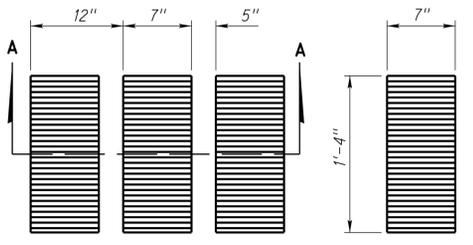
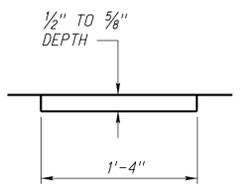


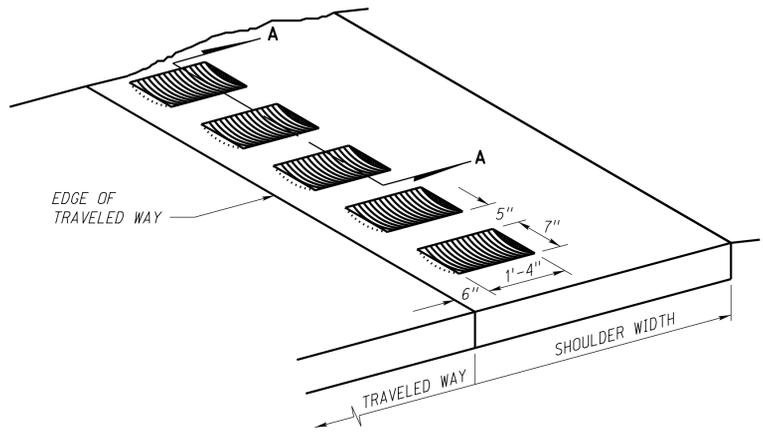
ROADWAY DESIGN DIVISION



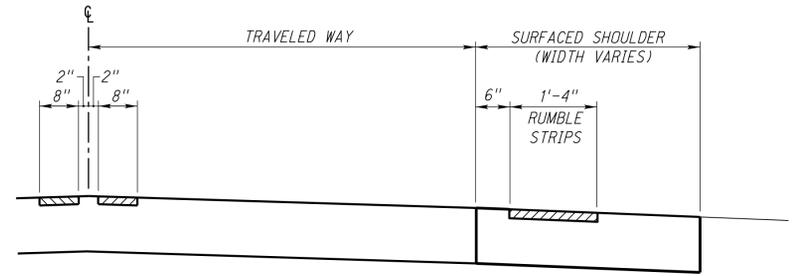
PLAN



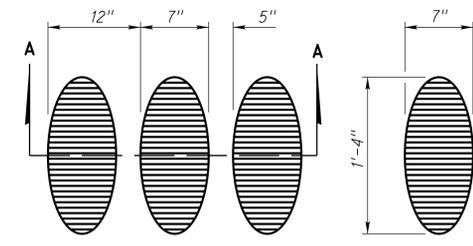
PROFILE



SHOULDER RUMBLE STRIPS DETAIL

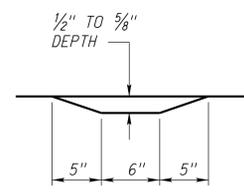


SHOULDER & CENTERLINE

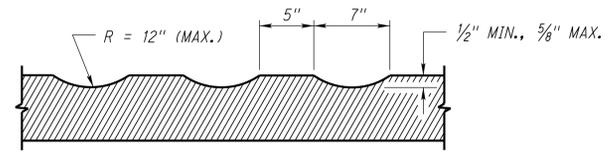


ALTERNATE PLAN

SHOULDER RUMBLE STRIPS SHAPE

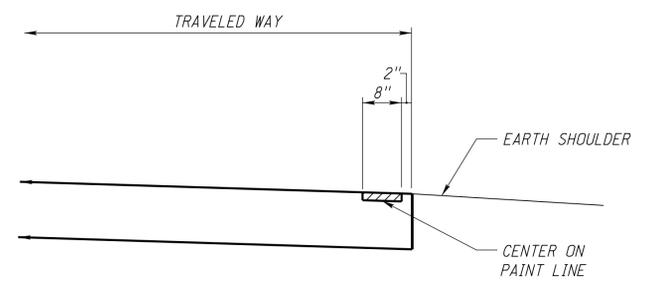


PROFILE

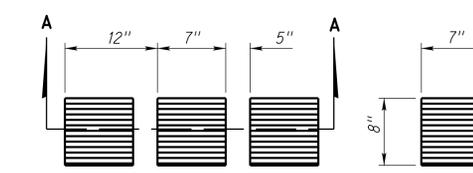


RUMBLE STRIPS CORRUGATIONS

SECTION A-A
(TYPICAL FOR ALL SHAPES)

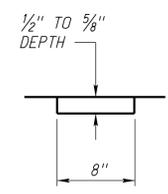


EDGE LINE ON 24 FEET ROADWAY

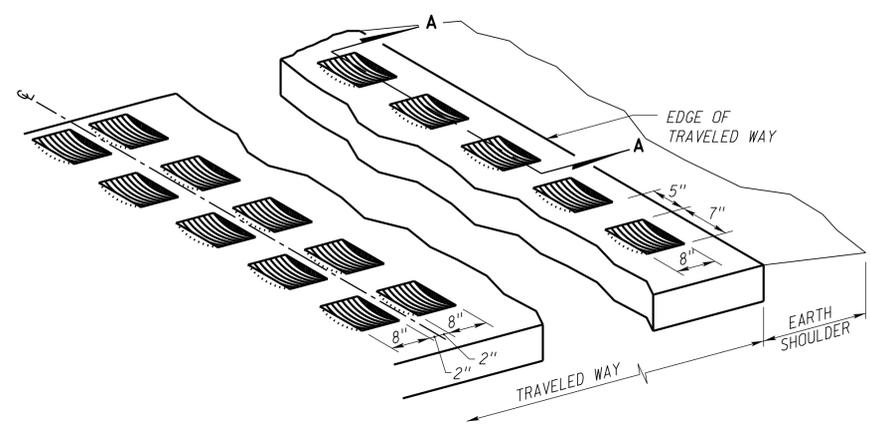


PLAN

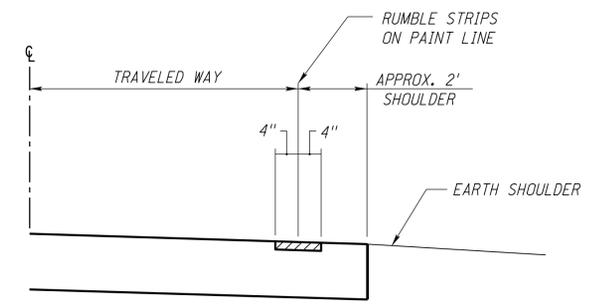
CENTERLINE AND EDGELINE RUMBLE STRIPS SHAPE



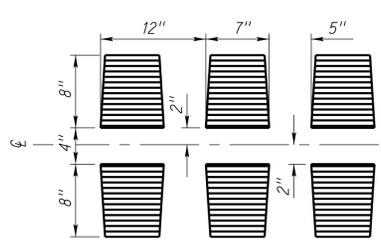
PROFILE



CENTERLINE AND EDGELINE RUMBLE STRIPS DETAIL

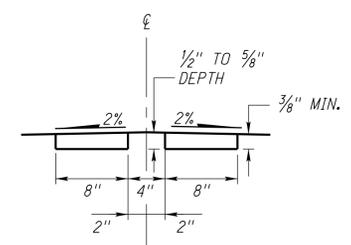


EDGE LINE ON 28 FEET ROADWAY



PLAN

ALTERNATE CENTERLINE RUMBLE STRIPS SHAPE



PROFILE

NOTES:

RUMBLE STRIPS SHALL BE PLACED ON ALL SHOULDERS AS INDICATED IN THIS PLAN AND IN ACCORDANCE WITH THE PROJECT PLANS. RUMBLE STRIPS ARE NOT NORMALLY REQUIRED ON CITY STREETS AND OTHER URBAN SHOULDERS ADJACENT TO CURB AND GUTTER UNLESS SPECIFICALLY NOTED IN THE PLANS.

RUMBLE STRIPS MAY BE CONTINUOUS THROUGH ALL DRIVEWAYS AND SHALL BE OMITTED ACROSS INTERSECTING ROADWAYS AND BRIDGES.

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User: dcr13017

Date: 14-JUL-2016 12:37

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Scale: 1:100
SHEET 1 OF 2



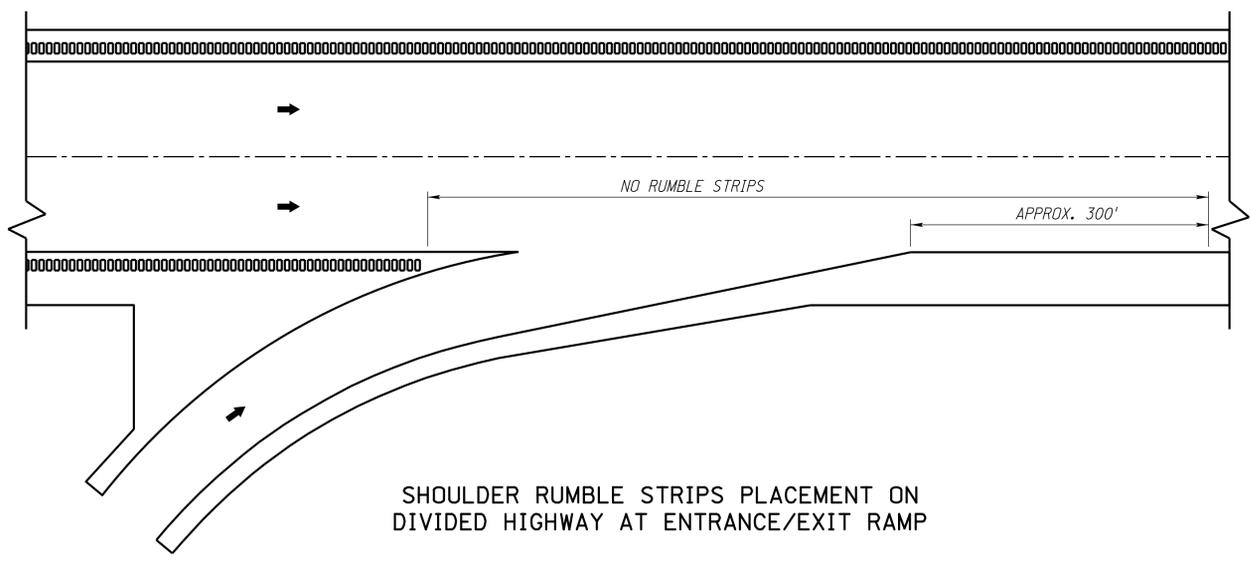
ROADWAY DESIGN DIVISION

Computer: DRDESIGN147

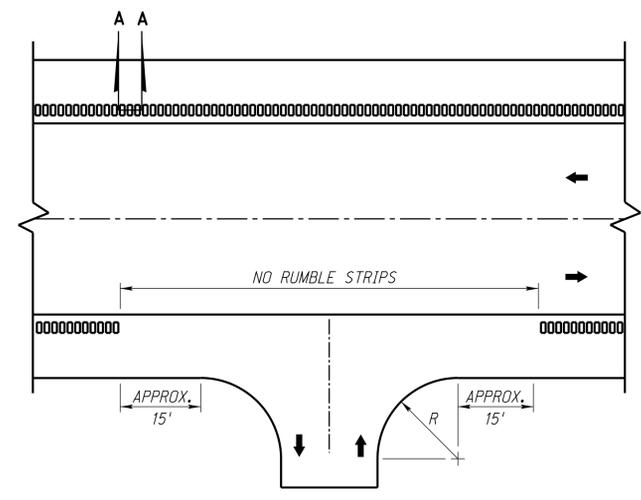
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Date: 14-JUL-2016 12:37

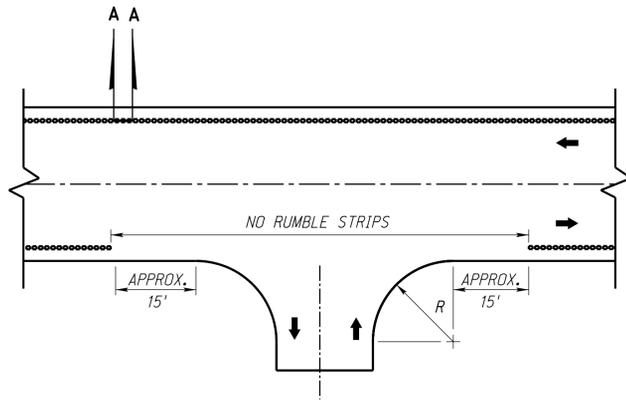
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SHEET 2 OF 2
3200-1-E-00



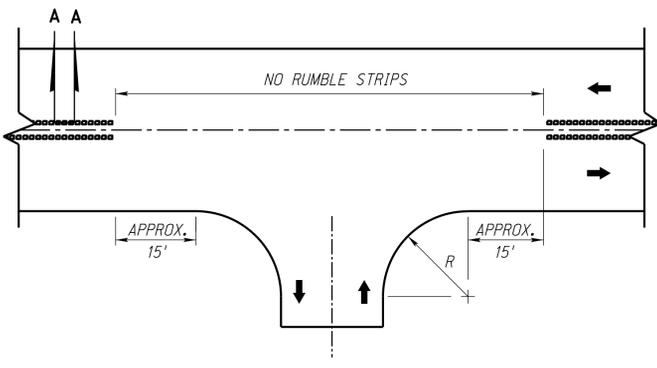
SHOULDER RUMBLE STRIPS PLACEMENT ON DIVIDED HIGHWAY AT ENTRANCE/EXIT RAMP



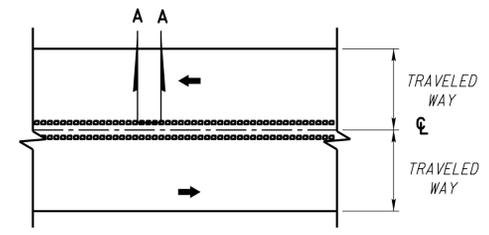
SHOULDER RUMBLE STRIPS PLACEMENT ON 2-LANE HIGHWAY AT INTERSECTION



EDGELINE RUMBLE STRIPS PLACEMENT AT INTERSECTION



CENTERLINE RUMBLE STRIPS PLACEMENT AT INTERSECTIONS

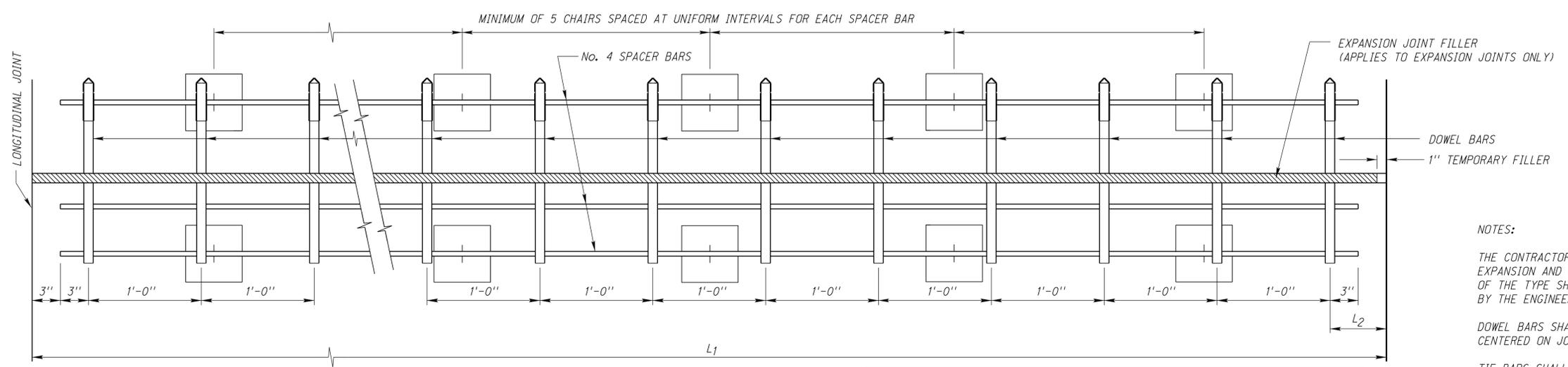


CENTERLINE LAYOUT



MILLED RUMBLE STRIPS
SHEET 2 OF 2
SPECIAL PLAN C

ROADWAY DESIGN DIVISION
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 User: ddr13017
 Date: 14-JUL-2016 12:37
 File: 33001e00.dgn
 Scale: 1:100
 SHEET 1 OF 3 3300-1-E-00



DOWEL BAR HEIGHT AND DIAMETER

PAVEMENT THICKNESS (T)	MINIMUM BAR DIA.	DOWEL BAR HEIGHT (T/2)	SKEW TOLERANCE
6" TO 8"	1 1/4"	T/2 ± 1/2"	1/4"

ASSEMBLY PLAN

DOWEL BAR LOCATION TABLE

L ₁	L ₂	L ₃	#BARS	DESCRIPTION
12'-0"	6"	5"	12	12'-0" PAVEMENT
15'-0"	2'-6"	2'-5"	13	15'-0" PAVEMENT (INCLUDES 3'-0" SHOULDER)
16'-0"	3'-6"	3'-5"	13	16'-0" PAVEMENT (INCLUDES 4'-0" SHOULDER)
16'-0"	6"	5"	16	16'-0" RAMP & LOOPS
14'-6"	1'-6"	1'-5"	VARIABLES	PAVEMENT WITH CURB
14'-6"	2'-6"	2'-5"	VARIABLES	PAVEMENT WITH CURB
6'-0"	6"	5"	VARIABLES	IRREGULAR AREAS (WIDEN, FILLETS, GORE)

NOTES:

THE CONTRACTOR MAY SUBSTITUTE OTHER DESIGNS FOR EXPANSION AND CONTRACTION JOINT SUPPORTS IN LIEU OF THE TYPE SHOWN WITH PRIOR WRITTEN APPROVAL BY THE ENGINEER.

DOWEL BARS SHALL BE A MINIMUM OF 17 3/4" IN LENGTH, CENTERED ON JOINTS AND BE SMOOTH BARS.

TIE BARS SHALL BE DEFORMED BARS.

FOR LOAD TRANSFER DEVICES AT EXPANSION JOINTS IN LANES OTHER THAN THE LANES SHOWN, MAINTAIN THE SPACING OF THE 1'-6" DOWEL BARS AT 1 FT. INTERVALS.

THE ENDS OF THE NO. 4 SPACER BARS SHALL NOT BE LESS THAN 3 IN. FROM THE EDGES OF THE PAVEMENT OR THE LONGITUDINAL JOINT.

THE CONTRACTOR MAY USE A MACHINE FOR PLACING THE LONGITUDINAL TIE BARS IN LIEU OF THE TIE BAR PINS. IF A MECHANICAL TIE BAR PLACEMENT MACHINE IS NOT USED, TIE BAR PINS AS SHOWN SHALL BE USED.

TIE, DOWEL & SPACER BARS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

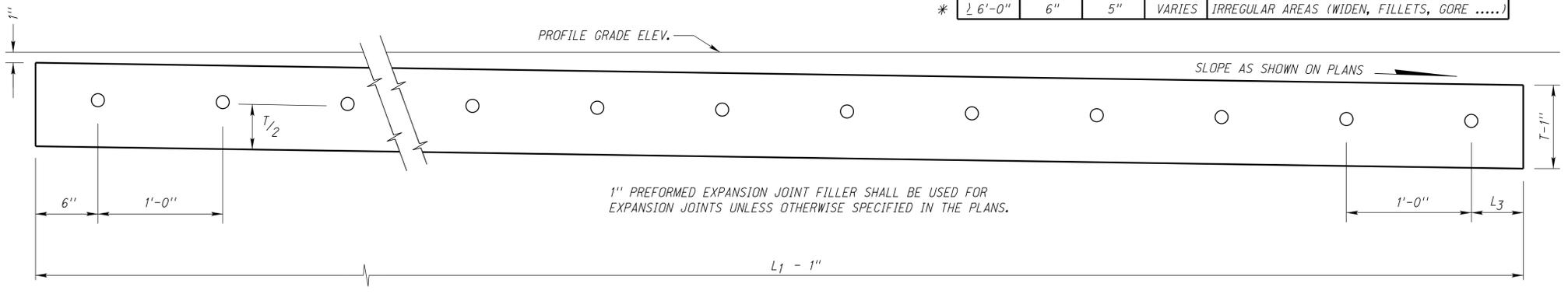
CONCRETE PAVEMENT SHALL BE TINED UNLESS OTHERWISE SHOWN IN THE PLANS.

EXPANSION JOINTS SHALL BE INSTALLED AT LOCATIONS SHOWN IN THE PLANS.

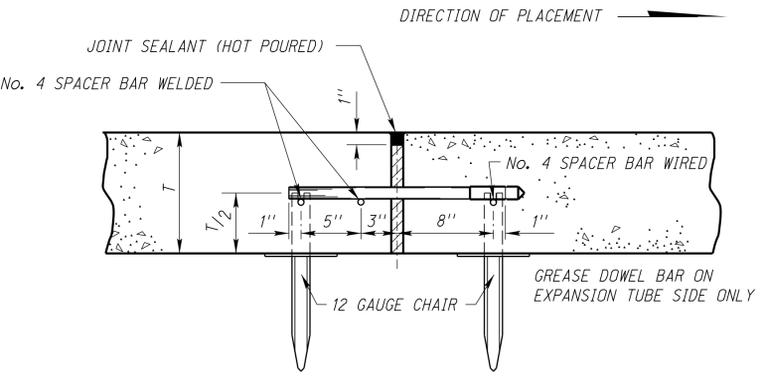
PAVEMENT PLACED ADJACENT TO R.R. TRACKS REQUIRES 3-EXPANSION JOINTS SPACED AT APPROX. 49'-6" INTERVALS.

EXPANSION JOINTS SHALL NOT BE SKEWED.

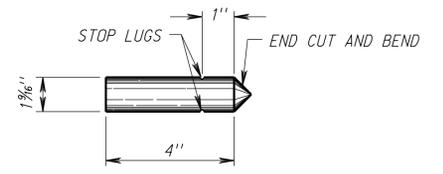
T = PAVEMENT THICKNESS



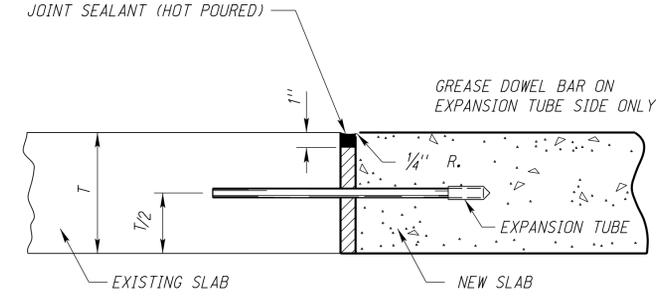
**PREFORMED EXPANSION JOINT FILLER
(TO BE USED AT EXPANSION JOINTS ONLY)**



SECTION



**EXPANSION TUBE
(SUBSIDIARY)**



SECTION

NOTES:
DOWEL BARS SHALL BE DRILLED TO A DEPTH OF 8" INTO EXISTING SLAB AND GROUTED.



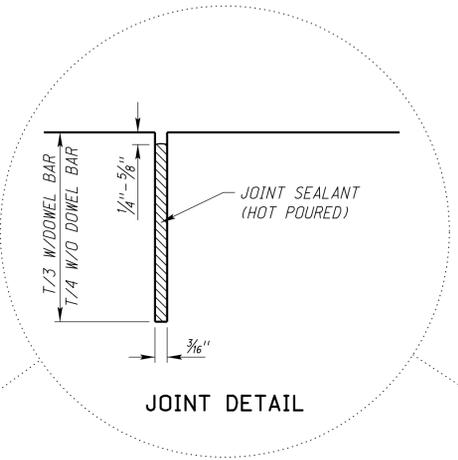
ROADWAY DESIGN DIVISION

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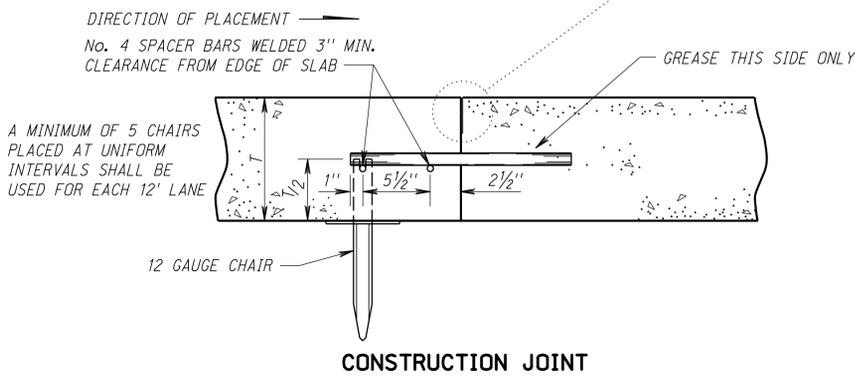
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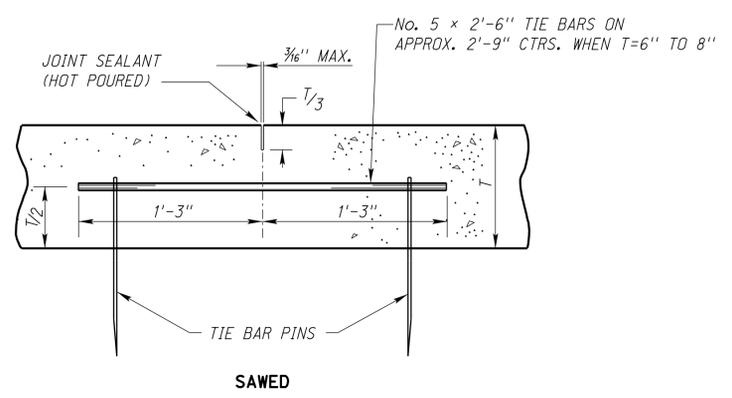
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SHEET 2 OF 3



JOINT DETAIL



CONSTRUCTION JOINT



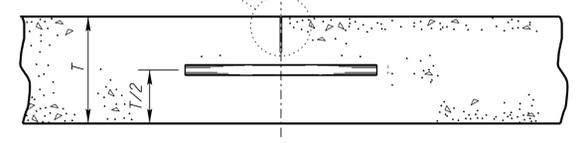
SAWED

WHEN TWO ADJACENT LANES ARE PLACED AT THE SAME TIME, THE LONGITUDINAL JOINT COMMON TO THE LANES SHALL BE SAWED

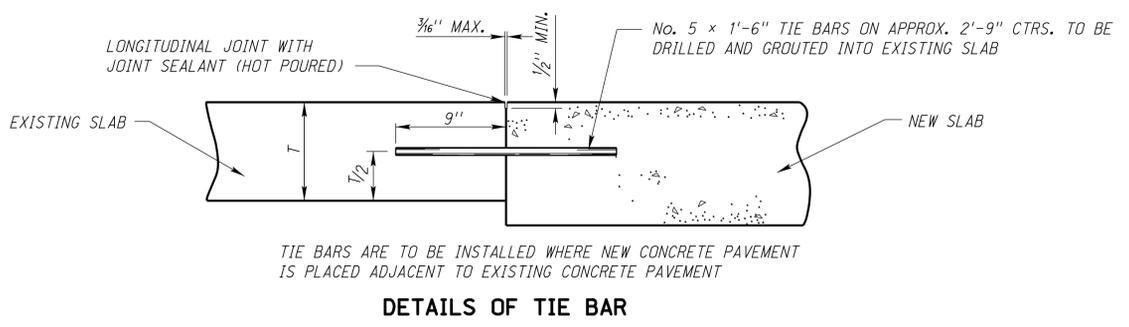
LONGITUDINAL JOINTS

NOTE: NO TIE BARS SHALL BE CLOSER THAN 1'-3" TO A TRANSVERSE JOINT. ALL LONGITUDINAL JOINTS BETWEEN LANES AND BETWEEN LANES AND SHOULDERS MUST BE TIED. MEDIAN SHOULD NOT BE TIED.

THE DOWEL BAR SPACING SHALL BE THE SAME AS SHOWN FOR THE EXPANSION JOINT. REFER TO BAR LOCATION TABLE AND THE DOWEL BAR HEIGHT AND DIAMETER TABLE ON SHEET 1 OF 4.

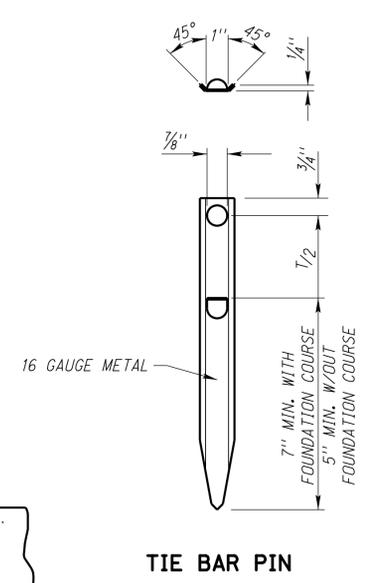


CONTRACTION JOINT

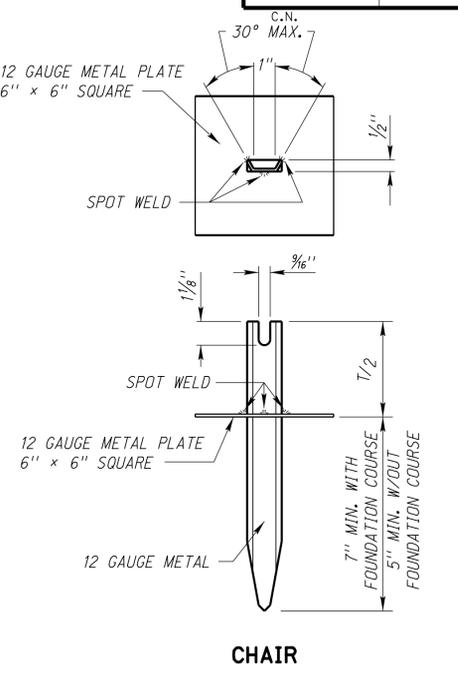


DETAILS OF TIE BAR

TIE BARS ARE TO BE INSTALLED WHERE NEW CONCRETE PAVEMENT IS PLACED ADJACENT TO EXISTING CONCRETE PAVEMENT



TIE BAR PIN



CHAIR

NOTE: T = PAVEMENT THICKNESS

6 TO 8 INCH CONCRETE PAVEMENT
SHEET 2 OF 3

SPECIAL PLAN C



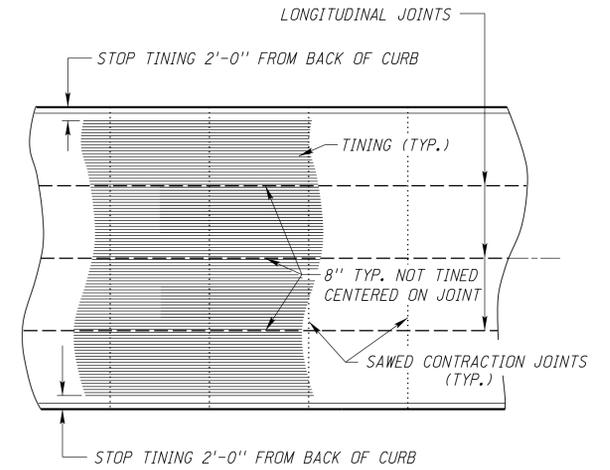
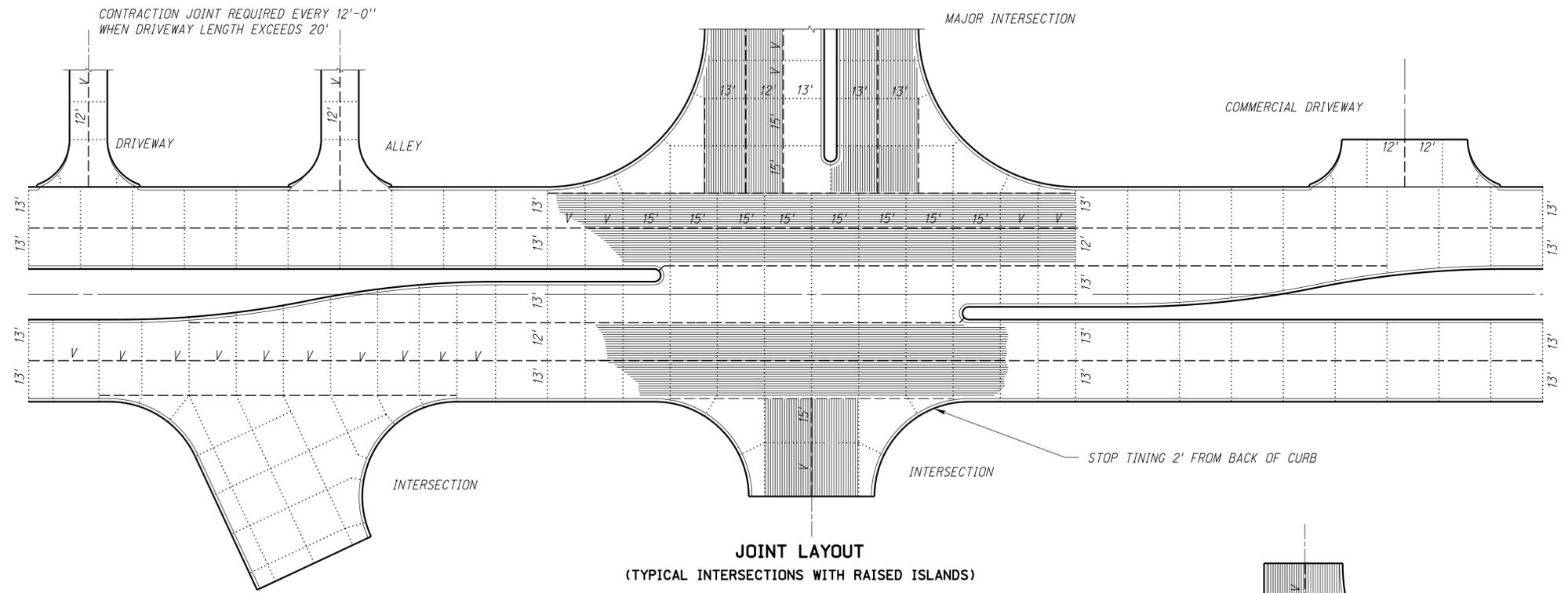
ROADWAY DESIGN DIVISION

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User: dcr13017

Date: 14-JUL-2016 12:37

File: 33001e00.dgn
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SHEET 3 OF 3



TINING LIMITS

LEGEND

- SAWED CONTRACTION JOINT
- LONGITUDINAL JOINT

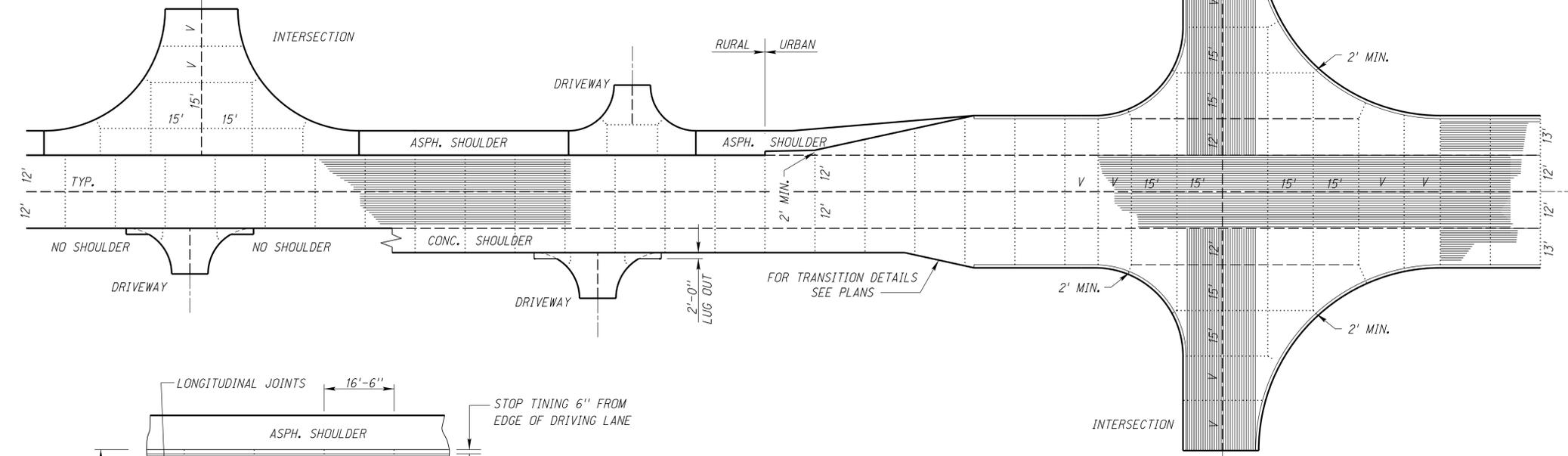
NOTES:

16'-6" TRANSVERSE JOINT SPACING IS THE STANDARD SPACING REGARDLESS OF THE PAVEMENT THICKNESS.

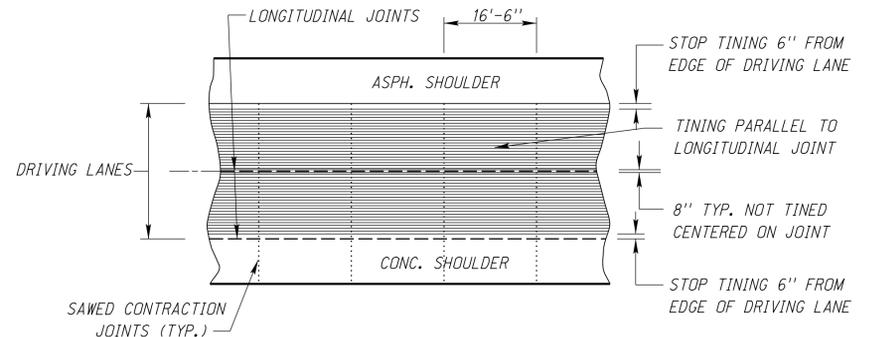
V VARIES FROM 10'-0" TO MAX. 16'-6".

VARIABLE SPACING IS USED AROUND INTERSECTIONS AND LARGE DRIVEWAYS WHICH IS TIED TO THE CONCRETE LANES OR SHOULDERS TO MATCH THE JOINTS.

ALL CONCRETE SURFACES, NOT TINED, WILL REQUIRE TRANSVERSE BROOMING OR BURLAP DRAG. (NOT APPLICABLE TO SHOULDERS)



JOINT LAYOUT (TYPICAL INTERSECTIONS & DRIVES)



RURAL TINING LIMITS WITH SURFACED SHOULDERS (IF CALLED FOR IN THE PLANS)



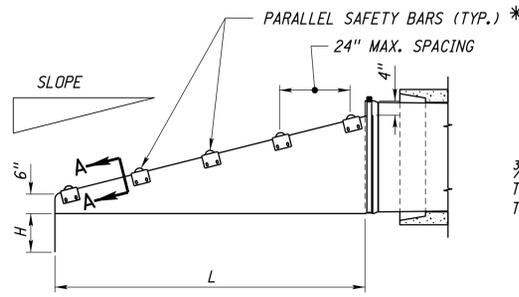
ROADWAY DESIGN DIVISION

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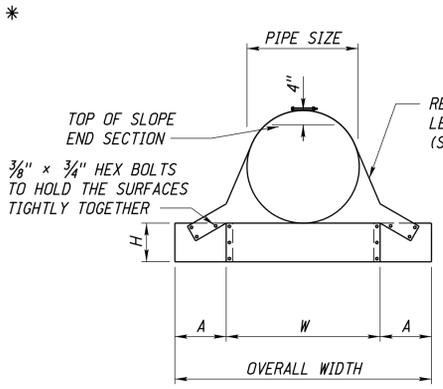
User: dcr13017

Date: 14-JUL-2016 12:37

File: 41201e01.dgn
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SHEET 1 OF 2 4120-1-E-01

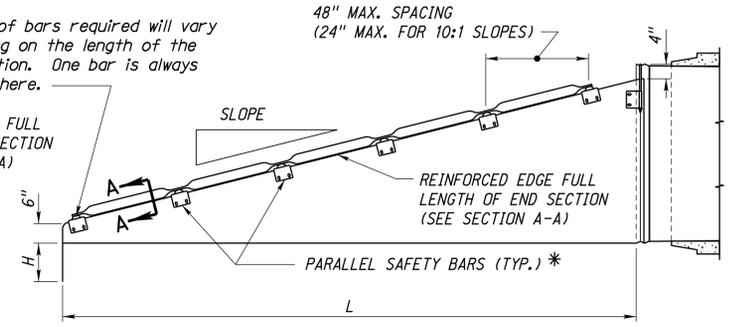


SIDE ELEVATION OF PARALLEL DRAINAGE STRUCTURE

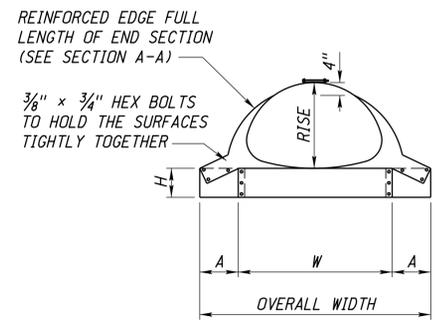


FRONT VIEW

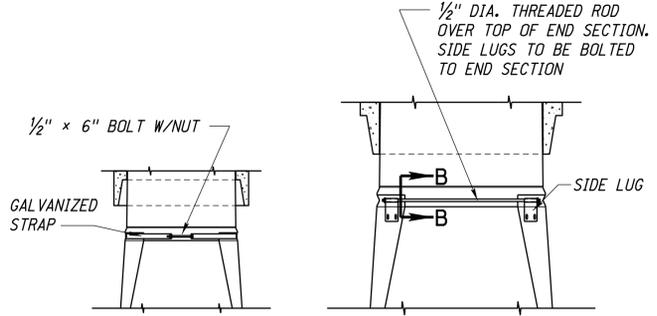
* Number of bars required will vary depending on the length of the End Section. One bar is always located here.



SIDE ELEVATION OF CROSS DRAINAGE STRUCTURE

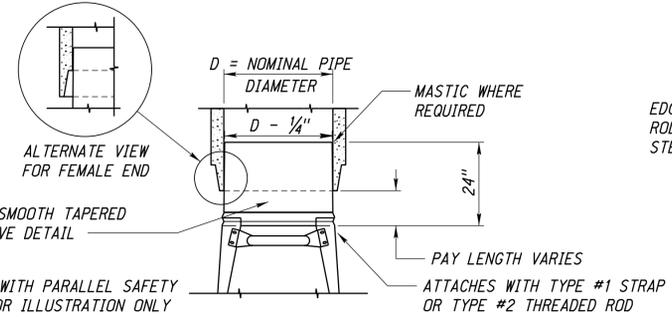


FRONT VIEW

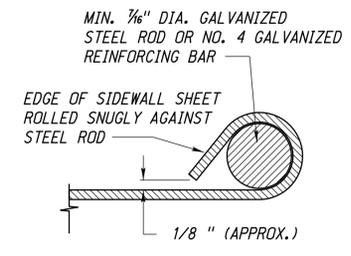


TYPE #1 CONNECTOR DETAILS THRU 24"

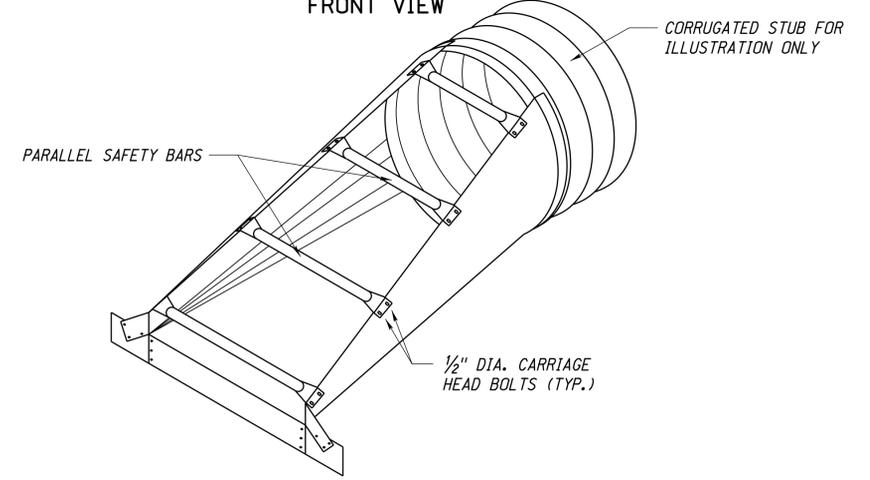
TYPE #2 CONNECTOR DETAILS FOR 30" AND LARGER



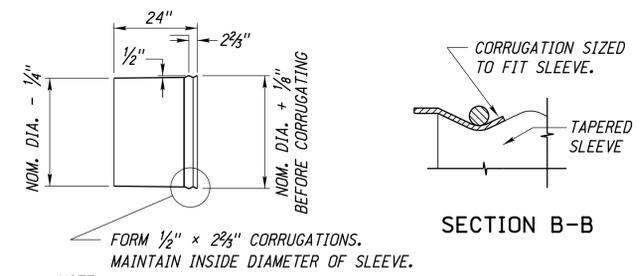
TAPERED SLEEVE FOR ATTACHING STEEL END SECTIONS TO CONCRETE PIPE



SECTION A-A



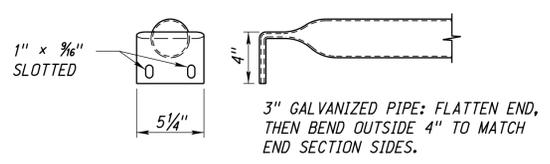
PARALLEL DRAINAGE STRUCTURE



SECTION B-B

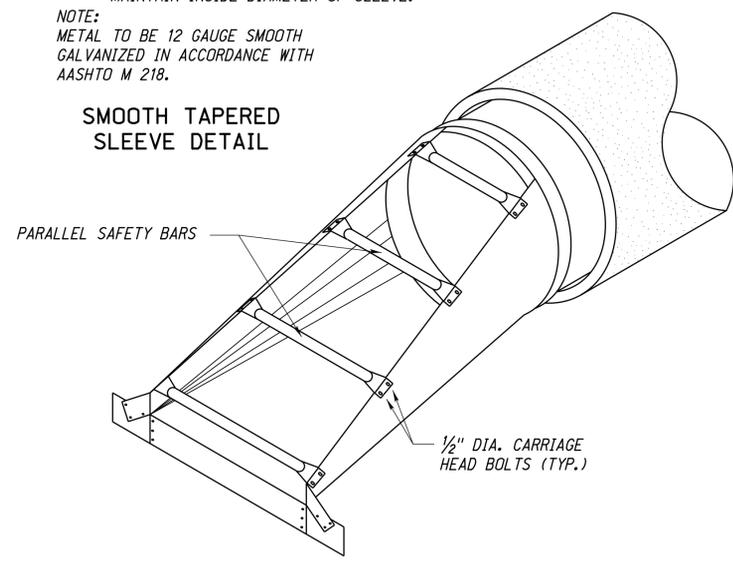
NOTE: METAL TO BE 12 GAUGE SMOOTH GALVANIZED IN ACCORDANCE WITH AASHTO M 218.

SMOOTH TAPERED SLEEVE DETAIL

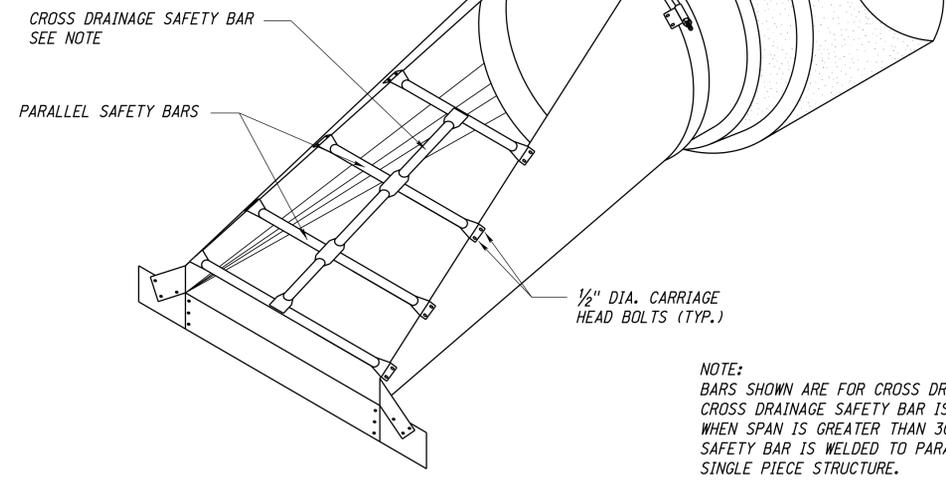


DETAIL OF PARALLEL SAFETY BARS

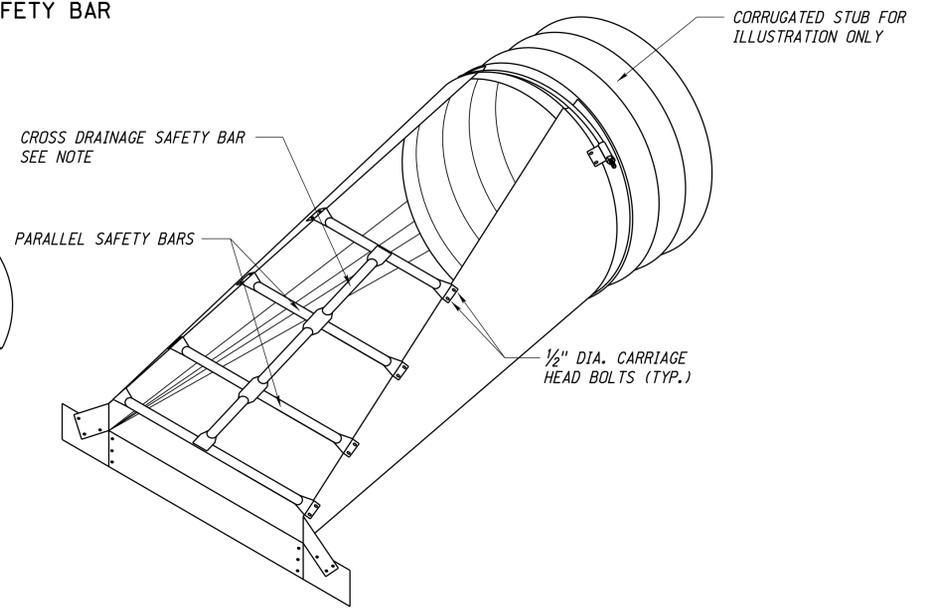
DETAIL OF CROSS DRAINAGE SAFETY BAR



PARALLEL DRAINAGE STRUCTURE



CROSS DRAINAGE STRUCTURE



CROSS DRAINAGE STRUCTURE

NOTE: BARS SHOWN ARE FOR CROSS DRAINAGE STRUCTURES. CROSS DRAINAGE SAFETY BAR IS REQUIRED ONLY WHEN SPAN IS GREATER THAN 30". CROSS DRAINAGE SAFETY BAR IS WELDED TO PARALLEL SAFETY BARS FOR SINGLE PIECE STRUCTURE.



SAFETY SLOPED END SECTIONS CORRUGATED METAL AND CONCRETE PIPE

SHEET 1 OF 2

SPECIAL PLAN C

File: 41201e01.dgn
 Scale: 1:100
 SHEET 2 OF 2
 Date: 14-JUL-2016 12:37
 User: ddr13017
 Computer: DRDESIGN147
 ROADWAY DESIGN DIVISION

METAL END SECTIONS FOR CONCRETE PIPE										
PIPE DIA. (IN.)	MIN. THICK.		DIMENSIONS (IN.)				L DIMENSIONS			
	IN.	GAUGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH (IN.)	SLOPE	LENGTH (IN.)
15	.064	16	8	6	21	37	4:1	20	6:1	30
18	.064	16	8	6	24	40	4:1	32	6:1	48
21	.064	16	8	6	27	43	4:1	44	6:1	66
24	.064	16	8	6	30	46	4:1	56	6:1	84
27	.109	12	12	9	33	57	4:1	68	6:1	102
30	.109	12	12	9	36	60	4:1	80	6:1	120
33	.109	12	12	9	39	63	4:1	92	6:1	138
36	.109	12	12	9	42	66	4:1	104	6:1	156
42	.109	12	16	12	48	80	4:1	128	6:1	192
48	.109	12	16	12	54	86	4:1	152	6:1	228
54	.109	12	16	12	60	92	4:1	176	6:1	264
60	.109	12	16	12	66	98	4:1	200	6:1	300

METAL END SECTIONS FOR CIRCULAR PIPE										
PIPE DIA. (IN.)	MIN. THICK.		DIMENSIONS (IN.)				L DIMENSIONS			
	IN.	GAUGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH (IN.)	SLOPE	LENGTH (IN.)
15	.064	16	8	6	21	37	4:1	20	6:1	30
18	.064	16	8	6	24	40	4:1	32	6:1	48
21	.064	16	8	6	27	43	4:1	44	6:1	66
24	.064	16	8	6	30	46	4:1	56	6:1	84
30	.109	12	12	9	36	60	4:1	80	6:1	120
36	.109	12	12	9	42	66	4:1	104	6:1	156
42	.109	12	16	12	48	80	4:1	128	6:1	192
48	.109	12	16	12	54	86	4:1	152	6:1	228
54	.109	12	16	12	60	92	4:1	176	6:1	264
60	.109	12	16	12	66	98	4:1	200	6:1	300

METAL END SECTIONS FOR CIRCULAR PIPE									
PIPE DIA. (IN.)	MIN. THICK.		DIMENSIONS (IN.)				L DIMENSIONS		
	IN.	GAUGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH (IN.)	
15	.109	12	8	6	21	37	10:1	70	
18	.109	12	8	6	24	40	10:1	100	
21	.109	12	8	6	27	43	10:1	130	
24	.109	12	8	6	30	46	10:1	160	

METAL END SECTIONS FOR ELLIPTICAL PIPE												
EQUIV. DIA. (IN.)	SPAN (IN.)	RISE (IN.)	MIN. THICK.		DIMENSIONS (IN.)				L DIMENSIONS			
			IN.	GAUGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH (IN.)	SLOPE	LENGTH (IN.)
18	23	14	.064	16	8	6	29	45	4:1	16	6:1	24
24	30	19	.064	16	8	6	36	52	4:1	36	6:1	54
27	34	22	.079	14	12	9	40	64	4:1	48	6:1	72
30	38	24	.079	14	12	9	44	68	4:1	56	6:1	84
33	42	27	.109	12	12	9	48	72	4:1	68	6:1	102
36	45	29	.109	12	16	12	51	83	4:1	76	6:1	114
42	53	34	.109	12	16	12	59	91	4:1	96	6:1	144
48	60	38	.109	12	16	12	66	98	4:1	112	6:1	168
54	68	43	.109	12	16	12	74	106	4:1	132	6:1	198
60	76	48	.109	12	16	12	80	112	4:1	152	6:1	228

METAL END SECTIONS FOR ARCHED PIPE												
EQUIV. DIA. (IN.)	SPAN (IN.)	RISE (IN.)	MIN. THICK.		DIMENSIONS (IN.)				L DIMENSIONS			
			IN.	GAUGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH (IN.)	SLOPE	LENGTH (IN.)
18	21	15	.064	16	8	6	27	43	4:1	20	6:1	30
21	24	18	.064	16	8	6	30	46	4:1	32	6:1	48
24	28	20	.064	16	8	6	34	50	4:1	40	6:1	60
30	35	24	.079	14	12	9	41	65	4:1	56	6:1	84
36	42	29	.109	12	12	9	48	72	4:1	76	6:1	114
42	49	33	.109	12	16	12	55	87	4:1	92	6:1	138
48	57	38	.109	12	16	12	63	95	4:1	112	6:1	168
54	64	43	.109	12	16	12	70	102	4:1	132	6:1	198
60	71	47	.109	12	16	12	77	109	4:1	148	6:1	222
72	83	57	.109	12	16	12	89	121	4:1	188	6:1	282

METAL END SECTIONS FOR ARCHED PIPE										
EQUIV. DIA. (IN.)	SPAN (IN.)	RISE (IN.)	MIN. THICK.		DIMENSIONS (IN.)			L DIMENSIONS		
			IN.	GAUGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH (IN.)
18	21	15	.109	12	8	6	27	43	10:1	70
21	24	18	.109	12	8	6	30	46	10:1	100
24	28	20	.109	12	8	6	34	50	10:1	120

NOTES:

STEEL:
 GALVANIZED STEEL SHALL MEET AASHTO SPECIFICATIONS.

CONNECTORS:
 ROUND SIZES THRU 24" ATTACH TO PIPE WITH TYPE #1 STRAPS. ALL OTHER SIZES ATTACH WITH TYPE #2 RODS AND LUGS.

TOE PLATE EXTENSIONS:
 WHEN REQUIRED, TOE PLATE EXTENSIONS ARE TO BE THE SAME GAUGE AS END SECTION. DIMENSIONS SHALL BE OVERALL WIDTH LESS 6 INCHES BY 8 INCHES HIGH.

SAFETY BARS:
 SAFETY BARS SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE. PIPE TO BE GALVANIZED AFTER FORMING.

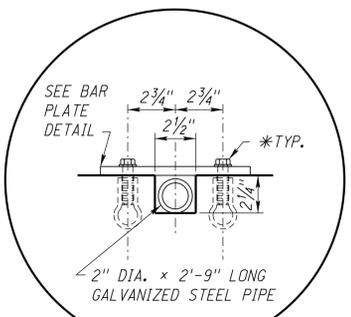
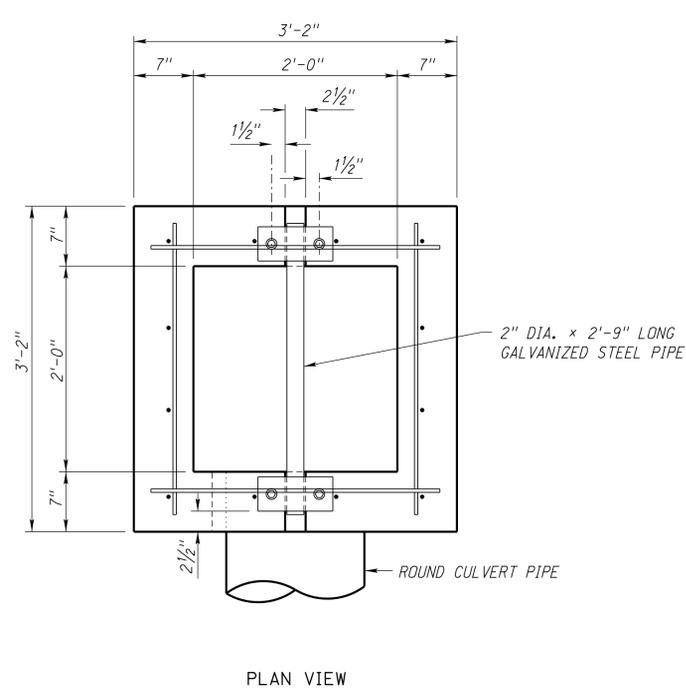
MISCELLANEOUS DETAILS:
 SLOTTED HOLES FOR SAFETY BAR ATTACHMENT SHALL BE PROVIDED FOR ALL END SECTIONS.



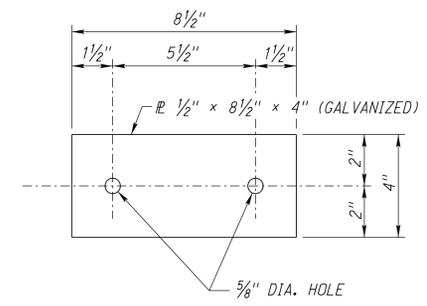
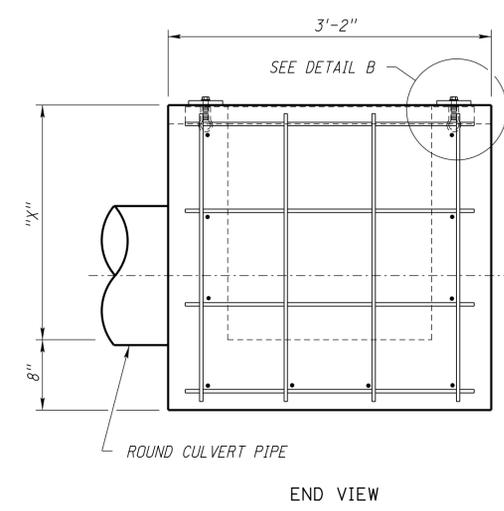
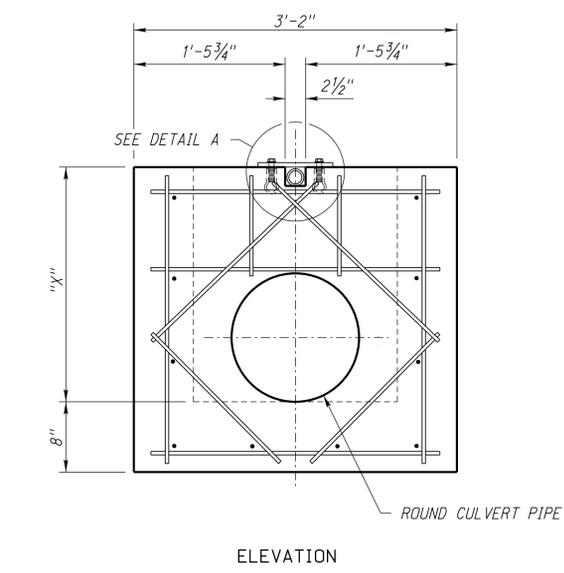
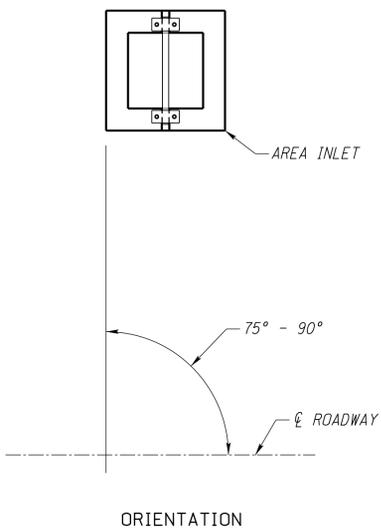
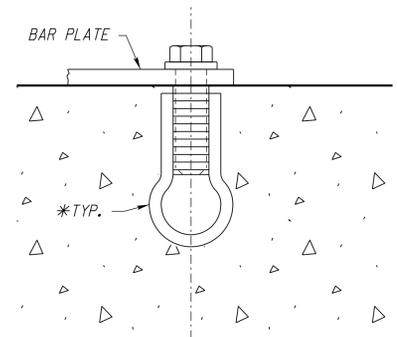
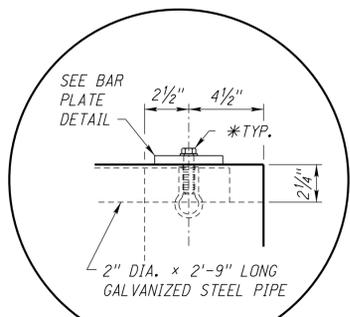
SAFETY SLOPED END SECTIONS
 CORRUGATED METAL AND
 CONCRETE PIPE
 SHEET 2 OF 2
SPECIAL PLAN C

QUANTITIES TABLE					
X	CONCRETE (CU. YDS.)	STEEL (LBS.)	X	CONCRETE (CU. YDS.)	STEEL (LBS.)
2'-0"	0.7	49	5'-0"	1.4	96
2'-6"	0.8	61	5'-6"	1.5	107
3'-0"	0.9	65	6'-0"	1.6	111
3'-6"	1.0	76	6'-6"	1.7	123
4'-0"	1.1	80	7'-0"	1.8	127
4'-6"	1.3	92	7'-6"	1.9	138

THE MINIMUM X VALUE ALLOWED FOR 15" DIA. PIPE IS 2'-0"
 THE MINIMUM X VALUE ALLOWED FOR 18" DIA. PIPE IS 2'-3"
 THE MINIMUM X VALUE ALLOWED FOR 24" DIA. PIPE IS 2'-9"
 THE MAXIMUM SIZE PIPE THAT MAY BE USED IS 24" DIA.



* 1/2" DIA. DAYTON/RICHMOND FERRULE LOOP INSERT OR APPROVED EQUAL



NOTES:

ALL CONCRETE USED SHALL BE CLASS 47B-3000 AND SHALL BE PAID FOR UNDER THE ITEM "CLASS 47B-3000 CONCRETE FOR INLET AND JUNCTION BOX".

THE MINIMUM COVERING, MEASURED FROM THE FACE OF THE CONCRETE TO THE SURFACE OF ANY REINFORCING BAR SHALL BE 2" UNLESS OTHERWISE NOTED.

ALL REINFORCING STEEL USED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60, SHALL BE NO. 4 BARS PLACED AT 1'-0" CENTERS (MAXIMUM) AND SHALL BE PAID FOR UNDER THE ITEM "REINFORCING STEEL FOR INLET AND JUNCTION BOX".

FIELD BEND AND/OR CLIP REINFORCING STEEL TO MAINTAIN MINIMUM COVERING.

THE 2" DIA. X 2'-9" PIPE, TRASH BAR PLATES AND ALL ASSOCIATED HARDWARE SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A123.

ALL DIAGONAL BARS, PREPARATION, MATERIALS, EQUIPMENT, TOOLS, LABOR, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK THAT ARE NOT PAID FOR DIRECTLY, SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS FOR WHICH PAYMENT IS MADE.

NO DEDUCTIONS HAVE BEEN MADE IN THE QUANTITIES FOR PIPE OPENINGS.

IF A PIPE IS ENTERING THE BOX ON A SKEW, THE OUTSIDE HORIZONTAL DIAMETER OF THE PIPE MUST NOT EXCEED THE INSIDE WIDTH OF THE BOX AND IT MUST ENTER THE BOX BETWEEN THE OUTSIDE CORNERS OF THE BOX.

CULVERT PIPE SHOWN FOR ORIENTATION PURPOSES ONLY.

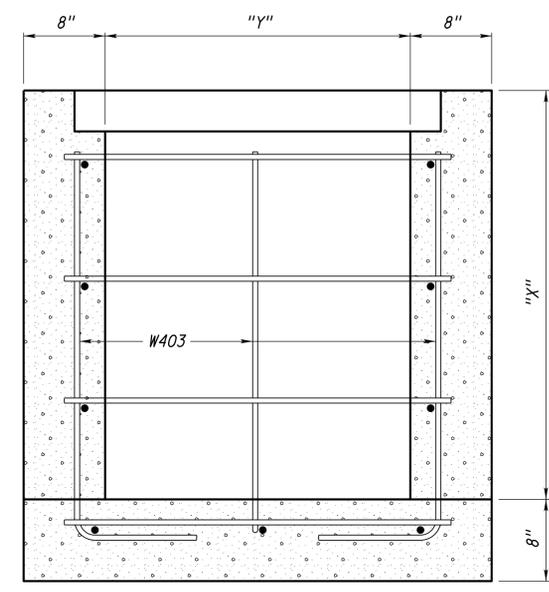
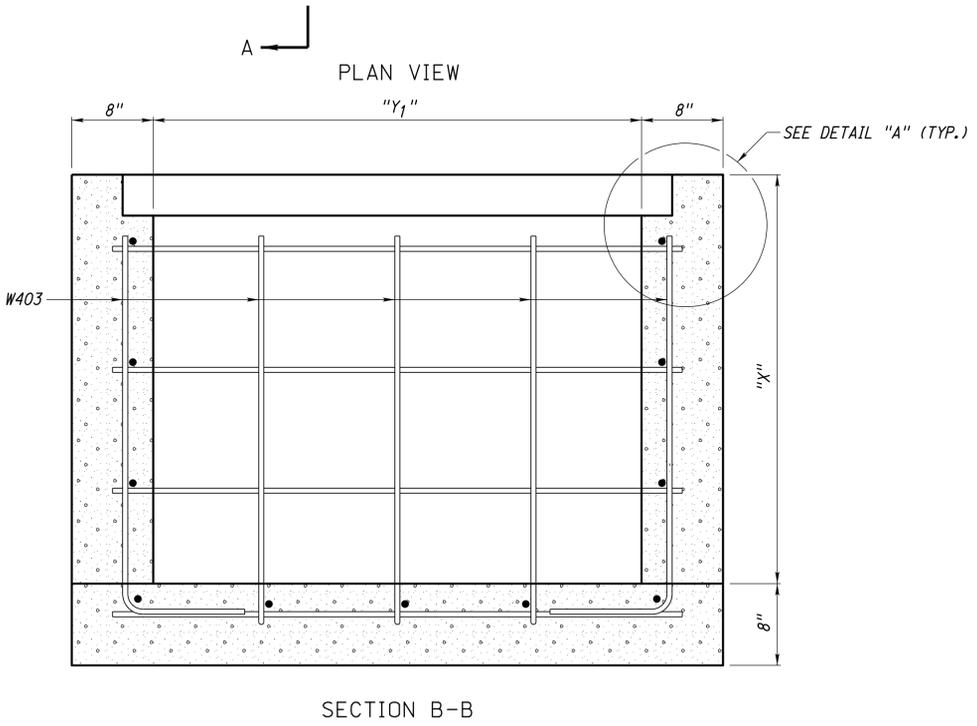
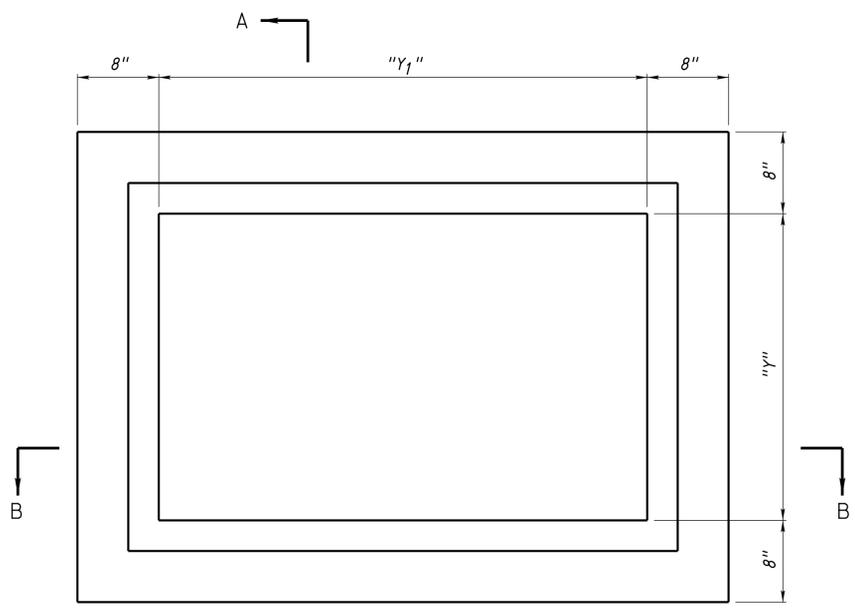


AREA INLET WITH BAR
 SHEET 1 OF 1
SPECIAL PLAN C

File: 43301601.dgn
 Scale: 1:100
 SHEET TOP 4330-1-E-01
 Date: 14-JUL-2016 12:37
 User: dcr13017
 Computer: DRDESIGN147
 ROADWAY DESIGN DIVISION

PIPE DIA. (IN.)	MIN. "X" VALUE
15	2'-0"
18	2'-3"
21	2'-9"
24	3'-0"
30	3'-6"
36	4'-0"
42	4'-6"
48	5'-0"

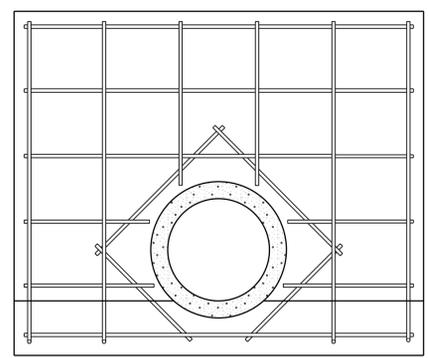
"X" VALUE	GRATE TYPE "A" "Y"=3'-0", "Y ₁ "=3'-0"		GRATE TYPE "B" "Y"=3'-6", "Y ₁ "=3'-6"		GRATE TYPE "C" "Y"=2'-6", "Y ₁ "=4'-0"		GRATE TYPE "D" "Y"=1'-8", "Y ₁ "=3'-8"		GRATE TYPE "E" "Y"=2'-0", "Y ₁ "=2'-0"		GRATE TYPE "F" "Y"=1'-6", "Y ₁ "=1'-6"	
	CONCRETE (CU. YDS.)	STEEL (LBS.)										
2'-0"	1.2	65	1.4	80	1.3	70	1.0	60	0.8	40	0.6	35
2'-6"	1.4	65	1.6	85	1.5	75	1.2	60	0.9	45	0.7	40
3'-0"	1.6	80	1.8	105	1.7	90	1.4	75	1.1	55	0.8	45
3'-6"	1.7	85	2.0	110	1.9	95	1.5	80	1.2	55	0.9	50
4'-0"	1.9	100	2.2	125	2.1	110	1.7	90	1.3	65	1.1	60
4'-6"	2.1	100	2.4	130	2.2	115	1.9	95	1.5	70	1.2	60
5'-0"	2.3	115	2.6	145	2.4	130	2.0	110	1.6	80	1.3	70
5'-6"	2.5	120	2.8	150	2.6	135	2.2	110	1.7	80	1.4	70
6'-0"	2.6	135	3.0	170	2.8	150	2.3	125	1.9	90	1.5	80
6'-6"	2.8	140	3.3	175	3.0	155	2.5	130	2.0	95	1.6	85
7'-0"	3.0	150	3.5	190	3.2	170	2.7	140	2.1	105	1.7	90



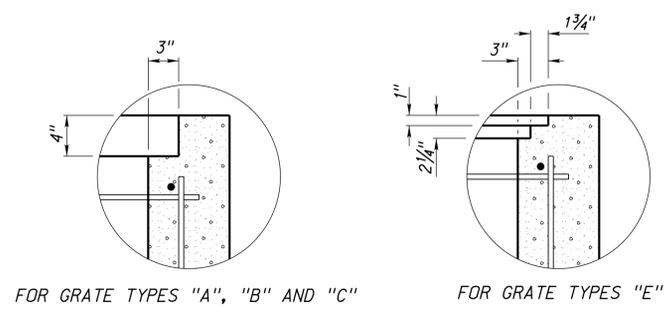
SECTION A-A



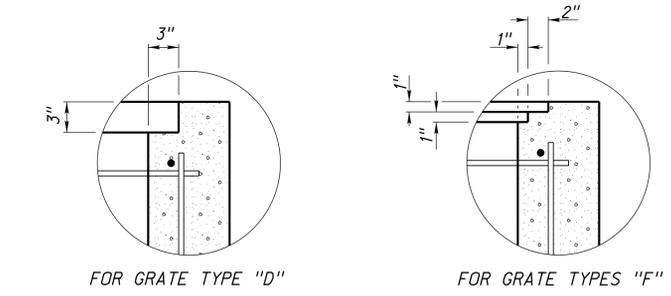
BENDING DIAGRAM



DETAIL "B"
USE FOR PLACEMENT OF DIAGONAL BARS ONLY



FOR GRATE TYPES "A", "B" AND "C"



FOR GRATE TYPE "D"

FOR GRATE TYPES "F"

DETAIL "A"

NOTES:

IN NO CASE SHALL THE SPAN OF THE PIPE PLUS THE ADDITIONAL ALLOWANCE FOR THE SKEW OF THE PIPE BE GREATER THAN THE "Y" OR "Y₁" DIMENSION OF THE INLET WALL IT IS INTENDED TO PENETRATE.

ALL CONCRETE USED SHALL BE CLASS 47B-3000 AND SHALL BE PAID FOR UNDER THE ITEM "CLASS 47B-3000 CONCRETE FOR INLET AND JUNCTION BOX".

ALL REINFORCING STEEL USED SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A615, GRADE 60. ALL REINFORCING STEEL SHALL BE NO. 4 BARS AT 12" CENTERS (MAX.) UNLESS NOTED OTHERWISE.

PLACE DIAGONAL REINFORCING AROUND PIPE OPENINGS AS SHOWN IN DETAIL "B".

THE MINIMUM COVERING, MEASURED FROM THE FACE OF THE CONCRETE TO THE SURFACE OF ANY REINFORCING BAR, SHALL BE 2", EXCEPT AS SHOWN.

FIELD BEND AND/OR CLIP REINFORCING STEEL TO ALLOW FOR MINIMUM CLEARANCE AND TO CLEAR PIPE OPENINGS.

THE CAST IRON GRATES AND FRAMES SHALL CONFORM TO THE SPECIAL PLAN AND STANDARD SPECIFICATIONS AND SHALL BE PAID FOR UNDER THE ITEM "CAST IRON GRATE AND FRAME".

EXCAVATION, BACKFILL AND DIAGONAL REINFORCING STEEL SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS FOR WHICH PAYMENT IS MADE.

NO DEDUCTIONS HAVE BEEN MADE IN THE QUANTITIES FOR PIPE OPENINGS.

ALL PIPES USED SHALL BE ROUND CORRUGATED METAL, REINFORCED CONCRETE, OR PLASTIC PIPE.

SEE SHEET 2 OF 2 FOR GRATE DETAILS.



AREA INLET WITH GRATE
SHEET 1 OF 2
SPECIAL PLAN C

ROADWAY DESIGN DIVISION
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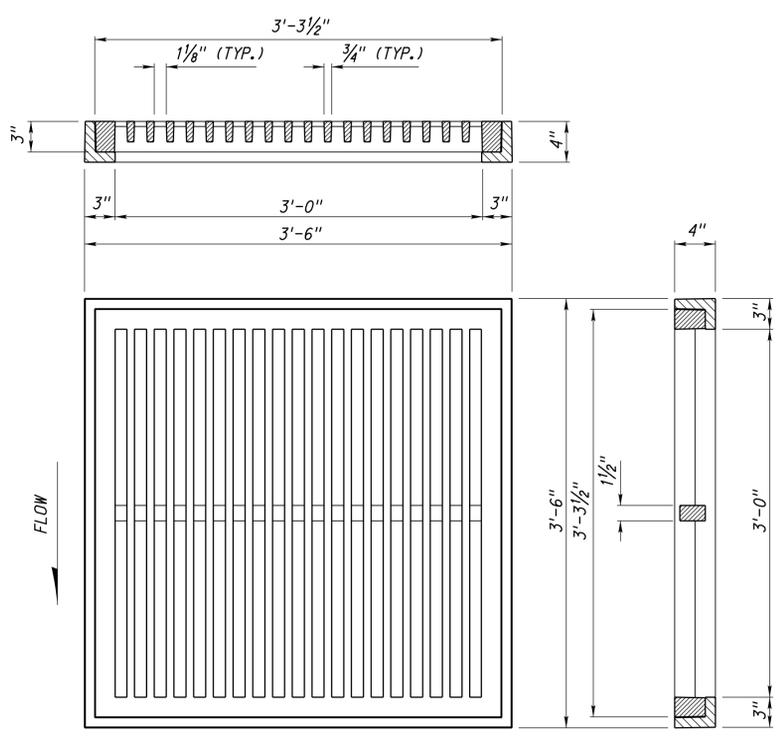
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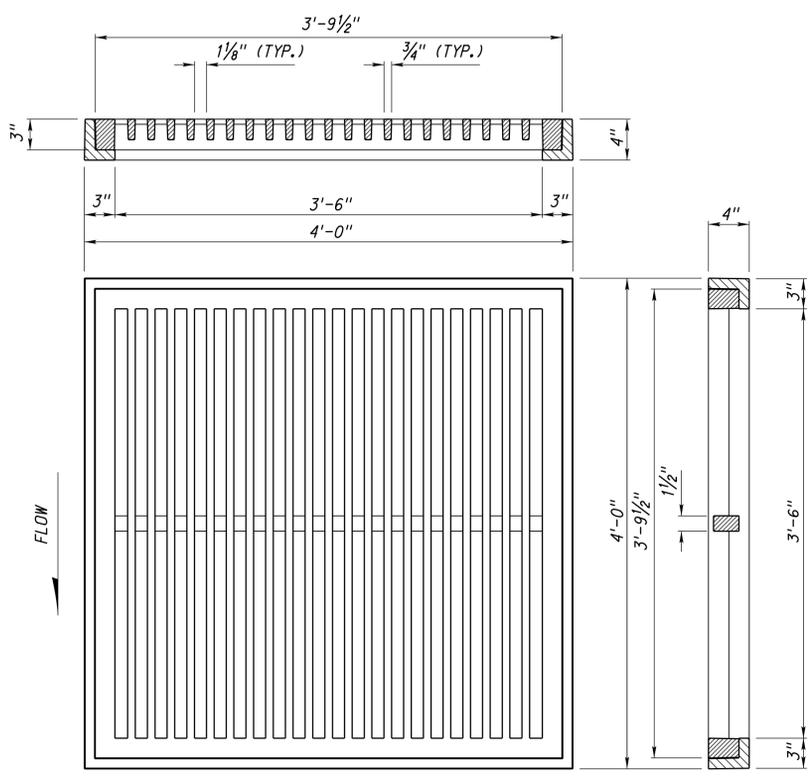
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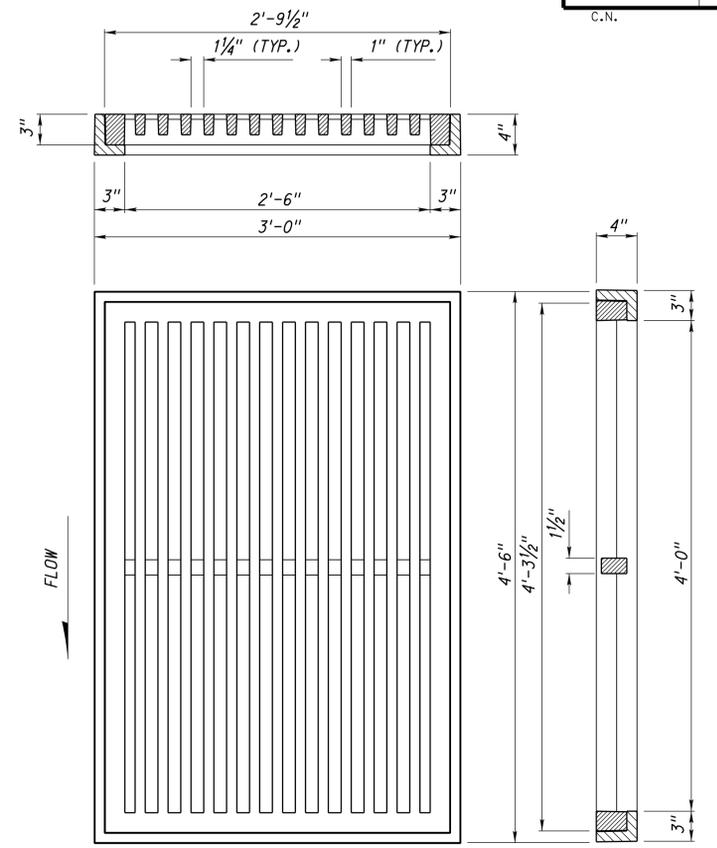
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SHEET 2 OF 2 4333-1-E-00



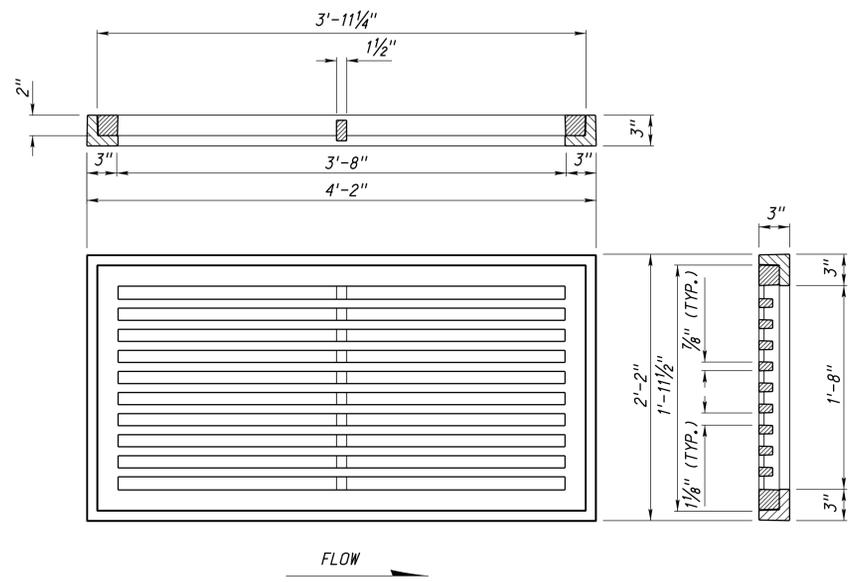
GRATE TYPE "A"
CLEAR OPENING 5.1 SQ. FT.
WEIGHT CAST IRON 745 LBS.



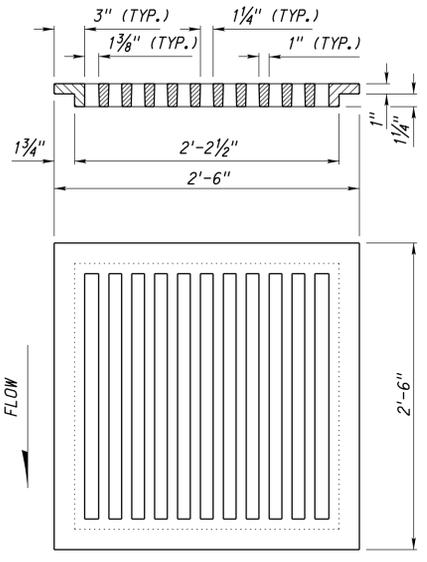
GRATE TYPE "B"
CLEAR OPENING 6.6 SQ. FT.
WEIGHT CAST IRON 990 LBS.



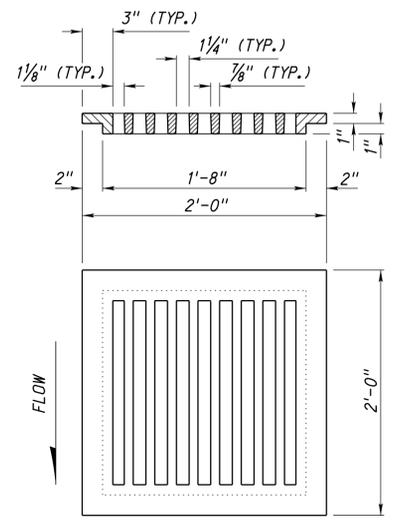
GRATE TYPE "C"
CLEAR OPENING 5.5 SQ. FT.
WEIGHT CAST IRON 825 LBS.



GRATE TYPE "D"
CLEAR OPENING 3.4 SQ. FT.
WEIGHT CAST IRON 555 LBS.



GRATE TYPE "E"
CLEAR OPENING 2.3 SQ. FT.
WEIGHT CAST IRON 265 LBS.



GRATE TYPE "F"
CLEAR OPENING 1.3 SQ. FT.
WEIGHT CAST IRON 175 LBS.

NOTE:
THESE GRATES ARE NOT TO BE USED IN
AREAS THAT ALLOW BICYCLE TRAFFIC.



AREA INLET WITH GRATE
SHEET 2 OF 2
SPECIAL PLAN C

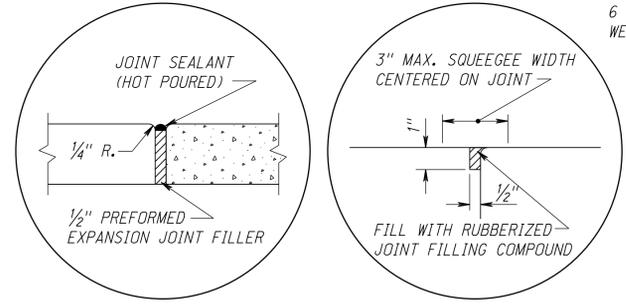
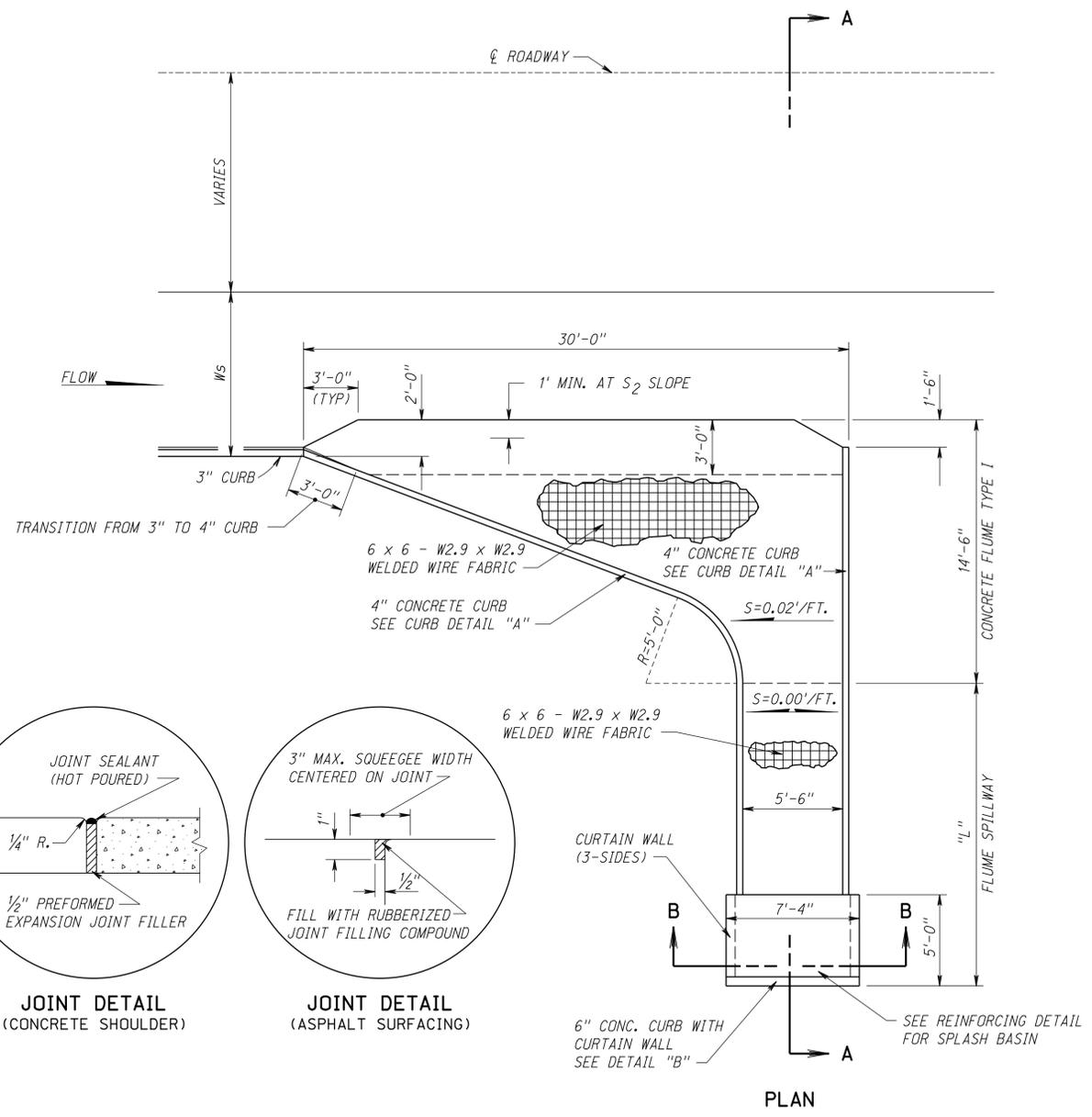
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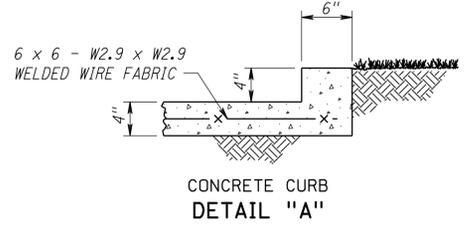
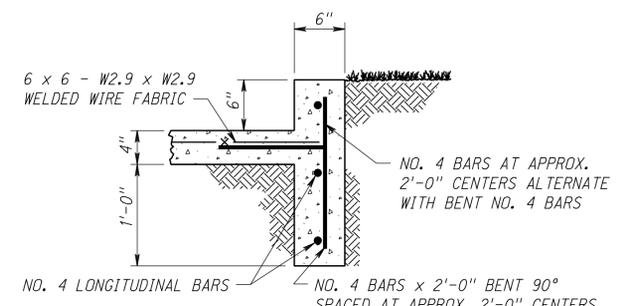
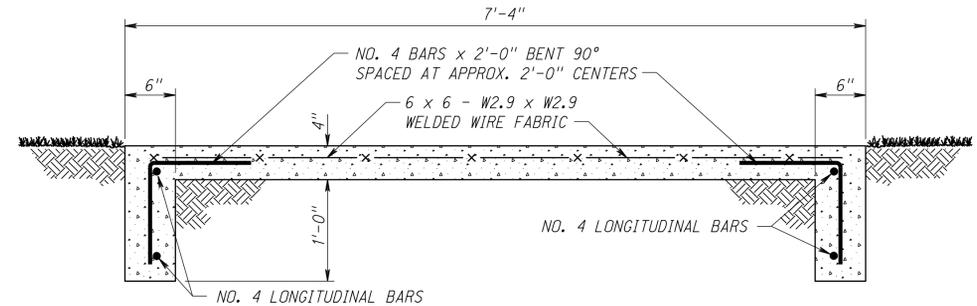
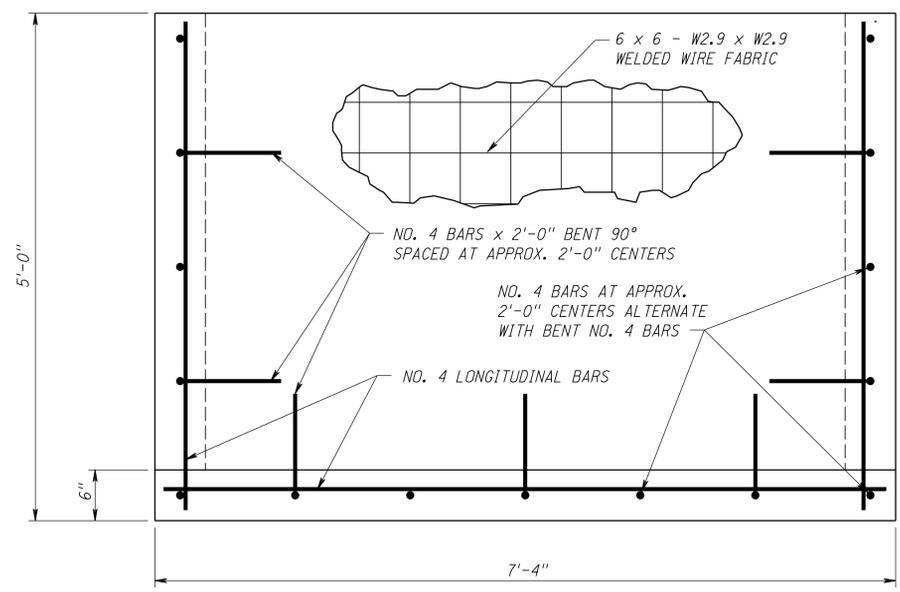
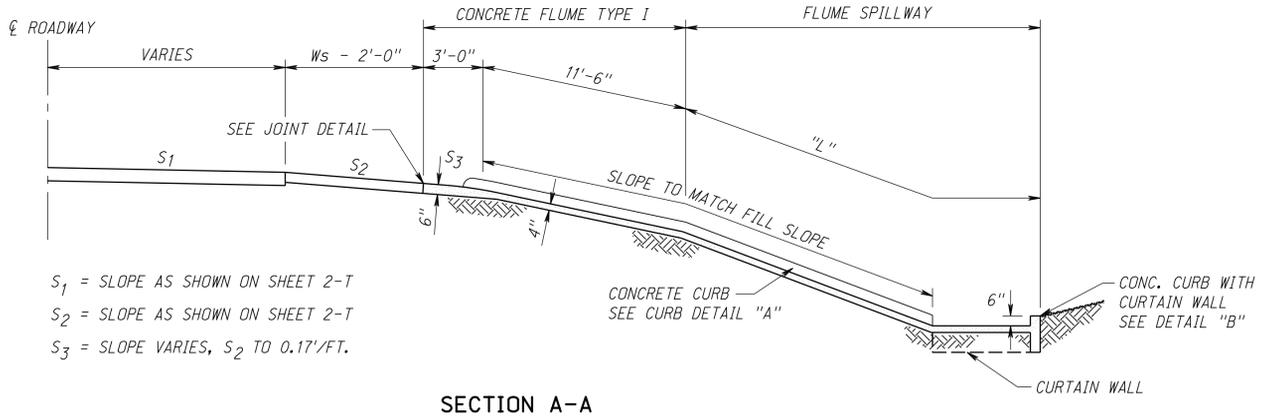
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Scale: 1:100
SHEET TOP 4341-1-E-03



JOINT DETAIL (CONCRETE SHOULDER)
JOINT DETAIL (ASPHALT SURFACING)



NOTES:

Ws = SURFACED SHOULDER WIDTH

"L" DIMENSION SHALL BE AS SHOWN IN THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

FINAL LOCATION OF FLUME TO BE DETERMINED BY THE ENGINEER.

CONCRETE FLUME TYPE I SHALL BE PAID FOR AS ONE EACH.

THE FLUME SPILLWAY SHALL BE SURFACE MEASURED AND PAID FOR BY THE LINEAR FOOT FOR THE ITEM "FLUME SPILLWAY".

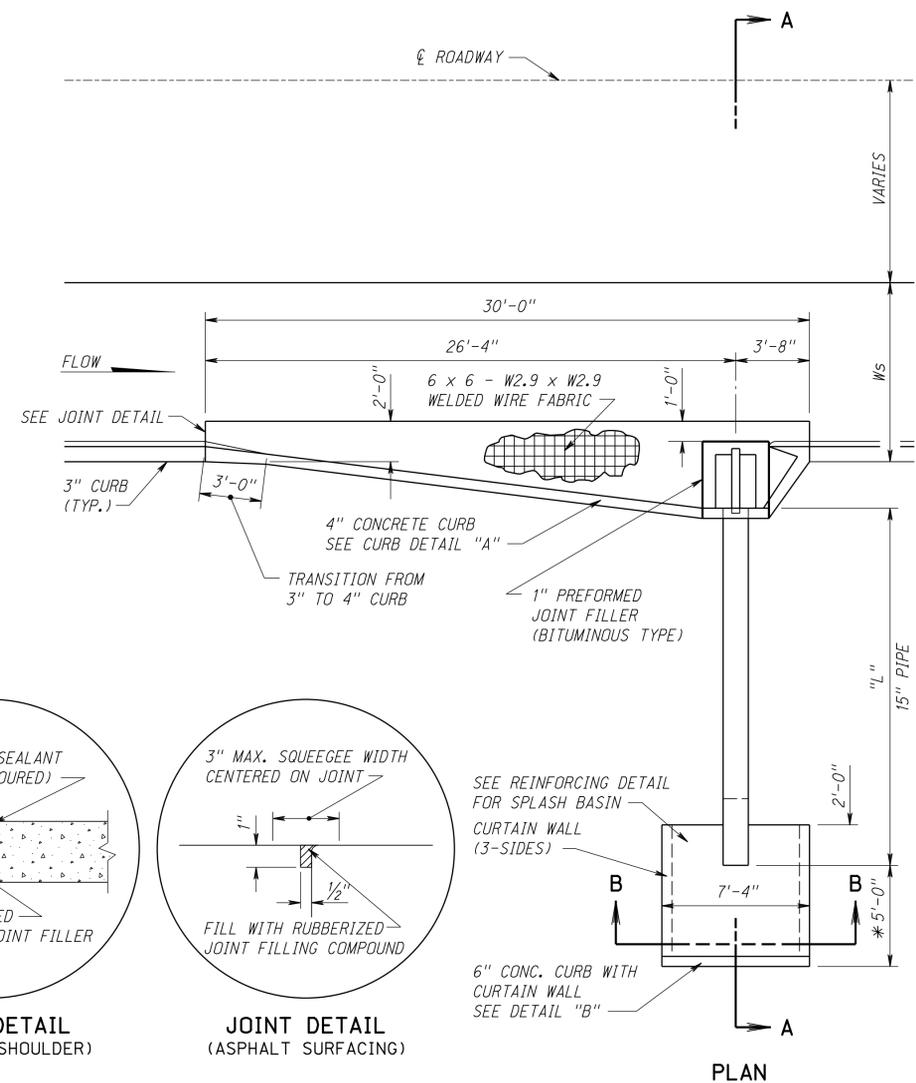
JOINT FILLER AND SEALANT MATERIALS ARE SUBSIDIARY TO THE FLUME.

ALL REINFORCING STEEL TO CONFORM TO A615/A615M, GRADE 60.

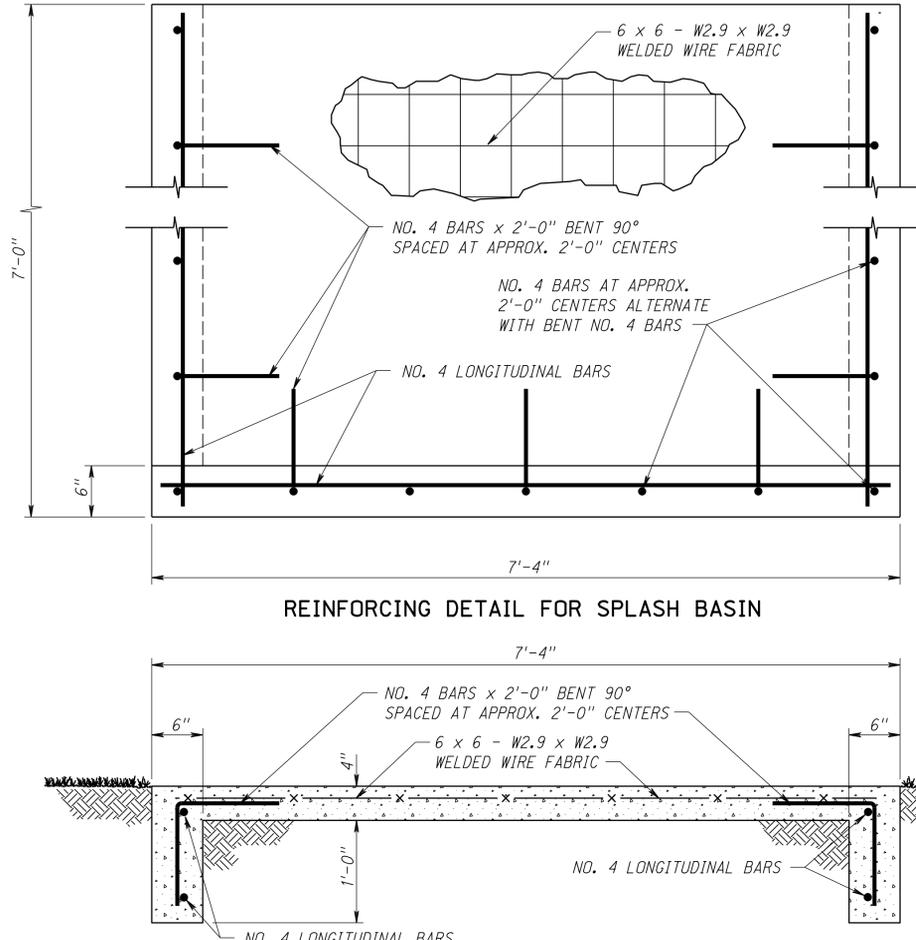
ALL CONCRETE USED SHALL BE CLASS 47B-3000.



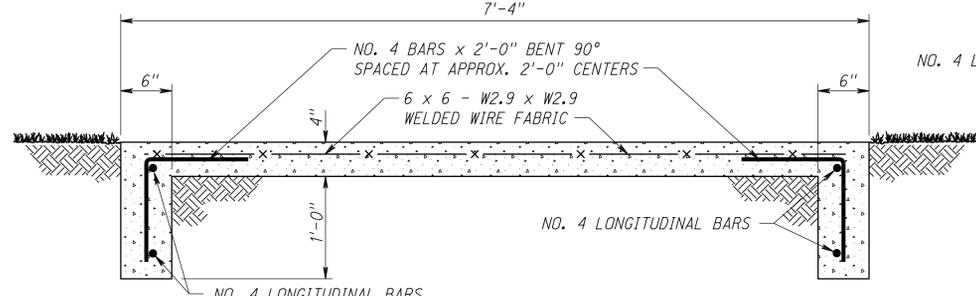
CONCRETE FLUME, TYPE I
SHEET 1 OF 1
SPECIAL PLAN C



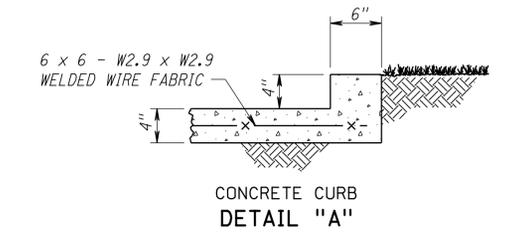
PLAN



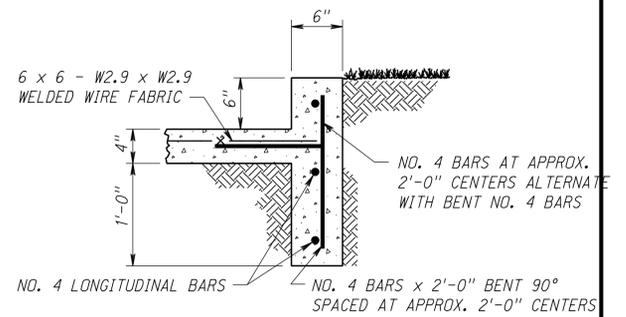
REINFORCING DETAIL FOR SPLASH BASIN



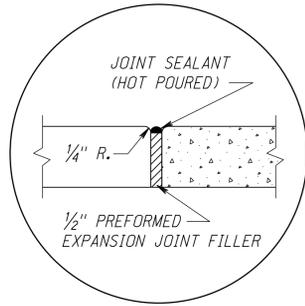
SECTION B-B



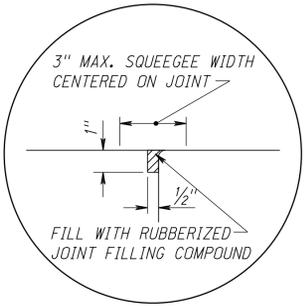
CONCRETE CURB DETAIL "A"



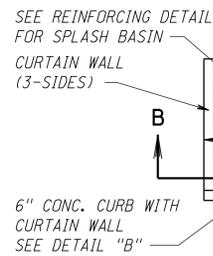
CONCRETE CURB WITH CURTAIN WALL DETAIL "B"



JOINT DETAIL (CONCRETE SHOULDER)

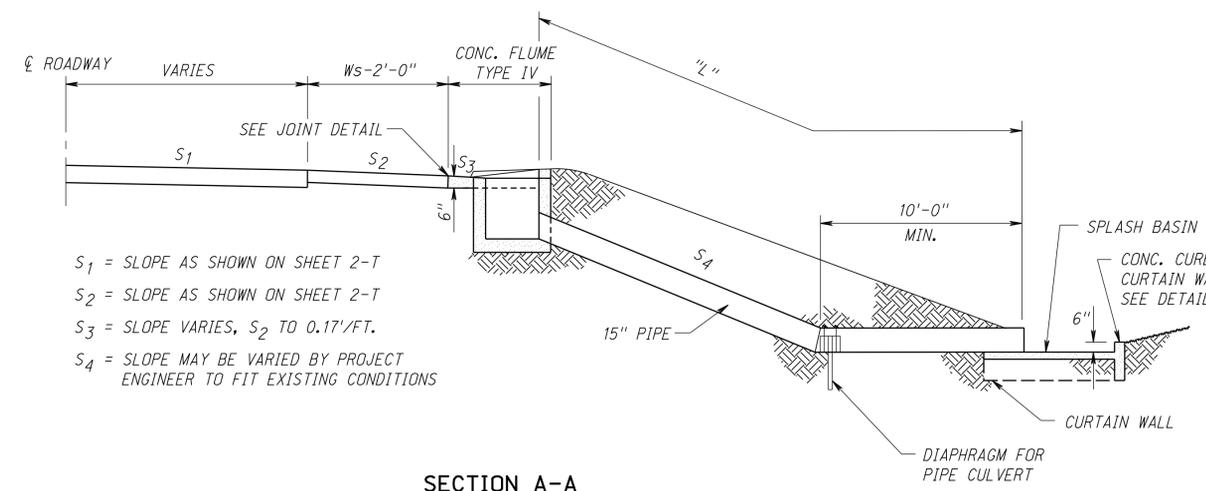


JOINT DETAIL (ASPHALT SURFACING)



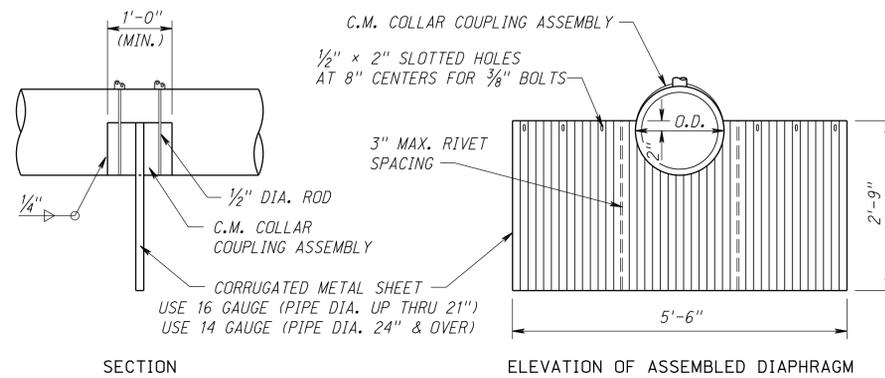
6" CONC. CURB WITH CURTAIN WALL SEE DETAIL "B"

* SPLASH BASIN IN A FILL SECTION: CONSTRUCT AS SHOWN. SPLASH BASIN IN A CUT SECTION: WIDEN BASIN TO THE TOE OF THE BACK SLOPE.



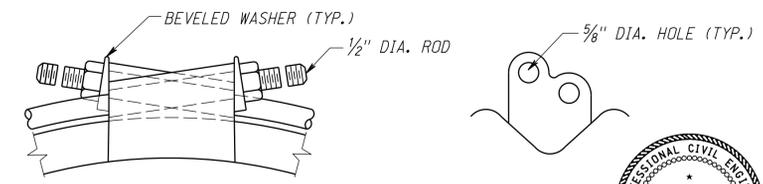
SECTION A-A

S₁ = SLOPE AS SHOWN ON SHEET 2-T
S₂ = SLOPE AS SHOWN ON SHEET 2-T
S₃ = SLOPE VARIES, S₂ TO 0.17'/FT.
S₄ = SLOPE MAY BE VARIED BY PROJECT ENGINEER TO FIT EXISTING CONDITIONS



SECTION

ELEVATION OF ASSEMBLED DIAPHRAGM



ELEVATION

END VIEW

STANDARD TANK LUG DETAILS METAL DIAPHRAGM DETAILS

NOTES:

- Ws = SURFACED SHOULDER WIDTH
- "L" DIMENSION SHALL BE AS SHOWN IN THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- FINAL LOCATION OF FLUME TO BE DETERMINED BY THE ENGINEER.
- COLLAR COUPLING BAND SHALL BE COATED WITH 1/2" BITUMINOUS MASTIC PRIOR TO INSTALLATION. WHEN AIR TEMPERATURE IS 50° F. OR LOWER, HEAT SHALL BE APPLIED TO SOFTEN THE MASTIC.
- EXCAVATION FOR THE FLUME, SPLASH BASIN, DIAPHRAGM AND CULVERT PIPE IS SUBSIDIARY TO OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.
- DIAPHRAGM AND SPLASH BASIN ARE SUBSIDIARY TO OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.
- JOINT FILLER AND THE SEALANT MATERIALS ARE SUBSIDIARY TO THE FLUME.
- ALL REINFORCING STEEL TO CONFORM TO A615/A615M, GRADE 60.
- ALL CONCRETE USED SHALL BE CLASS 47B-3000.



CONCRETE FLUME, TYPE IV
SHEET 1 OF 2
SPECIAL PLAN C

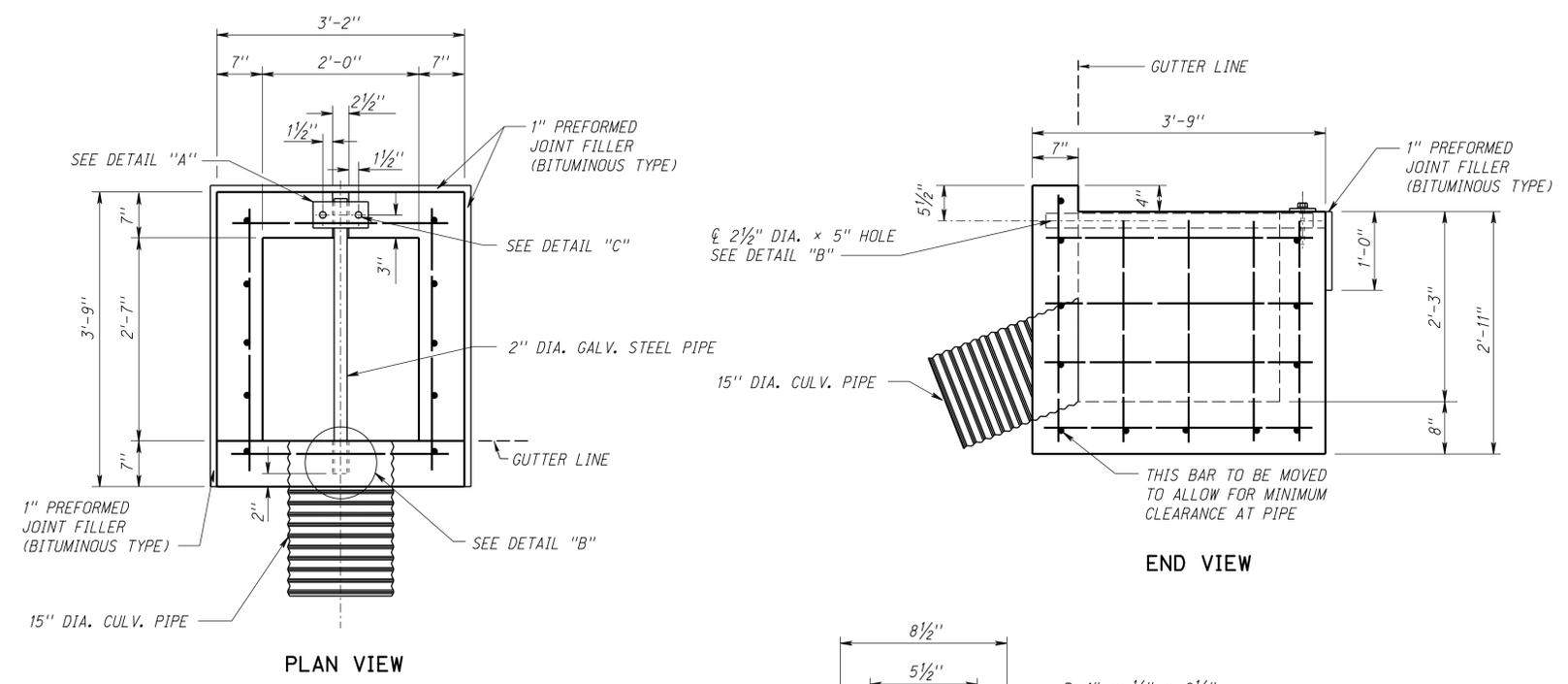
ROADWAY DESIGN DIVISION

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SHEET 2 OF 2 4344-1-E-04



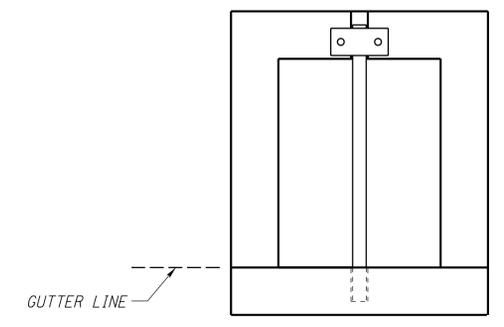
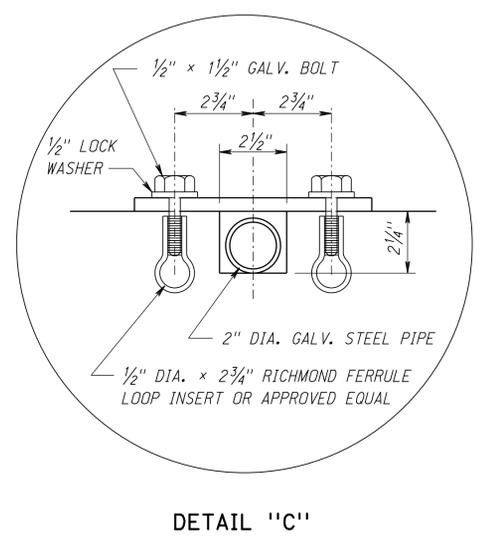
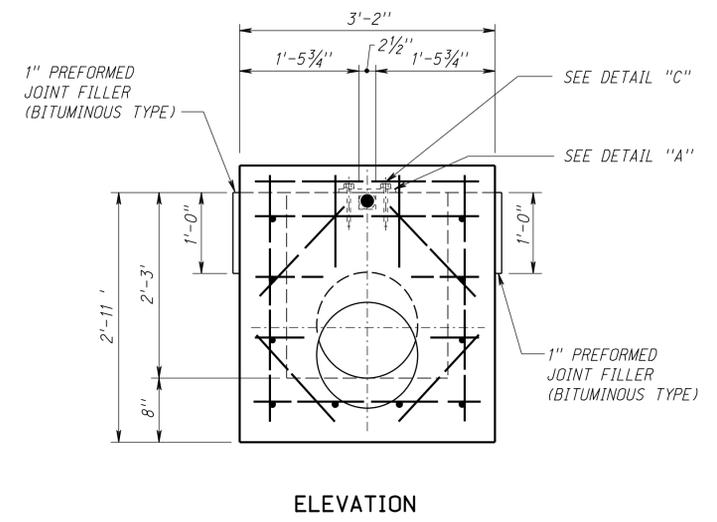
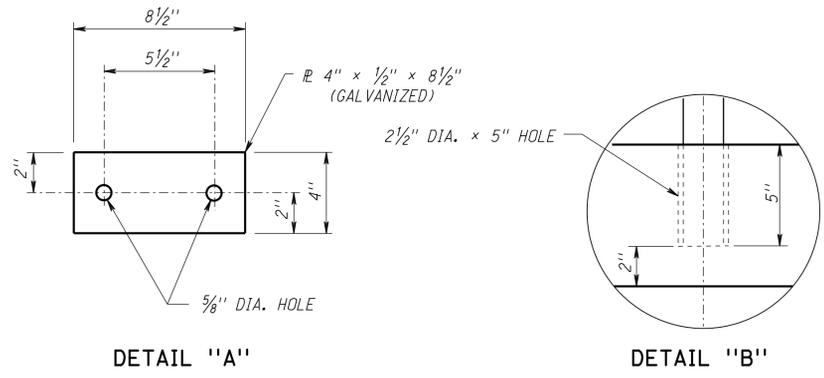
NOTES:

- ALL CONCRETE USED SHALL BE CLASS 47B-3000.
- ALL REINFORCING STEEL USED SHALL BE NO. 4 BARS AT 12" CENTERS (MAX.) AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A615/A615M GRADE 60.
- THE MINIMUM COVERING, MEASURED FROM THE FACE OF THE CONCRETE TO THE SURFACE OF ANY REINFORCING BAR SHALL BE 2" UNLESS NOTED OTHERWISE.
- FIELD BEND AND/OR CLIP REINFORCING STEEL TO MAINTAIN MINIMUM CLEARANCE AND TO CLEAR PIPE OPENINGS.
- ALL PREPARATION, MATERIALS, EQUIPMENT, TOOLS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE WORK THAT IS NOT PAID FOR DIRECTLY, SHALL BE CONSIDERED SUBSIDIARY TO THE ITEMS FOR WHICH DIRECT PAYMENT IS MADE.
- ALL CONCRETE SURFACES TO BE IN CONTACT WITH THE NEW WORK SHALL BE THOROUGHLY CLEANED BEFORE PLACING NEW CONCRETE.
- DEDUCTIONS FOR PIPE OPENINGS HAVE BEEN INCLUDED IN THE "QUANTITIES FOR INFORMATION ONLY".
- FERRULE LOOPS SHALL HAVE WORKING LOAD REQUIREMENTS OF 1,320 LBS. IN SHEAR AND 2,000 LBS. IN TENSION.

**QUANTITIES
- FOR INFORMATION ONLY -**

CONCRETE	0.85 CU. YDS.
REINFORCED STEEL	75 LBS.
2" GALVANIZED STEEL PIPE	3.50 LIN. FT.

(THE ABOVE ITEMS ARE SUBSIDIARY TO OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.)



CONCRETE FLUME, TYPE IV
SHEET 2 OF 2
SPECIAL PLAN C

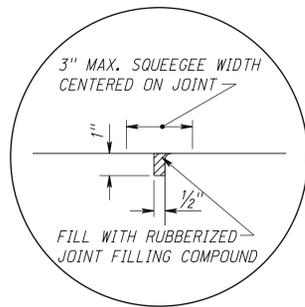
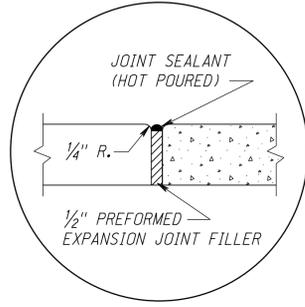
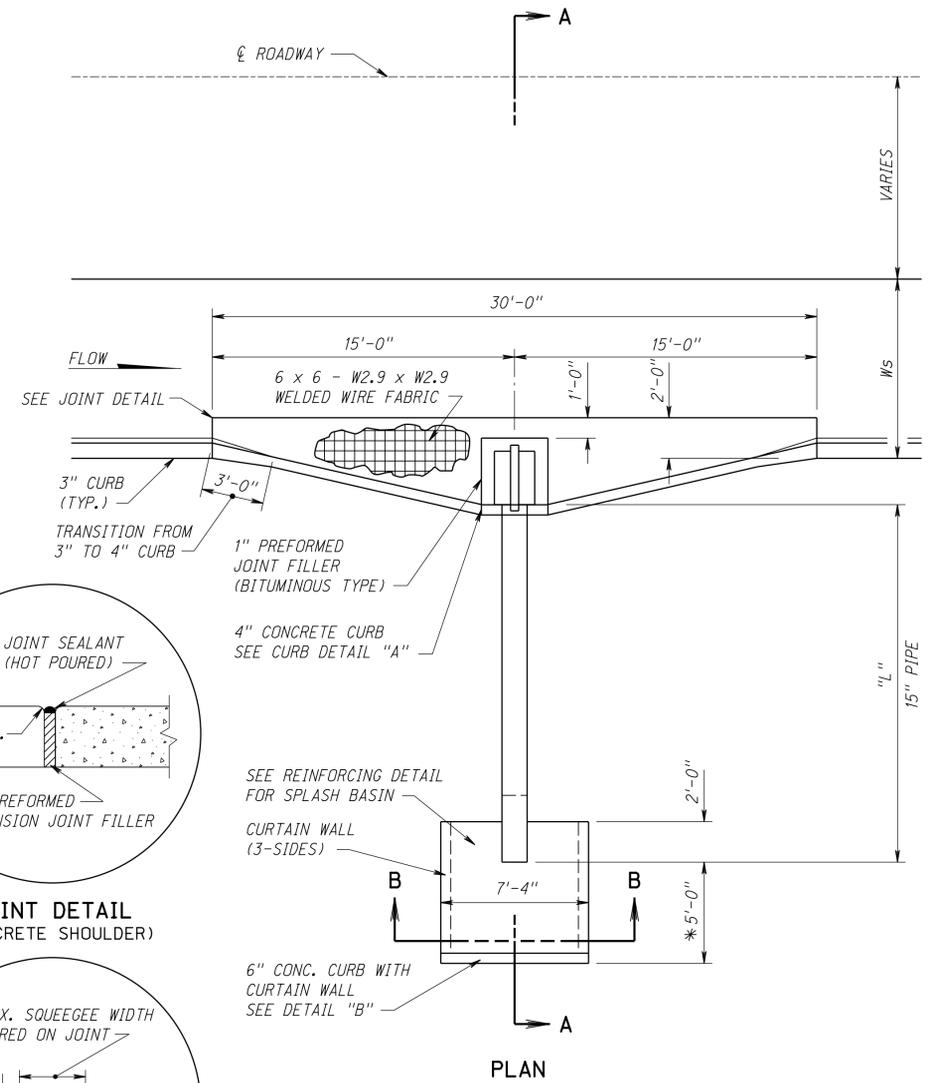
ROADWAY DESIGN DIVISION

Computer: DRDESIGN147

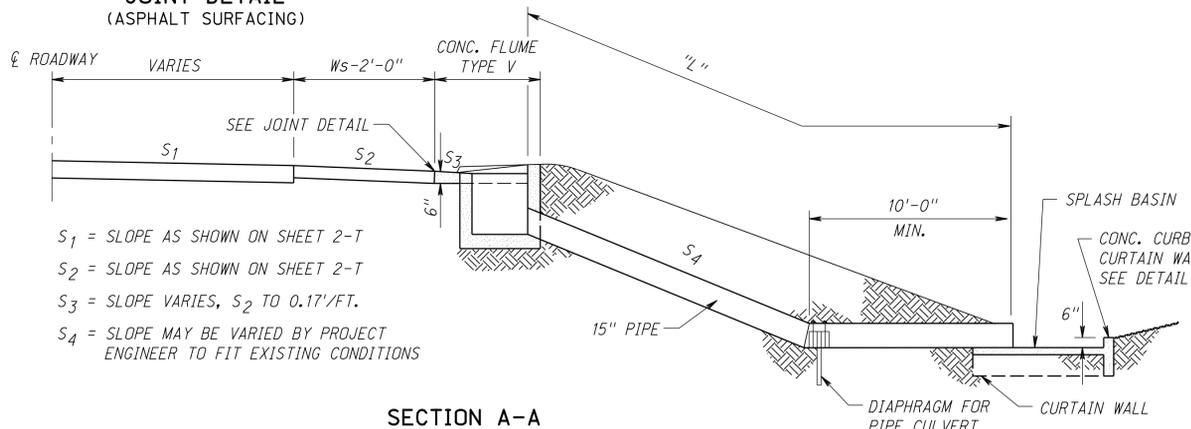
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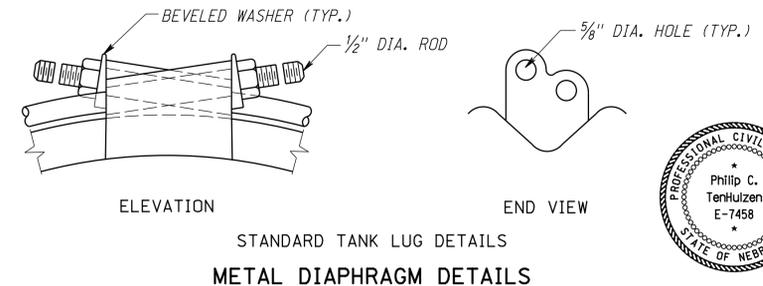
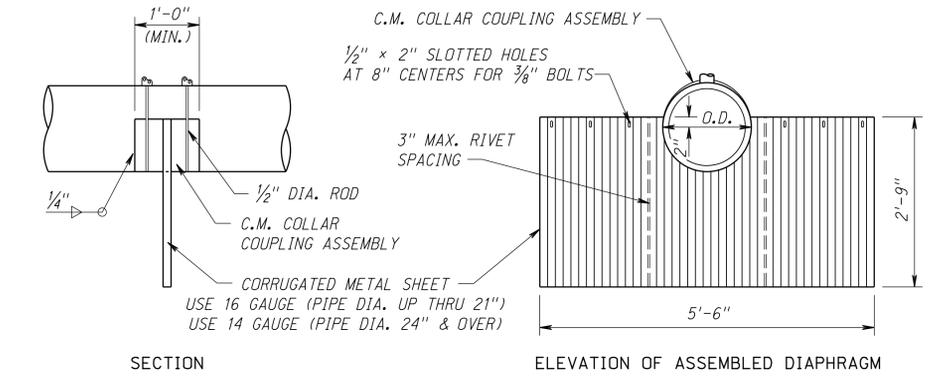
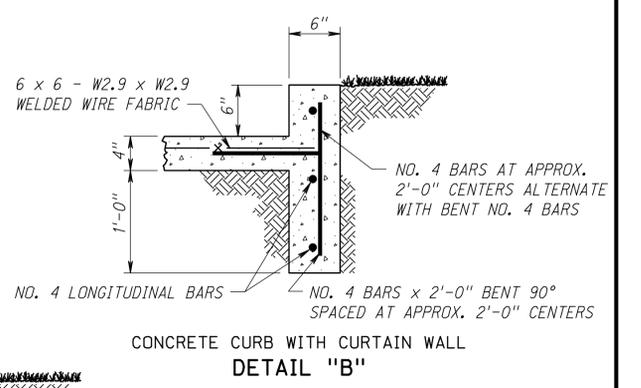
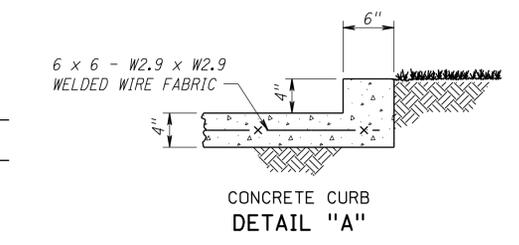
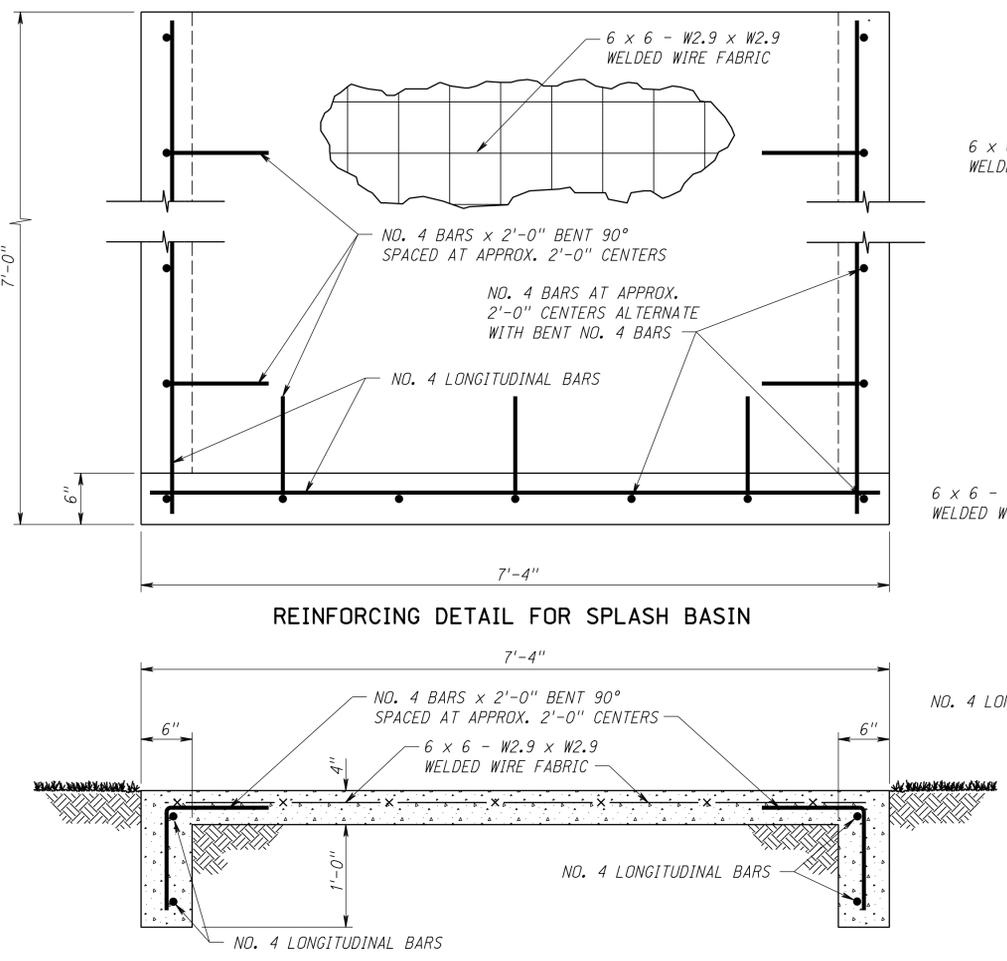
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SHEET 1 OF 2 4345-1-E-04



* SPLASH BASIN IN A FILL SECTION: CONSTRUCT AS SHOWN.
SPLASH BASIN IN A CUT SECTION: WIDEN BASIN TO THE TOE OF THE BACK SLOPE.



S₁ = SLOPE AS SHOWN ON SHEET 2-T
S₂ = SLOPE AS SHOWN ON SHEET 2-T
S₃ = SLOPE VARIES, S₂ TO 0.17'/FT.
S₄ = SLOPE MAY BE VARIED BY PROJECT ENGINEER TO FIT EXISTING CONDITIONS



NOTES:

- Ws = SURFACED SHOULDER WIDTH
- "L" DIMENSION SHALL BE AS SHOWN IN THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- FINAL LOCATION OF FLUME TO BE DETERMINED BY THE ENGINEER.
- COLLAR COUPLING BAND SHALL BE COATED WITH 1/2" BITUMINOUS MASTIC PRIOR TO INSTALLATION. WHEN AIR TEMPERATURE IS 50° F. OR LOWER, HEAT SHALL BE APPLIED TO SOFTEN THE MASTIC.
- EXCAVATION FOR THE FLUME, SPLASH BASIN, DIAPHRAGM AND CULVERT PIPE IS SUBSIDIARY TO OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.
- DIAPHRAGM AND SPLASH BASIN ARE SUBSIDIARY TO OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.
- JOINT FILLER AND THE SEALANT MATERIALS ARE SUBSIDIARY TO THE FLUME.
- ALL REINFORCING STEEL TO CONFORM TO A615/A615M, GRADE 60.
- ALL CONCRETE USED SHALL BE CLASS 47B-3000.



CONCRETE FLUME, TYPE V
SHEET 1 OF 2
SPECIAL PLAN C

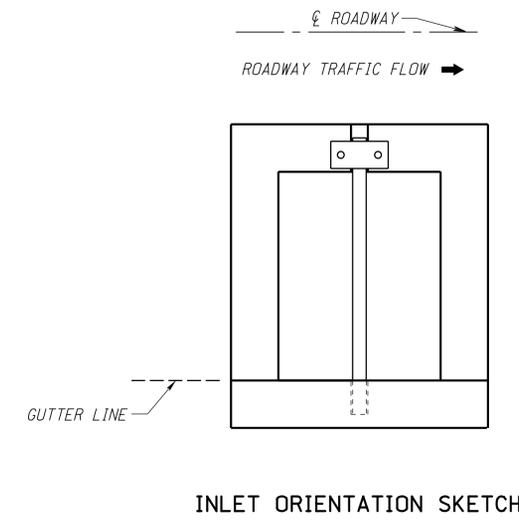
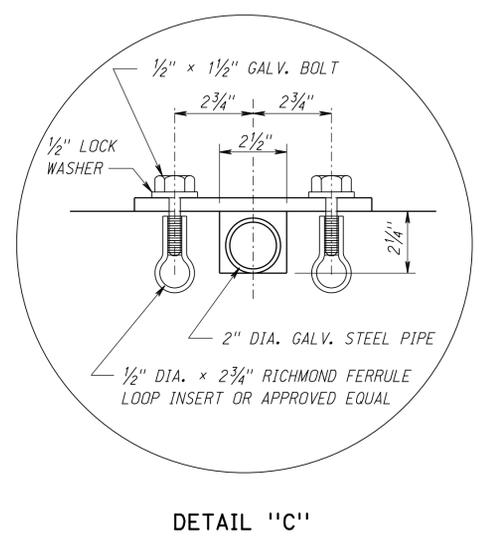
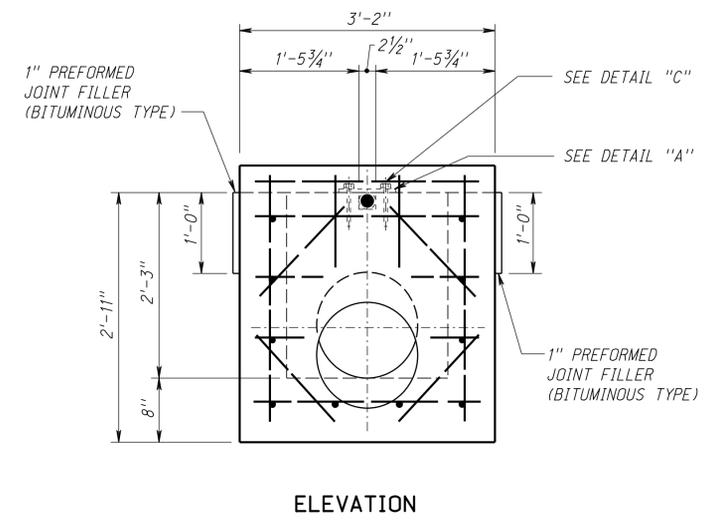
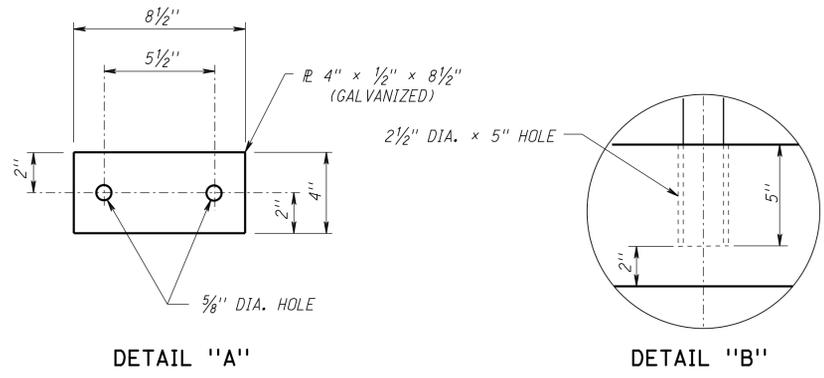
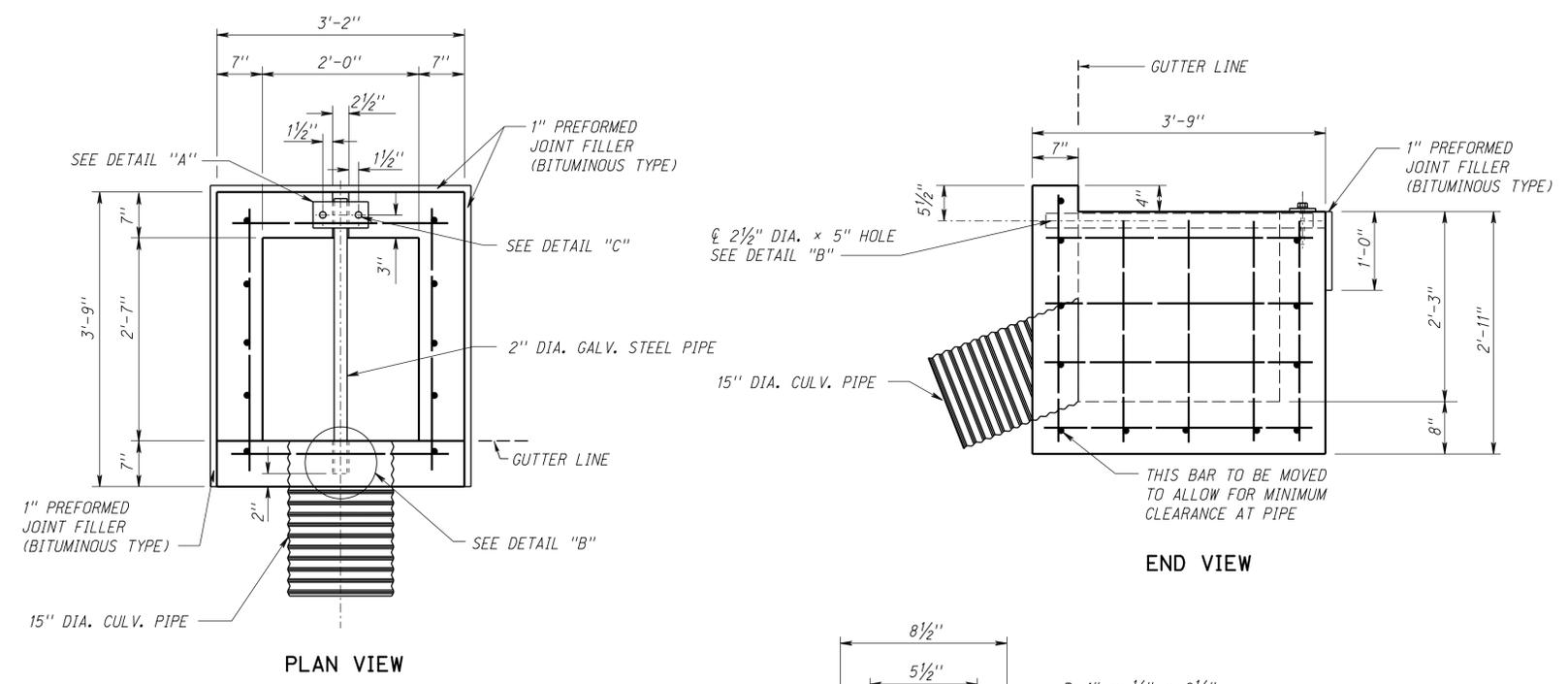
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User: dcr13017

Date: 14-JUL-2016 12:37

File: 43451604.dgn
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SHEET 2 OF 2 4345-1-E-04



NOTES:

ALL CONCRETE USED SHALL BE CLASS 47B-3000.

ALL REINFORCING STEEL USED SHALL BE NO. 4 BARS AT 12" CENTERS (MAX.) AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A615/A615M GRADE 60.

THE MINIMUM COVERING, MEASURED FROM THE FACE OF THE CONCRETE TO THE SURFACE OF ANY REINFORCING BAR SHALL BE 2" UNLESS NOTED OTHERWISE.

FIELD BEND AND/OR CLIP REINFORCING STEEL TO MAINTAIN MINIMUM CLEARANCE AND TO CLEAR PIPE OPENINGS.

ALL PREPARATION, MATERIALS, EQUIPMENT, TOOLS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE WORK THAT IS NOT PAID FOR DIRECTLY, SHALL BE CONSIDERED SUBSIDIARY TO THE ITEMS FOR WHICH DIRECT PAYMENT IS MADE.

ALL CONCRETE SURFACES TO BE IN CONTACT WITH THE NEW WORK SHALL BE THOROUGHLY CLEANED BEFORE PLACING NEW CONCRETE.

DEDUCTIONS FOR PIPE OPENINGS HAVE BEEN INCLUDED IN THE "QUANTITIES FOR INFORMATION ONLY".

FERRULE LOOPS SHALL HAVE WORKING LOAD REQUIREMENTS OF 1,320 LBS. IN SHEAR AND 2,000 LBS. IN TENSION.

QUANTITIES
- FOR INFORMATION ONLY -

CONCRETE	0.85 CU. YDS.
REINFORCED STEEL	75 LBS.
2" GALVANIZED STEEL PIPE	3.50 LIN. FT.

(THE ABOVE ITEMS ARE SUBSIDIARY TO OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.)



CONCRETE FLUME, TYPE V
SHEET 2 OF 2
SPECIAL PLAN C

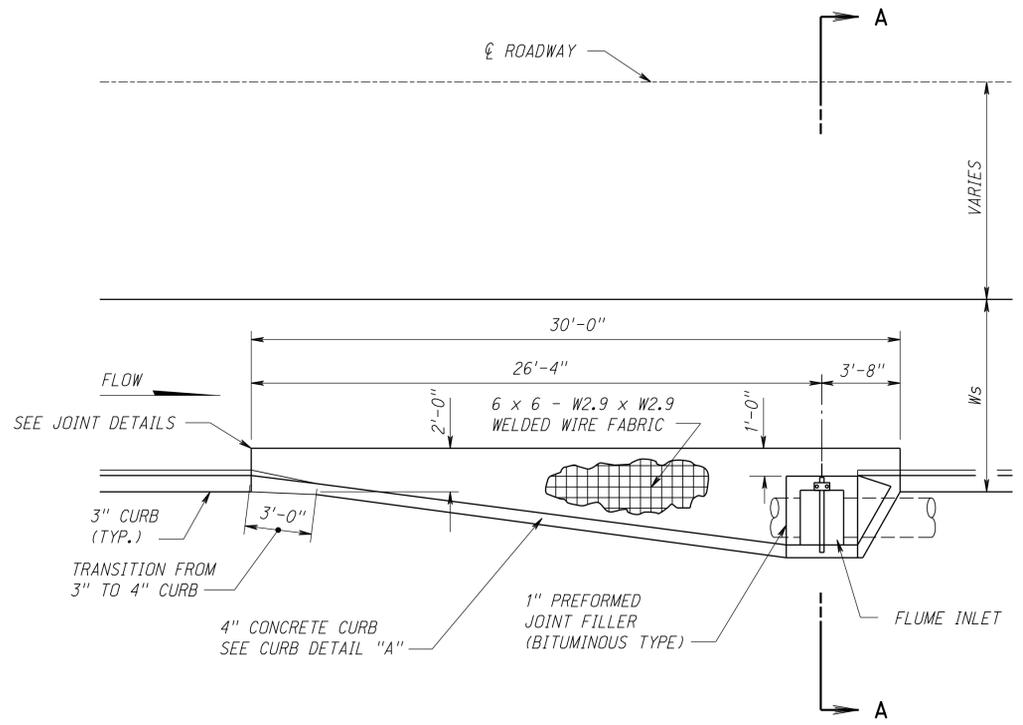
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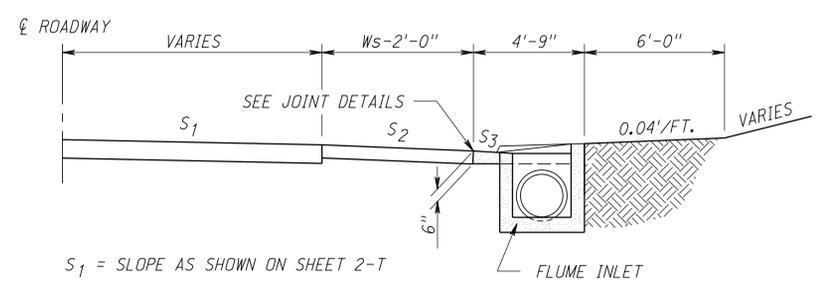
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SHEET 1 OF 2

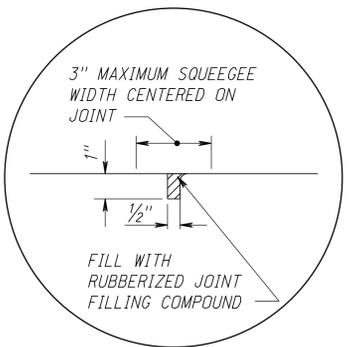


PLAN

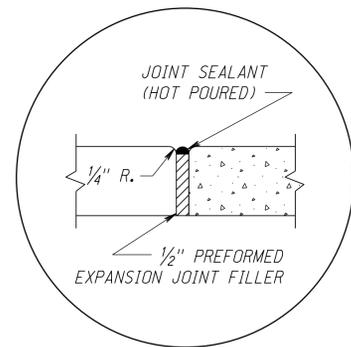


S₁ = SLOPE AS SHOWN ON SHEET 2-T
S₂ = SLOPE AS SHOWN ON SHEET 2-T
S₃ = SLOPE VARIES, S₂ TO 0.17'/FT.

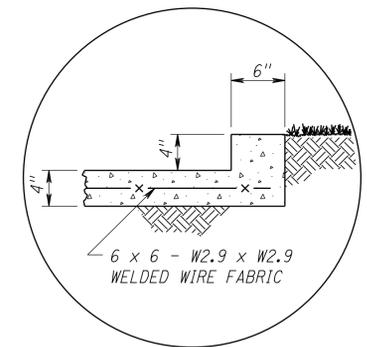
SECTION A-A



JOINT DETAIL
(ASPHALT SURFACING)



JOINT DETAIL
(CONCRETE SHOULDER)



DETAIL "A"
CONCRETE CURB

NOTES:

- Ws = SURFACED SHOULDER WIDTH
- FINAL LOCATION OF FLUME TO BE DETERMINED BY THE ENGINEER.
- EXCAVATION FOR THE FLUME IS SUBSIDIARY TO OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MAKE.
- JOINT FILLER AND THE SEALANT MATERIALS ARE SUBSIDIARY TO THE FLUME.
- ALL REINFORCING STEEL TO CONFORM TO A615/A615M, GRADE 60.
- ALL CONCRETE USED SHALL BE CLASS 47B-3000.



CONCRETE FLUME, TYPE VI
SHEET 1 OF 2
SPECIAL PLAN C

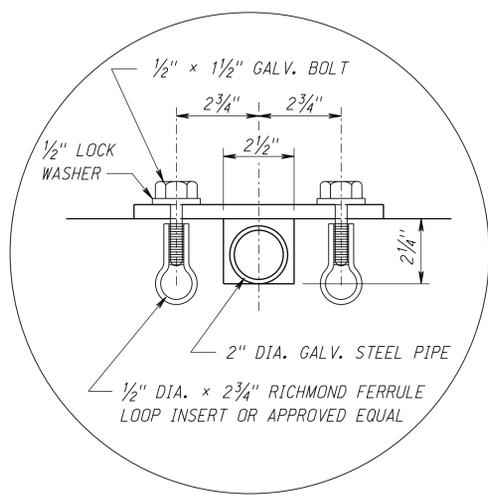
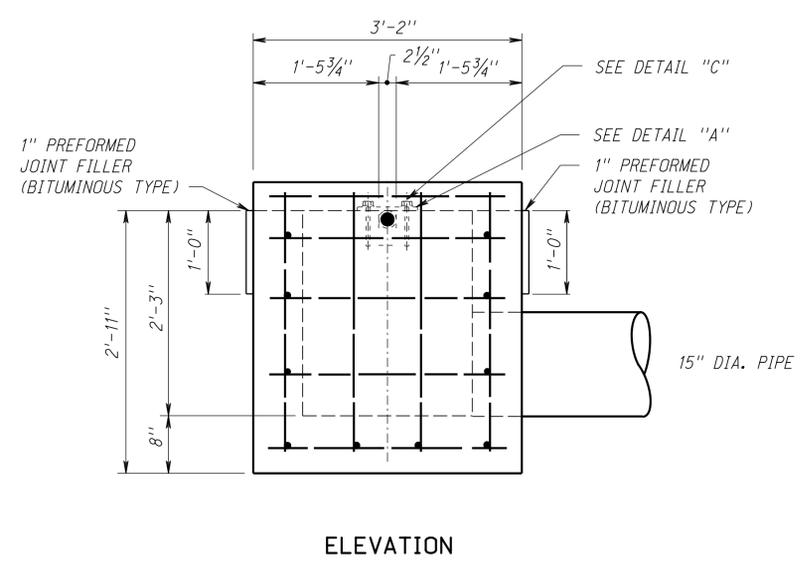
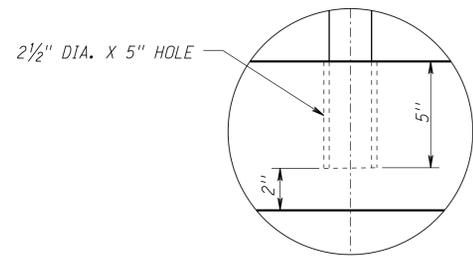
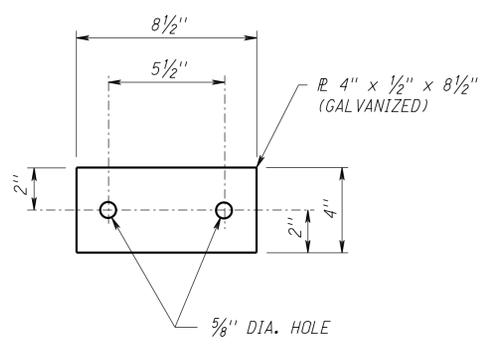
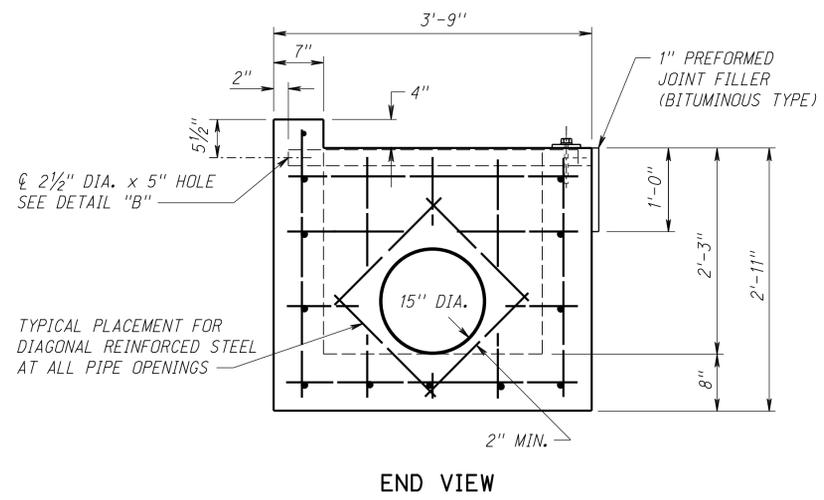
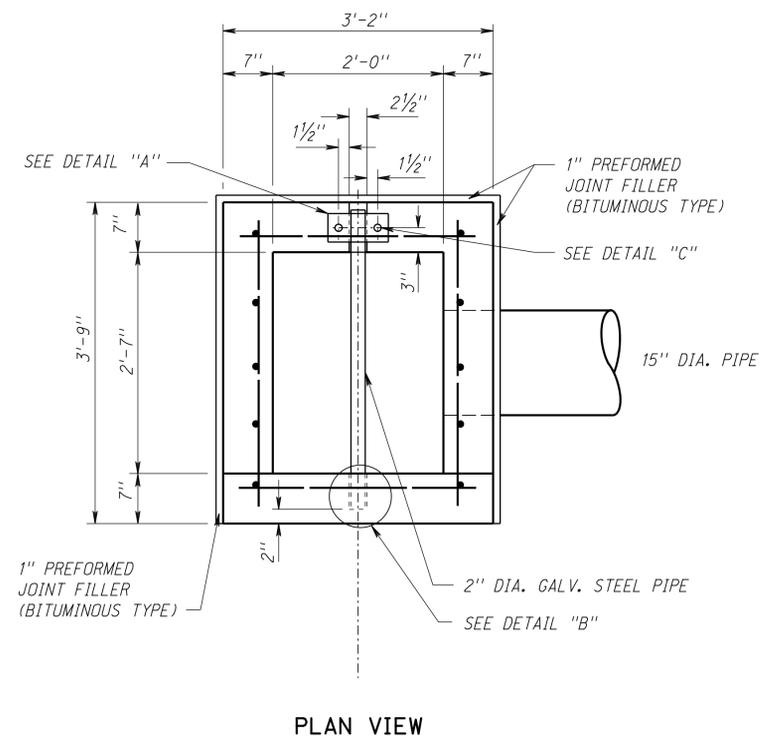
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SHEET 2 OF 2 4346-1-E-02



NOTES:

ALL REINFORCING STEEL USED SHALL BE NO. 4 BARS AT 12" CENTERS (MAX.) AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A615/A615M GRADE 60.

THE MINIMUM COVERING, MEASURED FROM THE FACE OF THE CONCRETE TO THE SURFACE OF ANY REINFORCING BAR SHALL BE 2" UNLESS NOTED OTHERWISE.

FIELD BEND AND/OR CLIP REINFORCING STEEL TO MAINTAIN MINIMUM CLEARANCE AND TO CLEAR PIPE OPENINGS.

ALL PREPARATION, MATERIALS, EQUIPMENT, TOOLS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE WORK THAT IS NOT PAID FOR DIRECTLY, SHALL BE CONSIDERED SUBSIDIARY TO THE ITEMS FOR WHICH DIRECT PAYMENT IS MADE.

ALL CONCRETE SURFACES TO BE IN CONTACT WITH THE NEW WORK SHALL BE THOROUGHLY CLEANED BEFORE PLACING NEW CONCRETE.

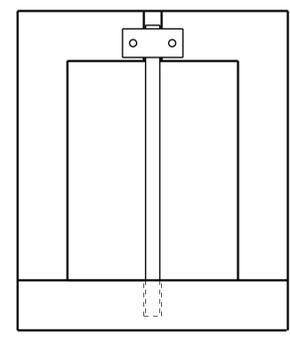
NO DEDUCTIONS FOR PIPE OPENINGS HAVE BEEN INCLUDED IN THE "QUANTITIES FOR INFORMATION ONLY".

FERRULE LOOPS SHALL HAVE WORKING LOAD REQUIREMENTS OF 1,320 LBS. IN SHEAR AND 2,000 LBS. IN TENSION.

QUANTITIES - FOR INFORMATION ONLY -

CONCRETE	0.88 CU. YDS.
REINFORCED STEEL	75 LBS.
2" GALVANIZED STEEL PIPE	3.50 LIN. FT.

(THE ABOVE ITEMS ARE SUBSIDIARY TO OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.)

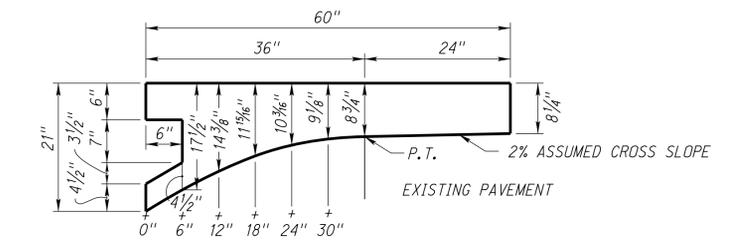
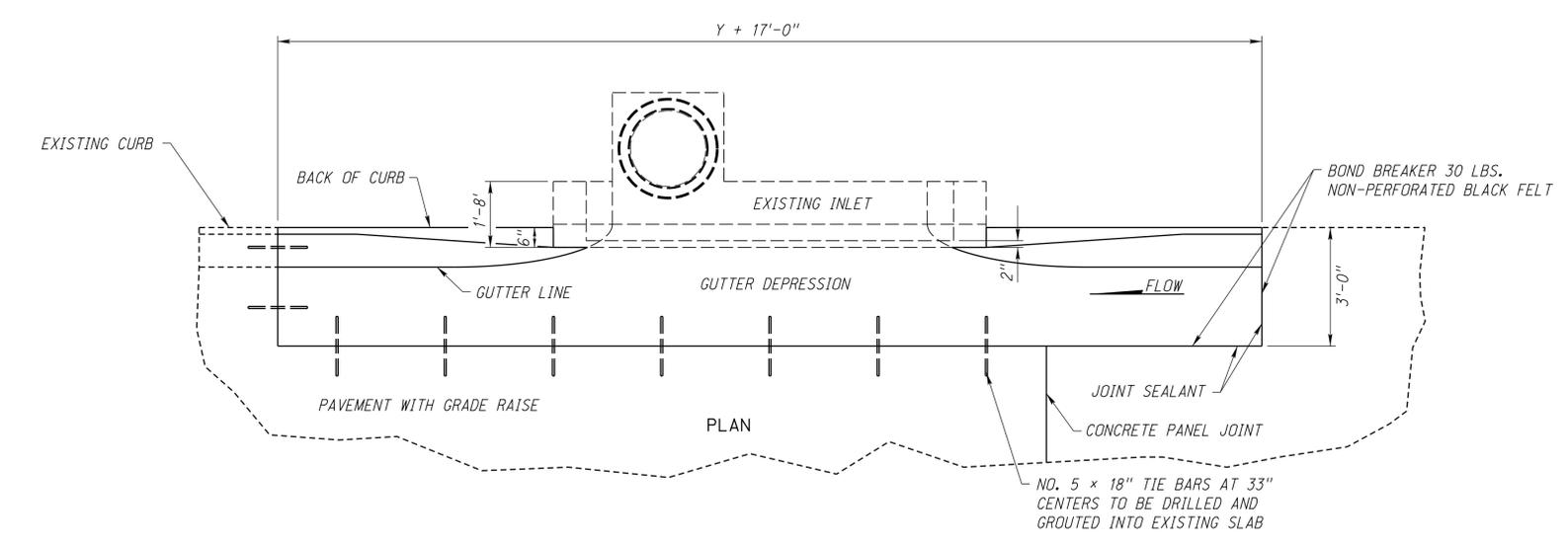


INLET ORIENTATION SKETCH

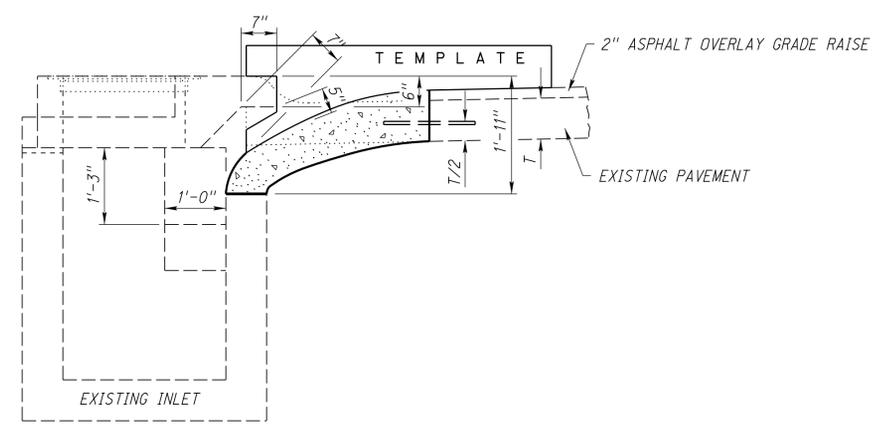
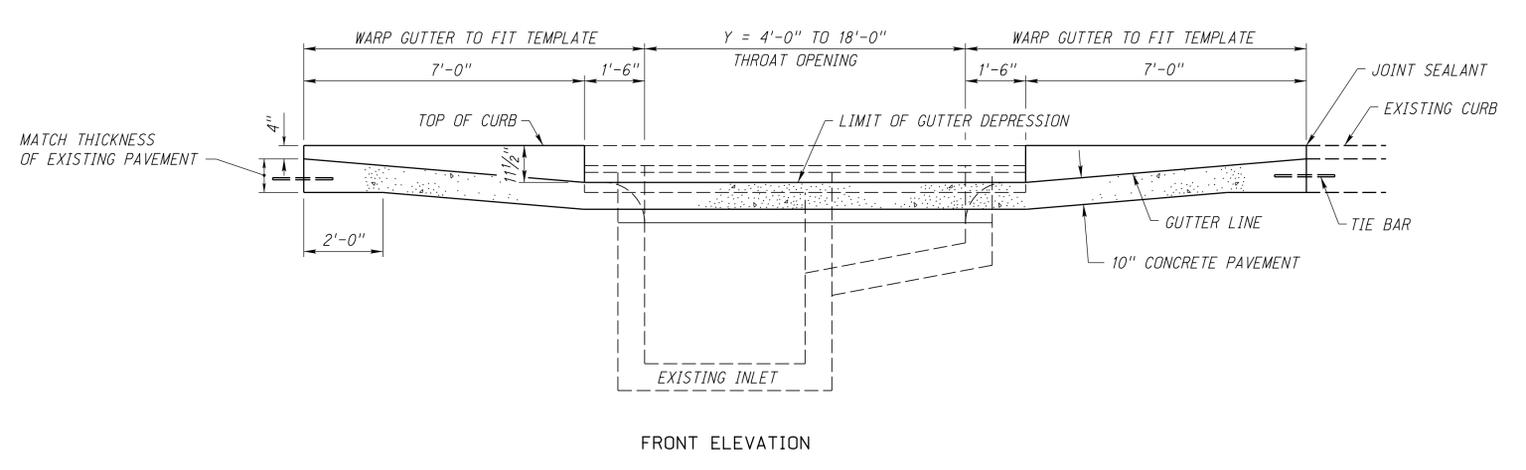


CONCRETE FLUME, TYPE VI
SHEET 2 OF 2
SPECIAL PLAN C

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 SHEET 1 OF 1
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GUTTER DEPRESSION TEMPLATE FOR 2" GRADE RAISE



TYPICAL SECTION OF GUTTER DEPRESSION

NOTES:
 TIE BARS ARE REQUIRED WHEREVER THE NEW GUTTER DEPRESSION ABUTS EXISTING CONCRETE.
 ALL CONCRETE SHALL BE CLASS 47B-3500
 THE GUTTER DEPRESSION TEMPLATE SHALL BE USED THROUGHOUT THE THROAT OPENING.
 THIS PLAN IS USED TO RECONSTRUCT GUTTER DEPRESSIONS FOR OVERLAYS 2" ABOVE THE ORIGINAL FINISH GRADE.



RECONSTRUCT GUTTER DEPRESSION FOR 2" GRADE RAISE
 SHEET 1 OF 1
SPECIAL PLAN C

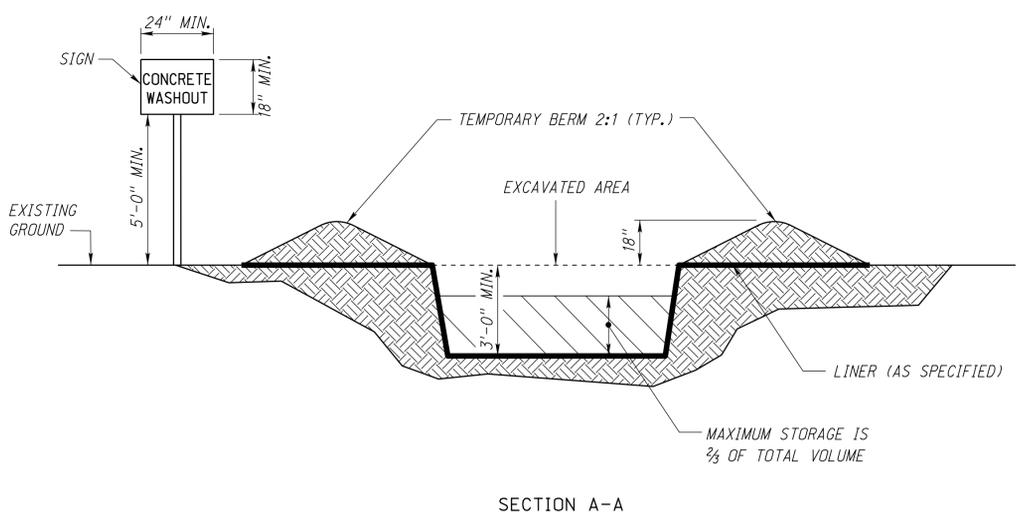
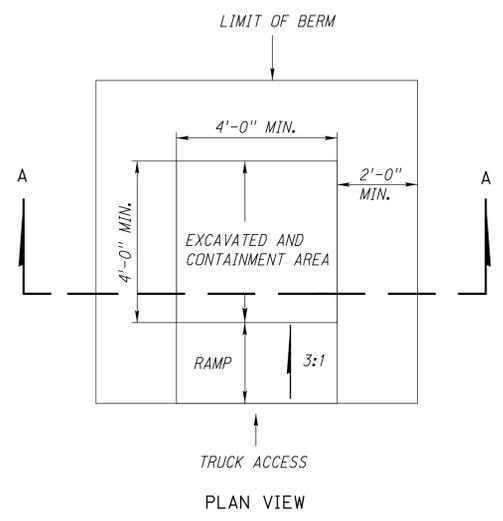
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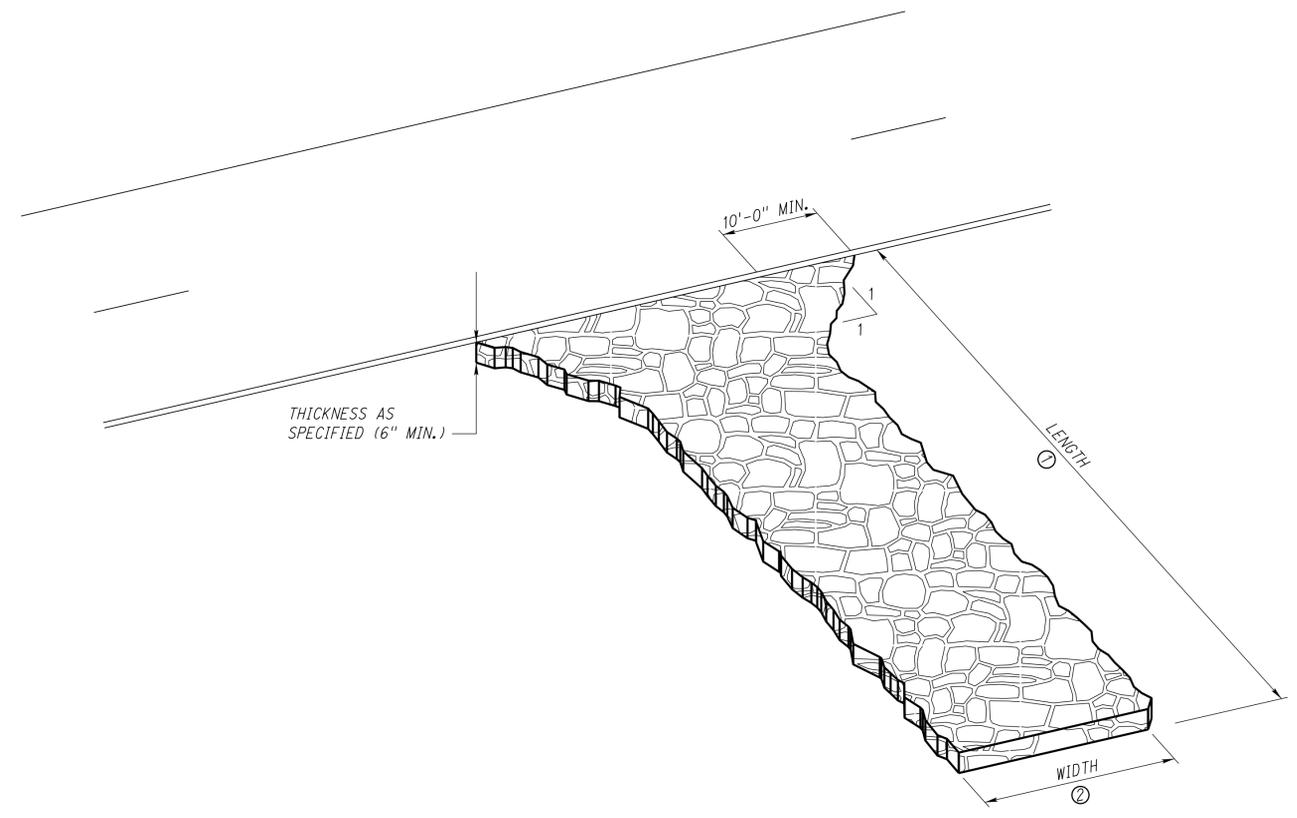
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SHEET 1 OF 1



NOTES:
EROSION BALES MAY BE USED AS AN ALTERNATIVE FOR THE BERM AREA, EXCEPT AT THE OPENING.
THE CONCRETE WASHOUT SIGN SHALL HAVE LETTERS AT LEAST 3 INCHES HIGH.
STRUCTURE MUST BE LINED WITH MATERIAL NOTED IN SPECIAL PROVISIONS.

CONCRETE WASHOUT STRUCTURE



NOTES:
REMOVE VEGETATION AND EXCAVATE SOFT SOILS FROM EXIT AREA. THOROUGHLY COMPACT SUBGRADE PRIOR TO PLACING STONE.
INSTALL CULVERT UNDER EXIT IF NECESSARY TO MAINTAIN DRAINAGE.
GRADE EXIT TO PREVENT RUNOFF FROM FLOWING ONTO STREET. DIRECT ALL RUNOFF FROM EXIT TO A SEDIMENT RETENTION DEVICE.
WHEN SPECIFIED, INSTALL SUBGRADE STABILIZATION FABRIC PRIOR TO PLACING CRUSHED STONE.
INSTALL LAYER OF CRUSHED STONE TO THE THICKNESS (6 INCH MINIMUM) AND DIMENSIONS SPECIFIED.

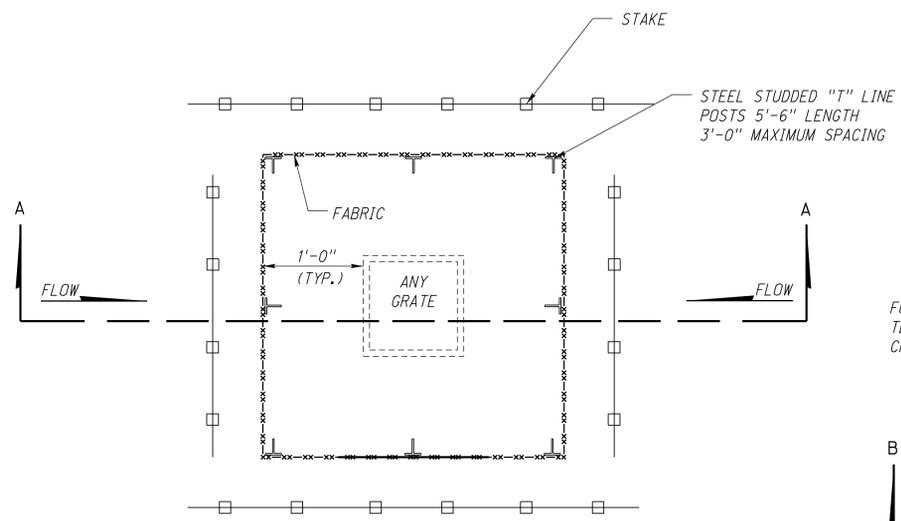
- ① EXIT LENGTH: 30 FT. MINIMUM OR AS SPECIFIED. LENGTH OF EXIT MAY BE INCREASED IF SEDIMENT TRACK-OUT OCCURS.
- ② EXIT WIDTH: 20 FT. MINIMUM.

STABILIZED CONSTRUCTION EXIT

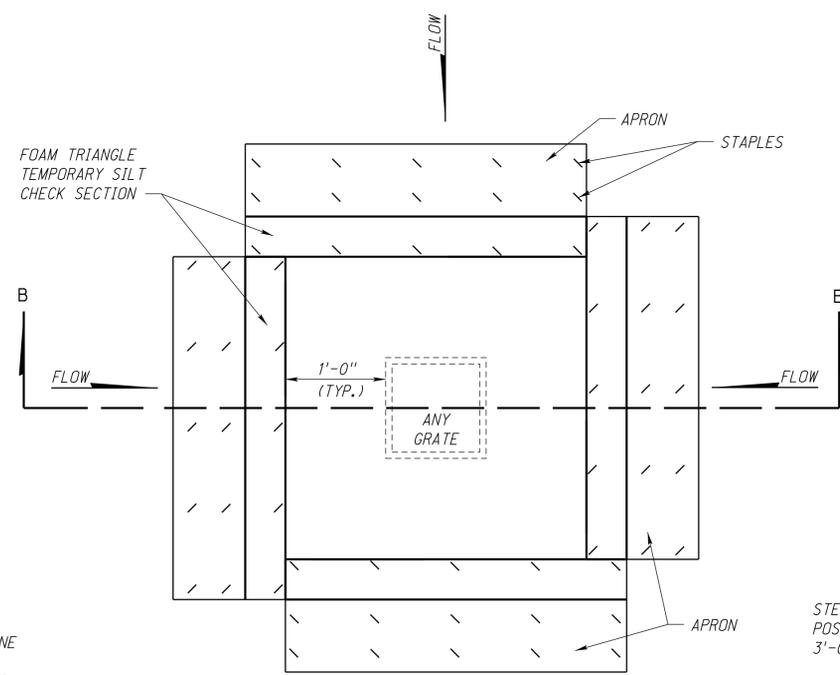


CONCRETE WASHOUT & CONSTRUCTION EXIT
SHEET 1 OF 1
SPECIAL PLAN C

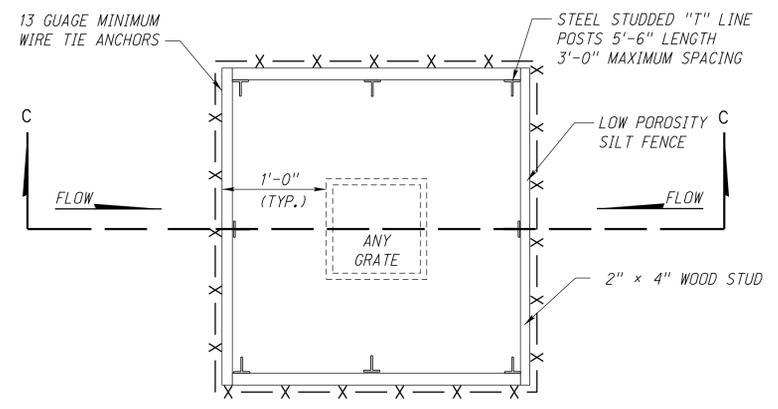
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SHEET 1 OF 2



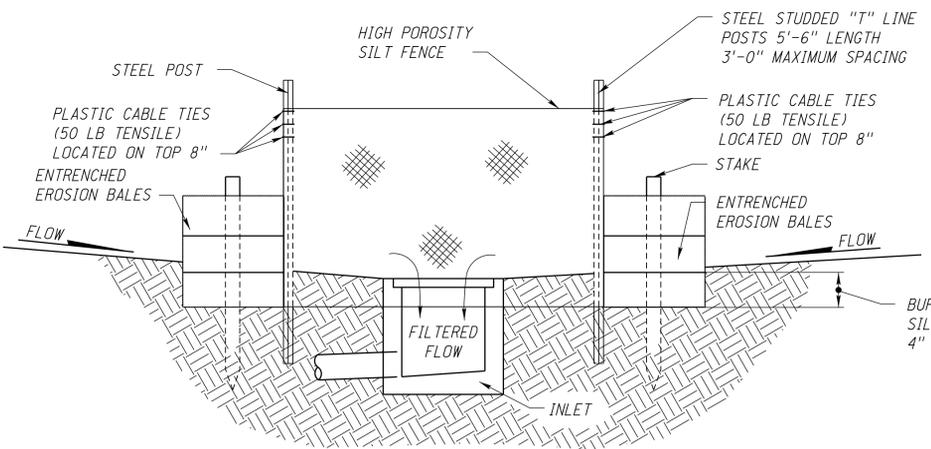
PLAN VIEW



PLAN VIEW

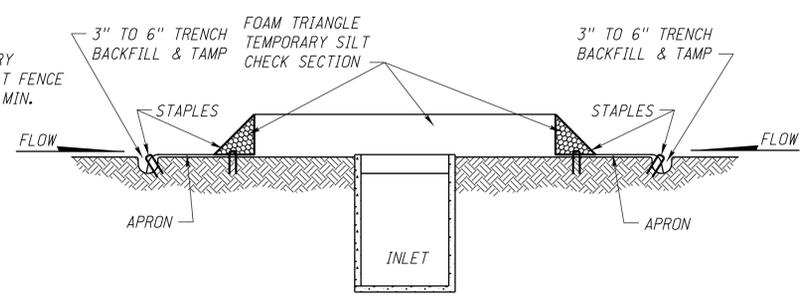


PLAN VIEW



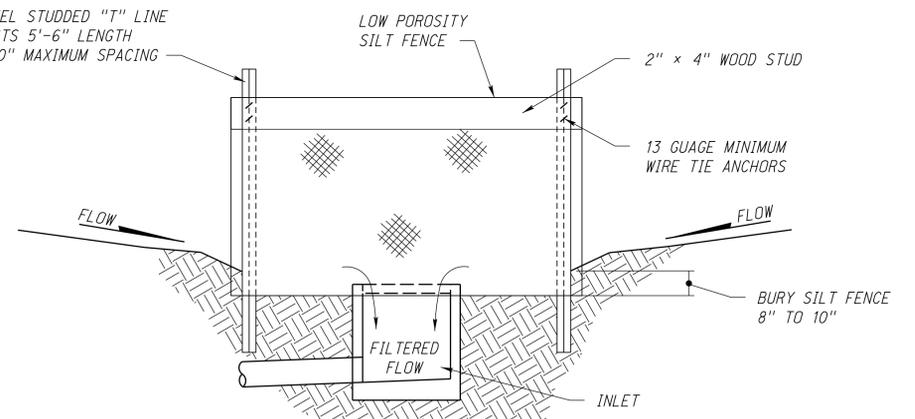
SECTION A-A

EROSION BALE AND SILT FENCE FILTER AT INLET



SECTION B-B

FOAM TRIANGLE FILTER AT INLET



ELEVATION SECTION C-C

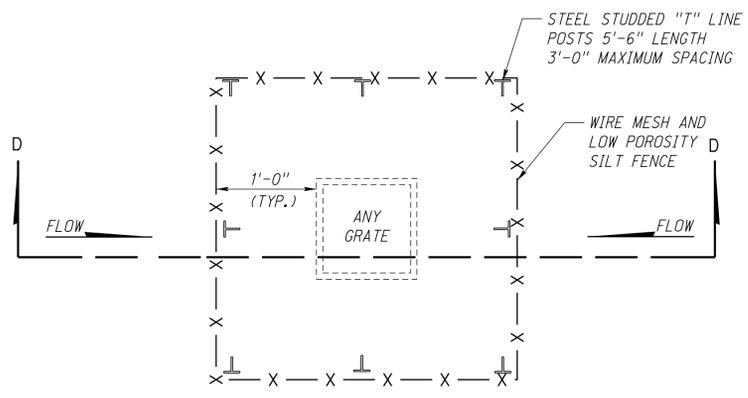
SILT FENCE AND WOOD FRAME FILTER AT INLET

NOTES:
STAKES SHALL BE WOOD AND BE 2" x 2" x 3'-0" NOMINAL.
EROSION BALES SHALL BE 18" x 18" x 36".
EROSION BALES SHALL BE ENTRENCHED 4 INCH MINIMUM INTO THE SOIL, TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

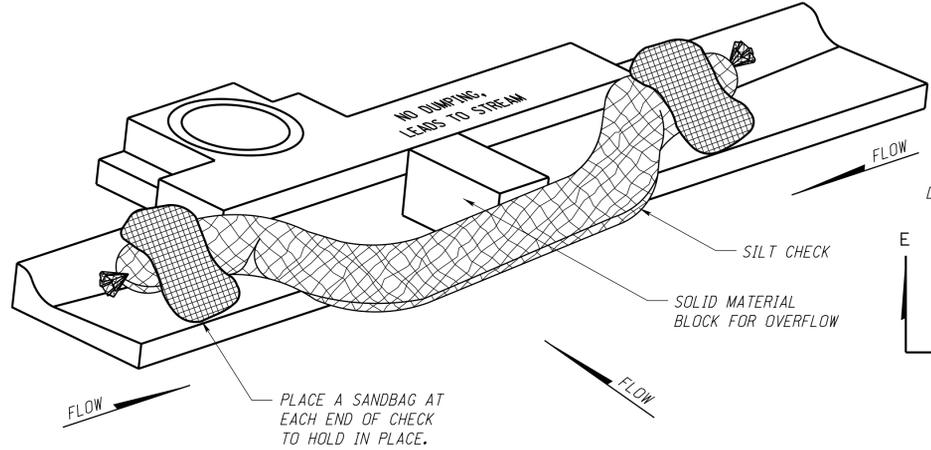
NOTES:
1. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.



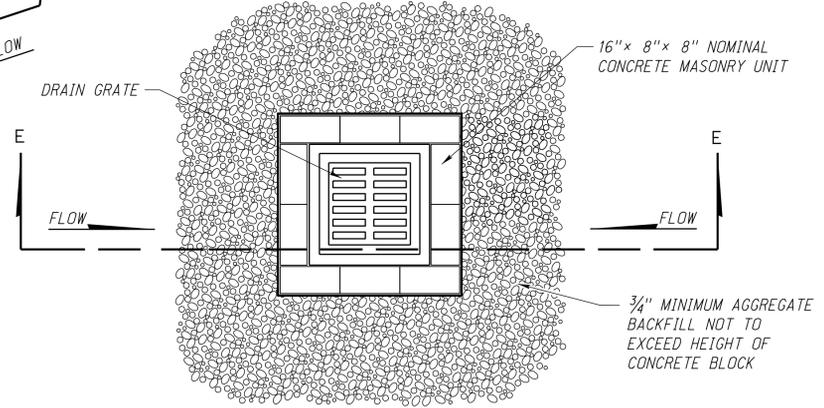
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51021e00



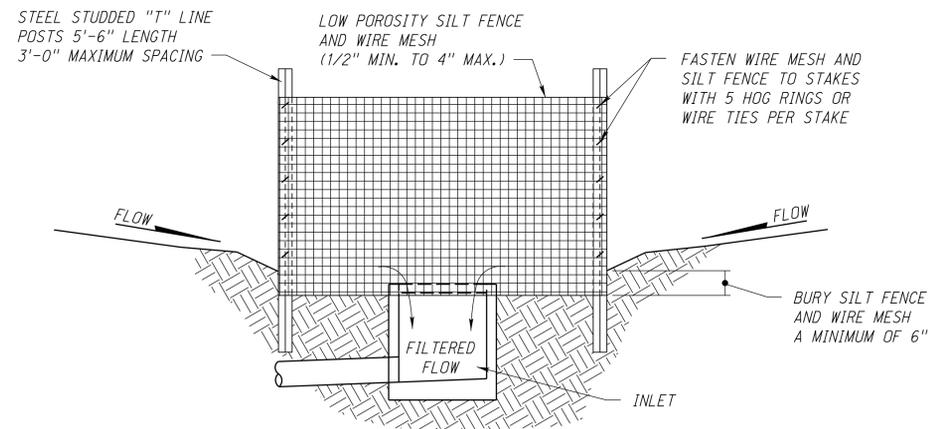
PLAN VIEW



CURB INLET PERSPECTIVE VIEW

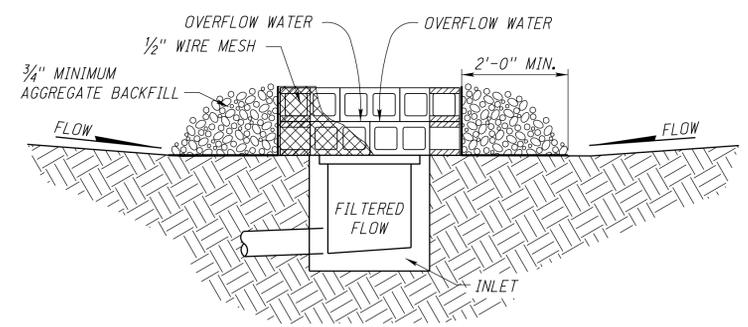


PLAN VIEW



ELEVATION SECTION D-D

WIRE MESH BACKED SILT FENCE FILTER AT INLET



SECTION E-E

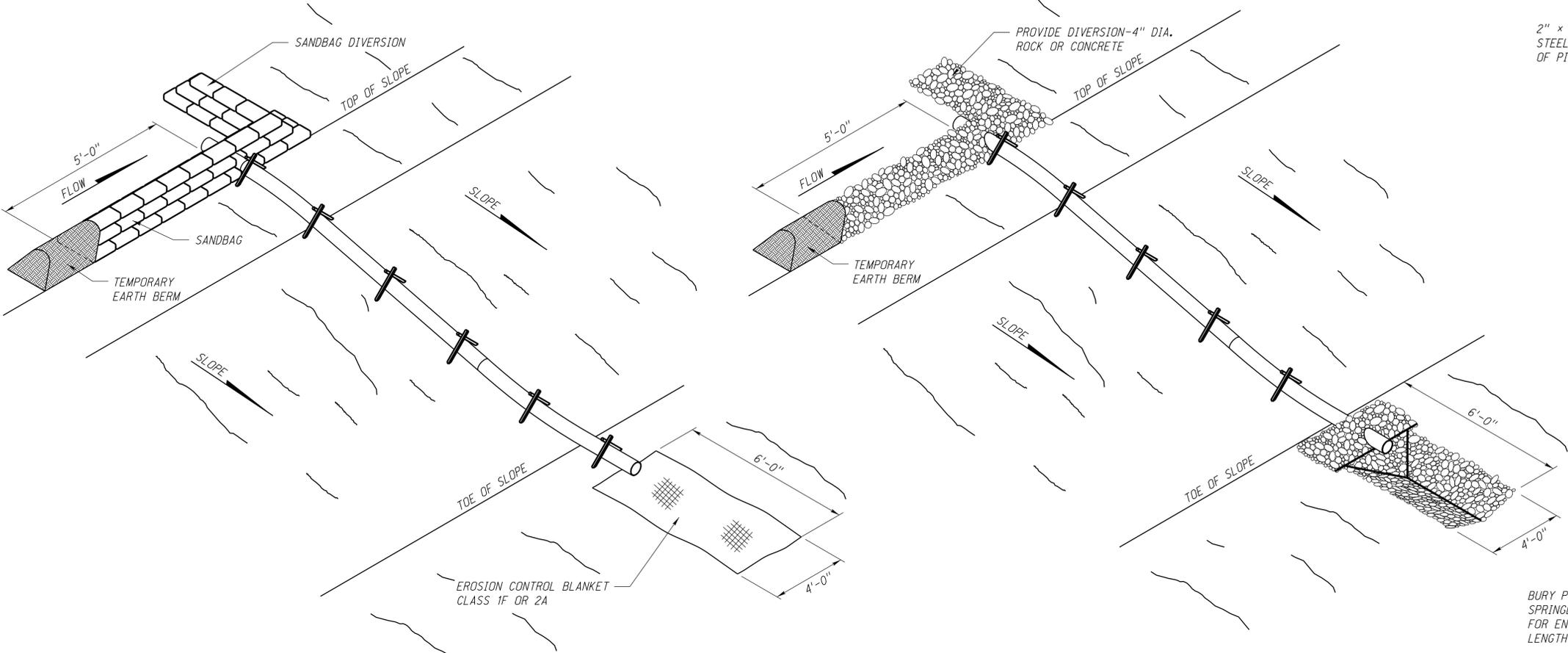
BLOCK AND GRAVEL FILTER AT INLET

NOTES:

1. APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.
2. 1/2" WIRE MESH SHALL COVER ENTIRE VERTICAL FACE OF BLOCKS AND APRON BELOW THE AGGREGATE BACKFILL.
3. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.
4. BLOCK COURSES SHOULD OFFSET TO IMPROVE STRUCTURAL STABILITY.

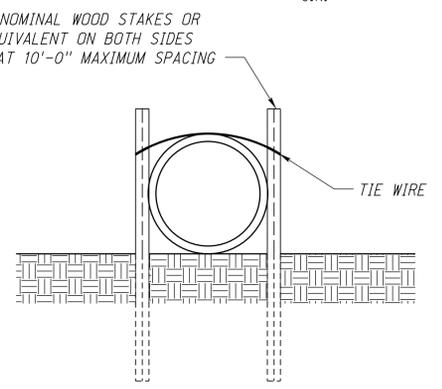


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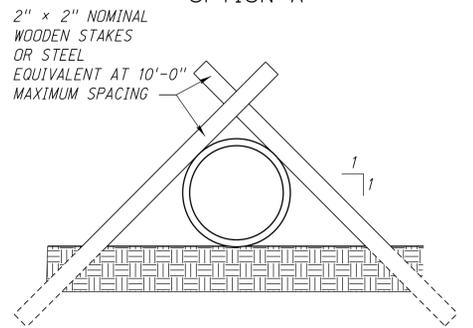


INLET OPTION A

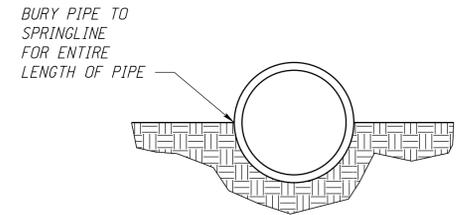
INLET OPTION B



OPTION A



OPTION B



OPTION C

BURY PIPE TO SPRINGLINE FOR ENTIRE LENGTH OF PIPE

SLOPE DRAIN ANCHORING OPTIONS

NOTES:

PLACE SLOPE DRAIN ON UNDISTURBED SOIL OR WELL COMPACTED FILL. CAREFULLY COMPACT COHESIVE SOILS AROUND INLET END OF THE DRAIN IN 6" LIFTS.

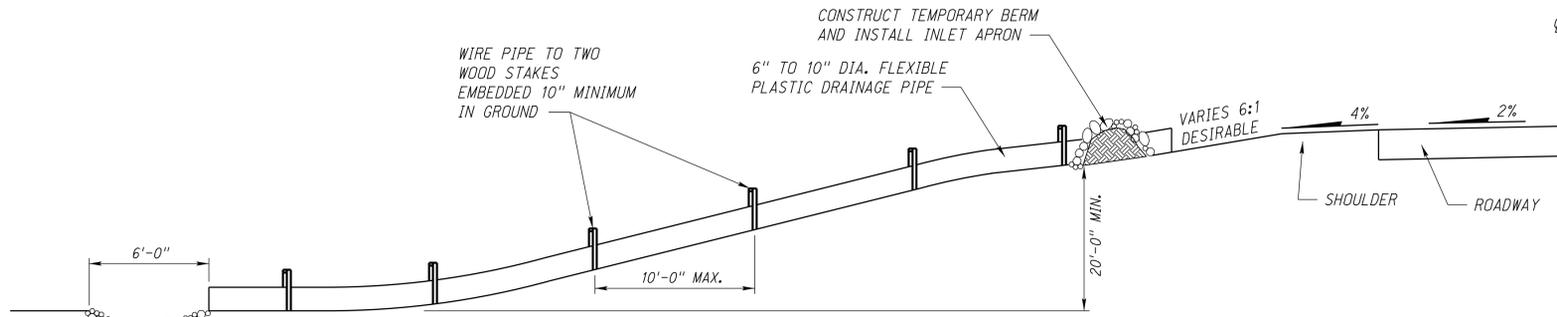
DISCHARGE SLOPE DRAIN TO A STABLE OUTLET OR TO A SEDIMENT RETENTION DEVICE.

PROVIDE PIPE AND APRONS OF DIAMETER SPECIFIED. PERFORATED PIPE IS NOT ALLOWED.

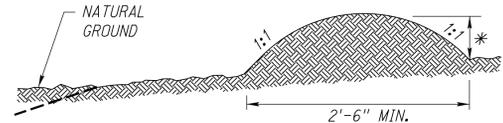
MULTIPLE PIPES MAY BE USED IN CONJUNCTION TO GAIN ADDITIONAL DRAINAGE VOLUME.

TEMPORARY BERM SHOULD BE USED TO DIRECT DRAINAGE INTO SLOPE DRAIN INLET.

OPTIONS A, B & C ARE INTERCHANGEABLE UNLESS SPECIFIED



TEMPORARY DOWN DRAIN ON FORESLOPE



TYPICAL SECTION OF TEMPORARY EARTH BERM
* 1 FT. MINIMUM OR VARIES

SLOPE DRAIN DESIGN GUIDELINES				
PIPE	BERM HEIGHT (H)	CAPACITY (HW-TOP OF PIPE)	LAND USE (MAX AREA FOR 2-YR STORM)	
			PAVEMENT	GRASS/PASTURE/CROP
6" HDPE	12"	0.4 CFS	0.1 ACRE	0.25 ACRE
8" HDPE	14"	0.8 CFS	0.2 ACRE	0.50 ACRE
10" HDPE	16"	1.4 CFS	0.4 ACRE	0.85 ACRE

HDPE - HIGH DENSITY POLYETHYLENE PIPE
HEIGHT OF SANDBAG OR ROCK CHECK DIVERSION IS H+4"

- BERMS SHALL BE USED TO INTERCEPT AND DIVERT DRAINAGE TO A DESIGNATED OUTLET.
- BERMS SHALL NOT BE USED WHERE DRAINAGE AREA EXCEEDS 10 ACRES.
- BERM MATERIAL SHALL BE COMPACTED WITH THE WHEELS OF THE EQUIPMENT USED TO CONSTRUCT IT.



SILT CHECK: SLOPE, SPACING, AND DIAMETER		
SLOPE	SPACING (FEET)	DIAMETER (INCH)
LESS THAN 50:1	100	9
50:1 - 10:1	75	12
5:1 - 3:1	40	12
3:1 - 2:1	25	12
GREATER THAN 2:1	15	12

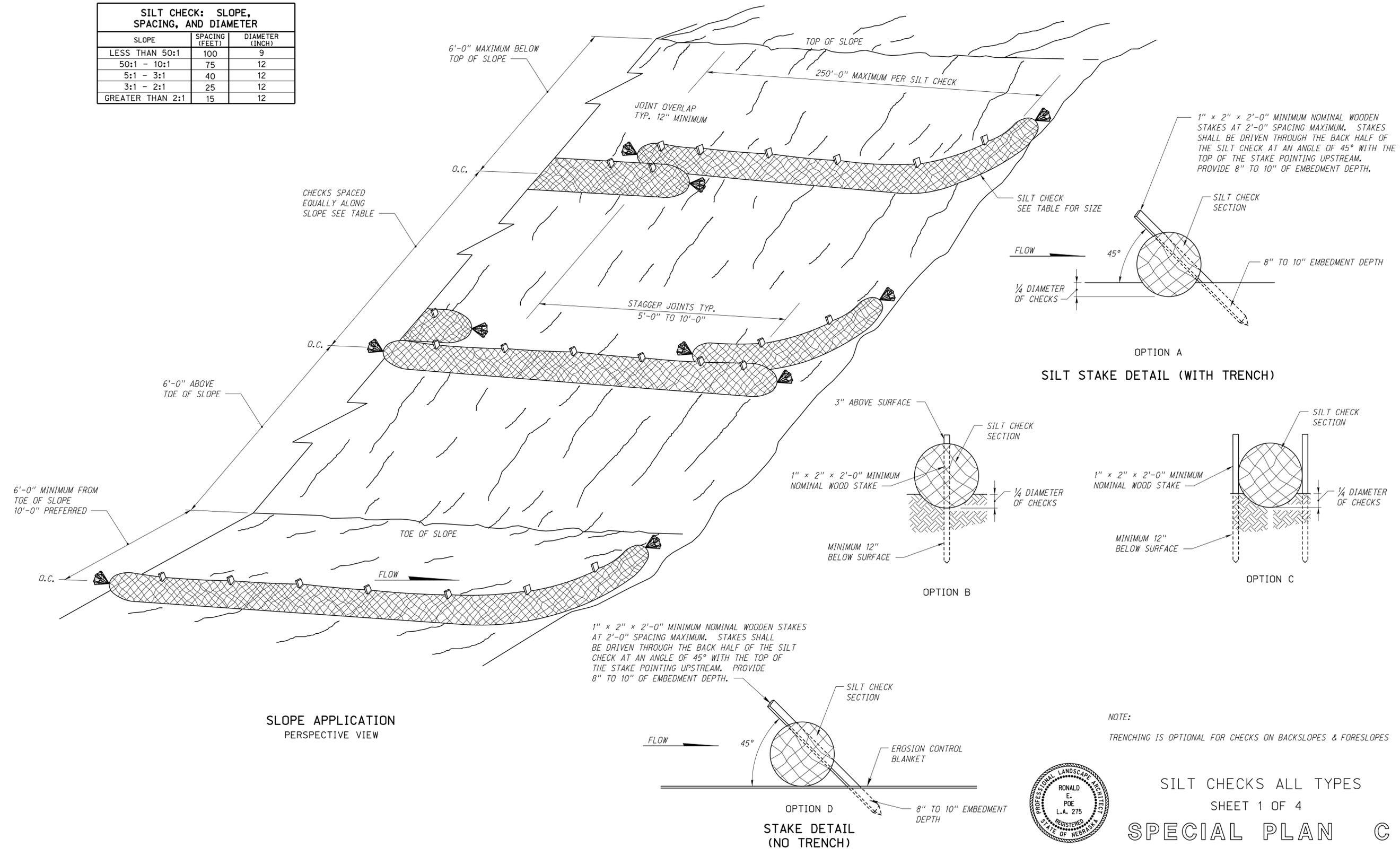
ROADWAY DESIGN DIVISION

Computer: DRDESIGN147

User: dcr13017

Date: 14-JUL-2016 12:37

File: 51041e00.dgn
Scale: 1:100
SHEET 1 OF 4



NOTE:
TRENCHING IS OPTIONAL FOR CHECKS ON BACKSLOPES & FORESLOPES

SILT CHECKS ALL TYPES
SHEET 1 OF 4
SPECIAL PLAN C

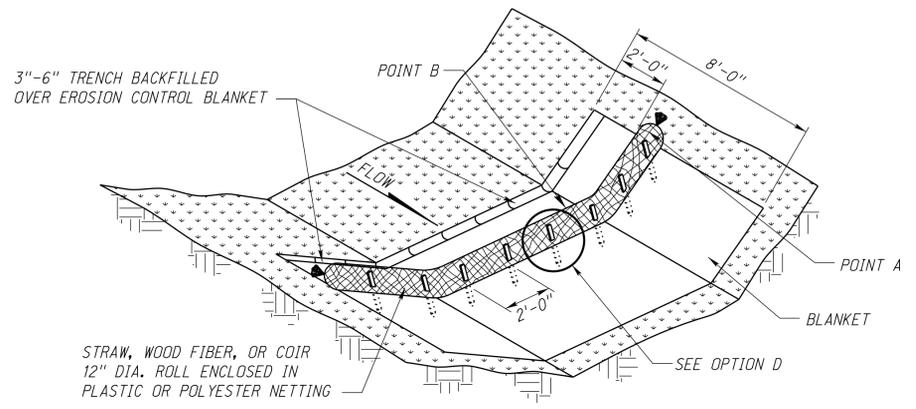
ROADWAY DESIGN DIVISION

Computer: DRDESIGN147

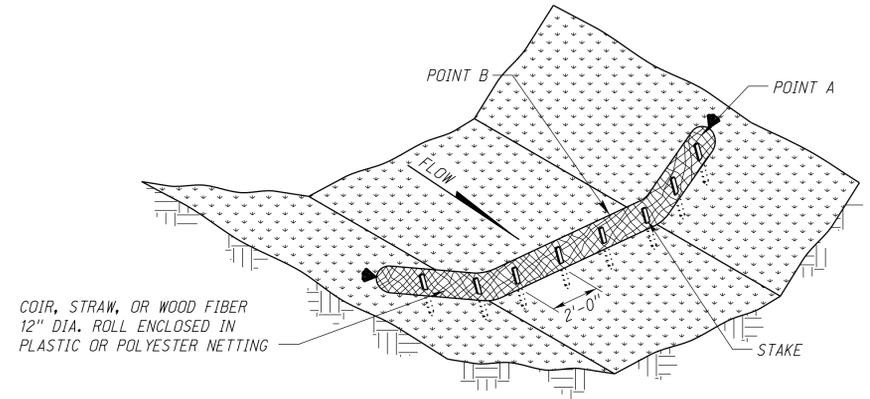
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Date: 14-JUL-2016 12:37

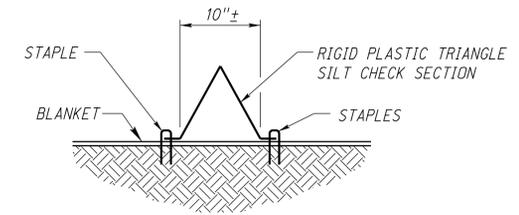
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SHEET 2 OF 4



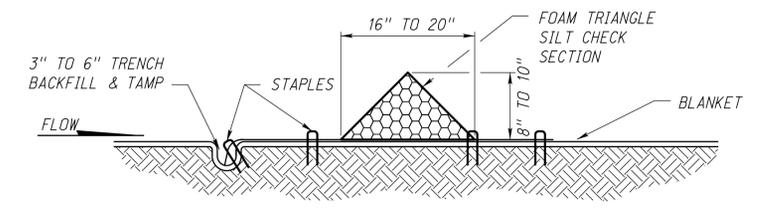
TYPE 2 & 3: HIGH & LOW WITH EROSION CONTROL



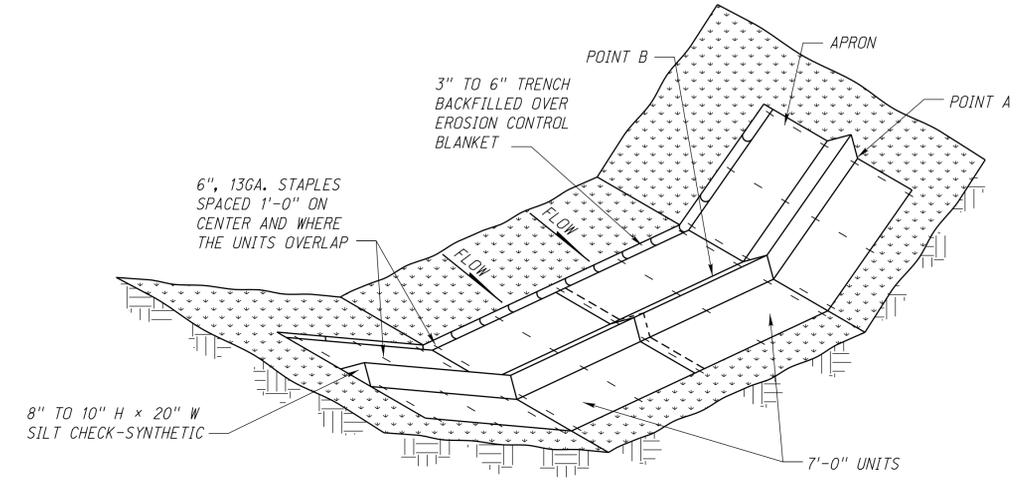
TYPE 1, 2 & 3: HIGH & LOW USE ON ROUGH GRADED & BARE SOIL AREAS



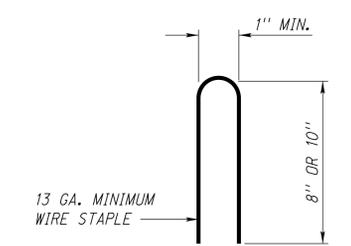
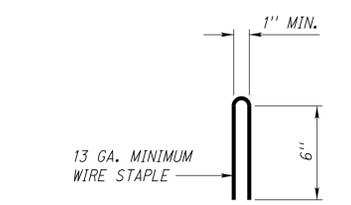
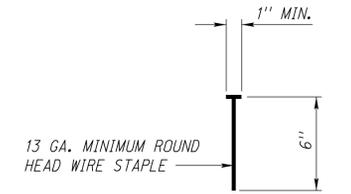
TYPE 4 SECTION



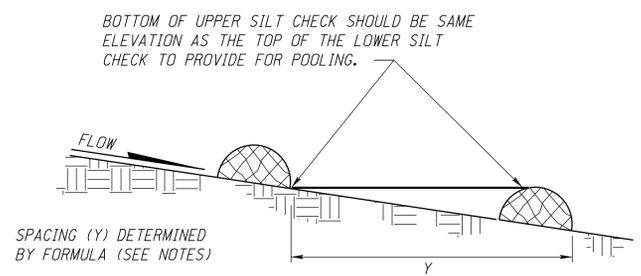
TYPE 4 SECTION



SILT CHECK: TYPE 4



WIRE STAPLE DETAIL



SILT CHECK SPACING-DITCH

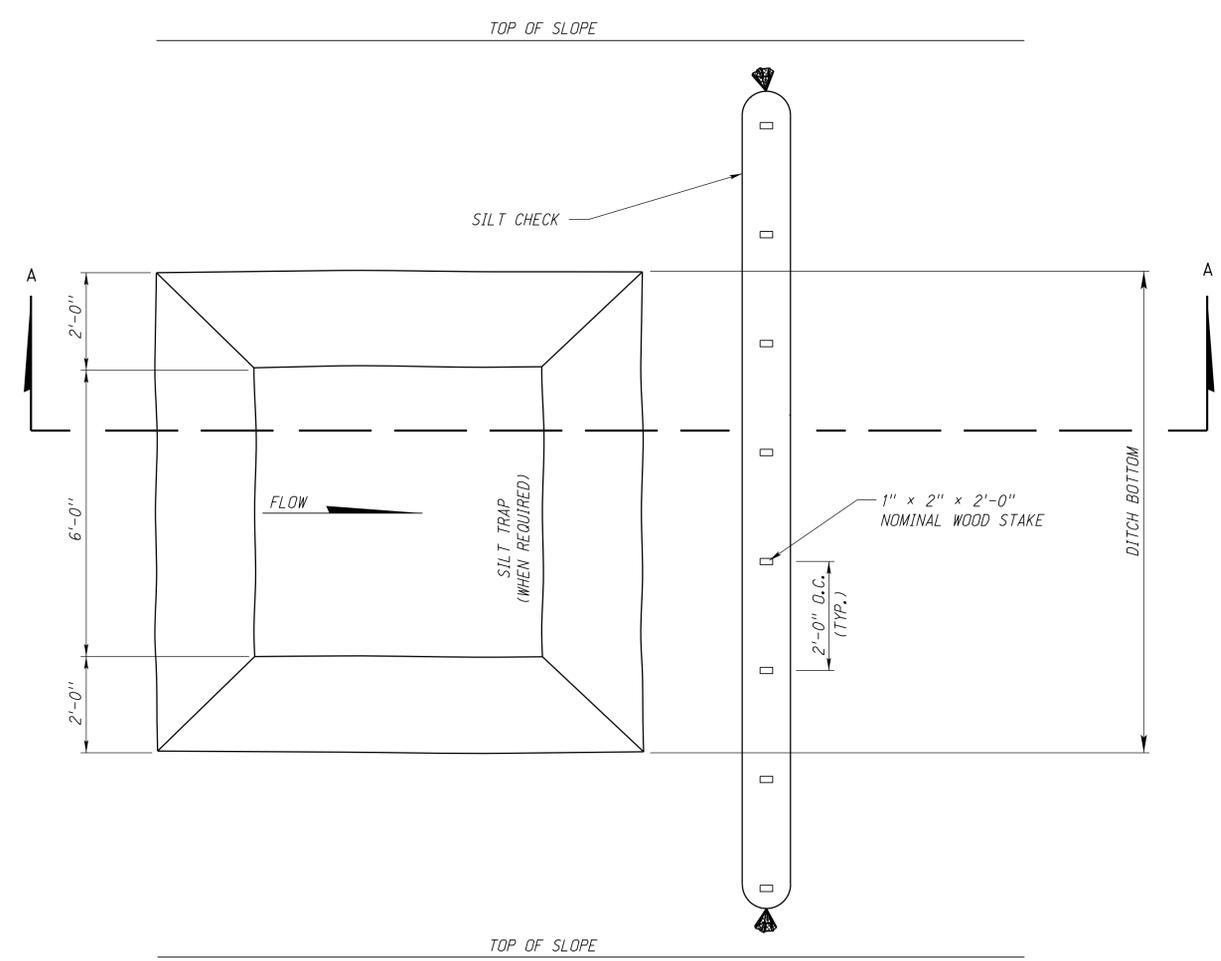
NOTES:

- APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

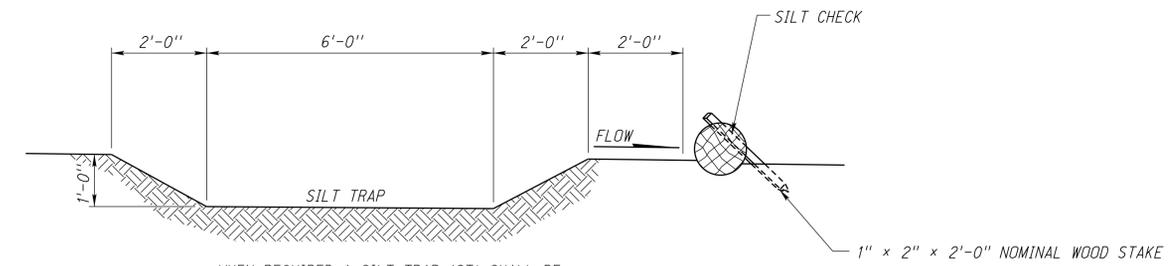
$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{SILT CHECK HEIGHT (FT.)}}{\% \text{ CHANNEL SLOPE}} \times 100$$
- POINT A MUST BE A MINIMUM OF 6" HIGHER THAN POINT B TO ENSURE THAT WATER FLOWS OVER THE CHECK AND NOT AROUND THE ENDS.
- PERMANENT ROCK CHECKS PLACED WITHIN THE CLEAR ZONE WILL NEED TO BE 18" OR LESS IN HEIGHT. A 10:1 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.
- THE TRENCH ON THE UPSTREAM SIDE OF THE SILT CHECK IS NOT REQUIRED IF THE EROSION CONTROL BLANKET CONTINUES IN THE ENTIRE LENGTH OF THE DITCH.
- THE MANUFACTURERS RECOMMENDED INSTALLATION DETAILS SHALL GOVERN OVER THE PLANS.
- SEE STAKING DETAIL SHEET 1 OF 4



File: 51041e00.dgn
 Scale: 1:100
 SHEET 3 OF 4
 Date: 14-JUL-2016 12:37
 User: dcr13017
 Computer: DRDESIGN147
 ROADWAY DESIGN DIVISION

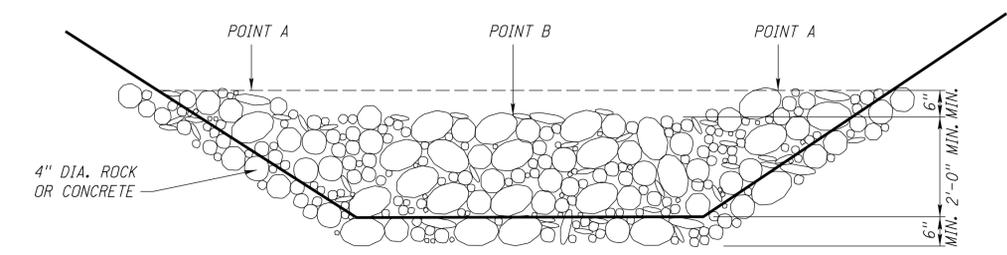


PLAN VIEW
FOR FLAT BOTTOM DITCH

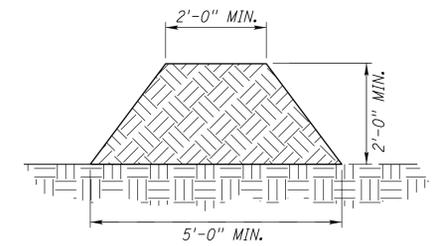


WHEN REQUIRED A SILT TRAP (ST) SHALL BE EXCAVATED TO THE WIDTH OF THE DITCH AND NO DIRECT PAYMENT WILL BE MADE.

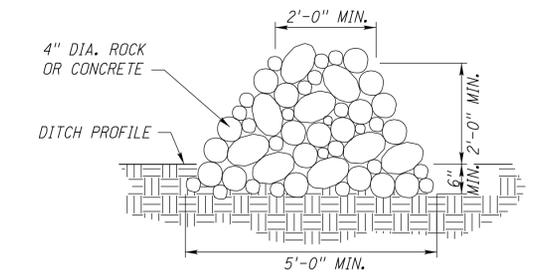
SECTION A-A



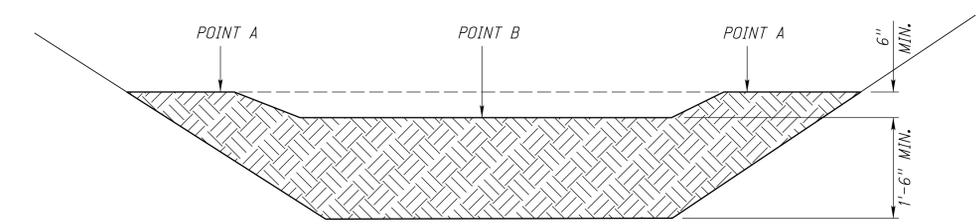
ROCK CHECK
ELEVATION VIEW



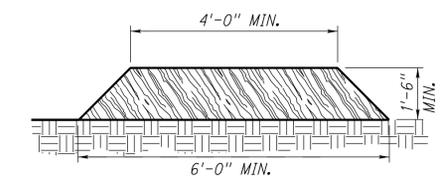
EARTH-SLASH MULCH PERIMETER BERM
CROSS SECTION



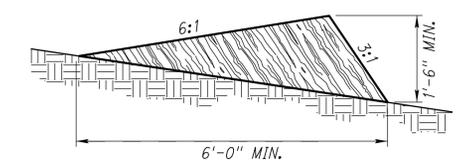
ROCK CHECK
CROSS SECTION



EARTH-SLASH MULCH CHECK
ELEVATION VIEW



CROSS SECTION
SILT CHECK-SLASH MULCH
OPTION A



CROSS SECTION
SILT CHECK-SLASH MULCH
OPTION B

SEE STAKING DETAIL SHEET 1 OF 4

SILT CHECKS ALL TYPES
SHEET 3 OF 4



SPECIAL PLAN C

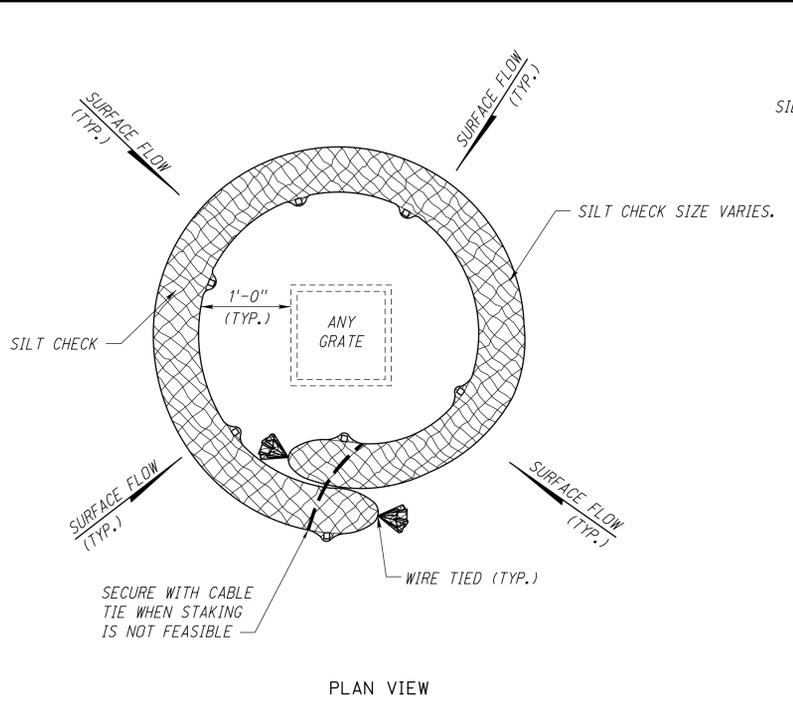
ROADWAY DESIGN DIVISION

Computer: DRDESIGN147

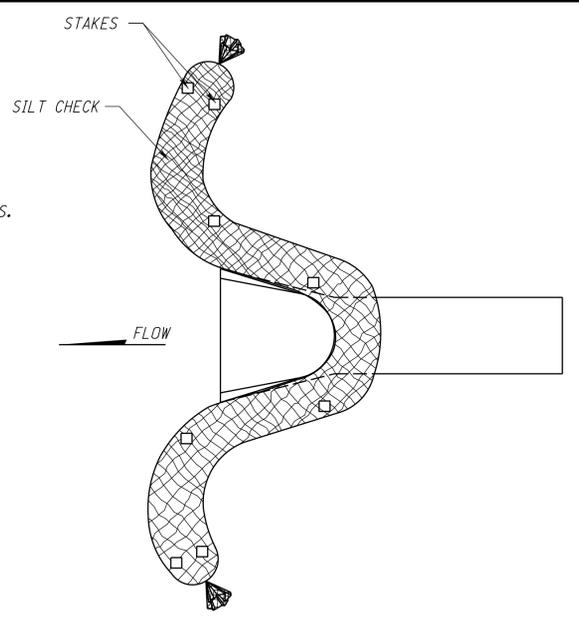
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Date: 14-JUL-2016 12:37

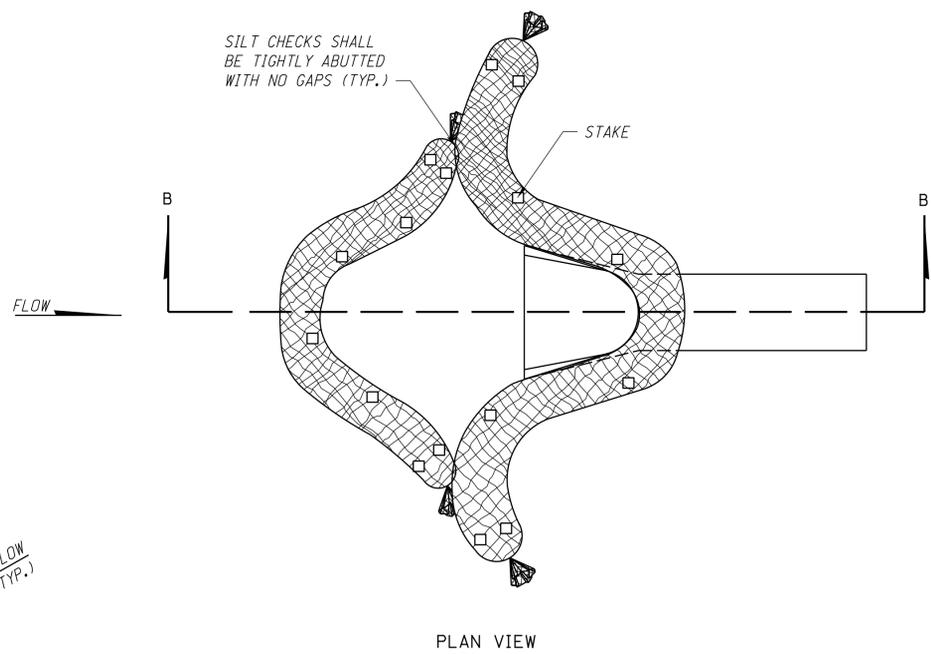
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SHEET 4 OF 4



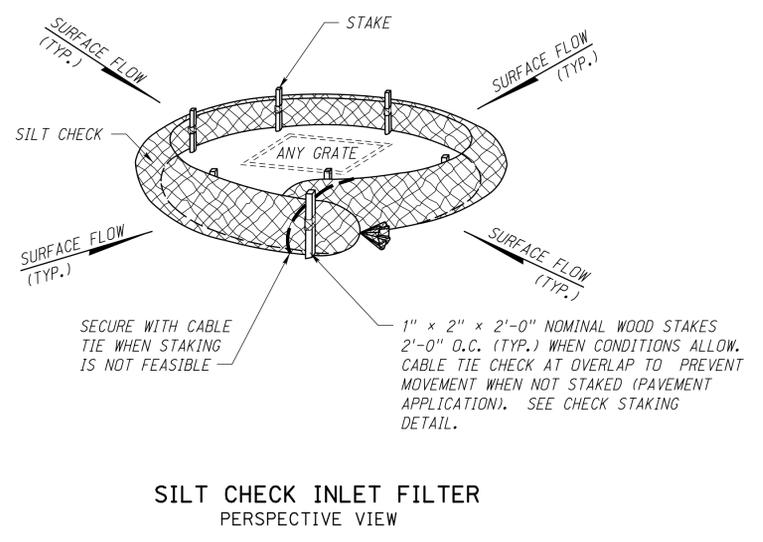
PLAN VIEW



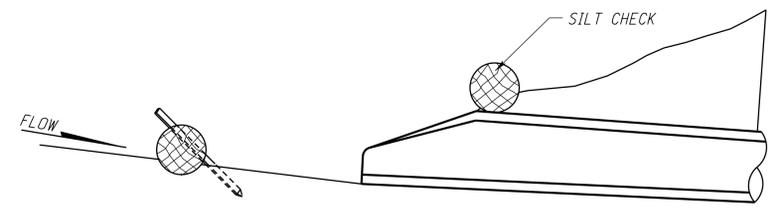
SILT CHECK OUTLET PROTECTION



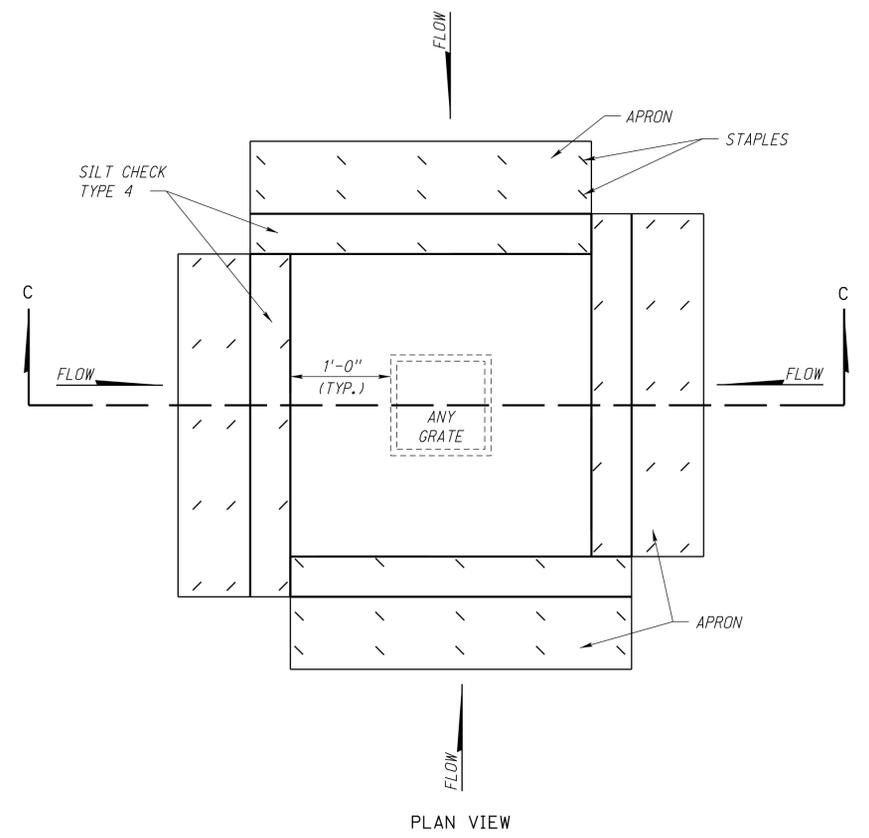
PLAN VIEW
SILT CHECK INLET PROTECTION



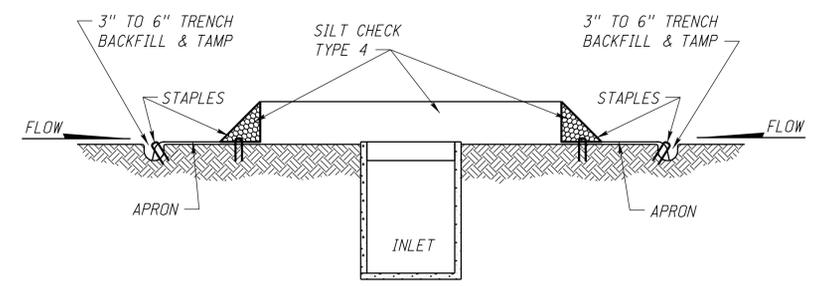
SILT CHECK INLET FILTER
PERSPECTIVE VIEW



SECTION B-B



PLAN VIEW



SECTION C-C
SILT CHECK TYPE 4
AT INLET

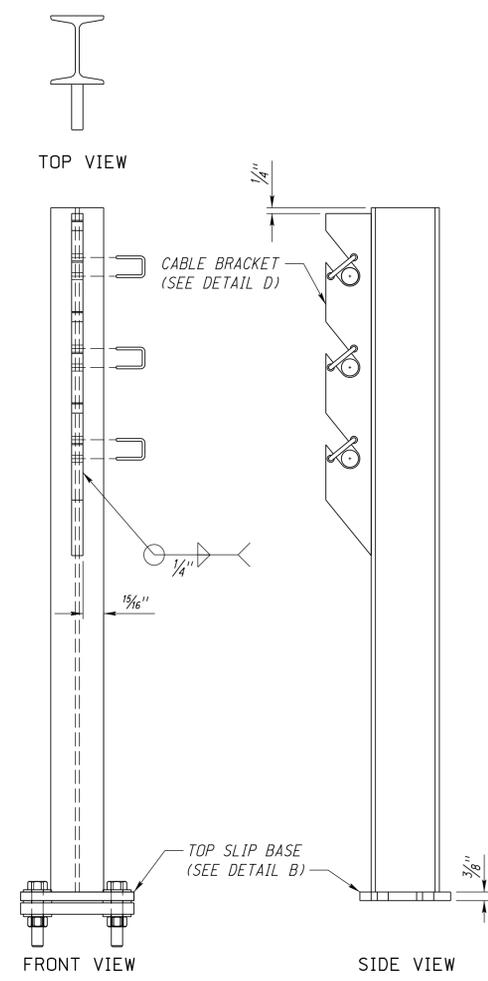
SEE STAKING DETAIL SHEET 1 OF 4

SILT CHECKS ALL TYPES
SHEET 4 OF 4

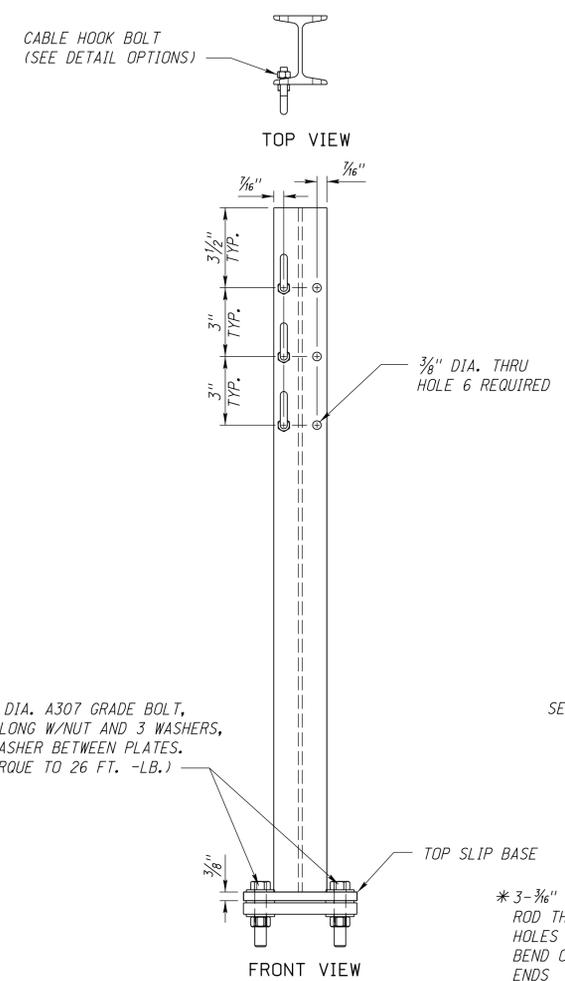
SPECIAL PLAN C



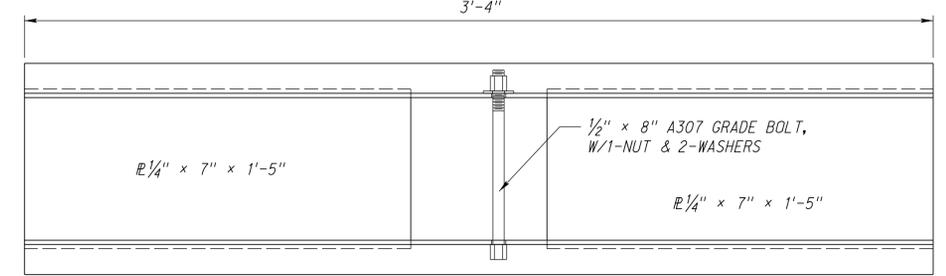
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 Date: 14-JUL-2016 12:37
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 SHEET 2 OF 3 T0201e02



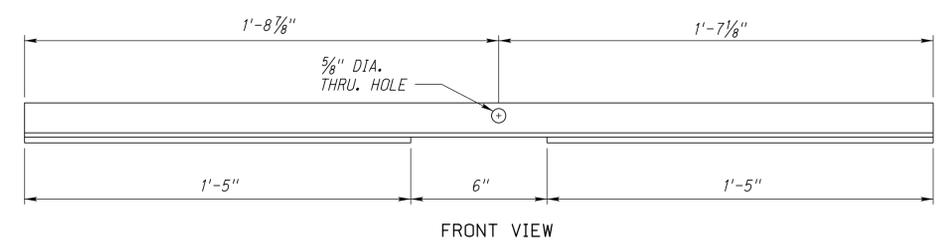
CABLE SUPPORT POST
POST NO. 2
S3 x 5.7 x 2'-6"



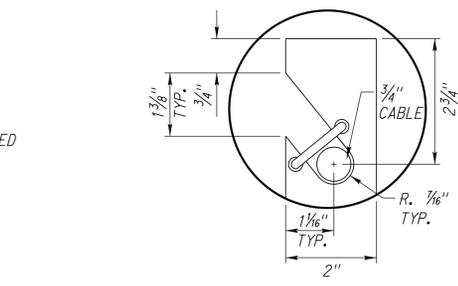
CABLE SUPPORT POST
POST NO. 3-7
S3 x 5.7 x 2'-6"



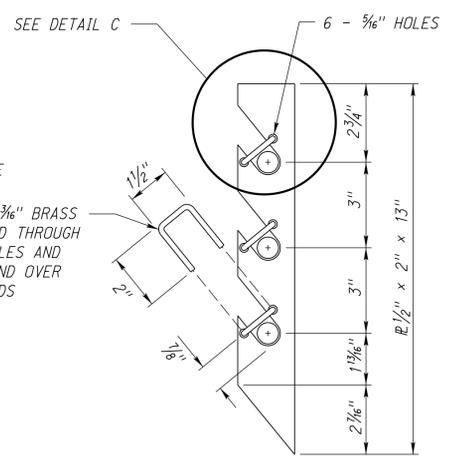
PLAN VIEW



BEARING STRUT
(POST 2)

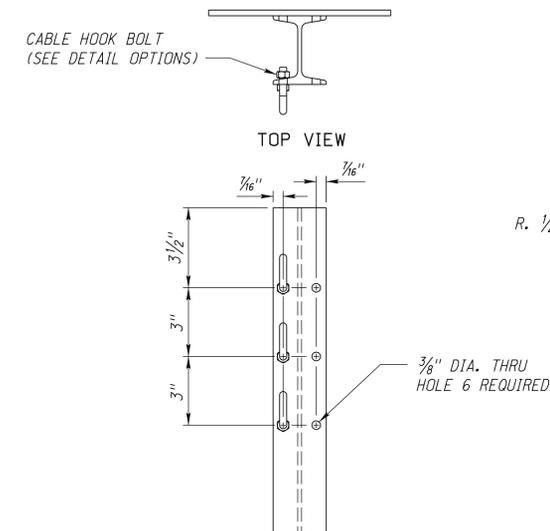
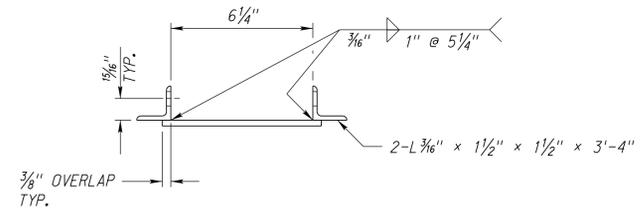


DETAIL C

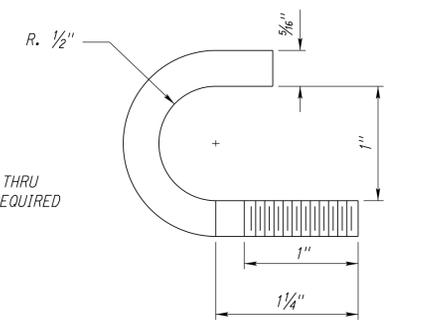


CABLE BRACKET
DETAIL D

* 3/16" BRASS ROD (OPTIONAL) IS FOR CONSTRUCTION PURPOSES ONLY, MAY BE LEFT IN PLACE AT END OF CONSTRUCTION OR REMOVED.

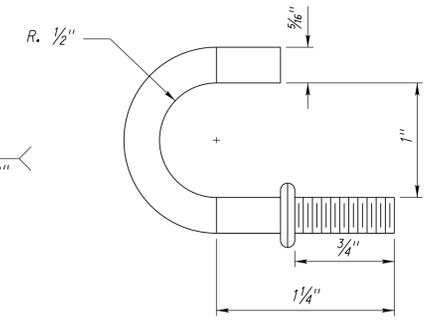


STANDARD LINE POST
POST NO. 8 & BEYOND
S3 x 5.7 x 5'-3"



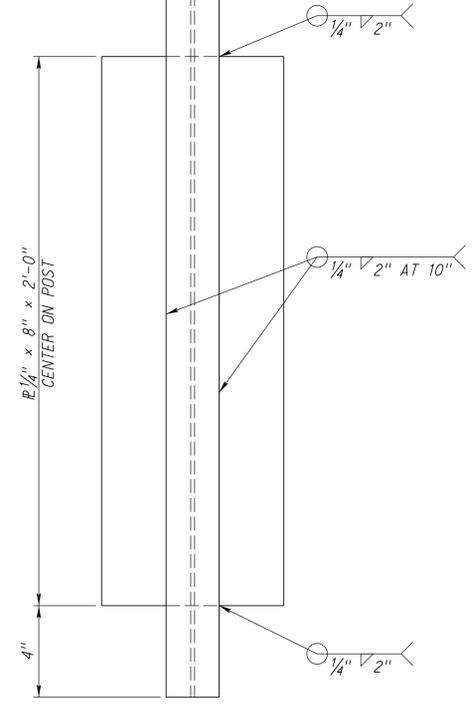
USE 2 HEX NUTS TO FASTEN TO POST

CABLE HOOK BOLT
DETAIL OPTION 1



USE 1 HEX NUT TO FASTEN TO POST

CABLE HOOK BOLT
DETAIL OPTION 2



FRONT VIEW



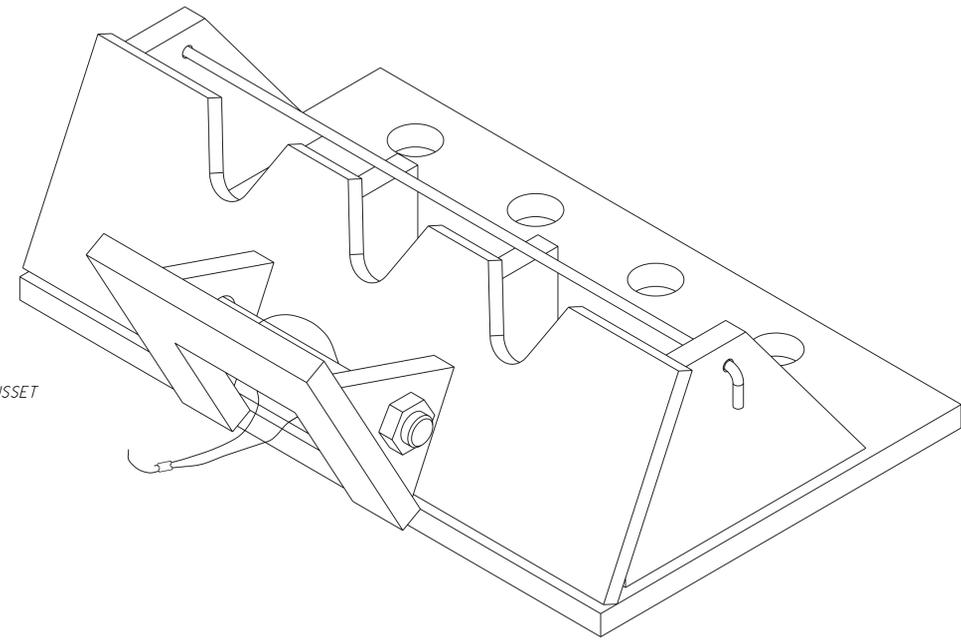
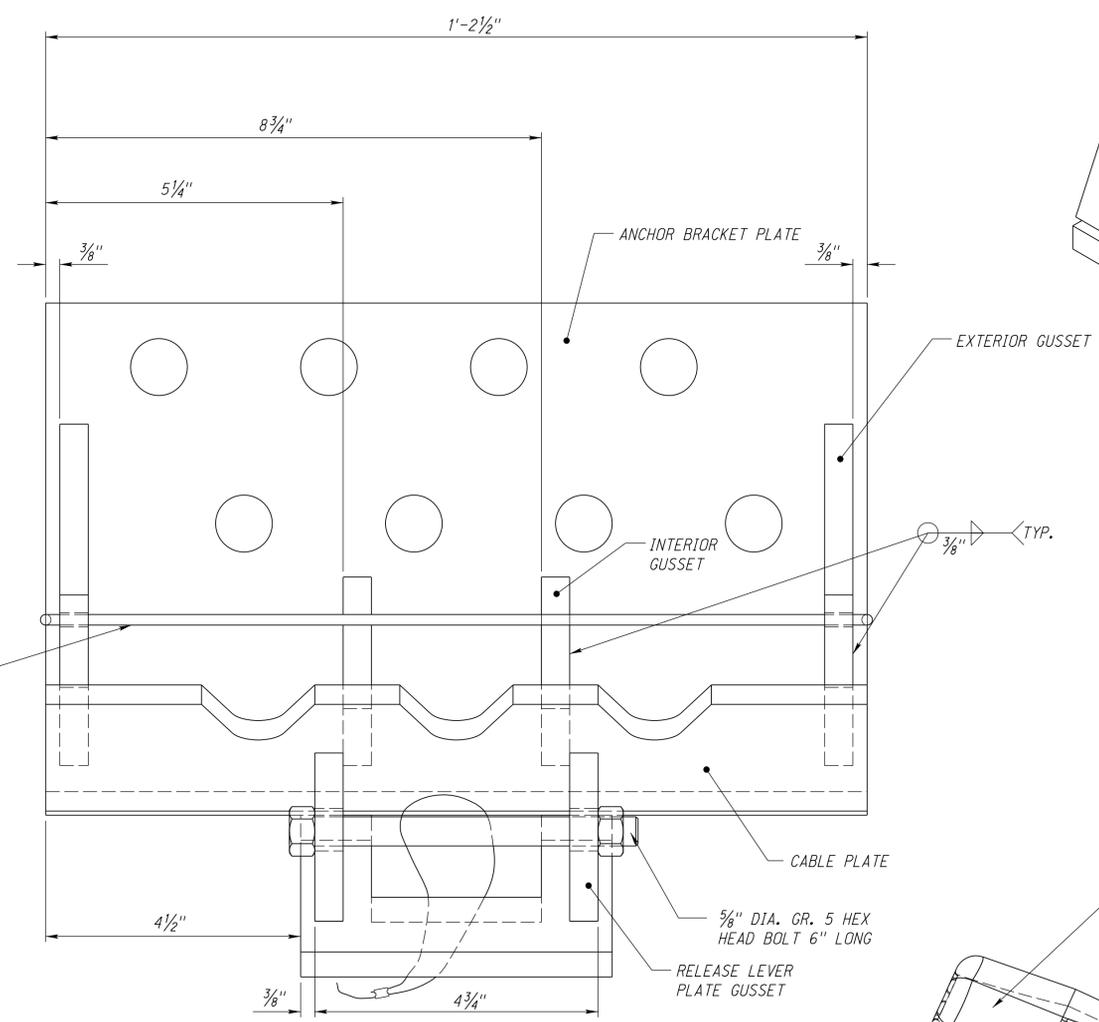
CABLE GUARDRAIL
SHEET 2 OF 5

PRIOR TO FINAL ACCEPTANCE BY THE STATE, THE FOLLOWING VALUES SHALL BE USED TO TIGHTEN THE TURNBUCKLES, DEPENDING ON THE TEMPERATURE AT THE TIME OF THE ADJUSTMENT.

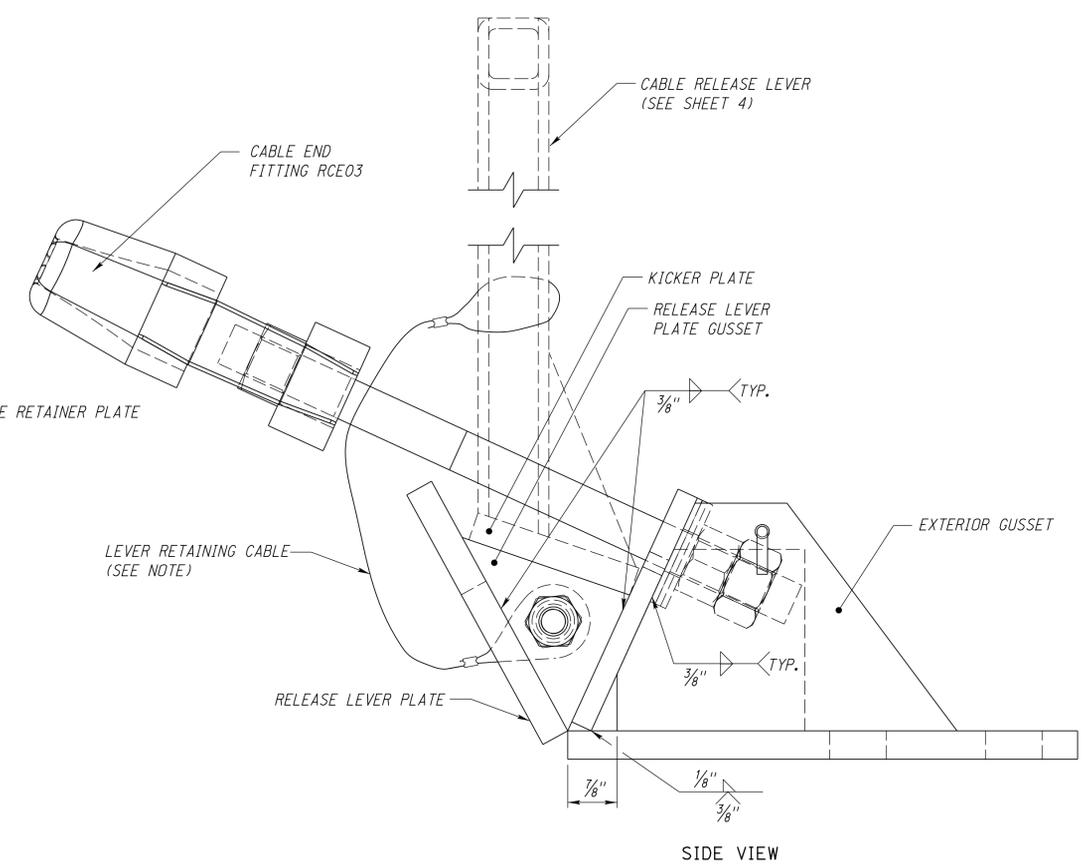
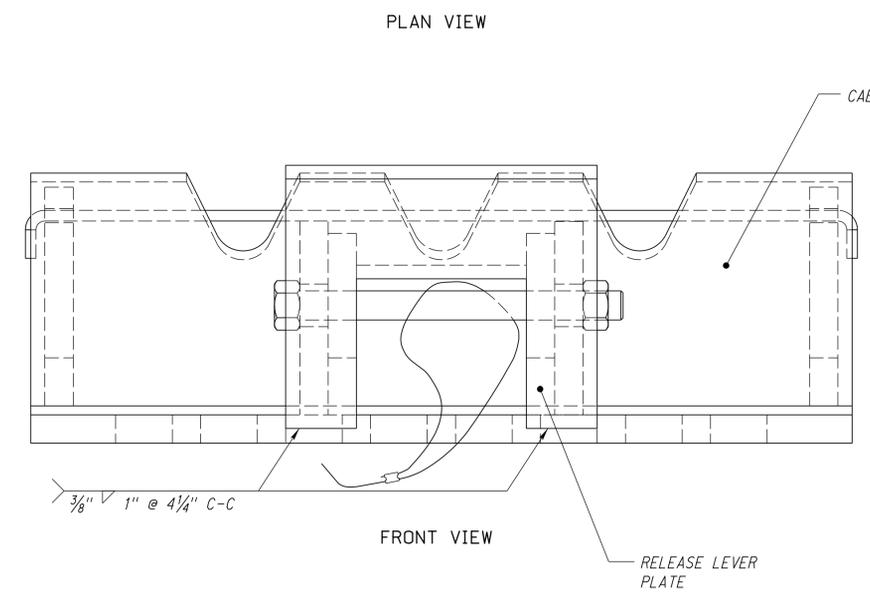
TEMPERATURE (DEGREE)	SPRING COMPRESSION
110 TO 120	1"
100 TO 109	1 1/4"
90 TO 99	1 1/2"
80 TO 89	1 3/4"
70 TO 79	2"
60 TO 69	2 1/4"
50 TO 59	2 1/2"
40 TO 49	2 3/4"
30 TO 39	3"
20 TO 29	3 1/4"
10 TO 19	3 1/2"
0 TO 9	3 3/4"
-10 TO -1	4"
-20 TO -11	4 1/4"

NOTE: SPRING COMPRESSION FROM UNLOADED POSITION IN EACH SPRING.

ROADWAY DESIGN DIVISION
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 User: ddr13017
 Date: 14-JUL-2016 12:37
 File: 70201e02.dgn
 Scale: 1:100
 SHEET 3 OF 5



CABLE ANCHOR

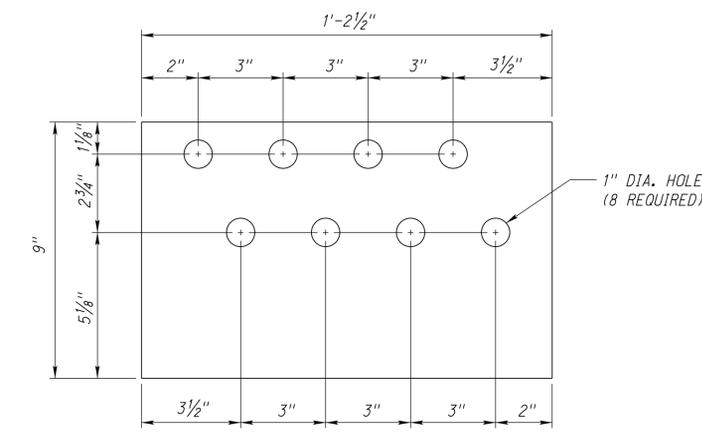


SIDE VIEW

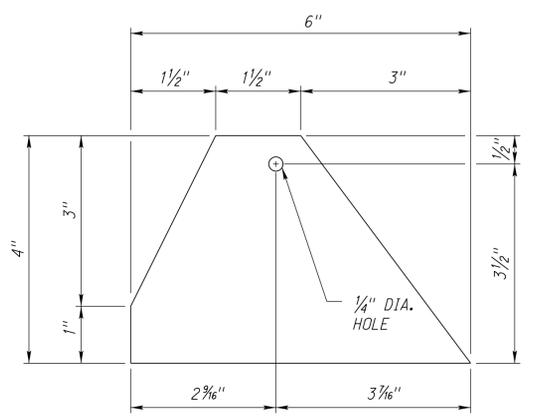
NOTE:
 ALL CABLE ENDS AND SPLICES SHALL BE DESIGNED AND SHALL DEVELOP THE FULL STRENGTH OF THE 3/4" ROUND CABLE (25,000 LBS.).
 STAGGER CABLE SPLICES, PROVIDE A MINIMUM OF 20 FT. BETWEEN ANY PAIR. PROVIDE A MINIMUM OF 100 FT. BETWEEN CABLE SPLICES ON THE SAME CABLE.
 ALL CABLES RUN OVER THE KICKER PLATE OF THE CABLE RELEASE LEVER. THE MIDDLE CABLE RUNS THROUGH THE LEVER UPRIGHTS.
 THE RETAINING CABLE IS GALVANIZED, 3/8" DIA. x 3 FT. LONG WITH 3" LONG LOOPS AND 1" CLIPS.



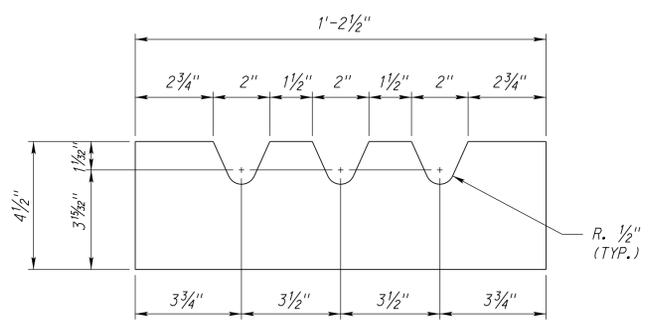
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 SHEET 4 OF 5
 T0201e02



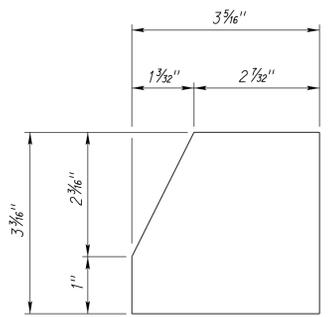
ANCHOR BRACKET PLATE
 $\mathbb{R} 1/2'' \times 9'' \times 1'-2 1/2''$



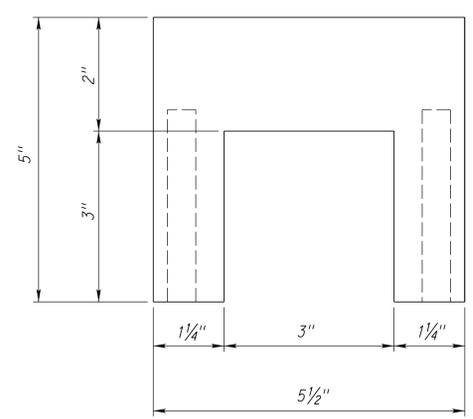
EXTERIOR GUSSET
 $\mathbb{R} 1/2'' \times 4'' \times 6''$



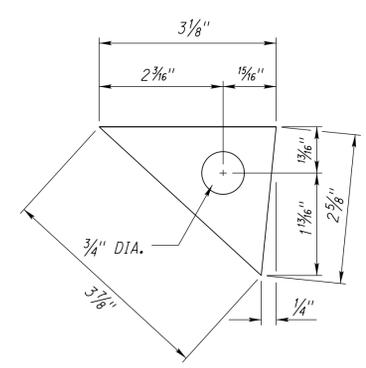
CABLE RETAINER PLATE
 $\mathbb{R} 3/8'' \times 4 1/2'' \times 1'-2 1/2''$



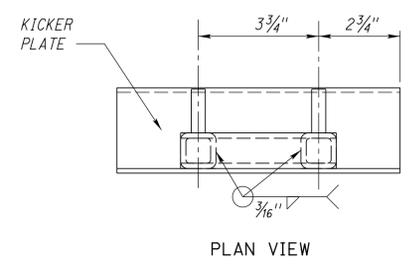
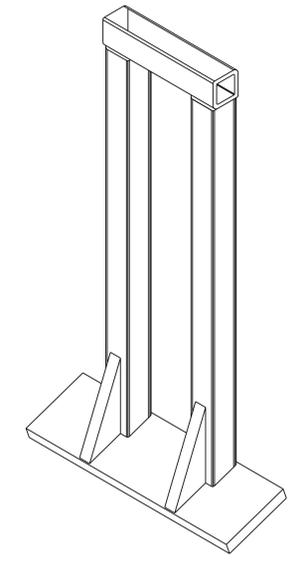
INTERIOR GUSSET
 $\mathbb{R} 1/2'' \times 3 3/16'' \times 3 3/16''$



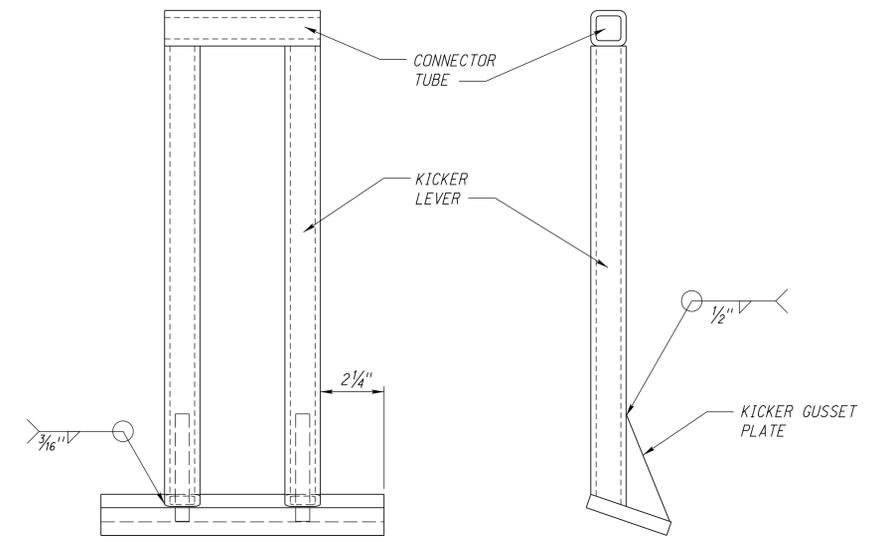
RELEASE LEVER PLATE
 $\mathbb{R} 1/2'' \times 5'' \times 5 1/2''$



RELEASE LEVER PLATE GUSSET
 $\mathbb{R} 1/2'' \times 2 5/8'' \times 3 3/8''$



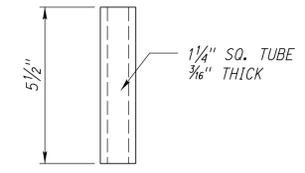
PLAN VIEW



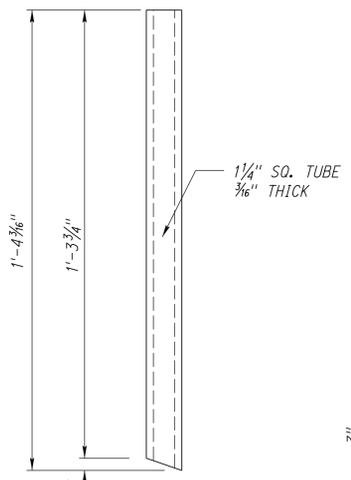
FRONT VIEW

SIDE VIEW

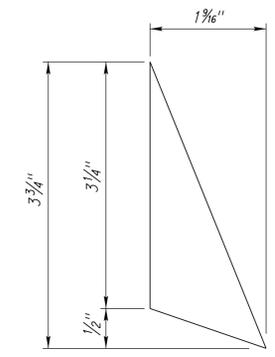
CABLE RELEASE LEVER



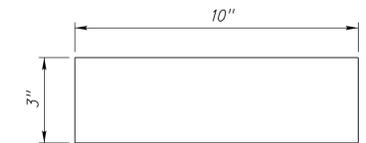
CONNECTOR TUBE



KICKER LEVER



KICKER PLATE GUSSET
 $\mathbb{R} 1/2'' \times 1 5/16'' \times 3 1/4''$



KICKER PLATE
 $\mathbb{R} 1/2'' \times 3'' \times 10''$

NOTE:
 THE KICKER LEVER SHOULD BE FLUSH WITH THE TOP OF THE KICKER PLATE, AND THE 3 1/4" LEG OF THE KICKER PLATE GUSSET SHOULD LINE UP WITH THE KICKER LEVER, AND THE BOTTOM OF THE KICKER PLATE GUSSET SHOULD ALIGN WITH THE BOTTOM OF THE KICKER PLATE.



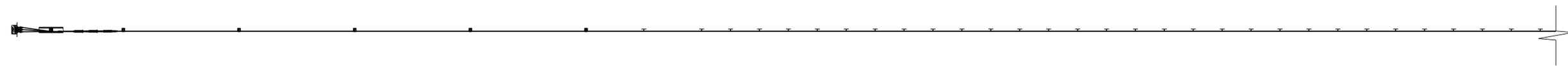
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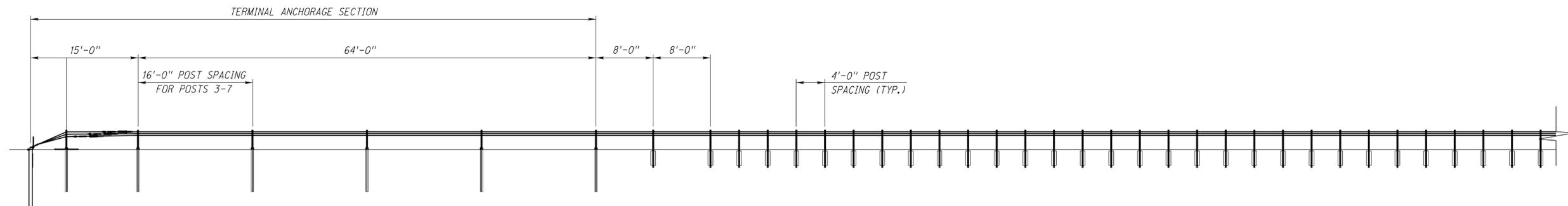
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SHEET 5 OF 5



PLAN VIEW



PROFILE VIEW



CABLE GUARDRAIL
SHEET 5 OF 5
SPECIAL PLAN C

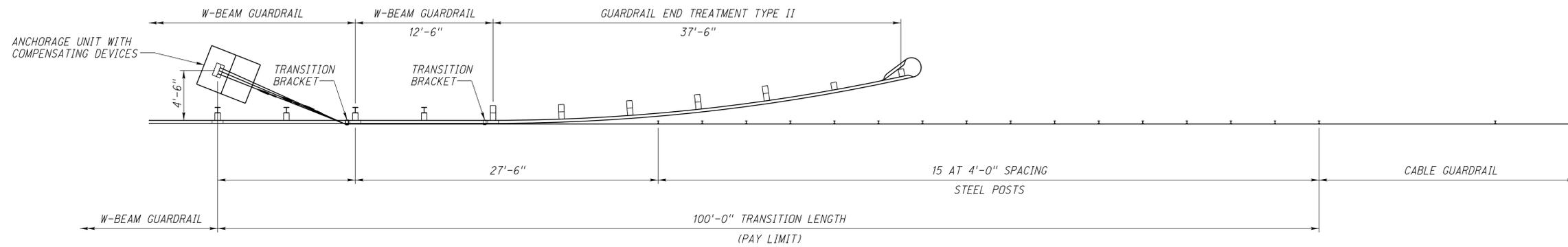
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Computer: DRDESIGN147

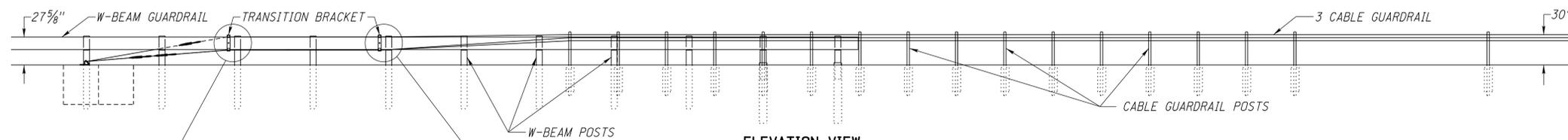
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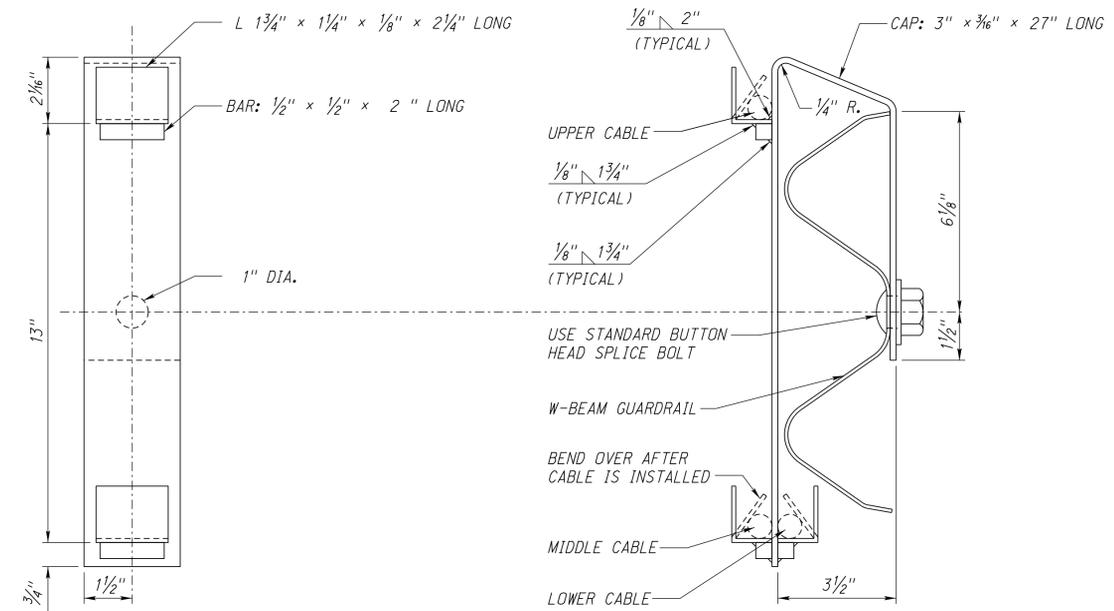
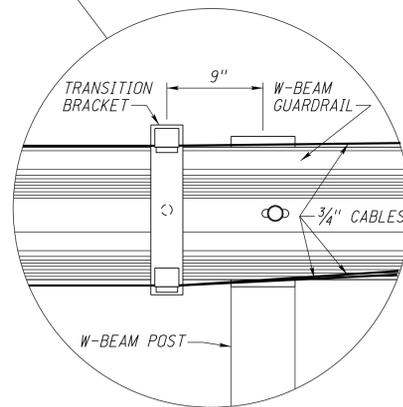
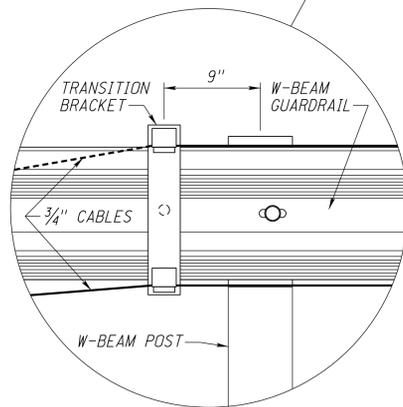
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SHEET TOP 1060-1-E-00



PLAN VIEW



ELEVATION VIEW



TRANSITION BRACKET

GENERAL NOTES:
STEEL USED IN THE FABRICATION OF THE BRACKET SHALL CONFORM TO ASTM A36.
THE BRACKET SHALL BE GALVANIZED AFTER FABRICATION ACCORDING TO ASTM A123.



CABLE GUARDRAIL TO
W-BEAM GUARDRAIL TRANSITION
SHEET OF
SPECIAL PLAN C

CONNECTION NOTES:

FOR DIVIDED ROADWAY

INSTALL THRIE-BEAM END SHOE, BETWEEN NESTED GUARDRAIL ELEMENTS. (SUBSIDIARY TO BRIDGE APPROACH SECTION)

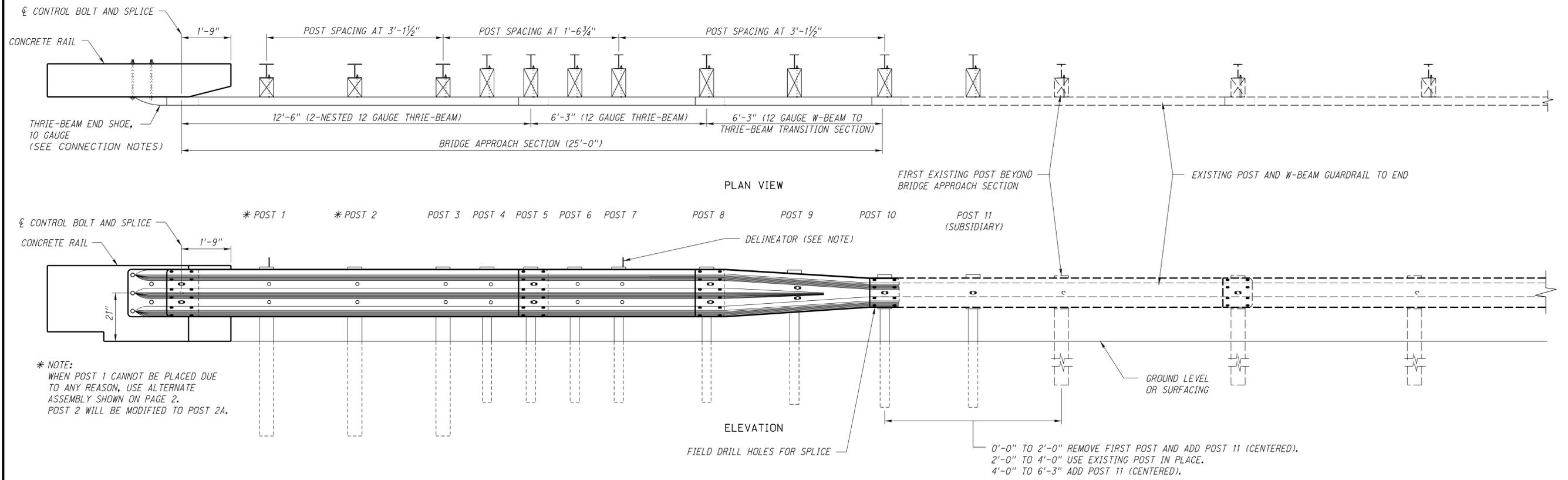
FOR 2-LANE ROADWAY

FOR APPROACHING TRAFFIC INSTALL THRIE-BEAM END SHOE, BETWEEN NESTED GUARDRAIL ELEMENTS. (SUBSIDIARY TO BRIDGE APPROACH SECTION)

FOR OFF END CONNECTIONS INSTALL THRIE-BEAM END SHOE, OUTSIDE OF THE NESTED GUARDRAIL ELEMENTS. (SUBSIDIARY TO BRIDGE APPROACH SECTION)

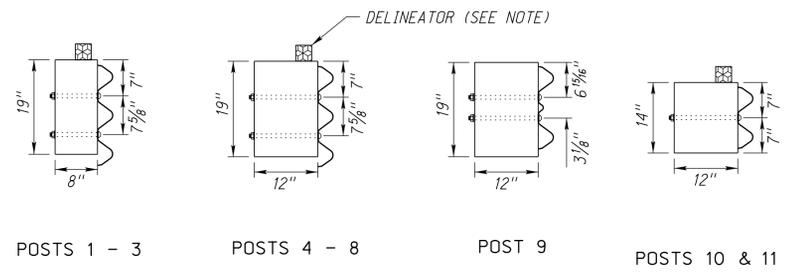
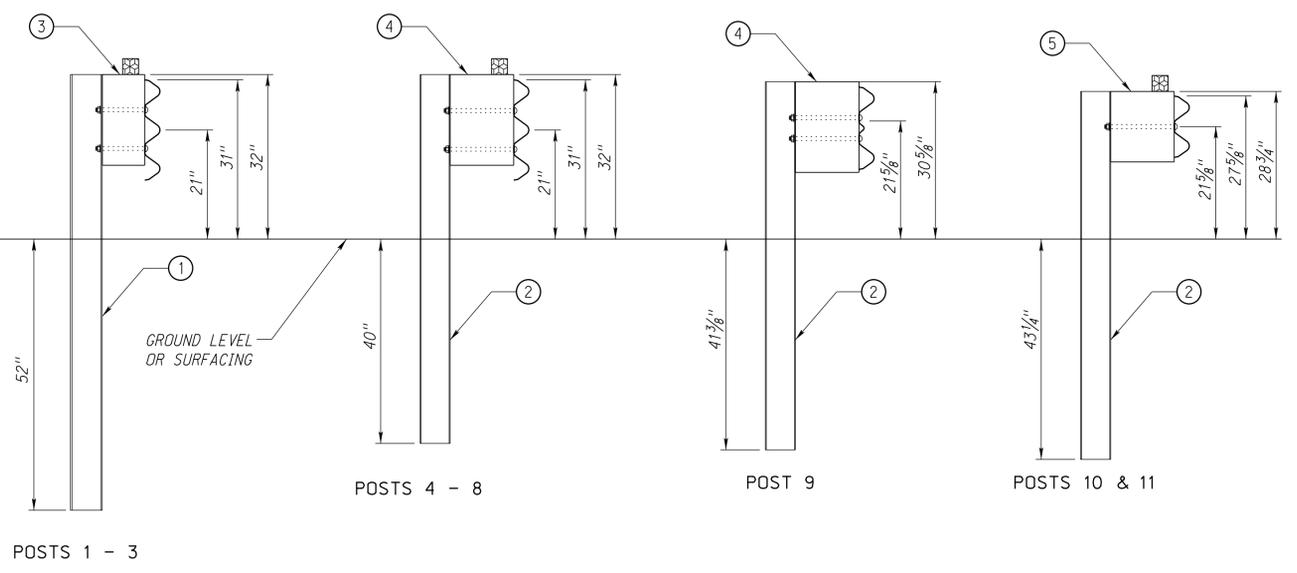
LEGEND

- ① W6 x 15 x 7' POST
- ② W6 x 9 x 6' POST
- ③ 6" x 8" x 19" OFFSET BLOCK
- ④ 6" x 12" x 19" OFFSET BLOCK
- ⑤ 6" x 12" x 14" OFFSET BLOCK



* NOTE:
WHEN POST 1 CANNOT BE PLACED DUE TO ANY REASON, USE ALTERNATE ASSEMBLY SHOWN ON PAGE 2. POST 2 WILL BE MODIFIED TO POST 2A.

0'-0" TO 2'-0" REMOVE FIRST POST AND ADD POST 11 (CENTERED).
2'-0" TO 4'-0" USE EXISTING POST IN PLACE.
4'-0" TO 6'-3" ADD POST 11 (CENTERED).



DELINEATOR NOTES:
YELLOW DELINEATORS ON LEFT AND WHITE DELINEATORS ON RIGHT.
DELINEATORS ARE A MINIMUM OF 3" HIGH AND ARE DOUBLE-FACED HIGH INTENSITY DELINEATORS.
DELINEATORS SUBSIDIARY TO BRIDGE APPROACH SECTION.

BLOCK DETAILS



BRIDGE APPROACH SECTION
31" TO EXISTING 27 5/8"
SHEET OF
SPECIAL PLAN C

ROADWAY DESIGN DIVISION
 Computer: DRDESIGN147
 User: ddr13017
 Date: 14-JUL-2016 12:38
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 SHEET 1 OF 2 7039_1.e_02

Special Plan 7044 is also Required When Using This Plan.

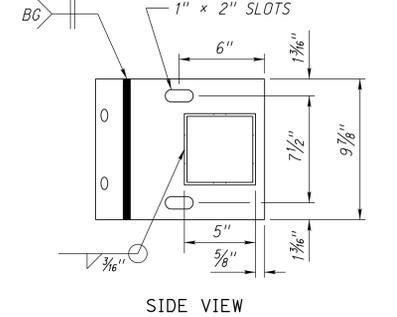
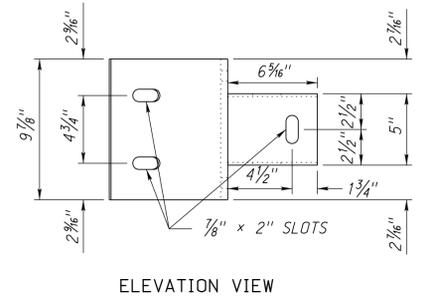
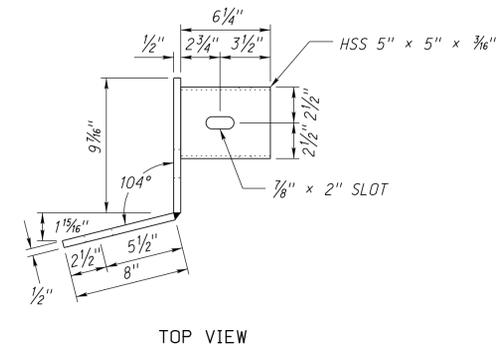
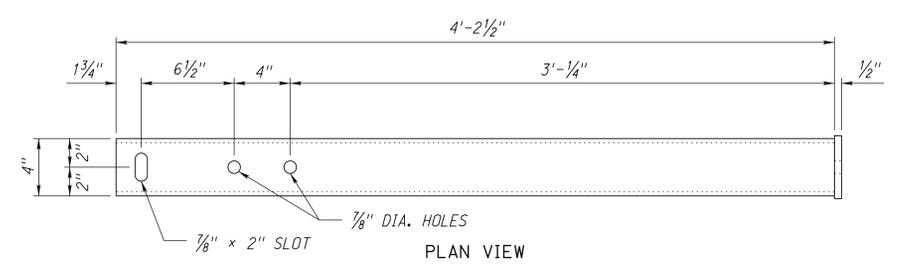
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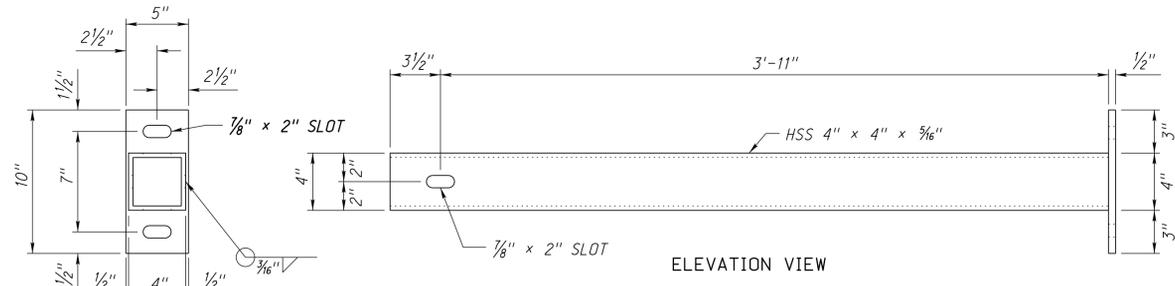
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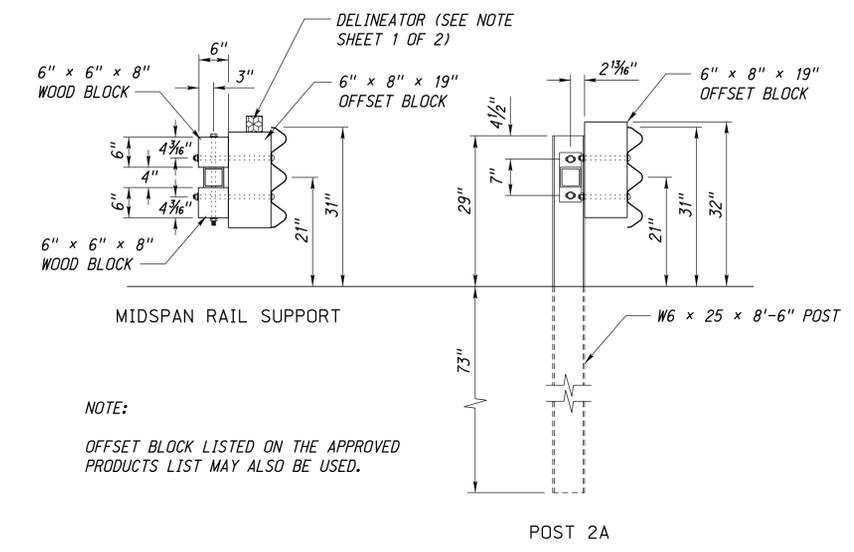
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SHEET 2 OF 2



END BRACKET DETAIL

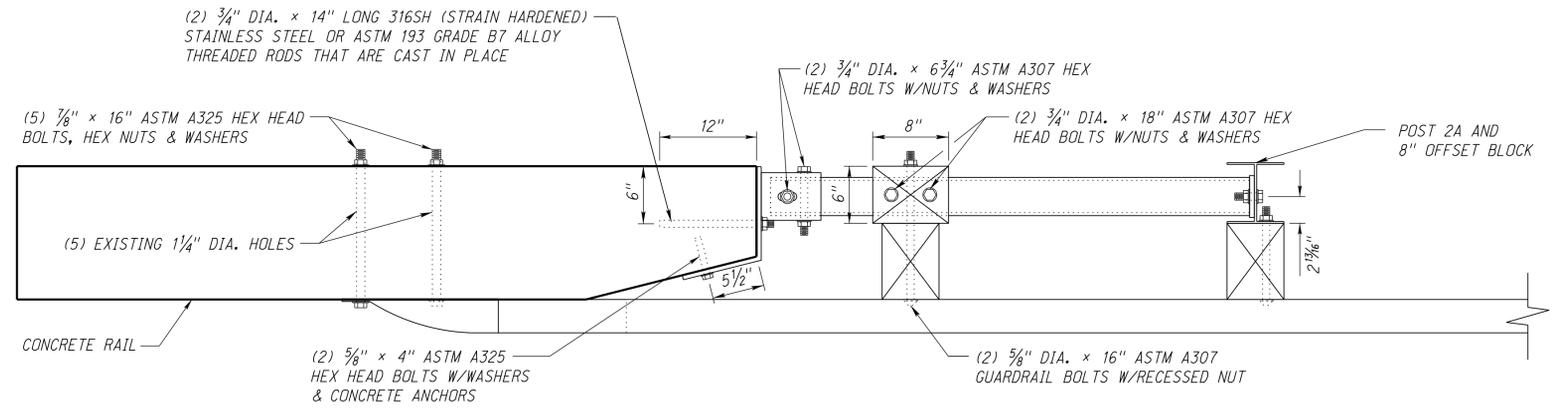


RAIL DETAIL

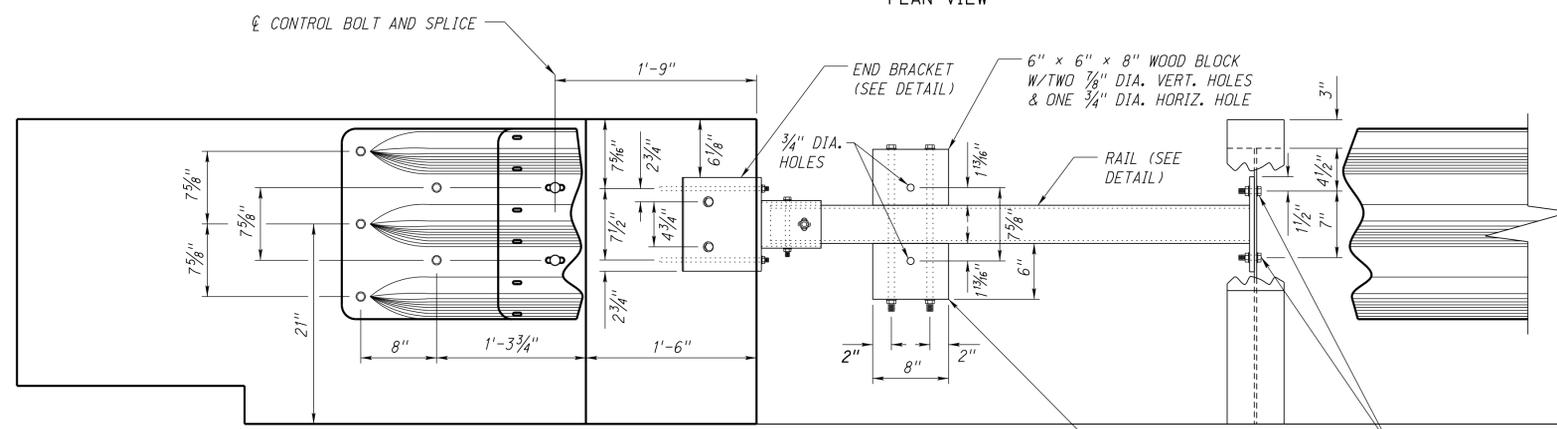


NOTE:
OFFSET BLOCK LISTED ON THE APPROVED PRODUCTS LIST MAY ALSO BE USED.

ALTERNATE ASSEMBLY

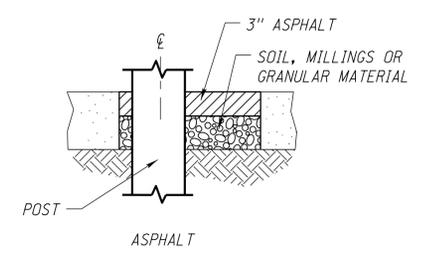


PLAN VIEW

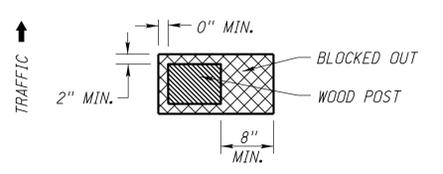


MIDSPAN RAIL SUPPORT DETAIL

MUST USE POST 2A (W6 x 25 x 8'-6")



DETAIL OF BACKFILLING AROUND POST



GUARDRAIL POSTS IN SURFACING

NOTE:
ALL STEEL MEMBERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
IN LIEU OF THE CAST IN PLACE 3/4" DIA. x 14" ANCHOR BOLTS, THE CONTRACTOR MAY GROUT 3/4" DIA. x 12" BOLTS INTO 7/8" DIA. x 12" DRILLED HOLES. ALL GROUT USED SHALL BE AN APPROVED NON-SHRINK GROUT. FOR 5/8" DIA. BOLTS USE 3/4" DIA. HOLES. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THIS OPTION.



BRIDGE APPROACH SECTION
31" TO EXISTING 27 5/8"
SHEET OF
SPECIAL PLAN C

Special Plan 7044 is also Required When Using This Plan.

CONNECTION NOTES:

FOR DIVIDED ROADWAY

INSTALL THRIE-BEAM END SHOE, BETWEEN NESTED GUARDRAIL ELEMENTS. (SUBSIDIARY TO BRIDGE APPROACH SECTION)

FOR 2-LANE ROADWAY

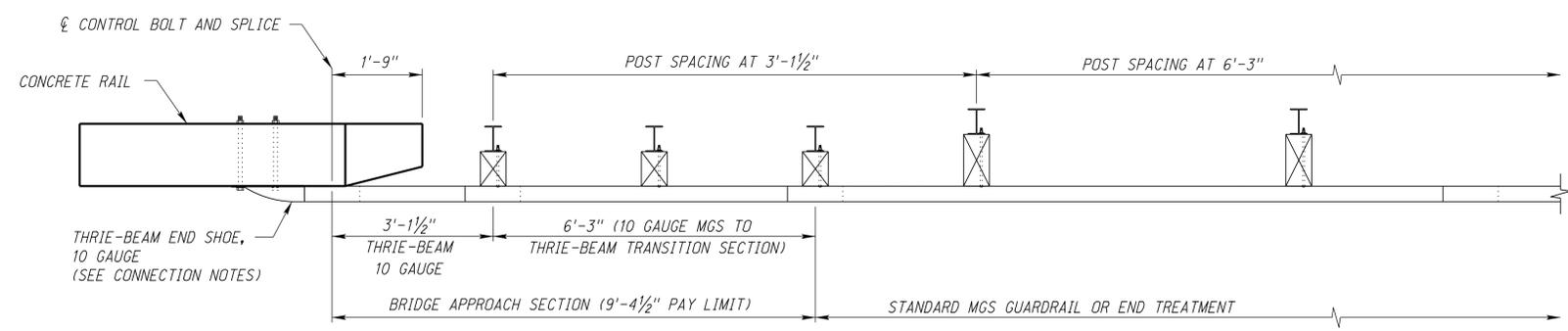
FOR APPROACHING TRAFFIC INSTALL THRIE-BEAM END SHOE, BETWEEN NESTED GUARDRAIL ELEMENTS. (SUBSIDIARY TO BRIDGE APPROACH SECTION)

FOR OFF END CONNECTIONS INSTALL THRIE-BEAM END SHOE, OUTSIDE OF THE NESTED GUARDRAIL ELEMENTS. (SUBSIDIARY TO BRIDGE APPROACH SECTION)

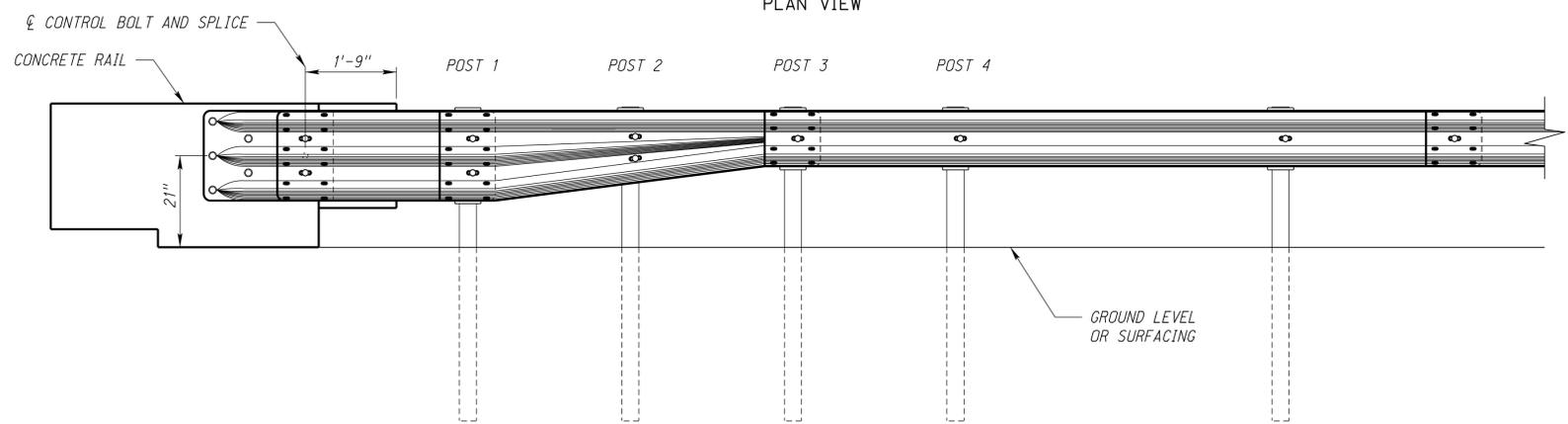


LEGEND

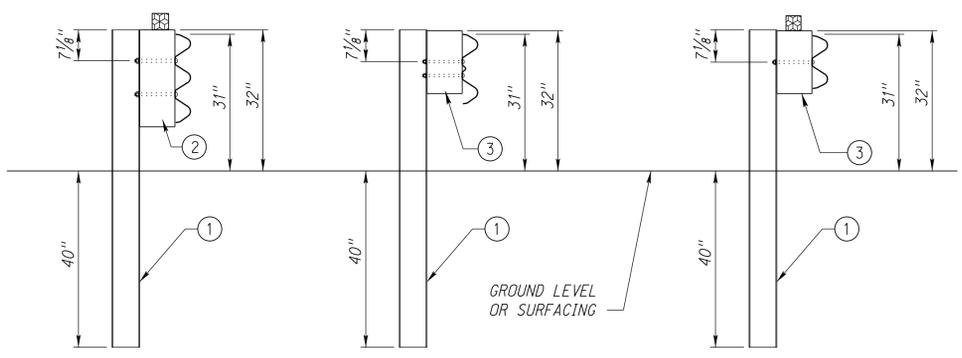
- ① W6 x 9 x 6' POST
- ② 6" x 8" x 22" OFFSET BLOCK
- ③ 6" x 8" x 14 1/4" ± 1/4" OFFSET BLOCK
- ④ 6" x 12" x 14 1/4" ± 1/4" OFFSET BLOCK



PLAN VIEW



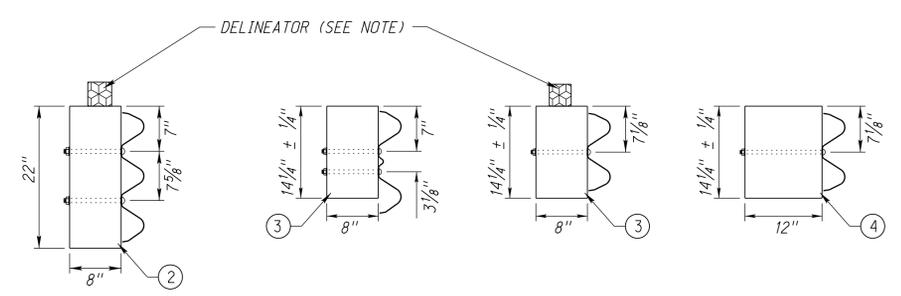
ELEVATION



POST 1

POST 2

POST 3



POST 1

POST 2

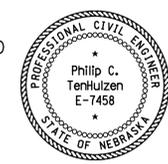
POST 3

POST 4 & BEYOND

BLOCK DETAILS

NOTES:

FOR ADDITIONAL DETAILS SEE PLAN 743.
 DELINEATORS SUBSIDIARY TO BRIDGE APPROACH SECTION.
 BUTTON HEAD BOLT 5/8" DIA. x LENGTH AS REQUIRED, SECURED WITH WASHER AND HEX NUT.
 ALL STEEL MEMBERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



MIDWEST GUARDRAIL SYSTEM
 BRIDGE APPROACH SECTION TL-2
 SHEET OF
SPECIAL PLAN C

File: 74601e00.dgn
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 SHEET 1 OF 1
 Date: 14-JUL-2016 12:38
 User: ddr13017
 Computer: DRDESIGN147
 ROADWAY DESIGN DIVISION

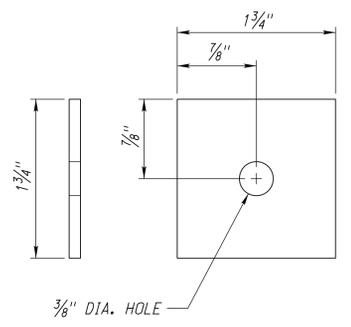
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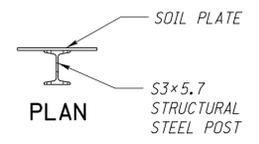
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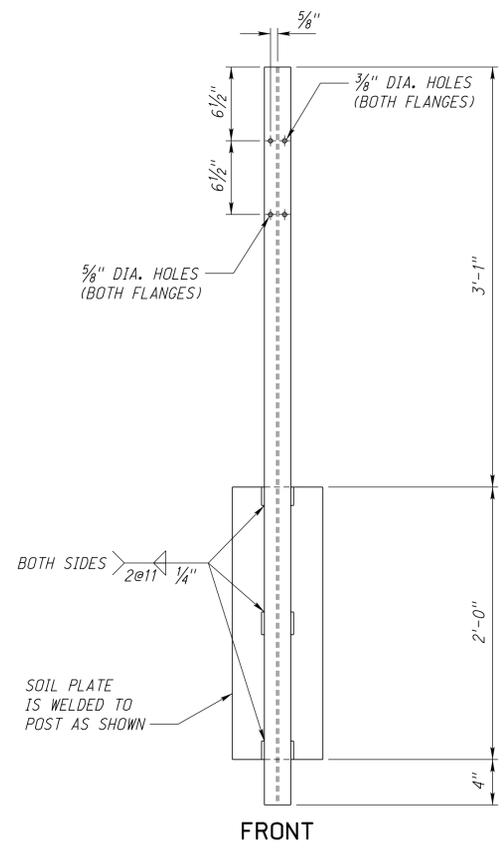
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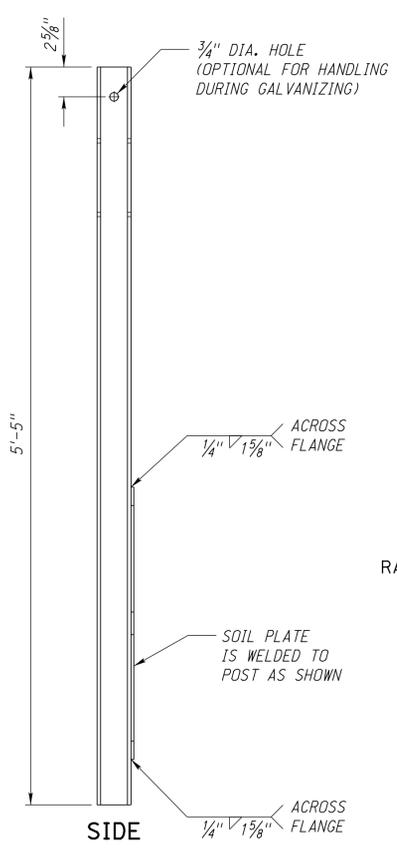
SQUARE GUARDRAIL WASHER



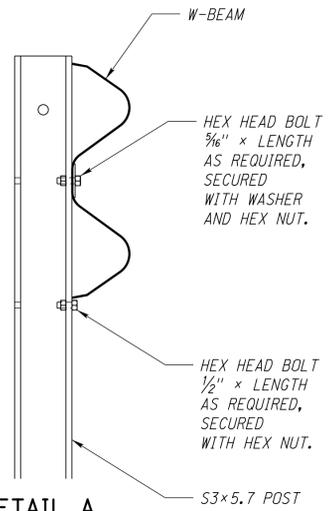
PLAN
SOIL PLATE
S3x5.7 STRUCTURAL STEEL POST



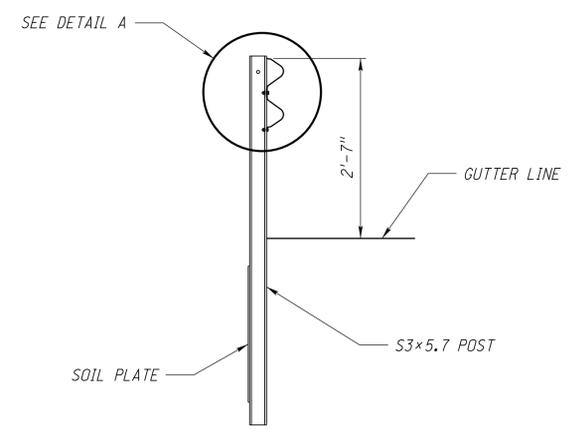
WEAK POST GUARDRAIL POST & SOIL PLATE



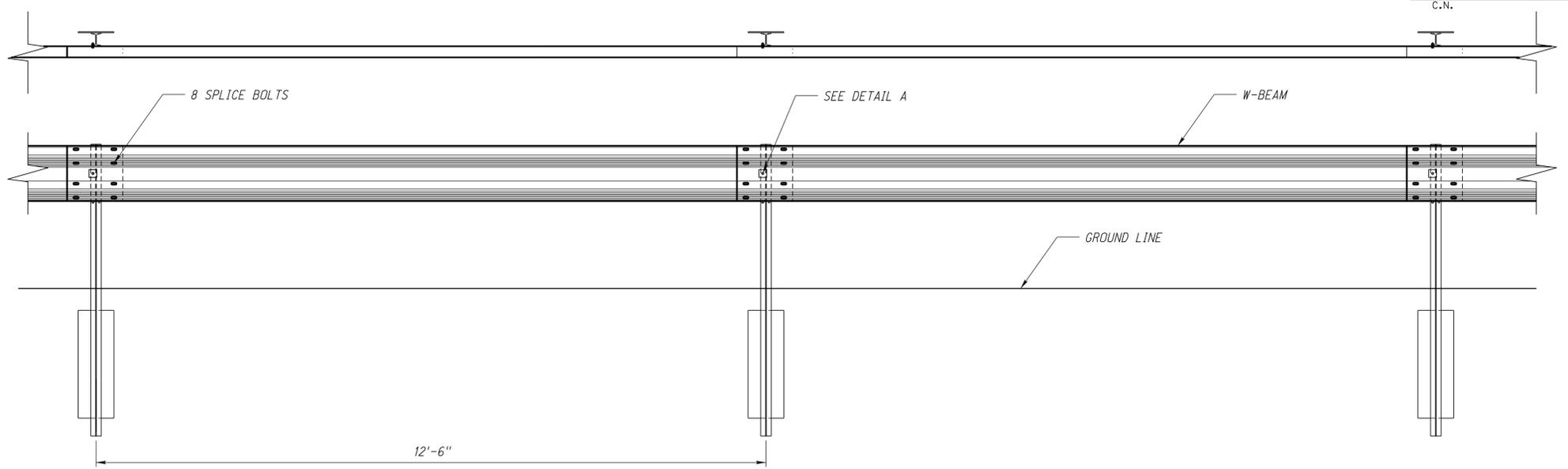
SIDE



DETAIL A
RAIL-POST ATTACHMENT



SECTION
RAIL-POST ATTACHMENT



ELEVATION

NOTES:

ALL POSTS SHALL BE MANUFACTURED USING STEEL CONFORMING TO ASTM A 36. THIS SECTION SHALL BE MANUFACTURED SUCH THAT IT CONFORMS TO THE GEOMETRY AND TOLERANCES OF ASTM A6 FOR A S3 x 5.7 S-SECTION. AFTER ALL PUNCHING, DRILLING, STAMPING AND WELDING IS COMPLETE, THE SECTION SHALL BE GALVANIZED ACCORDING TO ASTM A 123. ALL HOLES SHALL BE PUNCHED THROUGH BOTH FLANGES (IN-LINE).

THE SQUARE GUARDRAIL WASHER SHALL BE MANUFACTURED FROM ASTM A 36 STEEL PLATE. AFTER STAMPING OR PUNCHING, GALVANIZED PLATES SHALL BE FINISHED ACCORDING TO ASTM A 123.

MATERIAL FOR HOT DIPPED ZINC-COATED BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A307 GRADE A.

ALL STEEL MEMBERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



WEAK POST GUARDRAIL
SHEET 1 OF 1
SPECIAL PLAN C

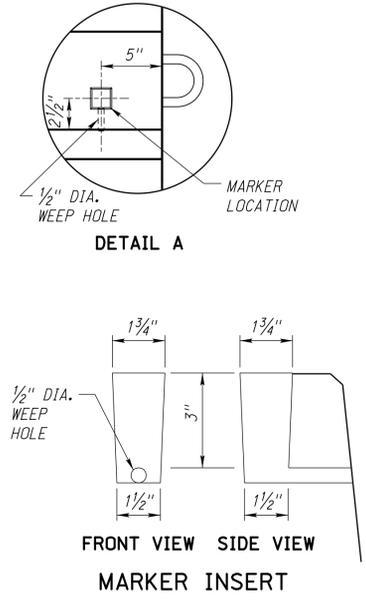
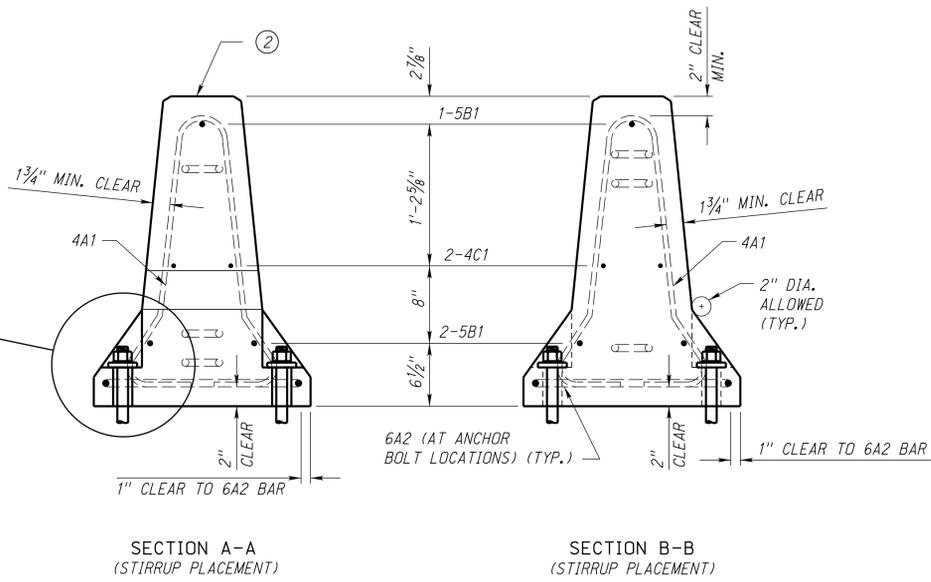
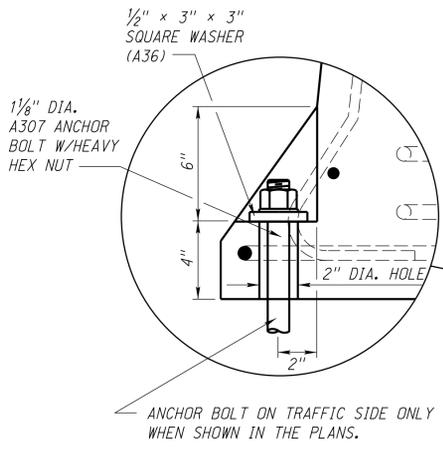
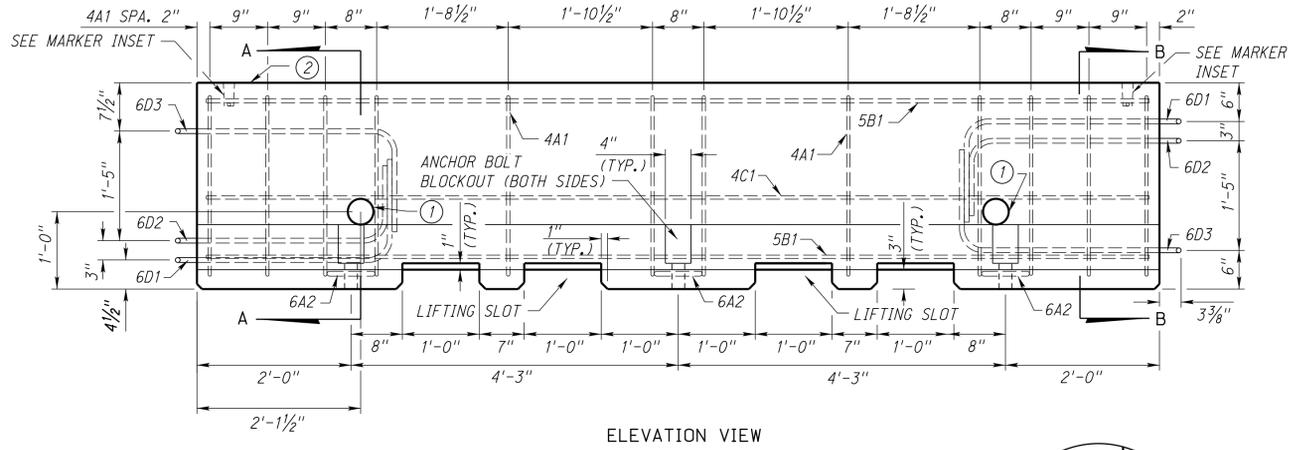
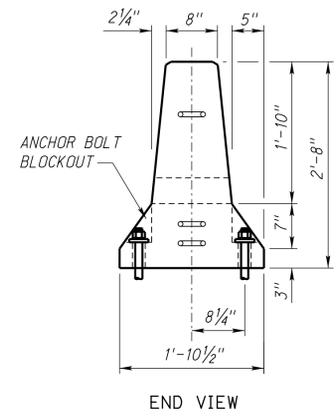
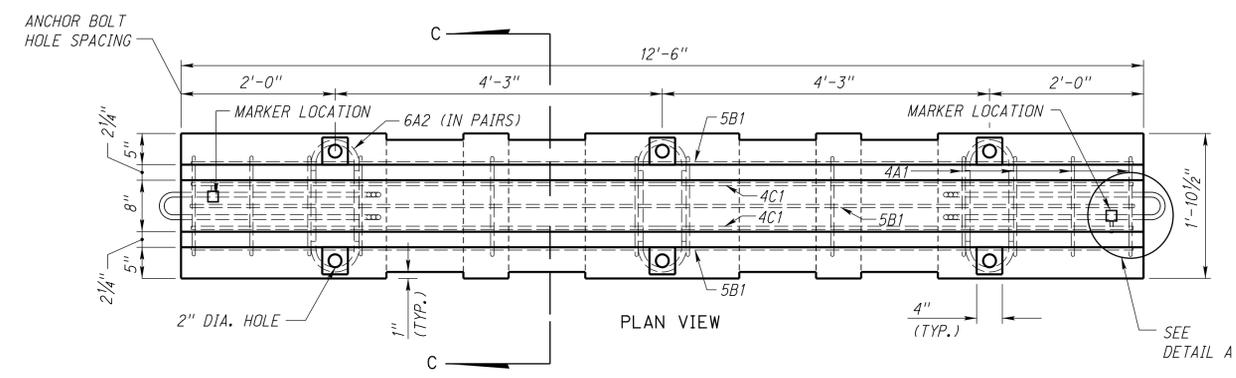
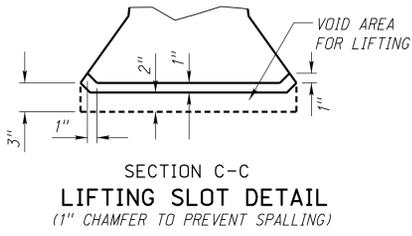
ROADWAY DESIGN DIVISION

Computer: DRDESIGN147

User: dcr13017

Date: 14-JUL-2016 12:38

File: 87001e05.dgn
SHEET Scale: 2:100 8700-1-e-05



NOTES:

THESE DETAILS ARE FOR THE FABRICATION AND INSTALLATION OF CONCRETE PROTECTION BARRIER. DETAILS SHOWN ARE TYPICAL.
CONCRETE PROTECTION BARRIERS SHALL BE MADE OF 5,000 psi CONCRETE AND BE PRECAST IN ACCORDANCE WITH APPLICABLE PORTIONS OF SECTION 705 IN THE STANDARD SPECIFICATIONS. THE FORMS MAY BE REMOVED WHEN THE CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH OF 2,175 psi. THE BARRIERS MAY BE TRANSPORTED WITHIN THE PLANT ONCE THE CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH OF 3,000 psi. THE BARRIERS MAY BE SHIPPED WHEN THE CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH OF 5,000 psi.

REINFORCING STEEL USED WITHIN THE CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 615 GRADE 60.

THE LOOP REINFORCING STEEL (BARS 6D1, 6D2 & 6D3) SHALL BE SMOOTH, MEETING THE REQUIREMENTS OF ASTM A 706 GRADE 60 OR ASTM A 615 GRADE 60, MODIFIED TO MEET THE FOLLOWING PHYSICAL AND CHEMICAL REQUIREMENTS. THE LOOP SHALL PASS A 180° BEND TEST ON A 2 3/4\"/>

TENSILE REQUIREMENTS		CHEMICAL COMPOSITION	
YIELD STRENGTH, MINIMUM PSI	60,000	ELEMENT	MAXIMUM%
TENSILE STRENGTH, MINIMUM PSI	80,000	CARBON	0.30
ELONGATION IN 8 INCH, MINIMUM	14%	MANGANESE	1.50
		PHOSPHORUS	0.035
		SULFUR	0.045
		SILICON	0.50

THE CONTRACTOR OR SUPPLIER SHALL FURNISH THE MATERIALS & RESEARCH DIVISION THE MANUFACTURERS CERTIFIED TEST REPORTS FOR THE ACTUAL HEAT OF STEEL BEING USED THAT SHOWS THE CHEMICAL AND PHYSICAL TEST RESULTS FOR THE LOOP REINFORCING STEEL BEFORE COATING OR FABRICATION BEGINS.

THE STEEL SHALL BE ZINC-COATED (GALVANIZED) AS SPECIFIED BELOW OR EPOXY COATED TO NEBRASKA STANDARDS.

ZINC-COATED (GALVANIZED) STEEL BARS SHALL MEET THE REQUIREMENTS OF ASTM A 123, (COATING GRADE 100, MINIMUM COATING--2.30 OZ. PER SQUARE FOOT). THE BARS SHALL BE FABRICATED PRIOR TO GALVANIZING. THE PROCEDURES OF ASTM A 143 SHALL BE OBSERVED AS APPLICABLE. ALL ZINC COATING DAMAGE DUE TO FABRICATION OR HANDLING SHALL BE REPAIRED WITH A ZINC DUST (ZINC-RICH) FORMULATION IN ACCORDANCE WITH ASTM A 780.

THE COATING PLANT INTENDING TO SUPPLY THE LOOP REINFORCING STEEL SHALL NOTIFY THE MATERIALS AND RESEARCH DIVISION (402-479-4746 OR 402-479-3849) TWO TO THREE WEEKS BEFORE PROCESSING ANY MATERIAL TO ARRANGE FOR NDOR PERSONNEL TO INSPECT THE MATERIAL DURING THE COATING AND FABRICATION PROCESS.

THE CONTRACTOR SHALL PROVIDE THE ENGINEER A LETTER CERTIFYING THE CONCRETE PROTECTION BARRIERS FOR USE ON THIS PROJECT ARE MADE IN ACCORDANCE WITH THESE PLANS.

CONCRETE PROTECTION BARRIERS ARE THE PROPERTY OF THE CONTRACTOR.

THE CONTRACTOR SHALL PROVIDE FOR AN APPROVED MONITORING SCHEDULE, WITH A PERSON ON CALL, AND AVAILABLE 24 HOURS A DAY, EACH DAY OF THE WEEK, TO REALIGN CONCRETE PROTECTION BARRIER WHICH HAS BEEN STRUCK. INITIATION OF SERVICE SHALL BE WITHIN ONE HOUR OF NOTIFICATION OF NEED.

- ① 4\"/>
- ② ONE END OF EACH BARRIER SHALL BE PERMANENTLY MARKED WITH THE FOLLOWING INFORMATION:
 - TYPE C
 - MANUFACTURER
 - DATE MANUFACTURED (MONTH AND YEAR)

USE 1/8\"/>

SURFACE PREPARATION: WHEN PLACED ON A PAVED SURFACE ALL LOOSE DIRT AND SAND SHALL BE REMOVED FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

BARRIERS MUST BE PULLED TIGHT DURING INSTALLATION TO REMOVE SLACK.

AT NO TIME SHALL THE BARRIERS BE LIFTED BY USE OF THE LOOP BARS: 6D1, 6D2 OR 6D3.



