

ITEM

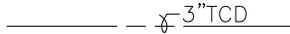
EXISTING

PROPOSED

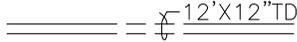
Telephone Cable  
(direct burial)



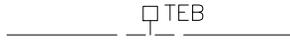
Telephone Conduit



Telephone Duct



Telephone Enclosure



Telephone Maintenance  
Hole



Telephone Pole



Telephone Handhole



Television Cable  
(direct Burial)



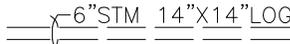
Television Handhole



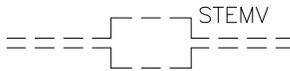
Telegraph Maintenance  
Hole



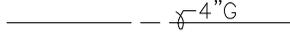
Steam Log



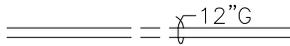
Steam Vault



Gas Main <1'-0\"/>



Gas Main ≥1'-0\"/>



Gas Valve



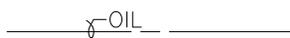
Gas Meter



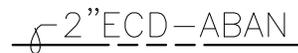
Gas Regulator



Petroleum or Oil



Abandon(ed)



revised

REF STD SPEC SEC



City of Seattle

NOT TO SCALE

STANDARD SYMBOLS  
PRIVATE UTILITIES

ITEM

details added

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

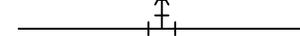
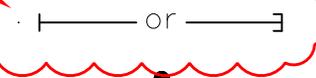
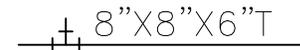
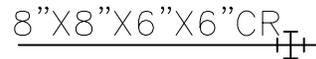
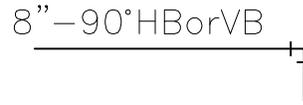
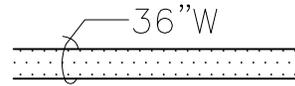
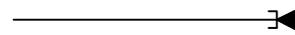
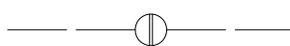
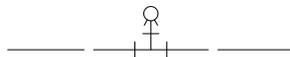
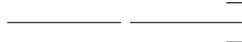
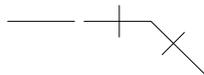
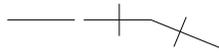
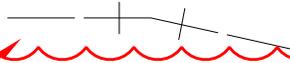
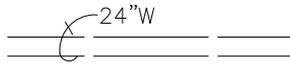
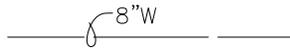
Hydrant

Water Meter

Valve Box

Gate Valve

Gate Valve  
w/ Chamber



revised

revised

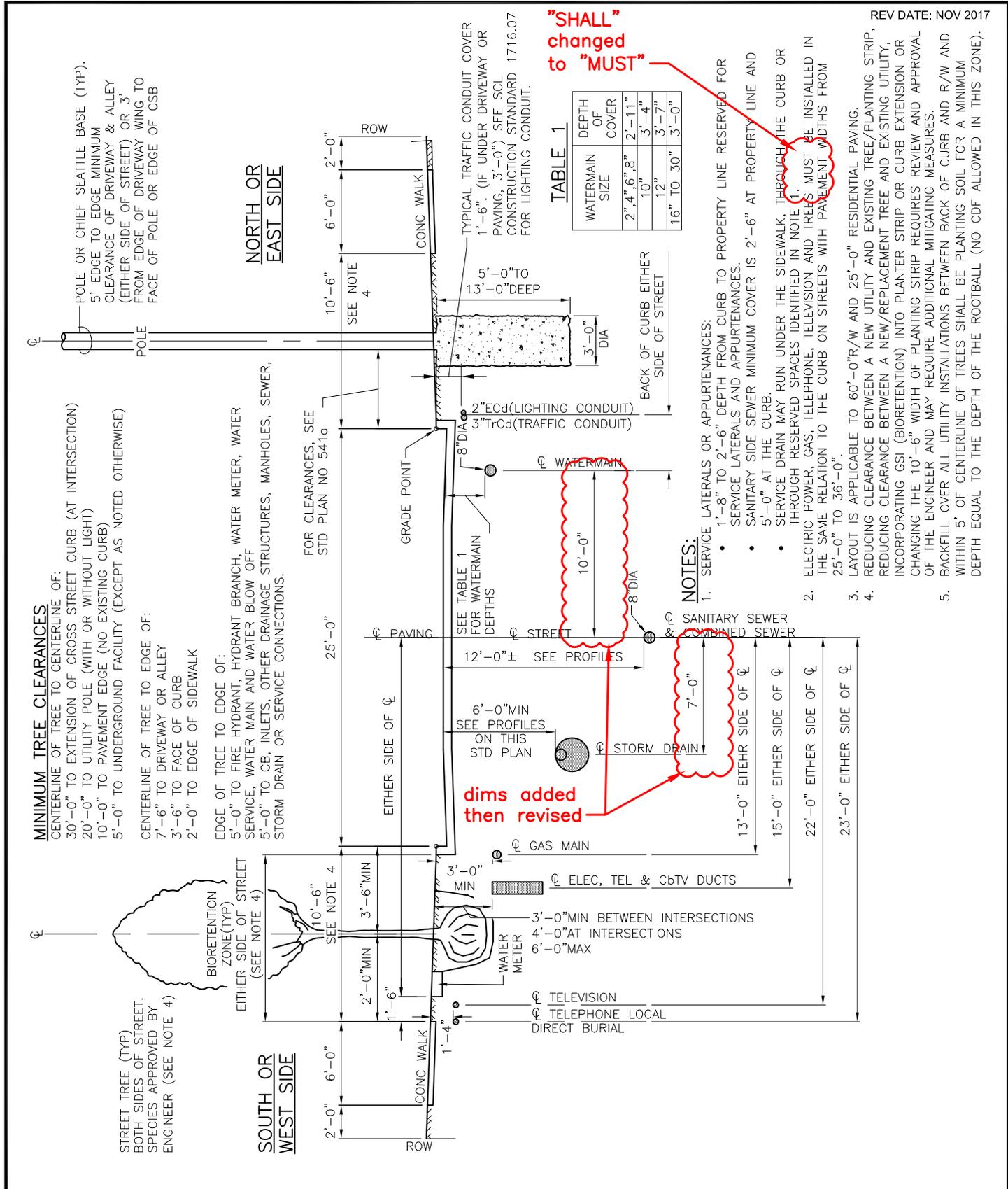
REF STD SPEC SEC



City of Seattle

NOT TO SCALE

STANDARD SYMBOLS  
WATER



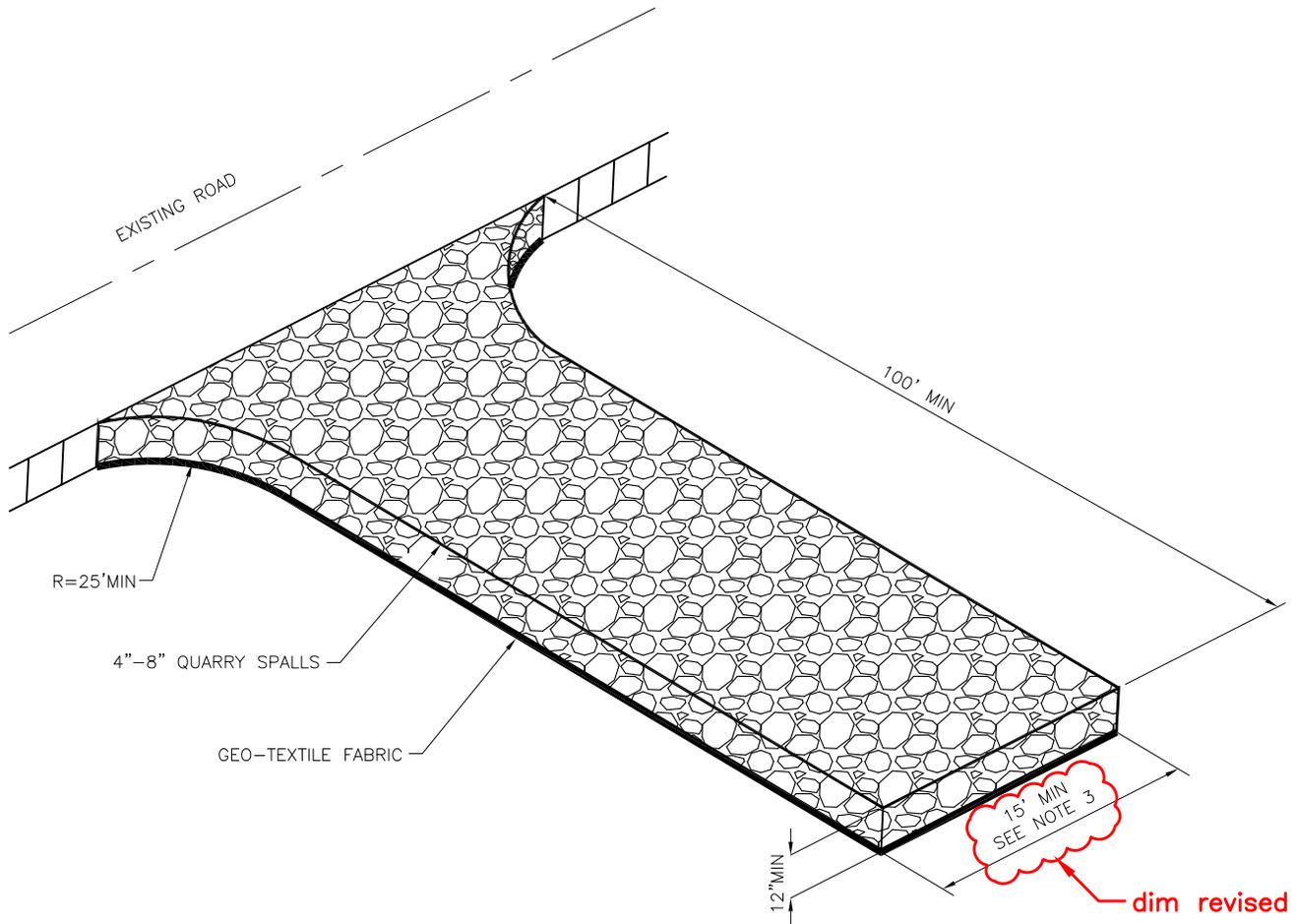
REF STD SPEC SEC 1-07.16, 1-07.17 & 1-07.28



City of Seattle

NOT TO SCALE

DESIRABLE LOCATIONS FOR UTILITIES (RESIDENTIAL STREET)



**NOTES:**

1. STABILIZED ACCESS SHALL BE USED IN ALL AREAS OF THE SITE WITH VEHICLE TRAFFIC AND PARKING, INCLUDING PLANTING STRIPS.
2. SEE SECTION 9-37.2 (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.

note 3 added

REF STD SPEC SEC 8-01

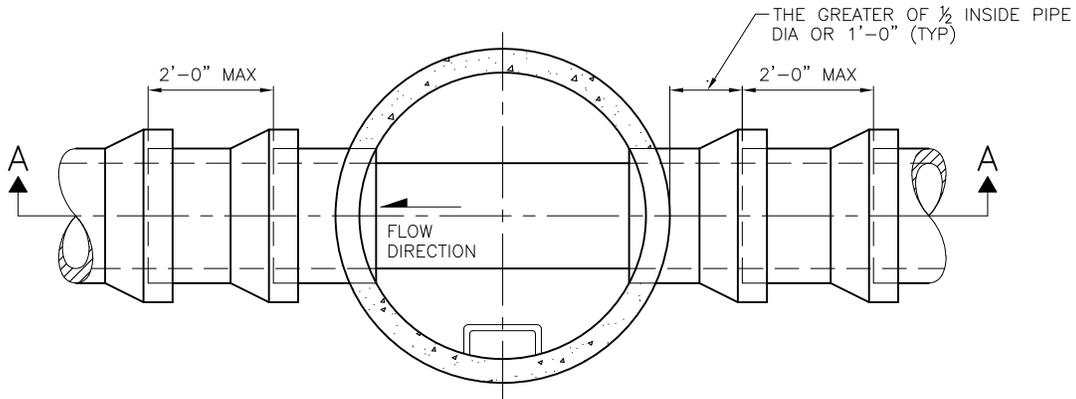


City of Seattle

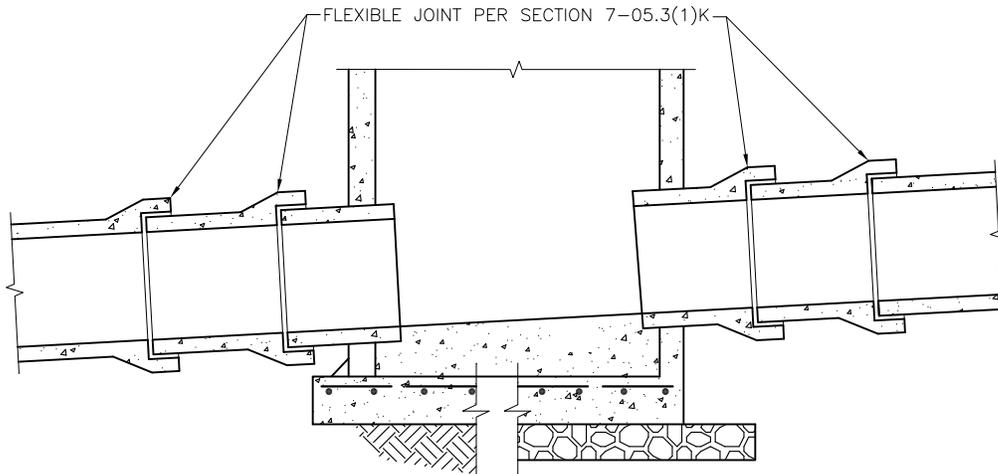
NOT TO SCALE

STABILIZED CONSTRUCTION ENTRANCE

new standard plan



PLAN VIEW  
(TOP REMOVED)



SECTION A-A

NOTES:

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

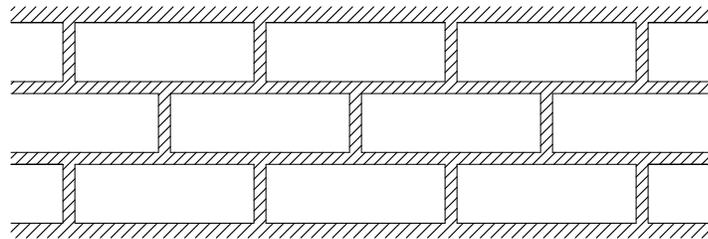
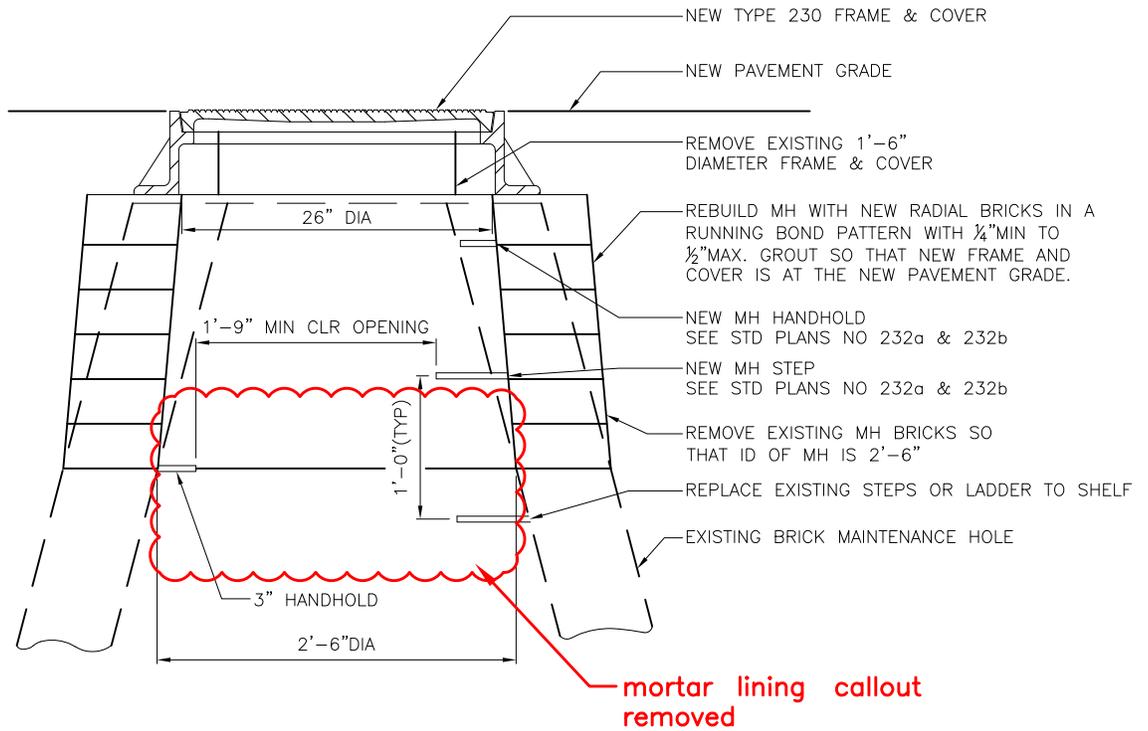
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

FLEXIBLE JOINT FOR VCP  
CONNECTION TO  
MAINTENANCE HOLES



**RUNNING BOND PATTERN**  
GROUT BETWEEN ALL BRICKS

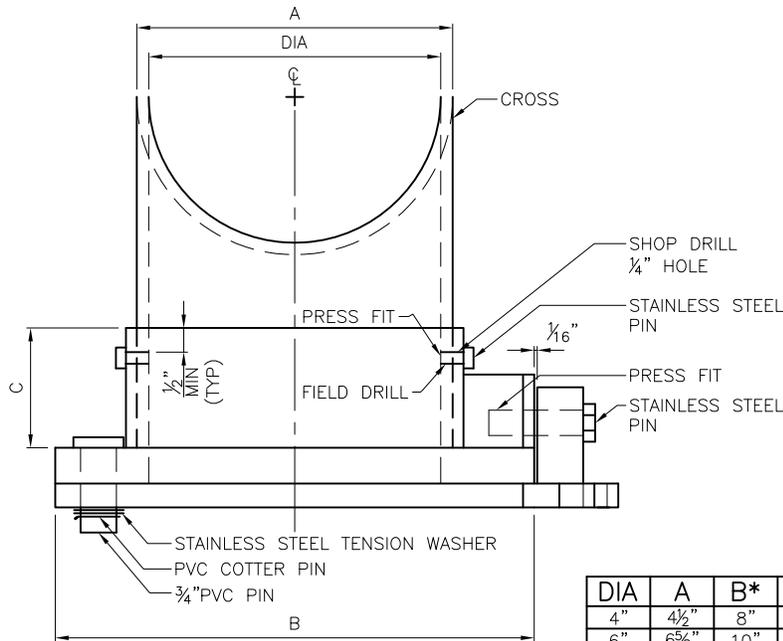
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

**REBUILD EXISTING  
BRICK MAINTENANCE HOLE**

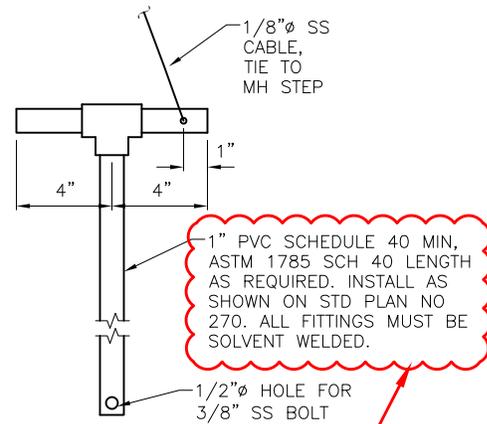


TOP VIEW

DIA	A	B*	C*
4"	4 1/2"	8"	2"
6"	6 5/8"	10"	2 1/2"
8"	8 3/8"	12"	3"
10"	10 3/4"	14"	3"
12"	12 3/4"	16"	3"

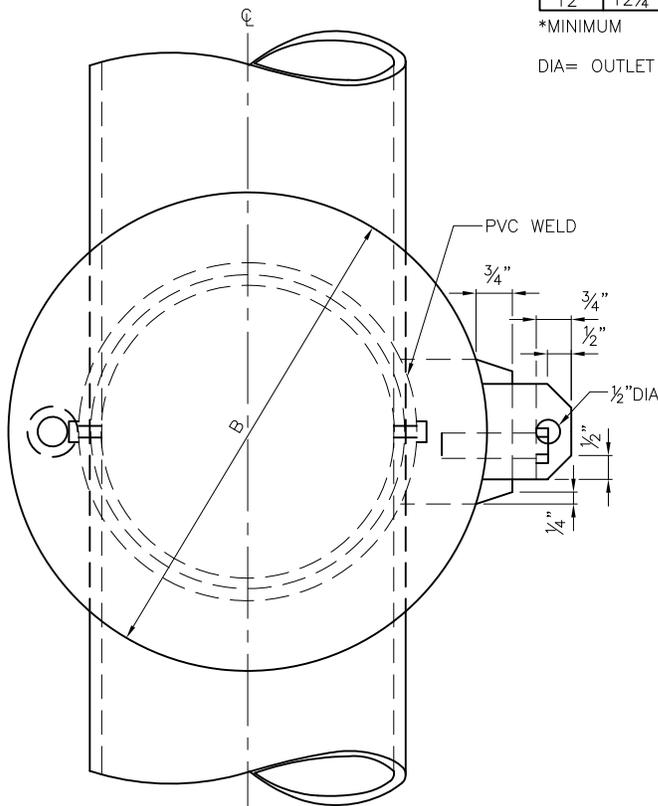
\*MINIMUM

DIA= OUTLET PIPE DIAMETER

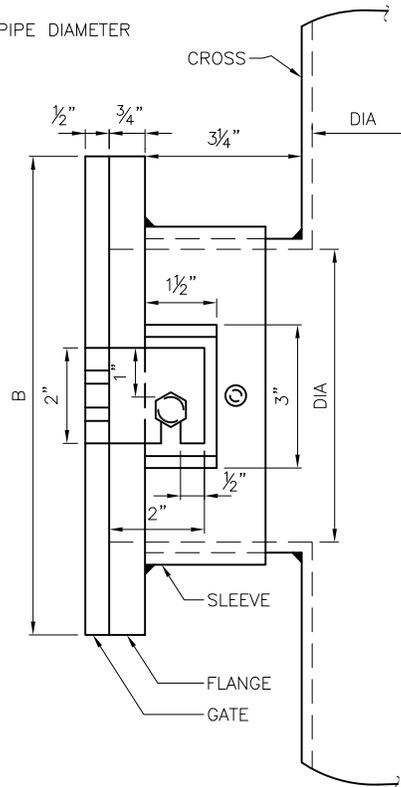


LIFT HANDLE

callout revised



FRONT VIEW



SIDE VIEW

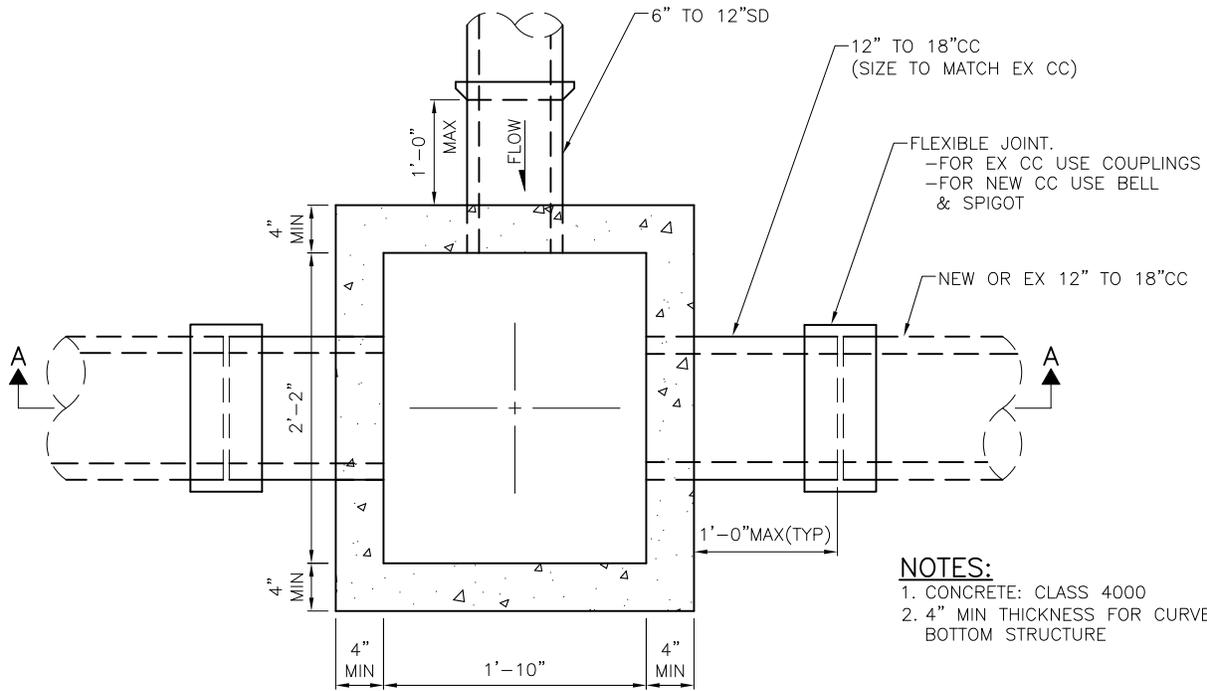
REF STD SPEC SEC 7-16



City of Seattle

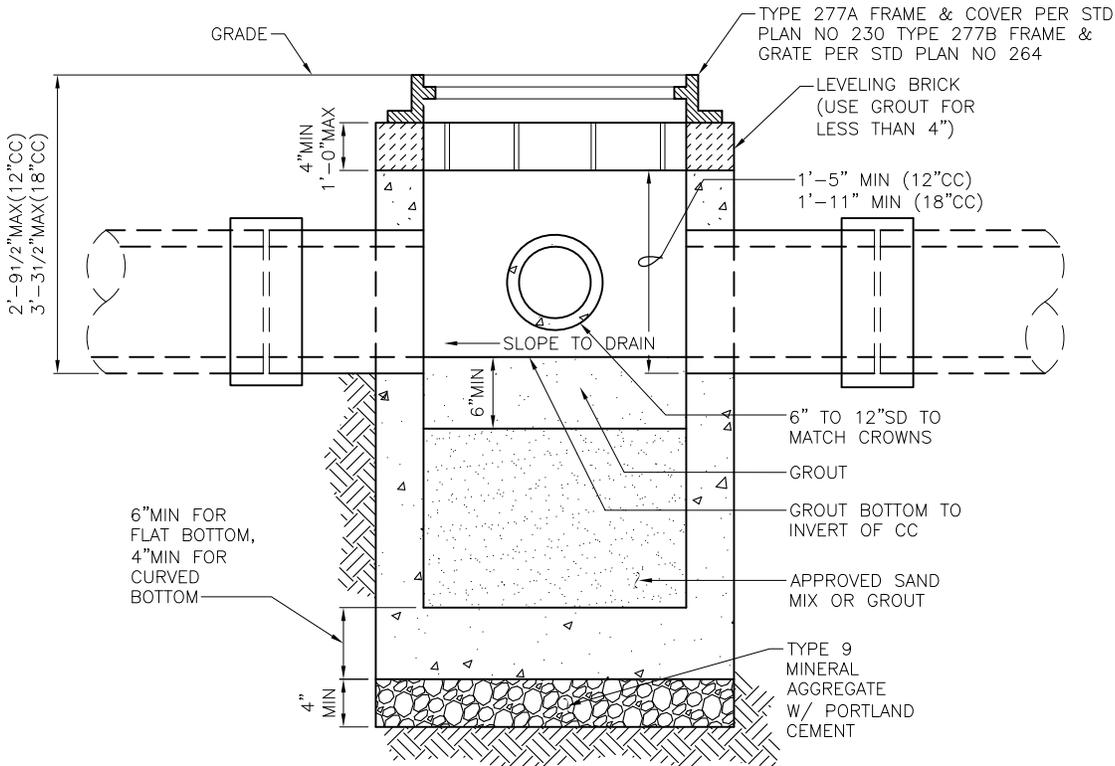
NOT TO SCALE

PVC SHEAR GATE  
FOR USE IN ROW ONLY



- NOTES:**
1. CONCRETE: CLASS 4000
  2. 4" MIN THICKNESS FOR CURVED BOTTOM STRUCTURE

PLAN



SECTION A-A

REF STD SPEC SEC 7-05

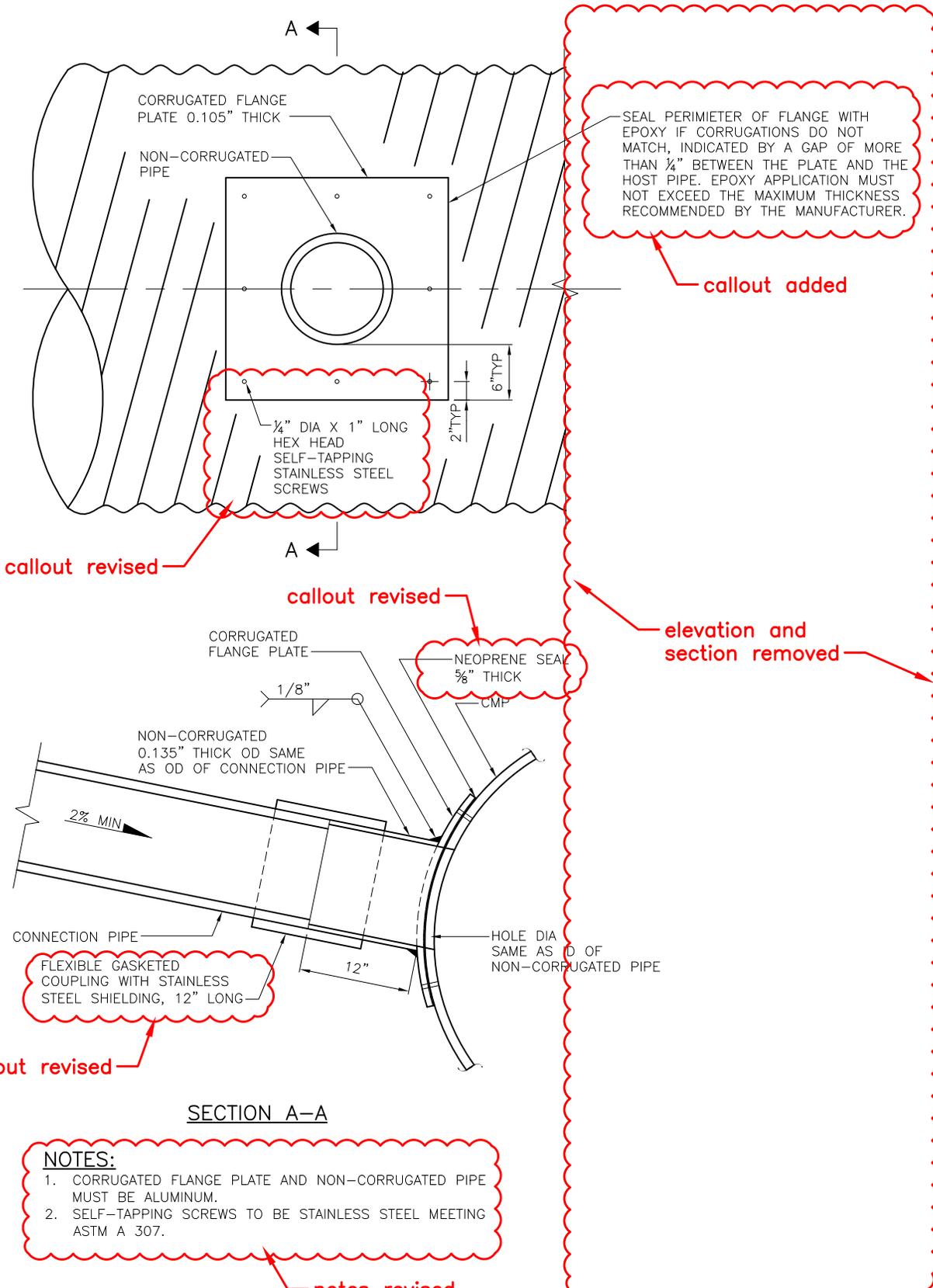
7-02, 9-12.9 revised



City of Seattle

NOT TO SCALE

**TYPE 277 JUNCTION BOX & INSTALLATION**



SEAL PERIMETER OF FLANGE WITH EPOXY IF CORRUGATIONS DO NOT MATCH, INDICATED BY A GAP OF MORE THAN 1/4\"/>

callout added

1/4\"/>

callout revised

callout revised

elevation and section removed

NEOPRENE SEAL 3/8\"/>

FLEXIBLE GASKETED COUPLING WITH STAINLESS STEEL SHIELDING, 12\"/>

callout revised

SECTION A-A

- NOTES:**
1. CORRUGATED FLANGE PLATE AND NON-CORRUGATED PIPE MUST BE ALUMINIUM.
  2. SELF-TAPPING SCREWS TO BE STAINLESS STEEL MEETING ASTM A 307.

notes revised

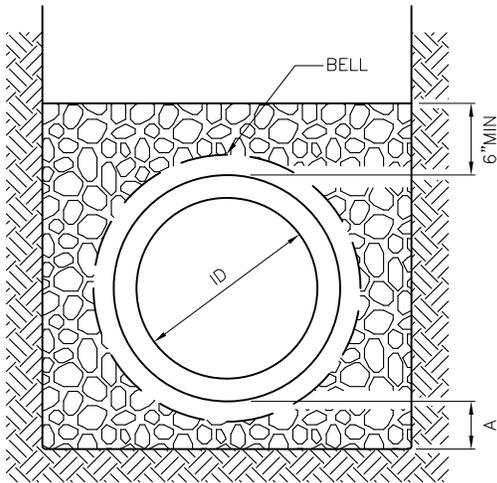
REF STD SPEC SEC 7-17 & 7-16.2



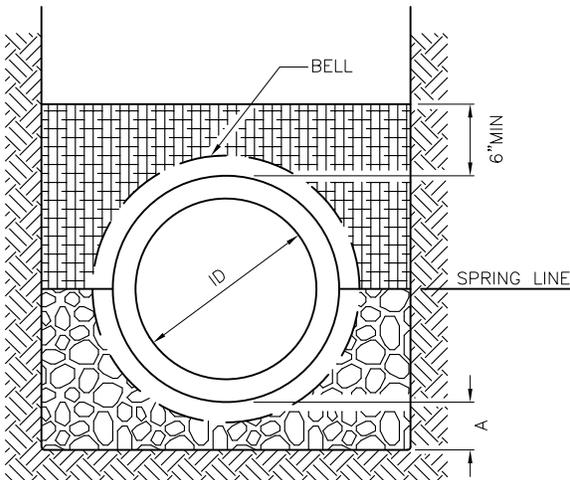
City of Seattle

NOT TO SCALE

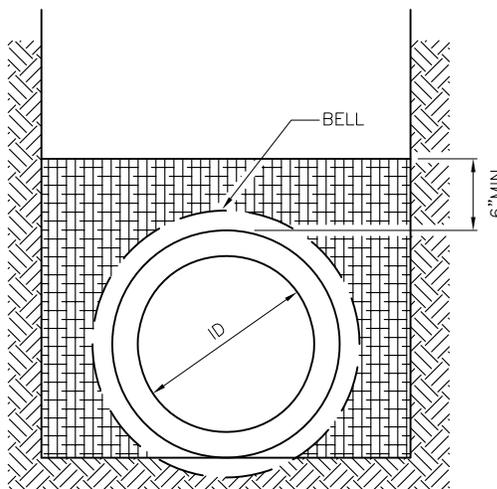
TEE INSTALLATION  
CORRUGATED METAL PIPE



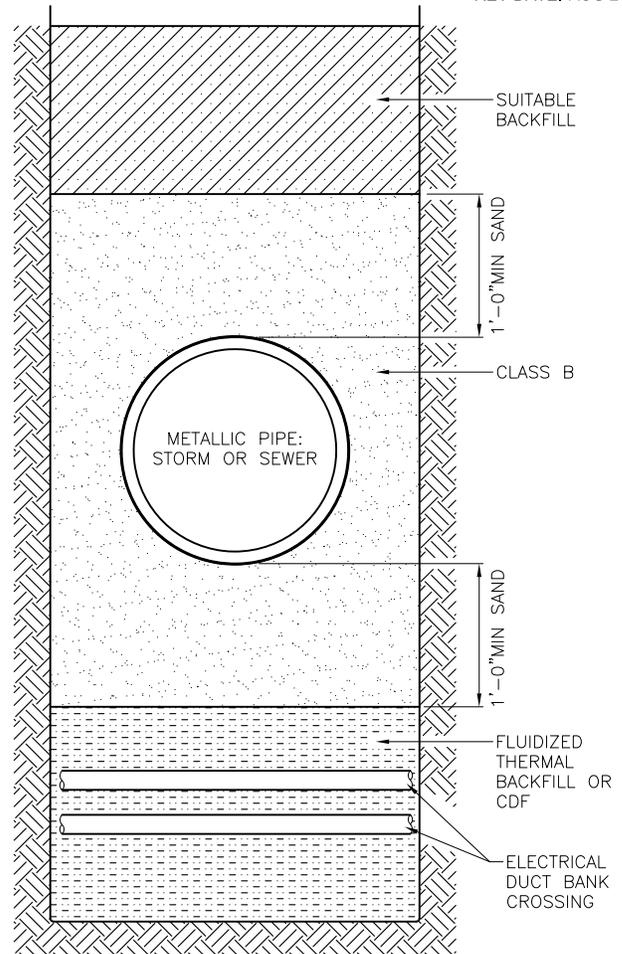
CLASS B BEDDING



CLASS C BEDDING



CLASS D BEDDING



**SAND BEDDING AT TRENCH CROSSING OF METAL PIPE**

AT METALLIC PIPE CROSSING OF FLUIDIZED THERMAL BACKFILL OR CDF CONDUIT CROSSINGS



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



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



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

9-03.16 changed to 9-03.14

**NOTES:**

1. FOR TRENCH WIDTH SEE STD PLAN NO 284
2. A=4" WHEN ID IS LESS THAN 2'-6", A=6" WHEN ID IS 2'-6" OR MORE.
3. UNIFORMLY SUPPORT PIPE BARREL. EXCAVATE HOLES FOR BELLS AND COUPLING.

REF STD SPEC SEC 2-10.2, 7-17

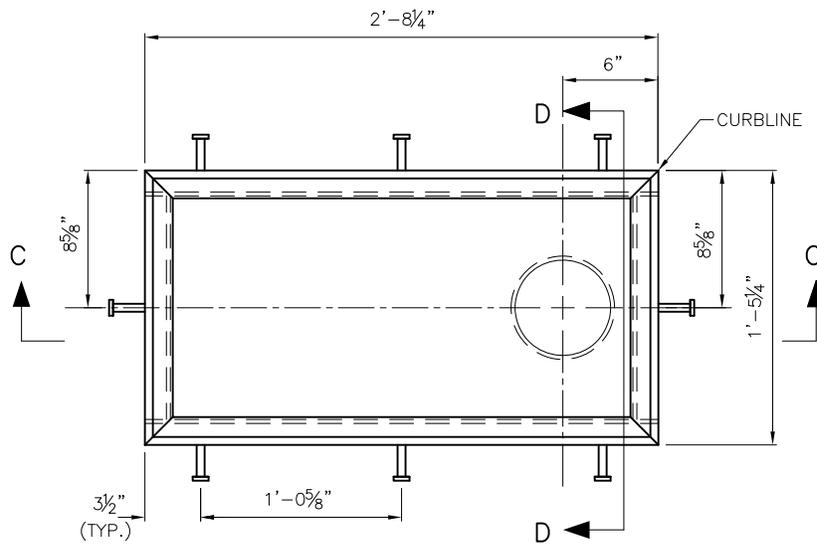
7-11 & 9-03.16 removed



City of Seattle

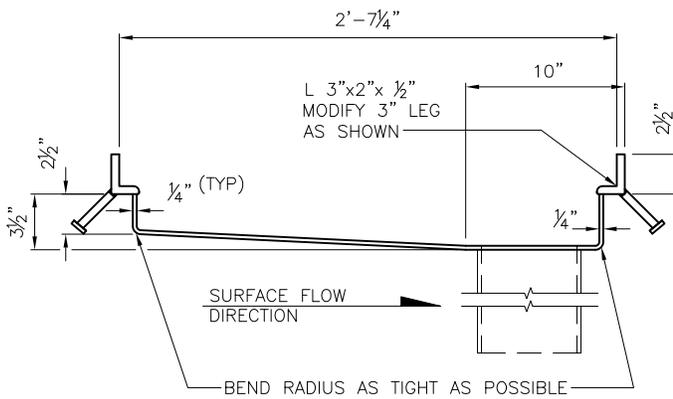
NOT TO SCALE

**PIPE BEDDING  
SEWER/STORM DRAIN**

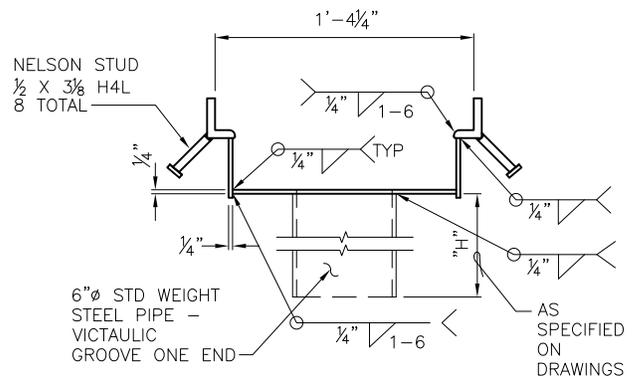


PLAN VIEW — BRIDGE DRAIN

SURFACE FLOW DIRECTION →



SECTION C-C



SECTION D-D

NOTES:

1. ALL 1/4" STEEL & L3"x 2"x 1/2" 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

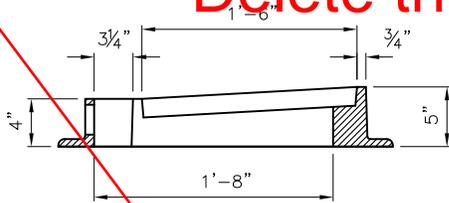


City of Seattle

NOT TO SCALE

BRIDGE DRAIN

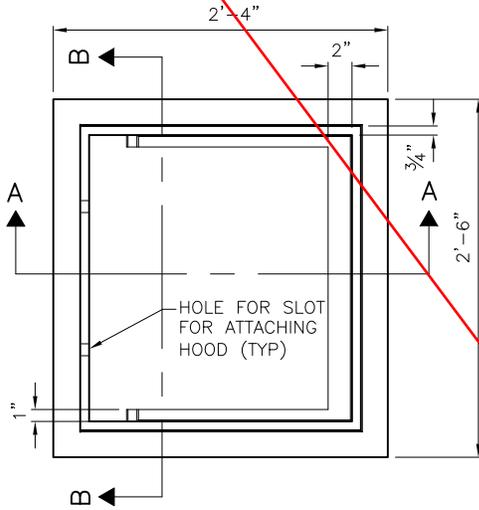
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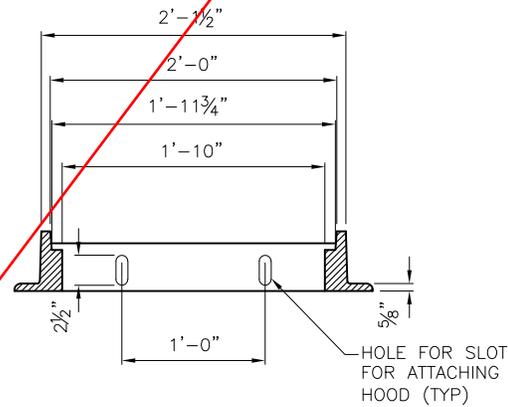
SECTION A-A

NOTES:

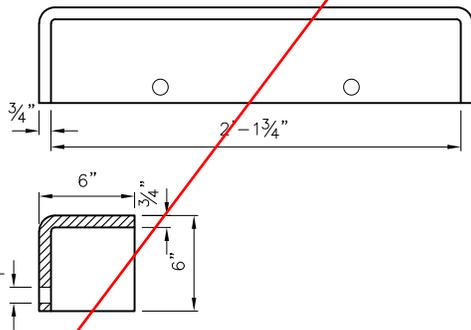
1. ATTACH THE HOOD TO THE FRAME WITH TWO 3/4" X 2" HEX HEAD BOLTS, NUTS, AND OVERSIZE WASHERS. THE WASHERS MUST HAVE DIAMETERS ADEQUATE TO ENSURE FULL BEARING ACROSS THE SLOTS.
2. ONLY DUCTILE IRON VANED GRATES MUST BE USED.



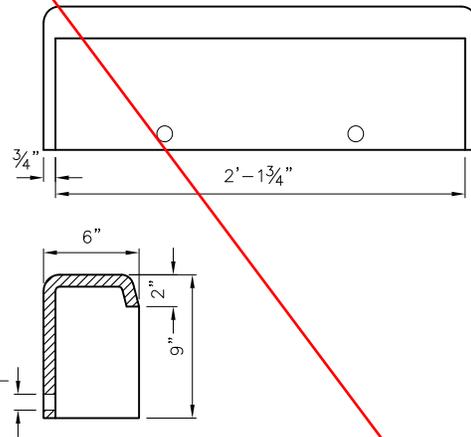
FRAME DETAIL



SECTION B-B



6" HOOD



9" HOOD

REF STD SPEC SEC 7-05

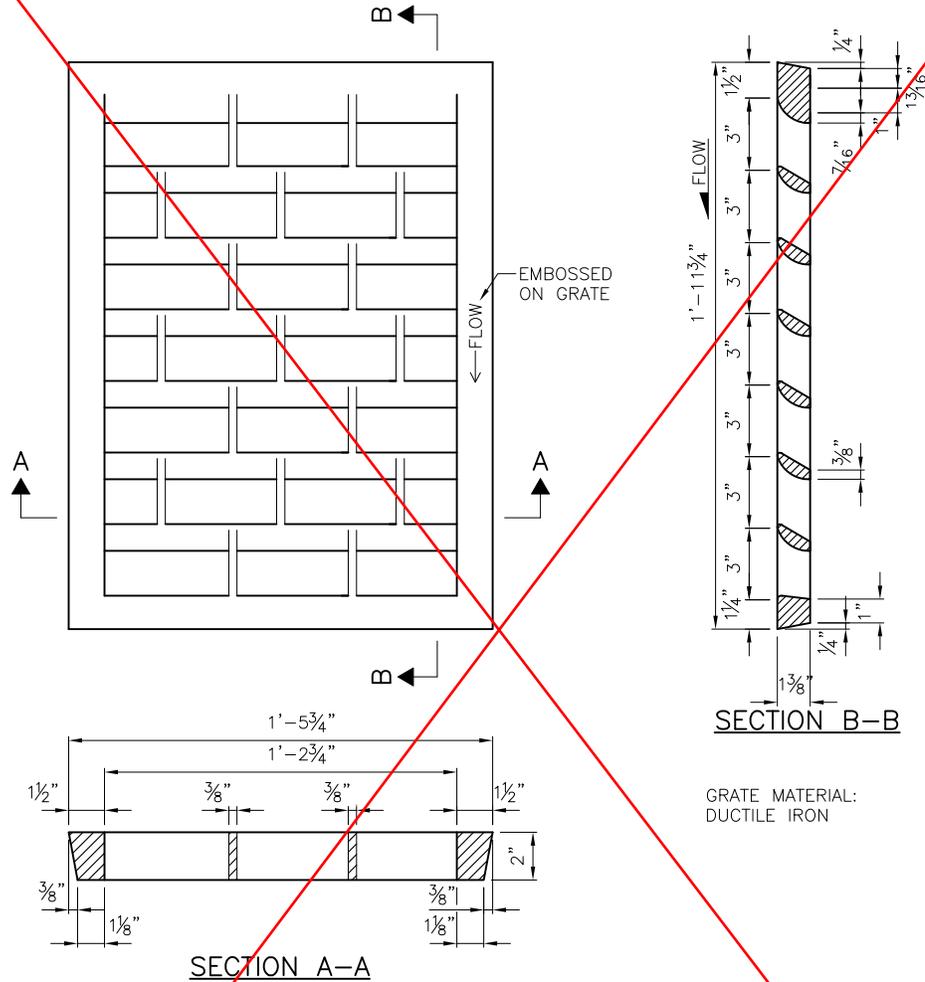


City of Seattle

NOT TO SCALE

CURB INLET FRAME

Delete this Standard Plan



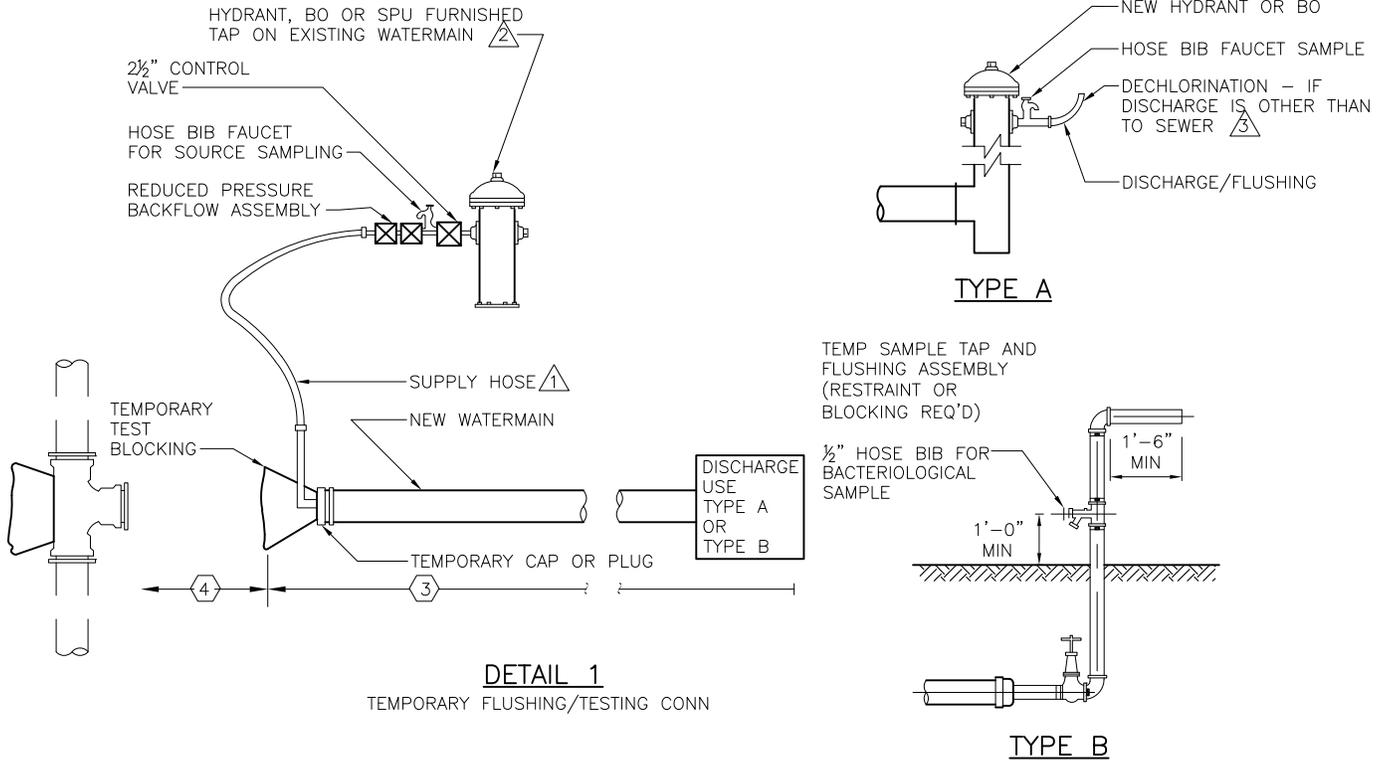
REF STD SPEC SEC



City of Seattle

NOT TO SCALE

CURB INLET VANED GRATE



**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 DIA 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 SITE. FOR INSTALLATION PROCEDURES CALL 684-3536.
5. ALL FITTINGS AND MATERIALS FURNISHED BY CONTRACTOR AND TO BE INSTALLED BY SPU MUST BE VERIFIED, INSPECTED AND ON THE JOB SITE PRIOR TO SHUTDOWN OF EXISTING MAIN. FAILURE TO MEET THIS REQUIREMENT COULD RESULT IN DELAYS.

**LEGEND**

- ① CLEAN & DISINFECTED POTABLE WATER HOSE ONLY. SIZE FLUSHING RISER PER TABLE IN STD SPEC SEC 7-11.3(12)
- ② HYDRANT PERMIT REQUIRED
- ③ CHECK WITH SEWER UTILITY BEFORE DISCHARGE TO SEWERS
- ④ 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.
- ⑤ 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.
- ⑥ INSTALLED BY CONTRACTOR
- ⑦ CONNECTION PIPE: CONTRACTOR FURNISHED, INSTALLED BY SPU
- ⑧ WATERMAIN WITH PLAIN ENDS
- ⑨ MECHANICAL JOINT SLEEVE WITH SPACER CUT TO FIT GAP, FURNISHED AND INSERTED AT TIME OF CONNECTION BY SPU
- ⑩ TAPPING SLEEVE & TAPPING VALVE FURNISHED AND INSTALLED BY SPU
- ⑪ APPLIES TO PIPES 4" THROUGH 12". ALL LARGER SIZES TO BE ADDRESSED ON DRAWINGS
- ⑫ MECHANICAL JOINT SLEEVE, FURNISHED BY CONTRACTOR AND INSTALLED BY SPU, SPACERS BY SPU WHERE REQUIRED.

REF STD SPEC SEC 7-11

revised



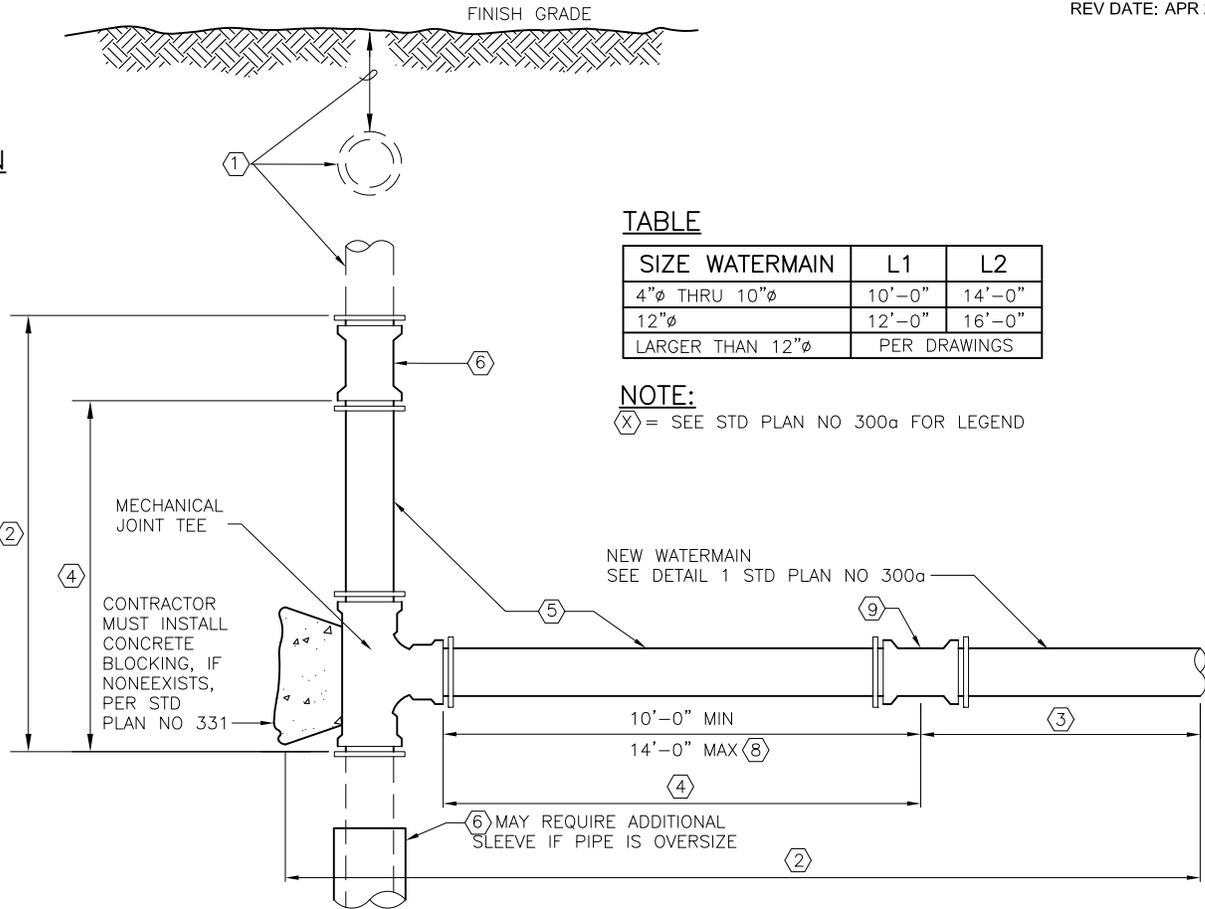
City of Seattle

NOT TO SCALE

CONNECTIONS TO EXISTING WATERMAINS

ELEVATION

PLAN



TABLE

SIZE WATERMAIN	L1	L2
4"φ THRU 10"φ	10'-0"	14'-0"
12"φ	12'-0"	16'-0"
LARGER THAN 12"φ	PER DRAWINGS	

NOTE:

(X) = SEE STD PLAN NO 300a FOR LEGEND

MECHANICAL JOINT TEE

CONTRACTOR MUST INSTALL CONCRETE BLOCKING, IF NONE EXISTS, PER STD PLAN NO 331

NEW WATERMAIN SEE DETAIL 1 STD PLAN NO 300g

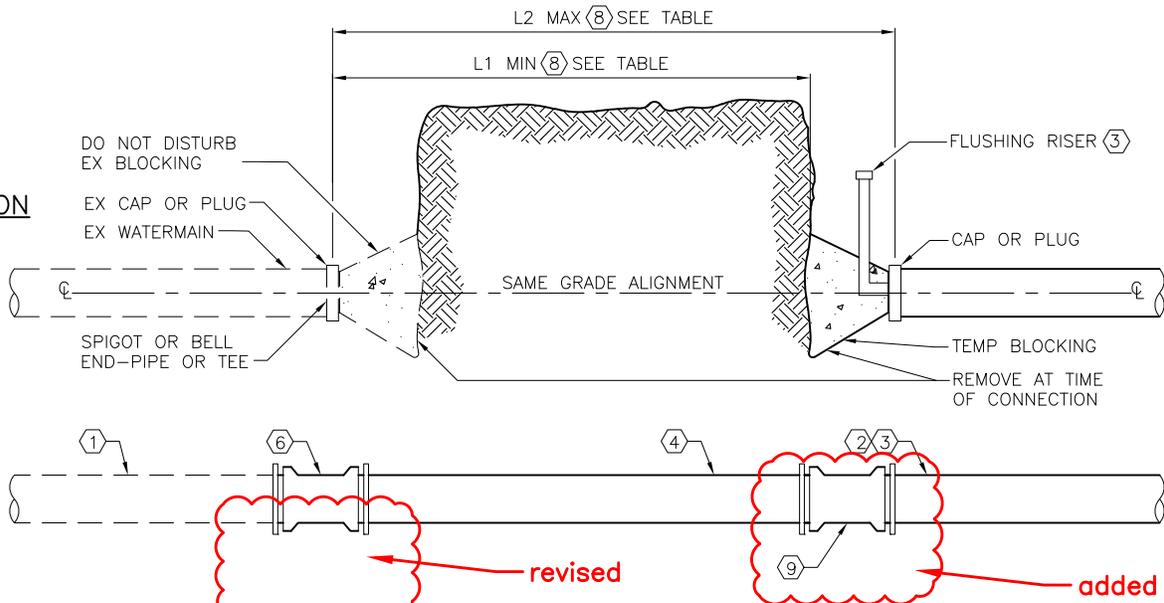
10'-0" MIN  
14'-0" MAX (8)

(6) MAY REQUIRE ADDITIONAL SLEEVE IF PIPE IS OVERSIZE

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

ELEVATION

PLAN



DO NOT DISTURB EX BLOCKING

EX CAP OR PLUG  
EX WATERMAIN

SPIGOT OR BELL END-PIPE OR TEE

L2 MAX (8) SEE TABLE

L1 MIN (8) SEE TABLE

SAME GRADE ALIGNMENT

FLUSHING RISER (6)

CAP OR PLUG

TEMP BLOCKING  
REMOVE AT TIME OF CONNECTION

revised

added

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

REF STD SPEC SEC 7-11

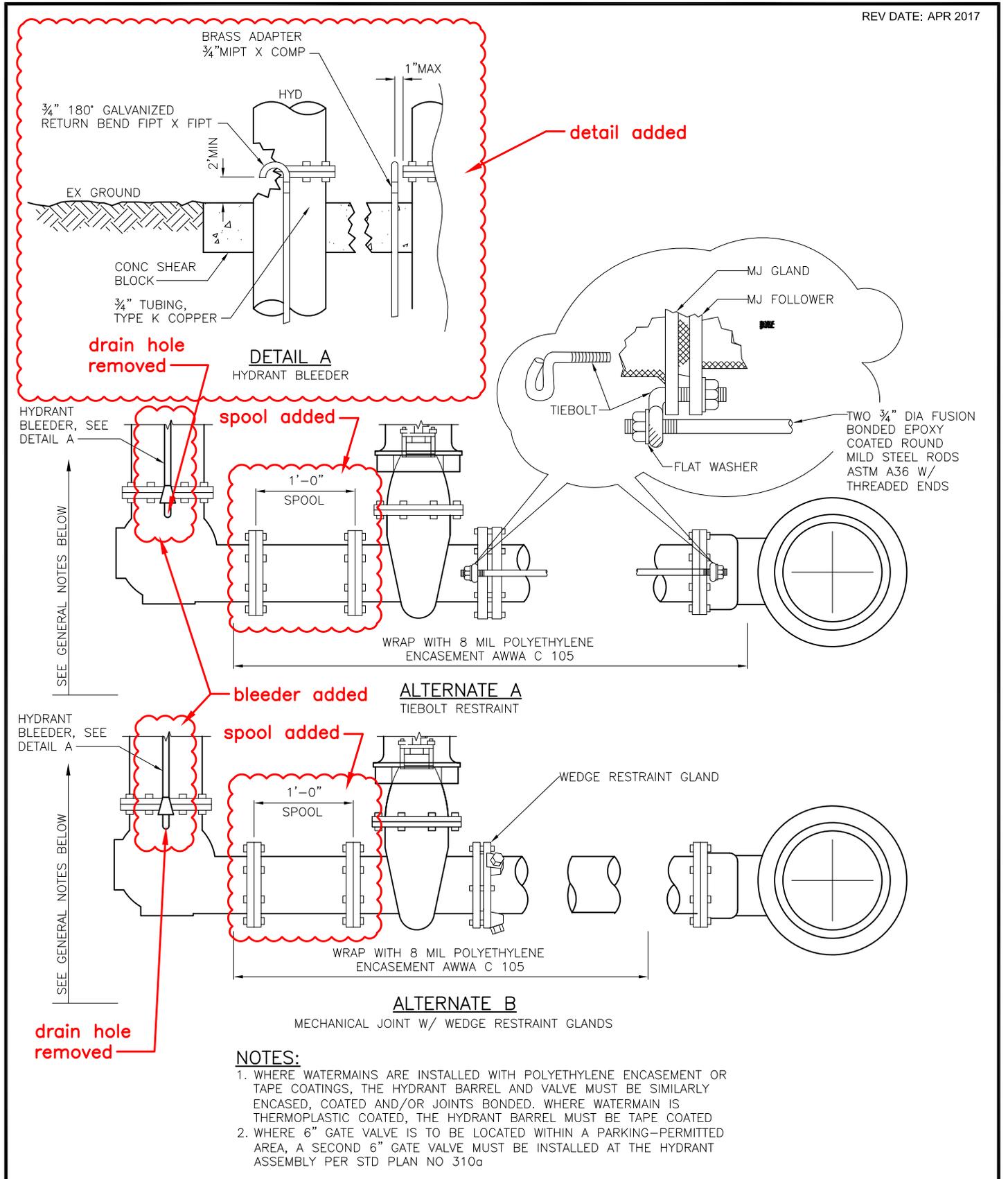


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NOT TO SCALE

CONNECTIONS TO EXISTING WATERMANS





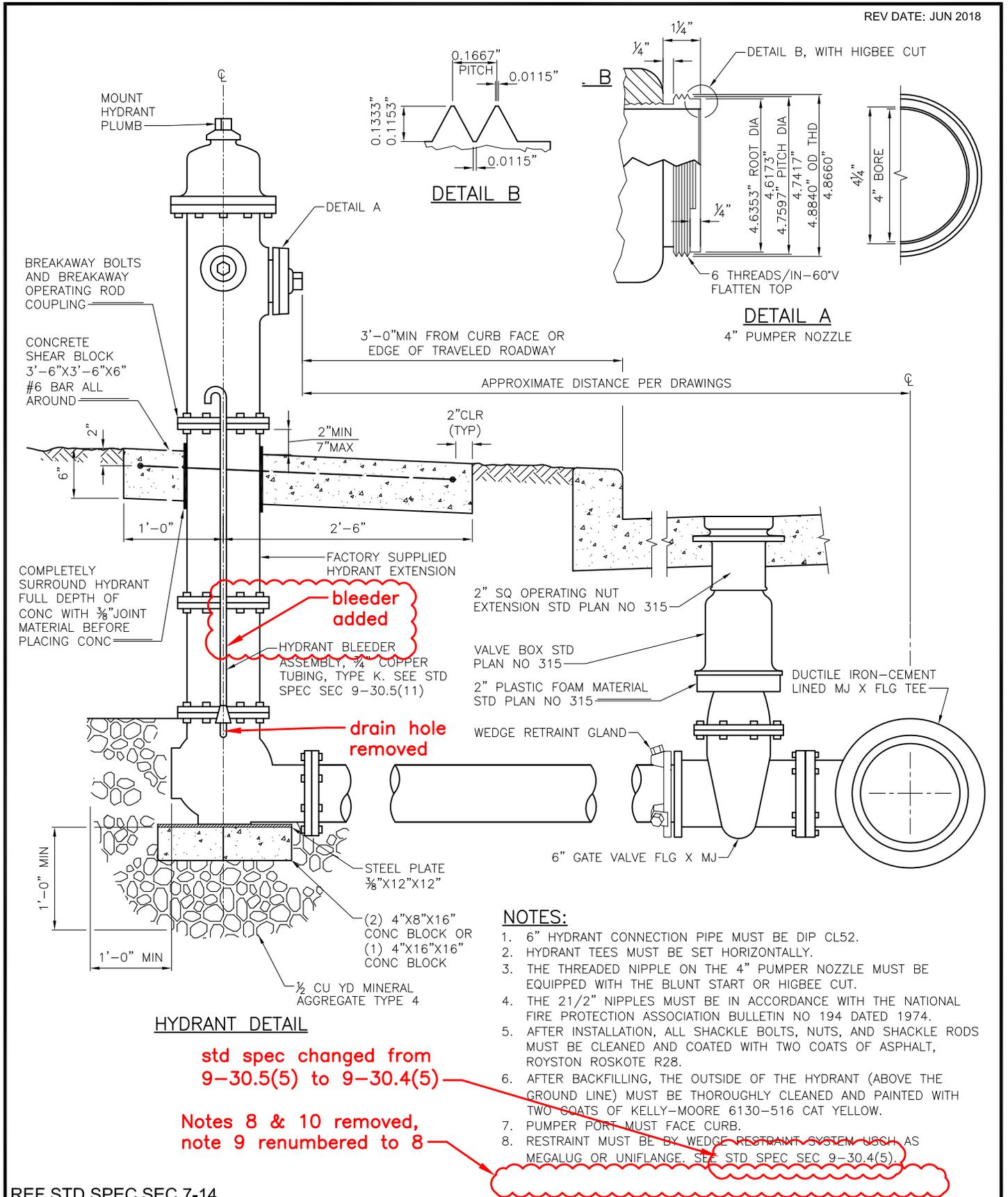
REF STD SPEC SEC 7-14



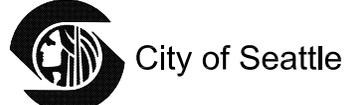
City of Seattle

NOT TO SCALE

TYPE 310 HYDRANT SETTING  
DETAIL

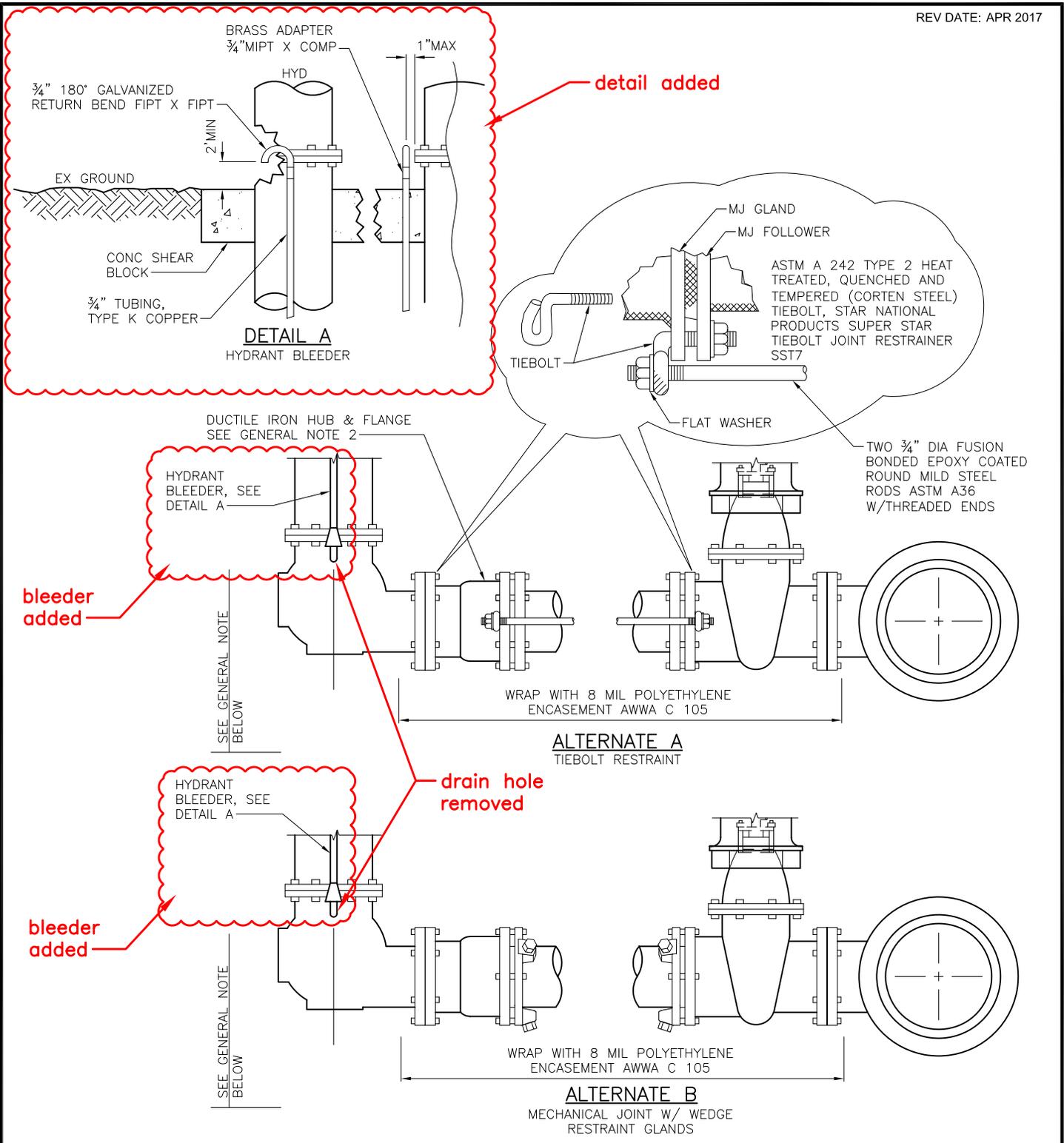


REF STD SPEC SEC 7-14



NOT TO SCALE

TYPE 311 HYDRANT SETTING DETAIL



**GENERAL NOTES:**

1. WHERE WATERMANS ARE INSTALLED WITH POLYETHYLENE ENCASUREMENT OR TAPE COATINGS, THE HYDRANT BARREL AND VALVE MUST BE SIMILARLY ENCASSED, COATED AND/OR JOINTS BONDED. WHERE WATERMAIN IS THERMOPLASTIC COATED, THE HYDRANT BARREL MUST BE TAPE COATED
2. WHERE 6" GATE VALVE IS TO BE LOCATED WITHIN A PARKING-PERMITTED AREA, A SECOND 6" GATE VALVE MUST BE INSTALLED AT THE HYDRANT ASSEMBLY PER STD PLAN NO 310a

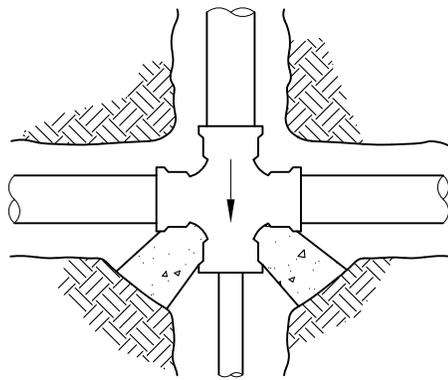
REF STD SPEC SEC 7-14



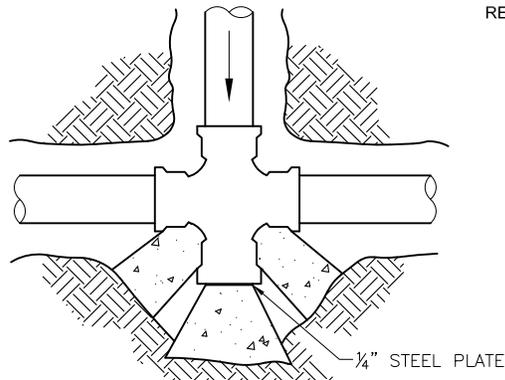
City of Seattle

NOT TO SCALE

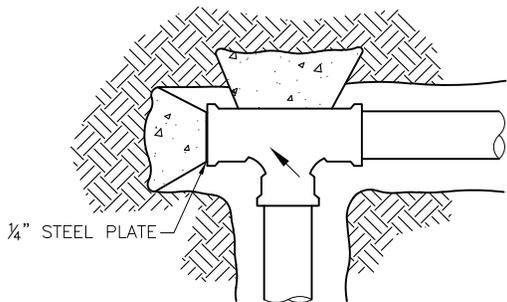
**TYPE 311 HYDRANT SETTING  
DETAIL**



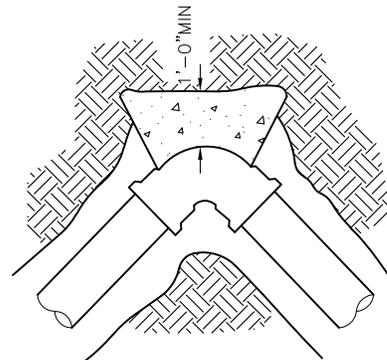
UNBALANCED CROSS



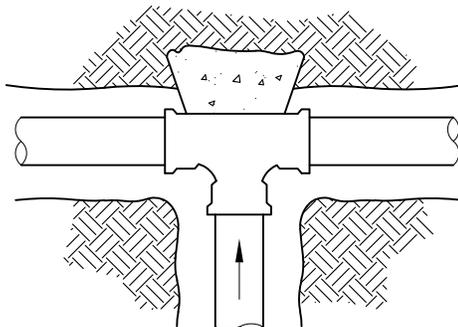
CROSS WITH PLUG



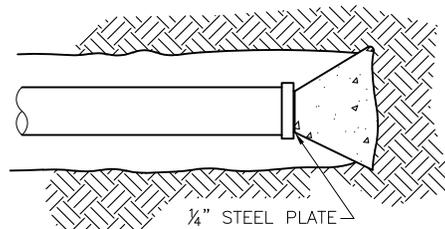
PLUGGED TEE



HORIZONTAL BEND



TEE



PIPE & CAP

THRUST BLOCK AREA IN SQUARE FEET (SEE STD PLAN NO 331B)

PIPE SIZE	FIRM SILT OR FIRM SILTY SAND				COMPACT SAND				COMPACT SAND & GRAVEL			
	90° BEND	TEE	45° BEND CAP OR PLUG	11 1/4° & 22 1/2° BEND	90° BEND	TEE	45° BEND CAP OR PLUG	11 1/4° & 22 1/2° BEND	90° BEND	TEE	45° BEND CAP OR PLUG	11 1/4° & 22 1/2° BEND
4"	7.0	4.2	4.2	1.7	2.9	2.1	2.1	1.0	2.2	1.6	1.6	1.0
6"	13.3	9.4	9.4	3.8	6.7	4.7	4.7	1.9	5.0	3.5	3.5	1.4
8"	23.3	16.7	16.7	6.7	11.7	8.4	8.4	3.4	8.8	6.3	6.3	2.5
12"	53.0	37.5	37.5	15.0	26.5	18.8	18.8	7.5	20.0	14.0	14.0	5.6

AREAS CALCULATED ON 300 PSI TEST PRESSURE AND 3'-0" MIN COVER OVER WATERMAIN



ECOLOGY BLOCKS, PER STD PLAN NO 460, MAY BE USED, AT THE DISCRETION OF THE ENGINEER ONLY, IN LIEU OF POURED-IN-PLACE BLOCKING FOR FITTINGS IN HEAVY OUTLINED PORTION OF TABLE. ECOLOGY BLOCKS USED FOR THRUST BLOCKING AT TEES MUST TRANSFER LOAD TO THE PIPE BODY PER SPEC SECTION 7-11.3(13).

note revised

REF STD SPEC SEC 7-11



City of Seattle

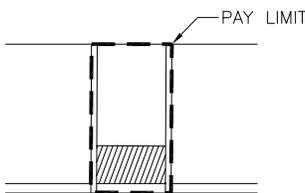
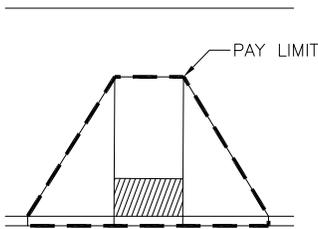
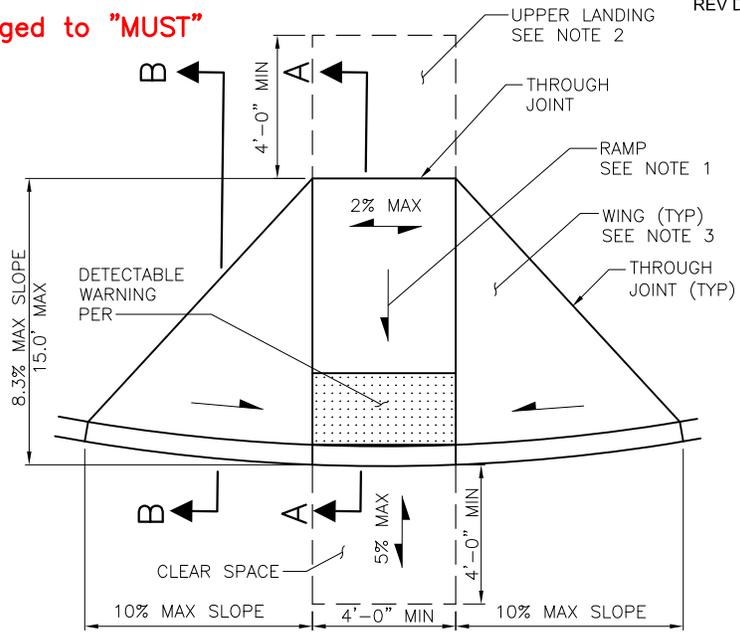
NOT TO SCALE

WATERMAIN THRUST BLOCKING HORIZONTAL FITTINGS

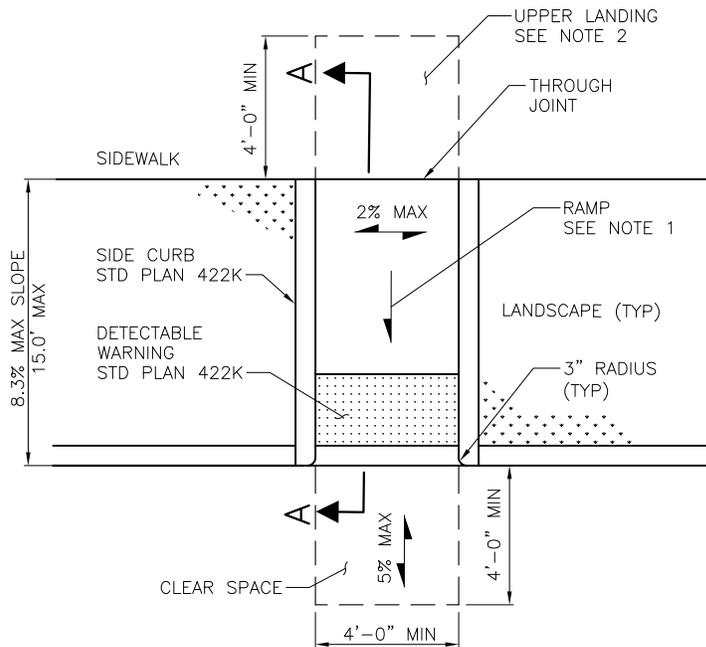
"SHALL" changed to "MUST"

**NOTES:**

1. RAMP CENTERLINE MUST BE RADIAL/PERPENDICULAR TO THE ALIGNMENT OF THE FACE OF CURB.
2. 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. SLOPE ON THE LANDING MUST BE BETWEEN 0.5% AND 2% IN ANY DIRECTION.
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.



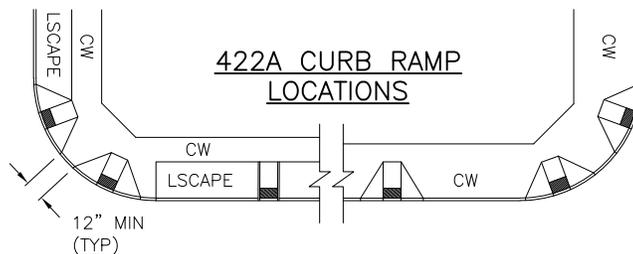
PAY LIMITS



PERPENDICULAR CURB RAMPS

(TYPE 422A)

2% MAX  
 = MAX SLOPE IN EITHER DIRECTION



REF STD SPEC SEC 8-14



City of Seattle

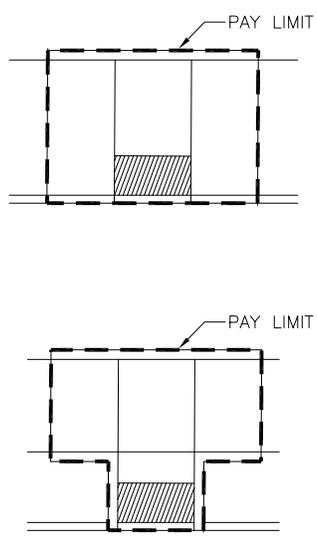
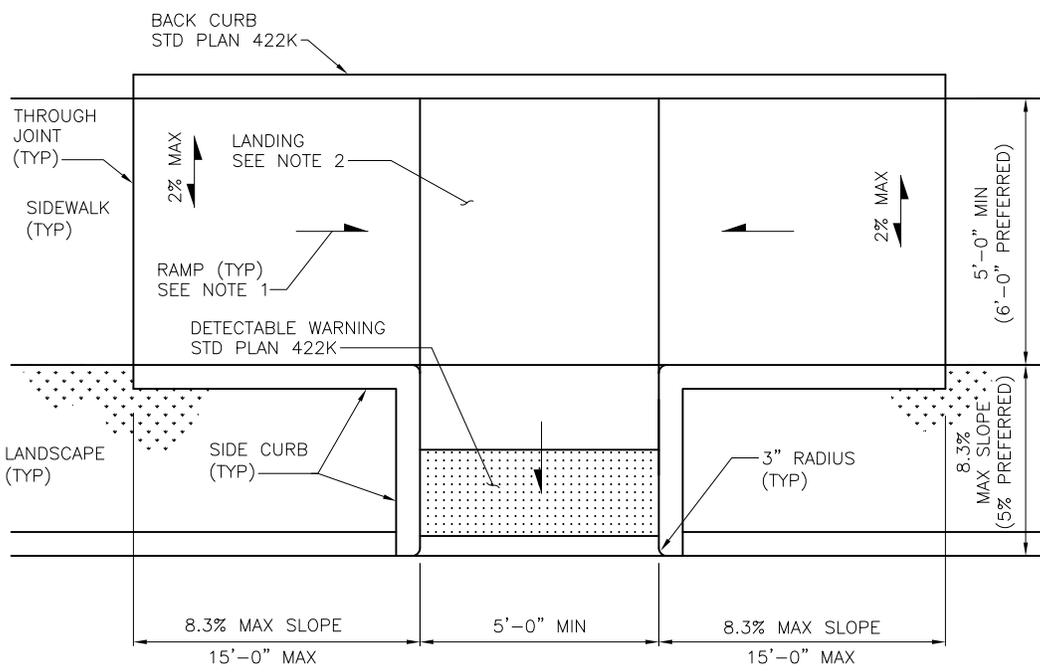
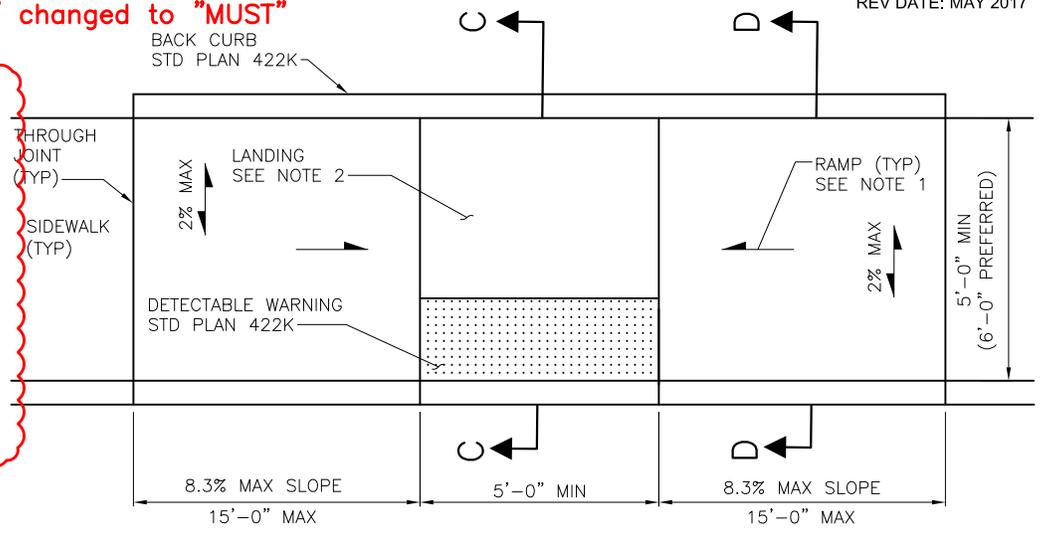
NOT TO SCALE

CURB RAMP DETAILS

"SHALL" changed to "MUST"

**NOTES:**

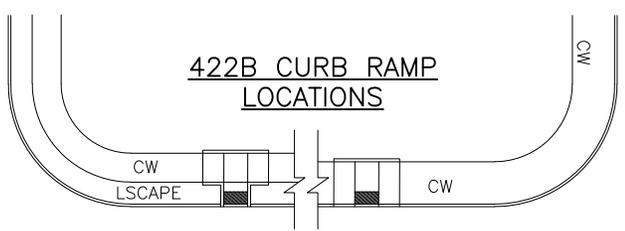
1. RAMP CENTERLINE(S) MUST BE PARALLEL TO THE ALIGNMENT OF THE FACE OF CURB. THE WIDTH OF THE RAMP MUST BE 5'-0" MINIMUM BUT 6'-0" IS PREFERRED.
2. SHARED LOWER CURB RAMP LANDING MUST HAVE A MINIMUM WIDTH OF 5'-0". SLOPE OF THE LANDING MUST BE BETWEEN 0.5% AND 2% IN ANY DIRECTION.
3. RAMP SURFACE MUST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



PAY LIMITS

PARALLEL CURB RAMPS  
(TYPE 422B)

2% MAX  
= MAX SLOPE IN EITHER DIRECTION



REF STD SPEC SEC 8-14



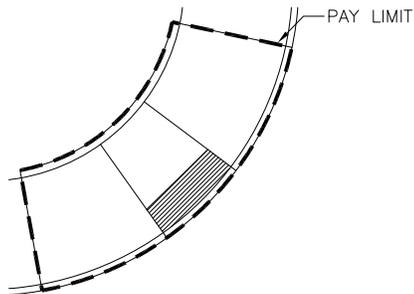
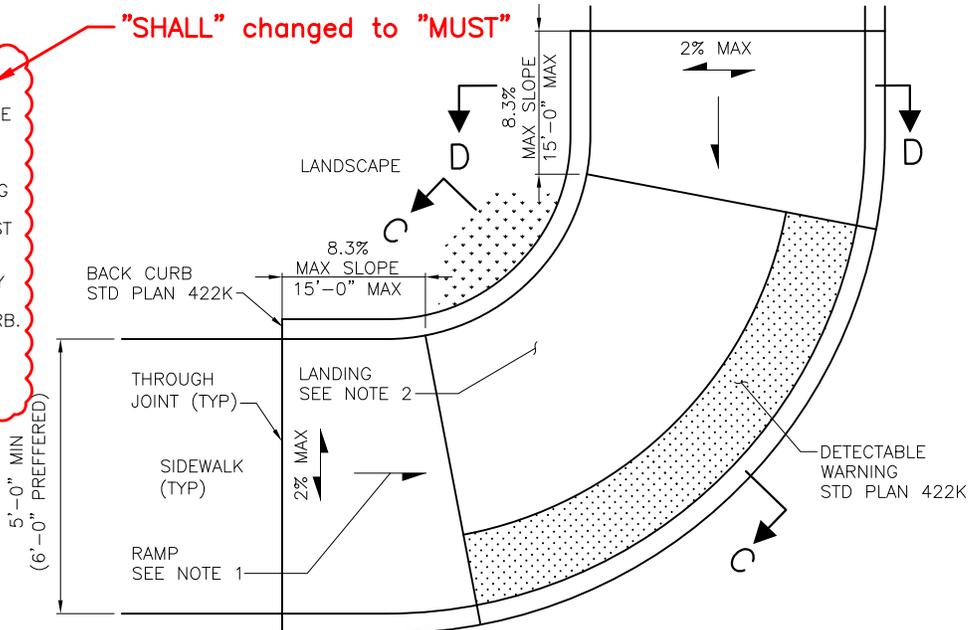
City of Seattle

NOT TO SCALE

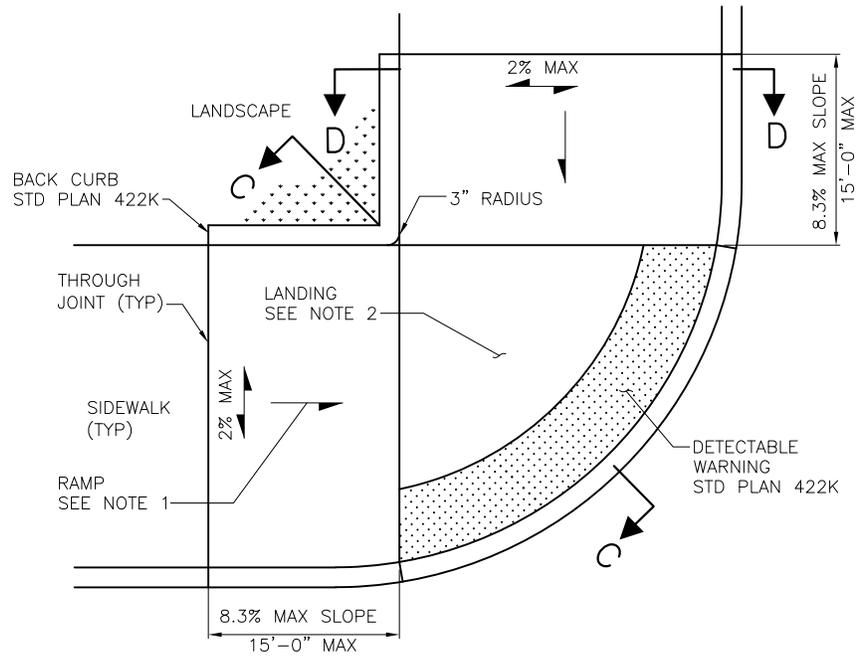
CURB RAMP DETAILS

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

"SHALL" changed to "MUST"

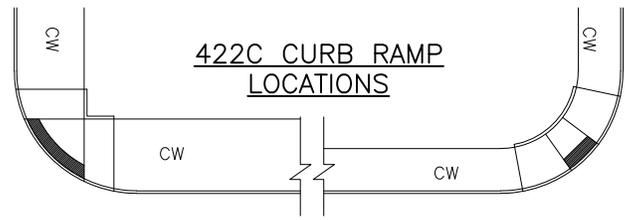


PAY LIMITS



PARALLEL CURB RAMPS (CORNER)  
(TYPE 422C)

2% MAX = MAX SLOPE IN EITHER DIRECTION



REF STD SPEC SEC 8-14



City of Seattle

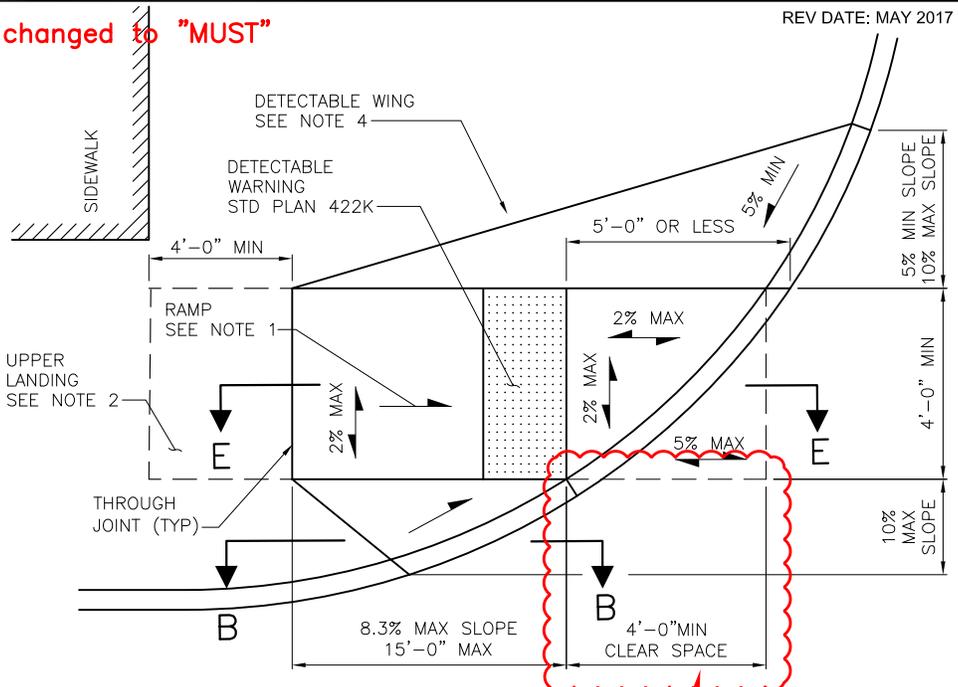
NOT TO SCALE

CURB RAMP DETAILS

**NOTES:**

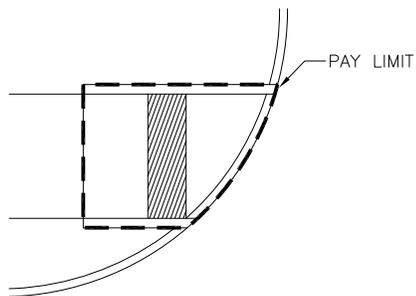
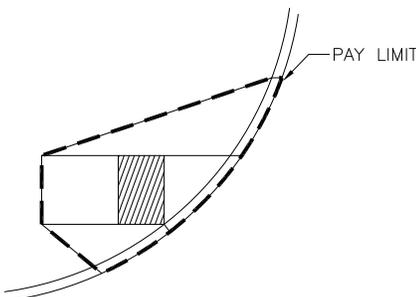
1. RAMP CENTERLINE MUST BE PARALLEL TO CROSSWALK AND/OR THE SIDEWALK.
2. UPPER LANDING AT THE TOP OF THE CURB RAMP MUST MATCH THE FULL WIDTH OF THE RAMP AND MUST HAVE A MINIMUM DEPTH OF 4'-0". IF THE LANDING IS LIMITED AT THE BACK-OF-SIDEWALK BY A PERMANENT VERTICAL BARRIER, THE DEPTH OF THE TURNING SPACE MUST BE 5'-0" MINIMUM, MEASURED PARALLEL TO THE RUN OF THE CURB RAMP. SLOPE ON THE LANDING MUST BE BETWEEN 0.5% AND 2% IN ANY DIRECTION.
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 BRUSHED FINISH PERPENDICULAR TO THE PATH OF TRAVEL.
6. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTIONS.

"SHALL" changed to "MUST"



upper landing removed

dimension added



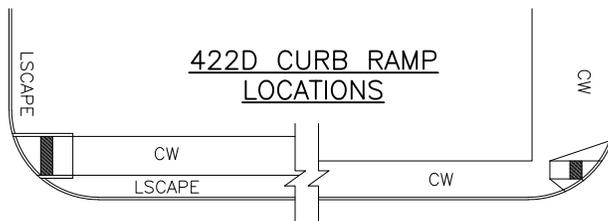
dimension added

**DIRECTIONAL CURB RAMPS**  
(TYPE 422D)

2% MAX = MAX SLOPE IN EITHER DIRECTION

PAY LIMITS

**422D CURB RAMP LOCATIONS**



REF STD SPEC SEC 8-14



City of Seattle

NOT TO SCALE

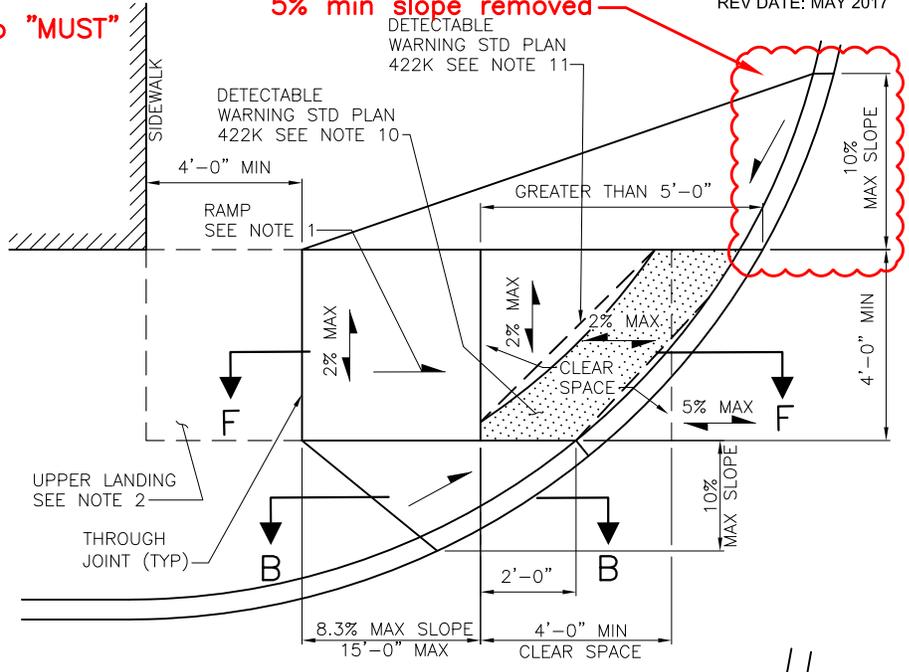
CURB RAMP DETAILS

**NOTES:**

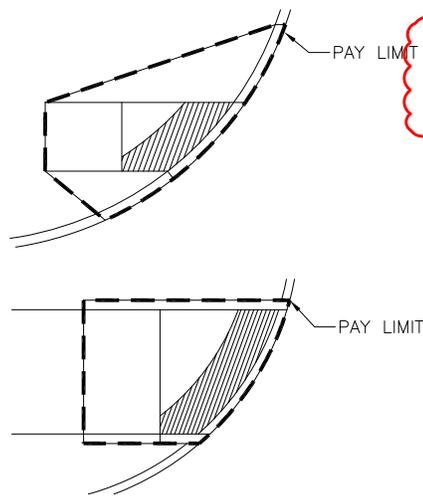
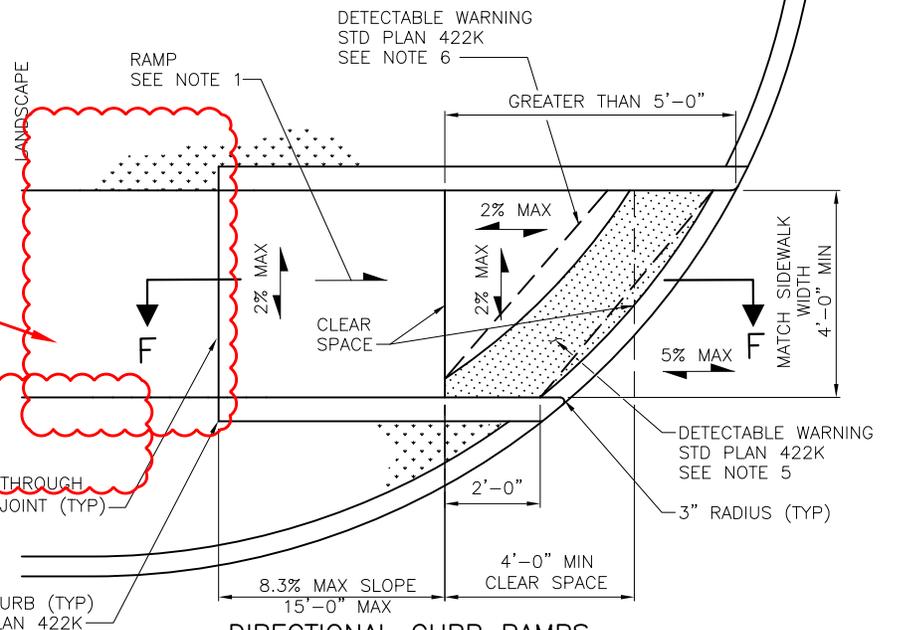
1. RAMP CENTERLINE MUST BE PARALLEL TO CROSSWALK AND/OR THE SIDEWALK.
2. UPPER LANDING AT THE TOP OF THE CURB RAMP MUST MATCH THE FULL WIDTH OF THE RAMP AND MUST HAVE A MINIMUM DEPTH OF 4'-0". IF THE LANDING IS LIMITED AT THE BACK-OF-SIDEWALK BY A PERMANENT VERTICAL BARRIER, THE DEPTH OF THE TURNING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

"SHALL" changed to "MUST"

5% min slope removed

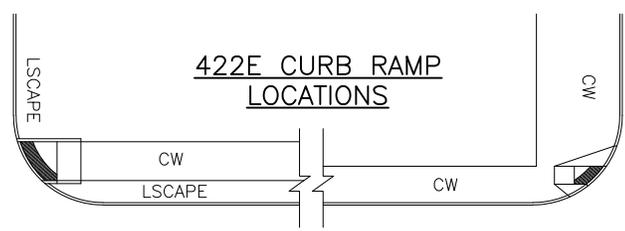


upper landing removed



PAY LIMITS

**DIRECTIONAL CURB RAMPS**  
(TYPE 422E)



REF STD SPEC SEC 8-14



City of Seattle

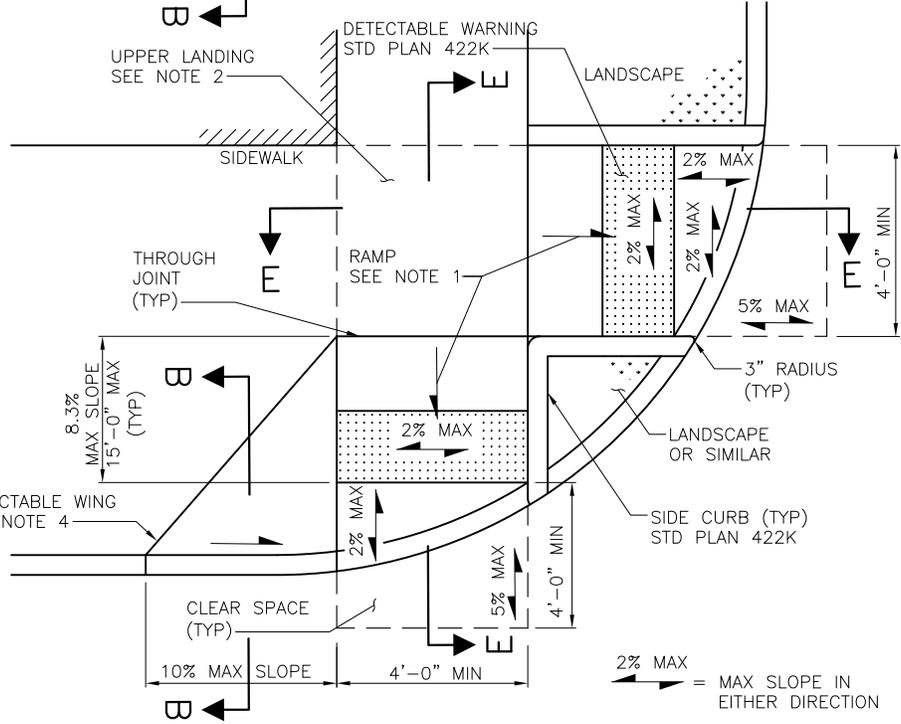
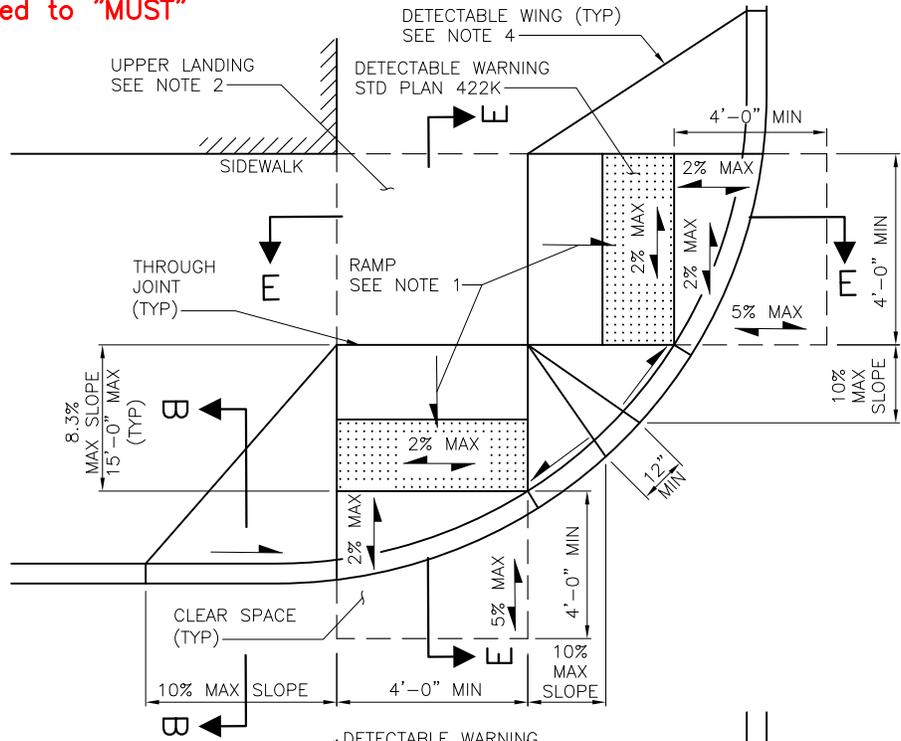
NOT TO SCALE

CURB RAMP DETAILS

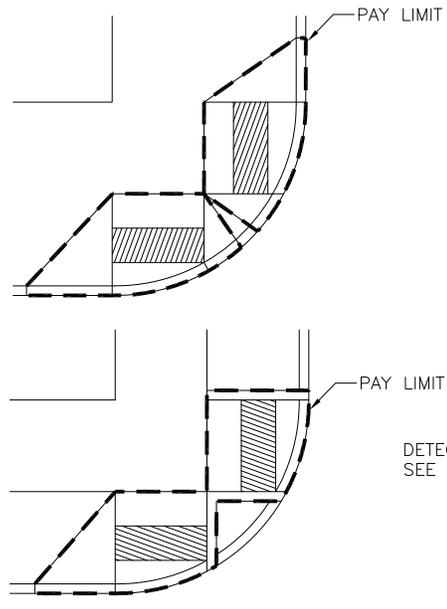
**NOTES:**

1. RAMP CENTERLINE(S) MUST BE PARALLEL TO CROSSWALK AND/OR THE SIDEWALK.
2. 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. SLOPE ON THE LANDING MUST BE BETWEEN 0.5% AND 2% IN ANY DIRECTION.
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 422L FOR GENERAL NOTES AND TYPICAL SECTIONS.

"SHALL" changed to "MUST"

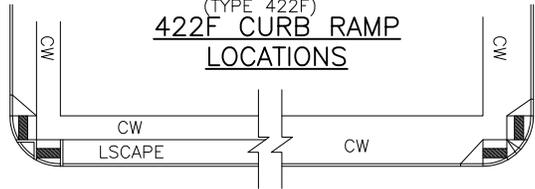


2% MAX = MAX SLOPE IN EITHER DIRECTION



PAY LIMITS

**DIRECTIONAL CURB RAMP W/ SHARED LANDING**



REF STD SPEC SEC 8-14



City of Seattle

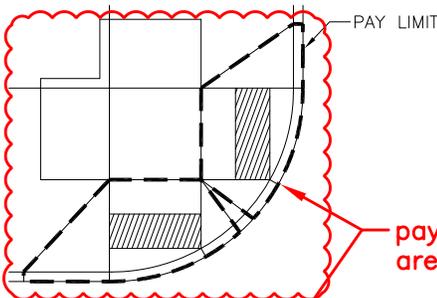
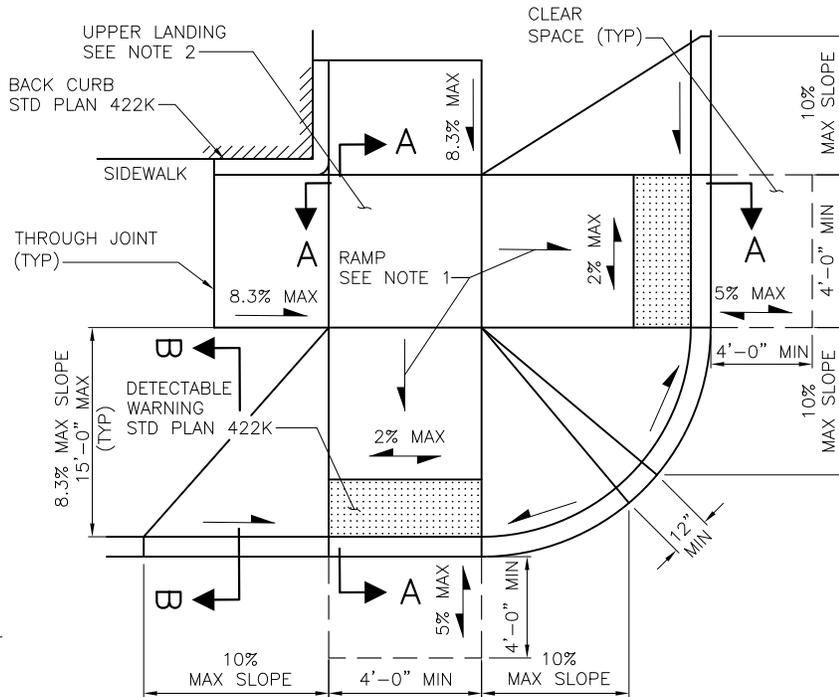
NOT TO SCALE

CURB RAMP DETAILS

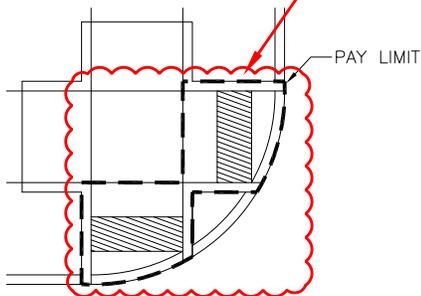
**NOTES:**

1. RAMP CENTERLINE(S) MUST BE PARALLEL TO CROSSWALK AND/OR THE SIDEWALK.
2. 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. SLOPE ON THE LANDING MUST BE BETWEEN 0.5% AND 2% IN ANY DIRECTION.
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.

"SHALL" changed to "MUST"

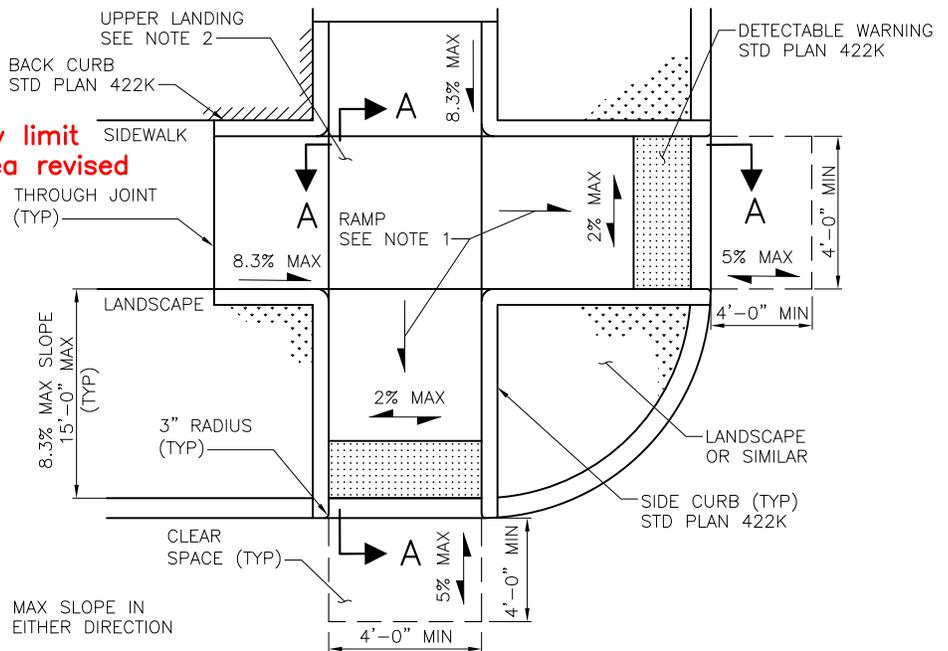


pay limit area revised

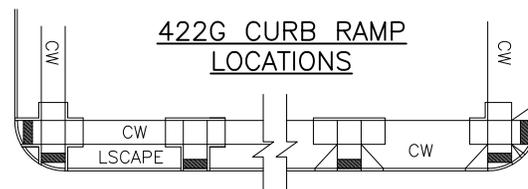


PAY LIMITS

2% MAX = MAX SLOPE IN EITHER DIRECTION



PARALLEL AND PERPENDICULAR COMBINATION CURB RAMPS W/ SHARED LANDING (TYPE 422G)



REF STD SPEC SEC 8-14



City of Seattle

NOT TO SCALE

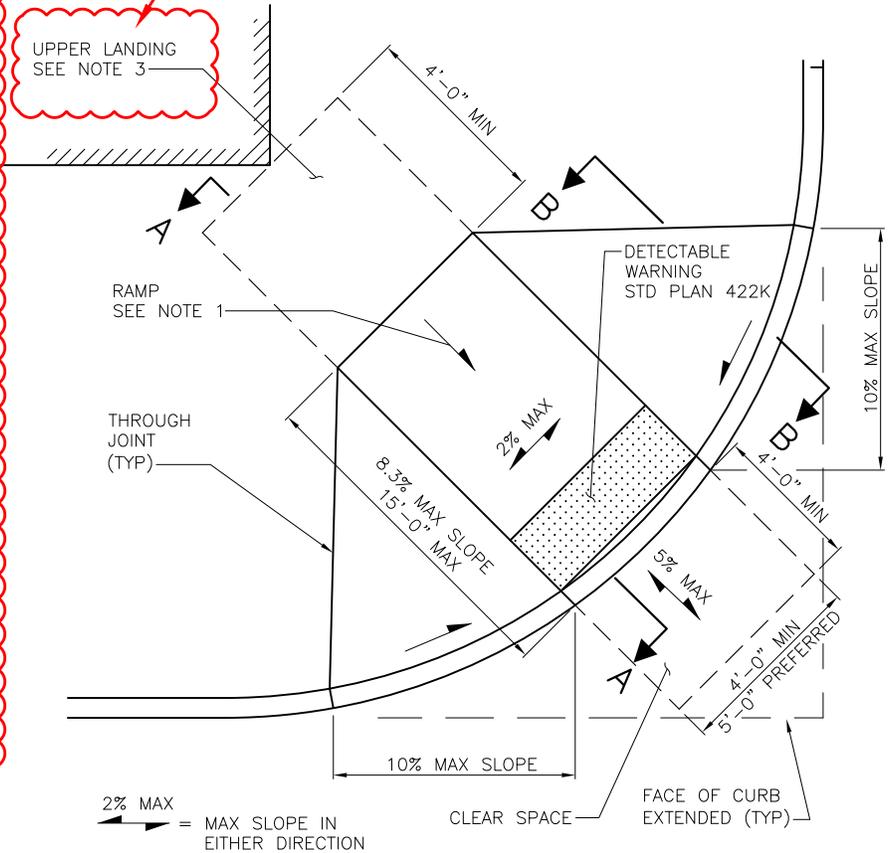
CURB RAMP DETAILS

**NOTES:**

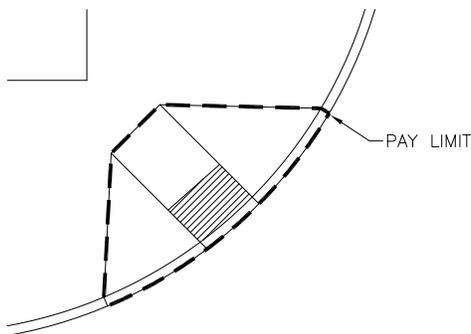
1. SHARED DIAGONAL PERPENDICULAR RAMP MUST NOT BE INSTALLED UNLESS ALL OTHER DESIGN OPTIONS ARE UNABLE TO BE CONSTRUCTED DUE TO EXISTING SITE CONSTRAINTS.
2. RAMP CENTERLINE MUST BE RADIAL/PERPENDICULAR TO THE ALIGNMENT OF THE FACE OF CURB.
3. UPPER LANDING AT THE TOP OF THE CURB RAMP MUST MATCH THE 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. SLOPE ON THE LANDING MUST BE BETWEEN 0.5% AND 2% IN ANY DIRECTION. CLEAR SPACE AT THE BOTTOM OF THE RAMP MUST BE 4'-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 RAMP.
5. 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.
6. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE PARALLEL TO THE CURB.
7. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTIONS.

"SHALL" changed to "MUST"

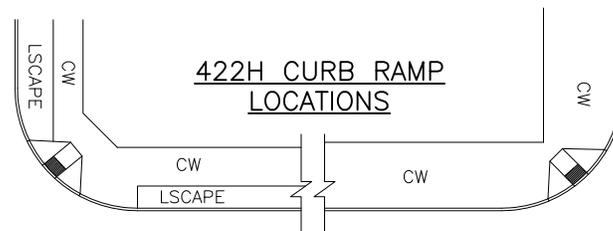
changed to "NOTE 3"



**SHARED DIAGONAL PERPENDICULAR CURB RAMP**  
(TYPE 422H)



PAY LIMITS



422H CURB RAMP LOCATIONS

REF STD SPEC SEC 8-14



City of Seattle

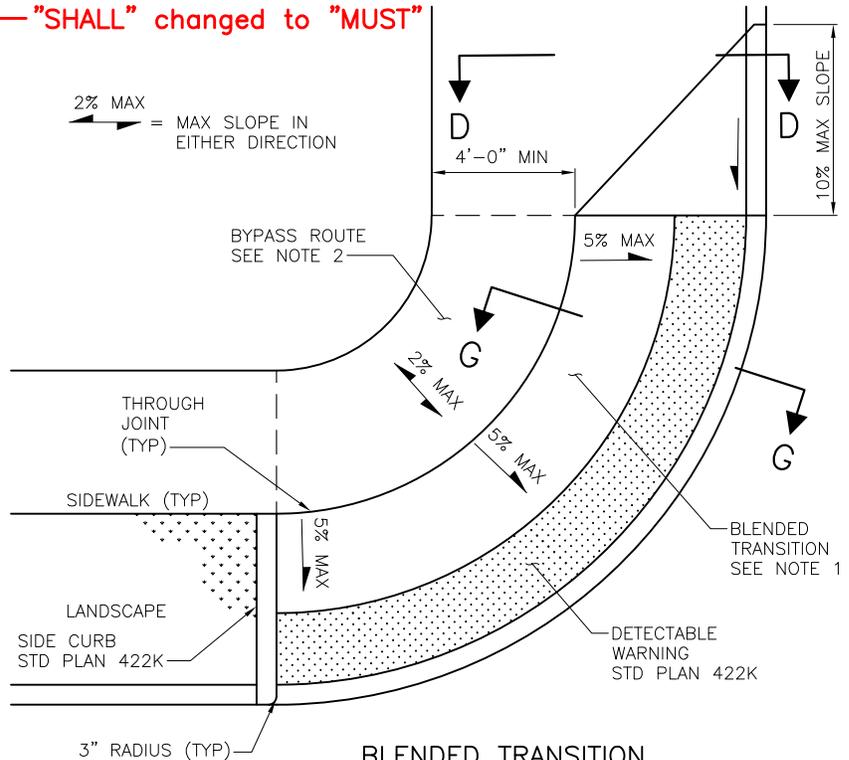
NOT TO SCALE

CURB RAMP DETAILS

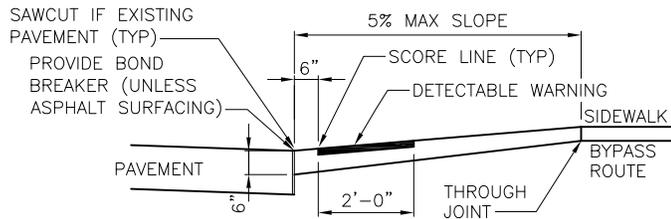
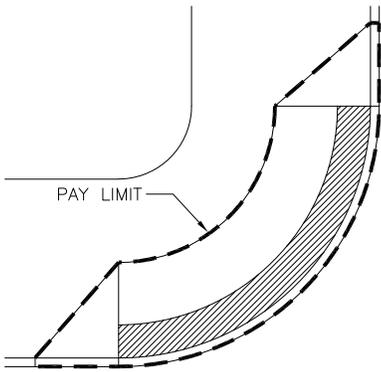
**"SHALL" changed to "MUST"**

**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 MINIMUM BYPASS ROUTE MUST BE PROVIDED AT THE TOP OF THE BLENDED TRANSITION WITH A MINIMUM WIDTH OF 4'-0". THE CROSS SLOPE OF THE BYPASS ROUTE MUST NOT EXCEED 2% IN ANY DIRECTION.
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. BLENDED TRANSITION SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE RADIAL/PERPENDICULAR TO THE CURB.
5. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTION D.

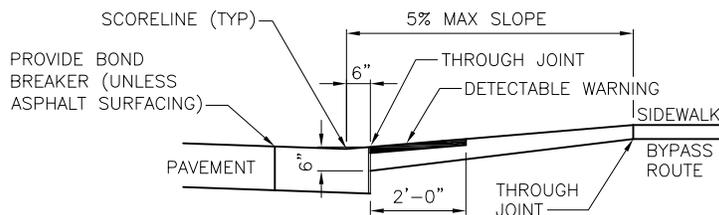
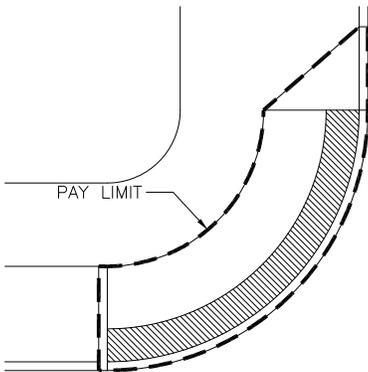


**BLENDED TRANSITION**  
(TYPE 422I)



**SECTION G-G**

CURB MONOLITHIC WITH RAMP. NEW PAVEMENT BLOCKED OUT FULL DEPTH. EXISTING PAVEMENT REMOVED AT FACE OF CURB

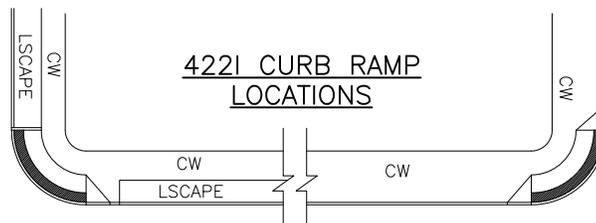


**SECTION G-G**

DEPRESSED CURB & GUTTER SEPARATE FROM RAMP.

PAY LIMITS

**422i CURB RAMP LOCATIONS**



REF STD SPEC SEC 8-14



City of Seattle

NOT TO SCALE

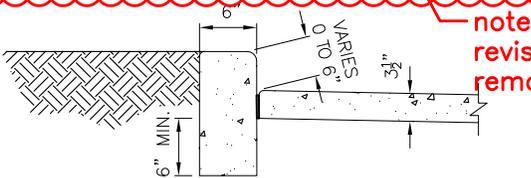
CURB RAMP DETAILS

**CURB RAMP GENERAL NOTES:**

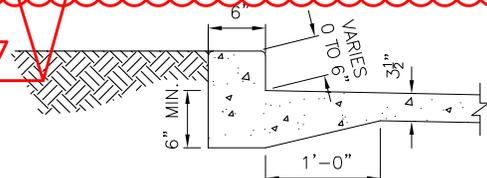
1. TWO CURB RAMP MUST BE INSTALLED AT EACH CORNER UNLESS OTHERWISE DIRECTED BY ENGINEER. SHARED DIAGONAL PERPENDICULAR RAMPS MUST NOT BE INSTALLED UNLESS ALL OTHER DESIGN OPTIONS ARE UNABLE TO BE CONSTRUCTED DUE TO EXISTING SITE CONSTRAINTS.
2. CURB RAMPS MUST BE AS CLOSELY ALIGNED WITH THE SIDEWALK AND THE PEDESTRIAN STREET CROSSING SERVED AS POSSIBLE.
3. CURB RAMP MUST BE CONSTRUCTED WITH COMPANION RAMP ON OPPOSITE SIDE OF THE ROADWAY WHERE NO RAMP IS PROVIDED UNLESS OTHERWISE DIRECTED BY ENGINEER.
4. RAMPS MUST TYPICALLY HAVE A MAXIMUM RUNNING SLOPE OF 8.3% AND A MINIMUM WIDTH OF 4'-0" UNLESS OTHERWISE DIRECTED BY ENGINEER. THE CROSS SLOPE OF RAMPS MUST BE A MAXIMUM OF 2%. CURB RAMPS ARE NOT REQUIRED TO EXCEED A LENGTH OF 15 FEET UNLESS OTHERWISE DIRECTED BY ENGINEER.
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 USABLE BY PEDESTRIANS MUST COMPLY WITH STANDARD PLAN SIDEWALK SLOPE LIMITS OR A CURB RAMP WING MUST BE PROVIDED AS SHOWN IN THE APPLICABLE CURB RAMP DETAILS. THE INSTALLATION OF CURBED EDGES IS NOT REQUIRED BUT MAY BE USED AT THE SIDES OR BACKS OF CURB RAMPS OR CURB RAMP LANDING WHERE THE ADJACENT SURFACE IS LANDSCAPED OR OTHERWISE NOT USABLE BY PEDESTRIANS.
7. THE COUNTER SLOPE OF THE GUTTER OR THE STREET AT THE BOTTOM OF CURB RAMP RUNS MUST BE 5% MAXIMUM. IF TURNING OR CHANGE OF ORIENTATION IS REQUIRED WITHIN THE PEDESTRIAN CROSSING AT THE BOTTOM OF CURB RAMP RUNS, THE SLOPE MUST BE 2% MAXIMUM IN ANY DIRECTION FOR A MINIMUM 4'-0" WIDTH X 4'-0" DEPTH MEASURED FROM THE RAMP 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. 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

10. DETECTABLE WARNING COLOR MUST BE "FEDERAL SAFETY YELLOW", UNLESS OTHERWISE DIRECTED BY ENGINEER.
11. 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 RADII MUST MATCH THE CURB RADII WITHOUT GAPS OR INCONSISTENCIES IN PLACEMENT.
12. AVOID LOCATING HANDHOLES, UTILITY CASTINGS, OR ANY OTHER SURFACE OBSTRUCTIONS IN THE CURB RAMP RUN(S) OR LANDING(S). IF NECESSARY DUE TO EXISTING CONSTRAINTS, HANDHOLES, UTILITY CASTINGS, OR OTHER SURFACE OBSTRUCTIONS MAY BE LOCATED WITHIN A RAMP RUN, LANDING, OR TURNING SPACE BUT MUST ADHERE TO SURFACE REQUIREMENTS. LEVEL CHANGES BETWEEN SURFACES MUST NOT EXCEED 1/4" OR 1/2" WITH A 1:2 BEVEL. GAPS BETWEEN SURFACES OR GRATINGS MAY NOT EXCEED 1/2". SURFACES MUST BE FIRM, STABLE, AND SLIP RESISTANT.
13. HANDHOLES, UTILITY CASTINGS, OR OTHER SURFACE OBSTRUCTIONS MUST NOT REDUCE THE REQUIRED DEPTH OF DETECTABLE WARNING.
14. POLES, HYDRANTS AND OTHER ABOVE GROUND OBSTRUCTIONS MUST HAVE A MINIMUM LATERAL CLEARANCE OF 1'-0" FROM RAMP RUN(S) OR LANDING(S).
15. ALL CHANGES IN LEVEL ACROSS JOINTS MUST BE FLUSH. ANY DIFFERENCE IN ELEVATION OF 3/16 INCH OR GREATER MUST BE REPAIRED OR REPLACED.
16. 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.

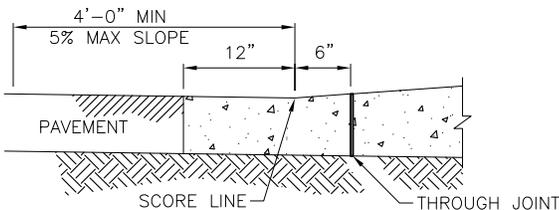
\* IT IS GENERALLY PREFERRED THAT CURB RAMPS, CURB RAMP LANDINGS, AND ASSOCIATED FEATURES NOT BE DESIGNED TO THE MINIMUM OR MAXIMUM ALLOWABLE DIMENSION AND/OR SLOPE TO ALLOW FOR A LIMITED MARGIN OF ERROR DURING CONSTRUCTION.



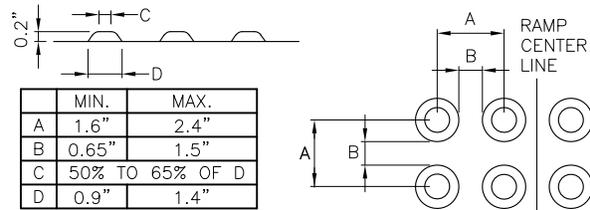
SIDE CURB DETAIL



BACK CURB DETAIL



DEPRESSED CURB AND GUTTER DETAIL



DETECTABLE WARNING TRUNCATED DOMES PATTERN

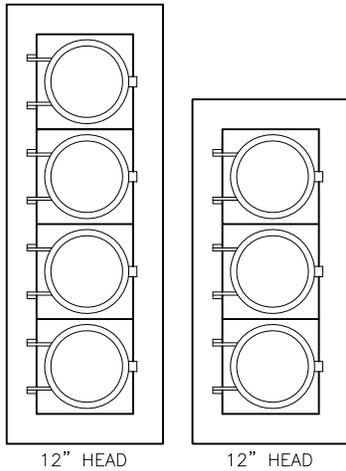
REF STD SPEC SEC 8-14



City of Seattle

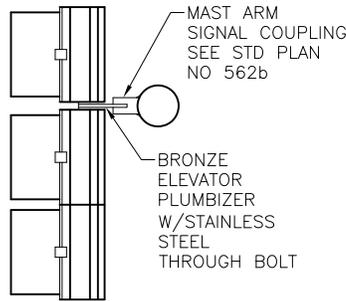
NOT TO SCALE

CURB RAMP DETAILS



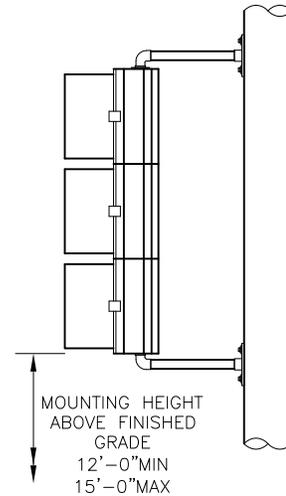
**TYPICAL SIGNAL FACES**

W/ TUNNEL VISORS &  
5" BACKPLATE (LOUVERED)  
1" YELLOW, DIAMOND GRADE RETRO  
REFLECTIVE TAPE



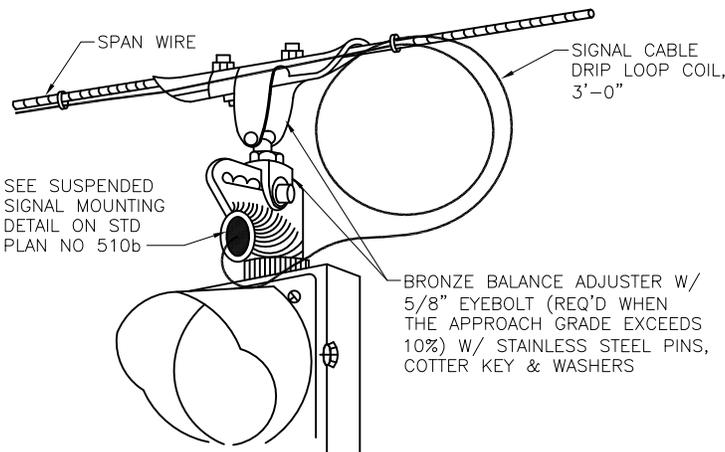
**MAST ARM MOUNTING**

SEE NOTE 1

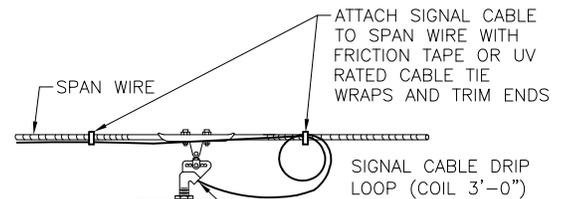


**BRACKET MOUNTING**

FOR SIGNAL HEAD BRACKET ASSEMBLY  
SEE STD PLAN NO 511

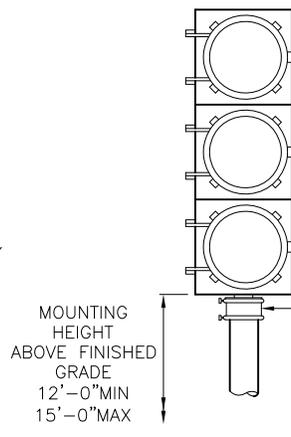


**SIGNAL HANGER DETAIL**



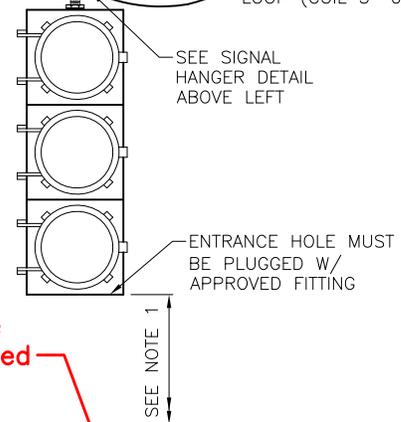
**NOTES:**

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



**PEDESTAL TOP MOUNTING**

FOR PEDESTAL SEE STD PLAN NO 524



title added

**SPAN MOUNTING**

REF STD SPEC SEC 8-31



City of Seattle

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VEHICULAR SIGNAL MOUNTING

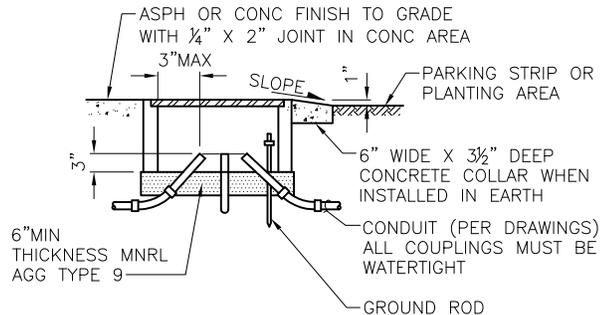
**NOTES:**

1. THE COVER MUST HAVE  $\frac{1}{16}$ " TO  $\frac{1}{8}$ " 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 "SDOT" OR "SL" ON THEM, AS APPROPRIATE.
4. TYPE 4 HANDHOLE MUST BE INSTALLED IN ROADWAYS, 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 THWN OR THHN COPPER WIRE MUST BE SECURED FROM THE HANDHOLE COVER TO THE FRAME. BOND FROM FRAME LID, AND LID TO GROUND ROD.
7. ALL HANDHOLE COVERS AND FRAMES MUST HAVE A NON-SKID SURFACE (SEE STD SPEC SEC 9-34.6)
8. ALL HANDHOLES MUST HAVE A LOAD RATING OF H20.
9. GROUND ROD REQUIRED IN ALL STREETLIGHT HANDHOLES PER SCL CONSTR STD 1710.50
10. SEE SCL CONSTRUCTION STANDARD 1716.07 FOR STREETLIGHT HANDHOLE AND CONDUIT REQUIREMENTS.

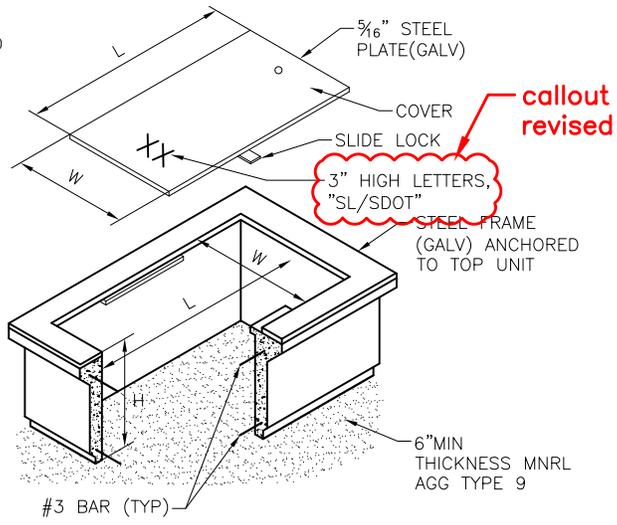
note revised

**HANDHOLE SCHEDULE**

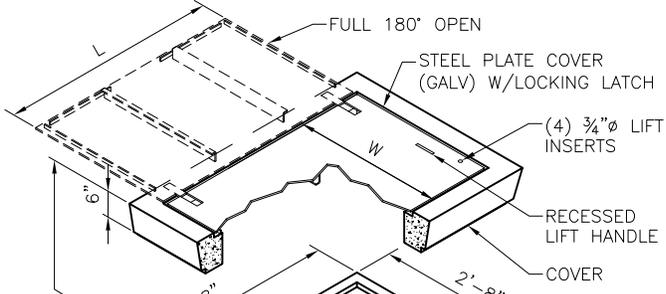
HANDHOLE TYPE	TOP UNIT INSIDE DIMENSION			EXTENSION UNIT(E)	COVER DIMENSIONS	
	L	W	H		L	W
1	19"	14"	12"	12"	18"	13"
2	28"	17"	12"	12"	26 $\frac{1}{2}$ "	17"
3	36"	24"	12"	12"	35"	24"
4	24"Ø	VAR	NA	NA	NA	NA
5	36"	24"	32"	NA	35"	24"
6	42"	42"	38 $\frac{1}{2}$ "	NA	33 $\frac{1}{2}$ "	33 $\frac{3}{4}$ "
GRHH	8"Ø			NA		



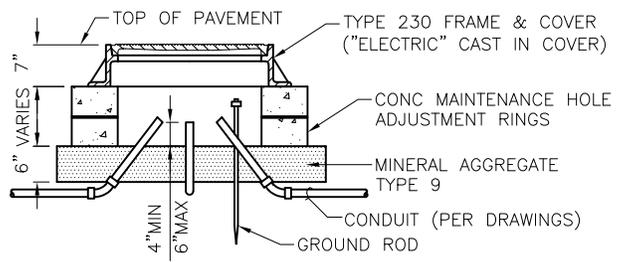
**HANDHOLE INSTALLATION DETAIL**



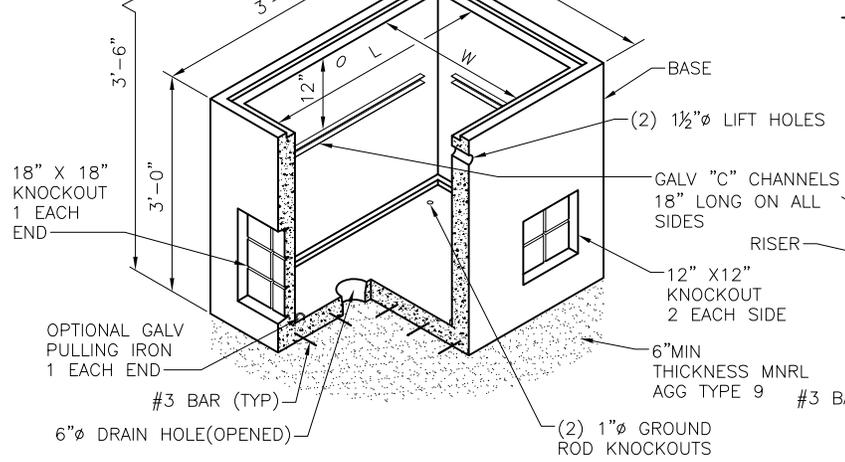
**TYPE 1 & 2 HANDHOLE**



**TYPE 5 HANDHOLE**



**TYPE 4 HANDHOLE TRAFFIC BEARING**



**TYPE 3 HANDHOLE (COVER SAME AS TYPE 5)**

REF STD SPEC SEC 8-33



City of Seattle

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HANDHOLES

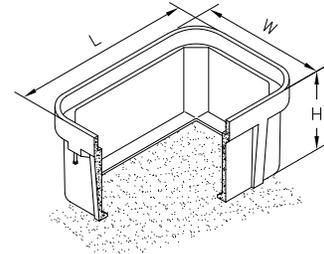
**NOTES:**

1. ALL NON-DELIBERATE TRAFFIC PULL BOX COVERS MUST COMPLY WITH ALL TEST PROVISIONS OF ANSI/SCTE 77 2010 "SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY", & MUST MEET THE TIER 15 APPLICATION. MARKING SHOWING THE TIER 15 RATING MUST BE EMBOSSED IN THE TOP SURFACE OF THE COVER.
2. ALL NON-DELIBERATE TRAFFIC PULL BOXES MUST COMPLY WITH ALL TEST PROVISIONS OF ANSI/SCTE 77 2012 "SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY", & MUST MEET THE TIER 22 APPLICATION. MARKINGS SHOWING THE TIER 22 RATING MUST BE LABELED OR STENCILED ON THE INSIDE & OUTSIDE OF THE BOX.
3. ALL NON-DELIBERATE TRAFFIC PULL BOXES & COVERS MUST BE MADE OF POLYMER CONCRETE WITH FIBERGLASS REINFORCEMENT. THE BOX MUST HAVE CONTINUOUS FIBERGLASS CLOTH REINFORCEMENT ON THE INSIDE & OUTSIDE PERIMETERS. THE COVER MUST HAVE A MINIMUM OF TWO LAYERS OF FIBERGLASS CLOTH REINFORCEMENT.
4. ALL NON-DELIBERATE TRAFFIC PULL BOXES & COVERS MUST BE TESTED & CERTIFIED, MEETING ALL TEST PROVISIONS ON THE ANSI/SCTE 77, TO THE 66WF, MEETING ALL TEST PROVISION OF THE LATEST REVISION OF ANSI/SCTE 77.
5. PULL SLOTS MUST BE RATED FOR MINIMUM PULL OUT OF 3,000 POUNDS.
6. TYPE 4 HANDHOLE MUST BE INSTALLED IN ROADWAYS PARKING LOTS, ETC. ALL COVERS MUST BE COMPLETE WITH A MOLDED LOGO, MANUFACTURERS NAME & TIER RATING LOGO (NO GLUE IN LOGO). LOGO MUST READ "SDOT" OR "SL" UNLESS STATED OTHERWISE BY THE CITY OF SEATTLE.
7. THE GROUND ROD MUST EXTEND 4" ABOVE THE BOTTOM OF THE HANDHOLE OR MINERAL AGGREGATE.
8. FOR PAVEMENT DEPTH GREATER THAN 7" USE FRAME EXTENSIONS (SEE STD PLAN NO 231) TO BRING THE COVER UP THE THE LEVEL OF THE FINISHED PAVEMENT WITHOUT EMBEDDING THE BOTTOM FLANGE OF THE CASTING IN THE PAVEMENT.
9. A 4' LENGTH OF #6 THWN OR THHN COPPER WIRE MUST BE SECURED FROM THE HANDHOLE COVER TO THE FRAME. WITH A 4'-0" LENGTH FROM FRAME THAT CAN BE HOOKED UP TO A GROUND ROD.
10. ALL HANDHOLE COVERS AND FRAMES MUST HAVE A NON-SKID SURFACE (SCL MATERIAL STANDARD 7203.10)
11. SEE SCL CONSTRUCTION STANDARD 1716.07 FOR STREET HANDHOLE AND CONDUIT REQUIREMENTS.

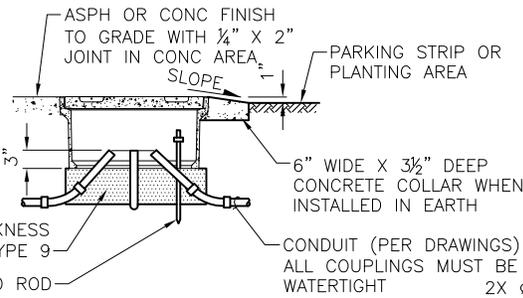
**HANDHOLE SCHEDULE**

HANDHOLE TYPE	TOP UNIT INSIDE DIMENSION			EXTENSION UNIT(E)	COVER DIMENSIONS	
	L	W	H		L	W
1	24"	13"	12"	12"	24"	13"
2	30"	17"	12"	12"	30"	17"
3	36"	24"	18"	12"	36"	24"
4	24"Ø	VAR	VAR	NA	NA	NA
5	30"	48"	36"	NA	30"	48"
6	48"	48"	48"	NA	48"	48"
GRHH	8"Ø			NA		

note revised



**TYPE 3 HANDHOLE**  
(COVER SAME AS TYPE 5)



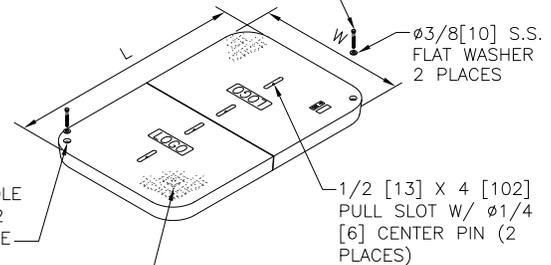
**HANDHOLE INSTALLATION DETAIL**

6" MIN THICKNESS  
MNRL AGG TYPE 9  
GROUND ROD

CONDUIT (PER DRAWINGS)  
ALL COUPLINGS MUST BE  
WATERTIGHT

2X Ø5/8 [16] THRU HOLE  
W/ Ø1 1/4 [32] X 1/2  
[13] DEEP COUNTERBORE

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



Ø3/8[10] S.S.  
FLAT WASHER  
2 PLACES

1/2 [13] X 4 [102]  
PULL SLOT W/ Ø1/4  
[6] CENTER PIN (2  
PLACES)

SKID RESISTANT  
SURFACE WITH A 0.6  
COEFFICIENT OF FRICTION

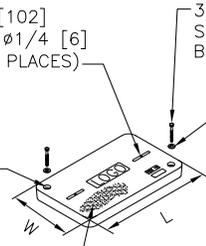
1/2 [13] X 4 [102]  
PULL SLOT W/ Ø1/4 [6]  
CENTER PIN (2 PLACES)

3/8-7 X 3 [76] LONG  
S.S. HEX HEAD AUGER  
BOLT 2 PLACES

2X Ø5/8 [16] THRU HOLE  
W/ Ø1 1/4 [32] X 1/2  
[13] DEEP COUNTERBORE

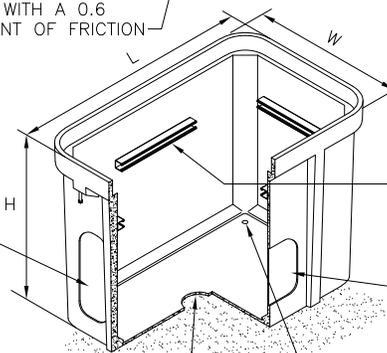
Ø3/8[10] S.S.  
FLAT WASHER  
2 PLACES

SKID RESISTANT  
SURFACE MS-86



**TYPE 1 & 2 HANDHOLE**

6" X 18"  
KNOCKOUT 2  
EACH END



GALV STRUT 18"  
LONG ON ALL SIDES

12" X 12"  
KNOCKOUT 1  
EACH SIDE

(2) 1"Ø GROUND  
ROD KNOCKOUTS

6"Ø DRAIN HOLE (OPENED)

**TYPE 5 HANDHOLE**

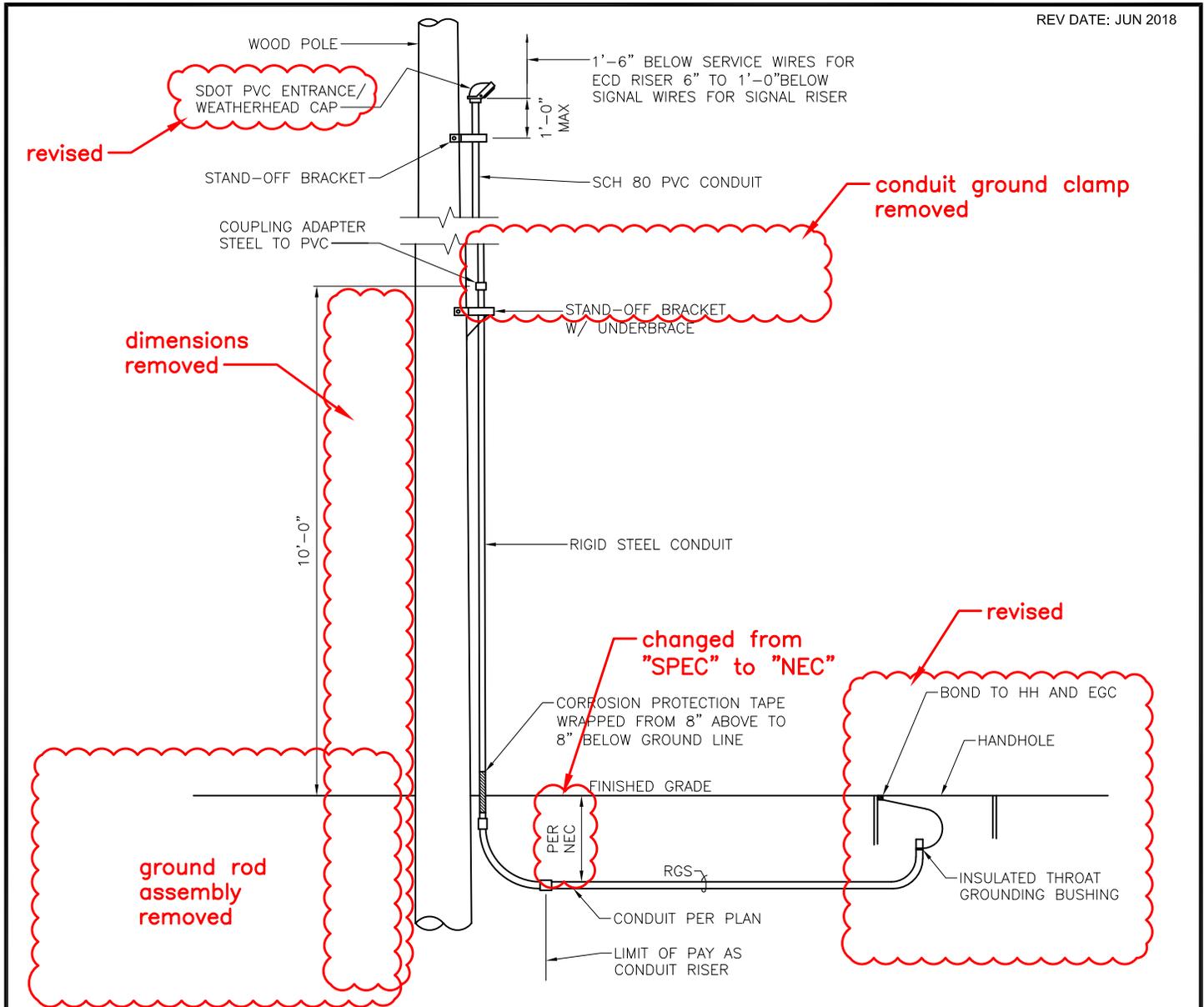
REF STD SPEC SEC 8-33



City of Seattle

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**POLYMER CONCRETE  
HANDHOLES**



**CONDUIT RISER (WITH STAND-OFF BRACKET\*)**

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

**NOTES:**

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

note 3 revised. previous note 5 removed and notes renumbered. notes 7 & 9 revised.

REF STD SPEC SEC 8-33

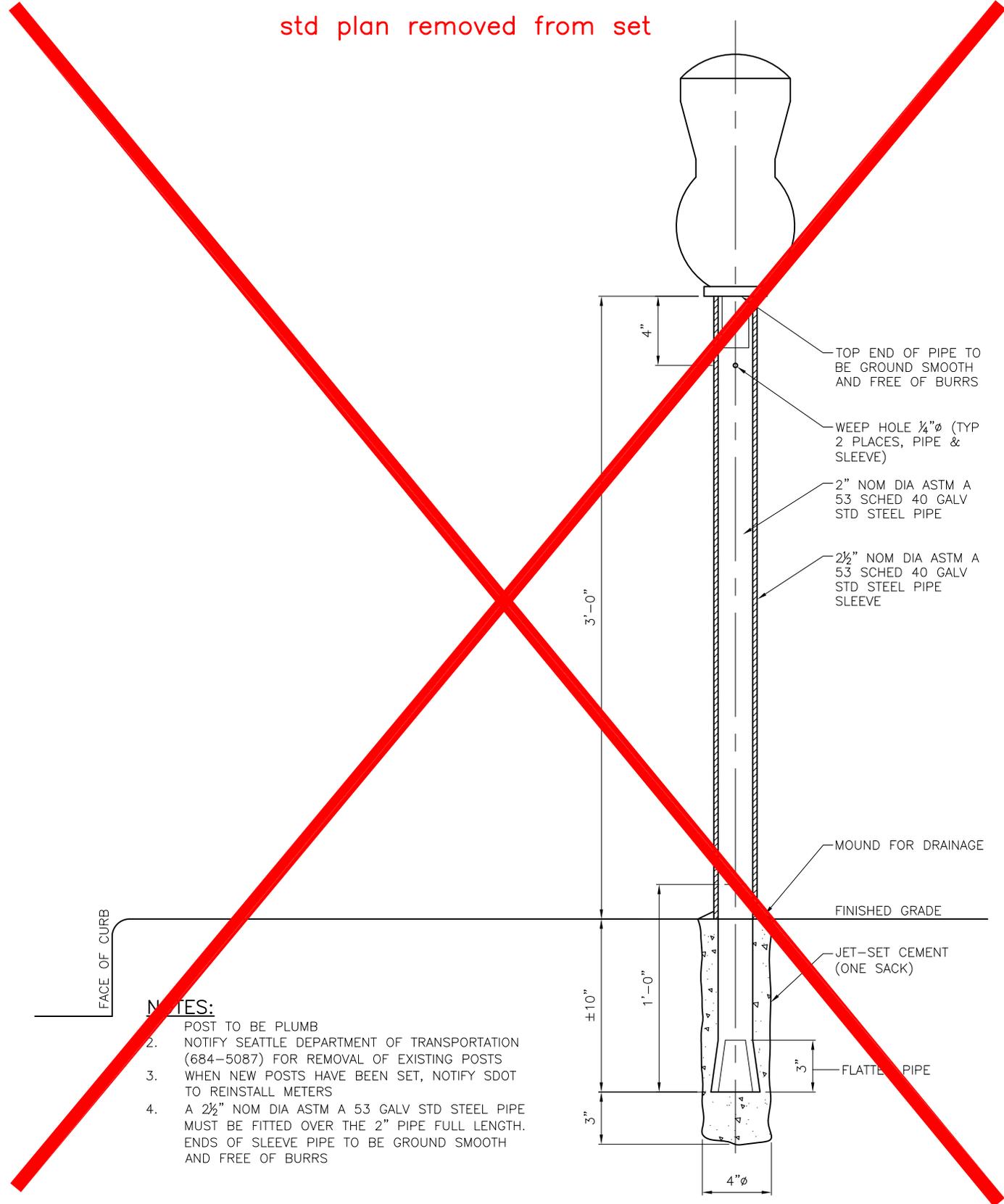


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TRAFFIC CONDUIT RISER

std plan removed from set



NOTES:

- 1. POST TO BE PLUMB
- 2. NOTIFY SEATTLE DEPARTMENT OF TRANSPORTATION (684-5087) FOR REMOVAL OF EXISTING POSTS
- 3. WHEN NEW POSTS HAVE BEEN SET, NOTIFY SDOT TO REINSTALL METERS
- 4. A 2 1/2" NOM DIA ASTM A 53 GALV STD STEEL PIPE MUST BE FITTED OVER THE 2" PIPE FULL LENGTH. ENDS OF SLEEVE PIPE TO BE GROUND SMOOTH AND FREE OF BURRS

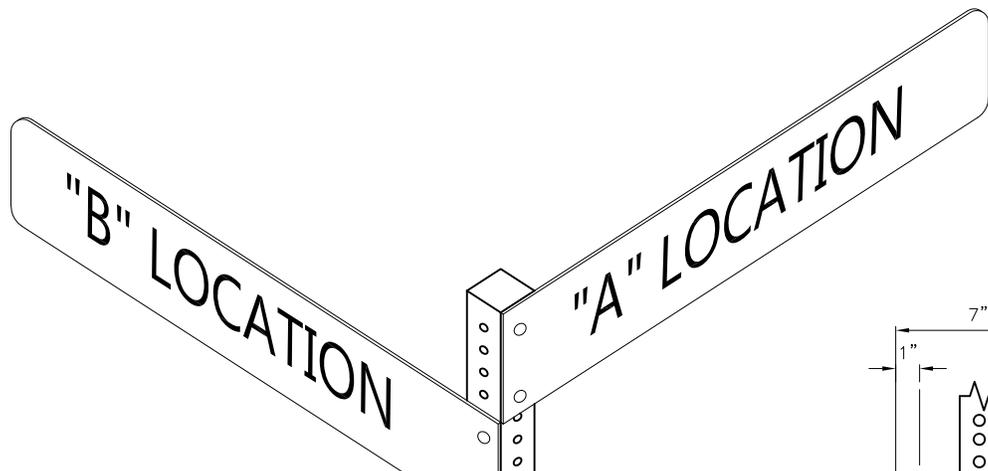
REF STD SPEC SEC 8-21



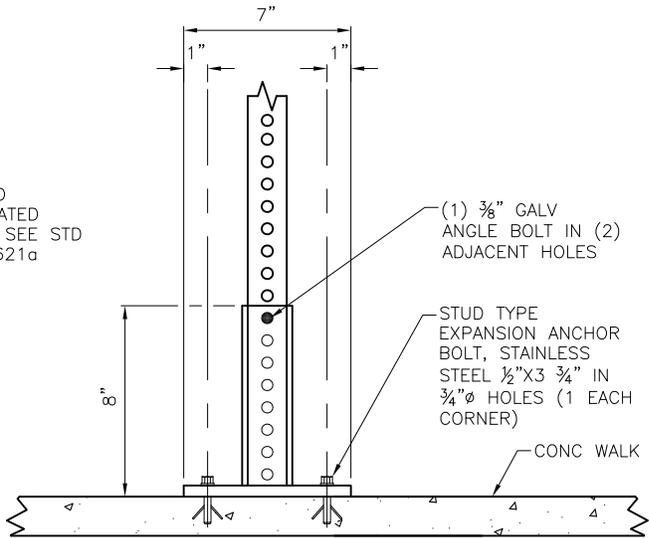
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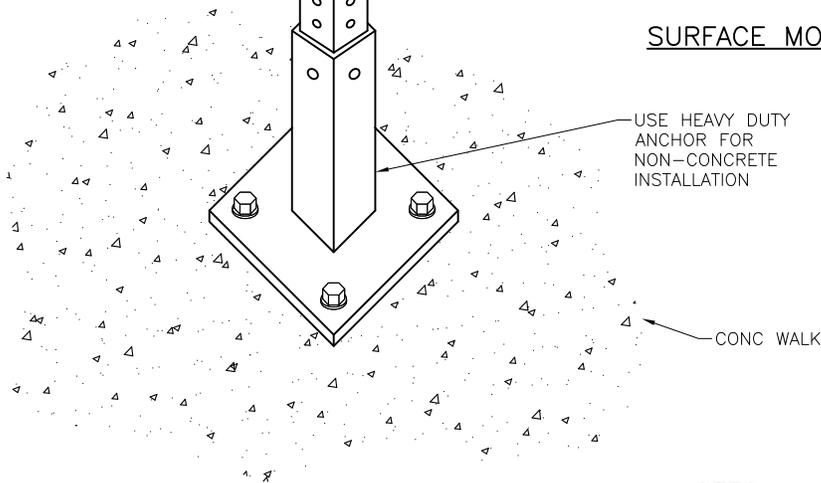
DIRECT BURIAL METER POST  
INSTALLATION DETAIL



TS-10 RED  
POWDERCOATED  
TELESPAR, SEE STD  
PLAN NO 621a



SURFACE MOUNT DETAIL



USE HEAVY DUTY  
ANCHOR FOR  
NON-CONCRETE  
INSTALLATION

CONC WALK

SURFACE MOUNT

**NOTES:**

1. WAYFINDING BLADE SHALL BE INSTALLED POINTING IN THE DIRECTION OF THE LOCATION ON BLADE.
2. CITY OF SEATTLE SHALL FABRICATE WAYFINDING BLADES AND SUPPLY MOUNTING HARDWARE AT PROJECT OR CONTRACTOR EXPENSE.
3. MAINTAIN 8 FEET MINIMUM OF VERTICAL CLEARANCE FROM CONCRETE WALK TO THE BOTTOM OF PEDESTRIAN WAYFINDING BLADES.

spec sec added

REF STD SPEC SEC 8-21



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PEDESTRIAN WAY  
FINDING SIGN