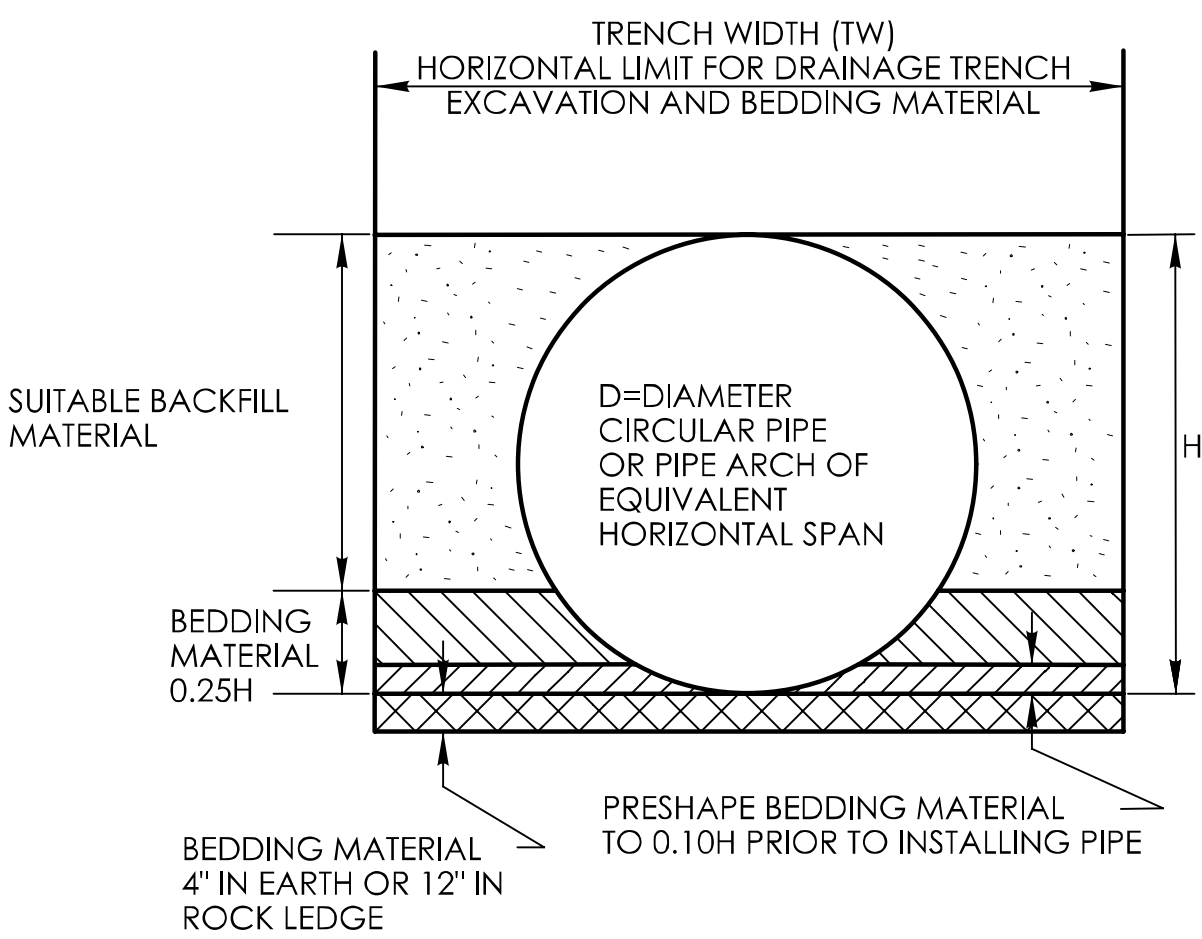


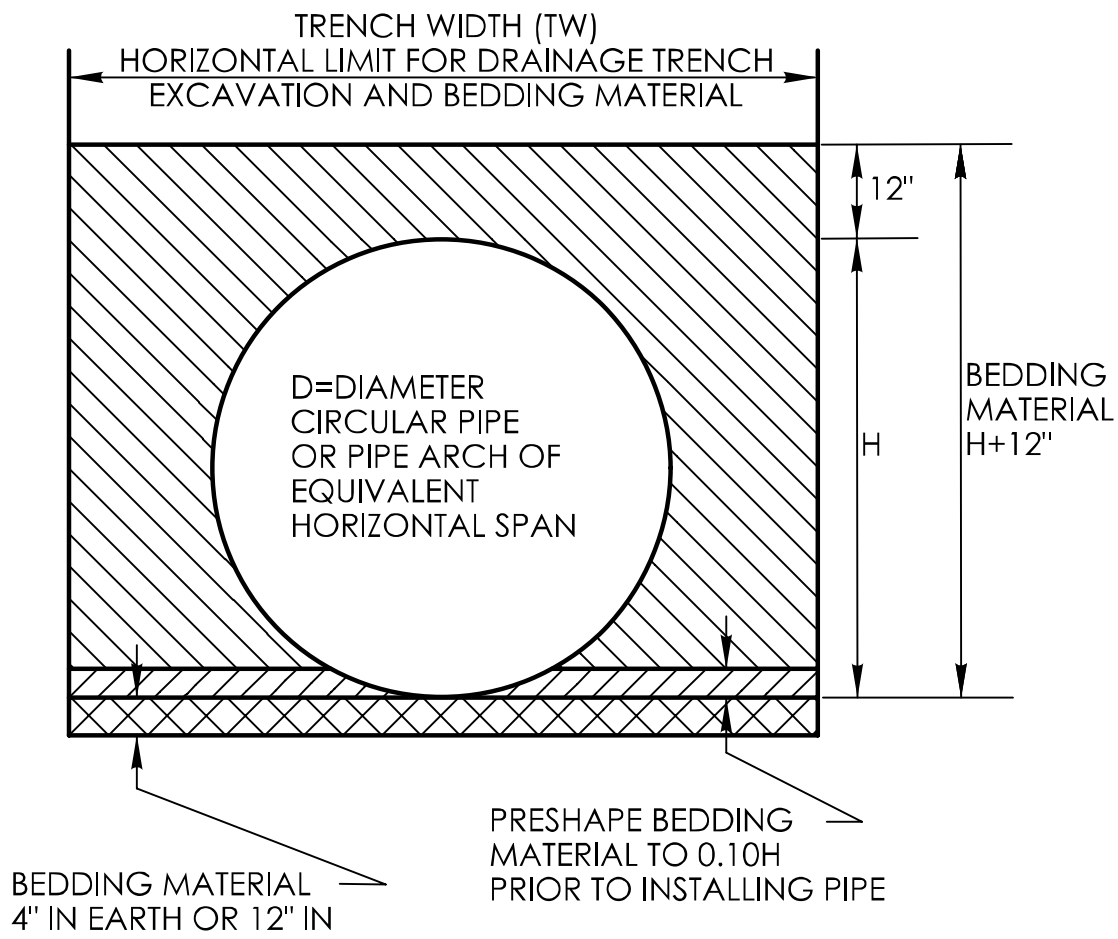
✓*	SHEET NO.	TITLE	APPROVAL DATE**	✓*	SHEET NO.	TITLE	APPROVAL DATE**
	HW-211_01	ANTI-TRACKING PAD	11-09-22		HW-821_01a	TRANSITION - 45" F-SHAPE TO 45" VERTICAL SHAPE SHEET 1	11-08-22
✓	HW-286_01	DRAINAGE TRENCH EXCAVATION	11-09-22		HW-821_01b	TRANSITION - 45" F-SHAPE TO 45" VERTICAL SHAPE SHEET 2	11-08-22
✓	HW-505 01a	STRAIGHT ENDWALLS	01-21-25		HW-821_01c	TRANSITION - 45" F-SHAPE TO 45" VERTICAL SHAPE SHEET 3	11-08-22
	HW-505 01b	STEEL REINFORCING FOR STRAIGHT ENDWALLS (2" DIFF BASE TO FLOW LINE)	01-05-24		HW-821_02a	45" F-SHAPE PRECAST CONCRETE BARRIER CURB SHEET 1	11-08-22
	HW-505 01c	STEEL REINFORCING FOR STRAIGHT ENDWALLS (STANDARD RIPRAP APPLICATION)	01-05-24		HW-821_02b	45" F-SHAPE PRECAST CONCRETE BARRIER CURB SHEET 2	11-08-22
✓	HW-505_02	TYPE "D-G" & "L" ENDWALLS	01-05-24		HW-821_03a	TRANSITION - 32" JERSEY SHAPE TO 45" VERTICAL SHAPE SHEET 1	11-08-22
✓	HW-586_01	CATCH BASIN AND DROP INLET TYPES "C" AND "C-L" STRUCTURES	01-05-24		HW-821_03b	TRANSITION - 32" JERSEY SHAPE TO 45" VERTICAL SHAPE SHEET 2	11-08-22
	HW-586_02	CATCH BASIN (TYPES "C" AND "C-L") FOR DOUBLE GRATE TYPE I STRUCTURES	01-05-24		HW-821_03c	TRANSITION - 32" JERSEY SHAPE TO 45" VERTICAL SHAPE SHEET 3	11-08-22
	HW-586_03	CATCH BASIN (TYPES "C" AND "C-L") FOR DOUBLE GRATE TYPE II STRUCTURES	01-05-24		HW-821_03d	TRANSITION - 32" JERSEY SHAPE TO 45" VERTICAL SHAPE SHEET 4	11-08-22
	HW-586_04	PRECAST CATCH BASIN AND ROUND STRUCTURE	10-17-24		HW-821_03e	TRANSITION - 32" JERSEY SHAPE TO 45" F-SHAPE	11-08-22
	HW-586_05	PRECAST CATCH BASIN TYPES FOR DOUBLE GRATE TYPE I	10-17-24		HW-821_04a	MERRITT PARKWAY NARROW MEDIAN BARRIER	11-08-22
	HW-586_06	PRECAST CATCH BASIN TYPES FOR DOUBLE GRATE TYPE II	10-17-24		HW-821_04b	MERRITT PARKWAY - 2' WIDE MEDIAN BARRIER AND ROADSIDE BARRIER	11-08-22
✓	HW-586 07a	CATCH BASIN TYPE "C" AND "C-L" TOPS	01-05-24		HW-821_05a	TRANSITION - 45" F-SHAPE TO 54" VERTICAL SHAPE SHEET 1	11-08-22
	HW-586 07b	CATCH BASIN TYPE "C" AND "C-L" DOUBLE GRATE TYPE I TOPS	11-09-22		HW-821_05b	TRANSITION - 45" F-SHAPE TO 54" VERTICAL SHAPE SHEET 2	11-08-22
	HW-586 07c	CATCH BASIN TYPE "C" AND "C-L" DOUBLE GRATE TYPE II TOPS	11-08-22		HW-821_06	54" VERTICAL SHAPE BARRIER	11-08-22
	HW-586 07d	CATCH BASIN TYPE "C-G" AND "C-M" BARRIER CURB TOPS	11-09-22		HW-821_07	MISCELLANEOUS DETAILS FOR BARRIER TRANSITIONS	11-08-22
✓	HW-586_08	CATCH BASIN FRAMES AND GRATES	11-09-22		HW-821_08a	F-SHAPE CONC. BARRIER CURB (21"x45") TRANSITION FOR THRIE-BEAM	10-17-24
	HW-586_09	CATCH BASIN LOCK DOWN TOPS	11-09-22		HW-821_08b	F-SHAPE CONC. BARRIER CURB (21"x45") TRANSITION FOR THRIE-BEAM - REINF.	11-08-22
	HW-586_10a	MANHOLE FRAME AND COVER	01-05-24		HW-821_09a	SINGLE SLOPE CONC. BARRIER CURB (20"x42") TRANS. FOR THRIE-BEAM	11-08-22
	HW-586_10b	MANHOLE FRAME AND GRATE	01-05-24		HW-821_09b	SINGLE SLOPE CONC. BARRIER CURB (20"x42") TRANS. FOR THRIE-BEAM - REINF.	11-08-22
	HW-586_10c	REINFORCED PRECAST CONCRETE MANHOLE	11-08-22		HW-821_10a	VERTICAL FACE CONC. (21"x54") TRANSITION FOR THRIE-BEAM	11-08-22
	HW-586_10d	MANHOLE NON-PRECAST CONCRETE UNIT	11-08-22		HW-821 10b	VERTICAL FACE CONC. (21"x54") TRANSITION FOR THRIE-BEAM REINF.	11-08-22
	HW-686_01a	CONCRETE PIPE CONNECTION SHEET 1	11-08-22		HW-821_11a	42" SINGLE SLOPE PRECAST CONCRETE BARRIER CURB -SHEET 1	01-05-24
	HW-686_01b	CONCRETE PIPE CONNECTION SHEET 2	11-08-22		HW-821_11b	42" SINGLE SLOPE PRECAST CONCRETE BARRIER CURB -SHEET 2	01-05-24
	HW-686_02a	DRAINANGE PIPE ENDS SHEET 1 [CORRUGATED METAL PIPE]	11-08-22		HW-822_01	TEMPORARY PRECAST CONCRETE BARRIER CURB	11-08-22
	HW-686_02b	DRAINAGE PIPE ENDS SHEET 2 [CONCRETE PIPE]	11-08-22	✓	HW-822 02a	TEMPORARY TRAFFIC BARRIER - DETAILS	11-08-22
	HW-751_01	UNDERDRAINS AND UNDERDRAIN OUTLETS	10-17-24		HW-822 02b	TEMPORARY TRAFFIC BARRIER (BOLTED)	01-23-25
	HW-803_01	PAVED APRONS	11-08-22		HW-822 02c	TEMPORARY TRAFFIC BARRIER & TEMPORARY TRAFFIC BARRIER (PINNED)	01-23-25
	HW-811_01	CONCRETE CURBING	11-08-22		HW-905_01	STONE WALL FENCE	11-09-22
	HW-813_01	GRANITE STONE TRANSITION CURBING	11-08-22		HW-906_01	WIRE FENCE	11-08-22
	HW-813_02	STONE CURBING	11-08-22				
✓	HW-815_01	BITUMINOUS CONCRETE CURBING	11-08-22				

✓*	SHEET NO.	TITLE	APPROVAL DATE**
✓	HW-910_01	W-BEAM METAL BEAM RAIL HARDWARE	11-08-22
✓	HW-910_02	METAL BEAM RAIL (TYPE R-B 350) GUIDERAIL	11-08-22
	HW-910_03	METAL BEAM RAIL (TYPE MD-B 350) GUIDERAIL	11-08-22
	HW-910_04	METAL BEAM RAIL (TYPE R-B 350) SYSTEMS 5, 5A, & 6	11-08-22
	HW-910_05	METAL BEAM RAIL R-B 350 SPAN TYPE I, II, III SECTIONS	11-08-22
	HW-910_06	R-B 350 BRIDGE ATTACHMENT SAFETY SHAPE PARAPET	11-08-22
✓	HW-910_07	R-B 350 BRIDGE ATTACHMENT VERTICAL SHAPE PARAPET	11-08-22
	HW-910 09a	MISCELLANEOUS GUIDERAIL TRANSITIONS SHEET 1	11-08-22
✓	HW-910 09b	MISCELLANEOUS GUIDERAIL TRANSITIONS SHEET 2	11-08-22
	HW-910 10	METAL BEAM RAIL 8" x 6" BOX BEAM	11-08-22
✓	HW-910 11	CURVED GUIDERAIL TREATMENT DETAIL	11-08-22
	HW-910_12a	MERRITT PARKWAY GUIDERAIL LEADING END ATTACHMENTS AND SYSTEMS 2&3	11-08-22
	HW-910_12b	MERRITT PARKWAY GUIDERAIL HARDWARE DETAILS	11-08-22
	HW-910_12c	MERRITT PARKWAY GUIDERAIL TRAILING END ATTACHMENTS	11-02-22
	HW-910_12d	MERRITT PARKWAY MEDIAN GUIDERAIL AND END ANCHOR	10-17-24
	HW-910_13a	THRIE-BEAM METAL BEAM RAIL HARDWARE	11-08-22
	HW-910_13b	THRIE-BEAM TRANSITIONS	11-08-22
	HW-910_14a	THRIE-BEAM 350 BRIDGE ATTACHMENT	11-08-22
	HW-910_14b	THRIE-BEAM 350 GUIDERAIL TRANSITION TO R-B 350 GUIDERAIL	11-08-22
	HW-910_15	MD-B 350 MEDIAN BARRIER SAFETY SHAPE ATTACHMENT TYPE I	11-08-22
	HW-910_16	MD-B 350 MEDIAN BARRIER SAFETY SHAPE ATTACHMENT TYPE II	11-08-22
✓	HW-910_17	R-B TERMINAL SECTION	11-08-22
	HW-910_18	METAL BEAM RAIL (TYPE MD-I) GUIDERAIL	11-08-22
	HW-910_19a	METAL BEAM RAIL (MODIFIED TYPE R-I) AND END ANCHORAGE TYPE I	10-17-24
	HW-910_19b	METAL BEAM RAIL (MODIFIED TYPE R-I) AND END ANCHORAGE TYPE II	10-17-24
	HW-910_19c	METAL BEAM RAIL (MODIFIED TYPE R-I) SYSTEMS 2 AND 3	11-08-22
✓	HW-910_20	MASH W-BEAM HARDWARE	10-17-24
✓	HW-910_21	METAL BEAM RAIL (R-B MASH) GUIDERAIL	01-05-24
	HW-910_22	METAL BEAM RAIL (MD-B MASH) GUIDERAIL	11-08-22
	HW-910_23	METAL BEAM RAIL (R-B MASH) HALF & QUARTER POST SPACING GUIDERAIL	11-08-22
	HW-910_24	METAL BEAM RAIL SPAN SECTION TYPES II AND III	11-08-22

✓*	SHEET NO.	TITLE	APPROVAL DATE**
✓	HW-910_25a	METAL BEAM RAIL TRANSITION 350 TO MASH	10-17-24
	HW-910_25b	METAL BEAM RAIL MEDIAN APPLICATION TRANSITION 350 TO MASH GUIDERAIL	01-05-24
	HW-910_26	THRIE-BEAM ATTACHMENT HARDWARE	11-08-22
	HW-910_27	THRIE-BEAM ATTACHMENT	11-08-22
	HW-910_29	THRIE-BEAM BRIDGE ATTACHMENT TRAILING END	02-02-24
✓	HW-911_01	R-B END ANCHORAGE TYPE I AND II	10-17-24
	HW-911_02	MD-B END ANCHORAGE TYPE I	10-17-24
	HW-911_03	ANCHOR IN EARTH CUT SLOPE & ANCHOR IN ROCK CUT SLOPE	01-05-24
	HW-911_05	MERRITT PARKWAY GUIDERAIL END ANCHORS	11-08-22
	HW-913_01a	CHAIN LINK FENCE	11-08-22
	HW-913_01b	CHAIN LINK FENCE HARDWARE	11-08-22
	HW-913_02	CHAIN LINK FENCE GATES	11-08-22
	HW-918_01a	THREE CABLE GUIDERAIL (I-BEAM POSTS) SHEET 1	11-08-22
	HW-918_01b	THREE CABLE GUIDERAIL (I-BEAM POSTS) SHEET 2	11-08-22
	HW-918_01c	THREE CABLE GUIDERAIL (I-BEAM POSTS) SHEET 3	11-08-22
	HW-921_01	CONCRETE SIDEWALKS	11-08-22
✓	HW-922_01	BITUMINOUS CONCRETE SIDEWALK AND BITUMINOUS CONCRETE DRIVEWAY	11-08-22
	HW-924_01	CONCRETE DRIVEWAY RAMPS	10-17-24
✓	HW-930_01	OBJECT MARKER (MAINTENANCE)	10-17-24
✓	HW-949_01a	LANDSCAPE PLANTING	11-09-22
✓	HW-949_01b	TREE STAKING	11-02-22
	HW-1800_01	GRADING PLAN FOR IMPACT ATTENUATION SYSTEMS (FLARED AND TANGENTIAL)	10-17-24
	HW-1800 02	GRADING PLAN FOR IMPACT ATTENUATION SYSTEMS (MEDIAN/GORE)	10-17-24



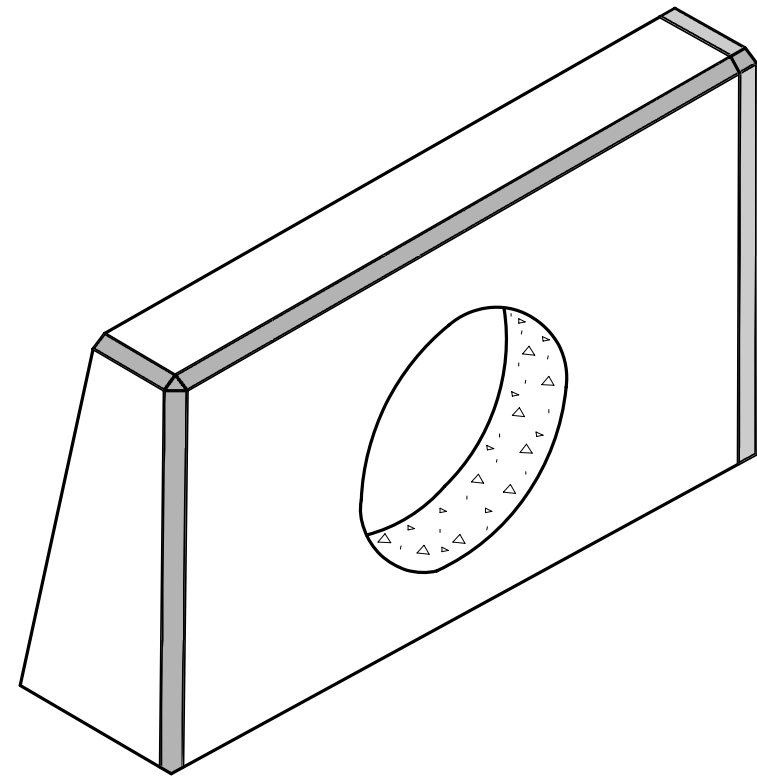
PIPE TRENCH
FOR PIPES LESS THAN 48"



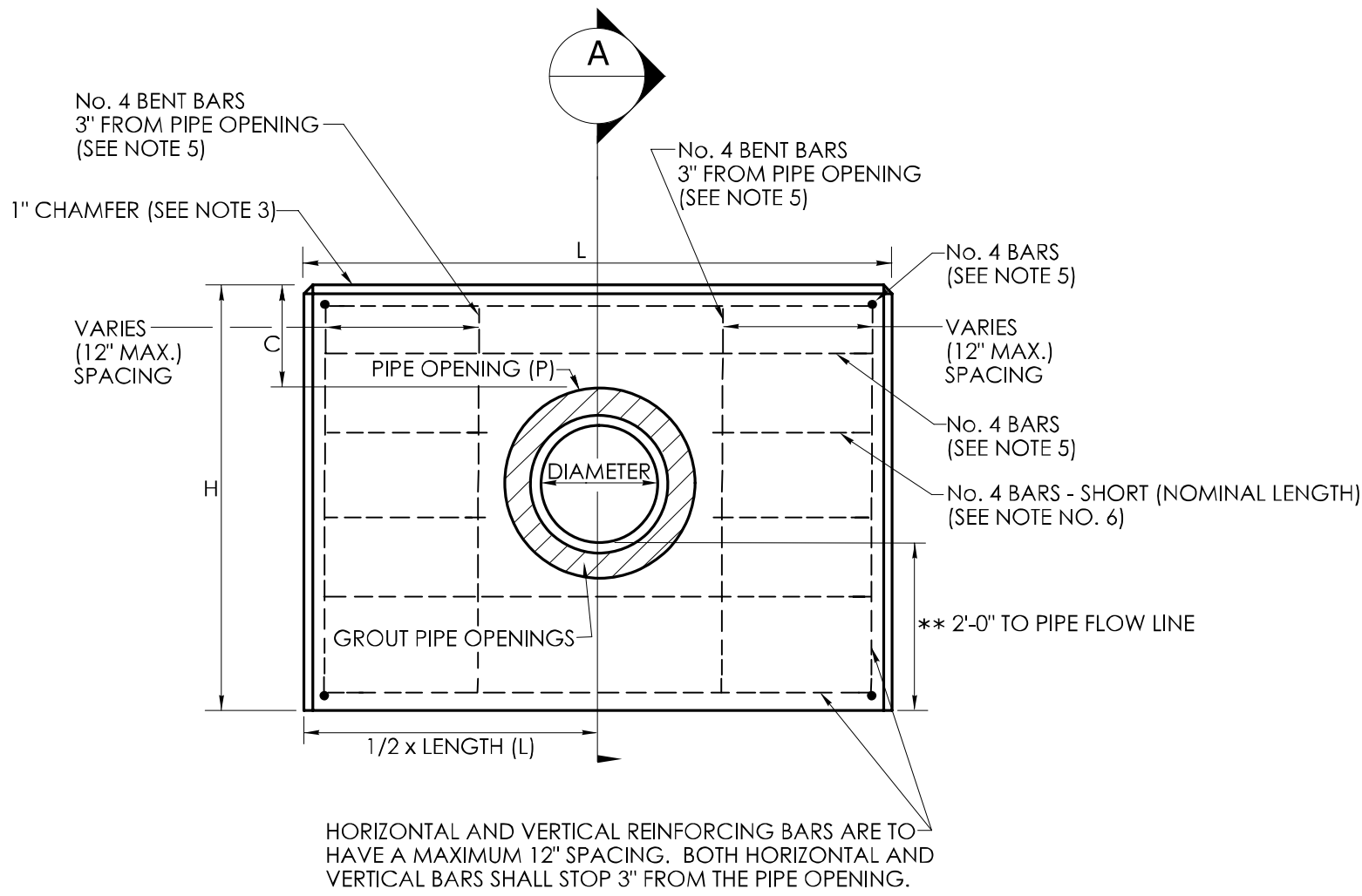
PIPE TRENCH
FOR PIPES GREATER THAN
OR EQUAL TO 48"

TRENCH WIDTH (TW) CHART

PIPE, PIPE-ARCH, OR DRAINAGE STRUCTURE	TRENCH WIDTH
PIPE OR PIPE-ARCH WITH NOMINAL INSIDE HORIZONTAL SPAN LESS THAN 30'	2' GREATER THAN NOMINAL INSIDE HORIZONTAL SPAN
PIPE OR PIPE-ARCH WITH NOMINAL INSIDE HORIZONTAL SPAN GREATER THAN OR EQUAL TO 30'	3' GREATER THAN NOMINAL INSIDE HORIZONTAL SPAN
PIPE OR PIPE-ARCH FABRICATED FROM STRUCTURAL PLATES	4' GREATER THAN NOMINAL INSIDE HORIZONTAL SPAN
DRAINAGE STRUCTURES	2' BEYOND ALL EXTERIOR OR FOUNDATION WALLS

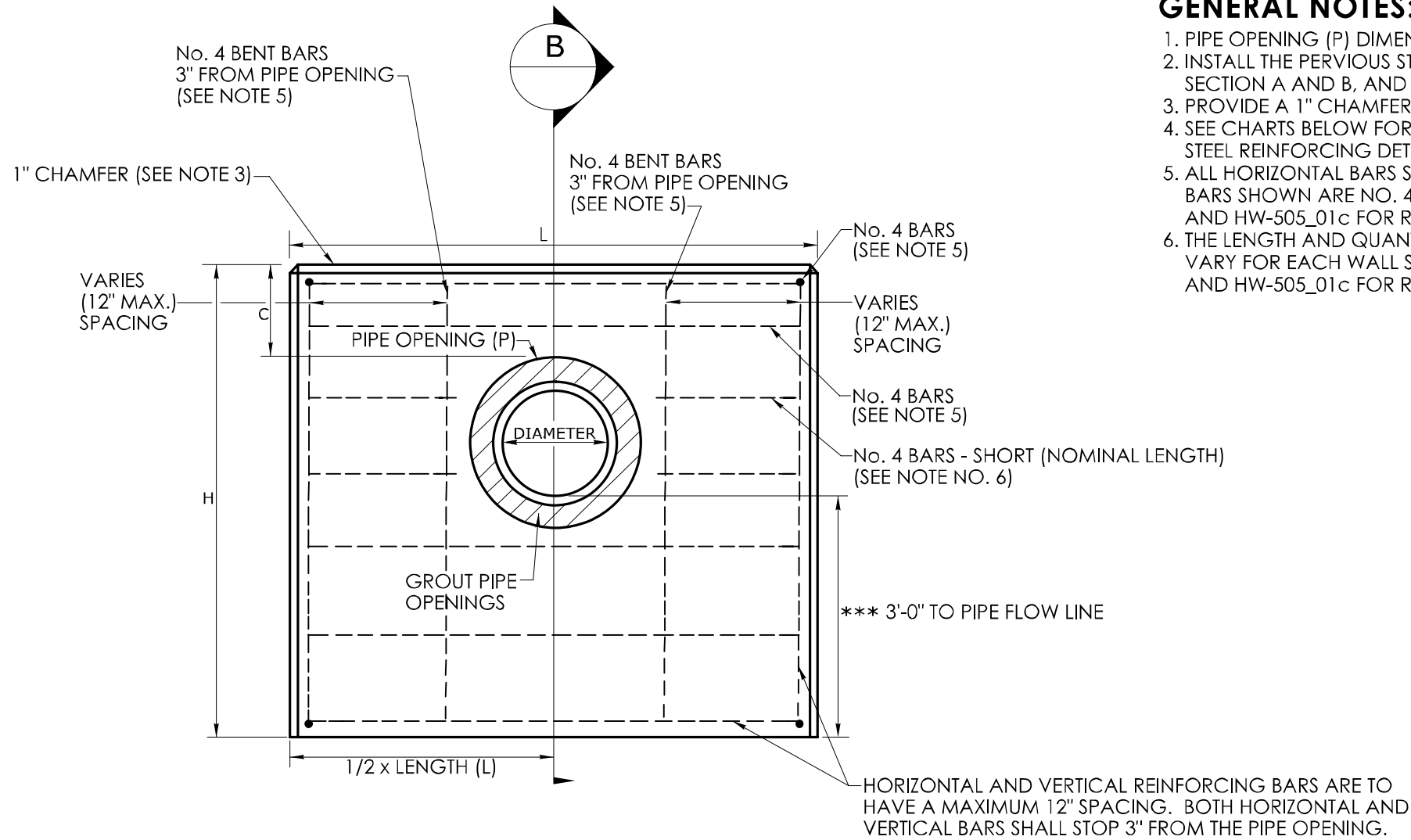


STRAIGHT ENDWALL



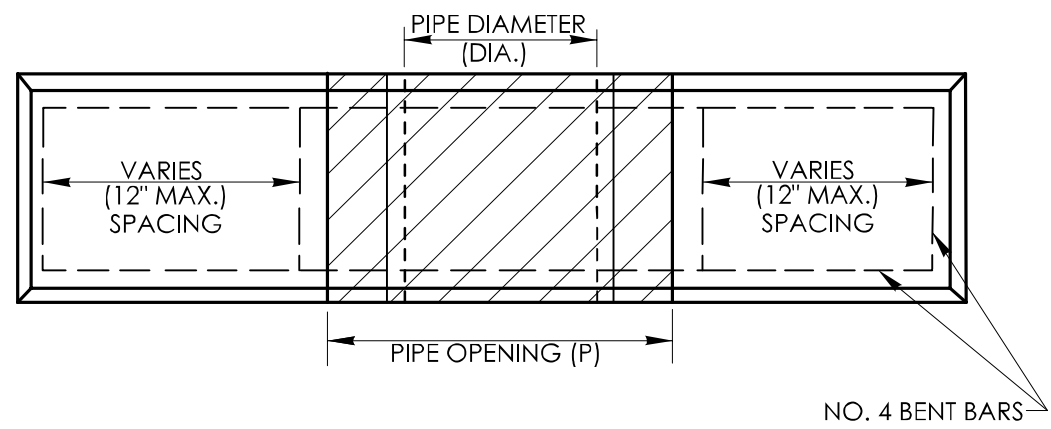
FRONT ELEVATION

** THIS ENDWALL CONFIGURATION IS TO BE USED WHEN ALL MATERIAL EXCEPT STANDARD RIPRAP IS TO BE INSTALLED AT THE OUTLET. A 2'-0" ELEVATION DIFFERENCE IS PROVIDED FROM THE BASE TO THE PIPE FLOW LINE.

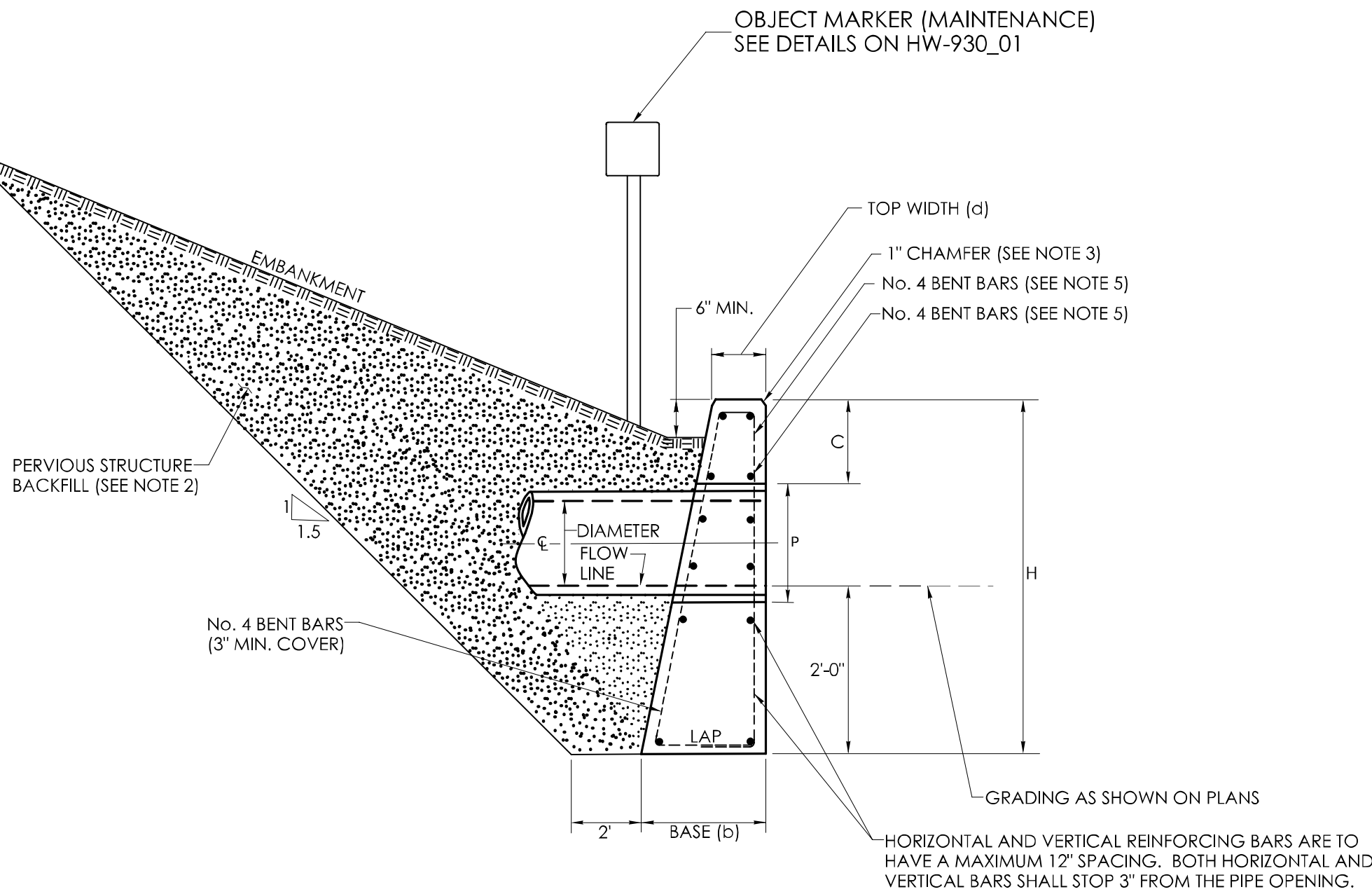


FRONT ELEVATION

*** THIS ENDWALL CONFIGURATION IS TO BE USED WHEN STANDARD RIPRAP IS INSTALLED AT THE OUTLET. A 3'-0" ELEVATION DIFFERENCE IS PROVIDED TO ACCOMMODATE THE PLACEMENT OF THE STANDARD RIPRAP.

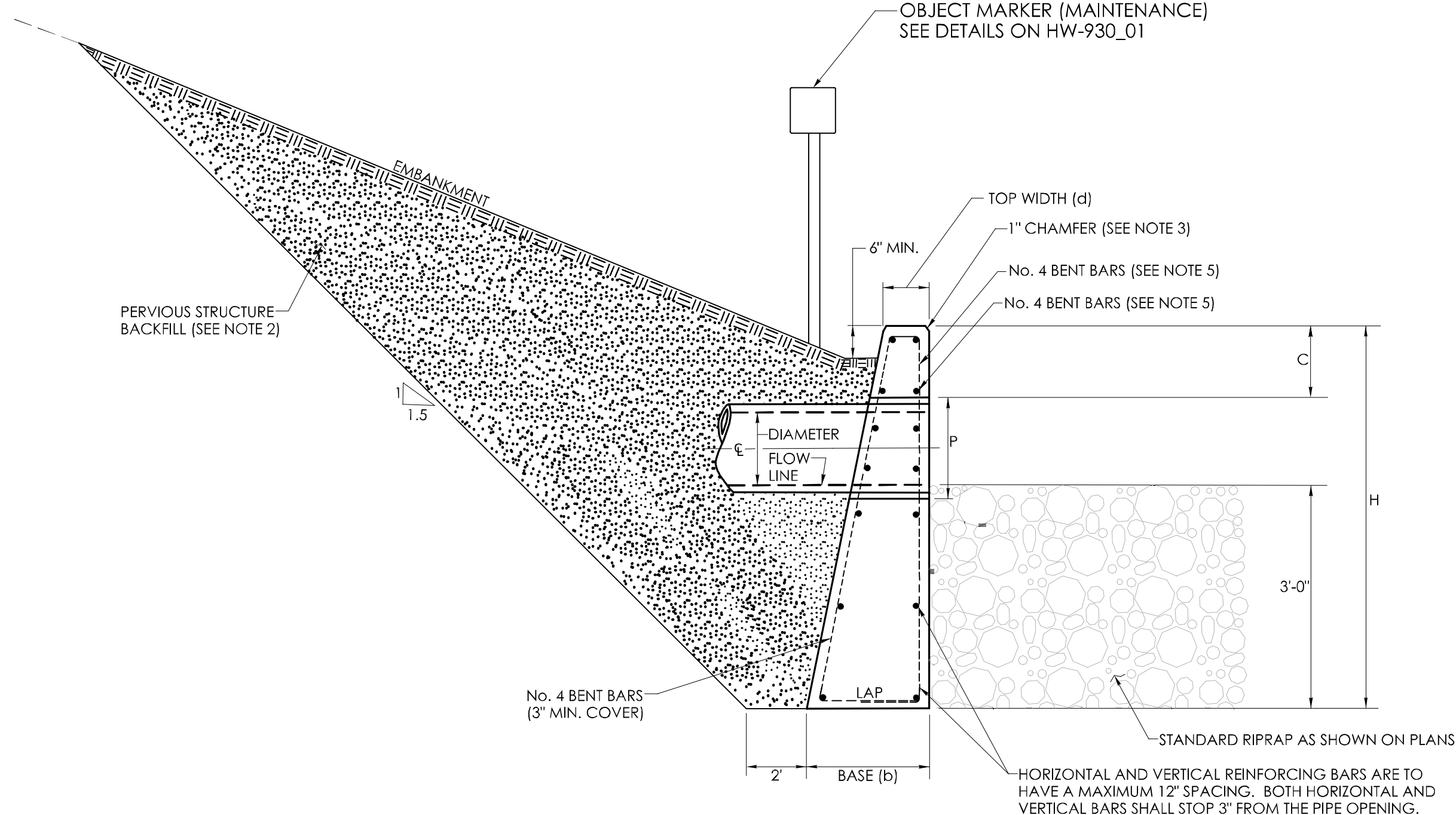


STRAIGHT ENDWALL PLAN



SECTION A

STRAIGHT ENDWALL



SECTION B

STRAIGHT ENDWALL FOR STANDARD RIPRAP APPLICATION

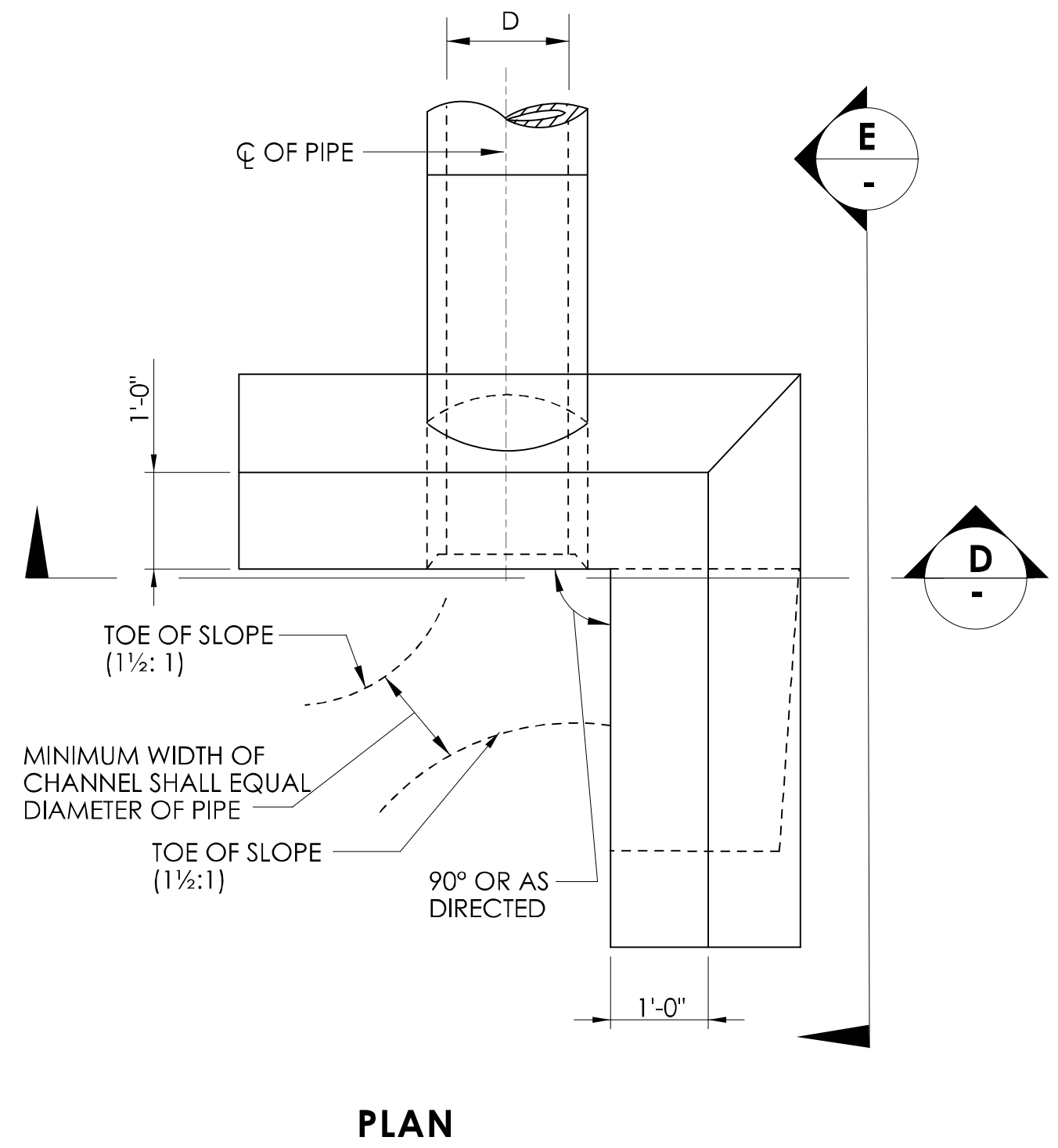
STRAIGHT ENDWALL DIMENSIONS								
CONCRETE					REINFORCING STEEL			
PIPE DIAMETER (DIA.)	CLEARANCE (C)	*PIPE OPENINGS (P)	TOTAL HEIGHT (H)	LENGTH (L)	TOP WIDTH (d)	BASE (b)	VOL.	
IN.	IN.	IN.	FT-IN.	FT-IN.	FT-IN.	FT-IN.	C.Y.	
12"	14"	20"	4'-6"	4'-6"	1'-3"	2'-0"	1.10	
15"	13.5"	24"	4'-9"	5'-6"	1'-3"	2'-0"	1.39	
18"	14"	26"	5'-0"	6'-6"	1'-3"	2'-0"	1.75	
24"	14"	32"	5'-6"	8'-6"	1'-6"	2'-3"	2.87	
30"	12"	42"	6'-0"	10'-6"	1'-9"	2'-6"	3.98	
36"	12"	48"	6'-6"	12'-6"	1'-9"	2'-8"	5.67	
42"	12"	54"	7'-0"	14'-6"	2'-0"	3'-0"	7.99	
48"	11"	62"	7'-6"	16'-6"	2'-0"	3'-0"	9.59	

SEE PROJECT PLANS FOR NON-STANDARD ENDWALL DETAILS

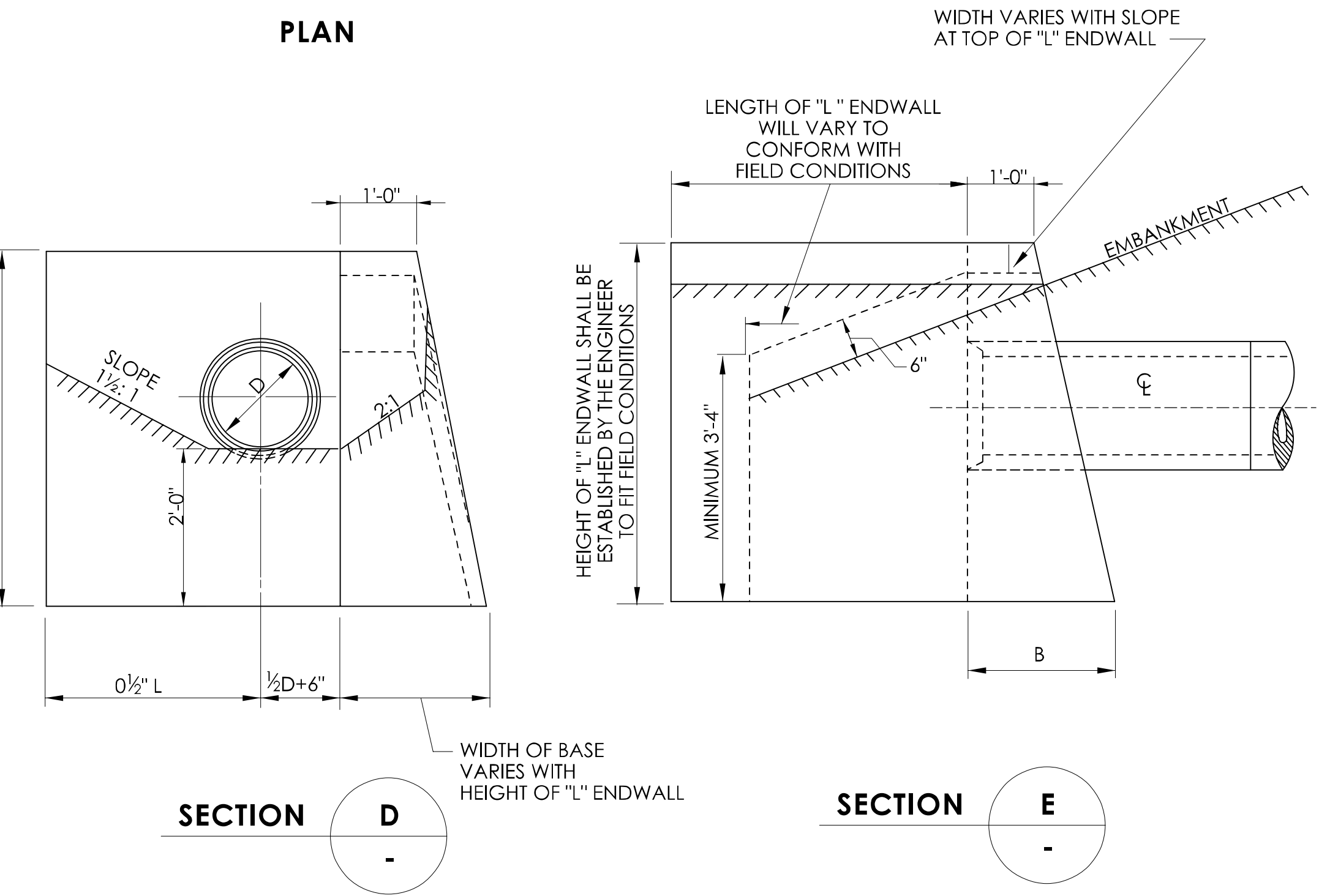
STRAIGHT ENDWALL DIMENSIONS (FOR STANDARD RIPRAP APPLICATION)								
CONCRETE					REINFORCING STEEL			
PIPE DIAMETER (DIA.)	CLEARANCE (C)	*PIPE OPENINGS (P)	TOTAL HEIGHT (H)	LENGTH (L)	TOP WIDTH (d)	BASE (b)	VOL.	
IN.	IN.	IN.	FT-IN.	FT-IN.	FT-IN.	FT-IN.	C.Y.	
12"	14"	20"	5'-6"	4'-6"	1'-3"	2'-2"	1.52	
15"	13.5"	24"	5'-9"	5'-6"	1'-3"	2'-2"	1.88	
18"	14"	26"	6'-0"	6'-6"	1'-3"	2'-2"	2.31	
24"	14"	32"	6'-6"	8'-6"	1'-6"	2'-5"	3.66	
30"	12"	42"	7'-0"	10'-6"	1'-9"	2'-8"	5.03	
36"	12"	48"	7'-6"	12'-6"	1'-9"	2'-10"	6.98	
42"	12"	54"	8'-0"	14'-6"	2'-0"	3'-2"	9.68	
48"	11"	62"	8'-6"	16'-6"	2'-0"	3'-2"	11.50	

SEE PROJECT PLANS FOR NON-STANDARD ENDWALL DETAILS

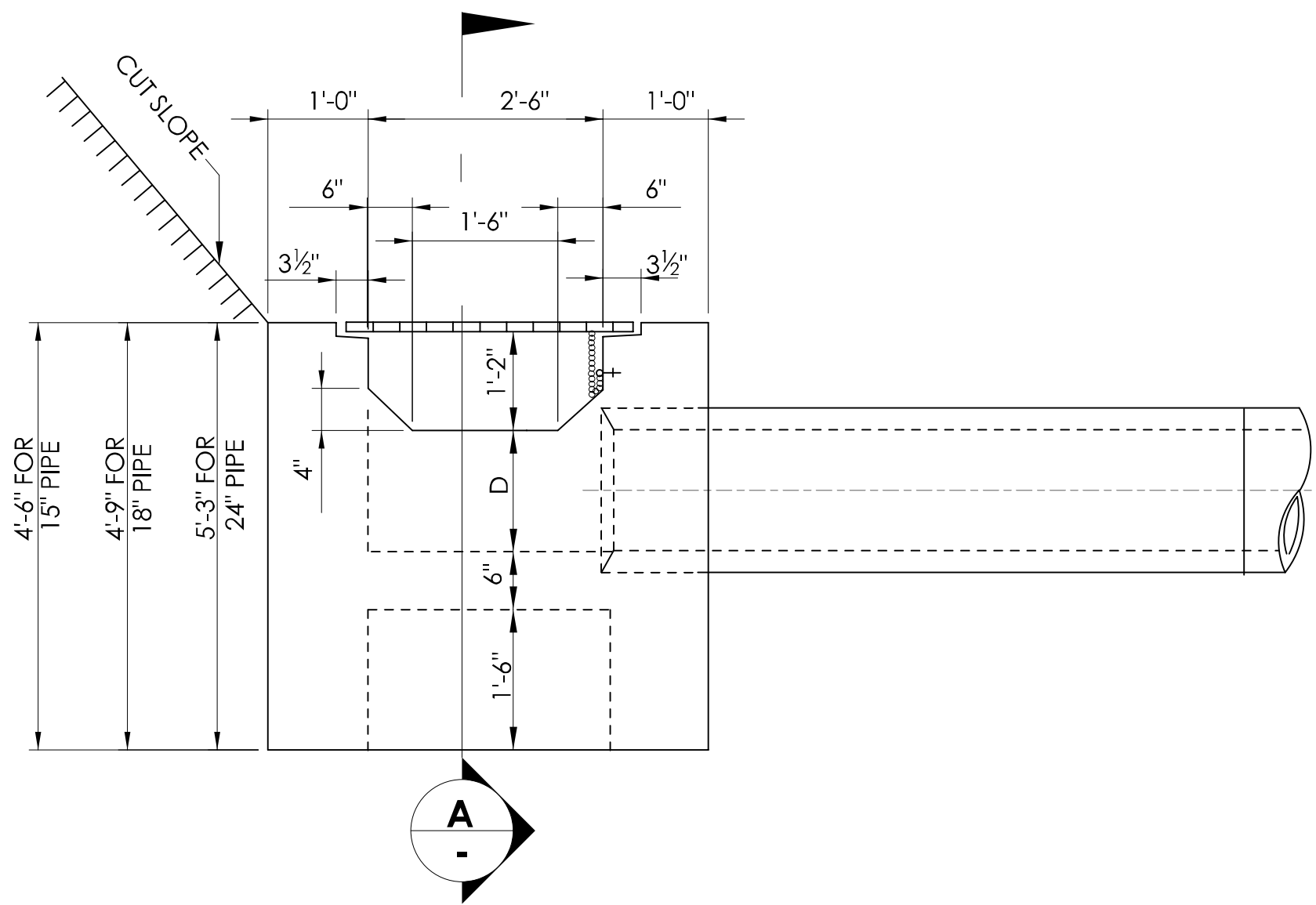
TYPE "L" ENDWALL DIMENSIONS				
D IN.	H FT. - IN.	½L FT. - IN.	BATTER IN./FT.	B FT. - IN.
12"	4'-6"	2'-3"	2½"	1'-11¼"
15"	4'-9"	2'-9"	2½"	1'-11½"
18"	5'-0"	3'-3"	2½"	2'-0½"
24"	5'-6"	4'-3"	2½"	2'-1¾"
30"	6'-0"	5'-3"	2½"	2'-3"
36"	6'-6"	6'-3"	3"	2'-7½"
42"	7'-0"	7'-3"	3"	2'-9"
48"	7'-6"	8'-3"	3"	2'-10½"



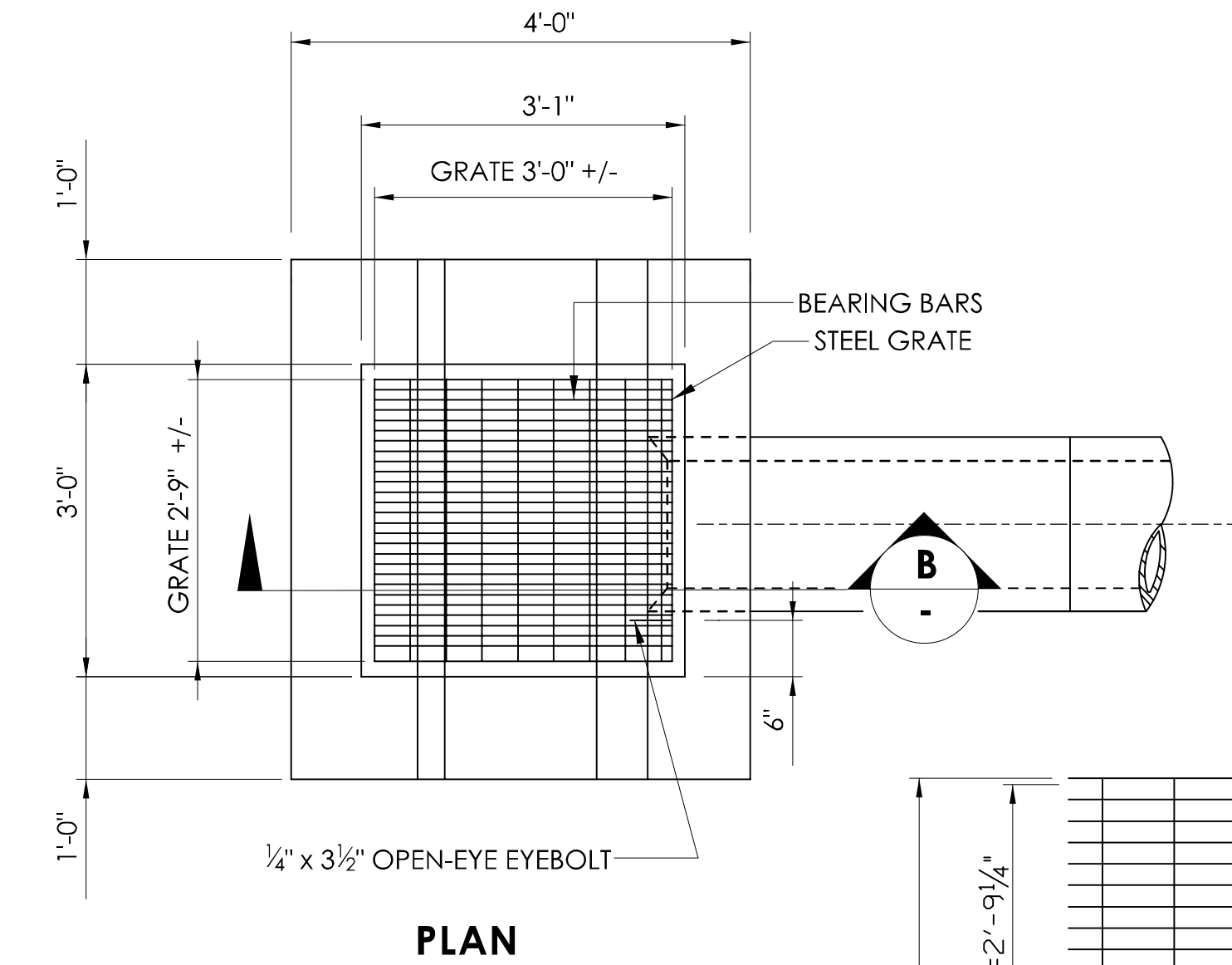
PLAN



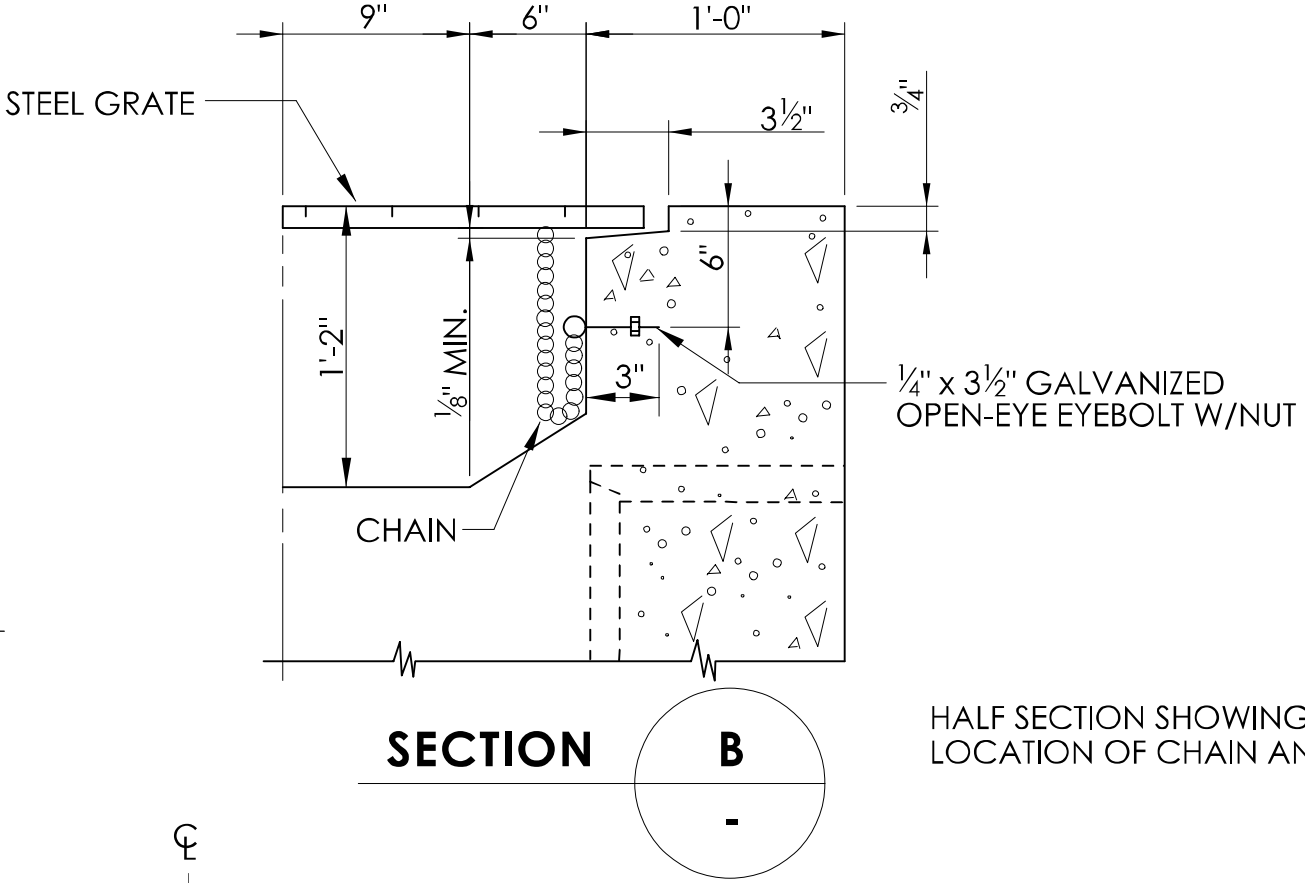
TYPE "L" ENDWALL



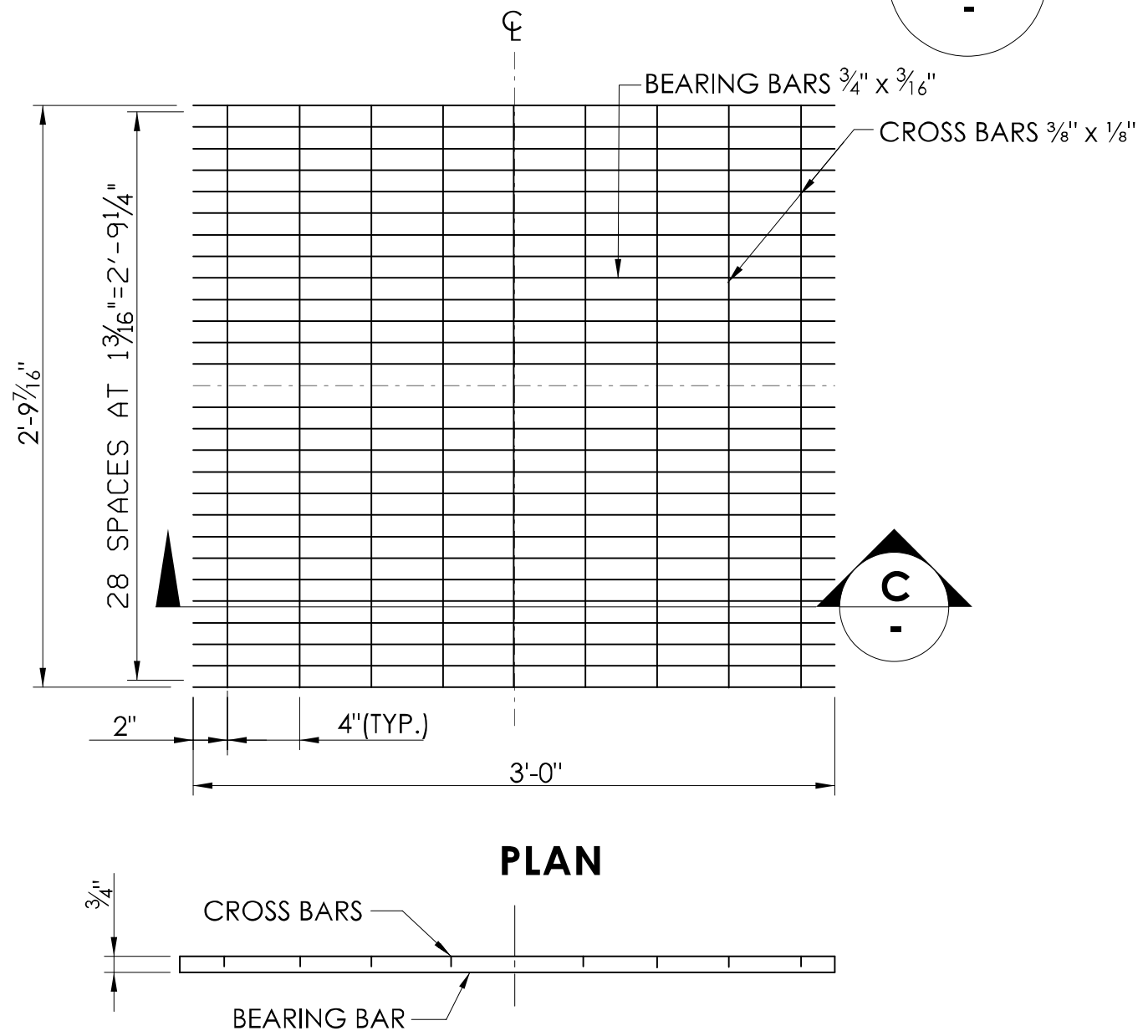
SIDE ELEVATION



PLAN



SECTION B



PLAN

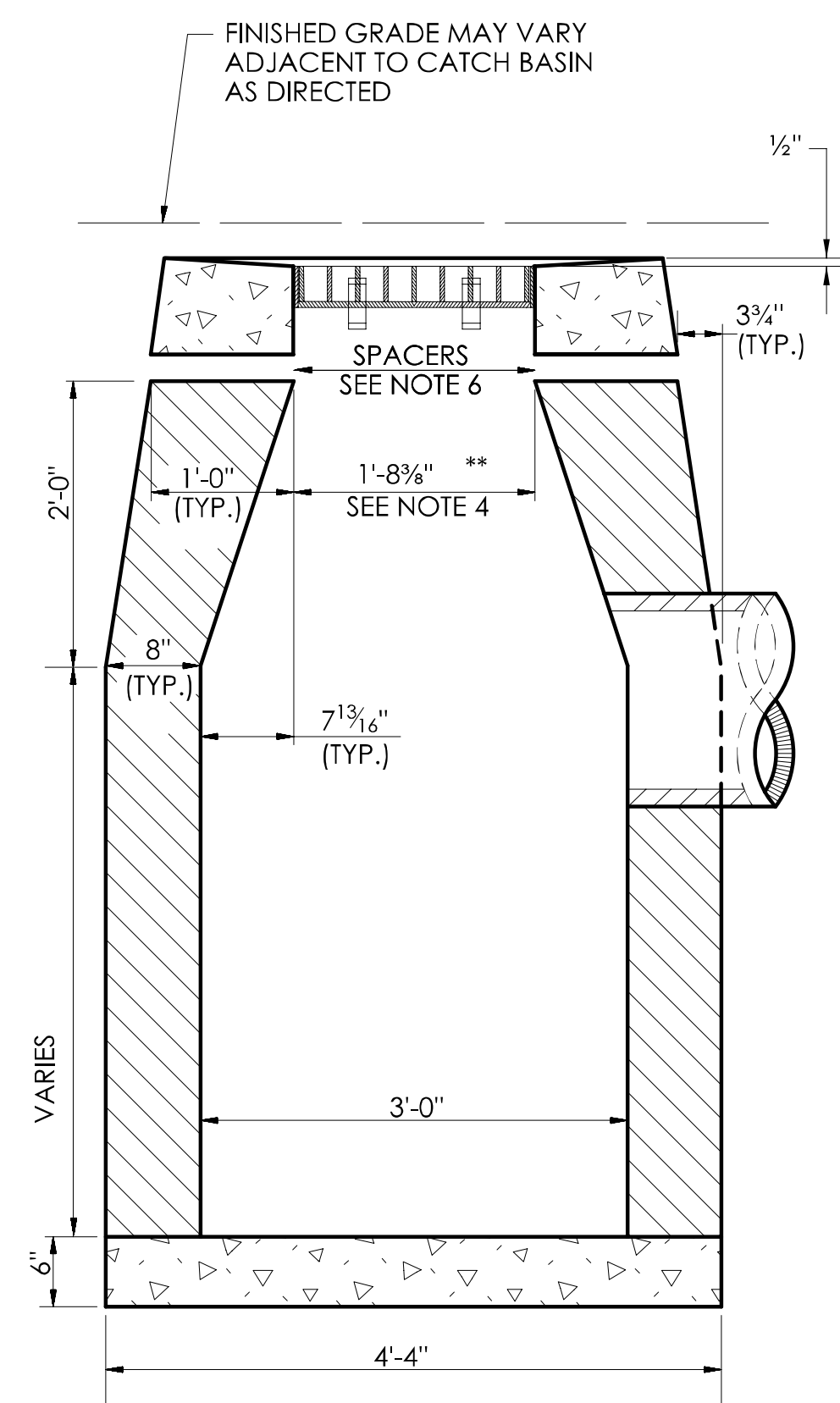
SECTION C
STEEL GRATE

TYPE "D-G" ENDWALL

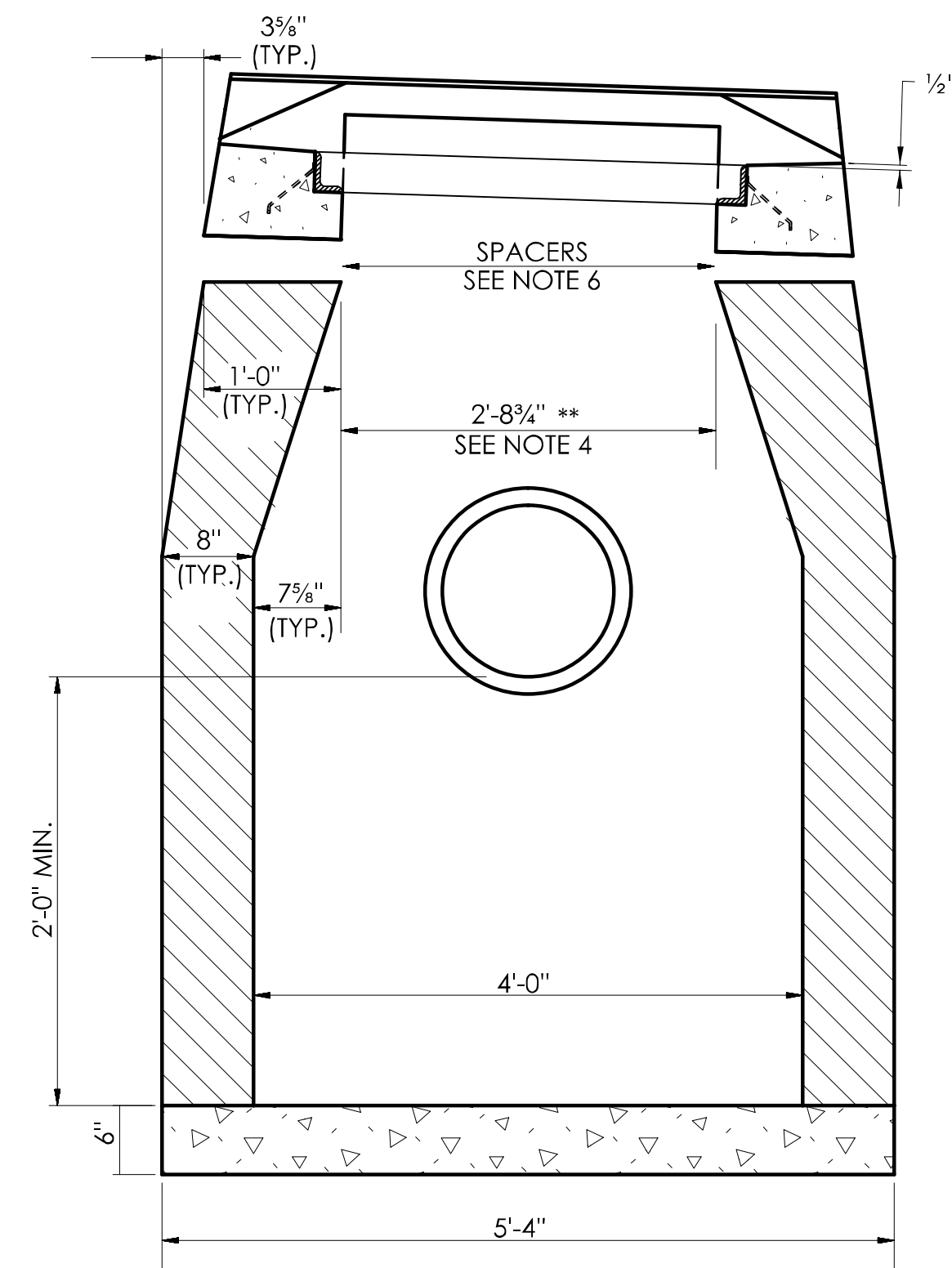
GENERAL NOTES

1. THESE ENDWALLS SHALL ONLY BE USED AT LOCATIONS WHERE THEY ARE OUTSIDE THE DESIGN CLEAR ZONE.
2. FOR ALL TYPE "D-G" & "L" ENDWALLS, ALL EDGES OF EXPOSED SURFACES SHALL BE CHAMFERED APPROXIMATELY 1".
3. ALL CONSTRUCTION DIMENSIONS ARE NOMINAL.
4. WHEN CONSTRUCTING TYPE "D-G" ENDWALLS, CARE MUST BE TAKEN TO HAVE THE SHORT AXIS OF THE WELL OPENING PARALLEL TO THE LONG AXIS OF THE GRATE IN ORDER TO ALLOW THE BEARING BARS TO PERFORM THEIR FUNCTION PROPERLY.
5. TYPE "D-G" AND "L" ENDWALLS SHALL BE CONSTRUCTED OF CONCRETE OR CEMENT RUBBLE MASONRY.
6. STEEL GRATING SHALL BE MECHANICALLY LOCKED UNDER HYDRAULIC PRESSURE, WELDED, OR ELECTROFORGED. APPROXIMATE WEIGHT = 45 LBS. THE GRATE SHALL BE GALVANIZED IN ACCORDANCE WITH M.06.03. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1 - STRUCTURAL WELDING CODE.
7. ALL REINFORCING BARS SHALL HAVE A 3" MIN. COVER.
8. STEEL GRATE SHALL CONFORM TO ASTM A-36 STEEL.
9. D = INSIDE DIAMETER OF PIPE.

TYPE "D-G" ENDWALL DIMENSIONS	
PIPE DIAMETER IN.	CONCRETE VOLUME CY.
15"	2.44
18"	2.57
24"	2.85

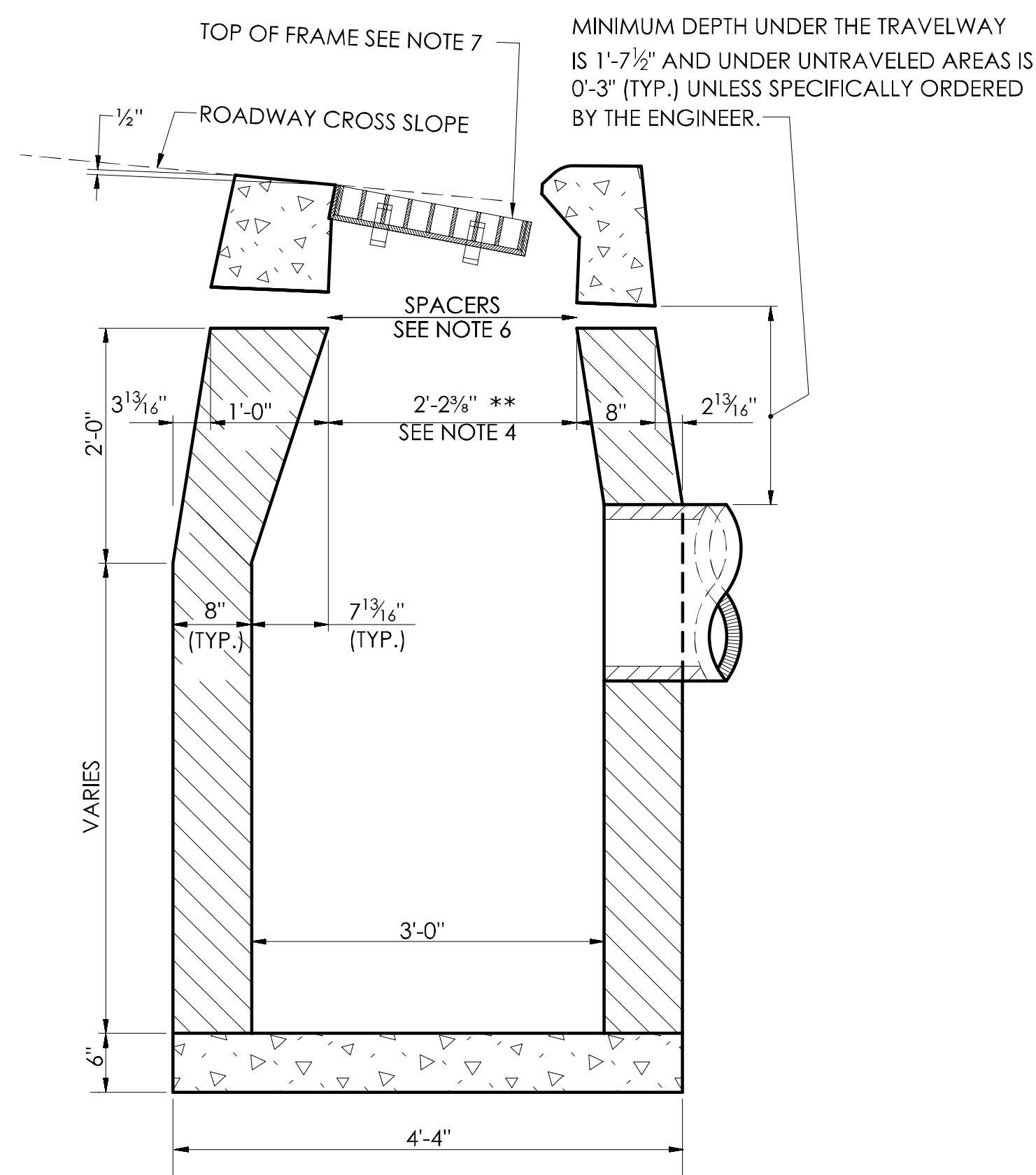


SECTION **B**
TYPE "C-L" CATCH BASIN



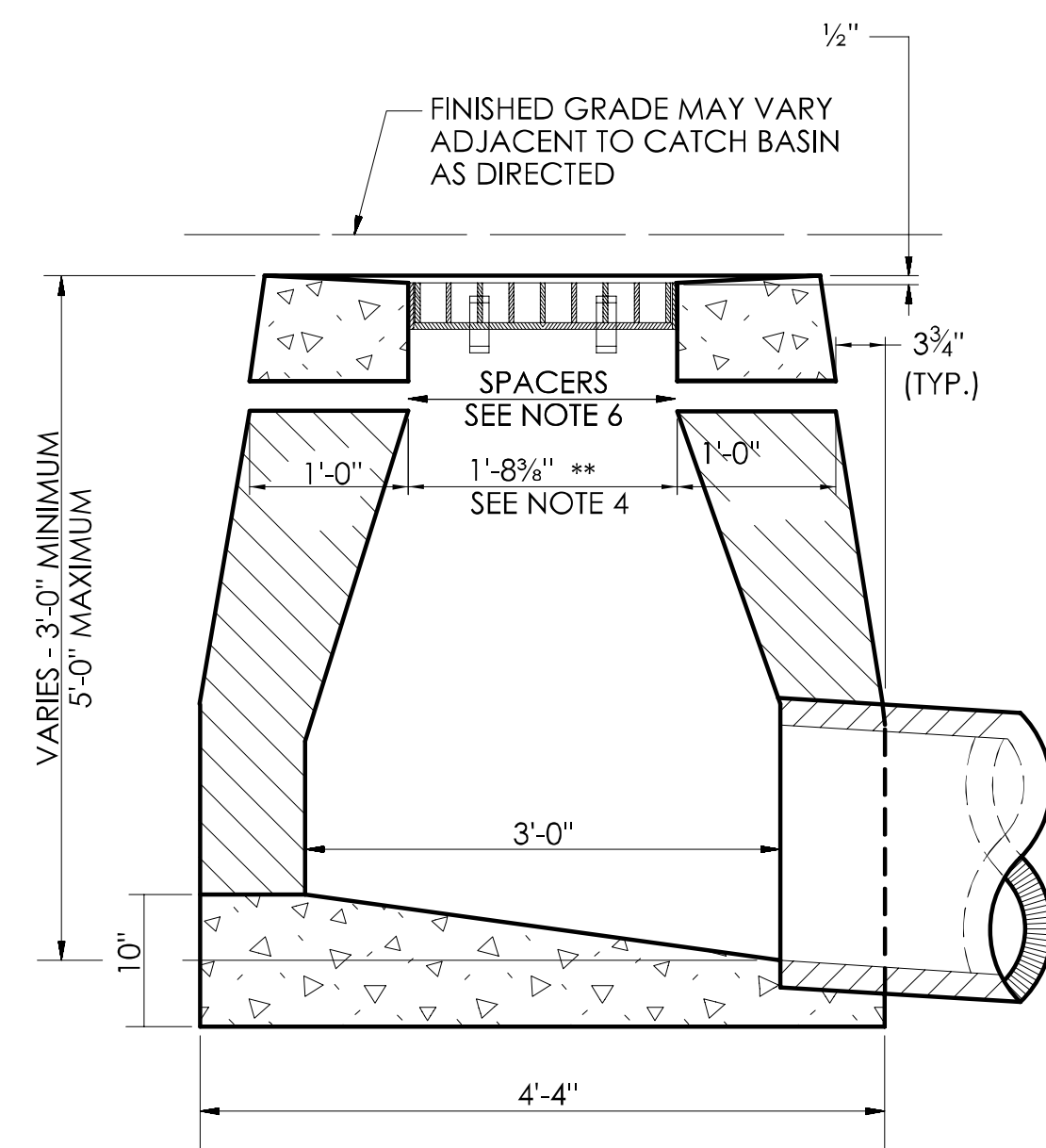
SECTION A

**TYPE "C" & "C-L" CATCH BASIN
(TYPE "C" TOP SHOWN)**



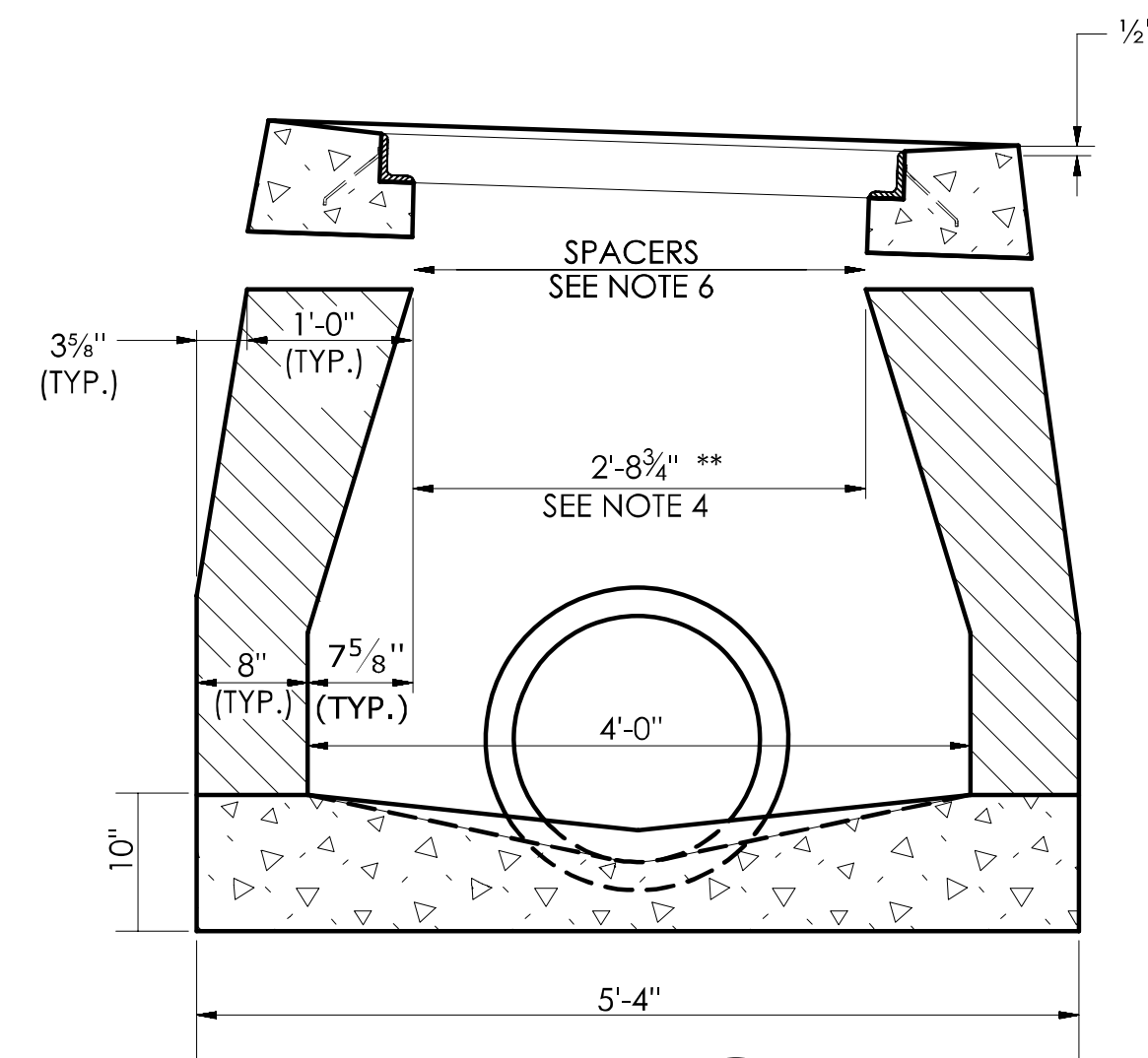
SECTION B

TYPE "C" CATCH BASIN



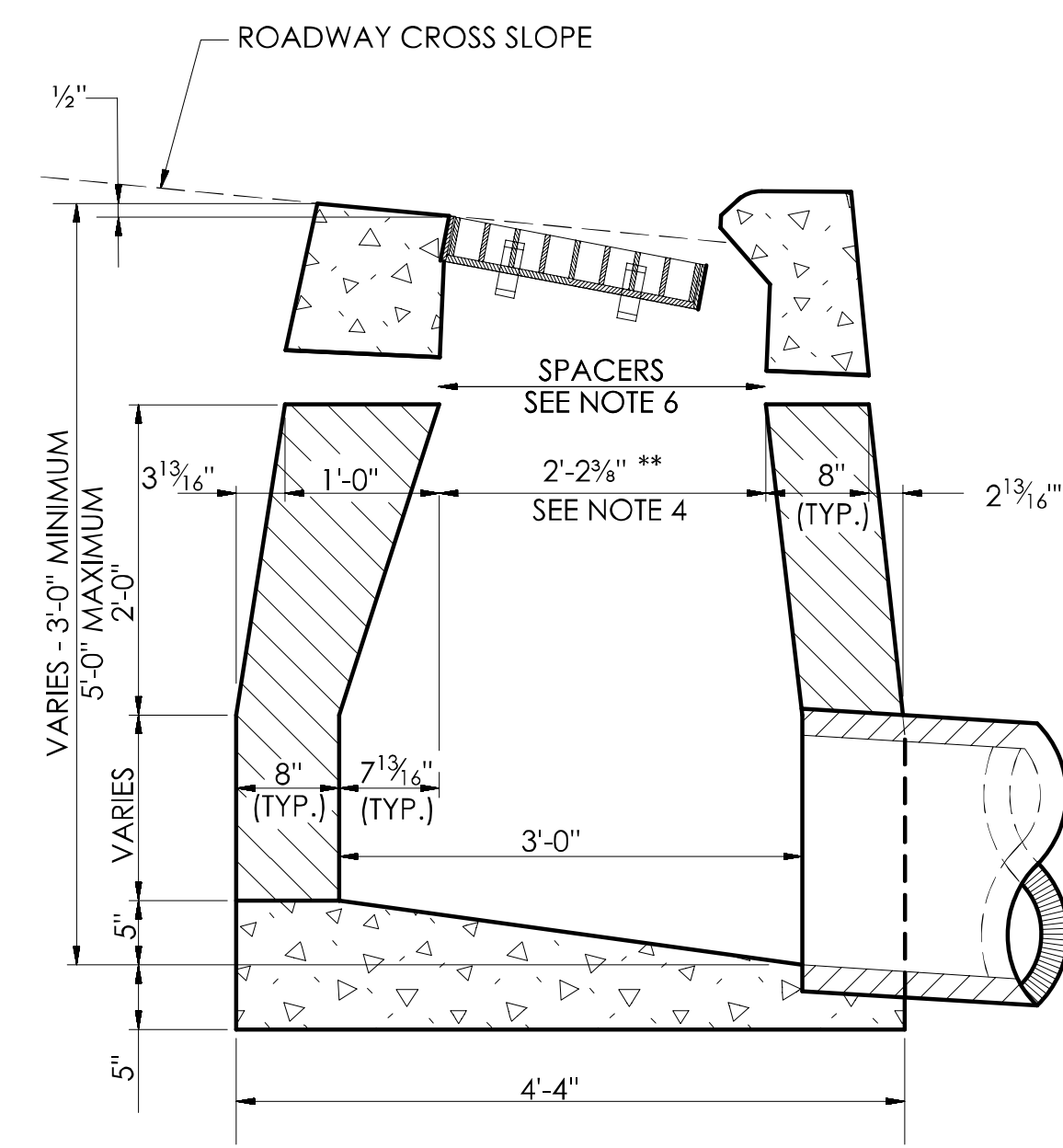
SECTION B

TYPE "C-L" DROP INLET



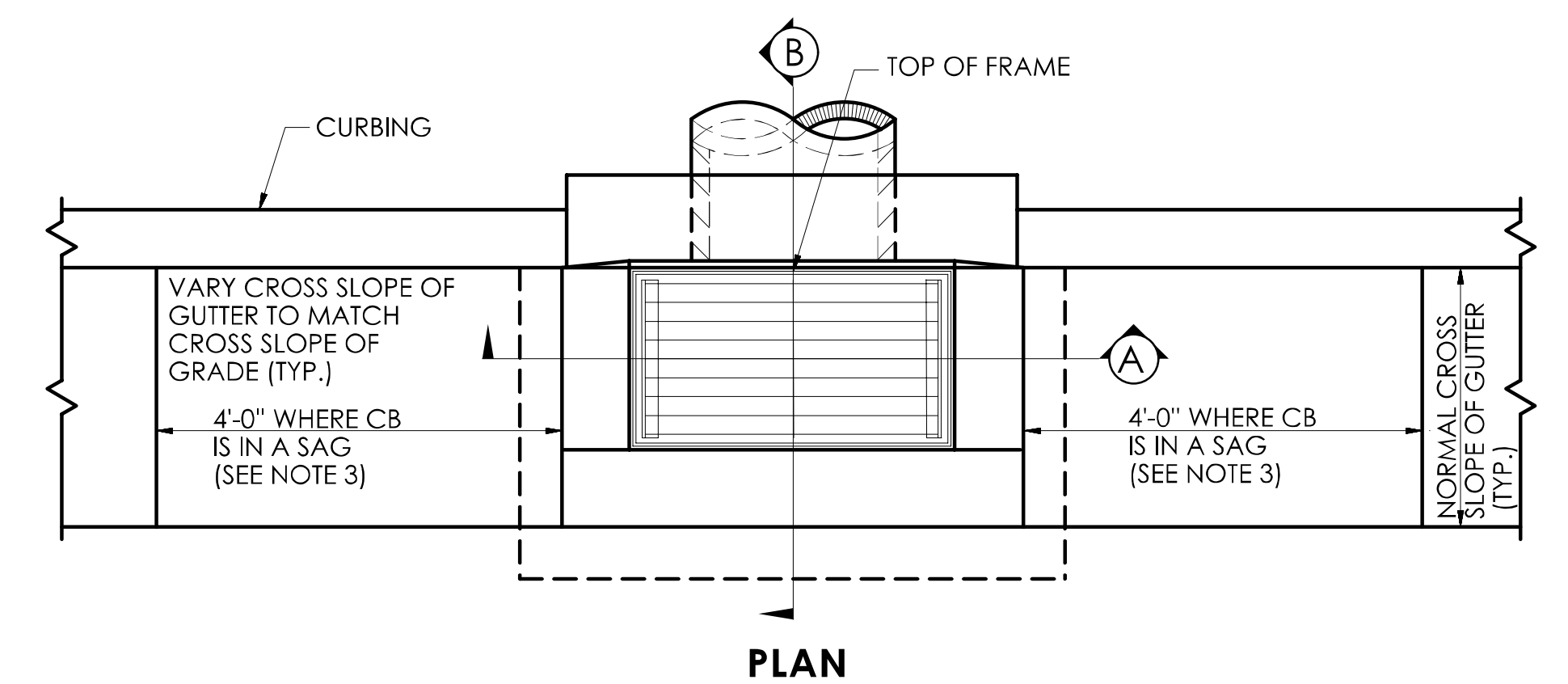
SECTION A

**TYPE "C" & "C-L" DROP INLET
(TYPE "C-L" TOP SHOWN)**

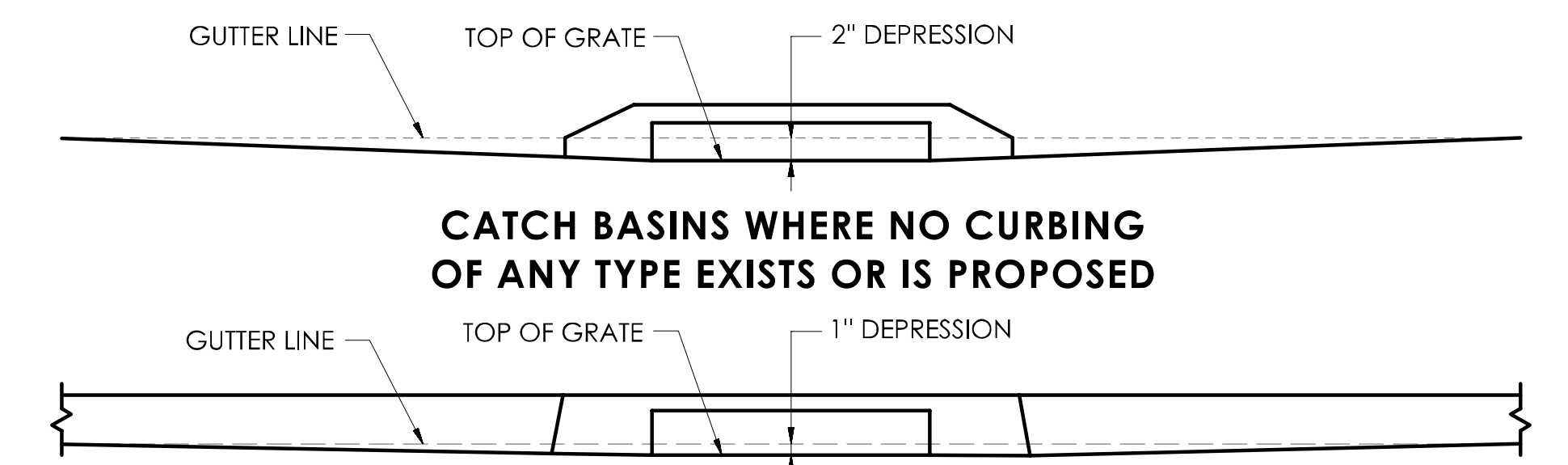


SECTION 

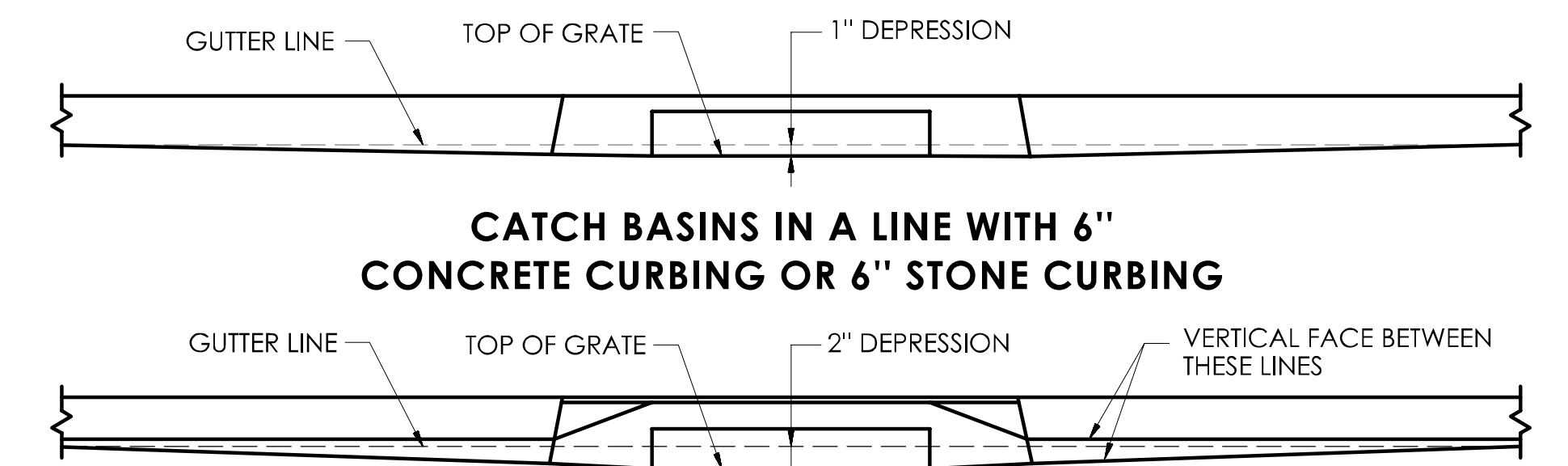
TYPE "C" DROP INLET



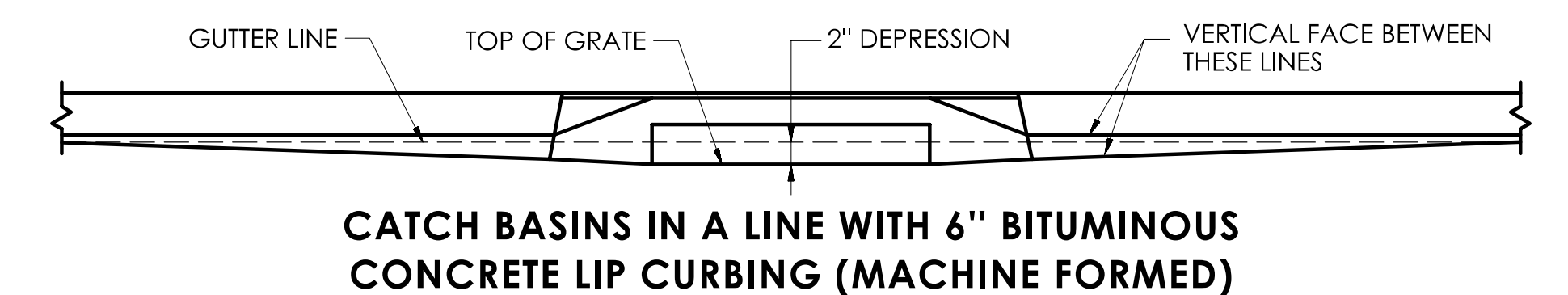
CATCH BASINS IN A LINE WITH 4" CONCRETE PARK CURBING OR 4" BITUMINOUS CONCRETE PARK CURBING



CATCH BASINS WHERE NO CURBING OF ANY TYPE EXISTS OR IS PROPOSED



CATCH BASINS IN A LINE WITH 6" CONCRETE CURBING OR 6" STONE CURBING

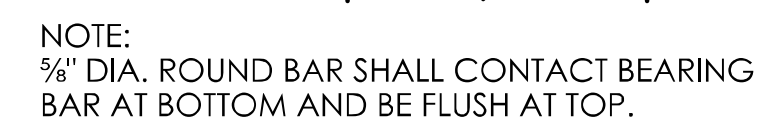


CATCH BASINS IN A LINE WITH 6" BITUMINOUS CONCRETE LIP CURBING (MACHINE FORMED)

DETAILS OF DEPRESSED GUTTER STRIP FOR TYPE "C" CATCH BASIN

GENERAL NOTES:

1. FOR CATCH BASIN TOPS, SEE SHEET NO. HW-586-07.
2. ALL FACES OF STRUCTURES IN CONTACT WITH CONCRETE PAVEMENT SHALL BE COVERED WITH A LAYER OF TAR PAPER OR APPROVED EQUAL.
3. USE 6'-0" ON UPGRADE SIDE (SEE PLAN VIEW) OF CONTINUOUS GRADE AND 1'-0" ON DOWNGRADE SIDE OF CONTINUOUS GRADE OR AS DIRECTED BY THE ENGINEER.
4. IF MASONRY UNITS ARE REQUIRED, THE BASIN SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE DIMENSIONS SHOWN. CORBELLING SHALL BE PERMITTED TO A MAXIMUM OF 3". NO PROJECTION SHALL EXTEND INSIDE THE LIMITS FOR THE CATCH BASIN OPENINGS SHOWN IN THE SECTION VIEWS **.
5. WALL THICKNESS OF ALL CATCH BASINS OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. 12" THICKNESS SHALL START AFTER THE FIRST 10'.
6. FOR GRADE ADJUSTMENT OF THE CATCH BASIN TOP (TO MATCH THE ROADWAYS' PROFILE AND CROSS-SLOPE SHOWN ON THE PLANS) USE: SPACERS EITHER CONCRETE MASONRY UNIT OR PRECAST WITH THE REQUIRED REINFORCING (RECOMMENDED BY THE MANUFACTURER) COMBINED WITH MORTAR AS NEEDED TO PROVIDE THE PROPER GRADE ADJUSTMENTS.
7. TOP OF FRAME ELEVATION SHALL BE MEASURED IN THE CENTER OF GRATE AT GUTTER LINE.



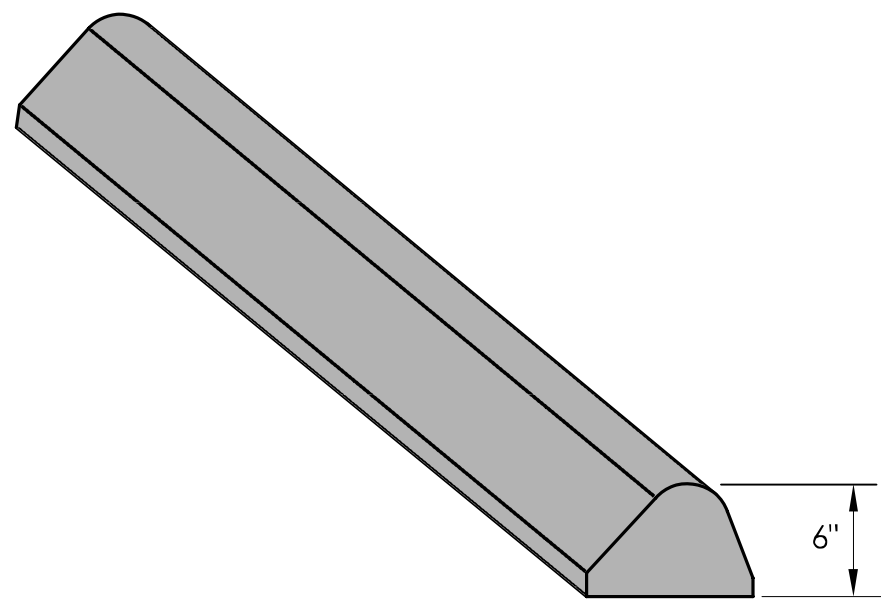
ROUND BAR ATTACHMENT CATCH BASIN GRATE TYPE A



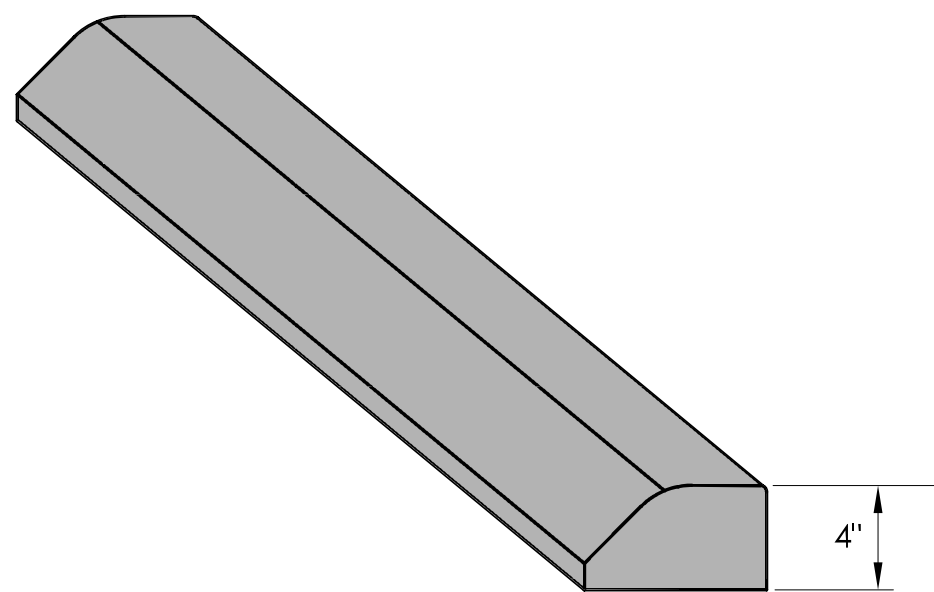
- GENERAL NOTES:**

1. STEEL OR CAST IRON SHALL BE USED FOR FRAMES. STEEL SHALL BE USED FOR TYPE "A" AND "B" GRATES.
2. TYPE "A" GRATES SHALL BE USED ON ALL ROADWAYS WHERE BICYCLE TRAFFIC IS ALLOWED OR ON HEAVY DUTY LOCK DOWN TOPS AS DIRECTED BY THE ENGINEER.
3. TYPE "B" GRATES SHALL BE USED ON ALL LIMITED ACCESS HIGHWAYS, RAMPS AND WHERE BICYCLE TRAFFIC IS NOT ALLOWED OR AS DIRECTED BY THE ENGINEER.
4. DO NOT GALVANIZE CAST IRON FRAMES.
5. DIMENSIONAL TOLERANCES SHALL BE $\pm \frac{3}{16}$ ".
6. ALL STEEL BARS SHALL BE WELDED AT ALL INTERSECTIONS.

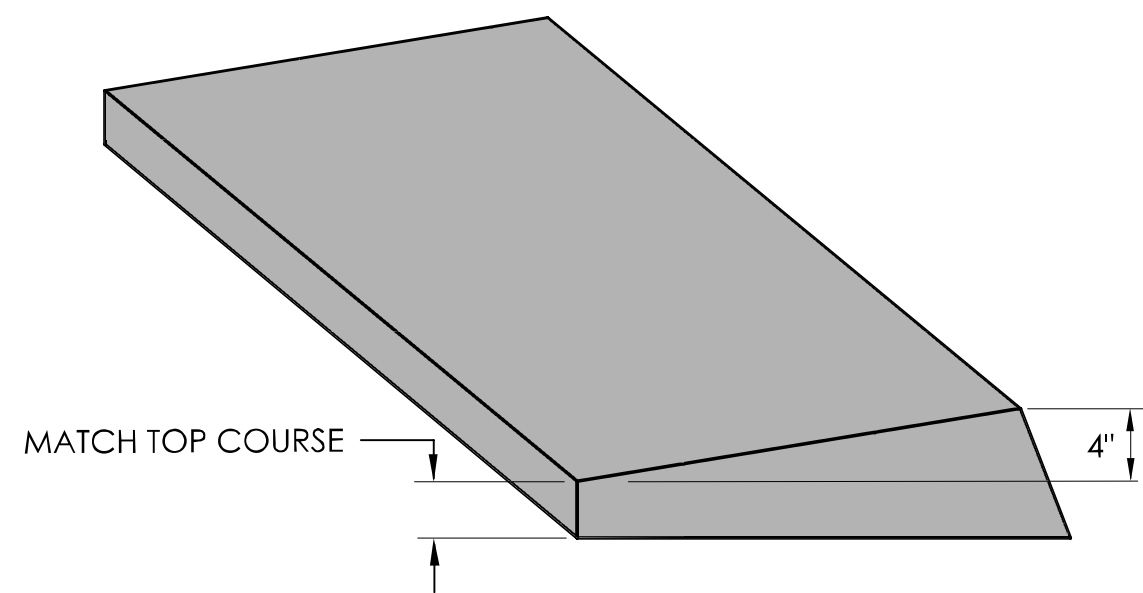




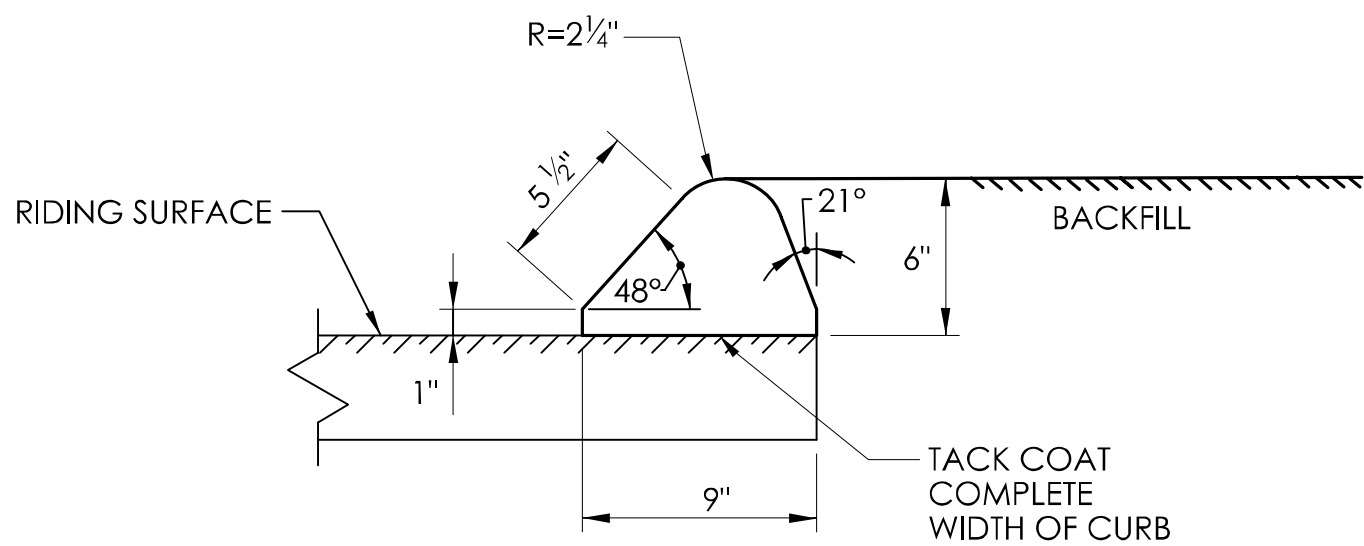
BITUMINOUS CONCRETE LIP CURBING
(6" HIGH)



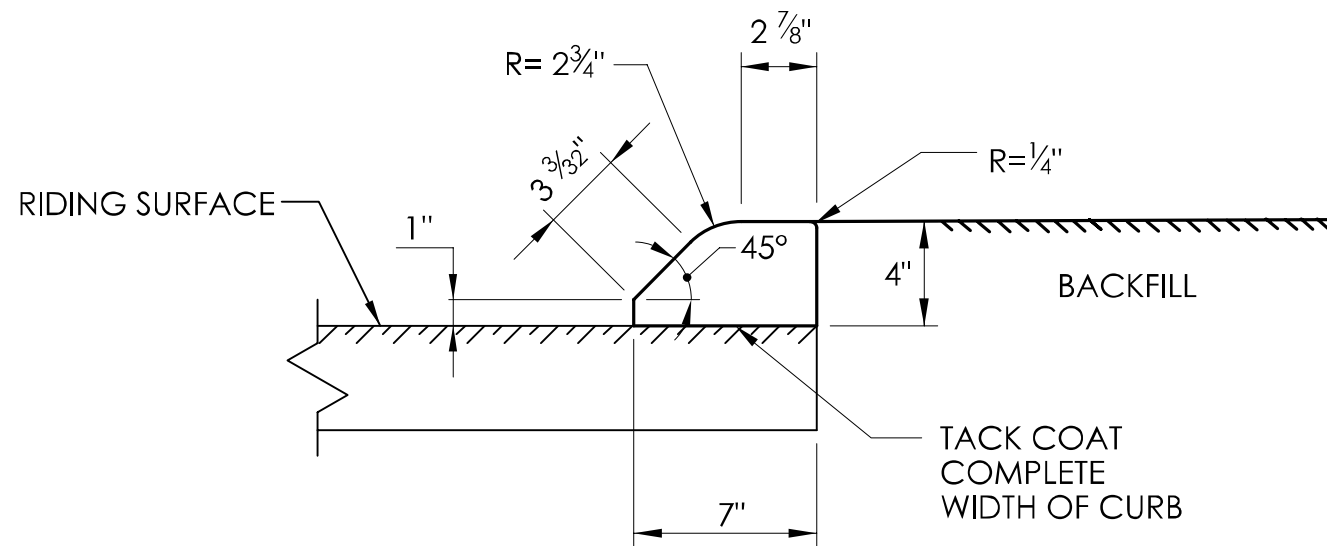
BITUMINOUS CONCRETE PARK CURBING
(4" HIGH)



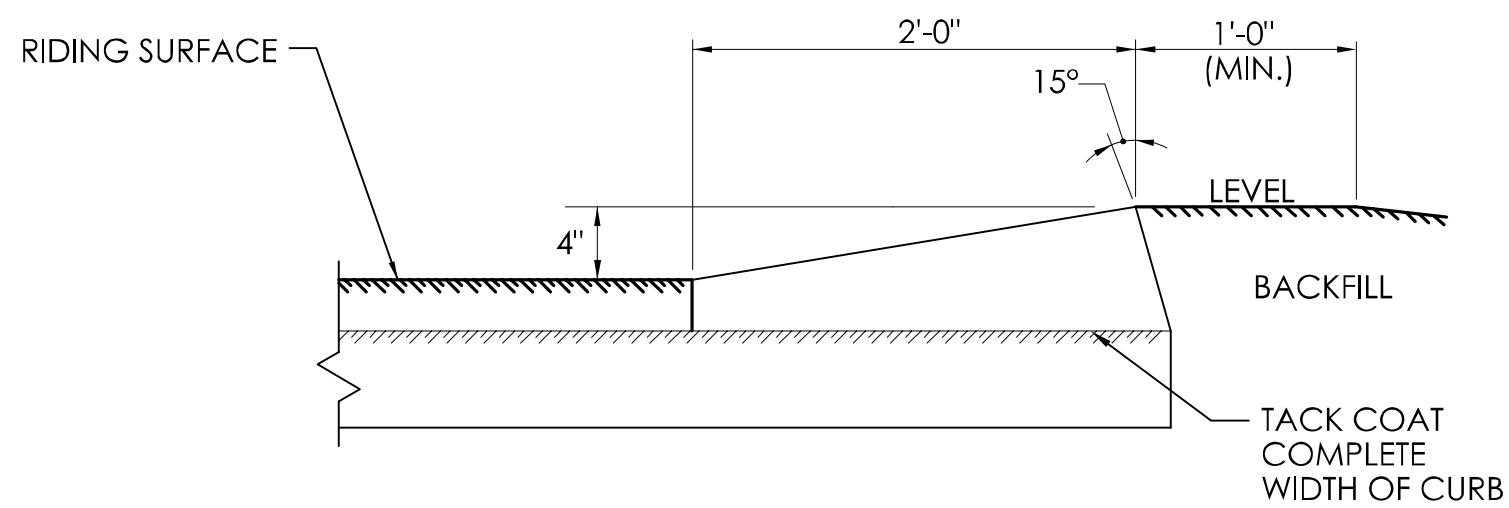
BITUMINOUS CONCRETE BERM CURBING
(4" HIGH)



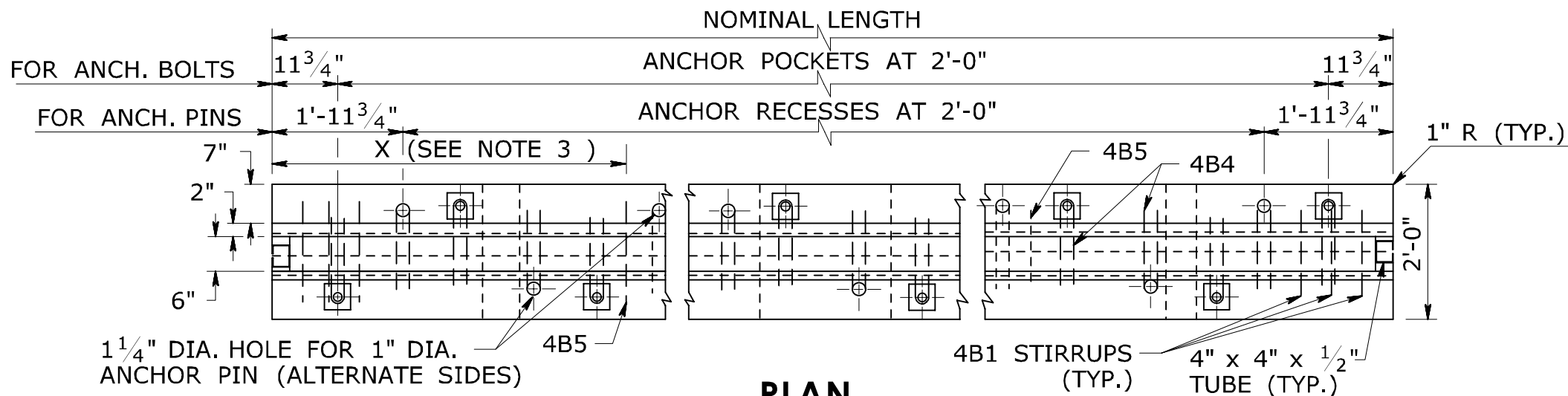
SECTION



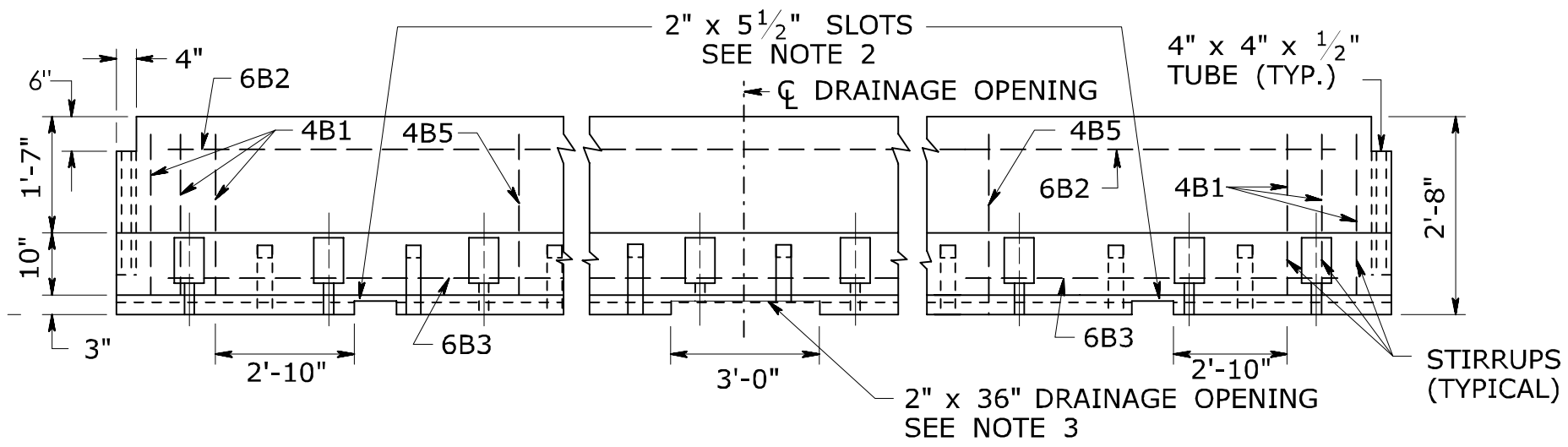
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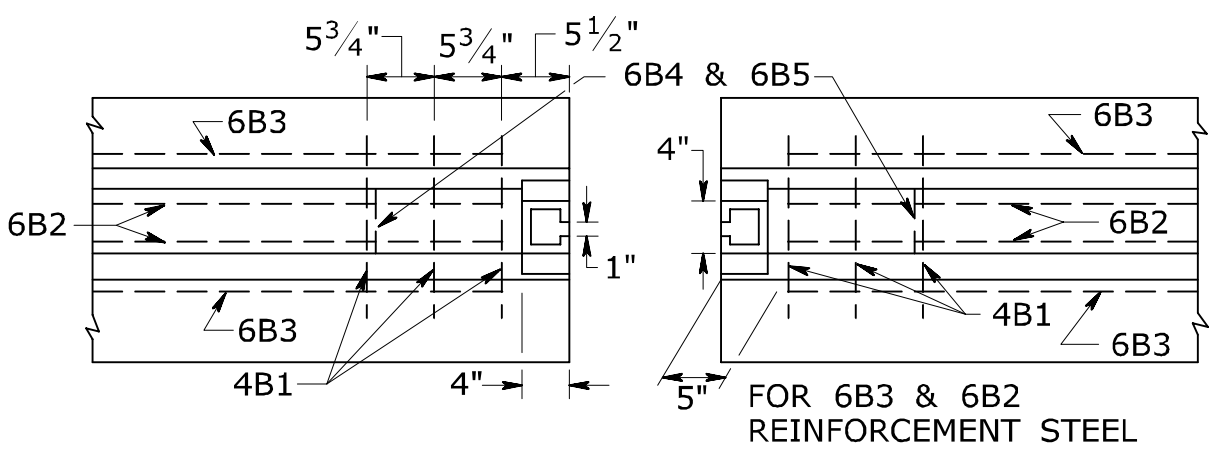
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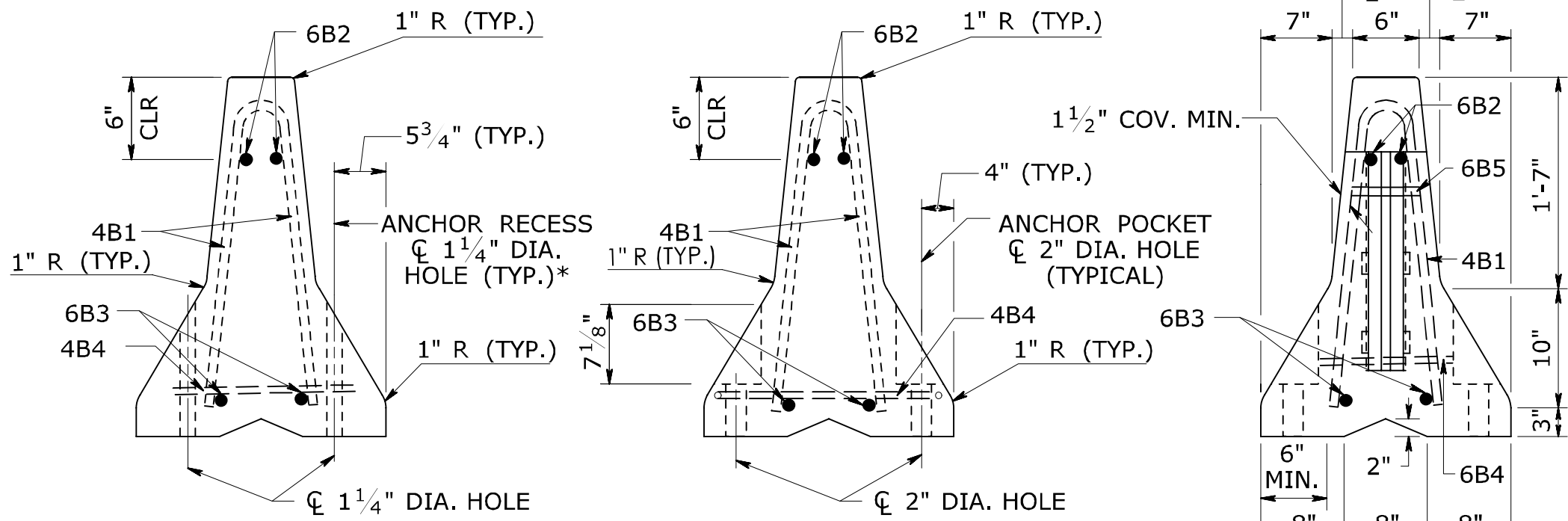
PLAN



ELEVATION



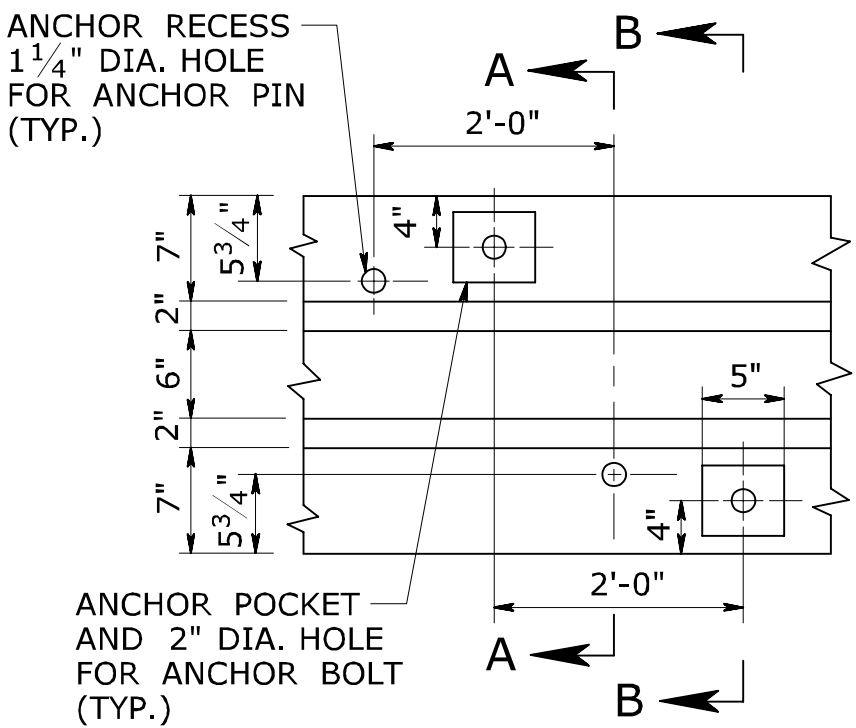
PLAN - BARRIER END



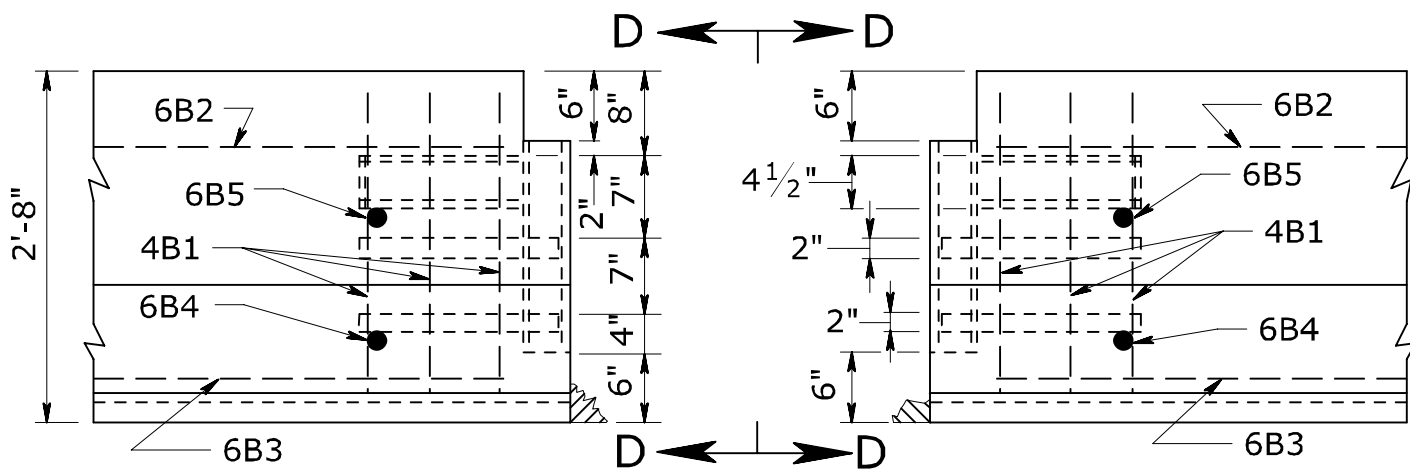
SECTION A-A

SECTION B-B

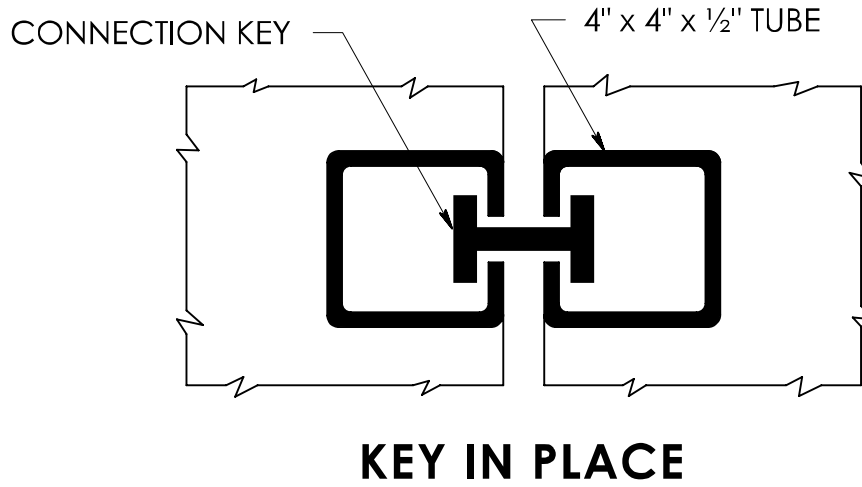
SECTION D-D



PLAN - ANCHOR RECESS/POCKET
SEE NOTE 5



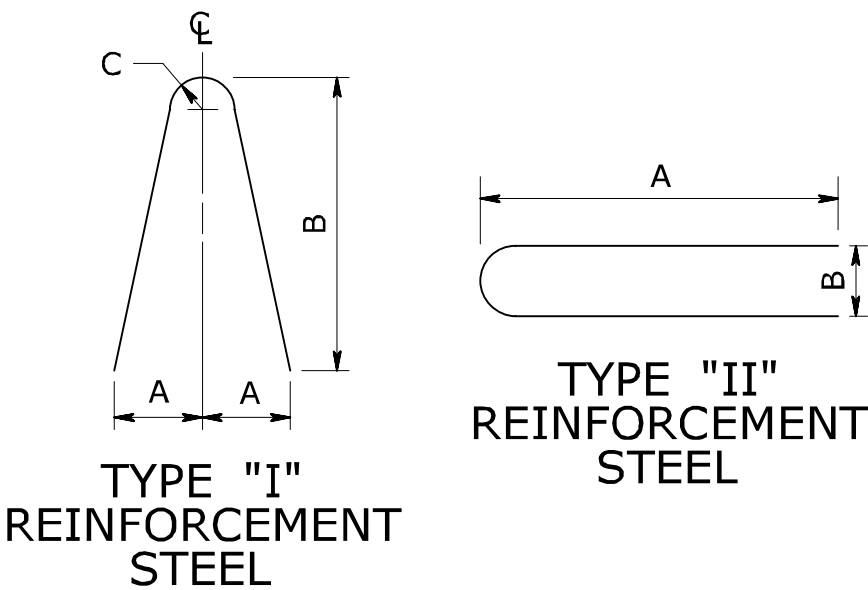
ELEVATION



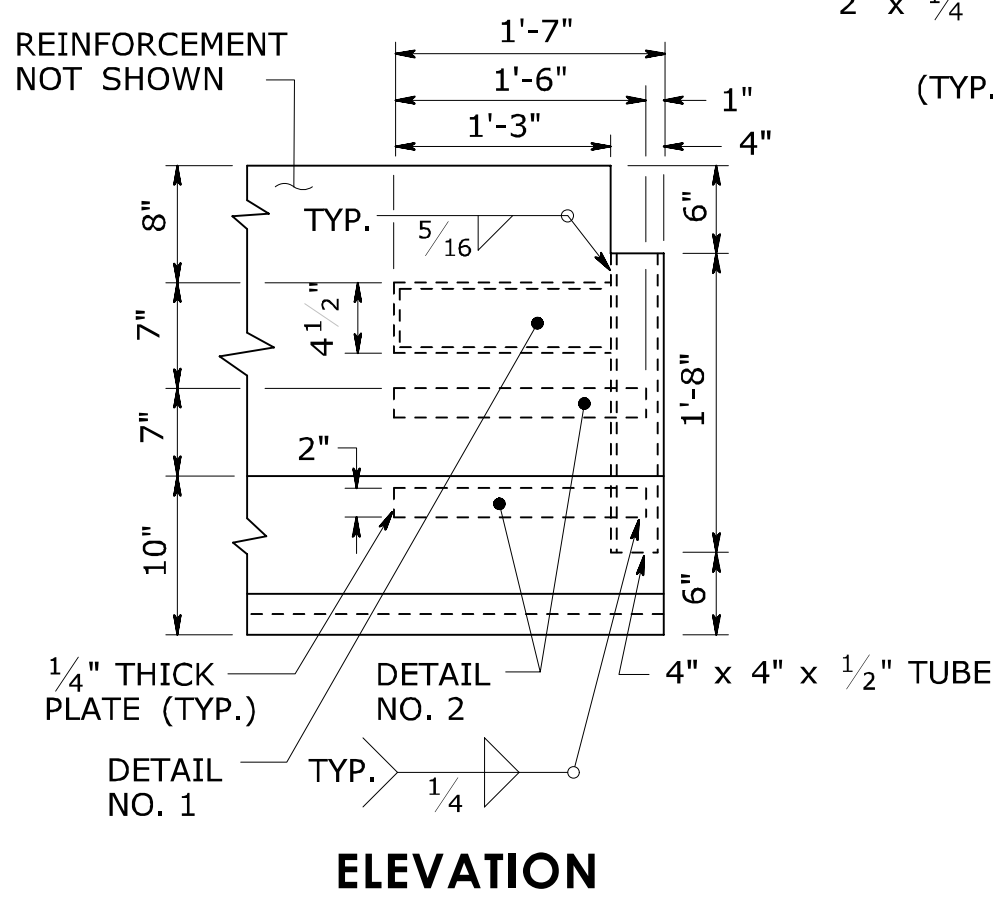
KEY IN PLACE

TABLE OF VARIABLE REINFORCEMENT STEEL			
NOMINAL LENGTH OF BARRIER UNIT	MARK	"X"	NO. EACH SECTION
20'	4B4	N.A.	19
20'	4B5	6'-11"	2
18'	4B4	N.A.	17
18'	4B5	6'-5"	2
16'	4B4	N.A.	15
16'	4B5	5'-11"	2
14'	4B4	N.A.	13
14'	4B5	7'-0"	1
12'	4B4	N.A.	11
12'	4B5	6'-0"	1
10'	4B4	N.A.	9
10'	4B5	5'-0"	1
8'	4B4	N.A.	7
8'	4B5	-	0
"X" DISTANCE FROM END OF BARRIER TO 4B5 REINFORCEMENT STEEL			

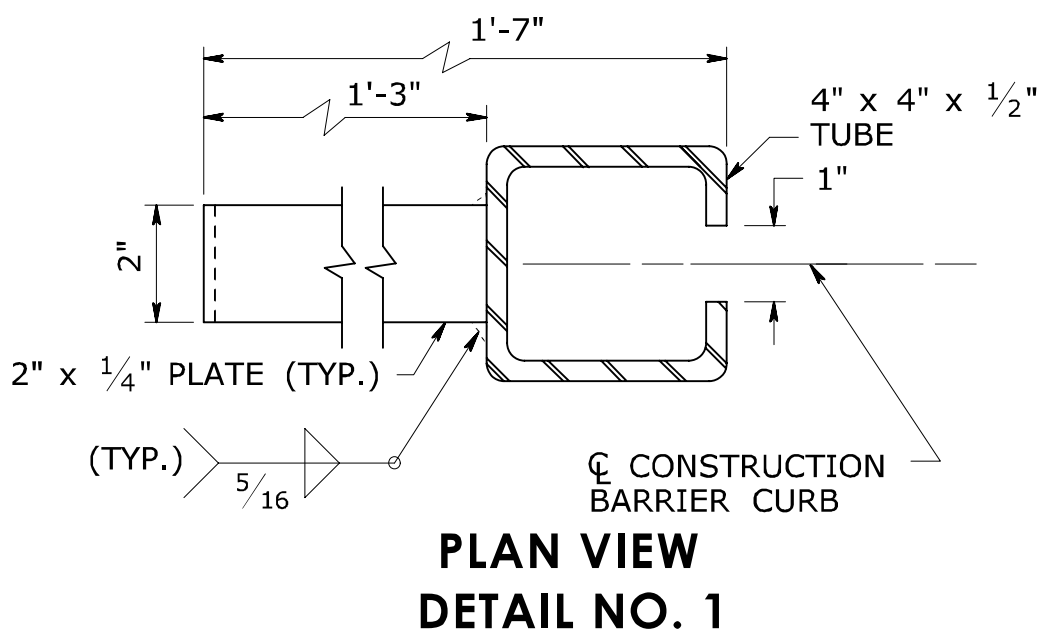
TEMPORARY TRAFFIC BARRIER



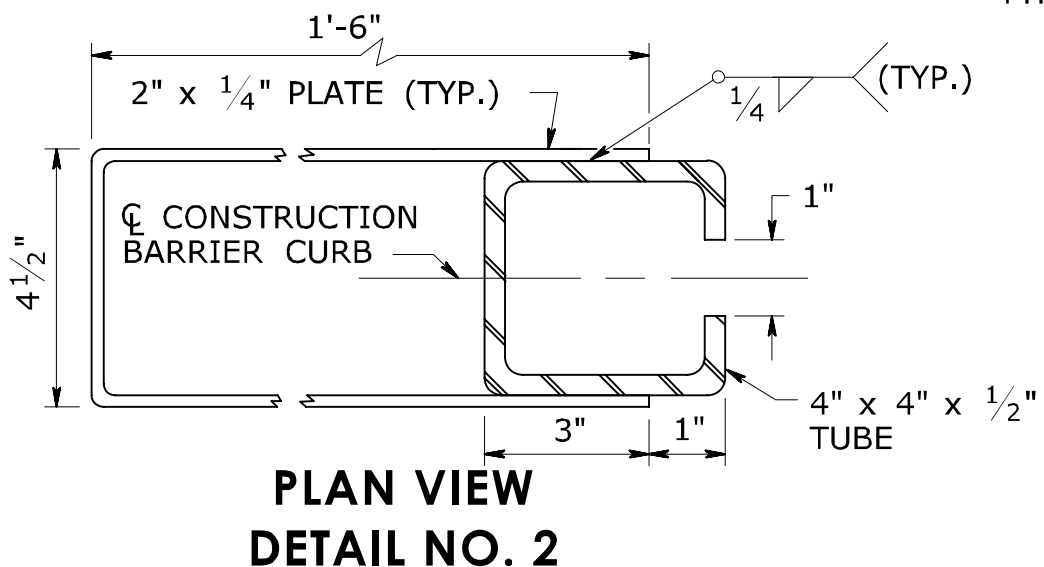
REINFORCEMENT STEEL LIST (EACH BARRIER SECTION)							
MARK	SIZE	NUMBER IN EACH SECTION	LENGTH	TYPE	A	B	C
4B1	#4	6	4'-11"	I	5"	26"	2"
4B4	#4	SEE NOTE 4	3'-1"	II	15 1/2"	4"	
4B5	#4	SEE NOTE 4	4'-11"	I	5"	26"	2"
6B2	#6	2	SEE NOTE 4	STR.			LONGITUDINAL (TOP) NORMAL SECTION
6B3	#6	2	SEE NOTE 4	STR.			LONGITUDINAL (BOTTOM) NORMAL SECTION
6B4	#6	2	1'-2"	STR.			TRANSVERSE (BOTTOM) NORMAL SECTION
6B5	#6	2	0'-6"	STR.			TRANSVERSE (TOP) NORMAL SECTION



ELEVATION

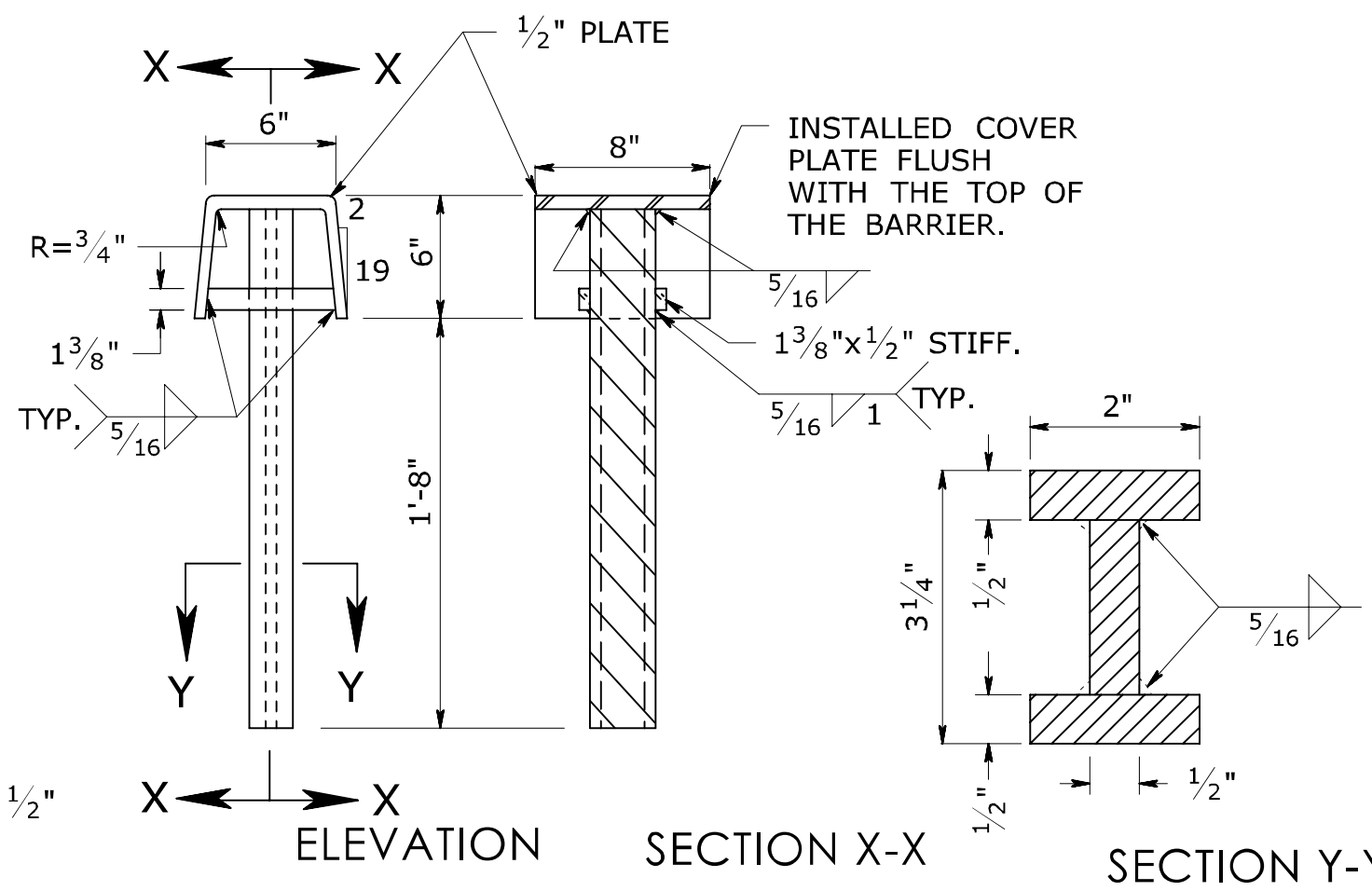


PLAN VIEW
DETAIL NO. 1



PLAN VIEW
DETAIL NO. 2

TEMPORARY TRAFFIC BARRIER CONNECTION DETAILS



SECTION X-X

SECTION Y-Y

CONNECTION KEY

NOT TO SCALE

SIGNATURE BLOCK:
OFFICE OF ENGINEERING
2800 BERLIN TURNPIKE
NEWINGTON, CT 06111

SUBMITTED BY:
Digitally signed by
Michael N. Calabrese, P.E.
Date: 2024.12.16
14:21:13-05'00'

APPROVED BY:
Digitally signed by
Michael N. Calabrese, P.E.
Date: 2025.01.21
13:41:21-05'00'



CONNECTICUT
DEPARTMENT OF
TRANSPORTATION

CTDOT
STANDARD SHEET

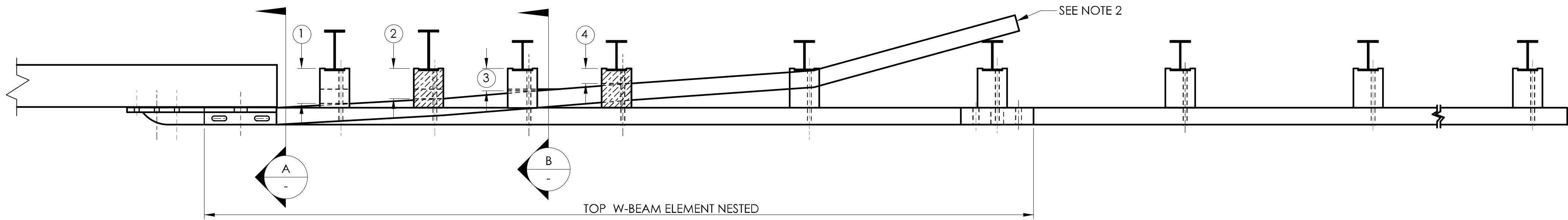
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TEMPORARY TRAFFIC BARRIER - DETAILS

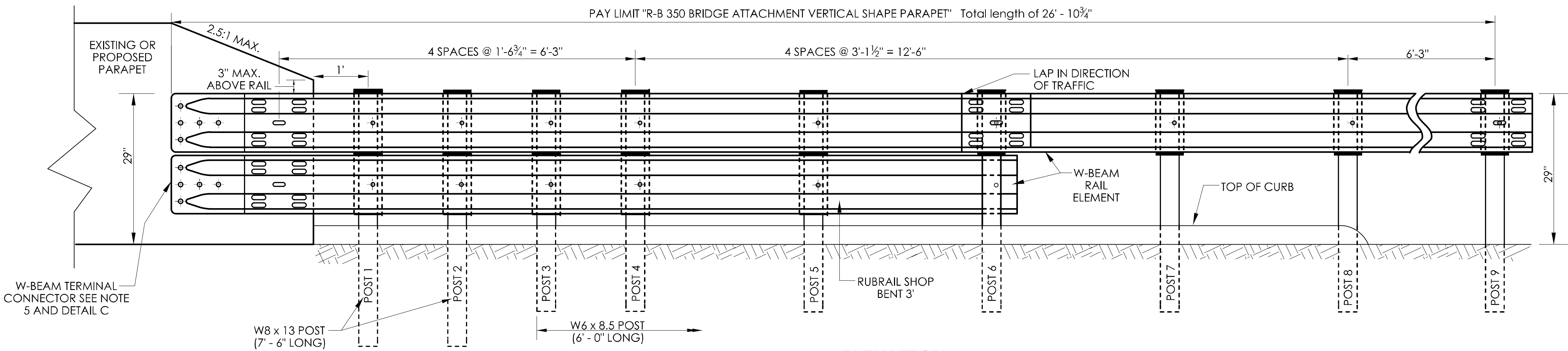
MASH 2016 COMPLIANT
APPROVAL ID: 2021-01

STANDARD SHEET NO.:

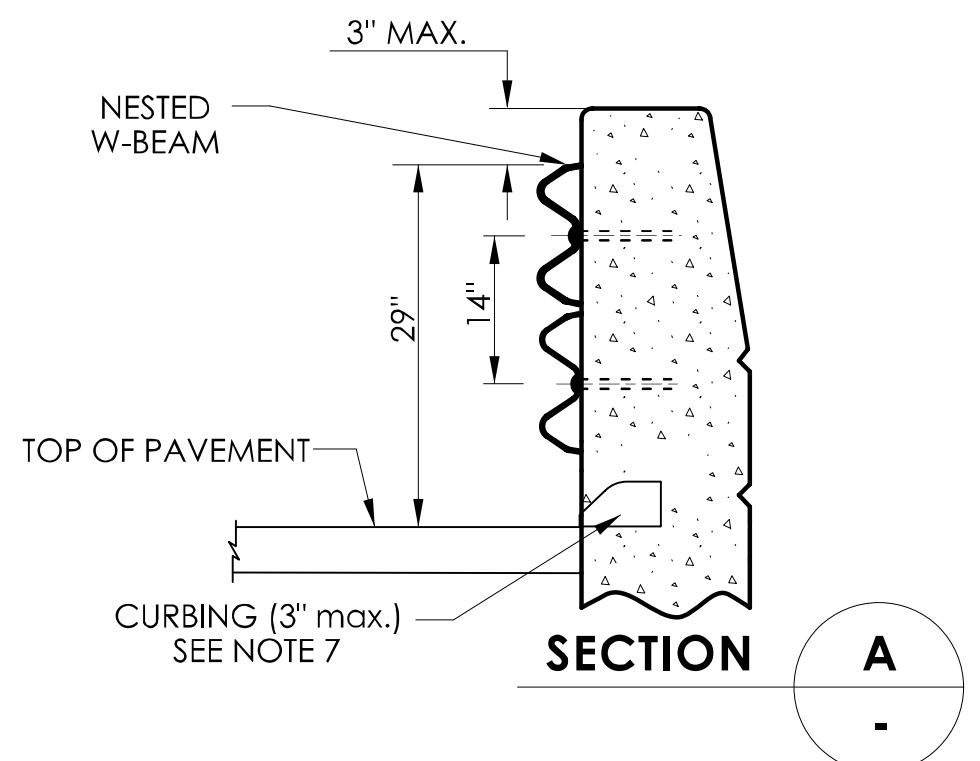
HW-822_02a



PLAN

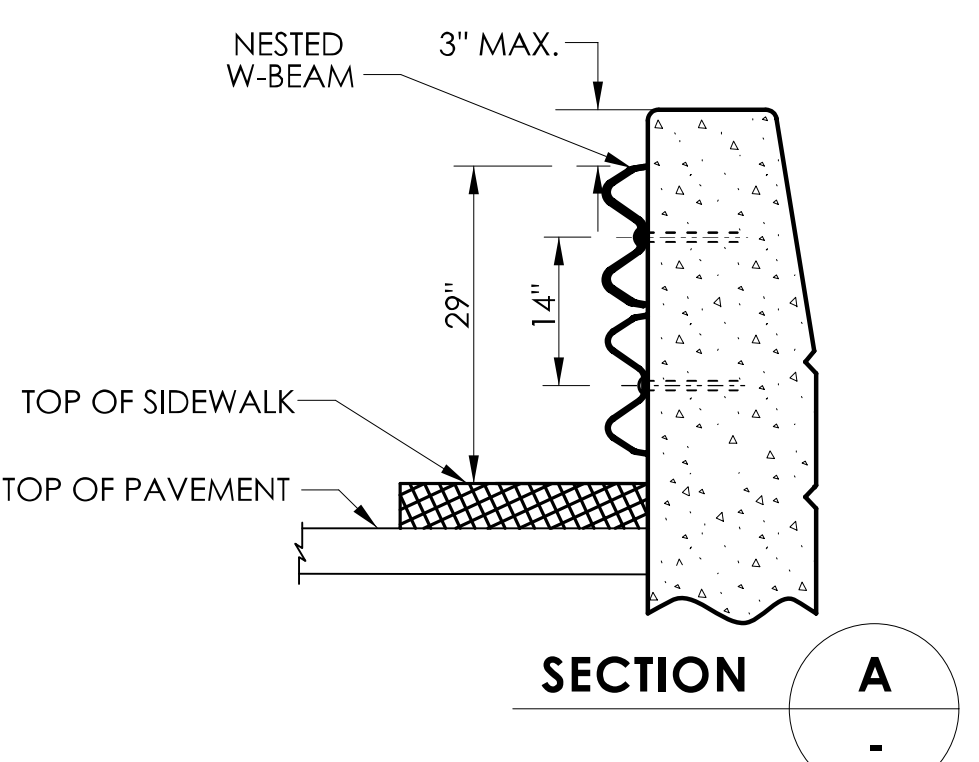


ELEVATION



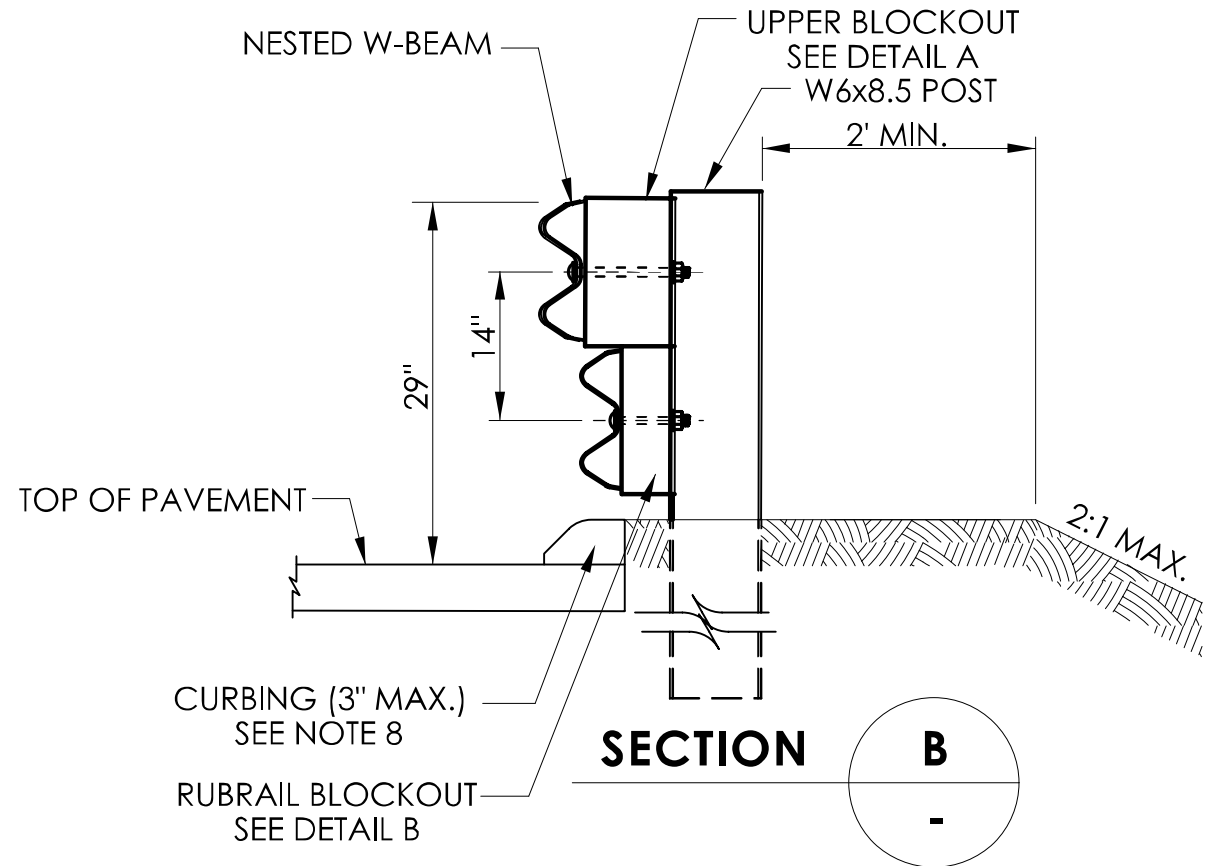
SECTION A

WITH CURBING



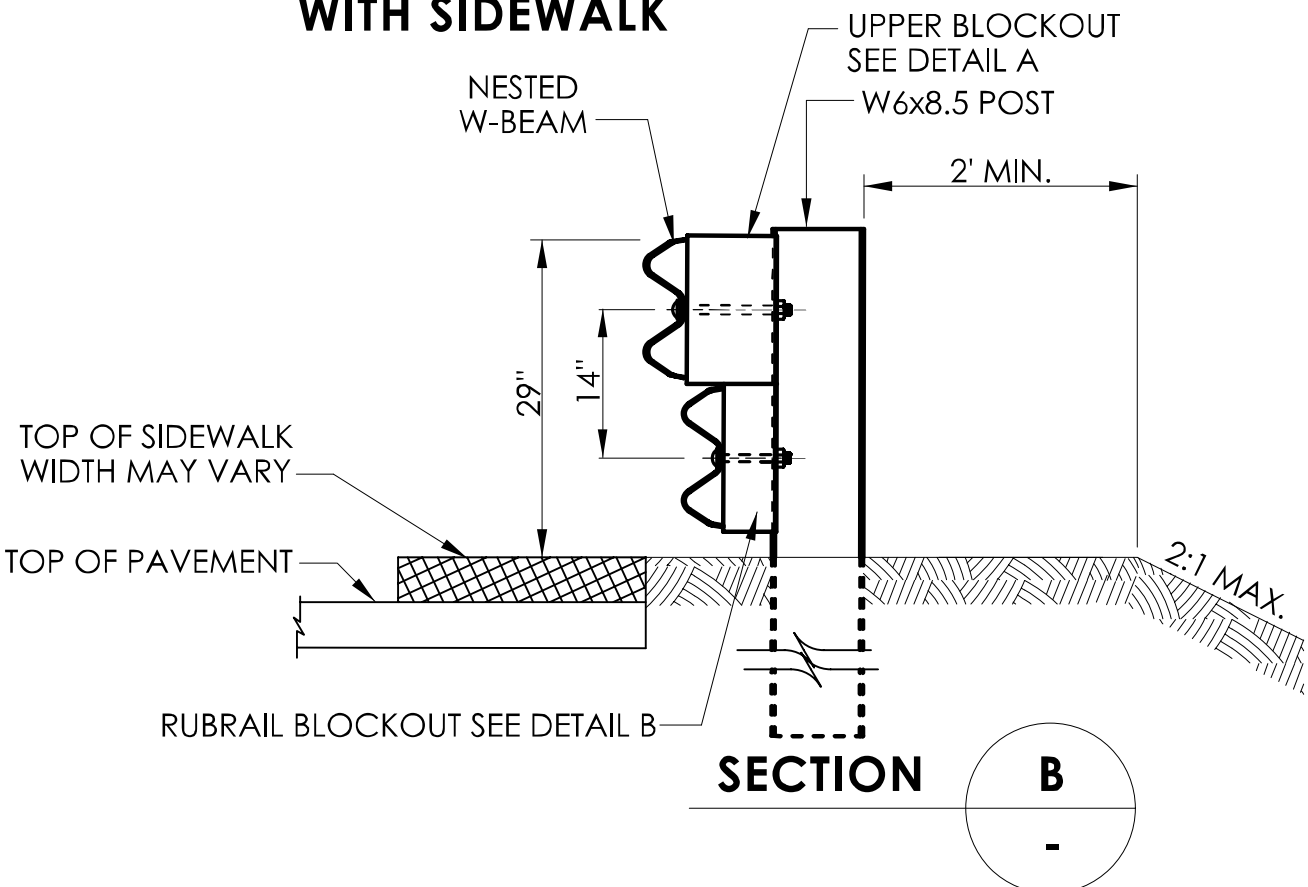
SECTION A

WITH SIDEWALK



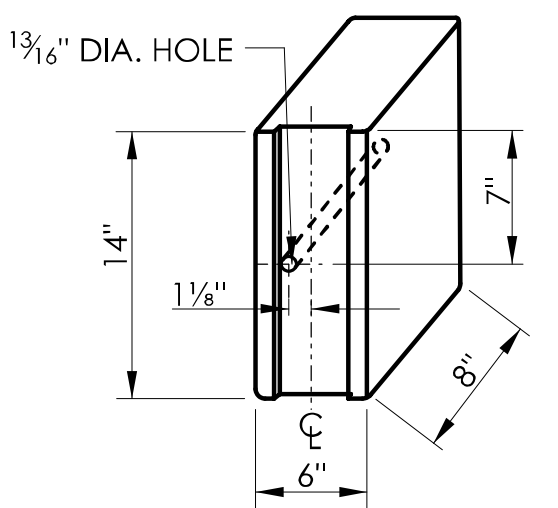
SECTION B

WITH CURBING

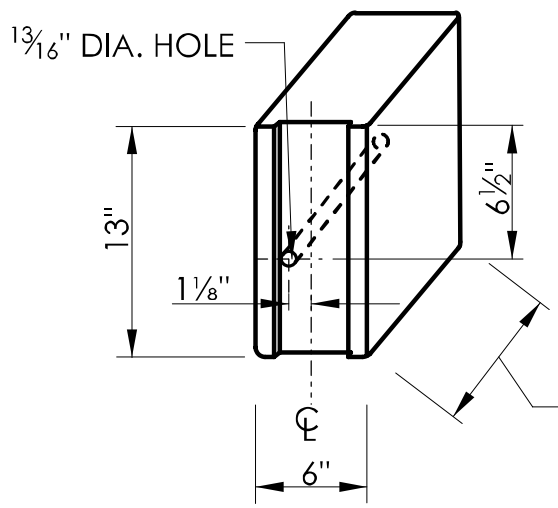


SECTION B

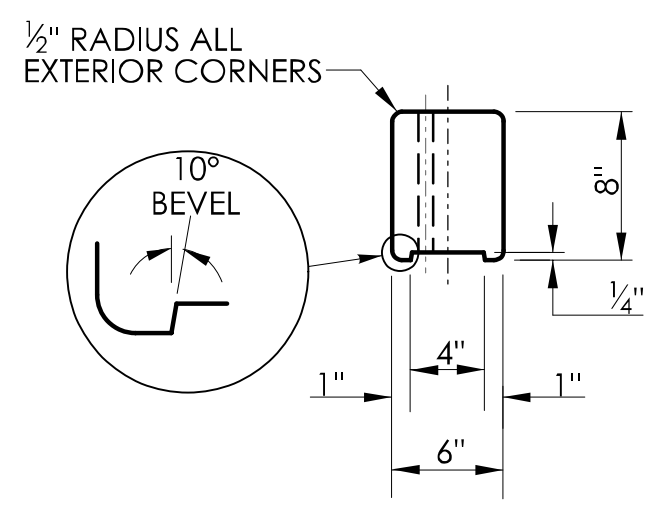
WITH SIDEWALK



DETAIL A
UPPER BLOCKOUT

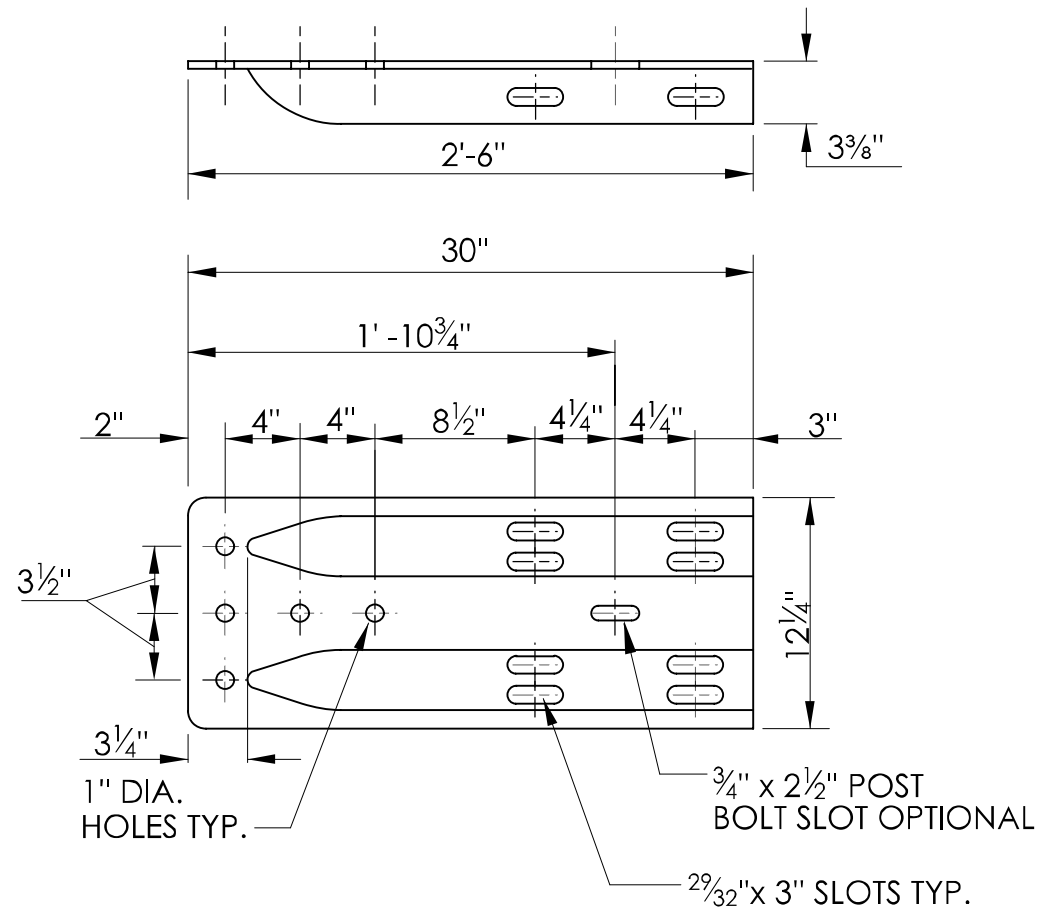


DETAIL B
RUBRAIL BLOCKOUT



TOP

RUBRAIL BLOCKOUTS 13" HIGH x 6" WIDE		
POST	THICKNESS	BOLT LENGTH
①	7"	9"
②	6"	8"
③	4 1/2"	6"
④	3"	5"



DETAIL C
W-BEAM TERMINAL CONNECTOR
CLASS B TYPE II
SEE NOTE 5

GENERAL NOTES:

- RUBRAIL BLOCKOUTS FOR POSTS 1 THROUGH 4 ARE ATTACHED TO POST AND RAIL WITH A 3/8" BUTTONHEAD BOLTS (SEE CHART FOR BOLT LENGTH). RUBRAIL ONLY IS ATTACHED TO POST 5 WITH A 3/8" x 1 1/4" BUTTONHEAD BOLT.
- THE RUBRAIL SHALL BE SHOP BENT IN THE LAST 3' TO FACILITATE INSTALLATION. DO NOT ATTACH RUBRAIL TO BACK OF POST 6.
- ANCHORAGE:

(A) AT EXISTING PARAPETS EACH W-BEAM TERMINAL CONNECTOR SHALL BE ANCHORED USING FOUR 1/8" x 12" CHEMICALLY ANCHORED BOLTS WITH WASHERS OR AS DETAILED ON STRUCTURE SHEETS. MAXIMUM BOLT PROJECTION BEYOND THE NUT SHALL BE 1/2". THE 12" MINIMUM LENGTH OF CHEMICALLY ANCHORED BOLTS SHALL INCLUDE A MINIMUM EMBEDMENT DEPTH OF 10" INTO SUITABLY REINFORCED CONCRETE OR AS RECOMMENDED BY THE MANUFACTURER OF BONDING MATERIAL.

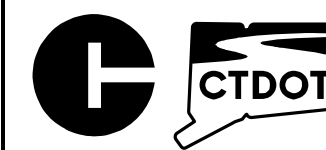
(B) FOR NEW PARAPETS OR BARRIERS, THE W-BEAM TERMINAL CONNECTORS SHALL BE ANCHORED AS DETAILED ON THE STRUCTURE SHEETS.
- ADDITIONAL BLOCKOUTS WITH POSTS 1 THROUGH 6 SHOULD BE AVOIDED.
- FOR SINGLE DIRECTION ROADWAY:
INSTALL W-BEAM TERMINAL CONNECTOR BETWEEN NESTED GUIDE RAIL ELEMENTS.
FOR DUAL DIRECTION ROADWAY FOR APPROACHING TRAFFIC:
INSTALL W-BEAM TERMINAL CONNECTOR BETWEEN NESTED GUIDE RAIL ELEMENTS.
FOR TRAILING END:
INSTALL W-BEAM TERMINAL CONNECTOR OUTSIDE OF THE NESTED GUIDE RAIL ELEMENTS.
- MINIMUM RAIL HEIGHT FOR NEW CONSTRUCTION SHALL BE 29" +/- 1".
- USE MODIFIED 4" BITUMINOUS CONCRETE PARK CURBING REDUCED TO A 3 INCH REVEAL BENEATH THE RUBRAIL IF CURBING IS REQUIRED.

NOT TO SCALE

SIGNATURE BLOCK:
OFFICE OF ENGINEERING
2800 BERLIN TURNPIKE
NEWINGTON, CT 06111

SUBMITTED BY:
Digitally signed by
Leo Fontaine, P.E.
Date: 2024.12.19
15:02:07-05'00'

APPROVED BY:
Digitally signed by
Michael N. Calabrese, P.E.
Date: 2025.01.29
11:56:34-05'00'

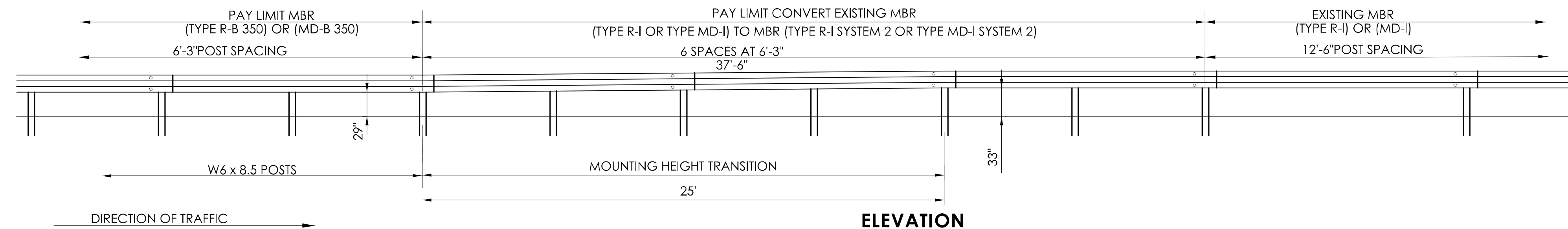


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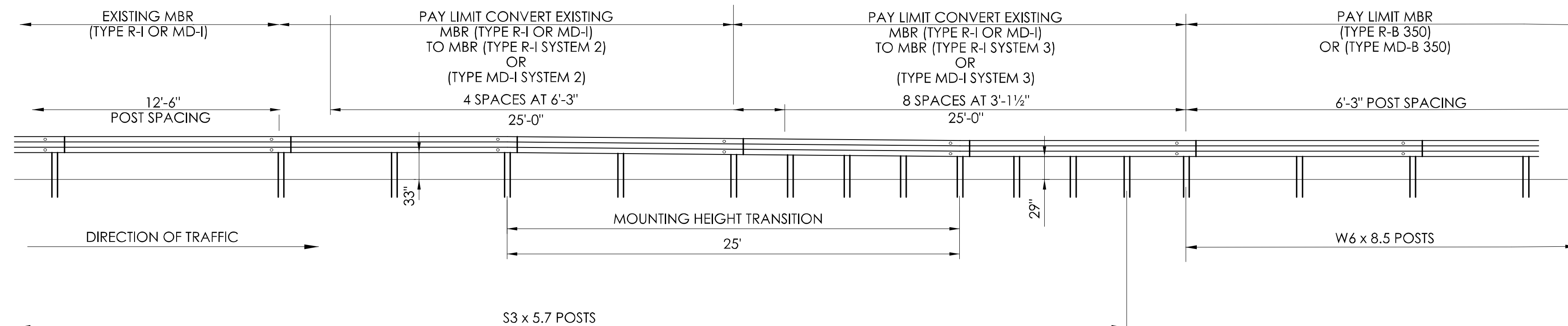
CTDOT
STANDARD SHEET

STANDARD SHEET TITLE:
R-B 350 BRIDGE ATTACHMENT TO VERTICAL SAFETY SHAPE PARAPET

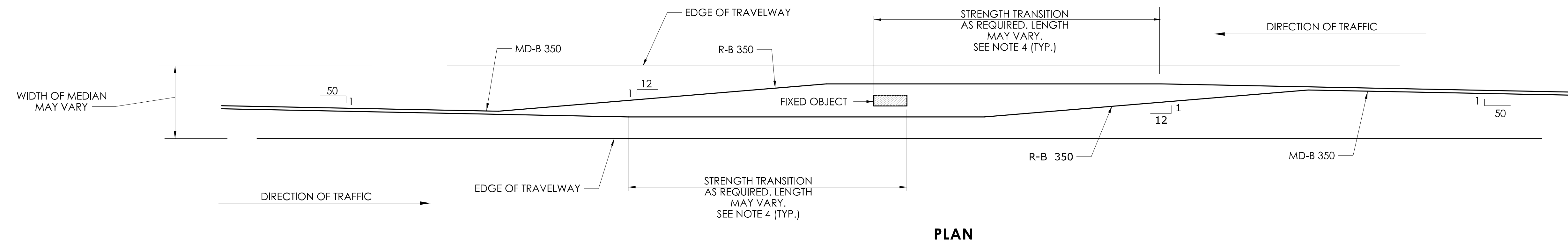
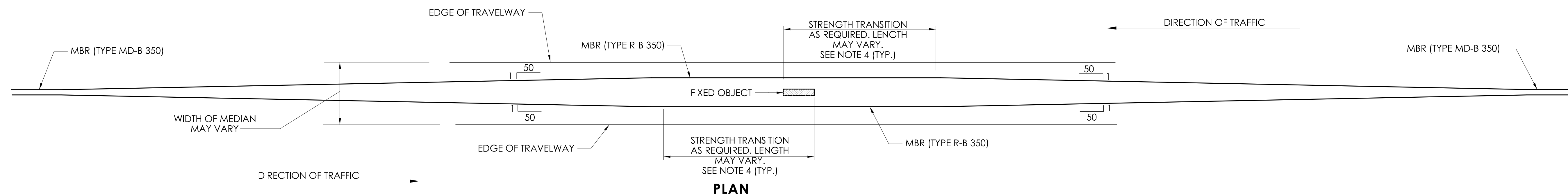
STANDARD SHEET NO.:
HW-910_07



**STRENGTH TRANSITION OF (TYPE R-B 350) TO (TYPE R-I) OR (TYPE MD-B 350) TO (TYPE MD-I)
IN THE DIRECTION OF TRAFFIC**



**STRENGTH TRANSITION OF (TYPE R-I) TO (TYPE R-B 350)
IN THE DIRECTION OF TRAFFIC OR
(TYPE MD-I) TO (TYPE MD-B 350)**

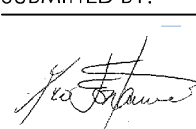


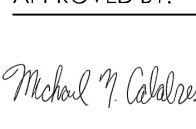
TYPICAL MEDIAN GUIDERAIL TRANSITIONS FOR FIXED OBJECT

- GENERAL NOTES:**
1. POST PLACEMENT WITHIN THE LIMITS OF THE TRANSITION SHOULD BE ADJUSTED TO ACCOMMODATE THE INTRODUCTION OF THE BLOCKOUT WHILE MAINTAINING A SMOOTH RAIL LINE.
 2. LATERAL PLACEMENT OF RAIL IN MEDIAN SHALL BE AS SHOWN ON THE PLANS.
 3. CROSS SECTION GRADE IN MEDIAN THRU TRANSITION AREA SHALL NOT EXCEED 10:1. AVOID PLACEMENT OF RAIL ON CROSS SLOPES STEEPER THAN 6:1. ADJUST RAIL HEIGHT WHEN RAIL IS GREATER THAN 2' FROM EDGE OF ROAD.
 4. PLACEMENT OF R-B 350 OR APPROPRIATE SYSTEMS ARE BASED ON DEFLECTION REQUIREMENTS FOR FIXED OBJECT. SEE STANDARD SHEET HW-910_04.

NOT TO SCALE

SIGNATURE BLOCK:
OFFICE OF ENGINEERING
2800 BERLIN TURNPIKE
NEWINGTON, CT 06111

SUBMITTED BY:

Digitally signed by
Leo Fontaine, P.E.
Date: 2024.12.19
15:02:37-05'00'

APPROVED BY:

Digitally signed by
Michael N.
Calabrese, P.E.
Date: 2025.01.29
12:13:53-05'00'

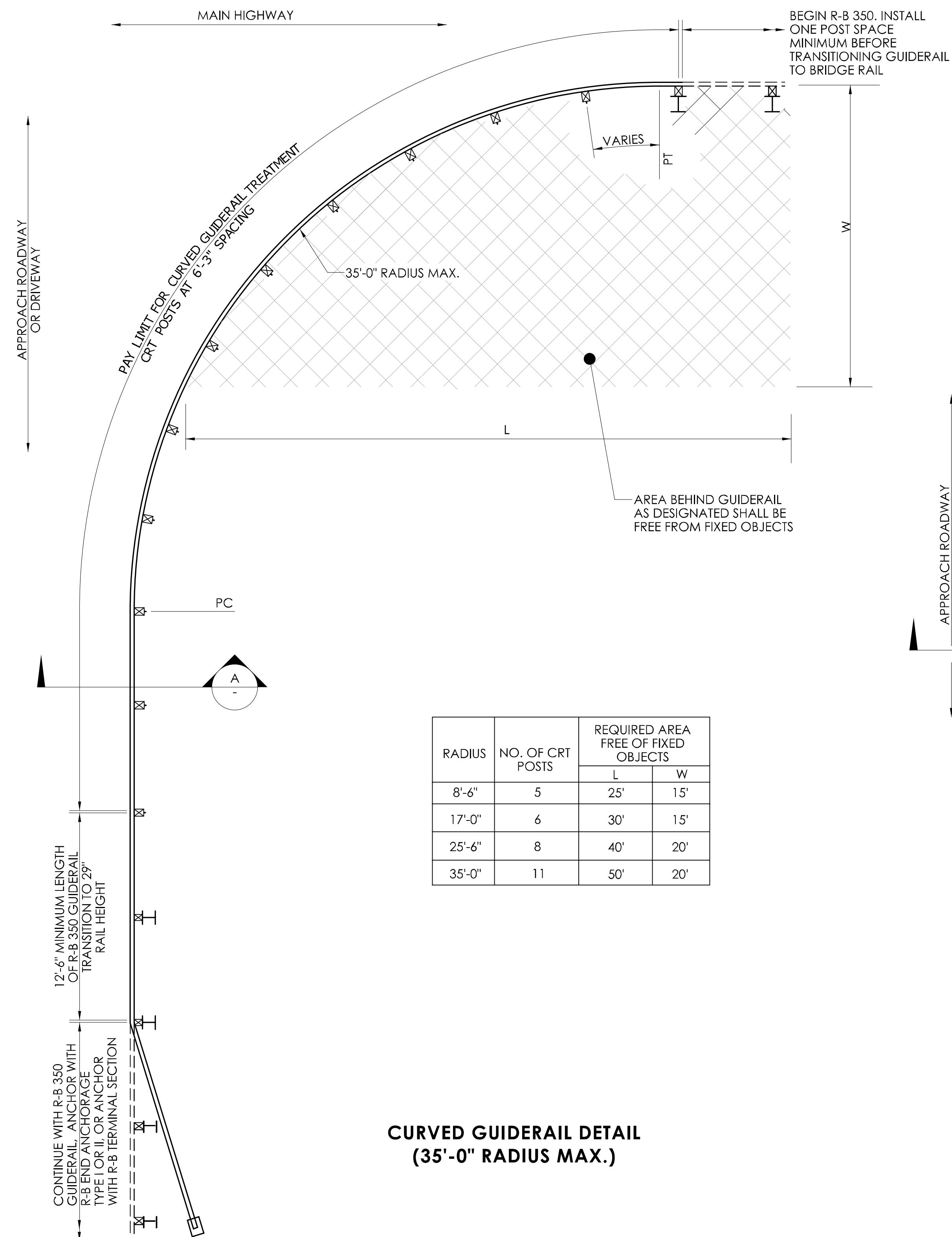


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DEPARTMENT OF
TRANSPORTATION

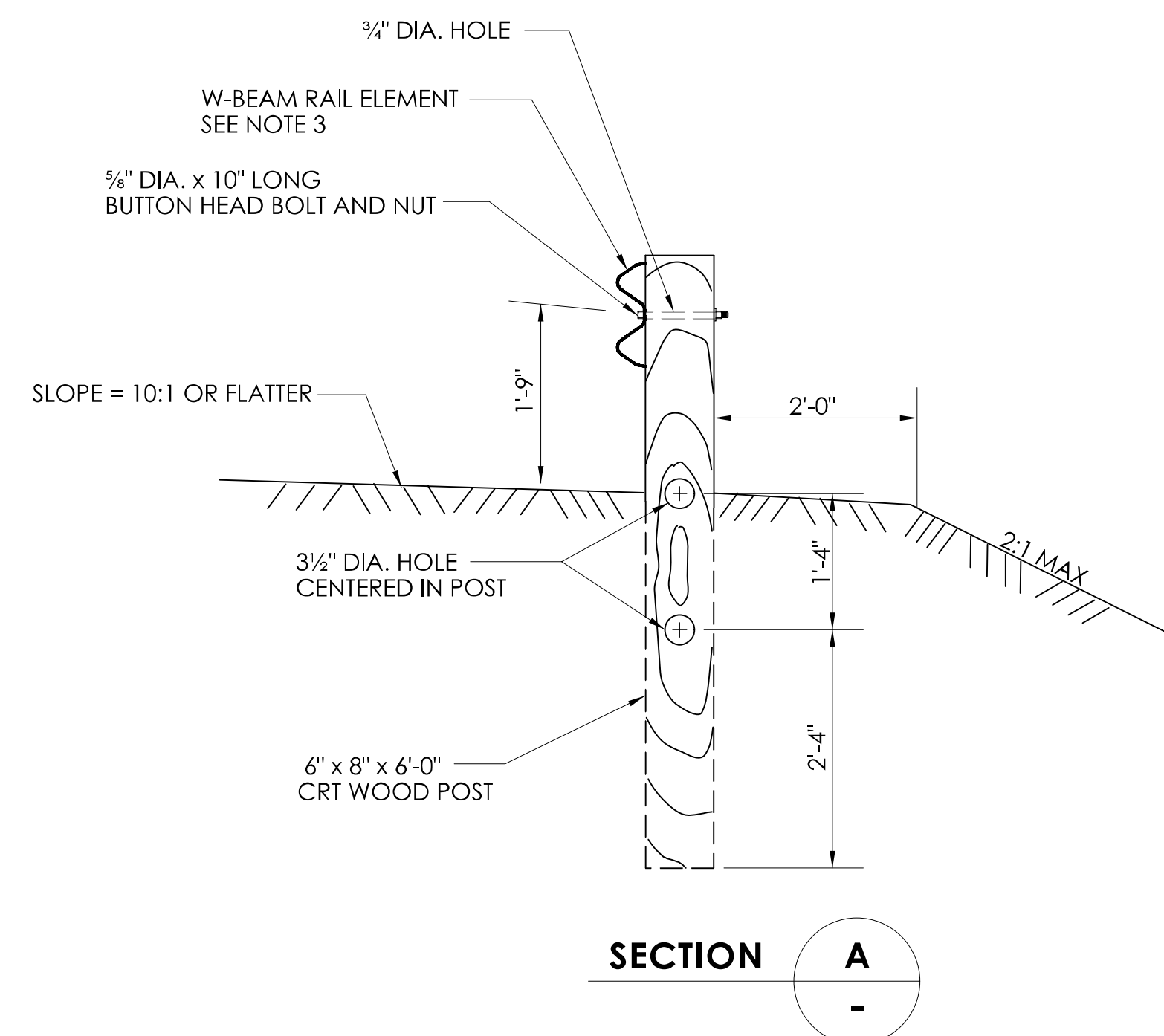
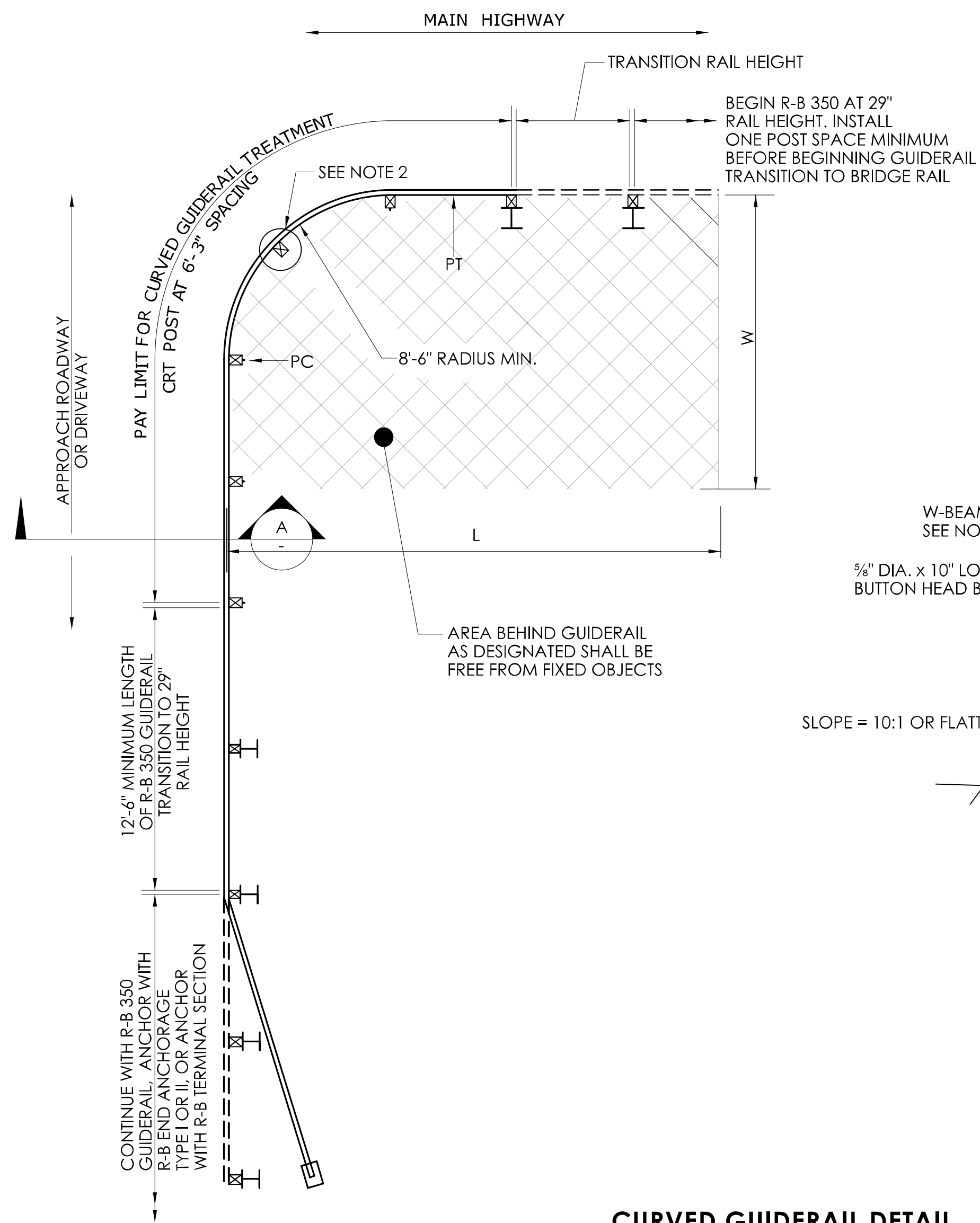
CTDOT
STANDARD SHEET

STANDARD SHEET TITLE:
MISCELLANEOUS GUIDERAIL TRANSITIONS SHEET 2

STANDARD SHEET NO.:
HW-910_09b

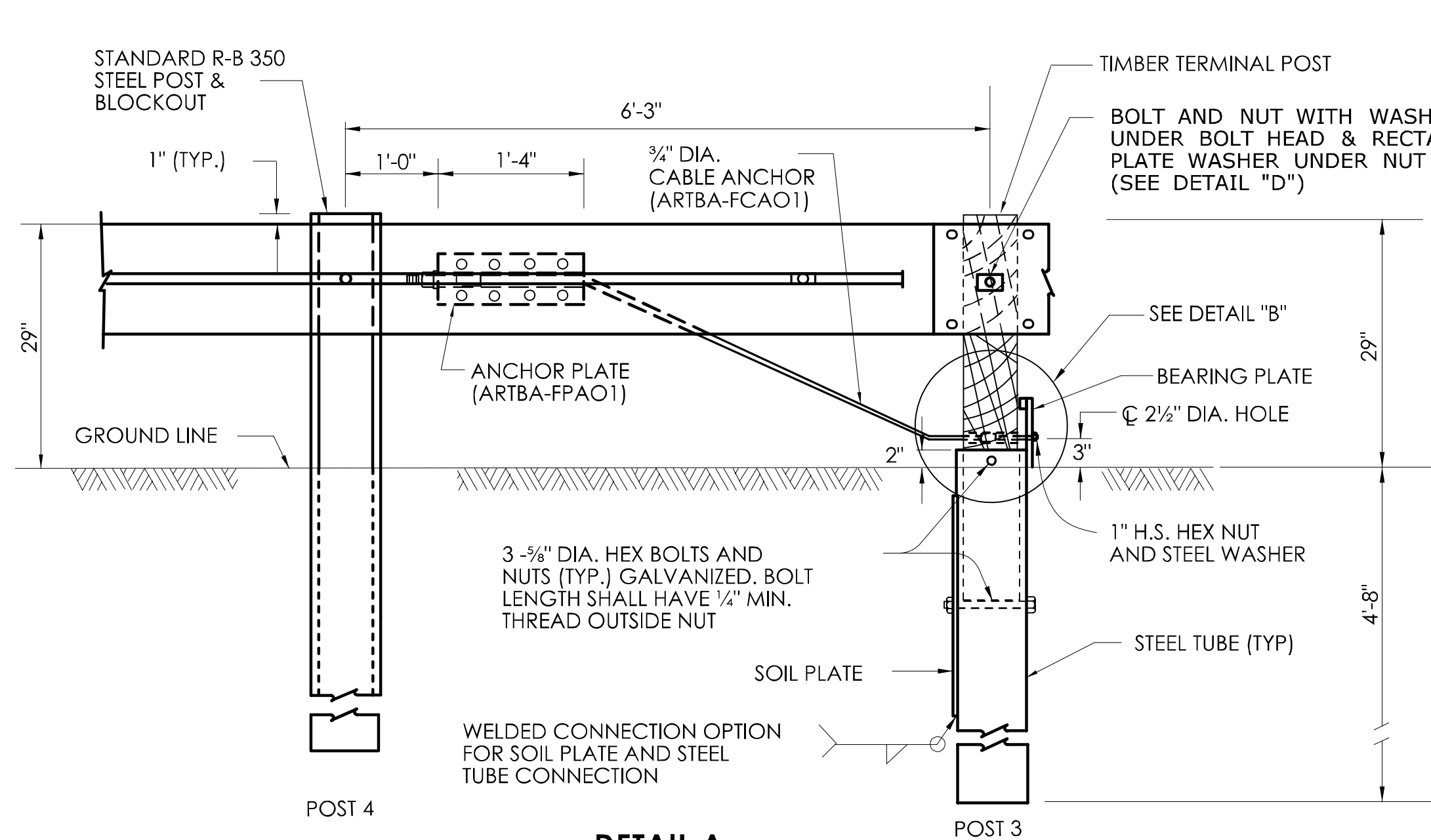


RADIUS	NO. OF CRT POSTS	REQUIRED AREA FREE OF FIXED OBJECTS	
		L	W
8'-6"	5	25'	15'
17'-0"	6	30'	15'
25'-6"	8	40'	20'
35'-0"	11	50'	20'

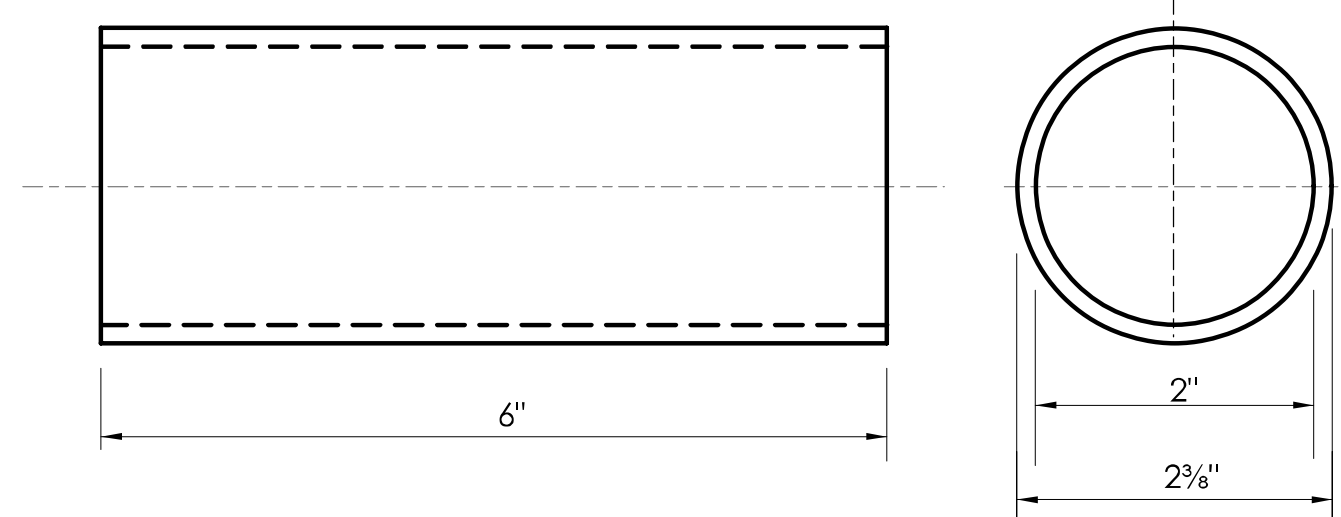


GENERAL NOTES:

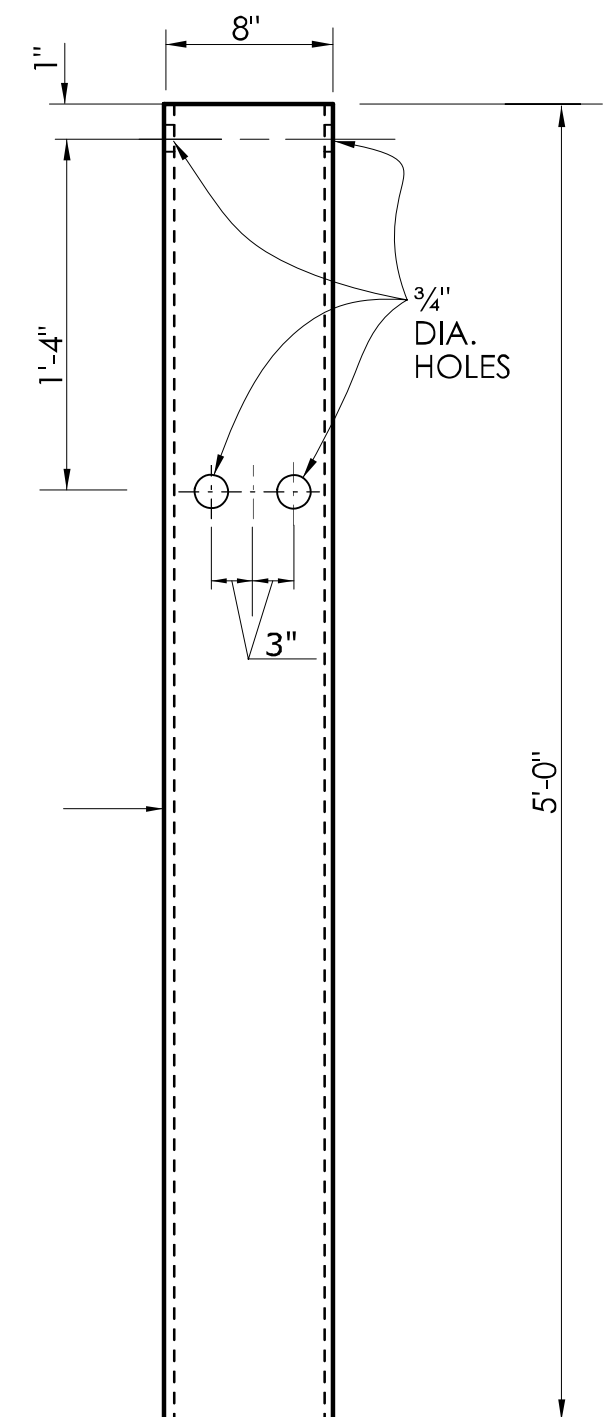
1. NO WASHERS ARE USED ON THE 5/8" DIA. BUTTON HEAD BOLTS CONNECTING THE RAIL TO THE CONTROLLED RELEASING TERMINAL (CRT) POSTS.
2. THE RAIL IS NOT BOLTED TO THE CRT POST AT THE CENTER OF THE NOSE AS SHOWN FOR THE 8'-6" RADIUS CURVED GUIDERAIL TREATMENT ONLY.
3. THE CURVED GUIDERAIL SECTION SHALL BE SHOP BENT.
4. THE SLOPE FROM THE EDGE OF THE SHOULDER TO THE FACE OF THE RAIL SHALL BE 10:1 OR FLATTER. NO CURBING SHALL BE INSTALLED WITHIN THE PAY LIMIT OF THE CURVED GUIDERAIL TREATMENT.
5. THIS SYSTEM SHALL BE USED ONLY ON ROADS WITH DESIGN SPEEDS ≤ 50 mph.
6. MAINTAIN MINIMUM 27 3/4" RAIL HEIGHT THROUGH RADIUS.



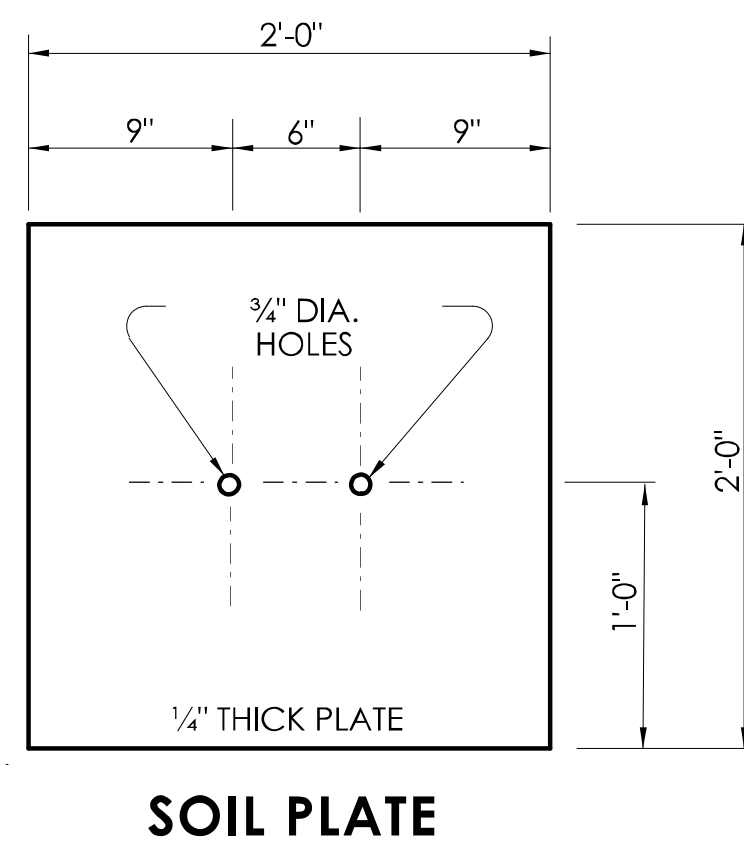
DETAIL A
CABLE ANCHORAGE ASSEMBLY



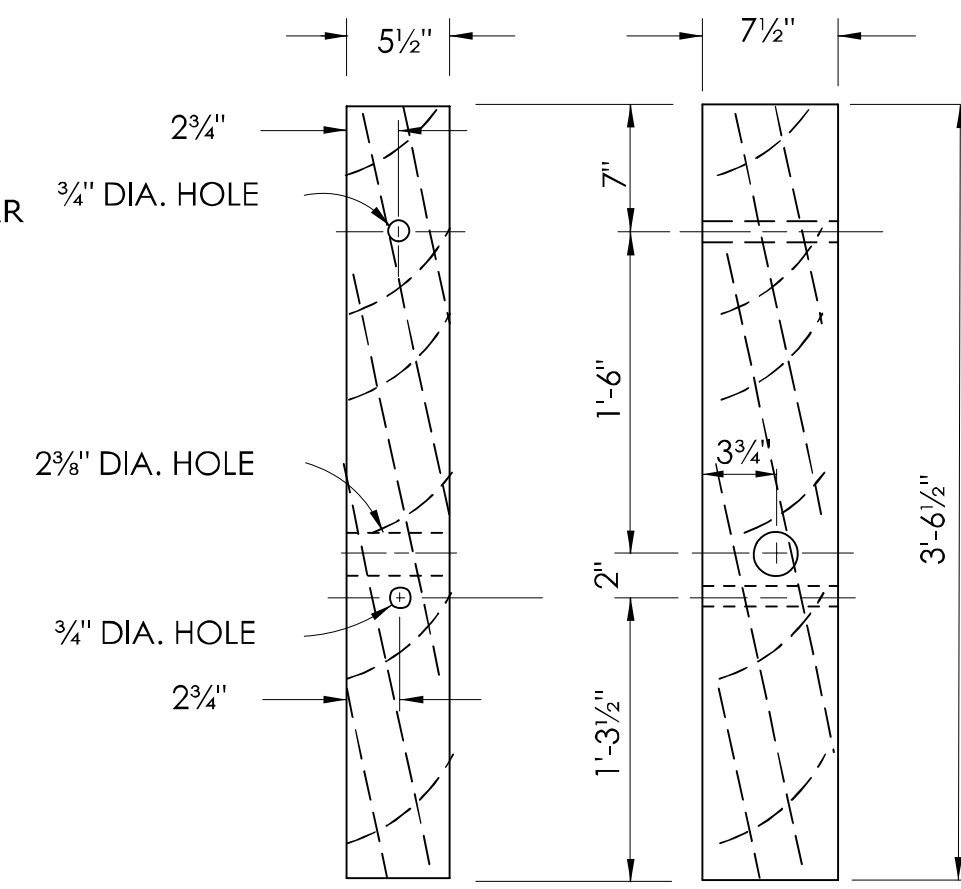
BREAKAWAY TERMINAL POST SLEEVE
(ARTBA-FMMO2)



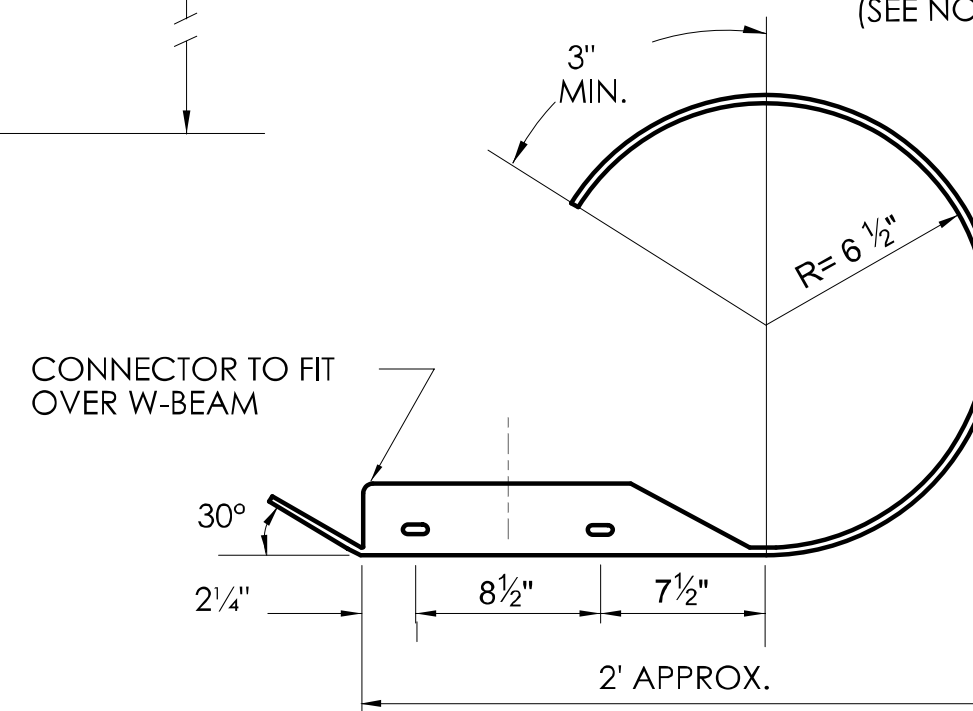
STEEL TUBE



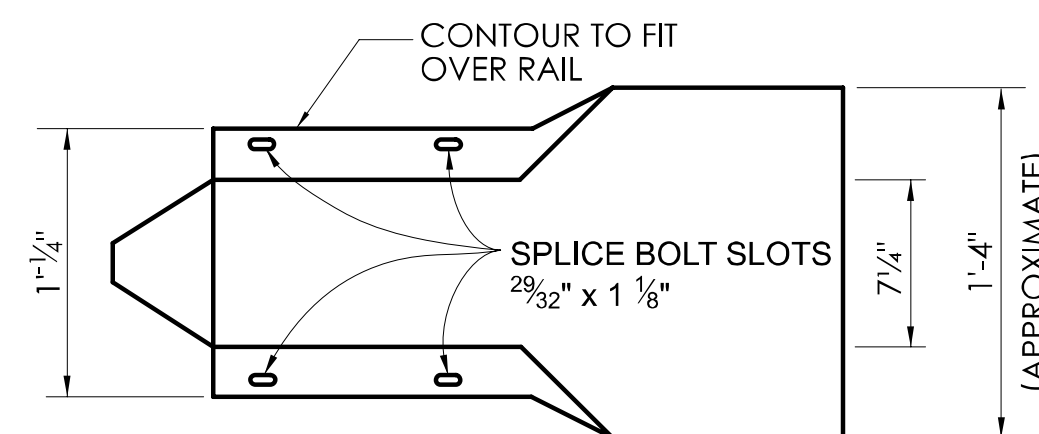
SOIL PLATE



DETAIL C
TIMBER TERMINAL POST
(ARTBA-PDFO1)
(SEE NOTE 2)

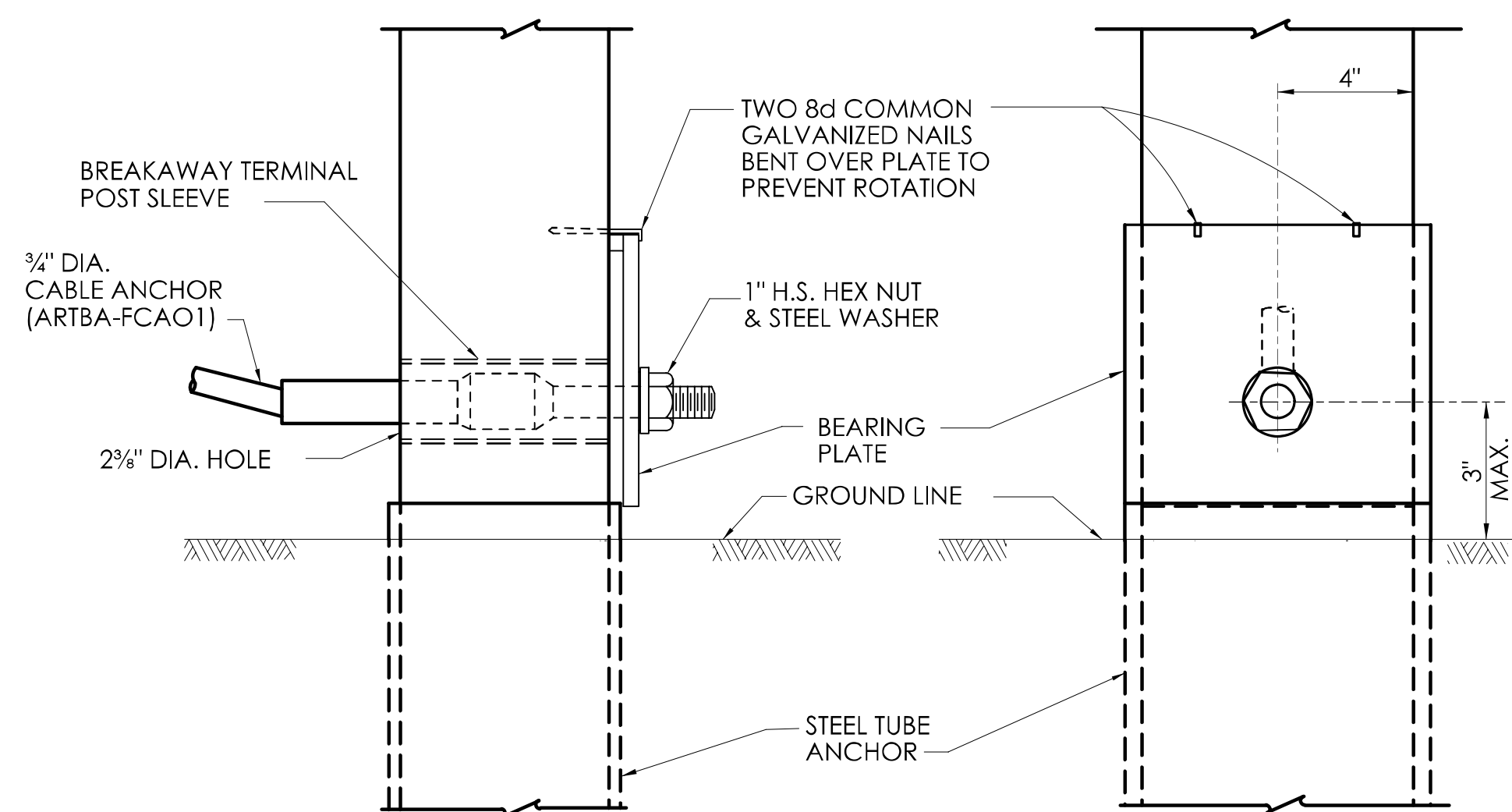


PLAN

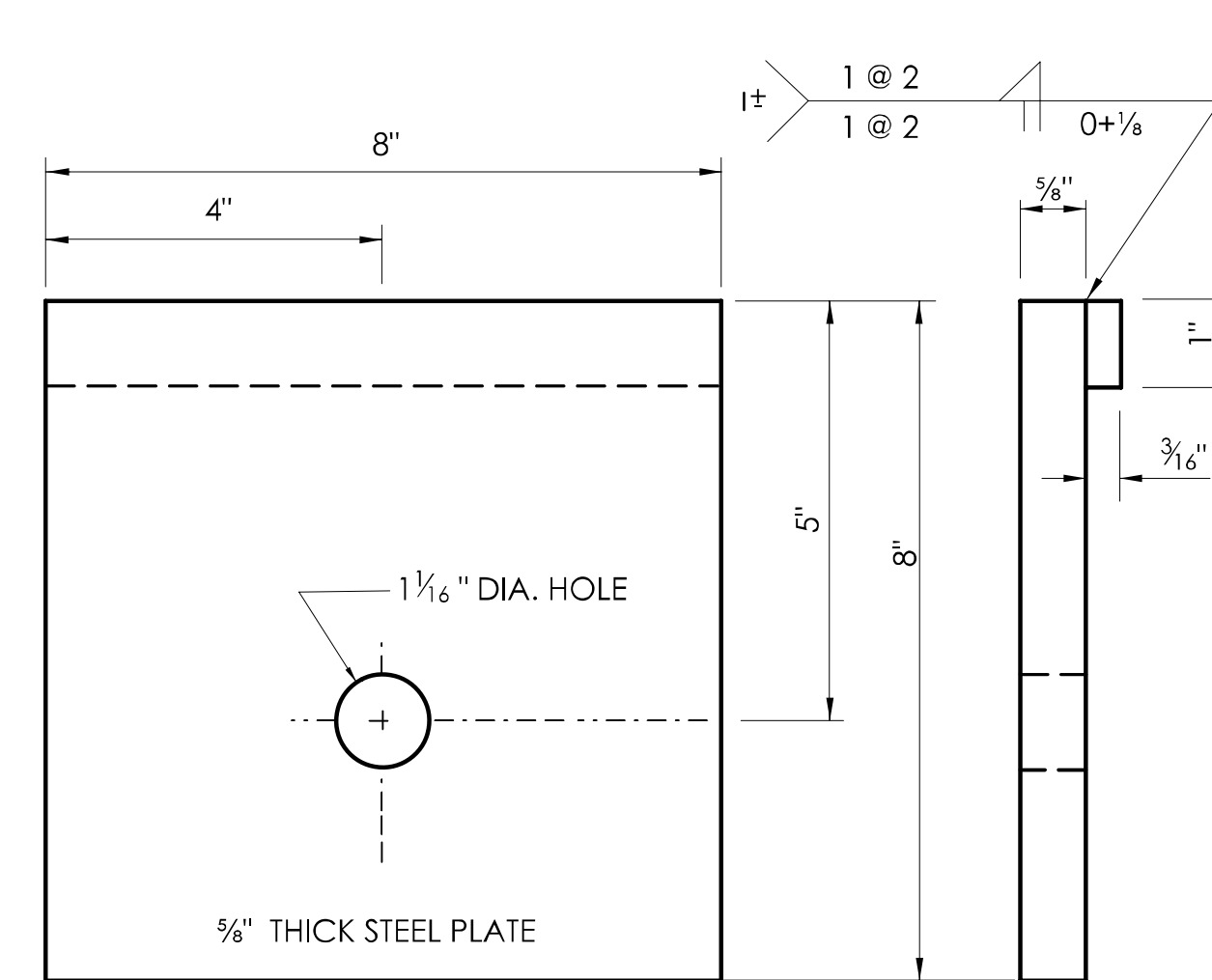


ELEVATION

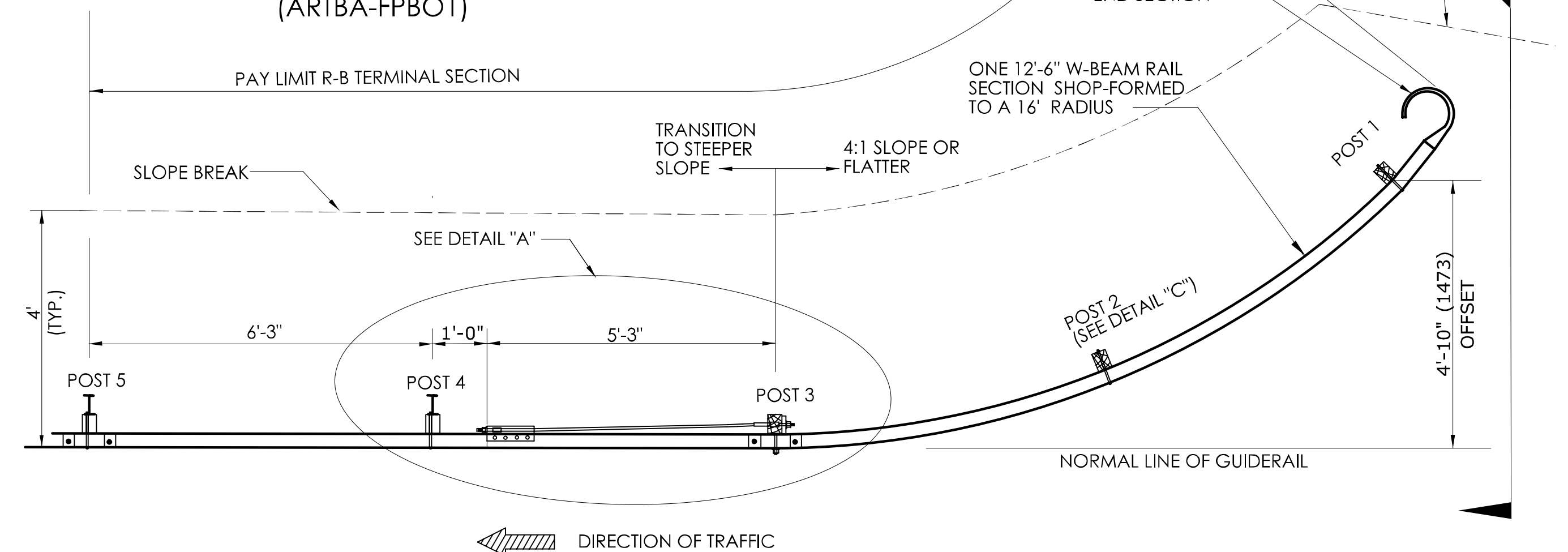
ROUNDED W-BEAM END SECTION



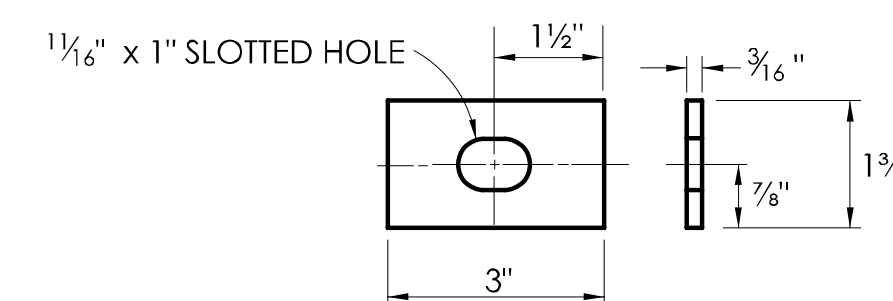
DETAIL B



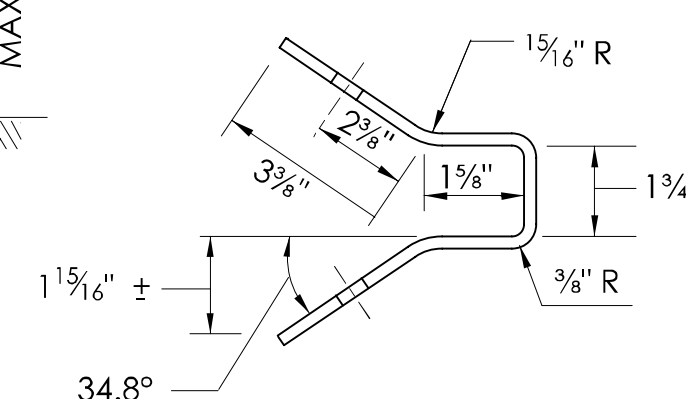
BEARING PLATE
(ARTBA-FPBO1)



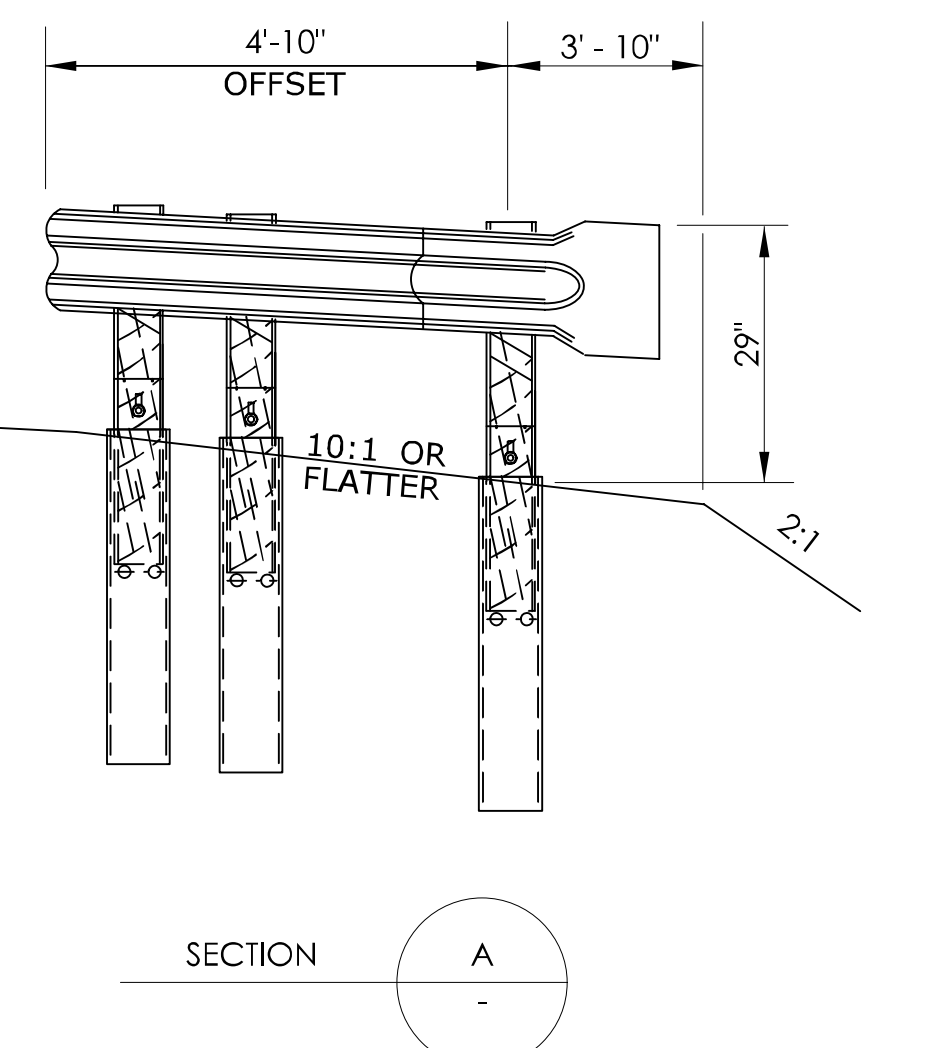
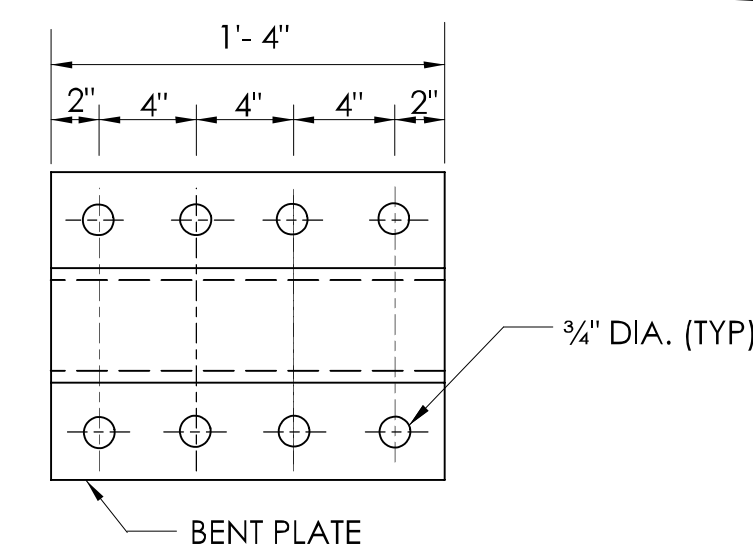
APPROACH END
(TRAILING END NOT SHOWN)



DETAIL D
RECTANGULAR PLATE WASHER

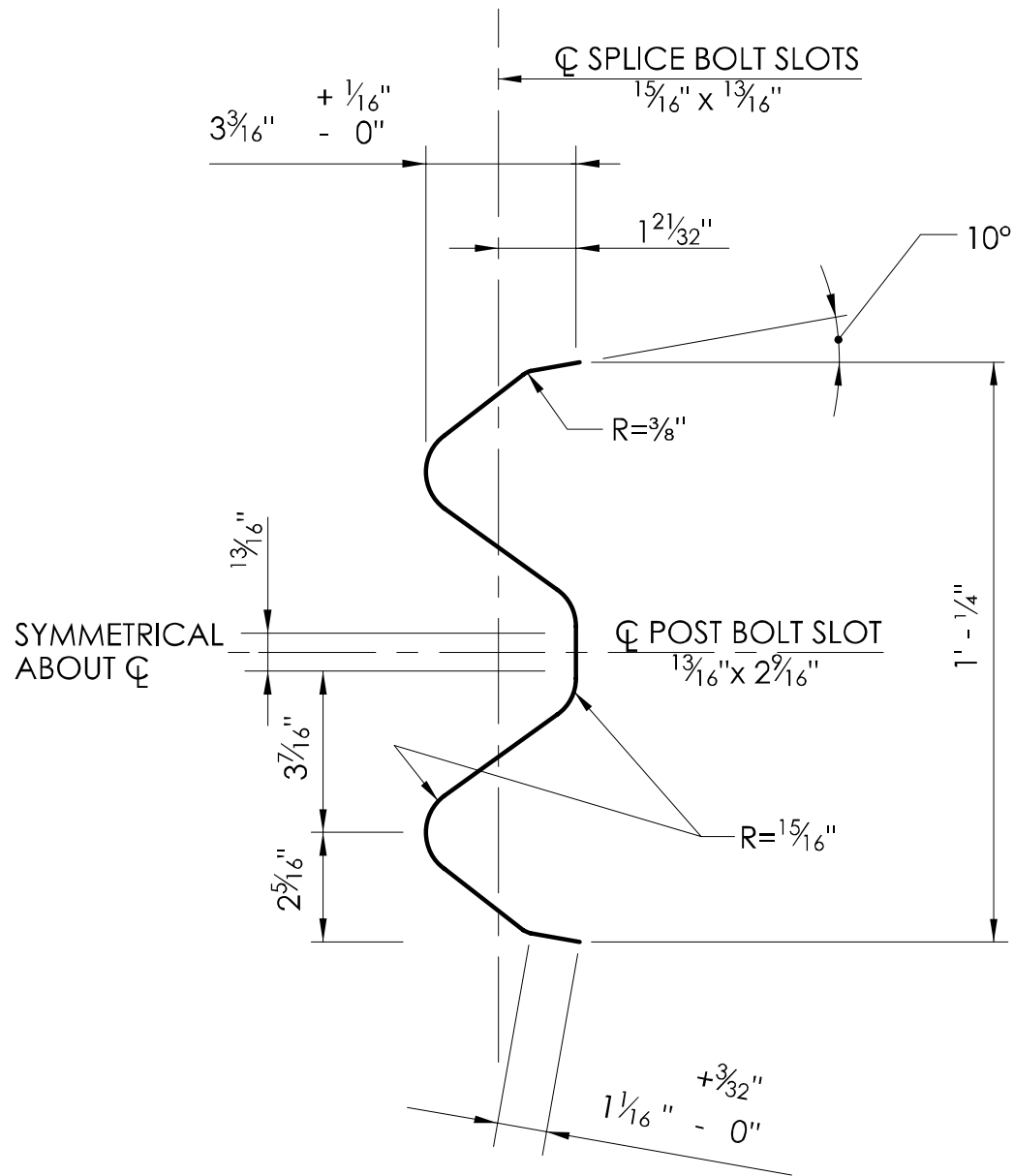


ANCHOR PLATE
(ARTBA-FPAO1)

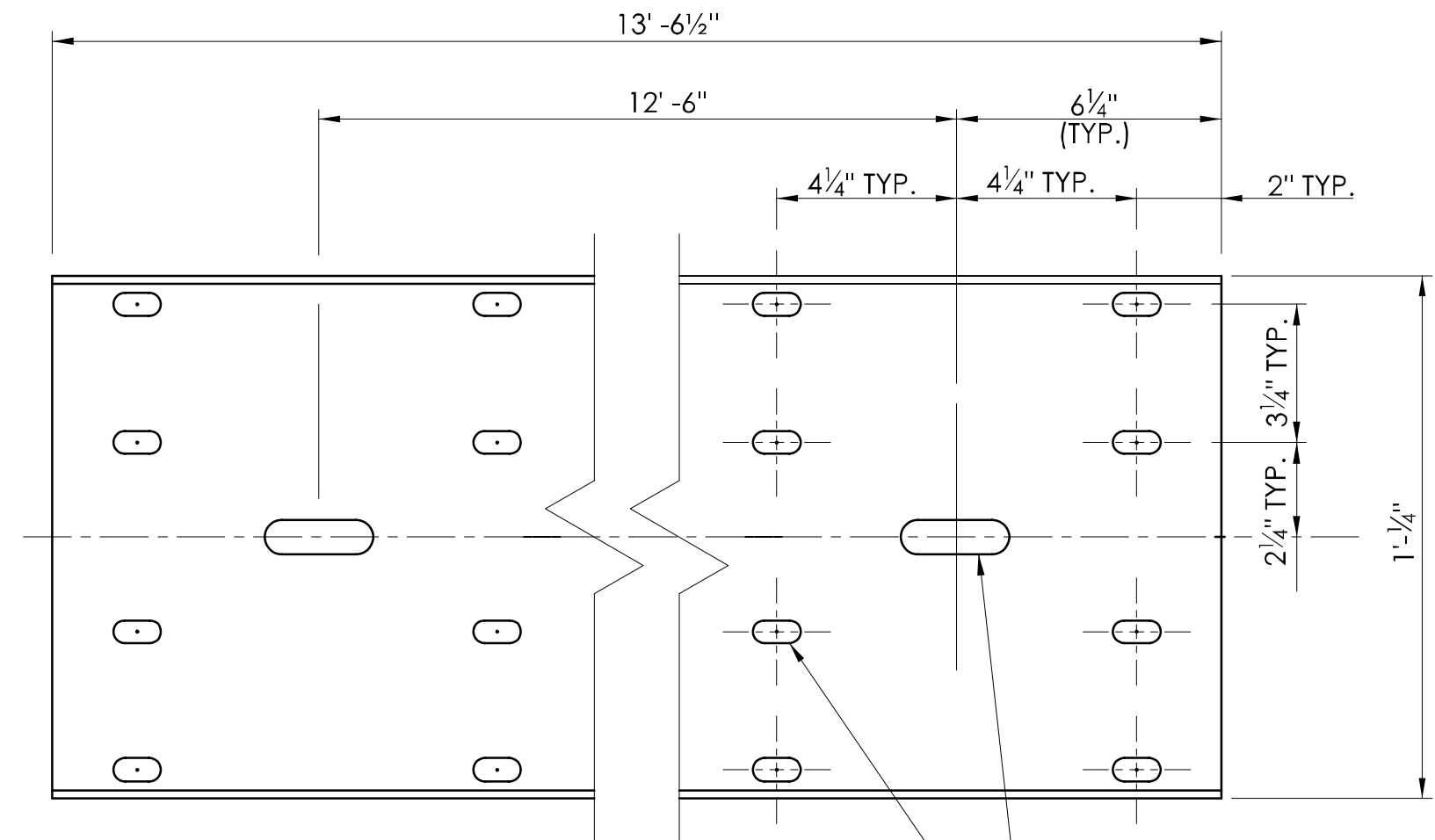


GENERAL NOTES:

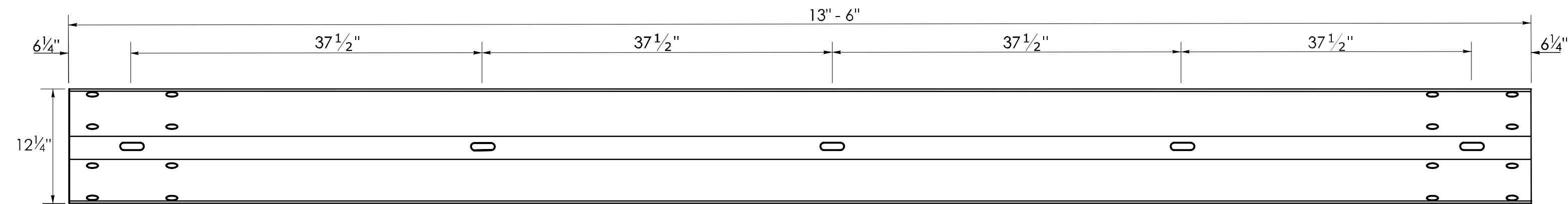
1. APPROACH END R-B TERMINAL SECTION SHALL ONLY BE USED ON LOW SPEED (<45 MPH) ROADWAYS.
2. POSTS 1, 2 AND 3 ARE TIMBER TERMINAL POSTS (DETAIL "C") WITH STEEL TUBES. POSTS 4 AND 5 ARE STANDARD R-B 350 STEEL POSTS WITH BLOCKOUTS.
3. REFER TO CTDOT STANDARD SPECIFICATIONS FOR MATERIAL AND GENERAL CONSTRUCTION METHODS.
4. MINIMUM RAIL HEIGHT FOR NEW CONSTRUCTION SHALL BE 29" +/- 1".



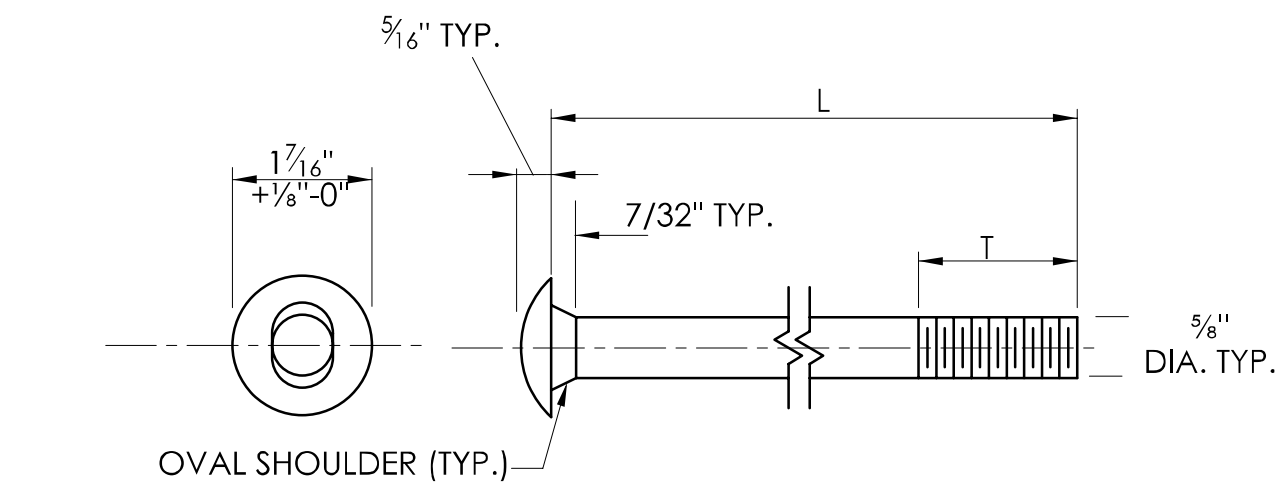
SECTION VIEW



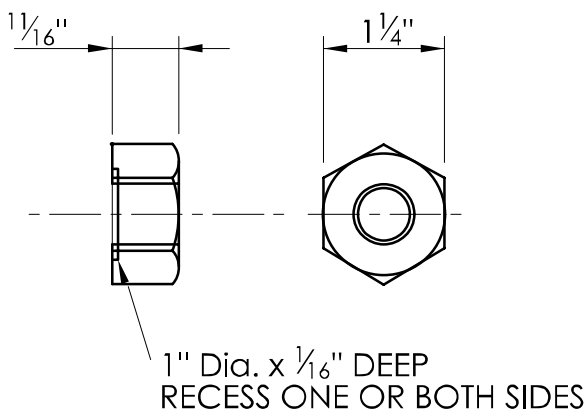
ELEVATION VIEW



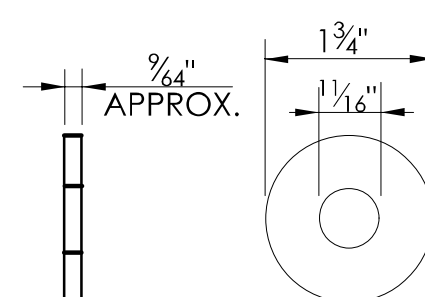
TYPICAL W-BEAM RAIL ELEMENT



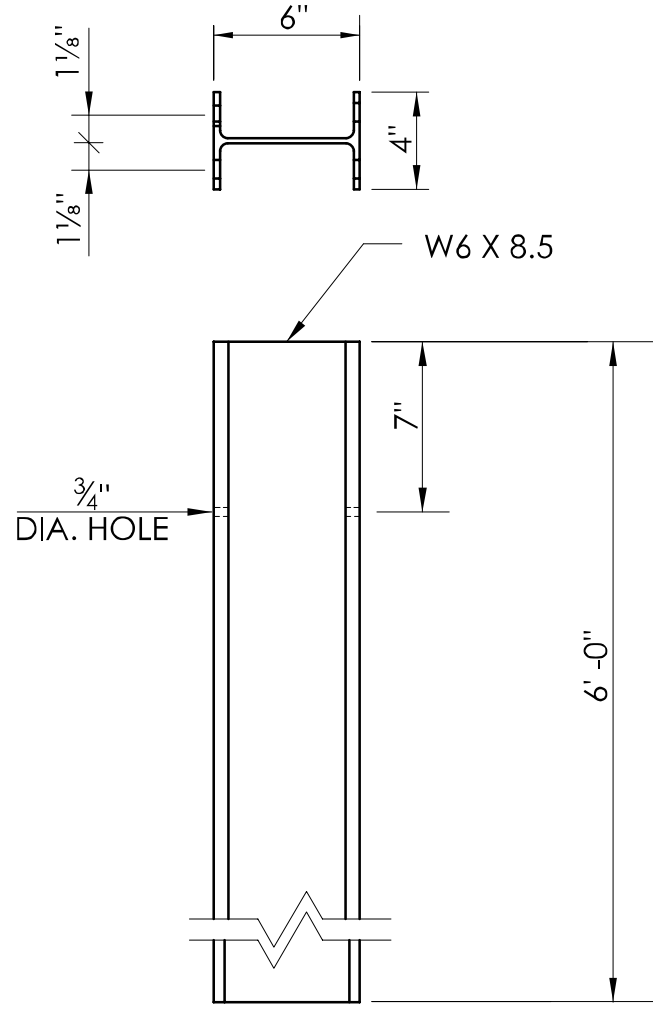
BUTTONHEAD BOLT



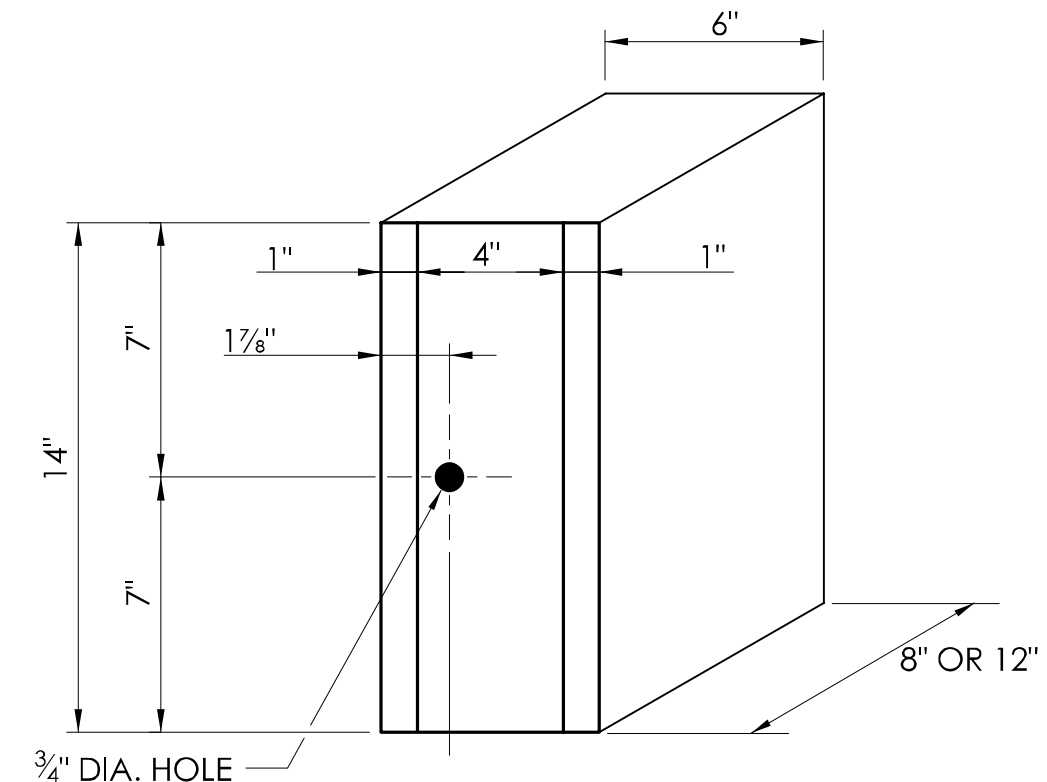
HEX NUT



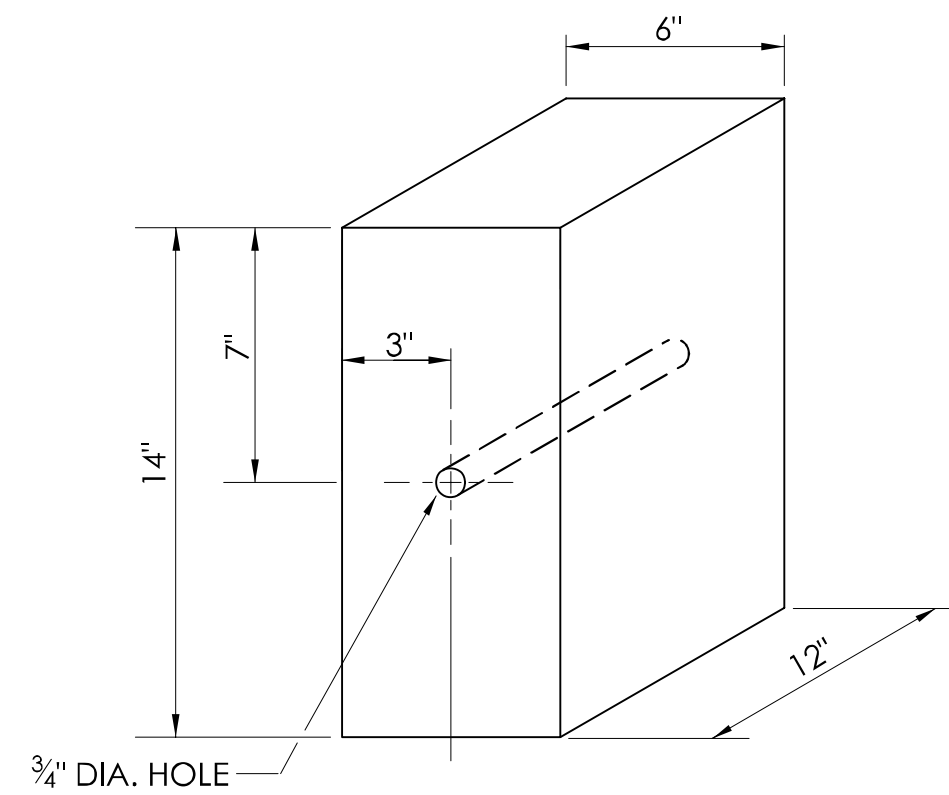
WASHER
[FWC16a]



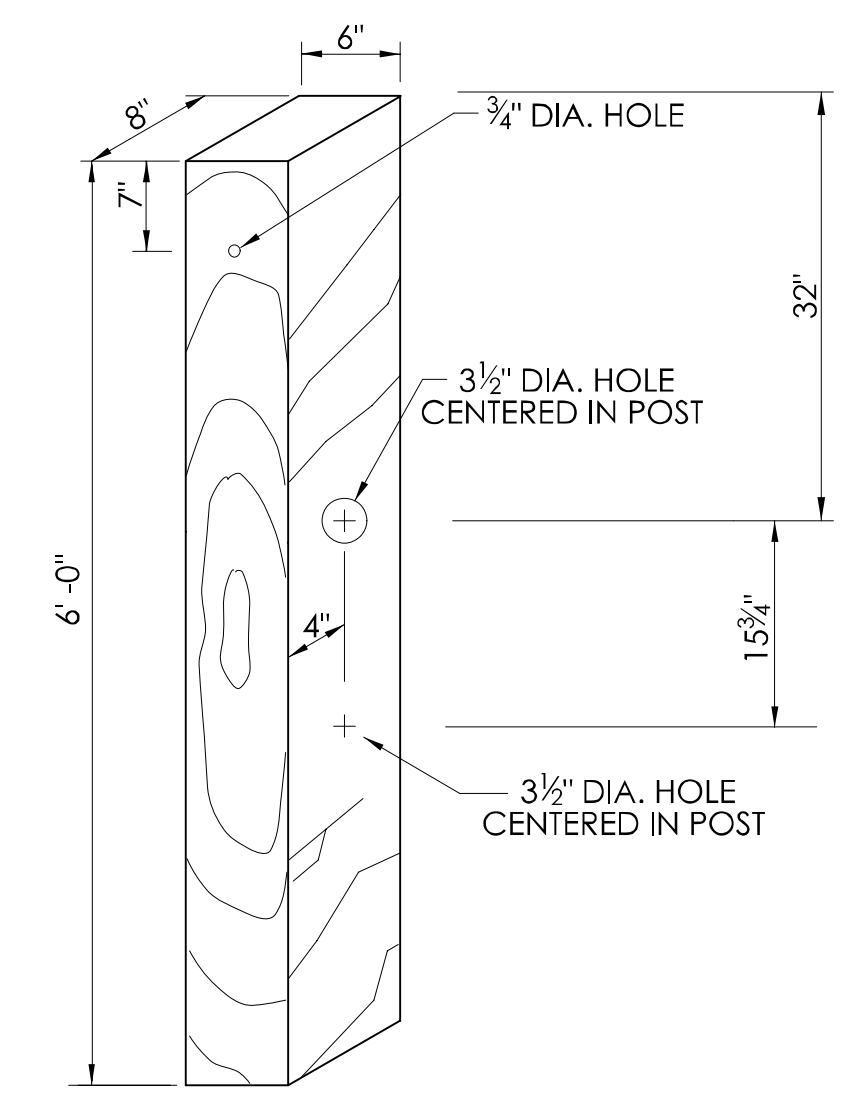
STEEL POST
6' - 0" LONG



8" or 12" PLASTIC BLOCKOUT
NOMINAL DIMENSIONS



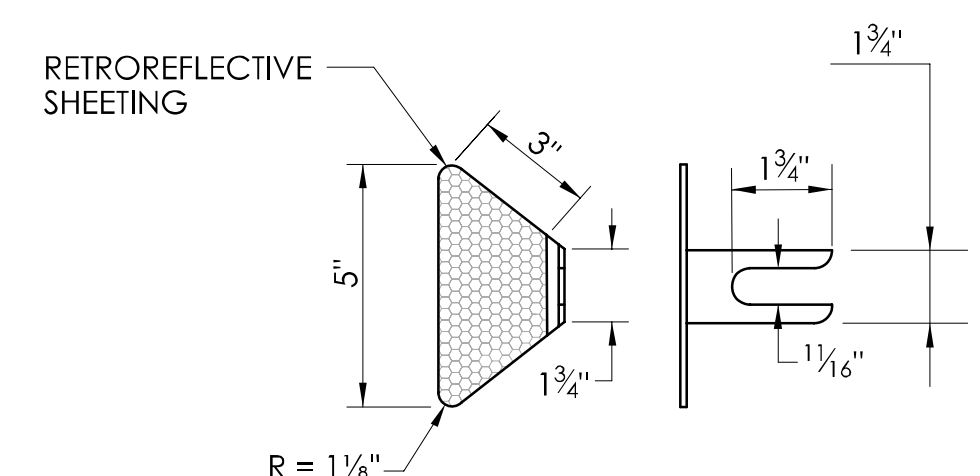
12" WOOD BLOCKOUT



CONTROL RELEASE TIMBER (CRT) POST
6' - 0" LONG

GENERAL NOTES:

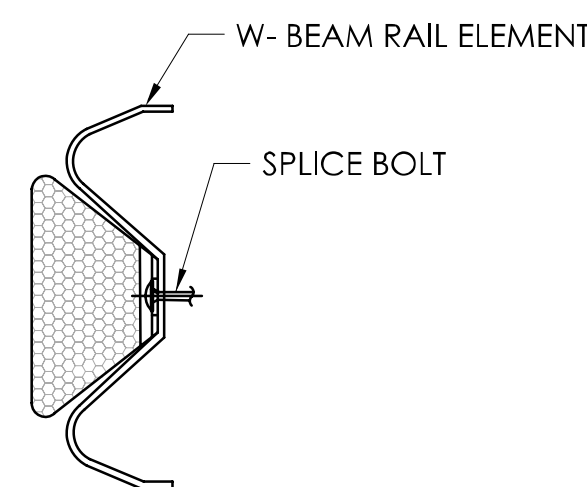
1. W6 x 9 POSTS MAY BE USED IN PLACE OF W6 x 8.5 POSTS.
2. W-BEAM GUIDERAIL SHALL USE CLASS A (12 GAUGE), TYPE II W-BEAM RAIL ELEMENTS.
3. SEVEN FOOT LONG STEEL POSTS (W6 X 8.5) ARE TO BE INSTALLED WHERE INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. ALL DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES



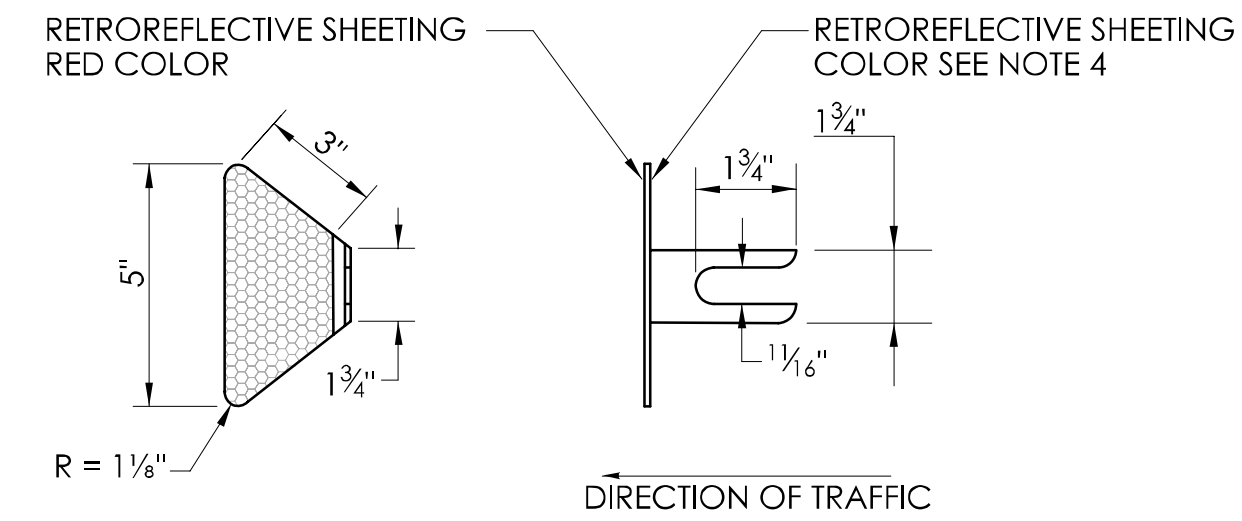
W-BEAM DELINEATOR

INSTALLATION NOTES:

1. INSTALL W-BEAM DELINEATORS ON RAIL THAT IS PARALLEL TO AND NOT GREATER THAN 8' FROM THE EDGE OF THE ROADWAY. A MINIMUM OF THREE W-BEAM DELINEATORS SHALL BE INSTALLED ON ANY LENGTH OF GUIDERAIL.
2. THE SPACING OF W-BEAM DELINEATORS IS 50 FEET, INSTALLED AT RAIL SPLICE LOCATIONS. SPACING IS 25 FEET ON RADII LESS THAN 300 FEET.
3. NO W-BEAM DELINEATORS ARE PERMITTED WITHIN 75 FEET OF THE IMPACT HEAD OF ANY TANGENTIAL OR FLARED IMPACT ATTENUATION SYSTEM.
4. RETROREFLECTIVE SHEETING SHALL BE WHITE EXCEPT ON THE LEFT SIDE OF DIVIDED STREETS, HIGHWAYS, RAMPS, AND ONE WAY ROADS IN THE DIRECTION OF TRAVEL WHERE IT SHALL BE YELLOW.
5. FOR HIGHWAY OFF RAMP, INSTALL W-BEAM DOUBLE SIDED DELINEATORS ACCORDING TO INSTALLATION REQUIREMENTS STATED BELOW FOR W-BEAM DOUBLE SIDED DELINEATORS.



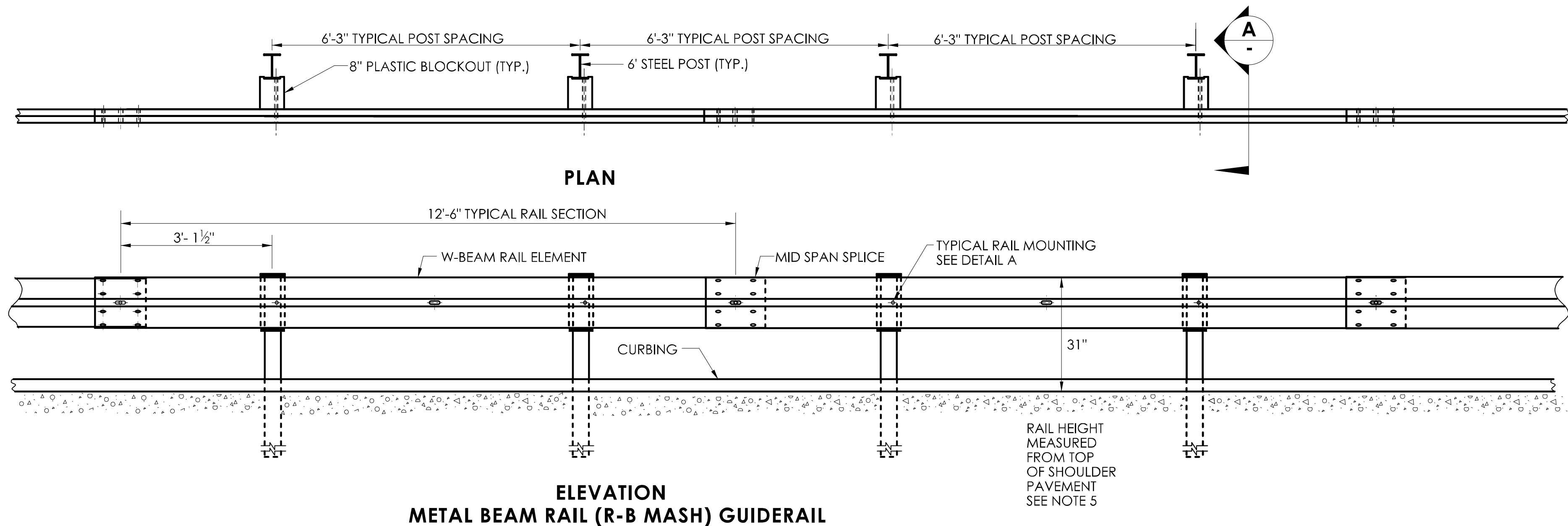
W-BEAM DELINEATOR
INSTALLATION



W-BEAM DOUBLE SIDED DELINEATOR
FOR HIGHWAY OFF RAMPS

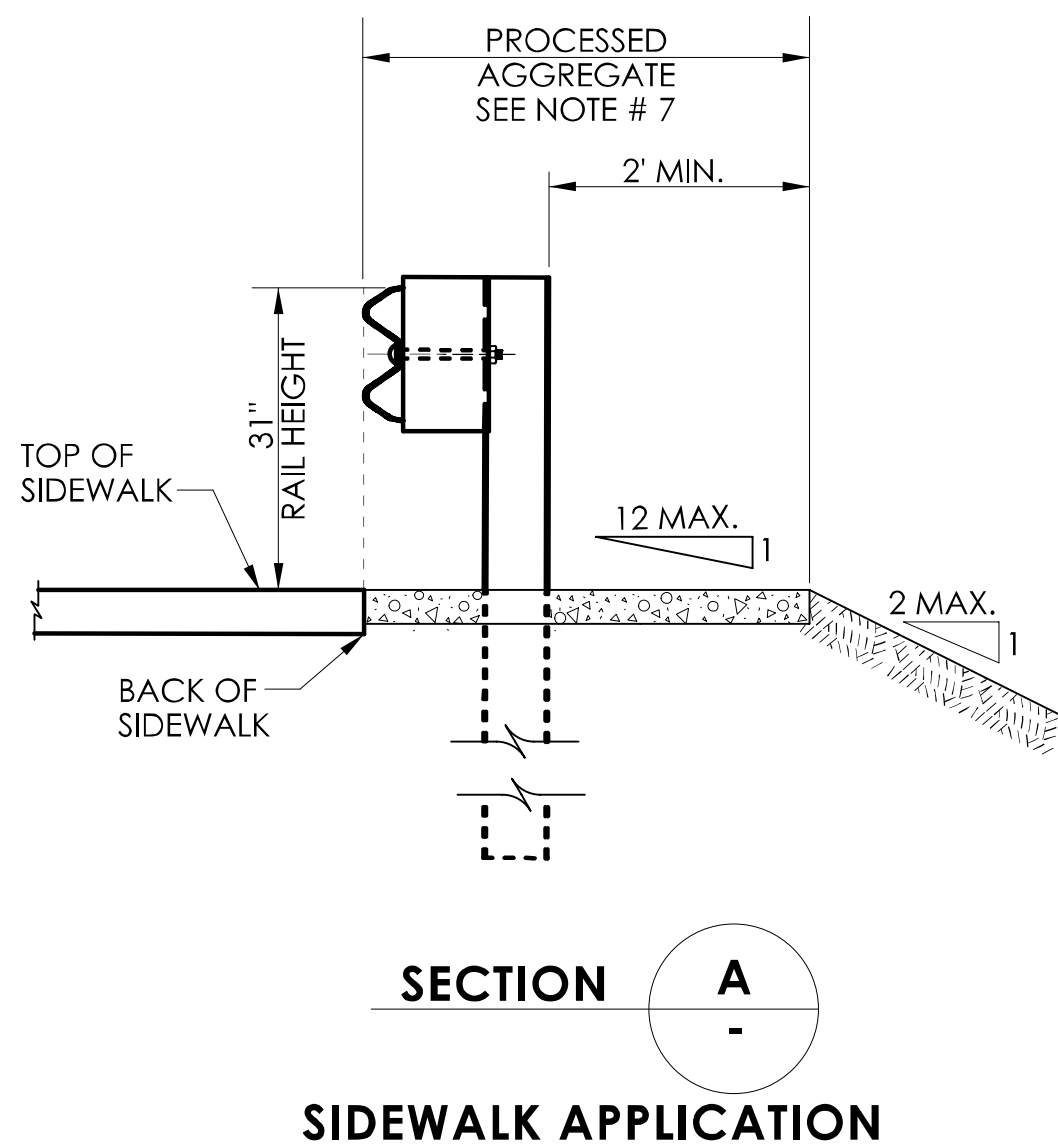
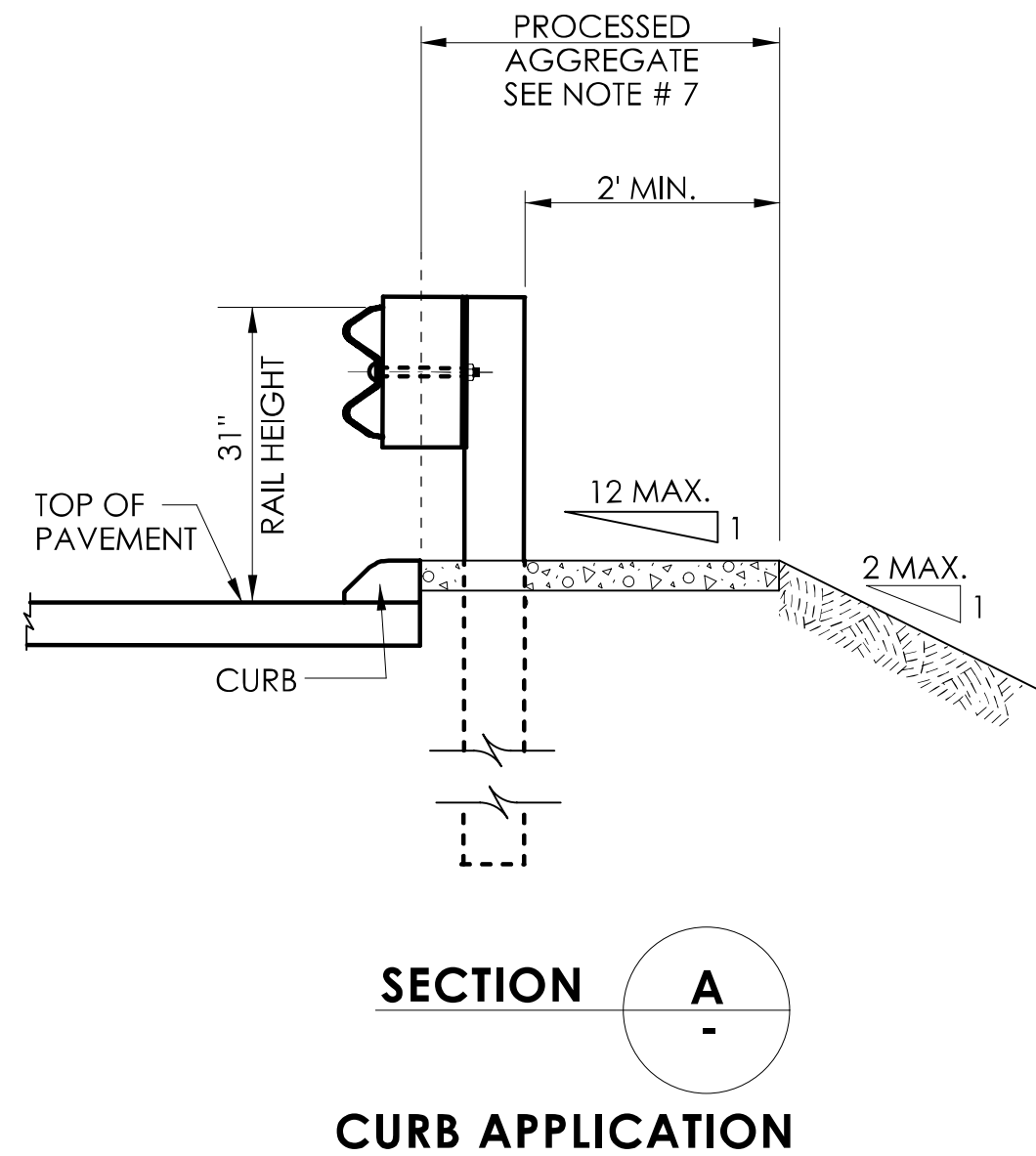
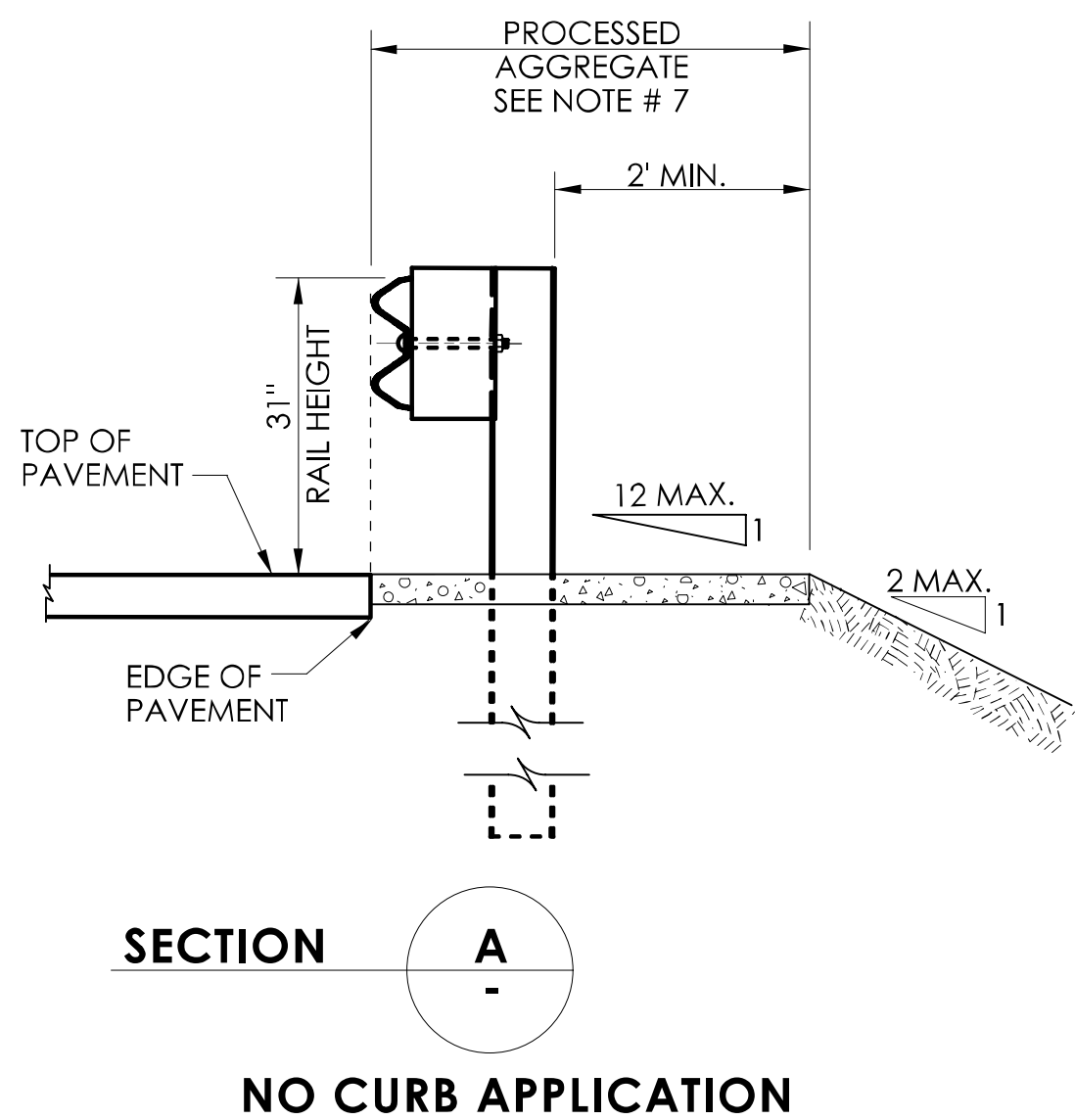
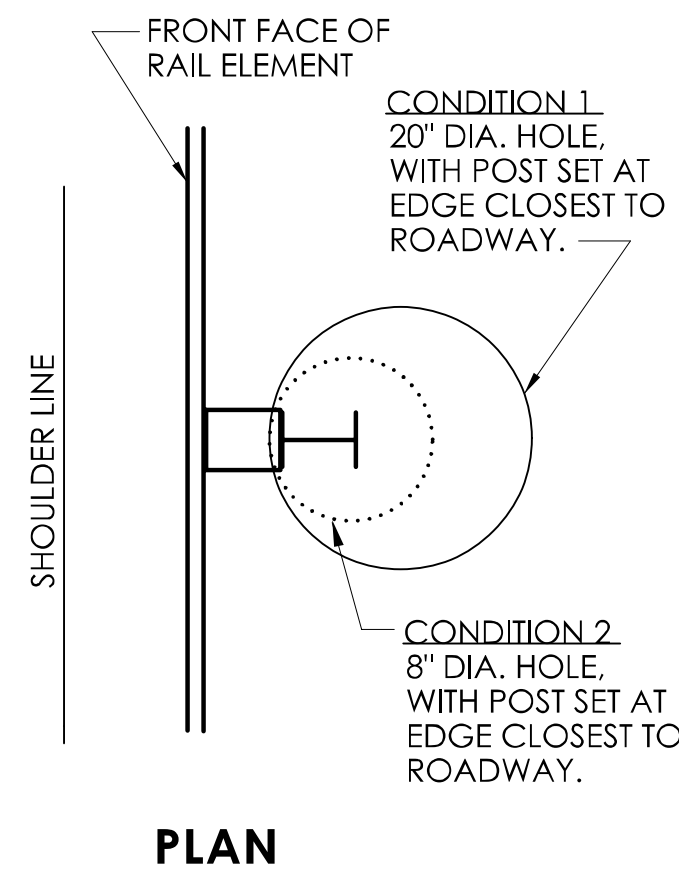
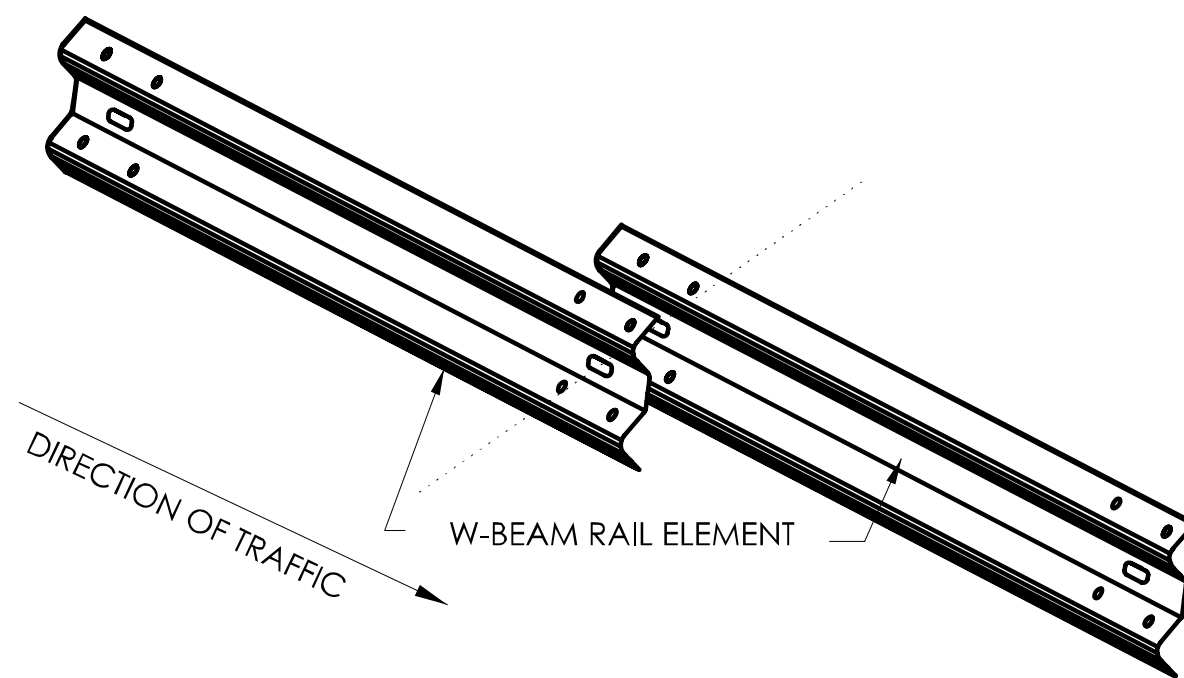
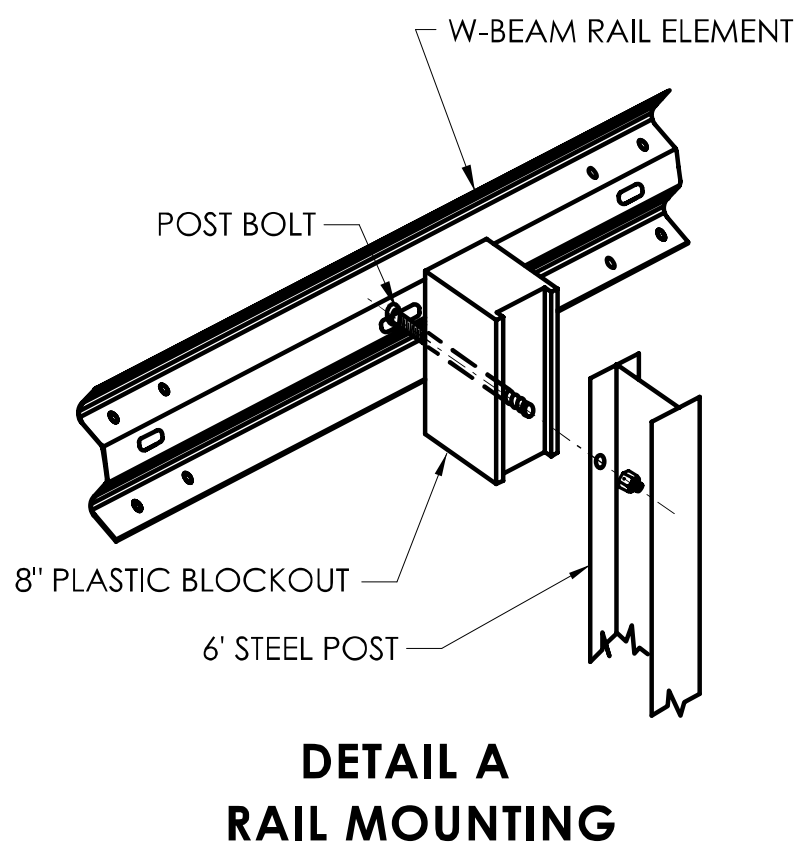
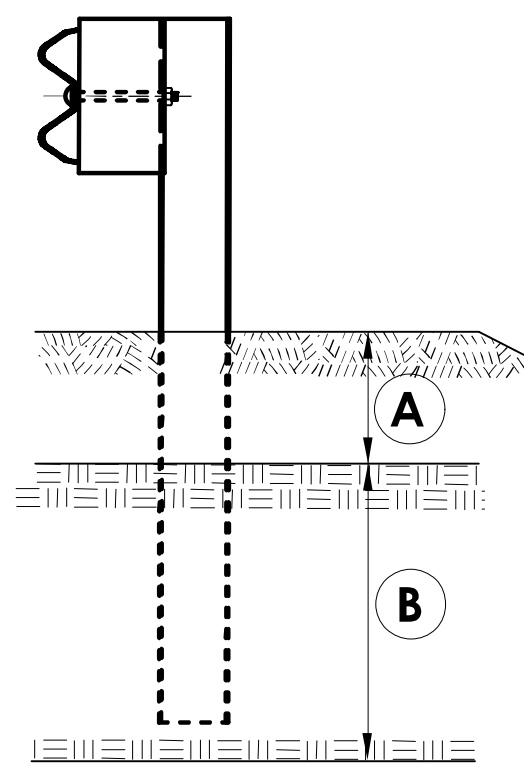
INSTALLATION NOTES:

1. INSTALL W-BEAM DOUBLE SIDED DELINEATORS ON HIGHWAY OFF RAMP'S W-BEAM GUIDERAIL BETWEEN THE PAINTED TRAFFIC STOP LINE TO THE FARTHEST "WRONG WAY" SIGNS FROM THE INTERSECTION.
2. INSTALL THE W-BEAM DOUBLE SIDED DELINEATORS AT 6'-3" SPACING.
3. NO W-BEAM DOUBLE SIDED DELINEATORS ARE PERMITTED WITHIN 75 FEET OF THE IMPACT HEAD OF ANY TANGENTIAL OR FLARED IMPACT ATTENUATION SYSTEM.
4. RETROREFLECTIVE SHEETING COLOR SHALL BE RED ON BACKSIDE (NOT FACING NORMAL DIRECTION OF TRAFFIC) WITH FRONT SIDE HAVING WHITE EXCEPT ON THE LEFT SIDE OF RAMPS WHERE IT SHALL BE YELLOW.



GENERAL NOTES:

1. SEE SHEET HW-910_20 FOR MASH W-BEAM HARDWARE AND W-BEAM DELINEATOR DETAILS.
2. THREE BLOCKOUTS MAY BE USED FOR ONE POST ONLY. TWO BLOCKOUTS MAY BE USED FOR A SERIES OF POSTS. THE COST OF ADDITIONAL BLOCKOUTS AND LONGER BOLTS SHALL BE INCLUDED IN THE PRICE PER FOOT OF GUIDERAIL. EXTRA BLOCKOUTS AT TRANSITIONS TO BRIDGE PARAPETS SHOULD BE AVOIDED. DO NOT USE ADDITIONAL BLOCKS IF IT CAUSES THE POST TO BE DRIVEN BEYOND AN EMBANKMENT HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.
3. IF BLOCKOUTS DO NOT AVOID POST FROM OBSTRUCTION, ONE POST MAY BE OMITTED IF 50 FEET OF GUIDERAIL EXISTS ON BOTH SIDES OF LOCATION. USE METAL BEAM RAIL SPAN SECTION TYPE II OR III FOR MORE THAN ONE CONSECUTIVE OMITTED POST, SEE SHEET HW-910_24.
4. W-BEAM GUIDERAIL MAY BE PLACED 1' OR MORE FROM THE EDGE OF PAVEMENT ONLY ON SLOPES 10:1 OR FLATTER AND WITHOUT CURBING.
5. IF THE RAIL IS INSTALLED WITHIN 2' OF THE EDGE OF PAVEMENT, THE RAIL HEIGHT IS MEASURED FROM THE SHOULDER SLOPE EXTENDED TO THE RAIL. IF THE RAIL IS INSTALLED BEYOND 2' FROM THE EDGE OF PAVEMENT, THE RAIL HEIGHT IS MEASURED FROM THE GROUND DIRECTLY BELOW THE RAIL.
6. RAIL HEIGHT CONSTRUCTION TOLERANCE IS +/- 1 INCH.
7. FOR NEW CONSTRUCTION, PLACE 6 INCH LAYER OF PROCESSED AGGREGATE. FOR CONSTRUCTION PROJECTS WITH GUIDERAIL UPGRADE, THE CONTRACT PLANS MAY CALL OUT PROCESSED AGGREGATE ONLY TO BE PLACE IN LOCATION(S) OF EXISTING VERTICAL PAVEMENT EDGE DROP OFF AS A LEVELING MATERIAL, FILLING IN DEPRESSED AREAS.



NOT TO SCALE

SIGNATURE BLOCK:
OFFICE OF ENGINEERING
2800 BERLIN TURNPIKE
NEWINGTON, CT 06111

SUBMITTED BY:
Digitally signed by
Léo Fontaine, P.E.
Date: 2024.12.19
15:04:27-05'00'

APPROVED BY:
Digitally signed by
Michael N.
Calabrese, P.E.
Date: 2025.01.29
12:32:15-05'00'



CONNECTICUT
DEPARTMENT OF
TRANSPORTATION

CTDOT
STANDARD SHEET

STANDARD SHEET TITLE:

METAL BEAM RAIL (R-B MASH) GUIDERAIL

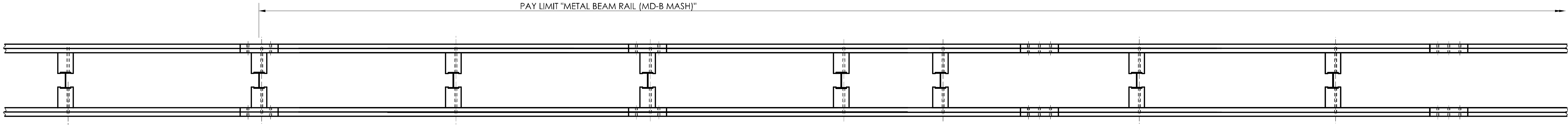
STANDARD SHEET NO.:

HW-910_21

GENERAL NOTES:

GENERAL NOTES:

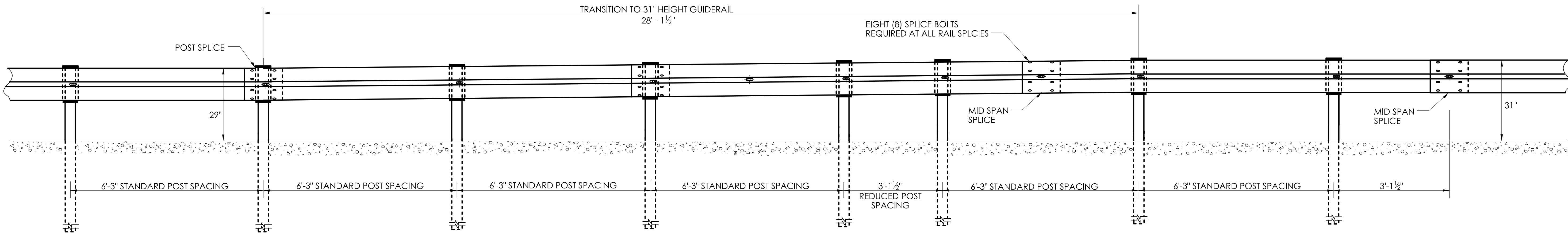
1. SEE SHEET HW-910_20 FOR HARDWARE AND W-BEAM DELINEATOR DETAILS.
2. NO POST(S) SHALL BE OMITTED WITHIN THE LENGTH OF GUIDERAIL TRANSITION.



PLAN
METAL BEAM RAIL MD-B 350 TRANSITION TO METAL BEAM RAIL MD-B MASH



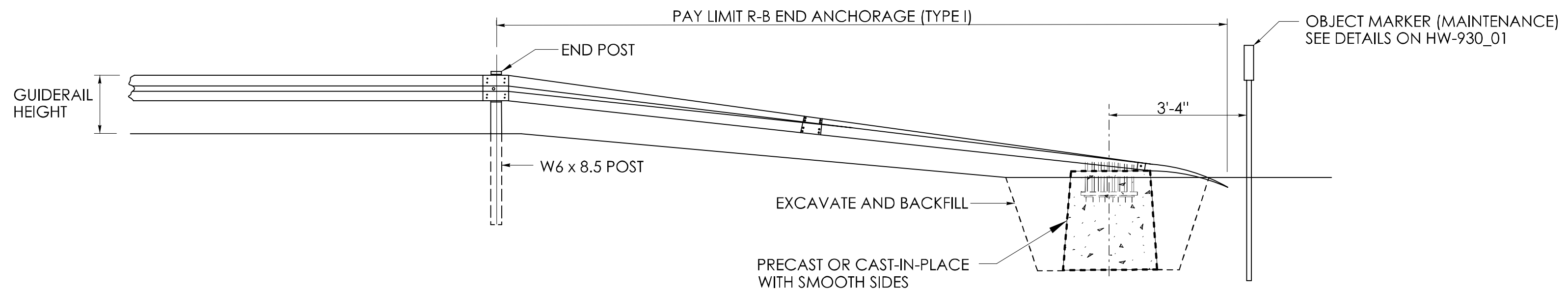
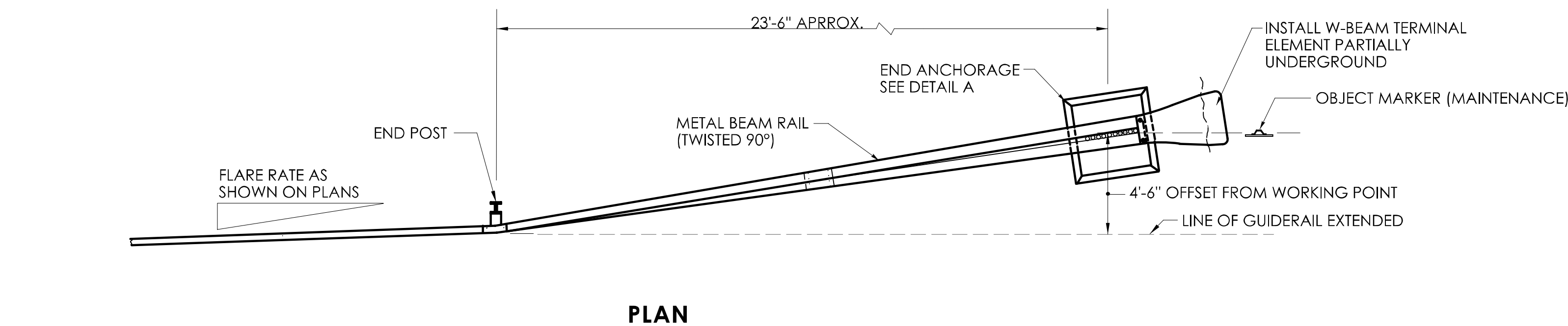
PLAN
METAL BEAM RAIL R-B 350 TRANSITION TO METAL BEAM RAIL R-B MASH



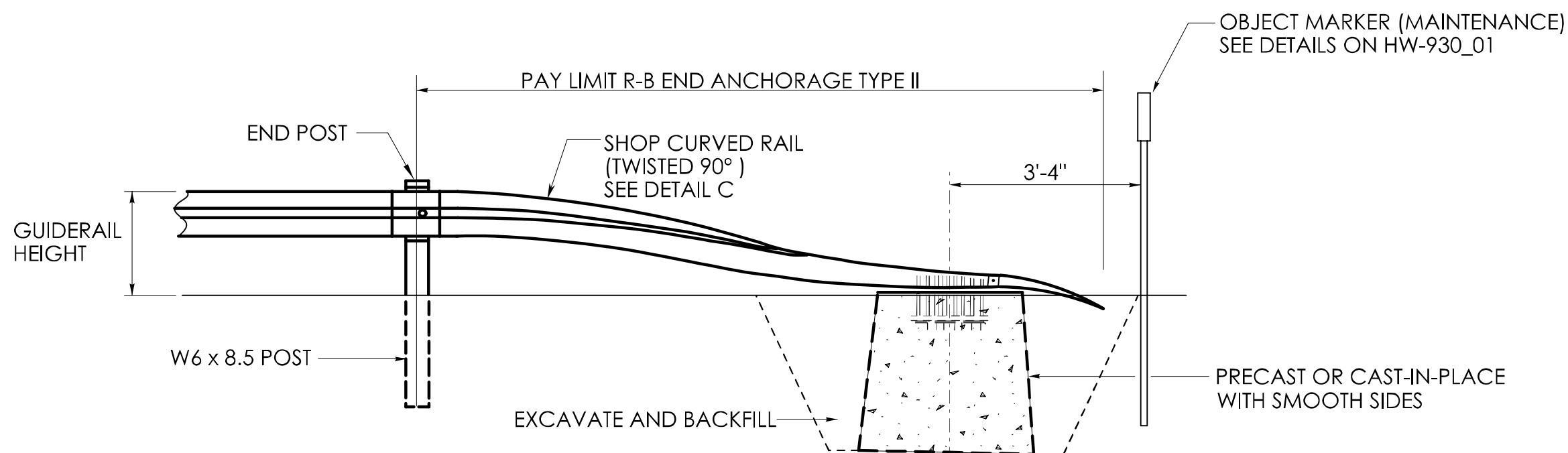
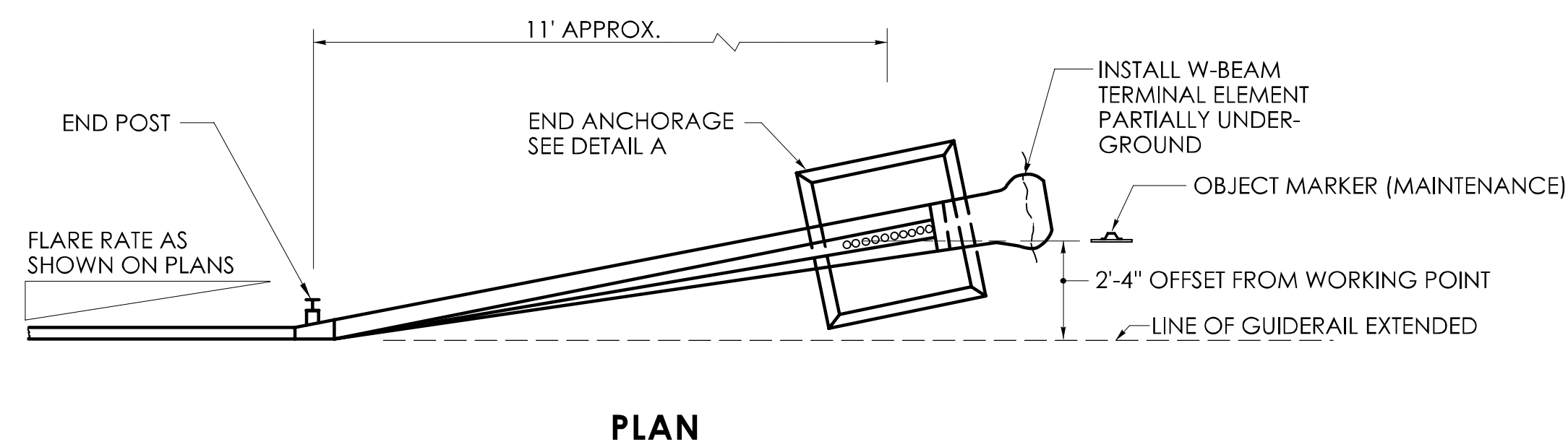
ELEVATION

	NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.19 15:07:14-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.29 12:35:10-05'00'	 CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: METAL BEAM RAIL TRANSITION 350 TO MASH GUIDERAIL	STANDARD SHEET NO.: HW-910_25a
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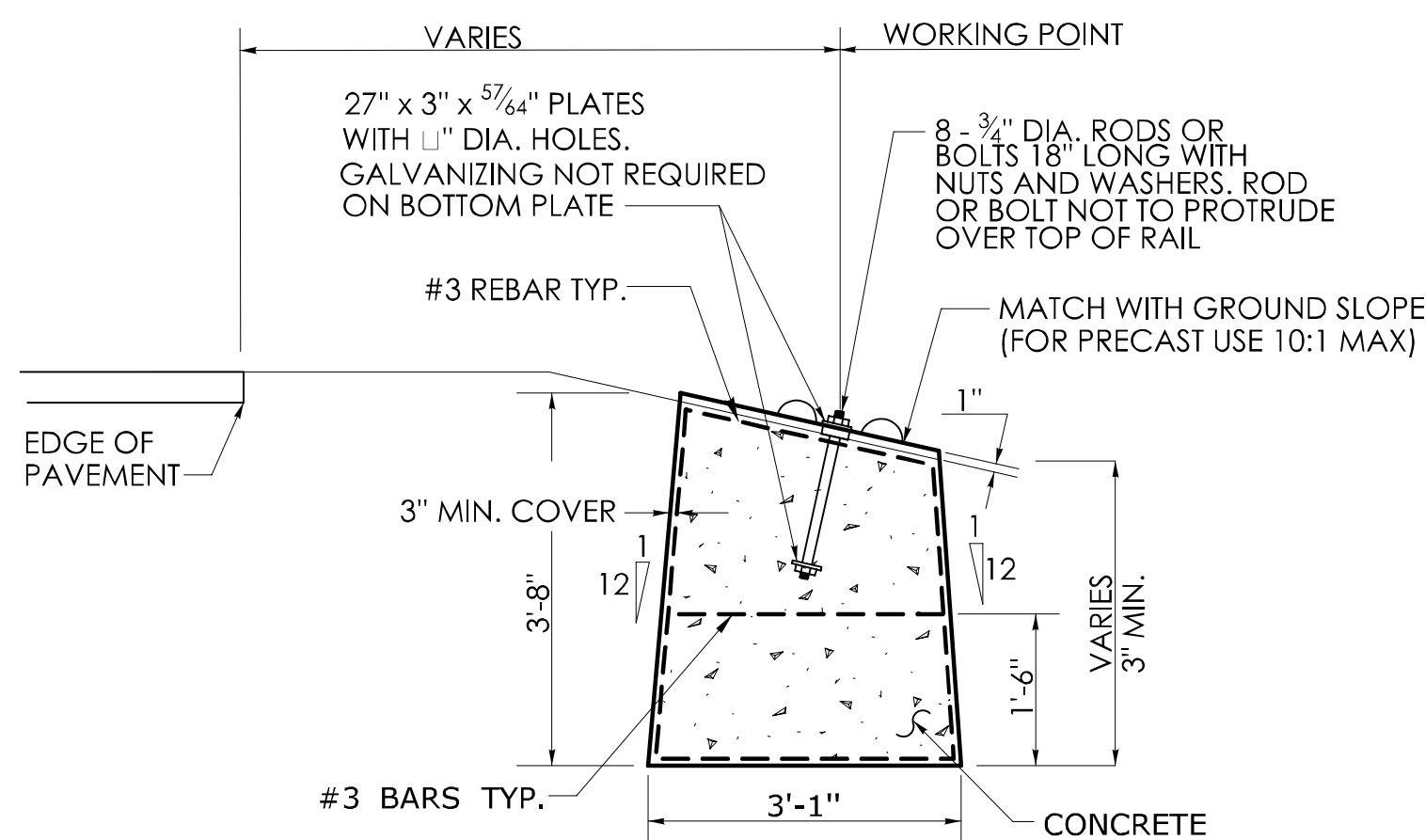
- GENERAL NOTES:**
- J-HOOK BOLTS MAY BE SUBSTITUTED FOR BOTTOM PLATE ANCHORAGE IN CONCRETE END ANCHORS USING THE SAME SIZE, STRENGTH, AND LENGTH AS NOTED ON THE PLANS.
 - INSTALLATION OF RADII DIFFERENT THAN WHAT IS SHOWN IN DETAIL "C" FOR R-B END ANCHORAGE TYPE II MUST BE APPROVED BY THE ENGINEER.



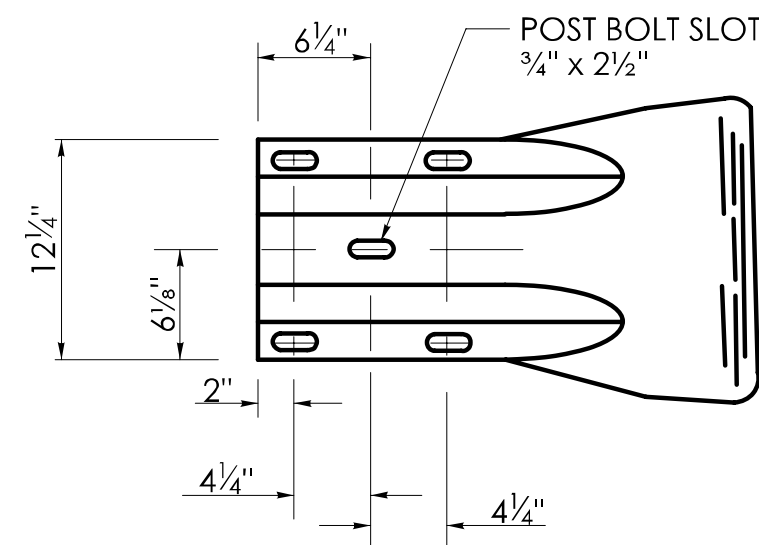
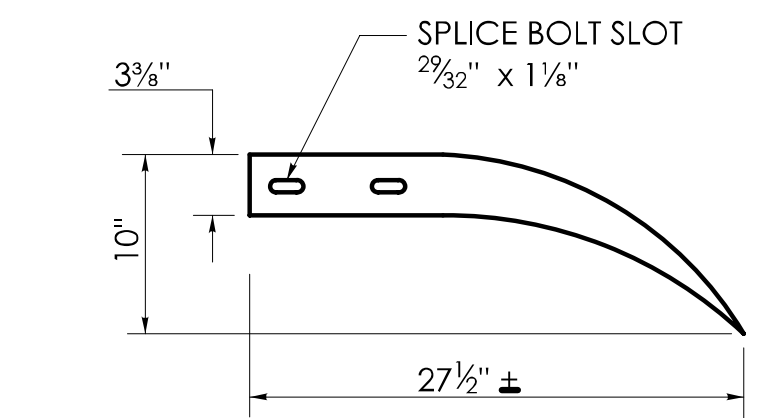
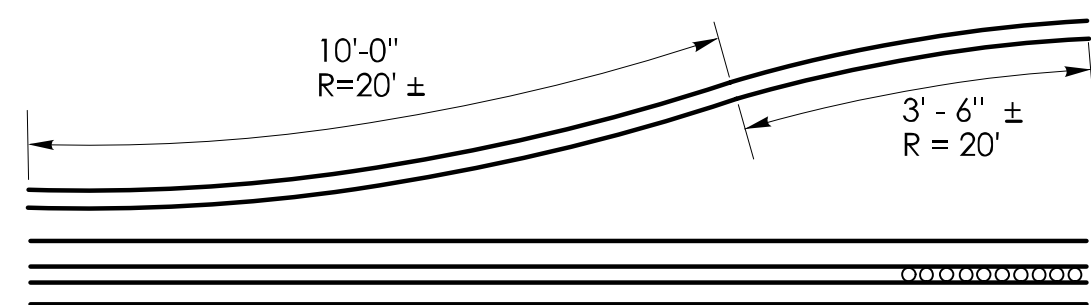
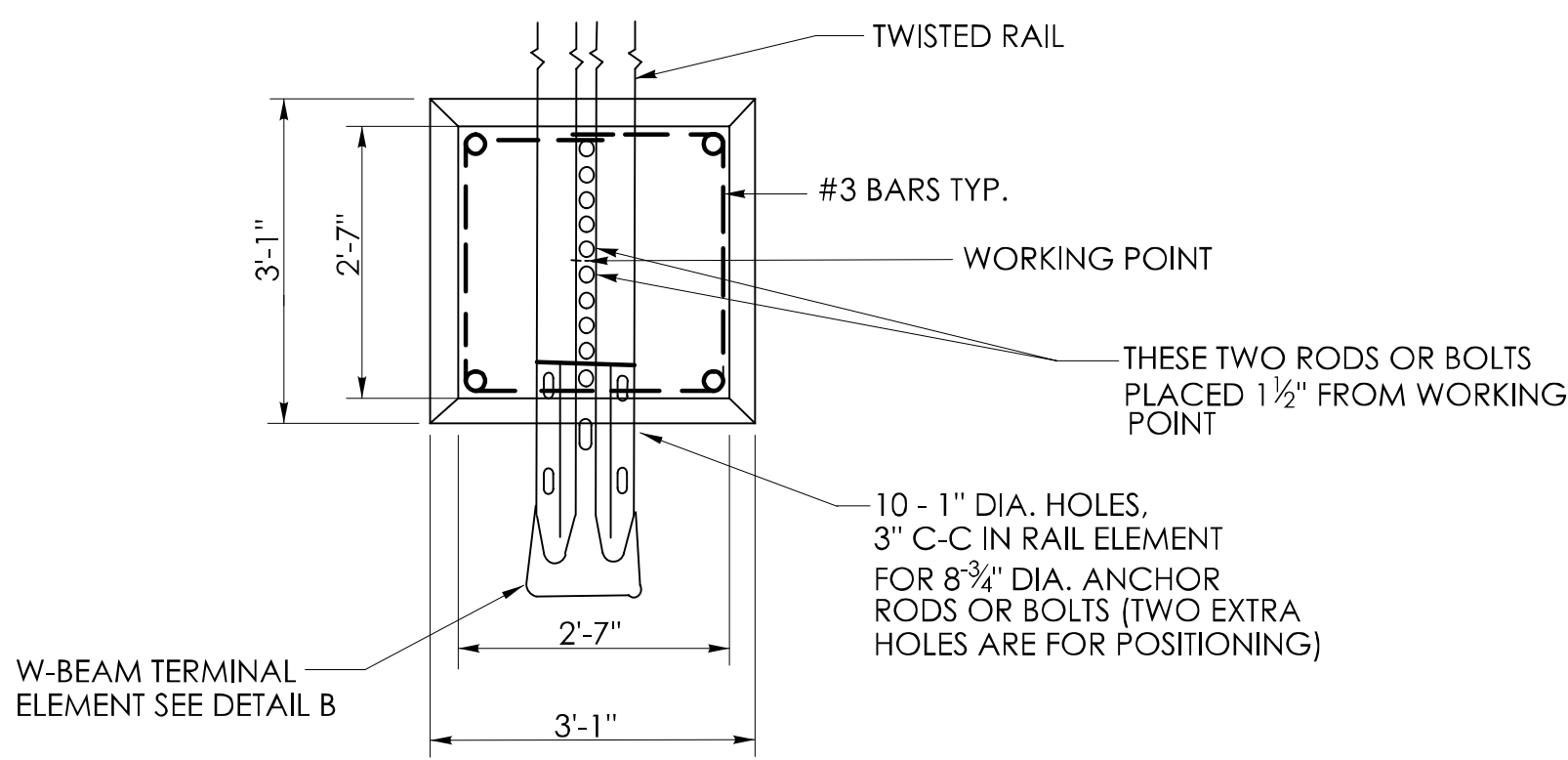
R-B END ANCHORAGE TYPE I



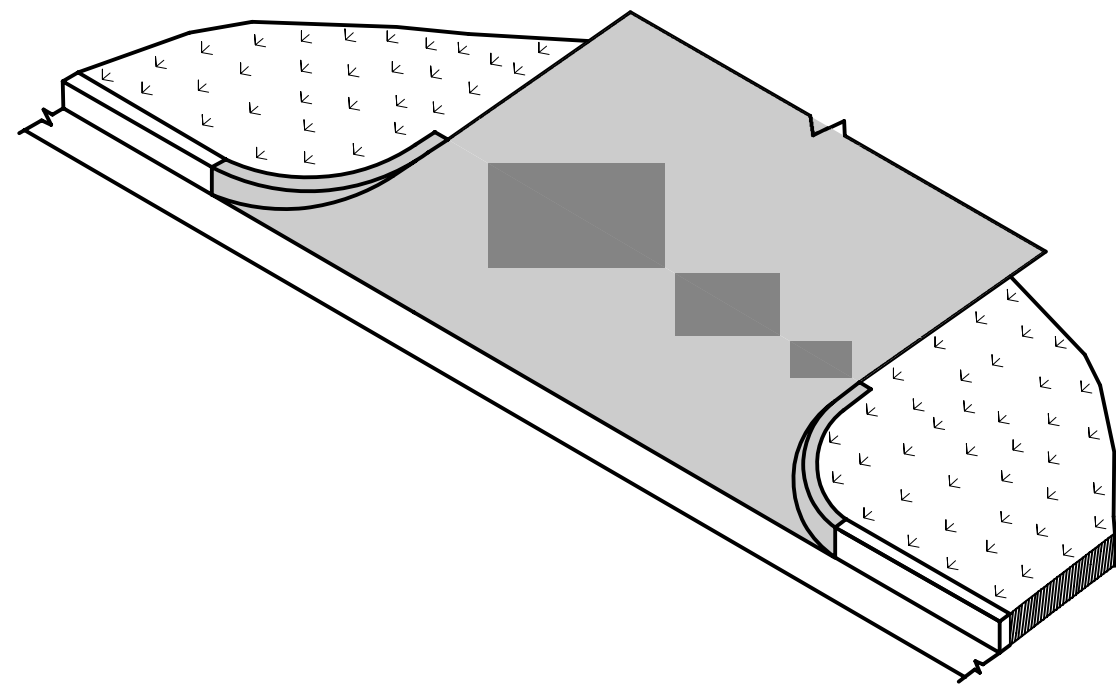
R-B END ANCHORAGE TYPE II



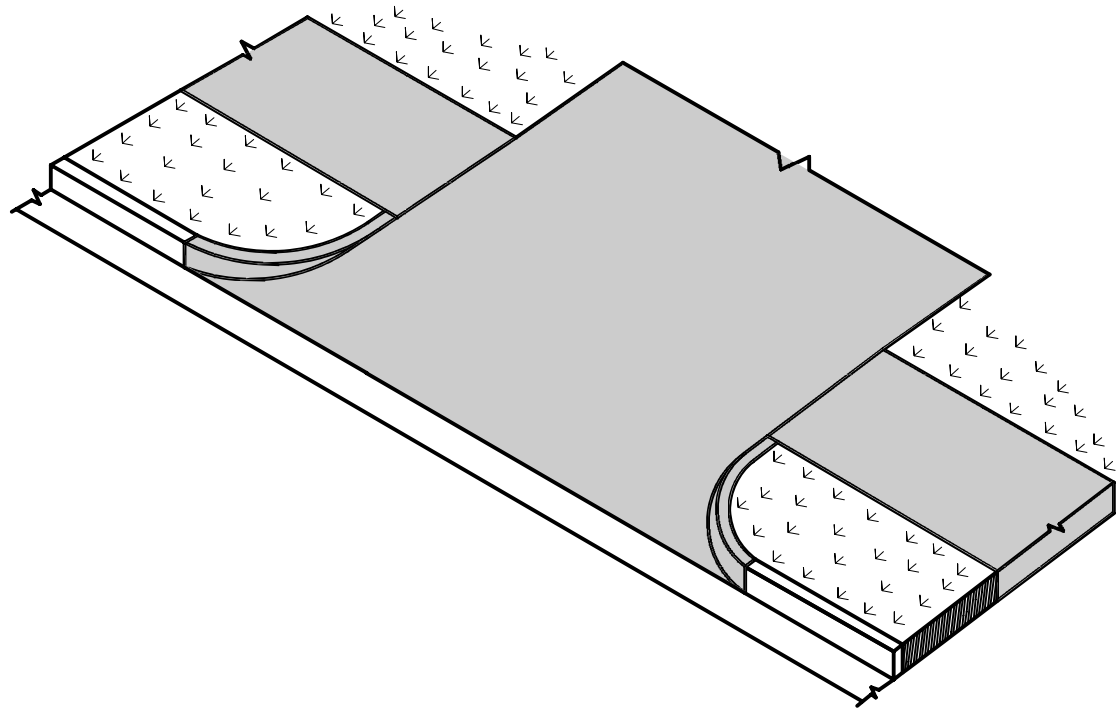
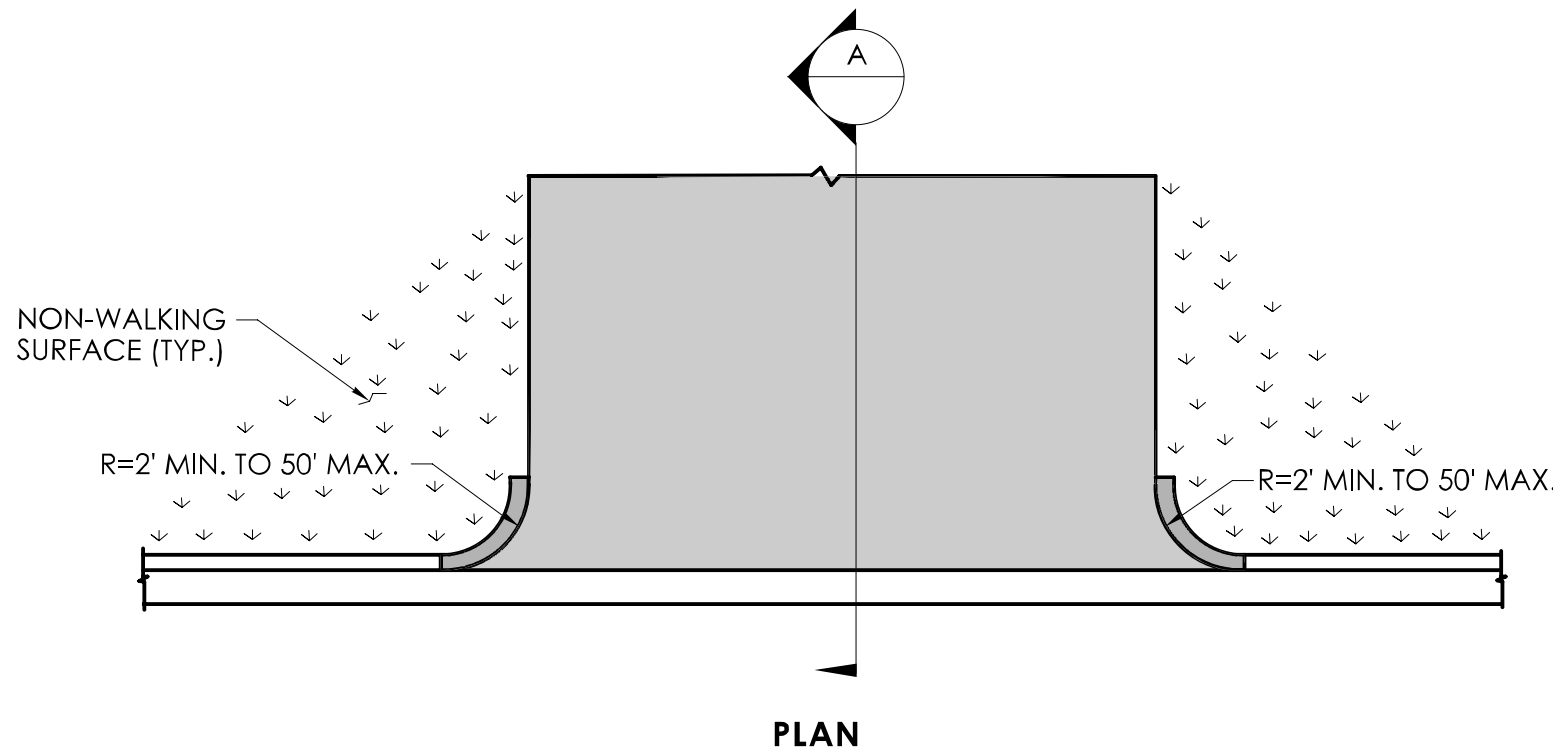
**DETAIL A
ROADSIDE CONCRETE END ANCHOR**
SEE NOTE 2



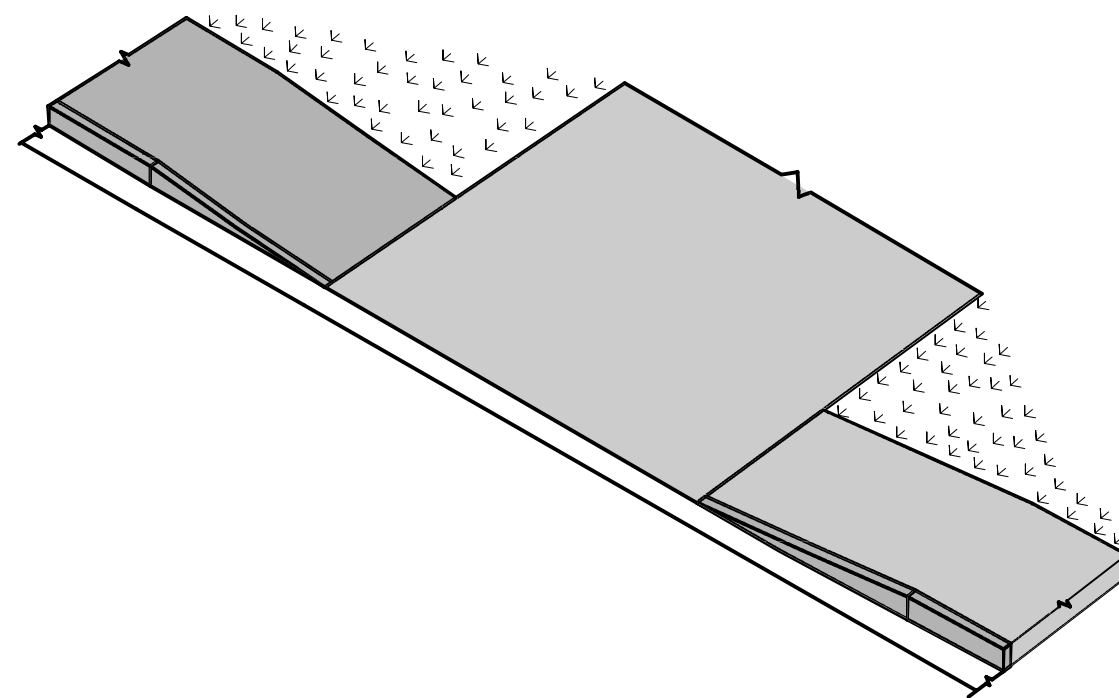
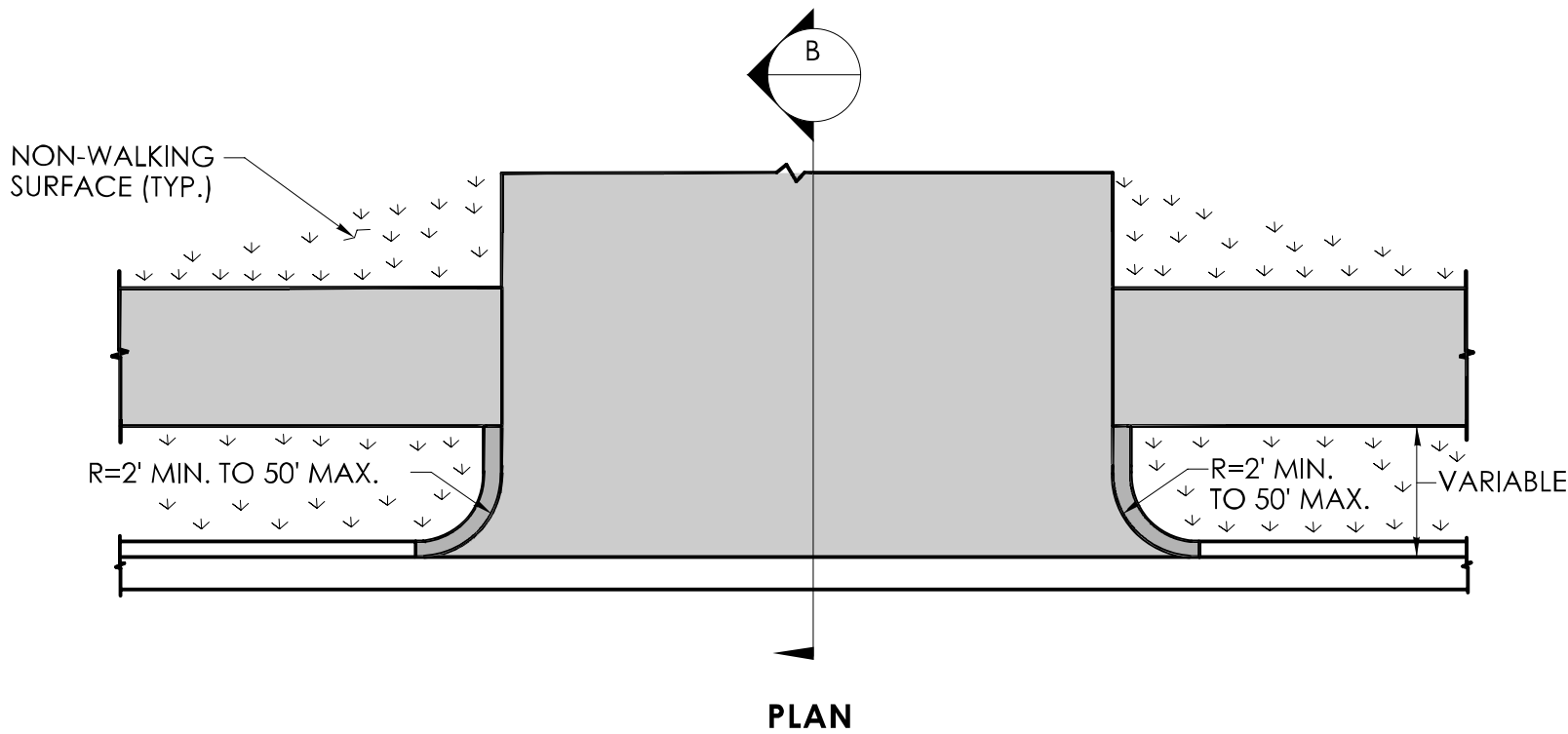
**DETAIL B
W-BEAM TERMINAL ELEMENT**



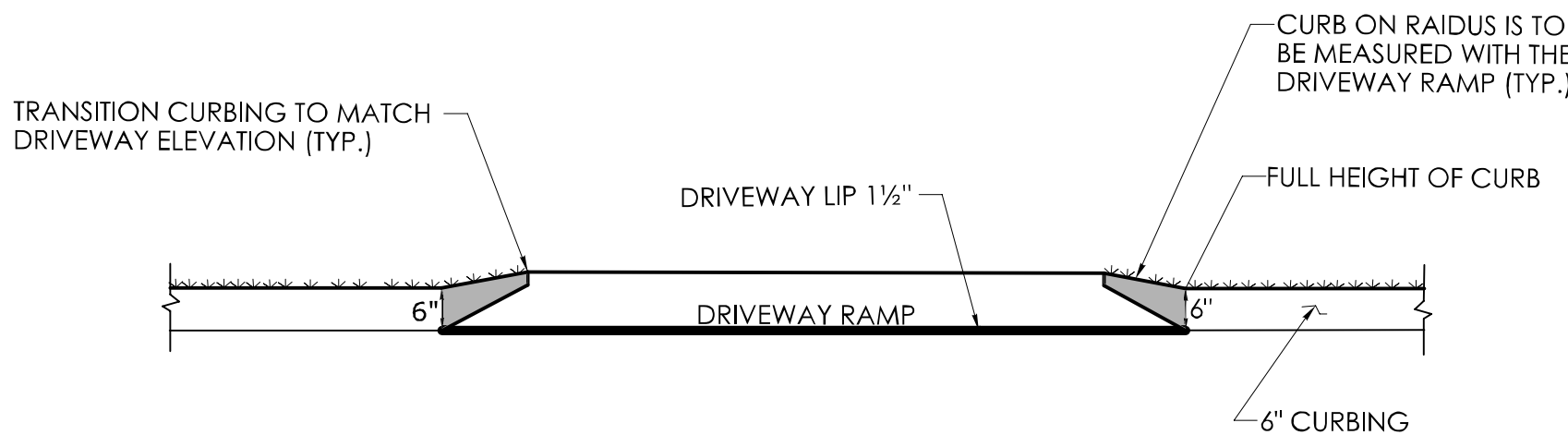
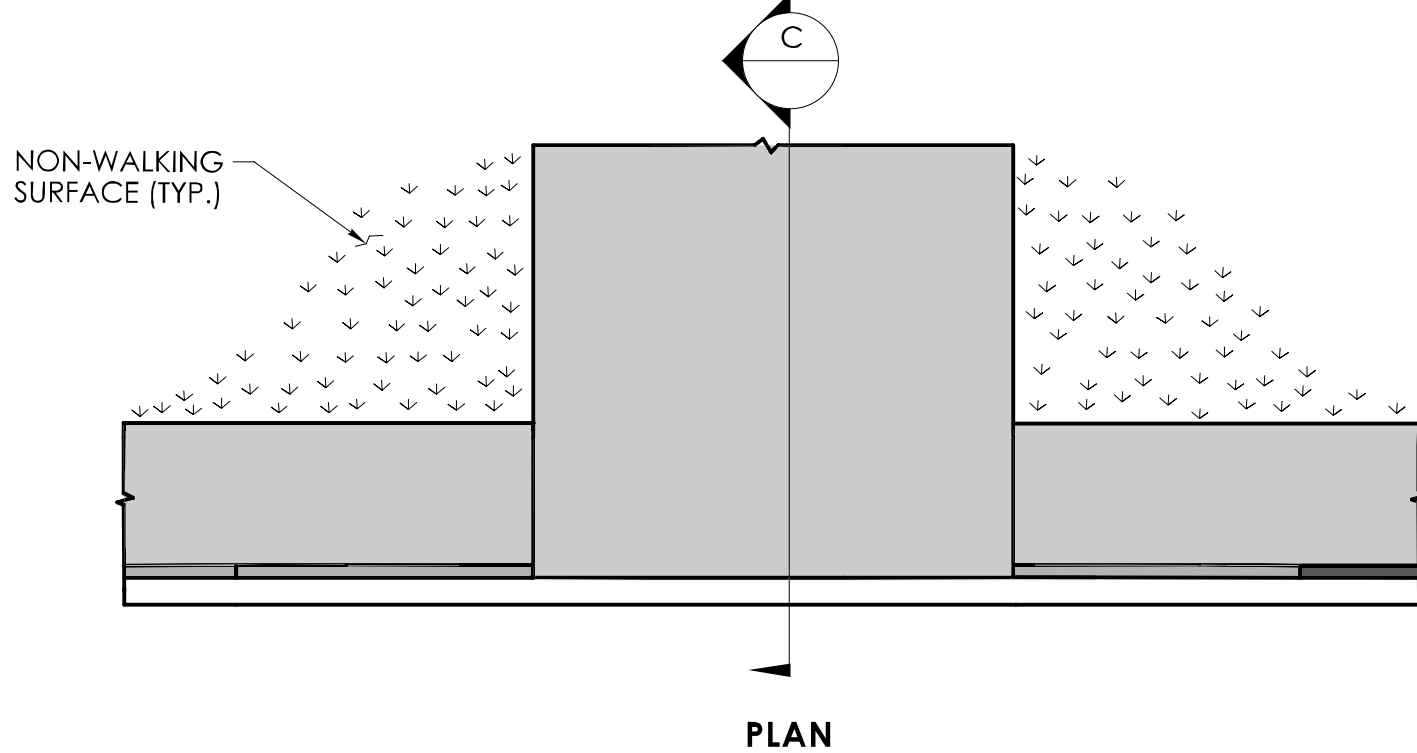
BITUMINOUS CONCRETE DRIVEWAY



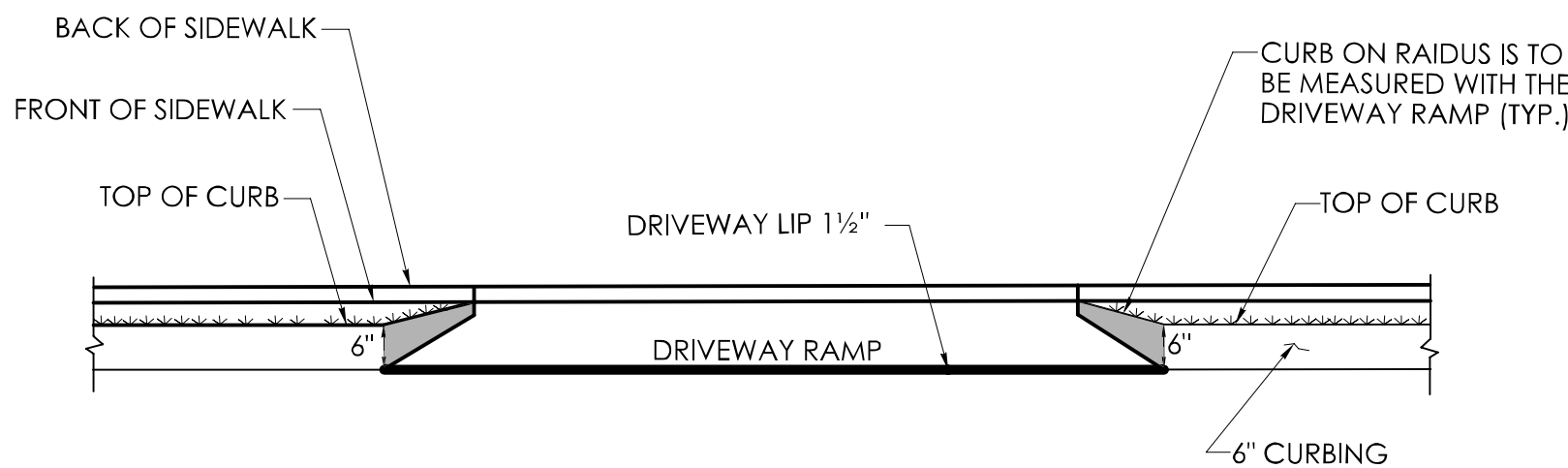
BITUMINOUS CONCRETE DRIVEWAY
WITH A PEDESTRIAN SIDEWALK SETBACK



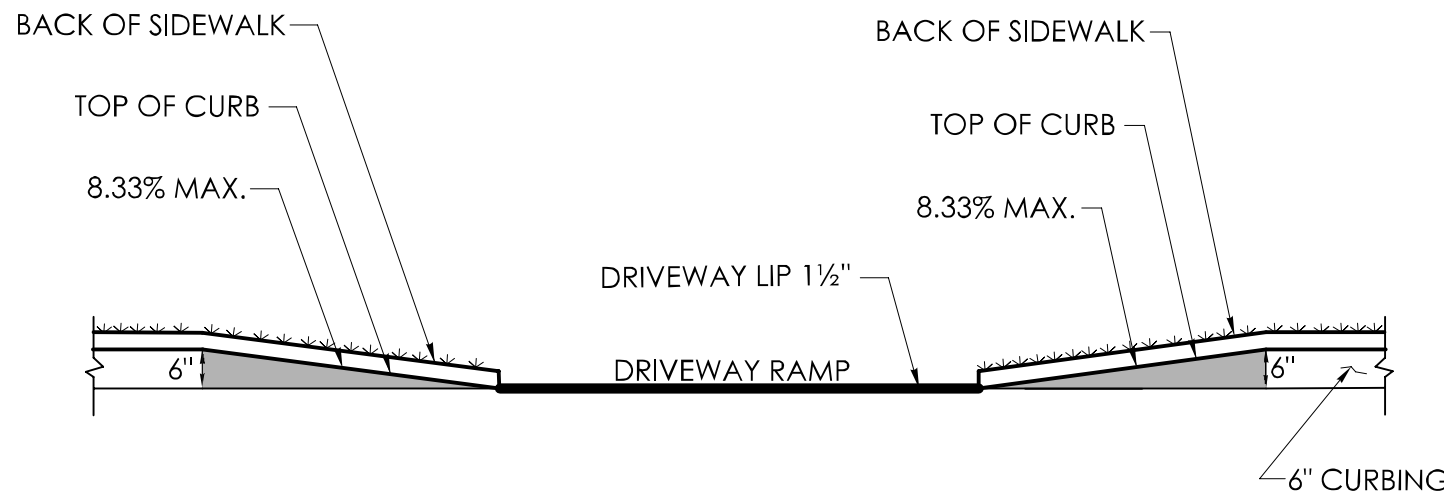
BITUMINOUS CONCRETE DRIVEWAY
WITH PEDESTRIAN SIDEWALK AT THE CURB



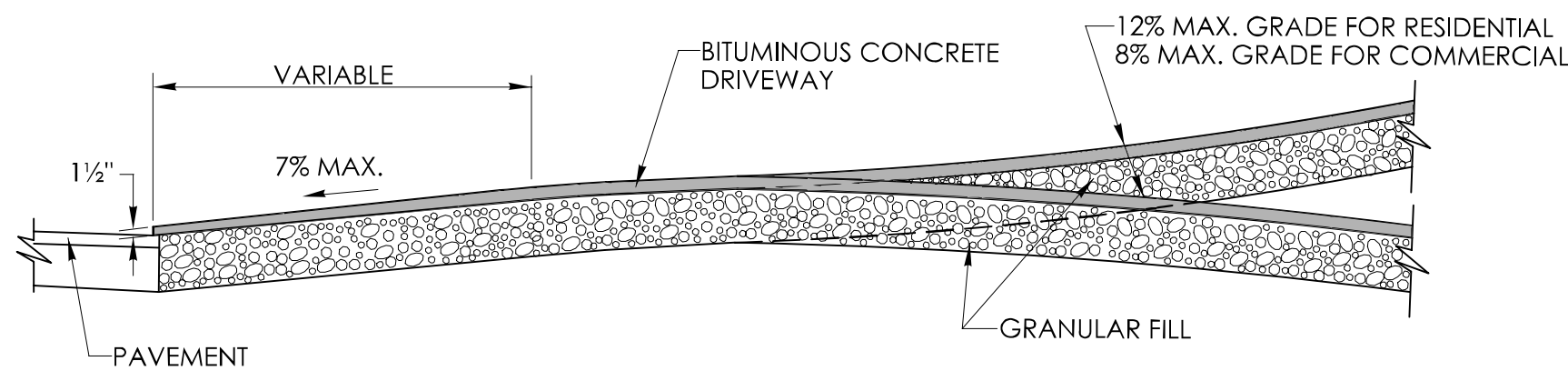
ELEVATION



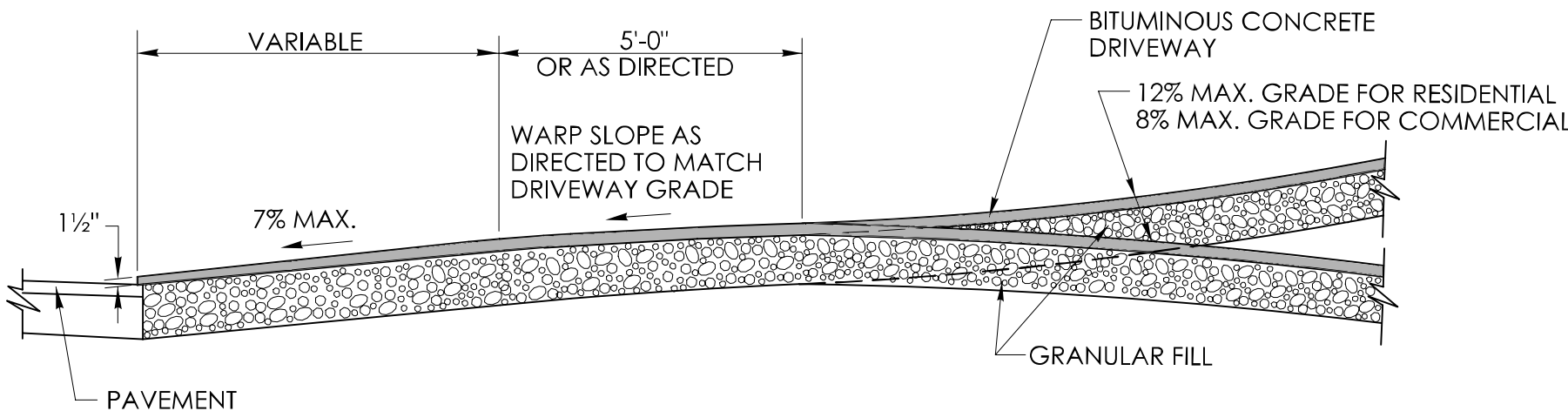
ELEVATION



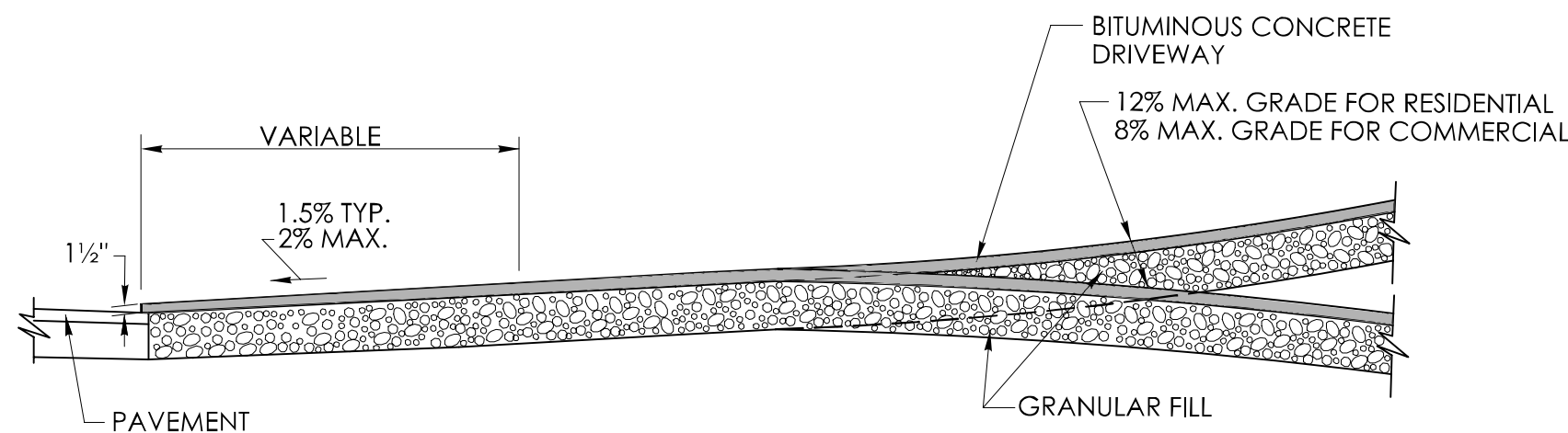
ELEVATION



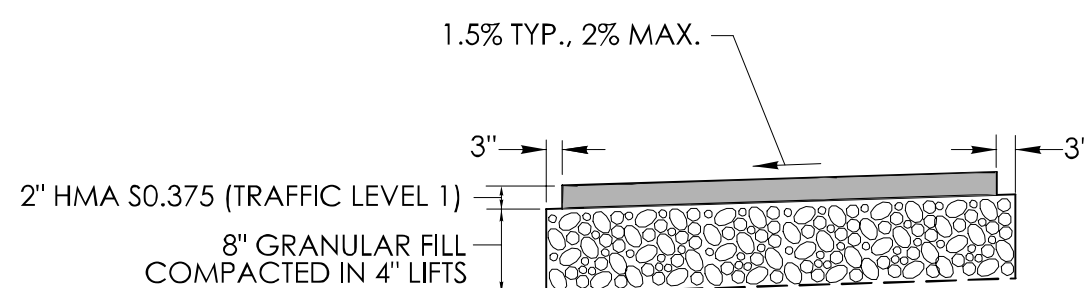
SECTION A



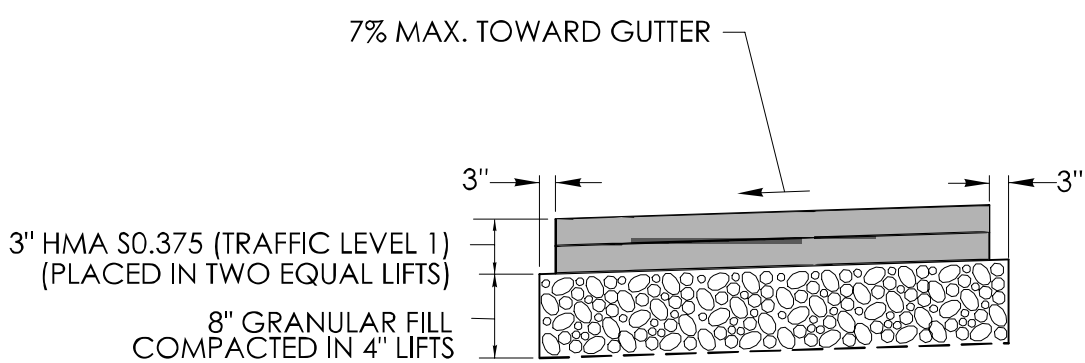
SECTION B



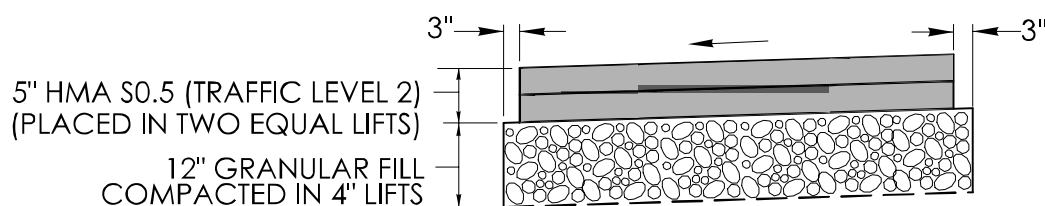
SECTION C



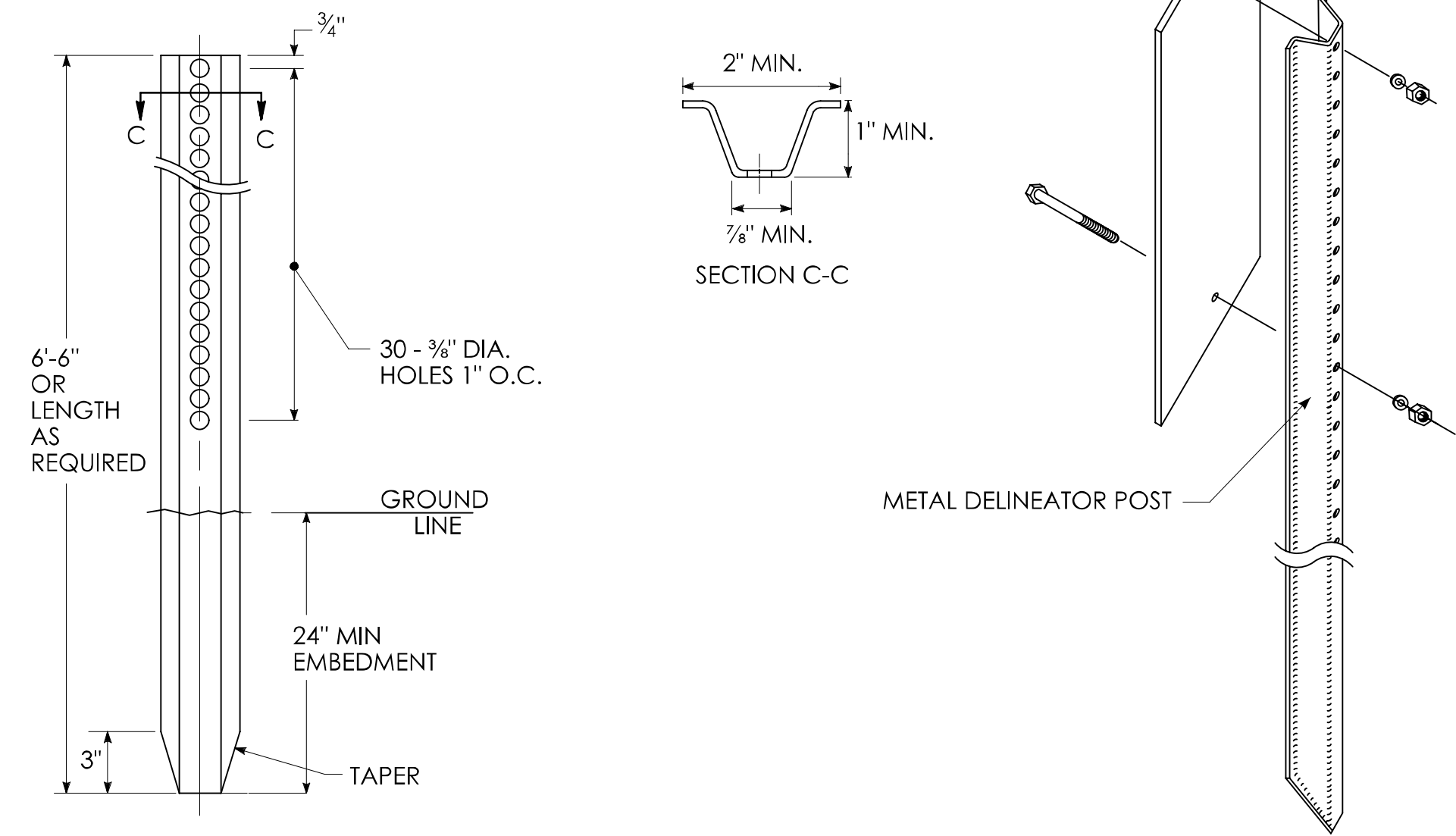
BITUMINOUS CONCRETE SIDEWALK



BITUMINOUS CONCRETE DRIVEWAY

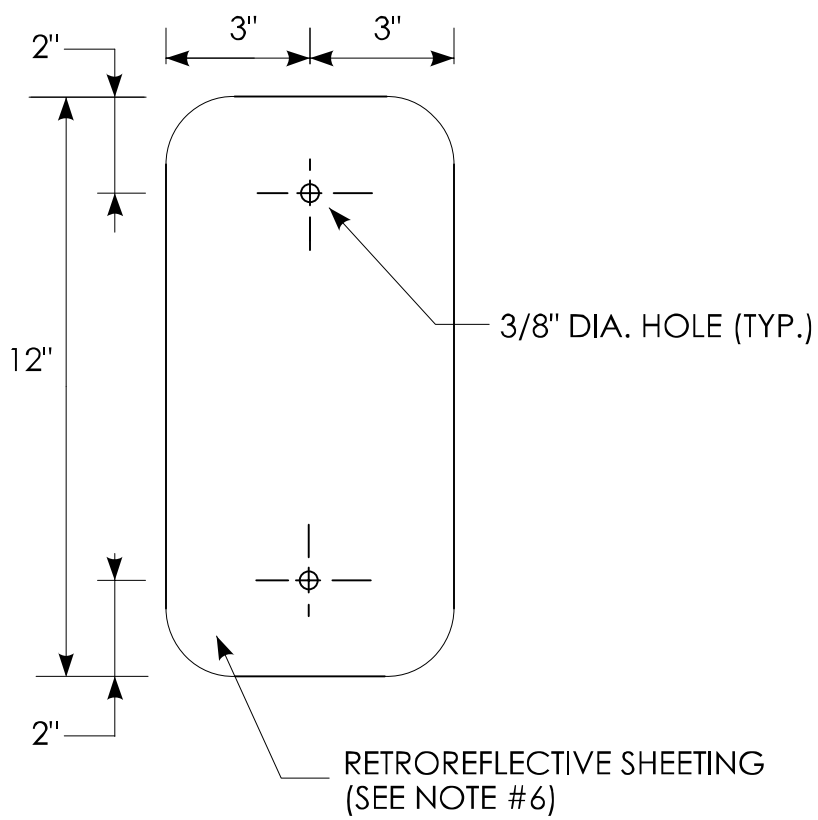


COMMERCIAL
BITUMINOUS CONCRETE DRIVEWAY



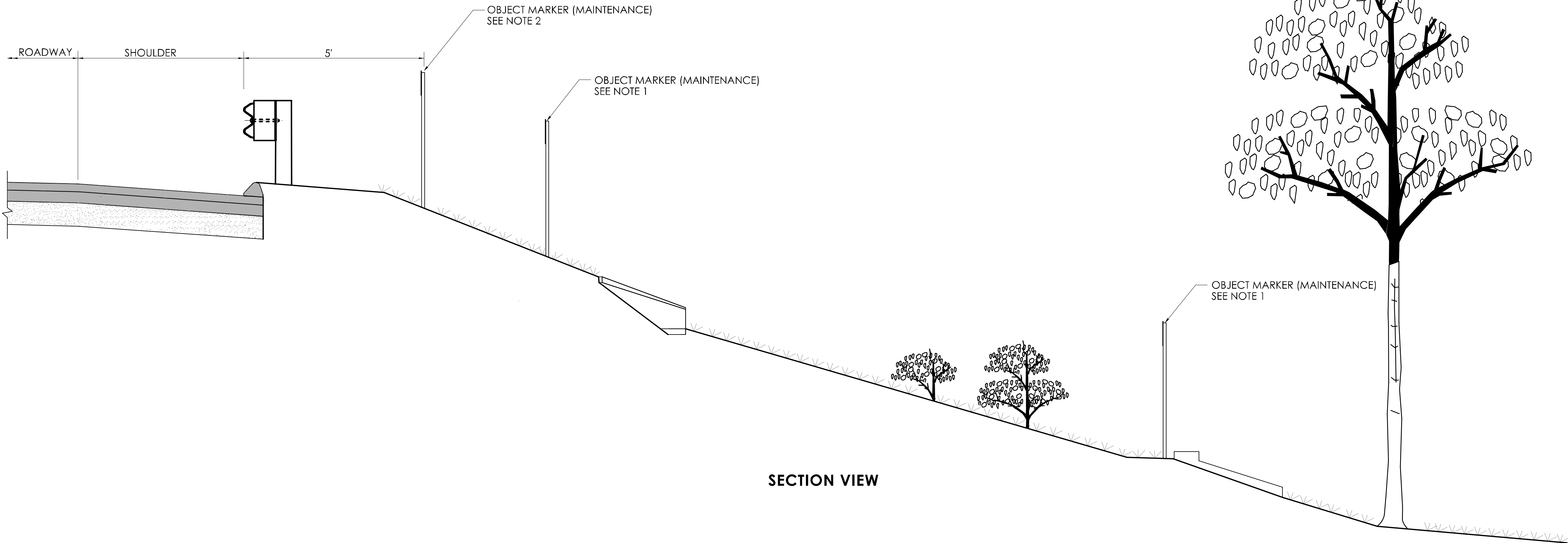
METAL DELINEATOR POST

INSTALLATION ON DELINEATOR POSTS



OBJECT MARKER DETAIL

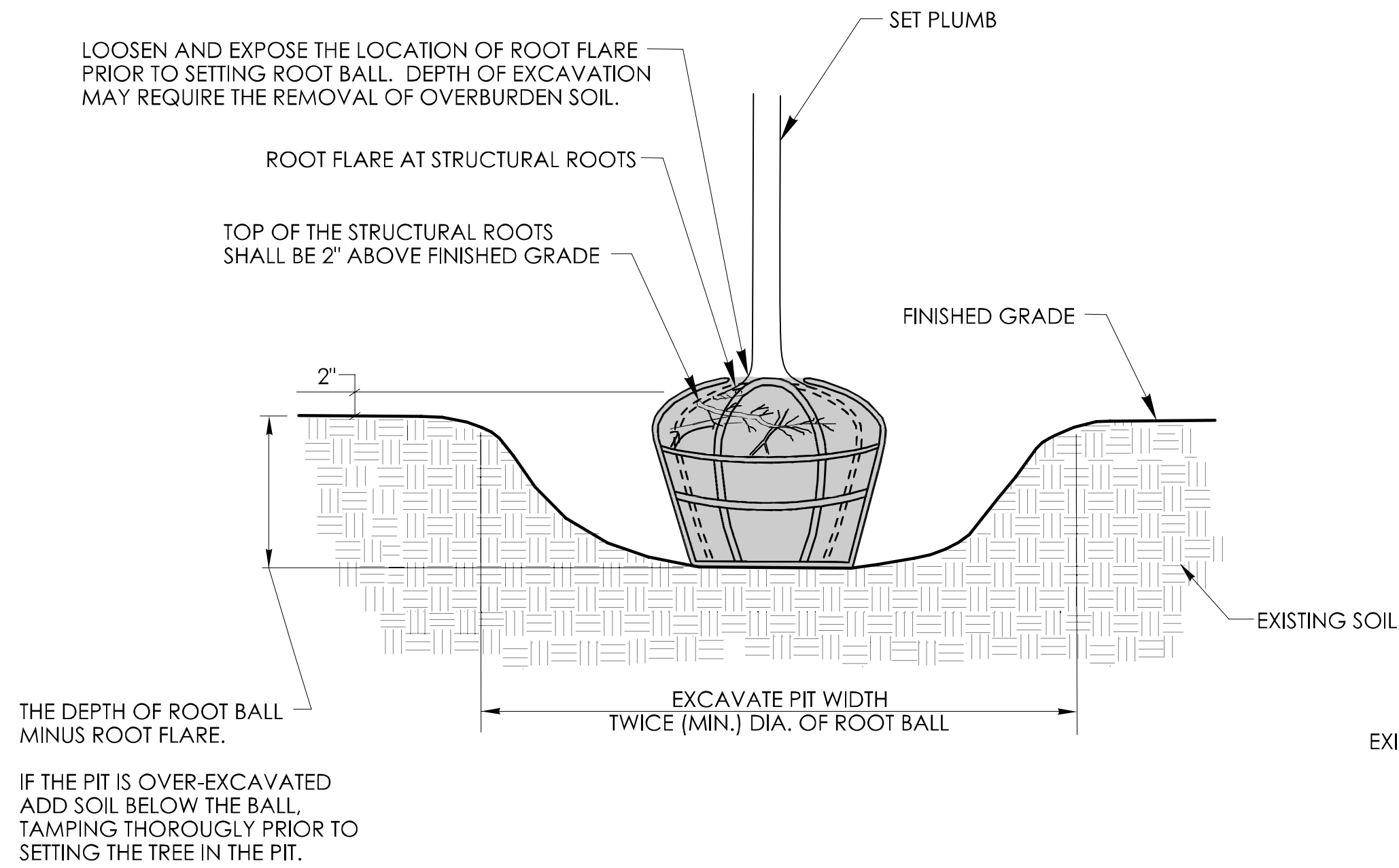
- GENERAL NOTES:**
1. OBJECT MARKER (MAINTENANCE) SHALL BE INSTALLED ADJACENT TO; END WALLS, DRAINAGE PIPE ENDS, UNDERDRAIN OUTLETS AND PAVED APRONS WITH THE MARKER FACING PARALLEL TO THE DIRECTION OF TRAFFIC.
 2. SECOND OBJECT MARKER (MAINTENANCE) SHALL ONLY BE INSTALLED 5 FEET FROM THE EDGE OF ROADWAY WHEN THE OBJECT MARKER ADJACENT TO STRUCTURE IS GREATER THAN 15 FEET FROM THE EDGE OF THE ROADWAY.
 3. OBJECT MARKER (MAINTENANCE) SHALL BE INSTALLED AT METAL BEAM GUIDERAIL ANCHORS AS SHOWN ON:
HW-911_01 R-B END ANCHORAGE TYPE I AND II,
HW-911_02 MD-B END ANCHORAGE TYPE I.
 4. OBJECT MARKERS SHALL BE FASTENED WITH 3/4" STAINLESS STEEL HEX HEAD BOLTS (LENGTH AS REQUIRED), WASHER AND FIBER INSERT SELF LOCKING NUT, ON STANDARD METAL DELINEATOR POST.
 5. METAL DELINEATOR POST SHALL BE 1.12 LBS/FT. ASTM A36 STEEL
 6. OBJECT MARKER COMPOSITION SHALL BE 14 GA. (0.080") THICK SHEET ALUMINUM WITH YELLOW TYPE XI RETROREFLECTIVE SHEETING.
 7. ALL OBJECT MARKERS (MAINTENANCE) SHALL BE INSTALLED WITH THE BOTTOM OF THE OBJECT MARKER 4 FT ABOVE THE GROUND.



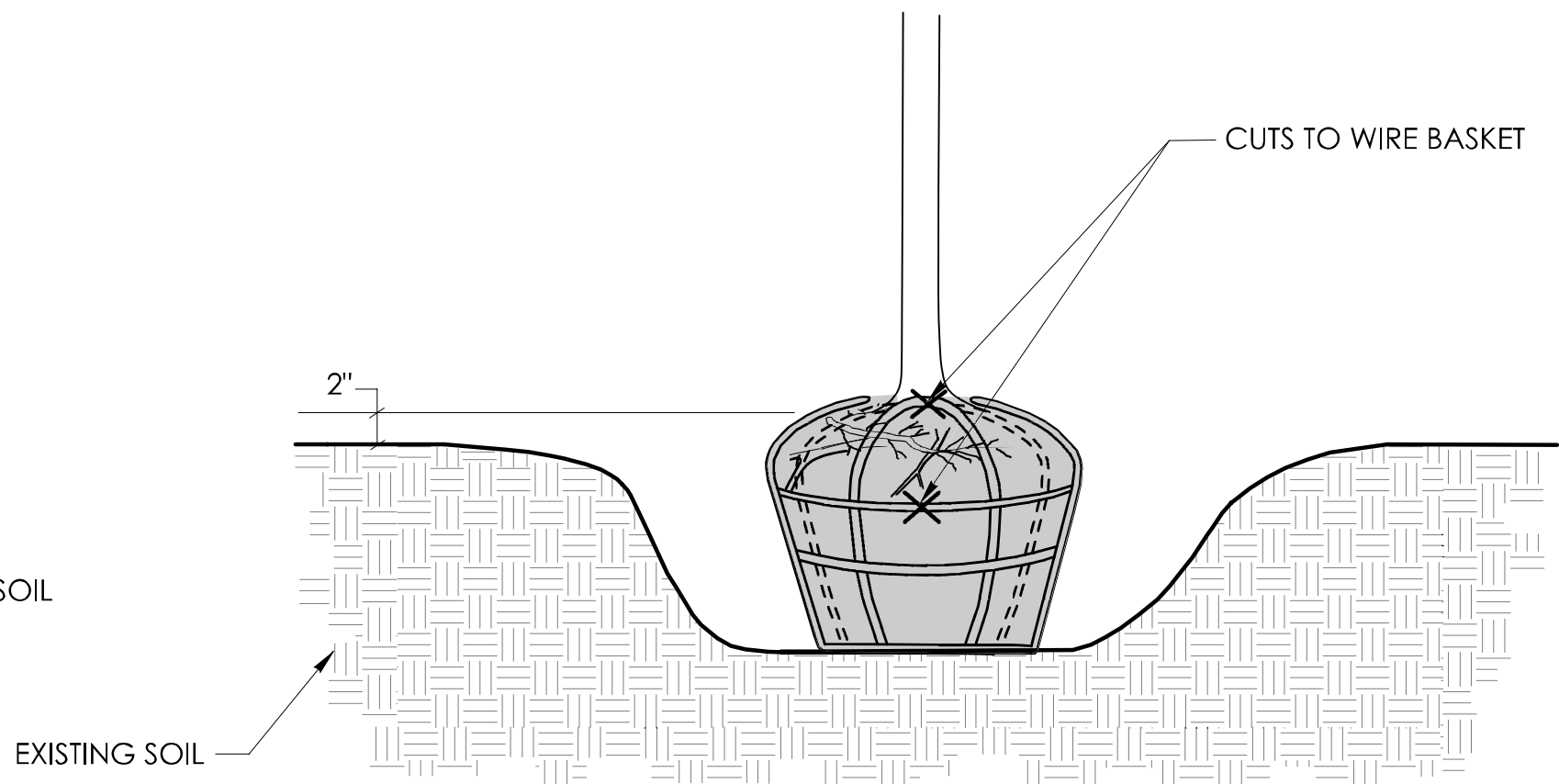
SECTION VIEW

GENERAL NOTES:

1. ALL EXTERIOR PACKAGING MATERIAL APPLIED TO PLANTS SHALL BE REMOVED AFTER THE PLANT IS LOCATED IN THE PIT EXCAVATION. CUT AND REMOVE TWINE, BURLAP OR WIRE BASKETS FROM THE TOP TWO-THIRDS OF THE ROOT BALL.
2. PLANT MALUS SPECIES (DECIDUOUS APPLE TREES OR SHRUBS) DEEP ENOUGH IN PIT TO COVER THE GRAFT TO PREVENT SPROUTING FROM THE ROOT STOCK.

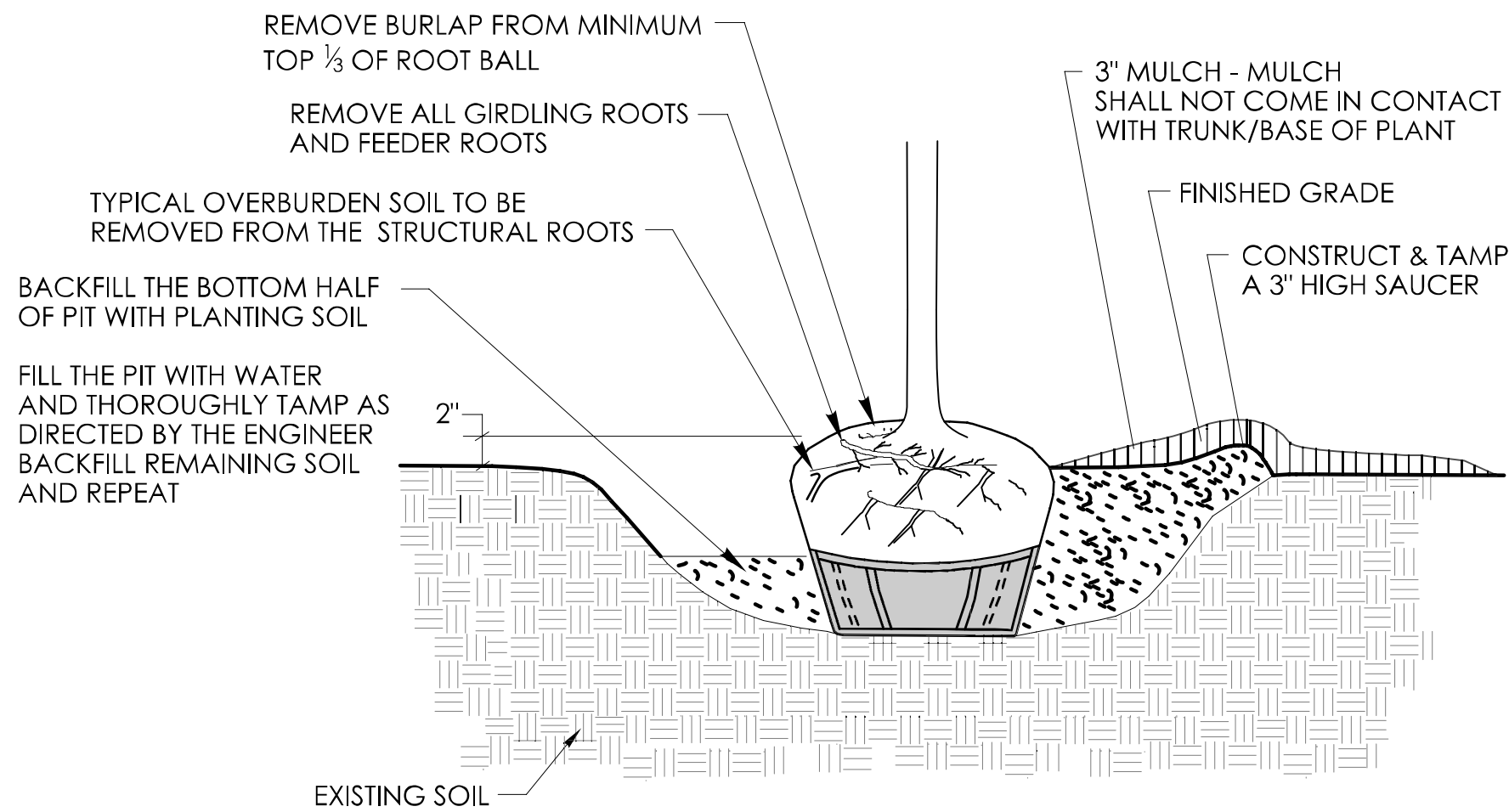


PIT EXCAVATION AND SETTING OF PLANTING

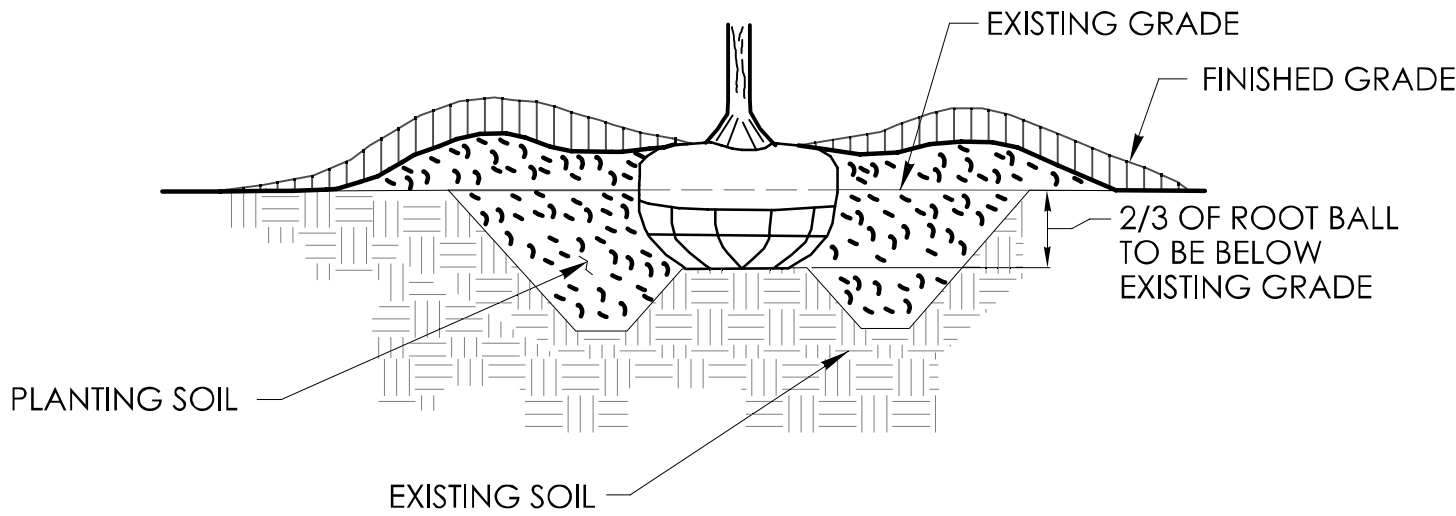


WIRE BASKET REMOVAL

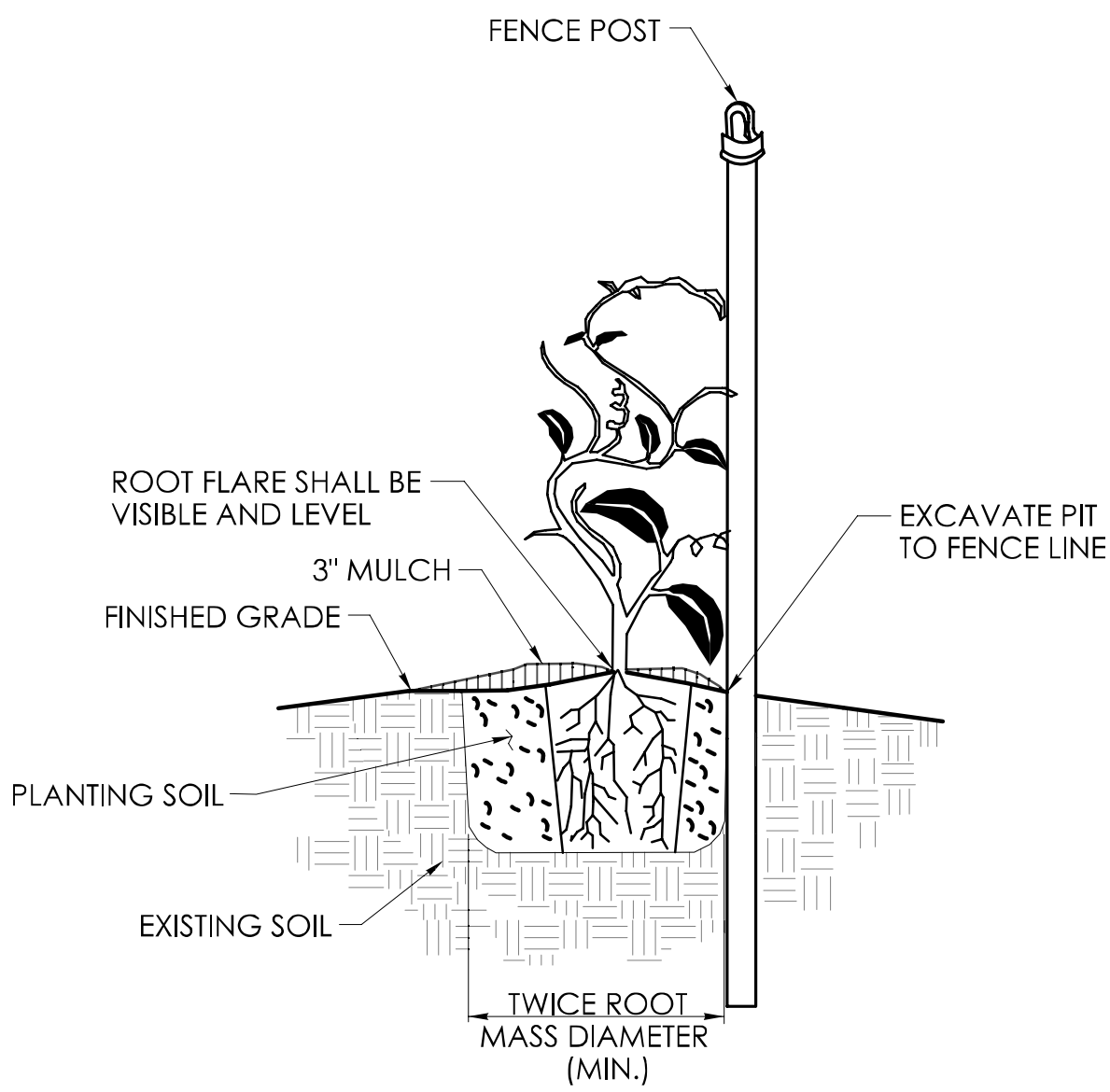
NOTE: IF WIRE BASKETS ARE USED, THE CONTRACTOR SHALL CUT ALL OF THE HORIZONTAL WIRES IN THE TOP 2/3 OF THE ROOT BALL AND BEND DOWN OR REMOVE THE TOP 1/3 OF THE WIRE BASKET



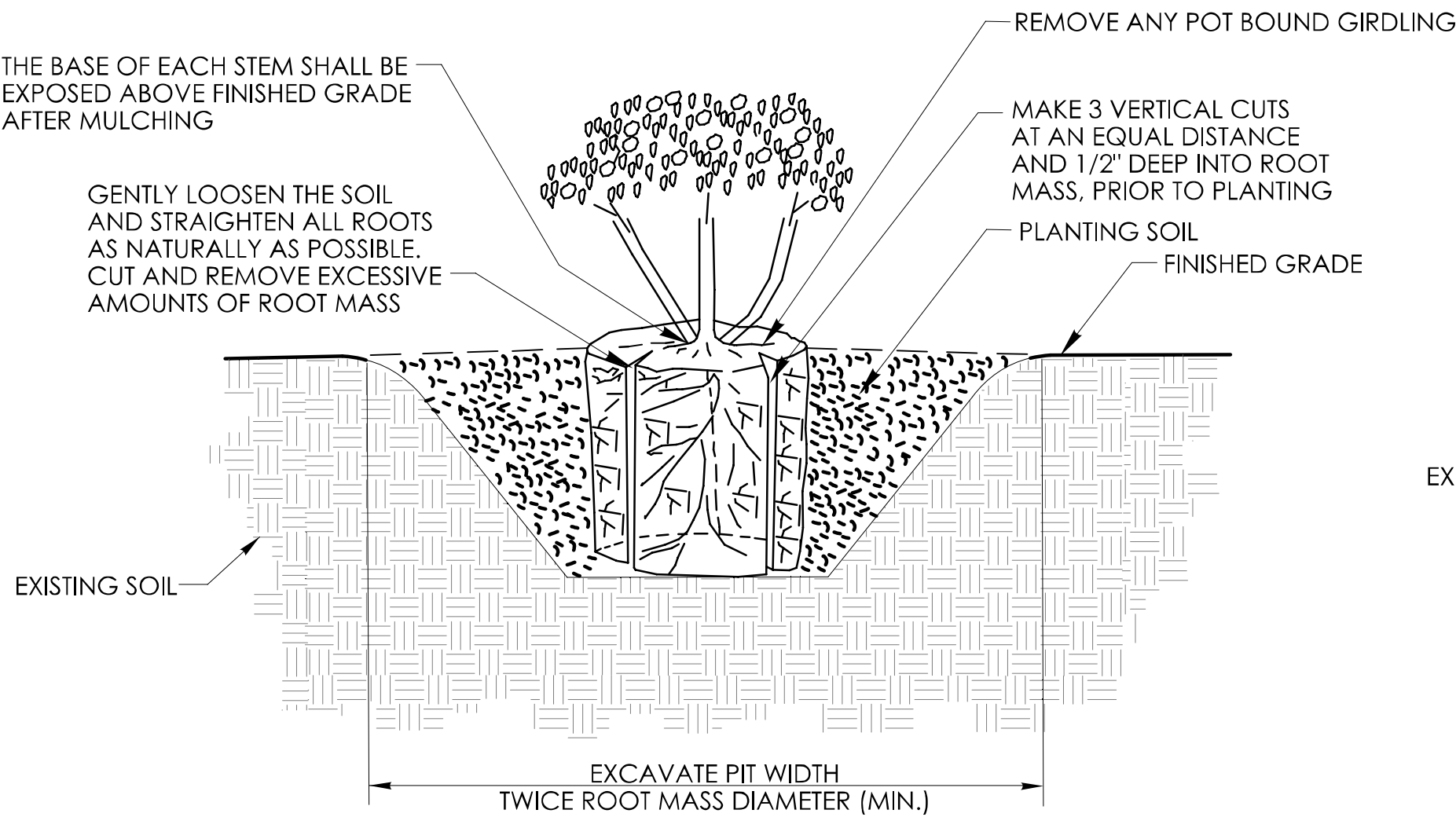
BACKFILL AND MULCH FOR PLANTING



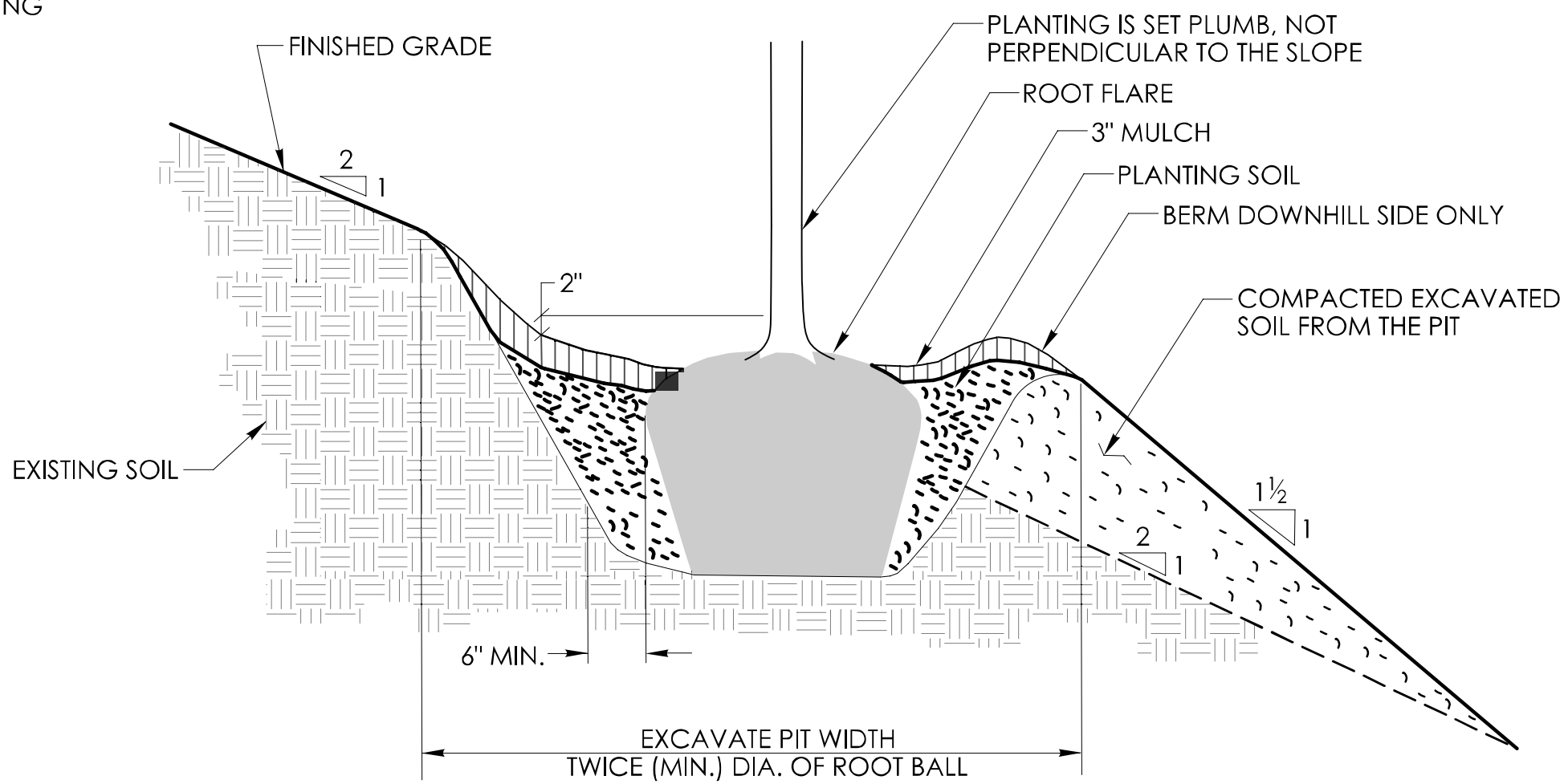
HEAVY CLAY PLANTINGS



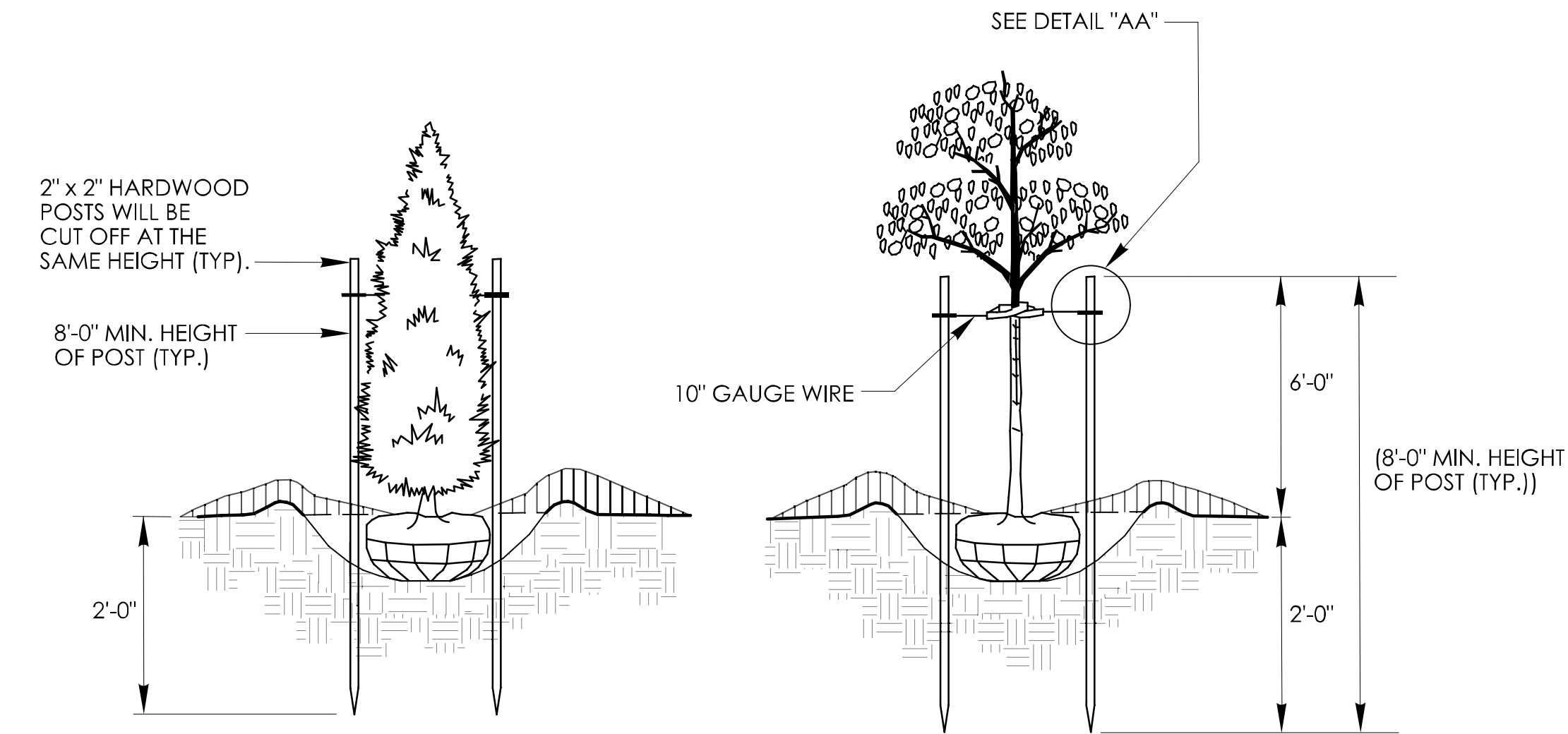
VINE PLANTING



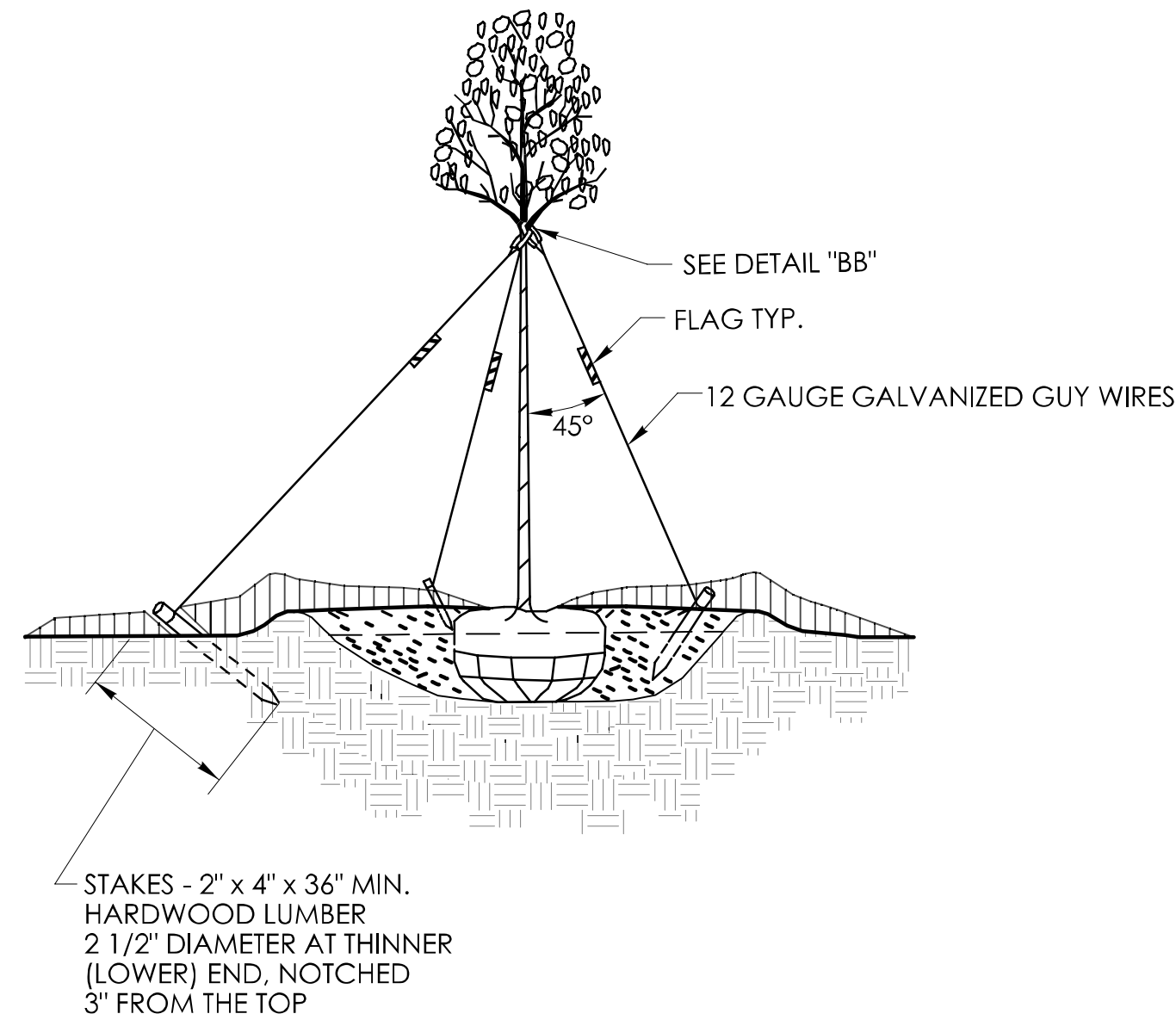
CONTAINER GROWN PLANTING



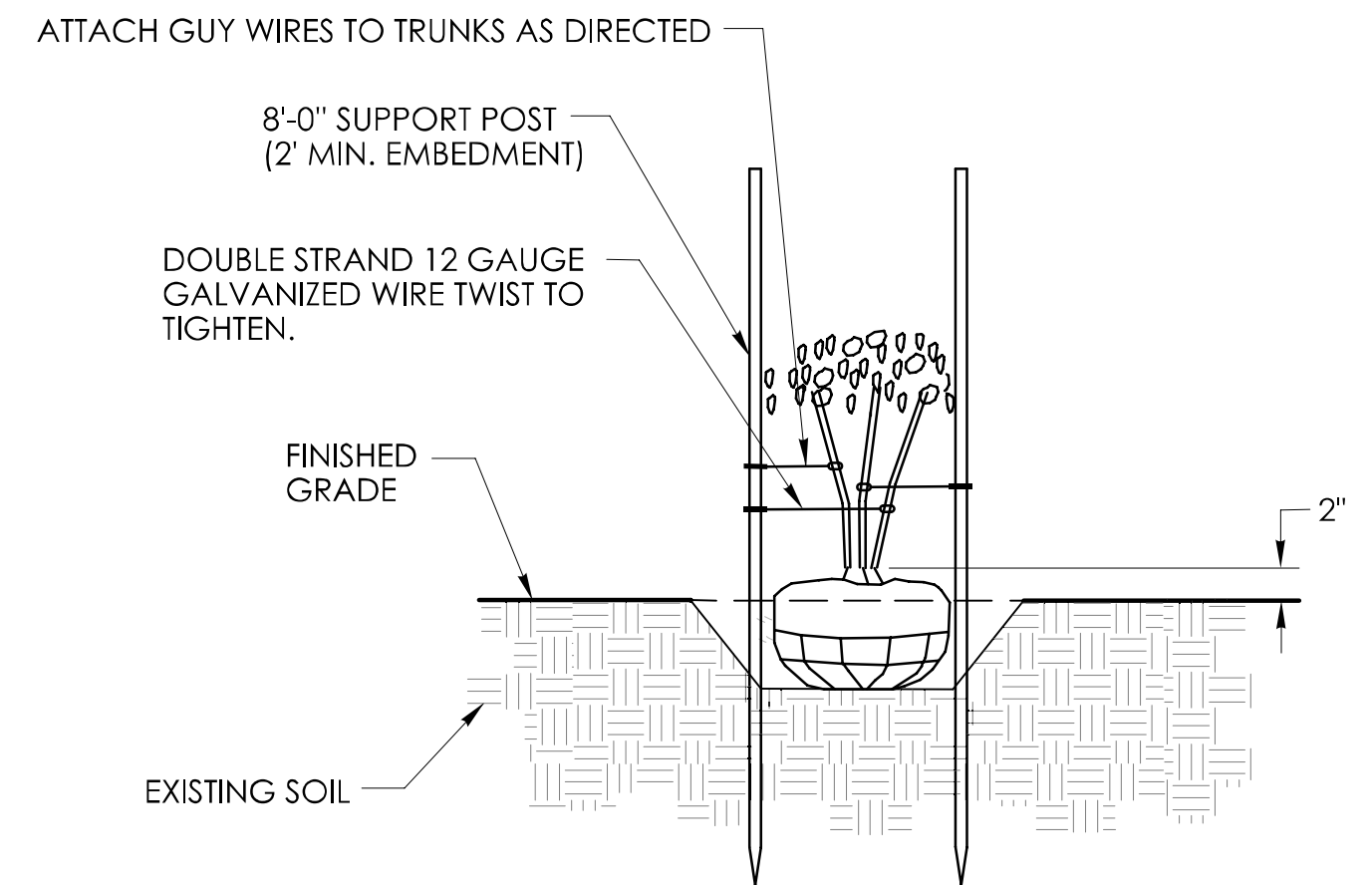
SLOPE PLANTING



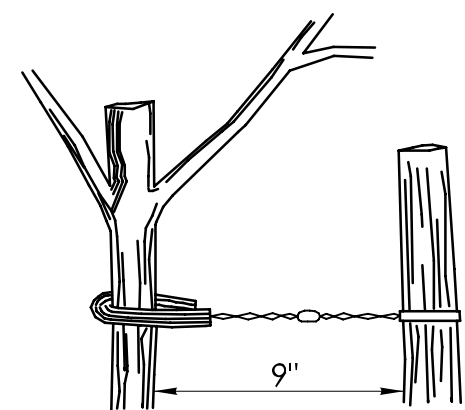
TWO STAKES



THREE GUYS AND STAKES



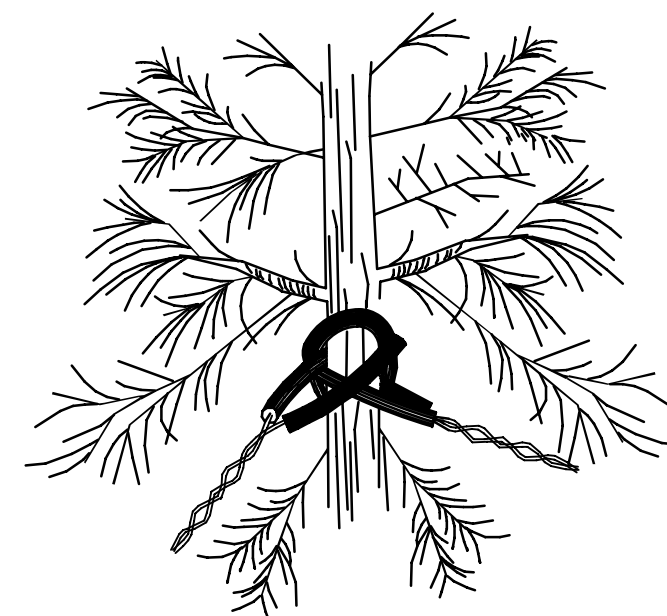
STAKING FOR MULTI-STEMMED TREES



DETAIL "AA"
POST AND GUY WIRE

ANCHOR TREE TO POST(S) USING GALVANIZED GUY WIRE AND 3/8" MIN. INSIDE DIAMETER RUBBER HOSE

GUY WIRES SHOULD BE PLACED AT LEAST HALF WAY UP THE TRUNK



DETAIL "BB"
GUY WIRES AROUND TRUNK

ANCHOR TREE TO STAKES USING GALVANIZED GUY WIRES AND 3/8" MIN. INSIDE DIAMETER RUBBER HOSE

GUY WIRES SHOULD BE PLACED AT LEAST HALF WAY UP THE TRUNK

GENERAL NOTES:

1. THE CONTRACTOR SHALL SUBMIT A STAKING PLAN FOR APPROVAL.
2. THE CONTRACTOR SHALL SUBMIT THE USE OF ANY OTHER MATERIALS FOR APPROVAL.
3. USE 3 POSTS FOR STAKING TREES 3" CALIPER OR GREATER AND EVERGREEN TREES 8' HIGH OR GREATER
4. USE DOUBLE STRAND 12 GAUGE GALVANIZED GUY WIRE FOR DECIDUOUS TREES GREATER THAN OR EQUAL TO 3" CALIPER AND USE DOUBLE STRAND 10 GAUGE GALVANIZED GUY WIRE FOR EVERGREEN TREES GREATER THAN OR EQUAL TO 8" CALIPER