SECTION I - BARRIER

B-L (2010)  –  BARRIER LEGEND

B-1  –  GUARDRAIL APPLICATIONS (TYPES 1-31, 2-31, AND 3-31)

B-2  –  GRADING FOR GUARDRAIL END TREATMENTS (TYPES 1, 2, AND 3)

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

B-4 (2012)  –  END ANCHORAGE, TYPE 31

B-5  –  GUARDRAIL TO BARRIER CONNECTION (TYPES 1-31, 2-31, AND EXIT TYPE 31)

B-6  –  BRIDGE RAIL RETROFIT (TYPES 1, 2, 3, AND 4)

B-7 (2010)  –  W-BEAM, TYPE 1-27 TO TYPE 1-31 TRANSITION SECTION

B-8  –  RESERVED

B-9  –  RESERVED

B-10  –  RESERVED

B-11  –  RESERVED

B-12  –  RESERVED

B-13  –  HARDWARE

B-14  –  CONCRETE SAFETY BARRIER (F SHAPE)

B-15  –  GUARDRAIL APPLICATIONS (TYPES 1-27, 2-27, AND 3-27)
SECTION I - BARRIER (CONT'D)

B-16 - GUARDRAIL OVER CULVERTS (TYPES 1-27, 2-27, AND 3-27)
(2010) - 1 GUARDRAIL OVER CULVERTS, TYPE 1-27
(2010) - 2 GUARDRAIL OVER CULVERTS, TYPE 2-27
(2010) - 3 GUARDRAIL OVER CULVERTS, TYPE 3-27
B-17 (2010) - GUARDRAIL END TREATMENT (TYPE 4-27).
B-18 (2010) - CURVED GUARDRAIL SECTION
B-19 (2012) - END ANCHORAGE, TYPE 27
B-20 - BURIED END SECTION
(2010) - 1 BURIED END SECTION - SINGLE RAIL
(2010) - 2 BURIED END SECTION - DOUBLE RAIL
(2010) - 3 POLE, CONCRETE BLOCK, AND RUBRAIL DETAILS
B-21 - GUARDRAIL TO BARRIER CONNECTION (TYPES 1-27, 2-27, AND EXIT TYPE 27.)
(2010) - 1 GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1-27.
(2010) - 2 GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 2-27.
(2010) - 3 GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE 27.

SECTION II - CURB & GUTTER

C-1 - P.C.C. CURB AND INTEGRAL P.C.C. CURB & GUTTER
(2012) - 1 P.C.C. CURB, TYPICAL CURB SECTION, AND TYPICAL TAPER SECTION AT NOSE OF MEDIANS,
(2012) - 2 INTEGRAL P.C.C. CURB & GUTTER,
C-2 - CURB RAMPS.
(2012) - 1 TYPE 1
(2012) - 3 TYPE 5
C-3 (2012) - ENTRANCES.
C-4 (2012) - CURB OPENING DETAILS.
C-5 (2011) - CURB OPENING WITH SIDEWALK DETAIL

SECTION III - DRAINAGE

D-1 - 6:1 SAFETY END STRUCTURE.
(2001) - 1 DETAIL VIEWS,
(2001) - 2 SCHEDULES.
D-2 - 10:1 SAFETY END STRUCTURE
(2001) - 1 DETAIL VIEWS,
(2001) - 2 SCHEDULES.
D-3 - SAFETY GRATES
(2005) - 1 SAFETY END STRUCTURE GRATE AND ASSEMBLY DETAIL.
(2007) - 2 PERSONNEL SAFETY GRATE FOR PIPE INLET DETAIL.
D-R (2012) - DRAINAGE INLET REFERENCE SHEET.
D-4 (2009) - INLET BOX DETAILS.
D-5 - DRAINAGE INLET DETAILS.
(2010) - 1 DRAINAGE INLET ASSEMBLY.
(2010) - 2 DRAINAGE INLET FRAME AND GRATES.
(2012) - 3 DRAINAGE INLET TOP UNITS.
(2010) - 4 DRAINAGE INLET COVER SLAB DETAILS.
(2010) - 5 DOUBLE INLET COVER SLAB DETAILS.
(2012) - 6 34" x 24" DRAINAGE INLET AND COVER SLAB DETAILS.
(2010) - 7 34" x 18" DRAINAGE INLET DETAILS.
(2010) - 8 DRAINAGE INLET TOP UNIT, TYPE 5.
(2010) - 9 DOGHOUSE INLET BOX.
### SECTION III - DRAINAGE (CONT’D)

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>NAME</th>
<th>SHEET NO.</th>
<th>NAME</th>
<th>SHEET NO.</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-6</td>
<td>MAHOLE DETAILS</td>
<td>D-7</td>
<td>JUNCTION BOX DETAILS</td>
<td>D-8</td>
<td>PIPE BEDDING</td>
</tr>
<tr>
<td></td>
<td>![2009]- 1 BOX MANHOLE ASSEMBLY</td>
<td></td>
<td>![2009]- 1 JUNCTION BOX ASSEMBLY</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>![2001]- 2 ROUND MANHOLE ASSEMBLY</td>
<td></td>
<td>![2007]- 2 JUNCTION BOX COVER SLAB</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>![2002]- 3 MANHOLE TOP UNIT, FRAME AND COVER</td>
<td></td>
<td>![2001]- 4 BOX MANHOLE COVER SLAB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-8 (2010)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-9 (2008)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-10 (2011)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SECTION IV - EROSION

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>NAME</th>
<th>SHEET NO.</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-1</td>
<td>INCREMENTAL STABILIZATION</td>
<td>E-2</td>
<td>SILT FENCE</td>
</tr>
<tr>
<td>E-3</td>
<td>DRAINAGE INLET SEDIMENT CONTROL</td>
<td>E-4</td>
<td>RESERVED</td>
</tr>
<tr>
<td>E-5</td>
<td>STONE CHECK DAM</td>
<td>E-6</td>
<td>SEDIMENT TRAP</td>
</tr>
<tr>
<td>E-7</td>
<td>SEDIMENT TRAP, USING DRAINAGE INLET AS OUTLET</td>
<td>E-8</td>
<td>RISER PIPE ASSEMBLY FOR SEDIMENT TRAP</td>
</tr>
<tr>
<td>E-9</td>
<td>EROSION CONTROL BLANKET APPLICATIONS</td>
<td>E-10</td>
<td>RIPRAP DITCH</td>
</tr>
<tr>
<td>E-11</td>
<td>TEMPORARY SWALE</td>
<td>E-12</td>
<td>PERIMETER DIKE/SWALE</td>
</tr>
<tr>
<td>E-13</td>
<td>EARTH DIKE</td>
<td>E-14</td>
<td>TEMPORARY SLOPE DRAIN</td>
</tr>
<tr>
<td>E-15</td>
<td>STILLING WELL</td>
<td>E-16</td>
<td>SUMP PIT, TYPES 1 AND 2</td>
</tr>
<tr>
<td>E-17</td>
<td>DEWATERING BASIN</td>
<td>E-18</td>
<td>GEOTEXTILE-LINED CHANNEL DIVERSION</td>
</tr>
<tr>
<td>E-19</td>
<td>SANDBAG DIVERSION</td>
<td>E-20</td>
<td>SANDBAG DIKE</td>
</tr>
<tr>
<td>E-21</td>
<td>STABILIZED CONSTRUCTION ENTRANCE</td>
<td>E-22</td>
<td>SKIMMER DEWATERING DEVICE</td>
</tr>
<tr>
<td>E-23</td>
<td>TURBIDITY CURTAIN</td>
<td>E-24</td>
<td>PORTABLE SEDIMENT TANK</td>
</tr>
<tr>
<td></td>
<td>![2005]- 1 FLOATING TURBIDITY CURTAIN</td>
<td>E-25</td>
<td>TURF REINFORCEMENT MAT APPLICATIONS</td>
</tr>
<tr>
<td></td>
<td>![2005]- 2 STAKED TURBIDITY CURTAIN</td>
<td>E-26</td>
<td>RIPRAP ENERGY DISSIPATOR DETAIL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

DELAWARE
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS (2012)

SHEET 3 OF 5

1/8/2013
SECTION V - LANDSCAPING

L-1 PLANTING DETAILS
- [2006] - 1 ROADSIDE SHRUB PLANTING DETAIL
- [2006] - 2 TREE PLANTING DETAIL
- [2006] - 3 PERENNIAL/GROUND COVER PLANTING DETAIL

SECTION VI - MISCELLANEOUS

M-1 (2001) RIGHT-OF-WAY FENCE
M-2 (2011) RIGHT-OF-WAY MONUMENTATION
M-3 (2009) BOLLARD AND SHARED-USE PATH DETAILS
M-4 (2011) BIKE RACK LAYOUT DETAILS
M-5 (2004) WOOD RAIL FENCE
M-6 (2011) PATTERNED HOT-MIX OR CONCRETE & BRICK PAVER DETAILS
M-7 (2006) CHAIN LINK FENCE DETAILS
M-8 (2007) P.C.C. PARKING BUMPER

SECTION VII - PAVEMENT

P-1 P.C.C. PAVEMENT
- [2001] - 1 SLAB PLAN WITH DOWEL AND TIE LOCATIONS
- [2004] - 2 JOINT AND SEALANT DETAILS
- [2001] - 3 W BOLT, HOOK BOLT, DOWEL AND TIE BAR DETAILS
- [2001] - 4 DOWEL SUPPORT BASKET
- [2003] - 5 DOWEL AND TIE BAR PLACEMENT TOLERANCES

P-2 P.C.C. PAVEMENT PATCHING
- [2008] - 1 FULL DEPTH PATCH, PLAN VIEW
- [2008] - 2 FULL DEPTH PATCH, SECTION VIEWS
- [2004] - 3 FULL DEPTH PATCH, SEALANT DETAILS, GROUT RETENTION DISK, AND DOWEL BARS
- [2003] - 4 FULL DEPTH PATCH, DOWEL AND TIE BAR PLACEMENT TOLERANCES
- [2003] - 5 PARTIAL DEPTH PATCH, PLAN AND SECTION VIEWS

P-3 (2012) BUTT JOINTS
### SECTION VIII - TRAFFIC

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-1</td>
<td>CONDUIT JUNCTION WELLS,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 1 TYPES 1, 2 &amp; 3,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 2 TYPE 4,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 3 TYPE 5,</td>
</tr>
<tr>
<td>T-2 (2011)</td>
<td>JUNCTION WELL, GROUNDING &amp; BONDING FOR STEEL FRAMES &amp; LIDS,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 1 TYPE 14,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 2 TYPE 14,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 3 TYPE 15,</td>
</tr>
<tr>
<td>T-3</td>
<td>CONDUIT JUNCTION WELLS,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 1 TYPE 14,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 2 TYPE 14,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 3 TYPE 15,</td>
</tr>
<tr>
<td>T-4</td>
<td>CABINET BASES,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 1 TYPES M &amp; F,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 2 TYPES P &amp; R,</td>
</tr>
<tr>
<td>T-5</td>
<td>POLE BASES,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 1 ROUND BASE &amp; ROUND BASE WITH SQUARE FOUNDATION,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 2 TYPICAL SECTION AND INSTALLATION (BASES 1, 2, 2A, 2B, 3, 3A, 3B, AND 7)</td>
</tr>
<tr>
<td></td>
<td>(2012) - 3 TYPICAL SECTION (BASES 5 AND 6), TYPE T GROUND ROD DETAIL,</td>
</tr>
<tr>
<td></td>
<td>(2012) - 4 TYPICAL SECTION (BASE 4) AND ANCHOR DETAIL,</td>
</tr>
<tr>
<td>T-6 (2011)</td>
<td>SPECIAL POLE BASE,</td>
</tr>
<tr>
<td>T-7 (2005)</td>
<td>SIGN FOUNDATION,</td>
</tr>
<tr>
<td>T-8 (2012)</td>
<td>LOOP DETECTOR TO CONDUIT CONNECTION</td>
</tr>
<tr>
<td>T-9 (2012)</td>
<td>LOOP DETECTOR INSTALLATION &amp; SPLICE KIT DETAILS</td>
</tr>
<tr>
<td>T-10</td>
<td><strong>DETAIL REMOVED IN 2012 REVISION</strong></td>
</tr>
<tr>
<td>T-11</td>
<td>INTERMEDIATE MESSENGER WIRE ATTACHMENT</td>
</tr>
<tr>
<td></td>
<td>(2005) - 1 INTERMEDIATE MESSENGER WIRE ATTACHMENT ON WOOD POLES,</td>
</tr>
<tr>
<td></td>
<td>(2005) - 2 ANGULAR INTERMEDIATE MESSENGER WIRE ATTACHMENT,</td>
</tr>
<tr>
<td>T-12</td>
<td>MESSENGER WIRE ATTACHMENT,</td>
</tr>
<tr>
<td></td>
<td>(2005) - 1 SPAN WIRE ATTACHMENT BETWEEN POLES,</td>
</tr>
<tr>
<td></td>
<td>(2005) - 2 LOAD END MESSENGER WIRE ATTACHMENT,</td>
</tr>
<tr>
<td>T-13</td>
<td>CONDUIT JUNCTION WELLS,</td>
</tr>
<tr>
<td></td>
<td>(2005) - 1 TYPE 12</td>
</tr>
<tr>
<td></td>
<td>(2006) - 2 TYPE 12</td>
</tr>
<tr>
<td></td>
<td>(2006) - 3 TYPE 13</td>
</tr>
<tr>
<td>T-14</td>
<td>EMERGENCY PREEMPTION RECIEVER,</td>
</tr>
<tr>
<td></td>
<td>(2006) - 1 UPRIGHT MOUNT,</td>
</tr>
<tr>
<td></td>
<td>(2006) - 2 INVERTED MOUNT,</td>
</tr>
<tr>
<td>T-15 (2009)</td>
<td>BREAKAWAY SIGN POST AND PIN ASSEMBLY DETAILS</td>
</tr>
<tr>
<td>T-16 (2010)</td>
<td>WOOD BARRICADE DETAILS</td>
</tr>
</tbody>
</table>
END SECTION PLAN

END SECTION ELEVATION

PLAN

LIMIT OF PAYMENT

END ANCHORAGE, TYPE 31

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'-0" STEEL TUBE WITHOUT A SOIL PLATE OR A 5'-0" STEEL TUBE WITH A SOIL PLATE.
3. PLACE A 3'-0" WIDE PLASTIC RETAINING TIE STRAP AROUND THE SHORT TIMBER BREAKAWAY POST AND TIMBER BEARING PLATE TO ENSURE THE PROPER ORIENTATION OF THE TIMBER BEARING PLATE.
4. REFERENCE DETAIL B-3, SHEET 8 OF 10 FOR PROPER TIMBER BEARING PLATE ORIENTATION.

DELAWARE DEPARTMENT OF TRANSPORTATION

STANDARD NO. B-4 (2012) SHT. 1 OF 1 RECOMMENDED
GUARDRAIL TO BARRIER CONNECTION, APPROACH, TYPE 2-31

**NOTES:**

1. CURB SHALL NOT BE USED AT THE FACE OF RAIL WITHIN THE LIMITS OF THIS INSTALLATION.
2. POSTS 1, 2, 3, 4, AND 6 REQUIRE AN ADDITIONAL HOLE TO ATTACH OFFSET BLOCKS AND/OR BENT RAIL.
3. DO NOT ATTACH RAILS TO POSTS 1, 2, 3, 5, OR 7.
4. POSTS 1 AND 2 ARE W8x13, 7'-6" LONG. ALL OTHER POSTS IN TRANSITION ARE W6x9, 6'-0" LONG.
5. ALL HOLES SHALL BE DRILLED PRIOR TO GALVANIZING.
6. BENT RAIL MAY BE SHOP BENT TO FACILITATE INSTALLATION OR MAY BE FIELD BENT USING HEAT.
7. APPROVED CONCRETE INSERTS MAY BE USED IN NEW CONSTRUCTION TO ATTACH TERMINAL CONNECTORS TO PARAPET.
8. PLACE GUARDRAIL DELINEATORS AT THE INTERVALS SPECIFIED IN THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
9. FOR INSTALLATIONS WHERE CURB EXISTS, IF THE EXISTING CURB IS 8" (200) OR HIGHER AND CANNOT BE REMOVED, THE BOTTOM RAIL CAN BE ELIMINATED.
10. A 6" x 8" x 14" OFFSET BLOCK IS USED AT POSTS 1 THROUGH 6 AND A 6" x 12" x 14" OFFSET BLOCK IS USED AT POSTS 7 THROUGH 9.

**APPROVED**

DELAWARE DEPARTMENT OF TRANSPORTATION

STANDARD NO. B-5 (2012) SHT. 4 OF 6

RECOMMENDED

SIG. ON FILE 01/07/2013

CHIEF ENGINEER
DESIGN ENGINEER

DATE 12/20/2012

SIGNATURE ON FILE

SCALE: NTS

12/4/2012
HARDWARE

**ANCHOR PLATE**

1" DIA. STEEL WASHER

HEX NUT

" DIA. @ 4" O.C.

POST SLEEVE

STEEL POST SLEEVE

" DIA. HOLE (TYP.)

TIMBER BEARING PLATE

16" THICKNESS

END PLATE

SWAGED CABLE ASSEMBLAGE AND RELATED HARDWARE ASSEMBLY

- **SWAGED CABLE (6x19) SWAGE CONNECTED GALVANIZED CABLE**
- **POST SLEEVE**
- **ANCHOR PLATE TO W-BEAM CONNECTION DETAIL**

NOTES:

1. PLACE A 3/8" WIDE GALVANIZED RETAINING TIE STRAP AROUND THE SHORT TIMBER BREAKAWAY POST AND TIMBER BEARING PLATE TO ENSURE PROPER ORIENTATION OF THE TIMBER BEARING PLATE.

2. TIGHTEN ASSEMBLY UNTIL CABLE IS TIGHTED.

3. ALL HOLES SHALL BE DRILLED PRIOR TO GALVANIZING.
TYPICAL CAST-IN-PLACE OR SLIP-FORM CONSTRUCTION

<table>
<thead>
<tr>
<th>NOMINAL LENGTH OF BARRIER SECTION (L)</th>
<th>X</th>
<th>NO. REQ'D FOR EACH BARRIER SECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>20'-0&quot;</td>
<td>5'-0&quot;</td>
<td>4</td>
</tr>
<tr>
<td>18'-0&quot;</td>
<td>4'-0&quot;</td>
<td>4</td>
</tr>
<tr>
<td>16'-0&quot;</td>
<td>6'-0&quot;</td>
<td>4</td>
</tr>
<tr>
<td>14'-0&quot;</td>
<td>3'-6&quot;</td>
<td>4</td>
</tr>
<tr>
<td>12'-0&quot;</td>
<td>3'-0&quot;</td>
<td>4</td>
</tr>
<tr>
<td>10'-0&quot;</td>
<td>2'-6&quot;</td>
<td>4</td>
</tr>
</tbody>
</table>

** THE LENGTH OF BAR 482 SHALL BE 8" 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 1 1/2" MIN.
2. FOR SLIP-FORM CONSTRUCTION, THE 482 BARS SHALL BE PLACED AS ONE CONTINUOUS PIECE. THE BARS SHALL OVERLAP A MINIMUM OF 32" IN THIS CASE.
3. FOR SLIP-FORM CONSTRUCTION, A JOINT SHALL BE CUT IN THE BARRIER EVERY 10'-0" AT A MAX DEPTH OF 32".
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'-0" STEEL TUBE WITHOUT A SOIL PLATE
   OR A 5'-0" STEEL TUBE WITH A SOIL PLATE.
3. PLACE A 3'-0" WIDE PLASTIC RETAINING TIE STRAP AROUND THE SHORT TIMBER
   BREAKAWAY POST AND TIMBER BEARING PLATE TO ENSURE THE PROPER ORIENTATION
   OF THE TIMBER BEARING PLATE.
4. REFER TO DETAIL B-13, SHEET # 8 FOR PROPER TIMBER BEARING PLATE ORIENTATION.

END ANCHORAGE, TYPE 27

DELWARE DEPARTMENT OF TRANSPORTATION

STANDARD NO. B-19 (2012)  SHT. 1 OF 1  APPROVED  SIGNATURE ON FILE 12/20/2012

SIGNATURE ON FILE 12/4/2012
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 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 6.

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.

5. DEPRESS END OF CURB RUNS NOT PART OF AN ISLAND OR MEDIAN FLUSH WITH PAVEMENT OR ADJACENT AREA AT A SLOPE OF 12:1.

DELAWARE DEPARTMENT OF TRANSPORTATION

STANDARD NO.  C-1 (2012)  SHEET 1 OF 2

APPROVED  RECOMMENDED

SIGNATURE ON FILE  01/07/2013  SIGNATURE ON FILE  12/20/2012

SCALE: NTS
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 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 LEADING EDGE OF
TRIANGULAR ISLANDS, TAPERING BACK TO FULL HEIGHT AT A SLOPE OF 4:1. SEE DETAIL
C-1, SHEET 1 OF 2 FOR TYPICAL SECTION OF TAPER AT NOSE OF MEDIAN ISLANDS.

5. 4" OF GABC, TYPE B SHALL BE PLACED UNDER ALL P.C.C. CURB AND P.C.C. CURB AND
GUTTER. SEE DETAIL C-1, SHEET 1 OF 2 FOR TYPICAL SECTION.

6. DEPRESS END OF CURB RUNS NOT PART OF AN ISLAND OR MEDIAN Flush WITH
PAVEMENT OR ADJACENT AREA AT A SLOPE OF 12:1.
NOTE:
A. THE AREA OF DETECTABLE WARNING TRUNCATED DOMES SHALL BE 2'-0" LONG AND THE FULL WIDTH OF THE RAMP OR DEPRESSED CURB.
B. SEE SPECIFICATION FOR ADDITIONAL INFORMATION.

NOTES:
1. FOR ALTERATIONS WITHOUT A GRASS STRIP OR WHERE THE EXISTING ROAD PROFILE IS STEEPER THAN 7% AND A 12:1 MAXIMUM SLOPE RAMP WILL NOT MEET THE SIDEWALK GRADE WITHIN A LENGTH OF 15'-0", THE RAMP LENGTH MAY BE LIMITED TO 15'-0" AT A CONSTANT SLOPE, AND ALLOWED TO EXCEED 12:1.
2. RAMP AND SIDEWALK CROSS SLOPE SHALL BE 50:1 (2%) MAXIMUM. FOR REHABILITATION WORK, THE RAMP CROSS SLOPE SHALL MATCH THE SLOPE OF THE ADJACENT ROADSIDE.
3. IF GRADING WILL BE STEEPER THAN 6.5%, THEN A TYPE 1-8 CURB OR RETAINING WALL SHOULD BE USED TO ELIMINATE THE NEED FOR THE STEEP SLOPE.
4. THE MAXIMUM DIFFERENCE IN GRADE BETWEEN THE CURB RAMP OR MODIFIED CURB AT THE FLOW LINE AND THE PAVEMENT SHALL BE 13%, HOWEVER 11% IS PREFERRED. SEE DETAIL ON THIS SHEET.
5. LANDING AREA SHALL BE EXTENDED 18" MIN BEYOND THE PEDESTRIAN PUSH BUTTON FOR ALL CURB RAMP TYPES. WHEN NO PEDESTRIAN PUSH BUTTON EXISTS, THE 18" EXTENSION CAN BE OMITTED.
6. LANDING AREA SHALL BE DELINEATED WITH JOINTS.
7. FOR REHABILITATION WORK, PLACE TRANSITION SLAB TO TRANSITION FROM THE NEW RAMP TO THE EXISTING SIDEWALK WHEN THE EXISTING SIDEWALK HAS A NON-COFORMING RUNNING SLOPE, CROSS SLOPE, OR WIDTH. ADJACENT CURB TAPER SHOULD MATCH THE SLOPE OF THE TRANSITION SLAB.
8. REFER TO THE DELAWARE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES FOR DETAILS REGARDING THE LOCATION OF PEDESTRIAN PUSH BUTTONS.
**Notes:**

1. For alterations without a grass strip or where the existing road profile is steeper than 7% and a 12:1 maximum slope ramp will not meet the sidewalk grade within a length of 15'-0", the ramp length may be limited to 15'-0" at a constant slope, and the ramp slope allowed to exceed 12:1.

2. Ramp and sidewalk cross slope shall be 50:1 (2%) maximum. For rehabilitation work, the ramp cross slope shall match the slope of the adjacent roadway.

3. If grading will be steeper than 6:1 adjacent to the curb ramp or sidewalk, then a type 1-8 curb or retaining wall should be used to eliminate the need for the steep slope.

4. Entire depressed area of curb shall have detectable warning truncated domes.

5. The maximum difference in grade between the sidewalk or curb and the pavement shall be 13%, however 11% is preferred. See Standard No. C-2, Sheet 1 of 3.

6. Refer to Delaware Manual for Uniform Traffic Control Devices for details regarding the location of pedestrian push buttons.

7. Landing area shall be delineated with joints.

8. The edge of the landing shall be a maximum of 10'-0" from the face of the curb.

9. For rehabilitation work, place transition slab to transition from the new ramp to the existing sidewalk when the existing sidewalk has a non-conforming running slope, cross slope, or width. Adjacent curb should match the slope of the transition slab.

10. Landing areas shall be extended 18" min beyond the pedestrian push button for all curb ramp types. When no pedestrian push button exists, the 18" extension can be omitted.
NOTES:

1. A CUT-THROUGH LEVEL WITH THE STREET IS THE PREFERRED TREATMENT FOR ISLANDS, ALTHOUGH, RAMPS CAN BE USED WHERE THE ISLAND WIDTH IS SUFFICIENT TO ACCOMMODATE THEM. POSITIVE SURFACE DRAINAGE MUST BE PROVIDED FOR EITHER TREATMENT. EITHER TREATMENT IS ACCEPTABLE.

2. FOR ALTERATIONS WITHOUT A GRASS STRIP OR WHERE THE EXISTING ROAD PROFILE IS STEEPER THAN 7% AND A 12:1 MAXIMUM SLOPE RAMP WILL NOT MEET THE SIDEWALK GRADE WITHIN A LENGTH OF 25'-0", THE RAMP LENGTH MAY BE LIMITED TO 15'-0" AT A CONSTANT SLOPE, AND ALLOWED TO EXCEED 12:1.

3. A CONTINUOUS PATH MUST BE PROVIDED BETWEEN ADJACENT CURB RAMPS IN ISLANDS AND MEDIANs, WITH A MAXIMUM RUNNING SLOPE OF 20:1.

4. RAMP AND SIDEWALK CROSS SLOPE SHALL BE 50:1 (2%) MAXIMUM. FOR REHABILITATION WORK, THE RAMP CROSS SLOPE SHALL MATCH THE SLOPE OF THE ADJACENT ROADWAY.

5. WHERE THERE IS NO DEPRESSED CURB AT A CUT-THROUGH OR CURB RAMP, THE DETECTABLE WARNING SHALL BE INSTALLED 3" FROM THE ROADWAY PAVEMENT.

6. DETECTABLE WARNINGS SHALL BE INSTALLED WHEN THE LENGTH W IN THE DIRECTION OF PEDESTRIAN TRAVEL FROM BACK OF CURB TO BACK OF CURB IS 6'-0" OR GREATER.

7. PEDESTRIAN SIGNALS SHALL BE ACCESSIBLE WITH A LEVEL LANDING, WHOSE EDGE IS NO MORE THAN 10" FROM ALL PEDESTRIAN PUSH BUTTONS.

8. LANDING AREA SHALL BE EXTENDED 18" MIN BEYOND PEDESTRIAN PUSH BUTTON FOR ALL CURB RAMPS TYPES. WHEN NO PEDESTRIAN PUSH BUTTON EXISTS, THE 18" EXTENSION CAN BE OMITTED.

9. LANDING AREA SHALL BE CLEARLY DELINEATED WITH JOINTS.

10. INTERMEDIATE LANDING IS ONLY REQUIRED WHEN THE TWO RAMPS INTERSECT BEFORE REACHING THE FULL HEIGHT.
ENTRANCE WITH SIDEWALK AND GRASS STRIP

* - JOINT
** - EXPANSION MATERIAL

SECTION A-A

DEPRESSED CURB

SIDEWALK 50:1 MAX.
6" CONCRETE
6" GABC

SECTION B-B

DEPRESSED CURB

SIDEWALK 50:1 MAX.
6" CONCRETE
6" GABC

NOTE:
IF WIDTH OF DRIVEWAY IS 15'-0" OR GREATER, THE FLARE AND EXTENSIONS CAN BE OMITTED.

SECTION C-C

NOTE:
ENTRANCE WITHOUT SIDEWALK

ENTRANCE WITH SIDEWALK AND NO GRASS STRIP

* - JOINT
** - EXPANSION MATERIAL

DELFTMARE DEPARTMENT OF TRANSPORTATION

STANDARD NO. C-3 (2012)  ENTRANCES  APPROVED  SIGNATURE ON FILE
SHT.  1 OF 1  RECOMMENDED  SIGNATURE ON FILE

01/07/2013  12/20/2012  12/4/2012
APPROPRIATE SRBM OR RIPRAP

15% SLOPE

CURB TYPE VARIES

4% SLOPE

PROPOSED GRADE

15% SLOPE

OR NORMAL GUTTER SHOULDERS, ROADWAY, OR NORMAL GUTTER SLOPE

PROPOSED PAVEMENT SLOPE

SHOULDER, ROADWAY, OR NORMAL GUTTER SLOPE

NOTES:
1) DESIGNER SHALL ESTABLISH WIDTH OF OPENING BASED ON DRAINAGE CALCULATIONS.
2) THE WIDTH OF THE APRON (SHOWN IN SECTION C-C) SHALL MATCH THE WIDTH OF THE CURB OPENING (SHOWN IN PLAN VIEW).

CURB OPENING DETAILS

DELAWARE DEPARTMENT OF TRANSPORTATION

STANDARD NO. C-4 (2012) SIH. 1 OF 1

APPROVED

SIGNATURE ON FILE 01/07/2013

SIGNATURE ON FILE 12/20/2012

12/4/2012
### Maximum Pipe Sizes

<table>
<thead>
<tr>
<th>Inlet Box Size</th>
<th>Cover Slab Size (L x W)</th>
<th>Drainage Inlet Top Unit</th>
<th>Inlet Top Unit Rebar Length</th>
<th>Inlet Top Unit Limit of Payment</th>
<th>Inlet Top Unit Bar Bending Diagram</th>
<th>Frame &amp; Grate (Found on Detail D-S, Sheet 2)</th>
<th>Maximum Size (See Note 1)</th>
<th>Maximum Height (To Top of Box)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17(\frac{3}{4})&quot; x 17(\frac{3}{4})&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>15&quot;</td>
</tr>
<tr>
<td>34&quot; x 18&quot;</td>
<td>NO COVER SLAB</td>
<td>TYPES A, C, D, E &amp; I (DETAIL D-S, SHEET 3)</td>
<td>79&quot;</td>
<td>82&quot;</td>
<td>SS04 (DETAIL D-S, SHEET 3)</td>
<td>TYPES 1 THRU 4 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, &amp; I (DETAIL D-S, SHEET 3)</td>
<td>79&quot;</td>
<td>82&quot;</td>
<td>SS03 (DETAIL D-S, SHEET 3)</td>
<td>TYPES 1 THRU 4 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>24&quot;</td>
<td>15&quot;</td>
</tr>
<tr>
<td>48&quot; x 30&quot;</td>
<td>60&quot; x 42&quot; (DETAIL D-S, SHEET 4)</td>
<td>TYPES A, B, C, D, &amp; I (DETAIL D-S, SHEET 3)</td>
<td>93&quot;</td>
<td>96&quot;</td>
<td>SS01 (DETAIL D-S, SHEET 3)</td>
<td>TYPES 1 THRU 4 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>36&quot;</td>
<td>21&quot;</td>
</tr>
<tr>
<td>48&quot; x 48&quot;</td>
<td>60&quot; x 48&quot; (DETAIL D-S, SHEET 4)</td>
<td>TYPES A, B, C, D, &amp; I (DETAIL D-S, SHEET 3)</td>
<td>93&quot;</td>
<td>96&quot;</td>
<td>SS01 (DETAIL D-S, SHEET 3)</td>
<td>TYPES 1 THRU 4 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>36&quot;</td>
<td>36&quot;</td>
</tr>
<tr>
<td>66&quot; x 30&quot;</td>
<td>78&quot; x 42&quot; (DETAIL D-S, SHEET 4)</td>
<td>TYPES A, B, C, D, &amp; I (DETAIL D-S, SHEET 3)</td>
<td>111&quot;</td>
<td>114&quot;</td>
<td>SS01 (DETAIL D-S, SHEET 3)</td>
<td>TYPES 1 THRU 4 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>48&quot;</td>
<td>21&quot;</td>
</tr>
<tr>
<td>66&quot; x 48&quot;</td>
<td>78&quot; x 60&quot; (DETAIL D-S, SHEET 4)</td>
<td>TYPES A, B, C, D, &amp; I (DETAIL D-S, SHEET 3)</td>
<td>111&quot;</td>
<td>114&quot;</td>
<td>SS01 (DETAIL D-S, SHEET 3)</td>
<td>TYPES 1 THRU 4 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>48&quot;</td>
<td>36&quot;</td>
</tr>
<tr>
<td>66&quot; x 66&quot;</td>
<td>78&quot; x 78&quot; (DETAIL D-S, SHEET 4)</td>
<td>TYPES A, B, C, D, &amp; I (DETAIL D-S, SHEET 3)</td>
<td>111&quot;</td>
<td>114&quot;</td>
<td>SS01 (DETAIL D-S, SHEET 3)</td>
<td>TYPES 1 THRU 4 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>48&quot;</td>
<td>48&quot;</td>
</tr>
<tr>
<td>72&quot; x 24&quot;</td>
<td>84&quot; x 48&quot; (DETAIL D-S, SHEET 3)</td>
<td>TYPES A, B, C, D, &amp; I (DETAIL D-S, SHEET 3)</td>
<td>113&quot;</td>
<td>120&quot;</td>
<td>SS02 (DETAIL D-S, SHEET 3)</td>
<td>TYPES 1 THRU 4 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>54&quot;</td>
<td>15&quot;</td>
</tr>
<tr>
<td>72&quot; x 48&quot;</td>
<td>84&quot; x 60&quot; (DETAIL D-S, SHEET 3)</td>
<td>TYPES A, B, C, D, &amp; I (DETAIL D-S, SHEET 3)</td>
<td>113&quot;</td>
<td>120&quot;</td>
<td>SS02 (DETAIL D-S, SHEET 3)</td>
<td>TYPES 1 THRU 4 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>54&quot;</td>
<td>36&quot;</td>
</tr>
<tr>
<td>72&quot; x 72&quot;</td>
<td>84&quot; x 84&quot; (DETAIL D-S, SHEET 3)</td>
<td>TYPES A, B, C, D, &amp; I (DETAIL D-S, SHEET 3)</td>
<td>113&quot;</td>
<td>120&quot;</td>
<td>SS02 (DETAIL D-S, SHEET 3)</td>
<td>TYPES 1 THRU 4 GRATE STANDARD DRAINAGE INLET FRAME</td>
<td>54&quot;</td>
<td>54&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 DELOIT design resource center.
2. Steps are required on all boxes whose depth is greater than 4’ 0” (1219).
3. See detail D-4 or appropriate detail sheet for additional notes.
**INTEGRAL CURB & GUTTER, TYPES 1-8 & 3-8, PCC CURB TYPE 1-8 AND PCC CURB TYPE 1-6, 1-4, AND 1-2.**

**INTEGRAL PCC CURB & GUTTER, TYPES 1-6, 3-6, 1-4, 3-4, 1-2 AND 3-2.**

**INTEGRAL PCC CURB & GUTTER, TYPE 2.**

**PCC CURB TYPE 2.**

* - THIS DIMENSION VARIES BASED ON THE HEIGHT OF THE CURB AND GUTTER OR CURB USED:

- INTEGRAL P.C.C. CURB AND GUTTER, TYPES 1-6 AND 3-6 & CURB, TYPE 1-6 - 12" MIN.
- INTEGRAL P.C.C. CURB AND GUTTER, TYPES 1-6 AND 3-6 & CURB, TYPE 1-6 - 10" MIN.
- INTEGRAL P.C.C. CURB AND GUTTER, TYPES 1-6 AND 3-6 & CURB, TYPE 1-6 - 8" MIN.

**NOTE:** LENGTH OF #4 REBAR SHALL BE THE OUTSIDE OF THE DRAINAGE INLET BOX PLUS 2'-9".

**OVERLAP BETWEEN BARS.**

MORE THAN ONE BAR IS USED, THERE MUST BE A 12" OVERLAP BETWEEN BARS.

**LENGTH OF #4 REBAR SHALL BE THE OUTSIDE OF THE DRAINAGE INLET BOX PLUS 2'-9".**

**DELaware DEPARTMENT OF TRANSPORTATION**

**STANDARD NO.** D-5 (2012)  
**SHT.** 3  
**OF** 9  
**APPROVED**  
**SIGNATURE ON FILE**  
**DATE** 01/07/2013  
**SIGNATURE ON FILE**  
**DATE** 12/20/2012  
**SIGNATURE ON FILE**  
**DATE** 12/4/2012
NOTE: SEE DETAIL D-5, SHEET 3 OF 9 FOR INLET TOP UNIT APPLICATIONS.

NOTE: REFER TO PREVIOUS SHEETS FOR REINFORCING REQUIREMENTS

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

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
NOTES:
1. ALL P.V.C. PIPES ARE TO BE 4" I.D., SCHEDULE 40.
2. ALL JOINTS OF THE FLOATATION SECTION SHALL BE SOLVENT WELDED.
3. 4" HOPE FLEXIBLE DRAIN PIPE IS TO BE ATTACHED TO THE POND OUTLET STRUCTURE WITH WATER TIGHT CONNECTIONS

DELTAWARE DEPARTMENT OF TRANSPORTATION

SKIMMER DWATERING DEVICE

STANDARD NO. E-22 (2012) SHT. 1 OF 1

APPROVED SIGNATURE ON FILE 01/07/2013

RECOMMENDED SIGNATURE ON FILE 12/20/2012

SCALE : 1/2" = 1'-0"
TO CLEAN STRAIGHT EDGE

SAWCUT EXISTING PAVEMENT

EXISTING PAVEMENT

OVERLAY

SEE SCHEDULE

NOTE:

THE PROFILE OF THE OVERLAY PAVING SHALL BE ADJUSTED TO ASSURE A SMOOTH TRANSITION THROUGH THE BUTT JOINT.

CONDITION | SLOPE
---|---
GREATER THAN OR EQUAL TO 55 MPH | 40:1
LESS THAN 55 MPH | 30:1
STOP OR INTERSECTION | 15:1

SCALE : NTS
1. Type 1 conduit junction well shall be precast concrete. At least one hole in precast wells will be of a 5” diameter completely through the wall. Unused holes shall be plugged.
2. Types 2 and 3 conduit junction wells shall be brick and will conform to standard specifications for brick masonry. Joints shall be concave type. Type 2 walls will be a nominal 4” thick. Type 3 wall will be a nominal 8” thick.
3. Junction wells shall not be placed under any type of pavement.
4. All conduit junction wells shall be constructed flush with the surface of the same. Installation in unpaved areas will be constructed above grade and graded to drain away from conduit junction well.
5. All cracks, gaps, or openings in junction well wall shall be sealed with concrete.

NOTES:
- T-1 (2012)
- DOT - E
- DEL. 57 STONE
- CAST IRON COVER
- CAST IRON FRAME
- PLAN VIEW
- DETAIL "A"
- CONDUIT JUNCTION WELL, TYPES 1, 2, AND 3
- APPROVED
- DEPARTMENT OF TRANSPORTATION
- STANDARD NO. T-1 (2012)
- SHIT. 1 OF 3
- RECOMMENDED
- SCALE: NTS
- 01/07/2013
- 01/07/2013
- 12/20/2012
- 12/4/2012
DETAIL "A"

\[ \text{\textbullet \text{\textbullet \textbullet \textbullet \textbullet}} \]

1. TYPE 4 CONDUIT JUNCTION WELL SHALL BE PRECAST CONCRETE. AT LEAST ONE HOLE IN PRECAST WELLS WILL BE OF A 5" DIAMETER COMPLETELY THROUGH THE WALL. UNUSED HOLES SHALL BE PLUGGED.

2. ALL CONDUIT JUNCTION WELLS CONSTRUCTED SHALL BE WITHIN CONSTRUCTED FLUSH WITH THE SURFACE OF THE SAME. INSTALLATION IN UNGRADED AREAS WILL BE CONSTRUCTED ABOVE GRADE AND GRADED TO DRAIN AWAY FROM CONDUIT JUNCTION WELL.

3. ALL CRACKS, GAPS, OR OPENINGS IN JUNCTION WELL WALL SHALL BE SEALED WITH CONCRETE.

NOTES:

FINISHED GRADE (UNPAVED)

CONCRETE WALL

GALV. CONDUIT

BUSHING

BUSHING

NONMETALLIC CONDUIT

DEL 57 STONE

20" X 42½"

40" X 64"

24" MIN.

3" MIN.

1.5" MAX.

NOTES:

1. TYPE 4 CONDUIT JUNCTION WELL SHALL BE PRECAST CONCRETE. AT LEAST ONE HOLE IN PRECAST WELLS WILL BE OF A 5" DIAMETER COMPLETELY THROUGH THE WALL. UNUSED HOLES SHALL BE PLUGGED.

2. ALL CONDUIT JUNCTION WELLS CONSTRUCTED SHALL BE WITHIN CONSTRUCTED FLUSH WITH THE SURFACE OF THE SAME. INSTALLATION IN UNPAVED AREAS WILL BE CONSTRUCTED ABOVE GRADE AND GRADED TO DRAIN AWAY FROM CONDUIT JUNCTION WELL.

3. ALL CRACKS, GAPS, OR OPENINGS IN JUNCTION WELL WALL SHALL BE SEALED WITH CONCRETE.
NOTES:
1. **Type 5 Conduit Junction Well** shall be precast concrete. At least one hole in precast wells shall be of a 5" diameter completely through the wall. Unused holes shall be plugged.
2. All conduit junction wells constructed shall be within constructed flush with the surface of the same. Installation in unpaved areas will be constructed above grade and graded to drain away from conduit junction well.
3. All cracks, gaps, or openings in junction well wall shall be sealed with concrete.
1. Type I1 conduit junction well lid shall be precast polymer concrete with a heavy-weave fiberglass frame, installed on a precast concrete well.
2. Type I1 conduit junction well body shall be precast concrete. At least one hole in precast wells will be of a 5" diameter completely through the wall. Unused holes shall be plugged.
3. Type I1 conduit junction wells shall be constructed flush with the surface of the same. Installation in unpaved areas will be constructed above grade and graded to drain away from the conduit junction well.
4. All cracks, gaps, or opening in junction well wall shall be sealed with concrete.
NOTES:
1. **TYPE 14 CONDUIT JUNCTION WELL** LID SHALL BE PRECAST POLYMER CONCRETE WITH A HEAVY-WEAVE FIBERGLASS FRAME. INSTALLED ON A PRECAST CONCRETE WELL.
2. **TYPE 14 CONDUIT JUNCTION WELL** BODY SHALL BE PRECAST CONCRETE. AT LEAST ONE HOLE IN PRECAST WELLS WILL BE OF A 3" DIAMETER COMPLETELY THROUGH THE WALL. UNUSED HOLES SHALL BE PLUGGED.
3. **TYPE 14 CONDUIT JUNCTION WELLS** SHALL BE CONSTRUCTED FLUSH WITH THE SURFACE OF THE SAME. INSTALLATION IN UNPAVED AREAS WILL BE CONSTRUCTED ABOVE GRADE AND GRADED TO DRAIN AWAY FROM THE CONDUIT JUNCTION WELL.
4. ALL CRACKS, GAPS, OR OPENINGS IN JUNCTION WELL WALL SHALL BE SEALED WITH CONCRETE.

DELAWARE
DEPARTMENT OF TRANSPORTATION

CONDUIT JUNCTION WELL, TYPE 14

STANDARD NO. T-3 (2012)  SHT. 2  OF 3  RECOMMENDED

APPROVED

SIGNATURE ON FILE  01/07/2013

SIGNATURE ON FILE  12/20/2012

12/4/2012
POLYMER CONCRETE WITH A HEAVY-WEAVE FIBERGLASS REINFORCEMENT LID

\( \frac{3}{8} \) X \( \frac{3}{4} \) PULL SLOT

POLYMER CONCRETE WITH A HEAVY-WEAVE FIBERGLASS REINFORCEMENT FRAME

\( \frac{3}{8} \) - 16 UNC HEX BOLT WITH WASHERS TO BE SECURED INTO THE WELL FRAME

NOTES:
1. TYPE 15 CONDUIT JUNCTION WELL LID SHALL BE PRECAST POLYMER CONCRETE WITH A HEAVY-WEAVE FIBERGLASS FRAME, INSTALLED ON A PRECAST CONCRETE WELL.
2. TYPE 15 CONDUIT JUNCTION WELL BODY SHALL BE PRECAST CONCRETE. AT LEAST ONE HOLE IN PRECAST WELLS WILL BE OF A 3" DIAMETER COMPLETELY THROUGH THE WALL. UNUSED HOLES SHALL BE PLUGGED.
3. TYPE 15 CONDUIT JUNCTION WELLS SHALL BE CONSTRUCTED FLUSH WITH THE SURFACE OF THE SAME. INSTALLATION IN UNPAVED AREAS WILL BE CONSTRUCTED ABOVE GRADE AND GRADED TO DRAIN AWAY FROM THE CONDUIT JUNCTION WELL.
4. ALL CRACKS, GAPS, OR OPENINGS IN JUNCTION WELL WALL SHALL BE SEALED WITH CONCRETE.

SECTION B-B

SECTION A-A

DEL. DOT ELECTRIC

FINISHED GRADE (UNPAVED)

FINISHED GRADE (PAVEMENT)

3" CONCRETE WALL

1" MIN.
3" MAX.

16" X 16"

24" X 10"

26" 4" 16" 24"

626"

30' X 38'

DEL. 57 STONE

1" MIN.
3" MAX.

4" MIN.
6" MAX.


DEL. DEPARTMENT OF TRANSPORTATION

CONDUIT JUNCTION WELL, TYPE 15

APPROVED

SIGNATURE ON FILE

01/07/2013

DATE

SIGNATURE ON FILE

12/20/2012

DATE

12/4/2012
NOTE:
1. CONCRETE APRON IS REQUIRED ONLY WHEN CABINET BASE IS INSTALLED IN EARTH AREAS OR AS DIRECTED ON PLAN.
2. CONDUITS SHALL BE EQUALLY SPACED, WITH MINIMUM 2" WIDTH SPACING ESTABLISHED BETWEEN ALL CONDUITS.
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.
EXISTING CONDUIT
ROUND BASE

CONNECTED TO AN EXISTING CONDUIT
THREADED CONDUIT PLUG UNLESS
SHALL BE CAPPED WITH A GALVANIZED
UNDERGROUND CONDUIT ENDS

6" M

#8 REINFORCING BARS
8 EQUALLY SPACED

#4 REINFORCING BARS
EQUALLY SPACED

3" x 240"

GROUND ROD (BE ATTACHED TO
GROUND FOR POLE TO

3" CONDUIT SWEEPS
6" M (MASTARM OR SPAN)

DIRECTION OF LOAD
REQUIREMENTS
BY POLE MANUFACTURE
TO BE AS DIRECTED

BOLT CIRCLE DIAMETER
TO BE AS DIRECTED
BY POLE MANUFACTURE
REQUIREMENTS

ROUND BASE

ROUND BASE w/ SQUARE
FOUNDATION HEADER

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

DELAWARE
DEPARTMENT OF TRANSPORTATION

POLE BASES

APPROVED

STANDARD NO. T-5 (2012) SIH. 1 OF 4 RECOMMENDED

SIGNATURE ON FILE 01/07/2013

SIGNATURE ON FILE 12/20/2012

12/4/2012
ANCHOR BOLTS

INSTALLATION IN SOIL

ROUNDED CORNERS FOR
AREA TO BE GROUTED

FINISHED GRADE

HEX NUT

ANCHOR BOLT

COVER

AS DIRECTED BY THE ENGINEER.

PLUMB OR CANT POLE

SQUARE NUT USED TO
CONDUIT

GRADE (SOIL)

FINISHED

(SEE POLE BASE DATA CHART)

TYPICAL SECTION (BASES 1, 2, 2A, 2B, 3, 3A, 3B, AND 7)

7"
3"
5"
24"
1"
2"
3"
3"
3"
240"

EMBED 8'-0" INTO UNDISTURBED SOIL

GROUND ROD (3" X 240")

NOTES:
1. PLACE EACH 6" Long x 1/2" Dia. P.V.C., Schedule 40 (Typ) Vents in the Grout as directed in the
FIELD BY ENGINEER.
2. SEE POLE BASE DATA CHART FOR POLE BASE DIMENSIONS.
3. ANCHOR BOLTS AND BOLT PATTERN TO BE PROVIDED BY DELDOT’S SIGNAL CONSTRUCTION INSPECTOR
UNLESS OTHERWISE DENOTED.
4. ANCHOR BOLTS AND BOLT PATTERN FOR TYPE 7 POLE BASES TO BE PROVIDED BY THE MANUFACTURER.

TYPICAL INSTALLATION (BASES 1, 2, 2A, 2B, 3, 3A, 3B, AND 7)

DELAWARE
DEPARTMENT OF TRANSPORTATION

STANDARD NO.  T-5 (2012)  
SHT. 2  
OF 4  
APPROVED  
RECOMMENDED

SIGNATURE ON FILE
12/4/2012

SIGNATURE ON FILE
12/20/2012

12/7/2013
01/07/2013

SCALE : NTS

01/4/2012
01/1/2012
POLE BASE DATA CHART

<table>
<thead>
<tr>
<th>POLE BASE TYPE</th>
<th>DIAMETER</th>
<th>DEPTH</th>
<th>#4 HORIZONTAL REINFORCING BARS</th>
<th>#8 VERTICAL REINFORCING BARS</th>
<th>CONDUITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>36&quot;</td>
<td>7'-0&quot;</td>
<td>5</td>
<td>8</td>
<td>2 - 3&quot;</td>
</tr>
<tr>
<td>2</td>
<td>48&quot;</td>
<td>10'-0&quot;</td>
<td>6</td>
<td>8</td>
<td>2 - 3&quot;</td>
</tr>
<tr>
<td>3</td>
<td>60&quot;</td>
<td>10'-0&quot;</td>
<td>6</td>
<td>8</td>
<td>2 - 3&quot;</td>
</tr>
<tr>
<td>3A</td>
<td>60&quot;</td>
<td>9'-0&quot;</td>
<td>6</td>
<td>8</td>
<td>2 - 3&quot;</td>
</tr>
<tr>
<td>3B</td>
<td>72&quot;</td>
<td>7'-0&quot;</td>
<td>5</td>
<td>8</td>
<td>2 - 3&quot;</td>
</tr>
<tr>
<td>4</td>
<td>24&quot;</td>
<td>2'-4&quot;</td>
<td>NONE</td>
<td>NONE</td>
<td>1 - 2.5&quot;</td>
</tr>
<tr>
<td>5</td>
<td>30&quot;</td>
<td>4'-0&quot;</td>
<td>NONE</td>
<td>NONE</td>
<td>2 - 3&quot;</td>
</tr>
<tr>
<td>6</td>
<td>24&quot;</td>
<td>6'-0&quot;</td>
<td>4</td>
<td>8</td>
<td>2 - 3&quot;</td>
</tr>
<tr>
<td>&quot;7</td>
<td>48&quot;</td>
<td>13'-4&quot;</td>
<td>7</td>
<td>8</td>
<td>1 - 1.5, 2 - 3&quot;</td>
</tr>
</tbody>
</table>

NOTE:
ANCHOR BOLTS AND BOLT PATTERN FOR TYPES 5, 6, & 7 POLE BASES TO BE PROVIDED BY THE MANUFACTURER.
NOTES:
ANCHOR BOLTS AND BOLT PATTERN TO BE PROVIDED BY DELDOT'S SIGNAL CONSTRUCTION INSPECTOR.
NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE CONDUIT AGAINST ANY POSSIBLE DAMAGE DURING PAVING OPERATIONS.
2. THE WEATHERPROOF FITTING SHALL CONSIST OF A GALVANIZED ½" COUPLING CONTAINING A STEEL THREADED REDUCING BUSHING (1½" TO ¾") AND A ¼" WATERTIGHT CONNECTOR FOR SERVICE ENTRANCE CABLE.
3. THE LEAD-IN WIRE SHALL BE RUN THROUGH THE RUBBER OF THE WEATHERPROOF FITTING.
4. LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT SHALL BE USED WHERE THE DISTANCE BETWEEN THE DRILLED HOLE FOR CONDUIT SLEEVE AND JUNCTION WELL IS 6'-0" OR LESS. ALL OTHER CONDUIT SLEEVES SHALL BE 1" RIGID, GALVANIZED STEEL UNLESS OTHERWISE SPECIFIED.
5. INSTALL DUCT SEAL IN BOTH ENDS OF CONDUIT SLEEVE.
6. SLEEVE AND SAWCUT SHALL NOT DAMAGE OR CONTACT CURB AND GUTTER.
7. SEPARATE 1" ELECTRICAL CONDUIT SLEEVES SHALL BE REQUIRED FOR EACH LOOP SPACED 1'-0" MINIMUM APART IN ROADWAY.
8. CONTRACTOR SHOULD AVOID WHEEL PATH IN THE ROADWAY WHILE DRILLING FOR CONDUIT INSTALLATION.
9. MAINTAIN 1½" TO EDGE OF TRAVELWAY (MEASURED TO FRONT OF GUTTER Pan, FACE OF UPRIGHT CURB, OR FRONT EDGE OF SHOULDER) OR OUTER EDGE OF PAVEMENT IF LOOP DETECTOR CONNECTION IS MADE IN THE SHOULDER.
10. REFER TO DETAIL T-9, SHEET 1 OF 1 FOR LOOP DETECTOR INSTALLATION DETAILS.
NOTES:
1. WHEN A PROPOSED LOOP DETECTOR SAWCUT橫S A LATERAL ROADWAY JOINT OR VALVE COVER (FOR EXAMPLE, MANHOLE, JUNCTION WELL, ETC.), LOOP DETECTOR INSTALLATION SHALL BE MODIFIED INTO TWO SEPARATE LOOP DETECTORS WHICH SHALL NOT TRAVERSE JOINTS OR VALVE COVERS.
2. THE LOOPS SHALL BE PLACED IN THE CENTER OF THE LANE UNLESS OTHERWISE NOTED ON PLANS.
3. PRESENCE LOOP DETECTORS ARE TO BE PLACED 12" BEHIND THE EXISTING OR PROPOSED STOP LINE.
4. LOOP DETECTOR AND LEAD-IN SAWCUTS SHALL BE 6".
5. 1½" DRILL HOLE SHOULD BE USED AT ALL CHANGES IN SAWCUT DIRECTIONS.
6. BARREL SIZE SHALL BE 1½" TO 3½" DIAMETER AND 4" TO 6" LONG. ALL SPLICE KIT CONNECTIONS SHALL BE DONE IN JUNCTION WELLS ONLY.

 LOOP DETECTOR INSTALLATION & SPLICE KIT

COORDINATES:

SECTION A-A

CONCRETE SURFACE

SECTION A-A

HOT-MIX SURFACE

SPICE KIT DETAIL

SEE NOTE 6

DELAWARE
DEPARTMENT OF TRANSPORTATION

LOOP DETECTOR SAWCUT TYPICAL

REFER TO DETAIL T-8, SHEET 1 OF 1, FOR LOOP DETECTOR LEAD-IN INSTALLATION DETAILS.

DEL.
STANDARD NO.
T-9 (2012)
SIIT. 1 OF 1
RECOMMENDED

APPROVED
SIGNATURE ON FILE
01/07/2013
SIGNATURE ON FILE
12/20/2012
12/4/2012