'-11 1/4"	14'-7 3/4"	3	11'-6 3/4"	2'-6"	N/A	4" STD	21'-1 1/4"
60"	0'-6"	3'-0"	3	7'-3 3/4"	5'-7"	2	9'-9"	16'-2 3/4"	3	12'-3 3/4"	3'-5"	N/A	4" STD	23'-7 1/4"
66"	0'-6"	2'-0"	4	9'-2 1/4"	3'-7"	3	13'-9 1/4"	17'-9 3/4"	4	14'-2"	5'-9 1/4"	3'-1"	4" STD	33'-0"
72"	0'-6"	2'-3"	4	9'-9 1/2"	4'-1"	3	14'-8 1/4"	19'-4 3/4"	4	15'-5 1/2"	2'-0 1/2"	N/A	5" STD	35'-0"
24"	0'-6"	2'-0"	2	4'-1"	3'-7"	1	4'-1"	8'-3 1/4"	2	5'-1 3/4"	N/A	3'-0"	3" STD	8'-1 3/4"
27"	0'-9"	2'-0"	2	4'-11"	3'-7"	1	4'-11"	9'-3 3/4"	2	5'-10 3/4"	N/A	3'-0"	4" STD	8'-10 3/4"
30"	1'-3"	3'-0"	2	4'-11 3/4"	5'-7"	1	4'-11 3/4"	10'-4"	2	7'-9"	3'-3 1/2"	N/A	4" STD	11'-0 1/2"
33"	1'-6"	2'-0"	3	6'-9 3/4"	3'-7"	2	8'-6 1/4"	11'-4 1/2"	3	9'-7 1/2"	5'-6 3/4"	3'-0"	4" STD	18'-2 1/4"
36"	0'-6"	2'-0"	3	6'-4 3/4"	3'-7"	2	9'-8 3/4"	12'-4 3/4"	3	9'-1 1/4"	5'-3 3/4"	3'-0"	4" STD	17'-5"
42"	0'-6"	2'-3"	3	7'-3 1/2"	4'-1"	2	9'-8 3/4"	14'-5 1/2"	3	10'-7 1/2"	1'-11 1/2"	N/A	4" STD	18'-10 1/2"
48"	0'-6"	2'-0"	4	9'-3 1/4"	3'-7"	3	13'-11"	17'-6 3/4"	4	13'-11"	5'-7 3/4"	3'-0"	4" STD	32'-4 1/4"
54"	1'-0"	3'-0"	4	9'-11 1/4"	5'-7"	3	14'-10 3/4"	19'-7 1/2"	4	16'-7"	3'-3 1/2"	N/A	5" STD	39'-9"
60"	0'-6"	2'-0"	5	11'-7"	3'-7"	4	18'-6 1/2"	21'-8 1/4"	5	18'-0 3/4"	5'-7 3/4"	3'-0"	5" STD	50'-5"
66"	0'-6"	2'-3"	5	12'-6"	4'-1"	4	19'-11 3/4"	23'-9"	5	19'-9 1/2"	1'-11 1/2"	N/A	5" STD	54'-4 1/2"
72"	0'-6"	2'-0"	6	13'-10 3/4"	3'-7"	5	23'-2"	25'-9 3/4"	6	22'-2 1/4"	5'-7 3/4"	3'-0"	5" STD	72'-7"
24"	0'-6"	2'-0"	3	6'-10 1/2"	3'-7"	2	9'-2"	13'-0 1/2"	3	9'-6"	5'-5 3/4"	2'-11 1/2"	4" STD	17'-11 1/4"
27"	0'-9"	2'-6"	3	7'-5 3/4"	4'-7"	2	9'-11 3/4"	14'-6 1/2"	3	11'-1"	2'-4"	N/A	4" STD	20'-1 1/2"
30"	1'-3"	2'-0"	4	9'-4 1/4"	3'-7"	3	14'-0 1/4"	16'-0 3/4"	4	13'-9 1/4"	5'-6 3/4"	2'-11 1/2"	4" STD	31'-11 1/2"
33"	1'-6"	2'-6"	4	9'-11 3/4"	4'-7"	3	14'-11 1/2"	17'-7"	4	15'-5 1/2"	2'-4"	N/A	4" STD	35'-7"
36"	0'-6"	2'-6"	4	9'-10"	4'-7"	3	14'-9"	19'-1 1/4"	4	15'-3 1/4"	2'-4"	N/A	5" STD	35'-2 1/2"
42"	0'-6"	2'-0"	5	12'-0 3/4"	3'-7"	4	19'-3 3/4"	22'-1 3/4"	5	18'-4 3/4"	5'-8 1/4"	2'-11 1/2"	5" STD	51'-1 1/2"
48"	0'-6"	2'-0"	6	14'-8"	3'-7"	5	24'-5 1/4"	26'-8 1/2"	6	22'-11"	5'-9"	2'-11 1/2"	5" STD	74'-7 1/2"
54"	1'-0"	2'-0"	7	16'-10 3/4"	3'-7"	6	28'-11 1/2"	29'-9"	7	26'-10 1/2"	5'-8 1/4"	2'-11 1/2"	5" STD	100'-7 3/4"
60"	0'-6"	2'-9"	7	17'-4 1/2"	5'-1"	6	29'-9 1/2"	32'-9 1/2"	7	28'-11"	2'-9 1/4"	N/A	5" STD	110'-11"



**PIPE RUNNER LAYOUT**

(Left forward culvert skew shown, actual culvert skew may be opposite hand.)

- (12) If the outermost wing pipe runner is a non-sliding pipe runner, consider the next outermost wing pipe runner the shortest.
- (13) Quantities shown include, if present, the non-sliding pipes.
- (14) The anchor pipe size is the next smaller size than the pipe runner size.

**SPECIAL NOTE:**  
Note that the tabular quantities are given for estimating purposes only. It is likely that these quantities will change due to field conditions. Therefore, verify all dimensions in the field prior to fabrication of the safety end treatment components.

**STANDARD PIPE RUNNER AND ANCHOR PIPE SIZES (14)**

Pipe Size	Pipe O.D.	Pipe I.D.
2" STD	2.375"	2.067"
3" STD	3.500"	3.068"
4" STD	4.500"	4.026"
5" STD	5.563"	5.047"

**TOTAL PIPE LENGTHS FORMULAS:**

$$\text{Total Length of All Pipe Runners} = \text{Total Length of Wingwall Pipe Runners} + \left( \frac{\text{No. of Headwall Pipe Runners}}{\text{No. of Wingwall Pipe Runners}} \right) (\text{Headwall Pipe Runner Length})$$

$$\text{Total Length of All Anchor Pipes} = (3.000') \left( \frac{\text{No. of Wing Pipe Runners}}{\text{No. of Headwall Pipe Runners}} + \frac{\text{No. of Non-Sliding Pipe Runners}}{\text{No. of Headwall Pipe Runners}} \right)$$

Texas Department of Transportation  
**SAFETY END TREATMENT WITH FLARED WINGS**  
 FOR 15° SKEW PIPE CULVERTS TYPE I ~ CROSS DRAINAGE  
**SETP-FW-15**

FILE: stpf15se-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: GAF
REVISIONS	CONT	SECT	JOB	HIGHWAY
	0138	10	029, ETC.	FM 248, ETC.
	DIST	COUNTY	SHEET NO.	
	ATL	CASS, ETC.	97	

Bridge Division Standard

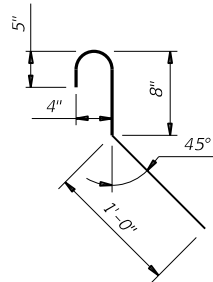


**TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL** (5)

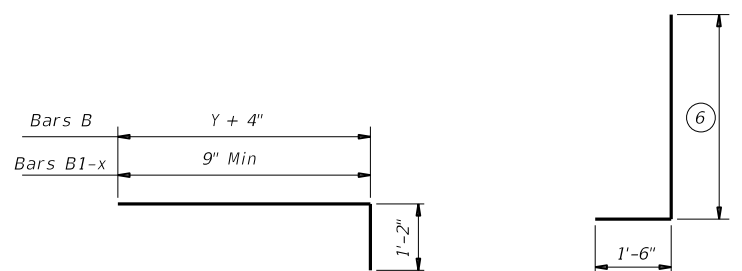
Slope	Dia of Pipe (D)	Values for One Pipe					Values to be Added for Each Add'l Pipe			
		W	X	Y	L	Reinf (Lbs)	Conc (CY)	X and W	Reinf (Lbs)	Conc (CY)
3:1	24"	10' - 7 1/2"	4' - 7"	7' - 3"	10' - 3"	231	2.3	4' - 1 3/4"	65	0.9
	27"	11' - 8 1/2"	4' - 11"	8' - 0"	11' - 3 3/4"	259	2.7	4' - 6 1/4"	75	1.0
	30"	12' - 9 1/2"	5' - 3"	8' - 9"	12' - 4 1/2"	302	3.1	5' - 0"	86	1.2
	33"	13' - 10 3/4"	5' - 7"	9' - 6"	13' - 5 1/4"	328	3.5	5' - 4 3/4"	94	1.4
	36"	14' - 11 3/4"	5' - 11 1/4"	10' - 3"	14' - 6"	361	4.0	5' - 10 1/2"	108	1.6
	42"	17' - 1 3/4"	6' - 7 1/4"	11' - 9"	16' - 7 1/2"	447	5.0	6' - 8 3/4"	133	2.1
	48"	20' - 0 3/4"	7' - 3 1/4"	14' - 0"	19' - 9 1/2"	550	6.6	7' - 7 1/4"	176	2.8
	54"	22' - 3"	7' - 11 1/2"	15' - 6"	21' - 11"	636	7.9	8' - 8"	211	3.5
	60"	24' - 5"	8' - 7 1/2"	17' - 0"	24' - 0 1/2"	735	9.4	9' - 6 1/4"	246	4.1
	66"	26' - 7"	9' - 3 1/2"	18' - 6"	26' - 2"	833	10.9	10' - 1 1/4"	274	4.6
	72"	28' - 9 1/4"	9' - 11 3/4"	20' - 0"	28' - 3 1/2"	942	12.5	10' - 9 1/4"	309	5.3
	4:1	24"	13' - 0 1/2"	4' - 7"	9' - 8"	13' - 8"	305	3.1	4' - 1 3/4"	75
27"		14' - 4 1/2"	4' - 11"	10' - 8"	15' - 1"	343	3.7	4' - 6 1/4"	87	1.3
30"		15' - 8 1/2"	5' - 3"	11' - 8"	16' - 6"	398	4.2	5' - 0"	99	1.5
33"		17' - 0 3/4"	5' - 7"	12' - 8"	17' - 11"	438	4.9	5' - 4 3/4"	112	1.7
36"		18' - 4 3/4"	5' - 11 1/4"	13' - 8"	19' - 4"	485	5.5	5' - 10 1/2"	128	2.0
42"		21' - 0 3/4"	6' - 7 1/4"	15' - 8"	22' - 1 3/4"	593	7.0	6' - 8 3/4"	158	2.6
48"		24' - 8 3/4"	7' - 3 1/4"	18' - 8"	26' - 4 3/4"	746	9.4	7' - 7 1/4"	211	3.4
54"		27' - 5"	7' - 11 1/2"	20' - 8"	29' - 2 3/4"	881	11.3	8' - 8"	257	4.3
60"		30' - 1"	8' - 7 1/2"	22' - 8"	32' - 0 3/4"	1,009	13.3	9' - 6 1/4"	297	5.1
66"		32' - 9"	9' - 3 1/2"	24' - 8"	34' - 10 1/2"	1,151	15.6	10' - 1 1/4"	340	5.8
72"		35' - 5 1/4"	9' - 11 3/4"	26' - 8"	37' - 8 1/2"	1,302	18.0	10' - 9 1/4"	378	6.6
6:1		24"	17' - 10 1/2"	4' - 7"	14' - 6"	20' - 6"	454	5.1	4' - 1 3/4"	91
	27"	19' - 8 1/2"	4' - 11"	16' - 0"	22' - 7 1/2"	523	6.0	4' - 6 1/4"	108	1.7
	30"	21' - 6 1/2"	5' - 3"	17' - 6"	24' - 9"	599	7.1	5' - 0"	124	2.0
	33"	23' - 4 3/4"	5' - 7"	19' - 0"	26' - 10 1/2"	680	8.2	5' - 4 3/4"	143	2.4
	36"	25' - 2 3/4"	5' - 11 1/4"	20' - 6"	29' - 0"	743	9.3	5' - 10 1/2"	162	2.8
	42"	28' - 10 3/4"	6' - 7 1/4"	23' - 6"	33' - 2 3/4"	926	11.9	6' - 8 3/4"	202	3.6
	48"	34' - 0 3/4"	7' - 3 1/4"	28' - 0"	39' - 7 1/4"	1,197	16.2	7' - 7 1/4"	274	4.7

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- Quantities shown are for concrete pipe and will increase slightly for metal pipe installation.
- For vehicle safety, reduce curb heights, if necessary, to provide a maximum 3" projection above finished grade. No changes will be made in quantities and no additional compensation will be allowed for this work.
- Provide a 1'-0" footing as shown where required to maintain 4" minimum cover for pipes.
- Dimensions shown are usual and maximum.
- Quantities shown are for one structure end. (One headwall)
- Min Length =  $6" + 3" \times \left( \frac{12 \times H - 7}{12 \times L} \right)$   
 Max Length =  $12 \times H - 3" \times \left( \frac{12 \times H - 7}{12 \times L} \right) - 1"$
- Lengths of wings based on SL:1 slope along this line.

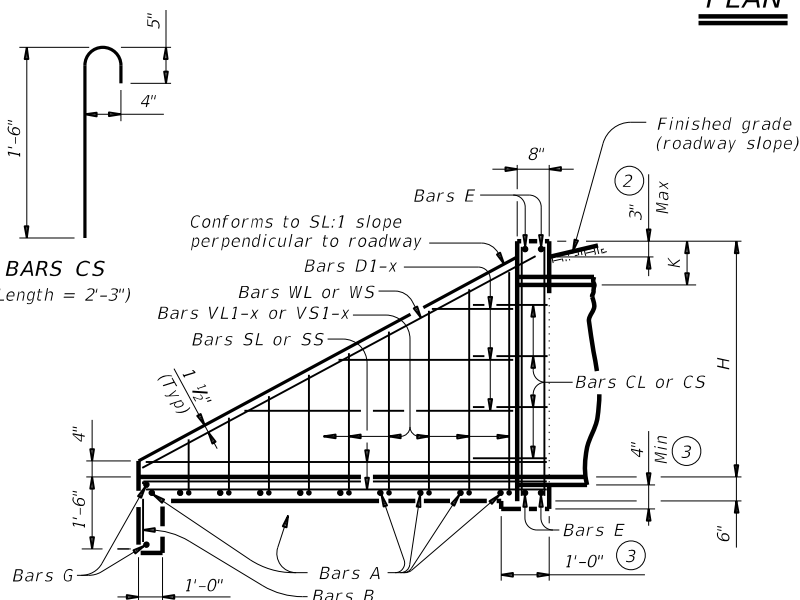


**BARS CL**  
(Length = 2'-5")

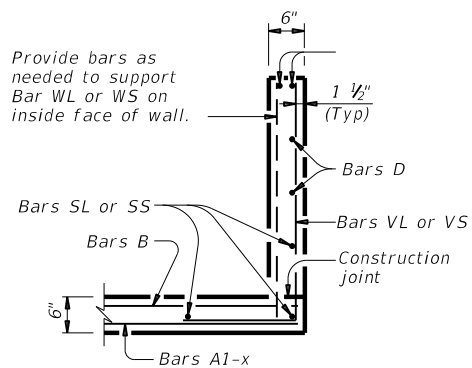


**BARS B and B1-x**

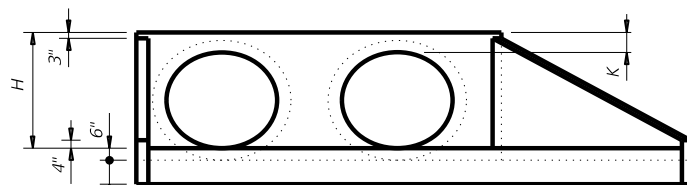
**BARS VL and VS**



**TYPICAL WING ELEVATION**

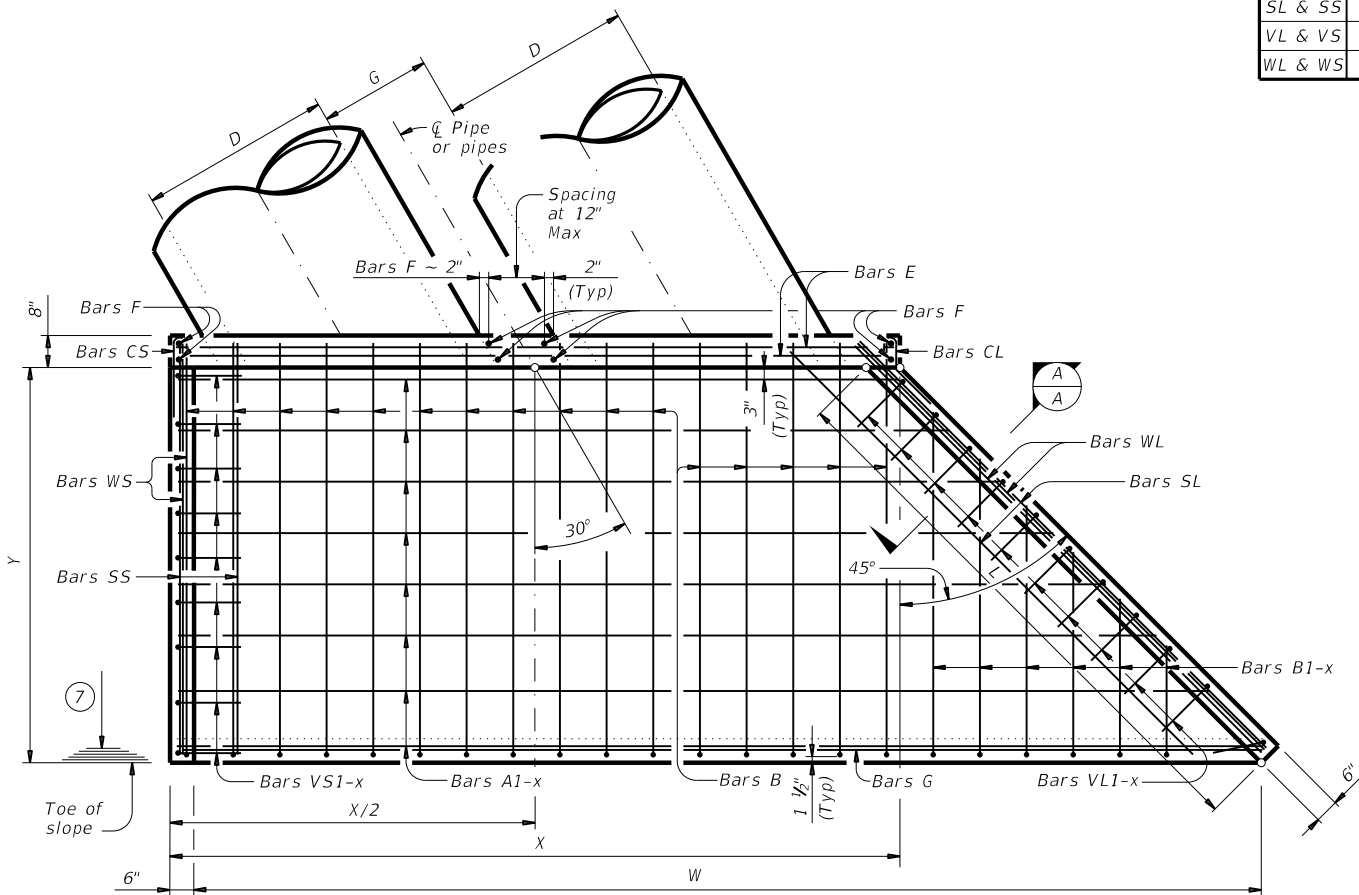


**SECTION A-A**



**ELEVATION**

(Showing dimensions.)



**PLAN**

**TABLE OF REINFORCING STEEL** (5)

Bar	Size	Spa	No.
A	#4	1' - 0"	~
B	#3	1' - 6"	~
CL & CS	#4	1' - 0"	~
D	#3	1' - 0"	~
E	#5	~	4
F	#5	~	~
G	#3	~	2
SL & SS	#4	~	6
VL & VS	#4	1' - 0"	~
WL & WS	#5	~	4

**TABLE OF CONSTANT DIMENSIONS**

Dia of Pipe (D)	G	K (4)	H
24"	1' - 7"	1' - 0"	3' - 0"
27"	1' - 8"	1' - 0"	3' - 3"
30"	1' - 10"	1' - 0"	3' - 6"
33"	1' - 11"	1' - 0"	3' - 9"
36"	2' - 1"	1' - 0"	4' - 0"
42"	2' - 4"	1' - 0"	4' - 6"
48"	2' - 7"	1' - 3"	5' - 3"
54"	3' - 0"	1' - 3"	5' - 9"
60"	3' - 3"	1' - 3"	6' - 3"
66"	3' - 3"	1' - 3"	6' - 9"
72"	3' - 4"	1' - 3"	7' - 3"

**MATERIAL NOTES:**  
 Provide Grade 60 reinforcing steel.  
 Provide galvanized reinforcing steel, if required elsewhere in the plans.  
 Adjust reinforcing bars, as necessary, to provide a minimum clear cover of 1 1/2".  
 Provide Class C concrete (f'c = 3,600 psi).  
 Provide pipe runners 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.  
 Provide ASTM A36 steel plates.  
 Galvanize all steel components, except reinforcing unless required elsewhere in the plans, after lubrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.  
 For optional adhesive anchors, install adhesive anchorages in accordance with the manufacturer's instructions including hole size, drilling equipment and method, hole cleaning equipment and method, mixing and dispensing adhesive, and anchor insertion. Do not alter the manufacturer's mixing nozzle or dispenser. Anchorage rods must be clean and free of grease, oil, or any other foreign material. Demonstrate hole cleaning method to the Engineer for approval and continue the approved process for all anchorage locations. Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.

**GENERAL NOTES:**  
 Designed according to AASHTO LRFD Bridge Design Specifications.  
 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 pipe runners.  
 The safety pipe runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.  
 All bolts, nuts, washers, brackets, angles and pipe runners are considered parts of the safety end treatment for payment.

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

SHEET 1 OF 3

Bridge Division Standard

**SAFETY END TREATMENT WITH FLARED WINGS**  
 FOR 30° SKEW PIPE CULVERTS  
 TYPE I ~ CROSS DRAINAGE

**SETP-FW-30**

FILE: stp30se-20.dgn	DN: GAF	CK: CAT	DW: BWH	CK: GAF
0138	10	029, ETC.	FM 248, ETC.	
DIST: ATL	COUNTY: CASS, ETC.	SHEET NO: 98		

DATE: FILE:



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DATE: FILE:

Pipe Culvert Dia	No. of Pipe Culverts	No. of L2 Spaces	L2 Overall Dimension	No. of Headwall Pipes
24"	1	1	2' - 4 1/2"	1
	2	3	6' - 6 1/4"	3
	3	5	10' - 8"	5
	4	6	14' - 9 3/4"	6
	5	8	18' - 11 1/2"	8
	6	10	23' - 1 1/4"	10
27"	1	1	2' - 5 1/2"	1
	2	3	6' - 11 3/4"	3
	3	5	11' - 6"	5
	4	7	16' - 0 1/4"	7
	5	9	20' - 6 1/2"	9
	6	10	25' - 0 3/4"	10
30"	1	1	2' - 6 1/2"	1
	2	3	7' - 6 1/2"	3
	3	5	12' - 6 1/2"	5
	4	7	17' - 6 1/2"	7
	5	9	22' - 6 1/2"	9
	6	11	27' - 6 1/2"	11
33"	1	2	3' - 10 1/2"	2
	2	4	9' - 3 1/4"	4
	3	6	14' - 8"	6
	4	9	20' - 0 3/4"	9
	5	11	25' - 5 1/2"	11
	6	13	30' - 10 1/4"	13
36"	1	2	3' - 11 3/4"	2
	2	4	9' - 10 1/4"	4
	3	7	15' - 8 3/4"	7
	4	9	21' - 7 1/4"	9
	5	11	27' - 5 3/4"	11
	6	14	33' - 4 1/4"	14
42"	1	2	4' - 10 3/4"	2
	2	5	11' - 7 1/2"	5
	3	8	18' - 4 1/4"	8
	4	11	25' - 1"	11
	5	13	31' - 9 3/4"	13
	6	16	38' - 6 1/2"	16
48"	1	2	4' - 9 3/4"	2
	2	5	12' - 5"	5
	3	8	20' - 0 1/4"	8
	4	12	27' - 7 1/2"	12
	5	15	35' - 2 3/4"	15
	6	18	42' - 10"	18
54"	1	3	6' - 3"	3
	2	6	14' - 11"	6
	3	10	23' - 7"	10
	4	13	32' - 3"	13
	5	17	40' - 11"	17
	6	20	49' - 7"	20
60"	1	3	6' - 11"	3
	2	7	16' - 5 1/4"	7
	3	11	25' - 11 1/2"	11
	4	15	35' - 5 3/4"	15
	5	19	45' - 0"	19
	6	22	54' - 6 1/4"	22
66"	1	3	7' - 4"	3
	2	7	17' - 5 1/4"	7
	3	11	27' - 6 1/2"	11
	4	16	37' - 7 3/4"	16
	5	20	47' - 9"	20
	6	24	57' - 10 1/4"	24
72"	1	3	7' - 3 1/4"	3
	2	8	18' - 0 1/2"	8
	3	12	28' - 9 3/4"	12
	4	16	39' - 7"	16
	5	21	50' - 4 1/4"	21
	6	25	61' - 1 1/2"	25

Side Slope	Pipe Culvert Dia	L1	P1	No. of Spaces in L3	L3 Overall Dimension	P2	No. of Spaces in L4	L4 Overall Dimension	Headwall Pipe Runner Length	No. of Wing Pipes (13)	Longest Wingwall Pipe Runner Length	Shortest Wingwall Pipe Runner Length	Non-Sliding Pipe Length	Pipe Runner Size (14)	Total Length of Wingwall Pipe Runners (13)
3:1	24"	1' - 0"	2' - 0"	3	6' - 3"	2' - 7 1/2"	2	5' - 10 3/4"	5' - 11 1/2"	3	4' - 5 1/4"	2' - 3"	1' - 6 1/2"	3" STD	8' - 2 3/4"
	27"	1' - 3"	2' - 0"	3	7' - 3"	2' - 7 1/2"	2	6' - 10"	6' - 9"	3	5' - 1 3/4"	2' - 7"	1' - 6 1/2"	3" STD	9' - 3 1/4"
	30"	1' - 6"	3' - 0"	3	7' - 3"	4' - 0 1/2"	2	6' - 10"	7' - 6 1/2"	3	6' - 2 1/4"	3' - 7 3/4"	2' - 7 1/4"	3" STD	12' - 5 1/4"
	33"	0' - 6"	2' - 6"	3	7' - 6"	3' - 4"	2	7' - 0 3/4"	8' - 4"	3	5' - 10"	3' - 2 1/2"	2' - 0 3/4"	3" STD	11' - 1 1/4"
	36"	0' - 9"	2' - 0"	4	9' - 0"	2' - 7 1/2"	3	9' - 6 1/2"	9' - 1 1/2"	4	7' - 2"	2' - 5"	1' - 6 1/2"	4" STD	15' - 11"
	42"	0' - 6"	2' - 3"	4	10' - 0"	2' - 11 3/4"	3	10' - 7 1/4"	10' - 8 1/4"	4	8' - 2 1/2"	2' - 11 1/4"	1' - 9 3/4"	4" STD	18' - 6 1/2"
	48"	1' - 3"	2' - 9"	5	12' - 6"	3' - 8 1/4"	4	14' - 1 3/4"	13' - 8 3/4"	5	11' - 4 1/2"	3' - 5 3/4"	2' - 4"	4" STD	32' - 0 1/2"
	54"	0' - 6"	2' - 0"	6	14' - 0"	2' - 7 1/2"	5	16' - 6"	14' - 7 3/4"	6	12' - 4"	2' - 6"	1' - 6 1/2"	4" STD	38' - 7 1/2"
	60"	0' - 6"	2' - 6"	6	15' - 0"	3' - 4"	5	17' - 8"	16' - 2 3/4"	6	13' - 9"	3' - 2 1/2"	2' - 0 3/4"	4" STD	44' - 5 1/2"
	66"	0' - 9"	2' - 0"	7	17' - 3"	2' - 7 1/2"	6	20' - 11"	17' - 9 3/4"	7	15' - 7 1/2"	2' - 7 3/4"	1' - 6 1/2"	4" STD	56' - 4 1/4"
72"	1' - 6"	2' - 0"	8	19' - 6"	2' - 7 1/2"	7	24' - 1 1/2"	19' - 4 3/4"	8	18' - 0 1/4"	2' - 7 1/4"	1' - 6 1/2"	5" STD	73' - 8 3/4"	
4:1	24"	1' - 0"	2' - 0"	4	8' - 8"	2' - 7 1/2"	3	9' - 2 1/4"	8' - 3 1/4"	4	6' - 8 1/2"	2' - 2 3/4"	1' - 6"	3" STD	14' - 11"
	27"	1' - 3"	2' - 0"	4	9' - 11"	2' - 7 1/2"	3	10' - 6 1/4"	9' - 3 3/4"	4	7' - 8"	2' - 6 3/4"	1' - 6"	4" STD	16' - 10 1/4"
	30"	1' - 6"	2' - 0"	5	11' - 2"	2' - 7 1/2"	4	12' - 7 1/2"	10' - 4"	5	9' - 2 1/2"	2' - 3 1/2"	1' - 6"	4" STD	24' - 6"
	33"	0' - 6"	2' - 0"	5	11' - 2"	2' - 7 1/2"	4	12' - 7 1/2"	11' - 4 1/2"	5	9' - 2 1/2"	2' - 3 1/2"	1' - 6"	4" STD	24' - 6"
	36"	0' - 9"	2' - 0"	5	12' - 5"	2' - 7 1/2"	4	14' - 0 1/2"	12' - 4 3/4"	5	10' - 3"	2' - 6 3/4"	1' - 6"	4" STD	27' - 1 1/2"
	42"	0' - 6"	2' - 0"	6	14' - 2"	2' - 7 1/2"	5	16' - 8 1/4"	14' - 5 1/2"	6	12' - 2"	2' - 5 1/4"	1' - 6"	4" STD	38' - 0 1/4"
	48"	1' - 3"	2' - 6"	7	17' - 5"	3' - 4"	6	21' - 1 1/4"	17' - 6 3/4"	7	15' - 10 3/4"	3' - 1"	2' - 0 1/4"	4" STD	58' - 11 1/2"
	54"	0' - 6"	2' - 0"	8	19' - 2"	2' - 7 1/2"	7	23' - 8 1/2"	19' - 7 1/2"	8	17' - 3 1/2"	2' - 5 3/4"	1' - 6"	5" STD	70' - 8 1/2"
	60"	0' - 6"	2' - 0"	9	21' - 2"	2' - 7 1/2"	8	26' - 7 1/4"	21' - 8 1/4"	9	19' - 4 3/4"	2' - 5"	1' - 6"	5" STD	88' - 9"
	66"	0' - 9"	3' - 0"	9	22' - 5"	4' - 0 1/2"	8	28' - 2"	23' - 9"	9	21' - 7"	3' - 7 1/4"	2' - 6 1/4"	5" STD	103' - 3 1/4"
72"	1' - 6"	2' - 0"	11	26' - 2"	2' - 7 1/2"	10	33' - 7 3/4"	25' - 9 3/4"	11	24' - 6 1/4"	2' - 5 1/2"	1' - 6"	5" STD	136' - 4 3/4"	
6:1	24"	1' - 0"	3' - 0"	5	12' - 6"	4' - 0 1/2"	4	14' - 1 3/4"	13' - 0 1/4"	5	11' - 1 1/2"	3' - 6 1/4"	2' - 5 3/4"	4" STD	31' - 9 1/4"
	27"	1' - 3"	2' - 3"	6	15' - 0"	2' - 11 3/4"	5	17' - 8"	14' - 6 1/2"	6	12' - 10 3/4"	2' - 9"	1' - 8 1/2"	4" STD	40' - 10"
	30"	1' - 6"	2' - 0"	7	17' - 0"	2' - 7 1/2"	6	20' - 7 1/4"	16' - 0 3/4"	7	14' - 9"	2' - 5 1/2"	1' - 5 1/2"	4" STD	53' - 0 1/4"
	33"	0' - 6"	2' - 0"	7	17' - 6"	2' - 7 1/2"	6	21' - 2 1/2"	17' - 7"	7	15' - 2"	2' - 6"	1' - 5 1/2"	4" STD	54' - 5 1/2"
	36"	0' - 9"	2' - 0"	8	19' - 3"	2' - 7 1/2"	7	23' - 9 3/4"	19' - 1 1/4"	8	17' - 0 1/2"	2' - 4 3/4"	1' - 5 1/2"	5" STD	69' - 6"
	42"	0' - 6"	2' - 0"	9	22' - 0"	2' - 7 1/2"	8	27' - 7 3/4"	22' - 1 3/4"	9	19' - 9 1/2"	2' - 5 1/4"	1' - 5 1/2"	5" STD	90' - 4 1/2"
48"	1' - 3"	2' - 0"	11	27' - 3"	2' - 7 1/2"	10	35' - 0 1/4"	26' - 8 1/2"	11	25' - 1"	2' - 5 3/4"	1' - 5 1/2"	5" STD	139' - 3 1/4"	

- (12) If the outermost wing pipe runner is a non-sliding pipe runner, consider the next outermost wing pipe runner the shortest.
- (13) Quantities shown include, if present, the non-sliding pipes.
- (14) The anchor pipe size is the next smaller size than the pipe runner size.

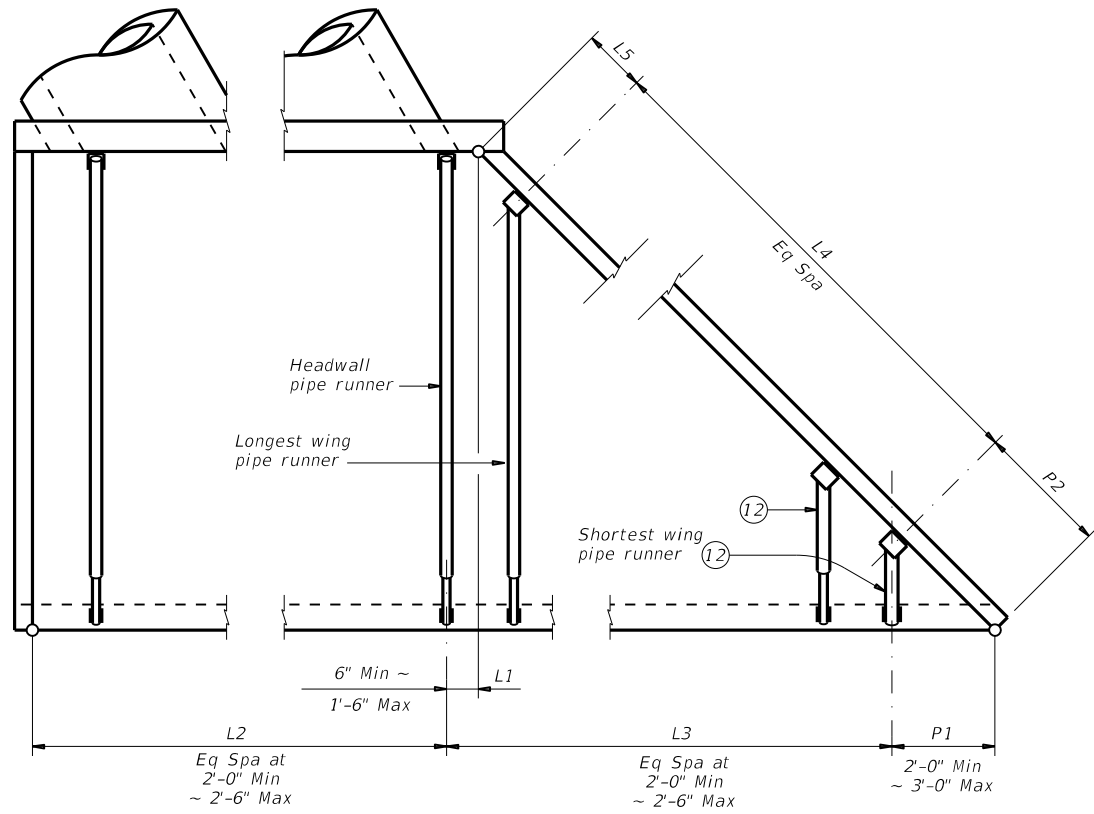
**SPECIAL NOTE:**  
Note that the tabular quantities are given for estimating purposes only. It is likely that these quantities will change due to field conditions. Therefore, verify all dimensions in the field prior to fabrication of the safety end treatment components.

Pipe Size	Pipe O.D.	Pipe I.D.
2" STD	2.375"	2.067"
3" STD	3.500"	3.068"
4" STD	4.500"	4.026"
5" STD	5.563"	5.047"

**TOTAL PIPE LENGTHS FORMULAS:**

$$\text{Total Length of All Pipe Runners} = \text{Total Length of Wingwall Pipe Runners} + \left( \frac{\text{No. of Headwall Pipe Runners}}{\text{No. of Wingwall Pipe Runners}} \right) (\text{Headwall Pipe Runner Length})$$

$$\text{Total Length of All Anchor Pipes} = (3.000') \left( \frac{\text{No. of Wing Pipe Runners}}{\text{No. of Headwall Pipe Runners}} + \frac{\text{No. of Non-Sliding Pipe Runners}}{\text{No. of Headwall Pipe Runners}} - \frac{\text{No. of Non-Sliding Pipe Runners}}{\text{No. of Wing Pipe Runners}} \right)$$



**PIPE RUNNER LAYOUT**

Note: Left forward culvert skew shown, actual culvert skew may be opposite hand.

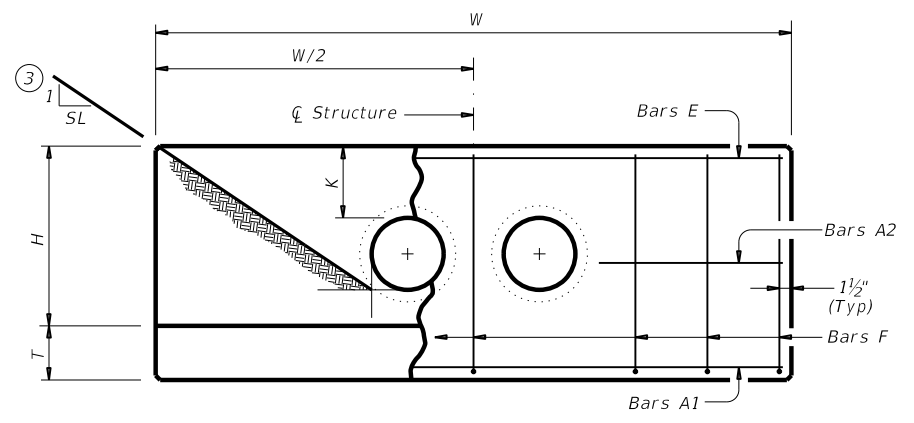
		<b>Bridge Division Standard</b>	
<b>SAFETY END TREATMENT WITH FLARED WINGS</b>			
<b>FOR 30° SKEW PIPE CULVERTS TYPE I ~ CROSS DRAINAGE</b>			
<b>SETP-FW-30</b>			
FILE: stp30se-20.dgn	DN: GAF	CK: CAT	DW: TxDOT
REVISIONS	CONT	SECT	JOB
0138	10	029, ETC.	FM 248, ETC.
DIST	COUNTY	SHEET NO.	
ATL	CASS, ETC.	100	

**TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (5)**

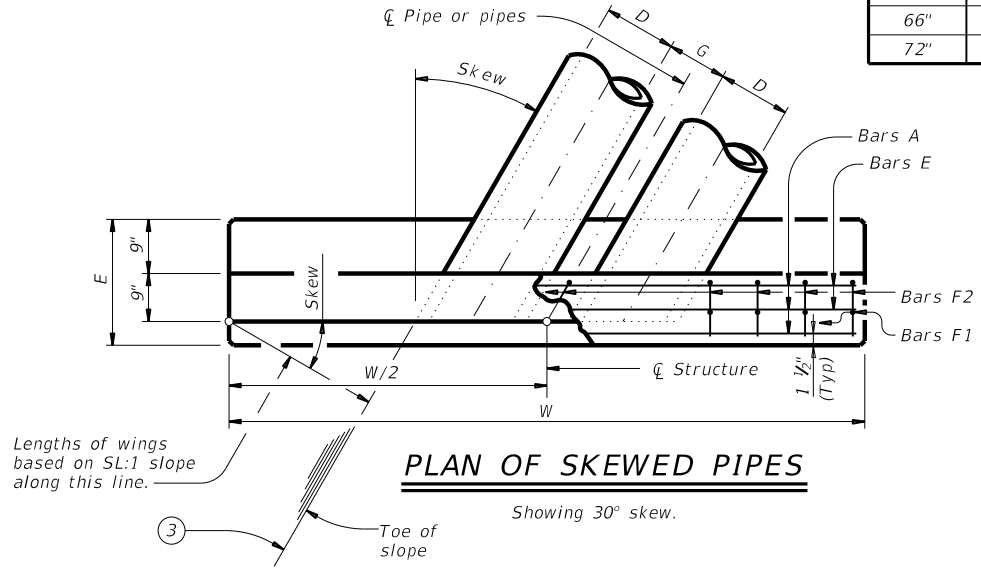
Slope	Dia of Pipe (D)	15° Skew						30° Skew						45° Skew					
		Values for One Pipe			Values To Be Added For Each Add'l Pipe			Values for One Pipe			Values To Be Added For Each Add'l Pipe			Values for One Pipe			Values To Be Added For Each Add'l Pipe		
		W	Reinf (Lbs) (1)	Conc (CY) (2)	W	Reinf (Lbs) (1)	Conc (CY) (2)	W	Reinf (Lbs) (1)	Conc (CY) (2)	W	Reinf (Lbs) (1)	Conc (CY) (2)	W	Reinf (Lbs) (1)	Conc (CY) (2)	W	Reinf (Lbs) (1)	Conc (CY) (2)
2:1	12"	9'-4"	124	1.1	1'-9 3/4"	15	0.2	10'-5"	130	1.2	2'-0"	16	0.2	12'-9"	159	1.5	2'-5 3/4"	17	0.3
	15"	10'-7"	136	1.3	2'-3"	17	0.2	11'-10"	159	1.5	2'-6"	18	0.2	14'-6"	191	1.8	3'-0 3/4"	20	0.3
	18"	11'-11"	165	1.5	2'-9"	19	0.3	13'-3"	174	1.7	3'-1"	29	0.3	16'-3"	207	2.1	3'-9 1/4"	33	0.4
	21"	13'-2"	203	1.9	3'-2 1/4"	31	0.4	14'-9"	233	2.1	3'-6 3/4"	33	0.4	18'-0"	276	2.6	4'-4 1/4"	36	0.5
	24"	14'-6"	240	2.1	3'-8 1/4"	34	0.4	16'-2"	251	2.4	4'-1 3/4"	36	0.5	19'-10"	318	2.9	5'-0 3/4"	39	0.6
	27"	15'-9"	258	2.5	4'-0 3/4"	38	0.5	17'-7"	292	2.8	4'-6 1/4"	39	0.6	21'-7"	342	3.4	5'-6 1/4"	44	0.7
	30"	17'-1"	297	2.8	4'-5 3/4"	40	0.6	19'-1"	311	3.1	5'-0"	42	0.6	23'-4"	388	3.8	6'-1 3/4"	47	0.8
	33"	18'-5"	320	3.3	4'-9 3/4"	43	0.6	20'-6"	358	3.6	5'-4 3/4"	46	0.7	25'-1"	439	4.4	6'-7 1/4"	51	0.9
	36"	19'-8"	401	4.0	5'-3"	47	0.9	21'-11"	422	4.5	5'-10 3/4"	50	0.9	26'-10"	517	5.5	7'-2 1/4"	55	1.2
	42"	22'-3"	476	5.0	6'-0 3/4"	53	1.1	24'-10"	528	5.6	6'-8 3/4"	56	1.2	30'-5"	634	6.9	8'-3"	76	1.4
	48"	25'-11"	577	6.6	6'-9 3/4"	60	1.3	28'-10"	637	7.3	7'-7 1/4"	79	1.5	35'-4"	791	9.0	9'-3 3/4"	88	1.8
	54"	28'-6"	711	7.8	7'-9"	83	1.6	31'-9"	781	8.7	8'-8"	81	1.8	38'-11"	958	10.7	10'-7 1/4"	97	2.2
60"	31'-1"	805	9.2	8'-6 1/4"	91	1.9	34'-8"	881	10.2	9'-6 1/4"	97	2.1	42'-5"	1,113	12.5	11'-8"	124	2.6	
66"	33'-8"	907	10.6	9'-0 3/4"	98	2.1	37'-6"	1,028	11.8	10'-1 1/4"	102	2.4	46'-0"	1,235	14.5	12'-4 1/4"	132	2.9	
72"	36'-3"	1,071	12.1	9'-8"	105	2.4	40'-5"	1,207	13.5	10'-9 1/4"	110	2.6	49'-6"	1,446	16.6	13'-2 1/4"	141	3.2	
3:1	12"	13'-6"	178	1.6	1'-9 3/4"	15	0.2	15'-0"	189	1.8	2'-0"	15	0.2	18'-5"	237	2.2	2'-5 3/4"	17	0.2
	15"	15'-3"	212	1.9	2'-3"	17	0.2	17'-0"	223	2.1	2'-6"	17	0.3	20'-10"	276	2.6	3'-0 3/4"	20	0.3
	18"	17'-1"	231	2.3	2'-9"	19	0.3	19'-1"	259	2.5	3'-1"	29	0.3	23'-4"	318	3.1	3'-9 1/4"	32	0.4
	21"	18'-11"	306	2.7	3'-2 1/4"	31	0.4	21'-1"	339	3.0	3'-6 3/4"	33	0.4	25'-10"	413	3.7	4'-4 1/4"	36	0.5
	24"	20'-8"	345	3.1	3'-8 3/4"	35	0.4	23'-1"	384	3.5	4'-1 3/4"	36	0.5	28'-3"	462	4.2	5'-0 3/4"	40	0.6
	27"	22'-6"	376	3.7	4'-0 3/4"	38	0.5	25'-1"	438	4.1	4'-6 1/4"	39	0.6	30'-9"	522	5.0	5'-6 1/4"	44	0.7
	30"	24'-4"	422	4.1	4'-5 3/4"	40	0.6	27'-2"	466	4.6	5'-0"	42	0.6	33'-3"	578	5.6	6'-1 3/4"	47	0.8
	33"	26'-2"	476	4.8	4'-10"	43	0.6	29'-2"	522	5.3	5'-4 3/4"	46	0.7	35'-9"	644	6.5	6'-7 1/4"	51	0.9
	36"	27'-11"	590	5.9	5'-3"	47	0.8	31'-2"	645	6.6	5'-10 3/4"	50	0.9	38'-2"	787	8.0	7'-2 1/4"	56	1.2
	42"	31'-7"	684	7.3	6'-0 1/4"	53	1.1	35'-3"	776	8.2	6'-8 3/4"	56	1.2	43'-2"	933	10.0	8'-3"	79	1.4
	48"	36'-9"	880	9.6	6'-9 3/4"	61	1.3	41'-0"	953	10.7	7'-7 1/4"	81	1.5	50'-2"	1,166	13.1	9'-3 3/4"	88	1.8
	54"	40'-5"	1,065	11.4	7'-9"	85	1.6	45'-0"	1,185	12.7	8'-8"	89	1.8	55'-2"	1,435	15.5	10'-7 1/4"	97	2.2
60"	44'-0"	1,224	13.3	8'-6 1/4"	93	1.9	49'-1"	1,356	14.8	9'-6 1/4"	96	2.1	60'-1"	1,635	18.2	11'-8"	124	2.6	
66"	47'-7"	1,357	15.4	9'-1"	98	2.1	53'-1"	1,497	17.2	10'-1 1/4"	103	2.3	65'-1"	1,892	21.1	12'-4 1/4"	130	2.9	
72"	51'-3"	1,624	17.7	9'-8"	105	2.3	57'-2"	1,787	19.7	10'-9 1/4"	109	2.6	70'-0"	2,218	24.1	13'-2 1/4"	139	3.2	
4:1	12"	17'-7"	232	2.1	1'-9 3/4"	15	0.2	19'-8"	259	2.4	2'-0"	16	0.2	24'-0"	314	2.9	2'-5 3/4"	18	0.2
	15"	19'-11"	272	2.5	2'-3"	17	0.2	22'-3"	301	2.8	2'-6"	18	0.3	27'-3"	361	3.5	3'-0 3/4"	21	0.3
	18"	22'-3"	313	3.0	2'-9"	19	0.3	24'-10"	344	3.3	3'-1"	29	0.3	30'-5"	427	4.0	3'-9 1/4"	32	0.4
	21"	24'-7"	407	3.6	3'-2 1/4"	31	0.4	27'-5"	446	4.0	3'-6 3/4"	33	0.4	33'-7"	549	4.9	4'-4 1/4"	36	0.5
	24"	26'-11"	455	4.1	3'-8 3/4"	35	0.4	30'-0"	499	4.5	4'-1 3/4"	36	0.5	36'-9"	609	5.6	5'-0 3/4"	40	0.6
	27"	29'-3"	514	4.8	4'-0 3/4"	38	0.5	32'-7"	562	5.4	4'-6 1/4"	40	0.6	39'-11"	703	6.6	5'-6 1/4"	43	0.7
	30"	31'-7"	568	5.4	4'-5 3/4"	40	0.6	35'-3"	620	6.0	5'-0"	42	0.6	43'-2"	768	7.4	6'-1 3/4"	49	0.8
	33"	33'-11"	634	6.2	4'-10"	43	0.7	37'-10"	710	7.0	5'-4 3/4"	46	0.7	46'-4"	848	8.5	6'-7 1/4"	52	0.9
	36"	36'-3"	776	7.7	5'-3"	48	0.9	40'-5"	868	8.6	5'-10 3/4"	49	0.9	49'-6"	1,058	10.6	7'-2 1/4"	56	1.1
	42"	40'-11"	921	9.6	6'-0 1/4"	53	1.0	45'-7"	1,022	10.7	6'-8 3/4"	57	1.2	55'-10"	1,262	13.1	8'-3"	78	1.4
	48"	47'-7"	1,152	12.6	6'-10"	61	1.3	53'-1"	1,268	14.0	7'-7 1/4"	80	1.5	65'-1"	1,587	17.2	9'-3 3/4"	86	1.8
	54"	52'-3"	1,416	14.9	7'-9 1/4"	86	1.6	58'-4"	1,589	16.6	8'-8"	89	1.8	71'-5"	1,924	20.4	10'-7 1/4"	95	2.2
60"	56'-11"	1,606	17.5	8'-6 3/4"	92	1.9	63'-6"	1,806	19.5	9'-6 1/4"	95	2.1	77'-9"	2,192	23.9	11'-8"	122	2.6	
66"	61'-7"	1,819	20.2	9'-0 3/4"	97	2.1	68'-8"	2,019	22.5	10'-1 1/4"	101	2.4	84'-2"	2,472	27.6	12'-4 1/4"	131	2.9	
72"	66'-3"	2,150	23.2	9'-8"	104	2.4	73'-11"	2,379	25.9	10'-9 1/4"	108	2.6	90'-6"	2,937	31.7	13'-2 1/4"	138	3.2	
6:1	12"	25'-11"	342	3.1	1'-9 3/4"	15	0.2	28'-10"	374	3.5	2'-0"	16	0.2	35'-4"	456	4.3	2'-5 3/4"	17	0.2
	15"	29'-3"	390	3.7	2'-3"	17	0.2	32'-7"	442	4.2	2'-6"	18	0.2	39'-11"	549	5.1	3'-0 3/4"	20	0.3
	18"	32'-7"	459	4.4	2'-9"	20	0.3	36'-4"	515	4.9	3'-1"	29	0.3	44'-7"	629	6.0	3'-9 1/4"	33	0.4
	21"	36'-0"	608	5.3	3'-2 1/4"	31	0.4	40'-2"	660	5.9	3'-6 3/4"	33	0.4	49'-2"	823	7.2	4'-4 1/4"	38	0.5
	24"	39'-4"	672	6.0	3'-8 3/4"	35	0.4	43'-11"	748	6.7	4'-1 3/4"	36	0.5	53'-9"	920	8.2	5'-0 3/4"	42	0.6
	27"	42'-8"	770	7.1	4'-0 3/4"	38	0.5	47'-8"	852	8.0	4'-6 1/4"	41	0.5	58'-4"	1,039	9.7	5'-6 1/4"	45	0.7
	30"	46'-1"	839	8.0	4'-5 3/4"	40	0.6	51'-5"	949	8.9	5'-0"	44	0.6	62'-11"	1,162	10.9	6'-1 3/4"	48	0.8
	33"	49'-5"	947	9.2	4'-10"	45	0.7	55'-2"	1,040	10.3	5'-4 3/4"	48	0.7	67'-6"	1,292	12.6	6'-7 1/4"	50	0.9
	36"	52'-10"	1,151	11.4	5'-3"	49	0.8	58'-11"	1,287	12.7	5'-10 3/4"	51	1.0	72'-1"	1,583	15.6	7'-2 1/4"	55	1.1
	42"	59'-6"	1,365	14.2	6'-0 1/4"	55	1.0	66'-5"	1,530	15.8	6'-8 3/4"	57	1.2	81'-4"	1,875	19.4	8'-3"	76	1.4
	48"	69'-4"	1,737	18.5	6'-10"	59	1.3	77'-4"	1,942	20.7	7'-7 1/4"	79	1.5	94'-9"	2,368	25.3	9'-3 3/4"	86	1.8
	54"	76'-1"	2,138	22.0	7'-9 1/4"	83	1.6	84'-10"	2,378	24.6	8'-8"	87	1.8	103'-11"	2,912	30.1	10'-7 1/4"	95	2.2
60"	82'-10"	2,426	25.8	8'-6 3/4"	90	1.9	92'-5"	2,681	28.8	9'-6 1/4"	94	2.1	113'-2"	3,294	35.3	11'-8"	122	2.6	
66"	89'-7"	2,730	29.9	9'-0 3/4"	96	2.1	99'-11"	3,038	33.3	10'-1 1/4"	101	2.4	122'-4"	3,697	40.8	12'-4 1/4"	130	2.9	
72"	96'-3"	3,218	34.2	9'-8"	102	2.4	107'-5"	3,580	38.2	10'-9 1/4"	108	2.6	131'-6"	4,372	46.8	13'-2 1/4"	139	3.2	

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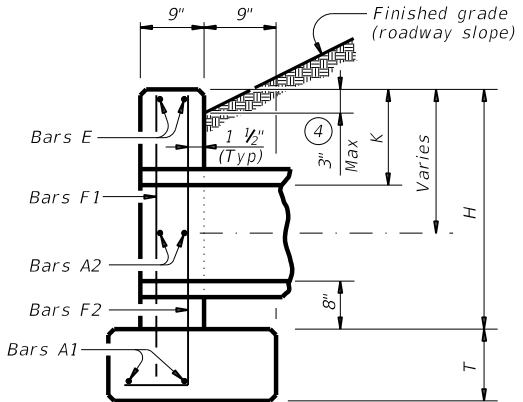


**ELEVATION**



**PLAN OF SKEWED PIPES**

Showing 30° skew.



**SECTION AT CENTER OF PIPE**

- Total quantities include one 3'-1" lap for bars over 60' in length.
- Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
- Indicated slope is perpendicular to centerline pipe or pipes.
- For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- Dimensions shown are usual and maximum.
- Quantities shown are for one structure end only (one headwall).

**TABLE OF CONSTANT DIMENSIONS**

Dia of Pipe (D)	G	K (5)	H	T	E
12"	0'-9"	1'-0"	2'-8"	0'-9"	1'-9"
15"	0'-11"	1'-0"	2'-11"	0'-9"	1'-9"
18"	1'-2"	1'-0"	3'-2"	0'-9"	1'-9"
21"	1'-4"	1'-0"	3'-5"	0'-9"	2'-0"
24"	1'-7"	1'-0"	3'-8"	0'-9"	2'-0"
27"	1'-8"	1'-0"	3'-11"	0'-9"	2'-3"
30"	1'-10"	1'-0"	4'-2"	0'-9"	2'-3"
33"	1'-11"	1'-0"	4'-5"	0'-9"	2'-6"
36"	2'-1"	1'-0"	4'-8"	1'-0"	2'-6"
42"	2'-4"	1'-0"	5'-2"	1'-0"	2'-9"
48"	2'-7"	1'-3"	5'-11"	1'-0"	3'-0"
54"	3'-0"	1'-3"	6'-5"	1'-0"	3'-3"
60"	3'-3"	1'-3"	6'-11"	1'-0"	3

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DATE: FILE:

REFLECTOR UNIT SIZES FOR DELINEATORS AND OBJECT MARKERS				DELINEATORS				D & OM DESCRIPTIVE CODES		
DEVICE	SIZE 1	SIZE 2	SIZE 3	SIZE 4	SINGLE		DOUBLE		INSTL DEL ASSM (D-XX)SZ X (XXXX)XXX (XX) NUMBER OF REFLECTORS S = Single D = Double COLOR OF REFLECTORS W = White Y = Yellow R = Red REFLECTOR UNIT SIZE 1 or 2 TYPE OF POST OR DELINEATOR WC = Wing Channel Post YFLX = Yellow Flexible Post WFLX = White Flexible Post BRFL = Barrier Reflector TYPE OF MOUNT GND = Embedded (drivable or set in concrete) CTB = Concrete Barrier Mount GF1 or GF2 = Guard Fence Attachment SRF = Surface Mount DIRECTION If Required BI = Bi-Directional BR = Bi-Directional with red on back	
SHEETING	Yellow, White or Red Type B or C reflective sheeting				Yellow, White or Red Type B or C Reflective Sheeting					
NOTE	1. Size 1 and 4 - Direct applied reflective sheeting for use on flexible post (fix). 2. Size 2 and 3 - For use on wing channel (wc) post only. Use approved metal, plastic or fiberglass backplate with 17/64" mounting holes.				SHEETING					
					POST TYPE	WC	YFLX, WFLX	WC	YFLX, WFLX	
					MOUNT TYPE	GND	GND, SRF	GND	GND, SRF	

OBJECT MARKERS										D & OM DESCRIPTIVE CODES	
DEVICE	Type 1 (OM-1)		Type 2 (OM-2)			Type 3 (OM-3)			Type 4 (OM-4)		INSTL OM ASSM (OM-XX) (XXXX)XXX (XX) TYPE OF OBJECT MARKER 1, 2, 3, or 4 NUMBER OF REFLECTORS OR DIRECTION X = 3-Size 2 reflector unit (Type 2 only) Y = 1-Size 3 reflector unit (Type 2 only) Z = 3-Size 1 or 1-Size 4 reflector unit(s) (Type 2 only) L = Left Side (Type 3 Object Marker only) R = Right Side (Type 3 Object Marker only) C = Center (Type 3 Object Marker only) TYPE OF POST WC = Wing Channel Post WFLX = White Flexible Post TWT = Thin Walled Tubing TYPE OF MOUNT GND = Embedded (drivable) SRF = Surface Mount WAS = Wedge Anchor Steel WAP = Wedge Anchor Plastic DIRECTION If Required BI = Bi-Directional
SHEETING	Yellow-Type B <sub>FL</sub> or C <sub>FL</sub> Sheeting		Yellow - Type B or C Sheeting			Alternating acrylic black and retroreflective yellow - Type B <sub>FL</sub> or C <sub>FL</sub> Sheeting			Red -Type B <sub>FL</sub> or C <sub>FL</sub> Sheeting		
POST TYPE	TWT		WC	WC	WFLX	TWT			TWT		
MOUNT TYPE	WAS, WAP		GND	GND	GND, SRF	WAS, WAP			WAS, WAP		

DEPARTMENTAL MATERIAL SPECIFICATIONS	
FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400
SIGN FACE MATERIALS	DMS-8300
DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600

BARRIER REFLECTORS (BRF)			CHEVRONS				ONE DIRECTION LARGE ARROW		NOTE: Delineator and object marker substrates and sign substrates shall be 0.080" Aluminum sign blank to conform to ASTM B-209 Alloy 6061-T6 or approved alternative.
GF1 GF2 CTB 	W1-8 				W1-6 				
1. Barrier reflectors shall meet the requirements of DMS 8600. 2. Approved Barrier Reflectors are listed on the "Barrier Reflectors" Material Producer List at: www.txdot.gov.	SIZE (W x L)	18" x 24" (Conventional)	24" x 30" (Conventional Oversize)	30" x 36" (Expressway)	36" x 48" (Freeway)	SIZE (W x L)	48" x 24" (Conventional)	60" x 30" (Expressway & Freeway)	
	MOUNTING HEIGHT	4'-0" or 7'-0"		7'-0" Only		MOUNTING HEIGHT	7'-0"		
	NOTE	1. CHEVRON (W1-8) signs and ONE DIRECTION LARGE ARROW (W1-6) Signs shall be installed per Sign Mounting Details (SMD) Standard Sheets and paid under Item 644 (Small Roadside Sign Assemblies). 2. When there is a need to increase conspicuity, the Texas version of the ONE DIRECTION LARGE ARROW sign (W1-9T) may be used instead of the ONE DIRECTION LARGE ARROW (W1-6).							
SHEETING	Yellow, White, Red								
NOTE	1. Reflective sheeting shall have a minimum dimension of 3 inches and minimum surface area of 9 square inches.								

Texas Department of Transportation  
 Traffic Safety Division Standard

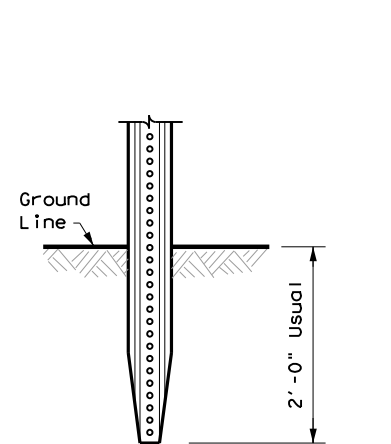
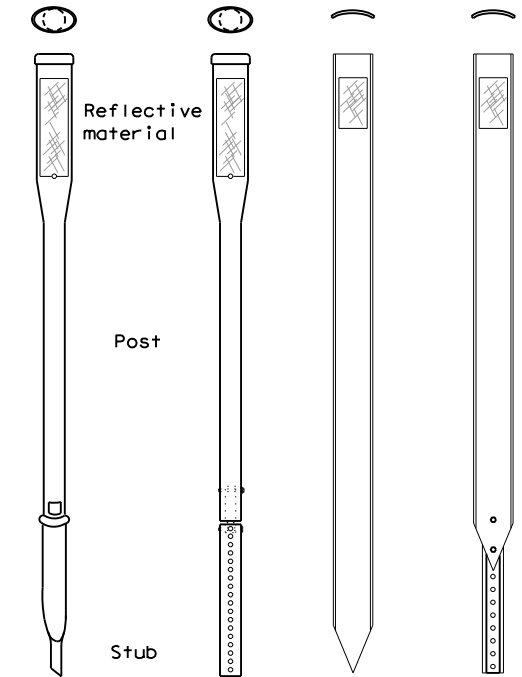
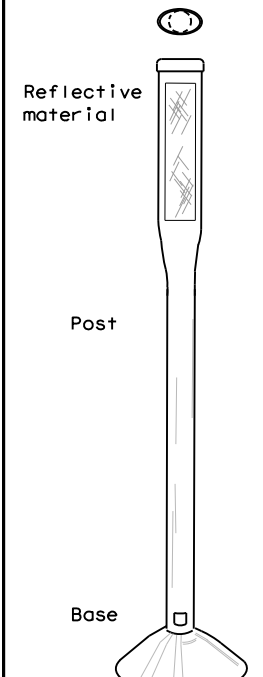
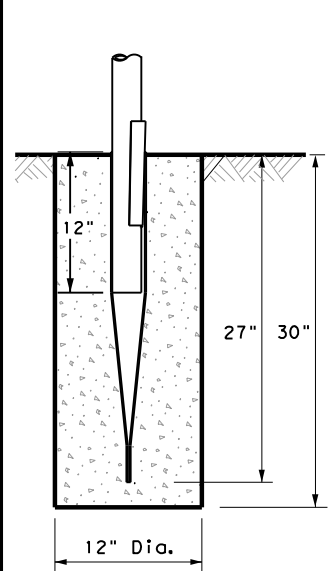
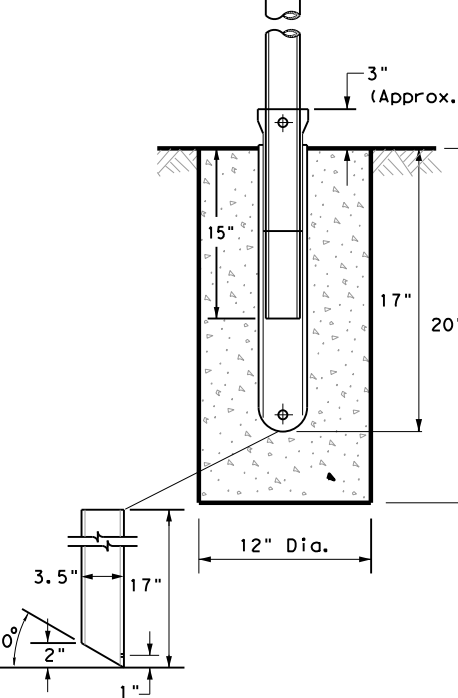
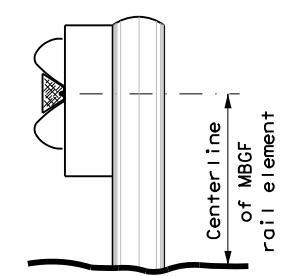
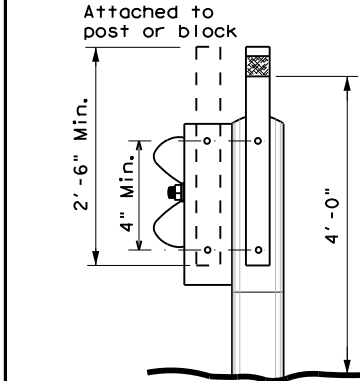
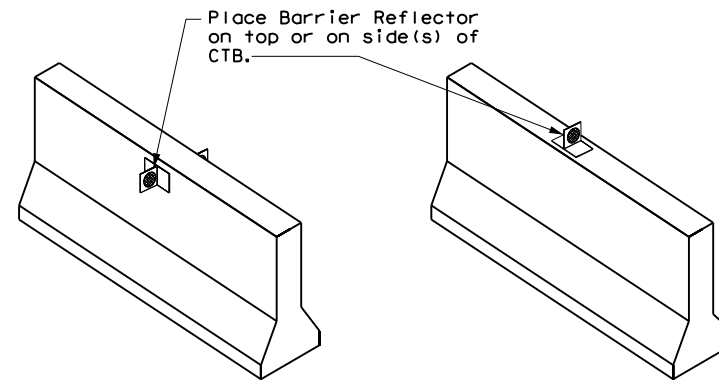
## DELINEATOR & OBJECT MARKER MATERIAL DESCRIPTION

### D & OM(1)-20

FILE: dom1-20.dgn	DN: TXDOT	CK: TXDOT	OW: TXDOT	CR: TXDOT
© TXDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS	0138	10	029, ETC.	FM 248, ETC.
10-09 3-15	DIST	COUNTY	SHEET NO.	
4-10 7-20	ATL	CASS, ETC.	102	

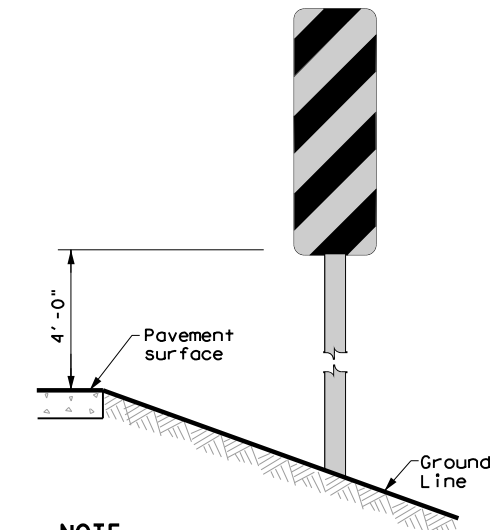
20A

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POST TYPE AND SUPPORT FOUNDATION DETAILS				TYPE OF BARRIER MOUNTS			
WING CHANNEL (WC)	FLEXIBLE POSTS (YFLX, WFLX)		WEDGE ANCHOR SYSTEMS		GUARD FENCE ATTACHMENT		
GND	GND	SRF	WAS	WAP	GF 1		
 <p style="text-align: center;">2'-0" Usual</p>	 <p style="text-align: center;">Reflective material</p> <p style="text-align: center;">Post</p> <p style="text-align: center;">Stub</p>	 <p style="text-align: center;">Reflective material</p> <p style="text-align: center;">Post</p> <p style="text-align: center;">Base</p>	 <p style="text-align: center;">12" Dia.</p> <p style="text-align: center;">27" 30"</p>	 <p style="text-align: center;">3" (Approx.)</p> <p style="text-align: center;">15" 17" 20"</p> <p style="text-align: center;">12" Dia.</p> <p style="text-align: center;">3.5" 17" 30° 2" 1"</p>	 <p style="text-align: center;">Centerline of MBCF rail element</p>	 <p style="text-align: center;">Attached to post or block</p> <p style="text-align: center;">2'-6" Min.</p> <p style="text-align: center;">4" Min.</p> <p style="text-align: center;">4'-0"</p>	
	EMBEDDED		SURFACE MOUNT	STEEL	PLASTIC	GF 2	
<b>NOTES</b> 1. Embedded Wing Channel (WC) post option may be used for Type 2 Object Markers and Delineators only. 2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr. 50, or ASTM A499.		<b>NOTES</b> 1. See "Flexible Delineator and Object Marker Posts" Material Producer List for approved devices. 2. Install per manufacturer's recommendations. 3. Post length may vary to meet field conditions. 4. When using yellow delineators with flexible posts to separate opposing direction of travel, such as centerline or median use, the flexible posts shall be yellow.		<b>NOTE</b> 1. Install per manufacturer's recommendations.			<b>CONCRETE TRAFFIC BARRIER (CTB)</b>  <p style="text-align: center;">Place Barrier Reflector on top or on side(s) of CTB.</p>

- GENERAL NOTES**
- Place delineators on a section of roadway at a consistent distance from the edge of pavement.
  - Where a restriction prevents consistent placement from the pavement edge, place the affected object markers in line with the innermost edge of the obstruction.
  - When Type 2 object markers and delineators are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of approximately 4'-0". If this is the case, place the object marker or delineator as close to the desired height as possible.
  - Install all delineators, object markers and barrier reflectors in accordance with the manufacturer's recommendation.
  - Barrier reflectors should be installed a minimum of 18 inches above the edge of the pavement surface.
  - Diagonal stripes on Type 3 object markers shall slope down toward the intended travel lane.

**TYPES 1,3, AND 4 OBJECT MARKERS AND CHEVRONS**



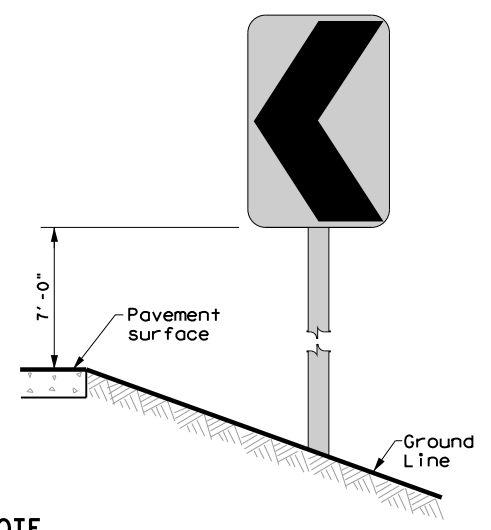
4'-0"

Pavement surface

Ground Line

**NOTE**  
 Mounting at 4 feet to the bottom of the chevron is permitted for chevrons that will not exceed a height of 6'-6" to the top of the chevron (sizes 24" x 30" and smaller)

**CHEVRONS AND ONE DIRECTION LARGE ARROW SIGN**



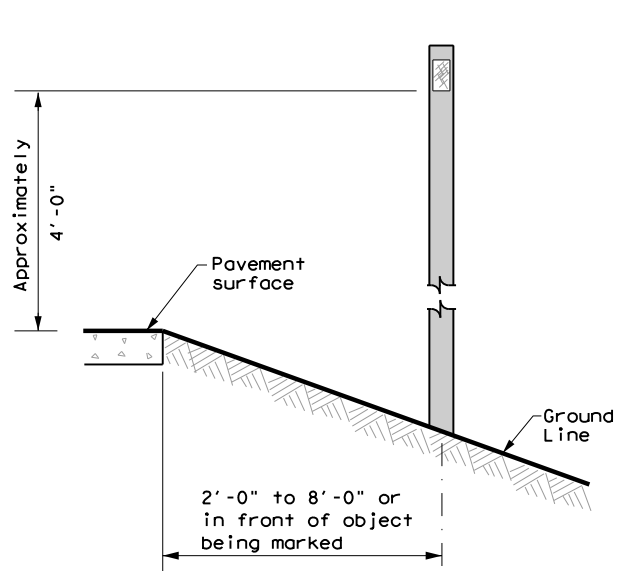
7'-0"

Pavement surface

Ground Line

**NOTE**  
 Chevrons 30" x 36" and larger shall be mounted at a height of 7' to the bottom of the chevron. Chevron sign and ONE DIRECTION LARGE ARROW sign (W1-9T) shall be installed per SMD standard sheets and paid under item 644.

**DELINEATORS AND TYPE 2 OBJECT MARKERS**




Approximately 4'-0"

Pavement surface

Ground Line

2'-0" to 8'-0" or in front of object being marked

See general notes 1, 2 and 3.



Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER INSTALLATION  
 D & OM(2)-20

FILE: dom2-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS	0138 10	029, ETC.FM 248, ETC.		
10-09 3-15	DIST	COUNTY	SHEET NO.	
4-10 7-20	ATL	CASS, ETC.	103	

20B

DATE: FILE:

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DATE: \$DATE\$  
 TIME: \$TIME\$  
 FILE: \$FILE\$

**SITE DESCRIPTION**

PROJECT LIMITS: FROM: SH 43 TO: MARION C/L

PROJECT DESCRIPTION: SAFETY TREAT FIXED OBJECTS

MAJOR SOIL DISTURBING ACTIVITIES: THIS PROJECT IS CONSIDERED A MAINTENANCE ACTIVITY.

TOTAL PROJECT AREA: N/A

TOTAL AREA TO BE DISTURBED: N/A

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: N/A

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: N/A

STORM WATER MANAGEMENT: N/A

LOCATION(S) OF ALL MAJOR STRUCTURAL CONTROLS EITHER PLANNED OR IN PLACE  
 LOCATIONS WHERE TEMPORARY OR PERMANENT STABILIZATION PRACTICES ARE EXPECTED TO BE USED  
 LOCATIONS OF CONCRETE VEHICLE WASHOUT AREAS  
 LOCATIONS OF PORTABLE SANITARY WASTE UNITS  
 LOCATIONS OF TRASH DUMPSTERS

**EROSION AND SEDIMENT CONTROLS**

**SOIL STABILIZATION PRACTICES:**

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

OTHER: EROSION CONTROL AND STABILIZATION MEASURES MUST BE INITIATED IMMEDIATELY IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. STABILIZATION MEASURES THAT PROVIDE A PROTECTIVE COVER MUST BE INITIATED IMMEDIATELY IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED.

**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: ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER. IF MAINTENANCE IS NECESSARY, IT WILL BE DONE PRIOR TO THE NEXT RAIN EVENT IF FEASIBLE. IF MAINTENANCE PRIOR TO THE NEXT ANTICIPATED STORM EVENT IS IMPRACTICABLE, THE REASON SHALL BE DOCUMENTED IN THE SWP3 AND MAINTENANCE MUST BE SCHEDULED AND ACCOMPLISHED AS SOON AS PRACTICABLE. EROSION AND SEDIMENT CONTROLS THAT HAVE BEEN INTENTIONALLY DISABLED, RUN-OVER, REMOVED OR OTHERWISE RENDERED INEFFECTIVE MUST BE REPLACED OR CORRECTED IMMEDIATELY UPON DISCOVERY. REFER TO APPLICABLE TPDES GENERAL PERMIT FOR ADDITIONAL INFORMATION.

INSPECTION: ITEM 506  
 AN INSPECTION WILL BE PERFORMED EVERY 7 CALENDAR DAYS. A MAINTENANCE REPORT WILL BE MADE PER EACH INSPECTION. BASED ON INSPECTION RESULTS, THE CONTROLS SHALL BE REVISED PER THE INSPECTION REPORT.

OFFSITE VEHICLE TRACKING:  
 THE CONTRACTOR SHALL BE REQUIRED, ON A REGULAR BASIS OR AS MAY BE DIRECTED BY THE ENGINEER, TO DAMPEN HAUL ROADS FOR DUST CONTROL, STABILIZE CONSTRUCTION ENTRANCES, REMOVE EXCESS DIRT FROM THE ROADWAY, AND COVER LOADED HAUL TRUCKS WITH TARPULIN.

CONCRETE TRUCK WASHOUT AREAS: THE CONTRACTOR WILL BE REQUIRED TO CONTAIN WASH WATER FROM CONCRETE TRUCKS AS DETAILED IN THE GENERAL PERMIT. SPECIFIC LOCATIONS MAY BE DETERMINED IN THE FIELD BUT MUST BE SHOWN ON THE SWP3 SITE MAP OR LAYOUT PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.

**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 MANAGEMENT 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.



**TxDOT STORM WATER POLLUTION PREVENTION PLAN**

**SWP3**

FILE: swp3less1acre.dgn	DN: TxDOT	CR: TxDOT	DW: TxDOT	CK: TxDOT	
Revisions		CONT	SECT	JOB	HIGHWAY
May 2017		0138	10	029, ETC.	FM 248, ETC.
		DIST	COUNTY		SHEET NO.
		ATL	CASS, ETC.		104

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DATE: FILE:

**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. N/A
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:

<b>Erosion</b>	<b>Sedimentation</b>	<b>Post-Construction TSS</b>
<input type="checkbox"/> Temporary Vegetation	<input type="checkbox"/> Silt Fence	<input type="checkbox"/> Vegetative Filter Strips
<input type="checkbox"/> Blankets/Matting	<input type="checkbox"/> Rock Berm	<input type="checkbox"/> Retention/Irrigation Systems
<input type="checkbox"/> Mulch	<input type="checkbox"/> Triangular Filter Dike	<input type="checkbox"/> Extended Detention Basin
<input type="checkbox"/> Sodding	<input type="checkbox"/> Sand Bag Berm	<input type="checkbox"/> Constructed Wetlands
<input type="checkbox"/> Interceptor Swale	<input type="checkbox"/> Straw Bale Dike	<input type="checkbox"/> Wet Basin
<input type="checkbox"/> Diversion Dike	<input type="checkbox"/> Brush Berms	<input type="checkbox"/> Erosion Control Compost
<input type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Mulch Filter Berm and Socks
<input type="checkbox"/> Mulch Filter Berm and Socks	<input type="checkbox"/> Mulch Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks
<input type="checkbox"/> Compost Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks	<input type="checkbox"/> Vegetation Lined Ditches
	<input type="checkbox"/> Stone Outlet Sediment Traps	<input type="checkbox"/> Sand Filter Systems
	<input type="checkbox"/> Sediment Basins	<input type="checkbox"/> 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.
- 3.
- 4.

**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.
- 3.
- 4.

**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.

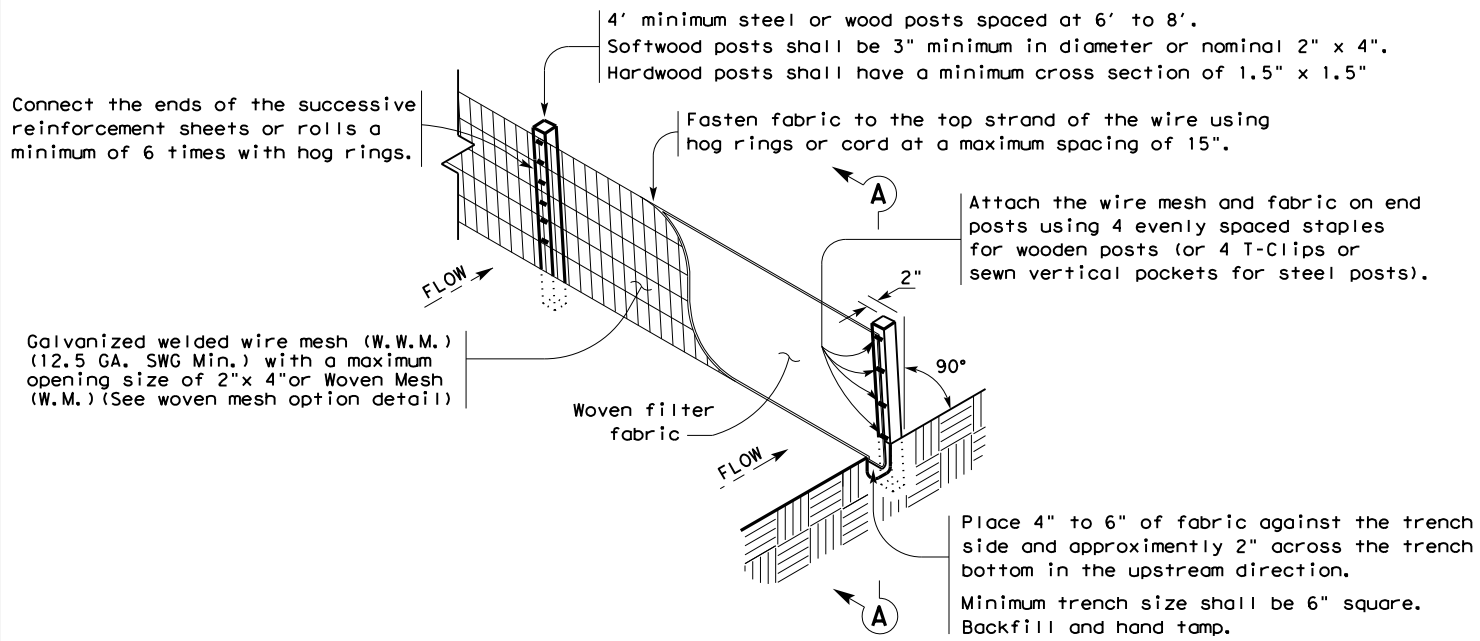
- 1.
- 2.
- 3.

		<b>Design Division Standard</b>	
<b>ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS</b> <b>EPIC</b>			
FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP
©TxDOT: February 2015	CONT	SECT	JOB
12-12-2011 (DS) REVISIONS	0138	10	029, ETC.
05-07-14 ADDED NOTE SECTION IV.	DIST	COUNTY	SHEET NO.
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	ATL	CASS, ETC.	105



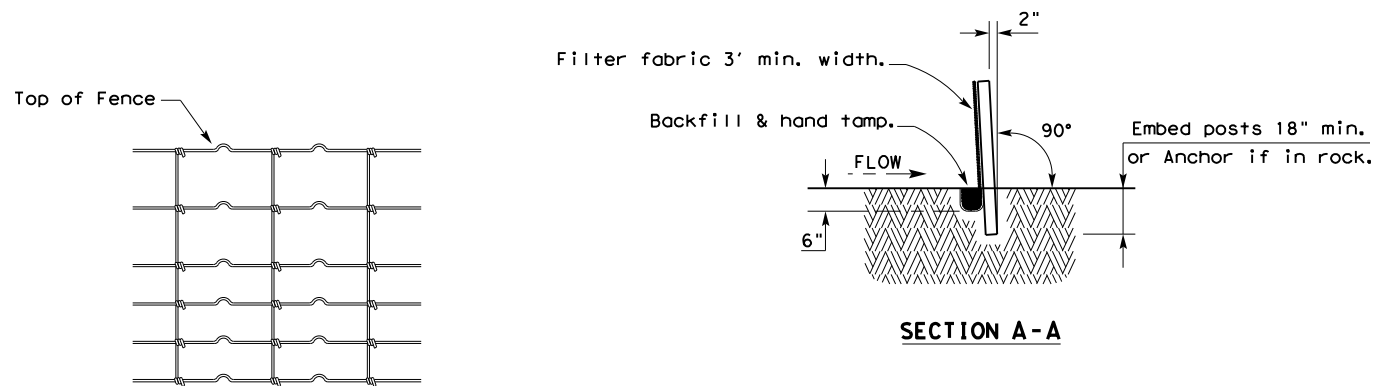
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DATE  
FILE



**TEMPORARY SEDIMENT CONTROL FENCE**

SCF



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

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

**SEDIMENT CONTROL FENCE USAGE GUIDELINES**

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

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

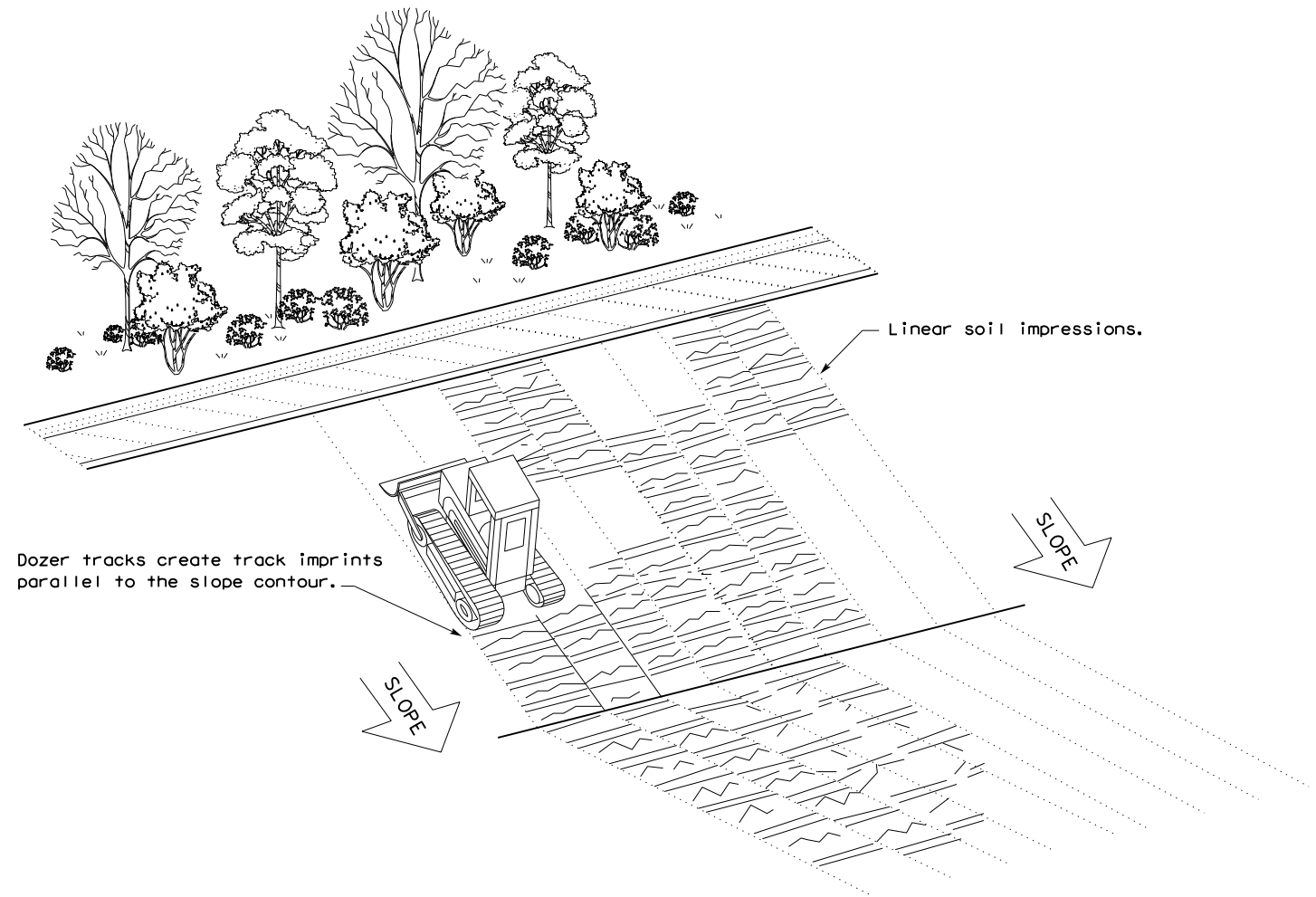
**LEGEND**

Sediment Control Fence

SCF

**GENERAL NOTES**

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

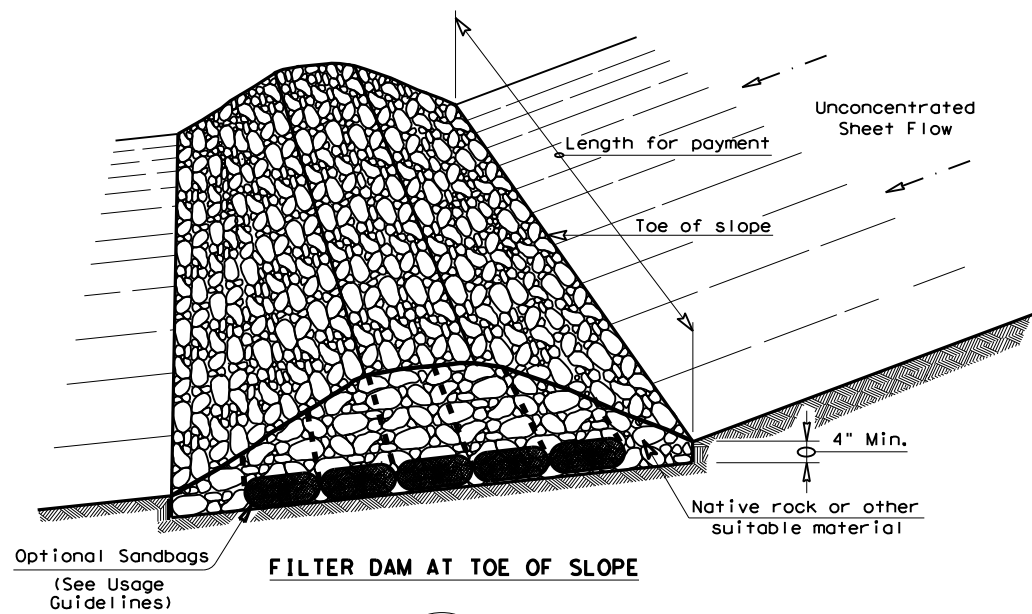


**VERTICAL TRACKING**

				Design Division Standard	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE &amp; VERTICAL TRACKING EC(1)-16</b>					
FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS		013810	029, ETC.	FM 248, ETC.	
	DIST	COUNTY		SHEET NO.	
	ATL	CASS, ETC.		106	

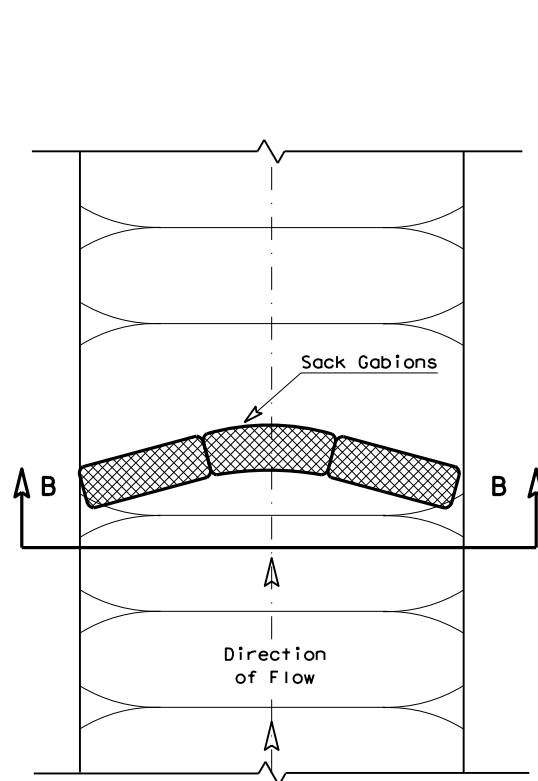
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DATE: FILE:

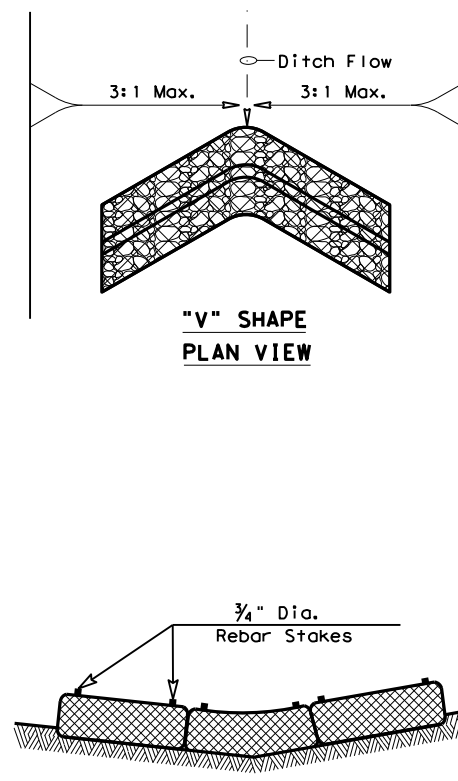


**FILTER DAM AT TOE OF SLOPE**

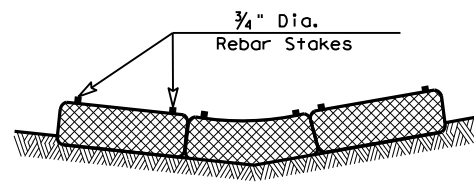
(RFD1)



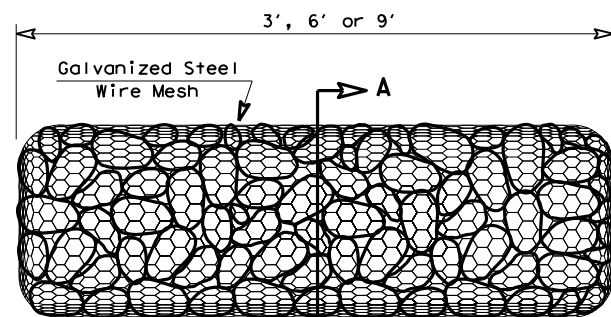
**PLAN VIEW**



**"V" SHAPE PLAN VIEW**

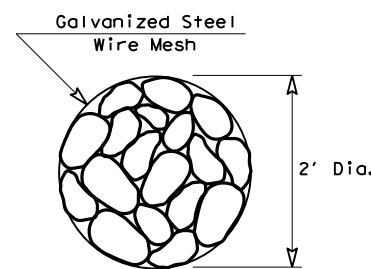


**SECTION B-B**

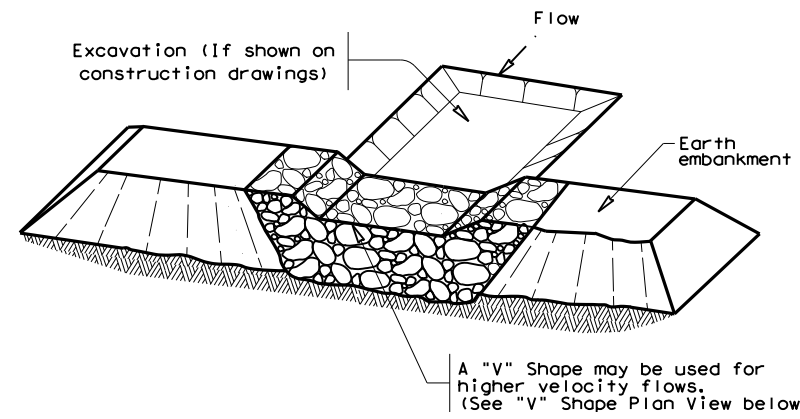


**TYPE 4 (SACK GABIONS)**

(RFD4)

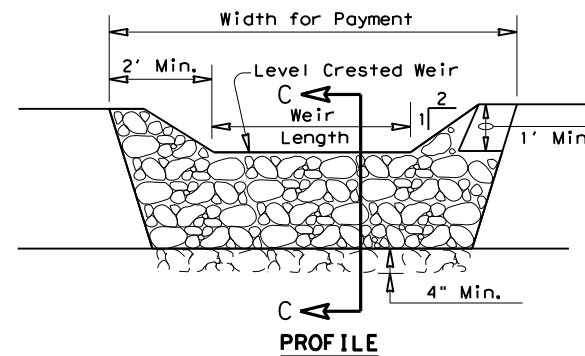


**SECTION A-A**

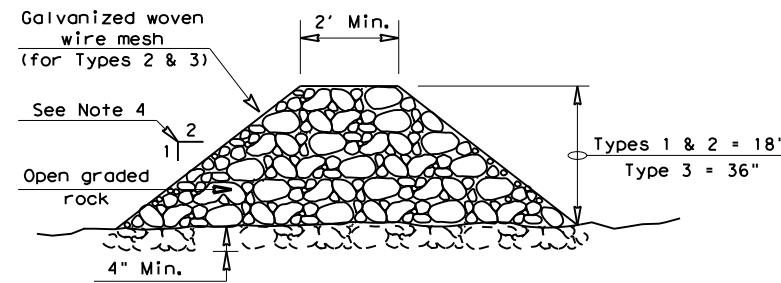


**FILTER DAM AT SEDIMENT TRAP**

(RFD1) OR (RFD2)



**PROFILE**



**SECTION C-C**

**ROCK FILTER DAM USAGE GUIDELINES**

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT<sup>2</sup> of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

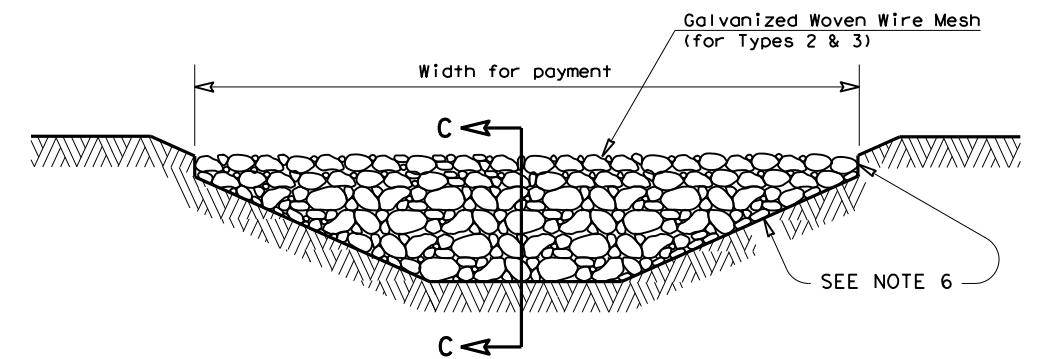
**Type 1 (18" high with no wire mesh) (3" to 6" aggregate):** Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximately 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

**Type 2 (18" high with wire mesh) (3" to 6" aggregate):** Type 2 may be used in ditches and at dike or swale outlets.

**Type 3 (36" high with wire mesh) (4" to 8" aggregate):** Type 3 may be used in stream flow and should be secured to the stream bed.

**Type 4 (Sack gabions) (3" to 6" aggregate):** Type 4 May be used in ditches and smaller channels to form an erosion control dam.

**Type 5:** Provide rock filter dams as shown on plans.



**FILTER DAM AT CHANNEL SECTIONS**

(RFD1) OR (RFD2) OR (RFD3)

**GENERAL NOTES**

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with 3/4" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 1/2" x 3 1/4".
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

**PLAN SHEET LEGEND**

- Type 1 Rock Filter Dam (RFD1)
- Type 2 Rock Filter Dam (RFD2)
- Type 3 Rock Filter Dam (RFD3)
- Type 4 Rock Filter Dam (RFD4)

		<b>Design Division Standard</b>	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</b> <b>ROCK FILTER DAMS</b> <b>EC(2)-16</b>			
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