SECTION I - BARRIER

SHEET NO.	NAME
B-L (2001)	– BARRIER LEGEND
B-1	– GUARDRAIL APPLICATIONS
	(2004) - 1 PLANS - (TYPE 1, TYPE 2, AND TYPE 3)
	(2004) - 2 ELEVATIONS AND SPLICE DETAIL
	(2002) - 3 SECTION VIEWS
	(2007) - 4 GRADING FOR GUARDRAIL END TREATMENT, TYPE 1
	(2007) - 5 GRADING FOR GUARDRAIL END TREATMENT, TYPE 2
	(2007) - 6 GRADING FOR GUARDRAIL END TREATMENT, TYPE 3
B-2	– GUARDRAIL OVER CULVERTS
	(2009) - 1 GUARDRAIL OVER CULVERTS, TYPE 1
	(2009) - 2 GUARDRAIL OVER CULVERTS, TYPE 2
	(2009) - 3 GUARDRAIL OVER CULVERTS, TYPE 3
B-3 (2009)	– GUARDRAIL END TREATMENT, TYPE 4
B-4 (2007)	– CURVED GUARDRAIL SECTION
B-5 (2002)	– END ANCHORAGE
B-6	– BURIED END SECTION
	(2002) - 1 BURIED END SECTION
	(2002) - 2 BURRIED END SECTION
	(2002) - 3 POST, CONCRETE BLOCK, & RUBRAIL ANCHOR DETAILS
B-7	– GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1
	(2005) - 1 PLAN, ELEVATION, AND SECTIONS
	(2001) - 2 WOOD BLOCKOUT, RUB RAIL WOOD BLOCKS, BEARING PLATE, RUB RAIL TO BARRIER CONNECTION DETAILS
	(2001) - 3 BENT PLATE RUB RAIL DETAILS
B-8	– GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 2
	(2005) - 1 PLAN, ELEVATION, AND SECTIONS
	(2001) - 2 BENT RAIL DETAILS, BLOCK SCHEDULE
B-9 (2002)	– GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE
B-10 (2004)	– BRIDGE RAIL RETROFIT, TYPE 1
B-11	– BRIDGE RAIL RETROFIT, TYPE 2
	(2004) - 1 PLAN, SECTION
	(2001) - 2 BASE PLATE DETAIL AND STEEL GUARDRAIL POST
B-12 (2001)	– BRIDGE RAIL RETROFIT, TYPE 3
B-13	– HARDWARE
	(2004) - 1 W-BEAM DETAILS
	(2004) - 2 W-BEAM STEEL POST AND OFFSET BLOCK
	(2004) - 3 W-BEAM TERMINAL CONNECTOR
	(2004) - 4 THRIE BEAM DETAILS
	(2004) - 5 THRIE BEAM STEEL POST AND OFFSET BLOCK
	(2004) - 6 W-THRIE BEAM TRANSITION SECTION
	(2008) - 7 WOOD BLOCK, SOIL PLATE, SHORT WOOD BREAKAWAY POST, STEEL TUBE, LONG WOOD BREAKAWAY POST
	(2004) - 8 SWAGED CABLE AND RELATED HARDWARE ASSEMBLY
	(2004) - 9 GUARDRAIL REFLECTOR AND BEARING PLATE DETAIL
	(2004) - 10 GUARDRAIL BOLT & RECESSED NUT
	(2004) - 11 5/8" (16) HEX BOLT, HEX NUT, & STEEL WASHER, HIGH-STRENGTH STRUCTURAL HEX BOLT & HEX NUT
	(2004) - 12 15/16" (24) HEX NUT & STEEL WASHER, 5/8" (16) CARRIAGE BOLT
	(2005) - 13 GUARDRAIL MOUNTED RAIL

SECTION I - BARRIER (CONT'D)

SHEET NO. NAME

B-14 — CONCRETE SAFETY BARRIER (F SHAPE)

(2009) - 1 32" (960) - TYPICAL CAST-IN-PLACE OR SLIP FORM CONSTRUCTION

(2009) - 2 32" (960) - TYPICAL PRE-CAST CONSTRUCTION

(2009) - 3 42" (1050) - TYPICAL CAST-IN-PLACE OR SLIP FORM CONSTRUCTION

(2009) - 4 SLOTTED PLATE CONNECTION DETAILS

B-15 — PORTABLE CONCRETE SAFETY BARRIER (F SHAPE)

~~(2008) - 1 PLAN, ELEVATION, AND SECTION VIEW~~ •DETAIL DELETED - SEE SPECIFICATIONS•

~~(2008) - 2 CURVE SECTION~~ •DETAIL DELETED - SEE SPECIFICATIONS•

~~(2008) - 3 TAPERED END SECTION~~ •DETAIL DELETED - SEE SPECIFICATIONS•

~~(2008) - 4 TYPICAL REINFORCEMENT DETAILS~~ •DETAIL DELETED - SEE SPECIFICATIONS•

~~(2008) - 5 JOINT CONNECTION DETAILS~~ •DETAIL DELETED - SEE SPECIFICATIONS•

SECTION II - CURB & GUTTER

SHEET NO. NAME

C-1 (2009) — P.C.C. CURB, P.C.C. CURB & GUTTER, AND HOT-MIX CURB

C-2 — CURB RAMPS

(2008) - 1 TYPE 1

(2008) - 2 TYPES 2, 3, & 4

(2008) - 3 SECTIONS FOR TYPES 2, 3, & 4

(2006) - 4 TYPE 5

C-3 (2008) — ENTRANCES

C-4 — CURB OPENINGS

(2001) - 1 TYPES A, B, & C

(2001) - 2 TYPES D & E

(2001) - 3 TYPES F & G

SECTION III - DRAINAGE

SHEET NO. NAME

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 & ASSEMBLY DETAIL

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

D-4 (2009) — INLET BOX DETAILS

D-5 — DRAINAGE INLET DETAILS

(2009) - 1 DRAINAGE INLET ASSEMBLY

(2009) - 2 DRAINAGE INLET FRAME AND GRATES

(2009) - 3 DRAINAGE INLET TOP UNITS

(2009) - 4 DRAINAGE INLET COVER SLAB DETAILS

(2009) - 5 DOUBLE INLET COVER SLAB DETAILS

(2009) - 6 34" (865) x 24" (610) DRAINAGE INLET AND COVER SLAB DETAILS

(2009) - 7 34" (865) x 18" (455) DRAINAGE INLET DETAILS

(2009) - 8 DRAINAGE INLET TOP UNIT, TYPE S

~~(2002) - 9 LAWN INLET DETAIL~~ •DETAIL DELETED AND DETAILS COMBINED WITH DETAIL D-4, SHEET 1 OF 1•

SECTION III - DRAINAGE (CONT'D)

SHEET NO.	NAME
D-6	— MANHOLE DETAILS
(2009) - 1	BOX MANHOLE ASSEMBLY
(2001) - 2	ROUND MANHOLE ASSEMBLY
(2001) - 3	MANHOLE 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 (2001)	— PIPE BEDDING
D-9 (2008)	— PERFORATED PIPE UNDERDRAIN
D-10 (2007)	— PIPE PLUGGING DETAIL

SECTION IV - EROSION

SHEET NO.	NAME
E-1 (2001)	— INCREMENTAL STABILIZATION
E-2 (2006)	— SILT FENCE
E-3 (2005)	— DRAINAGE INLET SEDIMENT CONTROL
E-4 (2001)	— CURB INLET SEDIMENT CONTROL
E-5 (2006)	— STONE CHECK DAM
E-6 (2005)	— SEDIMENT TRAP
E-7 (2005)	— SEDIMENT TRAP, USING DRAINAGE INLET AS OUTLET
E-8	— RISER PIPE ASSEMBLY FOR SEDIMENT TRAP
(2006) - 1	ELEVATION
(2006) - 2	TRASH HOOD DETAILS
E-9 (2005)	— EROSION CONTROL BLANKET APPLICATIONS
E-10 (2005)	— RIPRAP DITCH
E-11 (2005)	— TEMPORARY SWALE
E-12 (2005)	— PERIMETER DIKE/SWALE
E-13 (2005)	— EARTH DIKE
E-14 (2005)	— TEMPORARY SLOPE DRAIN
E-15 (2005)	— STILLING WELL
E-16 (2005)	— SUMP PIT, TYPE 1& 2
E-17 (2005)	— DEWATERING BASIN
E-18 (2005)	— GEOTEXTILE-LINED CHANNEL DIVERSION
E-19 (2005)	— SANDBAG DIVERSION
E-20 (2005)	— SANDBAG DIKE
E-21 (2005)	— STABILIZED CONSTRUCTION ENTRANCE
E-22 (2006)	— SKIMMER DEWATERING DEVICE
E-23	— TURBIDITY CURTAIN
(2005) - 1	FLOATING TURBIDITY CURTAIN
(2005) - 2	STAKED TURBIDITY CURTAIN
E-24 (2005)	— PORTABLE SEDIMENT TANK
E-25 (2005)	— TURF REINFORCEMENT MAT APPLICATIONS
E-26 (2006)	— RIPRAP ENERGY DISSIPATOR DETAIL

SECTION V - LANDSCAPING

SHEET NO. NAME

L-1 — PLANTING DETAILS

(2006) - 1 ROADSIDE SHRUB PLANTING DETAIL

(2006) - 2 TREE PLANTING DETAILS

(2006) - 3 PERENNIAL/GROUND COVER PLANTING DETAIL

SECTION VI - MISCELLANEOUS

SHEET NO. NAME

M-1 (2001) — RIGHT-OF-WAY FENCE

M-2 (2008) — CONCRETE MONUMENT

M-3 (2009) — BOLLARD & SHARED-USE PATH DETAILS

M-4 (2007) — BIKE RACK

M-5 (2004) — WOOD RAIL FENCE

M-6 (2004) — PATTERNED HOT-MIX OR CONCRETE & BRICK PAVER

M-7 (2006) — CHAIN LINK FENCE DETAILS

M-8 (2007) — P.C.C. PARKING BUMPER

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 & TIE BAR

(2001) - 4 DOWEL SUPPORT BASKET

(2001) - 5 DOWEL & 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 BAR PLACEMENT TOLERANCES

(2001) - 5 PARTIAL DEPTH PATCH, PLAN AND SECTION VIEWS

P-3 (2009) — BUTT JOINT DETAILS

SECTION VIII - TRAFFIC

SHEET NO. NAME

T-1 (2005) — CONDUIT JUNCTION WELL, TYPES 1,2, AND 3

T-2 (2005) — CONDUIT JUNCTION WELL, TYPE 4

T-3 (2005) — CONDUIT JUNCTION WELL, TYPE 5

T-4 (2005) — CABINET BASES (TYPES "M" AND "P")

T-5 — POLE BASES

(2005) - 1 ROUND BASE, SQUARE BASE

(2005) - 2 TYPICAL SECTION (BASES 1, 2, 2A, 2B, 3, 3A, 3B, AND 7), TYPICAL SECTION (BASE 4), TYPICAL INSTALLATION (BASES 1, 2, 2A, 2B, 3, 3A, 3B, 4, AND 7)

(2008) - 3 TYPICAL SECTION (BASES 5 AND 6), ANCHOR BOLT DATA CHART AND DETAILS

T-6 (2005) — SPECIAL POLE BASE

T-7 (2005) — SIGN FOUNDATION

T-8 (2005) — LOOP DETECTOR TO CONDUIT JUNCTION WELL CONNECTION

T-9 (2005) — TYPE "1 LOOP DETECTOR

T-10 (2005) — TYPE "2 LOOP DETECTOR

T-11 — MESSENGER WIRE ATTACHMENT

(2005) - 1 INTERMEDIATE MESSENGER WIRE ATTACHMENT ON WOOD POLES

(2005) - 2 ANGULAR INTERMEDIATE MESSENGER WIRE ATTACHMENT

T-12 — MESSENGER WIRE ATTACHMENT

(2005) - 1 SPAN WIRE ATTACHMENT BETWEEN POLES

(2005) - 2 DEAD END MESSENGER WIRE ATTACHMENT

T-13 — CONDUIT JUNCTION WELLS

(2005) - 1 TYPE 6

(2006) - 2 TYPE 7

(2006) - 3 TYPES 8 & 10

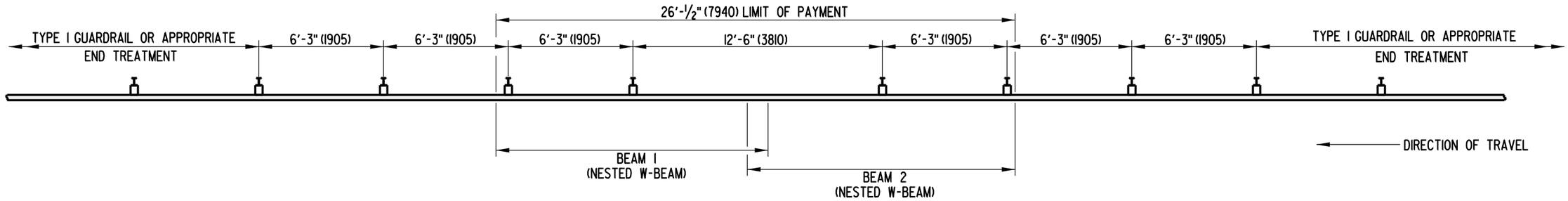
T-14 — EMERGENCY PREEMPTION RECEIVER

(2006) - 1 UPRIGHT MOUNT

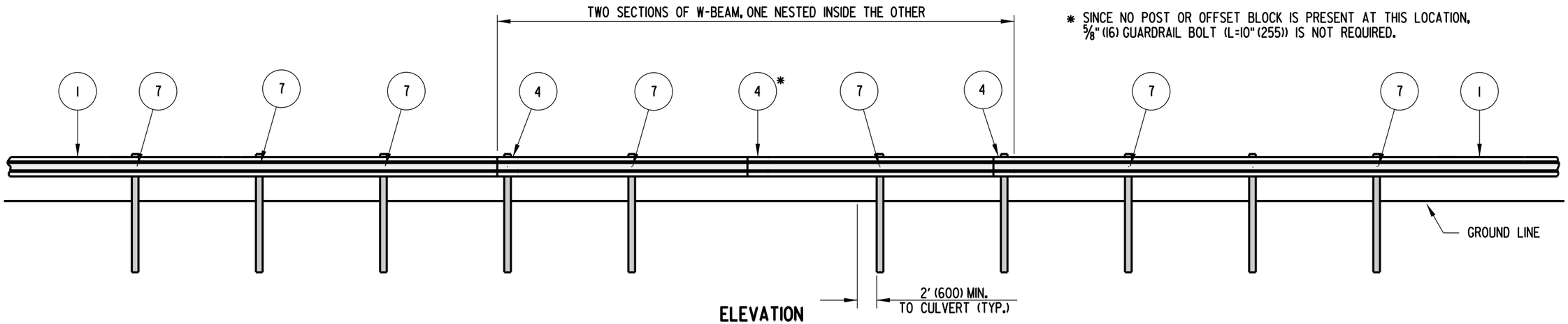
(2005) - 2 INVERTED MOUNT

T-15 — BREAKAWAY SIGN POST AND PIN ASSEMBLY DETAILS

SCALE : N.T.S.



PLAN



ELEVATION

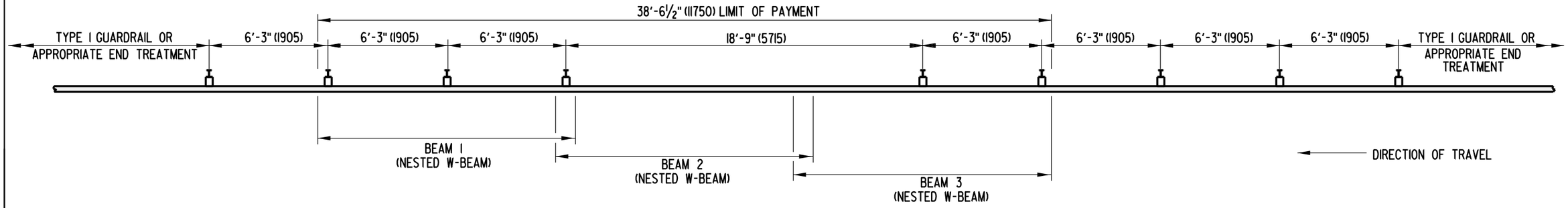
* SINCE NO POST OR OFFSET BLOCK IS PRESENT AT THIS LOCATION, 5/8" (16) GUARDRAIL BOLT (L=10" (255)) IS NOT REQUIRED.

NOTES :1). ALL W-BEAMS ARE 13'-6 1/2" (4130) IN LENGTH.
2). PLACE GUARDRAIL REFLECTOR EVERY FIFTH POST.

DELAWARE DEPARTMENT OF TRANSPORTATION	GUARDRAIL OVER CULVERTS, TYPE 1	APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. B-2 (2009) SHT. 1 OF 3	RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

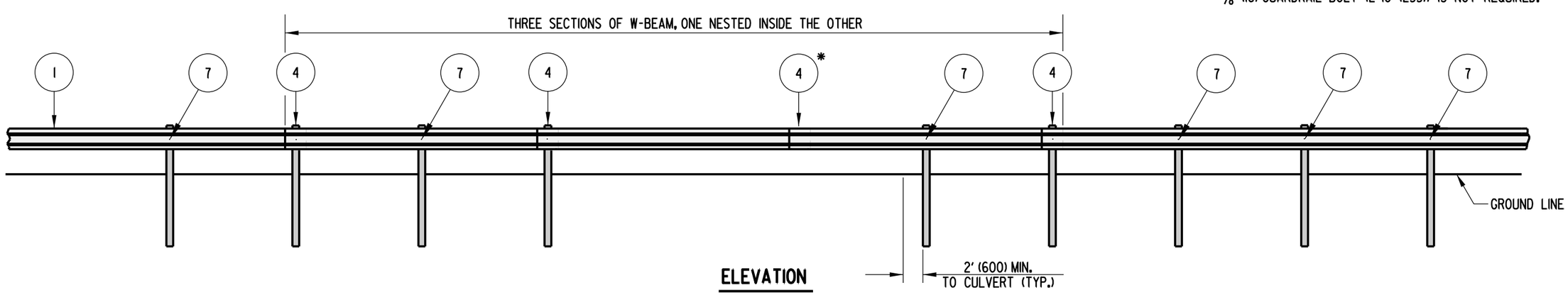
06/30/2009

SCALE : N.T.S.



PLAN

* SINCE NO POST OR OFFSET BLOCK IS PRESENT AT THIS LOCATION, ⅝" (16) GUARDRAIL BOLT (L=10" (255)) IS NOT REQUIRED.



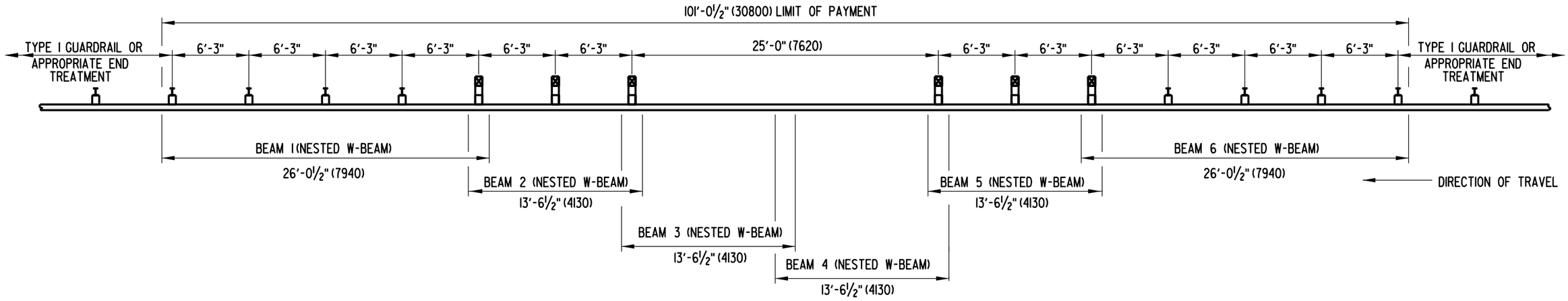
ELEVATION

NOTES : 1). ALL W-BEAMS ARE 13'-6½" (4130) IN LENGTH.
2). PLACE GUARDRAIL REFLECTOR EVERY FIFTH POST.

DELAWARE DEPARTMENT OF TRANSPORTATION	GUARDRAIL OVER CULVERTS, TYPE 2	APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. B-2 (2009) — SHT. 2 OF 3	RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

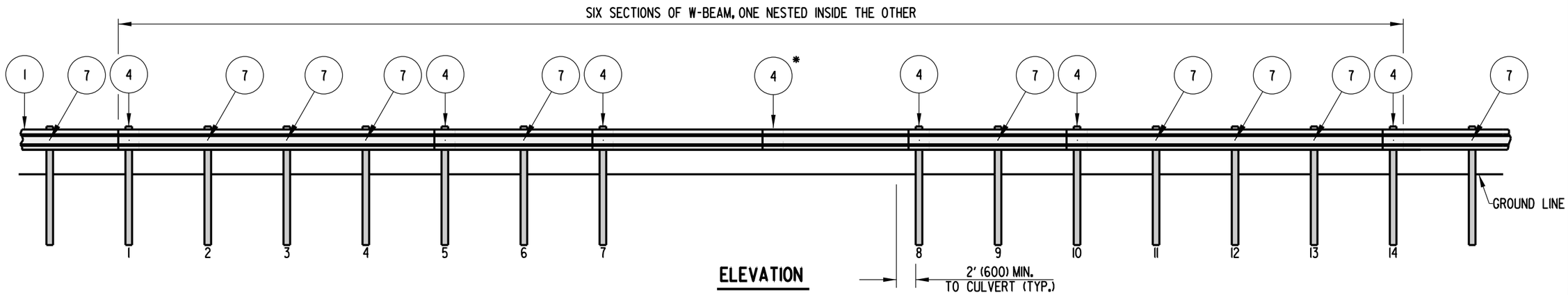
06/30/2009

SCALE : N.T.S.



PLAN

* SINCE NO POST OR OFFSET BLOCK IS PRESENT AT THIS LOCATION, ⅝" (16) GUARDRAIL BOLT (L=10" (255)) IS NOT REQUIRED.



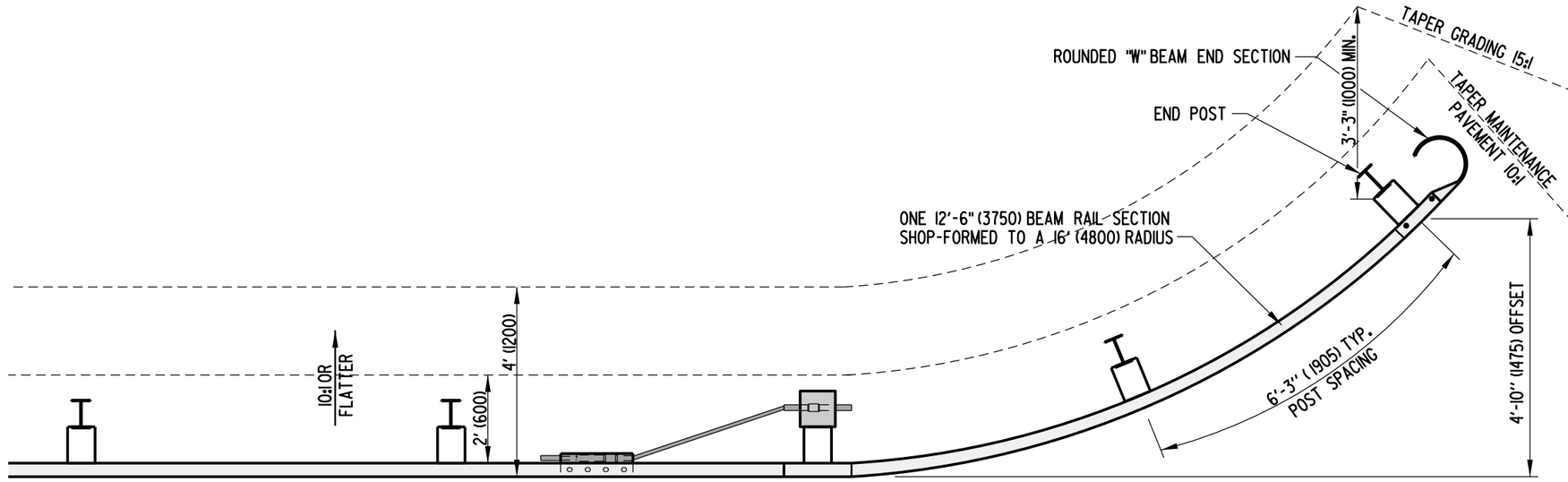
ELEVATION

NOTES:
1). PLACE GUARDRAIL REFLECTOR EVERY FIFTH POST.
2). POSTS 1-4 AND 11-14 ARE TO BE W6X9 (W15-X13.5) STEEL POSTS. POSTS 5-10 ARE TO BE 6"x8"x6' (150x200x1830) BREAKAWAY WOOD POSTS WITH 2 WOOD BLOCKS AT EACH OF THESE 6 POSTS.
3). THE SPLICES AT POSTS 5, 7, 8, & 10 ARE TO USE ⅝" (16) GUARDRAIL BOLT (L=22" (660)).

DELAWARE DEPARTMENT OF TRANSPORTATION	**GUARDRAIL OVER CULVERT, TYPE 3**		**APPROVED** SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. B-2 (2009)	**SHT. 3 OF 3**	**RECOMMENDED** SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

12/1/2009

SCALE : N.T.S.



PLAN

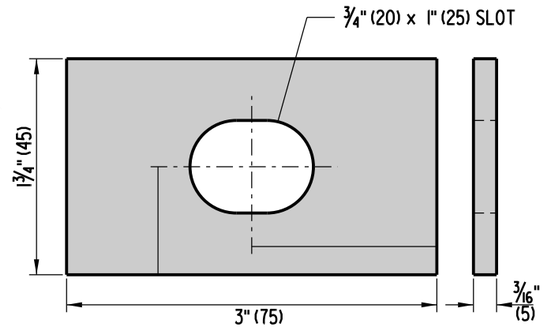
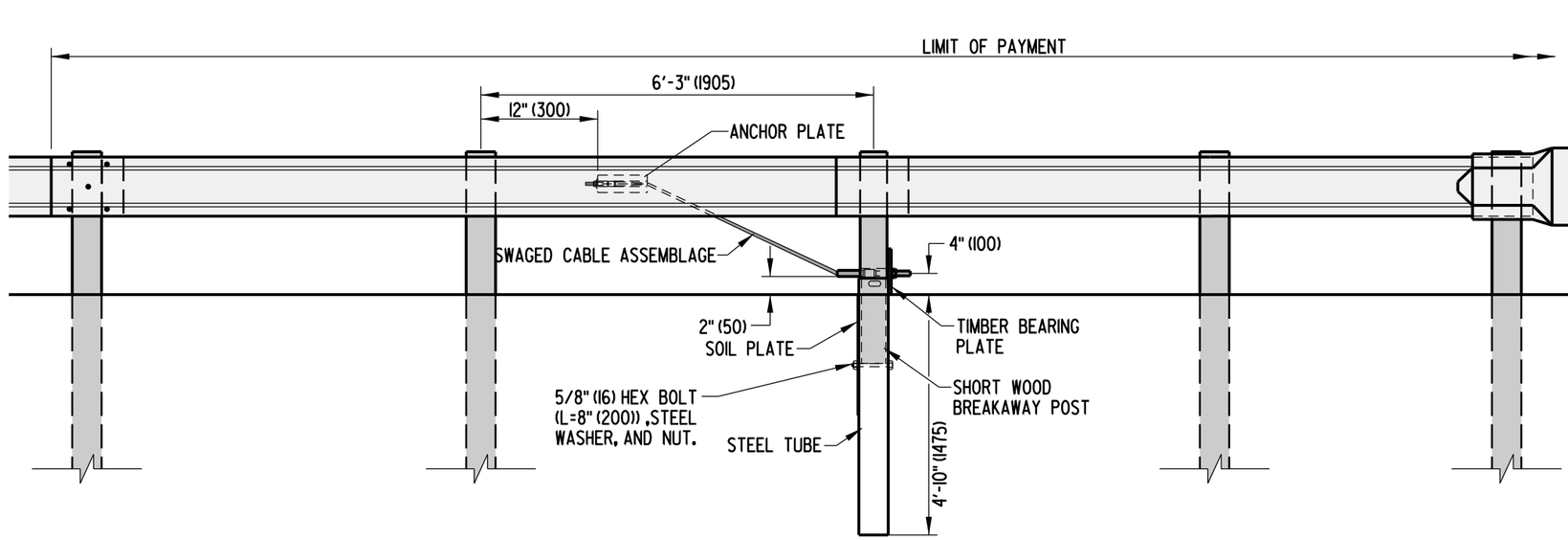


PLATE WASHER DETAIL



ELEVATION

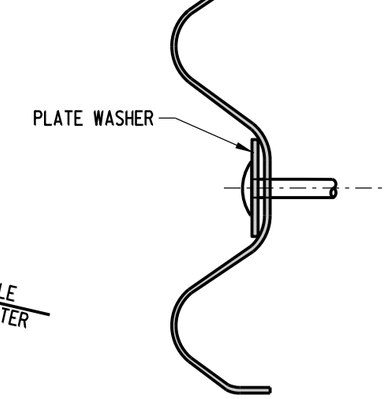


PLATE WASHER MOUNTING POSITION

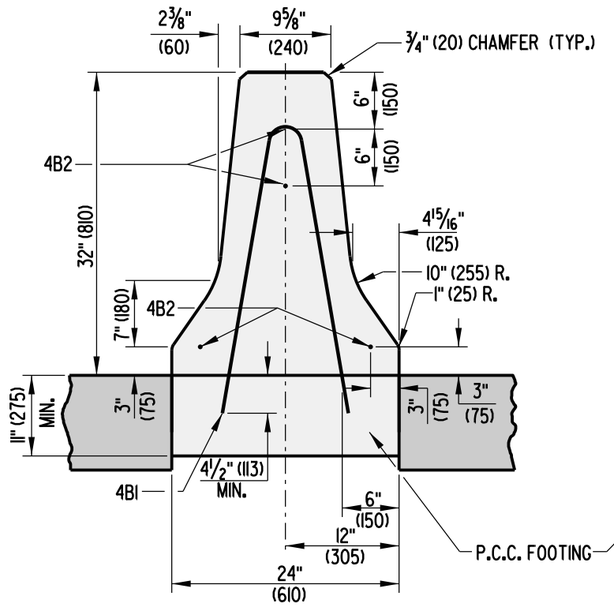
NOTES:

1). ADDITIONAL HOLES FOR ANCHOR PLATE SHALL BE DRILLED PRIOR TO GALVANIZING. (SEE STANDARD HARDWARE SHEET FOR HOLE SPACING INFORMATION).
2). CONTRACTOR HAS THE OPTION OF USING A 6' (1830) STEEL TUBE WITHOUT A SOIL PLATE OR A 5' (1525) STEEL TUBE WITH A SOIL PLATE.
3). PLATE WASHERS WILL BE INSTALLED AT POSTS 3 & 4 ONLY.
4). THIS END TREATMENT SHALL ONLY BE USED ON TRAVEL WAYS WITH A POSTED SPEED LIMIT OF 40 MPH (64 KM/H) OR LESS.

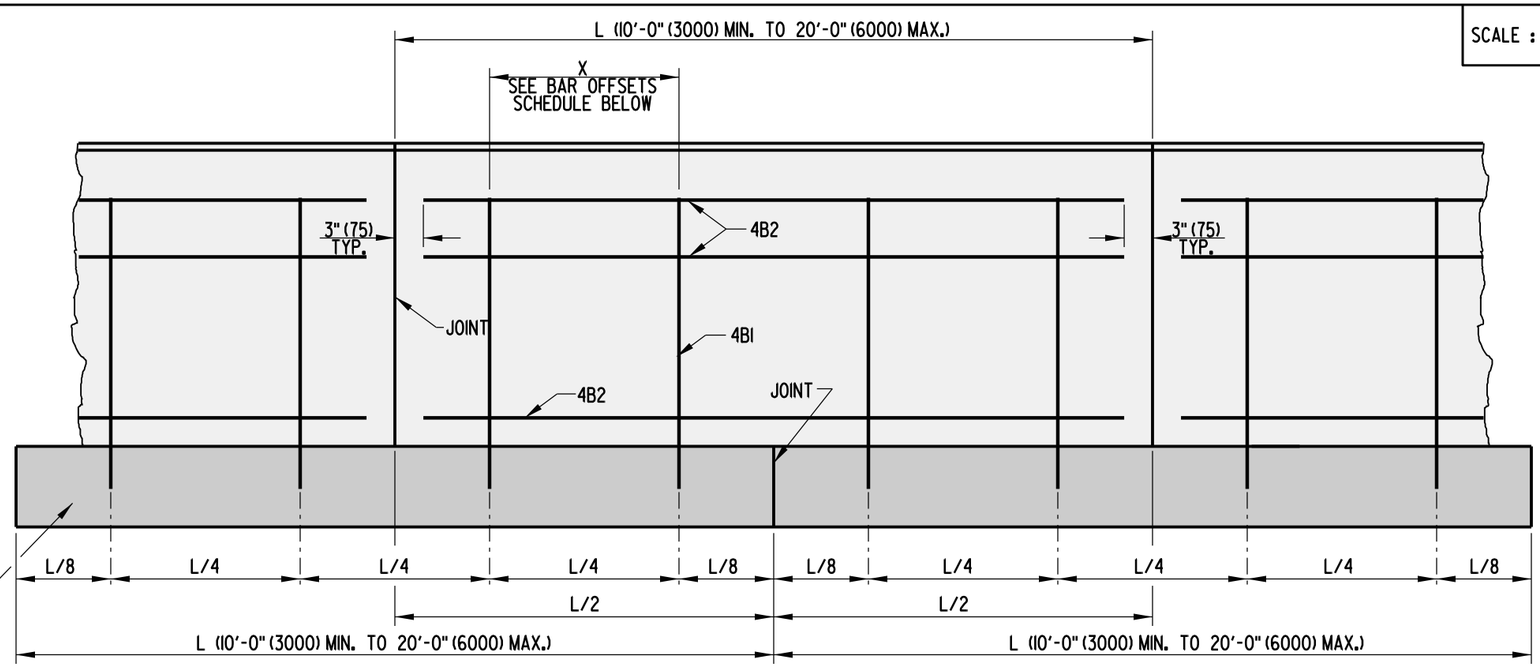
DELAWARE DEPARTMENT OF TRANSPORTATION	GUARDRAIL END TREATMENT, TYPE 4		APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. B-3 (2009)	SHT. 1 OF 1	RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

12/01/2009

SCALE : N.T.S.

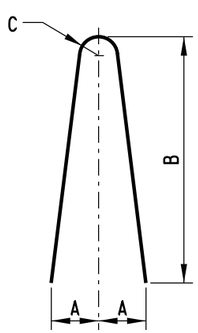


SECTION



ELEVATION

TYPICAL CAST-IN-PLACE OR SLIP-FORM CONSTRUCTION



TYPE 'I' BAR

BAR OFFSETS		
NOMINAL LENGTH OF BARRIER SECTION (L)	X	NO. REQ'D FOR EACH BARRIER SECTION
20' (6000)	5' - 0" (1500)	4
18' (5500)	4' - 6" (1350)	4
16' (5000)	4' - 0" (1200)	4
14' (4500)	3' - 6" (1050)	4
12' (4000)	3' - 0" (900)	4
10' (3000)	2' - 6" (750)	4

BAR LIST							
MARK	SIZE	NUMBER IN EACH SECTION	LENGTH	TYPE	A	B	C
4BI	4 (13)	**	5'-4" (1625)	I	7" (175)	30½" (775)	2" (50)
4B2	4 (13)	4	*	STR.	N/A	N/A	N/A

* THE LENGTH OF BAR 4B2 SHALL BE 6" (150) SHORTER IN LENGTH THAN THE NOMINAL SIZE OF THE BARRIER IN WHICH IT IS USED.

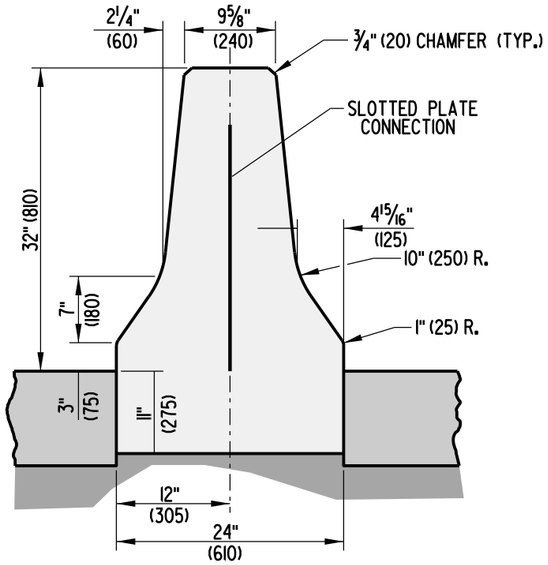
** SEE "BAR OFFSETS" CHART ON THIS SHEET FOR MORE INFORMATION.

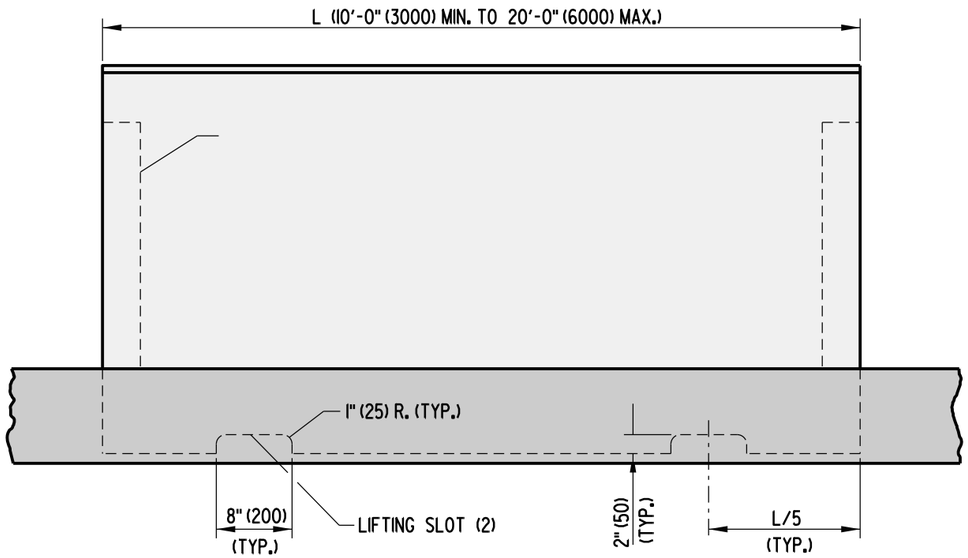
NOTES: 1). CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE 1½" (40) MIN.
2). BARS SHALL BE CUT AT EVERY JOINT IF MADE USING CONTINUOUS SLIP-FORM CONSTRUCTION.

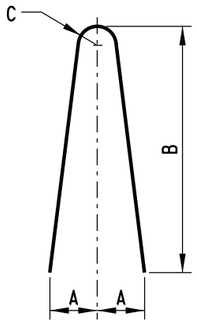
DELAWARE DEPARTMENT OF TRANSPORTATION	32" (960) CONCRETE SAFETY BARRIER (F SHAPE)	APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. B-14 (2009) SHT. 1 OF 4	RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

12/21/2009

SCALE : N.T.S.



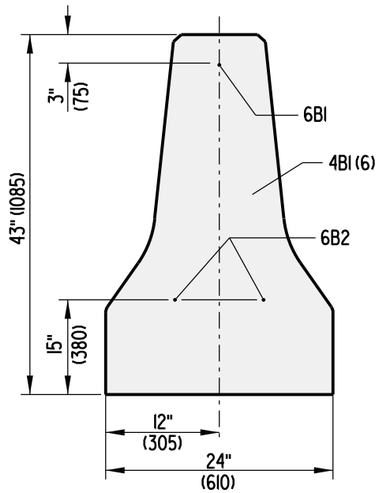




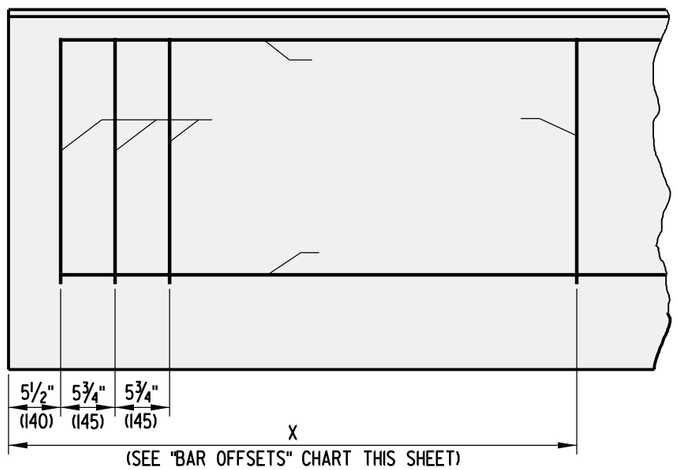
TYPE 'I' BAR

TYPICAL PRE-CAST CONSTRUCTON

BAR OFFSETS		
NOMINAL LENGTH OF BARRIER UNIT	"X"	NO. REQ'D FOR EACH BARRIER UNIT
20' (6000)	6' - 11" (2100)	2
18' (5500)	6' - 5" (1950)	2
16' (5000)	5' - 11" (1800)	2
14' (4500)	7' - 0" (2250)	1
12' (4000)	6' - 0" (2000)	1
10' (3000)	5' - 0" (1500)	1



'F' SHAPE BARRIER SECTION



ELEVATION

BAR LIST							
MARK	SIZE	NUMBER IN EACH SECTION	LENGTH	TYPE	A	B	C
4BI	4 (13)	6	4'-7" (1400)	I	5" (125)	26" (660)	2" (50)
4B2	4 (13)	**	4'-7" (1400)	I	5" (125)	26" (660)	2" (50)
6BI	6 (19)	I	*	STR.			
6B2	6 (19)	2	*	STR.			

* THE LENGTH OF BARS 6BI AND 6B2 SHALL BE 11" (280) SHORTER IN LENGTH THAN THE NOMINAL SIZE OF THE BARRIER IN WHICH IT IS USED.

** SEE "BAR OFFSETS" CHART ON THIS SHEET FOR MORE INFORMATION.

TYPICAL PRE-CAST REINFORCEMENT DETAILS

NOTES: 1). CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE 1½" (40) MIN..

DELAWARE
DEPARTMENT OF TRANSPORTATION

32" (960) CONCRETE SAFETY BARRIER (F SHAPE)

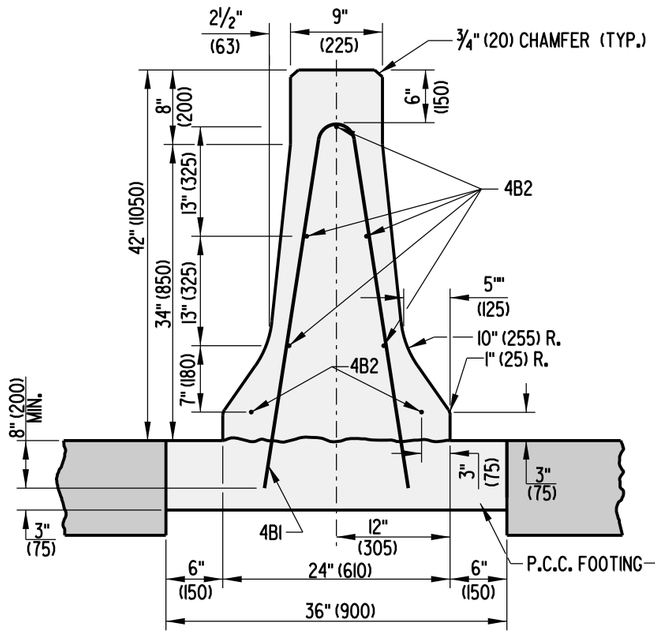
STANDARD NO. B-14 (2009) | SHT. 2 OF 4

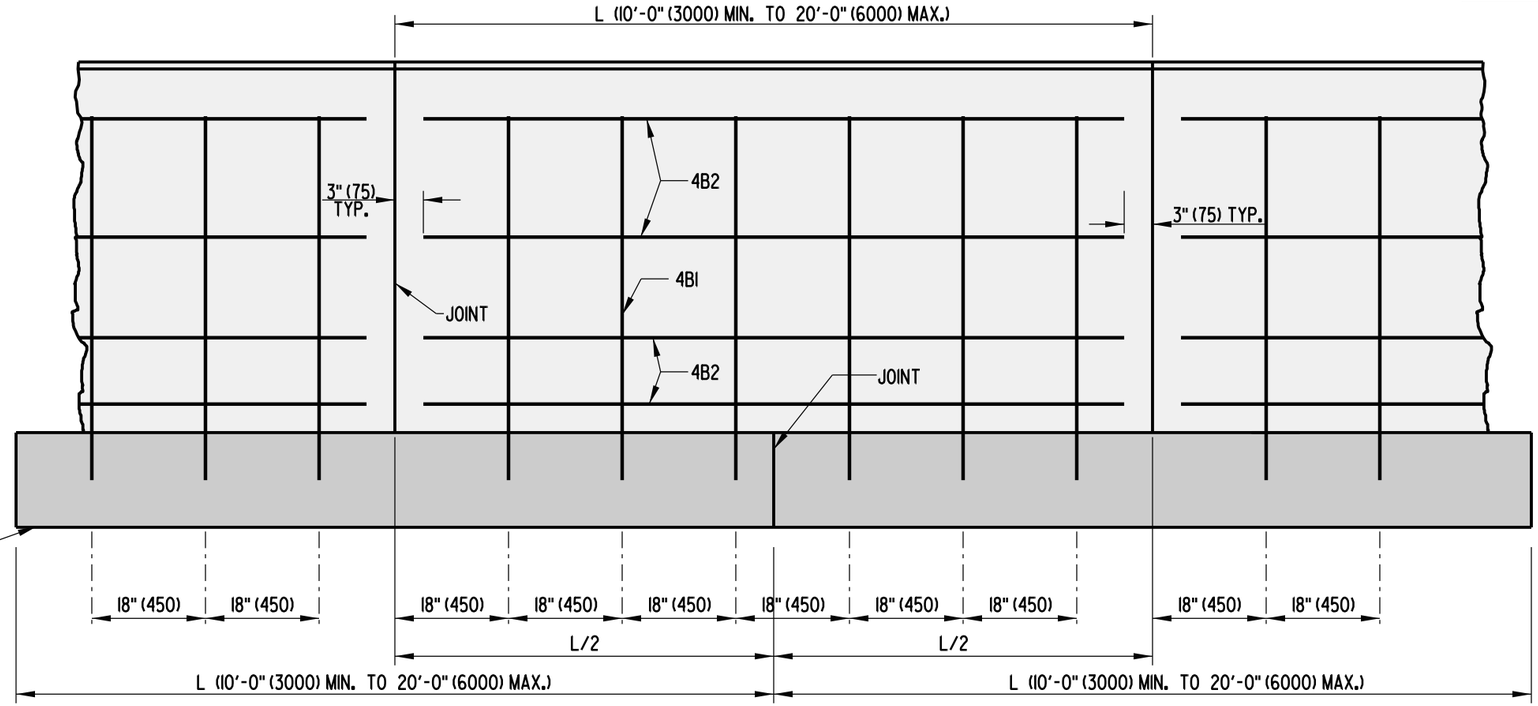
APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)

RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

09/18/2009

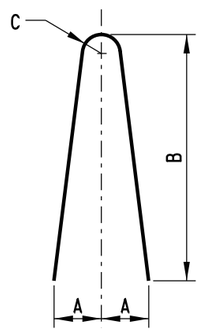
SCALE : N.T.S.





SECTION

ELEVATION



TYPE 'I' BAR

BAR OFFSETS	
NOMINAL LENGTH OF BARRIER SECTION (L)	NO. REQ'D FOR EACH BARRIER SECTION
20' (6000)	13
18' (5500)	12
16' (5000)	10
14' (4500)	9
12' (4000)	8
10' (3000)	6

BAR LIST							
MARK	SIZE	NUMBER IN EACH SECTION	LENGTH	TYPE	A	B	C
4BI	4 (13)	**	7'-6" (2286)	I	6" (150)	44" (1118)	2" (50)
4B2	4 (13)	7	*	STR.	N/A	N/A	N/A

* THE LENGTH OF BAR 4B2 SHALL BE 6" (150) SHORTER IN LENGTH THAN THE NOMINAL SIZE OF THE BARRIER IN WHICH IT IS USED.

** SEE "BAR OFFSETS" CHART ON THIS SHEET FOR MORE INFORMATION.

TYPICAL CAST-IN-PLACE OR SLIP-FORM CONSTRUCTION

NOTES: 1). CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE 1½" (40) MIN.
2). BARS SHALL BE CUT AT EVERY JOINT IF MADE USING CONTINUOUS SLIP-FORM CONSTRUCTION.

DELAWARE
DEPARTMENT OF TRANSPORTATION

42" (1050) CONCRETE BARRIER DETAILS (F-SHAPE)

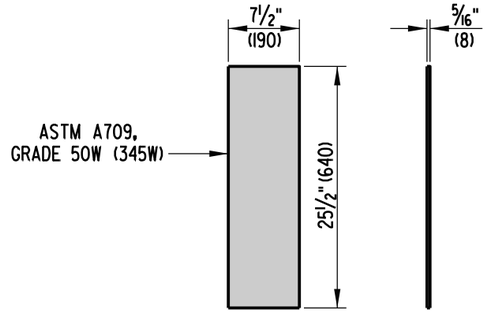
STANDARD NO. B-14 (2009) | SHT. 3 OF 4

APPROVED SIGNATURE ON FILE — CHIEF ENGINEER — 01/19/2010 DATE

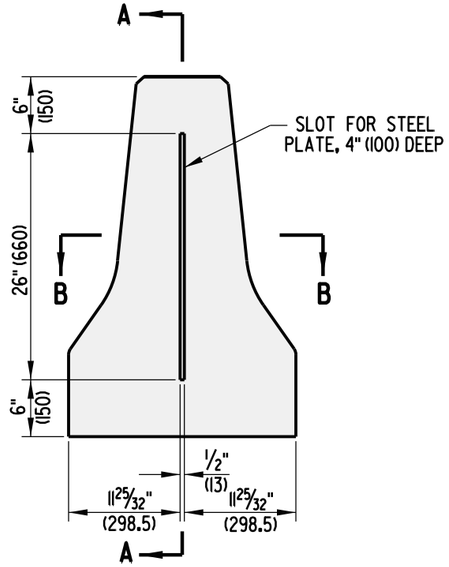
RECOMMENDED SIGNATURE ON FILE — DESIGN ENGINEER — 01/14/2010 DATE

12/21/2009

SCALE : N.T.S.

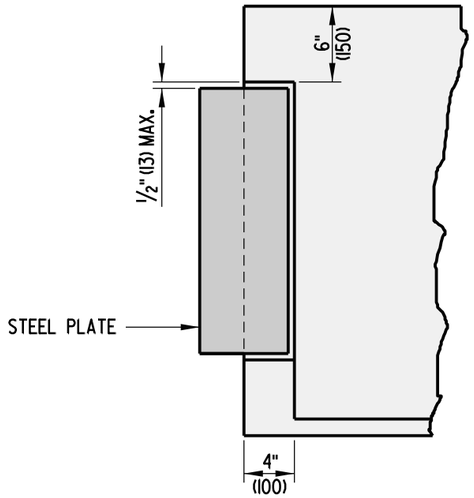


STEEL CONNECTOR PLATE

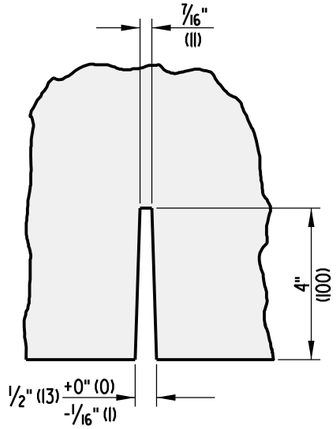


SLOT DIMENSIONS

CONCRETE SAFETY BARRIER, PRECAST CONSTRUCTION
'F' SHAPE BARRIER SECTION



SECTION A-A

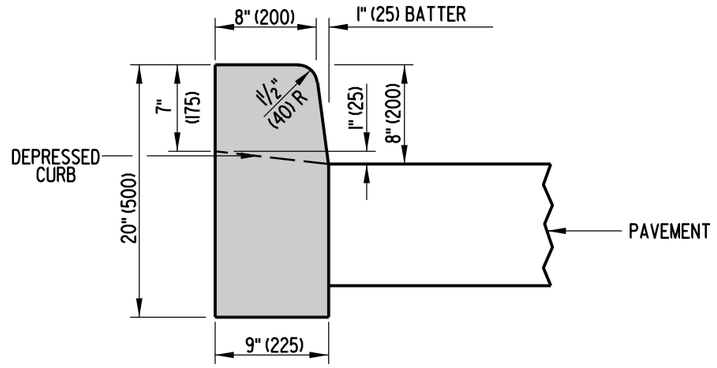


SECTION B-B

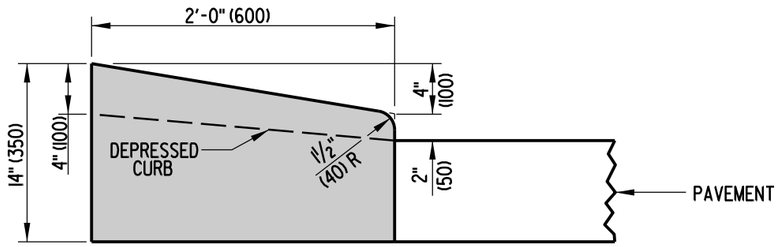
DELAWARE DEPARTMENT OF TRANSPORTATION	SLOTTED PLATE CONNECTION DETAILS		APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. B-14 (2009)	SHT. 4 OF 4	RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

09/18/2009

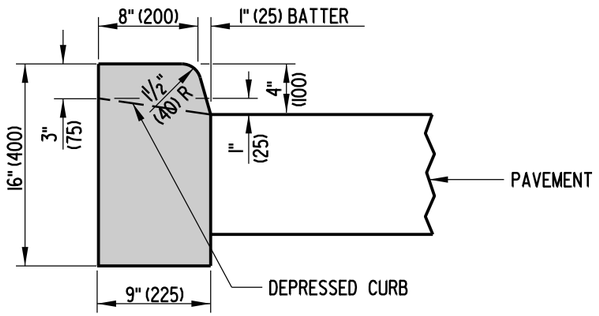
SCALE : N.T.S.



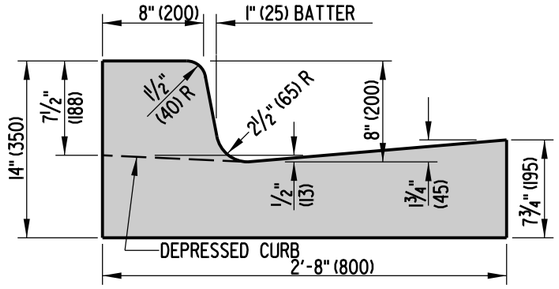
P.C.C. CURB
TYPE 1



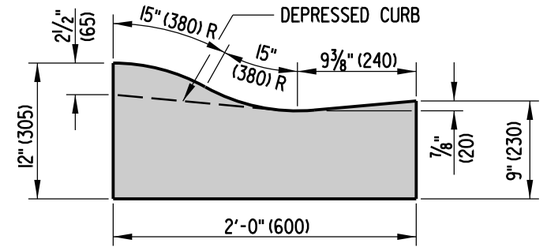
P.C.C. CURB
TYPE 2



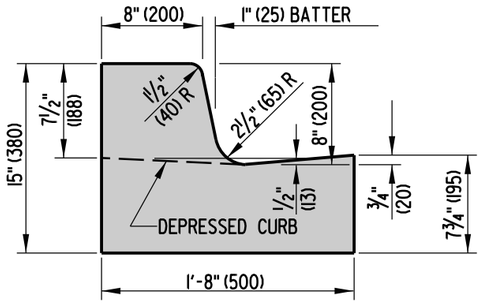
P.C.C. CURB
TYPE 3



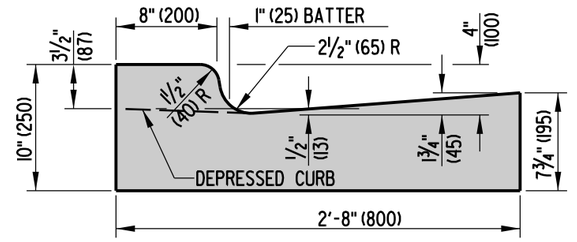
INTEGRAL P.C.C. CURB AND GUTTER
TYPE 1



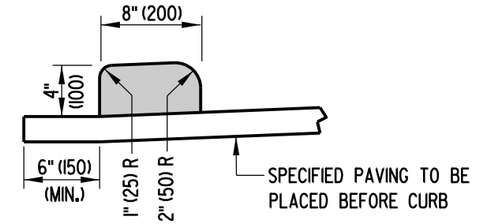
INTEGRAL P.C.C. CURB AND GUTTER
TYPE 2



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



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



HOT-MIX, HOT LAID BITUMINOUS CONCRETE CURB

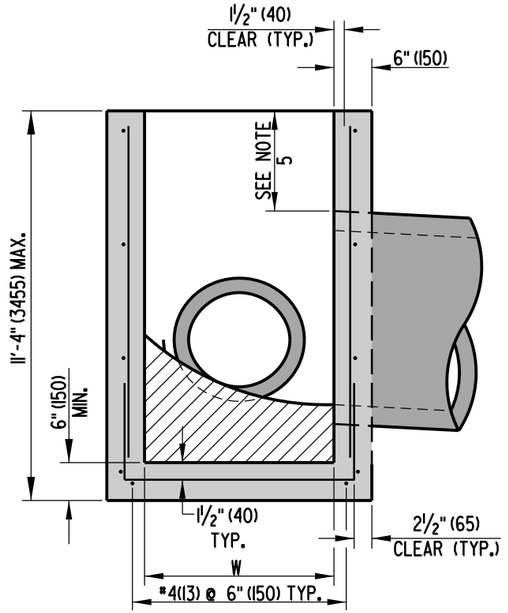
NOTES:

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. DEPRESS CURB AT ENTRANCES AND CURB RAMPS AS DETAILED ON THIS SHEET.
3. DEPRESS CURB FLUSH WITH PAVEMENT AT CURB RAMPS. MAXIMUM SLOPE OF CURB AT CURB RAMPS IS 20:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL. SEE DETAIL C-2, SHEET 1 OF 4.
4. DEPRESS CURB FLUSH WITH PAVEMENT OR ADJACENT AREA AT NOSE OF ISLANDS, TAPERING BACK TO FULL HEIGHT AT A SLOPE OF 12:1.

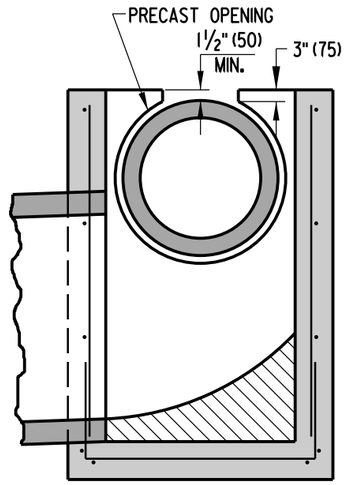
DELAWARE DEPARTMENT OF TRANSPORTATION	P.C.C. CURB, P.C.C. CURB & GUTTER, AND HOT-MIX CURB	APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. C-1 (2009) SHT. 1 OF 1	RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

01/12/2009

SCALE : N.T.S.



SECTION A-A



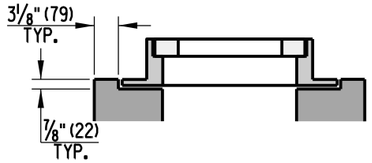
OPTIONAL PIPE OPENING DETAIL

SEE NOTE 5

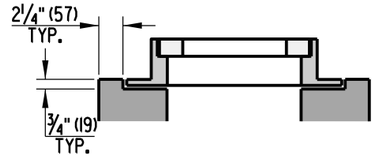
INLET BOX SCHEDULE			
L	W	FABRICATION TOLERANCE	
17⅝" (450)	11⅝" (295)	+1" (25)	*
24" (610)	24" (610)	+1" (25)	*
34" (865)	18" (455)	-1" (25)	
34" (865)	24" (610)	-1" (25)	
48" (1220)	30" (760)	+6" (150)	
48" (1220)	48" (1220)	+6" (150)	
66" (1675)	30" (760)	+6" (150)	
66" (1675)	48" (1220)	+6" (150)	
66" (1675)	66" (1675)	+6" (150)	
72" (1830)	24" (610)	-1" (25)	
72" (1830)	48" (1220)	-1" (25)	
72" (1830)	72" (1830)	-1" (25)	

* - THESE BOXES ARE TO BE USED FOR LAWN INLETS AND ARE NOT INTENDED TO BE USED IN THE TRAVELWAY. THE MAX DEPTH FOR THESE BOXES IS 4' (1220). SEE NOTE 8 FOR REINFORCEMENT.

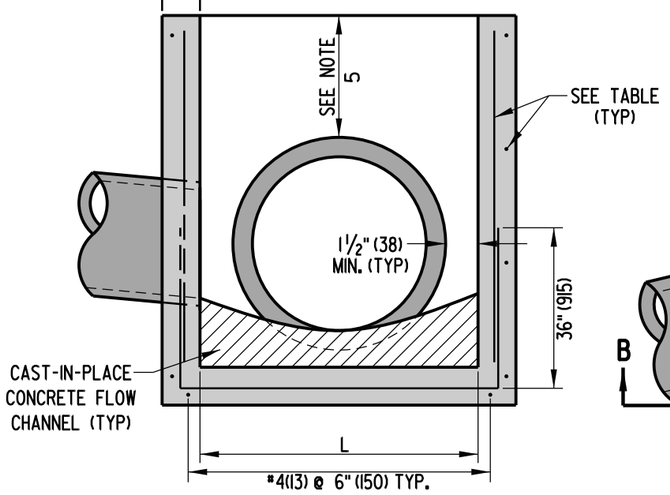
WALL REINFORCEMENT SCHEDULE		
INTERIOR WALL DIMENSION	AREA OF HORIZONTAL REINFORCEMENT PER FOOT (mm^2)	AREA OF VERTICAL REINFORCEMENT PER FOOT (mm^2)
	IN^2 (mm^2)	IN^2 (mm^2)
LESS THAN 4' (1220)	0.132 (85)	0.132 (85)
4' (1220) TO 4.5' (1370)	0.163 (105)	0.132 (85)
4.5' (1370) TO 5' (1525)	0.198 (128)	0.132 (85)
5' (1525) TO 5.5' (1675)	0.239 (154)	0.132 (85)
5.5' (1675) TO 6' (1830)	0.284 (183)	0.132 (85)



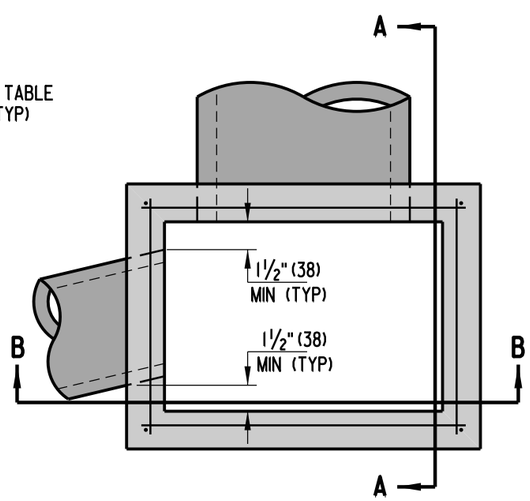
24" (610) x 24" (610) LAWN INLET BOX DETAIL



17⅝" (450) X 11⅝" (295) LAWN INLET BOX DETAIL



SECTION B-B



TOP VIEW

NOTES:

1). INLET BOXES SHALL BE PRECAST OR CAST-IN-PLACE.
2). PIPES SHALL NOT BE INSTALLED THROUGH ANY CORNER OF THE INLET BOX.
3). RISER SECTIONS MAY BE USED FOR DEEP INLET BOXES.
4). PIPES MAY BE INSTALLED NEAR OR THROUGH JOINTS FOR RISER SECTIONS.
5). WHEN THE COVER ABOVE THE PIPE IS LESS THAN 4" (100) TO THE COVER SLAB OR TOP UNIT OPENING, THE PORTION OF BOX WALL ABOVE THE PIPE MAY BE REMOVED AS SHOWN IN THE OPTIONAL PIPE OPENING DETAIL. THE AREA ABOVE THE PIPE SHALL THEN BE FORMED AND FILLED WITH HIGH-STRENGTH, NON-SHRINK GROUT MIXED WITH COARSE AGGREGATE IN A 1:1 RATIO BY WEIGHT.
6). CONCRETE FLOW CHANNEL SHALL BE WARPED FOR POSITIVE DRAINAGE.
7). WHEN INLET BOX IS PRECAST, PIPE OPENING SHALL BE BETWEEN 3" (75) AND 4" (100) LARGER THAN OUTSIDE DIAMETER OF PIPE AND SHALL NOT ENCROACH ON ADJACENT WALL.
8). REINFORCEMENT FOR LAWN INLET BOXES SHALL BE 4" (102) X 4" (102), W4 X W4 (W26 X W26) WELDED WIRE.

DELAWARE
DEPARTMENT OF TRANSPORTATION

INLET BOX DETAILS

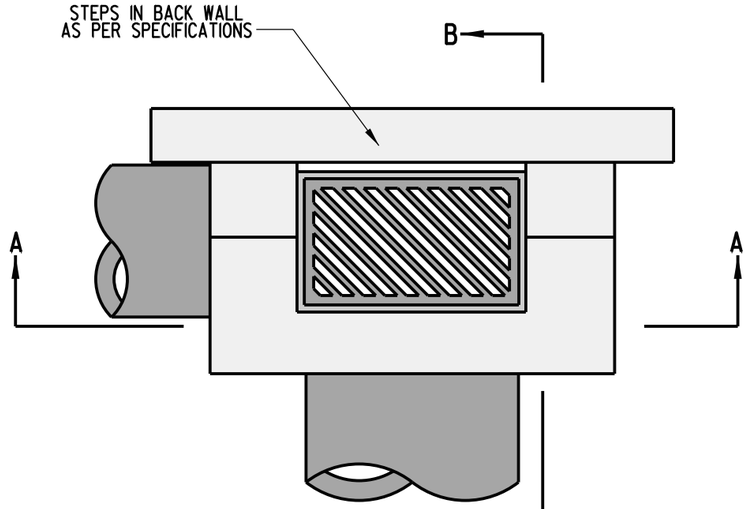
STANDARD NO. D-4 (2009) | SHT. 1 OF 1

APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)

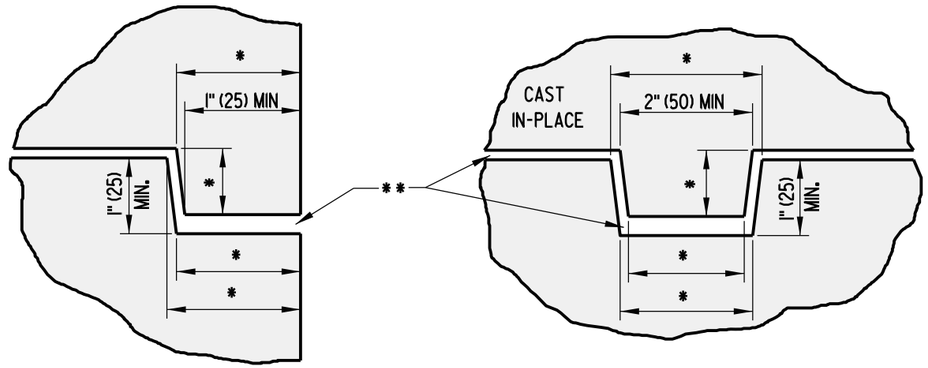
RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

08/19/2009

SCALE : N.T.S.

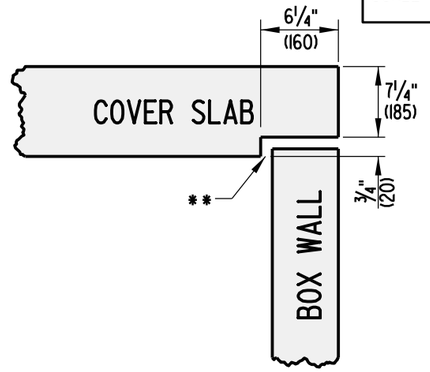


PLAN



TYPE 1 JOINT DETAIL

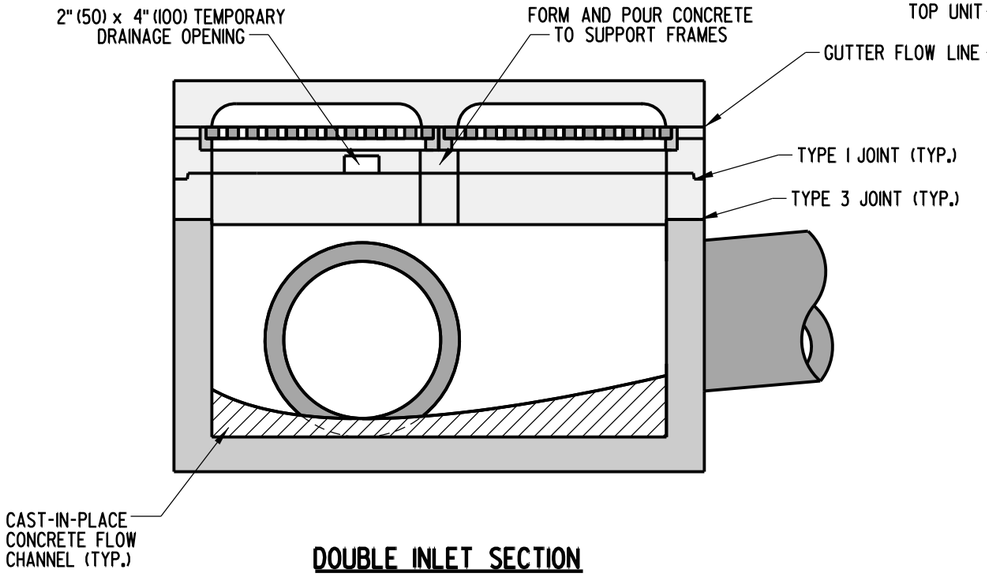
TYPE 2 JOINT DETAIL



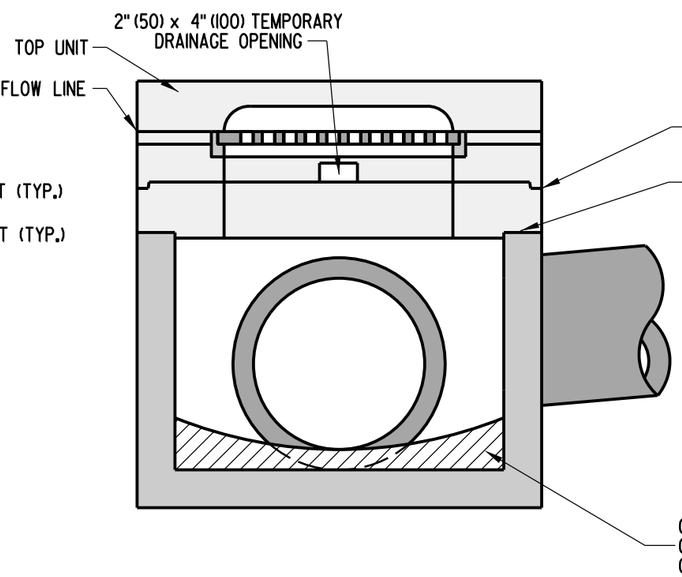
TYPE 3 JOINT DETAIL

* DIMENSIONS WILL VARY

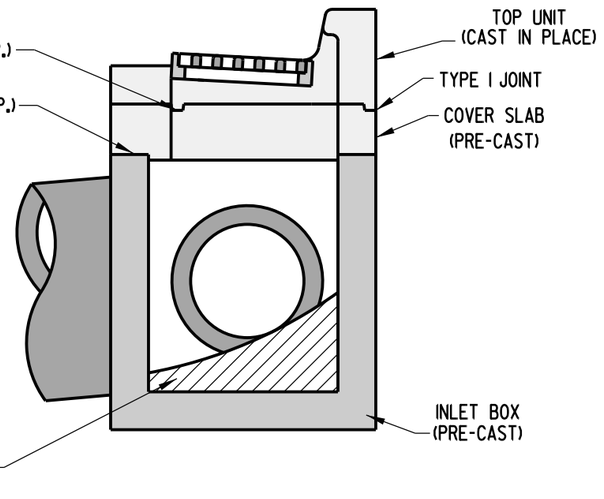
** JOINT SEALANT AS PER SPECIFICATIONS
ONLY BETWEEN 2 PRECAST UNITS



DOUBLE INLET SECTION



SECTION A-A



SECTION B-B

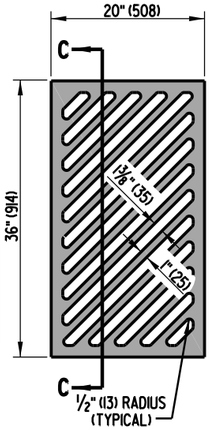
DELAWARE DEPARTMENT OF TRANSPORTATION	DRAINAGE INLET ASSEMBLY		APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. D-5 (2009)	SHT. 1 OF 8	RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

10/8/2009

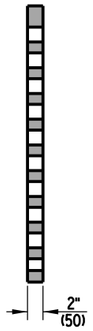
SCALE : N.T.S.

DRAINAGE INLET FRAME AND GRATES

TYPE 1

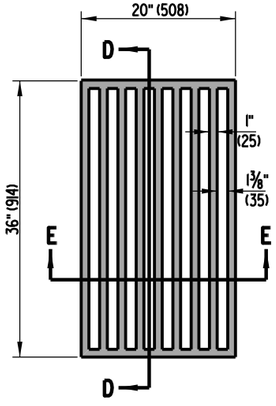


PLAN

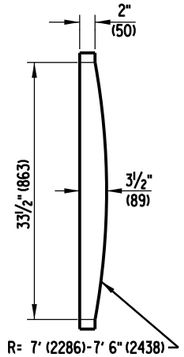


SECTION C-C

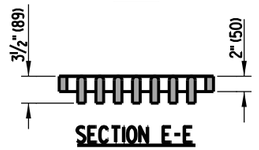
TYPE 2



PLAN

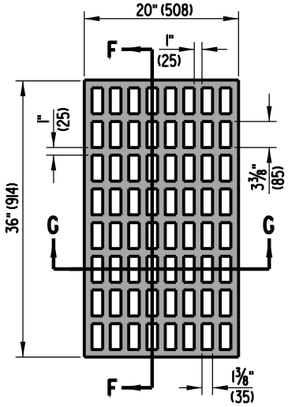


SECTION D-D

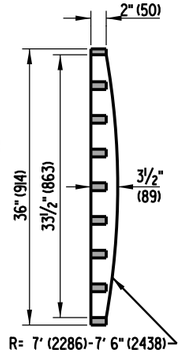


SECTION E-E

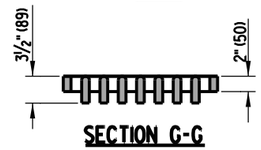
TYPE 3



PLAN

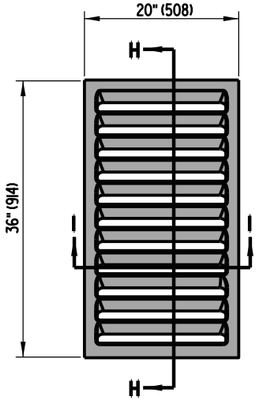


SECTION F-F

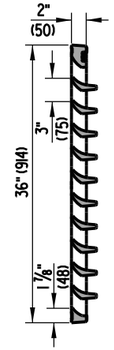


SECTION G-G

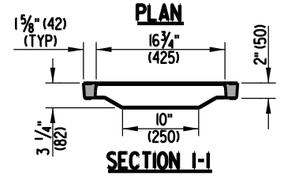
TYPE 4



PLAN

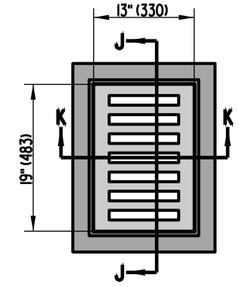


SECTION H-H

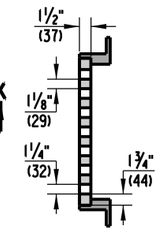


SECTION I-I

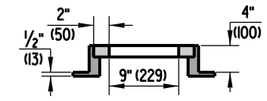
TYPE 5



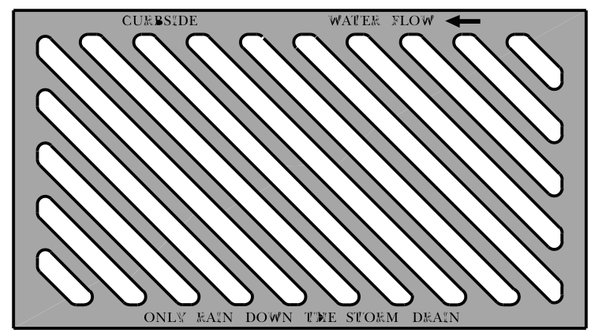
PLAN



SECTION J-J

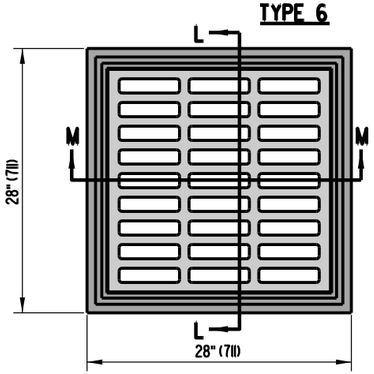


SECTION K-K

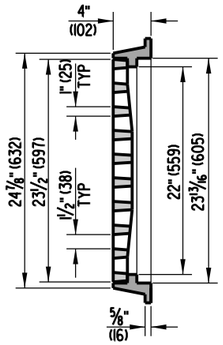


DRAINAGE GRATE LABELING EXAMPLE DETAIL

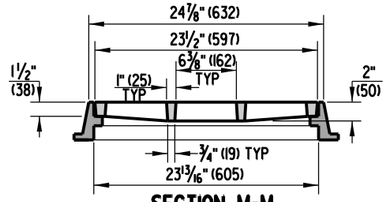
TYPE 6



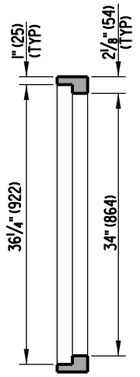
PLAN



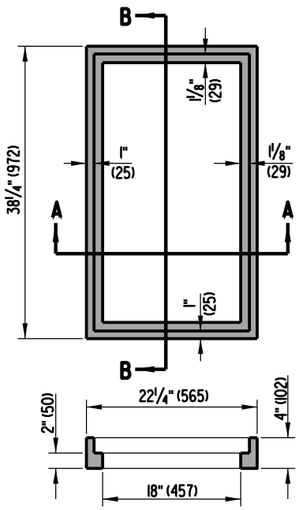
SECTION L-L



SECTION M-M



SECTION B-B



SECTION A-A

DRAINAGE INLET FRAME

THIS FRAME IS TO BE USED WITH TYPES I THROUGH 4 GRATES ONLY.

NOTES:

1). THE TYPE 2 DRAINAGE INLET GRATE SHALL NOT BE INSTALLED WHERE BICYCLE TRAFFIC MAY BE PRESENT.
2). THE TOP OF ALL DRAINAGE INLET GRATES SHALL BE LABELED "ONLY RAIN DOWN THE STORM DRAIN". ALSO, DRAINAGE INLET GRATES TYPE I AND TYPE 4 SHALL BE LABELED WITH "WATER FLOW" AND AN ARROW INDICATING FLOW DIRECTION AS SHOWN IN THE EXAMPLE DETAIL.
3). THE TYPE I DRAINAGE INLET GRATE SHALL BE LABELED WITH "CURBSIDE" AS SHOWN ON THE EXAMPLE DETAIL. ALL LABELING ON THE TYPE I SHALL BE ON BOTH TOP AND BOTTOM SIDES DUE TO THE TYPE I BEING REVERSIBLE.
4). THE TYPE 5 & 6 FRAME AND GRATE COMBINATIONS ARE TO BE USED IN CONJUNCTION WITH LAWN INLET BOXES ONLY. SEE SCHEDULE ON DETAIL D-4, SHEET 1 OF 1, FOR WHICH BOX SIZES ARE CONSIDERED LAWN INLET BOXES.
5). THE TYPE 6 FRAME AND GRATE COMBINATION SHOWN IS THE NEENAH FOUNDRY FRAME AND GRATE COMBINATION MODEL NF-1878-A5G, AN ACCEPTABLE ALTERNATIVE IS THE EAST JORDAN IRON WORKS FRAME AND GRATE COMBINATION MODEL V-5622.

DELAWARE
DEPARTMENT OF TRANSPORTATION

DRAINAGE INLET FRAME AND GRATES

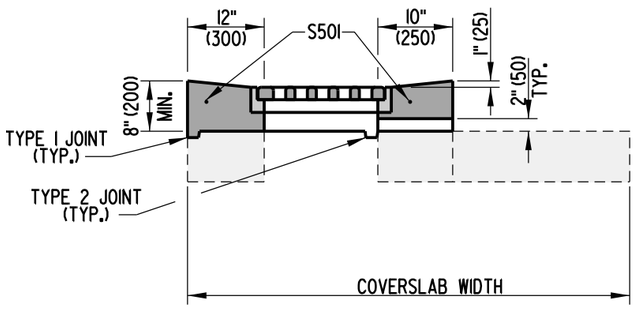
STANDARD NO. D-5 (2009) | SHT. 2 OF 8

APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)

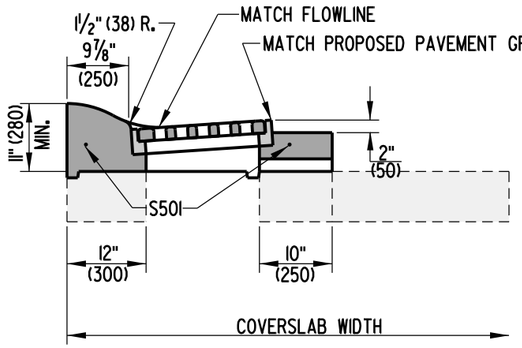
RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

12/01/2009

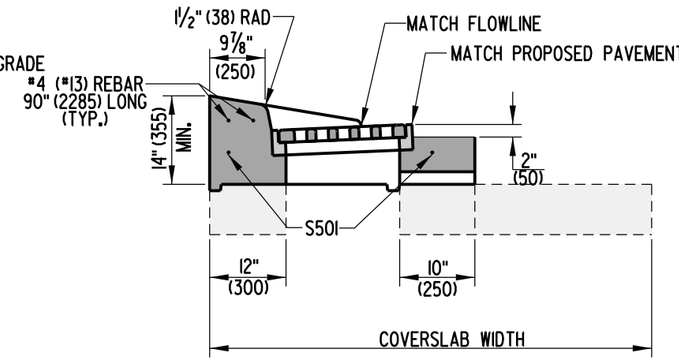
SCALE : N.T.S.



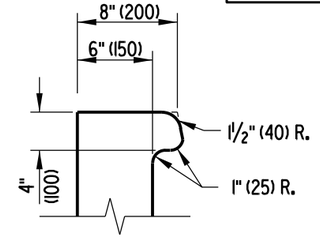
TYPE A



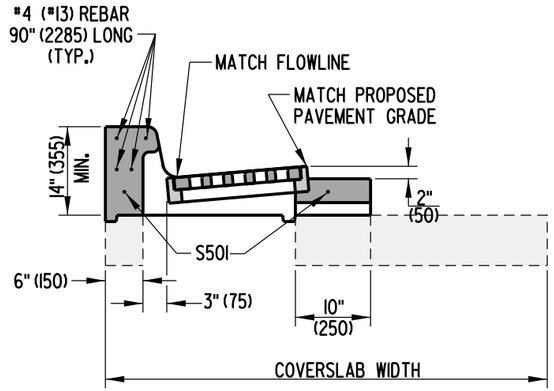
TYPE D



TYPE E

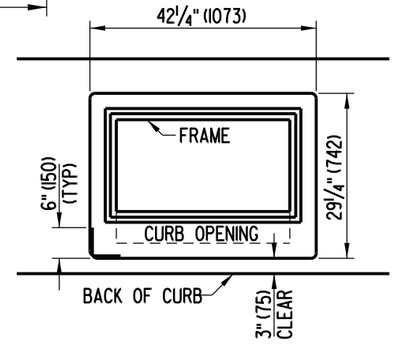


CURB OPENING DETAIL



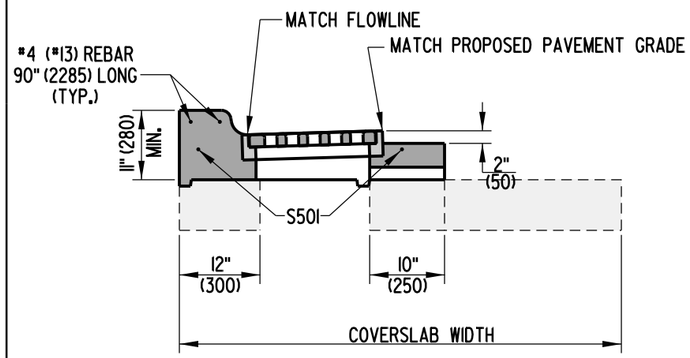
TYPE B

INLET TOP UNIT APPLICATIONS	
TOP UNIT	**CURB**
TYPE A	USE IN DRAINAGE SWALE
TYPE B	INTEGRAL PCC CURB & GUTTER, TYPE 1 & 3, PCC CURB TYPE 1
TYPE C	INTEGRAL PCC CURB & GUTTER, TYPE 4, PCC CURB TYPE 3
TYPE D	INTEGRAL PCC CURB & GUTTER, TYPE 2
TYPE E	PCC CURB TYPE 2

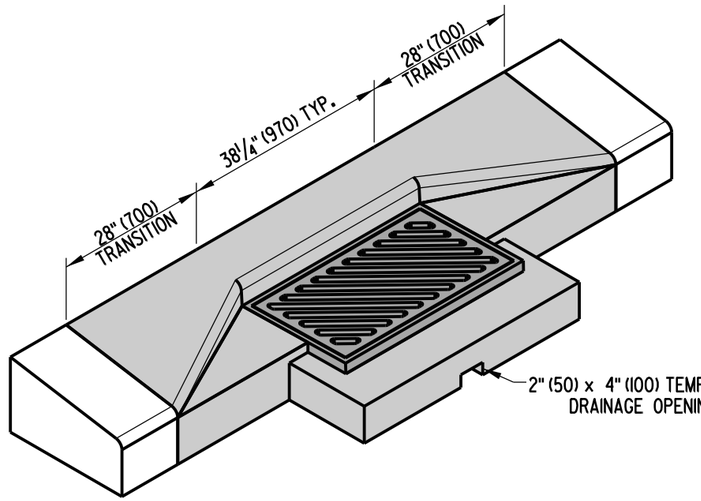


S501 BENDING DIAGRAM

S501 IS NOT REQUIRED TO BE ONE CONTINUOUS BAR. IF MORE THAN ONE BAR IS USED, THERE MUST BE A 12" (300) OVERLAP BETWEEN BARS.

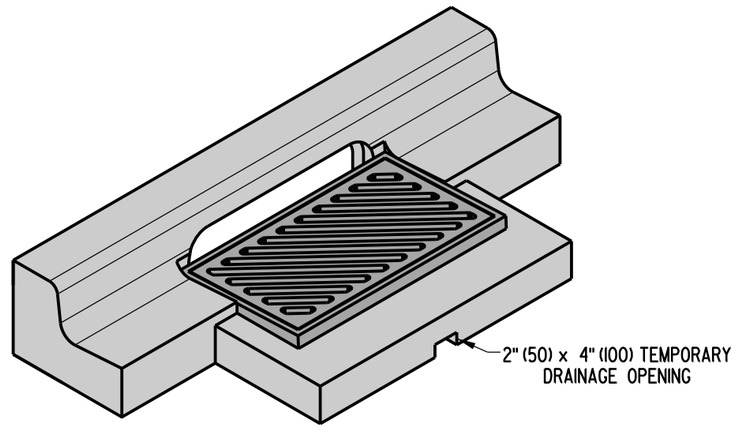


TYPE C



ISOMETRIC VIEW

TYPE E UNIT SHOWN



ISOMETRIC VIEW

TYPE B TOP UNIT SHOWN WITH INTEGRAL CURB & GUTTER TYPE 3

DELAWARE
DEPARTMENT OF TRANSPORTATION

DRAINAGE INLET TOP UNITS

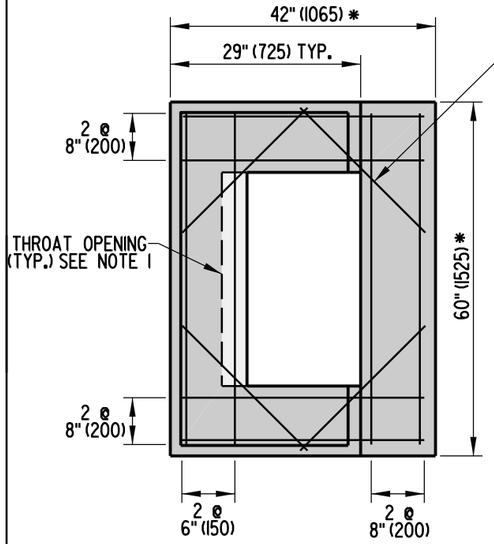
STANDARD NO. D-5 (2009) | **SHT.** 3 **OF** 8

APPROVED SIGNATURE ON FILE — CHIEF ENGINEER — 01/19/2010 DATE

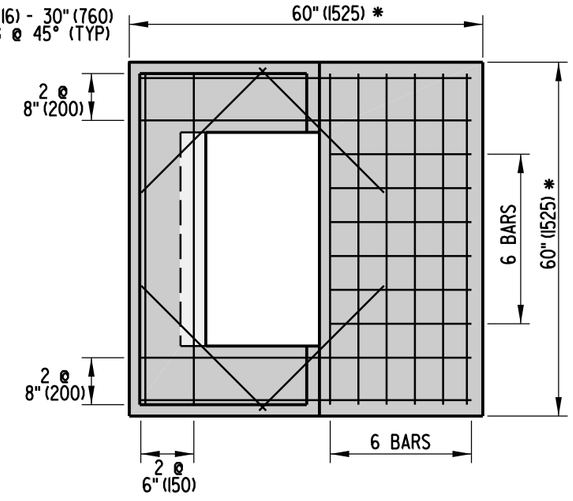
RECOMMENDED SIGNATURE ON FILE — DESIGN ENGINEER — 01/14/2010 DATE

12/22/2009

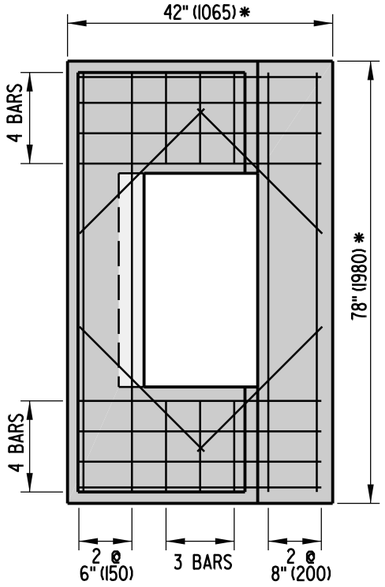
SCALE : N.T.S.



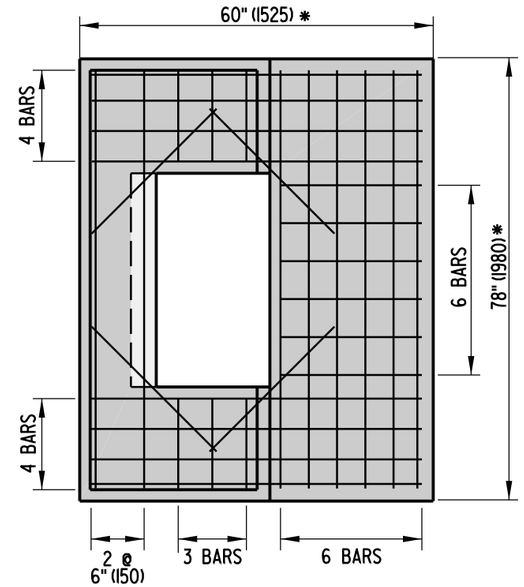
48" (1220) x 30" (760) INLET



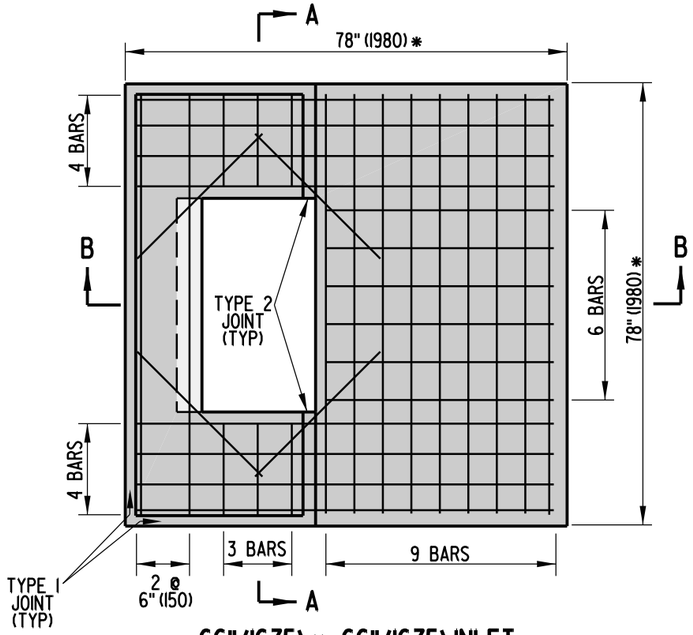
48" (1220) x 48" (1220) INLET



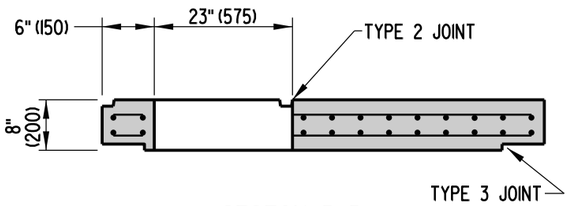
66" (1675) x 30" (760) INLET



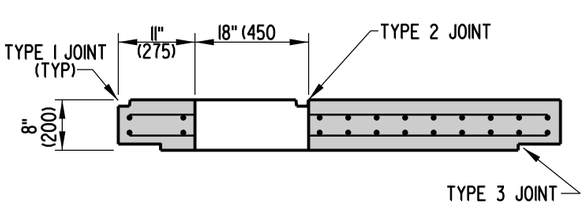
66" (1675) x 48" (1220) INLET



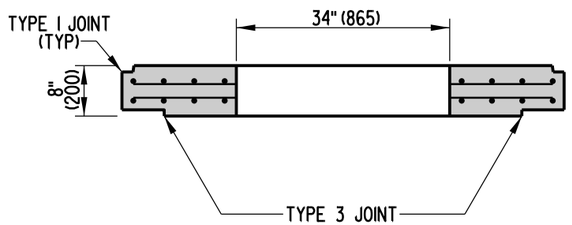
66" (1675) x 66" (1675) INLET



SECTON B-B
FOR TYPE B TOP UNITS



SECTON B-B
FOR TYPES A, C, D, & E TOP UNITS



SECTION A-A

NOTES :

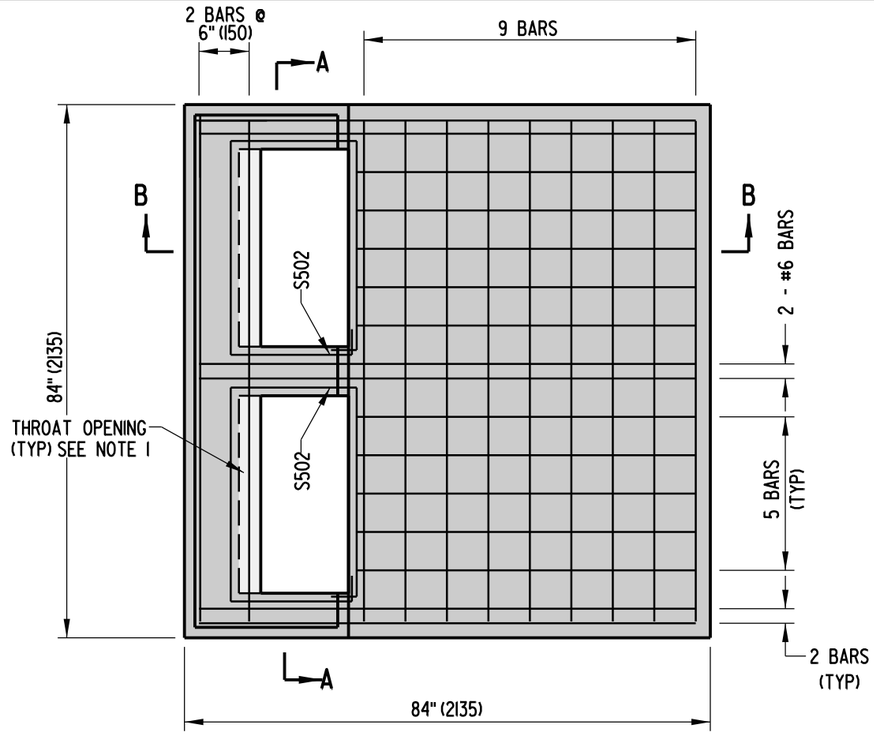
1). RELOCATE ENCROACHING REINFORCING BARS WHEN USING TYPE B UNIT.
2). COVER SLABS SHALL BE PRECAST AND MUST BE SIZED TO FIT INLET BOX DIMENSIONS.
3). ALL BARS ARE TO BE #5 (#16) SPACED @ 6" (150) UNLESS NOTED OTHERWISE. TOP REINFORCEMENT SHALL BE 0.11 IN^2 (70 mm^2) HORIZONTAL REINFORCEMENT PER FOOT IN BOTH DIRECTIONS.
4). MINIMUM BAR COVER = 1½" (38).

* - DIMENSIONS TO MATCH OUTSIDE TO OUTSIDE DIMENSIONS OF BOX.

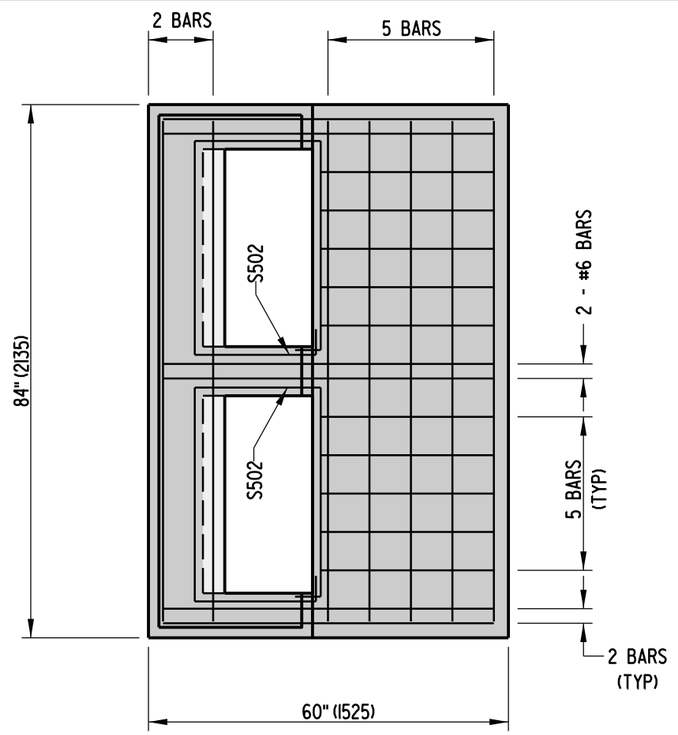
DELAWARE DEPARTMENT OF TRANSPORTATION	DRAINAGE INLET COVER SLAB DETAILS	APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. D-5 (2009) — SHT. 4 OF 8	RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

12/01/2009

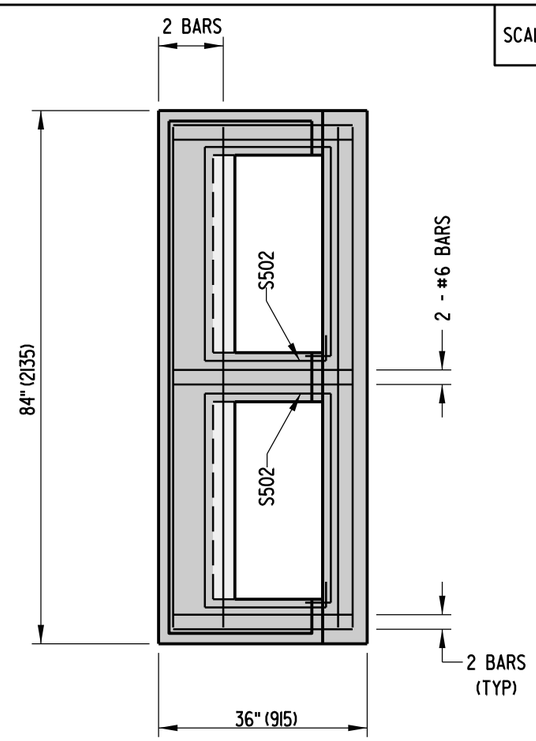
SCALE : N.T.S.



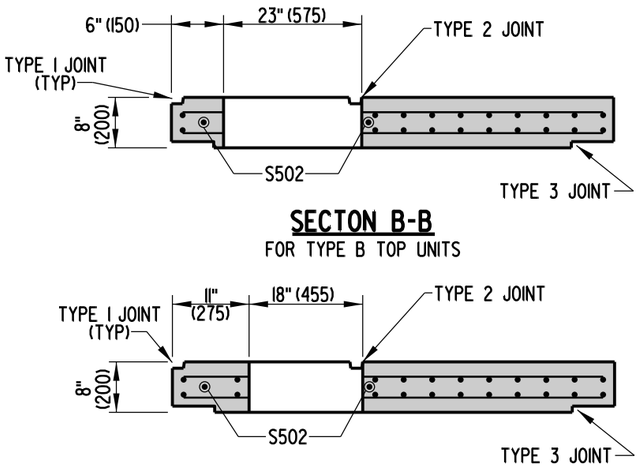
72" (1830) x 72" (1830) INLET



72" (1830) x 48" (1220) INLET



72" (1830) x 24" (610) INLET

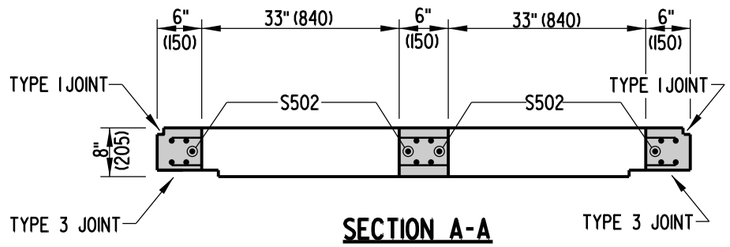


SECTON B-B

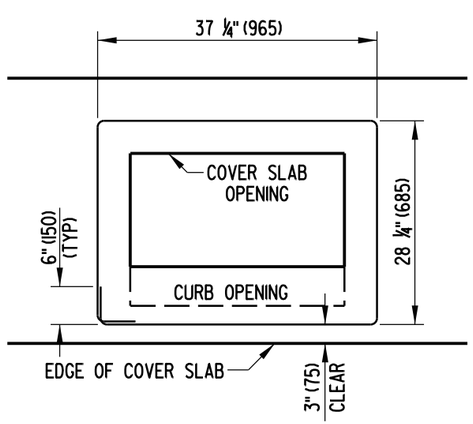
FOR TYPE B TOP UNITS

SECTON B-B

FOR TYPES A, C, D, & E TOP UNITS



SECTION A-A



S502 BENDING DIAGRAM

S502 IS NOT REQUIRED TO BE ONE CONTINUOUS BAR. IF MORE THAN ONE BAR IS USED, THERE MUST BE A 12" (300) OVERLAP BETWEEN BARS.

NOTES :

1). RELOCATE ENCROACHING REINFORCING BARS WHEN USING TYPE B TOP UNIT.
2). COVER SLABS ARE TO BE PRECAST AND MUST BE SIZED TO FIT INLET BOX DIMENSIONS.
3). ALL BARS ARE TO BE #5 (#16) SPACED @ 6" (150) UNLESS NOTED OTHERWISE. TOP REINFORCEMENT SHALL BE 0.11 IN^2 (70 mm^2) MIN. HORIZONAL REINFORCEMENT PER FOOT IN BOTH DIRECTIONS.
4). MINIMUM BAR COVER = 1½" (38).

DELAWARE
DEPARTMENT OF TRANSPORTATION

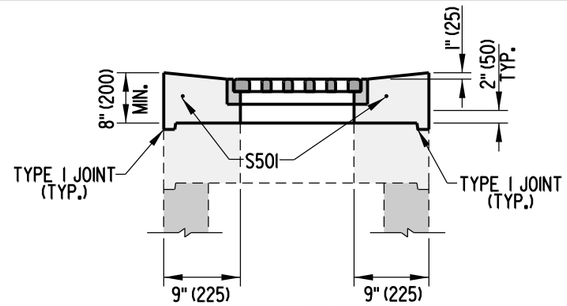
DOUBLE INLET COVER SLAB DETAILS

STANDARD NO. D-5 (2009) | **SHT. 5 OF 8**

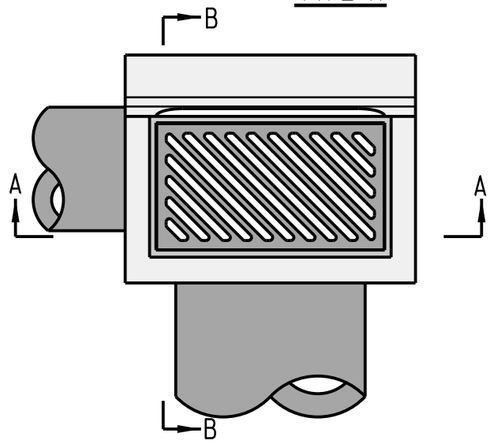
APPROVED SIGNATURE ON FILE — CHIEF ENGINEER — 01/19/2010 DATE

RECOMMENDED SIGNATURE ON FILE — DESIGN ENGINEER — 01/14/2010 DATE

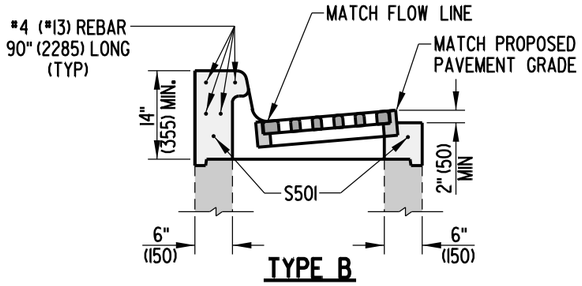
10/8/2009



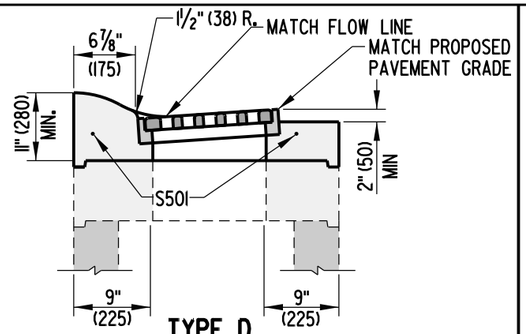
TYPE A



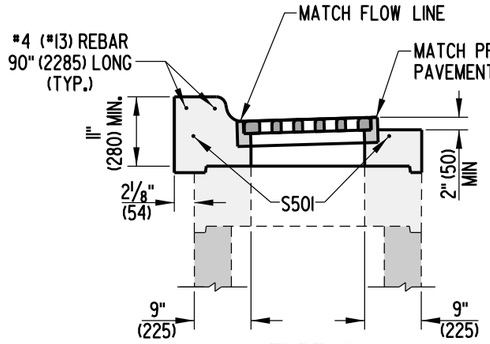
TOP VIEW



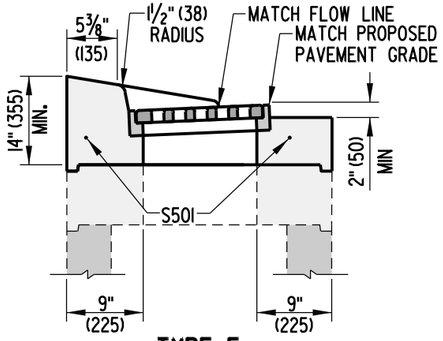
TYPE B



TYPE D



TYPE C

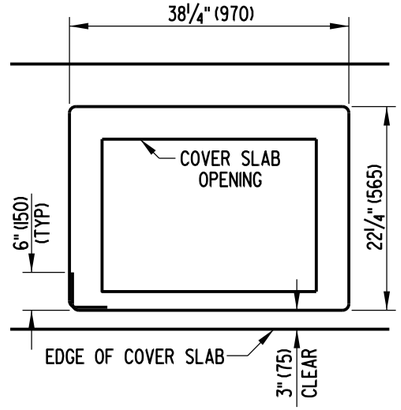


TYPE E

TOP UNIT DETAILS

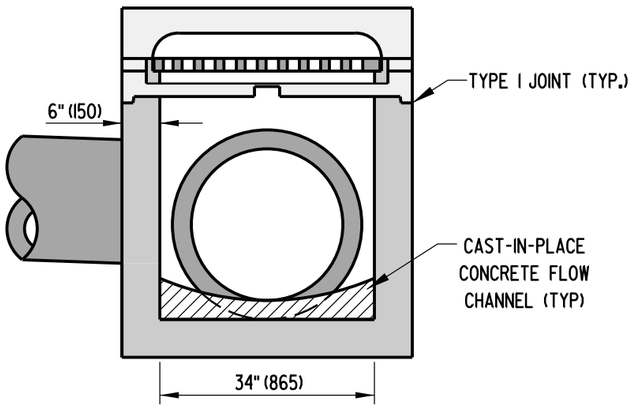
NOTE: SEE DETAIL D-5, SHEET 3 OF 8 FOR INLET TOP UNIT APPLICATIONS.

SCALE : N.T.S.

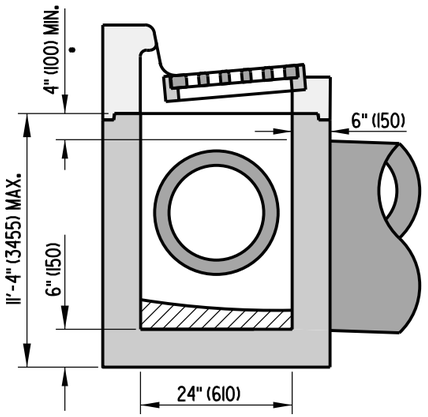


S503 BENDING DIAGRAM

S503 IS NOT REQUIRED TO BE ONE CONTINUOUS BAR. IF MORE THAN ONE BAR IS USED, THERE MUST BE A 12" (300) OVERLAP BETWEEN BARS.



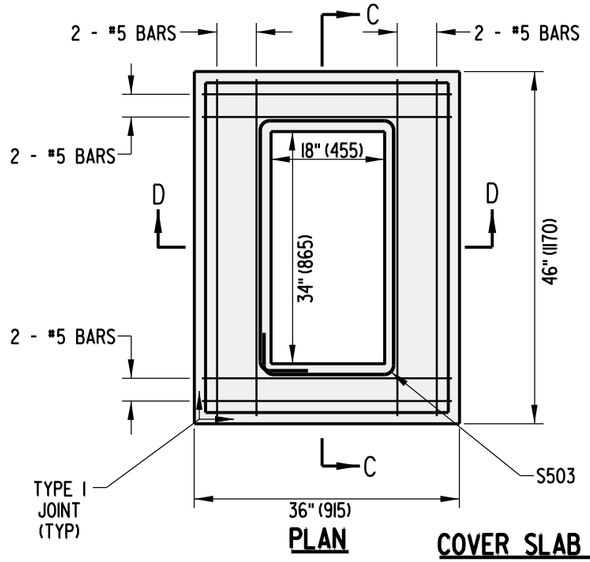
SECTION A-A



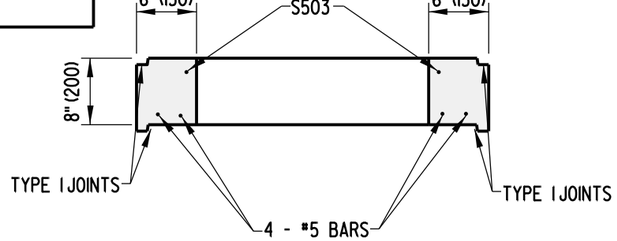
SECTION B-B

DRAINAGE INLET DETAILS

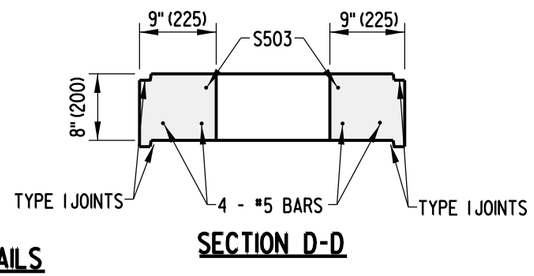
NOTE: REFER TO PREVIOUS SHEETS FOR REINFORCING REQUIREMENTS
• - SEE OPTIONAL PIPE OPENING DETAIL ON STANDARD NO. D-4, SHEET 1 OF 1



PLAN



SECTION C-C



SECTION D-D

COVER SLAB DETAILS

NOTE: COVER SLAB IS ONLY NEEDED FOR TYPES A, D, & E TOP UNITS FOR THE 34" (865) x 24" (610) DRAINAGE INLET.

DELAWARE
DEPARTMENT OF TRANSPORTATION

34" (865) x 24" (610) DRAINAGE INLET AND COVER SLAB DETAILS

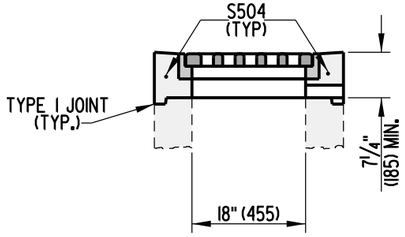
STANDARD NO. D-5 (2009) | SHT. 6 OF 8

APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)

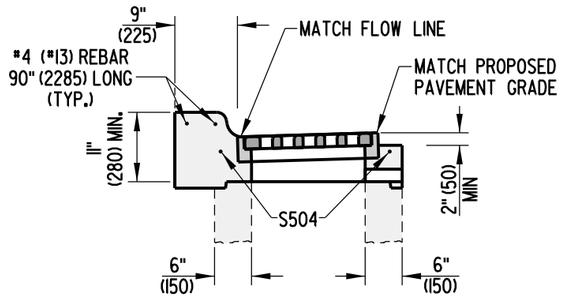
RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

01/04/2010

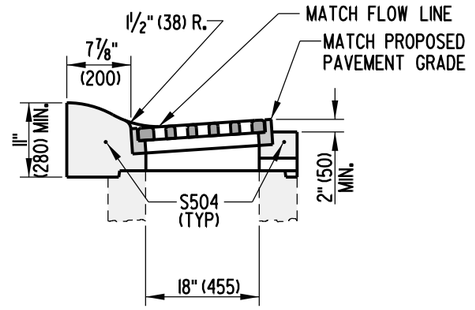
SCALE : N.T.S.



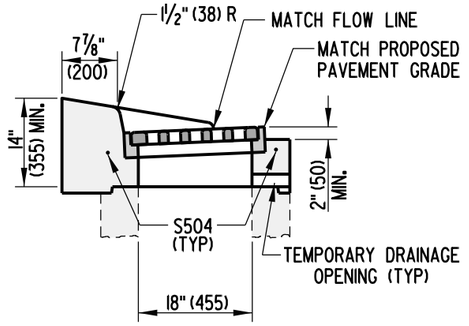
TYPE A



TYPE C

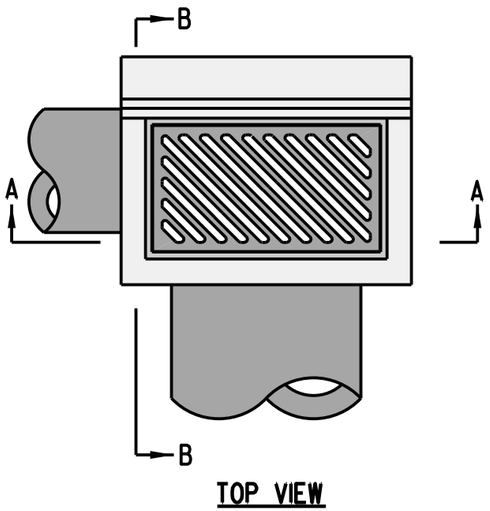


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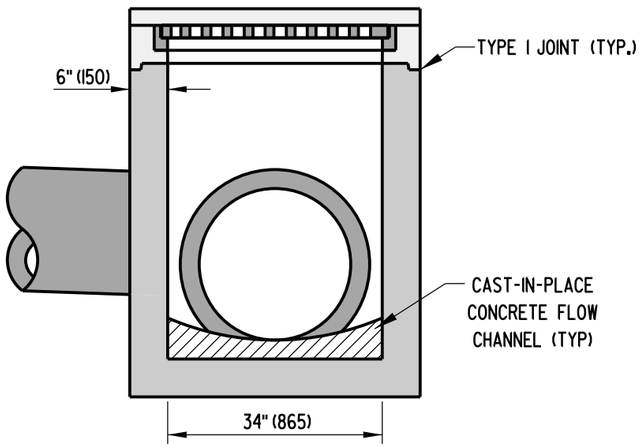


TYPE E

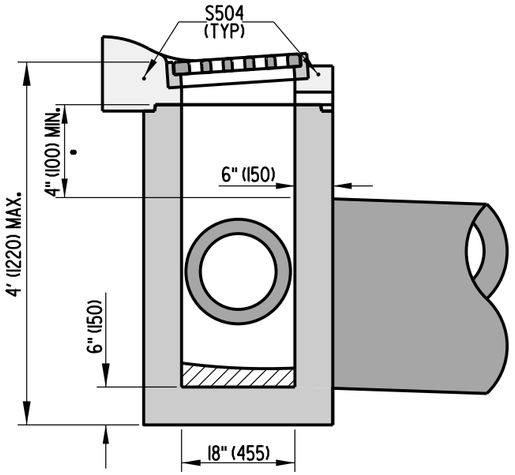
TOP UNIT DETAILS



TOP VIEW

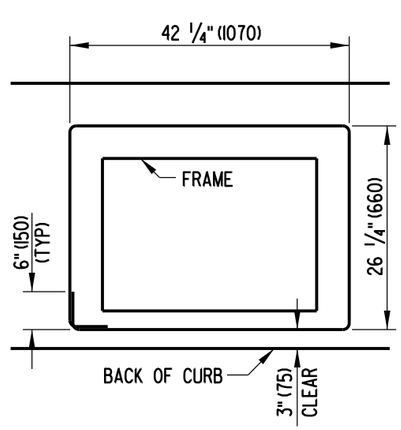


SECTION A-A



SECTION B-B

• - SEE OPTIONAL PIPE OPENING DETAIL ON STANDARD D-4, SHEET 1OF 1.



S504 BENDING DIAGRAM

S504 IS NOT REQUIRED TO BE ONE CONTINUOUS BAR. IF MORE THAN ONE BAR IS USED, THERE MUST BE A 12" (300) OVERLAP BETWEEN BARS.

NOTES:

1.) REFER TO PREVIOUS SHEETS FOR REINFORCEMENT REQUIREMENTS
2.) THE HEIGHT OF THIS INLET IS LIMITED TO 4' (1220) MAXIMUM, THEREFORE STEPS WILL NOT BE REQUIRED AND SHOULD NOT BE INSTALLED ON THIS INLET.
3). REFER TO DETAIL D-5, SHEET 3 OF 8 FOR INLET TOP UNIT APPLICATION.

DELAWARE
DEPARTMENT OF TRANSPORTATION

34" (865) x 18" (455) DRAINAGE INLET DETAILS

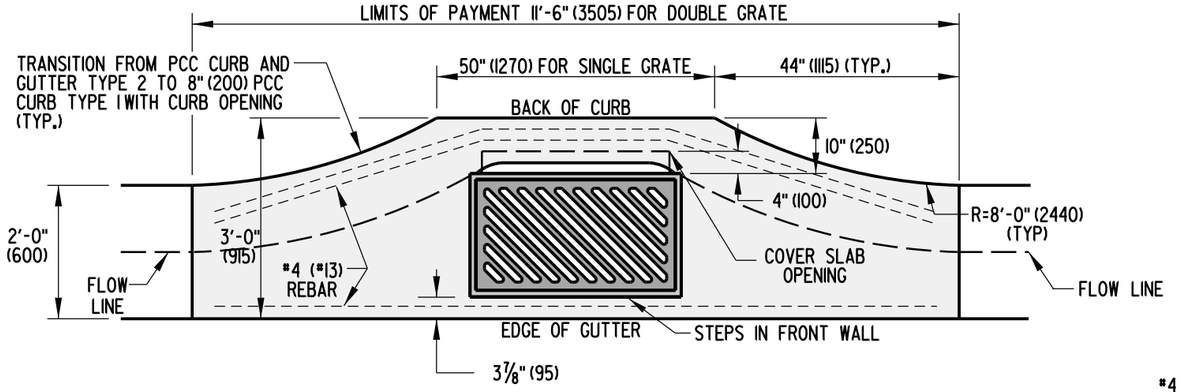
STANDARD NO. D-5 (2009) | SHT. 7 OF 8

APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)

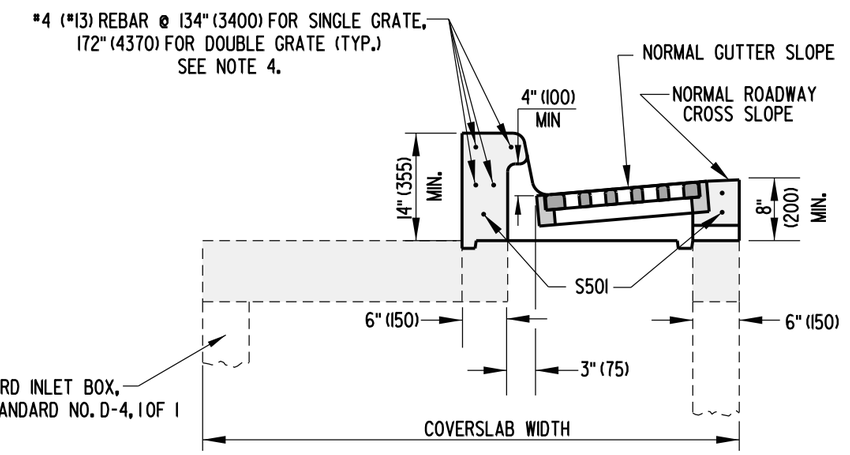
RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

01/05/2010

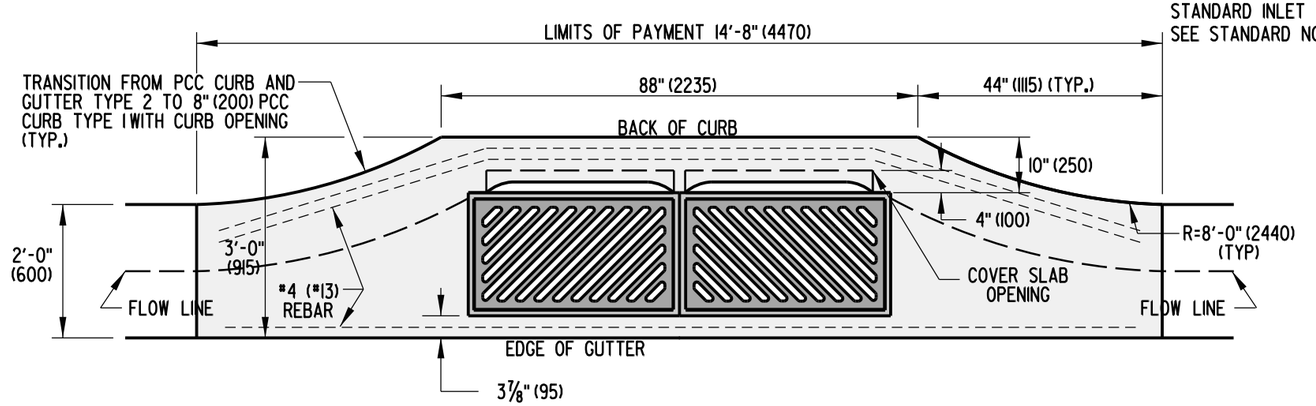
SCALE : N.T.S.



SINGLE GRATE SETUP



SUBDIVISION TOP & CONFIGURATION



DOUBLE GRATE SETUP

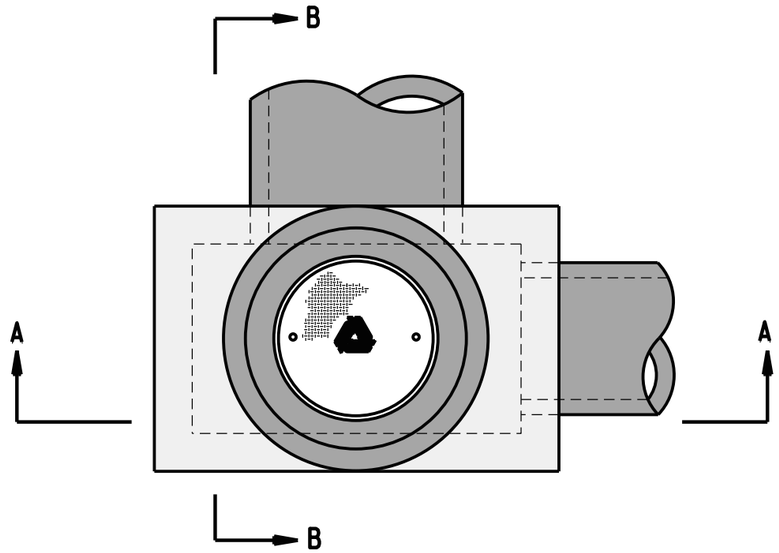
NOTES:

1). MINIMUM BOX SIZE TO BE 34" (850) X 24" (600).
2). PIPE OPENINGS IN THE FRONT WALL SHALL NOT INTERFERE WITH THE STEPS. THE PIPE SHALL BE SHIFTED HORIZONTALLY TO AVOID THE STEPS. IT MAY BE NECESSARY TO USE A LARGER BOX TO AVOID CONFLICT BETWEEN STEPS AND PIPE OPENING.
3). SEE DETAIL D-5, SHEET 3 OF 9, FOR S501 BAR DIAGRAM.
4). THE REBAR IN THE HEAD IS PREFERRED TO BE 1 CONTINUOUS PIECE, HOWEVER, IF MULTIPLE PIECES ARE TO BE USED, EACH PIECE SHALL OVERLAP BY 12" (300) MINIMUM AND THE FINAL LENGTH OF THE SPLICED REBAR SHALL BE AS NOTED ON THIS DETAIL.

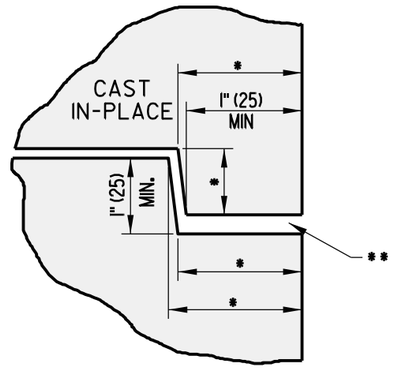
DELAWARE DEPARTMENT OF TRANSPORTATION	DRAINAGE INLET TOP UNIT, TYPE S		APPROVED SIGNATURE ON FILE CHIEF ENGINEER 01/19/2010 DATE
	STANDARD NO. D-5 (2009)	SHT. 8 OF 8	RECOMMENDED SIGNATURE ON FILE DESIGN ENGINEER 01/14/2010 DATE

12/01/2009

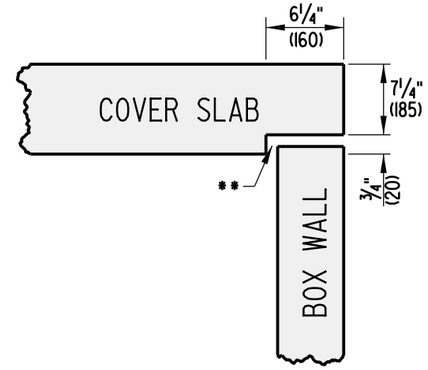
SCALE : N.T.S.



PLAN

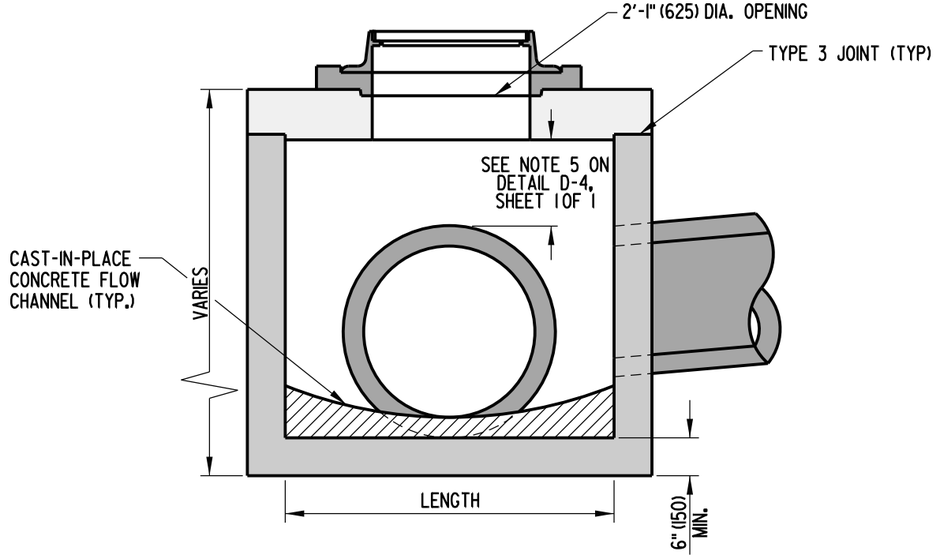


TYPE 1 JOINT DETAIL



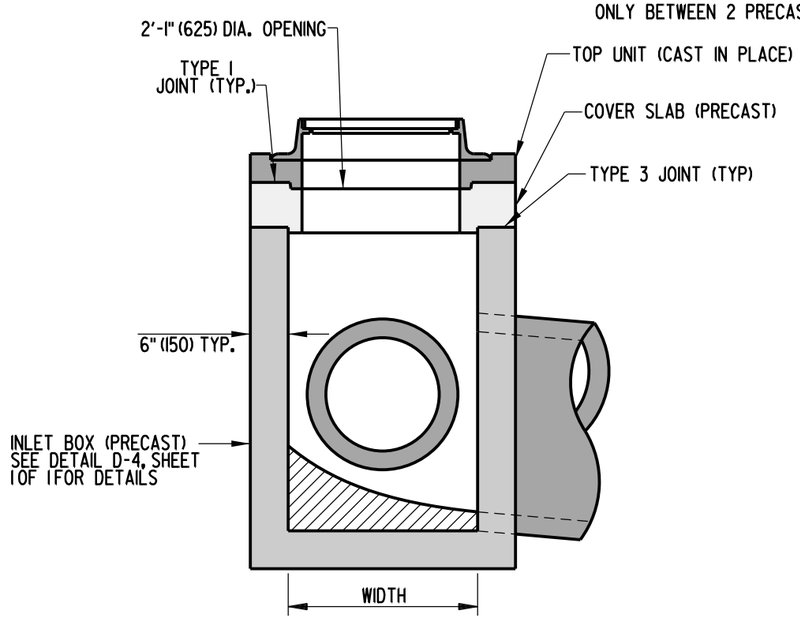
TYPE 3 JOINT DETAIL

* DIMENSIONS MAY VARY
** JOINT SEALANT AS PER SPECIFICATIONS ONLY BETWEEN 2 PRECAST UNITS



SECTION A-A

• - SEE OPTIONAL PIPE OPENING DETAIL ON STANDARD D-4, SHEET 1 OF 1.



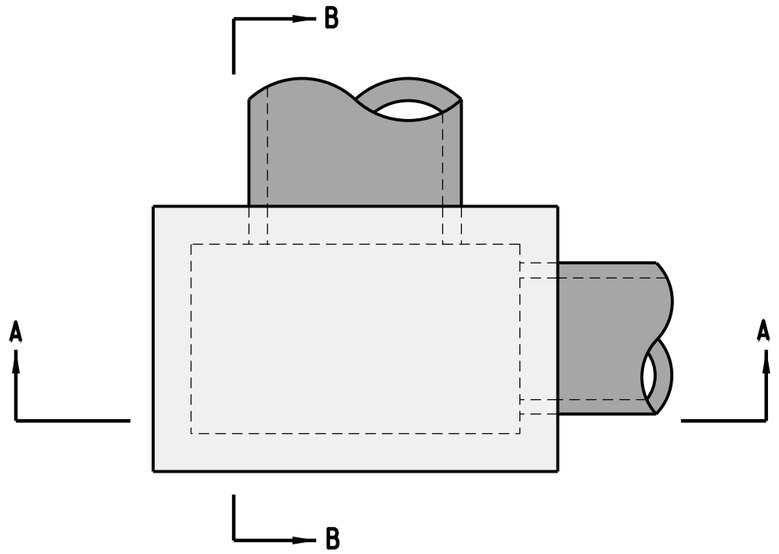
SECTION B-B

BOX MANHOLE ASSEMBLY

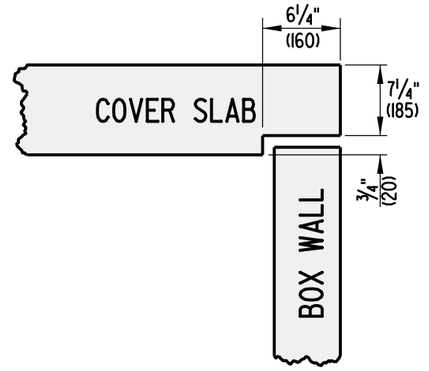
DELAWARE DEPARTMENT OF TRANSPORTATION	MANHOLE DETAILS		APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. D-6 (2009)	SHT. 1 OF 4	RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

10/20/2009

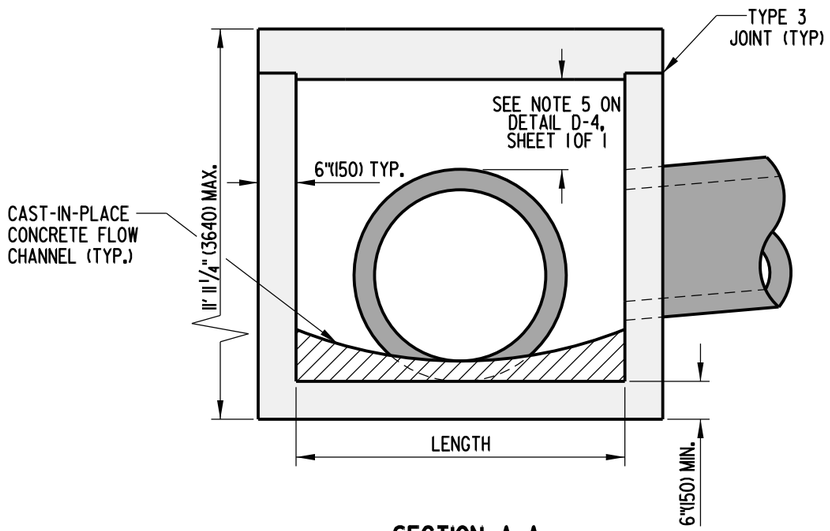
SCALE : N.T.S.



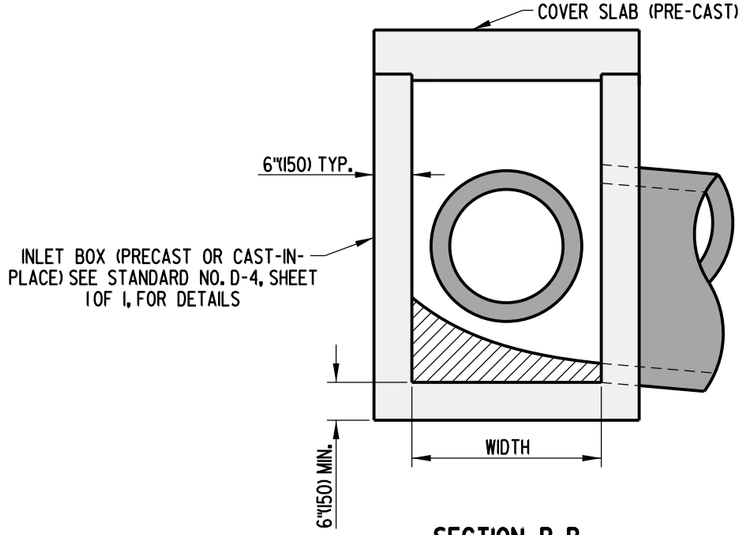
PLAN



TYPE 3 JOINT DETAIL



SECTION A-A



SECTION B-B

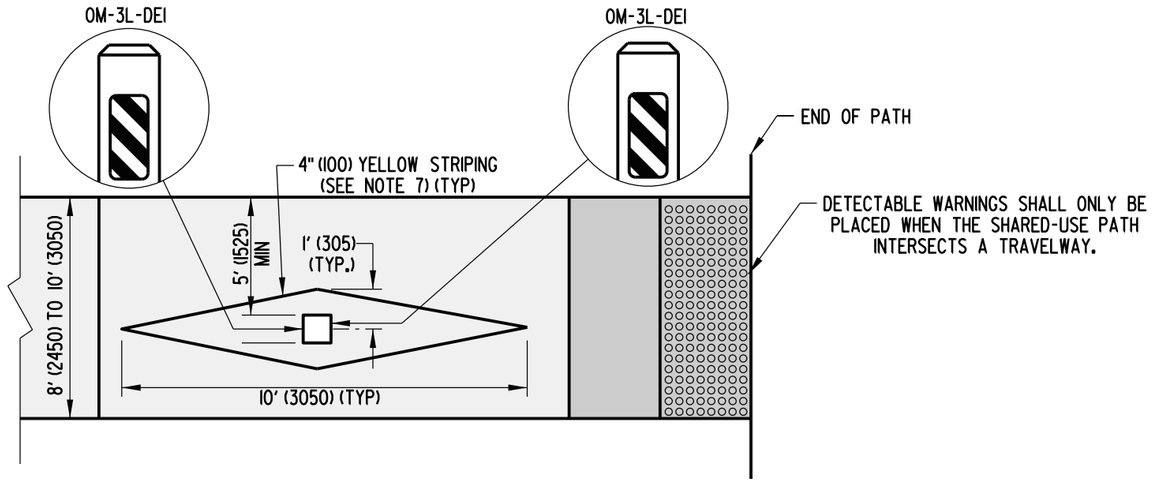
• - SEE OPTIONAL PIPE OPENING DETAIL ON STANDARD NO. D-4, SHEET 1 OF 1.

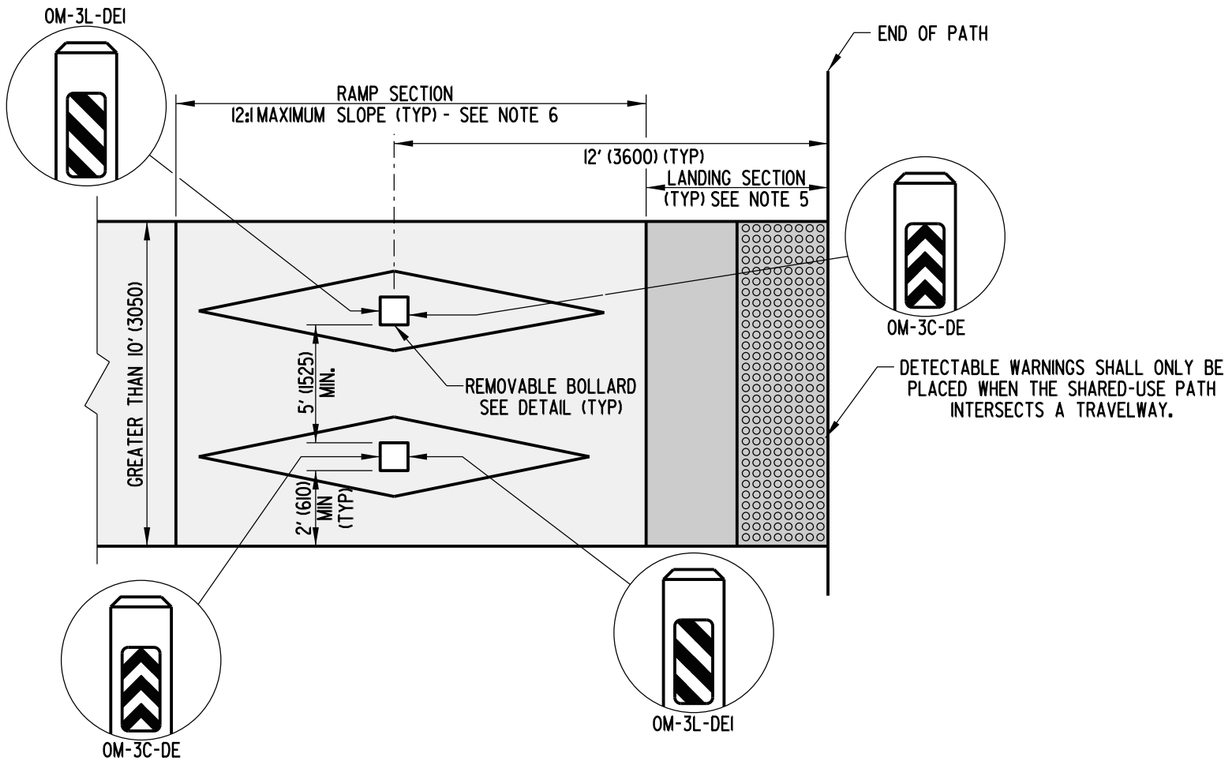
JUNCTION BOX ASSEMBLY

DELAWARE DEPARTMENT OF TRANSPORTATION	JUNCTION BOX DETAILS		APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. D-7 (2009)	SHT. 1 OF 2	RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

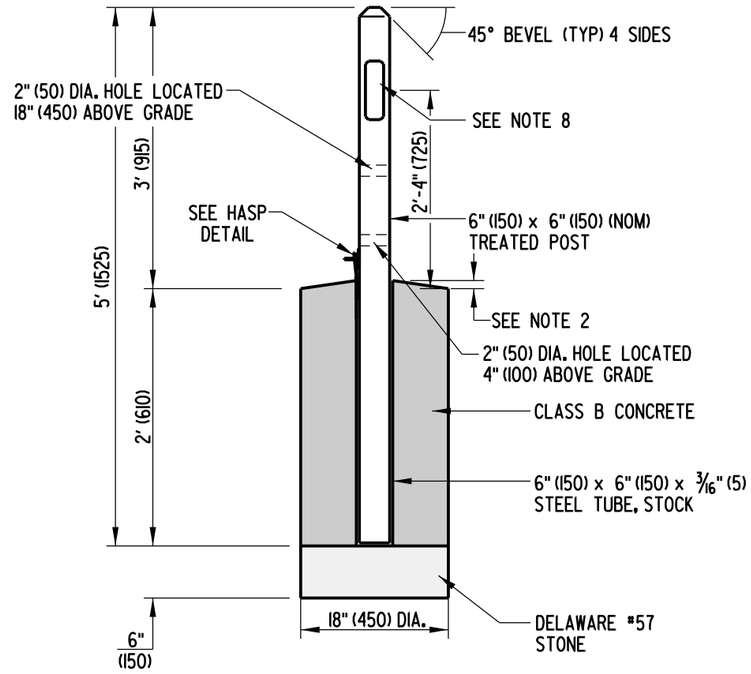
10/20/2009

SCALE : N.T.S.

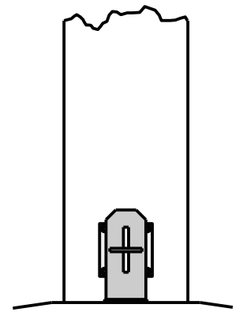




SHARED-USE PATH INTERSECTION



REMOVABLE BOLLARD



HASP DETAIL

LOWER PORTION OF HASP SHALL BE WELDED TO STEEL TUBE.

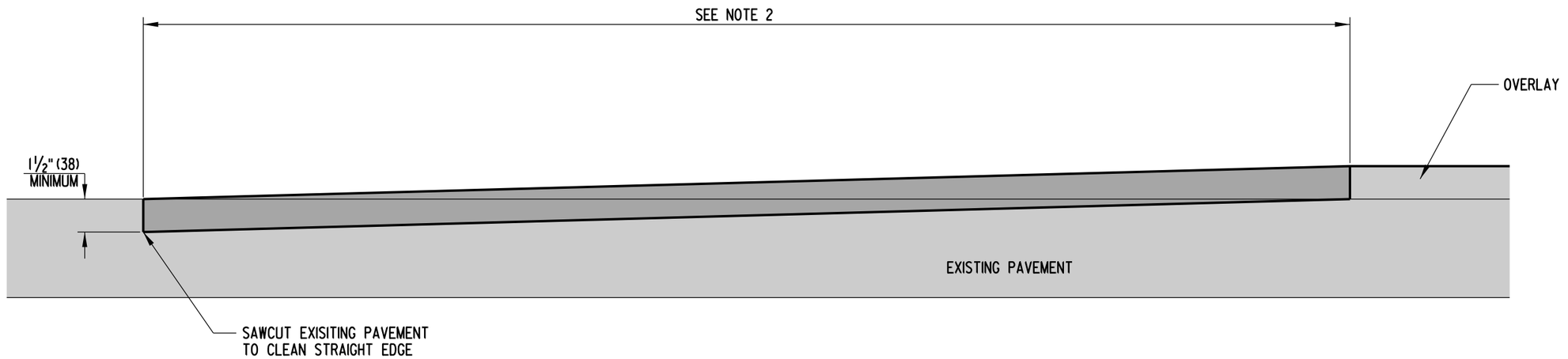
NOTES:

1). IF THE SHARED-USE PATH ENDS AT A ROADWAY OR RAILROAD CROSSING, THEN DETECTABLE WARNING TRUNCATED DOMES 24" (600) LONG AND THE FULL WIDTH OF THE PATH SHALL BE INSTALLED. SEE DETAIL C-2.
2). STEEL TUBE TO EXTEND ½" (13) ABOVE GROUND WITH CONCRETE TO SLOPE AWAY FROM TUBE TO KEEP WATER AND SEDIMENT FROM DRAINING INTO TUBE.
3). BOLLARDS ARE NOT REQUIRED FOR A SHARED-USE PATH LESS THAN 8' (2450) WIDE.
4). SHAVE THE POST AS NECESSARY SO THAT IT WILL FIT IN THE STEEL TUBE.
5). THE LANDING SECTION SHALL BE A MINIMUM OF 5' (1525) IN LENGTH AND SHALL HAVE A MAXIMUM CROSS SLOPE AND RUNNING SLOPE OF 2%. THE ENTIRE LANDING SECTION MUST ALSO BE CONCRETE.
6). THE RAMP SECTION SHALL HAVE A MAXIMUM CROSS SLOPE OF 2%. IT SHALL ALSO HAVE A MAXIMUM RUNNING SLOPE OF 12:1. HOWEVER, IF A 12:1 RUNNING SLOPE DOES NOT ALLOW THE RAMP TO MEET EXISTING GRADE WITHIN 15' (4200), THE RUNNING SLOPE MAY EXCEED 12:1.
7). STRIPING MATERIAL TO BE DETERMINED BY THE ENGINEER BASED ON THE MATERIAL THAT THE STRIPING IS BEING PLACED ON.
8). THE APPROPRIATE TYPE 3 OBJECT MARKER SHALL BE PLACED ON THE FRONT AND BACK OF EACH BOLLARD AS PER THIS DETAIL.

DELAWARE DEPARTMENT OF TRANSPORTATION	BOLLARD & SHARED-USE PATH DETAILS	APPROVED SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. M-3 (2009) — SHT. 1 OF 1	RECOMMENDED SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

01/06/2010

SCALE : N.T.S.



NOTES:

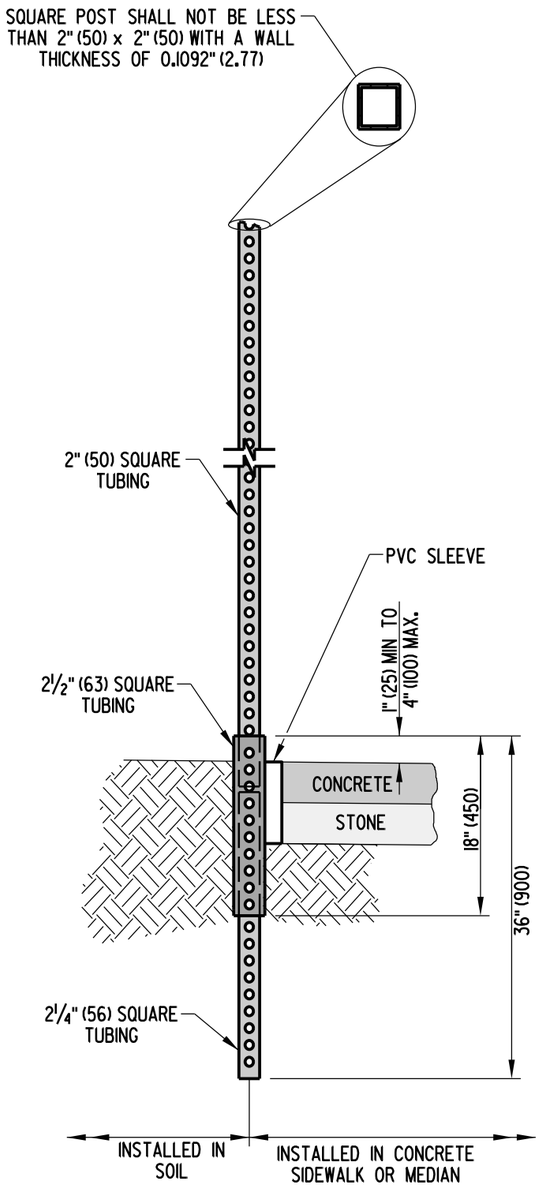
1). THE PROFILE OF THE OVERLAY PAVING SHALL BE ADJUSTED TO ASSURE A SMOOTH TRANSITION THROUGH THE BUTT JOINT. THE REMOVAL AND CLEANUP OF THE HOT MIX RESIDUE WEDGE LEFT FROM THE MILLING OPERATIONS ALONG CURB LINES, ADJACENT TO SPEED HUMPS, ACROSS INTERSECTING STREETS, AND AT THE BEGINNING AND ENDING POINTS OF THE BUTT JOINT, SHALL BE INCIDENTAL TO THE BUTT JOINT ITEM.

2). THE LENGTH OF THE BUTT JOINT SHALL BE EQUAL TO 30' (90m) FOR EVERY 1" (25) OF OVERLAY DEPTH.

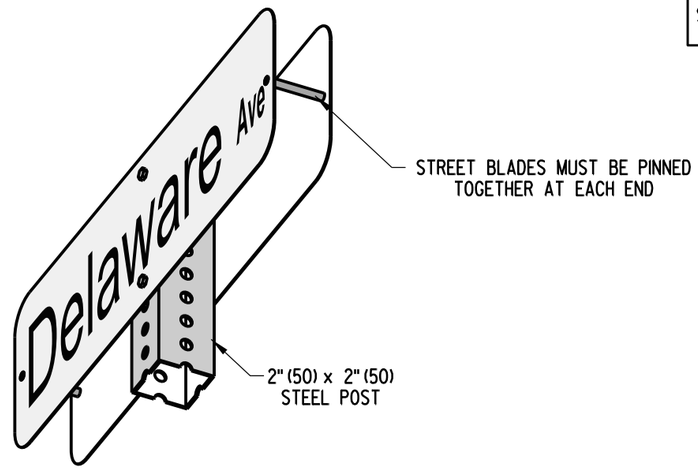
DELAWARE **DEPARTMENT OF TRANSPORTATION**	**BUTT JOINTS**	**APPROVED** SIGNATURE ON FILE (CHIEF ENGINEER) 01/19/2010 (DATE)
	STANDARD NO. P-3 (2009) — **SHT. 1 OF 1**	**RECOMMENDED** SIGNATURE ON FILE (DESIGN ENGINEER) 01/14/2010 (DATE)

01/08/2010

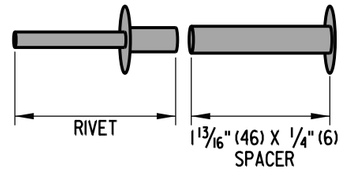
SCALE : N.T.S.



BREAK-AWAY ASSEMBLY



TYPICAL ASSEMBLY



PIN ASSEMBLY

NOTE: THE PIN ASSEMBLY IS TO BE USED WITH THE INSTALLATION OF BACK TO BACK STREET BLADE SIGNS WITH 6" (150) LETTERS.

NOTES:

1). SQUARE TUBES ARE TO BE FORMED FROM GALVANIZED SHEET STRUCTURAL (PHYSICAL) QUALITY, ASTM A 446, GRADE A, COATING DESIGNATION G 90, REGULAR SPANGLE, OR HOT ROLLED CARBON SHEET STEEL STRUCTURAL (PHYSICAL) QUALITY, ASTM A 57, GRADE 33.

2). NOMINAL OUTSIDE DIMENSIONS ARE AS FOLLOWS;
   A). 2" (50) x 2" (50) +/- 0.008
   2¼" (56) x 2¼" (56) +/- 0.010
   2½" (63) x 2½" (63) +/- 0.010

3). ALL FOUR SIDES ARE TO HAVE EVENLY SPACED 7/16" (12) DIAMETER HOLES ON 1" (25) CENTERS THE ENTIRE LENGTH OF THE TUBE.

4). STANDARD CORNER RADIUS SHALL BE 5/32" (4).

5). THE FASTENERS TO BE SUPPLIED UNDER THIS SPECIFICATION SHALL BE 5/16" (8), GRADE 5 UNC CORNER BOLTS WITH CADMIUM OR ZINC PLATING. INSTALLATION OF SIGNS SHALL BE WITH 3/8" (10) x 2½" (63) BOLT WITH LOCKNUT AND WASHER.

6). THE CONTRACTOR SHALL PROVIDE AND INSTALL PVC SLEEVES (4" (100) INSIDE DIAMETER MINIMUM, 6" (150) INSIDE DIAMETER MAXIMUM) IN PROPOSED CONCRETE SIDEWALKS, ISLANDS, AND MEDIANS FOR FUTURE TRAFFIC SIGN POSTS AS DIRECTED BY THE ENGINEER. THE LOWER END OF THE SLEEVE SHALL BE SET ON TOP OF THE SOIL.

DELAWARE
DEPARTMENT OF TRANSPORTATION

BREAKWAY SIGN POST AND PIN ASSEMBLY DETAILS

STANDARD NO. T-15 (2009) | **SHT. 1 OF 1**

APPROVED SIGNATURE ON FILE — CHIEF ENGINEER — 01/19/2010 — DATE

RECOMMENDED SIGNATURE ON FILE — DESIGN ENGINEER — 01/14/2010 — DATE

01/08/2010