

*ONLY STANDARD SHEETS MARKED WITH AN "✓" ARE IN THIS PROJECT #

0119-0121

**REVISED OR ADDED

✓*	SHEET NO.	TITLE	APPROVAL DATE**
✓	HW-211_01	ANTI-TRACKING PAD	11-09-22
✓	HW-286_01	DRAINAGE TRENCH EXCAVATION	11-09-22
	HW-505_01a	STRAIGHT ENDWALLS	01-21-25
	HW-505_01b	STEEL REINFORCING FOR STRAIGHT ENDWALLS (2" DIFF BASE TO FLOW LINE)	01-05-24
	HW-505_01c	STEEL REINFORCING FOR STRAIGHT ENDWALLS (STANDARD RIPRAP APPLICATION)	01-05-24
	HW-505_02	TYPE "D-G" & "L" ENDWALLS	01-05-24
✓	HW-586_01	CATCH BASIN AND DROP INLET TYPES "C" AND "C-L" STRUCTURES	01-05-24
	HW-586_02	CATCH BASIN (TYPES "C" AND "C-L") FOR DOUBLE GRATE TYPE I STRUCTURES	01-05-24
	HW-586_03	CATCH BASIN (TYPES "C" AND "C-L") FOR DOUBLE GRATE TYPE II STRUCTURES	01-05-24
	HW-586_04	PRECAST CATCH BASIN AND ROUND STRUCTURE	10-17-24
	HW-586_05	PRECAST CATCH BASIN TYPES FOR DOUBLE GRATE TYPE I	10-17-24
	HW-586_06	PRECAST CATCH BASIN TYPES FOR DOUBLE GRATE TYPE II	10-17-24
✓	HW-586_07a	CATCH BASIN TYPE "C" AND "C-L" TOPS	01-05-24
	HW-586_07b	CATCH BASIN TYPE "C" AND "C-L" DOUBLE GRATE TYPE I TOPS	11-09-22
	HW-586_07c	CATCH BASIN TYPE "C" AND "C-L" DOUBLE GRATE TYPE II TOPS	11-08-22
	HW-586_07d	CATCH BASIN TYPE "C-G" AND "C-M" BARRIER CURB TOPS	11-09-22
✓	HW-586_08	CATCH BASIN FRAMES AND GRATES	11-09-22
	HW-586_09	CATCH BASIN LOCK DOWN TOPS	11-09-22
✓	HW-586_10a	MANHOLE FRAME AND COVER	01-05-24
	HW-586_10b	MANHOLE FRAME AND GRATE	01-05-24
	HW-586_10c	REINFORCED PRECAST CONCRETE MANHOLE	11-08-22
	HW-586_10d	MANHOLE NON-PRECAST CONCRETE UNIT	11-08-22
✓	HW-686_01a	CONCRETE PIPE CONNECTION SHEET 1	11-08-22
✓	HW-686_01b	CONCRETE PIPE CONNECTION SHEET 2	11-08-22
	HW-686_02a	DRAINAGE PIPE ENDS SHEET 1 [CORRUGATED METAL PIPE]	11-08-22
✓	HW-686_02b	DRAINAGE PIPE ENDS SHEET 2 [CONCRETE PIPE]	11-08-22
	HW-751_01	UNDERDRAINS AND UNDERDRAIN OUTLETS	10-17-24
	HW-803_01	PAVED APRONS	11-08-22
	HW-811_01	CONCRETE CURBING	11-08-22
✓	HW-813_01	GRANITE STONE TRANSITION CURBING	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-821_01a	TRANSITION - 45" F-SHAPE TO 45" VERTICAL SHAPE SHEET 1	11-08-22
	HW-821_01b	TRANSITION - 45" F-SHAPE TO 45" VERTICAL SHAPE SHEET 2	11-08-22
	HW-821_01c	TRANSITION - 45" F-SHAPE TO 45" VERTICAL SHAPE SHEET 3	11-08-22
	HW-821_02a	45" F-SHAPE PRECAST CONCRETE BARRIER CURB SHEET 1	11-08-22
	HW-821_02b	45" F-SHAPE PRECAST CONCRETE BARRIER CURB SHEET 2	11-08-22
	HW-821_03a	TRANSITION - 32" JERSEY SHAPE TO 45" VERTICAL SHAPE SHEET 1	11-08-22
	HW-821_03b	TRANSITION - 32" JERSEY SHAPE TO 45" VERTICAL SHAPE SHEET 2	11-08-22
	HW-821_03c	TRANSITION - 32" JERSEY SHAPE TO 45" VERTICAL SHAPE SHEET 3	11-08-22
	HW-821_03d	TRANSITION - 32" JERSEY SHAPE TO 45" VERTICAL SHAPE SHEET 4	11-08-22
	HW-821_03e	TRANSITION - 32" JERSEY SHAPE TO 45" F-SHAPE	11-08-22
	HW-821_04a	MERRITT PARKWAY NARROW MEDIAN BARRIER	11-08-22
	HW-821_04b	MERRITT PARKWAY - 2' WIDE MEDIAN BARRIER AND ROADSIDE BARRIER	11-08-22
	HW-821_05a	TRANSITION - 45" F-SHAPE TO 54" VERTICAL SHAPE SHEET 1	11-08-22
	HW-821_05b	TRANSITION - 45" F-SHAPE TO 54" VERTICAL SHAPE SHEET 2	11-08-22
	HW-821_06	54" VERTICAL SHAPE BARRIER	11-08-22
	HW-821_07	MISCELLANOUS DETAILS FOR BARRIER TRANSITIONS	11-08-22
	HW-821_08a	F-SHAPE CONC. BARRIER CURB (21"x45") TRANSITION FOR THRIE-BEAM	10-17-24
	HW-821_08b	F-SHAPE CONC. BARRIER CURB (21"x45") TRANSITION FOR THRIE-BEAM - REINF.	11-08-22
	HW-821_09a	SINGLE SLOPE CONC. BARRIER CURB (20"x42") TRANS. FOR THRIE-BEAM	11-08-22
	HW-821_09b	SINGLE SLOPE CONC. BARRIER CURB (20"x42") TRANS. FOR THRIE-BEAM - REINF.	11-08-22
	HW-821_10a	VERTICAL FACE CONC. (21"x54") TRANSITION FOR THRIE-BEAM	11-08-22
	HW-821_10b	VERTICAL FACE CONC. (21"x54") TRANSITION FOR THRIE-BEAM REINF.	11-08-22
	HW-821_11a	42" SINGLE SLOPE PRECAST CONCRETE BARRIER CURB -SHEET 1	01-05-24
	HW-821_11b	42" SINGLE SLOPE PRECAST CONCRETE BARRIER CURB -SHEET 2	01-05-24
✓	HW-822_01	TEMPORARY PRECAST CONCRETE BARRIER CURB	11-08-22
	HW-822_02a	TEMPORARY TRAFFIC BARRIER - DETAILS	11-08-22
	HW-822_02b	TEMPORARY TRAFFIC BARRIER (BOLTED)	01-23-25
	HW-822_02c	TEMPORARY TRAFFIC BARRIER & TEMPORARY TRAFFIC BARRIER (PINNED)	01-23-25
	HW-905_01	STONE WALL FENCE	11-09-22
	HW-906_01	WIRE FENCE	11-08-22

*ONLY STANDARD SHEETS MARKED WITH AN " ✓ " ARE IN THIS PROJECT #

0119-0121

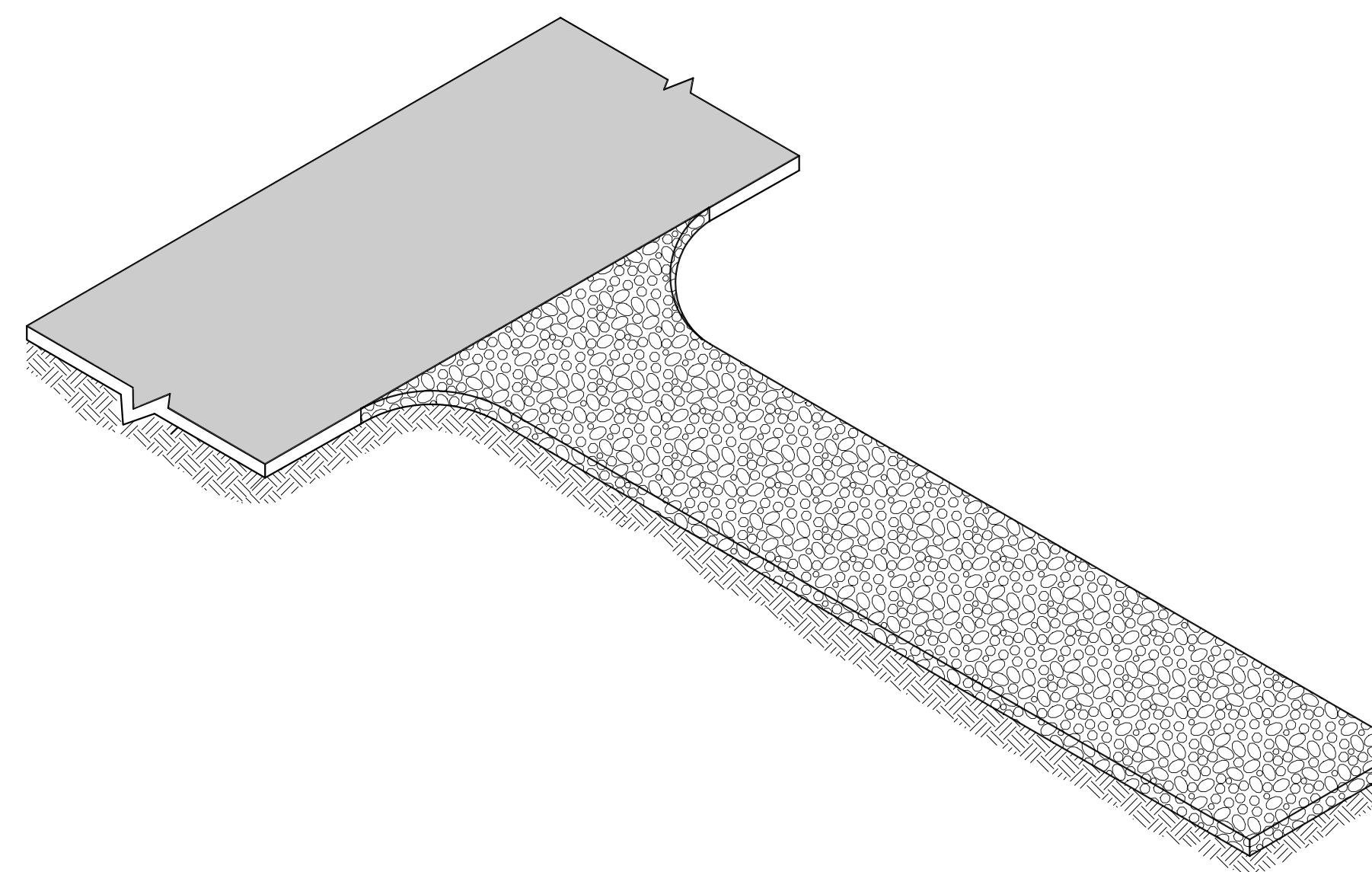
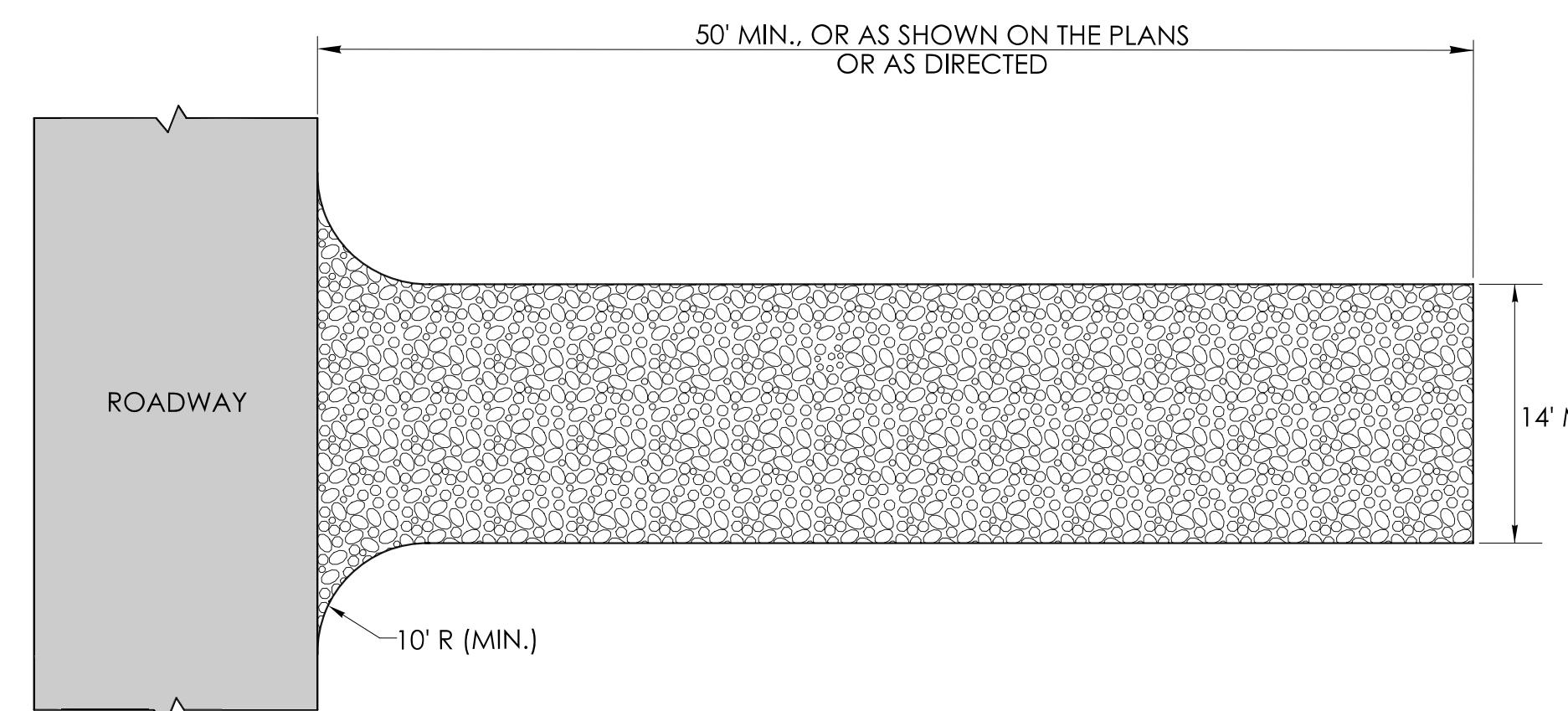
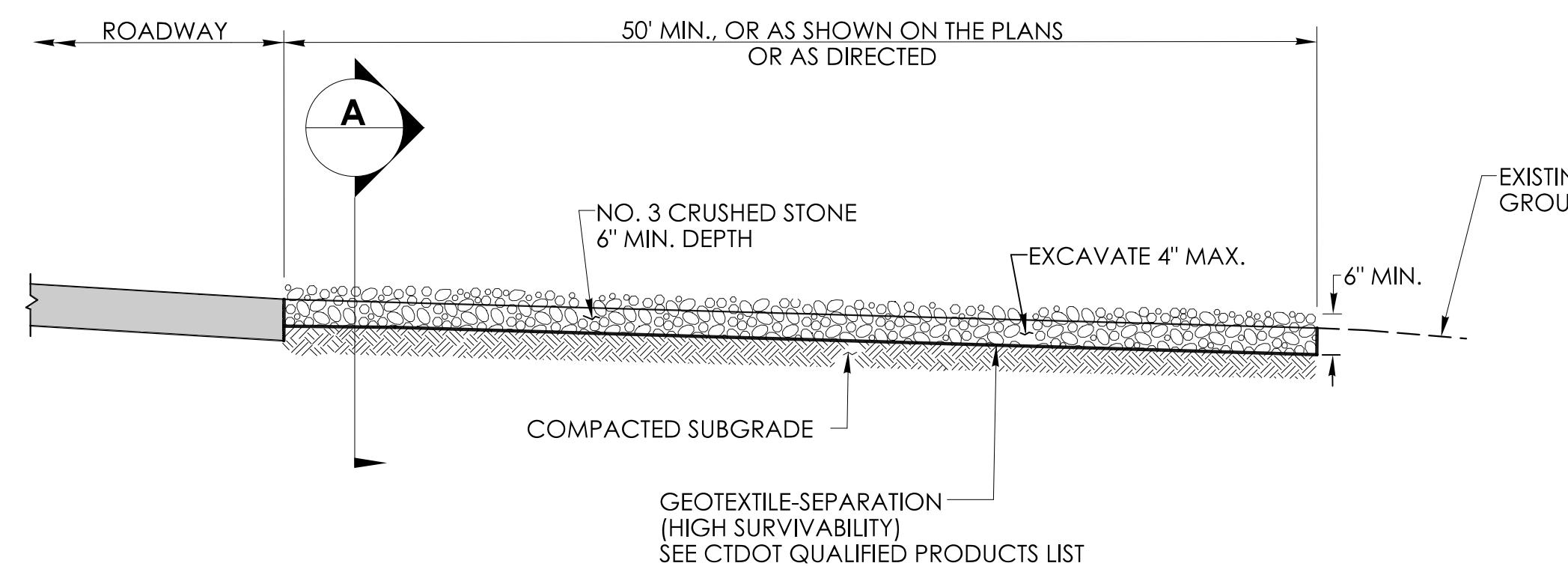
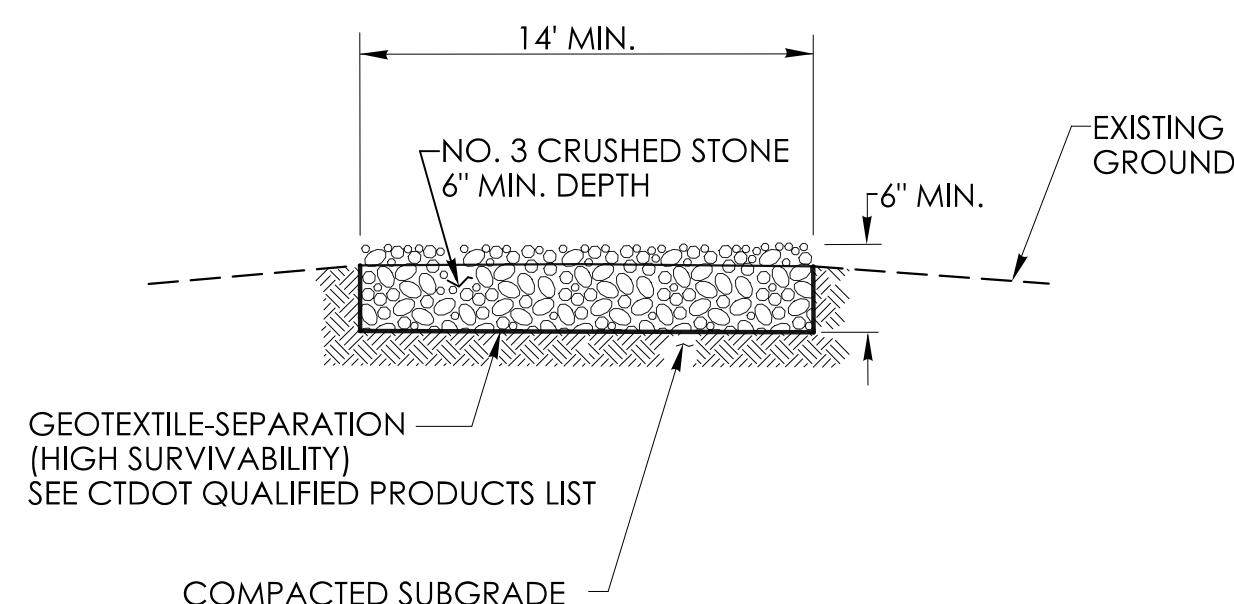
**REVISED OR ADDED

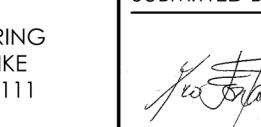
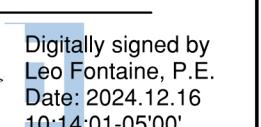
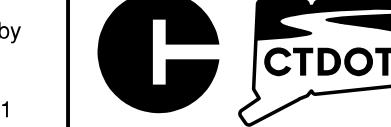
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✓	HW-910_01	W-BEAM METAL BEAM RAIL HARDWARE	11-08-22
✓	HW-910_02	METAL BEAM RAIL (TYPE R-B 350) GUIDERAIL	11-08-22
	HW-910_03	METAL BEAM RAIL (TYPE MD-B 350) GUIDERAIL	11-08-22
	HW-910_04	METAL BEAM RAIL (TYPE R-B 350) SYSTEMS 5, 5A, & 6	11-08-22
	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

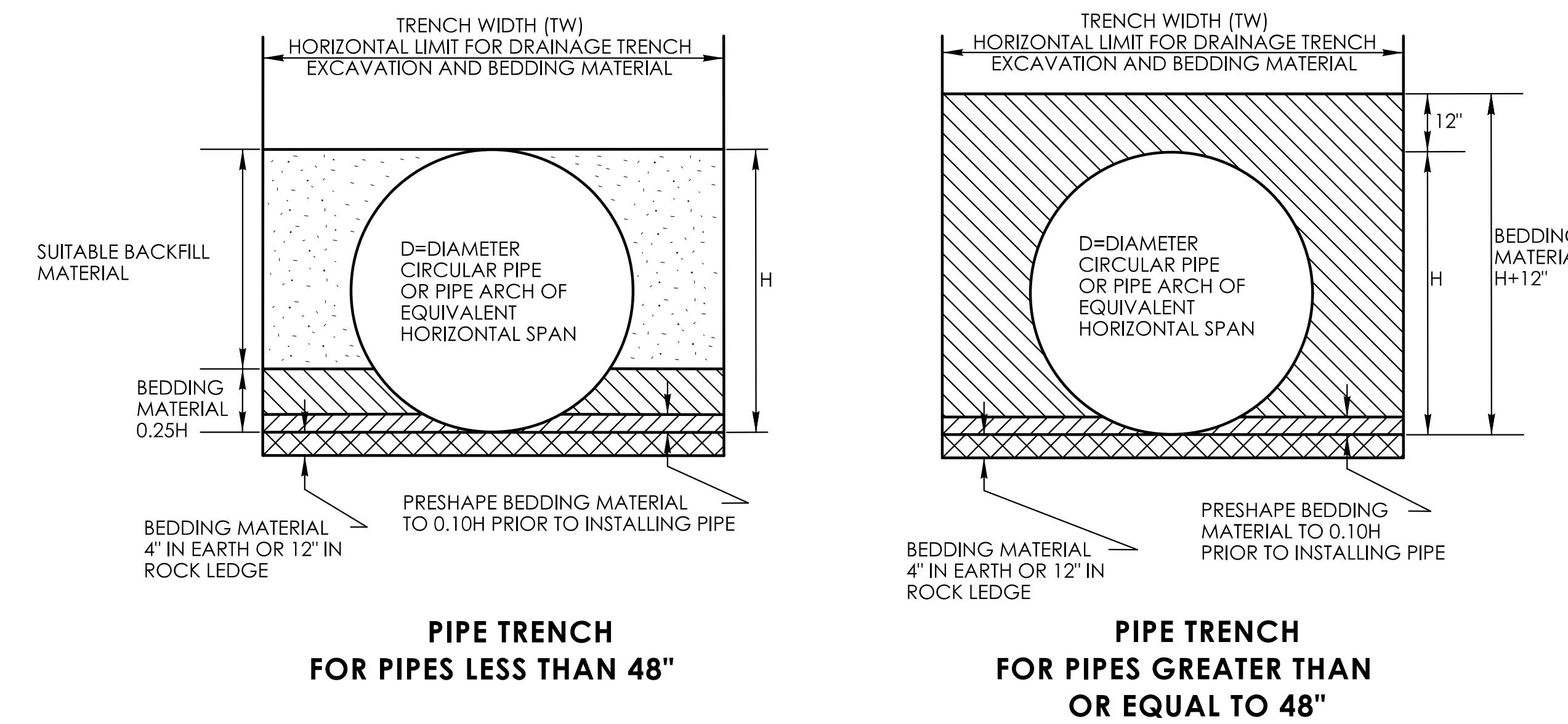
✓*	SHEET NO.	TITLE	APPROVAL DATE**
✓	HW-910_25a	METAL BEAM RAIL TRANSITION 350 TO MASH	10-17-24
	HW-910_25b	METAL BEAM RAIL MEDIAN APPLICATION TRANSITION 350 TO MASH GUIDERAIL	01-05-24
✓	HW-910_26	THRIE-BEAM ATTACHMENT HARDWARE	11-08-22
✓	HW-910_27	THRIE-BEAM ATTACHMENT	11-08-22
	HW-910_29	THRIE-BEAM 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

GENERAL NOTE:

1. THE LENGTH OF THE ANTI-TRACKING PAD SHALL BE INCREASED AS DIRECTED FOR SITES COMPOSED OF CLAY OR SILTS.

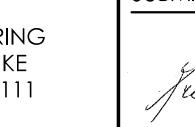
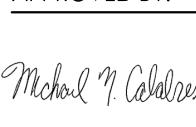
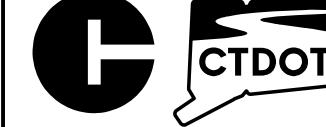
**ANTI-TRACKING PAD****PLAN****ELEVATION****SECTION A**

	NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.16 10:14:01-05'00"	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.21 12:24:22-05'00"	 CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: ANTI-TRACKING PAD	STANDARD SHEET NO.: HW-211_01
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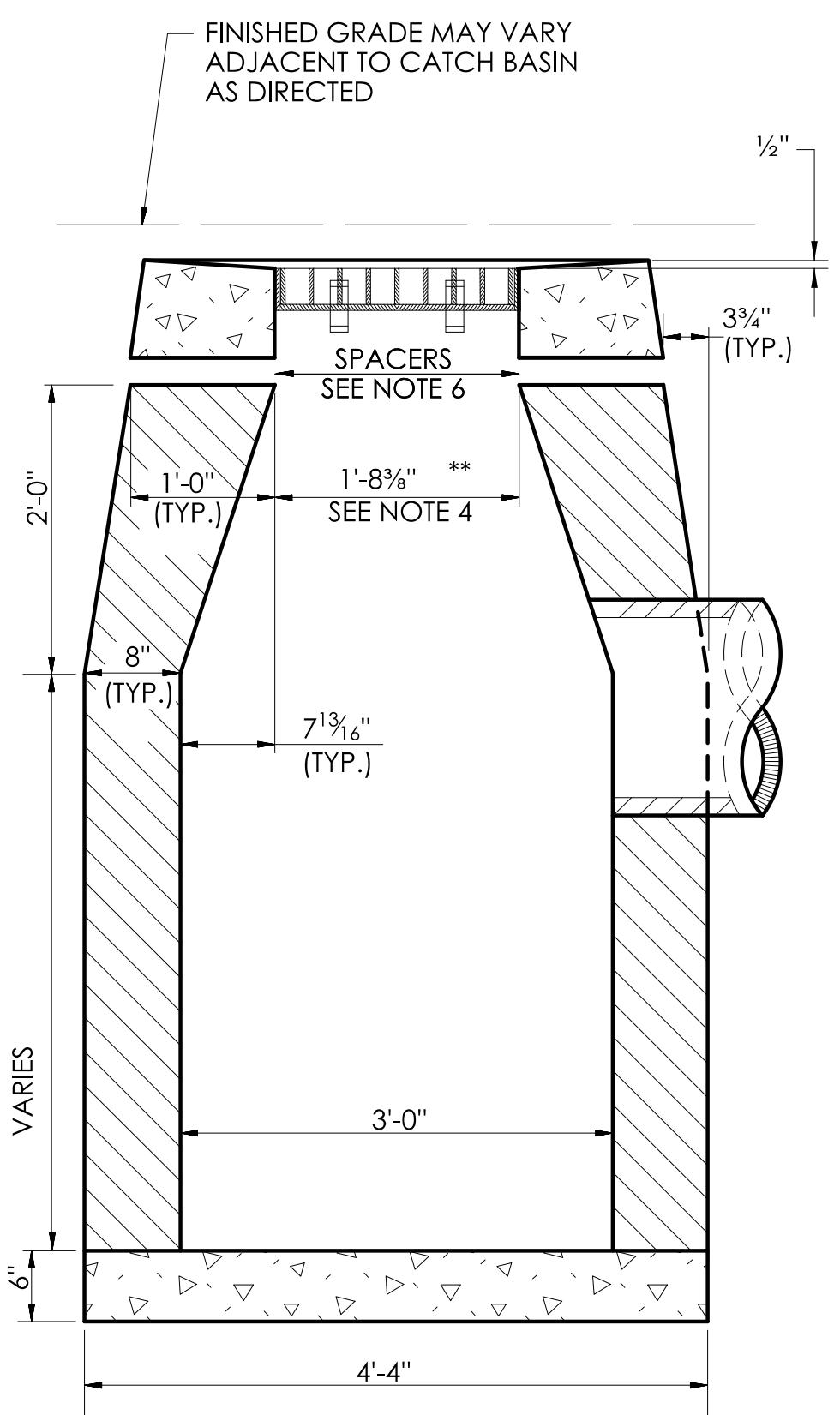
TRENCH WIDTH (TW) CHART

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

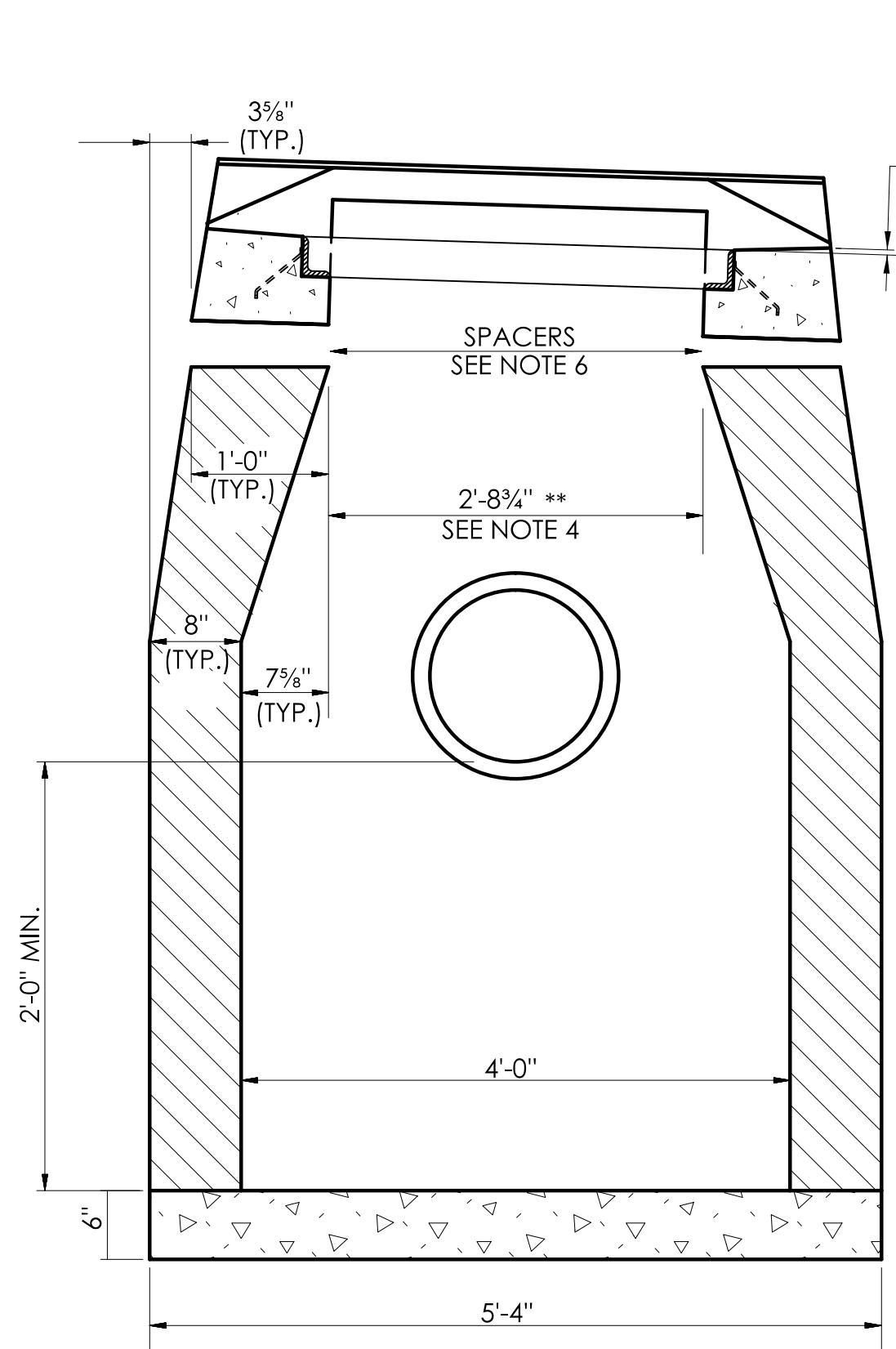
	NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.16 10:12:03-05'00"	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.21 12:25:59-05'00"	 CONNECTICUT DEPARTMENT OF TRANSPORTATION	STANDARD SHEET TITLE: DRAINAGE TRENCH EXCAVATION	STANDARD SHEET NO.: HW-286_01
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GENERAL NOTES:

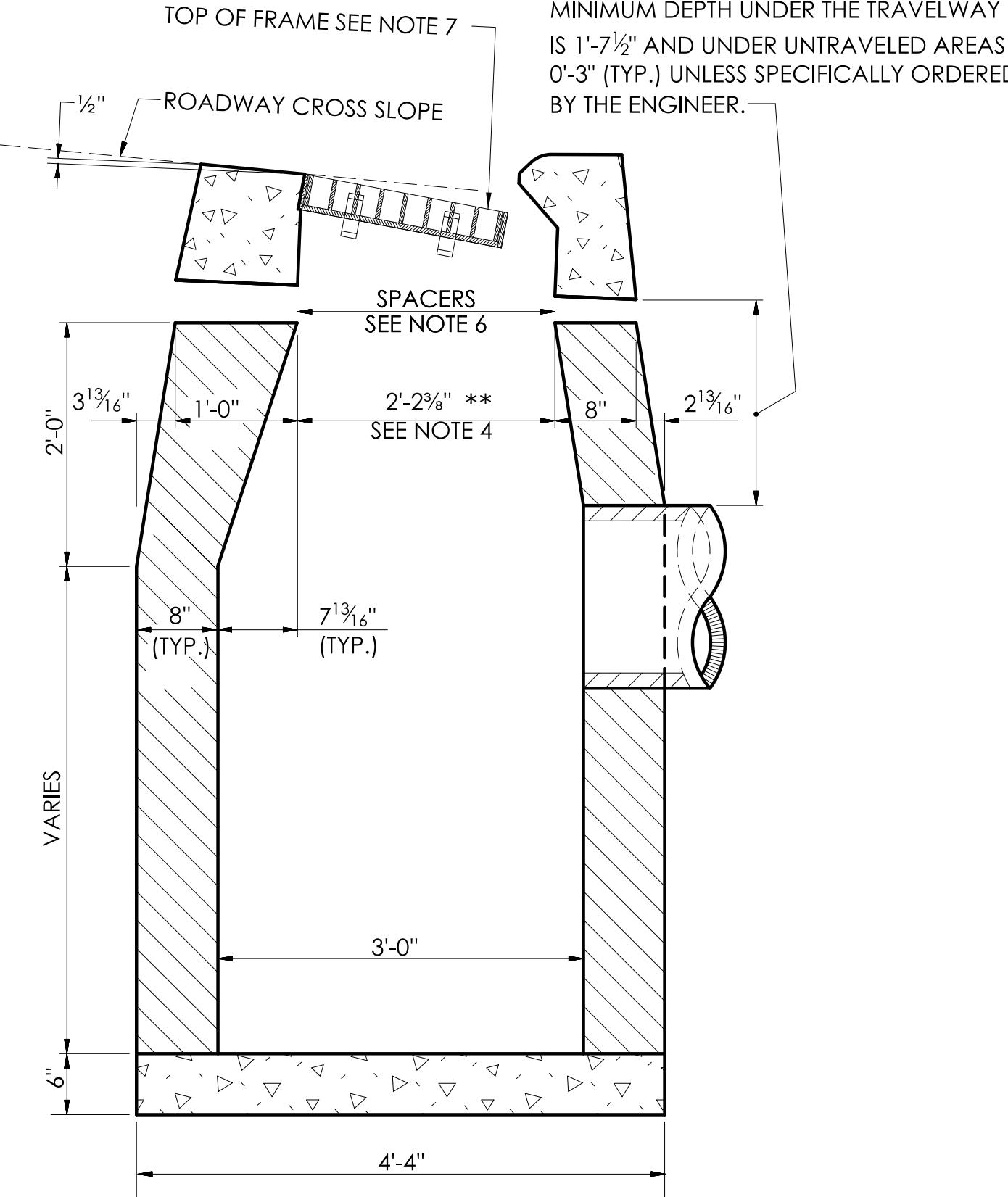
1. FOR CATCH BASIN TOPS, SEE SHEET NO. HW-586_07.
2. ALL FACES OF STRUCTURES IN CONTACT WITH CONCRETE PAVEMENT SHALL BE COVERED WITH A LAYER OF TAR PAVEMENT OR APPROVED EQUAL.
3. USE 6'-0" ON UPGRADE SIDE (SEE PLAN VIEW) OF CONTINUOUS GRADE AND 1'-0" ON DOWNGRADE SIDE OF CONTINUOUS GRADE OR AS DIRECTED 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.



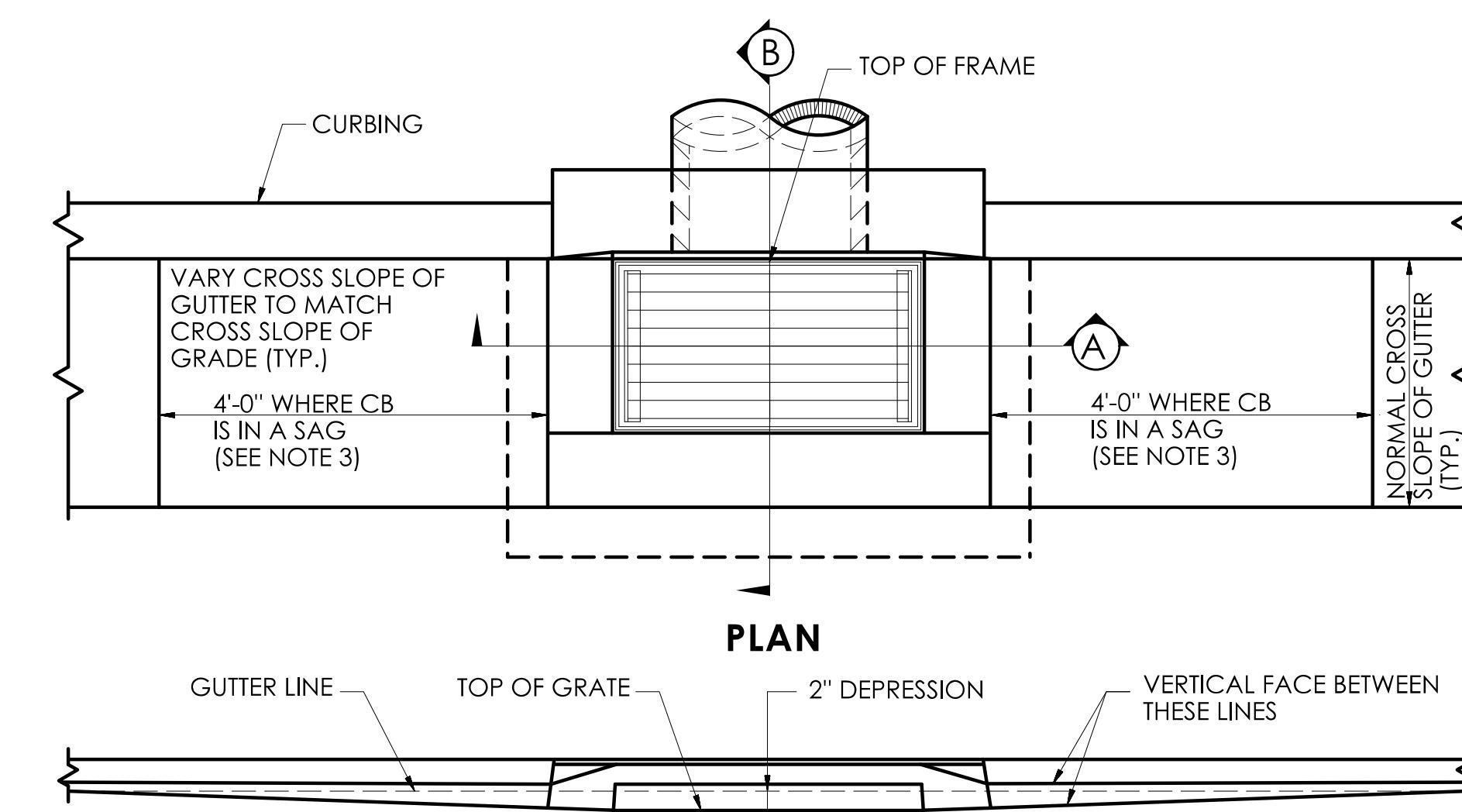
SECTION B
TYPE "C-L" CATCH BASIN



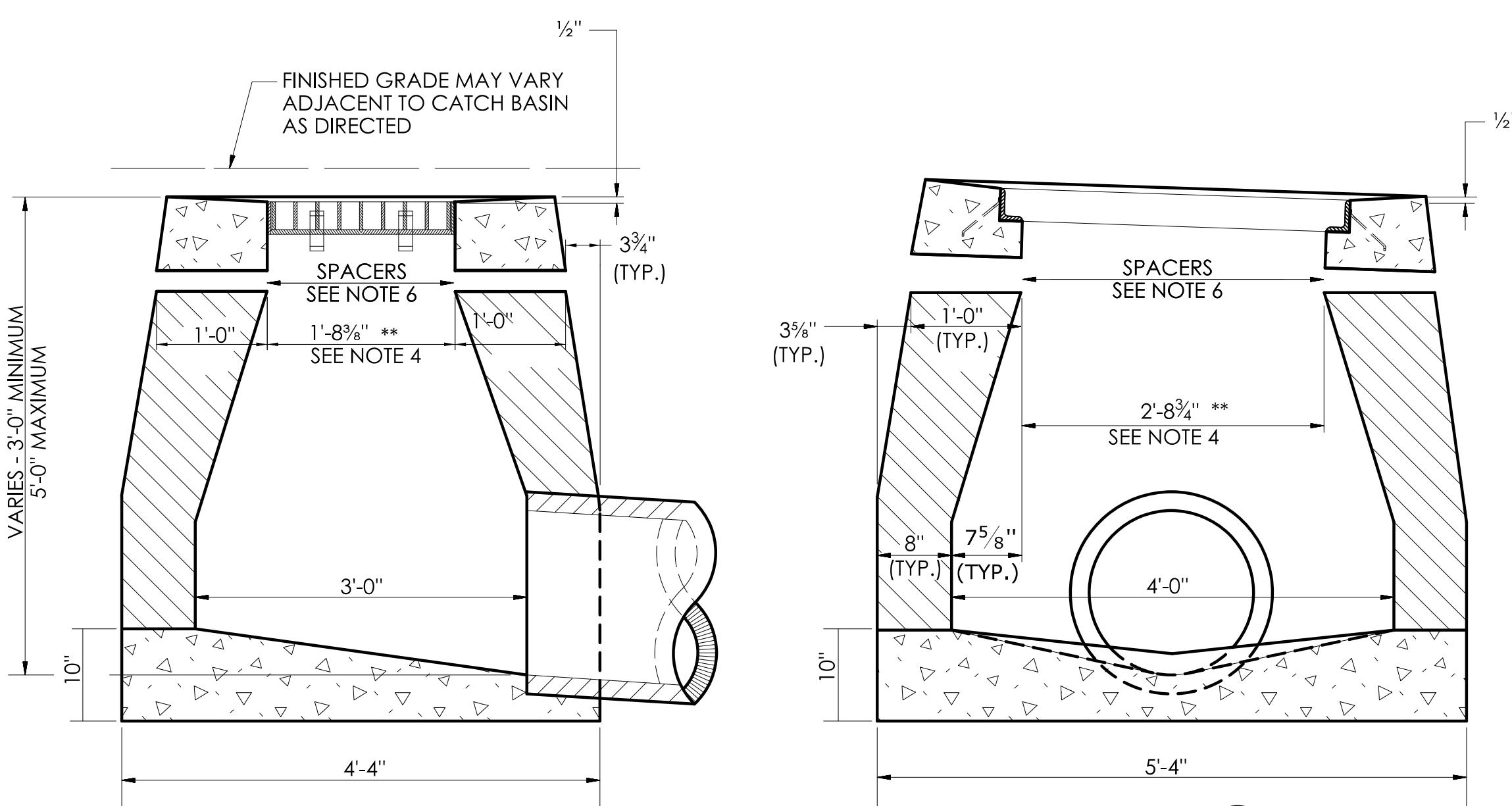
SECTION A
TYPE "C" & "C-L" CATCH BASIN
(TYPE "C" TOP SHOWN)



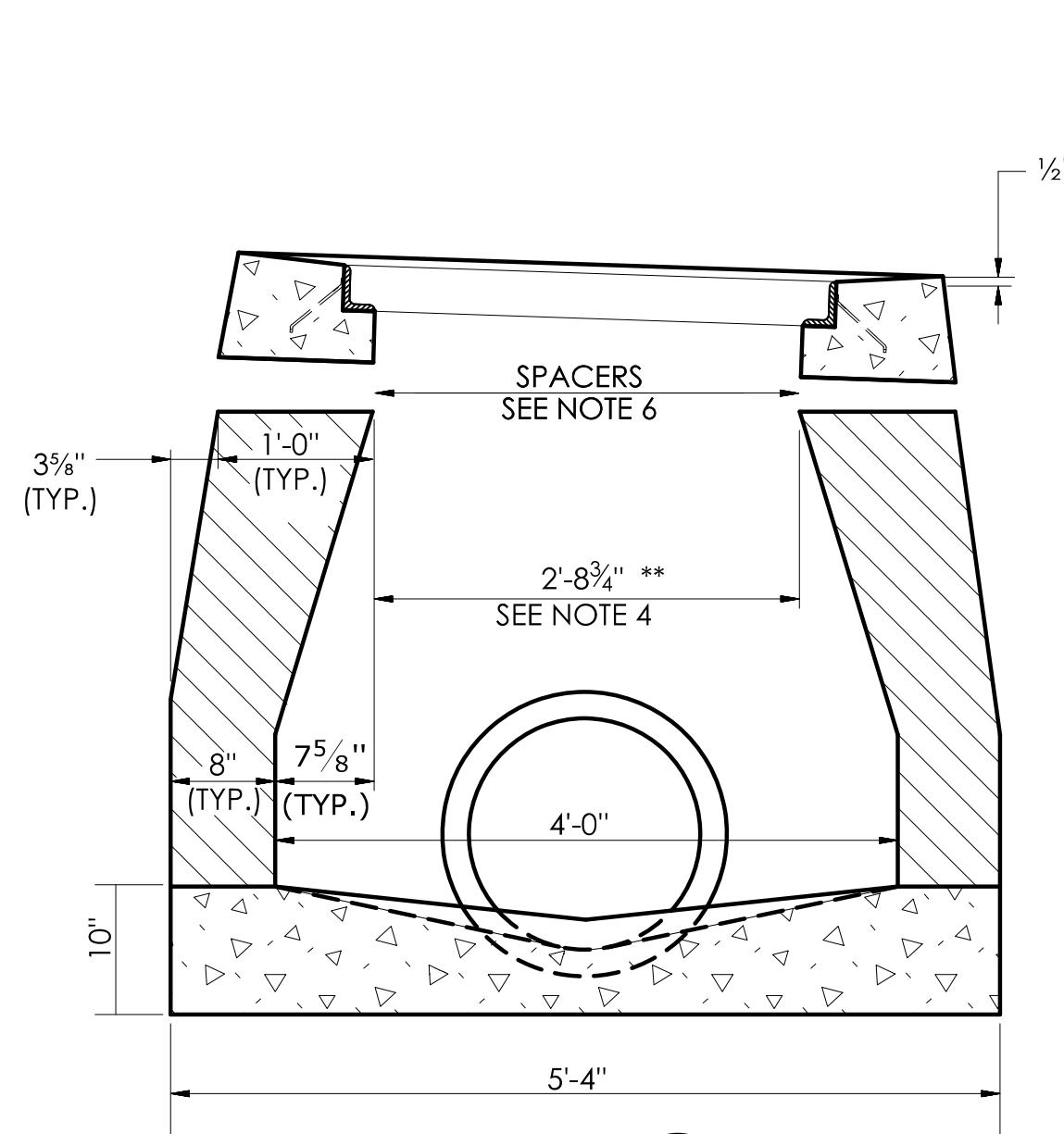
SECTION B
TYPE "C" CATCH BASIN



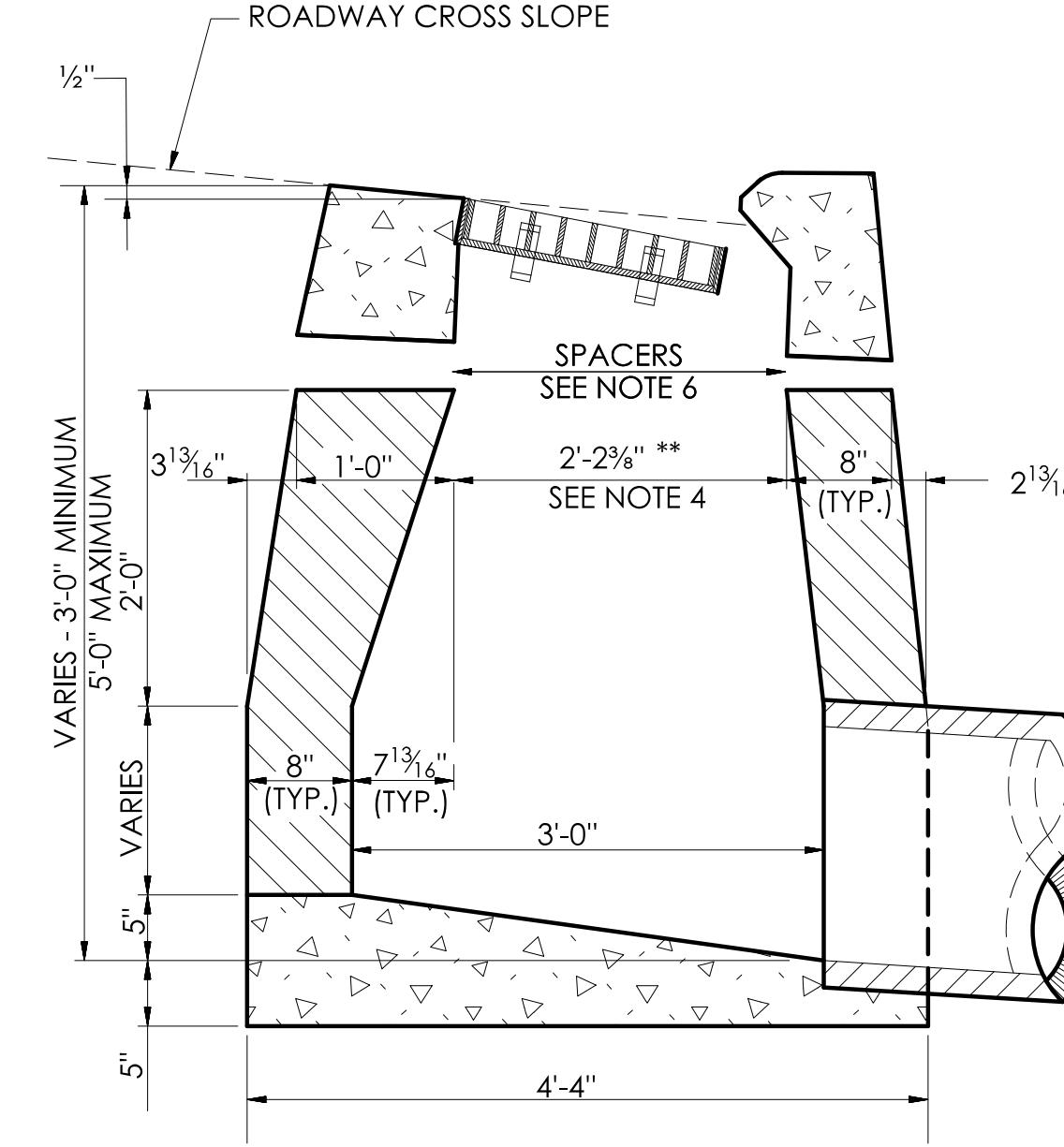
CATCH BASINS IN A LINE WITH 4" CONCRETE PARK CURBING OR 4" BITUMINOUS CONCRETE PARK CURBING



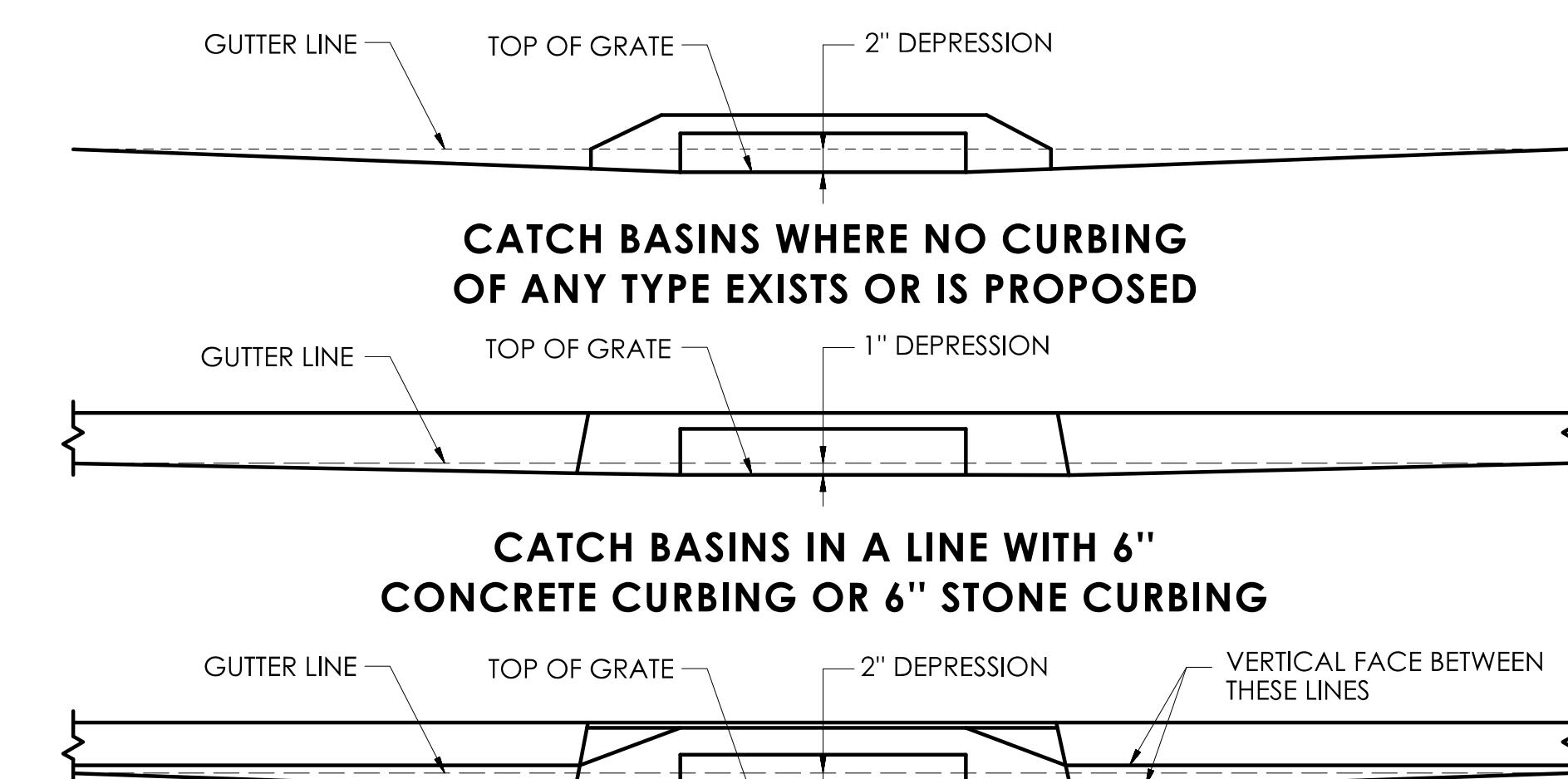
SECTION B
TYPE "C-L" DROP INLET



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



SECTION B
TYPE "C" DROP INLET



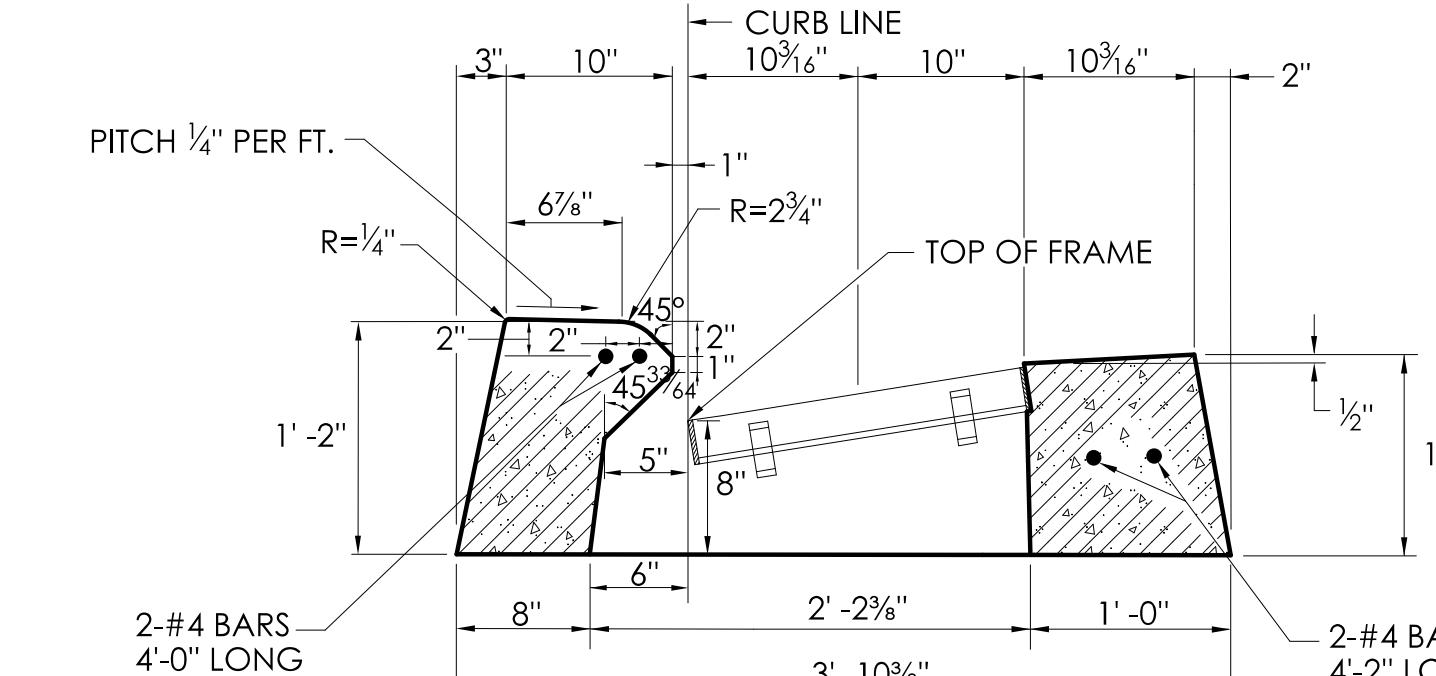
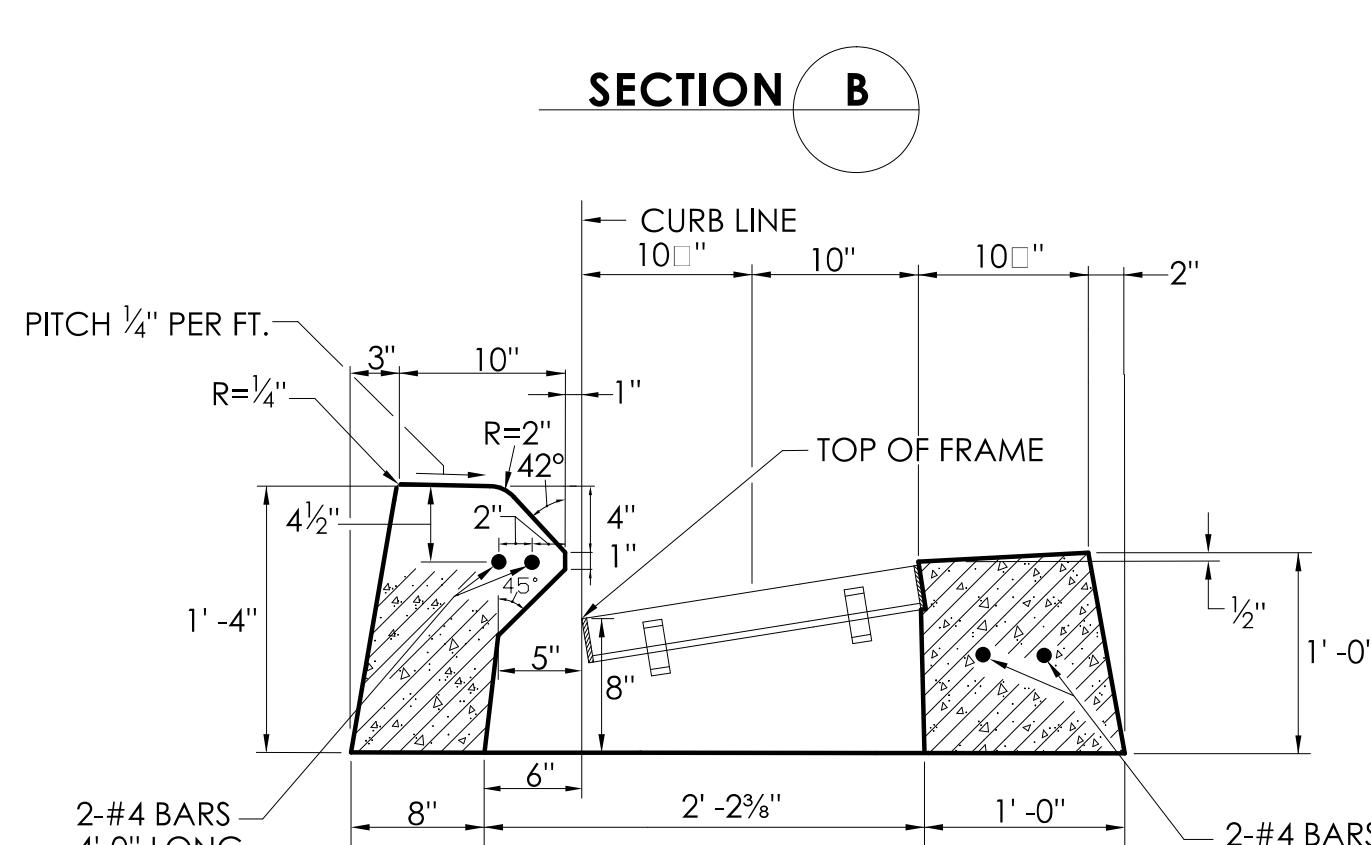
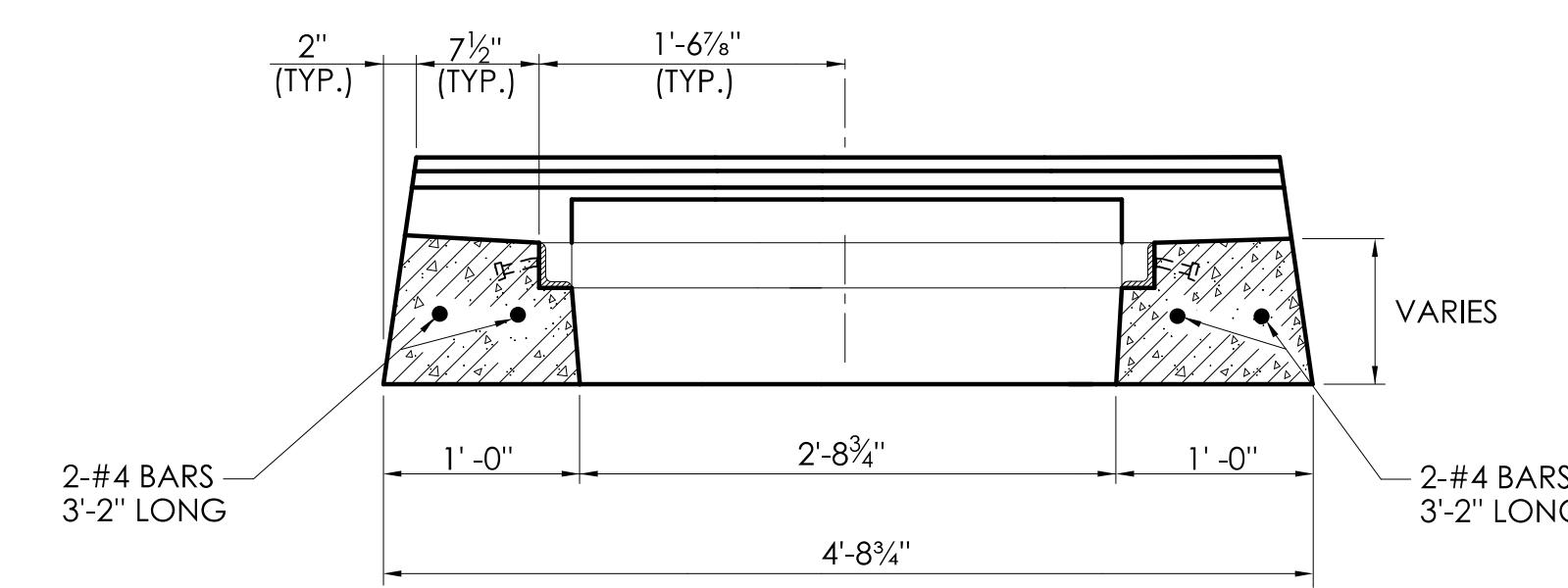
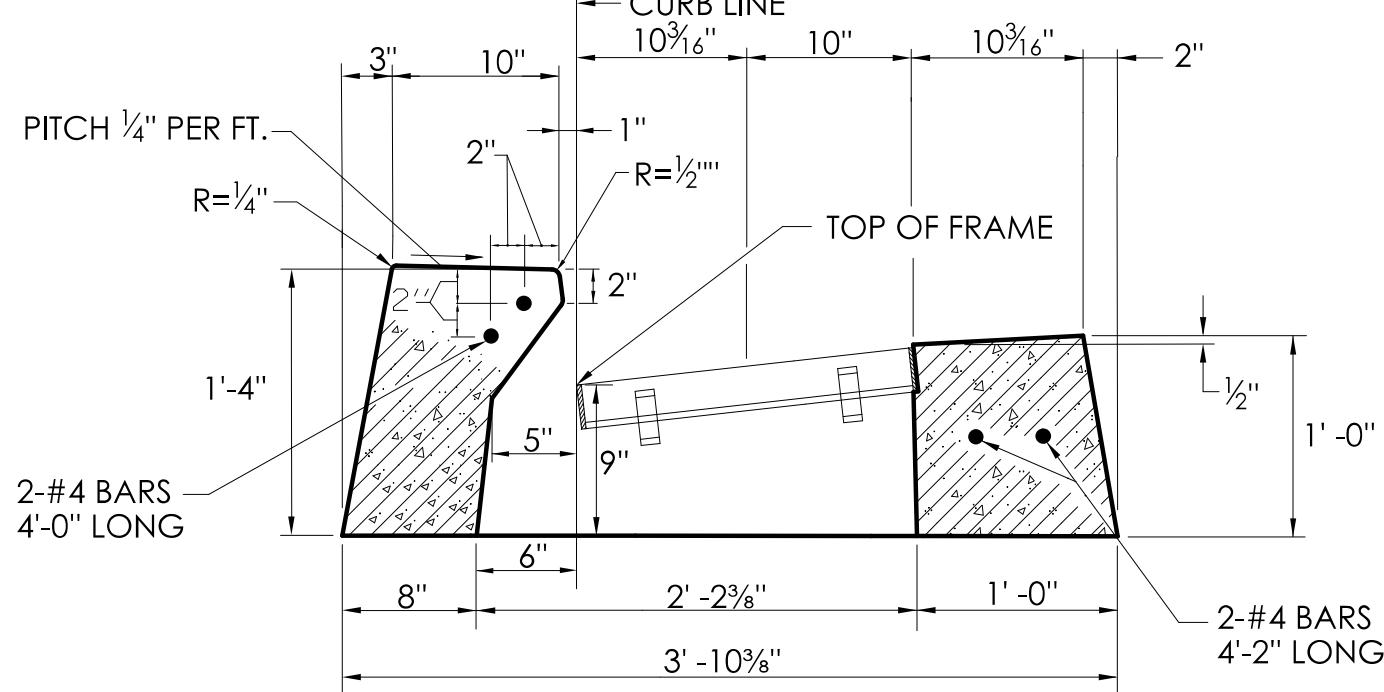
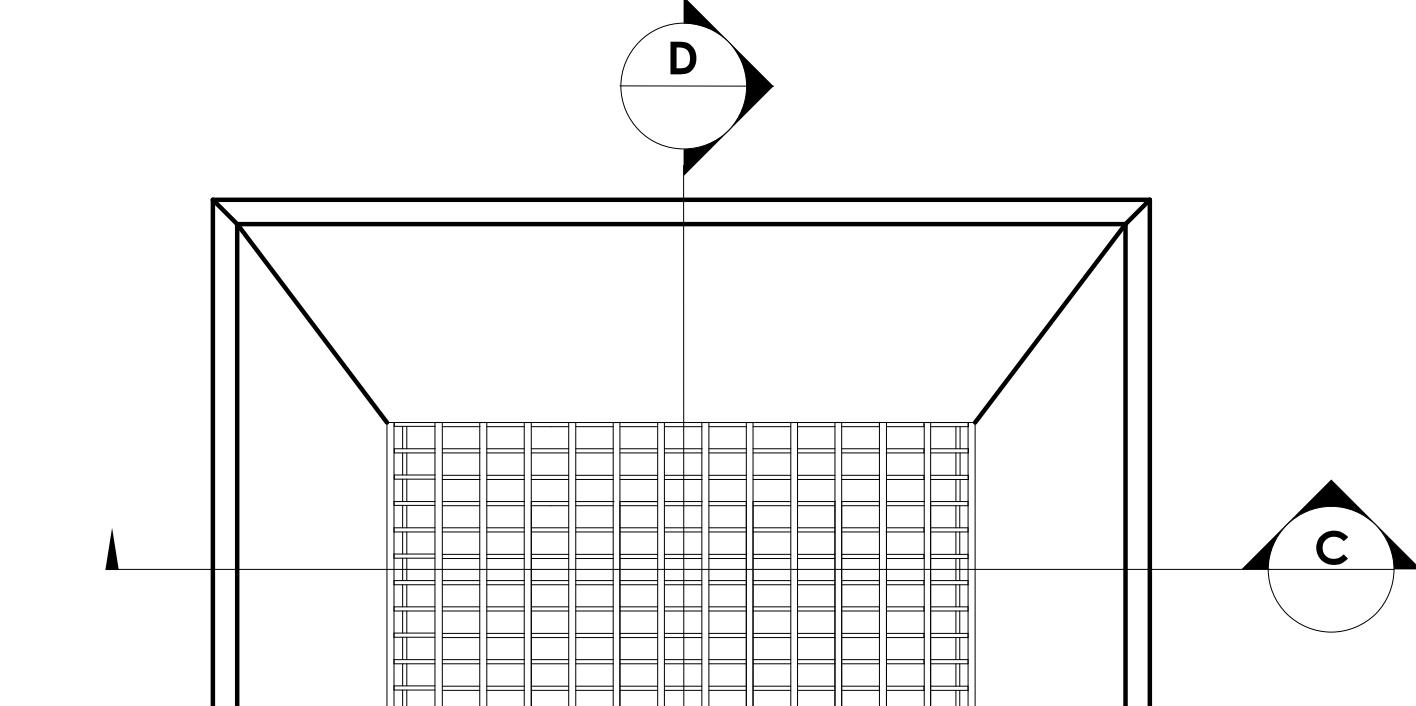
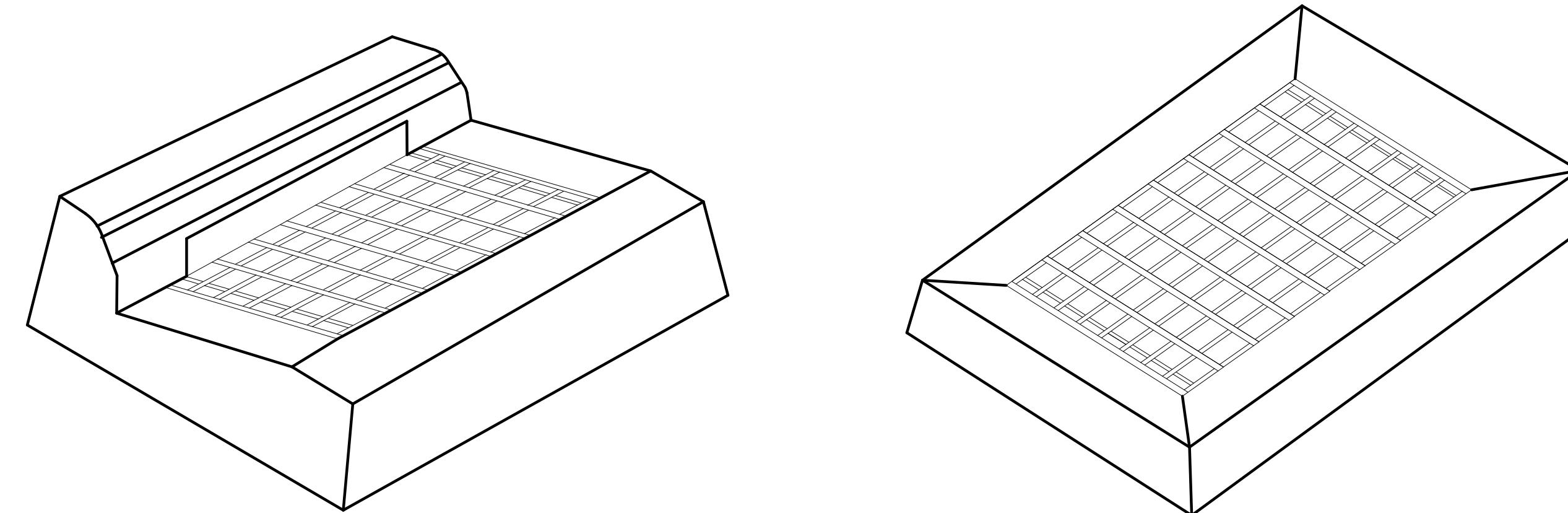
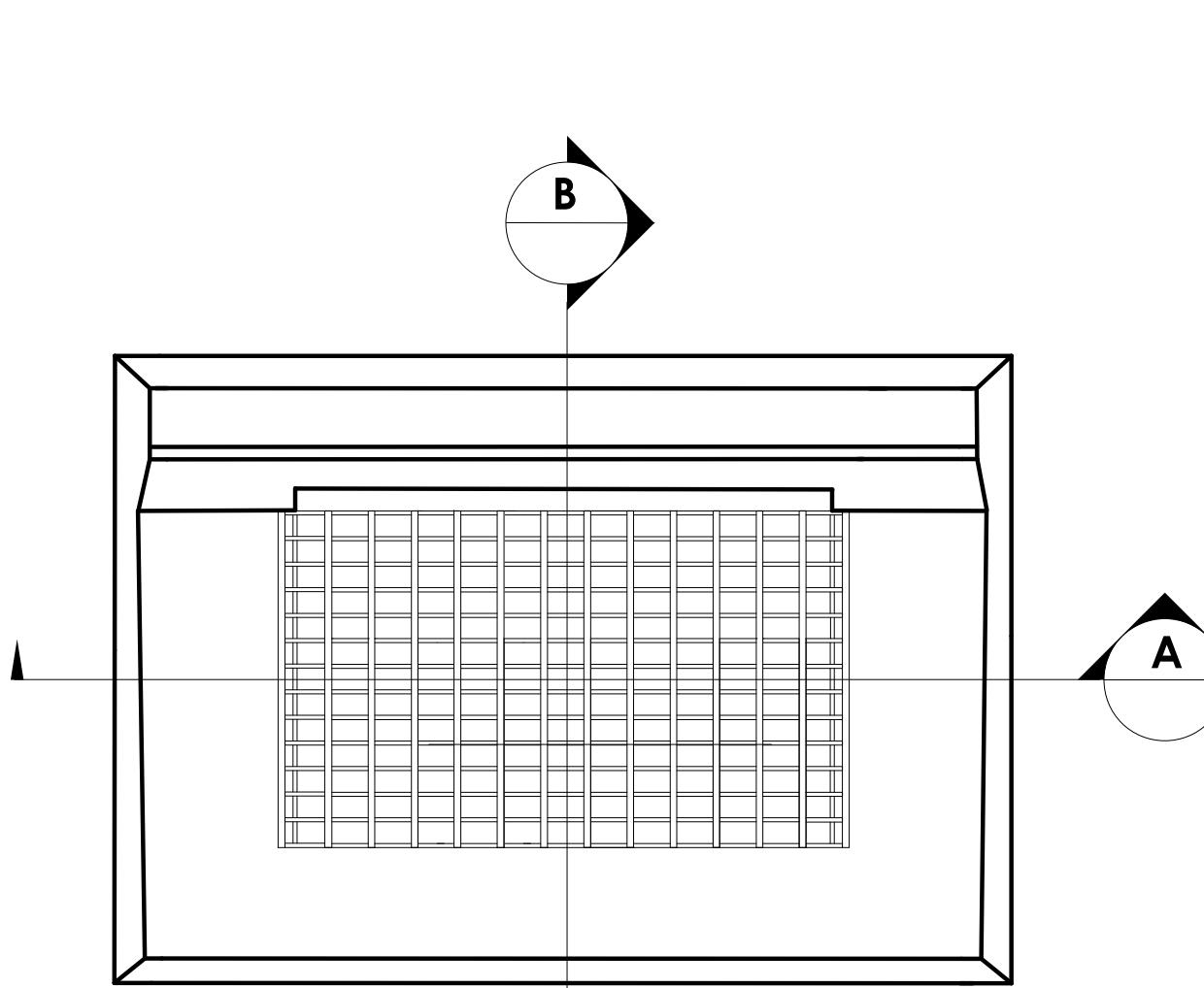
DETAILS OF DEPRESSED GUTTER STRIP
FOR TYPE "C" CATCH BASIN

NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Digitally signed by Leo Fontaine, P.E. Date: 2024.12.16 10:09:07-05'00'	APPROVED BY: Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.21 12:35:34-05'00'	CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: CATCH BASIN AND DROP INLET TYPES "C" AND "C-L" STRUCTURES	STANDARD SHEET NO.: HW-586_01
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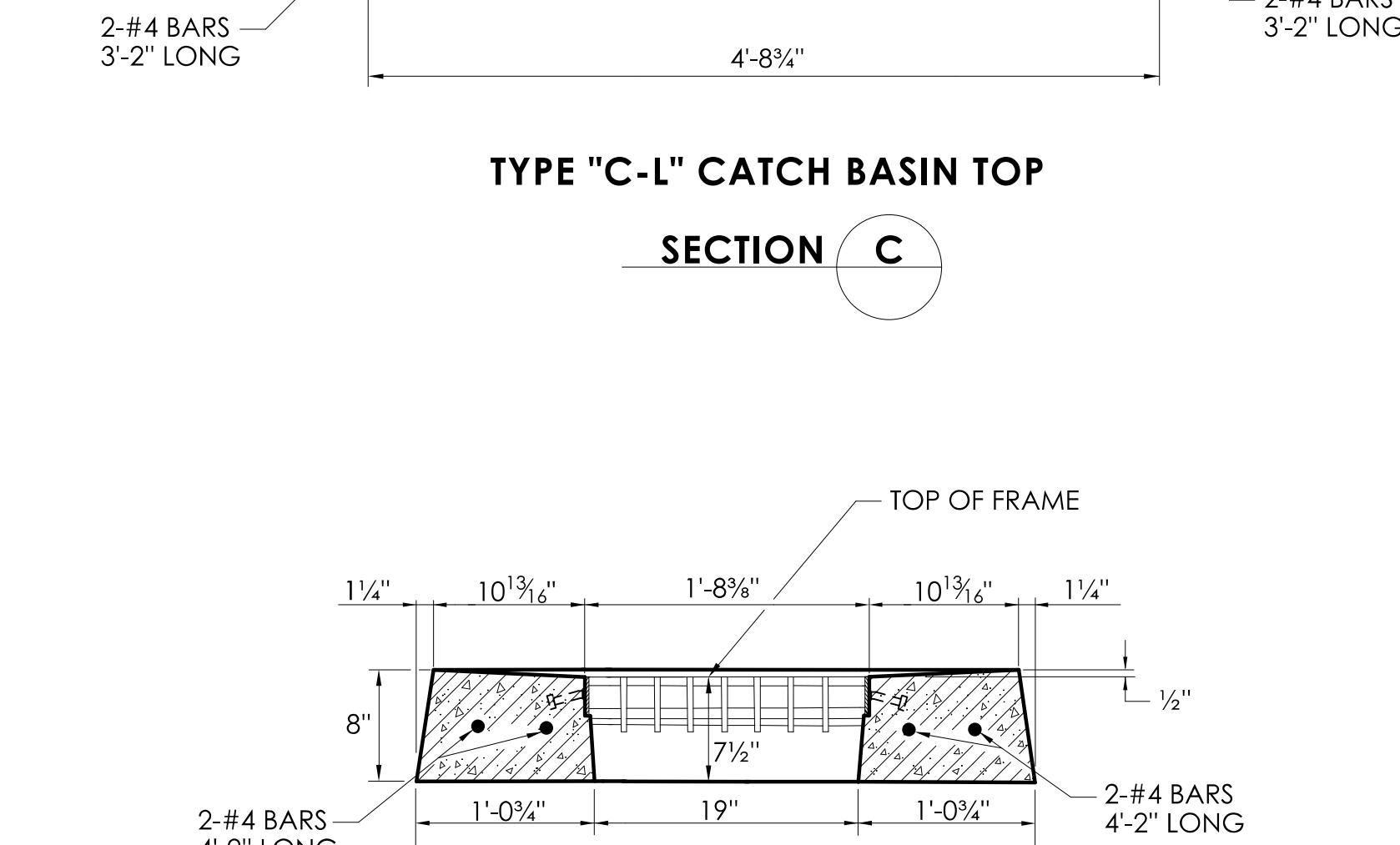
GENERAL NOTES:

1. SEE SHEET HW-586_08, FOR CATCH BASIN FRAMES AND GRATES AND HW-586_09 FOR CATCH BASIN LOCK DOWN TOPS.
2. SEE SHEET HW-586_01, CATCH BASIN AND DROP INLET TYPES "C" AND "C-L" TO DETERMINE THE TOP OF FRAME DEPRESSION AT THE GUTTER.
3. ALL BARS SHALL HAVE A MINIMUM 2" COVER.
4. Manufacturing Dimensional Tolerance Table

Any Dimension (D)	Allowable Tolerance
D < 5"	$\pm \frac{1}{8}$ "
5" \leq D \leq 10"	$\pm \frac{1}{8}$ "
D > 10"	± 1 "



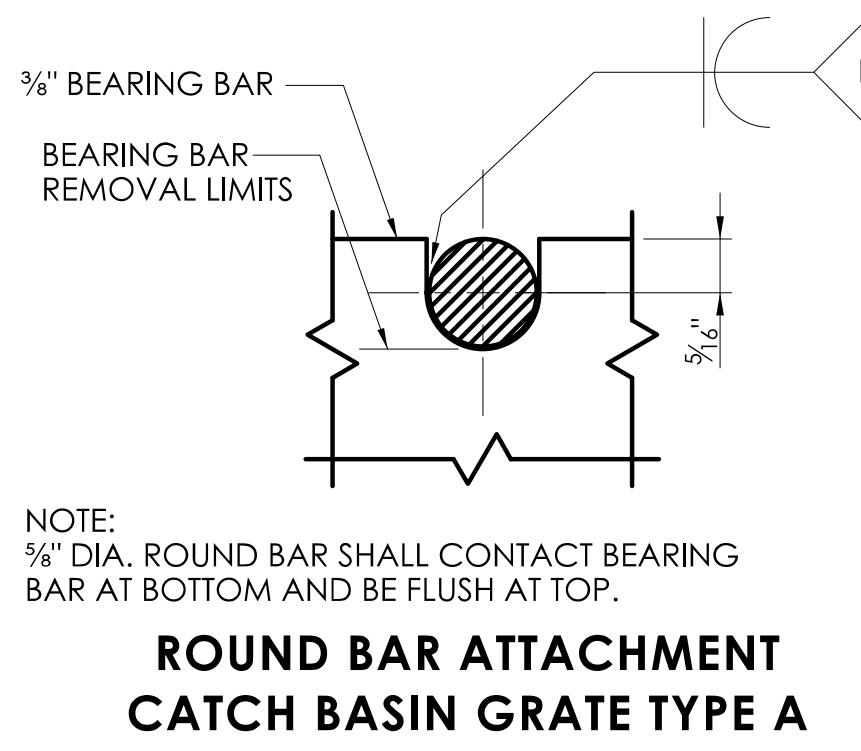
TYPE "C" CATCH BASIN TOP FOR
4" CONCRETE PARK CURBING OR
4" BITUMINOUS CONCRETE PARK CURBING



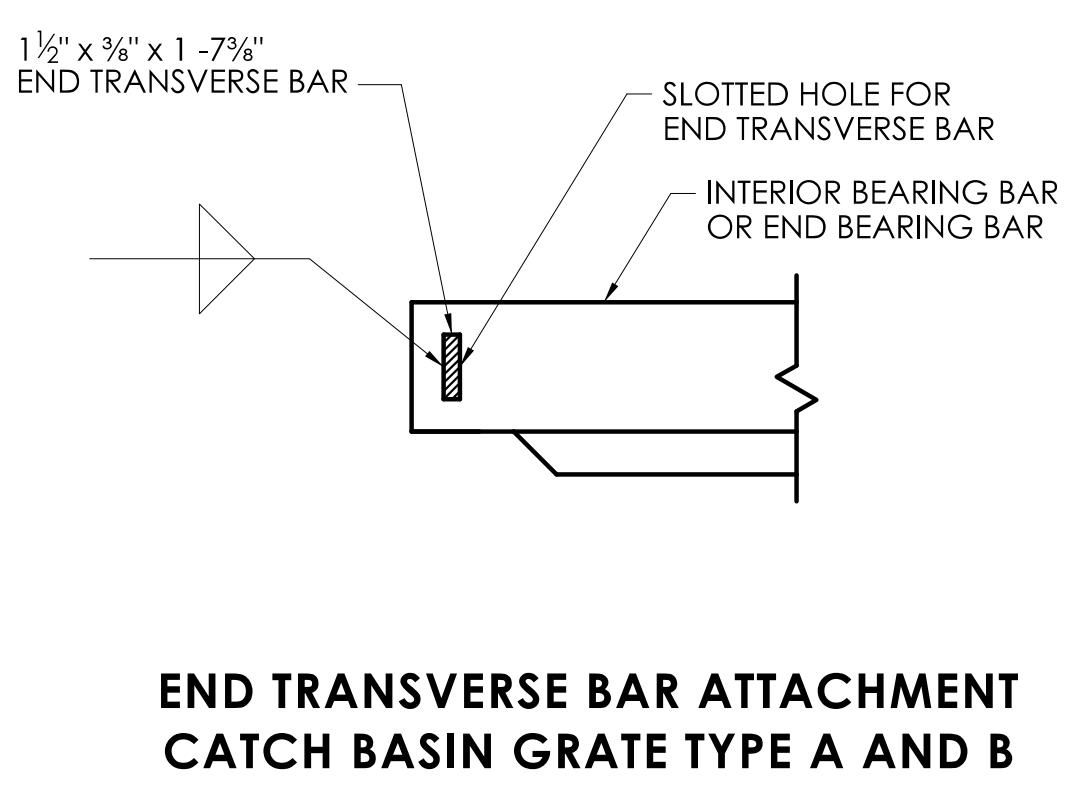
TYPE "C-L" CATCH BASIN TOP
SECTION D

GENERAL NOTES:

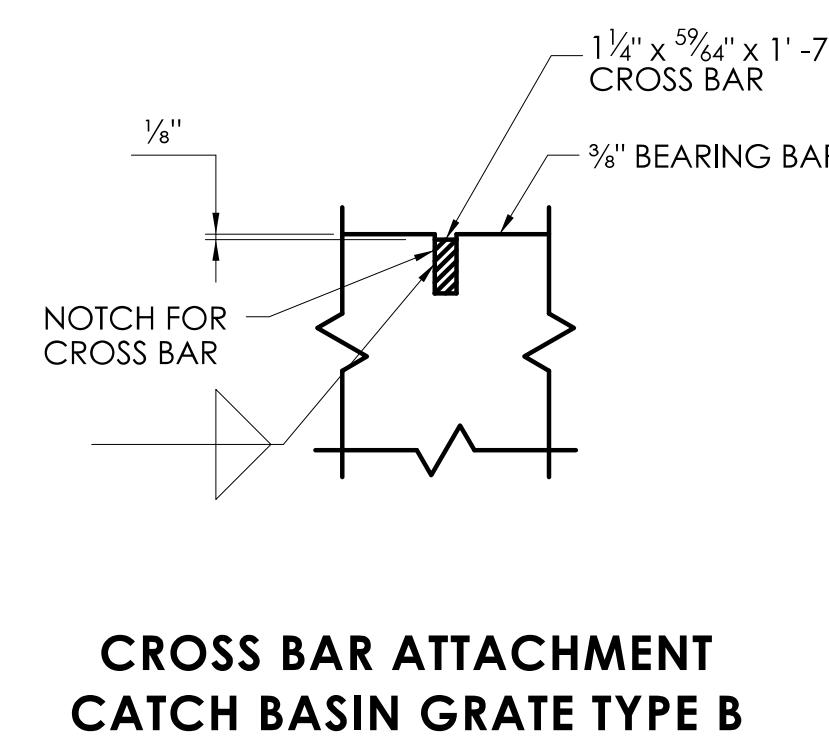
1. STEEL OR CAST IRON SHALL BE USED FOR FRAMES. STEEL SHALL BE USED FOR TYPE "A" AND "B" GRATES.
2. TYPE "A" GRATES SHALL BE USED ON ALL ROADWAYS WHERE BICYCLE TRAFFIC IS ALLOWED OR ON HEAVY DUTY LOCK DOWN TOPS AS DIRECTED BY THE ENGINEER.
3. TYPE "B" GRATES SHALL BE USED ON ALL LIMITED ACCESS HIGHWAYS, 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.



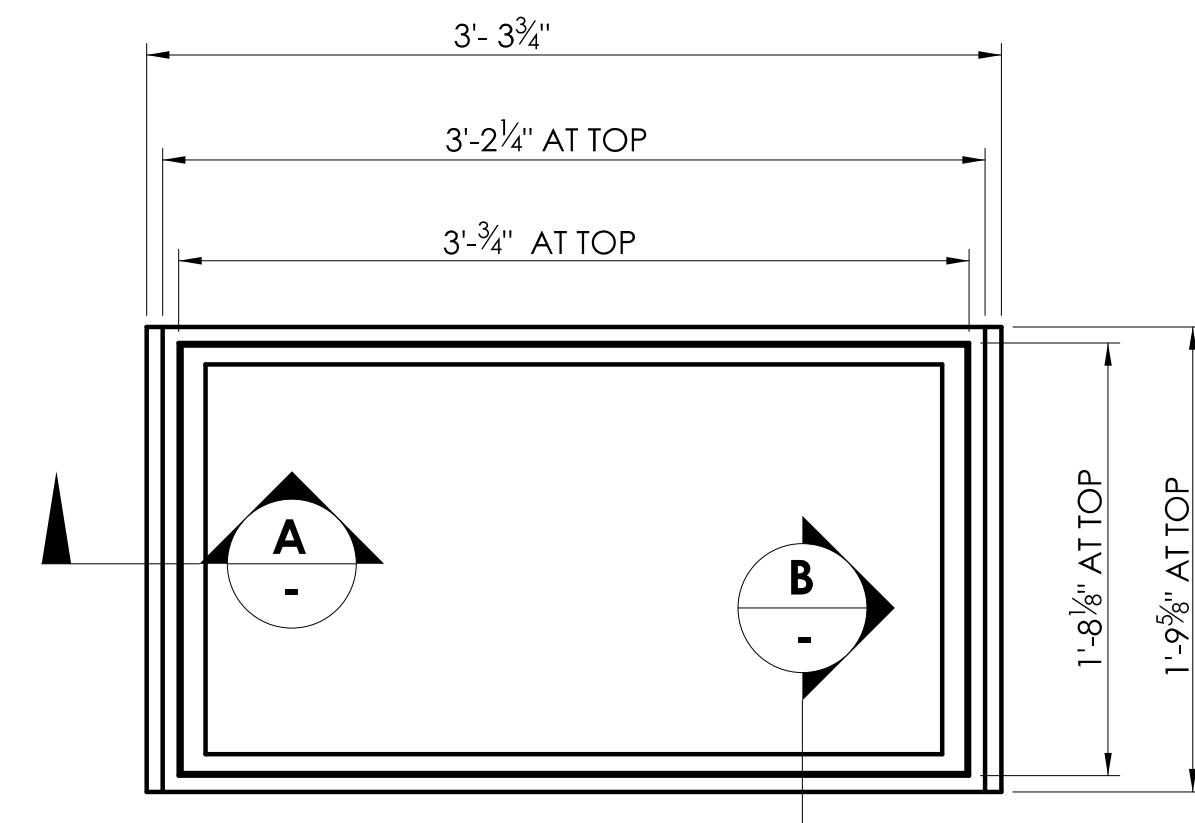
**ROUND BAR ATTACHMENT
CATCH BASIN GRATE TYPE A**



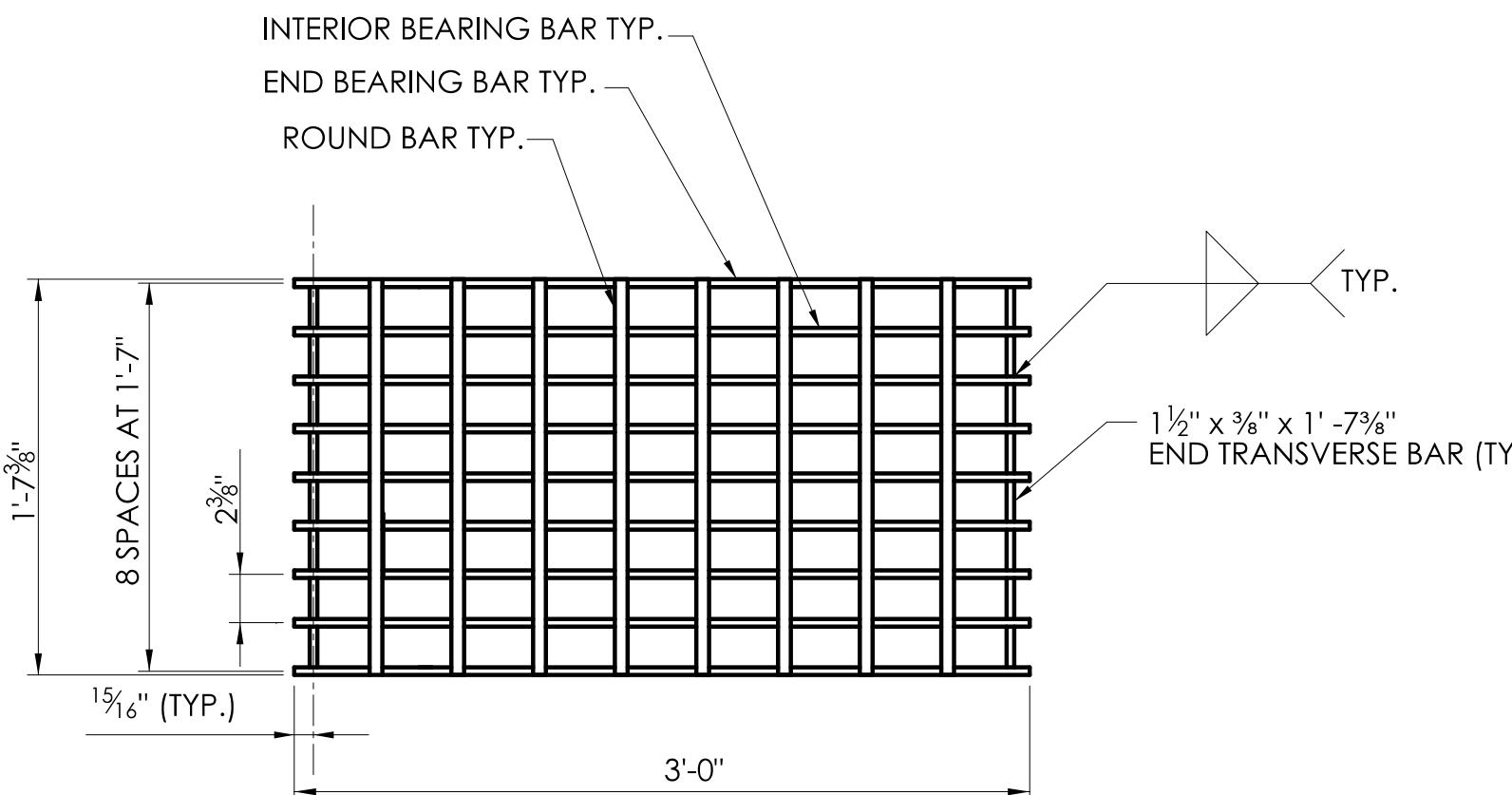
**END TRANSVERSE BAR ATTACHMENT
CATCH BASIN GRATE TYPE A AND B**



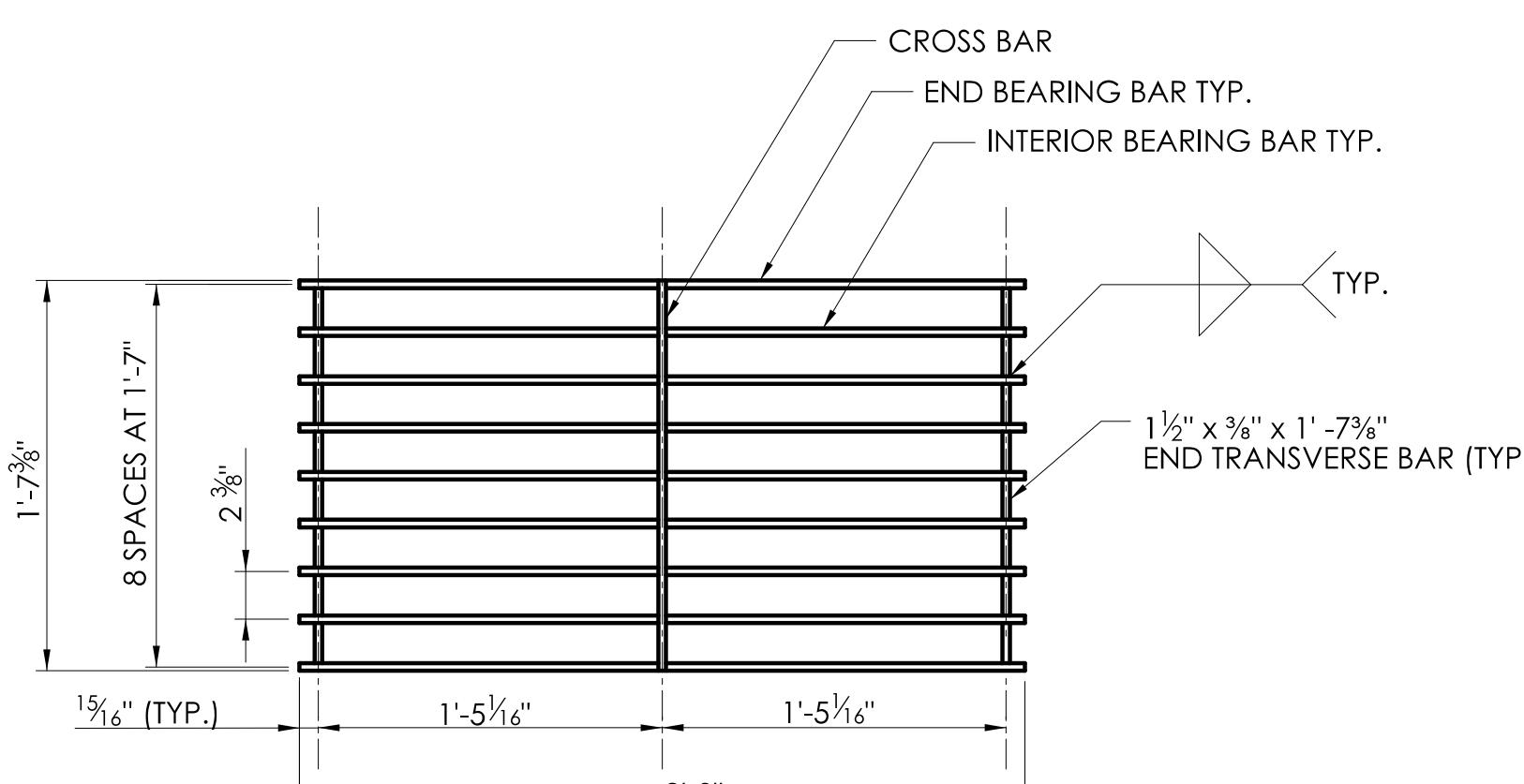
**CROSS BAR ATTACHMENT
CATCH BASIN GRATE TYPE B**



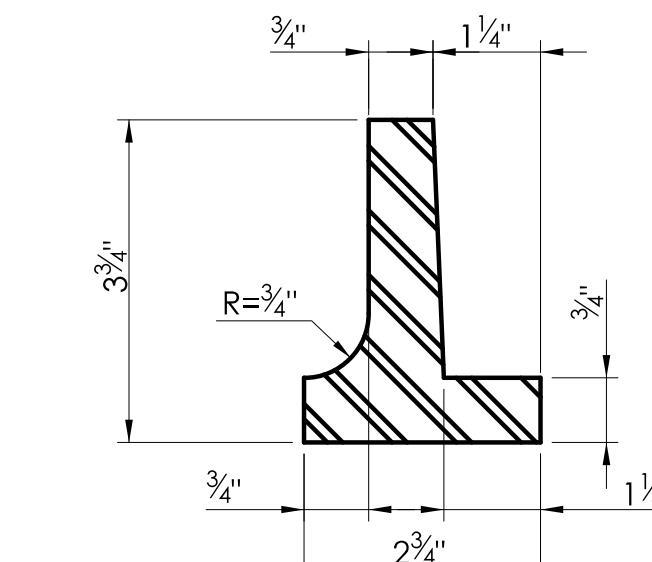
PLAN



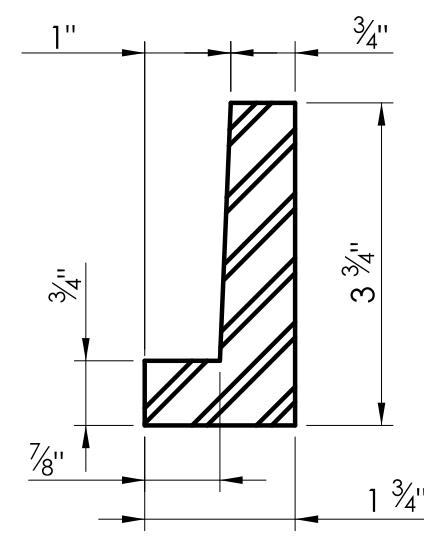
PLAN



PLAN

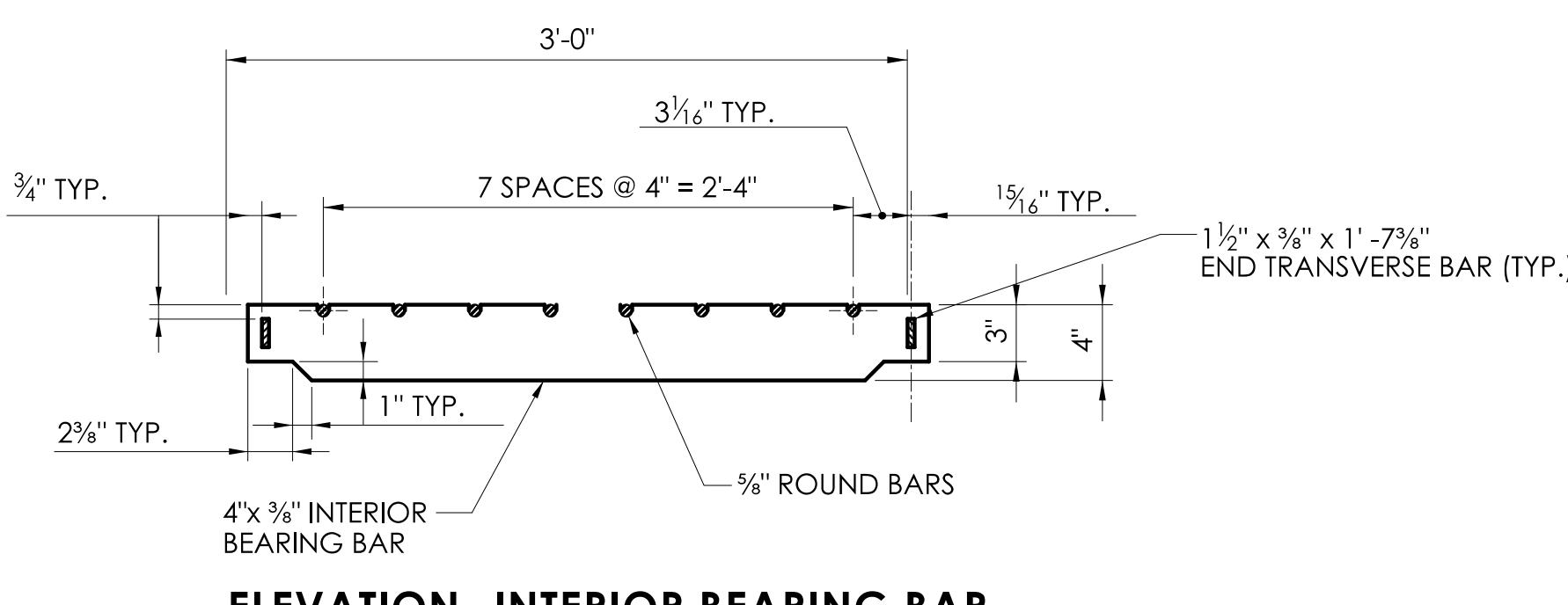


SECTION A

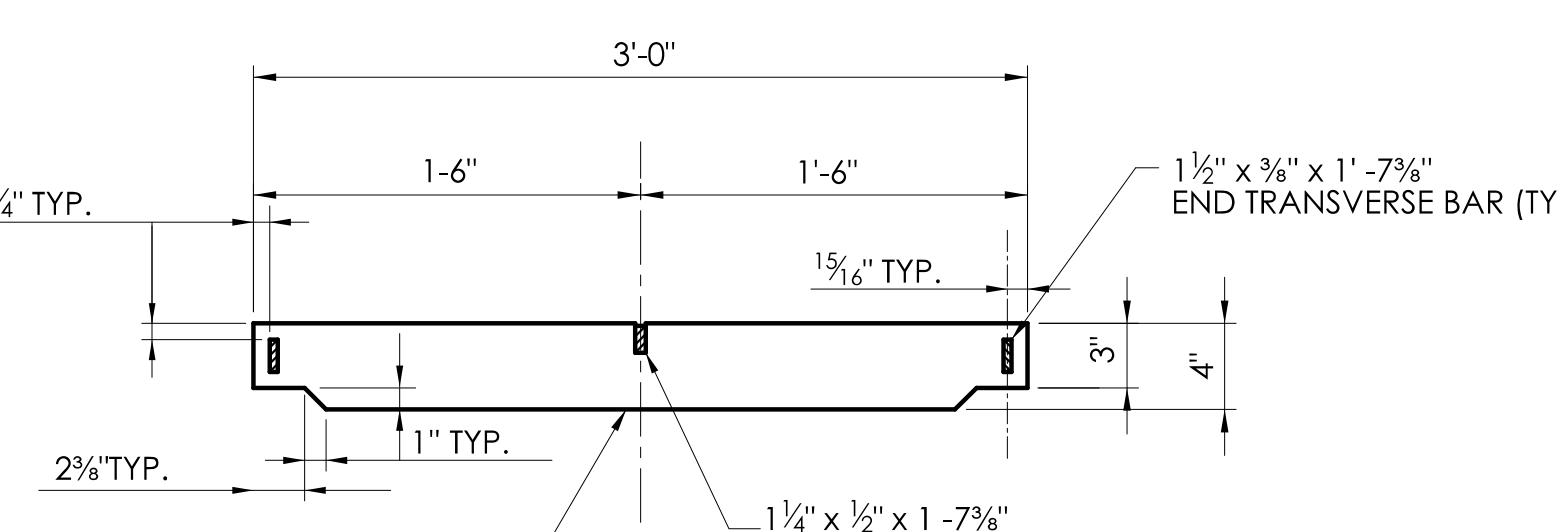


SECTION B

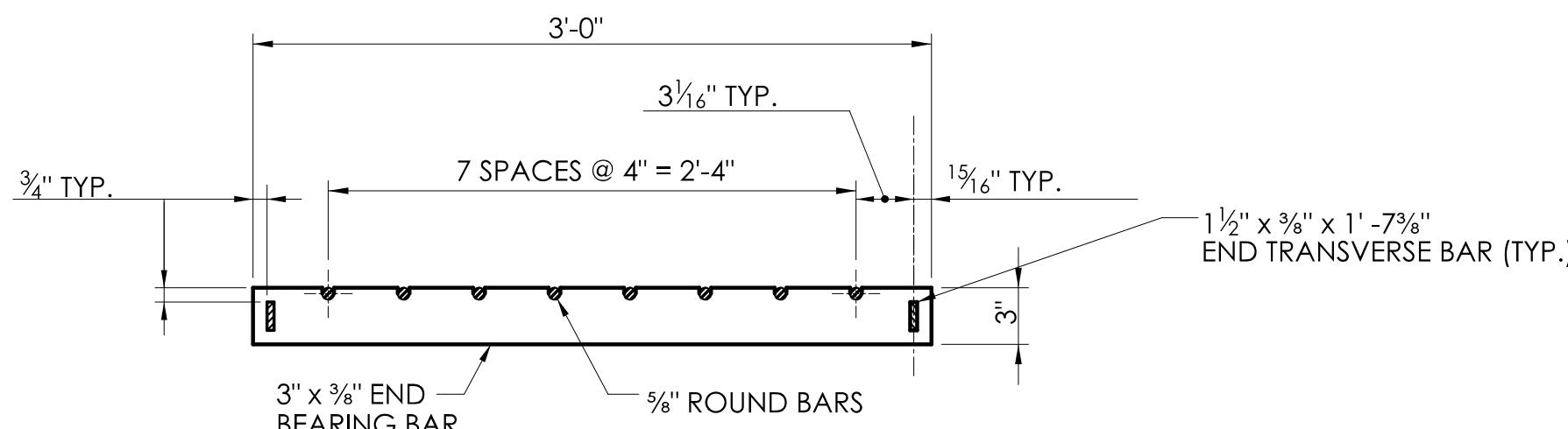
CAST IRON FRAME ALTERNATE



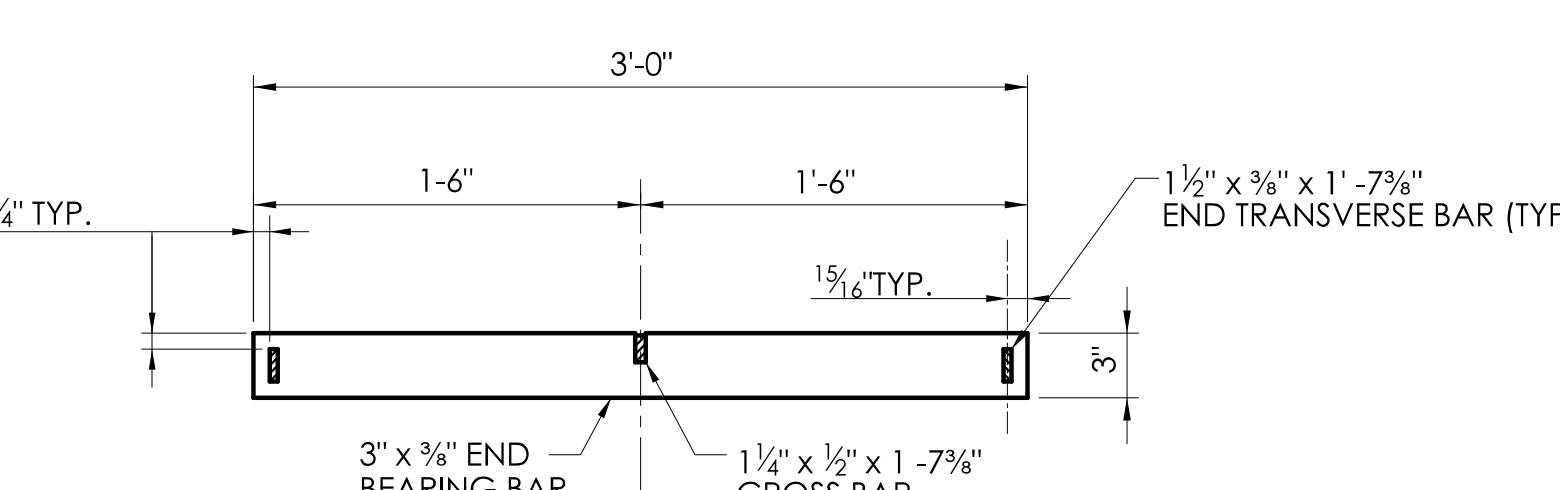
ELEVATION- INTERIOR BEARING BAR



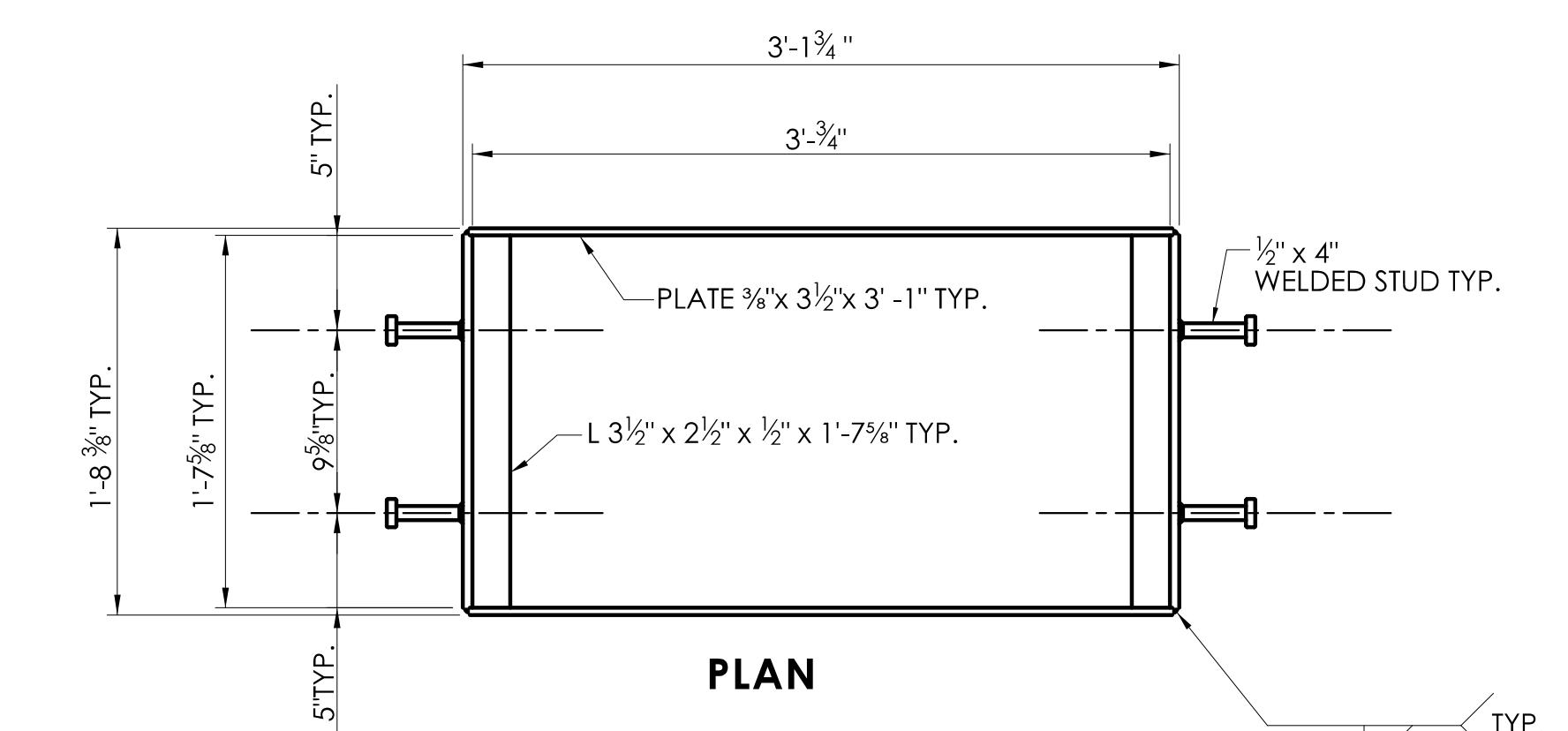
ELEVATION- INTERIOR BEARING BAR



**ELEVATION- END BEARING BAR
CATCH BASIN GRATE TYPE A**



**ELEVATION- END BEARING BAR
CATCH BASIN GRATE TYPE B**



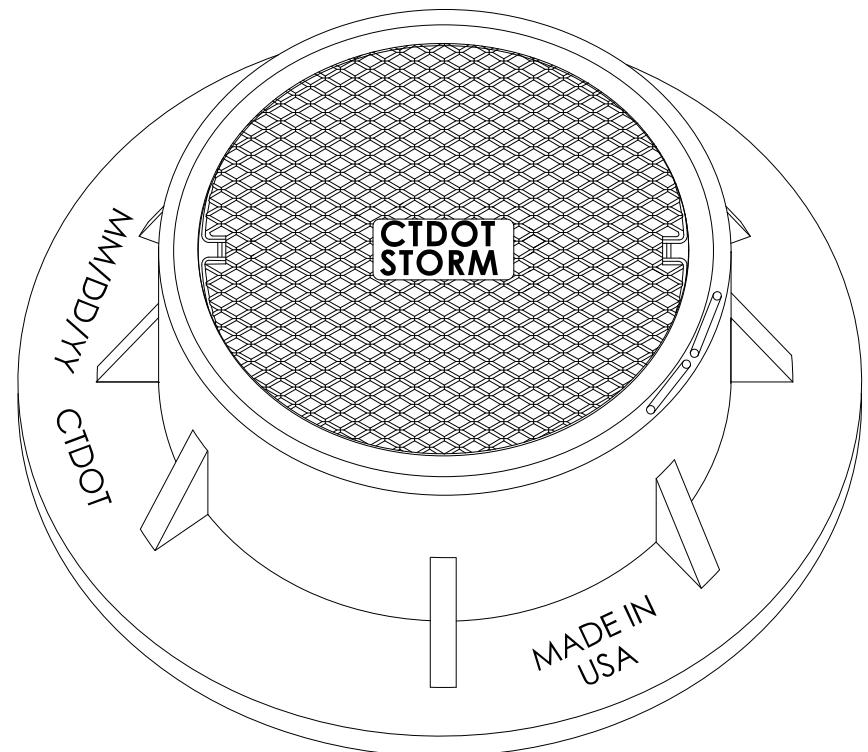
PLAN

**WELDED STUD ANCHOR DETAILS
STEEL FRAME**

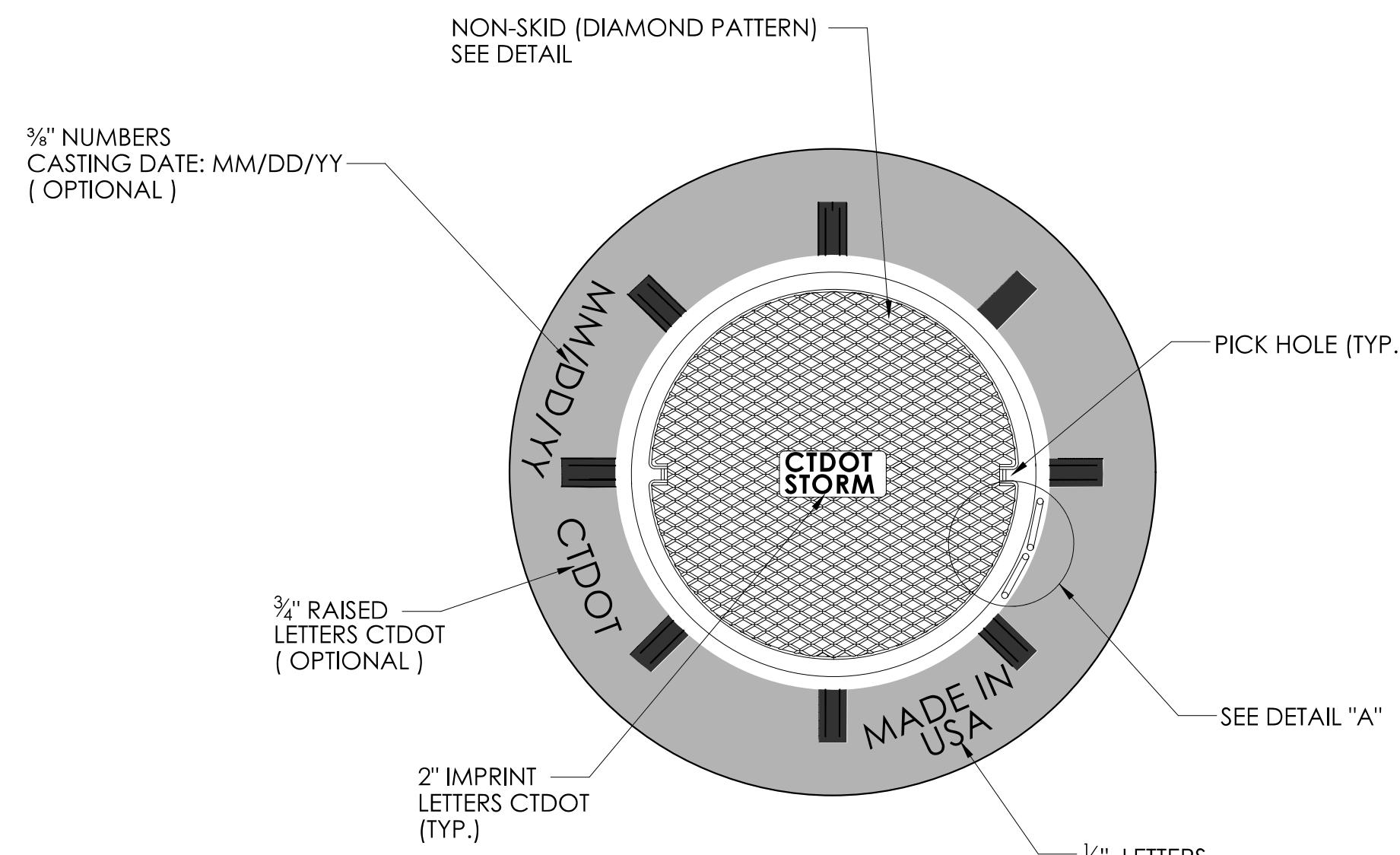
NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Digitally signed by Leo Fontaine, P.E. Date: 2024.12.16 10:16:20-05'00'	APPROVED BY: Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.21 13:02:17-05'00'	CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: CATCH BASIN FRAMES AND GRATES	STANDARD SHEET NO.: HW-586_08
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GENERAL NOTES:

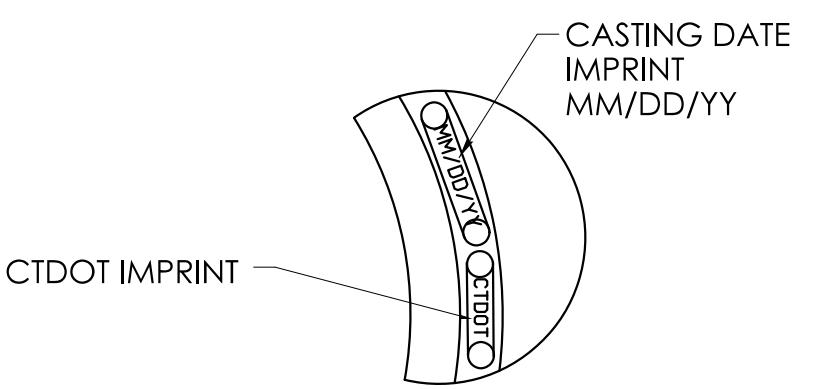
1. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
2. CASTING DATE SHALL BE INDICATED ON EACH; FRAME (SEE DETAIL A) AND COVER (PLACED ON UNDERSIDE).



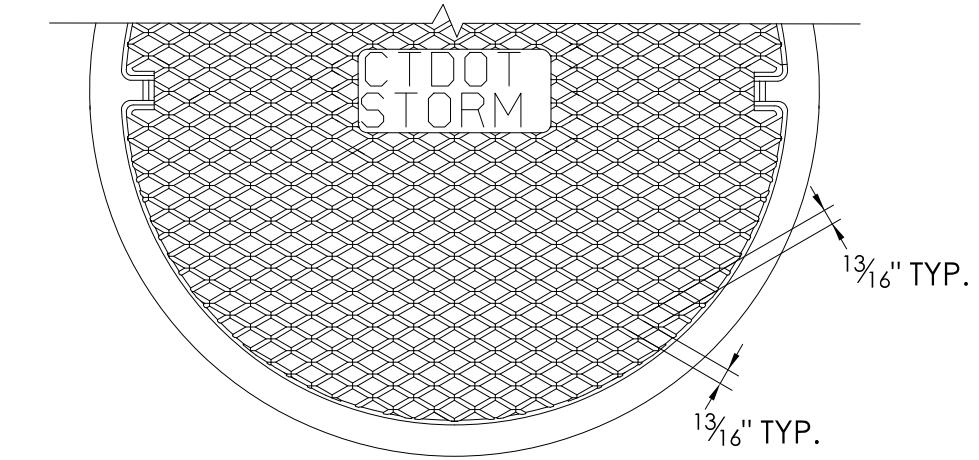
MANHOLE FRAME AND COVER



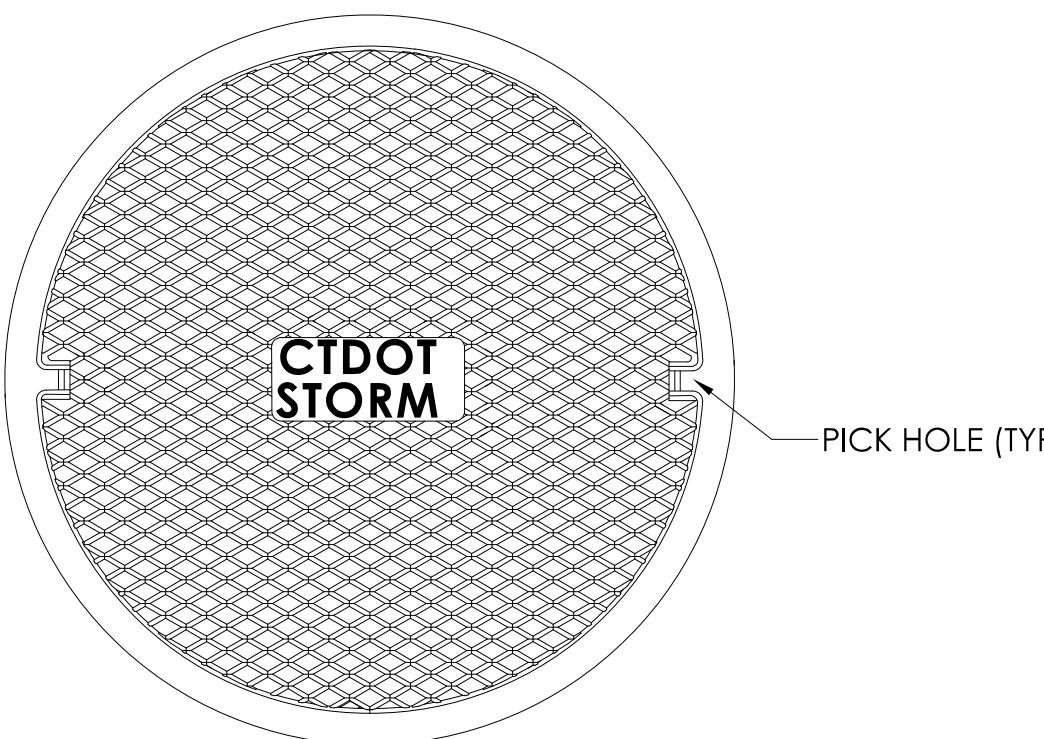
PLAN



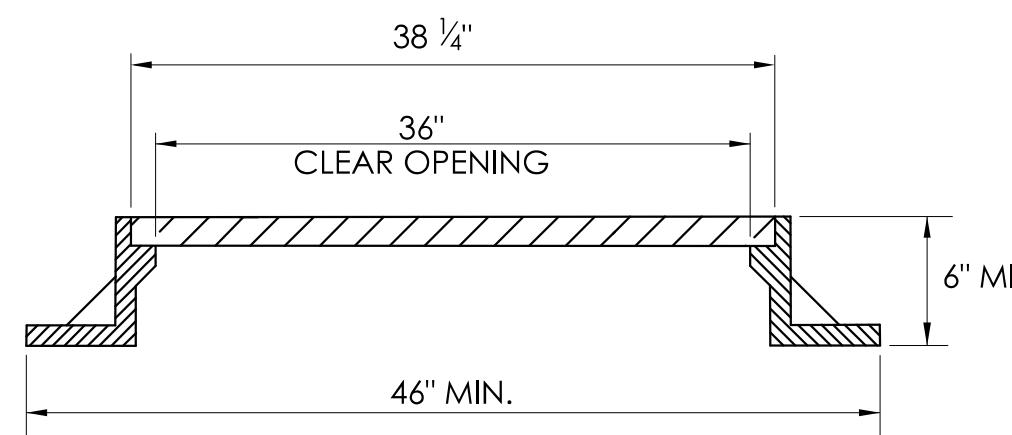
DETAIL "A"



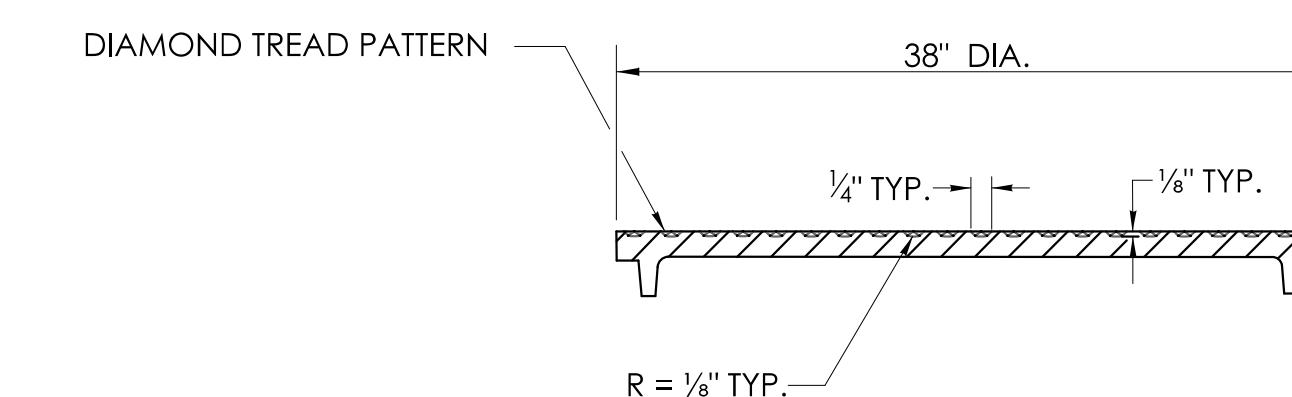
DIAMOND PATTERN PLAN



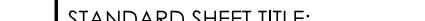
MANHOLE COVER PLAN



MANHOLE FRAME AND COVER

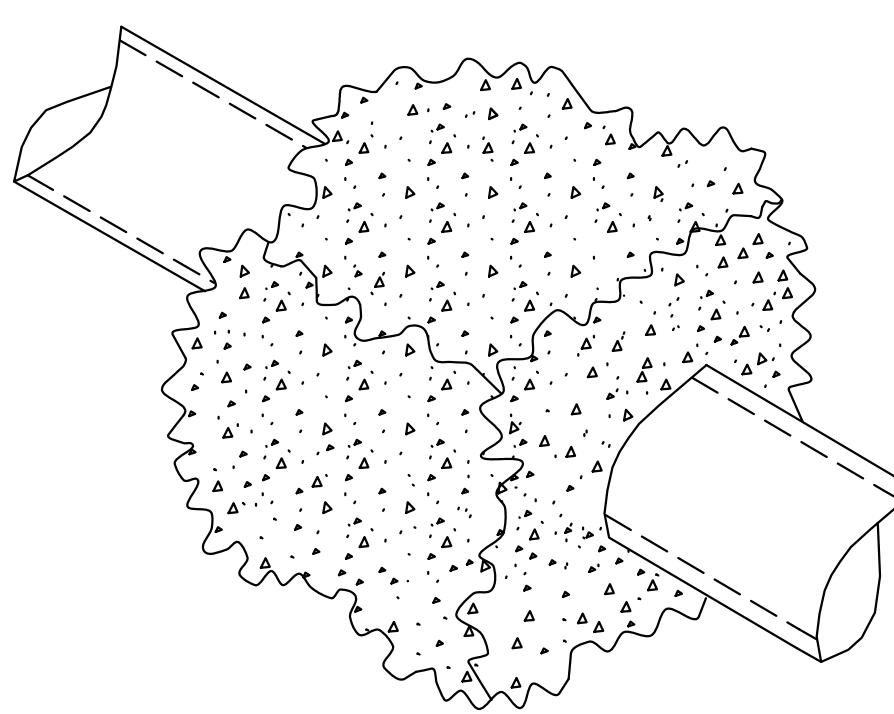


MANHOLE COVER WITH DIAMOND PATTERN

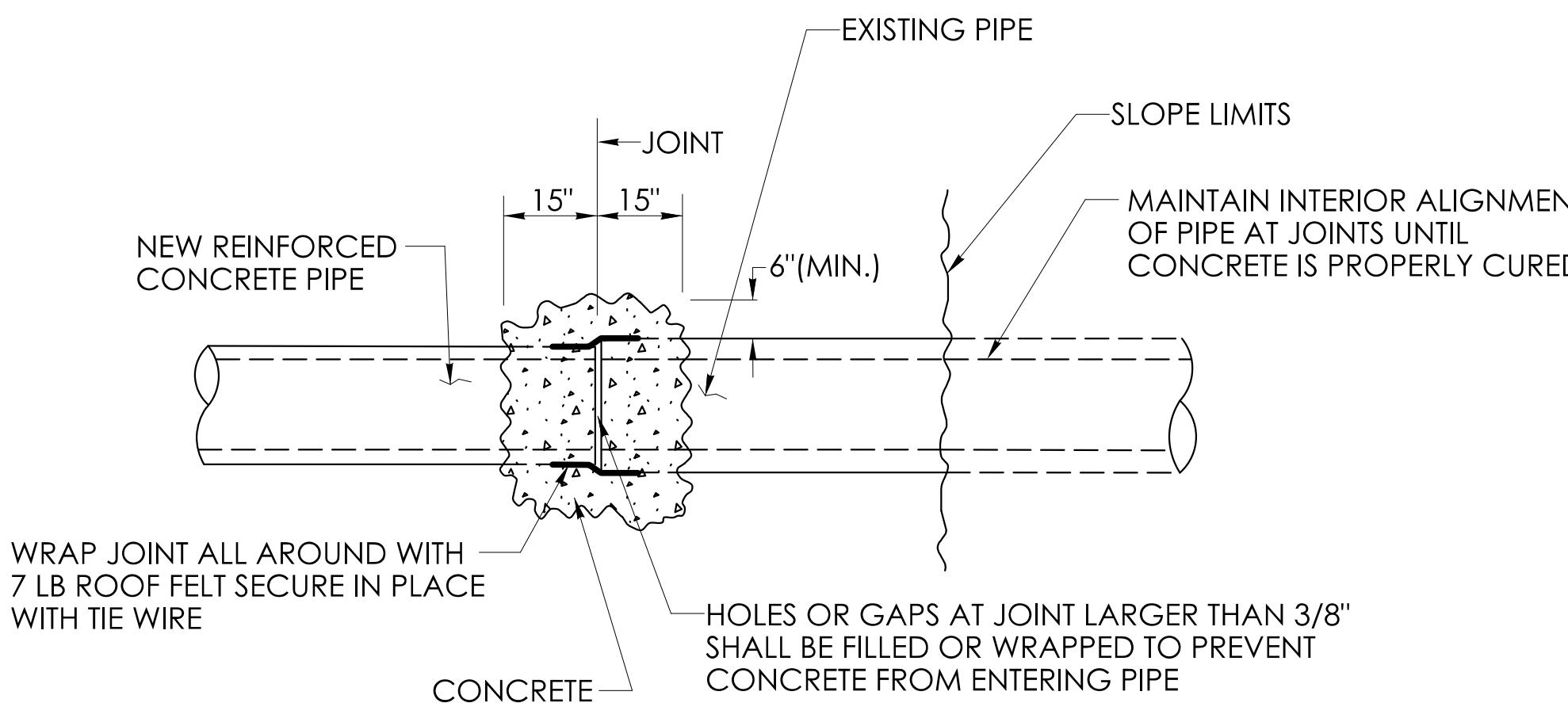
		NOT TO SCALE		SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.16 10:15:43-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.21 13:03:50-05'00'	 CONNECTICUT DEPARTMENT OF TRANSPORTATION	STANDARD SHEET TITLE: CTDOT STANDARD SHEET	STANDARD SHEET NO.: HW-586-10a
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GENERAL NOTES:

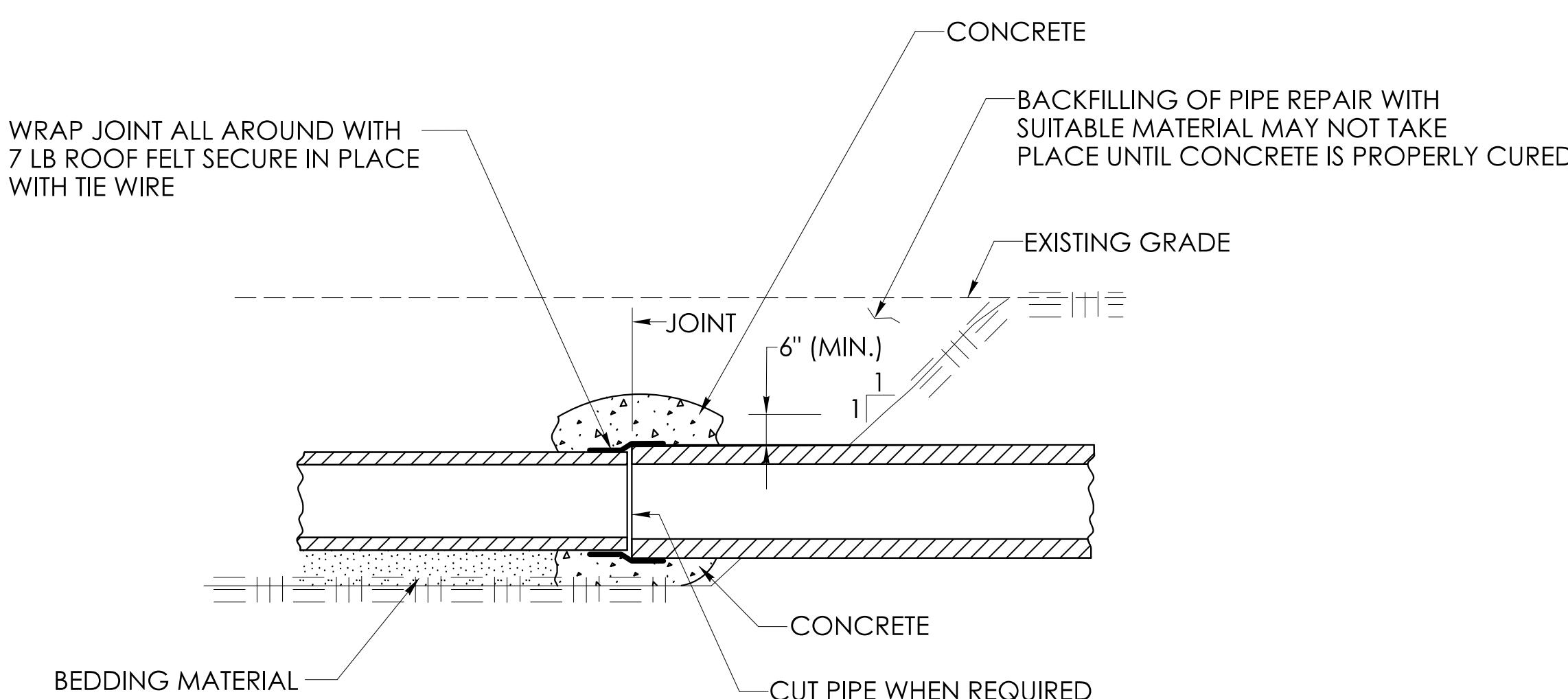
1. "CONCRETE PIPE CONNECTION" IS INTENDED FOR USE WHERE A REINFORCED CONCRETE PIPE REPAIR OR MODIFICATION IS NEEDED SOMEWHERE WITHIN A PIPE RUN WHERE A BELL/SPIGOT JOINT CANNOT BE ACHIEVED.
2. MAINTAIN INTERIOR ALIGNMENT OF PIPE AT JOINTS UNTIL CONCRETE IS PROPERLY CURED.
3. BACKFILL OF PIPE REPAIR WITH SUITABLE MATERIAL MAY NOT TAKE PLACE UNTIL THE CONCRETE IS PROPERLY CURED.
4. CONTRACTOR SHALL MAINTAIN LINE AND GRADE OF PIPE REPAIR OR MODIFICATION BY METHODS APPROVED BY THE ENGINEER
5. HOLES OR GAPS AT JOINT LARGER THAN $\frac{3}{8}$ " SHALL BE FILLED OR WRAPPED TO PREVENT CONCRETE FROM ENTERING THE PIPE.



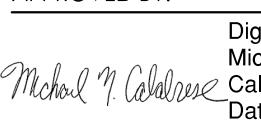
CONCRETE PIPE AT THE JOINT

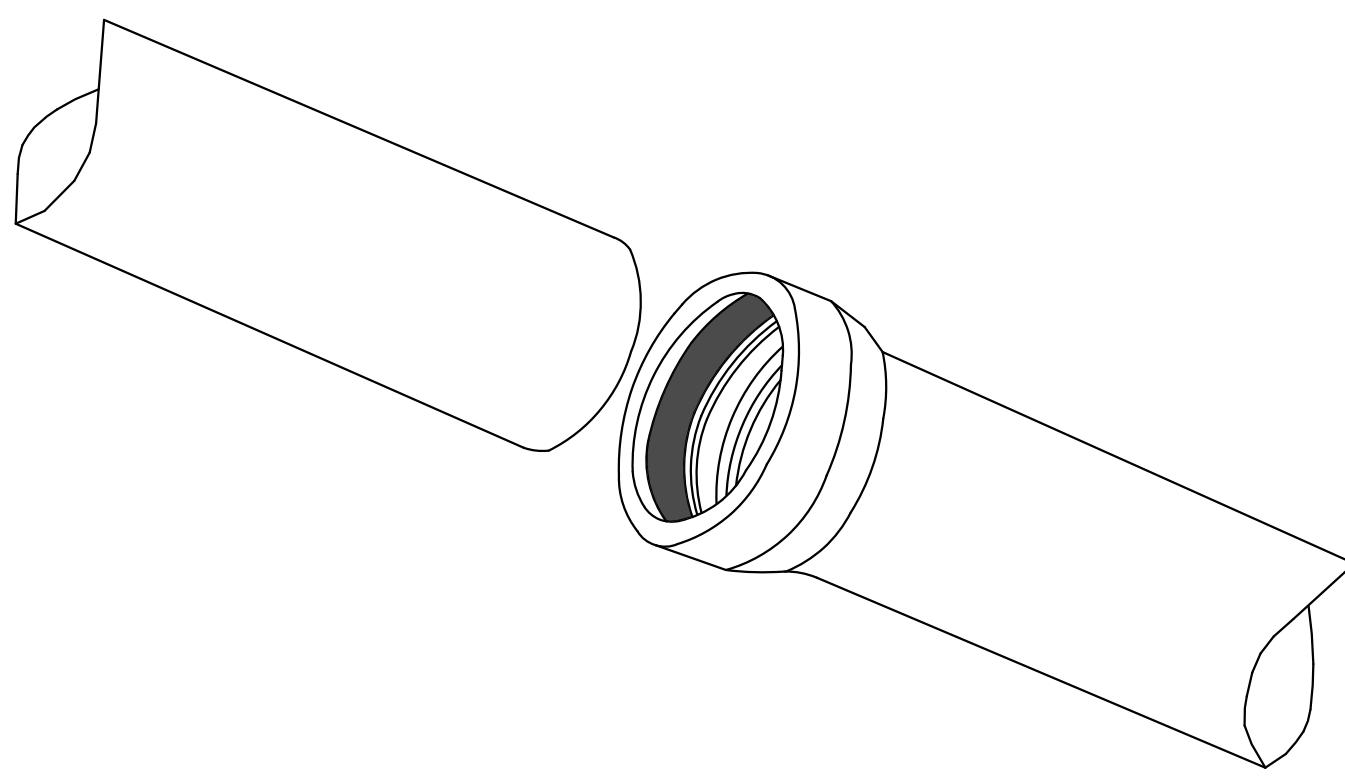


PLAN

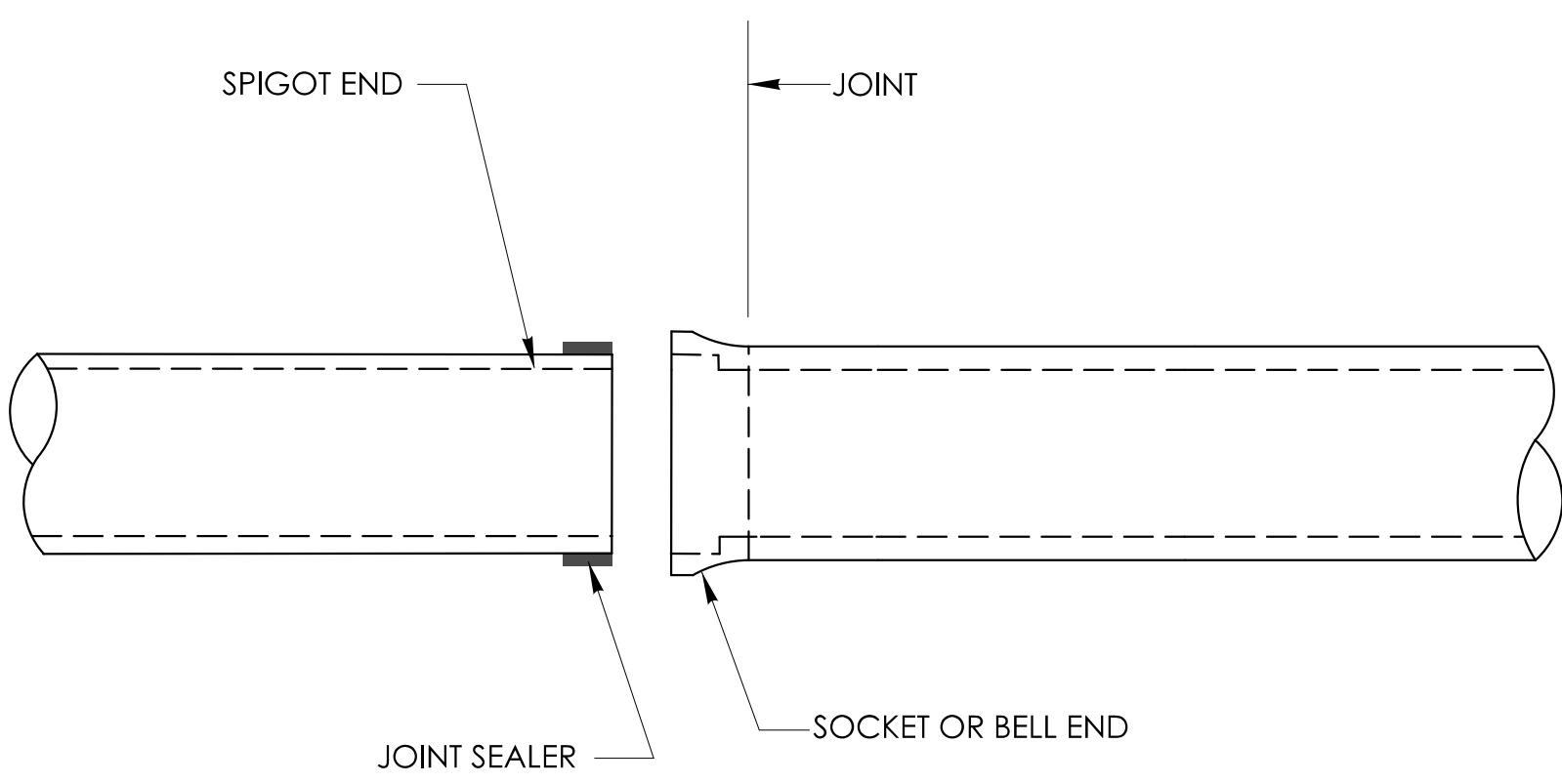


**SECTION
CONCRETE PIPE CONNECTION**

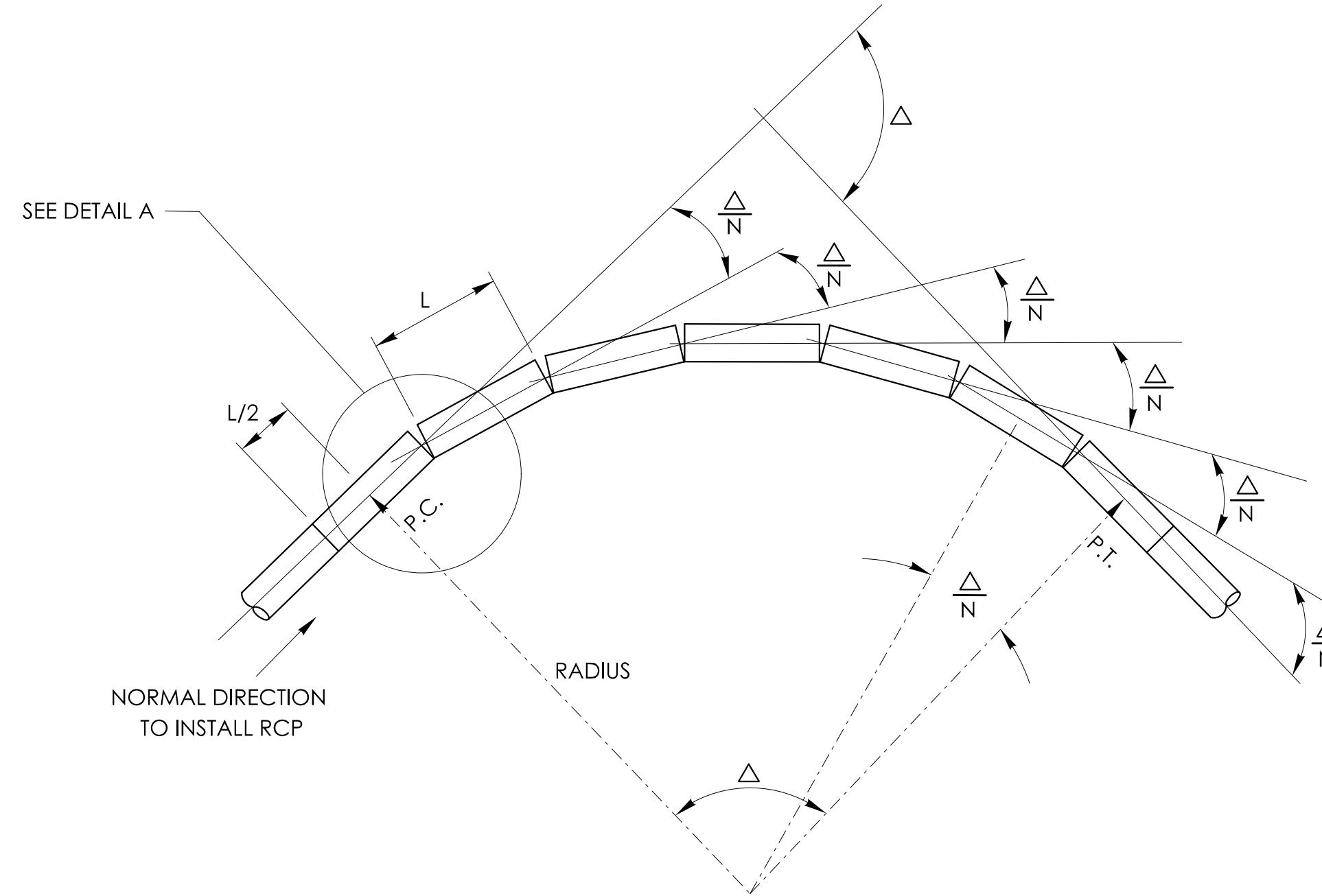
	NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.16 14:02:25-05'00"	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.21 13:07:29-05'00"	 CONNECTICUT DEPARTMENT OF TRANSPORTATION	STANDARD SHEET TITLE: CONCRETE PIPE CONNECTION SHEET 1	STANDARD SHEET NO.: HW-686_01a
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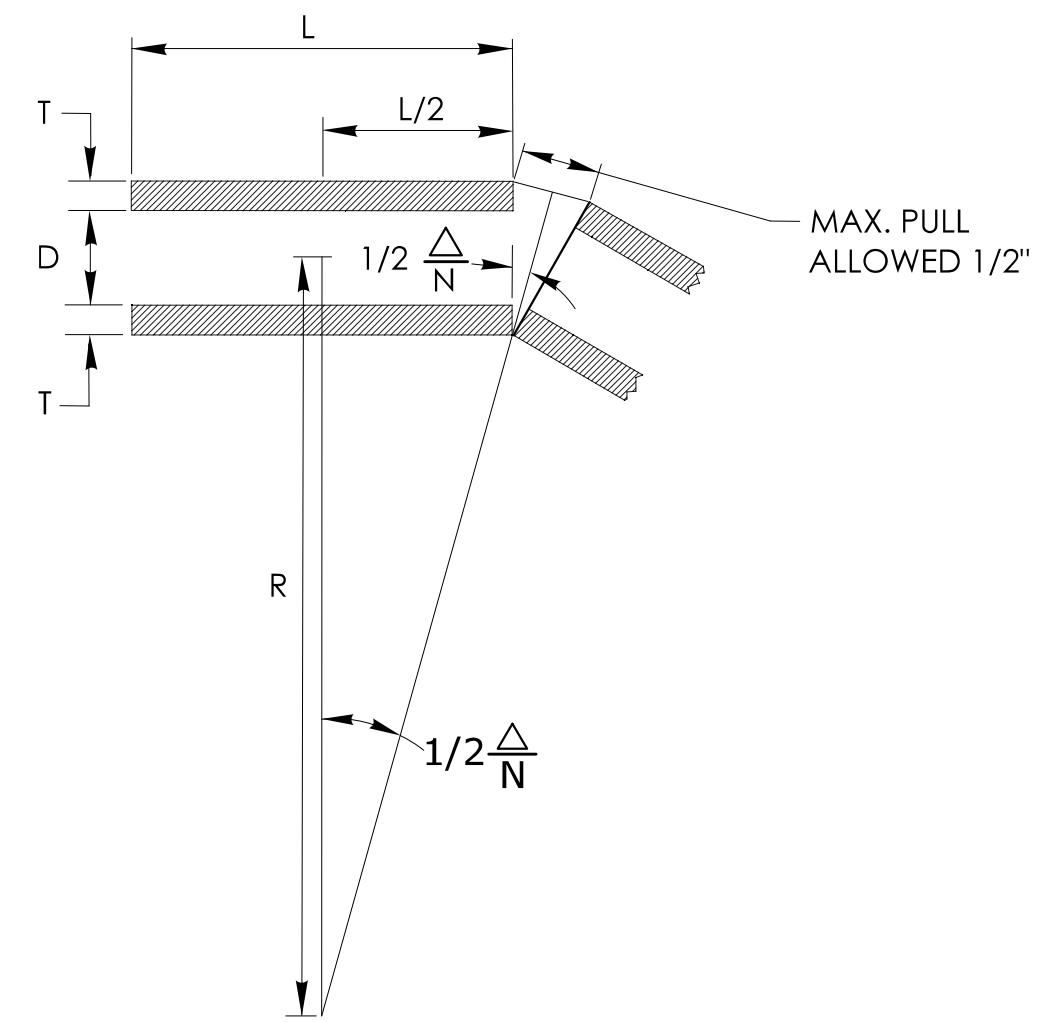
CONCRETE PIPE ASSEMBLY AT THE JOINT



STANDARD CONNECTION FOR CONCRETE PIPE



CURVED ALIGNMENT USING
DEFLECTED STRAIGHT PIPE
FOR MAXIMUM PULL 1/2"



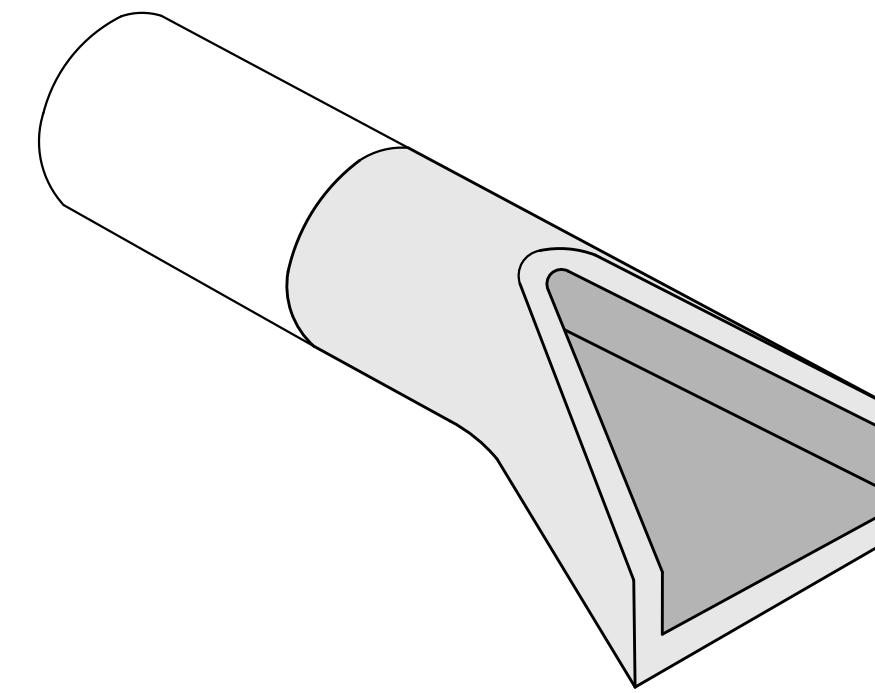
DETAIL A
DEFLECTING STANDARD FOR RCP

MINIMUM RADII FOR RCP PIPE
ON CURVED ALIGNMENT

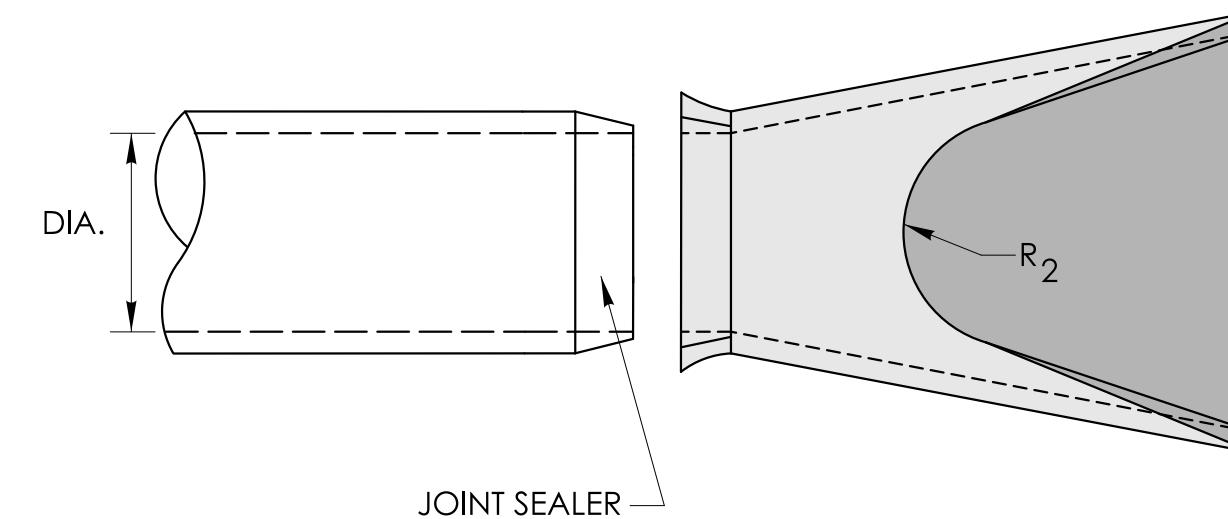
DIAMETER (D) IN.	MINIMUM RADII USING 8' PIPE LENGTHS FT.
15	337
18	392
21	401
24	452
30	617
36	729
42	842
48	953
54	1066
60	1178
72	1403

NOTES:

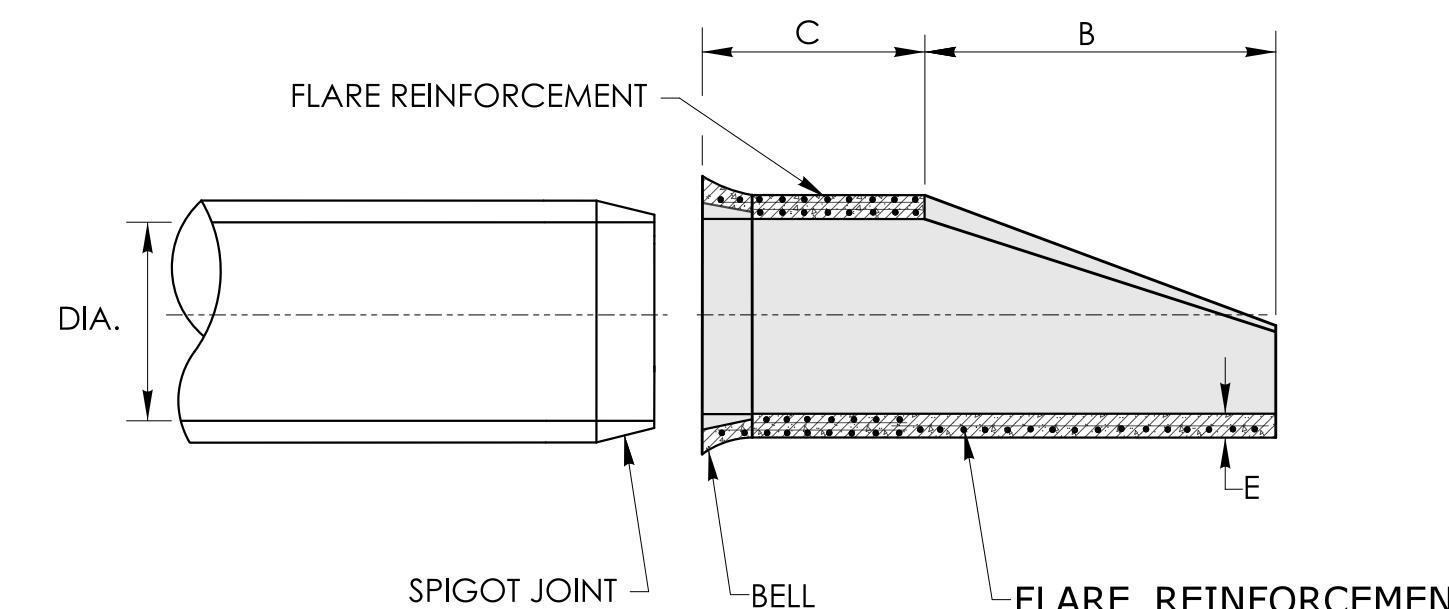
1. N IS THE NUMBER OF PIPE SEGMENTS
2. D IS PIPE DIAMETER
3. L IS LENGTH OF PIPE
4. T IS PIPE THICKNESS
5. Δ IS THE DEGREE OF CURVATURE



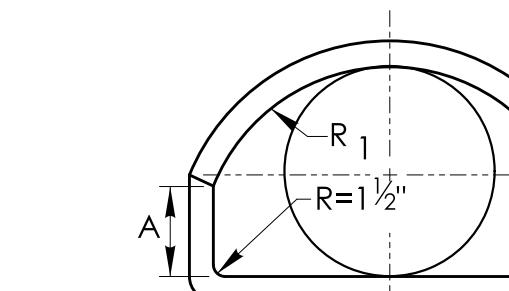
PRECAST CONCRETE PIPE END



PLAN



SECTION

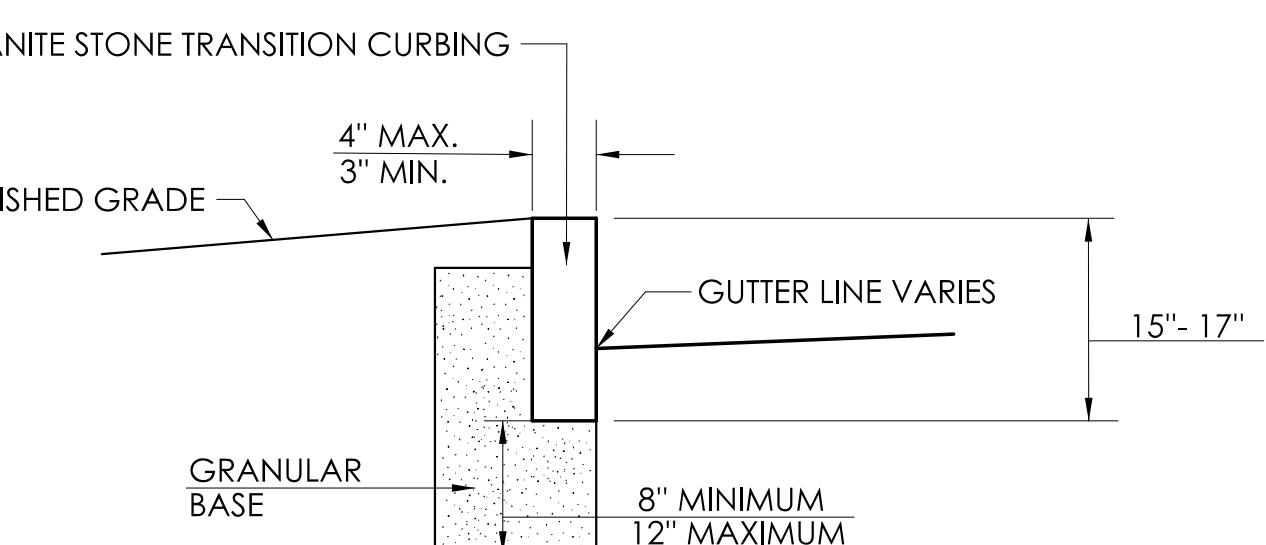
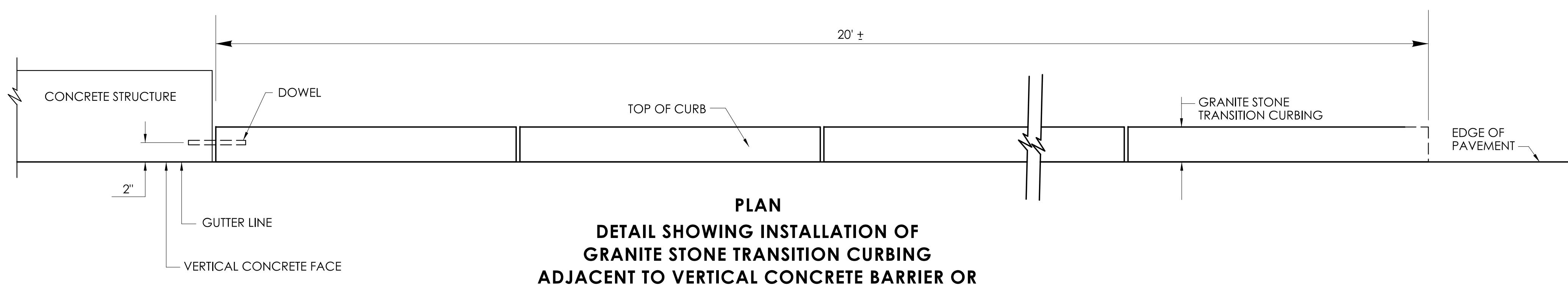
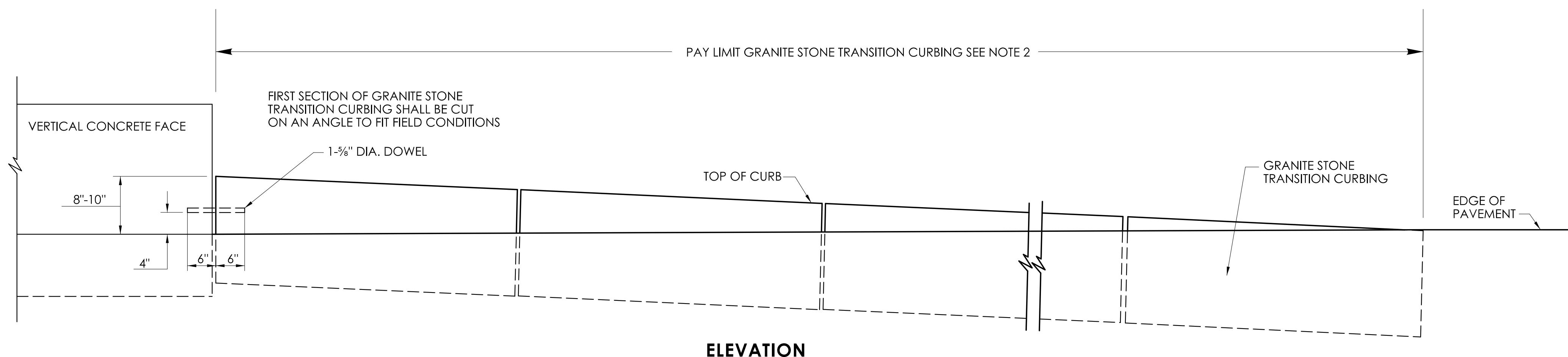


ELEVATION

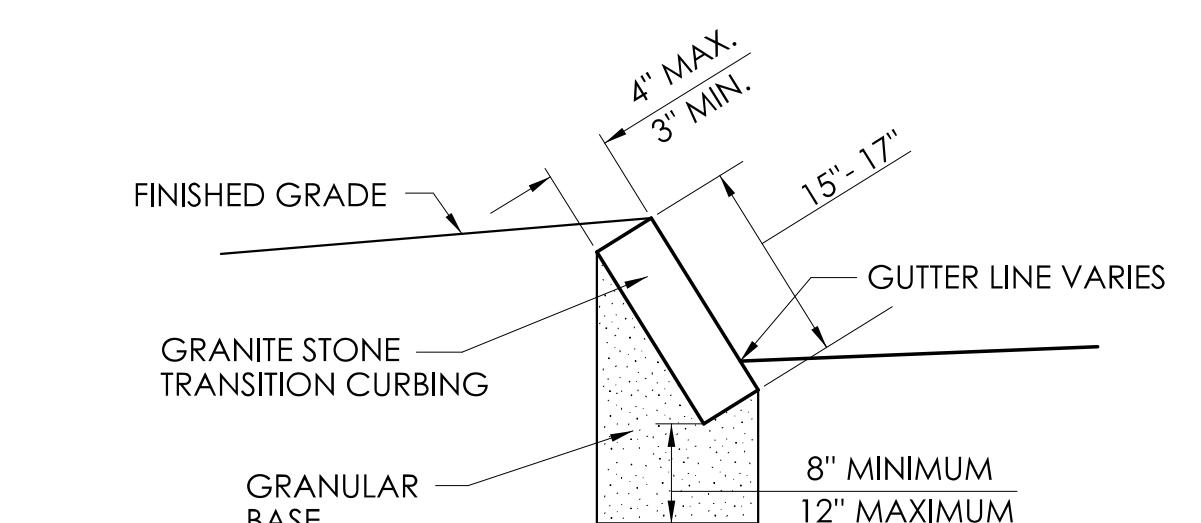
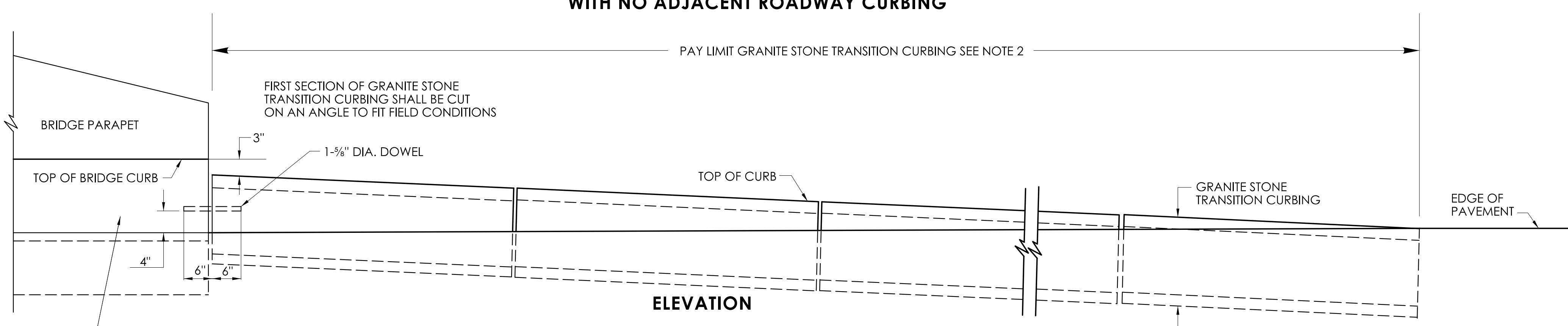
END SECTION FOR REINFORCED CONCRETE PIPE END								FLARE REINFORCEMENT ONE LAYER ONLY IN CENTER OF WALL	
PIPE DIAMETER INCHES	A INCHES	B INCHES	C INCHES	D INCHES	E INCHES	R ₁ INCHES	R ₂ INCHES	MIN. AREA OF LONGITUDINAL STEEL SQ. IN PER FT.	MIN. AREA OF TRANSVERSE STEEL STEEL SQ. IN PER FT.
12	4	24	48 $\frac{7}{8}$	24	3	10 $\frac{1}{4}$	9	0.048	0.048
15	6	27	46	30	3	12 $\frac{1}{2}$	11	0.054	0.054
18	9	27	46	36	3	15 $\frac{1}{2}$	12	0.060	0.060
24	9 $\frac{1}{2}$	43 $\frac{1}{2}$	30	48	3	16 $\frac{13}{16}$	14	0.072	0.072
30	12	54	19 $\frac{3}{4}$	60	3 $\frac{1}{2}$	18 $\frac{1}{2}$	15	0.084	0.084
36	15	63	34 $\frac{3}{4}$	72	4	24 $\frac{5}{16}$	20	0.096	0.096
42	21	63	35	78	4 $\frac{1}{2}$	27 $\frac{1}{2}$	22	0.108	0.108
48	24	72	26	84	5	28 $\frac{1}{2}$	22	0.120	0.120
54	27	65	35	90	5 $\frac{1}{2}$	33 $\frac{1}{8}$	24	0.132	0.132
60	30	60	39	96	6	36 $\frac{11}{16}$	24	0.144	0.144

GENERAL NOTES:

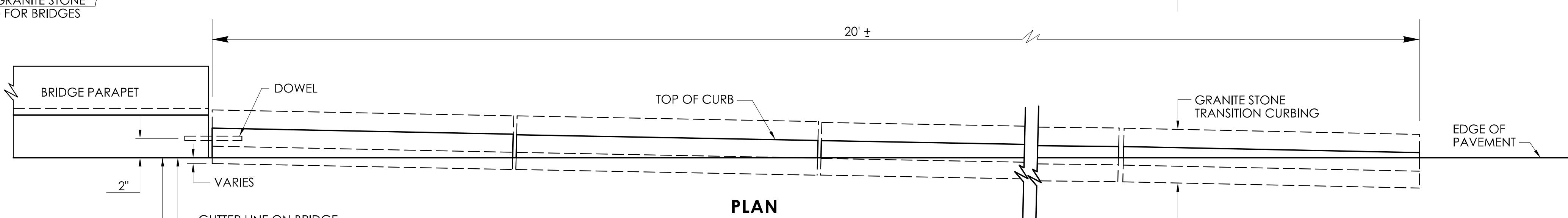
1. GRANITE STONE TRANSITION CURBING (INCLUDING DOWEL) WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR "GRANITE STONE TRANSITION CURBING".
2. FOR NEW R-B 350 GUICERAIL TRANSITIONS, ADJUSTMENT OF EXISTING CURBING HEIGHT TO A 4" REVEAL AT THE BRIDGE PARAPET WILL BE REQUIRED. IT MAY BE PAID FOR, WHEN NOTED ON THE PLANS, UNDER THE ITEM "RESET CURBING".
3. NEW INSTALLATIONS OF THIS CURBING SHALL ONLY BE ALLOWED ON THE MERRITT PARKWAY.
4. GRANITE STONE TRANSITION CURBING SHALL BE INSTALLED TO MATCH THE SLOPE OF SLOPED GRANITE STONE CURBING ON THE BRIDGE. ALL SECTIONS OF THE TRANSITION CURBING SHALL BE 2'-0" LONG.



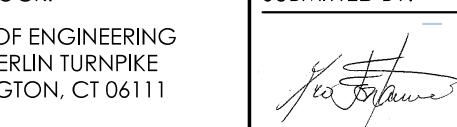
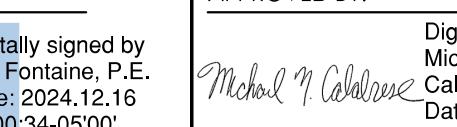
TYPICAL SECTION SHOWING INSTALLATION OF GRANITE STONE TRANSITION CURBING AT VERTICAL FACE

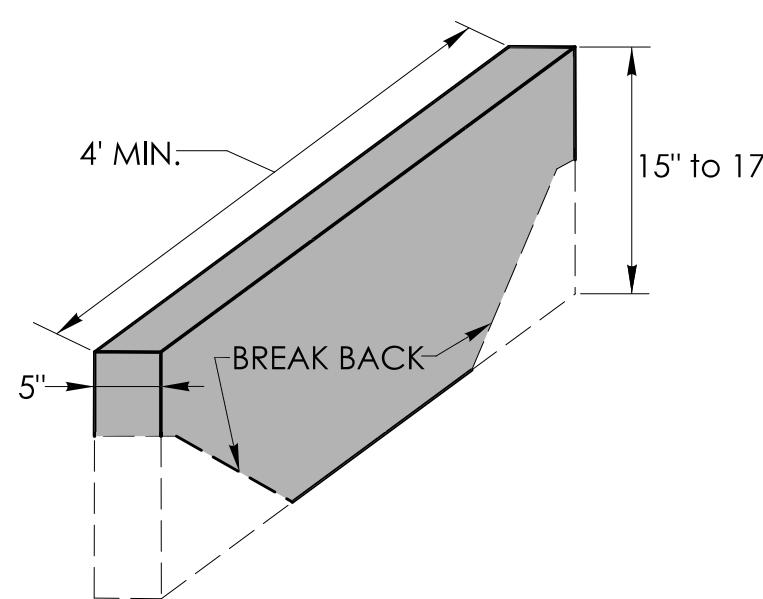


TYPICAL SECTION SHOWING INSTALLATION OF GRANITE STONE TRANSITION CURBING AT SLOPED GRANITE BRIDGE CURBING

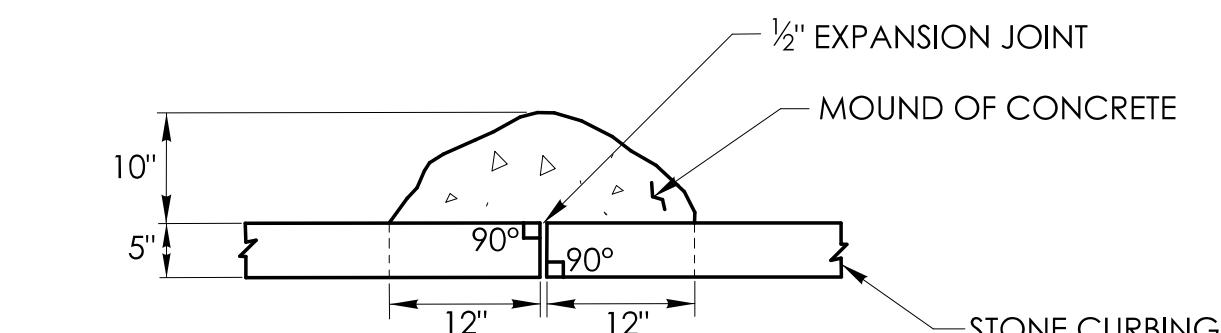


TYPICAL SECTION SHOWING INSTALLATION OF GRANITE STONE TRANSITION CURBING AT SLOPED GRANITE BRIDGE CURBING

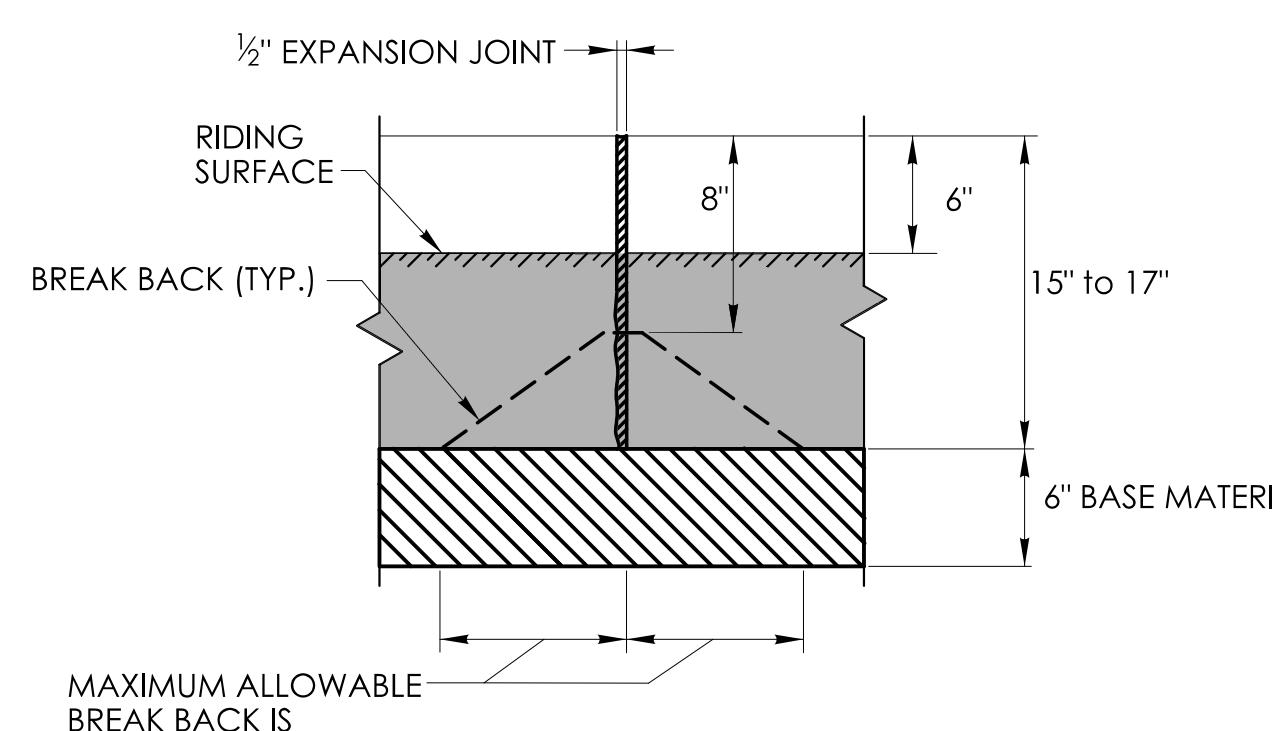
NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.16 14:00:34-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.21 13:14:17-05'00'	CONNECTICUT DEPARTMENT OF TRANSPORTATION 	STANDARD SHEET TITLE: GRANITE STONE TRANSITION CURBNG	STANDARD SHEET NO.: HW-813_01
PLOTTED DATE: 10/22/2024						



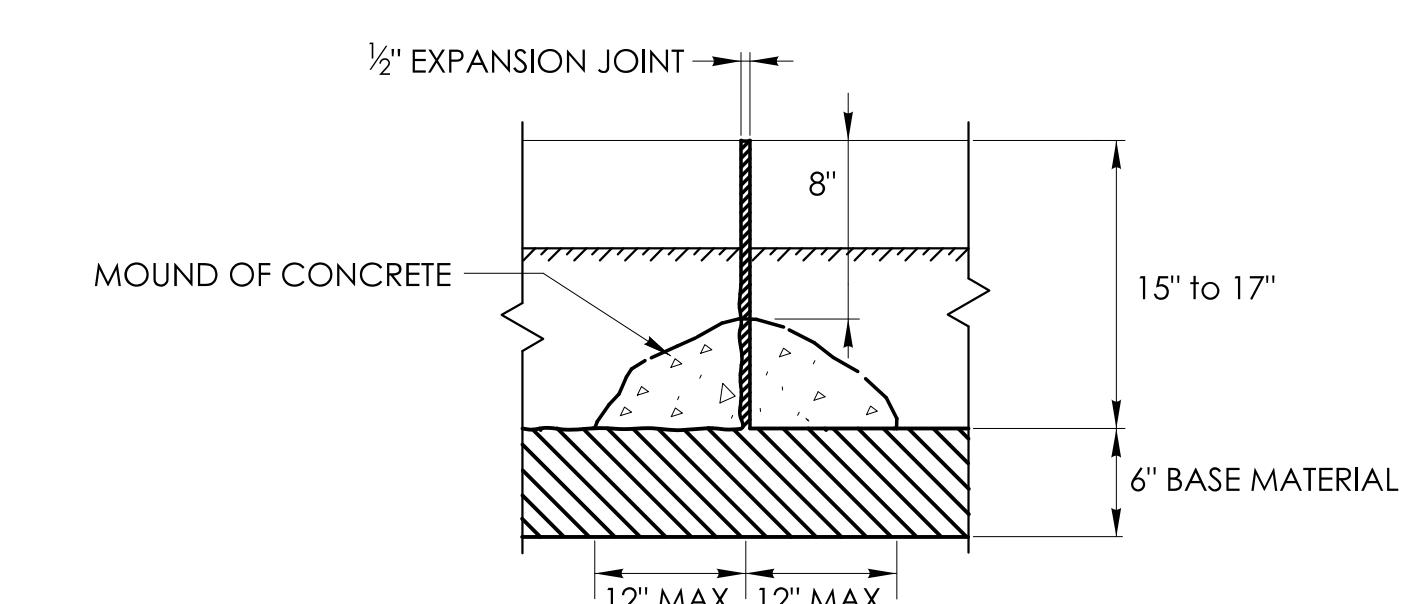
STONE CURBING



PLAN

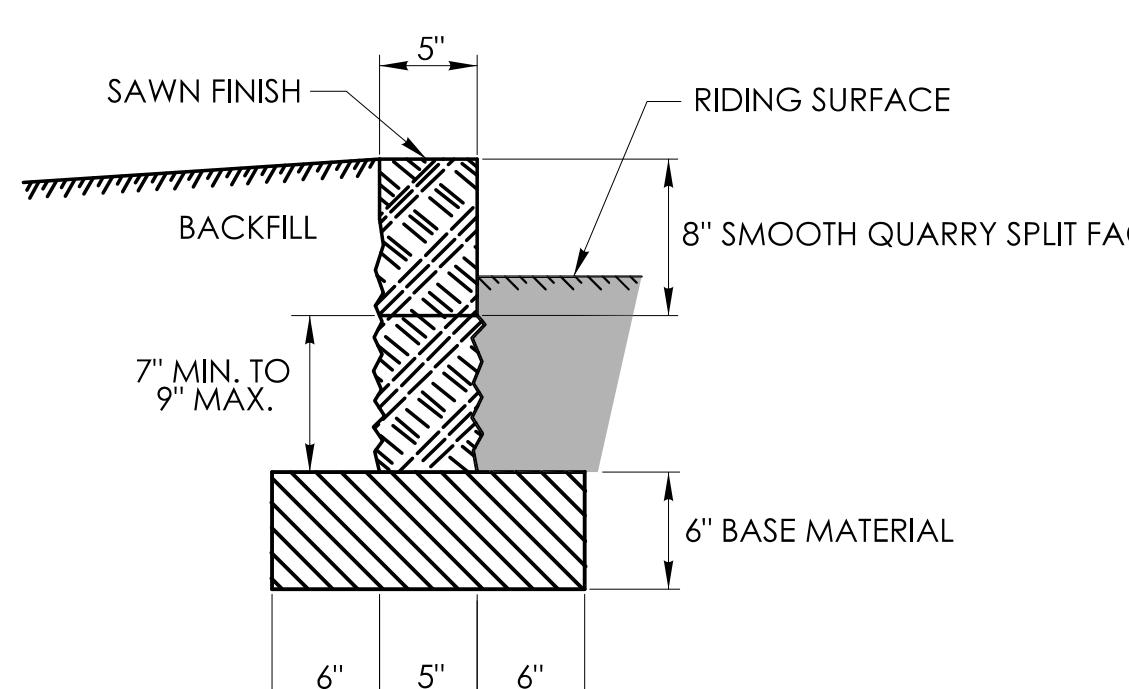


FRONT ELEVATION

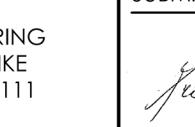
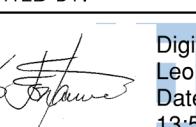


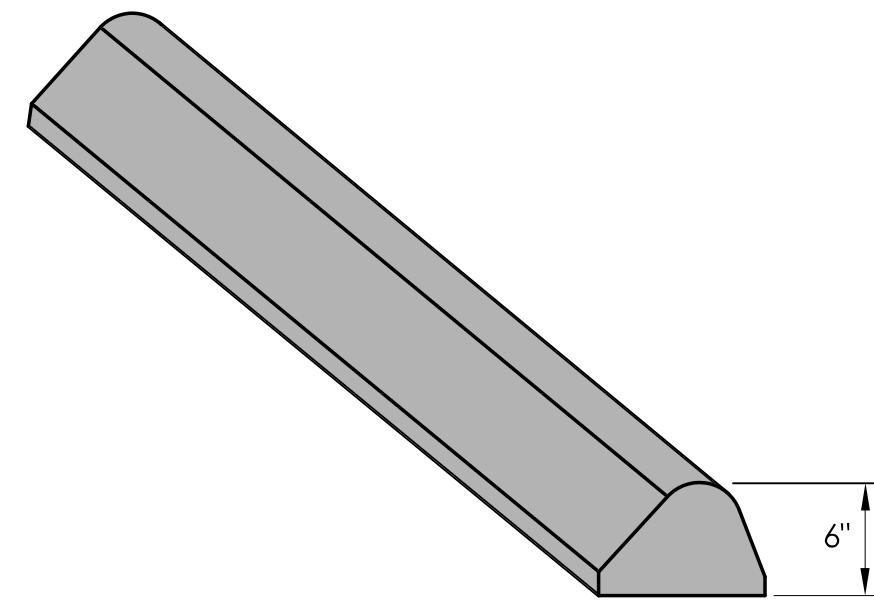
BACK ELEVATION

**MOULD OF CONCRETE AT ALL JOINTS
FOR STONE CURBING**

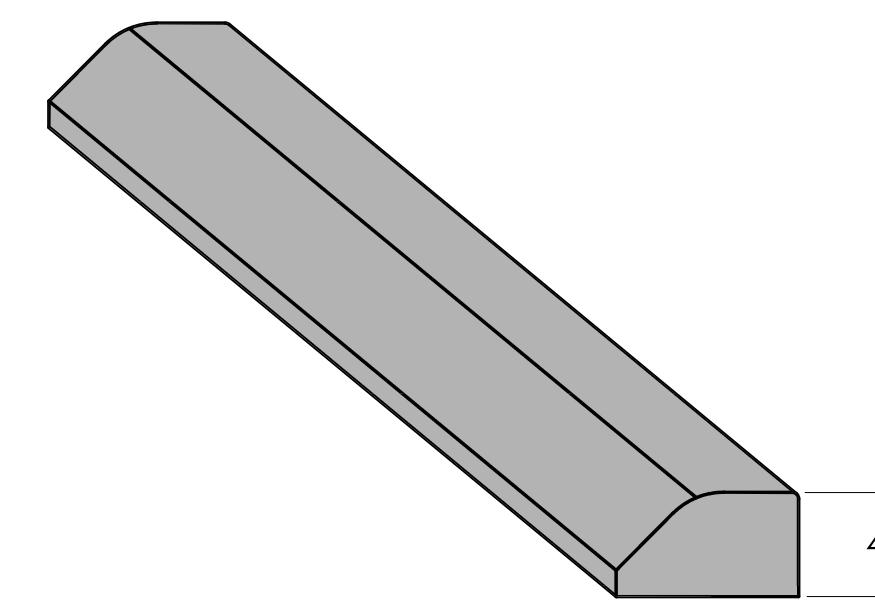


SECTION

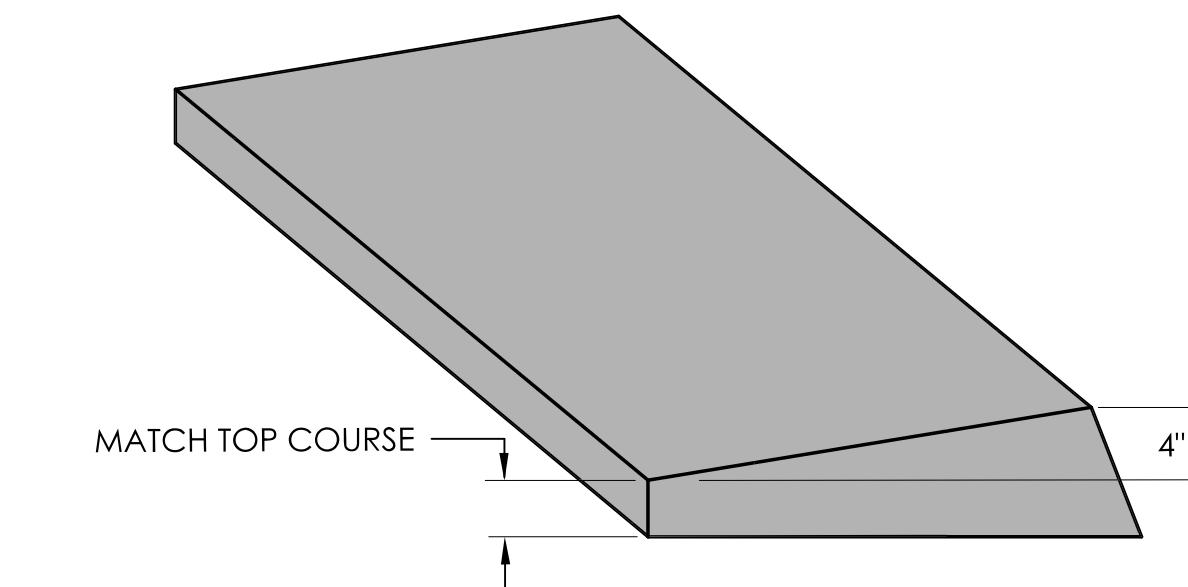
	NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.16 13:59:57-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.21 13:15:08-05'00'	 CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: STONE CURBNG	STANDARD SHEET NO.: HW-813_02
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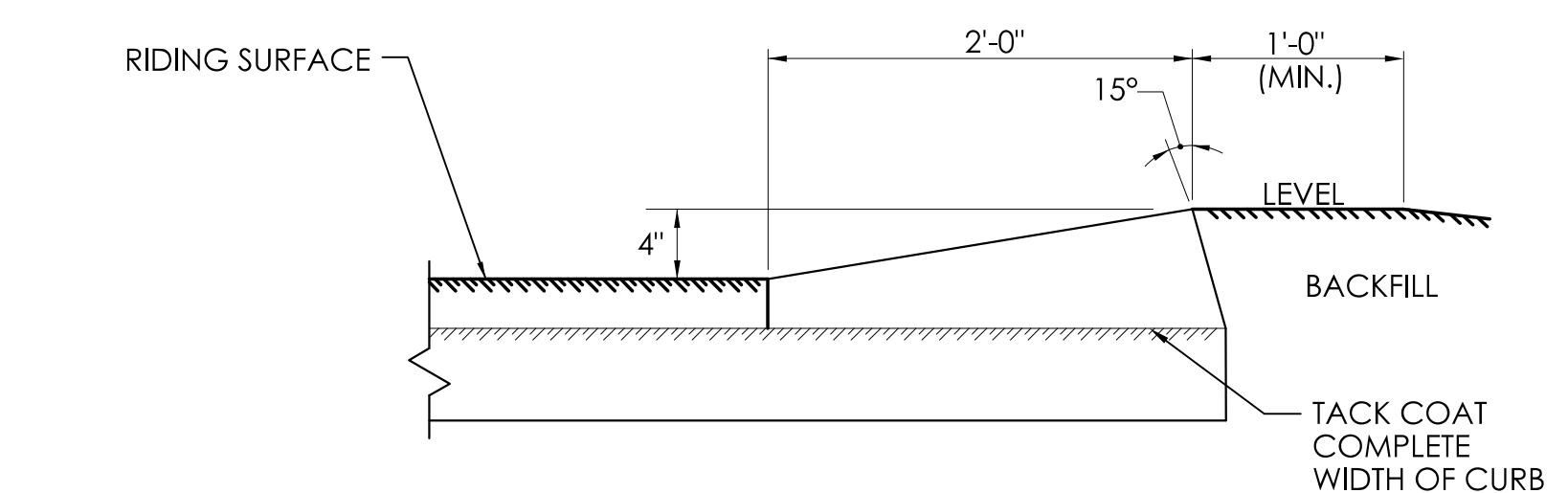
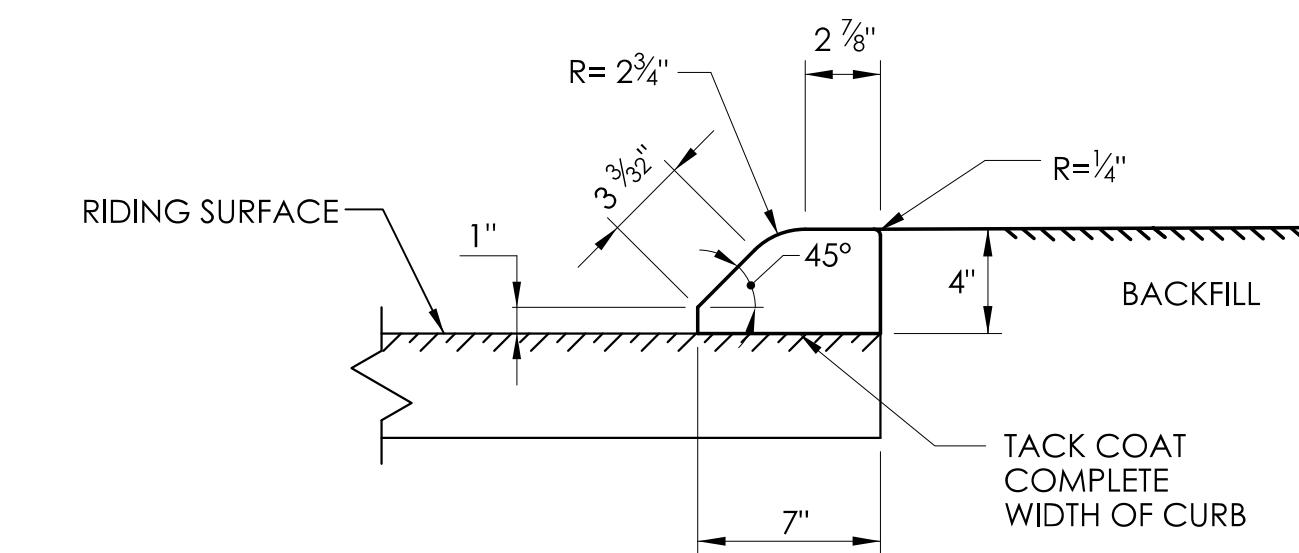
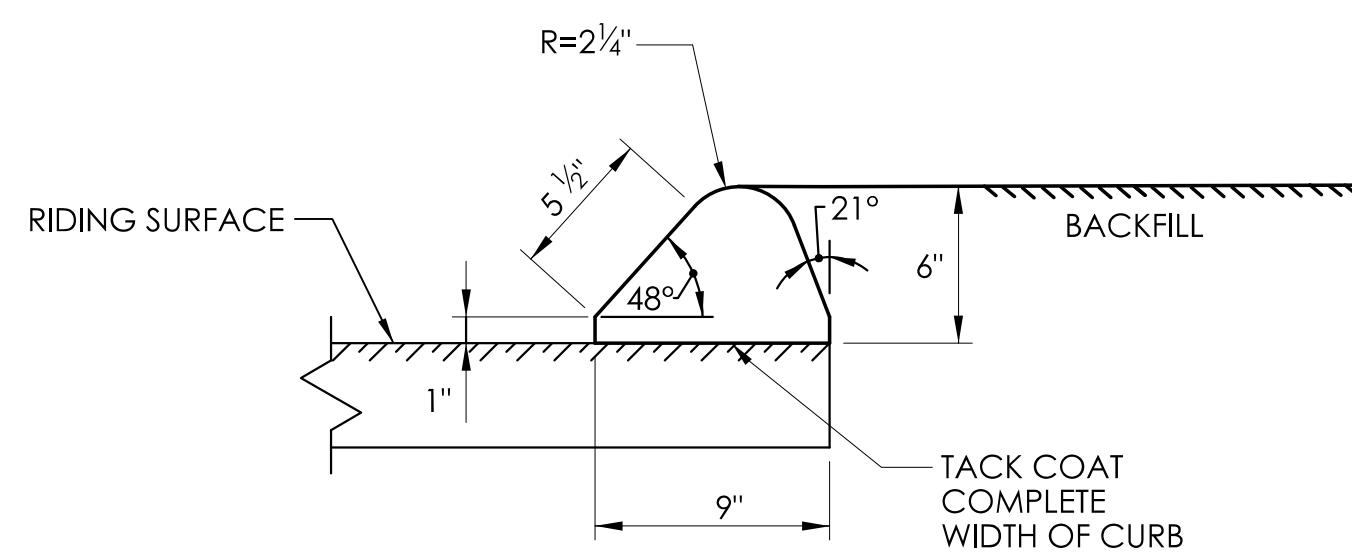
BITUMINOUS CONCRETE LIP CURBING
(6" HIGH)

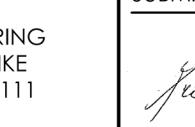
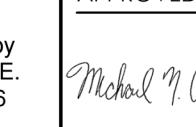


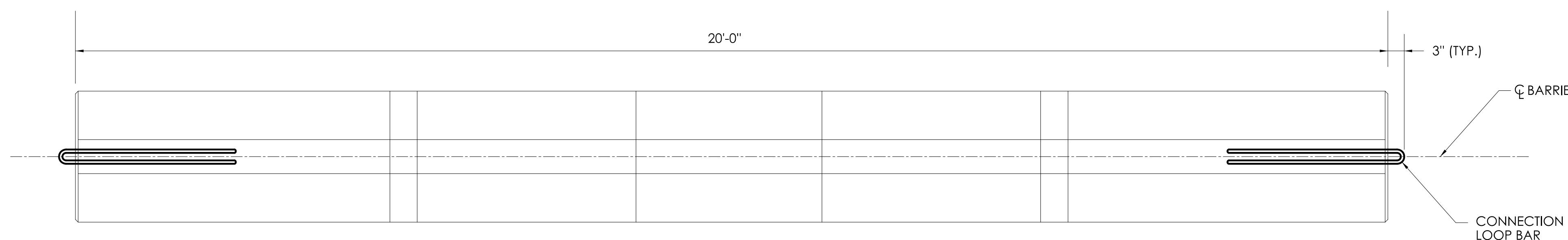
BITUMINOUS CONCRETE PARK CURBING
(4" HIGH)



BITUMINOUS CONCRETE BERM CURBING
(4" HIGH)



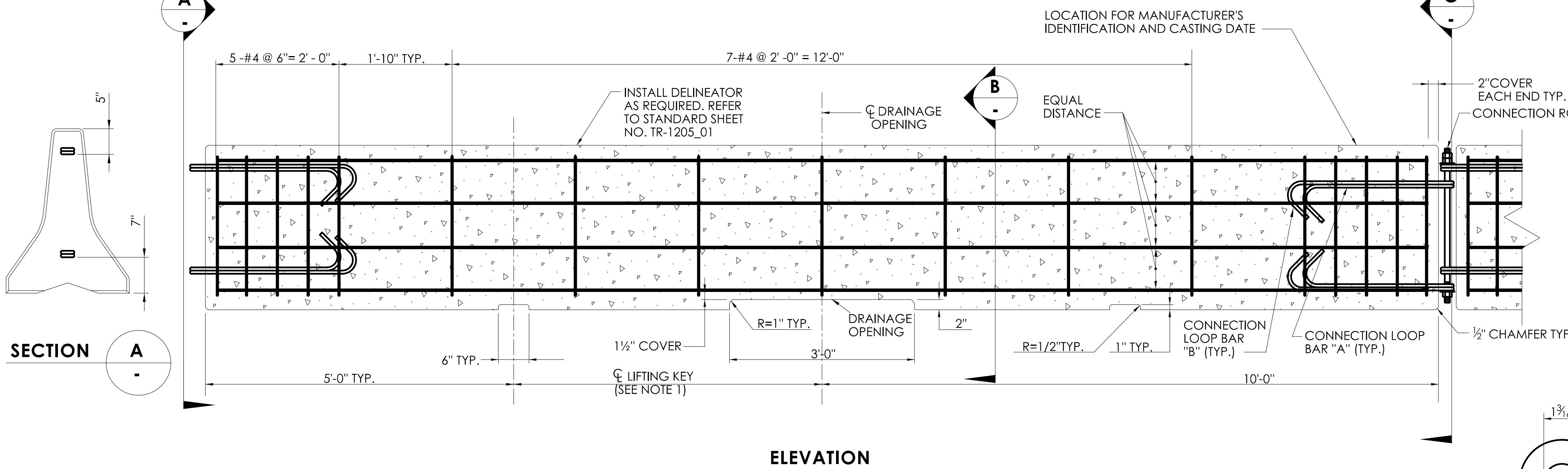
	NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.16 14:00:18-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.21 13:16:01-05'00'	 CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: BITUMINOUS CONCRETE CURBING	STANDARD SHEET NO.: HW-815_01
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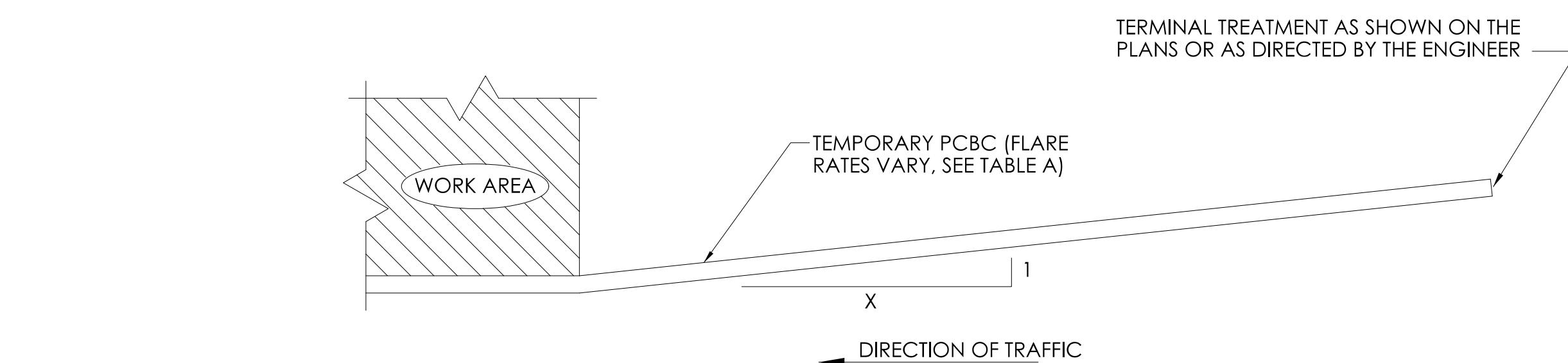
GENERAL NOTES:

1. ALTERNATE DESIGNS FOR LIFTING KEYS, HOLES OR OTHER HANDLING DEVICES MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
2. EXPECTED PERMANENT DYNAMIC DEFLECTION IS 3'-6" BASED ON TL-3 CRASH TESTS WITH 240' OF TPCBC.

PLAN



ELEVATION



PLAN - TYPICAL INSTALLATION

LOCATION FOR MANUFACTURER'S
IDENTIFICATION AND CASTING DATE

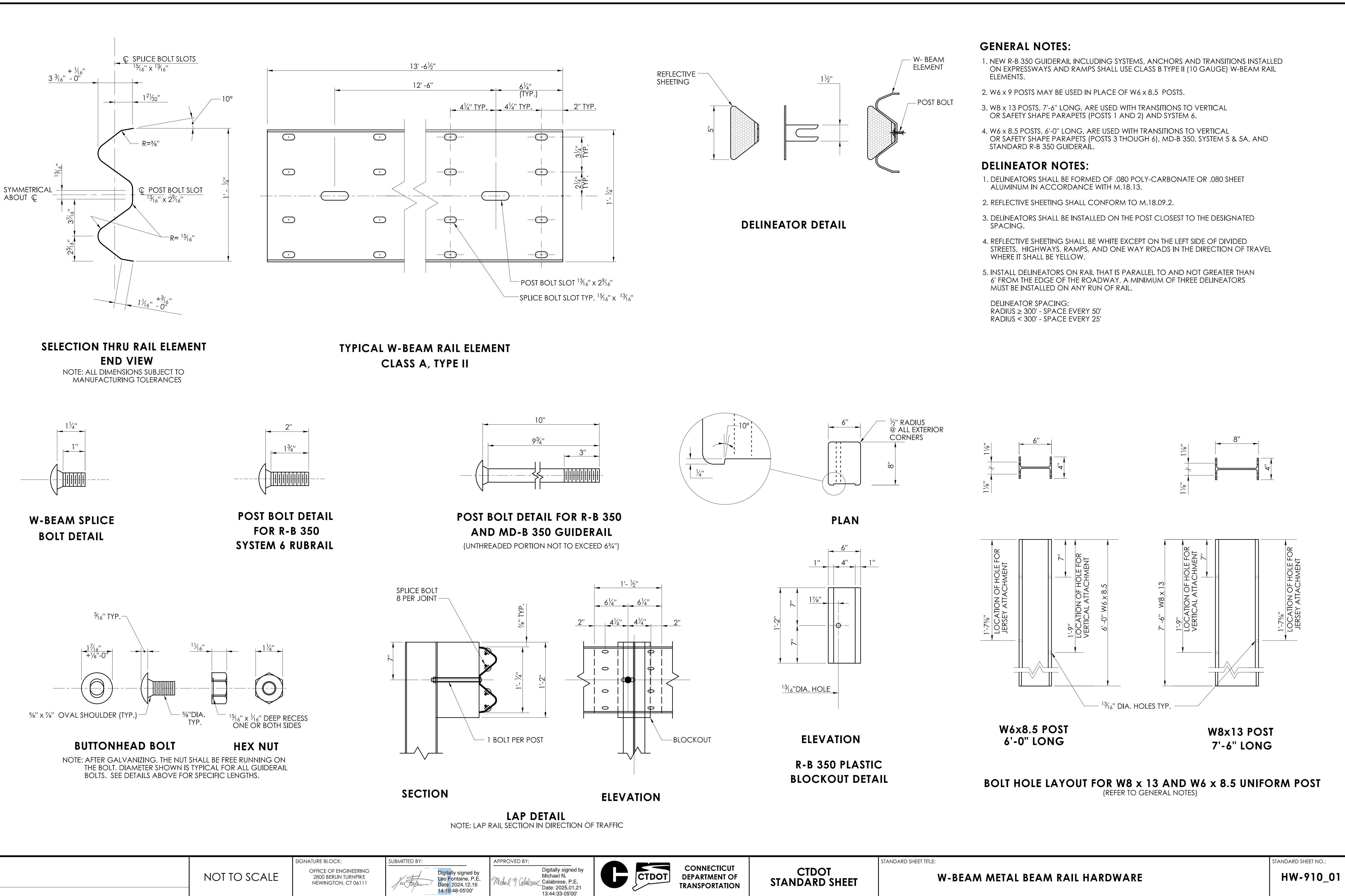
EQUAL DISTANCE

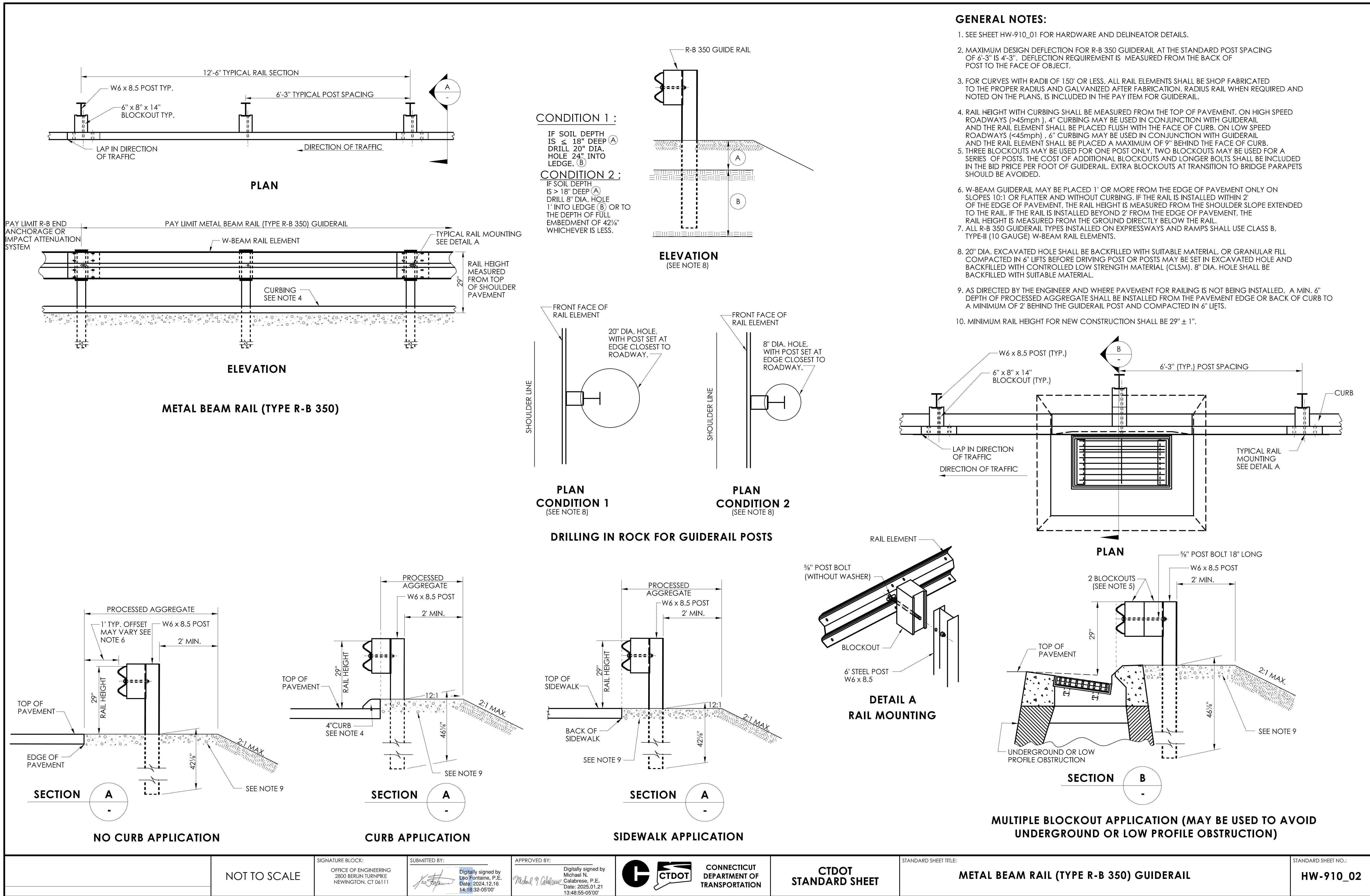
2' COVER
EACH END TYP.

CONNECTION ROD

1 1/2" COVER

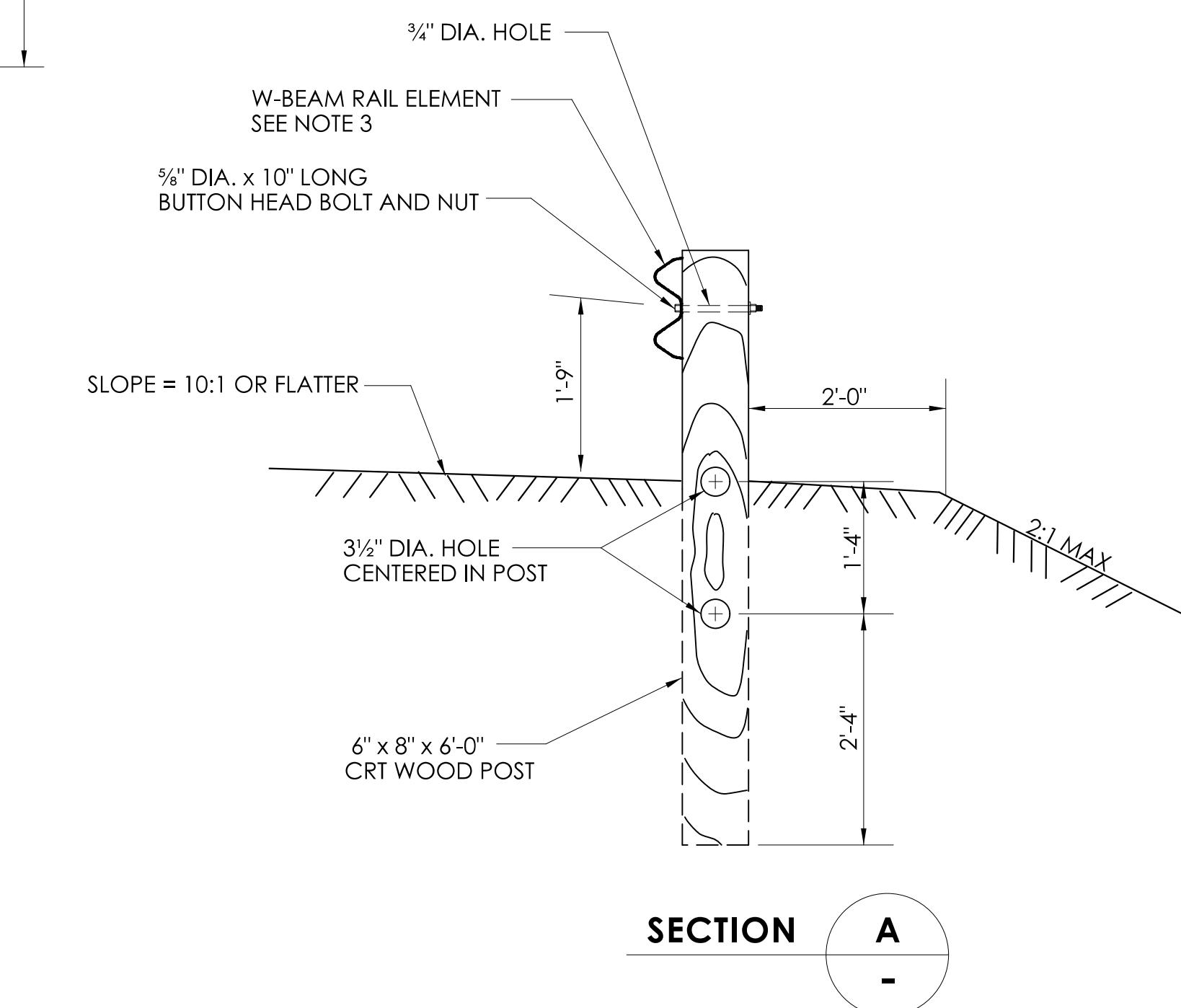
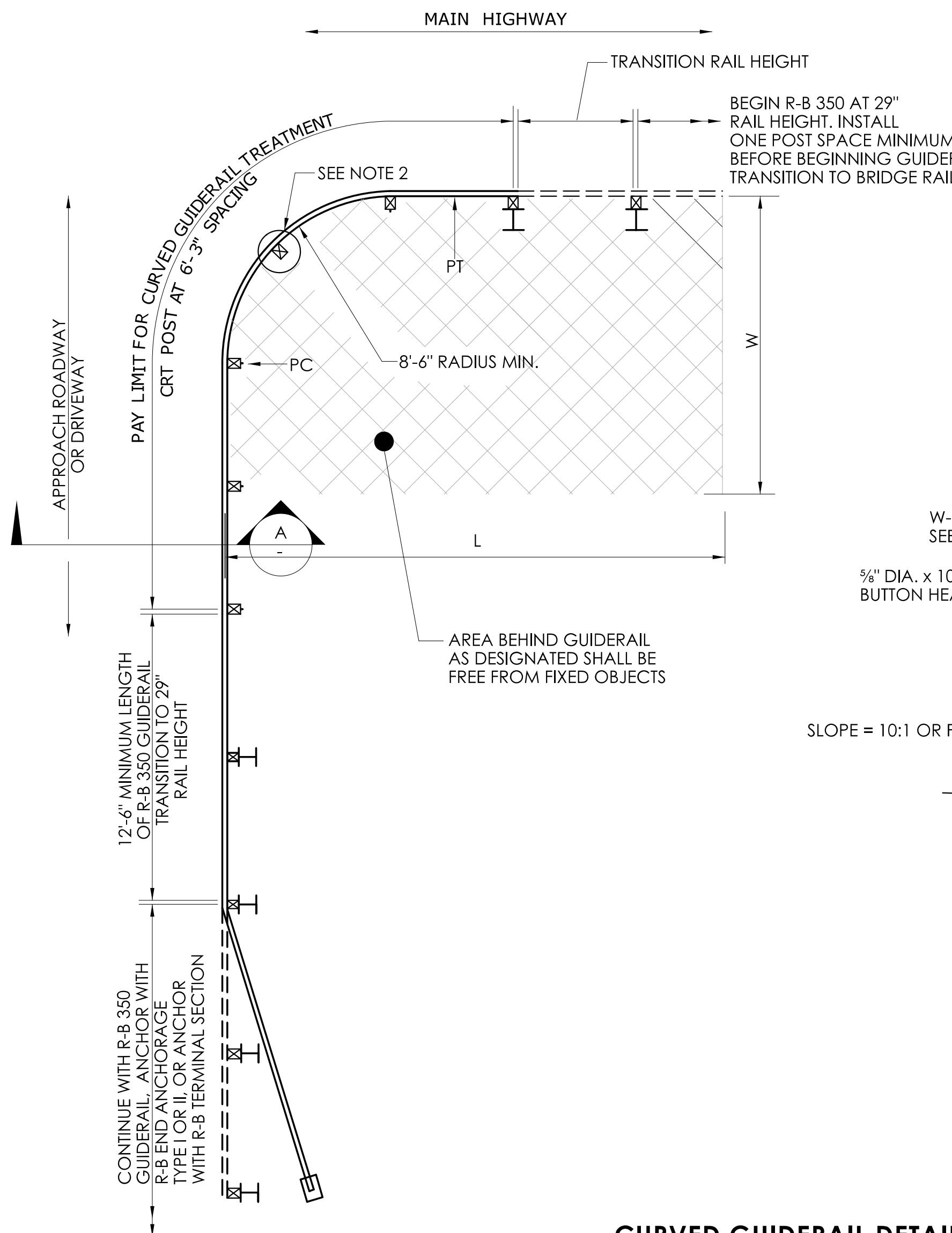
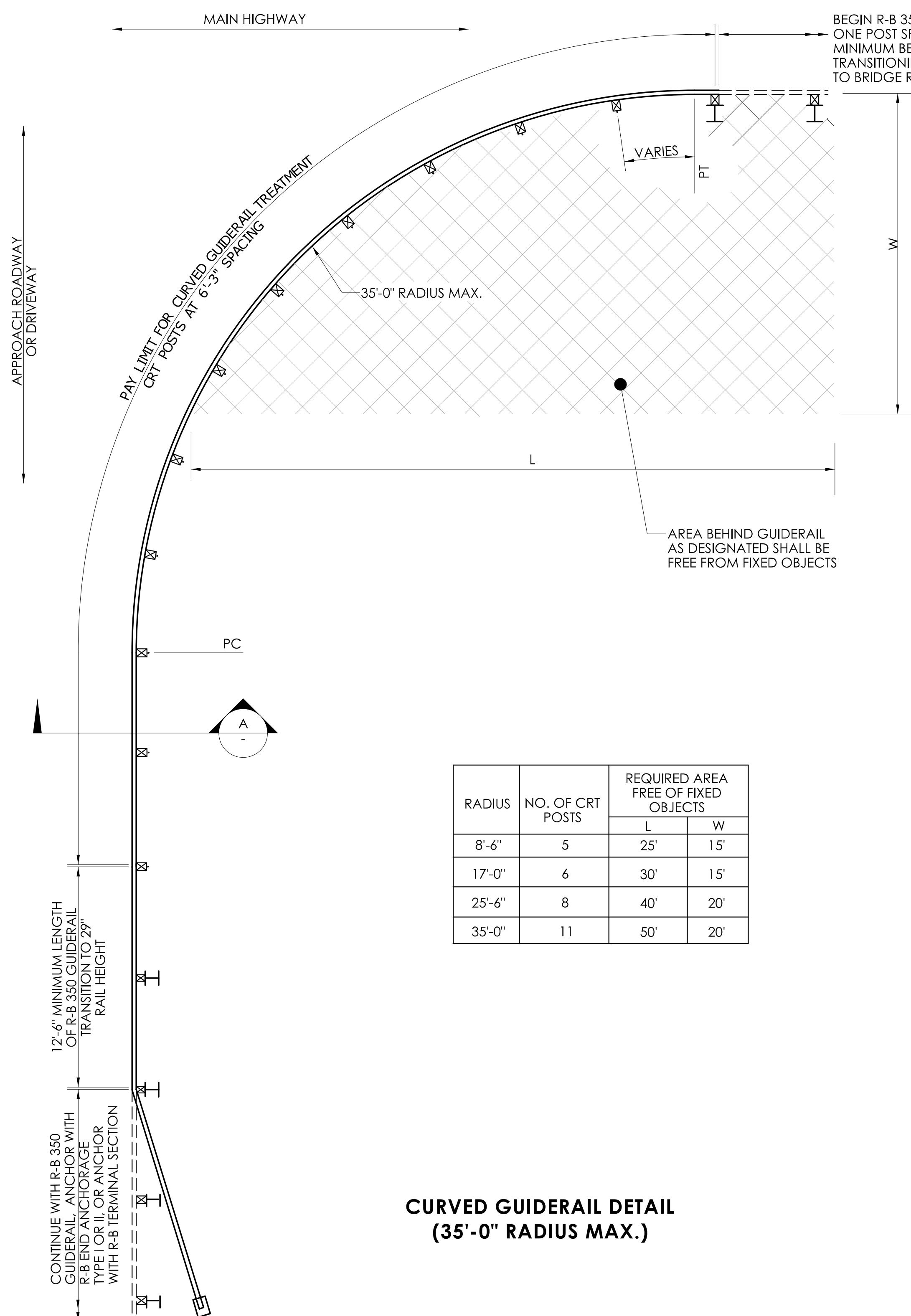
1 1/

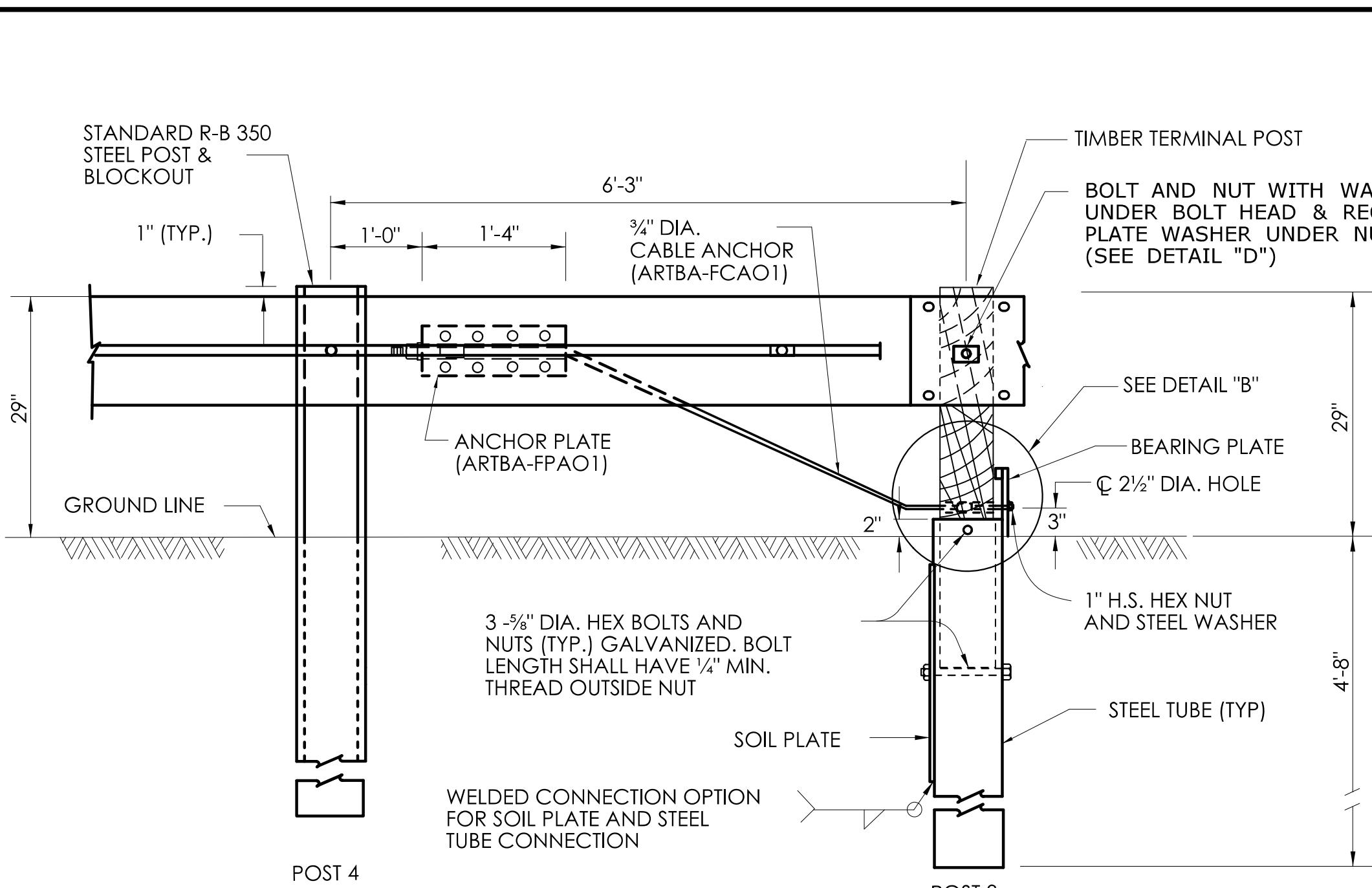




GENERAL NOTES:

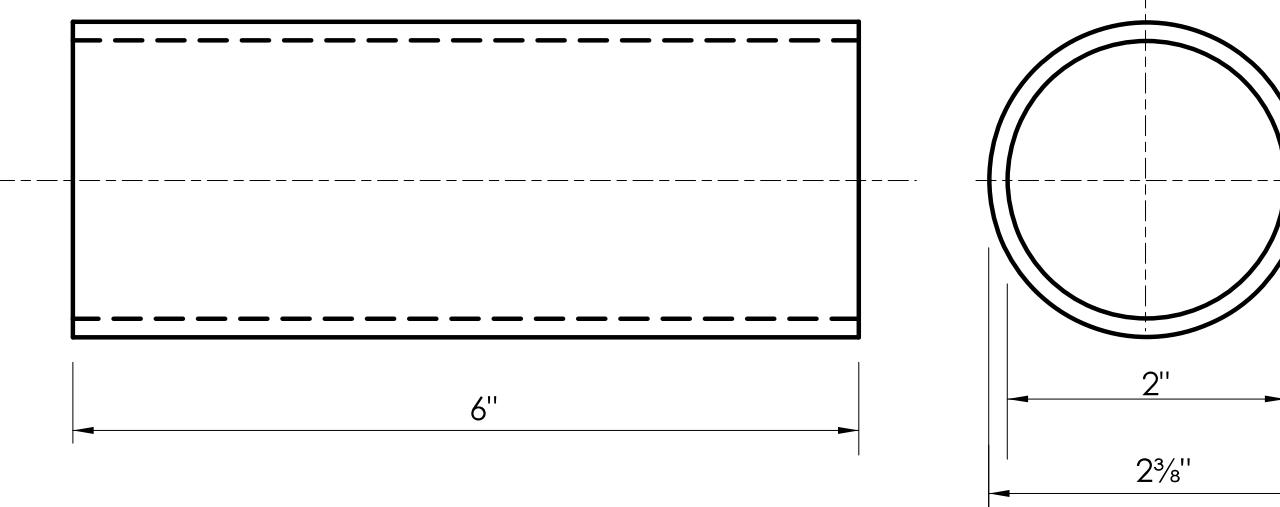
1. NO WASHERS ARE USED ON THE $\frac{5}{8}$ " DIA. BUTTON HEAD BOLTS CONNECTING THE RAIL TO THE CONTROLLED RELEASING TERMINAL (CRT) POSTS.
2. THE RAIL IS NOT BOLTED TO THE CRT POST AT THE CENTER OF THE NOSE AS SHOWN FOR THE 8'-6" RADIUS CURVED GUiderail TREATMENT ONLY.
3. THE CURVED GUiderail SECTION 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 $\frac{3}{4}$ " RAIL HEIGHT THROUGH RADIUS.





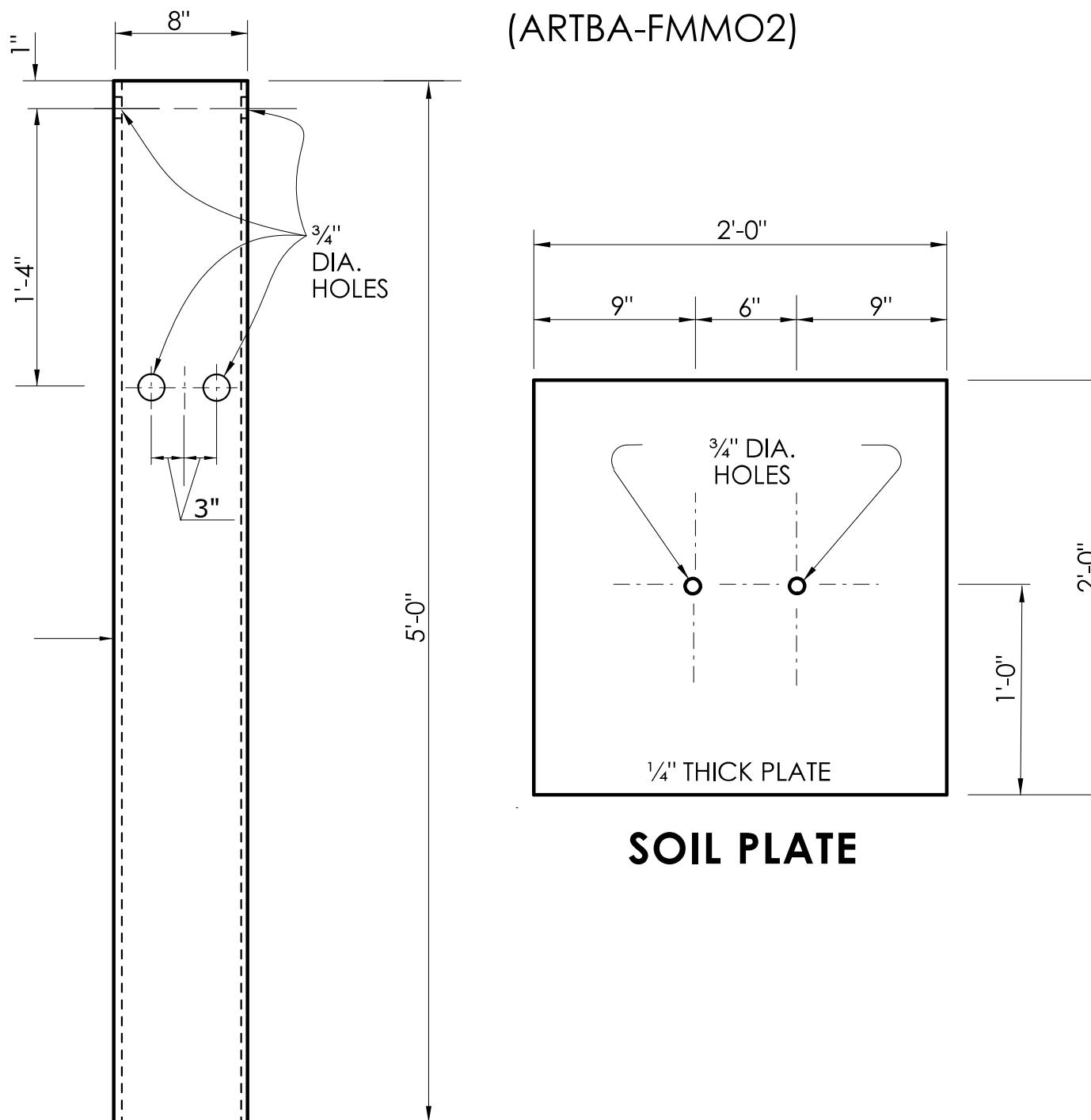
DETAIL A

CABLE ANCHORAGE ASSEMBLY

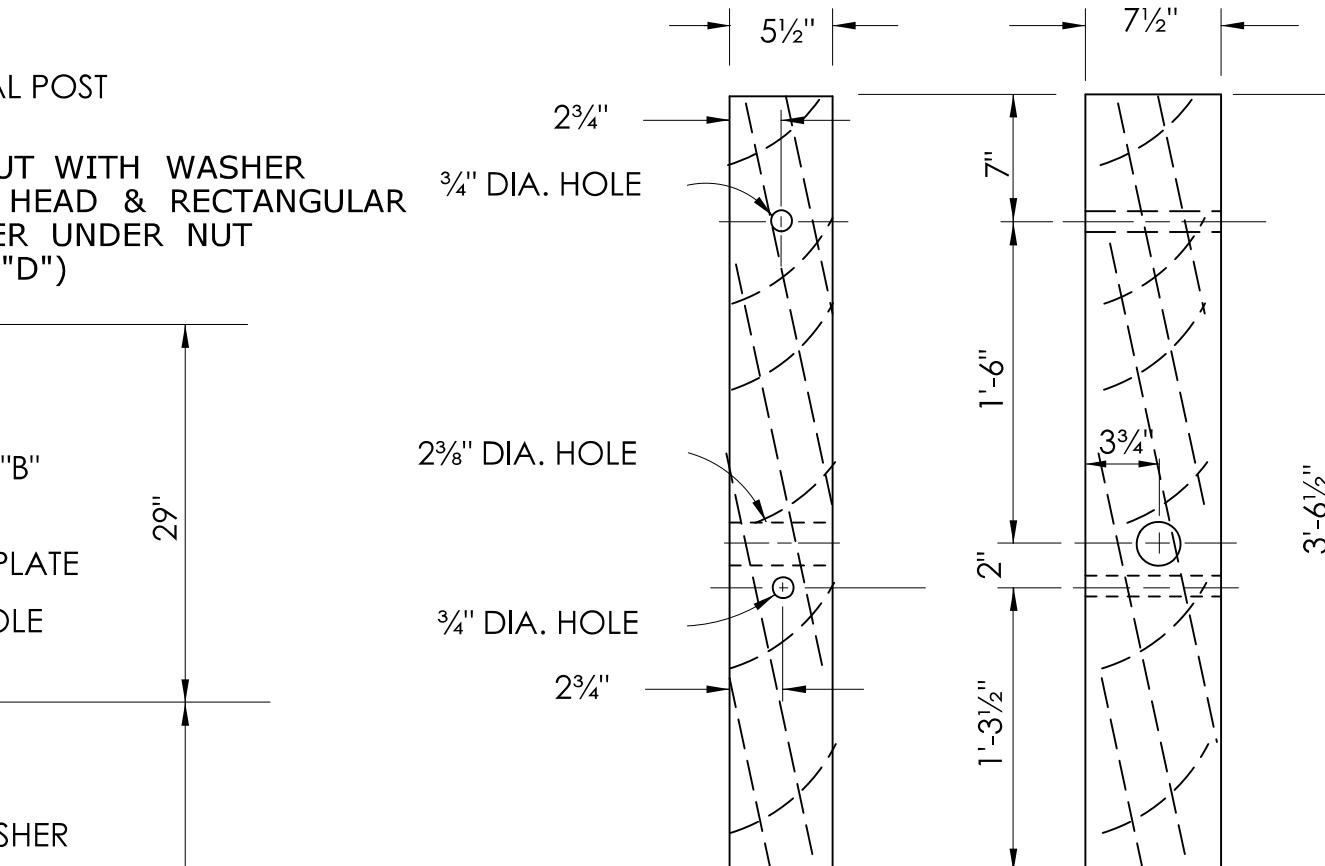


BREAKAWAY TERMINAL POST SLEEVE

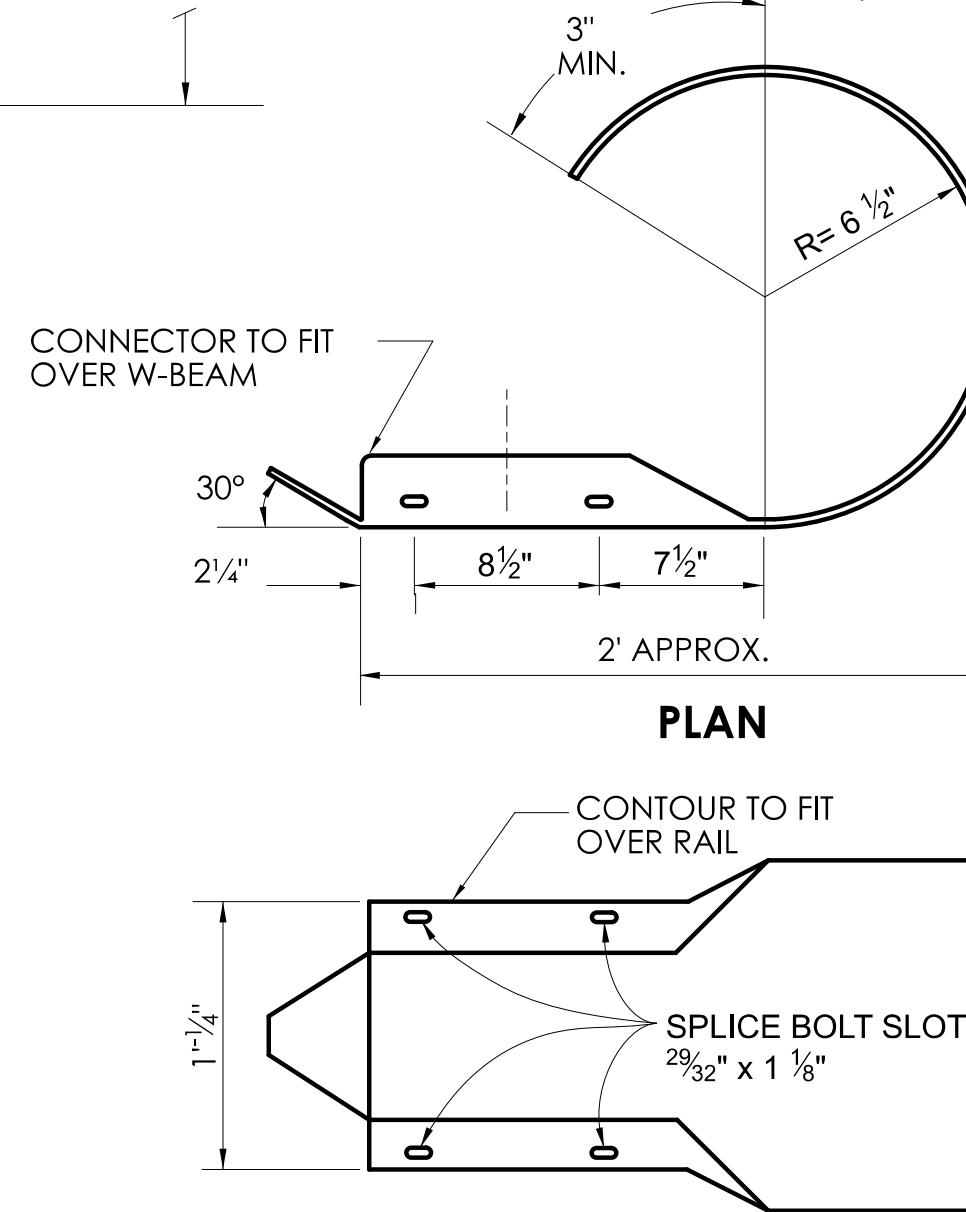
(ARTBA-FMM02)



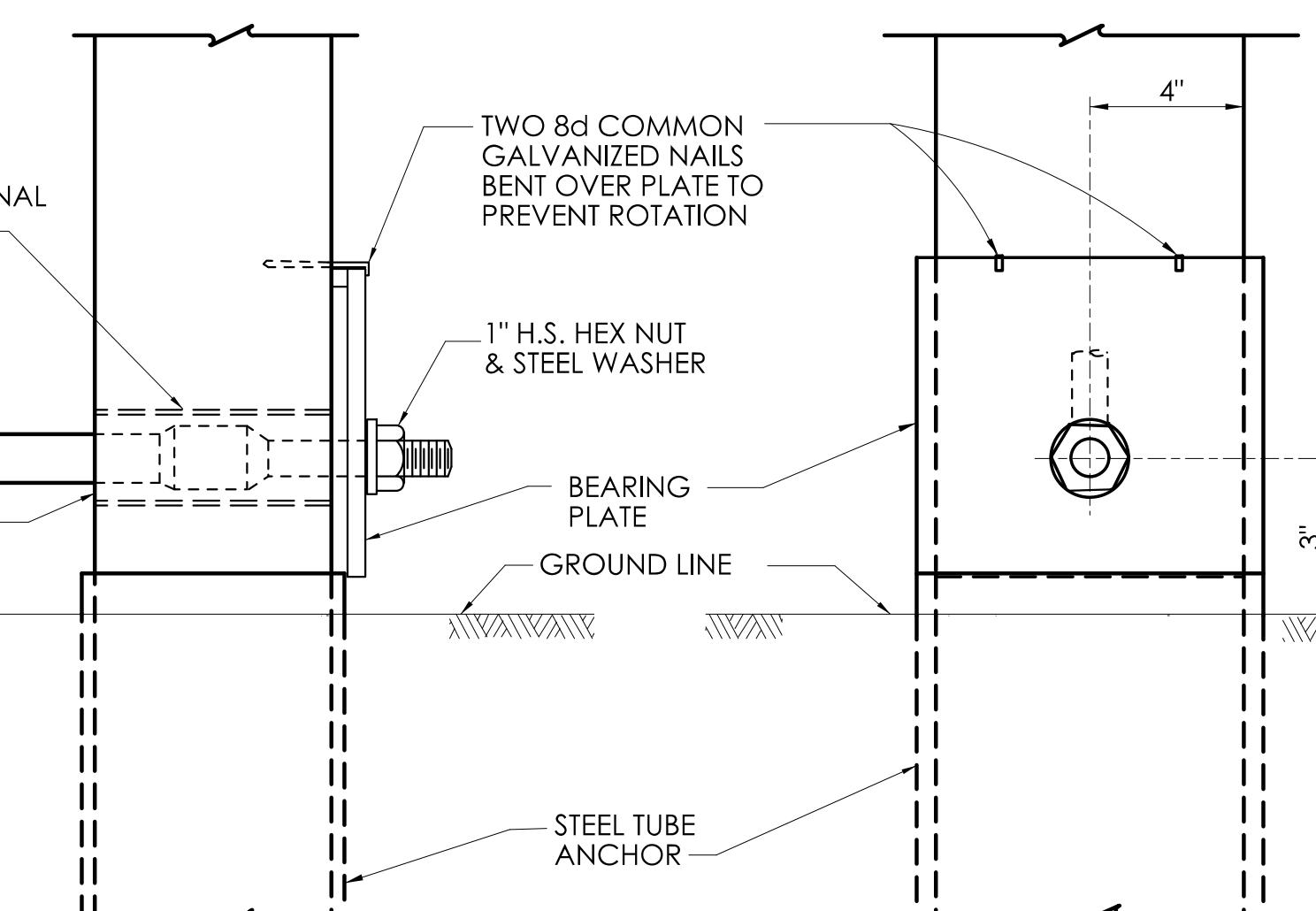
STEEL TUBE



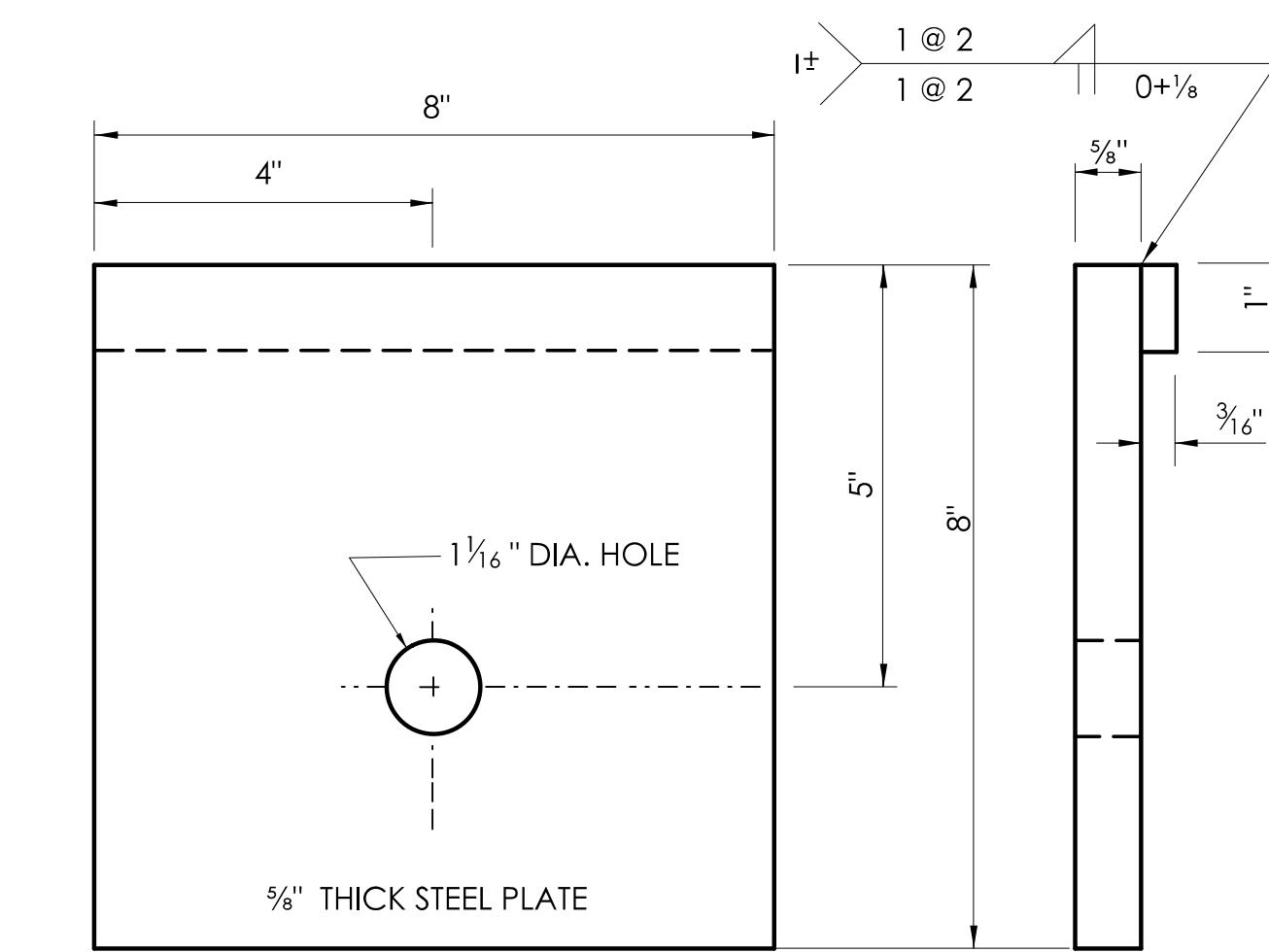
DETAIL C
TIMBER TERMINAL POS
(ARTBA-PDFO1)
(SEE NOTE 2)



ROUNDED W-BEAM END SECTION

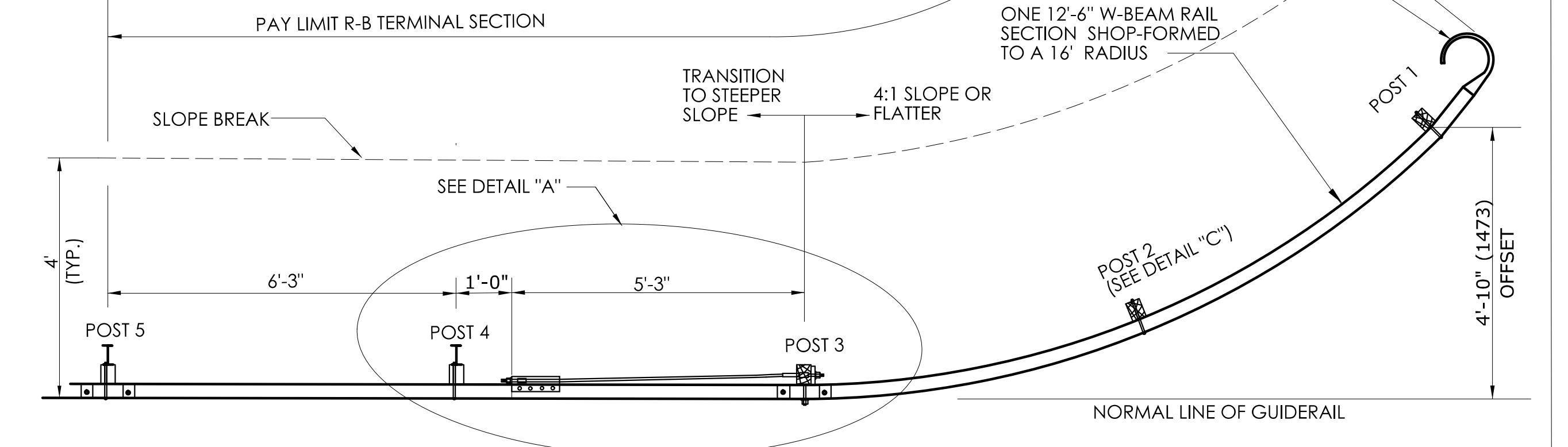


DETAIL B

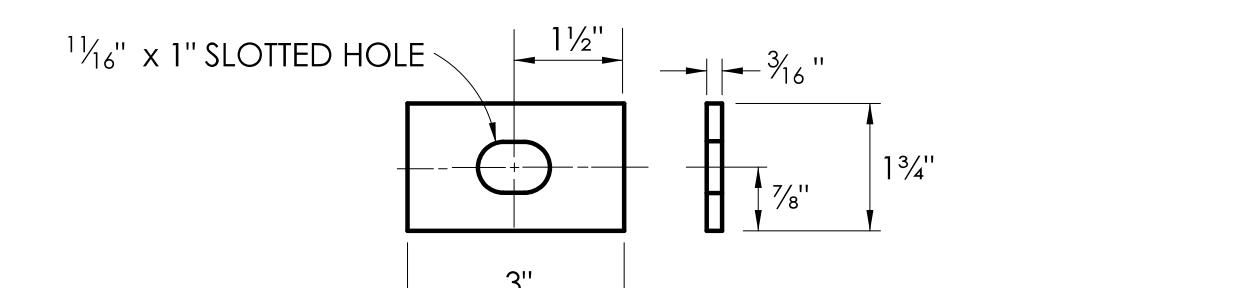


BEARING PLATE

(ARTBA-FPBO1)

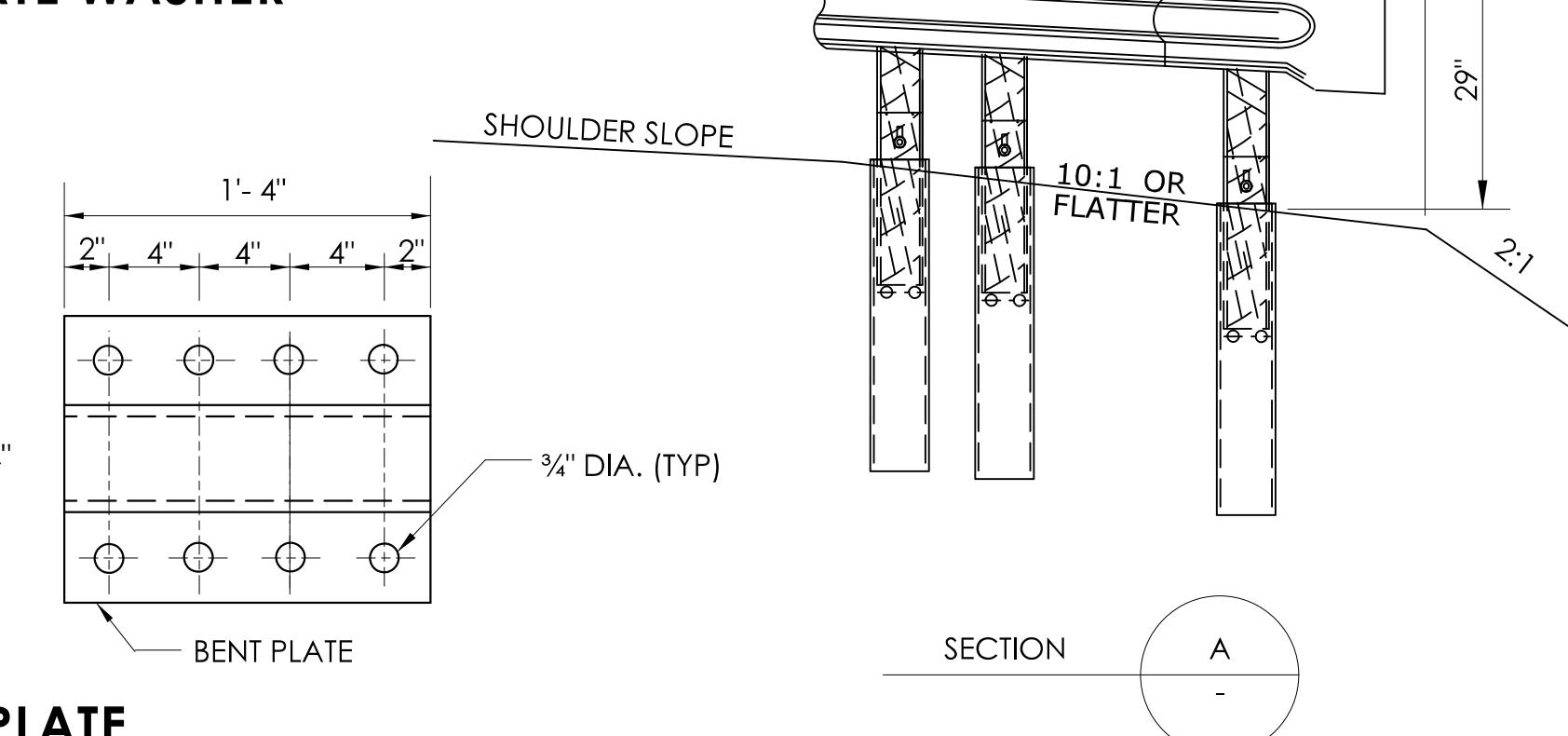


APPROACH END (TRAILING END NOT SHOWN)



DETAIL D

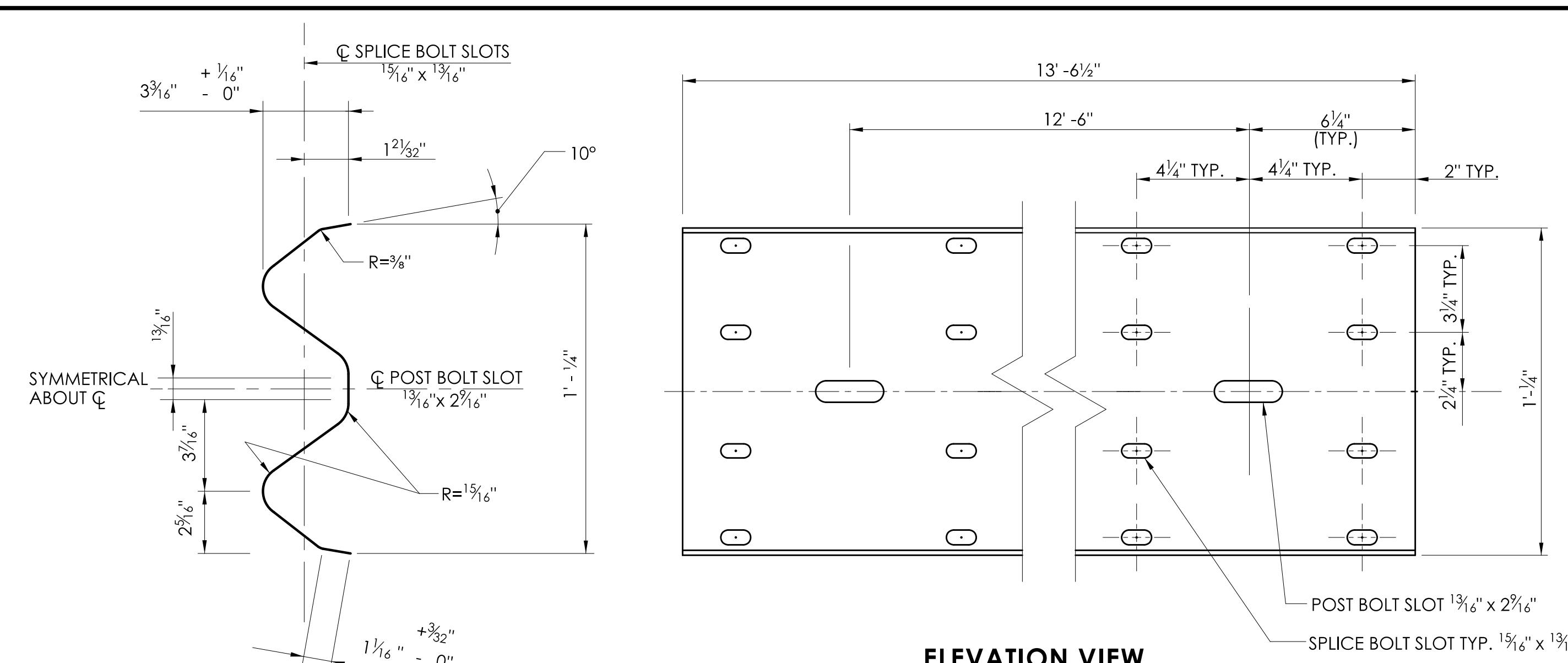
RECTANGULAR PLATE WASHER



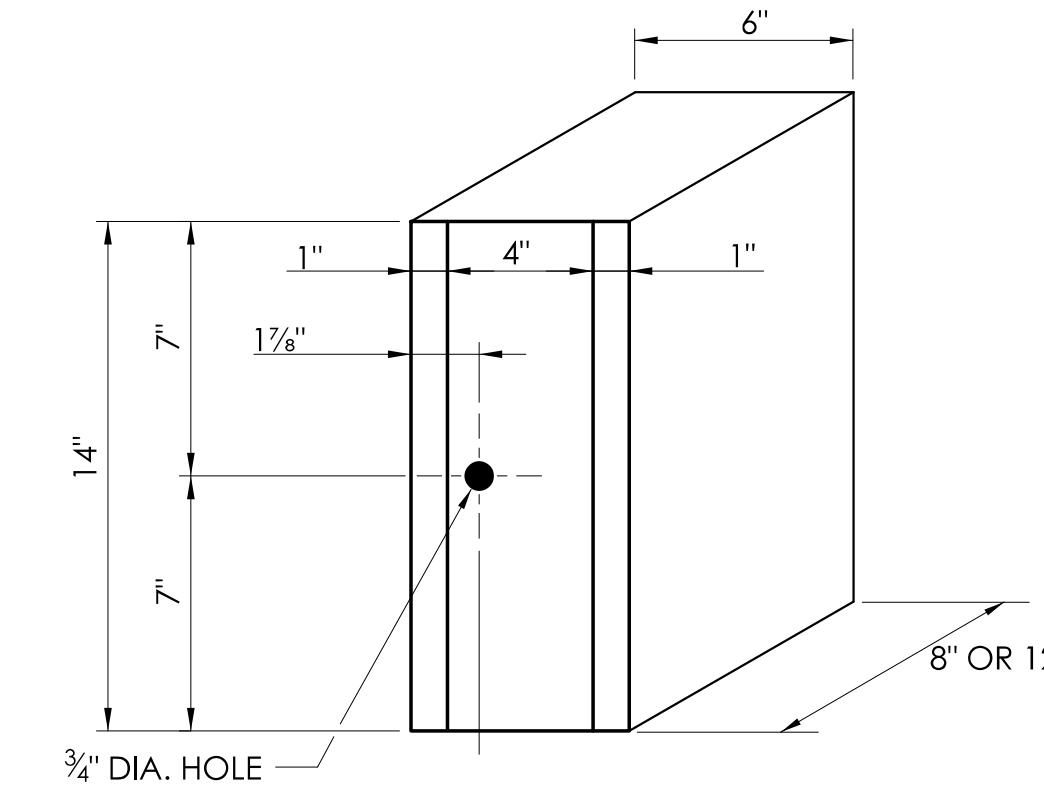
ANCHOR PLATE

(ARTBA-FPAO1)

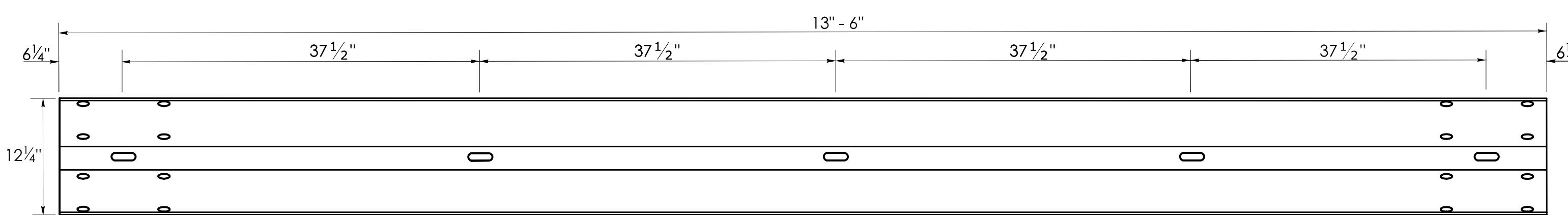




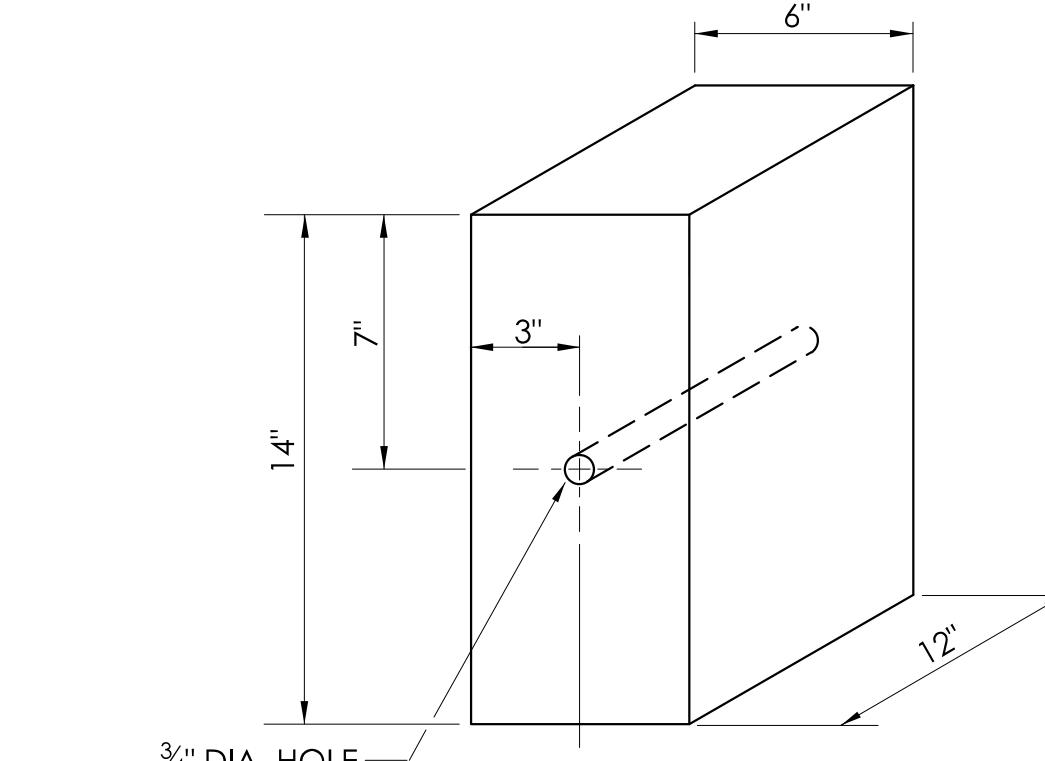
SECTION VIEW



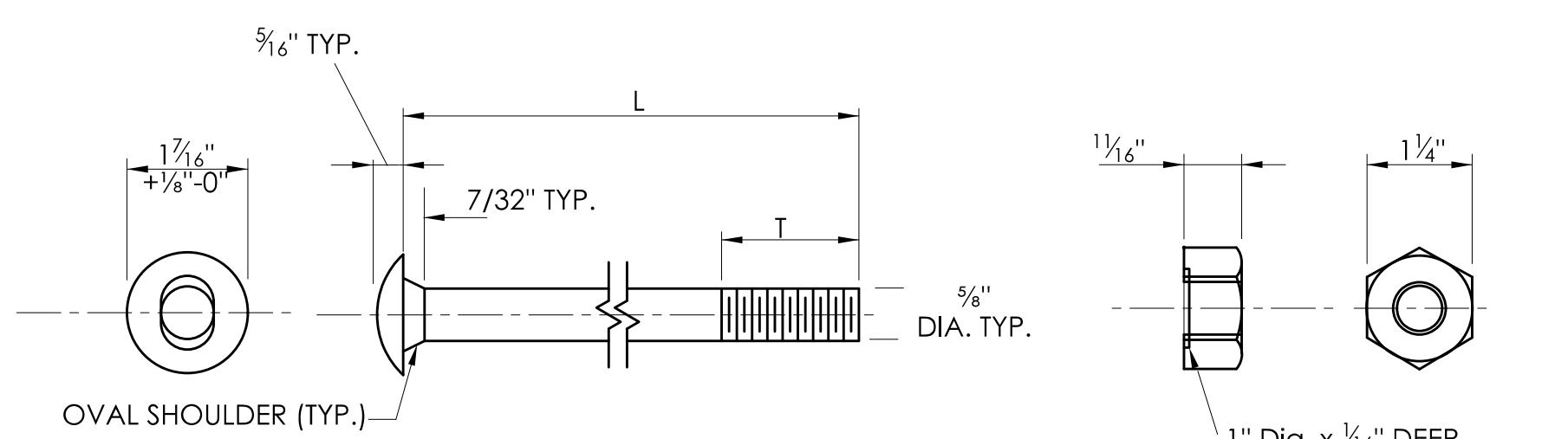
8" or 12" PLASTIC BLOCKOUT
NOMINAL DIMENSIONS



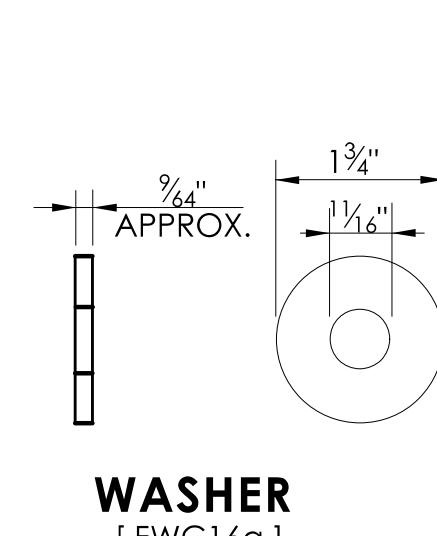
TYPICAL W-BEAM RAIL ELEMENT



12" WOOD BLOCKOUT



BUTTONHEAD BOLT

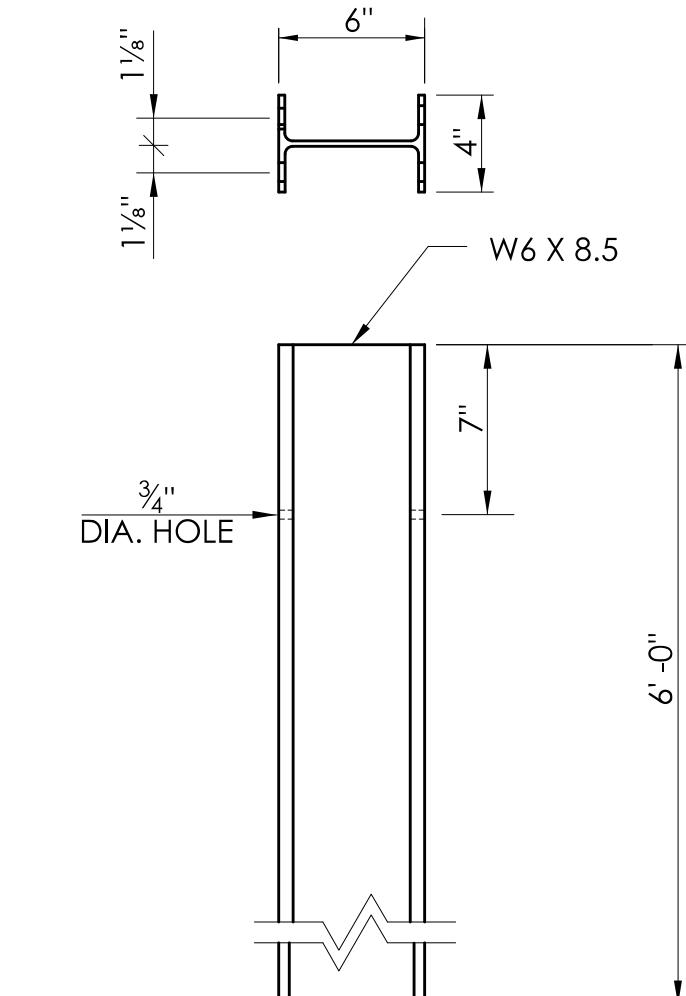


WASHER
[FWC16a]

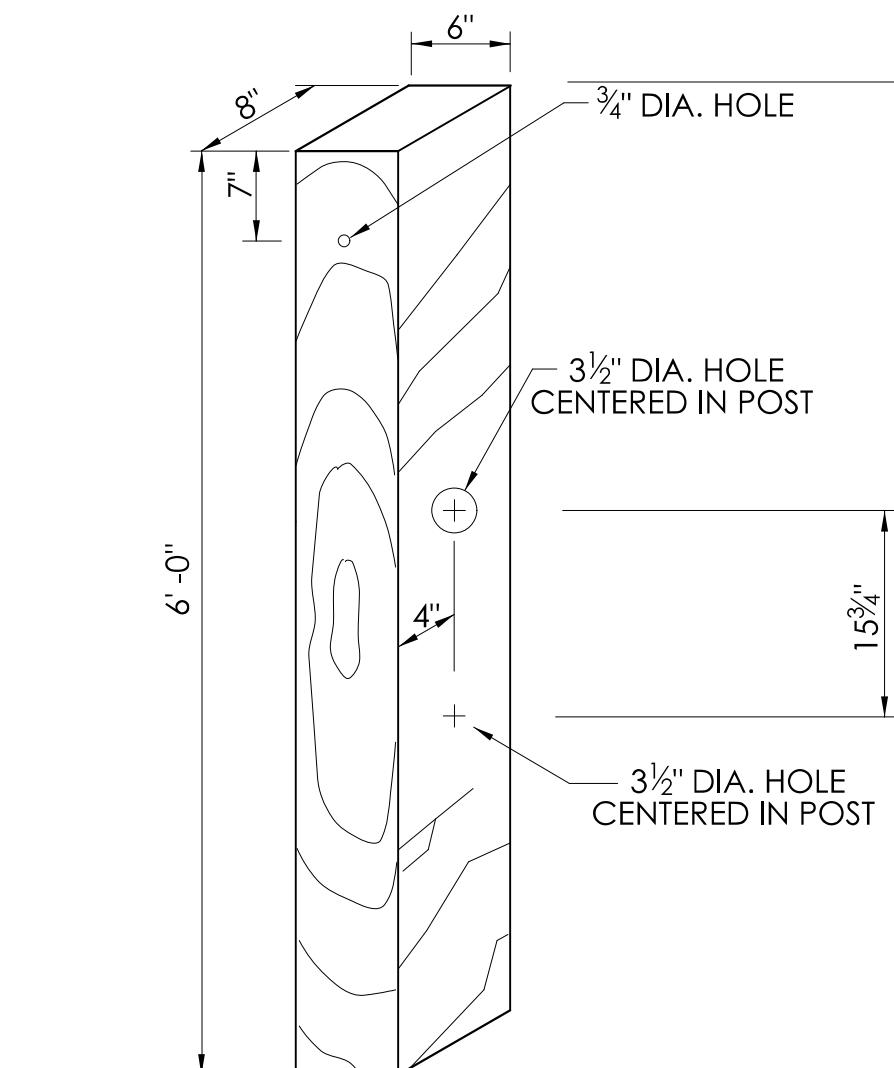
DESIGNATOR	L	T	INTENDED USE
FBB01	1 1/4"	1 1/8"	RAIL SPLICE BOLTS
FBB02	2"	1 3/4"	RUB RAIL BOLTS
FBB03	10"	4"	POST BOLTS (8" BLOCK OUTS)
FBB04	14"	4"	POST BOLTS (12" BLOCK OUTS)
	18"	4"	POST BOLTS (2-8" BLOCK OUTS)
	22"	4"	POST BOLTS (CRT WOOD POST SYSTEM)

5/8" BUTTON HEAD BOLT(S) AND RECESSED NUT(S)

NOTE: AFTER GALVANIZING, THE NUT SHALL BE FREE RUNNING
ON THE BOLT. DIAMETER SHOWN IS TYPICAL FOR ALL
GUIDERAIL BOLTS. SEE DETAILS ABOVE FOR SPECIFIC
LENGTHS.



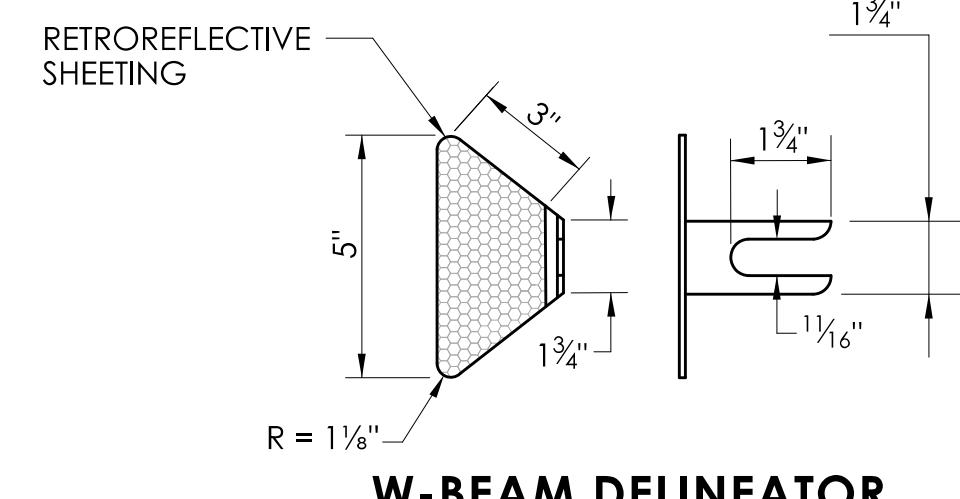
STEEL POST
6' - 0" LONG



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

GENERAL NOTES:

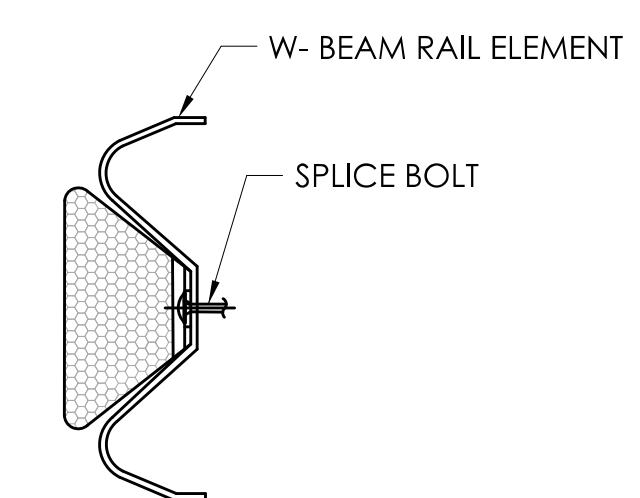
1. W6 x 9 POSTS MAY BE USED IN PLACE OF W6 x 8.5 POSTS.
2. W-BEAM GUIDERAIL SHALL USE CLASS A (12 GAUGE), TYPE II W-BEAM RAIL ELEMENTS.
3. SEVEN FOOT LONG STEEL POSTS (W6 X 8.5) ARE TO BE INSTALLED WHERE INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. ALL DIMENSIONS SUBJECT TO MANUFACTURING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



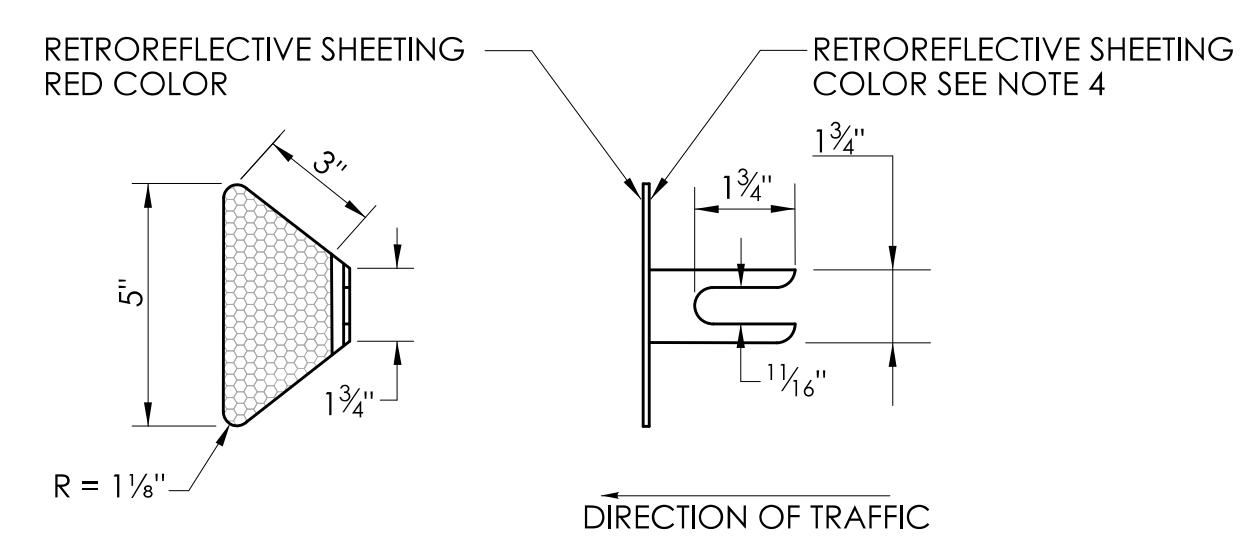
W-BEAM DELINEATOR

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.



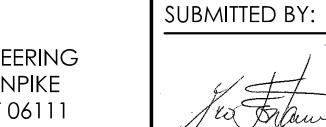
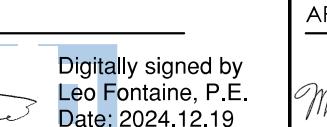
W-BEAM DELINEATOR
INSTALLATION



W-BEAM DOUBLE SIDED DELINEATOR
FOR HIGHWAY OFF RAMPS

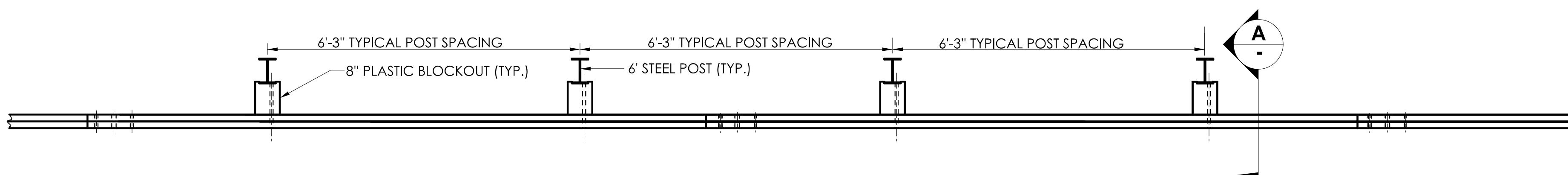
INSTALLATION NOTES:

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.

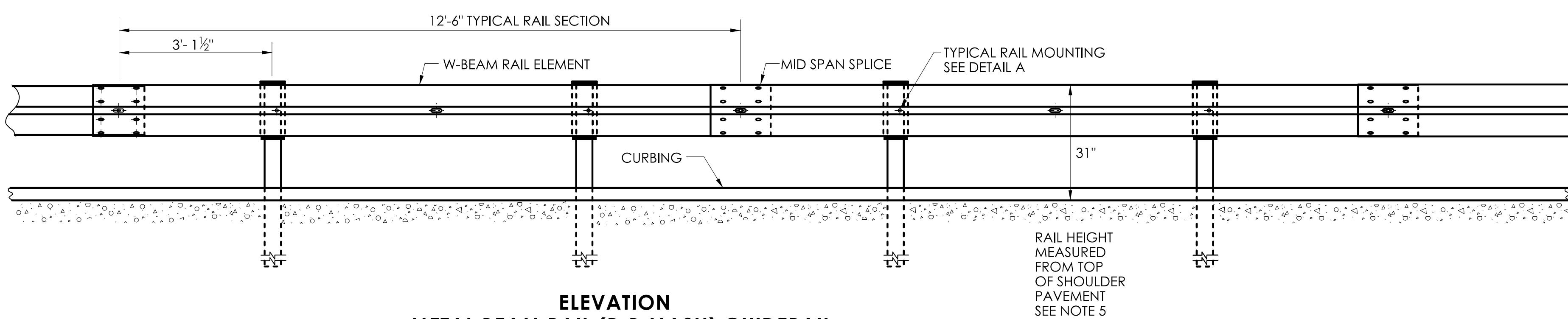
NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.19 14:56:01-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.29 12:30:53-05'00'	CONNECTICUT DEPARTMENT OF TRANSPORTATION 	STANDARD SHEET TITLE: MASH W-BEAM HARDWARE	STANDARD SHEET NO.: HW-910_20
PLOTTED DATE: 11/25/2024						

GENERAL NOTES:

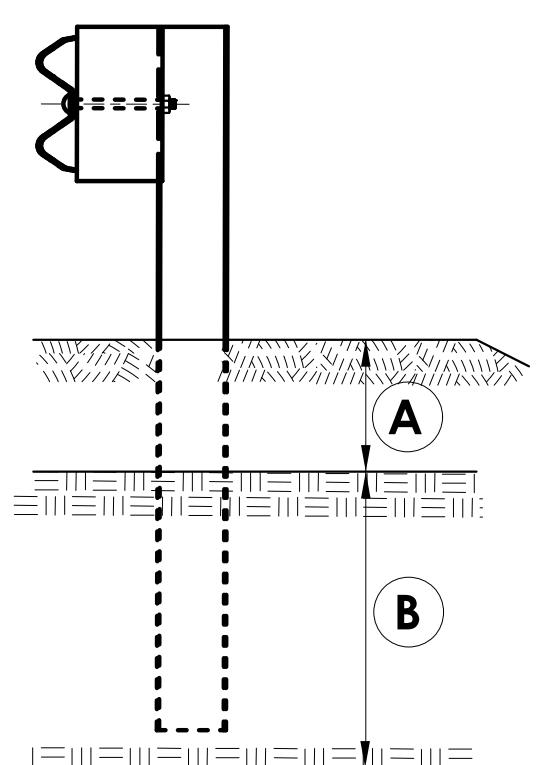
1. SEE SHEET HW-910_20 FOR MASH W-BEAM HARDWARE AND W-BEAM DELINEATOR DETAILS.
2. THREE BLOCKOUTS MAY BE USED FOR ONE POST ONLY. TWO BLOCKOUTS MAY BE USED FOR A SERIES OF POSTS. THE COST OF ADDITIONAL BLOCKOUTS AND LONGER BOLTS SHALL BE INCLUDED IN THE PRICE PER FOOT OF GUIDERAIL. EXTRA BLOCKOUTS AT 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 PLACED IN LOCATION(S) OF EXISTING VERTICAL PAVEMENT EDGE DROP OFF AS A LEVELING MATERIAL, FILLING IN DEPRESSED AREAS.



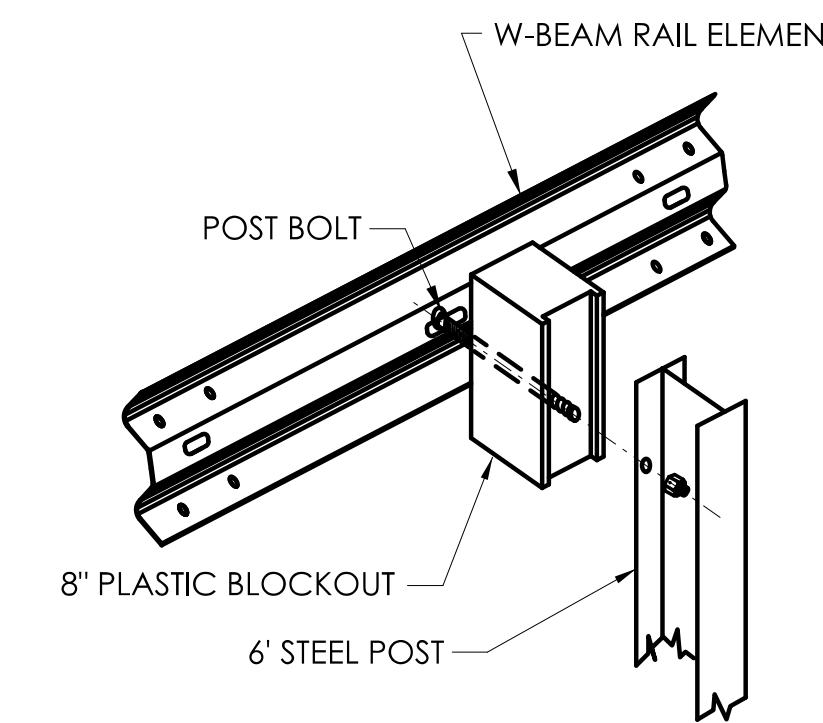
PLAN



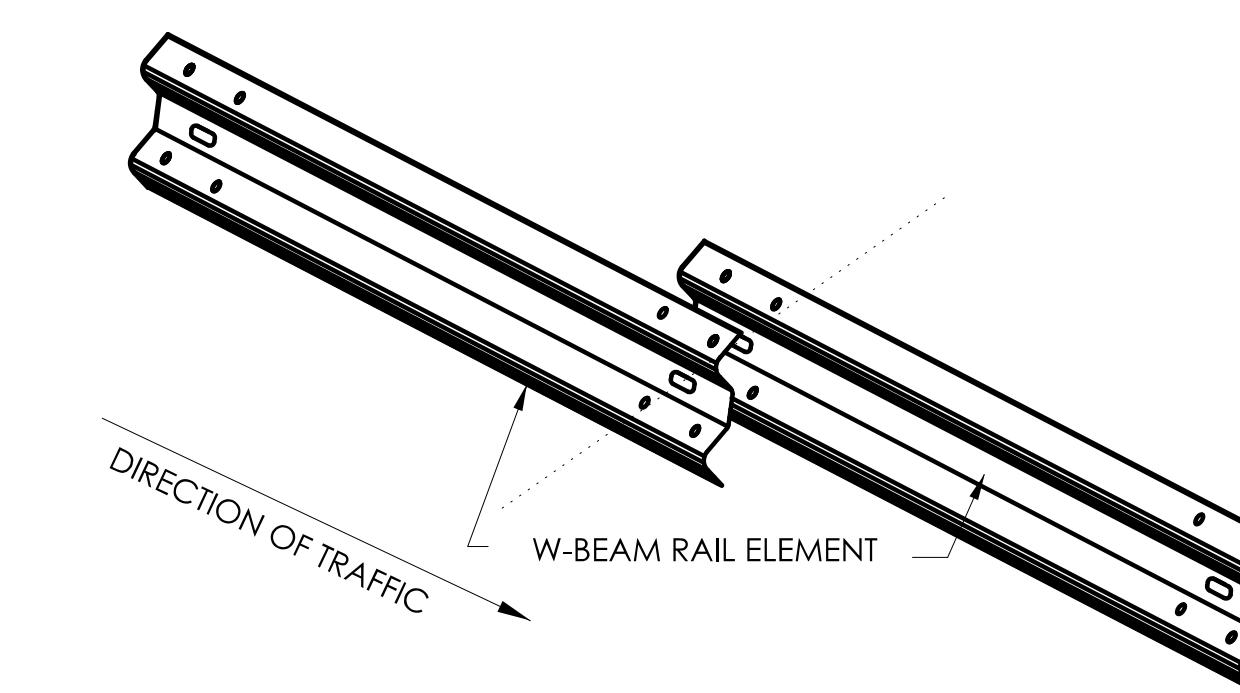
ELEVATION
METAL BEAM RAIL (R-B MASH) GUIDERAIL



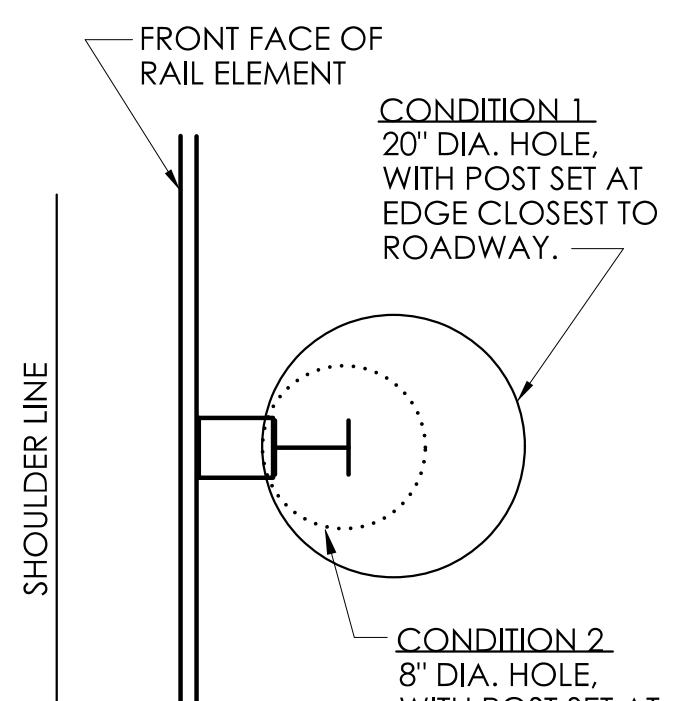
ELEVATION



DETAIL A
RAIL MOUNTING

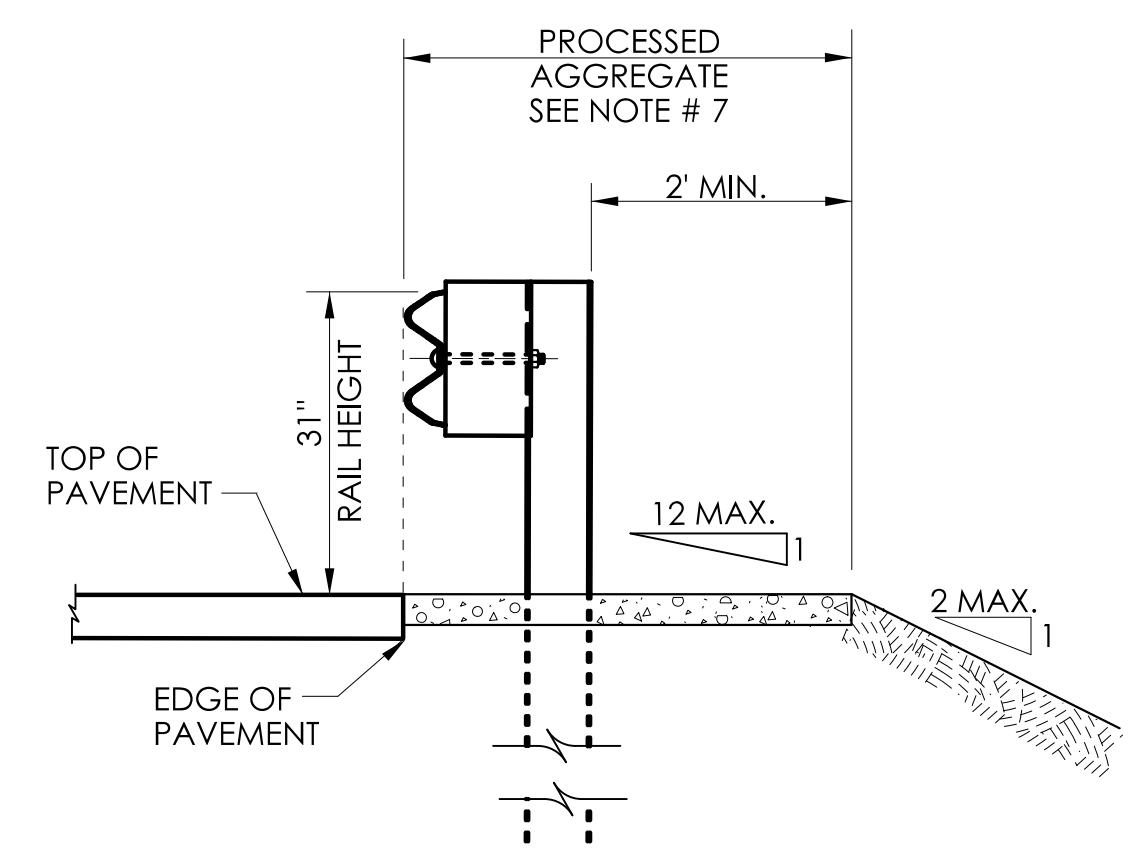


LAP W-BEAM RAIL SECTIONS
NOTE: EIGHT (8) SPLICE BOLTS PER JOINT



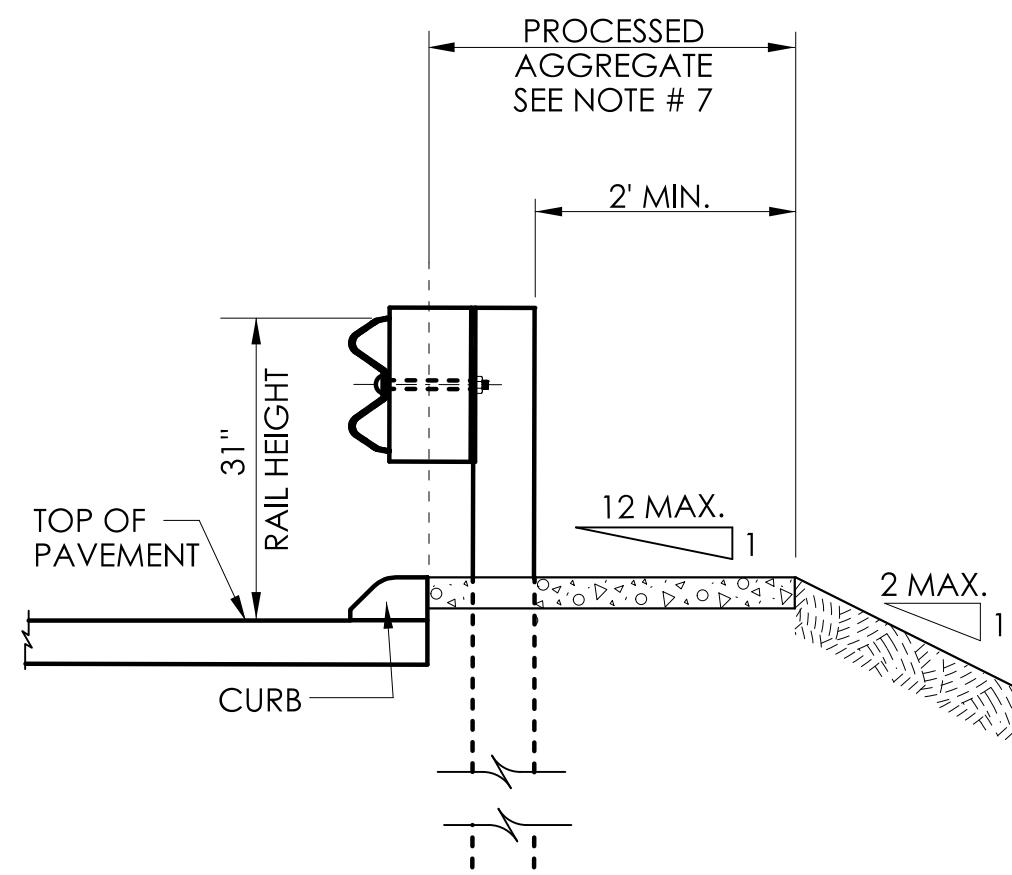
PLAN

GUIDERAIL POSTS IN ROCK



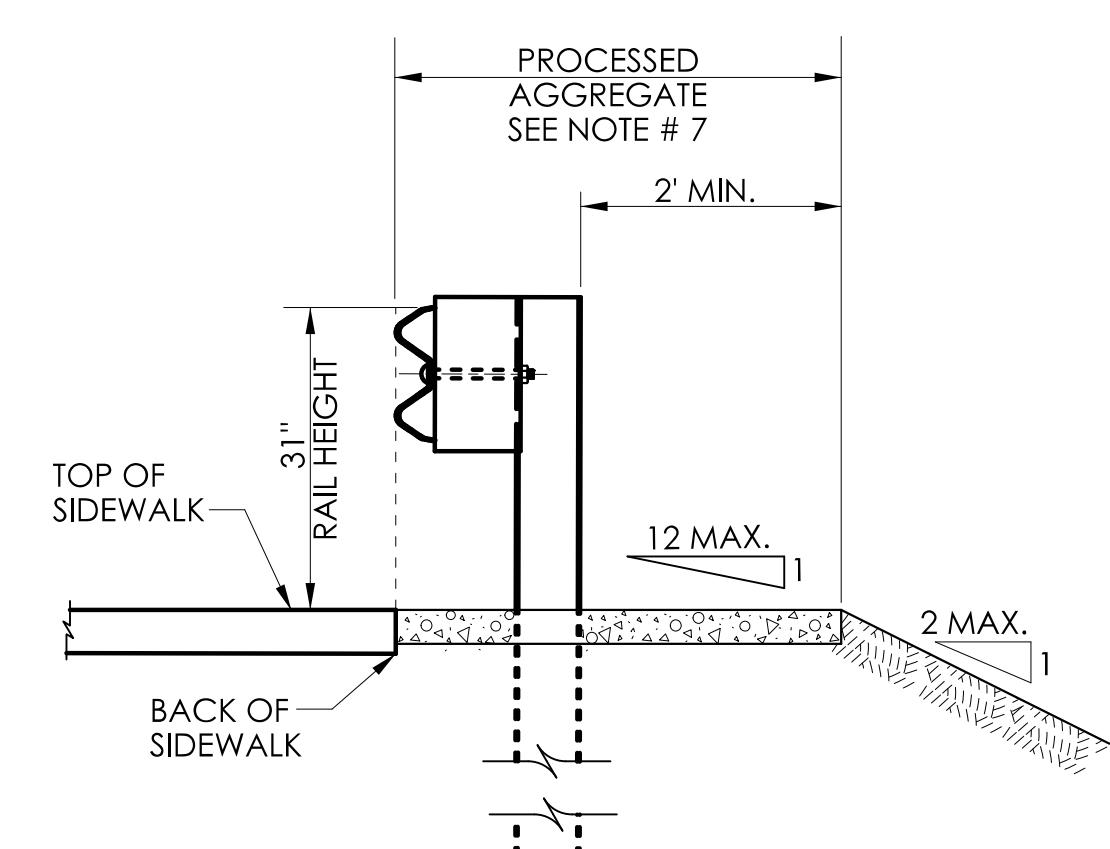
SECTION A

NO CURB APPLICATION



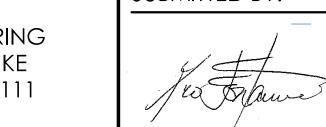
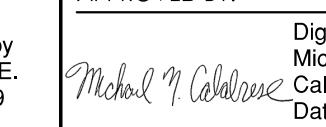
SECTION A

CURB APPLICATION



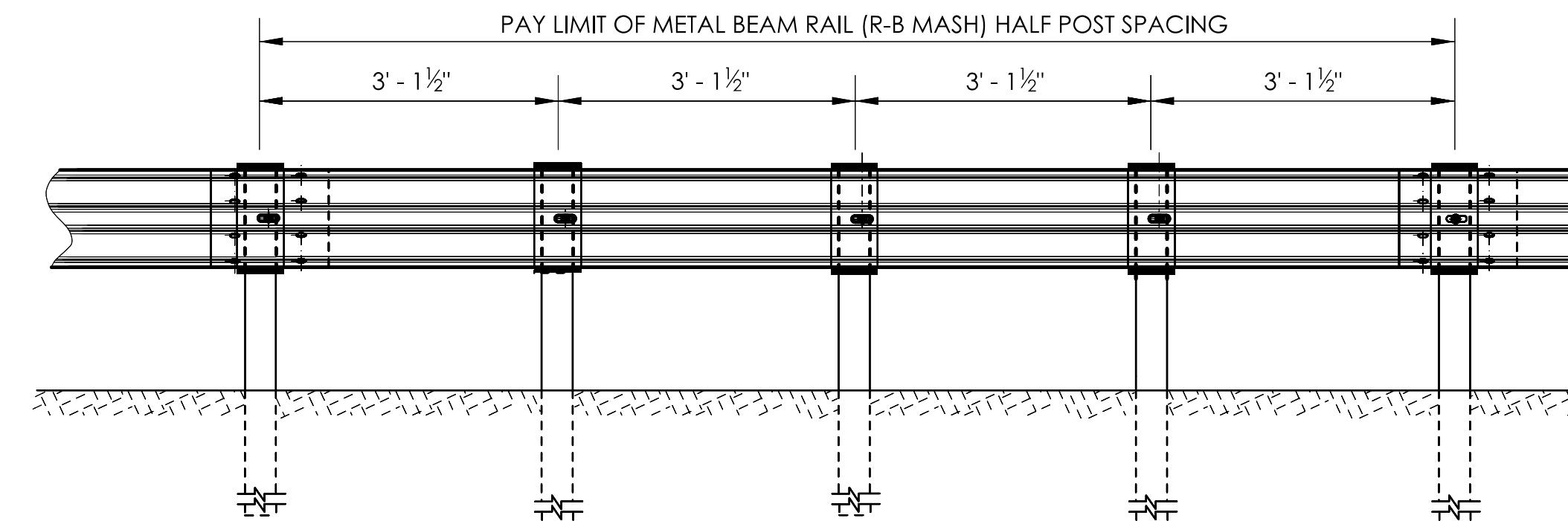
SECTION A

SIDEWALK APPLICATION

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 15:04:27-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.29 12:32:15-05'00'	CONNECTICUT DEPARTMENT OF TRANSPORTATION 	STANDARD SHEET TITLE: METAL BEAM RAIL (R-B MASH) GUIDERAIL	STANDARD SHEET NO.: HW-910_21
PLOTTED DATE: 10/23/2024						

GENERAL NOTES:

1. SEE SHEET HW-910_20 FOR HARDWARE AND W-BEAM DELINEATOR DETAILS.
2. W-BEAM DELINEATOR MAY BE INSTALLED AT POST BOLT CONNECTION TO MAINTAIN APPROPRIATE DELINEATOR SPACING.



METAL BEAM RAIL (R-B MASH) HALF POST SPACING

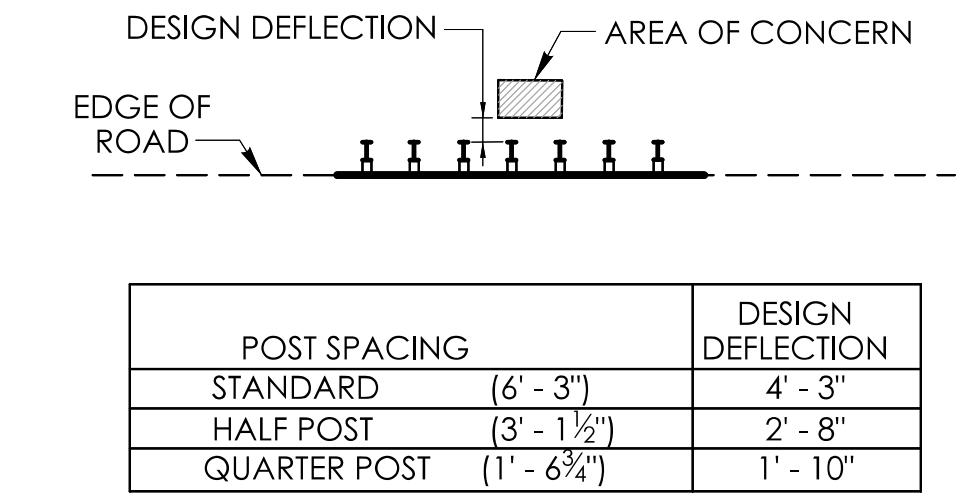
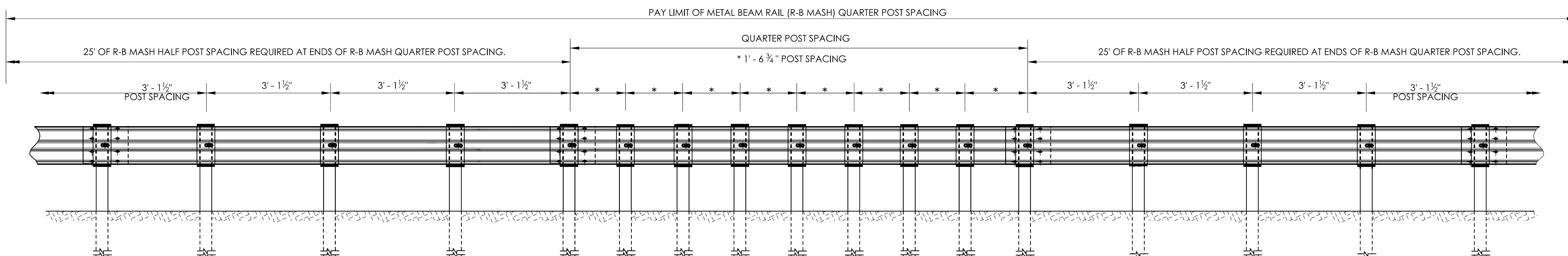


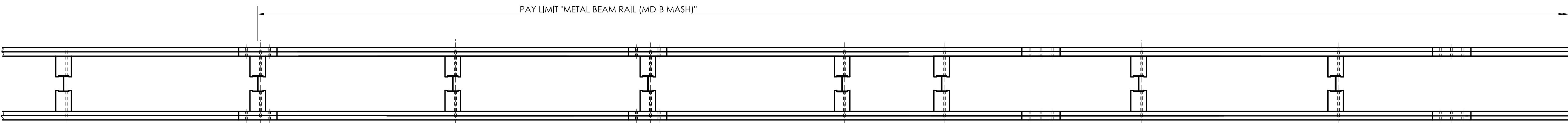
TABLE 1



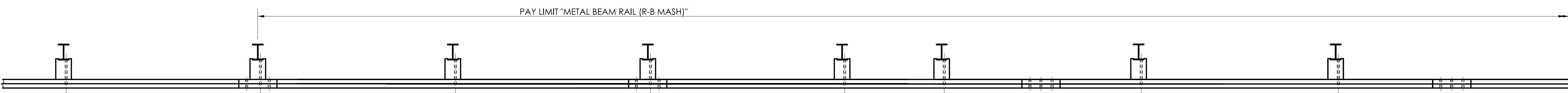
METAL BEAM RAIL (R-B MASH) QUARTER POST SPACING

GENERAL NOTES:**GENERAL NOTES:**

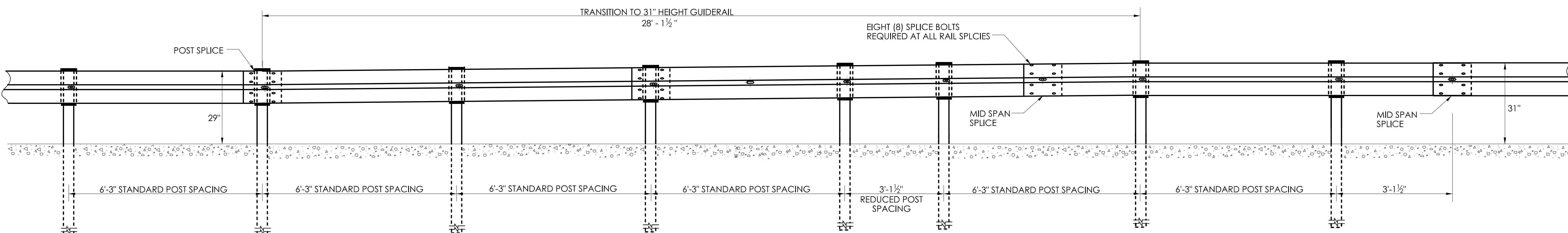
1. SEE SHEET HW-910_20 FOR HARDWARE AND W-BEAM DELINEATOR DETAILS.
2. NO POST(S) SHALL BE OMITTED WITHIN THE LENGTH OF GUIDERAIL TRANSITION.

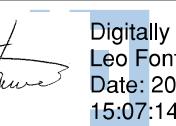


PLAN
METAL BEAM RAIL MD-B 350 TRANSITION TO METAL BEAM RAIL MD-B MASH

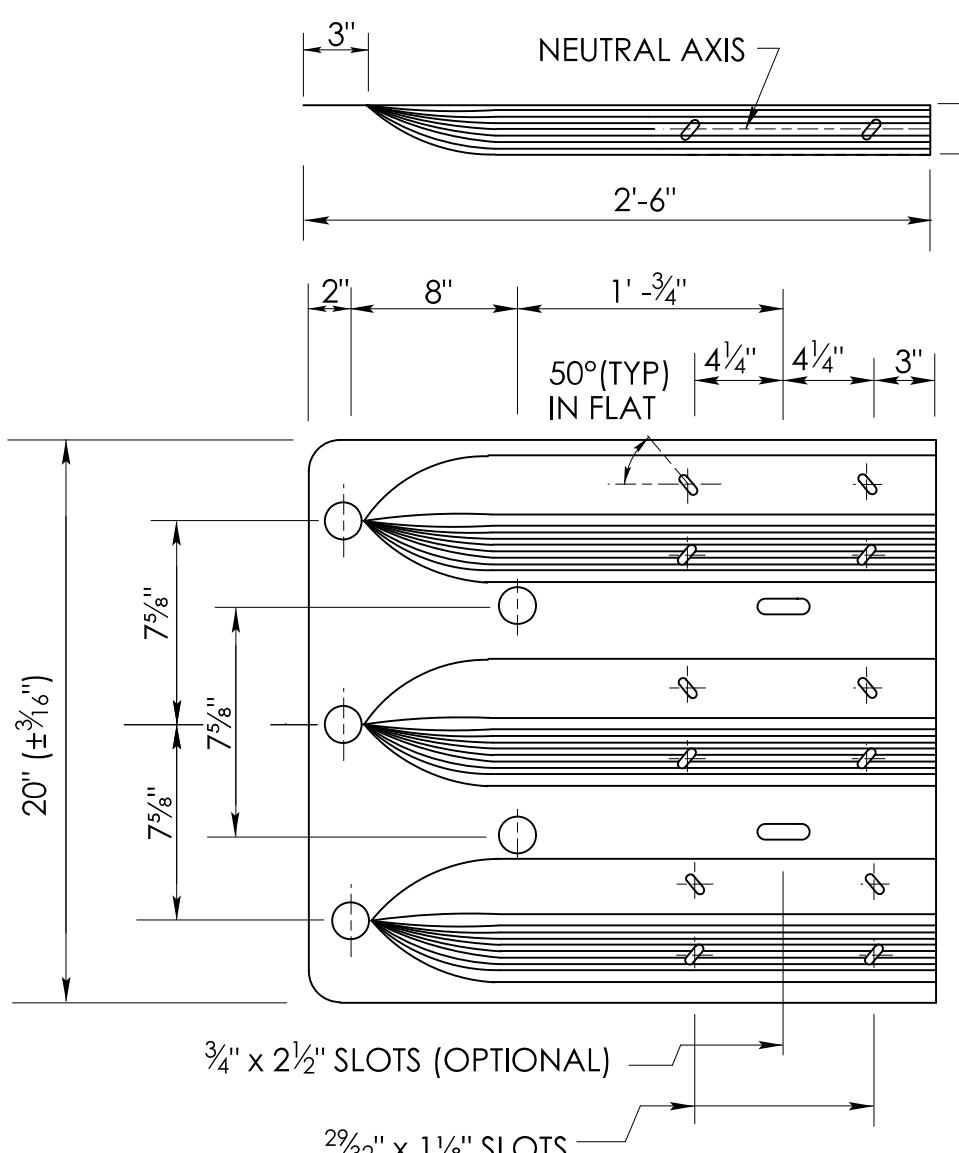


PLAN
METAL BEAM RAIL R-B 350 TRANSITION TO METAL BEAM RAIL R-B MASH

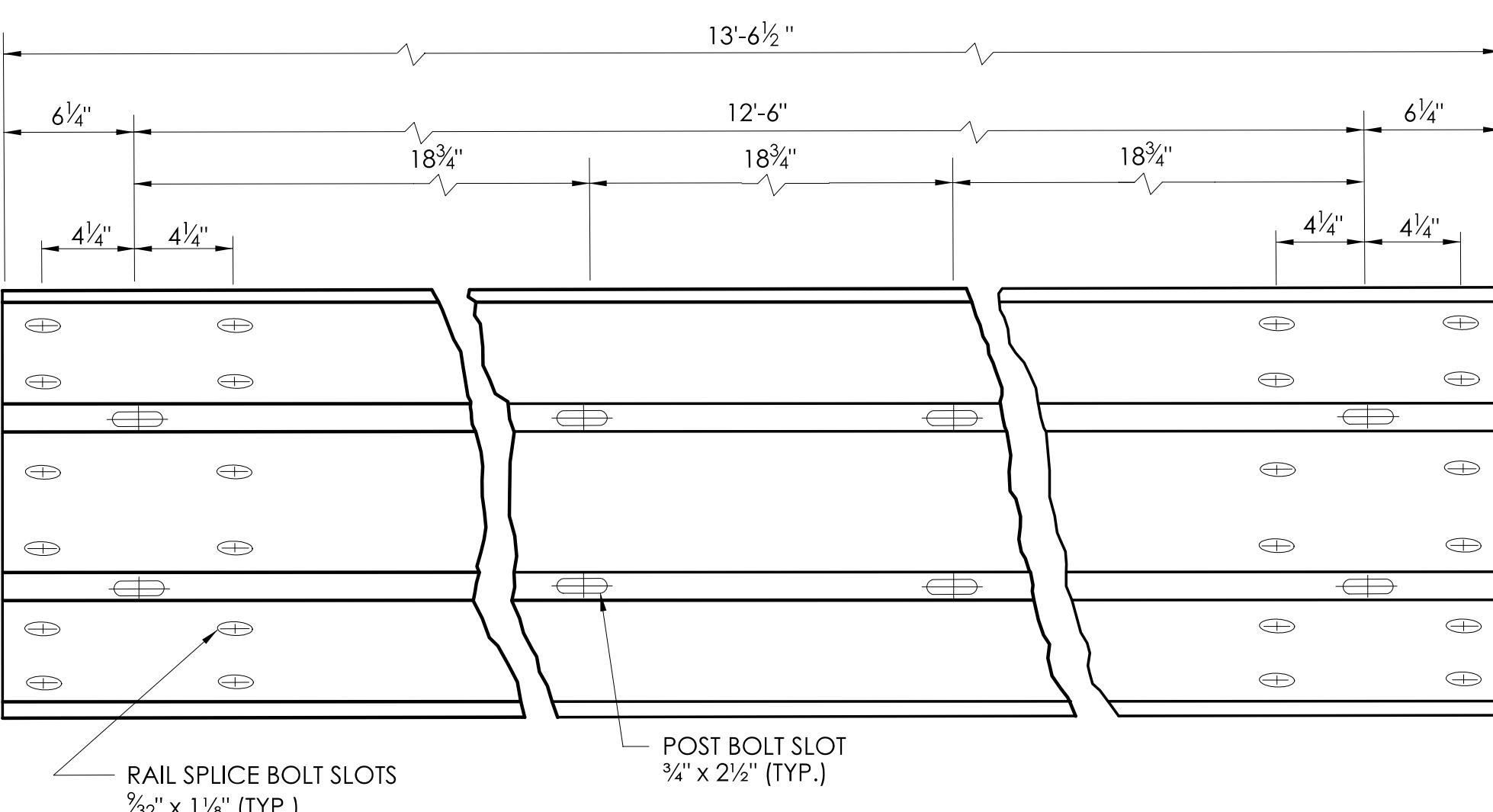
**ELEVATION**

	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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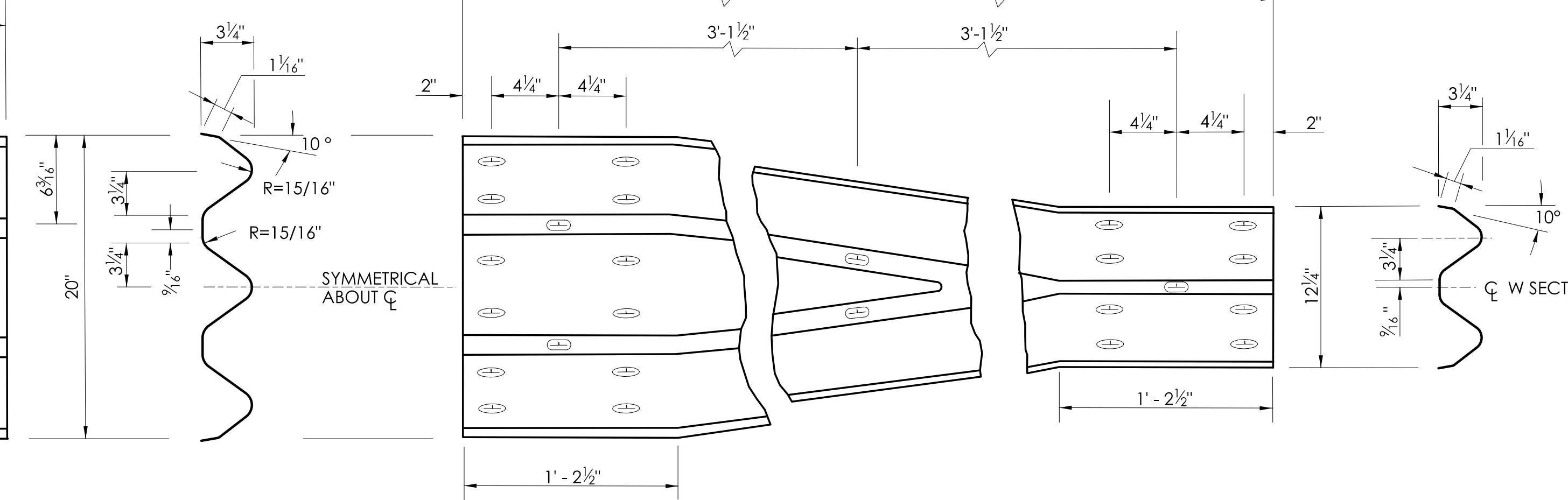
GENERAL NOTE:
1. ALL DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES



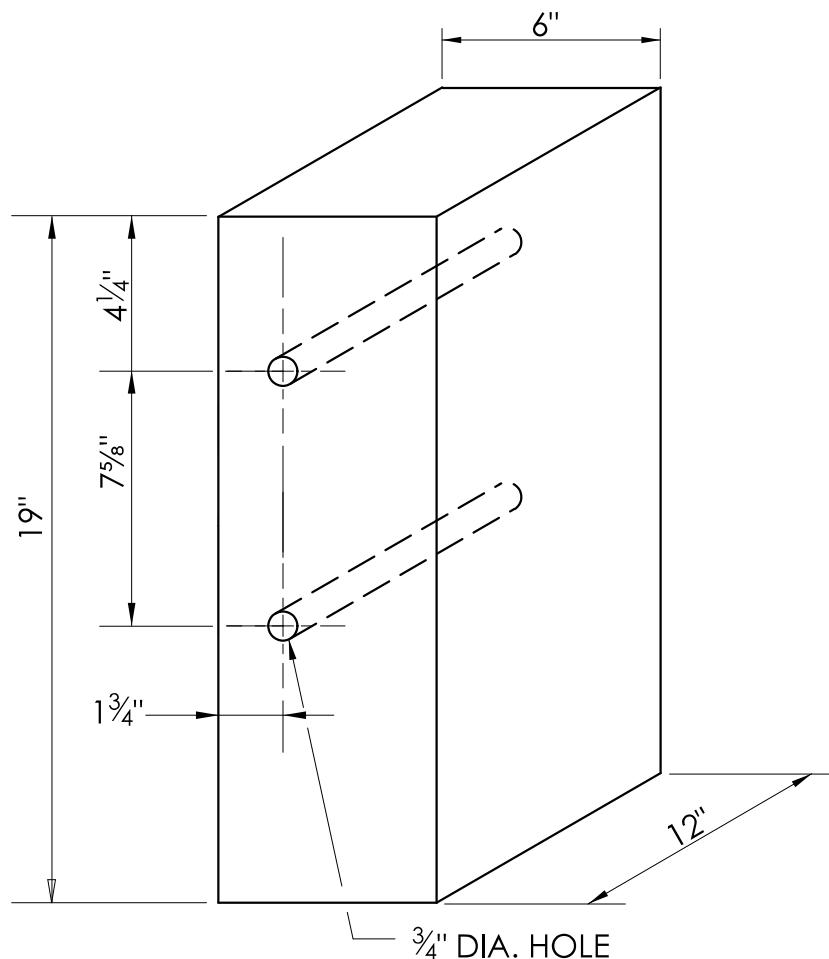
THRIE-BEAM TERMINAL CONNECTOR
[RTE01b]
(10 GAUGE)



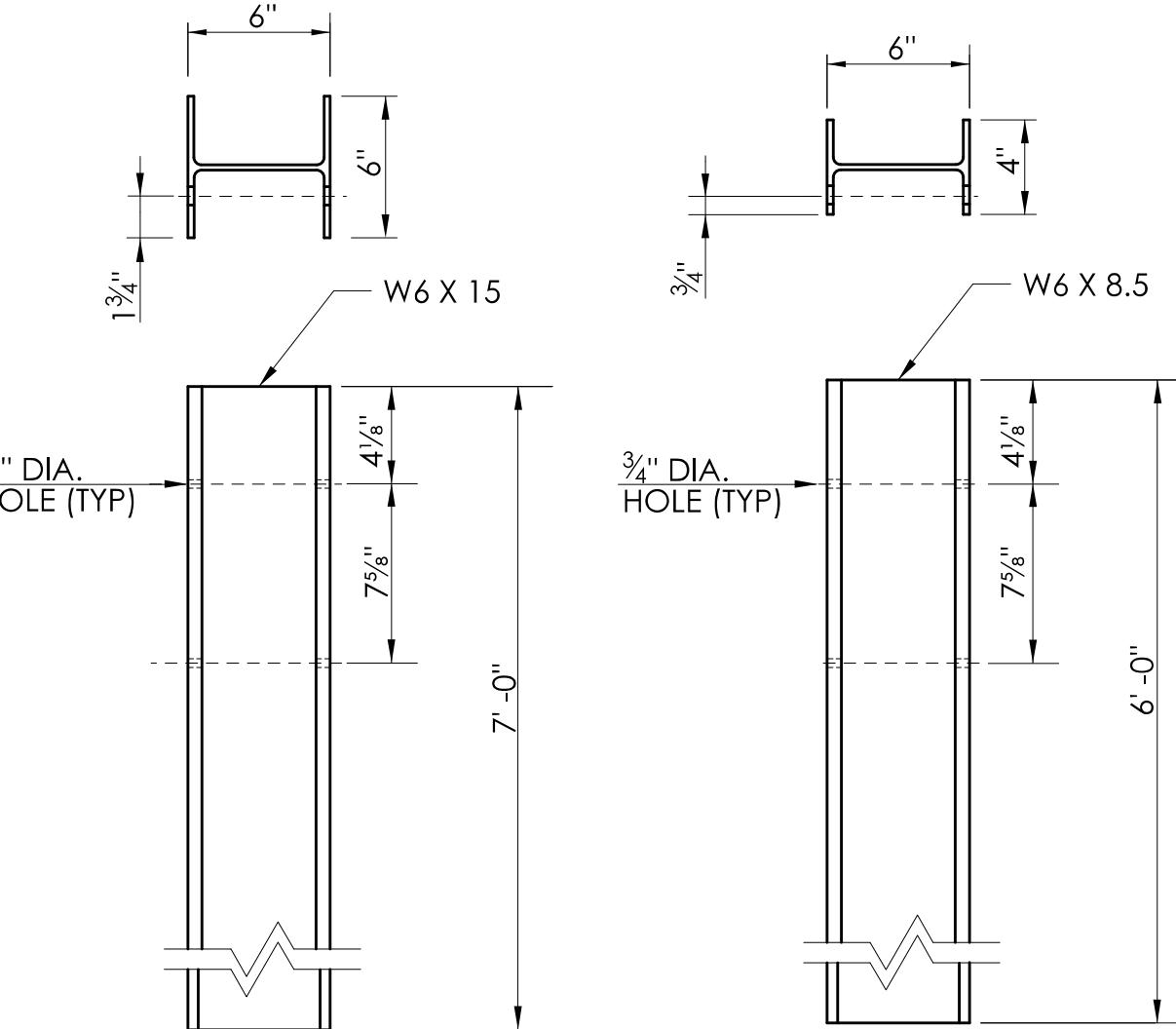
TYPICAL THRIE-BEAM RAIL ELEMENT
[RTM19a FOR 6'-3" AND RTM08a FOR 12'-6" THRIE-BEAM LENGTHS]
(12 GAUGE)



TYPICAL THRIE-BEAM TRANSITION ELEMENT
[RWT01b]
(10 GAUGE)

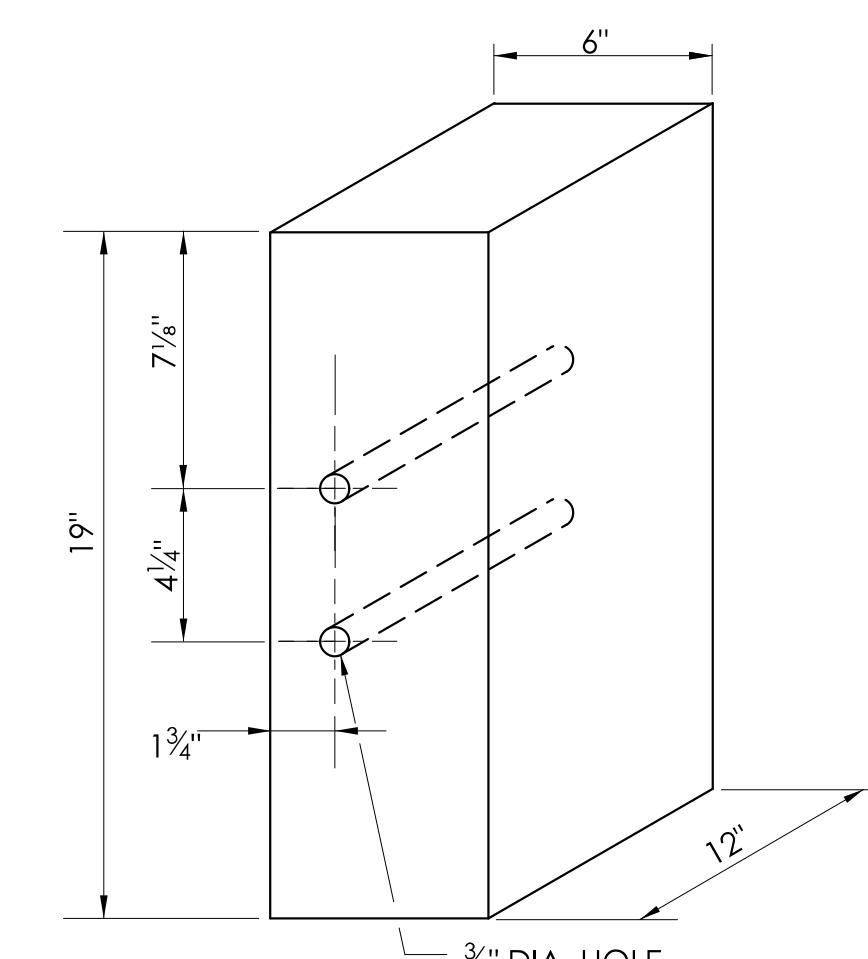


12" WOOD BLOCKOUT
[PDB18]
(FOR POSTS 1 TO 8)

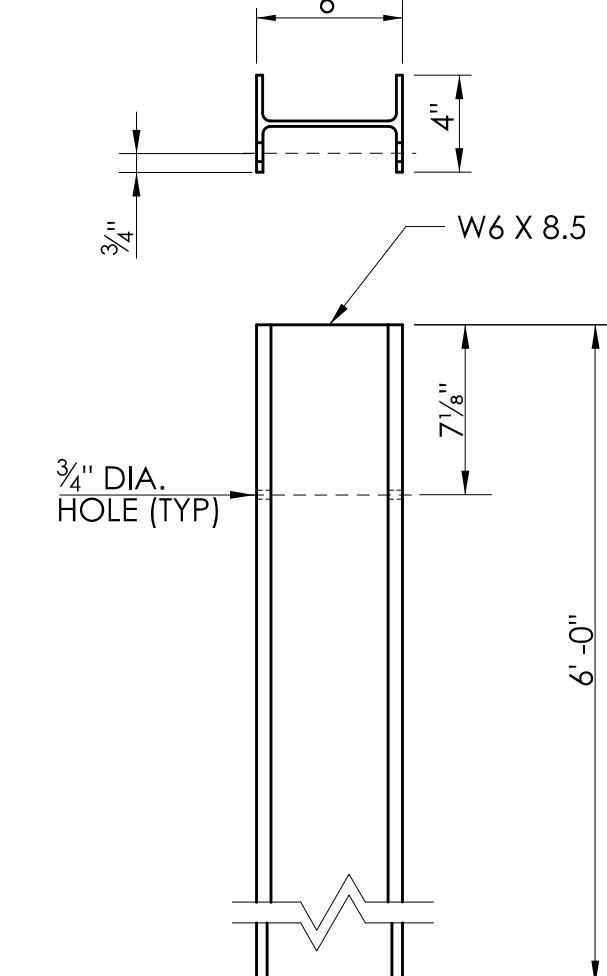


STEEL POST
7' - 0" LONG
[PDB18]
(FOR POSTS 1 TO 3)

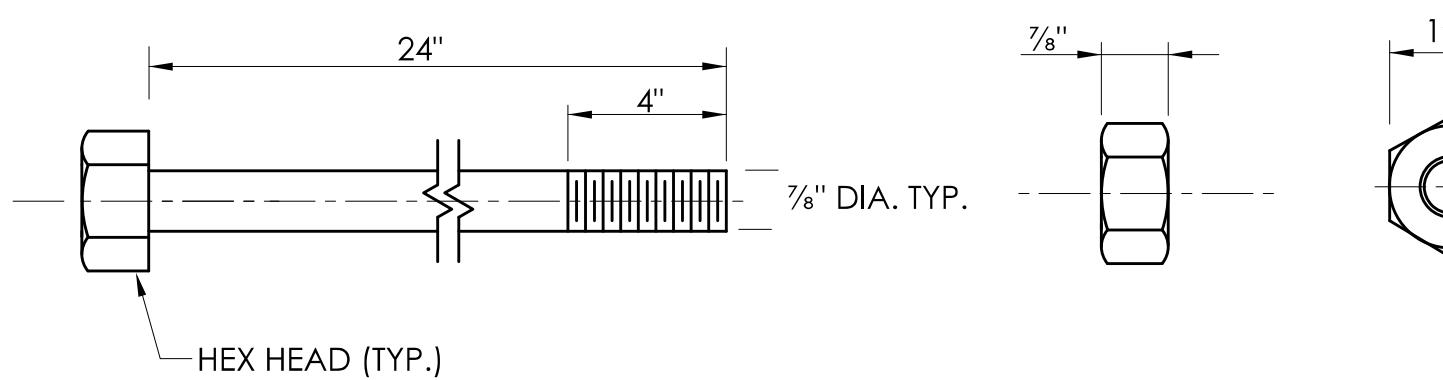
STEEL POST
6' - 0" LONG
[PDB18]
(FOR POSTS 4 TO 8)



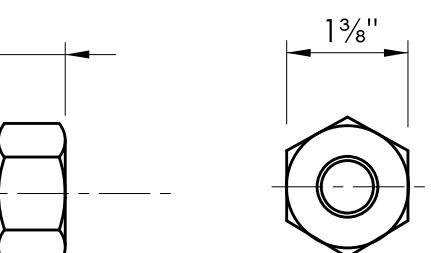
12" WOOD BLOCKOUT
[PDB18]
(FOR POST 9 ONLY)



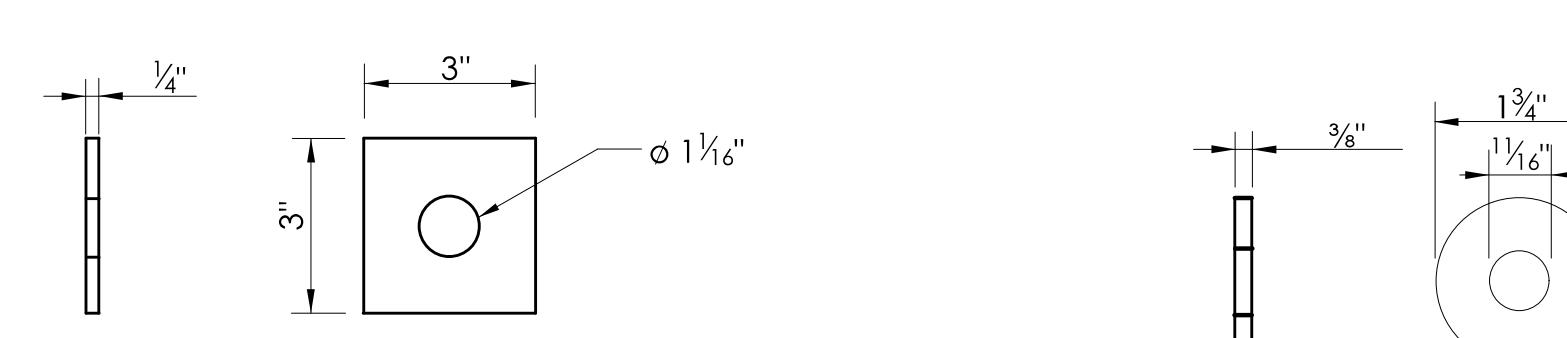
12" WOOD BLOCKOUT
[PDB18]
(FOR POSTS 10 TO 12)



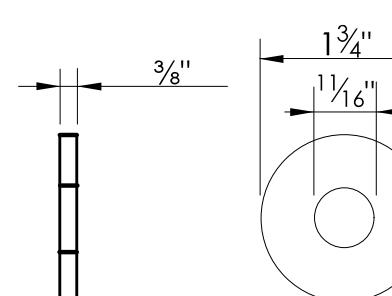
LONG HEAVY HEX HEAD BOLT
[FBX22b]
(FOR THRIE-BEAM TERMINAL CONNECTOR)



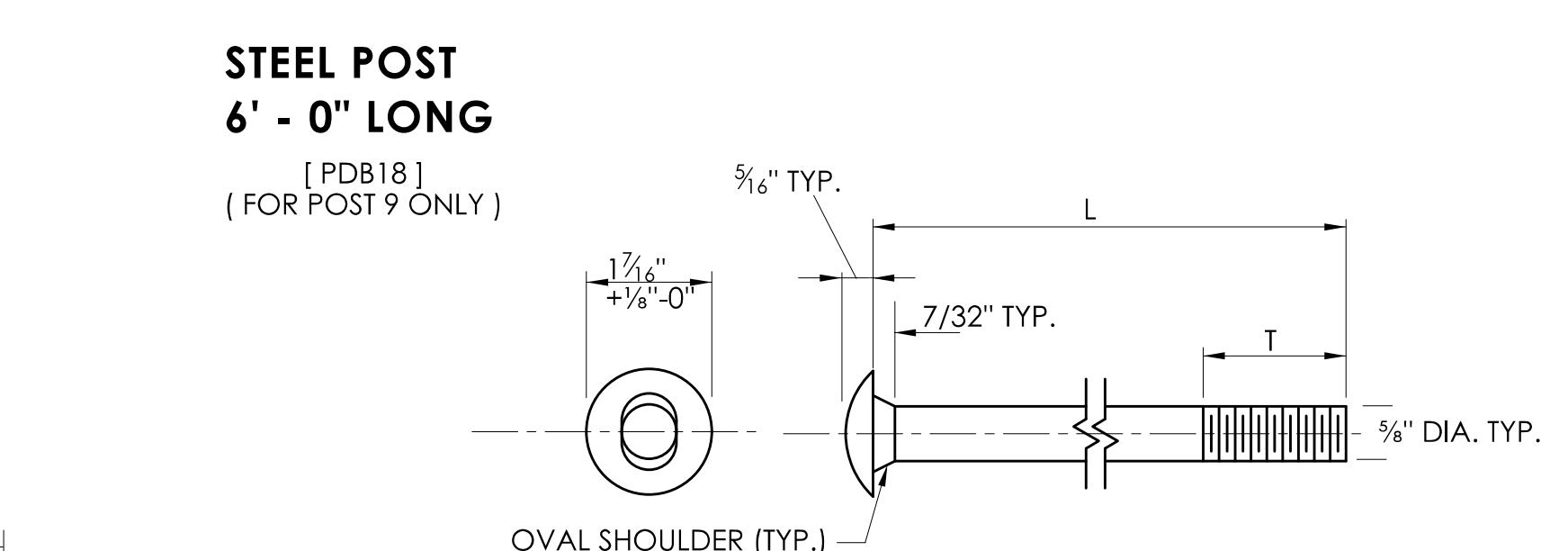
HEX NUT



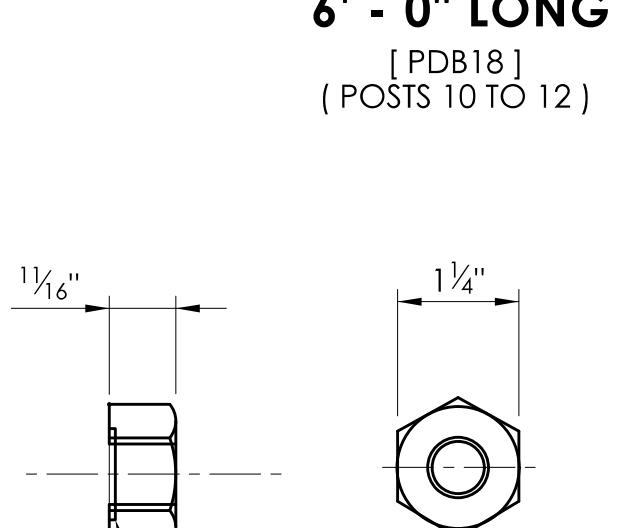
SQUARE PLATE WASHER
[FWR10]
(For THRIE-BEAM TERMINAL CONNECTOR,
PLACED BETWEEN HEX NUT AND BACKSIDE
OF CONCRETE STRUCTURE)



WASHER
[FWC16a]



BUTTONHEAD BOLT

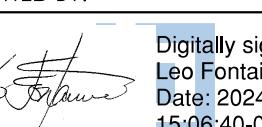


HEX NUT

DESIGNATOR	L	T	INTENDED USE
FBB02	2"	1 1/8"	RAIL SPLICE BOLTS
FBB06	14"	4"	POST BOLT (12" BLOCK OUTS)

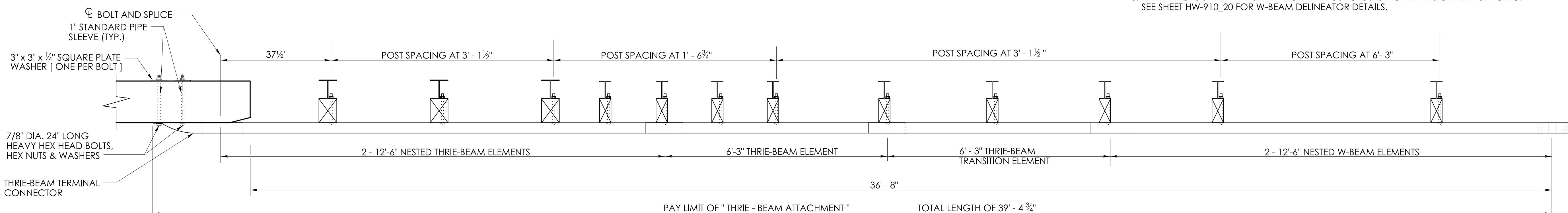
5/8" BUTTON HEAD BOLT(S) AND RECESSED NUT(S)

NOTE: AFTER GALVANIZING, THE NUT SHALL BE FREE RUNNING ON THE BOLT. DIAMETER SHOWN IS TYPICAL FOR ALL GUIDERAIL BOLTS. SEE DETAILS ABOVE FOR SPECIFIC LENGTHS.

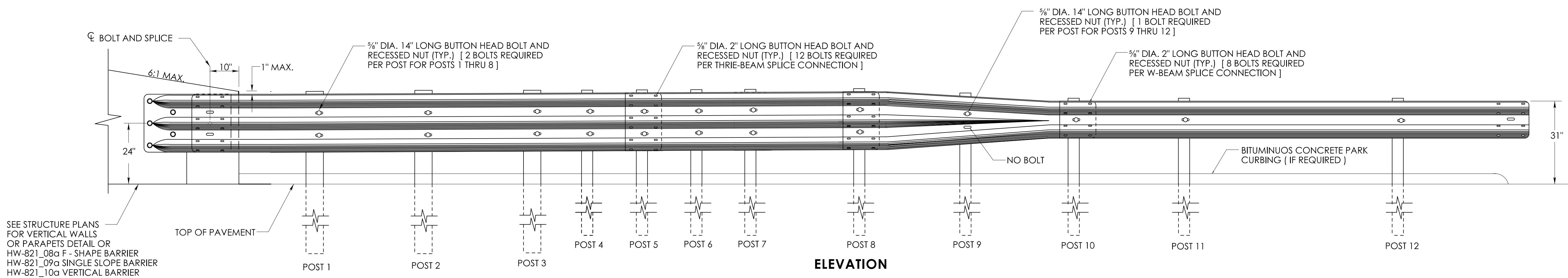
	NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.19 15:06:40-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.29 12:36:42-05'00'	CONNECTICUT DEPARTMENT OF TRANSPORTATION 	STANDARD SHEET TITLE: THRIE-BEAM ATTACHMENT HARDWARE	STANDARD SHEET NO.: HW-910_26
PLOTTED DATE: 10/23/2024							

GENERAL NOTES:

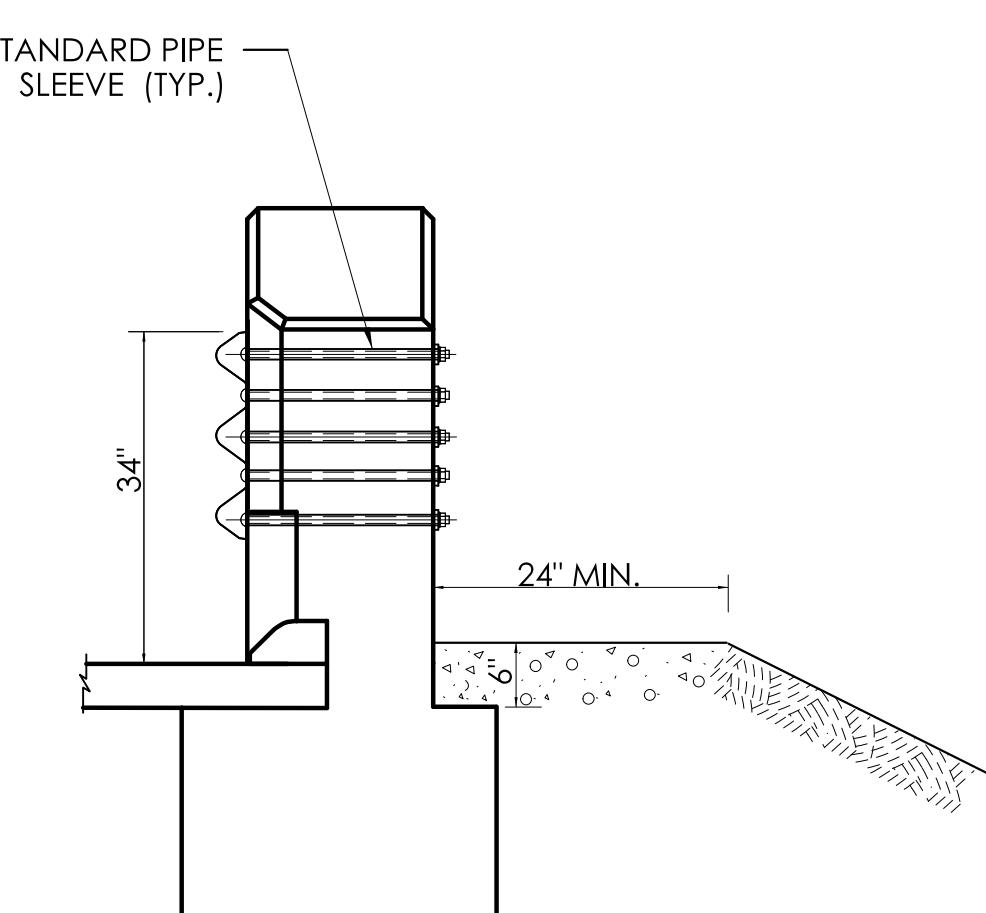
1. PROVIDE 2 FOOT MINIMUM EMBANKMENT BETWEEN THE BACK OF THE GUIDERAIL POST(S) / CONCRETE BARRIER AND THE BREAK IN THE FILL SLOPE.
2. INSTALL THRIE - BEAM TERMINAL CONNECTOR BETWEEN NESTED GUIDERAIL ELEMENTS, EXCEPT FOR SINGLE DIRECTION ROADWAY APPLICATION ONLY WHERE THE THRIE - BEAM TERMINAL CONNECTOR IS INSTALLED OUTSIDE OF NESTED GUIDERAIL ELEMENTS ON THE TRAILING END.
3. DELINEATORS SHALL BE INSTALLED ON THE POST CLOSEST TO THE DESIGNATED SPACING. SEE SHEET HW-910_20 FOR W-BEAM DELINEATOR DETAILS.



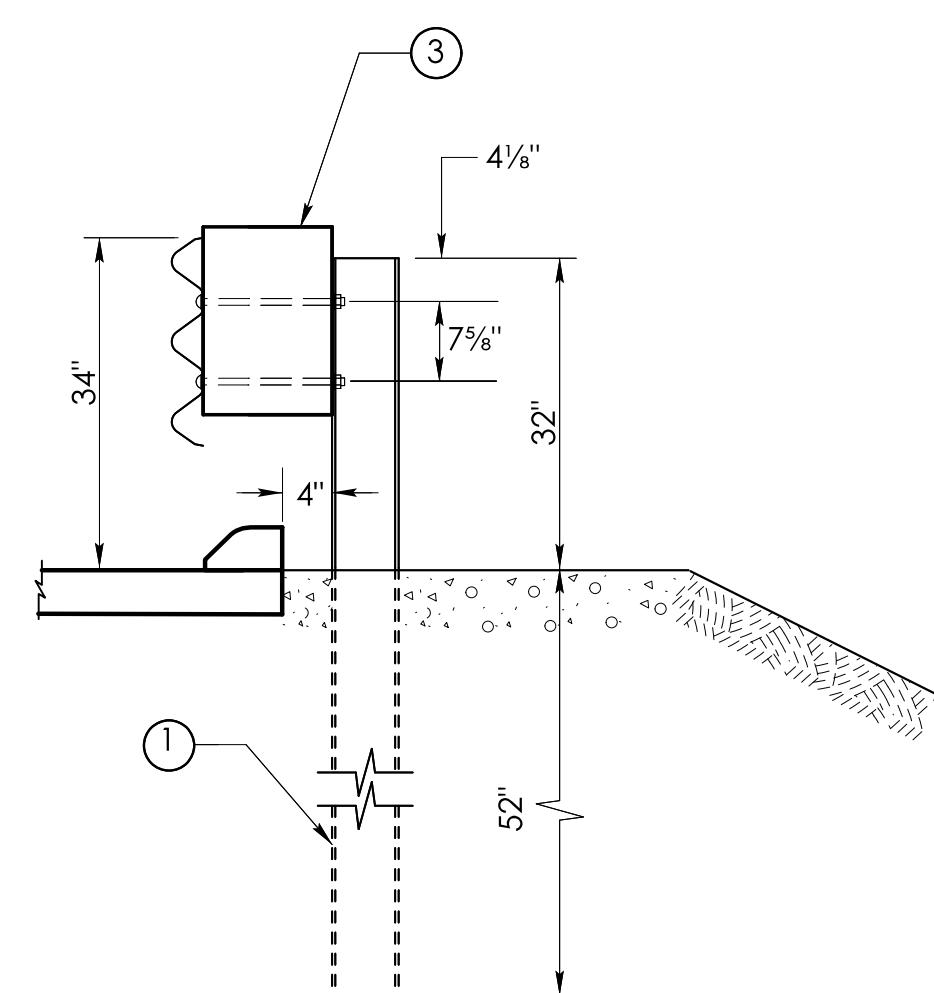
PLAN



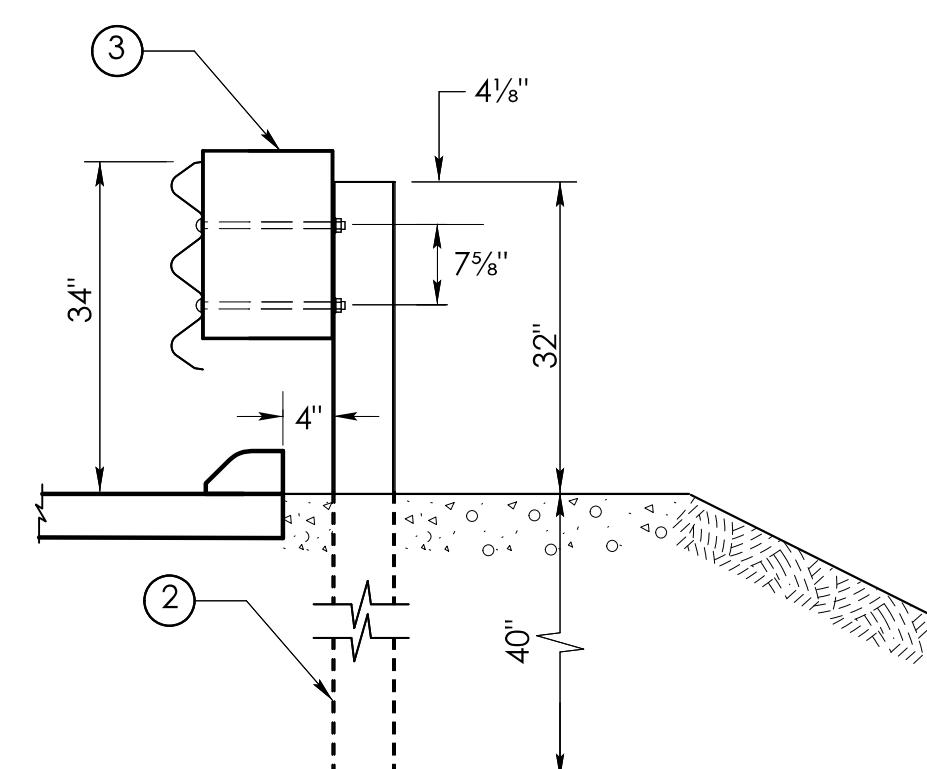
ELEVATION



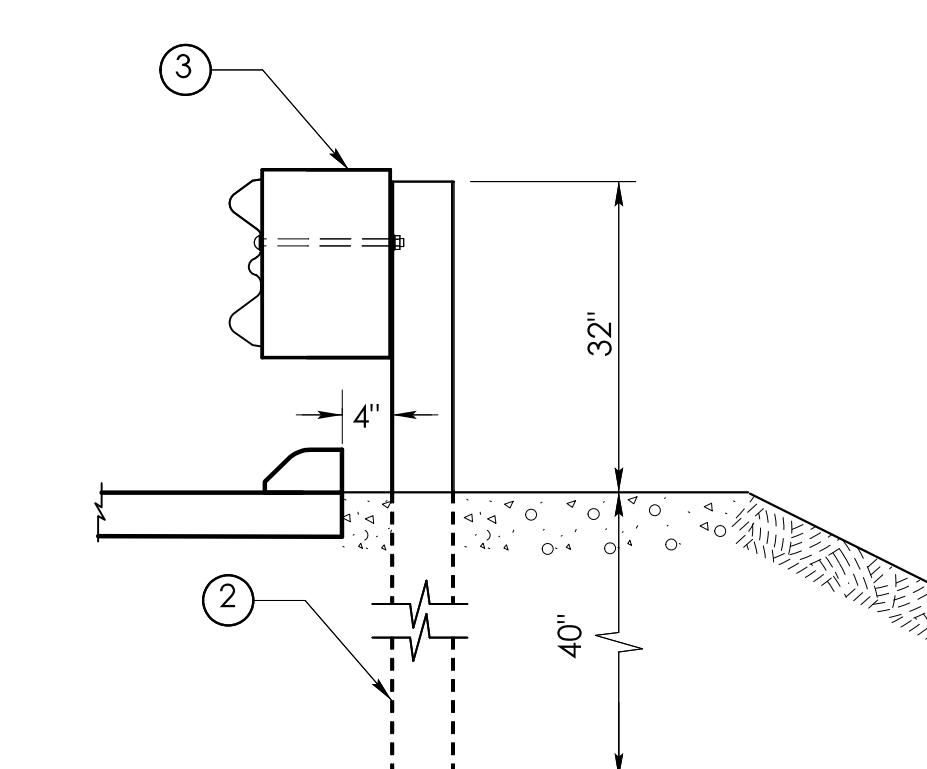
THRIE BEAM CONNECTION



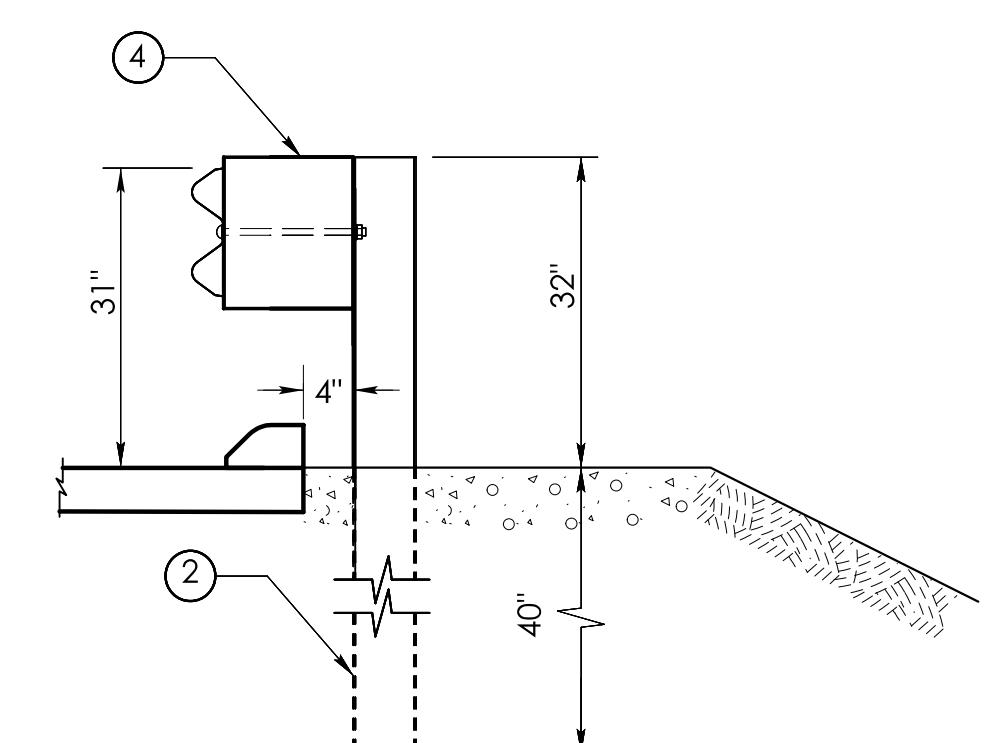
POST 1,2 & 3



POST 4,5,6,7 & 8



POST 9



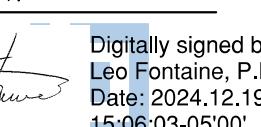
POST 10, 11 & 12

LEGEND

(1) W6 x 15, 7 FOOT LONG STEEL POST
 (2) W6 x 8.5 OR W6 x 9, 6 FOOT LONG STEEL POST

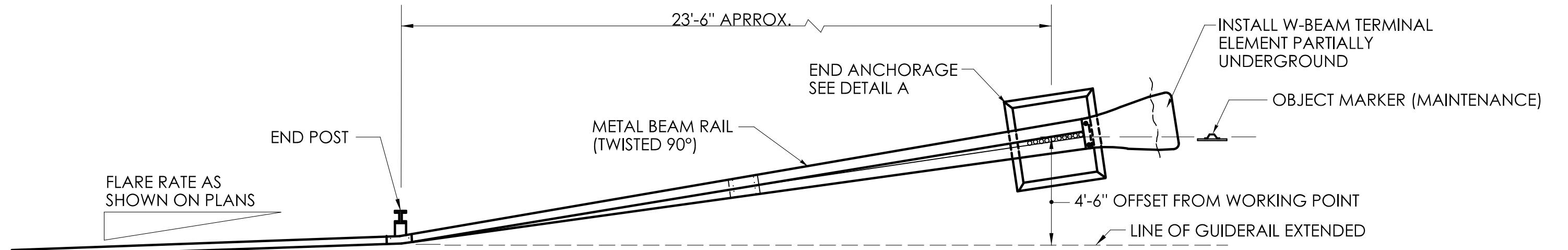
(3) 6" x 12" x 19" TREATED TIMBER BLOCKOUT
 (4) 6" x 12" x 14 1/4" TREATED TIMBER BLOCKOUT

MASH 2016 COMPLIANT
 APPROVAL ID: 2019-01

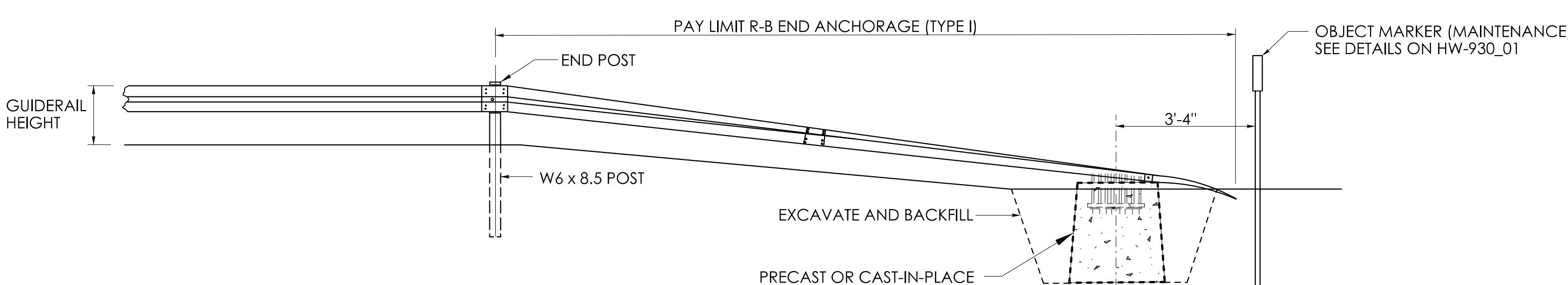
	NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.19 15:06:03-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.29 12:37:54-05'00'	CONNECTICUT DEPARTMENT OF TRANSPORTATION 	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: THRIE-BEAM ATTACHMENT	STANDARD SHEET NO.: HW-910_27
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GENERAL NOTES:

1. 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.
2. INSTALLATION OF RADII DIFFERENT THAN WHAT IS SHOWN IN DETAIL "C" FOR R-B END ANCHORAGE TYPE II MUST BE APPROVED BY THE ENGINEER.

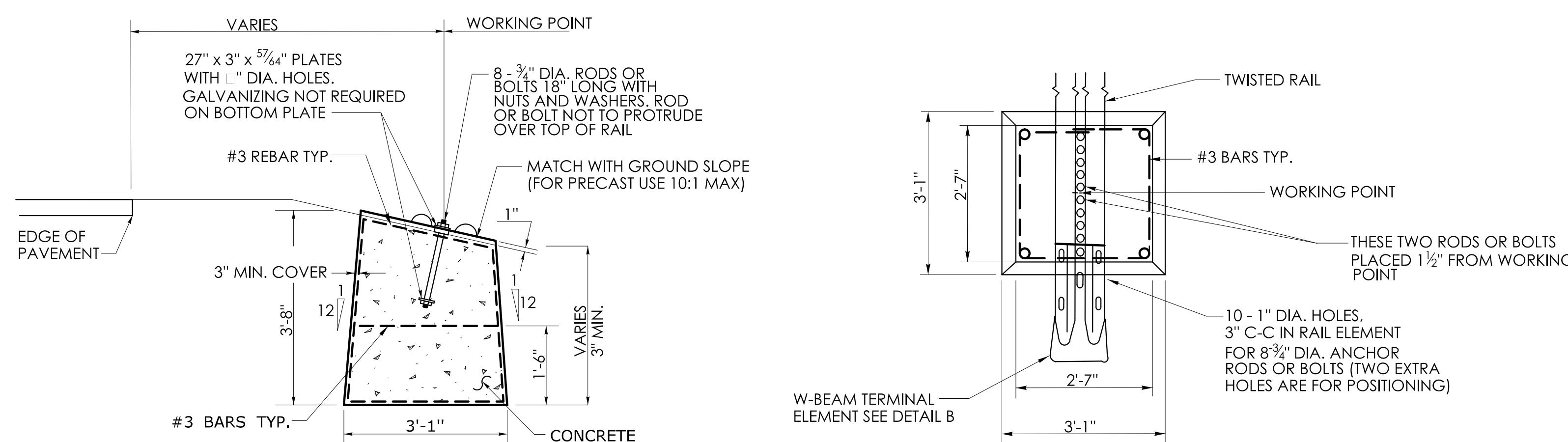


PLAN



ELEVATION

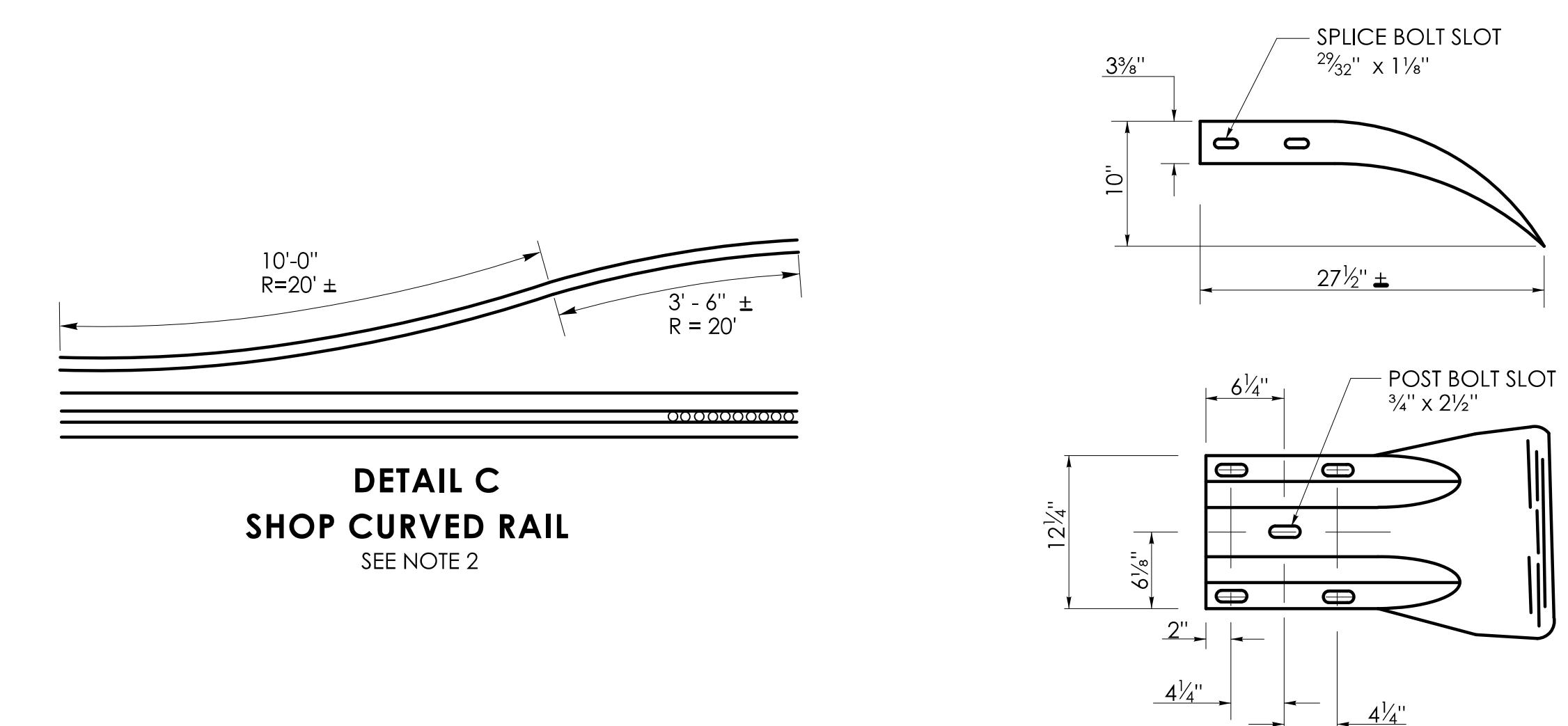
R-B END ANCHORAGE TYPE I



DETAIL A ROADSIDE CONCRETE END ANCHO

DETAIL C

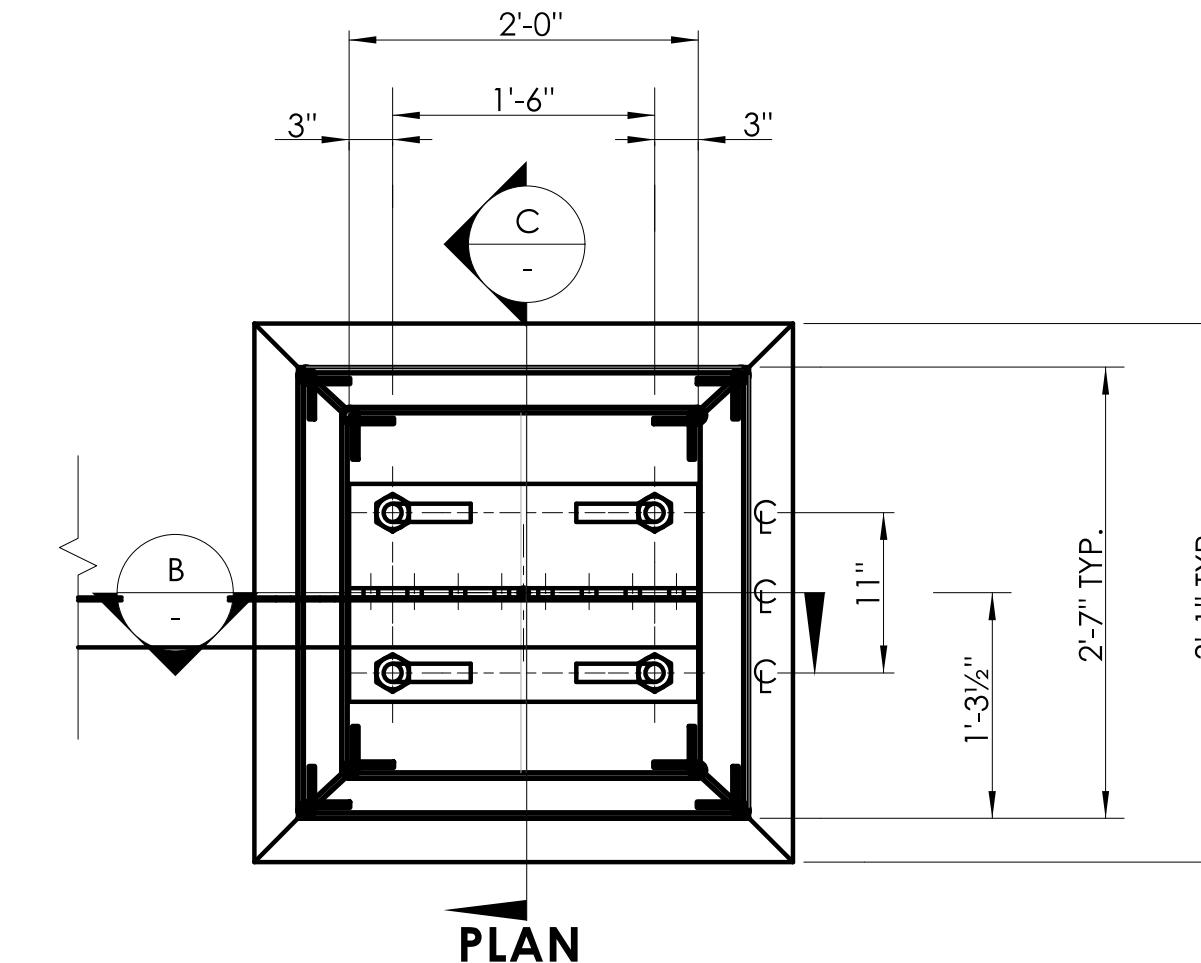
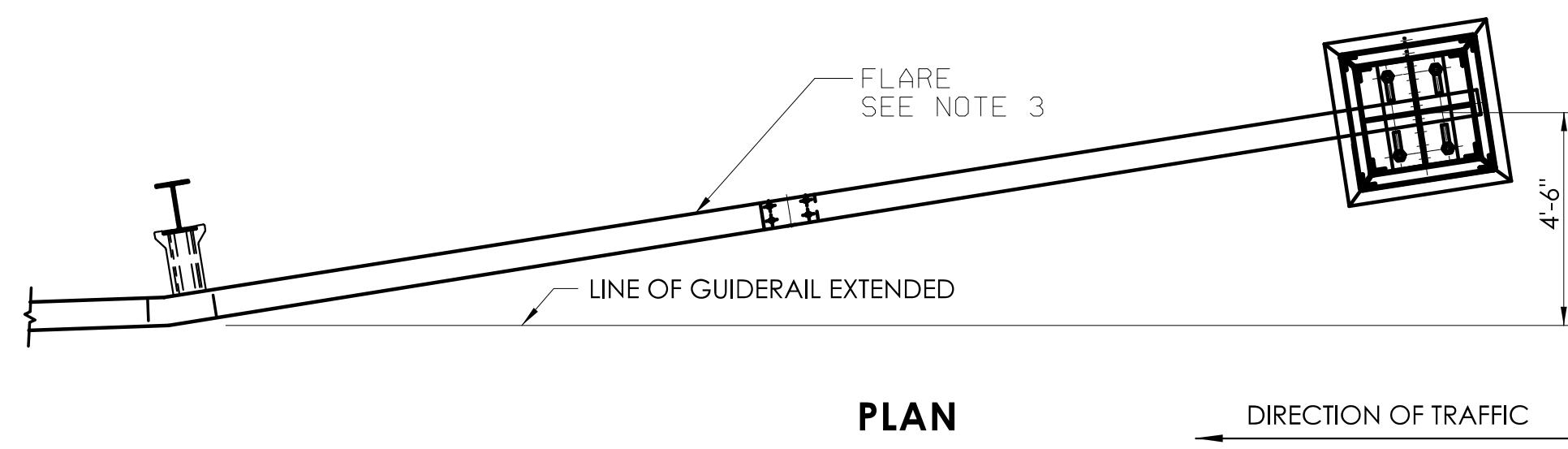
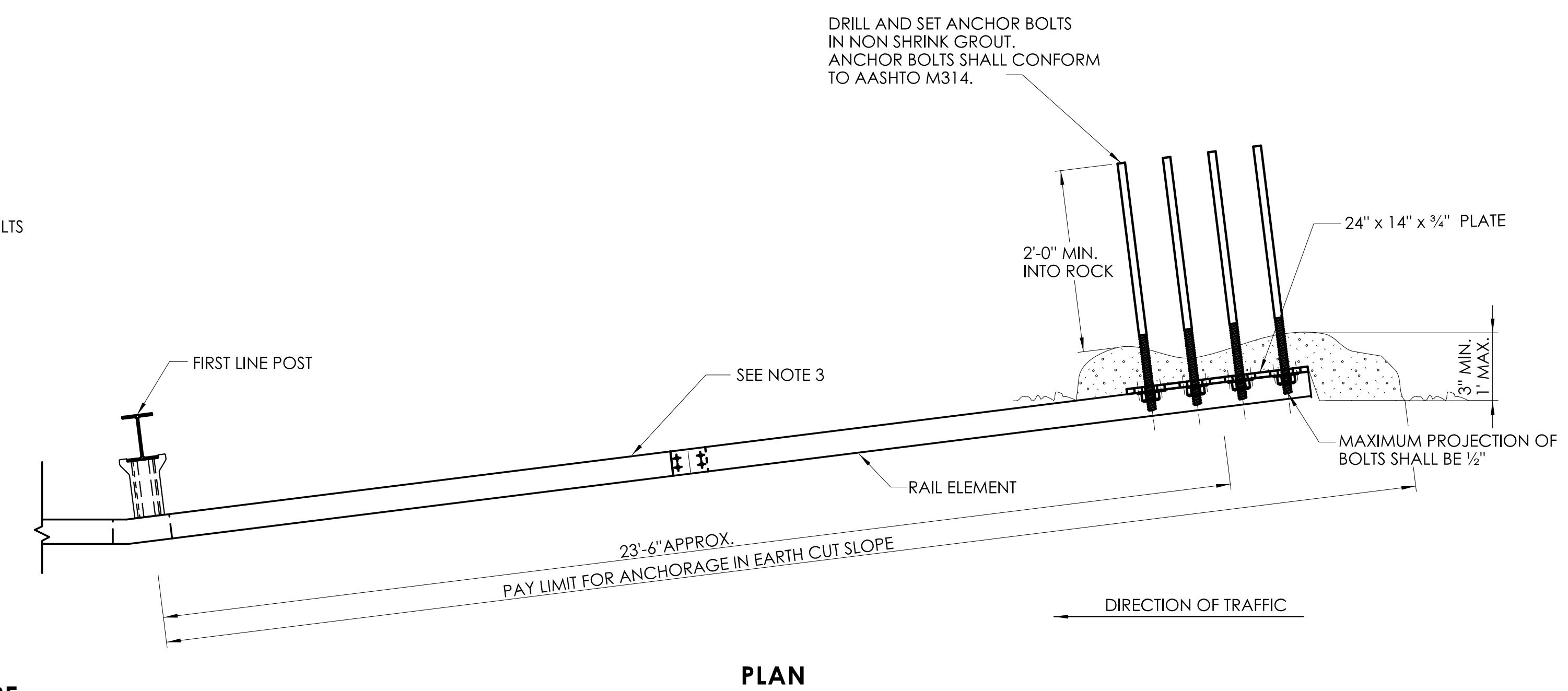
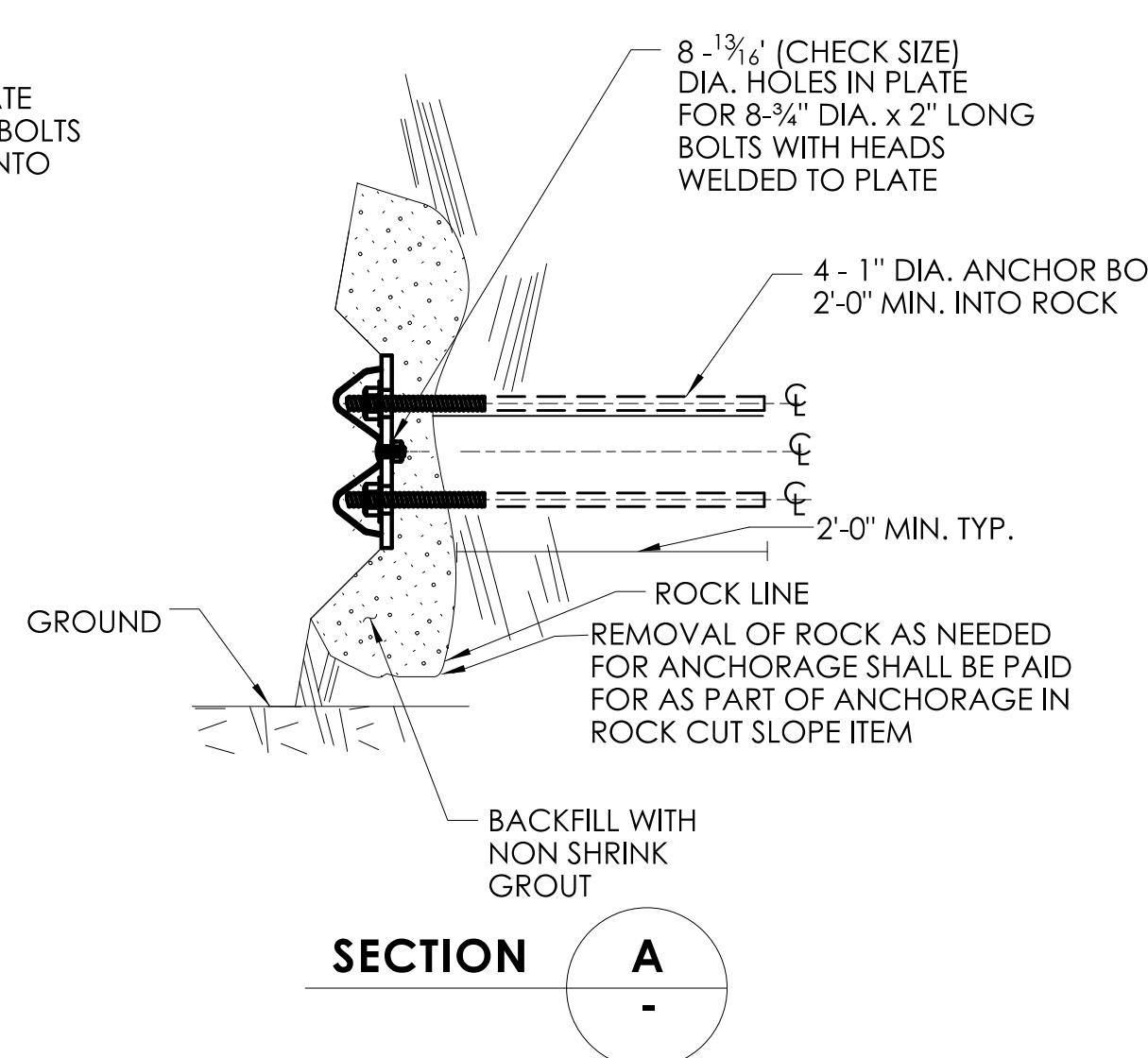
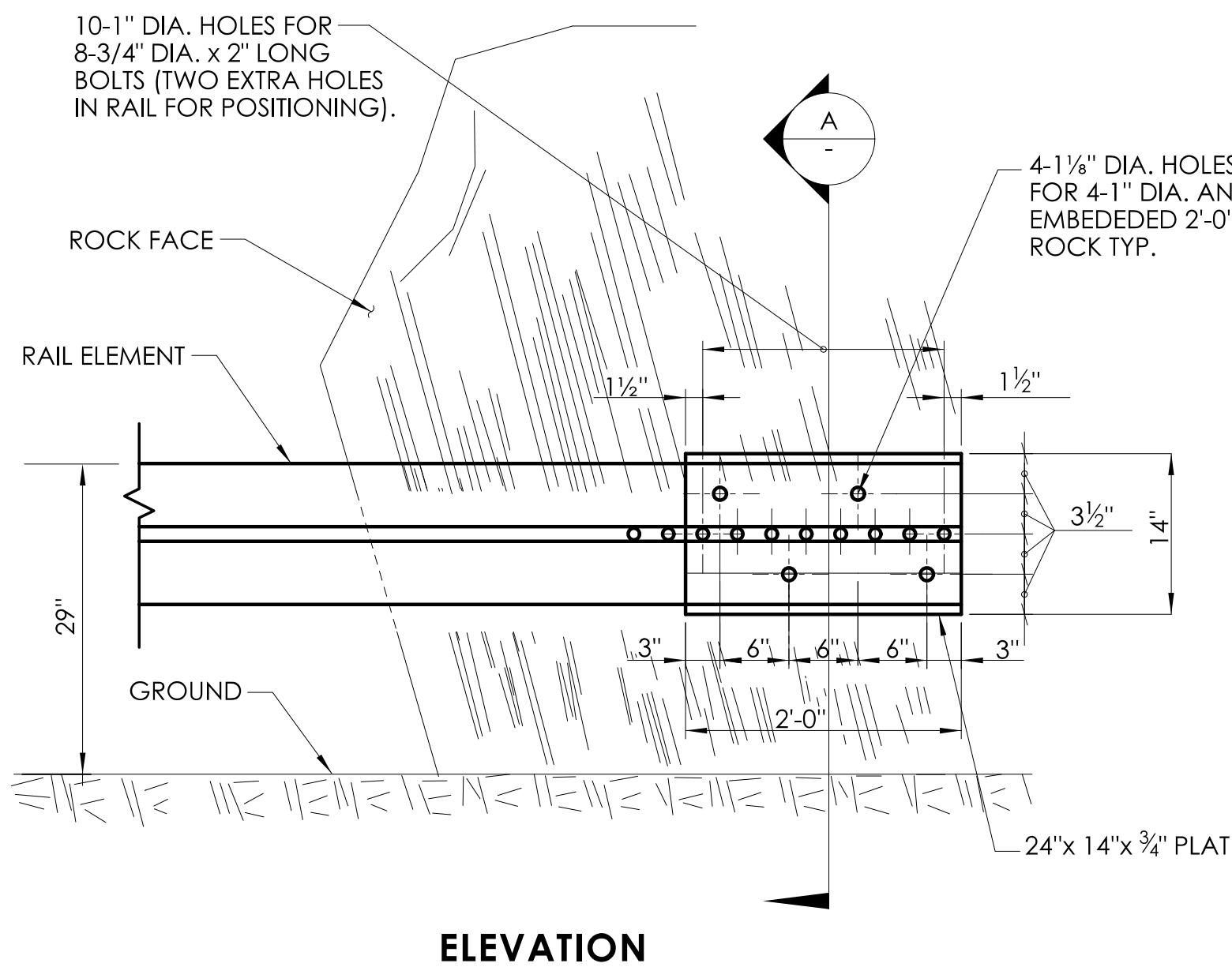
SHOP CURVED RAIL



DETAIL B

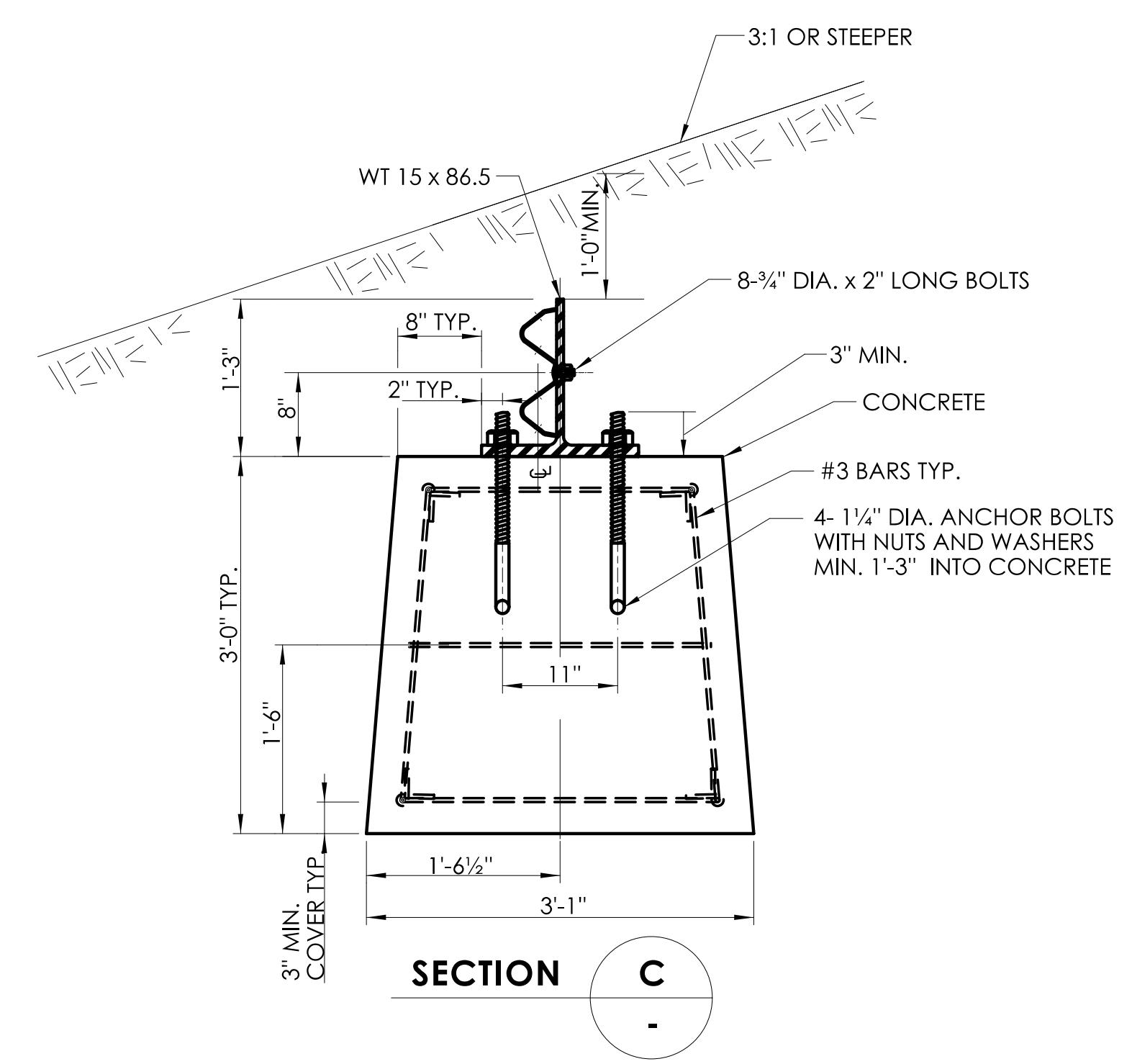
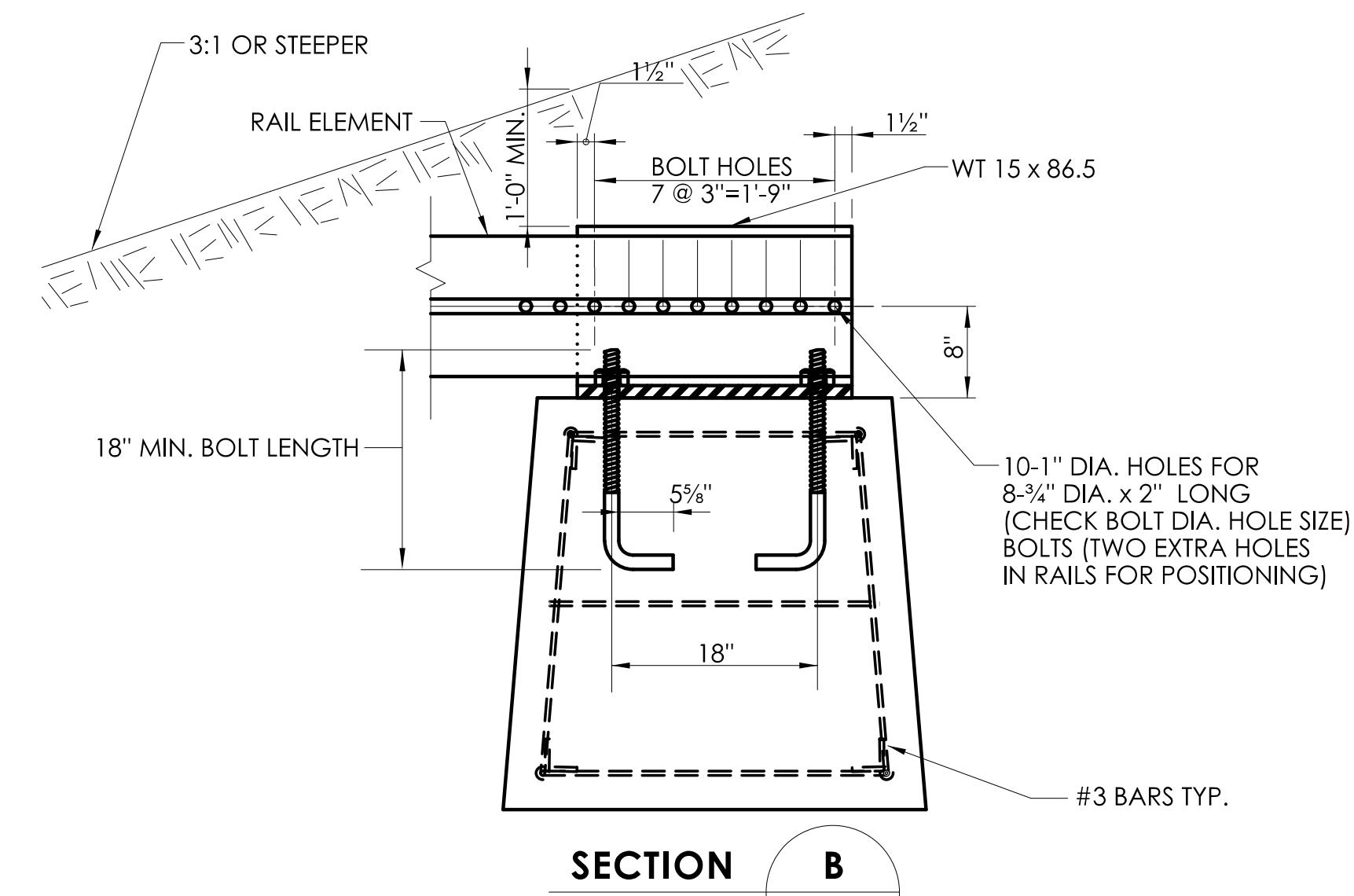
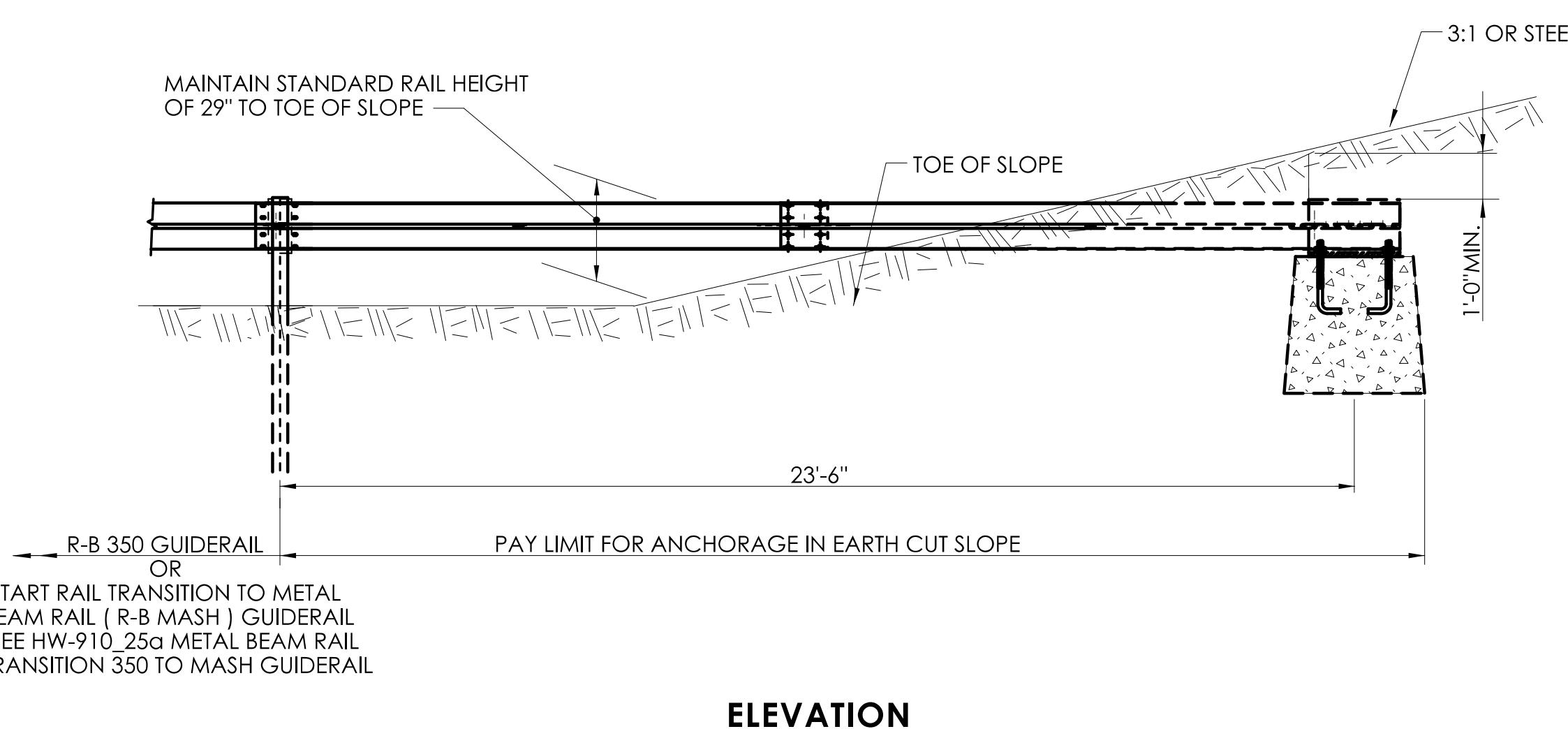
W-BEAM TERMINAL ELEMENT

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 15:05:33-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.29 12:39:13-05'00'	STANDARD SHEET TITLE: R-BEND ANCHORAGE TYPE I AND I	STANDARD SHEET NO.: HW-91-1-01
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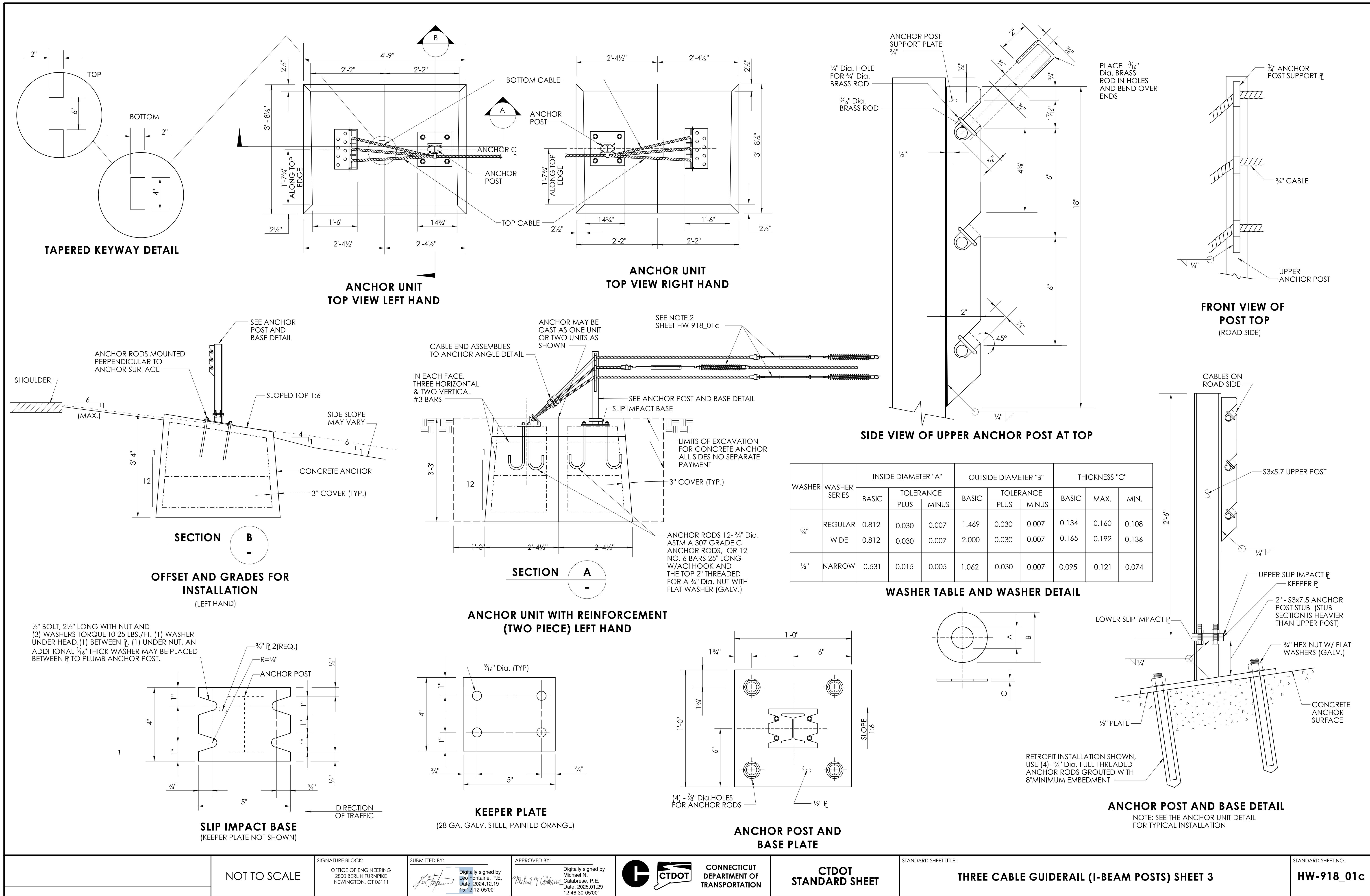


GENERAL NOTES:

- ANCHORAGE IN AN EARTH CUT SLOPE SHALL BE IN A CUT SLOPE 3:1 OR STEEPER. FULL RAIL HEIGHT MUST BE MAINTAINED TO TOE OF SLOPE AND A MINIMUM 1" COVER SHALL BE PROVIDED OVER THE RAIL ELEMENT.
- ANCHORAGE IN EARTH CUT SLOPE AND ROCK CUT SLOPE INSTALLED ON LIMITED ACCESS HIGHWAYS AND RAMPS SHALL USE CLASS B TYPE II (10 GAUGE) W-BEAM RAIL ELEMENTS.
- THE MAXIMUM FLARE RATES FOR THESE TERMINAL TREATMENTS SHALL CONFORM TO THE SAME REQUIREMENTS AS STANDARD GUIDERAIL IN ACCORDANCE WITH THE CTDOT HIGHWAY DESIGN MANUAL.
- MINIMUM RAIL HEIGHT FOR NEW CONSTRUCTION SHALL BE 29" ± 1".

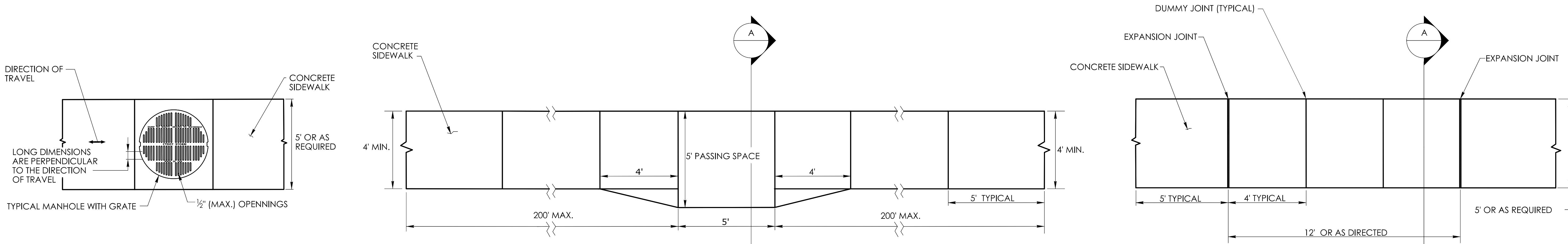


NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Digitally signed by Leo Fontaine, P.E. Date: 2024.12.19 15:04:59-05'00'	APPROVED BY: Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.29 12:40:40-05'00'	CONNECTICUT DEPARTMENT OF TRANSPORTATION CTDOT	STANDARD SHEET TITLE: ANCHOR IN EARTH CUT SLOPE	STANDARD SHEET NO.: HW-911_03
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GENERAL NOTES:

1. SEE CONCRETE SIDEWALK RAMPS GUIDE SHEETS FOR PEDESTRIAN RAMP TYPES.
2. ALL CURBING SHALL BE INSTALLED AS EITHER PRECAST OR CAST IN PLACE AS DIRECTED.



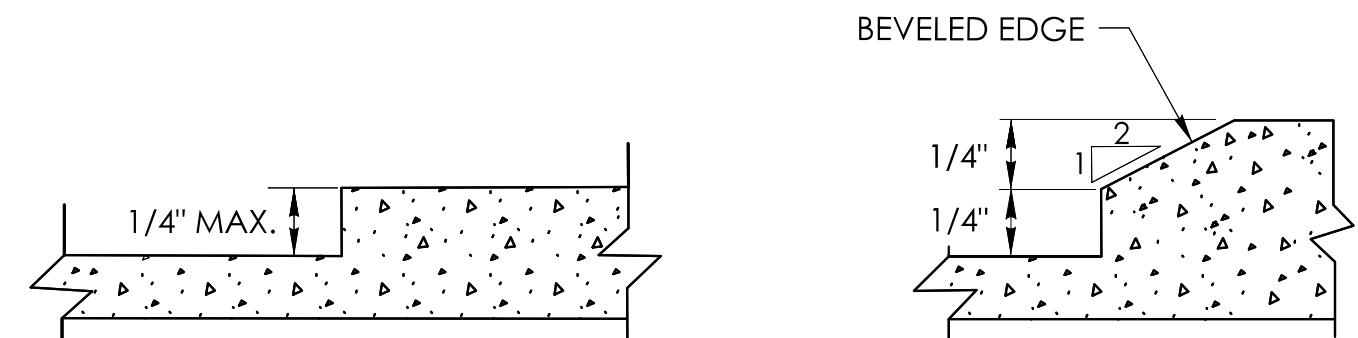
**PEDESTRIAN ACCESS ROUTE
OVER A MANHOLE WITH GRATE**

1. HORIZONTAL OPENINGS IN GRATES AND JOINTS MUST NOT BE MORE THAN $\frac{1}{2}$ INCH
2. ELONGATED OPENINGS IN GRATES MUST BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DIRECTION OF TRAVEL

**5' PASSING SPACE FOR 4' WIDE SIDEWALK
PLAN**

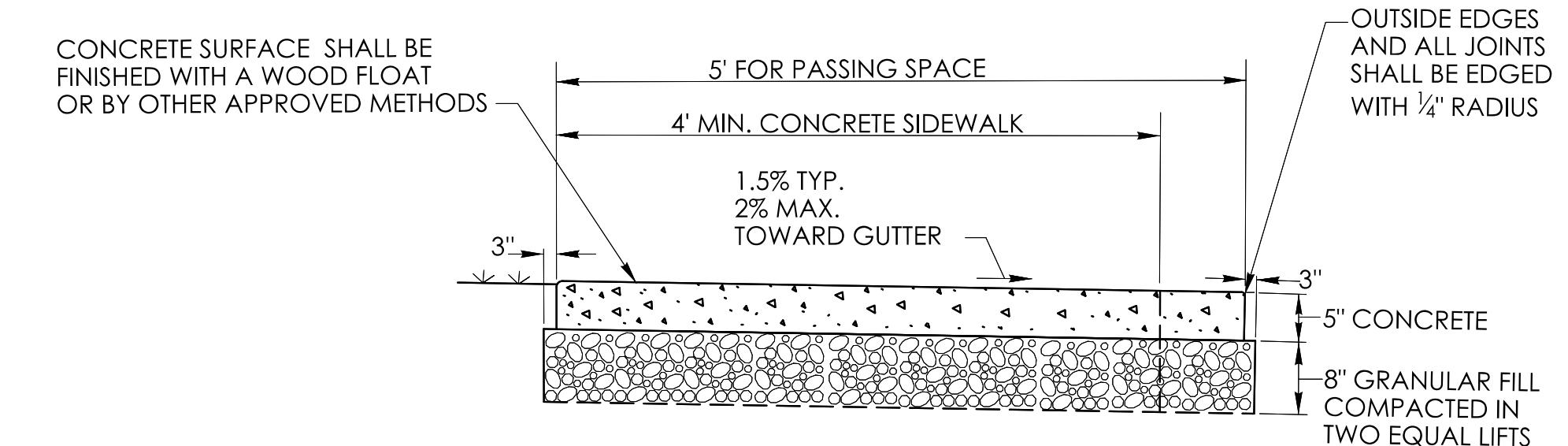
PASSING SPACES SHALL BE PROVIDED AT INTERVALS OF 200' MAXIMUM FOR SIDEWALKS LESS THAN 5' IN WIDTH

**5' WIDE SIDEWALK
PLAN**



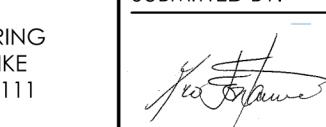
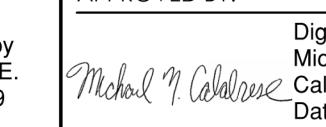
VERTICAL SURFACE DISCONTINUITIES

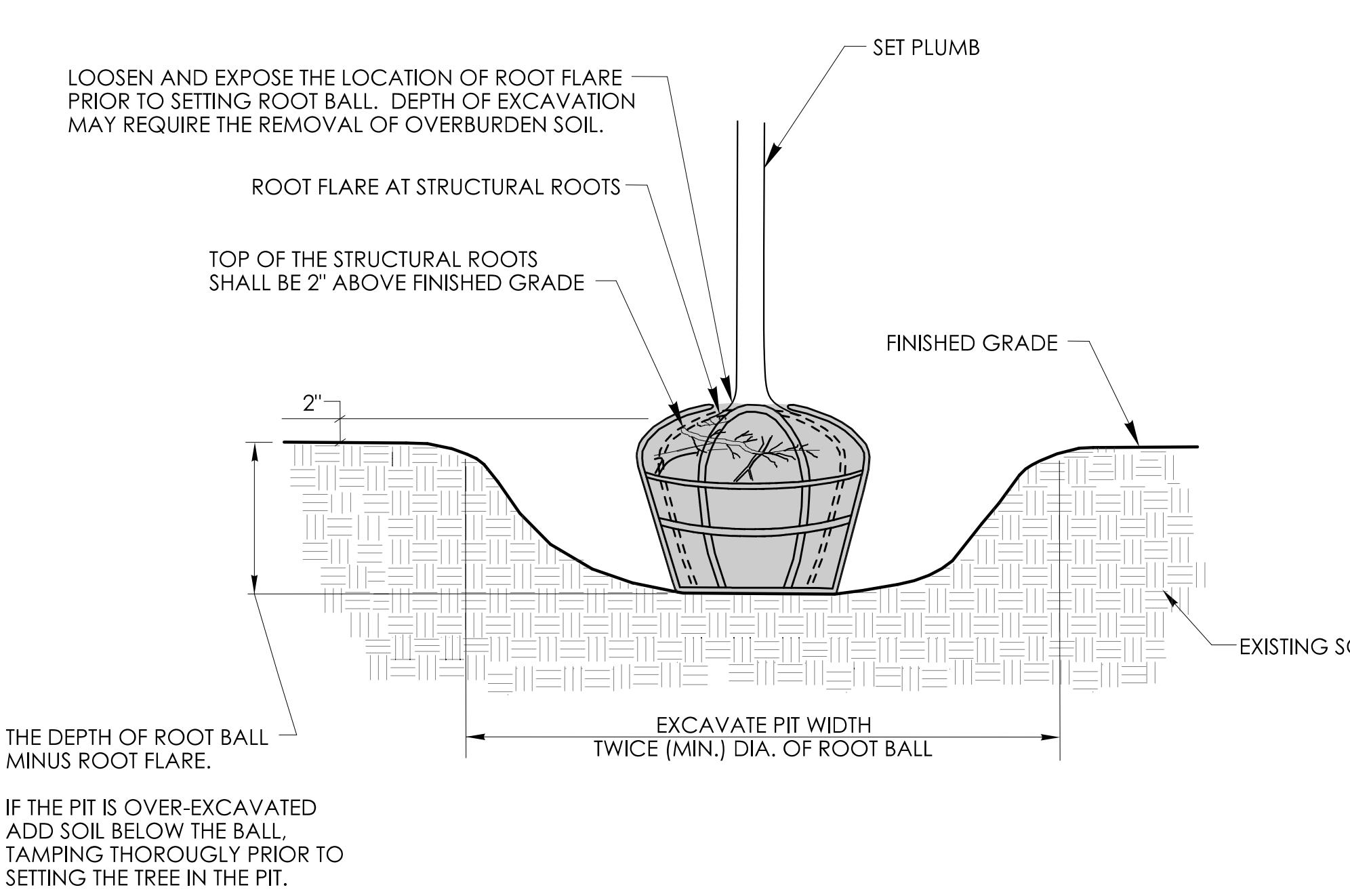
VERTICAL SURFACE DISCONTINUITIES MUST BE BEVELED TO A HEIGHT NOT GREATER THAN $\frac{1}{4}$ INCH. THE BEVEL MUST BE THE ENTIRE WIDTH OF THE DISCONTINUITY



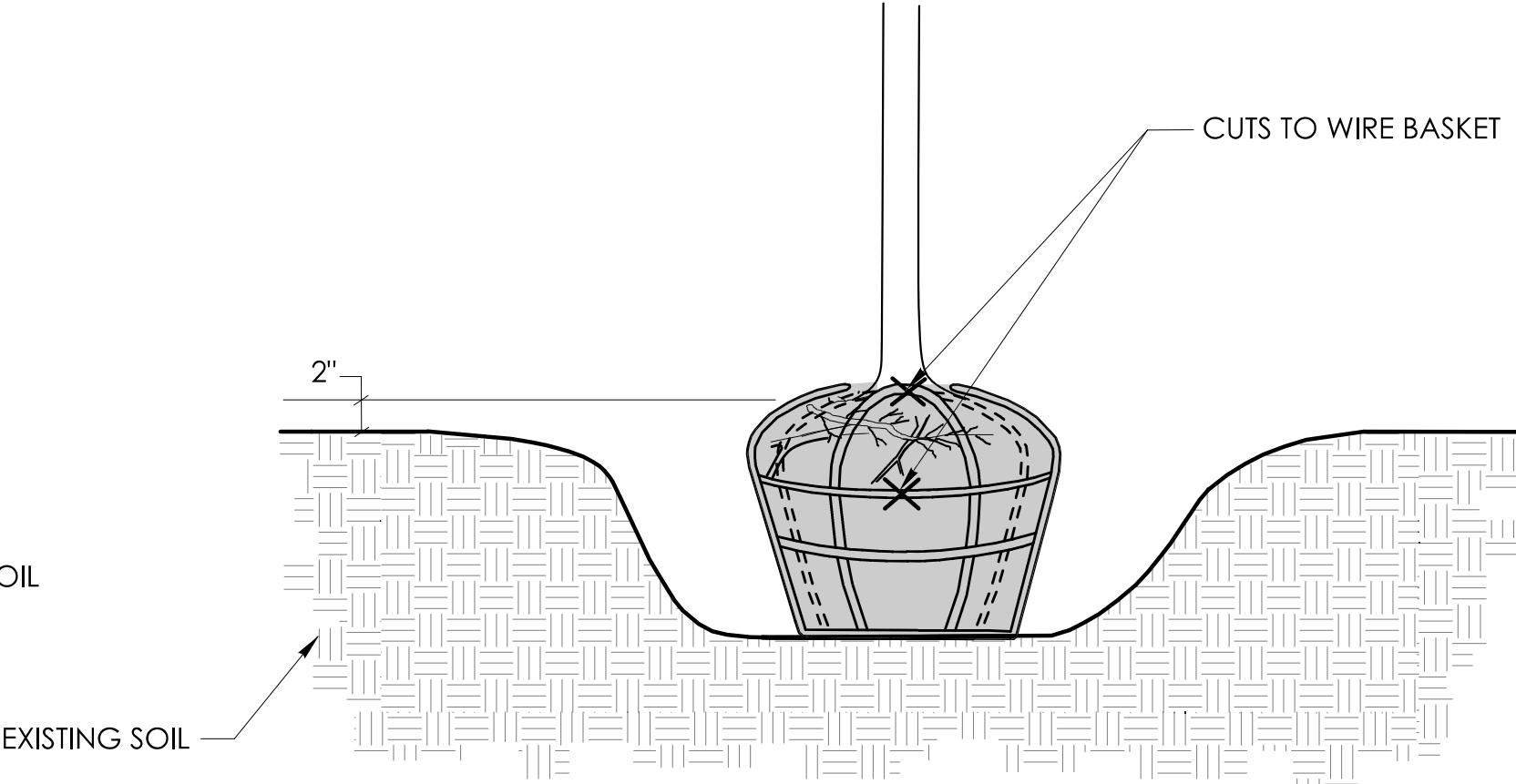
5' PASSING SPACE FOR 4' WIDE SIDEWALK

SECTION A

	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 15:11:56-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.29 12:47:10-05'00'	 CONNECTICUT DEPARTMENT OF TRANSPORTATION	STANDARD SHEET TITLE: CTDOT STANDARD SHEET	STANDARD SHEET NO.: HW-921_01
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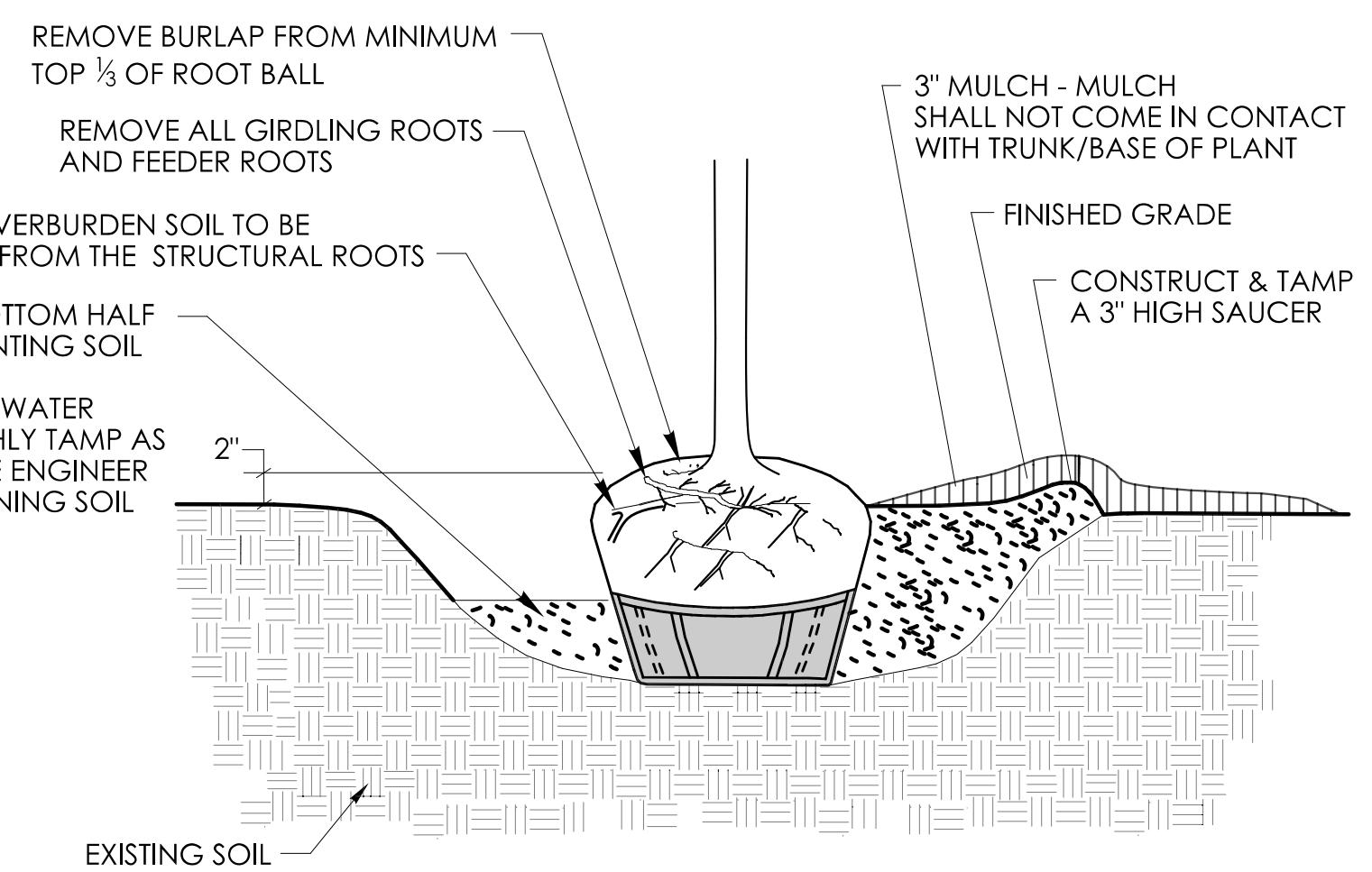


PIT EXCAVATION AND SETTING OF PLANTING

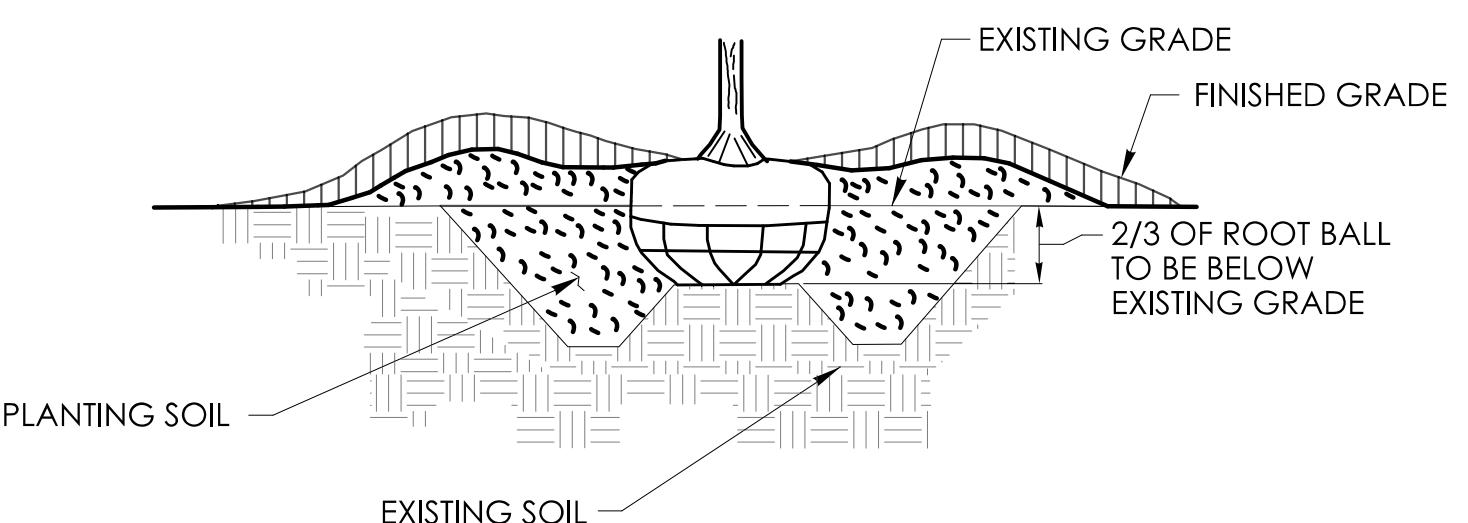


WIRE BASKET REMOVAL

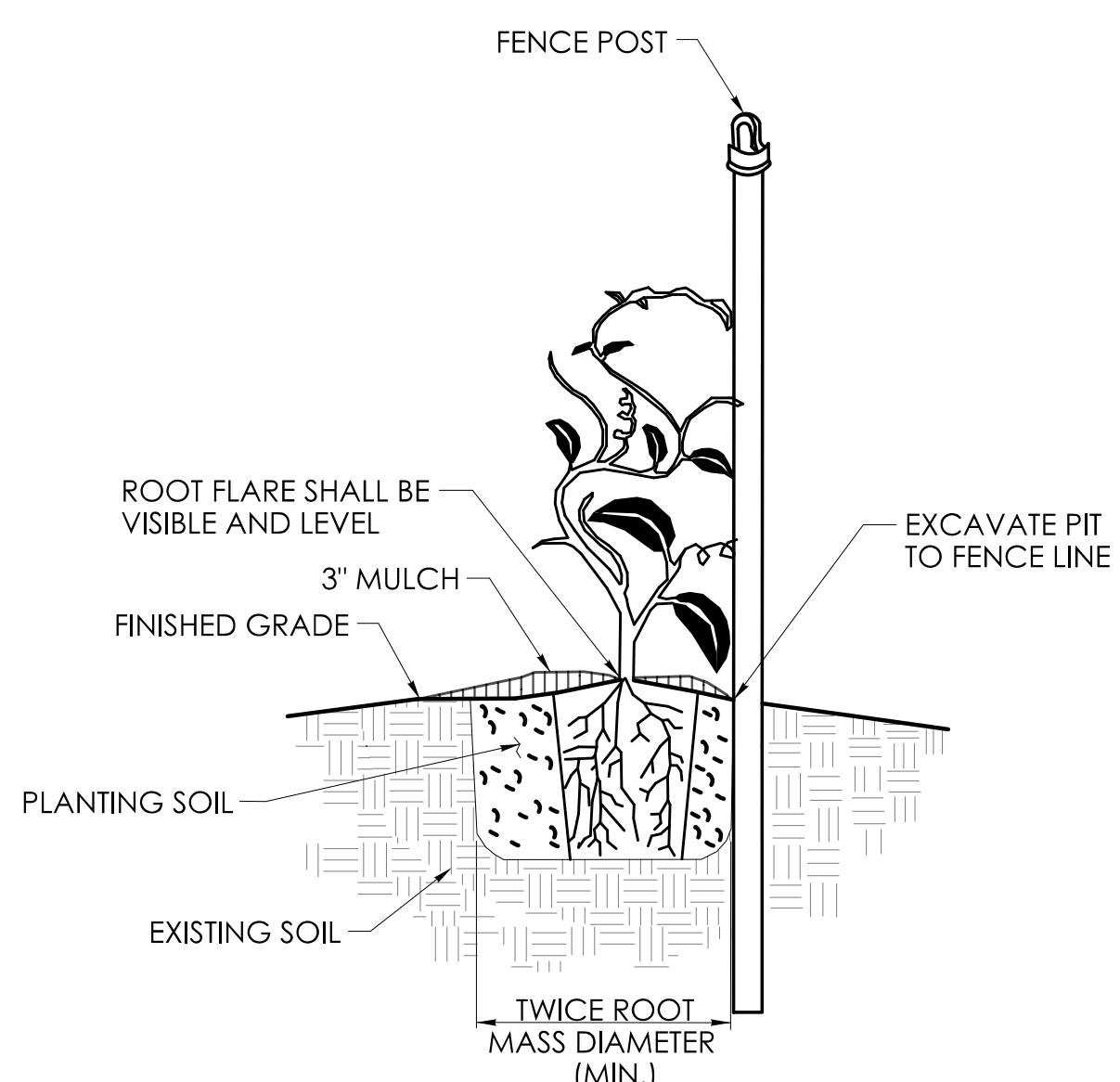
NOTE: IF WIRE BASKETS ARE USED, THE CONTRACTOR SHALL CUT ALL OF THE HORIZONTAL WIRES IN THE TOP $\frac{1}{3}$ OF THE ROOT BALL AND BEND DOWN OR REMOVE THE TOP $\frac{1}{3}$ OF THE WIRE BASKET



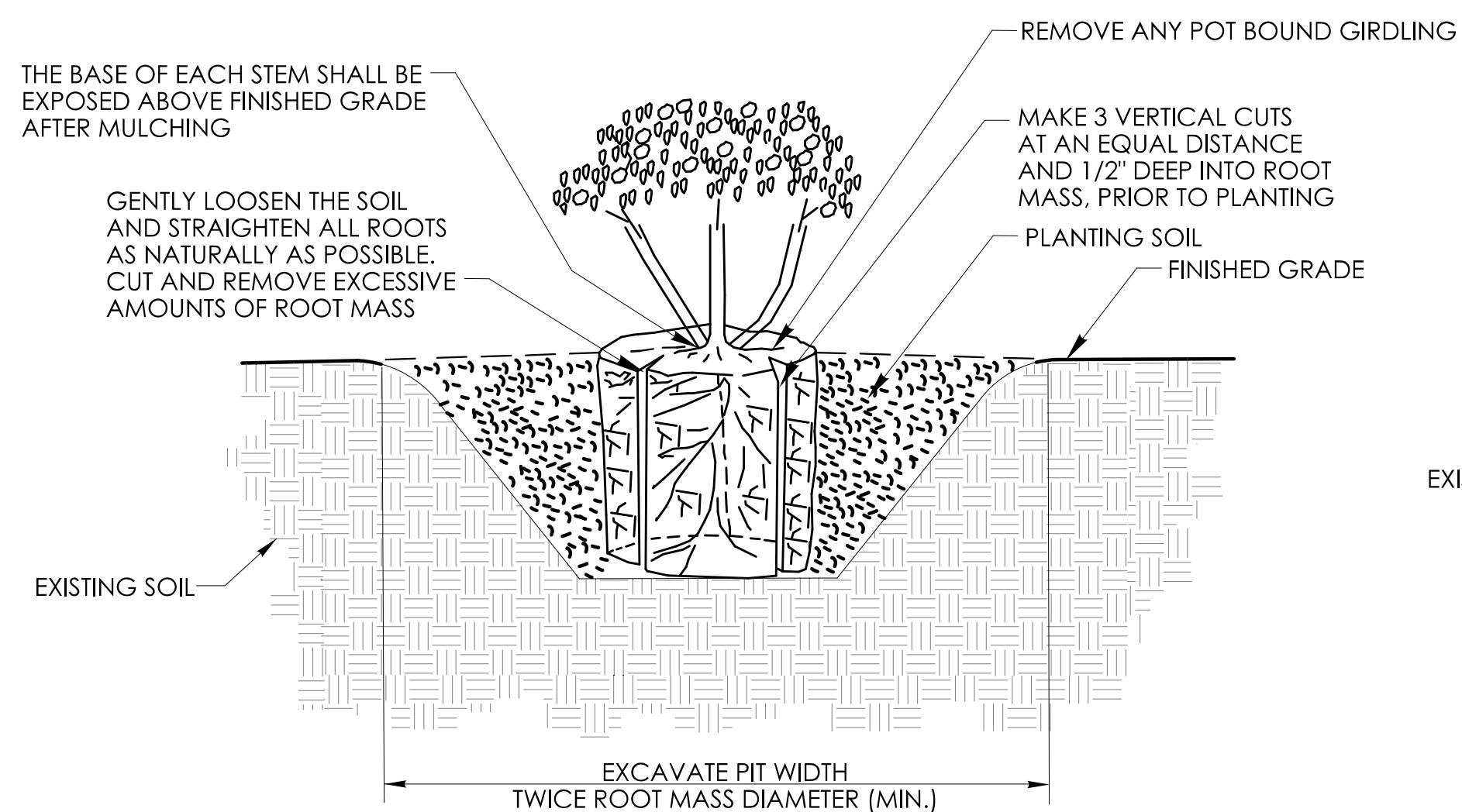
BACKFILL AND MULCH FOR PLANTING



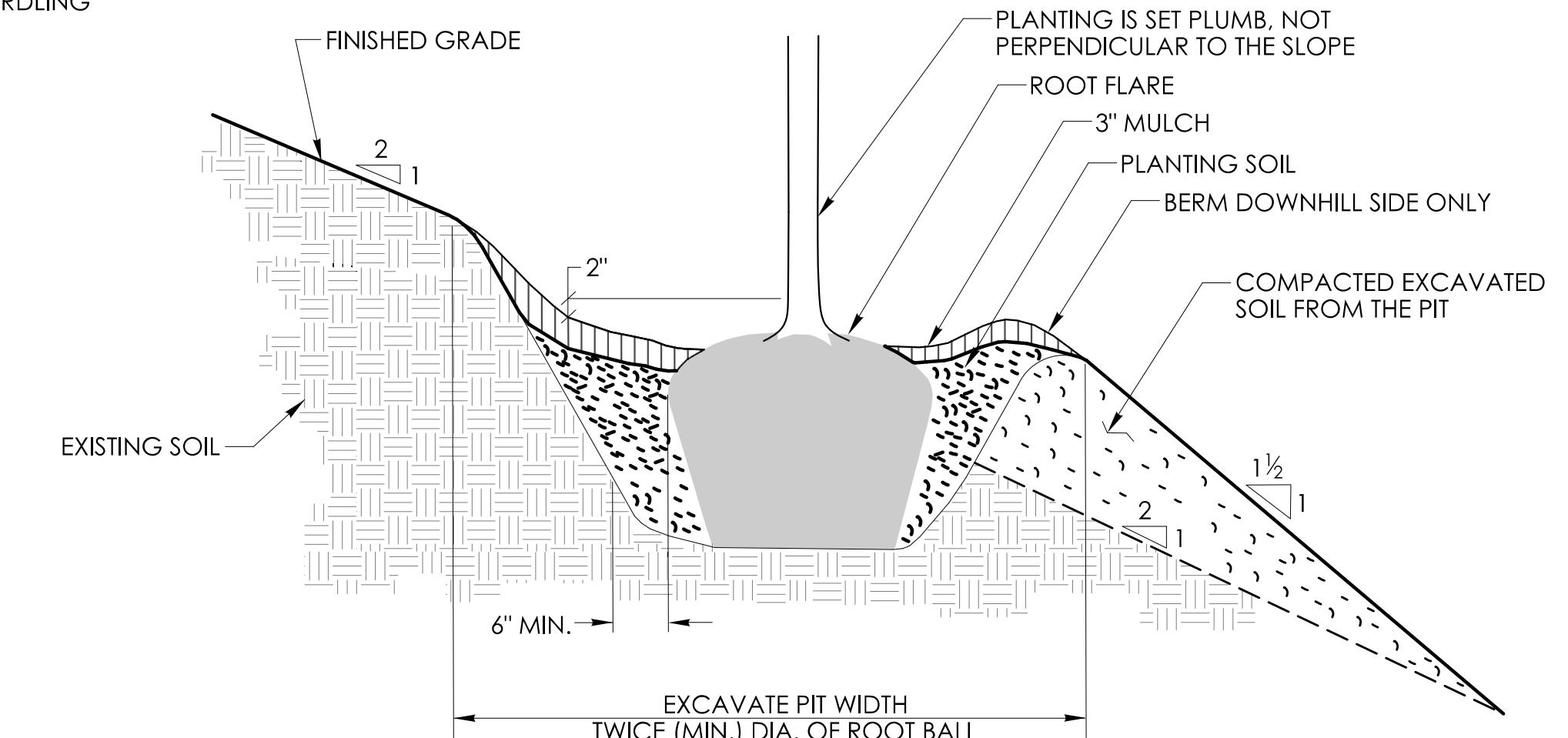
HEAVY CLAY PLANTINGS



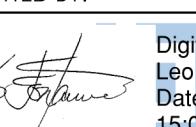
VINE PLANTING



CONTAINER GROWN PLANTING

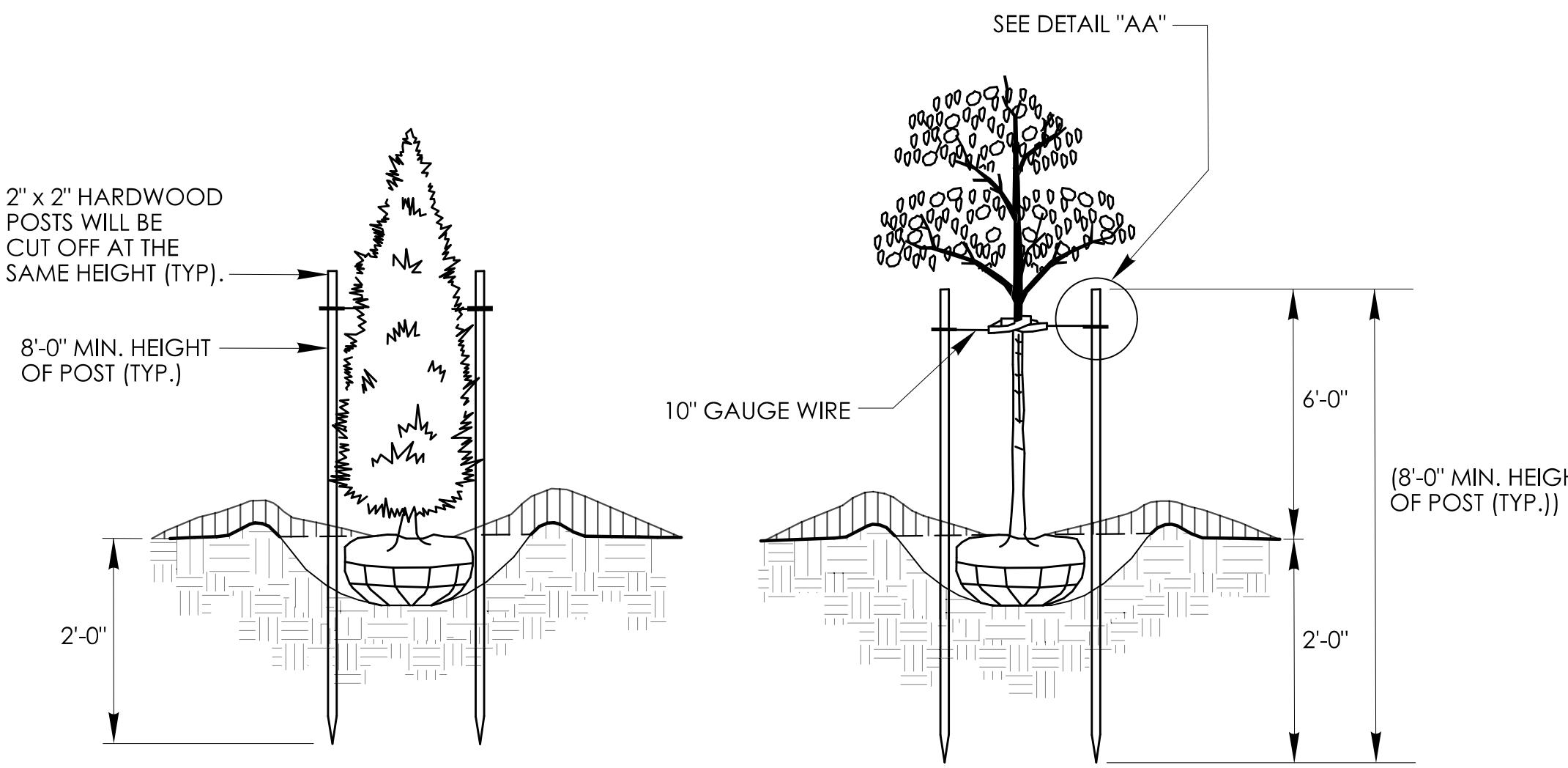


SLOPE PLANTING

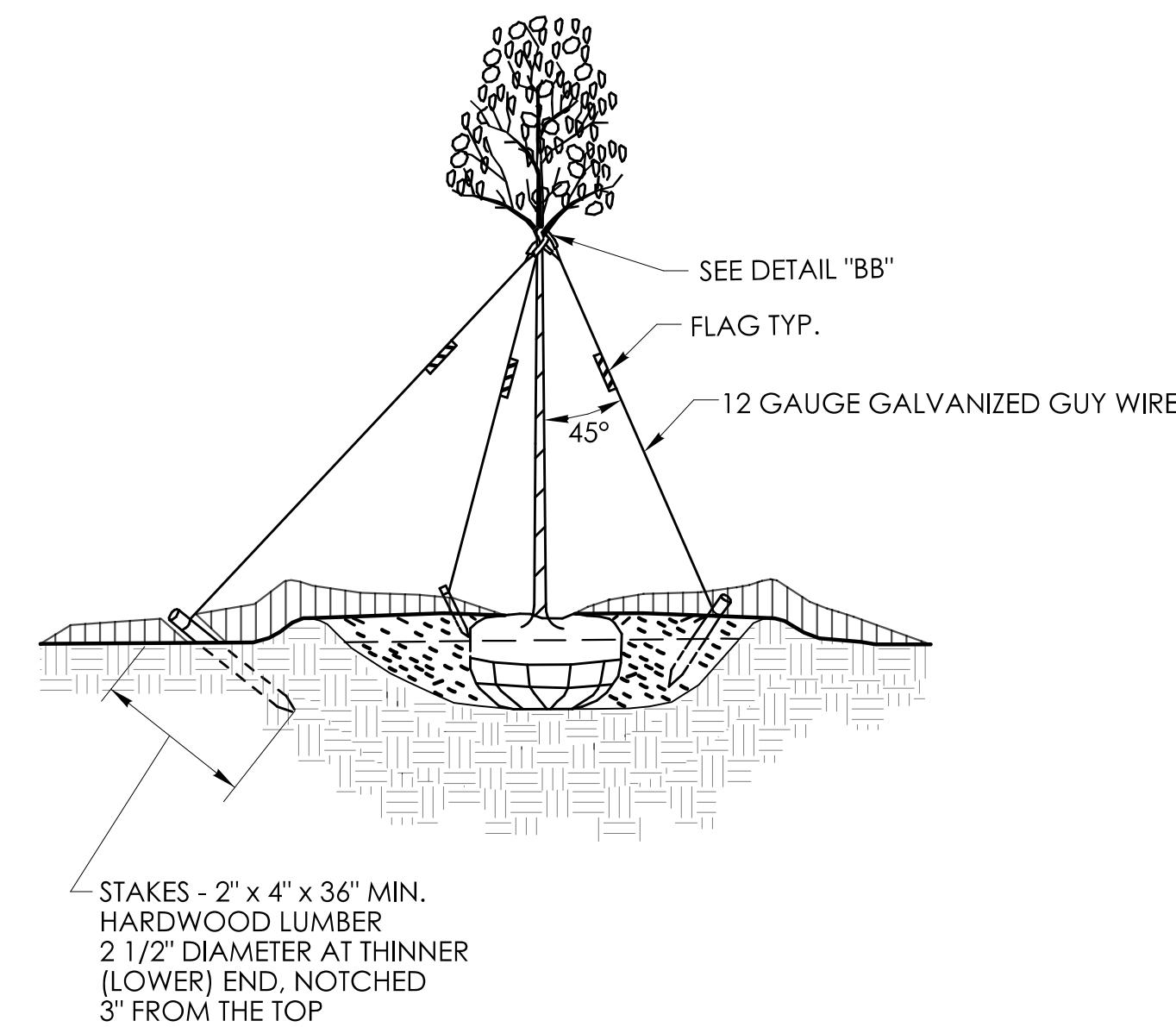
NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:  Digitally signed by Leo Fontaine, P.E. Date: 2024.12.19 15:09:41-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.29 22:52:12-05'00'	CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: LANDSCAPE PLANTING	STANDARD SHEET NO.: HW-949_01a

GENERAL NOTES:

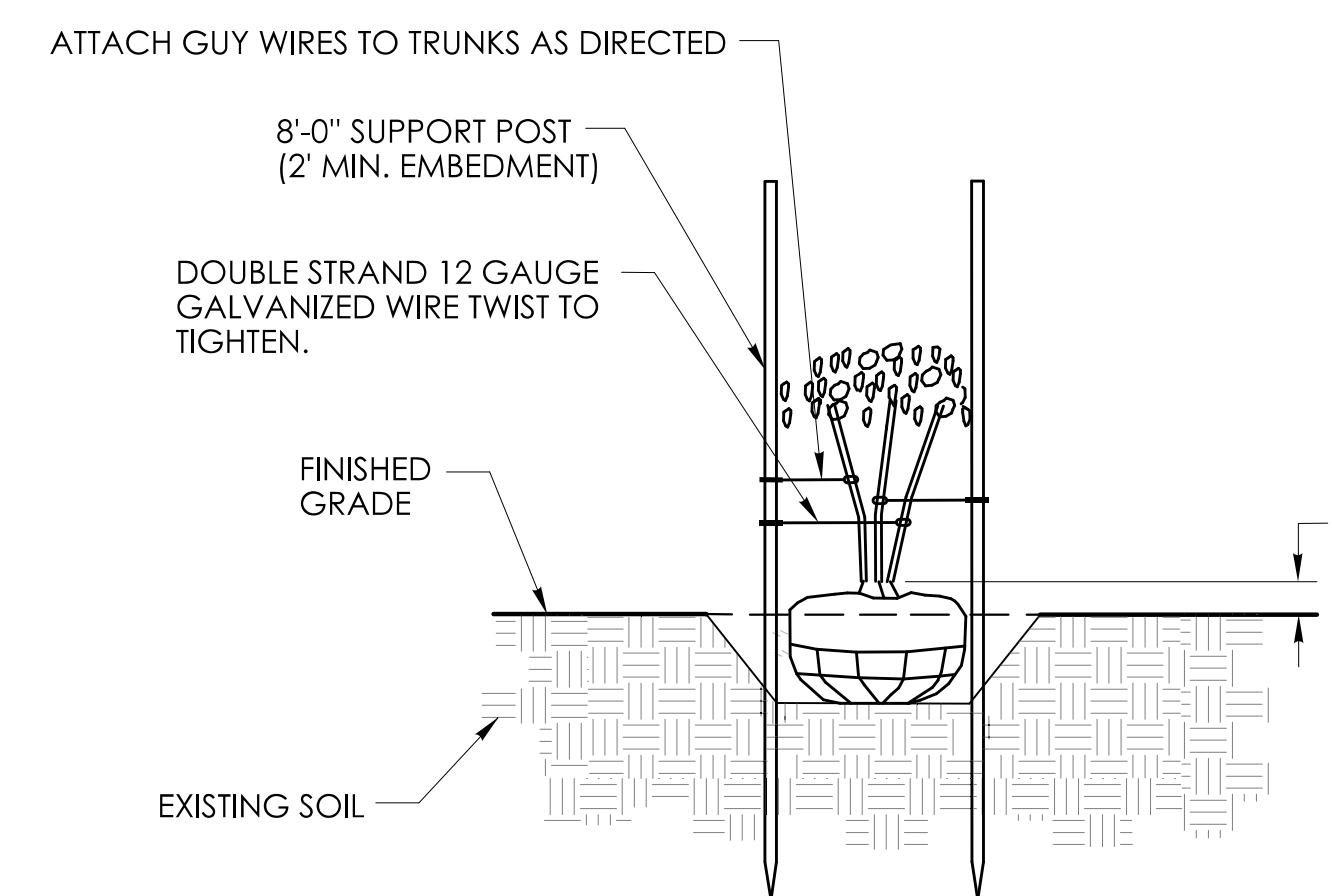
1. THE CONTRACTOR SHALL SUBMIT A STAKING PLAN FOR APPROVAL.
2. THE CONTRACTOR SHALL SUBMIT THE USE OF ANY OTHER MATERIALS FOR APPROVAL.
3. USE 3 POSTS FOR STAKING TREES 3" CALIPER OR GREATER AND EVERGREEN TREES 8' HIGH OR GREATER
4. USE DOUBLE STRAND 12 GAUGE GALVANIZED GUY WIRE FOR DECIDUOUS TREES GREATER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



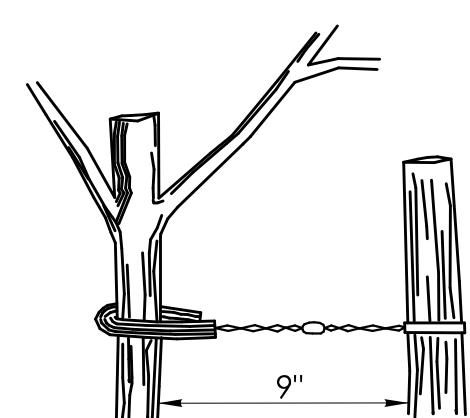
TWO STAKES



THREE GUYS AND STAKES



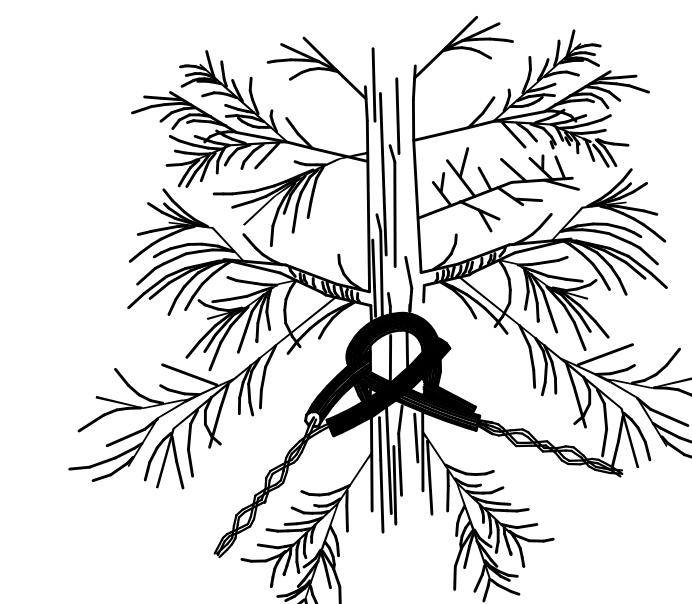
STAKING FOR MULTI-STEMMED TREES



DETAIL "AA"
POST AND GUY WIRE

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

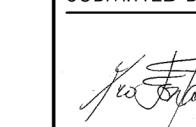
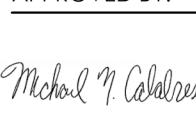
GUY WIRES SHOULD BE PLACED AT
LEAST HALF WAY UP THE TRUNK



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

	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 15:09:23-05'00'	APPROVED BY:  Digitally signed by Michael N. Calabrese, P.E. Date: 2025.01.29 22:53:37-05'00'	CONNECTICUT DEPARTMENT OF TRANSPORTATION	STANDARD SHEET TITLE: TREE STAKING	STANDARD SHEET NO.: HW-949_01b
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