
## Table of Contents

For the convenience of some of our users, the Table of Contents shows revised Plans with a vertical bar as well as bold type.

### 000 General-Legal-Miscellaneous

<table>
<thead>
<tr>
<th>Datum</th>
<th>Elevations &amp; Datums</th>
<th>001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevations &amp; Datums</td>
<td>001a</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Abbreviations</th>
<th>Abbreviations</th>
<th>002a-002f</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Standard Symbols</th>
<th>Electrical</th>
<th>003a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical</td>
<td>003b</td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td>003c</td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td>003d</td>
<td></td>
</tr>
<tr>
<td>Signalization / Channelization &amp; Signage</td>
<td>003e</td>
<td></td>
</tr>
<tr>
<td>Paving</td>
<td>003f</td>
<td></td>
</tr>
<tr>
<td>Paving</td>
<td>003g</td>
<td></td>
</tr>
<tr>
<td>Sewer &amp; Drainage</td>
<td>003h</td>
<td></td>
</tr>
<tr>
<td>Sewer &amp; Drainage</td>
<td>003i</td>
<td></td>
</tr>
<tr>
<td>Sewer &amp; Drainage</td>
<td>003j</td>
<td></td>
</tr>
<tr>
<td>Topographic &amp; Misc</td>
<td>003k</td>
<td></td>
</tr>
<tr>
<td>Topographic &amp; Misc</td>
<td>003l</td>
<td></td>
</tr>
<tr>
<td>Topographic &amp; Misc</td>
<td>003m</td>
<td></td>
</tr>
<tr>
<td>Topographic &amp; Misc</td>
<td>003n</td>
<td></td>
</tr>
</tbody>
</table>

**Private Utilities**

<table>
<thead>
<tr>
<th>Water</th>
<th>003o</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water</th>
<th>003p</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water</th>
<th>003q</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water</th>
<th>003r</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Payment</th>
<th>Sewer/Drainage Measurement Diagram</th>
<th>010</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Monument</th>
<th>Monument Frame &amp; Cover</th>
<th>020a</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Monument Frame &amp; Cover</th>
<th>020b</th>
</tr>
</thead>
</table>

**Miscellaneous**

<table>
<thead>
<tr>
<th>Desirable Locations for Utilities (Residential Street)</th>
<th>030</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Stabilized Construction Entrance</th>
<th>040</th>
</tr>
</thead>
</table>

### 100 Landscape Planting

<table>
<thead>
<tr>
<th>Trees</th>
<th>Deciduous Tree Planting in Planting Strip</th>
<th>100a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree &amp; Shrub Planting on Slopes</td>
<td>100b</td>
<td></td>
</tr>
<tr>
<td>Tree Planting in Amended Trench</td>
<td>100c</td>
<td></td>
</tr>
<tr>
<td>Coniferous Tree Planting</td>
<td>101</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shrub &amp; Ground Cover</th>
<th>Shrub Planting</th>
<th>110</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Cover Planting</td>
<td>111</td>
<td></td>
</tr>
<tr>
<td>Planting Pattern</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>Median Planting</td>
<td>113</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Irrigation</th>
<th>Hose Bib Assembly &amp; Quick Coupler Valve</th>
<th>121</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation Valves</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td>Irrigation Valves</td>
<td>123</td>
<td></td>
</tr>
<tr>
<td>Irrigation Valves</td>
<td>124</td>
<td></td>
</tr>
<tr>
<td>Irrigation Valves</td>
<td>125</td>
<td></td>
</tr>
<tr>
<td>Pop Up &amp; Fixed Irrigation Heads</td>
<td>126</td>
<td></td>
</tr>
<tr>
<td>Irrigation Controller Pedestal &amp; Enclosure Grounding</td>
<td>127</td>
<td></td>
</tr>
<tr>
<td>Irrigation Trenches</td>
<td>128</td>
<td></td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>Irrigation Controller Cabinet</td>
<td>129</td>
<td></td>
</tr>
<tr>
<td>Tree Protection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tree Protection During Construction</td>
<td>132a</td>
<td></td>
</tr>
<tr>
<td>Reusable Temporary Protection Fence</td>
<td>132b</td>
<td></td>
</tr>
<tr>
<td>Tree Protection During Trenching, Tunneling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or Excavation</td>
<td>133</td>
<td></td>
</tr>
<tr>
<td>Grading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slope Rounding</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>Rock Facing</td>
<td>141</td>
<td></td>
</tr>
<tr>
<td>Soil Amendment and Depth</td>
<td>142</td>
<td></td>
</tr>
<tr>
<td>200 Sewer-Drainage Appurtenances</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance holes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 204a Maintenance Hole</td>
<td>204a</td>
<td></td>
</tr>
<tr>
<td>Type 204b Maintenance Hole</td>
<td>204b</td>
<td></td>
</tr>
<tr>
<td>Type 204.5a Maintenance Hole</td>
<td>204.5a</td>
<td></td>
</tr>
<tr>
<td>Type 204.5b Maintenance Hole</td>
<td>204.5b</td>
<td></td>
</tr>
<tr>
<td>Type 205a Maintenance Hole</td>
<td>205a</td>
<td></td>
</tr>
<tr>
<td>Type 205b Maintenance Hole</td>
<td>205b</td>
<td></td>
</tr>
<tr>
<td>Type 206a Maintenance Hole</td>
<td>206a</td>
<td></td>
</tr>
<tr>
<td>Type 206b Maintenance Hole</td>
<td>206b</td>
<td></td>
</tr>
<tr>
<td>Type 207a Maintenance Hole</td>
<td>207a</td>
<td></td>
</tr>
<tr>
<td>Type 207b Maintenance Hole</td>
<td>207b</td>
<td></td>
</tr>
<tr>
<td>Type 208a Maintenance Hole</td>
<td>208a</td>
<td></td>
</tr>
<tr>
<td>Type 208b Maintenance Hole</td>
<td>208b</td>
<td></td>
</tr>
<tr>
<td>Type 209a Maintenance Hole</td>
<td>209a</td>
<td></td>
</tr>
<tr>
<td>Type 209b Maintenance Hole</td>
<td>209b</td>
<td></td>
</tr>
<tr>
<td>Type 210a Maintenance Hole</td>
<td>210a</td>
<td></td>
</tr>
<tr>
<td>Type 210b Maintenance Hole</td>
<td>210b</td>
<td></td>
</tr>
<tr>
<td>Type 211a Maintenance Hole</td>
<td>211a</td>
<td></td>
</tr>
<tr>
<td>Type 211b Maintenance Hole</td>
<td>211b</td>
<td></td>
</tr>
<tr>
<td>Type 212a Maintenance Hole</td>
<td>212a</td>
<td></td>
</tr>
<tr>
<td>Type 212b Maintenance Hole</td>
<td>212b</td>
<td></td>
</tr>
<tr>
<td><strong>Flexible Joint for VCP Connection</strong></td>
<td>215</td>
<td></td>
</tr>
<tr>
<td>Rebuild Existing Brick Maintenance Hole</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2'-0&quot; Diameter Frame &amp; Cover</td>
<td>230</td>
<td></td>
</tr>
<tr>
<td><strong>Sewer Replacement Cover</strong></td>
<td>231</td>
<td></td>
</tr>
<tr>
<td>Maintenance Hole Ladder Step &amp; Handhold</td>
<td>232a</td>
<td></td>
</tr>
<tr>
<td>Maintenance Hole Ladder Step &amp; Handhold</td>
<td>232b</td>
<td></td>
</tr>
<tr>
<td>Outside Drop Connection</td>
<td>233a</td>
<td></td>
</tr>
<tr>
<td>Inside Drop Connection</td>
<td>233b</td>
<td></td>
</tr>
<tr>
<td><strong>6&quot; or 8&quot; Vertical Connection to Concrete or Clay</strong></td>
<td>234a</td>
<td></td>
</tr>
<tr>
<td>6&quot; or 8&quot; Vertical Connection to Ductile Iron</td>
<td>234b</td>
<td></td>
</tr>
<tr>
<td>Catch Basins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 240 Catch Basin</td>
<td>240</td>
<td></td>
</tr>
<tr>
<td>Type 241 Catch Basin</td>
<td>241a</td>
<td></td>
</tr>
<tr>
<td>Type 241 Catch Basin Installations</td>
<td>241b</td>
<td></td>
</tr>
<tr>
<td>Type 242 Catch Basin</td>
<td>242</td>
<td></td>
</tr>
<tr>
<td>Precast Catch Basin Top Slab</td>
<td>243a</td>
<td></td>
</tr>
<tr>
<td>Precast Catch Basin Extension Risers</td>
<td>243b</td>
<td></td>
</tr>
<tr>
<td>Inlets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 250 Inlet</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Type 252 Inlet</td>
<td>252</td>
<td></td>
</tr>
<tr>
<td>Inlet/Catch Basin Location &amp; Installation</td>
<td>260a</td>
<td></td>
</tr>
<tr>
<td>Catch Basin &amp; Inlet Installation</td>
<td>260b</td>
<td></td>
</tr>
<tr>
<td>Catch Basin &amp; Inlet with 563b Hood</td>
<td>260c</td>
<td></td>
</tr>
<tr>
<td>Typical Catch Basin Connection</td>
<td>261</td>
<td></td>
</tr>
<tr>
<td>Type 262 Inlet Frame</td>
<td>262</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 263</td>
<td>Inlet Frame</td>
<td>263a</td>
</tr>
<tr>
<td>Type 263</td>
<td>Alternative Inlet Hood</td>
<td>263b</td>
</tr>
<tr>
<td>Inlet</td>
<td>Frame &amp; Grate</td>
<td>264</td>
</tr>
<tr>
<td>Vaned</td>
<td>Grate</td>
<td>265</td>
</tr>
<tr>
<td>Type 266</td>
<td>Replacement Vaned Grate</td>
<td>266</td>
</tr>
<tr>
<td>Outlet</td>
<td>Trap</td>
<td>267</td>
</tr>
<tr>
<td>Extension</td>
<td>for Inlet</td>
<td>268</td>
</tr>
<tr>
<td>Beehive</td>
<td>Grate for Bioretention</td>
<td>269</td>
</tr>
<tr>
<td><strong>Flow Control</strong></td>
<td>Flow Control Structure with Detention Pipe</td>
<td>270</td>
</tr>
<tr>
<td></td>
<td>CMP Detention Pipe Private System Only</td>
<td>271a</td>
</tr>
<tr>
<td></td>
<td>CMP Detention Structure End Plate Details Types A &amp; B</td>
<td>271b</td>
</tr>
<tr>
<td></td>
<td>CMP Detention Structure End Plate Details Types C</td>
<td>271c</td>
</tr>
<tr>
<td></td>
<td>CMP Detention Structure End Plate Dimensions</td>
<td>271d</td>
</tr>
<tr>
<td></td>
<td>Flow Control Device Assembly</td>
<td>272a</td>
</tr>
<tr>
<td></td>
<td><strong>PVC Shear Gate for Use in ROW Only</strong></td>
<td>272b</td>
</tr>
<tr>
<td></td>
<td>Type 277 Junction Box &amp; Installation</td>
<td>277</td>
</tr>
<tr>
<td>Vertical</td>
<td>Clean Out/Corrugated Metal Pipe</td>
<td>278</td>
</tr>
<tr>
<td><strong>Pipe Installation</strong></td>
<td>Tee Installation Corrugated Metal Pipe</td>
<td>279</td>
</tr>
<tr>
<td></td>
<td>8” Clean Out</td>
<td>280</td>
</tr>
<tr>
<td></td>
<td>Bioretention Under Drain Clean-out</td>
<td>281</td>
</tr>
<tr>
<td></td>
<td>&amp; Observation Port</td>
<td>281</td>
</tr>
<tr>
<td></td>
<td>Corrugated Metal Pipe Coupling Bands</td>
<td>282a</td>
</tr>
<tr>
<td></td>
<td>Corrugated Metal Pipe Coupling Bands</td>
<td>282b</td>
</tr>
<tr>
<td></td>
<td>Side Sewer Installation</td>
<td>283</td>
</tr>
<tr>
<td></td>
<td>Typical Trench Detail for Sewer &amp; Storm Drain</td>
<td>284</td>
</tr>
<tr>
<td></td>
<td><strong>Pipe Bedding Sewer/Storm Drain</strong></td>
<td>285</td>
</tr>
<tr>
<td><strong>Clearance Plans</strong></td>
<td>Sewer &amp; Water Spacing &amp; Clearances</td>
<td>286a</td>
</tr>
<tr>
<td></td>
<td>Sewer &amp; Water Spacing &amp; Clearances</td>
<td>286b</td>
</tr>
<tr>
<td><strong>Drains</strong></td>
<td>Bridge Drain</td>
<td>290</td>
</tr>
<tr>
<td></td>
<td>PVC Subsurface Drain Pipe</td>
<td>291</td>
</tr>
<tr>
<td></td>
<td>Infiltrating Bioretention with Sloped Sides &amp; Under Drain</td>
<td>292</td>
</tr>
<tr>
<td></td>
<td>Infiltrating Bioretention with Sloped Sides &amp; Under Drain</td>
<td>293a</td>
</tr>
<tr>
<td></td>
<td>Non-Infiltrating Bioretention with Sloped Sides &amp; Under Drain</td>
<td>293b</td>
</tr>
<tr>
<td></td>
<td>Vegetated Conveyance Swale</td>
<td>294</td>
</tr>
<tr>
<td></td>
<td>Typical Drain Curb Cut for Bioretention</td>
<td>295a</td>
</tr>
<tr>
<td></td>
<td>Drain Curb Cut Type 1</td>
<td>295b</td>
</tr>
<tr>
<td></td>
<td>Drain Curb Cut Type 2</td>
<td>295c</td>
</tr>
<tr>
<td></td>
<td>Drain Curb Cut Type 3</td>
<td>295d</td>
</tr>
<tr>
<td></td>
<td>Presettling Zone</td>
<td>299</td>
</tr>
<tr>
<td><strong>300 Watermain Appurtenances</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pipe Connections</td>
<td>Connections to Existing Watermains</td>
<td>300a</td>
</tr>
<tr>
<td></td>
<td>Connections to Existing Watermains</td>
<td>300b</td>
</tr>
<tr>
<td></td>
<td>Connections to Existing Watermains</td>
<td>300c</td>
</tr>
<tr>
<td><strong>Hydrants</strong></td>
<td>Type 310 Hydrant Setting Detail</td>
<td>310a</td>
</tr>
<tr>
<td></td>
<td>Type 310 Hydrant Setting Detail</td>
<td>310b</td>
</tr>
</tbody>
</table>
### 2014 Edition City of Seattle Standard Plans for Municipal Construction

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type 311 Hydrant Setting Detail</strong></td>
<td>311a</td>
<td></td>
</tr>
<tr>
<td><strong>Type 311 Hydrant Setting Detail</strong></td>
<td>311b</td>
<td></td>
</tr>
<tr>
<td><strong>Fire Hydrant Marker Layout</strong></td>
<td>312</td>
<td></td>
</tr>
<tr>
<td><strong>Wall Requirements for Hydrants</strong></td>
<td>313</td>
<td></td>
</tr>
<tr>
<td><strong>Fire hydrant Locations &amp; Clearances</strong></td>
<td>314a</td>
<td></td>
</tr>
<tr>
<td><strong>Clearances for Typical Water Service Vaults</strong></td>
<td>314b</td>
<td></td>
</tr>
<tr>
<td><strong>Valves</strong></td>
<td>315a</td>
<td></td>
</tr>
<tr>
<td><strong>Air Release Air Vacuum Valve</strong></td>
<td>320</td>
<td></td>
</tr>
<tr>
<td><strong>Concrete Blocking</strong></td>
<td>330a</td>
<td></td>
</tr>
<tr>
<td><strong>Watermain Thrust Blocking Vertical Fittings</strong></td>
<td>330b</td>
<td></td>
</tr>
<tr>
<td><strong>Watermain Thrust Blocking Horizontal Fittings</strong></td>
<td>331a</td>
<td></td>
</tr>
<tr>
<td><strong>Blow Off</strong></td>
<td>340a</td>
<td></td>
</tr>
<tr>
<td><strong>2” Blow Off Type A Non Traffic Installation</strong></td>
<td>340b</td>
<td></td>
</tr>
<tr>
<td><strong>Pipe Bedding</strong></td>
<td>350</td>
<td></td>
</tr>
<tr>
<td><strong>Watermain Trench and Bedding</strong></td>
<td>360</td>
<td></td>
</tr>
<tr>
<td><strong>Miscellaneous</strong></td>
<td>361a</td>
<td></td>
</tr>
<tr>
<td><strong>Watermain Electrolysis Test Station</strong></td>
<td>361b</td>
<td></td>
</tr>
<tr>
<td><strong>Type 361a Valve Chamber Frame &amp; Cover</strong></td>
<td>361c</td>
<td></td>
</tr>
<tr>
<td><strong>Type 361b Valve Chamber Frame &amp; Cover</strong></td>
<td>361d</td>
<td></td>
</tr>
<tr>
<td><strong>Joint Bonding for DIP Watermains &amp;</strong></td>
<td>362</td>
<td></td>
</tr>
<tr>
<td><strong>Joint Bonding Detail</strong></td>
<td>363</td>
<td></td>
</tr>
<tr>
<td><strong>Electrolysis Test Station Wire Installation Details</strong></td>
<td>364</td>
<td></td>
</tr>
<tr>
<td><strong>Sacrificial Anode Bonded to Pipe</strong></td>
<td>365</td>
<td></td>
</tr>
<tr>
<td><strong>Sacrificial Anode Installation Details</strong></td>
<td>400</td>
<td></td>
</tr>
<tr>
<td><strong>400 Street Paving &amp; Appurtenances</strong></td>
<td>400</td>
<td></td>
</tr>
<tr>
<td><strong>Paving</strong></td>
<td>401</td>
<td></td>
</tr>
<tr>
<td><strong>Half Section, Grading</strong></td>
<td>402</td>
<td></td>
</tr>
<tr>
<td><strong>Residential Pavement Sections</strong></td>
<td>403</td>
<td></td>
</tr>
<tr>
<td><strong>Commercial and Arterial Pavement Sections</strong></td>
<td>404a</td>
<td></td>
</tr>
<tr>
<td><strong>Roadway Cement Concrete Alley Pavements</strong></td>
<td>404b</td>
<td></td>
</tr>
<tr>
<td><strong>Pavement Patching</strong></td>
<td>404c</td>
<td></td>
</tr>
<tr>
<td><strong>Pavement Patching Zone of Influence</strong></td>
<td>405a</td>
<td></td>
</tr>
<tr>
<td><strong>Roadway Concrete Pavement Repair</strong></td>
<td>405b</td>
<td></td>
</tr>
<tr>
<td><strong>Pavement Repair Dowel Bar &amp; Tie Bar Details</strong></td>
<td>405c</td>
<td></td>
</tr>
<tr>
<td><strong>Roadway Concrete Pavement Joints</strong></td>
<td>405d</td>
<td></td>
</tr>
<tr>
<td><strong>Through Joints and Optional Keyways</strong></td>
<td>406</td>
<td></td>
</tr>
<tr>
<td><strong>for Cement Concrete Roadway</strong></td>
<td>410</td>
<td></td>
</tr>
<tr>
<td><strong>Frame &amp; Cover Cement Concrete Reinforcement</strong></td>
<td>411</td>
<td></td>
</tr>
<tr>
<td><strong>Detail</strong></td>
<td>412</td>
<td></td>
</tr>
<tr>
<td><strong>Curbs</strong></td>
<td>413a</td>
<td></td>
</tr>
<tr>
<td><strong>Type 410 Curb</strong></td>
<td>413b</td>
<td></td>
</tr>
<tr>
<td><strong>Curb Joints &amp; Dowels</strong></td>
<td>415</td>
<td></td>
</tr>
<tr>
<td><strong>Extruded Curb</strong></td>
<td>420</td>
<td></td>
</tr>
<tr>
<td><strong>3’ Precast Traffic Curb (Dual Sloped)</strong></td>
<td>421</td>
<td></td>
</tr>
<tr>
<td><strong>8’ Block and Radial Traffic Curb</strong></td>
<td>422</td>
<td></td>
</tr>
<tr>
<td><strong>Traffic Circle Details</strong></td>
<td>423</td>
<td></td>
</tr>
<tr>
<td><strong>Sidewalks</strong></td>
<td>424</td>
<td></td>
</tr>
<tr>
<td><strong>Concrete Sidewalk Details</strong></td>
<td>425</td>
<td></td>
</tr>
<tr>
<td><strong>Sidewalk with Monolithic Curb</strong></td>
<td>426</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Curb Ramp Details</th>
<th>422a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curb Ramp Details</td>
<td>422b</td>
</tr>
<tr>
<td>Curb Ramp Details</td>
<td>422c</td>
</tr>
<tr>
<td>Curb Ramp Details</td>
<td>422d</td>
</tr>
<tr>
<td>Curb Ramp Details</td>
<td>422e</td>
</tr>
<tr>
<td>Curb Ramp Details</td>
<td>422f</td>
</tr>
<tr>
<td>Curb Ramp Details</td>
<td>422g</td>
</tr>
<tr>
<td>Curb Ramp Details</td>
<td>422h</td>
</tr>
<tr>
<td>Curb Ramp Details</td>
<td>422i</td>
</tr>
<tr>
<td>Curb Ramp Sections</td>
<td>422j</td>
</tr>
<tr>
<td>Expandable Tree Pit Detail</td>
<td>424a</td>
</tr>
<tr>
<td>Tree Pit Detail</td>
<td>424b</td>
</tr>
<tr>
<td>Alternative Walkways</td>
<td>425</td>
</tr>
</tbody>
</table>

**Driveways**

<table>
<thead>
<tr>
<th>Type 430a &amp; 430b Driveways</th>
<th>430</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement Concrete Driveway Placed with Cement Concrete Sidewalk</td>
<td>431</td>
</tr>
<tr>
<td>Multi-Purpose Trail at Street Crossing</td>
<td>432a</td>
</tr>
<tr>
<td>Multi-Purpose Trail at Street Crossing</td>
<td>432b</td>
</tr>
<tr>
<td>Speed Hump</td>
<td>436a</td>
</tr>
<tr>
<td>Speed Cushion</td>
<td>436b</td>
</tr>
</tbody>
</table>

**Stairway, Steps**

<table>
<thead>
<tr>
<th>Cement Concrete Stairway &amp; Handrail</th>
<th>440a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement Concrete Stairway &amp; Handrail</td>
<td>440b</td>
</tr>
<tr>
<td>Cement Concrete Stairway &amp; Bike Runnel</td>
<td>440c</td>
</tr>
<tr>
<td>Cement Concrete Stairway &amp; Single Bike Runnel</td>
<td>440d</td>
</tr>
<tr>
<td>Cement Concrete Steps</td>
<td>441</td>
</tr>
<tr>
<td><strong>Steel Pipe Handrail</strong></td>
<td>442</td>
</tr>
<tr>
<td><strong>Vertical Railing</strong></td>
<td>443</td>
</tr>
</tbody>
</table>

**Fence**

<table>
<thead>
<tr>
<th>Chain Link Fence</th>
<th>450a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chain Link Fence</td>
<td>450b</td>
</tr>
<tr>
<td>Chain Link Gates</td>
<td>450c</td>
</tr>
</tbody>
</table>

**Miscellaneous**

<table>
<thead>
<tr>
<th>Temporary Pedestrian Walkway</th>
<th>456</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology Block, Concrete</td>
<td>460</td>
</tr>
<tr>
<td><strong>Fixed &amp; Removable Wood Bollard</strong></td>
<td>463</td>
</tr>
<tr>
<td>Removable Steel Bollard</td>
<td>464</td>
</tr>
<tr>
<td><strong>Fixed Steel Bollard</strong></td>
<td>465</td>
</tr>
</tbody>
</table>

### 500 Signalization-Lighting

**Signal Controller**

<table>
<thead>
<tr>
<th>Signal Controller Cabinet &amp; Foundation</th>
<th>500a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal Controller Foundation Conduit Layout</td>
<td>500b</td>
</tr>
<tr>
<td>Service Cabinet Foundation Detail</td>
<td>501a</td>
</tr>
<tr>
<td>Joint Signal Controller/Service Cabinet Foundation Detail</td>
<td>501b</td>
</tr>
</tbody>
</table>

**Vehicular Signal**

<table>
<thead>
<tr>
<th>Vehicular Signal Mounting</th>
<th>510a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicular Signal Mounting</td>
<td>510b</td>
</tr>
<tr>
<td>Signal Head Bracket Assembly</td>
<td>511</td>
</tr>
</tbody>
</table>

**Pedestrian Signal**

<table>
<thead>
<tr>
<th>Pedestrian Signal Clamshell Mounting</th>
<th>520</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian Pushbutton Post &amp; Foundation</td>
<td>521</td>
</tr>
<tr>
<td><strong>Accessible Pedestrian signal (APS) PED</strong></td>
<td>522a</td>
</tr>
<tr>
<td>Pushbutton Assembly</td>
<td>522a</td>
</tr>
</tbody>
</table>
# 2014 Edition City of Seattle Standard Plans for Municipal Construction

## Loop Detectors
- **Bicycle Pushbutton Assembly**
- **Rectangular Rapid Flashing Beacon**

<table>
<thead>
<tr>
<th>Loop Detectors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detector Loop Lead-In</td>
<td>530a</td>
</tr>
<tr>
<td>Detector Loop Details</td>
<td>530b</td>
</tr>
<tr>
<td>Detector Loop Wire &amp; Signal Cable Splice</td>
<td>530c</td>
</tr>
</tbody>
</table>

## Pole Foundations
- **Traffic Signal Pole Foundation Detail**
- **Strain Pole Foundation**
  - **Schedule / Notes (Type T, V, X & Z)**
  - Street Light Pole Foundations
  - Pedestrian Street Light Pole Foundations

<table>
<thead>
<tr>
<th>Pole Foundations</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traffic Signal Pole Foundation</strong></td>
<td>541a</td>
</tr>
<tr>
<td><strong>Strain Pole Foundation</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Schedule / Notes (Type T, V, X &amp; Z)</strong></td>
<td></td>
</tr>
<tr>
<td>Street Light Pole Foundations</td>
<td>543a</td>
</tr>
<tr>
<td>Pedestrian Street Light Pole Foundations</td>
<td>543b</td>
</tr>
</tbody>
</table>

## Handholes
- **Handholes**
- **Polymer Concrete Handholes**

<table>
<thead>
<tr>
<th>Handholes</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handholes</td>
<td>550a</td>
</tr>
<tr>
<td>Handholes</td>
<td>550b</td>
</tr>
<tr>
<td><strong>Polymer Concrete Handholes</strong></td>
<td></td>
</tr>
<tr>
<td>Polymer Concrete Handholes</td>
<td>550c</td>
</tr>
<tr>
<td>Polygon Concrete Handholes</td>
<td>550d</td>
</tr>
</tbody>
</table>

## Poles
- **Steel Mast Arm Pole**
- **Steel Mast Arm Pole Foundation Schedule & Detail (w/o METRO Trolley Loads)**
- Miscellaneous Steel Pole Details
- Terminal Cabinet Pole Mounting
- Strain Pole Details (Type V, X & Z Poles)

<table>
<thead>
<tr>
<th>Poles</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Steel Mast Arm Pole</strong></td>
<td>562a</td>
</tr>
<tr>
<td><strong>Steel Mast Arm Pole Foundation Schedule &amp; Detail (w/o METRO Trolley Loads)</strong></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Steel Pole Details</td>
<td>563a</td>
</tr>
<tr>
<td>Terminal Cabinet Pole Mounting</td>
<td>564</td>
</tr>
<tr>
<td>Strain Pole Details (Type V, X &amp; Z Poles)</td>
<td>566a</td>
</tr>
</tbody>
</table>

## Conduit Risers
- **Traffic Conduit Riser**

<table>
<thead>
<tr>
<th>Conduit Risers</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traffic Conduit Riser</strong></td>
<td>580</td>
</tr>
</tbody>
</table>

## 600 Signs

### Overhead
- Span Wire Installation
- Overhead Signs Span Wire Mounted
- Sign Installation (Non-Spanwire Mounting)

<table>
<thead>
<tr>
<th>600 Signs</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overhead</strong></td>
<td></td>
</tr>
<tr>
<td>Span Wire Installation</td>
<td>601a</td>
</tr>
<tr>
<td>Overhead Signs Span Wire Mounted</td>
<td>601b</td>
</tr>
<tr>
<td>Sign Installation (Non-Spanwire Mounting)</td>
<td>601c</td>
</tr>
</tbody>
</table>

### Pole Mounted
- Standard Sign Installation Steel Poles
- SNS Bracket for Steel Poles

<table>
<thead>
<tr>
<th>600 Signs</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pole Mounted</strong></td>
<td></td>
</tr>
<tr>
<td>Standard Sign Installation Steel Poles</td>
<td>610</td>
</tr>
<tr>
<td>SNS Bracket for Steel Poles</td>
<td>615</td>
</tr>
</tbody>
</table>

### Post Mounted
- **Stop and Yield Sign**
- **Wood Post and Anchor Installation**
- **Warning and Regulatory Sign Post**
  - Anchor Installations
- **Street Name Sign Installation**
- **Traffic Sign Posts**
  - Object Marker Installation in Traffic Circle
  - Parking Meter Post & Accessories
  - Surface Mount Meter Post Installation Detail
  - Metro Bus Zone Sign Installation

<table>
<thead>
<tr>
<th>600 Signs</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Post Mounted</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Stop and Yield Sign</strong></td>
<td></td>
</tr>
<tr>
<td>Wood Post and Anchor Installation</td>
<td>620</td>
</tr>
<tr>
<td>Warning and Regulatory Sign Post</td>
<td>621a</td>
</tr>
<tr>
<td>Anchor Installations</td>
<td>621b</td>
</tr>
<tr>
<td><strong>Street Name Sign Installation</strong></td>
<td>622</td>
</tr>
<tr>
<td><strong>Traffic Sign Posts</strong></td>
<td></td>
</tr>
<tr>
<td>Object Marker Installation in Traffic Circle</td>
<td>626</td>
</tr>
<tr>
<td>Parking Meter Post &amp; Accessories</td>
<td>627</td>
</tr>
<tr>
<td>Surface Mount Meter Post Installation Detail</td>
<td>628</td>
</tr>
<tr>
<td>Metro Bus Zone Sign Installation</td>
<td>630</td>
</tr>
<tr>
<td><strong>Pedestrian Wayfinding Sign</strong></td>
<td>631</td>
</tr>
</tbody>
</table>

#### 700 Pavement Markings

<table>
<thead>
<tr>
<th>Traffic Buttons/Lane Markers</th>
<th>Traffic Buttons and Lane Markers</th>
<th>700</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Channelization</strong></td>
<td><strong>Typical Left Turn Channelization and Legend Placement</strong> 710a</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Typical Lane Drop Channelization and Legend Placement</strong> 710b</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Typical Intersection Guideline Channelization</strong> 710c</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Typical White Barrier Area Channelization</strong> 711</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Typical Crosswalk &amp; Stop Line Installation Details</strong> 712</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Curb Marking Details</strong> 713</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Typical Angled Parking Stall Channelization</strong> 714</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Trail Obstruction Channelization</strong> 715</td>
<td></td>
</tr>
<tr>
<td><strong>Legends / Symbols</strong></td>
<td><strong>Mandatory Movement Arrows</strong> 720</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Optional Movement Arrows</strong> 721</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Optional Movement Arrows with Oblique Arrows</strong> 722</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Merge Arrows</strong> 723</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Speed Hump &amp; Speed Cushion Symbol</strong> 728</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Yield Line Layout &amp; Yield Line Triangle Symbols</strong> 729</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Pavement Markings Legends</strong> 730</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>International Symbol for Accessibility</strong> 740</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Pedestrian Symbol</strong> 741</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Helmeted Bicyclist Symbol with Arrow</strong> 770</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Sharrow &amp; Bike Symbol</strong> 771</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Bicycle Detector Symbol</strong> 772</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Bike DOT Symbol with Arrow</strong> 773</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Greenway Markings</strong> 774</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Cross Bike Pavement Marking</strong> 780</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Bike Lane Pavement Marking at Driveway</strong> 781</td>
<td></td>
</tr>
</tbody>
</table>

#### 800 Structures

<table>
<thead>
<tr>
<th>Walls</th>
<th>800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support Wall</td>
<td>800</td>
</tr>
<tr>
<td>Curb Wall</td>
<td>801</td>
</tr>
<tr>
<td>ITEM</td>
<td>EXISTING</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>90° Bend w/Conc Blocking</td>
<td></td>
</tr>
<tr>
<td>Plug w/Conc Blocking</td>
<td></td>
</tr>
<tr>
<td>Tee w/Conc Blocking</td>
<td></td>
</tr>
<tr>
<td>Watermain</td>
<td>8&quot;W</td>
</tr>
<tr>
<td>&lt;1'-0&quot;Dia</td>
<td></td>
</tr>
<tr>
<td>Watermain</td>
<td>24&quot;W</td>
</tr>
<tr>
<td>≥1'-0&quot;Dia</td>
<td></td>
</tr>
<tr>
<td>11 1/4° Bend</td>
<td></td>
</tr>
<tr>
<td>22 1/2° Bend</td>
<td></td>
</tr>
<tr>
<td>45° Bend</td>
<td></td>
</tr>
<tr>
<td>90° Bend</td>
<td></td>
</tr>
<tr>
<td>Cross</td>
<td></td>
</tr>
<tr>
<td>Tee</td>
<td></td>
</tr>
<tr>
<td>Pipe Sleeve</td>
<td></td>
</tr>
<tr>
<td>Plug</td>
<td></td>
</tr>
<tr>
<td>Hydrant</td>
<td></td>
</tr>
<tr>
<td>ITEM</td>
<td>EXISTING</td>
</tr>
<tr>
<td>------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>6&quot; &amp; Larger Domestic Service</td>
<td>![DS]</td>
</tr>
<tr>
<td>3&quot; &amp; 4&quot; Domestic Service</td>
<td>![DS]</td>
</tr>
<tr>
<td>4&quot; &amp; Larger Fire Service</td>
<td>![DC]</td>
</tr>
<tr>
<td>2&quot; &amp; Smaller Water Service</td>
<td>![WM]</td>
</tr>
</tbody>
</table>

**Valve Box**

![Valve Box]

**Gate Valve**

![Gate Valve]

**Gate Valve w/ Chamber**

![Gate Valve w/ Chamber]

**Gate Valve w/ Vault Chamber**

![Gate Valve w/ Vault Chamber]

**Reducer**

8"W → 4"W

8"X4"RED

**Air Valve**

![Air Valve]

**Blowoff**

![Blowoff]

1½"BO

**Fire Standpipe**

![Fire Standpipe]
<table>
<thead>
<tr>
<th>ITEM</th>
<th>EXISTING</th>
<th>PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Test Station</td>
<td>[ ]</td>
<td></td>
</tr>
<tr>
<td>Water Chamber</td>
<td>[ ]</td>
<td></td>
</tr>
<tr>
<td>Sprinkler Head</td>
<td>[ ]</td>
<td>[ ] IRRV</td>
</tr>
<tr>
<td>Irrigation Valve</td>
<td>[ ] IRRV</td>
<td>[ ] IRRV</td>
</tr>
<tr>
<td>Angle Valve</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Butterfly Valve</td>
<td></td>
<td>[ ]</td>
</tr>
<tr>
<td>Ball Valve</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Check Valve</td>
<td></td>
<td>[ ]</td>
</tr>
<tr>
<td>Cone Valve</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Globe Valve</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Needle Valve</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Plug Valve</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Resilient Seal Gate Valve</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Vertical Bend</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Concrete Blocking</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*new std plan due to additions to 003q*
NOTES:
1. STABILIZED ACCESS SHALL BE USED IN ALL AREAS OF THE SITE WITH VEHICLE TRAFFIC AND PARKING, INCLUDING PLANTING STRIPS.
2. SEE SECTION 5-37.2 (TABLE 3) FOR GEOTEXTILE REQUIREMENTS. GEOTEXTILE MODIFICATIONS BASED ON SPECIFIC PROJECT SITE CONDITIONS MAY BE APPROVED BY THE ENGINEER.
3. STABILIZED CONSTRUCTION ENTRANCES ON SEATTLE PARKS & RECREATION PROPERTY ARE LIMITED TO A MAXIMUM WIDTH OF 10 FEET UNLESS DIRECTED OTHERWISE.

REF STD SPEC SEC 8-01

City of Seattle

STABILIZED CONSTRUCTION ENTRANCE

new standard plan

PLAN VIEW
(TOP REMOVED)

SECTION A–A

NOTES:
1. SEE STANDARD PLANS NO 204a THROUGH 212b FOR MAINTENANCE HOLE REQUIREMENTS.

FLEXIBLE JOINT FOR VCP CONNECTION TO MAINTENANCE HOLES

REF STD SPEC SEC 7-05
NOTES:
1. DESIGNATE LOCKING COVER AS TYPE 230L FOR USE IN NON-VEHICULAR TRAFFIC AREAS.
2. COVER THICKNESS IS MEASURED FROM THE BOTTOM OF THE PATTERN.
3. FRAMES MUST BE MANUFACTURED FROM CAST IRON OR DUCTILE IRON.
4. COVERS MUST BE MANUFACTURED FROM DUCTILE IRON.

SECTION A-A

CALLOUT REVISIRED

LETTERS TO BE 3/8" WIDE AND RAISED 3/16" ABOVE SURFACE OF COVER

TOP OF PATTERN AND LETTERS

COVER
DETAIL PATTERN
"SEWER" OR "DRAIN", AS APPLICABLE, 3" RAISED LETTERS TO BE ½" WIDE AND RAISED ¾" ABOVE SURFACE OF COVER

1¾" X 1½" LIFT HOLES 2 PLACES

BOTTOM VIEW

SEWER

TOP VIEW

SECTION A--A
f=MACHINED FINISH

City of Seattle
NOT TO SCALE
SEWER REPLACEMENT COVER

NOTES:
1. PIPE AND FITTINGS MUST BE PVC PER ASTM D 3034 SDR 35.
2. CONCRETE HAUNCHING IS TO BE CLASS 3000 CONCRETE.

DETAIL A
FOR MAIN 3"-6"DIA. OR SMALLER

DETAIL B
FOR MAIN 3"-6"DIA. OR LARGER

6" OR 8" VERTICAL CONNECTION TO CONCRETE OR CLAY PIPE

City of Seattle
NOT TO SCALE

NOTES:
1. DI PIPE & FITTING MUST BE CEMENT LINED CL 50 (MIN). JOINTS MUST BE RUBBER GASKETED PUSH-ON OR MECHANICAL.
2. FABRICATED STEEL TAPPING SLEEVE MUST BE MANUFACTURED FOR USE WITH DI PIPE AND APPROVED BY SPU.
3. FABRICATED STEEL TAPPING SLEEVE USE IS RESTRICTED WITHIN THE RIGHT OF WAY. SPU AND SDOT APPROVAL IS REQUIRED.

DETAIL A
FOR VERTICAL CONNECTIONS TO NEW DI MAIN

DETAIL B
FOR VERTICAL CONNECTIONS TO EXISTING DI MAIN

REF STD SPEC SEC 7-08 & 7-17

City of Seattle

6" OR 8" VERTICAL CONNECTION TO DUCTILE IRON PIPE

NOTES:
1. DETENTION PIPE MATERIAL MUST BE AS SHOWN ON THE APPROVED CONSTRUCTION DRAWINGS. MATERIALS THAT MAY BE APPROVED FOR USE IN THE ROW INCLUDE:
   - DUCTILE IRON PIPE (DIP)
   - REINFORCED CONCRETE PIPE (RCP)
   - POLYPROPYLENE PIPE (PP DETENTION)
   - STEEL REINFORCED POLYETHYLENE PIPE (STL REINF PIPE DETENTION). ONLY MANUFACTURERS SUPPLIED TEES MUST BE USED FOR CONNECTIONS.
2. BEDDING FOR DETENTION PIPE MUST BE CLASS B. DIP AND RCP MUST BE BEDDED IN MINERAL AGGREGATE TYPE 9. FLEXIBLE PIPE MUST BE BEDDED IN MINERAL AGGREGATE TYPE 22.
3. INTERMEDIATE MH WILL BE REQUIRED FOR DETENTION PIPE LENGTHS GREATER THAN 150FT.
4. OUTLET PIPE MUST CONNECT TO MH ON MAINLINE.
5. STRUCTURE DESIGN MUST BE MODIFIED FOR PRIVATE SYSTEM WITH EXCLUSION OF SHEAR GATE.
6. ROTATE ELBOW RESTRICTOR CLEAR OF ACCESS OPENING.
7. FRAME LADDER AND STEPS OFFSET:
   7.1. CLEAN OUT IS VISIBLE FROM TOP.
   7.2. CLIMB DOWN SPACE IS CLEAR OF RISER AND CLEAN OUT GATE.
   7.3. MH OPENING MUST NOT BE PLACED DIRECTLY OVER THE TOP OF INLET PIPE.

<table>
<thead>
<tr>
<th>DETENTION PIPE DIA</th>
<th>FLOW CONTROL STRUCTURE</th>
<th>UPSTREAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>18&quot;</td>
<td>204.5b</td>
<td>204b</td>
</tr>
<tr>
<td>24&quot;</td>
<td>205b</td>
<td>204.5b</td>
</tr>
<tr>
<td>30&quot;</td>
<td>205b</td>
<td>205b</td>
</tr>
<tr>
<td>36&quot;</td>
<td>206b</td>
<td>206b</td>
</tr>
<tr>
<td>48&quot;</td>
<td>207b</td>
<td>207b</td>
</tr>
<tr>
<td>60&quot;</td>
<td>208b</td>
<td>208b</td>
</tr>
<tr>
<td>72&quot;</td>
<td>210b</td>
<td>210b</td>
</tr>
</tbody>
</table>

*SPECIFIC DESIGN INFORMATION AS INDICATED ON CONSTRUCTION DRAWINGS
**SIZE OF UPSTREAM MH MUST BE ADJUSTED FOR ALTERNATIVE PIPE MATERIAL

REF STD SPEC SEC 7-16
NOTES:
1. CONCRETE: CLASS 4000
2. 4" MIN THICKNESS FOR CURVED BOTTOM STRUCTURE

SECTION A-A

TYPE 277 JUNCTION BOX & INSTALLATION

City of Seattle
NOT TO SCALE

CLASS B BEDDING

SAND BEDDING AT TRENCH CROSSING OF METAL PIPE
AT METALLIC PIPE CROSSING OF FLUIDIZED THERMAL BACKFILL OR CDF CONDUIT CROSSINGS

MINERAL AGGREGATE PER STD SPEC 9-03.14 TYPE 9 FOR DUCTILE IRON WHEN APPlicable OR CONCRETE PIPE TYPE 22 FOR VITRIFIED CLAY AND FLEXIBLE PIPE

SELECTED NATIVE MATERIAL PER STD SPEC 2-10.2(1)

FLUIDIZED THERMAL BACKFILL PER SCL MATERIAL STD 7150.00 OR CDF (SEE CONTRACT DRAWINGS)

MINERAL AGGREGATE PER STD SPEC 9-03.14, TYPE 8 OR TYPE 7

NOTES:
1. FOR TRENCH WIDTH SEE STD PLAN No 284
2. A=4" WHEN ID IS LESS THAN 2'-6", A=6" WHEN ID IS 2'-6" OR MORE
3. UNIFORMLY SUPPORT PIPE BARRELS, EXCAVATE HOLES FOR BELLS AND BELLING
4. FOR FLUIDIZED THERMAL BACKFILL (FTB) OR CDF CROSSINGS OF METALLIC PIPE, WRAP METALLIC PIPE IN 8 MIL POLYETHYLENE ENCAPSULATION FOR FULL TRENCH WIDTH

NOT TO SCALE

PLAN VIEW - BRIDGE DRAIN

SECTION C-C

SECTION D-D

NOTES:
1. ALL 1/2" STEEL & L3" x 2" x 3/8" TO BE A-36.
2. 6" PIPE TO BE STANDARD WEIGHT STEEL.
3. AFTER FABRICATION, DRAIN ASSEMBLY TO BE HOT DIP GALVANIZED.
4. VANED GRATE TO BE PER STD PLAN NO 265.

REF STD SPEC SEC 6-01, 7-05

6-02 removed
Delete this Standard Plan

NOTES:
1. ATTACH THE HOOD TO THE FRAME WITH TWO 3/4 X 2" HEX HEAD BOLTS, NUTS, AND OVERSIZE WASHERS. THE WASHERS MUST HAVE DIAMETERS ADEQUATE TO ENSURE FULL BEARING ACROSS THE SLOTS.
2. ONLY DUCTILE IRON VANED GRATES MUST BE USED.

SECTION A–A

FRAME DETAIL

SECTION B–B

6" HOOD

9" HOOD

HOLE FOR SLOT FOR ATTACHING HOOD (TYP)

HOLE FOR SLOT FOR ATTACHING HOOD (TYP)
Delete this Standard Plan

SECTION A-A

SECTION B-B

EMBOSSD ON GRATE

Curb Material: Ductile Iron

City of Seattle

NOTES:
1. ALL FITTINGS MUST BE DUCTILE IRON
2. ALL EXCAVATION MUST PROVIDE A MINIMUM OF 1'-0" CLEAR AROUND PIPE AND FITTINGS.
3. THESE PLANS ARE FOR DIP AND CIP WATERMAINS 12" OR SMALLER. OTHER SIZES AND TYPES SEE PROJECT DRAWINGS
4. REDUCED PRESSURE BACKFLOW ASSEMBLIES (RPBA) MUST BE INSTALLED AS A UNIT (TWO SHUT-OFF VALVES, RELIEF PORT, TWO CHECK VALVES AND FOUR TEST COCKS). WHEN RPBA IS CONNECTED TO HYDRANT AND THE HOSE BIB FAUCET SAMPLE THEY MUST BE CAPPED WHEN NOT IN USE. ASSEMBLY MUST BE TESTED WHEN INSTALLED BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER (BAT) AND A CURRENT TEST REPORT MUST BE ON SITE FOR INSTALLATION PROCEDURES CALL 684-3536.
5. ALL FITTINGS AND MATERIALS FURNISHED BY CONTRACTOR AND TO BE INSTALLED BY SPU MUST BE VERIFIED, INSPECTED AND ON THE JOB SITE PRIOR TO SHUTDOWN OF EXISTING MAIN. FAILURE TO MEET THIS REQUIREMENT COULD RESULT IN DELAYS.

LEGEND
- CLEAN & DISINFECTED POTABLE WATER HOSE ONLY. SIZE FLUSHING RISER PER TABLE IN STD SPEC SEC 7-11.3(12)
- HYDRANT PERMIT REQUIRED
- CHECK WITH SEWER UTILITY BEFORE DISCHARGE TO SEWERS
- CONTRACTOR TO DETERMINE ALIGNMENT, GRADE AND OUTSIDE DIAMETER OF EXISTING PIPE PRIOR TO INSTALLING NEW WATERMAIN. ENGINEER TO DETERMINE OUTSIDE DIAMETER OF EXISTING PIPE WHEN CONTRACTOR EXCAVATES TO DETERMINE ALIGNMENT & GRADE.
- ALL EXCAVATION, PIPE, FITTINGS (EXCEPT AS NOTED BELOW), OTHER MATERIAL BEDDING, BACKFILL, COMPACTING & STREET RESTORATION BY CONTRACTOR. ALL MATERIALS MUST BE ON JOB SITE PRIOR TO SHUTDOWN OF EXISTING MAIN.
- INSTALLED BY CONTRACTOR
- CONNECTION PIPE: CONTRACTOR FURNISHED, INSTALLED BY SPU
- WATERMAIN WITH PLAIN ENDS
- MECHANICAL JOINT SLEEVE WITH SPACER CUT TO FIT GAP, FURNISHED AND INSERTED AT TIME OF CONNECTION BY SPU
- TAPPING SLEEVE & TAPPING VALVE FURNISHED AND INSTALLED BY SPU
- APPLIES TO PIPES 4" THROUGH 12" ALL LARGER SIZES TO BE ADDRESSED ON DRAWINGS
- MECHANICAL JOINT SLEEVE, FURNISHED BY CONTRACTOR AND INSTALLED BY SPU, SPACERS BY SPU WHERE REQUIRED.
NOTES:
1. WHERE WATERMAINS ARE INSTALLED WITH POLYETHYLENE ENCASEMENT OR
   TAPE COATINGS, THE HYDRANT BARREL AND VALVE MUST BE SIMILARLY
   ENCASED, COATED AND/OR JOINTS BONDED. WHERE WATERMAIN IS
   THERMOPLASTIC COATED, THE HYDRANT BARREL MUST BE TAPE COATED
2. WHERE 6" GATE VALVE IS TO BE LOCATED WITHIN A PARKING-PERMITTED
   AREA, A SECOND 6" GATE VALVE MUST BE INSTALLED AT THE HYDRANT
   ASSEMBLY PER STD PLAN NO 310m
NOTES:

1. 6" HYDRANT CONNECTION PIPE MUST BE DIP CL52.
2. HYDRANT TEES MUST BE SET HORIZONTALLY.
3. THE THREADED NIPPLE ON THE 4" PUMPER NOZZLE MUST BE EQUIPPED WITH THE BLUNT START OR HIGGIE CUT.
4. THE 21/2" NIPPLES MUST BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION BULLETIN NO 194 DATED 1974.
5. AFTER INSTALLATION, ALL SHACKLE BOLTS, NUTS, AND SHACKLE RODS MUST BE CLEANED AND COATED WITH TWO COATS OF ASPHALT, ROYSTON ROSKITE R2B.
6. AFTER BACKFILLING, THE OUTSIDE OF THE HYDRANT (ABOVE THE GROUND LINE) MUST BE THOROUGHLY CLEANED AND PAINTED WITH TWO COATS OF KELLY-MOORE 6130-516 CAT YELLOW.
7. PUMPER PUMP MUST FACE CURB.
8. RESTRAINT MUST BE BY WEDGE RESTRAINT SUCH AS MEGALUG OR UNIFLANGE, SEE STD SPEC SEC 9-30.4(9).

std spec changed from 9–30.5(5) to 9–30.4(5)

Notes 8 & 10 removed, note 9 renumbered to 8
GENERAL NOTES:
1. WHERE WATERMains ARE INSTALLED WITH POLYETHYLENE ENCASEMENT OR TAPE COATINGS, THE HYDRANT BARREL AND VALVE MUST BE SIMILARLY ENCASED, COATED AND/OR JOINTS BONDED. WHERE WATERMAIN IS THERMOPLASTIC COATED, THE HYDRANT BARREL MUST BE TAPE COATED.
2. WHERE 6" GATE VALVE IS TO BE LOCATED WITHIN A PARKING-PERMITTED AREA, A SECOND 6" GATE VALVE MUST BE INSTALLED AT THE HYDRANT ASSEMBLY PER STD PLAN NO 310a.

REF STD SPEC SEC 7-14

City of Seattle NOT TO SCALE TYPE 311 HYDRANT SETTING DETAIL

TRAFFIC ISLAND MARKER POST LAYOUT FOR FIRE HYDRANTS IN PARKING AREAS

NOTE:
1. LAYOUT OF MARKER POST MUST BE VERIFIED FIRST WITH SPU AND SDOT

FIXED BOLLARD, SEE STD PLAN NO 465 (TYP)
EXTRUDED CURB MATERIAL TO MATCH EX. PAVEMENT MATERIAL
SEE STD SPEC SEC 8-06

CONCRETE SHEAR BLOCK SEE STD PLANS NO 310a & 311a

2" ISLAND SURFACE MATERIAL OVER 4" COMPACTED MINERAL AGGREGATE TYPE 2 TO MATCH SURROUNDING PAVEMENT MATERIAL AND BE FLUSH WITH TOP OF CURB

NOTE:

PRESENTED FOR REVIEW

REF STD SPEC SEC 7-14

City of Seattle
NOT TO SCALE
FIRE HYDRANT MARKER LAYOUT

NOTE:
1. ROCK FOR ROCK FACING MUST COMPLY WITH STD PLAN NO 141

REF STD SPEC SEC 2-13

WALL REQUIREMENTS FOR HYDRANTS

NOTES:
1. NO PARKING ZONE WITHIN 15'-0" RADIUS OF FIRE HYDRANT.
2. MIN DISTANCE FROM BACK FACE OF HYDRANT TO FRONT EDGE OF CONCRETE WALK MUST BE 3'-0".
3. MARKER MUST BE 6" OFFSET FROM CENTER OF ROADSIDE IF CENTERLINE IS NOT STRIPED. OR 6" OFF STRIPED CENTERLINE WHERE MEDIAN OR TWO-WAY LEFT TURN LANE EXIST, MARKER MUST BE INSTALLED WITH 6" OFFSET FROM THE LANE LINE CLOSEST TO THE HYDRANT.

INSTALL BLUE TYPE 2A LANE MARKER ADJACENT TO FIRE HYDRANTS. SEE NOTE 3 (TYP).

DETAIL A
HYDRANT NEAR CURB RAMP

REF STD SPEC SEC 7-14  8-08

City of Seattle

FIRE HYDRANT LOCATIONS & CLEARANCES

NOTES:

1. UNION POINT 2" OUTSIDE VAULT OR 2" FROM PROPERTY LINE.
2. 5' CLEARANCE FROM NEW TREES OR CLEAR OF DRIPLINE FOR EXISTING TREES.
3. 5' CLEAR FROM POLES.
4. 2" CLEAR FROM EDGE OF DRIVEWAY OR ADA RAMP.
5. WATER SERVICE NOT TO BE INSTALLED IN DRIVEWAY, BEHIND ADA RAMP, OR STREET CORNER.
6. SIDE SEWER HORIZONTAL CLEARANCE 10" FOR CAST IRON WATER PIPE OR 5" FOR DUCTILE IRON WATER PIPE.
7. SIDE SEWER VERTICAL CLEARANCE 1.5" MIN.
8. VAULT HORIZONTAL CLEARANCE 12" MIN FROM OTHER UTILITIES, UNLESS OTHERWISE NOTED IN STD SPECS.
9. VERTICAL CLEARANCE 12" MIN FOR ALL OTHER UTILITY CROSSINGS UNLESS OTHERWISE NOTED IN STD SPECS.

SEE STD PLAN NO 003q FOR TYPICAL WATER SERVICE VAULTS

note 10 removed, std plan no 003q note added
details moved to std plan no 003q

CLEARANCES FOR TYPICAL WATER SERVICE VAULTS

Curb or edge of traveled portion of roadway

Title changed

City of Seattle

NOTES:
1. FRAME AND COVER MUST BE TESTED FOR ACCURACY OF FIT AND MUST BE MARKED IN SETS FOR DELIVERY.
2. CASTINGS AND EXTENSIONS MUST BE HOT-DIPPED IN ASPHALT VARNISH ROYSTON ROBSTONE #612XM OR 2 COATS OF MASTIC ROYSTON INSIDE AND OUT.
3. VALVE BOXES MUST BE EAST JORDAN COVER & TOP SECTION #366A, BOTTOM SECTION #5555, OR OLYMPIC FOUNDRY: LD #1086-33, TOP SECTION #1106-33, BASE SECTION #1301-33.
4. ALL CASTINGS MUST BE DIPPED FOR ONLY CAST IRON.

LEGEND:
1. AN OPERATING NUT EXTENSION MUST BE INSTALLED WHEN THE GROUND SURFACE IS MORE THAN 2'-6" ABOVE THE VALVE OPERATING NUT. THE OPERATING NUT EXTENSION MUST EXTEND INTO THE TOP SECTION OF THE STANDARD VALVE BOX AND MUST CLEAR THE BOTTOM OF THE LID BY 6" MIN.
2. EXTENSION PIECES (WHEN USED) MUST CONFORM TO MINIMUM THICKNESS REQUIREMENTS AND MUST FIT INTO THE TOP SECTION AND OVER THE BOTTOM SECTION.

REF STD SPEC SEC 7-12 & 9-30

CAST IRON VALVE BOX & OPERATING NUT EXTENSION

City of Seattle

### Thrust Block Area in Square Feet (See Std Plan No 331B)

<table>
<thead>
<tr>
<th>Soil</th>
<th>Firm Silt or Firm Siltsand</th>
<th>Compact Sand</th>
<th>Compact Sand &amp; Gravel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90° Bend TEE</td>
<td>45° Bend CAP or PLUG</td>
<td>11¾ &amp; 22¾ Bend TEE</td>
</tr>
<tr>
<td>4&quot;</td>
<td>7.0</td>
<td>4.2</td>
<td>4.2</td>
</tr>
<tr>
<td>6&quot;</td>
<td>13.3</td>
<td>9.4</td>
<td>9.4</td>
</tr>
<tr>
<td>8&quot;</td>
<td>23.3</td>
<td>15.7</td>
<td>15.7</td>
</tr>
<tr>
<td>12&quot;</td>
<td>53.0</td>
<td>37.5</td>
<td>37.5</td>
</tr>
</tbody>
</table>

Areas calculated on 300 psi test pressure and 24" min. cover over watermain.

- **Note Revised**: Ecology blocks, per Std Plan No 460, may be used, at the discretion of the engineer only, in lieu of poured-in-place blocking for fittings in heavy outlined portion of table. Ecology blocks used for thrust blocking at tees must transfer load to the pipe body per Spec Section 7-11.3(13).

---

**City of Seattle**

FOR 4" TO 8" WATERMINS, INSTALL A DUCTILE IRON TEE WITH A 4" BRANCH AND A BLIND (FLG) OR PLUG (MJ). FOR 12" WATERMINS, INSTALL A DUCTILE IRON TEE WITH A 6" BRANCH AND A BLIND (FLG) OR PLUG (MJ). INSTALL A 1½" IPT THREADED HOLE DRILLED INTO THE 4" OR 6" BLIND OR PLUG.

SEE NOTE THIS SHEET

TYPE 361S FRAME & COVER

½" STEEL PLATE

CONC BLOCKING PER STD PLAN NO 331

MECHANICAL JOINT CAP OR PLUG

UNDISTURBED GROUND

2" TYPE K COPPER

2" IRON BODY GATE VALVE W/2" SQUARE OPERATING NUT

VALVE BOX, SEE STD PLAN NO 315

2" BRASS COUPLING MIPT X COMP

2"X6" GALVANIZED NIPPLE

DRILL ½" DRAIN HOLE

MIN 3 COURSES CONCRETE BLOCK & MORTAR

TYPE 361S FRAME & COVER

COMPACTED SUBGRADE (95%)

2" GALV STEEL PIPE

2" PLASTIC FOAM MATERIAL, SEE STD PLAN NO 315

1 CU FT GRAVEL MINIR AGG TYPE 9

2" GALVANIZED ELBOW

NOTE:
1½"X2" CORP STOP, BALL TYPE BRASS BODY AWWA X CORP.
WHERE COATED DUCTILE IRON PIPE IS USED, THE MECHANICAL JOINT CAP AND CORP MUST BE WAX TAPEPER 7-11.3(B)(4)AND 9-30.1(4)F.

REF STD SPEC SEC 7-11

City of Seattle
NOT TO SCALE
2" BLOW OFF DETAIL TYPE B TRAFFIC INSTALLATION

BEDDING MATERIAL
CLASS B:
- FOR DISTRIBUTION WATERMAIN, MINERAL AGGREGATE PER STD SPEC 9-03.16 TYPE 6 OR TYPE 7
- FOR TRANSMISSION WATERMAIN, MINERAL AGGREGATE PER STD SPEC 9-03.16 TYPE 9
- SPECIAL BEDDING TO BE INDICATED ON DRAWINGS

NOTES:
1. EXCAVATE FOR THE BELL TO ENSURE UNIFORM SUPPORT FOR THE PIPE BELL.
2. FOR FLUIDIZED THERMAL BACKFILL (FTB) OR CDF CROSSINGS OF METALLIC PIPE, WRAP METALLIC PIPE IN 8 MIL POLYETHYLENE ENCASMENT FOR FULL TRENCH WIDTH.
3. FLUIDIZED THERMAL BEDDING PER SCG MATERIAL STANDARD 7150.00

7-17 REMOVED
NOTE 2 REVISED
LEADERS REMOVED
FRAME & COVER MUST BE TESTED FOR ACCURACY OF FIT AND MUST BE MARKED IN SETS FOR DELIVERY

BOTTOM VIEW

6 SPACES @ 2¾" (LETTERING AS REQUIRED)

TOP VIEW

SECTION A-A

TYPE 361b VALVE CHAMBER
FRAME & COVER IN PEDESTRIAN PATHWAYS

City of Seattle
NOT TO SCALE

300 WATERMAIN APPURTEINANCES

BOTTOM VIEW

LETTERS TO BE 3/8" WIDE AND RAISED 3/16" ABOVE SURFACE OF COVER

TOP VIEW

LIFTING HANDLE
(2 REQUIRED)

SECTION A--A
f=MACHINED FINISH

REF STD SPEC SEC 7-12, 7-20

City of Seattle

NOT TO SCALE

TYPE 361c WATER VALVE REPLACEMENT COVER IN VEHICULAR TRAVELWAYS

SLIP JOINT BOND CONNECTION

1. REMOVE PIPE COATING TO BRIGHT & CLEAN METAL

2. STRIP INSULATION FROM TEST STATION WIRE, INSTALL ADAPTER SLEEVE

3. HOLD MOLD Firmly WITH OPENING AWAY FROM OPERATOR AND IGNITE

4. REMOVE SLAG AND ALLOW TO COOL

5. 16 OUNCE HAMMER TEST PER STD. SPEC SEC 7-11.3(15D)

6. FINAL CONNECTION TO BE MADE WATER-TIGHT WITH MASTIC COATING OR PREFORMED THERMITE WELD CAP

MECHANICAL JOINT BOND CONNECTION

THERMITE WELD CONNECTION

NOTES:
1. JOINT BONDS FOR PIPE 16" DIAMETER AND SMALLER
2. FOR PIPE LARGER THAN 16" DIAMETER OR IMPRESSED SYSTEMS, SEE PROJECT DRAWINGS FOR JOINT BONDING DETAILS.

VALVE JOINT BOND CONNECTION

detail added
notes added
401A—CEMENT CONCRETE PAVEMENT WITH INTEGRAL CURB

401B—CEMENT CONCRETE PAVEMENT WITH EXISTING CURB & GUTTER

401C—HOT MIX ASPHALT ON CEMENT CONCRETE BASE

401D—HOT MIX ASPHALT OVER CRUSHED ROCK BASE

HMA DESIGN CRITERIA:

1. ALL LAYER THICKNESS UNLESS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS
2. ASPHALT PG 58H–22 UNLESS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS
3. LAYER THICKNESS MAY BE SHORT OR LONGER THAN SHOWN IN THE DRAWINGS
4. PAVEMENT DEPTH MUST BE 3" HMA (CL 1) WHEN REPLACING BITUMINOUS SURFACE TREATED RESIDENTIAL STREETS OR 2" HMA (CL 1) OVER 6" HMA (CL 1) FOR ALL OTHER RESIDENTIAL STREETS.
5. PROTECT ADJACENT PANELS FROM DAMAGE DUE TO UNDERMINING DURING EXCAVATION & PLACEMENT OF SUBGRADE. SEE SPEC SECTION 1–07.13.
NOTES:
IF CONC THICKNESS IS 9 INCH OR GREATER
OPTIONAL KEYWAY MAY BE USED SEE STD PLANS
NO 405c & 405d FOR DETAILS

OPTIONAL KEYWAY
FOR LONGITUDINAL JOINT

ROADWAY CEMENT
CONCRETE PAVEMENT
(THICKNESS AS SPECIFIED
IN CONTRACT DOCUMENTS)

SEE STD PLAN
TYPE 410c CURB

6" MNRL AGG TYPE 2
(COMPACTED AS SPECIFIED
IN CONTRACT DOCUMENTS)

COMPACTED SUBGRADE

402A—ROADWAY CONCRETE PAVEMENT ON CRUSHED ROCK

ROADWAY CEMENT
CONCRETE PAVEMENT
(THICKNESS AS SPECIFIED
IN CONTRACT DOCUMENTS)

SEE STD PLAN
TYPE 410c CURB

2" HMA (CL 2"

6" MNRL AGG TYPE 2
(COMPACTED AS SPECIFIED
IN CONTRACT DOCUMENTS)

COMPACTED SUBGRADE

402B—HOT MIX ASPHALT ON CEMENT CONCRETE ON CRUSHED ROCK

SEE STD PLAN
TYPE 410b CURB & GUTTER

2" HMA(CL 2"

HMA (CL 1") THICKNESS AS
SPECIFIED IN CONTRACT DOCUMENTS

6" MNRL AGG TYPE 2
(COMPACTED AS SPECIFIED
IN CONTRACT DOCUMENTS)

COMPACTED SUBGRADE

402C—HOT MIX ASPHALT ON CRUSHED ROCK BASE

HMA DESIGN CRITERIA:
1. MILLION EA. UNLESS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS
2. ASPHALT PG 58H—22 UNLESS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS
3. SUFFIX DESIGNATION USED IN PLACE OF CONTRACT NUMBER ON THE DRAWINGS
4. PROTECT ADJACENT PANELS FROM DAMAGE DUE TO UNDERMINING DURING EXCAVATION &
   PLACEMENT OF SUBGRADE. SEE SPEC SECTION 1–07.13.

REF STD SPEC SEC 4-04, 5-04, 5-05 & 8-04

Note added: PG 64–22 changed to 58H–22
1. DEPTH OF RESTORATION MUST MEET THE REQUIREMENTS OF "RIGHT OF WAY OPENING AND RESTORATION RULES".
2. FOR RIGID PAVEMENT (FULL DEPTH), WIDTH OF RESTORATION MUST EXTEND TO FULL PANEL WIDTH, OR AS REQUIRED IN THE "RIGHT OF WAY OPENING AND RESTORATION RULES" FOR OVERSIZED OR NON-STANDARD PANELS.
3. FOR FLEXIBLE PAVEMENT (FULL DEPTH & OVERLAY) RESTORATION WIDTH MUST MEET REQUIREMENTS OF STANDARD PLAN NO 404c AND THE "RIGHT OF WAY OPENING AND RESTORATION RULES".

REF STD SPEC SEC 2-02, 5-04 & 5-05
NOTES
1. INSTALL TIE BARS ALONG LONGITUDINAL JOINT BETWEEN FULL PANEL REPLACEMENT AND EXIST CEMENT CONC PAVEMENT. TIE BARS ARE NOT INSTALLED BETWEEN CEMENT CONC PAVEMENT AND HOT MIX ASPHALT SHOULDERS.
2. TIE BARS AND DOWELS ARE NOT REQUIRED:
   2.1. WHEN INDICATED ON THE DRAWINGS BY “NO TIE BARS” OR “NO DOWEL BARS”.
   2.2. WHEN EXISTING PAVEMENT IS 8” OR LESS OR WHEN THE ENGINEER DETERMINES THE EXISTING CONC NOT TO BE COMPETENT.
3. DO NOT PLACE LONGITUDINAL JOINTS OR SKEWED JOINTS WITHIN BIKE Lanes.
4. WHEN PAVING ADJACENT TO EXISTING PANELS, THE NEW TRANSVERSE JOINTS MUST BE PLACED TO MATCH JOINT LOCATIONS OF THE EXISTING ADJACENT PAVEMENT UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SEE STD PLAN NO 405C FOR MAXIMUM TRANSVERSE JOINT SPACING.

A* SEE SECTION A-A STANDARD PLAN 405b
B* SEE SECTION B-B STANDARD PLAN 405b

REF STD SPEC SEC 5-05

NOTES:
1. DO NOT PLACE LONGTUDINAL JOINTS OR SKewed JOINTS WITHIN BIKE LANES.
2. WHEN A JOINT IS WITHIN 18 INCHES OF A CASTING JOINT, SHOULD BE SKewed TO MEET THE CASTING AT 90 DEGREES UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR SHOWN ON THE DRAWINGS.
3. SEE STD PLAN NO 401 OR DRAWINGS FOR REBAR DETAIL AROUND CASTING 18 INCHES OR GREATER FROM JOINTS.
4. DOWEL BARS MUST NOT BE PLACED WITHIN 15 INCHES OF THE EDGE OF PAVEMENT OR A PARALLEL JOINT.
5. DOWEL BARS NOT REQUIRED FOR RESIDENTIAL PAVEMENT SECTIONS. SEE STD PLAN NO 401.

<table>
<thead>
<tr>
<th>DEPTH (D) OF RDWY CEM. CONC</th>
<th>DOWEL BAR SIZE (Dia #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot; ≤ D &lt; 9&quot;</td>
<td>1&quot; x 18&quot;</td>
</tr>
<tr>
<td>9&quot; ≤ D &lt; 11&quot;</td>
<td>3/4&quot; x 18&quot;</td>
</tr>
<tr>
<td>11&quot; ≤ D</td>
<td>1/2&quot; x 18&quot;</td>
</tr>
</tbody>
</table>

REF STD SPEC SEC 5-05
"HIGH STRENGTH" added

410B CURB & GUTTER

410C CURB

NOTES:
1. "H" MUST BE 6" FROM FINISHED ROADWAY GRADE UNLESS OTHERWISE SHOWN ON DRAWINGS
2. GUTTER MUST BE SLOPED THE SAME AS ADJACENT PAVEMENT OR 2% MIN, WHICHEVER IS GREATER
3. SEE STD PLAN NO 411 FOR CURB DOWELS

REF STD SPEC SEC 8-04

City of Seattle
NOT TO SCALE
TYPE 410 CURB

NOTE:
1. ALTERNATELY, THE USE OF EPoxy BONDING AGENT, IN PLACE OF #3 DEFORMED BARS, WILL BE ALLOWED.
2. EXTRUDED CURB MUST NOT BE USED IN SDOT MANAGED PUBLIC RIGHT OF WAY.

REF STD SPEC SEC 8-06

City of Seattle

NOT TO SCALE

EXTRUDED CURB

NOTES:
1. 3/8" THROUGH AND CONTRACTION JOINTS MUST BE LOCATED AS REQUIRED BY SECTION 8-14.3(6).
2. SAWCUT SCORING MUST MATCH PATTERN IN ADJACENT EXISTING SIDEWALK OR MUST BE A 2' SQUARE SCORING PATTERN UNLESS OTHERWISE APPROVED BY THE ENGINEER.
3. FOR CURB RAMPS, SEE STANDARD PLAN NO 422.
4. FOR TREE HUGS, SEE STANDARD PLAN NO 424.
5. 12" MINIMUM BETWEEN EDGE OF RAMP WING AND PLANTING STRIP IS DESIRABLE.
6. ALL SIDEWALK MUST BE NON-ROADWAY CEM CONC W/ 25% POZZOLANS.
7. 6'-0" MINIMUM CONTINUOUS SIDEWALK MUST BE MAINTAINED AROUND CORNERS.
NOTES:
1. RAMP CENTERLINE MUST BE RADIAL/PERPENDICULAR TO THE ALIGNMENT OF THE FACE OF CURB.
2. SLOPE ON THE LANDING MUST BE BETWEEN 0.5% AND 2% IN ANY DIRECTION. UPPER LANDING AT THE TOP OF THE CURB RAMP MUST MATCH THE FULL WIDTH OF THE RAMP AND MUST HAVE A MINIMUM DEPTH OF 4'-0". IF THE LANDING IS LIMITED AT THE BACK-OFF-SIDWALK BY A PERMANENT VERTICAL BARRIER, THE DEPTH OF THE TURNING SPACE MUST BE 5'-0" MINIMUM, MEASURED PARALLEL TO THE RUN OF THE CURB RAMP.
3. WINGS MUST HAVE A MAXIMUM SLOPE OF 10%. WINGS MUST HAVE A BRUSHED FINISH PARALLEL TO THE CURB. THE CONCRETE WALK THICKENED EDGE ALONG THE CURB MUST CONTINUE THROUGH EACH WING.
4. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE PARALLEL TO THE CURB.
5. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTIONS.
6. RAMP WIDTH MUST BE 5'-0" MINIMUM WHEN SIDE CURB IS USED ON BOTH SIDES INSTEAD OF WINGS.

"SHALL" changed to "MUST".
Note 2 revised, note 6 added callout revised.
Pay limit changed from curved to straight.

PERPENDICULAR CURB RAMPS (TYPE 422A)

REF STD SPEC SEC 8-14
NOTES:
1. RAMP CENTERLINE(S) MUST BE PARALLEL TO THE ALIGNMENT OF THE FACE OF CURB. THE WIDTH OF THE RAMP MUST BE 6'-0" (5'-0" MINIMUM).
2. RAMP CENTERLINE MUST BE RADIAL/PERPENDICULAR TO THE ALIGNMENT OF THE FACE OF CURB.
3. SLOPE OF THE LANDING MUST BE BETWEEN 0.5% AND 2% IN ANY DIRECTION. SHARED CURB RAMP LANDING MUST HAVE A MINIMUM WIDTH OF 5'-0".
4. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE RADIAL/PERPENDICULAR TO THE CURB.
5. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTIONS.

2% MAX = MAX SLOPE IN EITHER DIRECTION

PARALLEL CURB RAMPS (TYPE 422B)

422B CURB RAMP LOCATIONS

City of Seattle
NOT TO SCALE
CURB RAMP DETAILS

NOTES:
1. RAMP CURBLINE MUST BE PARALLEL TO CROSSWALK AND/OR THE SIDEWALK.
   SLOPE ON THE LANDING MUST BE BETWEEN 0.5% AND 2% IN ANY DIRECTION. UPPER LANDING AT THE TOP OF THE CURB RAMP MUST MATCH THE FULL WIDTH OF THE RAMP AND MUST HAVE A MINIMUM DEPTH OF 4'-0". IF THE LANDING IS LIMITED AT THE BACK-OF-SIDEWALK BY A PERMANENT VERTICAL BARRIER, THE DEPTH OF THE TURNING SPACE MUST BE 5'-0" MINIMUM, MEASURED PARALLEL TO THE RUN OF THE CURB RAMP.
2. WINGS MUST HAVE A MAXIMUM SLOPE OF 10%. WINGS MUST HAVE A BRUSHED FINISH PARALLEL TO THE CURB. THE CONCRETE WALK THICKENED EDGE ALONG THE CURB MUST CONTINUE THROUGH EACH WING.
3. WING ON THE OPEN SIDE OF THE CURB RAMP MUST HAVE A MINIMUM SLOPE OF 5% TO ASSIST PEDESTRIANS WITH VISUAL IMPAIRMENTS WHERE THE DETECTABLE WARNING SURFACE IS OFFSET FROM THE CURB LINE.
4. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED FINISH PERPENDICULAR TO THE PATH OF TRAVEL.
5. REFER TO DETAILS 422K AND 422I FOR GENERAL NOTES AND TYPICAL SECTIONS.

---

DIMENSIONS:
2% MAX = MAX SLOPE IN EITHER DIRECTION

---

PAY LIMITS

---

DIRECTIONAL CURB RAMPS (TYPE 422D)

---

422D CURB RAMP LOCATIONS

---

City of Seattle | NOT TO SCALE | CURB RAMP DETAILS

---

NOTES:
1. RAMP CENTERLINE MUST BE PARALLEL TO CROSSWALK AND/OR THE SIDEWALK.
2. SLOPE ON THE LANDING MUST BE BETWEEN 0.5% AND 2% IN ANY DIRECTION. UPPER LANDING AT THE TOP OF THE CURB RAMP MUST MATCH THE FULL WIDTH OF THE RAMP AND MUST HAVE A MINIMUM DEPTH OF 4'-0". IF THE LANDING IS LIMITED AT THE BACK-OF-SIDEWALK BY A PERMANENT VERTICAL BARRIER, THE DEPTH OF THE TURNING SPACE MUST BE 5'-0" MINIMUM MEASURED PARALLEL TO THE RUN OF THE CURB RAMP.
3. WINGS MUST HAVE A MAXIMUM SLOPE OF 10%. WINGS MUST HAVE A BRUSHED FINISH PARALLEL TO THE CURB. THE CONCRETE WALK THICKENED EDGE ALONG THE CURB MUST CONTINUE THROUGH EACH WING.
4. WHERE THE SETBACK FROM THE BOTTOM OF THE CURB RAMP TO THE BACK OF CURB LINE EXCEEDS 5'-0", THE DETECTABLE WARNING SURFACE MUST BE INSTALLED AT THE BACK OF CURB (NOT AT THE BOTTOM OF RAMP). RADIAL TILE MUST BE USED. CUTTING OR ALTERING DETECTABLE WARNING SURFACE MUST BE FIRST APPROVED BY THE ENGINEER.
5. DIRECTIONAL CURB RAMPS WITH LARGE SETBACK FROM BACK OF CURB TO CURB TOP OF THE CURB RAMP ARE NOT PREFERRED. DESIGNS BUT MAY BE USED IF NECESSARY DUE TO EXISTING SITE CONSTRAINTS.
6. STRAIGHT SECTIONS OF DETECTABLE WARNING SURFACE IS PERMITTED AS AN ALTERNATE. IF USED, THERE MUST BE 2" MAXIMUM FROM THE DETECTABLE WARNING SURFACE TO THE BACK OF CURB AT ANY POINT.
7. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED FINISH PERPENDICULAR TO THE PATH OF TRAVEL.
8. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTIONS.

---

City of Seattle

NOT TO SCALE

CURB RAMP DETAILS

NOTES:
1. **RAMP CENTERLINE MUST BE RADIAL/PERPENDICULAR TO THE ALIGNMENT OF THE FACE OF CURB.**
2. **SLOPE ON THE LANDING MUST BE BETWEEN 0.5% AND 2% IN ANY DIRECTION. UPPER LANDING AT THE TOP OF THE CURB RAMP MUST MATCH THE FULL WIDTH OF THE RAMP AND MUST HAVE A MINIMUM DEPTH OF 4'-0". IF THE LANDING IS LIMITED AT THE BACK-OF-SIDEWALK BY A PERMANENT VERTICAL BARRIER, THE DEPTH OF THE TURNING SPACE MUST BE 5'-0" MINIMUM, MEASURED PARALLEL TO THE RUN OF THE CURB RAMP.**
3. **CLEAR SPACE AT THE BOTTOM OF THE RAMP MUST BE 5'-0" MINIMUM IN WIDTH AND MUST EXTEND A MINIMUM OF 4'-0" BEYOND THE RAMP LOWER GRADE BREAK. THE CLEAR SPACE MUST FALL WHOLLY WITHIN THE LEGAL CROSSWALK, MARKED OR UNMARKED. THE CLEAR SPACE MUST FIT BEHIND LINES EXTENDING FROM THE FACE OF CURB RUNNING PARALLEL TO EACH ROADWAY. THERE IS NO ALLOWABLE Deviation FOR MINIMUM CLEAR SPACE REQUIREMENTS AT SHARED DIAGONAL PERPENDICULAR CURB RAMP.**
4. **WINGS MUST HAVE A MAXIMUM SLOPE OF 10%. WINGS MUST HAVE A BRUSHED FINISH PARALLEL TO THE CURB. THE CONCRETE WALK THICKENED EDGE ALONG THE CURB MUST CONTINUE THROUGH EACH WING.**
5. **RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE PARALLEL TO THE CURB.**
6. **REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTIONS.**

---

**SHARED DIAGONAL PERPENDICULAR CURB RAMP**

**TYPE 422F**

---

**PAY LIMITS**

**422H CURB RAMP LOCATIONS**

---

**City of Seattle**

**NOT TO SCALE**

**CURB RAMP DETAILS**

---

*Proposed 2020 Edition City of Seattle Standard Plans for Municipal Construction*
NOTES:
1. THE SIDEWALK MUST TRANSITION DOWN TO THE ROADSIDE WITH A MAXIMUM RUNNING SLOPE OF 5%. THE CROSS SLOPE ON THE TRANSITION MUST NOT EXCEED 2% AT ANY POINT.
2. A BYPASS ROUTE MUST BE PROVIDED AT THE TOP OF THE BLENDED TRANSITION WITH A MINIMUM WIDTH OF 6'-0" (2'-0" MIN). THE CROSS SLOPE OF THE BYPASS ROUTE MUST NOT EXCEED 2% IN ANY DIRECTION.
3. RADIAL TILES MUST BE USED, CUTTING OR ALTERING DETECTABLE WARNING SURFACES MUST BE FIRST APPROVED BY THE ENGINEER.
4. WINGS MUST HAVE A MAXIMUM SLOPE OF 10%. WINGS MUST HAVE A BRUSHED FINISH PARALLEL TO THE CURB. THE CONCRETE WALK THICKER EDGE ALONG THE CURB MUST CONTINUE THROUGH EACH WING.
5. BLENDED TRANSITION SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE RADIAL/PERPENDICULAR TO THE CURB.
6. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTION B.

2% MAX = MAX SLOPE IN EITHER DIRECTION

layout revised

notes revised & "SHALL" changed to "MUST"

SECTION G-G
CURB MONOLITHIC WITH RAMP. NEW PAVEMENT BLOKED OUT FULL DEPTH. EXISTING PAVEMENT REMOVED AT FACE OF CURB

SECTION G-G
DEPRESSED CURB & GUTTER SEPARATE FROM RAMP.

422G CURB RAMP LOCATIONS

REF STD SPEC SEC 8-14

City of Seattle

NOT TO SCALE

CURB RAMP DETAILS

NOTES:
1. SIZE, SHAPE, AND/OR DIMENSIONS OF CHANNELING ISLANDS OR PEDESTRIAN REFUGE ISLANDS MAY VARY. DETAILS SHOWN ARE INTENDED TO SHOW MINIMUM REQUIRED CLEARANCES AND DETECTABLE WARNING SURFACE PLACEMENT LOCATIONS.
2. ACCESS THROUGH CHANNELING ISLANDS OR PEDESTRIAN REFUGE ISLANDS MAY BE CUT-THROUGH OR ACCESS MAY BE PROVIDED USING STANDARD CURB RAMP DETAILS.
3. AT PEDESTRIAN REFUGE ISLANDS, DETECTABLE WARNING IS NOT TO BE INSTALLED IF THE REFUGE AREA IS LESS THAN 6' - 0" IN DEPTH (IN THE DIRECTION OF TRAVEL).
4. PROVIDE A MINIMUM 4' - 0" WIDTH X 4' - 0" DEPTH CLEAR SPACE FOR ACCESS FROM THE CHANNELING ISLAND OR PEDESTRIAN REFUGE ISLAND FOR EACH CROSSWALK.

5' - 0" MIN
2% MAX SLOPE

SECTION H-H

ROADWAY CURB (TYP)
SIDEWALK

ROADWAY CURB
STD PLAN 411 OR
STD PLAN 421

3" RADIUS
(TYP)

DETECTABLE
WARNING STD PLAN 422K

CLEAR SPACE
SEE NOTE 4
(TYP)

H

5' - 0" MIN
(TYP)

2'-0" MIN
SEE NOTE 3

ROADWAY CURB (TYP)

DETECTABLE
WARNING STD 422K

H

2% MAX
(TYP)

2% MAX
(TYP)

MAX SLOPE IN EITHER DIRECTION

ISLAND CUT-THROUGHS
(TYPE 422H)

REF STD SPEC SEC 8-14

City of Seattle
NOT TO SCALE
CURB RAMP DETAILS

CURB RAMP GENERAL NOTES:

1. TWO CURB RAMPS MUST BE INSTALLED AT EACH CORNER UNLESS OTHERWISE DIRECTED BY ENGINEER. SHADED DIAGONAL PERPENDICULAR RAMPS MUST NOT BE INSTALLED UNLESS ALL OTHER DESIGN OPTIONS ARE UNABLE TO BE CONSTRUCTED DUE TO EXISTING SITE CONSTRAINTS.

2. CURB RAMPS MUST BE AS CLOSELY ALIGNED WITH THE SIDEWALK AND THE PEDESTRIAN STREET CROSSING AS POSSIBLE.

3. CURB RAMP MUST CONSTRUCTED ON OPPOSITE SIDE OF THE ROADWAY WHERE NO RAMP IS PROVIDED UNLESS OTHERWISE DIRECTED BY ENGINEER.

4. RAMPS MUST TYPICALLY HAVE A MAXIMUM RUNNING SLOPE OF 8.3% AND A MINIMUM WIDTH OF 4'-0" UNLESS OTHERWISE DIRECTED BY ENGINEER. THE CROSS SLOPE OF RAMPS MUST BE A MAXIMUM OF 2%. CURB RAMPS ARE NOT REQUIRED TO EXCEED A LENGTH OF 15 FEET UNLESS OTHERWISE DIRECTED BY ENGINEER.4

5. GRADE BREAKS AT THE TOP AND THE BOTTOM OF CURB RAMP RUNS MUST BE PERPENDICULAR TO THE PATH OF TRAVEL. CURB RAMP RUNS ARE DEFINED BY RUNNING SLOPES THAT EXCEED 5% BUT ARE NO MORE THAN 8.3%. SURFACES ABUTTING AT CURB RAMP GRADE BREAKS MUST BE FLUSH.

6. AREAS ADJACENT TO CURB RAMPS OR CURB RAMP LANDINGS USEABLE BY PEDESTRIANS MUST COMPLY WITH STANDARD PLAN SIDEWALK SLOPE LIMITS OR A CURB RAMP WING MUST BE PROVIDED AS SHOWN IN THE APPROPRIATE CURB RAMPS DETAILS. THE INSTALLATION OF CURBED EDGES IS NOT REQUIRED BUT MAY BE USED AT THE SIDES OR BACKS OF CURB RAMPS OR CURB RAMP LANDINGS WHERE THE ADJACENT SURFACE IS LANDSCAPED OR OTHERWISE NOT USEABLE BY PEDESTRIANS.

7. THE COUNTER SLOPE OF THE GUTTER OR THE STREET AT THE BOTTOM OF CURB RAMP RUNS MUST BE 5% MAXIMUM. IF TURNING OR CHANGE OF ORIENTATION IS REQUIRED WITHIN THE PEDESTRIAN CROSSING AT THE BOTTOM OF CURB RAMP RUNS, THE SLOPE MUST BE 2% MAXIMUM IN ANY DIRECTION FOR A MINIMUM 4'-0" WIDE X 3'-0" DEPTH MEASURED FROM THE RAMP BOTTOM GUTTER BREAK.

8. CURB RAMPS WITH RUNS THAT TERMINATE AT THE ENTRANCE TO THE PEDESTRIAN STREET CROSSING MUST HAVE A CLEAR SPACE AT THE BOTTOM OF THE RAMP. "CLEAR SPACE" IS DEFINED AS A NAVIGABLE 4'-0" X 4'-0" SPACE EXTENDING FROM THE RAMP LOWER BREAK, THAT FALLS WHOLLY WITHIN THE LEGAL CROSSWALK, MARKED OR UNMARKED, AND OUTSIDE THE PARALLEL VEHICULAR TRAFFIC LANE.

9. A 4'-0" MINIMUM WIDTH UNOBSURCTED PEDESTRIAN ACCESS ROUTE MUST BE PROVIDED FROM EACH CURB RAMPS, BLENDED TRANSITION, OR FLUSH TRANSITION TO THE LEGAL CROSSWALK THAT IS SERVED, Marked OR UNMARKED, AND LOCATED OUTSIDE THE PARALLEL VEHICULAR TRAFFIC LANE.

10. DETECTABLE WARNING MUST BE PROVIDED AT CURB RAMPS AND AT LOCATIONS WHERE THE SIDEWALK AND ROADWAY ARE FLUSH. THE DETECTABLE WARNING SURFACE MUST HAVE A TRUNCATED DOME PATTERN AS SHOWN, WITH A MINIMUM DEPTH OF 2"-0", AND MUST BE PLACED AT THE BACK OF CURB BUT NO MORE THAN 8" FROM THE FACE OF CURB FOR MONOLITHIC CURBS OR ATYPICAL CURB WIDTHS. DETECTABLE WARNING MUST MATCH THE WIDTH OF THE RAMP RUN OR THE OPENING WHERE THE SIDEWALK AND ROADWAY ARE FLUSH. THE TRUNCATED DOMES ON THE DETECTABLE WARNING SURFACE SHOULD ALIGN WITH THE CURB RAMP RUN OR THE DIRECTION OF TRAVEL. DOMES MAY BE ON A RADIAL GRID PATTERN WHERE THE DETECTABLE WARNING SURFACE IS PLACED AT CURB RADIO.

11. DETECTABLE WARNING COLOR MUST BE "FEDERAL SAFETY YELLOW", UNLESS OTHERWISE DIRECTED BY ENGINEER.

12. DETECTABLE WARNING SURFACES SHOULD GENERALLY NOT BE CUT OR ALTERED TO FIT UNLESS THERE IS NO ALTERNATIVE AVAILABLE. IF REQUIRED, CUT OR ALTER THE DETECTABLE WARNING SURFACE PER THE MANUFACTURER'S DIRECTIONS. DETECTABLE WARNING SURFACES PLACED AT CURB RADIO MUST MATCH THE CURB RADIO WITHOUT GAPS OR INCONSISTENCIES IN PLACEMENT.

13. AVOID LOCATING HANDHOLES, UTILITY CASTINGS, OR ANY OTHER SURFACE OBSTRUCTIONS IN THE CURB RAMP RUN(S) OR LANDING(S). IF NECESSARY DUE TO EXISTING CONSTRAINTS, HANDHOLES, UTILITY CASTINGS, OR OTHER SURFACE OBSTRUCTIONS MAY BE LOCATED WITHIN A RAMP RUN, LANDING, OR TURNING SPACE BUT MUST ADHERE TO SURFACE REQUIREMENTS. LEVEL CHANGES BETWEEN SURFACES MUST NOT EXCEED 1/4" OR 1/2" ALONG A 1-2:1 DROP. GAPS BETWEEN SURFACES OR GRADE MATCHES BETWEEN SURFACES MUST BE FIRM, STABLE, AND SUIT RESISTANT.

14. HANDHOLES, UTILITY CASTINGS, OR OTHER SURFACE OBSTRUCTIONS MUST NOT REDUCE THE REQUIRED DEPTH OF DETECTABLE WARNING.

15. POLES, HYDRANTS AND OTHER ABOVE GROUND OBSTRUCTIONS MUST HAVE A MINIMUM LATERAL CLEARANCE OF 6'-0" FROM CURB RAMPS, OR LANDING(S).

16. ALL CHANGES IN LEVEL ACROSS JOINTS MUST BE FLUSH. ANY DIFFERENCE IN ELEVATION OF 3/16 INCH OR GREATER MUST BE REPAIRED OR REPLACED.

17. CURB RAMPS ARE DESIGNED TO ENSURE THAT WATER DOES NOT ACCUMULATE ON RAMP SURFACES. THE CONTRACTOR MUST CHECK GRADE LINES AND GUTTER FLOW LINE PRIOR TO CONSTRUCTION. IF THE CHECK REVEALS THAT SITE CONDITIONS WOULD RESULT IN ACCUMULATION OR WOULDN'T MATCH WITH OUTLINES AT THE BOTTOM OF CURB RAMPS OR AT CURB RAMPS LOWER LANDINGS AS SHOWN ON THE DRAWINGS OR PLANS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY AND STOP WORK ON THE CURB RAMP UNTIL DIRECTED TO CONTINUE BY THE ENGINEER.

18. IT IS RECOMMENDED THAT CURB RAMPS RUNNER LENGTHS BE DESIGNED TO 7.5% MAX. AND CURB RAMP LANDINGS BE DESIGNED TO 10.5% MAX TO ALLOW FOR A LIMITED MARGIN OF ERROR DURING CONSTRUCTION.

NOT TO SCALE

City of Seattle

TYPE C

TREE PIT DIMENSIONAL REQUIREMENTS:
- 24 SQ FT MIN TREE PIT SIZE
- 3'-0" MIN REQ'D BETWEEN TREE & FACE OF CURB
- 2'-0" MIN REQ'D BETWEEN TREE & CONC SIDEWALK
- 6'-0" MIN CONC WALKING SURFACE

NOTES:
1. INSTALLATIONS REQUIRING LESS THAN STANDARD MIN CLEARANCES MUST BE ALLOWED ONLY WITH APPROVAL BY THE ENGINEER.
2. INSTALL ROOT BARRIERS AS NOTED. SEE STANDARD PLAN NO 1004.
3. SEE STD PLAN NO 420 FOR CW SCORING DETAILS.
4. WHEN INSTALLING NEW TREE PITS IN EXISTING SIDEWALK, REMOVE SIDEWALK TO FULL PANE WIDTH, INSTALL TREE PIT AS SHOWN ON THIS DETAIL.

FOR ADDITIONAL SIDEWALK SCORING REQUIREMENTS SEE STD PLAN NO 420

SIDEWALK, NON-ROADWAY CEM CONC W/25% POZZOLANS

THROUGH JOINTS THROUGH SIDEWALK

ROOT BARRIER AT OUTSIDE EDGE OF TREE PIT (TYP) - FOR NEW TREE INSTALLATIONS ONLY

BACK EDGE OF CONC WALK

FACED OF CURB

6'-0" MIN

12"
NOTES:
1. TYPE 430A MUST BE USED UNLESS OTHERWISE DIRECTED BY ENGINEER. USE OF DRIVEWAY TYPE 430B IS SUBJECT TO ENGINEER'S APPROVAL.
2. DRIVEWAYS MUST BE NON-ROADWAY CEM. CONC. HIGH STRENGTH.
3. WING WIDTH ON ARTERIAL STREETS WHERE TRAVEL LANE IS NEXT TO THE CURB MUST BE 5'-0". OTHERWISE, WING WIDTH MUST BE 2'-0".
4. "V" GROOVE SCORING MUST MATCH PATTERN IN ADJACENT EXISTING SIDEWALK.
5. FOR CONCRETE DRIVEWAY CONSTRUCTED WITH CONCRETE SIDEWALK, SEE STANDARD PLAN NO 43.
6. CONCRETE DRIVEWAYS WITH A WIDTH GREATER THAN 15'-0" MUST HAVE A 1/8" TRANSVERSE CONSTRUCTION JOINT NEAR THE CENTERLINE OF DRIVEWAY. SEE SECTION 8-19 STANDARD PLAN NO 43.
7. FOR TYPE 430A CROSS-SLOPE IN THE 6'-0" MINIMUM WIDTH AREA CONNECTING TO CW ON EACH SIDE OF THE DRIVEWAY MUST BE MAXIMUM 2% AND MINIMUM 0.5%. FOR TYPE 430B, CROSS-SLOPE OF THE DRIVEWAY BETWEEN THE TWO RAMP SECTIONS MUST BE MAXIMUM 2% AND MINIMUM 0.5%. DRIVEWAY ON THE PRIVATE SIDE OF THE CW MAY BE SLOPED AS NEEDED TO MATCH EXISTING SITE CONDITIONS.
8. RAMP MUST HAVE A MAXIMUM SLOPE OF 8.3% AND A MINIMUM WIDTH OF 6'-0". THE CROSS-SLOPE OF THE RAMP MUST BE MAXIMUM 2% AND MINIMUM 0.5%. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE PERPENDICULAR TO THE CURB. CHANGES IN LEVEL ACROSS JOINTS MUST BE FUSED WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 0.5 INCH.
9. ALL SLOPE GRADES MUST BE MEASURED OFF THE HORIZON-LINE. IF EXISTING SITE CONDITIONS CONFLICT WITH OBTAINING GRADES SHOWN, THE CONTRACTOR MUST MAKE MINIMUM ADJUSTMENTS TO THE GRADES TO ACCOMMODATE EXISTING SITE CONDITIONS. ADJUSTMENTS ARE SUBJECT TO ENGINEER APPROVAL. CONCRETE MUST BE BROOMED ON TOP OF THE DRIVEWAY. GRADING MUST BE FINISHED.
10. PROTECT ADJACENT PANELS FROM DAMAGE DUE TO UNDERMINING DURING EXCAVATION & PLACEMENT OF SUBGRADE. SEE SPEC SECTION 1-07.13.

REF STD SPEC SEC 8-19

note 12 added

sections revised, mnlr agg added

changed from 12:1

notes 7 & 8 revised

changed from 12:1

City of Seattle

NOT TO SCALE

TYPE 430A & 430B DRIVEWAYS

NOTES:

1. DRIVEWAY WIDTH GREATER THAN 15'-0" AND LESS THAN OR EQUAL TO 30' MUST HAVE TRANSVERSE CONSTRUCTION JOINTS AT ITS CENTER.
2. DRIVEWAY GREATER THAN 30'-0" requires SDOT approval and must have transverse contraction joints evenly placed so the distance between contraction joints, or between the edge through joints and contraction joints is not greater than 15'-0".
3. PROVIDE SCORE LINES PER SDOT HORN 425 AND THE DRAWING.
4. THE SURFACE MUST BE BRUSHED IN THE TRANSVERSE DIRECTION IN RELATION TO THE CENTERLINE OF THE DRIVEWAY OR ALLEY WITH A FIBER HAIR BRUSH OR OTHER APPROVED BRUSH TYPE.
5. PROTECT ADJACENT PANELS FROM DAMAGE DUE TO UNDERMINING DURING EXCAVATION & PLACEMENT OF SUBGRADE. SEE SPEC SECTION 1-07.13.

notes 4 & 5 added

SECTION A-A

* UNLESS OTHERWISE APPROVED BY SDOT.
NOTES:
1. FOR CURB RAMP AND DETECTABLE WARNING DETAILS SEE STANDARD PLAN NO 422 (SERIES).
2. FOR BOLLARD DETAIL SEE STANDARD PLAN NO 463.
3. ASPHALT TRAIL CROSS SLOPE MINIMUM 1%, MAXIMUM 2%.
4. CEMENT CONCRETE WARNING PAD THICKNESS TO MATCH ASPHALT THICKNESS OR MINIMUM 6" THICK WHICHEVER IS GREATER.
5. CRUSHED ROCK ON EDGE OF TRAIL AS NEEDED TO DISBURSE DRAINAGE FLOW.
6. ALL CHANGES IN LEVEL ACROSS JOINTS MUST BE FLUSH WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 1/8 INCH.
7. ALL SLOPE GRADES MUST BE MEASURED OFF THE HORIZON-LINE. IF EXISTING SITE CONDITIONS CONFLICT WITH OBTAINING GRADES SHOWN, THE CONTRACTOR MUST MAKE MINIMUM ADJUSTMENTS TO THE GRADES TO ACCOMMODATE EXISTING SITE CONDITIONS; ADJUSTMENTS ARE SUBJECT TO APPROVAL BY THE ENGINEER.
8. ALL CEMENT CONCRETE WARNING PADS MUST BE BRUSHED FINISHED AND "V" GROOVED TO MATCH PATTERN IN ADJACENT OR NEARBY SIDEWALKS.
SECTION B-B

NOTE:
1. SPEED HUMP MUST BE HMA CL 3/8".
2. CHEVRON SYMBOL PER STD PLAN NO. 728A.

SECTION A-A

TOLERANCE AT CENTER IS 3/8".
PARABOLIC SHAPE MUST BE MAINTAINED.
3-HUMP LAYOUT
NTS

OF ROADWAY

SEE NOTE 2 (TYP)

12'-0"

3'-0"

SECTION A-A
TOLERANCE AT CENTER 6 1/2". PARADES SHOULD BE MAINTAINED.

new std plan

NOTE:
1. CUSHION MUST BE HMA CL 3/8".
2. CHEVRON SYMBOL PER STD PLAN NO 728A.
3. TRIANGLE SYMBOL PER STD PLAN NO 728B.

4-HUMP LAYOUT
NTS

OF ROADWAY

SEE NOTE 3 (TYP)

12'-0"

3'-0"

W (SEE PLANS)

VARES

CURB OR EDGE
OF ROADWAY

VARIES

4'-0"

1'-0"

1'-0"

VARIES

1'-0"

1'-0"

1'-0"

2'-0" WHEN W < 30'
2'-6" WHEN W > 30'

SECTION B-B
NTS

W (SEE PLANS)

VARES

CURB OR EDGE
OF ROADWAY

2' WHEN W < 30'
2'-6" WHEN W > 30'

SECTION C-C
NTS

W (SEE PLANS)

VARES

CURB OR EDGE
OF ROADWAY

2' WHEN W < 30'
2'-6" WHEN W ≥ 30'

TACK COAT

City of Seattle

NOT TO SCALE

SPEED CUSHION

NOTES:
1. FLIGHTS OF STAIRS MUST HAVE MAX VERTICAL RISE OF 12" BEFORE A LANDING.
2. AVOID FEWER THAN 2 RISERS PER FLIGHT.
3. STEPS IN FLIGHT MUST HAVE UNIFORM TREAD RUNS AND UNIFORM RISER HEIGHTS WITH TOLERANCE OF ±3/8".
4. TREADS MUST BE 11"MIN, 12" MAX. RISERS MUST BE 5" MIN, 7" MAX.
5. LANDINGS BETWEEN FLIGHTS OF RISERS MUST HAVE SAME WIDTH AS STEPS AND A MIN LENGTH OF 4'-0".
6. STAIRWAYS WITH 1 OR MORE RIDING RAILS MUST HAVE HANDRAILS ON BOTH SIDES.
7. HANDRAILS MUST BE CONTINUOUS ACROSS Landings BETWEEN FLIGHTS OF STEPS.
8. SEE STEEL MUST BE HOT DIPPED GALVANIZED.
10. PIPE DIAMETERS SHOWN CORRESPOND TO PIPE "SHAPE" AS DEFINED IN AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.
11. SHADOWLINE ON STAIR PLANS. PIPES OF CAST IRON AND STEEL SHALL BE MARKED WITH SYSTEM OF THE CAST IRON AND STEEL.
12. PIPE DIAMETERS SHOWN CORRESPOND TO PIPE "SHAPE" AS DEFINED IN AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.
13. FLIGHT SURFACE MUST HAVE GROOVES AT THE NOSE FOR TRACTION.
14. IF LANDING IS ELEVATED, LANDINGS MUST HAVE VERTICAL RAILING PER RIGHT OF WAY IMPROVEMENT MANUAL.
15. STAIRWAYS DEViating FROM STANDARD PLAN TO ACCOMMODATE BICYCLE FEATURES MAY BE USED PER STD PLAN NO 440C OR 440D.
16. SEE HANDRAILS FROM THE BOTTOM Landings TO THE NOSE OF THE TREAD MUST BE 1/2" IN DIAMETER.
17. HANDRAIL CAPPING MOUTH MUST BE FREE FROM SPRAW OR ABRASIVE ELEMENTS AND MUST HAVE ROUNDED EDGES.
18. HANDRAIL EXTENSION MUST EXTEND OUT TREAD LENGTH MINIMUM PARALLEL TO THE SLOPE OF THE STAIR LANDING BOTTOM nosing.
19. ALL STAIRWAYS EXTENSION MUST EXTEND Horizontally OVER THE LANDING AS MINIMUM BETWEEN TOP STAIR NOSE.
21. VENT HOLES IN END SECTIONS OR IN SIMILAR SECTIONS MUST BE 3/8" IN DIAMETER.
22. END MUST BE LEFT COMPLETELY OPEN. ANY DEVICE USED FOR FIELD-ERECTION THAT PREVENTS FULL OPENINGS ON ENDS OF HORIZONTAL RAILS AND VERTICAL LEGS MUST BE GALVANIZED SEPARATELY AND ATTACHED AFTER GALVANIZING.

REF STD SPEC SEC 8-18

City of Seattle NOT TO SCALE CEMENT CONCRETE STAIRWAY & HANDRAIL

NOTES:
1. REFER TO STANDARD PLAN NO. 440a AND 440b FOR ADDITIONAL DETAILS AND DIMENSIONS.
2. PIPE DIAMETERS SHOWN correspond to PIPE "SHAPE" as defined in American Institute of Steel Construction Manual.
3. FIELD WELDED AND GROUND SURFACES MUST BE CLEANED AND COATED WITH ZINC SPRAY TO A MIN. OF 3 MILS, DRY PAINT THICKNESS.
4. DIMENSIONS SHOWN ON ONE SIDE OF THE SECTION VIEW ARE TYPICAL TO THE OTHER SIDE, UNLESS NOTED OTHERWISE.
5. DISTANCE BETWEEN HANDGRIP SUPPORTS MUST NOT EXCEED 6'.
6. BIKE RUNNEL SLAB THICKNESS VARY WITH STEP RISER HEIGHT, MIN. 10.5", MAX. 12.5".
7. RUNNEL LIP HEIGHT 1.5" ABOVE STEP NOSING AND LANDING.
8. LANDINGS THAT INTERSECT OTHER STAIRS OR WALKS MUST BE AT LEAST 6' LONG TO ALLOW FOR A 4" OF CLEAR AREA WITHOUT RUNNEL & RAIL.
9. STAMP CONCRETE AT TOP AND BOTTOM OF RUNNEL. SEE CONCRETE STAMP DETAIL.  
10. RUNNEL LOCATION RAIL MOLD BE ON EITHER SIDE OF STAIRWAY AS DETERMINED BY ENGINEER.
11. LONG STAIRWAYS OR STAIRWAYS WITH SIGHT OBSTRUCTIONS TO CYCLISTS MUST HAVE SIDEWALK BREAKS TO ALLOW ONCOMING CYCLISTS PASSENGER, LOCATIONS OF SIDEWALK BREAKS TO BE DETERMINED BY ENGINEER.
12. ANY CONSTRUCTION OUTSIDE OF RUNNEL MUST ALLOW ENOUGH CLEARANCE FOR BIKE PEDALS AND HANDLEBARS FROM INTERFERING WITH MOVEMENT.
13. EXTERNAL VENT HOLES MUST BE AS CLOSE TO THE WELD AS POSSIBLE AND MUST BE 25% THE SIZE OF THE HO. OF THE PIPE, BUT NOT LESS THAN 1/4" IN DIAMETER.
14. VENT HOLES IN END SECTIONS OR IN SIMILAR SECTIONS MUST BE 1/8" IN DIAMETER.
15. ENDS MUST BE LEFT COMPLETELY OPEN. ANY DEVICE USED FOR FIELD-ERECTION THAT PREVENTS FULL OPENINGS ON ENDS OF HORIZONTAL RAILS AND VERTICAL LEGS MUST BE GALVANIZED SEPARATELY AND ATTACHED AFTER GALVANIZING.

REF STD SPEC SEC 8-18

City of Seattle

NOT TO SCALE

CEMENT CONCRETE
STAIRWAY & SINGLE BIKE RUNNEL

NOTES:
1. CEMENT CONCRETE MUST BE CL 3000 TROWEL FINISH.
2. NUMBER OF STEPS MUST SUIT INDIVIDUAL CONDITIONS WITH UNIFORM TREAD AND RISER DIMENSIONS AS FOLLOWS:
   TREADS MUST BE 11" MIN – 12" MAX
   RISERS MUST BE 6" MIN – 7" MAX
3. STEP WIDTH MUST MATCH WIDTH OF EXISTING WALK, BUT MUST BE NO LESS THAN 35" MIN.
4. STAIRWAYS WITH 1 OR MORE RISERS MUST INCLUDE A HANDRAIL ON BOTH SIDES; SEE STD PLAN NO 440.
5. REINFORCING STEEL LAYOUT – SEE STD PLAN NO 440
6. TREAD SLOPES OUTWARD @ 1%.
NOTES:
1. RAILING MUST NOT BE HOT DIP GALVANIZED AFTER FABRICATION.
2. ALL POSTS AND BALUSTERS MUST BE PLUMB AND RAILS PARALLEL TO GRADE.
3. PIPE MATERIAL MUST CONFORM TO ASTM A53.
4. REINFORCING STEEL ASTM A706 OR 60.
5. IF THE CONCRETE WALK SLOPE IS 5% OR GREATER A GRIPPING HANDRAIL IS REQUIRED. GRIPPING HANDRAILS ON RAMPS (SLOPE EXCEEDS 5%) MUST EXTEND HORIZONTALLY A MINIMUM OF 1/4" BEYOND TOP AND BOTTOM OF RAMPS.
6. PIPE DIAMETERS SHOWN CORRESPOND TO PIPE "SHAPE" AS DEFINED IN AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.
7. PIPE EXPANSION GAP AT EVERY STREET PANEL.
8. THIS DETAIL IS FOR EXISTING CONCRETE STRUCTURE CONNECTION ONLY. ANCHOR BOLTS MUST BE DESIGNED PER AASHTO CODE.

DETAIL C
EXISTING CONC. STRUCTURE CONNECTION

DETAIL A
RAIL ENDS

DETAIL B
SLIP JOINT

DETAIL C
SEE DETAIL C ON STD PLAN NO 442 TYPICAL AT RAIL ENDS

DETAIL D
HANDRAIL SLIP JOINT

SECTION A-A

REF STD SPEC SEC 8-18

City of Seattle
NOT TO SCALE
VERTICAL RAILING

STEEL PIPE, 6" NOM. SCH 80, FILLED WITH CL 3000 CONC. PAINT FEDERAL SAFETY YELLOW, SEE FEDERAL PAINT STANDARD.

CONC CL 3000

SLOPE CONCRETE FOR DRAINAGE

2"X3/8" JOINT MATERIAL

1'/6"

1'/6"
TYPICAL SIGNAL FACES
W/ TUNNEL VISORS & 5" BACKPLATE (LOUVERED)
1" YELLOW, DIAMOND GRADE RETRO REFLECTIVE TAPE

MAST ARM MOUNTING
SEE NOTE 1

BRACKET MOUNTING
FOR SIGNAL HEAD BRACKET ASSEMBLY
SEE STD PLAN NO 511

 Signal Hanger Detail

NOTES:
1. "VERTICAL CLEARANCE: 17' MIN TO ROADWAY 19'-0" MAX (ON TRUCK ROUTES USE 18' TO 19')
2. BACKPLATES HAVE BEEN OMITTED FROM VARIOUS VIEWS FOR CLARITY

PEDESTAL TOP MOUNTING
FOR PEDESTAL SEE STD PLAN NO 524

**title added**

SPAN MOUNTING

REF STD SPEC SEC 8-31

City of Seattle  NOT TO SCALE  VEHICULAR SIGNAL MOUNTING

1/4-20 X 3/8" LONG STAINLESS STEEL SCREW

PUSH BUTTON FOR
MUTCD R10-3
5"x7" SIGN

1/4-20 X 3/8" LONG STAINLESS STEEL SCREW
1/4-20 STAINLESS STEEL BOLT WITH WASHER & LOCK WASHER

NOTES:
1. PUSHBUTTON MUST HAVE DIRECTIONAL ARROW AS SPECIFIED ON THE PLANS.
2. INSTALLATION OF TWO PEDESTRIAN PUSHBUTTON ASSEMBLIES MUST BE ON A 4" OR LARGER POLE.
3. DETAIL SHOWS PUSHBUTTON INSTALLED ON METAL POLE. PUSHBUTTON INSTALLED ON OTHER MATERIALS MUST BE PER MANUFACTURER'S RECOMMENDATION.
4. PUSHBUTTON PLACEMENT MUST MEET MUTCD AND SOT REQUIREMENTS.

note 4 added
**NOTES:**

1. **Rectangular Rapid Flashing Beacon Must Be Hardwired to a Service Cabinet Unless Otherwise Noted in the Drawings.**
2. **Rectangular Rapid Flashing Beacon Shall Have Signs and Light Bar on Both Sides of Pedestal and Be Oriented to Face Oncoming Vehicular Traffic Unless Noted Otherwise in Drawings.**
3. **(1) Pedestrian LED Indication, 1/2" (MIN) WIDE X 1-3/4" (MIN) HIGH, MUST BE PROVIDED MOUNTED ON SIDE OF THE LIGHT BAR. PEDESTRIAN LED INDICATION MUST BE DIRECTED TOWARDS CROSSWALK AND BE VISIBLE TO PEDESTRIANS IN THE CROSSWALK.**
   - **(2) If a Solar Panel Is Included.**
   - **(3) Use the Standard Foundation Shown, Then Mounting Height of Solar Panel Must Be No More Than 17'-6".**
   - **(4) Foundation Soils Must Be Free of Landfill or Other Settlement-Prone Material and Groundwater.**
   - **(5) All Reinforcing Bars Must Be Deformed Billet Steel Conforming to ASTM, Class A706, Grade 60.**

---

**Typical Solar Panel Location**

Where solar panel is noted in the drawings, size, mounting, and hardware must be per manufacturer, see notes 1 & 4.

**Signs Must Be Mounted With Stainless Steel Bracket Per Std Plan 816. Provide Minimum Clearance Between Sign and Curb or Roadway Edge Per Std Plan 527A.**

**Pushbutton Per Std Plan 522A. Sign to Be Either R10-25 or R10-25C (9"x12"). As Noted in Drawings. Pushbutton Assembly to Be Sized to Accommodate Sign.**

**Pedestal Pole Per Std Plan 524. Surface and Finished Grade Per Drawings.**
# Foundation Schedule

<table>
<thead>
<tr>
<th>Pole Type</th>
<th>Projection</th>
<th>Vertical Reinforcement (No. of Bars per Plan)</th>
<th>Anchor Bolts (Total 4 per Pole)</th>
<th>Anchor Plate Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>1/2&quot;</td>
<td>#8</td>
<td>1 1/2&quot; Dia X 60&quot;</td>
<td>3/8&quot; X 16&quot; X 16&quot;</td>
</tr>
<tr>
<td>V</td>
<td>9&quot;</td>
<td>#8</td>
<td>1 3/4&quot; Dia X 72&quot;</td>
<td>3/8&quot; X 16&quot; X 16&quot;</td>
</tr>
<tr>
<td>X</td>
<td>10&quot;</td>
<td>#8</td>
<td>2&quot; Dia X 72&quot;</td>
<td>5/8&quot; X 18&quot; X 18&quot;</td>
</tr>
<tr>
<td>Z</td>
<td>11 1/2&quot;</td>
<td>#8</td>
<td>2 1/2&quot; Dia X 72&quot;</td>
<td>5/8&quot; X 20&quot; X 20&quot;</td>
</tr>
</tbody>
</table>

Foundation depth per plan, where pole type other than noted above is required, refer to drawings for foundation depth, dimensions, reinforcing, anchor bolts, and anchor plate dimensions.

## Notes:

1. Concrete must be Class 4000P.
2. Anchor bolts for Type T, V, X and Z must conform to ASTM F1554 Grade 105 Class 2A threads including supplementary requirements S2 through S4. Provide nuts according to ASTM A536 Heavy Hex Grade DH and nuts per ASTM F436.
4. All reinforcing bars must be deformed billet steel conforming to ASTM Class A706, Grade 60.
5. Anchor bolts must be hot dip galvanized per ASTM F2329 including nuts & washers (full length) with 18" of threads on top & 12" on bottom.
6. Tape the top of anchor bolts with corrosion protection tape per STD SPEC Sec 8-32.3(2a) prior to pouring concrete.

---

**Revised Notes:**

notes 1, 2, 3, 5 & 7

---

---

**Ref Std Spec Sec 8-32**

---

---

**City of Seattle**  |  **Not to Scale**  |  **Strain Pole Foundation Schedule & Notes**  |  **(Type T, V, X & Z)**

---

NOTES:
1. THE COVER MUST HAVE 3/8" TO 3/4" CLEARANCE ON EACH EDGE WITHIN THE FRAME AFTER GALVANIZING.
2. THE GROUND ROD MUST EXTEND 4" ABOVE THE BOTTOM OF THE HANDHOLE OR MINERAL AGGREGATE.
3. TYPE 1, 2, 3, 5 & 6 HANDHOLE COVERS MUST HAVE "GTL" OR "SL" ON THEM, AS APPROPRIATE.
4. TYPE 1 HANDHOLE MUST BE INSTALLED IN ROADS, PARKING LOTS, ETC.
5. FOR PAVEMENT DEPTH GREATER THAN 7" USE FRAME EXTENSIONS (SEE STD PLAN NO 231) TO BRING THE COVER UP TO THE THE LEVEL OF THE FINISHED PAVEMENT WITHOUT EMBEDDING THE BOTTOM FLANGE OF THE CASTING IN THE PAVEMENT.
6. A 4" LENGTH OF #6 THHN OR THWN COPPER WIRE MUST BE SECURED FROM THE HANDHOLE COVER TO THE FRAME, BOND FROM FRAME, LID, AND LID TO GROUND ROD.
7. ALL HANDHOLE COVERS AND FRAMES MUST HAVE A NON-SKID SURFACE (SEE STD SPEC SEC 9-34.6).
8. ALL HANDHOLES MUST HAVE A LOAD RATING OF H20.
9. GROUND ROD REQUIRED IN ALL STREETLIGHT HANDHOLES PER SCL CONSTR STD 1710.50
10. SEE SCL CONSTRUCTION STANDARD 1716.07 FOR STREETLIGHT HANDHOLE AND CONDUIT REQUIREMENTS.

HANDHOLE INSTALLATION DETAIL

FULL 180° OPEN
STEEL PLATE COVER (GALV) W/LOCKING LATCH
CONCRETE COLLAR WHEN INSTALLED IN EARTH
GROUND ROD

TYPE 1 & 2 HANDHOLE

TOP OF PAVEMENT
TYPE 230 FRAME & COVER ("ELECTRIC" CAST IN COVER)
MINERAL AGGREGATE TYPE 9
CONDUIT (PER DRAWINGS)
GROUND ROD

TYPE 3 HANDHOLE
(COVER SAME AS TYPE 5)

TYPE 4 HANDHOLE
TRAFFIC BEARING

TYPE 5 HANDHOLE

REF STD SPEC SEC 8-33

City of Seattle
NOT TO SCALE
HANDHOLES

**NOTES:**


2. ALL NON-DELIBERATE TRAFFIC PULL BOXES MUST COMPILY WITH ALL TEST PROVISIONS OF ANSI/SCTE 77:2012 "SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY", & MUST MEET THE TIER 22 APPLICATION. MARKINGS SHOWING THE TIER 22 RATING MUST BE EMBOSSED OR STENCILLED ON THE INSIDE & OUTSIDE OF THE BOX.

3. ALL NON-DELIBERATE TRAFFIC PULL BOXES & COVERS MUST BE MADE OF POLYMER CONCRETE WITH FIBERGLASS REINFORCEMENT. THE BOX MUST HAVE CONTINUOUS FIBERGLASS CLOTH REINFORCEMENT ON THE INSIDE & OUTSIDE PERIMETERS. THE COVER MUST HAVE A MINIMUM OF TWO LAYERS OF FIBERGLASS CLOTH REINFORCEMENT.

4. ALL NON-DELIBERATE TRAFFIC PULL BOXES & COVERS MUST BE TESTED & CERTIFIED, MEETING ALL TEST PROVISIONS ON THE ANSI/SCTE 77, TO THE 60WF, MEETING ALL TEST PROVISIONS OF THE LATEST REVISION OF ANSI/SCTE 77.

5. ALL BOXES MUST BE MARKED FOR MANUFACTURER, S/N, 1992 POUNDS, TYPE 4 HANDHOLE MUST BE INSTALLED IN ROADWAYS, PARKING LOTS, ETC. ALL COVERS MUST BE COMPLETE WITH A MOLDED LOGO, MANUFACTURER'S NAME & TIER RATING LOGO (NO GLUE IN LOGO). LOGO MUST READ "SLOT" OR "SL" UNLESS STATED OTHERWISE BY THE CITY OF SEATTLE. THE GROUND ROD MUST EXTEND 4" ABOVE THE BOTTOM OF THE HANDHOLE OR MINERAL AGGREGATE.

6. FOR PAVEMENT DEPTH GREATER THAN 7" USE FRAME EXTENSIONS (SEE STD PLAN NO 231) TO BRING THE COVER UP TO THE LEVEL OF THE FINISHED PAVEMENT WITHOUT EMBEDDING THE BOTTOM FLANGE OF THE CASTING IN THE PAVEMENT.

7. A 4" LENGTH OF #6 THINN OR THICK COPPER WIRE MUST BE SECURED FROM THE HANDHOLE COVER TO THE FRAME, WITH A 4-0" LENGTH FROM FRAME THAT CAN BE HOOKED TO A GROUND ROD.

8. ALL HANDHOLE COVERS AND FRAMES MUST HAVE A NON-SKID SURFACE (SCL MATERIAL STANDARD 7203.10)

9. SEE SCL CONSTRUCTION STANDARD 1716.07 FOR STREET HANDHOLE AND CONDUIT REQUIREMENTS.

---

### HANDHOLE SCHEDULE

<table>
<thead>
<tr>
<th>HANDHOLE TYPE</th>
<th>TOP UNIT INSIDE DIMENSION</th>
<th>EXTENSION UNIT(S)</th>
<th>COVER DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>W</td>
<td>H</td>
</tr>
<tr>
<td>1</td>
<td>24&quot;</td>
<td>13&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>2</td>
<td>30&quot;</td>
<td>17&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>3</td>
<td>36&quot;</td>
<td>24&quot;</td>
<td>18&quot;</td>
</tr>
<tr>
<td>4</td>
<td>24°</td>
<td>VAR</td>
<td>NA</td>
</tr>
<tr>
<td>5</td>
<td>30&quot;</td>
<td>48&quot;</td>
<td>36&quot;</td>
</tr>
<tr>
<td>6</td>
<td>48&quot;</td>
<td>48&quot;</td>
<td>48&quot;</td>
</tr>
</tbody>
</table>

---

### HANDHOLE INSTALLATION DETAIL

- **Asph or Conc Finish to Grade with 1/4" x 2" Joint in Conc Area, Slope**
- **Parking Strip or Planting Area**
- **6" Min Thickness Mnrl Agg Type 9**
- **Ground Rod**
- **6" Wide x 3/4" Deep Concrete Collar When Installed in Earth**
- **Conduit (Per Drawings) All Couplings Must Be Watertight**

---

### TYPE 3 HANDHOLE

(COVER SAME AS TYPE 5)

- **3/8-7 x 4 [102]** Long S.S. Hex Head Auger Bolt 2 Places
- **3/8-7 x 3 [76]** Long S.S. Hex Head Auger Bolt 2 Places
- **Skid Resistant Surface with a 0.6 Coefficient of Friction**
- **6" x 18" Knockout 2 Each End**

---

### TYPE 1 & 2 HANDHOLE

- **6" Min Thickness Mnrl Agg Type 9**
- **6" Drain Hole (Open)**

---

### TYPE 5 HANDHOLE

- **Galv Strut 18" Long on all Sides**
- **12" x 12" Knockout 1 Each Side**

---

### POLYMER CONCRETE HANDHOLES

**NOT TO SCALE**

---

**City of Seattle**

### MAST ARM SCHEDULE

<table>
<thead>
<tr>
<th>MAST ARM LENGTH</th>
<th>FLANGE PLATE</th>
<th>POLE BASE PLATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BOLT CIRCLE &quot;B&quot;</td>
<td>THREADED BOLT DIA</td>
</tr>
<tr>
<td>15'-0&quot; TO 30'-0&quot;</td>
<td>11&quot;</td>
<td>1&quot;-8NC</td>
</tr>
<tr>
<td>31'-0&quot; TO 40'-0&quot;</td>
<td>12&quot;</td>
<td>1 1/8&quot;-7NC</td>
</tr>
<tr>
<td>41'-0&quot; TO 45'-0&quot;</td>
<td>13/8&quot;</td>
<td>1 1/4&quot;-7NC</td>
</tr>
<tr>
<td>46'-0&quot; TO 60'-0&quot;</td>
<td>14&quot;</td>
<td>1 1/2&quot;-6NC</td>
</tr>
</tbody>
</table>

### POLE SCHEDULE

<table>
<thead>
<tr>
<th>MAST ARM LENGTH</th>
<th>BOLT CIRCLE &quot;A&quot;</th>
<th>BOLT CIRCLE &quot;B&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### POLE FOUNDATION NOTES

1. CONCRETE MUST BE CLASS 4000P.
2. ANCHOR BOLTS MUST BE ASTM F1554 GRADE 105 CLASS 2A THREADS INCLUDING SUPPLEMENTAL REQUIREMENTS 52 THROUGH 54, NUTS, ASTM A563 HEAVY HEX GRADE DH HARDENED STEEL WASHERS, ASTM F436.
4. ALL REINFORCING BARS MUST BE DEFORMED BILLET STEEL CONFORMING TO ASTM CLASS A706, GRADE 60.
5. ANCHOR BOLTS MUST BE HOT DIP GALVANIZED PER ASTM F2329 INCLUDING NUTS & WASHERS (FULL LENGTH) WITH A MINIMUM OF 18" OF THREADS ON TOP & 12" ON BOTTOM.
6. TAPE THE TOP OF ANCHOR BOLTS WITH CORROSION PROTECTION TAPE PER STD SPEC SEC 8-32.32(2) PRIOR TO POURING CONCRETE.
7. SEE STD PLAN NO 541a AND 541b FOR FOUNDATION DETAILS.
8. FOUNDATION DEPTH, REINFORCEMENT AND ANCHOR BOLTS MUST BE IN CONFORMANCE WITH "ASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" (6TH EDITION, 2013). DESIGN BASIC WIND SPEED IS 85 MPH AND REOCCURRENCE INTERVAL/DESIGN LIFE IS 50 YEARS.

### FOUNDATION SCHEDULE

<table>
<thead>
<tr>
<th>MAST ARM LENGTH</th>
<th>ANCHOR BOLTS</th>
<th>VERTICAL REINFORCING (# OF BARS PER PLAN)</th>
<th>ANCHOR PLATE DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PROJECTION &quot;A&quot;</td>
<td>BOLT CIRCLE DIA</td>
<td>SIZE</td>
</tr>
<tr>
<td>15'-0&quot; TO 30'-0&quot;</td>
<td>7/8&quot;</td>
<td>1 1/8&quot;</td>
<td>5/8&quot; X 60&quot;</td>
</tr>
<tr>
<td>31'-0&quot; TO 40'-0&quot;</td>
<td>9&quot;</td>
<td>1 1/4&quot;</td>
<td>5/8&quot; X 72&quot;</td>
</tr>
<tr>
<td>41'-0&quot; TO 45'-0&quot;</td>
<td>9&quot;</td>
<td>1 1/2&quot;</td>
<td>5/8&quot; X 72&quot;</td>
</tr>
<tr>
<td>46'-0&quot; TO 60'-0&quot;</td>
<td>10&quot;</td>
<td>2&quot;</td>
<td>5/8&quot; X 72&quot;</td>
</tr>
</tbody>
</table>

FOUNDATION DEPTH, VERTICAL REINFORCING SPACING, AND NUMBER OF VERTICAL REINFORCING BARS MUST BE PER PLANS.

REF STD SPEC SEC 8-32

City of Seattle

NOT TO SCALE

STEEL MAST ARM POLE FOUNDATION SCHEDULE & DETAIL W/O METRO TROLLEY LOADS

POLLE SCHEDULE

<table>
<thead>
<tr>
<th>POLE TYPE</th>
<th>POLE BASE PLATE SIZE</th>
<th>BOLT CIRCLE DIA &quot;B&quot;</th>
<th>BOLT HOLE</th>
<th>ANCHOR BOLTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>12&quot;</td>
<td>1¾&quot;x18&quot;x18&quot;</td>
<td>1½&quot;x23&quot;x23&quot;</td>
<td>18&quot;</td>
</tr>
<tr>
<td>X</td>
<td>14&quot;</td>
<td>2&quot;x20&quot;x20&quot;</td>
<td>2&quot;x23&quot;x23&quot;</td>
<td>20&quot;</td>
</tr>
<tr>
<td>Z</td>
<td>15&quot;</td>
<td>2½&quot;x23&quot;x23&quot;</td>
<td>--</td>
<td>22&quot;</td>
</tr>
</tbody>
</table>

NOTES:
1. POLE SHAFT AND REINFORCING SLEEVE: ASTM A572 GRADE 50, 60 OR 65 (Fy=50, 60 OR 65 KSI RESPECTIVELY) OR ASTM A595 GRADE A OR B (Fy=55 OR 60 KSI RESPECTIVELY).
2. BASE PLATE AND HARDWARE: REINFORCEMENT: ASTM A36 OR ASTM A572 GRADE 42. BASE PLATE Fy>0.65 POLE SHAFT Fy THE BASE PLATE THICKNESS MAY BE REDUCED BY ¼" IF ASTM A572 GRADE 42 STEEL IS USED.
3. REINFORCING SLEEVE MUST BE FABRICATED FROM THE SAME MATERIAL AND YIELD STRENGTH AS THE POLE SHAFT.
4. POLE SHAFTS MUST HAVE NO MORE THAN TWO LONGITUDINAL WELDS IN EACH PLY.
5. MINIMUM SHAFT WALL THICKNESS OF EACH PLY MUST BE 0.250" (3 GAUGE). POLE MUST HAVE A MAXIMUM OF TWO PLY'S NOT INCLUDING THE ¼" REINFORCING SLEEVE.
6. MAXIMUM SILICON CONTENT IN STEEL MUST BE 0.04%. SEE STD SPEC SECTION 9-33.1(3) FOR GENERAL GALVANIZING REQUIREMENTS.
7. POLE DIAMETER FOR 12 OR MORE SIED POLES MUST BE MEASURED FROM THE POINT TO POINT DIMENSION.
8. POLES MUST MEET DEFLECTION CRITERIA STATED IN STD SPEC SECTION 9-33.2(2) WITH THE DECK LOAD APPLIED AT 95% ABOVE GROUND LINE.
9. POLE STRENGTH MUST MEET REQUIREMENTS OF AASHO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS (6TH EDITION, 2013).
NOTES:
1. POLE STRENGTH MUST MEET REQUIREMENTS OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (6TH EDITION, 2013).
2. POLE SHAFT: ASTM A572 GRADE 50, 60 OR 65 (Fy=50, 60 OR 65 KSI RESPECTIVELY), OR ASTM A595 GRADE A OR B (Fy=55 OR 60 KSI RESPECTIVELY).
3. BASE PLATE AND HANDBORE REINFORCING RIM: ASTM A36 OR ASTM A572 GRADE 42. BASE PLATE Fy=20.85 POLE SHAFT Fy THE BASE PLATE THICKNESS MAY BE REDUCED BY 1/8" IF ASTM A572 GRADE 42 STEEL IS USED.
4. POLE SHAFTS MUST HAVE NO MORE THAN TWO LONGITUDINAL WELDS IN EACH PLY.
5. MINIMUM SHAFT WALL THICKNESS OF EACH PLY MUST BE 0.239" (3 GAUGE). POLE MUST HAVE A MAXIMUM OF TWO PLYS.
6. MAXIMUM SILICON CONTENT IN STEEL MUST BE 0.04%. SEE STD SPEC SECTION 9–33.1(3) FOR GENERAL GALVANIZING REQUIREMENTS.
7. POLE DIAMETER FOR 12 OR MORE SIDED POLES MUST BE MEASURED FROM THE POINT TO POINT DIMENSION.
8. POLES MUST MEET DEFLECTION CRITERIA STATED IN STD SPEC SECTION 9–33.2(2) WITH THE DEAD LOAD APPLIED AT 27" ABOVE GROUND LINE.
9. THE POLES MUST BE COMPACT AND MUST MEET THE REQUIREMENTS IN AASHTO SECTION 4, TABLE 4.1B(1).

ALTERNATE POLE BASE DETAIL

POLE BASE DETAIL

REF STD SPEC SEC 8-32, 9-33

City of Seattle | NOT TO SCALE | TYPE T STRAIN POLE DETAILS
TRAFFIC SIGNAL ONLY

CONDUIT RISER (WITH STAND-OFF BRACKET*)

*WHEN THERE WILL BE ONLY ONE CONDUIT (1/2" OR SMALLER) ON THE POLE, TWO HOLE MALLEABLE IRON CLAMPS WITH DOUBLE HEADED NAILS MUST BE USED TO SECURE THE CONDUIT TO THE POLE IN LIEU OF THE STAND-OFF BRACKETS.

NOTES:

1. ON POLES WITH EXISTING CONDUITS, NEW CONDUITS MUST BE INSTALLED IN ACCORDANCE WITH THIS STANDARD PLAN.
2. RIGID STEEL CONDUIT MUST BE GROUNDED JUST BELOW COUPLING, APPROXIMATELY 8' 0" TO 10' 0" ABOVE GROUND, AS SHOWN.
3. ALL RISERS BONDED IN HH.
4. THE GROUND WIRE MUST BE ONE CONTINUOUS LENGTH. INSERT THE GROUND WIRE FORM THE BOTTOM OF THE GROUND CLAMP & BEND OVER THE CLAMP BEFORE TIGHTENING.
5. ALL STEEL HARDWARE MUST BE HOT DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123.
6. CONDUIT CLAMP SPACING MUST BE PER THE NEC WITH A MINIMUM OF TWO HOLE CLAMP PER 10'-0" LENGTH OF CONDUIT.
7. SERVICE AND SIGNAL CONDUCTORS MUST NOT BE PLACED IN THE SAME CONDUIT.
8. WHEN POSSIBLE, RISER MUST BE INSTALLED ON DOWNSTREAM SIDE OF TRAFFIC.
9. SEE SCL CONSTRUCTION STANDARD 1714.50 FOR STREETLIGHT HANDHOLE AND CONDUIT REQUIREMENTS & 0224.34 FOR STREETLIGHT CONDUIT RISERS.

REF STD SPEC SEQ 8-33

City of Seattle  NOT TO SCALE  TRAFFIC CONDUIT RISER

1. ON POLES FILLED WITH OR MADE FROM CONCRETE USE 5/16"X2½" MIN STUD BOLT ANCHORS WITH HEX NUT.
2. FOR SIGNS OVER 2'6"X3'6" MOUNT SIGNS USING SIGN BRACKETS AS SPECIFIED IN SECTION 8-21.3(1)BD FOR STREET DESIGNATION SIGNS.
3. FOR DARK COLORED POLES PAINT BAND TO MATCH POLE.
4. ALL HARDWARE TO BE STAINLESS STEEL.

**NOTE 2 REvised**

REF STD SPEC SEC 8-21

City of Seattle

NOT TO SCALE

TRAFFIC SIGN MOUNTING ON METAL POLES

STOP AND YIELD SIGNS MUST BE RED-BACKED WITH A RETROREFLECTIVE MATERIAL CONSISTENT WITH THAT ON THE SIGN FACE.

"SHALL" changed to "MUST"

POST ANCHOR INSTALLATIONS

NOTE:
1. CONTACT SEATTLE DEPARTMENT OF TRANSPORTATION (684-5087) FOR DETAILS REGARDING SIGN MESSAGE AND FOUNDATION.
2. STEEL SELF-TAPPING #10 X 3/4" WITH HEX WASHER HEAD ZINC PLATED
3. RED AND WHITE SLEEVE
4. SEE STANDARD 621a FOR OTHER WARNING & REGULATORY SIGN POST

REF STD SPEC SEC 8-21

City of Seattle | NOT TO SCALE | STOP AND YIELD SIGN POST AND ANCHOR INSTALLATION

NOTES:
1. SNS BLADE MUST BE INSTALLED PARALLEL TO CORRESPONDING STREET.
2. INSTALLATION OF SNS ON ANY OTHER METAL POLE MUST REQUIRE REVIEW AND APPROVAL BY THE ENGINEER.
3. SNS/SP RELOCATION: OLD CONCRETE MUST BE REMOVED AND NEW CONCRETE BASE SHALL BE CONSTRUCTED.
4. CITY OF SEATTLE MUST FABRICATE SNS BLADES AND SUPPLY MOUNTING HARDWARE AT PROJECT OR CONTRACTOR EXPENSE.

bilingual installation added

note 5 removed

REF STD SPEC SEC 8-21

City of Seattle
NOT TO SCALE
STREET NAME SIGN INSTALLATION

Qwik Punch Telespar Standard Sign Post
(TS-5, TS-10, TS-12) (See Note 2)

NOTES:
2. Suffixes attached to Telespar name designations indicate sleeve types: RW=Red/White, FY=Fluorescent Yellow Green, FY=FMMA Yellow

Note 2 added
NOTES:
1. WAYFINDING BLADE MUST BE INSTALLED POINTING IN THE DIRECTION OF THE LOCATION ON BLADE.
2. CITY OF SEATTLE WILL FABRICATE WAYFINDING SIGNS. CONTRACTOR MUST SUPPLY MOUNTING HARDWARE AND INSTALL SIGNS.
3. MAINTAIN 8 FEET MINIMUM OF VERTICAL CLEARANCE FROM CONCRETE WALK TO THE BOTTOM OF PEDESTRIAN WAYFINDING BLADES.

spec sec added

notes 1 & 2 revised.

callout revised

SURFACE MOUNT ON SIDEWALK OR USE HEAVY DUTY ANCHOR FOR NON-CONCRETE INSTALLATION PER STD PLAN NO 621b.
surface mount detail removed
New standard plan revised from previous std plans 710 and 711.

**TYPICAL TURN LANE CHANNELIZATION**

Number of Legend Sets Required Based on the Length of Approach Lines

- **Approach Line Length**
  - **Legend Sets**
  - Less Than 50 Feet: 1 set at x-walk end of pocket
  - 50 Feet-120 Feet: 2 sets
  - 125 Feet-300 Feet: 3 sets (Second legend located midway between first and last legends)
  - Over 300 Feet: Additional sets spaced at approx 100 ft intervals between first and last sets

**NOTES:**

Left turn lane layout shown above. Same layout applies for other turn lanes.

---

**TYPICAL TWO WAY LEFT TURN LANES**

Number of Legend Sets Required Based on the Length of Typical Two Way Left Turn Lanes

- **Lane Length**
  - **Legend Sets**
  - Less Than 50 Feet: 1 set (centered between both ends of lane)
  - 0 Feet-300 Feet: 2 sets
  - Over 300 Feet: 3 sets (Second legend located midway between first and last legends)
  - Additional sets spaced at approx 300 ft intervals

**NOTE:**

Line callouts are identified & described in Std Spec Sec 8-22.
ALIGN TAILS OF APPROACH LANE ARROWS. NOTE: THE 10' OFFSET FROM THE END OF THE LANE OR THE STOP BAR SHOULD BE ESTABLISHED BY THE SHORTEST ARROW ON THE APPROACH AND LONGER ARROWS MAY ENDCRAPE UPON THE 10' OFFSET FROM THE END OF THE LANE TO OBTAIN ALIGNMENT WITH THE TAIL END OF SHORTER ARROWS WHEN PRESENT.

NOTE:
LEGENDS, SYMBOLS & ARROWS MUST BE CENTERED WITHIN THE LANE TO WHICH THEY APPLY, AS SHOWN.

TABLE A

<table>
<thead>
<tr>
<th>POSTED OR 85TH-PERCENTILE SPEED</th>
<th>MAX X</th>
<th>MIN X</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 MPH</td>
<td>225 FT</td>
<td>75 FT</td>
</tr>
<tr>
<td>25 MPH</td>
<td>325 FT</td>
<td>115 FT</td>
</tr>
<tr>
<td>30 MPH</td>
<td>420 FT</td>
<td>165 FT</td>
</tr>
<tr>
<td>35 MPH</td>
<td>565 FT</td>
<td>225 FT</td>
</tr>
<tr>
<td>40 MPH</td>
<td>670 FT</td>
<td>295 FT</td>
</tr>
<tr>
<td>45 MPH</td>
<td>775 FT</td>
<td>375 FT</td>
</tr>
</tbody>
</table>

TYPICAL LANE DROP INSTALLATION DETAILS

<table>
<thead>
<tr>
<th>LINE LENGTH</th>
<th>LEGEND SETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LESS THAN 50 FEET</td>
<td>APPROACH LINE (1 TOTAL)</td>
</tr>
<tr>
<td>50 FEET TO 120 FEET</td>
<td>ADD 1 SET AT BEGINNING OF APPROACH LINE (2 TOTAL)</td>
</tr>
<tr>
<td>125 FEET TO 300 FEET</td>
<td>ADD 1 SET LOCATED MIDWAY BETWEEN FIRST AND LAST SETS (3 TOTAL)</td>
</tr>
<tr>
<td>OVER 300 FEET</td>
<td>ADD SETS SPACED AT APPROX. 100 FEET INTERVALS BETWEEN FIRST AND LAST SETS</td>
</tr>
</tbody>
</table>

NOTE:
1. SEE MUTCD SECTION 28.20 FOR GUIDANCE ON SIGNS.
2. MANDATORY MOVEMENT LANE CONTROL SIGNS MUST BE PAIRED WITH LEGENDS PLACED WITHIN THE APPROACH LINE.

REF STD SPEC SEC 8-22
City of Seattle NOT TO SCALE TYPICAL LANE DROP CHANNELIZATION AND LEGEND PLACEMENT

DO NOT INSTALL LANE MARKERS WITHIN PEDESTRIAN CROSSES AREA (SEE STD PLAN NO 712)
C - /W
PASSENGER LOAD ZONE, ETC
(WHITE)

C - /R
TOW-AWAY ZONE
(RED)

C - /Y
COMMERCIAL LOAD, TRUCK LOAD, LOAD & UNLOAD ZONE, ETC
(YELLOW)

3'-0"  4'-0"  3'-0"
RED   YELLOW  RED
VARIABLE  3'-0"  4'-0"
(10'-0" MAX)  RED   YELLOW  RED

C - /BUS
BUS ZONE (NON-PARKING METERED AREAS)
BUS ZONES ARE PAINTED ON TOP & FACE OF CURB

3'-0"  4'-0"  3'-0"  4'-0"  3'-0"  4'-0"  3'-0"  4'-0"
RED   YELLOW  RED   YELLOW  RED   YELLOW  RED   YELLOW
TOP OF CURB  FACE OF CURB

C - /BUSB
BUS ZONE (PARKING METERED AREAS)
BUS ZONES ARE PAINTED ON TOP & FACE OF CURB

3'-0"  4'-0"  3'-0"  4'-0"  3'-0"  4'-0"  3'-0"  4'-0"
RED   YELLOW  RED   YELLOW  RED   YELLOW  RED   YELLOW
TOP OF CURB  FACE OF CURB

NOTES:
1. TOTAL LENGTH OF CURB MARKINGS MUST BE AS SHOWN ON DRAWINGS
2. PAINT MUST BE APPLIED NEATLY ON THE CURB AND ALL PAINT SMEARS
ON ADJACENT SURFACES MUST BE REMOVED

REF STD SPEC SEC 8-22
1. THE WIDTH OF THE TRAVEL LANE NEXT TO ANGLED PARKING SPACES MUST BE A MINIMUM OF 12'-6" FOR 45-DEGREE STALLS AND 17'-0" FOR 60-DEGREE STALLS.
2. BARRIER CROSSHATCH LINES MUST BE AlIGNED AS SHOWN, INTERSECTING THE EDGE OF THE PARKING LANE AT 45-DEGREES AND ANGLED AGAINST THE ANGLED OF THE PARKING SPACES.

NOTES:

REF STD SPEC SEC 8-22

City of Seattle NOT TO SCALE TYPICAL ANGLED PARKING STALL CHANNELIZATION
NOTE:
1. TAPER LENGTH AS SHOWN ON DRAWINGS.
2. SEE STD PLAN NO'S 432a & 432b FOR MULTI-PURPOSE TRAIL DESIGN PLANS.

REF STD SPEC SEC 8-22

City of Seattle
NOT TO SCALE
TRAIL OBSTRUCTION
CHANNELIZATION

700 PAVEMENT MARKINGS

STANDARD PLAN NO 717a

REV DATE: JUL 2019

SIGN REGULATING LANE TO BE USED BY BUSES ONLY (TYP).

S=_750 (TYP)

MANDATORY MOVEMENT SIGN REGULATING LANE USE AS RIGHT TURN ONLY EXCEPT BUSES

(L_/6WS)

PLACE AT OR NEAR ALLEY OR MAJOR DRIVEWAY

ALLEY

S=_720c (TYP)

S=_730a (TYP)

(L_/6W2)

THERE IS NO CHANNELIZATION FOR RIGHT TURNS BECAUSE THE ONE-WAY STREET DOES NOT ALLOW FOR IT.

BACK OF SIDEWALK

ONE WAY

UNMARKED PED CROSSING

NEW STANDARD PLAN

REF STD SPEC SEC 8-22

City of Seattle NOT TO SCALE TYPICAL CURBSIDE RED BUS LANE LAYOUT

NEW STANDARD PLAN

723A
LEFT MERGE/LANE REDUCTION ARROWS

723B
RIGHT MERGE/LANE REDUCTION ARROWS

REF STD SPEC SEC 8-22

City of Seattle
NOT TO SCALE
MERGE ARROWS

728A
CHEVRON WITH TRIANGLE

NOTE:
THIS SYMBOL MAY BE SCALED DOWN AND RESIZED FOR BIKE FACILITIES TO FIT BIKE FACILITIES WIDTH DIMENSIONS IN THOSE INSTANCES MUST BE SHOWN ON DESIGN DRAWINGS.
3” TO 12” PER DRAWINGS
OR AS REQUIRED BY SDOT (TYP)

DIRECTION
OF TRAVEL

YIELD LINE LAYOUT

729A
YIELD LINE WITH 18” TALL TRIANGLES

729B
YIELD LINE WITH 36” TALL TRIANGLES

REF STD SPEC SEC 8-22

City of Seattle
NOT TO SCALE
YIELD LINE LAYOUT &
YIELD LINE TRIANGLE SYMBOLS

new standard plan symbol moved from previous std plan 721a

740A
INTERNATIONAL SYMBOL OF ACCESSIBILITY

title revised
new standard plan symbol moved from previous std plan 722

Title revised

741A
PEDESTRIAN SYMBOL
new standard plan.
symbols moved from previous std plan 722

770A
HELMETED BICYCLIST SYMBOL WITH ARROW

770B
BICYCLE LINE THROUGH ARROW

titles revised

770C
HELMETED BICYCLIST SYMBOL

REF STD SPEC SEC 8-22
City of Seattle
NOT TO SCALE
HELMETED BICYCLIST SYMBOL WITH ARROW

new standard plan, symbols moved from previous std plan 724

771A
SHARROW

771B
CHEVRON FOR SHARROW

771C
BIKE SYMBOL

titles revised

REF STD SPEC SEC 8-22

City of Seattle
NOT TO SCALE
SHARROW & BIKE SYMBOLS

new standard plan. symbol moved from previous std plan 725

772
BICYCLE DETECTOR SYMBOL

NOTE:
SEE STD PLAN NO 530b FOR PLACEMENT
773A
BIKE DOT SYMBOL WITH ARROW

2'-6"

MARKED IN WHITE

MARKED IN BLACK

1'-101/8"

4'-113/8"

1'-83/4"

2'-0"

1'-0"

773B
BIKE DOT ARROW

2'-6"

MARKED IN WHITE

MARKED IN BLACK

1'-101/8"

1'-83/4"

2'-0"

2'-0"

1'-0"

773C
BIKE DOT SYMBOL

MARKED IN WHITE

MARKED IN BLACK

1'-0"

2'-6"

2'-0"

1'-0"

REF STD SPEC SEC 8-22

City of Seattle

NOT TO SCALE

BIKE DOT SYMBOL WITH ARROW

NOTE:
SEE STD PLAN NO 771 FOR SYMBOL DIMENSIONS.
NOTES:
1. WHERE STRIPED CROSSWALK DOES NOT EXIST, CROSS BIKE MUST BE PLACED AT LANE LINE AND 1/2 LANE WIDTH CONSISTENT WITH STANDARD PLAN 712. IF NO CROSSWALK OR LANE LINE EXISTS, CROSSBIKE MUST BE PLACED AT 9" ON CENTERS.
2. CROSS BIKE MATERIAL MUST BE MMA OR PRE-FORMED THERMOPLASTIC.
DRIVEWAY CROSSING LAYOUT

NOTE:
DRIVEWAY CROSSING MATERIAL MUST BE MMA
OR PRE-FORMED THERMOPLASTIC