

COND	Condition
CONN	Connect/Connection
CONSTR	Construction
CONT	Continuous
CORP	Corporation
COS	City of Seattle
CPEP	Corrugated Polyethylene Pipe
CR	Cross, Curb Radius
CSB	Chief Seattle Base
CULV	Culvert
CW	Concrete Walk
CY	Cubic Yard
DB	Direct Burial Cable
DC	Direct Current
DCVA	Double Check Valve Assembly
DEPT	Department
DGV	District Gate Valve
DIA 0	Diameter
DIP or DI	Ductile Iron Pipe
DIPRA	Ductile Iron Pipe Research Assoc.
DR	Drive
DS	Downspout
DWG	Drawing
DWY	Driveway
E	East
EA	Each
ECB	Electrical Cable
ECC	Eccentric
ECD	Electrical Conduit
ED	Electrical Duct
EL/ELEV	Elevation
ELEC	Electric/Electrical
EMH	Electrical Maintenance Hole

ENCL	Enclosure
ENGR	Engineer
EOC	End of Curb
EQ	Equal
ESAL	Equivalent Single Axle Loads
ESMT	Easement
EV	Electrical Vault
EVC	End of Vertical Curb
EW	Each Way
EX	Existing
EXP	Expansion
FACB	Fire Alarm Cable
FAHH	Fire Alarm Handhole
FC	Face of Curb
FCS	Flow Control Structure
FDN	Foundation
FF	Far Face, Finished Floor
FG	Finished Grade
FIG	Figure
FIPT	Female Iron Pipe Thread
FL	Flow Line
FLG	Flange
FLR	Floor
FLT	Flat Bar
FM	Force Main
FO or FOC	Fiber Optics
FS	Far Side
FT	Feet
FTB	Fluidized Thermal Backfill
FTG	Footing
G	Gas
G REG	Gas Regulator
GA	Gauge

REF STD SPEC SEC 1-01.2



City of Seattle

NOT TO SCALE

ABBREVIATIONS

MCV	Manual Control Valve
MDV	Manual Drain Valve
MH	Maintenance Hole
MIC	Monument in Case
MIN	Minimum
MIPT	Male Iron Pipe Thread
MISC	Miscellaneous
MJ	Mechanical Joint
ML 	Monument Line
MNRL AGG	Mineral Aggregate
MOD	Modify/Modified
MON	Monument
MW	Monitor Well
N	North
NAD	North American Datum
NAVD	North American Vertical Datum
NF	Near Face
NGVD	National Geodetic Vertical Datum
NIC	Not in Contract
NO	Number
NOM	Nominal
NS	Near Side
NTS	Not To Scale
OC	On Center
OD	Outside Diameter/Dimension
OF	Outside Face
OH	Overhead
PAV	Pavement
PC	Point of Curvature
PCC	Point of Compound Curve
PCW	Pervious Concrete Walk
PDP	Perforated Drain Pipe
PE	Plain End

PED	Pedestrian
PG	Performance Grade
PH	Phase
PI	Point of Intersection
PL	Plate, Place, Polyethylene
	Property Line
POC	Point on Curve
PP	Power Pole
PPB	Pedestrian Push Button
PR	Pair
PRC	Point of Reverse Curve
PROP	Proposed
PRKG	Parking
PRV	Pressure Reducing Valve
PS	Pipe Sewer Combined
PSD	Pipe Storm Drain
PSDD	Pipe Storm Drain Detention
PSI	Pounds per Square Inch
PSIA	Pounds per Square Inch Absolute
PSIG	Pounds per Square Inch Gauge
PSS	Pipe Sewer Sanitary
PT	Point of Tangency
PVB	Pressure Vacuum Breaker
PVC	Polyvinyl Chloride
PVT	Private
QTY	Quantity
R	Radius
R&R	Remove & Replace
R/W	Right of Way
RCP	Reinforced Concrete Pipe
RD	Roof Drain
RDWY	Roadway
RECONN	Reconnect

REF STD SPEC SEC 1-01.2

new abbreviation added



City of Seattle

NOT TO SCALE

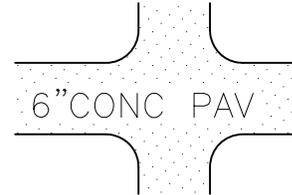
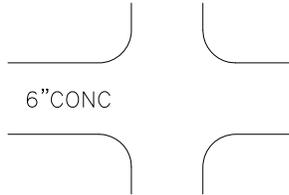
ABBREVIATIONS

ITEM

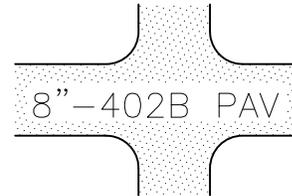
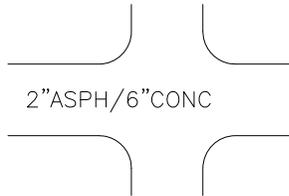
EXISTING

PROPOSED

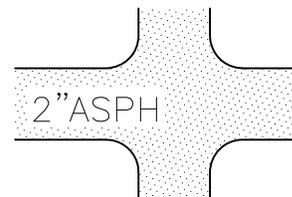
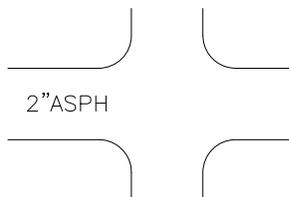
Cement Concrete Pavement



Asphalt Concrete Pavement



Asphalt Concrete Surfacing

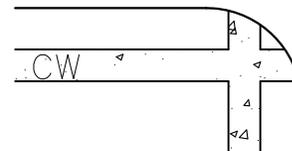
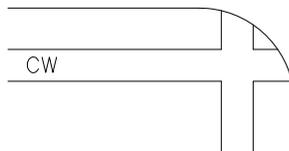


Curb



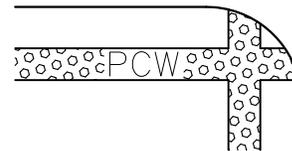
TYPE 410C CURB

Cement Concrete Walk



Pervious Concrete Walk

added



REF STD SPEC SEC



City of Seattle

NOT TO SCALE

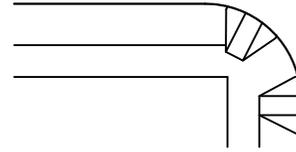
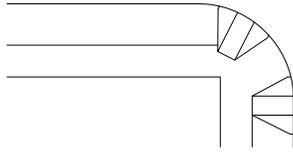
STANDARD SYMBOLS
PAVING

ITEM

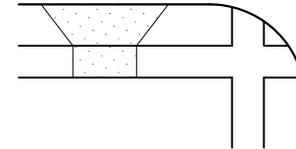
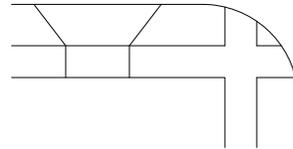
EXISTING

PROPOSED

Curb Ramp

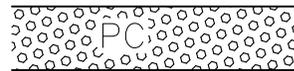


Conc Dwy



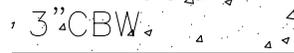
Pervious Concrete Surface

added



Cement Concrete Bike Way

3"CBW



Asphalt Concrete Bike Way

3"ABW

3"ABW

Grading

GRADED

TO BE GRADED

REF STD SPEC SEC



City of Seattle

NOT TO SCALE

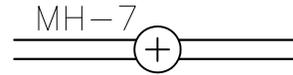
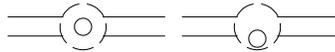
STANDARD SYMBOLS
PAVING

ITEM

EXISTING

PROPOSED

Maintenance Holes



Inlet Type 250A



Inlet Type 250B



Inlet Type 252



Inlet Type 268



Catch Basin round inlet top



Private CB & Inlet



Catch Basin Type 151
(pre 1985)



Catch Basin Type 240A



Catch Basin Type 240B



Catch Basin Type 240C



Catch Basin Type 240D



Catch Basin Type 241



Catch Basin Type 242A



Catch Basin Type 242B



Junction Box Type 277A



Junction Box Type 277B



Area Drain



REF STD SPEC SEC



City of Seattle

NOT TO SCALE

STANDARD SYMBOLS
SEWER & DRAINAGE

ITEM	EXISTING	PROPOSED
Sand Box		
Clean Out		
Concrete Culvert		
Pipe Sewer Combined <1'-0" Dia		
Pipe Sewer Combined ≥1'-0" Dia		
Side Sewer Combined		
Pipe Sewer Sanitary <1'-0" Dia		
Pipe Sewer Sanitary ≥1'-0" Dia		
Side Sewer Sanitary		
Pipe Storm Drain <1'-0" Dia		
Pipe Storm Drain ≥1'-0" Dia		

REF STD SPEC SEC



City of Seattle

NOT TO SCALE

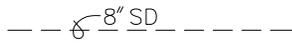
STANDARD SYMBOLS
SEWER & DRAINAGE

ITEM

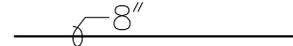
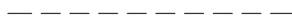
EXISTING

PROPOSED

Service Drain



Inlet & CB Connection



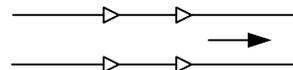
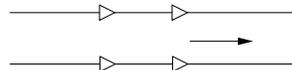
Open Ended Pipe



Ditch



Stream



REF STD SPEC SEC



City of Seattle

NOT TO SCALE

STANDARD SYMBOLS
SEWER & DRAINAGE

ITEM	EXISTING	PROPOSED
Bench Mark (found or set)		
Brass Plug/Cap (found or set)		
Hub/Tack (found or set)		
Monument in Case (found or set)		
Conc. Mon. (found or set)		
Section Corner (found or set)		
Quarter Corner (found or set)		
Section Corner (calculated)		
Quarter Corner (calculated)		
Rebar/Cap, Pipe/Cap Rebar, Iron Pipe (found or set)		
Tack/Lead, Tack PK Nail, Spike (found or set)		
Bench Mark (not found)		
Brass Plug/Cap (not found)		
MIC. (not found)		
Conc. Mon. (not found)		
Rebar/Cap, Pipe/Cap Rebar, Iron Pipe (not found)		
Tack/Lead, Tack PK Nail, Spike (not found)		
Survey Shot Point		

REF STD SPEC SEC



City of Seattle

NOT TO SCALE

STANDARD SYMBOLS
TOPOGRAPHIC & MISC

ITEM

EXISTING

PROPOSED

Center Line



Monument Line



Survey Line



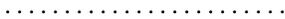
Right of Way Line



Lot & Ownership Line



Permanent Easement Line



Temp Const Easement Line



Vacated Street or Alley



State Highway Limited Access Line



Building



Chain Link Fence



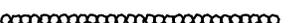
Wood Fence



Guardrail



Rock Facing



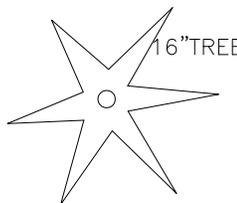
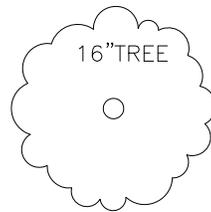
Rock Facing



Riprap



Trees



PER DRAWINGS

REF STD SPEC SEC



City of Seattle

NOT TO SCALE

STANDARD SYMBOLS
TOPOGRAPHIC & MISC

ITEM	EXISTING	PROPOSED
Shrub or Bush		
Ground, Grade Line		
Grade (arrow downhill)	5.6%	5.6%
Rail Road Tracks		
City Limits		
Slope Line		
Contours		
Slope Angle Horiz:Vert	v c	H:V
Vertical Curve	v c	v c
Depression		
Stump		
Top of Cut Toe of Fill		
Dimension Line		
Match Line		
Test Hole & Number (test boring)		
Bench Mark		

REF STD SPEC SEC



City of Seattle

NOT TO SCALE

STANDARD SYMBOLS
TOPOGRAPHIC & MISC

ITEM

EXISTING

PROPOSED

Monitor Well



Street Name Sign



US Mail Box



Private Mail Box



Bollard



Posts



Parking Meter & Pay Station



Rectangular Casting



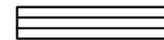
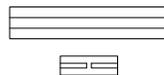
Circular Casting



Column



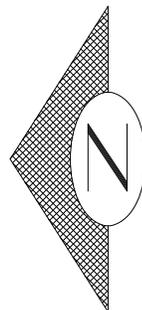
Jersey Barrier & Eco Block



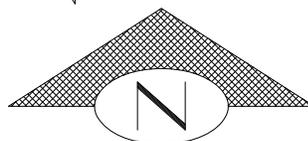
Tree Pit



North Arrow horizontal



North Arrow vertical



REF STD SPEC SEC



City of Seattle

NOT TO SCALE

STANDARD SYMBOLS
TOPOGRAPHIC & MISC

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		
Gas Valve		
Gas Meter		
Gas Regulator		
Petroleum or Oil		
Abandon(ed)		

REF STD SPEC SEC



City of Seattle

NOT TO SCALE

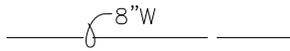
STANDARD SYMBOLS
PRIVATE UTILITIES

ITEM

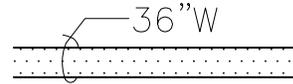
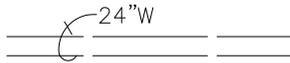
EXISTING

PROPOSED

Watermain
<1'-0"Dia



Watermain
≥1'-0"Dia



11 1/4° Bend w/
Conc Blocking



22 1/2° Bend



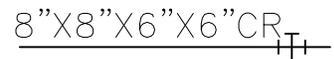
45° Bend



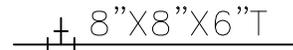
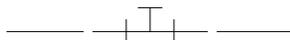
90° Bend



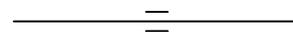
Cross



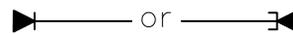
Tee



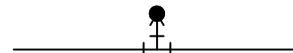
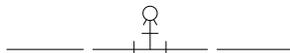
Pipe Sleeve



Plug w/ Conc
Blocking



Hydrant



Water Meter



Valve Box



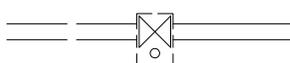
Gate Valve



Gate Valve
w/ Chamber



Gate Valve
w/ Vault Chamber



Reducer



REF STD SPEC SEC



City of Seattle

NOT TO SCALE

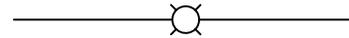
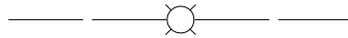
STANDARD SYMBOLS
WATER

ITEM

EXISTING

PROPOSED

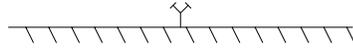
Air Valve



Blowoff



Fire Standpipe



Water Test Station



Water Chamber



Sprinkler Head



Irrigation Valve



Angle Valve



Butterfly Valve



Ball Valve



Check Valve



Cone Valve



Globe Valve



Needle Valve



Plug Valve



Resilient Seal Gate Valve



Vertical Bend



Concrete Blocking



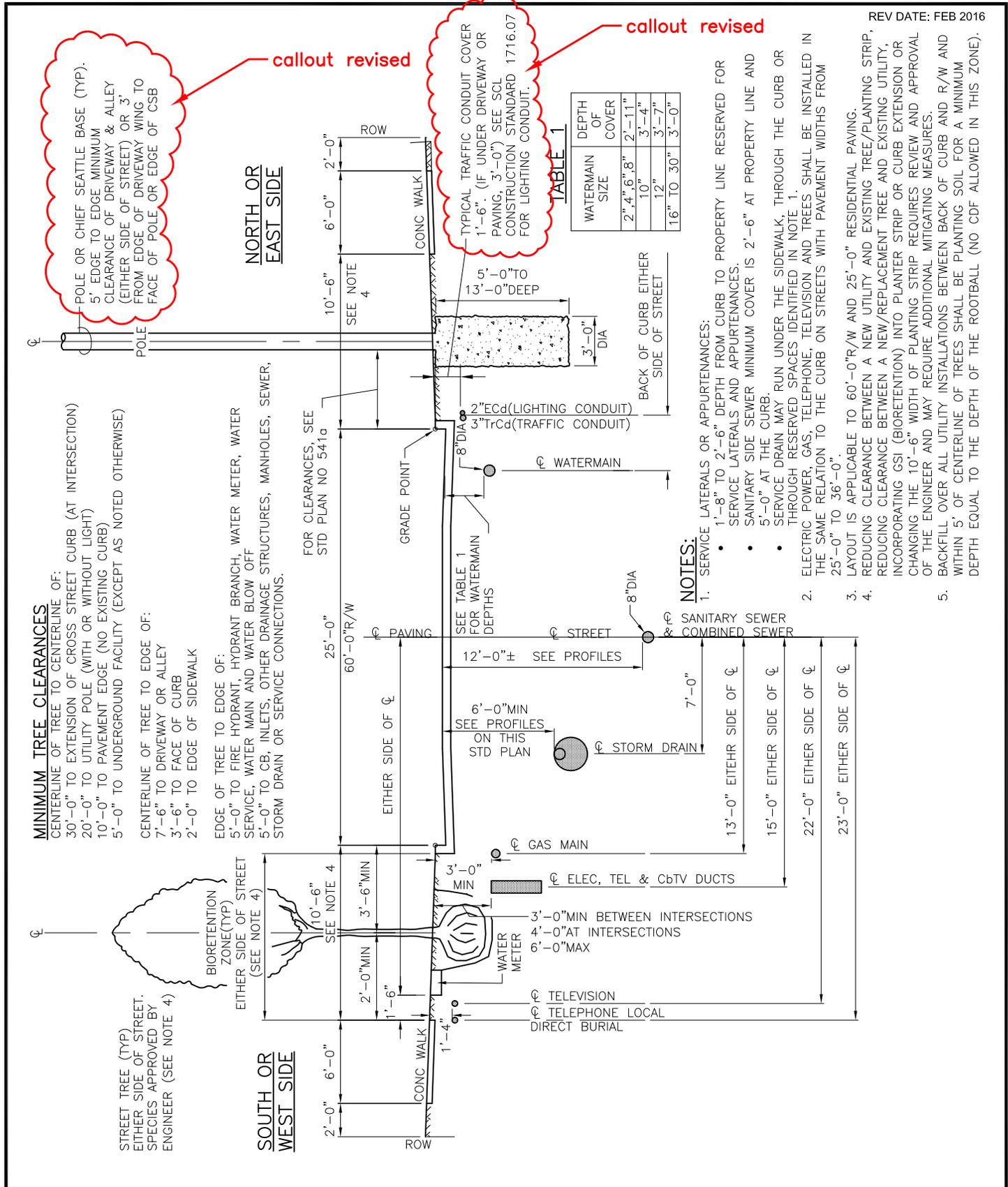
REF STD SPEC SEC



City of Seattle

NOT TO SCALE

STANDARD SYMBOLS
WATER



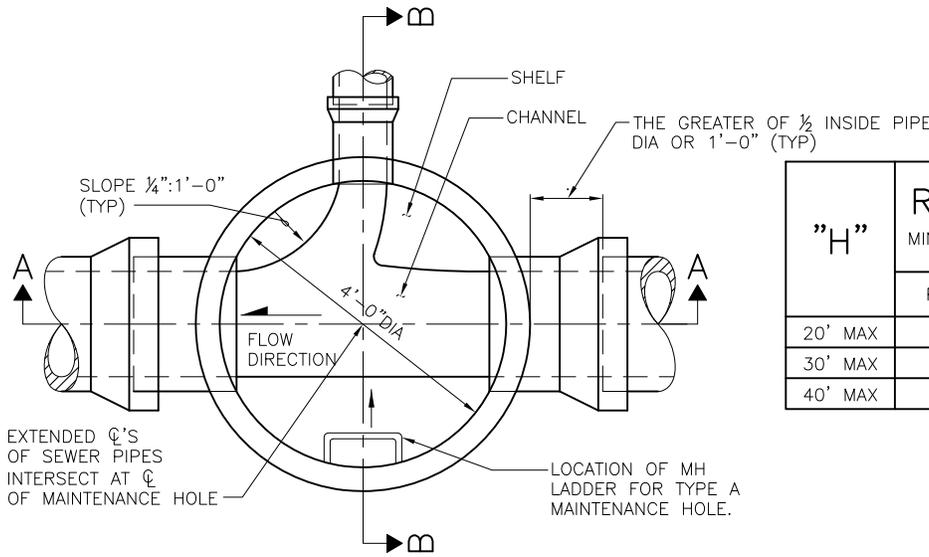
REF STD SPEC SEC 1-07.16, 1-07.17 & 1-07.28



City of Seattle

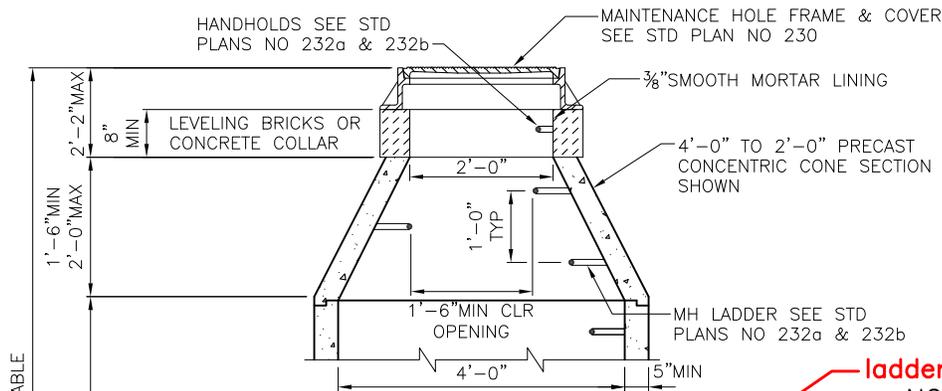
NOT TO SCALE

DESIRABLE LOCATIONS FOR UTILITIES (RESIDENTIAL STREET)



"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.25	0.17
30' MAX	0.31	0.22
40' MAX	0.36	0.25

PLAN VIEW
(TOP REMOVED)

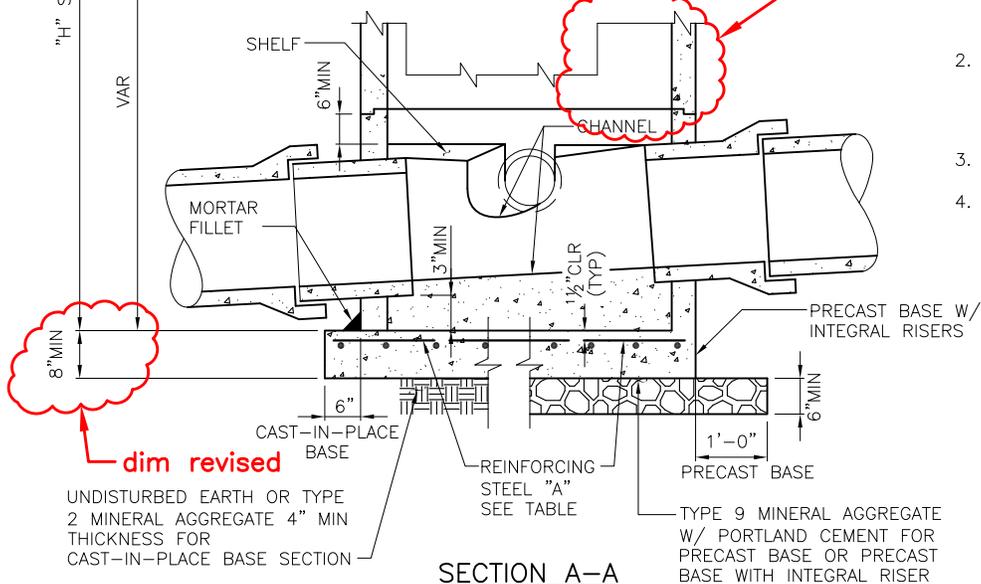


SECTION B-B

ladder step removed

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 SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS 5 IN. MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 8 IN.



SECTION A-A

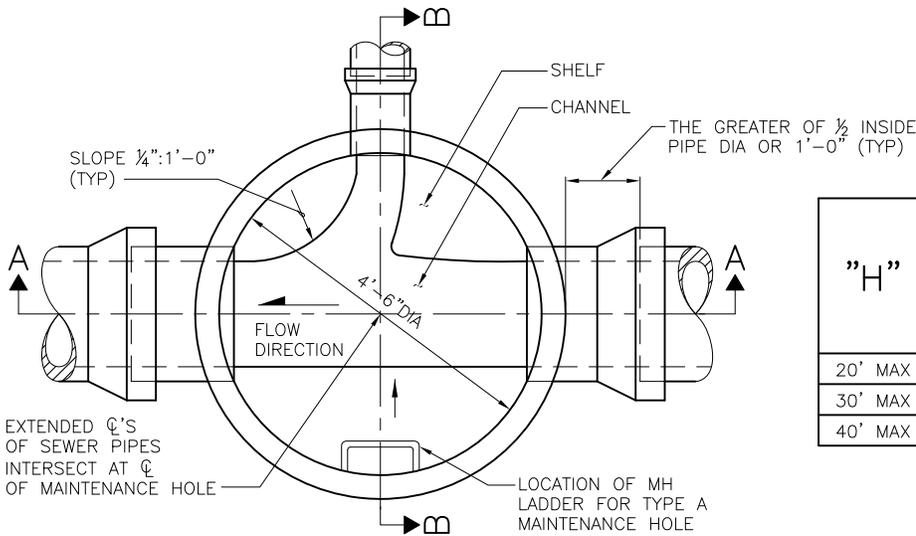
REF STD SPEC SEC 7-05



City of Seattle

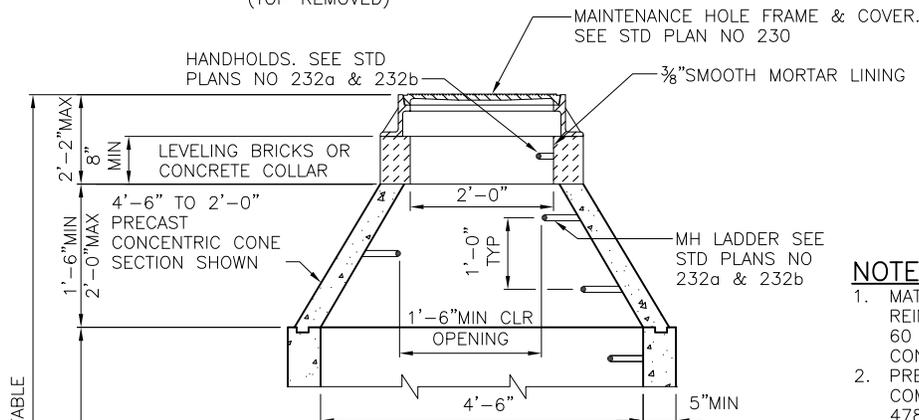
NOT TO SCALE

TYPE 204a MAINTENANCE HOLE



PLAN VIEW
(TOP REMOVED)

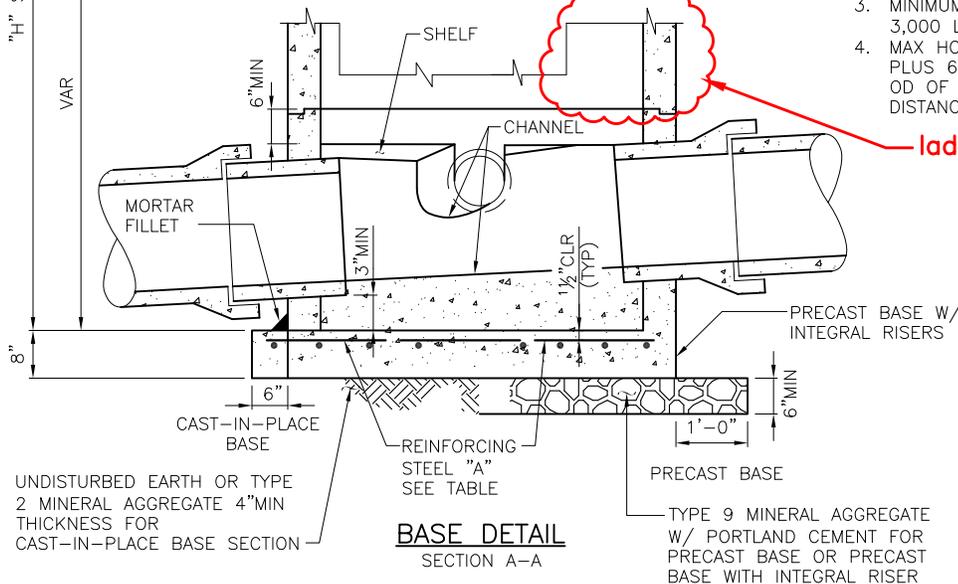
"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.29	0.21
30' MAX	0.36	0.26
40' MAX	0.42	0.31



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 SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS 6 IN. MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 8 IN.



BASE DETAIL
SECTION A-A

—ladder step removed

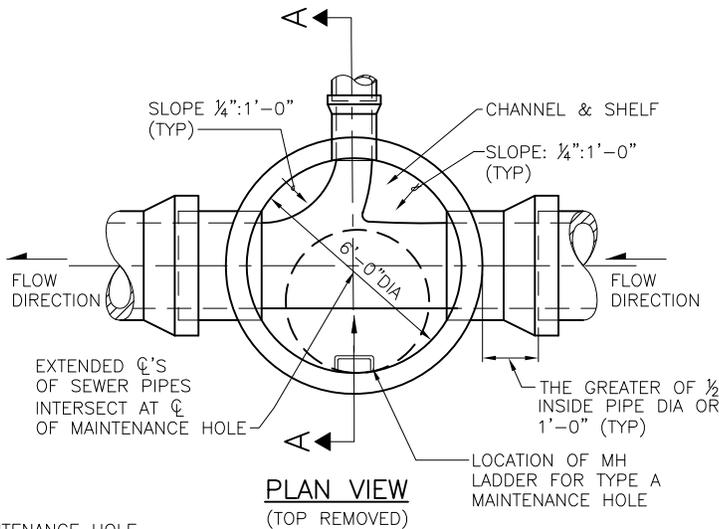
REF STD SPEC SEC 7-05



City of Seattle

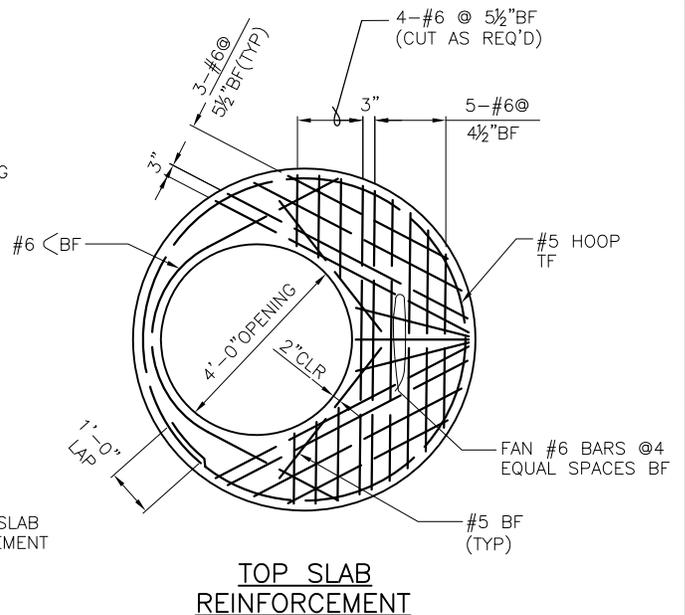
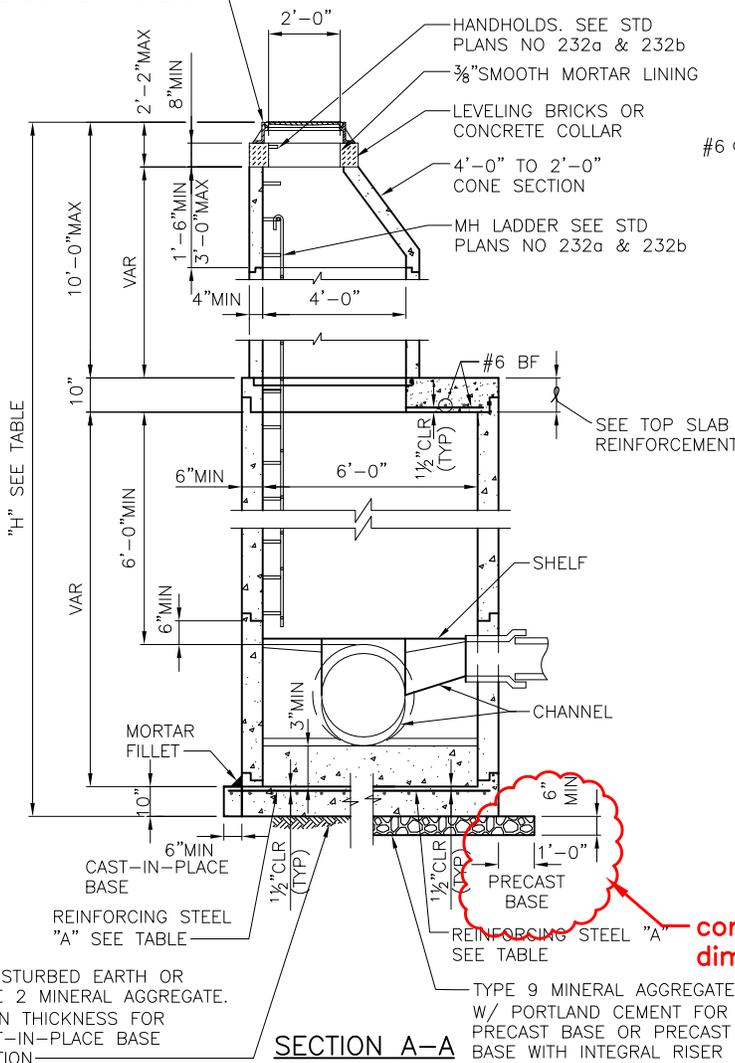
NOT TO SCALE

TYPE 204.5a MAINTENANCE HOLE



"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.39	0.30
30' MAX	0.47	0.37
40' MAX	0.56	0.46

MAINTENANCE HOLE FRAME & COVER. SEE STD PLAN NO 230



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 SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS 7 IN. MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 12 IN.

corrected base dimension

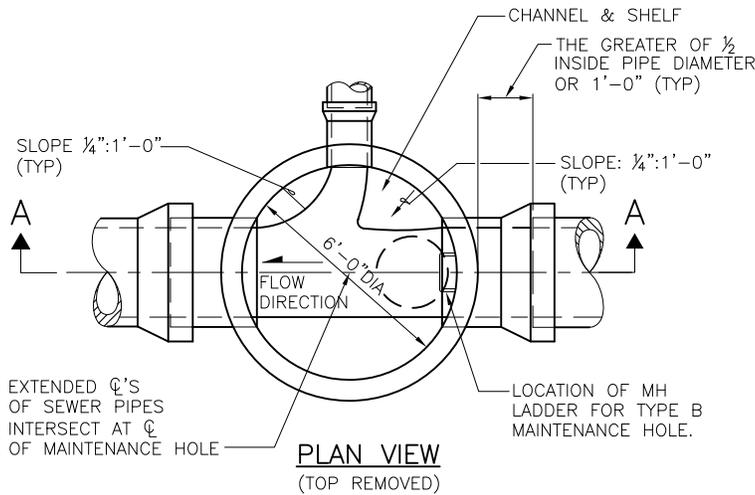
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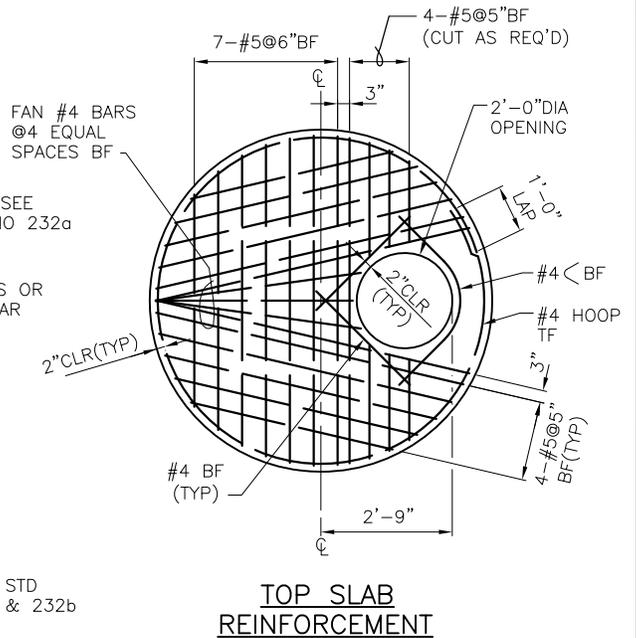
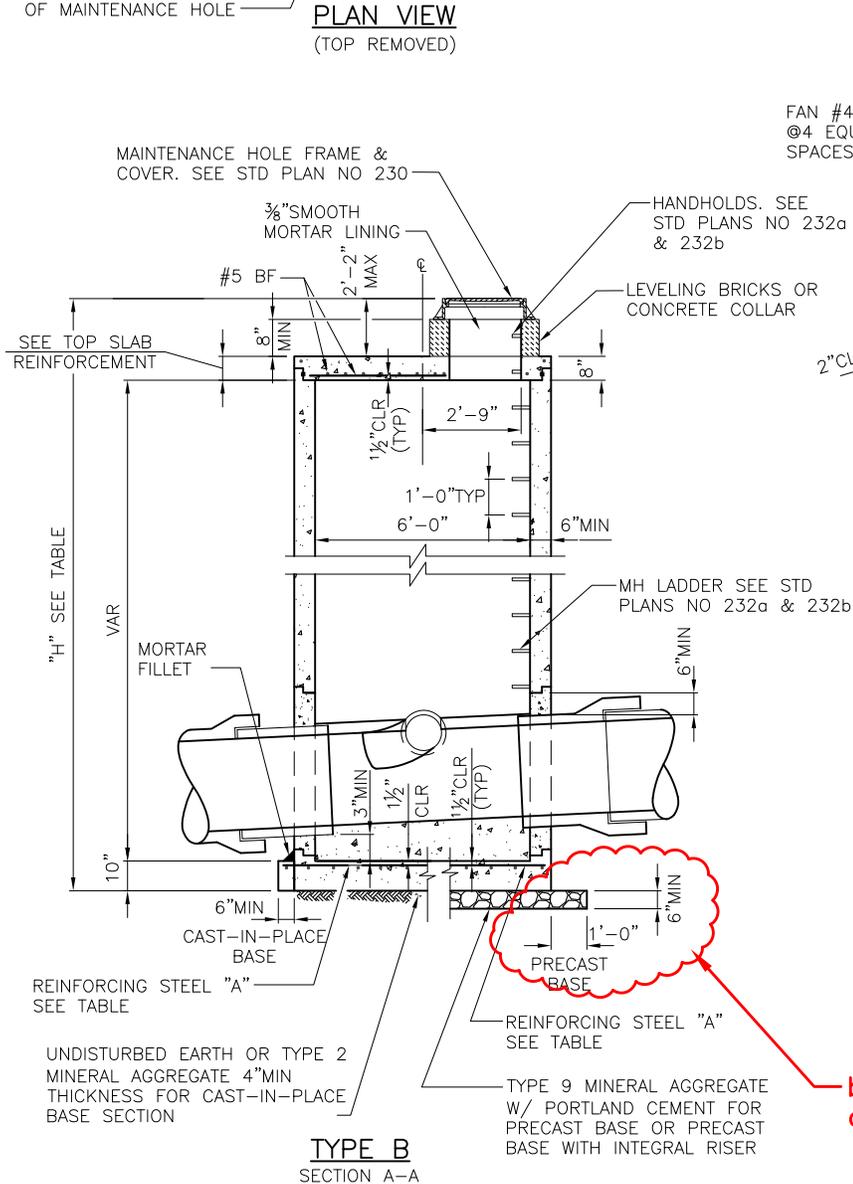
City of Seattle

NOT TO SCALE

TYPE 206a MAINTENANCE HOLE



"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.29	0.24
30' MAX	0.41	0.32
40' MAX	0.49	0.41



- 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 SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.
 3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
 4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS 7 IN. MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 12 IN.

base dimension corrected

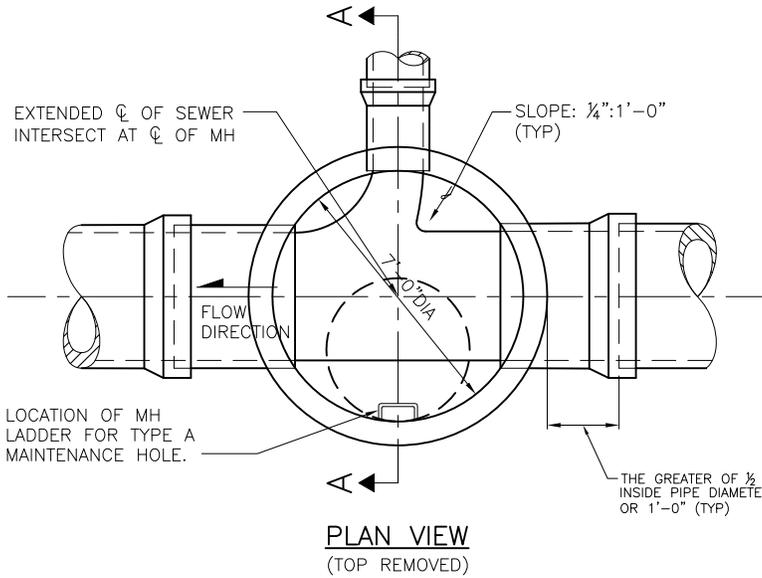
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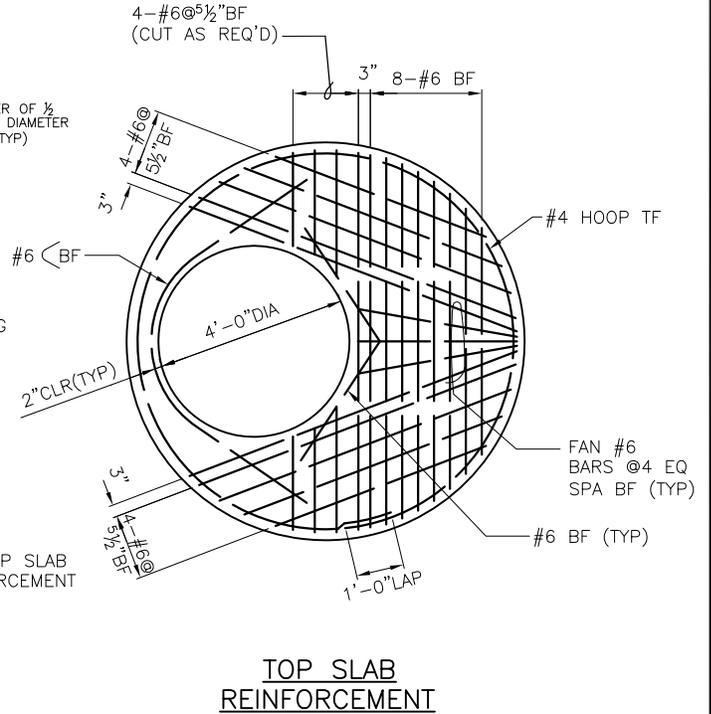
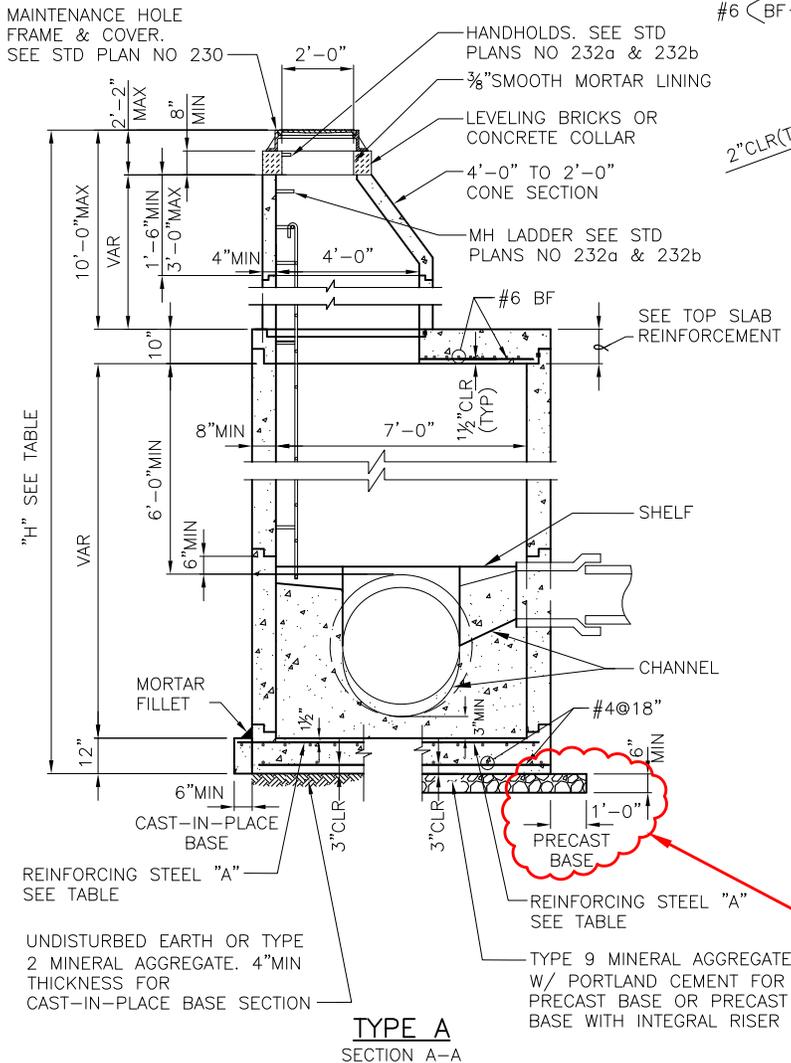
City of Seattle

NOT TO SCALE

TYPE 206b MAINTENANCE HOLE



"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.42	0.34
30' MAX	0.51	0.41
40' MAX	0.60	0.48



- NOTES:**
- MATERIALS: CONCRETE-CLASS 4000; REINFORCING STEEL-ASTM A615 GRADE 60 MIN; CHANNEL AND SHELF MATERIAL - CONCRETE CLASS 3000.
 - PRECAST MAINTENANCE HOLE COMPONENTS SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.
 - MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
 - MAX HOLE SIZE SHALL BE OD OF PIPE PLUS 8 IN. MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 12 IN.

base dimension corrected

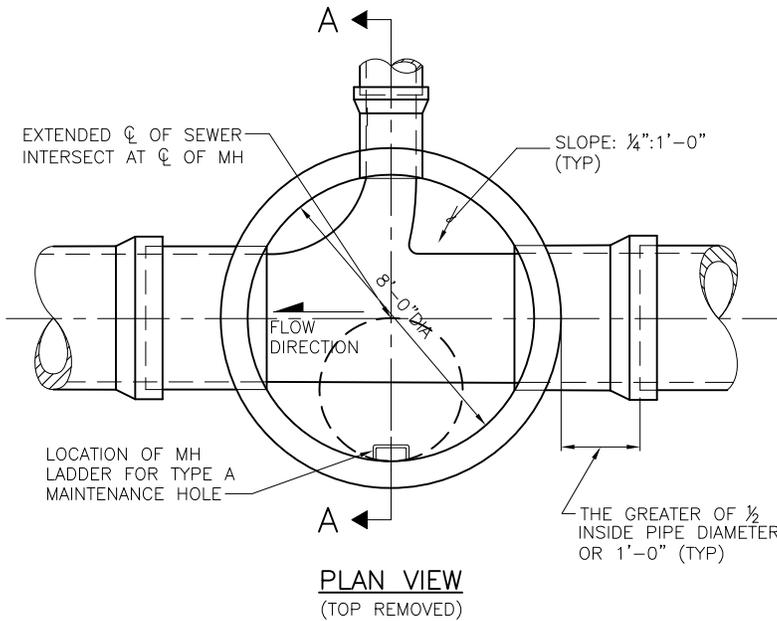
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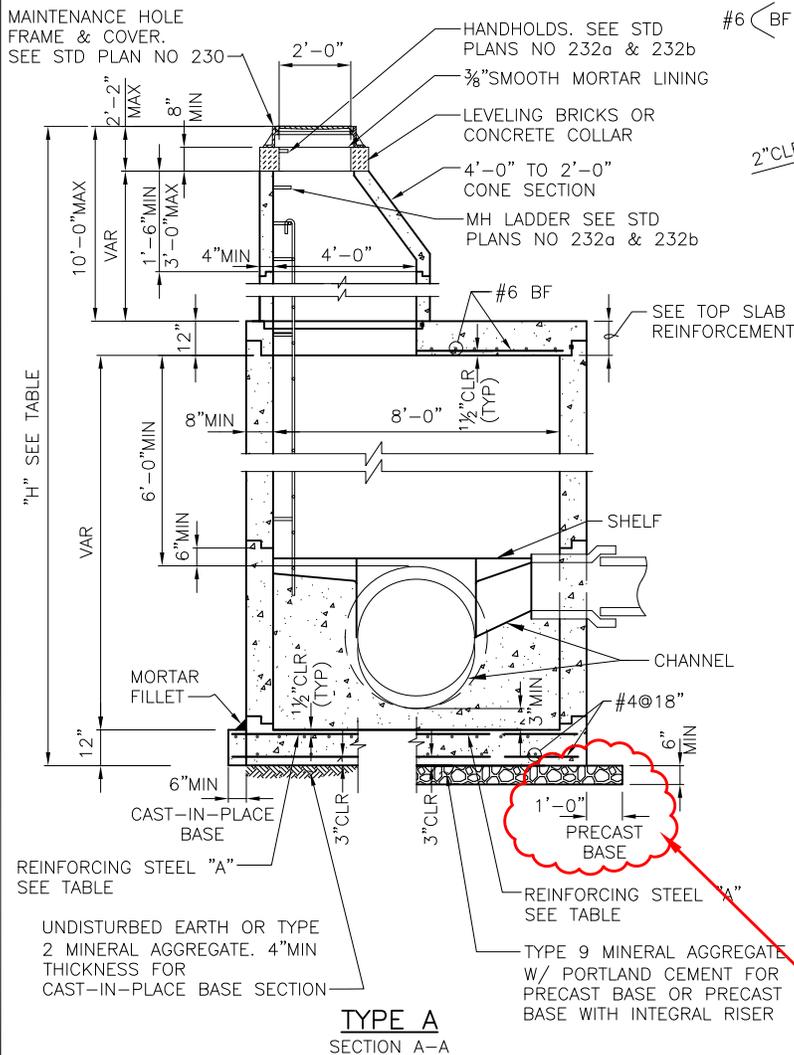
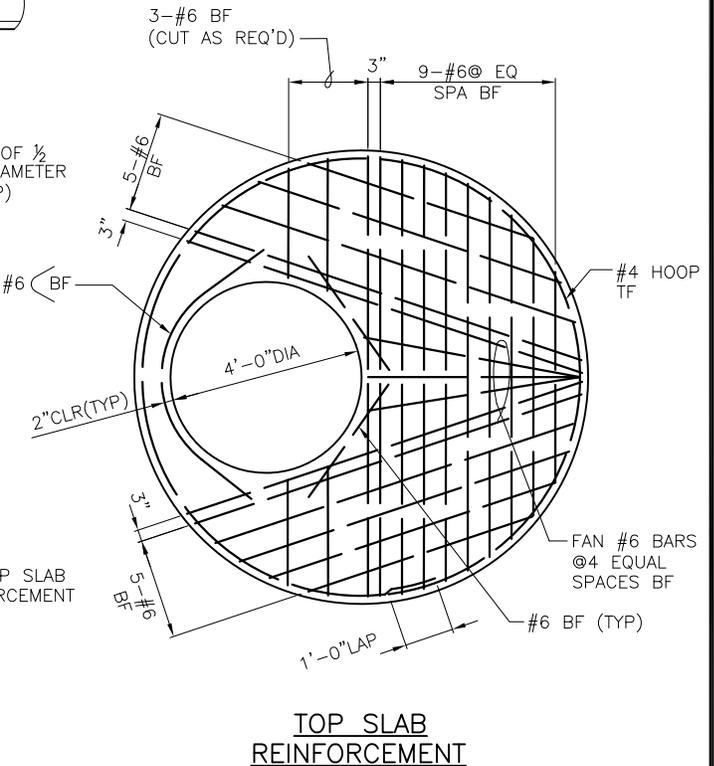
City of Seattle

NOT TO SCALE

TYPE 207a MAINTENANCE HOLE



"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.54	0.45
30' MAX	0.66	0.55
40' MAX	0.78	0.64



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
SHALL CONFORM TO ASTM C 478. JOINTS
BETWEEN PRECAST COMPONENTS SHALL BE
RUBBER GASKETED CONFORMING TO ASTM C
443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000
LBS/SQ FT
4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS
9". MIN HOLE SIZE SHALL BE OD OF PIPE
PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

base dimension corrected

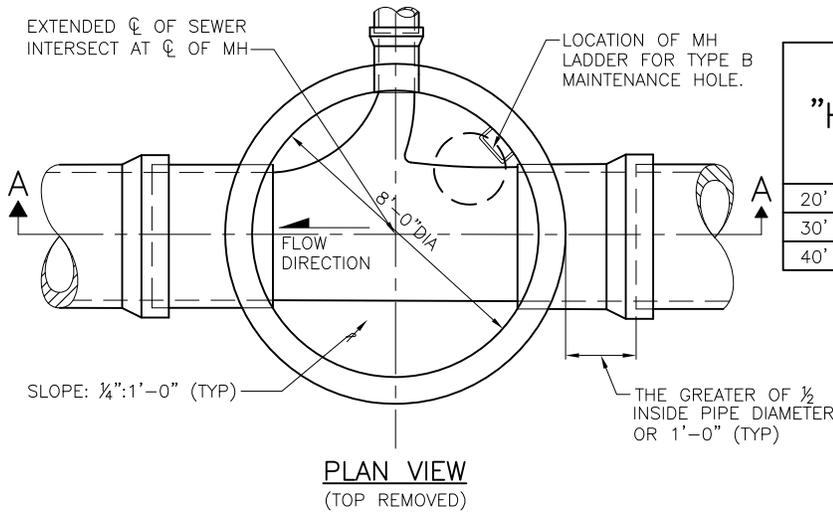
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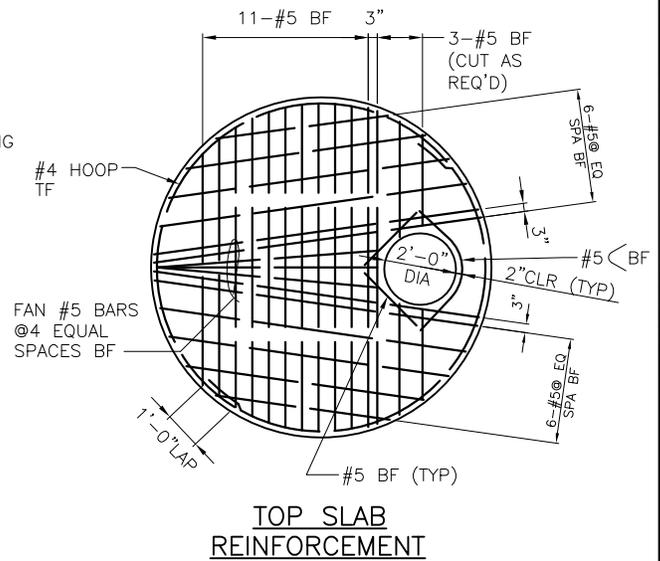
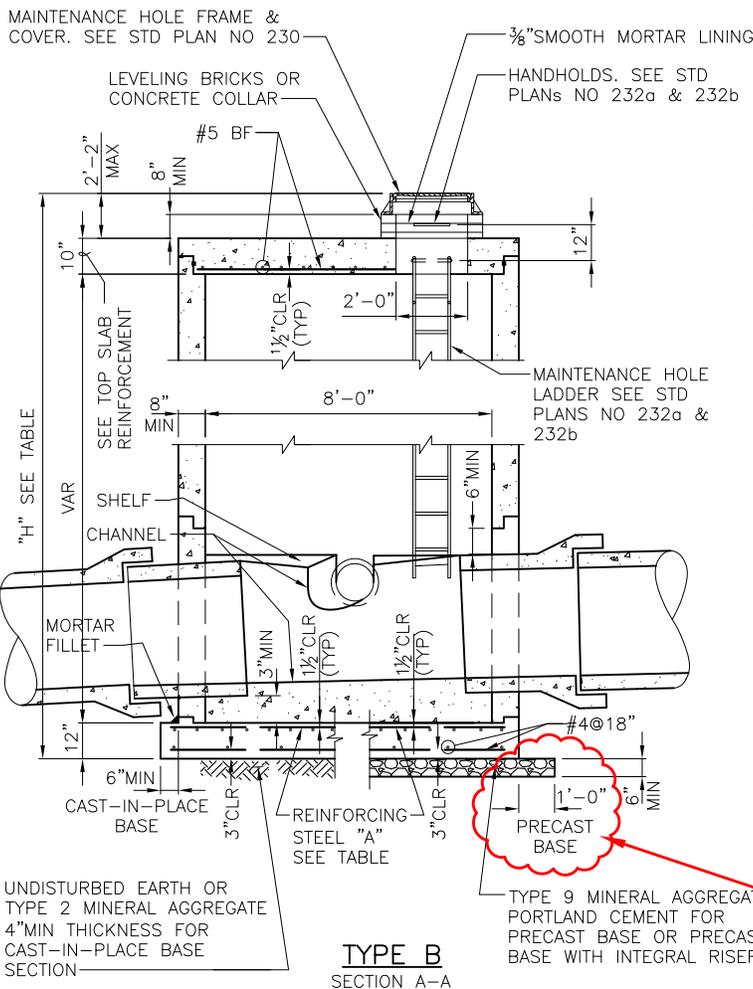
City of Seattle

NOT TO SCALE

TYPE 208a MAINTENANCE HOLE



"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.42	0.35
30' MAX	0.53	0.45
40' MAX	0.65	0.54



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 SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS 9". MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

base dimension corrected

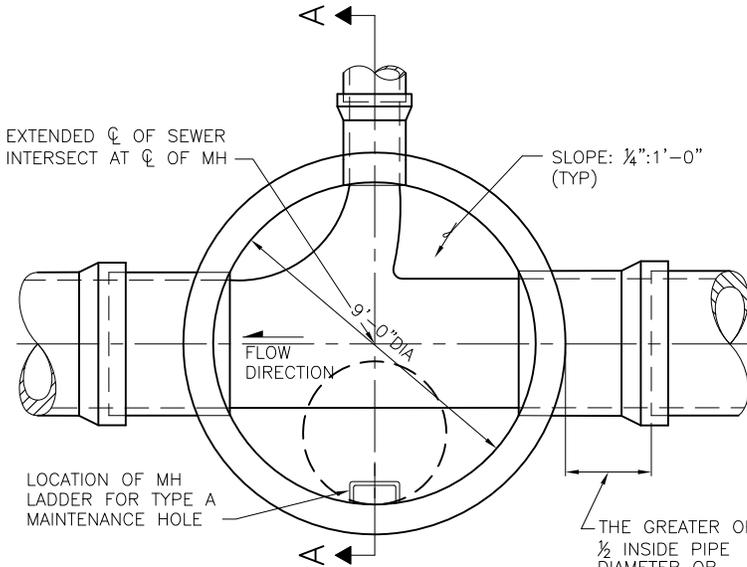
REF STD SPEC SEC 7-05



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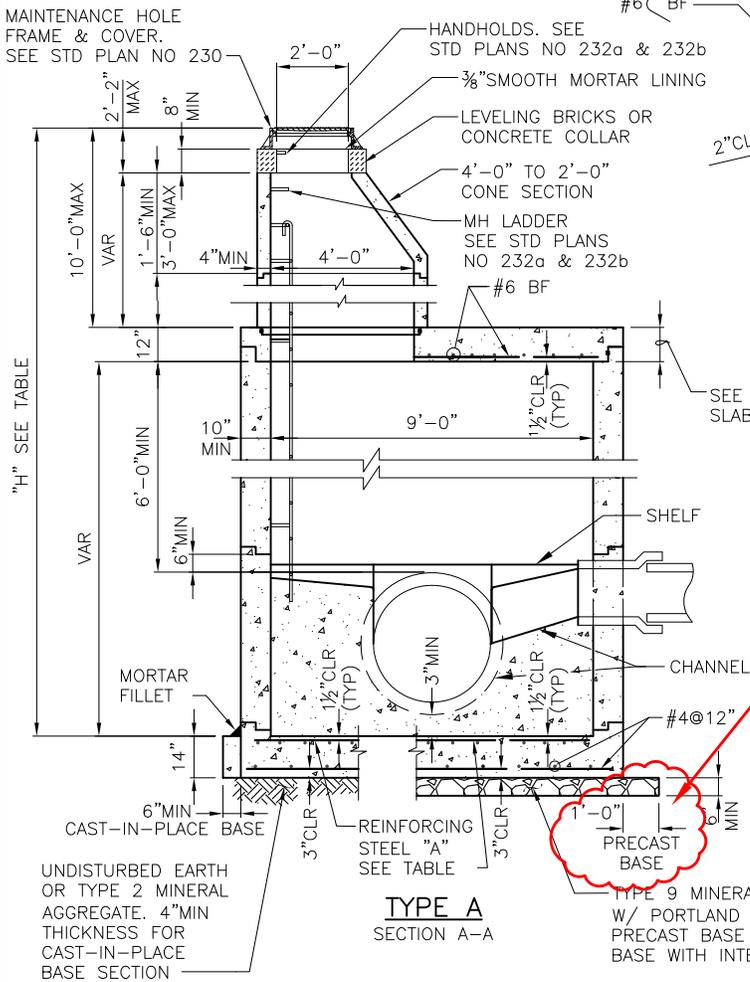
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TYPE 208b MAINTENANCE HOLE

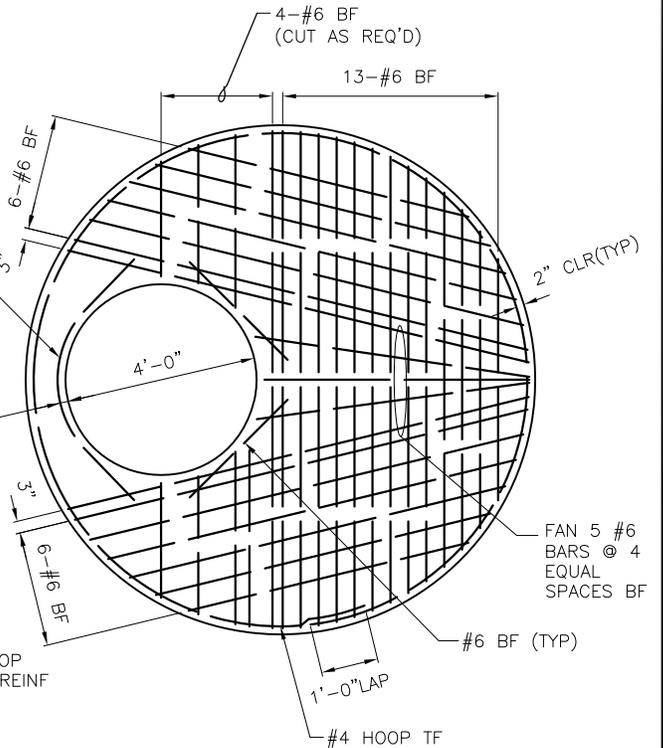


PLAN VIEW
(TOP REMOVED)

"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.57	0.49
30' MAX	0.70	0.59
40' MAX	0.81	0.69



TYPE A
SECTION A-A



TOP SLAB REINFORCEMENT

base dimension corrected

NOTES:

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

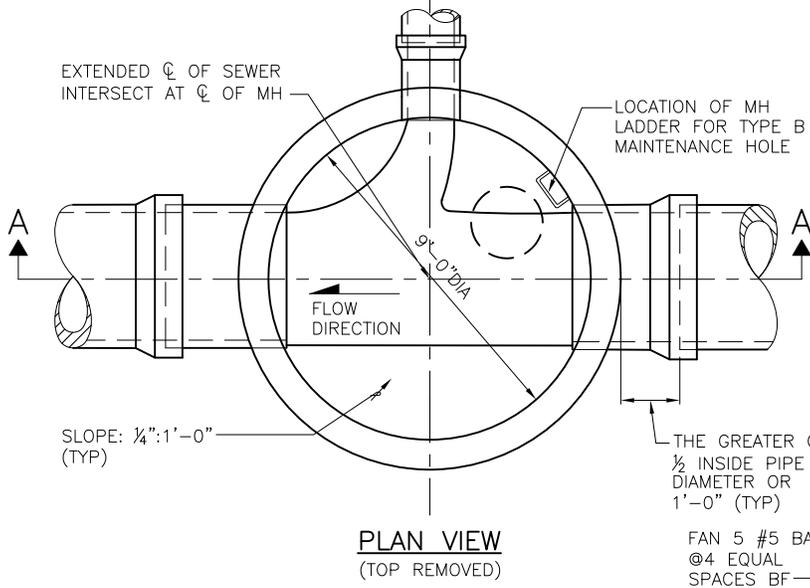
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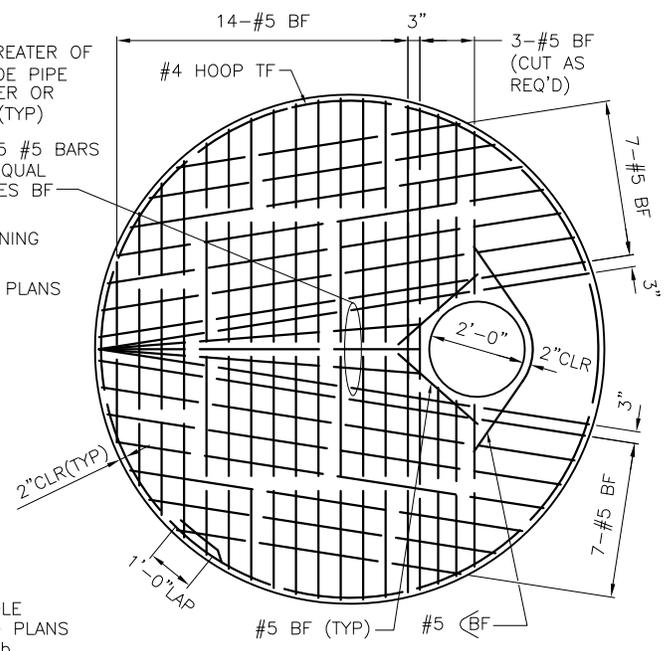
City of Seattle

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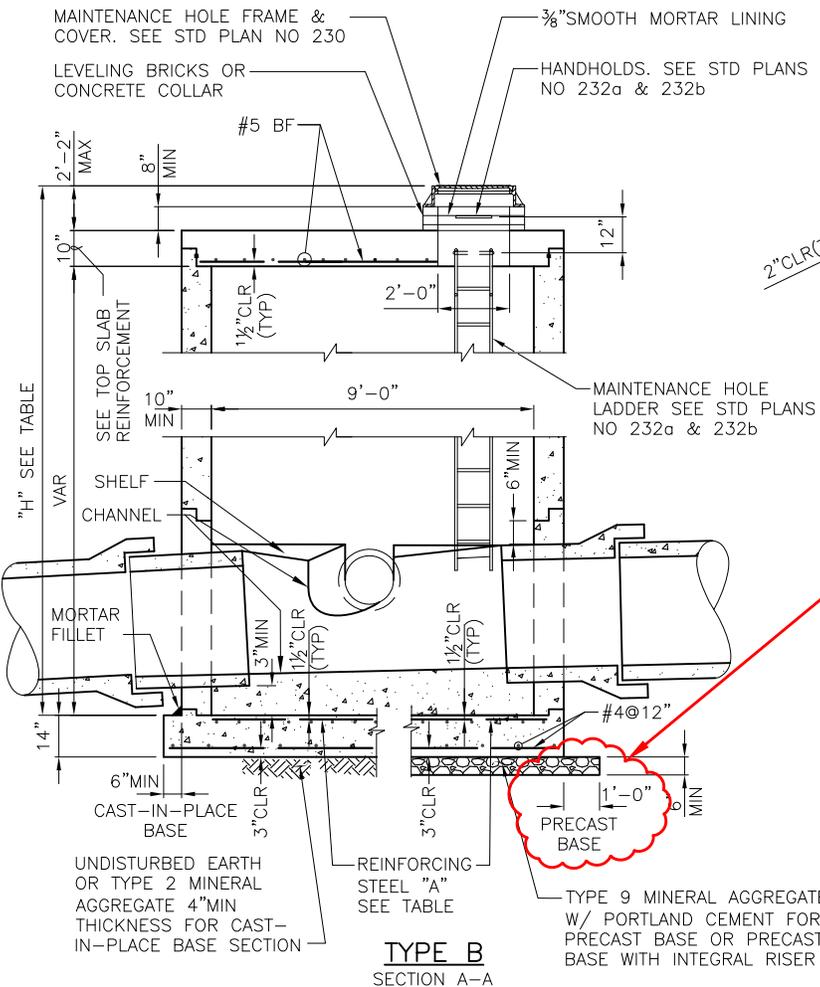
TYPE 209a MAINTENANCE HOLE



"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.44	0.37
30' MAX	0.56	0.48
40' MAX	0.68	0.58



TOP SLAB REINFORCEMENT



TYPE B SECTION A-A

base dimension corrected

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 SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS 10". MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

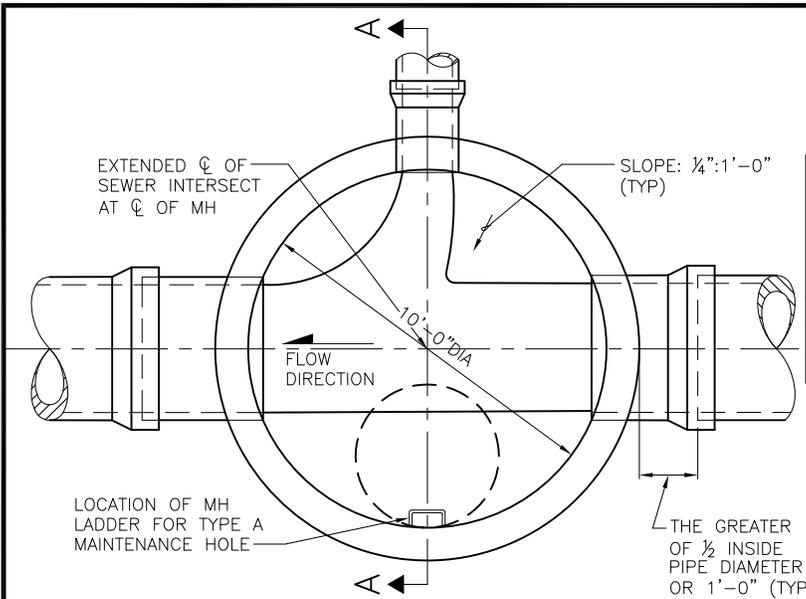
REF STD SPEC SEC 7-05



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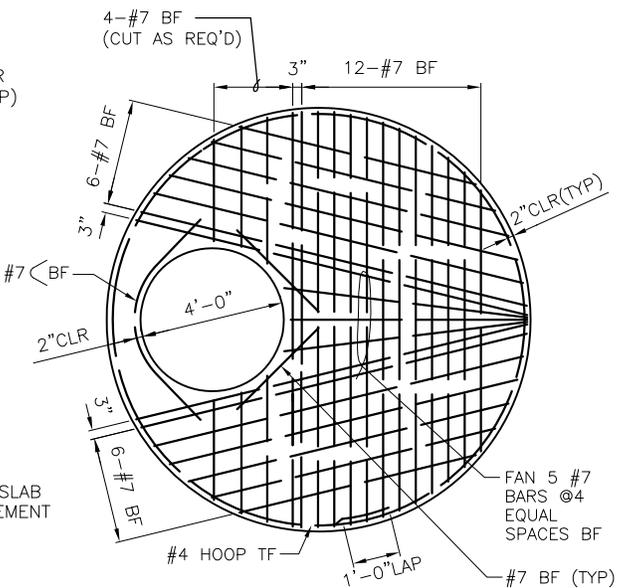
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TYPE 209b MAINTENANCE HOLE

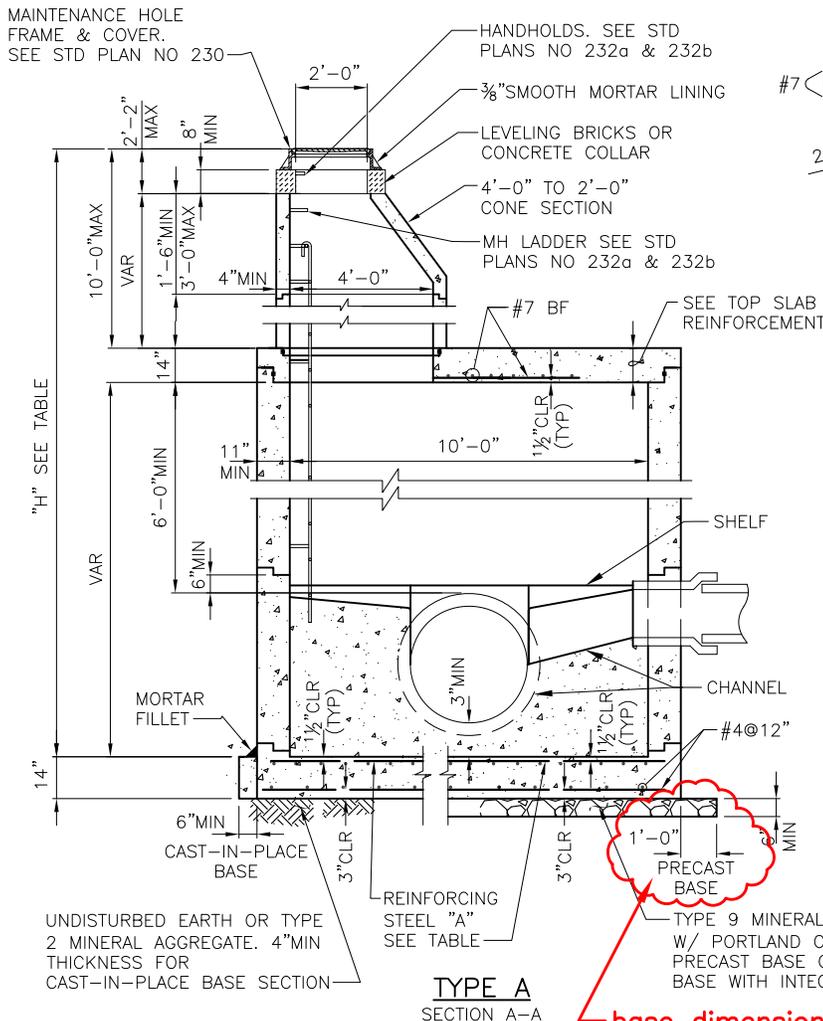


"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.70	0.60
30' MAX	0.85	0.73
40' MAX	1.00	0.86

PLAN VIEW
(TOP REMOVED)



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 SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS 11". MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

base dimension corrected

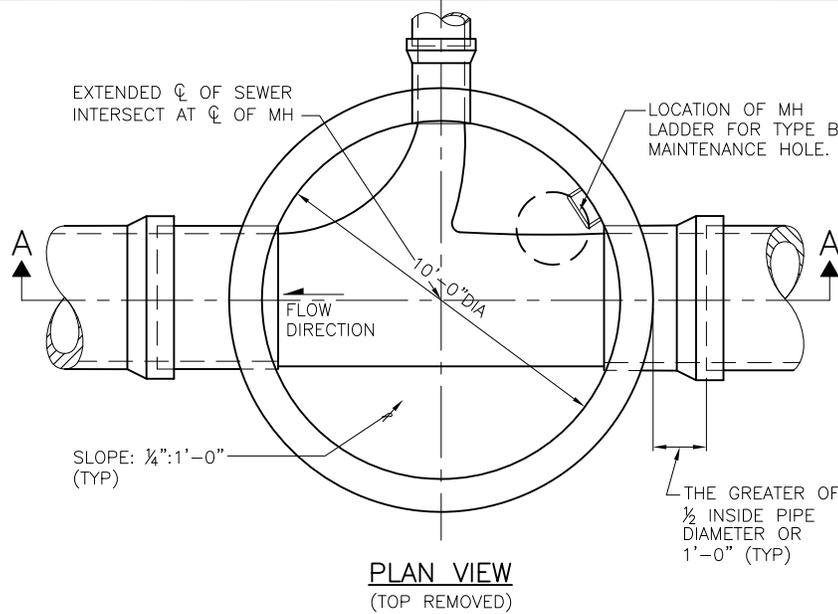
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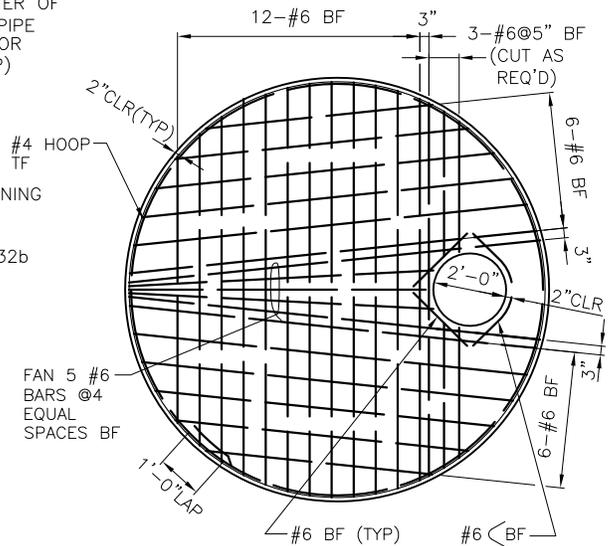
City of Seattle

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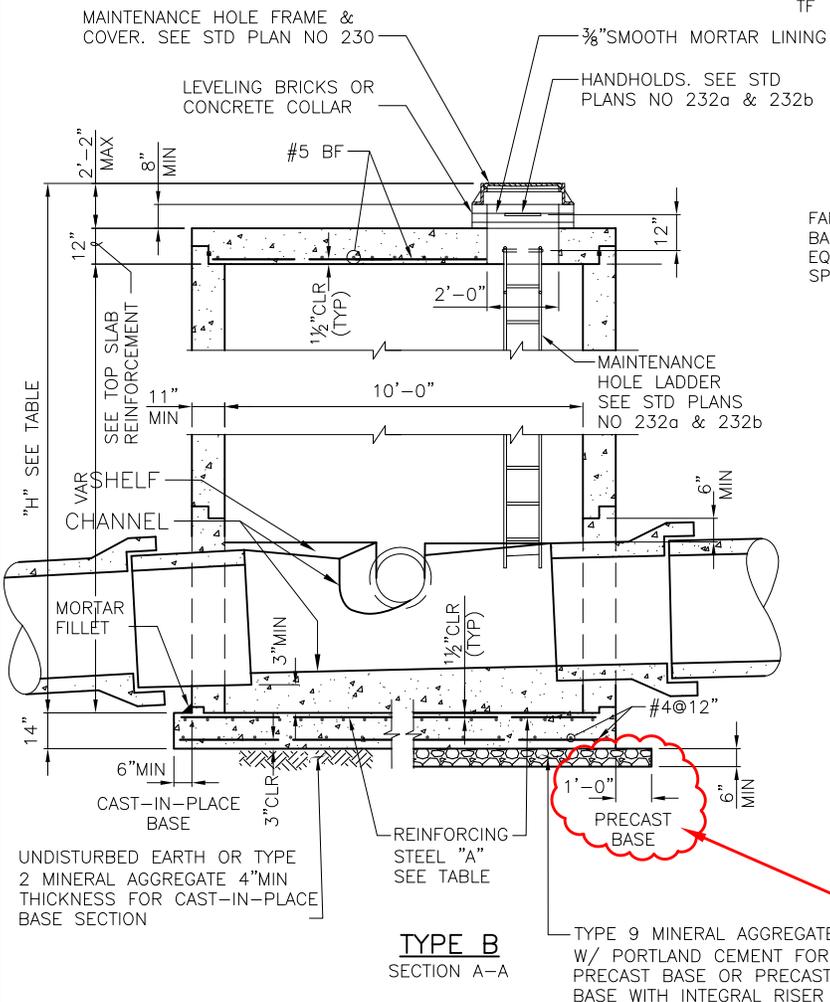
TYPE 210a MAINTENANCE HOLE



"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.52	0.45
30' MAX	0.66	0.57
40' MAX	0.81	0.70



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
SHALL CONFORM TO ASTM C 478. JOINTS
BETWEEN PRECAST COMPONENTS SHALL BE
RUBBER GASKETED CONFORMING TO ASTM C
443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000
LBS/SQ FT
4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS
11". MIN HOLE SIZE SHALL BE OD OF PIPE
PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

base dimension corrected

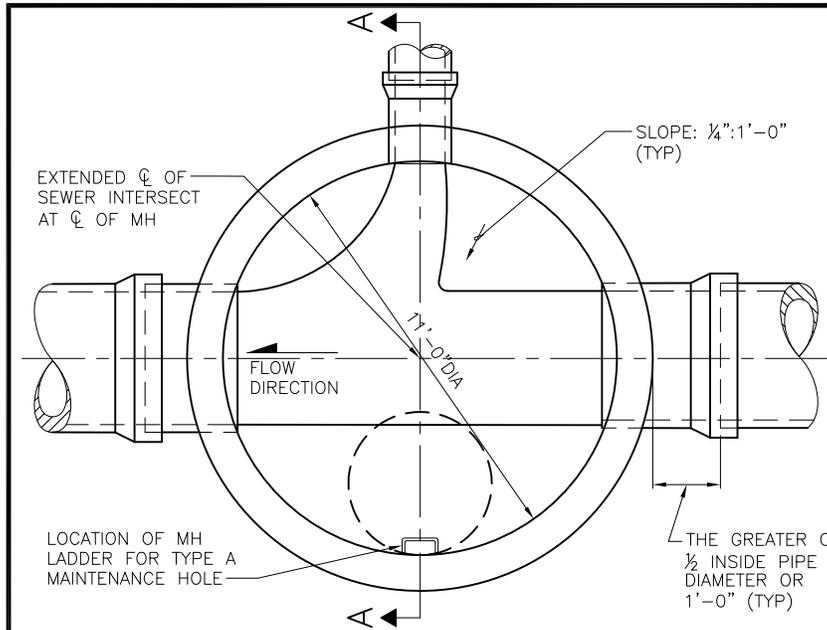
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City of Seattle

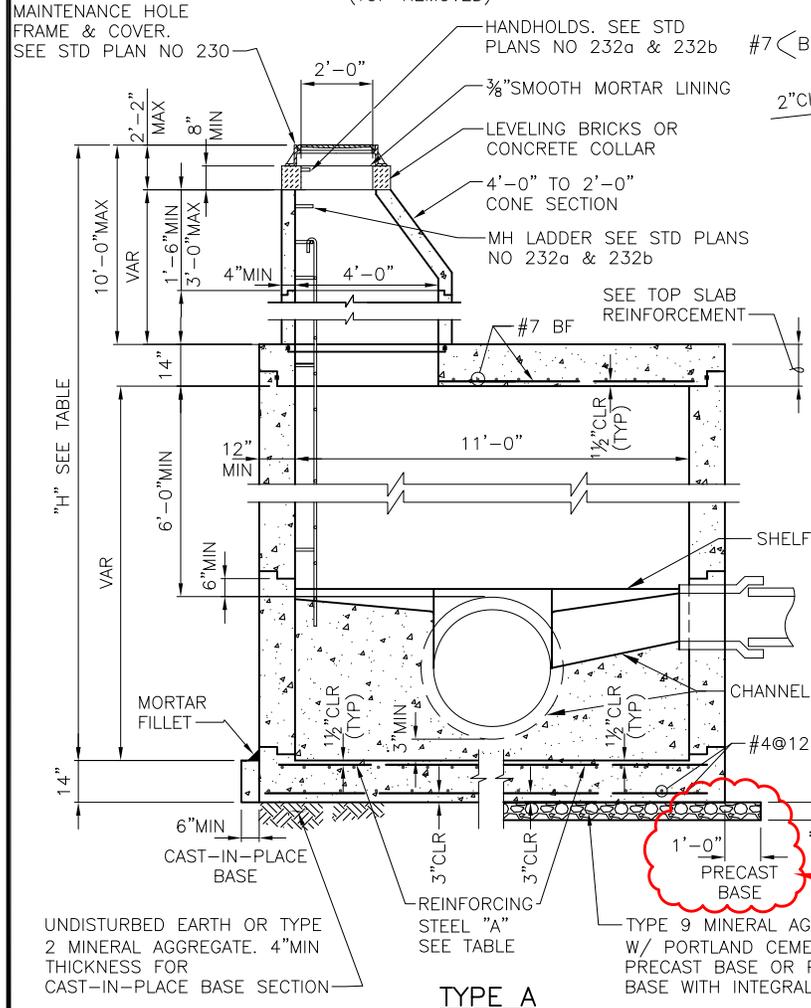
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TYPE 210b MAINTENANCE HOLE

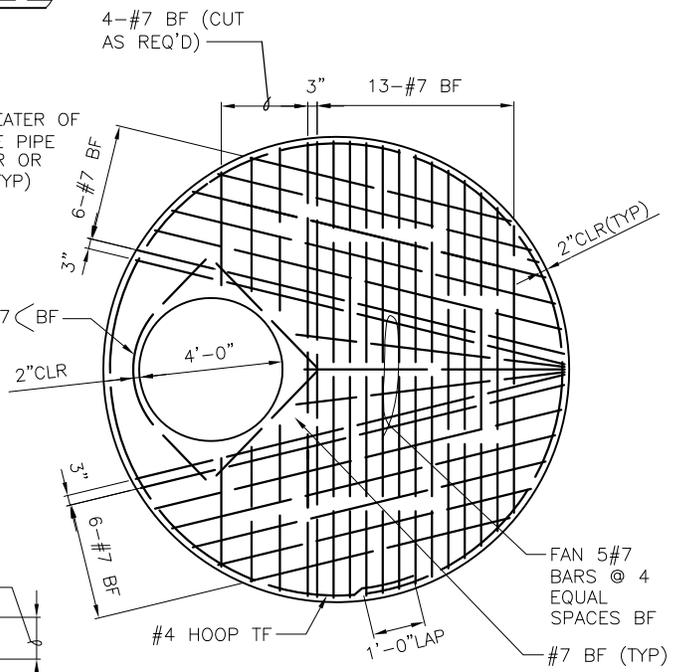


PLAN VIEW
(TOP REMOVED)

"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.85	0.74
30' MAX	1.02	0.89
40' MAX	1.20	1.05



TYPE A
SECTION A-A



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 SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS 12". MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

base dimension corrected

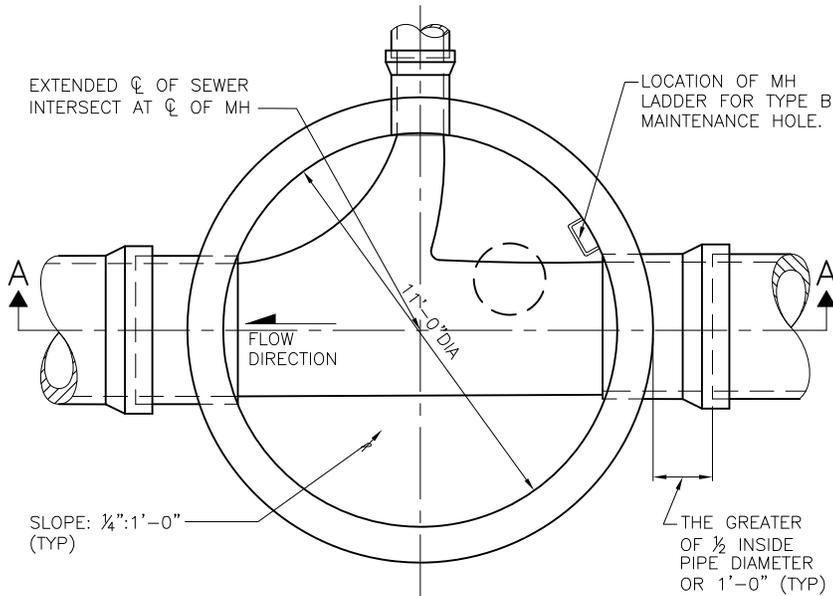
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City of Seattle

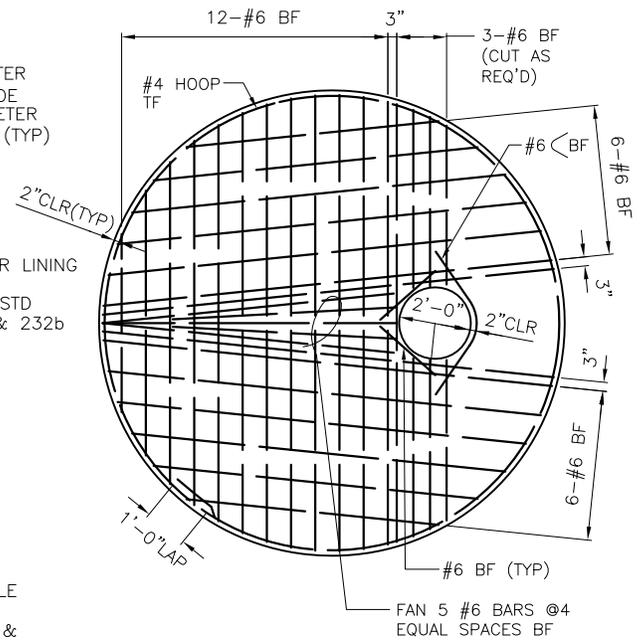
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TYPE 211a MAINTENANCE HOLE

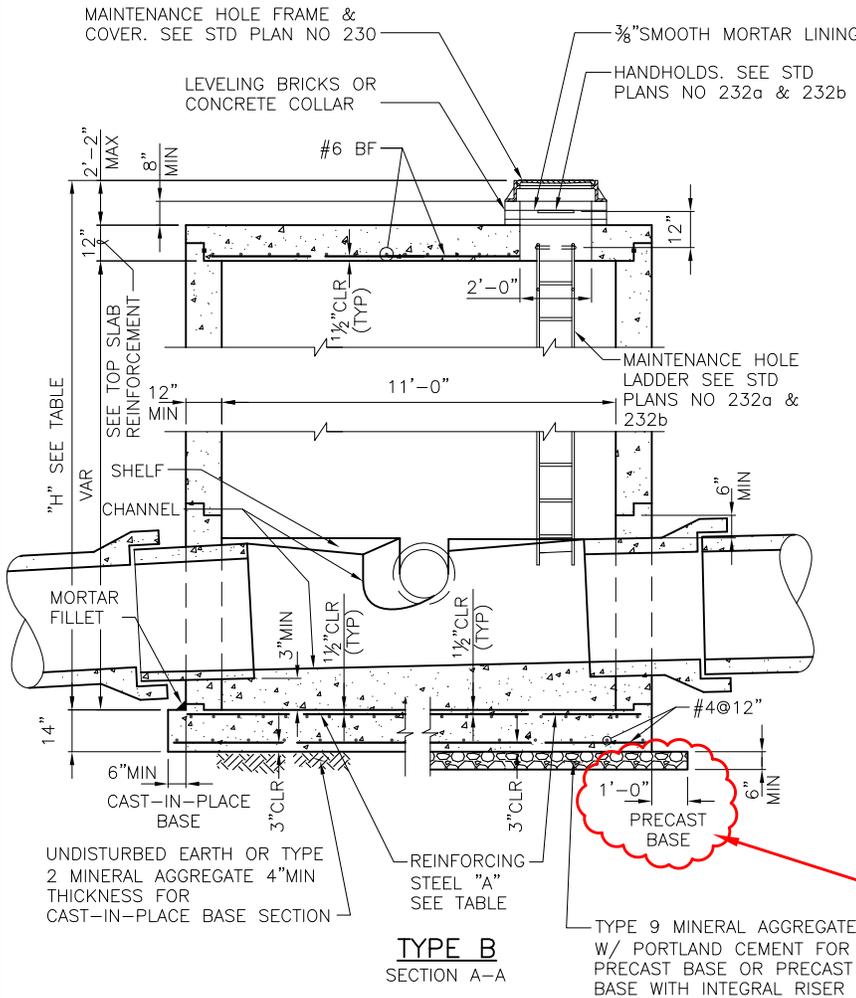


PLAN VIEW
(TOP REMOVED)

"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.62	0.54
30' MAX	0.79	0.69
40' MAX	0.97	0.85



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 SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.
3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS 12". MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

base dimension corrected

REF STD SPEC SEC 7-05

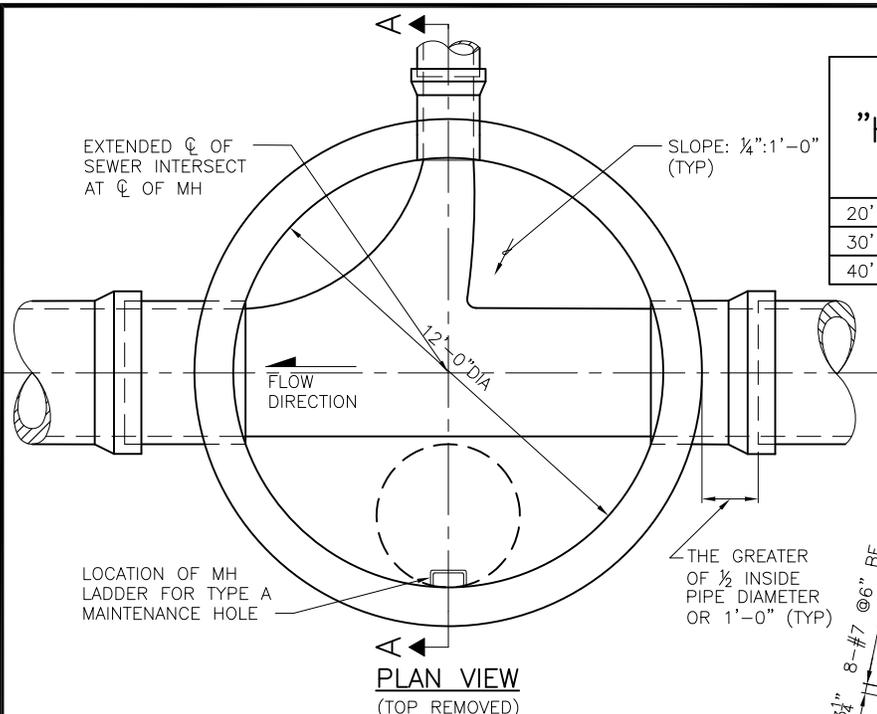


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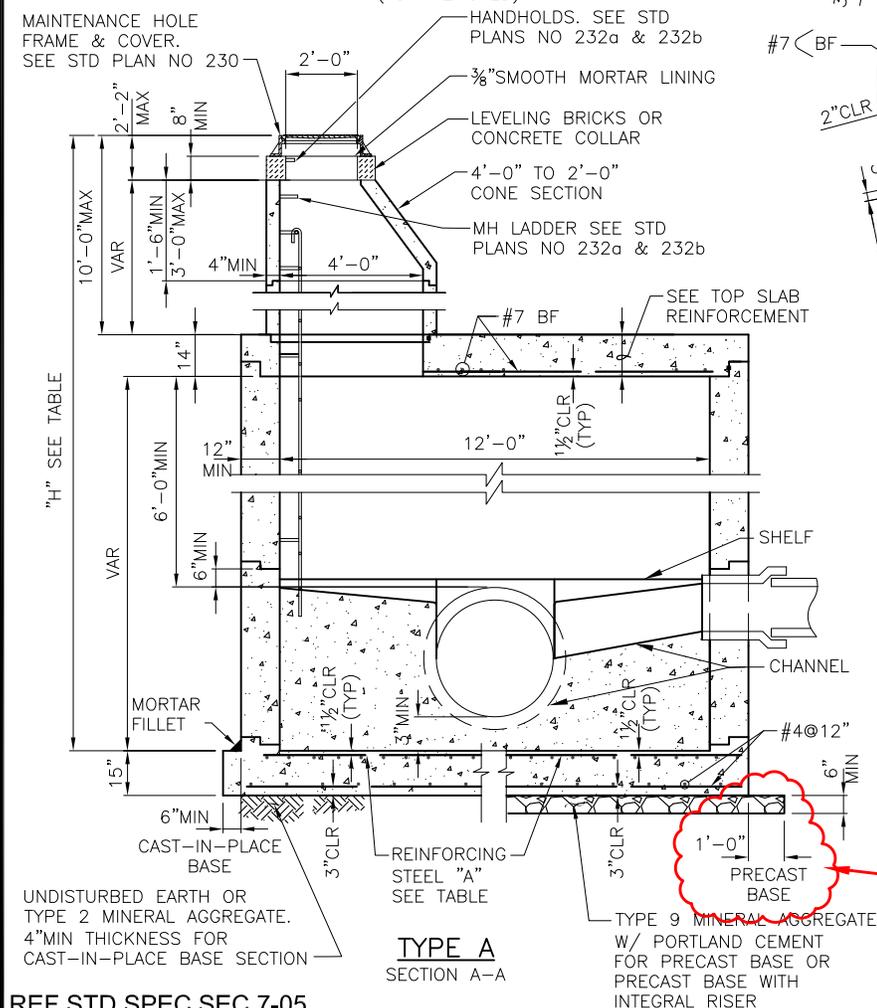
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TYPE 211b MAINTENANCE HOLE

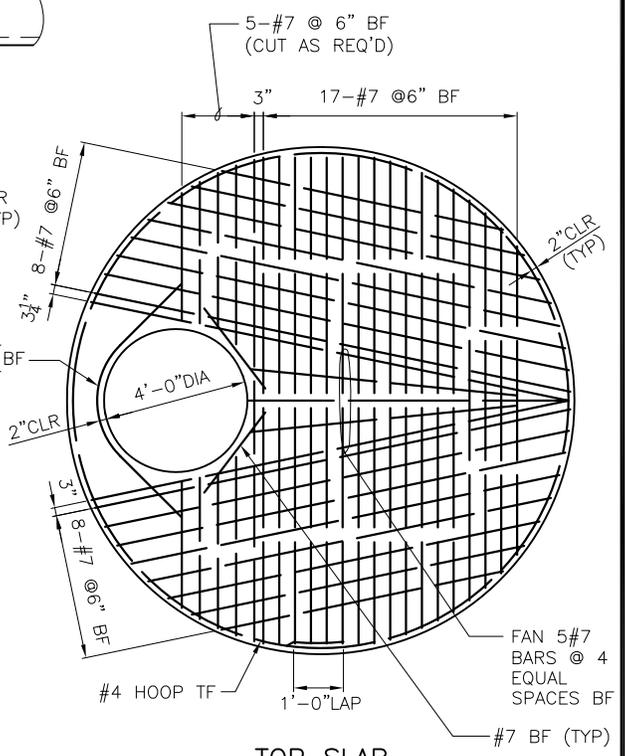
"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	1.01	0.89
30' MAX	1.28	1.13
40' MAX	1.56	1.37



PLAN VIEW
(TOP REMOVED)



TYPE A
SECTION A-A



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 SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.
 3. MINIMUM REQUIRED SOIL BEARING = 3,000 LBS/SQ FT
 4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS 13". MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

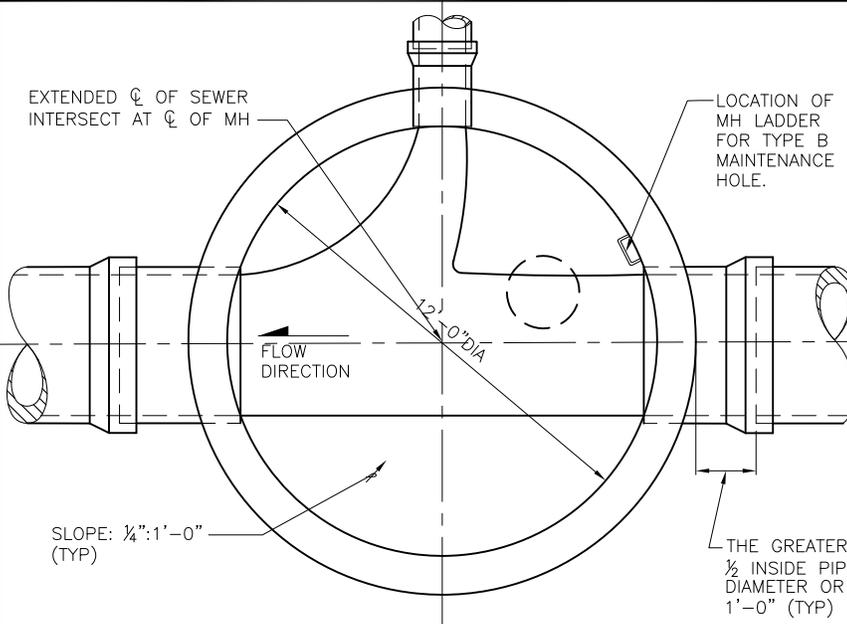
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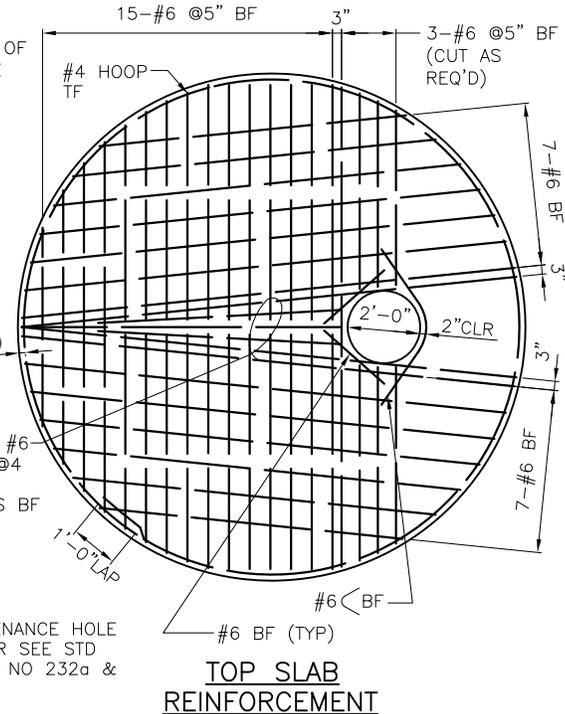
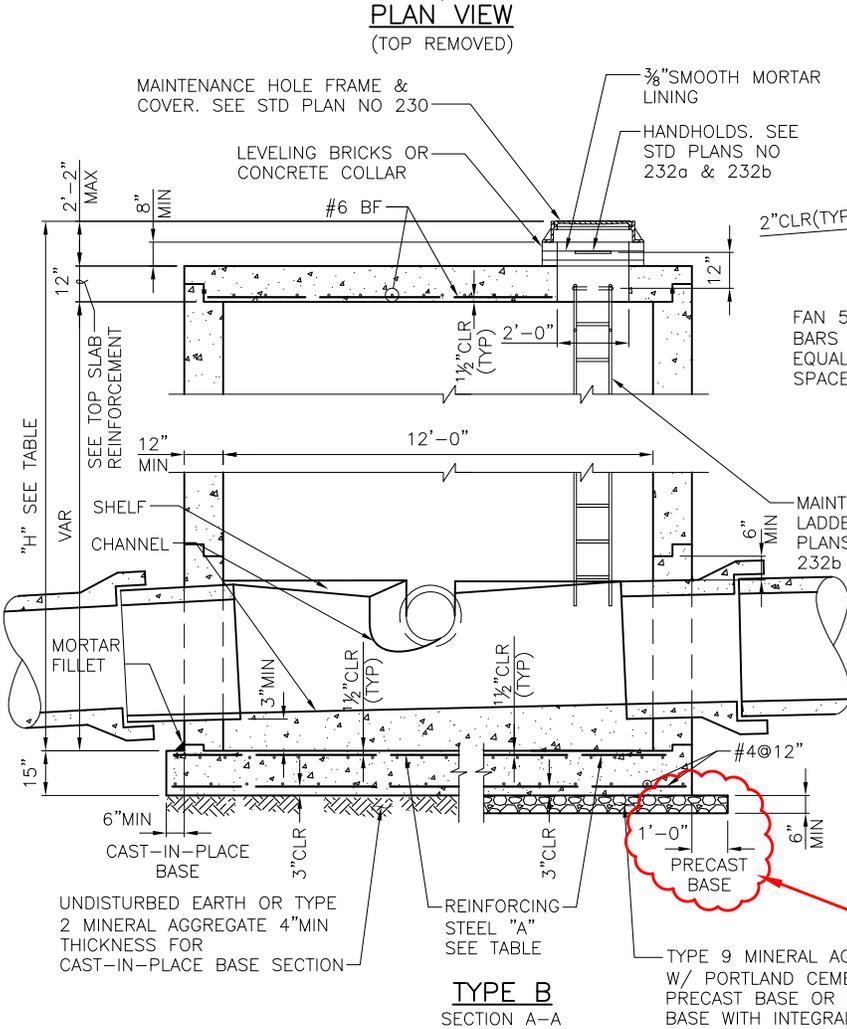
City of Seattle

NOT TO SCALE

TYPE 212a MAINTENANCE HOLE



"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.81	0.72
30' MAX	1.09	0.96
40' MAX	1.36	1.20



- 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
SHALL CONFORM TO ASTM C 478. JOINTS
BETWEEN PRECAST COMPONENTS SHALL BE
RUBBER GASKETED CONFORMING TO ASTM C
443.
 3. MINIMUM REQUIRED SOIL BEARING = 3,000
LBS/SQ FT
 4. MAX HOLE SIZE SHALL BE OD OF PIPE PLUS
13". MIN HOLE SIZE SHALL BE OD OF PIPE
PLUS 3". MIN DISTANCE BETWEEN HOLES IS 12".

base dimension corrected

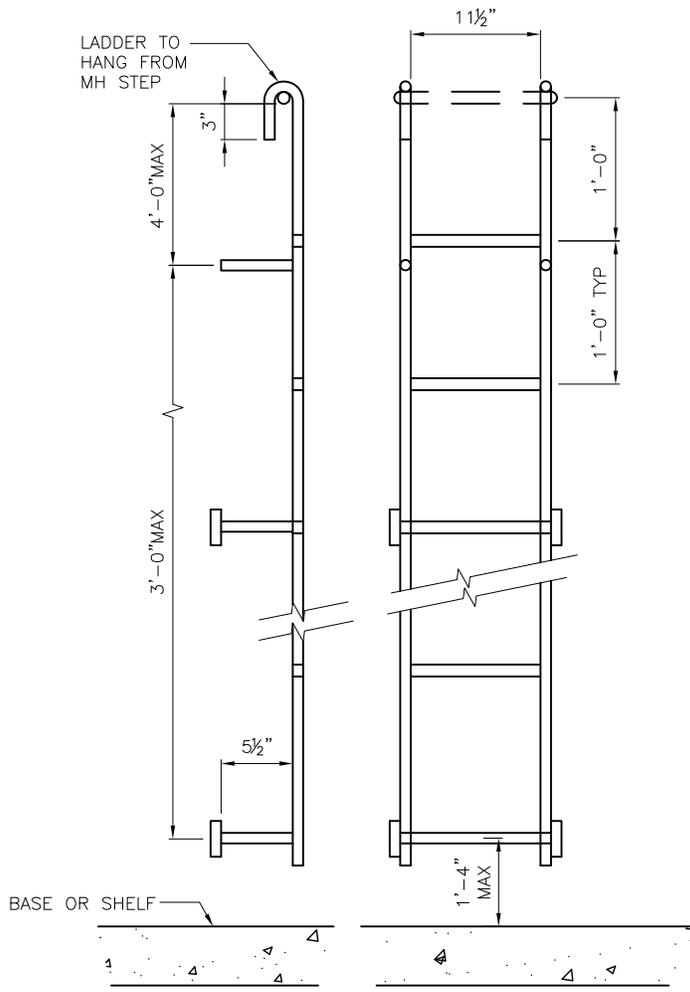
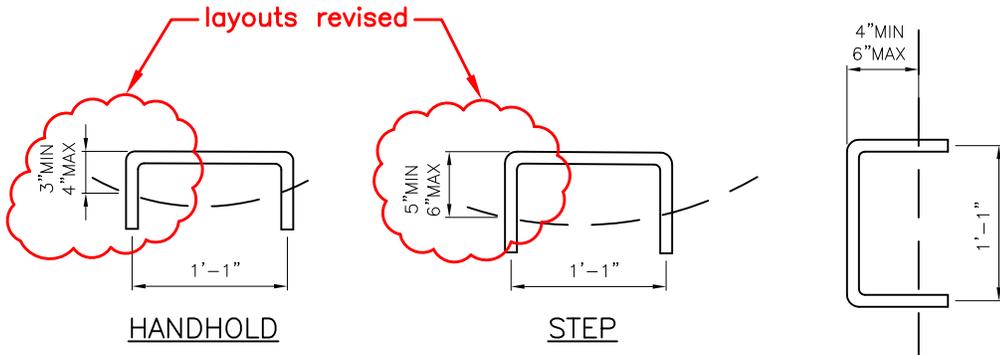
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

TYPE 212b MAINTENANCE HOLE



NOTES:

1. MATERIAL – STEEL REINFORCED POLYPROPYLENE
2. DIMENSIONS FOR THE MH LADDER AND STEP ARE MINIMUM REQUIREMENTS ONLY.
3. WHEN THE DISTANCE FROM THE LAST (HIGHEST) STEP OR HANDHOLD TO THE TOP OF THE MH FRAME EXCEEDS 1'-6", A HANDHOLD SHALL BE INSTALLED MID-WAY IN THE LEVELING BRICK OR COLLAR.
4. EITHER STEPS, LADDERS OR A COMBINATION OF THE TWO CAN BE USED. IF BOTH STEPS AND LADDERS ARE USED IN ANY MH, THEY SHALL BE FROM THE SAME MANUFACTURER.
5. A VERTICAL HANDHOLD SHALL BE INSTALLED 4'-0" ABOVE THE SHELF WHEN INDICATED IN MH PLAN VIEW.

LADDER

REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

**MAINTENANCE HOLE LADDER,
STEP AND HANDHOLD**

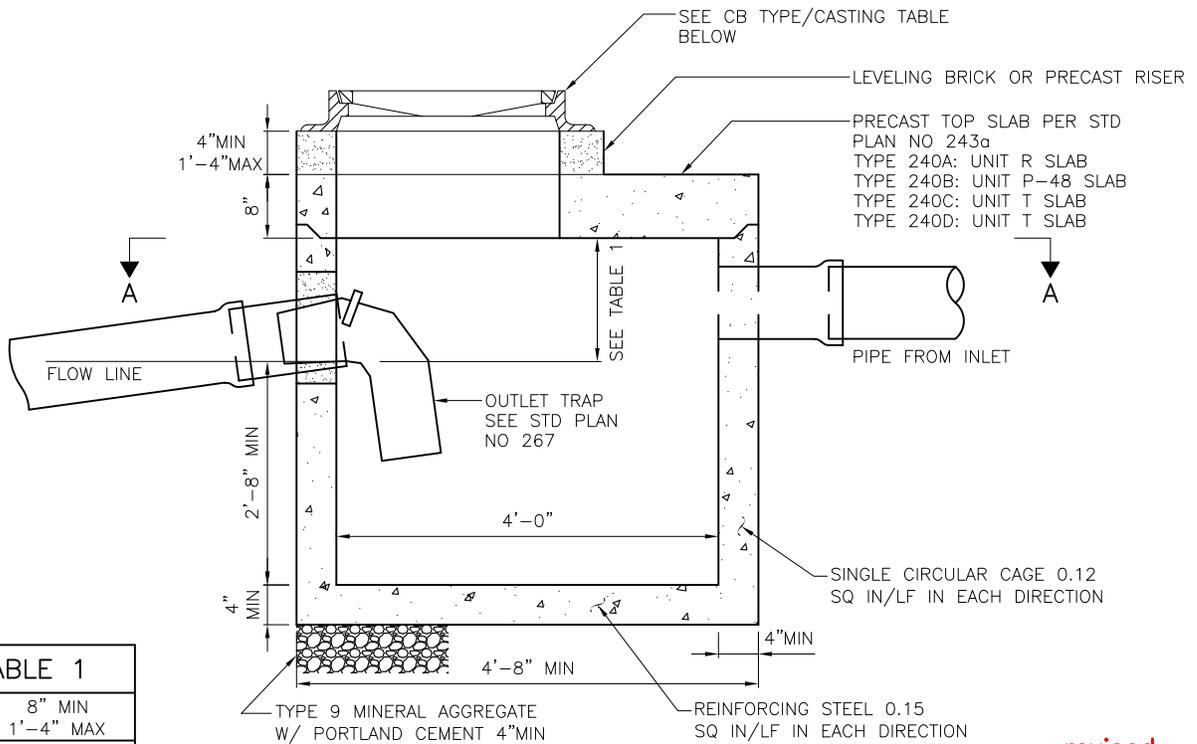
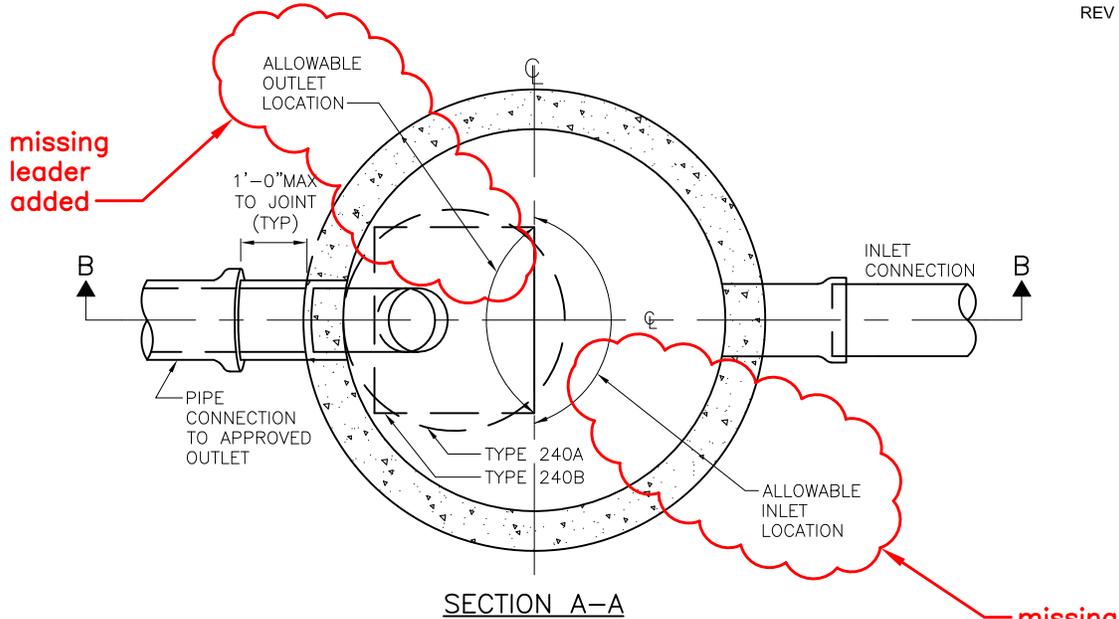


TABLE 1

6"ø	8" MIN 1'-4" MAX
8"ø	10" MIN 1'-4" MAX
12"ø	1'-3" MIN 2'-0" MAX

- NOTES:**
1. FRAME & GRATE OR FRAME & COVER SHALL BE LOCATED OVER TRAP.
 2. INVERT OF INLET PIPE SHALL BE 2" MIN ABOVE INVERT OF OUTLET PIPE.
 3. SEE STD PLAN 261 FOR ALLOWABLE OUTLET LOCATIONS.

CB TYPE	CASTING	
	FRAME	COVER
240A	PER STD PLAN 230	PER STD PLAN 230
240B	PER STD PLAN 264	PER STD PLAN 264
240C	PER STD PLAN 262	PER STD PLAN 265
240D	PER STD PLAN 263A	PER STD PLAN 265

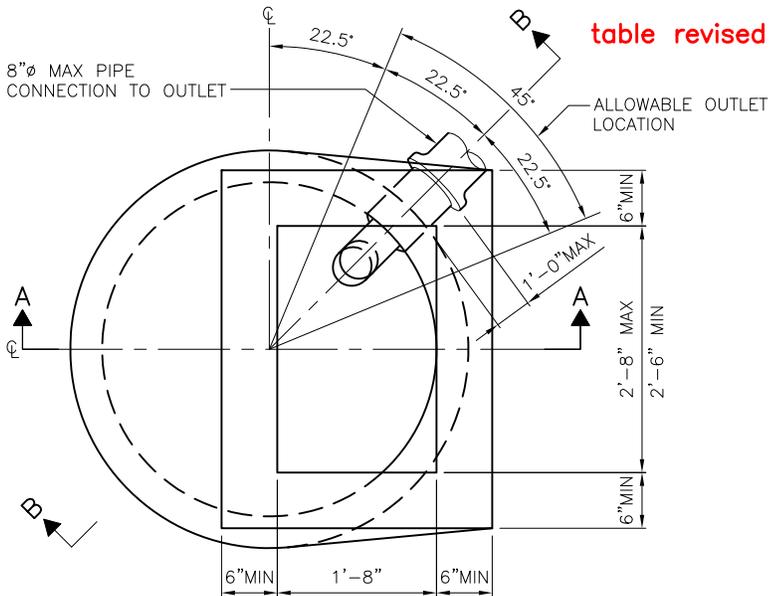
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

TYPE 240 CATCH BASIN

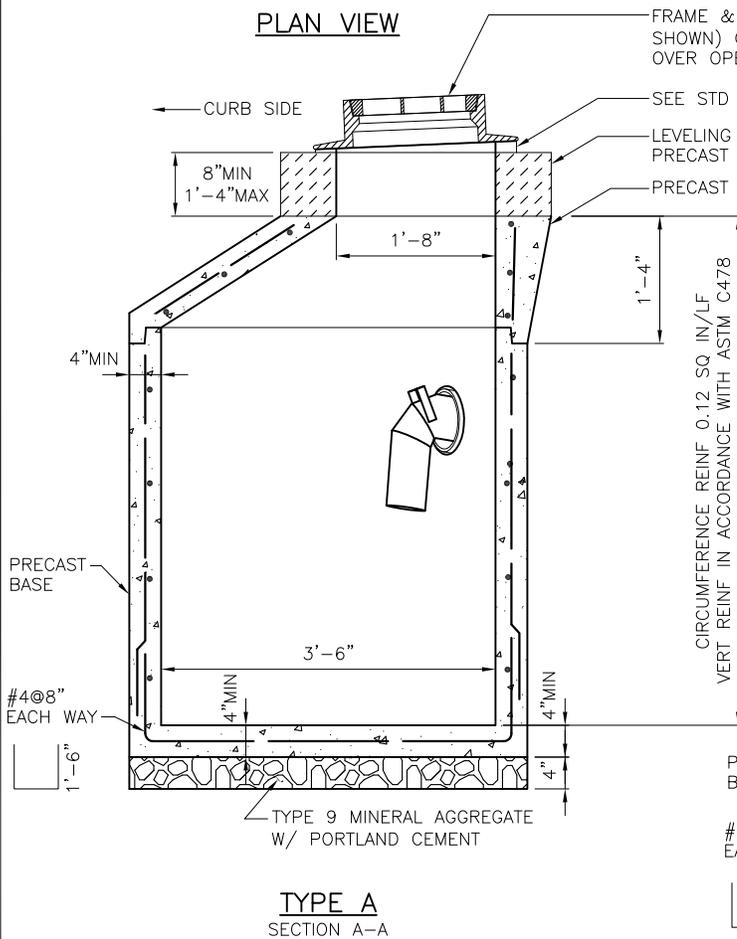


CB TYPE	CASTING		
	FRAME	GRATE	HOOD
A	NO 262	NO 265	NONE
B	NO 263A	NO 265	NO 263A
C	NO 263A	NO 265	NO 263B

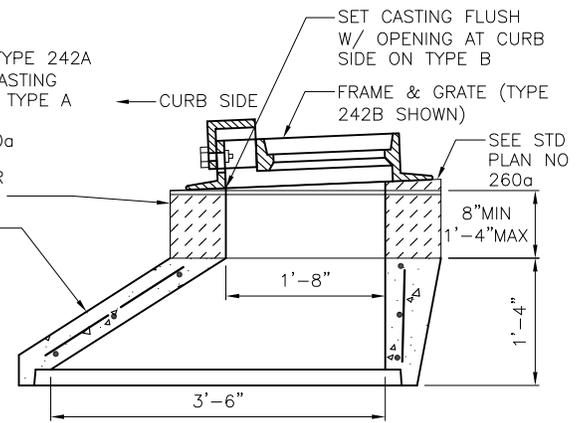
NOTES:

1. MATERIAL: CONCRETE: CLASS 4000
REINFORCING STEEL: ASTM A 615 GR 60
2. INSTALL & LOCATE PER STD PLANS NO 260 & 261
3. OUTLET TRAP TO BE LOCATED DIRECTLY BELOW FRAME AND GRATE
4. USE OF LEVELING BRICKS SHALL BE RUNNING BOND PATTERN WITH ¼ TO ½ GROUT IN BETWEEN BRICKS.

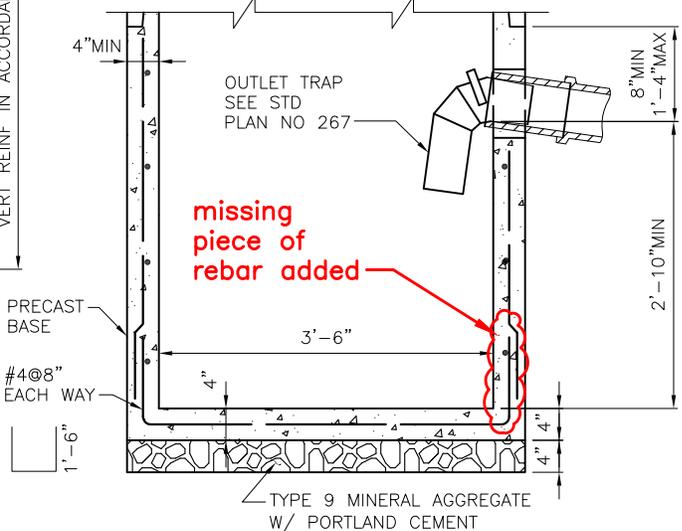
PLAN VIEW



TYPE A
SECTION A-A



TYPE B
SECTION A-A



TYPE A & B
SECTION B-B

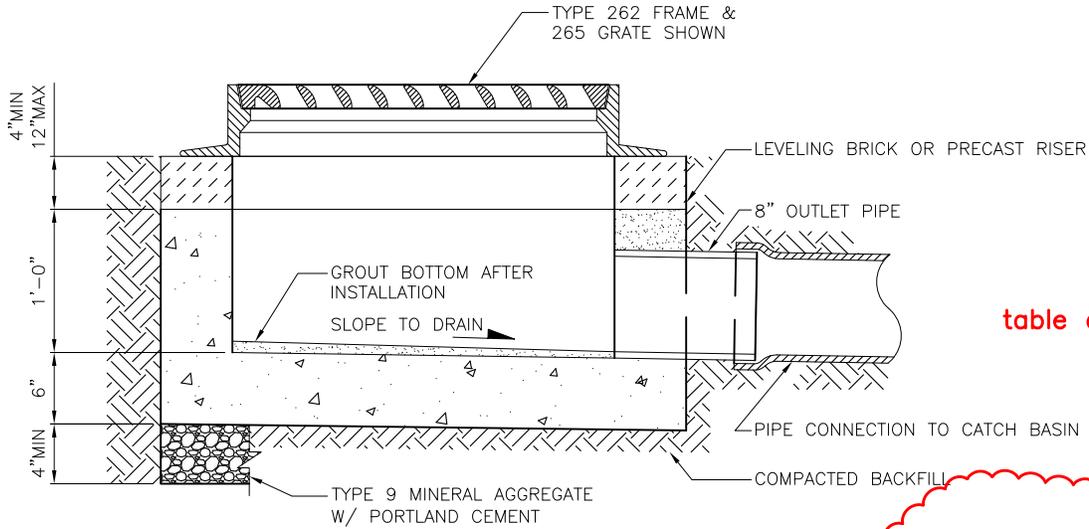
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

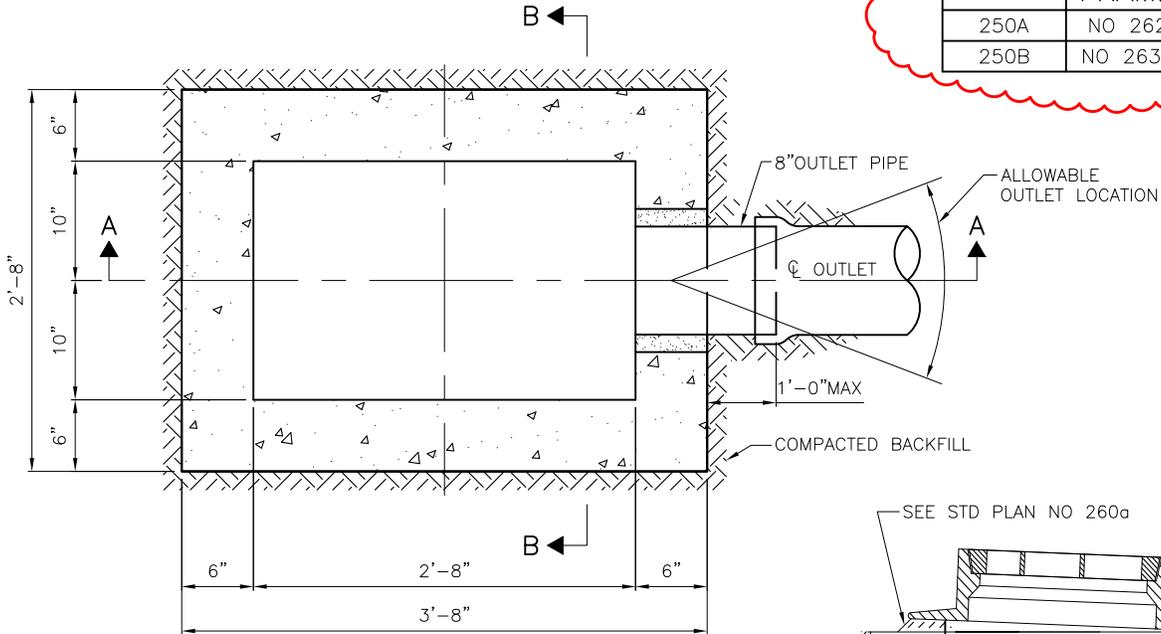
TYPE 242 CATCH BASIN



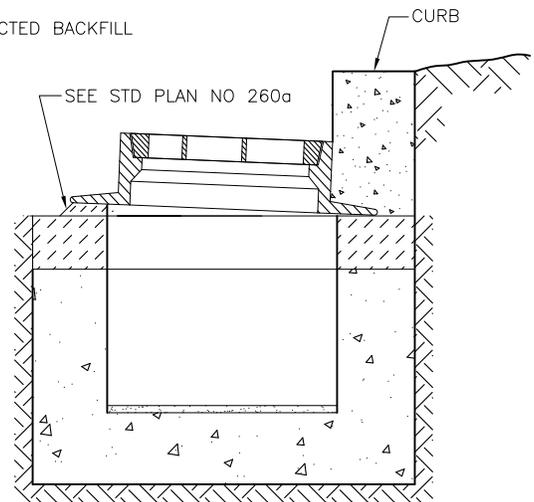
SECTION A-A

table added

INLET TYPE	CASTING	
	FRAME	GRATE
250A	NO 262	NO 265
250B	NO 263A	NO 265



PLAN VIEW



SECTION B-B
TYPE A ONLY

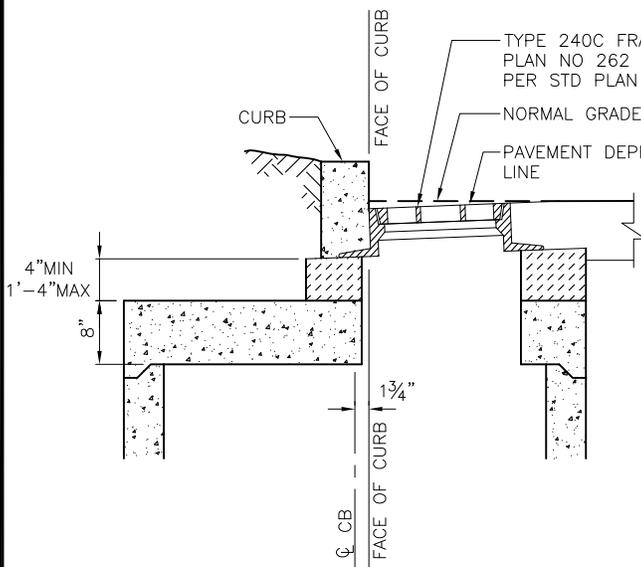
REF STD SPEC SEC 7-05



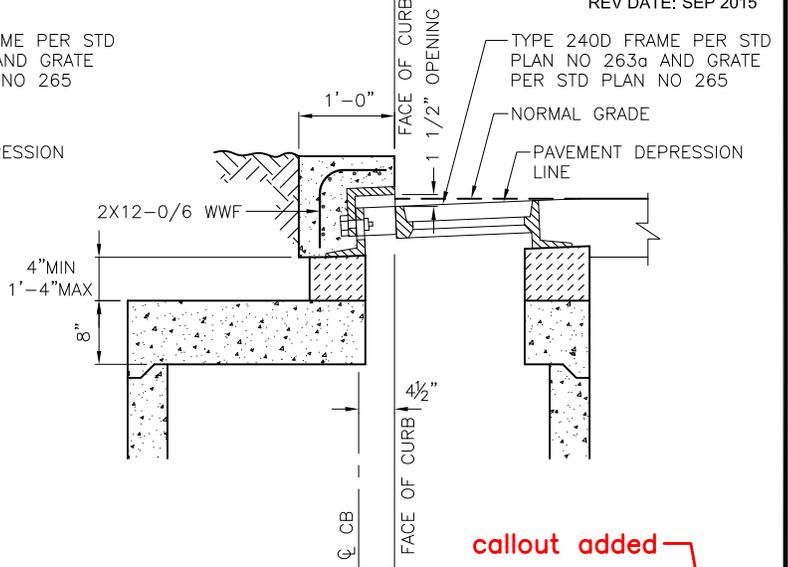
City of Seattle

NOT TO SCALE

TYPE 250 INLET

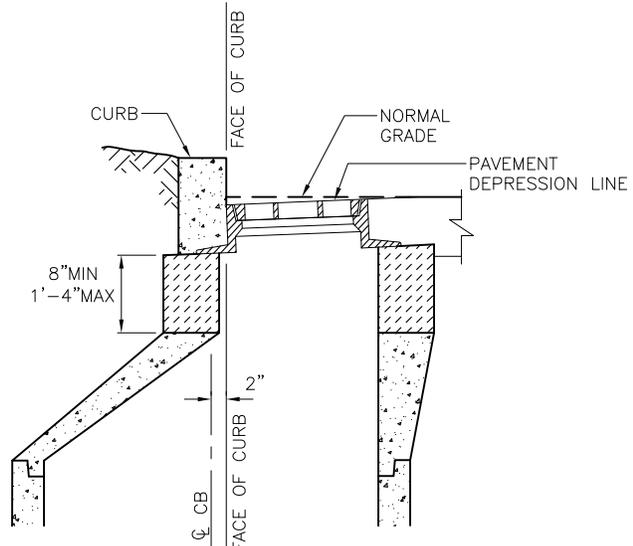


TYPE 240C CB

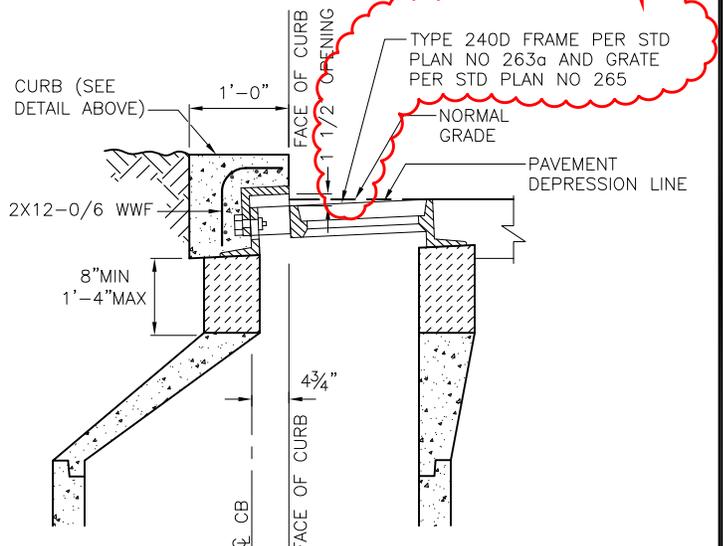


TYPE 240D CB

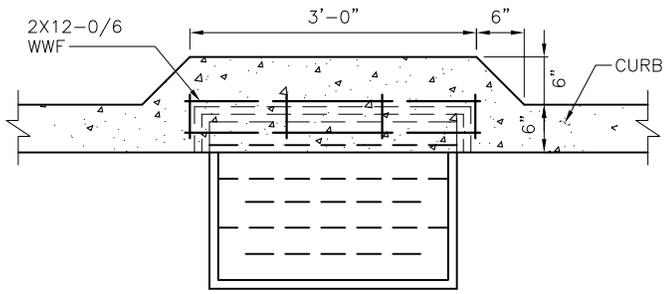
callout added



TYPE 242A CB
(TYPE 250A INLET SIMILAR)



TYPE 242B CB
(TYPE 250B INLET SIMILAR)



CURB DETAIL (PLAN VIEW) FOR
TYPE 240D & 242B CB & TYPE 250B INLET

new detail was added then removed and moved to new Std Plan 260c

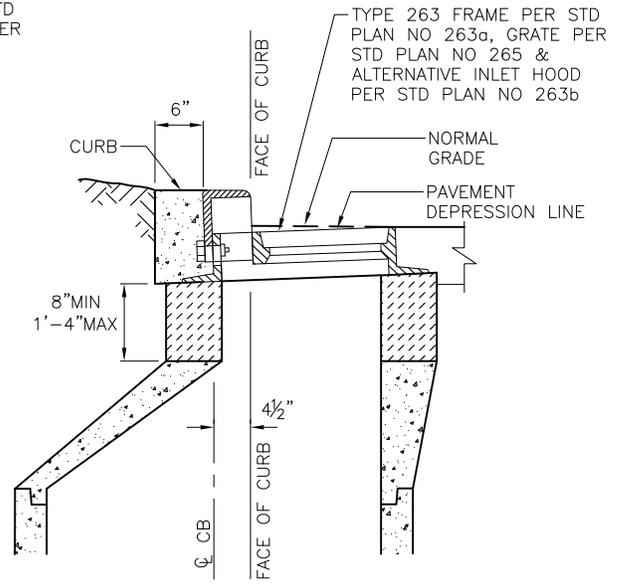
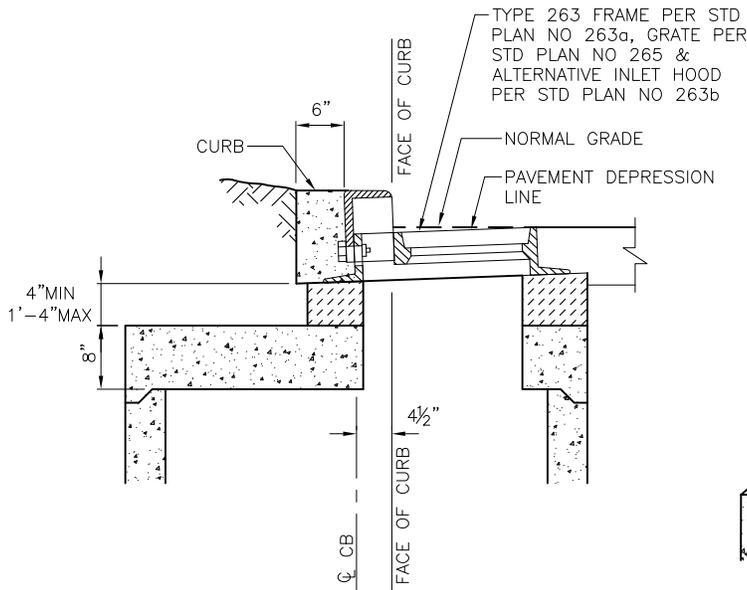
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

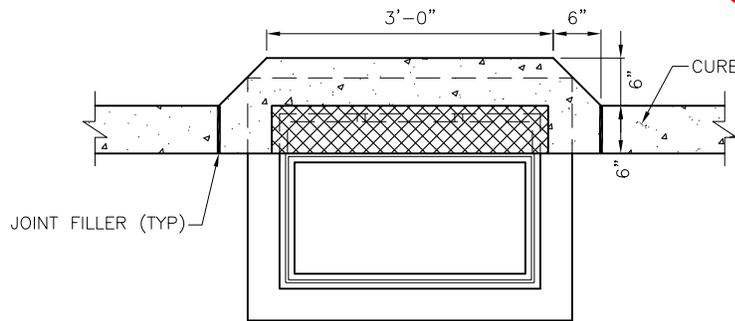
CATCH BASIN &
INLET INSTALLATION



TYPE 240C CB

TYPE 242A CB

new std plan



CURB DETAIL (PLAN VIEW) FOR TYPE 240D & 242C CB & TYPE 250B INLET

REF STD SPEC SEC 7-05

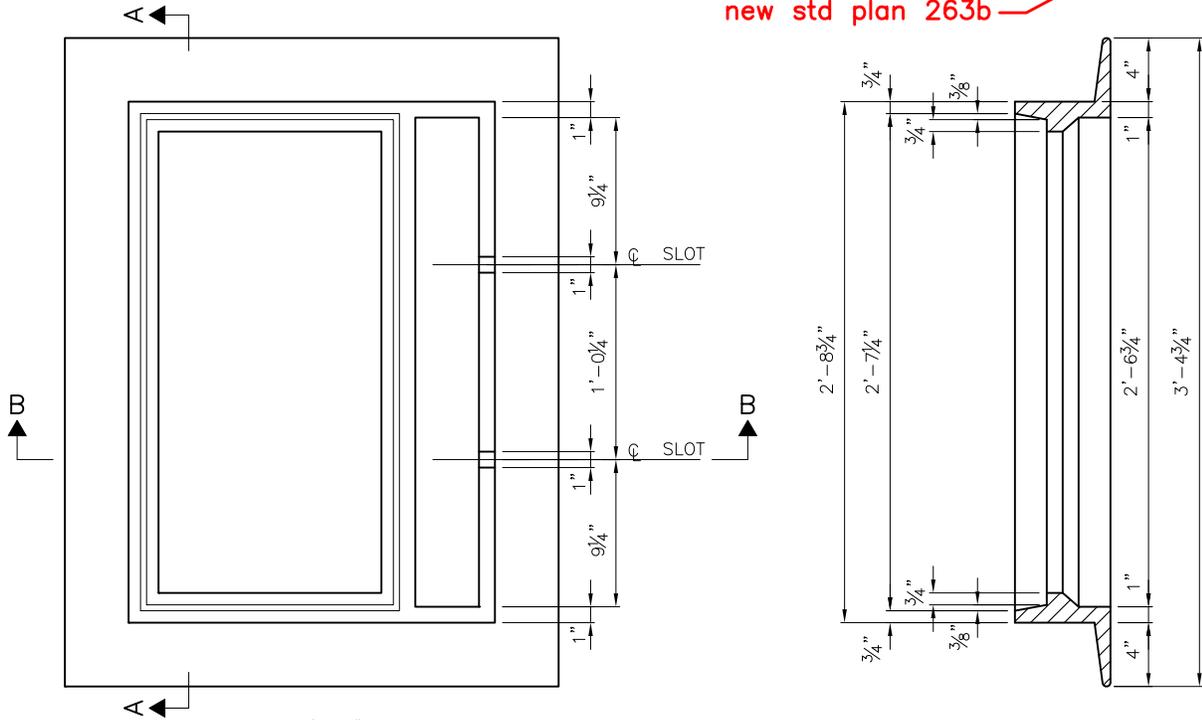


City of Seattle

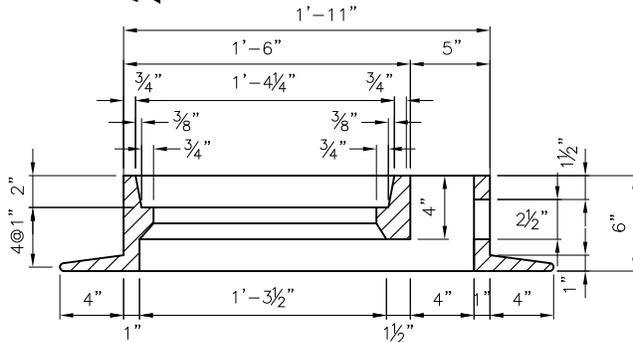
NOT TO SCALE

CATCH BASIN & INLET
INSTALLATION WITH STANDARD
PLAN 263B ALTERNATIVE HOOD

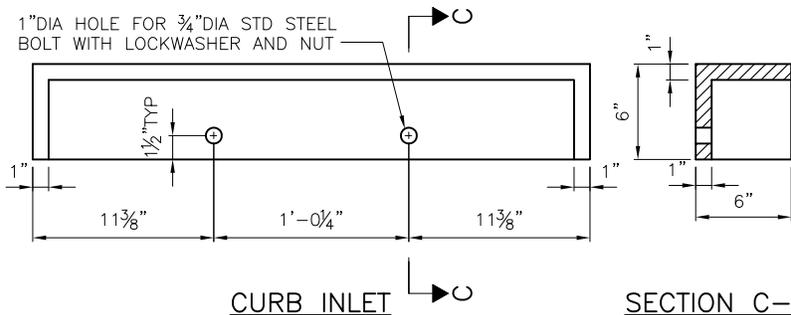
renumbered due to new std plan 263b



SECTION A-A



SECTION B-B



CURB INLET

SECTION C-C

REF STD SPEC SEC 9-12

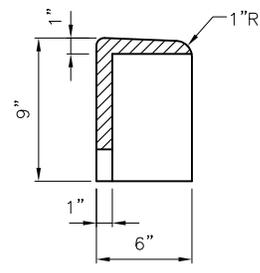
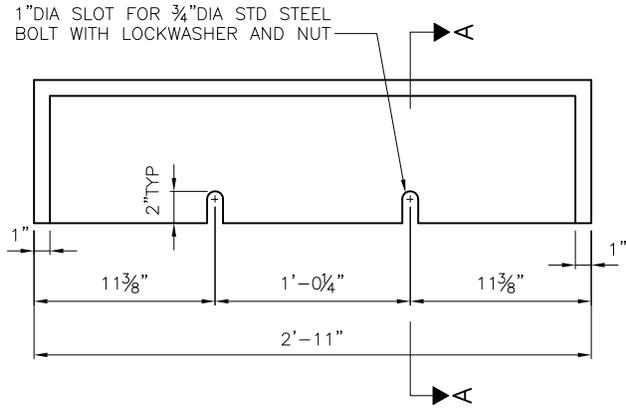


City of Seattle

NOT TO SCALE

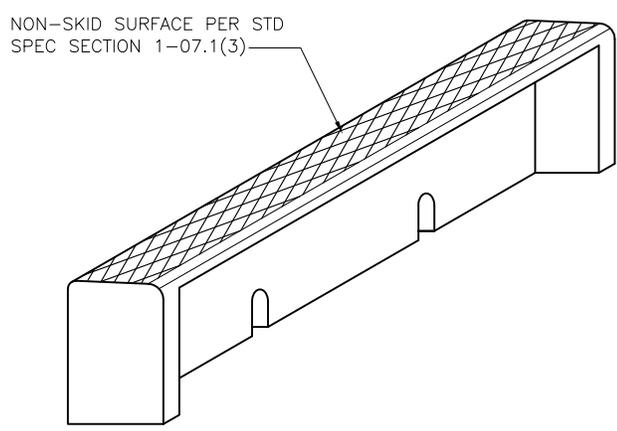
TYPE 263 INLET FRAME AND HOOD

new standard plan



SECTION A-A

CURB INLET



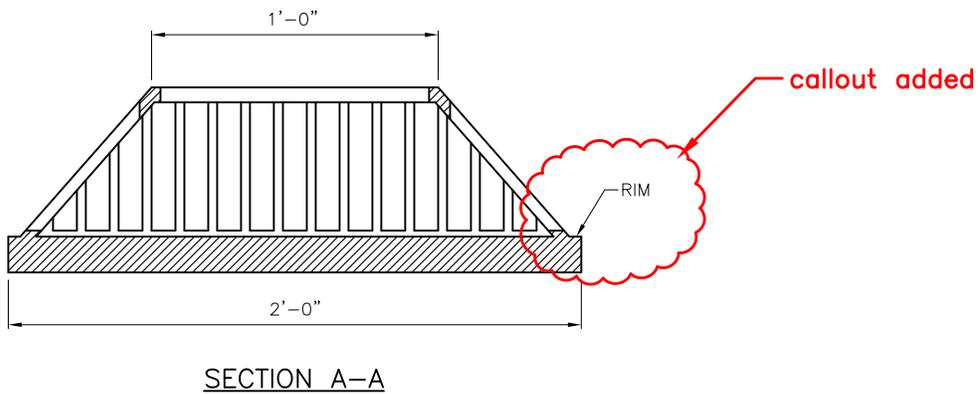
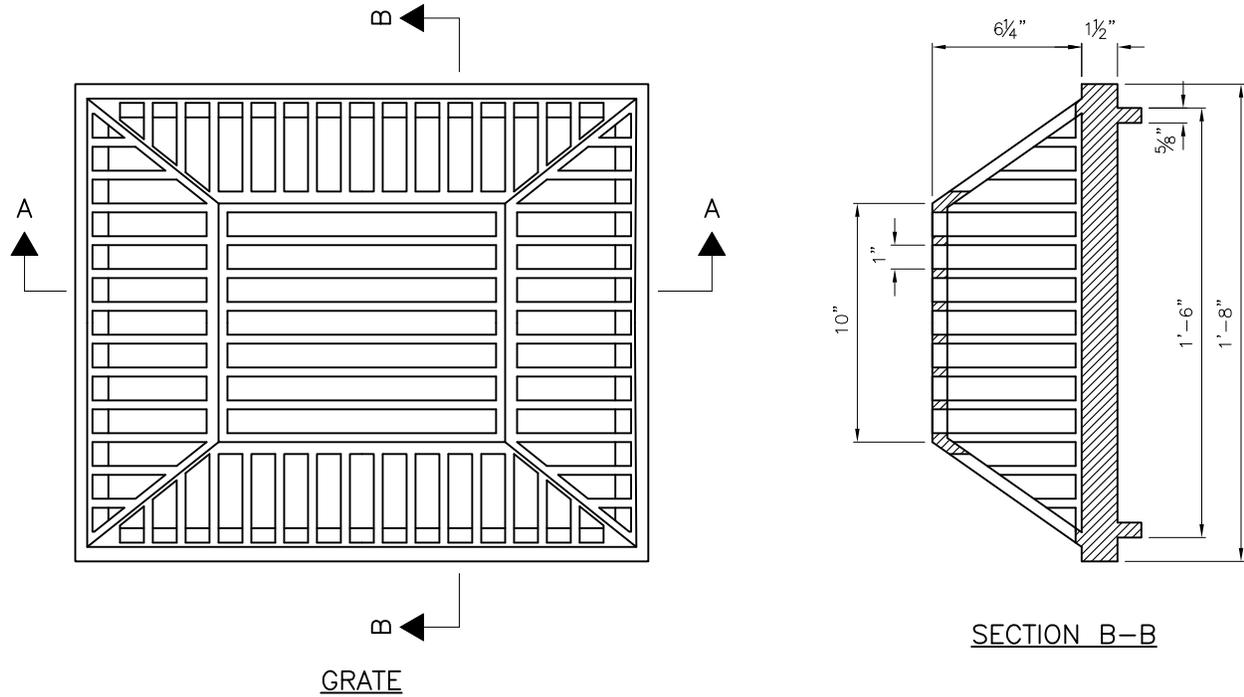
REF STD SPEC SEC 9-12



City of Seattle

NOT TO SCALE

TYPE 263 ALTERNATIVE INLET HOOD



- NOTES:**
 1. GRATE MATERIAL: DUCTILE IRON
 2. FRAME PER STD PLAN NO 264

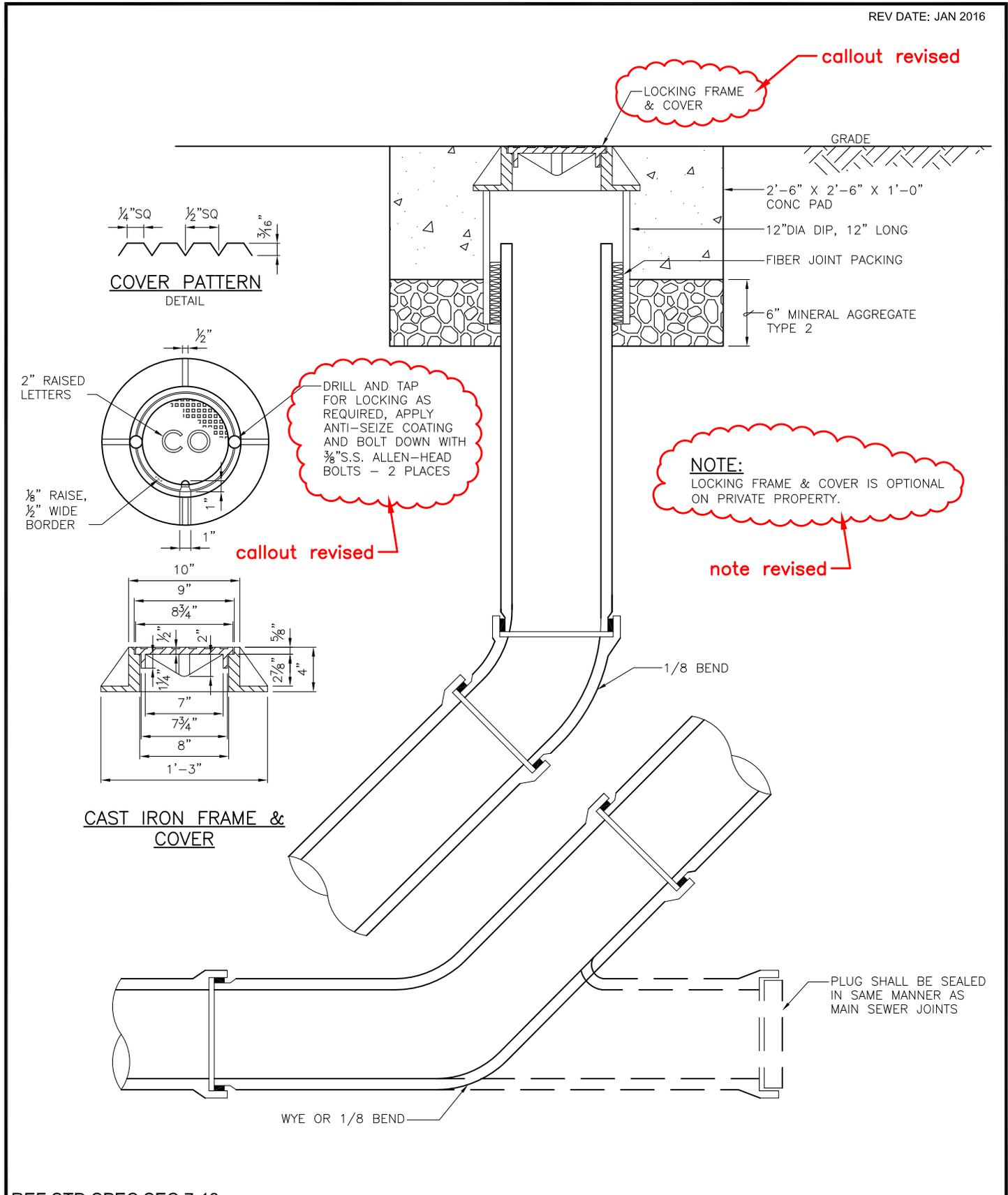
REF STD SPEC SEC 9-12



City of Seattle

NOT TO SCALE

BEEHIVE GRATE FOR
 BIORETENTION



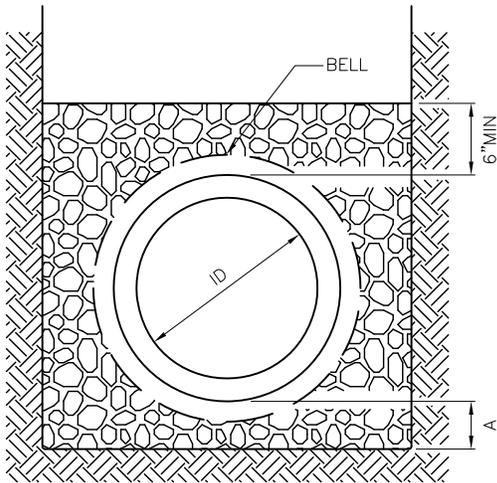
REF STD SPEC SEC 7-19



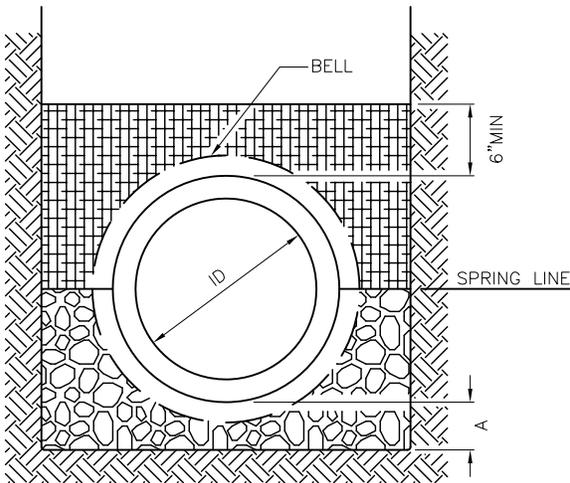
City of Seattle

NOT TO SCALE

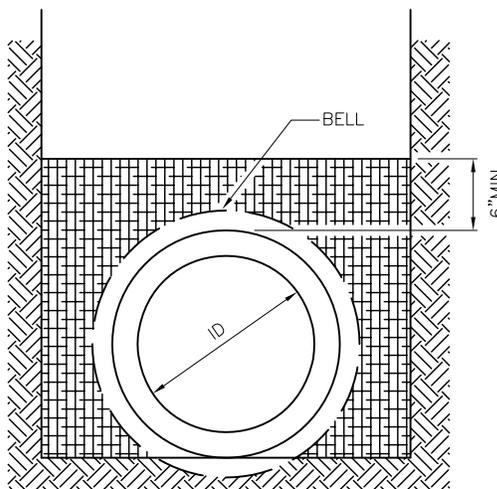
8" CLEAN-OUT



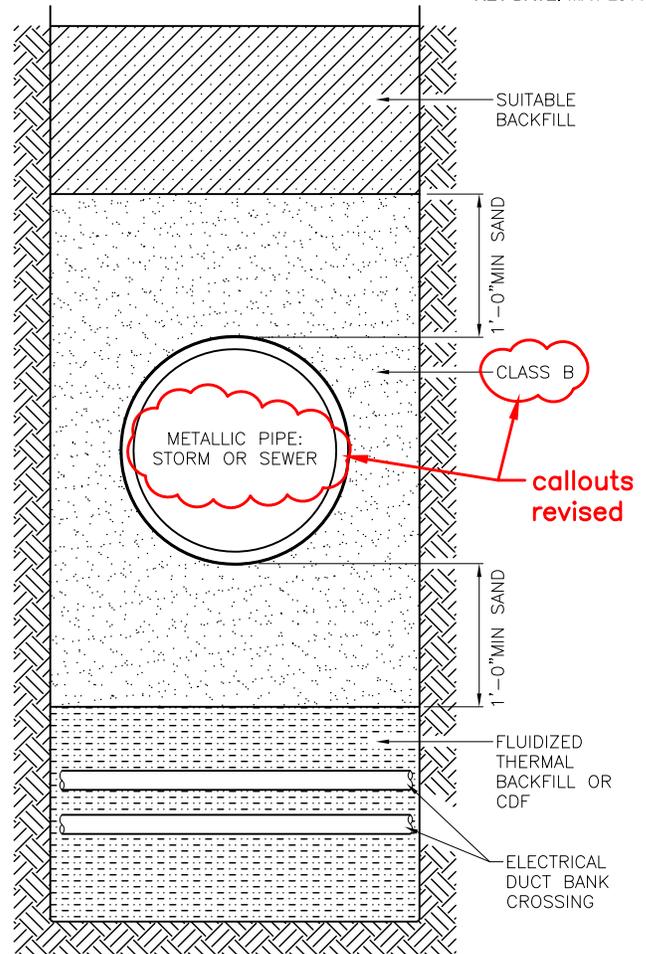
CLASS B BEDDING



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 9-03.16 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 9-03.16, TYPE 6 OR TYPE 7

NOTES:

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

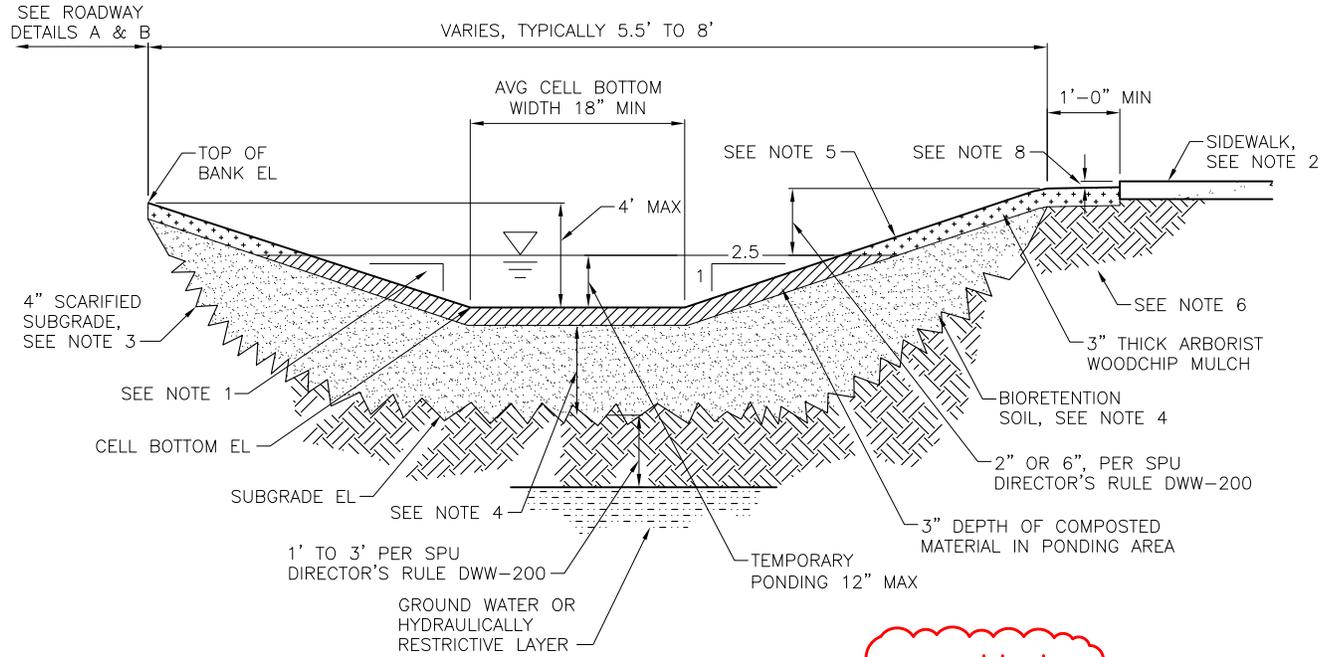
REF STD SPEC SEC 2-10.2, 7-11, 7-17, 9-03.16



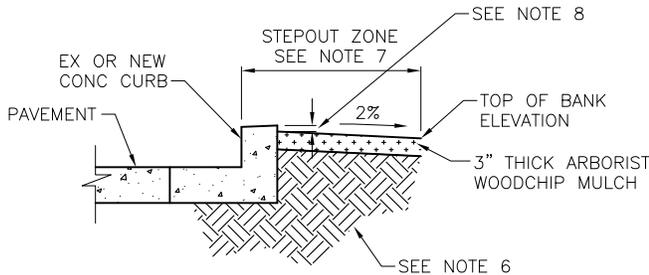
City of Seattle

NOT TO SCALE

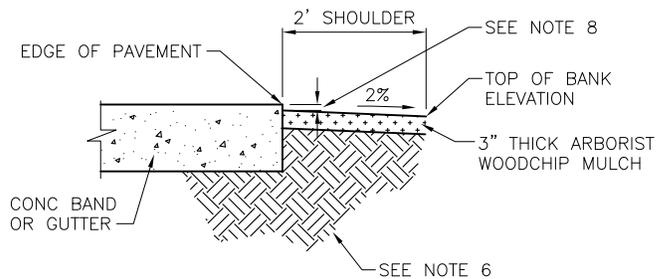
**PIPE BEDDING
SEWER/STORM DRAIN**



new std plan



DETAIL A
CURBED ROADWAY
(ADJACENT TO PARKING ZONE)



DETAIL B
CURBLESS ROADWAY

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 4" MIN IN THE AREA SUBJECT TO TEMPORARY PONDING BEFORE BIORETENTION SOIL INSTALLATION.
4. PROVIDE 1.5' MIN BIORETENTION SOIL FOR WATER QUALITY TREATMENT PER STORMWATER CODE REQUIREMENT.
5. CELL SHALL BE PLANTED PER APPROVED LANDSCAPE PLAN.
6. SOIL AT THE EDGE SHALL BE UNDISTURBED NATIVE SOIL OR APPROVED SOIL COMPACTED TO 95% DENSITY.
7. FACE OF CURB TO TOP OF SLOPE SHALL BE MIN 2'-0" FOR NON-MAJOR ARTERIAL STREET, MIN 4'-0" FOR MAJOR ARTERIAL STREET.
8. PROVIDE MIN ONE INCH GAP BETWEEN TOP OF WALKS, CURBS, PAVEMENTS AND DRIVEWAYS AND TOP OF ARBORIST WOODCHIP MULCH.

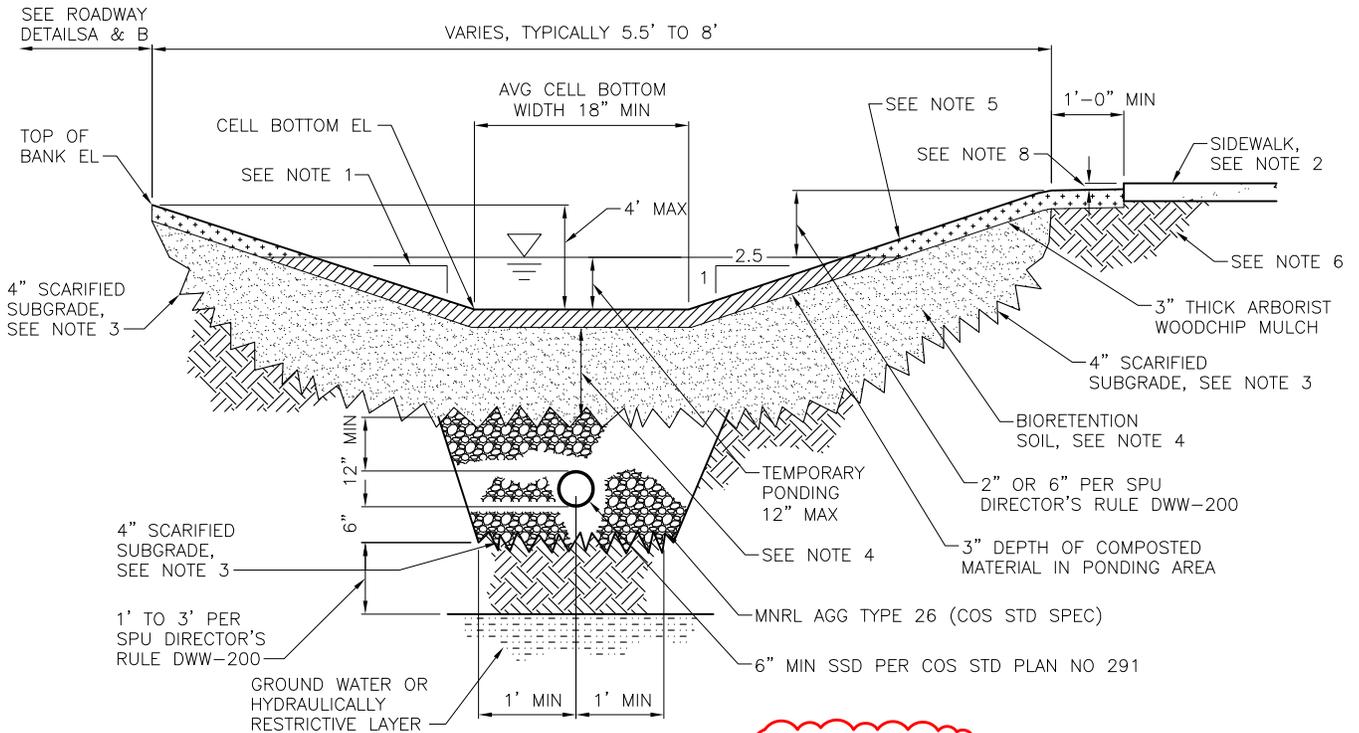
REF STD SPEC SEC 7-21



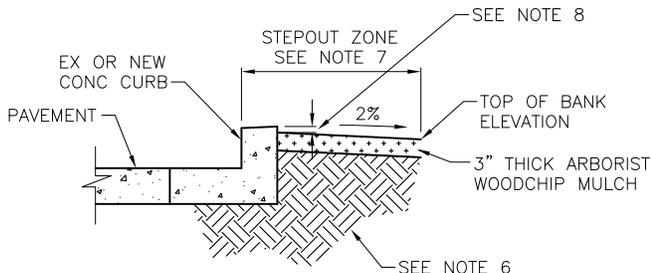
City of Seattle

NOT TO SCALE

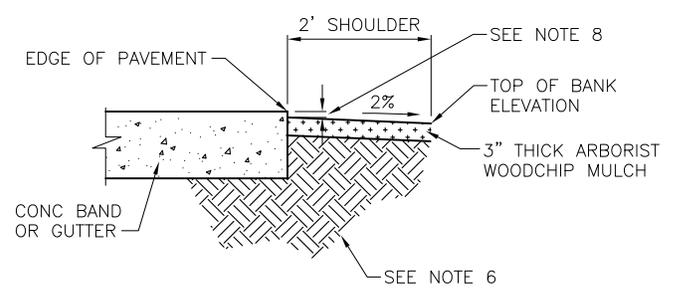
**INFILTRATING BIORETENTION
WITH SLOPED SIDES**



new std plan



DETAIL A
CURBED ROADWAY
(ADJACENT TO PARKING ZONE)



DETAIL B
CURBLESS ROADWAY

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 4" MIN IN THE AREA SUBJECT TO TEMPORARY PONDING BEFORE BIORETENTION SOIL INSTALLATION.
4. PROVIDE 1.5' MIN BIORETENTION SOIL FOR WATER QUALITY TREATMENT PER STORMWATER CODE REQUIREMENT.
5. CELL SHALL BE PLANTED PER APPROVED LANDSCAPE PLAN.
6. SOIL AT THE EDGE SHALL BE UNDISTURBED NATIVE SOIL OR APPROVED SOIL COMPACTED TO 95% DENSITY.
7. FACE OF CURB TO TOP OF SLOPE SHALL BE MIN 2'-0" FOR NON-MAJOR ARTERIAL STREET, MIN 4'-0" FOR MAJOR ARTERIAL STREET.
8. PROVIDE MIN ONE INCH GAP BETWEEN TOP OF WALKS, CURBS, PAVEMENTS AND DRIVEWAYS AND TOP OF ARBORIST WOODCHIP MULCH.

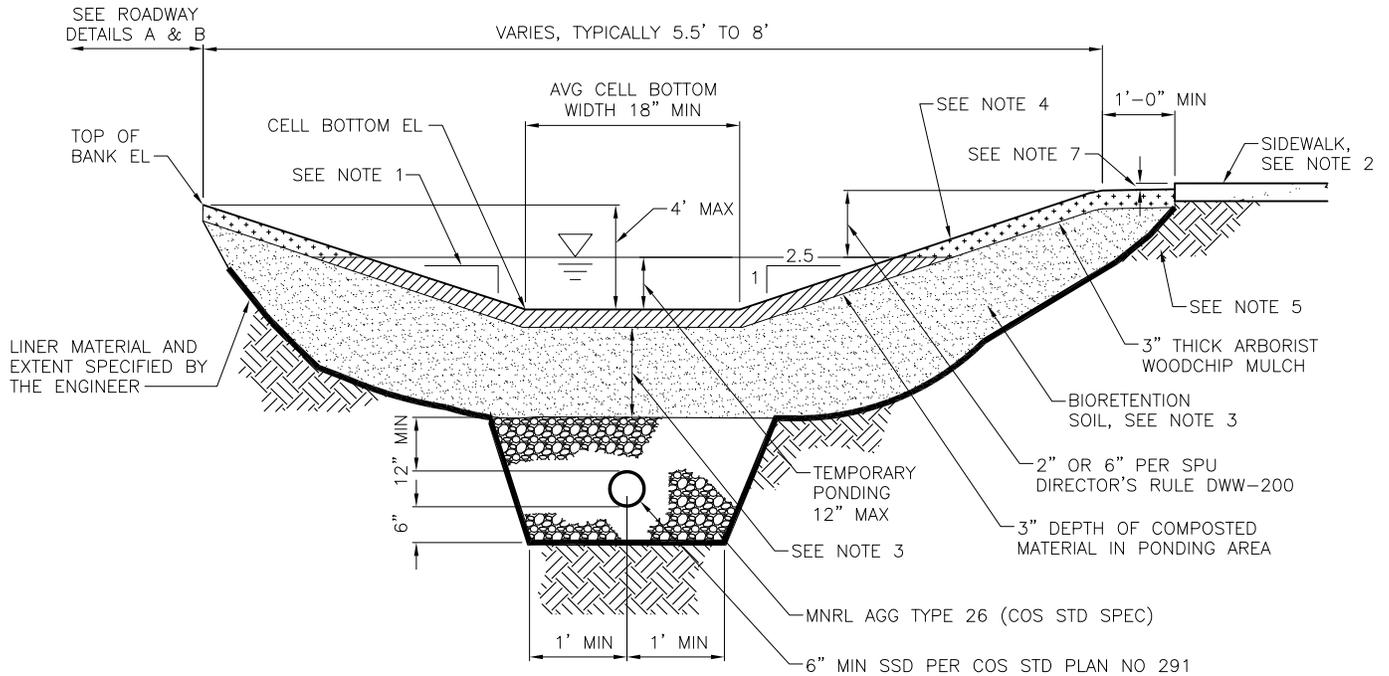
REF STD SPEC SEC 7-21



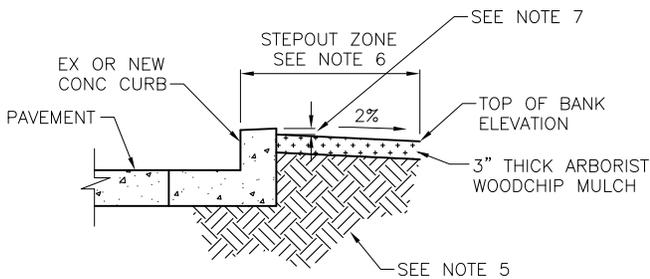
City of Seattle

NOT TO SCALE

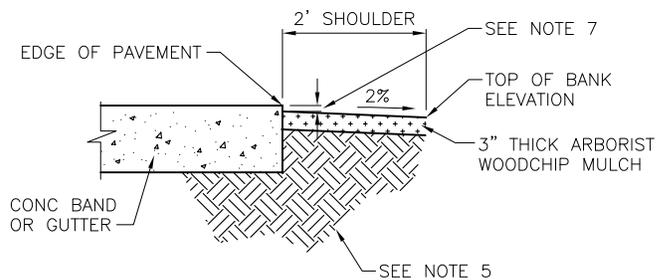
**INFILTRATING BIORETENTION
WITH SLOPED SIDES
& UNDER DRAIN**



new std plan



DETAIL A
CURBED ROADWAY
 (ADJACENT TO PARKING ZONE)



DETAIL B
CURBLESS ROADWAY

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. PROVIDE 1.5' MIN BIORETENTION SOIL FOR WATER QUALITY TREATMENT PER STORMWATER CODE REQUIREMENT.
4. CELL SHALL BE PLANTED PER APPROVED LANDSCAPE PLAN.
5. SOIL AT THE EDGE SHALL BE UNDISTURBED NATIVE SOIL OR APPROVED SOIL COMPACTED TO 95% DENSITY.
6. FACE OF CURB TO TOP OF SLOPE SHALL BE MIN 2'-0" FOR NON-MAJOR ARTERIAL STREET, MIN 4'-0" FOR MAJOR ARTERIAL STREET.
7. PROVIDE MIN ONE INCH GAP BETWEEN TOP OF WALKS, CURBS, PAVEMENTS AND DRIVEWAYS AND TOP OF ARBORIST WOODCHIP MULCH.

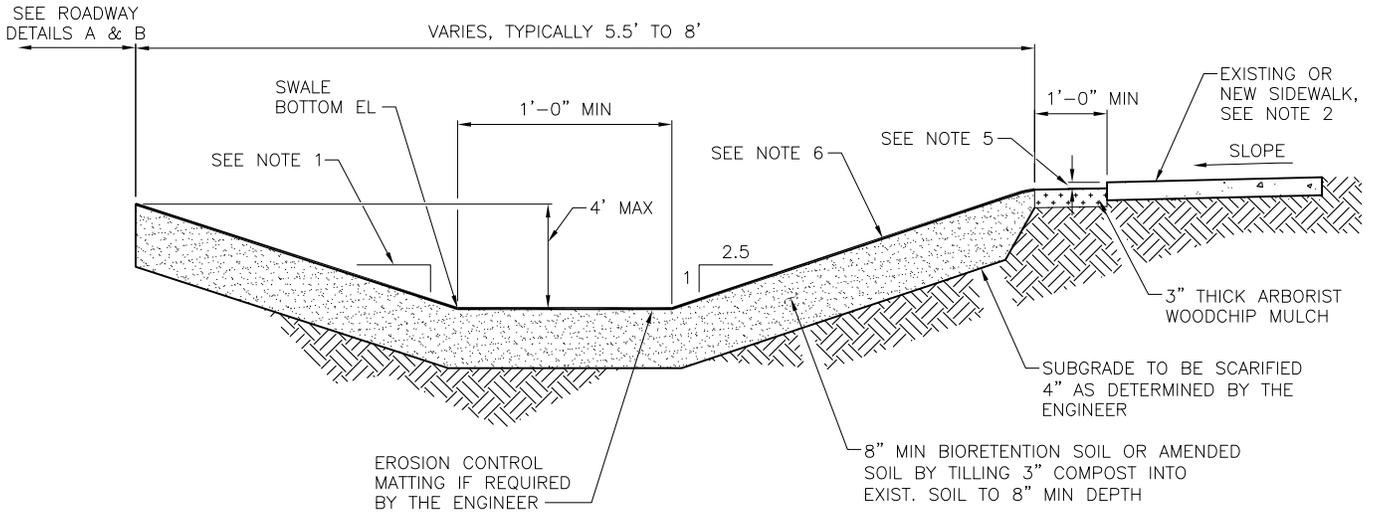
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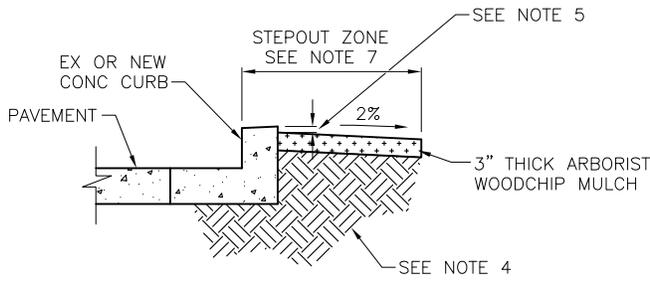
City of Seattle

NOT TO SCALE

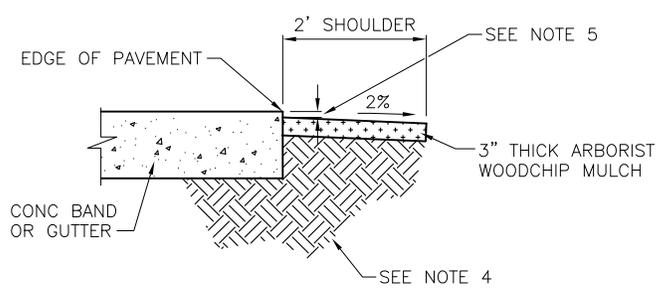
**NON-INFILTRATING BIORETENTION
 WITH SLOPED SLIDES
 & UNDER DRAIN**



new std plan



DETAIL A
CURBED ROADWAY
(ADJACENT TO PARKING ZONE)



DETAIL B
CURBLESS ROADWAY

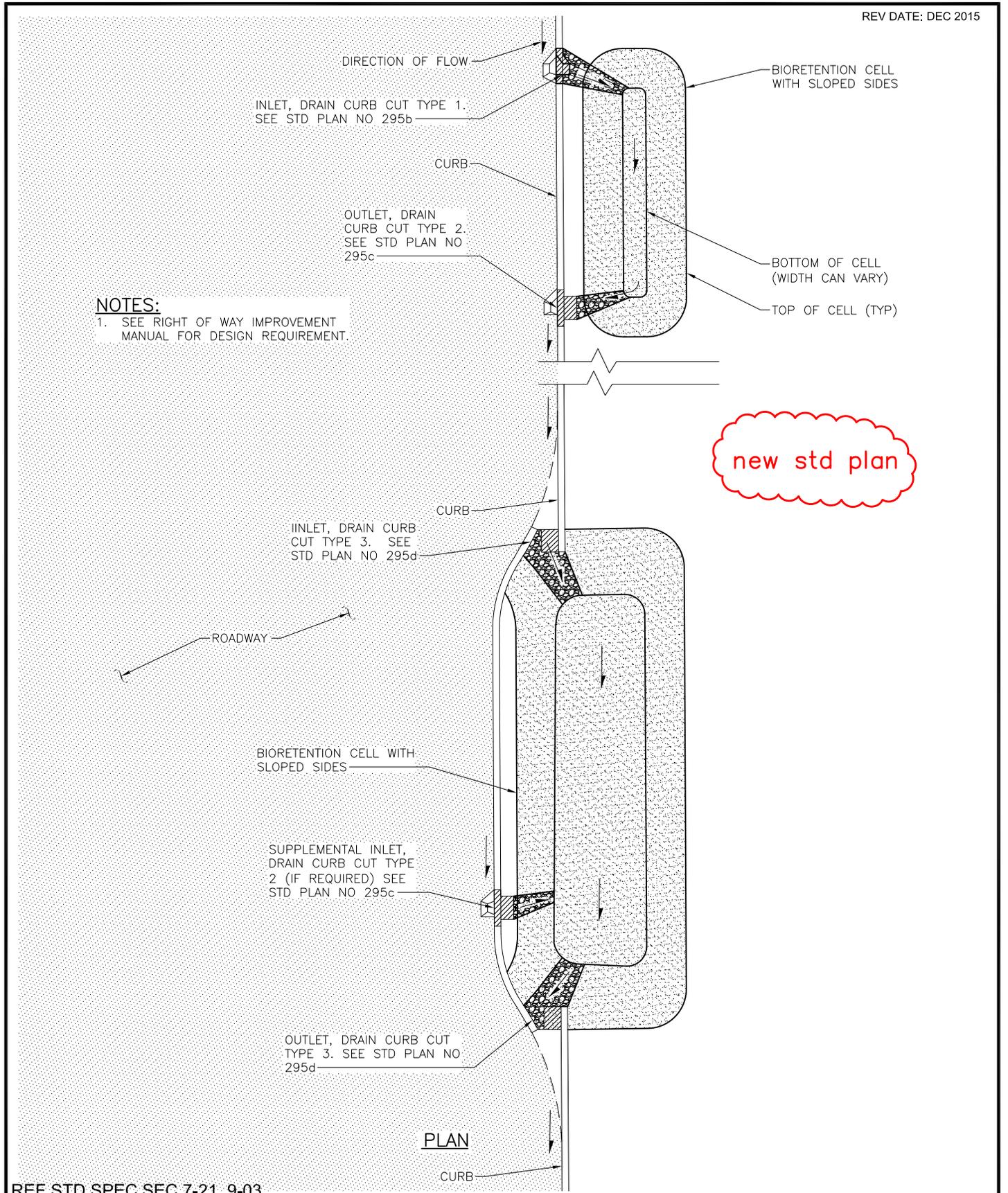
- NOTES:**
1. TYPICAL MAXIMUM SLOPE ALLOWED IS 2.5H=1V, 3H=1V MAX WHEN WITHIN 50- FEET OF INTERSECTIONS OR CURBLESS ROADWAY.
 2. CONVEYANCE SWALE OVERFLOW ELEVATIONS MUST BE SET BELOW SIDEWALK ELEVATION.
 3. LONGITUDINAL SLOPE GREATER THAN OR EQUAL TO 4%, CHECK DAM REQUIRED.
 4. UNDISTURBED NATIVE SOIL OR APPROVED SOIL COMPACTED TO 95% DENSITY.
 5. PROVIDE MIN ONE INCH GAP 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 SHALL BE MIN 2'-0" FOR NON-MAJOR ARTERIAL STREETS, MIN 4'-0" FOR MAJOR ARTERIAL STREETS.

REF STD SPEC SEC 7-21



NOT TO SCALE

VEGETATED CONVEYANCE SWALE
(NOT FOR WATER QUALITY TREATMENT)



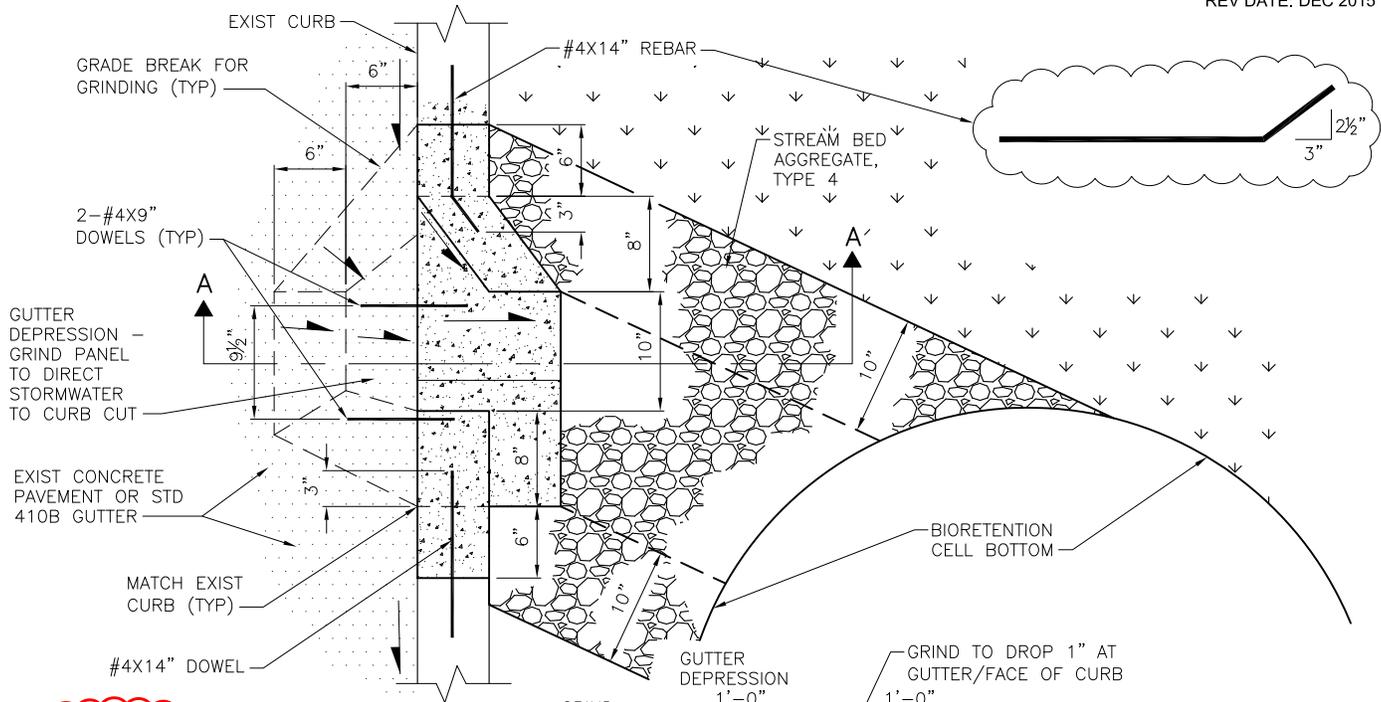
REF STD SPEC SEC 7-21, 9-03



City of Seattle

NOT TO SCALE

TYPICAL DRAIN CURB CUT LOCATION FOR BIORETENTION WITH SLOPED SIDES

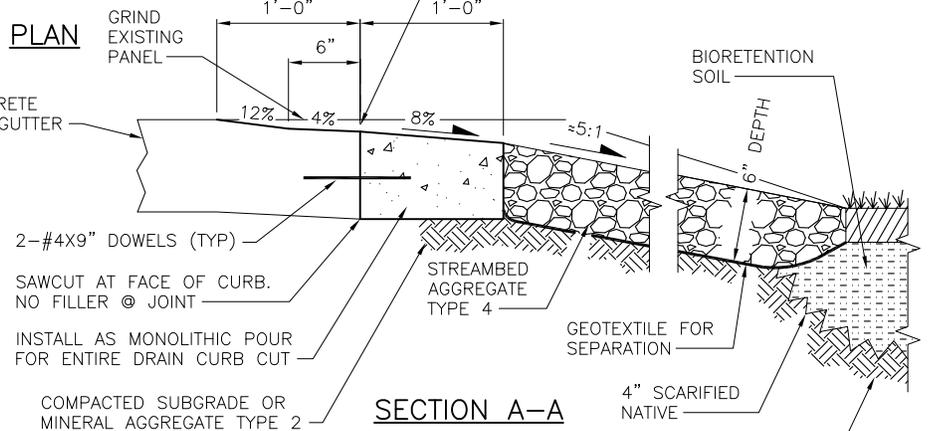


new std plan

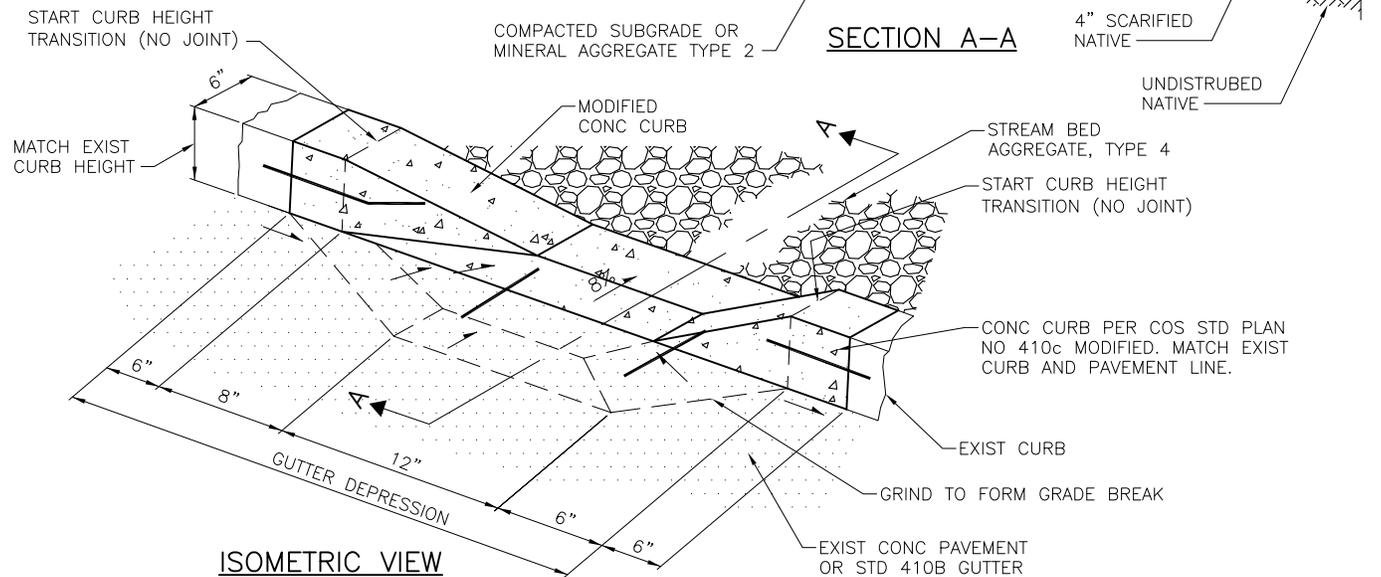
NOTES:

1. DRAIN CURB CUTS SHALL NOT BE LOCATED WITHIN CONCRETE ROAD PANEL JOINT.

PLAN



SECTION A-A



ISOMETRIC VIEW

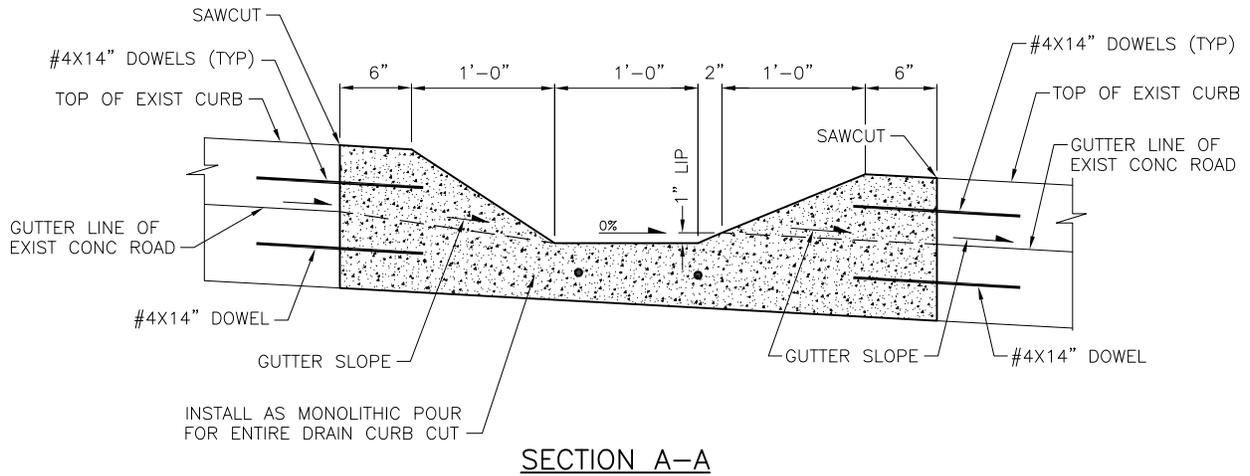
REF STD SPEC SEC 7-21, 9-03



City of Seattle

NOT TO SCALE

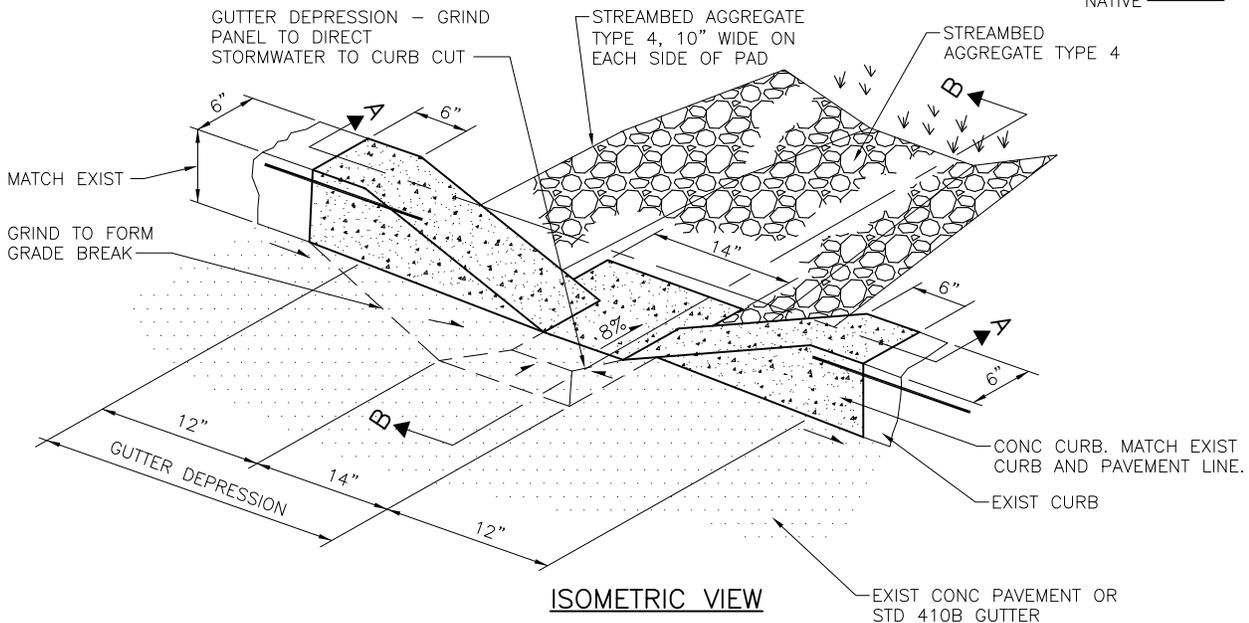
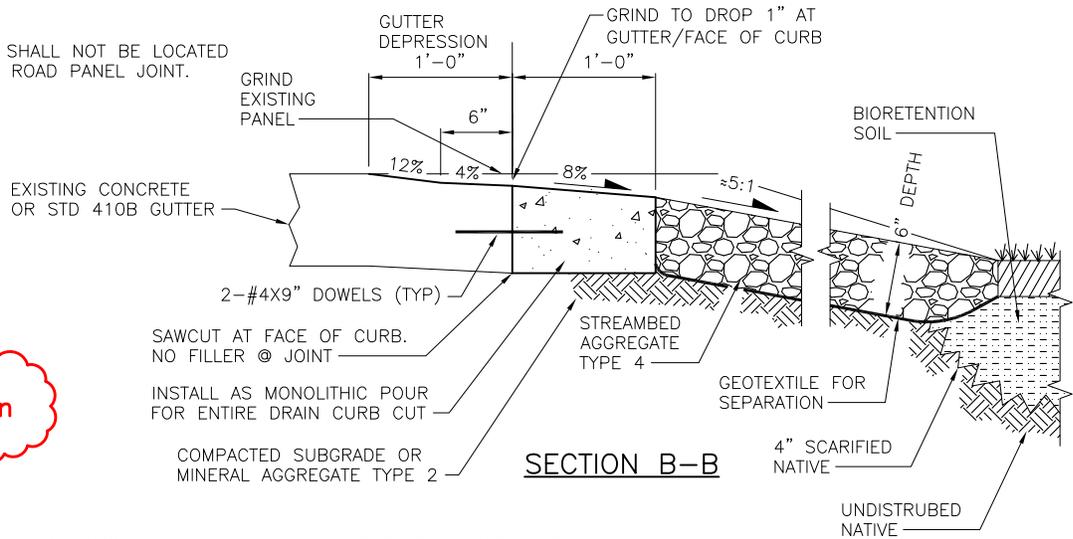
DRAIN CURB CUT TYPE 1



NOTES:

1. DRAIN CURB CUT SHALL NOT BE LOCATED WITHIN CONCRETE ROAD PANEL JOINT.

new std plan



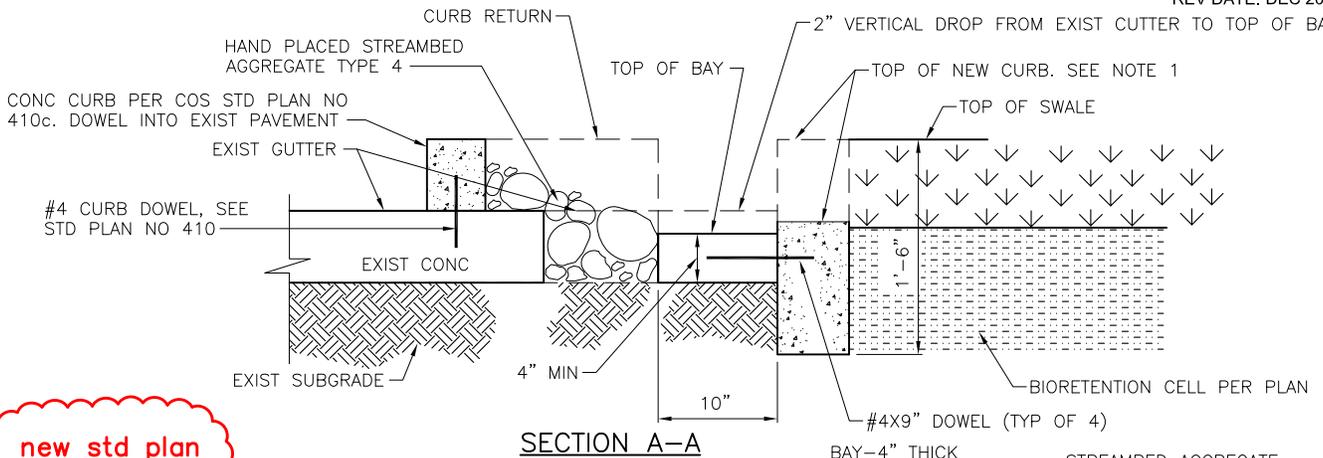
REF STD SPEC SEC 7-21, 9-03



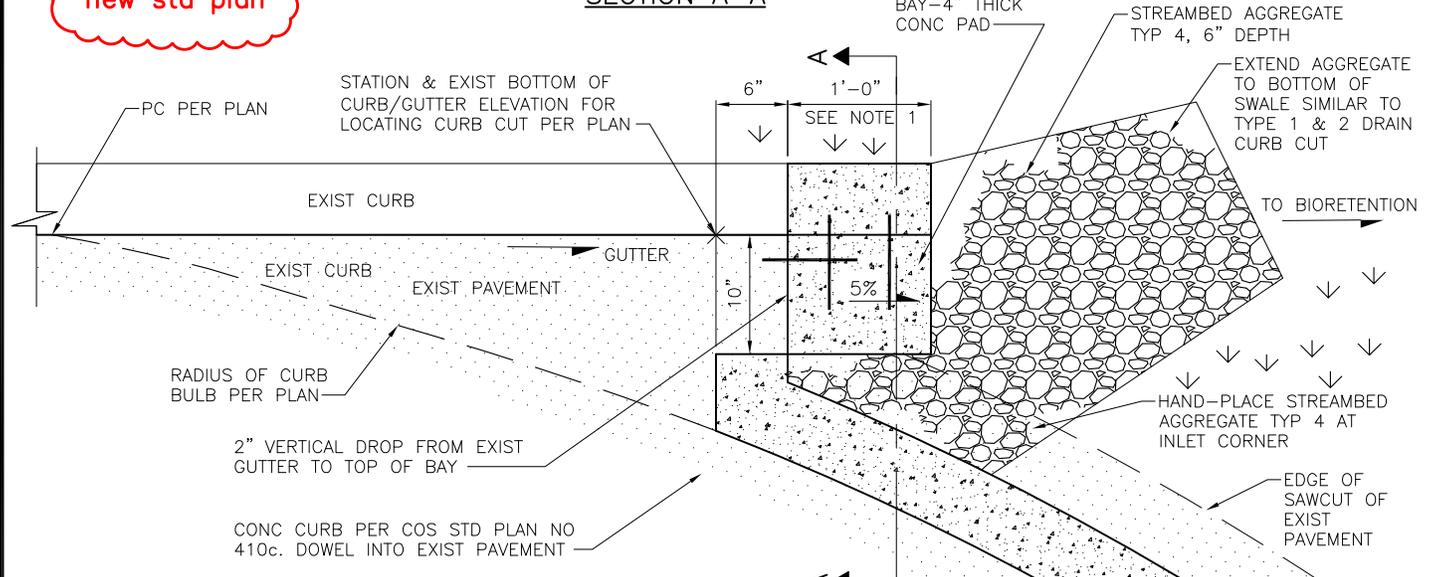
City of Seattle

NOT TO SCALE

DRAIN CURB CUT TYPE 2

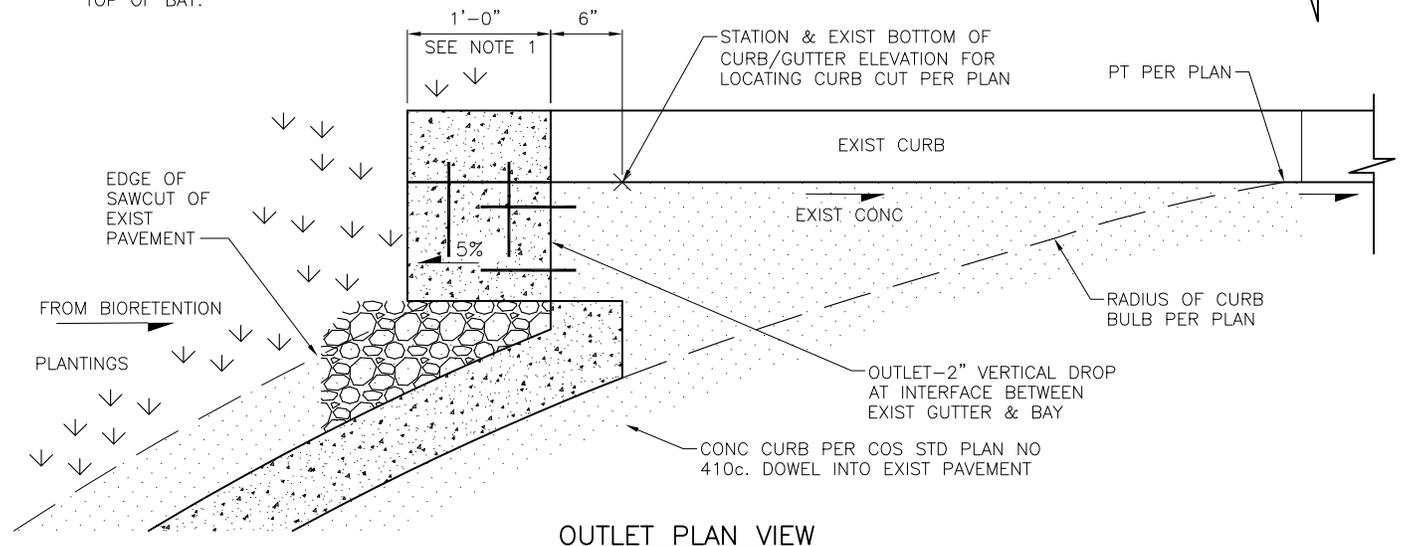


new std plan



NOTES:

- 1. TAPER CURB HEIGHT FROM TOP OF EXISTING CURB TO TOP OF BAY.



REF STD SPEC SEC 7-21, 9-03

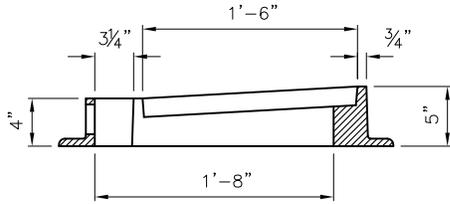


City of Seattle

NOT TO SCALE

DRAIN CURB CUT TYPE 3

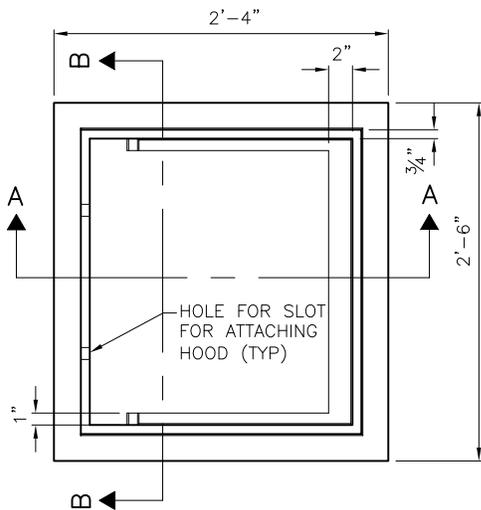
new std plan



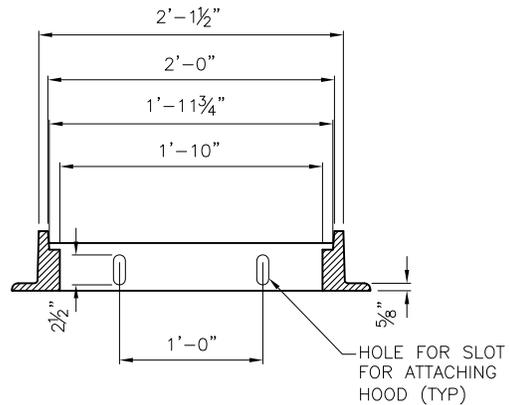
SECTION A-A

NOTES:

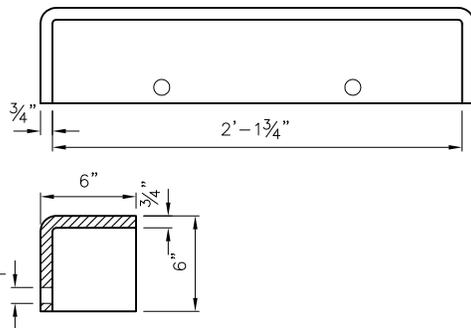
1. ATTACH THE HOOD TO THE FRAME WITH TWO 3/4" X 2" HEX HEAD BOLTS, NUTS, AND OVERSIZE WASHERS. THE WASHERS SHALL HAVE DIAMETERS ADEQUATE TO ENSURE FULL BEARING ACROSS THE SLOTS.
2. ONLY DUCTILE IRON VANED GRATES SHALL BE USED.



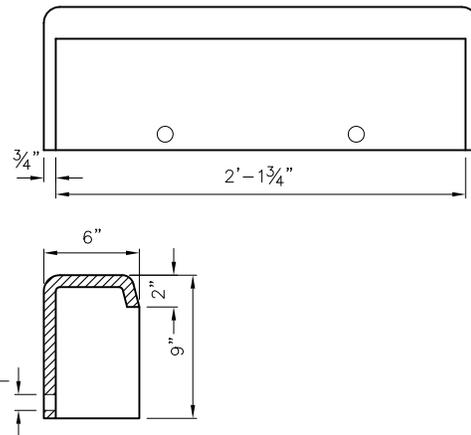
FRAME DETAIL



SECTION B-B



6" HOOD



9" HOOD

REF STD SPEC SEC 7-05

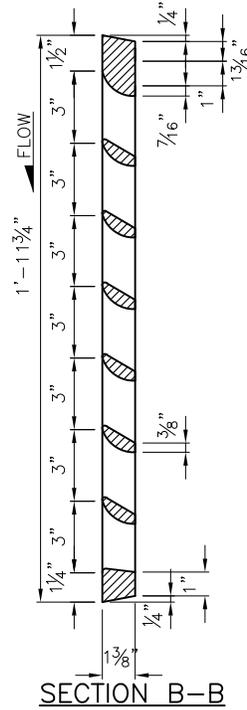
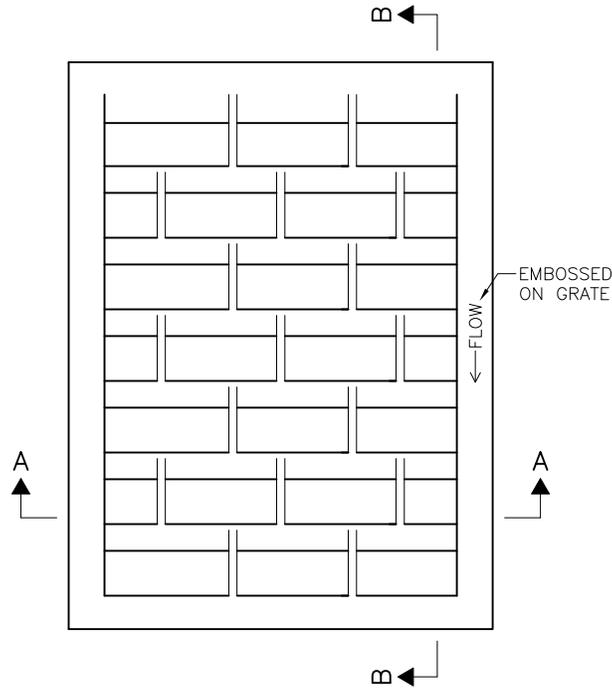


City of Seattle

NOT TO SCALE

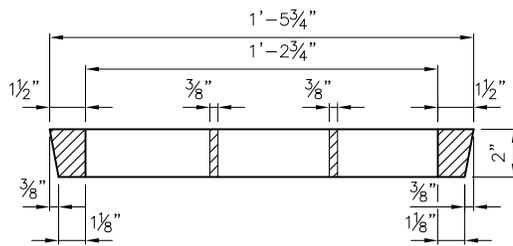
CURB INLET FRAME

new std plan



SECTION B-B

GRATE MATERIAL:
DUCTILE IRON



SECTION A-A

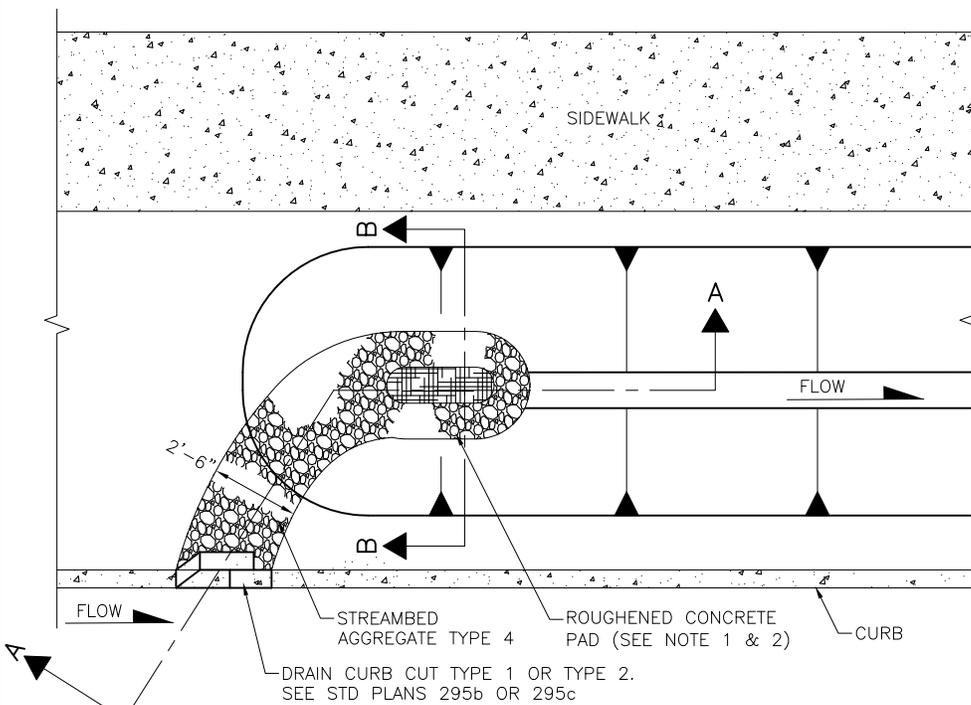
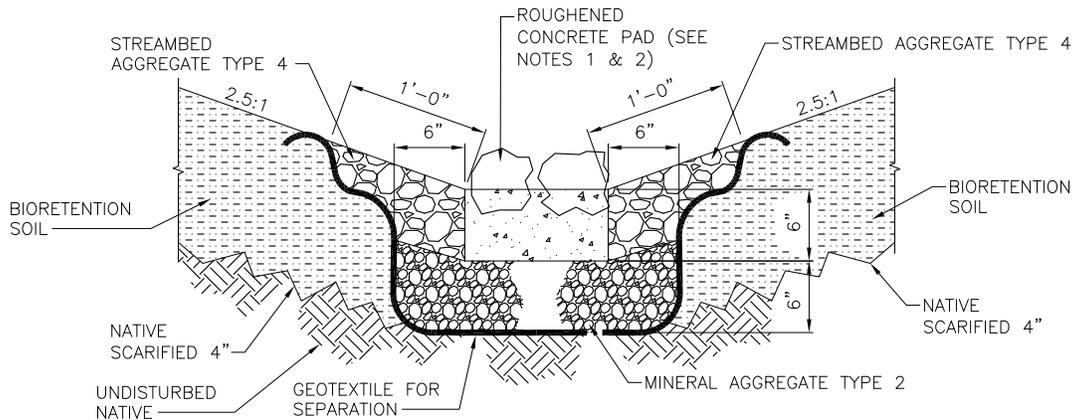
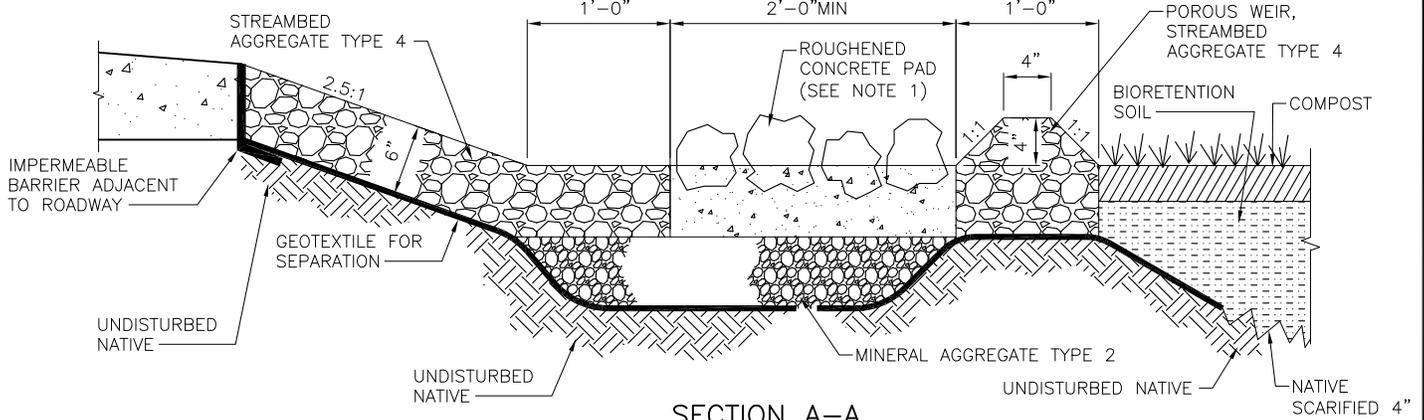
REF STD SPEC SEC



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NOT TO SCALE

CURB INLET VANED GRATE



new std plan

NOTES:

1. ROUGHENED CONCRETE PAD SHALL BE MIN 2' LONG & 2.5 SF OR 5.0SF PER SPU DIRECTOR'S RULE 200
2. ROUGHENED CONCRETE PAD SHALL BE CONSTRUCTED WITH COMMERCIAL CONCRETE (STD SPEC 6-02) EMBED WELL MIXED 6"-8" STREAMBED AGGREGATE TO CREATE ROUGHNESS. 50% MIN OF THE SURFACE SHALL HAVE PROTRUDING AGGREGATE

PRESETTLING ZONE

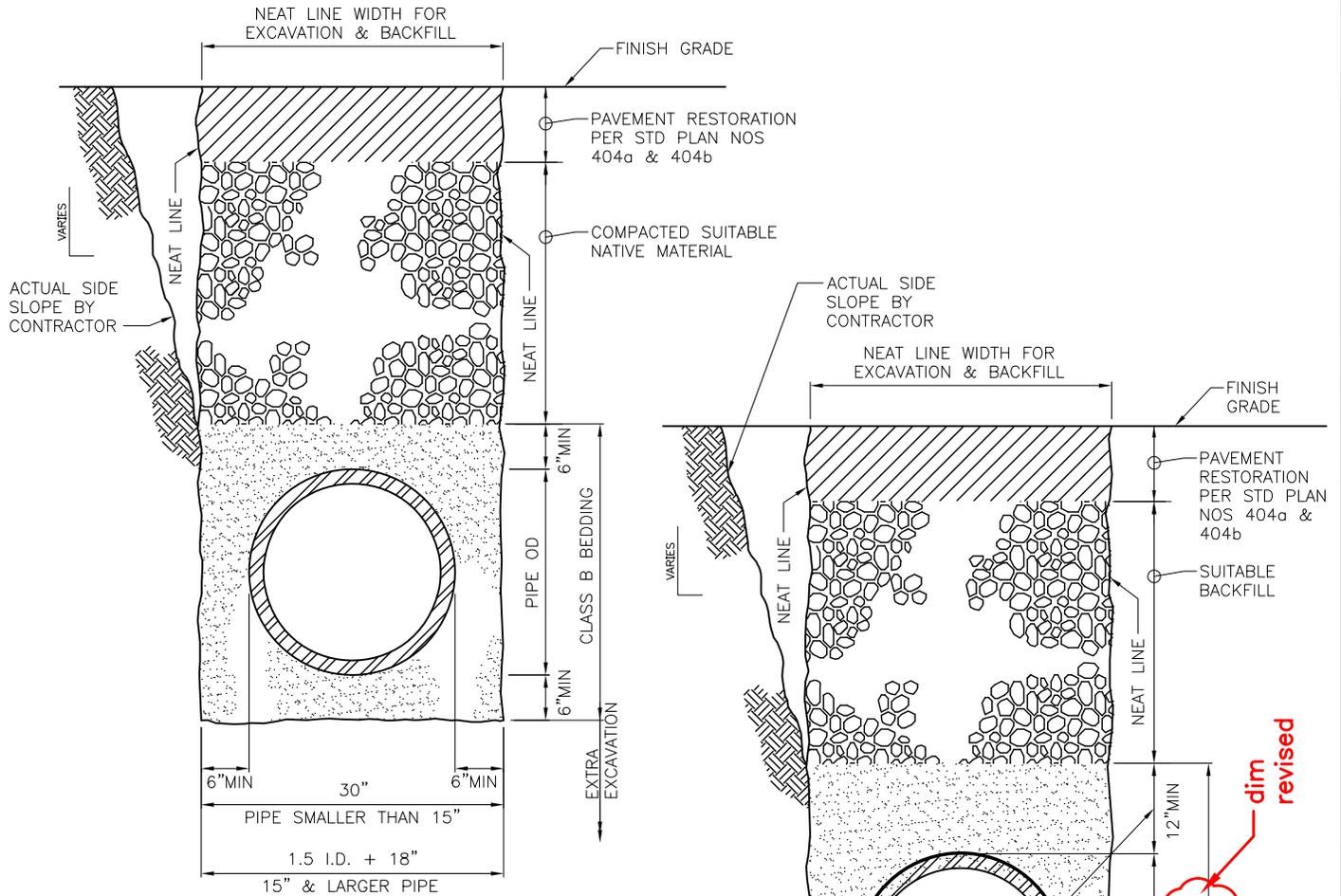
REF STD SPEC SEC 7-21, 9-03



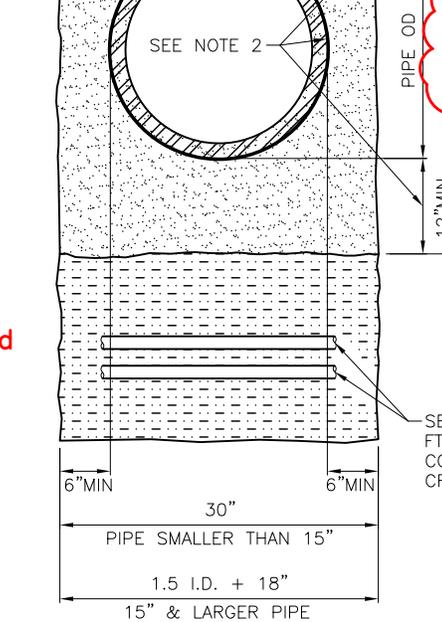
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PRESETTLING ZONE



TYPICAL BEDDING



BEDDING AT TRENCH CROSSING

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 BARREL
2. FOR FLUIDIZED THERMAL BACKFILL (FTB) OR CDF CROSSINGS OF METALLIC PIPE, INCREASE CLASS B SAND DEPTH & COVER TO 12" MIN & ENCASE METALLIC PIPE IN 8 MIL POLYETHYLENE ENCASEMENT FOR FULL TRENCH WIDTH
3. FLUIDIZED THERMAL BEDDING PER SCL MATERIAL STANDARD 7150.00

revised

note 3 added

9-03.16 added

dim revised

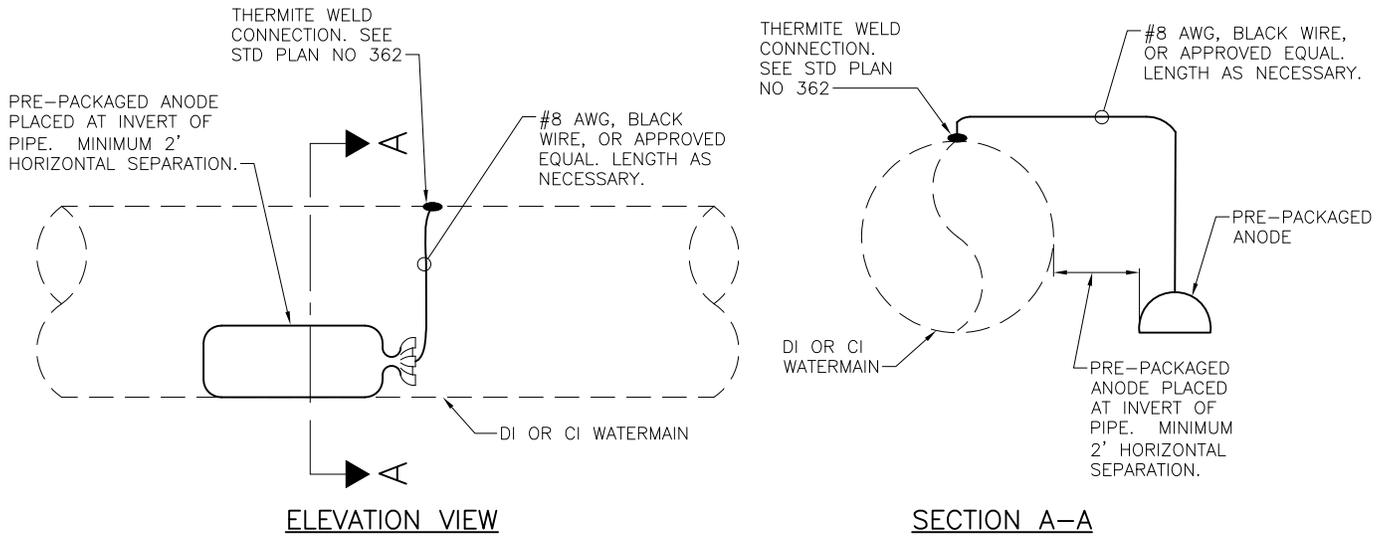
REF STD SPEC SEC 7-11, 7-17, 9-03.16



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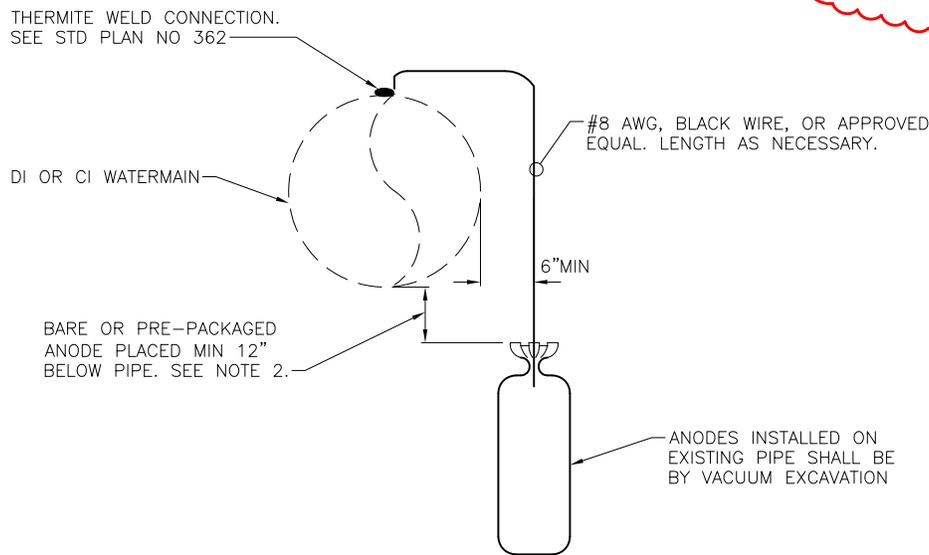
NOT TO SCALE

WATERMAIN TRENCH AND BEDDING



TYPICAL SINGLE HORIZONTAL ANODE INSTALLATION

new std plan



TYPICAL SINGLE VERTICAL ANODE INSTALLATION

NOTES:

1. SPU CATHODIC PROTECTION MAY SPECIFY TYPE AND REQUIRED SPACING OF ANODE(S) LONGITUDINALLY ALONG WATER MAIN TO BE SHOWN IN DESIGN DRAWINGS. MAXIMUM SPACING SHALL BE 36' UNLESS OTHERWISE NOTED ON PLANS.
2. FOR VERTICAL ANODE INSTALLATION, IF ANODE IS NOT PRE-PACKAGED, BARE ANODE MUST BE INSTALLED W/MIN 6" SC3 COKE BREEZE AROUND ALL SIDES OF ANODE.
3. ANODE SIZE SHALL BE 17LB HIGH POTENTIAL MAGNESIUM ANODE, UNLESS OTHERWISE NOTED ON THE PLANS.
4. PLACE RED "CAUTION" OR "DANGER" TAPE 6" OVER ANODE WIRES. TAPE SHALL BE MIN 3" WIDE.
5. BACKFILL OVER ANODE WITH SUITABLE NATIVE MATERIAL OR APPROVED EQUAL.

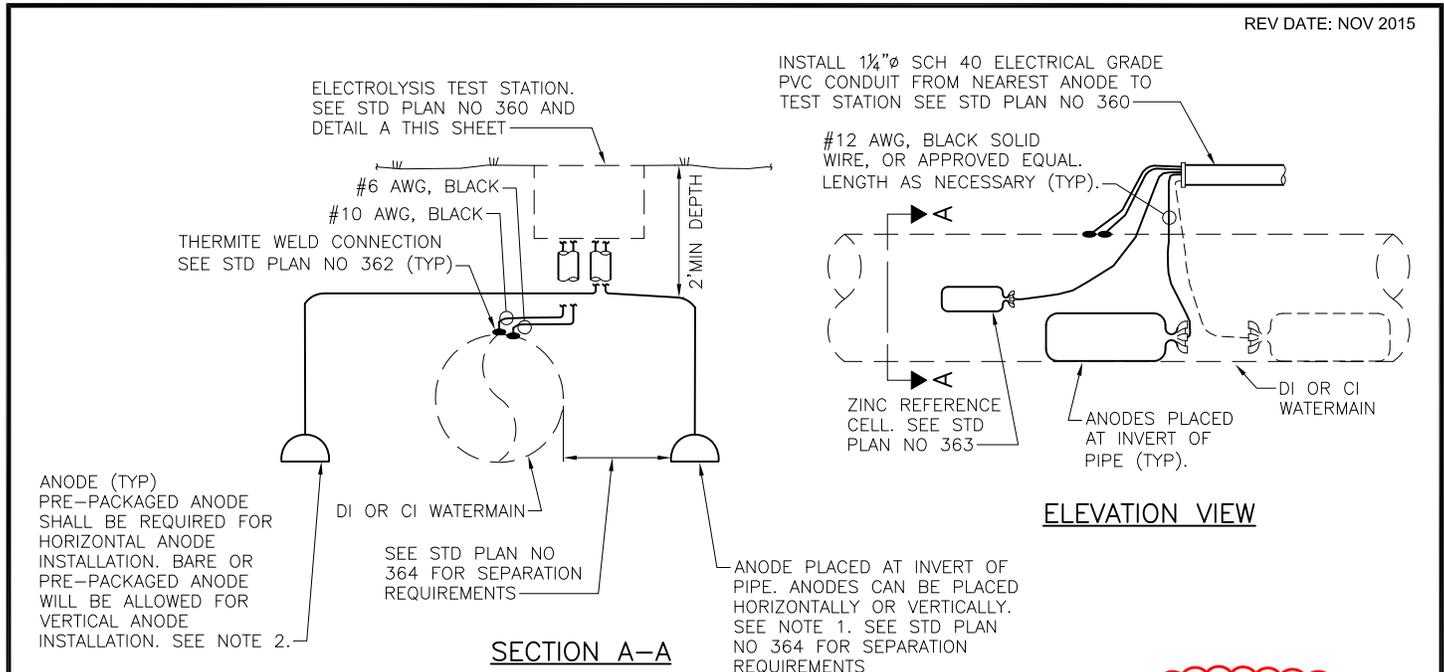
REF STD SPEC SEC 7-11, 9-30



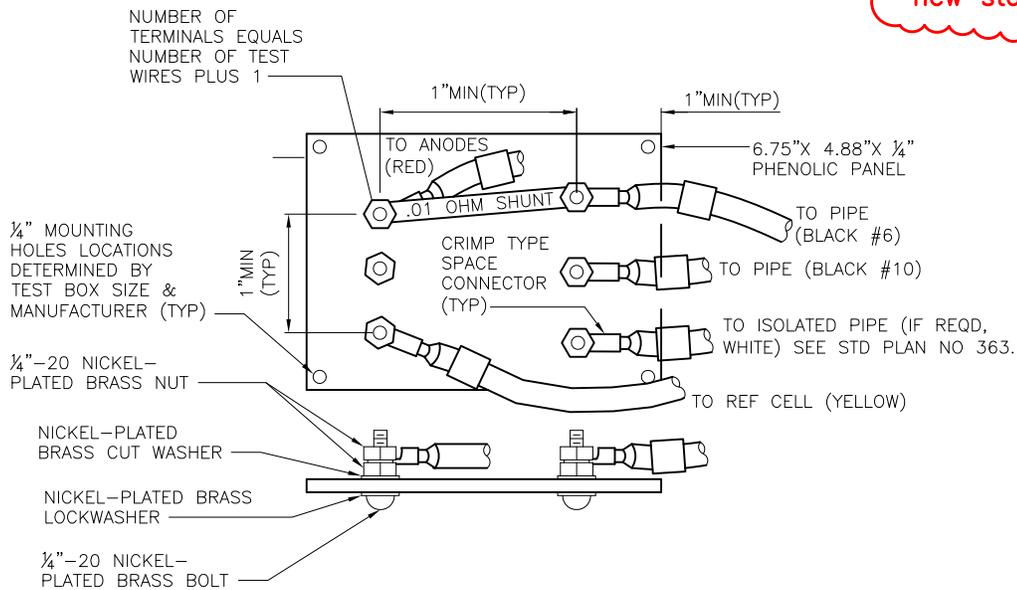
City of Seattle

NOT TO SCALE

SACRIFICIAL ANODE BONDED TO PIPE INSTALLATION DETAILS



new std plan



NOTES:

1. REQUIRED SPACING OF ANODE(S) TO BE SHOWN IN DESIGN DRAWINGS.
2. FOR VERTICAL INSTALLATION, IF ANODE IS NOT PRE-PACKAGED, BARE ANODE MUST BE INSTALLED W/ MIN 6" SC3 COKE BREEZE AROUND ALL SIDES OF ANODE.
3. ANODE SIZE SHALL BE 17LB HIGH POTENTIAL MAGNESIUM ANODE, UNLESS OTHERWISE NOTED ON THE PLANS.
4. PLACE RED "CAUTION" OR "DANGER" TAPE 6" OVER ANODE WIRES AND CONDUIT. TAPE SHALL BE MIN 3" WIDE.
5. BACKFILL OVER ANODE WITH SUITABLE NATIVE MATERIAL OR APPROVED EQUAL.

REF STD SPEC SEC 7-11, 9-30

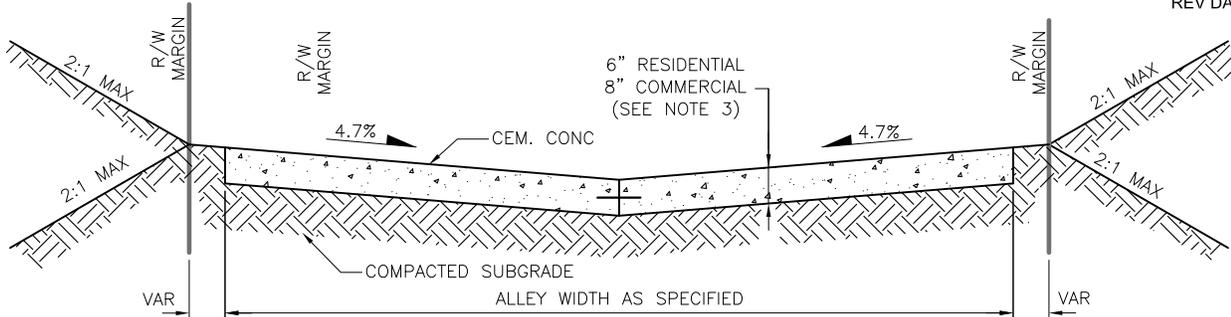


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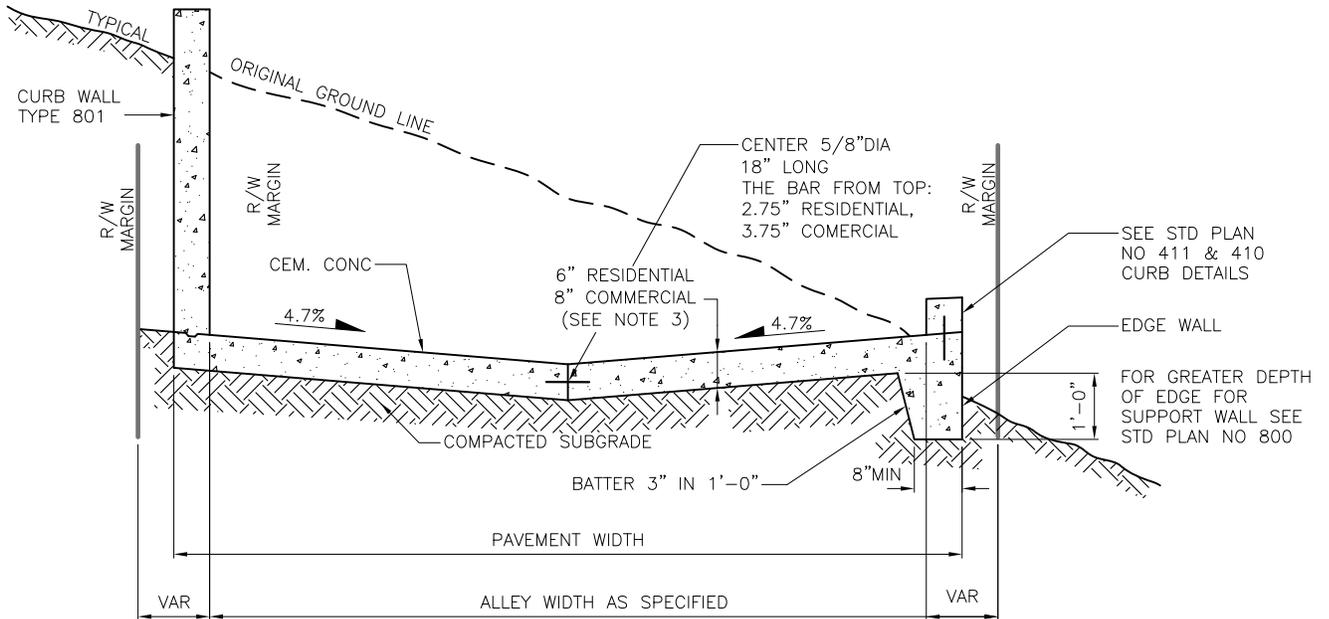
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SACRIFICIAL ANODE INSTALLATION DETAILS

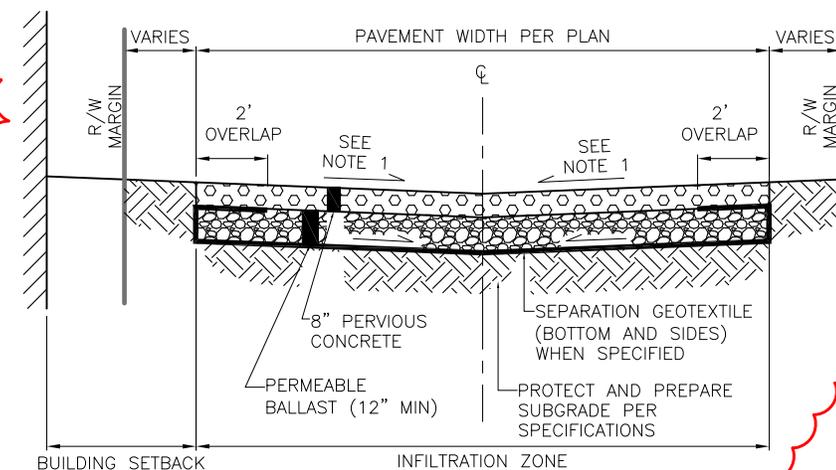
MULTIPLE ANODES CONNECTED AT TEST STATION



CONCRETE ALLEY PAVEMENT



CEMENT CONCRETE ALLEY PAVEMENT 403B-FOR SHALLOW EMBANKMENT AREA



PERVIOUS CONCRETE PAVEMENT

NOTES:

1. WHEN ALLEY PAVEMENT IS 16'-0" OR WIDER PLACE CONSTRUCTION JOINT WITH TIE BAR PER STD PLAN NO 405 ALONG CENTERLINE OF ALLEY.
2. FOR ADA ACCESSIBLE ACCESS TO ENTRY IN ALLEY CONSIDER ALTERNATIVE DESIGN; SUBJECT TO APPROVAL BY THE ENGINEER.
3. 8" OR AS SHOWN IN CONTRACT OR APPROVAL BY THE ENGINEER.
4. MIN CROSS SLOPE IS 1%
5. PERMEABLE BALLAST SHALL BE MINERAL AGGREGATE TYPE 13, UNLESS DETERMINED OTHERWISE BY ENGINEER.

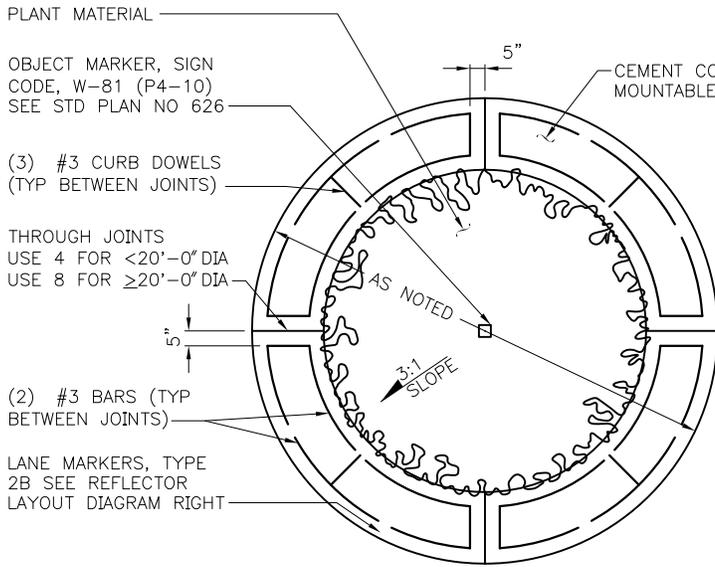
REF STD SPEC SEC 8-17, 8-19



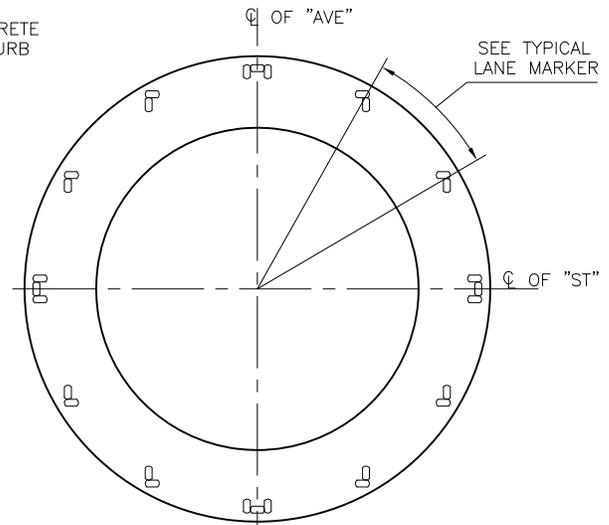
City of Seattle

NOT TO SCALE

ROADWAY CEMENT CONCRETE ALLEY PAVEMENTS



TYPICAL TRAFFIC CIRCLE



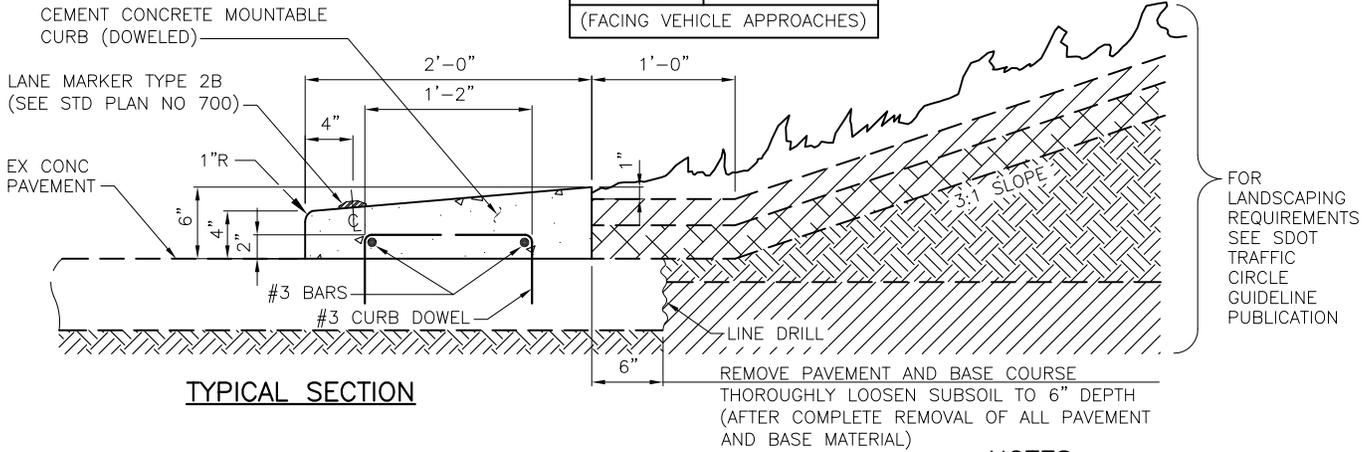
TRAFFIC CIRCLE REFLECTOR LAYOUT

this SP was removed for the 2011 & 2014 editions and is now being reinstated.

SPACING CHART

DIAMETER OF CIRCLE	DEGREE OF SPACING
≤12'-0"	EVERY 45°
<20'-0"	EVERY 30°
>20'-0"	EVERY 22 1/2°

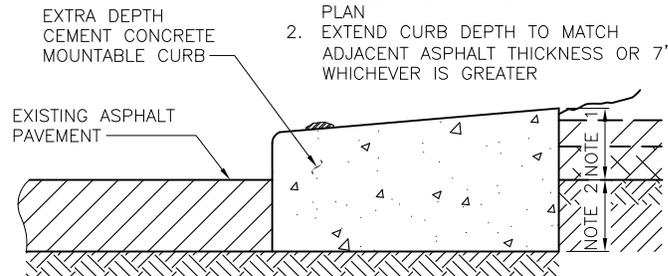
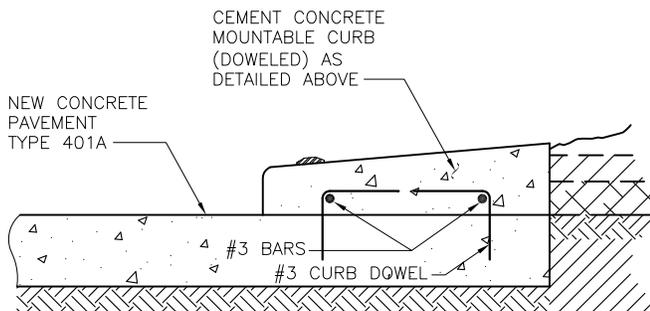
(FACING VEHICLE APPROACHES)



TYPICAL SECTION

NOTES:

1. DIMENSIONS ABOVE PAVEMENT EXTENSION TO MATCH SECTION DETAILED ELSEWHERE ON THIS STD PLAN
2. EXTEND CURB DEPTH TO MATCH ADJACENT ASPHALT THICKNESS OR 7" WHICHEVER IS GREATER



TYPICAL SECTIONS

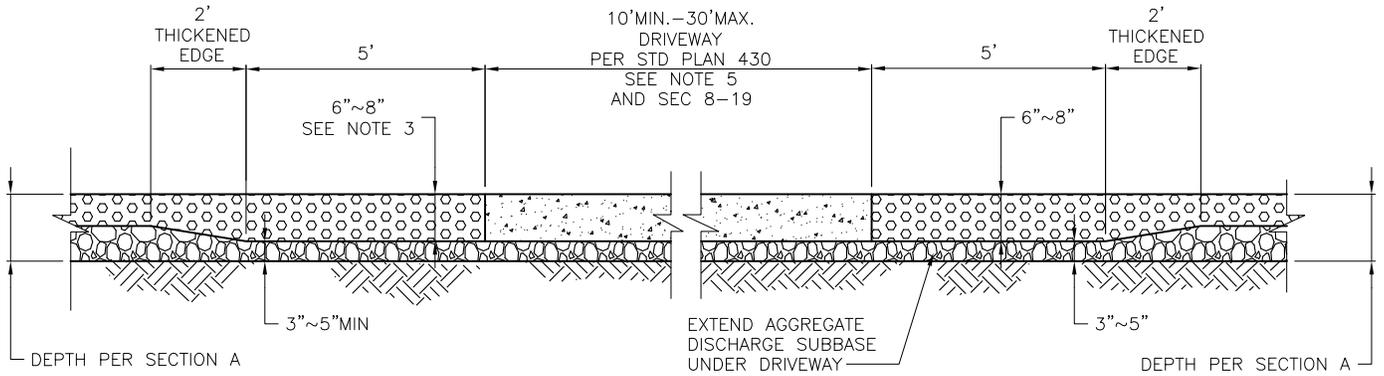
REF STD SPEC SEC 8-02, 8-04, 8-08



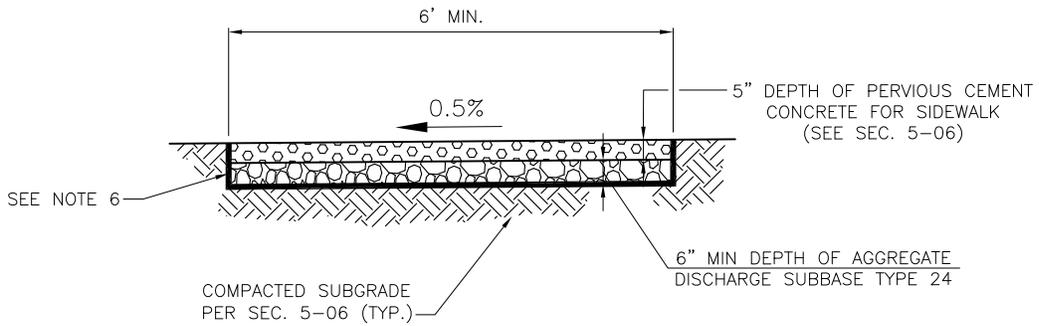
City of Seattle

NOT TO SCALE

TRAFFIC CIRCLE DETAILS



PERVIOUS CONC CEM SIDEWALK DEPTH TRANSITION AT DRIVEWAYS PROFILE VIEW

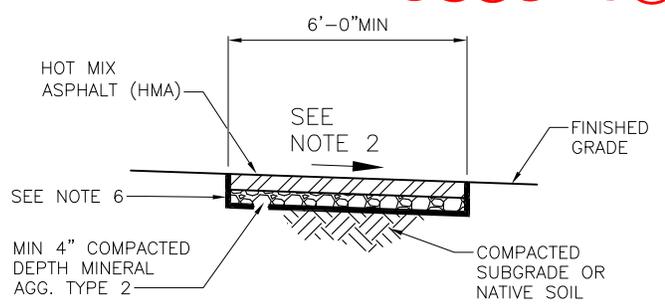


PERVIOUS CONC SECTION A

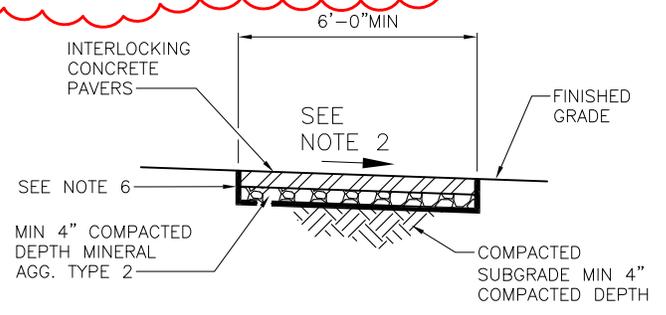
NOTES:

1. DEPTHS SHOWN FOR PAVEMENT SECTIONS ARE COMPACTED DEPTH.
2. SIDEWALK DEPTH AT DRIVEWAY TO MATCH DRIVEWAY PAVEMENT DEPTH.
3. DEPTH OF POROUS CEMENT CONCRETE FOR DRIVEWAYS SHALL BE 8" MIN.
4. 6% MAX. PERVIOUS CEMENT CONCRETE PROFILE GRADE.
5. WHERE PERVIOUS CONCRETE IS SHOWN ON PLANS FOR ALLEY, PERVIOUS CONCRETE SHALL BE 8" WITH 3" AGGREGATE DISCHARGE SUBBASE.
6. APPLY SEPARATION GEOTEXTILE SEC. 9-37, ON BOTTOM AND SIDES. EXTEND GEOTEXTILE ABOVE PERVIOUS CONCRETE FOR SIDEWALK PAVEMENT. AFTER PAVEMENT HAS CURED AND ADJACENT FINISHED GRADE HAS BEEN STABILIZED, CUT SEPARATION GEOTEXTILE AT FINISHED GRADE (TYP.)

notes 5 & 6 added



HOT MIX ASPHALT PAVEMENT SIDEWALK SECTION



CONCRETE PAVER SIDEWALK SECTION

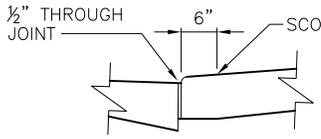
REF STD SPEC SEC 5-04, 5-06



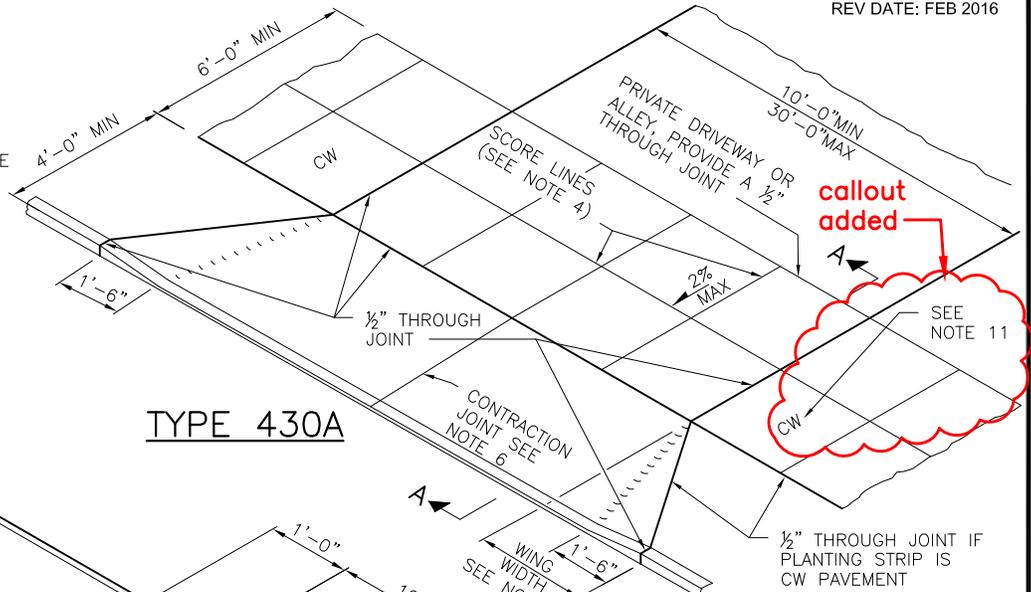
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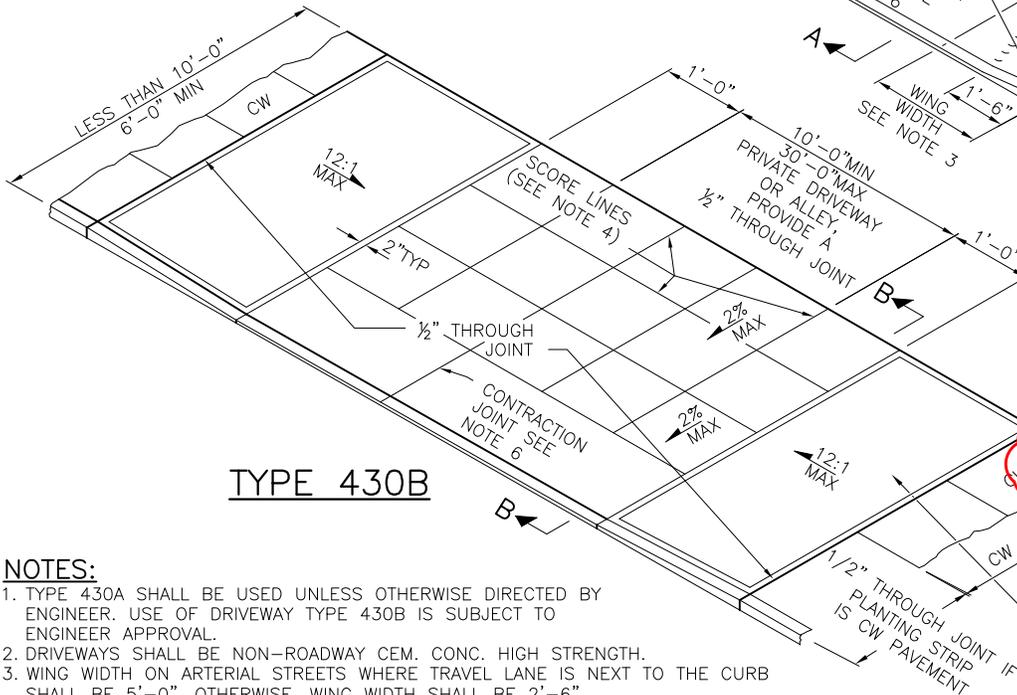
ALTERNATIVE WALKWAYS



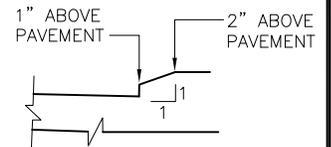
DETAIL B
DRIVENRY W/ MONOLITHIC CURB & APPROACH



TYPE 430A



TYPE 430B

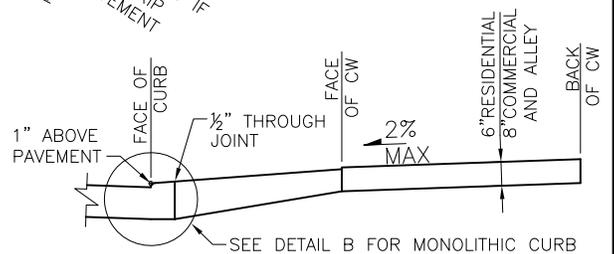


DETAIL A

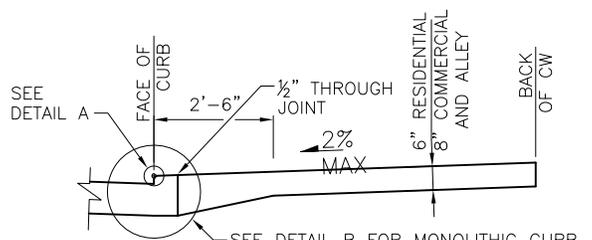
NOTES:

1. TYPE 430A SHALL BE USED UNLESS OTHERWISE DIRECTED BY ENGINEER. USE OF DRIVEWAY TYPE 430B IS SUBJECT TO ENGINEER APPROVAL.
2. DRIVEWAYS SHALL BE NON-ROADWAY CEM. CONC. HIGH STRENGTH.
3. WING WIDTH ON ARTERIAL STREETS WHERE TRAVEL LANE IS NEXT TO THE CURB SHALL BE 5'-0". OTHERWISE, WING WIDTH SHALL BE 2'-6".
4. "V" GROOVE SCORING SHALL MATCH PATTERN IN ADJACENT EXISTING SIDEWALK.
5. FOR CONCRETE DRIVEWAYS CONSTRUCTED WITH CONCRETE SIDEWALK, SEE STANDARD PLAN NO 431.
6. CONCRETE DRIVEWAYS WITH A WIDTH GREATER THAN 15'-0" SHALL HAVE A 3/8" TRANSVERSE CONTRACTION JOINT NEAR THE CENTERLINE OF DRIVEWAY. SEE DETAIL SECTION C-C STANDARD PLAN NO 420.
7. FOR TYPE 430A SLOPE IN THE 6'-0" MINIMUM WIDE AREA CONNECTING TO CW ON EACH SIDE OF THE DRIVEWAY SHALL BE MAXIMUM 2% AND MINIMUM 0.5%. FOR TYPE 430B, SLOPE OF THE DRIVEWAY BETWEEN THE TWO RAMP SECTIONS SHALL BE MAXIMUM 2% AND MINIMUM 0.5%. DRIVEWAY ON THE PRIVATE SIDE OF THE CW MAY BE SLOPED AS NEEDED TO MATCH EXISTING SITE CONDITIONS.
8. RAMP SHALL HAVE A MAXIMUM SLOPE 12H:1V. AND A MINIMUM WIDTH OF 6'-0". THE CROSS SLOPE OF THE RAMP SHALL BE MAXIMUM OF 50H:1V. RAMP SURFACE SHALL HAVE A HEAVY BROOM BRUSHED SURFACE PERPENDICULAR TO THE CURB.
9. ALL CHANGES IN LEVEL ACROSS JOINTS SHALL BE FLUSH WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 3/16 INCH.
10. ALL SLOPE GRADES SHALL BE MEASURED OFF THE HORIZON-LINE. IF EXISTING SITE CONDITIONS CONFLICT WITH OBTAINING GRADES SHOWN, THE CONTRACTOR SHALL MAKE MINIMUM ADJUSTMENTS TO THE GRADES TO ACCOMMODATE EXISTING SITE CONDITIONS. ADJUSTMENTS ARE SUBJECT TO ENGINEER APPROVAL.
11. CONCRETE WALKWAY OUTSIDE OF THE DRIVEWAY CROSSING MAY BE PERVIOUS.

note 11 added



SECTION A-A



SECTION B-B

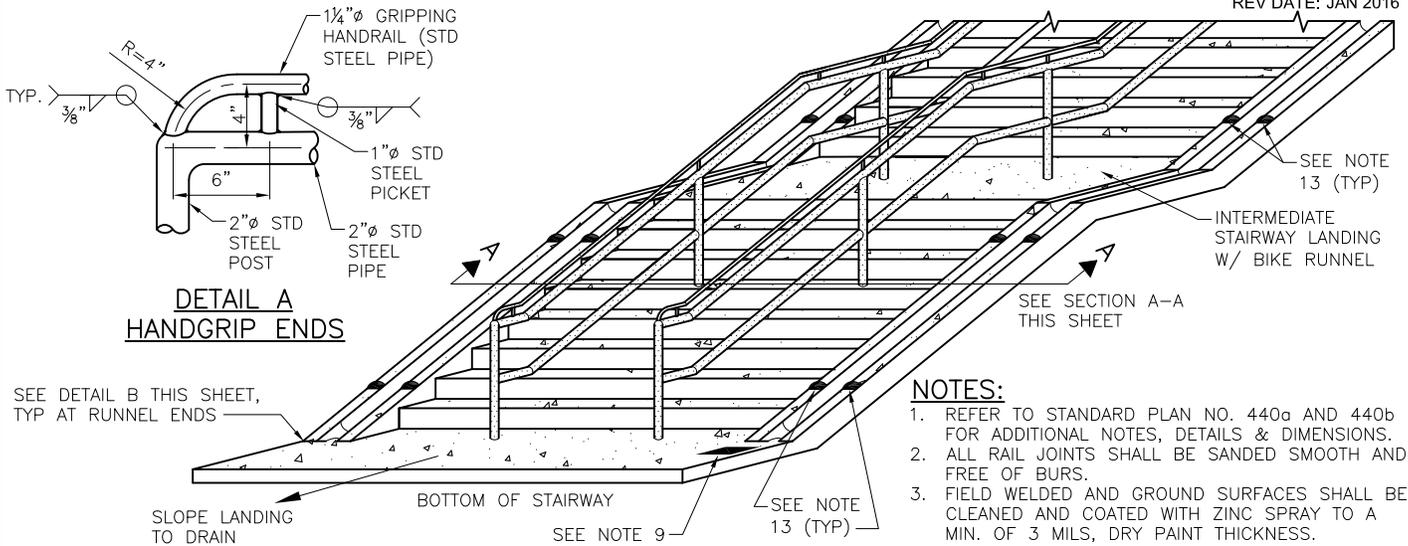


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TYPE 430A & 430B DRIVEWAYS

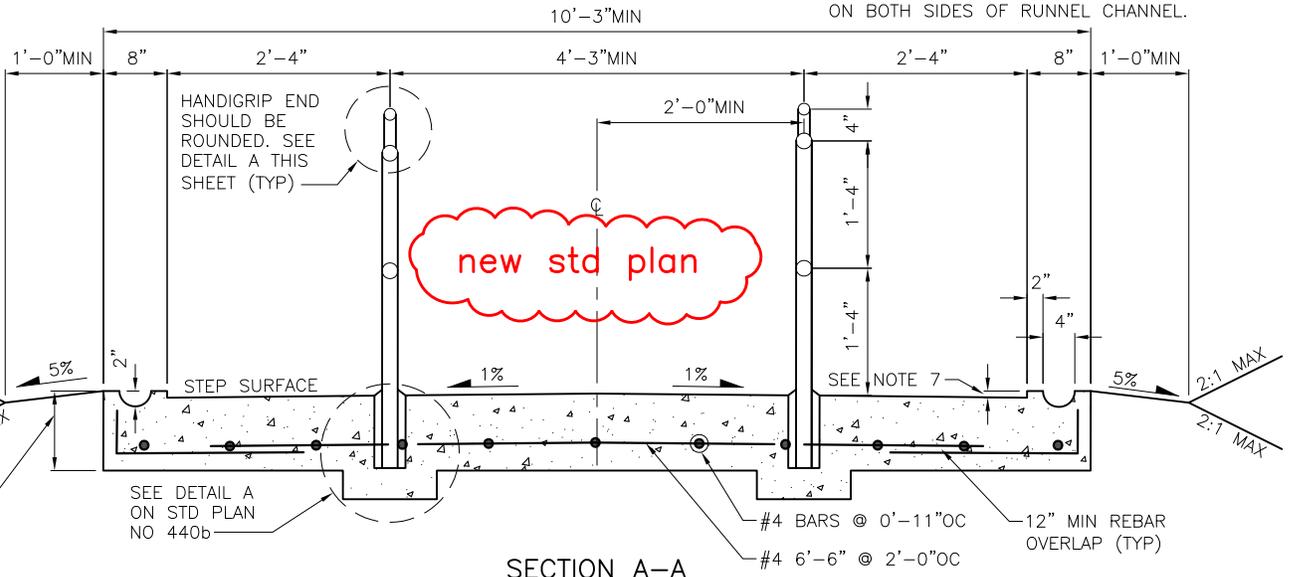
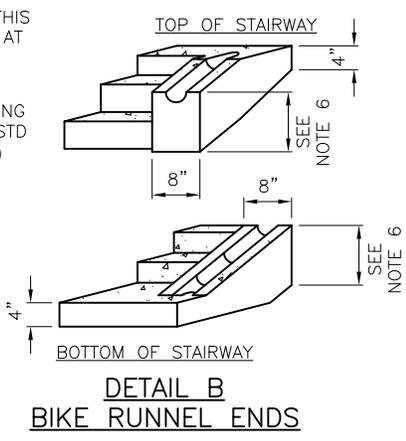
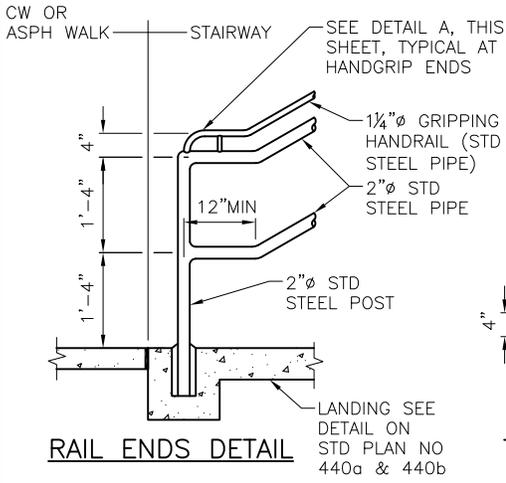
REV DATE: JAN 2016



**DETAIL A
HANDGRIP ENDS**

NOTES:

1. REFER TO STANDARD PLAN NO. 440a AND 440b FOR ADDITIONAL NOTES, DETAILS & DIMENSIONS.
2. ALL RAIL JOINTS SHALL BE SANDED SMOOTH AND FREE OF BURS.
3. FIELD WELDED AND GROUND SURFACES SHALL 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 SHALL NOT EXCEED 6'.
6. BIKE RUNNEL SLAB THICKNESS VARIES WITH STEP RISER HEIGHT. MIN. 10.5", MAX. 12.5"
7. RUNNEL LIP HEIGHT 1.5" ABOVE STEP NOSING AND LANDING.
8. LANDINGS THAT INTERSECT OTHER STAIRS OR WALKS SHALL BE AT LEAST 6' LONG TO ALLOW FOR A MIN. 4' OF CLEAR AREA WITHOUT RUNNEL & RAIL.
9. STAMP CONCRETE AT TOP AND BOTTOM OF RUNNEL. SEE CONCRETE STAMP DETAIL STD PLAN NO 440d.
10. RUNNEL LOCATION SHALL BE ON EITHER SIDE OF STAIRWAY AS DETERMINED BY ENGINEER.
11. LONG STAIRWAYS OR STAIRWAYS WITH SIGHT OBSTRUCTIONS TO CYCLISTS SHALL HAVE SIDEWALK BREAKS TO ALLOW ONCOMING CYCLISTS PASSAGE. LOCATIONS OF SIDEWALK BREAKS TO BE DETERMINED BY ENGINEER.
12. ANY CONSTRUCTION OUTSIDE OF RUNNEL SHALL ALLOW ENOUGH CLEARANCE FOR BIKE PEDALS AND HANDLEBARS FROM INTERFERING WITH MOVEMENT.
13. INSTALL ANTI-SKATE DEVICES 3' FROM THE TOP & BOTTOM OF LANDINGS ON ALL HANDRAILS & ON BOTH SIDES OF RUNNEL CHANNEL.



REF STD SPEC SEC 8-18

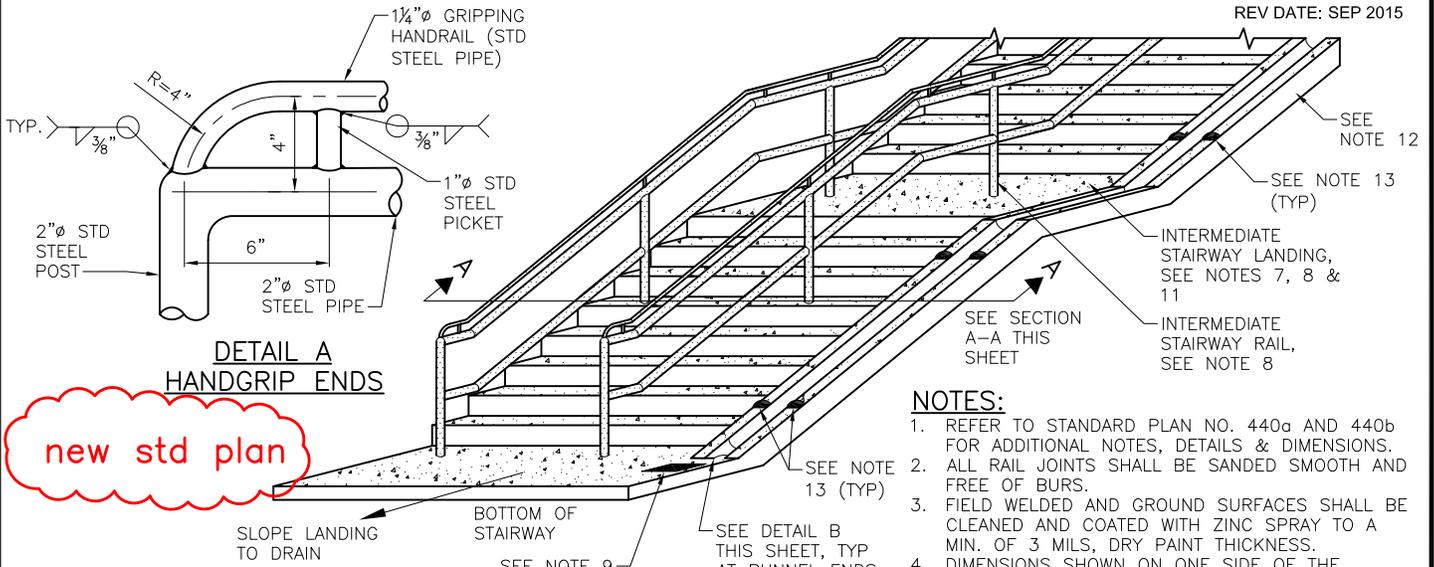


City of Seattle

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**CEMENT CONCRETE
STAIRWAY & BIKE RUNNEL**

REV DATE: SEP 2015



DETAIL A
HANDGRIP ENDS

new std plan

SLOPE LANDING TO DRAIN

BOTTOM OF STAIRWAY

SEE NOTE 9

SEE NOTE 13 (TYP)

SEE DETAIL B THIS SHEET, TYP AT RUNNEL ENDS

TOP OF STAIRWAY/LANDINGS

SEE NOTE 9

SEE NOTE 6

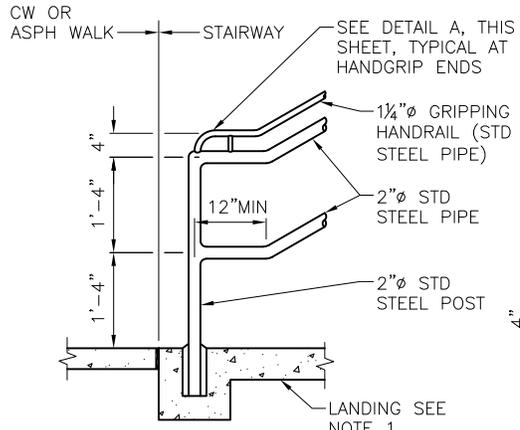
SEE NOTE 7

SEE NOTE 9

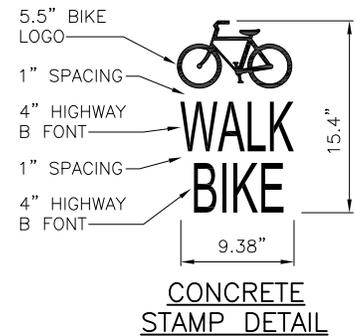
SEE NOTE 6

BOTTOM OF STAIRWAY/LANDINGS

DETAIL B
BIKE RUNNEL ENDS

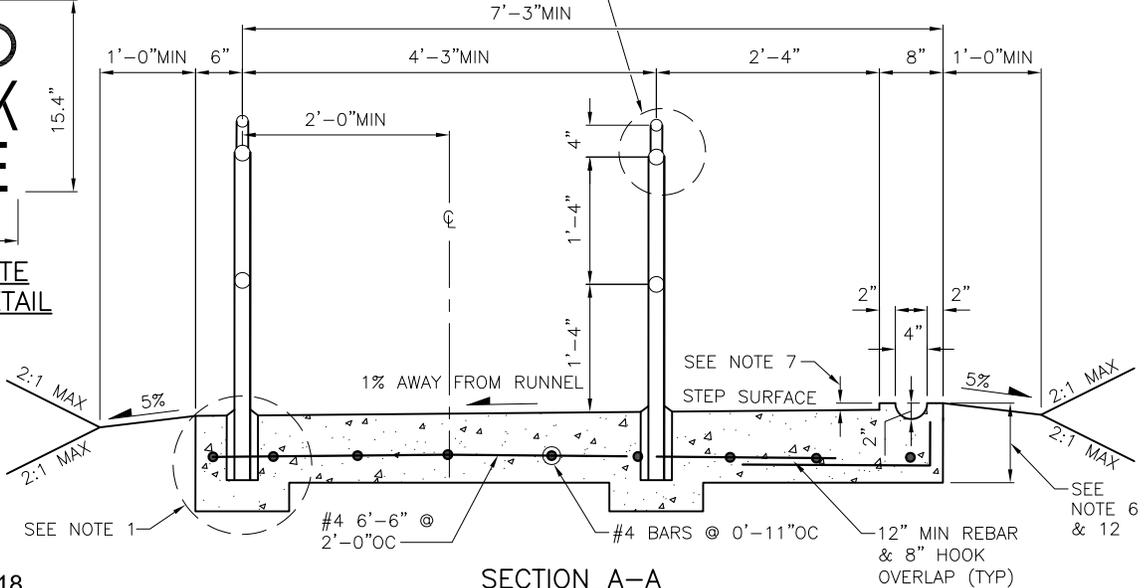


RAIL ENDS DETAIL



CONCRETE
STAMP DETAIL

HANDGRIP END SHOULD BE ROUNDED.
SEE DETAIL A THIS SHEET (TYP)



SECTION A-A

NOTES:

1. REFER TO STANDARD PLAN NO. 440a AND 440b FOR ADDITIONAL NOTES, DETAILS & DIMENSIONS.
2. ALL RAIL JOINTS SHALL BE SANDED SMOOTH AND FREE OF BURS.
3. FIELD WELDED AND GROUND SURFACES SHALL 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 SHALL NOT EXCEED 6'.
6. BIKE RUNNEL SLAB THICKNESS VARIES WITH STEP RISER HEIGHT. MIN. 10.5", MAX. 12.5"
7. RUNNEL LIP HEIGHT 1.5" ABOVE STEP NOSING AND LANDING.
8. LANDINGS THAT INTERSECT OTHER STAIRS OR WALKS SHALL BE AT LEAST 6' LONG TO ALLOW FOR A MIN. 4' OF CLEAR AREA WITHOUT RUNNEL & RAIL.
9. STAMP CONCRETE AT TOP AND BOTTOM OF RUNNEL. SEE CONCRETE STAMP DETAIL.
10. RUNNEL LOCATION SHALL BE ON EITHER SIDE OF STAIRWAY AS DETERMINED BY ENGINEER.
11. LONG STAIRWAYS OR STAIRWAYS WITH SIGHT OBSTRUCTIONS TO CYCLISTS SHALL HAVE SIDEWALK BREAKS TO ALLOW ONCOMING CYCLISTS PASSAGE. LOCATIONS OF SIDEWALK BREAKS TO BE DETERMINED BY ENGINEER.
12. ANY CONSTRUCTION OUTSIDE OF RUNNEL SHALL ALLOW ENOUGH CLEARANCE FOR BIKE PEDALS AND HANDLEBARS FROM INTERFERING WITH MOVEMENT.
13. INSTALL ANTI-SKATE DEVICES 3' FROM THE TOP & BOTTOM OF LANDINGS ON ALL HANDRAILS & ON BOTH SIDES OF RUNNEL CHANNEL.

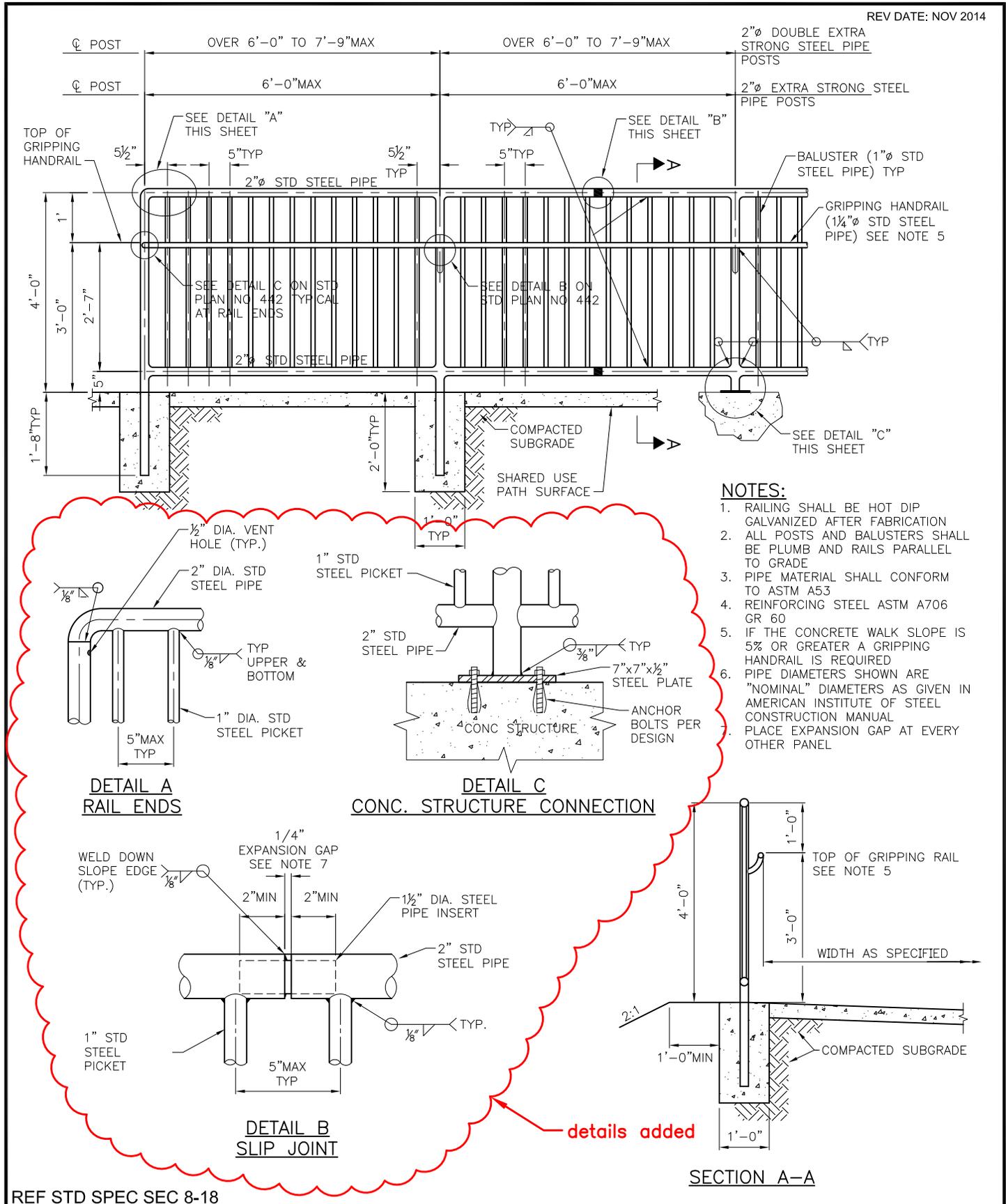
REF STD SPEC SEC 8-18



City of Seattle

NOT TO SCALE

CEMENT CONCRETE
STAIRWAY & SINGLE BIKE RUNNEL



- NOTES:**
1. RAILING SHALL BE HOT DIP GALVANIZED AFTER FABRICATION
 2. ALL POSTS AND BALUSTERS SHALL BE PLUMB AND RAILS PARALLEL TO GRADE
 3. PIPE MATERIAL SHALL CONFORM TO ASTM A53
 4. REINFORCING STEEL ASTM A706 GR 60
 5. IF THE CONCRETE WALK SLOPE IS 5% OR GREATER A GRIPPING HANDRAIL IS REQUIRED
 6. PIPE DIAMETERS SHOWN ARE "NOMINAL" DIAMETERS AS GIVEN IN AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL
 7. PLACE EXPANSION GAP AT EVERY OTHER PANEL

REF STD SPEC SEC 8-18

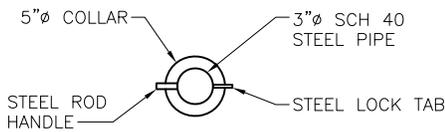
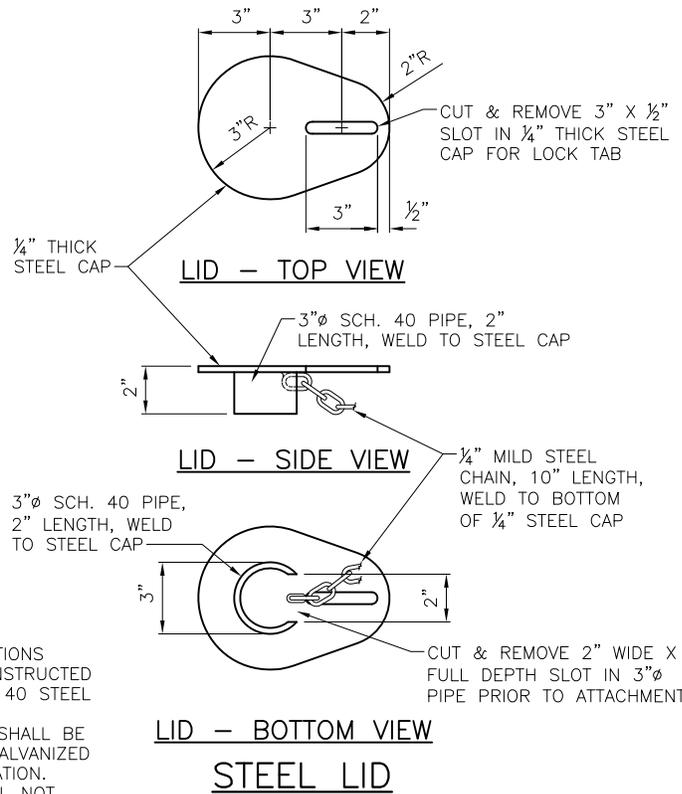
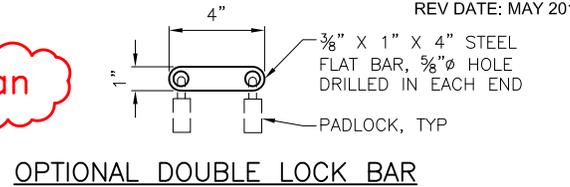
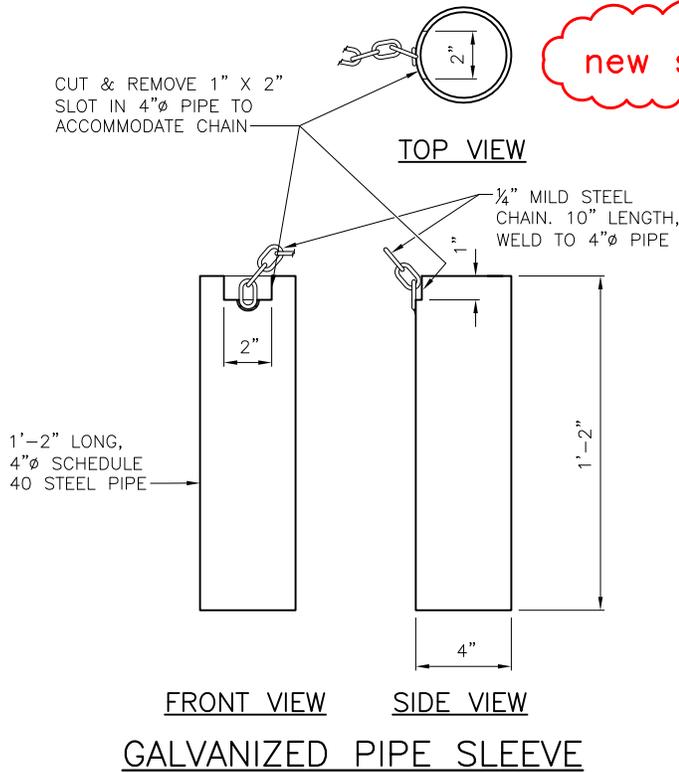


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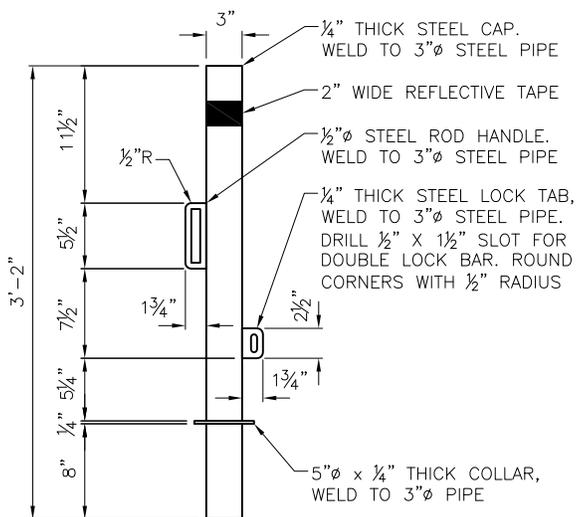
VERTICAL RAILING

new std plan

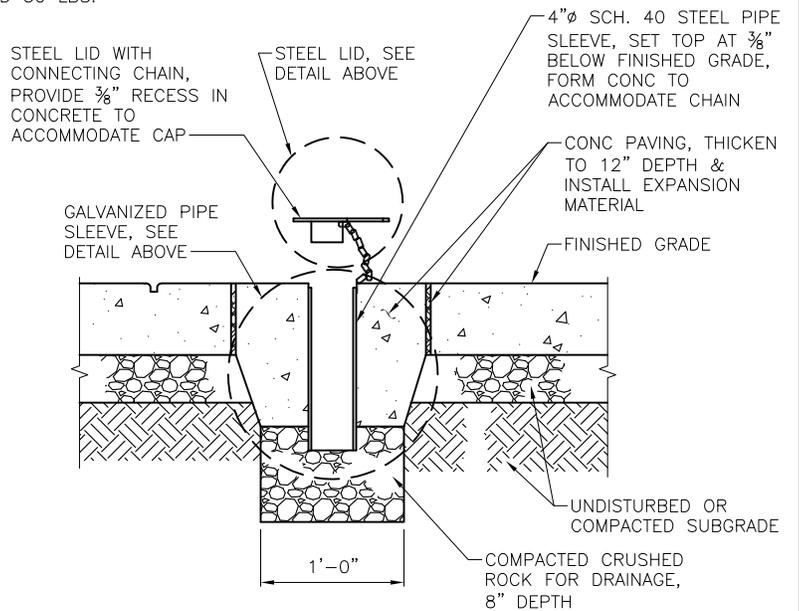


NOTES:

1. ALL PIPE SECTIONS SHALL BE CONSTRUCTED OF SCHEDULE 40 STEEL PIPE AND ALL COMPONENTS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
2. BOLLARD SHALL NOT EXCEED 50 LBS.



BOLLARD



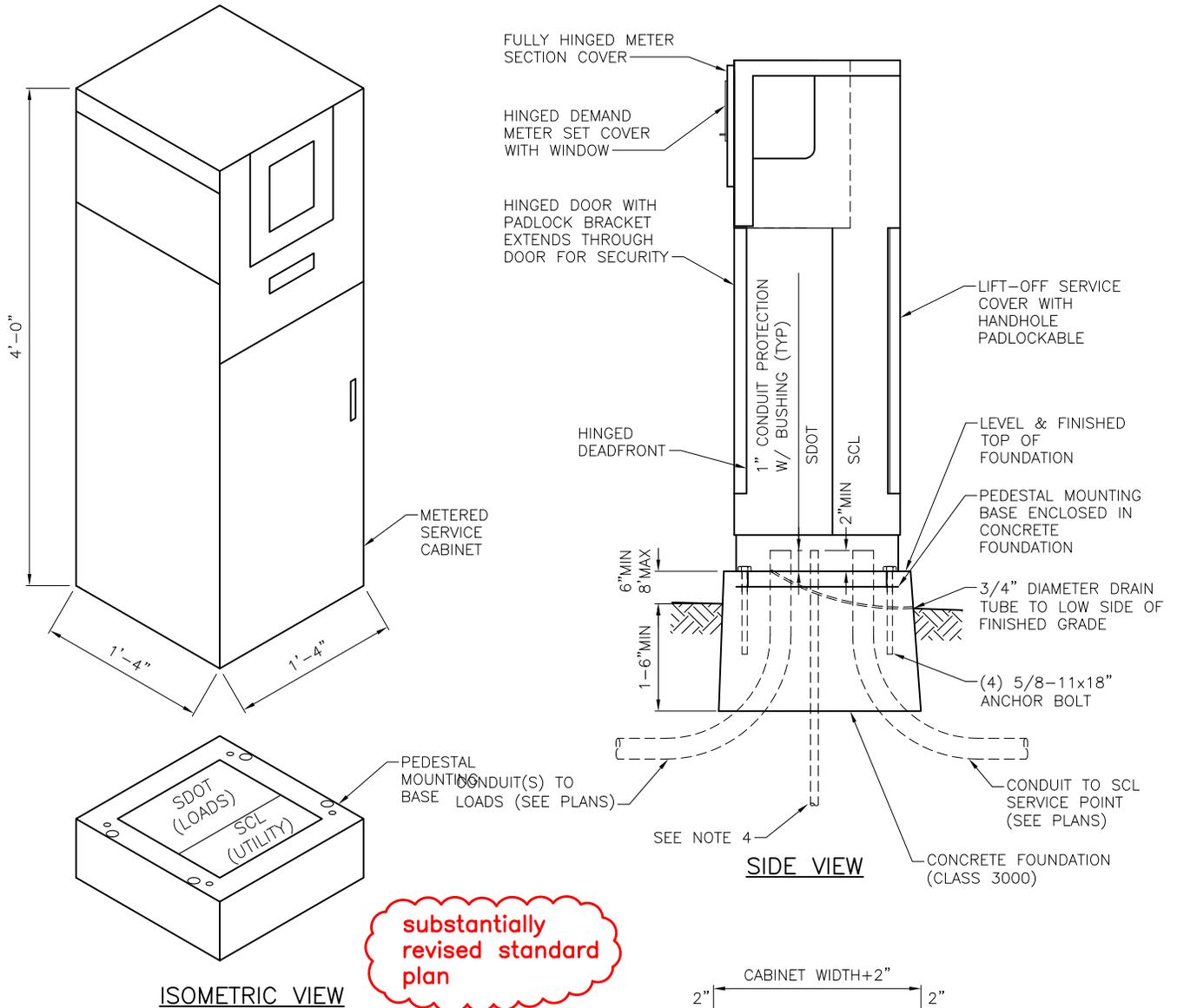
REF STD SPEC SEC 8-02



City of Seattle

NOT TO SCALE

REMOVABLE STEEL BOLLARD



NOTES:

1. 36" MINIMUM CLEARANCE SHALL 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 SHALL BE PROVIDED BY THE MANUFACTURER.
4. DDGROUND ROD 3/4"x120" COPPER WITH GROUND CLAMP. A SECOND GROUND SHALL BE INSTALLED A MINIMUM 8' AWAY IN A GROUND ROD HANDHOLE AS PER CITY OF SEATTLE STANDARD PLAN NO 550b. COORDINATE WITH ELECTRICAL INSPECTOR FOR LOCATION. INSTALL #4 AWG COPPER-CLAD GROUND WIRE BETWEEN CABINET FOUNDATION AND GROUND ROD HANDHOLE

spec sections added

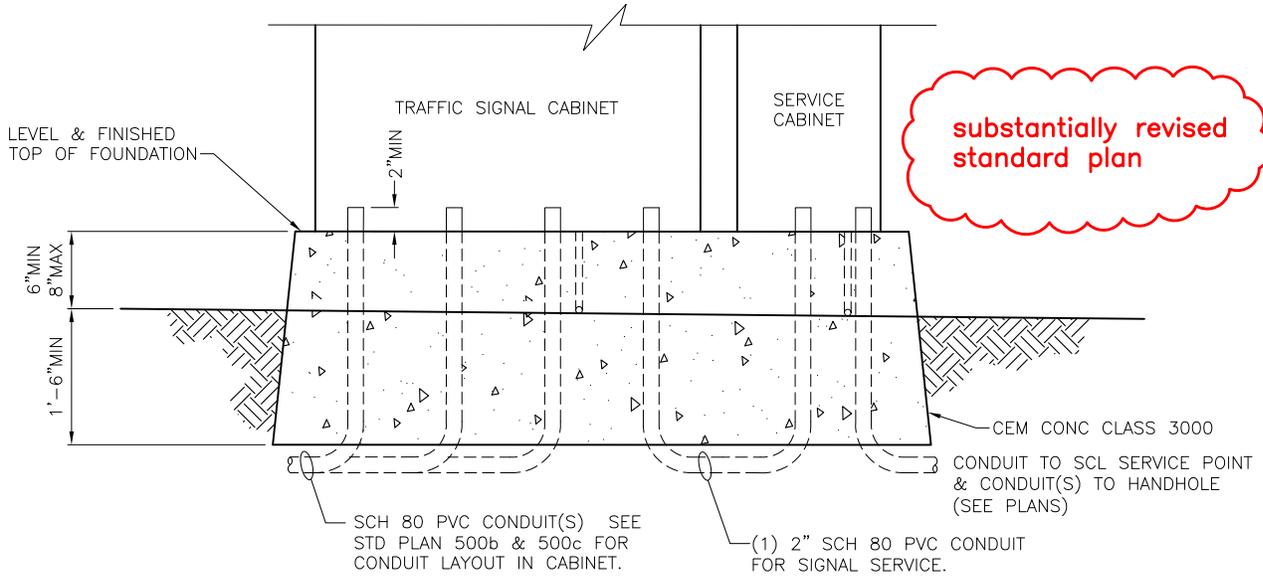
REF STD SPEC SEC 8-31,8-32



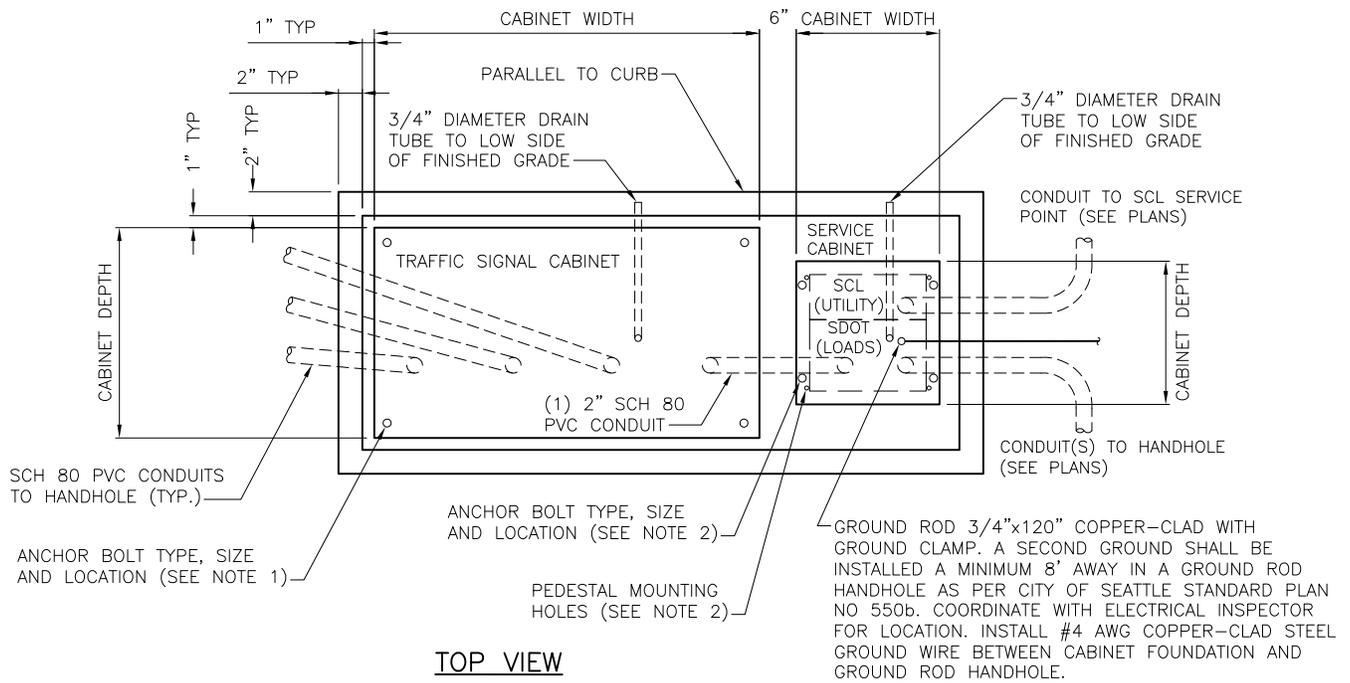
City of Seattle

NOT TO SCALE

SERVICE CABINET FOUNDATION DETAIL



SIDE VIEW



TOP VIEW

JOINT SIGNAL CONTROLLER/SERVICE CABINET FOUNDATION DETAIL

NOT TO SCALE

NOTES:

1. FOR SIGNAL CONTROLLER DIMENSIONS AND OTHER REQUIREMENTS, SEE STD PLAN NO. 500g.
2. FOR SERVICE CABINET DIMENSIONS AND OTHER REQUIREMENTS, SEE STD PLAN NO 501g.
3. SEAL CABINETS TO FOUNDATION WITH GREY OR CLEAR SILICON TO PREVENT MOISTURE FROM ENTERING THE CABINET.

— spec sections added

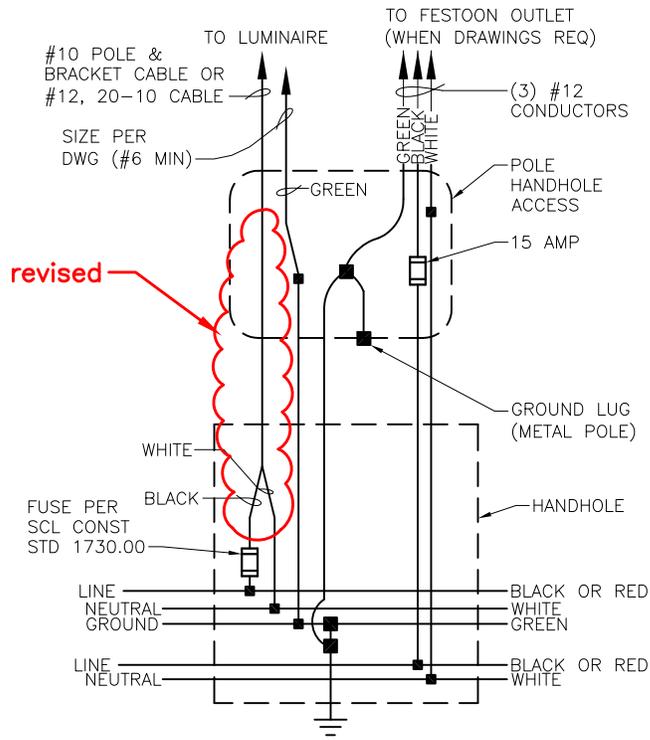
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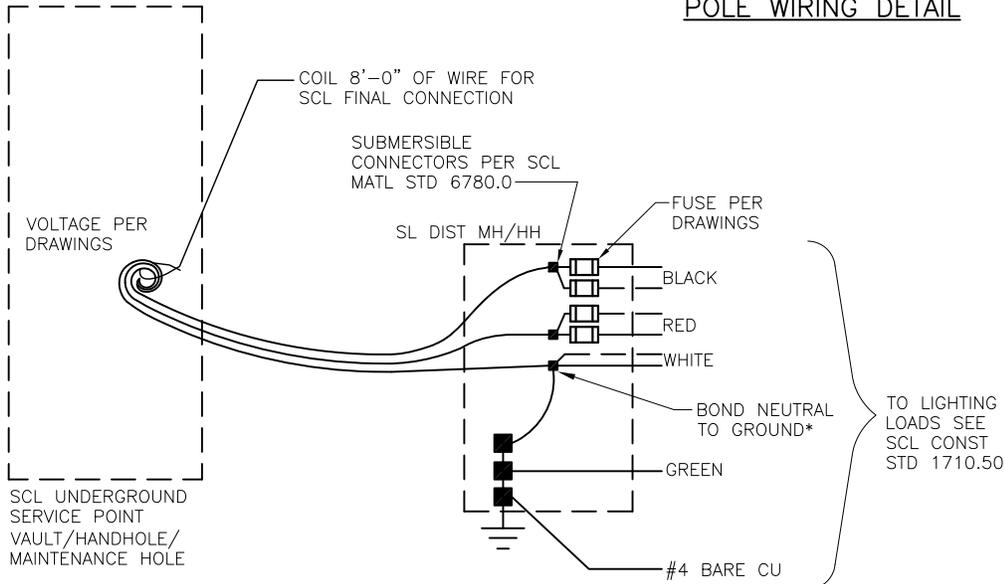
City of Seattle

NOT TO SCALE

**JOINT SIGNAL CONTROLLER/
SERVICE CABINET
FOUNDATION DETAIL**



POLE WIRING DETAIL



LIGHTING SERVICE

UNDERGROUND SERVICE CONNECTION

NOTES:

1. SCL REQ NEUTRAL TO BE BONDED TO GROUND IN SCL SERVICE POINT
2. BOND NEUTRAL TO GROUND AT ONLY ONE LOCATION
3. FOR JOINT SCL STREETLIGHT & SDOT TRAFFIC HANDHOLES, SEE SCL CONST STD 1810.05

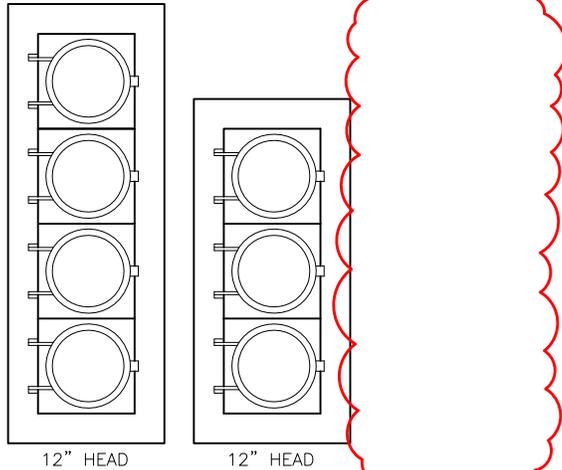
REF STD SPEC SEC 8-30 & 8-31



City of Seattle

NOT TO SCALE

LIGHTING SERVICE CONNECTION & LIGHT POLE WIRING DETAIL



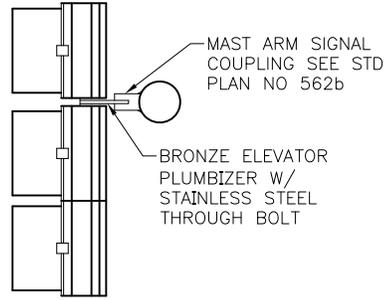
TYPICAL SIGNAL FACES

W/ TUNNEL VISORS &
5" BACKPLATE (LOUVERED)

1" YELLOW, DIAMOND GRADE RETRO REFLECTIVE TAPE

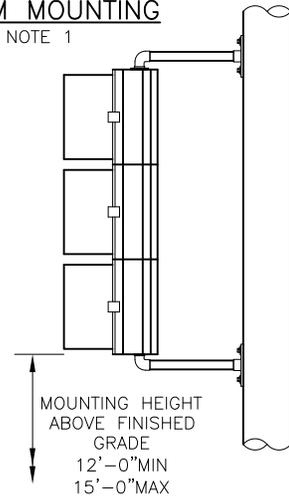
8" heads removed

note added



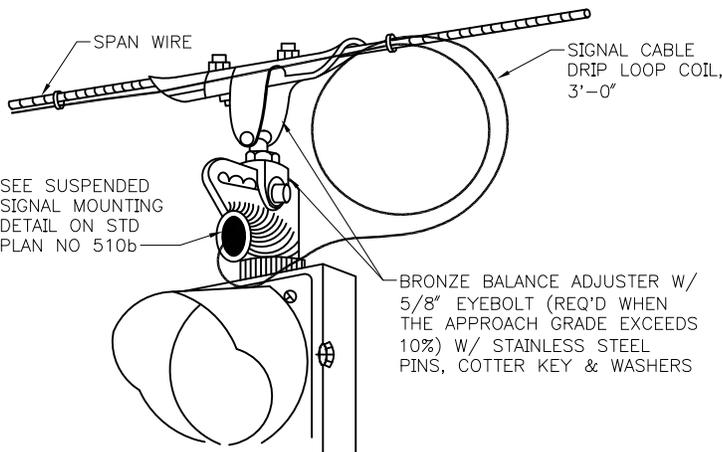
MAST ARM MOUNTING

SEE NOTE 1



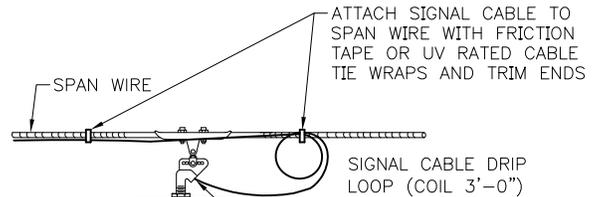
BRACKET MOUNTING

FOR SIGNAL HEAD BRACKET ASSEMBLY
SEE STD PLAN NO 511



SEE SUSPENDED
SIGNAL MOUNTING
DETAIL ON STD
PLAN NO 510b

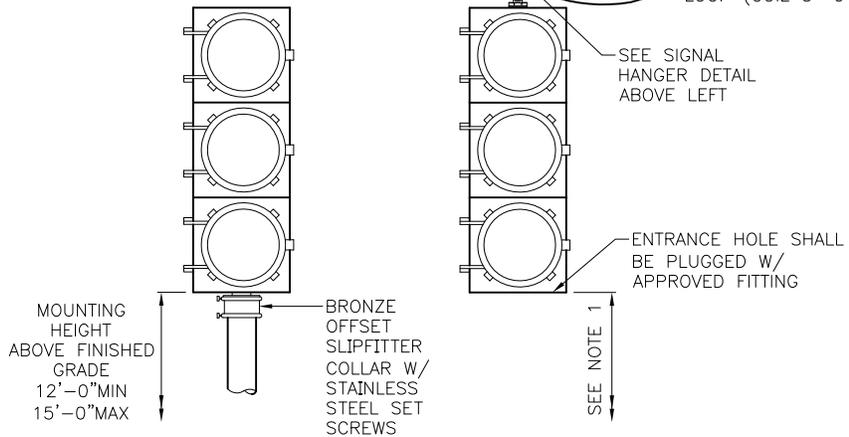
BRONZE BALANCE ADJUSTER W/
5/8" EYEBOLT (REQ'D WHEN
THE APPROACH GRADE EXCEEDS
10%) W/ STAINLESS STEEL
PINS, COTTER KEY & WASHERS



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

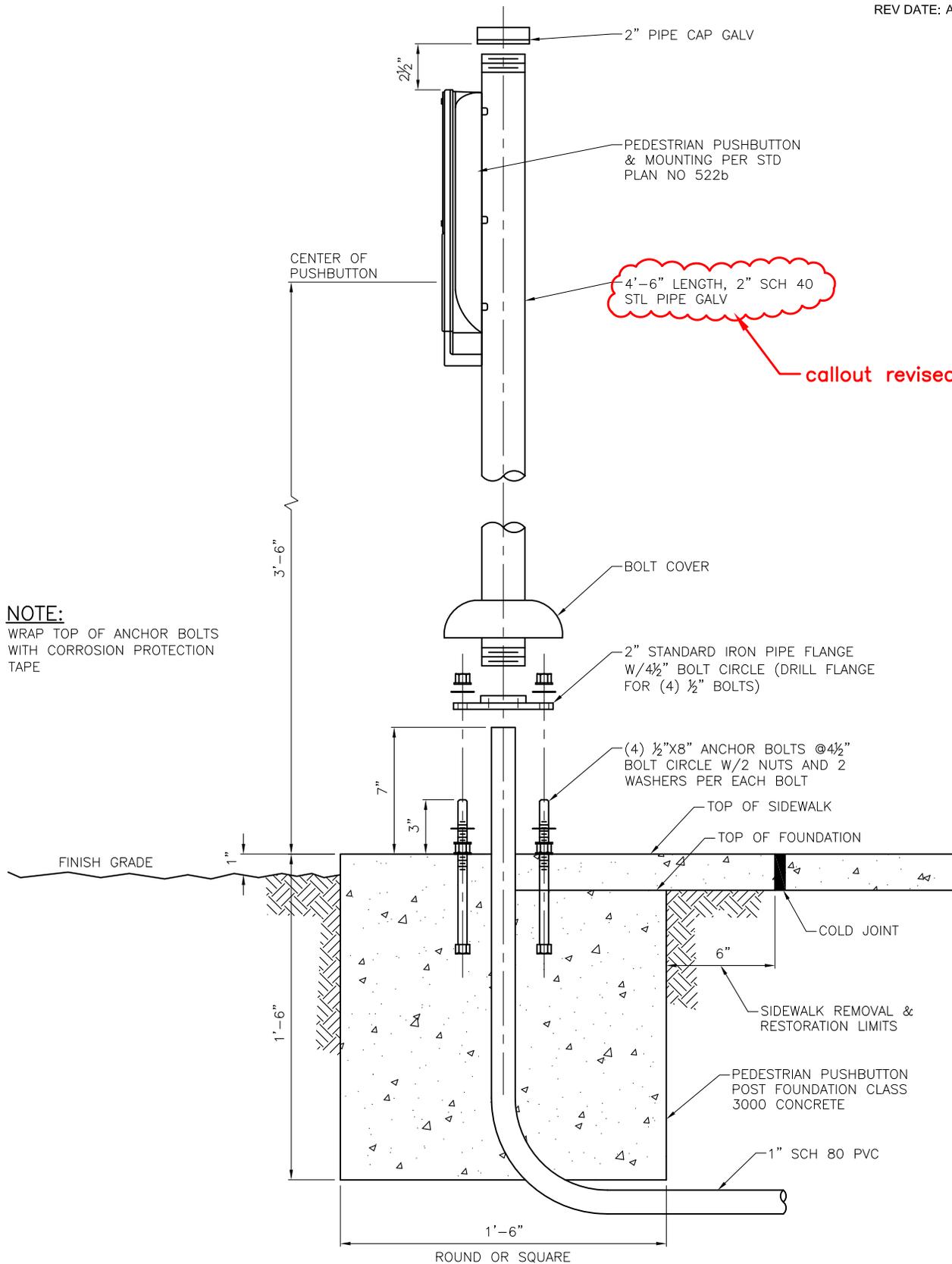
REF STD SPEC SEC 8-31



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NOT TO SCALE

VEHICULAR SIGNAL MOUNTING



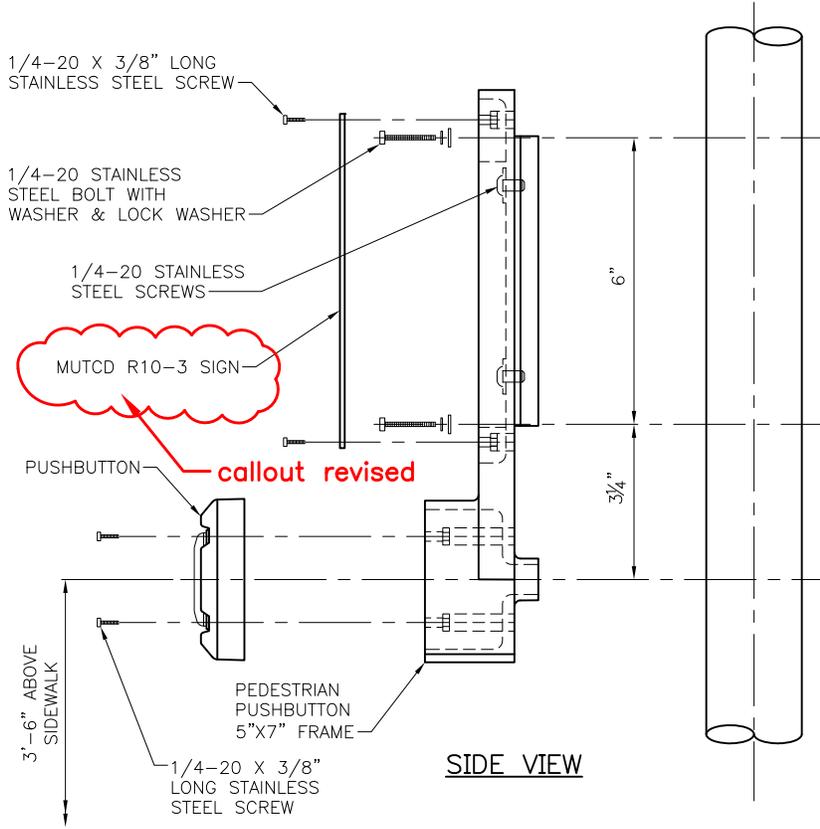
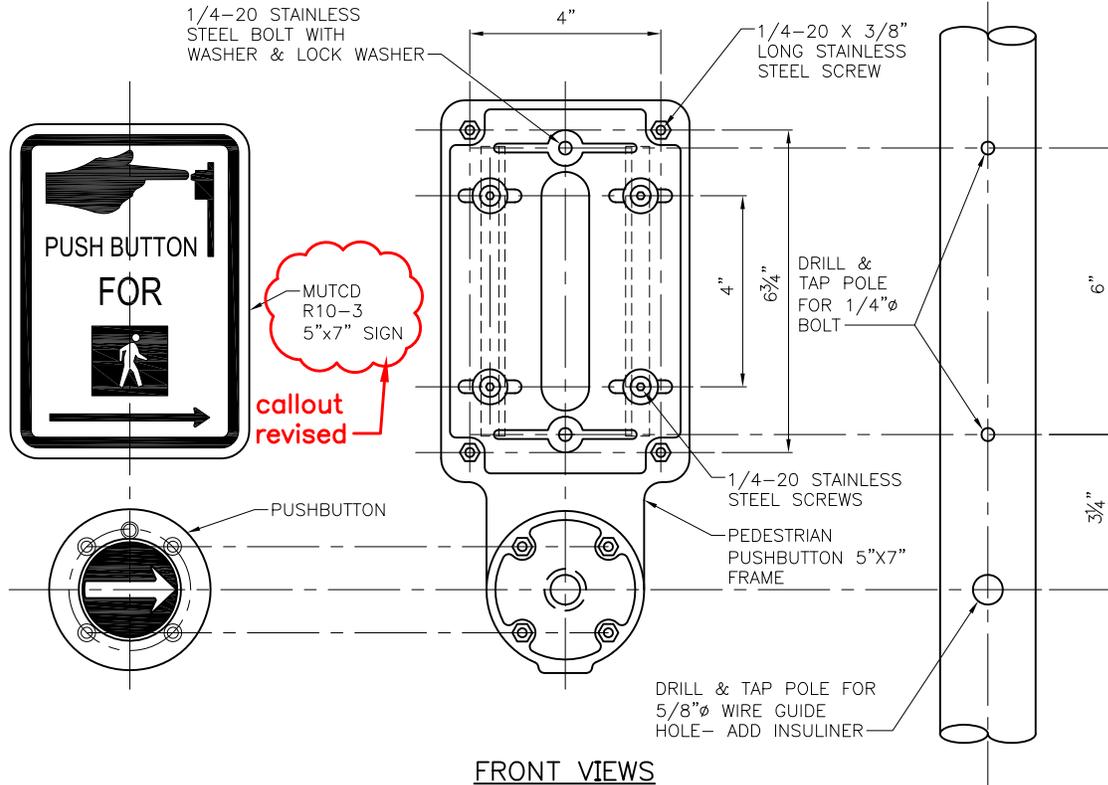
REF STD SPEC SEC 8-31 & 8-32



City of Seattle

NOT TO SCALE

PEDESTRIAN PUSHBUTTON
POST & FOUNDATION



NOTES:

1. PUSHBUTTON SHALL HAVE DIRECTIONAL ARROW AS SPECIFIED ON THE PLANS.
2. INSTALLATION OF TWO PEDESTRIAN PUSHBUTTON ASSEMBLIES SHALL BE APPROVED BY THE ENGINEER.
3. DETAIL SHOWS PUSHBUTTON INSTALLED ON METAL POLE. PUSHBUTTON INSTALLED ON OTHER MATERIALS SHALL BE PER MANUFACTURER'S RECOMMENDATION.

note 2 revised, note 3 added

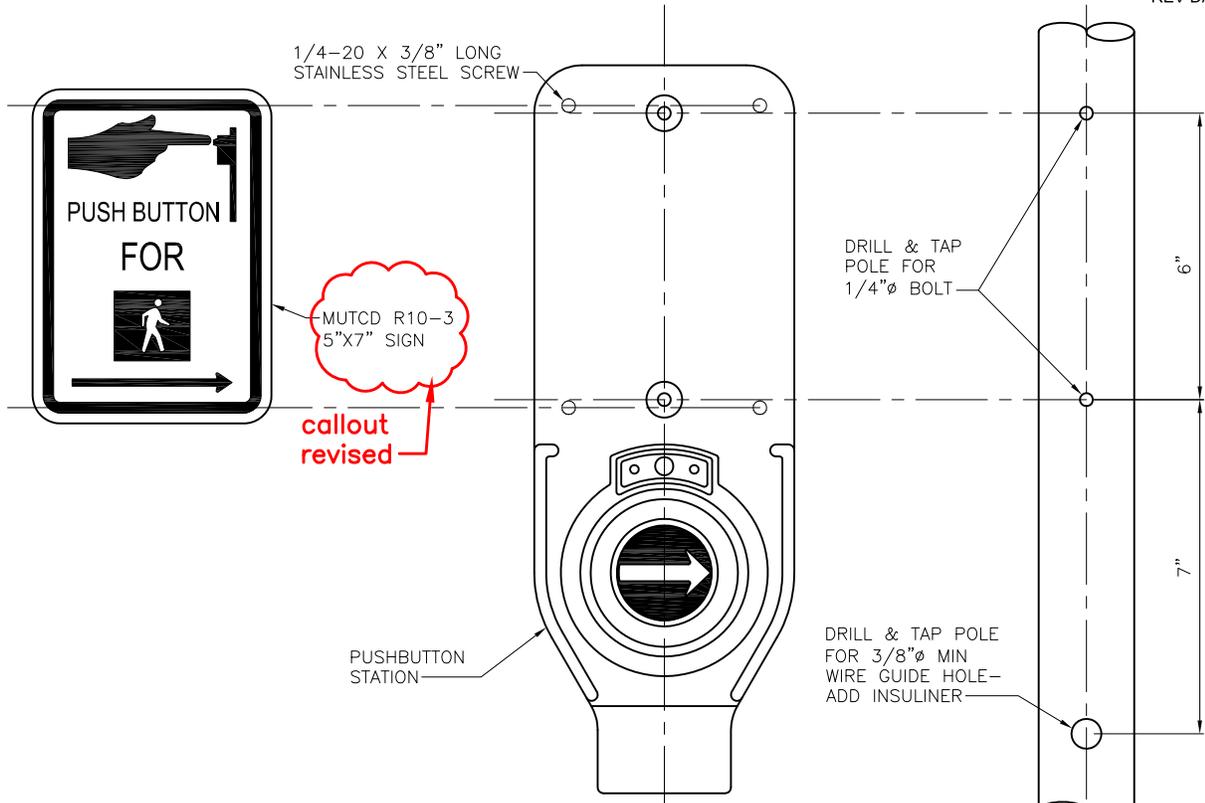
REF STD SPEC SEC 8-31



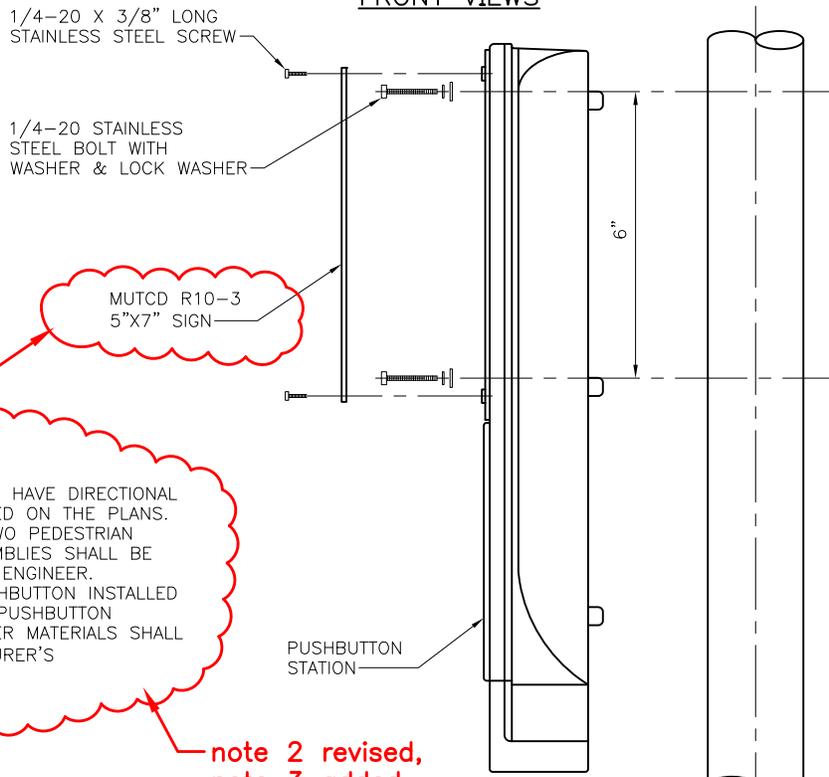
City of Seattle

NOT TO SCALE

PEDESTRIAN PUSHBUTTON ASSEMBLY



FRONT VIEWS



SIDE VIEW

NOTES:

1. PUSHBUTTON SHALL HAVE DIRECTIONAL ARROW AS SPECIFIED ON THE PLANS.
2. INSTALLATION OF TWO PEDESTRIAN PUSHBUTTON ASSEMBLIES SHALL BE APPROVED BY THE ENGINEER.
3. DETAIL SHOWS PUSHBUTTON INSTALLED ON METAL POLE. PUSHBUTTON INSTALLED ON OTHER MATERIALS SHALL BE PER MANUFACTURER'S RECOMMENDATION.

note 2 revised, note 3 added

title revised

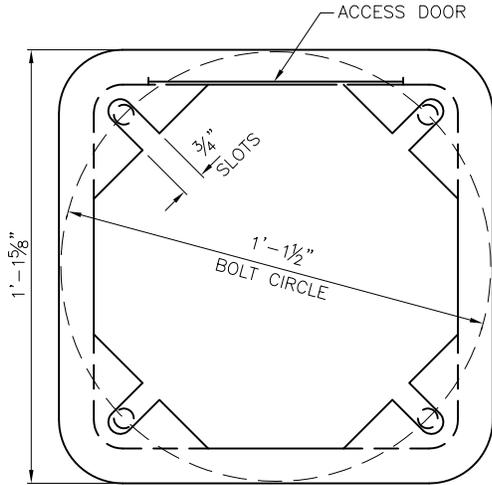
REF STD SPEC SEC 8-31



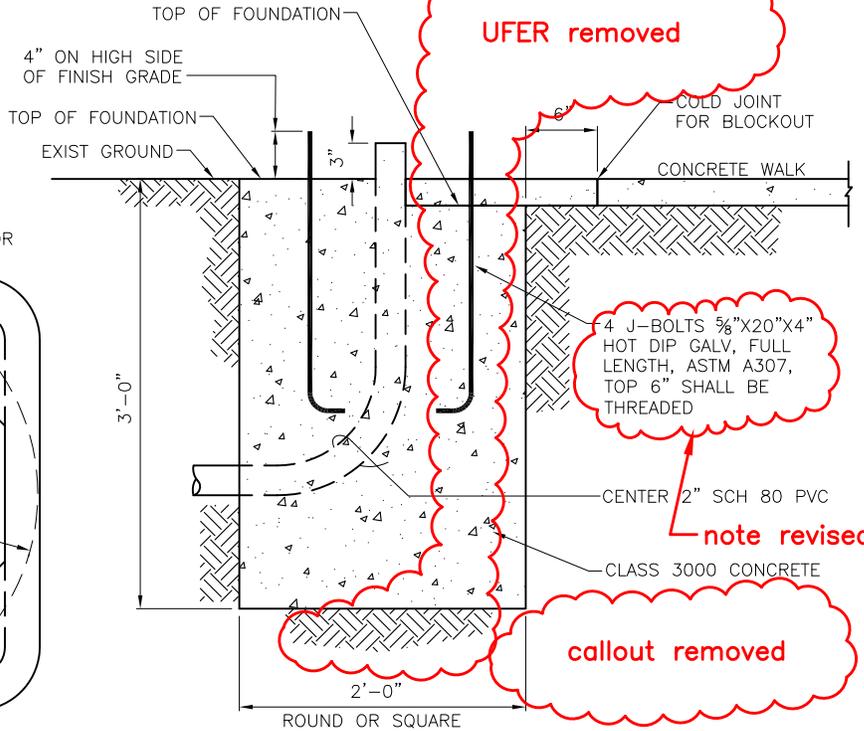
City of Seattle

NOT TO SCALE

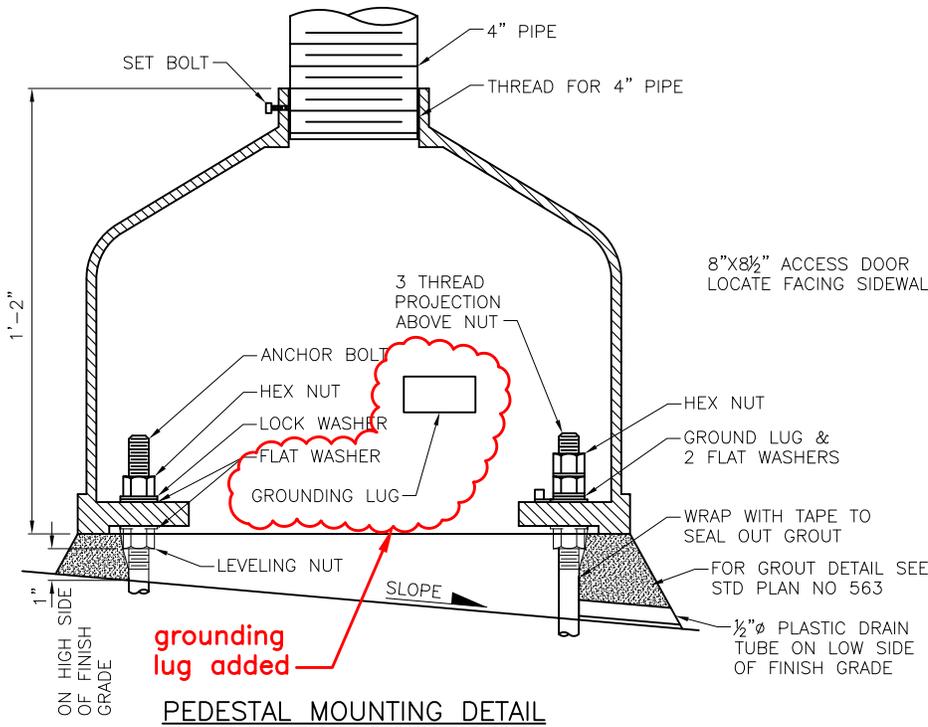
ACCESSIBLE PEDESTRIAN SIGNAL (APS)
PED. PUSHBUTTON ASSEM.



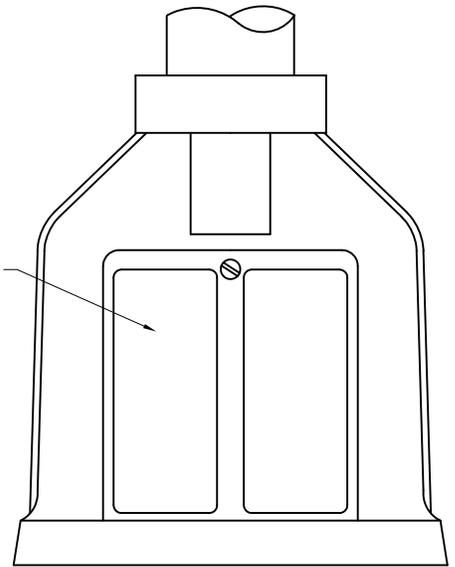
BOTTOM VIEW



PEDESTAL FOUNDATION



PEDESTAL MOUNTING DETAIL



SQUARE BASE PEDESTAL

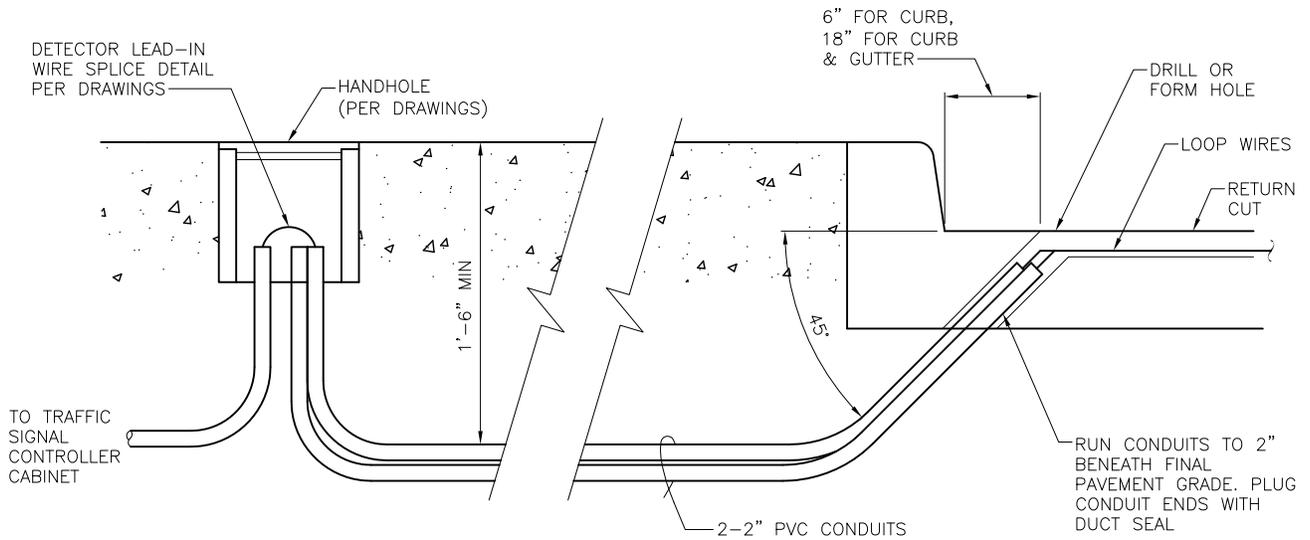
REF STD SPEC SEC 8-32



City of Seattle

NOT TO SCALE

PEDESTAL & FOUNDATION



CURB/PAVEMENT ENTRANCE FOR DETECTOR LOOP WIRES

NOTES:

1. SHARP EDGE TOOLS SHALL NOT BE USED IN PLACING CONDUCTORS IN SAW CUTS
2. EACH PAIR OF LOOP WIRES IN THE RETURN CUT SHALL BE TWISTED A MINIMUM OF 3 TURNS PER FOOT AND MAY SHARE COMMON RETURN CUTS WITH OTHER TWISTED PAIRS
3. TAPE LOOP WIRE A MINIMUM OF 2 TURNS AT EACH CORNER
4. REMOVE SHARP CORNER EDGES IN SAW CUTS WHERE LOOP WIRE WILL BE BENT AROUND
5. PERFORM RESISTANCE AND CONTINUITY TESTS PRIOR TO SEALING LOOP WIRES
6. COIL 5'-0" OF LOOP WIRE IN HANDHOLE

title changed

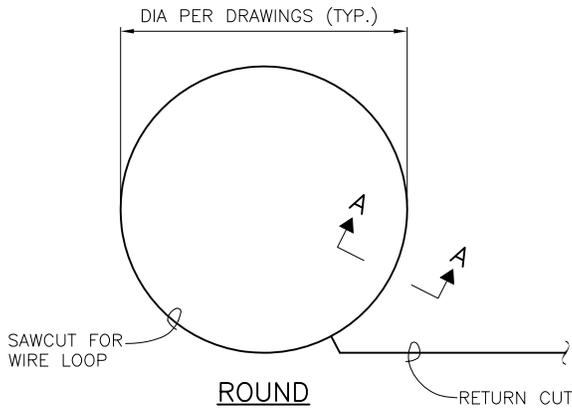
REF STD SPEC SEC 8-31



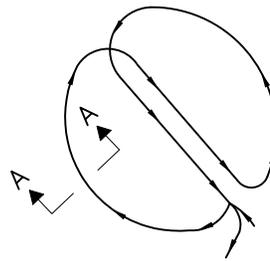
City of Seattle

NOT TO SCALE

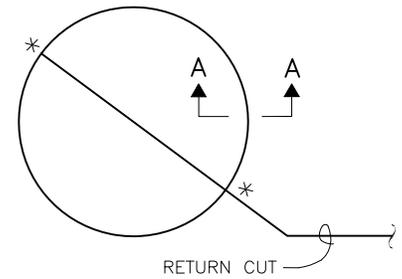
DETECTOR LOOP LEAD-IN



DIPOLE LOOP DETECTOR



WINDING
DETAIL

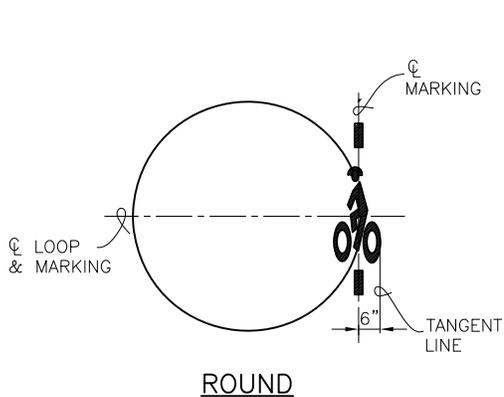


ROUND

QUADRIPOLE LOOP DETECTOR

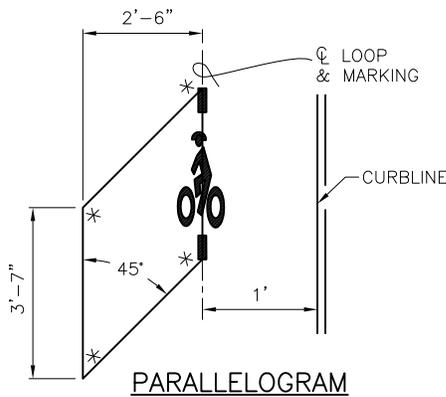
***NOTE:**

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

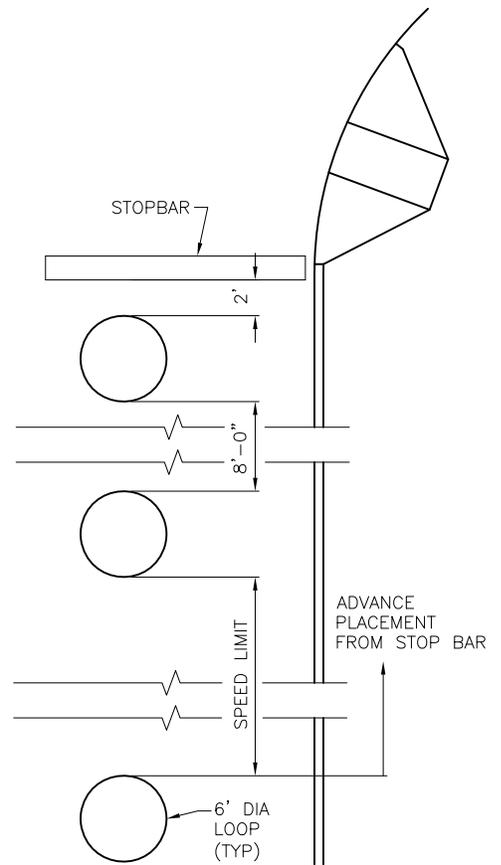


ROUND

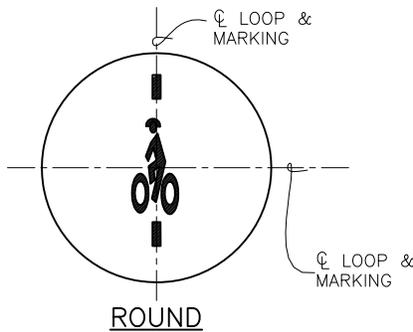
BICYCLE DIPOLE



PARALLELOGRAM

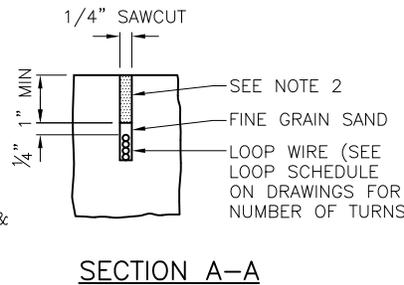


STANDARD LOOP SPACING



ROUND

BICYCLE QUADRIPOLE



SECTION A-A

NOTES:

1. SEE STD PLAN NO. 725 FOR BICYCLE DETECTOR PAVEMENT MARKER DETAIL.
2. FILL CUT AFTER VERTICAL PLACEMENT AND TESTING WITH HOT PAVING GRADE LIQUID ASPHALT ASTM D 312 TYPE III OR QUICK SETTING HIGH STRENGTH GROUT

title revised

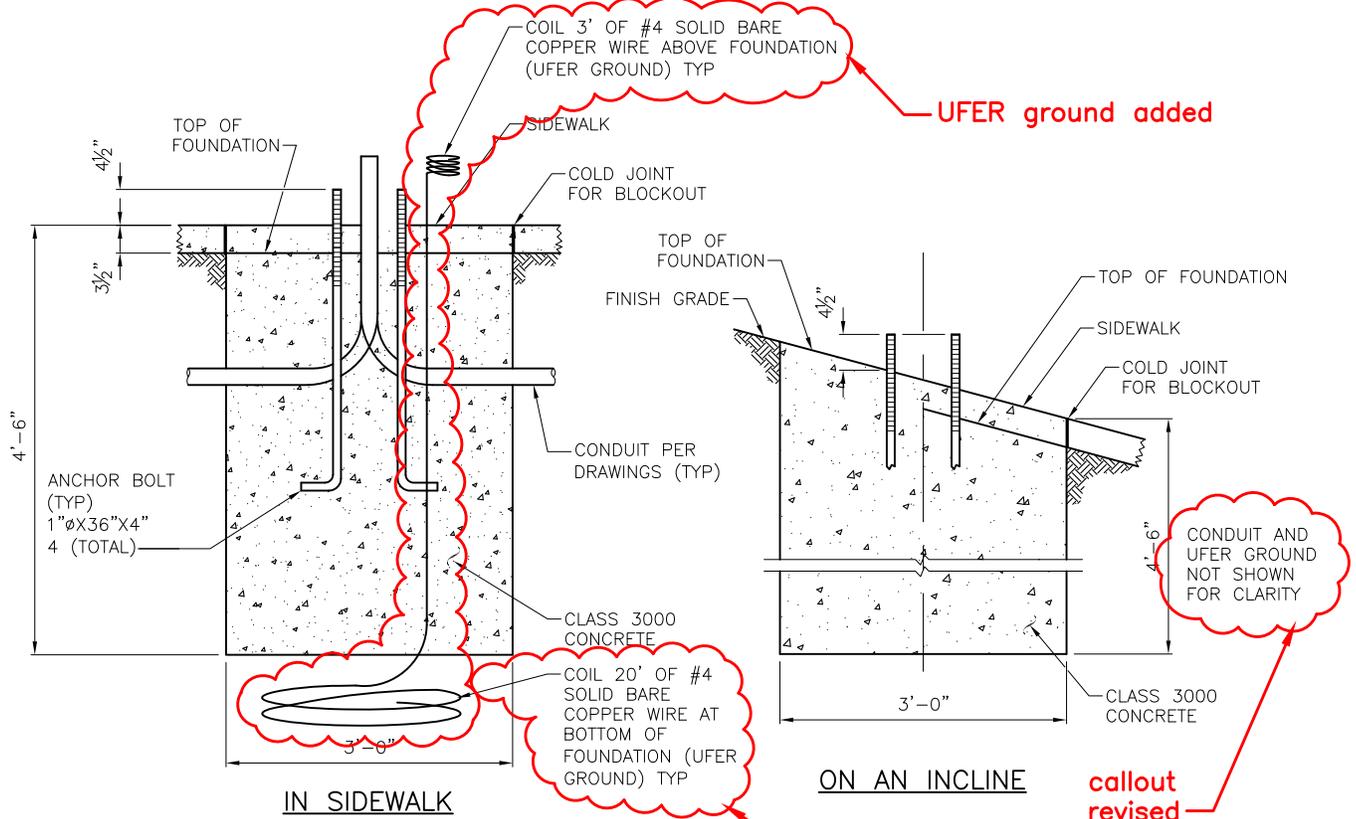
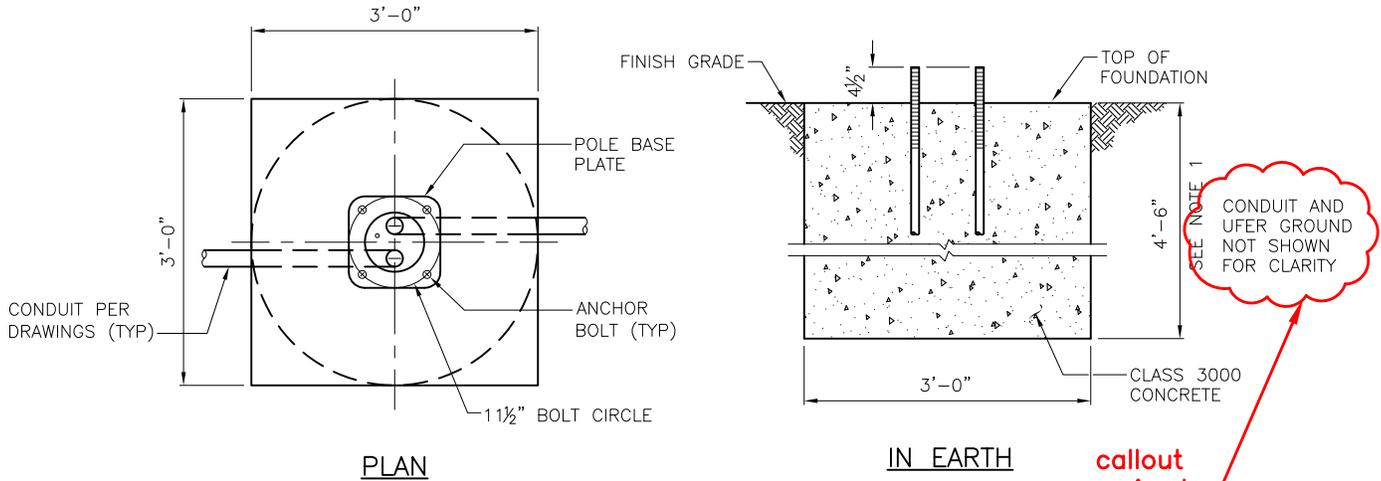
REF STD SPEC SEC 8-31



City of Seattle

NOT TO SCALE

DETECTOR LOOP DETAILS



NOTES:

1. BOLT CIRCLE: 1 1/2" TYP
2. SEE STD PLAN NO 563a FOR POLE MOUNTING AND GROUT DETAIL
3. ANCHOR BOLTS SHALL BE HOT DIP GALVANIZED ASTM A153 OR F2329, FULL LENGTH AND FABRICATED FROM ASTM F1554 OR A576 WITH 12" THREADS ON TOP
4. UFER GROUND NOT SHOWN IN ALL DETAILS FOR CLARITY

notes 3 and 4 revised

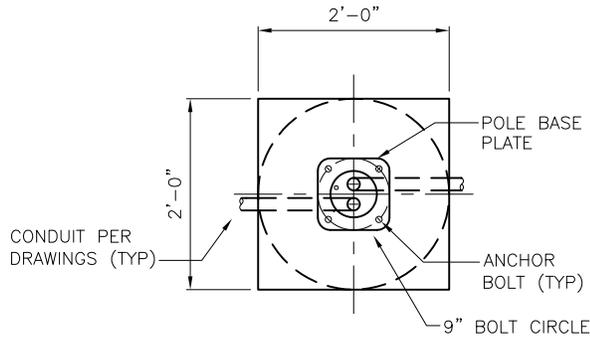
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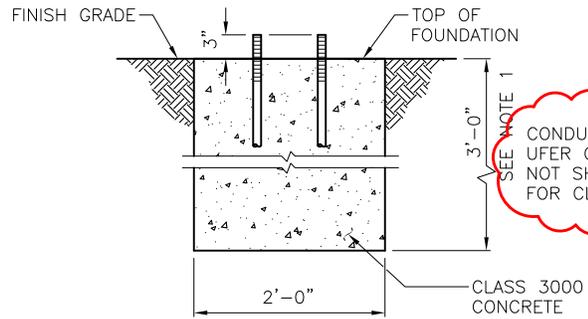
City of Seattle

NOT TO SCALE

STREET LIGHT
POLE FOUNDATIONS



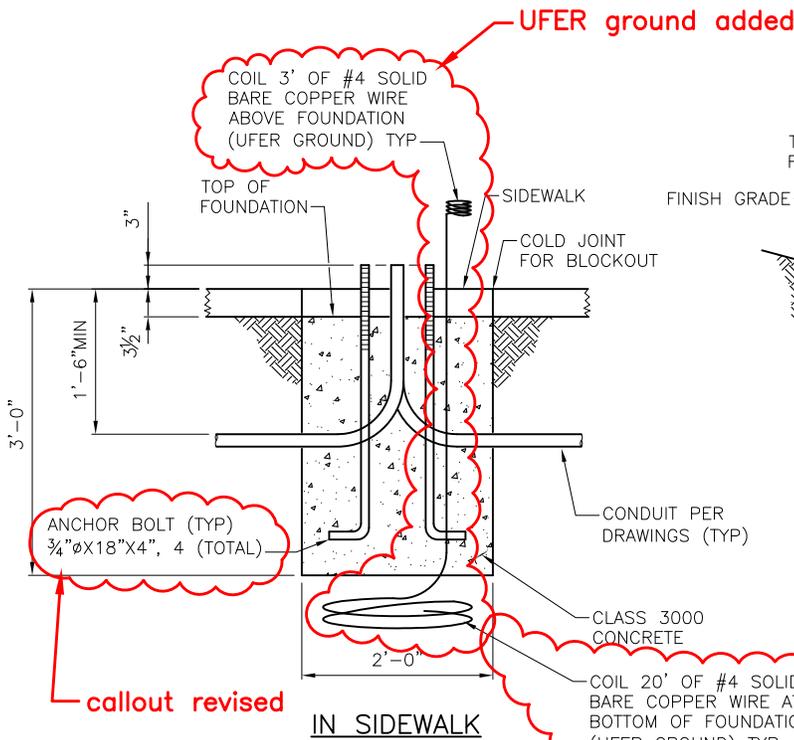
PLAN



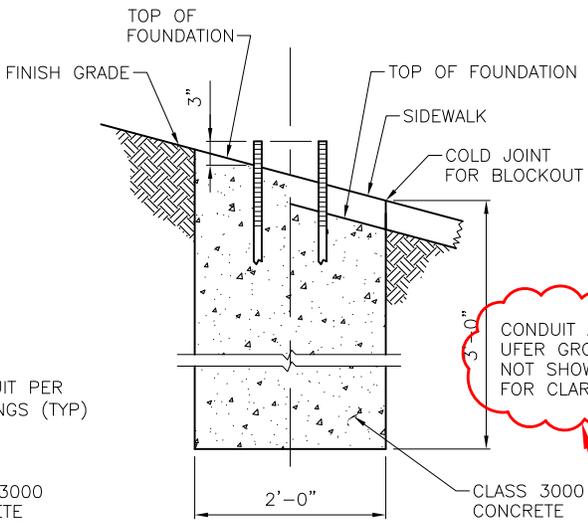
IN EARTH

SEE NOTE 1
CONDUIT AND UFER GROUND NOT SHOWN FOR CLARITY

callout revised



callout revised



CONDUIT AND UFER GROUND NOT SHOWN FOR CLARITY

callout revised

NOTES:

1. BOLT CIRCLE: 9" TYP
2. SEE STD PLAN NO 563a FOR POLE MOUNTING AND GROUT DETAIL
3. ANCHOR BOLTS SHALL BE HOT DIP GALVANIZED TO ASTM A153 OR F2329, FULL LENGTH AND FABRICATED FROM ASTM F1554 OR A576 WITH 8" OF THREADS ON TOP
4. SEE SCL MATERIAL STANDARD 5/36.09 FOR POLES
5. UFER GROUND NOT SHOWN IN ALL DETAILS FOR CLARITY

callout added

note 3 revised

note 5 added

REF STD SPEC SEC 8-32



City of Seattle

NOT TO SCALE

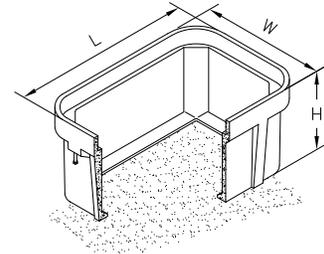
PEDESTRIAN STREET LIGHT POLE FOUNDATIONS

NOTES:

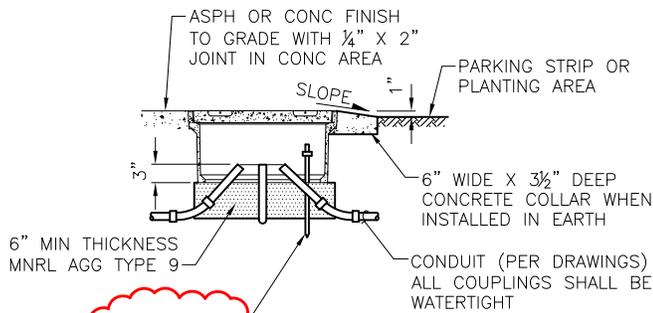
1. ALL NON-DELIBERATE TRAFFIC PULL BOX COVERS MUST COMPLY WITH ALL TEST PROVISIONS OF ANSI/SCTE 77 2010 "SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY", & MUST MEET THE TIER 15 APPLICATION. MARKING SHOWING THE TIER 15 RATING MUST BE EMBOSSED IN THE TOP SURFACE OF THE COVER.
2. ALL NON-DELIBERATE 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 SHALL 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 SHALL READ "TC" AND/OR "SL" UNLESS STATED OTHERWISE BY THE CITY OF SEATTLE.
7. THE GROUND ROD SHALL 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 SHALL 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 SHALL HAVE A NON-SKID SURFACE (SEE STD SPEC SEC 9-34.6)

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"	13"	VAR	NA	NA	NA
5	30"	48"	36"	NA	30"	48"
6	48"	48"	48"	NA	48"	48"
GRHH	8"Ø			NA		



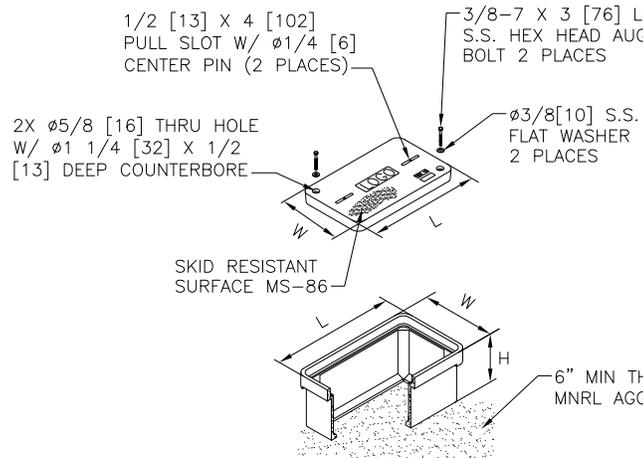
TYPE 3 HANDHOLE
(COVER SAME AS TYPE 5)



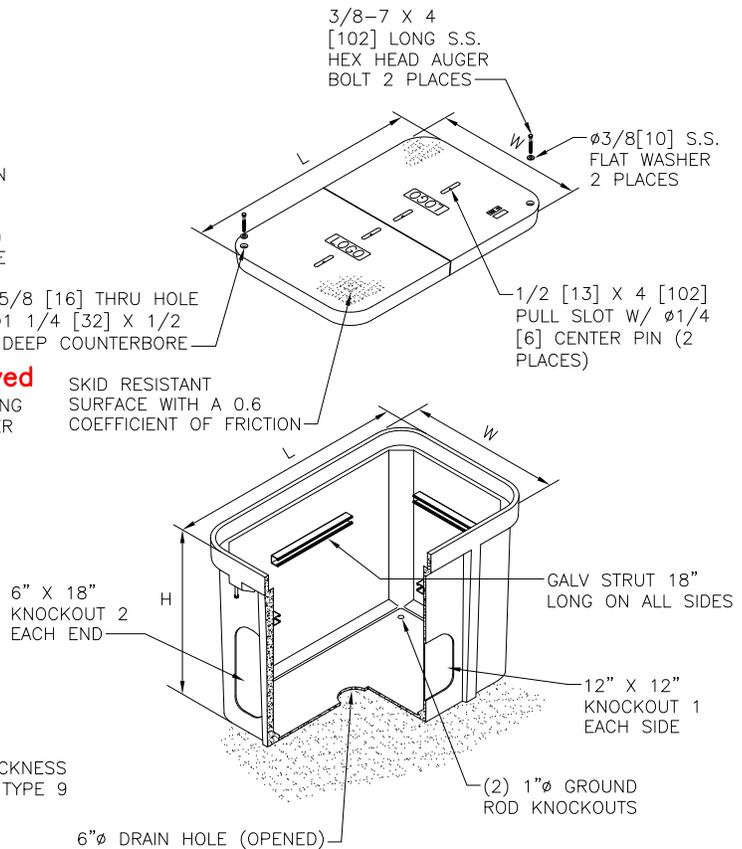
HANDHOLE INSTALLATION DETAIL

GROUND ROD

"PER DRAWINGS" removed



TYPE 1 & 2 HANDHOLE



TYPE 5 HANDHOLE

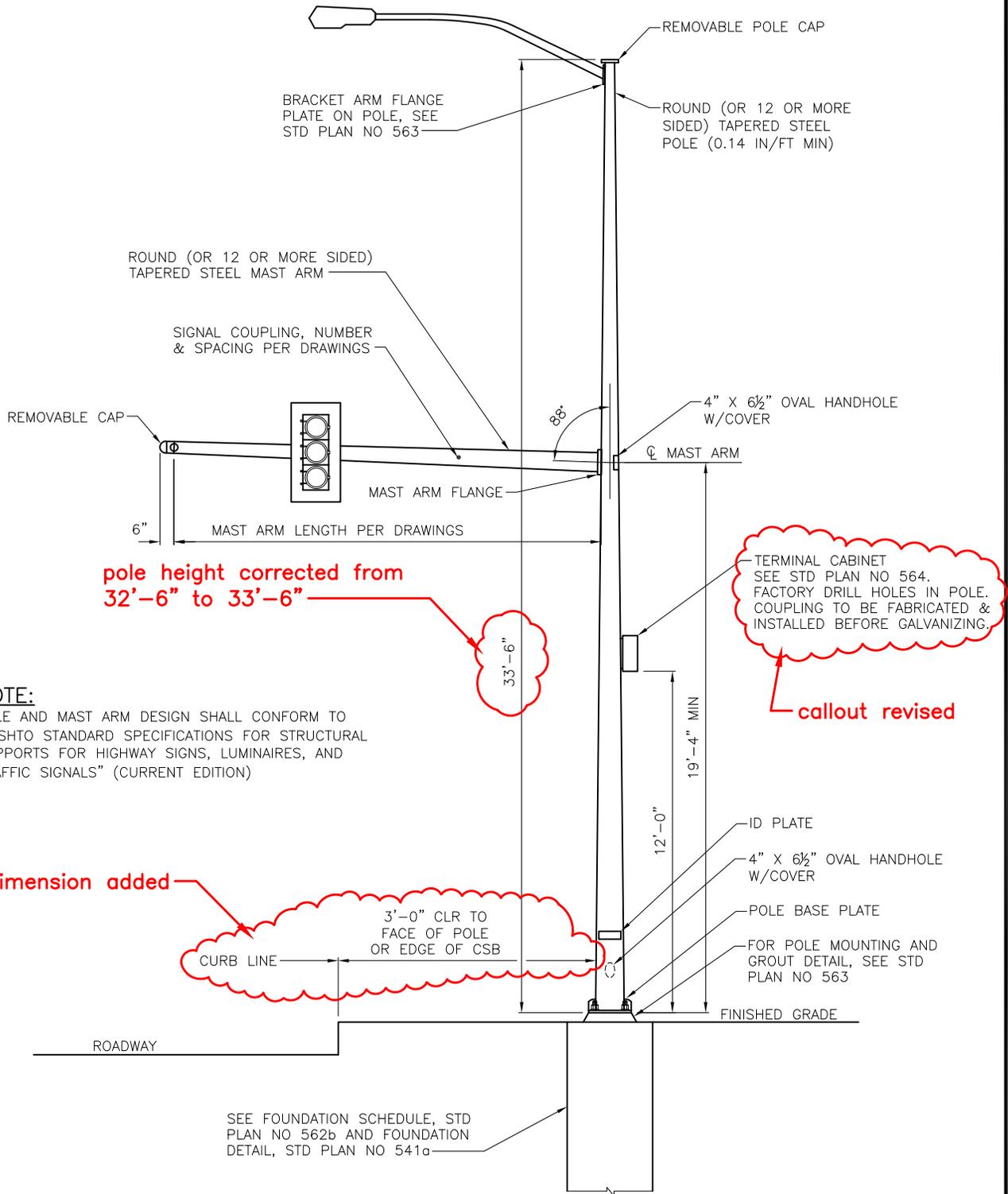
REF STD SPEC SEC 8-33



City of Seattle

NOT TO SCALE

POLYMER CONCRETE HANDHOLES



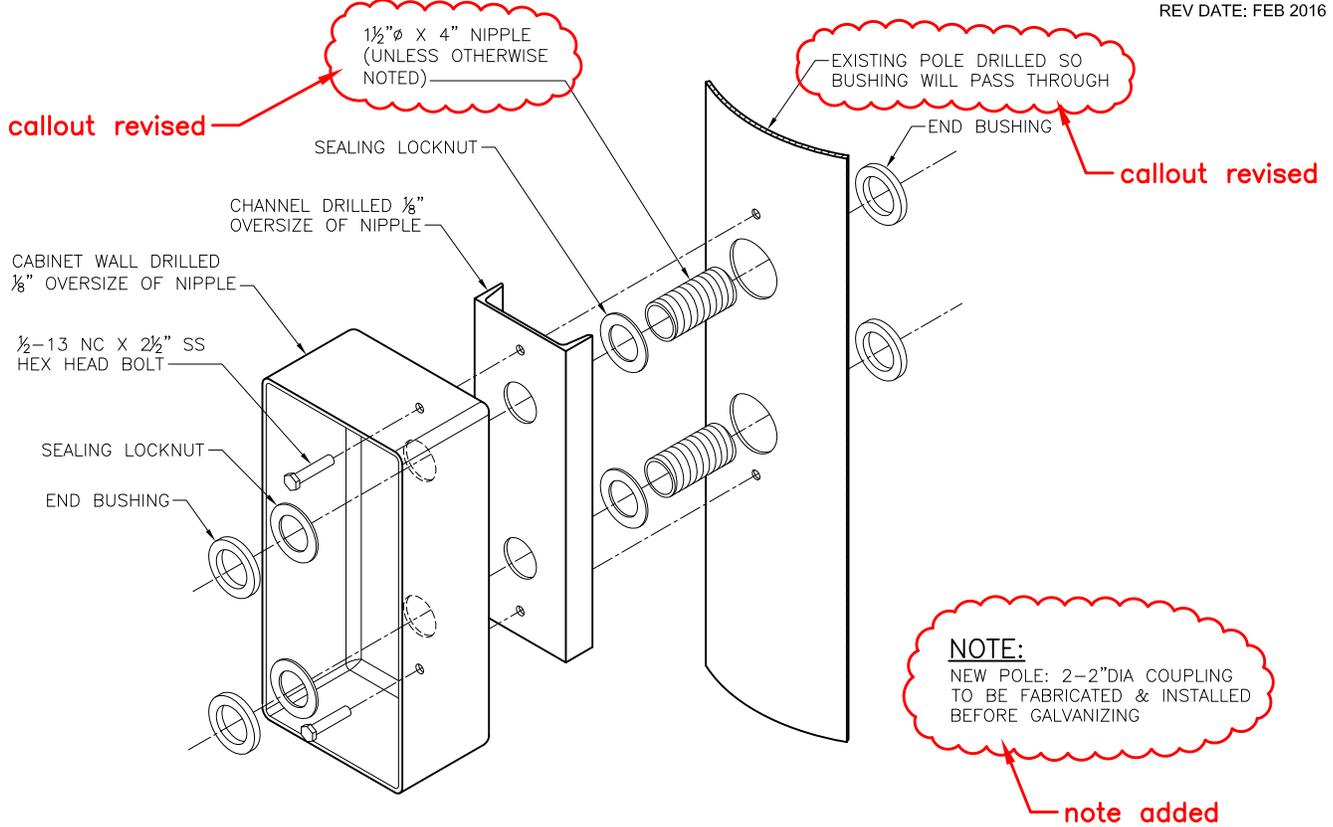
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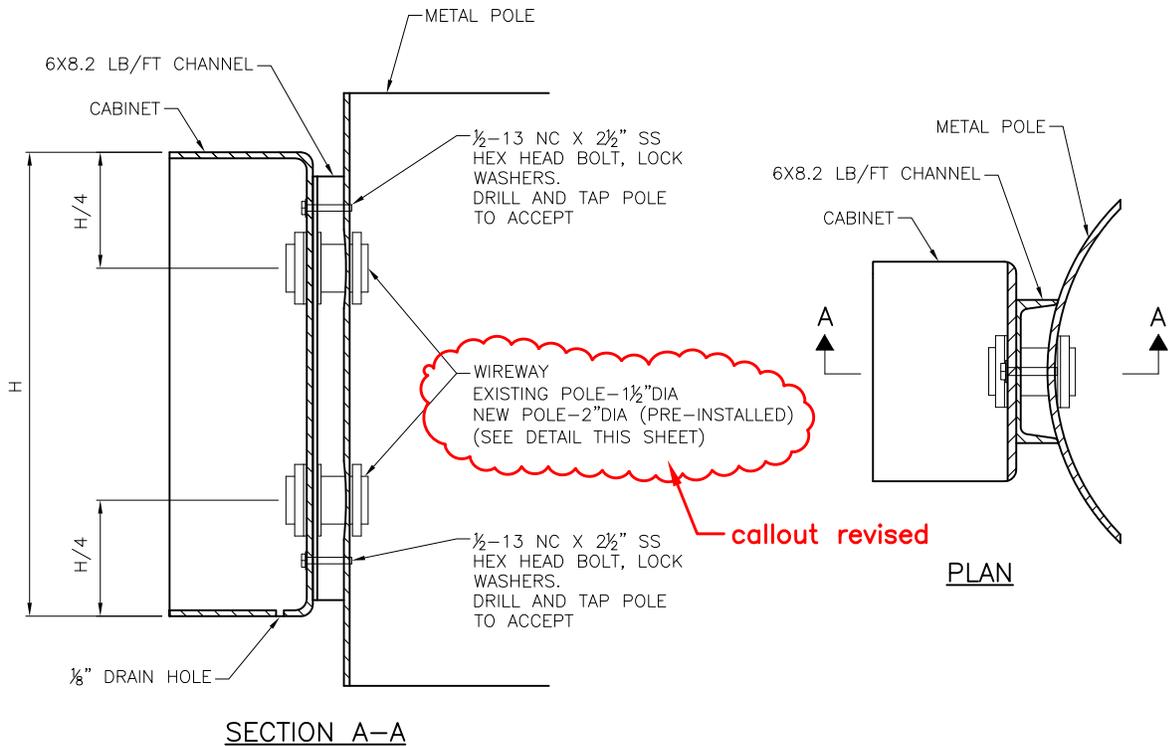
City of Seattle

NOT TO SCALE

STEEL MAST ARM POLE



WIREWAY ISOMETRIC DETAIL



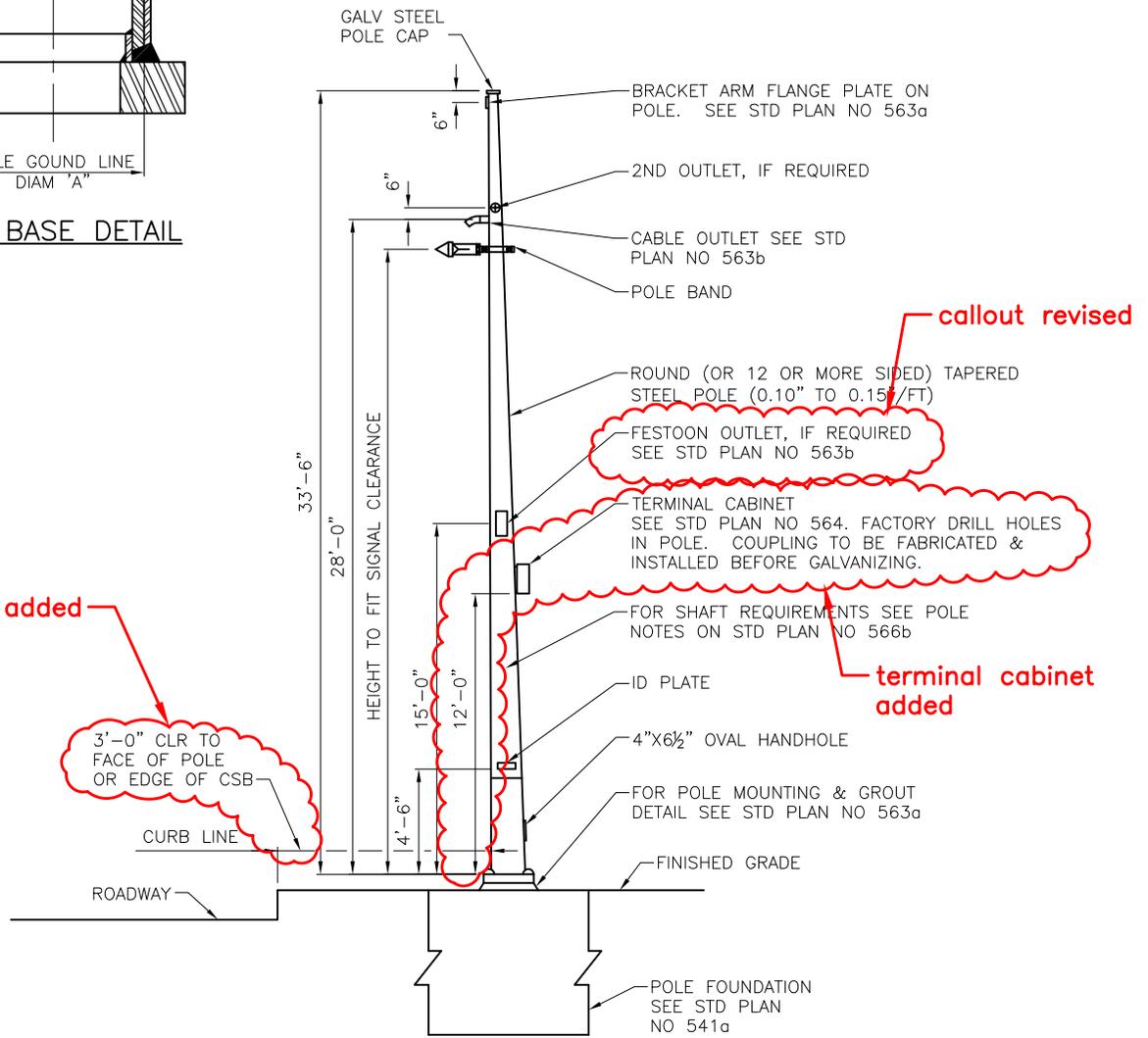
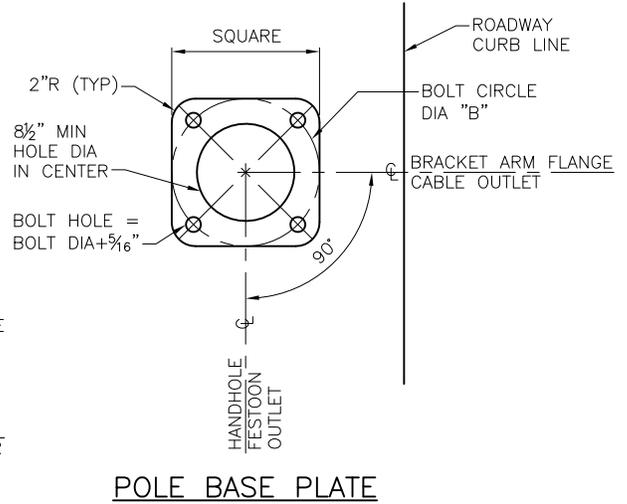
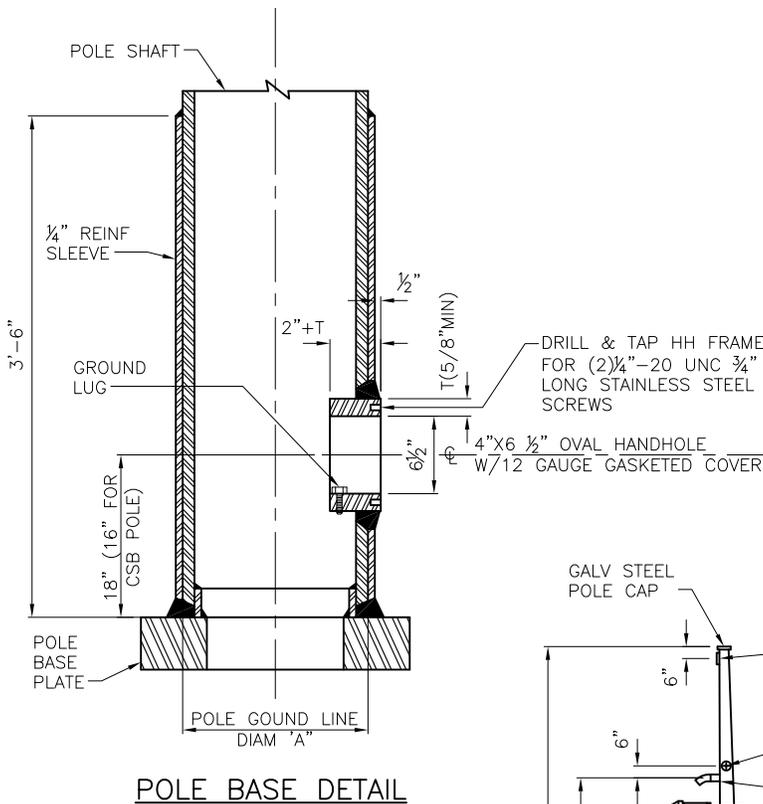
REF STD SPEC SEC 8-32



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NOT TO SCALE

TERMINAL CABINET
POLE MOUNTING



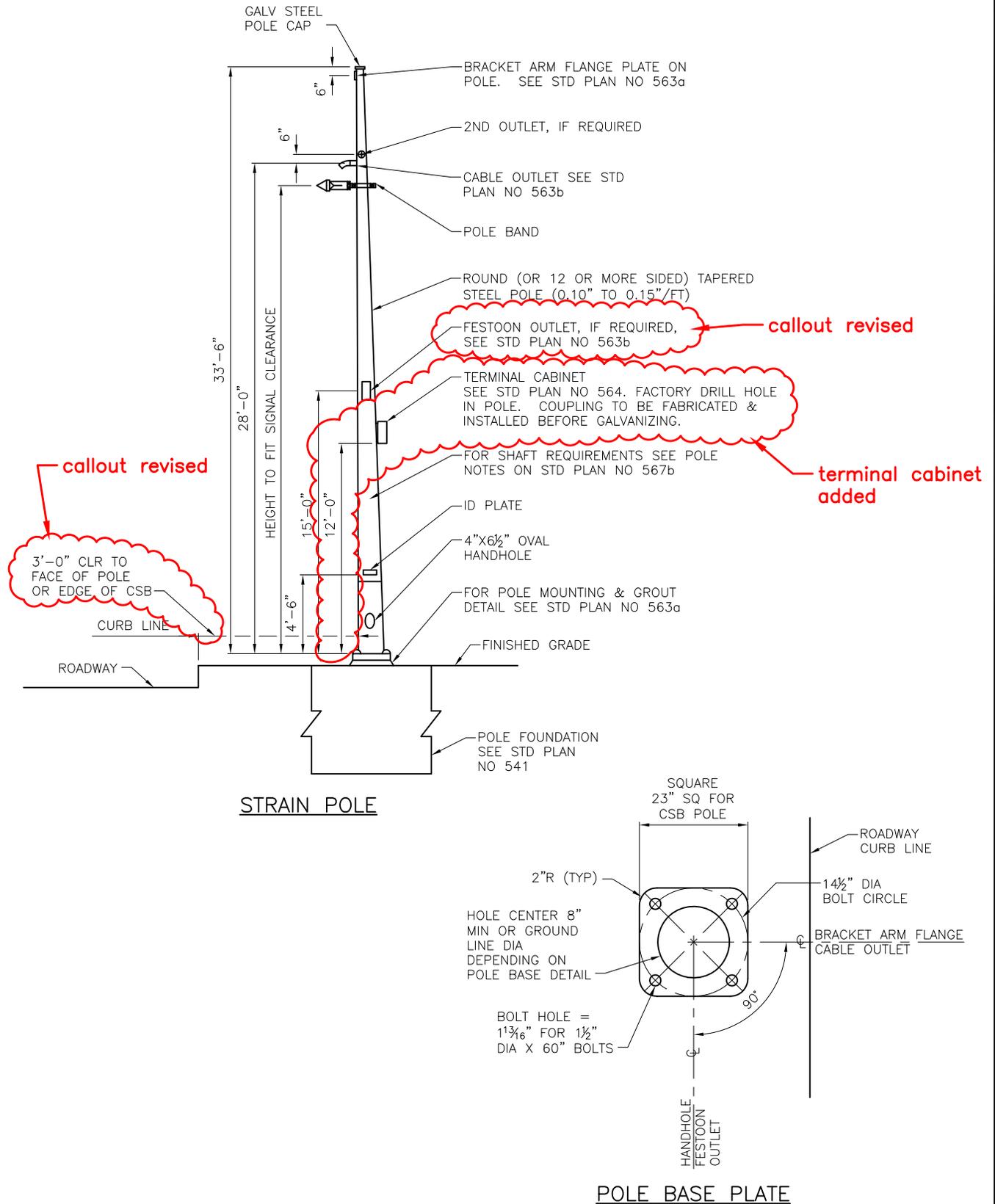
REF STD SPEC SEC 8-32



City of Seattle

NOT TO SCALE

**STRAIN POLE DETAILS
(TYPE V, X & Z POLES)**



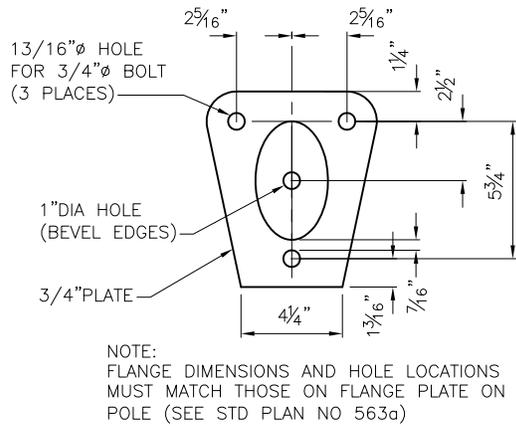
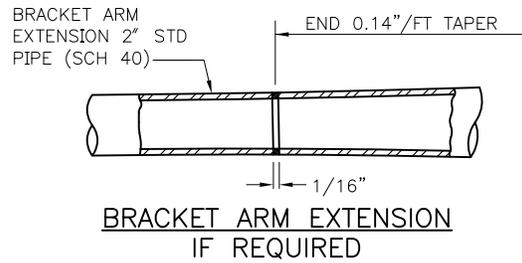
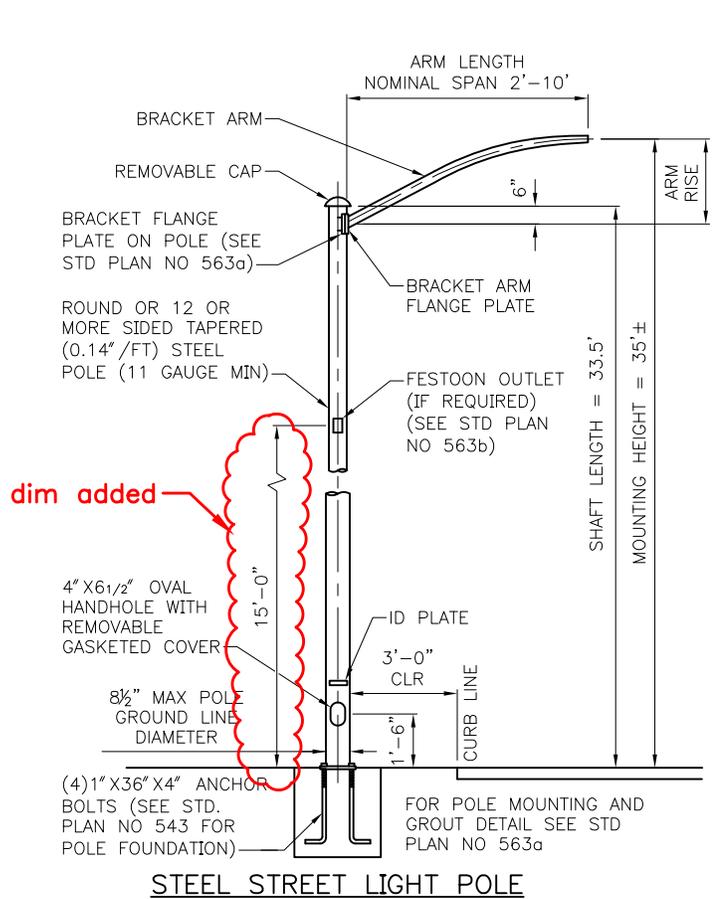
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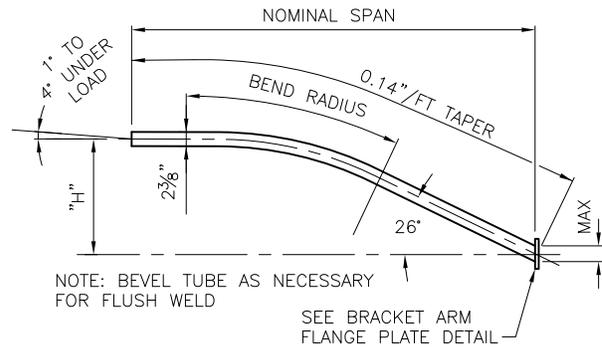
City of Seattle

NOT TO SCALE

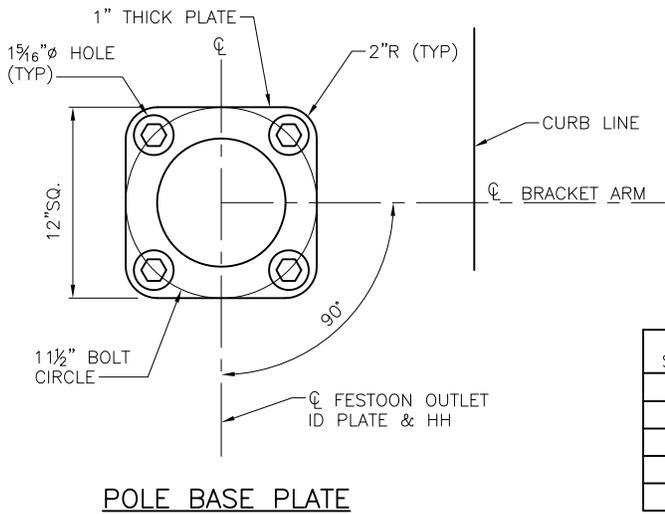
TYPE T STRAIN POLE DETAILS
TRAFFIC SIGNAL ONLY



BRACKET ARM FLANGE PLATE



2' THRU 10' BRACKET ARMS



NOM SPAN	H*	BEND RADIUS	TUBE REQUIREMENT
2'	5 1/4"	-	2" STD PIPE
4'	12"	6'	11 GAUGE
6'	18"	9'	11 GAUGE
8'	24"	13'	11 GAUGE
10'	30"	15'	11 GAUGE

MATERIAL SPECIFICATION
 PLATE AND SHAPES:
 ASTM A36
 POLE SHAFTS:
 ASTM A570
 GR 40 MIN.
 ANCHOR BOLTS:
 ASTM A307
 BRACKET ARM FLANGE
 PLATE BOLT: ASTM A325

NOTE:

1. ALL OTHER ARM LENGTHS REQUIRE SCL REVIEW AND APPROVAL

* THESE DIMENSIONS ARE ONLY ILLUSTRATIVE OF THE GENERAL OUTLINE AND MATERIALS USED IN THE CONSTRUCTION OF THESE ARMS AND ARE NOT INTENDED TO EXCLUDE MANUFACTURER'S STANDARD PRODUCTS.

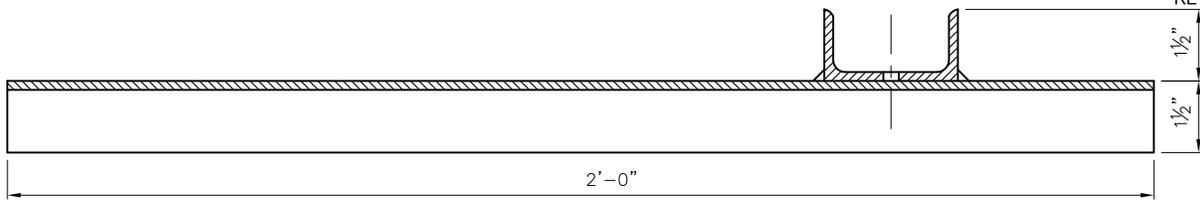
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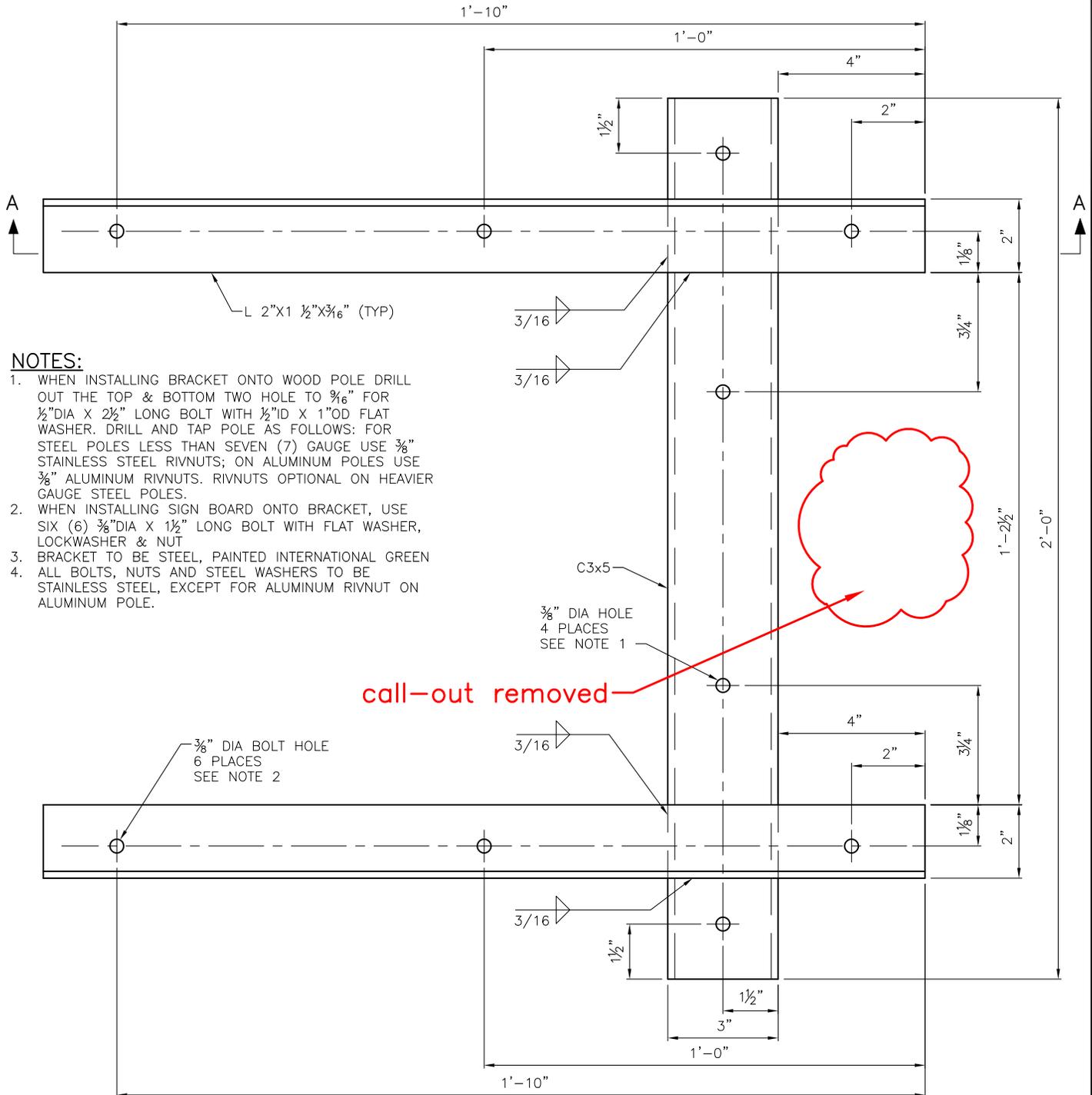
City of Seattle

NOT TO SCALE

STEEL STREET LIGHT POLE WITH BRACKET ARM



SECTION A-A



NOTES:

1. WHEN INSTALLING BRACKET ONTO WOOD POLE DRILL OUT THE TOP & BOTTOM TWO HOLE TO $\frac{3}{16}$ " FOR $\frac{1}{2}$ " DIA X $2\frac{1}{2}$ " LONG BOLT WITH $\frac{1}{2}$ " ID X 1" OD FLAT WASHER. DRILL AND TAP POLE AS FOLLOWS: FOR STEEL POLES LESS THAN SEVEN (7) GAUGE USE $\frac{3}{8}$ " STAINLESS STEEL RIVNUTS; ON ALUMINUM POLES USE $\frac{3}{8}$ " ALUMINUM RIVNUTS. RIVNUTS OPTIONAL ON HEAVIER GAUGE STEEL POLES.
2. WHEN INSTALLING SIGN BOARD ONTO BRACKET, USE SIX (6) $\frac{3}{8}$ " DIA X $1\frac{1}{2}$ " LONG BOLT WITH FLAT WASHER, LOCKWASHER & NUT
3. BRACKET TO BE STEEL, PAINTED INTERNATIONAL GREEN
4. ALL BOLTS, NUTS AND STEEL WASHERS TO BE STAINLESS STEEL, EXCEPT FOR ALUMINUM RIVNUT ON ALUMINUM POLE.

REF STD SPEC SEC 8-21



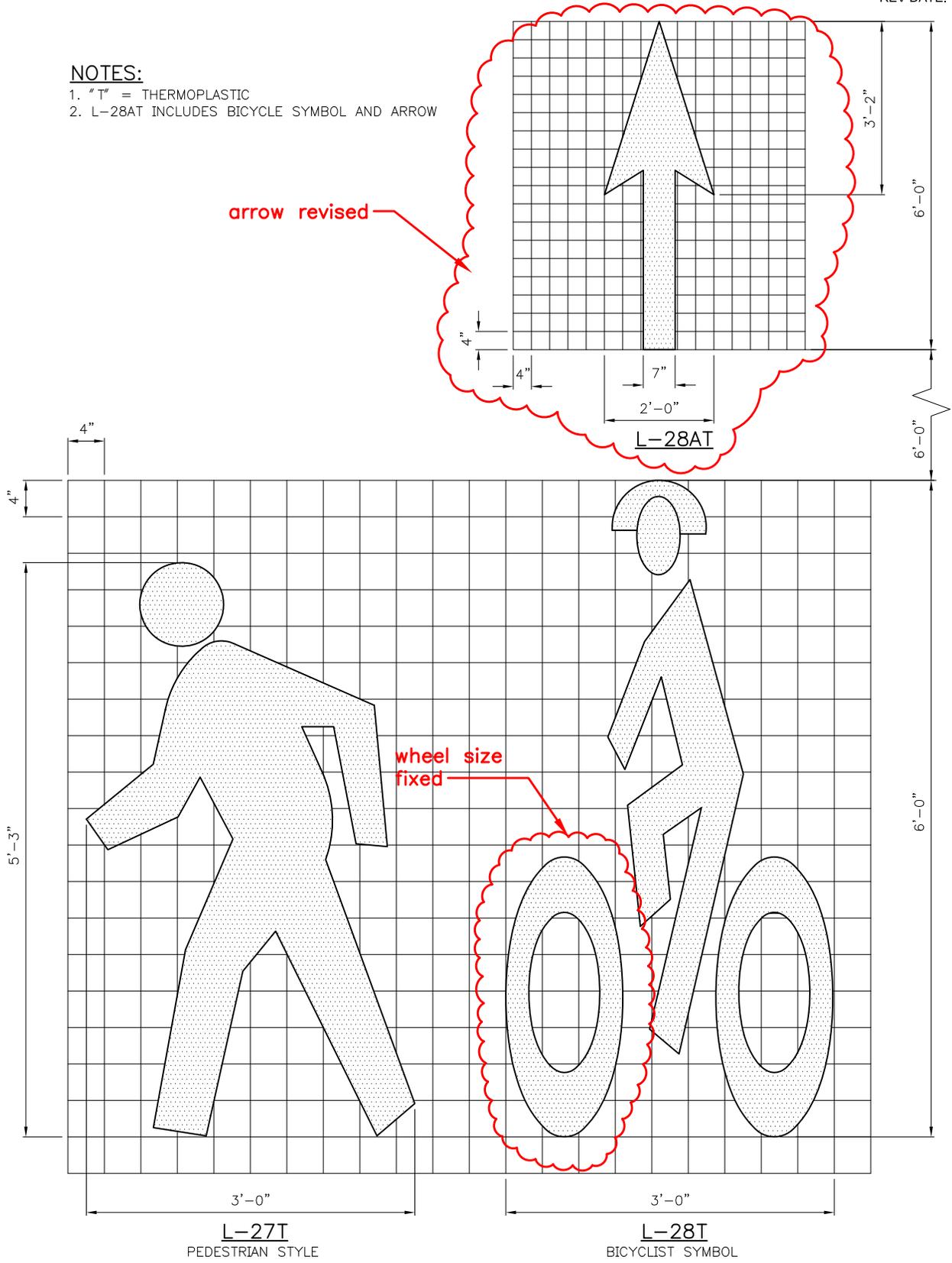
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**SDS BRACKET FOR STEEL
OR WOOD POLES**

NOTES:

- 1. "T" = THERMOPLASTIC
- 2. L-28AT INCLUDES BICYCLE SYMBOL AND ARROW



L-27T
PEDESTRIAN STYLE

L-28T
BICYCLIST SYMBOL
(INCLUDES L-28A, LT-28AT)
(SEE NOTE 2)

REF STD SPEC SEC 8-22



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**BICYCLIST & PEDESTRIAN
SYMBOLS**