## SECTION I - BARRIER

### B-L (2010)  — BARRIER LEGEND

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>NAME</th>
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<tbody>
<tr>
<td>B-L</td>
<td>BARRIER LEGEND</td>
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### B-1  — GUARDRAIL APPLICATIONS (TYPES 1-31, 2-31, AND 3-31)

<table>
<thead>
<tr>
<th>SHEET NO.</th>
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<tbody>
<tr>
<td>B-1</td>
<td>GUARDRAIL APPLICATIONS (TYPES 1-31, 2-31, AND 3-31)</td>
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### B-2  — GRADING FOR GUARDRAIL END TREATMENTS (TYPES 1, 2, AND 3)

<table>
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<tr>
<th>SHEET NO.</th>
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<tbody>
<tr>
<td>B-2</td>
<td>GRADING FOR GUARDRAIL END TREATMENTS (TYPES 1, 2, AND 3)</td>
</tr>
</tbody>
</table>

### B-3  — GUARDRAIL OVER CULVERTS (TYPES 1-31, 2-31, AND 3-31)

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>NAME</th>
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<tbody>
<tr>
<td>B-3</td>
<td>GUARDRAIL OVER CULVERTS (TYPES 1-31, 2-31, AND 3-31)</td>
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### B-4 (2012)  — END ANCHORAGE, TYPE 31

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<tbody>
<tr>
<td>B-4</td>
<td>END ANCHORAGE, TYPE 31</td>
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### B-5  — GUARDRAIL TO BARRIER CONNECTION (TYPES 1-31, 2-31, AND EXIT TYPE 31)

<table>
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<th>SHEET NO.</th>
<th>NAME</th>
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<tbody>
<tr>
<td>B-5</td>
<td>GUARDRAIL TO BARRIER CONNECTION (TYPES 1-31, 2-31, AND EXIT TYPE 31)</td>
</tr>
</tbody>
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### B-6  — BRIDGE RAIL RETROFIT (TYPES 1, 2, 3, AND 4)

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<td>B-6</td>
<td>BRIDGE RAIL RETROFIT (TYPES 1, 2, 3, AND 4)</td>
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### B-7 (2010)  — W-BEAM, TYPE 1-27 TO TYPE 1-31 TRANSITION SECTION

<table>
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<tr>
<th>SHEET NO.</th>
<th>NAME</th>
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<tbody>
<tr>
<td>B-7</td>
<td>W-BEAM, TYPE 1-27 TO TYPE 1-31 TRANSITION SECTION</td>
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### B-8  — RESERVED

<table>
<thead>
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<tr>
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### B-9  — RESERVED

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### B-10  — RESERVED

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### B-11  — RESERVED

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### B-12  — RESERVED

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<td>B-12</td>
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</table>

### B-13  — HARDWARE

<table>
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<tbody>
<tr>
<td>B-13</td>
<td>HARDWARE</td>
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### B-14  — CONCRETE SAFETY BARRIER (F SHAPE)

<table>
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<th>SHEET NO.</th>
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<tr>
<td>B-14</td>
<td>CONCRETE SAFETY BARRIER (F SHAPE)</td>
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</table>

### B-15  — GUARDRAIL APPLICATIONS (TYPES 1-27, 2-27, AND 3-27)

<table>
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<tbody>
<tr>
<td>B-15</td>
<td>GUARDRAIL APPLICATIONS (TYPES 1-27, 2-27, AND 3-27)</td>
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</table>
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<table>
<thead>
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<tbody>
<tr>
<td>B-16</td>
<td>GUARDRAIL OVER CULVERTS (TYPES 1-27, 2-27, AND 3-27)</td>
</tr>
<tr>
<td>B-17 (2010)</td>
<td>GUARDRAIL END TREATMENT (TYPE 4-27)</td>
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<tr>
<td>B-18 (2010)</td>
<td>CURVED GUARDRAIL SECTION</td>
</tr>
<tr>
<td>B-19 (2012)</td>
<td>END ANCHORAGE (TYPE 27)</td>
</tr>
<tr>
<td>B-20</td>
<td>BURIED END SECTION</td>
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<tr>
<td>B-21</td>
<td>GUARDRAIL TO BARRIER CONNECTION (TYPES 1-27, 2-27, AND EXIT TYPE 27)</td>
</tr>
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### SECTION II - CURB & GUTTER

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>NAME</th>
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<tbody>
<tr>
<td>C-1</td>
<td>P.C.C. CURB AND INTEGRAL P.C.C. CURB &amp; GUTTER</td>
</tr>
<tr>
<td>C-2</td>
<td>CURB RAMPS</td>
</tr>
<tr>
<td>C-3 (2012)</td>
<td>ENTRANCES</td>
</tr>
<tr>
<td>C-4 (2017)</td>
<td>CURB OPENING DETAILS</td>
</tr>
<tr>
<td>C-6 (2017)</td>
<td>CURB RETAINING WALL</td>
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### SECTION III - DRAINAGE

<table>
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<tr>
<th>SHEET NO.</th>
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<tbody>
<tr>
<td>D-1</td>
<td>6:1 SAFETY END STRUCTURE,</td>
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<tr>
<td>D-2</td>
<td>10:1 SAFETY END STRUCTURE,</td>
</tr>
<tr>
<td>D-3</td>
<td>SAFETY GRATES</td>
</tr>
<tr>
<td>D-R (2017)</td>
<td>DRAINAGE INLET REFERENCE SHEET</td>
</tr>
<tr>
<td>D-R (2009)</td>
<td>INLET BOX DETAILS</td>
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<tr>
<td>D-5</td>
<td>DRAINAGE INLET DETAILS</td>
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- MAHOLE DETAILS
  - BOX MANHOLE ASSEMBLY
    - 2001
  - ROUND MANHOLE ASSEMBLY
    - 2001
  - MANHOLE, TOP UNIT, FRAME AND COVER
    - 2001
  - BOX MANHOLE COVER SLAB
    - 2001

- JUNCTION BOX DETAILS
  - JUNCTION BOX ASSEMBLY
    - 2001
  - JUNCTION BOX COVER SLAB
    - 2001

SECTION IV - EROSION

- CONCRETE WASHOUT
- SILT FENCE
- SEDIMENT TRAP
- INLET SEDIMENT CONTROL, DRAINAGE INLET
- INLET SEDIMENT CONTROL, CULVERT INLET
- PORTABLE SEDIMENT TANK
- SUNP PIT
- SKIMMER DEWATERING DEVICE
- STONE CHECK DAM
- TEMPORARY SLOPE DRAIN
- INCREMENTAL STABILIZATION
- EROSION CONTROL BLANKET APPLICATIONS
- TURF REINFORCEMENT MAT APPLICATIONS
- STABILIZED CONSTRUCTION ENTRANCE
- SANDBAG DIKE
- SANDBAG DIVERSION
- GEOTEXTILE-LINED CHANNEL DIVERSION
- TURBIDITY CURTAIN
- STILLING WELL
- RIPRAP ENERGY DISSIPATOR
- STONE OUTLET DETAIL
## SECTION V - LANDSCAPING

<table>
<thead>
<tr>
<th>SHEET NO.</th>
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<tr>
<td>L-1</td>
<td>1. PLANTING DETAILS</td>
</tr>
<tr>
<td></td>
<td>(2017) - 1. ROADSIDE SHRUB PLANTING DETAIL</td>
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<td></td>
<td>(2017) - 2. TREE PLANTING DETAIL</td>
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<tr>
<td></td>
<td>(2017) - 3. PERENNIAL/GROUND COVER PLANTING DETAIL</td>
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## SECTION VI - MISCELLANEOUS

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<th>SHEET NO.</th>
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<tbody>
<tr>
<td>M-1 (2001)</td>
<td>1. RIGHT-OF-WAY FENCE</td>
</tr>
<tr>
<td>M-2 (2017)</td>
<td>2. RIGHT-OF-WAY MONUMENTATION</td>
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<tr>
<td>M-3 (2013)</td>
<td>3. SHARED-USE PATH &amp; SIDEWALK DETAILS</td>
</tr>
<tr>
<td>M-4 (2011)</td>
<td>4. BIKE RACK LAYOUT DETAILS</td>
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<tr>
<td>M-5 (2004)</td>
<td>5. WOOD RAIL FENCE</td>
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<tr>
<td>M-6 (2011)</td>
<td>6. PATTERED HOT-MIX OR CONCRETE &amp; BRICK PAVER DETAILS</td>
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<td>M-7 (2006)</td>
<td>7. CHAIN LINK FENCE DETAILS</td>
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<tr>
<td>M-8 (2014)</td>
<td>8. P.C.C. PARKING BUMPER</td>
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<tr>
<td>M-9</td>
<td>9. BUS STOP PAD DETAILS</td>
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<td>(2013) - 1. BUS STOP PAD DETAILS, TYPES 1, 2 &amp; 3</td>
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<td>(2013) - 2. BUS STOP PAD WITH SHEETER DETAILS, TYPES 1 &amp; 2</td>
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<td>M-10</td>
<td>10. BRIDGE SAFETY FENCE</td>
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<td>(2014) - 1. BRIDGE SAFETY FENCE, TYPE 1</td>
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<td>(2014) - 2. BRIDGE SAFETY FENCE, TYPE 2</td>
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<td></td>
<td>(2017) - 3. HARDWARE</td>
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<td>M-11 (2017)</td>
<td>STEEL PLATE</td>
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## SECTION VII - PAVEMENT

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

- CONDUIT JUNCTION WELLS
  (2013): 1. TYPE 1
  (2013): 2. TYPE 2
  (2013): 3. TYPE 3
  (2013): 4. TYPE 4
  (2013): 5. TYPE 5

- JUNCTION WELL, GROUNDING & BONDING FOR STEEL FRAMES & LIDS
  (2011): 1. JUNCTION WELL BEHIND CURB OR CUBS & GUTTER WITH GRASS STRIP
  (2011): 2. JUNCTION WELL BEHIND CURB OR CUBS & GUTTER WITH SIDEWALK AND JUNCTION WELL DIRECTLY BEHIND CURB OR CUB & GUTTER
  (2011): 3. JUNCTION WELL IN CONCRETE ISLAND
  (2011): 4. JUNCTION WELL WITHOUT CURB OR CUB & GUTTER WITH SIDEWALK AND GRASS STRIPS AND JUNCTION WELL DIRECTLY ADJACENT TO PAVED SURFACE

- LOOP DETECTOR INSTALLATION
  (2013): 1. LOOP DETECTOR LEAD-IN WIRE INSTALLATION
  (2013): 2. LOOP DETECTOR LEAD-OUT WIRE INSTALLATION
  (2013): 3. TYPICAL INTERSECTION LAYOUT
  (2013): 4. PEDESTRIAN CROSSING TYPICAL LAYOUT

- MESSENGER WIRE ATTACHMENT
  (2005): 1. MESSNGER WIRE ATTACHMENT ON WOOD POLES
  (2005): 2. ANGULAR INTERMEDIATE MESSENGER WIRE ATTACHMENT
  (2005): 3. SPAN WIRE ATTACHMENT BETWEEN POLES
  (2005): 4. DEAD END MESSENGER WIRE ATTACHMENT

- CONDUIT JUNCTION WELL, TYPE 7

- EMERGENCY PREEMPTION RECIEVER
  (2006): 1. UPRIGHT MOUNT

- BREAKAWAY SIGN POST AND PIN ASSEMBLY DETAILS

- WOOD BARRICADE DETAILS

- ELECTRICAL SERVICE PEDESTAL - LIGHTING, SIGNAL & 'ITMS' COMPONENT INSTALLATIONS
<table>
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<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>1</td>
<td>W-BEAM</td>
</tr>
<tr>
<td>2</td>
<td>W6 X 9 STEEL POST</td>
</tr>
</tbody>
</table>
| 3A, 3B | 3A - 6" x 12" x 14" OFFSET BLOCK   
|         | 3B - 6" x 8" x 14" OFFSET BLOCK   |
| 4       | SPlice · REQUIRES EIGHT(8) ¾" GUARDRAIL BOLTS (L=1½") WITH RECESS NUTS |
| 5       | W-BEAM TERMINAL CONNECTOR |
| 6       | ¾" GUARDRAIL BOLT (L=1½") AND RECESS NUT |
| 7A, 7B | 7A - ¾" GUARDRAIL BOLT (L=14") AND RECESS NUT   
|         | 7B - ¾" GUARDRAIL BOLT (L=10") AND RECESS NUT   |
| 8       | ¾" GUARDRAIL BOLT (L=10"), STEEL WASHER, AND RECESS NUT |
| 9       | ¾" HIGH STRENGTH STRUCTURAL HEX BOLT (L=VARIIES) AND HEX NUT |
| 10      | ½" CARRIAGE BOLT (L=VARIIES), 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" CLEARANCE TO OBSTRUCTION IS AVAILABLE

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.

EDGES OF TRAVEL LANE
EDGE OF SHOULDER
SHOULDER

FLARE RATES

<table>
<thead>
<tr>
<th>DESIGN SPEED</th>
<th>FLARE RATE</th>
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<tbody>
<tr>
<td>70 MPH</td>
<td>15:1</td>
</tr>
<tr>
<td>60 MPH</td>
<td>14:1</td>
</tr>
<tr>
<td>55 MPH</td>
<td>12:1</td>
</tr>
<tr>
<td>50 MPH</td>
<td>11:1</td>
</tr>
<tr>
<td>45 MPH</td>
<td>10:1</td>
</tr>
<tr>
<td>40 MPH</td>
<td>9:1</td>
</tr>
<tr>
<td>30 MPH</td>
<td>7:1</td>
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DELaware DEPARTMENT OF TRANSPORTATION
TYPES I-31, 2-31, AND 3-31 GUARDRAIL APPLICATIONS
STANDARD NO. B-1 (2017) SHT. 1 OF 3
APPROVED SIGNATURE ON FILE 5/31/2017
RECOMMENDED SIGNATURE ON FILE 5/18/2017

SCALE: NTS
NOTE:
1) OVERLAP W-BEAMS IN DIRECTION OF TRAVEL.
2) SEE DETAIL B-L, SHEET 1 FOR MORE INFORMATION.
GUARDRAIL SECTION
RURAL SHOULDER APPLICATION

GUARDRAIL SECTION
MEDIAN APPLICATION

GUARDRAIL SECTION
URBAN SHOULDER APPLICATION

<table>
<thead>
<tr>
<th>TYPE</th>
<th>POST SPACING</th>
<th>CLEAR AREA BEHIND POST</th>
<th>DESIGN SPEED</th>
<th>D</th>
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<tbody>
<tr>
<td>1</td>
<td>6'-0&quot;</td>
<td>3'-0&quot; MIN</td>
<td>&lt; 50 MPH</td>
<td>8'-0&quot;</td>
</tr>
<tr>
<td>2</td>
<td>3'-15/&quot;</td>
<td>2'-0&quot; MIN</td>
<td>≥ 50 MPH</td>
<td>13'-0&quot;</td>
</tr>
</tbody>
</table>

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

10:1 OR FLATTER

NOTE: SCALE: NTS

DELAWARE DEPARTMENT OF TRANSPORTATION

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

STANDARD NO. B-1 (2017) SHT. 3 OF 3

APPROVED

SIGNATURE ON FILE

5/31/2017

SIGNATURE ON FILE

5/16/2017

CHIEF ENGINEER

DESIGN ENGINEER

DATE

SIGNATURE ON FILE

5/10/2017

NOTE: SCALE: NTS
REAR VIEW WITH START & END SECTION

SIDE VIEW

SECTION A-A AT RAIL SPLICE

ISOMETRIC VIEW WITH START & END SECTION

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.
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 1. USE APPROVED JOINT FILLER TO SEAL. WORK TO BE PAID UNDER RESPECTIVE CURB AND GUTTER ITEM.
2. THE DEPRESSED CURB DIMENSIONS (INCLUDING 1" UP) 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 UP). 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.

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

TYPICAL CURB SECTION

NOTES:
1. TYPE MAY VARY
2. PAVEMENT
3. NO SIGNS OR OTHER OBSTRUCTIONS
4. 6" MIN
5. (SEE NOTE 6)
6. (SEE NOTE)
7. SHT. 1 OF 3
INTEGRAL P.C.C. CURB & GUTTER

**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 details 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-5, sheet 2 of 2 for typical section at 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.

**TYPES:**
- **TYPE 1-8**
- **TYPE 1-6**
- **TYPE 1-4**
- **TYPE 3-8**
- **TYPE 3-6**
- **TYPE 3-4**
- **TYPE 3-2**

**SCALE:** NTS

**SIGNATURE ON FILE**
- 5/31/2017
- 5/18/2017
- 5/10/2017

**DELTA DEPARTMENT OF TRANSPORTATION**

**STANDARD NO.** C-1 (2017)

**APPROVED**

**DATE** 5/31/2017

**RECOMMENDED**

**SIGNATURE ON FILE**

**DATE** 5/16/2017

**DATE** 5/10/2017
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". 

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

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

INTEGRAL P.C.C. CURB AND GUTTER

DELAWARE
DEPARTMENT OF TRANSPORTATION

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

STANDARD NO. C-1 (2017) SHT. 3 OF 3

APPROVED
SIGNATURE ON FILE 5/31/2017

RECOMMENDED
SIGNATURE ON FILE 5/16/2017

5/10/2017
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.

3. The slab width over the concrete spillway shall be 12" wider than the sidewalk width on the approach to the curb opening.

See Pedestrian Accessibility Standards Manual for more guidance.

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.

3. The slab width over the concrete spillway shall be 12" wider than the sidewalk width on the approach to the curb opening.

See Pedestrian Accessibility Standards Manual for more guidance.
CURB RETAINING WALL SECTION
FOR H GREATER THAN 2'-6" BUT LESS THAN OR EQUAL TO 2'-6"
MATCH EXISTING SLOPE
UP TO A MAX OF 16.7%
5'-0" MIN SIDEWALK (SEE NOTE 15)
STANDARD NO. (SEE NOTE 15)
SHT. OF H (SEE NOTE 15)
DATE

PLAN VIEW

TABLE

<table>
<thead>
<tr>
<th>WALL HEIGHT</th>
<th>TOEWALL DEPTH</th>
<th>REQUIRED TRANSVERSE REINFORCEMENT</th>
<th>REQUIRED LONGITUDINAL REINFORCEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREATER THAN 12&quot; TO 2'-6&quot; NO TOEWALL NEEDED</td>
<td>#4 BARS @ 6&quot; (RW02E &amp; RW03E)</td>
<td>#4 BARS @ 12&quot; (RW02E &amp; RW03E)</td>
<td></td>
</tr>
<tr>
<td>GREATER THAN 2'-6&quot; TO 3'-0&quot;</td>
<td>6&quot;</td>
<td>#4 BARS @ 6&quot; (RW02E &amp; RW03E, &amp; TW02E)</td>
<td>#4 BARS @ 12&quot; (RW02E &amp; RW03E)</td>
</tr>
<tr>
<td>GREATER THAN 3'-0&quot; TO 3'-6&quot;</td>
<td>12&quot;</td>
<td>#5 BARS @ 6&quot; (RW02E, RW03E, &amp; TW02E)</td>
<td>#5 BARS @ 12&quot; (RW02E &amp; RW03E)</td>
</tr>
</tbody>
</table>

NOTES:
1. THE CURB RETAINING WALL DETAILS ARE FOR QUICK FIELD CHANGES WITH APPROVAL OF THE ENGINEER.
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 5" AT THE TOP OF WALL. PLACE A ½" 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 SUBURBANCES ARE 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 U-SHAPED BAR.
7. BEND THE TW02E BARS INTO 3 CONTINUOUS U-SHAPED BARS.
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 SEE DETAIL M-3 FOR SIDEWALK DETAILS AND NOTES, INCLUDING CONSTRUCTION JOINTS AND EXPANSION MATERIAL.
10. THE TOEWALL CAN 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 3-B CAN BE USED.
14. CURB HAS BEEN OMITTED FROM THESE DETAILS FOR CLARITY PURPOSES. FOR INSTALLATIONS WHERE THE CURB RETAINING WALL HAS BEEN DESIGNED TO RESIST EARTH PRESSURE ONLY. ADDITIONAL REINFORCEMENT MAY BE REQUIRED IF ANY SUBURBANCES ARE APPLIED BEHIND THE RETAINING WALL WITHIN A DISTANCE EQUAL TO 2 TIMES H AND WOULD REQUIRE AN APPROVED SHOP DRAWING.
15. SIDEWALK WIDTHS LESS THAN SHOWN ON THIS SHEET REQUIRE DEPARTMENT APPROVAL.
16. TOE WALL IS PLACED AT THE EDGE OF THE SIDEWALK, THE TOEWALL IS NOT A REPLACEMENT FOR CURB.
17. CURB HAS BEEN OMITTED FROM THESE DETAILS FOR CLARITY PURPOSES. FOR INSTALLATIONS WHERE THE CURB RETAINING WALL WITH A HEIGHT GREATER THAN 2'-6" IS REQUIRED (TYP).
18. CHAMFER EDGES 5" AT THE TOP OF WALL. PLACE A ½" ROUND EDGE AT THE FRONT OF SIDEWALK.

MATCH EXISTING SLOPE
UP TO A MAX OF 16.7%
5'-0" MIN SIDEWALK (SEE NOTE 15)
STANDARD NO. (SEE NOTE 15)
SHT. OF H (SEE NOTE 15)
DATE

CURB RETAINING WALL

DEPARTMENT OF TRANSPORTATION

C-6 (2017)

SIGNATURE ON FILE
5/31/2017

RECOMMENDED
5/11/2017
<table>
<thead>
<tr>
<th>INLET BOX SIZE L x W</th>
<th>COVER SLAB SIZE L x W</th>
<th>DRAINAGE INLET BAR BENDING DIAGRAM</th>
<th>INLET TOP UNIT REBAR LENGTH</th>
<th>INLET TOP UNIT LIMIT OF PAYMENT</th>
<th>INLET TOP UNIT TYPE</th>
<th>FRAM &amp; GRATE COMBO TYPE</th>
<th>MAXIMUM PIPE SIZE (SEE NOTE 1)</th>
<th>MAXIMUM HEIGHT (TO TOP OF BOX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 5/8&quot; x 11 5/8&quot;</td>
<td>NO COVER SLAB</td>
<td>TYPE 5 (FRAME &amp; GRATE COMBO)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>TYPE 5 (FRAME &amp; GRATE COMBO)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>24&quot; x 24&quot;</td>
<td>NO COVER SLAB</td>
<td>TYPE 6 (FRAME &amp; GRATE COMBO)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>TYPE 6 (FRAME &amp; GRATE COMBO)</td>
<td>15&quot;</td>
<td>4'-0&quot;</td>
</tr>
<tr>
<td>34&quot; x 18&quot;</td>
<td>NO COVER SLAB</td>
<td>TYPES A, C, D, &amp; E &amp;</td>
<td>79&quot;</td>
<td>82&quot;</td>
<td>[SEE NOTE 5]</td>
<td>TYPES 1-THRU-4 &amp; 7 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>24&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>34&quot; x 24&quot;</td>
<td>NO COVER SLAB</td>
<td>TYPES A, B, C, D, E, &amp; S</td>
<td>79&quot;</td>
<td>82&quot;</td>
<td>[SEE NOTE 5]</td>
<td>TYPES 1-THRU-4 &amp; 7 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>24&quot;</td>
<td>15&quot;</td>
</tr>
<tr>
<td>48&quot; x 60&quot;</td>
<td></td>
<td>TYPE 5</td>
<td>93&quot;</td>
<td>96&quot;</td>
<td>[SEE NOTE 5]</td>
<td>TYPES 1-THRU-4 &amp; 7 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>36&quot;</td>
<td>11'-4&quot;</td>
</tr>
<tr>
<td>66&quot; x 42&quot;</td>
<td></td>
<td>TYPE 5</td>
<td>111&quot;</td>
<td>114&quot;</td>
<td>[SEE NOTE 5]</td>
<td>TYPES 1-THRU-4 &amp; 7 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>48&quot;</td>
<td>11'-4&quot;</td>
</tr>
<tr>
<td>66&quot; x 30&quot;</td>
<td></td>
<td>TYPE 5</td>
<td>111&quot;</td>
<td>114&quot;</td>
<td>[SEE NOTE 5]</td>
<td>TYPES 1-THRU-4 &amp; 7 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>48&quot;</td>
<td>11'-4&quot;</td>
</tr>
<tr>
<td>72&quot; x 60&quot;</td>
<td></td>
<td>TYPE 5</td>
<td>113&quot;</td>
<td>120&quot;</td>
<td>[SEE NOTE 5]</td>
<td>TYPES 1-THRU-4 &amp; 7 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>54&quot;</td>
<td>11'-4&quot;</td>
</tr>
<tr>
<td>72&quot; x 48&quot;</td>
<td></td>
<td>TYPE 5</td>
<td>113&quot;</td>
<td>120&quot;</td>
<td>[SEE NOTE 5]</td>
<td>TYPES 1-THRU-4 &amp; 7 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>54&quot;</td>
<td>11'-4&quot;</td>
</tr>
</tbody>
</table>

**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 5 FOR INLET TOP UNIT TYPES A, B, C, D, & E. FOR INLET TOP UNIT TYPES 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 TYPES 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.
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 MASSSES IN ONE CONTINUOUS BED.
DO NOT PRUNE THE DOMINANT LEADER OR TERMINAL BUDS OF THE CROWN.

DO NOT PRUNE THE DOMINANT LEADER OR TERMINAL BUDS OF THE CROWN.

DO NOT BURY REMOVE BURLAP AND BASKETS TO 1/2 TREE PLANTING DETAIL

TO ANY PERMANENT STRUCTURE (I.E. CURB, SIDEWALK, BUILDING, ETC...) LIMB TREE TO 7'-0" FOR PEDESTRIAN CLEARANCE WHEN PLANTING ADJACENT TO SIDEWALKS.

DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.

AND SO THAT TRUNK FLARE IS VISIBLE.

DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.

MULCH IN ACCORDANCE WITH SPECIFICATIONS. DO NOT PLACE MULCH AGAINST THE TRUNK.

MULCH IN ACCORDANCE WITH SPECIFICATIONS. DO NOT PLACE MULCH AGAINST THE TRUNK.

MIX SOIL EXCAVATED FROM PIT WITH APPROVED AMMENDMENTS AS PER SPECIFICATIONS AND USE AS BACKFILL DURING INSTALLATION OF TREE.

MIX SOIL EXCAVATED FROM PIT WITH APPROVED AMMENDMENTS AS PER SPECIFICATIONS AND USE AS BACKFILL DURING INSTALLATION OF TREE.

STEM & GUY TREES REFER TO SPECIFICATIONS FOR MATERIAL GUIDELINES

STEM & GUY TREES REFER TO SPECIFICATIONS FOR MATERIAL GUIDELINES

SET ROOT BALL FLUSH TO GRADE OR 1" TO 2" ABOVE GRADE IF SOILS ARE SLOW TO DRAIN AND SO THAT TRUNK FLARE IS VISIBLE. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.

SET ROOT BALL FLUSH TO GRADE OR 1" TO 2" ABOVE GRADE IF SOILS ARE SLOW TO DRAIN AND SO THAT TRUNK FLARE IS VISIBLE. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.

TAMP SOIL AROUND THE ROOT BALL BASE WITH FOOT PRESSURE SO ROOT BALL DOES NOT SHIFT.

TAMP SOIL AROUND THE ROOT BALL BASE WITH FOOT PRESSURE SO ROOT BALL DOES NOT SHIFT.

PLANTING DETAILS

DELAWARE DEPARTMENT OF TRANSPORTATION

STANDARD NO. L-1 (2017) SHT. 2 OF 3

APPROVED

SIGNATURE ON FILE 5/31/2017

NOTE: 1). TREE PRUNING IS TO BE PERFORMED BY AN L.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.
NOTE:
1. SEE PLANT LIST FOR SPACING (X).

PLAN VIEW

SECTION VIEW

PERENNIAL/GROUND COVER
FINISHED GRADE
3" MULCH - NOT TO COVER LEAVES
ROOT MASS
6" PREPARED SOIL MIX, AS PER SPECIFICATION.
SUBGRADE TILLED TO 6" DEPTH

PERENNIAL/GROUND COVER PLANTING 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 roads, classifications, a wooden stake shall be placed with "ROW" handwritten vertically in 2" 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.

DELWARE
DEPARTMENT OF TRANSPORTATION

STANDARD NO. M-2 (2017)  SHT. 1 OF 1  APPROVED  SIGNATURE ON FILE  5/31/2017

RIGHT OF WAY MONUMENTATION

APPROVED  SIGNATURE ON FILE  5/18/2017

RECOMMENDED  SIGNATURE ON FILE  5/11/2017
TRUSS ROD ATTACHMENT

- 1-1/2" x 1" BRACE BAND
- 2.875" O.D. POST
- 1.66" O.D. POST FITTING
- MALLEABLE IRON TURNBUCKLE
- MALLEABLE IRON FITTING
- 3/4" x 9/16" CARRIAGE BOLT AND NUT

STRETCHER BAR ATTACHMENT

- 1/2" x 1/2" CARRIAGE BOLT AND NUT (NOT SHOWN)
- 3/4" x 9/16" CARRIAGE BOLT AND NUT (NOT SHOWN)

TOP LONGITUDINAL RAIL-POST ATTACHMENT

- 1/2" x 1/2" CARRIAGE BOLT AND NUT (NOT SHOWN)
- 3/4" x 9/16" CARRIAGE BOLT AND NUT (NOT SHOWN)

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

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 J OINT.
2. WORKING DRAWINGS - WORKING DRAWINGS WILL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR REVIEW

DELTAW IS SAFETY FENCE

- STANDARD NO. M-10 (2017)
- BRIDGE SAFETY FENCE
- APPROVED
- RECOMMENDED
- SCALE: NTS
- SIGNATURE ON FILE
STEEL PLATES MUST HAVE A SURFACE THAT IS MANUFACTURED WITH A MINIMUM NOMINAL COEFFICIENT OF FRICTION OF 0.35 AT THE TIME OF PLACEMENT.

STEEL PLATES AND DOWELS WILL CONFORM TO ASTM A36 STANDARDS.

STEEL PLATES BRIDGING ON FREEWAYS AND EXPRESSWAYS IS STRICTLY PROHIBITED.

INSTALL STEEL PLATE BRIDGING AND SHORING USING EITHER OF THE METHODS BELOW:

METHOD 1:
- SECURE BRIDGING AGAINST DISPLACEMENT BY USING ADJUSTABLE CLEATS, SHIMS, OR OTHER DEVICES.
- BRIDGING AND TRAFFIC LOADS.
- STEEL PLATES AND DOWELS WILL CONFORM TO ASTM A36 STANDARDS.
- 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.
- 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.
- A STRUCTURE DESIGN IS REQUIRED FOR TRENCH WIDTHS GREATER THAN 6'-0". DESIGN WILL BE APPROVED BY THE 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. 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 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 THIS DETAIL. BUTT SUBSEQUENT PLATES TO EACH OTHER, USE COMPACTED BITUMINOUS TEMPORARY ROADWAY MATERIAL (TRM) TO FORM A RAMPS 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.

### TRENCH WIDTH | MIN. PLATE THICKNESS
---|---
1'-0" | 3/8" 
2'-0" | 1/2" 
3'-0" | 3/4" 
4'-0" | 1" 
5'-0" | 1 1/8" 
6'-0" | 1 1/4"

### Notes:
1. USE OF STEEL PLATES MUST BE APPROVED BY THE DEPARTMENT AND IS NOT PERMITTED BETWEEN NOVEMBER 1ST AND MARCH 31ST.
2. STEEL PLATE BRIDGING ON FREEWAYS AND EXPRESSWAYS IS STRICTLY PROHIBITED.
3. STEEL PLATES AND DOWELS WILL CONFORM TO ASTM A36 STANDARDS.
4. ADEQUATELY SHORE THE TRENCH IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS TO SUPPORT THE BRIDGING AND TRAFFIC LOADS.
5. SECURE BRIDGING AGAINST DISPLACEMENT BY USING ADJUSTABLE CLEATS, SHIMS, OR OTHER DEVICES.
6. 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.
7. 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.
8. A STRUCTURE DESIGN IS REQUIRED FOR TRENCH WIDTHS GREATER THAN 6'-0". DESIGN WILL BE APPROVED BY THE DEPARTMENT PRIOR TO USE.
9. 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. 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 THIS DETAIL. BUTT SUBSEQUENT PLATES TO EACH OTHER, USE COMPACTED BITUMINOUS TEMPORARY ROADWAY MATERIAL (TRM) TO FORM A RAMPS 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.
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.
CONNECTED TO AN EXISTING CONDUIT

THREADED CONDUIT PLUG UNLESS CAPED WITH A GALVANIZED UNDERGROUND CONDUIT ENDS

6" M

#8 REINFORCING BARS
8 EQUALLY SPACED

#5 REINFORCING BARS
EQUALLY SPACED

3" x 240"

GROUND ROD

BE ATTACHED TO GROUND FOR POLE TO

3" CONDUIT SWEEPS

6" M

(MAST ARM OR SPAN)

DIRECTION OF LOAD

REQUIREMENTS BY POLE MANUFACTURE TO BE AS DIRECTED

BOLT CIRCLE DIAMETER

ROUND BASE

ROUND BASE w/ SQUARE FOUNDATION HEADER

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

DELAWARE DEPARTMENT OF TRANSPORTATION
STANDARD NO. T-5 (2017) SHT. 1 OF 4

APPROVED SIGNATURE ON FILE

RECOMMENDED SIGNATURE ON FILE

5/31/2017

5/18/2017

6/13/2017
### POLE BASE DATA CHART

<table>
<thead>
<tr>
<th>POLE BASE TYPE</th>
<th>DIAMETER</th>
<th>DEPTH</th>
<th>#5 HORIZONTAL REINFORCING BARS</th>
<th>#8 VERTICAL REINFORCING BARS</th>
<th>CONDUITS</th>
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<tr>
<td>1</td>
<td>36&quot;</td>
<td>7'-0&quot;</td>
<td>5</td>
<td>8</td>
<td>2 - 3'</td>
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<tr>
<td>2</td>
<td>36&quot;</td>
<td>10'-0&quot;</td>
<td>6</td>
<td>8</td>
<td>2 - 3'</td>
</tr>
<tr>
<td>2A</td>
<td>48&quot;</td>
<td>8'-0&quot;</td>
<td>5</td>
<td>8</td>
<td>2 - 3'</td>
</tr>
<tr>
<td>2B</td>
<td>60&quot;</td>
<td>7'-0&quot;</td>
<td>5</td>
<td>8</td>
<td>2 - 3'</td>
</tr>
<tr>
<td>3</td>
<td>48&quot;</td>
<td>10'-0&quot;</td>
<td>14</td>
<td>17</td>
<td>2 - 3'</td>
</tr>
<tr>
<td>3A</td>
<td>48&quot;</td>
<td>12'-0&quot;</td>
<td>17</td>
<td>17</td>
<td>2 - 3'</td>
</tr>
<tr>
<td>3B</td>
<td>48&quot;</td>
<td>15'-0&quot;</td>
<td>21</td>
<td>17</td>
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<tr>
<td>3C</td>
<td>48&quot;</td>
<td>20'-0&quot;</td>
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<tr>
<td>4A &amp; 4B</td>
<td>24&quot;</td>
<td>2'-4&quot;</td>
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<td>NONE</td>
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<tr>
<td>6</td>
<td>24&quot;</td>
<td>6'-0&quot;</td>
<td>4</td>
<td>8</td>
<td>2 - 3'</td>
</tr>
</tbody>
</table>

**NOTE:**
- Anchor bolts and bolt pattern for types 5, 6, & 7 pole bases to be provided by the manufacturer.

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**TYPICAL SECTION (BASE 6)**

- FINISHED GRADE (SIDWALK, PAVEMENT, ETC.)
- EXPANSION MATERIAL
- #5 REINFORCING BAR (TYP.)
- #8 REINFORCING BAR (TYP.)
- ANCHOR BOLTS (SEE NOTE)
- GROUND ROD (1½ x 240")
  
  EMBED 8'-0" INTO UNDISTURBED SOIL

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**DELAWARE DEPARTMENT OF TRANSPORTATION**

<table>
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<th>SHT.</th>
<th>OF</th>
<th>4</th>
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**APPROVED**

- 5/31/2017
- 5/18/2017
- 6/13/2017

**SIGNATURE ON FILE**

- 5/31/2017
- 5/18/2017
- 6/13/2017

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**SCALE: NTS**