Curb Ramp, Type 1 and Sections

Notes:
1. The area of detectable warning truncated domes shall be 24" (600) long and the full width of the ramp.
2. See specification for additional information.

1. Where a 12:1 maximum slope ramp will not meet the sidewalk grade within a length of 15' (4570) due to steep adjacent roadway, the ramp length may be limited to 15' (4570), and the ramp slope allowed to exceed 12:1.
2. Ramp width shall be 4' (1200) minimum, however, 5' (1525) is preferred.

DETECTABLE WARNING TRUNCATED DOME DETAILS

Notes:
1. Where a 12:1 maximum slope ramp will not meet the sidewalk grade within a length of 15' (4570) due to steep adjacent roadway, the ramp length may be limited to 15' (4570), and the ramp slope allowed to exceed 12:1.
2. Sidewalk width shall be 4' (1200) minimum, however, 5' (1525) is preferred.
DELAWARE DEPARTMENT OF TRANSPORTATION

Curb ramps, Types 2, 3, & 4

Notes:
1. Where a 12:1 maximum slope ramp will not meet the sidewalk grade within a length of 15' (4570) due to steep adjacent roadway, the ramp length may be limited to 15' (4570), and the ramp slope allowed to exceed 12:1.
2. Transition to existing sidewalk width over the length of the ramp.
3. Ramp width shall be 4' (1200) minimum, however, 5' (1525) is preferred.

NOTE: THE DIAGONAL CURB RAMP IS NOT THE PREFERRED TREATMENT.

RECOMMENDED APPROVED

DATE: 11/05

SHEET 2 OF 4
DELAWARE DEPARTMENT OF TRANSPORTATION

DETECTABLE WARNING TRUNCATED DOMES

SECTION E-E

SECTION F-F

ELEVATION D-D

ELEVATION G-G

NOTE: CURB RAMP WIDTH SHALL BE 4' (1200) MINIMUM. HOWEVER, 5' (1525) IS PREFERRED.

CURB RAMP SECTIONS FOR TYPES 2 & 3

APPROVED

CURTIS, M. J. D. 11/05

C-2 (2004) SHT. 3 OF 4 RECOMMENDED

DETECTABLE WARNING TRUNCATED DOMES

CURB (TYPE VARIES, SEE CONSTRUCTION PLAN SHEETS)

24" (600)

ELEVATION D-D

ELEVATION G-G

NOTE: CURB RAMP WIDTH SHALL BE 4' (1200) MINIMUM. HOWEVER, 5' (1525) IS PREFERRED.

CURB RAMP SECTIONS FOR TYPES 2 & 3

APPROVED

CURTIS, M. J. D. 11/05

C-2 (2004) SHT. 3 OF 4 RECOMMENDED

DETECTABLE WARNING TRUNCATED DOMES

CURB (TYPE VARIES, SEE CONSTRUCTION PLAN SHEETS)

24" (600)
DELAWARE
DEPARTMENT OF TRANSPORTATION

CURB RAMP TYPE 5 & SECTIONS

SHT. 4 OF 4

APPROVED

RECOMMENDED

DATE

NOTE 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.

NOTE 2: WHERE A 12:1 MAXIMUM SLOPE RAMP WILL NOT MEET THE SIDEWALK GRADE WITHIN A LENGTH OF 6' (1800) DUE TO STEEP ADJACENT ROADWAY, THE RAMP LENGTH MAY BE LIMITED TO 6' (1800), AND THE RAMP SLOPE ALLOWED TO EXCEED 12:1.

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

NOTE 4: RAMP WIDTH SHALL BE A MINIMUM OF 4' (1200), HOWEVER 5' (1525) IS PREFERRED. WHEN USING CUT-THROUGH STYLE RAMP, WITH CURBING ON BOTH SIDES OF THE RAMP, THE WIDTH SHALL BE A MINIMUM OF 5' (1525).
**INLET TOP UNIT APPLICATIONS**

<table>
<thead>
<tr>
<th>Top Unit</th>
<th>Curbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>Use in drainage swale</td>
</tr>
<tr>
<td>Type B</td>
<td>Integral PCC curb &amp; gutter, Type 1 &amp; 2, PCC curb Type 1</td>
</tr>
<tr>
<td>Type C</td>
<td>Integral PCC curb &amp; gutter, Type 4, PCC curb Type 3</td>
</tr>
<tr>
<td>Type D</td>
<td>PCC curb Type 2</td>
</tr>
</tbody>
</table>

**DRAINAGE INLET TOP UNITS**

Note: Top unit is to be cast-in-place to grade as specified on plan sheets or as directed by engineer.

**NOTE:** TOP UNIT IS TO BE CAST-IN-PLACE TO GRADE AS SPECIFIED ON PLAN SHEETS OR AS DIRECTED BY ENGINEER.
34\(\text{in} (865)\) x 24\(\text{in} (610)\) DRAINAGE INLET DETAILS

NOTE: REFER TO PREVIOUS SHEETS FOR REINFORCING REQUIREMENTS
**NOTES:**

1. Geotextile filter fabric shall be placed entirely over the top of underdrain trench and lapped as shown.

2. Slope of underdrains shall match roadway grade, unless otherwise directed by the Engineer.

3. Outlet pipe configurations shall use 45 degree elbows or shall use straight pipe with a minimum radius of 3' (900) to direct underdrain pipe into side of drainage inlet or to positive grade. Pipe shall also be non-perforated and have a smooth interior.

4. Rodent screen shall snugly fit the provided slot with the screen lip fitting tight to the bottom flow line.

5. A 4' (1200) flexible delineator shall be furnished and installed at the direction of the Engineer to mark the location of the concrete headwall. Cost incidental to downspout splash aprons item.

6. When two lines of pipe underdrain drain to a low point, each pipe must have its own outlet.
SHARED USE PATH INTERSECTION

NOTES:
1. THE 4"x1000 CONCRETE SHARED-USE PATH SHALL BE FINISHED TO INCLUDE A TEXTURED WARNING SURFACE BY USING A JOINT STRIPE TO PRODUCE A 1/8" DEEP V-JOINT AT 4"x1000 O.C. PAINT FOR INSTALLING THE GROOVED FINISH SHALL BE INCIDENTAL TO THE SIDEWALK CONSTRUCTION.
2. FOR 8' (2450) AND 10' (3050) PATH WIDTH, THE OUTSIDE DIMENSION FROM CENTER OF BOLLARD TO EDGE OF PATH SHALL BE 2' (600) AND 3' (915) RESPECTIVELY.
4. STEEL TUBE TO EXTEND 1/4' (30) ABOVE GROUND WITH CONCRETE TO SLOPE AWAY FROM TUBE TO KEEP WATER AND SEDIMENT FROM DRaining INTO TUBE.
BIKE RACK DETAILS


5 BIKES
| N = 30" (760) |

7 BIKES
| N = 60" (150) |

9 BIKES
| N = 87" (2210) |

11 BIKES
| N = 111" (2819) |

BICYCLE RACK

CONCRETE (TYP.)

STONE (TYP.)

OUTER EDGE OF CONCRETE FOOTING TO BE FLUSH WITH SURROUNDING GRADE (TYP.)

SLOPE TO DRAIN

24" (600) (TYP.)

2 3/8" (60) DIA. TUBING

2 3/8" (60) DIA. TUBING

W = 38" (965)

W = 63" (1600)

W = 87" (2210)

W = 111" (2819)

12" (305) DIA.

3" (75)

3" (75)

4 REBAR 6" (150) LONG

9.6" (244) (TYP.)

24" (600) MIN.

24" (600) MIN.

DELWARE DEPARTMENT OF TRANSPORTATION

BIKE RACK DETAILS

STANDARD NO. M-4 (2004) SHT. 1 OF 1

APPROVED

RECOMMENDED

DATE

N.T.S.

DATE

N.T.S.
**WOOD RAIL FENCE DETAILS**

**STANDARD NO.** M-5 (2004)  
**SHT.** 1  
**OF** 1  
**DELAWARE DEPARTMENT OF TRANSPORTATION**

**NOTES:**
1. All rail joints shall be centered at the posts.
2. All joints shall be attached with 3-12d nails and two adjacent rails shall not end on the same post.
3. Rails shall be flush to the posts at the end posts.

**SECTION A-A**
- **CLASS B CONCRETE**
- **POSTS 8' (2.4m) O.C. ON STRAIGHT RUNS, 4' (1.2m) O.C. AROUND CURVES**

**PATH**
- **4" (100) x 4" (100) (NOMINAL) TREATED POSTS (TYP)**
- **ATTACH WITH 4-12d HOT DIP GALVANIZED RING NAILS (TYP)**
- **SEE NOTE 2**

**TYPICAL JOINT DETAIL**
- **M-5 (2004)**
- **24" (610) MIN**
- **12" (305) DIA. MIN**
- **4" (100) x 4" (100) (NOMINAL) TREATED RAILS (TYP)**
- **MITER TOP AT 3:12 SLOPE**
- **24" (610) WIN**

**FRONT**
- **WATER TOP AT 3:6 SLOPE**
- **5½" (140) (TYP)**
- **6" (150) (TYP) MAX**
- **§ 5" (125) (TYP)**
4" (100) x 8" (200) RUNNING BOND PATTERN

4" (100) x 8" (200) HERRINGBONE PATTERN

NOTES:
1. Actual pattern to be used shall be specified on the plans. Color is to be "brick red" unless otherwise noted on the plans.
2. Materials and pavement box vary depending on plans.
3. For crosswalk applications, 8" (200) white lines should be placed on both sides.
4. The patterns above are the preferred patterns available for sidewalk or crosswalk applications.

BRICK PAVER SIDEWALK DETAIL

NOTES:
1. All pavers are to be "brick red" unless otherwise specified on the plans. Pattern shall be specified on the plans.
2. Expansion joint may be needed on non-curb side of brick paver sidewalk if there is against building or other confining feature.
NOTES:
1. AS DIMENSIONED, THE WIDTH OF THE TRANSVERSE SEALANT RESERVOIR IS APPLICABLE WHEN THE TEMPERATURE OF THE PAVEMENT SURFACE IS BETWEEN 60°F (16°C) AND 80°F (27°C). WHEN THE TEMPERATURE IS BELOW 60°F (16°C), THE SEALANT RESERVOIR SHOULD BE CUT 1/4” NARROWER. WHEN THE TEMPERATURE IS ABOVE 80°F (27°C), THE SEALANT RESERVOIR SHALL BE CUT 1/4” WIDER.
2. "T" REFERS TO THE ACTUAL CONSTRUCTED SLAB THICKNESS.
3. TOLERANCE ON ALL JOINT SEALANT DETAIL DIMENSIONS SHOWN WITHOUT RANGES SHALL BE PLUS 1/16" AND MINUS 1/32".
4. THE TOP EDGES OF THE CONTACT SURFACES OF THE SEALANT MATERIAL ON BOTH SIDES OF THE JOINT RESERVOIR SHALL BE AT THE SAME ELEVATION.
5. TRANSVERSE JOINT MATERIAL SHALL BE PLACED BEFORE LONGITUDINAL JOINT MATERIAL. THE TRANSVERSE JOINT MATERIAL SHALL BE CONTINUOUS FOR THE FULL WIDTH OF ALL ADJACENT P.C.C. PAVEMENT SLABS.
6. LONGITUDINAL JOINT MATERIAL SHALL BE PLACED WITHOUT GAPS WHEN EVER INTERRUPTED BY THE TRANSVERSE JOINT MATERIAL.
7. TRANSVERSE JOINT SEAL TO BE RECESSED 1/8" TO 1/4" BELOW THE TOP OF THE SLAB.
8. A 45° CHAMFER SHALL BE CUT 1/4" TO 1/2" DEEP AT THE TOP OF THE SLAB ALONG BOTH SIDES OF THE TRANSVERSE SEALANT RESERVOIR.
9. THE TOP EDGES OF THE COMPRESSION SEAL SHALL BE IN FULL CONTACT WITH THE SLAB SIDES.
10. THE TOP EDGES OF THE COMPRESSION SEAL SHALL BE IN FULL CONTACT WITH THE SLAB SIDES.
SECTION A-A

SECTION B-B

SECTION C-C

FULL DEPTH PATCH

DELAWARE
DEPARTMENT OF TRANSPORTATION

P.C.C. PAVEMENT PATCHING


APPROVED

RECOMMENDED

1/1/05
1/5/05
SEALANT DETAIL - LONGITUDINAL JOINT

SEALANT DETAIL - TRANSVERSE SAW-CUT JOINT

SEALANT DETAIL - TRANSVERSE CONSTRUCTION JOINT

NOTES:

1. AS DIMENSIONED, THE WIDTH OF THE TRANSVERSE SEALANT RESERVOIR IS APPLICABLE WHEN THE TEMPERATURE OF THE PAVEMENT SURFACE IS BETWEEN 60°F (16°C) AND 80°F (27°C). WHEN THE TEMPERATURE IS BELOW 60°F (16°C), THE SEALANT RESERVOIR SHALL BE CUT 0.3T narrower. WHEN THE TEMPERATURE IS ABOVE 80°F (27°C), THE SEALANT RESERVOIR SHALL BE CUT 0.4T NARROWER.

2. *T* REFERS TO THE EXISTING "AS-BUILT" SLAB THICKNESS.

3. TOLERANCE ON ALL JOINT SEALANT DETAIL DIMENSIONS SHOWN IN THIS PLAN SHALL BE PLUS/minus 0.10.

4. THE TOP EDGES OF THE CONTACT SURFACES OF THE SEALANT MATERIAL ON BOTH SIDES OF THE JOINT RESERVOIR SHALL BE AT THE SAME ELEVATION.

D - DOWEL DIAMETER INCLUDING PROTECTING COATINGS, IF ANY
CONCRETE CABINET BASE

CONCRETE BASE

PLAN VIEW

GROUND RODS

3" CABINET (762)

2" CABINET (508)

CONCRETE CABINET BASE

SECTION A-A

EXPANSION BOLT (6)

INSTALL INSULATING BUSHINGS AT THIS END OF CONDUIT.

GROUNDED CONDUIT AND ALL CONDUIT SWEEP

FINISHED GRADE (PAVEMENT, ETC.)

GROUND RODS

GROUND RODS

EXPANSION BOLT (6)

GROUNDED CONDUIT AND ALL CONDUIT SWEEP

PLAN SYMBOL

DELWARE

DEPARTMENT OF TRANSPORTATION

CABINET BASES (TYPES 'M' & 'P')


SHT. 1 OF 1

APPROVED

RECOMMENDED

09/24/2004
NOTES:

1. Saw cuts for wire slot construction shall be extended beyond the corners so that the slot is full depth at turn points. A forty-five (45) degree angle shall be cut 12" (300) back from the point of the extended corner.

2. The diagonal cut shall be stopped approximately 2" (50) from the corner to prevent the triangular portion of the pavement from breaking.

3. A maximum of two loop detectors can be spliced to one lead-in cable. The detail illustrates the method of splicing two loop detectors (Loop #1 and Loop #2) to a lead-in cable.

4. Loop detector shall be centered in travel lane.

SECTION A - A

SECTION B - B

DETAILS FOR INSTALLING LOOP DETECTOR WIRE (SINGLE WRAP)

PLAN SYMBOL

DELAWARE DEPARTMENT OF TRANSPORTATION

TYPE #1 LOOP DETECTOR

STANDARD NO. T-9 (2004) SHT. 1 OF 1

APPROVED

RECOMMENDED

DATE: 1/10/05

DATE: 6/5
NOTES:

1. SAW CUTS FOR WIRE SLOT CONSTRUCTION SHALL BE EXTENDED BEYOND THE CORNERS SO THAT THE SLOT IS FULL DEPTH AT TURN POINTS. A FORTY-FIVE (45) DEGREE ANGLE SHALL BE CUT 1' (0.3m) BACK FROM THE POINT OF THE EXTENDED CORNER.

2. THE DIAGONAL CUT SHALL BE STOPPED APPROXIMATELY 2" (50) FROM THE CORNER TO PREVENT THE TRIANGULAR PORTION OF THE PAVEMENT FROM BREAKING.

3. A MAXIMUM OF TWO LOOP DETECTORS CAN BE SPLICED TO ONE LEAD-IN CABLE. THE DETAIL ILLUSTRATES THE METHOD OF SPLICING TWO LOOP DETECTORS (LOOP #1 AND LOOP #2) TO A LEAD-IN CABLE.

4. LOOP DETECTOR SHALL BE CENTERED IN TRAVEL LANE.
SPAN WIRE ATTACHMENT BETWEEN POLES

1. STRAIN PLATE (2 REQUIRED, 1 IN FRONT AND 1 IN REAR OF POLE)
2. ½" x 16 x 3½" GALVANIZED SCREW
3. GUY HOOK
4. WOOD POLE

NOTE: SPAN WIRE ATTACHMENT BETWEEN METAL POLES IS THE SAME AS SHOWN FOR WOOD POLES EXCEPT THAT THE STRAIN PLATES AND GUY HOOKS ARE NOT USED. FOR DETAIL SEE T-14 SHEET 2 - "DEAD END MESSERWI ME ATTACHMENT, METAL POLES".
WOOD POLES

1. INSTALLATION METHOD SHOWN FOR DEAD END MESSENGER WIRE ATTACHMENT TO METAL POLES SHALL BE USED FOR SPAN WIRE ATTACHMENT BETWEEN METAL POLES.

METAL POLES

NOTES:

1. INSTALLATION METHOD SHOWN FOR DEAD END MESSENGER WIRE ATTACHMENT TO METAL POLES SHALL BE USED FOR SPAN WIRE ATTACHMENT BETWEEN METAL POLES.
NOTES:

1. Type 6 conduit junction well shall be precast polymer concrete.
2. All conduit junction wells constructed within pavement, sidewalks, etc. will be constructed flush with the surface of the same. Installation in unfixed areas will be constructed above grade and graded to drain away from the conduit junction well.
3. Polymer concrete covers shall be the heavy-duty type with a design load of 8,000 lbs (6800 kg) over a 10" (250) square.
1. Type 7 conduit junction well shall be precast polymer concrete.
2. All conduit junction wells constructed within pavement, sidewalks, etc. will 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.
3. Polymer concrete covers shall be the heavy duty type with a design load of 2,000 lbs (907 kg) over a 10" x 12" square.

**NOTES:**
- POLYMER CONCRETE WITH A HEAVY-MEAVE FIBERGLASS REINFORCEMENT
- 50" RESISTANT SURFACE
- POLYMER TONGUE AND GROOVE
- BUSHING
- STONE

**PLAN VIEW**

**SECTION A-A**

**PLAN SYMBOL**
1. TYPES 8 & 10 CONDUIT JUNCTION WELLS SHALL BE PRECAST POLYMER CONCRETE.
2. ALL CONDUIT JUNCTION WELLS CONSTRUCTED WITHIN PAVEMENT, SIDEWALKS, ETC. WILL 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.
3. POLYMER CONCRETE COVERS SHALL BE THE HEAVY-DUTY TYPE WITH A DESIGN LOAD OF 15,000 LBS (6800 KG) OVER A 10" (255) SQUARE.

SECTION A-A

PLAN VIEW

NOTES:
- Silicone sealer installed dry (typ) - hole saw with trade size
- Pull slot

PLAN SYMBOL

DIMENSIONS

<table>
<thead>
<tr>
<th>COVER</th>
<th>TYPE 8</th>
<th>TYPE 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>47 1/2&quot;</td>
<td>35 1/2&quot;</td>
</tr>
<tr>
<td>B</td>
<td>30 1/2&quot;</td>
<td>24 1/2&quot;</td>
</tr>
<tr>
<td>C</td>
<td>49 1/2&quot;</td>
<td>37 1/2&quot;</td>
</tr>
<tr>
<td>D</td>
<td>32 1/2&quot;</td>
<td>28 1/2&quot;</td>
</tr>
<tr>
<td>E</td>
<td>45 1/2&quot;</td>
<td>33 1/2&quot;</td>
</tr>
<tr>
<td>F</td>
<td>28 1/4&quot;</td>
<td>22 1/4&quot;</td>
</tr>
<tr>
<td>G</td>
<td>36&quot;</td>
<td>30&quot;</td>
</tr>
<tr>
<td>H</td>
<td>33&quot;</td>
<td>27&quot;</td>
</tr>
<tr>
<td>I</td>
<td>58&quot;</td>
<td>46&quot;</td>
</tr>
<tr>
<td>J</td>
<td>40&quot;</td>
<td>34&quot;</td>
</tr>
</tbody>
</table>

DELWARE DEPARTMENT OF TRANSPORTATION

CONDUIT JUNCTION WELLS, TYPES 8 & 10


APPROVED

RECOMMENDED

DATE: 11/10/05

SCALE: N.T.S.
NOTES:
1. UPRIGHT CONFIGURATION SHALL BE USED FOR MOUNTING ON MAST ARMS, SIGNAL HEAD FRAMEWORKS AND PEDESTALS.
2. UPRIGHT MOUNTING HARDWARE SHALL BE SUPPLIED BY THE DEPARTMENT.
3. TEFLON TAPE SHALL BE APPLIED TO THREADS BEFORE MOUNTING.
1. Inverted configuration shall be used for span mount.
2. Span wire mounting hardware shall be supplied by the Department.
3. Teflon tape shall be applied to threads before mounting.
4. Route the lead-in cable through the metal cap and the rubber plug, replace the metal cap, sealing the cable entry port. Tighten the metal cap so the cable will not slide through the rubber plug.
5. Wrap Scotch Super 33 tape around the cable connections to terminal strip.
6. Lower point of drip loop must be lower than cable entry point.
7. Wiring access door weather proof.
8. Use 4-wrap of Scotch Super 33 tape around cable entry port.
9. Cab connection to terminal strip.
10. TWO \( \frac{1}{4} \times 10 \) inch weep holes.
11. Mounting nut.
13. Cap screw.
14. Metal cap (See Note 4).
15. Span wire clamp.
17. Side view.