RHODE ISLAND
STANDARD DETAILS
<table>
<thead>
<tr>
<th>Detail No.</th>
<th>Date</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.0</td>
<td>6/98</td>
<td>Underdrain</td>
</tr>
<tr>
<td>1.2.0</td>
<td>6/98</td>
<td>Combination Drain</td>
</tr>
<tr>
<td>1.3.0</td>
<td>6/98</td>
<td>Concrete Connecting Collar</td>
</tr>
<tr>
<td>2.1.0</td>
<td>6/98</td>
<td>Concrete Headwalls for Pipe Culverts</td>
</tr>
<tr>
<td>2.2.0A</td>
<td>6/98</td>
<td>Standard Headwalls for Multiple 3’-6” to 7’-0” Pipe Culverts (Sheet 1 of 2)</td>
</tr>
<tr>
<td>2.2.0B</td>
<td>6/98</td>
<td>Standard Headwalls for Multiple 3’-6” to 7’-0” Pipe Culverts (Sheet 2 of 2)</td>
</tr>
<tr>
<td>2.3.0</td>
<td>6/98</td>
<td>Precast Concrete Flared End Section</td>
</tr>
<tr>
<td>3.1.0</td>
<td>6/98</td>
<td>No Detail Assigned</td>
</tr>
<tr>
<td>3.2.0</td>
<td>6/98</td>
<td>Brick/Solid Block 4’-0” Round Manhole</td>
</tr>
<tr>
<td>3.2.1</td>
<td>6/98</td>
<td>Brick/Solid Block 5’-0” or 6’-0” Round Manhole</td>
</tr>
<tr>
<td>3.2.2</td>
<td>6/98</td>
<td>Solid Block Shallow 4’-0” or 5’-0” Round Manhole</td>
</tr>
<tr>
<td>3.3.0</td>
<td>6/98</td>
<td>Brick/Solid Block Type “D” Square Catch Basin</td>
</tr>
<tr>
<td>3.3.1</td>
<td>6/98</td>
<td>Brick/Solid Block Driveway Basin and Gutter Inlet</td>
</tr>
<tr>
<td>3.3.2</td>
<td>6/98</td>
<td>Brick/Solid Block Type “F” Square Catch Basin</td>
</tr>
<tr>
<td>3.3.3</td>
<td>6/98</td>
<td>Solid Block Flush Square Catch Basin</td>
</tr>
<tr>
<td>3.3.4</td>
<td>6/98</td>
<td>Brick/Solid Block Double Grate Catch Basin Grate Parallel to Edge of Pavement</td>
</tr>
<tr>
<td>3.3.5</td>
<td>6/98</td>
<td>Brick/Solid Block Double Grate Catch Basin Grate Perpendicular to Edge of Pavement</td>
</tr>
<tr>
<td>3.3.6A</td>
<td>6/98</td>
<td>High Capacity Inlet (Sheet 1 of 2)</td>
</tr>
<tr>
<td>3.3.6B</td>
<td>6/98</td>
<td>High Capacity Inlet (Sheet 2 of 2)</td>
</tr>
<tr>
<td>3.4.0</td>
<td>3/05 R1</td>
<td>Brick/Solid Block Type “D” Round Catch Basin</td>
</tr>
<tr>
<td>3.4.1</td>
<td>3/05 R1</td>
<td>Brick/Solid Block Round Catch Basin with Gutter Inlet</td>
</tr>
<tr>
<td>3.4.2</td>
<td>3/05 R1</td>
<td>Brick/Solid Block Type “F” Round Catch Basin</td>
</tr>
<tr>
<td>Detail No.</td>
<td>Date</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
<td>--------------------------------------------------------------</td>
</tr>
<tr>
<td>3.4.3</td>
<td>3/05 R1</td>
<td>Brick/Solid Block Type “R” Catch Basin</td>
</tr>
<tr>
<td>3.4.4</td>
<td>3/05 R1</td>
<td>Solid Block Flush Round Catch Basin</td>
</tr>
<tr>
<td>3.4.5</td>
<td>3/05 R1</td>
<td>Brick/Solid Block 5'-0” or 6'-0” Round Catch Basin</td>
</tr>
<tr>
<td>3.5.0</td>
<td>6/98</td>
<td>Solid Block Shallow Type “F” Square Catch Basin (Pipe Cover 1'-6” to 3'-0”))</td>
</tr>
<tr>
<td>3.5.1</td>
<td>6/98</td>
<td>Solid Block Shallow 5’-0” or 6’-0” Square Catch Basin (Pipe Cover 1’-6” to 3’-0”))</td>
</tr>
<tr>
<td>3.5.2</td>
<td>6/98</td>
<td>Solid Block Shallow Double Grate Catch Basin Grate Parallel to Curb</td>
</tr>
<tr>
<td>3.5.3</td>
<td>6/98</td>
<td>Solid Block Shallow Double Grate Catch Basin Grate Parallel to Edge of Pavement</td>
</tr>
<tr>
<td>3.5.4</td>
<td>6/98</td>
<td>Solid Block Shallow Double Grate Catch Basin Grate Perpendicular to Curb</td>
</tr>
<tr>
<td>3.5.5</td>
<td>6/98</td>
<td>Solid Block Shallow Double Grate Catch Basin Grate Perpendicular to Edge of Pavement</td>
</tr>
<tr>
<td>3.6.0</td>
<td>6/98</td>
<td>Brick/Solid Block Drop Inlet</td>
</tr>
<tr>
<td>3.7.0</td>
<td>6/98</td>
<td>Brick/Solid Block Round Manhole or Catch Basin Depth Greater than 12’-0”</td>
</tr>
<tr>
<td>4.1.0</td>
<td></td>
<td>No Detail Assigned</td>
</tr>
<tr>
<td>4.2.0</td>
<td>6/98</td>
<td>Precast 4’-0” Round Manhole</td>
</tr>
<tr>
<td>4.2.1</td>
<td>6/98</td>
<td>Precast 5’-0” Round Manhole</td>
</tr>
<tr>
<td>4.2.2</td>
<td>6/98</td>
<td>Precast 6’-0” Round Manhole</td>
</tr>
<tr>
<td>4.3.0</td>
<td>6/98</td>
<td>Precast 4’-0” or 6’-0” Square Manhole or Catch Basin</td>
</tr>
<tr>
<td>4.4.0</td>
<td>6/98</td>
<td>Precast 4’-0”, 5’-0” or 6’-0” Round Catch Basin</td>
</tr>
<tr>
<td>4.5.0</td>
<td>6/98</td>
<td>Precast Concrete Drop Inlet</td>
</tr>
<tr>
<td>4.5.1</td>
<td>6/98</td>
<td>Precast Concrete Drop Inlet Lateral Outlet</td>
</tr>
<tr>
<td>4.5.2</td>
<td>6/98</td>
<td>Precast Concrete Drop Inlet Longitudinal Outlet</td>
</tr>
<tr>
<td>Detail No.</td>
<td>Date</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4.6.0</td>
<td>6/98</td>
<td>Concrete Cover for Shallow 4’-0” Round Manholes</td>
</tr>
<tr>
<td>4.6.1</td>
<td>6/98</td>
<td>Concrete Cover for Shallow 5’-0” Round Manholes</td>
</tr>
<tr>
<td>4.7.0</td>
<td>6/98</td>
<td>Top Cover for 4’-0” or 6’-0” Square Catch Basins and Manholes</td>
</tr>
<tr>
<td>4.7.1</td>
<td>6/98</td>
<td>Top Cover Monolithic with Riser Section for 4’-0” or 6’-0” Square Catch Basins and Manholes</td>
</tr>
<tr>
<td>4.7.2</td>
<td>6/98</td>
<td>Alternate Top Cover for Round Precast Manholes and Catch Basins</td>
</tr>
<tr>
<td>4.8.0</td>
<td>6/98</td>
<td>Concrete Cover for Shallow Type “F” Square Catch Basins</td>
</tr>
<tr>
<td>4.8.1</td>
<td>6/98</td>
<td>Concrete Cover for Shallow Double Grate Catch Basins with Curb</td>
</tr>
<tr>
<td>4.8.2</td>
<td>6/98</td>
<td>Concrete Cover for Shallow Double Grate Catch Basins without Curb</td>
</tr>
<tr>
<td>4.8.3</td>
<td>6/98</td>
<td>Concrete Cover for Shallow 5’-0” Square Catch Basins</td>
</tr>
<tr>
<td>4.8.4</td>
<td>6/98</td>
<td>Concrete Cover for Shallow 6’-0” Square Catch Basins</td>
</tr>
<tr>
<td>5.1.0</td>
<td>6/98</td>
<td>Precast Concrete Sump for Round Catch Basins (Wet Areas)</td>
</tr>
<tr>
<td>5.2.0</td>
<td>6/98</td>
<td>Round Manholes and Catch Basins Maximum Pipe Size Standard</td>
</tr>
<tr>
<td>5.3.0</td>
<td>6/98</td>
<td>Catch Basin and Manhole Step</td>
</tr>
<tr>
<td>5.4.0</td>
<td>6/98</td>
<td>Concrete Collars</td>
</tr>
<tr>
<td>6.1.0</td>
<td>6/98</td>
<td>Light-Duty Square Frame and Round Cover</td>
</tr>
<tr>
<td>6.1.1</td>
<td>6/98</td>
<td>Heavy-Duty Square Frame and Round Cover</td>
</tr>
<tr>
<td>6.2.0</td>
<td>6/98</td>
<td>Round Frame and Cover Light-Duty</td>
</tr>
<tr>
<td>6.2.1</td>
<td>6/98</td>
<td>Heavy-Duty Round Frame and Cover</td>
</tr>
<tr>
<td>6.3.0</td>
<td>6/98</td>
<td>Square Frame and Grate</td>
</tr>
<tr>
<td>6.3.1</td>
<td>7/06 R1</td>
<td>Square Frame and Grate</td>
</tr>
<tr>
<td>6.3.2</td>
<td>7/06 R1</td>
<td>Square Frame and Grate (Bicycle Safe)</td>
</tr>
<tr>
<td>6.3.3</td>
<td>6/98</td>
<td>High Capacity Frame and Grate</td>
</tr>
<tr>
<td>6.3.4</td>
<td>6/98</td>
<td>High Capacity Frame and Grate (Bicycle Safe)</td>
</tr>
</tbody>
</table>
## RHODE ISLAND STANDARD DETAILS

### INDEX

<table>
<thead>
<tr>
<th>Detail No.</th>
<th>Date</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.4.0</td>
<td>6/98</td>
<td>Round Frame and Grate</td>
</tr>
<tr>
<td>6.4.1</td>
<td>4/13</td>
<td>Round Area Frame and Grate</td>
</tr>
<tr>
<td>7.1.0</td>
<td>3/05 R1</td>
<td>Precast Concrete Curb</td>
</tr>
<tr>
<td>7.1.1</td>
<td>6/10 R2</td>
<td>3'-0” Precast Concrete Transition Curb</td>
</tr>
<tr>
<td>7.1.2</td>
<td>3/05 R1</td>
<td>6'-0” Precast Concrete Transition Curb</td>
</tr>
<tr>
<td>7.1.3</td>
<td>3/05 R1</td>
<td>Precast Concrete Wheelchair Ramp Transition Curb</td>
</tr>
<tr>
<td>7.1.3A</td>
<td>9/12</td>
<td>High Side Transition Curb Length</td>
</tr>
<tr>
<td>7.1.4</td>
<td>3/05 R1</td>
<td>Precast Concrete 2'-0” Radius Corner</td>
</tr>
<tr>
<td>7.1.5</td>
<td>3/05 R1</td>
<td>Precast Concrete Inlet Stone (for Square Catch Basin)</td>
</tr>
<tr>
<td>7.1.6</td>
<td>3/05 R1</td>
<td>Precast Concrete Inlet Stone (for Round Catch Basin)</td>
</tr>
<tr>
<td>7.1.7</td>
<td>3/05 R1</td>
<td>Precast Concrete Apron Stone (for Square Catch Basin)</td>
</tr>
<tr>
<td>7.1.8</td>
<td>3/05 R1</td>
<td>Precast Concrete Apron Stone (for Round Catch Basin)</td>
</tr>
<tr>
<td>7.1.9</td>
<td>9/12 R1</td>
<td>Precast Concrete Ramp Stone</td>
</tr>
<tr>
<td>7.2.0</td>
<td>3/05 R1</td>
<td>Precast Concrete Sloped Face Curb</td>
</tr>
<tr>
<td>7.2.1</td>
<td>3/05 R1</td>
<td>Precast Concrete Sloped Face Transition Curb</td>
</tr>
<tr>
<td>7.2.2</td>
<td>3/05 R1</td>
<td>Precast Concrete Transition Curb (Vertical Face to Sloped Face)</td>
</tr>
<tr>
<td>7.2.3</td>
<td>6/98</td>
<td>Precast Concrete Lot Curb</td>
</tr>
<tr>
<td>7.2.4</td>
<td>3/05 R1</td>
<td>Precast Concrete Car Stops</td>
</tr>
<tr>
<td>7.3.0</td>
<td>9/12 R2</td>
<td>Granite Curb</td>
</tr>
<tr>
<td>7.3.1</td>
<td>9/12 R3</td>
<td>3’-0” Granite Transition Curb</td>
</tr>
<tr>
<td>7.3.2</td>
<td>9/12 R2</td>
<td>6’-0” Granite Transition Curb</td>
</tr>
<tr>
<td>7.3.3</td>
<td>9/12 R2</td>
<td>Granite Wheelchair Ramp Transition Curb</td>
</tr>
<tr>
<td>7.3.4</td>
<td>9/12 R2</td>
<td>Granite 2’-0” Radius Corner</td>
</tr>
<tr>
<td>7.3.5</td>
<td>9/12 R2</td>
<td>Granite Inlet Stone (for Square Catch Basin)</td>
</tr>
</tbody>
</table>
**RHODE ISLAND STANDARD DETAILS**

**INDEX**

<table>
<thead>
<tr>
<th>Detail No.</th>
<th>Date</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.3.6</td>
<td>9/12 R2</td>
<td>Granite Inlet Stone (for Round Catch Basin)</td>
</tr>
<tr>
<td>7.3.7</td>
<td>9/12 R2</td>
<td>Granite Apron Stone (for Square Catch Basin)</td>
</tr>
<tr>
<td>7.3.8</td>
<td>9/12 R2</td>
<td>Granite Apron Stone (for Round Catch Basin)</td>
</tr>
<tr>
<td>7.3.9</td>
<td>9/12 R2</td>
<td>Granite Ramp Stone</td>
</tr>
<tr>
<td>7.4.0</td>
<td>3/05 R1</td>
<td>Granite Sloped Face Curb</td>
</tr>
<tr>
<td>7.4.1</td>
<td>3/05 R1</td>
<td>Granite Sloped Face Transition Curb</td>
</tr>
<tr>
<td>7.4.2</td>
<td>3/05 R1</td>
<td>Granite Transition Curb (Vertical Face to Sloped Face)</td>
</tr>
<tr>
<td>7.5.0</td>
<td>3/05 R1</td>
<td>Bituminous Concrete Lip Curb</td>
</tr>
<tr>
<td>7.5.1</td>
<td>3/05 R1</td>
<td>Bituminous Berm</td>
</tr>
<tr>
<td>7.6.0</td>
<td>3/05 R1</td>
<td>Curb Setting Detail</td>
</tr>
<tr>
<td>7.7.0</td>
<td>3/14</td>
<td>Granite Truck Apron Stone</td>
</tr>
<tr>
<td>8.1.0</td>
<td>6/98</td>
<td>Seeded Ditch</td>
</tr>
<tr>
<td>8.2.0</td>
<td>6/98</td>
<td>Bituminous Concrete Ditch</td>
</tr>
<tr>
<td>8.3.0</td>
<td>6/98</td>
<td>Rip-Rap Ditch</td>
</tr>
<tr>
<td>8.4.0</td>
<td>6/98</td>
<td>Paved Waterway</td>
</tr>
<tr>
<td>9.1.0</td>
<td>6/98</td>
<td>Baled Hay Erosion Check</td>
</tr>
<tr>
<td>9.2.0</td>
<td>6/98</td>
<td>Silt Fence Detail</td>
</tr>
<tr>
<td>9.3.0</td>
<td>6/98</td>
<td>Baled Hay Erosion Check and Silt Fence Combined</td>
</tr>
<tr>
<td>9.4.0</td>
<td>6/98</td>
<td>Baled Hay Ditch and Swale Erosion Check</td>
</tr>
<tr>
<td>9.5.0</td>
<td>6/98</td>
<td>Log and Hay Check Dam</td>
</tr>
<tr>
<td>9.6.0</td>
<td>6/98</td>
<td>Sand Bag Erosion Check</td>
</tr>
<tr>
<td>9.7.0</td>
<td>6/98</td>
<td>Dewatering Basin</td>
</tr>
<tr>
<td>9.8.0</td>
<td>6/98</td>
<td>Baled Hay Catch Basin Inlet Protection</td>
</tr>
<tr>
<td>9.9.0</td>
<td>6/98</td>
<td>Construction Access</td>
</tr>
<tr>
<td>Detail No.</td>
<td>Date</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>10.1.0</td>
<td>6/98</td>
<td>Wet Stone Masonry Retaining Wall</td>
</tr>
<tr>
<td>10.2.0</td>
<td>6/98</td>
<td>Rubble Masonry Wall</td>
</tr>
<tr>
<td>10.3.0</td>
<td>6/98</td>
<td>Concrete Retaining Wall</td>
</tr>
<tr>
<td>10.4.0</td>
<td>6/98</td>
<td>Stone Masonry Steps</td>
</tr>
<tr>
<td>11.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>12.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>13.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>14.1.0</td>
<td>6/98</td>
<td>Concrete Highway Bound</td>
</tr>
<tr>
<td>14.2.0</td>
<td>6/98</td>
<td>Granite Highway Bound</td>
</tr>
<tr>
<td>14.3.0</td>
<td>6/98</td>
<td>Highway Bound Set in Concealed Ledge</td>
</tr>
<tr>
<td>14.4.0</td>
<td>6/98</td>
<td>Reinforced Concrete Precise Level Monument</td>
</tr>
<tr>
<td>14.4.1</td>
<td>6/98</td>
<td>Standard Bench Mark Heads</td>
</tr>
<tr>
<td>14.4.2</td>
<td>6/98</td>
<td>Standard Marker Triangulation Station</td>
</tr>
<tr>
<td>14.4.3</td>
<td>6/98</td>
<td>Geodetic Survey Disk</td>
</tr>
<tr>
<td>14.5.0</td>
<td>6/98</td>
<td>Survey Wedge</td>
</tr>
<tr>
<td>14.5.1</td>
<td>6/98</td>
<td>Survey Stake</td>
</tr>
<tr>
<td>15.1.0</td>
<td>6/10</td>
<td>Post and Mounting for Rural Mailbox</td>
</tr>
<tr>
<td>15.1.1</td>
<td>6/10</td>
<td>Setting and Mounting Dimensions for Rural Mailbox</td>
</tr>
<tr>
<td>15.2.0</td>
<td>6/10</td>
<td>Post and Multiple Mountings for Rural Mailboxes</td>
</tr>
<tr>
<td>16.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>17.1.0</td>
<td>6/98</td>
<td>Traffic Monitoring Station Single Junction Box Wood Post Detail</td>
</tr>
<tr>
<td>17.1.1</td>
<td>6/98</td>
<td>Traffic Monitoring Station Double Junction Box Wood Post Detail</td>
</tr>
<tr>
<td>17.2.0</td>
<td>6/98</td>
<td>Traffic Monitoring Station Portable Computer Cable</td>
</tr>
<tr>
<td>17.3.0</td>
<td>6/98</td>
<td>Traffic Monitoring Station Pole Mounted Cabinet</td>
</tr>
</tbody>
</table>
### RHODE ISLAND STANDARD DETAILS

#### INDEX

<table>
<thead>
<tr>
<th>Detail No.</th>
<th>Date</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.3.1</td>
<td>6/98</td>
<td>Traffic Monitoring Station Type “H” Cabinet Post Mounted Installation</td>
</tr>
<tr>
<td>17.3.2</td>
<td>6/98</td>
<td>Traffic Monitoring Station Type “H” Cabinet – Electrical Service</td>
</tr>
<tr>
<td>17.4.0</td>
<td>6/98</td>
<td>Traffic Monitoring Station Controller Cabinet Ground Mounted Installation</td>
</tr>
<tr>
<td>17.4.1</td>
<td>6/98</td>
<td>Traffic Monitoring Station Controller Cabinet Wiring Details – Interior</td>
</tr>
<tr>
<td>17.5.0</td>
<td>6/98</td>
<td>Traffic Monitoring Station Power Outlet Box</td>
</tr>
<tr>
<td>17.6.0</td>
<td>6/98</td>
<td>Traffic Monitoring Station Flexible Conduit Installation</td>
</tr>
<tr>
<td>17.7.0</td>
<td>6/98</td>
<td>Traffic Monitoring Station Loop Wire Layout for Directional Counting</td>
</tr>
<tr>
<td>17.7.1</td>
<td>6/98</td>
<td>Traffic Monitoring Station Loop Wire Layout for Multiple Lanes in the Same Direction</td>
</tr>
<tr>
<td>17.7.2</td>
<td>6/98</td>
<td>Traffic Monitoring Station Axle Sensor and Loop Layout</td>
</tr>
<tr>
<td>17.7.3</td>
<td>6/98</td>
<td>Traffic Monitoring Station Loop Dimensions</td>
</tr>
<tr>
<td>17.7.4</td>
<td>6/98</td>
<td>Traffic Monitoring Station Loop Wire Installation</td>
</tr>
<tr>
<td>17.7.5</td>
<td>6/98</td>
<td>Traffic Monitoring Station Sawcut Cross-Section with a Pavement Overlay</td>
</tr>
<tr>
<td>17.7.6</td>
<td>6/98</td>
<td>Traffic Monitoring Station Sawcut Cross-Section without a Pavement Overlay</td>
</tr>
<tr>
<td>18.1.0</td>
<td>6/08</td>
<td>R1 Concrete Light Standard Base</td>
</tr>
<tr>
<td>18.1.1</td>
<td>6/08</td>
<td>Breakaway Support Couplings for Light Standards</td>
</tr>
<tr>
<td>18.2.0</td>
<td>11/13</td>
<td>R3 Precast Type “A” Handhole</td>
</tr>
<tr>
<td>18.2.1</td>
<td>5/11</td>
<td>R3 Precast Type “H” Heavy-Duty Handhole</td>
</tr>
<tr>
<td>18.2.2</td>
<td>5/11</td>
<td>R3 Precast Type “B” Heavy-Duty Handhole</td>
</tr>
<tr>
<td>18.3.0</td>
<td>6/08</td>
<td>R1 Aluminum Lighting Standards</td>
</tr>
<tr>
<td>18.3.1</td>
<td>6/08</td>
<td>R1 Aluminum Pole – Grounding Detail</td>
</tr>
<tr>
<td>18.3.2</td>
<td>6/08</td>
<td>R1 Typical Luminaire – Wiring Diagram</td>
</tr>
<tr>
<td>18.3.3</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>18.3.4</td>
<td>6/98</td>
<td>Breakaway Support Couplings for Light Standards</td>
</tr>
<tr>
<td>18.3.5</td>
<td>6/08</td>
<td>R1 Recessed Bolt Couplings for Light Standards</td>
</tr>
</tbody>
</table>
### INDEX

<table>
<thead>
<tr>
<th>Detail No.</th>
<th>Date</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.3.6</td>
<td>6/08</td>
<td>Typical Wiring Diagrams</td>
</tr>
<tr>
<td>18.3.7</td>
<td>6/08</td>
<td>Underpass Lighting Detail</td>
</tr>
<tr>
<td>18.4.0</td>
<td>6/08 R1</td>
<td>Service Pedestal</td>
</tr>
<tr>
<td>18.4.1</td>
<td>6/08 R1</td>
<td>Service Pedestal – Grounding Detail</td>
</tr>
<tr>
<td>18.4.2</td>
<td>6/08 R1</td>
<td>Service Pedestal 240/480 Volts – 3W</td>
</tr>
<tr>
<td>18.4.3</td>
<td>6/08 R1</td>
<td>Service Pedestal 240/480 Volts – 3W</td>
</tr>
<tr>
<td>18.4.4</td>
<td>6/08 R1</td>
<td>Service Pedestal 120/240 or 120/208 Volts – 3W</td>
</tr>
<tr>
<td>18.4.5</td>
<td>6/08 R1</td>
<td>Service Pedestal 120/240 or 120/208 Volts – 3W</td>
</tr>
<tr>
<td>18.4.6</td>
<td>6/08</td>
<td>Service Pedestal Foundation</td>
</tr>
<tr>
<td>18.5.0</td>
<td>6/98</td>
<td>Phase-Neutral Connector Kit</td>
</tr>
<tr>
<td>18.6.0</td>
<td>6/08 R1</td>
<td>Trench Detail for Conduit in Existing Roadway</td>
</tr>
<tr>
<td>18.6.1</td>
<td>6/08</td>
<td>Light Conduit – Road/Ramp Crossing</td>
</tr>
<tr>
<td>18.6.2</td>
<td>6/08</td>
<td>Expansion Joints</td>
</tr>
<tr>
<td>18.6.3</td>
<td>6/08</td>
<td>Pullboxes – Type “V” and Type “W”</td>
</tr>
<tr>
<td>18.7.0</td>
<td>6/08 R1</td>
<td>Riser Pole Detail</td>
</tr>
<tr>
<td>19.1.0</td>
<td>6/98</td>
<td>Ground Mounted Controller Installation</td>
</tr>
<tr>
<td>19.1.1</td>
<td>6/98</td>
<td>Pole Mounted Controller Installation</td>
</tr>
<tr>
<td>19.2.0</td>
<td>6/98</td>
<td>Steel Mast Arm</td>
</tr>
<tr>
<td>19.3.0</td>
<td>6/98</td>
<td>Steel Span Pole</td>
</tr>
<tr>
<td>19.4.0</td>
<td>6/98</td>
<td>Aluminum Pedestal</td>
</tr>
<tr>
<td>19.5.0</td>
<td>6/98</td>
<td>Mast Arm and Span Pole Foundation</td>
</tr>
<tr>
<td>19.5.1</td>
<td>6/98</td>
<td>Ornamental Mast Arm Foundation</td>
</tr>
<tr>
<td>19.6.0A</td>
<td>6/98</td>
<td>Inductance Loop Vehicle Detector Installation Details (Sheet 1 of 2)</td>
</tr>
<tr>
<td>19.6.0B</td>
<td>6/98</td>
<td>Inductance Loop Vehicle Detector Installation Details (Sheet 2 of 2)</td>
</tr>
</tbody>
</table>
### RHODE ISLAND STANDARD DETAILS

#### INDEX

<table>
<thead>
<tr>
<th>Detail No.</th>
<th>Date</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.1.0</td>
<td>6/98</td>
<td>Pavement Markings – Arrows and Only</td>
</tr>
<tr>
<td>20.2.0</td>
<td>6/98</td>
<td>Bi-Directional Control Device</td>
</tr>
<tr>
<td>20.3.0</td>
<td>2/18</td>
<td>Pavement Markings – Crosswalks and Stop Lines</td>
</tr>
<tr>
<td>20.4.0</td>
<td>2/18</td>
<td>Pavement Markings – Yield Line</td>
</tr>
<tr>
<td>21.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>22.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>23.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>24.1.0</td>
<td>6/98</td>
<td>Sign Post Selection and Installation Details Square Post (Signs up to 8’-0” W x 4’-0” H)</td>
</tr>
<tr>
<td>24.2.0</td>
<td>6/98</td>
<td>Sign Post Selection and Installation Details U-Channel Post (Signs up to 8’-0” W x 4’-0”H)</td>
</tr>
<tr>
<td>24.3.0</td>
<td>6/98</td>
<td>Construction and Temporary Sign Mountings (Signs up to 60 Sq. Ft.)</td>
</tr>
<tr>
<td>24.4.0</td>
<td>6/98</td>
<td>Cantilever Breakaway Sign Support for 4’-0” to 5’-0” Sidewalks</td>
</tr>
<tr>
<td>24.5.0</td>
<td></td>
<td>No Detail Assigned</td>
</tr>
<tr>
<td>24.6.0</td>
<td>6/98</td>
<td>Parking Sign Mounting Detail</td>
</tr>
<tr>
<td>24.6.1</td>
<td>6/98</td>
<td>Street Sign Mounting Detail</td>
</tr>
<tr>
<td>24.6.2</td>
<td>6/98</td>
<td>Mile Marker Mounting Detail</td>
</tr>
<tr>
<td>24.6.3</td>
<td>6/98</td>
<td>Lightweight Steel Delineator Mounting Detail</td>
</tr>
<tr>
<td>24.6.4</td>
<td>6/98</td>
<td>Bridge Abutment Marker Mounting Detail</td>
</tr>
<tr>
<td>25.1.0</td>
<td>6/98</td>
<td>Temporary Construction Sign Cover Detail</td>
</tr>
<tr>
<td>25.2.0</td>
<td>5/11 R1</td>
<td>Box Form</td>
</tr>
<tr>
<td>26.1.0</td>
<td>3/05 R1</td>
<td>Fluorescent Traffic Cone</td>
</tr>
<tr>
<td>26.2.0</td>
<td>3/05 R1</td>
<td>Polyethylene Drum with Markings</td>
</tr>
<tr>
<td>26.3.0</td>
<td>3/05 R1</td>
<td>PVC Plastic Pipe Type III Barricade</td>
</tr>
<tr>
<td>Detail No.</td>
<td>Date</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------</td>
</tr>
<tr>
<td>26.3.1</td>
<td>3/05 R1</td>
<td>Plastic Pipe Type III Barricade</td>
</tr>
<tr>
<td>27.1.0</td>
<td>6/98</td>
<td>Regulatory Signs</td>
</tr>
<tr>
<td>27.1.1</td>
<td>6/98</td>
<td>Traffic Fines In Work Zone Regulatory Sign</td>
</tr>
<tr>
<td>28.1.0</td>
<td>6/98</td>
<td>Warning Signs</td>
</tr>
<tr>
<td>29.1.0</td>
<td>6/98</td>
<td>Construction Signs</td>
</tr>
<tr>
<td>29.1.1</td>
<td>6/98</td>
<td>Field Office Identification Sign</td>
</tr>
<tr>
<td>29.2.0</td>
<td>6/98</td>
<td>Guide Signs</td>
</tr>
<tr>
<td>30.1.0</td>
<td>6/98</td>
<td>Sign Location Details (Signs 6'-0&quot;W x 4'-0&quot;H and Greater)</td>
</tr>
<tr>
<td>30.1.1</td>
<td>6/98</td>
<td>Post Selection Table for Breakaway Signs (Signs 6'-0&quot;W x 4'-0&quot;H and Greater)</td>
</tr>
<tr>
<td>30.2.0</td>
<td>6/98</td>
<td>Foundation Details (Signs 6'-0&quot;W x 4'-0&quot;H and Greater)</td>
</tr>
<tr>
<td>30.2.1</td>
<td>6/98</td>
<td>Foundation Modification for Retrofit (Signs 6'-0&quot;W x 4'-0&quot;H and Greater)</td>
</tr>
<tr>
<td>30.3.0</td>
<td>6/98</td>
<td>Sign Panel Details (Signs 6'-0&quot;W x 4'-0&quot;H and Greater)</td>
</tr>
<tr>
<td>30.3.1</td>
<td>6/98</td>
<td>Post Clip and Bolt Detail (for Extruded Aluminum)</td>
</tr>
<tr>
<td>30.4.0</td>
<td>6/98</td>
<td>Ground Mounted Primary Directional Sign Post on Breakaway Couplings</td>
</tr>
<tr>
<td>30.4.1</td>
<td>6/98</td>
<td>Bracket Selection Table, Bolt Circle and General Notes</td>
</tr>
<tr>
<td>30.4.2</td>
<td>6/98</td>
<td>Installation Notes</td>
</tr>
<tr>
<td>30.4.3</td>
<td>6/98</td>
<td>Bill of Materials</td>
</tr>
<tr>
<td>31.1.0</td>
<td>6/10 R2</td>
<td>Chain Link Fence 3'-0&quot; to 4'-0&quot;</td>
</tr>
<tr>
<td>31.2.0</td>
<td>6/10 R2</td>
<td>Chain Link Fence 5'-0&quot; to 6'-0&quot;</td>
</tr>
<tr>
<td>31.2.1</td>
<td>3/05 R1</td>
<td>Chain Link Fence 5'-0&quot; to 6'-0&quot; Intermediate Post</td>
</tr>
<tr>
<td>31.3.0</td>
<td>3/05 R1</td>
<td>Woven Wire Right-of-Way Fence (Steel Post)</td>
</tr>
<tr>
<td>32.1.0</td>
<td></td>
<td>No Detail Assigned</td>
</tr>
</tbody>
</table>
# RHODE ISLAND STANDARD DETAILS

## INDEX

<table>
<thead>
<tr>
<th>Detail No.</th>
<th>Date</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.1.0</td>
<td></td>
<td>No Detail Assigned</td>
</tr>
<tr>
<td>34.1.0</td>
<td>9/12 R1</td>
<td>Roadside Guardrail Installation</td>
</tr>
<tr>
<td>34.1.1</td>
<td>6/98</td>
<td>Typical Guardrail Installation at Structures</td>
</tr>
<tr>
<td>34.1.2</td>
<td>6/98</td>
<td>Typical Guardrail Post Installation in Ledge</td>
</tr>
<tr>
<td>34.2.0</td>
<td>6/98</td>
<td>Steel Beam Guardrail</td>
</tr>
<tr>
<td>34.2.1</td>
<td>6/98</td>
<td>Steel Beam Guardrail Details</td>
</tr>
<tr>
<td>34.2.2</td>
<td>6/98</td>
<td>Steel Beam Guardrail Double Face Assembly</td>
</tr>
<tr>
<td>34.2.3</td>
<td>6/98</td>
<td>Steel Beam Guardrail Fixtures</td>
</tr>
<tr>
<td>34.2.4</td>
<td>6/98</td>
<td>Steel Beam Guardrail Post and Offset Bracket “C” Section</td>
</tr>
<tr>
<td>34.2.5</td>
<td>6/98</td>
<td>Steel Beam Guardrail ReflectORIZED Triangular Delineator</td>
</tr>
<tr>
<td>34.3.0</td>
<td>6/98</td>
<td>Earth Berm for Roadside Barrier Terminal Sections</td>
</tr>
<tr>
<td>34.3.1</td>
<td>6/98</td>
<td>Guardrail End Section</td>
</tr>
<tr>
<td>34.3.2</td>
<td>6/98</td>
<td>Terminal End Section (Single Face)</td>
</tr>
<tr>
<td>34.3.3</td>
<td>6/98</td>
<td>Anchorage Details Approach End Section</td>
</tr>
<tr>
<td>34.3.4</td>
<td>6/98</td>
<td>Anchorage Details Trailing End Section</td>
</tr>
<tr>
<td>34.3.5</td>
<td>6/98</td>
<td>Guardrail Connection to Existing End Post Approach End Section</td>
</tr>
<tr>
<td>34.3.6</td>
<td>6/98</td>
<td>Guardrail Connection to Existing End Post Trailing End Section</td>
</tr>
<tr>
<td>34.3.7</td>
<td>6/98</td>
<td>Guardrail Connection to Barrier Approach End Section</td>
</tr>
<tr>
<td>34.3.8</td>
<td>6/98</td>
<td>Guardrail Connection to Barrier Trailing End Section</td>
</tr>
<tr>
<td>34.4.0</td>
<td>3/05 R1</td>
<td>Steel Backed Timber Guardrail</td>
</tr>
<tr>
<td>34.4.1</td>
<td>3/05 R1</td>
<td>Steel Backed Timber Guardrail Terminal Section – Type 1</td>
</tr>
<tr>
<td>34.4.2</td>
<td>3/05 R1</td>
<td>Steel Backed Timber Guardrail Terminal Section – Type 2</td>
</tr>
<tr>
<td>34.5.3</td>
<td>5/09</td>
<td>Steel Thrie Beam Guardrail Single Face</td>
</tr>
<tr>
<td>34.5.4</td>
<td>5/09</td>
<td>Steel Thrie Beam Guardrail Double Face</td>
</tr>
</tbody>
</table>
### RHODE ISLAND STANDARD DETAILS

**INDEX**

<table>
<thead>
<tr>
<th>Detail No.</th>
<th>Date</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>36.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>37.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>38.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>39.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>40.1.0</td>
<td>6/98</td>
<td>Double-Faced Precast Median Barrier</td>
</tr>
<tr>
<td>40.2.0</td>
<td>6/98</td>
<td>Single-Faced Precast Median Barrier</td>
</tr>
<tr>
<td>40.2.1</td>
<td>7/09 R1</td>
<td>Single-Faced Precast Median Barrier with Concrete Slab</td>
</tr>
<tr>
<td>40.3.0</td>
<td>6/98</td>
<td>Precast Median Barrier Transition Unit</td>
</tr>
<tr>
<td>40.4.0</td>
<td>6/98</td>
<td>Precast Median Barrier for Light Standard</td>
</tr>
<tr>
<td>40.5.0</td>
<td>11/13 R2</td>
<td>Unanchored Precast Concrete Barrier for Temporary Traffic Control</td>
</tr>
<tr>
<td>41.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>42.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>43.1.0</td>
<td>6/10 R2</td>
<td>Cement Concrete Sidewalk</td>
</tr>
<tr>
<td>43.2.0</td>
<td>6/10 R2</td>
<td>Bituminous Concrete Sidewalk</td>
</tr>
<tr>
<td>43.3.0</td>
<td>9/12 R3</td>
<td>Wheelchair Ramp</td>
</tr>
<tr>
<td>43.3.1</td>
<td>9/12 R2</td>
<td>Wheelchair Ramp for Limited Right-of-Way Areas</td>
</tr>
<tr>
<td>43.3.2</td>
<td>3/15</td>
<td>Ramp Landing for Narrow Sidewalk</td>
</tr>
<tr>
<td>43.4.0</td>
<td>6/10 R3</td>
<td>Driveway Development for 3’-0” Transition Curb</td>
</tr>
<tr>
<td>43.4.1</td>
<td>6/08 R2</td>
<td>Driveway Development for 6’-0” Transition Curb</td>
</tr>
<tr>
<td>43.5.0</td>
<td>6/10 R3</td>
<td>Cement Concrete Driveways</td>
</tr>
<tr>
<td>44.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>45.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>46.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>Detail No.</td>
<td>Date</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>47.1.0</td>
<td>6/98</td>
<td>Pavement Removal Drop-Off Detail</td>
</tr>
<tr>
<td>47.1.1</td>
<td>6/98</td>
<td>Transverse Pavement Cut and Match</td>
</tr>
<tr>
<td>48.1.0</td>
<td>9/12 R2</td>
<td>Detectable Warning Panel Placement</td>
</tr>
<tr>
<td>49.1.0</td>
<td></td>
<td>No Standard Assigned</td>
</tr>
<tr>
<td>50.1.0</td>
<td>6/98</td>
<td>Large Tree Staking and Planting Detail (2” Caliper and Greater)</td>
</tr>
<tr>
<td>50.1.1</td>
<td>6/98</td>
<td>Tree Planting on Slope</td>
</tr>
<tr>
<td>50.1.2</td>
<td>6/98</td>
<td>Paver Detail Around New Trees</td>
</tr>
<tr>
<td>50.2.0</td>
<td>6/98</td>
<td>Evergreen Tree Planting Detail (4’-0” High and Greater)</td>
</tr>
<tr>
<td>50.3.0</td>
<td>6/98</td>
<td>Ball and Burlap Shrub Planting Detail</td>
</tr>
<tr>
<td>50.3.1</td>
<td>6/98</td>
<td>Container Grown Shrub Planting Detail</td>
</tr>
<tr>
<td>50.3.2</td>
<td>6/98</td>
<td>Shrub Planting on Slope</td>
</tr>
<tr>
<td>50.4.0</td>
<td>6/98</td>
<td>Perennial Planting Detail</td>
</tr>
<tr>
<td>50.5.0</td>
<td>6/98</td>
<td>Ornamental Grass Planting Detail</td>
</tr>
<tr>
<td>50.6.0</td>
<td>6/98</td>
<td>Groundcover Planting Detail</td>
</tr>
<tr>
<td>50.7.0</td>
<td>6/98</td>
<td>Bulb Planting Detail</td>
</tr>
<tr>
<td>51.1.0</td>
<td>6/98</td>
<td>Tree Protection Device</td>
</tr>
<tr>
<td>51.1.1</td>
<td>6/98</td>
<td>Drip Line Tree Protection Device for Existing Trees</td>
</tr>
<tr>
<td>51.2.0</td>
<td>6/98</td>
<td>Shrub Protection Device</td>
</tr>
<tr>
<td>51.3.0</td>
<td>6/98</td>
<td>Tree Well</td>
</tr>
<tr>
<td>51.4.0</td>
<td>6/98</td>
<td>Tree Wall</td>
</tr>
</tbody>
</table>
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 703 OF THE R.I. STANDARD SPECIFICATIONS.
2. WIDTH (W) OF TRENCH = INSIDE DIAMETER OF PIPE + 1'-0" OR 2'-0"
   WHICH EVER IS GREATER.
3. MINIMUM PIPE DIAMETER 8".
4. DISTANCE DIMENSIONS ARE GIVEN TO THE OUTSIDE DIAMETER OF PIPE.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

UNDERDRAIN

R.I. STANDARD
1.1.0

JUNE 15, 1998
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 703 OF THE R.I. STANDARD SPECIFICATIONS.
2. MINIMUM PIPE DIAMETER 1'-0".
3. TRENCH WIDTHS: PIPE ≤ 36" = O.D. + 24"
   EACH SIDE
   PIPE > 36" = O.D. + 30"
   EACH SIDE
4. DISTANCE DIMENSIONS ARE GIVEN TO THE OUTSIDE DIAMETER OF PIPE.
5. SEE CONSTRUCTION PLANS FOR LOCATION.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 709 OF THE R.I. STANDARD SPECIFICATIONS.
2. MAXIMUM PIPE DIAMETER FOR USE OF CONNECTING COLLAR IS 2'-0".
3. PIPE WITH LARGEST OUTSIDE DIAMETER USED TO DETERMINE SIZE OF COLLAR.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

CONCRETE CONNECTING COLLAR

JUNE 15, 1998

R.I. STANDARD 1.3.0
1-#6 x 3'-0"long (MIN.) E.F. E.S.
ADDITIONAL BARS

1'-0" to 2'-6" @

1'-0"(MIN.)

1-#6 x 3'-0"long (MIN.) E.F. E.S.
ADDITIONAL BARS

B

3'-0" to 6'-0" @

1'-0"(MIN.)

REPLACE AREA OF INTERRUPTED BARS AT THE OPENING WITH ONE HALF OF SAME BARS

SECTION A-A

SECTION B-B

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 709 OF THE R.I. STANDARD SPECIFICATIONS.
2. 3/4" CHAMFER ON ALL EXPOSED EDGES.
3. 1'-0" COMPACTED GRAVEL UNDER HEADDOWN.
4. ALL REINFORCING BARS SHALL BE EPOXY COATED.
#6 @ 1'-0", E.W., E.F.

**NOTES:**
1. SHALL BE IN ACCORDANCE WITH SECTION 709 OF THE STANDARD SPECIFICATIONS.
2. QUANTITIES GIVEN ARE FOR ONE ENDWALL.
3. FOR DIMENSIONS NOT GIVEN IN TABLE, SEE SHEET 2 OF 2.
4. ON SHALLOW FILLS, WHERE ENDWALLS ARE 1'-0" OR LESS BELOW SHOULDER LINE, THE TOP OF THE ENDWALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF THE ROAD.
5. ALL REINFORCING BARS SHALL BE EPOXY COATED.

**FOR CORRUGATED METAL PIPE**

<table>
<thead>
<tr>
<th>DIAMETER</th>
<th>S</th>
<th>T</th>
<th>FILL SLOPE 1 1/2:1</th>
<th>FILL SLOPE 2:1</th>
</tr>
</thead>
<tbody>
<tr>
<td>3'-6&quot;</td>
<td>5'-3 1/2&quot;</td>
<td>8'-9 1/2&quot;</td>
<td>5.1</td>
<td>5.8</td>
</tr>
<tr>
<td>4'-0&quot;</td>
<td>6'-0 1/2&quot;</td>
<td>10'-0 1/2&quot;</td>
<td>6.3</td>
<td>7.2</td>
</tr>
<tr>
<td>4'-6&quot;</td>
<td>6'-9 1/2&quot;</td>
<td>11'-3 1/2&quot;</td>
<td>8.3</td>
<td>8.4</td>
</tr>
<tr>
<td>5'-0&quot;</td>
<td>7'-6 1/2&quot;</td>
<td>12'-6 1/2&quot;</td>
<td>10.4</td>
<td>11.8</td>
</tr>
<tr>
<td>5'-6&quot;</td>
<td>8'-3 1/2&quot;</td>
<td>13'-9 1/2&quot;</td>
<td>12.8</td>
<td>14.6</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>9'-0 1/2&quot;</td>
<td>16'-0 1/2&quot;</td>
<td>16.7</td>
<td>17.9</td>
</tr>
<tr>
<td>6'-6&quot;</td>
<td>9'-9 1/2&quot;</td>
<td>16'-3 1/2&quot;</td>
<td>19.0</td>
<td>21.7</td>
</tr>
<tr>
<td>7'-0&quot;</td>
<td>10'-6 1/2&quot;</td>
<td>17'-6 1/2&quot;</td>
<td>22.8</td>
<td>26.0</td>
</tr>
</tbody>
</table>

**FOR CONCRETE PIPE**

<table>
<thead>
<tr>
<th>DIAMETER</th>
<th>S</th>
<th>T</th>
<th>FILL SLOPE 1 1/2:1</th>
<th>FILL SLOPE 2:1</th>
</tr>
</thead>
<tbody>
<tr>
<td>3'-6&quot;</td>
<td>6'-0&quot;</td>
<td>9'-0&quot;</td>
<td>4.1</td>
<td>5.5</td>
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<td>6'-10&quot;</td>
<td>10'-10&quot;</td>
<td>6.0</td>
<td>6.9</td>
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<tr>
<td>4'-6&quot;</td>
<td>7'-0&quot;</td>
<td>12'-2&quot;</td>
<td>7.7</td>
<td>8.8</td>
</tr>
<tr>
<td>5'-0&quot;</td>
<td>8'-6&quot;</td>
<td>13'-6&quot;</td>
<td>9.7</td>
<td>11.2</td>
</tr>
<tr>
<td>5'-6&quot;</td>
<td>9'-4&quot;</td>
<td>14'-10&quot;</td>
<td>12.1</td>
<td>13.9</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>10'-2&quot;</td>
<td>16'-2&quot;</td>
<td>14.7</td>
<td>16.9</td>
</tr>
<tr>
<td>6'-6&quot;</td>
<td>11'-0&quot;</td>
<td>17'-6&quot;</td>
<td>17.7</td>
<td>20.4</td>
</tr>
<tr>
<td>7'-0&quot;</td>
<td>11'-10&quot;</td>
<td>18'-10&quot;</td>
<td>21.2</td>
<td>24.4</td>
</tr>
</tbody>
</table>

**RHODE ISLAND DEPARTMENT OF TRANSPORTATION**

**STANDARD HEADWALLS FOR MULTIPLE 3'-6" TO 7'-0" PIPE CULVERTS**

**R.I. STANDARD 2.2.0A**

**JUNE 15, 1998**
<table>
<thead>
<tr>
<th>Diameter of Pipe Culverts</th>
<th>3'–6&quot;</th>
<th>4'–0&quot;</th>
<th>4'–6&quot;</th>
<th>5'–0&quot;</th>
<th>5'–6&quot;</th>
<th>6'–0&quot;</th>
<th>6'–6&quot;</th>
<th>7'–0&quot;</th>
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<tbody>
<tr>
<td>A 1'–6&quot;</td>
<td>1'–6&quot;</td>
<td>1'–6&quot;</td>
<td>1'–6&quot;</td>
<td>1'–6&quot;</td>
<td>1'–6&quot;</td>
<td>1'–6&quot;</td>
<td>1'–6&quot;</td>
<td>1'–6&quot;</td>
</tr>
<tr>
<td>B 4'–4&quot;</td>
<td>4'–4&quot;</td>
<td>5'–4&quot;</td>
<td>5'–10&quot;</td>
<td>6'–4&quot;</td>
<td>6'–10&quot;</td>
<td>7'–4&quot;</td>
<td>7'–10&quot;</td>
<td></td>
</tr>
<tr>
<td>C 3'–3 3/4&quot;</td>
<td>3'–9&quot;</td>
<td>4'–2 1/4&quot;</td>
<td>4'–7&quot;</td>
<td>5'–0 5/8&quot;</td>
<td>5'–5 3/4&quot;</td>
<td>5'–11&quot;</td>
<td>6'–4 1/4&quot;</td>
<td></td>
</tr>
<tr>
<td>D 3'–6&quot;</td>
<td>4'–0&quot;</td>
<td>4'–6&quot;</td>
<td>5'–0&quot;</td>
<td>6'–0&quot;</td>
<td>6'–6&quot;</td>
<td>7'–0&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E 0'–6&quot;</td>
<td>0'–6&quot;</td>
<td>0'–6&quot;</td>
<td>0'–6&quot;</td>
<td>0'–6&quot;</td>
<td>0'–6&quot;</td>
<td>0'–6&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H 0'–10&quot;</td>
<td>0'–10&quot;</td>
<td>0'–11&quot;</td>
<td>1'–0&quot;</td>
<td>1'–1&quot;</td>
<td>1'–2&quot;</td>
<td>1'–3&quot;</td>
<td>1'–4&quot;</td>
<td></td>
</tr>
<tr>
<td>J 11'–8 1/2&quot;</td>
<td>13'–2 1/4&quot;</td>
<td>14'–9 1/4&quot;</td>
<td>16'–4&quot;</td>
<td>17'–11&quot;</td>
<td>19'–6&quot;</td>
<td>21'–0 3/4&quot;</td>
<td>22'–7 5/8&quot;</td>
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</tr>
<tr>
<td>K 1'–11&quot;</td>
<td>2'–0 1/2&quot;</td>
<td>2'–3&quot;</td>
<td>2'–5 1/2&quot;</td>
<td>2'–8&quot;</td>
<td>2'–10 1/2&quot;</td>
<td>3'–1&quot;</td>
<td>3'–3 1/2&quot;</td>
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</tr>
<tr>
<td>L 6'–7 5/8&quot;</td>
<td>7'–5&quot;</td>
<td>8'–4 1/2&quot;</td>
<td>9'–2 7/8&quot;</td>
<td>10'–1 1/4&quot;</td>
<td>10'–11 5/8&quot;</td>
<td>11'–10&quot;</td>
<td>12'–8 3/8&quot;</td>
<td></td>
</tr>
<tr>
<td>P 5'–9&quot;</td>
<td>6'–6&quot;</td>
<td>7'–3&quot;</td>
<td>8'–0&quot;</td>
<td>8'–9&quot;</td>
<td>9'–6&quot;</td>
<td>10'–3&quot;</td>
<td>11'–0&quot;</td>
<td></td>
</tr>
<tr>
<td>Q 0'–11 1/2&quot;</td>
<td>0'–11 1/2&quot;</td>
<td>1'–0 1/2&quot;</td>
<td>1'–1 1/2&quot;</td>
<td>1'–2 1/2&quot;</td>
<td>1'–3 1/2&quot;</td>
<td>1'–4 1/2&quot;</td>
<td>1'–5 1/2&quot;</td>
<td></td>
</tr>
</tbody>
</table>

### For a 1 1/2:1 Fill Slope

<table>
<thead>
<tr>
<th>C.U.</th>
<th>Conc.</th>
<th>Pipe</th>
<th>C.M.</th>
<th>Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.6</td>
<td>4.4</td>
<td>5.7</td>
<td>7.1</td>
</tr>
</tbody>
</table>

### For a 2:1 Fill Slope

<table>
<thead>
<tr>
<th>C.U.</th>
<th>Conc.</th>
<th>Pipe</th>
<th>C.M.</th>
<th>Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.3</td>
<td>5.3</td>
<td>6.8</td>
<td>8.6</td>
</tr>
</tbody>
</table>

### C.M. Pipe

<table>
<thead>
<tr>
<th>C.U.</th>
<th>Conc.</th>
<th>Pipe</th>
<th>C.M.</th>
<th>Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.5</td>
<td>5.6</td>
<td>7.2</td>
<td>9.1</td>
</tr>
</tbody>
</table>

**Note:**

For all dimensions not shown, see values listed above for 1 1/2:1 fill slope.
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION 701 OF THE R.I. STANDARD SPECIFICATIONS.

R.I. STANDARD
2.3.0
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

SECTION A-A

BRICK/SOLID BLOCK
5'-0" OR 6'-0" ROUND MANHOLE

#6 @ 7" E.W.
3" COVER (PRECAST OPTIONAL)

3" COVER (TYP.)

CONCRETE BASE

PIPE

BRICK

STD. 5.3.0
1'-0" O.C.

8"
5'-0" OR 6'-0" Ø
8"

4" (TYP.)
6"
CONCRETE COVER
(SEE STD. 4.6.0 OR 4.6.1)

Drill and grout
#4 dowel (typ.)
(SEE STD. 4.6.0 OR 4.6.1)

4" frame and cover

Adjust to grade using mortar

#4 dowel (typ.)

4" (typ.)

3" cover (typ.)

3" cover

Concrete base
(precast optional)

1:25

6"

8"

8"

4'-0" or 5'-0"

BRICK/SOLID BLOCK INVERT

#5 @ 9" E.W.

1/2 Ø OF PIPE

SECTION A-A

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. ADJUST DOWEL LOCATION BASED ON PIPE CONFIGURATION, AS REQUIRED.
4. PIPE COVER FOR THIS DETAIL SHALL BE 1'-6" TO 3'-0".
5. ALL PIPES SHALL BE SEALED TO MANHOLE ON INSIDE AND OUTSIDE SURFACES.
6. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. USE 8" WALLS UP TO 6'-0" DEPTH AND 1'-0" WALLS UP TO 8'-0" DEPTH.

PLAN

CEMENT MORTAR SLOPED TRANSITION

SECTION A-A

SECTION B-B

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BRICK/SOLID BLOCK

TYPE "D" SQUARE CATCH BASIN

JUNE 15, 1998

R.I. STANDARD 3.3.0
PLAN

SECTION A-A

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BRICK/SOLID BLOCK
DRIVEWAY BASIN AND GUTTER INLET

R.I. STANDARD 3.3.1
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. USE 8" WALLS TO 6'-0" DEPTH, USE 1'-0" WALLS TO 8'-0" DEPTH.

FRAME AND GRATE (ORDER 4 FLANGE WHEN APRON STONE IS NOT USED)

CONCRETE BASE (PRECAST OPTIONAL)

SEEP HOLE
(2) #5 x 4'-0" LONG\nDIAGONAL (TYP.)
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

SOLID BLOCK FLUSH SQUARE CATCH BASIN

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. ALL REINFORCING BARS TO BE 5'-0" LONG UNLESS OTHERWISE NOTED.
4. USE 8" WALLS UP TO 6'-0" DEPTH AND 1'-0" WALLS UP TO 8'-0" DEPTH.
5. ALL REINFORCING SHALL BE EPOXY COATED.

SECTION A-A

SECTION B-B
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT ON ALL INSIDE AND OUTSIDE SURFACES.
3. USE 8" WALLS UP TO 6'-0" DEPTH, AND 1'-0" WALLS UP TO 8'-0" DEPTH.
4. TWO SINGLE FRAMES WITH THREE FLANGES AND TWIN GRATES MAY BE SUBSTITUTED FOR THE DOUBLE FRAME WITH TWIN GRATES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
BRICK/SOLID BLOCK DOUBLE GRATE CATCH BASIN
GRATE PARALLEL TO EDGE OF PAVEMENT
R.I. STANDARD 3.3.4
JUNE 15, 1998
ISSUE DATE
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT ON ALL INSIDE AND OUTSIDE SURFACES.
3. USE 8" WALLS UP TO 6'-0" DEPTH, AND 1'-0" WALLS UP TO 8'-0" DEPTH.
4. TWO SINGLE FRAMES WITH THREE FLANGES AND TWIN GRATES MAY BE SUBSTITUTED FOR THE DOUBLE FRAME WITH TWIN GRATES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BRICK/SOLID BLOCK DOUBLE GRATE CATCH BASIN
GRATE PERPENDICULAR TO EDGE OF PAVEMENT

R.I. STANDARD 3.3.5

JUNE 15, 1998
SECTION C-C

T = THICKNESS OF PAVEMENT

<table>
<thead>
<tr>
<th>SIDEWALK</th>
<th>GRAVEL SUBBASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₁ BARS (TOP)</td>
<td>D BAR</td>
</tr>
<tr>
<td>J BARS</td>
<td>G BARS (2-TOP)</td>
</tr>
<tr>
<td>C BARS</td>
<td>K₁ BARS (TOP)</td>
</tr>
<tr>
<td>(4)--#6 VERTICAL WITH #3 9&quot; TIES</td>
<td></td>
</tr>
</tbody>
</table>

A BARS

VARIATES 8" TO 18"

3"R (TYP.)

2"-3 1/2"

3"R (TYP.)

4 3/4" (TYP.)

2"-8"

3"R (TYP.)

4 3/4" (TYP.)

3"R (TYP.)

2"-8"

4 3/4" (TYP.)

4"-1 1/2"

3"R (TYP.)

4"-1 1/2"

NOTE: SKETCH SHOWS USE OF INLET SAGS. BOTH SIDES TO BE SYMMETRICAL.

FLOW

FLOW

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/4" EXPANSION JOINT NOT NECESSARY WHEN FLEXIBLE PAVEMENT IS USED FOR SIDEWALK OR ROADWAY.
3. THE COVERING FOR ALL REINFORCING STEEL SHALL BE 2", MEASURED FROM THE SURFACE OF THE CONCRETE TO THE FACE OF THE BAR, UNLESS OTHERWISE SHOWN.
4. THE HIGH CAPACITY INLET DETAILED HEREIN IS FOR USE ON A GRADE, IF IT IS TO BE USED IN A SAG, (SEE SKETCH HEREIN), IT SHOULD BE BUILT SYMMETRICALLY ABOUT THE CENTERLINE OF THE PIPE AND LENGTH OF OPENING SPECIFIED.
5. THE TYPE AND SIZE OF PIPE TO BE USED WITH THIS INLET SHALL BE THE TYPE AND SIZE AS CALLED FOR ON THE PLANS.
6. TYPICAL "KEYED" CONSTRUCTION JOINTS ARE SHOWN ON THE DETAILS HEREIN. OTHER "KEYED" OR "DOWELED" TYPE CONSTRUCTION JOINTS MAY BE USED IF ACCEPTABLE TO THE ENGINEER.
7. THE BEARING AREA OF FRAME AND COVER SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT FOR THE ENTIRE COVER IN THE FRAME. NO PROJECTIONS SHALL EXIST ON BEARING AREAS OF EITHER CASTING, AND THE COVER SHALL SEAT IN ITS FRAME WITHOUT ROCKING.
8. ALL REINFORCING BARS SHALL BE EPOXY COATED.
9. A SLAB TYPE MANHOLE AND STD. 7.1.0 PRECAST CURB TO BE USED WITH HIGH CAPACITY INLET.
10. THE BELL OR GROOVE OF CONCRETE PIPE CANNOT BE USED INSIDE THE INLET. IT MUST BE CUT OFF.
11. ALL EXPOSED EDGES AT CONSTRUCTION JOINTS SHALL BE BEVELED 3/4".
12. WHEN DEEMED NECESSARY, WEEP HOLES MAY BE INSTALLED IN THE SIDEWALLS OF INLETS DURING CONSTRUCTION TO PROVIDE BASE COURSE DRAINAGE PRIOR TO PLACEMENT OF PAVEMENT. THESE WEEP HOLES SHALL BE LOCATED AT OR BELOW SUBGRADE ELEVATION AS DIRECTED OR APPROVED BY THE ENGINEER TO PROPERLY DRAIN SUBSURFACE MATERIAL.
13. IF HIGH CAPACITY INLET IS TO BE CONSTRUCTED ALONG WITH A SIDEWALK, THE SIDEWALK SHALL BE CONSTRUCTED MONOLITHIC WITH THE TOP SLAB ON THE INLET. THE SIDEWALK SHALL BE REINFORCED WITH WELDED WIRE MESH 6x6 - W2.9 x W2.9 PLACED 2" BELOW SURFACE OF SIDEWALK AND EXTENDED INTO THE TOP SLAB OF THE INLET A MINIMUM DISTANCE OF 8".
14. BAR SIZES = B BARS, C BARS, D BARS, E BARS, F BARS, G BARS K₁ BARS AND K₂ BARS ARE ALL TO BE #5 BARS. H₁ BARS AND J BARS ARE ALL TO BE #6 BARS. A BARS ARE TO BE #7 BARS.
15. THE COST TO NOTCH THE CURB SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE CURBING.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.
3.4.2 STANDARD

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

TYPE "F" ROUND CATCH BASIN

- CONCRETE BASE
- BRICK/SOLID BLOCK

FRAME AND GRATE
(ORDER 4 FLANGE AND SQUARE RING WHEN APRON STONE IS NOT USED)

SECTION A-A
- PLAN
- PAVEMENT
- CONCRETE BASE
- SEEP HOLE

SECTION B-B
- BASE MAX.
- COVER 9"
- COVER 3"

REVISIONS

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BRICK/SOLID BLOCK
TYPE "F" ROUND CATCH BASIN

R.I. STANDARD
3.4.2

NO.  BY    DATE
1 MLP Mar 05

JUNE 15, 1998

CHIEF ENGINEER
JANET A. CAPPETTA

CHIEF DESIGN ENGINEER
EDWARD B. PARSONS

ISSUE DATE
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BRICK/SOLID BLOCK
TYPE "R" CATCH BASIN

REVISIONS

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<th>BY</th>
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<tr>
<td>1</td>
<td>MLP</td>
<td>Mar 05</td>
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JUNE 15, 1998
SOLID BLOCK FLUSH ROUND CATCH BASIN

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.
4. ALL REINFORCING SHALL BE EPOXY COATED.
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BRICK/SOLID BLOCK

5’-0” OR 6’-0” ROUND CATCH BASIN

JUNE 15, 1998

R.I. STANDARD 3.4.5
SECTION A-A

SECTION B-B

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. ADJUST DOWEL LOCATION BASED ON PIPE CONFIGURATION, AS REQUIRED.
4. USE 8" WALLS UP TO 6'-0" DEPTH, USE 1'-0" WALLS UP TO 8'-0" DEPTH.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. ADJUST DOWEL LOCATION BASED ON PIPE CONFIGURATION, AS REQUIRED.
4. USE 8" WALLS UP TO 6'-0" DEPTH, USE 1'-0" WALLS UP TO 8'-0" DEPTH.
FILL VOID UNDER GRATE FRAME WITH AN ADDITIONAL BLOCK COURSE AND GROUT INTO PLACE

CONCRETE COVER (SEE STD. 4.8.1)

DRILL AND GROUT #4 DOWEL (TYP.) (SEE STD. 4.8.1)

ADJUST TO GRADE USING MORTAR

JOINT SEALER (PIPE WILL BE SEALED TO CATCH BASIN ON INSIDE AND OUTSIDE SURFACES)

FRAME AND GRATE PAVEMENT

CURB

STD. 5.3.0 1'-0" O.C.

SOLID BLOCK

CEMENT MORTAR SLOPED TRANSITION

3" COVER (TYP.)

1'-0" # SEEP HOLE

CONCRETE BASE (PRECAST OPTIONAL)

3" COVER #5 9" E.W.

(2) #5 X 4'-0" LONG DIAGONAL (TYP.)

SECTION A-A

FRAME DETAILS

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. 8" HIGH FRAME MAY BE SUBSTITUTED WITH A 4" HIGH FRAME AS NEEDED. SHOP DRAWINGS ARE REQUIRED.
4. ADJUST DOWEL LOCATION BASED ON PIPE CONFIGURATION, IF REQUIRED.
5. PIPE COVER FOR THIS DETAIL SHALL BE 1'-6" TO 3'-0".
6. USE 8" WALLS UP TO 6'-0" DEPTH, USE 1'-0" WALLS UP TO 8'-0" DEPTH.
7. TWO SINGLE FRAMES WITH THREE FLANGES AND TWIN GRATES MAY BE SUBSTITUTED FOR THE DOUBLE FRAME WITH TWIN GRATES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SOLID BLOCK SHALLOW DOUBLE GRATE CATCH BASIN GRATE PARALLEL TO CURB

R.I. STANDARD 3.5.2

ISSUE ONE

JUNE 15, 1998

REVISIONS
NO. BY DATE
FILL VOID UNDER GRATE FRAME WITH AN ADDITIONAL BLOCK COURSE AND GROUT INTO PLACE

CONCRETE COVER (SEE STD. 4.8.1)

DRILL AND GROUT #4 DOWEL (TYP.) (SEE STD. 4.8.1)

ADJUST TO GRADE USING MORTAR

JOINT SEALER (PIPE WILL BE SEALED TO CATCH BASIN ON INSIDE AND OUTSIDE SURFACES)

FRAME AND GRATE PAVEMENT

BERM

STD. 5.3.0 1'-0" O.C.

SOLID BLOCK

CEMENT MORTAR SLOPED TRANSITION

3" COVER (TYP.)

1'-0" # SEEP HOLE

CONCRETE BASE (PRECAST OPTIONAL)

#5 @ 9 E.W.

(2)-#5 @ 4'-0" LONG DIAGONAL (TYP.)

SECTION A-A

SECTION B-B

SECTION C-C

FRAME DETAILS

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. 8" HIGH FRAME MAY BE SUBSTITUTED WITH A 4" HIGH FRAME AS NEEDED. SHOP DRAWINGS ARE REQUIRED.
4. ADJUST DOWEL LOCATION BASED ON PIPE CONFIGURATION, IF REQUIRED.
5. PIPE COVER FOR THIS DETAIL SHALL BE 1'-5" TO 3'-0".
6. USE 8" WALLS UP TO 6'-0" DEPTH, USE 4'-0" WALLS UP TO 8'-0" DEPTH.
7. TWO SINGLE FRAMES WITH THREE FLANGES AND TWIN GRATES MAY BE SUBSTITUTED FOR THE DOUBLE FRAME WITH TWIN GRATES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

SOLID BLOCK SHALLOW DOUBLE GRATE CATCH BASIN
GRATE PARALLEL TO EDGE OF PAVEMENT

R.I. STANDARD

JUNE 15, 1998

3.5.3
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. 8" HIGH FRAME MAY BE SUBSTITUTED WITH A 4" HIGH FRAME AS NEEDED. SHOP DRAWINGS ARE REQUIRED.
4. ADJUST DOWEL LOCATION BASED ON PIPE CONFIGURATION, IF REQUIRED.
5. PIPE COVER FOR THIS DETAIL SHALL BE 1'-5" TO 3'-0".
6. USE 6" WALLS UP TO 6'-0" DEPTH, USE 1'-0" WALLS UP TO 8'-0" DEPTH.
7. TWO SINGLE FRAMES WITH THREE FLANGES AND TWI GRATES MAY BE SUBSTITUTED FOR THE DOUBLE FRAME WITH TWI GRATES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SOLID BLOCK SHALLOW DOUBLE GRAPE CATCH BASIN
GRAPE PERPENDICULAR TO CURB
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. 8" HIGH FRAME MAY BE SUBSTITUTED WITH A 4" HIGH FRAME AS NEEDED. SHOP DRAWINGS ARE REQUIRED.
4. ADJUST DOWEL LOCATION BASED ON PIPE CONFIGURATION, IF REQUIRED.
5. PIPE COVER FOR THIS DETAIL SHALL BE 1'-6" TO 3'-0".
6. USE 8" WALLS UP TO 6'-0" DEPTH, USE 1'-0" WALLS UP TO 8'-0" DEPTH.
7. TWO SINGLE FRAMES WITH THREE FLANGES AND TWIN GRATES MAY BE SUBSTITUTED FOR THE DOUBLE FRAME WITH TWIN GRATES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SOLID BLOCK SHALLOW DOUBLE GRATE CATCH BASIN
GRATE PERPENDICULAR TO EDGE OF PAVEMENT
R.I. STANDARD 3.5.5

REVISIONS
NO. BY DATE

JUNE 15, 1998
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASSTR COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BRICK/SOLID BLOCK ROUND
MANHOLES AND CATCH BASINS
DEPTH GREATER THAN 12'-0''

R.I. STANDARD 3.7.0
ALTERNATE TOP LOADING (SEE NOTES 7 AND 8)

AS REQUIRED

4'-0"

FRAME AND COVER

ADJUST TO GRADE AS REQUIRED USING RED CLAY BRICK COURSE

8"
2'-0"

STEPS PER APPROVED PRODUCTS LIST 1'-0" O.C.

MORTAR ALL JOINTS TOTAL WIDTH OF WALL

4'-0"

5"

BRICK INVERT

1/2 # OF PIPE

PIPE OPENINGS CAST TO PLAN

6"

(SEE NOTE 3)

8" MIN. OVERLAP (TYP.)

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED = 0.12 SQ. IN./LIN. FT. MINIMUM.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN./LIN. FT. (BOTH WAYS).
4. ONE POUR MONOLITHIC BASE SECTION.
5. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
6. STEPS SHALL CONFORM TO STD. 5.3.0 AND SHALL BE INSTALLED AT THE CASTING PLANT.
7. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE STD. 4.7.2).
8. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
9. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PRECAST 4'-0" ROUND MANHOLE

JUNE 15, 1998

REVISIONS

NO.  BY  DATE

JUNE 15, 1998

R.I.  STANDARD

4.2.0
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. CIRCUMFERENCEAL STEEL REINFORCEMENT REQUIRED = 0.15 SQ. IN./LIN. FT. MINIMUM.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN./LIN. FT. (BOTH WAYS).
4. ONE POUR MONOLITHIC BASE SECTION.
5. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
6. STEPS SHALL CONFORM TO STD. 5.3.0 AND SHALL BE INSTALLED AT THE CASTING PLANT.
7. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE STD. 4.7.0).
8. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
9. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED = 0.15 SQ. IN./LIN. FT. MINIMUM.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN./LIN. FT. (BOTH WAYS).
4. ONE POUR MONOLITHIC BASE SECTION.
5. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
6. STEPS SHALL CONFORM TO STD. 5.3.0 AND SHALL BE INSTALLED AT THE CASTING PLANT.
7. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE STD. 4.7.2).
8. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
9. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PRECAST 6'-0" ROUND MANHOLE

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</table>

JUNE 15, 1998
ADJUST TO GRADE AS REQUIRED USING RED CLAY BRICK COURSE

2'-0" MAX. COVER

REFER TO STD. 4.6.1 FOR TOP SLAB FOR ALTERNATE TOP SLAB MONOLITHIC WITH RISER SECTION, SEE STD. 4.6.2

MORTAR ALL JOINTS TOTAL WITH OF WALL

#4 8" E.F., HORIZONTAL

#4 9" E.F., VERTICAL

#4 9" E.F., VERTICAL

REINFORCED CONCRETE PLUG FOR SLOTTED HOLES

#4 8" E.W., HORIZONTAL

SLOTTED HOLES WILL BE PERMITTED (SEE NOTE G)

CATCH BASIN

WIDTH (C) | A | B
---|---|---
4'-0" | 8" | 8"
6'-0" | 9" | 9"

FOR REINFORCING STEEL SEE CATCH BASIN

MANHOLE

PIECE OPENING CAST TO PLAN

1/2 ø OF PIPE

REINFORCED CONCRETE PLUG FOR SLOTTED HOLES

#4 4" BOTH WAYS

6" (TYP.)

2" COVER

SECTION B-B

WALL 3

WALL 1

PIECE ARMS

SECTION A-A

ALTERNATE POSITIONING OF VERTICAL BARS

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
3. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
4. TOP SLAB, RISER AND BASE SECTIONS HAVE BEEN REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADINGS WITH EARTH PRESSURES INCLUDED. THIS IMPLIES THAT THE TOP SLAB, RISER AND BASE SECTIONS ARE DESIGNED FOR AXLE LOAD OF NO GREATER THAN 20 TONS.
5. THERE IS TO BE 2" MINIMUM COVER ON ALL REBARS.
6. ALL REBARS ARE TO HAVE MINIMUM 2" CLEARANCE FROM OPENING.
7. STEPS SHALL CONFORM TO STD. 5.3.0 AND SHALL BE INSTALLED AT THE CASTING PLANT.
8. THE SPICE LENGTHS ON TIES ARE TO BE A MINIMUM OF 1'-7".
9. WHERE THE CLEARANCE FROM THE TOP OF THE PIPE TO THE RIM IS "B" OR LESS, PLUGS SHALL BE USED IN CONJUNCTION WITH SLOTTED HOLES. NO SLOTTED HOLE WILL BE PERMITTED WHERE THE CLEARANCE IS GREATER THAN "B". IN CASES WHERE SLOTTED HOLES ARE NOT USED AND THE WALL OPENING COMES WITHIN 1'-3" OF THE RIM, AN ADDITIONAL #8 BAR SHALL BE USED ABOVE THE OPENING THE WIDTH "C" OF THE WALL.
ALTERNATE TOP SLAB (SEE NOTES 10 AND 11)

FRAME AND GRATE/Cover

ADJUST TO GRADE AS REQUIRED USING RED CLAY BRICK COURSE

2'-0"

ROUND OR SQUARE

PIECE OPENINGS
CAST TO PLAN

STEPS PER APPROVED PRODUCTS LIST
1'-0" O.C.

MORTAR ALL
JOINTS TOTAL
WIDTH OF WALL

8" MIN.
OVERLAP
(TYP.)

1'-0" SEEP HOLE
(SEE NOTE 3)

TABLE 1

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<th>CATCH BASIN DIAMETER (D)</th>
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<th>B</th>
<th>CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED*</th>
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<td>7&quot;</td>
<td>0.15 SQ. IN./LIN. FT.</td>
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<td>6'-0&quot;</td>
<td>7&quot;</td>
<td>8&quot;</td>
<td>0.18 SQ. IN./LIN. FT.</td>
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* FOR LONGITUDINAL (VERTICAL STANDING) REINFORCEMENT REFER TO ASTM C478, ITEM 8.1.2

TYPE "D"

TYPE "R"

TYPE "F"

TYPE CATCH BASIN AS REQUIRED

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. SEE TABLE 1 FOR STEEL REINFORCEMENT REQUIREMENTS.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN./LIN. FT. (BOTH WAYS).
4. STEPS SHALL CONFORM TO STD. 5.3.0 AND SHALL BE INSTALLED AT THE CASTING PLANT.
5. ONE POUR MONOLITHIC BASE SECTION.
6. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
7. CORBEL MADE OF RED CLAY BRICK WILL BE PERMITTED FOR THE "CONE SECTION" OF THE 4'-0" CATCH BASIN ONLY.
8. FOR CATCH BASIN TYPES "D" AND "F" STEPS MUST BE INSTALLED ON THE CURB SIDE OF THE STRUCTURE.
9. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
10. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H--25 LOADING (SEE STD. 4.7.2).
11. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
12. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN

JUNE 15, 1998

ISSUE DATE
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. MINIMUM REQUIRED CONCRETE REINFORCEMENT = 0.12 SQ. IN./LIN. FT. (EACH WAY).
3. MINIMUM COVER ON REINFORCEMENT SHALL BE 2".

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FRAME AND GRATE

CONCRETE FILL

1'-0" PIPE

8" MIN. OVERLAP (TYP.)

SECTION A-A
SECTION B-B

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE DROP INLET

JUNE 15, 1998
ISSUE DATE

R.I. STANDARD 4.5.0
APRON STONE

PLAN

FRAME AND GRATE

PAVEMENT

CURB SUPPORT

CONCRETE FILL

8" MIN. OVERLAP (TYP.)

1'-0"

5"

SECTION A-A

SECTION B-B

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. MINIMUM REQUIRED CONCRETE REINFORCEMENT = 0.12 SQ. IN./LIN. FT. (EACH WAY).
3. MINIMUM COVER ON REINFORCEMENT SHALL BE 2".

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE DROP INLET LATERAL OUTLET

R.I. STANDARD 4.5.1

JUNE 15, 1998

CHIEF ENGINEER

TRANSPORTATION

CHIEF DESIGN ENGINEER

TRANSPORTATION

ISSUE DATE
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. MINIMUM REQUIRED CONCRETE REINFORCEMENT = 0.12 SQ. IN./LIN. FT. (EACH WAY).
3. MINIMUM COVER ON REINFORCEMENT SHALL BE 2".

SECTION A-A

SECTION B-B

APRON STONE

FRAME AND GRATE

CURB SUPPORT

CONCRETE FILL

8" MIN. OVERLAP (TYP.)

1'-0" PIPE

2'-10"

5"

5"

10

5"

6" (TYP.)

2'-0"

3'-3"

5"

5"

5"

5"
SECTION A–A

2" COVER (MIN.)
ON ALL BARS

#6 @ 2" C.-C.

7" (TYP.)
(SEE NOTE 7)

PLAN

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
3. TOP SLAB HAS BEEN REINFORCED TO MEET OR EXCEED H–25 OR HS–25 LOADINGS WITH EARTH PRESSURES INCLUDED. THIS IMPELS THAT THE TOP SLAB IS DESIGNED FOR AXLE LOADS OF NO MORE THAN 20 TONS.
4. ALL REBARS ARE TO HAVE A MINIMUM 2" CLEARANCE FROM OPENING.
5. PRECAST SECTION SHALL BE LIFTED USING APPROVED LIFTING LUGS LOCATED SUCH THAT NO DAMAGE TO THE SLAB OCCURS.
6. DOWEL HOLES IN COVER TO BE FORMED OR CORED BY THE FABRICATOR.
7. ALL REBARS IN THE BOTTOM MAT ARE #5 @ 7", BOTH WAYS, WITH 2" MINIMUM COVER, EXCEPT FOR REBARS ADJACENT TO THE OPENING. THESE REBARS SHALL BE #6 (SHOWN WITH HEAVIER LINE FOR CLARITY). REBARS IN THE TOP MAT ARE #6 BARS PLACED ADJACENT TO THE OPENING, BOTH WAYS, WITH 2" MINIMUM COVER.
SECTION A-A

PLAN

DOWEL DETAIL

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
3. TOP SLAB HAS BEEN REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADINGS WITH EARTH Pressures INCLUDED. THIS IMPLIES THAT THE TOP SLAB IS DESIGNED FOR AXLE LOADS OF NO MORE THAN 20 TONS.
4. ALL REBARS ARE TO HAVE A MINIMUM 2" CLEARANCE FROM OPENING.
5. PRECAST SECTION SHALL BE LiftED USING APPROVED LIFTING LUGS LOCATED SUCH THAT NO DAMAGE TO THE SLAB OCCURS.
6. DOWEL HOLES IN COVER TO BE FORMED OR CORED BY THE FABRICATOR.
7. ALL REBARS IN THE BOTTOM MAT ARE #5 @ 7', BOTH WAYS, WITH 2" MINIMUM COVER, EXCEPT FOR REBARS ADJACENT TO THE OPENING. THESE REBARS SHALL BE #6 (SHOWN WITH HEAVIER LINE FOR CLARITY). REBARS IN THE TOP MAT ARE #6 BARS PLACED ADJACENT TO THE OPENING, BOTH WAYS, WITH 2" MINIMUM COVER.
2" MIN. COVER (TYP.)

#5 @ 1'-0"
E.W., TOP

T/2

#5 @ 7" E.W., BOTTOM
1" TAPER

T/WALL THICKNESS

SECTION A-A

ASTM SPECIFICATION C478, ITEM 8.1.3

2" R (TYP.)

8" MIN. FOR CIRCULAR OR SQUARE OPENING

(2) - #5, TOP
(3) - #6, BOTTOM
(SEE NOTE 8)

TONGUE AND GROOVE EDGE

(2) - #5 x 4'-0" LONG DIAGONAL (TYP. TOP AND BOTTOM)

2" MIN. COVER ON ALL BARS

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS TOP COVER IS FOR STD. 4.3.0.
3. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
4. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
5. TOP SLAB HAS BEEN REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADINGS WITH EARTH PRESSURES INCLUDED. THIS IMPLIES THAT THE TOP SLAB IS DESIGNED FOR AXLE LOADS OF NO MORE THAN 20 TONS.
6. ALL REBARS ARE TO HAVE A MINIMUM 2" CLEARANCE FROM OPENING.
7. WHERE NO LIP IS PROVIDED, THE ASTM SPECIFICATION REFERENCE SHALL BE IGNORED. IN ALL CASES, THE CONTACT SURFACES SHALL MATCH.
8. ALL REBARS IN THE BOTTOM MAT ARE #5 @ 7" BOTH WAYS WITH 2" MINIMUM COVER, EXCEPT FOR BARE ADJACENT TO THE OPENING. THESE BARS SHALL BE (3) - #6 (SHOWN WITH HEAVIER LINE FOR CLARITY). REBARS IN THE TOP MAT ARE #5 @ 1'-0" BOTH WAYS WITH 2" MINIMUM COVER, EXCEPT FOR BARS ADJACENT TO THE OPENING. THESE BARS SHALL BE (2) - #5 BARS.
9. FOR DOUBLE GRATE OPENINGS, THE REBARS SURROUNDING THE OPENING IN THE BOTTOM MAT SHALL BE #7 BARS.
(2) #5 x 4'-0" Long diagonal (Typ.)

9" Min. for circular or square opening

2" R (Typ.)

2" Cover Min. (Typ.)

Tongue and groove edge

(2) #5 Bars

Opening (Typ.)

#5 x 1'-0" L.E., E.W.

TOP MAT

(2) #5 Bars

Opening (Typ.)

#5 x 7" E.W., Bottom

#5 x 1'-0" L.E., E.W., Top

SECTION A-A

(2) #6 Bars

Opening (Typ.)

#5 x 4'-0" Long diagonal (Typ.)

#5 x 7" E.W., Bottom

2" R (Typ.)

2" Cover Min. (Typ.) T (Wall Thickness)

T/2

Tongue and groove edge

#5 0.5" E.W., Vertical

2" Min.

2" Min.

1" Taper (Typ.)

BOTTOM MAT

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
3. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
4. TOP SLAB MONOLITHIC WITH RISER SECTION HAS BEEN REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADING WITH EARTH PRESSURES INCLUDED. THIS IMPLIES THAT THE TOP SECTION IS DESIGNED FOR AXLE LOADS OF NO MORE THAN 20 TONS.
5. ALL REBARS ARE TO HAVE A 2" MINIMUM CLEARANCE FROM OPENING.
6. THE STICK LENGTHS ON TIES ARE TO BE A MINIMUM OF 1'-6".
7. WALL WIDTHS MUST BE EQUIVALENT TO THOSE OF THE BASE SECTION.
8. ALL REBARS IN THE BOTTOM MAT ARE #5 @ 1'-0" BOTH WAYS, WITH A 2" MINIMUM COVER, EXCEPT FOR THE REBARS ADJACENT TO THE OPENING. THESE BARS SHALL BE #4-#8 (SHOWN WITH HEAVIER LINES FOR CLARITY). REBARS IN THE TOP MAT ARE #5 @ 1'-0" BOTH WAYS, WITH A 2" MINIMUM COVER, EXCEPT FOR THE REBARS ADJACENT TO THE OPENING. THESE BARS SHALL BE #3-#5 BARS.
9. FOR DOUBLE CRATE OPENINGS, THE REINFORCING BARS SURROUNDING THE OPENING IN THE BOTTOM MAT SHALL BE #7 BARS.
SEE ASTM SPECIFICATION C478, ITEM 8.1.3

2" R (TYP.)
ALL CORNERS

9" MIN.
FOR SQUARE
OPENING

TONGUE
AND
GROOVE
EDGE

2" MIN. COVER
ON ALL BARS

(2) #5 BARS, TOP (TYP.)
(3) #6 BARS, BOTTOM (TYP.)

PLAN

9" MIN.
FOR
CIRCULAR
OPENING

(2) #5 x 4'-0" LONG
DIAGONAL (TYP.
TOP AND BOTTOM)

#5 @ 1'-0"
E.W., TOP

1" TAPER

#5 @ 7"
E.W., BOTTOM

SECTION A-A

T = WALL THICKNESS

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING
   AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC
   TOOLS WILL BE ALLOWED.
3. THE CENTER LINE OF THE OPENING MUST BE WITHIN 2" FROM THE STEPS.
4. ALTERNATE TOP COVER IS STEEL REINFORCED TO MEET OR EXCEED H-25 OR HS-25
   LOADINGS WITH EARTH PRESSURES INCLUDED. THIS IMPLIES THAT THE TOP SLAB IS
   DESIGNED FOR AXLE LOADS OF NO MORE THAN 20 TONS.
5. ALL REBAR SHALL HAVE A MINIMUM OF 2" CLEARANCE FROM OPENING.
6. ALL REBARS IN THE BOTTOM MAT ARE #5 @ 2", BOTH WAYS, WITH 2" MINIMUM COVER,
   EXCEPT FOR REBARS ADJACENT TO THE OPENING. THESE BARS SHALL BE (3) #6
   SHOWN WITH A HEAVIER LINE FOR CLARITY). REBARS IN THE TOP MAT ARE #5 @ 1'-0"
   BOTH WAYS, WITH 2" MINIMUM COVER, EXCEPT FOR REBARS ADJACENT TO THE OPENING.
   THESE BARS SHALL BE (2) #5 BARS.
#6 @ 4" EACH WAY 
TOP AND BOTTOM (TYP.)

SEEN A.S.T.M. SPEC.
C 478, ITEM 8.1.3 (TYP.)

2" MIN. COVER (TYP.)

9" (TYP.)

4" C.C. (TYP.)

SECTION

(4)-#6, (2) TOP AND BOTTOM 
EACH CORNER 3'-0" LONG

2" COVER (MIN.)
ON ALL BARS

DRILL AND 
GROUT #4

1 1/2" FILL 
WITH GROUT

5'-5" 

4'-8"

#6 @ 2" C.C.

DOWEL DETAIL

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
3. TOP SLAB HAS BEEN REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADINGS 
WITH EARTH PRESSURES INCLUDED. THIS IMPLIES THAT THE TOP SLAB IS DESIGNED 
FOR AXLE LOADS OF NO MORE THAN 20 TONS.
4. ALL REBARS ARE TO HAVE A MINIMUM 2" CLEARANCE FROM OPENING.
5. PRECAST SECTION SHALL BE LIFTED USING APPROVED LIFTING LUGS LOCATED SUCH 
THAT NO DAMAGE TO THE SLAB OCCURS.
6. DOWEL HOLES IN COVER TO BE FORMED OR CORED BY THE FABRICATOR.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

CONCRETE COVER FOR SHALLOW 
TYPE "F" SQUARE CATCH BASINS

JUNE 15, 1998
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
3. TOP SLAB HAS BEEN REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADINGS
   WITH EARTH PRESSURES INCLUDED. THIS IMPLIES THAT THE TOP SLAB IS DESIGNED
   FOR AXLE LOADS OF NO MORE THAN 20 TONS.
4. ALL REBARS ARE TO HAVE A MINIMUM 2" CLEARANCE FROM OPENING.
5. PRECAST SECTION SHALL BE LIFTED USING APPROVED LIFTING LUGS LOCATED SUCH
   THAT NO DAMAGE TO THE SLAB OCCURS.
6. DOWEL HOLES IN COVER TO BE FORMED OR CORED BY THE FABRICATOR.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
3. TOP SLAB HAS BEEN REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADINGS WITH EARTH PRESSURES INCLUDED. THIS IMPLIES THAT THE TOP SLAB IS DESIGNED FOR AXLE LOADS OF NO MORE THAN 20 TONS.
4. ALL REBARS ARE TO HAVE A MINIMUM 2" CLEARANCE FROM OPENING.
5. PRECAST SECTION SHALL BE LIFTED USING APPROVED LIFTING LUGS LOCATED SUCH THAT NO DAMAGE TO THE SLAB OCCURS.
6. DOWEL HOLES IN COVER TO BE FORMED OR CORED BY THE FABRICATOR.
#6 @ 4" EACH WAY
TOP AND BOTTOM (TYP.)

SECTION

(4)#6, (2) TOP AND BOTTOM
EACH CORNER 3'-0" LONG

2" COVER (MIN.)
ON ALL BARS

#6 @ 2" C.-C.

6'-4"

DRILL AND
GROUT #4

1 1/2" FILL
WITH GROUT

1'-0"

DOWEL DETAIL

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
3. TOP SLAB HAS BEEN REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADINGS
   WITH EARTH PRESSURES INCLUDED. THIS IMPLIES THAT THE TOP SLAB IS DESIGNED
   FOR AXLE LOADS NO GREATER THAN 20 TONS.
4. ALL REBARS ARE TO HAVE A MINIMUM 2" CLEARANCE FROM OPENING.
5. PRECAST SECTION SHALL BE LIFTED USING APPROVED LIFTING LUGS LOCATED SUCH
   THAT NO DAMAGE TO THE SLAB OCCURS.
6. DOWEL HOLES IN COVER TO BE FORMED OR CORED BY THE FABRICATOR.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

CONCRETE COVER FOR SHALLOW
5'-0" SQUARE CATCH BASINS

R.I. STANDARD
4.8.3

JUNE 15, 1998

SIGNED: [Signatures]

CHIEF ENGINEER TRANSPORTATION

CHIEF DESIGN ENGINEER TRANSPORTATION

ISSUE DATE
#6 @ 4" EACH WAY TOP AND BOTTOM (TYP.)
See A.S.T.M. SPEC. C 478, ITEM 8.1.3 (TYP.)
9" (TYP.)
2" MIN. COVER (TYP.)
4" C.-C. (TYP.)

SECTION

(4) #6, (2) TOP AND BOTTOM EACH CORNER 3'-0" LONG

2'-0"
2'-0"

2" COVER (MIN.) ON ALL BARS

6'-8"
6'-8"

#6 @ 2" C.-C.
7'-4"

DOWEL DETAIL

DRILL AND
GROUT #4

1 1/2" FILL
WITH GROUT

1'-0"

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
3. TOP SLAB HAS BEEN REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADINGS WITH EARTH PRESSURES INCLUDED. THIS IMPLIES THAT THE TOP SLAB IS DESIGNED FOR AXLE LOADS OF NO MORE THAN 20 TONS.
4. ALL REBARS ARE TO HAVE A MINIMUM 2" CLEARANCE FROM OPENING.
5. PRECAST SECTION SHALL BE LIFTED USING APPROVED LIFTING LUGS LOCATED SUCH THAT NO DAMAGE TO THE SLAB OCCURS.
6. DOWEL HOLES IN COVER TO BE FORMED OR CORED BY THE FABRICATOR.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. EITHER TYPE I OR TYPE II MAY BE USED AT THE DISCRETION OF THE ENGINEER.
3. REINFORCING TO BE 4x4-W4.0 xW4.0 WELDED WIRE MESH, 2 LAYERS, HORIZONTAL AND VERTICAL (EPOXY COATED).

SECTION A-A

PRECAST CONCRETE SUMP FOR ROUND CATCH BASINS (WET AREAS)

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS

NO.  BY  DATE

JUNE 15, 1998

R.I. STANDARD 5.1.0

EPOXY COATED WELDED WIRE MESH (2 LAYERS, HORIZONTAL AND VERTICAL)

CLASS C BEDDING

ADAPTER RING

BRICK/SOLID BLOCK

ASPHALTIC SEALING COMPOUND IN JOINT

(2)-#3 CONTINUOUS

STANDARD CATCH BASIN
CROSS SECTION OF MANHOLE OR CATCH BASIN

<table>
<thead>
<tr>
<th></th>
<th>4 FT. MANHOLE OR CATCH BASIN</th>
<th>5 FT. MANHOLE OR CATCH BASIN</th>
<th>6 FT. MANHOLE OR CATCH BASIN</th>
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</thead>
<tbody>
<tr>
<td><strong>MAX. PIPE O.D.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRAIGHT THRU TO 45° DEFLAGION</td>
<td>33 1/2&quot; O.D. 27&quot; R.C. PIPE</td>
<td>44&quot; O.D. 36&quot; R.C. PIPE</td>
<td>51&quot; O.D. 42&quot; R.C. PIPE</td>
</tr>
<tr>
<td><strong>MAX. PIPE O.D.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90° DEFLAGION</td>
<td>23&quot; O.D. 18&quot; R.C. PIPE</td>
<td>33 1/2&quot; O.D. 27&quot; R.C. PIPE</td>
<td>37&quot; O.D. 30&quot; R.C. PIPE</td>
</tr>
</tbody>
</table>

NOTE:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE MINIMUM DISTANCE BETWEEN PIPES ENTERING MANHOLES AND CATCH BASINS MUST BE 1'-6". THE SIZE OF THE CATCH BASIN WILL BE DETERMINED BY THE PIPE SIZE AND ENTRY ANGLE. (SEE TABLE ABOVE.)
NOTES:
1. STEPS SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. CROSS SECTION AREA MAY BE REDUCED UPON SUBMISSION OF CERTIFIED LOAD TESTS. STEPS MUST SUPPORT 300 LBS.
3. STOCK SHOWN IS 1" SQUARE WHICH MAY BE REPLACED BY 1" DIAMETER.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

CATCH BASIN AND MANHOLE STEP

R.I. STANDARD
5.3.0

JUNE 15, 1998
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. COLLARS TO BE CONCRETE MASONRY AS DIRECTED.
3. 9" OF CONCRETE IN BITUMINOUS PAVED AREAS. MEET EXISTING CONCRETE IN PORTLAND CEMENT CONCRETE AREAS.
3/4" ø HOLES

COVER

FRAME

SECTION A-A

SECTION B-B

FRONT ELEVATION

NOTES:
1. FRAME AND COVER SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. FRAME AND COVER SEATS TO BE MACHINE FINISH.
SECTION A-A

NOTES:
1. FRAME AND COVER SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. FRAME AND COVER SEATS TO BE MACHINE FINISH.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

HEAVY-DUTY
SQUARE FRAME AND ROUND COVER

JUNE 15, 1998

R.I. STANDARD
6.1.1
COVER SECTION

FRAME SECTION

NOTE:
FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

ROUND FRAME AND COVER
LIGHT-DUTY

R.I. STANDARD
6.2.0

JUNE 15, 1998
ISSUE DATE
NOTES:
1. FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. FRAME AND COVER SEATS MUST HAVE MACHINE FINISH.
SECTION A-A

SECTION B-B

NOTE:
FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

SQUARE FRAME AND GRATE

R.I. STANDARD
6.3.0

JUNE 15, 1998

CHIEF ENGINEER
TRANSPORTATION

CHIEF DESIGN ENGINEER
TRANSPORTATION

ISSUE DATE
4TH FLANGE WHEN ORDERED

NOTE:
FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

SQUARE FRAME AND GRATE

REVISIONS
NO. BY DATE
1 MLP 7/21/06

JUNE 15, 1998
CHIEF ENGINEER
CHIEF DESIGN ENGINEER
ISSUE DATE

R.I. STANDARD
6.3.1
NOTE: FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.

SECTION A-A

SECTION B-B

SECTION C-C

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

SQUARE FRAME AND GRATE
(BICYCLE SAFE)

REVISIONS

NO. BY DATE
1 MLP 7/21/06

JUNE 15, 1998
ISSUE DATE

R.I. STANDARD
6.3.2
SECTION A-A

NOTES:
1. FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. GRATES CAN BE INSTALLED IN ONLY ONE POSITION IN THE FRAME. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING FRAME FOR PROPER ORIENTATION OF GRATE.
3. ORDER 2 FLANGE FRAME WHEN USED WITH CURBING OR APRON STONE.
NOTES:
1. FRAME AND COVER SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS CORNER LEFT FOR "LEFT" GRATE, DIAGONALLY OPPOSITE CORNER FOR "RIGHT" GRATE TO FIT IN KEYED FRAME.
NOTE:
FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
7/8" DIA HOLES ON 30" DIA BOLT CIRCLE

FRAMES SECTION

GRATE SECTION A-A

DETAIL B

NOTES:
1. FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR FILLER PIECES TO BE 3'-0".
3. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
4. CIRCULAR CURB IS REQUIRED ON CURVES WITH RADIUS OF 160'-0" OR LESS. STRAIGHT CURB TO BE USED ON CURVES OF MORE THAN 160'-0" RADIUS.
5. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION, FOR OTHER DIRECTION USE OPPOSITE HAND AND INCLUDE A 1/2" φ X 4" EPOXY COATED DOWEL.
3. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
4. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
5. LEFT AND RIGHT SECTIONS SHALL BE INSTALLED AS REQUIRED.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
3'-0" PRECAST CONCRETE TRANSITION CURB

R.I. STANDARD 7.1.1
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION. FOR OTHER DIRECTION USE OPPOSITE HAND AND INCLUDE A 1/2" φ x 4" EPOXY COATED DOWEL.
3. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
4. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

6'-0" PRECAST CONCRETE TRANSITION CURB

JUNE 15, 1998

R.I. STANDARD 7.1.2
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. CIRCULAR CURB IS REQUIRED ON CURVES WITH RADIi OF 160'-0" OR LESS. STRAIGHT CURB TO BE USED ON CURVES OF MORE THAN 160'-0" RADIUS.
3. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
4. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
5. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR CURB FILLER PIECES TO BE 3'-0" (GREATER LENGTHS PREFERRED).

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<th>TRANSITION LENGTH (FT.)</th>
<th>BATTER (IN.)</th>
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<td>6.0</td>
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<tr>
<td>7.0</td>
<td>1.3</td>
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<td>8.0</td>
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<td>9.5</td>
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<td>11.5</td>
<td>0.8</td>
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<td>15.0</td>
<td>0.6</td>
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<tr>
<td>18.0</td>
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Wheelchair Ramp Transition Curb Chart
Required Transition Length to Achieve 1:12 Ramp Transition Slope

Minimum Length of Transition
\( L = \frac{6 \text{ ft.}}{1 - 12 \times \text{RG}} \)

Running Grade

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<th>0.005</th>
<th>0.01</th>
<th>0.015</th>
<th>0.02</th>
<th>0.025</th>
<th>0.03</th>
<th>0.035</th>
<th>0.04</th>
<th>0.045</th>
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<td>5</td>
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<td>10</td>
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<td>14</td>
</tr>
</tbody>
</table>

1. Use with STD. 7.1.3 and 7.3.3.
2. The high side transition curb length shall be rounded up to the next half foot increment.
3. For running grades greater than 5%, the length of transition curb shall be 18 feet.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
3. NO REINFORCEMENT REQUIRED.
4. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
5. SEE STD. 7.1.0 FOR DOWEL SOCKET LOCATION.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
3. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
3. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.

NOTES:

PRECAST CONCRETE INLET STONE
(FOR ROUND CATCH BASIN)
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
3. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
3. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE APRON STONE
(FOR ROUND CATCH BASIN)

JUNE 15, 1998

R.I. STANDARD
7.1.8
CIRCULAR CONCRETE RAMP STONE

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR RAMP STONE TO BE 4'-0".
3. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
4. CIRCULAR RAMP STONE IS REQUIRED ON CURVES WITH RADIUS OF 160'-0" OR LESS.
   STRAIGHT RAMP STONE TO BE USED ON CURVES OF MORE THAN 160'-0" RADIUS.
5. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
6. RAMP STONE SHALL BE SET IN ACCORDANCE WITH STD. 43.3.0.
7. 12" RAMP STONE SHALL BE SET IN CONJUNCTION WITH STD. 7.1.2.
8. 18" RAMP STONE SHALL BE SET IN CONJUNCTION WITH STD. 7.1.3.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR PIECES TO BE 3'-0".
3. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
4. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
5. CIRCULAR CURB IS REQUIRED ON CURVES WITH RADII OF 160'-0" OR LESS. STRAIGHT CURB TO BE USED ON CURVES OF MORE THAN 160'-0" RADIUS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
3. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
4. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION, FOR OTHER DIRECTION USE
   OPPOSITE HAND AND INCLUDE A 1/2" φ x 4" EPOXY COATED DOWEL.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
3. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
4. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION. FOR OTHER DIRECTION USE OPPOSITE HAND AND INCLUDE A 1/2" Ø X 4" EPOXY COATED DOWEL.

GUTTER LINE
1'-6" LOT CURB

LONGITUDINAL SECTION @ JOINT

3/4" Ø DOWEL EPOXY COATED
6" LONG

7/8" Ø HOLE
3 1/4" DEEP
6'-0" MAX.

3/4" CHAMFER

END SECTION

2'-0" LOT CURB

LONGITUDINAL SECTION @ JOINT

3/4" Ø DOWEL EPOXY COATED
6" LONG

7/8" Ø HOLE
3 1/4" DEEP
6'-0" MAX.

3/4" CHAMFER

END SECTION

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/8" JOINTS DOWELED WITH A 3/4" Ø DOWEL 6" LONG.
3. TOP AND EXPOSED SURFACES TO H+2" TO HAVE A SPONGE FLOAT FINISH.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. ALL EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
3. ALL SURFACES TO HAVE A SPONGE FLOAT FINISH.
1/2" CHAMFER

CHAMFER 1/2" QUARRY SPLIT

3'-0" MIN.

1'-6" 6" ±1"

R = 160'-0" MAX.

1/2" CHAMFER

CIRCULAR CURB

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. TOP SURFACE TO BE DRESSED BY SAW. REMAINDER MAY BE QUARRY SPLIT.
3. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR PIECES TO BE 3'-0".
4. CIRCULAR CURB IS REQUIRED ON CURVES WITH RADII OF 160'-0" OR LESS. STRAIGHT CURB TO BE USED ON CURVES OF MORE THAN 160'-0" RADIUS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. TOP SURFACE TO BE DRESSED BY SAW. REMAINDER MAY BE QUARRY SPLIT.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE CONTRACTOR MAY CUT EXISTING CURB SECTIONS AS REQUIRED TO MEET THIS DETAIL AND THE R.I. STANDARD SPECIFICATIONS, WHERE OLD CURBING IS BEING REUSED.
3. TOP SURFACE TO BE DRESSED BY SAW. REMAINDER MAY BE QUARRY SPLIT.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

6’-0” GRANITE TRANSITION CURB

REVISIONS
NO. BY DATE
1 MLP Mar 2005
2 MLP Sep 2012

JUNE 15, 1998

CHIEF ENGINEER
TRANSPORTATION

CHIEF DESIGN ENGINEER
TRANSPORTATION

ISSUE DATE

R.I. STANDARD
7.3.2
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE CONTRACTOR MAY CUT EXISTING CURB SECTIONS AS REQUIRED TO MEET THIS DETAIL
   AND THE R.I. STANDARD SPECIFICATIONS, WHERE OLD CURBING IS BEING REUSED.
3. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR CURB FILLER PIECES TO BE 3’—0” (GREATER
   LENGTHS PREFERRED).
4. TOP SURFACE TO BE DRESSED BY SAW. REMAINDER MAY BE QUARRY SPLIT.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. TOP SURFACE TO BE DRESSED BY SAW. REMAINDER MAY BE QUARRY SPLIT.
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1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. TOP SURFACE TO BE DRESSED BY SAW. REMAINDER MAY BE QUARRY SPLIT.
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1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. TOP SURFACE TO BE DRESSED BY SAW. REMAINDER MAY BE QUARRY SPLIT.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. TOP SURFACE TO BE DRESSED BY SAW. REMAINDER MAY BE QUARRY SPLIT.
GUTTER LINE

4'-0"
MINIMUM

18"

6" QUARRY SPLIT

6"±1"

18"

INSIDE CHORD

4'-0"

MINIMUM

RADIAL RADIAL

CIRCULAR GRANITE RAMP STONE

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. TOP SURFACE TO BE DRESSED BY SAW TO PROVIDE NO-SLIP SURFACE; REMAINDER MAY BE QUARRY SPLIT.
3. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR RAMP STONE TO BE 4'-0".
4. CIRCULAR RAMP STONE IS REQUIRED ON CURVES WITH RADII OF 160'-0" OR LESS.
   STRAIGHT RAMP STONE TO BE USED ON CURVES OF MORE THAN 160'-0" RADIUS.
5. RAMP STONE SHALL BE SET IN ACCORDANCE WITH STD. 43.3.0 AND IN CONJUNCTION
CIRCULAR CURB

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. TOP SURFACE AND SLOPED SURFACE TO BE DRESSED BY SAW. REMAINDER TO BE QUARRY SPLIT.
3. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR PIECES TO BE 3’–0”.
4. CIRCULAR CURB IS REQUIRED ON CURVES WITH RADIUS OF 160’–0” OR LESS. STRAIGHT CURB TO BE USED ON CURVES OF MORE THAN 160’–0” RADIUS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. TOP SURFACE AND SLOPED SURFACE TO BE DRESSED BY SAW. REMAINDER TO BE QUARRY SPLIT.
3. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION. FOR OTHER DIRECTION USE OPPOSITE HAND.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. TOP SURFACE AND SLOPED SURFACE TO BE DRESSED BY SAW. REMAINDER TO BE QUARRY SPLIT.
3. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION. FOR OTHER DIRECTION USE OPPOSITE HAND.
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
### Notes:
1. Shall be in accordance with Section 906 of the R.I. Standard Specifications.
2. Bituminous berm can be placed at the same time that the surface course layer is placed on the project roadway, or it can be installed in a separate operation.

**Construction Method A**

- Bituminous concrete berm, Class I-1
- 4" Plantable soil or loam
- 3" Finished reveal
- 1'-0"
- 6" Base course
- Gravel borrow

**Construction Method B**

- Bituminous concrete berm, Class I-1
- 4" Plantable soil or loam
- 3" Finished reveal
- 1'-0"
- 6" Base course
- Gravel borrow

---

**Revisions**

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NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. CEMENT CONCRETE SHALL BE USED ONLY WHEN THE CURB IS SET AFTER THE BASE AND/OR BINDER COURSES ARE IN PLACE, OTHERWISE THE CEMENT CONCRETE WILL BE ELIMINATED AND THE GRAVEL BROUGHT UP TO BOTTOM OF THE BASE COURSE.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. ALL EXPOSED SURFACES AND ALL SURFACES FIVE (5) INCHES FROM THE TOP OR BOTTOM TO BE DRESSED BY SAW; REMAINDER MAY BE QUARRY SPLIT.
3. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR RAMP STONE TO BE 4'-0".
4. CIRCULAR APRON STONE IS REQUIRED ON CURVES WITH RADIOf OF 140'-0" OR LESS.
5. GRANITE TRUCK APRON STONES ARE TO BE USED ON ROUNDABOUTS TO TRANSITION FROM THE ROADWAY SURFACE TO THE TRUCK APRON SURFACE.
NOTE:
SLOPES MAY VARY TO SUIT CONDITIONS AS PER PLANS OR ENGINEER.
NOTE:
SLOPES MAY VARY TO SUIT CONDITIONS AS PER PLANS OR ENGINEER.
NOTES:
1. SLOPES MAY VARY TO SUIT CONDITIONS AS PER PLANS OR ENGINEER.
2. RIP-RAP AND BEDDING SIZE MAY VARY. SEE CONTRACT DOCUMENTS.
TRANSITION FROM BERM TO SIDE OF PAVED WATERWAY

EDGE OF PAVEMENT

12'-0"R

6'-0"R

VARIES

FLOW

60'

(SEE NOTE 2)

BERM OR CURB

2'-0"R

1'-0"

4'-0"

1'-0"

6:1

6:1

3" BITUMINOUS CONCRETE CLASS I-1

6" GRAVEL BORROW

SECTION A-A

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 711 OF THE R.I. STANDARD SPECIFICATIONS.
2. WHEN PAVED WATERWAY IS USED AT A LOW POINT THIS ANGLE SHALL BE 90°.
ELEVATION

LIMIT OF CLEARING
PROTECTED AREA
AREA OF DISTURBANCE
(HOME AS DETAILED ON PLANS)

HORIZONTAL BALE BINDING

EXISTING GROUND

BALED HAY OR STRAW STAKED IN PLACE WITH (2) 1"x1"x3'-0" (MIN.) STAKES

HIGHWAY SLOPE

PLAN

LIMIT OF CLEARING
PROTECTED AREA
AREA OF DISTURBANCE
(HOME AS DETAILED ON PLANS)

(2) 1"x1"x3'-0" (MIN.) STAKES PER BALE

BALES TO BUTT TOGETHER

WEDGE LOOSE HAY BETWEEN BALES TO MAKE A CONTINUOUS BARRIER (TYP.)

1'-0" (MIN.)

100'-0" ±

FLOW

TOE OF SLOPE

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.
2. TO BE USED WHERE THE EXISTING GROUND SLOPES AWAY FROM THE HIGHWAY EMBANKMENT AS CALLED FOR ON PLANS.
3. AT APPROXIMATE 100'-0" INTERVALS A BALE OF HAY IS TO BUTT PERPENDICULARLY.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.
2. 2"x2"x4'-6"(MAX.) OAK POSTS FOR SILT FENCE SHALL BE LOCATED 8'-0" (MAX.) O.C. IN WETLAND AREAS AND 4'-0" (MAX.) O.C. IN WETLAND RAVINE, GULLY OR DROP-OFF AREAS AS SHOWN ON PLANS.
3. 1"x1"x4'-6"(MIN.) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.
4. SILT FENCE SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I.
STANDARD SPECIFICATIONS.
2. STD. 9.1.0 IS INSTALLED "TIGHT" AGAINST SILT FENCE.
THOROUGHLY COMPACT EXCAVATED SOILS BACK INTO
TRENCH AFTER INSTALLATION OF EROSION CONTROL
DEVICE. SILT FENCE FABRIC SHALL NOT BE SLIT. STD.
9.1.0 POST SHALL BE DRIVEN THROUGH SILT FENCE
FABRIC. 2"x2"x4'-6"(MAX.) OAK POST FOR SILT FENCE
SHALL BE LOCATED 8'-0"(MAX.) O.C. IN WETLAND AREAS
AND 4'-0"(MAX.) O.C. IN WETLAND RAVINE, GULLY OR
DROP-OFF AREAS AS SHOWN ON PLANS.
3. 1"x1"x4'-6"(MIN.) POSTS PERMITTED FOR PRE-FABRICATED
SILT FENCE.
4. SILT FENCE AND BALED HAY SHALL BE INSTALLED
BEFORE ANY GRUBBING OR EARTH EXCAVATION
TAKES PLACE.
SWALE ELEVATION

BALED HAY OR STRAW
STAKED IN PLACE WITH (2)
1"x1"x3'-0" (MIN.) STAKES

HIGHWAY SLOPE

EXISTING GROUND

OVERLAP EDGES

3" EMBEDMENT (TYP.)

Wedge loose straw between bales to create a continuous barrier (TYP.)

Next pair

1'-6" MIN
(TYP.)

100'-0" MAX.

12'-0" O.C.

SWALE PLAN

Baled Hay or straw staked in place with (2)
1"x1"x3'-0" (MIN.) stakes

OVERLAP EDGES

BALE BINDING (TYP.)

3" EMBEDMENT (TYP.)

DITCH ELEVATION

DITCH PLAN

SWALE

NEXT PAIR

C DITCH

BOTTOM OF DITCH

FLOw

ONE PAIR OF
EROSION CHECKS (TYP.)

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 207 OF THE R.I. STANDARD SPECIFICATIONS.
2. TO BE USED IN LOCATIONS WHERE THE EXISTING GROUND SLOPES IN TOWARD THE
   EMBANKMENT OR IN DRAINAGE DITCHES AS CALLED FOR ON THE PLANS.
3. THE BALES ARE TO BE EMBEDDED A MINIMUM OF 3" INTO THE EXISTING GROUND,
   HIGHWAY SLOPE OR DITCH SECTION.
4. POINTS "A" SHOULD BE AT A HIGHER ELEVATION THAN POINTS "B".

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BALED HAY DITCH AND SWALE EROSION CHECK

JUNE 15, 1998

ISSUE DATE

9.4.0

R.I. STANDARD
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 207 OF THE R.I. STANDARD SPECIFICATIONS.
2. DAM TO BE CONSTRUCTED OF NATIVE LOGS OBTAINED FROM CLEARING OPERATION, WHEN AVAILABLE. ALL LOGS TO BE SPiked WITH WIRE SPIKES OR BOLTED TOGETHER. EXISTING TREES, BOULDERS OR LEDGE MAY BE USED IN PLACE OF THE THE VERTICAL POSTS AT THE DISCRETION OF THE ENGINEER.
3. WHEN VERTICAL POST CANNOT BE DRIVEN INTO THE STREAM BED, STONES SHALL BE USED TO BRACE THE STRUCTURE.
4. BALES OF HAY TO BE EMBEDDED A MINIMUM OF 6" INTO THE EXISTING GROUND. IF THE EXISTING GROUND IS LEDGE, A 2'-0"x2'-0" WEDGE OF CRUSHED STONE IS TO BE PLACED AGAINST THE UPSTREAM FACE OF THE CHECK DAM.
5. HEIGHT OF THE DAM WILL VARY BASED ON HIGH WATER LEVEL.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
LOG AND HAY CHECK DAM

R.I. STANDARD 9.5.0

JUNE 15, 1998
ISSUE DATE
SECTION A-A

NOTE:
SHALL BE IN ACCORDANCE WITH SECTION 207 OF THE R.I. STANDARD SPECIFICATIONS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 208 OF THE R.I. STANDARD SPECIFICATIONS.
2. PROVIDE ADDITIONAL SAND BAGS AS REQUIRED TO FILL SPACE BETWEEN ADJACENT BARRIERS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 209 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS INLET PROTECTION CAN ALSO BE USED WHEN CONSTRUCTION SEQUENCING REQUIRE A CATCH BASIN TO BE EXPOSED TO SEDIMENT FROM THE SUBGRADE. THIS WILL BE ACHIEVED BY INSTALLING THE BALED HAY AS SHOWN ON THIS DETAIL INTO THE SUBGRADE.
3. THE PERIMETER CONFIGURATION OF THE BALED HAY WILL VARY DEPENDING ON THE PARTICULAR TYPE OF CATCH BASIN INLET BEING CONSTRUCTED. THE ENGINEER WILL PROVIDE SPECIFIC DIRECTION IN SUCH CASES.
NOTES:
1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 911 OF THE R.I. STANDARD SPECIFICATIONS.
2. JOINTS SHALL NOT EXCEED 1" IN WIDTH.
3. JOINTS ON THE FACE OF WALL SHALL BE POINTED TO THE FACE LINE OF THE WALL UNLESS RECESSED JOINTS ARE CALLED FOR ABOVE GRADE.
4. POINTING OF JOINTS ON TOP OF WALL SHALL BE FLUSH AND PITCHED TO DEFLECT WATER OFF OF THE WALL.
5. DRESS 6" BELOW GRADE FOR FRONT FACE OF WALL.
6. WEEP HOLES SHALL BE CONSTRUCTED OF 3" GRAY SCHEDULE 80 PVC PIPE WHEN H ≤ 5′-0" AND 4" GRAY SCHEDULE 80 PIPE WHEN H > 5′-0" ALL PIPE IS TO BE SOLID.
7. TIE STONES SHALL BE PLACED A MAXIMUM OF 4′-0" O.C.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
WET STONE MASONRY RETAINING WALL

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<th>H</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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SECTION A-A
CONCRETE FOOTING FOR H > 5′-0"

GROUND LEVEL MAY VARY
4′ PLANTABLE SOIL (MIN.)

BACKFILL WITH SUITABLE FILL

GRAY SCHEDULE 80 PVC PIPE SPACED 10′-0″ O.C.
(SEE NOTE 6)

6 CU. FT.
_FILTER STONE WRAPPED WITH FILTER FABRIC

STRUCTURAL EXCAVATION PAY LIMIT

FOR OPTIONAL RECESSED JOINT WALL SEE DETAIL "A"

SLOPE GRADE AWAY FROM WALL

1′
1:20

1′-6"
2MAX

FOR H > 5′-0″
TIE STONE (TYP.)

PLAN

SECTION A-A

SLOPE GRADE AWAY FROM WALL (TYP.)
FINISHED GRADE

STRUCTURAL EXCAVATION PAY LIMIT

ELEVATION

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 912 OF THE R.I. STANDARD SPECIFICATIONS.
2. TIE STONES SHALL BE PLACED A MAXIMUM OF 4'-0" O.C.
CONCRETE RETAINING WALL

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 808 OF THE R.I. STANDARD SPECIFICATIONS.
2. USE 1/2" PREFORMED JOINT FILLER AND BEVEL EXPOSED EDGES WITH 3/4" CHAMFER.
3. SEAL BACKFACE WITH 1/4"x1/2" JOINT SEALANT.
4. SURFACE RUB EXPOSED FACE AND TOP.
5. ALL REINFORCING TO BE EPOXY COATED.
6. PROVIDE EXPANSION JOINTS EVERY 25'-0" IN STEMS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

JUNE 15, 1998
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 911 OF THE R.I. STANDARD SPECIFICATIONS.
2. ALL EXPOSED TOP EDGES OF TREATS TO HAVE 1/2" CHAMFER (SIX OR TOOLEO).
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 915 OF THE R.I. STANDARD SPECIFICATIONS.
2. #3 DEFORMED EPOXY COATED REINFORCEMENT TO CLEAR TOP AND BOTTOM BY 2".
3. #8 EPOXY COATED WIRE TO CLEAR TOP AND BOTTOM BY 3".
4. BOUNDS TO BE SET 6" ABOVE FINISHED GRADE, EXCEPT IN SIDEWALKS, LAWNS AND
   DRIVEWAYS WHERE THEY SHALL BE SET FLUSH WITH FINISHED GRADE.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 915 OF THE R.I. STANDARD SPECIFICATIONS.
2. BOUND TO BE QUARRY SPLIT FROM FINE GRAIN GRANITE FREE FROM NATURAL FRACTURES, SEAMS, LAMINATIONS, CRACKS OR IMPURITIES.
3. TOP SURFACE OF BOUND TO BE DRESSED OR SAWSD.
4. CONICAL DRILL HOLE IN CENTER OF TOP TO BE 1/4" Ø AND 3/4" DEEP.
5. BOTTOM TO BE AT LEAST 6" SQUARE AND FLAT.
6. LETTERS "RIHB" ON TOP TO BE OF DIMENSIONS AS SHOWN.
7. BOUNDS TO BE SET 6" ABOVE FINISHED GRADE, EXCEPT IN SIDEWALKS, LAWNS AND DRIVEWAYS WHERE THEY SHALL BE SET FLUSH WITH FINISHED GRADE.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 915 OF THE R.I. STANDARD SPECIFICATIONS.
2. SEE STD. 14.1.0 OR STD. 14.2.0 FOR DETAILS OF BOUND.
3. 9" SQUARE HOLE, 4" DEEP TO BE CHIPPED IN LEDGE.
4. BOUNDS TO BE SET 6" ABOVE FINISHED GRADE, EXCEPT IN SIDEWALKS, LAWNS AND DRIVEWAYS WHERE THEY SHALL BE SET FLUSH WITH FINISHED GRADE.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 915 OF THE R.I. STANDARD SPECIFICATIONS.
2. MONUMENTS TO BE SET 6" ABOVE FINISHED GRADE, EXCEPT IN SIDEWALKS, LAWNS AND DRIVeways WHERE THEY SHALL BE SET FLUSH WITH FINISHED GRADE.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 915 OF THE R.I. STANDARD SPECIFICATIONS.
2. OUTER LETTERS: 1/4" HIGH 
   3/64" STROKE
   1/32" INSET
3. MIDDLE LETTERS: 1/4" HIGH
   1/32" STROKE
   1/64" INSET
4. INNER LETTERS: 3/32" HIGH
   1/32" STROKE
   1/64" INSET
5. CIRCLES: 1/32" STROKE
   1/64" INSET 
   CENTER PUNCHMARK—1/32" INSET

STEEL WEDGE FOR LEDGE SHANK

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

STANDARD BENCH MARK HEADS
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 915 OF THE R.I. STANDARD SPECIFICATIONS.
2. OUTER LETTERS: 1/4" HIGH
   3/64" STROKE
   1/32" INSET
3. MIDDLE LETTERS: 1/8" HIGH
   1/32" STROKE
   1/64" INSET
4. INNER LETTERS: 3/32" HIGH
   1/32" STROKE
   1/64" INSET
5. CIRCLES: 1/32" STROKE
   1/64" INSET
6. TRIANGLE: 3/64" STROKE
   1/32" INSET
   CENTER PUNCHMARK – 1/32" INSET

STEEL WEDGE FOR LEDGE SHANK

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

STANDARD MARKER
TRIANGULATION STATION

R.I. STANDARD 14.4.2

JUNE 15, 1998

ISSUE DATE
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION 915 OF THE R.I. STANDARD SPECIFICATIONS.

SECTION A-A

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

GEODETIC SURVEY DISK

R.I. STANDARD 14.4.3

JUNE 15, 1998

CHIEF ENGINEER TRANSPORTATION
CHIEF DESIGN ENGINEER TRANSPORTATION

REVISIONS

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NOTE:
WEDGE SHALL BE OF SEASONED OAK AND FREE OF KNOTS.
NOTE:
STAKE SHALL BE OF SEASONED OAK AND FREE OF KNOTS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 917 OF THE R.I. STANDARD SPECIFICATIONS.
2. CONTRACTOR WILL REPLACE EXISTING BOX IF BOX DOES NOT CONFORM TO U.S. POSTAL SERVICE SPECIFICATIONS. CONTRACTOR SHALL USE U.S. POSTAL SERVICE BOX 1, 1A OR 2.
3. LOCATION OF Posts TO BE SET UNDER ADVICE OF LOCAL MAIL CARRIER.
4. ALL METAL SURFACES (INCLUDING MAILBOX) AND HARDWARE SHALL BE GALVANIZED WITH A MINIMUM GALVANIZED COATING OF 1.9 MILS.
5. WHEN MORE THAN ONE SUPPORT SYSTEM IS TO BE INSTALLED, THE MINIMUM SPACING OF SUPPORT POSTS SHALL BE 3'-0".
6. USE 8-0.1875"x0.75" BOLTS WITH LOCKWASHERS FOR ALL SIZE BOXES (4 EACH SIDE).
7. USE WITH RI STANDARD DETAIL 15.1.1.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

POST AND MOUNTING FOR RURAL MAILBOX

R.I. STANDARD 15.1.0

M.L.P. 06/01/10

JUNE 15, 1998

ISSUE DATE
NOTES:
1. SHALL BE WHEN INSTALLING RURAL MAILBOXES RI STANDARD NOS. 15.1.0 AND 15.2.0.
2. MAILBOXES SHALL BE SET TO PROVIDE 3’-0” OF CLEARANCE BETWEEN THE BACK FACE OF MAILBOX AND BACK OF SIDEWALK OR OBSTRUCTION.
3. LOCATION OF POSTS TO BE SET UNDER ADVICE OF LOCAL MAIL CARRIER.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 917 OF THE R.I. STANDARD SPECIFICATIONS.
2. CONTRACTOR SHALL REPLACE EXISTING BOX IF IT DOES NOT CONFORM TO U.S. POSTAL SERVICE SPECIFICATIONS. CONTRACTOR SHALL USE U.S. POSTAL SERVICE BOX 1, 1A OR 2.
3. LOCATION OF POSTS TO BE SET UNDER THE ADVICE OF THE LOCAL MAIL CARRIER.
4. ALL METAL SURFACES (INCLUDING MAILBOX) AND HARDWARE SHALL BE GALVANIZED WITH A MINIMUM GALVANIZED COATING OF 1.9 MILS.
5. WHEN MORE THAN ONE SUPPORT SYSTEM IS TO BE INSTALLED THE MINIMUM SPACING OF THE SUPPORT POSTS SHALL BE 4'-7 1/2".
6. FOR SOCKET SYSTEM DETAILS SEE STD. 15.1.0.
7. USE WITH RI STANDARD DETAIL 15.1.1.
NOTE:
1. TYPE "H" CABINET MUST BE LOCATED A MIN. OF 30'-0" FROM PAVED HIGHWAY SURFACE OR LOCATED BEHIND A PROTECTIVE BARRIER.
2. PROVIDE WEATHER HEAD AT TOP OF POLE.
DETAIL "A"

UTILITY SYSTEM

NEW SECONDARY SYSTEM BY CONTRACTOR

1/0 ALUMINUM TRIPLEX CONDUCTOR

2" RIGID STEEL CONDUIT WITH WEATHERHEAD

GALVANIZED CLAMPS (TYP.)

DETAIL "A"

ACCESSIBLE ROADWAY

150'-0" MAX.

HIGHWAY SURFACE

(SEE NOTE)

NOTE:
TYPE "H" CABINET MUST BE LOCATED A MINIMUM OF 30'-0" FROM PAVED HIGHWAY SURFACE OR LOCATED BEHIND A PROTECTIVE BARRIER.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

TRAFFIC MONITORING STATION

TYPE "H" CABINET - ELECTRIC SERVICE

R.I. STANDARD 17.3.2

SIGNED

JUNE 15, 1998
NOTE:
GASKET AND/OR CAULKING TO BE APPLIED BETWEEN CABINET AND FOUNDATION TO PROVIDE A PERMANENT WEATHERTIGHT SEAL.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

TRAFFIC MONITORING STATION
CONTROLLER CABINET
GROUND MOUNTED INSTALLATION

REVISIONS

NO. BY DATE

JUNE 15, 1998

CHIEF ENGINEER
TRANSPORTATION

CHIEF DESIGN ENGINEER
TRANSPORTATION

R.I. STANDARD
17.4.0
FAN AND THERMOSTAT

METER AND METER TRIM IF REQUIRED

POWER OUTLET BOX

TRANSFORMER (NOT REQUIRED WITH 120 VOLTAGE)

DOUBLE POLE 30 AMP CIRCUIT BREAKER AND ENCLOSURE ("MAIN")

240 OR 120 VOLTAGE SUPPLY

CABINET

2 ADJUSTABLE SHELVES (SPACED AT APPROXIMATELY 1/3 AND 2/3 CABINET HEIGHT)

DOUBLE ROW TERMINAL STRIP (40 HEADS)

COILED DETECTOR LOOP WIRE

ELECTRIC CONDUIT (2" RIGID STEEL)

LOOP CONDUIT (2" RIGID STEEL)

TELEPHONE CONDUIT (2" RIGID STEEL)

NEUTRAL WIRE

GROUND ROD WITH ACORN CLAMP

FRONT SECTION

SIDE SECTION

NOTES:
1. TRANSFORMER MUST BE WİRED TO ALLOW 120 SECONDARY VOLTAGE AT POWER OUTLET BOX.
2. WİREİNG SHOWN WITHOUT METER. IF METER IS REQUIRED, WİRE METER BETWEEN CONDUIT AND "MAIN."
3. 3/4" MARINE PLYWOOD TO BE USED AS BACKING TO MOUNT ACCESSORIES.
4. DOUBLE POLE BREAKER SWITCH REQUIRED FOR 220 VOLTAGE ONLY. SINGLE POLE BREAKER WITH ENCLOSURE MAY BE USED FOR 110 VOLTAGE.
5. INSTALLATION TO INCLUDE TELEPHONE JACK, PULL CHAIN LIGHT AND SURGE ARRESTER.
6. PROVIDE 60 AMP SERVICE.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
TRAFFIC MONITORING STATION
CONTROLLER CABINET
WIRING DETAILS – INTERIOR

REVISIONS

NO.  BY  DATE

JUNE 15, 1998

R.I. STANDARD 17.4.1

SIGNED

CHIEF ENGINEER
TRANSPORTATION

CHIEF DESIGN ENGINEER
TRANSPORTATION
THREE PRONG OUTLETS

#12 AWG WIRE

#12 AWG

GROUND POST

#12 AWG WIRE

#12 AWG

GREEN

GROUND POST

120 VOLTAGE SUPPLY

COVER AND OUTLETS

#12 AWG WIRE

#12 AWG

WHITE

NEUTRAL POST

JUMPER WIRE

CIRCUIT BREAKER

POWER OUTLET BOX
FILL WITH LOOP EMBEDDING SEALER

HOLD DOWN

LOOP WIRE (NO TWISTS IN SAWCUT)

USE INSULATING BUSHING TO SEAL THE END OF THE CONDUIT AND THE HOLE THROUGH THE PAVEMENT, TO PREVENT LOOP EMBEDDING SEALER FROM ENTERING

30° TO 60° (TYP.)

FLEXIBLE PVC LIQUID TIGHT PLASTIC TUBING

LOOP WIRE (TWIST 3 TURNS PER FT. MIN.)

SLOPE 2" PVC CONDUIT TO HANDHOLE (SEE LOCATION PLANS)

NOTES:
1. DO NOT USE SHARP OBJECTS TO HOLD DOWN WIRE.
2. CURB DETAIL IS SHOWN BY DASHED LINES, RUN THE CONDUIT UNDER THE CURB.
RHODE ISLAND DEPARTMENT OF TRANSPORTATION
FOR MULTIPLE LANES IN THE SAME DIRECTION
TRAFFIC MONITORING STATION LOOP WIRE LAYOUT

SHOULDER

16'-0"

EDGE OF PAVEMENT OR FACE OF CURB

TRAFFIC LOOP (TYP.) FOR LOOP DIMENSIONS
REFERENCE STD. 17.7.3

TRAFFIC LOOP (TYP.)

TRAVEL LANE

DIRECTION OF TRAVEL

TRAVEL LANE

DIRECTION OF TRAVEL

TRAVEL LANE

DIRECTION OF TRAVEL

SHOULDER

EDGE OF PAVEMENT OR FACE OF CURB

LOOP WIRE (NO TWISTS IN SAW CUT)

2'-0" MIN. (TYP.)

LOOP WIRE (NO TWISTS IN SAW CUT)

FLEXIBLE LIQUID TIGHT CONDUIT AND 2" PVC CONDUIT (SEE STD. 17.6.0) STRIP TUBING FROM CONDUCTORS AND TWIST 3 TURNS PER FT. MIN. FROM BEGINNING OF FLEXIBLE CONDUIT BACK TO EQUIPMENT CABINET

SEAL END OF TUBING AND END OF CONDUIT TO PREVENT LOOP EMBEDDING SEALER FROM ENTERING (SEE STD. 17.6.0)

HANIDHOLE

EQUIPMENT CABINET

JUNE 15, 1998

R.I. STANDARD 17.7.1
STEP 1

FEED WIRE FROM
EQUIPMENT LOCATION
ONE CIRCUMFERENCE
OF LOOP WIRE

STEP 2

TWO ADDITIONAL
CIRCUMFENCES
OF LOOP WIRE

STEP 3

FOURTH AND FINAL
CIRCUMFERENCE
OF LOOP WIRE
RETURN WIRE TO
EQUIPMENT LOCATION
NOTE:
USE SHORT (2" TYP.) PIECES OF OPEN CELLED POLYURETHANE BACKER ROD FOAM SEALER STRIPS AT 2'-0" CENTERS TO HOLD LOOP WIRES IN PLACE UNTIL SEALER SETS. DO NOT USE SHARP OBJECTS TO HOLD WIRE DOWN.
NOTE:
USE SHORT (2" TYP.) PIECES OF OPEN CELLED POLYURETHANE BACKER ROD FOAM SEALER STRIPS AT 2'-0" CENTERS TO HOLD LOOP WIRES IN PLACE UNTIL SEALER SETS. DO NOT USE SHARP OBJECTS TO HOLD WIRE DOWN.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

TRAFFIC MONITORING STATION
SAWCUT CROSS-SECTION
WITHOUT A PAVEMENT OVERLAY

R.I. STANDARD 17.7.6

JUNE 15, 1998
CONCRETE TOLERANCES

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<tr>
<td>0”–12”</td>
<td>1/4”</td>
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<td>12”–24”</td>
<td>1/2”</td>
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<tr>
<td>24”–72”</td>
<td>3/4”</td>
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NOTES:

1. SHALL BE IN ACCORDANCE WITH SECTION T.08 OF THE R.I. STANDARD SPECIFICATIONS.
2. 2” GALVANIZED CONDUIT WITH 92” BEND AND 1”–6” RADIUS, PROJECTING 2 3/4” AS SHOWN. THREADS TO HAVE PROTECTOR.
3. BOLTS – (4) 1” Ø x 3’–0” LONG WITH 4” HOOK.
4. STD. 18.3.5 TO BE USED WITH THIS STANDARD.
5. DESIGN BOLT TENSION = 30 K.
6. FOUNDATION DESIGN IS BASED ON COMPETENT GRANULAR SOIL CONDITIONS. A SPECIAL DESIGN IS REQUIRED IF FIELD CONDITIONS VARY FROM THIS.
7. 2 3/4” PROJECTION OF RECESSED BOLT COUPLINGS (RI STD. 18.3.5). ALL GALVANIZED BOLTS ON A 11 1/2” BOLT CIRCLE SHALL BE SHIPPED WITH GALVANIZED WASHERS AND GALVANIZED HEX NUTS (BOLT THREAD IS 8NC). BOLT MATERIAL IS 55,000 PSI MIN. YIELD.
8. FOUNDATIONS MAY BE PRECAST OR CAST IN–PLACE.
SECTION DETAIL OF ASSEMBLY COUPLER

NOTE:

1. DESCRIPTION: THE DEVICES SHALL BE FURNISHED IN "SETS". EACH "SET" SHALL BE PACKAGED IN A CORRUGATED BOX AND SHALL CONTAIN THE FOLLOWING:

   1 EA. GALVANIZED DUCTILE IRON REACTION PLATE, 7/8" THICK. MANUFACTURED IN ACCORDANCE WITH ASTM SPECIFICATION A536, STANDARD SPECIFICATION FOR DUCTILE IRON CASTINGS, AS ILLUSTRATED. THE PURPOSE OF THIS DEVICE IS TO PREVENT DAMAGE TO THE ANCHOR BOLTS WHEN BREAKAWAY COUPLINGS ARE FRACTURED AND TO PERMIT LEVELING.

   4 EA. GRAY IRON BREAKAWAY COUPLINGS MANUFACTURED IN ACCORDANCE WITH ASTM SPECIFICATION A48, STANDARD SPECIFICATION FOR GRAY IRON CASTINGS, AS ILLUSTRATED. DISSIMILAR METALS, SUCH AS CAST ALUMINUM, ARE NOT ACCEPTABLE.

   4 EA. ZINC PLATED THREADED STUDS

   12 EA. ZINC PLATED HEX NUTS

   4 EA. PLASTIC SPACERS

   12 EA. GALVANIZED WASHERS

   1 EA. 0.045 GAUGE ALUMINUM PROTECTIVE SHROUD

2. SHALL BE IN ACCORDANCE WITH SECTION T.08 OF THE R.I. STANDARD SPECIFICATIONS. THIS ITEM TO BE USED WITH STD. 18.1.0.

3. THIS ITEM SHALL BE INSTALLED IN ALL INSTALLATIONS, INCLUDING BEHIND GUARDRAIL UP TO 4' FROM THE BACK OF GUARDRAIL.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.05 OF THE RI STANDARD SPECIFICATIONS.
2. COVER TO HAVE NON-SLIP DIAMOND SURFACE AND THE WORD "ELECTRIC" ON ELECTRIC HANDBOLES, "SIGNAL" ON SIGNAL HANDBOLES, AND "COMM" ON TELEPHONE HANDBOLES.
3. 4" KNOCKOUTS ARE TO BE PROVIDED ON ALL FOUR SIDES OF THE HANDBOLE. FOLLOWING CONDUIT INSTALLATION THE CONTRACTOR SHALL SEAL AROUND CONDUIT ENTRANCES WITH CEMENT.
4. MINIMUM REQUIRED CONCRETE REINFORCEMENT = 0.058 SQ. IN./LIN. FT. (EACH WAY).
5. HANDBOLE RING TO BE SET IN MORTAR OVER HANDBOLE WALL.
6. FRAME AND COVER TO BE PROVIDED WITH GROUND CONNECTOR (FASTENED WITH 3/8–16 THREADS INTO BLIND HOLE) AND WELDED NUT. BOND BOTH ITEMS TO GROUND ROD USING #6cu. BARE CONDUCTOR.
7. MAX. ADJUSTMENT FOR COVER TO FINISHED GRADE SHALL BE 3".
7. NOT INTENDED FOR USE IN ROADWAY.

MORTAR (TYP.)
#6 BARE COPPER WITH 5' OF SLACK
INSULATED BONDING BUSHINGS WITH THREADED ENDS (STEEL CONDUIT ONLY). BELL ENDS FOR PVC CONDUIT.
4" KNOCKOUT (SEE NOTE 3)
GROUT AROUND CONDUITS
CRUSHED STONE
COMPACTED GRAVEL BORROW
5/8"Øx10'–0" GROUND DRIVE ROD TO SAME LEVEL AS CONDUIT
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.05 OF THE RI STANDARD SPECIFICATIONS.
2. COVER TO HAVE NON-SLIP DIAMOND SURFACE AND THE WORD “ELECTRIC” ON ELECTRIC HANDBOLES, “SIGNAL” ON SIGNAL HANDBOLES, AND “COMM” ON TELEPHONE HANDBOLES.
3. 4" KNOCKOUTS ARE TO BE PROVIDED ON ALL FOUR SIDES OF THE HANDBOLES. FOLLOWING CONDUIT INSTALLATION THE CONTRACTOR SHALL SEAL AROUND THE CONDUIT ENTRANCES WITH CEMENT.
4. FRAME AND COVER TO BE PROVIDED WITH GROUND CONNECTOR (FASTENED WITH 3/8−16 THREADS INTO BLIND HOLE) AND WELDED NUT. BOND BOTH ITEMS TO GROUND ROD USING #6cu. BARE CONDUCTOR.
5. MAX. ADJUSTMENT FOR COVER TO FINISHED GRADE SHALL BE 3’.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PRECAST TYPE "H"
HEAVY-DUTY HANDBOLES

R.I. STANDARD 18.2.1

JUNE 15, 1998

REVISIONS

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<th>NO.</th>
<th>BY</th>
<th>DATE</th>
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<td>3</td>
<td>RBH</td>
<td>5/31/11</td>
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CHIEF ENGINEER
CHIEF DESIGN ENGINEER
CHIEF CIVIL ENGINEER

ISSUE DATE
NUMBER OF CONDUITS AS INDICATED

#4 REBARS @ 12" O.C. VERTICAL
#4 REBARS @ 10" O.C. HORIZONTAL
© BEND AROUND CORNERS

(2) #4 REBAR IN ROOF SLAB
GROUND WIRE

NUMBER OF CONDUITS AS INDICATED
PULLING IN IRON

(2) #5 TOP AND BOTTOM AROUND OPENING
GROUND ROD

FINISHED GRADE
FRAME AND COVER
SET FRAME IN MORTAR BED OVER MANHOLE

GROUND CONNECTOR
KEY
END BELL

#6cu. BARE GROUND WIRE WITH 5’ OF SLACK
1”Ø CRUSHED STONE
2” SAND FILL
GROUNDING ROD

2’-1 3/8”
6”
1’-0”-0’-5 1/2’-8”
3-10 1/2”
3’-0”
8”
8”
4’-6”

SECTION A–A

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.05 OF THE RI STANDARD SPECIFICATIONS.
2. COVER TO HAVE NON–SLIP DIAMOND SURFACE AND THE WORD "ELECTRIC".
3. FRAME AND COVER TO BE PROVIDED WITH GROUND CONNECTOR (FASTENED WITH 3/8–16 THREADS INTO BLIND HOLE) AND WELDED NUT. BOND BOTH ITEMS TO GROUND ROD USING #6cu. BARE CONDUCTOR.
4. MAX. ADJUSTMENT FOR COVER TO FINISHED GRADE SHALL BE 3”.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PRECAST TYPE "B" HEAVY DUTY HANDHOLE

JUNE 15, 1998

PREPARED BY:

CHIEF ENGINEER TRANSPORTATION
CHIEF DESIGN ENGINEER TRANSPORTATION

REVISIONS
NO. BY DATE
1 MLP Mar 05
2 MLP 6/27/08
3 RSH 5/31/11

R.I. STANDARD 18.2.2
20'-0" DOUBLE DAVIT ARM

(10'-0"

10'-0"(MAX.) SINGLE DAVIT ARM

(SEE NOTE 5)

2"Ø SLIPFITTER

DAVIT ARM ALUMINUM ALLOY
TAPERED 6" TO 4"
RADIUS 3'-9"

CUT-OFF LUMINAIRE
SIZE AS
INDICATED

GUSSET PLATE
FOR TWIN DAVIT

SLEEVE FOR FIELD
JOINT ASSEMBLY

11/16" HOLE FOR 5/8" BOLTS

INTERNAL FACTORY MOUNTED
VIBRATION DAMPER

LOWER SHAFT ALUMINUM ALLOY

CAST ALUMINUM
BASE WITH 4 CAST
BOLT COVERS

(SEE NOTE 3)

REINFORCED FLUSH
TYPE HAND-HOLE

MOUNTING HEIGHT (30'-0"
AND 40'-0"

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.08 OF THE RI STANDARD SPECIFICATIONS.
2. SEE CONTRACT DOCUMENTS FOR SPECIFIC POLE HEIGHTS AND DAVIT CONFIGURATIONS.
3. FOR BREAKAWAY COUPLING DETAIL, SEE STD. 18.1.1.
4. SMALLER ARMS (4'-0" AND 6'-0") ALLOWED FOR RAMPS.
5. WHEN LIGHTING STANDARDS ARE INSTALLED ON BRIDGE PARAPETS, A DAMPER
PAD(RUBBER) MUST BE INSTALLED BETWEEN STANDARD BASE AND CONCRETE FOUNDATION.
6. FOR INSTALLATION ON BRIDGES AND WHERE EXCESSIVE WINDS MAY BE PRESENT,
CONSIDERATION IS TO BE GIVEN TO THE APPLICATION OF EXTERNAL DAMPERS ON THE
DAVITS TO REDUCE VIBRATION.
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION T.04 OF THE RI STANDARD SPECIFICATIONS.
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION T.04 OF THE RI STANDARD SPECIFICATIONS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.08 OF THE R.I. STANDARD SPECIFICATIONS.
2. STD. 18.3.5 TO BE USED WITH THIS STANDARD.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.08 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS STANDARD SHALL BE COORDINATED WITH STD. 18.1.0 AND 18.1.1.
3. THE HEXAGONAL COUPLINGS SHALL BE GALVANIZED AND SHALL BE ABLE TO DEVELOP THE STRENGTH OF THE 1\"Ø ANCHOR BOLTS. THE BOLT LENGTH SHALL BE DETERMINED BY THE BOLT SUPPLIER AND SHALL MEET THE APPROVAL OF THE ENGINEER.
4. GALVANIZED OR STAINLESS STEEL HEX BOLTS SHALL BE USED. THEY SHALL BE ABLE TO DEVELOP THE STRENGTH OF THE 1\"Ø ANCHOR BOLTS.
5. APPROVED PLUGS SHALL BE INSERTED INTO THE HEX COUPLINGS DURING CONSTRUCTION OF THE FOUNDATION.

1\"Ø GALVANIZED HEX COUPLING (SEE NOTE 3)

1\"Ø GALVANIZED ANCHOR BOLTS, 8 NC BOLT THREADS, 3'-0" LONG WITH 4" HOOK, 55,000 PSI MINIMUM YIELD
TUNNEL LUMINAIRE ATTACHMENT DETAIL

16"x16"x8" GALV. JUNCTION BOX
W/GASKETED COVER

1/2" GALV. SUPPORT ROD

3/4" PVC COATED FLEX R.S.
CONDUIT WITH SEAL TIGHT
CONNECTOR

xxx WATT HPS TUNNEL LUMINAIRE BOTTOM TO
EXTEND 1"± BELOW BEAM (SEE NOTE 2)

ROADWAY DECK

SLOPED EMBANKMENT

UNDERPASS LIGHTING - VERTICAL ELEVATION

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.08 OF THE RI STANDARD SPECIFICATIONS.
2. WATTAGE TO BE SPECIFIED BASED ON EACH INDIVIDUAL APPLICATION.
3. CONDUIT SIZE, JUNCTION BOXES, EXPANSION JOINTS AND CONDUCTORS TO BE ACCORDING
   TO PLANS FOR EACH PROJECT.
4. MECHANICAL ANCHORS SHALL BE USED FOR OVERHEAD MOUNTING —
   NO EPOXY ANCHORAGE SYSTEMS ARE ALLOWED.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

UNDERPASS LIGHTING DETAIL
9”x5 1/2” LEXAN WINDOW WITH GASKET FOR PHOTO ELECTRIC CONTROL (FACING NORTH)

NEMA 3R STAINLESS STEEL CABINET BOLTED DOUBLE DOOR PADLOCK AND HASP

NEOPRENE GASKET ALL AROUND

1” CHAMFER

2’-0”

CONCRETE PAD (REFER TO RI STD. 18.4.6)

1” CHAMFER

<table>
<thead>
<tr>
<th>CABINET DIMENSIONS</th>
<th>A</th>
<th>B</th>
<th>C</th>
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<tbody>
<tr>
<td>120/240 OR 120/208 VOLT</td>
<td>4’-0” TO 4’-4”</td>
<td>3’-6” TO 4’-2”</td>
<td>1’-2” TO 2’-0”</td>
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<tr>
<td>240/480 VOLT</td>
<td>4’-0” TO 6’-0”</td>
<td>3’-6” TO 6’-0”</td>
<td>2’-0”</td>
</tr>
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NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.09 OF THE RI STANDARD SPECIFICATIONS.
2. PEDESTAL DIMENSIONS ARE APPROXIMATE. CONTRACTOR TO ASSURE THAT ALL COMPONENTS FIT INSIDE THE ENCLOSURE ACCORDING TO NEC REQUIREMENTS.
3. ENCLOSURE TO BE SECURED TO FOUNDATION BY USING (2) 1/2” “THUNDERSTUDS” STAINLESS STEEL BOLTS ON EACH SIDE.
1. SHALL BE IN ACCORDANCE WITH LATEST NEC(2005) AND WITH SECTION T.04 OF THE RI STANDARD SPECIFICATIONS.
2. #2cu. BARE GROUND WIRE 1’-0” BELOW GRADE. ALLOW 3’-0” SLACK LEADS TO BOND AT GROUNDING LUGS IN CABINET.
3. GROUND RODS MUST BE SPACED A MINIMUM OF 6’-0” FROM EACH OTHER.
2P-200 AMP WITH DOUBLE LUGS
ELECTRIC METER MAIN (200A) WITH BY-PASS SWITCH IN WATER TIGHT ENCLOSURE

2P-20 AMP BREAKER

200 AMP - 600 V. DISCONNECT SWITCH (SEE NOTE 3)

3 KVA TRANSFORMER
240/480 V.-120/240 V.
3' MIN. TO BOTTOM OF METER

DUPLEX RECEPTACLE WITH GFI

500 WATT ELECTRIC PUMP HOUSE HEATER WITH THERMOSTAT

2P-150 AMP BREAKER

AIR VENT

PHOTO ELECTRIC CELL (TWIST LOCK), FACING NORTH

2P-150 AMP MECHANICALLY HELD LIGHTING CONTACTOR IN NEMA 1 ENCLOSURE

100 WATT INCANDESCENT WITH SINGLE POLE SWITCH

MISC. LOAD PANELBOARD
60 AMPS - 120/240 V.

LIGHTING PANELBOARD
200 AMP-240/480 V.

#6cu. BARE GROUND

GROUND LUG

NEOPRENE GASKET ALL AROUND

GRADE TO DRAIN (TYP.)

CONCRETE FOUNDATION (RI STD. 18.4.6)
1'-0"
CRUSHED STONE

5/8"x10'-'0"
GROUNDING ROD (COPPER)

3" CONDUIT WITH (3)
3/Ocu. & (1) #2cu.
GRD. TO UTILITY

2" SAND

(4) 3" PVC SCH. 80 CONDUITS FOR LIGHTING CIRCUITS TO TYPE "B" HANDBOLES

SWITCHGEAR DETAIL

FRONT VIEW

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.09 OF THE RI STANDARD SPECIFICATIONS.
2. APPROXIMATE DIMENSION 6'-0"(MAX.) x 4'-0" x 1'-6" TO 2'-0"(MAX.).
3. DISCONNECT SWITCH TO MEET UTILITY COLD SEQUENCE REQUIREMENTS, LOCKED BY UTILITY.
4. CONTRACTOR TO INSTALL OUTGOING CONDUITS DIRECTLY UNDERNEATH EACH PANELBOARD.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

SERVICE PEDESTAL
240/480 VOLTS - 3W

REVISIONS

<table>
<thead>
<tr>
<th>NO.</th>
<th>BY</th>
<th>DATE</th>
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<tr>
<td>1</td>
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JUNE 15, 1998
ISSUE DATE

CHIEF ENGINEER TRANSPORTATION
EDWARD W. PERKINS, JR.
CHIEF DESIGN ENGINEER TRANSPORTATION

R.I. STANDARD
18.4.2
5-Terminal Meter Socket Detail

Electric Meter
Duplex Receptacle with GFI
200 Amp - 600 V. Disconnect Switch
3 KVA Transformer 240/480 V., 120/240 V.
60 Amp - 120/240 V. Misc. Loads Panelboard
#6cu. Bare Ground
(3) 3/0cu. & (1) #2cu. Grd. to Utility
5/8"Ø x 10'-0" Ground Rod
500 Watt Electric Pump House Heater with Thermostat

2 Pole 200 Amp Main with Double Lugs
2 Pole 150 Amp
Mechanically Held 150 Amp - 2 Pole Contactor
Photo Electric Cell (Facing North)
Lexan Window
100 Watt Incandescent with Single Pole Switch
200 Amp - 240/480 V. Lighting Panelboard 1P (20–50 Amp) Based on Loads
#6cu. Bare Ground
5/8"Ø x 10'-0" Ground Rod
Lighting Circuits (As Required)

Power Schematic

Notes:
1. Shall be in accordance with Section T.09 of the RI Standard Specifications.
2. On three-wire installations, terminal and jaw at "B" must be grounded.

Rhode Island Department of Transportation

Service Pedestal
240/480 Volts - 3W

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<table>
<thead>
<tr>
<th>No.</th>
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<th>Date</th>
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R.I. Standard 18.4.3

June 15, 1998
SWITCHGEAR DETAIL
FRONT VIEW

NOTE:
1. SHALL BE IN ACCORDANCE WITH SECTION T.09 OF THE RI STANDARD SPECIFICATIONS.
2. CONTRACTOR TO INSTALL OUTGOING CONDUITS DIRECTLY UNDERNEATH EACH PANELBOARD.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

SERVICE PEDESTAL
120/240 OR 120/208 VOLTS - 3W

R.I. STANDARD
18.4.4
5-TERMINAL METER SOCKET DETAIL

2 POLE 150 AMP BREAKER
HAND (ON/OFF) AUTOMATIC SWITCH
MECHANICALLY HELD 150 AMP - 2 POLE CONTACTOR
PHOTO ELECTRIC CELL OR TIMER

100 WATT INCANDESCENT WITH SINGLE POLE SWITCH
200 AMP LIGHTING PANEL 1P (20-50 AMP) BASED ON LOADS
DUPLEX RECEPTACLE WITH GFI
60 AMP MISCELLANEOUS LOADS
#6cu. BARE GROUND WIRE

CONDUITS TO LIGHTING CIRCUITS (AS REQUIRED)
500 WATT ELECTRIC PUMP HOUSE HEATER WITH THERMOSTAT (240 V.)

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.09 OF THE RI STANDARD SPECIFICATIONS.
2. ON THREE-WIRE INSTALLATIONS, TERMINAL AND JAW AT "B" MUST BE GROUNDED.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. LOCATED IN HANDHOLE AT BASE OF ALUMINUM POLE.
NOTE: INSTALL SPACERS AT APPROXIMATELY 6’ APART.

STANDARD TRENCH DETAIL

NOTE: SHALL BE IN ACCORDANCE WITH SECTION T.06 OF THE RI STANDARD SPECIFICATIONS.

AUTOMATIC TRENCHING MACHINE DETAIL

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

TRENCH DETAIL FOR CONDUIT IN EXISTING ROADWAY

JUNE 15, 1998

R.I. STANDARD 18.6.0
MATCH EXISTING PAVEMENT DEPTH WITH BITUMINOUS OR CONCRETE SURFACE COURSE

NOTE:
INSTALL SPACERS AT APPROXIMATELY 6' APART.

TRENCH SECTION

ROAD PAVEMENT
YELLOW WARNING TAPE
CURB
GRADE

(1) or (2) 3" PVC SCH. 80 CONDUITS AS REQUIRED

SECTION
TYPE "A" HANDBOHE
RIDOT 18.2.0

TYPE "H" HD HANDBOHE
RIDOT 18.2.1

OR TYPE "B" PULLBOX
RIDOT 18.2.2

SECTION
TYPE "A" HANDBOHE
RIDOT 18.2.0

TYPE "H" HD HANDBOHE
RIDOT 18.2.1

OR TYPE "B" PULLBOX
RIDOT 18.2.2

NOTE:
SHALL BE IN ACCORDANCE WITH SECTON T.06 OF THE RI STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
LIGHT CONDUIT –
ROAD/RAMP CROSSING

R.I. STANDARD 18.6.1
EXPANSION JOINT DETAIL W/OUT DEFLECTION
WATERTIGHT COUPLING

SWITCHGEAR DETAIL

EXPANSION JOINT DETAIL W/DEFLECTION
WATERTIGHT COUPLING

NOTE:
SHALL BE IN ACCORDANCE WITH SECTION T.06 OF THE RI STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

EXPANSION JOINTS

R.I. STANDARD
18.6.2

JUNE 27, 2008
ISSUE DATE
"V" PULLBOX NOTES:
1. FLANGE AND COVER TO BE MACHINED AT JOINT.
2. BOX TO BE U.L. LISTED.
3. BOX TO BE U.L. LISTED FOR SUBMERSIBLE USE. BOX TO BE CONSTRUCTED OF GALVANIZED STEEL WITH CAST IRON COVER.
4. PROVIDE HUBS AS REQUIRED.
5. SHALL BE IN ACCORDANCE WITH R.I. STANDARD. SPEC. T.05.
6. BOX SIZES TO BE: 24"Lx12"Wx8"D FOR 3" CONDUIT, 16"Lx12"Wx8"D FOR 2" CONDUIT.

TYPICAL SECTION AT TYPE "V" PULLBOX — WITHIN STRUCTURE

"W" PULLBOX NOTES:
1. FLANGE AND COVER TO BE MACHINED AT JOINT.
2. BOX TO BE U.L. LISTED.
3. BOX TO BE U.L. LISTED FOR SUBMERSIBLE USE. BOX TO BE CONSTRUCTED OF GALVANIZED STEEL.
4. PROVIDE HUBS AS REQUIRED.
5. SHALL BE IN ACCORDANCE WITH R.I. STANDARD. SPEC. T.05.

TYPICAL SECTION AT TYPE "W" PULLBOX — SURFACE MOUNTED
WEATHERHEAD
SECONDARY TO TRANSFORMER

PVC SCH. 40 (SEE NOTE 2)
TRANSITION COUPLING R.S./PVC
GROUND CLAMP AT TOP OF STEEL RISER

#6 CU. BARE STRANDED TO GROUND ROD
RIGID STEEL CONDUIT (SEE NOTE 2)
GALVANIZED CLAMPS (SEE NOTE 2)

16'-0" MIN.
10'±

FINISHED GRADE

2'-0" OR 3'-0"
2'-0" R (2" RISER) OR 3'-0" R (3" RISER)

2" OR 3" R.S. CONDUIT TO SERVICE PEDESTAL

5/8"x10'-0" GROUNDING ROD

RISER POLE

NOTE:
1. SHALL BE IN ACCORDANCE WITH SECTION T.06 OF THE RI STANDARD SPECIFICATIONS.
2. 2" RISER TO BE USED FOR 100 AMP SERVICE AND 3" RISER TO BE USED FOR 200 AMP SERVICE.
3. GROUND WIRE AND GROUND ROD TO BE SUPPLIED BY UTILITY.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.12 OF THE R.I. STANDARD SPECIFICATION.
2. TRAFFIC SIGNAL NUMBER TO BE STENCIL ON EXTERIOR AND INTERIOR OF ALL CABINET DOORS (GROUND AND POLE MOUNTED). STENCIL SHALL BE 3” HIGH BLOCK LETTERS APPLIED WITH BLACK PAINT.
3. SILICONE CAULKING TO BE APPLIED BETWEEN CABINET AND FOUNDATION TO PROVIDE A PERMANENT WEATHER TIGHT SEAL.
4. IN UNPAVED AREAS A 4’-0” x 2’-6” PAVED WORK PAD SHALL BE PLACED IN FRONT OF THE CABINET DOOR. PAD AND FOUNDATION SHALL BE COMPLETED IN ONE POUR.
NOTE:
1. SHALL BE IN ACCORDANCE WITH SECTION T.12 OF THE R.I. STANDARD DETAILS.
2. THE CABINET SHALL BE MOUNTED SO THAT HOLES IN THE POLE FOR WIRE ACCESS FITTINGS ARE AT 90° TO THE AXIS OF POLE LOAD.
3. LOCATE BRACKETS AND ATTACHING BOLTS TO CLEAR EQUIPMENT WITHIN CABINET.
4. IN UNPAVED AREAS, A 4'-0"x2'-6"x4" PAVED WORK PAD SHALL BE PLACED IN FRONT OF THE DOOR.
5. ALL HARDWARE SHALL BE STAINLESS STEEL.
6. LINE CONDUCTORS SHALL BE PROTECTED TO THE METER.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
POLE MOUNTED CONTROLLER INSTALLATION

R.I. STANDARD 19.1.1

JUNE 15, 1998
ISSUE DATE
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.11 OF THE R.I. STANDARD SPECIFICATIONS.
2. MOUNTING BRACKET MOUNTED SECURELY WITH STAINLESS STEEL BOLTS MUST BE ADJUSTABLE SUCH THAT THE FACE OF THE SIGN IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC. THE MOUNTING SHALL HOLD THE SIGN ROBUSTLY IN PLACE AND RESIST MOVEMENT IN ALL DIRECTIONS.
3. ALL SIGNS SHOULD INCLUDE 2" BACKPLATES FOR DESIGN PURPOSES.
4. ALL STREET SIGNS ARE 1'-6" HIGH BY 6'-0" LONG.
5. DOOR FACE AND WINDOWS SHALL BE PAINTED FLAT BLACK.
6. SIGNAL HEADS SHALL BE PLACED ON THE MAST ARM SO THAT THE RED LENSES ARE AT EQUAL HEIGHT ABOVE THE PAVEMENT SURFACE.
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION T.11 OF THE R.I. STANDARD SPECIFICATIONS.
POLE DETAIL

6063-T6 ALUMINUM ALLOY SHAFT
WALL—TAPERED 6"x4 1/2"

SIGN

PEDESTRIAN
PUSHBUTTON

TRANSFORMER BASE
356 CAST
ALUMINUM ALLOY

HANDHOLE

PLAN

1'-8"

BOLT CIRCLE SHALL
BE DESIGNATED BY
THE MANUFACTURER
IN ACCORDANCE WITH
THE SPECIFICATIONS

GALVANIZED STEEL ANCHOR
BOLTS 3/4"x2'-1" LONG
WITH 3"—90° HOOK
AND 4" THREADED END

RIGID STEEL CONDUIT
AND GROUNDING BUSHING
SEE PLANS FOR SIZE
AND NUMBER REQUIRED

3"

1" CHAMFER (TYP.)

FINISHED GRADE

ELEVATION

FOUNDATION DETAIL

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.11 OF THE R.I. STANDARD SPECIFICATIONS.
2. PRECAST CONCRETE FOUNDATIONS MAY BE PROVIDED AS AN ALTERNATE TO CAST IN-PLACE FOUNDATIONS.
1. SHALL BE IN ACCORDANCE WITH SECTION T.11 OF THE R.I. STANDARD SPECIFICATIONS.
2. M (MOMENT AT BASE) TO BE FURNISHED BY MAST ARM FABRICATOR.
3. GROUND ROD 5/8" Ø x 10'-0" LONG, IF CONTROLLER IS POLE MOUNTED.
4. ANCHOR BOLT LENGTH AS REQUIRED TO DEVELOP THE CALCULATED BOLT TENSION.
5. CAST FOUNDATIONS AGAINST UNDISTURBED SOIL.
6. DESIGN SOIL PRESSURE = 1250 PSF.
7. REFERENCE STD. 19.2.0 AND 19.3.0.
8. BOLT TEMPLATE AND WOOD FORMS SHALL BE REMOVED PRIOR TO BACKFILLING.
9. M (MOMENT AT BASE) MAY BE REDUCED (DIVIDED BY 1.4) FOR LOADING COMBINATIONS CONTAINING WIND.
10. NO FOUNDATIONS TO BE PLACED IN CLAY, SILT OR MUCK.
11. PRIOR TO THE INSTALLATION OF POLE THE FOUNDATION SHALL BE MARKED BY A TRAFFIC CONE, DOUBLE NUTTED TO THE ANCHOR BOLTS.
12. FOUNDATION DESIGN IS BASED ON WELL GRADED GRANULAR SOIL CONDITIONS. A SPECIAL DESIGN IS REQUIRED IF FIELD CONDITIONS VARY FROM THIS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.11 OF THE R.I. STANDARD SPECIFICATIONS.
2. M (MOMENT AT BASE) TO BE FURNISHED BY SPAN POLE FABRICATOR.
3. GROUND ROD 5/8" Ø x 10'-0" LONG, IF CONTROLLER IS POLE MOUNTED.
4. CAST FOUNDATIONS AGAINST UNDISTURBED EARTH.
5. REFERENCE STD. 19.2.0.
6. NO FOUNDATIONS TO BE PLACED IN CLAY, SILT OR MUCK.
7. M (MOMENT AT BASE) MAY BE REDUCED (DIVIDED BY 1.4) FOR LOADING COMBINATIONS CONTAINING WIND.
8. DESIGN SOIL PRESSURE 1250 PSF.
9. PRIOR TO INSTALLATION OF THE POLES, THE FOUNDATION BOLTS SHALL BE MARKED BY A TRAFFIC CONE AND DOUBLE-NUTTED TO THE ANCHOR BOLT.
10. FOUNDATION DESIGN IS BASED ON WELL GRADED GRANULAR SOIL CONDITIONS. A SPECIAL DESIGN IS REQUIRED IF FIELD CONDITIONS VARY FROM THIS.
SAWCUT CROSS SECTION IN ASPHALT WHERE AN OVERLAY IS BEING PLACED

NOTE: USE SHORT (2") VPS PIECE OF OPEN CELL POLYURETHANE BACKER ROD FOAM SEALER STRIPS AT 2'-0" CENTERS TO HOLD LOOP WIRES IN PLACE UNTIL SEALER SETS. DO NOT USE SHARP OBJECTS TO HOLD WIRE DOWN.

SAWCUT CROSS SECTION IN CONCRETE OR ASPHALT CROSSING PAVEMENT JOINTS OR CRACKS
CHIP OUT CORNER

CORE CORNER

DETAILED "B"

CORNER DETAILS

SHIELDED LEAD INTO CONTROLLER CABINET

SPlicing (see detail "E")

LOOP WIRE IN TUBING

INSULATING BUSHING

MORTAR SEAL

DETAILED "D"

SEAL SPACE BETWEEN TUBING AFTER INSULATING

CONDUCTOR

TUBING

SEAL ENDS OF TUBING BEFORE INSULATING

TWIST AND SOLDER

WATERPROOF COATING FOLLOWED BY PVC TAPE

DRAINWIRE

DETAILED "E"

SPlicing DETAIL

NOTE:

SHALL BE IN ACCORDANCE WITH SECTION 1.13 OF THE R.I. STANDARD SPECIFICATIONS.
R1 = 3'-2"
R2 = 2'-2"

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.20 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE LONGITUDINAL SPACE BETWEEN WORD OR SYMBOL MESSAGES, INCLUDING ARROWS, SHOULD BE AT LEAST FOUR TIMES THE HEIGHT OF THE CHARACTER FOR LOW SPEED ROADS BUT NOT MORE THAN TEN TIMES THE HEIGHT OF THE CHARACTER UNDER ANY CONDITIONS.
3. THE SPACING OF THE PAVEMENT MARKINGS WILL BE AS SHOWN ON THE PLAN AND AS PER THE MUTCD.
4. SYMBOLS AND WORDS SHALL MEET THE REQUIREMENTS OF THE FHWA "STANDARD ALPHABET AND SYMBOLS FOR HIGHWAY PAVEMENT MARKINGS."
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.20 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE RAISED REFLECTIVE PAVEMENT MARKERS SHALL BE INSTALLED AFTER THE 8" ARROW HAS BEEN PLACED.
GENERAL NOTES:
1. ALL MARKINGS SHALL BE IN ACCORDANCE WITH SECTION 7.20 OF THE RI STANDARD SPECIFICATIONS.
2. ALL CROSSWALK AND STOP LINE MARKINGS SHALL BE WHITE.
3. CROSSWALK AND STOP LINE MARKINGS SHALL ONLY BE INSTALLED WHERE CALLED FOR ON THE PLANS.

CROSSWALK NOTES:
1. CROSSWALK WIDTH SHALL BE 8'-0" UNLESS OTHERWISE CALLED FOR ON THE PLANS.
2. CROSSWALK MARKINGS SHALL BE LAID OUT ONLY AFTER MEASUREMENT OF THE ACTUAL DISTANCE BETWEEN EDGES OF PAVEMENT ALONG THE CENTERLINE OF THE PROPOSED CROSSING. THE FIRST CROSSWALK MARKING ESTABLISHED SHALL BE A 1'-0" WIDE LINE CENTERED UPON THE MIDPOINT OF THE CENTERLINE. EACH GAP BETWEEN ADJACENT CROSSWALK LINES SHALL BE 2'-0" WIDE. THE SPACE BETWEEN EACH CROSSWALK LINE CLOSEST TO THE EDGE OF PAVEMENT AND THE LATTER MAY BE LESS THAN 2'-0" WIDE, BUT SUCH SPACES AT BOTH ENDS OF EACH INDIVIDUAL CROSSWALK SHALL BE OF EQUAL LENGTH UNLESS THE CONDITION OF NOTE 4 OR 5 APPLIES.
3. CROSSWALK LINES SHALL BE ORIENTED IN-LINE AND PARALLEL WITH THE PREDOMINANT PATH OF VEHICLES PASSING OVER THE CROSSWALK; TYPICALLY THIS WILL BE PARALLEL TO THE CURB LINE OF THE UPSTREAM ROADWAY APPROACH.
4. SHORTER SEGMENTS OF THE CROSSWALK LINE MARKINGS SHALL BE INSTALLED AT THE ENDS OF CROSSWALKS WHERE REQUIRED TO ENSURE THAT THE CROSSWALK IS MARKED OVER THE ENTIRE DISTANCE OF THE CROSSING BETWEEN EDGES OF PAVEMENT.
5. WHERE TWO CROSSWALKS MEET, THE ORIENTATION OF THE CROSSWALK LINES INSTALLED ACROSS THE MAJOR ROADWAY SHALL BE CARRIED TO THE EDGE OF PAVEMENT. THE ROADWAY RUNNING LEFT TO RIGHT IS THE MAJOR ROADWAY IN THIS DETAIL.

STOP LINE NOTES:
1. STOP LINE WIDTH SHALL BE 1'-0" UNLESS OTHERWISE CALLED FOR ON THE PLANS.
2. UNLESS OTHERWISE CALLED FOR ON THE PLANS, STOP LINES SHALL BE INSTALLED PARALLEL TO THE NEAREST MARKED CROSSWALK OR, IF NO CROSSWALK IS MARKED, PARALLEL TO THE EDGE OF THE NEAREST INTERSECTING TRAVELED WAY.
YIELD LINE LAYOUT

CURVED APPROACH

NOTES:
1. ALL MARKINGS SHALL BE IN ACCORDANCE WITH SECTION T.20 OF THE RI STANDARD SPECIFICATIONS.
2. ALL YIELD LINE MARKINGS SHALL BE WHITE.
3. YIELD LINE MARKINGS SHALL ONLY BE INSTALLED WHERE CALLED FOR ON THE PLANS.
4. THE EDGE OF TRAVEL LANE IS THE EDGE OR LANE LINE PAVEMENT MARKING OR, WHERE NO SUCH MARKING IS PRESENT, THE EDGE OF THE PAVEMENT.
7. UNLESS OTHERWISE CALLED FOR ON THE PLANS:
   A. WHERE A MARKED CROSSWALK IS ABSENT FROM A YIELD–CONTROLLED APPROACH, THE YIELD LINE SHOULD BE PLACED AT THE LOCATION OF THE YIELD SIGN(S), BUT SHALL NOT BE PLACED MORE THAN 30’–0” NOR LESS THAN 4’–0” FROM THE NEAREST EDGE OF THE INTERSECTING TRAVEL LANE.
8. FOR YIELD LINES ON DESIGNATED BICYCLE FACILITIES, REFER TO THE PLANS FOR REDUCED–SIZE YIELD LINE TRIANGLES AND ALTERNATE LAYOUT.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.
2. SIGN SUPPORTS HAVE BEEN DESIGNED IN ACCORDANCE WITH AASHO SPECIFICATIONS FOR A 10-YEAR MEAN WIND RECURRENCE INTERVAL.
3. FOR INSTALLATION IN GROUND OR BITUMINOUS CONCRETE DRIVE SIGN POST ANCHOR TO REQUIRED DEPTH SO THAT THE HOLE WILL MATCH TO SIGN POST ABOVE GROUND FOR THE BOLT CONNECTION. INSERT SIGN POST AND BOLT IN PLACE.
4. FOR INSTALLATION IN CONCRETE SEE STD. 25.3.0 AND FOLLOW THE PROCEDURE IN NOTE 2.
5. FOR INSTALLATION IN LEDGE LESS THAN 3'-0" BELOW GRADE SEE DETAIL ABOVE.
6. EDGE OF SIGN SHALL BE 1'-0" (MIN.) FROM EDGE OF CURB IN URBAN AREAS AND 6'-0" (MIN.) FROM EDGE OF CURB IN EDGE OF CURB IN RURAL AREAS.
7. INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
8. BREAKAWAY SIGN SUPPORTS SHALL BE FABRICATED FROM STEEL AND SHALL CONFORM TO THE BREAKAWAY DESIGN SHOWN ON THIS SHEET.
9. STEEL POSTS SHALL CONFORM TO ASTM-A361, FY= 55 KSI. THE CROSS SECTION OF THE POST SHALL BE SQUARE TUBE FORMED OF 12 GAUGE (.105" U.S.S. GAUGE) COLD-ROLLED CARBON STEEL SHEETS WHICH HAVE BEEN ZINC COATED (1.25 OZ.) CONFORMING TO ASTM-A525, CAREFULLY ROLLED TO SIZE AND WELDED DIRECTLY IN THE CORNER BY HIGH FREQUENCY RESISTANCE WELDING OR EQUAL. AND EXTERNALLY SCARED TO AGREE WITH CORNER RADIUS STANDARD CORNER RADIUS SHALL BE 3/32" PLUS OR MINUS 1/64".
10. ALL BOLTS SHALL CONFORM TO ASTM-A307, CLASS A.
12. FOR SIGNS GREATER THAN 32 SQ. FT., REFER TO STD. 30.1.0, 30.1.1, 30.2.0, 30.2.1, 30.3.0, 30.3.1, 30.4.0, 30.4.1, 30.4.2 AND 30.4.3.

R.I. STANDARD
SIGN POST SELECTION AND INSTALLATION DETAILS
SQUARE POST (SIGNS UP TO 8'-0"Wx4'-0"H)

JUNE 15, 1998
ISSUE 24.1.0
USE BRACING FOR SIGN WIDTH EQUAL TO OR GREATER THAN 3'-0"

(1) 4 LB./FT.
RIB-BAK U-CHANNEL SIGN POST

5'-0" MIN. (URBAN AREAS)
7'-0" MIN. (RURAL AREAS)
7'-0" MAX.

CURB
ROADWAY

(SEE DETAIL "A")

BASE POST TO BE SAME WEIGHT PER FOOT AS
TOP POST (4'-6" LENGTH)

SIGNS UP TO 12 SQ. FT.

6'-0" MIN. (TYP.)

(3) 4 LB./FT.
RIB-BAK
U-CHANNEL SIGN POSTS

5'-0" MIN.
8'-0" MAX.

CURB
ROADWAY

BASE POST TO BE SAME WEIGHT PER FOOT AS
TOP POST (4'-6" LENGTH)

SIGNS UP TO 40 SQ. FT.

6'-0" MIN. (TYP.)

4'-0" MIN. FOR SIGN WIDTHS
6'-0" AND GREATER

(1) 4 LB./FT.
RIB-BAK U-CHANNEL SIGN POST

5'-0" MIN. (URBAN AREAS)
7'-0" MIN. (RURAL AREAS)
7'-0" MAX.

CURB
ROADWAY

BASE POST TO BE SAME
WEIGHT PER FOOT AS
TOP POST (4'-6" LENGTH)

SIGNS UP TO 28 SQ. FT.

RECOMMENDED TORQUE VALUES:
BOLTS TO THREADED BAR SPACER
20 FT. LBS.
SELF-LOCKING FLANGE NUT TO BOLTS
20 FT. LBS.

TOP VIEW

3/8" HOLE
1/4" C.

DIRECTION
OF TRAFFIC

4" MAX.
STUB
HEIGHT

FRONT VIEW
RIGHT SIDE VIEW
DETAIL "A"

INSTALLATION PROCEDURE:
1. REMOVE A SPADE FULL OF SOIL (APPROXIMATELY 2" DEEP) FROM WHERE THE BASE POST WILL BE LOCATED.
2. DRIVE THE BASE POST IN THE CENTER OF THE HOLE JUST CREATED, TO WITHIN 4" OF GRADE LEVEL.
4. NEST THE TOP POST OVER THE PROTRUDING BOLTS ON THE BASE POST. PLACE A SELF-LOCKING FLANGE NUT ON EACH BOLT AND TIGHTEN SECURELY TO 20 FT. LBS. OF TORQUE.
5. REPLACE SOIL REMOVED IN STEP 1.
6. IN TRIPLE POST INSTALLATIONS USING 4 LB./FT. POSTS IN WEAK SOIL, A 1'-0"W X 6"H SOIL PLATE IS REQUIRED.

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE SILVER ANODIZED BAR SPACER IS FOR USE WITH 2, 2.5 AND 2.75 LB./FT. RIB-BAK POST GRADE SP-80 ONLY.
3. THE GOLD ANODIZED BAR SPACER IS FOR USE WITH 3 AND 4 LB./FT. RIB-BAK POST GRADE SP-80 ONLY.
4. INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
5. FOR SIGNS GREATER THAN 40 SQ. FT., REFER TO STD. 30.1.0, 30.1.1, 30.2.0, 30.2.1, 30.3.0, 30.3.1, 30.4.0, 30.4.1, 30.4.2 AND 30.4.3

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

SIGN POST SELECTION AND INSTALLATION DETAILS
U-CHANNEL POST (SIGNS UP TO 8'-0"WX4'-0"H)

R.I. STANDARD
24.2.0

JUNE 15, 1998
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.
2. USE (2) 4"x6" POSTS FOR SIGN AREAS GREATER THAN 20 SQ. FT.
3. DRILL 1 1/2" HOLE IN POST FOR 4"x6" POSTS ONLY.
4. FOR SIGNS 5'-0"x5'-0" AND LARGER USE DIAGONAL BRACING ON EACH VERTICAL POST AND 4 LAG SCREWS.
5. CONSTRUCTION AND TEMPORARY SIGN PANELS SHALL BE 3/4" THICK EXTERIOR GRADE PLYWOOD OR ALUMINUM.
6. ALL SUPPORTS (INCLUDING TEMPORARY) MUST BE SUCCESSFULLY CRASH TESTED.
7. FOR SIGNS GREATER THAN 60 SQ. FT., REFER TO STD. 30.1.0, 30.1.1, 30.2.0, 30.2.1, 30.3.0, 30.3.1, 30.4.0, 30.4.1, 30.4.2 AND 30.4.3.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS SIGN MOUNTING SHALL NOT REPLACE STD. 24.6.0 PARKING SIGN MOUNTING.
3. INSTALLATION SOIL, GRAVEL, OR ASPHALT CAP AND SLEDGE HAMMER. CONCRETE USE PNEUMATIC HAMMER OR CONCRETE DRILL.
4. MAXIMUM SIGN AREA 7.5 SQ. FT.
5. DOUBLE TEE EXTRUSION MAY BE ORDERED OR CUT TO EQUAL HORIZONTAL EDGE OF SIGN.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

CANTILEVER BREAKAWAY SIGN SUPPORT FOR 4'-0" TO 5'-0" SIDEWALKS

R.I. STANDARD 24.4.0

REVISIONS

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<th>DATE</th>
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JUNE 15, 1998

CHIEF ENGINEER
TRANSPORTATION

CHIEF DESIGN ENGINEER
TRANSPORTATION

ISSUE DATE
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE STANDARD SPECIFICATIONS.
2. PARKING SIGNS SHALL BE SET AT AN ANGLE OF NOT LESS THAN 30° NOR MORE THAN 45° WITH A LINE PARALLEL TO FLOW OF TRAFFIC, 1'-6" (1'-0" MIN.) FROM EDGE OF CURB FACE.
TYPICAL SIGN LOCATION

IF SIGNS ARE ON THEIR OWN SUPPORT POST, THE POST SHALL BE LOCATED NEARER TO THE MAJOR STREET AND WITHIN 5'-0" OF THE P.T. OF THE CURVE.

2'-0"+ DESIRABLE
1'-0" MIN.
(SEE NOTE 3)

(SEE DETAIL "A")

14 1/2"Lx7 1/2"H L-BRACKET OR WING TYPE

3/4"x0.20 STAINLESS STEEL STRAP

ALUMINUM TOP BRACKET MOUNTING

FOR SIGN POST DETAILS SEE STD. 24.1.0 OR 24.2.0

STD. 25.5.0

POST ANCHOR

DETAIL "A"

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.
2. EACH SIGN SHALL HAVE LEGEND ON BOTH SIDES.
3. POSTS SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE BACK OF SIDEWALK, UNLESS SPACE DOES NOT PERMIT.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.19 OR THE R.I. STANDARD SPECIFICATIONS.
2. POSTS FOR MARKERS SHALL CONFORM TO STD. 24.6.0
3. POST LENGTH FOR MILE MARKER SHALL BE 8'-0" WITH 3/8" Ø HOLES 1" O.C. FOR A LENGTH OF 2'-6" FROM TOP OF POST.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.18 OF THE R.I. STANDARD SPECIFICATIONS.
2. INSTALLATION SHALL CONFORM TO THE LATEST EDITION OF THE MUTCD.
3. MOUNT WITH 3/16" ALUMINUM DRAW RIVETS AND WASHERS OR 1/4" ALUMINUM CARRIAGE BOLTS AND WAHERS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
LIGHTWEIGHT STEEL DELINEATOR MOUNTING DETAIL

JUNE 15, 1998
ISSUE DATE
BLACK - 8" 45° STRIPES PAINTED ON YELLOW REFLECTORIZED BACKGROUND
LAG SCREWS AND WASHERS

FOR SIGN POST DETAILS SEE NOTE 3

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.18 OF THE R.I. STANDARD SPECIFICATIONS.
2. SIGN SHOWN IS FOR RIGHT BRIDGE ABUTMENT. USE OPPOSITE SIGN FOR LEFT SIDE.
3. POSTS FOR MARKERS SHALL CONFORM TO STD. 24.6.0.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BRIDGE ABUTMENT MARKER MOUNTING DETAIL

R.I. STANDARD 24.6.4

JUNE 15, 1998
1. SHALL BE IN ACCORDANCE WITH SECTION 922 OR THE R.I. STANDARD SPECIFICATIONS.
2. HARD COVER – FOR DAILY COVERING OF CONSTRUCTION SIGNS AS NEEDED OR TO CHANGE SIGN MESSAGE AS NEEDED.
3. SOFT COVER – AN ALTERNATIVE TO USING A PLYWOOD SIGN COVER WILL BE A TARP COVER (NON-TRANSPARENT) WITH GROMMETS FOR THE PURPOSE OF RECEIVING A CORD OR A ROPE TO SECURE TARP COVER TO EXISTING CONSTRUCTION SIGN FACE. TARP COVER DIMENSIONS SHALL BE AT LEAST EQUAL TO THE CONSTRUCTION SIGN DIMENSIONS. THIS SOFT COVER IS SOLELY FOR THE PURPOSE OF COVERING CONSTRUCTION SIGNS, AT NO TIME SHALL SIGN MESSAGES APPEAR ON THE FACE OF THE TARP COVERS, NOR SHALL TARP COVERS BE SECURED BY TAPING OR STAPLING TO FRONT OF SIGN.
### POST DIAMETER OR MAJOR DIMENSION

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<td>10&quot;</td>
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<tr>
<td>6&quot;</td>
<td>12&quot;</td>
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**NOTES:**

1. 3/4" x 6" BOARDS TO BE USED FOR FORMS FOR POST MOUNTING IN CONCRETE AND ASPHALT SIDEWALK AREAS.
2. DIMENSION "A" SHALL NOT BE LESS THAN 8".
3. AFTER INSTALLATION OF THE POST AND PROPER COMPACTION, THE HOLE SHALL BE PAVED TO MATCH THE SURROUNDING SIDEWALK.
4. THE BOX FORM SHALL BE REMOVED PRIOR TO PATCHING THE SIDEWALK AREA.
5. IN CONCRETE SIDEWALK AREAS EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN THE NEW PATCH AND THE ADJACENT SIDEWALK AREA.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 923 OF THE R.I. STANDARD SPECIFICATIONS.
2. DIMENSIONS MAY VARY WITH MANUFACTURER’S RECOMMENDATIONS.
3. IN AREAS WHERE POSTED SPEED IS 45 MPH AND OVER ADD A 7 LB. WEIGHTED RING TO EACH CONE.

INSIDE DIAMETER AT TOP = 1”±

REFLECTORIZED WHITE BAND OF SHEETING TYPE IV FLEXIBLE

FLUORESCENT RED-ORANGE POLY-VINYL CONE

WEIGHTED BASE

INSIDE DIAMETER AT BASE = 10”±
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 923 OF THE R.I. STANDARD SPECIFICATIONS.
2. BASE TO BE ADAPTED FOR SANDBAG BALLAST.
3. DRUM CAN BE CYLINDRICAL OR PARTLY CYLINDRICAL WITH A FLAT SIDE.
4. DRUM SHALL BE MANUFACTURED FROM TOUGH, REBOUNDABLE PLASTIC, MADE OF HIGH DENSITY (HARD) POLYETHYLENE.
**NOTES:**

1. SHALL BE IN ACCORDANCE WITH SECTION 923 OF THE R.I. STANDARD SPECIFICATIONS.
2. ALL PIPE SHALL BE POLYVINYL CHLORIDE (PVC) PRESSURE RATED CLASS SDR 21 OR SDR 26 CONFORMING TO ASTM D2241 OR ASTM D2729.
4. ALL PIPES SHALL BE WHITE. WHITE FITTINGS ARE PREFERRED, BLACK MAY BE USED.
5. ALL JOINTS SHALL BE FREE TO SEPARATE UPON VEHICLE IMPACT.
6. A FIXED FRANGIBLE PAVEMENT CONNECTION PREFERRED. SAND BAGS MAY BE SUBSTITUTED.
7. STRIPES SHALL BE SLOPED DOWNWARD IN DIRECTION OF TRAFFIC TO PASS.
8. PVC PIPE SHALL BE ULTRAVIOLET LIGHT STABILIZED.
9. ATTACH PANELS WITH 1" NO. 14 PAN HEAD METAL SCREWS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 923 OF THE R.I. STANDARD SPECIFICATIONS.
4. ALL PIPE SHALL BE WHITE AND SHALL BE ULTRAVIOLET LIGHT STABILIZED.
5. ALTERNATE ORANGE AND WHITE STRIPES SHALL BE REFLECTORIZED, 6” WIDE, SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC TO PASS.
6. THE BARRICADE RAILS SHALL BE 9”x48”x0.125” PLASTIC PANELS ATTACHED WITH 1” PLASTIC RIVETS, 4 PER RAIL.
7. THIS IS AN APPROVED ALTERNATE TO STD. 26.3.0.
8. ALL SHEETING SHALL BE TYPE IV FLEXIBLE SHEETING.
### REGULATORY SIGNS

#### NOTES:
1. **SHALL BE IN ACCORDANCE WITH SECTION 2.115 OF THE R.I. STANDARD SPECIFICATIONS.**
2. **A DENOTES TYPE XI GRADESignInING.**
3. **REGULATORY SIGNS SHALL BE MOUNTED IN ACCORDANCE WITH STD. 24.1.0, 24.2.0 OR 24.6.0.**
4. **THICKNESS OF ALUMINUM SIGN PLATES LESS THAN 10 SQ. FT. – 0.011 IN.**
5. **GREATER THAN 36 SQ. FT. – 0.125 IN.**
6. **FOR ADDITIONAL SIGNS SEE THE MUTCD.**

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<th><strong>R1-2</strong></th>
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### RHODE ISLAND DEPARTMENT OF TRANSPORTATION

**REVISIONS**

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**JUNE 15, 1998**

**R.I. STANDARD 27.1.0**

**ISSUE DATE**
### SIGN Dimensions (Inches)

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### NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.
2. STANDARD: \(> 50' - 0'' < 200' - 0''\)
   RURAL: \(> 200' - 0'' < 400' - 0''\)
   EXPRESSWAY: \(> 400' - 0'' < 800' - 0''\)
3. WHEN INSTALLING ON JERSEY BARRIERS LESS THAN 48" WIDE, A 36"x54" SIGN DIMENSION MAY BE USED.
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<td>30° 36' 45&quot;</td>
</tr>
<tr>
<td></td>
<td>30° 36' 45&quot;</td>
<td>30° 36' 45&quot;</td>
<td>30° 36' 45&quot;</td>
<td>30° 36' 45&quot;</td>
<td>30° 36' 45&quot;</td>
</tr>
</tbody>
</table>

**NOTES:**
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.
2. # DENOTES TYPE II GRADE SHEETING. IF USED WITHIN WORK ZONE, USE TYPE III SHEETING.
3. WARNING SIGNS SHALL BE MOUNTED IN ACCORDANCE WITH STD. 24.1.0, 24.2.0 OR 24.6.4.
4. FOR ADDITIONAL SIGNS SEE THE MUTCD.

**RHODE ISLAND DEPARTMENT OF TRANSPORTATION**

**WARNING SIGNS**

**R.I. STANDARD 28.1.0**

**JUNE 15, 1998**

**ISSUE DATE**
Notes:
1. Shall be in accordance with section 922 of the R.I. standard specifications.
2. Legend on W20-series shall indicate distance as follows:
   - 1500 ft 1/2 mile
   - 1000 ft 1 mile
   - 500 ft ahead

3. * denotes type V grade sheeting.
4. Construction signs shall be mounted in accordance with std. 24.1.0, 24.2.0 or 24.3.0.
5. For additional signs see the MUTCD.
Property of
The State of Rhode Island
Department of Transportation
TRESPASSERS WILL BE PROSECUTED
UNITED STATES GOVERNMENT
FEDERAL HIGHWAY ADMINISTRATION

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 922 OF THE R.I. STANDARD SPECIFICATIONS.
2. SIGN SHALL BE 3/4" EXTERIOR MARINE PLYWOOD OR ALUMINUM (THICKNESS = 0.081”).
3. SIGN SHALL HAVE A WHITE REFLECTORIZED BACKGROUND WITH A BLUE LEGEND AND LIGHT BLUE STATE SEAL.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
FIELD OFFICE IDENTIFICATION SIGN

JUNE 15, 1998
CHIEF ENGINEER
CHIEF DESIGN ENGINEER
ISSUE DATE
<table>
<thead>
<tr>
<th>SIGN NUMBER</th>
<th>M1-1</th>
<th>M1-4</th>
<th>M1-5 (SEE NOTE 1)</th>
<th>M2-1</th>
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</thead>
<tbody>
<tr>
<td>LEGEND</td>
<td><img src="image" alt="Legend" /></td>
<td><img src="image" alt="Legend" /></td>
<td><img src="image" alt="Legend" /></td>
<td><img src="image" alt="Legend" /></td>
</tr>
<tr>
<td>COLOR</td>
<td>BACKGROUND</td>
<td>STANDARD INTERSTATE COLORS</td>
<td>STANDARD INTERSTATE COLORS</td>
<td>BLACK-WHITE SHIELD</td>
</tr>
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<td>48&quot;</td>
<td>30°</td>
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<td>HEIGHT</td>
<td>24&quot;</td>
<td>36&quot;</td>
<td>48&quot;</td>
<td>24&quot;</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SIGN NUMBER</th>
<th>M3-1,2,3,4 (SEE NOTE 3)</th>
<th>M4-5</th>
<th>M4-6</th>
<th>M4-8,9R</th>
<th>M4-10 (R OR L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEGEND</td>
<td><img src="image" alt="Legend" /></td>
<td><img src="image" alt="Legend" /></td>
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<tr>
<td>COLOR</td>
<td>BACKGROUND</td>
<td>WHITE</td>
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<td>BLUE</td>
</tr>
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<td>15&quot;</td>
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</table>

<table>
<thead>
<tr>
<th>SIGN NUMBER</th>
<th>M5-1 (R OR L)</th>
<th>M5-2 (R OR L)</th>
<th>M5-3</th>
<th>M5-4</th>
<th>M5-2 (R OR L)</th>
<th>M5-1</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>COLOR</td>
<td>BACKGROUND</td>
<td>BLUE</td>
<td>WHITE</td>
<td>BLUE</td>
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<td>BLUE</td>
</tr>
<tr>
<td>WIDTH</td>
<td>21&quot;</td>
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<td>21&quot;</td>
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<tr>
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<th>M6-3</th>
<th>M6-4</th>
<th>M6-1</th>
<th>M6-2 (R OR L)</th>
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<td>COLOR</td>
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<td>BLACK</td>
<td>WHITE</td>
</tr>
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<td>WIDTH</td>
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<td>15&quot;</td>
<td>21&quot;</td>
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<tr>
<th>SIGN NUMBER</th>
<th>M8-3</th>
<th>M8-4</th>
<th>I-4</th>
<th>D9-2</th>
<th>D10-1</th>
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<td>24&quot;x24&quot;</td>
<td>24&quot;x24&quot;</td>
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<tr>
<td>HEIGHT</td>
<td>24&quot;x8&quot; (PLAQUE)</td>
<td>24&quot;x8&quot; (PLAQUE)</td>
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<td>24&quot;</td>
<td>36&quot;</td>
<td>24&quot;x8&quot; (PLAQUE)</td>
<td></td>
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</tbody>
</table>

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTIONS T.15 OF THE R.I. STANDARD SPECIFICATIONS.
2. SIGN M1-5:
   A. LEGEND RI SHALL BE 4" SERIES D.
   B. ONE NUMERAL SHALL BE 12" SERIES E.
   C. TWO OR THREE NUMERALS SHALL BE 12" SERIES D.
   D. BORDER - 5/8" BLACK, 3/8" WHITE.
   E. RADIUS - 1 1/2".
   F. POST LENGTH SHALL BE 8'-0" FOR MP SIGNS.
3. M3-5 SERIES WIDTH SAME AS M1 SERIES WIDTH.
4. D10-3A MILE TENTH'S USE 24.6.3.
5. GUIDE SIGNS SHALL BE MOUNTED IN ACCORDANCE WITH STD. 24.1.0, 24.2.0, 24.6.2 OR 24.6.3.
6. FOR ADDITIONAL SIGNS SEE THE MUTCD.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

GUIDE SIGNS

REVISIONS

NO. BY DATE

JUNE 15, 1998

R.I. STANDARD 29.2.0
SIGN LOCATION - CUT

SIGN LOCATION - FILL

Determine required values of: W = maximum width of sign
H = maximum height of sign
L = maximum distance between top of footing and center line of sign

Enter the post selection table with maximum value of "L" and required values of "W" and "H" for selection of post sign.
For sign sizes between those values of "W", "H" and "L" in the table, use next higher foot value.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SIGN LOCATION DETAILS
(SIGNS 6'-0" W x 4'-0" H AND GREATER)

R.I. STANDARD
30.1.0

REVISIONS
NO. BY DATE

JUNE 15, 1998
ISSUE DATE
<table>
<thead>
<tr>
<th>#</th>
<th>H</th>
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<td>4</td>
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RHODE ISLAND DEPARTMENT OF TRANSPORTATION

POST SELECTION TABLE FOR BREAKAWAY SIGNS
(SIGNS 6'-0"Wx4'-0"H AND GREATER)

REVISIONS
NO. | BY DATE
--- | ---

JUNE 15, 1998

RI STANDARD 30.1.1
SECTION A-A

4" COVER TOP AND BOTTOM

SECTION

FOUNDATION SELECTION TABLE

<table>
<thead>
<tr>
<th>POST SIZE</th>
<th>DIAMETER FEET (L1)</th>
<th>DEPTH FEET (K1)</th>
<th>REINFORCING STEEL (M1)</th>
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<tr>
<td>WB</td>
<td>2.0</td>
<td>5.50</td>
<td>8-#5</td>
</tr>
<tr>
<td>WB</td>
<td>2.5</td>
<td>6.00</td>
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</tr>
<tr>
<td>WT0</td>
<td>3.0</td>
<td>6.75</td>
<td>8-#6</td>
</tr>
<tr>
<td>WT2</td>
<td>3.0</td>
<td>7.50</td>
<td>8-#7</td>
</tr>
<tr>
<td>WT4</td>
<td>3.0</td>
<td>8.00</td>
<td>8-#7</td>
</tr>
</tbody>
</table>

NOTES:
1. THE CONTRACTOR SHALL DEVELOP DRAWINGS FOR THE FOUNDATION AND STRUCTURAL SUPPORTS BASED ON THE DATA INCLUDED ON THESE DETAILS.
2. FOUNDATION HOLES, EXCEPT IN LEDGE, SHALL BE EXCAVATED BY THE AUGER METHOD TO THE NEAR LINES OF THE OUTSIDE DIMENSIONS OF THE FOOTINGS WITHOUT DISTURBING THE SOIL AROUND OR BELOW THE PROPOSED FOOTING.
3. IN AREAS WHERE ROCK OR LEDGE IS ENCOUNTERED, THE BOTTOM OF THE FOOTING SHALL BE PLACED TO THE DESIGN DEPTH SHOWN ON THIS SHEET. THE CONCRETE SHALL FILL THE ENTIRE VOLUME OF THE EXCAVATION TO THE FULL DEPTH OF THE FOOTING.
5. BACKFILL FOR FOUNDATIONS, IF REQUIRED BY THE ENGINEER SHALL BE GRAVEL BORNT ON CONFORMING TO THE REQUIREMENTS OF THE R.I. STANDARD SPECIFICATIONS. EXCEPT THAT NO ENCHARGE LARGER THAN 1 1/2" SHALL BE ALLOWED.
6. WHERE FOOTINGS ARE PLACED AGAINST ENCHAMENTS THE TOP AT BELOW FINISHED GRADE SHALL BE FORMED.
7. ANCHOR BOLTS SHALL BE SET TO CONFORM WITH THE BASE-PLATE TEMPLATE AS FURNISHED IN CONFORMANCE WITH THE STANDARD PLANS.
8. THE TOP OF THE FOUNDATIONS SHALL BE PROPERLY FINISHED AND DRESSED TO ASSURE THAT FULL BEARING WILL BE PROVIDED ON THE LEVELING NUTS WHICH ARE TO BE SET IN CONCRETE. ALL EXPOSED EDGES SHALL HAVE A 1/2" CHAMFER.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
FOUNDATION DETAILS
(SIGNS 6'-0"WX4'-0"H AND GREATER)

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

JUNE 13, 1998
NOTES:
1. FOR CONCRETE CLASS, SEE SECTION 601.01.1, TABLE 1 OF THE R.I. STANDARD SPECIFICATIONS.
2. WHEN EXISTING POST IS ATTACHED TO FOUNDATION BY ANCHOR BOLTS, REMOVE EXISTING ANCHOR BOLTS A MINIMUM OF 1" BELOW TOP OF NEW FOUNDATION. A 3 3/4" DEEP SECTION OF POST SHALL BE USED TO ATTACH THE ANCHOR PLATES. ANY UNCOATED PORTION OF THE SECTION SHALL BE PAINTED WITH AN APPROVED ZINC RICH PAINT.
3. WHEN EXISTING POST IS EMBEDDED IN A FOUNDATION, REMOVE POST APPROXIMATELY 3 3/4" ABOVE TOP OF NEW FOUNDATION, INSTALL ANCHOR PLATES AND PAINT TOP OF POST WITH AN APPROVED ZINC RICH PAINT.
4. AFTER CORRECTLY POSITIONING ANCHOR BOLTS AND ANCHOR PLATES, FILL HOLES WITH NON-SHRINK GROUT.
5. PAINT ANY EXPOSED EXISTING REINFORCING BARS WITH A ZINC RICH PAINT BEFORE APPLYING GROUT.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
FOUNDATION MODIFICATION FOR RETROFIT (SIGNS 6'-0"WX4'-0"H AND GREATER)

JUNE 15, 1998
NOTES:
1. PANEL HEX BOLT AND WASHER ASTM-B211 ALUMINUM ALLOY 2024-T4 3/4"-16 x 3/4" LONG.
2. ALUMINUM SIGN PANEL (TYPE B) ALUMINUM ALLOY 6063-T6 ASTM-B221 THICKNESS 0.125".
3. PANEL HEX NUT, ALUMINUM ALLOY 6062-T9 3/8"-16 HEX. HD. NUT ASTM-B211.
4. ALL EXTRUDED ALUMINUM PANELS SHALL HAVE SIDE MOULDINGS.
5. PANEL BOLTS TO BE PLACED SYMMETRICALLY ABOUT E OF SIGN PANEL.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SIGN PANEL DETAILS
(SIGNS 6'-0"W x 4'-0"H AND GREATER)

JUNE 15, 1998
R.I. STANDARD
30.3.0
ALUMINUM SHALL HAVE ONE COAT OF BITUMINOUS PAINT PER AASHTO SPECIFICATIONS

NOTES:
## Bracket Selection Table

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<th>POST SIZE</th>
<th>#1 E= .100&quot;</th>
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<th>#3 E= .200&quot;</th>
<th>#4 E= .250&quot;</th>
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<tr>
<td></td>
<td>MIN. L</td>
<td>MAX. L</td>
<td>MIN. L</td>
<td>MAX. L</td>
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<tr>
<td><strong>GROUP A</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 WF 9</td>
<td>12'-2&quot;</td>
<td>25'-0&quot;</td>
<td>8'-7&quot;</td>
<td>12'-1&quot;</td>
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<tr>
<td>6 WF 12</td>
<td>12'-4&quot;</td>
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<td>8'-9&quot;</td>
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<td>6 WF 15</td>
<td>12'-4&quot;</td>
<td>25'-0&quot;</td>
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<td>12'-3&quot;</td>
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<td>8 WF 18</td>
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<td>10'-0&quot;</td>
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<td>7'-9&quot;</td>
</tr>
<tr>
<td>8 WF 21</td>
<td>14'-3&quot;</td>
<td>10'-2&quot;</td>
<td>14'-2&quot;</td>
<td>7'-11&quot;</td>
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<tr>
<td><strong>GROUP B</strong></td>
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</tr>
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<td>10 WF 22</td>
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<td>11'-3&quot;</td>
<td>15'-8&quot;</td>
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<tr>
<td>10 WF 26</td>
<td>15'-10&quot;</td>
<td>25'-0&quot;</td>
<td>11'-4&quot;</td>
<td>15'-9&quot;</td>
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<tr>
<td>12 WF 26</td>
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<td>12'-6&quot;</td>
<td>17'-5&quot;</td>
<td>9'-7&quot;</td>
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<tr>
<td>14 WF 30</td>
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<td>13'-10&quot;</td>
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### Bolt Circle (Diameter)

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<td><strong>GROUP A</strong></td>
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</tr>
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<td>6 WF 9</td>
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<td>6 WF 12</td>
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<td>6 WF 16</td>
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<tr>
<td>8 WF 24</td>
<td>17'-1/8&quot;</td>
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</tr>
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<td>10 WF 22</td>
<td>19'-1/2&quot;</td>
<td></td>
</tr>
<tr>
<td>10 WF 26</td>
<td>19'-5/8&quot;</td>
<td></td>
</tr>
<tr>
<td>10 WF 30</td>
<td>19'-3/4&quot;</td>
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</tr>
<tr>
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</tr>
<tr>
<td>12 WF 30</td>
<td>23'-3/16&quot;</td>
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</tbody>
</table>

### Notes:
2. All hardware (American Standard) supplied shall be hot dip galvanized per ASTM A153 or mechanically galvanized per ASTM B695.
3. Fasteners, except for special bolt and coupling shall be installed with lockwashers or locknuts and do not have specific torque requirements. Fasteners should be made as tight as possible with conventional wrenches unless noted otherwise.
4. Square and level individual components to minimize need for shimming.
5. Structural steel to be hot dip galvanized per ASTM A123 after fabrication.
6. No more than two shims underneath any one coupling and no more than three shims underneath any two couplings.
7. Select proper post size by referring to post selection tables for medium and large signs.
INSTALLATION NOTES:
WRENCH SIZES REQUIRED: 9/16", 7/8", 1", 1 1/16", 1 1/4", 1 7/16", 1 5/8"

ANCHOR ASSEMBLY:
1. ASSEMBLE COUPLING ANCHORS 6A TO INSTALLATION TEMPLATE (NOT SHOWN). RIGID STEEL TEMPLATE IS RECOMMENDED.
2. LOWER ENTIRE ANCHOR ASSEMBLY INTO FRESH CONCRETE AND VIBRATE INTO POSITION SO THAT THE TOPS OF THE INDIVIDUAL ANCHORS 6A ARE FLUSH WITH THE FINISHED TOP SURFACE OF THE FOOTINGS.

BRACKET ASSEMBLY:
1. ASSEMBLE BRACKET TO POST WITH BOLTS PROVIDED.
2. SQUARE AND TIGHTEN. (ITEMS 1, 2A, 2B, 2C, 2D, 2E, AND 2F)

HINGE ASSEMBLY:
1. BUTT UPPER AND LOWER POSTS TOGETHER ON FLAT SURFACE.
2. PLACE HINGE PLATES 4A ON OUTER FLANGES AND SECURE WITH BOLTS 5A, 5B AND 5C. SNUG BUT DO NOT TIGHTEN.
3. MAKE SURE UPPER AND LOWER POSTS ARE IN ALIGNMENT, THEN TIGHTEN ALL NUTS 5C TO PROOF LOAD (1/2 TURN BEYOND SNUG).

COUPLING ASSEMBLY:
1. SUSPEND POST OVER FOOTING AND INSERT SPECIAL BOLTS 3A THROUGH BRACKET 1.
2. BELOW BRACKET, THREAD COUPLINGS 3B INTO ANCHORS 6A BUT LEAVE LOOSE.
3. LOWER POST WITH SPECIAL BOLTS 3A ONTO LOOSE COUPLINGS 3B AND THREAD BOLTS INTO COUPLINGS.
4. THREAD COUPLINGS ALL THE WAY IN ANCHORS 6A.
5. TIGHTEN SPECIAL BOLTS 3A. DO NOT PLACE TORQUE ACROSS NECKED DOWN PORTION OF COUPLINGS. WRENCH FLATS ARE PROVIDED ON EITHER SIDE FOR PROPER TIGHTENING.
6. IF POST IS NOT PLUMB, INSERT SHIMS 2G AND 2H BETWEEN COUPLINGS 3B AND AND ANCHOR 6A.
<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY./POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bracket 6061-T6 Aluminum (See Bracket Selection Table)</td>
<td>2</td>
</tr>
<tr>
<td>2A</td>
<td>Bolt Group A - 1/2&quot;-13 UNC x 2-1/2&quot; HEX HEAD, ASTM A325, GALV., ASTM A153</td>
<td>4</td>
</tr>
<tr>
<td>2B</td>
<td>Bolt Group A - 1/2&quot;-13 UNC x 2-3/4&quot; HEX HEAD, ASTM A325, GALV., ASTM A153</td>
<td>4</td>
</tr>
<tr>
<td>2C</td>
<td>Bolt Group A - 1/2&quot;-13 UNC x 3&quot; HEX HEAD, ASTM A325, GALV., ASTM A153</td>
<td>4</td>
</tr>
<tr>
<td>2D</td>
<td>Cap Screw Group A - 1/2&quot;-13 UNC x 1-1/4&quot; HEX HEAD, ASTM A307, GALV.</td>
<td>4</td>
</tr>
<tr>
<td>2E</td>
<td>Lockwasher Group A - 1/2&quot; ANSi B18-21-1, GALV., ASTM A153</td>
<td>16</td>
</tr>
<tr>
<td>2F</td>
<td>Nut Group A - 1/2&quot;-13 UNC, HEAVY HEX, ASTM A563, GR. DH, GALV.</td>
<td>2</td>
</tr>
<tr>
<td>2G</td>
<td>Shim Group A - 21&quot; HORSESHOE, 18 GAUGE, GALV., STEEL SHEET</td>
<td>2</td>
</tr>
<tr>
<td>2H</td>
<td>Shim Group B - 1&quot; HORSESHOE, 18 GAUGE, GALV., STEEL SHEET</td>
<td>2</td>
</tr>
<tr>
<td>3A</td>
<td>Special Bolt 1&quot;-8 UNC ASTM A449, GALV., ASTM A153/B895</td>
<td>4</td>
</tr>
<tr>
<td>3B</td>
<td>Coupling 1&quot;-8 UNC LP., AMS 63780, GALV., ASTM A153, POLYESTER COAT **</td>
<td>4</td>
</tr>
<tr>
<td>4A</td>
<td>Hinge Plate Group A - TYPE B525, AISI A130 STEEL, GALV., ASTM A123</td>
<td>4</td>
</tr>
<tr>
<td>4B</td>
<td>Hinge Plate Group B - TYPE B650, AISI A130 STEEL, GALV., ASTM A123</td>
<td>4</td>
</tr>
<tr>
<td>5A</td>
<td>Bolt 3/4&quot;-10 UNC x 2-1/4&quot; HEX HEAD, ASTM A325, GALV., ASTM A153</td>
<td>8</td>
</tr>
<tr>
<td>5B</td>
<td>Lockwasher 3/4&quot;-10 UNC, HEAVY HEX, ASTM A563, GR. DH, GALV.</td>
<td>8</td>
</tr>
<tr>
<td>5C</td>
<td>Nut 3/4&quot;-10 UNC, HEAVY HEX, ASTM A563, GR. DH, GALV.</td>
<td>8</td>
</tr>
<tr>
<td>6A</td>
<td>Anchor Group A -1&quot;-BUNC, 304 S.S. FERRULE, AISI 1038 ROD. AISI 1008 COIL</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>GROUP B -1&quot;-BUNC, 304 S.S. FERRULE, AISI 1008 COIL</td>
<td>4</td>
</tr>
</tbody>
</table>

*With exception to decarburization and macrostructure clauses
**2-4 MIL. THICK MORTON POWDER COATINGS - 20-7037 POLYESTER POWDER COAT
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 903 OF THE R.I. STANDARD SPECIFICATIONS.
2. INTERMEDIATE POSTS REQUIRED EVERY 200’-0”.
3. ALL PIPES REFER TO SCHEDULE 40 NOMINAL PIPE SIZES.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTIONS 901, 902 OF THE RI STANDARD SPECIFICATIONS.
2. SHALL BE IN ACCORDANCE WITH SECTION 223 OF THE RI STANDARD SPECIFICATIONS.
3. SETBACK FROM CURB FACE OR BERM AS SPECIFIED ON PLANS, 8’ LESS THAN 40 MPH; 13’ LESS THAN 50 MPH.
4. W-BEAM POSTS W6X9 STANDARD 72 INCHES OR AS SPECIFIED ON PLANS.
5. THREE BEAM POSTS W6X9 STANDARD 81 INCHES OR AS SPECIFIED ON PLANS.
6. TOP OF RAIL HEIGHT MEASURED FROM 10:1 SURFACE.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

ROADSIDE GUARDRAIL INSTALLATION

JUNE 15, 1998

R.I. STANDARD 34.1.0
NOTE: THIS DETAIL IS ONLY APPLICABLE IF OBSTRUCTION IS LESS THAN 30'-0" FROM THE EDGE OF THE TRAVEL LANE.

DETAIL AT ROADSIDE OBSTRUCTION

TRANSITION RATE 100:1
(SINGLE FACED METAL BEAM GUARDRAIL)

EDGE OF PAVEMENT

6W8.5 6'-0" POST
6W8.5 1'-2" LONG OFFSET BRACKETS
6W8.5 1'-2" LONG OFFSET BRACKETS
6W8.5 6'-0" POST
6W8.5 6'-0" POST
6W8.5 1'-2" LONG OFFSET BRACKET

9" MAX.
4'-0"
MIN.

DETAIL AT PIERS

NOTE:
SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
SECTION A-A

7/8" Ø HOLE IN PLATE (TYP.)

1'-0"

8"

2"

1 1/2"

11/2"

7"

3/16"

3/16"

SECTION A-A

VARIATES

2'-0" MAX.

2'-0" MIN.

1'-6"

MIN.

1'-0" SQ.

MIN.

10" Ø SONOTUBE (SEE NOTE 2)

CONCRETE FILL

DRILL AND GROUT 1 3/8" Ø HOLES 10 1/2" DEEP AND FILL WITH NON-SHRINK GROUT

SOFT TO MEDIUM LEDGE

HARD LEDGE

LEDGE 0'-0" TO 0'-2" BELOW GROUND

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. A 10" Ø DRILLED HOLE 1'-6" DEEP IS AN ACCEPTABLE SUBSTITUTE.
3. WET SAND FILL, HAND COMPACTED SHALL BE USED TO BACKFILL SONOTUBE AFTER INSERTING GUARDRAIL POST.

EXISTING GROUND

10" Ø SONOTUBE

CONCRETE FILL

2'-0"

2'-0" SQ.

VARIATES

2'-0" MIN.

3'-9" MAX.

LEDGE 2'-0" TO 3'-9" BELOW GROUND

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

TYPICAL GUARDRAIL POST INSTALLATION IN LEDGE

R.I. STANDARD

JUNE 15, 1998
NOTE: DEPRESSION TO BE FILLED WITH CORRESPONDING MATERIAL
**Splice Bolt**

- 2"(x) post bolt slot
- 3/4" x 2 1/2" x 3" O.C.
- (see note 2)

**Notes:**
1. (x) tolerance: ±1 1/4"
2. End post bolt slot 1/2" O.C. (unless otherwise noted)

**Splice Detail**

**Section**

- 1/2" O.C.
- 3/4" x 2" slot

**Notes:**
1. All slots 11/16" x 2" all square holes 11/16".
2. Splice occurs at posts only.

**Rub Rail**

- Splice Plate
- RE-9-70

**Note:**
- Shall be in accordance with section 901 of the R.I. Standard Specifications.

**Back-Up Plate**

- This back-up plate is placed behind rail elements at intermediate (non-splice) posts.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. ALL DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES.
3. AFTER GALVANIZING THE NUT SHALL BE FREE RUNNING ON THE BOLT.
4. THE RAIL ELEMENT SHALL BE SHOP CURVED WHEN THE PLACEMENT OF GUARDRAIL IS ON A CURVE HAVING A RADIUS OF 150'-0" OR LESS.
## BOLT SELECTION TABLE

<table>
<thead>
<tr>
<th>INTENDED USE</th>
<th>BOLT TYPE</th>
<th>L</th>
<th>THREAD LENGTH</th>
<th>NUT TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS SPLICE ON &quot;W&quot; BEAM GUARD RAIL</td>
<td>5/8&quot; Ø BUTTON HEAD</td>
<td>1 1/4&quot;</td>
<td>FULL</td>
<td>5/8&quot; Ø STANDARD</td>
</tr>
<tr>
<td>FOR FASTENING &quot;W&quot; BEAM RAIL TO STEEL POSTS OR BRACKET</td>
<td>5/8&quot; Ø BUTTON HEAD</td>
<td>2&quot;</td>
<td>1 1/2&quot; MIN.</td>
<td>5/8&quot; Ø STANDARD</td>
</tr>
<tr>
<td>AS SPLICE BOLT FOR CHANNEL RUB RAIL ELEMENTS USED IN &quot;W&quot; BEAM GUARD RAIL</td>
<td>5/8&quot; Ø CARRIAGE HEAD</td>
<td>1 1/4&quot;</td>
<td>FULL</td>
<td>5/8&quot; Ø HEX</td>
</tr>
<tr>
<td>FOR FASTENING CHANNEL RUB RAIL ELEMENTS TO STEEL POSTS IN &quot;W&quot; BEAM GUARD RAIL</td>
<td>5/8&quot; Ø CARRIAGE HEAD</td>
<td>3&quot;</td>
<td>1 1/2&quot; MIN.</td>
<td>5/8&quot; Ø HEX</td>
</tr>
<tr>
<td>FOR FASTENING STEEL BLOCK TO STEEL POSTS</td>
<td>5/8&quot; Ø HEX</td>
<td>1 1/2&quot;</td>
<td>FULL</td>
<td>5/8&quot; Ø HEX</td>
</tr>
</tbody>
</table>

**NOTE:** USE ONLY AT 8th POST ON STD. 34.3.1

**RECTANGULAR**

**PLATE WASHER F-12-70**

**SPLICE BOLT SLOT**

**POST BOLT SLOT**
**NOTES:**
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. ALL HOLES TO BE 13/16" Ø.
3. ONLY ONE TYPE OF POST SHALL BE USED IN A SINGLE RUN. OPEN SIDE SHALL FACE AWAY FROM DIRECTION OF ONCOMING TRAFFIC.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. REFLECTIVE MATERIAL SHALL BE OF ENCAPSULATED LENS SILVER OR AMBER.
3. SILVER REFLECTORS SHALL BE INSTALLED ON THE RIGHT SIDE OF THE ROAD AND AMBER ON THE LEFT, IN ACCORDANCE WITH MUTCD GUIDELINES FOR PAVEMENT EDGELINE MARKINGS.
4. THE REFLECTORIZED ALUMINUM WASHER IS TO BE PLACED IN VALLEY OF BEAM WHEN MOUNTING BEAM ONTO EACH SIXTH POST.
5. REFLECTORIZED GALVANIZED WASHERS MAY BE USED AS AN OPTION.
LENGTH OF TERMINAL SECTION = 20'±

14'–0" MAX.

15'–0"

15'–0"

2:1 OR FLATTER
TOE OF BERM

20:1 OR FLATTER
FLAT

2:1 OR FLATTER
TOE OF BERM

4:1 OR FLATTER
EDGE OF SHOULD

W=WIDTH OF GUARDRAIL OR WIDTH OF GUARDRAIL AND POST

COMPACTED GRAVEL BORROW

DIRECTION OF TRAVEL

PLAN

END OF TERMINAL SECTION

5'-0" ROUNDING

TOP OF TERMINAL (11:1)

1'-6" MIN. (SEE NOTE 3)

TOP OF BERM 20:1 OR FLATTER

14'-0" MAX.

30'-0"

4'-0" ROUNDBLING

3:1 OR FLATTER

2:1 OR FLATTER

5'-0" ROUNDING

SECTION A–A

ELEVATION

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE ACTUAL DIMENSIONS OF THE BERM SHALL VARY IN ACCORDANCE WITH THE VARIABLE DIMENSIONS SHOWN AND AS DIRECTED BY THE ENGINEER.
3. SEE PLANS FOR DETAILS OF SPECIFIED ROADSIDE BARRIER AND TERMINAL SECTIONS.
4. IF THE TAPER ON THE TOP OF THE TERMINAL SECTION IS STEEPER THAN 11:1, THE MINIMUM HEIGHT OF THE BERM SHALL BE 2'-0".

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

EARTH BERM FOR ROADSIDE BARRIER TERMINAL SECTIONS

REVISIONS

NO. BY DATE

R.I.
STANDARD
34.3.0

JUNE 15, 1998

ISSUE DATE
OFFSET TO FACE OF POST FROM BACK OF RAIL ALIGNMENT

<table>
<thead>
<tr>
<th>POST NO.</th>
<th>OFFSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>4.00'</td>
</tr>
<tr>
<td>7</td>
<td>2.79'</td>
</tr>
<tr>
<td>6</td>
<td>1.79'</td>
</tr>
<tr>
<td>5</td>
<td>1.25'</td>
</tr>
<tr>
<td>4</td>
<td>0.80'</td>
</tr>
<tr>
<td>3</td>
<td>0.45'</td>
</tr>
<tr>
<td>2</td>
<td>0.11'</td>
</tr>
<tr>
<td>1</td>
<td>0.00'</td>
</tr>
</tbody>
</table>

PAY LIMIT (25'-0" NOMINAL RAIL LENGTH)

REQUIRED GUARDRAIL NORMAL LENGTH

PAYOUT BY LIN. FT.

SPECIAL END SHOE

BUFFER END SECTION

1'-0" CONCRETE FOOTING

VARIES SLOPE OR FLATTER

SHOULDER LINE

PLAN

4'-2" 1'-0" 6' 3'-0"

3/4" CABLE (DRAWN TIGHT NO SLACK SECURELY FASTENED)

3'-0" CONCRETE FOOTING

6x6.6/6 WELDED WIRE FABRIC (TYP.)

1" 3'-0"'S (TYP.)

3'-0" SANGLE FOOTING (TYP.)

10" SONATUBE BEVEL POST CORNERS FIELD COAT (TYP.)

ANCHORAGE DETAIL

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS STANDARD IS NOT TO BE USED WHEN THE DESIGN SPEED IS EXCEEDS 45 MPH.
3. ALL METAL BEAM RAIL, POST, OFFSET BRACKETS, NUTS, BOLTS, WASHERS, AND ALL OTHER ACCESSORIES SHALL BE HOT DIPPED GALVANIZED.
4. ALL DIMENSIONS SUBJECT TO MANUFACTURERS' TOLERANCES.
5. AFTER GALVANIZING, THE NUT SHALL BE FREE RUNNING ON THE BOLT.
6. THE RAIL ELEMENT SHALL BE SHOWN CURVED WHEN THE PLACEMENT OF GUARDRAIL IS ON A CURVE HAVING A RADIUS OF 150'-0" OR LESS. NO ADDITIONAL PAYMENT SHALL BE ALLOWED FOR THIS WORK.
7. POST AND OFFSET BRACKET TO BE FABRICATED FROM 6"x4" 8 1/2 LBS. STEEL "H" SECTIONS.
8. POST AND BRACKET BOLT HOLES TO BE OVAL UNLESS OTHERWISE SPECIFIED.
9. ALL HOLES SHALL BE 13/16".
10. FOR DETAILS ON CABLE, ANCHOR PLATE, END POST, BUFFER END SECTION, AND BACKUP PLATE SEE STD. 34.3.3.
11. TO FACILITATE REMOVAL OF BROKEN WOOD POST, 10" # (ONLY) PERMANENT CARDBOARD SONATURES OR METAL SLEEVES ARE TO BE INSTALLED AROUND THE POST PRIOR TO CASTING THE FOOTINGS. (SLEEVE TO BE FILLED WITH CONCRETE SAND.)
12. FOR TRAILING END OF GUARDRAIL ADJACENT TO ONE-WAY ROADWAY OMIT TERMINAL SECTION. NEXT TO LAST POST TO BE 3'-0" POST.
13. USE NO WASHERS UNDER POST BOLT HEADS FROM FIRST THRU SEVENTH POSTS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

GUARDRAIL END SECTION

JUNE 15, 1998

ISSUE DATE

R.I. STANDARD 34.3.1
NOTE:
shall be in accordance with section 901 of the r.i. standard specifications.
DETAIL "A"

1 1/2" EYES
ORIENT TO ACCOMMODATE
TURBUCLE CONNECTIONS
FOR CABLE BARRIER

1 1/4"x4'-6"
GALVINIZED RODS
PARALLEL TO AXIS
OF GUARDRAIL AT
POINT OF ANCHORAGE

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. CABLE TO BE PARALLEL TO GUARDRAIL FOR STRAIGHT RUNS OF RAIL. CABLE MAY HAVE
   ANGLE POINT AT ANCHOR PLATE IF GUARDRAIL IS CURVED.
EXISTING END POST

DIRECTION OF TRAFFIC

PLAN

LIMIT OF PAYMENT = 26'-10 1/2"

CORE DRILL 1" HOLE IN END POST FOR 4 3/4" HIGH STRENGTH (A325) THROUGH BOLTS (GALVANIZED) WITH WASHERS RE-8-79 TERMINAL CONNECTOR

7 SPACES AT 3'-1/2" = 21'-10 1/2"

1/4"X3"X3" PLATE WASHERS ASTM A36 GALVANIZED

SECTION A-A

ELEVATION

Wearing SURFACE

RE-8-79 A

TERMINAL CONNECTOR (RE-8-79)

PLATE WASHER ARRANGEMENT

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. TERMINAL CONNECTOR, GUARDRAIL, POSTS, BRACKETS, ALL HARDWARE, NUTS, BOLTS WASHERS, DRILLING AND ALL OTHER INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION ARE INCLUDED AS PART OF THIS STANDARD.
3. DIMENSIONAL TOLERANCES NOT SHOWN OR IMPLIED ARE INTENDED TO BE THOSE CONSISTENT WITH THE PROPER FUNCTIONING OF THE PART, INCLUDING ITS APPEARANCE, AND ACCEPTED MANUFACTURING PRACTICES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

GUARDRAIL CONNECTION TO EXISTING END POST APPROACH END SECTION

R.I. STANDARD 34.3.5

REVISIONS

NO.  BY  DATE

JUNE 15, 1998
FLARED END SECTION SECTION (RE-5-76)

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. MASONRY BRACKET, END SECTION, GUARDRAIL, POSTS ALL HARDWARE, NUTS, BOLTS, WASHERS, DRILLING AND ALL OTHER INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION ARE INCLUDED AS PART OF THIS STANDARD.
3. ALL STRUCTURAL SHAPES WHICH MAKE UP THE MASONRY BRACKET SHALL BE GALVANIZED.
4. FOR HIGH SPEED UPGRADE TO THIER BEAM ESPECIALLY AT FIXED OBJECT LOCATIONS.
5. DIMENSIONAL TOLERANCES NOT SHOWN OR IMPLIED ARE INTENDED TO BE THOSE CONSISTENT WITH THE PROPER FUNCTIONING OF THE PART, INCLUDING ITS APPEARANCE, AND ACCEPTED MANUFACTURING PRACTICES.
CORE DRILL 1" Holes in End Post for
4 3/4" HIGH STRENGTH (A325) THROUGH
BOLTS (GALVANIZED) WITH WASHERS

RE-8 TERMINAL CONNECTOR

7 SPACES AT
3' - 1 1/2" = 21' - 10 1/2"

LIMIT OF PAYMENT = 26' - 10 1/2"

1' - 0" ±

4' - 0" ±

SECTION A-A

ELEVATION

1/4"x3"x3" PLATE WASHERS
ASTM A36
GALVANIZED

STD. 40.1.0
OR 40.1.1

RE-8

A

DIRECTION OF TRAFFIC

PLATE WASHER
ARRANGEMENT

29/32"x1 1/8" SLOTS

3/4"x2 1/2" POST BOLT SLOTS (OPTIONAL)

3 3/8"

2' - 6"

NEUTRAL AXIS

TERMINAL CONNECTOR
(RE-8)

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. TERMINAL CONNECTOR, GUARDRAIL, POSTS, BRACKETS, ALL HARDWARE, NUTS, BOLTS, WASHERS, DRILLING AND ALL OTHER INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION ARE INCLUDED AS PART OF THIS STANDARD.
3. DIMENSIONAL TOLERANCES NOT SHOWN OR IMPLIED ARE INTENDED TO BE THOSE CONSISTENT WITH THE PROPER FUNCTIONING OF THE PART, INCLUDING ITS APPEARANCE, AND ACCEPTED MANUFACTURING PRACTICES.
STEEL RAIL DETAIL
6"x3/8"x9'-9"

PLATE WASHER DETAIL
4 3/4"x1/4"

STEEL SPLICE PLATE DETAIL
6"x3/8"x2'-6"

POST CONNECTION PLAN

POST CONNECTION ELEVATION

SECTION A-A

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 902 OF THE R.I. STANDARD SPECIFICATIONS.
2. ALL STRUCTURAL STEEL AND FASTENER HARDWARE SHALL BE WEATHERING STEEL AS SPECIFIED.
**Steel Backed Timber Guardrail**

### Plan

- **30'-0" Flared Length** (See Note 3)
- **5/8" Single Bolt with Plate**
- **Edge of Pavement**
- **Begin Flare** (See Note 3)
- **See Roadway Typical Section for Offset Distance**

### Elevation

- **Steel Backed Timber Guardrail** (See Std. 34.4.0)
- **Steel Rail Backing**
- **Steel Splice Plate**
- **Earth Berm** (See Note 2)
- **Concrete Anchor**

### Detail "A"

- **13/16" Hole (Typ.)**
- **2'-0"**
- **3 1/2"**
- **8 3/4"**
- **2'-3"**

### Section A-A

- **6" x 1/2" x 9"**
- **4" (Min. Cover)**
- **Back-up Plates** (See Detail)

### Back-up Plate Detail

- **6" x 1/2" x 9"**
- **1 1/2"**

### Notes:

1. Shall be in accordance with Section 902 of the R.I. Standard Specifications.
2. Reference Std. 34.3.0 for construction of Earth Berm.
3. The guardrail flare shown in the plan view is the minimum length and rate required, as directed by the Engineer. The guardrail should be flared so the terminal section is outside the clear zone. When this is not practical, it should be flared as far from the road as practical at the maximum rate indicated on the guardrail flare rate table.
4. Reference Std. 34.4.0 for timber, structural steel and hardware details.
5. The blocks shall be included in the terminal section, except on the concrete anchor.
**NOTES:**

1. SHALL BE IN ACCORDANCE WITH SECTION 902 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS STANDARD IS NOT TO BE USED WHEN THE DESIGN SPEED EXCEEDS 45 MPH.
3. SEE STD. 34.4.0 STEEL BACKED TIMBER GUARDRAIL, FOR TIMBER, STRUCTURAL STEEL AND HARDWARE DETAILS.
4. THE BLOCKS SHALL BE INCLUDED IN THE TERMINAL SECTION, EXCEPT ON THE CONCRETE ANCHOR.
5. CUT FLARES SHALL BEGIN AT THE NEAREST POST TO A TRANSITION POINT BETWEEN FILL AND CUT AS DIRECTED BY THE ENGINEER.
6. THE FLARE SHALL BE EXTENDED INTO THE CUT UNTIL A MINIMUM OF 1' - 0" COVER IS OBTAINED OVER THE GUARDRAIL END.
AASHTO M180 CLASS A TYPE II

BEAM SECTION

15/16" R

1 17/32" 15/16" R

10" 9/16" 3 3/16" 1/16" 3 3/16" 1/16" 2 1/4" 1 1/4" 1 1/4" 1/8" 2 1/4" 2 5/16" 2 5/16" 2 1/4"

NEUTRAL
AXIS

29/32" x 1 1/8" 29/32" x 1 1/8"

3/4" x 2 - 1/2" POST BOLT SLOTS

1/16"

12 GAUGE

MODIFIED THRIE BEAM BLOCKOUT

PLAN OF RAIL

13/16"

M14X18 BLOCK

ELEVATION OF RAIL

EMBEDMENT LENGTH 48"

M14X18 POST

W6X9 POST

THRIE BEAM BACKER PLATE AT INTERMEDIATE POST

ELEVATED POST HEIGHT 35"

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. POST TO BE FABRICATED FROM W6X9 BY 81" LONG STEEL SECTIONS.
3. MODIFIED BLOCKOUT TO BE FABRICATED FROM M14X18 BY 177" LONG STEEL SECTIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

STEEL THRIE BEAM GUARDRAIL SINGLE FACE

MAY 1, 2009

R.I. STANDARD 34.5.3
BEAM SECTION

15/16" R
1 17/32"
3 3/16"
2 5/16"
2 1/4"
15/16" R
11/16"
3 1/4"
2 1/4"
1 1/8"
3 1/4"
9/16"
NEUTRAL AXIS

29/32" x 1 1/8" SLOTS
3/4" x 2 - 1/2" POST BOLT SLOTS
29/32" x 1 1/8" SLOTS

AASHTO M180 CLASS A Type II

PLAN OF MEDIAN RAIL

THREE BEAM BACKER PLATE AT INTERMEDIATE POST

ELEVATION OF MEDIAN RAIL

M14X18 BLOCK

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. POST TO BE FABRICATED FROM W6X9 BY 78" LONG STEEL SECTIONS.
3. MODIFIED BLOCKOUT TO BE FABRICATED FROM M14X18 BY 17" LONG STEEL SECTIONS.
1/4" maximum open joints on tangent sections
1/4" maximum open measured at inside of curves

PLAN
1/2" x 8" slot (10" deep)

SECTION A-A

ELEVATION

SECTION B-B

Dowel detail at ends

1" #1-6" plain bar

Setting detail

Gravel subbase (compacted to 95% maximum density)

8" x 16" x 4" concrete block (typical each joint and at center of barrier)

NOTE: SHALL BE IN ACCORDANCE WITH SECTION 909 OF THE R.I. STANDARD SPECIFICATIONS.

Rhode Island Department of Transportation

Double-Faced Precast Median Barrier

R.I. Standard 40.1.0

June 15, 1998

Issue Date
SECTION A-A

Dowel detail at ends

ELEVATION

SECTION B-B

Bend around 1" pin

2" cover (min.)

#4 @ 1'-0" typ. (6'-0"± long)

REINFORCING

1/4" maximum open joints on tangent sections
1/4" maximum open measured at inside of curves

DETAIL "A"

2" non-shrink mortar

ELEVATION

2'-8" lift hole

& 1" plain bar one end
1 1/2"×6" slot other end (see dowel detail)

No.

NO.

REVISIONS

REVISIONS

BY

BY

DATE

DATE

R.I. STANDARD

REVISIONS

NO.

R.I. STANDARD

JUNE 15, 1998

40.2.0

ISSUE DATE

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

SINGLE-FACED PRECAST MEDIAN BARRIER

NOTES:

1. Shall be in accordance with section 909 of the R.I. standard specifications.
2. Unit shall be supported by concrete setting blocks (see Std. 40.1.0).

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

JUNE 15, 1998

R.I. STANDARD

40.2.0

ISSUE DATE

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

SINGLE-FACED PRECAST MEDIAN BARRIER

NOTES:

1. Shall be in accordance with section 909 of the R.I. standard specifications.
2. Unit shall be supported by concrete setting blocks (see Std. 40.1.0).
SINGLE-FACED PRECAST MEDIAN BARRIER WITH CONCRETE SLAB

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

1. SHALL BE IN ACCORDANCE WITH SECTION 809 OF THE R.I. STANDARD SPECIFICATIONS.
2. UNIT SHALL BE SUPPORTED BY CONCRETE SETTING BLOCKS (SEE STD. 40.1.0).
3. SUBDrain SHALL BE TIED INTO THE DRAINAGE SYSTEM.
REINFORCING

SECTION A-A

ELEVATION

SECTION B-B

DOWEL DETAILS AT 2'-0" ENDS

NOTE:

1. SHALL BE IN ACCORDANCE WITH SECTION 909 OF THE R.I. STANDARD SPECIFICATIONS.
2. UNITS SHALL BE SUPPORTED BY CONCRETE SETTING BLOCKS (SEE STD. 40.1.0).

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PRECAST MEDIAN BARRIER TRANSITION UNIT

R.I. STANDARD 40.3.0

JUNE 15, 1998
NOTE: SHALL BE IN ACCORDANCE WITH SECTION 909 OF THE R.I. STANDARD SPECIFICATIONS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 926 OF THE R.I. STANDARD SPECIFICATIONS.
2. BEND REBARS AROUND A 1 3/8" Ø PIN.
3. BARS R-1 SHALL BE FABRICATED CONTINUOUSLY. R-2 BARS SHALL BE FABRICATED WITH 2'-0" MINIMUM LAPS AS SHOWN ON THE DETAIL.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
UNANCHORED PRECAST CONCRETE BARRIER
FOR TEMPORARY TRAFFIC CONTROL

JUNE 15, 1998
ISSUE ONE
NOTES
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
2. FOR CURB SETTING DETAIL REFERENCE STD. 7.6.0.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
2. FOR CURB SETTING DETAIL REFERENCE STD. 7.6.0.
### NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE RI STANDARD SPECIFICATIONS.
2. WHEN ANY OBSTRUCTION LOCATED IN THE SIDEWALK FALLS WITHIN A CROSSWALK AREA, THE WHEELCHAIR RAMP SHALL BE PLACED SUCH THAT THE OBSTRUCTION FALLS OUTSIDE OF THE RAMP.
3. AT NO TIME IS ANY PART OF THE WHEELCHAIR RAMP TO BE LOCATED OUTSIDE OF THE CROSSWALK, AND IT IS TO BE CENTERED WHENDEVER POSSIBLE.
4. DRAINAGE FACILITIES ARE TO BE LOCATED UP-GRADE OF ALL WHEELCHAIR Ramps.
5. LOCATION OF WHEELCHAIR RAMPS IS AS SHOWN ON CONTRACT DRAWINGS.
6. IN NO INSTANCE SHALL THE SIDEWALK CROSS SLOPE EXCEED 1:50 EXCEPT WITHIN THE RAMP AREA.
7. AN UNOBSTRUCTED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 4'-0" SHALL BE MAINTAINED.
8. THE WHEELCHAIR RAMP SLOPE AND SIDE SLOPES (TRANSITIONS), MUST NOT BE STEEPER THAN 1:12. HOWEVER, THESE SLOPES MAY BE FLATTER THAN 1:12 WHEN WARRANTED BY SURROUNDING CONDITIONS.
9. WHERE THE ROAD PROFILE EXCEEDS 5% THE HIGH SIDE TRANSITION LENGTH (T) SHALL BE EIGHTEEN FEET (18'-0")
10. IN NO CASE, WHERE A STOP LINE IS WARRANTED, SHALL A RAMP BE PLACED BEHIND THE STOP LINE.
11. THE ENTRANCE OF THE WHEELCHAIR RAMP SHALL BE FLUSH WITH THE ROADWAY.
12. THE WHEELCHAIR RAMP SHALL BE CENTERED RADIALY, OPPOSITE THE RADIUS POINT WHEN POSSIBLE.
13. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR FILLER PIECES TO BE 3'-0" (GREATER LENGTHS PREFERRED).
14. ALL REQUIRED CUTTING OF CURB PIECES TO BE PAID FOR UNDER COST OF CURB.
15. DETECTABLE WARNINGS TO BE PAID FOR UNDER SECTION 942 OF THE RI STANDARD SPECIFICATIONS.
16. 8" CONCRETE DEPTH FOR RADIUS WHEELCHAIR RAMPS ONLY. USE 4" DEPTH FOR TANGENT (MID-BLOCK) LOCATIONS.

### TABLE

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<thead>
<tr>
<th>ROADWAY PROFILE GRADE</th>
<th>T (FT.)</th>
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<tr>
<td>0.00</td>
<td>6.0</td>
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<tr>
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### STANDARD CURB SECTIONS OR WHEELCHAIR RAMP TRANSITION CURB AS REQUIRED

### ISOMETRIC VIEW

NOT TO SCALE

### SECTION A-A

NOT TO SCALE

### DETECTABLE WARNING RI STD. 48.1.0

### RAMP AND FLARES (SEE NOTE 16)

CONCRETE 4" AND 8" STD. 43.1.0

### CONCRETE 4" STD. 43.1.0

### DETECTABLE WARNING RI STD. 48.1.0

### LANDING AND TRANSITIONS

CONCRETE 4" STD. 43.1.0

### RAMP AND FLARES

CONCRETE 4" AND 8" STD. 43.1.0

### ROADWAY PROFILE GRADE T (FT.)

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STANDARD CURB SECTIONS OR WHEELCHAIR RAMP TRANSITION CURB AS REQUIRED

TRANSITION LENGTH

TYPICAL CROSSWALK APPLICATION ACROSS SIDE STREET (EXACT LOCATION TO BE SHOWN ON PLANS)

43.1.0 or 43.2.0 SIDEWALK

STATE HIGHWAY LINE

DIRECTION OF PEDESTRIAN TRAVEL

CURB OR TRANSITIONS AS REQUIRED FOR EARTH SUPPORT

PLAN

ROADWAY GRADE

ROADWAY GRADE | T
---|---
0.00 | 6.0
0.01 | 7.0
0.02 | 8.0
0.03 | 9.5
0.04 | 11.5
0.05 | 15.0

NORMAL SIDEWALK GRADE

STD. 43.1.0 or 43.2.0 GRANULAND AND LANDING

SECTION A–A

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS DETAIL IS TO BE USED ONLY WHEN STATE RIGHT–OF–WAY IS LIMITED TO BACK OF SIDEWALK, AND SIDEWALK IS NARROW WITH NO PEDESTRIAN TRAFFIC FROM SIDE STREET.
3. WHEN ANY OBSTRUCTION LOCATED IN THE SIDEWALK FALLS WITHIN A CROSSTRAVEL AREA, IF POSSIBLE, THE OBSTRUCTION SHALL BE PLACED SUCH THAT IT FALLS OUTSIDE OF THE RAMP.
4. AT NO TIME IS ANY PART OF THE WHEELCHAIR RAMP TO BE LOCATED OUTSIDE OF THE CROSSTRAVEL, AND IT IS TO BE CENTERED WHENEVER POSSIBLE.
5. DRAINAGE FACILITIES ARE TO BE LOCATED UP–GRADE OF ALL WHEELCHAIR RAMPS.
6. LOCATION OF WHEELCHAIR RAMPS IS AS SHOWN ON CONTRACT DRAWINGS.
7. ALL REQUIRED CUTTING OF CURB PIECES TO BE PAID FOR UNDER COST OF CURB.
8. WHERE THE ROAD PROFILE EXCEEDS 5% THE TRANSITION LENGTH (T) SHALL BE EIGHTEEN FEET (18’–0”).
9. THE ENTRANCE OF THE WHEELCHAIR RAMP SHALL BE Flush WITH THE ROADWAY.
10. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR FILLER PIECES TO BE 3’–0”(GREATER LENGTHS PREFERRED).
11. AN UNOBSERVED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 4’–0” SHALL BE MAINTAINED.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

WHEELCHAIR RAMP FOR LIMITED RIGHT–OF–WAY AREAS

R.I. STANDARD 43.3.1

REVISIONS

NO. | BY | DATE
---|---|---
1 | MLP | Dec 2005
2 | MLP | Sep 2012

JUNE 15, 1998

ISSUE DATE
NOTES:
1. THIS DETAIL MAY BE USED WHEN A PHYSICAL BARRIER IS PRESENT AND THERE IS INSUFFICIENT ROOM TO PROPERLY CONSTRUCT AN ADA ACCESSIBLE RAMP AND LANDING; A TECHNICAL INFEASIBILITY FINDING IS REQUIRED.
2. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE RI STANDARD SPECIFICATIONS.
3. THE RAMP–LANDING AND TRANSITIONS SHALL BE FREE OF OBSTRUCTIONS.
4. LOCATION OF THE RAMP–LANDING IS AS SHOWN ON CONTRACT DRAWINGS.
5. AN UNOBSTRUCTED PEDESTRIAN ACCESS ROUTE (PATH OF TRAVEL) WITH A MINIMUM WIDTH OF 4’–0” SHALL BE MAINTAINED.
6. THE ENTRANCE OF THE RAMP–LANDING SHALL BE FLUSH WITH THE PAVEMENT.
7. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR FILLER PIECES TO BE 3’–0” (GREATER LENGTHS PREFERRED).
8. ALL REQUIRED CUTTING OF CURB PIECES TO BE PAID FOR UNDER COST OF CURB.
9. DETECTABLE WARNINGS TO BE PAID FOR UNDER SECTION 942 OF THE RI STANDARD SPECIFICATIONS.
CUT AND MATCH EXISTING CONCRETE OR BITUMINOUS DRIVEWAY AS REQUIRED

1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
2. WHEN DRIVEWAY IS BELOW BACK EDGE OF SIDEWALK PROFILE, STD. 43.4.1 MUST BE USED.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
DRIVEWAY DEVELOPMENT FOR 3'−0" TRANSITION CURB

R.I. STANDARD 43.4.0
CUT AND MATCH EXISTING CONCRETE OR BITUMINOUS DRIVEWAY AS REQUIRED

NOTE:
SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
NOTES:
1. TRANSVERSE DROP-OFF:
   POSTED SPEED ≤ 35 M.P.H.: 5 FEET HORIZONTALLY TO 1 INCH VERTICALLY
   POSTED SPEED > 35 M.P.H.: 10 FEET HORIZONTALLY TO 1 INCH VERTICALLY
2. LONGITUDINAL DROP-OFF (OUTSIDE EDGES OF PAVEMENT):
   POSTED SPEED ≤ 35 M.P.H.: DROP-OFFS > 3" BUT < 5" SHALL BE TAPERED TO A 1:1 OR FLATTER SLOPE TO EXISTING GROUND.
   ALL DROP-OFFS ≤ 5" SHALL BE TAPERED TO A 4:1 OR FLATTER SLOPE TO EXISTING GROUND.
   POSTED SPEED > 35 M.P.H.: LONGITUDINAL DROP-OFFS WILL NOT BE PERMITTED WITHIN 2'-0" OF A TRAVEL LANE. THIS AREA MUST BE AT GRADE WITH THE TRAVEL LANE.
   HOWEVER, SHOULD THE CONTRACTOR'S APPROVED SEQUENCE OF OPERATIONS RESULT IN OVERNIGHT DROP-OFFS GREATER THAN THREE INCHES OCCURRING BETWEEN 2'-0" TO 6'-0" FROM A TRAVEL LANE, THEN THE DROP-OFFS SHALL BE TAPERED TO A 4:1 OR FLATTER SLOPE TO EXISTING GROUND.
EXISTING PAVEMENT DEPTH ≤ 4"

EXISTING PAVEMENT DEPTH > 4"

NOTE:
A BOND BREAKER (TAPERED OR EQUIVALENT) WILL BE PLACED 5'–0" FROM THE JOINT AND COVERED WITH THE BINDER COURSE AS THE TEMPORARY RAMP. PRIOR TO PLACING THE SURFACE COURSE, THE BINDER COURSE AND BOND BREAKER WILL BE REMOVED.
NOTES
1. DETECTABLE WARNING PANEL SHALL BE IN ACCORDANCE WITH SECTION 942 OF THE RHODE ISLAND STANDARD SPECIFICATIONS; PANEL TO MATCH RAMP WIDTH.
**GUYING DETAIL**

- **KNOT**
- **GUY WEBBING**
- **DO NOT CUT LEADER**
- **TREE PER PLAN**
- **REMOVE ALL DEADWOOD**
  (DO NOT REMOVE ANY OTHER VEGETATION)
- **GUY WEBBING ATTACHED NO HIGHER THAN 1/2 AND NO LOWER THAN 1/3 THE HEIGHT OF THE TREE**
- **3" PINEBARK MULCH (UNLESS OTHERWISE NOTED ON PLANS)**
- **REMOVE ALL NURSERY PROTECTION DEVICES PRIOR TO PLANTING**
- **BACKFILL WITH LOAM**
- **MOUND WITH EXCAVATED SOIL TO 3" ABOVE FINISHED GRADE**
- **2"x2" HARDWOOD STAKES (TYP.)**
  HEIGHT VARIES
  DRIVE 3' - 0" INTO GROUND OUTSIDE OF ROOTBALL
- **ROOTBALL ON UNDISTURBED SUBGRADE**
- **PLANT TREE AT DEPTH EQUAL TO 2" LESS THAN THE DISTANCE FROM BOTTOM OF ROOTBALL TO ROOT COLLAR**
- **2 x ROOTBALL DIAMETER (MIN.)**
- **CUT AND REMOVE BURLAP AND WIRE BASKET FROM TOP 1/3 OF ROOTBALL**

**NOTE:**
SHALL BE IN ACCORDANCE WITH SECTION L.06 OF THE R.I. STANDARD SPECIFICATIONS.

**RHODE ISLAND DEPARTMENT OF TRANSPORTATION**

**LARGE TREE STAKING AND PLANTING DETAIL**
(2" CALIPER AND GREATER)

**REVISIONS**

<table>
<thead>
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<th>DATE</th>
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**R.I. STANDARD 50.1.0**

**JUNE 15, 1998**

**ISSUE DATE**

**SIGNED**

[Signature]

[Signature]

**CHIEF ENGINEER**

**TRANSPORTATION**

**CHIEF DESIGN ENGINEER**

**TRANSPORTATION**
DO NOT CUT LEADER

REMOVE ALL DEADWOOD (DO NOT REMOVE ANY OTHER VEGETATION)

TREE PER PLAN

REMOVE ALL NURSERY PROTECTION DEVICES PRIOR TO PLANTING

3" PINEBARK MULCH (UNLESS OTHERWISE NOTED ON PLANS)

MOUND WITH EXCAVATED SOIL TO 3" ABOVE FINISHED GRADE

BACKFILL WITH LOAM

ROOTBALL ON UNDISTURBED SUBGRADE

PLANT TREE AT DEPTH EQUAL TO 2" LESS THAN THE DISTANCE FROM BOTTOM OF ROOTBALL TO ROOT COLLAR

CUT AND REMOVE BURLAP AND WIRE BASKET FROM TOP 1/3 OF ROOTBALL

2 x ROOTBALL DIAMETER (MIN.)

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION L.06 OF THE R.I. STANDARD SPECIFICATIONS.
2. FOR STAKING DETAIL SEE STD. 50.1.0

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

TREE PLANTING ON SLOPE

REVISIONS

NO.  BY  DATE

JUNE 15, 1998

CHIEF ENGINEER
TRANSPORTATION

CHIEF DESIGN ENGINEER
TRANSPORTATION

ISSUE DATE

R.I. STANDARD
50.1.1
2"x2" NAILS HARDWOOD STAKES (TYP.) DRIVE 3'-0" INTO GROUND OUTSIDE OF ROOTBALL

8" (MAX.) GUY WEBBING ATTACHED NO HIGHER THAN 1/2 AND NO LOWER THAN 1/3 THE HEIGHT OF THE TREE

LANDSCAPE FILTER FABRIC STONE FINES PAVERS 1"STONE FINES SETTING BED SIDEWALK BACKFILL WITH LOAM

ROOTBALL ON UNDISTURBED SUBGRADE

SECTION

LEAVE OUT PAVERS FOR TREE STAKING (TYP.) (SEE NOTE 3)

3'-0" MIN.

SIDEWALK WIDTH VARIES

BACK OF SIDEWALK

FACE OF CURB

PAVERS

LEAVE OUT PAVERS FOR TREE STAKING (TYP.) (SEE NOTE 2)

3'-0" MIN.

SIDEWALK WIDTH VARIES

BACK OF CURB

FACE OF CURB

PAVERS

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTIONS L.06 AND L.12 OF THE R.I. STANDARD SPECIFICATIONS.
2. STAKES SHOULD BE LOCATED PARALLEL TO ROAD AND SIDEWALK.
3. AFTER THE GUARANTEE PERIOD THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF STAKES AND GUY WEBBING, AND FOR THE INSTALLATION OF PAVERS PREVIOUSLY LEFT OUT FOR STAKING.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PAVER DETAIL AROUND NEW TREES

JUNE 15, 1998

ISSUE DATE
GUYING DETAIL

DO NOT CUT LEADER

TREE PER PLAN

REMOVE ALL DEADWOOD
(Do not remove any other vegetation)

GUY WEBBING
Attached no higher than 1/2 and no lower than 1/3 the height of the tree

3" PINEBARK MULCH
(Unless otherwise noted on plans)

MOUND WITH EXCAVATED SOIL TO 3" ABOVE FINISHED GRADE

PLANT TREE AT DEPTH EQUAL TO 2" LESS THAN THE DISTANCE FROM BOTTOM OF ROOTBALL TO ROOT COLLAR

CUT AND REMOVE BURLAP AND WIRE BASKET FROM TOP 1/3 OF ROOTBALL

NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.06 OF THE R.I. STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

EVERGREEN TREE PLANTING DETAIL (4' - 0" HIGH AND GREATER)

REVISIONS
NO. BY DATE

JUNE 15, 1998

ISSUE DATE

R.I. STANDARD
50.2.0
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.06 OF THE R.I. STANDARD SPECIFICATIONS.
SHRUB PER PLAN

REMOVE ALL DEADWOOD
(DO NOT REMOVE
ANY OTHER VEGETATION)

BACKFILL
WITH LOAM

MOUND WITH
EXCAVATED SOIL
TO 3" ABOVE
FINISHED GRADE

3" PINEBARK MULCH
(UNLESS OTHERWISE
NOTED ON PLANS)

GENTLY HAND LOOSEN
SOIL FROM AROUND
ROOTBALL WITHOUT
SEVERING MAIN ROOTS

SPREAD ROOTS OVER
UNDISTURBED SUBGRADE

PLANT SHRUB AT
DEPTH EQUAL TO
2" LESS THAN THE
DISTANCE FROM
BOTTOM OF THE
ROOTBALL TO THE
ROOT COLLAR

2 x ROOTBALL
DIAMETER (MIN.)

NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.06 OF THE R.I. STANDARD SPECIFICATIONS.
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.06 OF THE R.I. STANDARD SPECIFICATIONS.
GENTLY HAND LOOSEN SOIL FROM AROUND ROOTBALL WITHOUT SEVERING MAIN ROOTS

BACKFILL WITH LOAM

2" PINEBARK MULCH (UNLESS OTHERWISE NOTED ON PLANS)

MOUND WITH EXCAVATED SOIL TO 3" ABOVE FINISHED GRADE

SPREAD ROOTS OVER UNDISTURBED SUBGRADE

2 x ROOTBALL DIAMETER (MIN.)

PLANT PERENNIAL AT DEPTH EQUAL TO THAT WHICH THE PLANT WAS GROWN IN THE NURSERY

NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.06 OF THE R.I. STANDARD SPECIFICATIONS.
GENTLY HAND LOOSE SOIL FROM AROUND ROOTBALL WITHOUT SEVERING MAIN ROOTS

BACKFILL WITH LOAM

SPREAD ROOTS OVER UNDISTURBED SUBGRADE

ORNAMENTAL GRASS PER PLAN

2" PINEBARK MULCH (UNLESS OTHERWISE NOTED ON PLANS)

MOUND WITH EXCAVATED SOIL TO 3" ABOVE FINISHED GRADE

PLANT GRASS AT DEPTH EQUAL TO THAT WHICH THE PLANT WAS GROWN IN THE NURSERY

2 x ROOTBALL DIAMETER (MIN.)

NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.06 OF THE R.I. STANDARD SPECIFICATIONS.
PLANT GROUND COVER AT DEPTH EQUAL TO THAT WHICH IT WAS GROWN IN THE NURSERY.

BACKFILL WITH LOAM.

SPREAD ROOTS OVER UNDISTURBED SUBGRADE.

MOUND WITH EXCAVATED SOIL TO 3" ABOVE FINISHED GRADE.

GENTLY HAND LOOSEN SOIL FROM AROUND ROOTBALL WITHOUT SEVERING MAIN ROOTS.

GROUND COVER PER PLAN.

2" PINEBARK MULCH (UNLESS OTHERWISE NOTED ON PLANS).

SEE PLAN FOR PLANTING BED LAYOUT.

NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.06 OF THE R.I. STANDARD SPECIFICATIONS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION L.06 OF THE R.I. STANDARD SPECIFICATIONS.
2. BY HAND, SPREAD BONE MEAL OVER ENTIRE PLANTING BED AT A RATE NOT TO EXCEED 1/2 LB. PER 25 SQ. FT.
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.11 OF THE STANDARD SPECIFICATIONS.
NOTE: SHALL BE IN ACCORDANCE WITH SECTION L.11 OF THE R.I. STANDARD SPECIFICATIONS.
SHRUB PROTECTION DEVICE

NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.11 OF THE R.I. STANDARD SPECIFICATIONS.
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.13 OF THE R.I. STANDARD SPECIFICATIONS.
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION L.13 OF THE R.I. STANDARD SPECIFICATIONS.
2. FOR WALL INSTALLATION DETAILS REFERENCE STD. 10.0.1.
3. PRIOR TO EXCAVATION, THE CONTRACTOR SHALL ROOT PRUNE THE TREE. ALL ROOT PRUNING SHALL BE IN ACCORDANCE WITH SECTION L.10 OF THE R.I. STANDARD SPECIFICATIONS.