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<td>Rigid Galvanized Steel</td>
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<td>Street Light Handhole</td>
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<td>Steam Log</td>
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<td>Telephone Conduit</td>
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<td>TCHH</td>
<td>Traffic Control Handhole</td>
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<td>TD</td>
<td>Telephone Duct</td>
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<td>TEL</td>
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<tr>
<td>TEMP</td>
<td>Temporary</td>
</tr>
<tr>
<td>TF</td>
<td>Top Face</td>
</tr>
</tbody>
</table>
SIGNALIZATION

Vehicle & Pedestrian Signal Head
(?=Identification Number)

Traffic Sign (?=Identification Number)

Cable Runs
(?=Run Number per Wiring Schedule)

Removal/Relocation Item
(?=Identification Number per Removal/Relocation Plan)

Construction Item
(?=Identification Number per Signalization Plan)

Signal Poles, Signal Pedestals, Push Button Pedestals &
Push Buttons identified by number on Signalization Plan.

CHANNELIZATION & SIGNAGE

Install Channelization/Signage
(?=Channelization / Signage Identified on Plan)

Remove Channelization / Signage
(?=Channelization / Signage Identified on Plan)

Relocate Signage
(?=Signage Identified on Plan)
<table>
<thead>
<tr>
<th>ITEM</th>
<th>EXISTING</th>
<th>PROPOSED</th>
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<tbody>
<tr>
<td>Telephone Cable (direct burial)</td>
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<td>$\Phi^{TCB}$</td>
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<tr>
<td>Telephone Conduit</td>
<td></td>
<td>$\Phi^{3&quot;TCD}$</td>
</tr>
<tr>
<td>Telephone Duct</td>
<td></td>
<td>$\Phi^{12&quot;x12&quot;TD}$</td>
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<tr>
<td>Telephone Enclosure</td>
<td></td>
<td>$\Phi^{TEB}$</td>
</tr>
<tr>
<td>Telephone Maintenance Hole</td>
<td></td>
<td>TEVault</td>
</tr>
<tr>
<td>Telephone Pole</td>
<td></td>
<td>$TP$</td>
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<tr>
<td>Telephone Handhole</td>
<td></td>
<td>THH</td>
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<tr>
<td>Television Cable (direct Burial)</td>
<td></td>
<td>$\Phi^{TVCB}$</td>
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<tr>
<td>Television Handhole</td>
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<td>TVHH</td>
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<td>Telegraph Maintenance Hole</td>
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<td>TELEMV</td>
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<td>$6&quot;STM, 14&quot;x14&quot;LOG$</td>
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<td>$STEMV$</td>
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<td>Gas Main &lt;1'-0&quot; Dia</td>
<td></td>
<td>$\Phi^{4&quot;G}$</td>
</tr>
<tr>
<td>Gas Main ≥1'-0&quot; Dia</td>
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<td>Gas Valve</td>
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<td>Gas Meter</td>
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<td>Gas Regulator</td>
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<td>Abandon(ed)</td>
<td></td>
<td>$2&quot;ECD{ABAN}$</td>
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</tbody>
</table>

Revised
ITEM | EXISTING | PROPOSED
--- | --- | ---
90° Bend w/Conc Blocking |
Plug w/Conc Blocking |
Tee w/Conc Blocking |
Watermain <1'-0" Dia |
Watermain ≥1'-0" Dia |
11 1/4° Bend |
22 1/2° Bend |
45° Bend |
90° Bend |
Cross |
Tee |
Pipe Sleeve |
Plug |
Hydrant |

sheet revised due to additions to 003q

details added

8"W | 8"W
24"W | 36"W
8"-11"HBorVB
8"-22"HBorVB
8"-45"HBorVB
8"-90"HBorVB
8"X8"X6"X6"CR
8"X8"X6"T

revised

revised
<table>
<thead>
<tr>
<th>ITEM</th>
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<th>PROPOSED</th>
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<td>2&quot; &amp; Smaller Water Service</td>
<td><img src="image" alt="WM" /></td>
<td><img src="image" alt="WM" /></td>
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<tr>
<td>Valve Box</td>
<td>![image]</td>
<td><img src="image" alt="4&quot;GV W/VBOX" /></td>
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<tr>
<td>Gate Valve</td>
<td>![image]</td>
<td><img src="image" alt="8&quot;GV W/CH" /></td>
</tr>
<tr>
<td>Gate Valve w/ Chamber</td>
<td>![image]</td>
<td><img src="image" alt="16&quot;GV W/VCH" /></td>
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<tr>
<td>Gate Valve w/ Vault Chamber</td>
<td>![image]</td>
<td><img src="image" alt="16&quot;GV W/VCH" /></td>
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<td>Reducer</td>
<td><img src="image" alt="8&quot;W" /> <img src="image" alt="4&quot;W" /></td>
<td><img src="image" alt="8&quot;X4&quot;RED" /></td>
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<td>Air Valve</td>
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<td>Blowoff</td>
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<td><img src="image" alt="1½&quot;BO" /></td>
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<td>Fire Standpipe</td>
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<td>![image]</td>
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<td>ITEM</td>
<td>EXISTING</td>
<td>PROPOSED</td>
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<td>Water Test Station</td>
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<td><img src="image" alt="new std plan due to additions to 003q" /></td>
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<td>Water Chamber</td>
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<td>Sprinkler Head</td>
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<td>Irrigation Valve</td>
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<td>Angle Valve</td>
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<td>Resilient Seal Gate Valve</td>
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</table>
NOTES:
1. MEASUREMENT PER LINEAR FOOT. PIPE ENDING IN STRUCTURE MEASURED TO EITHER INSIDE FACE OR TO CENTERLINE OF STRUCTURE AS INDICATED, OR TO TEE OR WYE AS INDICATED.
2. TEE OR WYE INCLUDING PLUG = UNIT PRICE EACH.
3. ALL PIPE MUST BE MEASURED ON THE SLOPE ALONG THE CENTERLINE OF PIPE TO NEAREST 0.10 LF.

"SHALL" changed to "MUST"
NOTES:
1. MONUMENT CASE TO BE INSTALLED BY CONTRACTOR.
2. BASE TO BE PLACED ON A WELL COMPACTED FOUNDATION.
3. FRAME AND COVER MUST BE TESTED FOR ACCURACY OF FIT AND MUST BE MARKED IN SETS FOR DELIVERY.
4. FRAME AND COVER MUST BE CAST IRON AND HAVE COATING APPLIED TO ALL FACES.
5. CASTINGS IN RIGID PAVEMENT MUST HAVE REINFORCING STEEL IN THE PAVEMENT.
6. USE LOCKING COVER IN R/W, DRILL AND TAP, APPLY ANTI-SEIZE COATING AND BOLT DOWN WITH 3/8" S.S. ALLEN-HEAD BOLTS – 2 PLACES.

PLAN
SEE SECTION A-A ON STD PLAN NO 020c

RISER RING DIMENSIONS
<table>
<thead>
<tr>
<th>A (SIZE)</th>
<th>1 1/8&quot;</th>
<th>2&quot;</th>
<th>3&quot;</th>
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RISER RING SECTION

CASE SECTION

COVER SECTION

16" #3 BAR SPIRAL, 3" BETWEEN LAYERS (3 LAYERS OF BAR)
SECTION A--A
FROM STD PLAN NO 020a

City of Seattle
NOT TO SCALE
SURVEY MONUMENT

**MINIMUM TREE CLEARANCES**

CENTERLINE OF TREE TO CENTERLINE OF:
- 30'-0" to extension of cross street curb (at intersection)
- 20'-0" to utility pole (with or without light)
- 10'-0" to pavement edge (no existing curb)
- 5'-0" to underground facility (except as noted otherwise)

CENTERLINE OF TREE TO EDGE OF:
- 7'-6" to driveway or alley
- 3'-6" to face of curb
- 2'-0" to edge of sidewalk

EDGE OF TREE TO EDGE OF:
- 5'-0" to line hydrant, hydrant branch, water meter, water service, water main and water blow off
- 5'-0" to GS, inlets, other drainage structures, manholes, sewer, storm drain or service connections

**NOTES:**
1. SERVICE LATERALS OR APPURTENANCES:
   - 1'-8" to 2'-0" depth from curb to property line reserved for service laterals and appurtenances.
   - Sanitary side sewer minimum cover is 2'-6" at property line and 5'-0" at the curb.
   - Service drain may run under the sidewalk, through the curb or through reserved spaces identified in Note 1.

2. ELECTRIC, TELEPHONE, TELEVISION AND TREES MUST BE INSTALLED IN THE SAME RELATION TO THE CURB ON STREETS WITH PAVEMENT WIDTHS FROM 25'-0" TO 36'-0".

3. LAYOUT IS APPROPRIABLE TO 60'-0" R/W AND 25'-0" RESIDENTIAL PAVING.

4. REDUCING CLEARANCE BETWEEN A NEW UTILITY AND EXISTING TREE/PLANTING STRIP, REDUCING CLEARANCE BETWEEN A NEW/REPLACEMENT TREE AND EXISTING UTILITY, INCORPORATING GS (BIORETENTION) INTO PLANTER STRIP OR CURB EXTENSION OR CHANGING THE 10'-0" WIDTH OF PLANTING STRIP REQUIRES REVIEW AND APPROVAL OF THE ENGINEER AND MAY REQUIRE ADDITIONAL MITIGATING MEASURES.

5. BACKFILL OVER ALL UTILITY INSTALLATIONS BETWEEN BACK OF CURB AND R/W AND WITHIN 5' OF CENTERLINE OF TREE MUST BE PLANTING SOIL FOR A MINIMUM DEPTH EQUAL TO THE DEPTH OF THE HOOKBALL (NO COF ALLOWED IN THIS ZONE).
NOTES:
1. STABILIZED ACCESS MUST BE USED IN ALL AREAS OF THE SITE WITH VEHICLE TRAFFIC AND CARING, 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.

"SHALL" changed to "MUST"

16 MIN SEE NOTE 3

dim revised

note 3 added
B&B or containerized shrub (Typ)
Set all plants at nursery level (Typ)
Min 2"-3" of mulch
Shrub planting pit preparation = rootball depth & width plus 1'-0" additional all sides
Finish grade

See std. plan no. 142 - soil amendment & depth

Remove all wire, strings, and other non-burlap material, and remove burlap from top 3/4 of rootball.

See std. spec. sec. 8-02.3(6)c.

Undisturbed subgrade (provides firm base so that rootball will not sink)
CONTINUOUS OUTER ROW AT X FEET ON CENTER, 2/3X FEET SETBACK FROM EDGE OF PLANTING BED WITH TRIANGULAR SPACING INSIDE BED (TYP)

AREA FOR SPACING ADJUSTMENT

2/3X OR 8" MIN. WHICHEVER IS GREATER (TYP)

X = RECOMMENDED SPACING (SEE LANDSCAPE DETAIL ON DRAWING)

⊕ = ACTUAL PLANT LOCATIONS

spec section revised

REF STD SPEC SEC 8-02

City of Seattle

NOTES:
1. SLEEVE SIZE AS SHOWN ON DRAWINGS OR 10 OF SLEEVE TO BE 1" GREATER THAN OD OF PIPE
2. SLEEVES REQUIRED UNDER ALL PAVED AREAS
3. DETECTABLE MARKING TAPE COLOR PER STANDARD SPECIFICATIONS SECTION 9-15.11 FOR PLATABLE OR NON-PLATABLE MATERIAL
4. CONDUIT DEPTH MUST BE PER SCL CONSTRUCTION STANDARD 1716.07

REF STD SPEC SEC 8-03

note 4 added
6" SUBSURFACE DRAIN PIPE PER STD PLAN NO 291. BED IN MINERAL AGGREGATE TYPE 22. BEDDING MUST PROVIDE MIN 3" COVER ALL AROUND, OUTLET TO APPROVED DISCHARGE POINT. SURFACE DITCH CURB ABOVE INLET. SEPARATE CB WITH NO ROADWAY DRAINAGE.

SECTION

TOP OF ROCK FACING

EXISTING OR PROPOSED GRADE

ELEVATION

<table>
<thead>
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<th>(h)</th>
<th>(d)</th>
<th>SIZE(BASE)</th>
<th>SIZE(TOP)</th>
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<tr>
<td>2 FEET</td>
<td>3 INCHES</td>
<td>2-MAN</td>
<td>1-MAN</td>
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<td>6 INCHES</td>
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<td>2-MAN</td>
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<tr>
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<td>9 INCHES</td>
<td>4-MAN</td>
<td>2-MAN</td>
</tr>
<tr>
<td>8 FEET</td>
<td>12 INCHES</td>
<td>5-MAN</td>
<td>2-MAN</td>
</tr>
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</table>

ø = 14" ±1"
200 SEWER-DRAINAGE APPURTENANCES

PLAN VIEW
(TOP REMOVED)

HANDHOLDS SEE STD PLANS NO 232a & 232b
MAINTENANCE HOLE FRAME & COVERS SEE STD PLAN NO 230

LEVELING BRICKS OR CONCRETE COLLAR
4'-0" TO 2'-0" PRECAST CONCENTRIC CONE SECTION SHOWN
1'-6"MIN CLR OPENING
MH LADDER SEE STD PLANS NO 232a & 232b

SECTION B-B

NOTES:
1. MATERIALS: CONCRETE-CLASS 4000;
REINFORCING STEEL-ASTM A615 GRADE 60 MIN; CHANNEL AND SHELF MATERIAL
- CONCRETE CLASS 3000.
2. PRECAST MAINTENANCE HOLE
COMPONENTS SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST
COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 2,000 LBS/SQ FT.
4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 5 IN. MIN HOLE SIZE MUST BE
OD OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 8 IN.

SECTION A-A

UNDISTURBED EARTH OR TYPE 2 MINERAL AGGREGATE 4" MIN
THICKNESS FOR CAST-IN-PLACE BASE SECTION

PRECAST BASE W/ INTEGRAL RISERS

REINFORCING STEEL "A" SEE TABLE

REINFORCING STEEL "A"
MIN. 50 IN/FT, TOP FACE, IN EACH DIRECTION

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<tr>
<th>H</th>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
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</thead>
<tbody>
<tr>
<td>20' MAX</td>
<td>0.25</td>
<td>0.17</td>
</tr>
<tr>
<td>30' MAX</td>
<td>0.31</td>
<td>0.22</td>
</tr>
<tr>
<td>40' MAX</td>
<td>0.36</td>
<td>0.25</td>
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</table>

SLOPE 3/4":1'-0" (Typ)
EXTENDED C'S OF SEWER PIPES INTERSECT AT C OF MAINTENANCE HOLE
LOCATION OF MH LADDER FOR TYPE A MAINTENANCE HOLE

SMOOTH MORTAR CALLOUT REMOVED

REF STD SPEC SEC 7-05

City of Seattle
NOT TO SCALE
TYPE 204a MAINTENANCE HOLE

NOTES:
1. MATERIALS: CONCRETE—CLASS 4000; REINFORCING STEEL—ASTM A615 GRADE 60 MIN.; CHANNEL AND SHELF MATERIAL = CONCRETE CLASS 3000.
2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 476. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT.
4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 5 IN. MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 8 IN.

REF STD SPEC SEC 7-05

City of Seattle  NOT TO SCALE  TYPE 204b MAINTENANCE HOLE

REINFORCING STEEL "A"
MIN. 50 IN/FT, TOP FACE, IN EACH DIRECTION

<table>
<thead>
<tr>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20' MAX</td>
<td>0.29</td>
</tr>
<tr>
<td>30' MAX</td>
<td>0.36</td>
</tr>
<tr>
<td>40' MAX</td>
<td>0.42</td>
</tr>
</tbody>
</table>

NOTES:
1. MATERIALS: CONCRETE—CLASS 4000; REINFORCING STEEL—ASTM A615 GRADE 60 MIN; CHANNEL AND SHELF MATERIAL = CONCRETE CLASS 3000.
2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ. FT.
4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 6 IN. MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 8 IN.

City of Seattle
NOT TO SCALE
TYPE 204.5a MAINTENANCE HOLE

NOTES:
1. MATERIALS: CONCRETE—CLASS 4000; REINFORCING STEEL—ASTM A615 GRADE 60 MIN; CHANNEL AND SHELF MATERIAL — CONCRETE CLASS 3000.
2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT.
4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 8 IN. MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 8 IN.

REF STD SPEC SEC 7-05
NOTES:
1. MATERIALS: CONCRETE=CLASS 4000;
   REINFORCING STEEL=ASTM A615 GRADE 60 MIN;
   CHANNEL AND SHELF MATERIAL = CONCRETE CLASS 3000;
2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 478.
   JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED
   CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 6 IN;
   MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3 IN.
   MIN CLEAR DISTANCE BETWEEN HOLES IS 8 IN.

REF STD SPEC SEC 7-05

City of Seattle

NOT TO SCALE

TYPE 205a MAINTENANCE HOLE
**REINFORCING STEEL "A"**

<table>
<thead>
<tr>
<th>MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION</th>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20' MAX</td>
<td>0.33</td>
<td>0.29</td>
</tr>
<tr>
<td>30' MAX</td>
<td>0.41</td>
<td>0.31</td>
</tr>
<tr>
<td>40' MAX</td>
<td>0.49</td>
<td>0.37</td>
</tr>
</tbody>
</table>

**NOTES:**

1. **MATERIALS:** CONCRETE—CLASS 4000;
   REINFORCING STEEL—ASTM A615 GRADE 60 MIN.; CHANNEL AND SHELF MATERIAL—CONCRETE CLASS 3000.

2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 473. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 344.

3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT

4. MAX. HOLE SIZE MUST BE 00 OF PIPE PLUS 6 IN. MIN. HOLE SIZE MUST BE 00 OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 8 IN.

---

**SECTION A-A**

**TOP SLAB REINFORCEMENT**

- **FAN 5-#4 6-H**
- **EQUAL SPACES BF**
- **#4 CBF**
- **#4 HOOP**
- **TF**

**PLAN VIEW (TOP REMOVED)**

- **FLOW DIRECTION**
- **SHELF**
- **CHANNEL**
- **LOCATION OF NH LADDER FOR TYPE B MAINTENANCE HOLE**
- **EXTENDED F'S OF SEWER PIPES INTERSECT AT F OF MAINTENANCE HOLE**

---

**SLOPE 1/4":1'-0" (TOP)**

**REF 205 SPEC SEC 7-05**

**200 SEWER-DRAINAGE APPURTEINCES**

**STANDARD PLAN NO 205b**

**NOT TO SCALE**

**TYPE 205b MAINTENANCE HOLE**
REINFORCING STEEL "A"
MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION

<table>
<thead>
<tr>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20° MAX</td>
<td>0.39</td>
</tr>
<tr>
<td>30° MAX</td>
<td>0.47</td>
</tr>
<tr>
<td>40° MAX</td>
<td>0.56</td>
</tr>
</tbody>
</table>

NOTES:
1. MATERIALS: CONCRETE-CLASS 4000;
   REINFORCING STEEL-ASTM A615 GRADE 60 MIN;
   CHANNEL AND SHELF MATERIAL - CONCRETE CLASS 3000.
2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 479.
   JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING - 3,000 LBS/SQ. FT
4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 7 IN.
   MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3 IN.
   MIN CLEAR DISTANCE BETWEEN HOLES IS 4 1/2 IN.

SECTION A-A

UNDISTURBED EARTH OR TYPE 2 MINERAL AGGREGATE
6" MIN THICKNESS FOR CAST-IN-PLACE BASE

REINFORCING STEEL "A" SEE TABLE

TYPE 2 MINERAL AGGREGATE
W/ PORTLAND CEMENT FOR PRECAST BASE OR PRECAST BASE WITH INTEGRAL RISER
**REINFORCING STEEL "A"**

<table>
<thead>
<tr>
<th>MIN. SQ IN/FT, TOP FACE, IN. EACH DIRECTION</th>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20' MAX</td>
<td>0.29</td>
<td>0.24</td>
</tr>
<tr>
<td>30' MAX</td>
<td>0.41</td>
<td>0.32</td>
</tr>
<tr>
<td>40' MAX</td>
<td>0.49</td>
<td>0.41</td>
</tr>
</tbody>
</table>

**NOTES:**
1. MATERIALS: CONCRETE - CLASS 4000; REINFORCING STEEL - ASTM A615 GRADE 60 MIN; CHANNEL AND SHELF MATERIAL - CONCRETE CLASS 3000.
2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL DEPTH = 3,000 LBS/SQ FT
4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 7 IN. MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 12 IN.

**SECTION A-A**

- UNDISTURBED EARTH OR TYPE 2 MINERAL AGGREGATE 4' MIN THICKNESS FOR CAST-IN-PLACE BASE SECTION
- TYPE B MINERAL AGGREGATE W/ PORTLAND CEMENT FOR PRECAST BASE OR PRECAST BASE WITH INTEGRAL RISER

**200 SEWER-DRAINAGE APPURTENANCES**

**STANDARD PLAN NO 206b**

**REVISION DATE: NOV 2019**
**200 SEWER-DRAINAGE APPURTEYNANCES**

**STANDARD PLAN NO 207a**

**REINFORCING STEEL "A"**

<table>
<thead>
<tr>
<th>MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION</th>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20' MAX</td>
<td>0.42</td>
<td>0.34</td>
</tr>
<tr>
<td>30' MAX</td>
<td>0.51</td>
<td>0.41</td>
</tr>
<tr>
<td>40' MAX</td>
<td>0.60</td>
<td>0.48</td>
</tr>
</tbody>
</table>

**TOP SLAB REINFORCEMENT**

**NOTES:**

1. MATERIALS: CONCRETE-CLASS 4000; REINFORCING STEEL-ASTM A615 GRADE 60 MIN; CHANNEL AND SHELF MATERIAL - CONCRETE CLASS 3000.
2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 441.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/50 FT
4. MAX HOLE SIZE MUST BE 00 OF PIPE PLUS 8 IN. MIN HOLE SIZE MUST BE 00 OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 12 IN.

**SECTION A-A**

**REF STD SPEC SEC 7-05**

City of Seattle  NOT TO SCALE  TYPE 207a MAINTENANCE HOLE
200 SEWER-DRAINAGE APPURTEINANCES

STANDARD PLAN NO 208a

REINFORCING STEEL "A"
MIN. SQ IN/FT, TOP FACE IN EACH DIRECTION

<table>
<thead>
<tr>
<th></th>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20' MAX</td>
<td>0.54</td>
<td>0.45</td>
</tr>
<tr>
<td>30' MAX</td>
<td>0.66</td>
<td>0.55</td>
</tr>
<tr>
<td>40' MAX</td>
<td>0.78</td>
<td>0.64</td>
</tr>
</tbody>
</table>

"H" 

LOCATION OF MH LADDER FOR TYPE A MAINTENANCE HOLE

PLAN VIEW TOPI REMOVED)

LEVELING BRICKS OR CONCRETE COLLAR

4'-0" TO 2'-0" CONE SECTION

MH LADDER SEE STD PLANS NO 232a & 232b

HANDHOLDS, SEE STD PLANS NO 232a & 232b

MAINTENANCE HOLE FRAME & COVER, SEE STD PLAN NO 230

FLOW DIRECTION

SLOPE: ¾: 1'-0"

(TYP)

EXTENDED LINES OF SEWER INTERSECT AT ¾ OF MH

THE GREATER OF ¾ INSIDE PIPE DIAMETER OR 1'-0" (TYP)

THE SMALLEST DIAMETER IS THE REINFORCING STEEL "A"

MIN. SQ IN/FT, TOP FACE IN EACH DIRECTION

3 - #6 BF (CUT AS REQ'D)

TOP SLAB REINFORCEMENT

NOTES:

1. MATERIAL: CONCRETE CLASS 4000
   REINFORCING STEEL: ASTM A615 GRADE 60 MIN.
   CHANNEL AND SHELF MATERIAL: CONCRETE CLASS 3000.

2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.

3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT

4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 9".
   MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3".
   MIN DISTANCE BETWEEN HOLES IS 12".

SECTION A-A

REF STD SPEC SEC 7-05

City of Seattle


NOT TO SCALE

TYPE 208a MAINTENANCE HOLE
200 SEWER-DRAINAGE APPURTENANCES

REINFORCING STEEL "A"

<table>
<thead>
<tr>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20' MAX</td>
<td>0.42</td>
</tr>
<tr>
<td>30' MAX</td>
<td>0.53</td>
</tr>
<tr>
<td>40' MAX</td>
<td>0.65</td>
</tr>
</tbody>
</table>

NOTES:
1. MATERIAL: CONCRETE—CLASS 4000
   REINFORCING STEEL—ASTM A615 GRADE 60 MIN.
   CHANNEL AND SHELF MATERIAL: CONCRETE CLASS 3000.
2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 476. JOINTS BETWEEN
   PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000
   LBS/500 FT.
4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 9".
   MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3".
   MIN DISTANCE BETWEEN HOLES IS 12".

Section A-A

City of Seattle
NOT TO SCALE
TYPE 208B MAINTENANCE HOLE

**200 SEWER-DRAINAGE APPURTenANCES**

**REINFORCING STEEL “A”**

<table>
<thead>
<tr>
<th>MIN. SQ IN./FT, TOP FACE, IN EACH DIRECTION</th>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20’ MAX</td>
<td>0.57</td>
<td>0.49</td>
</tr>
<tr>
<td>30’ MAX</td>
<td>0.70</td>
<td>0.59</td>
</tr>
<tr>
<td>40’ MAX</td>
<td>0.81</td>
<td>0.69</td>
</tr>
</tbody>
</table>

**NOTES:**

1. MATERIAL CONCRETE—CLASS 4000 REINFORCING STEEL—ASTM A615 GRADE 60 MIN.
   CHANNEL AND SHELF MATERIAL: CONCRETE CLASS 3000.

2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 476. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.

3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/50 FT

4. MAX HOLE SIZE MUST BE 00 OF PIPE PLUS 10”. MIN HOLE SIZE MUST BE 00 OF PIPE PLUS 3”. MIN DISTANCE BETWEEN HOLES IS 12”.

**SECTION A-A**

**TOP SLAB REINFORCEMENT**

---

**REFERENCES:**

- STD PLAN NO 232
- STD PLAN NO 232a & 232b
- STD SPEC SEC 7-05

City of Seattle | NOT TO SCALE | TYPE 209a MAINTENANCE HOLE
"H" REINFORCING STEEL "A"
MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION

<table>
<thead>
<tr>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20' MAX</td>
<td>0.44</td>
</tr>
<tr>
<td>30' MAX</td>
<td>0.56</td>
</tr>
<tr>
<td>40' MAX</td>
<td>0.68</td>
</tr>
</tbody>
</table>

SLOPE: ¼"1:1'-0" (TYP)

PLAN VIEW (TOP REMOVED)

MAINTENANCE HOLE FRAME & COVER SEE STD PLAN NO 230
LEVELING BRICKS OR CONCRETE COLLAR
HANDHOLDS; SEE STD PLANS NO 232a & 232b

"H" SEE TABLE

MAINTENANCE HOLE LADDER SEE STD PLANS NO 232a & 232b

SHELF CHANNEL
MORTAR FILLET
REINFORCING STEEL "A" SEE TABLE
TYPE 9 MINERAL AGGREGATE W/ PORTLAND CEMENT FOR PRECAST BASE OR PRECAST BASE WITH INTEGRAL RISER

NOTES:
1. MATERIAL: CONCRETE—CLASS 4000
REINFORCING STEEL—ASTM A615 GRADE 60 MIN
CHANNEL AND SHELF MATERIAL: CONCRETE CLASS 3000.
2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER
GASETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT.
4. MAX HOE SIZE MUST BE OD OF PIPE PLUS 10".
MIN HOLE SIZE MUST BE OD OF PIPE PLUS 5".
MIN DISTANCE BETWEEN HOLES IS 12".

SECTION A-A

REF STD SPEC SEC 7-05

City of Seattle
### Reinforcing Steel "A"

<table>
<thead>
<tr>
<th>Min. Sq In/ft, Top Face, in Each Direction</th>
<th>Precast Base</th>
<th>Cast-in-Place Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>20' MAX</td>
<td>0.70</td>
<td>0.60</td>
</tr>
<tr>
<td>30' MAX</td>
<td>0.85</td>
<td>0.73</td>
</tr>
<tr>
<td>40' MAX</td>
<td>1.00</td>
<td>0.86</td>
</tr>
</tbody>
</table>

**NOTES:**

1. MATERIAL: CONCRETE—CLASS 4000
   REINFORCING STEEL—ASTM A615 GRADE 60 MIN CHANNEL AND SHELF MATERIAL; CONCRETE CLASS 4000.

2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.

3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/50 FT.

4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 11". MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3". WIN DISTANCE BETWEEN HOLES IS 12".

---

**Smooth Mortar Callout Removed**
REINFORCING STEEL "A"

<table>
<thead>
<tr>
<th>MIN. SQ FT/FT², TOP FACE, IN EACH DIRECTION</th>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20' MAX</td>
<td>0.52</td>
<td>0.45</td>
</tr>
<tr>
<td>30' MAX</td>
<td>0.66</td>
<td>0.57</td>
</tr>
<tr>
<td>40' MAX</td>
<td>0.81</td>
<td>0.70</td>
</tr>
</tbody>
</table>

NOTES:
1. MATERIAL: CONCRETE—CLASS 4000
REINFORCING STEEL—ASTM A615 GRADE 60 MIN.
2. PRECAST MAINTENANCE HOLE
COMPONENTS MUST CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING - 3,000 LBS/SQ FT
4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 1 1/2". MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

SECTION A-A

REV STD SPEC SEC 7-05

City of Seattle

NOT TO SCALE

TYPE 210b MAINTENANCE HOLE

200 SEWER-DRAINAGE APPURTEYNES

STANDARD PLAN NO 211b

REV DATE: NOV 2019

"H" REINFORCING STEEL "A"

MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION

<table>
<thead>
<tr>
<th></th>
<th>PRECAST BASE</th>
<th>CAST-IN-PLACE BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20' MAX</td>
<td>0.62</td>
<td>0.54</td>
</tr>
<tr>
<td>30' MAX</td>
<td>0.79</td>
<td>0.69</td>
</tr>
<tr>
<td>40' MAX</td>
<td>0.97</td>
<td>0.85</td>
</tr>
</tbody>
</table>

NOTES:
1. MATERIAL: CONCRETE—CLASS 4000
2. REINFORCING STEEL—ASTM A615 GRADE 60 MIN CHANNEL AND SHELF MATERIAL CONCRETE CLASS 3000.
3. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.
4. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/FT.
5. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 12". MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

REF STD SPEC SEC 7-05

City of Seattle

NOT TO SCALE

TYPE 211b MAINTENANCE HOLE
NOTES:
1. MATERIAL: CONCRETE—CLASS 4000 REINFORCING STEEL—ASTM A615 GRADE 60 MIN CHANNEL AND SHELF MATERIAL: CONCRETE CLASS 3000.
2. PRECAST MAINTENANCE HOLE COMPONENTS MUST CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS MUST BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/50 FT.
4. MAX HOLE SIZE MUST BE OD OF PIPE PLUS 13", MIN HOLE SIZE MUST BE OD OF PIPE PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

REF STD SPEC SEC 7-05

new standard plan

PLAN VIEW
(TOP REMOVED)

SECTION A-A

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

REF STD SPEC SEC 7-05

City of Seattle
NOT TO SCALE
FLEXIBLE JOINT FOR VCP CONNECTION TO MAINTENANCE HOLES
NEW TYPE 230 FRAME & COVER

NEW PAVEMENT GRADE

REMOVE EXISTING 1'-6" DIAMETER FRAME & COVER

REBUILD MH WITH NEW RADIAL BRICKS IN A RUNNING BOND PATTERN WITH 1/2" MIN TO 1/2" MAX. GROUT SO THAT NEW FRAME AND COVER IS AT THE NEW PAVEMENT GRADE.

NEW MH HANDLEHOLD SEE STD PLANS NO 232a & 232b
NEW MH STEP SEE STD PLANS NO 232a & 232b

REMOVE EXISTING MH BRICKS SO THAT ID OF MH IS 2'-6"

REPLACE EXISTING STEPS OR LADDER TO SHELF

EXISTING BRICK MAINTENANCE HOLE

3" HANDHOLD

mortar lining callout removed

2'-6"DIA

1'-9" MIN CLR OPENING

26" DIA

RUNNING BOND PATTERN
GROUT BETWEEN ALL BRICKS

REF STD SPEC SEC 7-05

City of Seattle
NOT TO SCALE
REBUILD EXISTING
BRICK MAINTENANCE HOLE

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.
"SEWER" OR "DRAIN", AS APPLICABLE, 3" RAISED LETTERS TO BE ½" WIDE AND RAISED ⅛" ABOVE SURFACE OF COVER.

BOTTOM VIEW

TOP VIEW

SECTION A—A

f=MACHINED FINISH

REF STD SPEC SEC 7-05, 7-20

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'-0" DIA. OR SMALLER

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

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

REF STD SPEC SEC 7-08, 7-17

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

6" OR 8" DI PIPE
MANUFACTURED DI TEE
MECHANICAL JOINT
FABRICATED STEEL TAPPING SLEEVE
NEW DI MAIN

DETAIL B
FOR VERTICAL CONNECTIONS TO EXISTING DI MAIN

6" OR 8" DI PIPE
MECHANICAL JOINT
FABRICATED STEEL TAPPING SLEEVE
EXISTING DI MAIN

REF STD SPEC SEC 7-08, 7-17

City of Seattle
NOT TO SCALE
6" OR 8" VERTICAL CONNECTION TO DUCTILE IRON PIPE

NOTES:
1. OPEN AREA – 100 SQUARE INCHES.
2. SEE STD PLAN NO 265 FOR VANE AND END DETAIL.
3. STD PLAN NO 266 DIMENSIONS GOVERN ON END DETAIL.
4. REPLACEMENT VANED GRATE FOR TYPE 164 INLET FRAMES.

spec section 7–20.3(7) changed to 7–20.3(6)
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 MANUFACTURER'S SUPPLIED FITTINGS MUST BE USED FOR CONNECTIONS.
2. BEDDING FOR DETENTION PIPE MUST BE CLASS 9. DIP AND RCP MUST BE BEDDED IN MINERAL AGGREGATE TYPE 9. FLEXIBLE PIPE MUST BE BEDDED IN MINERAL AGGREGATE TYPE 22.
3. INTERMEDIATE MHS WILL BE REQUIRED FOR DETENTION PIPE LENGTHS GREATER THAN 300FT.
4. OUTLET PIPE MUST CONNECT TO MHS 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. MHS OPENING MUST NOT BE PLACED DIRECTLY OVER THE TOP OF INLET PIPE.

<table>
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<tr>
<th>DETENTION PIPE DIAMETER</th>
<th>FLOW CONTROL STRUCTURE* (MH SIZE)</th>
<th>UPSTREAM** (MH SIZE)</th>
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<tr>
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<tr>
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*SPECIFIC DESIGN INFORMATION AS INDICATED ON CONSTRUCTION DRAWINGS
**SIZE OF UPSTREAM MHS MUST BE ADJUSTED FOR ALTERNATIVE PIPE MATERIAL.
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)

SUITABLE BACKFILL

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

MINERAL AGGREGATE PER STD SPEC 9-03.14, TYPE 6 OR TYPE 7

NOTES:
1. FOR TRENCH WIDTH SEE STD PLAN NO 284
2. AN-4 WHEN ID IS LESS THAN 2’-6”, AN-6 WHEN ID IS 2’-6” OR MORE
3. UNIFORMLY SUPPORT PIPE BARREL EXCAVATE HOLES FOR BELLS AND STRAIGHTEN PIPE END
4. FOR FLUIDIZED THERMAL BACKFILL (ITB) OR CDF CROSSINGS OF METALLIC PIPE, WRAP METALLIC PIPE IN 8 MIL POLYETHYLENE ENCASEMENT FOR FULL TRENCH WIDTH

REF STD SPEC SEC 2-10.2, 7-17

City of Seattle

NOTES:

1. EXCEPTIONS TO STD PLAN NO 286 MUST BE APPROVED BY SEATTLE PUBLIC UTILITIES, WATER QUALITY DIVISION.
2. "SEWER" INCLUDES SANITARY SEWER, COMBINED SEWER AND SIDE SEWER.
3. WHERE MINIMUM CLEARANCES CANNOT BE MET, SEWER MUST BE CONSTRUCTED OF MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS INCLUDING WATER MAIN PRESSURE TESTING REQUIREMENTS.
4. NO VERTICAL CLEARANCE REQUIRED.
5. IF MINIMUM VERTICAL SEPARATION CANNOT BE MET, WATER MAIN MUST BE A STANDARD SINGLE 18'–0" NOMINAL LENGTH DUCTILE IRON WATER MAIN SECTION CENTERED AT THE POINT OF CROSSING.
6. SEWER MUST HAVE ADEQUATE FOUNDATION SUPPORT TO PREVENT SETTLEMENT ON THE WATER MAIN AND TO PREVENT DEFLECTION OF WATER MAIN JOINTS.
7. CROSSINGS AT AN ANGLE BETWEEN 90° AND 45° MAY OCCUR BETWEEN 9'-0" AND 6'-0" OF WATER MAIN JOINT. FOR CROSSINGS LESS THAN 45°, SEE NOTE 1.

REF STD SPEC SEC 1-07.17 & 7-11

City of Seattle  NOT TO SCALE  SEWER & WATER SPACING & CLEARANCES

NOTES:
1. ALL 1/8 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

City of Seattle
BRIDGE DRAIN

NOTES:
1. ASTM D 2241 SDR 21 CLASS 200 PVC PIPE OR
   ASTM D 1785 SCH 40
2. SLOT DIMENSIONS ARE 0.064" WIDE X 1.00" LONG
   SPACED ALONG PIPE AT 0.3" ON CENTER.

spec section 9-05, 3(1) changed to 9-05.4(1)

REF STD SPEC SEC 9-05.4(1)
NOTES:
1. TYPICAL MAXIMUM SLOPE ALLOWED IS 2:5H=1V, 3H=1V MAX WHEN WITHIN 50-FEET OF INTERSECTIONS OR CURBLES ROADWAY
2. SUBGRADE AND FILL ELEVATIONS MUST BE SET BELOW SIDEWALK ELEVATION
3. SCARIFY SUBGRADE AS SPECIFIED IN SPEC SECTION 7-21.3(2)B IN THE AREA SUBJECT TO TEMPORARY PONDING BEFORE BIORETENTION SOIL INSTALLATION.
4. 12" MIN OR 18" MIN IF WATER QUALITY TREATMENT IS REQUIRED PER STORMWATER CODE REQUIREMENT.
5. cell MUST BE CURRED AS DEPICTED IN ATTACHED DETAIL PAGE
6. SOIL UNDER SHOULDER OR PAVED AREAS MUST BE UNDISTURBED NATIVE SOIL OR APPROVED FILL COMPACTED TO 95% DENSITY
7. FACE OF CURB TO TOP OF SLOPE MUST BE MIN 2:10 FOR NON-MAJOR ARTERIAL STREET, MIN 4:01 FOR MAJOR ARTERIAL STREET
8. PROVIDE MIN ONE INCH GAP BETWEEN TOP OF WALKS, CURBS, PAVEMENTS AND DRIVEWAYS AND TOP OF ARBORIST WOODCHIP MULCH.

REF STD SEC 7-21

City of Seattle  NOT TO SCALE  INFILTRATING BIORETENTION WITH SLOPED SIDES

NOTES:
1. TYPICAL MAXIMUM SLOPE ALLOWED IS 2.5H:1V, 3H:1V MAX WHEN WITHIN 50-FEET OF INTERSECTIONS OR CURBLESS ROADWAY.
2. BIORETENTION OVERFLOW ELEVATIONS MUST BE SET BELOW SIDEWALK ELEVATION.
3. SCARIFY SUBGRADE AS SPECIFIED IN SPEC SECTION 7-21.(2)(B) IN THE AREA SUBJECT TO TEMPORARY PONDING BEFORE BIORETENTION SOIL INSTALLATION.
4. 12" MIN OR 18" MIN IF WATER QUALITY TREATMENT IS REQUIRED PER STORMWATER CODE REQUIREMENT.
5. CURB MUST BE PLANTED AT APPROVED MORTAR BAND.
6. SOIL UNDER SHOULDERS OR PAVED AREAS MUST BE UNDISTURBED NATIVE SOIL OR APPROVED SOIL COMPACTED TO 93% DENSITY.
7. FACE OF CURB TO TOP OF GRADE MUST BE MIN. 2'-0" FOR NON-MAJOR ARTESIAN STREET, MIN. 4'-0" FOR MAJOR ARTESIAN STREET.
8. PROVIDE MIN ONE INCH GAP BETWEEN TOP OF WALKS, CURBS, PAVEMENTS AND DRIVEWAYS AND TOP OF ARBORIST WOODCHIP MULCH.
NOTES:
1. TYPICAL MAXIMUM SLOPE ALLOWED IS 2.5H:1V, 3H:1V MAX WHEN WITHIN 50-FEET OF INTERSECTIONS OR CURBLESS ROADWAY.
2. BIORETENTION SOIL/ELEVATIONS MUST BE SET BELOW SIDEWALK ELEVATION.
3. 12" MIN OR 18" MIN IF WATER QUALITY TREATMENT IS REQUIRED PER STORMWATER CODE REQUIREMENT.
4. SOIL UNDER SHOULDERS OR PAVED AREAS MUST BE UNDISTURBED NATIVE SOIL OR APPROVED SOIL COMPACTED TO 95% DENSITY.
5. PROVIDE MIN ONE INCH GAP BETWEEN TOP OF WALKS, CURBS, PAVEMENTS AND DRIVEWAYS AND TOP OF ARBORIST WOODCHIP MULCH.
NOTES:
1. TYPICAL MAXIMUM SLOPE ALLOWED IS 2.5H:1V, 3H:1V MAX WHEN WITHIN 50- FEET OF INTERSECTIONS OR CURBLESS ROADWAY.
2. CONVEYANCE SWALE OVERFLOW ELEVATIONS MUST BE SET BELOW SIDEWALK ELEVATION.
3. LONGITUDINAL SLOPE GREATER THAN OR EQUAL TO 4%, CHECK DAM REQUIRED.
4. UNDISTURBED NATIVE SOIL OR APPROVED SOIL COMPACTED TO 95% DENSITY.
5. PROVIDE MIN ONE INCH CAP BETWEEN TOP OF WALKS, CURBS, PAVEMENTS AND
   DRIVEWAYS AND TOP OF TREATMENT LAYER.
6. PLANTING PER APPROVED LANDSCAPE PLAN.
7. FACE OF CURB TO TOP OF SLOPE MUST BE MIN 2'-0" FOR NON-MAJOR ARTERIAL
   STREETS, MIN 4'-0" FOR MAJOR ARTERIAL STREETS.

REF STD SPEC SEC 7-21

City of Seattle  NOT TO SCALE  VEGETATED CONVEYANCE SWALE
(NOT FOR WATER QUALITY TREATMENT)
NOTES:
1. DRAIN CURB CUT MUST NOT BE LOCATED WITHIN CONCRETE ROAD PANEL JOINT.

EXIST CONCRETE PAVEMENT OR STD 410B GUTTER PER STD PLAN NO 410

SECTION A-A

SECTION B-B

ISOMETRIC VIEW

EXIST CONCRETE PAVEMENT OR STD 410B GUTTER PER STD PLAN NO 410

CITY OF SEATTLE

200 SEWER-DRAINAGE APPURTENNANCES

SECTION A-A

NOTES:
1. TAPER CURB HEIGHT FROM TOP OF EXISTING CURB TO TOP OF BAY.

OUTLET PLAN VIEW

CONC CURB, TYPE 410c PER COS STD PLAN NO 410. DOWEL INTO EXIST PAVEMENT.

EXIST CONC

REFERENCES:
- USE STD SPEC SEC 7-21, 9-03

City of Seattle
NOT TO SCALE
DRAIN CURB CUT TYPE 3

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**

City of Seattle

Delete this Standard Plan
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 3/4" OTHER SIZES AND TYPES SEE PROJECT DRAWINGS
4. REDUCED PRESSURE BACKFLOW ASSEMBLY (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 FILE. 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.
① ALL EXCAVATION, PIPE, FITTINGS (EXCEPT AS NOTED BELOW), OTHER MATERIAL BEDDING, BACKFILL, COMPACTION & STREET RESTORATION BY CONTRACTOR. ALL MATERIALS MUST BE ON JOB SITE PRIOR TO SHUTDOWN OF EXISTING MAIN.
② INSTALLED BY CONTRACTOR
③ CONNECTION PIPE, CONTRACTOR FURNISHED, INSTALLED BY SPU
④ WATERMAIN WITH PLAIN ENDS
⑤ MECHANICAL JOINT SLEEVE WITH SPACER CUT TO FIT GAP, FURNISHED AND INSERTED AT TIME OF CONNECTION BY SPU
⑥ TAPPING SLEEVE & TAPPING VALVE FURNISHED AND INSTALLED BY SPU
⑦ APPLIES TO PIPES 4" THROUGH 12", ALL LARGER SIZES TO BE ADDRESSED ON DRAWINGS
⑧ MECHANICAL JOINT SLEEVE, FURNISHED BY CONTRACTOR AND INSTALLED BY SPU, SPACERS BY SPU WHERE REQUIRED.

REF STD SPEC SEC 7-11

City of Seattle NOT TO SCALE CONNECTIONS TO EXISTING WATERMAINS

TABLE

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<th>Size Watermain</th>
<th>L1</th>
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<tr>
<td>4&quot; thru 10&quot;</td>
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<tr>
<td>Larger than 12&quot;</td>
<td>PER DRAWINGS</td>
<td></td>
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NOTE:
(X) - SEE STD PLAN NO 300a FOR LEGEND

CONNECTIONS TO EXISTING MAIN, WITH A NEW TEE OR CROSS
(CUT IN NEW TEE)

CONNECTIONS TO EXISTING MAIN, STUB OR END OUTLET OF TEE OR CROSS

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 310 HYDRANT SETTING DETAIL

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 HIGSEE 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 ROSKOTE R28.
6. AFTER BACKFILLING, THE INSIDE 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 PORT MUST FACE CURB.
8. RESTRAINT MUST BE BY WEDGE RESTRAINT SYSTEM SUCH AS MEGALUG OR UNIFLANGE (SEE STD SPEC SEC 9-30.4(5)).

REF STD SPEC SEC 7-14

City of Seattle
NOT TO SCALE

TYPE 311 HYDRANT SETTING
DETAIl

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 ENGAGED, 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.
TRAFFIC ISLAND MARKER POST LAYOUT FOR FIRE HYDRANTS IN PARKING AREAS

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

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

FIXED BOLLARD, SEE STD PLAN NO 465 (TYP)

EXTRUDED CURB MATERIAL TO MATCH EX PAVEMENT MATERIAL, SEE STD SPEC SEC B-06

REFERENCE

REF STD SPEC SEC 7-14

City of Seattle

FIRE HYDRANT MARKER LAYOUT

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

SECTION A-A

REF STD SPEC SEC 2-13

City of Seattle
NOT TO SCALE
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 ROADWAY IF CENTERLINE IS NOT STRIPED, OR 6" OFF STRIPED CENTERLINE WHERE MEDIAN OR TWO-WAY LEFT TURN LANES 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
NOT TO SCALE
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 003 q FOR TYPICAL WATER SERVICE VAULTS

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

CITY OF SEATTLE
NOT TO SCALE

CLEARANCES FOR TYPICAL WATER SERVICE VAULTS
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 OR VARNISH ROYSTON ROBSTONE #612XM OR 2 COATS OF VARNISH ROYSTON INSIDE AND OUT
3. VALVE BOXES MUST BE EAST JORDAN COVER & TOP SECTION #1664, BOTTOM SECTION #15555, OR OLYMPIC FOUNDRY: LD #1008-33, TOP SECTION #1106-33, BASE SECTION #1301-33
4. ALL CASTINGS MUST BE DRIED PRIOR TO ASSEMBLY

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

City of Seattle
CAST IRON VALVE BOX & OPERATING NUT EXTENSION
NOT TO SCALE

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

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<th>Firm Silt or Firm Silt Sand</th>
<th>Compact Sand</th>
<th>Compact Sand &amp; Gravel</th>
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<td>90° BEND</td>
<td>45° Bend</td>
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Areas calculated on 300 psi test pressure and 24" min cover over watermain.

- **Note revised**
- **Bold outline added**

**City of Seattle**

**WATERMAIN THRUST BLOCKING HORIZONTAL FITTINGS**

FOR 4" TO 6" WATERMAINS, INSTALL A DUCTILE IRON TEE WITH A 4" BRANCH AND A BLOOM (FLG) OR PLUG (MUF). FOR 12" WATERMAINS, INSTALL A DUCTILE IRON TEE WITH A 6" BRANCH AND A BLOOM (FLG) OR PLUG (MUF). AFTER PRESSURE TEST, AND PRIOR TO FLUSHING AND BACTERIOLOGICAL SAMPLING, REMOVE BLOOM OR PLUG AND INSTALL BLOOM OR PLUG WITH A 1/2" IPT THREADED HOLE DRILLED INTO THE 4" OR 6" BLOOM OR PLUG. INSERT A 1/2" X 2" Corp Stop PER Note. Attach 2" Blow Off Pipe to Corp and Flush and Sample All Pipe.

MECHANICAL JOINT CAP OR PLUG

1/4" STEEL PLATE

CONC BLOCKING PER STD PLAN NO 331

UNDISTURBED GROUND

PLAN

ELEVATION

2" BLOW OFF TYPE A NON TRAFFIC INSTALLATION

FOR 4" TO 6" WATERMANS, INSTALL A DUCTILE IRON TEE WITH A 4" BRANCH AND A BLIND (FLG) OR PLUG (MU).
FOR 12" WATERMANS, INSTALL A DUCTILE IRON TEE WITH A 6" BRANCH AND A BLIND (FLG) OR PLUG (MU). AFTER
PRESSURE TEST, AND PRIOR TO FLUSHING AND
BACTERIOLOGICAL SAMPLING, REMOVE BLIND OR PLUG AND
INSTALL BLIND OR PLUG WITH A 1½" FT THREADED HOLE
DRILLED INTO THE 4" OR 6" BLIND OR PLUG. INSERT A
½" x 2" CORP STOP PER NOTE. ATTACH 2" BLOW OFF
PIPE TO CORP AND FLUSH AND SAMPLE ALL PIPE.

NOTE:
½"x2" COMP STOP, BALL TYPE BRASS BODY AWWA X COMP.
WHERE COATED DUCTILE IRON PIPE IS USED, THE MECHANICAL JOINT
CAP AND COMP MUST BE WAX TAPE PER 7-11.3.8(a) AND 9-30.1(a).

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 ENCASEMENT FOR FULL TRENCH WIDTH.
3. FLUIDIZED THERMAL BEDDING PER SDLC MATERIAL STANDARD 7150.00

REF STD SPEC SEC 7-11, 9-03.16

City of Seattle
WATERMAIN TRENCH AND BEDDING
NOT TO SCALE
Frame & Cover must be tested for accuracy of fit and must be marked in sets for delivery.

Bottom View

Top View

Lifting Handle

Section A-A

Ref Std Spec Sec 7-12

City of Seattle

Type 361a Valve Chamber
Frame & Cover in Vehicular Travelways

FRAME & COVER MUST BE TESTED FOR ACCURACY OF FIT AND MUST BE MARKED IN SETS FOR DELIVERY

1½"X1½" LIFT HOLES; 2 PLACES

BOTTOM VIEW

6 SPACES @ 2½" (LETTERING AS REQUIRED)

TOP VIEW

TYPE 361b VALVE CHAMBER
FRAME & COVER IN PEDESTRIAN PATHWAYS

REF STD SPEC SEC 7-12

City of Seattle NOT TO SCALE

BOTTOM VIEW

LETTERS TO BE \( \frac{1}{2}'' \) WIDE AND RAISED \( \frac{3}{16}'' \) 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
new std plan

13/16"x1/8" LIFT HOLES, 2 PLACES

LETTERS TO BE 3/16" WIDE AND RAISED 3/32" ABOVE SURFACE OF COVER

BOTTOM VIEW

TOP VIEW

SECTION A--A
f=MACHINED FINISH

1'-9/4"
1'/8"
3/16" 3/8"
1/2"
7/8"
1'/8"
1'
4'/8"
6"
1'-7/4"
1'/8"
1'/4"
3/4"
1/2"
1/8"
**300 WATERMAIN APPURtenANCES**

**STANDARD PLAN NO. 362**

**REV DATE: SEP 2019**

---

**SLIP JOINT BOND CONNECTION**

1. **Connection Sequence:**
   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 oz. hammer test per STD. SPEC Sec 7-11.3(15)D.
   6. Final connection to be made water-tight with mastic coating or preformed thermite weld cap.

---

**MECHANICAL JOINT BOND CONNECTION**

- Thermite weld cap or mastic mold to fit over thermite weld & follower ring.
- #8 AWG joint bond cable.

---

**THERMITE WELD CONNECTION**

- Thermite weld connection (Typ) with thermite weld cap or mastic tape coating (Typ).
- #2 AWG joint bond cable.

---

**Valve Joint Bond Connection**

- Thermite weld cap or mastic mold to fit over thermite weld & follower ring.
- #8 AWG joint bond cable.

---

**NOTES:**

1. Joint bonds for pipe 16" diameter and smaller.
2. For pipe larger than 16" or impressed systems, see project drawings for joint bonding details.

---

**REF STD SPEC SEC 7-11**

---

**City of Seattle**

**NOT TO SCALE**

**2020 Edition City of Seattle Standard Plans for Municipal Construction**

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**JOINT BONDING FOR DIP WATERMAINS & JOINT BONDING DETAIL**

---

**callout revised**

**detail added**

**notes added**
* SEE RIGHT OF WAY IMPROVEMENT MANUAL FOR DIMENSIONS.
** UNLESS OTHERWISE APPROVED BY THE ENGINEER.
*** 2% MAXIMUM, 0.5% MINIMUM; USE 1.5% UNLESS OTHERWISE SHOWN IN CONTRACT OR APPROVED BY THE ENGINEER.

City of Seattle
NOT TO SCALE
HALF SECTION, GRADING

NOTES:
IF CONCRETE 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)

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

COMPACTED SUBGRADE

402A—ROADWAY CONCRETE PAVEMENT ON CRUSHED ROCK

TIE BAR

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

SEE STD PLAN TYPE 410c CURB

2" HMA (CL 2"

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

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

SEE STD PLAN TYPE 410b CURB & GUTTER

2" HMA (CL 2"

402C—HOT MIX ASPHALT ON CRUSHED ROCK BASE

HMA DESIGN CRITERIA:
1. MILLION FEET, UNLESS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS
2. ASPHALT PG 58-22 UNLESS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS
3. ASPHALT WILL BE ACCEPTED IF UNLESS A WAIVER IS PROVIDED ON THE DRAWINGS
4. PROTECT ADJACENT PANELS FROM DAMAGE DUE TO UNDERMINING DURING EXCAVATION & PLACEMENT OF SUBGRADE. SEE SPEC SECTION 1-07.13.

PG 64-22 changed to 58H-22

note added
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 SHOULDER.

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

City of Seattle
NOT TO SCALE
ROADWAY CONCRETE PAVEMENT REPAIR

NOTES:
1. DO NOT PLACE LONGITUDINAL JOINTS OR SKEWED JOINTS WITHIN BIKE Lanes.
2. WHEN A JOINT IS WITHIN 18 INCHES OF A CASTING JOINTS 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 4016 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;X18&quot;</td>
</tr>
<tr>
<td>9&quot;≤D &lt;11&quot;</td>
<td>1½&quot;X18&quot;</td>
</tr>
<tr>
<td>11&quot;≤D</td>
<td>1½&quot;X19&quot;</td>
</tr>
</tbody>
</table>

REF STD SPEC SEC 5-05
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
EXTRUDED ASPHALT CONCRETE CURB

EXTRUDED CEMENT CONCRETE 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

TYPICAL SIDEWALK & CURB RAMP DETAIL

2% changed to 2% MAX

NOTES:
1. ¾" 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 AIDS, SEE STANDARD PLAN NO 424.
5. 12" MINIMUM BETWEEN EDGE OF RAMP WIND 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.

REF STD SPEC SEC 8-14

City of Seattle
NOT TO SCALE
CONCRETE SIDEWALK DETAILS
NOTES:
1. RAMP CENTERLINE MUST BE RADIAL/PERPENDICULAR TO THE ALIGNMENT OF THE FACE OF CURB.
2. THE SLOPE ON THE LANDING MUST BE A MINIMUM OF 0.5% IN ANY ONE DIRECTION AND MUST NOT EXCEED 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-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.

PAY LIMIT

"SHALL" changed to "MUST". note 2 revised, note 6 added

PAY LIMITS

PERPENDICULAR CURB RAMPS
(TYPE 422A)

422A CURB RAMP LOCATIONS

400 STREET PAVING & APPURTENANCES
STANDARD PLAN NO 422a

REV DATE: JAN 2020

REF STD SPEC SEC 8-14

City of Seattle
NOT TO SCALE
CURB RAMP DETAILS

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/PARALLEL TO THE ALIGNMENT OF THE FACE OF CURB.
3. THE SLOPE ON THE LANDING MUST BE A MINIMUM OF 0.5% IN ANY ONE DIRECTION AND MUST NOT EXCEED 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 CURB 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.
4. RAMP SURFACE MUST HAVE A HEAVY BROWN BRUSHED SURFACE RADIAL/PARALLEL TO THE CURB.
5. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTIONS.

8.3% MAX SLOPE 15'-0" MAX 8.3% MAX SLOPE 15'-0" MAX

PARALLEL CURB RAMPS
(TYPE 422B)

NOTES: 1. 2 & 3 revised, also, "SHALL" changed to "MUST"
NOTES:
1. RAMP CENTRELINE MUST BE PARALLEL TO CROSSWALK AND/OR THE SIDEWALK.
2. THE SLOPE ON THE LANDING MUST BE A MINIMUM OF 0.5% IN ANY ONE DIRECTION AND MUST NOT EXCEED 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. 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.
5. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED FINISH PERPENDICULAR TO THE PATH OF TRAVEL.
6. REFER TO DETAILS 422K AND 4221 FOR GENERAL NOTES AND TYPICAL SECTIONS.

PAY LIMITS

DIRECTIONAL CURB RAMPS
(TYPE 422D)

422D CURB RAMP LOCATIONS

CW

CW

NOTES:

1. Ramp centerline must be parallel to crosswalk and/or the sidewalk.

2. The slope on the landing must be a minimum of 0% in any one direction and must not exceed 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 brush 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 approved by the Engineer.

5. Directional curb ramps with large setback from back of curb to bottom 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 a minimum of 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 STD PLAN 422K and 422L for general notes and typical sections.

Revised Notes:

- 5% min slope removed
- "SHALL" changed to "MUST"
- Through joint (Typ) revised
- Upper landing removed
- Detectable warning STD PLAN 422K SEE NOTE 4
- 3" radius (Typ) revised
- Pay limit
- Curb ramp details

City of Seattle
NOT TO SCALE
NOTES:

1. ramp centerline must be radial/orthogonal to the alignment of the face of curb.
2. the slope on the landing must be a minimum of 0.5% in any one direction and must not exceed 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 6'-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 exemption for minimum clear space requirements at shared diagonal perpendicular curb ramps.
4. wings must have a maximum slope of 10%. wings must have a brushed finish parallel to the curb. the concrete edge 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.

2% max - max slope in either direction

PAY LIMITS

SHARED DIAGONAL PERPENDICULAR CURB RAMP
(TYPE 422F)

CLEAR SPACE, SEE NOTE 3
FACE OF CURB EXTENDED (TYp)

422H CURB RAMP LOCATIONS

REF STD SPEC SEC 8-14
NOTES:
1. THE SIDEWALK MUST TRANSITION DOWN TO THE ROADWAY 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" (5'-0" MIN). THE CROSS SLOPE OF THE BYPASS ROUTE MUST BE A MINIMUM OF 0.5% IN ANY DIRECTION AND MUST NOT EXCEED 2% IN ANY DIRECTION.
3. RADIAL TILE 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 THICKENED EDGE ALONG THE CURB MUST CONTINUE THROUGH EACH WING.
5. BLENDED TRANSITION SURFACE MUST HAVE A HEAVY BRUSHED SURFACE RADIAL/PERPENDICULAR TO THE CURB.
6. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTION B.

PAY LIMIT

REF STD SPEC SEC 8-14

City of Seattle
NOT TO SCALE
CURB RAMP DETAILS

NOTES:
1. SIZE, SHAPE, AND/OR DIMENSIONS OF CHANNELIZING 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 CHANNELIZING 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 CHANNELIZING ISLAND OR PEDESTRIAN REFUGE ISLAND FOR EACH CROSSWALK.

SECTION H-H

ROADWAY CURB
STD PLAN 410 OR
STD PLAN 421

Slope 2% MAX

ROADWAY CURB (TYP)

Slope 2% MAX

SIDEWALK

3' RADIUS
(1")

DETECTABLE WARNING
STD PLAN 422K

CLEAR SPACE
SEE NOTE 4

(TYP)

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. SNAILED 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 SERVED AS POSSIBLE.

3. CURB RAMP MUST BE CONSTRUCTED PARALLEL TO 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" 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.

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

7. THE OUTER 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" WIDTH AT 4'-0" DEPTH MEASURED FROM THE GRATE BOTTOM GRADE 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" BY 4'-0" SPACE, EXTENDING FROM THE RAMP LOWER GRADE BREAK, THAT FALLS WHOLLY WITHIN THE LEGAL CROSSWALK, MARKED OR UNMARKED, AND OUTSIDE THE PARALLEL VEHICULAR TRAFFIC LANE.

9. A 4'-0" MINIMUM WIDTH UNOBSTRUCTED PEDESTRIAN ACCESS ROUTE MUST BE PROVIDED FROM EACH CURB RAMP, BLENDED TRANSITION, OR FLUSH TRANSITION TO THE LEGAL CROSSWALK THAT IS SERVED, MARKED OR UNMARKED, AND LOCATED OUTSIDE THE PARALLEL VERTICAL 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 RADI.

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 RADI MUST MATCH THE CURB RADI 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 1/8" WITH A 1:2 DEPLOY GAP BETWEEN SURFACES OR CASTINGS MAY NOT EXCEED 1/8". SURFACES MUST BE FIRM, STABLE, AND SUB REACTIVE.

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 1'-0" FROM RAMP RUN(S) 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 PONDING, OR WOULD CONFLICT WITH OBTAINING THE GRADES AT THE BOTTOM OF CURB RAMPS OR AT CURB RAMP 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.

NOT TO SCALE

CURB RAMP DETAILS

400 STREET PAVING & APPURTENANCES

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

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

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

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

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

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

SCORE LINE (Typ)
PROVIDE BOND BREAKER (UNLESS ASPHALT SURFACING)

8.3% MAX SLOPE

THROUGH JOINT

DETECTABLE WARNING

SIDWALK

SAWCUT IF EXISTING PAVEMENT (Typ)
PROVIDE BOND BREAKER (UNLESS ASPHALT SURFACING)

8.3% MAX SLOPE

THROUGH JOINT

DETECTABLE WARNING

SIDWALK

SAWCUT IF EXISTING PAVEMENT (Typ)
PROVIDE BOND BREAKER (UNLESS ASPHALT SURFACING)

8.3% MAX SLOPE

THROUGH JOINT

DETECTABLE WARNING

SIDWALK

SAWCUT IF EXISTING PAVEMENT (Typ)
PROVIDE BOND BREAKER (UNLESS ASPHALT SURFACING)

8.3% MAX SLOPE

THROUGH JOINT

DETECTABLE WARNING

SIDWALK

SAWCUT IF EXISTING PAVEMENT (Typ)
PROVIDE BOND BREAKER (UNLESS ASPHALT SURFACING)

8.3% MAX SLOPE

THROUGH JOINT

DETECTABLE WARNING

SIDWALK

SAWCUT IF EXISTING PAVEMENT (Typ)
PROVIDE BOND BREAKER (UNLESS ASPHALT SURFACING)

8.3% MAX SLOPE

THROUGH JOINT

DETECTABLE WARNING

SIDWALK

REF STD SPEC SEC 8-14

City of Seattle
NOT TO SCALE
CURB RAMP SECTIONS

FOR ADDITIONAL SIDEWALK SCORING REQUIREMENTS
SEE STD PLAN NO 420

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 100a.
3. SEE STD PLAN NO 100 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.

note 4 added
400 STREET PAVING & APPURTEANCES

STANDARD PLAN NO 430

REVIEW DATE: SEP 2019

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 15'-0". OTHERWISE, WING WIDTH MUST BE 2'-6".
4. "V" GROOVE SCORING MUST MATCH PATTERN IN ADJACENT EXISTING SIDEWALK.
5. FOR CONCRETE DRIVEWAY CONSTRUCTED WITH CONCRETE SIDEWALK, SEE STANDARD PLAN NO 430.
6. CONCRETE DRIVEWAYS WITH A WIDTH GREATER THAN 15'-0" MUST HAVE A 3/8" TRANSVERSE CONTRACTION JOINT NEAR THE CENTERLINE OF DRIVEWAY. SEE SECTION 10-10 STANDARD PLAN NO 430.
7. FOR TYPE 430A CROSS-SLOPE IN THE 6'-0" MINIMUM WIDE 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%.
8. RAMP MUST HAVE A MAXIMUM SLOPE OF 8.3% AND A MINIMUM WIDTH OF 6'-0".
9. THE CROSS SLOPE OF THE RAMP MUST BE MAXIMUM 2.0% RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE PERPENDICULAR TO THE CURB. CHANGES IN LEVEL ACROSS JOINTS MUST BE SMOOTH WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 3/8".
10. ALL SLOPE GRADES MUST BE MEASURED OFF THE HORIZON LINE. IF EXISTING SITE CONDITIONS CONFLICT WITH OBTAINED GRADES SHOWN, THE CONTRACTOR MUST MAKE MINIMUM ADJUSTMENTS TO THE GRADES TO ACCOMMODATE EXISTING SITE CONDITIONS. ADJUSTMENTS ARE SUBJECT TO ENGINEER APPROVAL.
11. PRIVATE DRIVEWAY OR ALLEY PROVIDE A 3/4" THROUGH JOINT.
12. 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

City of Seattle

NOT TO SCALE

TYPE 430A & 430B DRIVEWAYS

score lines redrawn at 2' x 2' grid

ALLEY OR PRIVATE DRIVEWAY WIDTH AS SPECIFIED

\( \frac{3}{4} \) THROUGH JOINT

SCORE LINES

SEE NOTE 4

added

FUTURE ALLEY OR PRIVATE CONCRETE DRIVEWAY

\( \frac{3}{4} \) THROUGH JOINT MATERIAL FOR FULL DEPTH OF DRIVEWAY SLAB

CEM CONC DRIVEWAY, STD PLAN NO 430

CEM CONC SIDEWALK, STD PLAN NO 420

COMPACTED SUBGRADE

6" RESIDENTIAL
8" COMMERCIAL AND ALLEY

6" MNRL AGG TYPE 2
(COMPACTED DEPTH)

mnrl agg added

SECTION A-A

* UNLESS OTHERWISE APPROVED BY SDOT.

NOTES:
1. DRIVEWAY WIDTH GREATER THAN 15'-0" AND LESS THAN OR EQUAL TO 30' MUST HAVE TRANSVERSE CONSTRUCTION JOINTS AT IT'S CENTER.
2. DRIVEWAY GREATER THAN 30'-0" REQUIRE 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. TRANSVERSE JOINTS LINES UP WITH HORN 425 AND THE DRIVING.

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

REF STD SPEC SEC 8-14, 8-19

City of Seattle

NOT TO SCALE

CEMENT CONCRETE DRIVEWAY PLACED WITH CEMENT CONCRETE SIDEWALK

MULTI PURPOSE TRAIL AT ARTERIAL STREET W/BULB-OUT (TYP)

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 3/8 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 3/4" GROOVED TO MATCH PATTERN IN ADJACENT OR NEARBY SIDEWALKS.

REF STD SPEC SEC
City of Seattle  NOT TO SCALE  MULTI-PURPOSE TRAIL AT STREET CROSSING

NOTES:
1. SPEED HUMP MUST BE HMA CL 3/8"
2. CHEVRON SYMBOL PER STD PLAN NO 728A
3. TOLERANCE AT CENTER IS 3/8"
4. PARABOLIC SHAPE MUST BE MAINTAINED
5. CHEVRON MUST BE CENTERED IN THE TRAVEL WAY AND MISSNG THE WHEEL PATH
6. SEAL ALL EDGES WHERE NEW ASPHALT MEETS EXISTING PER 5-04.3(10)B
7. SEALING MATERIALS MUST MEET 9-02.1(8)

SECTION A--A

REF STD SPEC SEC 5-04
NOTES:
1. CUSHION MUST BE HMA CL 34.
2. CHEVRON SYMBOL PER STD PLAN NO 728A
3. TRIANGLE SYMBOL PER STD PLAN NO 728B
4. TOLERANCE AT CENTER IS 3/8'
5. PARABOLIC SHAPE MUST BE MAINTAINED

REF STD SPEC SEC 5-04

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 RISERS MUST HAVE HANDRAILS ON BOTH SIDES.
7. HANDRAILS MUST BE CONTINUOUS ACROSS LANDINGS BETWEEN FLIGHTS OF STEPS.
8. ALL STEEL MUST BE HOT-DIPPED GALVANIZED.
10. PIPE DIAMETERS SHOWN CORRESPOND TO PIPE "SHAPE" AS DEFINED IN AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.
11. FOR NORMAL GRANULAR FLOOR OR SEE DETAIL B ON STD PLAN NO 440b (THIS IS INTERNAL AND MUST BE CALLED OUT ON DRAWINGS).
12. TYPICAL TREAD LENGTH (2'-9"")
13. LANDINGS MUST BE 0.5\% MIN FOR A MIN LENGTH OF 4', ADJACENT SIDEWALK MAY BE PART OF LANDING IF SLOPE CRITERIA AND SETBACKS FROM HANDRAILS ARE MET.
14. TREAD SURFACE MUST HAVE GROOVES AT THE NOSE FOR TRACTION.
15. IF LANDING IS ELEVATED, LANDINGS MUST HAVE VERTICAL RAILING PER RIGHT OF WAY IMPROVEMENT MANUAL.
16. STAIRWAYS DEVIATING FROM STANDARD PLAN TO ACCOMMODATE BICYCLE FEATURES MAY BE USED PER STD PLAN NO 440c OR 440d.
17. EXTERNAL-VENT HOLES MUST BE AS CLOSE TO THE WELL AS POSSIBLE AND MUST BE 25% THE SIZE OF THE ID. OF THE PIPE, BUT NOT LESS THAN 1/4" IN DIAMETER.
18. VENT HOLES IN END SECTIONS OR IN SIMILAR SECTIONS MUST BE 1/2" IN DIAMETER.
19. ENDS MUST BE LEFT COMPLETELY OPEN. ANY DEVICE USED FOR FIELD-ERECTED THAT PREVENTS FULL OPENINGS ON ENDS OF HORIZONTAL RAILS AND VERTICAL LEGS MUST BE GALVANIZED SEPARATELY AND ATTACHED AFTER GALVANIZING.
400 STREET PAVING & APPURTENANCES

STANDARD PLAN NO 440b

REV DATE: DEC 2019

DETAIL A

2" STD STEEL PIPE POST

MOUND FOR DRAINAGE (TYP)

16 GA GALV STEEL SLEEVE

#4 REINFORCING U BAR AT EACH POST SEE DETAIL E

NON-SHRINK GROUT

DETAIL B

SEE NOTE 11 ON STD PLAN NO 440a

STAIRWAY

1"-0"

1"-0" SHOULDER

2" STD STEEL PIPE & 2" STD STEEL PIPE POST

GRIPOING HANDRAIL (1½" STD STEEL PIPE)

DETAIL C

HAND GRIP TERMINATION

SECTION C-C

CALLOUTS REVISED

SECTION D-D

SECTION REvised

NOTE:
PIPE DIAMETERS SHOWN CORRESPOND TO PIPE "SHAPE" AS DEFINED IN AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL

DETAIL D

D 2" STD STEEL PIPE

D 2" STD STEEL PIPE POST

4" ROUND BAR

1½" GRIPOING HANDRAIL (STD STEEL PIPE)

1¼" GRIPOING HANDRAIL (STD STEEL PIPE)

DETAIL F

#4 REINFORCING U BAR

#1 6"-8" @ 0'-2" OC

#1 8"-11" OC

NON-SHRINK GROUT

4" SLEEVE

DETAIL E

2" STD STEEL PIPE POST

MOUND FOR DRAINAGE (TYP)

GRADE LINE

DETAIL F

CONTINUOUS WELD ONE SIDE DOWN-SLOPE EDGE (TYP)

2" MIN EXPANSION GAP

2" MIN

1½" STEEL PIPE INSERT

DETAIL G

SLIP JOINT

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 NOTES, DETAILS, & 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 RISING AND LANDING.
8. LANDINGS THAT INTERSECT OTHER STAIRS OR WALKS MUST BE AT LEAST 6' LONG TO ALLOW FOR A MIN. 4' OF CLEAR WATER WITHOUT RUNNEL & RAIL.
9. STAMP CONCRETE AT TOP AND BOTTOM OF RUNNEL, SEE CONCRETE STAMP DETAIL.
10. RUNNEL LOCATION RAIL MUST 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 PASSAGE. 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 1 1/8" IN SIZE OF THE HO. THE HO. THE PIPE, BUT NOT LESS THAN 1 1/8" IN DIA.
14. VENT HOLES IN END SECTIONS OR IN SIMILAR SECTIONS MUST BE 3/4" IN DIA.
15. ENDS MUST BE LEFT COMPLETELY OPEN, ANY DEVICE USED FOR FIELD-ERECTING 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
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 - 14" MAX
   RISERS MUST BE 6" MIN - 7" MAX
3. STEP WIDTH MUST MATCH WIDTH OF EXISTING WALK, BUT MUST BE NO LESS THAN 4'-0" MIN
4. STAIRWAYS WITH 1 OR MORE RISERS MUST INCLUDE A HANDRAIL ON BOTH SIDES. SEE STD PLAN NO 440.
   REINFORCING STEEL MUST BE 2'-0" X 4'-0"
5. TREAD SLOPES OUTWARD @ 1" PER 12".

SECTION A-A

REF STD SPEC SEC 8-18

City of Seattle  NOT TO SCALE  CEMENT CONCRETE STEPS

NOTES:
1. RAILING MUST BE HOT DIP GALVANIZED AFTER FABRICATION.
2. ALL POSTS MUST BE PLUMB AND RAILS PARALLEL TO THE GROUND.
3. PIPE MATERIAL MUST CONFORM TO ASTM A 53.
4. REINFORCING STEEL ASTM A 706 OR 60.
5. IF THE CONCRETE SLOPE IS 5% OR GREATER A GRIPPING HANDRAIL IS REQUIRED. GRIPPING HANDRAILS ON RAMPS (SLOPE EXCEEDS 5%) MUST EXTEND HORIZONTALLY A MINIMUM OF 12" BEYOND TOP AND BOTTOM OF RAMPS RUNS.
6. PIPE DIAMETERS SHOWN CORRESPOND TO PIPE "SHAPE" AS DEFINED IN AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.

SECTION A-A
MOUND FOR DRAINAGE (TYP.)

#4 REINFORCING U BAR AT EACH POST SEE DETAIL BELOW
4" 16GA GALV STEEL SLEEVE (TYP.)
NON-SHRINK GROUT

DETAIL A

SECTION C-C

SECTION B-B

DETAIL C

DETAIL B

REF STD SPEC SEC 8-14, 8-18

City of Seattle
NOT TO SCALE
STEEL PIPE HANDRAIL

NOTES:
1. RAILING MUST 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 1/2" BEYOND THE TOP OR BOTTOM OF RAMPS.
6. PIPE DIAMETERS SHOWN CORRESPOND TO PIPE "SHAPE" AS DEFINED IN AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.
7. PIPE CONNECTIONS SHOWN FOR WRAP-AROUND PANEL.
8. "DETAIL C" IS FOR EXISTING CONCRETE STRUCTURE CONNECTION ONLY. ANCHOR BOLTS MUST BE DESIGNED PER AASHTO CODE.
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"×3/4" JOINT MATERIAL

1/8" CHAMFER (TYP.)

ASPH MNRL AGG TYPE 2

CW

MNRL AGG TYPE 2

1'-6"
NOTES:
1. UNLESS OTHERWISE SPECIFIED, TRAFFIC SIGNAL CONTROLLER CABINET MUST BE FURNISHED BY THE CITY
2. UNLESS OTHERWISE SPECIFIED, EXACT CABINET DIMENSIONS & ANCHOR BOLT LOCATIONS MUST BE PROVIDED BY THE TRAFFIC SIGNAL SHOP
3. PLACE CABINET DOOR ON SIDEWALK SIDE OF FOUNDATION
4. SEAL CABINET TO FOUNDATION WITH GREY OR CLEAR SILICONE TO PREVENT MOISTURE FROM ENTERING THE CABINET
5. CABINET FOUNDATIONS INSTALLED IN A LANDSCAPE AREA MUST INCLUDE A CONCRETE SIDEWALK MAINTENANCE PAD ON THE SDOT DOOR SIDE OF THE FOUNDATION, SEE STD SPEC SEC 8-32.3(2)(B)

<table>
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<tr>
<th>DIMENSION</th>
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<td>A</td>
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<td>44&quot;</td>
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<tr>
<td>B</td>
<td>17&quot;</td>
<td>25 1/2&quot;</td>
<td>23 1/2&quot;</td>
</tr>
<tr>
<td>C</td>
<td>38&quot; TO 52&quot;</td>
<td>50&quot; TO 58&quot;</td>
<td>64 1/4&quot; TO 67 1/2&quot;</td>
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SIGNAL CONTROLLER CABINET—TYPES II, III, VI

LEVEL & FINISHED TOP OF FOUNDATION
1" CHAMFER (TYP)
3/8" PVC DRAIN TUBE TO LOW SIDE OF FINISHED GRADE
CONDUIT PER DRAWINGS
CLASS 3000 CONCRETE

SIGNAL CONTROLLER FOUNDATION
SEE STD PLANS NO 500b & 500c FOR CONDUIT LAYOUT

REF STD SPEC SEC 8-31, 8-32
CONDUIT LAYOUT – TYPE II SIGNAL CONTROLLER FOUNDATION

CONDUIT LAYOUT – TYPE III/VI SIGNAL CONTROLLER FOUNDATION

REF STD SPEC SEC 8-31, 8-32

City of Seattle

NOTES:
1. 36" MINIMUM CLEARANCE MUST BE REQUIRED IN FRONT OF BOTH FRONT AND BACK CABINET DOOR.
2. SEAL CABINET TO FOUNDATION WITH GREY OR CLEAR SILICON TO PREVENT MOISTURE FROM ENTERING THE CABINET.
3. EXACT SERVICE CABINET DIMENSIONS, ANCHOR BOLT LOCATIONS AND PEDESTAL MOUNTING HOLES MUST BE PROVIDED BY THE MANUFACTURER.
4. GROUND ROD 3/4"x12" COPPER CLAD WITH GROUND ROD CLAMP; A SECOND GROUND ROD MUST BE INSTALLED A MINIMUM 8" AWAY IN A GROUND ROD HANDOLE AS PER CITY OF SEATTLE STANDARD PLAN NO 5508, COORDINATE WITH ELECTRICAL INSPECTOR FOR LOCATION. INSTALL #4 AWG COPPER GROUND WIRE BETWEEN CABINET FOUNDATION AND SERVICE CABINET.
5. CABINET FOUNDATIONS INSTALLED IN A LANDSCAPE AREA MUST INCLUDE A CONCRETE SIDEWALK MAINTENANCE PAD ON THE SDOT DOOR SIDE OF THE FOUNDATION, SEE STD SPEC SEC 8-32.3(2)/9

City of Seattle

NOTES:
1. FOR SIGNAL CONTROLLER DIMENSIONS AND OTHER REQUIREMENTS, SEE STD PLAN NO. 500a.
2. FOR SERVICE CABINET DIMENSIONS AND OTHER REQUIREMENTS, SEE STD PLAN NO. 501a.
3. SEAL CABINETS TO FOUNDATION WITH GREY OR CLEAR SILICON TO PREVENT MOISTURE FROM ENTERING THE CABINET.
4. THE SERVICE CABINET MUST BE PLACED ON THE OPPOSITE SIDE OF THE CONTROLLER CABINET FROM THE STREET.
5. CABINET FOUNDATIONS INSTALLED IN A LANDSCAPE AREA MUST INCLUDE A CONCRETE SIDEWALK MAINTENANCE PAD ON THE SDOT DOOR SIDE OF THE CABINET, SEE STD SPEC SEC 8-32.3(2)B.

CABINET WIDTH
3/4" DIAMETER DRAIN TUBE TO LOW SIDE OF FINISHED GRADE

MIN ONE 2" CONDUIT TO HANDBOKE (SEE PLANS)
GROUND ROD 3/4" X 12" COPPER-CLAD WITH GROUND CLAMP. A SECOND GROUND ROD MUST BE INSTALLED A MINIMUM 8" AWAY IN A GROUND ROD HANDBOKE AS PER CITY OF SEATTLE STANDARD PLAN NO 550b. COORDINATE WITH ELECTRICAL INSPECTOR FOR LOCATION. INSTALL #4 AWG COPPER GROUND WIRE BETWEEN CABINET FOUNDATION AND GROUND ROD HANDBOKE.

3/4" DIAMETER DRAIN TUBE TO LOW SIDE OF FINISHED GRADE
PARALLEL TO CURB

ANCHOR BOLT TYPE, SIZE AND LOCATION (SEE NOTE 2)
PEDESTAL MOUNTING HOLES (SEE NOTE 2)
ANCHOR BOLT TYPE, SIZE AND LOCATION (SEE NOTE 1)
CONCRETE MAINTENANCE PAD (SEE NOTE 5)

TOP VIEW
JOIN SIGNAL CONTROLLER/SERVICE CABINET FOUNDATION DETAIL
NOT TO SCALE

REF STD SPEC SEC 8-31,8-32

City of Seattle
**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

**SPAN MOUNTING**

**ATTACH SIGNAL CABLE TO SPAN WIRE WITH FRICTION TAPE OR UV RATED CABLE TIE WRAPS AND TRIM ENDS**

**REFERENCES:**
REF STD SPEC SEC 8-31

City of Seattle
NOT TO SCALE
VEHICULAR SIGNAL MOUNTING

NOTES:

1. BOLT AND WASHERS MUST BE STAINLESS STEEL PER ASTM A 563 DH AND ASTM F 436
2. MOUNTING MUST BE AS FOLLOWS:
   - ON METAL POLES THINNER THAN 7 GAUGE, USE 3/8" STAINLESS STEEL RIVETS
   - ON METAL POLES 7 GAUGE OR THICKER, DRILL AND TAP FOR 3/8" BOLT (STAINLESS STEEL RIVETS OPTIONAL)
   - ON POLES FILLED WITH OR MADE FROM CONCRETE USE 3/8"X2¾" STUD BOLT ANCHORS WITH HEX NUT
3. FOR STREET NAME SIGN PEDESTAL INSTALLATION, SEE STD PLAN NO 623
NOTE:
WRAP TOP OF ANCHOR BOLTS WITH CORROSION PROTECTION TAPE

PEDESTRIAN PUSHBUTTON & MOUNTING PER STD PLAN NO 522a and 522b

2" PIPE CAP CALV

2" SCH 40 STL PIPE CALV

BOLT COVER

2" STANDARD IRON PIPE FLANGE W/41/4" BOLT CIRCLE

(4) 1/2"X12" ANCHOR BOLTS @41/4" BOLT CIRCLE W/2 NUTS AND 2 WASHERS PER EACH BOLT

TOP OF SIDEWALK

TOP OF FOUNDATION

COLD JOINT

SIDEWALK REMOVAL & RESTORATION LIMITS

PEDESTRIAN PUSHBUTTON POST FOUNDATION CLASS 3000 CONCRETE

1" SCH 80 PVC

ROUND OR SQUARE

FINISH GRADE

1" CHAMFER (TYP)

1'-6"
1/4-20 X 3/8” LONG STAINLESS STEEL SCREW

MUTCD R10-3 5”x7” SIGN

PUSHBUTTON STATION

DRILL POLE FOR 5/8” MIN. WIRE GUIDE HOLE AND INSULATOR

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 SIGN REQUIREMENTS.

note 4 added

REF STD SPEC SEC 8-31

ACCESSIBLE PEDESTRIAN SIGNAL (APS)
PED. PUSHBUTTON ASSEM.
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. THIS PUSHBUTTON ASSEMBLY MUST NOT BE INSTALLED FOR PEDESTRIAN USE UNLESS APPROVED BY THE ENGINEER.

City of Seattle

NOTES:
1. 3'-0" MIN CLEARANCE IS REQUIRED IN FRONT OF ACCESS DOOR.
2. A POLE AND BASE COLLAR ASSEMBLY IS REQUIRED FOR ALUMINUM PEDESTAL SHAFTS TALLER THAN 10'.

8"X8"X2" ACCESS DOOR
LOCATE FACING SIDEWALK

ANCHOR BOLT
HEX NUT
LOCK WASHER
FLAT WASHER

LEVELING NUT SLOPE

3" THREAD PROJECTION ABOVE NUT

WRAP WITH TAPE TO SEAL OUT GROUT

FOR GROUT DETAIL SEE STD PLAN NO 563

1 3/8" PLASTIC DRAIN TUBE ON LOW SIDE OF FINISH GRADE

ACCESS DOOR
SLOTS

4" ON HIGH SIDE OF FINISH GRADE
EXIST GROUND

TOP OF FOUNDATION 6"
COLD JOINT FOR BLOCKOUT
CONCRETE WALK

CENTER 2" SCH 80 PVC
CLASS 3000 CONCRETE
1'-0"
ROUND OR SQUARE

1'-1/8"
BOLT CIRCLE

PEDESTAL FOUNDATION

BOTTOM VIEW

4" PIPE THREAD FOR 4" PIPE
SET BOLT

4 1/2" PIPE
GROUNDING LUG

PEDESTAL MOUNTING DETAIL

SQUARE BASE PEDESTAL

REFERENCES:
STANDARD PLAN NO 524

500 SIGNALIZATION-LIGHTING

NOT TO SCALE

City of Seattle


REF STD SPEC SEC 8-32
TYPICAL SOLAR PANEL LOCATION
WHERE SOLAR PANEL IS NOTED
IN THE DRAWINGS, SIZE,
MOUNTING AND HARDWARE
MUST BE PER MANUFACTURER,
SEE NOTES 1 & 4.

SIGN MUST BE MOUNTED
WITH STAINLESS STEEL
BRACKET PER STD PLAN
816. PROVIDE MINIMUM
CLEARANCE BETWEEN SIGN
AND CURB OR ROADWAY
EDGE PER STD PLAN 827A.

FLASH CONTROLLER
AND CONTROLLER
CABINET (PER
DRAWING)

(2) W11-15
(2) W16-7PL (24"X12")
OR
(2) W16-7PR (24"X12")

PUSHBUTTON ASSEMBLY
SIGN TO BE EITHER R10-25 OR
R10-25C (9"X12"), AS
NOTED IN DRAWINGS.
PUSHBUTTON ASSEMBLY
TO BE SIZED TO ACCOMMODATE
SIGN. SEE NOTE 7.

PEDESTAL POLE
PER STD PLAN 524

SURFACE AND
FINISHED
GRADE PER DRAWINGS

SIDE VIEW

NOTES:
1. RECTANGULAR RAPID FLASHING BEACON MUST BE
HARDWIRED TO A SERVICE CABINET UNLESS OTHERWISE
NOTED IN THE DRAWINGS.
2. RECTANGULAR RAPID FLASHING BEACON MUST 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 TOWARD CROSSWALK AND BE VISIBLE
TO PEDESTRIANS IN THE CROSSWALK. WHERE RAPID
FLASHING BEACON IS LOCATED IN A MEDIAN, OR SERVES
MULTIPLE DIRECTIONS OF PEDESTRIAN TRAVEL, PEDESTRIAN
LED INDICATION MUST BE PROVIDED ON BOTH SIDES OF
LIGHT BAR.
4. IF A SOLAR PANEL IS INCLUDED ON THE POLE, USING THE
STANDARD FOUNDATION SHOWN, THEN MOUNTING HEIGHT
OF SOLAR PANEL MUST BE NO MORE THAN 17"-8".
5. FOUNDATION SOILS MUST BE FREE OF LANDFILL OR OTHER
SETTLEMENT-PRONE MATERIAL AND GROUNDWATER.
6. ALL REINFORCING BARS MUST BE DEFORMED BILLET STEEL
CONFORMING TO ASTM CLASS A706, GRADE 60.
7. PUSHBUTTON TO BE SUPPLIED WITH RECTANGULAR RAPID
FLASHING BEACON.

RECTANGULAR RAPID
FLASHING BEACON

SIDE VIEW

REF STD SPEC SEC

City of Seattle

NOT TO SCALE

RECTANGULAR RAPID
FLASHING BEACON

DIPOLE LOOP DETECTOR

WINDING DETAIL

QUADRIPOLE LOOP DETECTOR

*NOTE:
OVERLAP CUT AT FULL DEPTH AT CORNERS (TYP) CHIP 1" BACK THEN ROUND OFF CORNERS WHERE LOOP WIRE WILL BE BENT 90° OR LESS.

BICYCLE DIPOLE

PARALLELOGRAM

BICYCLE QUADRIPOLE

NOTES:
1. SEE STD PLAN NO 772 FOR BICYCLE DETECTOR PAVEMENT MARKER DETAIL
2. FILL CUT AFTER VERTICAL GRADE ADJUSTMENT WITH HOT AIR-APPLIED GRADE LIQUID ASPHALT ASTM D 312 TYPE III OR QUICK SETTING HIGH STRENGTH GROUT

REF STD SPEC SEC 8-31

# FOUNDATION SCHEDULE

<table>
<thead>
<tr>
<th>POLE TYPE</th>
<th>PROJECTION</th>
<th>ANCHOR BOLTS (TOTAL 4 PER POLE)</th>
<th>ANCHOR PLATE DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \frac{7}{16}'' )</td>
<td>( \frac{1}{2}'' ) DIA x 60''</td>
<td>( \frac{1}{2}'' ) X 16'' x 16''</td>
</tr>
<tr>
<td></td>
<td>9''</td>
<td>( \frac{1}{4}'' ) DIA x 72''</td>
<td>18''</td>
</tr>
<tr>
<td></td>
<td>10''</td>
<td>( \frac{1}{2}'' ) DIA x 72''</td>
<td>20''</td>
</tr>
<tr>
<td></td>
<td>11 5/8''</td>
<td>( \frac{1}{4}'' ) DIA x 72''</td>
<td>22''</td>
</tr>
</tbody>
</table>

FOUNDATION PER POLE, WHERE POLE TYPE OTHER THAN NOTED ABOVE IS REQUIRED, REFER TO PLANS FOR ANCHOR BOLTS AND ANCHOR PLATE DIMENSIONS.

# ANCHOR PLATE

- Center Hole Diameter
- Corner Radius
- Bolt Circle Diameter

# INCLINED CONDITION

- Inclined Sidewalk or Finished Grade
- Anchor Bolts

# 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.
3. ANCHOR PLATE: ASTM A36, HOT DIP GALVANIZED PER ASTM A123.
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(2); PRIOR TO POURING CONCRETE.
7. FOUNDATION DEPTH, REINFORCEMENT AND ANCHOR BOLTS MUST BE IN CONFORMANCE WITH "AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" (6TH EDITION, 2013). DESIGN BASIC WIND SPEED IS 85 MPH AND RECURRENCE INTERVAL/DISIGN LIFE IS 50 YEARS.

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 ¾" TO 1½" 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 "SOOT" OR "SL" ON THEM, AS APPROPRIATE.
4. TYPE 1 HANDHOLE MUST BE INSTALLED IN HIGHWAYS, 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 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 UD AND UD TO GROUND ROD.
7. ALL HANDHOLE COVERS AND FRAMES MUST HAVE A NON-SKID SURFACE (SEE STD SPEC SEC 9-34.6).
8. ALL HANDHOLE MUST HAVE A LOAD PATH OF HCR.
9. GROUND ROD REQUIRED IN ALL STREETLIGHT HANDHOLES PER SCL CONSTR STD 1714.50.
10. SEE SCL CONSTRUCTION STANDARD 1716.07 & SCL MATERIAL STD 7203.10 FOR STREETLIGHT HANDHOLE AND CONDUIT REQUIREMENTS.

HANDHOLE INSTALLATION DETAIL

FULL 180° OPEN STEEL PLATE COVER (GALV) W/Locking Latch
(4) ¾" Lift INSERTS
RECESSED LIFT HANDLE
COVER

18" X 18" KNOCKOUT 1 EACH END
6" DRAIN HOLE(OPENED)
OPTIONAL GALV PULLING IRON 1 EACH END
6" MIN THICKNESS MNRL AGG TYPE 9
#3 BAR (TYP)

TYPE 5 HANDHOLE

TOP UNIT INSIDE DIMENSION EXTENSION UNIT(E) COVER DIMENSIONS
1 10" 13" 12" 12" 17½" 12½"
2 12" 12" 12" 12" 22½" 16½"
3 36" 24" 10" 12" 35" 24"
4 24" VAR NA NA NA NA
5 36" 24" 32" 12" 35" 24"
6 42" 42" 36½" NA 35½" 33½"

TYPE 1 & 2 HANDHOLE

#3 BAR (TYP)

2" HIGH LETTERS, "SOOT" OR "SL" AS APPROPRIATE

STEEL FRAME (GALV) ANCHORED TO TOP UNIT

6" MIN THICKNESS MNRL AGG TYPE 9

TYPE 3 HANDHOLE

COVER SAME AS TYPE 5

TYPE 4 HANDHOLE

TRAFFIC BEARING

TOP OF PAVEMENT

CONCRETE CAST IN COVER

MINERAL AGGREGATE TYPE 9

GALV "C" CHANNELS 18" LONG ON ALL SIDES

RISER

12" X 12" KNOCKOUT 2 EACH SIDE

6" MIN THICKNESS MNRL AGG TYPE 9

#3 BAR (TYP)

3"-6"

2"-8"

3"-6"

2"-8"
NOTES:
2. ALL NON-DELIBERATE TRAFFIC PULL BOXES MUST COMPLY WITH ALL TEST PROVISIONS OF ANSI/SCITE 77 2012 “SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY”, & MUST MEET THE TIER 22 APPLICATION. MARKINGS SHOWING THE TIER 22 RATING MUST BE LACED 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.
5. ALL BOXES MUST BE LOWERED AT RIM & CALIBRATED AT TOP, NO LARRYING.
6. TYPE 4 HANDBOLES MUST BE INSTALLED IN ROADWAY PARKING LOTS, ETC. ALL COVERS MUST BE COMPLETE WITH A MOLDED LOGO, MANUFACTURES NAME & TIER RATING LOGO (NO GLUE IN LOGO). LOGO MUST READ “SDOT” OR “SL” UNLESS STATED OTHERWISE BY THE CITY OF SEATTLE.
7. THE DIAMOND HOLE MUST EXTEND 4” ABOVE THE BOTTOM OF THE HANDBOLES OR MINERAL AGGREGATE.
8. 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 EMBODGING THE BOTTOM FLANGE OF THE CASTING IN THE PAVEMENT.
9. A 4” LENGTH OF #6 THIN OR THIN COPPER WIRE MUST BE SECURED FROM THE HANDBOLES COVER TO THE FRAME, WITH A 4-0” LENGTH FROM FRAME THAT CAN BE HOOKED TO A GROUND ROD.
10. ALL HANDBOLES COVERS AND FRAMES MUST HAVE A NON-SKID SURFACE (SCL MATERIAL STANDARD 7203.10).
11. SEE SCL CONSTRUCTION STANDARD 1716.07 FOR STREET HANDBOLES 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>1</td>
<td>24&quot; 13&quot; 12&quot;</td>
<td>H</td>
<td>L W</td>
</tr>
<tr>
<td>2</td>
<td>30&quot; 17&quot; 12&quot;</td>
<td>H</td>
<td>L W</td>
</tr>
<tr>
<td>3</td>
<td>36&quot; 24&quot; 18&quot;</td>
<td>H</td>
<td>L W</td>
</tr>
<tr>
<td>4</td>
<td>24&quot; [10] VAR</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>5</td>
<td>30&quot; 48&quot; 36&quot;</td>
<td>NA</td>
<td>30&quot; 48&quot;</td>
</tr>
<tr>
<td>6</td>
<td>48&quot; 48&quot; 48&quot;</td>
<td>NA</td>
<td>48&quot; 48&quot;</td>
</tr>
</tbody>
</table>

TYPE 3 HANDBOLE
(COVER SAME AS TYPE 5)

3/8-7 X 4 [102] LONG S.S. HEX HEAD AUGER BOLT 2 PLACES

TYPE 1 & 2 HANDBOLE


TYPE 5 HANDBOLE

6" X 18" KNOCKOUT 2 EACH END
6" DRAIN HOLE (OPENED)
(2) 1/8" GROUND ROD KNOCKOUTS

POLYMER CONCRETE HANDBOLES

City of Seattle
NOT TO SCALE

NOTE:
POLE AND MAST ARM DESIGN MUST CONFORM TO "AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" (6TH EDITION, 2013).
DESIGN BASIC WIND SPEED IS 85 MPH AND RECURRANCE INTERVAL/DESIGN LIFE IS 50 YEARS.

SEE FOUNDATION SCHEDULE, STD PLAN NO 562a AND FOUNDATION DETAIL, STD PLAN NO 541a
500 SIGNALIZATION-LIGHTING

STANDARD PLAN NO 562b

REV DATE: JAN 2020

CENTER HOLE DIAMETER

RED LINE:
- Hole added
- Callouts revised
- Schedule revised
- Flange detail removed
- Notes 1, 2, 3, 5, 7 & 8 revised

POLE FOUNDATION NOTES
1. CONCRETE MUST BE CLASS 4000P.
4. ALL REINFORCING BARS MUST BE DEFORMED BILLET STEEL CONFORMING TO ASTM CLASS A705, 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 8-32.3(2)A PRIOR TO POURING CONCRETE.
7. SEE STD PLAN NO 541a FOR FOUNDATION DETAILS.
8. FOUNDATION DEPTH, REINFORCEMENT AND ANCHOR BOLTS MUST BE IN CONFORMANCE WITH "ASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS" (6TH EDITION, 2013). DESIGN BASIC WIND SPEED IS 85 MPH AND RECURRENCE INTERVAL/DESIGN LIFE IS 50 YEARS.

POLE SCHEDULE

<table>
<thead>
<tr>
<th>MAST ARM LENGTH</th>
<th>POLE BASE PLATE</th>
<th>POLE SCHEDULE</th>
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<tbody>
<tr>
<td>15'-0&quot; TO 30'-0&quot;</td>
<td>16&quot; X 16&quot; 1¾&quot; 1¾&quot;</td>
<td>1¾&quot;</td>
</tr>
<tr>
<td>31'-0&quot; TO 40'-0&quot;</td>
<td>18&quot; X 18&quot; 1¾&quot; 2¾&quot;</td>
<td>2¾&quot;</td>
</tr>
<tr>
<td>41'-0&quot; TO 45'-0&quot;</td>
<td>18&quot; X 18&quot; 1¾&quot; 2¾&quot;</td>
<td>2¾&quot;</td>
</tr>
<tr>
<td>46'-0&quot; TO 60'-0&quot;</td>
<td>20&quot; X 20&quot; 2¾&quot; 2¾&quot;</td>
<td>2¾&quot;</td>
</tr>
</tbody>
</table>

FOUNDATION SCHEDULE

<table>
<thead>
<tr>
<th>MAST ARM LENGTH</th>
<th>ANCHOR BOLTS</th>
<th>ANCHOR PLATE DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>15'-0&quot; TO 30'-0&quot;</td>
<td>7&quot; 1¾&quot; 1¾&quot;</td>
<td>¾&quot; X 16&quot; X 16&quot; 1¾&quot;</td>
</tr>
<tr>
<td>31'-0&quot; TO 40'-0&quot;</td>
<td>9&quot; 1¾&quot; 1¾&quot;</td>
<td>¾&quot; X 16&quot; X 16&quot; 1¾&quot;</td>
</tr>
<tr>
<td>41'-0&quot; TO 45'-0&quot;</td>
<td>18&quot; 1¾&quot; 2¾&quot;</td>
<td>¾&quot; X 16&quot; X 16&quot; 1¾&quot;</td>
</tr>
<tr>
<td>46'-0&quot; TO 60'-0&quot;</td>
<td>10&quot; 2½&quot; 2¾&quot;</td>
<td>¾&quot; X 16&quot; X 16&quot; 1¾&quot;</td>
</tr>
</tbody>
</table>

FOUNDATION DEPTH 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

### POLE SCHEDULE

<table>
<thead>
<tr>
<th>POLE TYPE</th>
<th>GROUND LINE DIA &quot;A&quot;</th>
<th>POLE BASE PLATE SIZE</th>
<th>BOLT CIRCLE DIA &quot;A&quot;</th>
<th>BOLT HOLE</th>
<th>ANCHOR BOLTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>12&quot;</td>
<td>1¼&quot;x18&quot;x18&quot;</td>
<td>1¾&quot;x23&quot;x23&quot;</td>
<td>18&quot;</td>
<td>2½&quot;</td>
</tr>
<tr>
<td>X</td>
<td>14&quot;</td>
<td>1½&quot;x20&quot;x20&quot;</td>
<td>2&quot;x23&quot;x23&quot;</td>
<td>20&quot;</td>
<td>2½&quot;</td>
</tr>
<tr>
<td>Z</td>
<td>15&quot;</td>
<td>2½&quot;x23&quot;x23&quot;</td>
<td>2½&quot;x23&quot;x23&quot;</td>
<td>22&quot;</td>
<td>2½&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=65 OR 60 KSI RESPECTIVELY).
2. BASE PLATE AND HANDRAIL REINFORCING RUB: ASTM A572 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 0.235" (3 GAUGE). POLE MUST HAVE A MAXIMUM OF TWO PLYS 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 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 MEAN LOAD APPLIED AT 2% ABOVE GROUND LINE.
9. POLE STRENGTH MUST MEET REQUIREMENTS OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS (6TH EDITION, 2013). DESIGN WIND SPEED IS 85 MPH AND RECURRENCE INTERVAL/DESIGN LIFE IS 50 YEARS.

REF: STD SPEC 8-32, 9-33

City of Seattle | NOT TO SCALE | STRAIN POLE DETAILS (TYPE V, X, & Z POLES)

NOTES:
1. POLE STRENGTH MUST MEET REQUIREMENTS OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (6TH EDITION, 2013). DESIGN WIND SPEED IS 85 MPH AND RECURRENCE INTERVAL/DESIGN LIFE IS 50 YEARS.
2. POLE SHAFT: ASTM A572 GRADE 50, 60 OR 65 (Fy=50, 60 OR 65 KSI RESPECTIVELY), OR ASTM A992 GRADE A OR B (Fy=55 OR 60 KSI RESPECTIVELY).
3. BASE PLATE AND HANDHOLE REINFORCING RIM: ASTM A36 OR ASTM A572 GRADE 42.
4. POLE SHAFTS MUST HAVE NO MORE THAN TWO LONGITUDINAL WELDS IN EACH PLY.
5. MINIMUM SHIFT 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 SIZED 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 1.4 1B(1).

ALTERNATE POLE BASE DETAIL

POLE BASE DETAIL

REF STD SPEC SEC 8-32, 9-33
CONDUIT RISER (WITH STAND-OFF BRACKET*)

*WHEN THERE WILL BE ONLY ONE CONDUIT (1½" 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 6'-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 FROM 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
NOTES:
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)(b3) for street designation signs. For dark colored sign in white paint band to match pole.
3. All hardware to be stainless steel.

note 2 revised
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 3/8" 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. SIGN MUST BE ATTACHED WITH TOP EDGE OF SIGN FLUSH WITH TOP OF SQUARE SECTION OF POST.
2. TS-5 ASSEMBLIES MUST BE USED ONLY WITH APPROVAL OF ENGINEER, IN AREAS NOT SUBJECT TO RECREATIONAL TRAFFIC.
3. POST SLEEVE MAY BE FLUORESCENT YELLOW GREEN OR FHWA YELLOW WHERE SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER.

"SHALL" changed to "MUST"

new detail added

note 3 revised
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/SS relocation, old concrete must be removed and new concrete base shall be constructed.
4. All street name signs will be furnished by the City of Seattle at project or permittee's expense.

See heavy duty anchor, STD PLAN NO 621b.

TS-10 TELESPAR, see STD PLAN NO 621a.

TS-12 TELESPAR, see STD PLAN NO 621a.

BILINGUAL INSTALLATION added

note 4 revised

note 5 removed
PERFORATED TELESPAR STANDARD SIGN POST
(TS-5, TS-10, TS-12) (SEE NOTE 2)

NOTES:
1. SEE STD. PAPER NO. 625-25A
2. SUFFIXES ATTACHED TO TELESPAR NAME DESIGNATIONS INDICATE SLEEVE TYPES: RW—RED/WHITE, FYC—FLUORESCENT YELLOW GREEN, Y—FHWA YELLOW.

REF STD SPEC SEC 8-21
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 detail removed
TYPICAL TURN LANE CHANNELIZATION

NUMBER OF LEGEND SETS REQUIRED BASED ON THE LENGTH OF APPROACH LINES

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<thead>
<tr>
<th>APPROACH LENGTH</th>
<th>LEGEND SETS</th>
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</thead>
<tbody>
<tr>
<td>LESS THAN 50 FEET</td>
<td>1 SET AT X-WALK END OF POCKET</td>
</tr>
<tr>
<td>50 FEET TO 120 FEET</td>
<td>2 SETS</td>
</tr>
<tr>
<td>125 FEET TO 300 FEET</td>
<td>3 SETS (SECOND LEGEND LOCATED MIDWAY BETWEEN FIRST AND LAST LEGENDS)</td>
</tr>
<tr>
<td>OVER 300 FEET</td>
<td>ADDITIONAL SETS SPACED AT APPROX 100 FT INTERVALS BETWEEN FIRST AND LAST SETS</td>
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NOTES:
LEFT TURN LANE LAYOUT SHOWN ABOVE. SAME LAYOUT APPLIES FOR OTHER TURN LANES.

TYPICAL TWO WAY LEFT TURN LANE CHANNELIZATION

NUMBER OF LEGEND SETS REQUIRED BASED ON THE LENGTH OF TYPICAL TWO WAY LEFT TURN LANES

<table>
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<tr>
<th>APPROACH LENGTH</th>
<th>LEGEND SETS</th>
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<tbody>
<tr>
<td>LESS THAN 50 FEET</td>
<td>1 SET AT X-WALK END OF POCKET</td>
</tr>
<tr>
<td>50 FEET TO 300 FEET</td>
<td>2 SETS</td>
</tr>
<tr>
<td>OVER 300 FEET</td>
<td>3 SETS (SECOND LEGEND LOCATED MIDWAY BETWEEN FIRST AND LAST LEGENDS) ADDITIONAL SETS SPACED AT APPROX 300 FT INTERVALS</td>
</tr>
</tbody>
</table>

NOTE:
LINE CALLOUTS ARE IDENTIFIED & DESCRIBED IN STD SPEC SEC 8-22.

REF STD SPEC SEC 8-22

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

new standard plan revised from previous std plan 710

**TABLE A**

<table>
<thead>
<tr>
<th>POSTED OR</th>
<th>MUTCD TABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>85TH-PERCENTILE SPEED</td>
<td>2C=4 CONDITION A</td>
</tr>
<tr>
<td>20 MPH</td>
<td>225 FT</td>
</tr>
<tr>
<td>25 MPH</td>
<td>325 FT</td>
</tr>
<tr>
<td>30 MPH</td>
<td>450 FT</td>
</tr>
<tr>
<td>35 MPH</td>
<td>565 FT</td>
</tr>
<tr>
<td>40 MPH</td>
<td>670 FT</td>
</tr>
<tr>
<td>45 MPH</td>
<td>775 FT</td>
</tr>
</tbody>
</table>

**TYPICAL LEGEND AND SYMBOL 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 2B.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

new standard plan

(TYP) INSTALL TYPE 2A LANE MARKERS IN BETWEEN 4" YELLOW LINES

(L= /4YD)

(L= /4WS)

(L= /4W2)

DO NOT INSTALL LANE MARKERS WITHIN PEDESTRIAN CROSSWALK AREA (SEE STD PLAN NO 712)

L= /4YD

L= /4Y2

L= /4YD

REF STD SPEC SEC 8-22

City of Seattle

TYPICAL INTERSECTION GUIDELINE CHANNELIZATION

NOTES:
1. "LADDER STYLE" CROSSWALK MUST BE USED IN MOST APPLICATIONS. "TRANSVERSE LINE" CROSSWALK (L\_XWK) MAY ONLY BE USED WITH APPROVAL OF ENGINEER.
2. LOWER Landing of Curb Ramp must fall wholly within Crosswalk lines. See Standard Plan No 422k.
3. WHERE EXISTING TRAFFIC LOOP LOCATIONS ARE BETWEEN 1" AND 4" FROM THE EDGE OF CROSSWALK, STOP LINE MAY BE PLACED UP TO 2" FROM THE CROSSWALK WITH THE APPROVAL OF ENGINEER.
4. EXACT LOCATION OF CROSSWALK AND STOP LINES MUST BE APPROVED BY SDOT.
5. Colored or Textured Pavement Crosswalks MUST be supplemented with "Transverse Line" Crosswalk Markings.
6. EXISTING CROSSWALK MARKINGS THAT CONFLICT WITH NEW CROSSWALK MARKINGS MUST BE REMOVED.
7. WHEN MARKED CROSSWALK ARE NOT PRESENT, STOP BAR MUST BE PLACED AT A MINIMUM DISTANCE OF 4'-0" UPSTREAM FROM THE EDGE OF THE DETECTABLE WARNING SURFACE OR ANTICIPATED PEDESTRIAN TRAVEL PATH, WHEREVER IS GREATER.

TYPICAL CROSSWALK WITHOUT UPSTREAM CHANNELIZATION

WHERE TRAFFIC LANE LINES ARE NOT USED, LADDER BARS MUST BE 5'-0" CENTER TO CENTER, BEGINNING AT THE MARKED CENTERLINE OF THE ROADWAY.
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
VAR  (10'-0" MAX)

3'-0"  4'-0"  3'-0"
RED  YELLOW  RED

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

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

City of Seattle
NOT TO SCALE
CURB MARKING DETAILS

NOTES:
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.

REF STD SPEC SEC 8-22
NOTE:
1. SEE 2009 MUTCD FIGURE 91-8 FOR TAPER FORMULA.
2. SEE STD PLAN NO'S 432a & 432b FOR MULTI-PURPOSE TRAIL DESIGN PLANS.

REF STD SPEC SEC 8-22
NEW STANDARD PLAN

722A
LEFT & OBLIQUE LEFT ARROW

722B
RIGHT & OBLIQUE RIGHT ARROW

REF STD SPEC SEC 8-22

City of Seattle
NOT TO SCALE
OPTIONAL MOVEMENT ARROWS WITH OBLIQUE ARROWS

new standard plan

723A
LEFT MERGE/LANE REDUCTION ARROWS

723B
RIGHT MERGE/LANE REDUCTION ARROWS

REF STD SPEC SEC 8-22
new standard plan

728A
CHEVRON WITH TRIANGLE

NOTE:
THIS SYMBOL MAY BE RESIZED FOR BIKE FACILITIES.
DIMENSIONS IN THOSE INSTANCES MUST BE SHOWN ON
DESIGN DRAWINGS.

728B
CENTER CUSHION TRIANGLE

REF STD SPEC SEC 8-22

City of Seattle
NOT TO SCALE
SPEED HUMP &
SPEED CUSHION SYMBOL

YIELD LINE LAYOUT

729A
YIELD LINE WITH 18" TALL TRIANGLES

729B
YIELD LINE WITH 36" TALL TRIANGLES

3" TO 12" PER DRAWINGS
OR AS REQUIRED BY SDOT (TYP)

DIRECTION
OF TRAVEL
700 PAVEMENT MARKINGS

STANDARD PLAN NO 730

NOTE:

THIS SYMBOL MAY BE RESIZED FOR BIKE FACILITIES

730A
NAME LEGEND

titles revised

730B
BUS LEGEND

new legend

accessibility symbol moved to new std plan 740

730C
"SLOW" LEGEND

730D
BK LEGEND

REF STD SPEC SEC 8-22

City of Seattle

NOT TO SCALE

PAVEMENT MARKINGS

LEGENDS

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

3'-0"

5'-3"

4"

4"

741A
PEDESTRIAN SYMBOL

title revised

REF STD SPEC SEC 8-22

City of Seattle
NOT TO SCALE
PEDESTRIAN SYMBOL

NOTES:
FHWA APPROVED RED COLOR FOR BUS LANES
MUST BE USED WITH THERMOPLASTIC OR MMA.

750
RED BUS LANE MARKINGS

REF STD SPEC SEC 8-22
new standard plan. symbols moved from previous std plan 722

titles revised

HELMETED BICYCLIST SYMBOL WITH ARROW
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

titles revised

771A
SHARROW

771B
CHEVRON FOR SHARROW

771C
BIKE SYMBOL

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

NOTE:
SEE STD PLAN NO 530b FOR PLACEMENT

772
BICYCLE DETECTOR SYMBOL
700 PAVEMENT MARKINGS

STANDARD PLAN NO 773

REV DATE: JUL 2019

new standard plan

773A
BIKE DOT SYMBOL WITH ARROW

773B
BIKE DOT ARROW

773C
BIKE DOT SYMBOL

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.

774A
GREENWAY THROUGH SYMBOL

774B
GREENWAY ROUTE TURNS SYMBOL

774C
GREENWAY THREE-ROUTE SYMBOL

774D
GREENWAY FOUR-ROUTE SYMBOL
700 PAVEMENT MARKINGS

780A
ONE-WAY CROSS BIKE LAYOUT

780B
TWO-WAY CROSS BIKE LAYOUT

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, CROSS BIKE MUST BE PLACED AT 5' ON
   CENTERS.
2. CROSS BIKE MATERIAL MUST BE MMA OR PRE-FORMED
   THERMOPLASTIC.
3. WHEN CONNECTING BIKE LANES OF VARYING WIDTH, THE
   CROSS BIKE WIDTH MUST BE SIZED TO THE NARROWER OF THE
   TWO FACILITIES.

REF STD SPEC SEC 8-22
DRIVEWAY CROSSING LAYOUT

NOTES:
1. DRIVEWAY CROSSING MATERIAL MUST BE MMA OR PRE-FORMED THERMOPLASTIC
2. MATCH DRIVEWAY APRON IF WIDER THAN 20'
NOTES:
1. BASE OF SUPPORT WALL TO BE BEARING ON COMPACTED SUITABLE MATERIAL
2. BACK FORM FOR SUPPORT WALL MAY BE OMITTED AND CONCRETE PLACED
   AGAINST NATIVE EARTH WHEN GROUND CONDITIONS PERMIT. CLEARANCE TO
   REINF STEEL IN BACK FACE MUST BE 2½"
3. WHEN CONSTRUCTION OF ALLEY PAVEMENT IS NOT PLACED INTEGRAL WITH
   SUPPORT WALL, SHEAR KEYS MUST BE INSTALLED 1"-6" ON CENTERS
4. CONCRETE FOR SUPPORT WALL MUST BE CLASS 4000
5. REINFORCING STEEL ASTM A706 (AASHTO M 31 GRADE 60)
6. VEHICULAR & PEDESTRIAN RAILING PER RIGHT OF WAY IMPROVEMENT MANUAL

REF STD SPEC SEC 8-17, 8-19

City of Seattle  NOT TO SCALE  SUPPORT WALL

NOTES:
1. MATCH WALL THROUGH JOINTS WITH PAVEMENT THROUGH JOINTS. DISCONTINUE HORIZONTAL REINFORCEMENT AT JOINTS AND MAINTAIN 1/2 CLEAR TO ALL REINFORCING AT JOINTS.
2. CONC CLASS 4000 FOR CURB WALL.
3. MAX HEIGHT 4'-0" (MIN PAVEMENT WIDTH IS 12'-0" FOR WALLS HIGHER THAN 3'-0")
4. WHEN CONSTRUCTION OF WALL IS NOT PLACED INTEGRAL WITH ALLEY PAVEMENT, SHEAR KEY INDENTATIONS SPACED 1'-6" OC MUST BE INSTALLED IN THE PAVEMENT SLAB.
5. REINF STEEL ASTM A706 (AASHTO M 31 GRADE 60)
6. ANY RAILING ON TOP OF WALL PER RIGHT OF WAY IMPROVEMENT MANUAL.
7. NON-WOVEN GEOTEXTILE TO BE MODERATE SURVIVABILITY, ANY CLASS PER TABLES 1 AND 2 STD SPEC SEC 9-37
8. ALLEY THICKNESS PER STANDARD PLAN NO 403

REF STD SPEC SEC 8-17