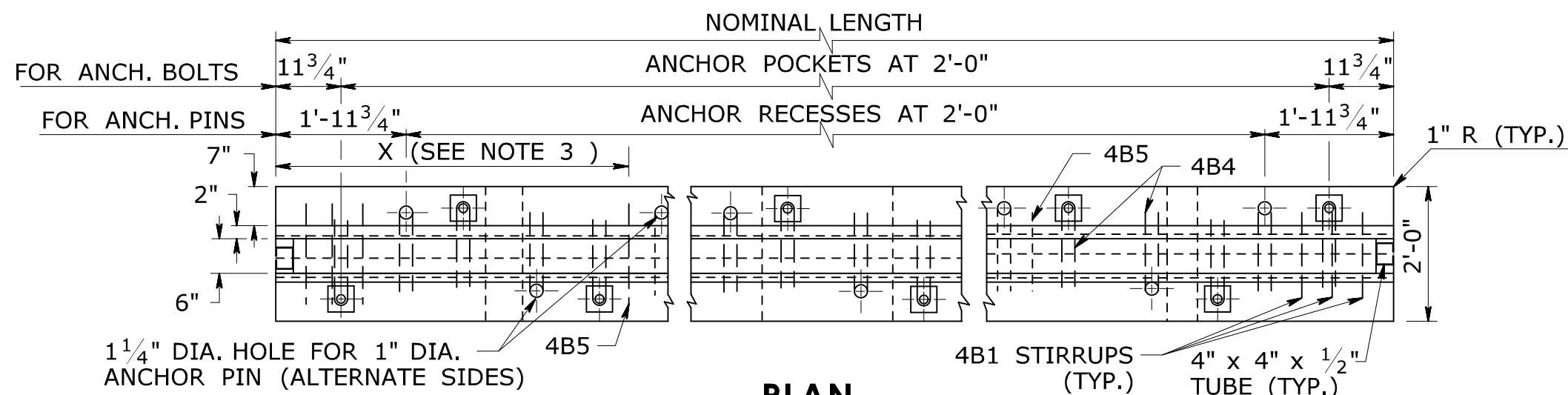


✓*	SHEET NO.	TITLE	APPROVAL DATE**	✓*	SHEET NO.	TITLE	APPROVAL DATE**
	HW-211_01	ANTI-TRACKING PAD	11-09-22		HW-821_01a	TRANSITION - 45" F-SHAPE TO 45" VERTICAL SHAPE SHEET 1	11-08-22
	HW-286_01	DRAINAGE TRENCH EXCAVATION	11-09-22		HW-821_01b	TRANSITION - 45" F-SHAPE TO 45" VERTICAL SHAPE SHEET 2	11-08-22
	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	MISCELLANOUS DETAILS FOR BARRIER TRANSITIONS	08-20-25
	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				

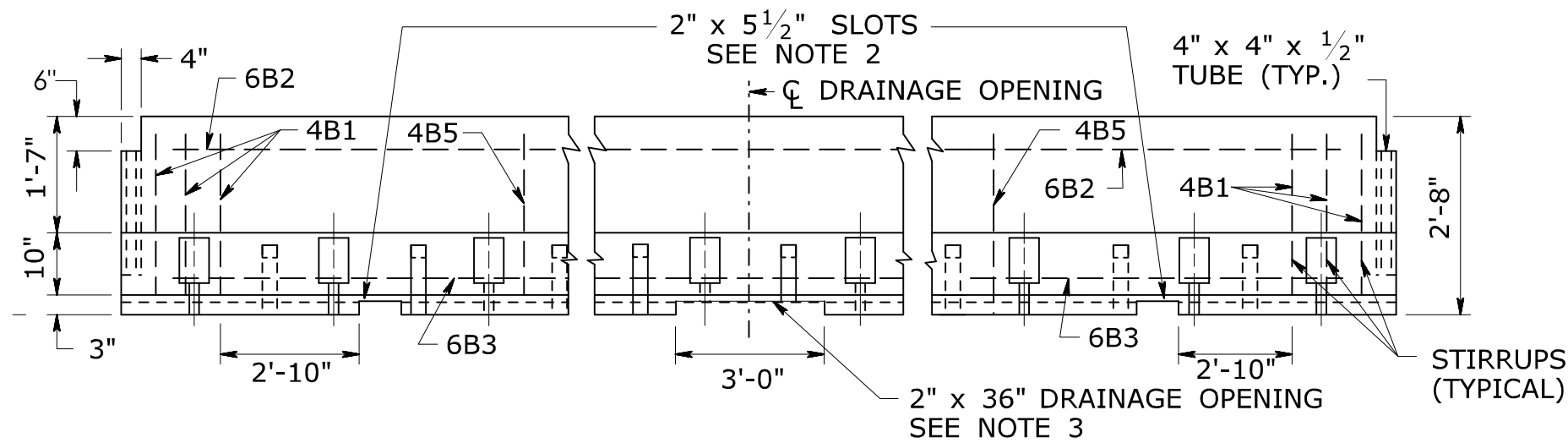
*ONLY STANDARD SHEETS MARKED WITH AN " ✓ " ARE IN THIS PROJECT #0111-0127**REVISED OR ADDED

✓*	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

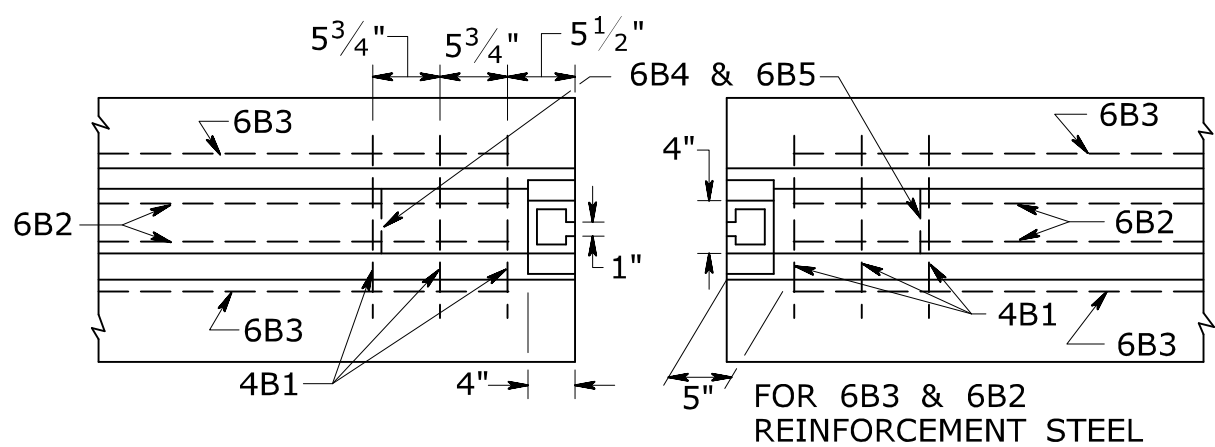
✓*	SHEET NO.	TITLE	APPROVAL DATE**
✓	HW-910_25a	METAL BEAM RAIL TRANSITION 350 TO MASH	10-17-24
	HW-910_25b	METAL BEAM RAIL MEDIAN APPLICATION TRANSITION 350 TO MASH GUIDERAIL	01-05-24
✓	HW-910_26	THRIE-BEAM ATTACHMENT HARDWARE	11-08-22
✓	HW-910_27	THRIE-BEAM ATTACHMENT	11-08-22
	HW-910_29	THRIE-BEAM BRIDGE ATTACHMENT TRAILING END	02-02-24
	HW-910_30a	METAL BEAM RAIL (6 X 6 BOX BEAM) GUIDERAIL - HARDWARE	01-28-25
	HW-910_30b	METAL BEAM RAIL (6 X 6 BOX BEAM) GUIDERAIL	01-28-25
✓	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_06a	METAL BEAM RAIL (6 x 6 BOX BEAM) END ANCHORAGE TYPE I - HARDWARE	01-28-25
	HW-911_06b	METAL BEAM RAIL (6 x 6 BOX BEAM) END ANCHORAGE TYPE I	01-28-25
	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



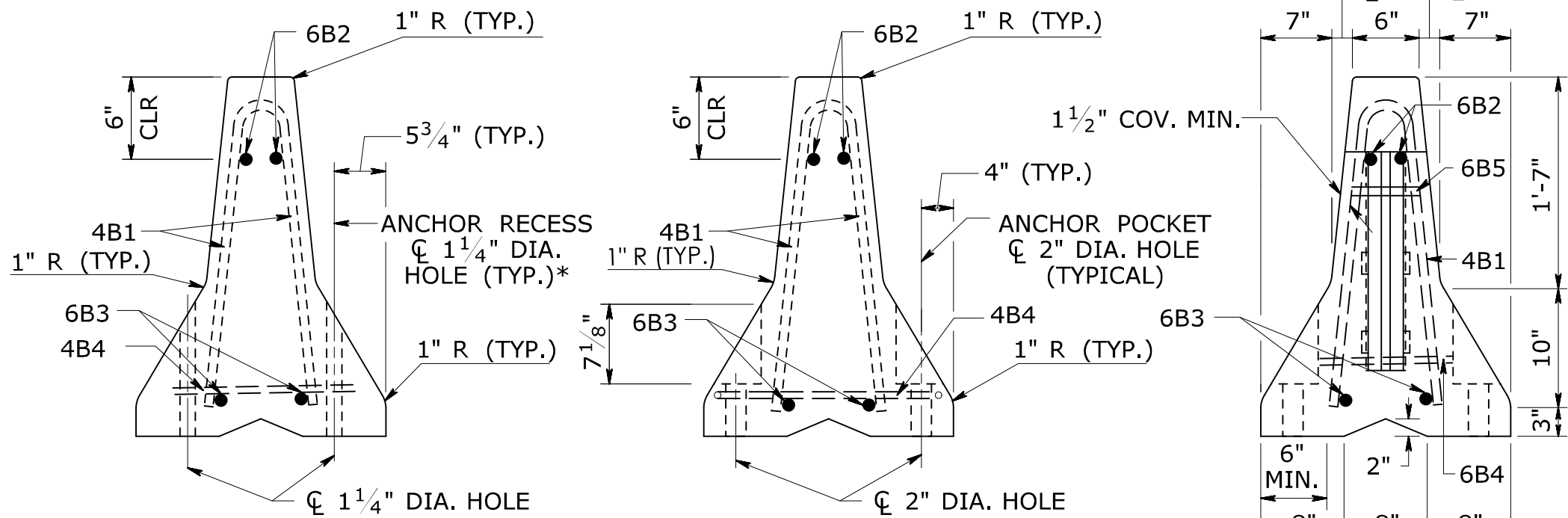
PLAN



ELEVATION



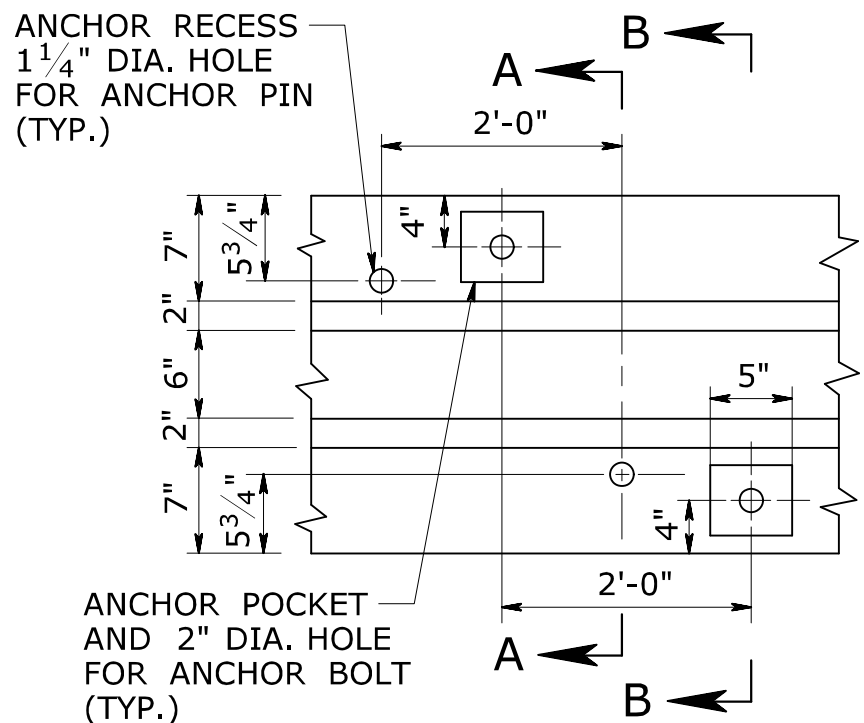
PLAN - BARRIER END



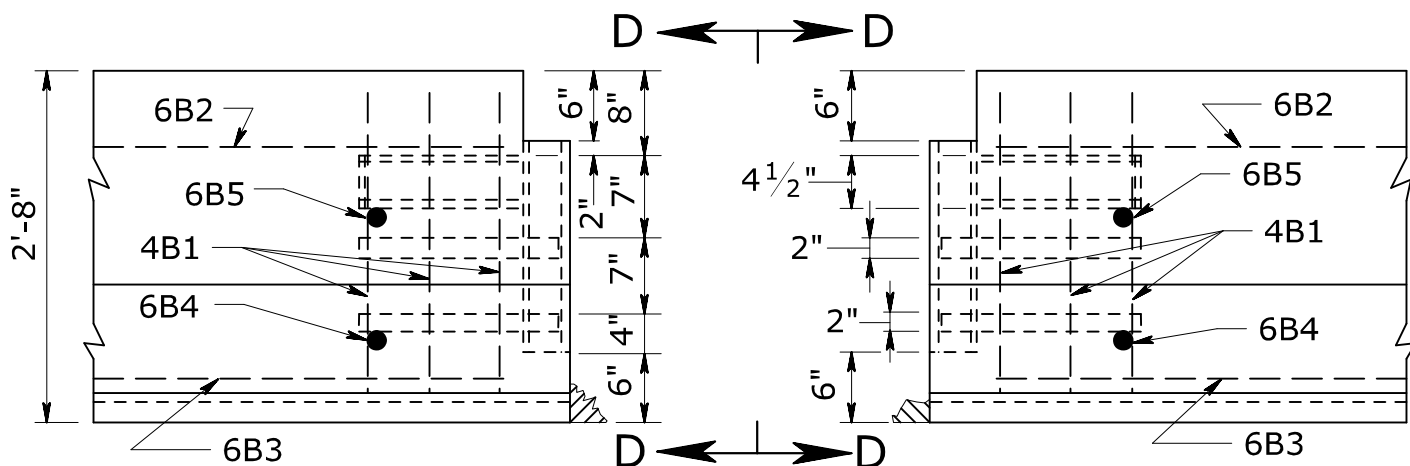
SECTION A-A

SECTION B-B

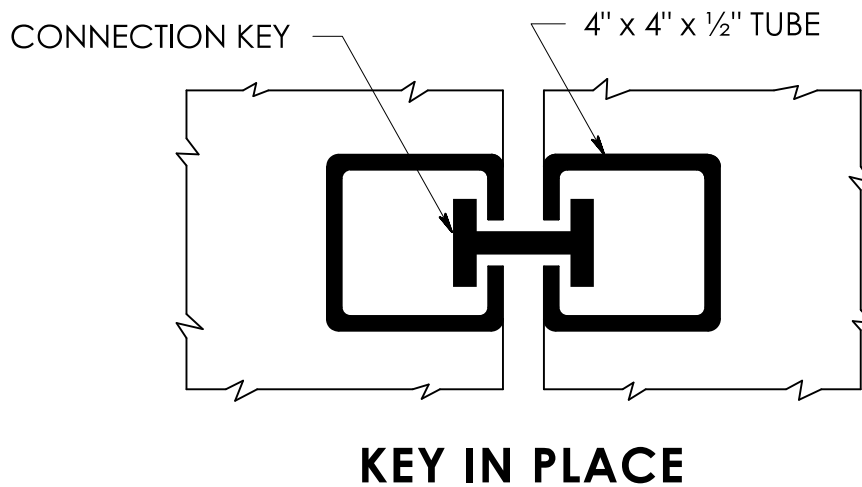
SECTION D-D



PLAN - ANCHOR RECESS/POCKET
SEE NOTE 5



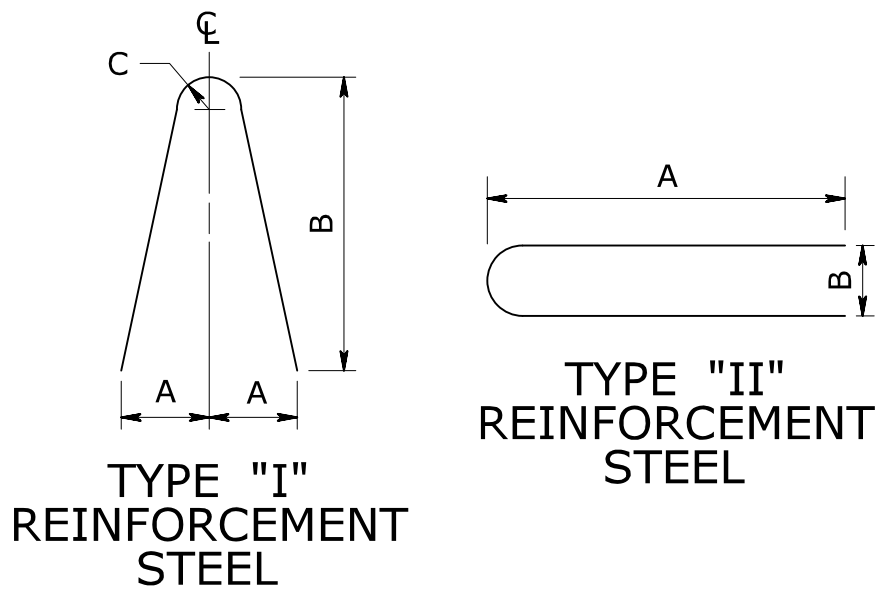
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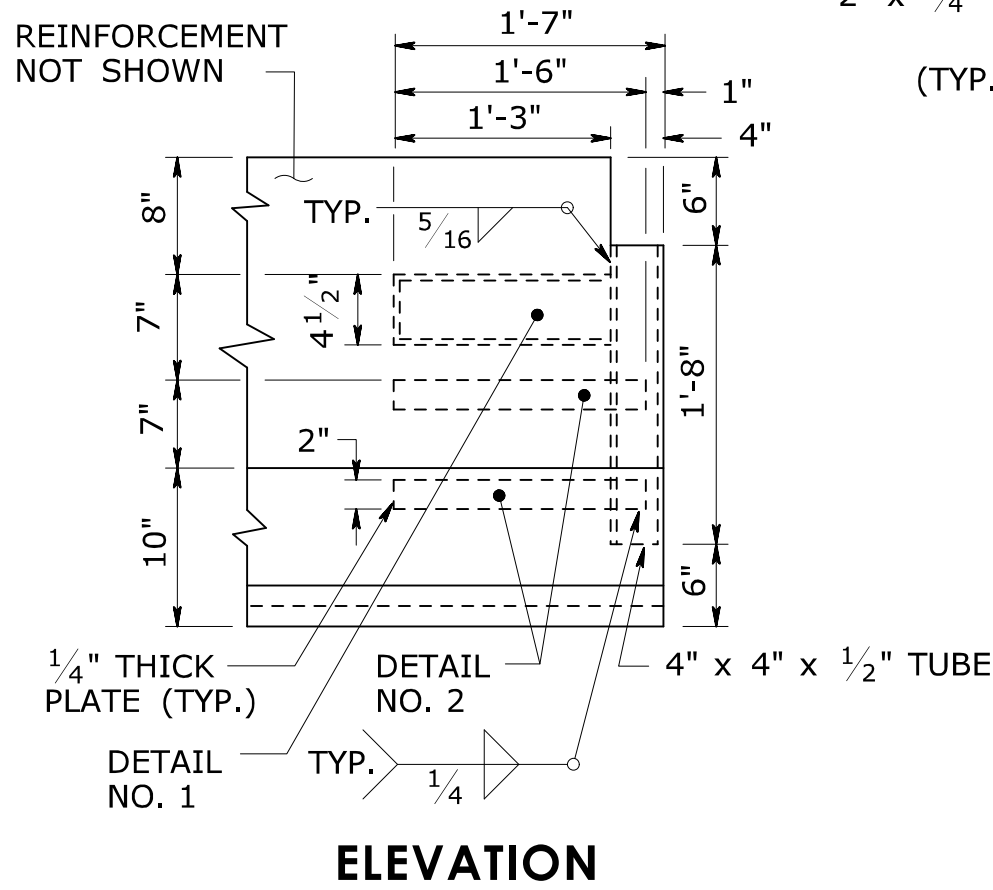
KEY IN PLACE

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			

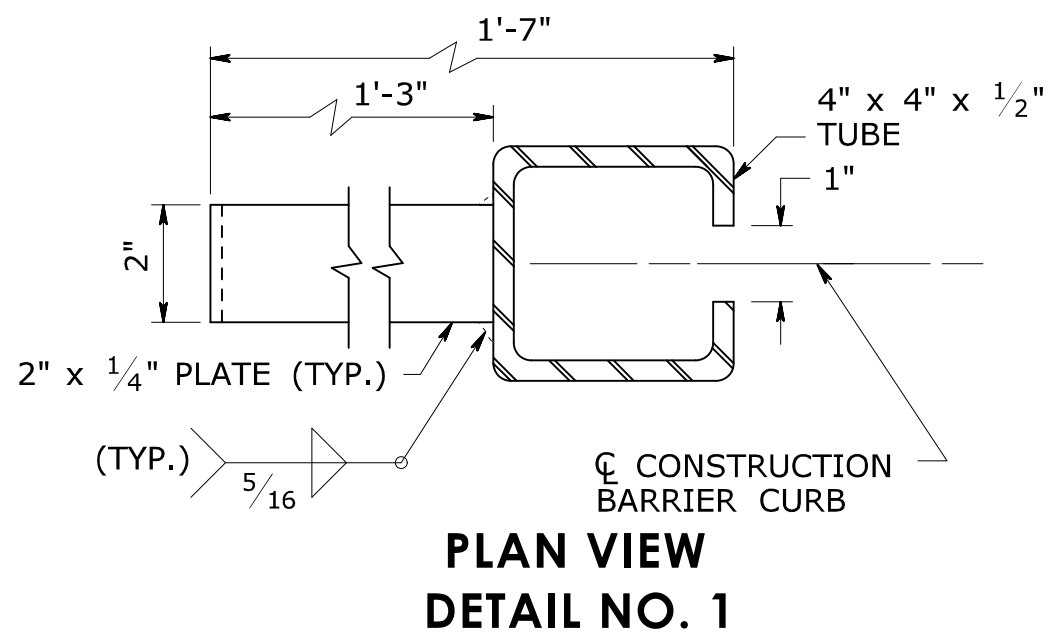
TEMPORARY TRAFFIC BARRIER



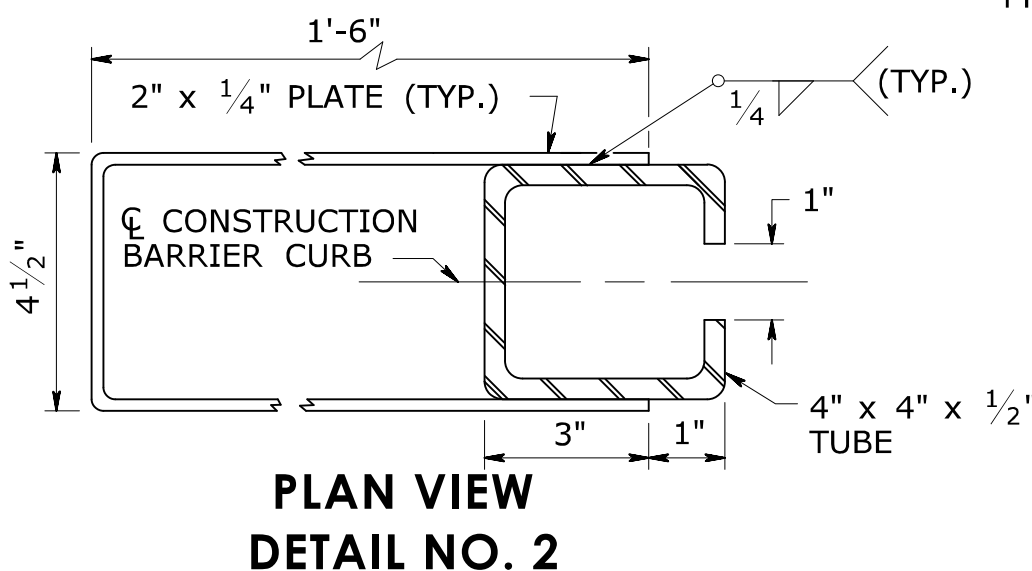
REINFORCEMENT STEEL LIST (EACH BARRIER SECTION)							
MARK	SIZE	NUMBER IN EACH SECTION	LENGTH	TYPE	A	B	C
4B1	#4	6	4'-11"	I	5"	26"	2"
4B4	#4	SEE NOTE 4	3'-1"	II	15 1/2"	4"	
4B5	#4	SEE NOTE 4	4'-11"	I	5"	26"	2"
6B2	#6	2	SEE NOTE 4	STR.			
6B3	#6	2	SEE NOTE 4	STR.			
6B4	#6	2	1'-2"	STR.			
6B5	#6	2	0'-6"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



ELEVATION

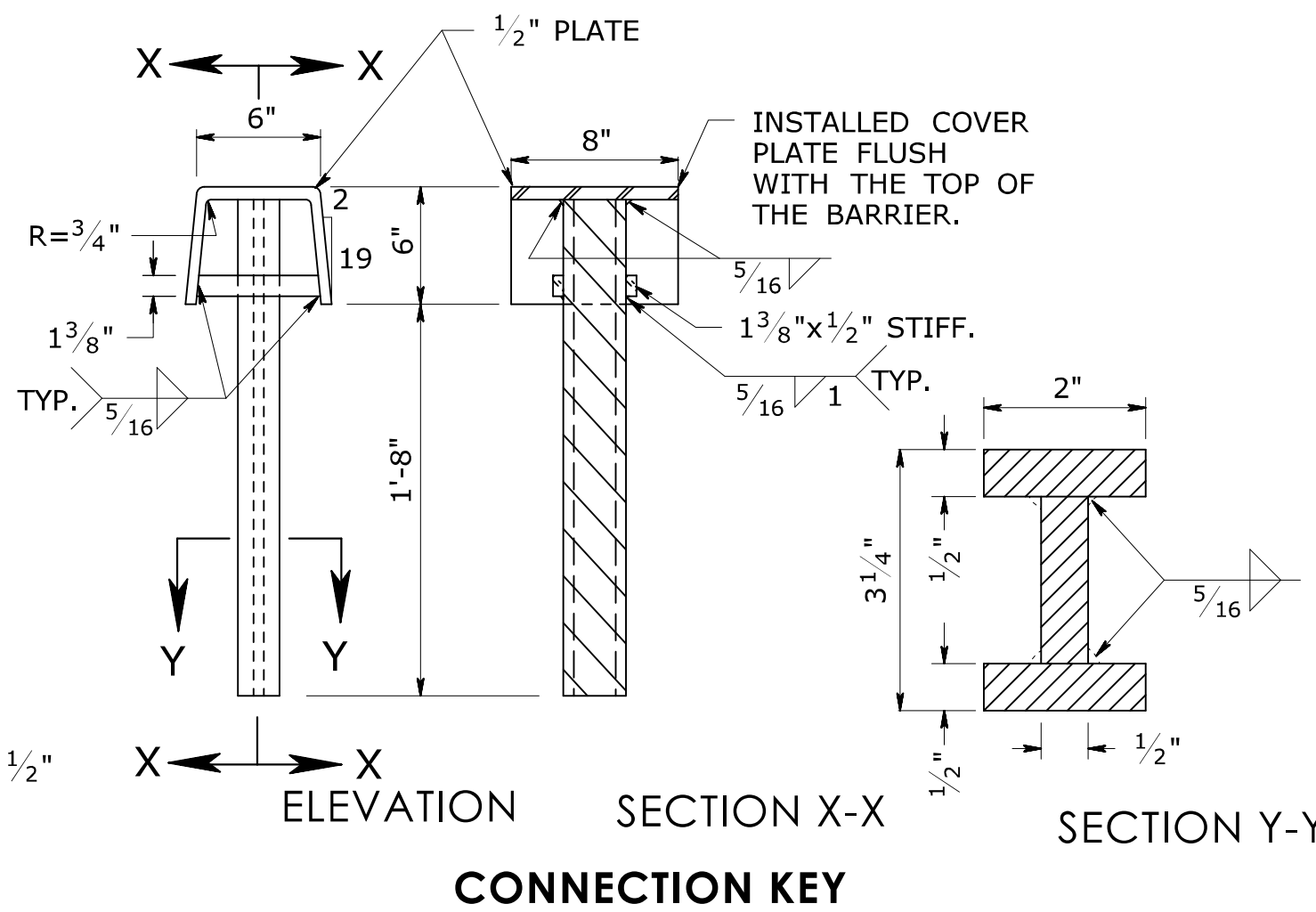


PLAN VIEW
DETAIL NO. 1



PLAN VIEW
DETAIL NO. 2

TEMPORARY TRAFFIC BARRIER CONNECTION DETAILS



SECTION X-X
CONNECTION KEY

SECTION Y-Y

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

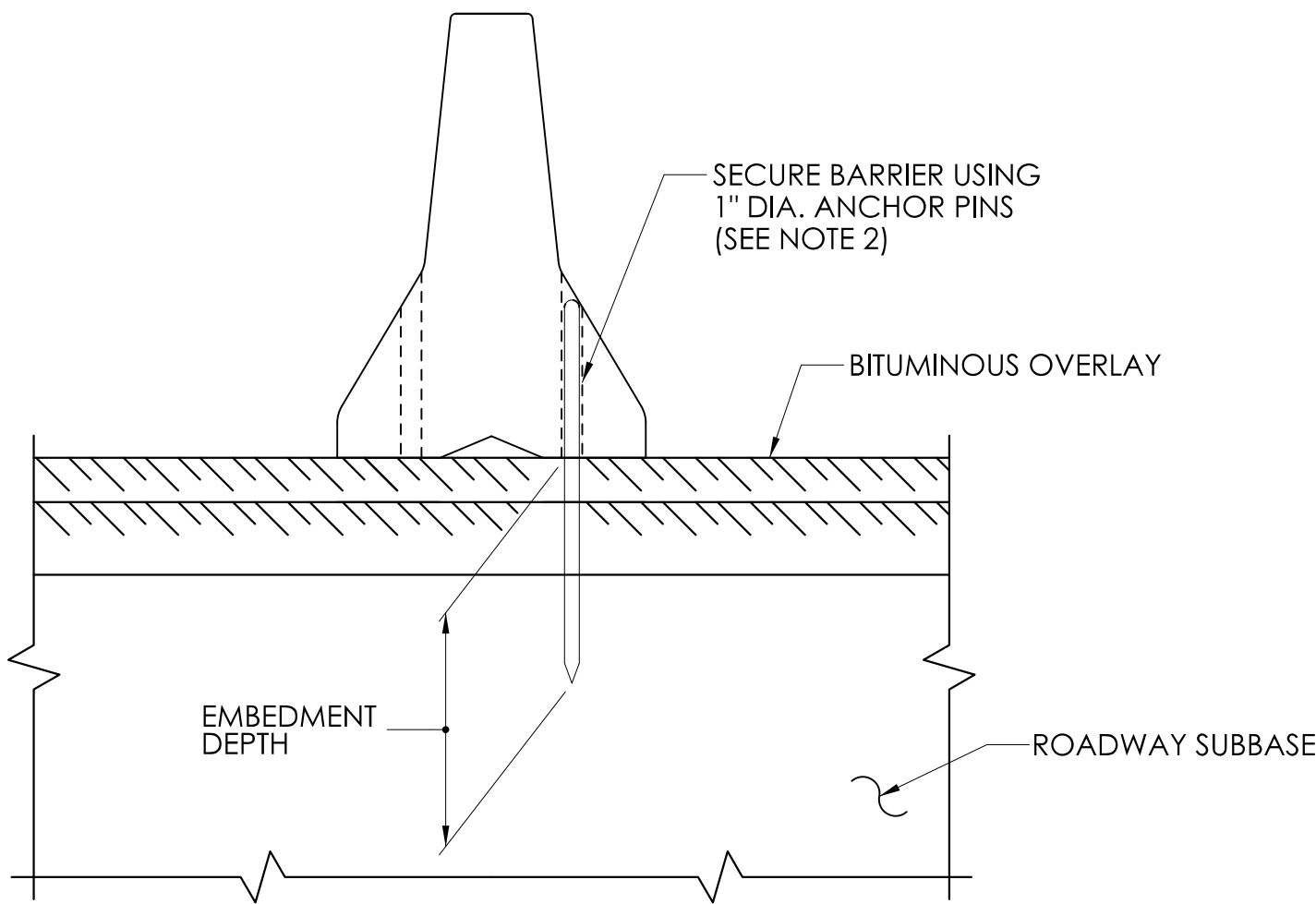
STANDARD SHEET TITLE:

TEMPORARY TRAFFIC BARRIER - DETAILS

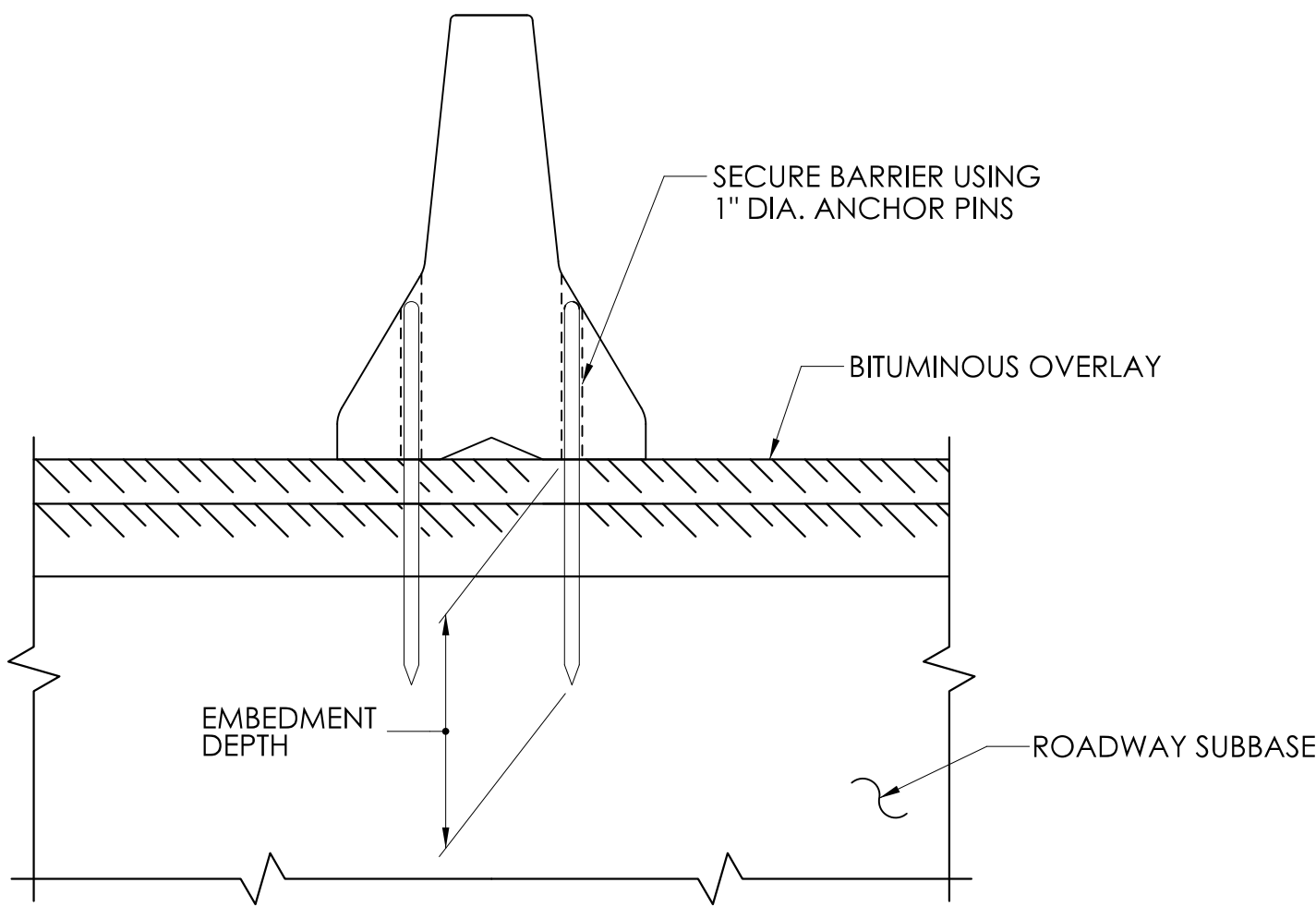
MASH 2016 COMPLIANT
APPROVAL ID: 2021-01

STANDARD SHEET NO.:

HW-822_02a



END VIEW - TEMPORARY TRAFFIC BARRIER (PINNED)
SEE NOTES 2 & 3 FOR PIN OPTIONS
ROADSIDE APPLICATION SHOWN



END VIEW - TERMINAL UNIT

NOTE A
ENSURE THAT THE LENGTH OF THE ANCHOR PIN IS SUCH THAT THE FOLLOWING
MINIMUM EMBEDMENT LENGTH IS OBTAINED:

- (A) INTO CONCRETE PAVEMENT 0'-5"
- (B) INTO FLEXIBLE PAVEMENT 1'-6"
- (C) INTO UNPAVED AREA 2'-6"



ANCHOR PIN

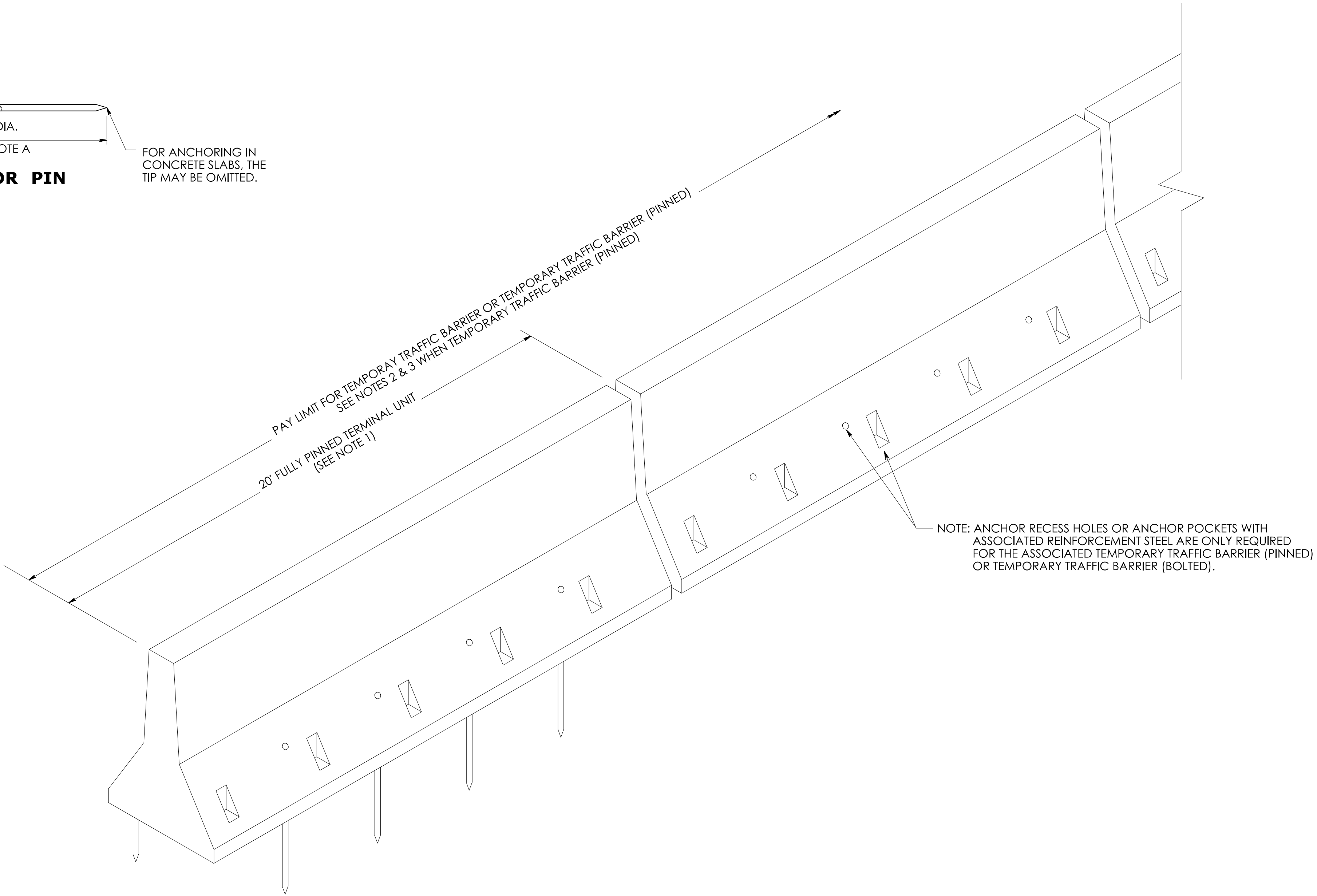
FOR ANCHORING IN
CONCRETE SLABS, THE
TIP MAY BE OMITTED.

GENERAL NOTES:

1. THE FIRST AND LAST UNIT OF A TEMPORARY TRAFFIC BARRIER LAYOUT SHALL BE 20 FOOT IN LENGTH AND FULLY PINNED (9 PINS) ON BOTH SIDES.
2. ANCHOR PINS SHALL NOT ALTERNATE SIDES.
3. TEMPORARY TRAFFIC BARRIER (PINNED) SHALL BE FULLY PINNED (9 PINS) IN LOCATIONS WHERE THE BARRIERS ARE DIVIDING OPPOSING TRAFFIC.
4. ALL ANCHOR PINS INSTALLED SHALL NOT PROJECT BEYOND THE TEMPORARY TRAFFIC BARRIER'S SURFACE.
5. INSTALL DELINEATORS WITH THE COLORS AND SPACING AS REQUIRED IN SECTION 8.22.
6. TEMPORARY TRAFFIC BARRIER DESIGN DEFLECTION DISTANCES BY TYPE:

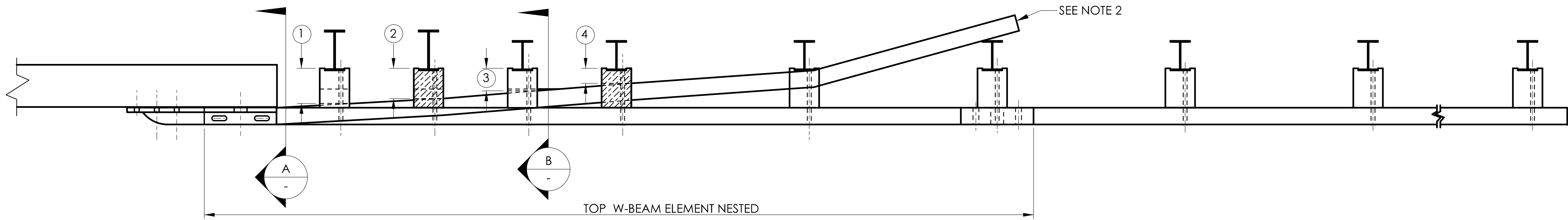
BARRIER TYPE	**DEFLECTION
UNPINNED	40"
PINNED	20"

** MASH STANDARD DEFLECTION CAUSED BY 5,000 LB VEHICLE TRAVELING 62 MPH IMPACTING THE BARRIER AT 25 DEGREE ANGLE.

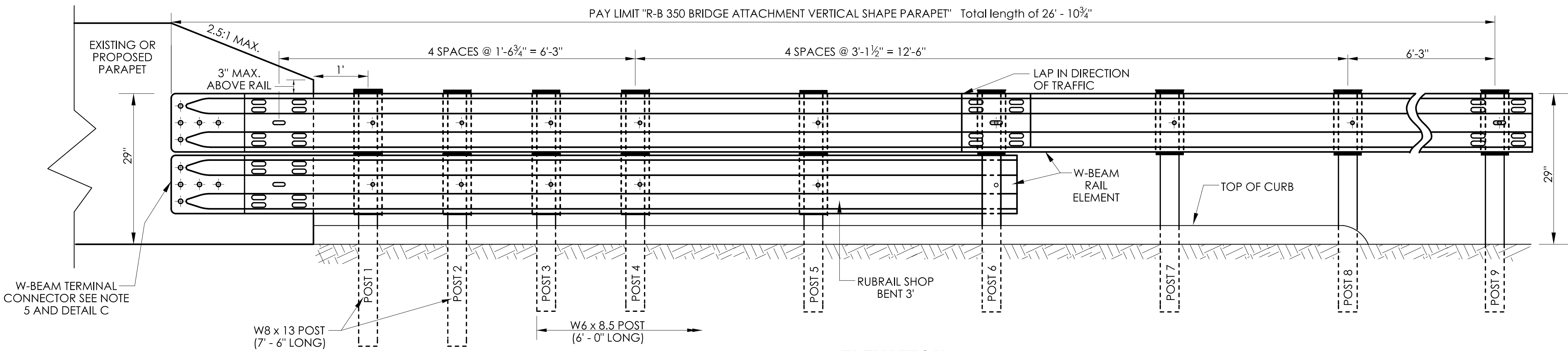


TEMPORARY TRAFFIC BARRIER

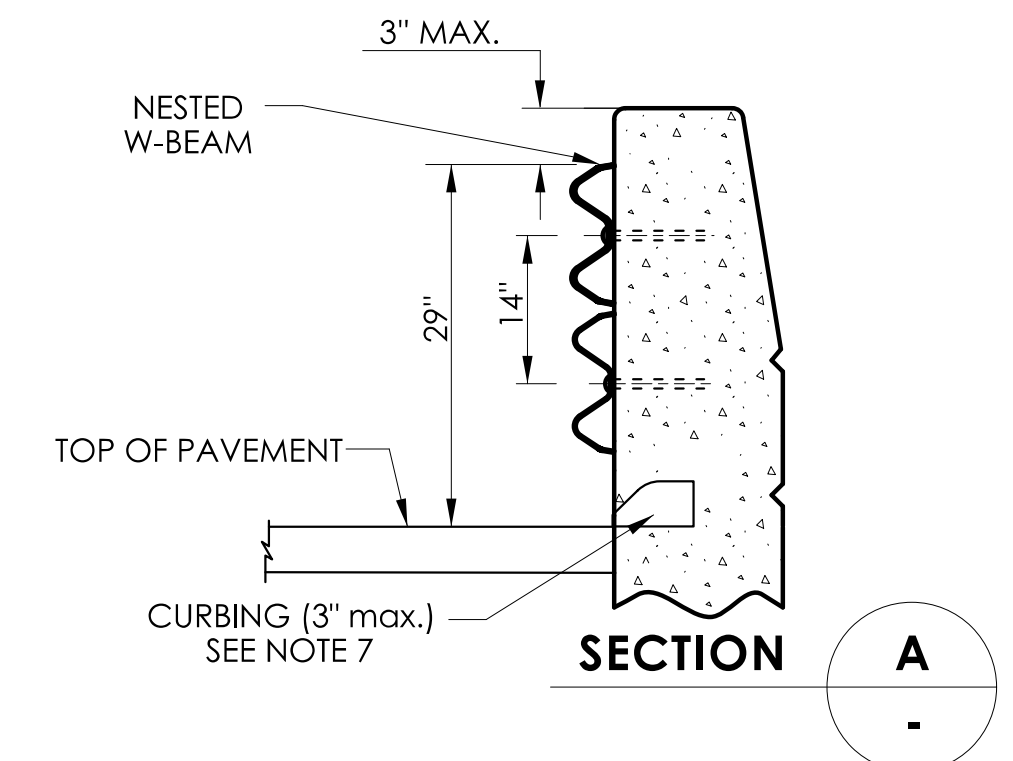
MASH 2016 COMPLIANT
APPROVAL ID. 2021-01



PLAN

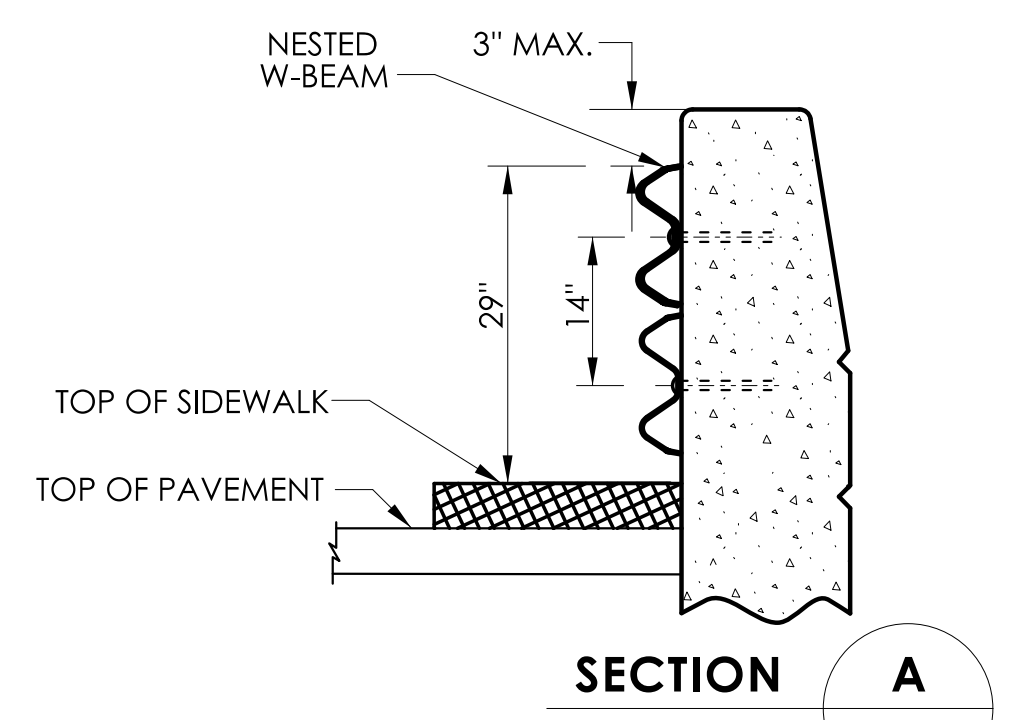


ELEVATION



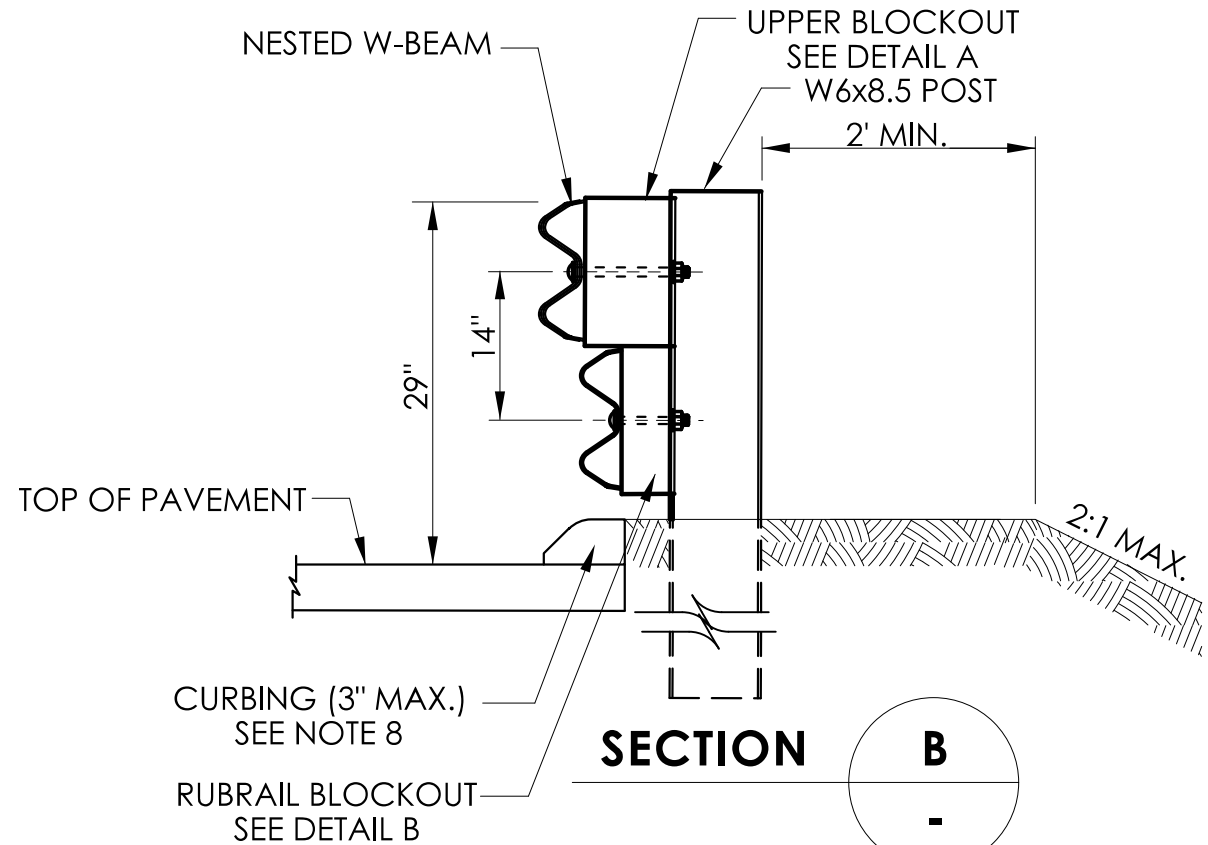
SECTION A

WITH CURBING



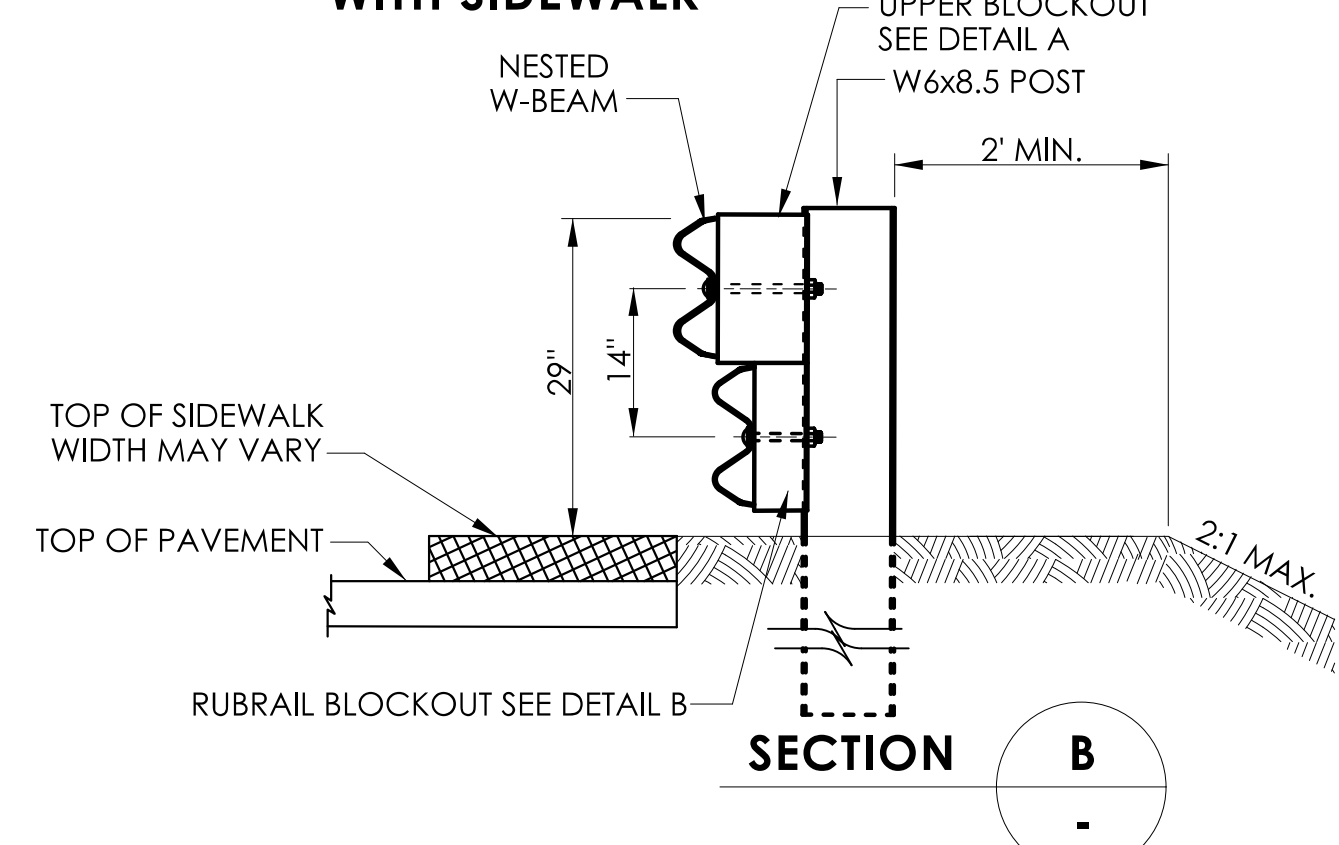
SECTION A

WITH SIDEWALK



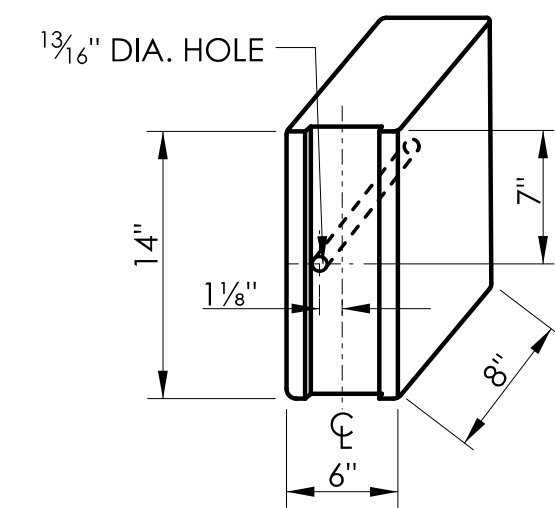
SECTION B

WITH CURBING

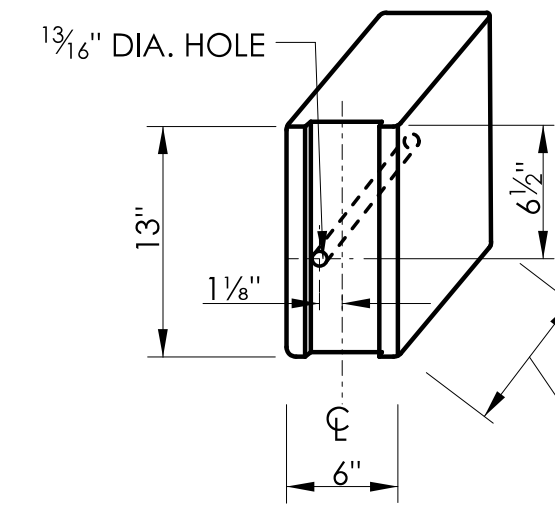


SECTION B

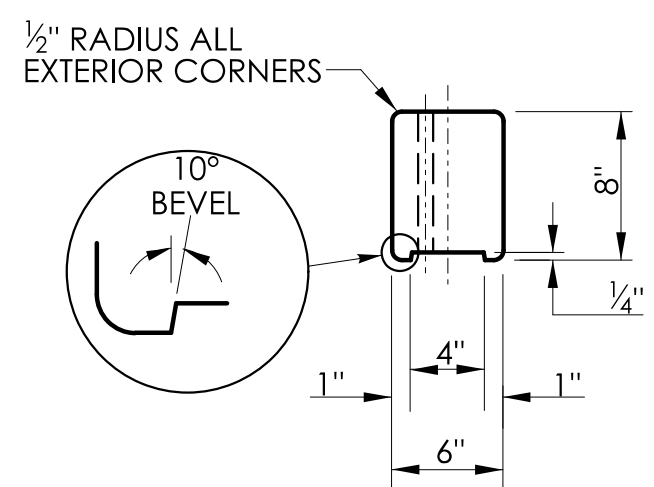
WITH SIDEWALK



DETAIL A
UPPER BLOCKOUT

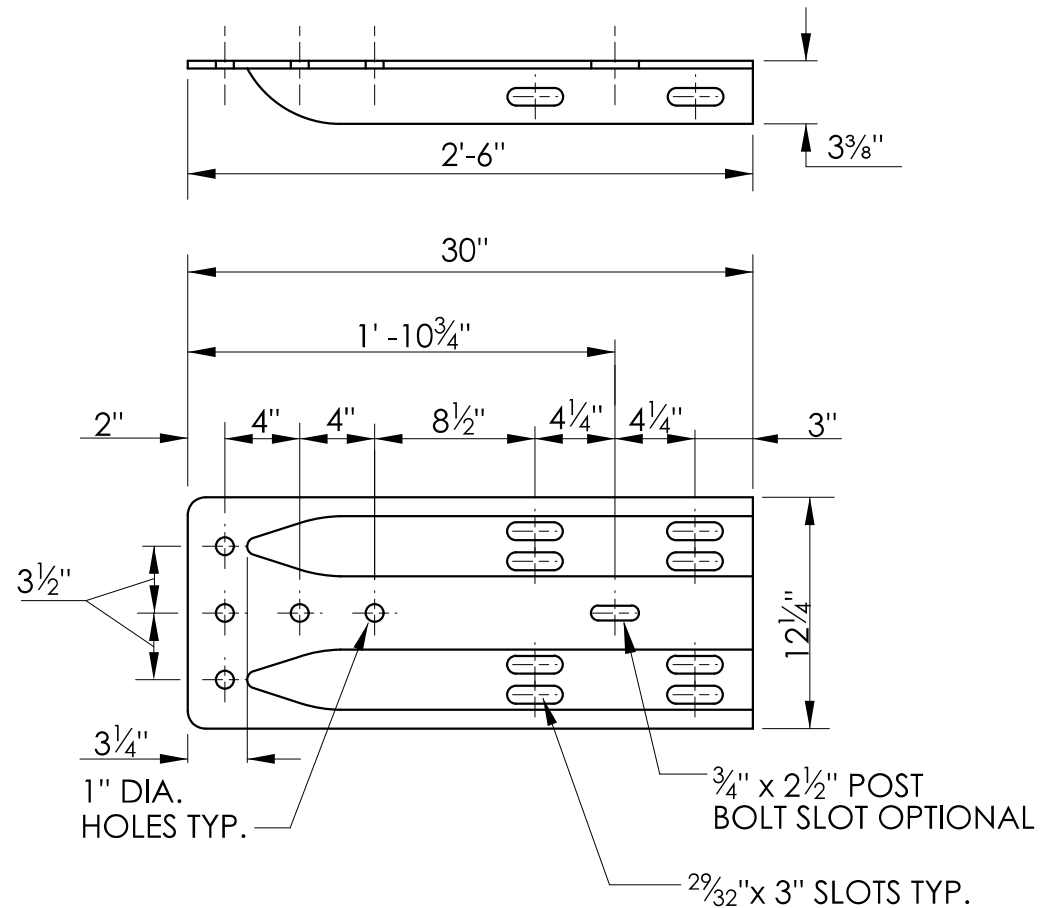


DETAIL B
RUBRAIL BLOCKOUT



TOP

RUBRAIL BLOCKOUTS 13" HIGH x 6" WIDE		
POST	THICKNESS	BOLT LENGTH
①	7"	9"
②	6"	8"
③	4½"	6"
④	3"	5"



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

GENERAL NOTES:

1. RUBRAIL BLOCKOUTS FOR POSTS 1 THROUGH 4 ARE ATTACHED TO POST AND RAIL WITH A ⅝" BUTTONHEAD BOLTS (SEE CHART FOR BOLT LENGTH). RUBRAIL ONLY IS ATTACHED TO POST 5 WITH A ⅝" x 1¼" BUTTONHEAD BOLT.
2. THE RUBRAIL SHALL BE SHOP BENT IN THE LAST 3' TO FACILITATE INSTALLATION. DO NOT ATTACH RUBRAIL TO BACK OF POST 6.
3. ANCHORAGE:

(A) AT EXISTING PARAPETS EACH W-BEAM TERMINAL CONNECTOR SHALL BE ANCHORED USING FOUR ⅝" x 12" CHEMICALLY ANCHORED BOLTS WITH WASHERS OR AS DETAILED ON STRUCTURE SHEETS. MAXIMUM BOLT PROJECTION BEYOND THE NUT SHALL BE ½". 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.
4. ADDITIONAL BLOCKOUTS WITH POSTS 1 THROUGH 6 SHOULD BE AVOIDED.
5. 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:

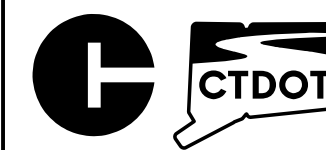
INSTALL W-BEAM TERMINAL CONNECTOR OUTSIDE OF THE NESTED GUIDE RAIL ELEMENTS.
6. MINIMUM RAIL HEIGHT FOR NEW CONSTRUCTION SHALL BE 29" +/- 1".
7. USE MODIFIED 4" BITUMINOUS CONCRETE PARK CURBING REDUCED TO A 3 INCH REVEAL BENEATH THE RUBRAIL IF CURBING IS REQUIRED.

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'

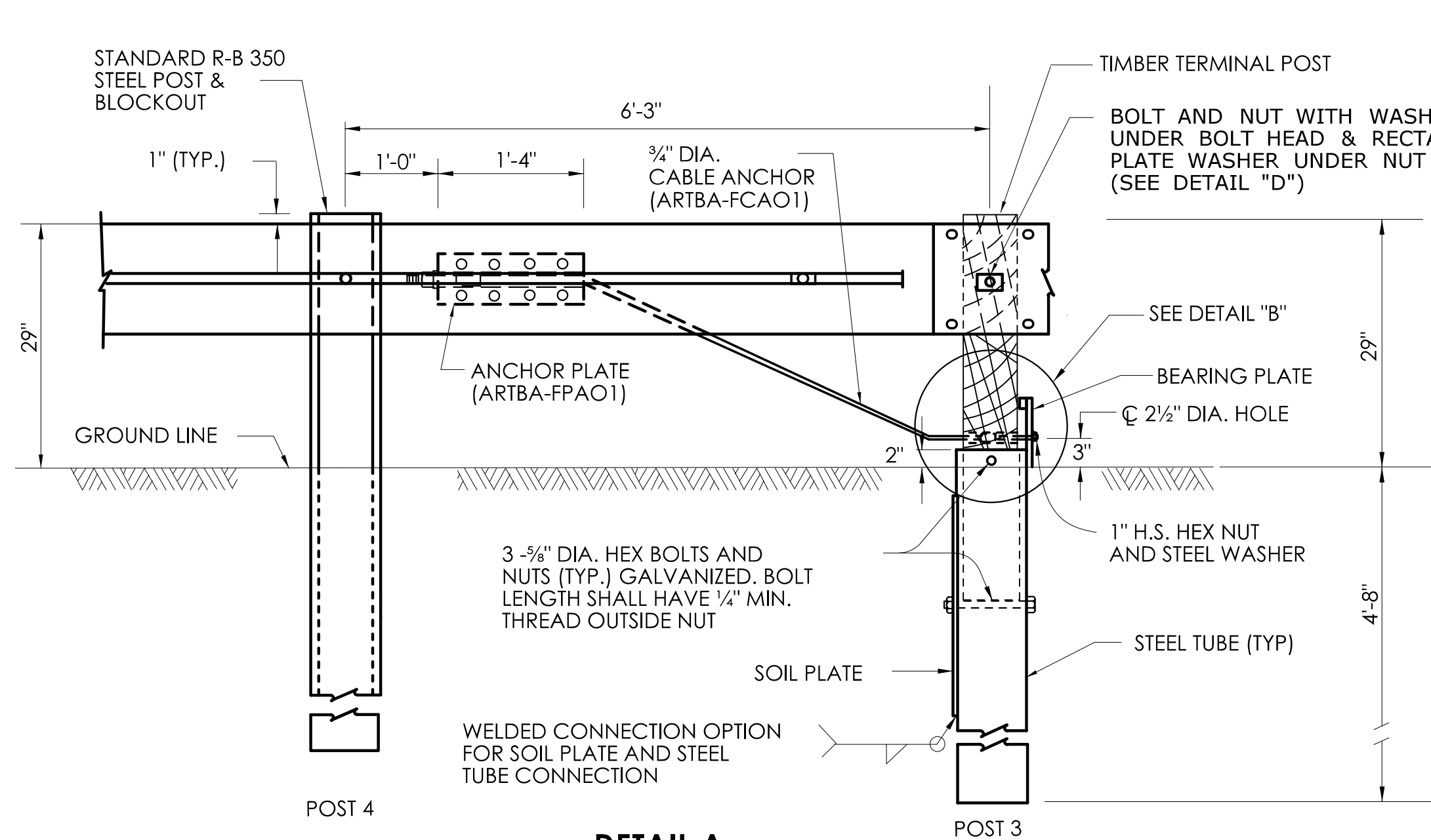


CONNECTICUT
DEPARTMENT OF
TRANSPORTATION

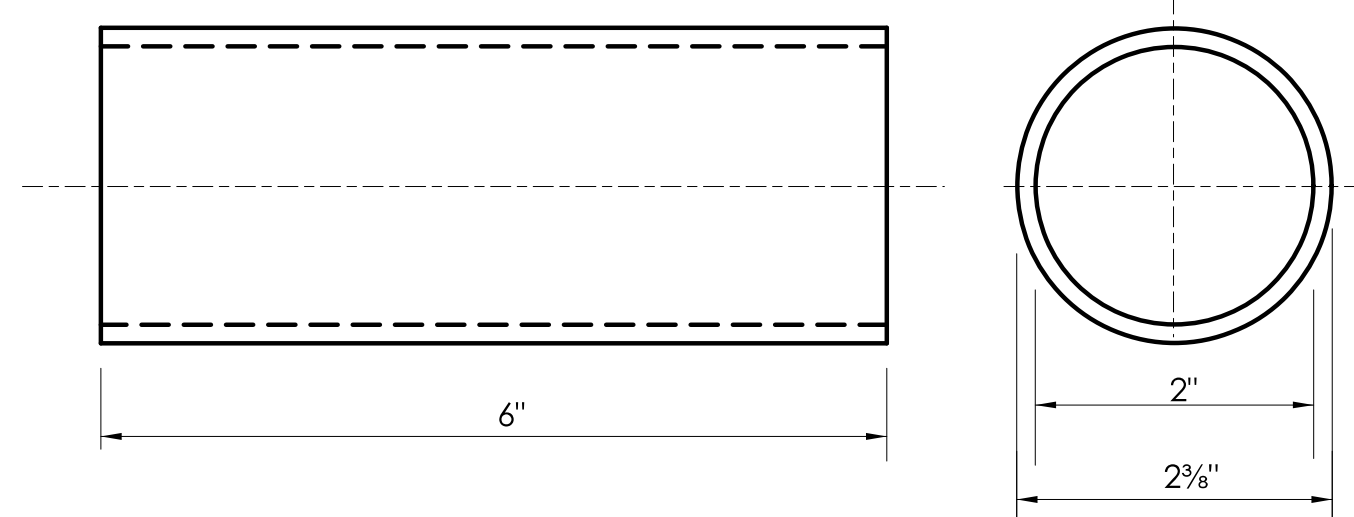
CTDOT
STANDARD SHEET

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

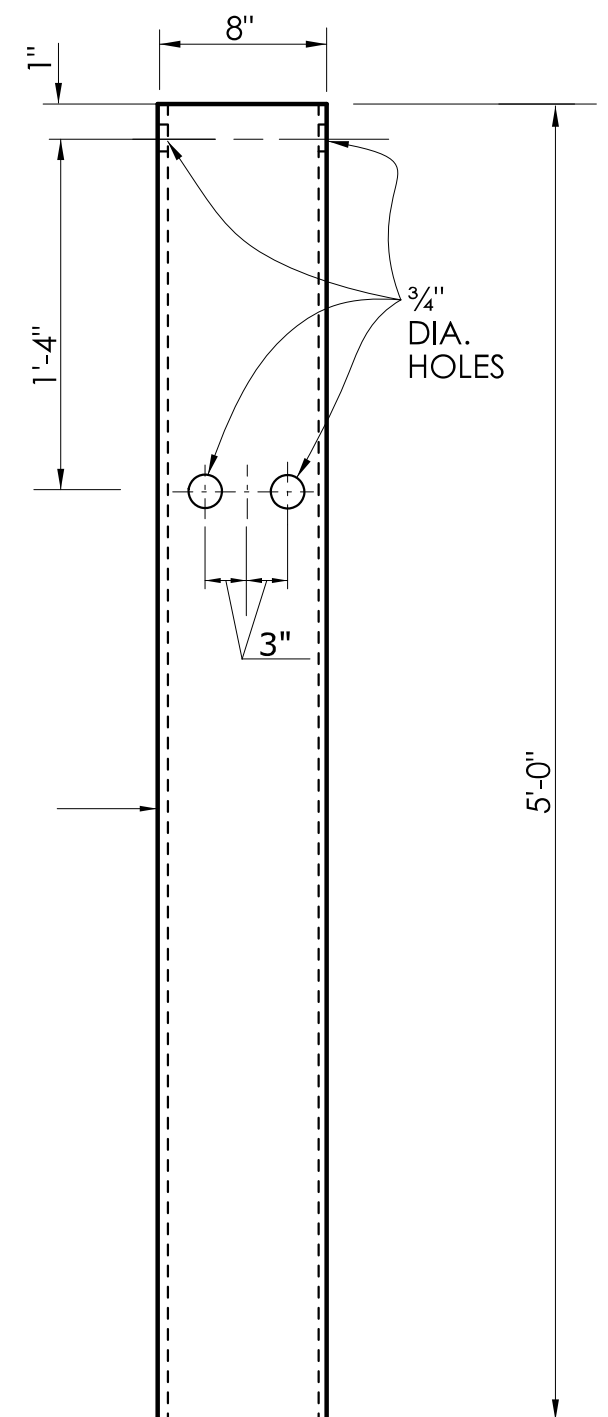
STANDARD SHEET NO.:
HW-910_07



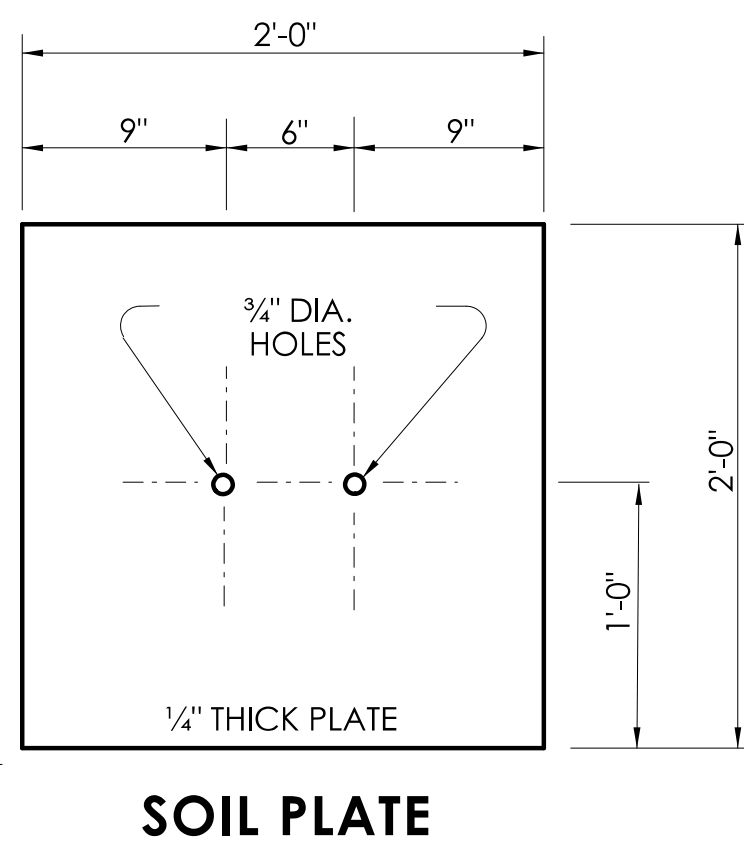
DETAIL A
CABLE ANCHORAGE ASSEMBLY



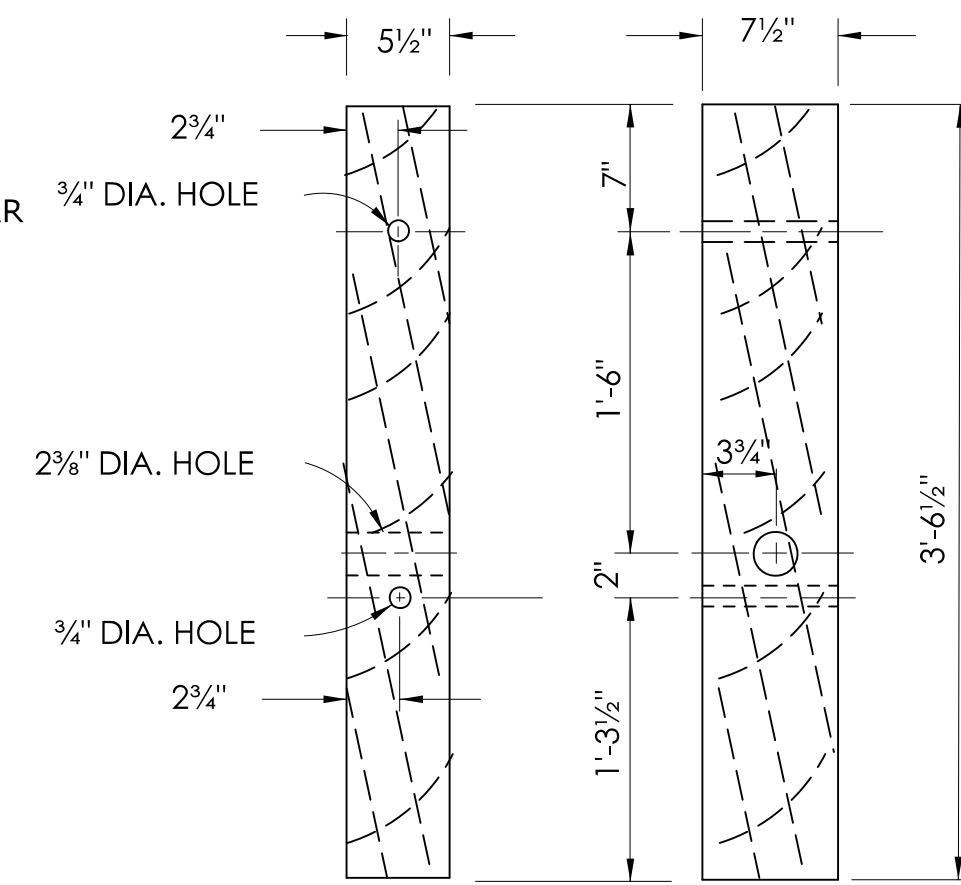
BREAKAWAY TERMINAL POST SLEEVE
(ARTBA-FMMO2)



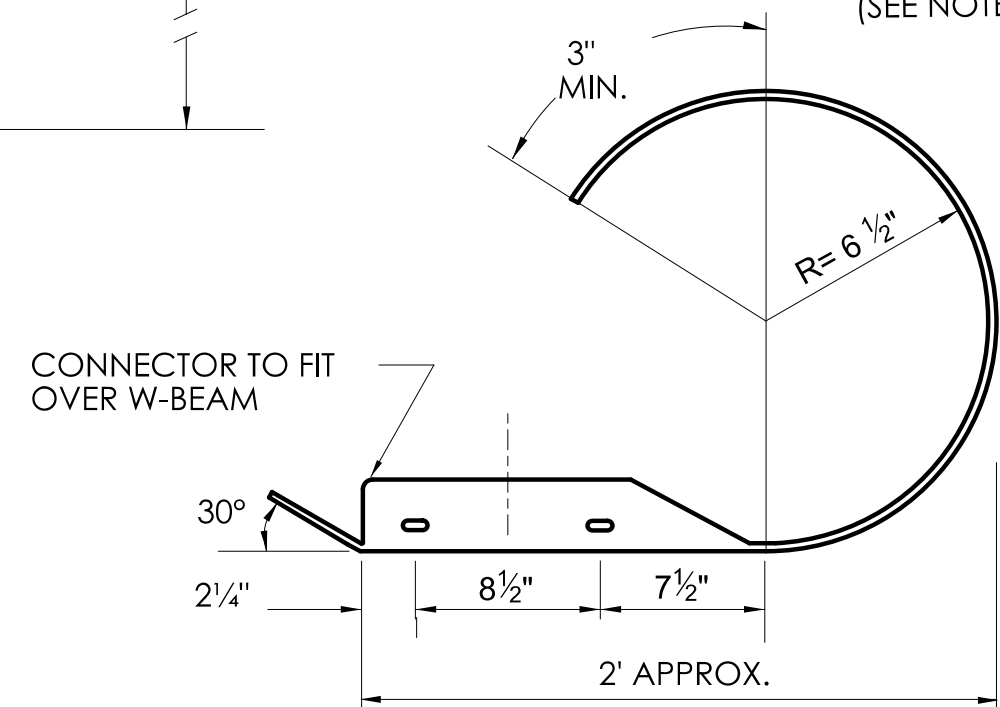
STEEL TUBE



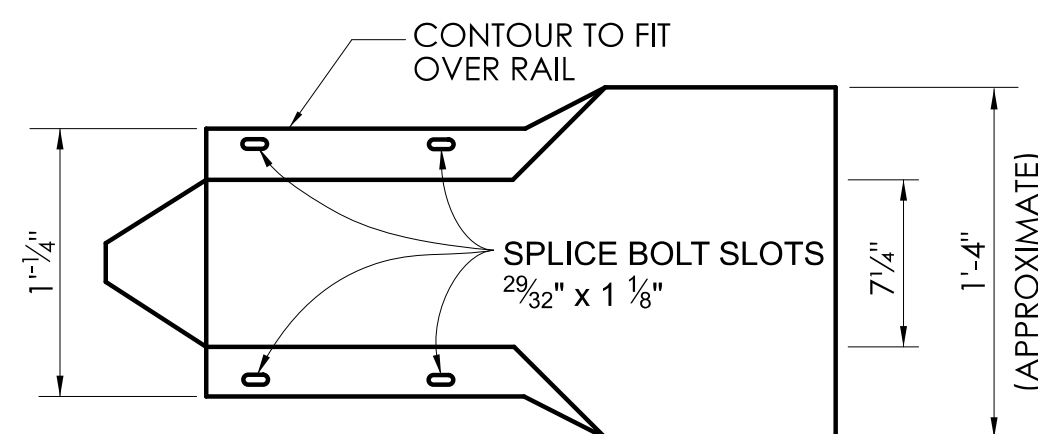
SOIL PLATE



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

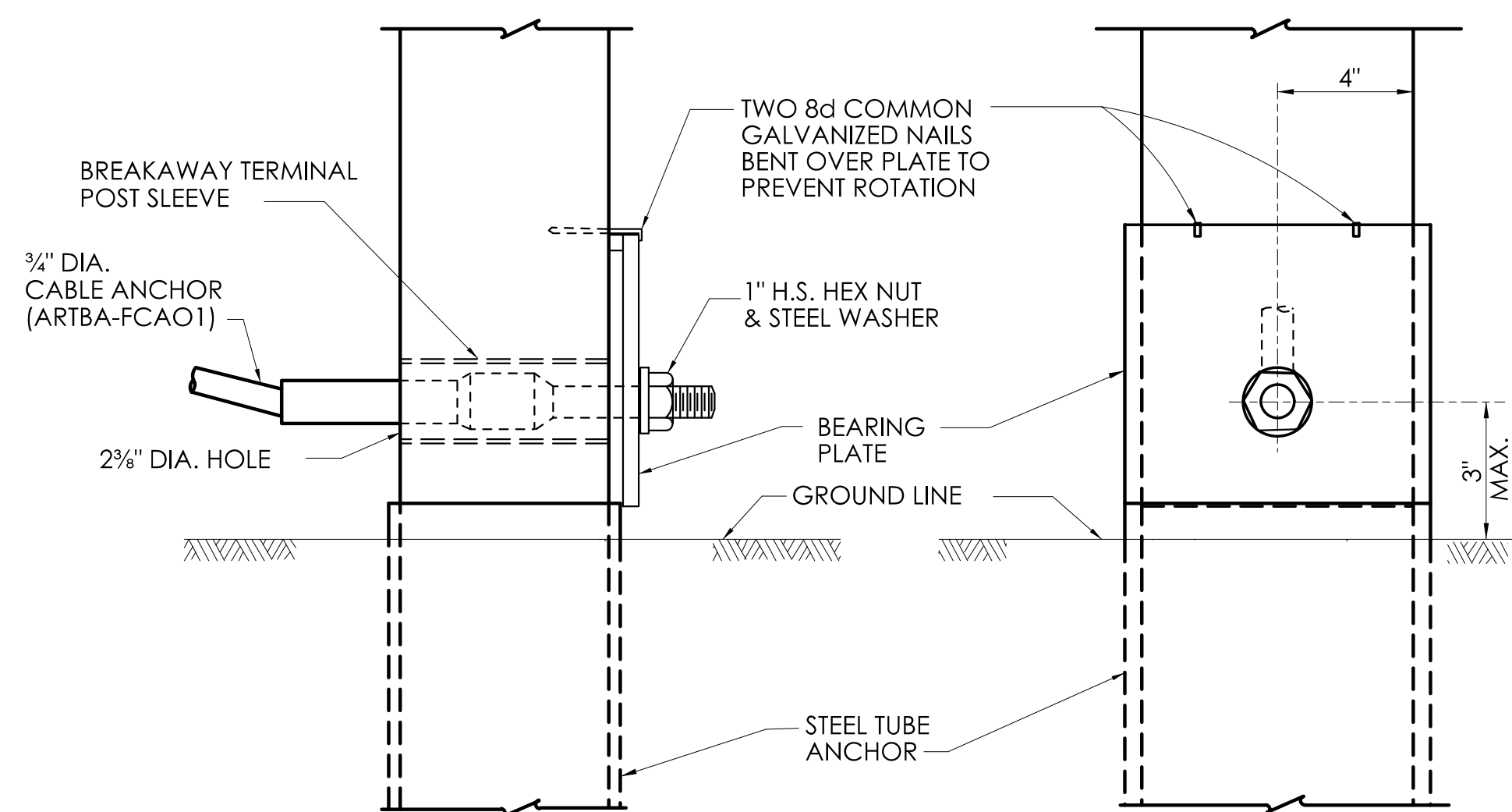


PLAN

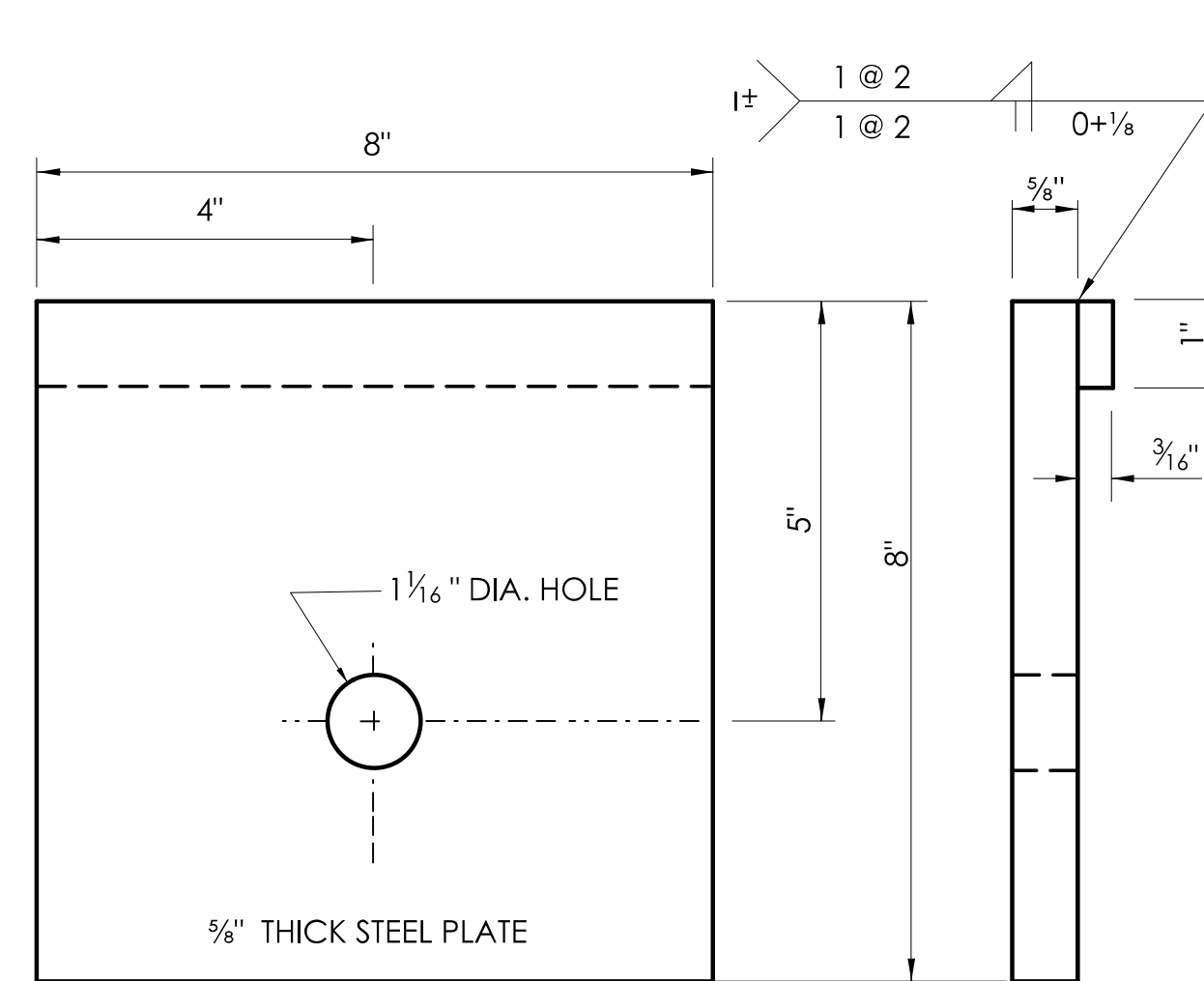


ELEVATION

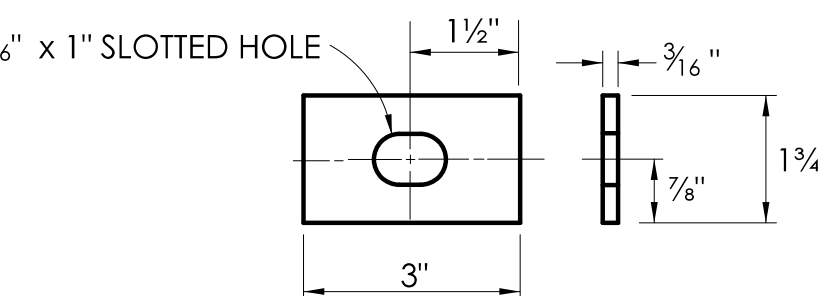
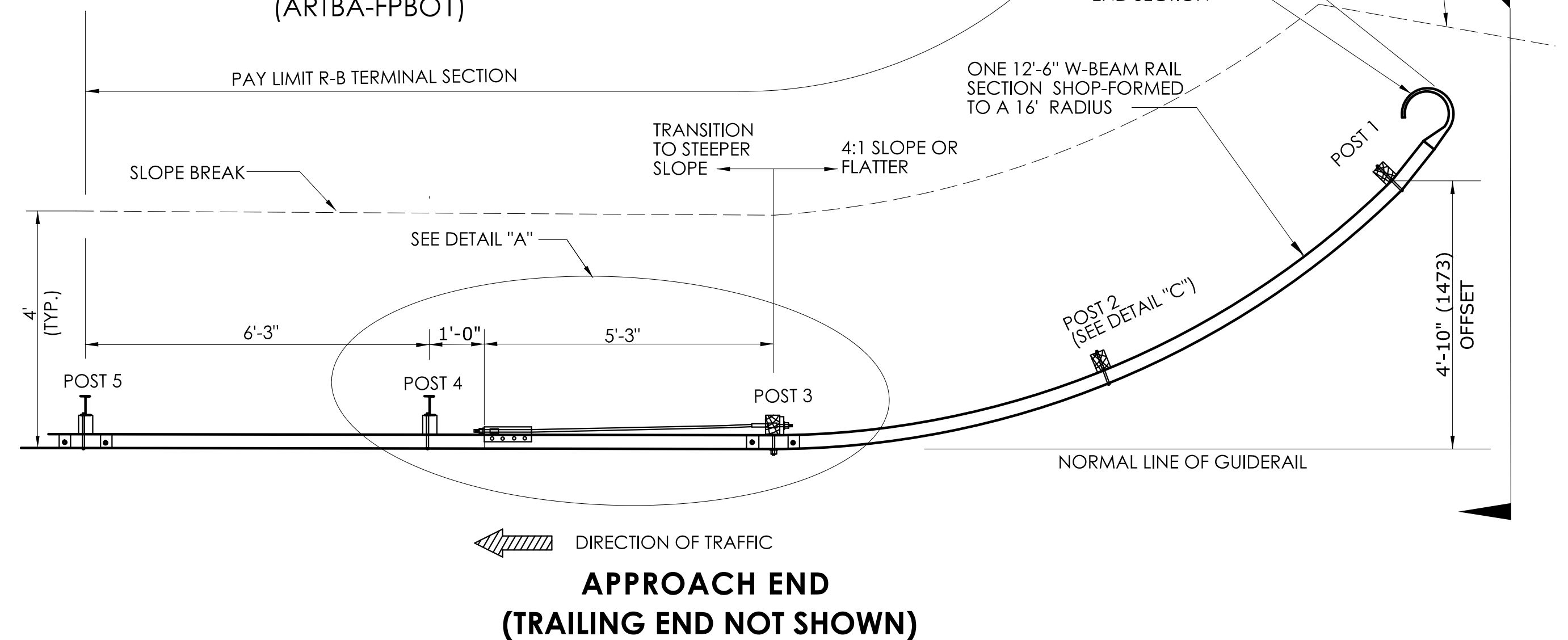
ROUNDED W-BEAM END SECTION



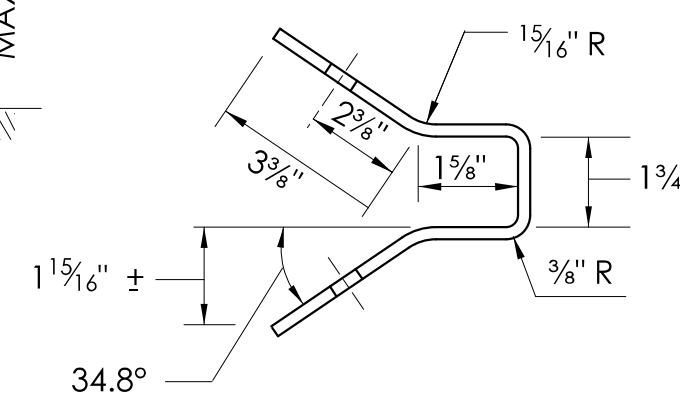
DETAIL B



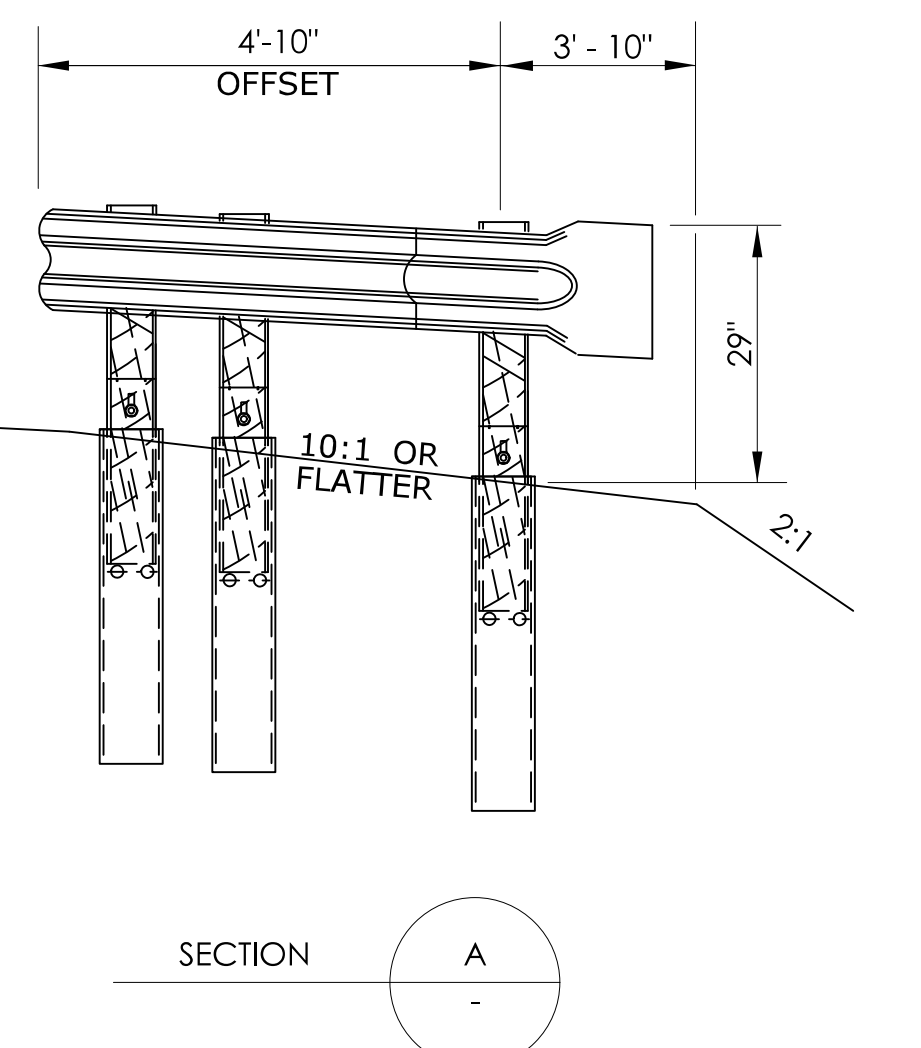
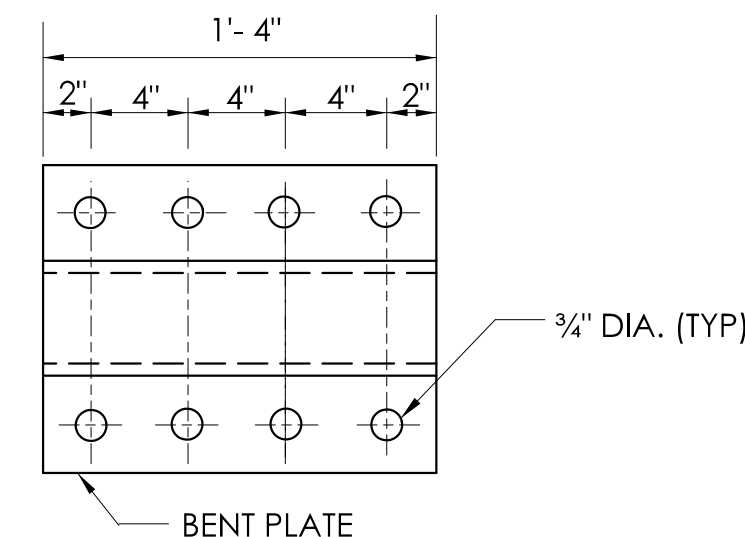
BEARING PLATE
(ARTBA-FPBO1)



DETAIL D
RECTANGULAR PLATE WASHER

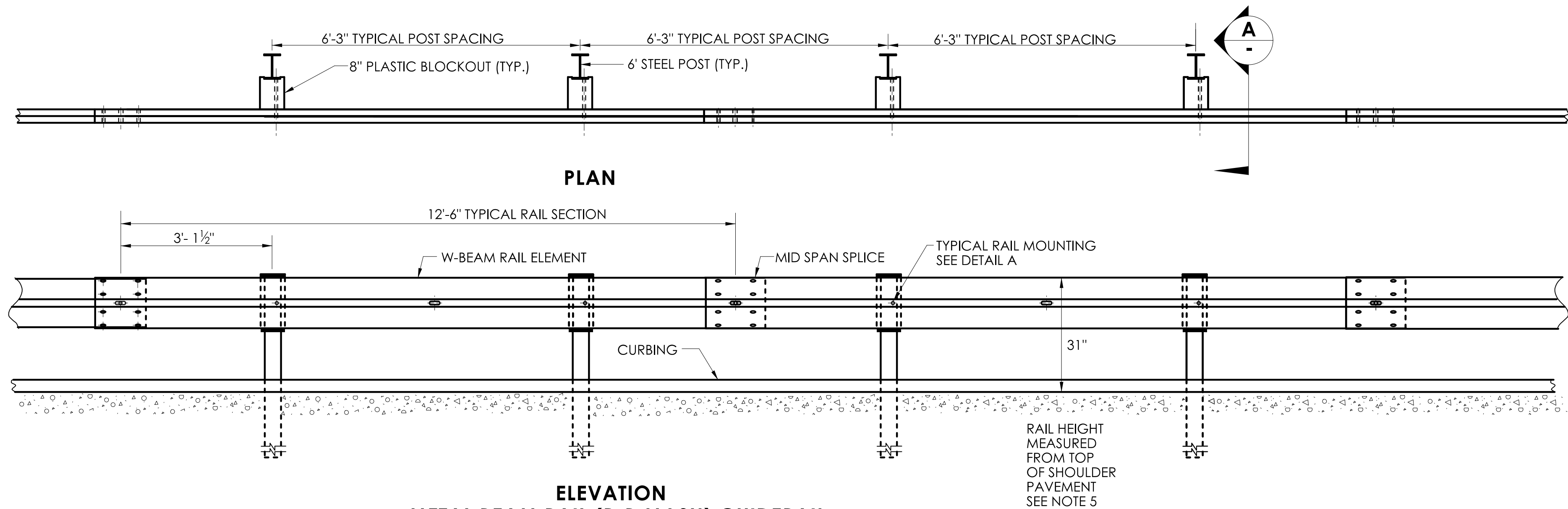


ANCHOR PLATE
(ARTBA-FPAO1)

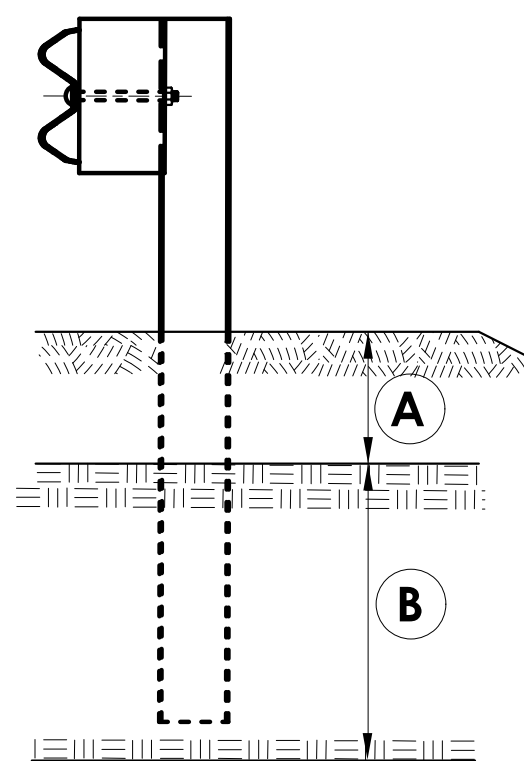


GENERAL NOTES:

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".



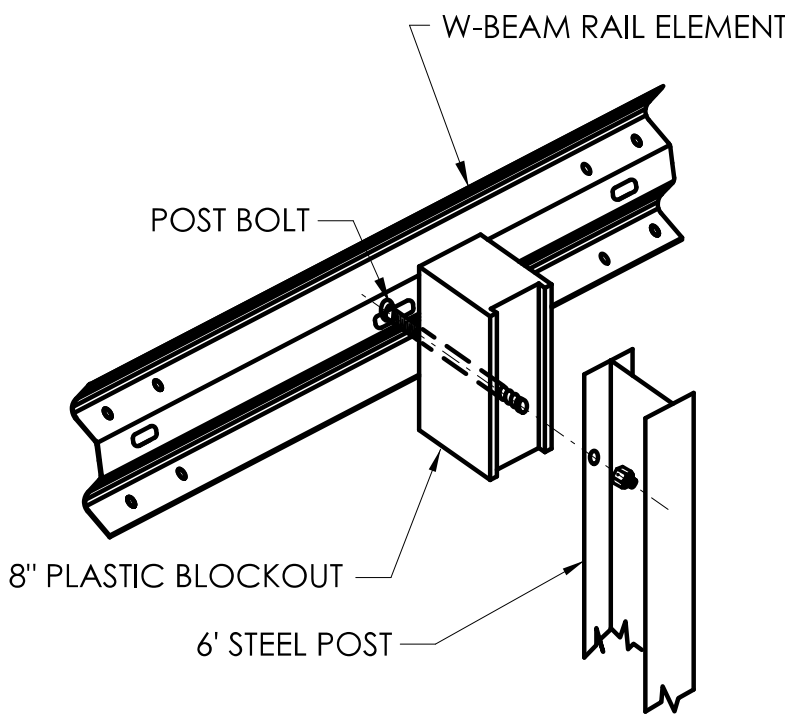
ELEVATION
METAL BEAM RAIL (R-B MASH) GUIDERAIL



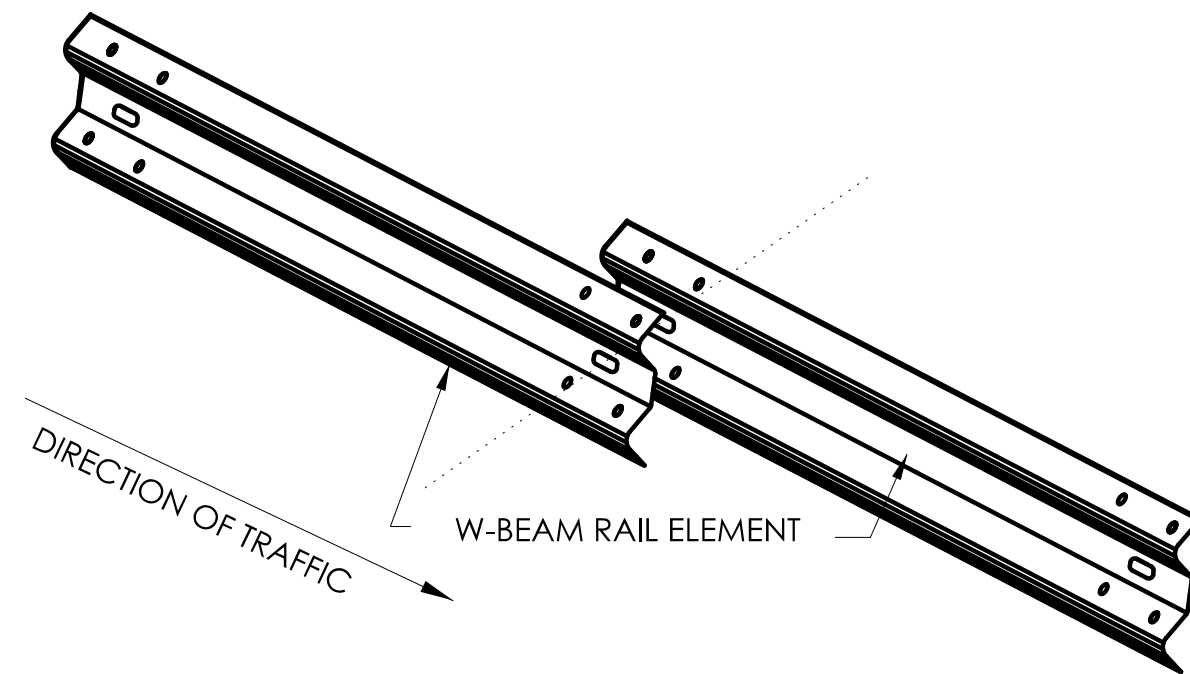
ELEVATION

CONDITION 1:
IF SOIL DEPTH
IS $\leq$ 18" DEEP (A)
DRILL 20" DIA.
HOLE 24" INTO
LEDGE. (B)

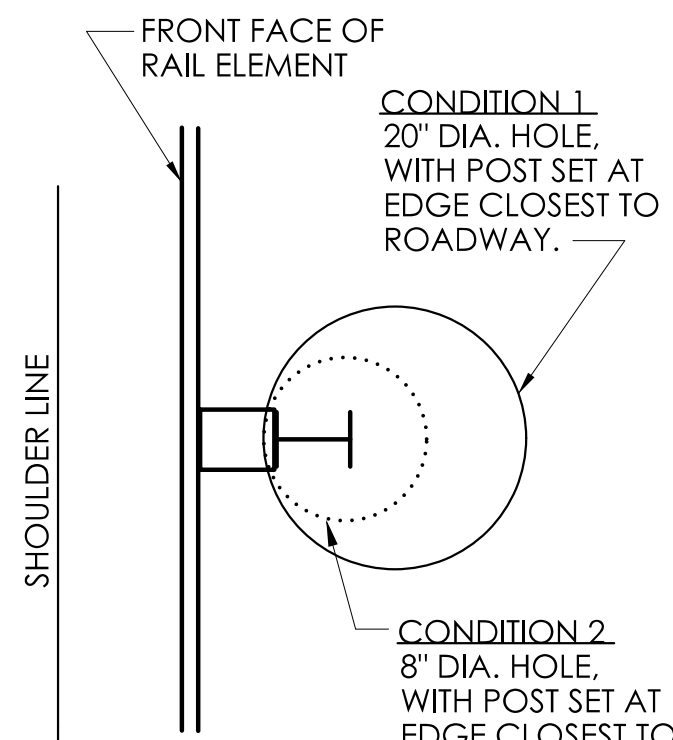
CONDITION 2:
IF SOIL DEPTH
IS > 18" DEEP (A)
DRILL 8" DIA. HOLE
12" INTO LEDGE (B) OR TO
THE DEPTH OF FULL
EMBEDMENT
WHICHEVER IS LESS.



DETAIL A
RAIL MOUNTING

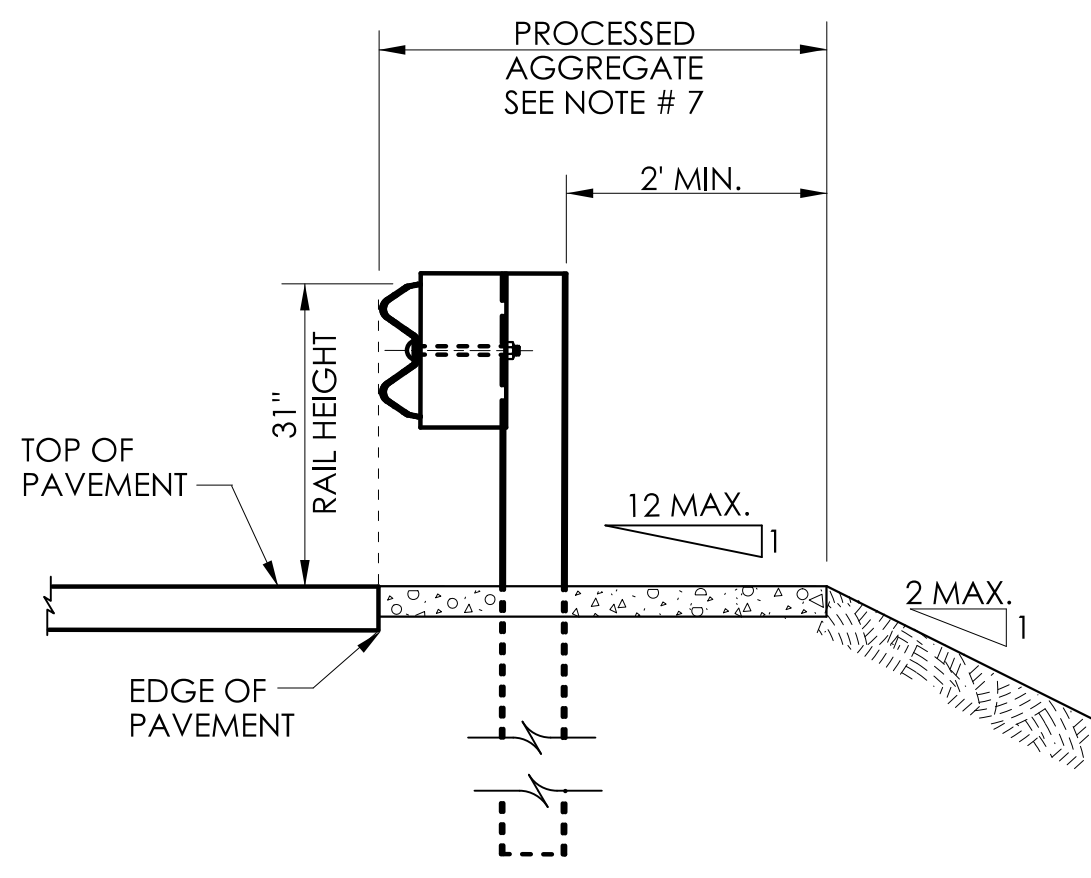


LAP W-BEAM RAIL SECTIONS
NOTE: EIGHT (8) SPLICE BOLTS PER JOINT



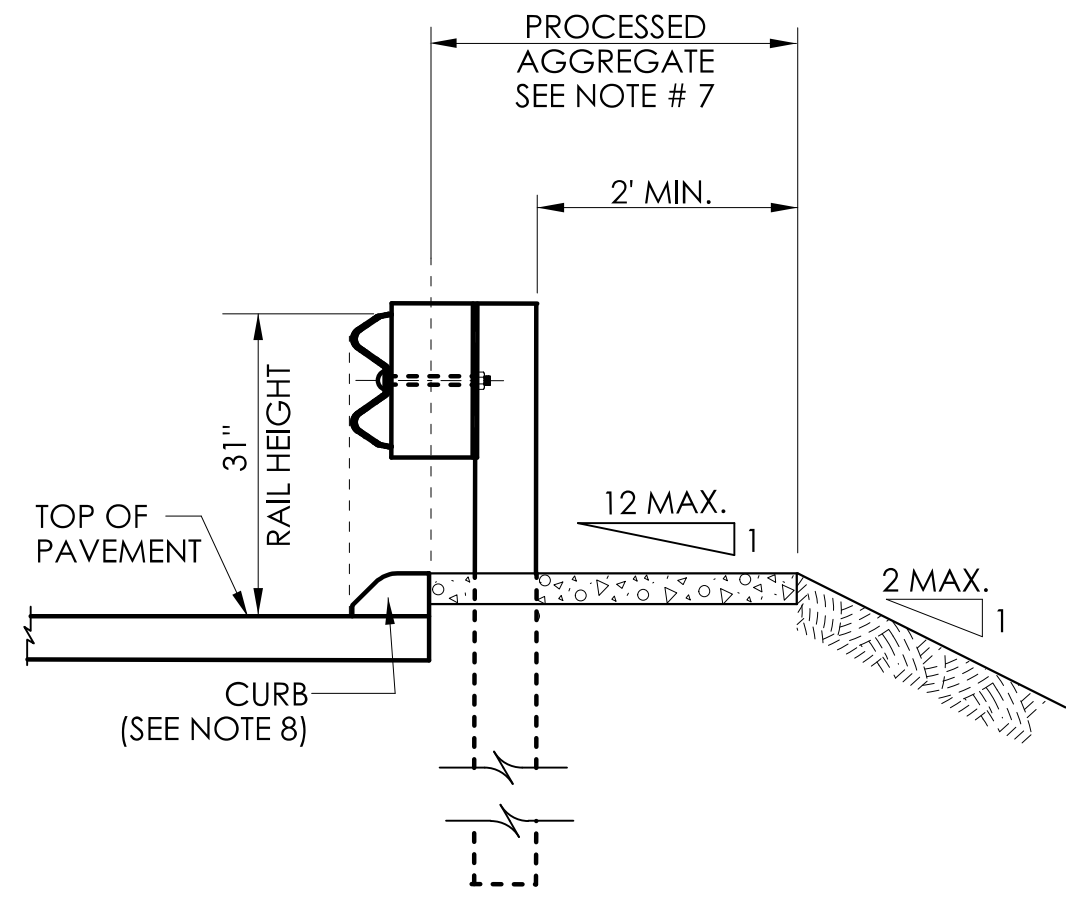
PLAN

GUIDERAIL POSTS IN ROCK



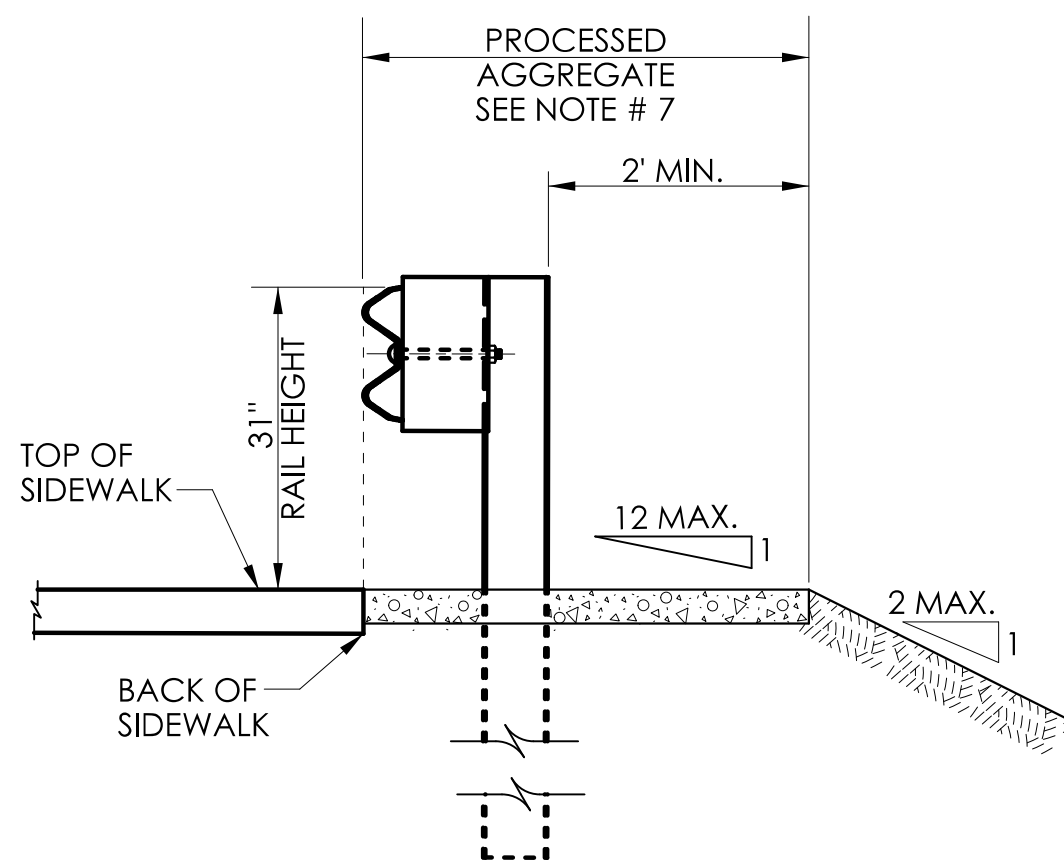
SECTION A

NO CURB APPLICATION



SECTION A

CURB APPLICATION



SECTION A

SIDEWALK APPLICATION

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. 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.
8. CTDOT STANDARD 4" CURBING MAY BE USED IN CONJUNCTION WITH GUIDERAIL AND THE RAIL ELEMENT SHALL BE PLACED FLUSH WITH THE FACE OF CURB.

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.



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



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



NOT TO SCALE

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

SUBMITTED BY:  Digitally signed by Salvatore Aresco, P.E.
Date: 2026.03.24 12:56:50-04'00'

APPROVED BY: _____

Digitally signed by
Michael Calabrese
P.E
Date: 2026.04.09
20:26:47-04'00'



CONNECTICUT
DEPARTMENT OF
TRANSPORTATION

CTDOT STANDARD SHEET

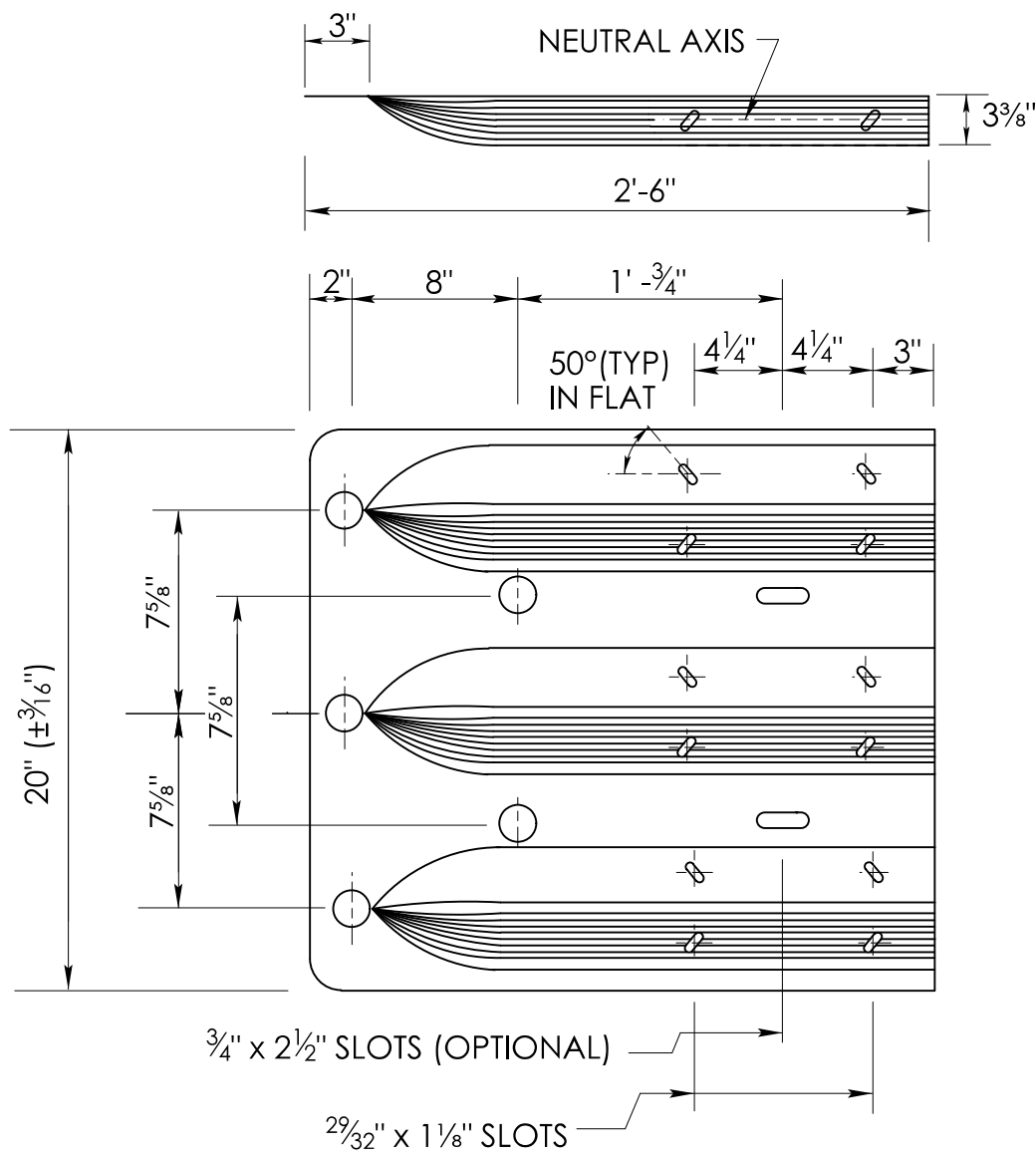
STANDARD SHEET TITLE:

METAL BEAM RAIL TRANSITION 350 TO MASH GUIDERAIL

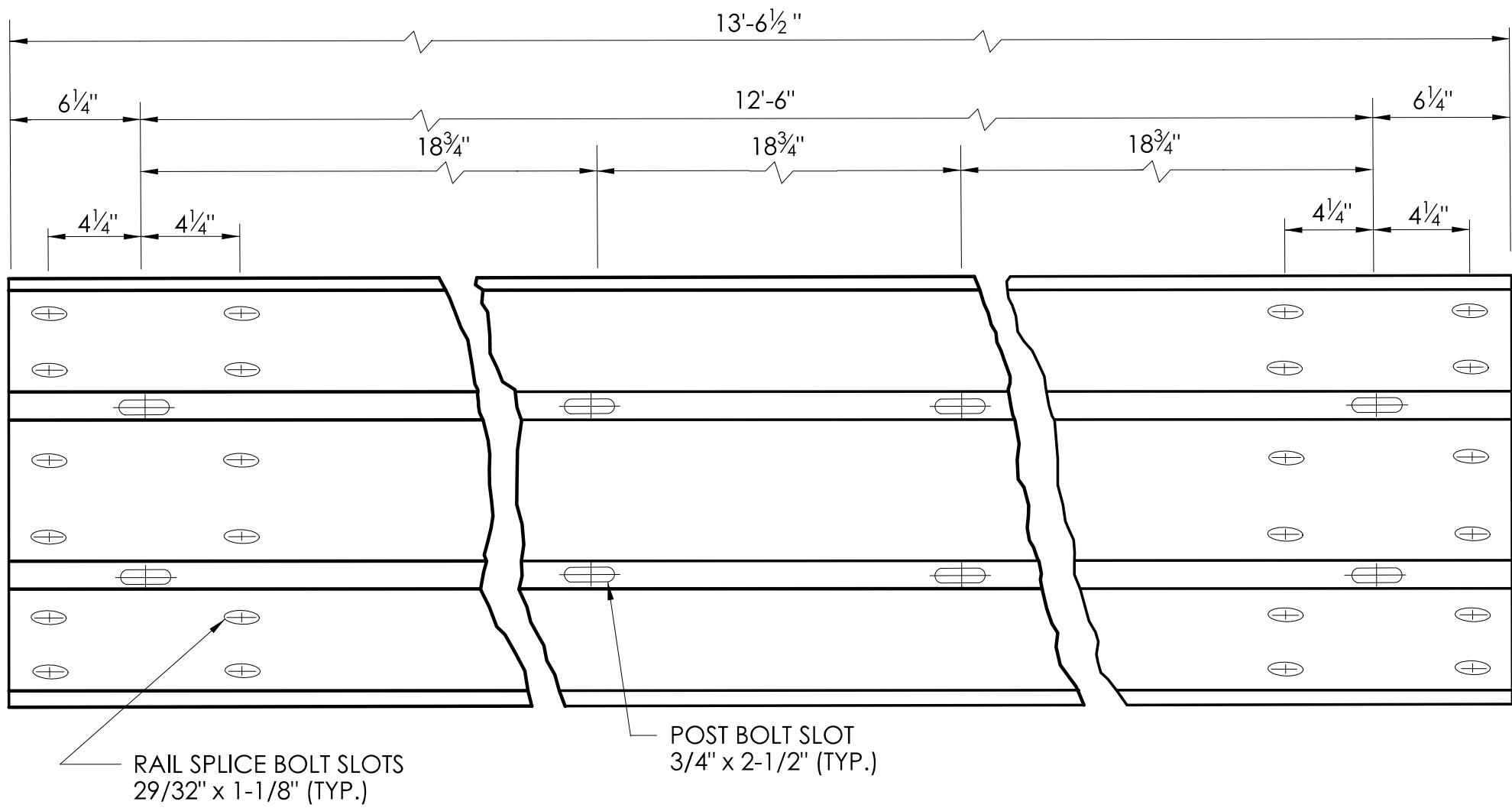
STANDARD SHEET NO.:

HW-910_25a

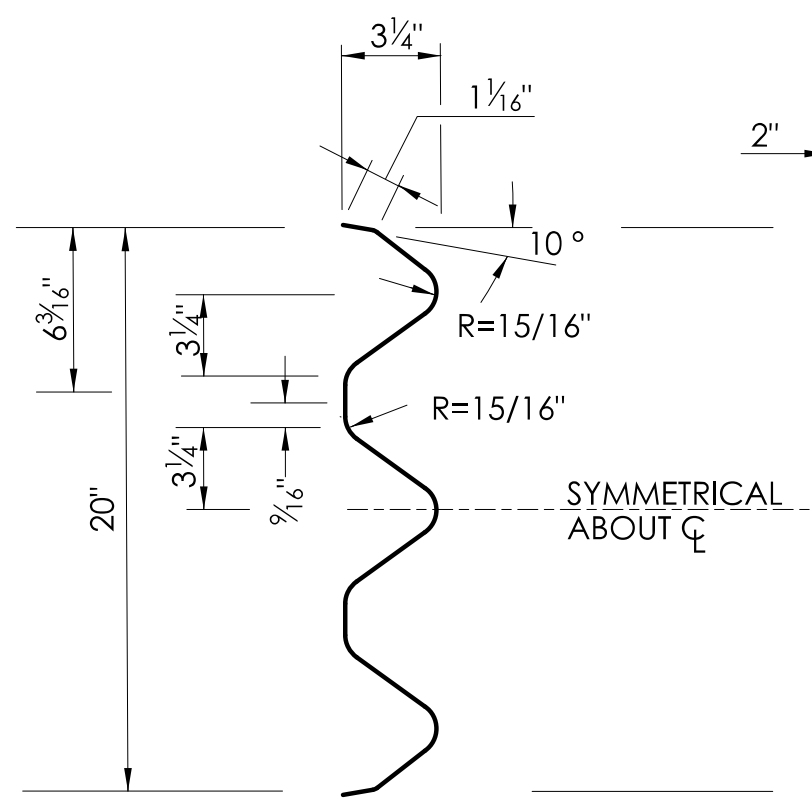
GENERAL NOTE:
1. ALL DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES



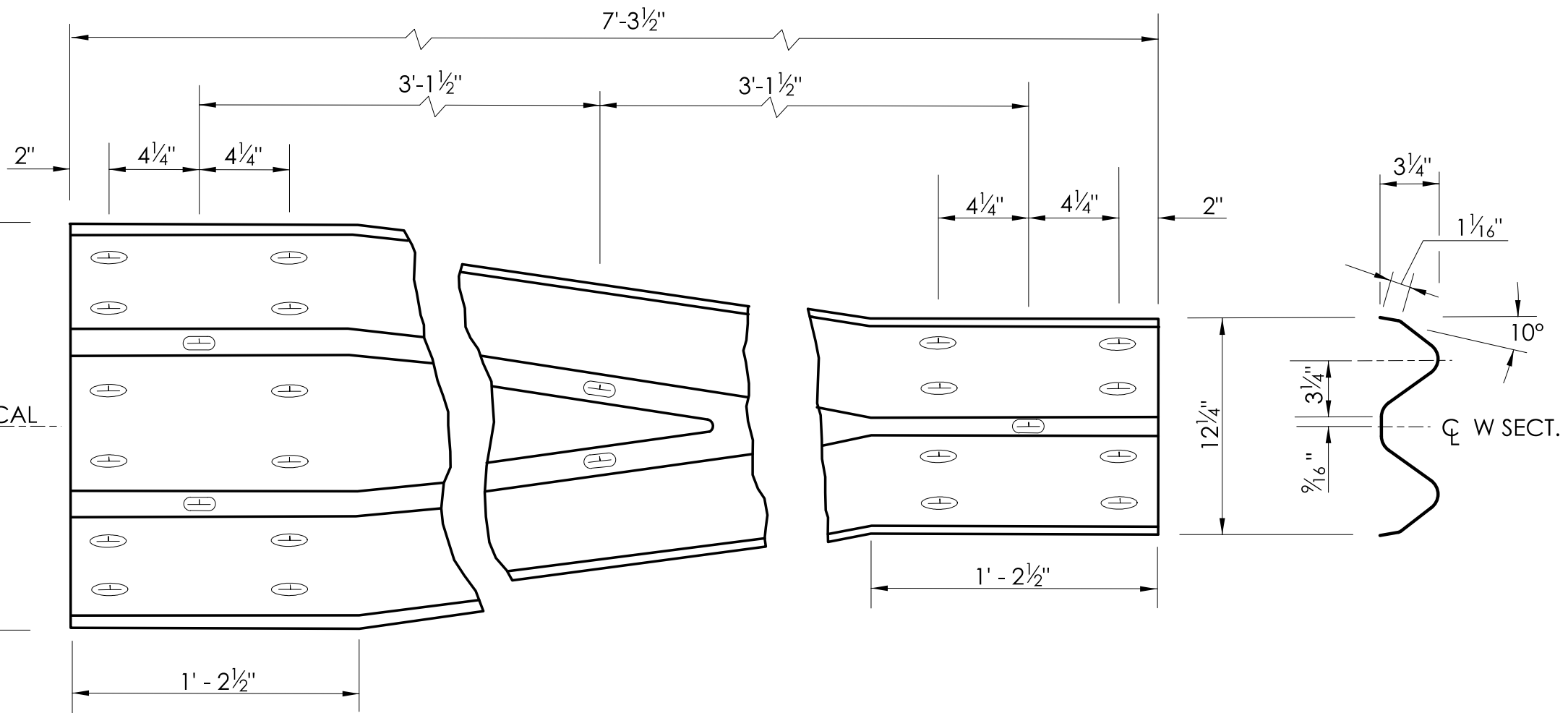
THRIE-BEAM TERMINAL CONNECTOR
[RTE01b]
(10 GAUGE)



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

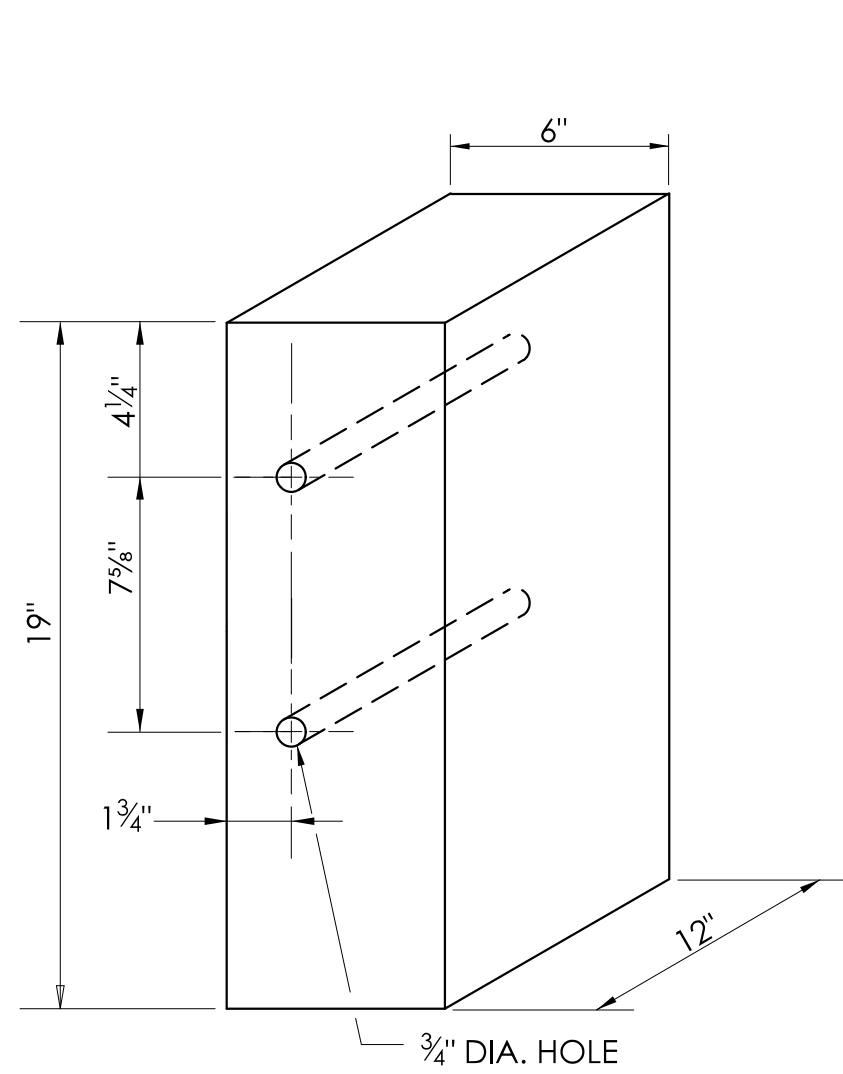


END VIEW OF TRANSITION

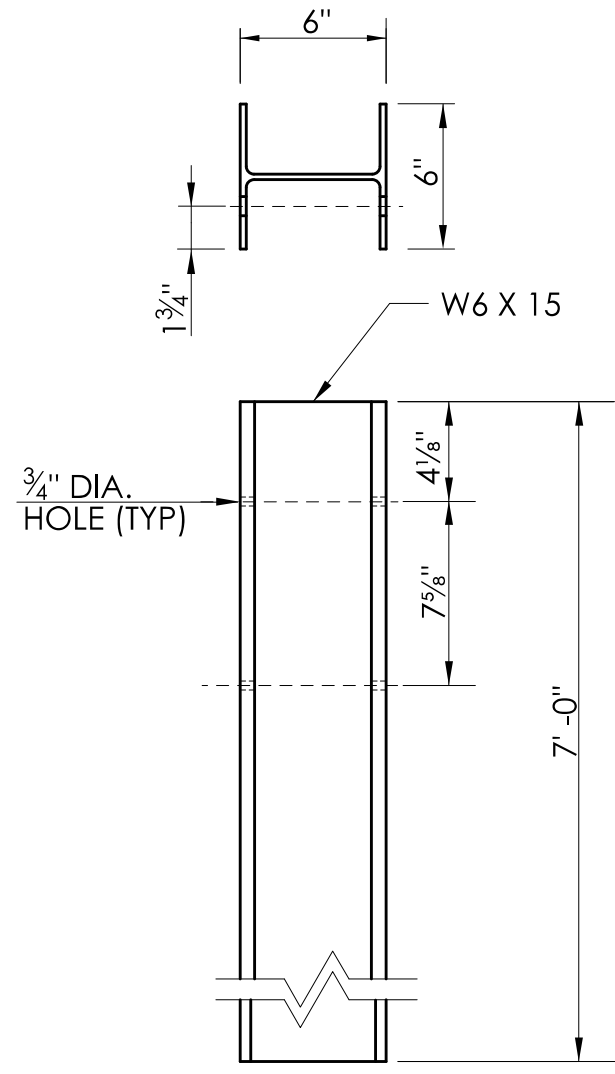


TYPICAL THRIE-BEAM TRANSITION ELEMENT
[RWT01b]
(10 GAUGE)

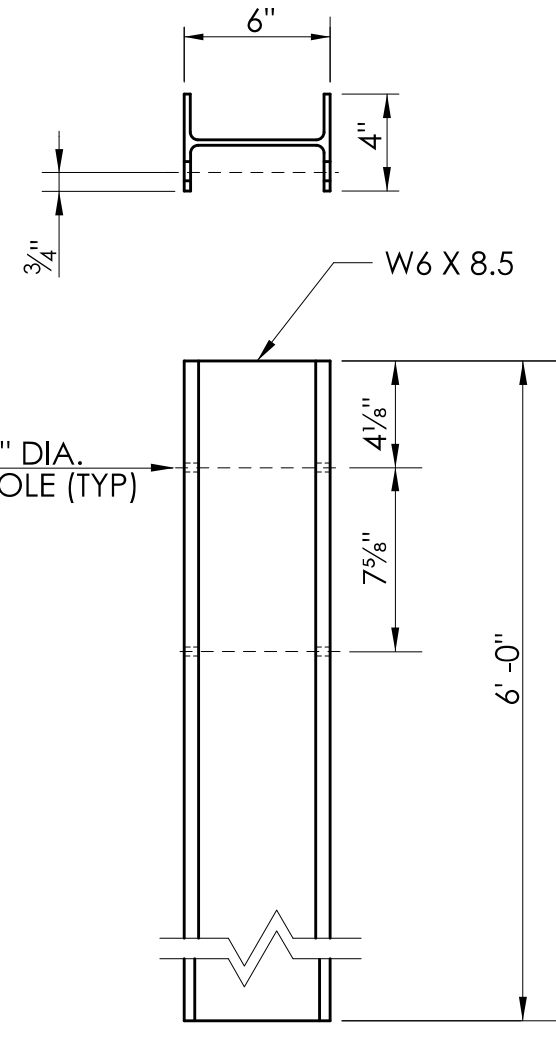
END VIEW OF TRANSITION



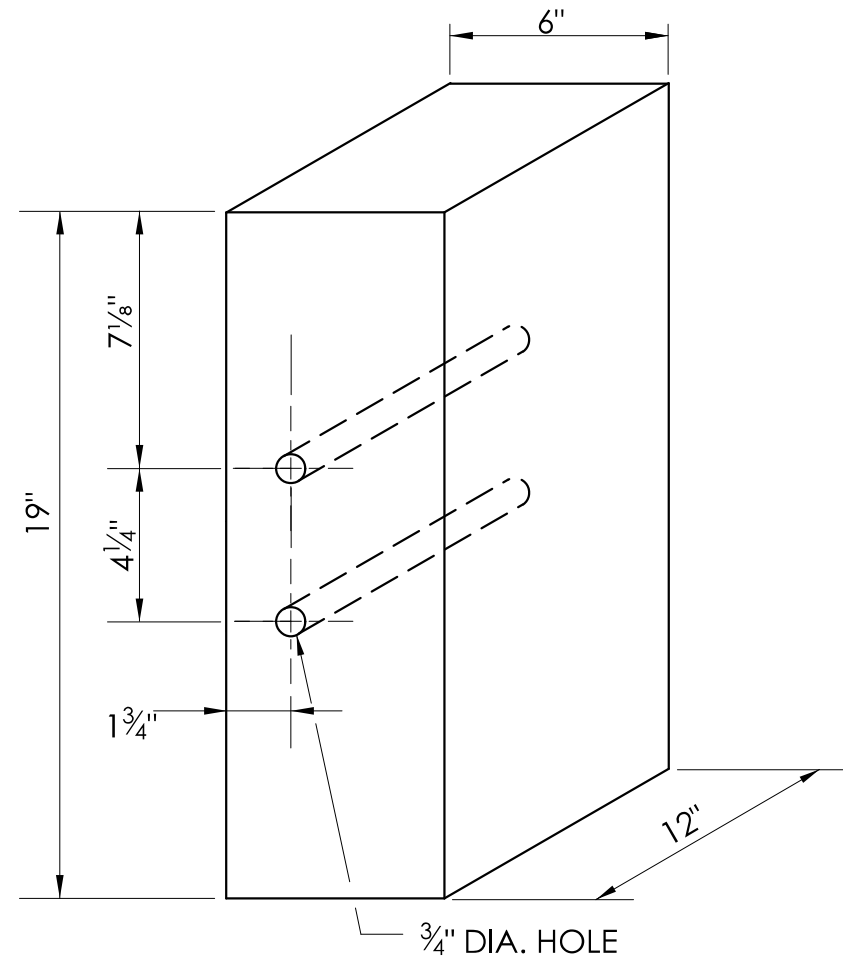
12" WOOD BLOCKOUT
[PDB18]
(FOR POSTS 1 TO 8)



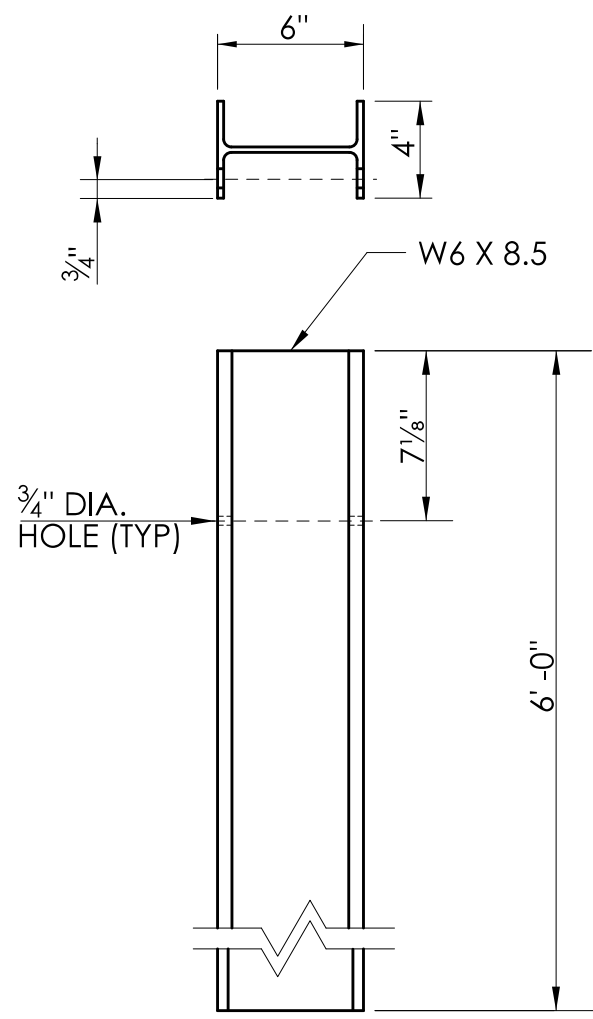
STEEL POST 7' - 0" LONG
[PDB18]
(FOR POSTS 1 TO 3)



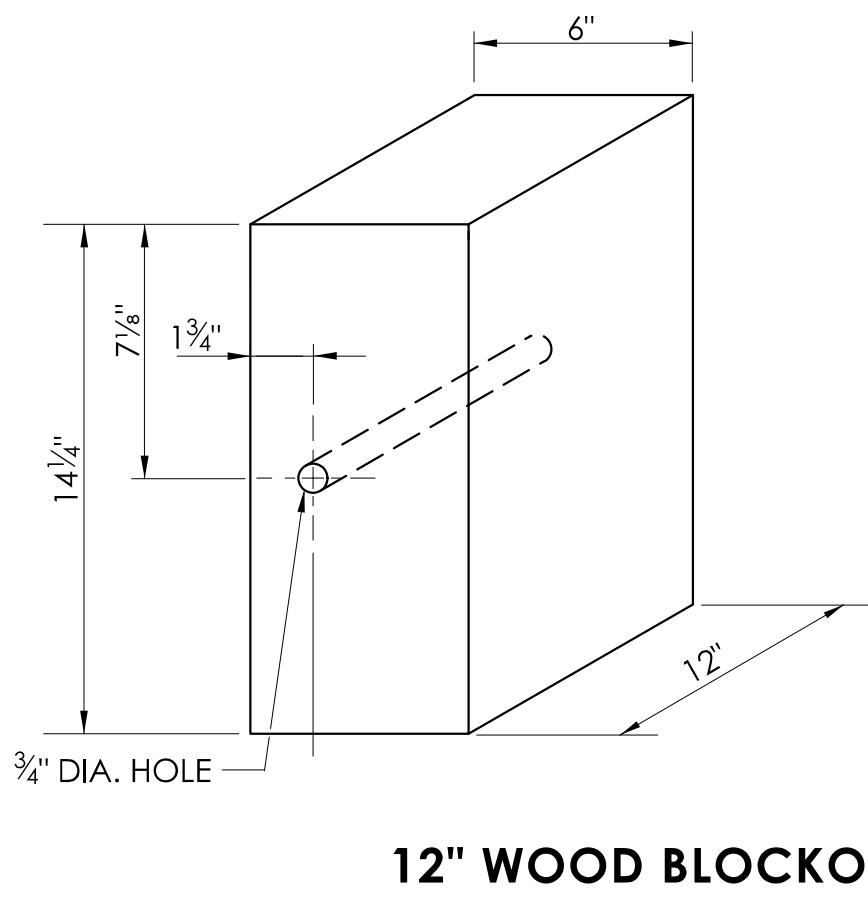
STEEL POST 6' - 0" LONG
[PDB18]
(FOR POSTS 4 TO 8)



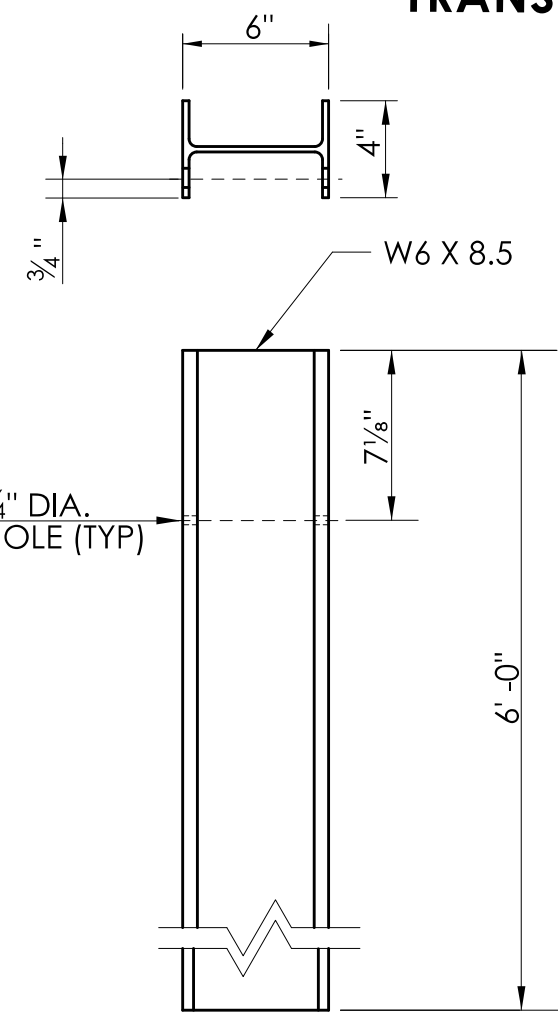
12" WOOD BLOCKOUT
[PDB18]
(FOR POST 9 ONLY)



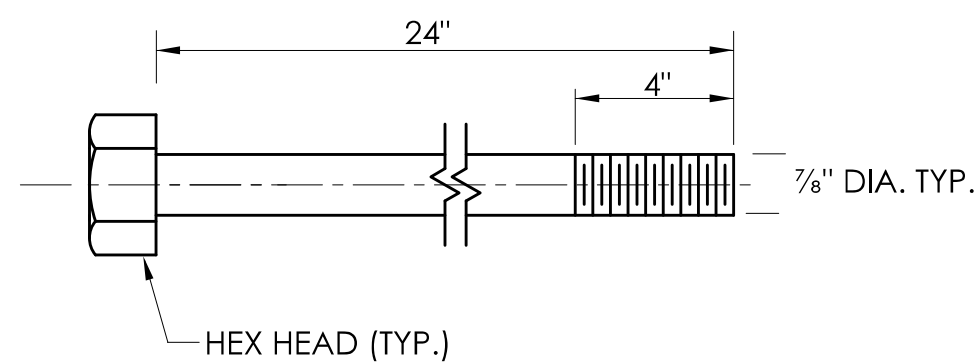
STEEL POST 6' - 0" LONG
[PDB18]
(FOR POST 9 ONLY)



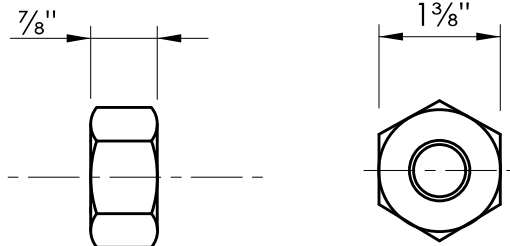
12" WOOD BLOCKOUT
[PDB10a]
(FOR POSTS 10 TO 12)



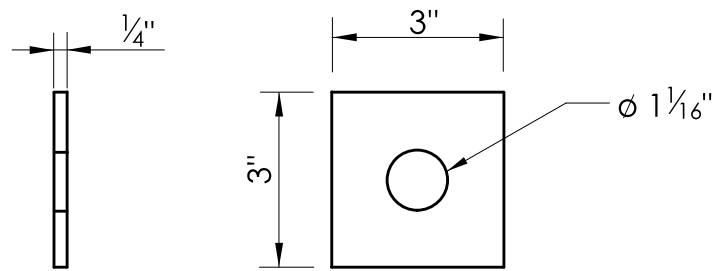
STEEL POST 6' - 0" LONG
[PDB18]
(POSTS 10 TO 12)



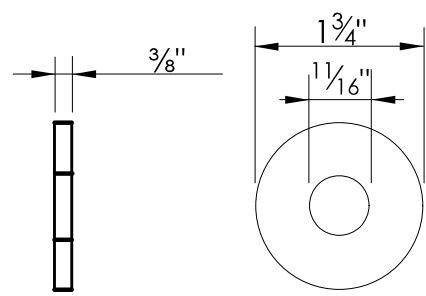
LONG HEAVY HEX HEAD BOLT
[FBX22b]
(FOR THRIE-BEAM TERMINAL CONNECTOR)



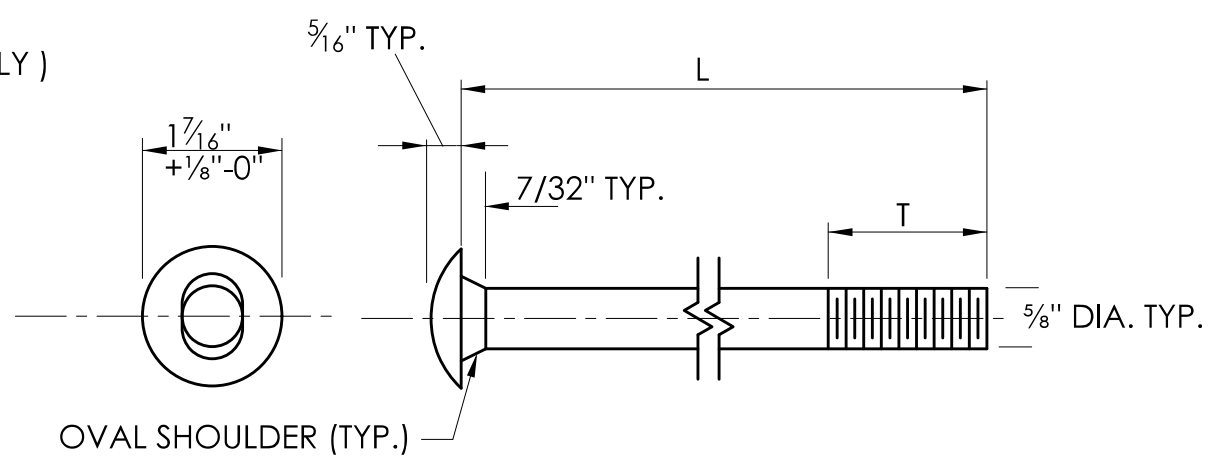
HEX NUT



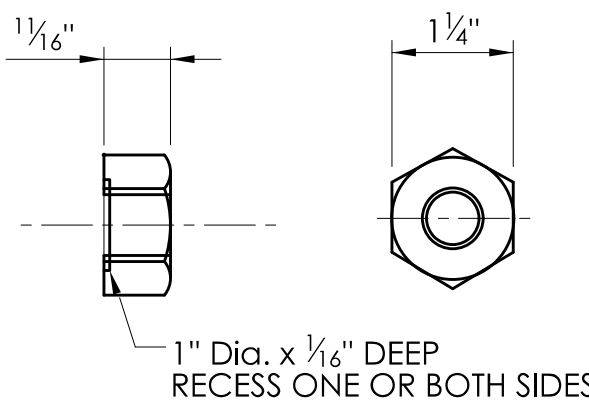
SQUARE PLATE WASHER
[FWR10]
(For THRIE-BEAM TERMINAL CONNECTOR, PLACED BETWEEN HEX NUT AND BACKSIDE OF CONCRETE STRUCTURE)



WASHER
[FWC16a]
(FOR WASHERS PLACED BETWEEN SPLICE NUT AND THRIE-BEAM TERMINAL CONNECTOR)



BUTTONHEAD BOLT



HEX NUT

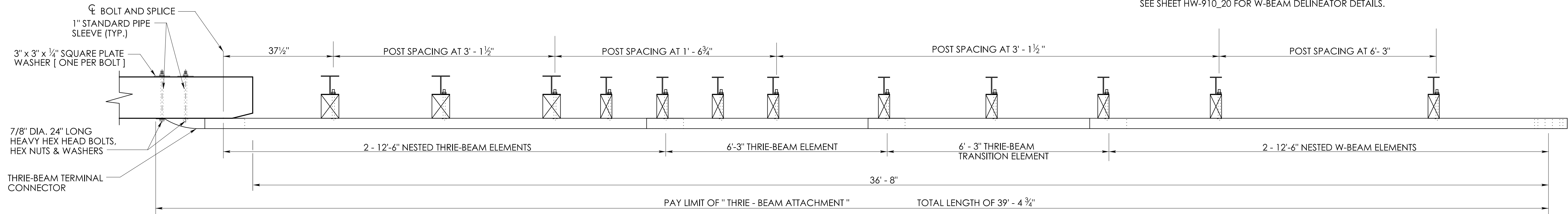
DESIGNATOR	L	T	INTENDED USE
FBB02	2"	1 7/8"	RAIL SPLICE BOLTS
FBB06	14"	4"	POST BOLT (12" BLOCK OUTS)

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

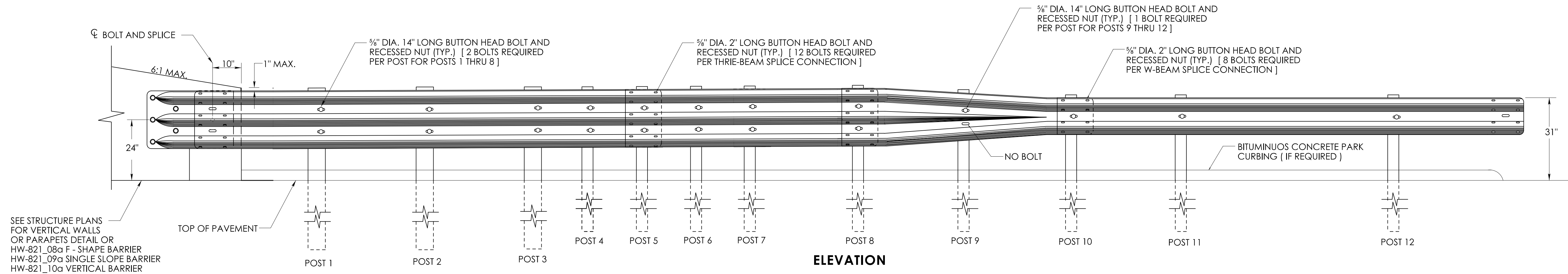
NOTE: AFTER GALVANIZING, THE NUT SHALL BE FREE RUNNING ON THE BOLT. DIAMETER SHOWN IS TYPICAL FOR ALL GUIDERAIL BOLTS. SEE DETAILS ABOVE FOR SPECIFIC LENGTHS.

GENERAL NOTES:

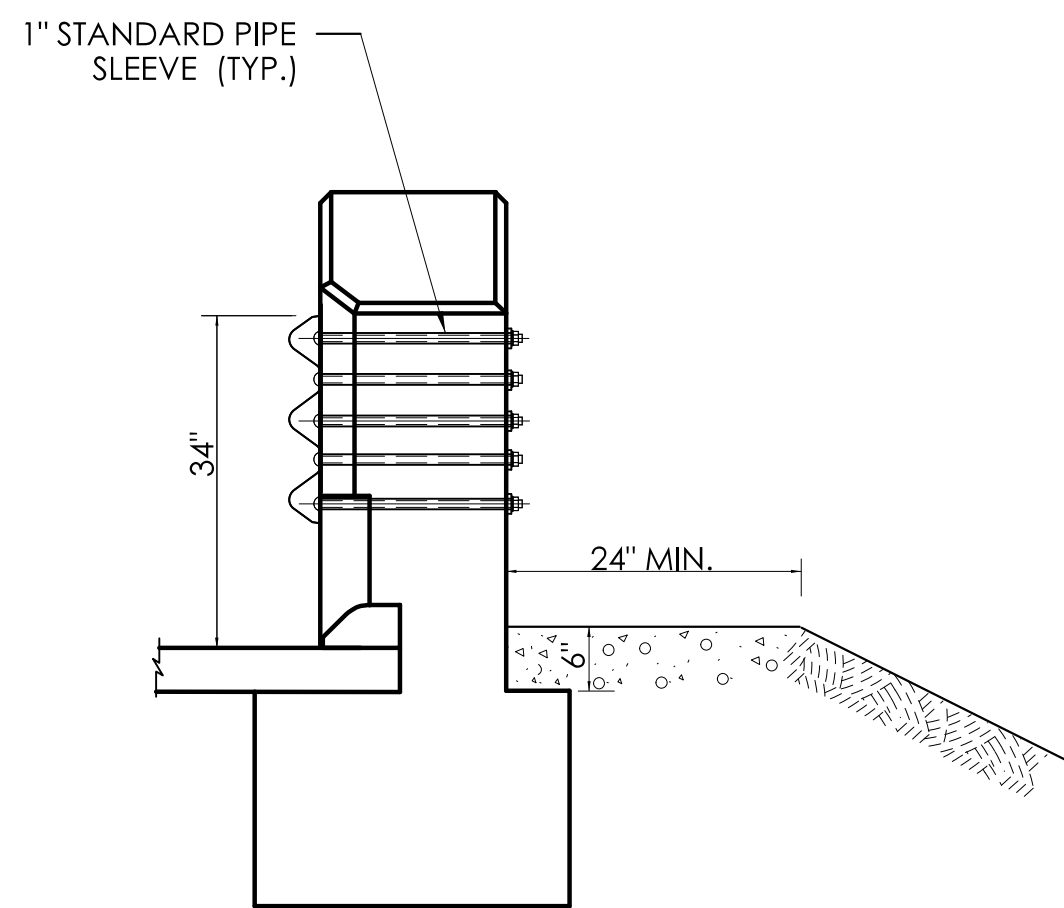
1. PROVIDE 2 FOOT MINIMUM EMBANKMENT BETWEEN THE BACK OF THE GUIDERAIL POST(S) / CONCRETE BARRIER AND THE BREAK IN THE FILL SLOPE.
2. INSTALL THRIE - BEAM TERMINAL CONNECTOR BETWEEN NESTED GUIDERAIL ELEMENTS, EXCEPT FOR SINGLE DIRECTION ROADWAY APPLICATION ONLY WHERE THE THRIE - BEAM TERMINAL CONNECTOR 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.



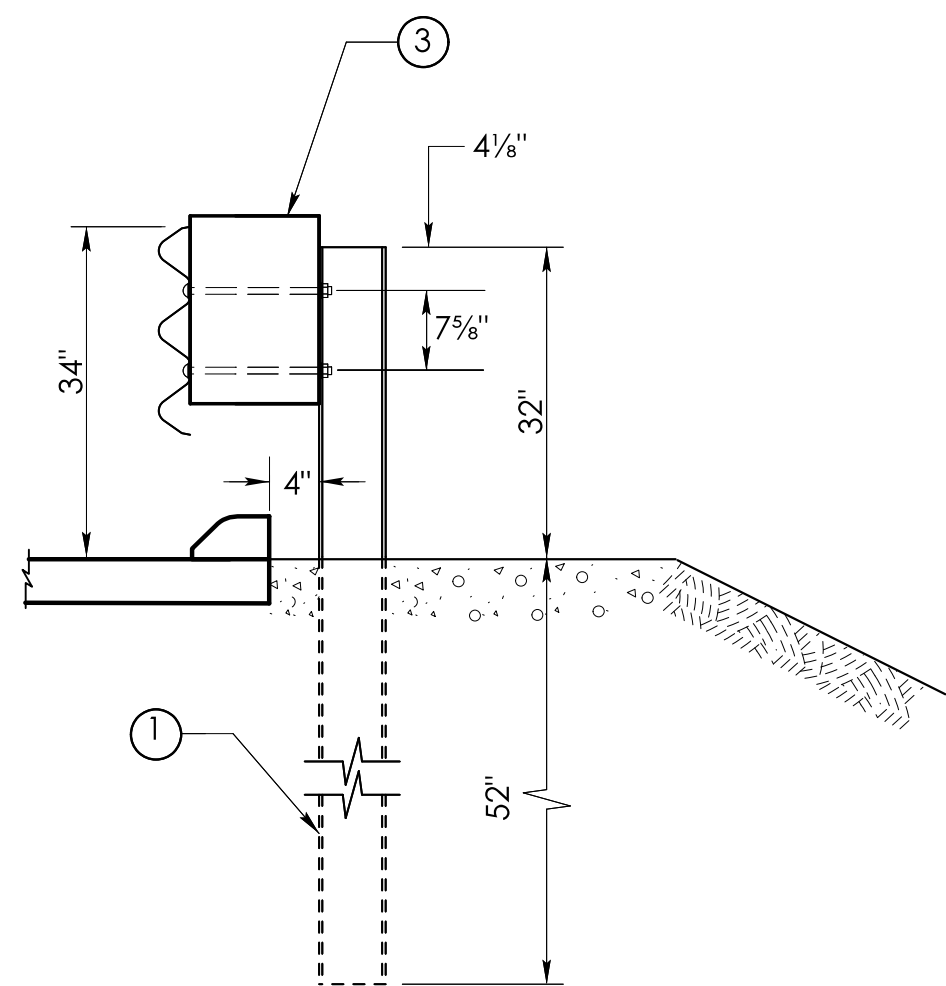
PLAN



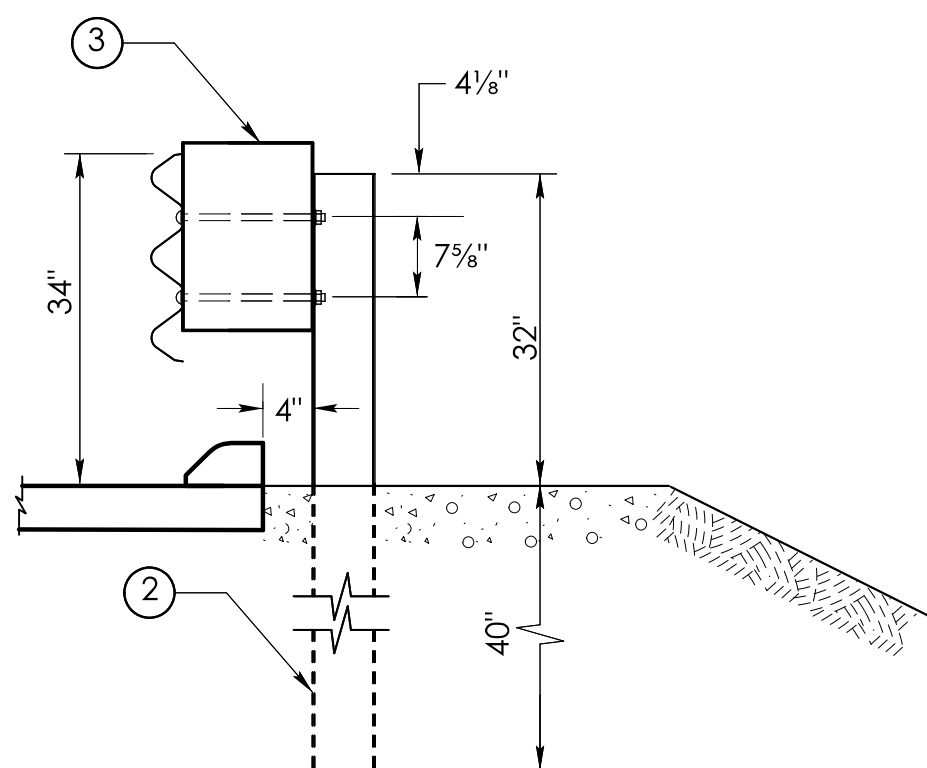
ELEVATION



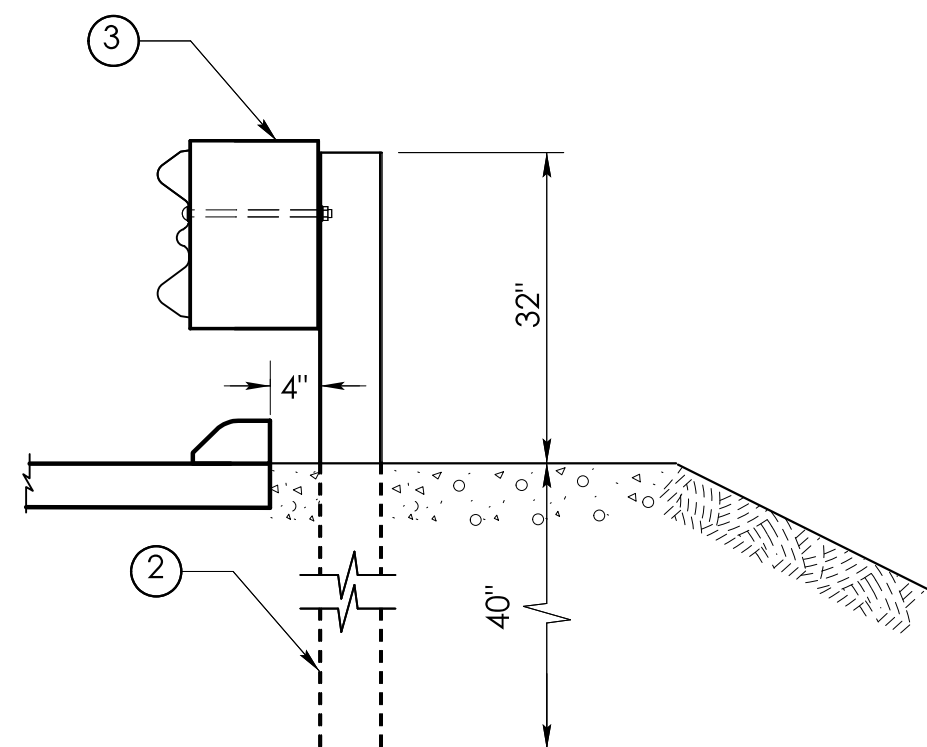
THRIE BEAM CONNECTION



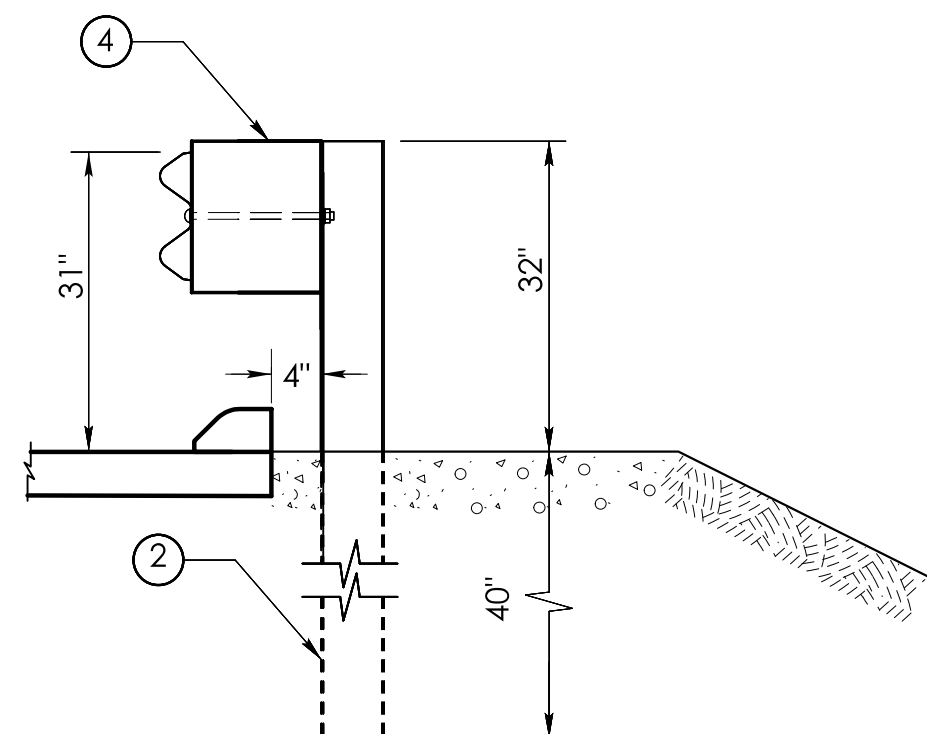
POST 1, 2 & 3



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

NOT TO SCALE

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

SUBMITTED BY:
Léo Fontaine
Digitally signed by
Léo Fontaine, P.E.
Date: 2024.12.19
15:06:03-05'00'

APPROVED BY:
Michael N. Calabrese
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:

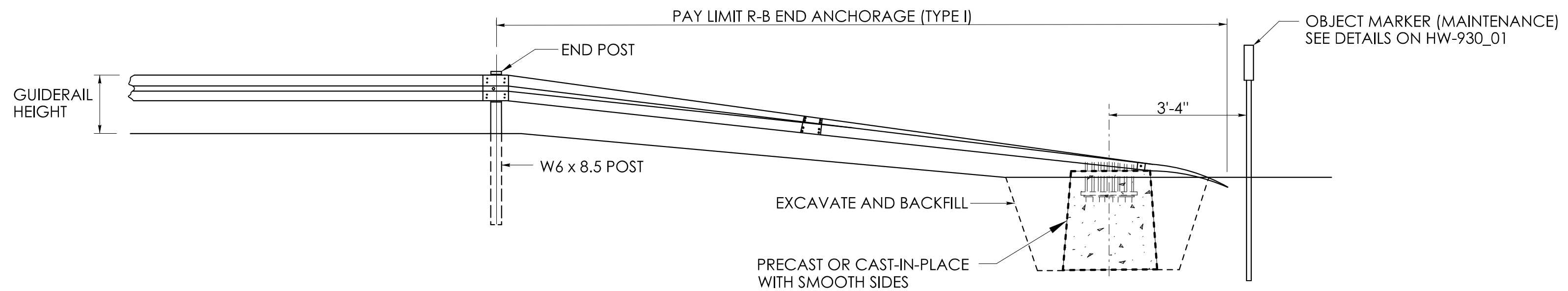
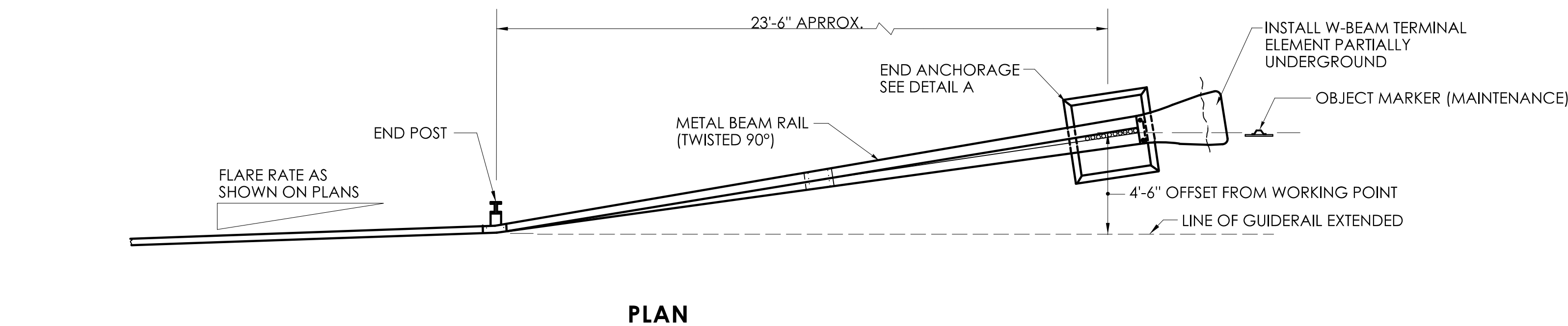
THRIE-BEAM ATTACHMENT

MASH 2016 COMPLIANT
APPROVAL ID: 2019-01

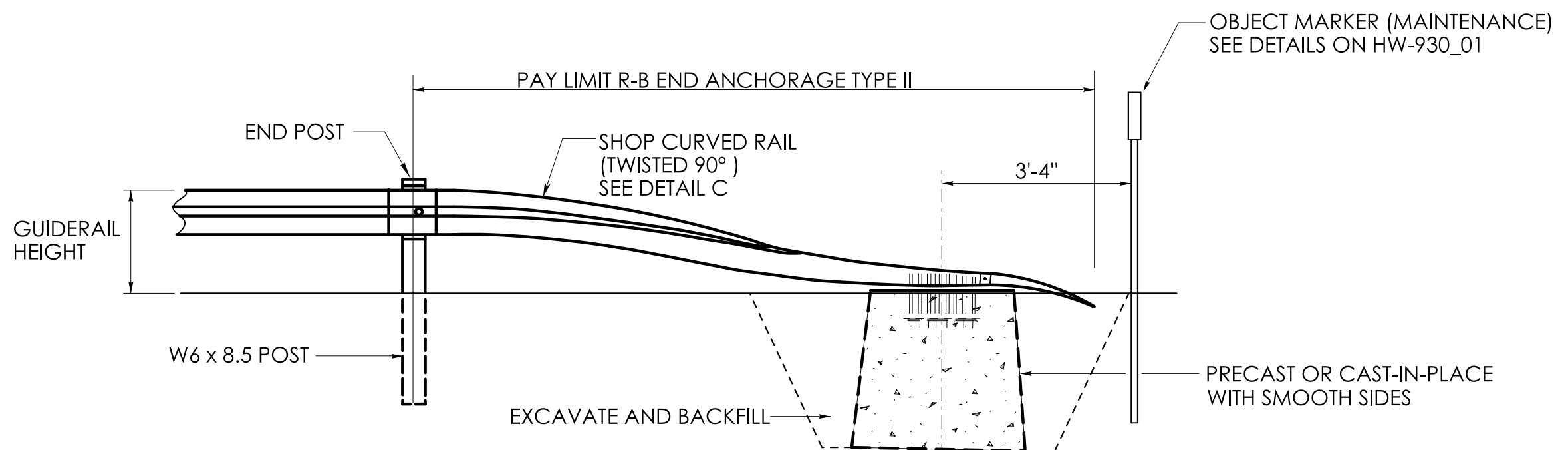
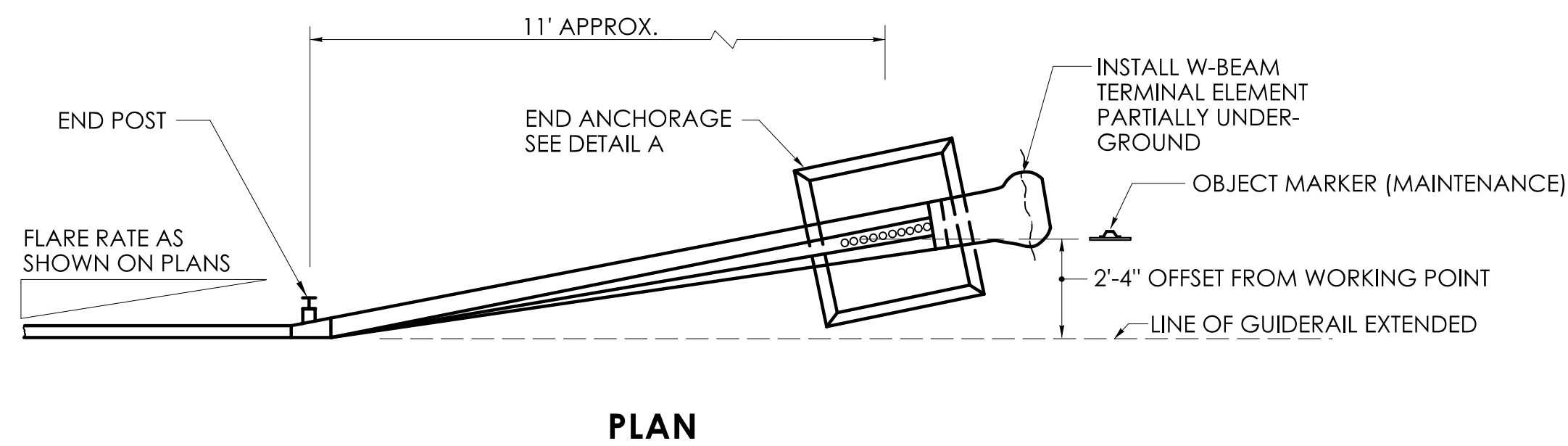
STANDARD SHEET NO.:

HW-910_27

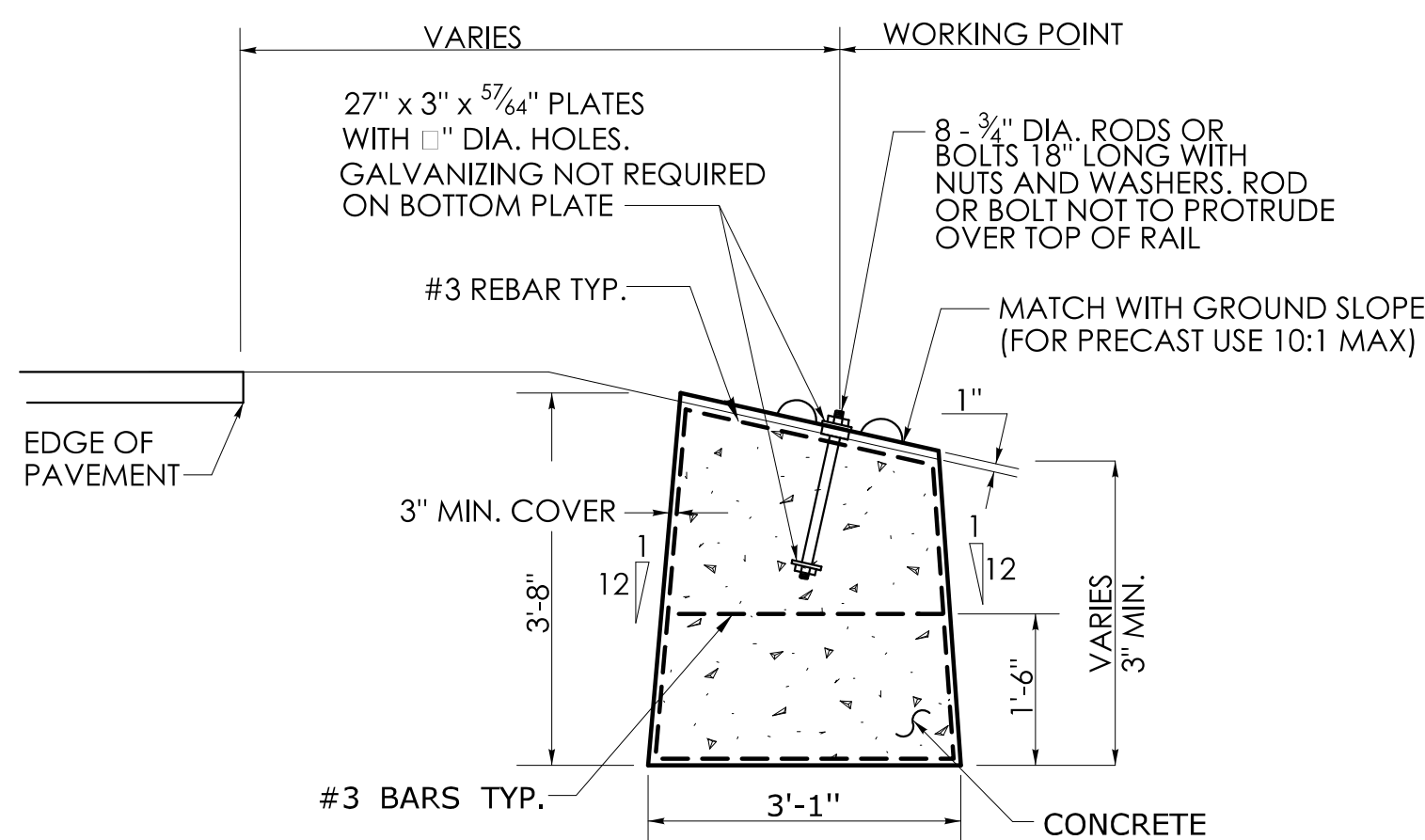
- GENERAL NOTES:**
- J-HOOK BOLTS MAY BE SUBSTITUTED FOR BOTTOM PLATE ANCHORAGE IN CONCRETE END ANCHORS USING THE SAME SIZE, STRENGTH, AND LENGTH AS NOTED ON THE PLANS.
 - INSTALLATION OF RADII DIFFERENT THAN WHAT IS SHOWN IN DETAIL "C" FOR R-B END ANCHORAGE TYPE II MUST BE APPROVED BY THE ENGINEER.



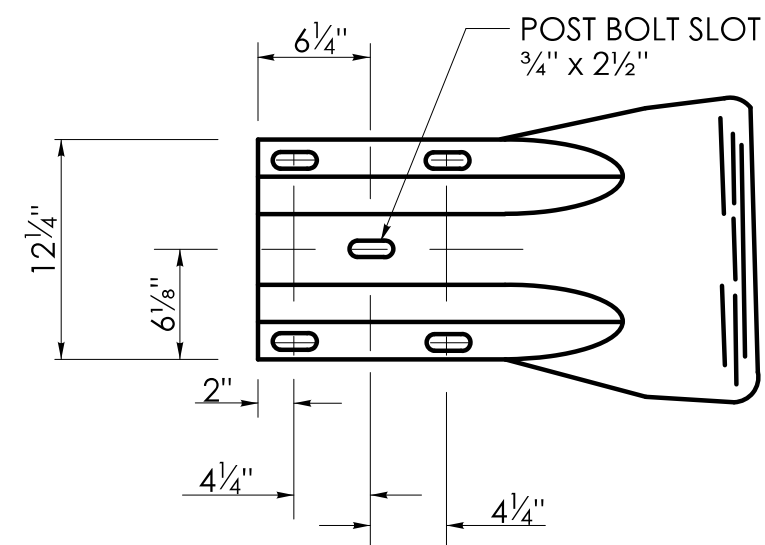
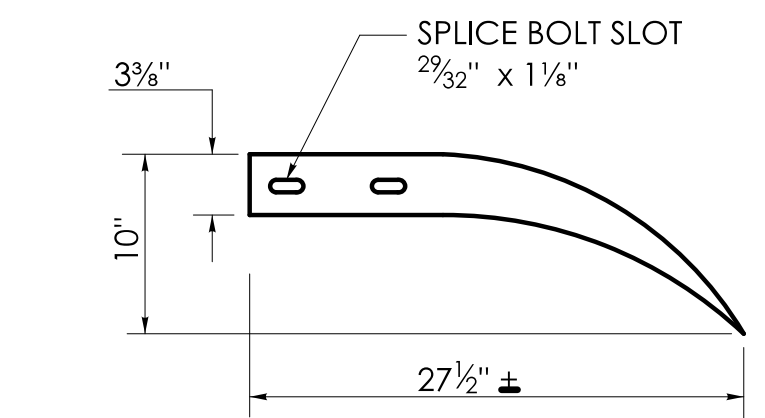
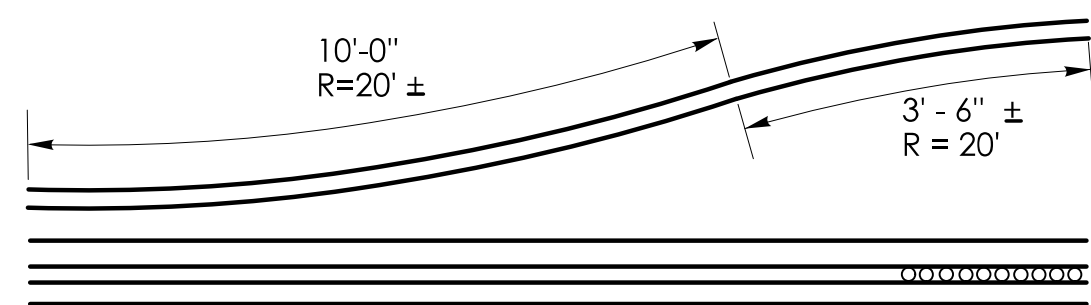
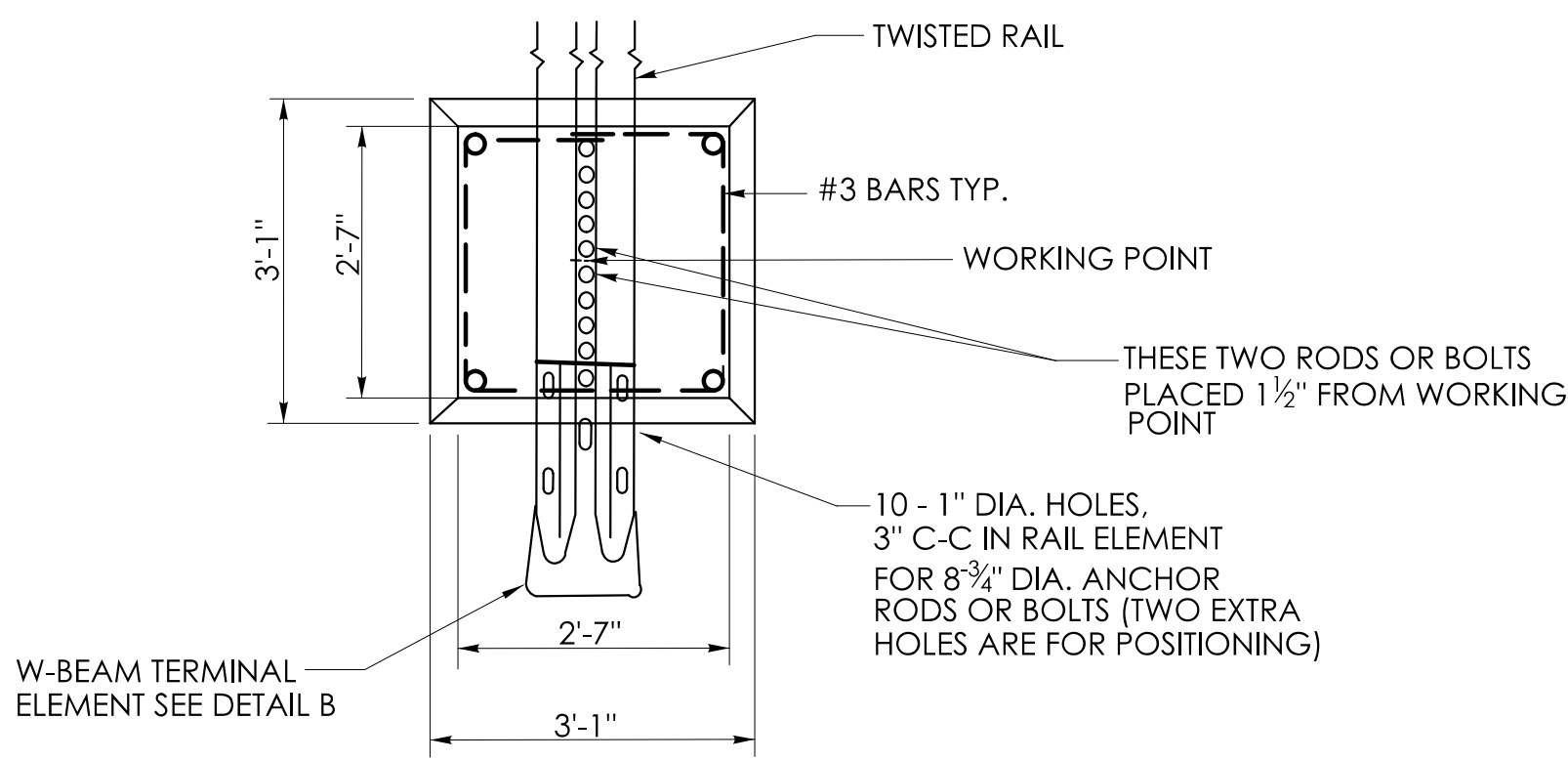
R-B END ANCHORAGE TYPE I



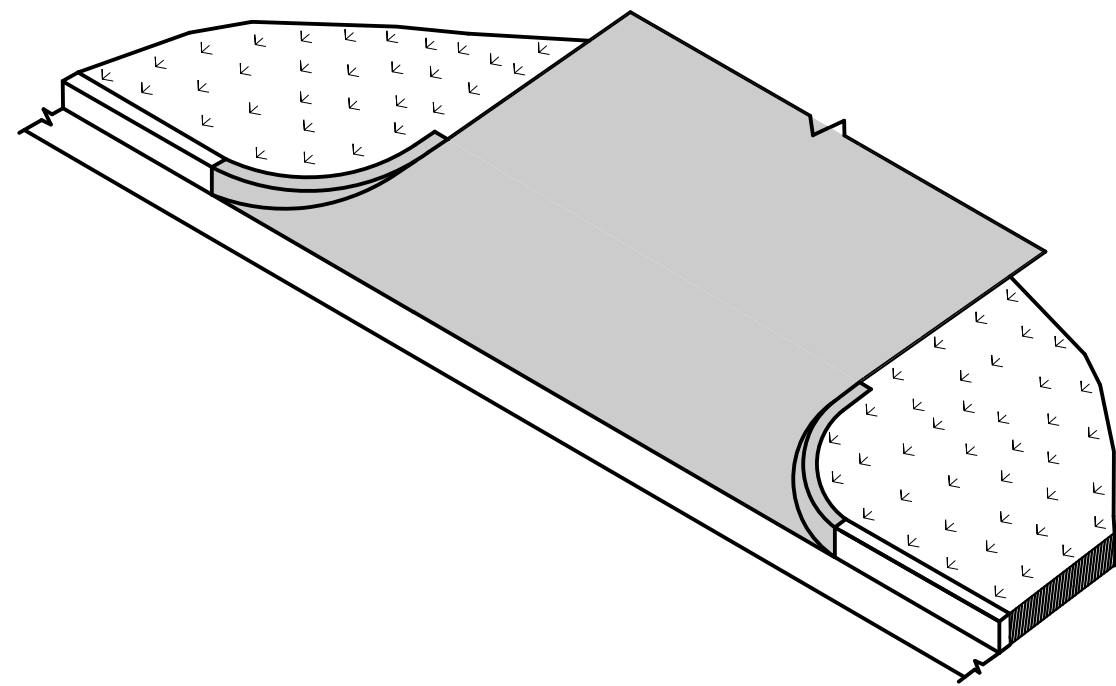
R-B END ANCHORAGE TYPE II



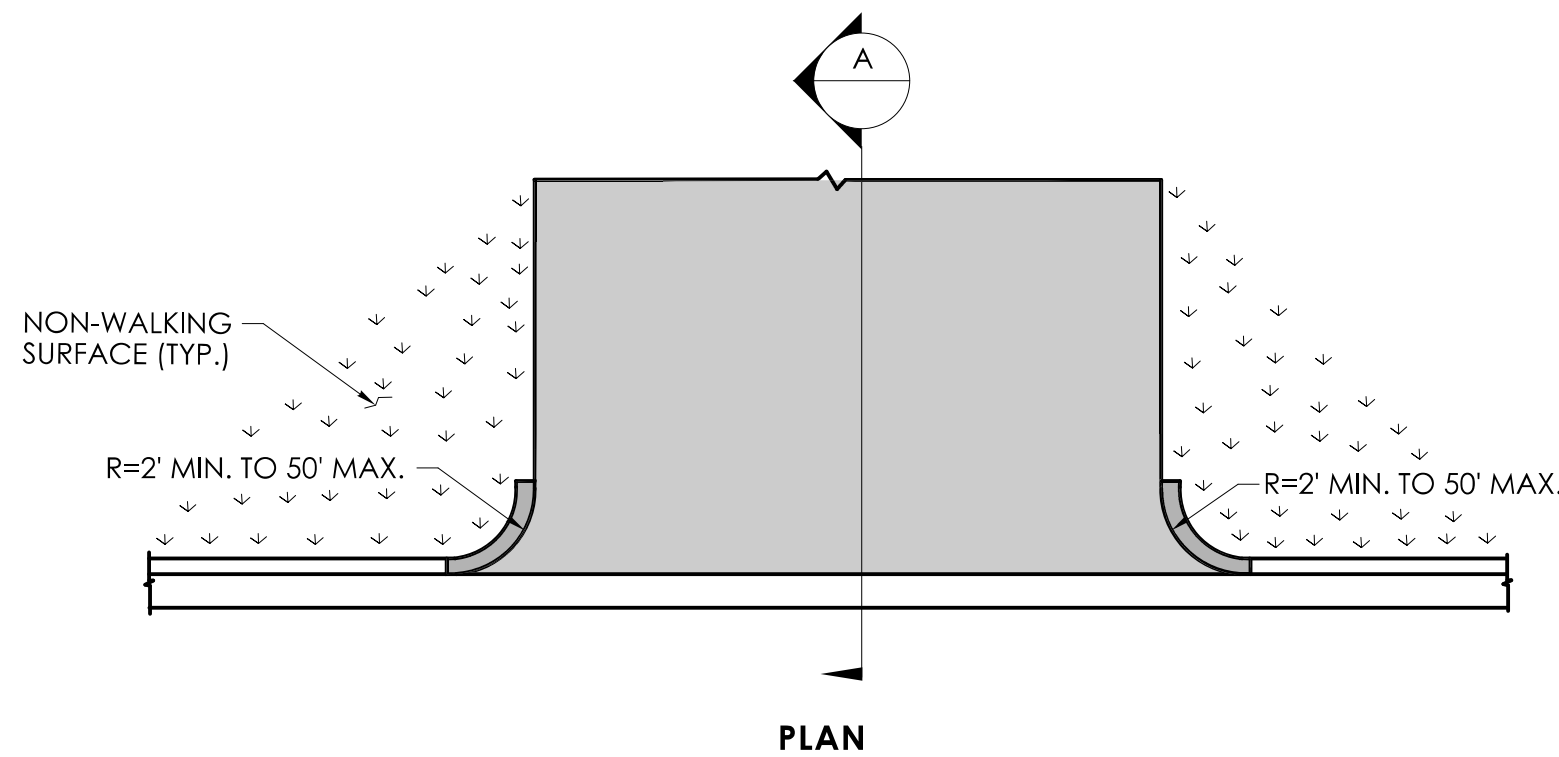
**DETAIL A
ROADSIDE CONCRETE END ANCHOR**
SEE NOTE 2



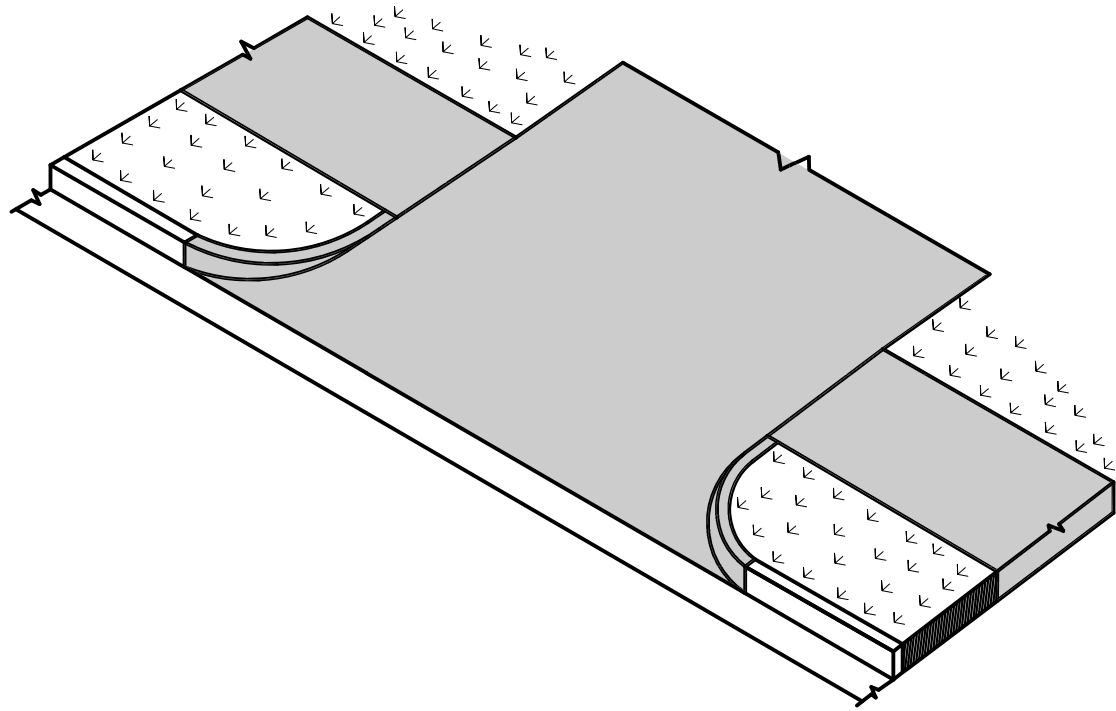
**DETAIL B
W-BEAM TERMINAL ELEMENT**



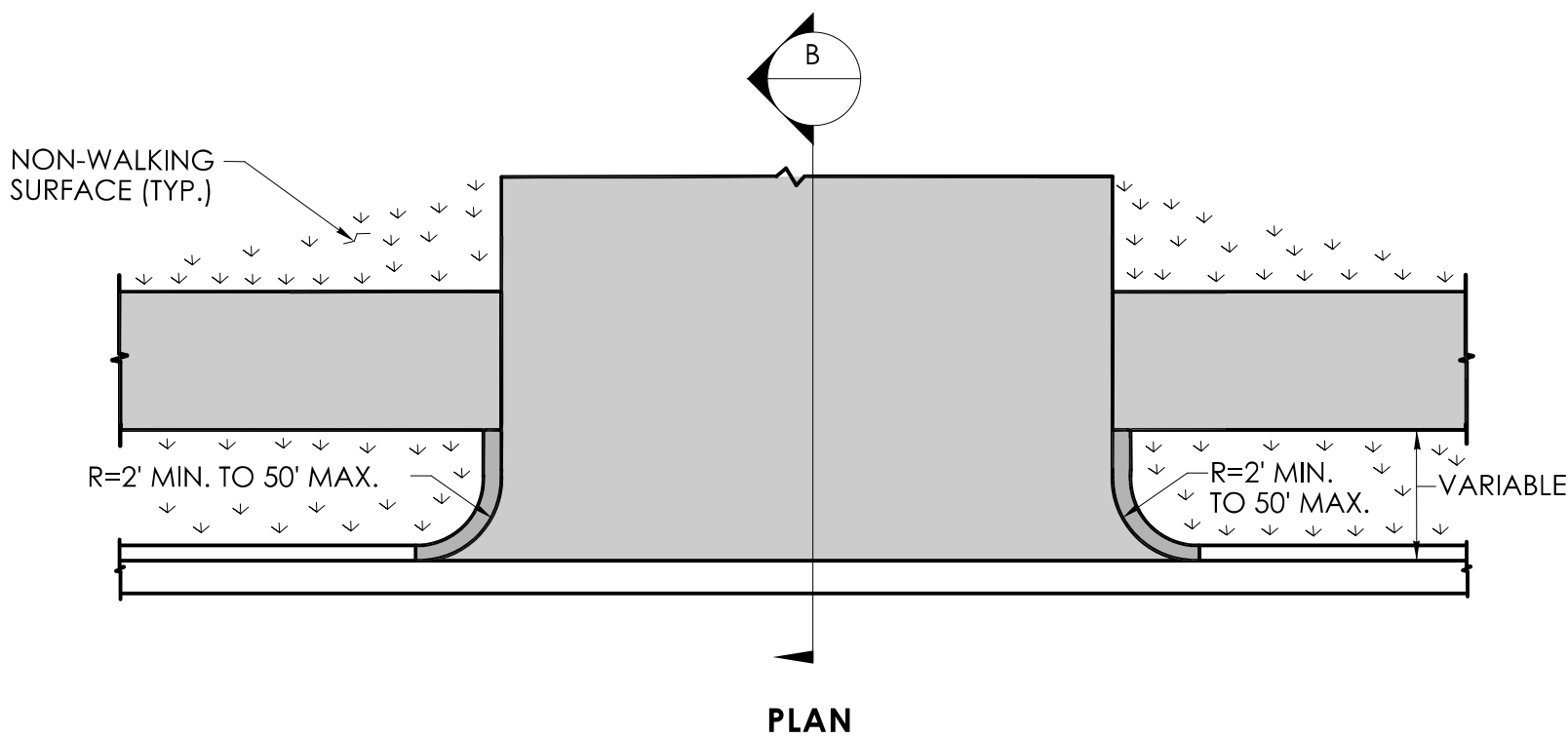
BITUMINOUS CONCRETE DRIVEWAY



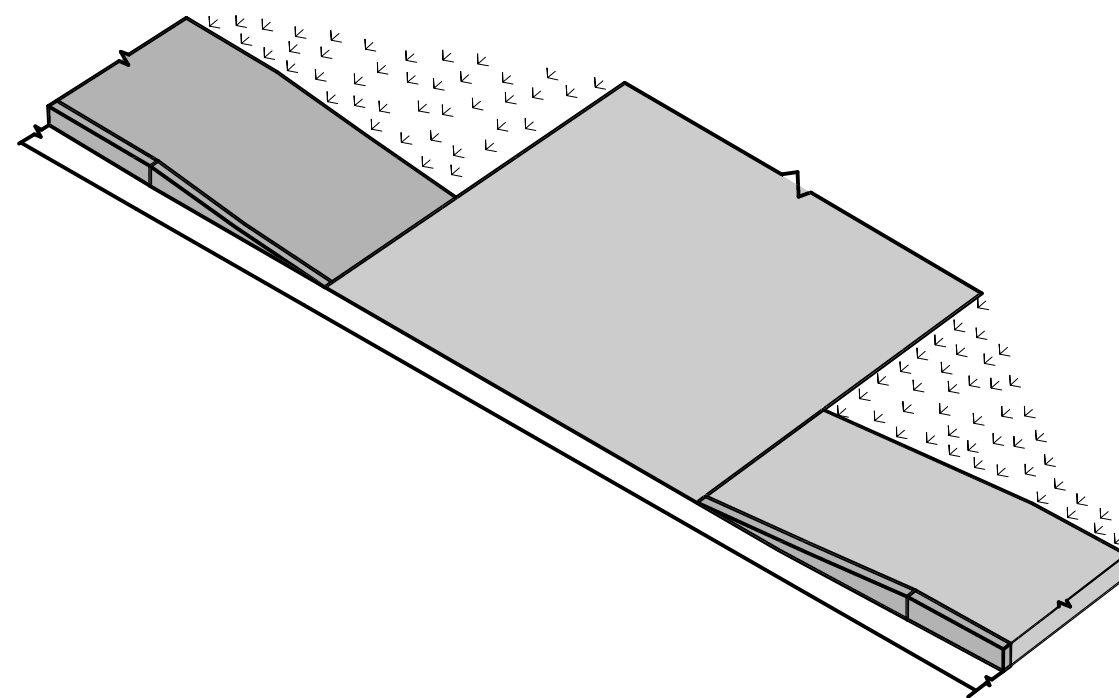
PLAN



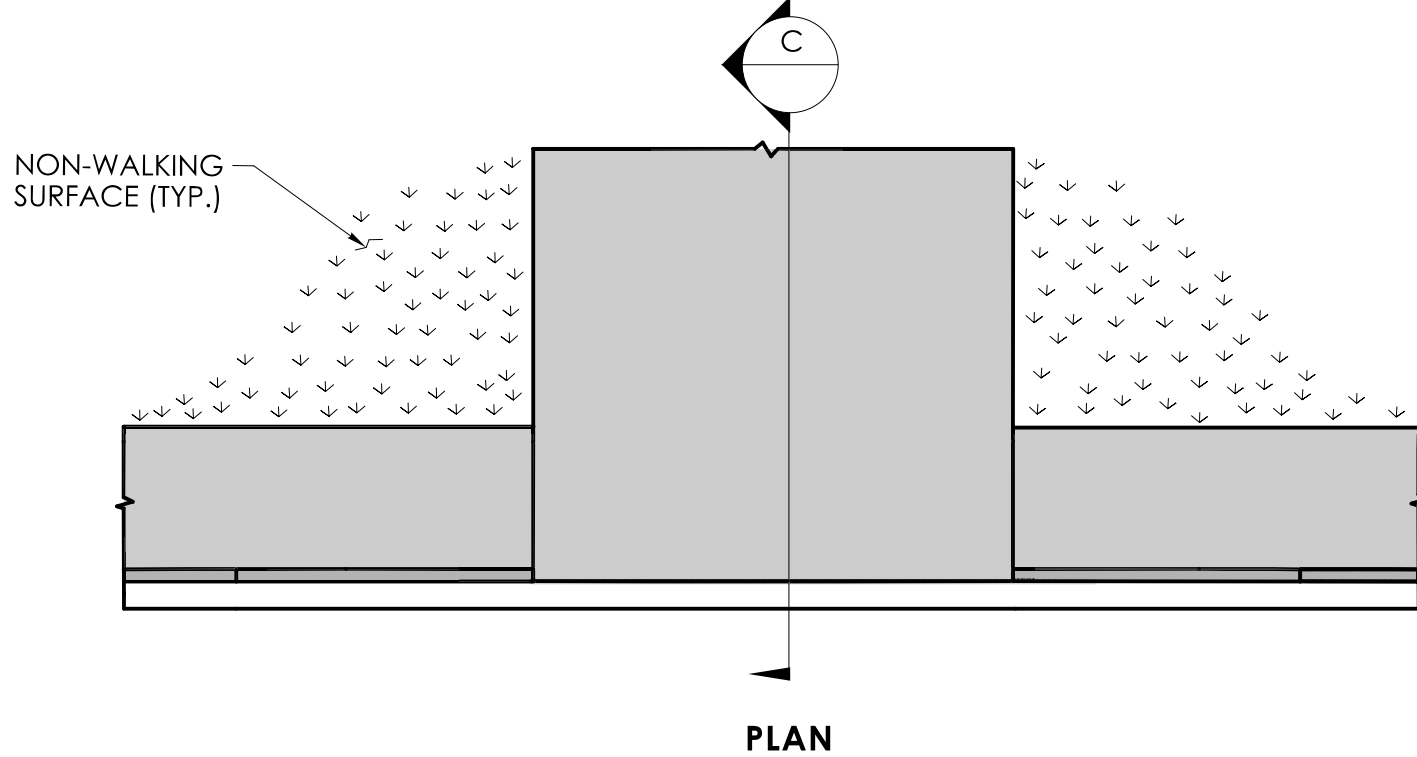
BITUMINOUS CONCRETE DRIVEWAY
WITH A PEDESTRIAN SIDEWALK SETBACK



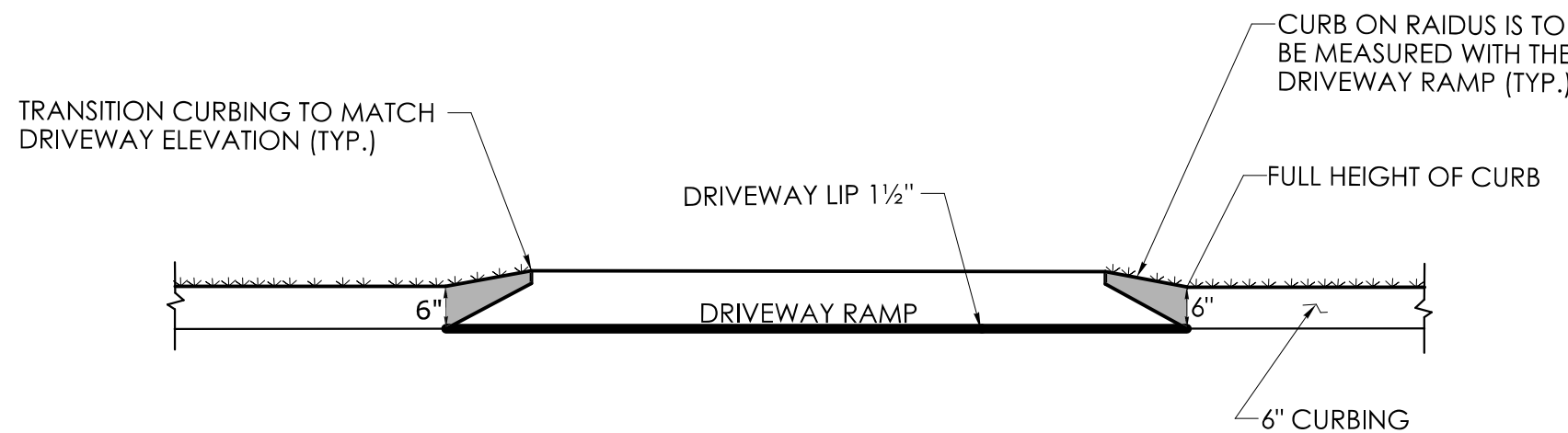
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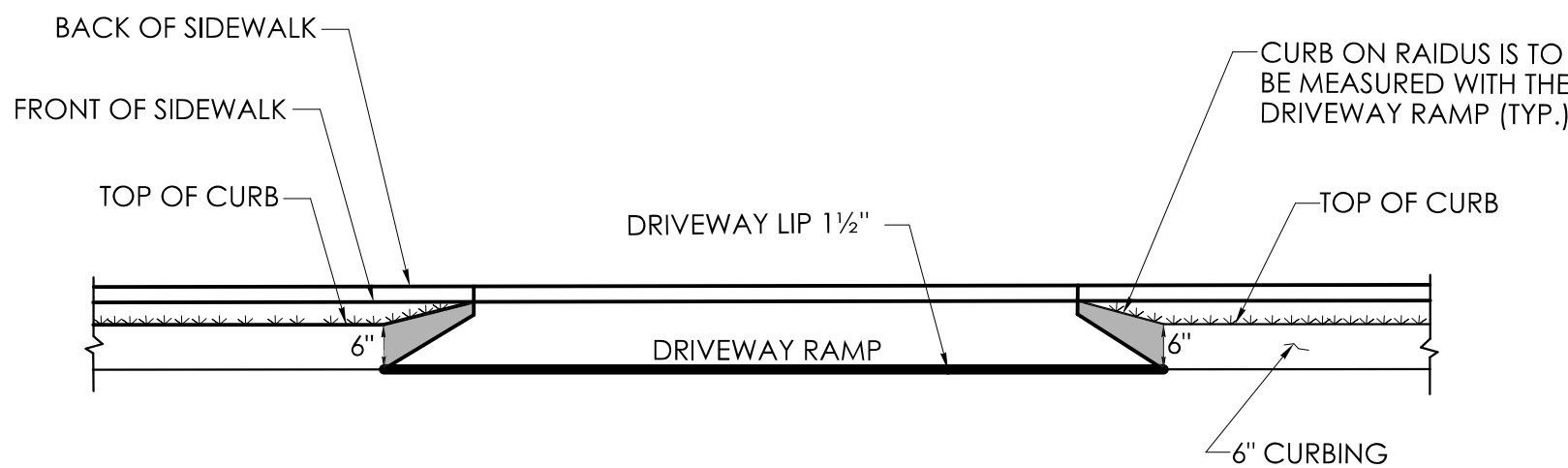
BITUMINOUS CONCRETE DRIVEWAY
WITH PEDESTRIAN SIDEWALK AT THE CURB



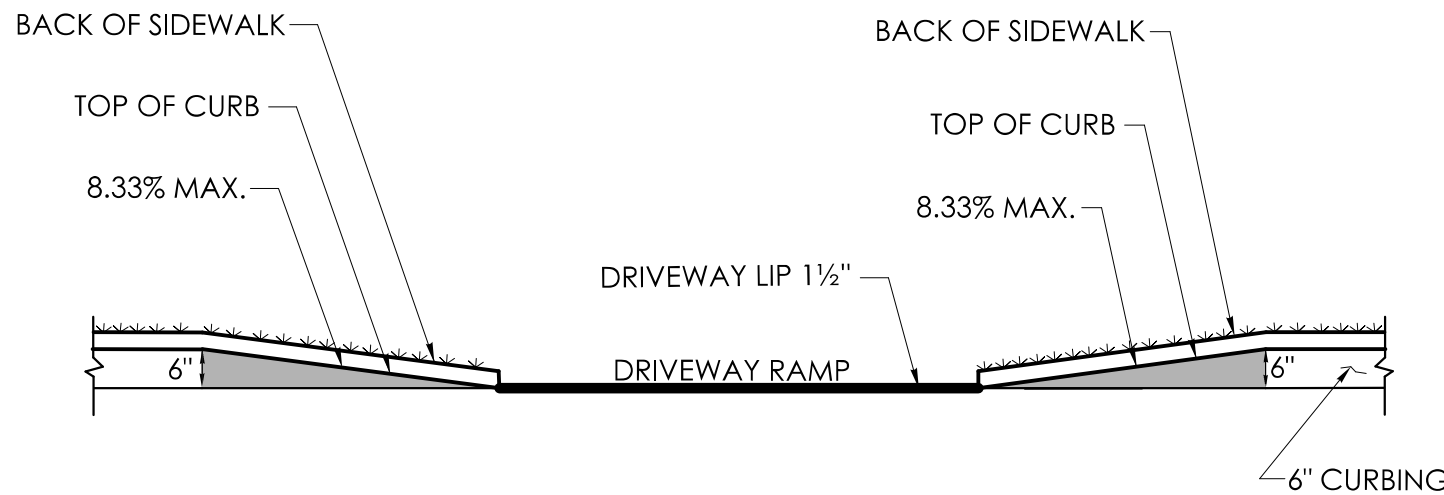
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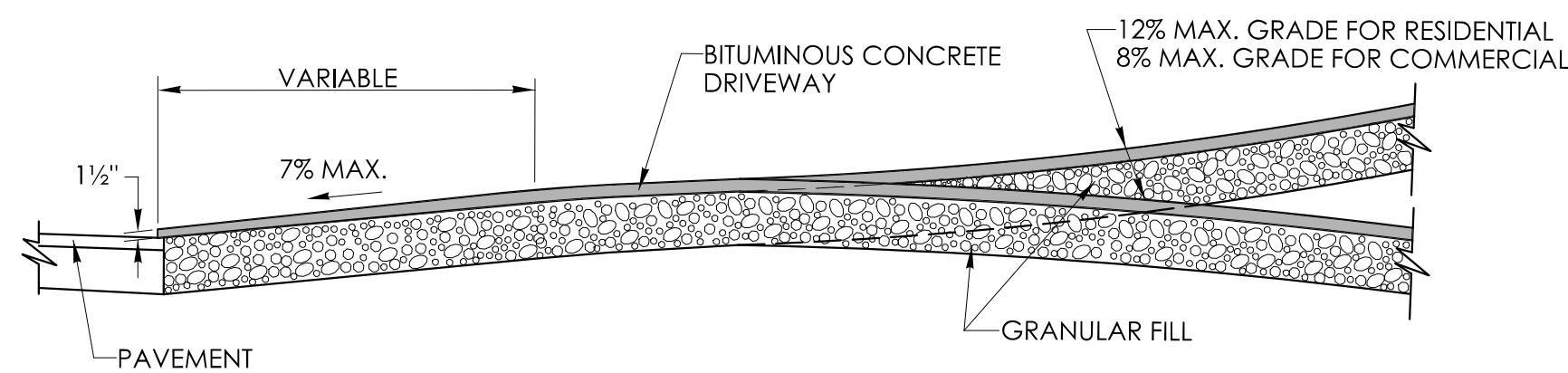
ELEVATION



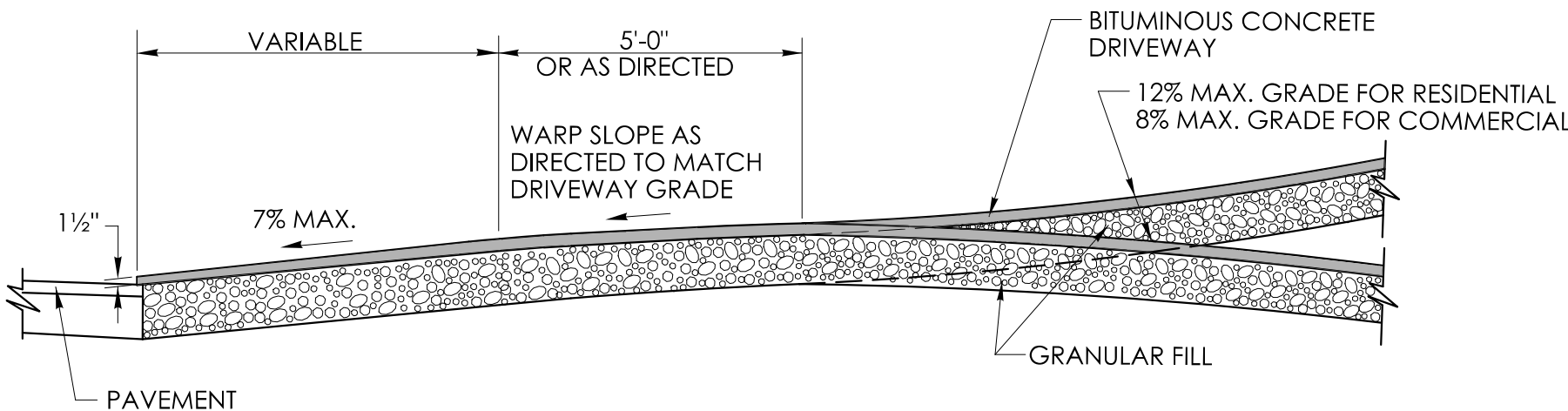
ELEVATION



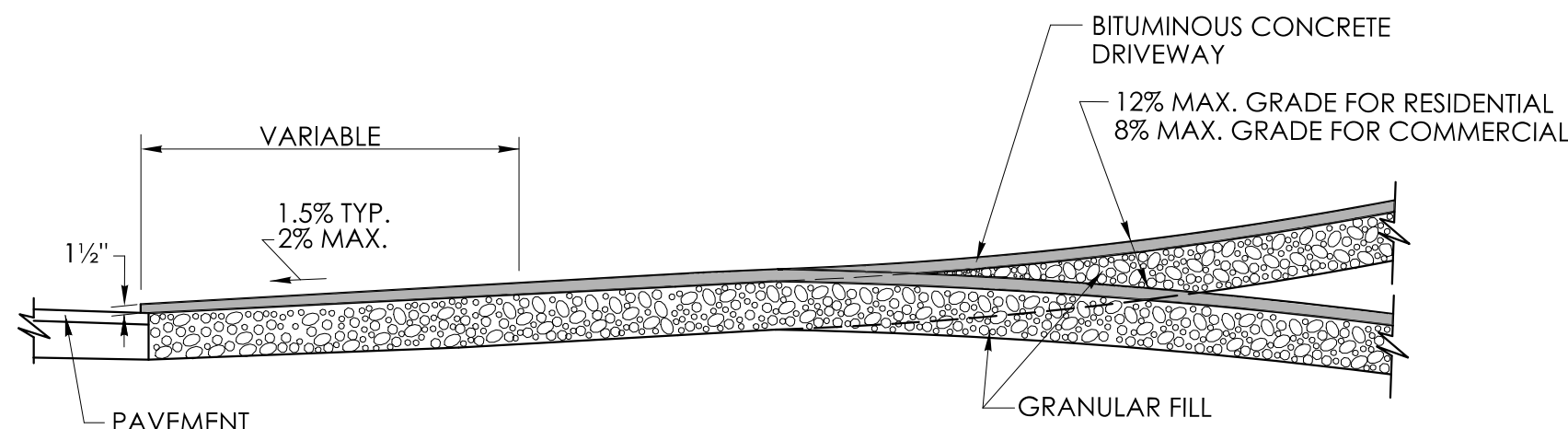
ELEVATION



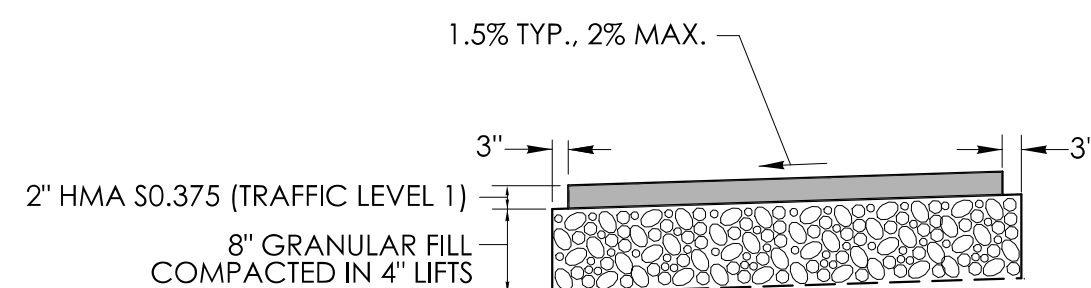
SECTION A



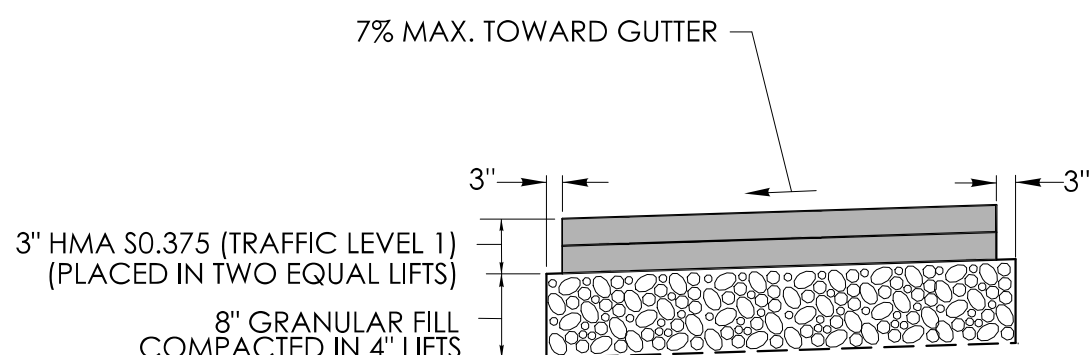
SECTION B



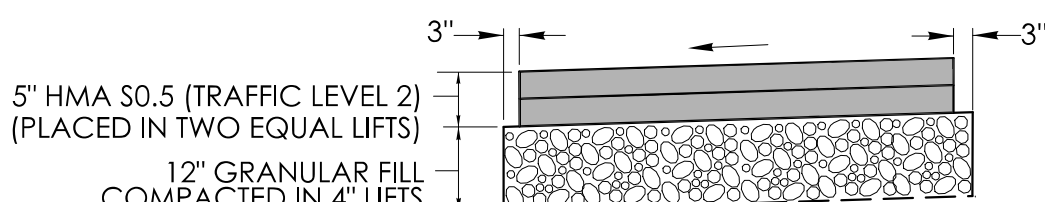
SECTION C



BITUMINOUS CONCRETE SIDEWALK



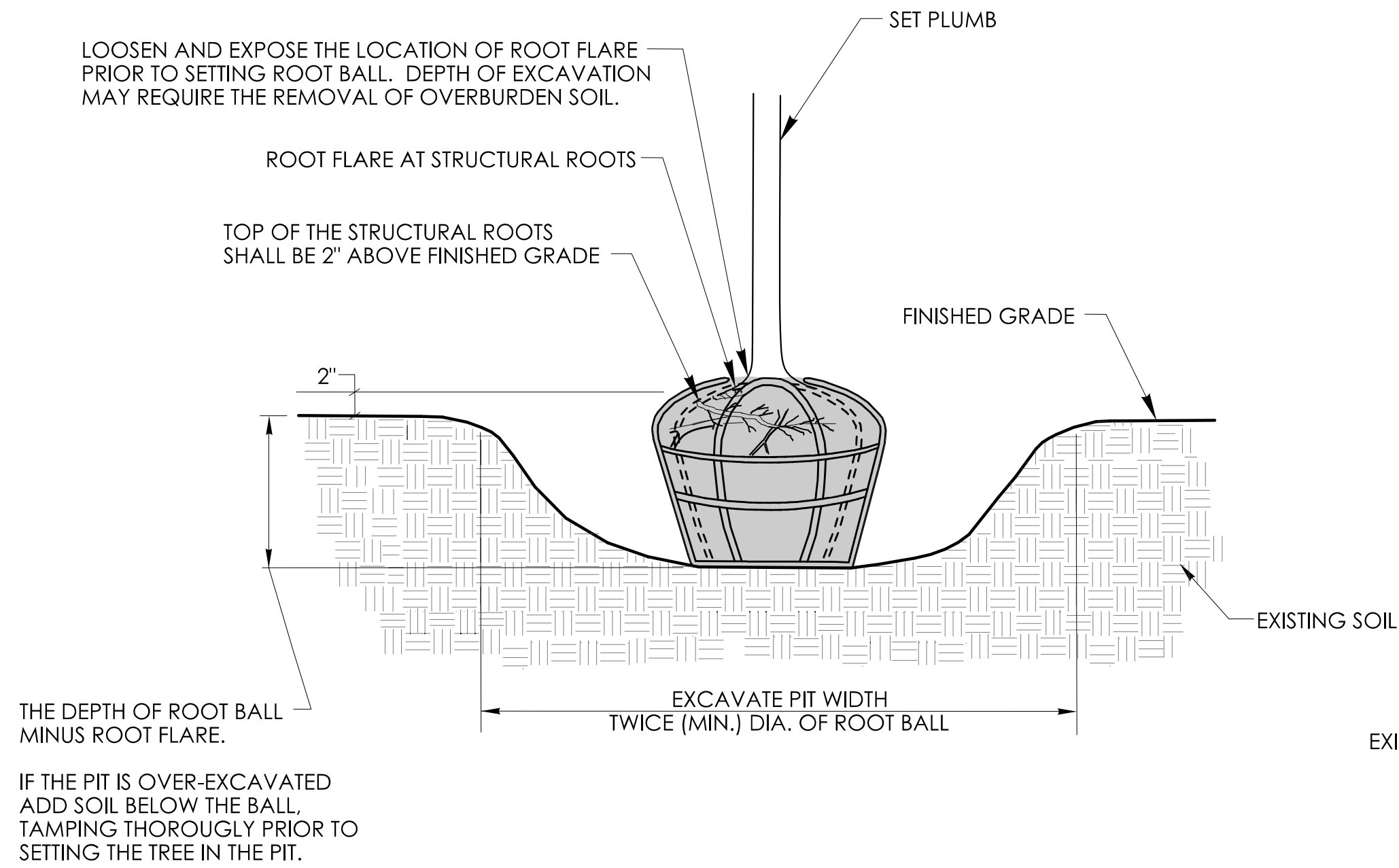
BITUMINOUS CONCRETE DRIVEWAY



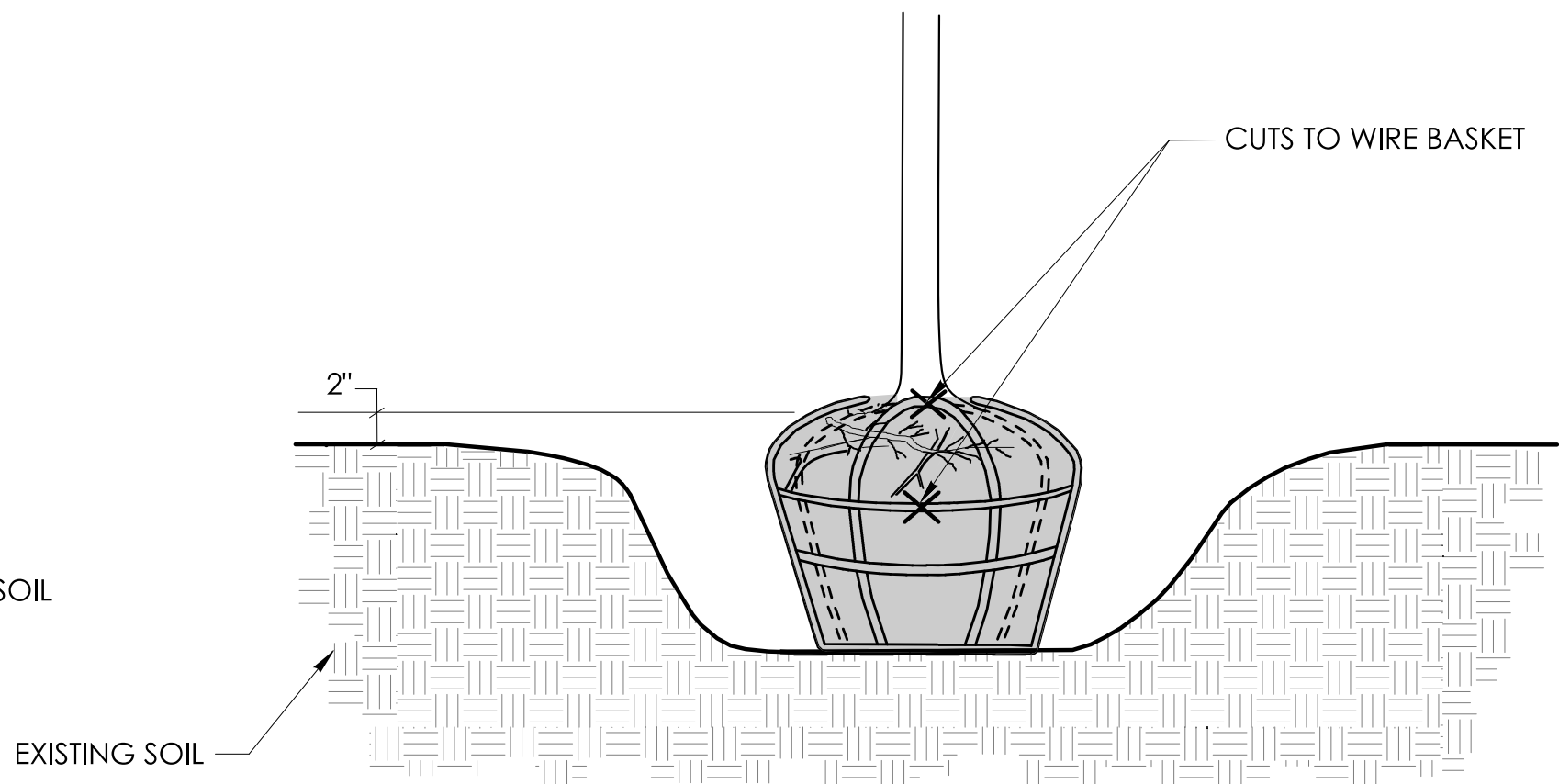
COMMERCIAL
BITUMINOUS CONCRETE DRIVEWAY

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.

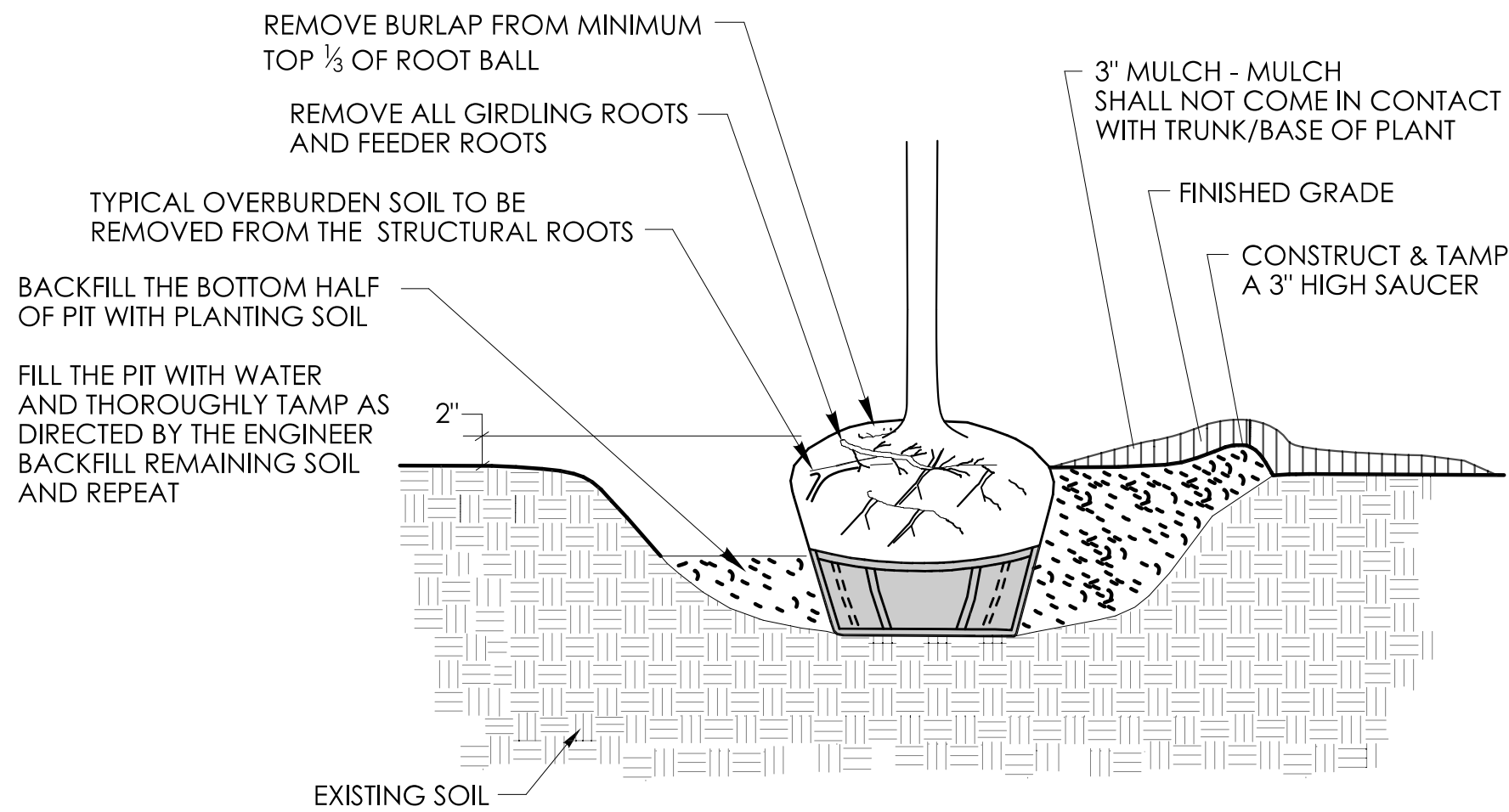


PIT EXCAVATION AND SETTING OF PLANTING

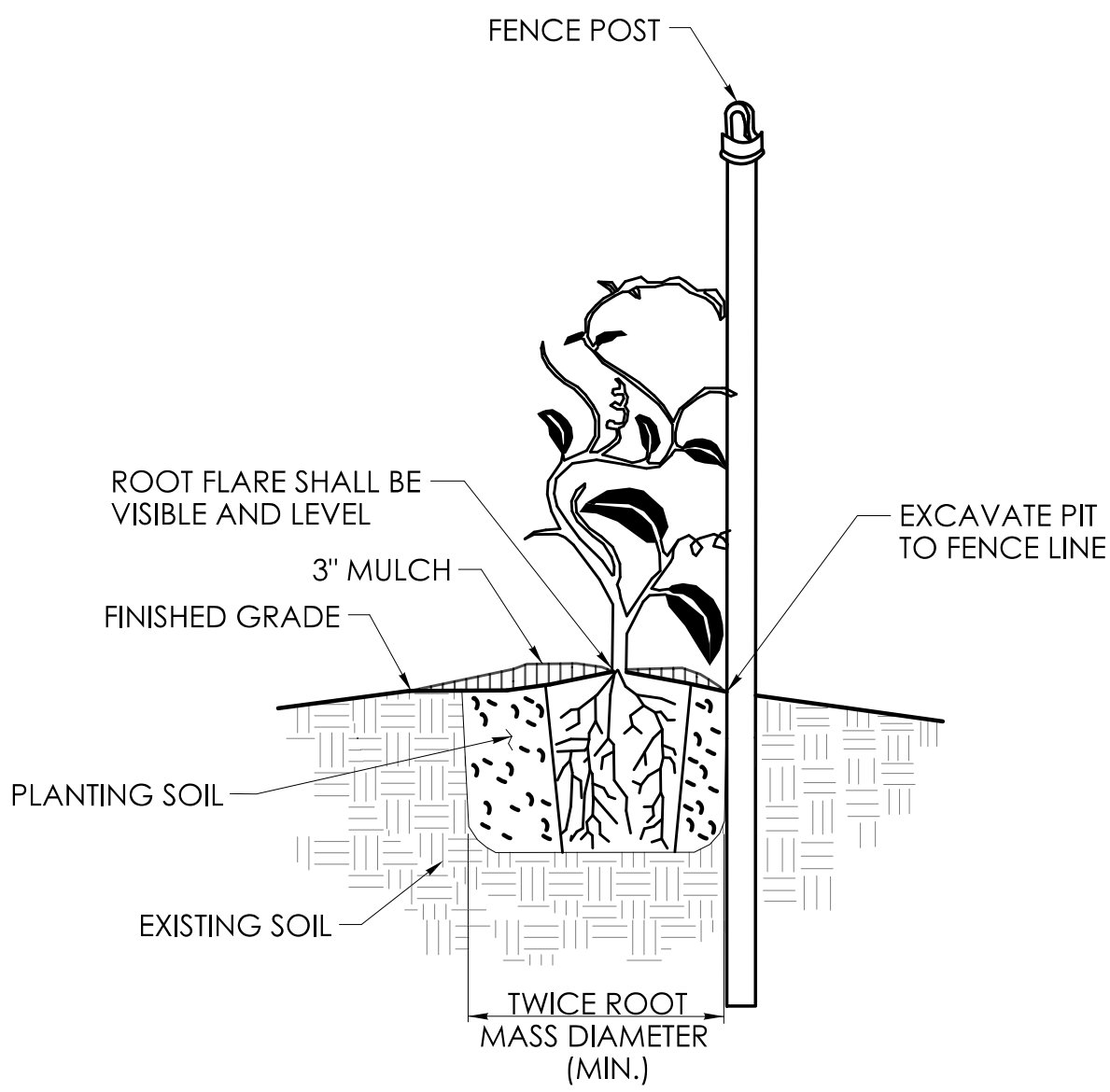


WIRE BASKET REMOVAL

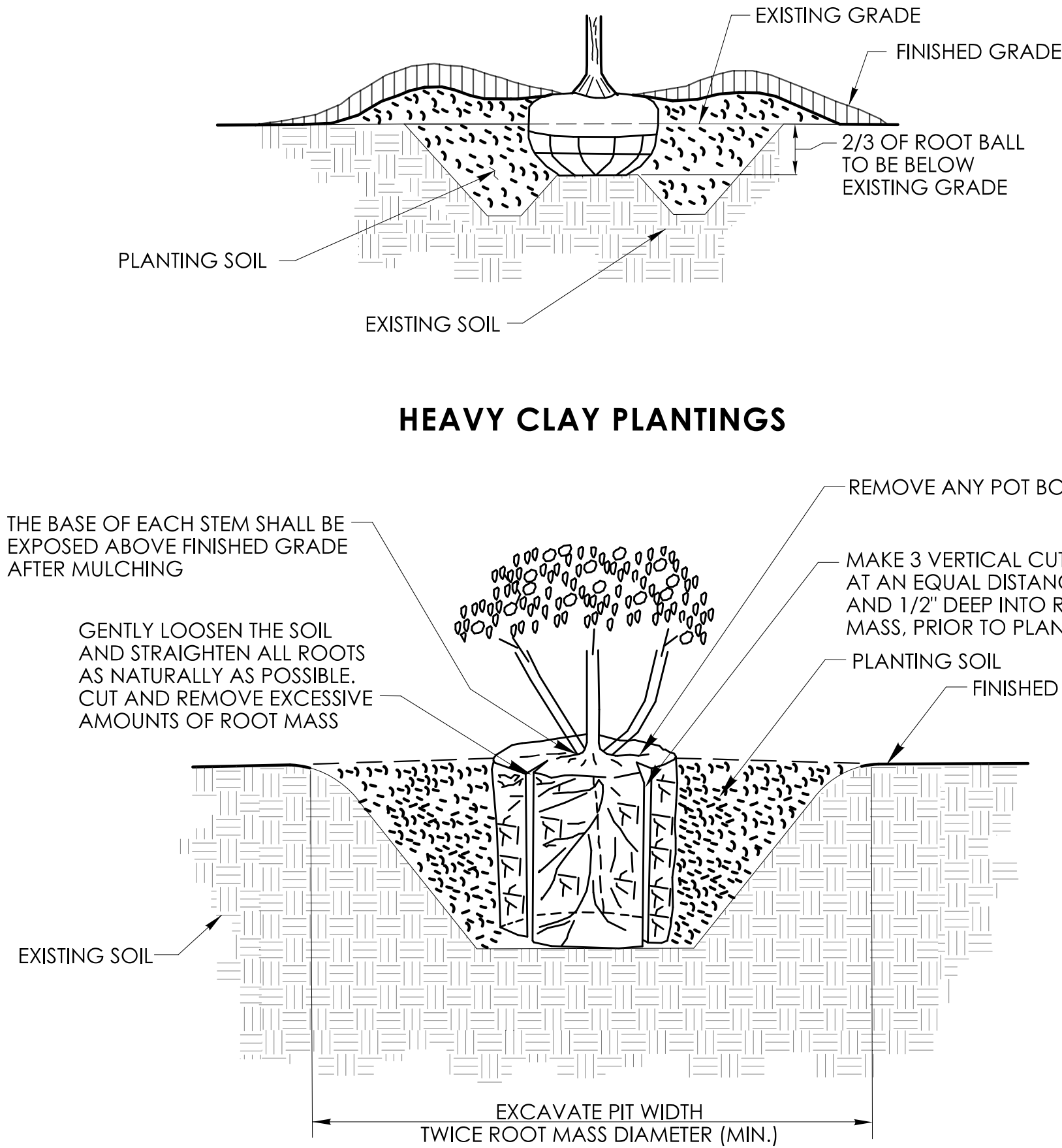
NOTE: IF WIRE BASKETS ARE USED, THE CONTRACTOR SHALL CUT ALL OF THE HORIZONTAL WIRES IN THE TOP 2/3 OF THE ROOT BALL AND BEND DOWN OR REMOVE THE TOP 1/3 OF THE WIRE BASKET



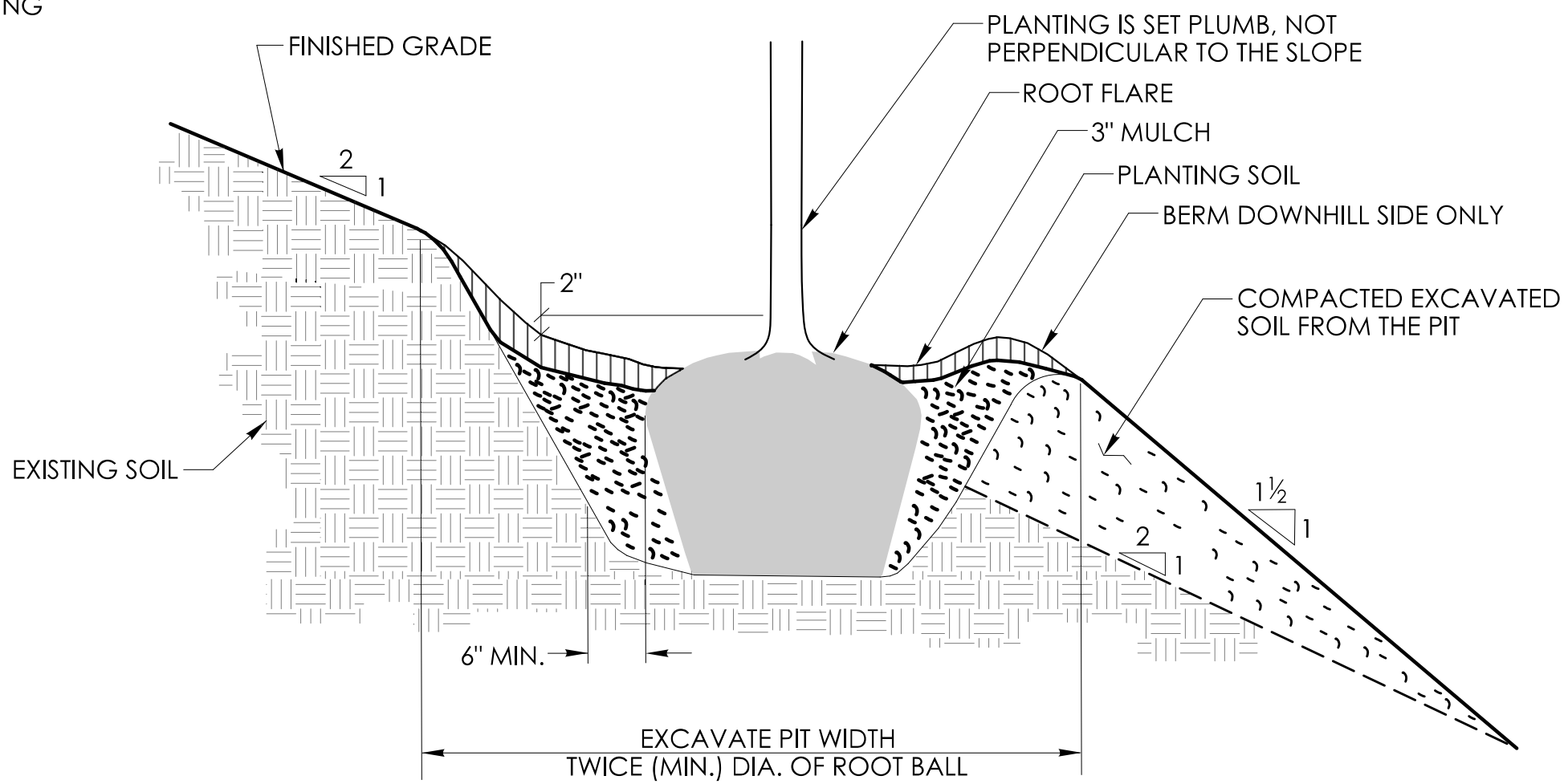
BACKFILL AND MULCH FOR PLANTING



VINE PLANTING



CONTAINER GROWN PLANTING



SLOPE PLANTING

NOT TO SCALE

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

SUBMITTED BY:
Leo Fontaine, P.E.
Date: 2024.12.19
15:09:41-05'00'

APPROVED BY:
Michael N. Calabrese, P.E.
Date: 2025.01.29
22:52:12-05'00'

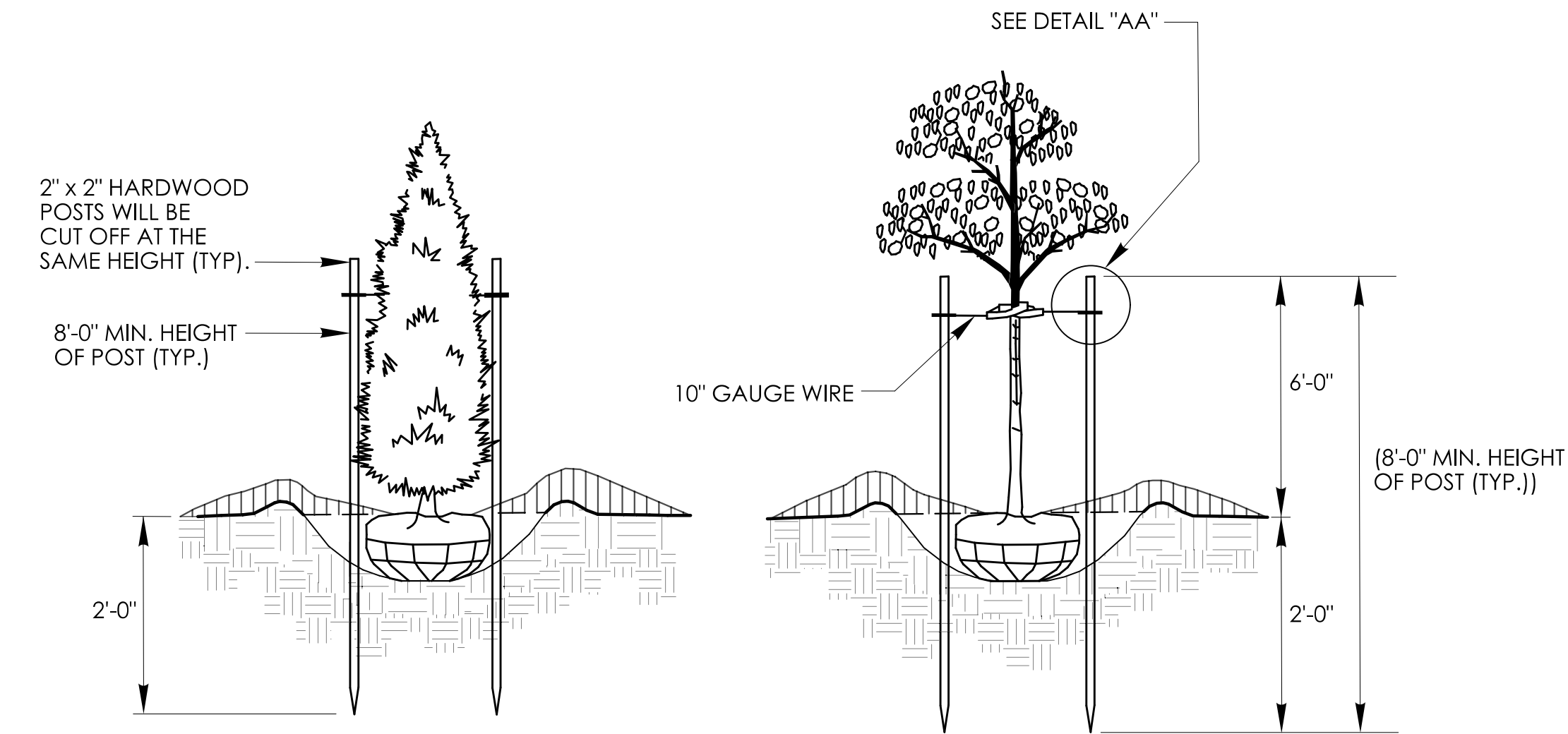


CONNECTICUT
DEPARTMENT OF
TRANSPORTATION

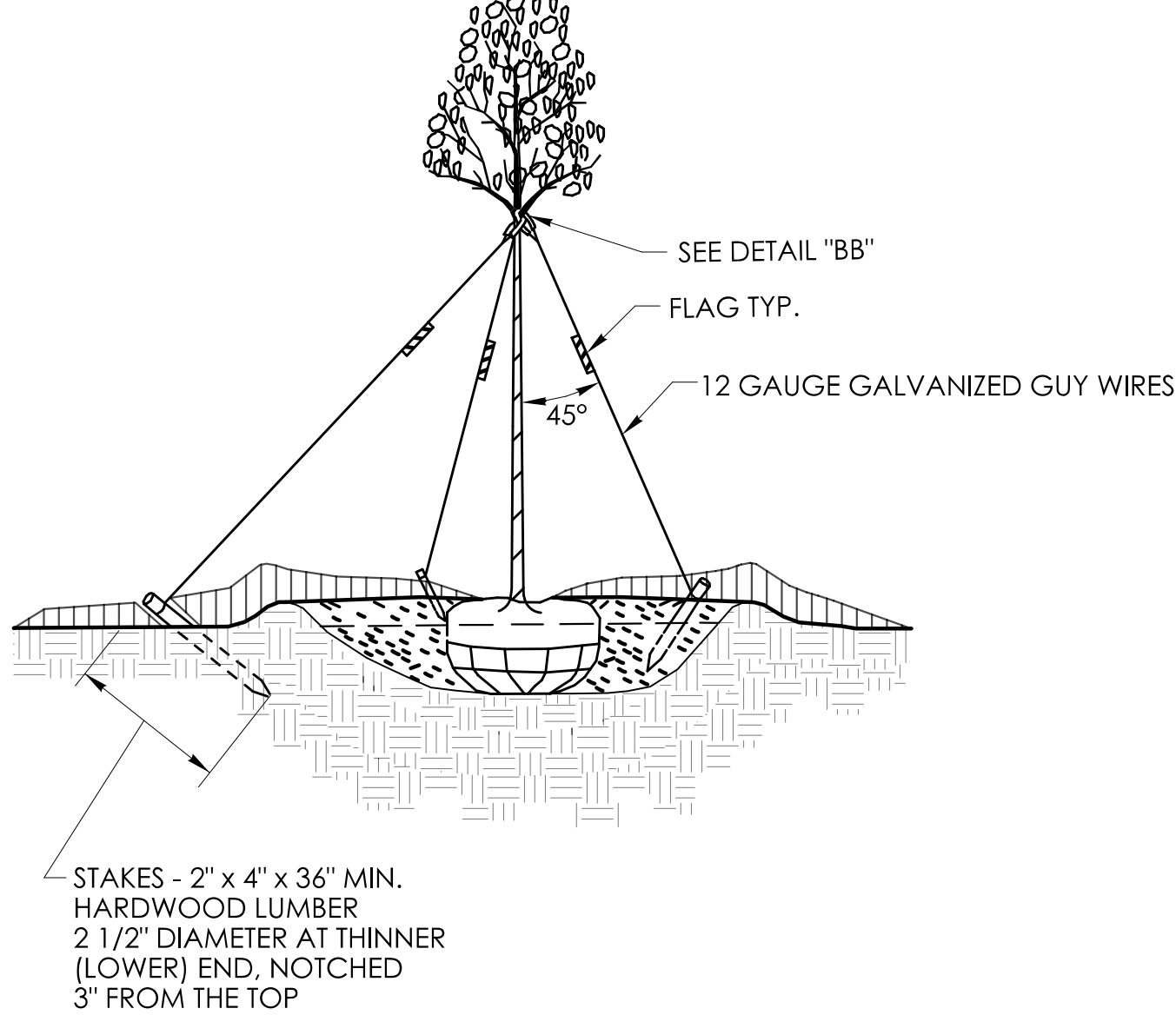
CTDOT
STANDARD SHEET

STANDARD SHEET TITLE:
LANDSCAPE PLANTING

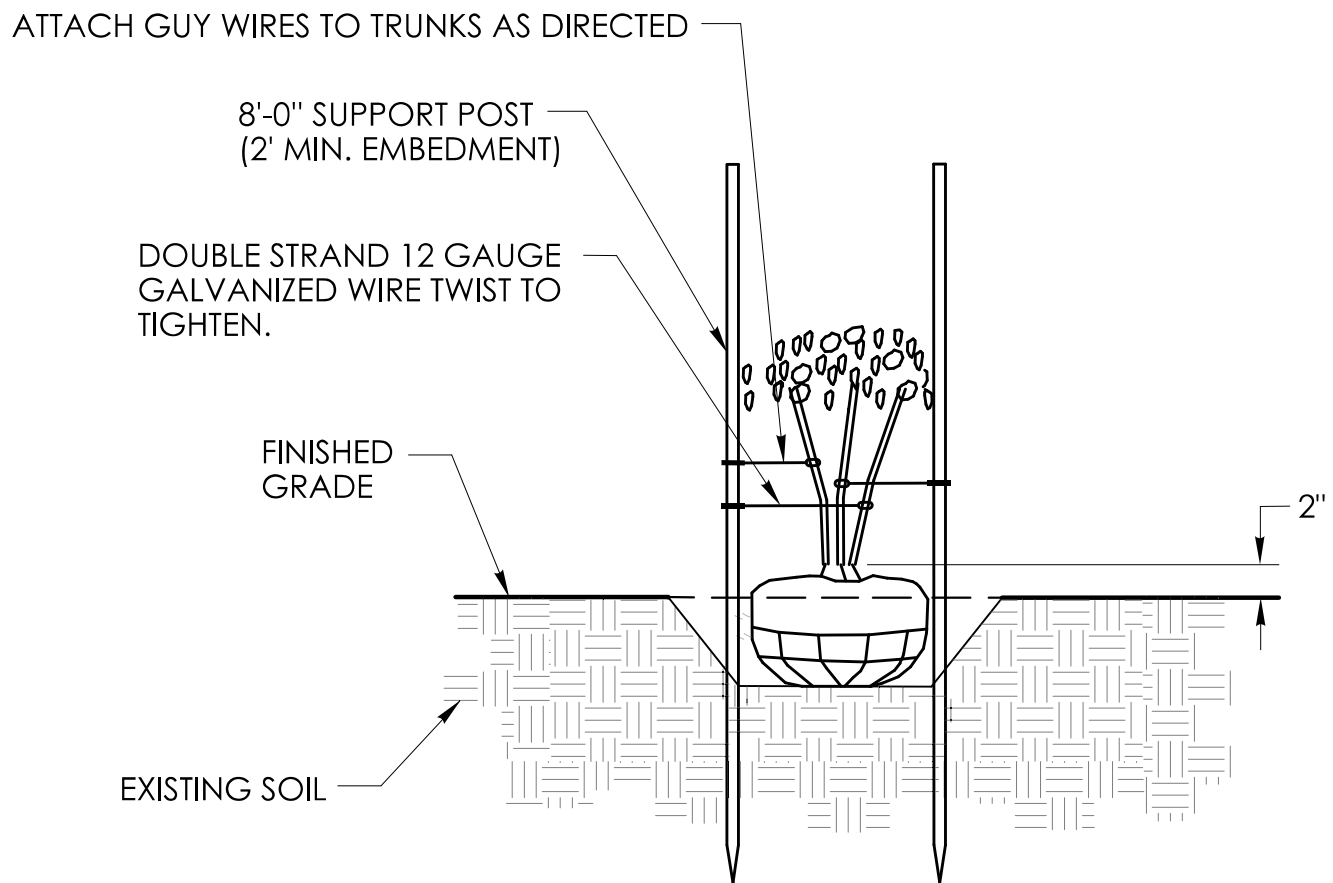
STANDARD SHEET NO.:
HW-949_01a



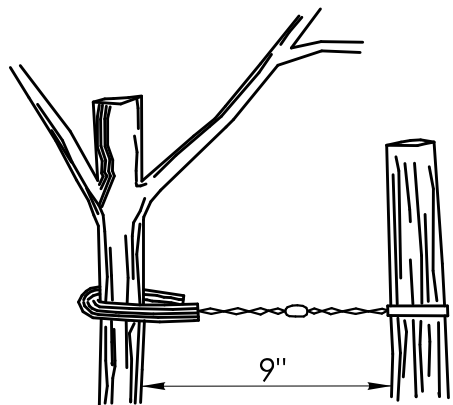
TWO STAKES



THREE GUYS AND STAKES



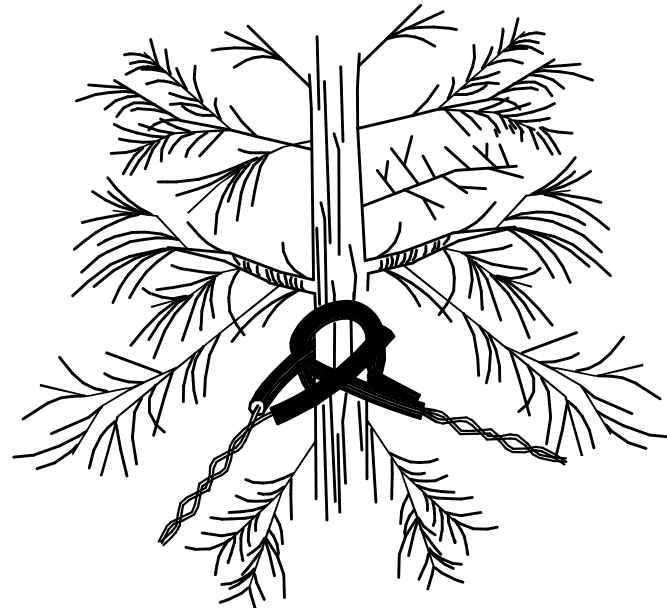
STAKING FOR MULTI-STEMMED TREES



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