

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

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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



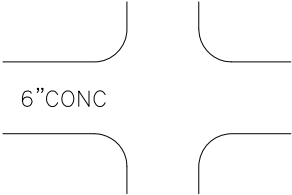
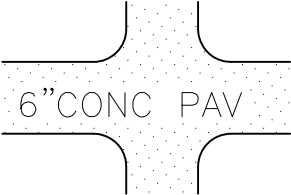
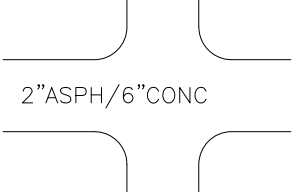
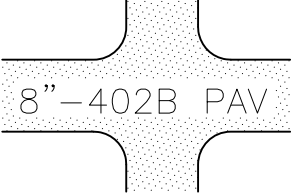
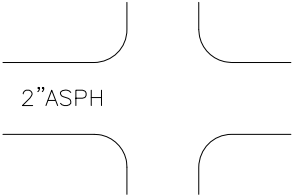
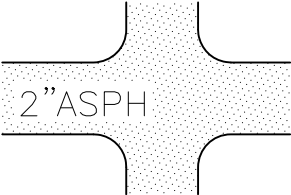

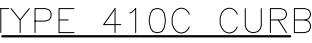
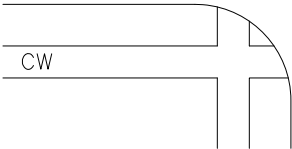
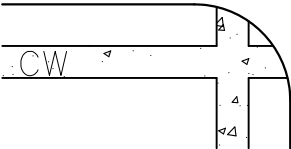

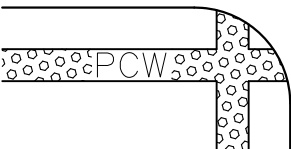

City of Seattle

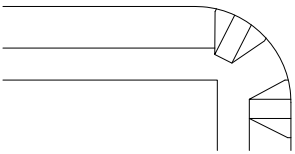
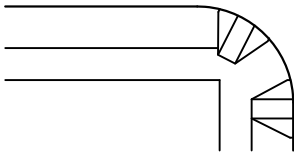
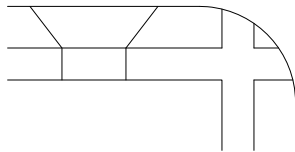
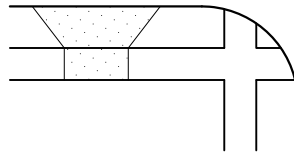
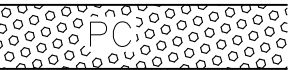
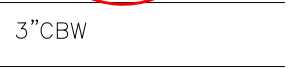
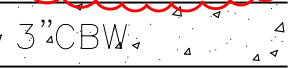


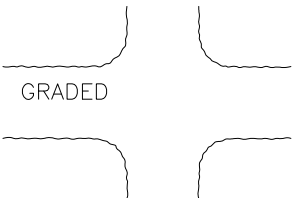
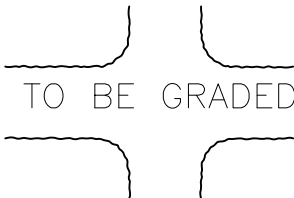
NOT TO SCALE

ABBREVIATIONS

[illegible]

## ABBREVIATIONS

ITEM	EXISTING	PROPOSED
Cement Concrete Pavement		
Asphalt Concrete Pavement		
Asphalt Concrete Surfacing		
Curb		
Cement Concrete Walk		
Pervious Concrete Walk		
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		
Asphalt Concrete Bike Way		
Grading		

REF STD SPEC SEC



City of Seattle

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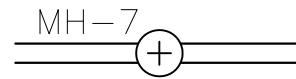
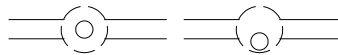
STANDARD SYMBOLS  
PAVING

## ITEM

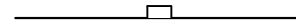
## EXISTING

## PROPOSED

Maintenance Holes



Inlet Type 250A



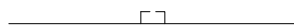
Inlet Type 250B



Inlet Type 252



Inlet Type 268



Catch Basin round inlet top



Private CB &amp; 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



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STANDARD SYMBOLS  
SEWER & DRAINAGE

## ITEM

## EXISTING

## PROPOSED

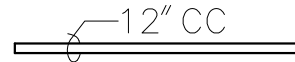
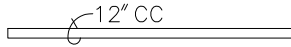
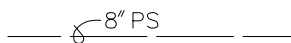
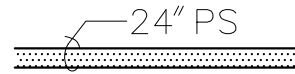
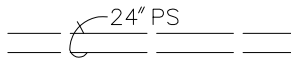
Sand Box



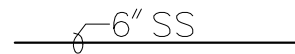
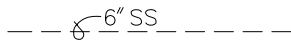
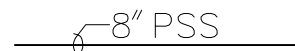
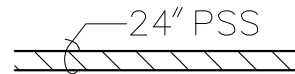
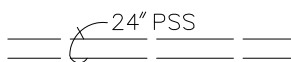
Clean Out



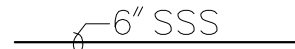
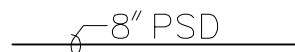
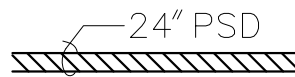
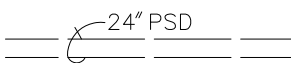
Concrete Culvert

Pipe Sewer  
Combined <1'-0"DiaPipe Sewer  
Combined ≥1'-0"Dia

Side Sewer Combined

Pipe Sewer Sanitary  
<1'-0"DiaPipe Sewer Sanitary  
≥1'-0"Dia

Side Sewer Sanitary

Pipe Storm Drain  
<1'-0"DiaPipe Storm Drain  
≥1'-0"Dia

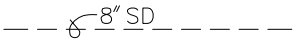


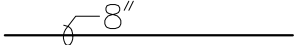




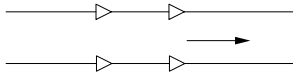
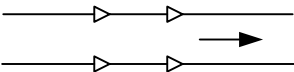
REF STD SPEC SEC



City of Seattle

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STANDARD SYMBOLS  
SEWER & DRAINAGE

ITEM	EXISTING	PROPOSED
Service Drain		
Inlet & CB Connection		
Open Ended Pipe		
Ditch		
Stream		

REF STD SPEC SEC



City of Seattle

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STANDARD SYMBOLS  
SEWER & DRAINAGE



## ITEM

## EXISTING

## PROPOSED

Bench Mark (found or set)



Brass Plug/Cap (found or set)



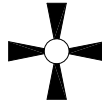
Hub/Tack (found or set)

Monument in Case  
(found or set)

Conc. Mon. (found or set)



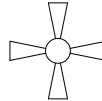
Section Corner (found or set)



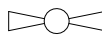
Quarter Corner (found or set)



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






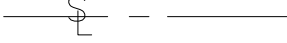








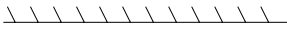

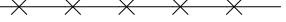

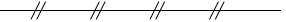








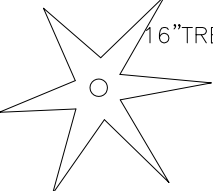
REF STD SPEC SEC



City of Seattle

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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

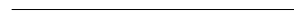
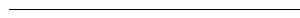
## EXISTING

## PROPOSED

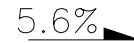
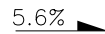
Shrub or Bush



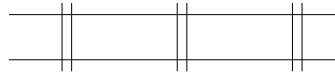
Ground, Grade Line



Grade (arrow downhill)



Rail Road Tracks



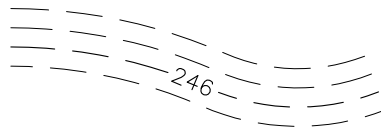
City Limits



Slope Line

SLOPE LINE

Contours

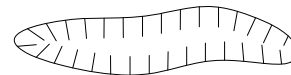
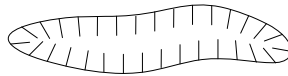
Slope Angle  
Horiz:Vert

H:V

Vertical Curve



Depression



Stump



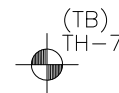
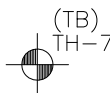
Top of Cut Toe of Fill



Dimension Line



Match Line

Test Hole & Number  
(test boring)

Bench Mark



REF STD SPEC SEC



City of Seattle

















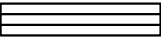


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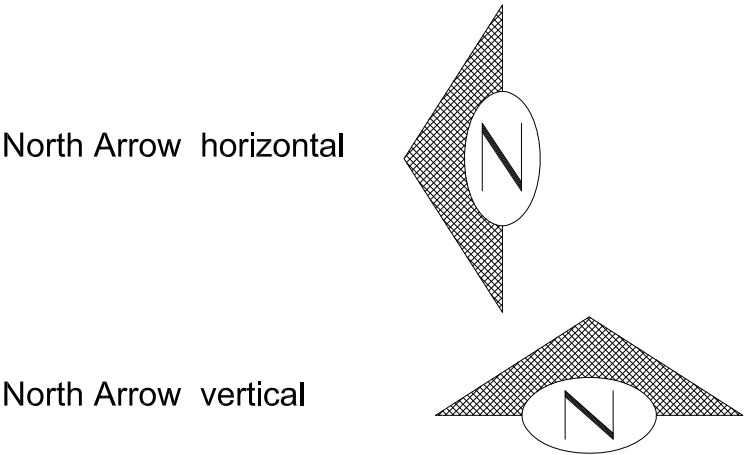
STANDARD SYMBOLS  
TOPOGRAPHIC & MISC

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		



REF STD SPEC SEC



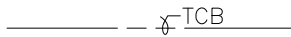
NOT TO SCALE

STANDARD SYMBOLS  
TOPOGRAPHIC & MISC

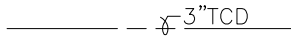
## ITEM

## EXISTING

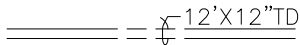
## PROPOSED

Telephone Cable  
(direct burial) TCB

Telephone Conduit

 3" TCD

Telephone Duct

 12'X12" TD

Telephone Enclosure

 TEBTelephone Maintenance  
Hole TEL  
VAULT

Telephone Pole

 TP

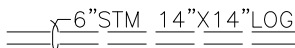
Telephone Handhole

 THHTelevision Cable  
(direct Burial) TVCB

Television Handhole

 TVHHTelegraph Maintenance  
Hole TELEG  
MH

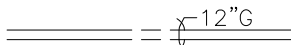
Steam Log

 6" STM 14"X14" LOG

Steam Vault

 STEMV

Gas Main

 12" G

Gas Valve



Gas Meter

 GM

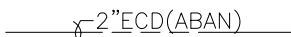
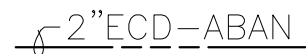
Gas Regulator

 G REG

Petroleum or Oil

 OIL

Abandon(ed)

 2" ECD (ABAN) 2" ECD - ABAN

REF STD SPEC SEC



City of Seattle

NOT TO SCALE

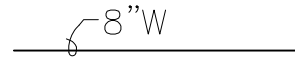
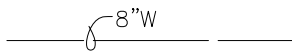
STANDARD SYMBOLS  
PRIVATE UTILITIES

## ITEM

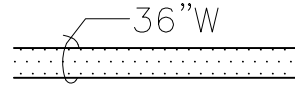
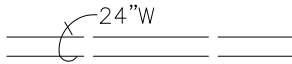
## EXISTING

## PROPOSED

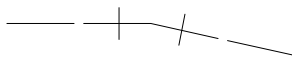
Watermain  
<1'-0"Dia



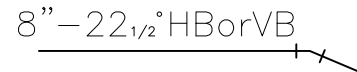
Watermain  
≥1'-0"Dia



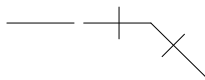
11 1/4° Bend w/  
Conc Blocking



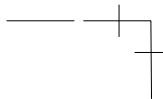
22 1/2° Bend



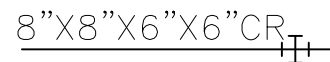
45° Bend



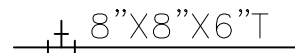
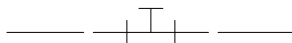
90° Bend



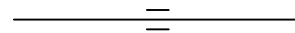
Cross



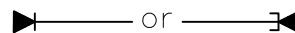
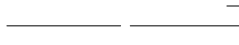
Tee



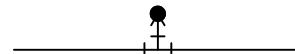
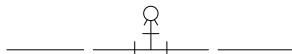
Pipe Sleeve



Plug w/ Conc  
Blocking



Hydrant



Water Meter



Valve Box



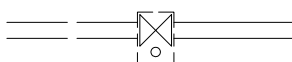
Gate Valve



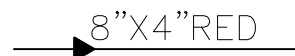
Gate Valve  
w/ Chamber



Gate Valve  
w/ Vault Chamber



Reducer



REF STD SPEC SEC



City of Seattle

NOT TO SCALE

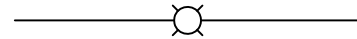
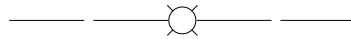
STANDARD SYMBOLS  
WATER

## ITEM

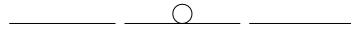
## EXISTING

## PROPOSED

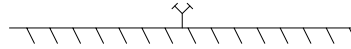
Air Valve



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



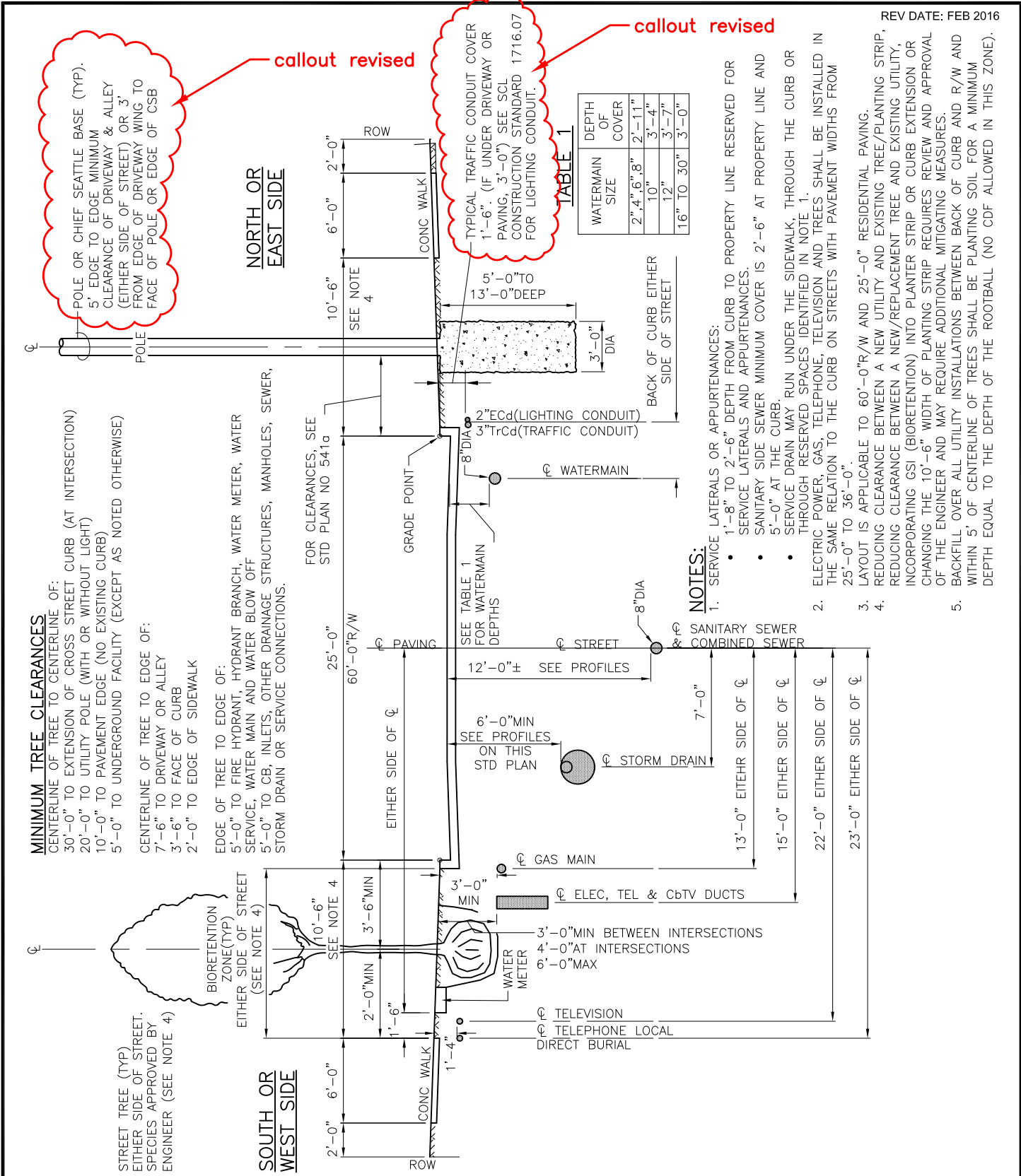
REF STD SPEC SEC



City of Seattle

NOT TO SCALE

STANDARD SYMBOLS  
WATER



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

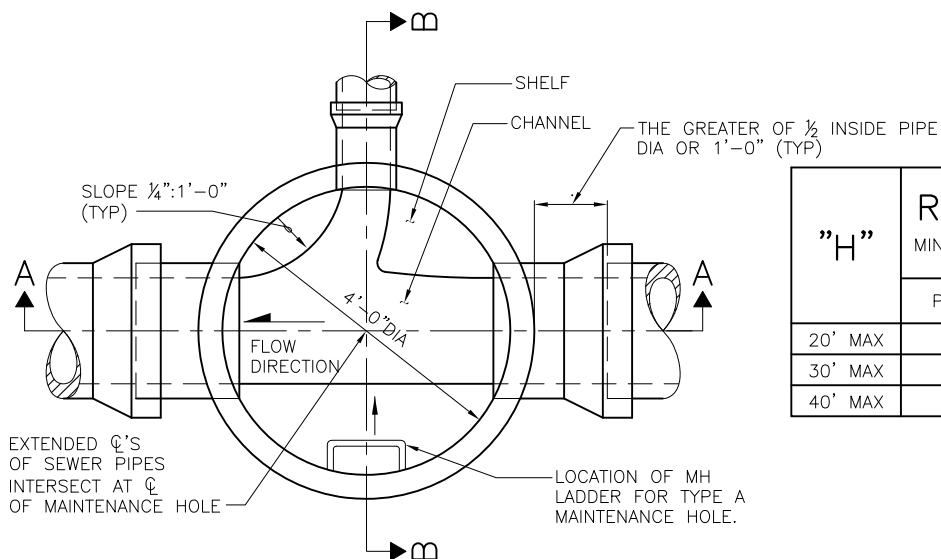


City of Seattle

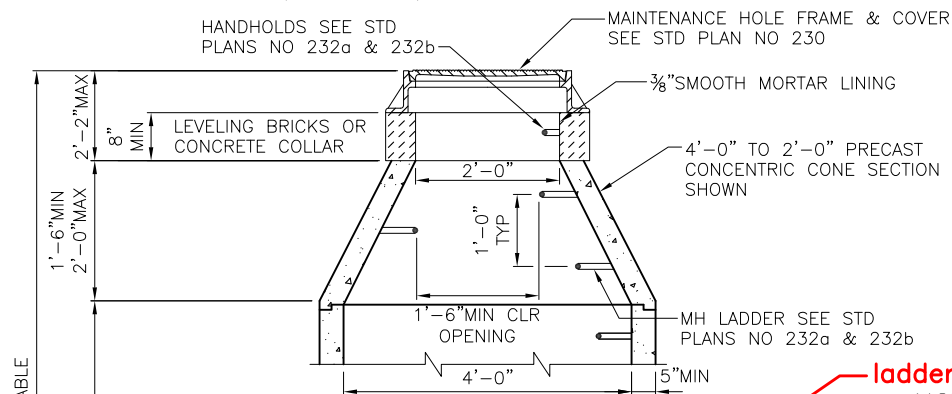
NOT TO SCALE

DESIRABLE LOCATIONS  
FOR UTILITIES  
(RESIDENTIAL STREET)





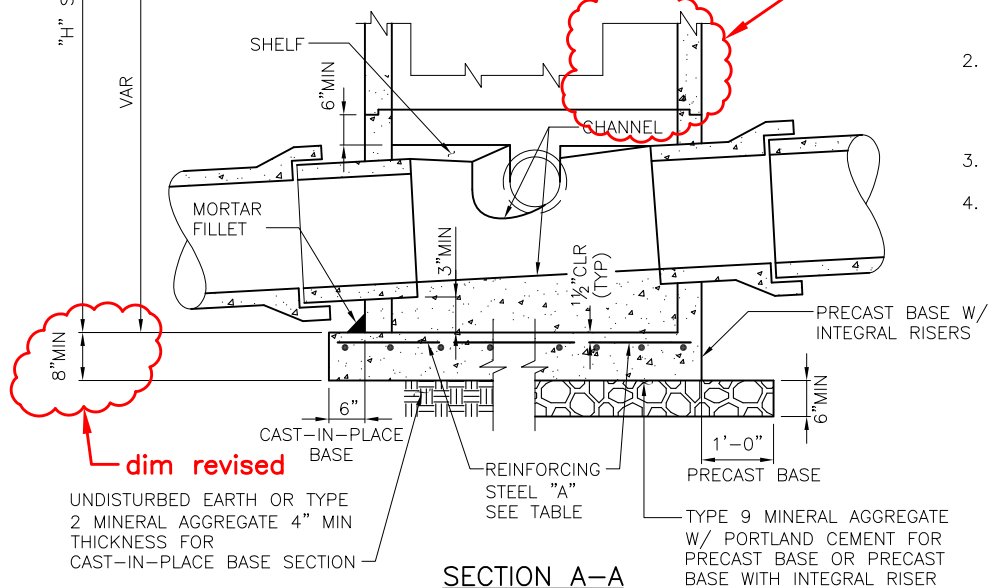
"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.25	0.17
30' MAX	0.31	0.22
40' MAX	0.36	0.25



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.



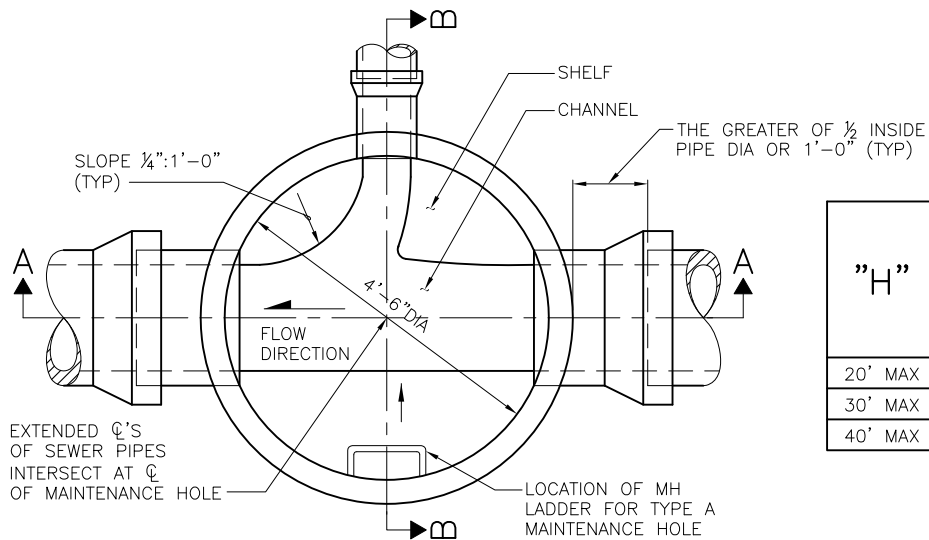
REF STD SPEC SEC 7-05



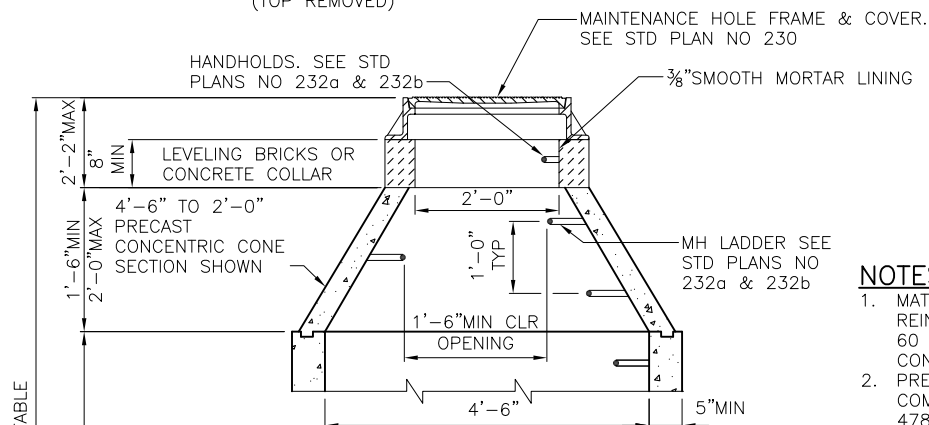
City of Seattle

NOT TO SCALE

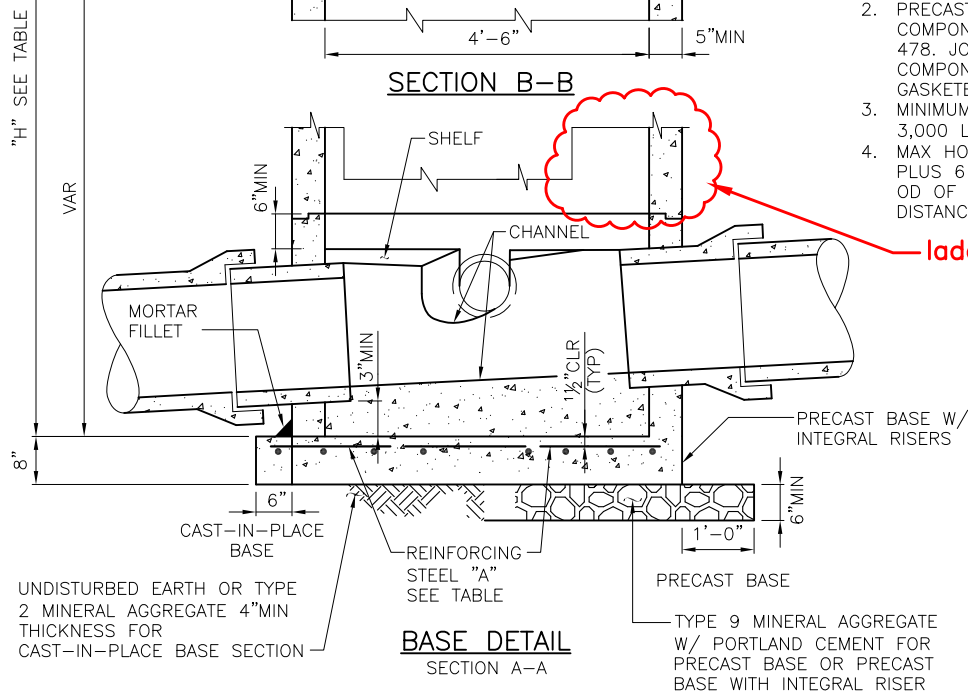
TYPE 204a MAINTENANCE HOLE



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

**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.



ladder step removed

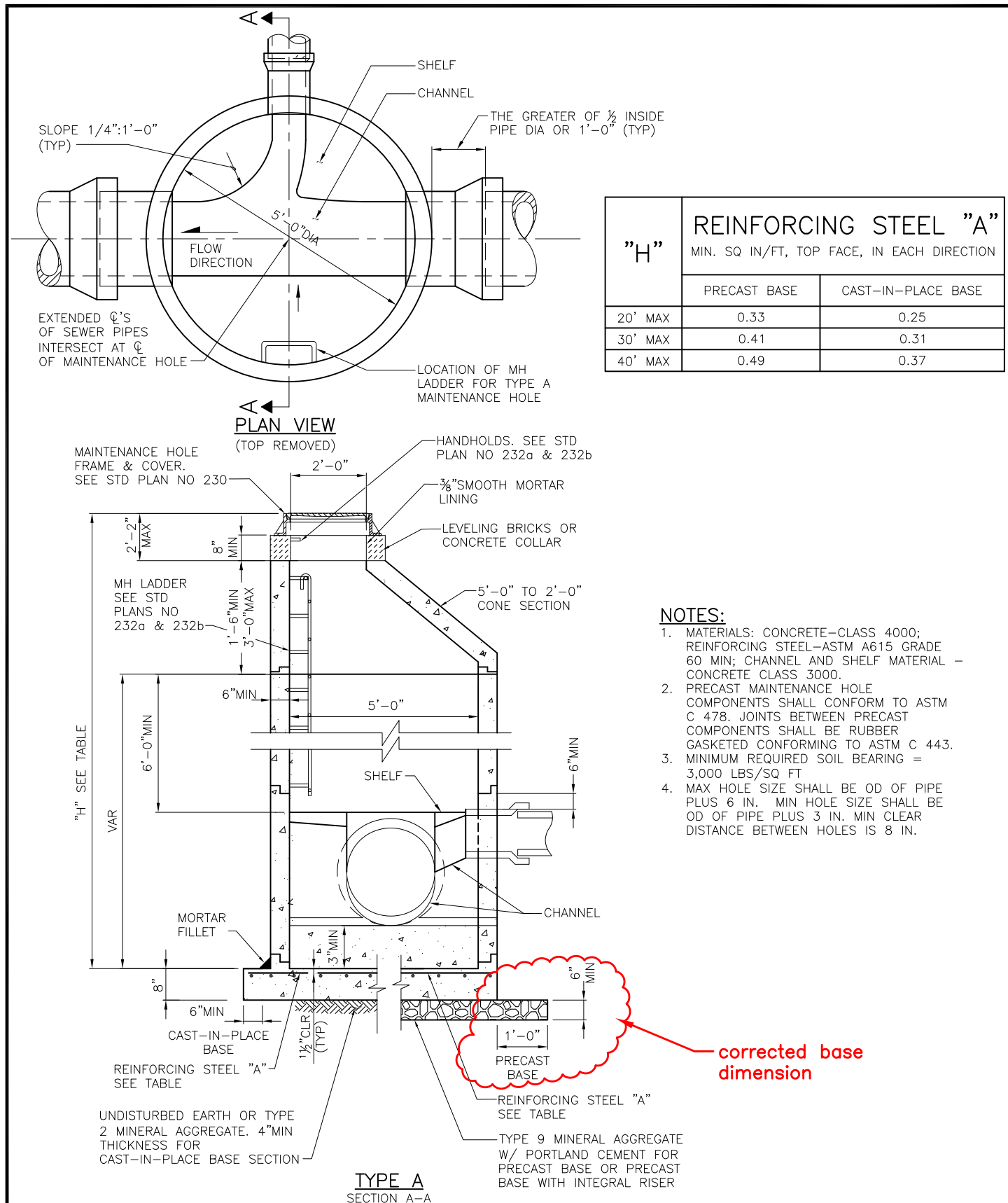
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

TYPE 204.5a MAINTENANCE HOLE



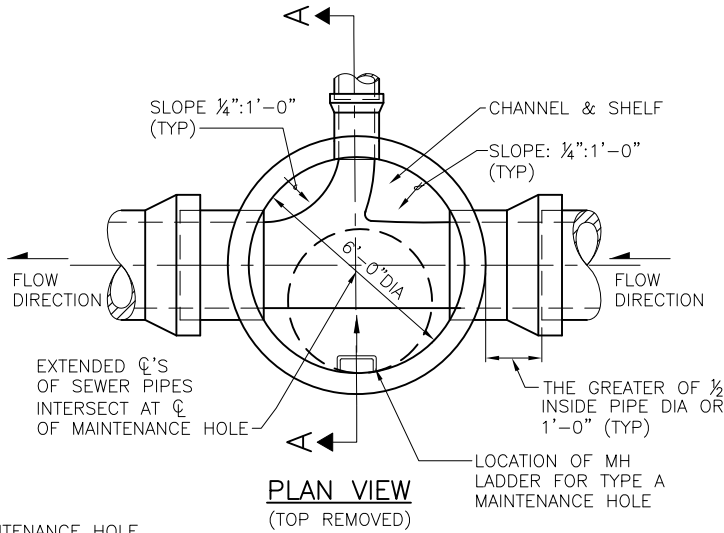
REF STD SPEC SEC 7-05



City of Seattle

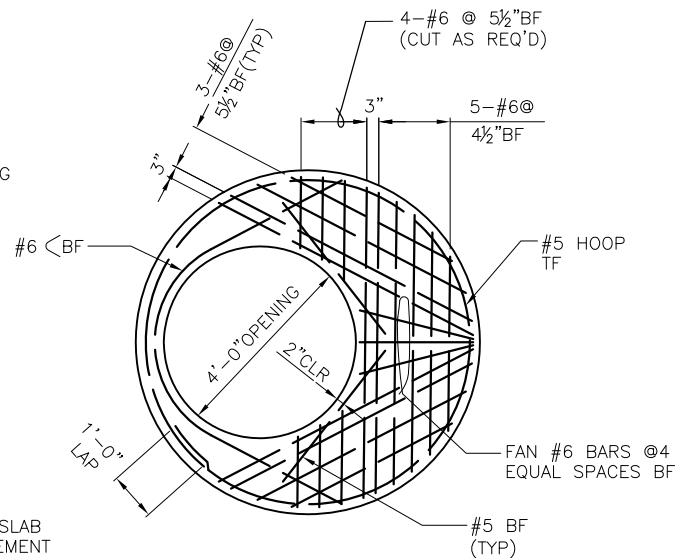
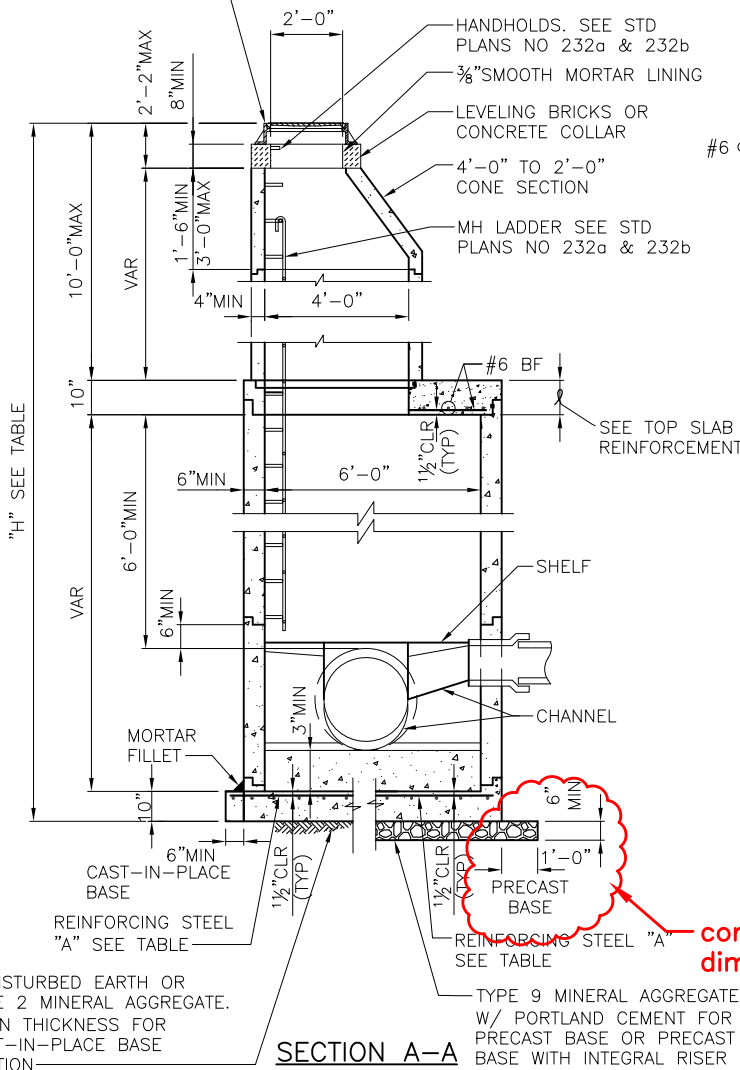
NOT TO SCALE

TYPE 205a 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

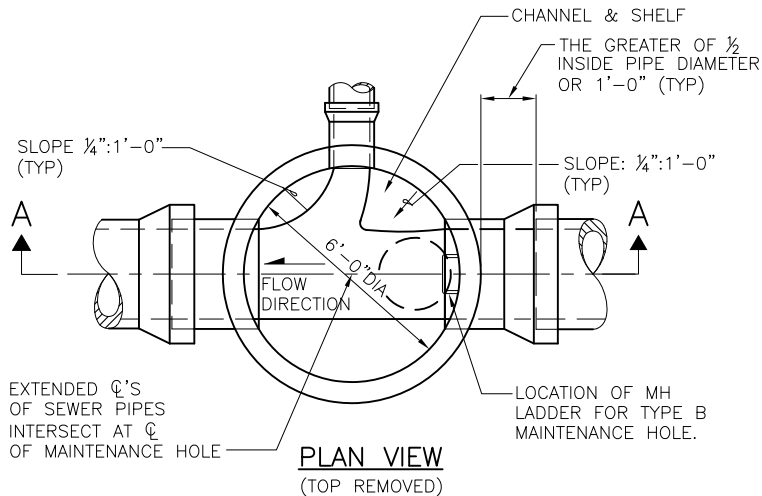
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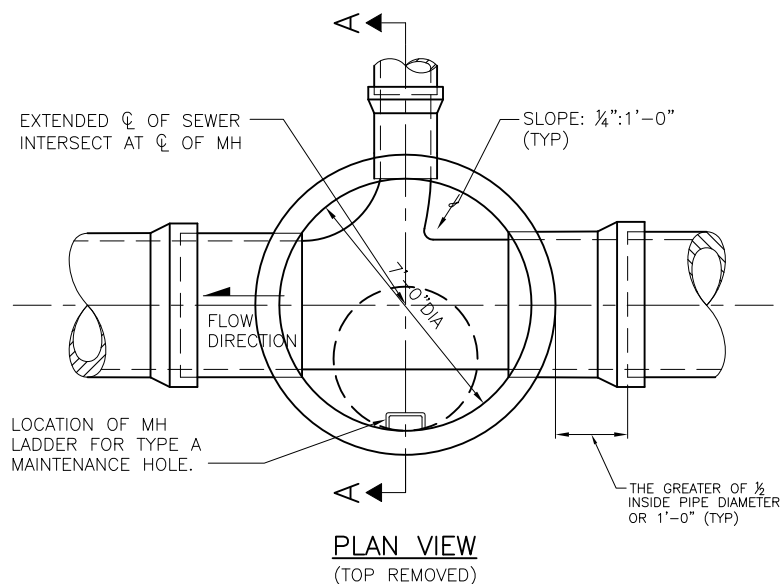


City of Seattle

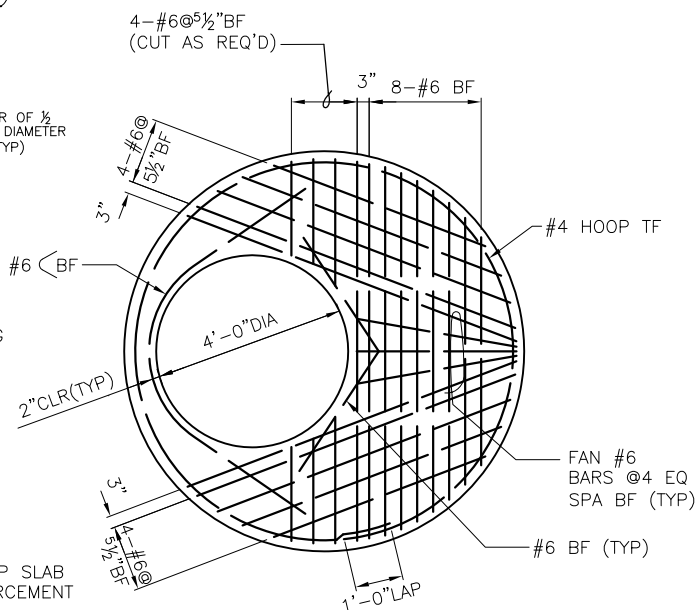
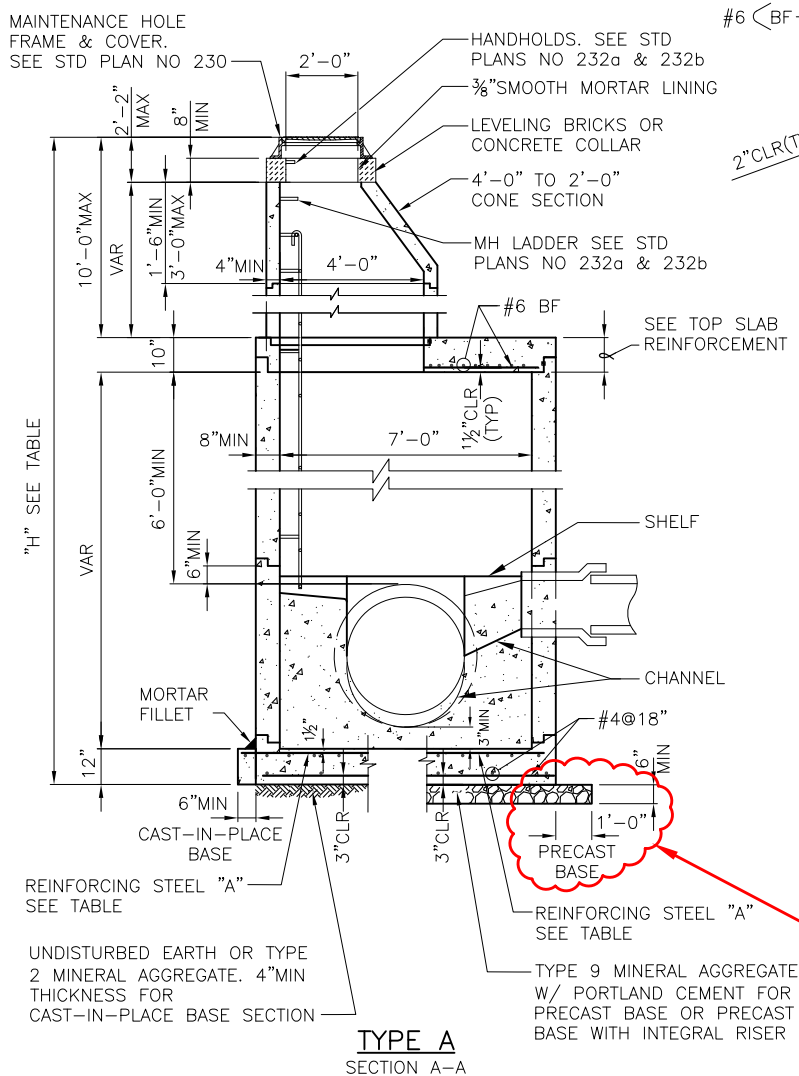
NOT TO SCALE

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	0.42	0.34
30' MAX	0.51	0.41
40' MAX	0.60	0.48

**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 8 IN. MIN HOLE SIZE SHALL BE OD OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE BETWEEN HOLES IS 12 IN.

**base dimension corrected**

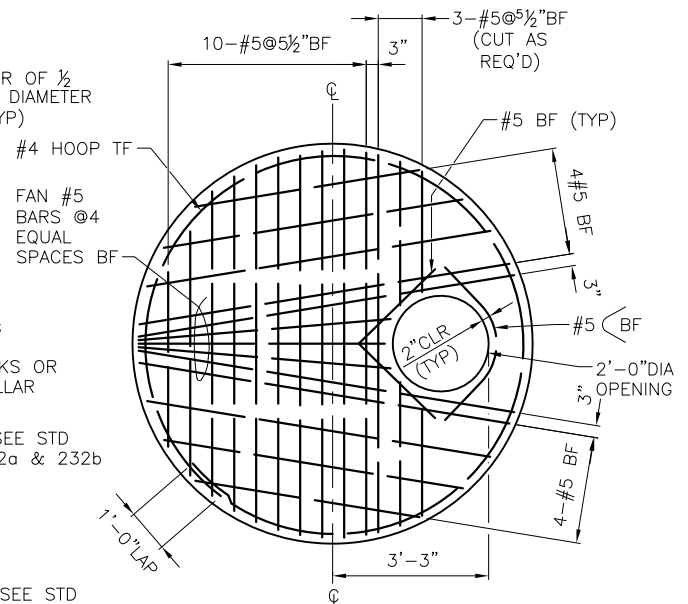
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

TYPE 207a MAINTENANCE HOLE



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 8 IN. MIN HOLE SIZE SHALL BE OD  
OF PIPE PLUS 3 IN. MIN CLEAR DISTANCE  
BETWEEN HOLES IS 12 IN.

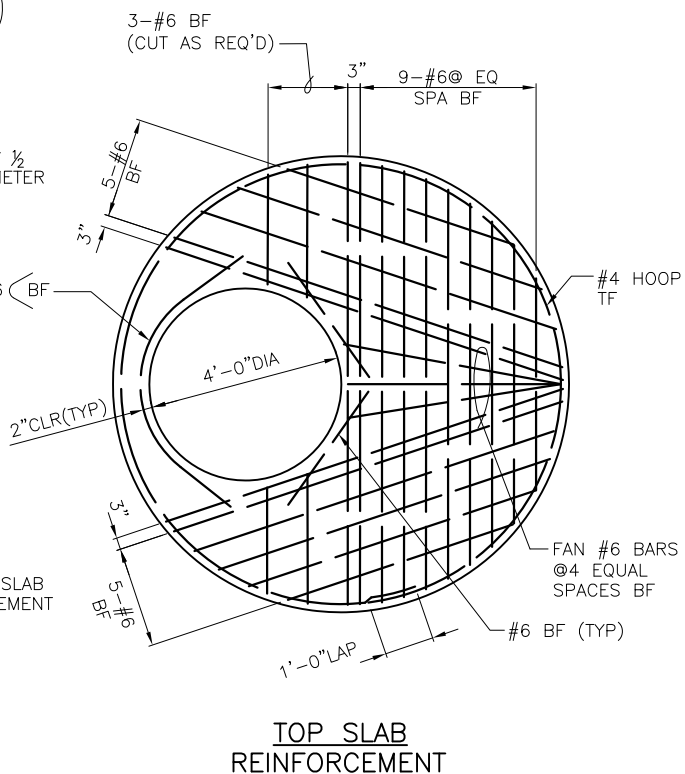
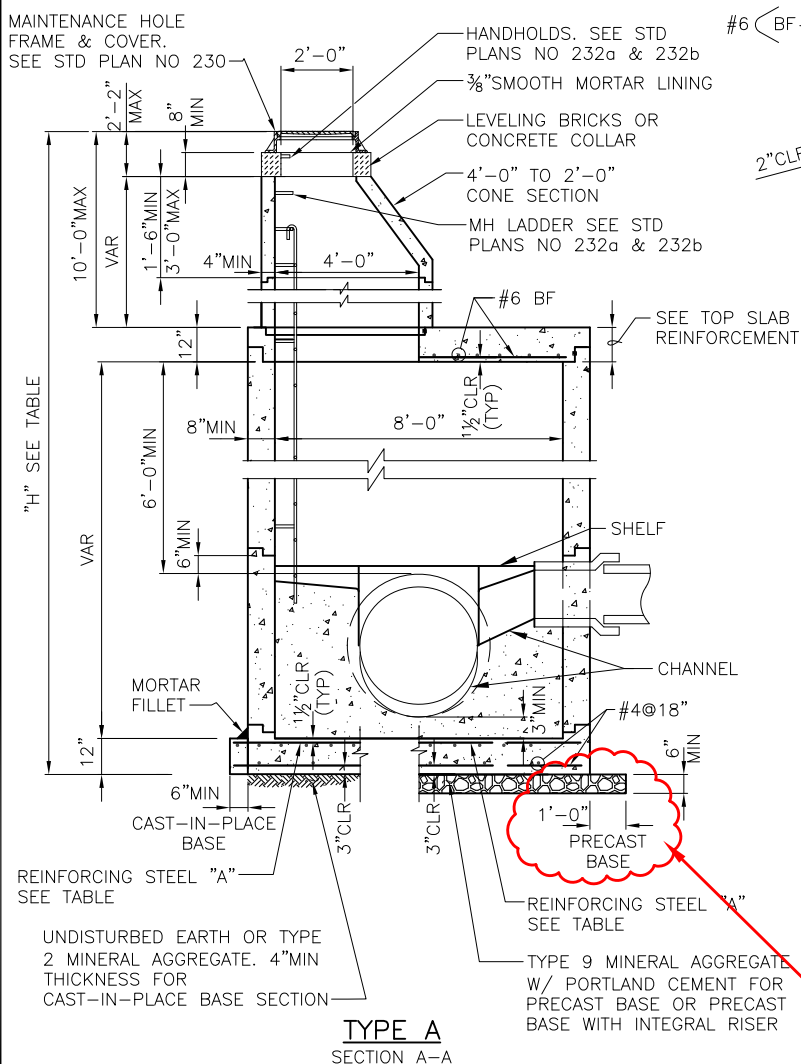
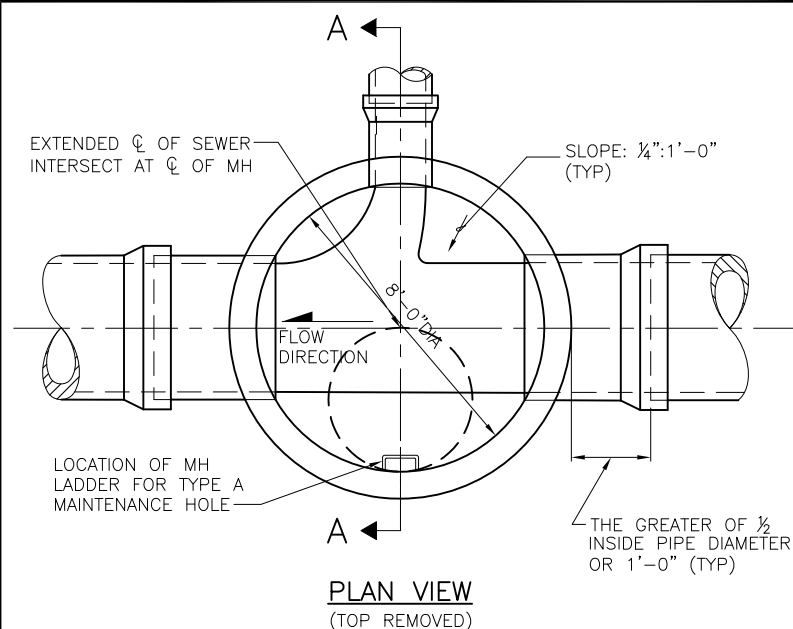
REF STD SPEC SEC 7-05



## TYPE 207b 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".

REF STD SPEC SEC 7-05

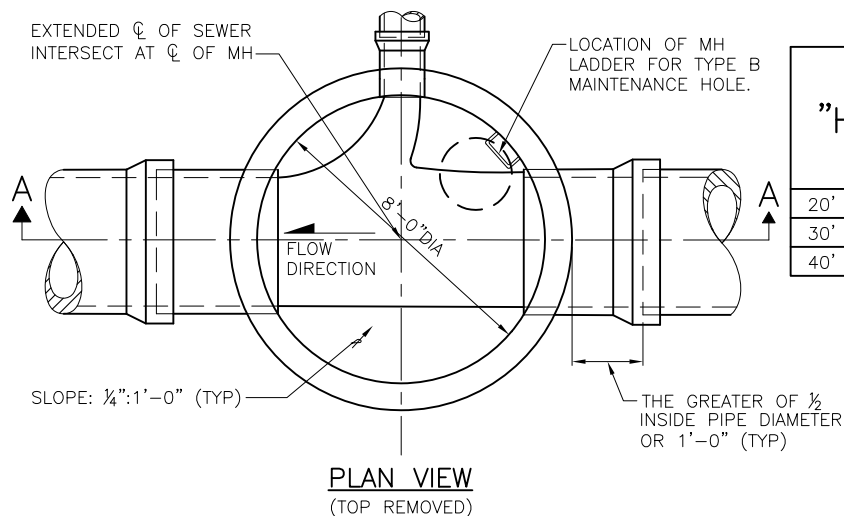


City of Seattle

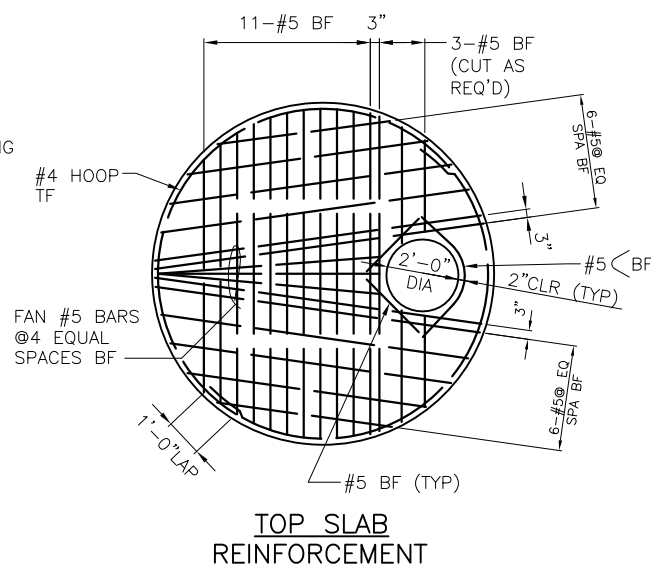
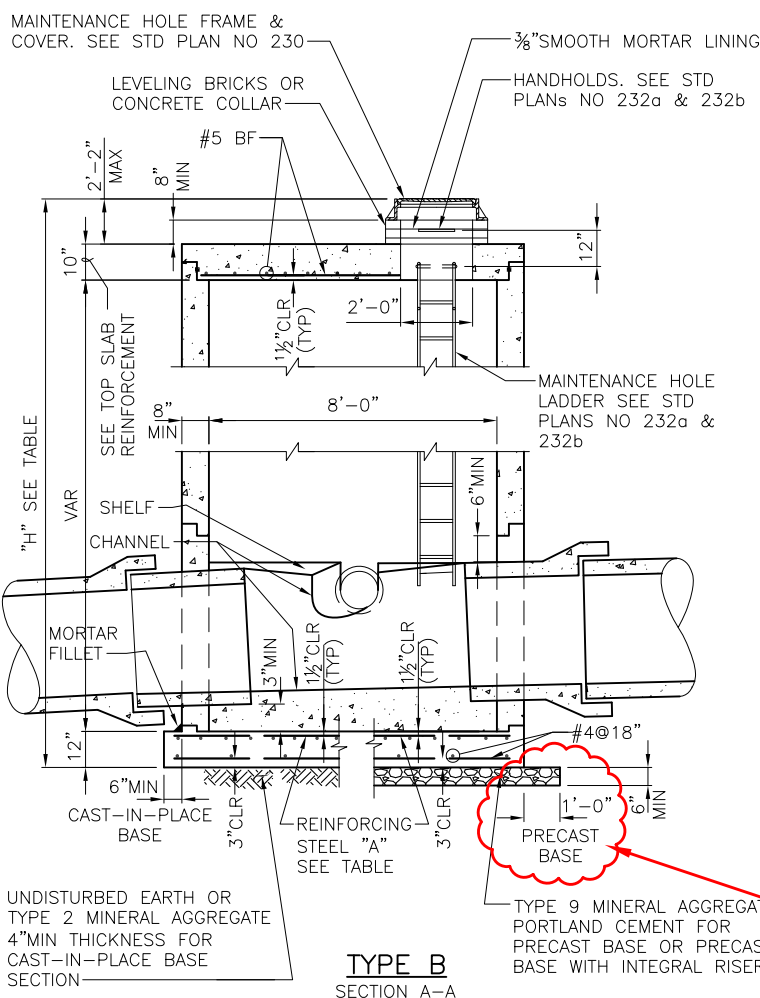
NOT TO SCALE

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**

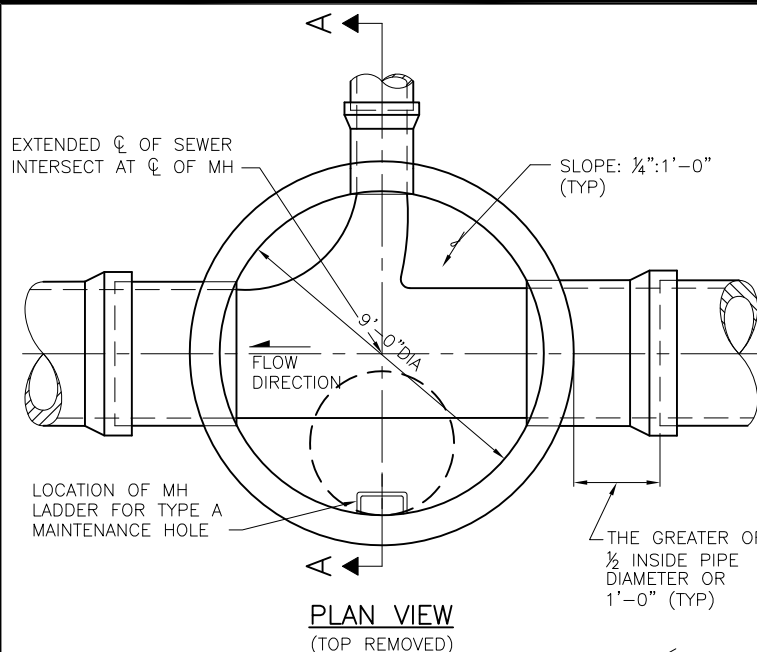
REF STD SPEC SEC 7-05



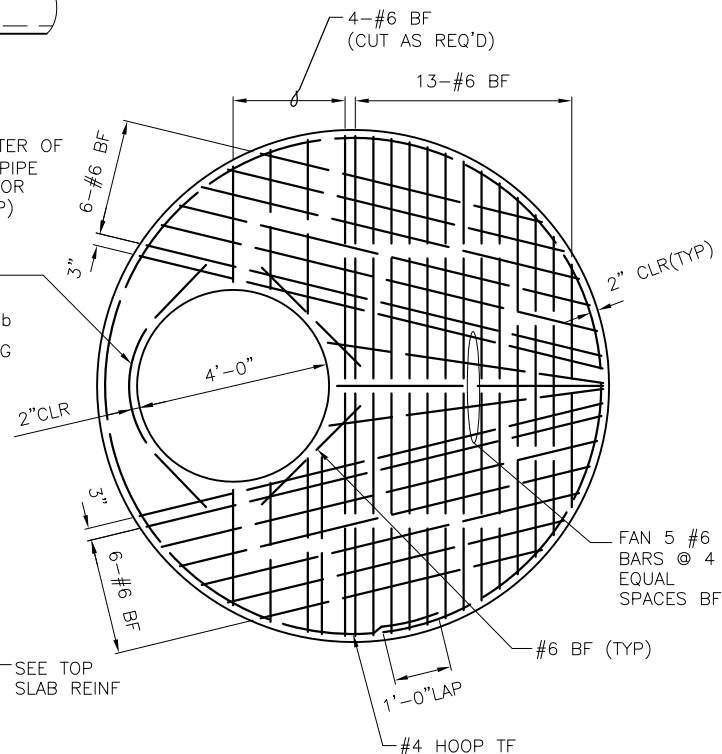
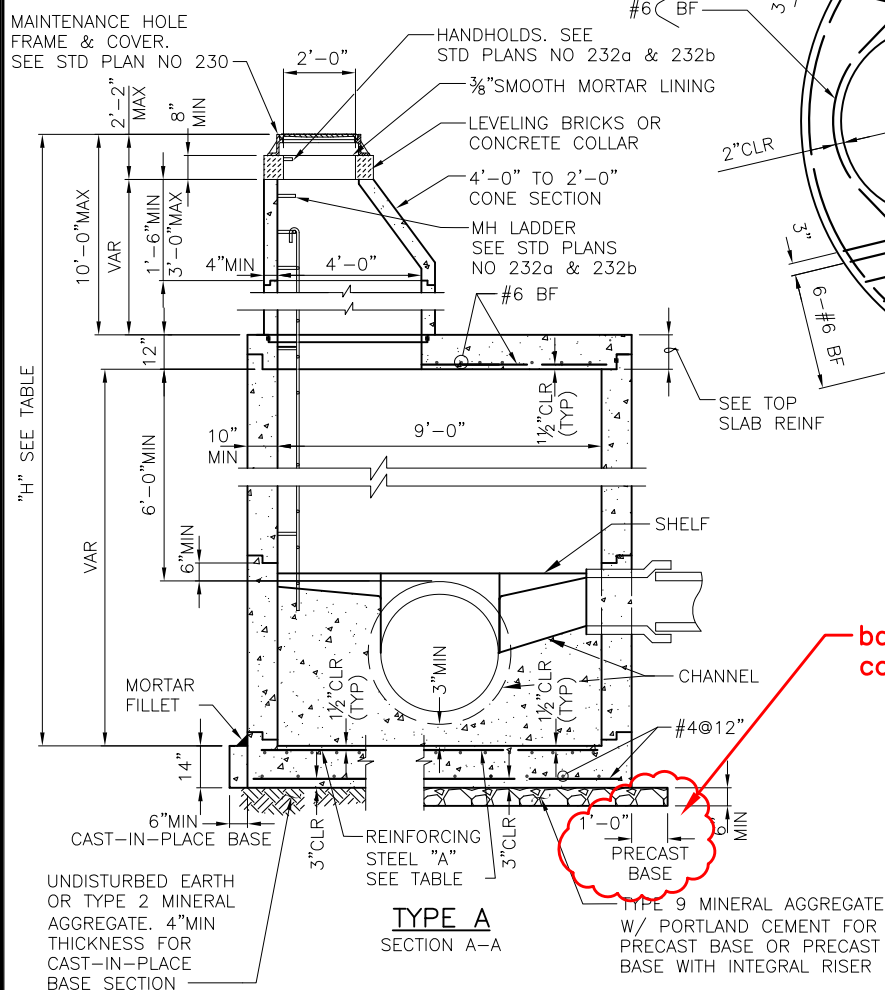
City of Seattle

NOT TO SCALE

TYPE 208b MAINTENANCE HOLE



"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



**TOP SLAB REINFORCEMENT**

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".

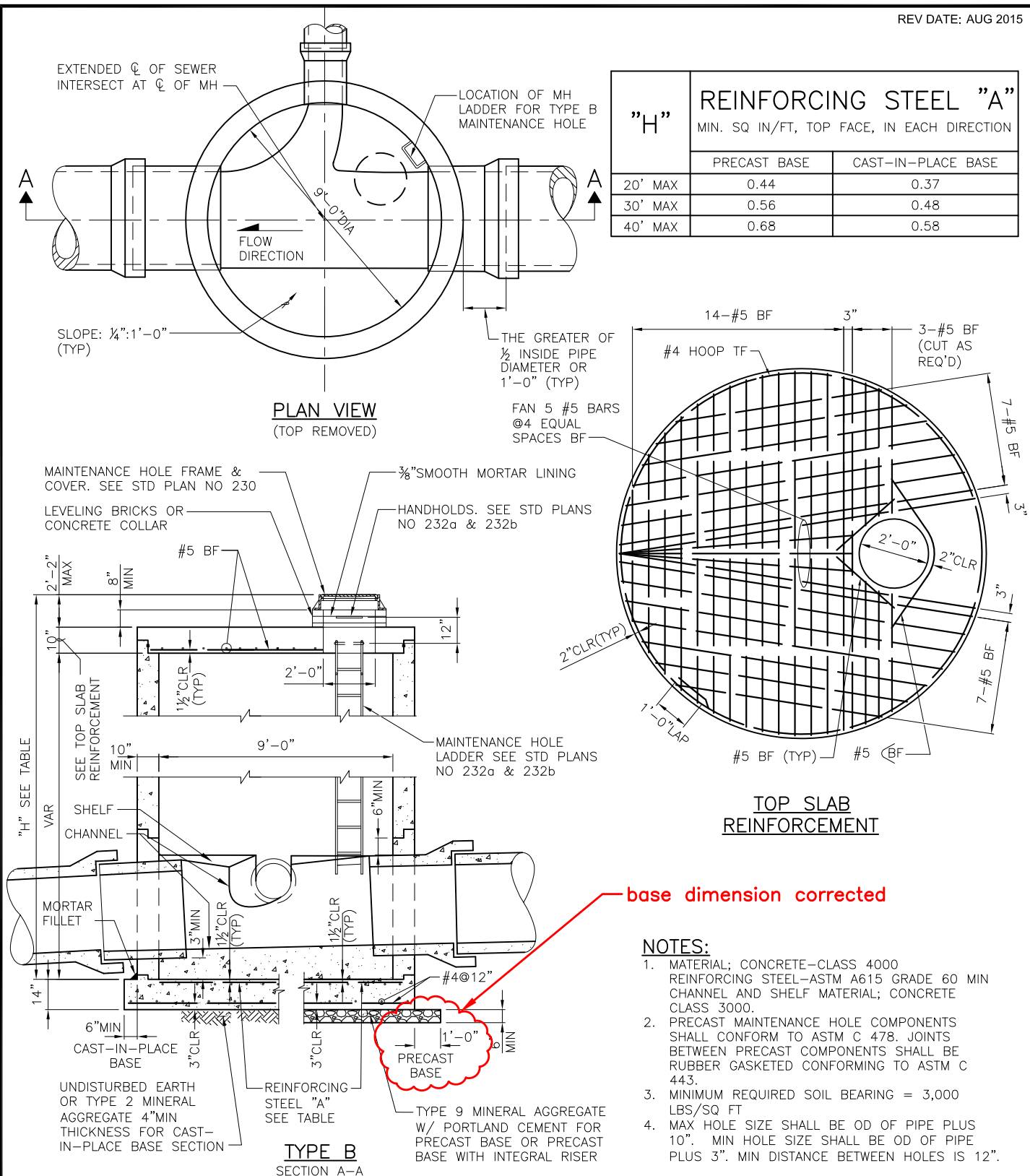
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

TYPE 209a MAINTENANCE HOLE

**NOTES:**

1. MATERIAL; CONCRETE—CLASS 4000  
REINFORCING STEEL—ASTM A615 GRADE 60 MIN  
CHANNEL AND SHELF MATERIAL; CONCRETE  
CLASS 3000.
2. PRECAST MAINTENANCE HOLE COMPONENTS  
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

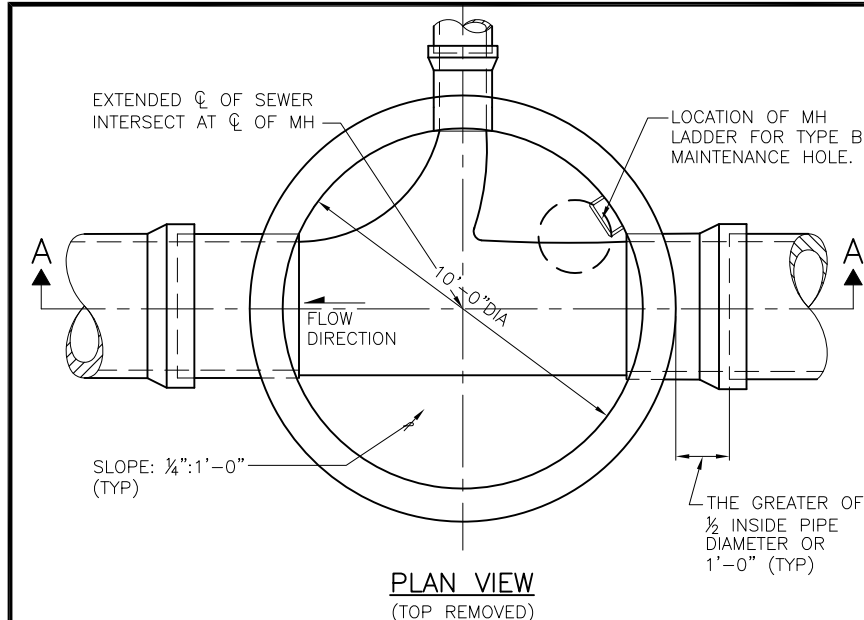


City of Seattle

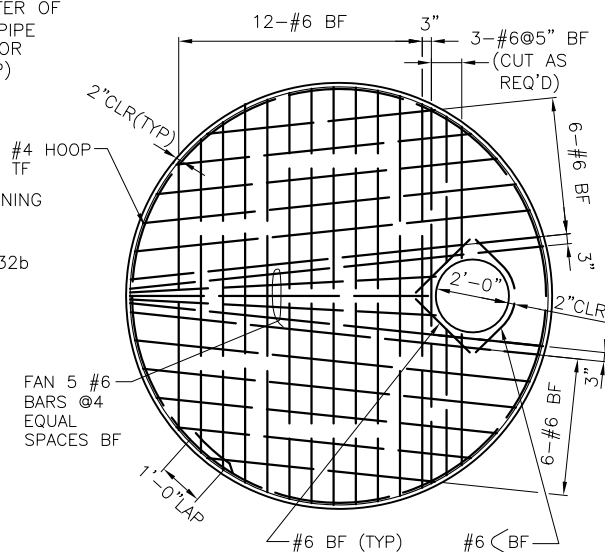
NOT TO SCALE

TYPE 209b MAINTENANCE HOLE



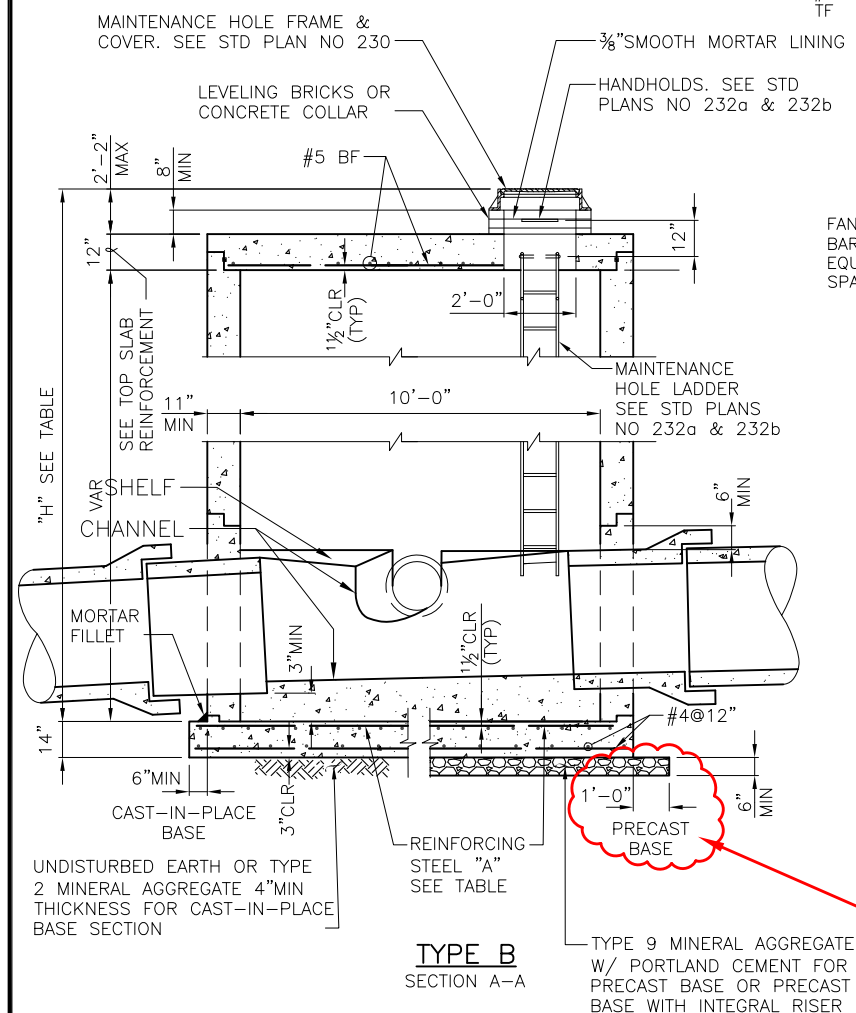


"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.52	0.45
30' MAX	0.66	0.57
40' MAX	0.81	0.70

**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**



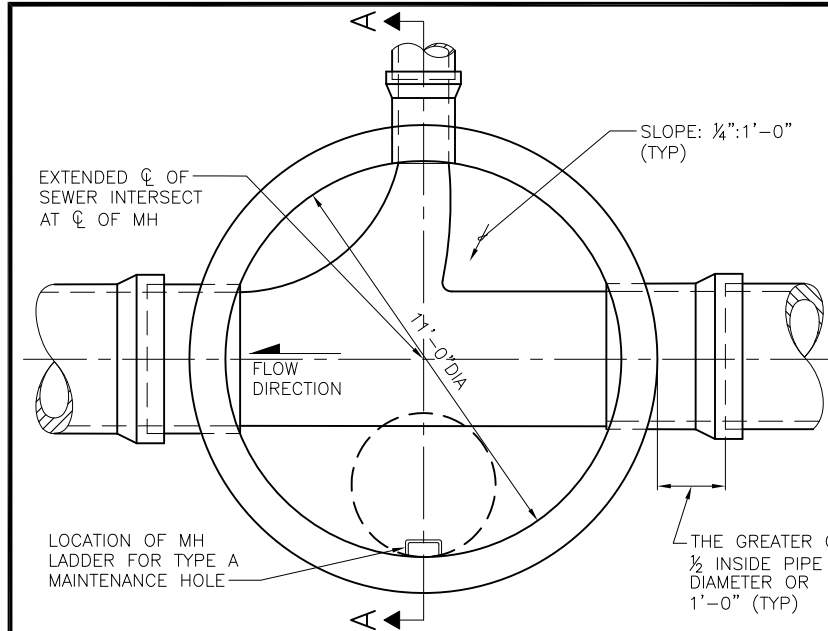
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

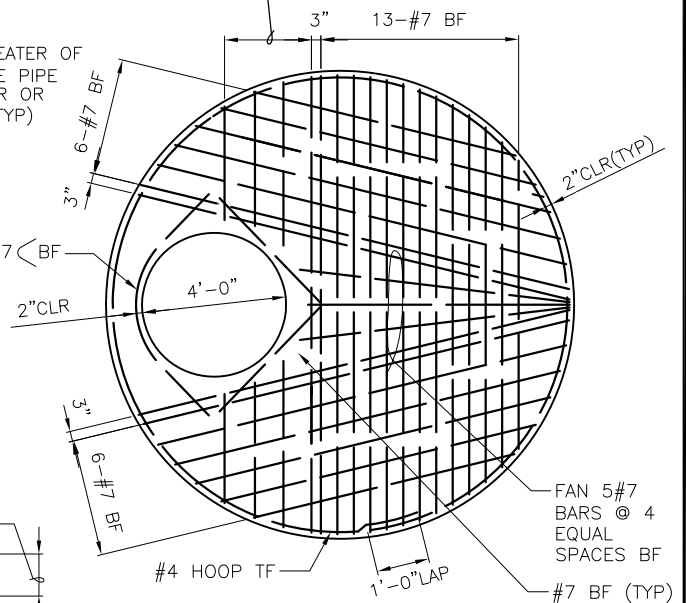
TYPE 210b MAINTENANCE HOLE



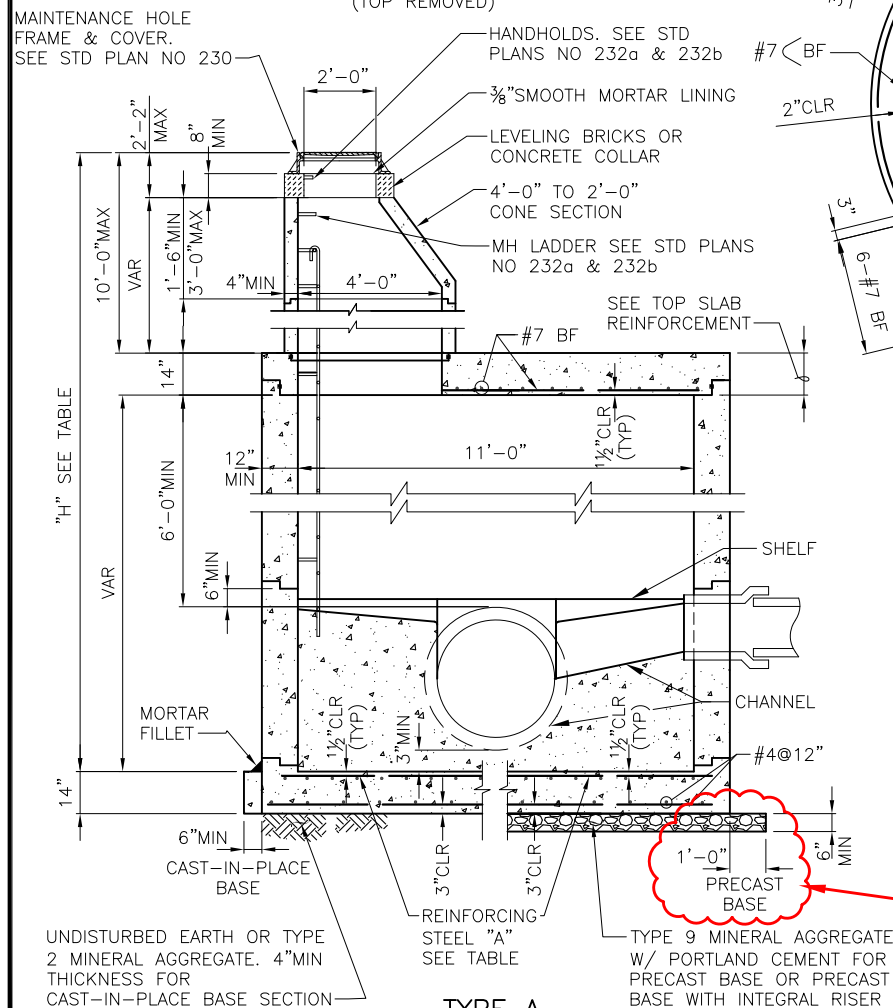
**PLAN VIEW**  
(TOP REMOVED)

"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

4-#7 BF (CUT AS REQ'D)



**TOP SLAB REINFORCEMENT**



**TYPE A**  
SECTION A-A

**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

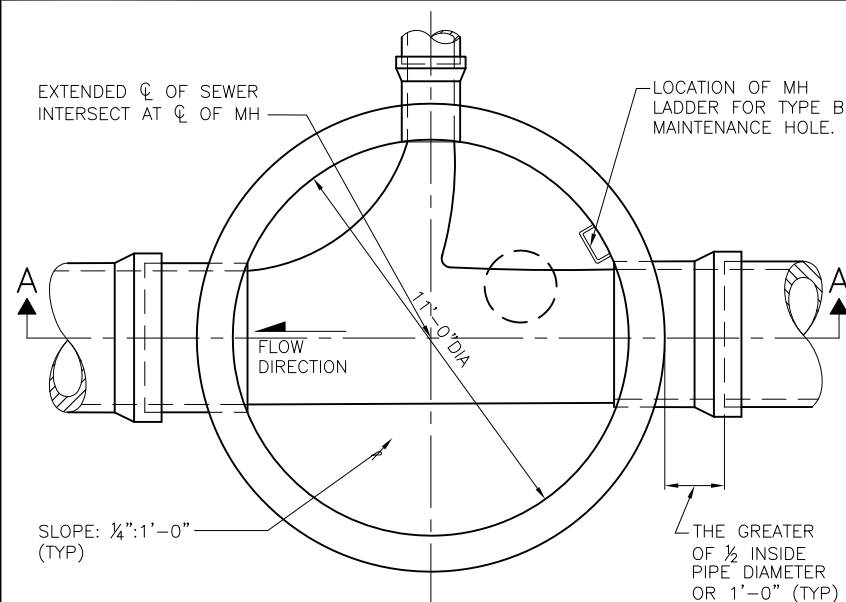


City of Seattle

NOT TO SCALE

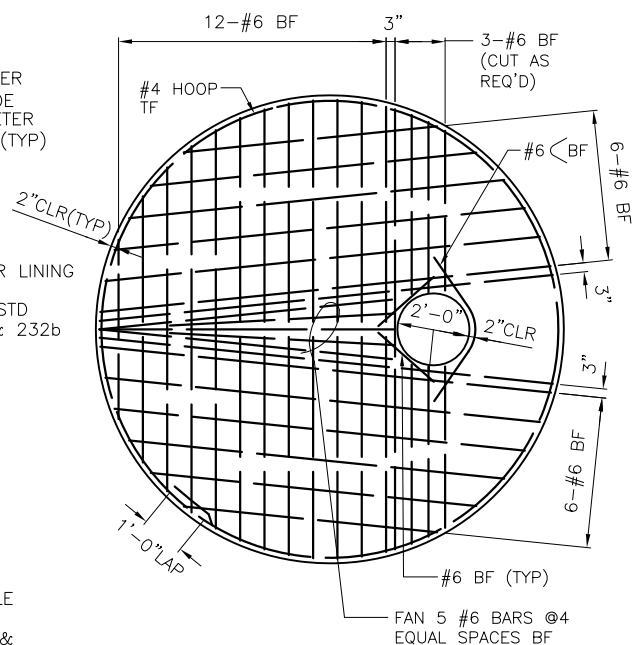
TYPE 211a MAINTENANCE HOLE



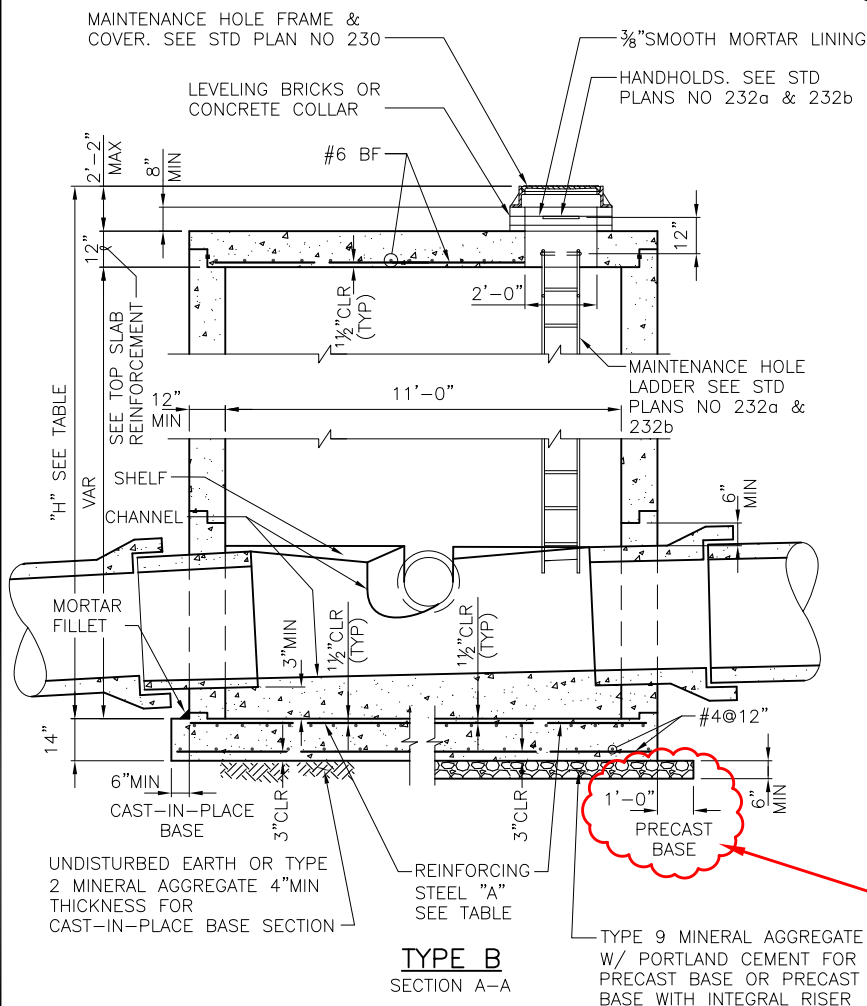


**PLAN VIEW**  
(TOP REMOVED)

"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



City of Seattle

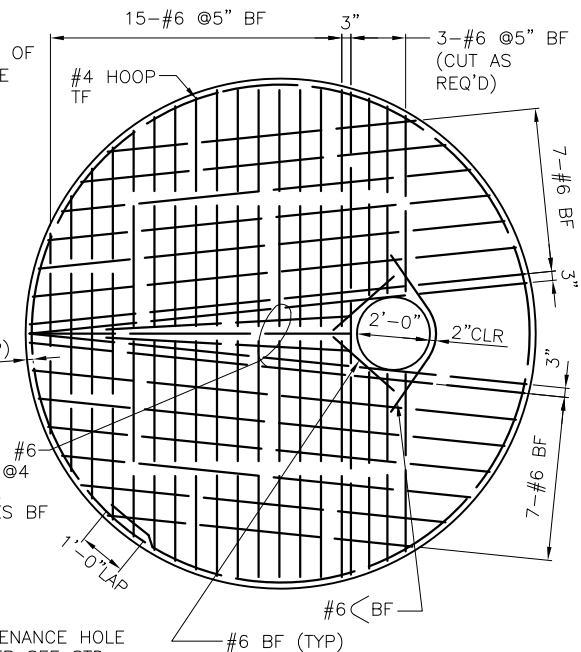
NOT TO SCALE

TYPE 211b MAINTENANCE HOLE



2014 Edition City of Seattle Standard Plans for Municipal Construction





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".

MAINTENANCE HOLE FRAME & COVER. SEE STD PLAN NO 230

LEVELING BRICKS OR CONCRETE COLLAR

#6 BF

3/8" SMOOTH MORTAR LINING

HANDHOLDS. SEE STD PLANS NO 232a & 232b

2" CLR (TYP)

FAN 5 #6 BARS @ 4 EQUAL SPACES BF

1'-0" LAP

12'-0"

1 1/2" CLR (TYP)

2'-0"

1 1/2" CLR (TYP)

3" MIN

1 1/2" CLR (TYP)

1 1/2" CLR (TYP)

6" MIN

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

6" MIN

1'-0"

PRECAST BASE

TYPE 9 MINERAL AGGREGATE W/ PORTLAND CEMENT FOR PRECAST BASE OR PRECAST BASE WITH INTEGRAL RISER

REINFORCING STEEL "A" SEE TABLE

3" CLR

3" CLR

6" MIN

CAST-IN-PLACE BASE

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

15"

6" MIN

MORTAR FILLET

CHANNEL

SHELF

SEE TOP SLAB REINFORCEMENT

12" MIN

12"

2'-2" MAX

8" MIN

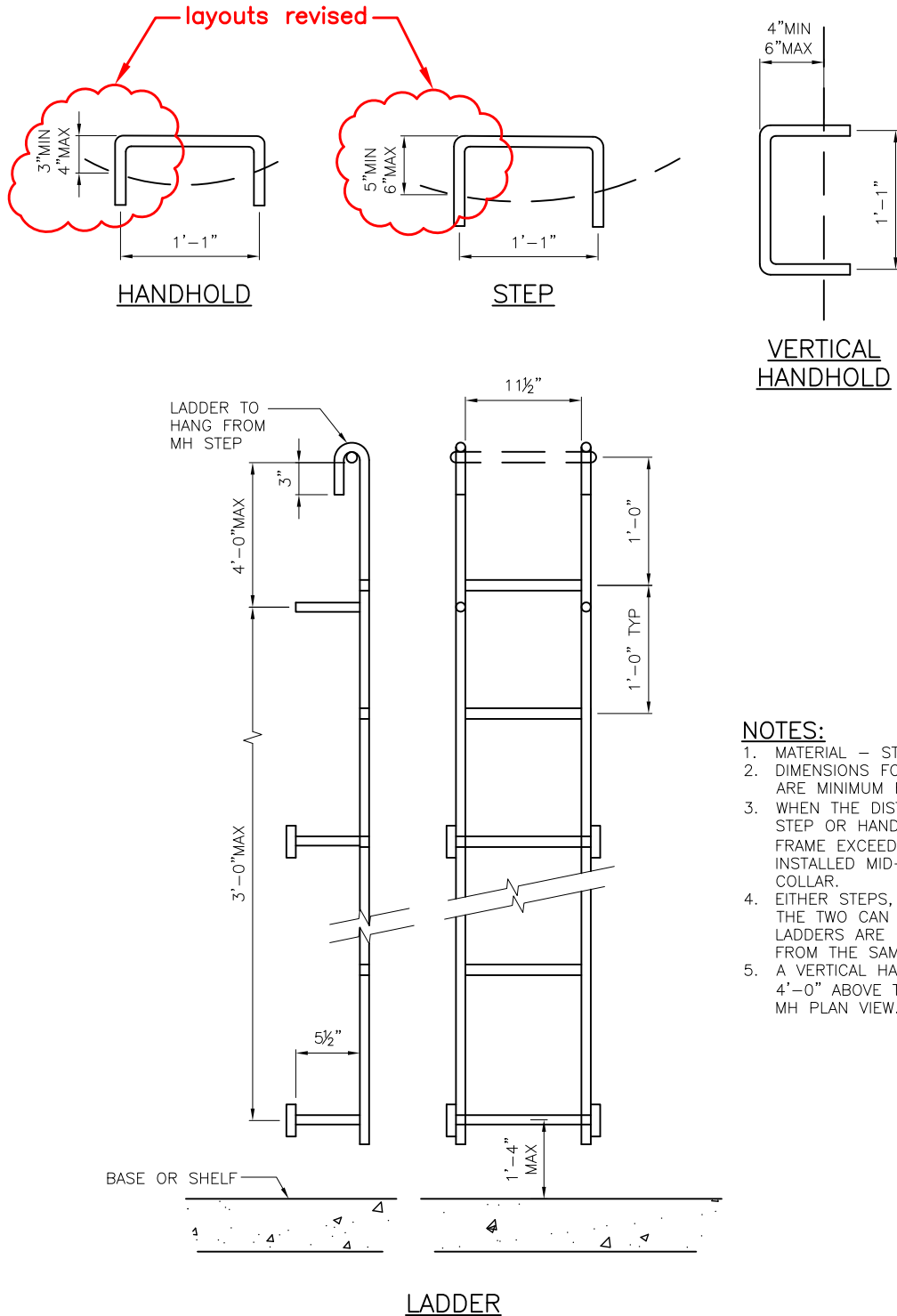
"H" SEE TABLE

VAR

NOTE

1. MA
2. PR
3. MI
4. MA

TYPE B  
SECTION A-A

**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.

REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

**MAINTENANCE HOLE LADDER,  
STEP AND HANDHOLD**

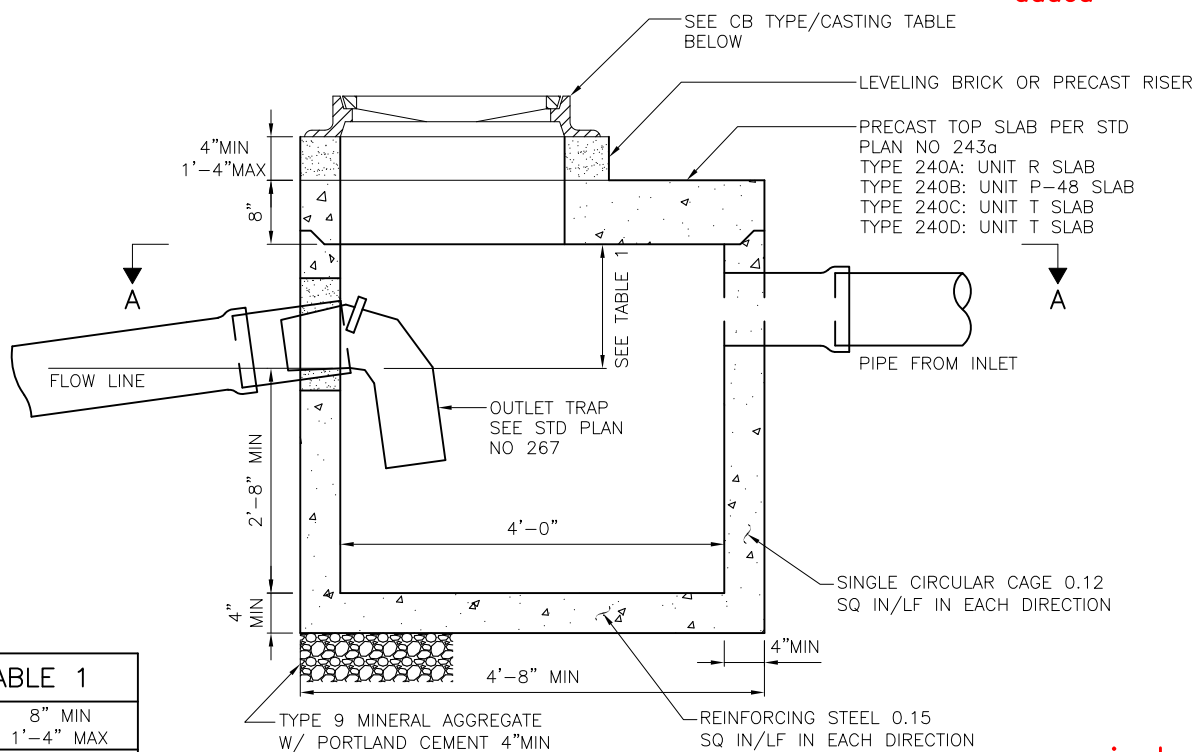
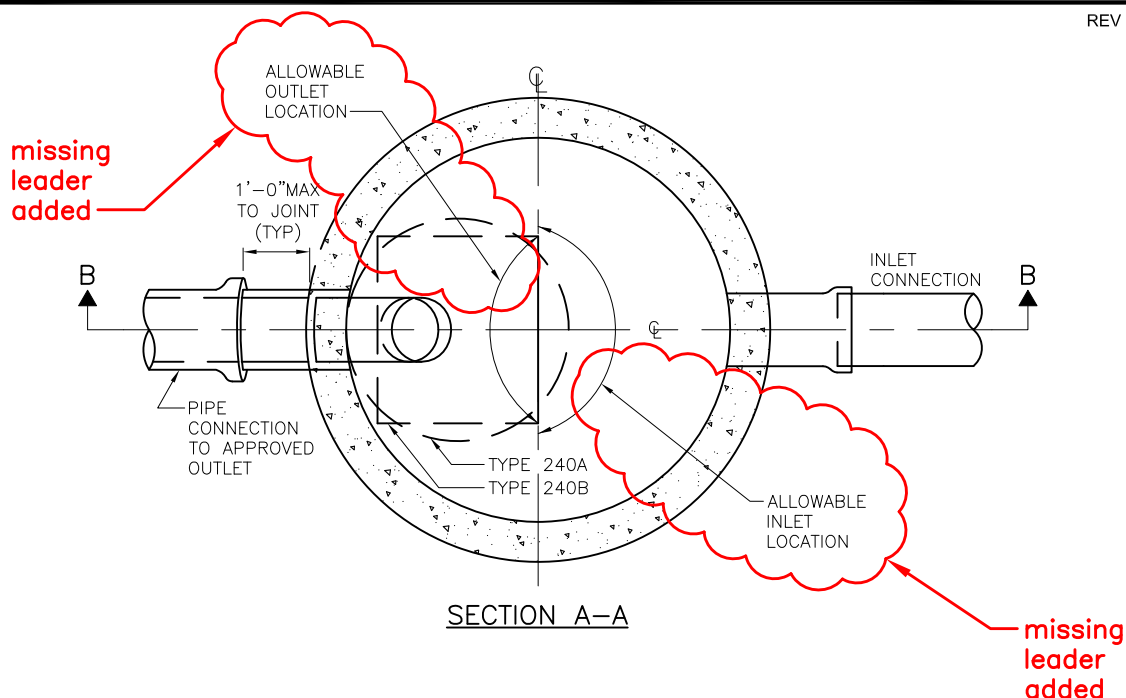


TABLE 1	
6"Ø	8" MIN 1'-4" MAX
8"Ø	10" MIN 1'-4" MAX
12"Ø	1'-3" MIN 2'-0" MAX

**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



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NOT TO SCALE

TYPE 240 CATCH BASIN

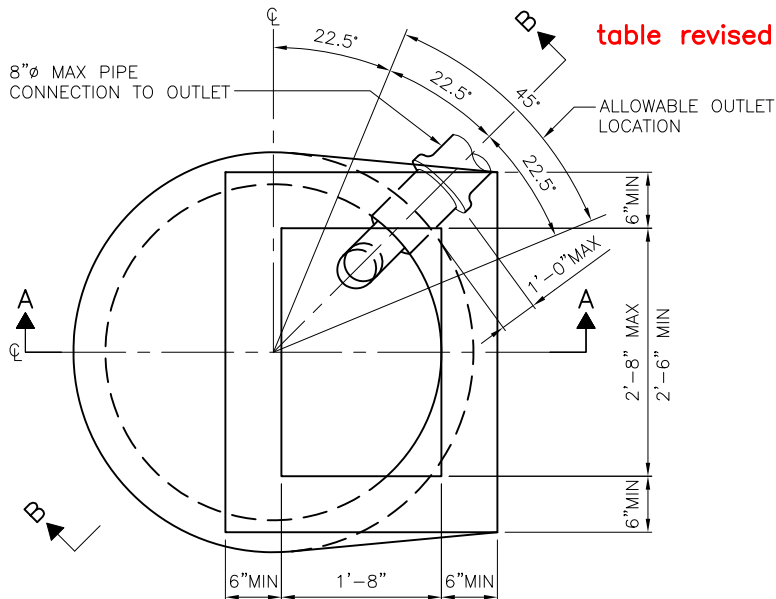
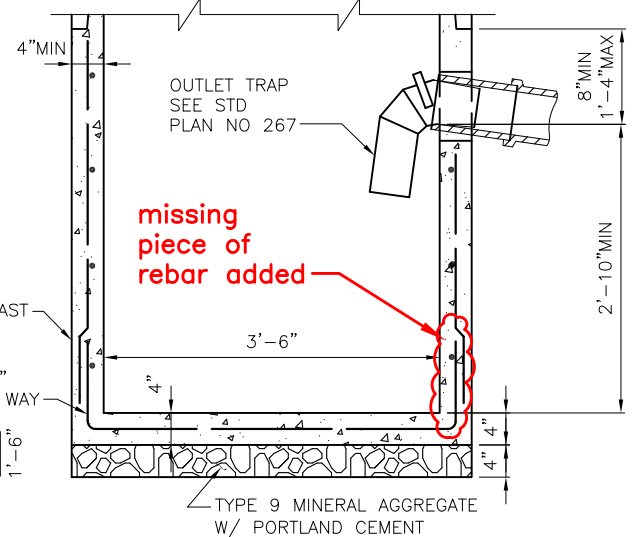
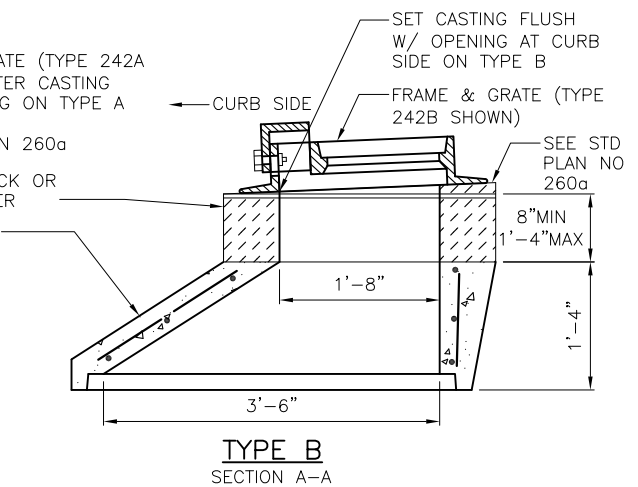
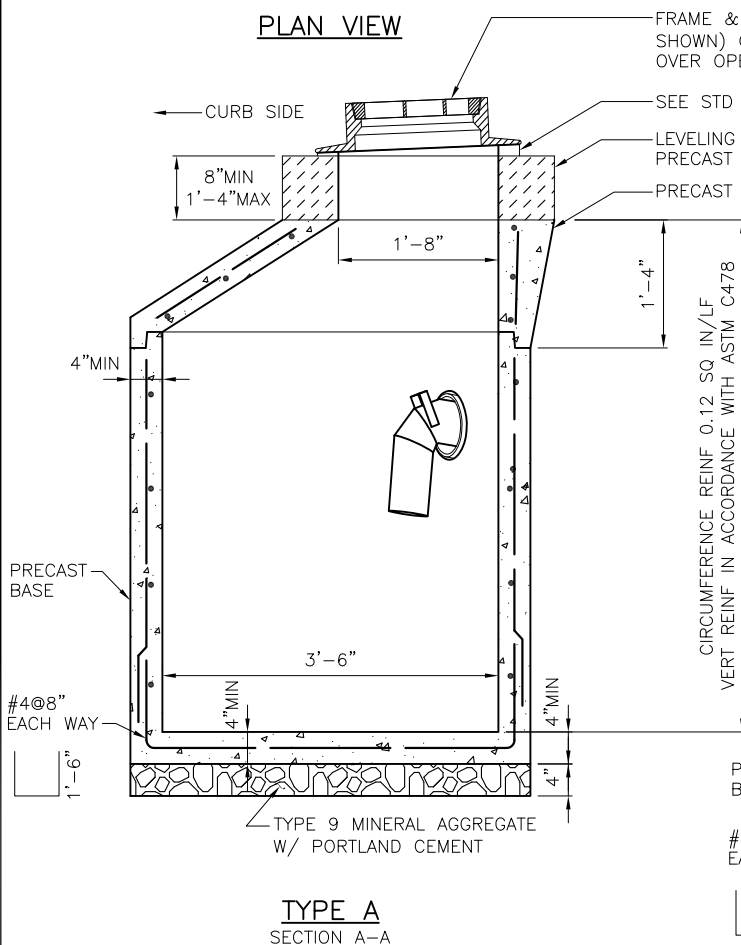


table revised

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  $\frac{1}{4}$  TO  $\frac{1}{2}$  GROUT IN BETWEEN BRICKS.



missing piece of rebar added

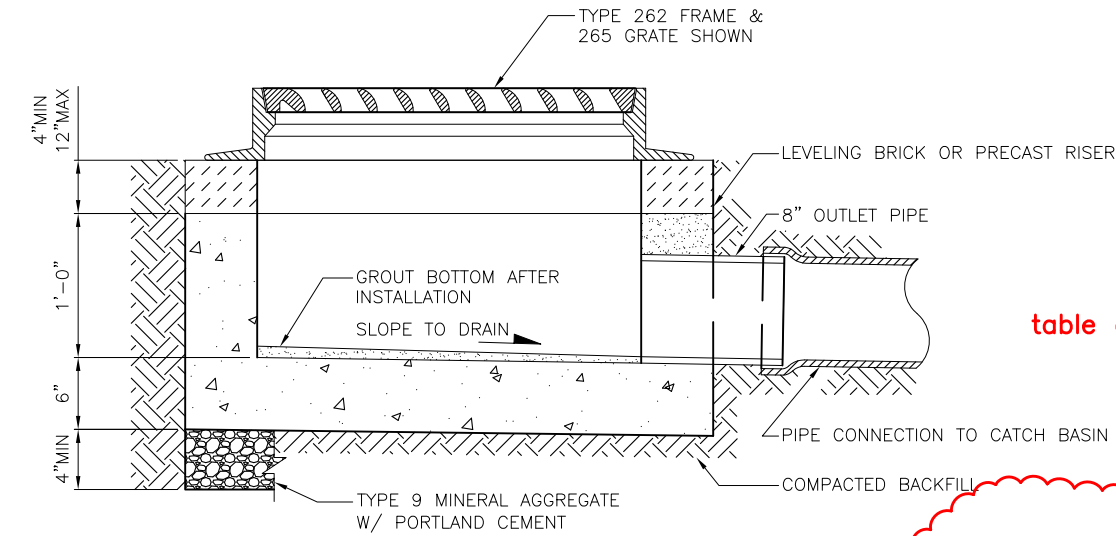
REF STD SPEC SEC 7-05



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NOT TO SCALE

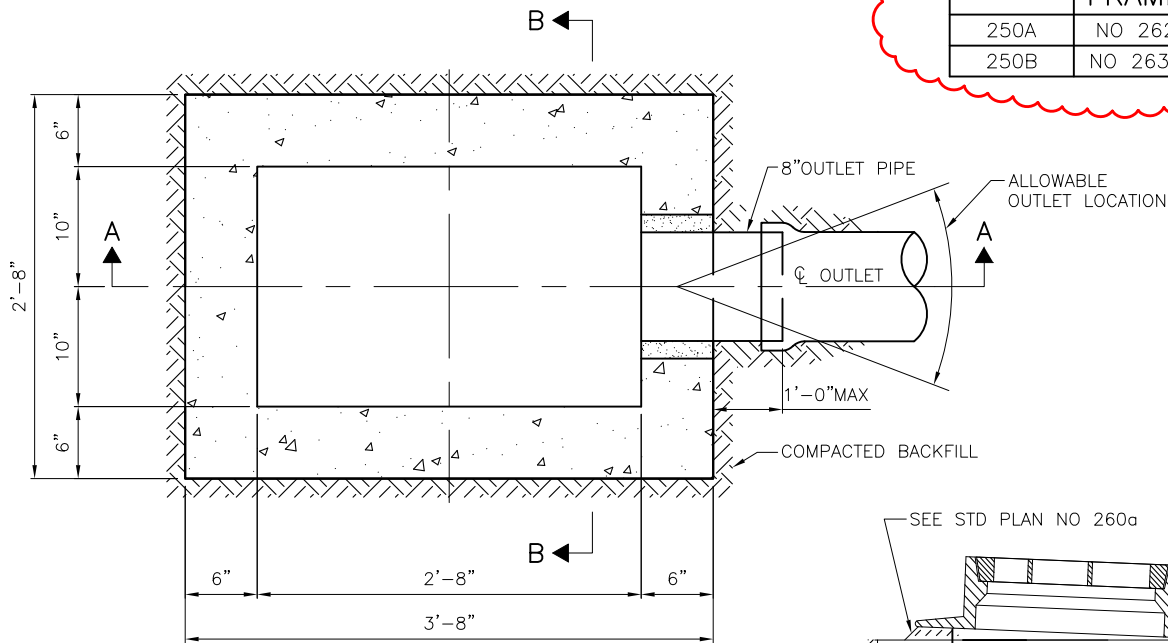
TYPE 242 CATCH BASIN



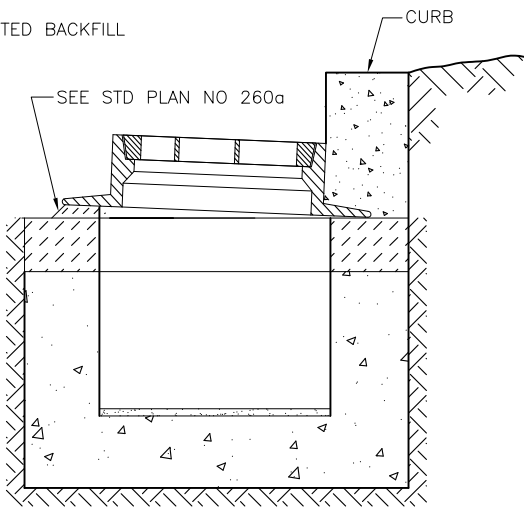
SECTION A-A

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

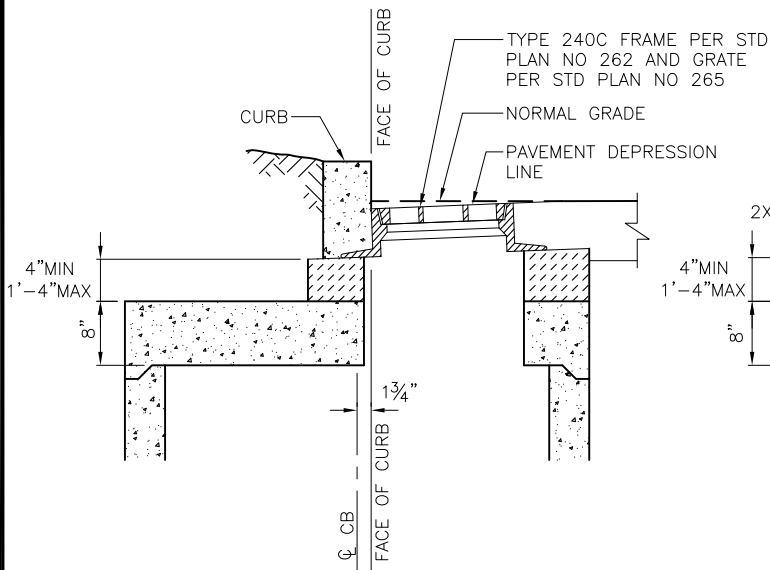


City of Seattle

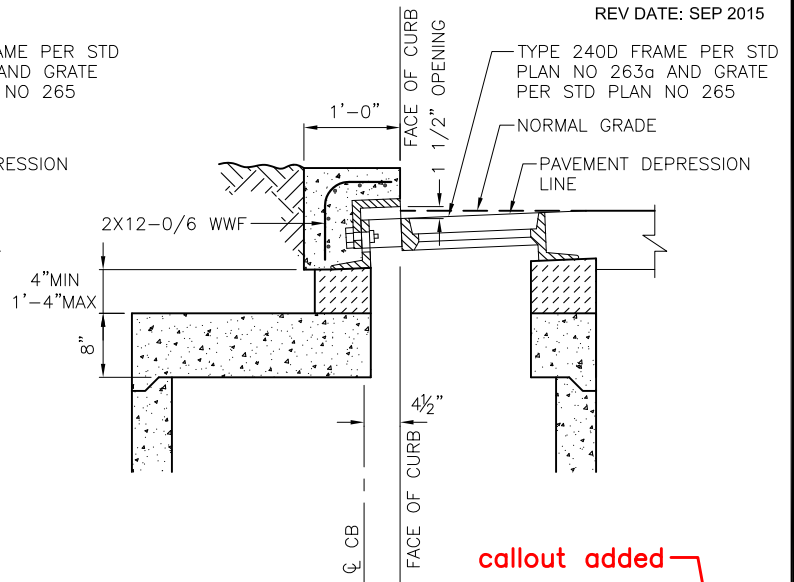
NOT TO SCALE

TYPE 250 INLET

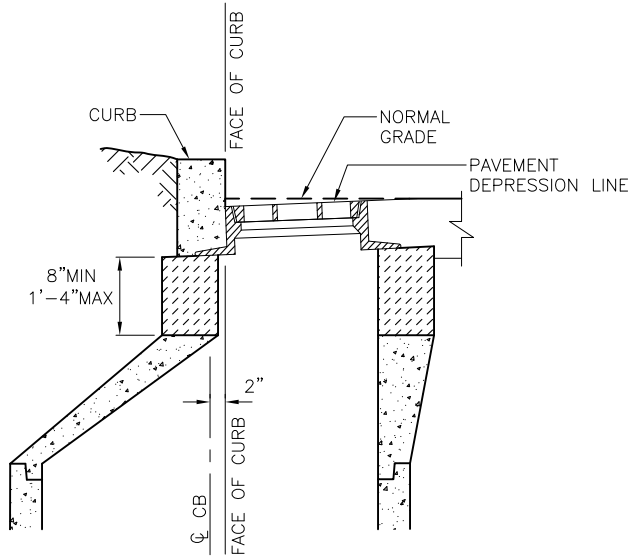
REV DATE: SEP 2015



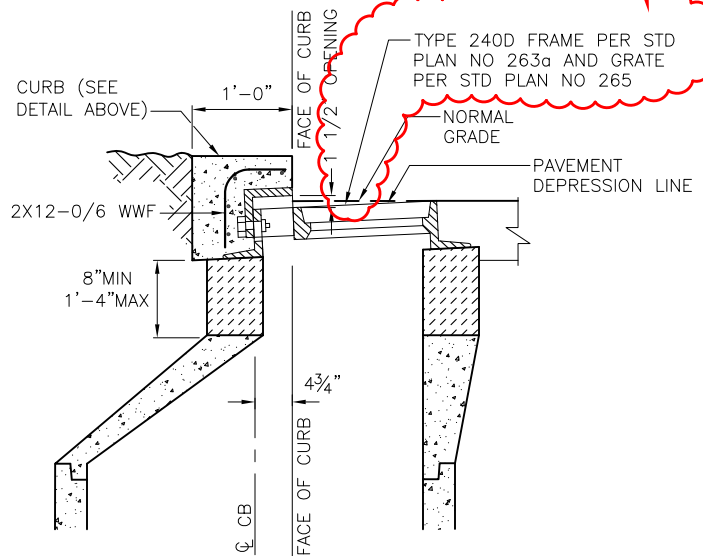
**TYPE 240C CB**



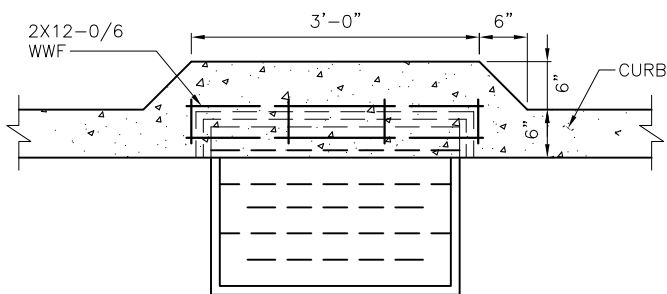
**TYPE 240D CB**



**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

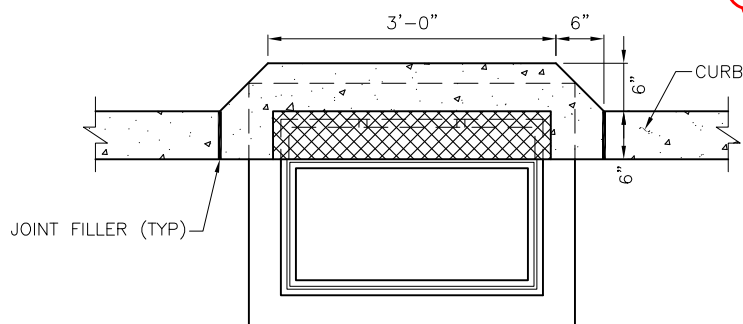


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NOT TO SCALE

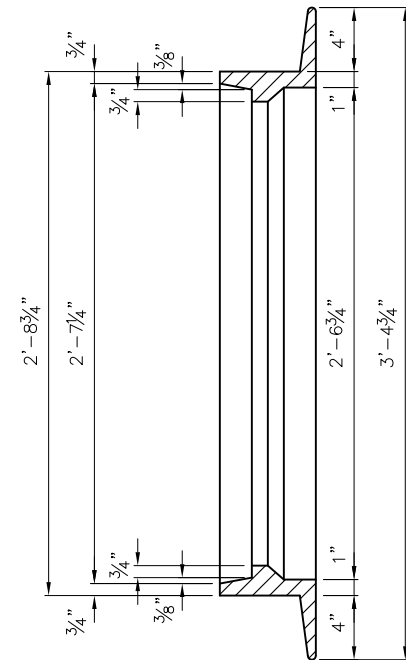
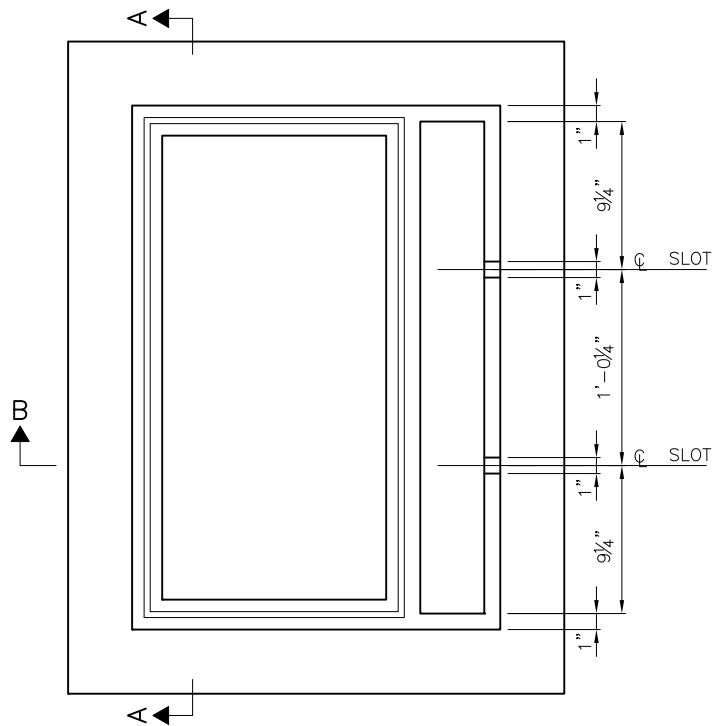
**CATCH BASIN &  
INLET INSTALLATION**

new std plan

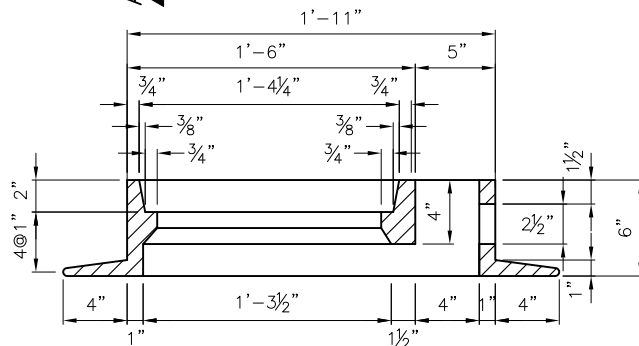


CURB DETAIL (PLAN VIEW) FOR  
TYPE 240D & 242C CB & TYPE 250B INLET

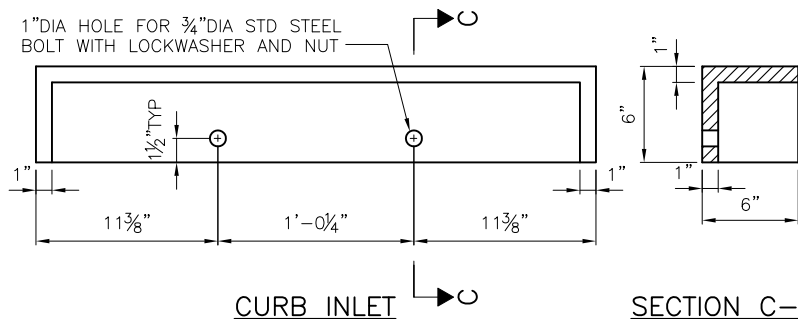
# CATCH BASIN & INLET INSTALLATION WITH STANDARD PLAN 263B ALTERNATIVE HOOD

renumbered due to  
new std plan 263b

SECTION A-A



SECTION B-B



SECTION C-C

REF STD SPEC SEC 9-12



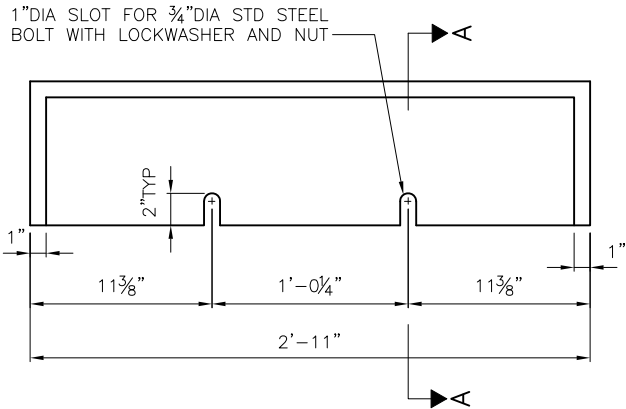
City of Seattle

NOT TO SCALE

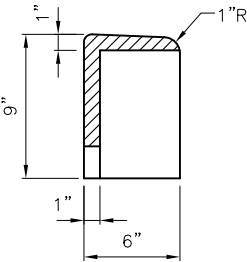
TYPE 263 INLET FRAME  
AND HOOD



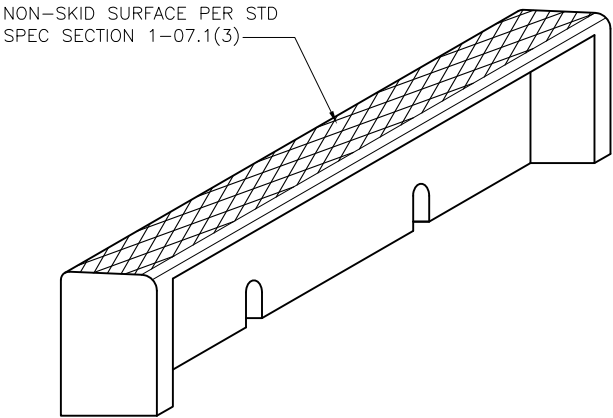
new standard plan



CURB INLET



SECTION A-A



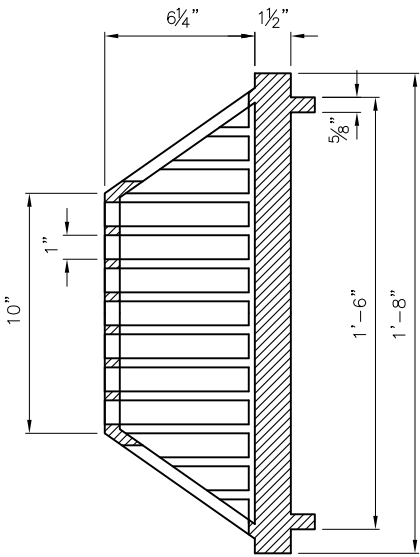
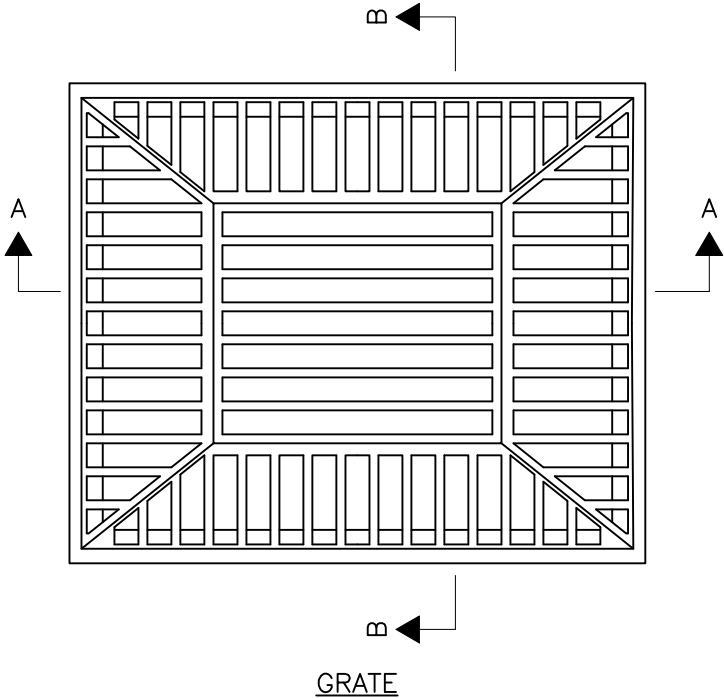
REF STD SPEC SEC 9-12



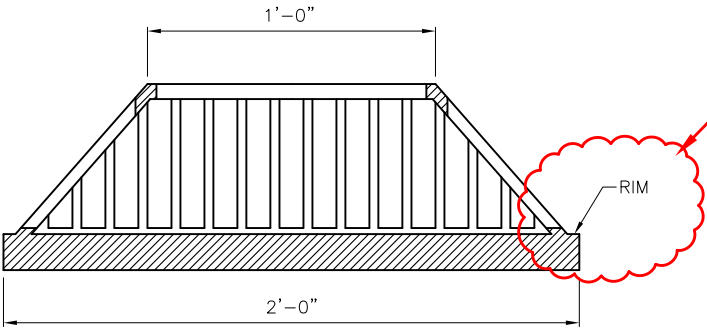
City of Seattle

NOT TO SCALE

TYPE 263 ALTERNATIVE  
INLET HOOD



SECTION B-B



SECTION A-A

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

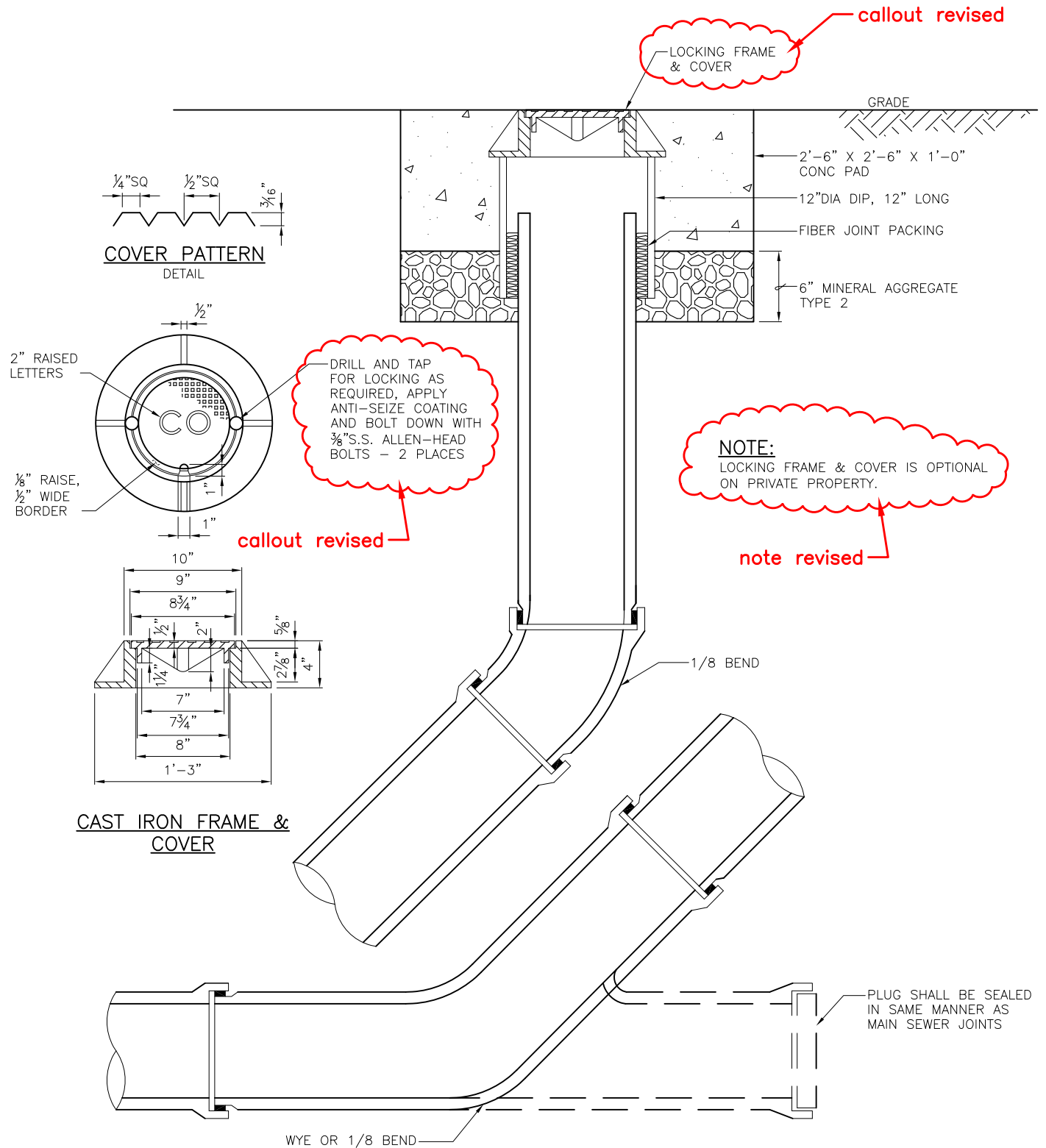
REF STD SPEC SEC 9-12



City of Seattle

NOT TO SCALE

BEEHIVE GRATE FOR  
BIORETENTION



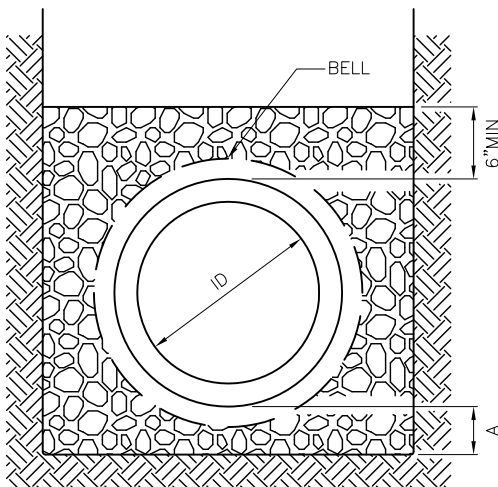
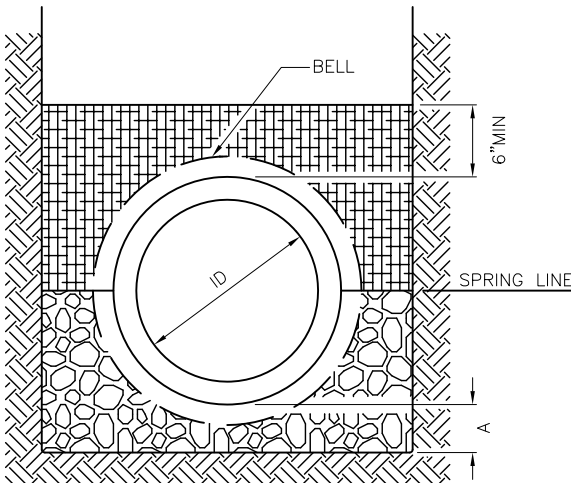
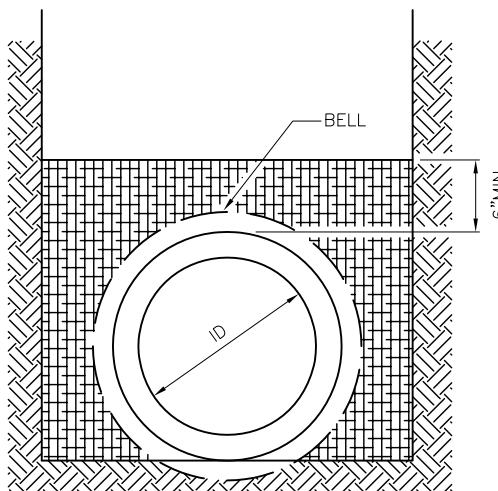
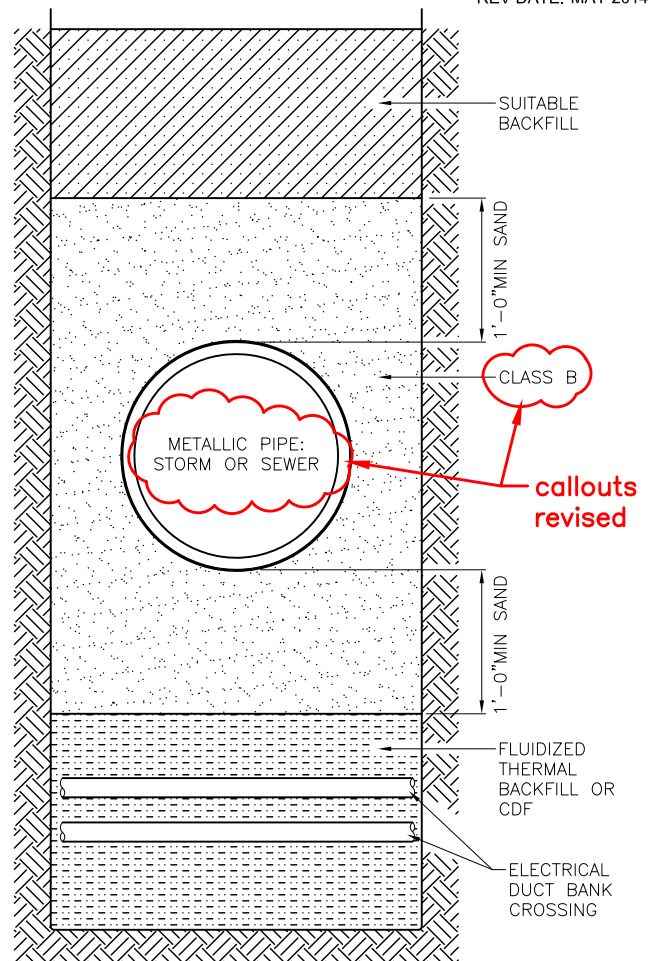
REF STD SPEC SEC 7-19



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 CROSSINGSMINERAL AGGREGATE PER STD SPEC 9-03.16  
TYPE 9 FOR DUCTILE IRON WHEN APPLICABLE  
OR CONCRETE PIPE TYPE 22 FOR VITRIFIED  
CLAY AND FLEXIBLE PIPESELECTED 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.

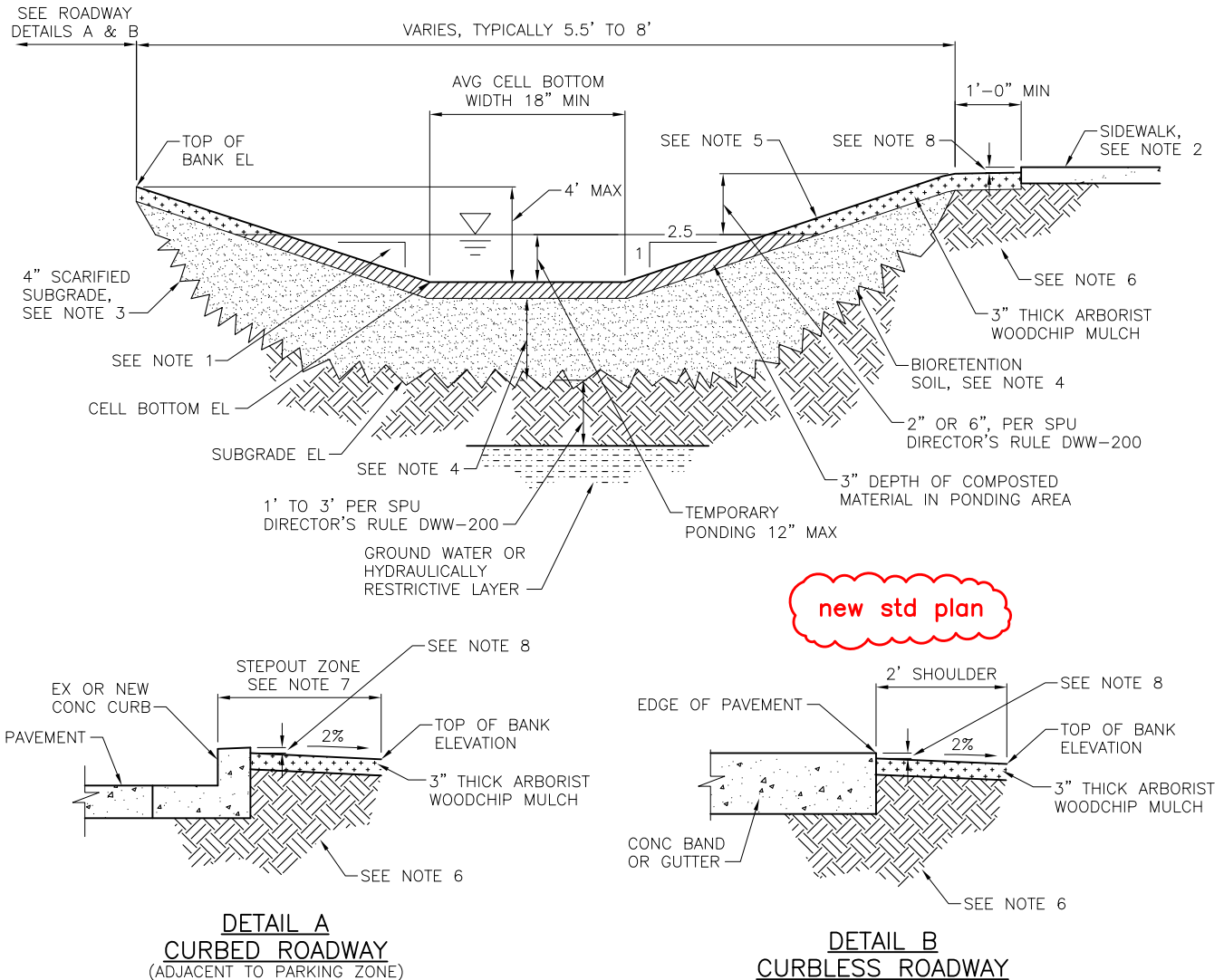
REF STD SPEC SEC 2-10.2, 7-11, 7-17, 9-03.16



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NOT TO SCALE

**PIPE BEDDING  
SEWER/STORM DRAIN**

**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



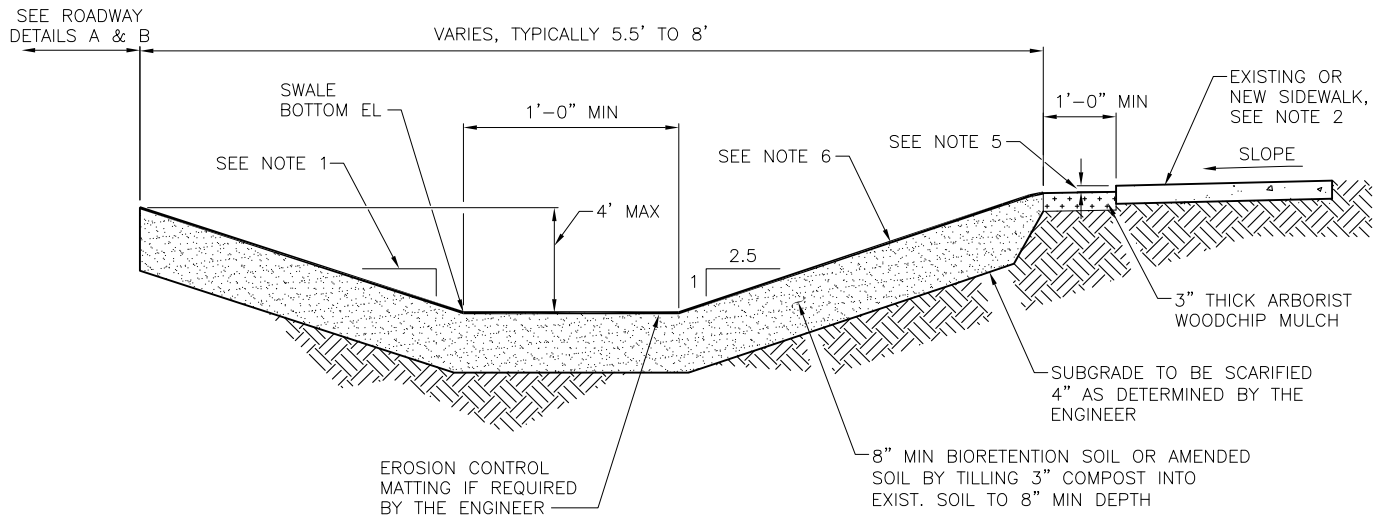
City of Seattle

NOT TO SCALE

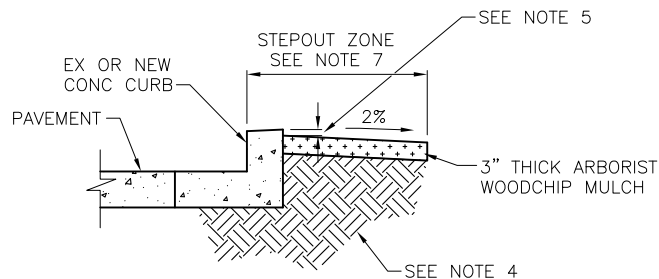
INFILTRATING BIORETENTION  
WITH SLOPED SIDES



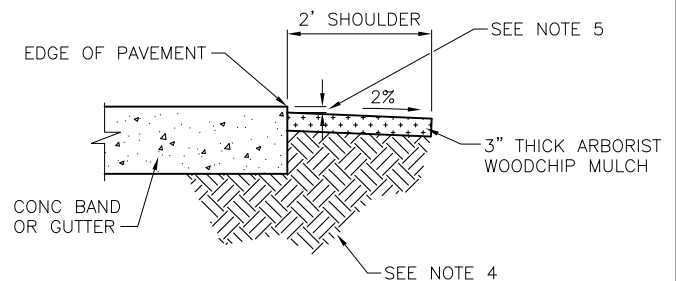




new std plan



**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. 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



City of Seattle

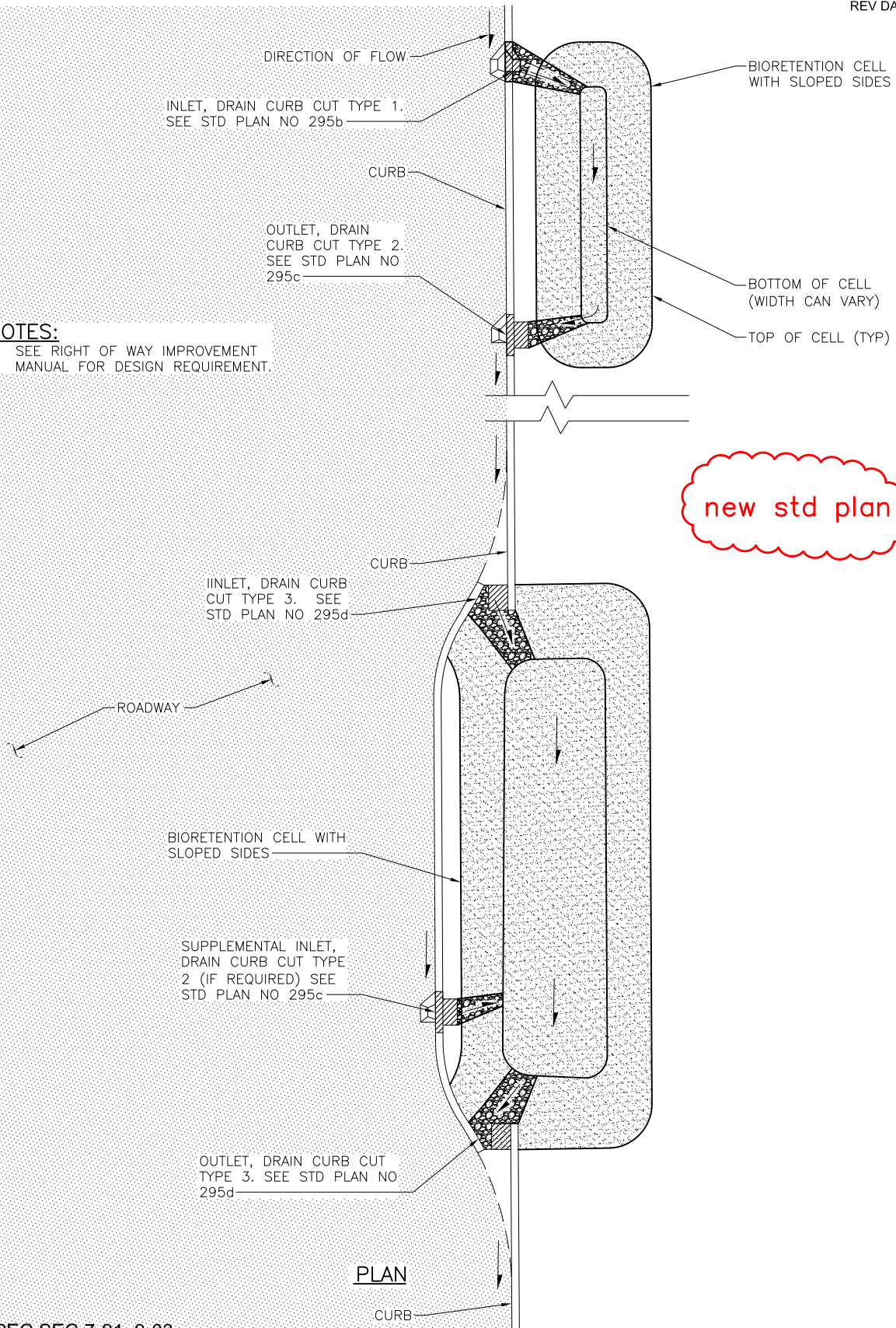
NOT TO SCALE

**VEGETATED CONVEYANCE SWALE**  
**(NOT FOR WATER QUALITY TREATMENT)**



**NOTES:**

1. SEE RIGHT OF WAY IMPROVEMENT  
MANUAL FOR DESIGN REQUIREMENT.



REF STD SPEC SEC 7-21, 9-03

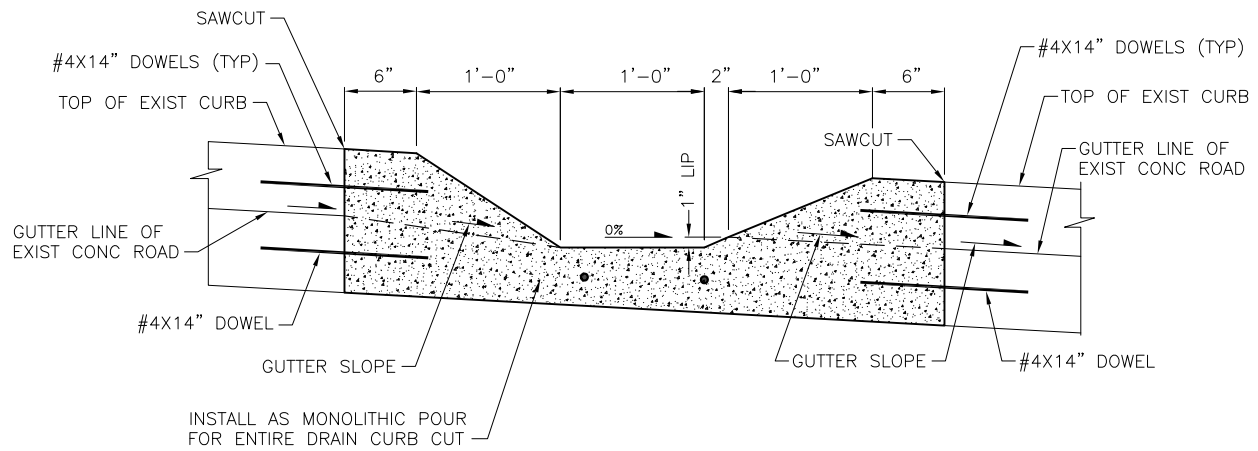


City of Seattle

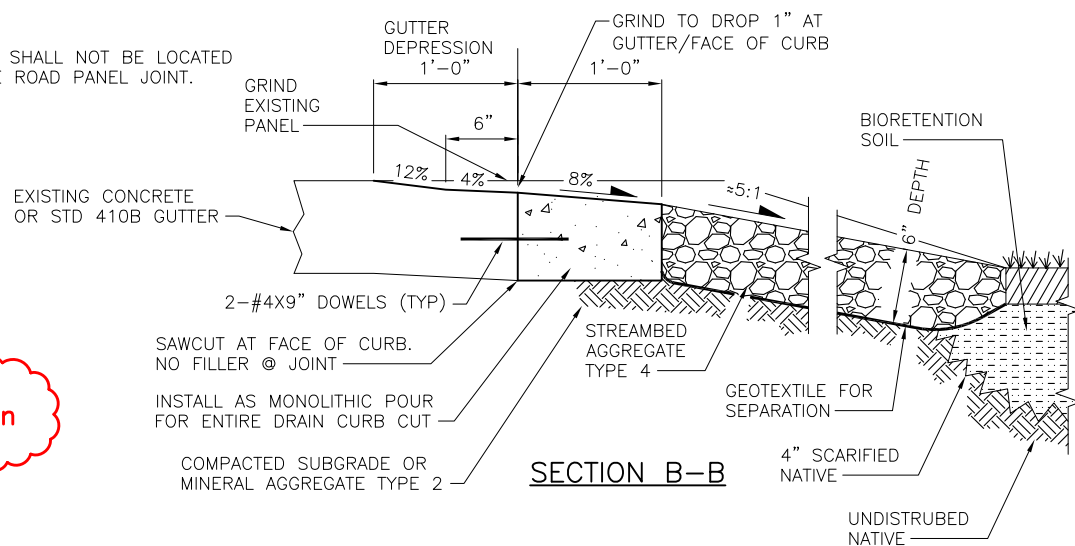
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**TYPICAL DRAIN CURB CUT  
LOCATION FOR BIORETENTION  
WITH SLOPED SIDES**

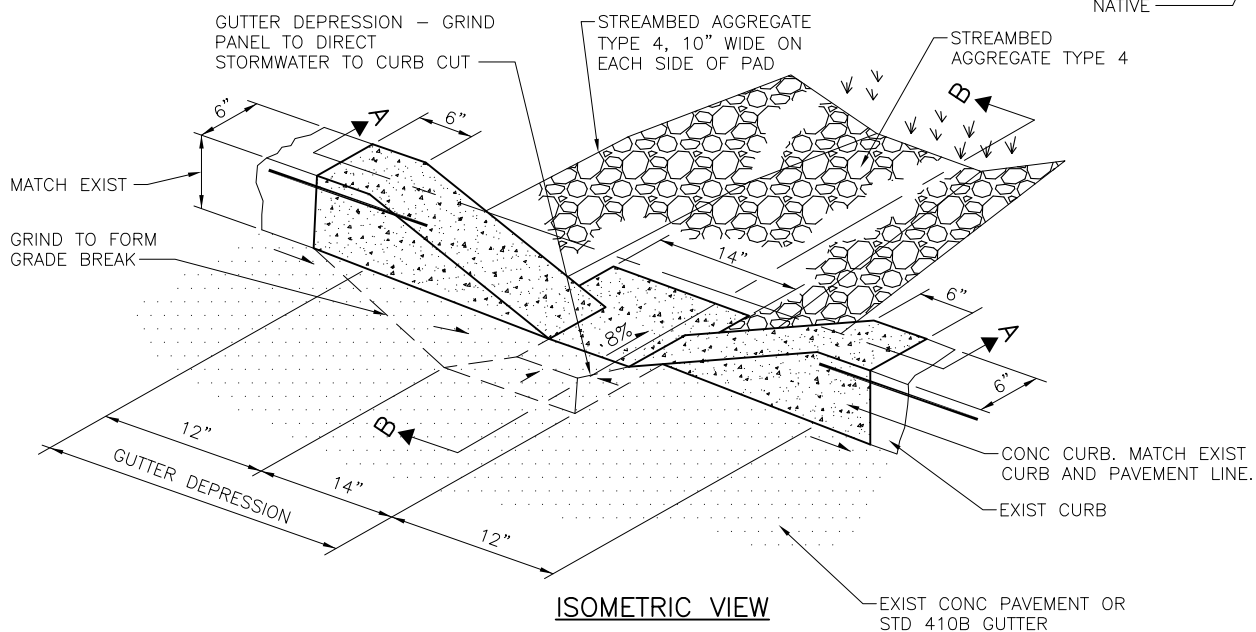


**SECTION A-A****NOTES:**

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

**SECTION B-B**

new std plan

**ISOMETRIC VIEW**

REF STD SPEC SEC 7-21, 9-03

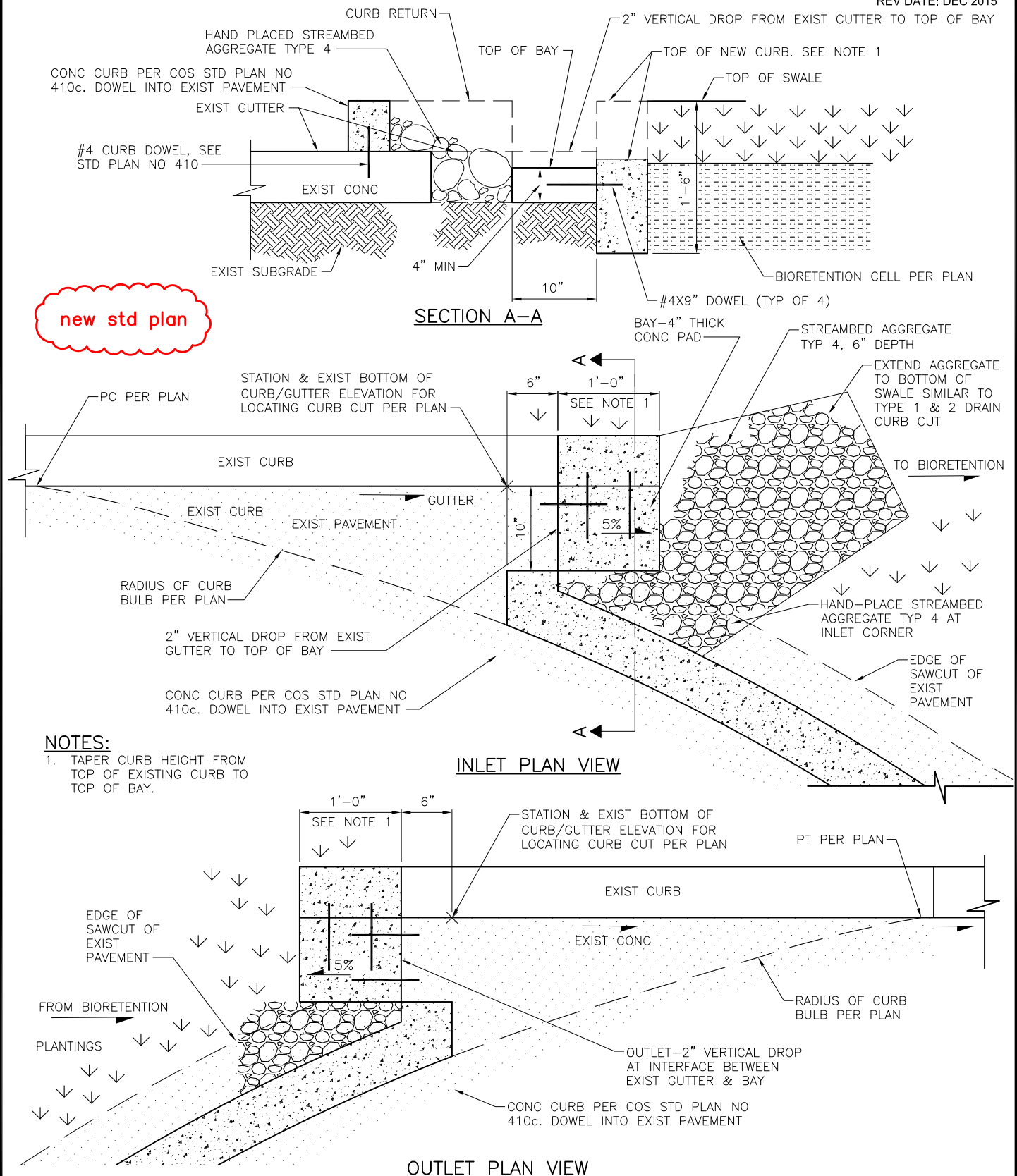


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NOT TO SCALE

**DRAIN CURB CUT TYPE 2**

REV DATE: DEC 2015



REF STD SPEC SEC 7-21, 9-03

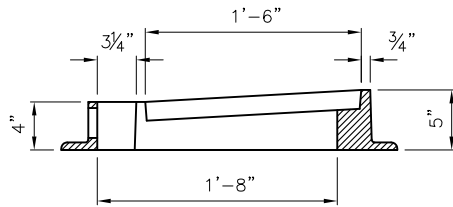


City of Seattle

NOT TO SCALE

DRAIN CURB CUT TYPE 3

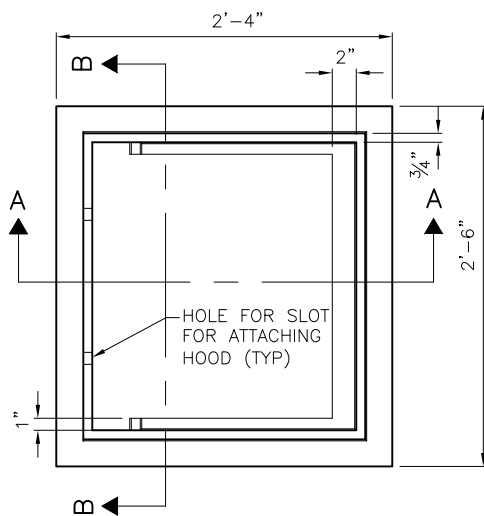
new std plan



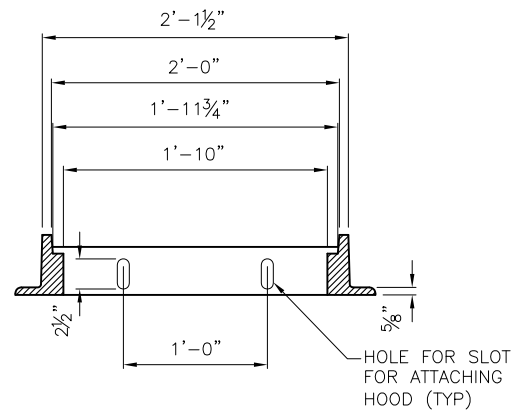
SECTION A-A

**NOTES:**

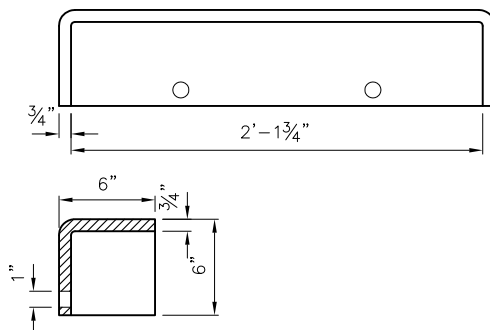
1. ATTACH THE HOOD TO THE FRAME WITH TWO  $\frac{3}{4}$ " X 2" HEX HEAD BOLTS, NUTS, AND OVERSIZE WASHERS. THE WASHERS SHALL HAVE DIAMETERS ADEQUATE TO ENSURE FULL BEARING ACROSS THE SLOTS.
2. ONLY DUCTILE IRON VANED GRATES SHALL BE USED.



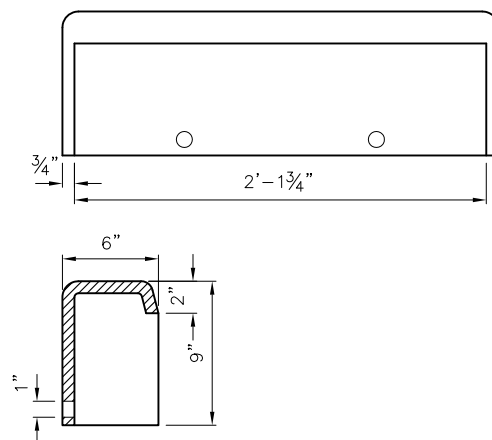
FRAME DETAIL



SECTION B-B



6" HOOD



9" HOOD

REF STD SPEC SEC 7-05

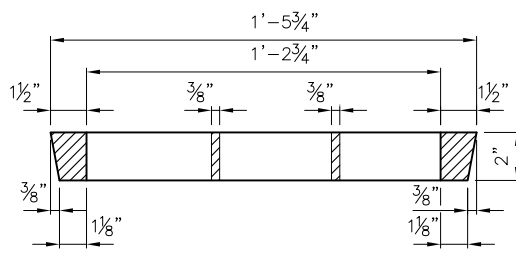
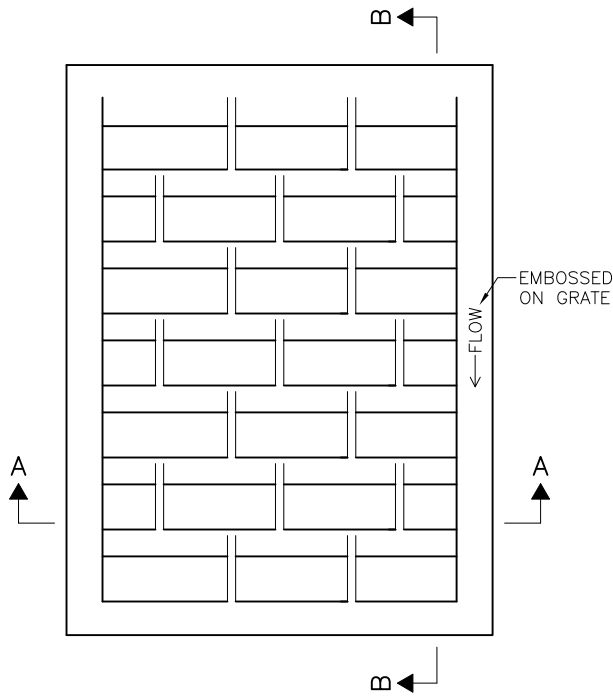


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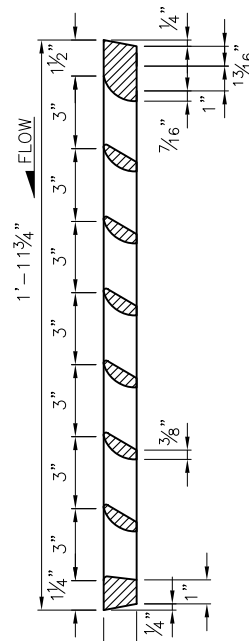
NOT TO SCALE

CURB INLET FRAME

new std plan



SECTION A-A



SECTION B-B

GRATE MATERIAL:  
DUCTILE IRON

REF STD SPEC SEC

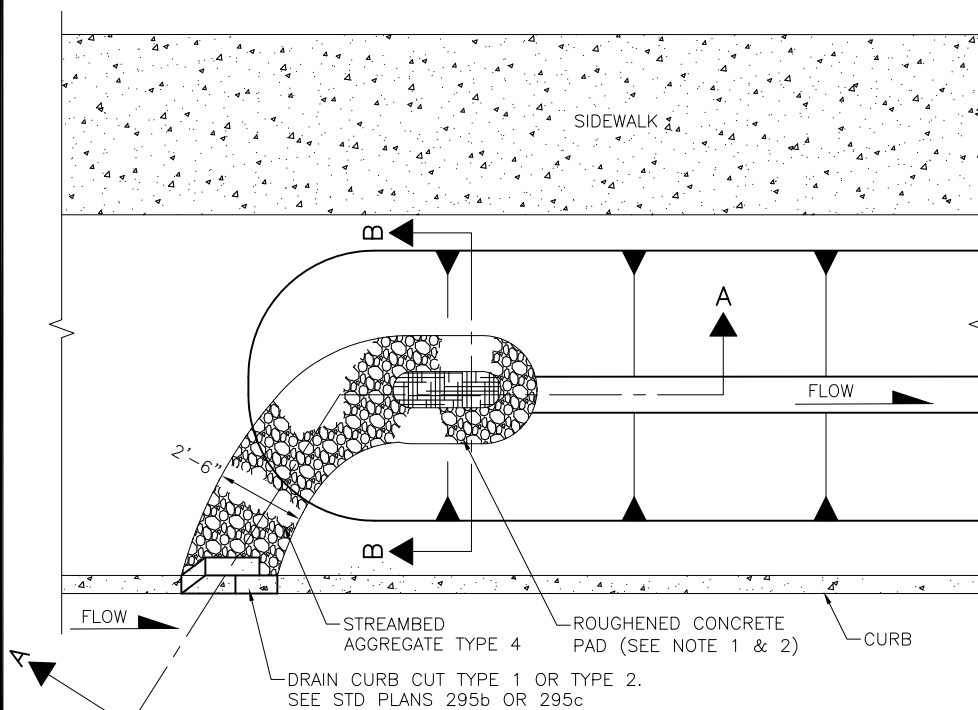
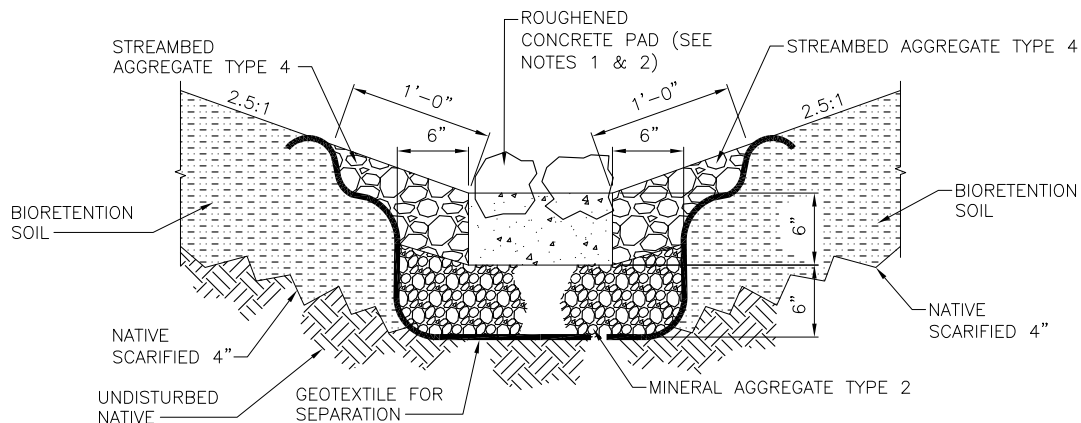
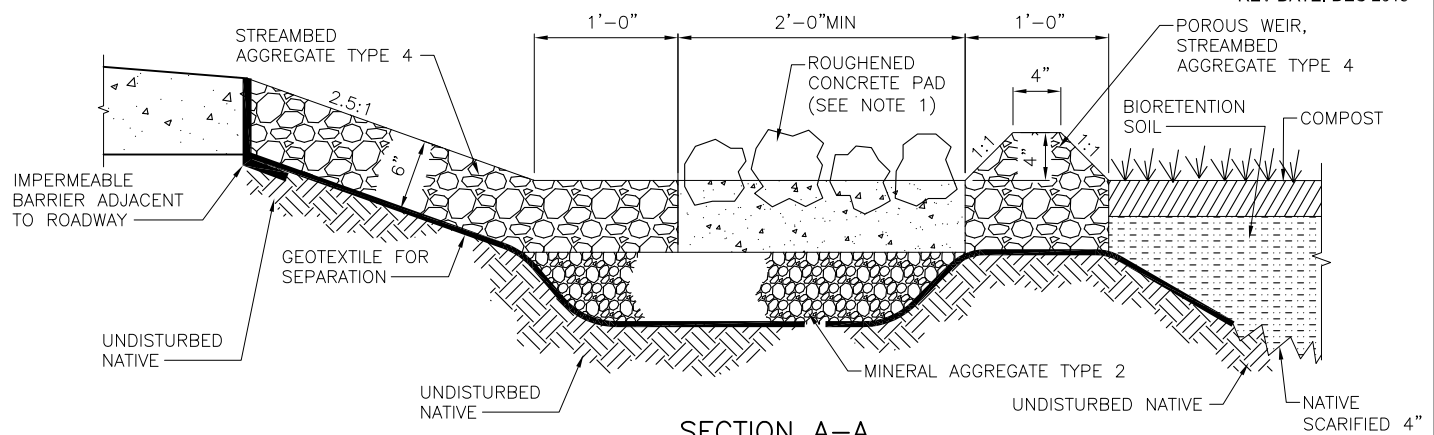


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NOT TO SCALE

CURB INLET VANED GRATE

REV DATE: DEC 2015



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

REF STD SPEC SEC 7-21, 9-03

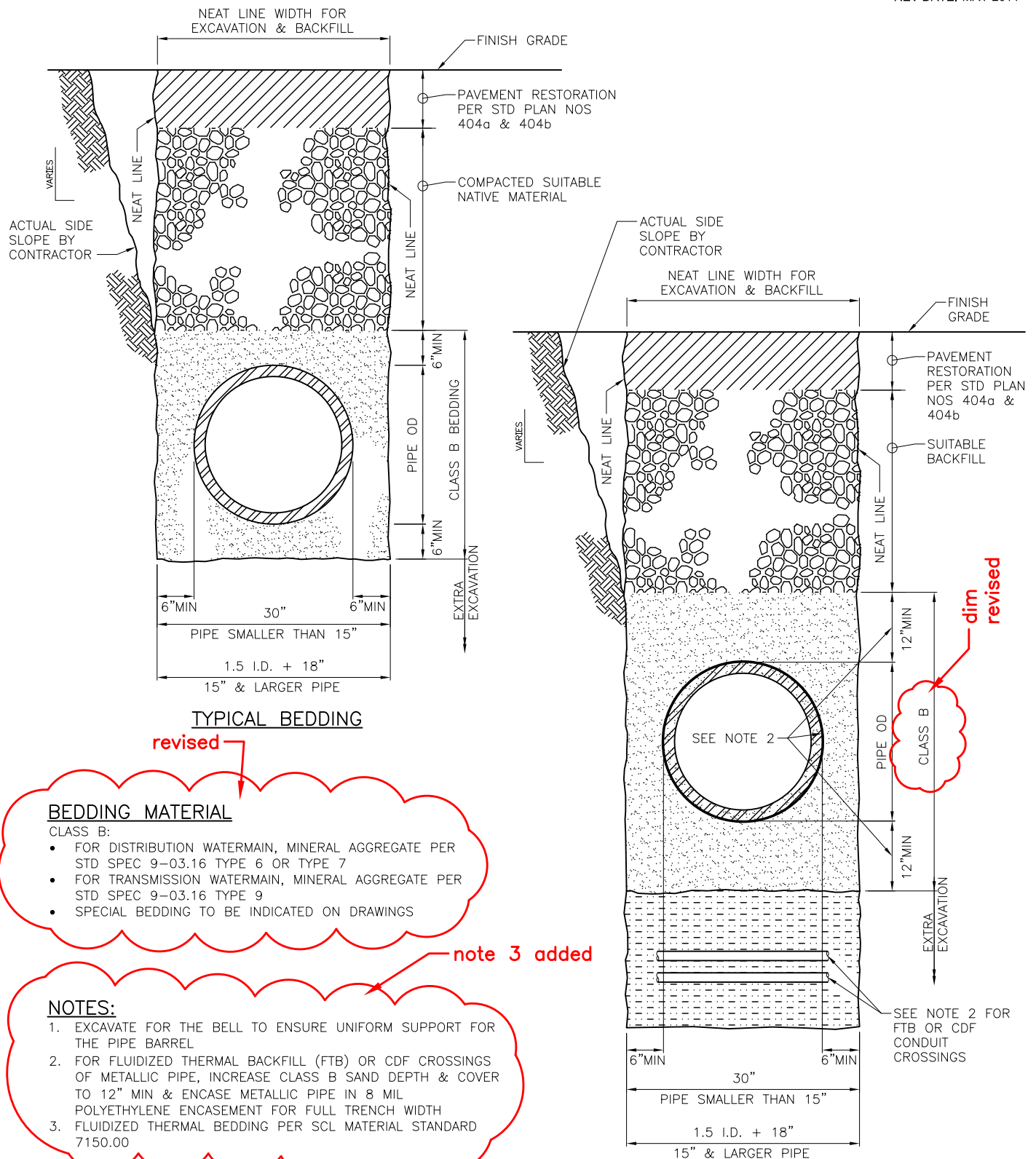


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NOT TO SCALE

PRESETTLING ZONE





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

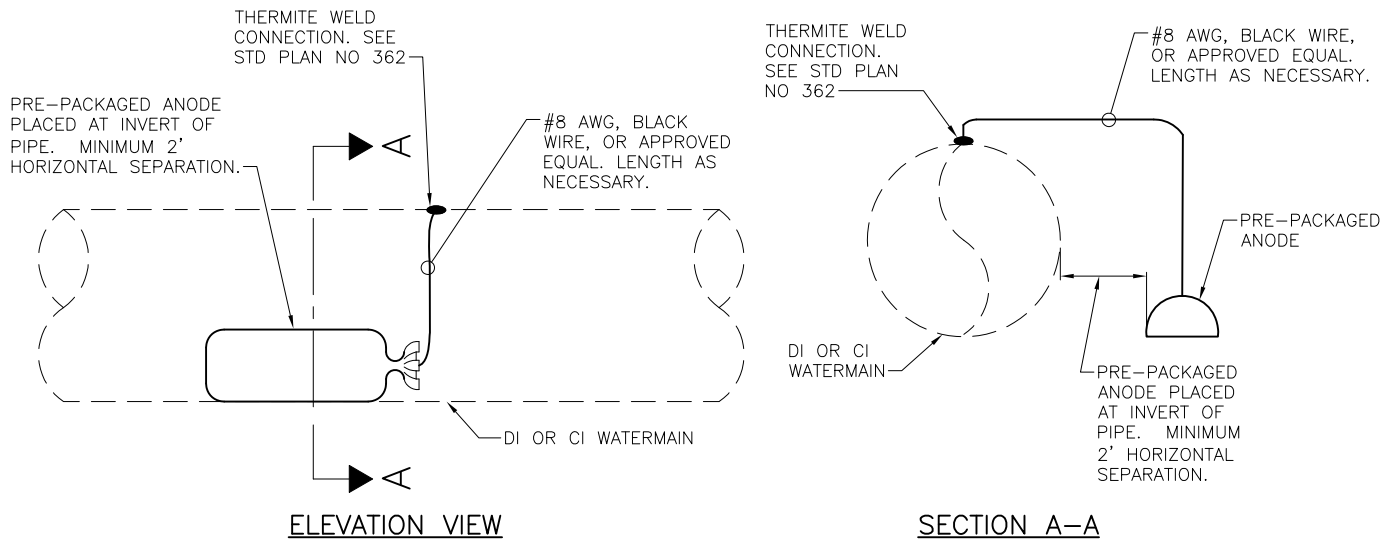


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NOT TO SCALE

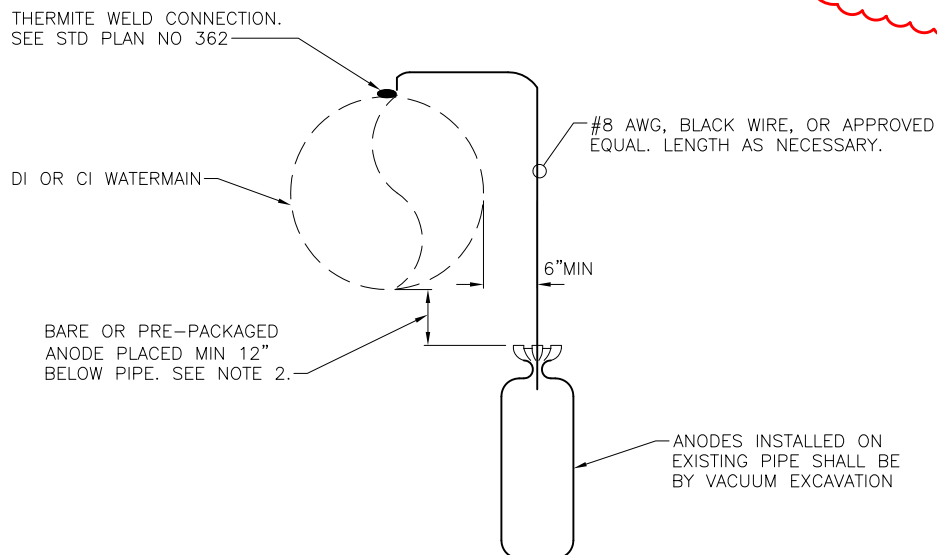
WATERMAIN TRENCH  
AND BEDDING





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.

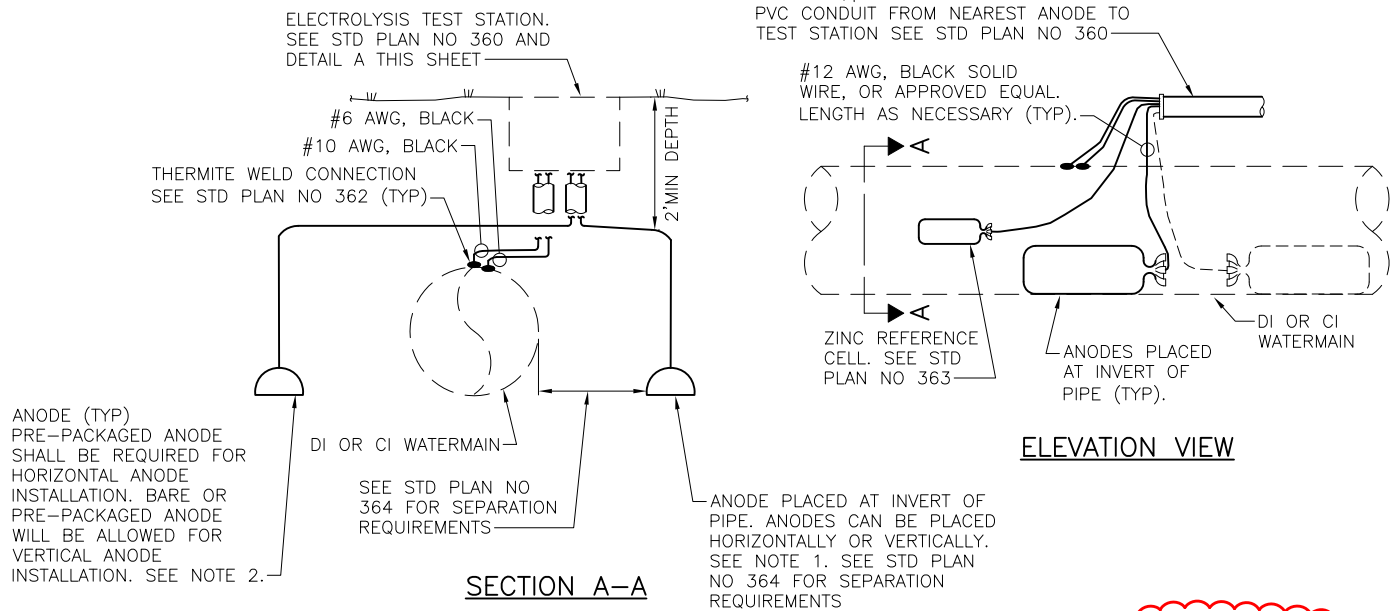
REF STD SPEC SEC 7-11, 9-30



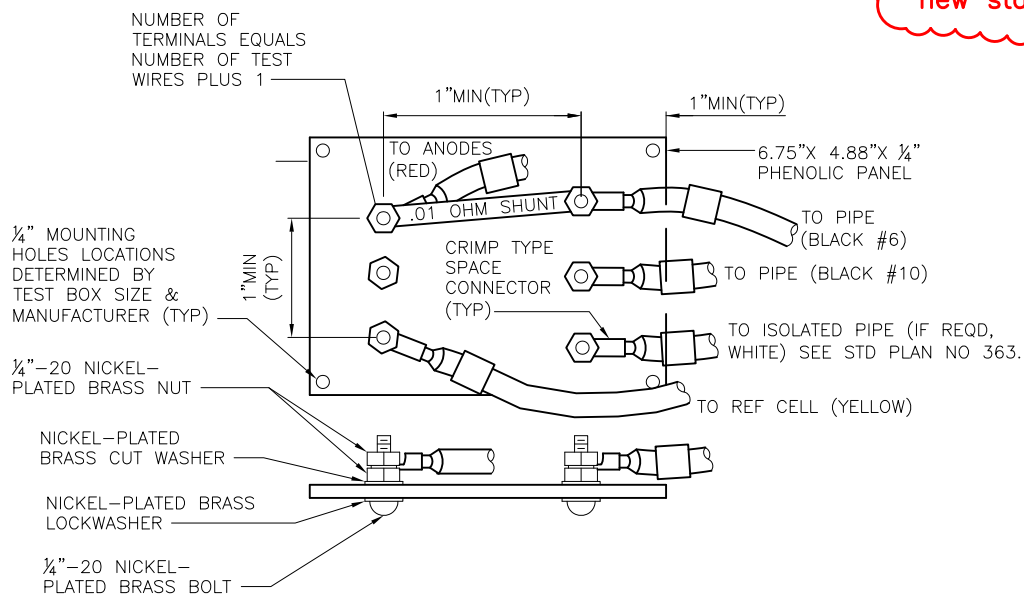
City of Seattle

NOT TO SCALE

**SACRIFICIAL ANODE  
BONDED TO PIPE  
INSTALLATION DETAILS**

**SECTION A-A**

new std plan

**TERMINAL BOARD, DETAIL A****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

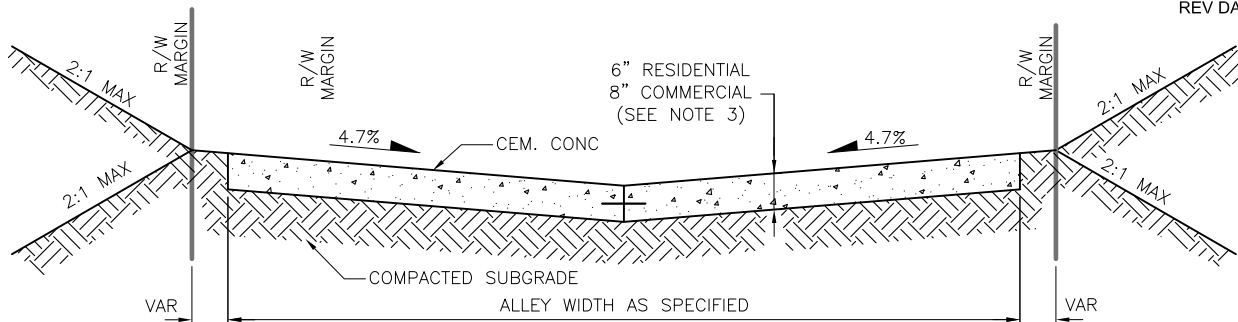
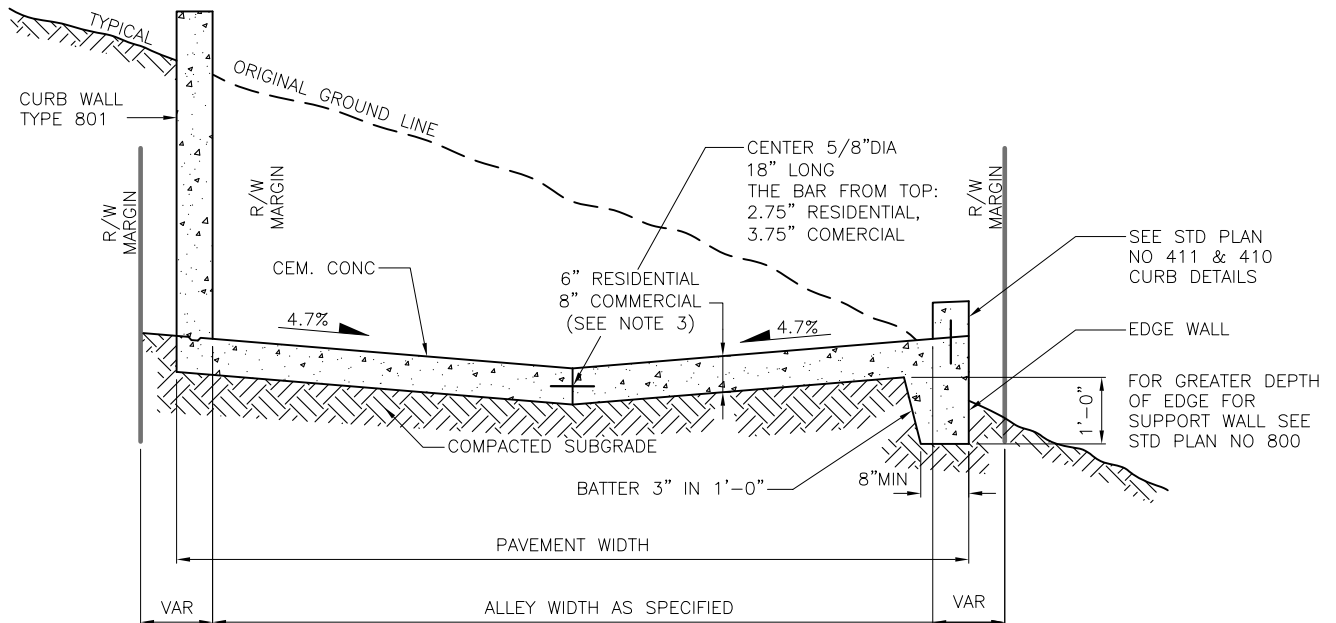
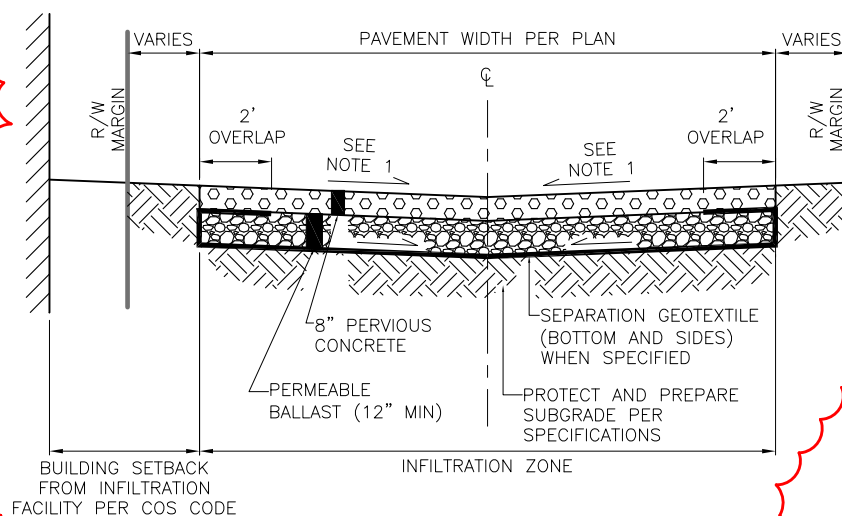


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**SACRIFICIAL ANODE  
INSTALLATION DETAILS**

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.

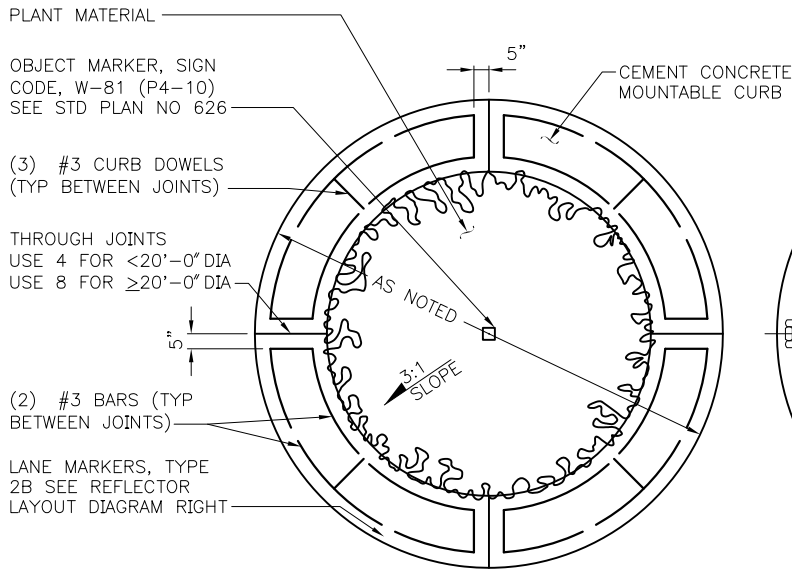
REF STD SPEC SEC 8-17, 8-19



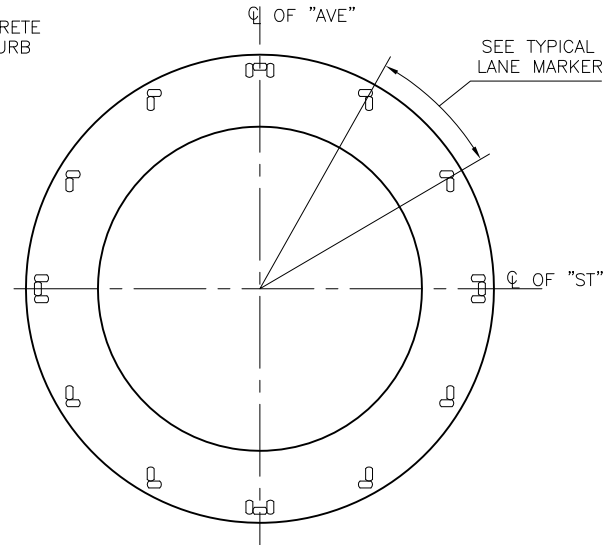
City of Seattle

NOT TO SCALE

**ROADWAY CEMENT CONCRETE  
ALLEY PAVEMENTS**



TYPICAL TRAFFIC CIRCLE



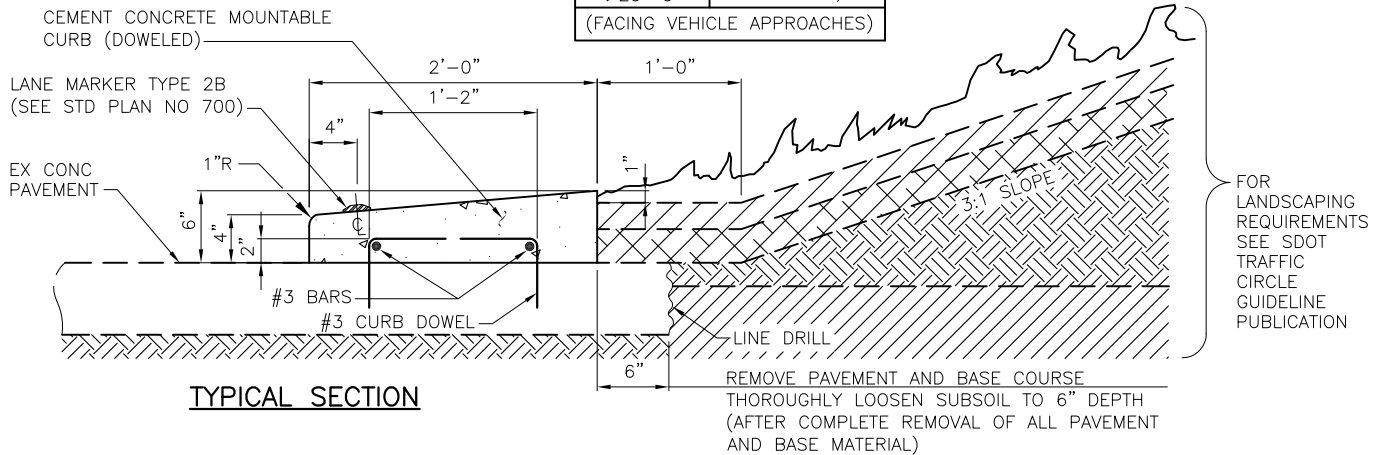
TRAFFIC CIRCLE REFLECTOR LAYOUT

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 22½°

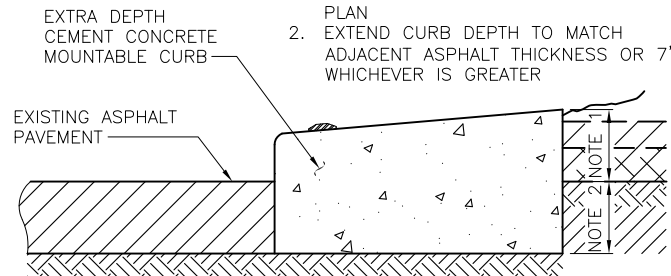
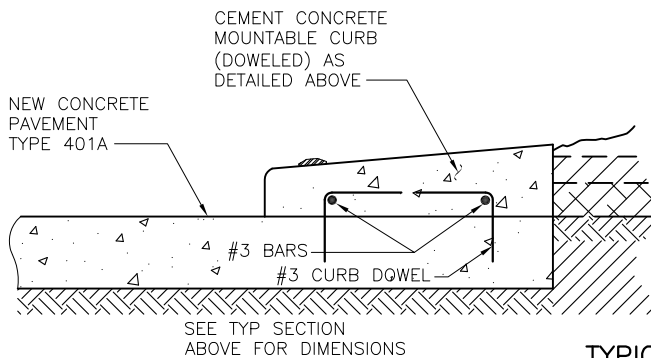
(FACING VEHICLE APPROACHES)



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

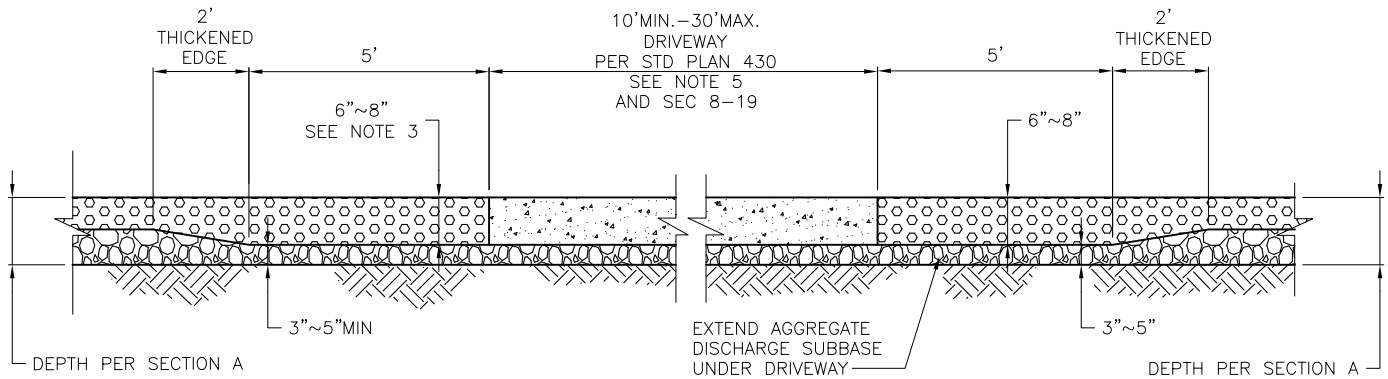
REF STD SPEC SEC 8-02, 8-04, 8-08



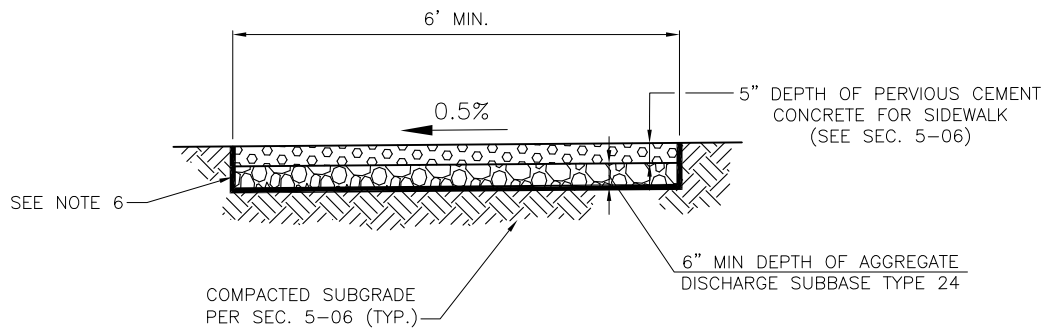
City of Seattle

NOT TO SCALE

TRAFFIC CIRCLE DETAILS



**PERVIOUS CONC CEM SIDEWALK DEPTH TRANSITION AT DRIVEWAYS PROFILE VIEW**

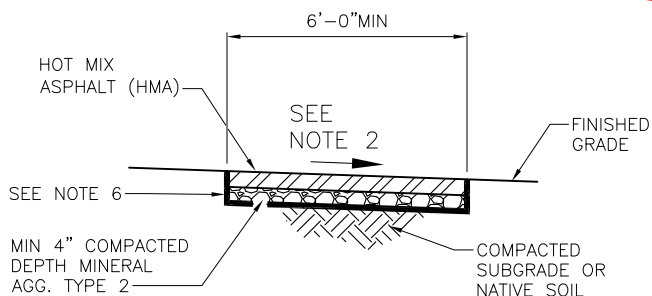


**PERVIOUS CONC SECTION A**

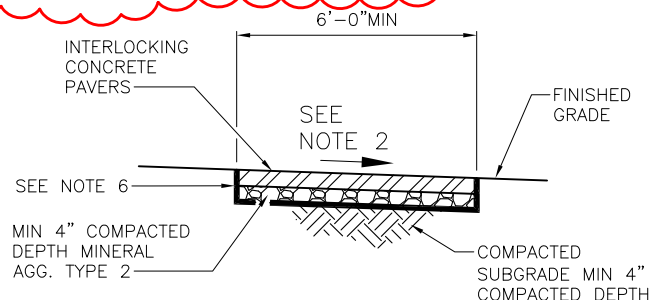
**NOTES:**

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**

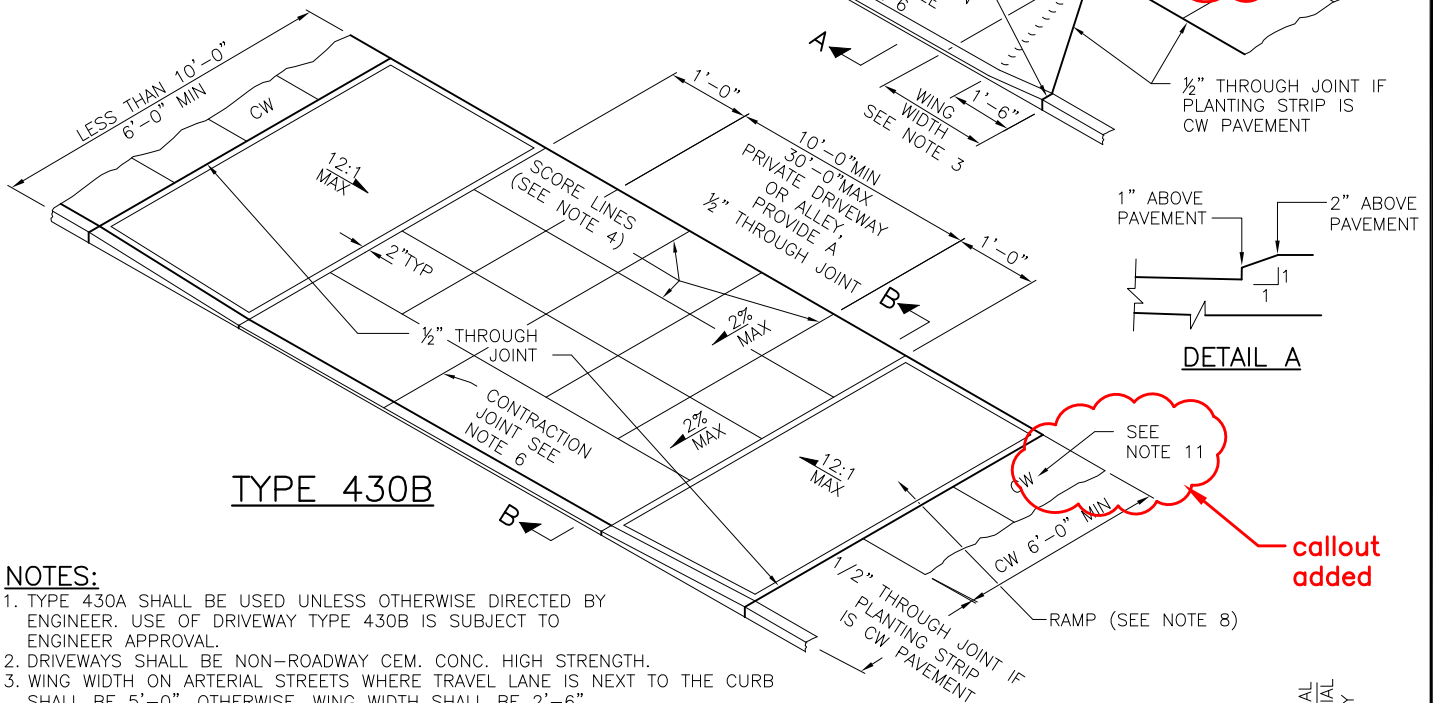
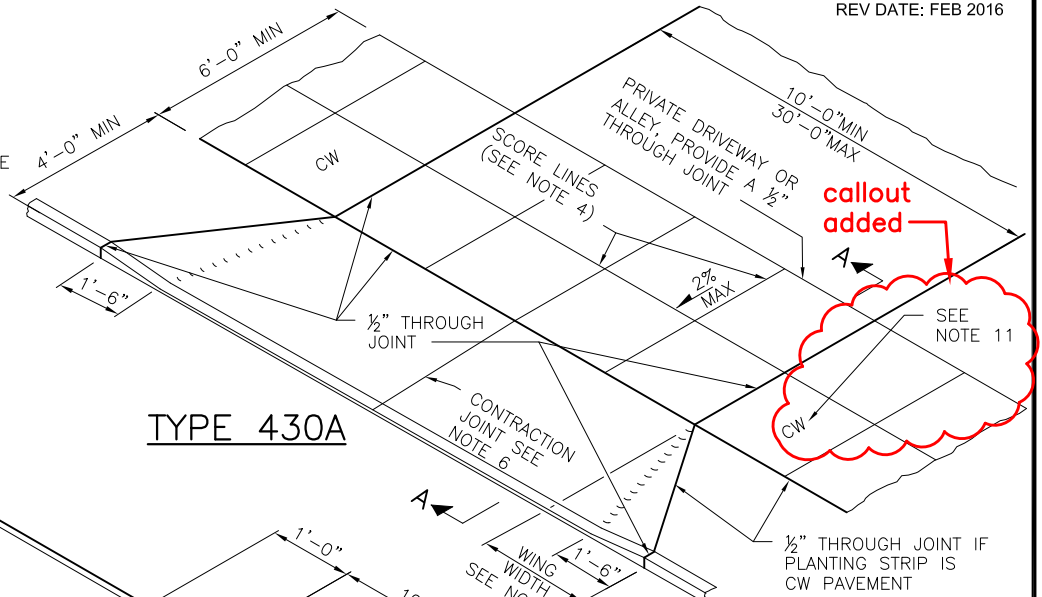
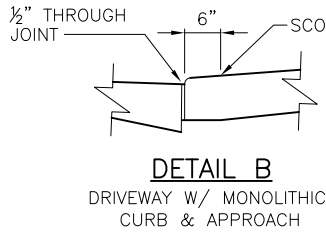
REF STD SPEC SEC 5-04, 5-06



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NOT TO SCALE

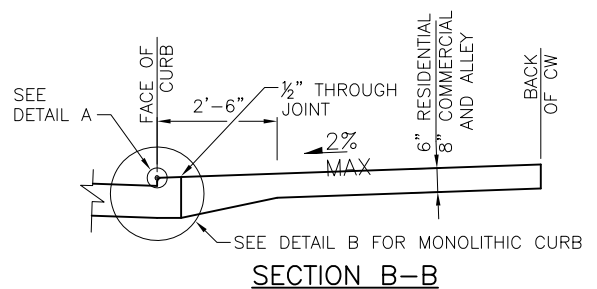
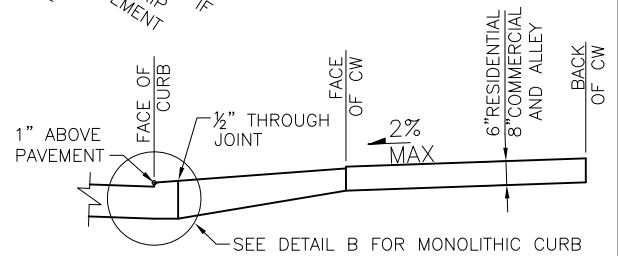
ALTERNATIVE WALKWAYS



**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 DRIVEWAY 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

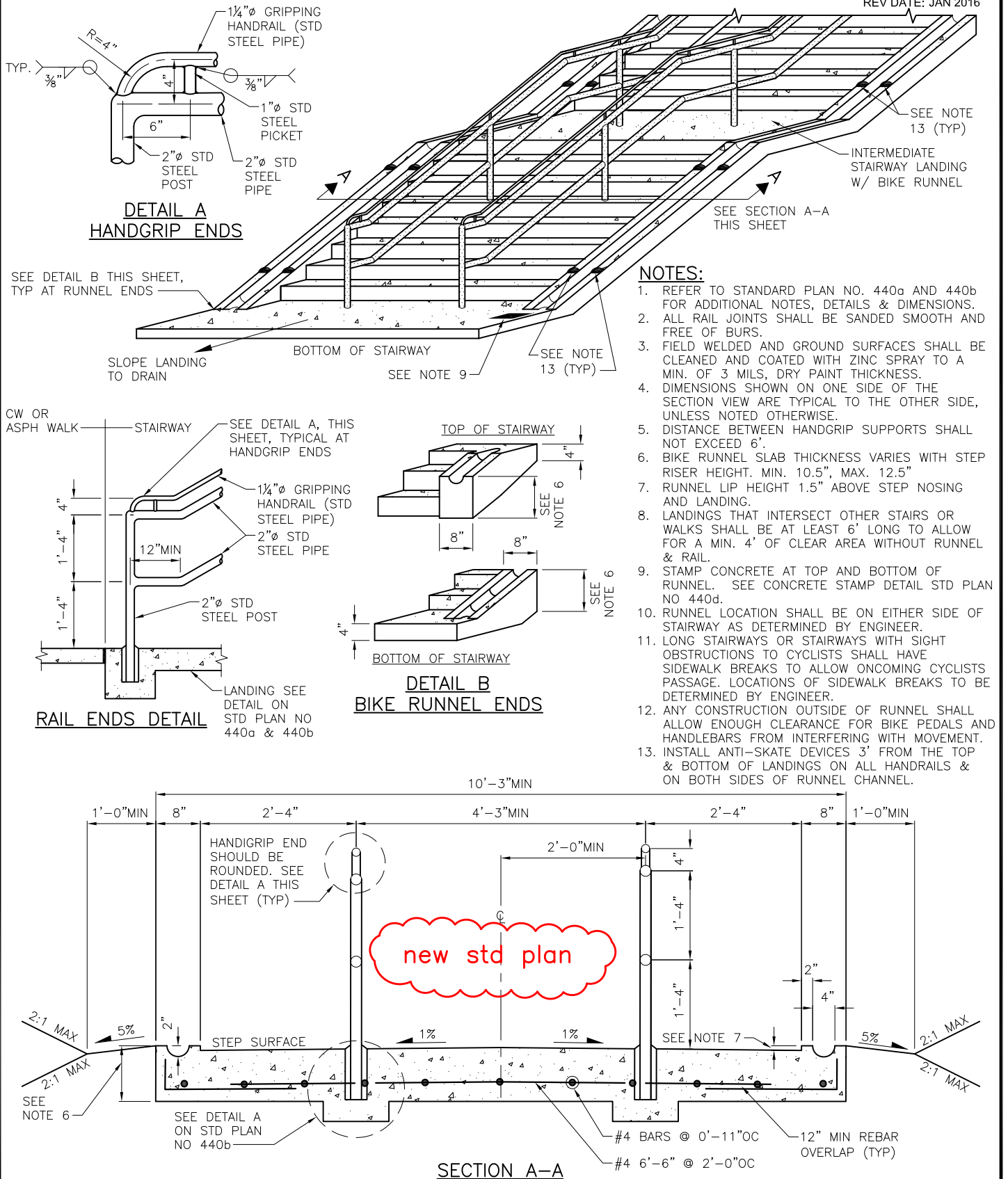


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NOT TO SCALE

TYPE 430A & 430B DRIVEWAYS

REV DATE: JAN 2016



REF STD SPEC SEC 8-18



City of Seattle

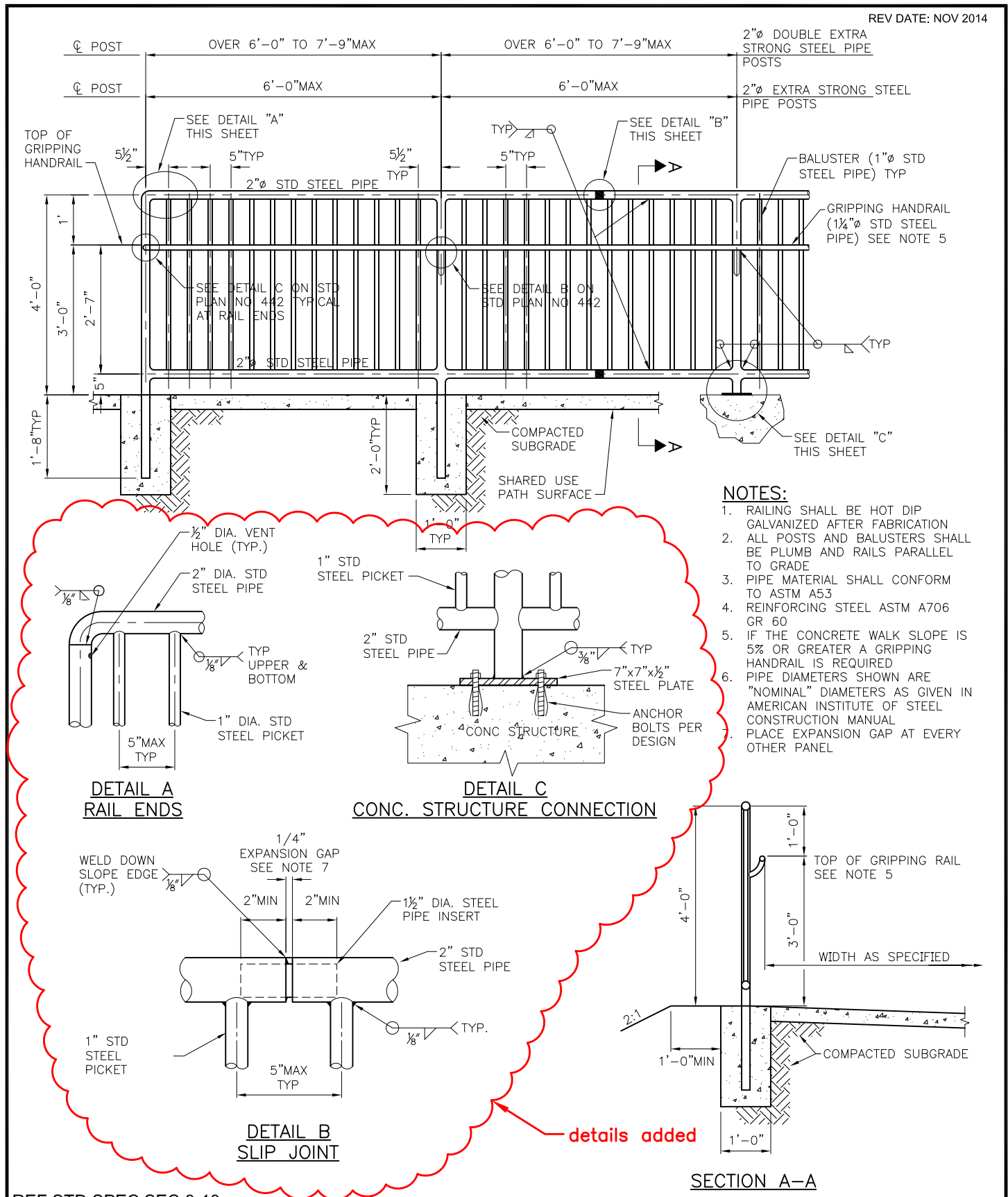
NOT TO SCALE

**CEMENT CONCRETE  
STAIRWAY & BIKE RUNNEL**









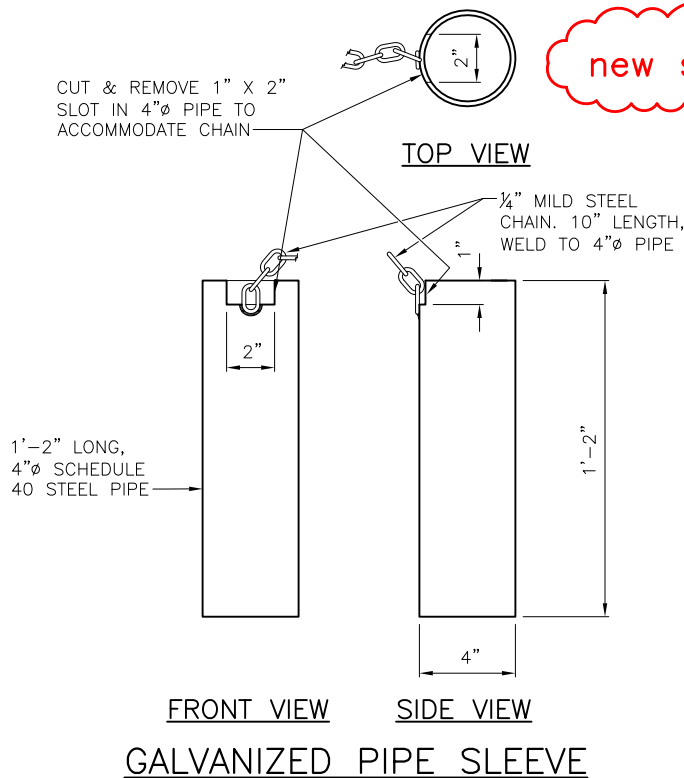
REF STD SPEC SEC 8-18



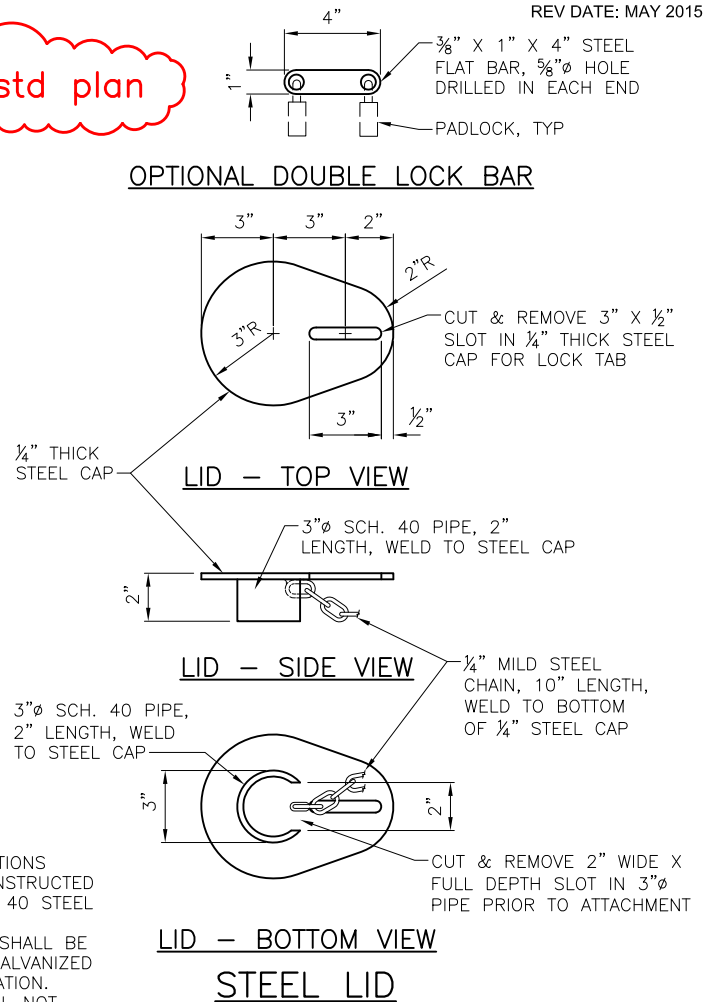
City of Seattle

NOT TO SCALE

VERTICAL RAILING

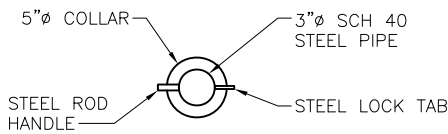


**OPTIONAL DOUBLE LOCK BAR**

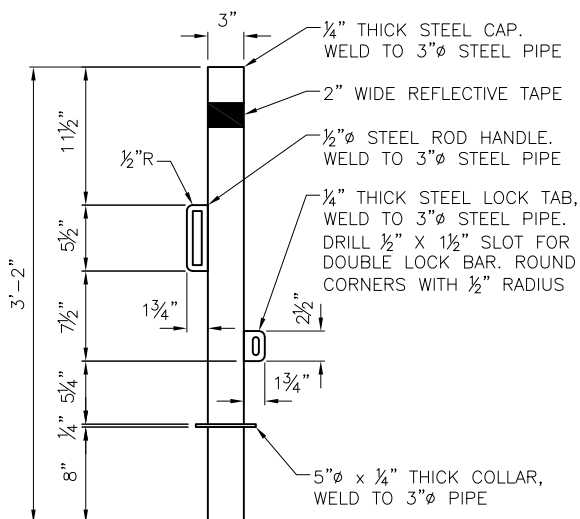


**NOTES:**

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.

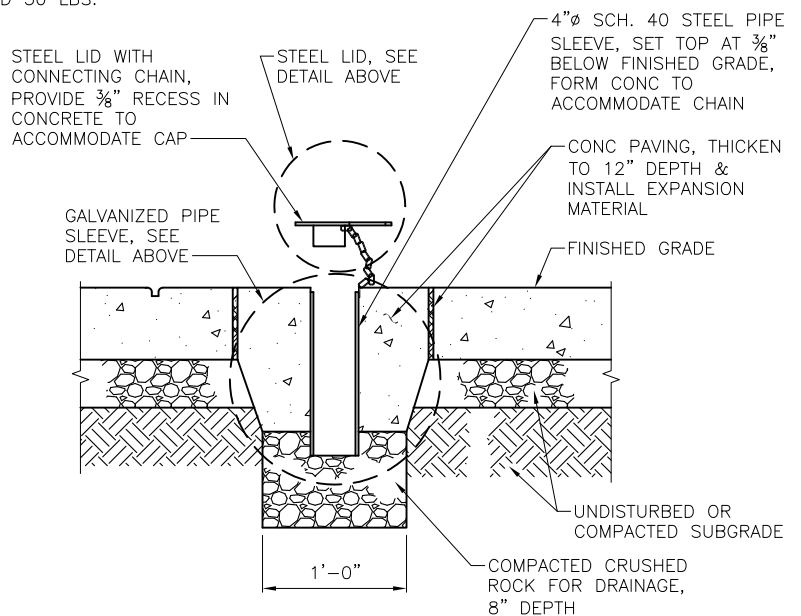


**BOLLARD PLAN VIEW**



**BOLLARD ELEVATION**

**BOLLARD**



**SLEEVE IN CONCRETE SECTION VIEW**

REF STD SPEC SEC 8-02

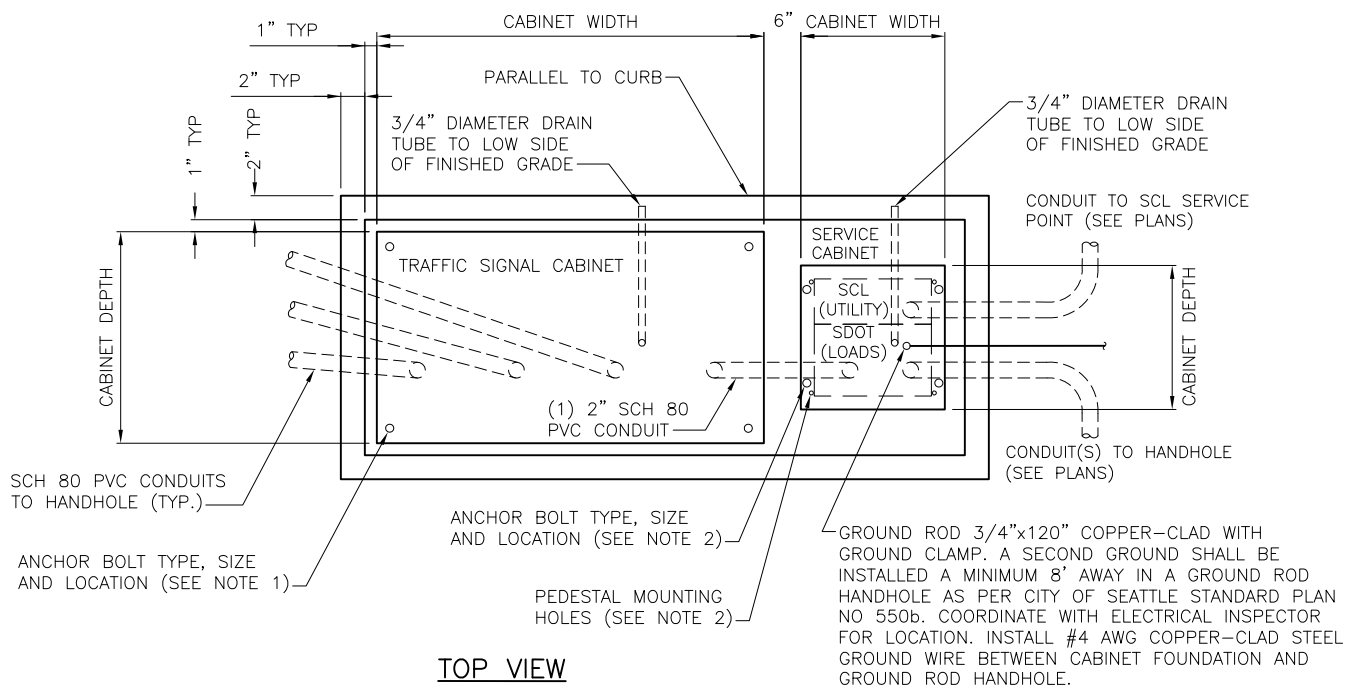
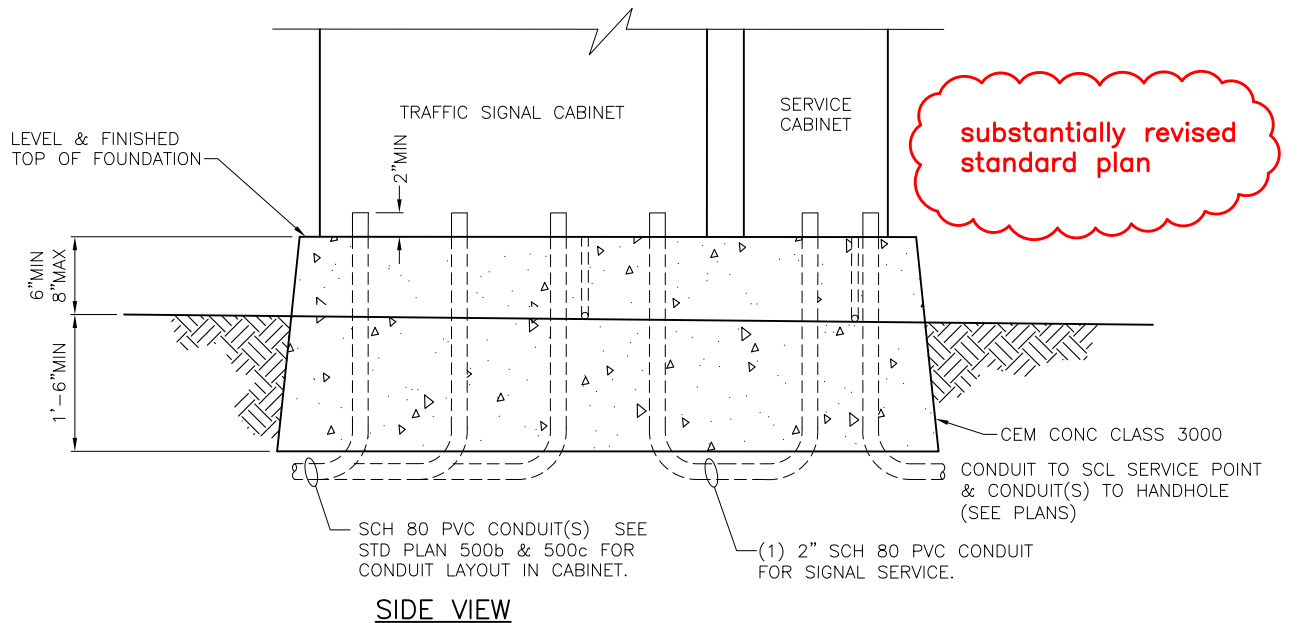


City of Seattle

NOT TO SCALE

REMOVABLE STEEL BOLLARD



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

NOT TO SCALE

**NOTES:**

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

spec sections added

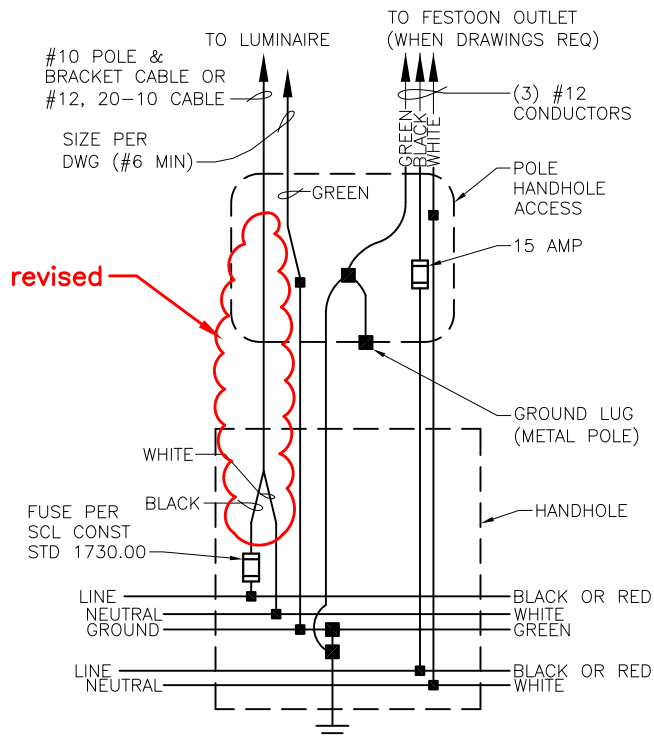
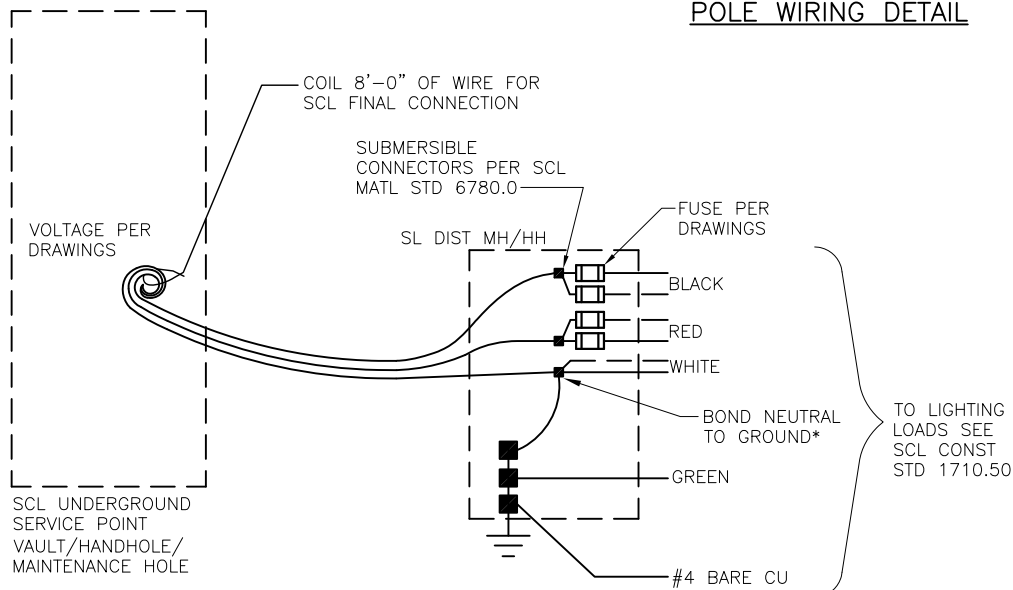
REF STD SPEC SEC 8-31,8-32



City of Seattle

NOT TO SCALE

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

POLE WIRING DETAILLIGHTING SERVICEUNDERGROUND SERVICE CONNECTIONNOTES:

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

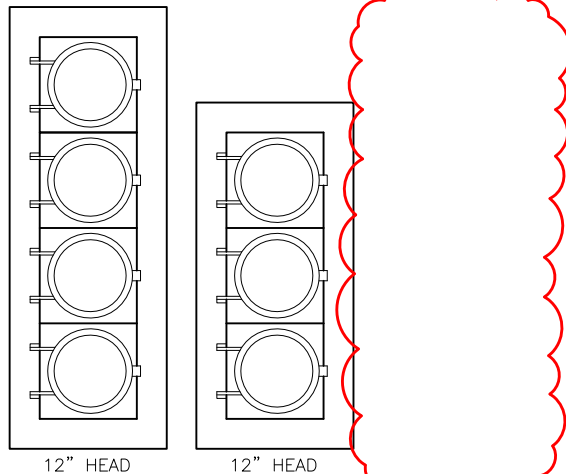
REF STD SPEC SEC 8-30 &amp; 8-31



City of Seattle

NOT TO SCALE

LIGHTING SERVICE CONNECTION  
& LIGHT POLE WIRING DETAIL

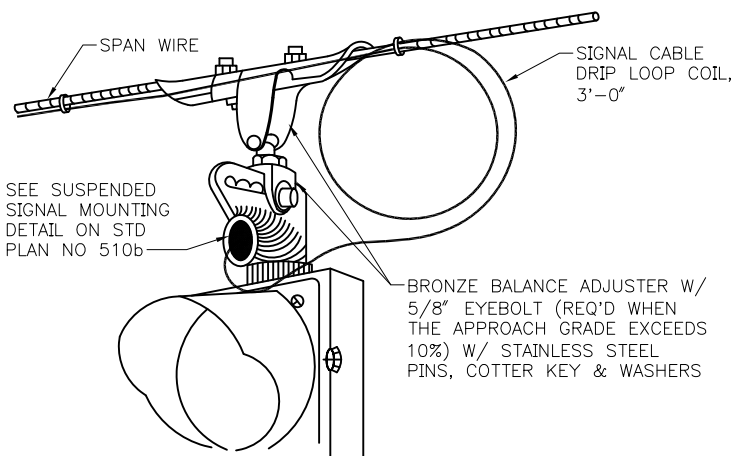
TYPICAL SIGNAL FACES

W/ TUNNEL VISORS &  
5" BACKPLATE (LOUVERED)

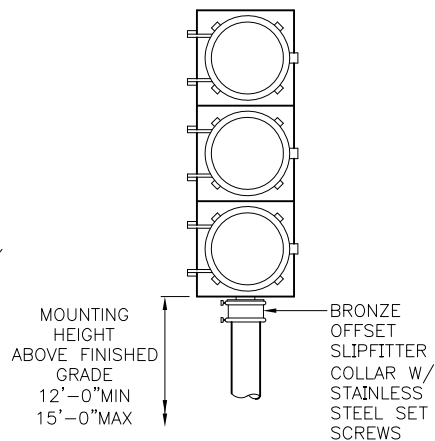
1" YELLOW, DIAMOND GRADE RETRO REFLECTIVE TAPE

8" heads removed

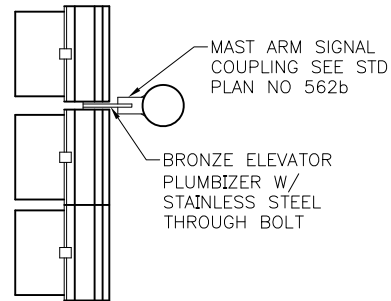
note added

SIGNAL HANGER DETAILNOTES:

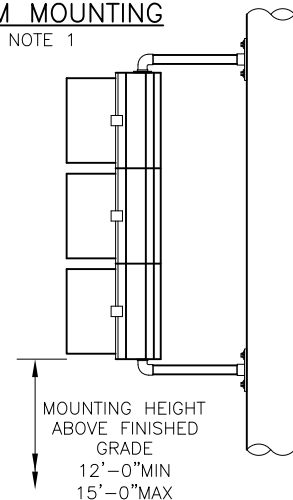
1. VERTICAL CLEARANCE: 17' MIN TO ROADWAY 19'-0" MAX (ON TRUCK ROUTES USE 18' TO 19')
2. BACKPLATES HAVE BEEN OMITTED FROM VARIOUS VIEWS FOR CLARITY

PEDESTAL TOP MOUNTING

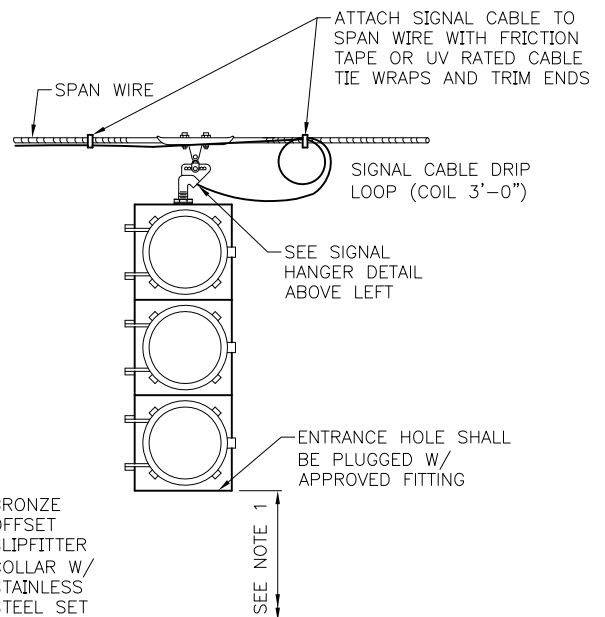
FOR PEDESTAL SEE STD PLAN NO 524

MAST ARM MOUNTING

SEE NOTE 1

BRACKET MOUNTING

FOR SIGNAL HEAD BRACKET ASSEMBLY  
SEE STD PLAN NO 511



REF STD SPEC SEC 8-31

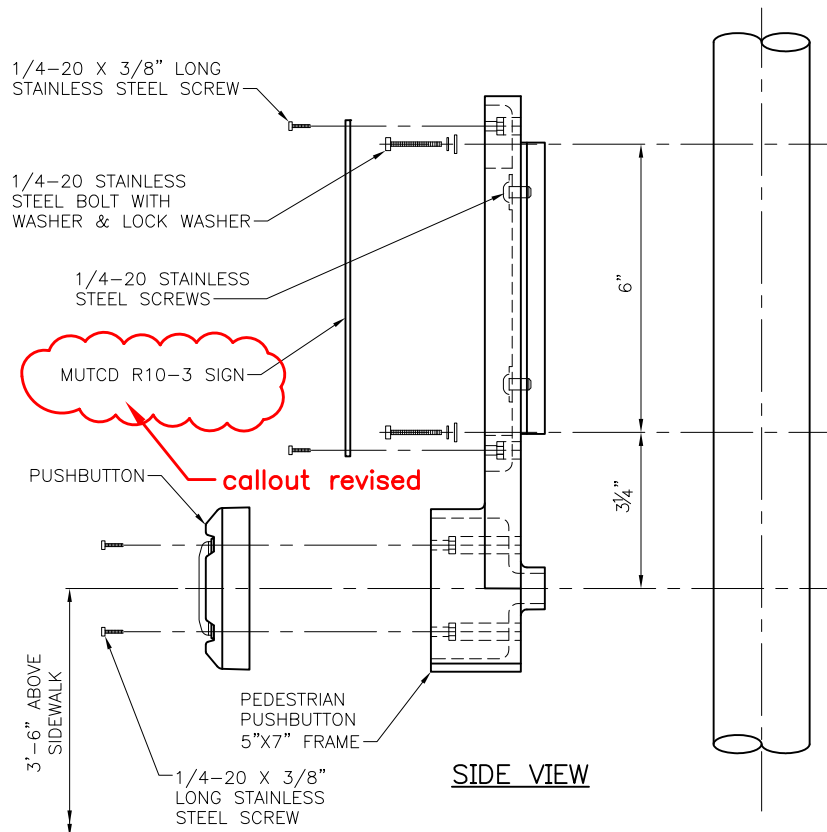
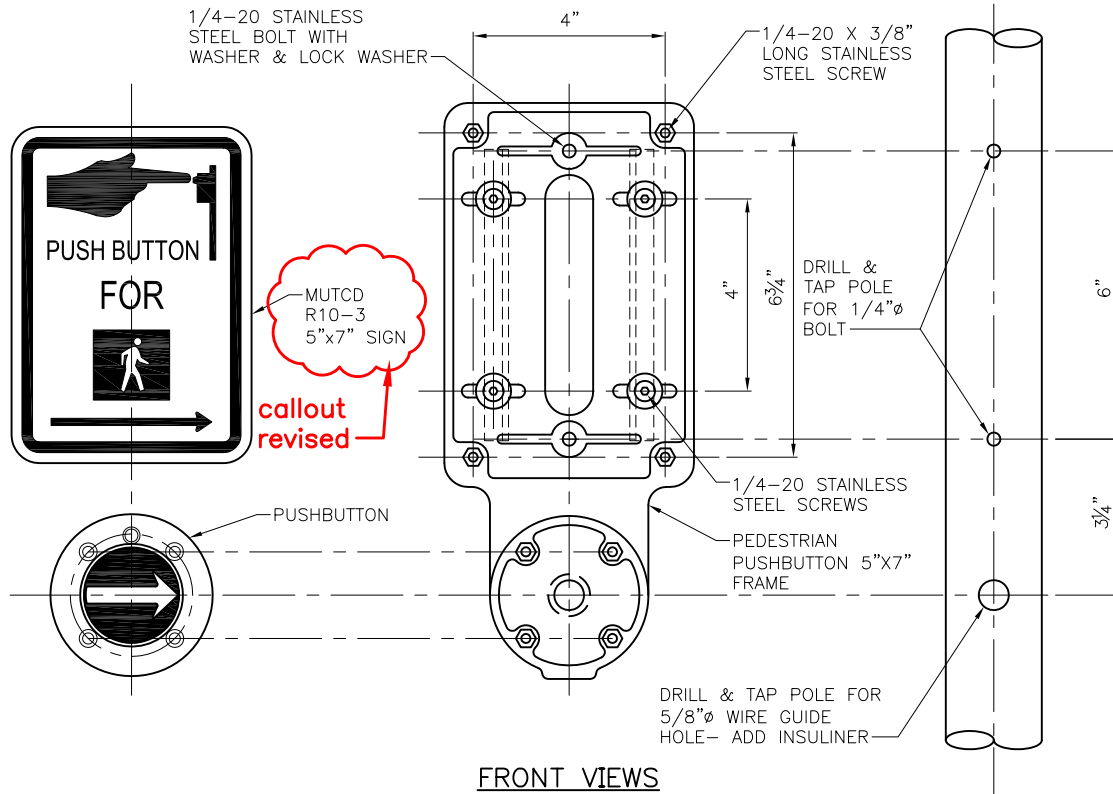


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NOT TO SCALE

VEHICULAR SIGNAL MOUNTING



**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

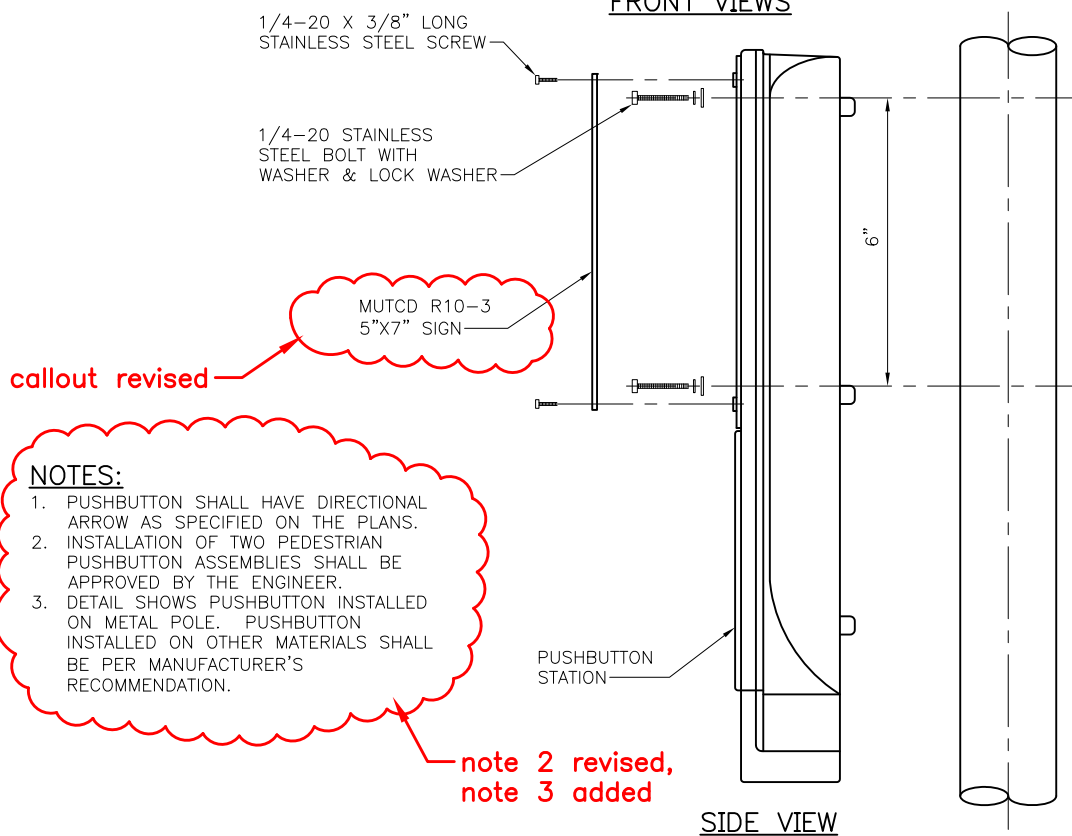
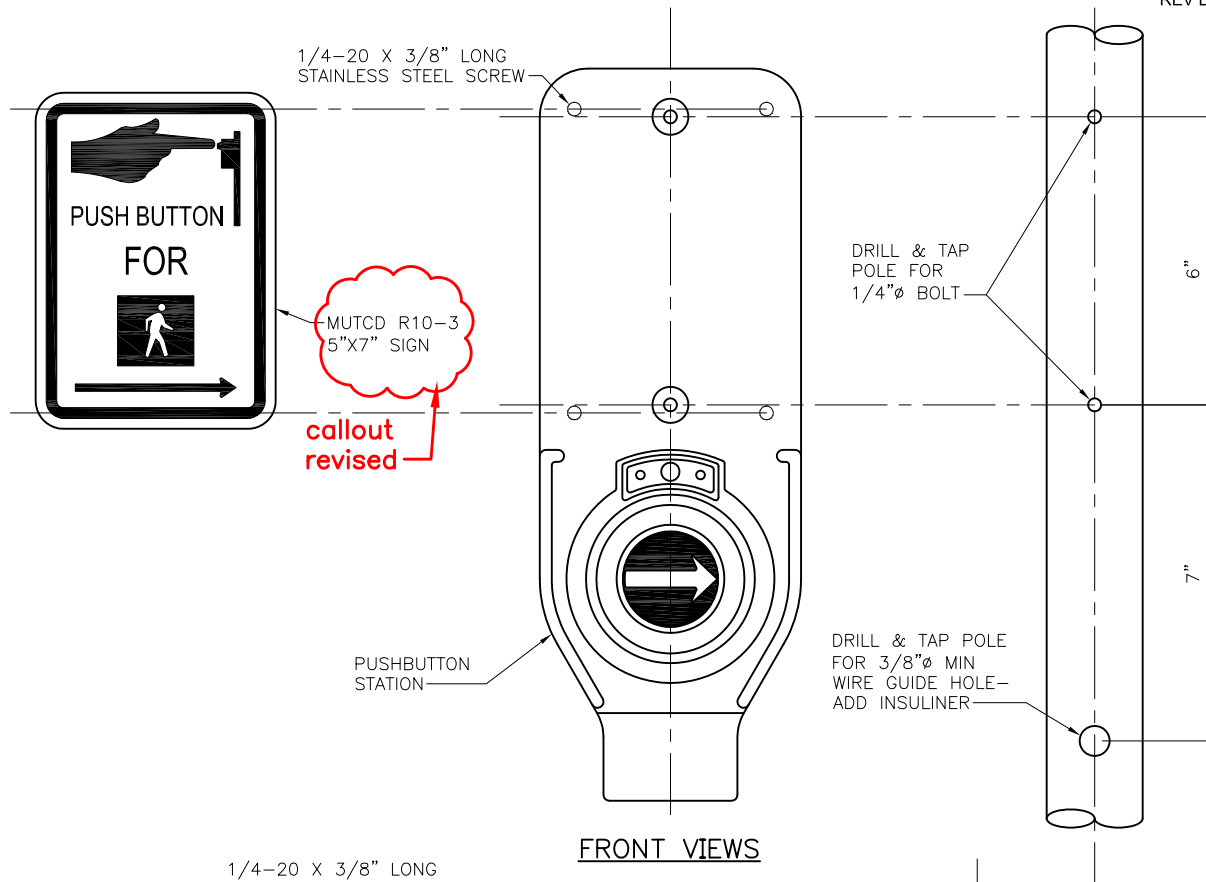


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NOT TO SCALE

**PEDESTRIAN PUSHBUTTON  
ASSEMBLY**





REF STD SPEC SEC 8-31

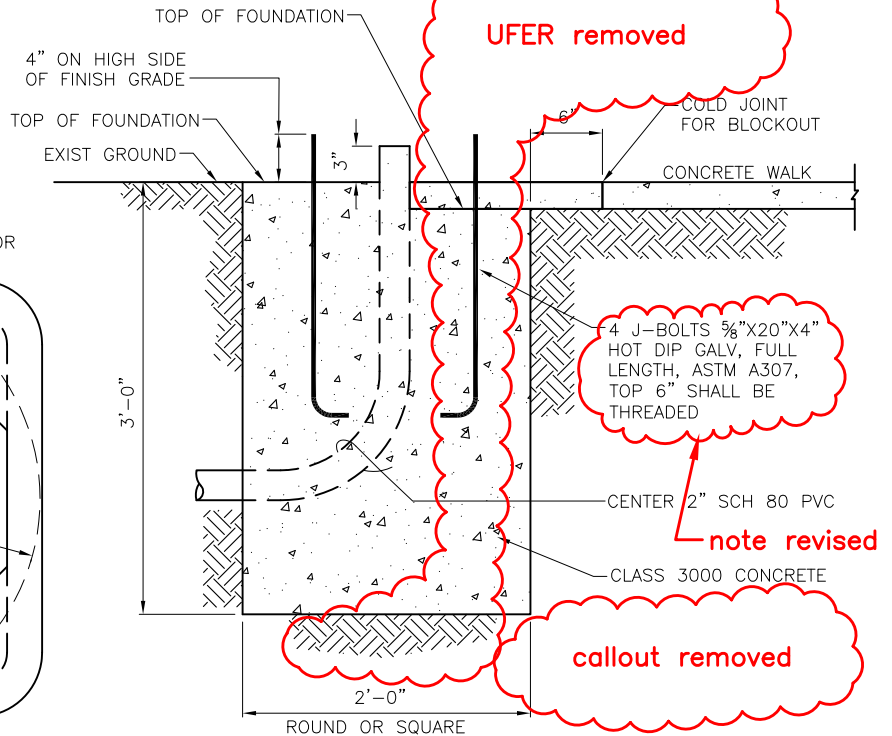


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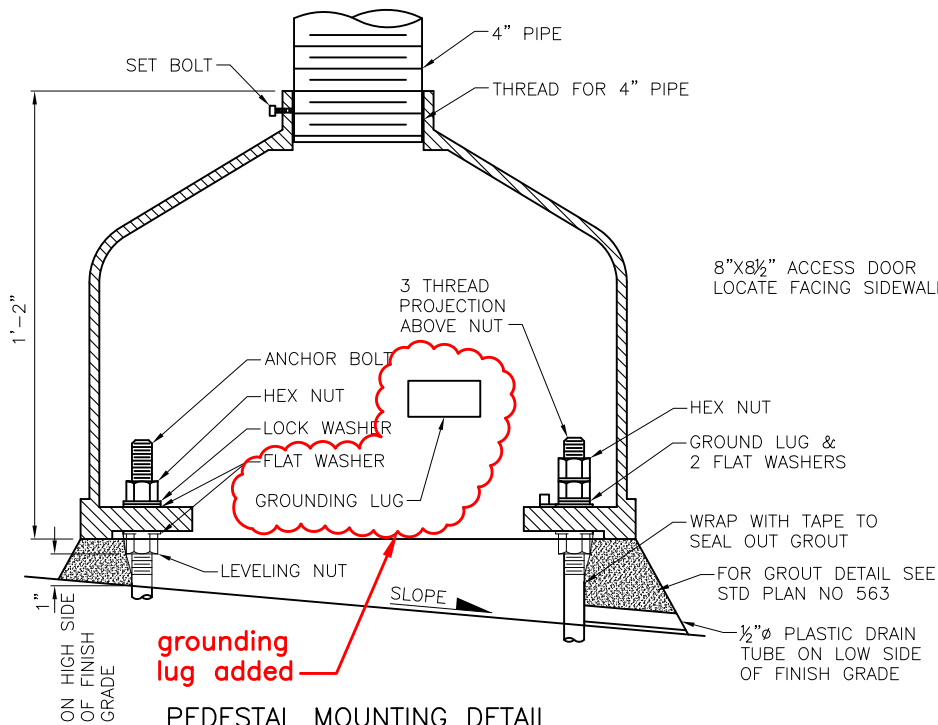
NOT TO SCALE

ACCESSIBLE PEDESTRIAN  
SIGNAL (APS)  
PED. PUSHBUTTON ASSEM.

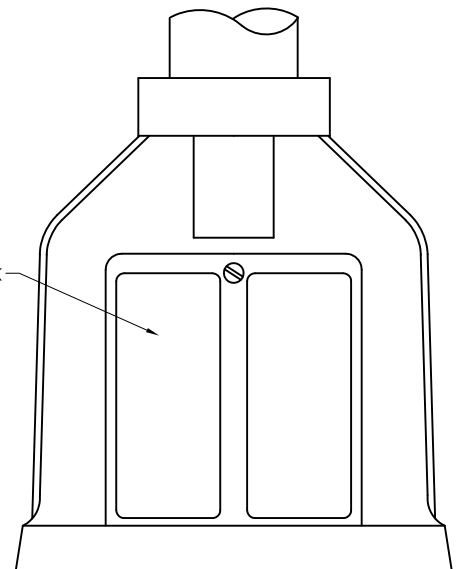
BOTTOM VIEW



PEDESTAL FOUNDATION



### PEDESTAL MOUNTING DETAIL



SQUARE BASE PEDESTAL

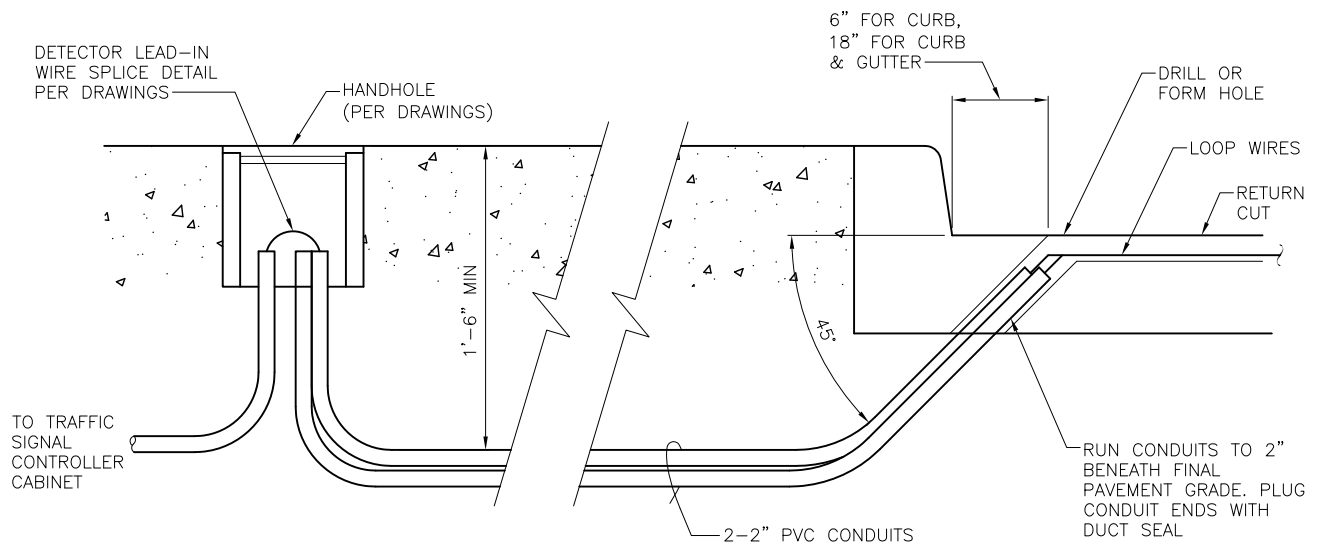
REF STD SPEC SEC 8-32



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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

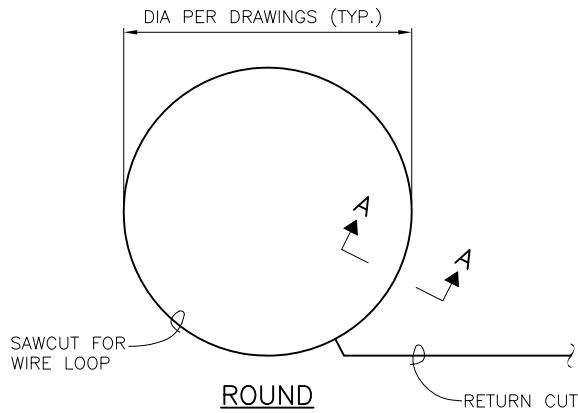
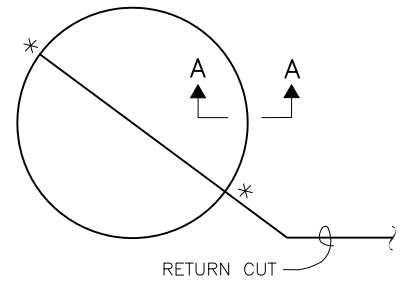
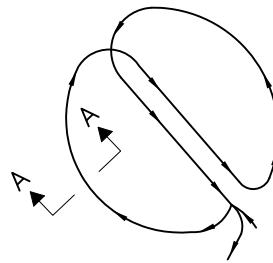
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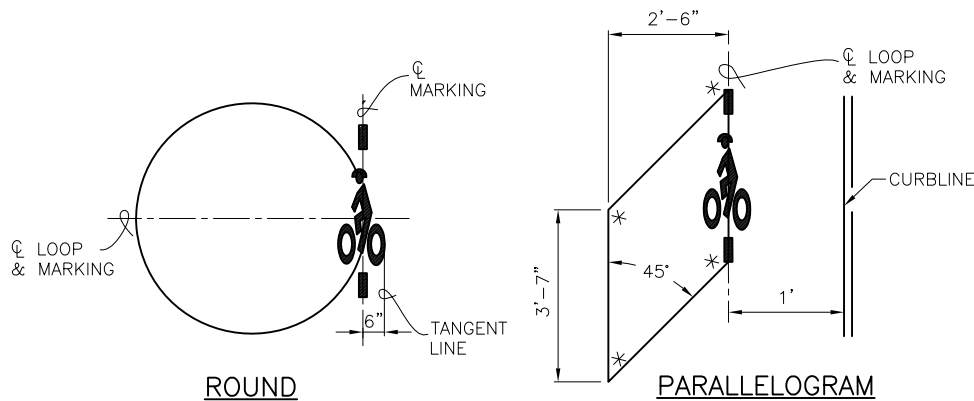
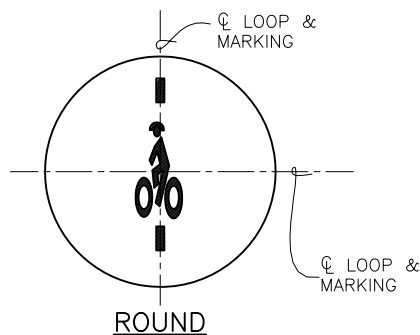
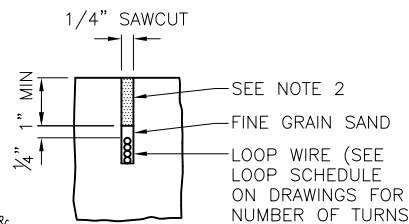
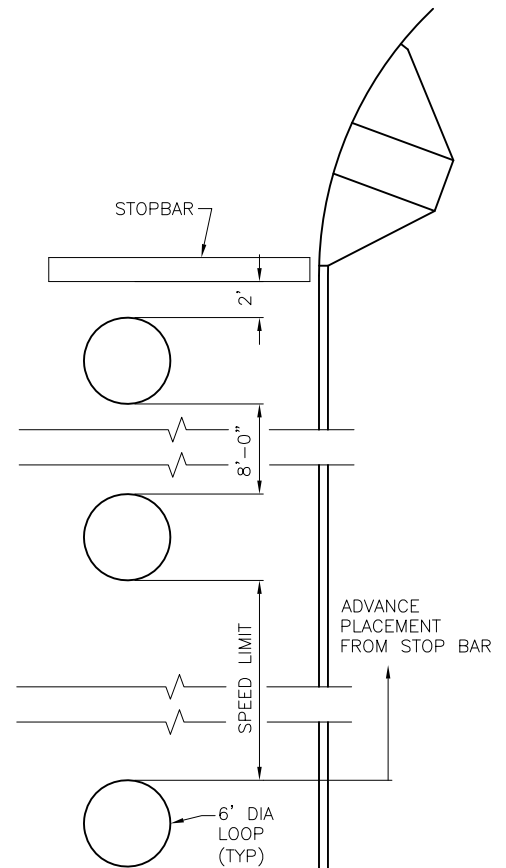
City of Seattle

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DETECTOR LOOP LEAD-IN

DIPOLE LOOP DETECTORQUADRIPOLE 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.

BICYCLE DIPOLEBICYCLE QUADRIPOLESECTION A-ASTANDARD LOOP SPACING**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

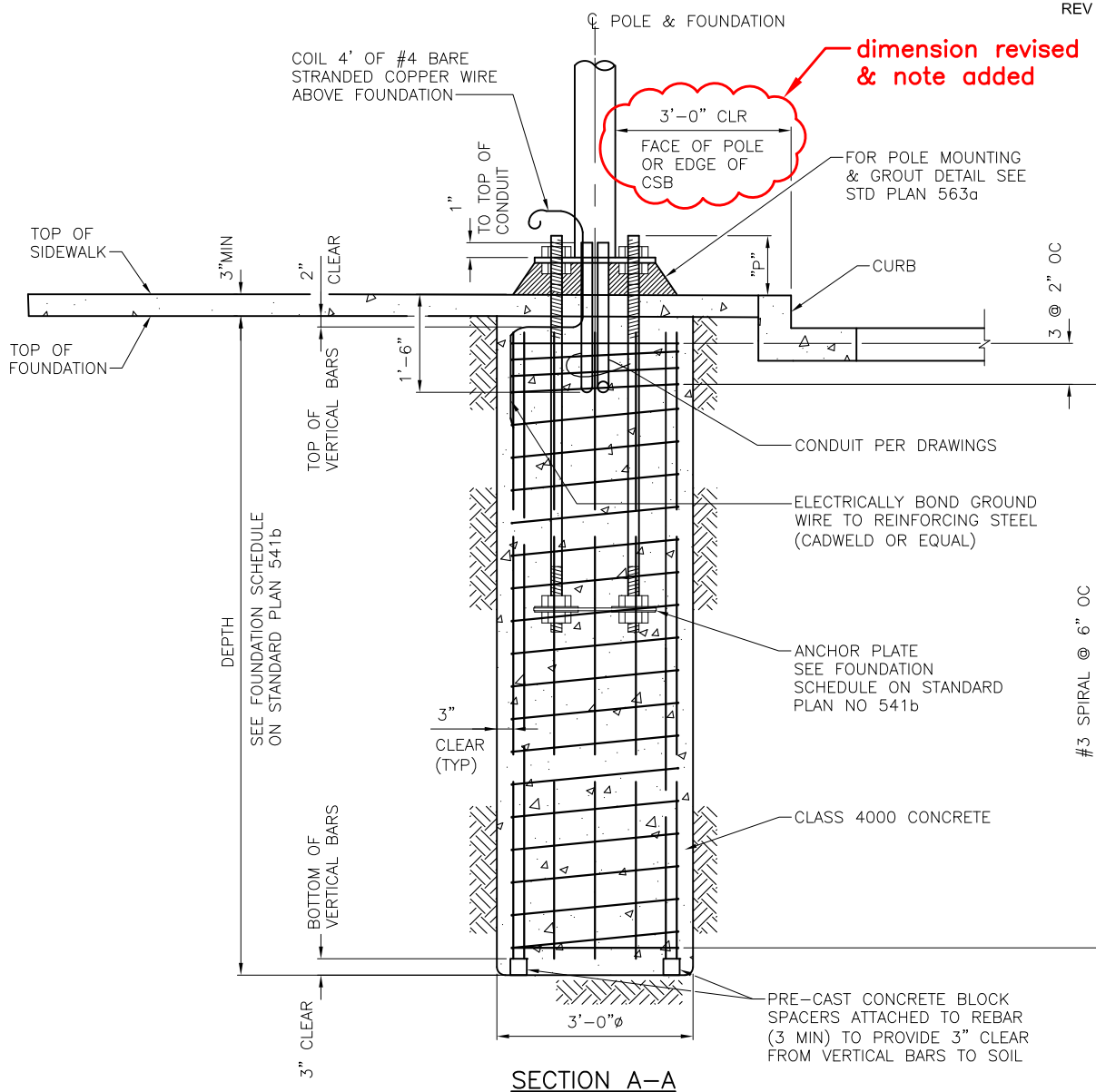
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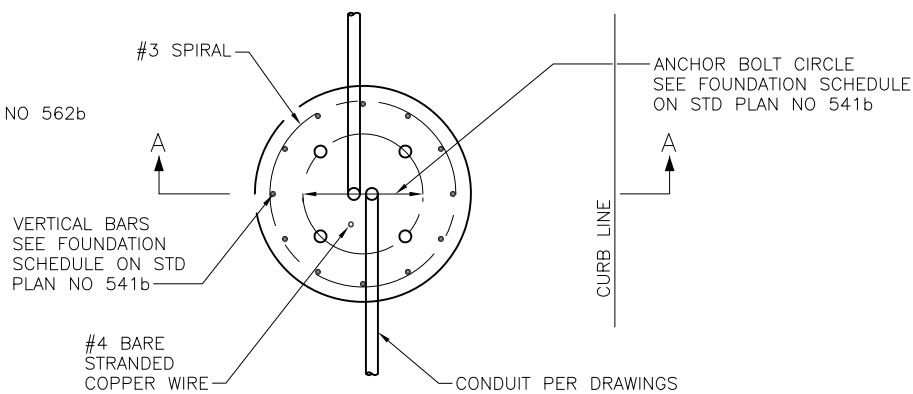
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**DETECTOR LOOP DETAILS**



NOTE:

FOR STEEL MAST ARM POLE  
FOUNDATION SEE STD PLAN NO 562b



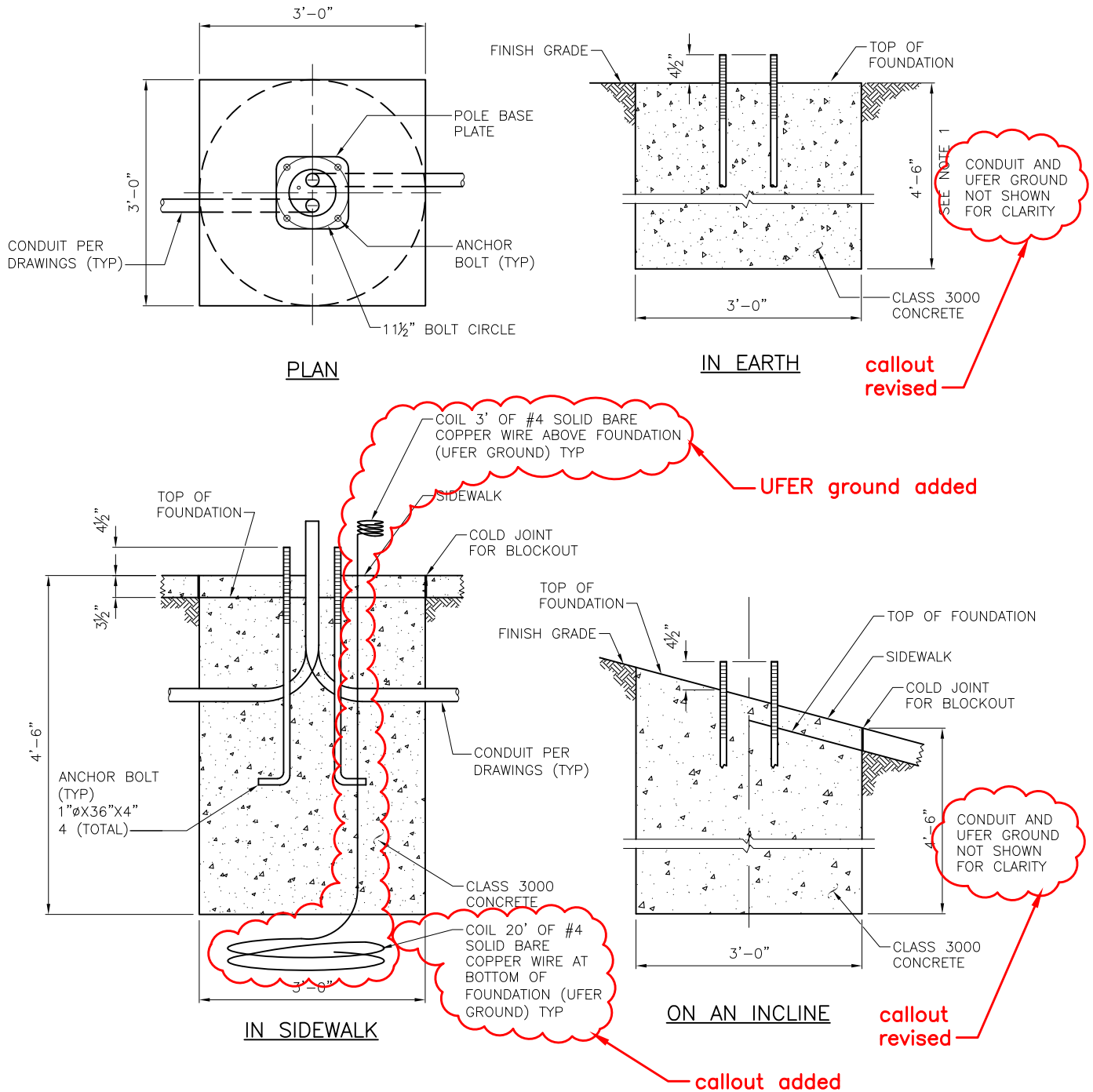
PLAN VIEW  
STRAIN POLE FOUNDATION IN SIDEWALK

REF STD SPEC SEC 8-32, 6-02



NOT TO SCALE

## STRAIN POLE FOUNDATION DETAIL (TYPE T, V, X & Z)

**NOTES:**

1. BOLT CIRCLE: 11 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

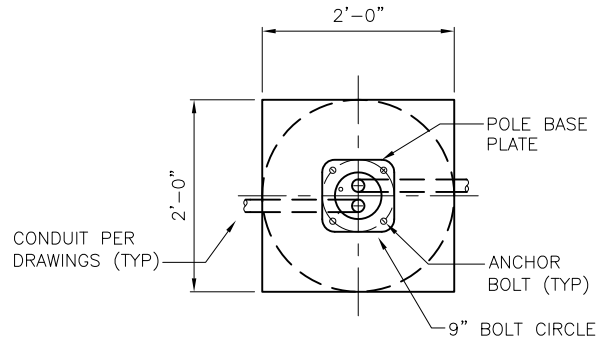
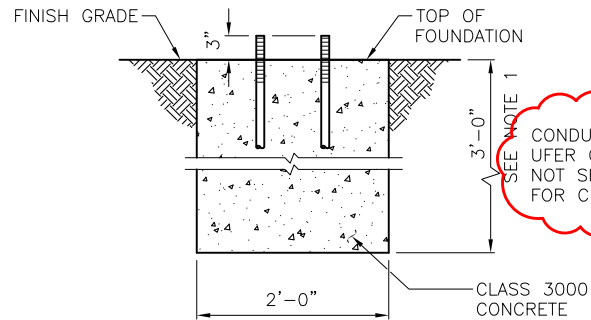
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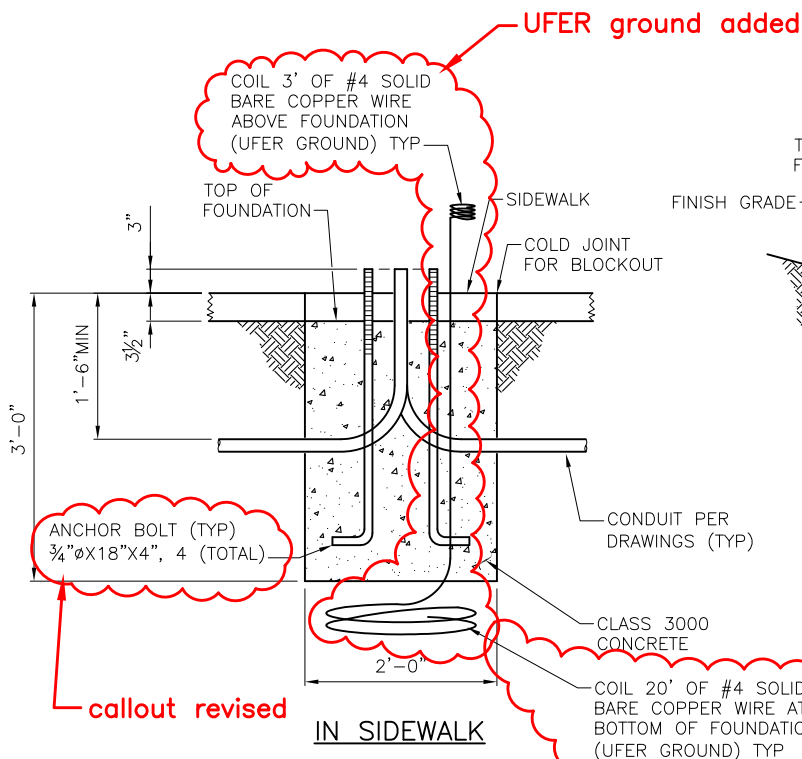
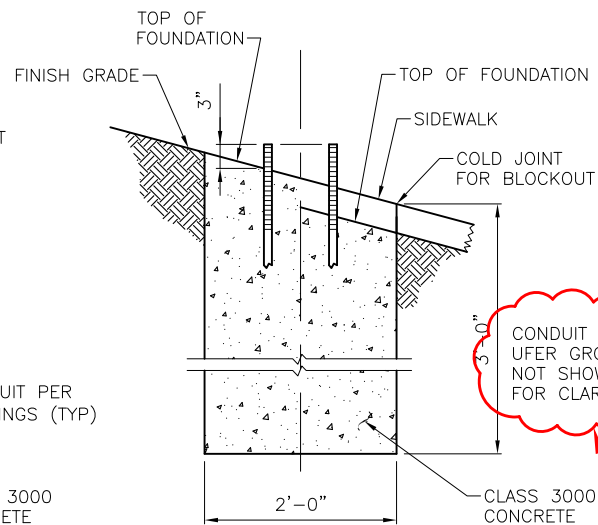
NOT TO SCALE

STREET LIGHT  
POLE FOUNDATIONS

PLANIN EARTH

SEE NOTE 1  
CONDUIT AND UFER GROUND NOT SHOWN FOR CLARITY

callout revised

IN SIDEWALKON AN INCLINE

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 SEE 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



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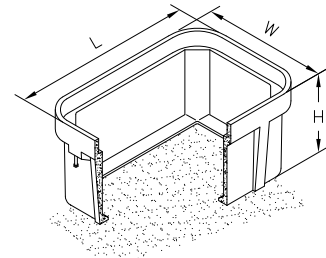
PEDESTRIAN STREET LIGHT  
POLE FOUNDATIONS

**NOTES:**

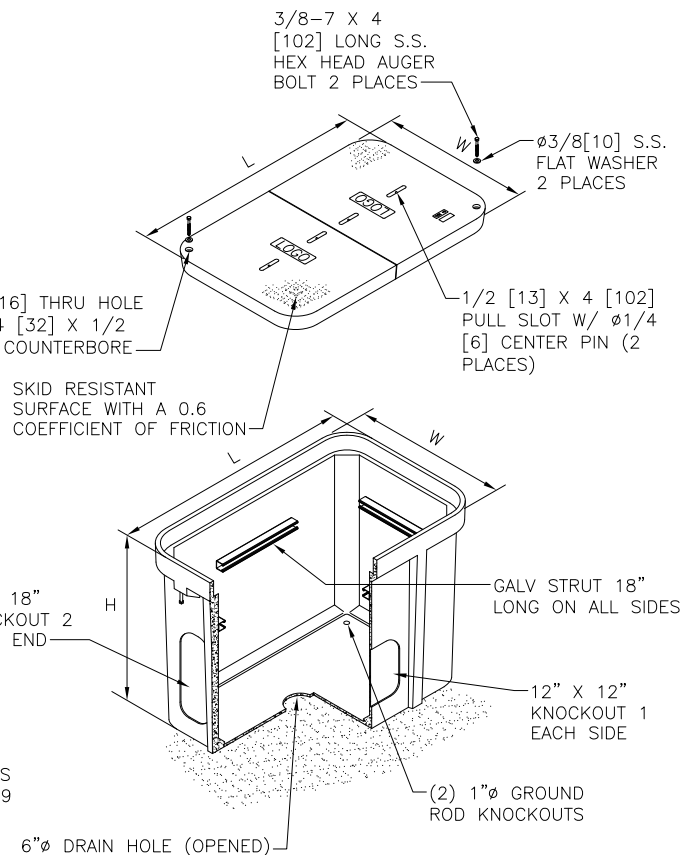
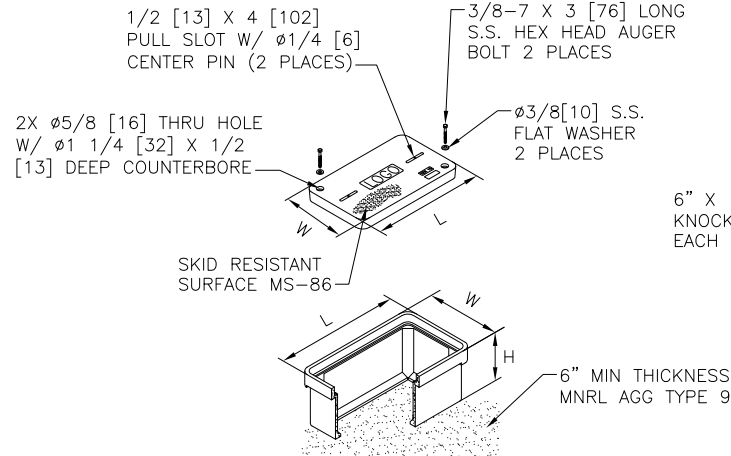
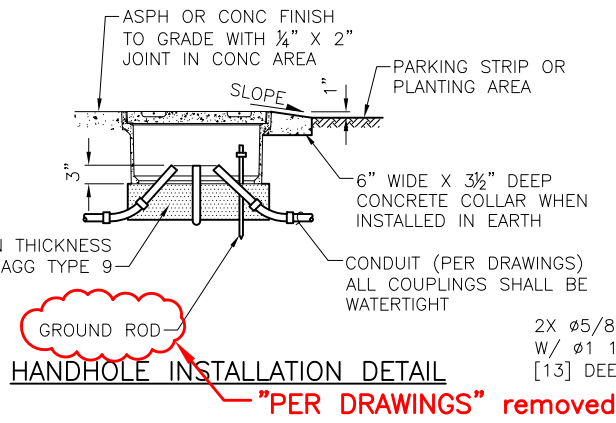
1. ALL NON-DELIBERATE TRAFFIC PULL BOX COVERS MUST COMPLY WITH ALL TEST PROVISIONS OF ANSI/SCTE 77 2010 "SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY", & MUST MEET THE TIER 15 APPLICATION. MARKING SHOWING THE TIER 15 RATING MUST BE EMBOSSED IN THE TOP SURFACE OF THE COVER.
2. ALL NON-DELIBERATE 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 TO 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"	17"	48"	NA	30"	17"
6	48"	48"	48"	NA	48"	48"
GRHH	8"Ø			NA		



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



REF STD SPEC SEC 8-33

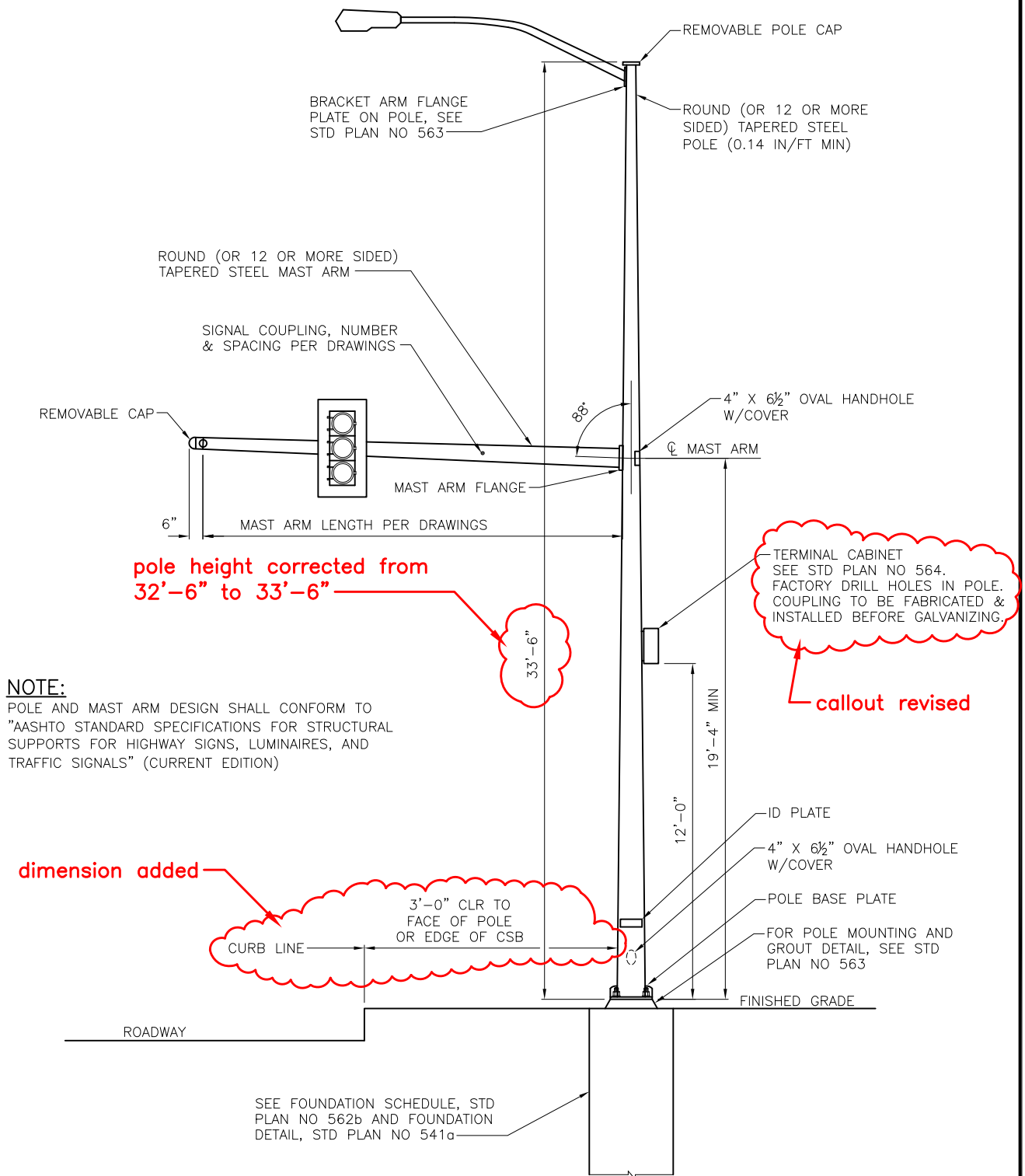


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POLYMER CONCRETE  
HANDHOLES





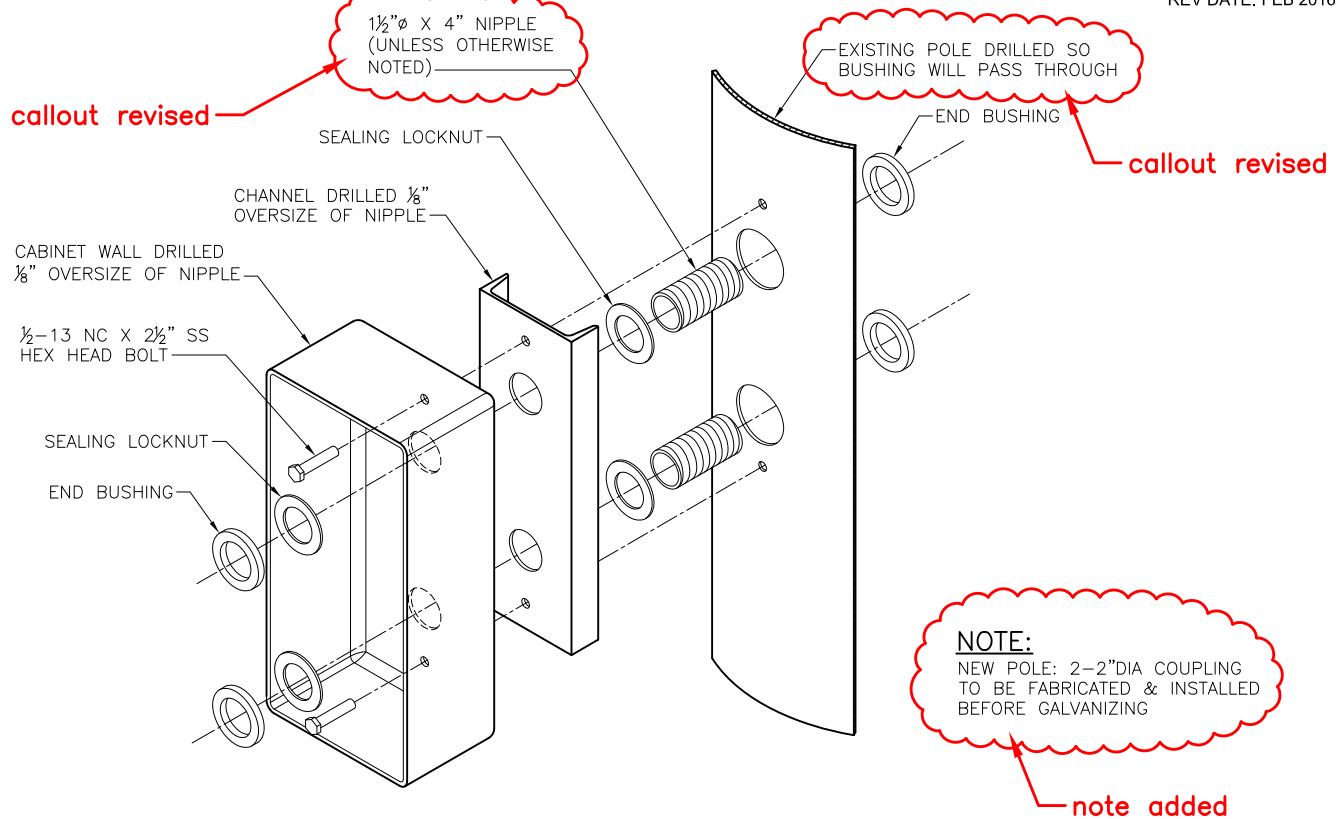
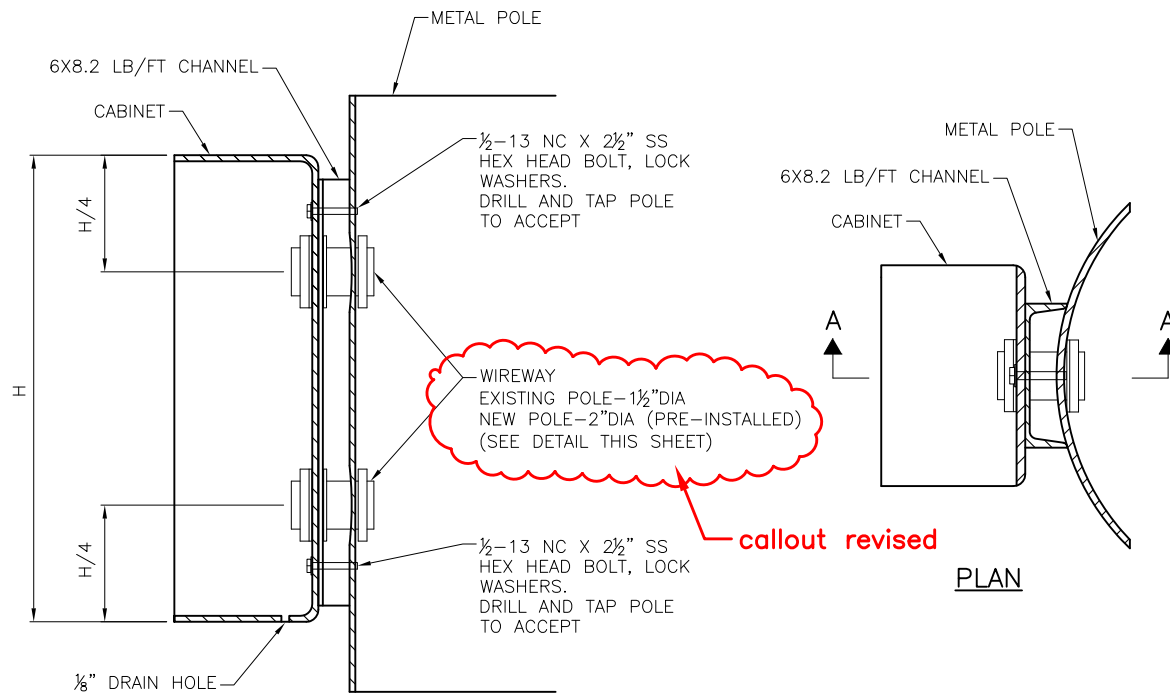
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STEEL MAINT ARM POLE

WIREWAY ISOMETRIC DETAILSECTION A-A

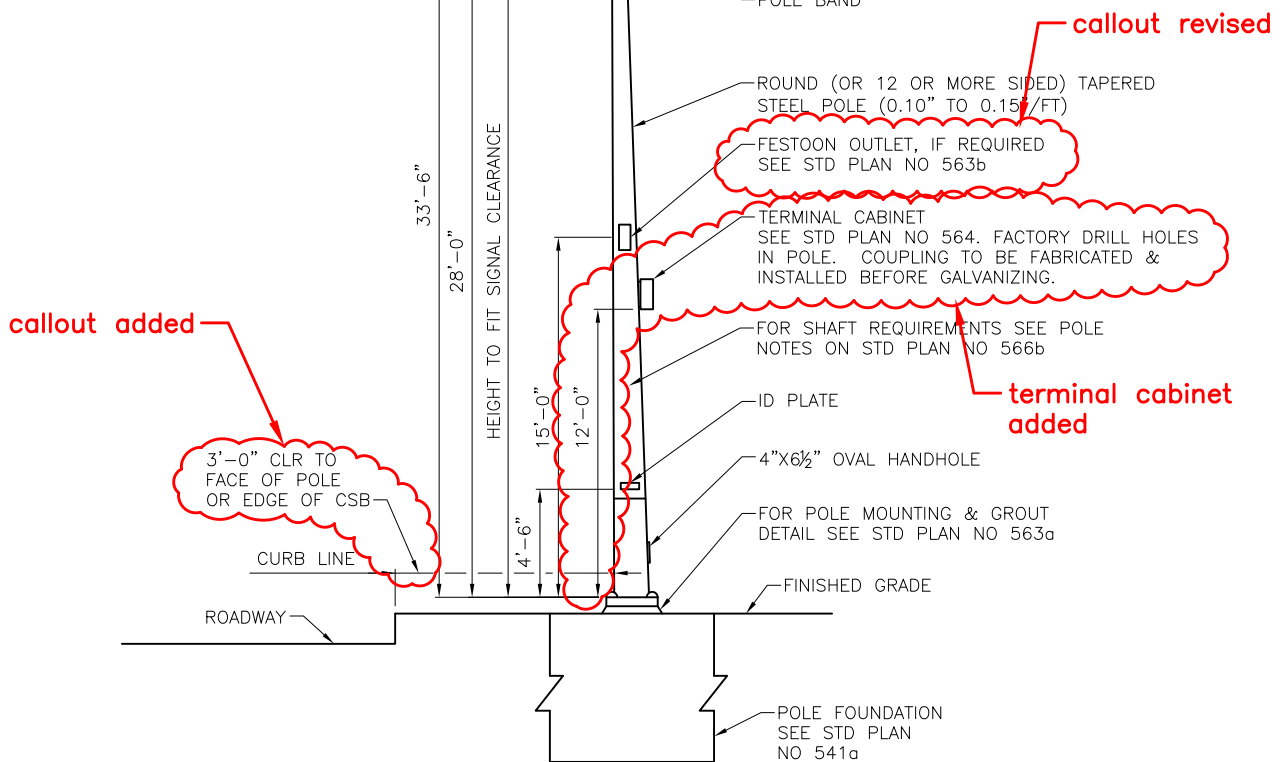
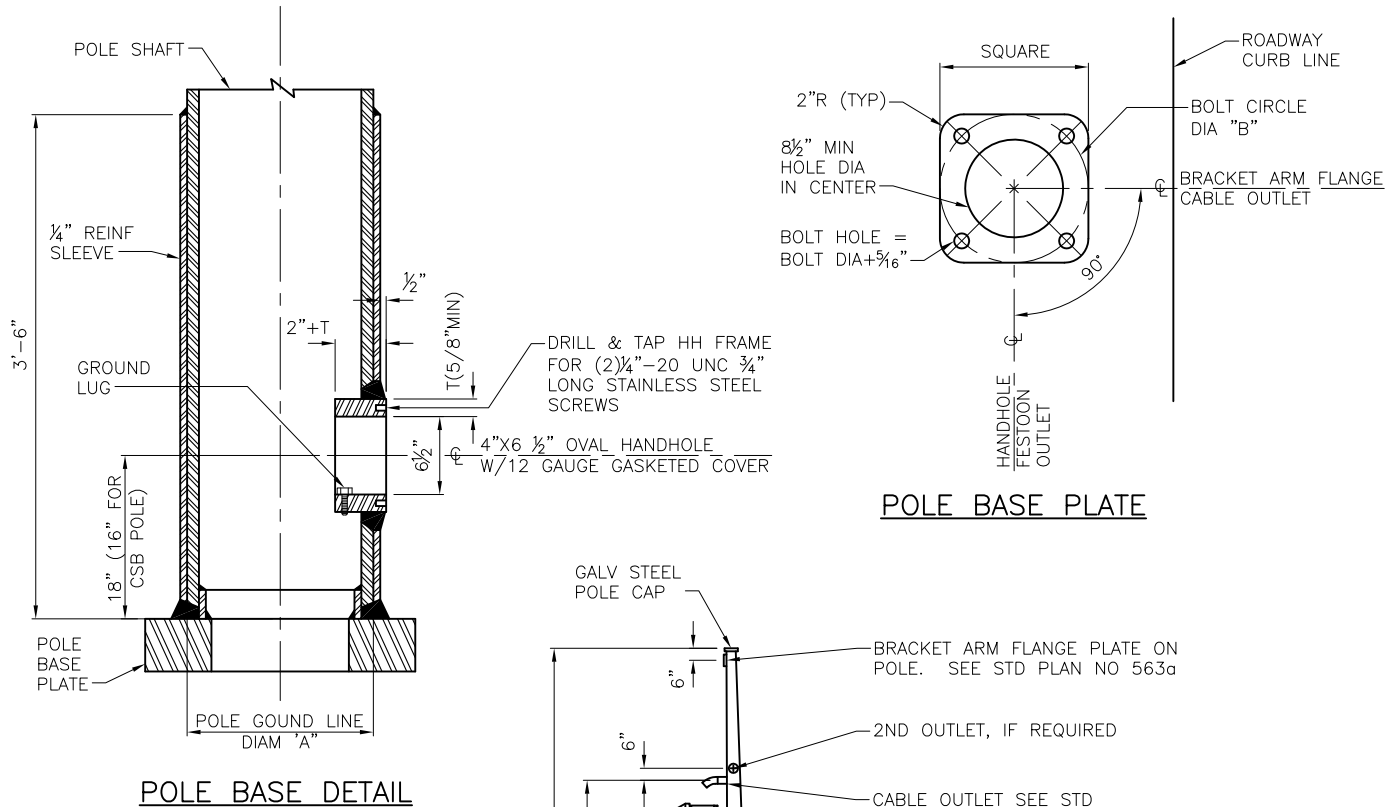
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TERMINAL CABINET  
POLE MOUNTING



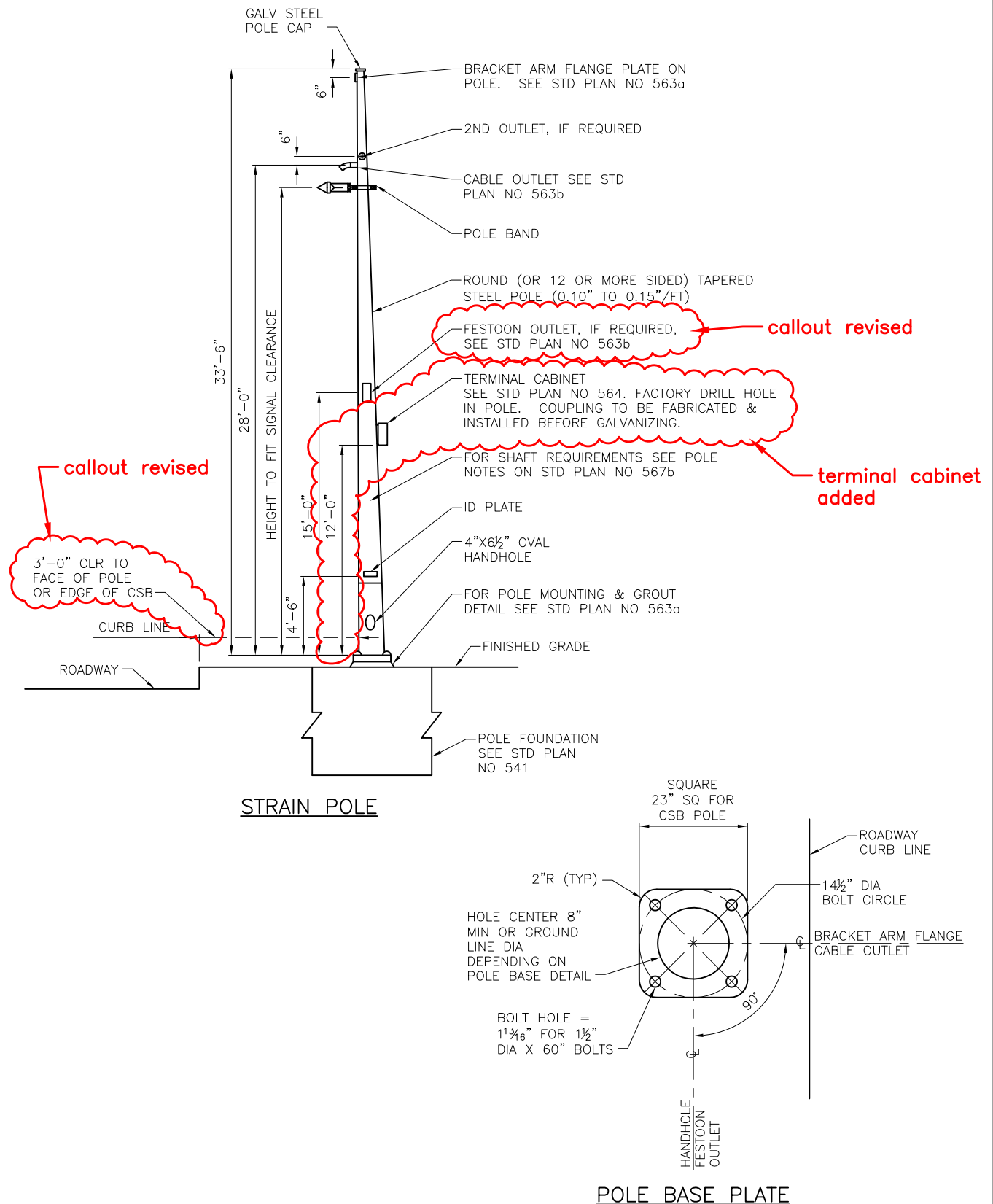
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**STRAIN POLE DETAILS  
(TYPE V, X & Z POLES)**



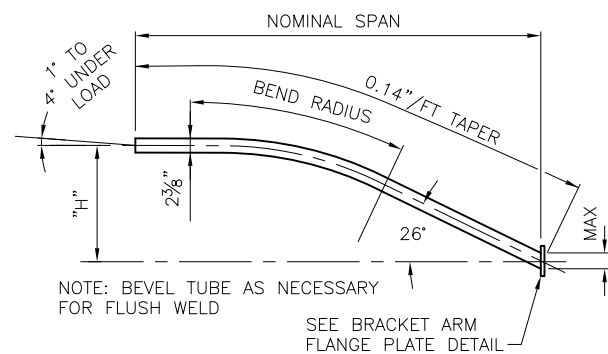
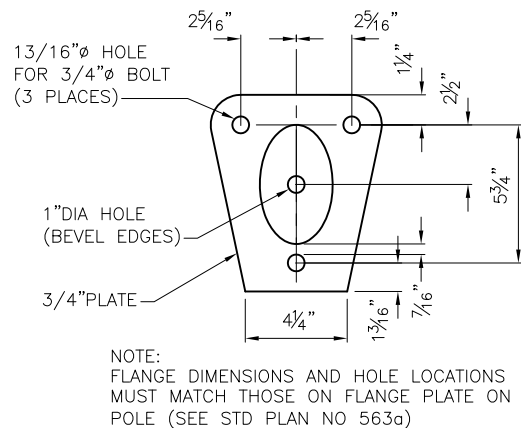
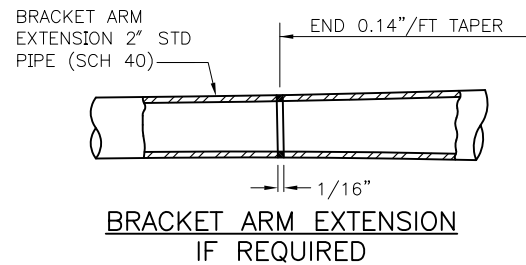
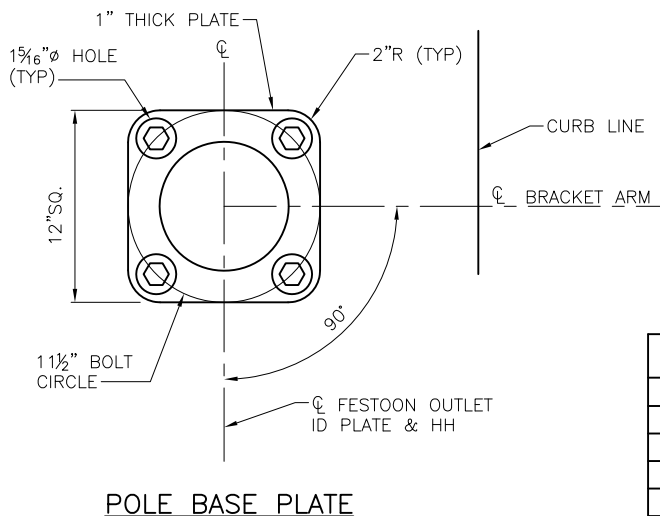
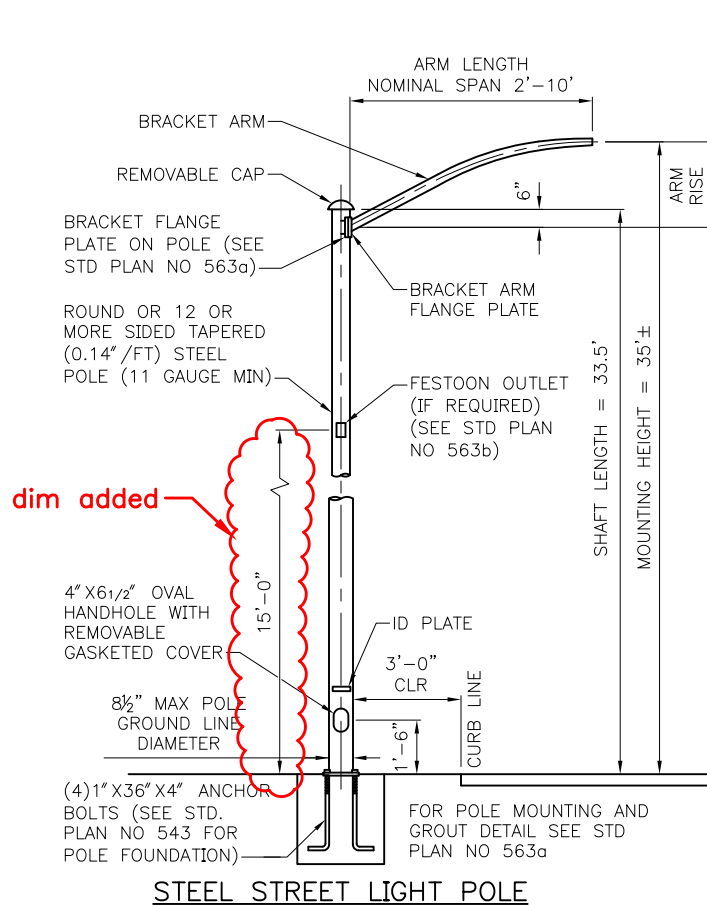
REF STD SPEC SEC 8-32



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TYPE T STRAIN POLE DETAILS  
TRAFFIC SIGNAL ONLY



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.

REF STD SPEC SEC 8-32



City of Seattle

NOT TO SCALE

**STEEL STREET LIGHT POLE  
WITH BRACKET ARM**

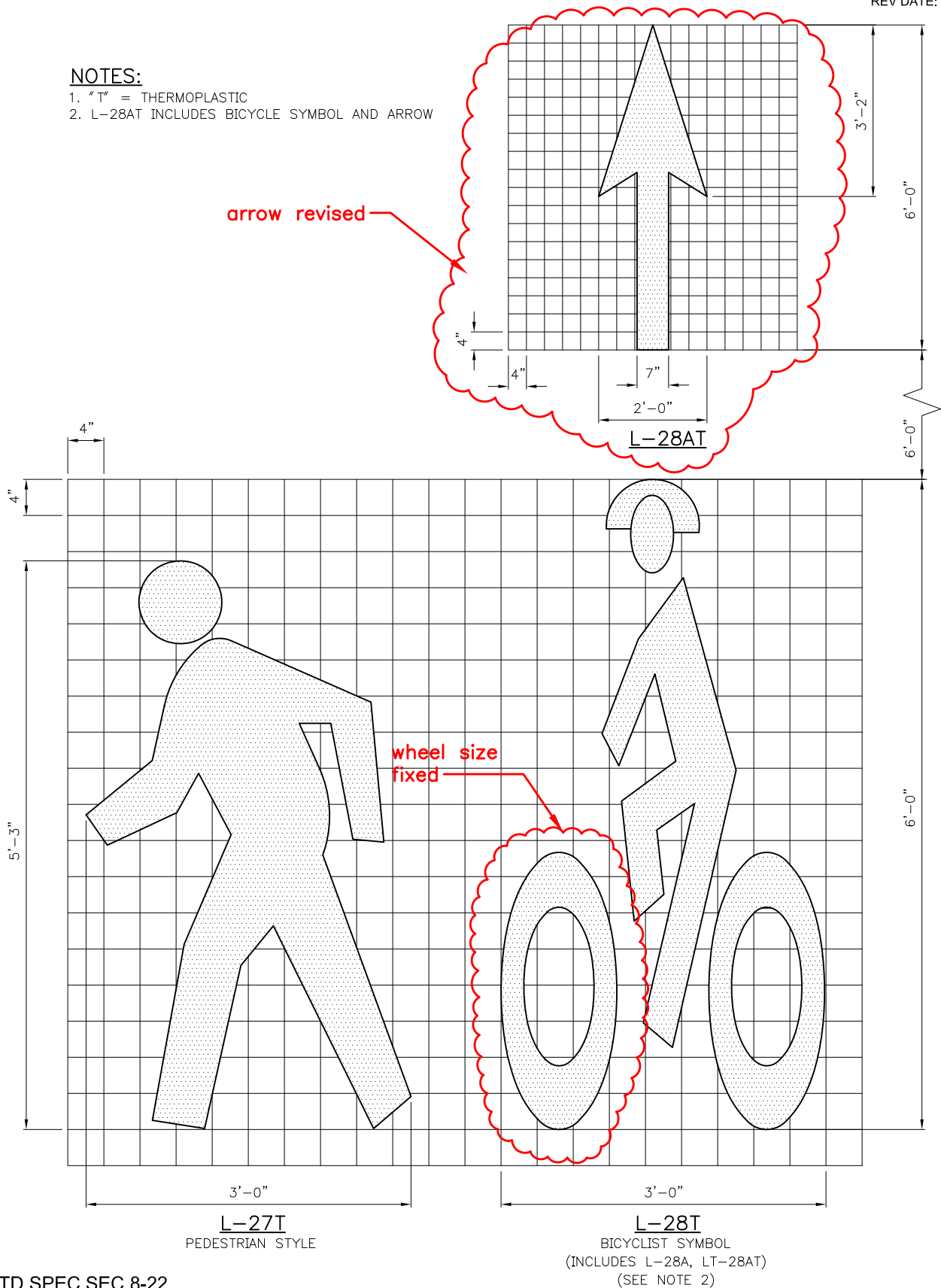
**NOTES:**

- WHEN INSTALLING BRACKET ONTO WOOD POLE DRILL OUT THE TOP & BOTTOM TWO HOLE TO  $\frac{9}{16}$ " 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.
- 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
- BRACKET TO BE STEEL, PAINTED INTERNATIONAL GREEN
- ALL BOLTS, NUTS AND STEEL WASHERS TO BE STAINLESS STEEL, EXCEPT FOR ALUMINUM RIVNUT ON ALUMINUM POLE.

**call-out removed**

## SDS BRACKET FOR STEEL OR WOOD POLES

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



REF STD SPEC SEC 8-22



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**BICYCLIST & PEDESTRIAN  
SYMBOLS**