

SECTION I - BARRIER

SHEET NO.	NAME
B-L (2010)	– BARRIER LEGEND
B-1	– GUARDRAIL APPLICATIONS (TYPES 1-31, 2-31, AND 3-31)
	(2017) - 1 PLAN VIEWS
	(2017) - 2 ELEVATION VIEWS AND SPLICE DETAIL
	(2017) - 3 SECTION VIEWS
B-2	– GRADING FOR GUARDRAIL END TREATMENTS (TYPES 1, 2, AND 3)
	(2013) - 1 GUARDRAIL END TREATMENT, TYPE 1
	(2013) - 2 GUARDRAIL END TREATMENT, TYPE 2
	(2010) - 3 GUARDRAIL END TREATMENT, TYPE 3
B-3	– GUARDRAIL OVER CULVERTS (TYPES 1-31, 2-31, AND 3-31)
	(2013) - 1 GUARDRAIL OVER CULVERTS, TYPE 1-31
	(2013) - 2 GUARDRAIL OVER CULVERTS, TYPE 2-31
	(2013) - 3 GUARDRAIL OVER CULVERTS, TYPE 3-31
B-4 (2012)	– END ANCHORAGE , TYPE 31
B-5	– GUARDRAIL TO BARRIER CONNECTION (TYPES 1-31, 2-31, AND EXIT TYPE 31)
	(2010) - 1 GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1-31
	(2010) - 2 GUARDRAIL TO BARRIER CONNECTION, TYPE 1 HARDWARE
	(2010) - 3 GUARDRAIL TO BARRIER CONNECTION, BENT PLATE RUB RAIL
	(2012) - 4 GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 2-31
	(2010) - 5 GUARDRAIL TO BARRIER CONNECTION, TYPE 2 HARDWARE
	(2010) - 6 GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE 31
B-6	– BRIDGE RAIL RETROFIT (TYPES 1, 2, 3, AND 4)
	(2013) - 1 BRIDGE RAIL RETROFIT, ENTRANCE AND END APPLICATIONS
	(2010) - 2 BRIDGE RAIL RETROFIT, TYPES 1 AND 2
	(2010) - 3 BRIDGE RAIL RETROFIT, TYPE 2 HARDWARE
	(2010) - 4 BRIDGE RAIL RETROFIT, TYPE 3
	(2010) - 5 BRIDGE RAIL RETROFIT, TYPE 4
B-7 (2010)	– W-BEAM, TYPE 1-27 TO TYPE 1-31 TRANSITION SECTION
B-8	– RESERVED
B-9	– RESERVED
B-10	– RESERVED
B-11	– RESERVED
B-12	– RESERVED
B-13	– HARDWARE
	(2010) - 1 W-BEAM ELEVATION AND SECTION VIEWS
	(2010) - 2 W-BEAM STEEL POST AND OFFSET BLOCK
	(2010) - 3 W-BEAM TERMINAL CONNECTOR
	(2010) - 4 THRIE BEAM AND THRIE BEAM EXPANSION ELEMENT ELEVATION AND SECTION VIEWS
	(2010) - 5 THRIE BEAM STEEL POST AND OFFSET BLOCK
	(2010) - 6 ASYMMETRIC AND SYMMETRIC W-BEAM TO THRIE BEAM TRANSITION SECTION
	(2010) - 7 SHORT AND LONG WOOD BREAKAWAY POSTS, STEEL TUBE, SOIL PLATE, AND OFFSET BLOCKS
	(2012) - 8 SWAGED CABLE ASSEMBLAGE AND HARDWARE
	(2010) - 9 GUARDRAIL DELINEATOR AND W-BEAM BEARING PLATE
	(2010) - 10 GUARDRAIL MOUNTED RAIL
B-14	– CONCRETE SAFETY BARRIER (F SHAPE)
	(2012) - 1 32" (960) CONCRETE BARRIER, TYPICAL CAST-IN-PLACE OR SLIP-FORM ELEVATION AND SECTION VIEWS
	(2009) - 2 32" (960) CONCRETE BARRIER, TYPICAL PRE-CAST ELEVATION AND SECTION VIEWS
	(2009) - 3 42" (1050) CONCRETE BARRIER, TYPICAL CAST-IN-PLACE OR SLIP-FORM ELEVATION AND SECTION VIEWS
	(2009) - 4 SLOTTED PLATE CONNECTION DETAILS
B-15	– GUARDRAIL APPLICATIONS (TYPES 1-27, 2-27, AND 3-27)
	(2010) - 1 PLAN VIEWS
	(2010) - 2 ELEVATION VIEWS AND SPLICE DETAIL
	(2010) - 3 SECTION VIEWS



SHEET NO. NAME

SECTION I - BARRIER (CONT'D)

B-16 - GUARDRAIL OVER CULVERTS (TYPES 1-27, 2-27, AND 3-27)

(2013) - 1 GUARDRAIL OVER CULVERTS, TYPE 1-27

(2013) - 2 GUARDRAIL OVER CULVERTS, TYPE 2-27

(2013) - 3 GUARDRAIL OVER CULVERTS, TYPE 3-27

B-17 (2010) - GUARDRAIL END TREATMENT (TYPE 4-27)

B-18 (2010) - CURVED GUARDRAIL SECTION

B-19 (2012) - END ANCHORAGE (TYPE 27)

B-20 - BURIED END SECTION

(2010) - 1 BURIED END SECTION - SINGLE RAIL

(2010) - 2 BURIED END SECTION - DOUBLE RAIL

(2010) - 3 POST, CONCRETE BLOCK, AND RUBRAIL DETAILS

B-21 - GUARDRAIL TO BARRIER CONNECTION (TYPES 1-27, 2-27, AND EXIT TYPE 27)

(2010) - 1 GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1-27

(2010) - 2 GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 2-27

(2010) - 3 GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE 27

SHEET NO. NAME

SECTION II - CURB & GUTTER

C-1 - P.C.C. CURB AND INTEGRAL P.C.C. CURB & GUTTER

(2013) - 1 P.C.C. CURB, TYPICAL CURB SECTION, AND TYPICAL TAPER SECTION AT NOSE OF MEDIANS

(2012) - 2 INTEGRAL P.C.C. CURB & GUTTER

(2017) - 3 INTEGRAL P.C.C. CURB & GUTTER (FOR USE AT CURB RAMPS ONLY)

C-2 - CURB RAMPS

(2013) - 1 TYPE 1

(2013) - 2 TYPE 2, 3, AND 4

(2013) - 3 TYPE 5

C-3 (2012) - ENTRANCES

C-4 (2012) - CURB OPENING DETAILS

C-5 (2017) - CURB OPENING WITH SIDEWALK DETAIL

C-6 (2017) - CURB RETAINING WALL

SHEET NO. NAME

SECTION III - DRAINAGE

D-1 - 6:1 SAFETY END STRUCTURE

(2001) - 1 DETAIL VIEWS

(2001) - 2 SCHEDULES

D-2 - 10:1 SAFETY END STRUCTURE

(2001) - 1 DETAIL VIEWS

(2001) - 2 SCHEDULES

D-3 - SAFETY GRATES

(2005) - 1 SAFETY END STRUCTURE GRATE AND ASSEMBLY DETAIL

(2007) - 2 PERSONNEL SAFETY GRATE FOR PIPE INLET DETAIL

D-R (2017) - DRAINAGE INLET REFERENCE SHEET

D-4 (2009) - INLET BOX DETAILS

D-5 - DRAINAGE INLET DETAILS

(2010) - 1 DRAINAGE INLET ASSEMBLY

(2014) - 2 DRAINAGE INLET FRAME AND GRATES

(2012) - 3 DRAINAGE INLET TOP UNITS

(2010) - 4 DRAINAGE INLET COVER SLAB DETAILS

(2010) - 5 DOUBLE INLET COVER SLAB DETAILS

(2012) - 6 34" x 24" DRAINAGE INLET AND COVER SLAB DETAILS

(2010) - 7 34" x 18" DRAINAGE INLET DETAILS

(2010) - 8 DRAINAGE INLET TOP UNIT, TYPE S

(2010) - 9 DOGHOUSE INLET BOX



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INDEX OF SHEETS (2017)

SHEET 2 OF 5

SHEET NO. NAME

SECTION III - DRAINAGE (CONT'D)

- D-6 – MAHOLE DETAILS
(2009) - 1 BOX MANHOLE ASSEMBLY
(2001) - 2 ROUND MANHOLE ASSEMBLY
(2001) - 3 MANHOLE, TOP UNIT, FRAME AND COVER
(2007) - 4 BOX MANHOLE COVER SLAB
D-7 – JUNCTION BOX DETAILS
(2009) - 1 JUNCTION BOX ASSEMBLY
(2007) - 2 JUNCTION BOX COVER SLAB
D-8 (2010) – PIPE BEDDING
D-9 (2008) – PERFORATED PIPE UNDERDRAIN
D-10 (2011) – PIPE PLUGGING DETAIL

SHEET NO. NAME

SECTION IV - EROSION

- E-1 (2014) – CONCRETE WASHOUT
E-2 (2014) – SILT FENCE
E-3 (2014) – SEDIMENT TRAP
E-4 (2014) – INLET SEDIMENT CONTROL, DRAINAGE INLET
E-5 (2014) – INLET SEDIMENT CONTROL, CULVERT INLET
E-6 (2014) – PORTABLE SEDIMENT TANK
E-7 (2014) – SUMP PIT
E-8 (2014) – SKIMMER DEWATERING DEVICE
E-9 (2014) – STONE CHECK DAM
E-10 (2014) – TEMPORARY SLOPE DRAIN
E-11 (2014) – INCREMENTAL STABILIZATION
E-12 (2014) – EROSION CONTROL BLANKET APPLICATIONS
E-13 (2014) – TURF REINFORCEMENT MAT APPLICATIONS
E-14 (2014) – STABILIZED CONSTRUCTION ENTRANCE
E-15 (2014) – SANDBAG DIKE
E-16 (2014) – SANDBAG DIVERSION
E-17 (2014) – GEOTEXTILE-LINED CHANNEL DIVERSION
E-18 (2014) – TURBIDITY CURTAIN
E-19 (2014) – STILLING WELL
E-20 (2014) – RIPRAP ENERGY DISSIPATOR
E-21 (2014) – STONE OUTLET DETAIL



SECTION V - LANDSCAPING

SHEET NO.	NAME
L-1	— PLANTING DETAILS
(2017) - 1	ROADSIDE SHRUB PLANTING DETAIL
(2017) - 2	TREE PLANTING DETAIL
(2017) - 3	PERENNIAL/GROUND COVER PLANTING DETAIL

SECTION VI - MISCELLANEOUS

SHEET NO.	NAME
M-1 (2001)	— RIGHT-OF-WAY FENCE
M-2 (2017)	— RIGHT-OF-WAY MONUMENTATION
M-3 (2013)	— SHARED-USE PATH & SIDEWALK DETAILS
M-4 (2011)	— BIKE RACK LAYOUT DETAILS
M-5 (2004)	— WOOD RAIL FENCE
M-6 (2011)	— PATTERNED HOT-MIX OR CONCRETE & BRICK PAVER DETAILS
M-7 (2006)	— CHAIN LINK FENCE DETAILS
M-8 (2014)	— P.C.C. PARKING BUMPER
M-9	— BUS STOP PAD DETAILS
(2013) - 1	BUS STOP PAD DETAILS, TYPES 1, 2, & 3
(2013) - 2	BUS STOP PAD WITH SHELTER DETAILS, TYPES 1 & 2
M-10	— BRIDGE SAFETY FENCE
(2014) - 1	BRIDGE SAFETY FENCE, TYPE 1
(2014) - 2	BRIDGE SAFETY FENCE, TYPE 2
(2017) - 3	HARDWARE
M-11 (2017)	— STEEL PLATE

SECTION VII - PAVEMENT

SHEET NO.	NAME
P-1	— P.C.C. PAVEMENT
(2001) - 1	SLAB PLAN (WITH DOWEL AND TIE LOCATIONS)
(2004) - 2	JOINT AND SEALANT DETAILS
(2001) - 3	W BOLT, HOOK BOLT, DOWEL AND TIE BAR DETAILS
(2001) - 4	DOWEL SUPPORT BASKET
(2001) - 5	DOWEL AND TIE BAR PLACEMENT TOLERANCES
P-2	— P.C.C. PAVEMENT PATCHING
(2008) - 1	FULL DEPTH PATCH, PLAN VIEW
(2008) - 2	FULL DEPTH PATCH, SECTION VIEWS
(2004) - 3	FULL DEPTH PATCH, SEALANT DETAILS, GROUT RETENTION DISK, AND DOWEL BAR
(2001) - 4	FULL DEPTH PATCH, DOWEL AND TIE BAR PLACEMENT TOLERANCES
(2001) - 5	PARTIAL DEPTH PATCH, PLAN AND SECTION VIEWS
P-3 (2014)	— BUTT JOINTS
P-4 (2013)	— PERMANENT CROSS-ROAD PATCH OVER PIPE TRENCH DETAIL



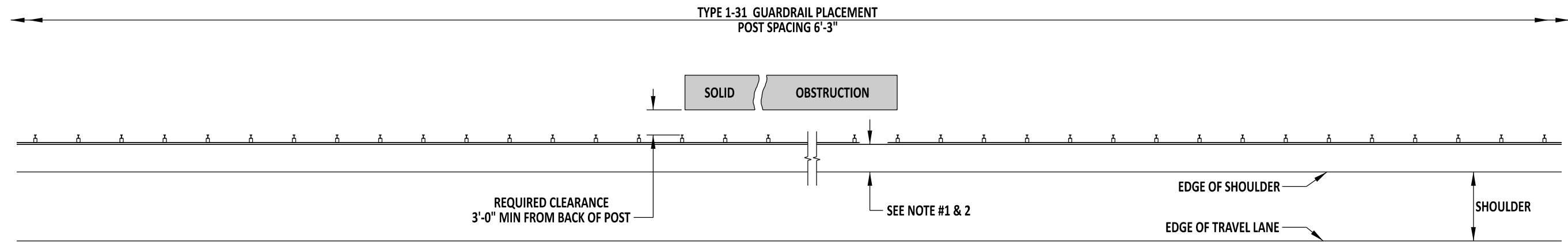
SECTION VIII - TRAFFIC

SHEET NO.	NAME
T-1	<div><div>– CONDUIT JUNCTION WELLS</div><div>(2013) - 1 TYPE 1</div><div>(2013) - 2 TYPE 4</div><div>(2013) - 3 TYPE 5</div></div>
T-2 (2011)	<div><div>– JUNCTION WELL, GROUNDING & BONDING FOR STEEL FRAMES & LIDS</div></div>
T-3	<div><div>– CONDUIT JUNCTION WELLS</div><div>(2013) - 1 TYPE 11</div><div>(2012) - 2 TYPE 14</div><div>(2012) - 3 TYPE 15</div></div>
T-4	<div><div>– CABINET BASES</div><div>(2013) - 1 TYPES M & F</div><div>(2017) - 2 TYPE "P & R"</div></div>
T-5	<div><div>– POLE BASES</div><div>(2017) - 1 ROUND BASE & ROUND BASE WITH SQUARE FOUNDATION HEADER</div><div>(2013) - 2 TYPICAL SECTION AND INSTALLATION (BASES 1, 2, 2A, 2B, 3, 3A, AND 3B)</div><div>(2017) - 3 TYPICAL SECTION (BASES 6) AND POLE BASE DATA CHART</div><div>(2014) - 4 TYPICAL SECTION (BASE 4A AND 4B) AND ANCHOR DETAIL</div></div>
T-6 (2011)	<div><div>– SPECIAL POLE BASE</div></div>
T-7 (2005)	<div><div>– SIGN FOUNDATION</div></div>
T-8	<div><div>– LOOP DETECTOR LEAD-IN WIRE INSTALLATION</div><div>(2013) - 1 JUNCTION WELL BEHIND CURB OR CURB AND GUTTER WITH GRASS STRIP</div><div>(2013) - 2 JUNCTION WELL BEHIND CURB OR CURB & GUTTER WITH SIDEWALK AND JUNCTION WELL DIRECTLY BEHIND CURB OR CURB & GUTTER</div><div>(2013) - 3 JUNCTION WELL IN CONCRETE ISLAND</div><div>(2013) - 4 JUNCTION WELL WITHOUT CURB OR CURB & GUTTER WITH SIDEWALK AND GRASS STRIPS AND JUNCTION WELL DIRECTLY ADJACENT TO PAVED SURFACE</div></div>
T-9	<div><div>– LOOP DETECTOR INSTALLATION</div><div>(2013) - 1 LOOP DETECTOR SAWCUT TYPICAL, HOT MIX SURFACE TYPICAL SECTION, AND SPLICE KIT</div><div>(2013) - 2 TYPICAL INTERSECTION LAYOUT</div><div>(2013) - 3 PEDESTRIAN CROSSING TYPICAL LAYOUT</div></div>
T-10	<div><div>– **DETAIL REMOVED IN 2012 REVISION**</div></div>
T-11	<div><div>– MESSENGER WIRE ATTACHMENT</div><div>(2005) - 1 INTERMEDIATE MESSENGER WIRE ATTACHMENT ON WOOD POLES</div><div>(2005) - 2 ANGULAR INTERMEDIATE MESSENGER WIRE ATTACHMENT</div></div>
T-12	<div><div>– MESSENGER WIRE ATTACHMENT</div><div>(2005) - 1 SPAN WIRE ATTACHMENT BETWEEN POLES</div><div>(2005) - 2 DEAD END MESSENGER WIRE ATTACHMENT</div></div>
T-13 (2013)	<div><div>– CONDUIT JUNCTION WELL, TYPE 7</div></div>
T-14	<div><div>– EMERGENCY PREEMPTION RECIEVER</div><div>(2006) - 1 UPRIGHT MOUNT</div><div>(2005) - 2 INVERTED MOUNT</div></div>
T-15 (2013)	<div><div>– BREAKAWAY SIGN POST AND PIN ASSEMBLY DETAILS</div></div>
T-16 (2010)	<div><div>– WOOD BARRICADE DETAILS</div></div>
T-17 (2013)	<div><div>– ELECTRICAL SERVICE PEDESTAL - LIGHTING, SIGNAL & 'ITMS' COMPONENT INSTALLATIONS</div></div>

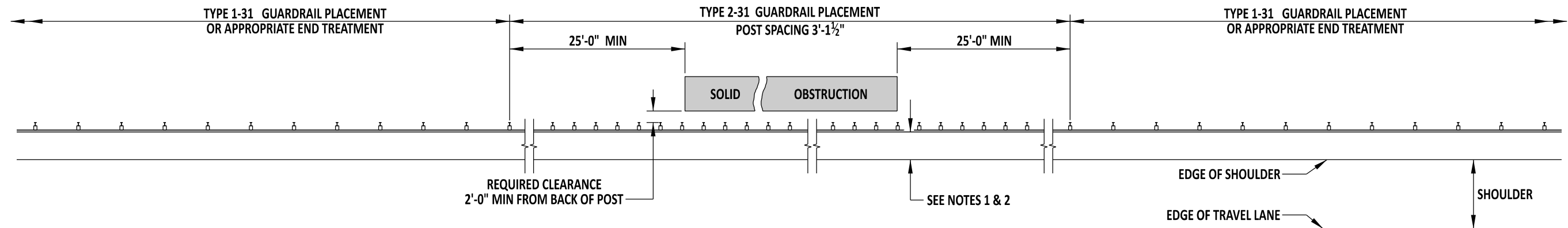


BARRIER LEGEND	
ITEM NO.	DESCRIPTION
1	W-BEAM
2	W6 X 9 STEEL POST
3A 3B	3A- 6" x 12" x 14" OFFSET BLOCK 3B- 6" x 8" x 14" OFFSET BLOCK
4	SPLICE - REQUIRES EIGHT(8) 5/8" GUARDRAIL BOLTS (L=1¼") WITH RECESS NUTS
5	W-BEAM TERMINAL CONNECTOR
6	5/8" GUARDRAIL BOLT (L=1¼") AND RECESS NUT
7A 7B	7A- 5/8" GUARDRAIL BOLT (L=14") AND RECESS NUT 7B- 5/8" GUARDRAIL BOLT (L=10") AND RECESS NUT
8	5/8" GUARDRAIL BOLT (L=10"), STEEL WASHER, AND RECESS NUT
9	7/8" HIGH STRENGTH STRUCTURAL HEX BOLT (L=VARIES) AND HEX NUT
10	5/8" CARRIAGE BOLT (L=VARIES), STEEL WASHER, AND HEX NUT
11	BEARING PLATE

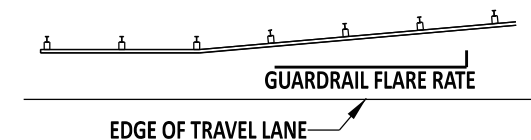




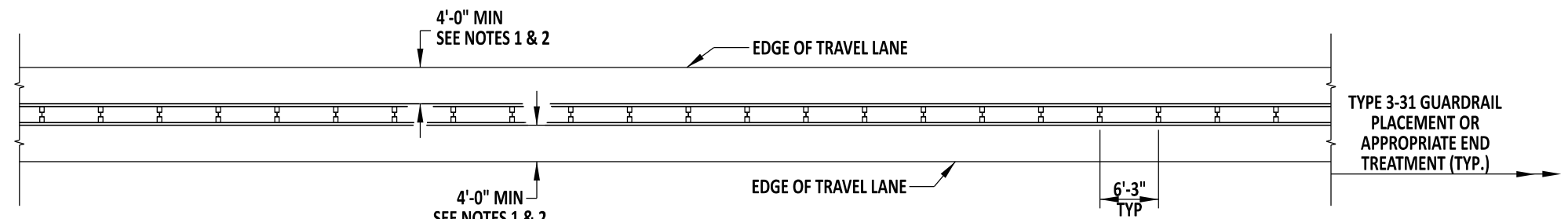
TYPE 1-31 GUARDRAIL
TYPICAL GUARDRAIL TREATMENT WHEN THE REQUIRED 3'-0" CLEARANCE TO THE OBSTRUCTION IS AVAILABLE



TYPE 2-31 GUARDRAIL
TYPICAL GUARDRAIL TREATMENT WHEN 2'-0" TO 3'-0" OF CLEARANCE TO OBSTRUCTION IS AVAILABLE



FLARE RATES	
DESIGN SPEED	FLARE RATE
70 MPH	15:1
60 MPH	14:1
55 MPH	12:1
50 MPH	11:1
45 MPH	10:1
40 MPH	9:1
30 MPH	7:1



TYPE 3-31 GUARDRAIL
TYPICAL MEDIAN GUARDRAIL TREATMENT

NOTES:

- 1). MAXIMIZE THE DISTANCE FROM THE EDGE OF THE TRAVEL LANE OR SHOULDER TO THE FACE OF GUARDRAIL. THIS AREA SHALL BE GRADED 10:1 OR FLATTER.
- 2). GRADE THIS AREA 10:1 OR FLATTER



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TYPES 1-31, 2-31, AND 3-31 GUARDRAIL APPLICATIONS

STANDARD NO. B-1 (2017)

SHT. 1 OF 3

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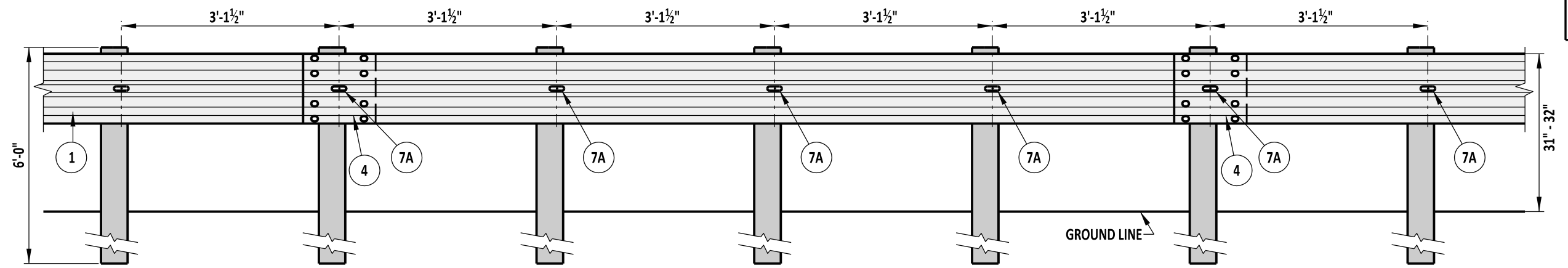
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5/31/2017
DATE

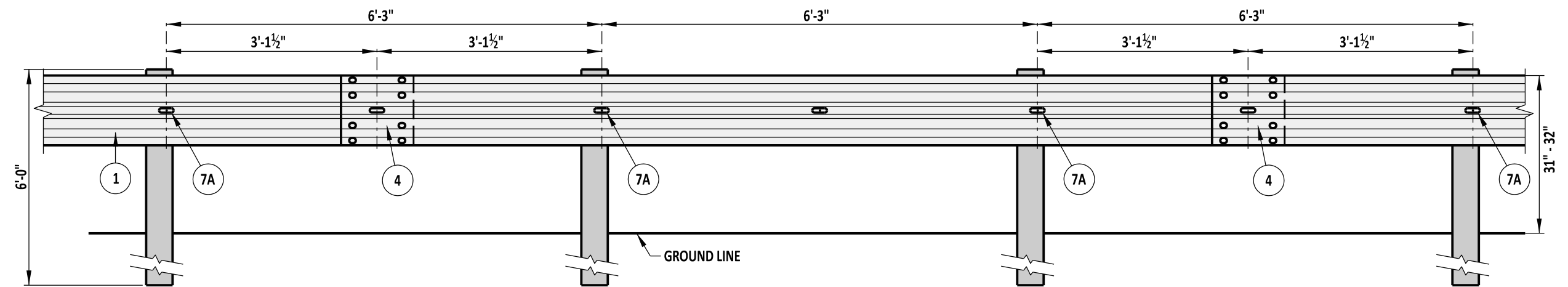
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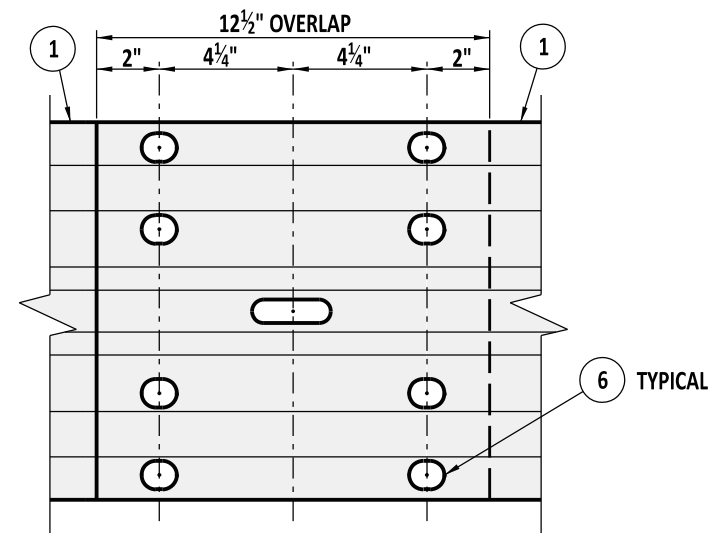
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DATE



TYPE 2-31



TYPE 1-31 OR 3-31



4 SPLICE DETAIL

NOTE :
 1). OVERLAP W-BEAMS IN DIRECTION OF TRAVEL.
 2). SEE DETAIL B-L, SHEET 1 FOR MORE INFORMATION



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TYPES 1-31, 2-31, AND 3-31 GUARDRAIL APPLICATIONS

STANDARD NO. B-1 (2017)

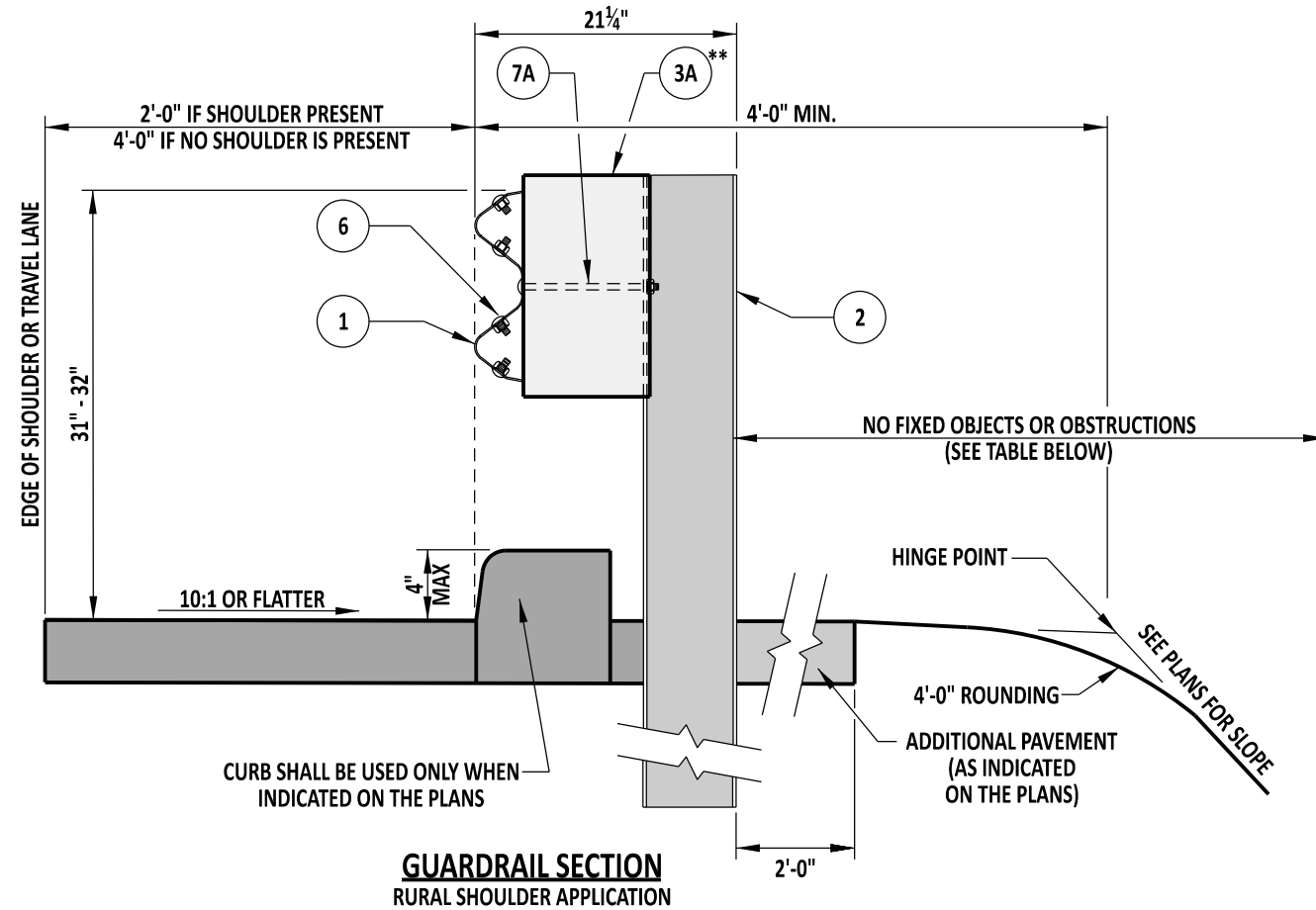
SHT. 2 OF 3

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RECOMMENDED

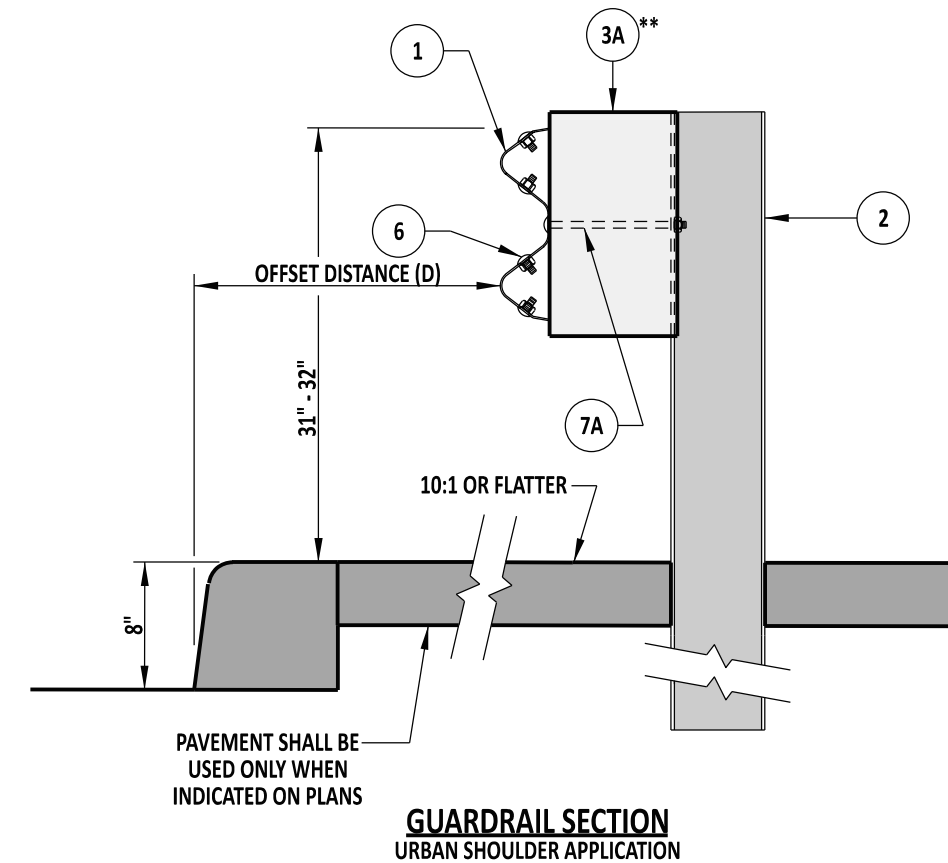
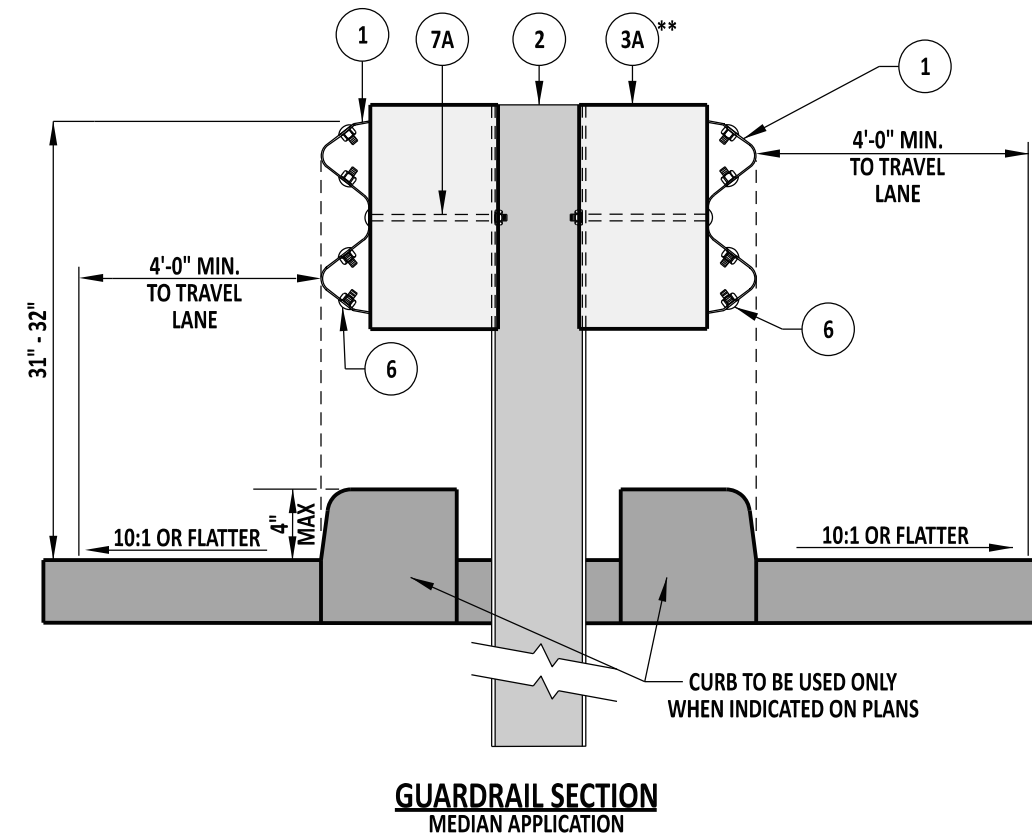
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DESIGN ENGINEER DATE



TYPE	POST SPACING	CLEAR AREA BEHIND POST
1	6'-3"	3'-0" MIN
2	3'-1 1/2"	2'-0" MIN

DESIGN SPEED	D
< 50 MPH	8'-0"
≥ 50 MPH	13'-0"

** - SEE STANDARD SPECIFICATIONS CONCERNING THE USE OF ALTERNATIVE OFFSET BLOCK MATERIALS



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TYPES 1-31, 2-31, AND 3-31 GUARDRAIL APPLICATIONS

STANDARD NO. B-1 (2017)

SHT. 3 OF 3

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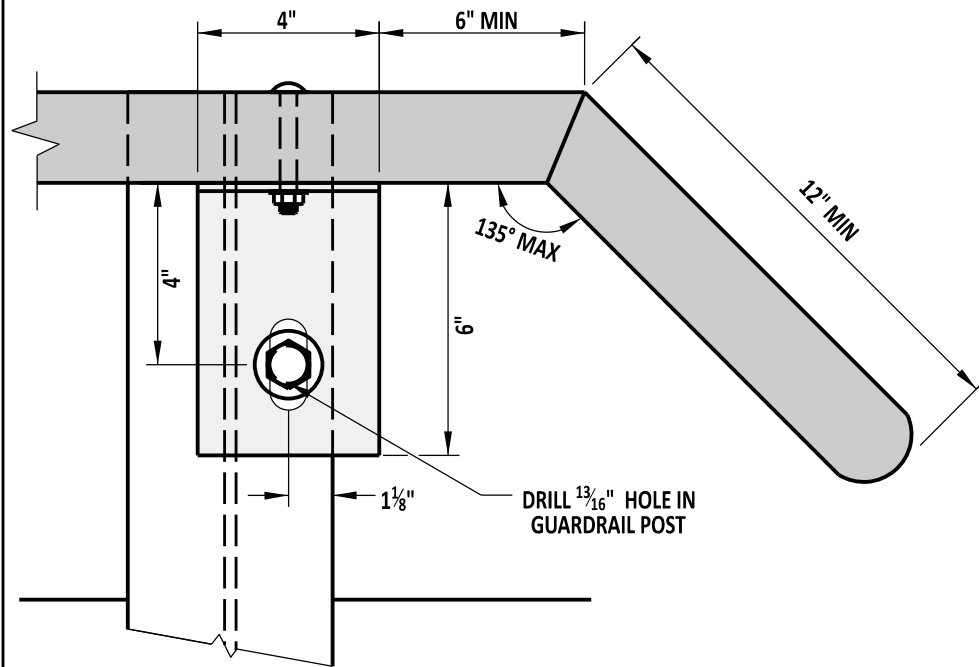
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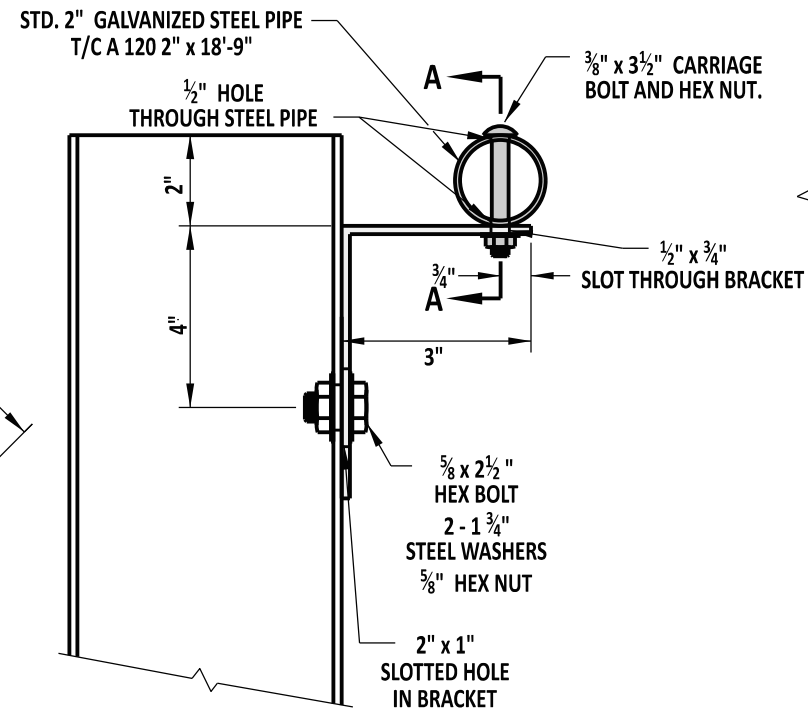
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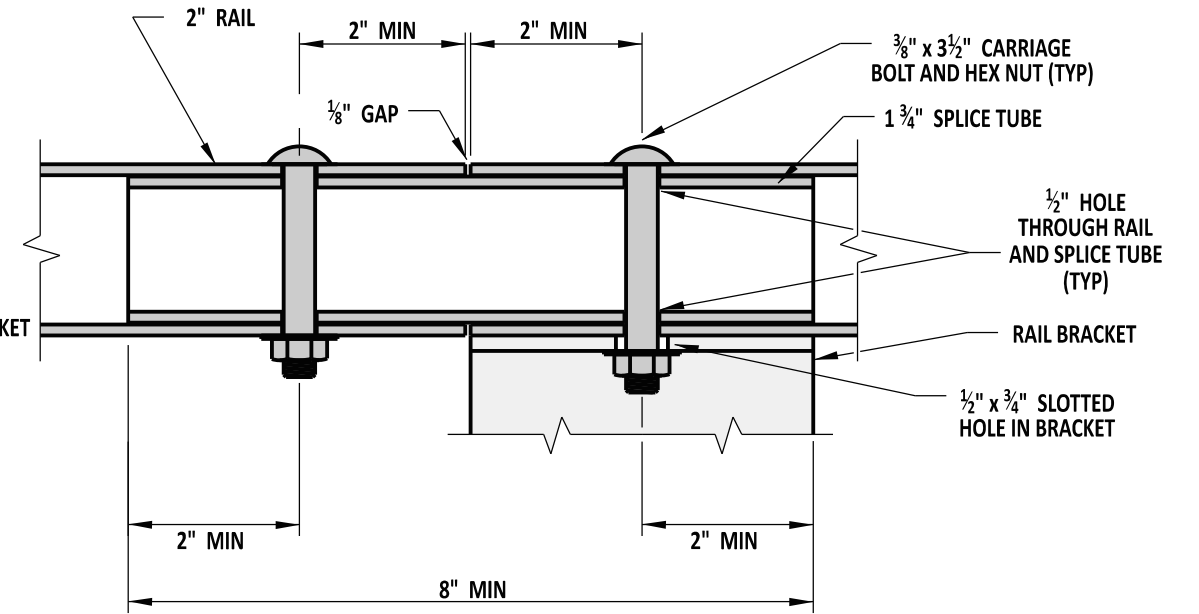
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REAR VIEW WITH START & END SECTION



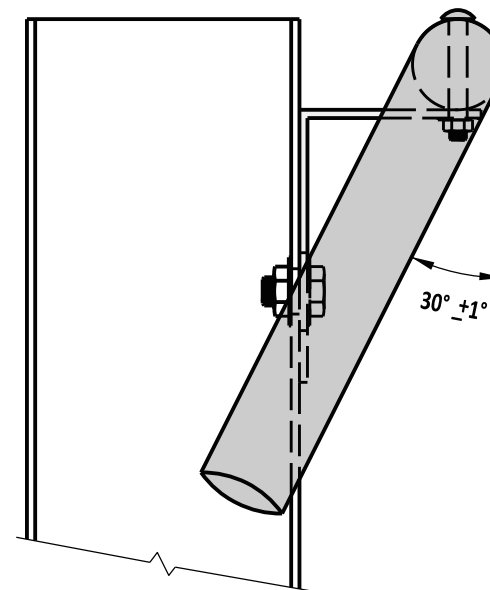
SIDE VIEW



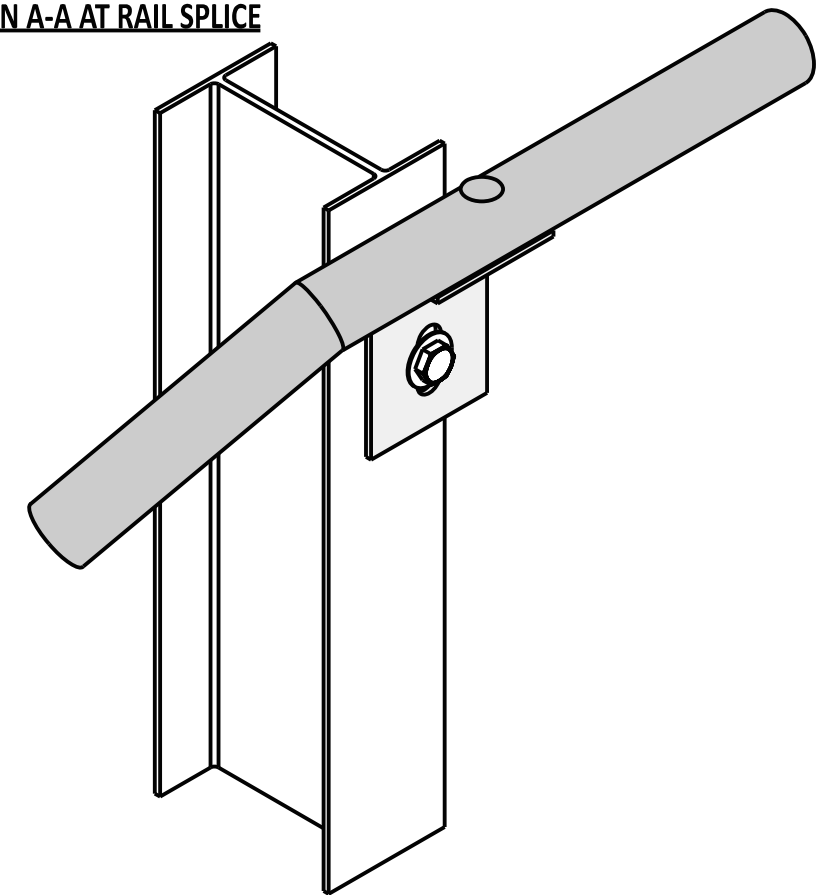
SECTION A-A AT RAIL SPLICE

NOTES:

- 1). USE THIS RAIL ADJACENT TO AN PEDESTRIAN ACCESS ROUTE.
- 2). SHOP FABRICATE ALL COMPONENTS OF THE RAIL INCLUDING CUTTING AND DRILLING.
- 3). BUR ALL EXPOSED THREADED HARDWARE TO ENSURE NUTS CAN NOT BE REMOVED.
- 4). PRIOR TO GALVANIZING, SHOP DRILL GUARDRAIL POSTS THAT RAIL BRACKETS WILL BE ATTACHED TO.
- 5). PLACE RAIL SPLICES AT RAIL SUPPORT BRACKETS, USING THE SAME BOLT TO ATTACH THE RAIL TO THE BRACKET, TO SECURE THE SPLICE TUBE.
- 6). ONLY INSTALL RAILS TO STANDARD W-BEAM SECTIONS AND AT LEAST ONE POST AWAY FROM THE PAYMENT LIMITS OF THE END TREATMENT.



SIDE VIEW WITH START & END SECTION



ISOMETRIC VIEW WITH START & END SECTION



DELAWARE
DEPARTMENT OF TRANSPORTATION

GUARDRAIL MOUNTED RAIL

STANDARD NO.

B-13 (2017)

SHT. 10

OF 10

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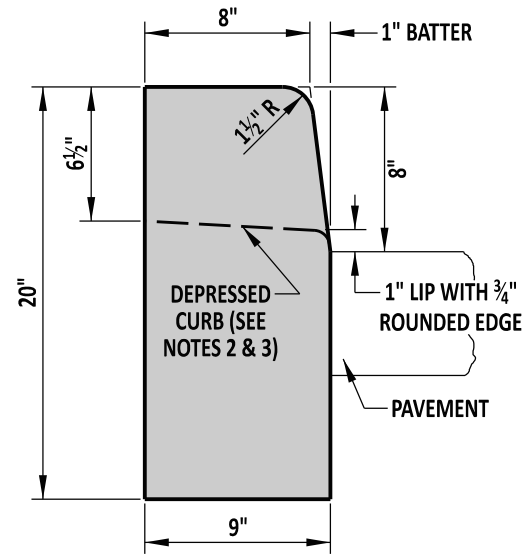
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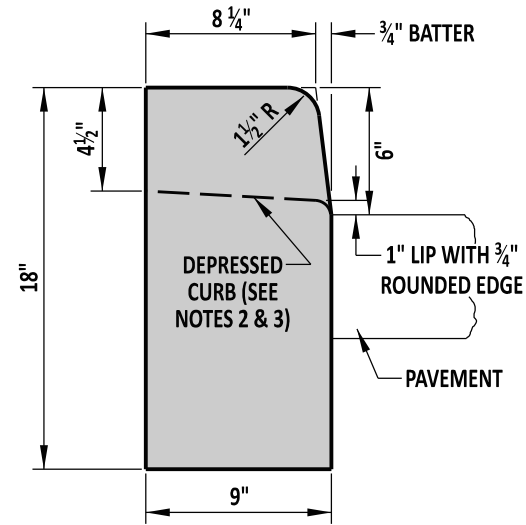
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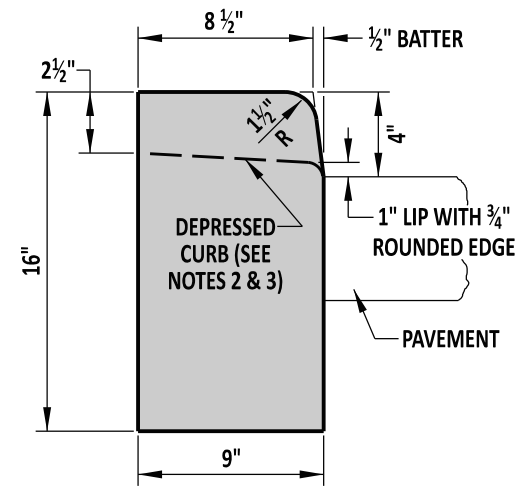
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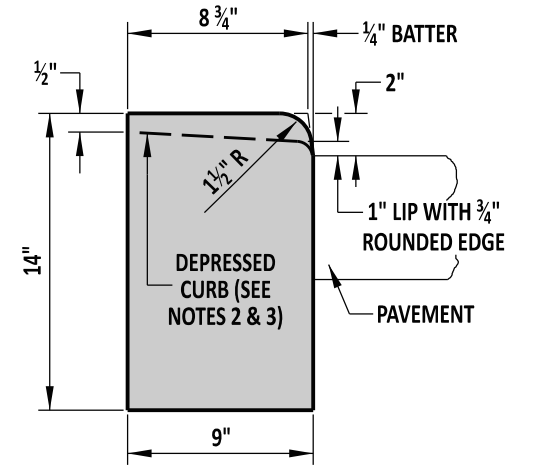
P.C.C. CURB
TYPE 1-8



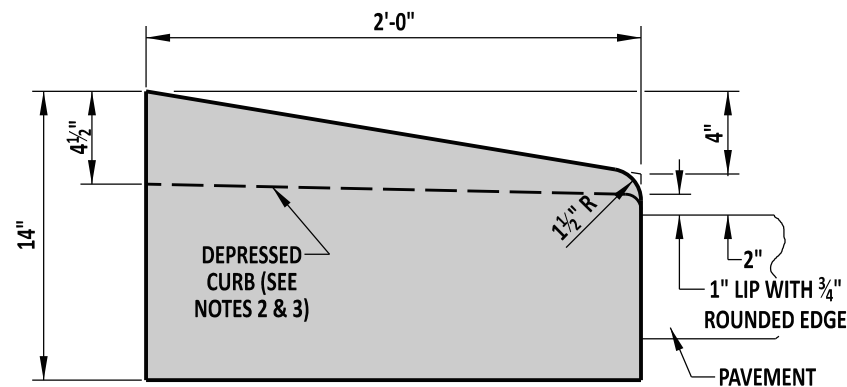
P.C.C. CURB
TYPE 1-6



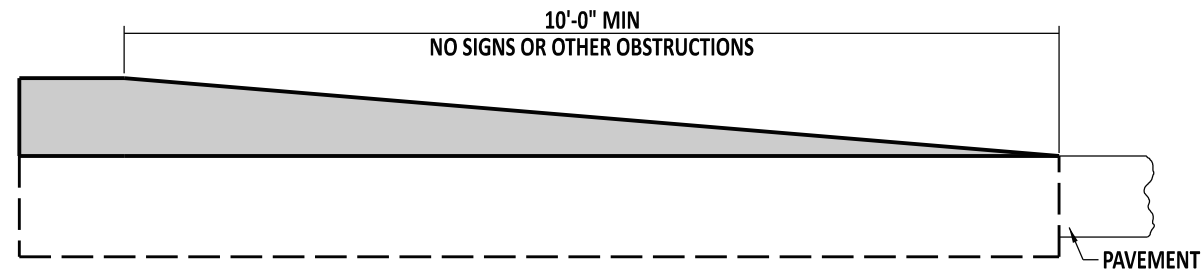
P.C.C. CURB
TYPE 1-4



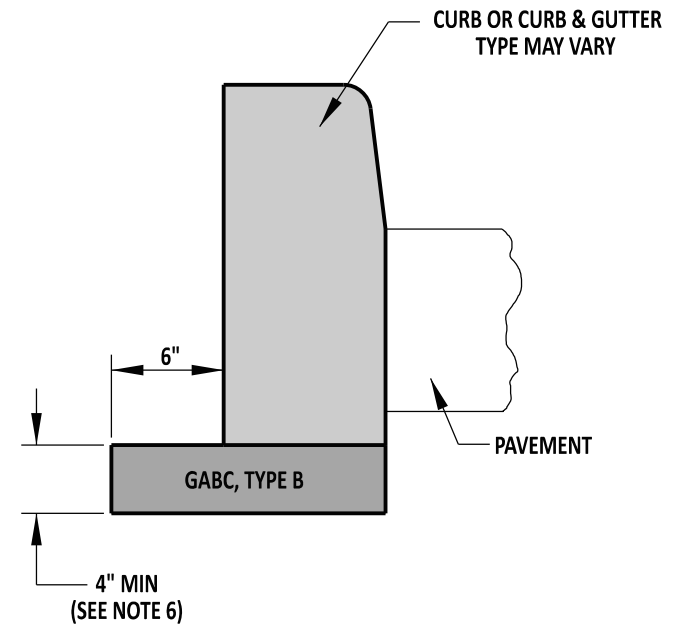
P.C.C. CURB
TYPE 1-2



P.C.C. CURB
TYPE 2



TYPICAL TAPER SECTION
AT NOSE OF MEDIANS
TYPE 1-8 CURB SHOWN



TYPICAL CURB SECTION

NOTES:

- 1). WHEN P.C.C. CURB OR INTEGRAL P.C.C. CURB AND GUTTER IS PLACED ADJACENT TO PORTLAND CEMENT CONCRETE PAVEMENT, CONSTRUCT THE JOINT AS PER THE LONGITUDINAL JOINT SEALANT DETAIL ON DETAIL P-2, SHEET 3. USE APPROVED JOINT FILLER TO SEAL. WORK TO BE PAID UNDER RESPECTIVE CURB AND GUTTER ITEM.
- 2). THE DEPRESSED CURB DIMENSIONS (INCLUDING 1" LIP) ON THIS SHEET ARE FOR USE AT ENTRANCES ONLY. FOR CURB DEPRESSIONS AT CURB RAMPS, SEE NOTE 3.
- 3). AT CURB RAMPS, DEPRESS CURB FLUSH WITH THE PAVEMENT (WITH NO LIP). SLOPE THE TOP OF THE CURB 8.3% OR FLATTER IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 4). DEPRESS CURB FLUSH WITH PAVEMENT OR ADJACENT AREA AT ALL CORNERS OF TRIANGULAR ISLANDS, TAPERING BACK TO FULL HEIGHT AT A RATE OF 4:1.
- 5). TAPER END OF CURB RUNS NOT PART OF AN ISLAND OR MEDIAN FLUSH WITH PAVEMENT OR ADJACENT AREA AT A RATE OF 12:1.
- 6). FOR SUBDIVISION APPLICATIONS, A MINIMUM OF 6" OF GABC IS REQUIRED.



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P.C.C. CURB
STANDARD NO. C-1 (2017)

SHT. 1 OF 3

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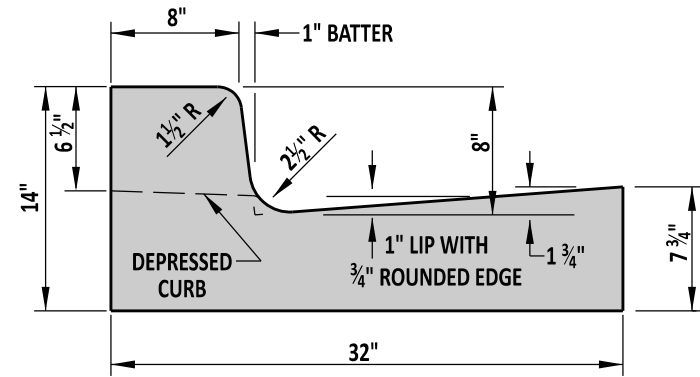
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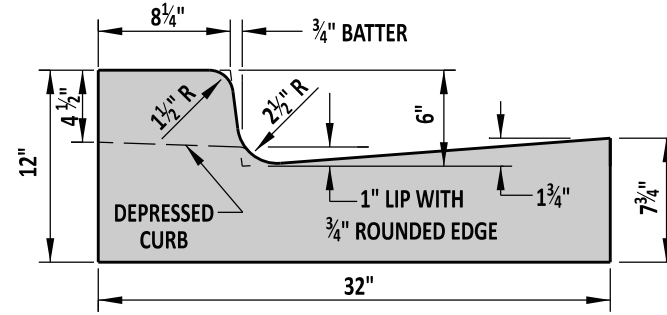
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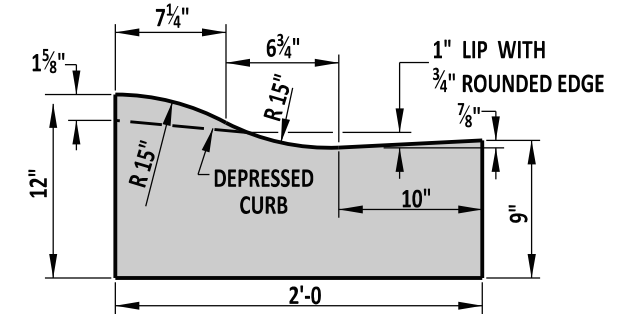
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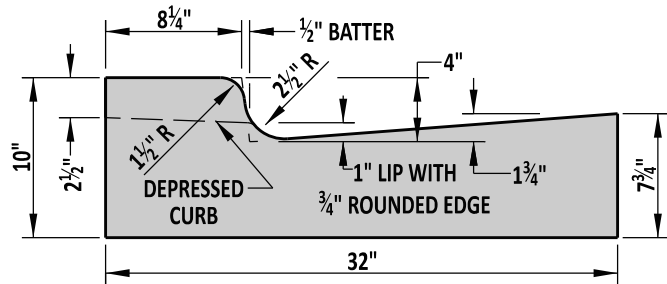
INTEGRAL P.C.C. CURB AND GUTTER
TYPE 1-8



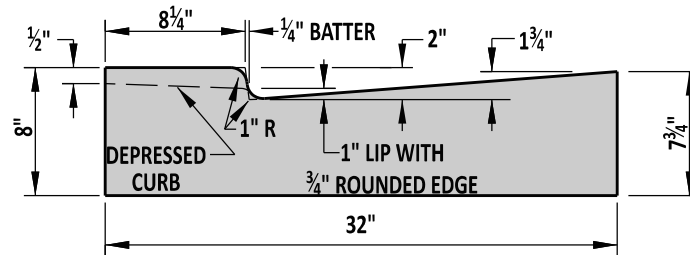
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TYPE 1-6



INTEGRAL P.C.C. CURB AND GUTTER
TYPE 2



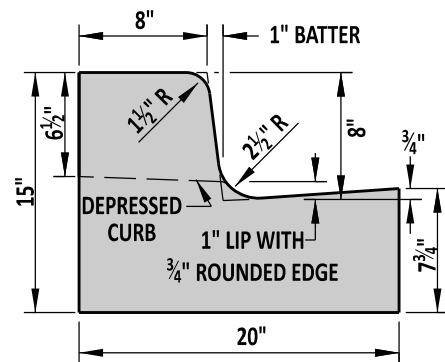
INTEGRAL P.C.C. CURB AND GUTTER
TYPE 1-4



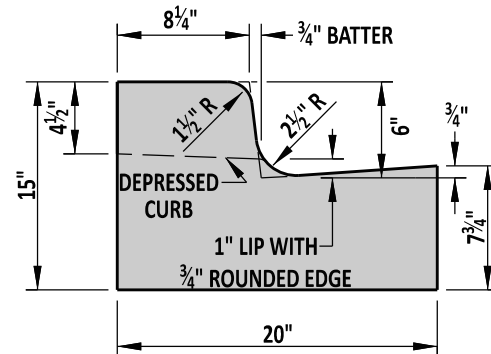
INTEGRAL P.C.C. CURB AND GUTTER
TYPE 1-2

NOTES:

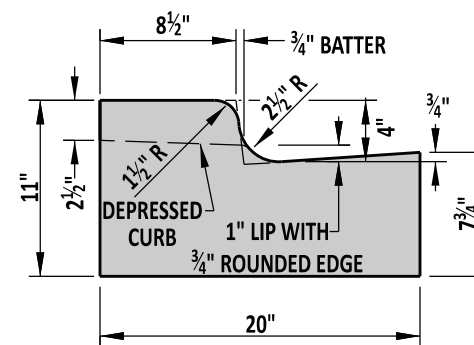
- 1). WHEN P.C.C. CURB OR INTEGRAL P.C.C. CURB AND GUTTER IS PLACED ADJACENT TO PORTLAND CEMENT CONCRETE PAVEMENT, CONSTRUCT THE JOINT AS PER THE LONGITUDINAL JOINT SEALANT DETAIL ON DETAIL P-2, SHEET 3 OF 5. USE APPROVED JOINT FILLER TO SEAL. WORK TO BE PAID UNDER RESPECTIVE CURB AND GUTTER ITEM.
- 2). THE DEPRESSED CURB DIMENSIONS (INCLUDING 1" LIP) ON THIS SHEET ARE FOR USE AT ENTRANCES ONLY. FOR CURB DIMENSIONS AT CURB RAMPS, SEE NOTE 3.
- 3). SEE DETAIL C-1, SHEET 3 FOR DEPRESSING AT CURB RAMPS.
- 4). DEPRESS CURB FLUSH WITH PAVEMENT OR ADJACENT AREA AT LEADING EDGE OF TRIANGULAR ISLANDS, TAPERING BACK TO FULL HEIGHT AT A SLOPE OF 4:1. SEE DETAIL C-1, SHEET 1 OF 2 FOR TYPICAL SECTION OF TAPER AT NOSE OF MEDIAN ISLANDS.
- 5). 4" OF GABC, TYPE B SHALL BE PLACED UNDER ALL P.C.C. CURB AND P.C.C. CURB AND GUTTER. SEE DETAIL C-1, SHEET 1 OF 2 FOR TYPICAL SECTION.
- 6). DEPRESS END OF CURB RUNS NOT PART OF AN ISLAND OR MEDIAN FLUSH WITH PAVEMENT OR ADJACENT AREA AT A SLOPE OF 12:1.



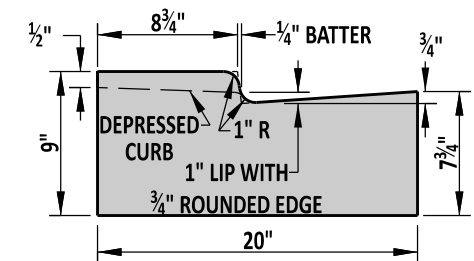
INTEGRAL P.C.C. CURB AND GUTTER
TYPE 3-8



INTEGRAL P.C.C. CURB AND GUTTER
TYPE 3-6



INTEGRAL P.C.C. CURB AND GUTTER
TYPE 3-4



INTEGRAL P.C.C. CURB AND GUTTER
TYPE 3-2



DELAWARE
DEPARTMENT OF TRANSPORTATION

INTEGRAL P.C.C. CURB & GUTTER

STANDARD NO.

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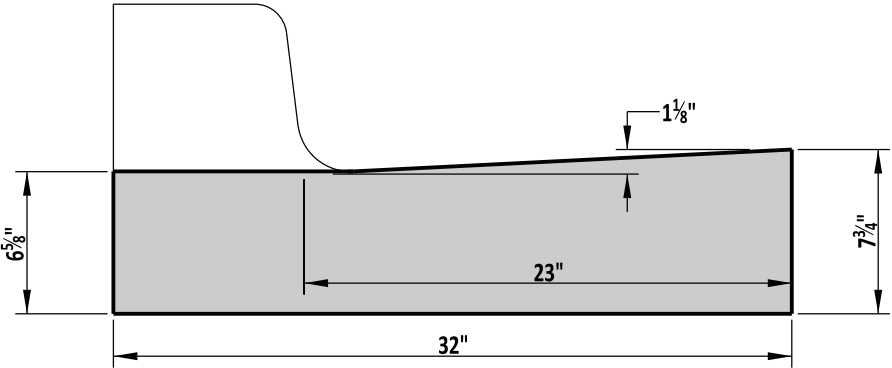
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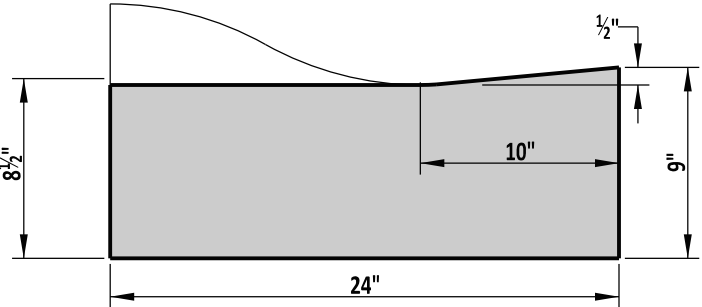
5/18/2017
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THIS DETAIL IS TO BE USED ONLY FOR THE SECTIONS OF CURB & GUTTER THAT ARE DIRECTLY IN FRONT OF THE CURB RAMPS. REFER TO
DETAIL C-1, SHEET 2 FOR TYPICAL CURB DIMENSIONS AND FOR DEPRESSING CURB AT ENTRANCES

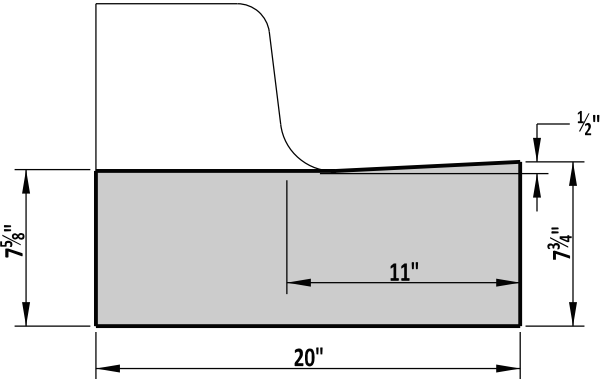
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INTEGRAL P.C.C. CURB AND GUTTER
TYPES 1-2 THRU 1-8



INTEGRAL P.C.C. CURB AND GUTTER
TYPE 2



INTEGRAL P.C.C. CURB AND GUTTER
TYPES 3-2 THRU 3-8

NOTES:

- 1). WHEN P.C.C. CURB OR INTEGRAL P.C.C. CURB AND GUTTER IS PLACED ADJACENT TO PORTLAND CEMENT CONCRETE PAVEMENT, CONSTRUCT THE JOINT AS PER THE LONGITUDINAL JOINT SEALANT DETAIL ON DETAIL P-2, SHEET 3. USE APPROVED JOINT FILLER TO SEAL. WORK TO BE PAID UNDER RESPECTIVE CURB AND GUTTER ITEM.
- 2). DEPRESS CURB FLUSH WITH PAVEMENT (WITH NO LIP). SLOPE THE TOP OF THE CURB 8.3% OR FLATTER IN THE DIRECTION OF PEDESTRIAN TRAVEL. THE MAXIMUM SLOPE OF THE GUTTER PAN IN CURB RAMPS IS 5%. SEE DETAIL C-2, SHEET 1.
- 3). SEE TYPICAL CURB SECTION DETAIL AND NOTE 6 ON DETAIL C-1, SHEET 1 FOR PLACEMENT OF GABC UNDER CURB AND GUTTER.
- 4). TRANSITION FROM STANDARD GUTTER SLOPE TO SLOPE SHOWN ON THIS DETAIL OVER A DISTANCE OF 5'-0".



DELAWARE
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INTEGRAL P.C.C. CURB & GUTTER
(FOR USE AT CURB RAMPS ONLY)

STANDARD NO.

C-1 (2017)

SHT. 3

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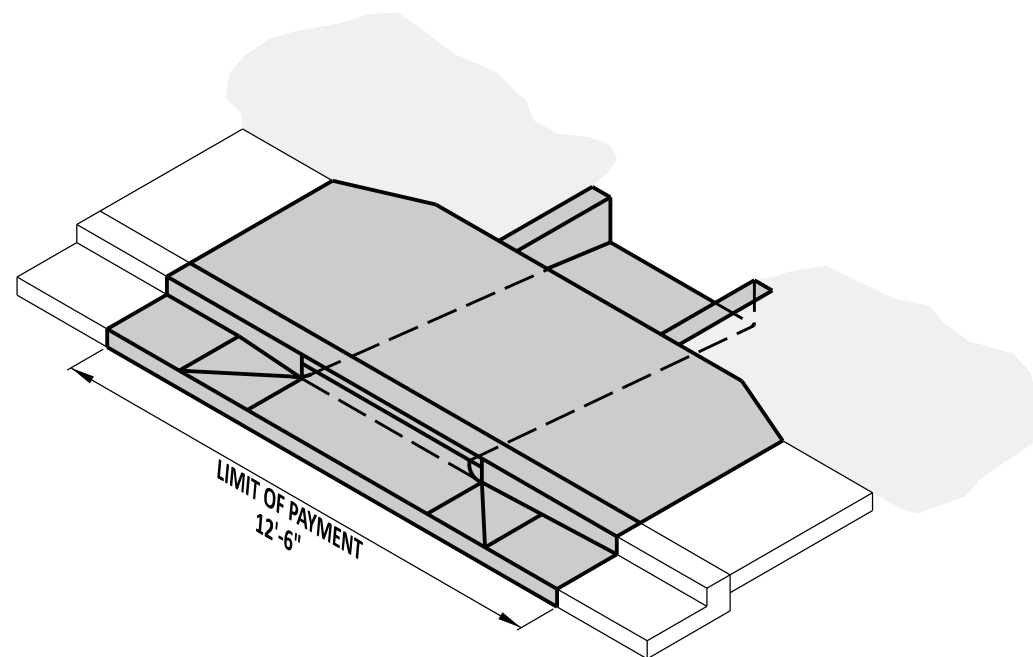
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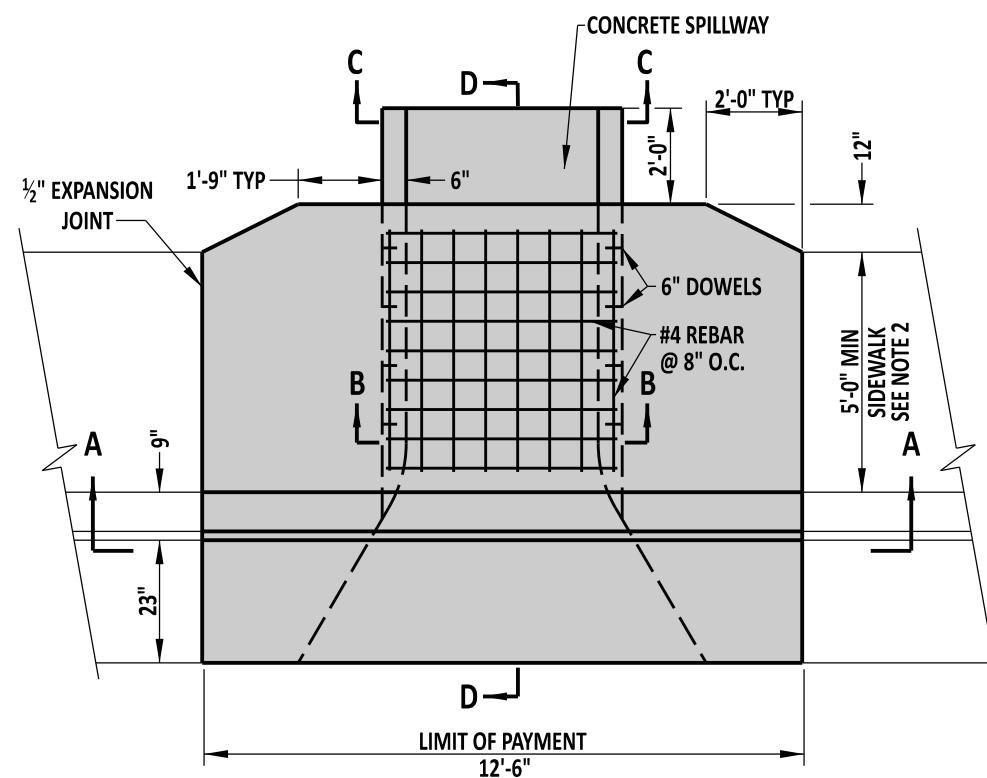
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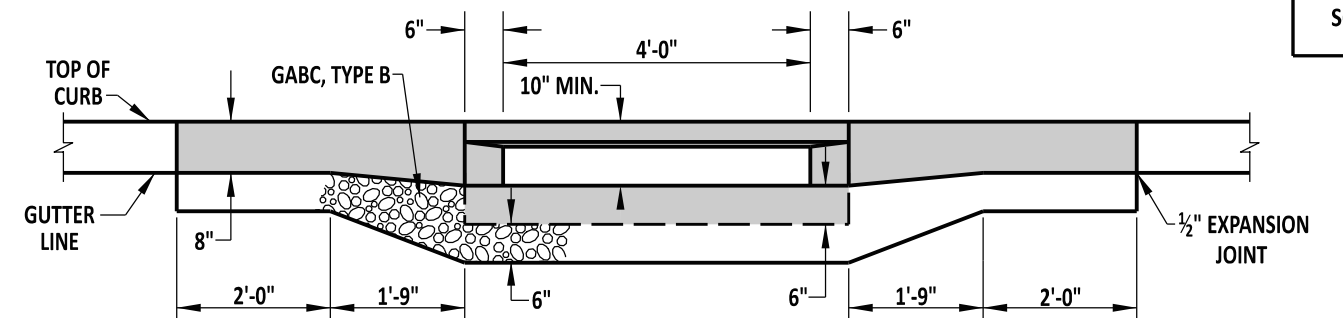


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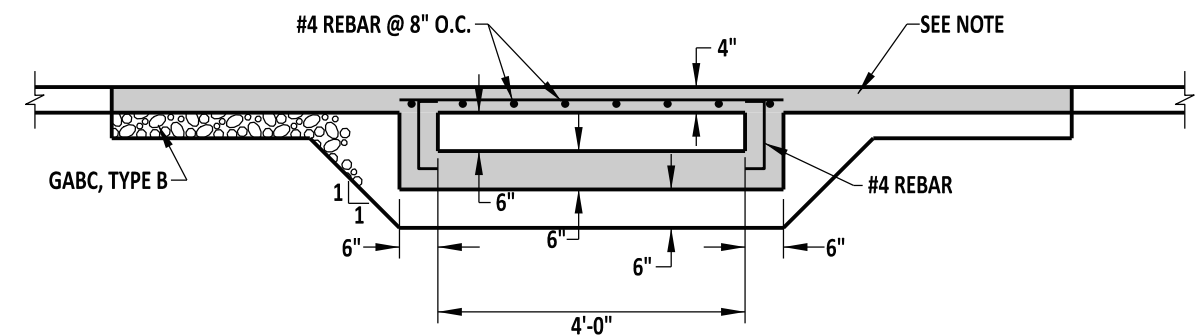


PLAN

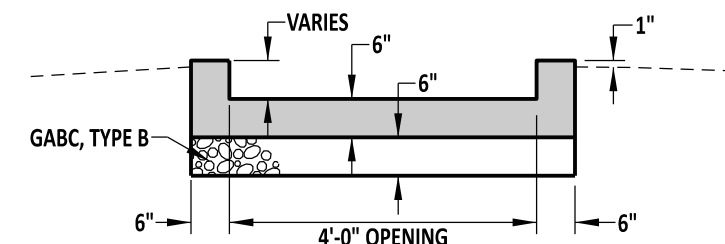
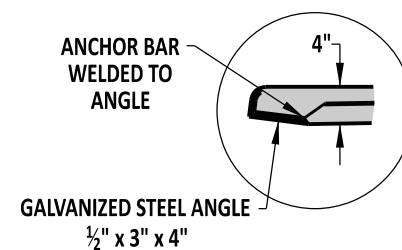
CURB / SIDEWALK OPENING



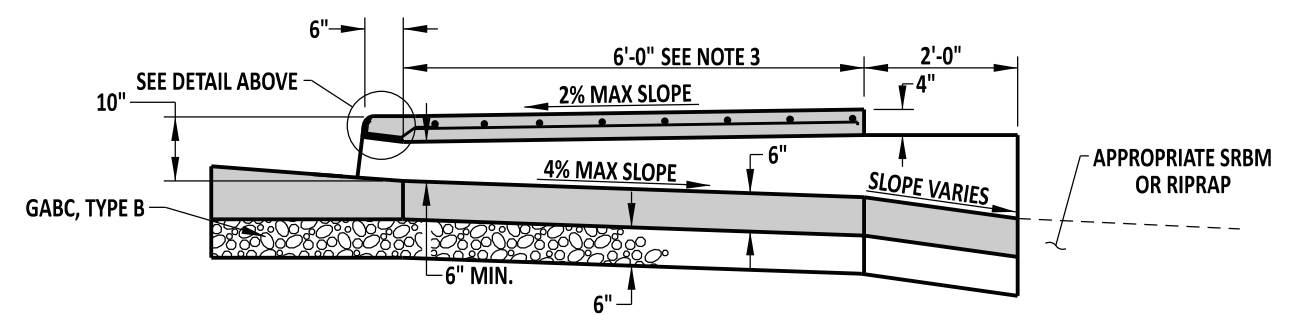
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTE:

- 1). WHEN A GRASS STRIP IS PRESENT BETWEEN THE BACK OF CURB AND SIDEWALK, THE SIDEWALK PORTION OF THIS STRUCTURE MAY BE PRECAST. HOWEVER, WHEN THE SIDEWALK IS DIRECTLY BEHIND THE CURB, THE ENTIRE UNIT MUST BE CAST-IN-PLACE.
- 2). SIDEWALK WIDTHS LESS THAN SHOWN ON THIS SHEET REQUIRE DEPARTMENT APPROVAL. SEE PEDESTRIAN ACCESSIBILITY STANDARDS MANUAL FOR MORE GUIDANCE.
- 3). THE SLAB WIDTH OVER THE CONCRETE SPILLWAY SHALL BE 12" WIDER THAN THE SIDEWALK WIDTH ON THE APPROACH TO THE CURB OPENING



**DELAWARE
DEPARTMENT OF TRANSPORTATION**

CURB OPENING WITH SIDEWALK DETAIL

STANDARD NO. C-5 (2017)

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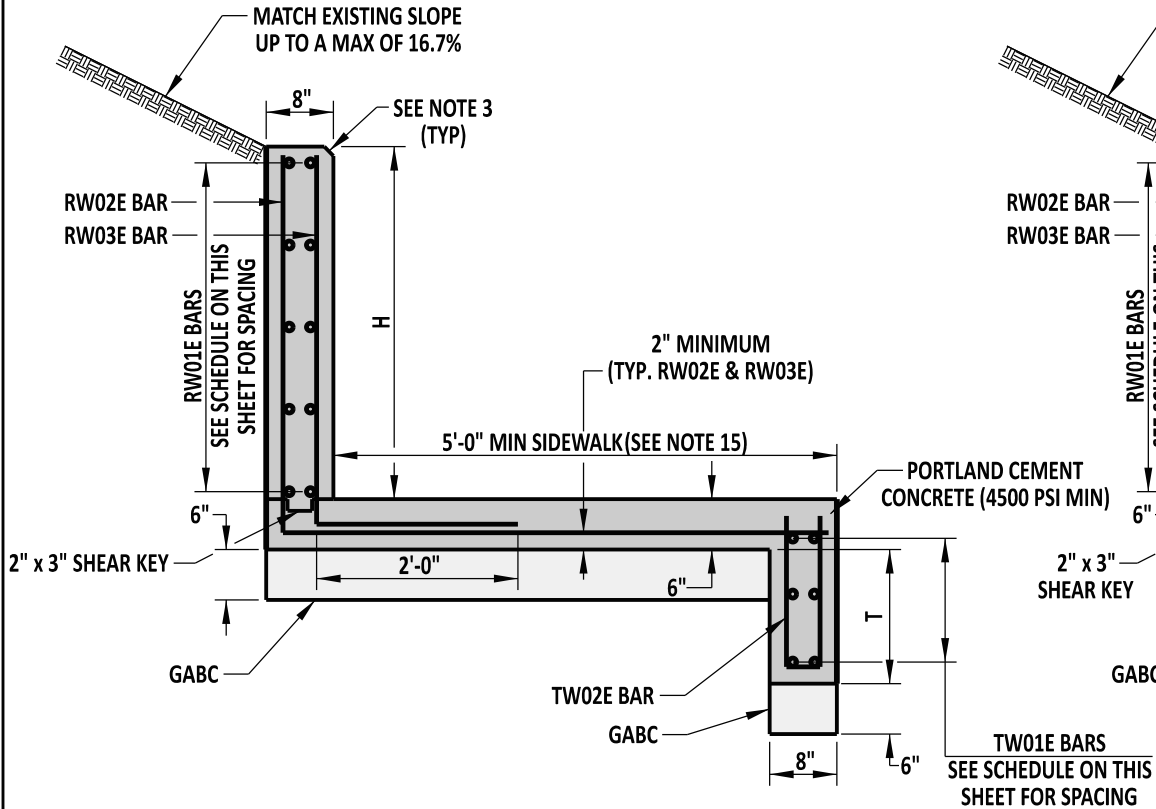
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WALL HEIGHT (H)	TOEWALL DEPTH (T)	REQUIRED TRANSVERSE REINFORCEMENT	REQUIRED LONGITUDINAL REINFORCEMENT
GREATER THAN 12" TO 2'-6"	NO TOEWALL NEEDED	#4 BARS @ 6" (RW02E, & RW03E)	#4 BARS @ 12" (RW01E & TW01E)
GREATER THAN 2'-6" TO 3'-0"	6"	#4 BARS @ 6" (RW02E, RW03E, & TW02E)	#4 BARS @ 12" (RW01E & TW01E)
GREATER THAN 3'-0" TO 3'-6"	12"	#5 BARS @ 6" (RW02E, RW03E, & TW02E)	#4 BARS @ 12" (RW01E & TW01E)

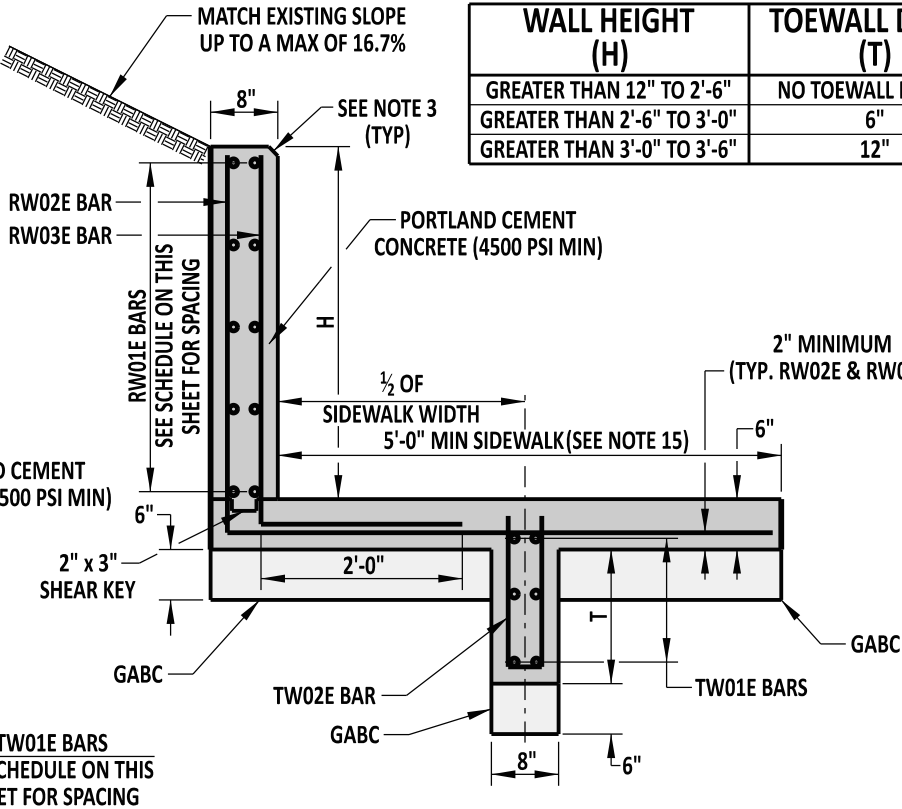
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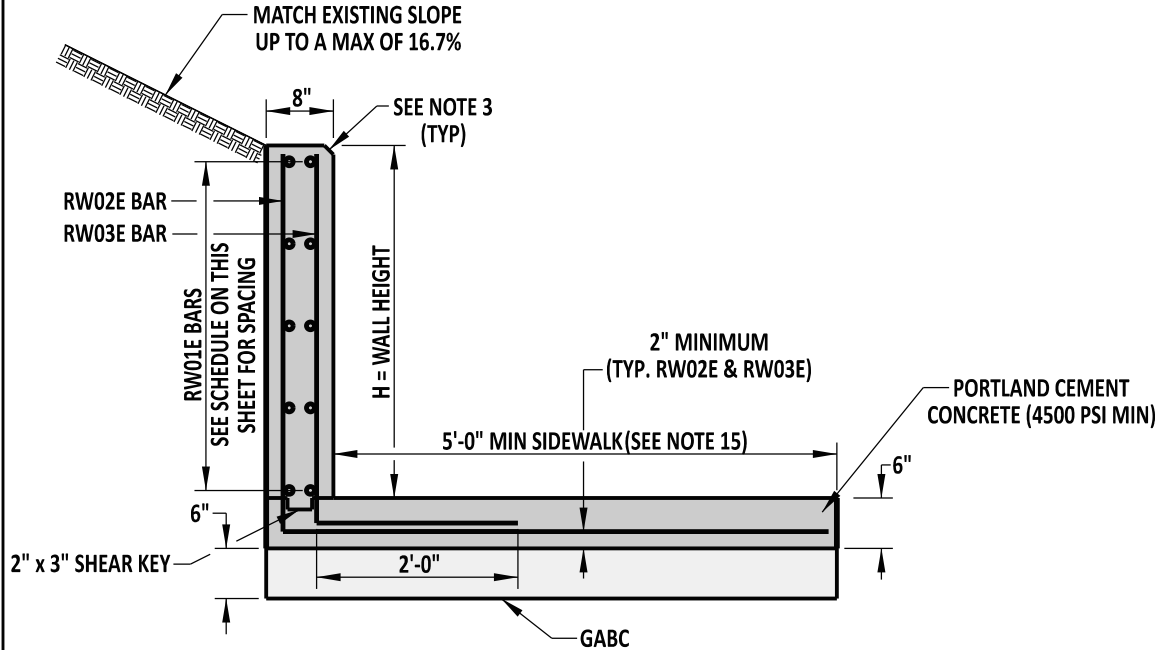
- 1). THE CURB RETAINING WALL DETAILS ARE FOR QUICK FIELD CHANGES WITH APPROVAL OF THE ENGINEER. MODULAR BLOCK WALLS OR ANY OTHER SMALL RETAINING WALLS ARE THE PREFERRED CHOICE DURING PLAN DEVELOPMENT.
- 2). WHEN H IS GREATER THAN 2'-6", CAST THE CURB RETAINING WALLS IN PLACE. WHEN H IS GREATER THAN 12" AND LESS THAN 2'-6", THE WALLS CAN BE EITHER PRECAST OR CAST-IN-PLACE.
- 3). CHAMFER EDGES 3/4" AT THE TOP OF WALL. PLACE A 1/4" ROUND EDGE AT THE FRONT OF SIDEWALK.
- 4). THE RETAINING WALL HAS BEEN DESIGNED TO RESIST EARTH PRESSURE ONLY. ADDITIONAL REINFORCEMENT MAY BE REQUIRED IF ANY SURCHARGE IS APPLIED BEHIND THE RETAINING WALL WITHIN A DISTANCE EQUAL TO 2 TIMES H AND WOULD REQUIRE AN APPROVED SHOP DRAWING.
- 5). MINIMUM BAR COVER IS 2" UNLESS OTHERWISE SPECIFIED ON THIS SHEET.
- 6). BEND THE RW02E AND RW03E BARS INTO ONE CONTINUOUS L-SHAPED BAR.
- 7). BEND THE TW02E BARS INTO 1 CONTINUOUS U-SHAPED BAR.
- 8). SEE DETAIL M-3 FOR SIDEWALK DETAILS AND NOTES, INCLUDING CONSTRUCTION JOINTS AND EXPANSION MATERIAL.
- 9). DO NOT PLACE RW01E AND TW01E BARS THROUGH EXPANSION JOINTS. STOP REINFORCEMENT AND MAINTAIN MINIMUM BAR COVER AS SPECIFIED IN PREVIOUS NOTES.
- 10). THE TOEWALL CAN OPTIONALLY BE PLACED AT MIDPOINT OF THE SIDEWALK.
- 11). ALL REINFORCING STEEL MUST BE EPOXY COATED.
- 12). IF A CURB IS CONSTRUCTED ADJACENT TO THE STRUCTURE, COAT THE FRONT FACE OF THE SIDEWALK/TOEWALL WITH AN APPROVED BOND BREAKER AGENT PRIOR TO THE PLACEMENT OF CONCRETE FOR THE CURB.
- 13). FOR CURB RETAINING WALLS WHERE H IS 12" OR LESS, A MODIFIED P.C.C. CURB TYPE 1-8 CAN BE USED.
- 14). CURB HAS BEEN OMITTED FROM THESE DETAILS FOR CLARITY PURPOSES. FOR INSTALLATIONS WHERE THE TOE WALL IS PLACED AT THE EDGE OF THE SIDEWALK, THE TOEWALL IS NOT A REPLACEMENT FOR CURB.
- 15). SIDEWALK WIDTHS LESS THEN SHOWN ON THIS SHEET REQUIRE DEPARTMENT APPROVAL. SEE PEDESTRIAN ACCESSIBILITY STANDARDS MANUAL FOR MORE GUIDANCE.



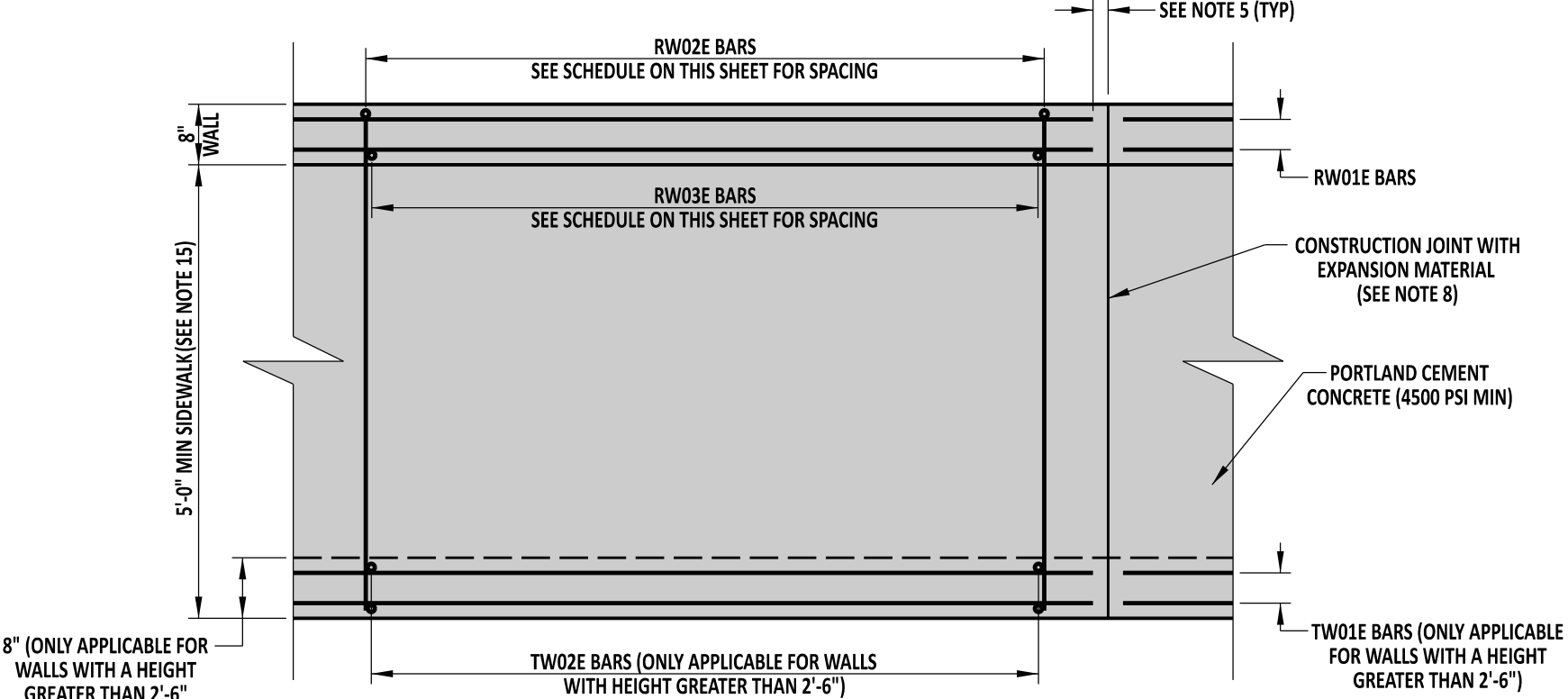
CURB RETAINING WALL SECTION
FOR H GREATER THAN 2'-6"



OPTIONAL TOEWALL PLACEMENT
CURB RETAINING WALL SECTION
FOR H GREATER THAN 2'-6"



CURB RETAINING WALL SECTION
FOR HEIGHTS GREATER THAN 12"
BUT LESS THAN OR EQUAL TO 2'-6"



PLAN VIEW



DELAWARE
DEPARTMENT OF TRANSPORTATION

CURB RETAINING WALL			
STANDARD NO.	C-6 (2017)	SHT.	1 OF 1

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INLET BOX SIZE		COVER SLAB SIZE (L X W)	DRAINAGE INLET TOP UNIT	INLET TOP UNIT REBAR LENGTH	INLET TOP UNIT LIMIT OF PAYMENT	INLET TOP UNIT BAR BENDING DIAGRAM	FRAME & GRATE (FOUND ON DETAIL D-5, SHEET 2) SEE NOTE 6	MAXIMUM PIPE SIZE (SEE NOTE 1)		MAXIMUM HEIGHT (TO TOP OF BOX)
L	W							L	W	
17 $\frac{5}{8}$ "	11 $\frac{5}{8}$ "	NO COVER SLAB	TYPE 5 (FRAME & GRATE COMBO)	N/A	N/A	N/A	TYPE 5 (FRAME & GRATE COMBO)	N/A	N/A	4'-0"
24"	24"	NO COVER SLAB	TYPE 6 (FRAME & GRATE COMBO)	N/A	N/A	N/A	TYPE 6 (FRAME & GRATE COMBO)	15"	15"	4'-0"
34"	18"	NO COVER SLAB	TYPES A, C, D, & E (DETAIL D-5, SHEET 7)	79"	82"	S504 (DETAIL D-5, SHEET 7)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	24"	12"	4'-0" (SEE NOTE 7)
34"	24"	NO COVER SLAB	TYPES A, B, C, D, E, & S (SEE NOTE 4)	79"	82"	S501 (SEE NOTE 5)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	24"	15"	11'-4"
48"	30"	60" x 42" (DETAIL D-5, SHEET 4)	TYPES A, B, C, D, E & S (SEE NOTE 5)	93"	96"	S501 (SEE NOTE 5)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	36"	21"	11'-4"
48"	48"	60" x 60" (DETAIL D-5, SHEET 4)	TYPES A, B, C, D, E & S (SEE NOTE 5)	93"	96"	S501 (SEE NOTE 5)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	36"	36"	11'-4"
66"	30"	78" x 42" (DETAIL D-4, SHEET 4)	TYPES A, B, C, D, E & S (SEE NOTE 5)	111"	114"	S501 (SEE NOTE 5)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	48"	21"	11'-4"
66"	48"	78" x 60" (DETAIL D-5, SHEET 4)	TYPES A, B, C, D, E & S (SEE NOTE 5)	111"	114"	S501 (SEE NOTE 5)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	48"	36"	11'-4"
66"	66"	78" x 78" (DETAIL D-5, SHEET 4)	TYPES A, B, C, D, E & S (SEE NOTE 5)	111"	114"	S501 (SEE NOTE 5)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	48"	48"	11'-4"
72"	24"	84" x 36" DETAIL D-5, SHEET 5)	TYPES A, B, C, D, E & S (SEE NOTE 5)	117"	120"	S501 (SEE NOTE 5)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	54"	15"	11'-4"
72"	48"	84" x 60" (DETAIL D-5, SHEET 5)	TYPES A, B, C, D, E & S (SEE NOTE 5)	117"	120"	S501 (SEE NOTE 5)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	54"	36"	11'-4"
72"	72"	84" x 84" (DETAIL D-5, SHEET 5)	TYPES A, B, C, D, E & S (SEE NOTE 5)	117"	120"	S501 (SEE NOTE 5)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	54"	54"	11'-4"

NOTES :

- 1). MAXIMUM PIPE SIZES ARE CALCULATED USING REINFORCED CONCRETE PIPE PERPENDICULAR TO THE BOX WALL. FOR OTHER PIPE SIZES, TYPES AND SKEW ANGLES OTHER THAN PERPENDICULAR, SEE CHART ON DELDOT DESIGN RESOURCE CENTER.
- 2). STEPS ARE REQUIRED ON ALL BOXES WHOSE DEPTH IS 4'-0" OR GREATER.
- 3). SEE DETAIL D-4 OR APPROPRIATE DETAIL SHEET FOR ADDITIONAL NOTES.
- 4). FOR A 34" X 24" DRAINAGE INLET, SEE DETAIL D-5, SHEET 6 FOR INLET TOP UNIT TYPES A, B, C, D, & E. FOR INLET TOP UNIT TYPE S, SEE DETAIL D-5, SHEET 8.
- 5). FOR MORE INFORMATION ON DRAINAGE INLET TOP UNIT TYPES A, B, C, D, & E SEE DETAIL D-5, SHEET 3 AND FOR DRAINAGE INLET TOP UNIT, TYPE S, SEE DETAIL D-5, SHEET 8.
- 6). ONLY USE THE TYPE 7 DRAINAGE INLET GRATE WHEN SPECIFIED ON THE PLANS OR AFTER APPROVAL BY THE ENGINEER.
- 7). SEE DETAIL D-5, SHEET 7 FOR MORE INFORMATION ON THE MAXIMUM HEIGHT FOR THE 34" X 18" DRAINAGE INLET.



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DRAINAGE INLET REFERENCE SHEET

STANDARD NO. D-R (2017) SHT. 1 OF 1

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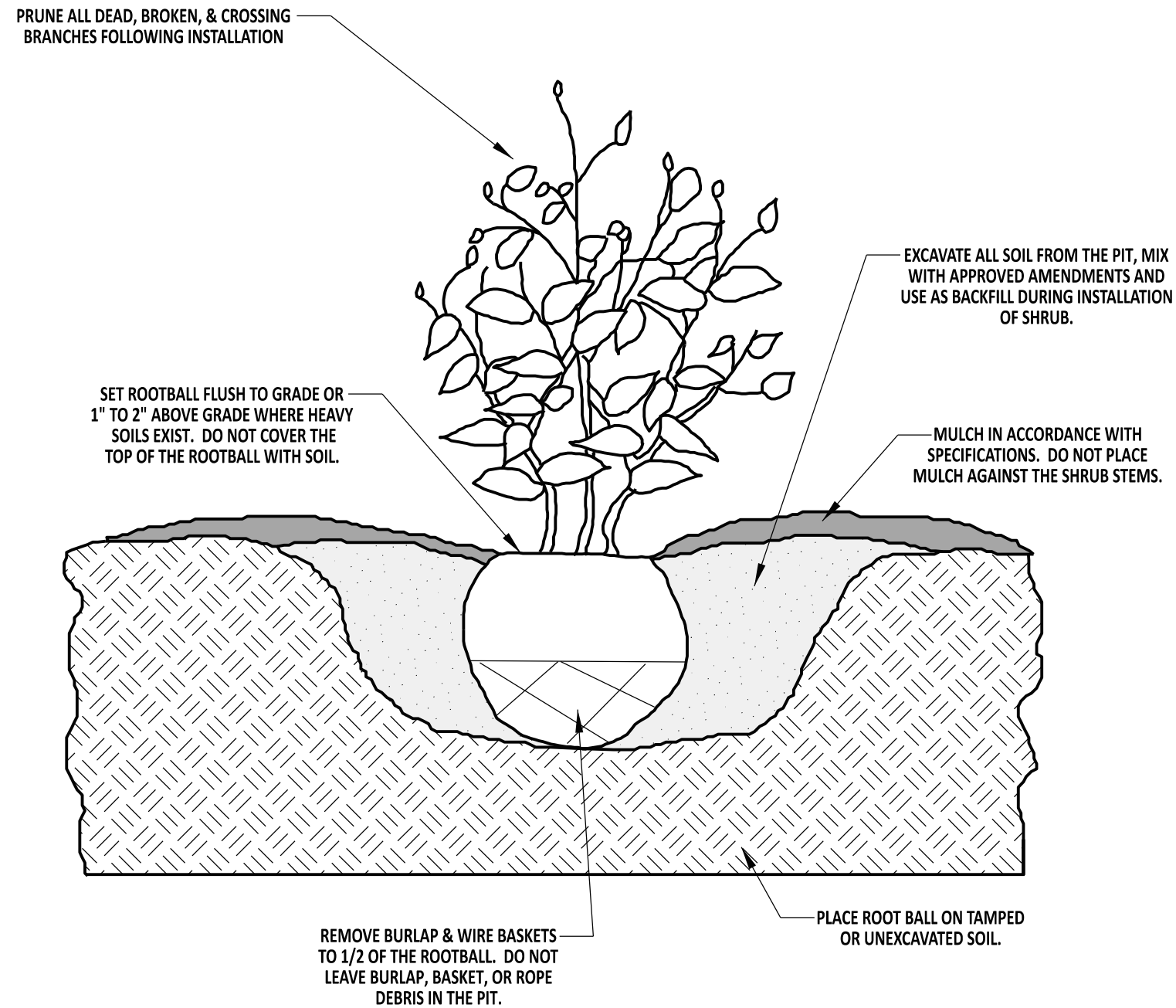
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NOTES:

- 1). DIG BASE OF PLANTING PIT A MINIMUM OF TWO AND A MAXIMUM OF THREE TIMES THE SIZE OF THE ROOT BALL.
- 2). INSTALL SHRUBS IN MASSES OF NO LESS THAN 3 PLANTS. A MINIMUM OF 3'-0" IS REQUIRED FROM MIDDLE OF SHRUB TO ANY PERMANENT STRUCTURE (I.E. CURB, SIDEWALK, BUILDING, ETC...)
- 3). SHRUB PRUNING IS TO BE PERFORMED BY AN I.S.A. CERTIFIED ARBORIST, CERTIFIED NURSERY PROFESSIONAL, OR UNDER THE DIRECTION THEREOF. DO NOT HEAVILY PRUNE SHRUBS AT PLANTING.
- 4). HAND DIG AUGERED HOLES TO FINAL WIDTH AND DEPTH TO ELIMINATE GLAZING.
- 5). MULCH ALL SHRUB MASSES IN ONE CONTINUOUS BED.

ROADSIDE SHRUB PLANTING DETAIL



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PLANTING DETAILS

STANDARD NO.

L-1 (2017)

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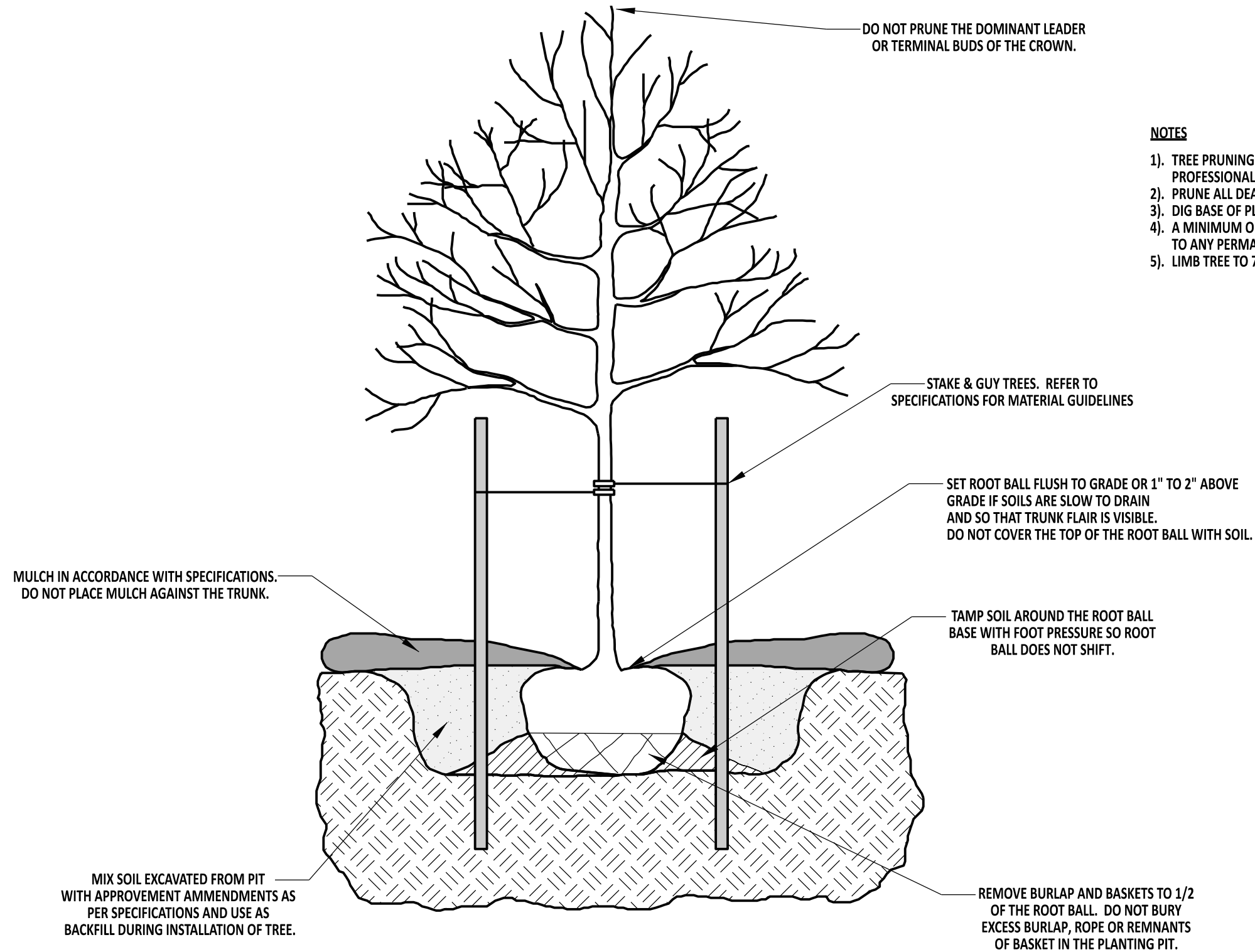
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5/18/2017
DATE



NOTES

- 1). TREE PRUNING IS TO BE PERFORMED BY AN I.S.A. CERTIFIED ARBORIST, CERTIFIED NURSERY PROFESSIONAL, OR UNDER THE DIRECTION THEREOF. DO NOT HEAVILY PRUNE TREES AT PLANTING.
- 2). PRUNE ALL DEAD, BROKEN, & CROSSING BRANCHES FOLLOWING INSTALLATION.
- 3). DIG BASE OF PLANTING PIT A MINIMUM OF TWO AND A MAXIMUM THREE TIMES THE SIZE OF THE ROOT BALL.
- 4). A MINIMUM OF 3'-0" IS REQUIRED FROM THE MIDDLE OF THE TREE TO ANY PERMANENT STRUCTURE (I.E. CURB, SIDEWALK, BUILDING, ETC...)
- 5). LIMB TREE TO 7'-0" FOR PEDESTRIAN CLEARANCE WHEN PLANTING ADJACENT TO SIDEWALKS.

TREE PLANTING DETAIL



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PLANTING DETAILS

STANDARD NO.

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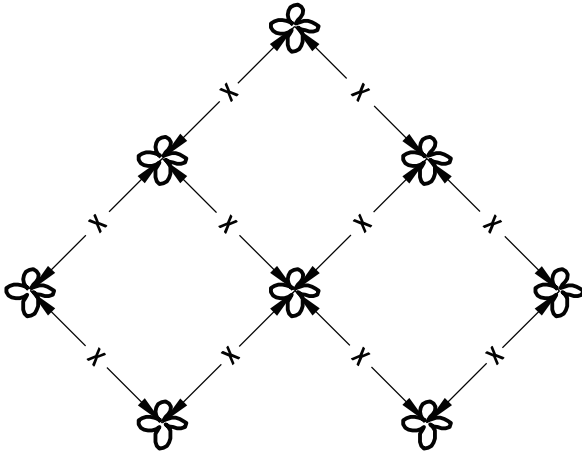
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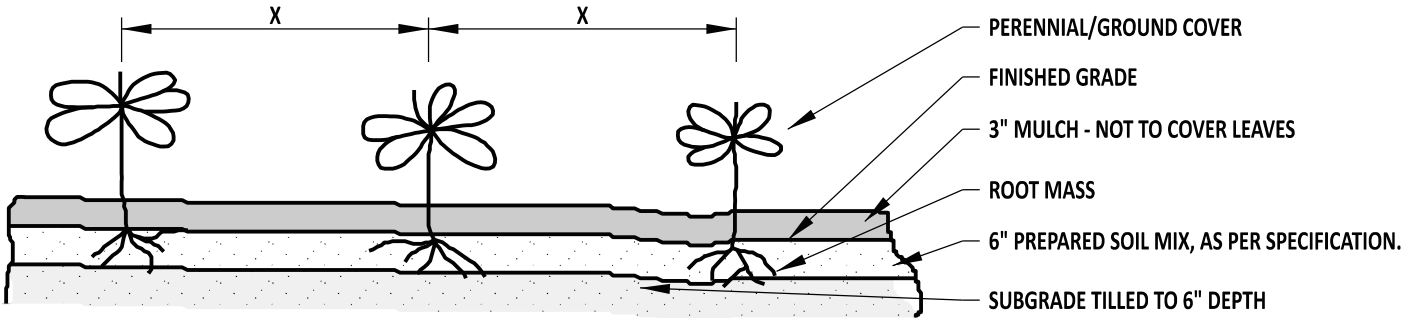
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NOTE:
1). SEE PLANT LIST FOR SPACING (X).



PLAN VIEW



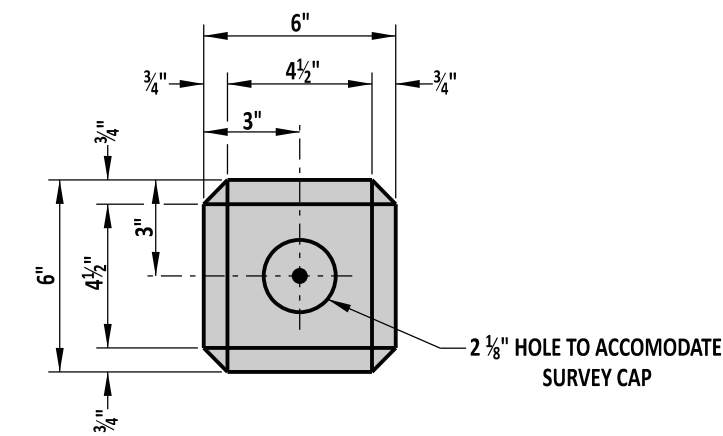
SECTION VIEW

PERENNIAL/GROUNDCOVER PLANTING DETAIL

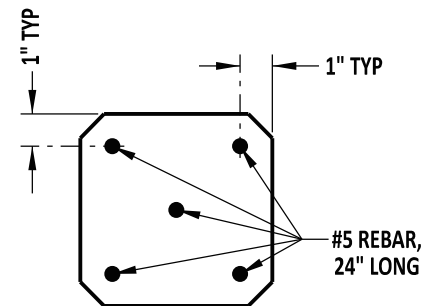


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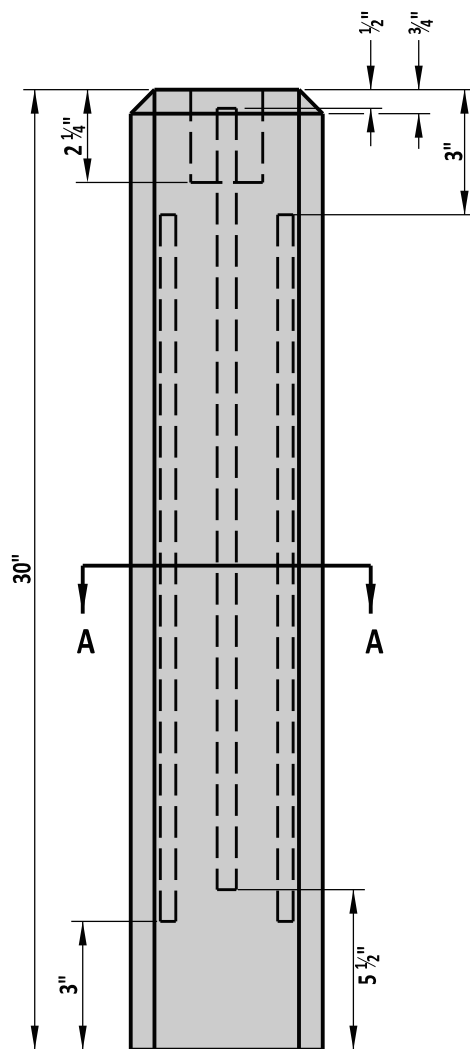
PLANTING DETAILS				APPROVED	SIGNATURE ON FILE	5/31/2017
					CHIEF ENGINEER	DATE
STANDARD NO.	L-1 (2017)	SHT.	3	OF	3	RECOMMENDED
					SIGNATURE ON FILE	5/18/2017
					DESIGN ENGINEER	DATE



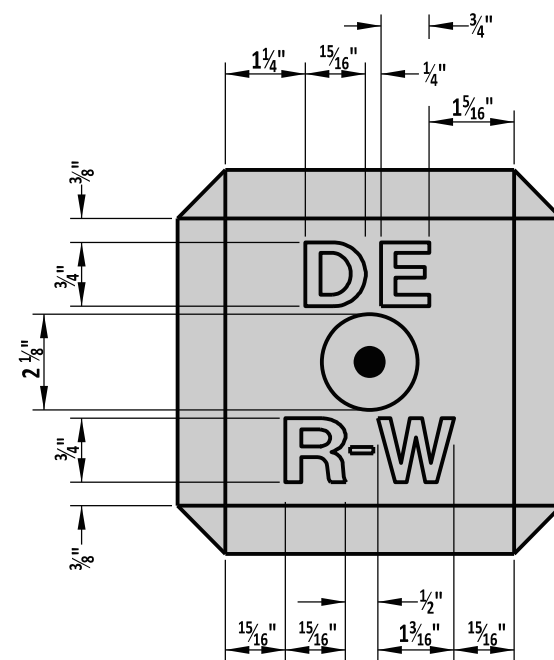
TOP



SECTION A-A



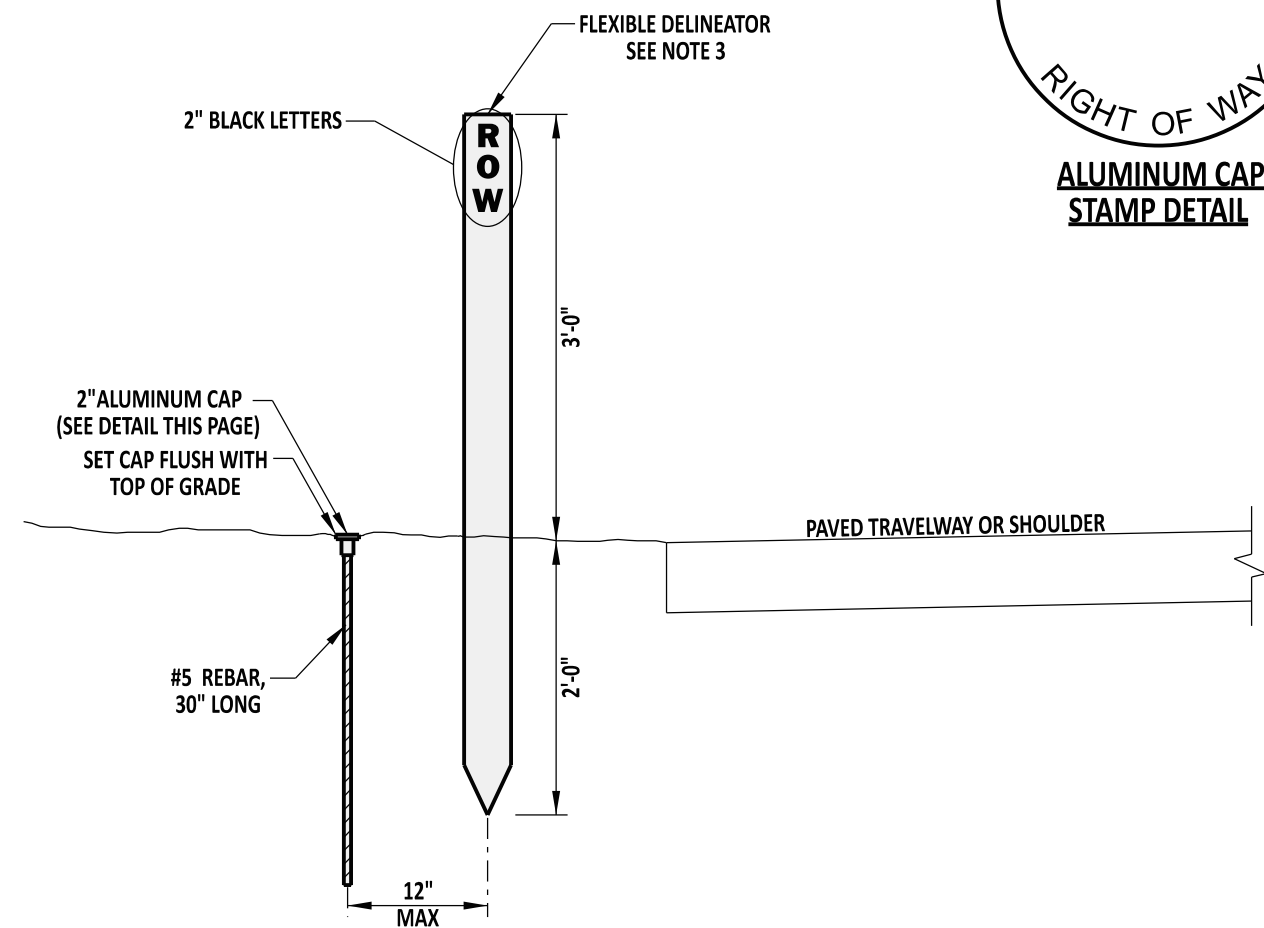
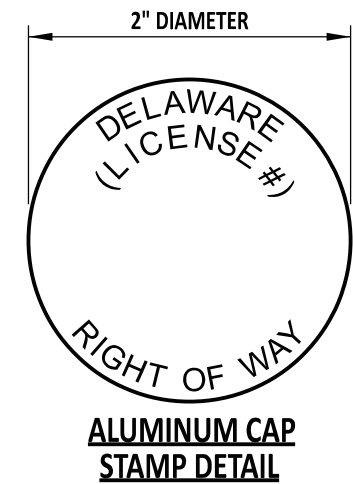
ELEVATION



TOP DETAIL

- NOTES : 1). LONGITUDINAL STEEL SHALL BE HELD IN PLACE BY CRADLES.
- 2). LETTERS ON CONCRETE MONUMENT TO BE COUNTERSUNK IN TOP OF MARKER 1/4".
- 3). FLEXIBLE DELINEATORS ARE ONLY TO BE USED ON ROADS WITH A SPECIFIED DENIAL OF ACCESS OR CLASSIFIED AS MINOR ARTERIALS OR HIGHER. ON ALL OTHER ROAD CLASSIFICATIONS, A WOODEN STAKE SHALL BE PLACED WITH "ROW" HANDWRITTEN VERTICALLY IN 1" TALL LETTERS.
- 4). PLACE CAP ON CONCRETE MONUMENT SO THAT TOP OF CAP IS FLUSH WITH THE TOP OF THE CONCRETE MONUMENT.
- 5). IN HOT-MIX OR CONCRETE, PLACE A CONCRETE SURVEY MARKER IN LIEU OF A REBAR AND CAP. SEE REBAR AND CAP ITEM SPECIFICATION FOR MORE INFORMATION.

SCALE : NTS



REBAR AND CAP WITH FLEXIBLE DELINEATOR DETAIL



DELAWARE
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MONUMENTATION

STANDARD NO.

M-2 (2017)

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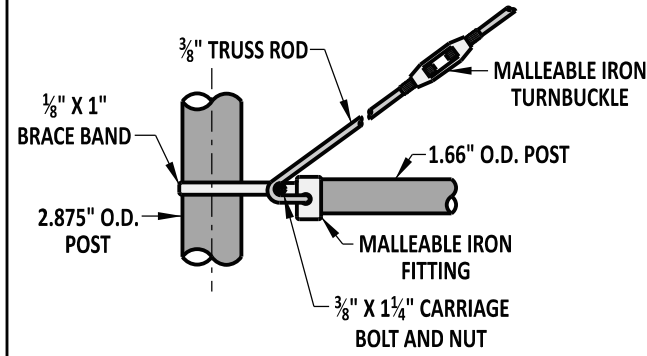
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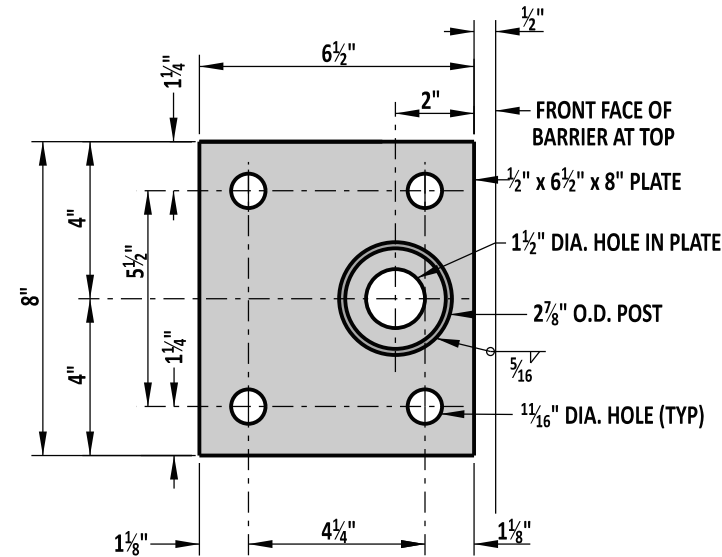
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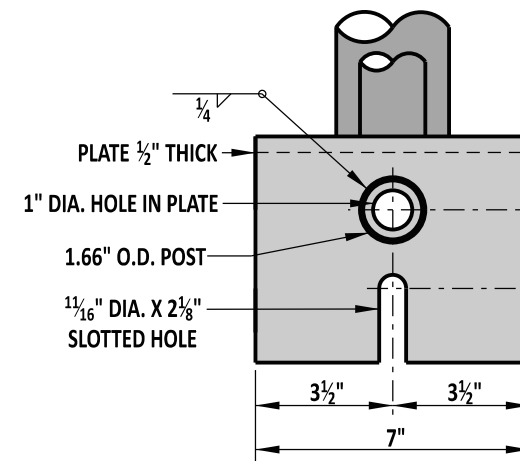
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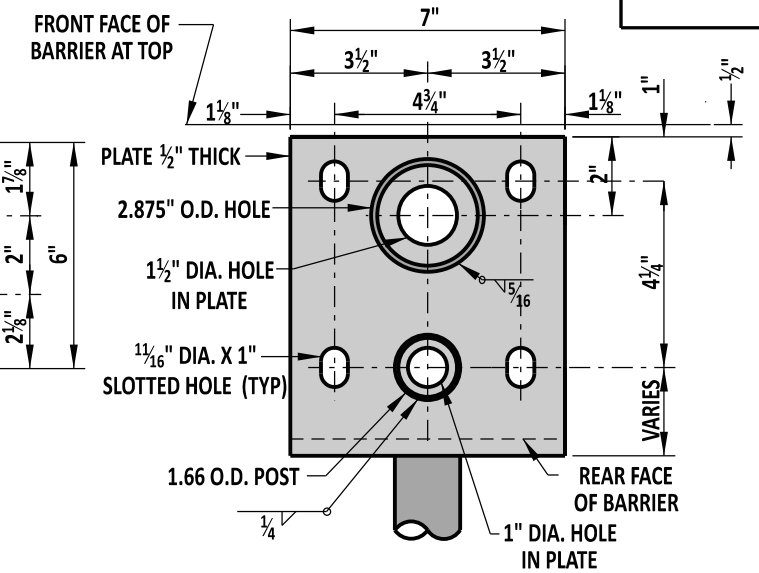
TRUSS ROD ATTACHMENT



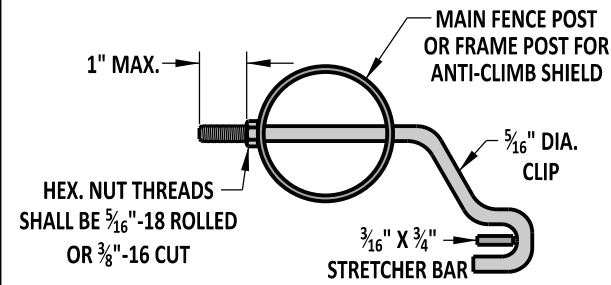
DETAIL 'A'



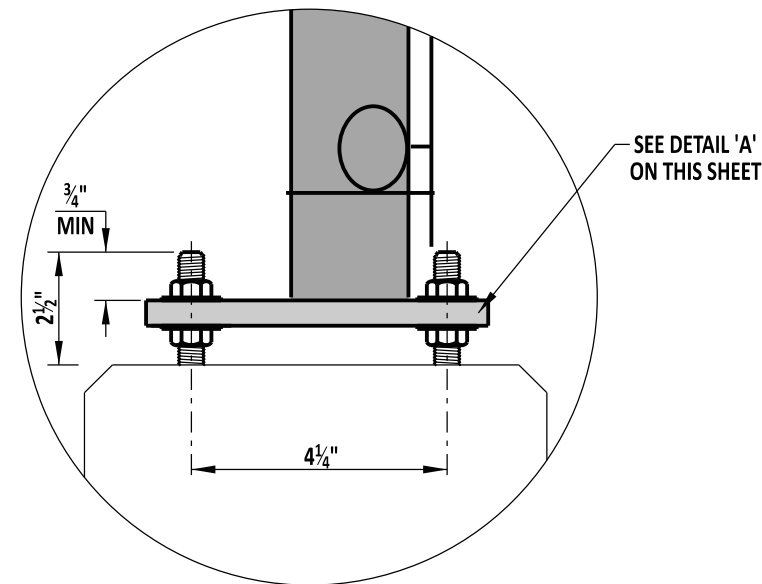
SIDE VIEW



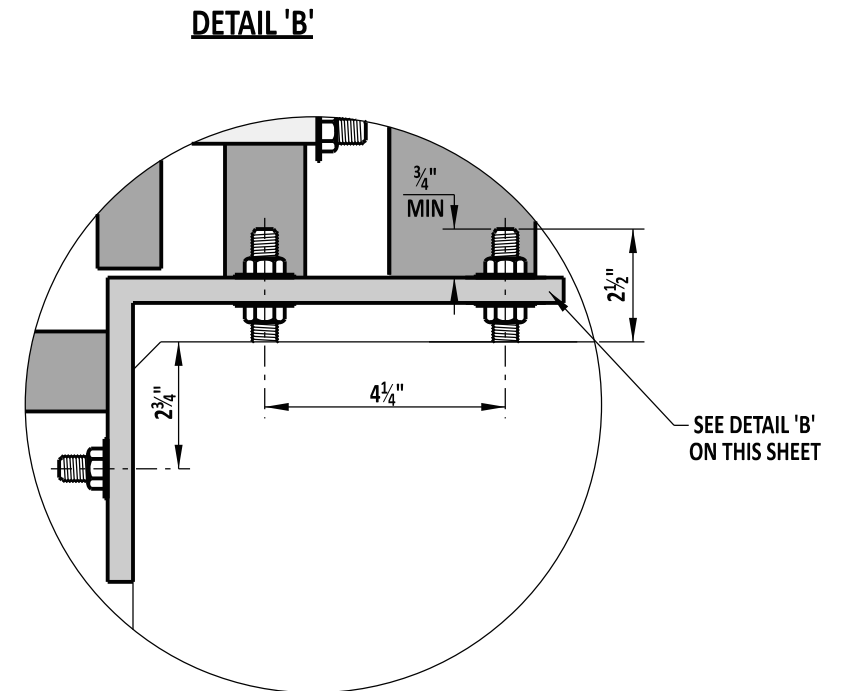
PLAN VIEW



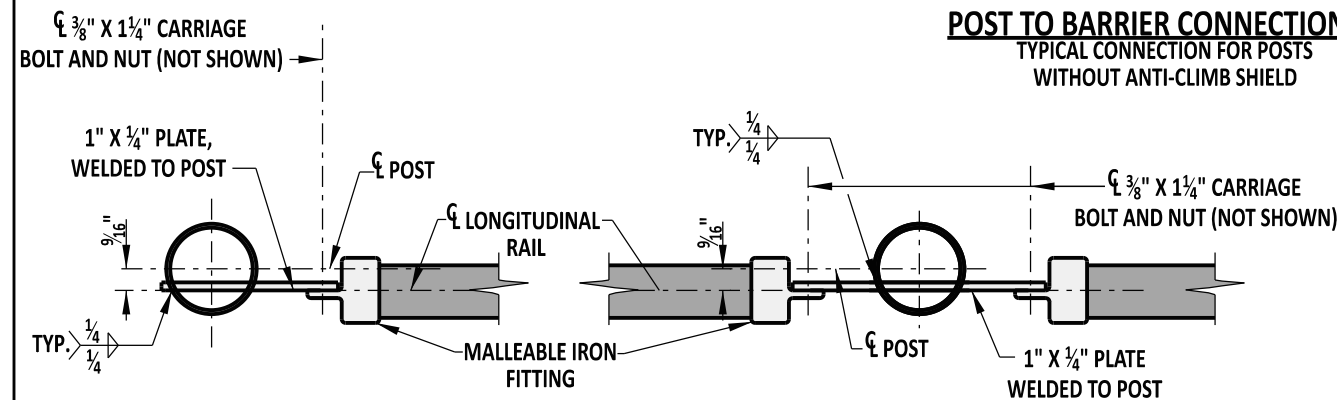
STRETCHER BAR ATTACHMENT



POST TO BARRIER CONNECTION 'A'
TYPICAL CONNECTION FOR POSTS
WITHOUT ANTI-CLIMB SHIELD



POST TO BARRIER CONNECTION 'B'
TYPICAL CONNECTION FOR POSTS
WITH ANTI-CLIMB SHIELD



TOP LONGITUDINAL RAIL-POST ATTACHMENT

NOTES:

- 1). POST SPACING - POST SPACING TO BE DETERMINED BY THE CONTRACTOR AND INCLUDED IN THE WORKING DRAWINGS. EACH POST MUST BE A MINIMUM OF 1'-0" FROM ANY PARAPET JOINT.
- 2). WORKING DRAWINGS - WORKING DRAWINGS WILL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR REVIEW



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BRIDGE SAFETY FENCE

STANDARD NO.

M-10 (2017)

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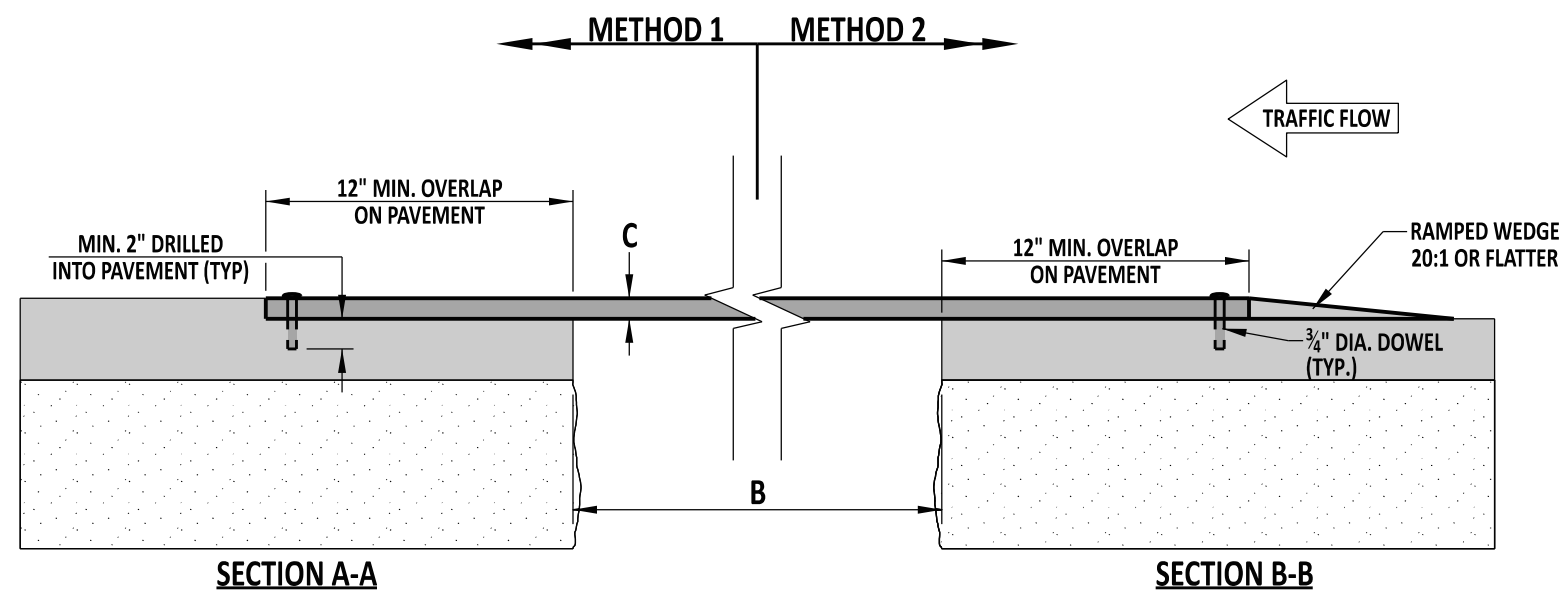
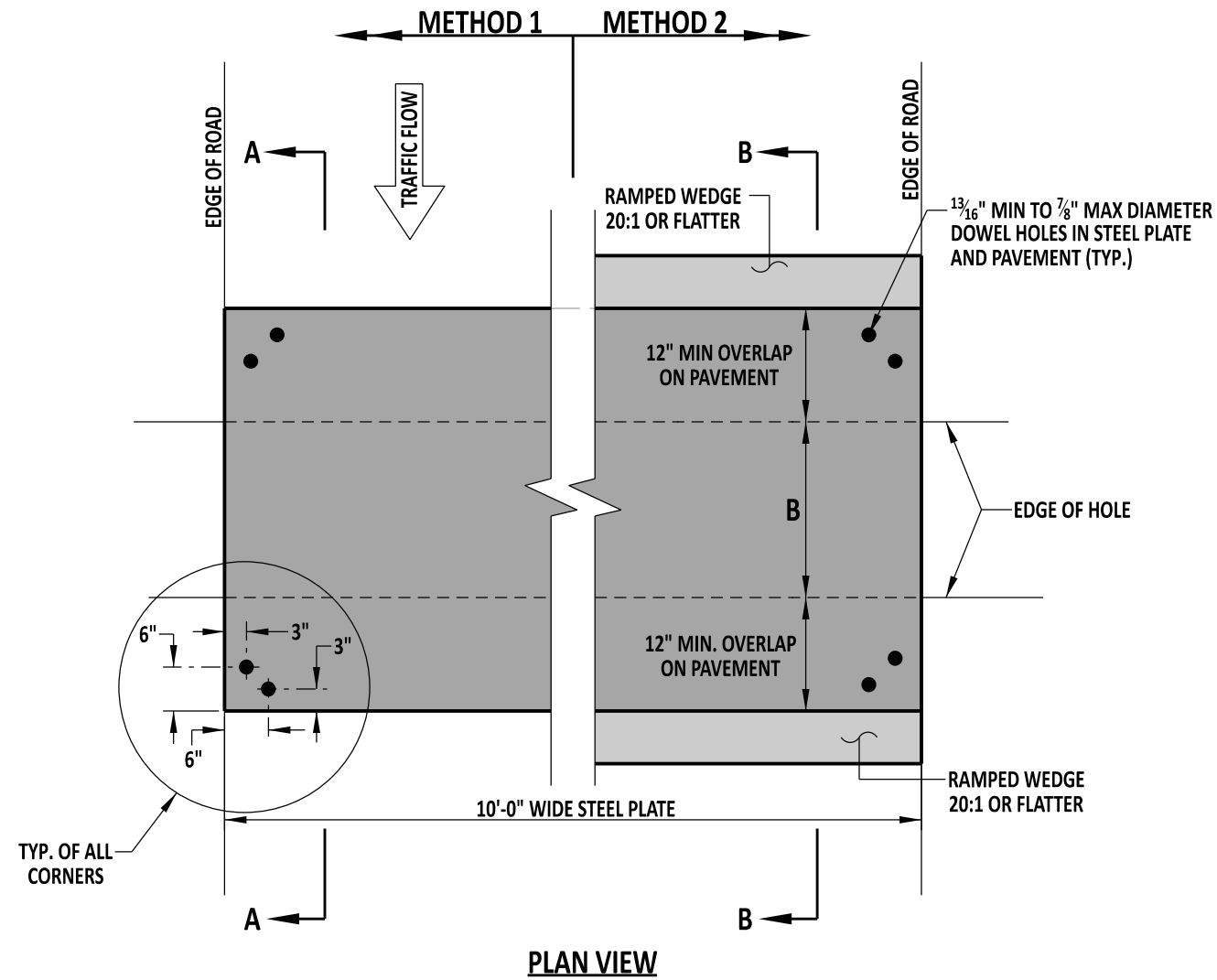
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B	C
TRENCH WIDTH	MIN. PLATE THICKNESS
1'-0"	1/2"
2'-0"	3/4"
3'-0"	7/8"
4'-0"	1"
5'-0"	1 1/8"
6'-0"	1 1/4"

BASED ON HL-93 TRUCK LOAD

NOTES:

- USE OF STEEL PLATES MUST BE APPROVED BY THE DEPARTMENT AND IS NOT PERMITTED BETWEEN NOVEMBER 1ST AND MARCH 31ST.
- STEEL PLATE BRIDGING ON FREEWAYS AND EXPRESSWAYS IS STRICTLY PROHIBITED.
- STEEL PLATES AND DOWELS WILL CONFORM TO ASTM A36 STANDARDS.
- ADEQUATELY SHORE THE TRENCH IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS TO SUPPORT THE BRIDGING AND TRAFFIC LOADS.
- SECURE BRIDGING AGAINST DISPLACEMENT BY USING ADJUSTABLE CLEATS, SHIMS, OR OTHER DEVICES.
- USE OF STEEL PLATE BRIDGING IS NOT TO EXCEED FOUR (4) CONSECUTIVE WORKING DAYS IN ANY GIVEN WEEK AND NOT LEFT IN PLACE OVER THE WEEKEND, UNLESS DIRECTED BY THE ENGINEER IN THE FIELD.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF STEEL PLATES, SHORING, ASPHALT CONCRETE RAMPS, AND ENSURING THEY MEET ALL MINIMUM SPECIFICATIONS. DEFORMATIONS OF ANY KIND ARE NOT ACCEPTABLE ON STEEL PLATES. EXAMPLES OF DEFORMATIONS COULD BE, BUT NOT LIMITED TO, ANY OF THE FOLLOWING: FREE FROM ANY CLIPS, CHAINS, ATTACHMENTS, WELDMENTS, SURFACE IRREGULARITIES, ETC.
- A STRUCTURE DESIGN IS REQUIRED FOR TRENCH WIDTHS GREATER THAN 6'-0". DESIGN WILL BE APPROVED BY DEPARTMENT PRIOR TO USE.
- INSTALL STEEL PLATE BRIDGING AND SHORING USING EITHER OF THE METHODS BELOW:
METHOD 1: FOR SPEEDS GREATER THAN 45 MPH, MILL THE PAVEMENT TO A DEPTH EQUAL TO THE THICKNESS OF THE PLATE AND TO A WIDTH AND LENGTH EQUAL TO THE DIMENSION OF THE PLATE. BUTT SUBSEQUENT PLATES TO EACH OTHER. ATTACH THE PLATE TO THE ROADWAY BY A MINIMUM OF TWO DOWELS PRE-DRILLED INTO EACH CORNER OF THE PLATE AND DRILLED 2" INTO THE PAVEMENT AS SHOWN ON THIS DETAIL.
METHOD 2: FOR SPEEDS 45 MPH OR LESS, ATTACH THE PLATE TO THE ROADWAY BY A MINIMUM OF TWO DOWELS PRE-DRILLED INTO EACH CORNER OF THE PLATE AND DRILLED 2" INTO THE PAVEMENT AS SHOWN IN ON THIS DETAIL. BUTT SUBSEQUENT PLATES TO EACH OTHER. USE COMPACTED BITUMINOUS TEMPORARY ROADWAY MATERIAL (TRM) TO FORM A RAMPED WEDGE WITH A MAXIMUM SLOPE OF 5% AND A MINIMUM TAPER LENGTH OF 20" TO COVER ALL EDGES OF STEEL PLATES.
- FOR BOTH METHODS, WHEN THE STEEL PLATES ARE REMOVED, BACKFILL THE DOWEL HOLES IN THE PAVEMENT WITH EITHER GRADED FINES OF ASPHALT CONCRETE MIX, CONCRETE SLURRY, OR EQUIVALENT SLURRY TO THE SATISFACTION OF THE ENGINEER.
- STEEL PLATES MUST HAVE A SURFACE THAT IS MANUFACTURED WITH A MINIMUM NOMINAL COEFFICIENT OF FRICTION OF 0.35 AT THE TIME OF PLACEMENT.



DELAWARE
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STEEL PLATE

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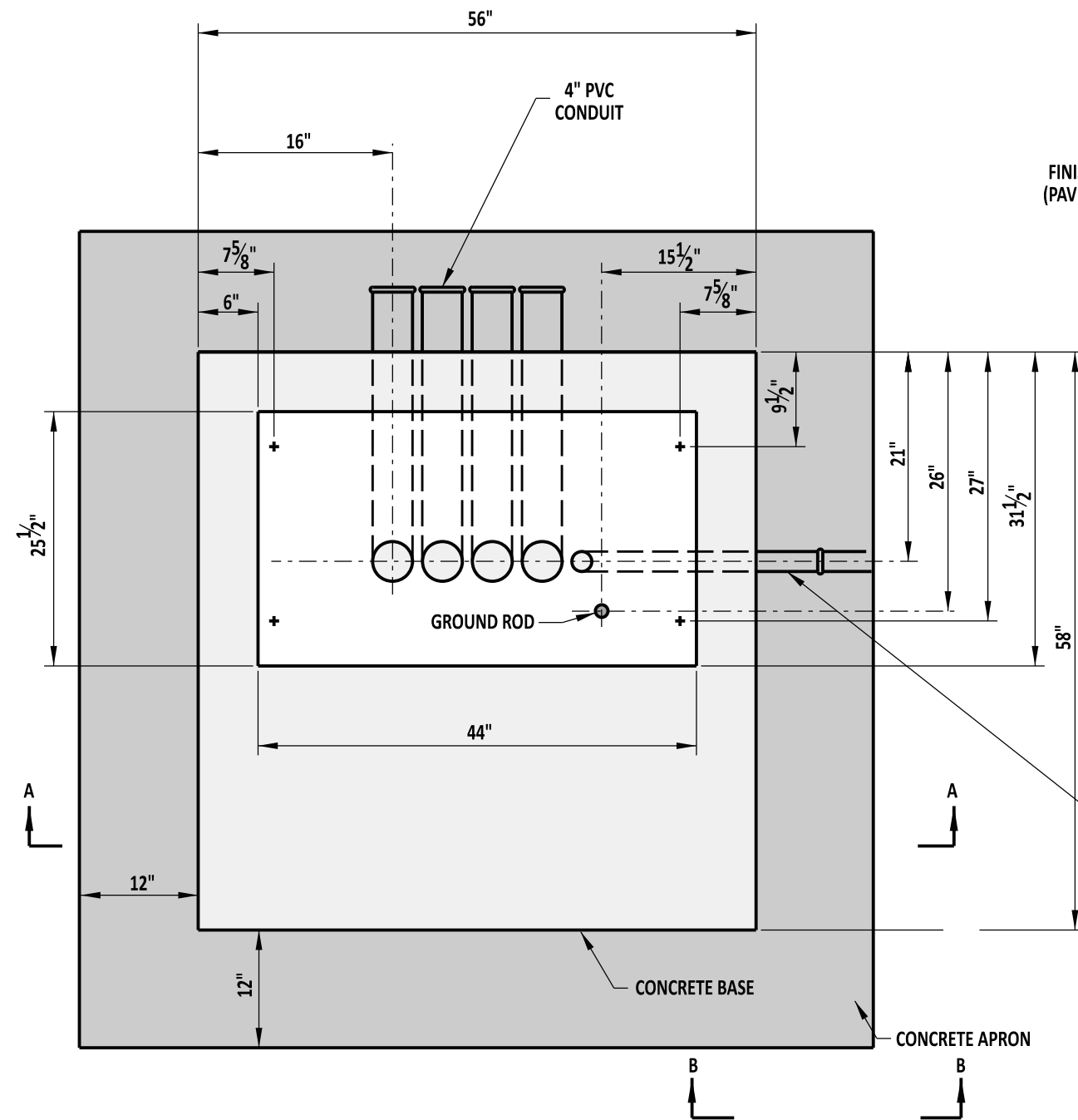
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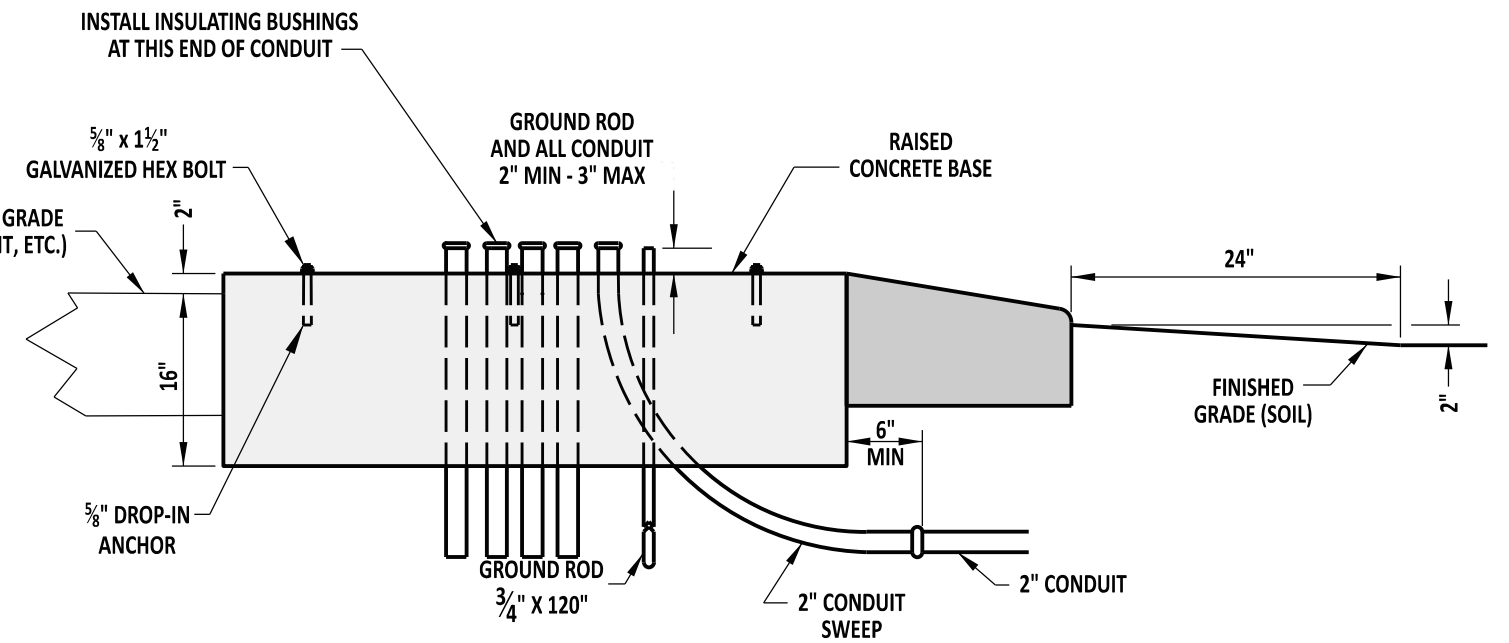
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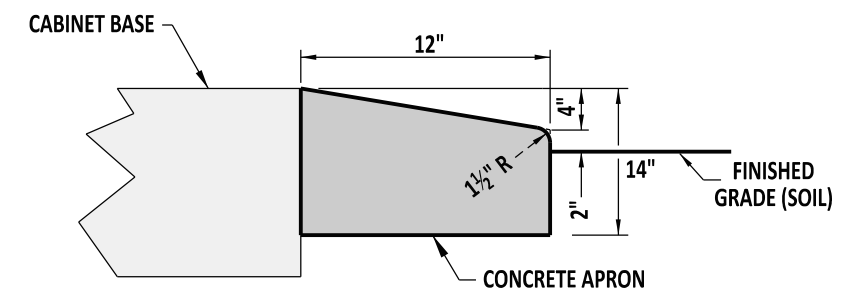
**"P & R" CABINET
PLAN VIEW**

NOTE:

- 1). CONCRETE APRON IS REQUIRED ONLY WHEN CABINET BASE IS INSTALLED IN EARTH AREAS OR AS DIRECTED ON PLAN.
- 2). CONDUITS SHALL BE EVENLY SPACED, WITH MINIMUM 2" WIDTH ESTABLISHED BETWEEN ALL CONDUITS.



SECTION A-A



SECTION B-B



**DELAWARE
DEPARTMENT OF TRANSPORTATION**

CABINET BASES, TYPES P & R

STANDARD NO. T-4 (2017)

SHT. 2 OF 2

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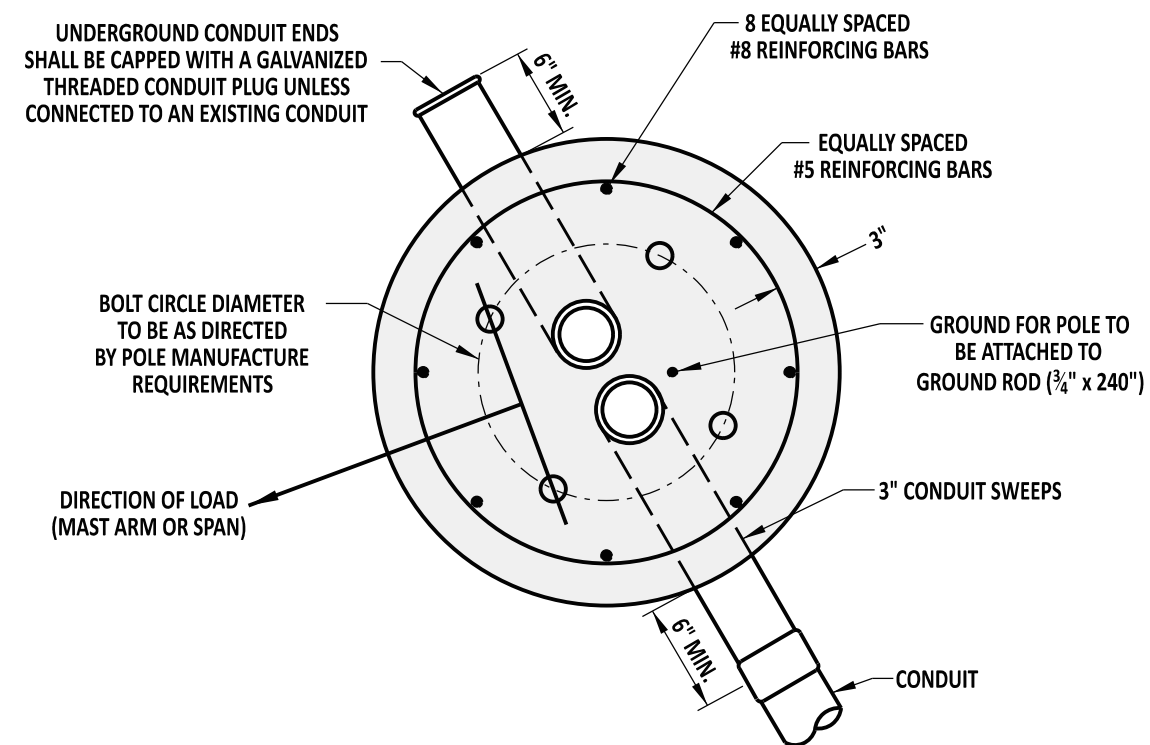
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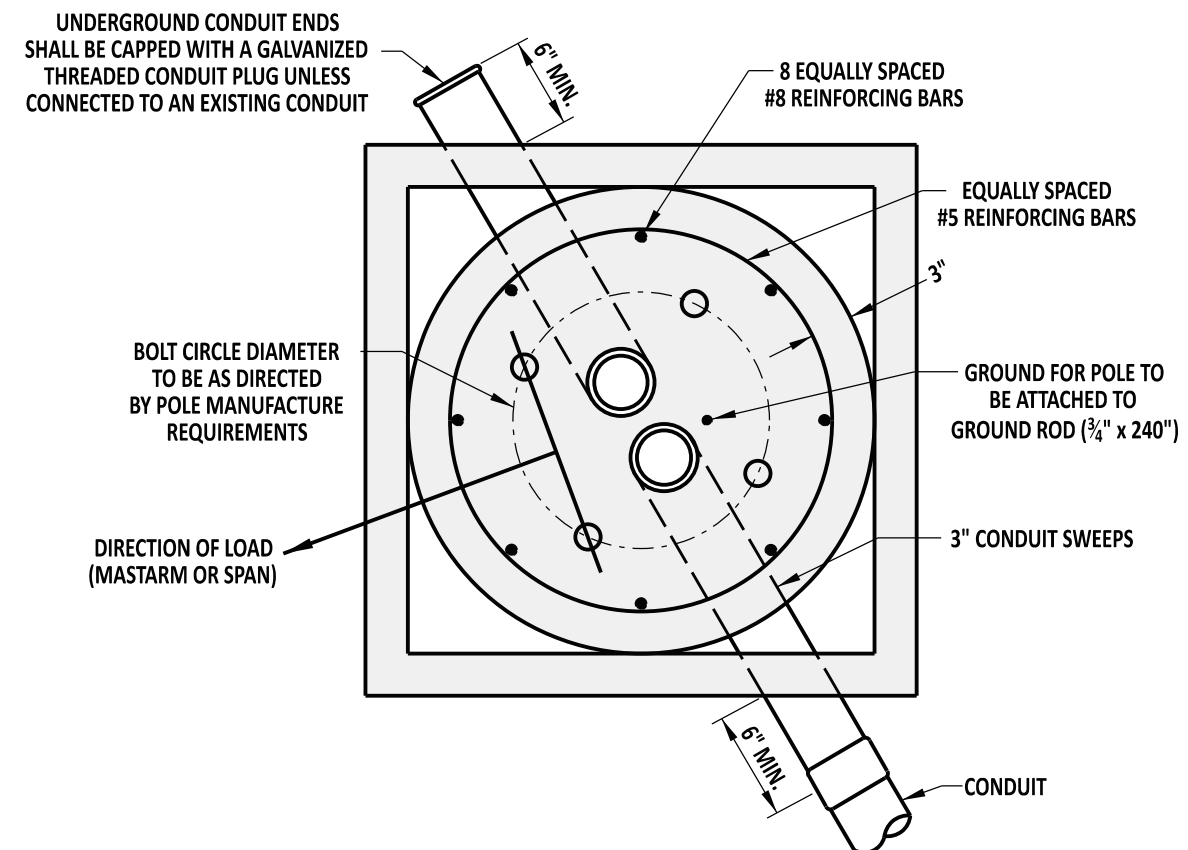
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ROUND BASE



**ROUND BASE w/ SQUARE
FOUNDATION HEADER**

NOTE: SQUARE FOUNDATION HEADER SHALL HAVE A 6" MINIMUM DEPTH.



DELAWARE
DEPARTMENT OF TRANSPORTATION

POLE BASES

STANDARD NO. T-5 (2017)

SHT. 1 OF 4

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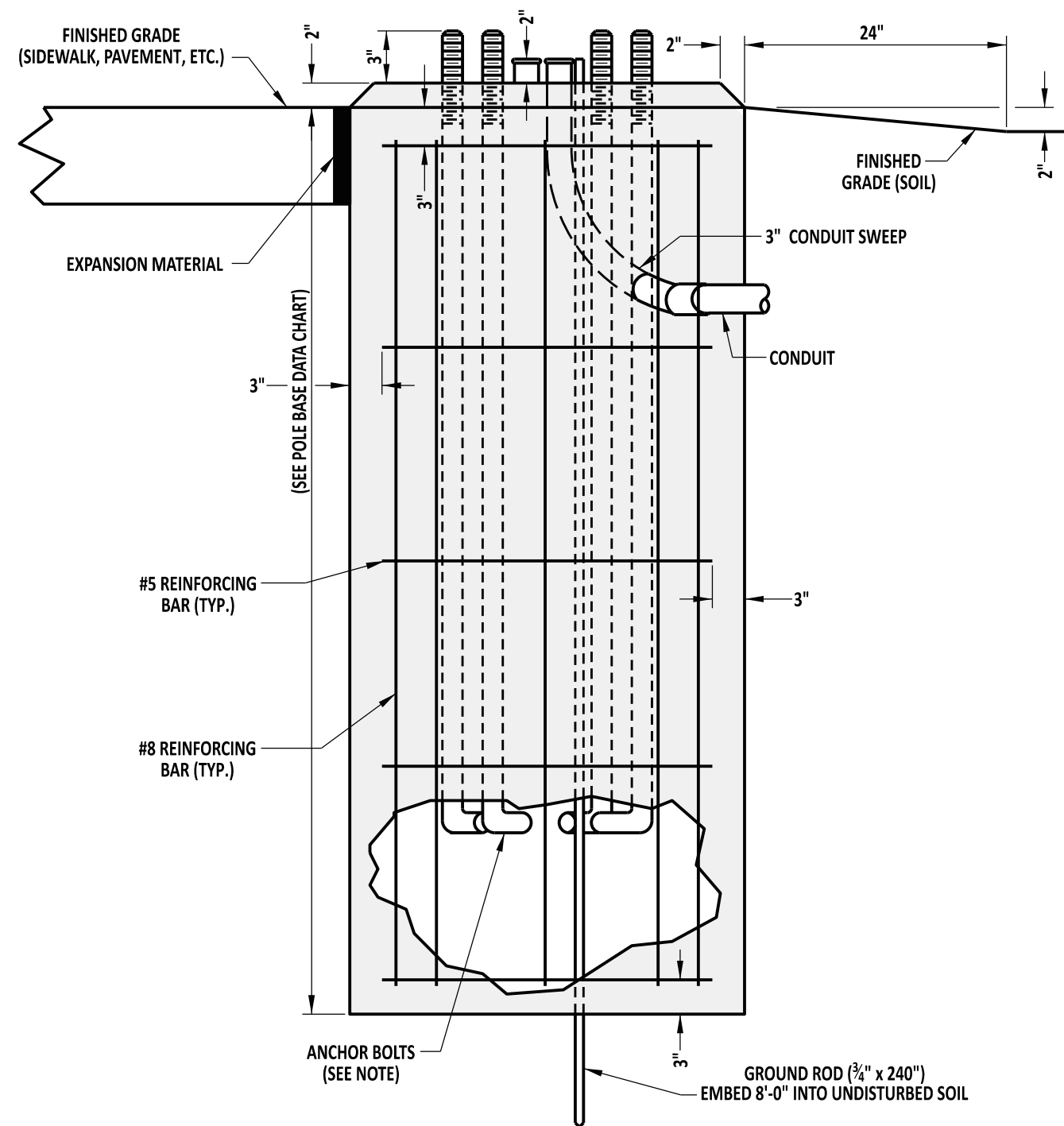
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TYPICAL SECTION (BASE 6)

POLE BASE DATA CHART					
POLE BASE TYPE #	DIAMETER	DEPTH	#5 HORIZONTAL REINFORCING BARS	#8 VERTICAL REINFORCING BARS	CONDUITS
1	36"	7'-0"	5	8	2 - 3"
2	36"	10'-0"	6	8	2 - 3"
2A	48"	8'-0"	5	8	2 - 3"
2B	60"	7'-0"	5	8	2 - 3"
3	48"	10'-0"	14	17	2 - 3"
3A	48"	12'-0"	17	17	2 - 3"
3B	48"	15'-0"	21	17	2 - 3"
3C	48"	20'-0"	27	17	2 - 3"
4A & 4B	24"	2'-4"	NONE	NONE	2 - 2.5"
6	24"	6'-0"	4	8	2 - 3"

NOTE:
ANCHOR BOLTS AND BOLT PATTERN FOR TYPES 5, 6, & 7 POLE BASES TO BE PROVIDED BY THE MANUFACTURER.



DELAWARE
DEPARTMENT OF TRANSPORTATION

POLE BASES

STANDARD NO. T-5 (2017)

SHT. 3 OF 4

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