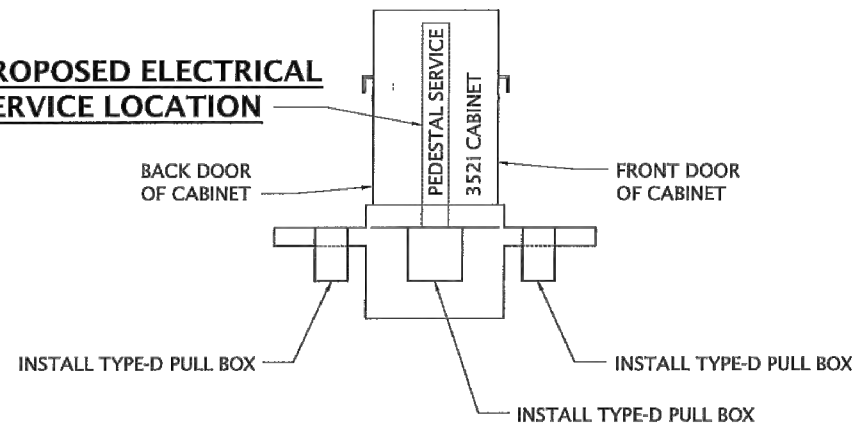
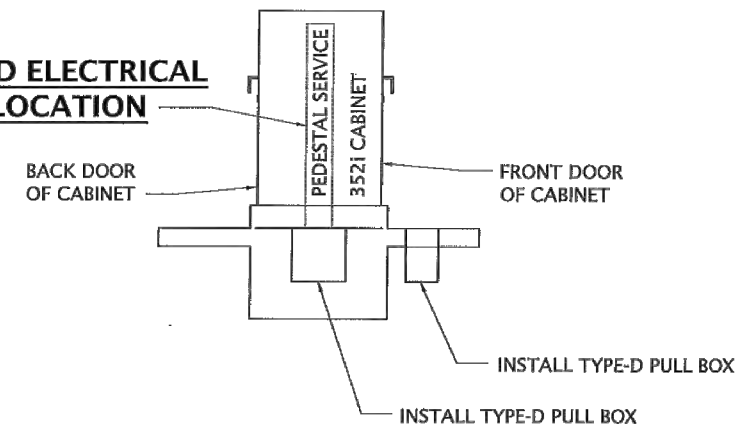


PROPOSED ELECTRICAL SERVICE LOCATION

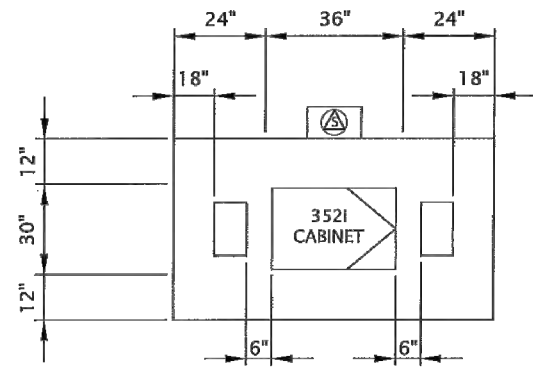


FRONT CABINET FOUNDATION VIEW

PROPOSED ELECTRICAL SERVICE LOCATION



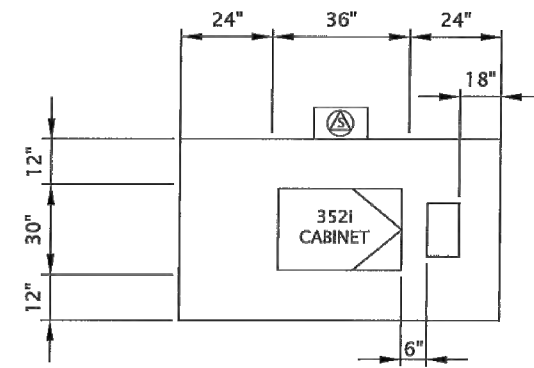
FRONT CABINET FOUNDATION VIEW



SIDEWALK

STREET

TOP CABINET FOUNDATION VIEW



SIDEWALK

STREET

TOP CABINET FOUNDATION VIEW

NOTES:

1. SEE TRAFFIC SIGNAL TYPE 3521 CABINET INSTALLATION DETAIL (34 41 10-D606).

EXISTING		LEGEND:		PROPOSED	
1	STEEL POLE & MAST ARM	1	STEEL POLE & MAST ARM	2	PHASE NUMBER
1	SIGNAL HEAD & No.	1	SIGNAL HEAD & No.	2	OPTICON (2 DETECTORS)
1	NEMA CONTROLLER CABINET	1	2070 CONTROLLER CABINET	2	VEHICLE DETECTION LOOP
1	GROUND BOX	1	GROUND BOX	2	PEDESTRIAN SIGNAL & No.
1	LUMINAIRE	1	LUMINAIRE	2	RIGHT OF WAY
1	FIBER OPTIC CABLE	1	SIDEWALK RAMP	2	PROPOSED O.H. TRIPLEX #6
1	TEL. TELEPHONE CABLE	1	EXISTING CONDUIT RUN	2	PROPOSED CONDUIT RUN
1	WATER LINE	1	VIDEO DETECTION AREA	2	LARGE GROUND BOX
		1	FIRE HYDRANT	2	VIDEO DET. CAMERA
		1	WOOD POLE	2	PED PUSH BUTTON
		1	VEHICLE DETECTION LOOP	2	SERVICE
		1	PEDESTRIAN SIGNAL & No.	2	PEDESTAL SERVICE

DESIGNED BY: _____
 DATE: _____
 DRAWN BY: B.W.
 DATE: 1-12-2018
 CHECKED BY: _____
 DATE: _____
 CAD FILE: _____
 DATE: _____

DEPT. OF TRANSPORTATION
 AND PUBLIC WORKS
 TRAFFIC MANAGEMENT



PROPOSED CABINET FOUNDATION DETAIL

DWG. No. LOCATION No. SHEET No. 1 OF 1

DATE	BY	REV	REVISION

DUNAWAY 550 Bailey Avenue
 Suite 400
 Fort Worth, TX 76107
 (TX REG. F-1114) 817-335-1121



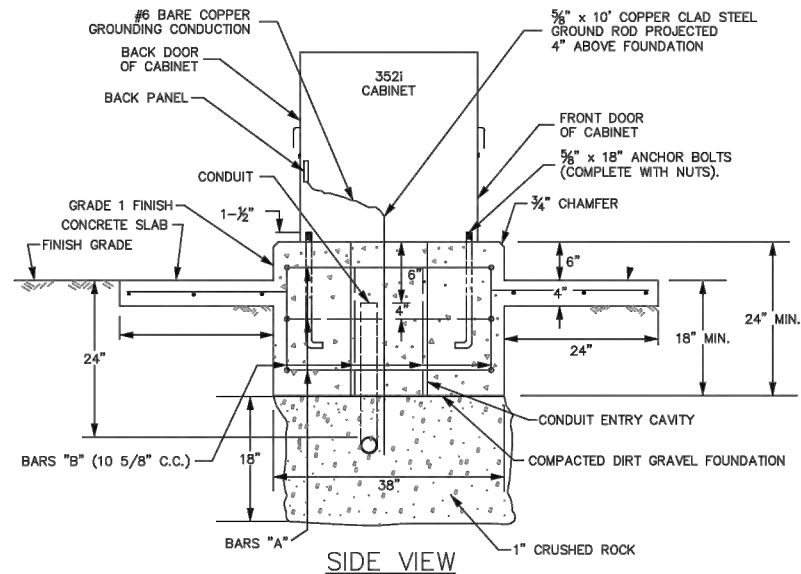
PROJ NO. 101264 FILE NO. K-2630

Texas Department of Transportation
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2018 SAFE ROUTES TO SCHOOL IMPROVEMENTS

CFW STANDARD DETAIL - CABINET

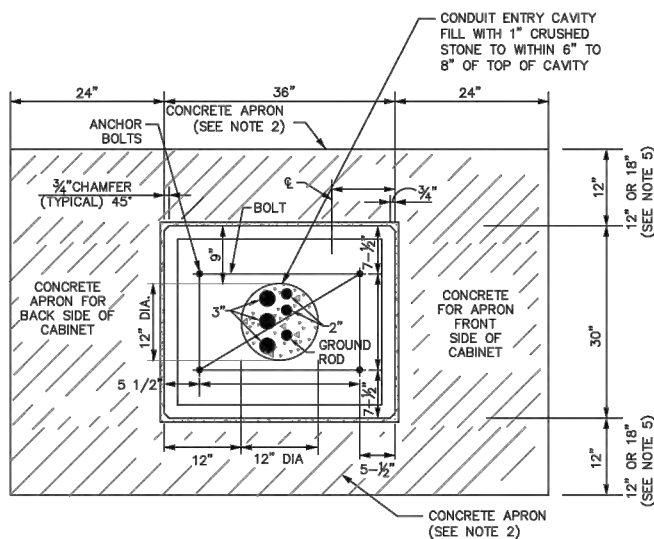
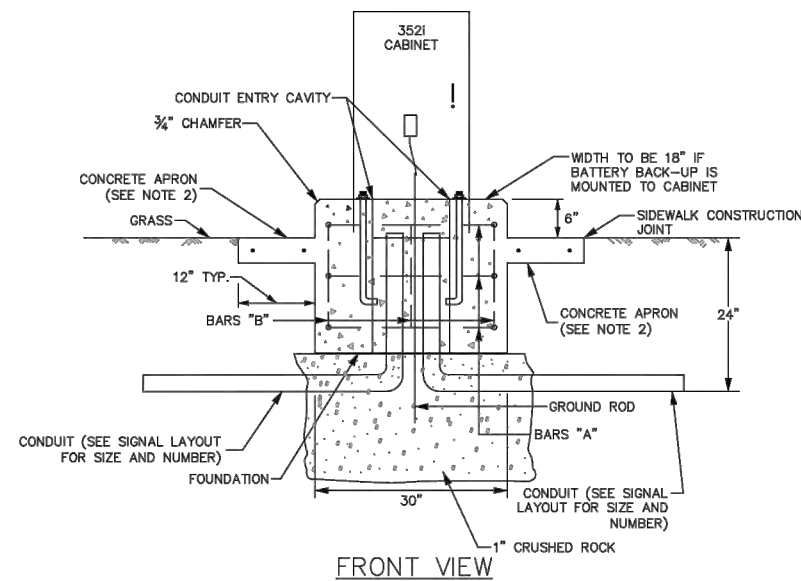
FED. RD. DIV. NO.	STATE	PROJECT NO.		HIGHWAY NO.	
6	TEXAS	STP 2021(929)TP		VA	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
FTW	TARRANT	0902	90	082	297



- NOTES:
- ANCHOR BOLT THREADS SHALL BE TAPED PRIOR TO POURING CONCRETE.
 - ALL OR PART OF CONCRETE APRON MAY BE REQUIRED DEPENDING ON THE PLACEMENT OF CABINET FOUNDATION IN RELATION TO EXISTING SIDEWALKS.
 - CAVITY IN FOUNDATION ALLOWS FOR THE FUTURE PLACEMENT OF CONDUIT. CAVITY EXTENDS FROM TOP TO BOTTOM OF FOUNDATION. PLACE 1" CRUSHED STONE IN CAVITY TO WITHIN 6" (TO 8") FROM THE TOP OF THE FOUNDATION.
 - CONTROLLER FOUNDATION APRON SHALL BE CONSTRUCTED AS CLASS B CONCRETE RIP-RAP AND SHALL BE SUBSIDIARY TO THE CONTROLLER FOUNDATION.
 - CABINET FOUNDATION SHALL BE 7' x 5.5' IF A BATTERY BACK-UP IS ATTACHED TO THE CABINET.
 - CABINET DOOR SHALL OPEN TO THE NORTH. CONTROLLER FACE PLATE SHALL FACE NORTH. FIELD TERMINATIONS TO BE DONE ON SOUTH SIDE OF CABINET.

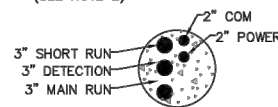
STEEL SUMMARY TABLE				
BAR	NO. BARS	SIZE	LENGTH	SPACING
A	3	5	9'-8"	8" C.C.
B	10	5	2'-2"	VAR.
C	6	3	1'-8"	8.5" C.C.
D	6	3	3'-3"	10" C.C.
E	NOT USED	NOT USED	NOT USED	NOT USED
F	4	3	6'-8"	8" C.C.

PROVIDE 2" MIN. COVER FOR TOP AND SIDES

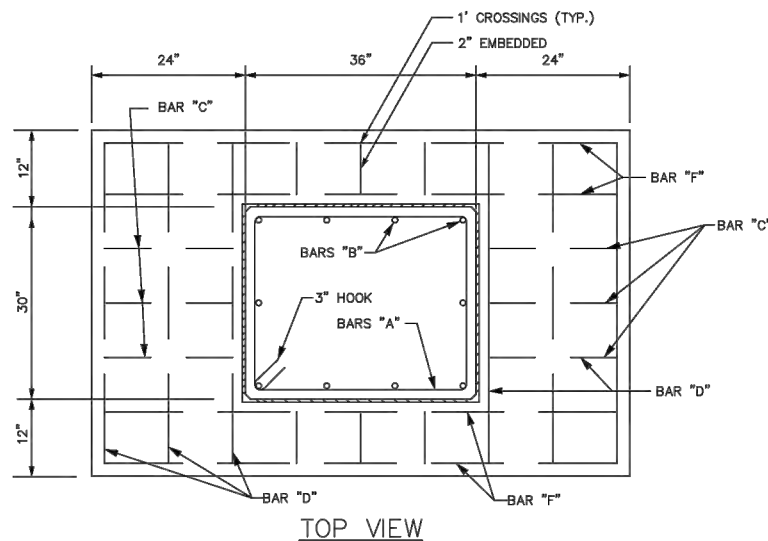


TOP VIEW

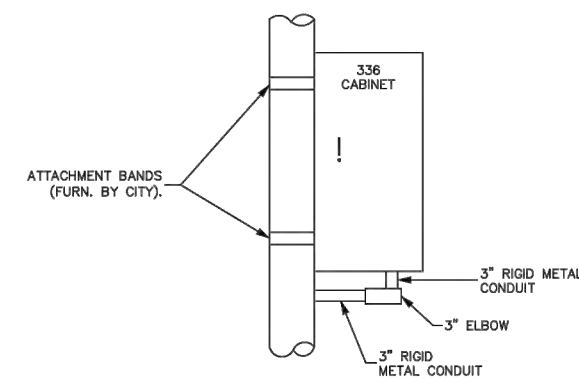
2'-6" X 3'-0" CABINET FOUNDATION WITH APRONS



CONDUIT DETAIL



TOP VIEW



336 CABINET POLE MOUNTED

(CABINET IS BANDED TO POLE)

FOR CABINETS MOUNTED TO TIMBER POLES, USE ATTACHMENT METHODS APPROVED BY MANUFACTURER OF CABINET



CITY OF FORT WORTH, TEXAS
TRAFFIC SIGNAL
TYPE 352i CABINET
INSTALLATION DETAILS

REVISED: 11-19-2015

34 41 10-D606

DATE	BY	REV	REVISION

DUNAWAY 550 Bailey Avenue
Suite 400
Fort Worth, TX 76107
817-335-1121
(TX REG-F-1114)



PROJ NO. 101264 FILE NO. K-2630

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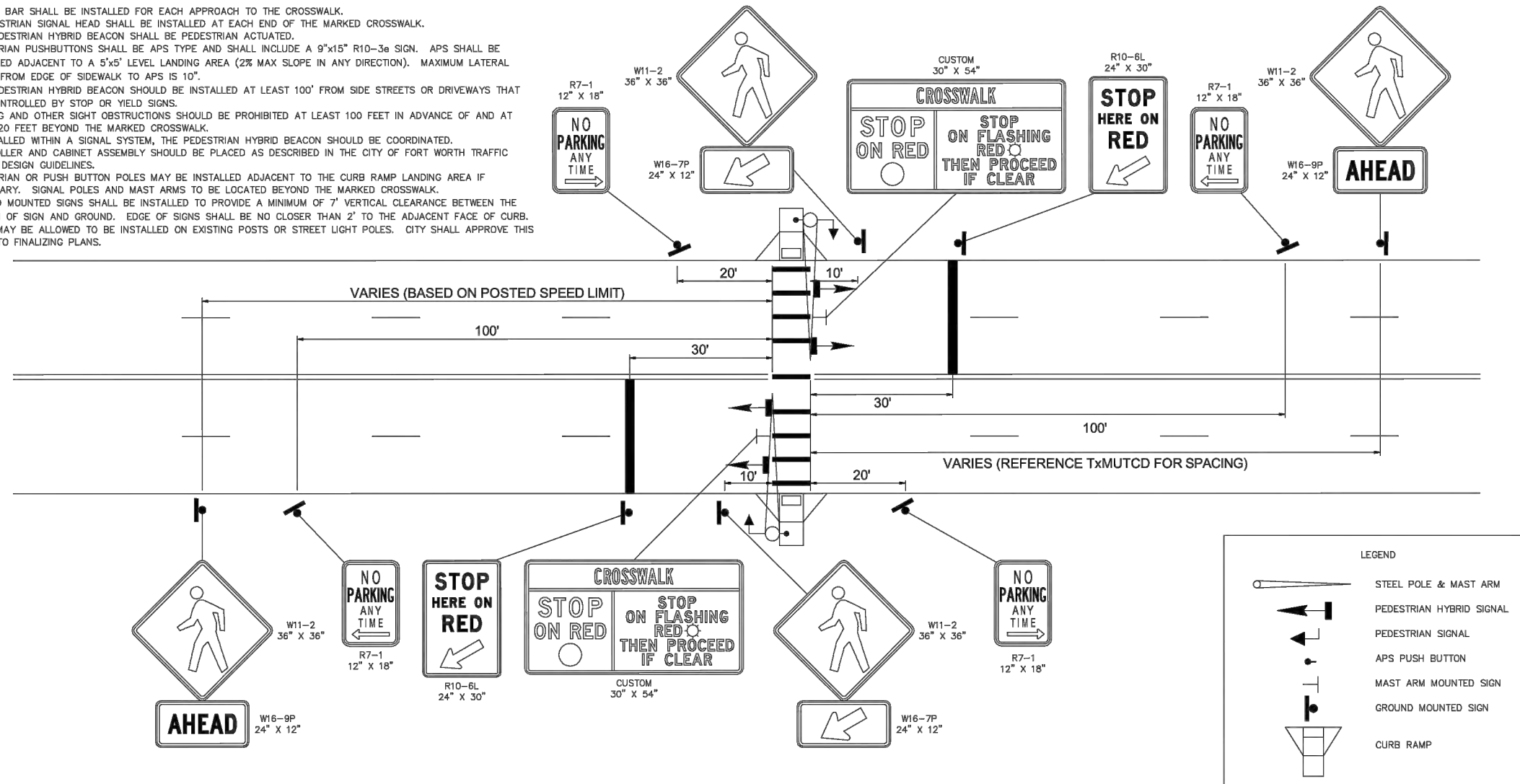
2018 SAFE ROUTES TO SCHOOL IMPROVEMENTS

CFW STANDARD DETAIL D606

FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
6	TEXAS	STP 2021(929)TP			VA
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
FTW	TARRANT	0902	90	082	298

NOTES:

1. REFERENCE THE 2011 TEXAS MUTCD FOR GUIDANCE ON WHEN A PEDESTRIAN HYBRID BEACON (HAWK SIGNAL) IS AN APPROPRIATE TRAFFIC CONTROL DEVICE.
2. REFERENCE CITY OF FORT WORTH STANDARD DETAIL D683 FOR PEDESTRIAN HYBRID BEACON SIGNAL FACE DETAILS.
3. A PEDESTRIAN HYBRID BEACON SHALL ONLY BE INSTALLED AT A MARKED CROSSWALK.
4. REFERENCE CITY OF FORT WORTH STANDARD DETAIL D643 FOR CROSSWALK AND STOP BAR INSTALLATION DETAILS.
5. AT LEAST TWO PEDESTRIAN HYBRID BEACON FACES SHALL BE INSTALLED FOR EACH APPROACH OF THE MAJOR STREET.
6. A STOP BAR SHALL BE INSTALLED FOR EACH APPROACH TO THE CROSSWALK.
7. A PEDESTRIAN SIGNAL HEAD SHALL BE INSTALLED AT EACH END OF THE MARKED CROSSWALK.
8. THE PEDESTRIAN HYBRID BEACON SHALL BE PEDESTRIAN ACTUATED.
9. PEDESTRIAN PUSHBUTTONS SHALL BE APS TYPE AND SHALL INCLUDE A 9"x15" R10-36 SIGN. APS SHALL BE INSTALLED ADJACENT TO A 5'x5' LEVEL LANDING AREA (2% MAX SLOPE IN ANY DIRECTION). MAXIMUM LATERAL REACH FROM EDGE OF SIDEWALK TO APS IS 10".
10. THE PEDESTRIAN HYBRID BEACON SHOULD BE INSTALLED AT LEAST 100' FROM SIDE STREETS OR DRIVEWAYS THAT ARE CONTROLLED BY STOP OR YIELD SIGNS.
11. PARKING AND OTHER SIGHT OBSTRUCTIONS SHOULD BE PROHIBITED AT LEAST 100 FEET IN ADVANCE OF AND AT LEAST 20 FEET BEYOND THE MARKED CROSSWALK.
12. IF INSTALLED WITHIN A SIGNAL SYSTEM, THE PEDESTRIAN HYBRID BEACON SHOULD BE COORDINATED.
13. CONTROLLER AND CABINET ASSEMBLY SHOULD BE PLACED AS DESCRIBED IN THE CITY OF FORT WORTH TRAFFIC SIGNAL DESIGN GUIDELINES.
14. PEDESTRIAN OR PUSH BUTTON POLES MAY BE INSTALLED ADJACENT TO THE CURB RAMP LANDING AREA IF NECESSARY. SIGNAL POLES AND MAST ARMS TO BE LOCATED BEYOND THE MARKED CROSSWALK.
15. GROUND MOUNTED SIGNS SHALL BE INSTALLED TO PROVIDE A MINIMUM OF 7' VERTICAL CLEARANCE BETWEEN THE BOTTOM OF SIGN AND GROUND. EDGE OF SIGNS SHALL BE NO CLOSER THAN 2' TO THE ADJACENT FACE OF CURB.
16. SIGNS MAY BE ALLOWED TO BE INSTALLED ON EXISTING POSTS OR STREET LIGHT POLES. CITY SHALL APPROVE THIS PRIOR TO FINALIZING PLANS.



CITY OF FORT WORTH, TEXAS
**PEDESTRIAN HYBRID BEACON
 (HAWK SIGNAL)
 TYPICAL LAYOUT**

DATE: 3/25/16
34 41 16-D688

DATE	BY	REV	REVISION

DUNAWAY 550 Bailey Avenue
 Suite 400
 Fort Worth, TX 76107
 817-335-1121
(TX REG F-1114)

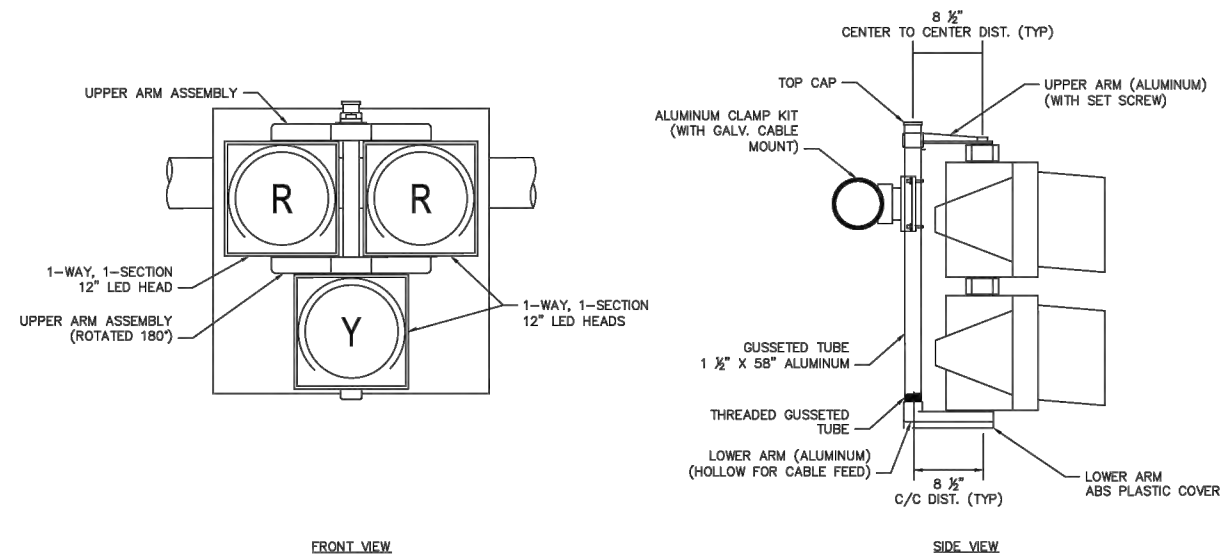
FORT WORTH
 PROJ NO. 101264 FILE NO. K-2630

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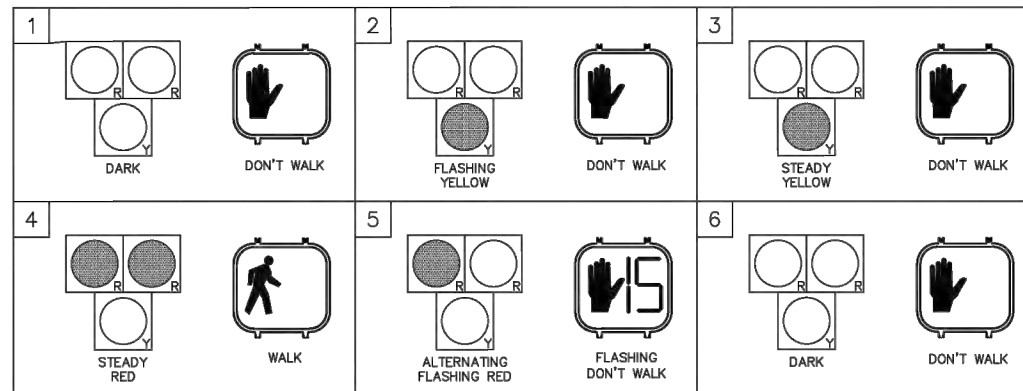
2018 SAFE ROUTES TO SCHOOL IMPROVEMENTS

CFW STANDARD DETAIL D688

FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
6	TEXAS	STP 2021(929)TP	VA		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
FTW	TARRANT	0902	90	082	299



HAWK BEACON DETAIL



SEQUENCE FOR A HAWK SIGNAL

NOTE: PUSH BUTTONS FOR HAWK SIGNALS SHALL BE APS TYPE



CITY OF FORT WORTH, TEXAS
**PEDESTRIAN HYBRID
 SIGNAL (HAWK) DETAILS**

DATE: 11-19-2015

34 41 16-D683

DATE	BY	REV	REVISION

DUNAWAY 550 Bailey Avenue
 Suite 400
 Fort Worth, TX 76107
 817-335-1121
(TX REG-F-1114)



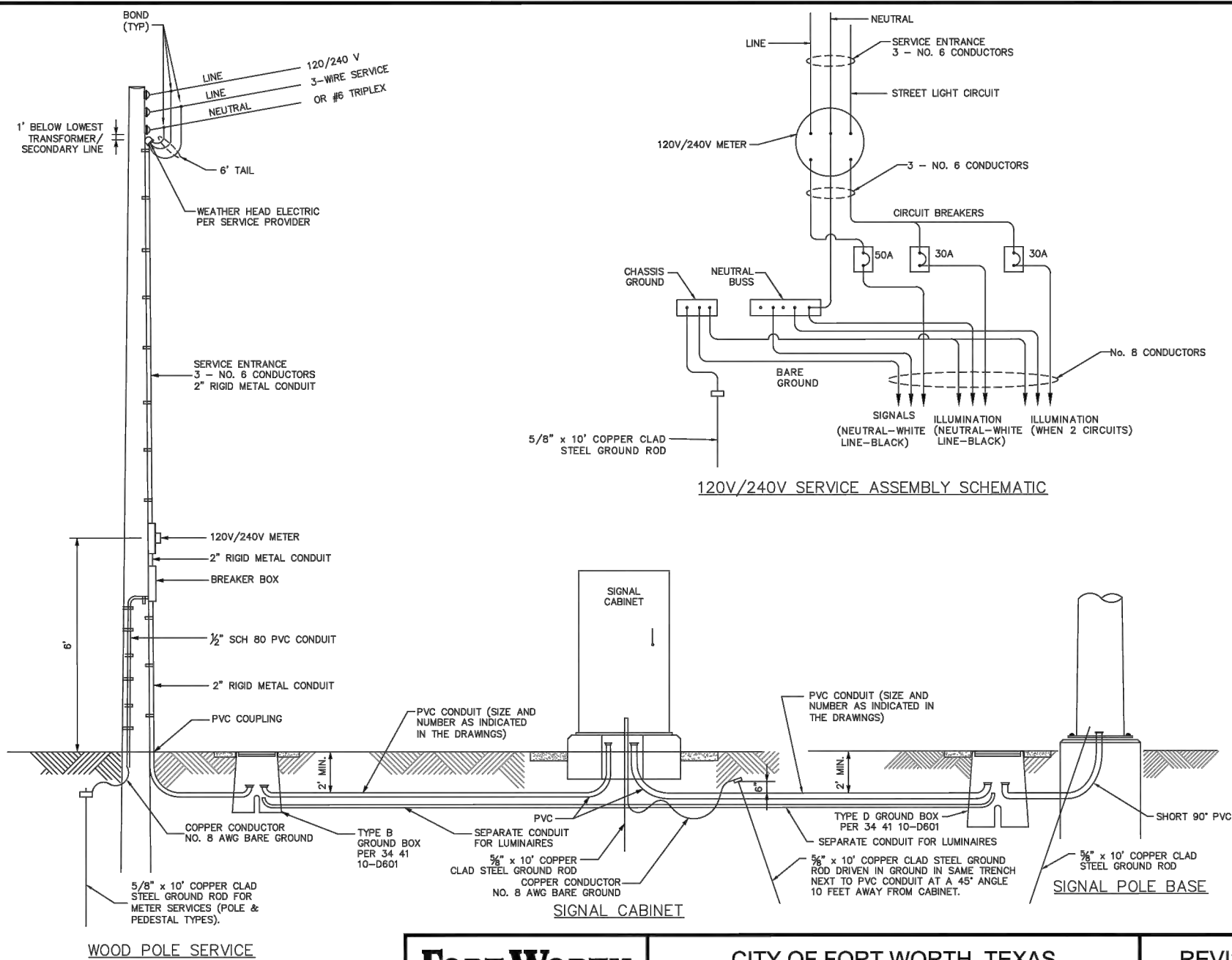
PROJ NO. 101264 FILE NO. K-2630

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2018 SAFE ROUTES TO SCHOOL IMPROVEMENTS

CFW STANDARD DETAIL D683

FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
6	TEXAS	STP 2021(929)TP			VA
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
FTW	TARRANT	0902	90	082	300



CITY OF FORT WORTH, TEXAS
**TRAFFIC SIGNAL
 ELECTRICAL SERVICE DETAILS**

REVISED: 11-19-2015
34 41 10-D602

DATE	BY	REV	REVISION

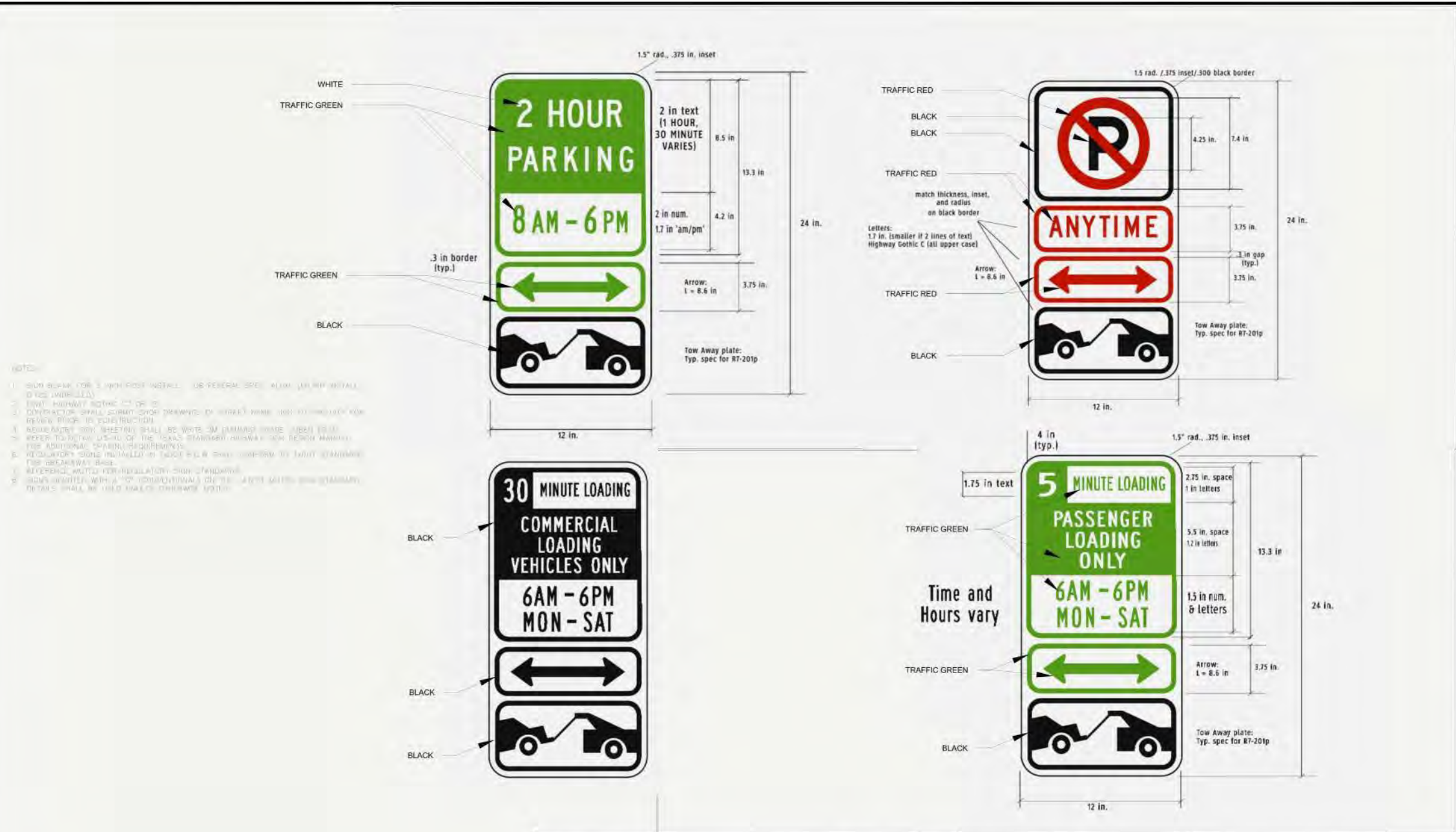
DUNAWAY 550 Bailey Avenue
 Suite 400
 Fort Worth, TX 76107
 817-335-1121
(TX REG-F-1114)

FORT WORTH
 PROJ NO. 101264 FILE NO. K-2630
 Texas Department of Transportation
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2018 SAFE ROUTES TO SCHOOL IMPROVEMENTS

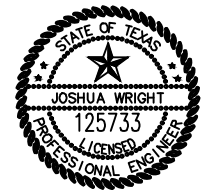
CFW STANDARD DETAIL D602

FED. RD. DIV. NO.	STATE	PROJECT NO.		HIGHWAY NO.	
6	TEXAS	STP 2021(929)TP		VA	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
FTW	TARRANT	0902	90	082	301



- NOTES:
1. SIGN BOARD FOR 2 HOUR PARKING: USE FEDERAL SPEC ALUM. (A) WITH INITIAL D US (A) (B) (C) (D)
 2. EIGHT HIGHWAY ROUTE (H) OR (R)
 3. CONTRACTOR SHALL VERIFY SIGN DRAWING OR WORKED DRAWING FOR APPROVAL PRIOR TO CONSTRUCTION
 4. ALUMINUM SIGN SHEETING SHALL BE WHITE OR (A) (B) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z) (AA) (AB) (AC) (AD) (AE) (AF) (AG) (AH) (AI) (AJ) (AK) (AL) (AM) (AN) (AO) (AP) (AQ) (AR) (AS) (AT) (AU) (AV) (AW) (AX) (AY) (AZ) (BA) (BB) (BC) (BD) (BE) (BF) (BG) (BH) (BI) (BJ) (BK) (BL) (BM) (BN) (BO) (BP) (BQ) (BR) (BS) (BT) (BU) (BV) (BW) (BX) (BY) (BZ) (CA) (CB) (CC) (CD) (CE) (CF) (CG) (CH) (CI) (CJ) (CK) (CL) (CM) (CN) (CO) (CP) (CQ) (CR) (CS) (CT) (CU) (CV) (CW) (CX) (CY) (CZ) (DA) (DB) (DC) (DD) (DE) (DF) (DG) (DH) (DI) (DJ) (DK) (DL) (DM) (DN) (DO) (DP) (DQ) (DR) (DS) (DT) (DU) (DV) (DW) (DX) (DY) (DZ) (EA) (EB) (EC) (ED) (EE) (EF) (EG) (EH) (EI) (EJ) (EK) (EL) (EM) (EN) (EO) (EP) (EQ) (ER) (ES) (ET) (EU) (EV) (EW) (EX) (EY) (EZ) (FA) (FB) (FC) (FD) (FE) (FF) (FG) (FH) (FI) (FJ) (FK) (FL) (FM) (FN) (FO) (FP) (FQ) (FR) (FS) (FT) (FU) (FV) (FW) (FX) (FY) (FZ) (GA) (GB) (GC) (GD) (GE) (GF) (GG) (GH) (GI) (GJ) (GK) (GL) (GM) (GN) (GO) (GP) (GQ) (GR) (GS) (GT) (GU) (GV) (GW) (GX) (GY) (GZ) (HA) (HB) (HC) (HD) (HE) (HF) (HG) (HH) (HI) (HJ) (HK) (HL) (HM) (HN) (HO) (HP) (HQ) (HR) (HS) (HT) (HU) (HV) (HW) (HX) (HY) (HZ) (IA) (IB) (IC) (ID) (IE) (IF) (IG) (IH) (II) (IJ) (IK) (IL) (IM) (IN) (IO) (IP) (IQ) (IR) (IS) (IT) (IU) (IV) (IW) (IX) (IY) (IZ) (JA) (JB) (JC) (JD) (JE) (JF) (JG) (JH) (JI) (JJ) (JK) (JL) (JM) (JN) (JO) (JP) (JQ) (JR) (JS) (JT) (JU) (JV) (JW) (JX) (JY) (JZ) (KA) (KB) (KC) (KD) (KE) (KF) (KG) (KH) (KI) (KJ) (KK) (KL) (KM) (KN) (KO) (KP) (KQ) (KR) (KS) (KT) (KU) (KV) (KW) (KX) (KY) (KZ) (LA) (LB) (LC) (LD) (LE) (LF) (LG) (LH) (LI) (LJ) (LK) (LL) (LM) (LN) (LO) (LP) (LQ) (LR) (LS) (LT) (LU) (LV) (LW) (LX) (LY) (LZ) (MA) (MB) (MC) (MD) (ME) (MF) (MG) (MH) (MI) (MJ) (MK) (ML) (MM) (MN) (MO) (MP) (MQ) (MR) (MS) (MT) (MU) (MV) (MW) (MX) (MY) (MZ) (NA) (NB) (NC) (ND) (NE) (NF) (NG) (NH) (NI) (NJ) (NK) (NL) (NM) (NN) (NO) (NP) (NQ) (NR) (NS) (NT) (NU) (NV) (NW) (NX) (NY) (NZ) (OA) (OB) (OC) (OD) (OE) (OF) (OG) (OH) (OI) (OJ) (OK) (OL) (OM) (ON) (OO) (OP) (OQ) (OR) (OS) (OT) (OU) (OV) (OW) (OX) (OY) (OZ) (PA) (PB) (PC) (PD) (PE) (PF) (PG) (PH) (PI) (PJ) (PK) (PL) (PM) (PN) (PO) (PP) (PQ) (PR) (PS) (PT) (PU) (PV) (PW) (PX) (PY) (PZ) (QA) (QB) (QC) (QD) (QE) (QF) (QG) (QH) (QI) (QJ) (QK) (QL) (QM) (QN) (QO) (QP) (QQ) (QR) (QS) (QT) (QU) (QV) (QW) (QX) (QY) (QZ) (RA) (RB) (RC) (RD) (RE) (RF) (RG) (RH) (RI) (RJ) (RK) (RL) (RM) (RN) (RO) (RP) (RQ) (RR) (RS) (RT) (RU) (RV) (RW) (RX) (RY) (RZ) (SA) (SB) (SC) (SD) (SE) (SF) (SG) (SH) (SI) (SJ) (SK) (SL) (SM) (SN) (SO) (SP) (SQ) (SR) (SS) (ST) (SU) (SV) (SW) (SX) (SY) (SZ) (TA) (TB) (TC) (TD) (TE) (TF) (TG) (TH) (TI) (TJ) (TK) (TL) (TM) (TN) (TO) (TP) (TQ) (TR) (TS) (TT) (TU) (TV) (TW) (TX) (TY) (TZ) (UA) (UB) (UC) (UD) (UE) (UF) (UG) (UH) (UI) (UJ) (UK) (UL) (UM) (UN) (UO) (UP) (UQ) (UR) (US) (UT) (UU) (UV) (UW) (UX) (UY) (UZ) (VA) (VB) (VC) (VD) (VE) (VF) (VG) (VH) (VI) (VJ) (VK) (VL) (VM) (VN) (VO) (VP) (VQ) (VR) (VS) (VT) (VU) (VV) (VW) (VX) (VY) (VZ) (WA) (WB) (WC) (WD) (WE) (WF) (WG) (WH) (WI) (WJ) (WK) (WL) (WM) (WN) (WO) (WP) (WQ) (WR) (WS) (WT) (WU) (WV) (WW) (WX) (WY) (WZ) (XA) (XB) (XC) (XD) (XE) (XF) (XG) (XH) (XI) (XJ) (XK) (XL) (XM) (XN) (XO) (XP) (XQ) (XR) (XS) (XT) (XU) (XV) (XW) (XX) (XY) (XZ) (YA) (YB) (YC) (YD) (YE) (YF) (YG) (YH) (YI) (YJ) (YK) (YL) (YM) (YN) (YO) (YP) (YQ) (YR) (YS) (YT) (YU) (YV) (YW) (YX) (YY) (YZ) (ZA) (ZB) (ZC) (ZD) (ZE) (ZF) (ZG) (ZH) (ZI) (ZJ) (ZK) (ZL) (ZM) (ZN) (ZO) (ZP) (ZQ) (ZR) (ZS) (ZT) (ZU) (ZV) (ZW) (ZX) (ZY) (ZZ)

	CITY OF FORT WORTH, TEXAS	DATE: 6-8-2015
	STANDARD PARKING SIGNS	34 41 30-D685



PROJECT ENGINEER
 6/11/2021
 DATE

DATE	BY	REV	REVISION

550 Bailey Avenue
 Suite 400
 Fort Worth, TX 76107
 817-335-1121

PROJ NO. 101264 FILE NO. K-2630

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CFW STANDARD DETAIL D686

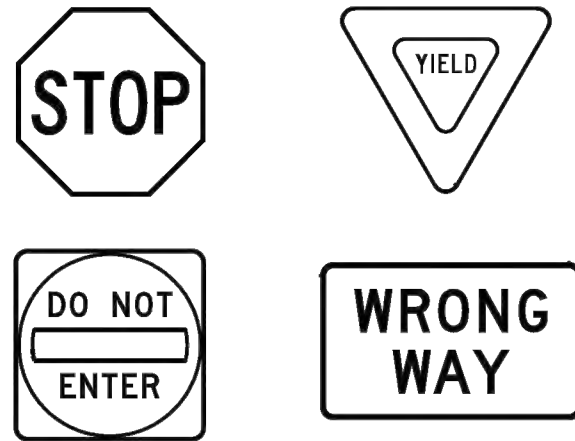
FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
6	TEXAS	STP 2021(929)TP			VA
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
FTW	TARRANT	0902	90	082	302

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DATE: FILE:

REQUIREMENTS FOR RED BACKGROUND REGULATORY SIGNS

(STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



REQUIREMENTS FOR FOUR SPECIFIC SIGNS ONLY

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	WHITE	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE B OR C SHEETING
LEGEND	RED	TYPE B OR C SHEETING

REQUIREMENTS FOR WHITE BACKGROUND REGULATORY SIGNS

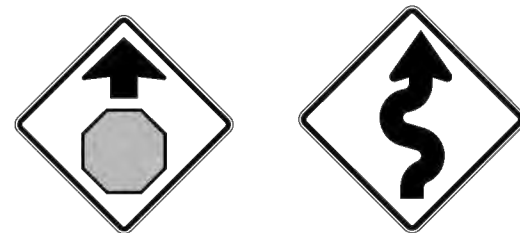
(EXCLUDING STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND, BORDERS AND SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR WARNING SIGNS



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	FLOURESCENT YELLOW	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR SCHOOL SIGNS



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	FLOURESCENT YELLOW GREEN	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
SYMBOLS	RED	TYPE B OR C SHEETING

GENERAL NOTES

- Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
- Sign legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod or F).
- Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
- Black legend and borders shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
- White legend and borders shall be applied by screening process with transparent colored ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof.
- Colored legend shall be applied by screening process with transparent colored ink, transparent colored overlay film or colored sheeting to background sheeting, or combination thereof.
- Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
- Mounting details for roadside mounted signs are shown in the "SMD series" Standard Plan Sheets.

ALUMINUM SIGN BLANKS THICKNESS

Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

DEPARTMENTAL MATERIAL SPECIFICATIONS

ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

<http://www.txdot.gov/>

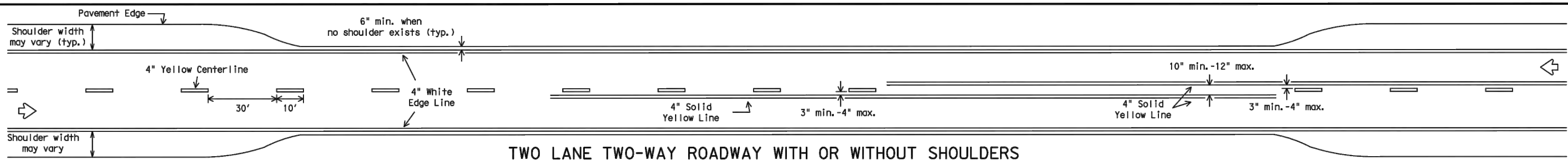


TYPICAL SIGN REQUIREMENTS

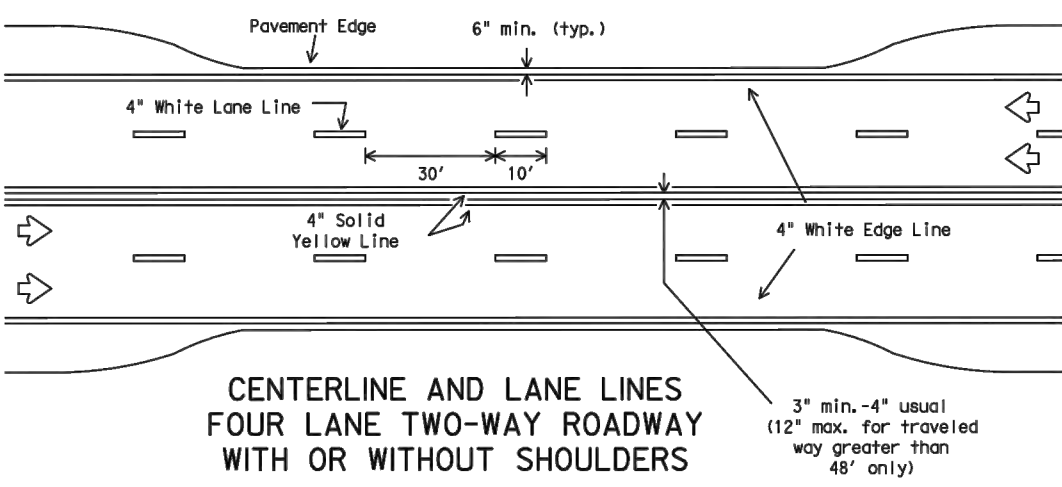
TSR (4) - 13

FILE#	tsr4-13.dgn	DN#	TxDOT	CK#	TxDOT	DW#	TxDOT	CK#	TxDOT
© TxDOT	October 2003	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0902	90	082	N/A				
12-03	7-13	DIST	COUNTY	SHEET NO.					
9-08		FTW	TARRANT	303					

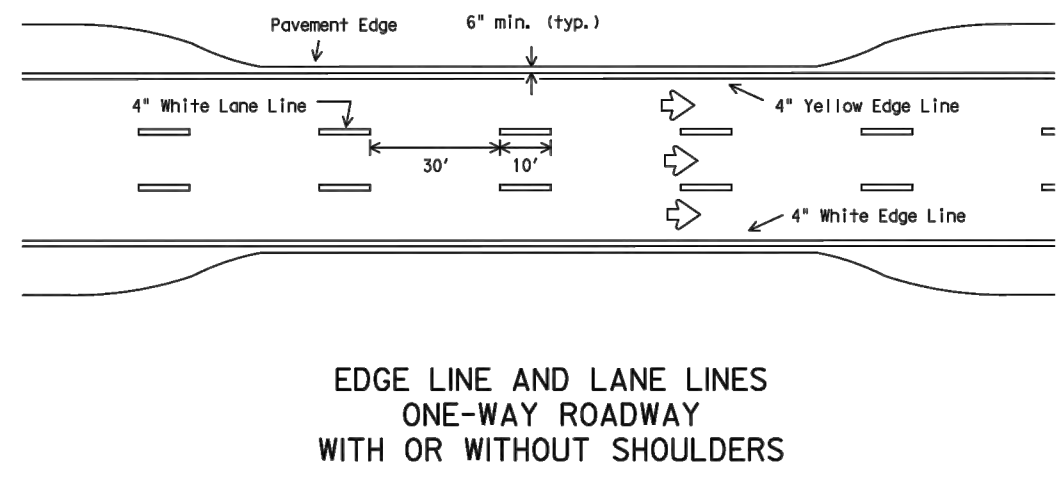
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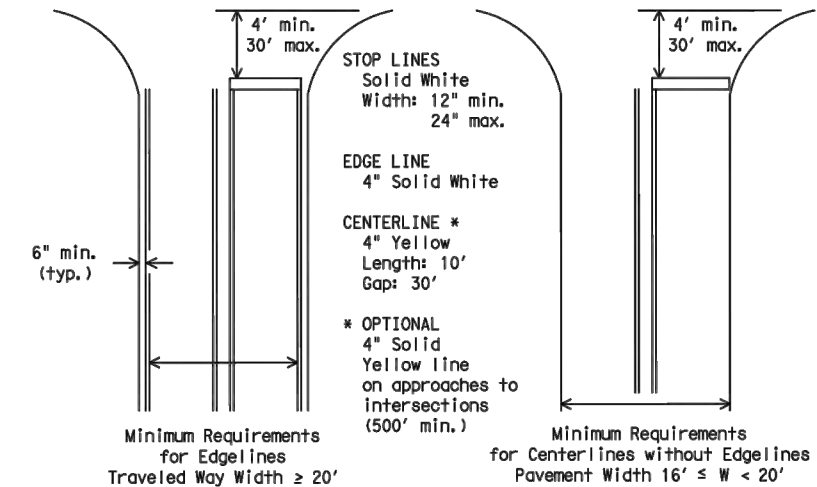
TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



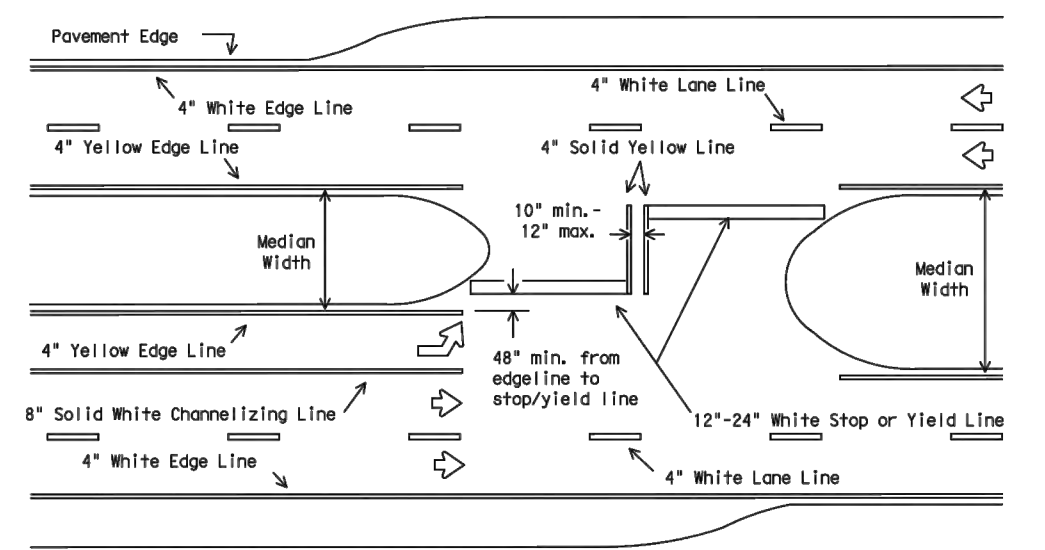
CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS

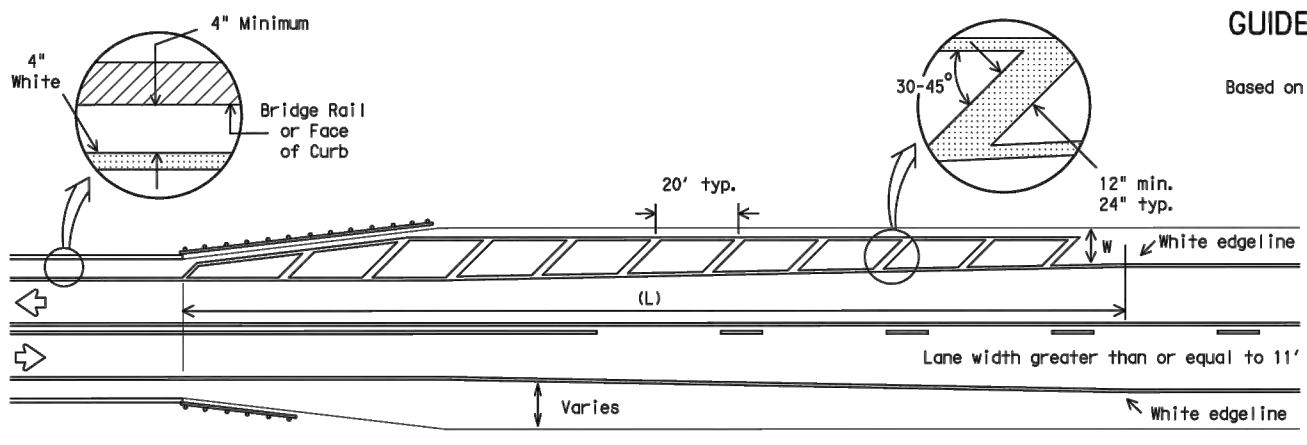


GUIDE FOR PLACEMENT OF STOP LINES,
EDGE LINE & CENTERLINE
Based on Traveled Way and Pavement Widths for Undivided Highways



FOUR LANE DIVIDED ROADWAY INTERSECTIONS

All medians shall be field measured to determine the location of necessary striping. Stop/Yield bars and centerlines shall be placed when the median width is greater than 30 ft. The median width is defined as the area between two roadways of a divided highway measured from edge of traveled way to edge of traveled way. The median excludes turn lanes. The median width might be different between intersections, interchanges and of opposite approaches of the same intersection. The narrow median width will be the controlling width to determine if markings are required.



ROADWAYS WITH REDUCED SHOULDER
WIDTHS ACROSS BRIDGE OR CULVERT

- NOTES:
- No-passing zone on bridge approach is optional but if used, it shall be a minimum 500 feet long.
 - For crosshatching length (L) see Table 1.
 - The width of the offset (W) and the required crosshatching width is the full shoulder width in advance of the bridge.
 - The crosshatching is not required if delineators or barrier reflectors are used along the structure.
 - For guard fence details, refer elsewhere in the plans.

TABLE 1 - TYPICAL LENGTH (L)

Posted Speed *	Formula
≤ 40	$L = \frac{WS^2}{60}$
≥ 45	$L = WS$

* 85th Percentile Speed may be used on roads where traffic speeds normally exceed the posted speed limit. Crosshatching length should be rounded up to nearest 5 foot increment.
L=Length of Crosshatching (FT.) W=Width of Offset (FT.) S=Posted Speed (MPH)

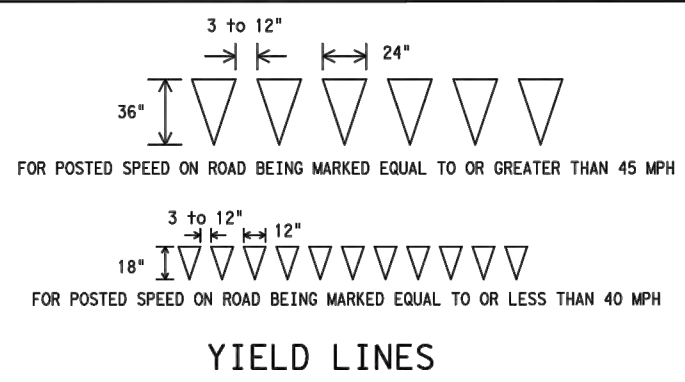
EXAMPLES:
An 8 foot shoulder in advance of a bridge reduces to 4 feet on a 70 MPH roadway. The length of the crosshatching should be:
 $L = 8 \times 70 = 560$ ft.
A 4 foot shoulder in advance of a bridge reduces to 2 feet on a 40 MPH roadway. The length of the crosshatching should be:
 $L = 4(40)^2 / 60 = 106.67$ ft. rounded to 110 ft.

GENERAL NOTES

- Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should typically be placed a minimum of 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.
- The traveled way includes only that portion of the roadway used for vehicular travel and not the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to inside of edgeline of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



YIELD LINES

Texas Department of Transportation
Traffic Operations Division

TYPICAL STANDARD
PAVEMENT MARKINGS

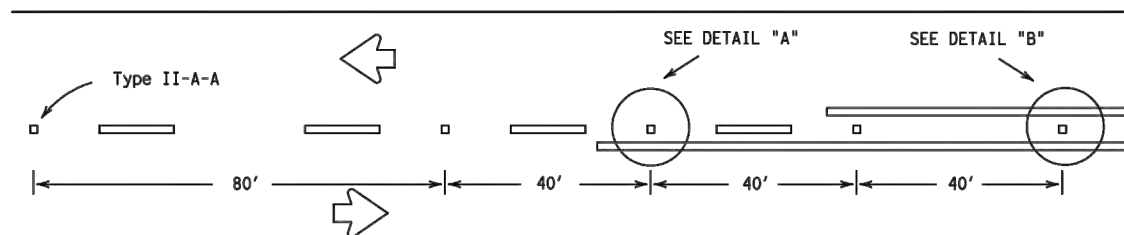
PM(1)-12

© TxDOT November 1978	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
8-95 2-12	0902	90	082	
5-00	DIST	COUNTY		SHEET NO.
8-00				304
3-03				

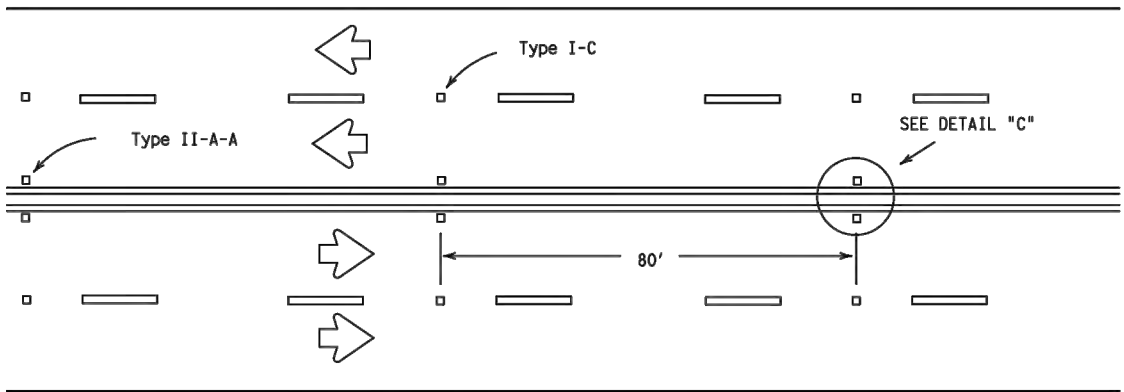
DATE: FILE:

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REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

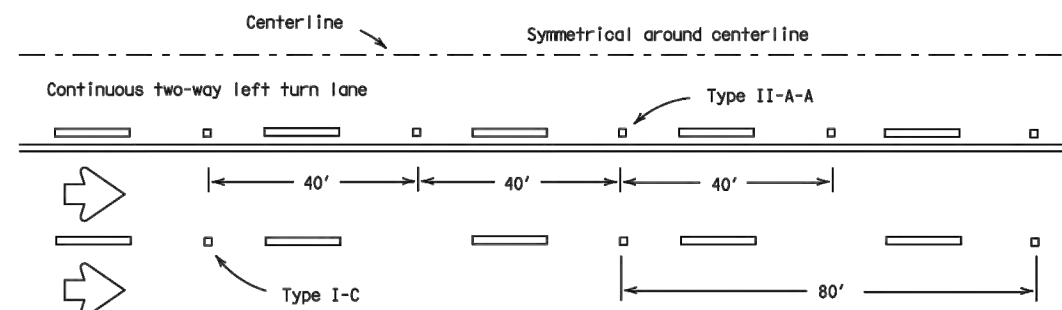


CENTERLINE FOR ALL TWO LANE ROADWAYS

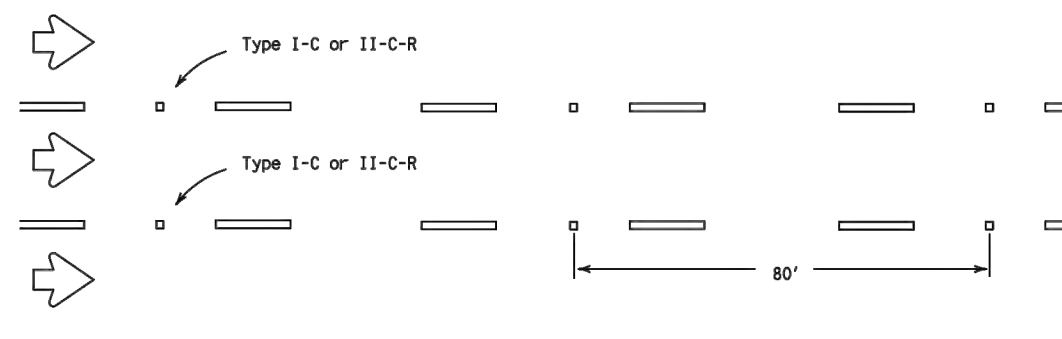


**CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY HIGHWAYS**

Raised pavement marker Type I-C, clear face toward normal traffic, shall be placed on 80-foot centers.

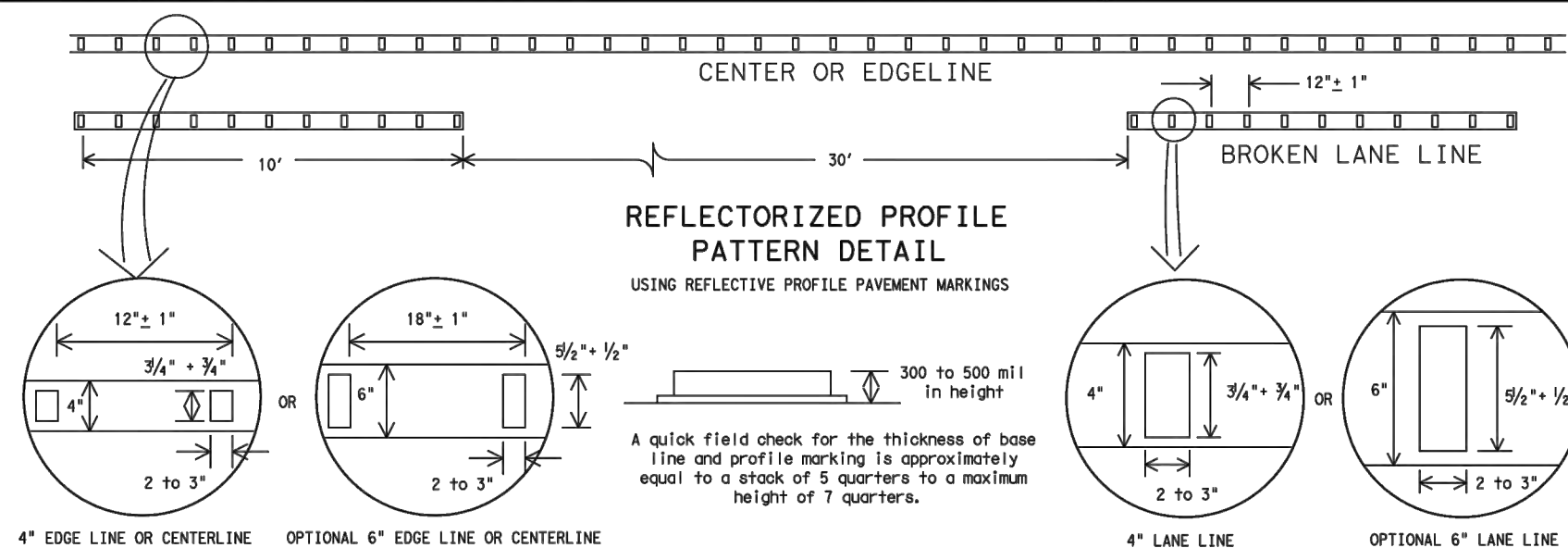
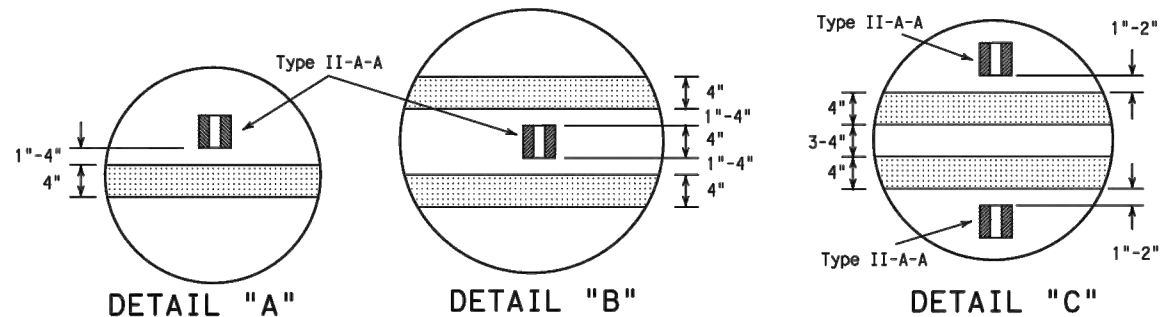


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.



**REFLECTORIZED PROFILE
PATTERN DETAIL**
USING REFLECTIVE PROFILE PAVEMENT MARKINGS

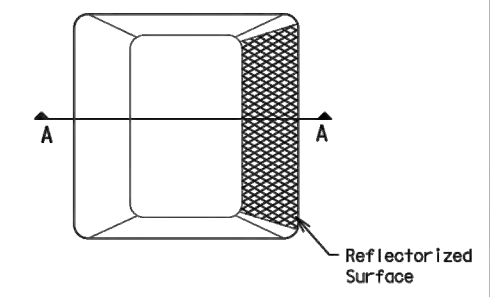
A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

NOTE:
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

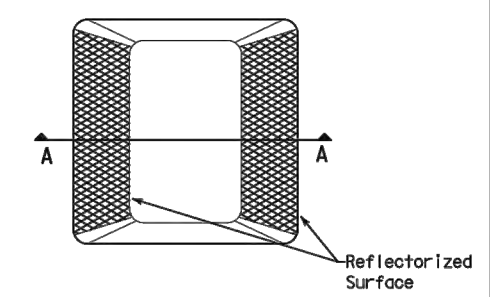
- GENERAL NOTES**
- All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
 - On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

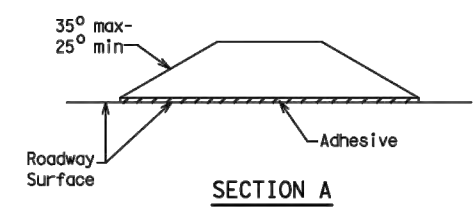
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



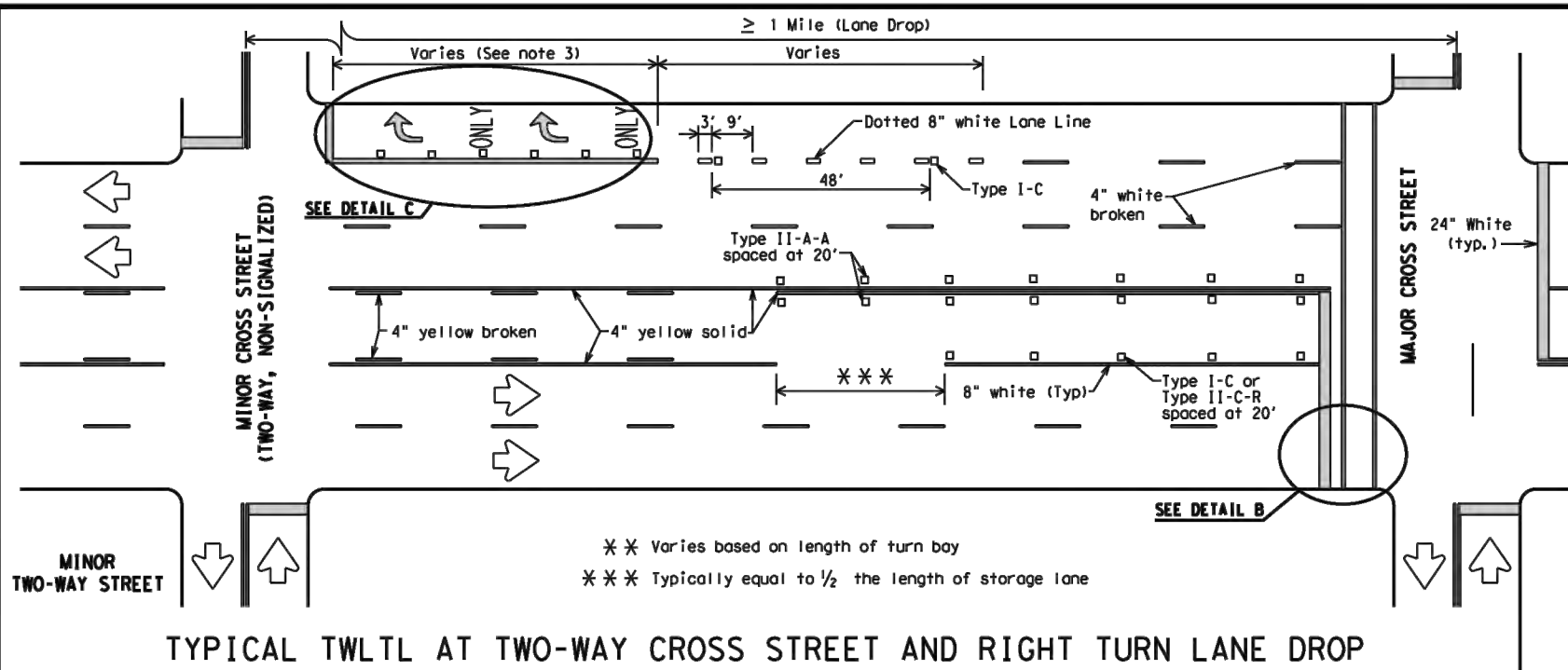
RAISED PAVEMENT MARKERS

Texas Department of Transportation
 Traffic Operations Division
**POSITION GUIDANCE USING
RAISED MARKERS
REFLECTORIZED PROFILE
MARKINGS**
PM(2)-12

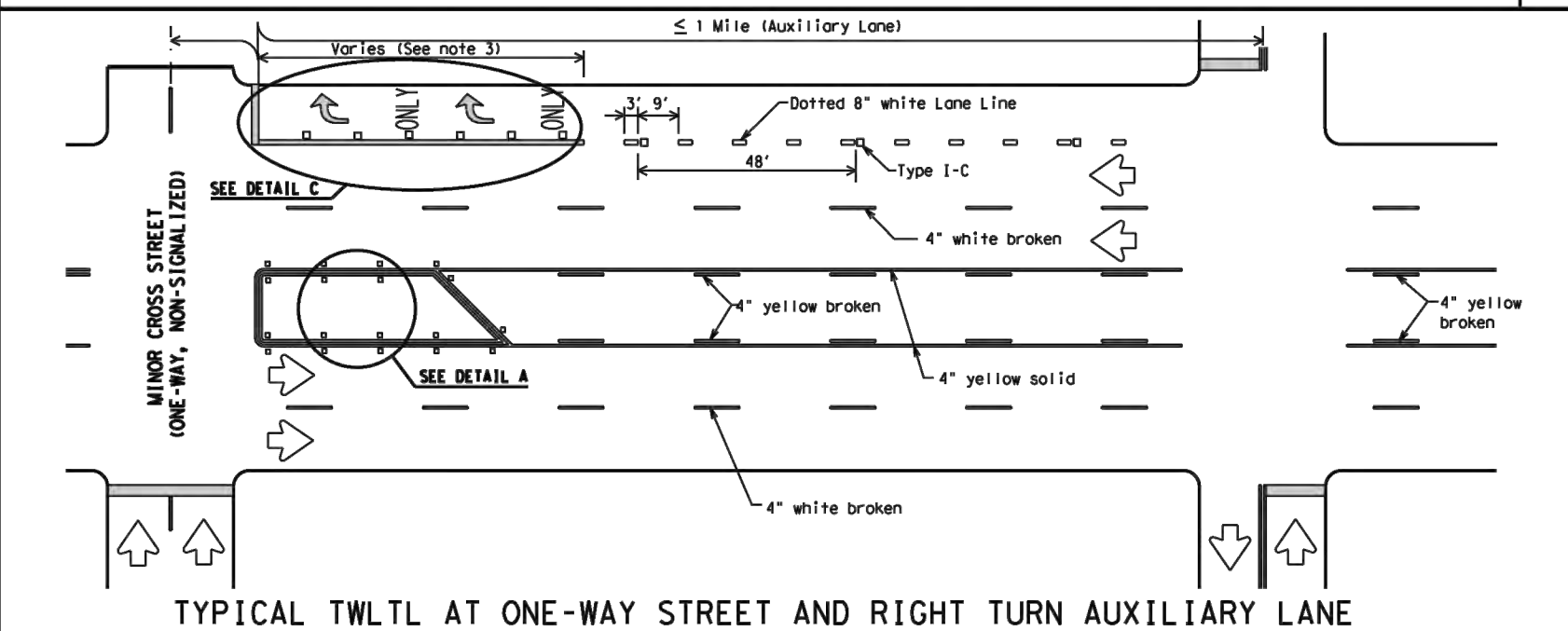
© TxDOT April 1977		DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISONS		CONT	SECT	JOB	HIGHWAY
4-92	2-10	0902	90	082	N/A
5-00	2-12	DIST		COUNTY	SHEET NO.
8-00		FTW		TARRANT	305
2-08					

DATE:
FILE:

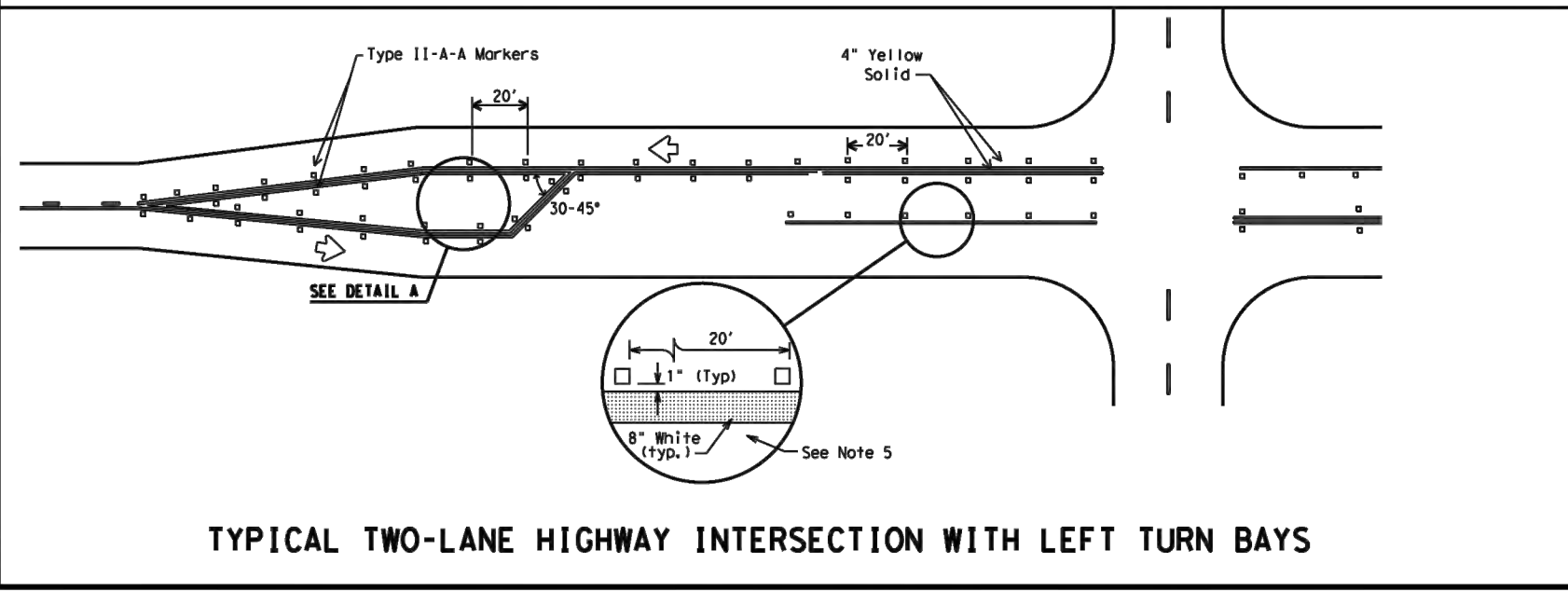
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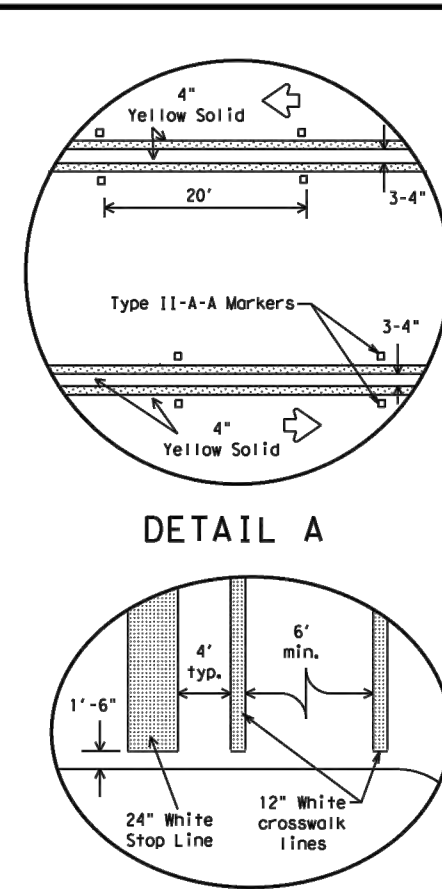
TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



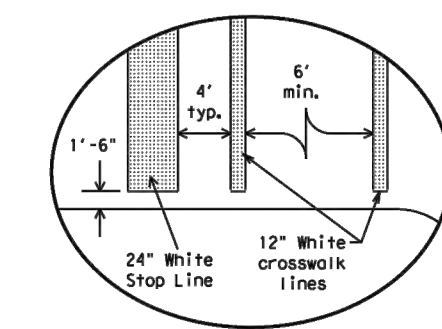
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



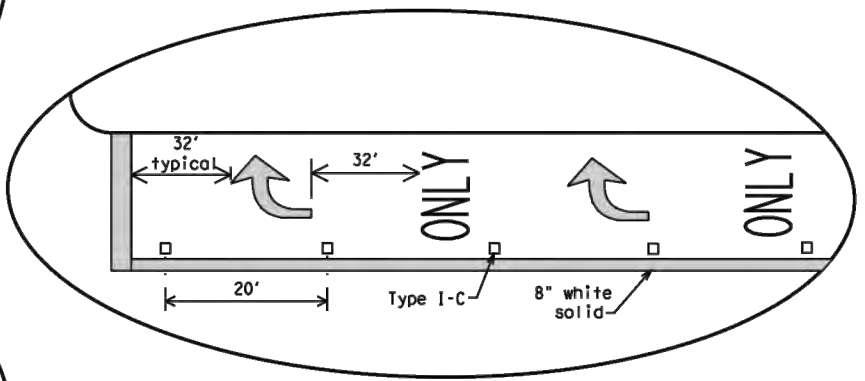
TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS



DETAIL A



DETAIL B



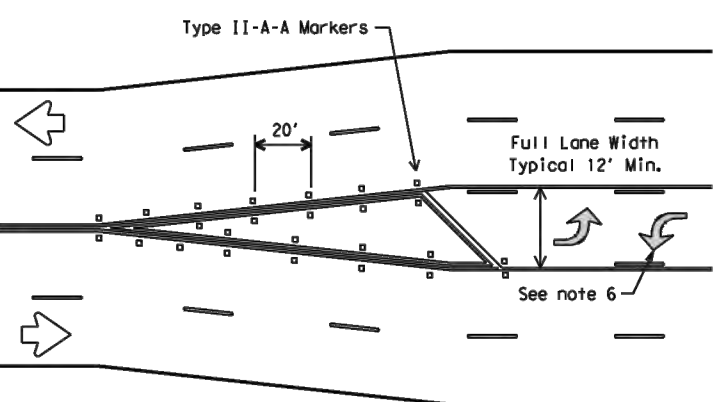
DETAIL C

Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.

- GENERAL NOTES**
- Refer elsewhere in plans for additional RPM placement and details.
 - Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows as shown in the Standard Highway Sign Designs for Texas.
 - When lane used word and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
 - Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used.
 - Raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Raised pavement marker Type II-C-R with divided highways and raised medians.
 - A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.



TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

Texas Department of Transportation
Traffic Operations Division

PAVEMENT MARKINGS FOR TWO-WAY LEFT TURN LANES DIVIDED HIGHWAYS AND RURAL LEFT TURN BAYS

PM(3)-12

© TxDOT April 1998		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
5-00	2-12	0902	90	082	N/A
8-00					
3-03					
2-10					
		DIST	COUNTY		SHEET NO.
		FTW	TARRANT		306

22C

DATE: FILE:

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

- FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
- TWT = Thin-Walled Tubing (see SMD(TWT))
- 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

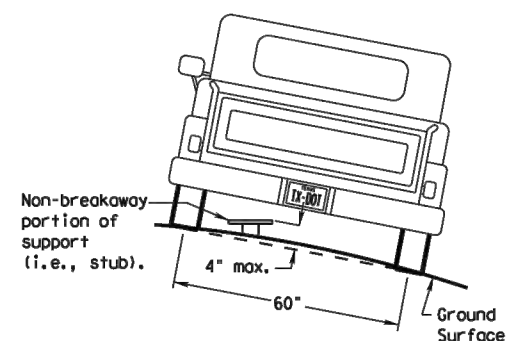
Anchor Type

- UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
- UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
- WS = Wedge Anchor Steel - (see SMD(TWT))
- WP = Wedge Anchor Plastic (see SMD(TWT))
- SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
- SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

- P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
- T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
- U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
- IF REQUIRED
- 1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
- BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
- WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
- EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

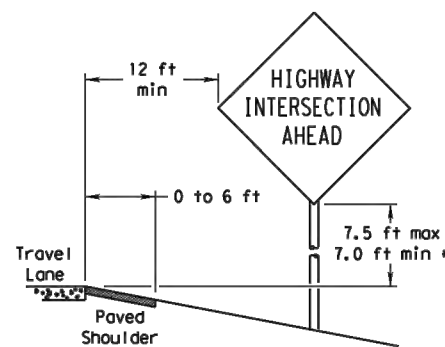
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

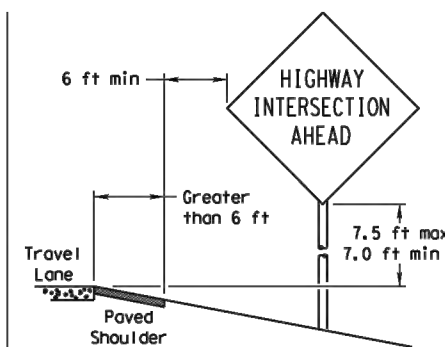
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

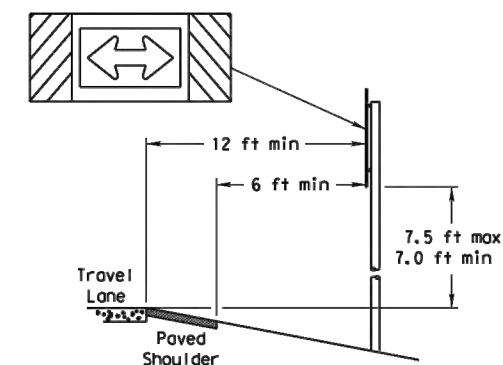
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



GREATER THAN 6 FT. WIDE

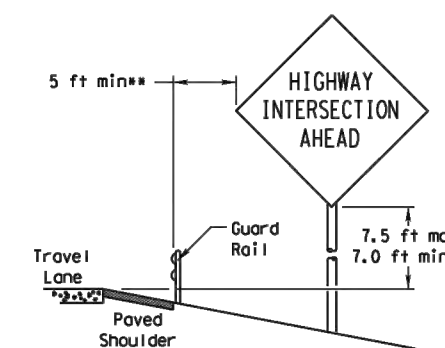
When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

T-INTERSECTION



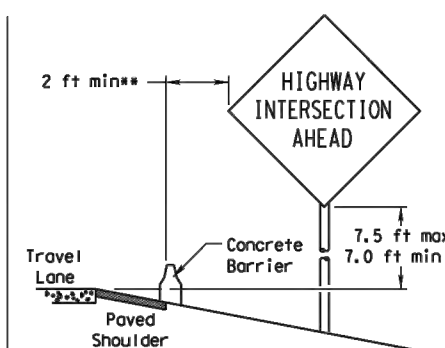
When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.

BEHIND BARRIER

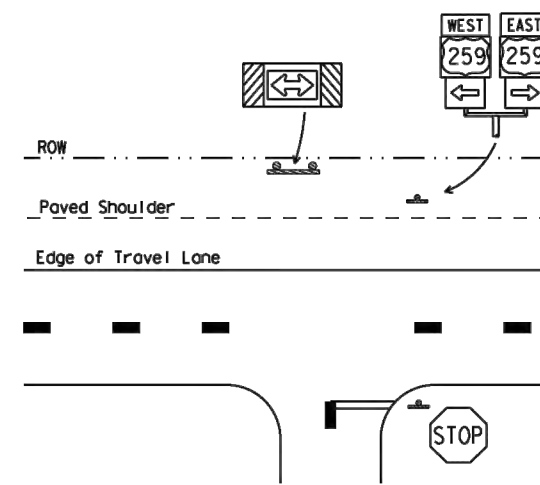


BEHIND GUARDRAIL

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.



BEHIND CONCRETE BARRIER



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

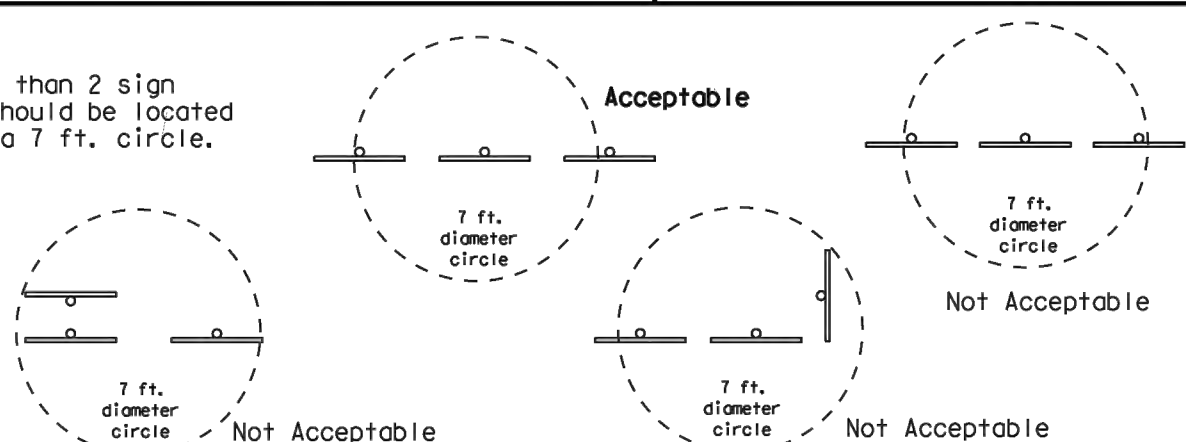
- (1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or
- (2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

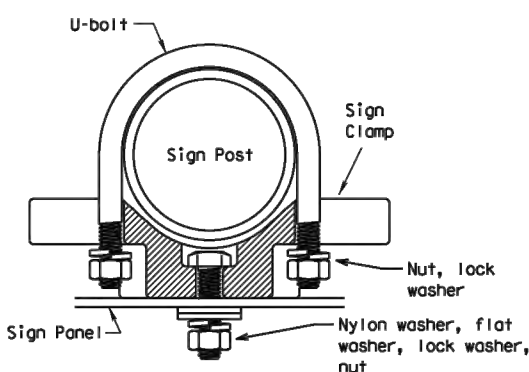
The website address is:
<http://www.txdot.gov/publications/traffic.htm>

No more than 2 sign posts should be located within a 7 ft. circle.

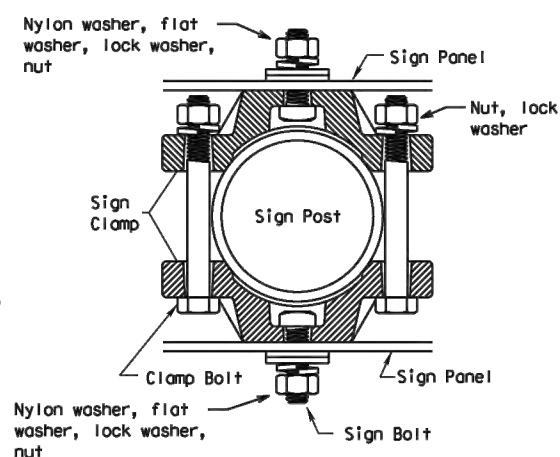


TYPICAL SIGN ATTACHMENT DETAIL

Single Signs



Back-to-Back Signs



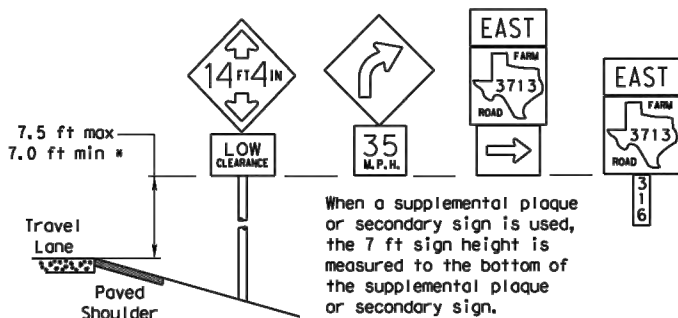
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

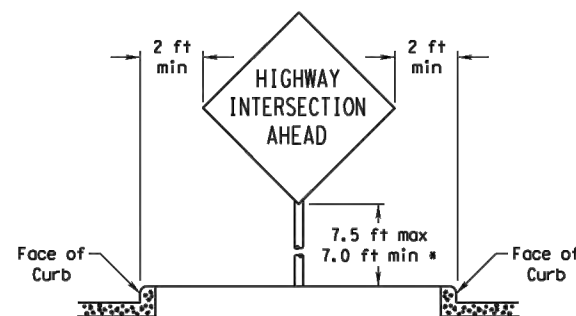
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

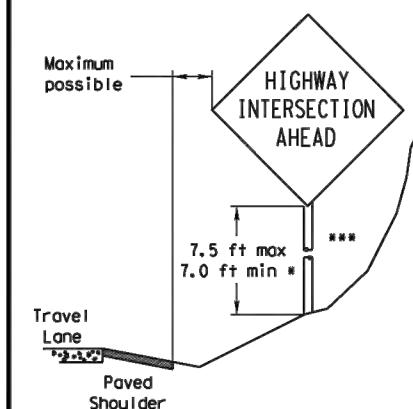


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY (When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

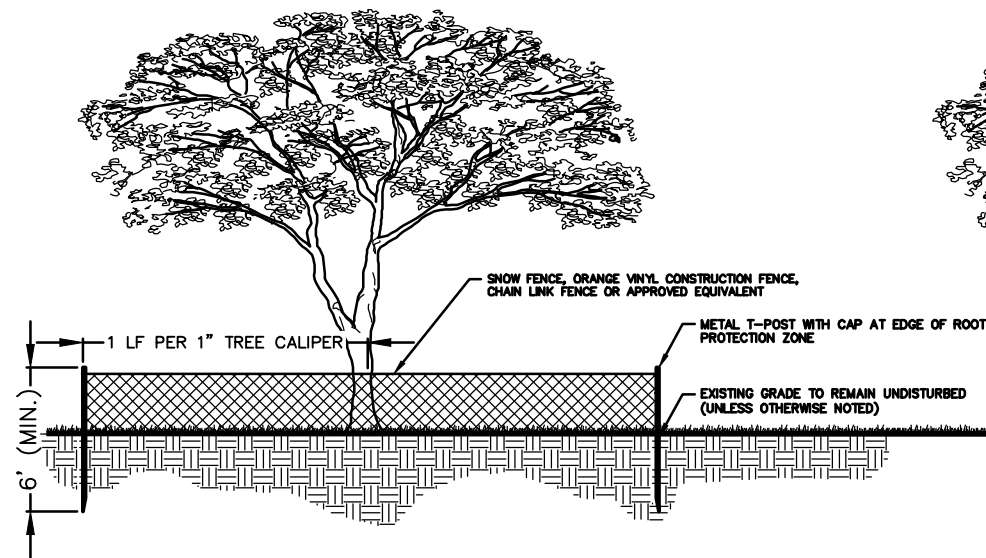
*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

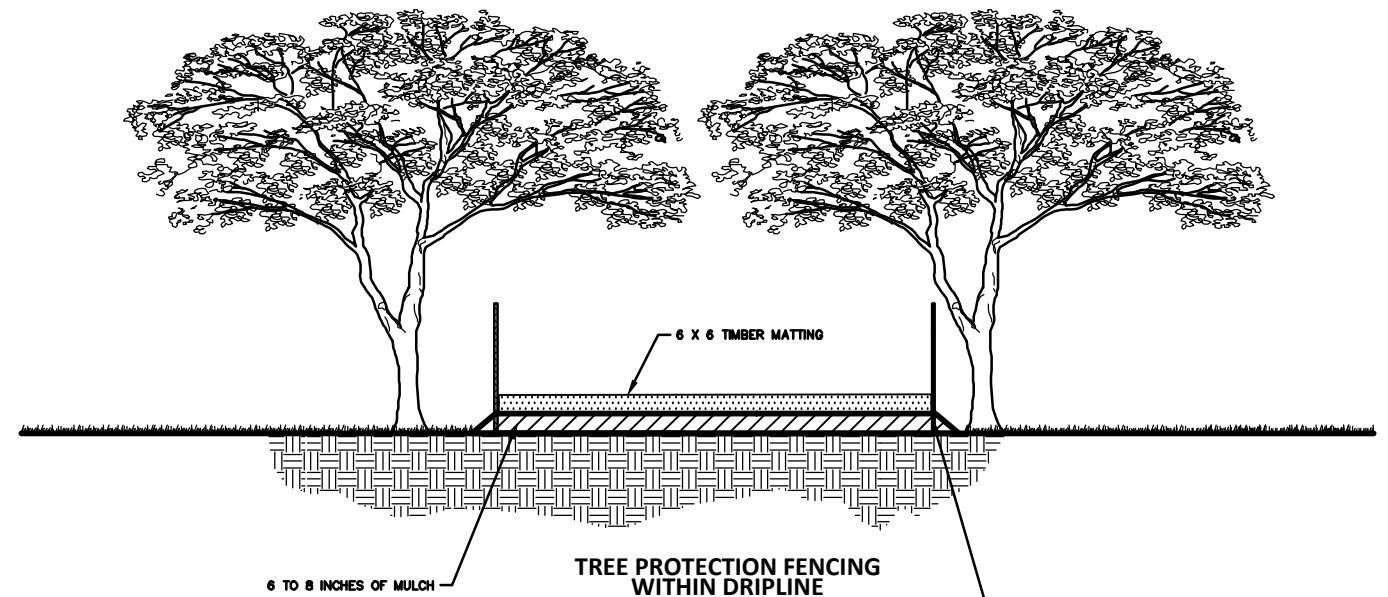
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

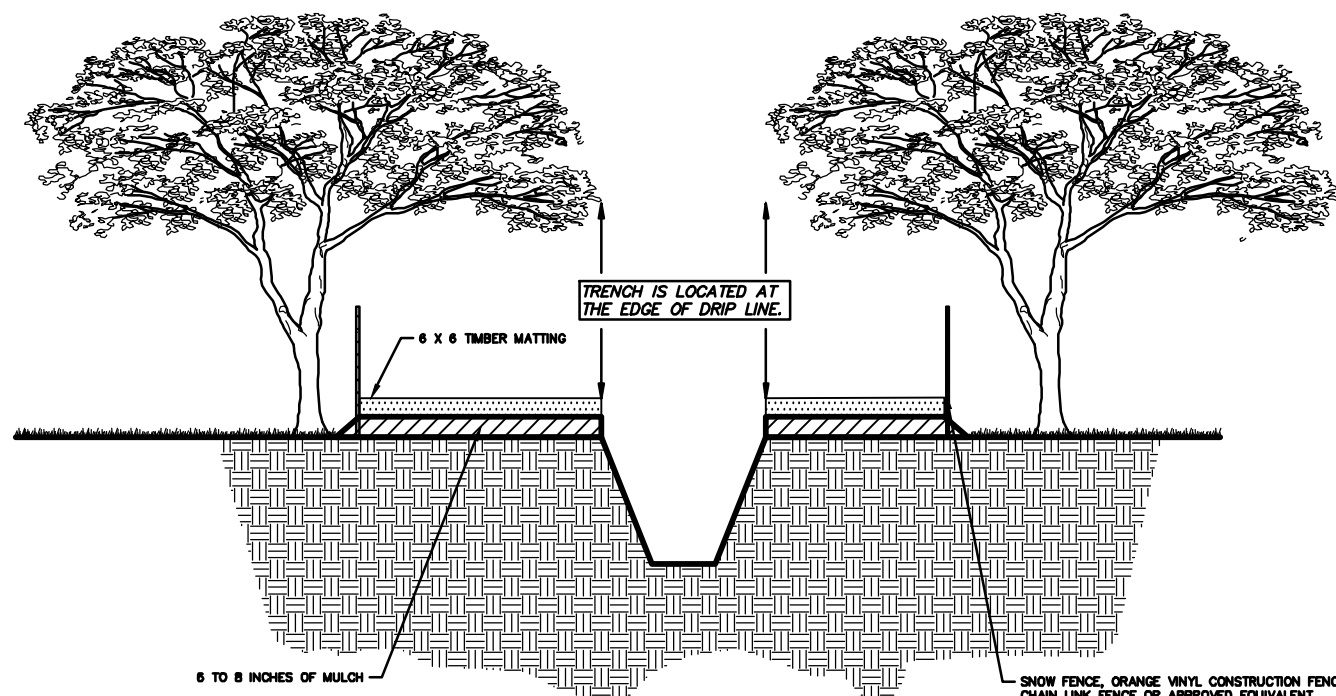
© TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08	REVISIONS	CONT	SECT	JOB
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		DIST	COUNTY	SHEET NO.
		FTW	TARRANT	307



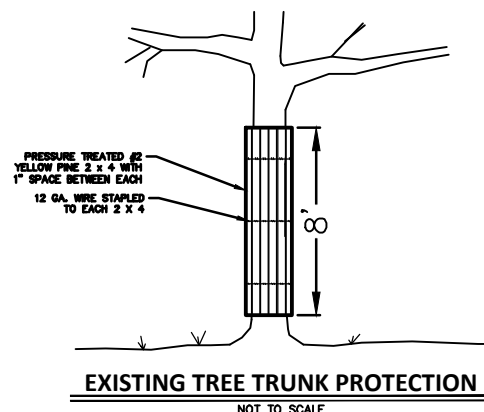
TREE PROTECTION FENCING WITHIN DRIPLINE
NOT TO SCALE



TREE PROTECTION FENCING WITHIN DRIPLINE
NOT TO SCALE



TREE PROTECTION TRENCH DETAIL
NOT TO SCALE



EXISTING TREE TRUNK PROTECTION
NOT TO SCALE

ASSESSMENT OF DAMAGES TO TREES:

1. NO PRUNING OF ANY CITY TREE SHALL BE PERMITTED, UNLESS SPECIFIED OTHERWISE IN THESE SPECIFICATIONS, SEVERE DAMAGE TO TREES WILL RESULT IN REPLACEMENT OR COMPENSATION OF TREES BY THE CONTRACTOR. FAILURE TO REPLACE DAMAGED TREES SHALL BE CONSIDERED A BREACH OF CONTRACT AND CONTRACTOR SHALL BE ASSESSED FOR DAMAGES. SLIGHT OR MODERATE DAMAGE TO TREES WILL RESULT IN ASSESSMENT OF DAMAGES

ASSESSMENT OF DAMAGES TO TREES

- 1.1. THE CONTRACTOR WILL CHECK TREES IN THE CONTRACT AREA BEFORE CONTRACT WORK BEGINS, ANY DAMAGE WILL BE NOTED AND REPORTED TO THE CONTRACT ADMINISTRATOR.
- 1.2. THE CONTRACT ADMINISTRATOR WILL CONDUCT RANDOM CHECKS OF TREES DURING CONTRACT PERIOD.
- 1.3. A CHECK OF ALL TREES MAY BE MADE AT THE END OF THE CONTRACT PERIOD. CITY FORESTER, CONTRACT ADMINISTRATOR, AND CONTRACTOR WILL ATTEND THE INSPECTION.
- 1.4. DAMAGES SHALL BE DOCUMENTED BY MEMO TO THE CITY FORESTER WITH COPY TO CONTRACT FILE AND THE CONTRACTOR.

- 1.5. CONTRACTOR MAY HAVE THE OPTION OF REPLACEMENT OR PAYMENT FOR SEVERELY DAMAGED TREES AT A LOCATION DESIGNATED BY PARD. REPLACEMENT SHALL BE MADE ON CALIPER INCH PER CALIPER INCH BASIS WITH A MINIMUM SIZE OF REPLACEMENT TREE OF 2" IN CALIPER FOR TREES DAMAGED OR REMOVED LESS THAN 30" DBH AND 2" PER INCH ON TREES 30" DBH OR GREATER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLANTING WATERING, MULCHING AND MAINTENANCE OF REPLACEMENT TREES FOR A PERIOD OF NOT LESS THAN 2 YEARS. ANY TREE THAT DOES NOT SURVIVE THE 2 YEAR ESTABLISHMENT PERIOD SHALL BE COMPENSATED FOR BY THE CONTRACTOR TO PARD TREE FUND AT A RATE OF \$200 PER CALIPER INCH.

- 1.6. SLIGHT DAMAGE SHALL BE DEFINED AS DAMAGE, IN THE OPINION OF THE CITY FORESTER THAT MAY HEAL. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: SCARING OF THE TRUNK INTO THE CAMBIAL LAYER 1/4" TO 2" IN WIDTH BUT LESS THAN 1/3 TRUNK CIRCUMFERENCE OR BREAKING OF LIMBS LESS THAN 2" IN DIAMETER OR LIMBS LESS THAN 1/3 TRUNK CALIPER, WHICHEVER IS LESS. SLIGHT DAMAGE SHALL ALSO INCLUDE REMOVAL OR LYING DOWN OF PROTECTIVE TREE FENCING PRIOR TO END OF CONSTRUCTION, STORING EQUIPMENT OR SUPPLIES WITHIN THE CRITICAL ROOT ZONE (CRZ), OR DISPOSING OF PAINT OR CONCRETE WITHIN THE CRZ BUT NOT CLOSER TO THE TRUNK THAN 50% RADIUS OF THE CRZ. SLIGHT DAMAGE TO TREES SHALL BE ASSESSED AT A RATE OF \$100.00 FOR EACH INSTANCE. EACH DAY TREE FENCING IS NOT PROPERLY PLACED, EQUIPMENT OR SUPPLIES ARE STORED WITHIN CRZ OR FILL IS STORED WITHIN THE CRZ SHALL BE CONSIDERED ONE INSTANCE.

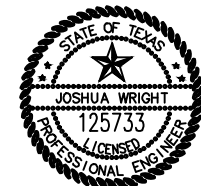
- 1.7. MODERATE DAMAGE SHALL BE DEFINED AS DAMAGE, IN THE OPINION OF THE CITY FORESTER, THAT CONTRIBUTES TO THE POOR HEALTH AND REDUCED LONGEVITY OF THE TREE, EXAMPLES INCLUDE BUT ARE NOT LIMITED TO SCARING OF THE TRUNK INTO THE CAMBIAL LAYER GREATER THAN 2" BUT LESS THAN 1/3 THE TRUNK CIRCUMFERENCE OR BREAKING OF LIMBS MORE THAN 2" IN DIAMETER BUT LESS THAN 1/3 TRUNK CALIPER. MODERATE DAMAGE SHALL ALSO INCLUDE COMPACTION OF SOIL, GRADING OR FILLING IN 20% OF THE CRZ ON ONE OF FOUR SIDES BUT OUTSIDE THE 50% RADIUS OF THE CRZ, DISPOSING OF PAINT OR CONCRETE WITHIN 50% RADIUS OF THE CRZ. MODERATE DAMAGES SHALL BE CALCULATED AT A RATE OF 1/2 THE ASSESSED VALUE OF THE TREE PER EACH INSTANCE OF DAMAGE.

- 1.8. SEVERE DAMAGE OR REMOVAL OF TREES IS SUBJECT TO PENALTY OF \$200 PER DIAMETER INCH OF TREES REMOVED OR DAMAGED FOR TREES LESS THAN 30" DBH, \$400 PER DIAMETER INCH OF TREES 30" DBH OR GREATER. SEVERE DAMAGE OR REMOVAL SHALL INCLUDE BUT IS NOT LIMITED TO SCARING OF THE TRUNK INTO THE CAMBIAL LAYER GREATER THAN 1/3 THE TRUNK CIRCUMFERENCE, UPROOTING OR CAUSING A TREE TO LEAN, DAMAGE TO A SCAFFOLDING BRANCH OR BRANCH GREATER THAN 1/3 OF TRUNK CALIPER. SEVERE DAMAGE SHALL ALSO INCLUDE COMPACTION OF SOIL, GRADING OR FILLING MORE THAN 20% OF THE CRZ, OR WITHIN 50% RADIUS OF THE CRZ OR ON MORE THAN ONE OF 4 SIDES. CUTTING 1/3 OF THE BUTTRESS ROOTS WITHIN 3 TIMES THE DISTANCE OF THE DBH OF THE TRUNK, OR CUTTING 4 ROOTS 4" OR GREATER IN DIAMETER WITHIN 4' OF THE TRUNK SHALL ALSO BE CONSIDERED SEVERE DAMAGE.

- 1.9. BRANCHES SHALL BE MEASURED AT THE POINT OF ATTACHMENT OR AT THE LATERAL TO WHICH THE BRANCH WOULD BE PRUNED BACK TO ACCORDING TO ANSI STANDARDS. TREES CALIPER SHALL BE MEASURED ACCORDING TO ACCEPTED INDUSTRY STANDARDS. TREES GREATER THAN 6" IN CALIPER SHALL BE MEASURED USING DIAMETER AT BREAST HEIGHT (DBH). TREES THAT MUST BE REMOVED DUE TO DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REMOVED BY THE FORESTRY SECTION TREE REMOVAL CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

- 1.10. ALL DAMAGES SHALL BE PAID TO THE CITY TREE FUND. FAILURE TO REPLACE OR PAY FOR DAMAGED TREES SHALL RESULT IN A BREACH OF CONTRACT AND THE CONTRACTOR WILL BE AUTOMATICALLY ASSESSED DAMAGES. DAMAGES AS DESCRIBED HEREIN SHALL BE DEDUCTED FROM PAYMENTS OTHERWISE DUE TO THE CONTRACTOR.

SNOW FENCE, ORANGE VINYL CONSTRUCTION FENCE, CHAIN LINK FENCE OR APPROVED EQUIVALENT WITH METAL T-POST WITH CAP AT EDGE OF ROOT PROTECTION ZONE



JOSHUA WRIGHT
PROFESSIONAL ENGINEER
DATE 6/11/2021

DATE	BY	REV	REVISION

DUNAWAY 550 Bailey Avenue
Suite 400
Fort Worth, TX 76107
817-335-1121
(TX REG #1114)



PROJ NO. 101264 FILE NO. K-2630

Texas Department of Transportation
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2018 SAFE ROUTES TO SCHOOL IMPROVEMENTS

TREE PROTECTION DETAILS

FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
6	TEXAS	STP 2021(929)TP	VA		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
FTW	TARRANT	0902	90	082	309

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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.
2.
 No Action Required Required Action

Action No.

- Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000
- Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
- Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
- When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

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.

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

Best Management Practices:

Erosion	Sedimentation	Post-Construction TSS
<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 checked="" 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.

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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.

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

- No Action Required Required Action

Action No.

- MIGRATORY BIRD TREATY ACT (MBTA): BETWEEN OCTOBER 1 AND FEBRUARY 15, THE CONTRACTOR WOULD REMOVE ALL OLD MIGRATORY BIRD NESTS FROM ANY STRUCTURE THAT WOULD BE AFFECTED BY THE PROPOSED PROJECT, AND COMPLETE DEMOLITION AND/OR VEGETATION CLEANING. IN ADDITION, THE CONTRACTOR SHALL BE PREPARED TO PREVENT MIGRATORY BIRDS FROM BUILDING NESTS BY UTILIZING NEST PREVENTION METHODS SUCH AS BIRD REPELLING SPRAYS BETWEEN FEBRUARY 15 AND OCTOBER 1. IN THE EVENT THAT MIGRATORY BIRDS ARE ENCOUNTERED ON-SITE DURING PROJECT CONSTRUCTION, ADVERSE IMPACTS ON PROTECTED BIRDS ACTIVE NESTS, EGGS, AND/OR YOUNG SHOULD BE AVOIDED.*
- SEE ITEM NO. 5 IN GENERAL NOTES.

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.

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.

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VII. OTHER ENVIRONMENTAL ISSUES

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

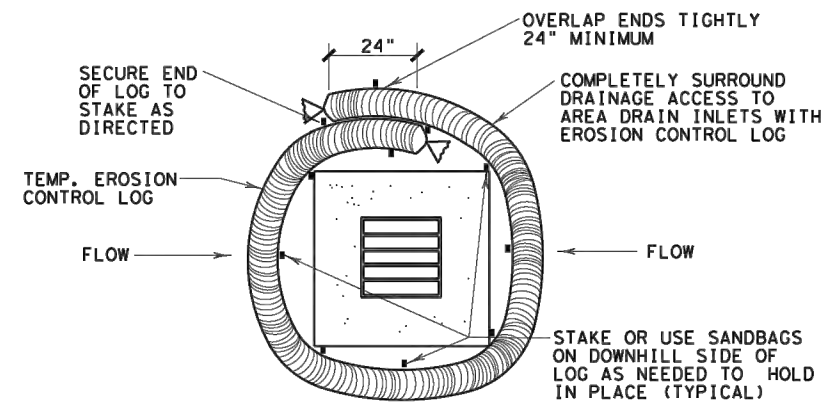
- No Action Required Required Action

Action No.

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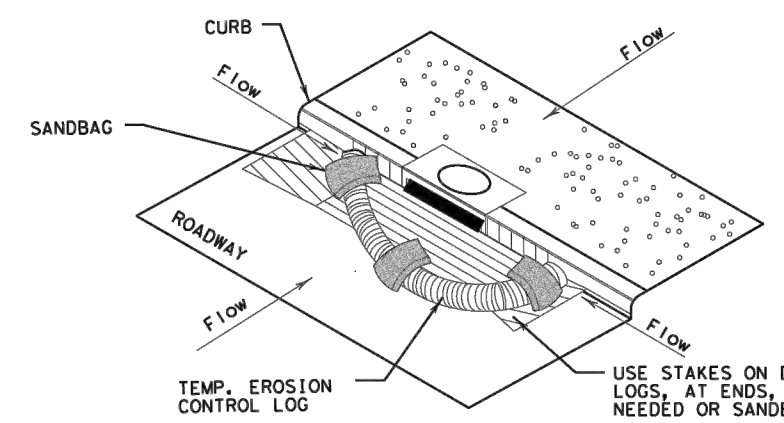
 Texas Department of Transportation		<i>Design Division Standard</i>	
ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS			
EPIC			
FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP
© TxDOT: February 2015	CONT	SECT	JOB
12-12-2011 (DS) REVISIONS	0902	90	082
05-07-14 ADDED NOTE SECTION IV.	DIST	COUNTY	SHEET NO.
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	FTW	TARRANT	311

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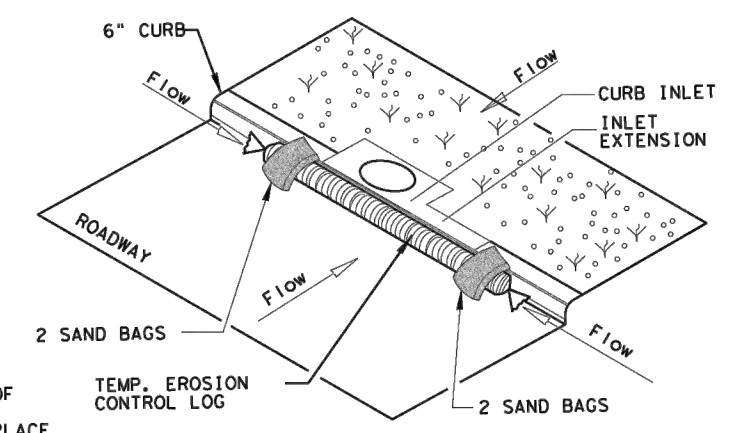
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

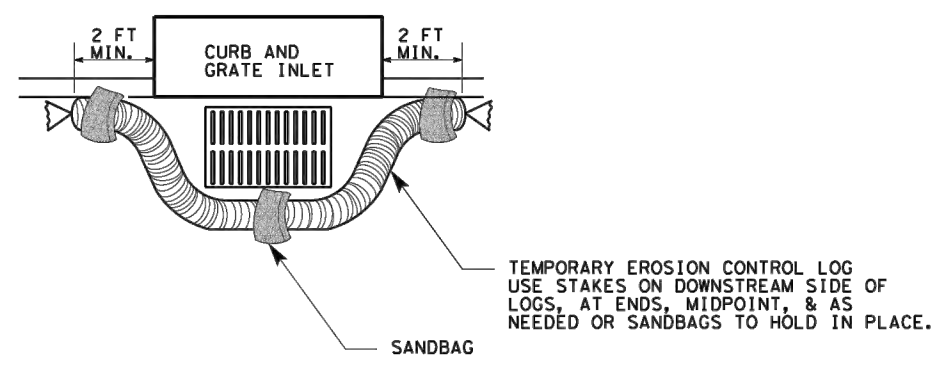
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EROSION CONTROL LOG AT CURB INLET

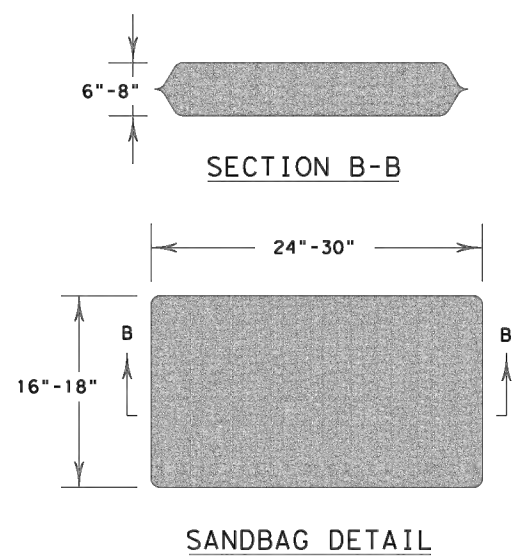
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NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI



		Design Division Standard		
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC (9) - 16				
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0902	90	082	N/A
	DIST	COUNTY		SHEET NO.
	FTW	TARRANT		312

DATE:
FILE: