

CLF	Chain Link Fence
CLR	Clearance
CMP	Corrugated Metal Pipe <i>added</i>
CO	Clean Out
COL	Column
COMP	Compression
CONC	Concrete
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
CSECP	Construction Stormwater & Erosion Control Plan
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 ϕ	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 <i>added</i>
EVPD	Emergency Vehicle Preemption Detector
EW	Each Way
EX	Existing
EXP	Expansion
FACB	Fire Alarm Cable
FAHH	Fire Alarm Handhole
FC	Face of Curb
FCS	Flow Control Structure <i>added</i>
f'c	Specified compressive strength of concrete
FDN	Foundation
FDP	Flexible Delineation Post
FF	Far Face, Finished Floor
FG	Finished Grade
FHWA	Federal Highway Administration
FIG	Figure <i>added</i>

REF STD SPEC SEC 1-01.2



City of Seattle

NOT TO SCALE

ABBREVIATIONS

LED	Light Emitting Diode
LF	Linear/Lineal Feet
LID	Local Improvement District
LIT	Large Inlet Top (Catch Basin)
LOC	Locate/Location
LONGIT	Longitudinal
LP	Light Pole
LS	Lump Sum
LSCAPE	Landscape, Landscaping
LST	Landscape Timber
LT	Left
LTG	Lighting
LUM	Luminaire
MA	Mast Arm
MATL	Material
MAX	Maximum
MB	Mailbox
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 \overline{M}	Monument Line
MNRL AGG	Mineral Aggregate
MOD	Modify/Modified
MON	Monument
MUTCD	Manual on Uniform Traffic Control Devices
MW	Monitor Well

N	North
NAD	North American Datum
NAVD	North American Vertical Datum
NEMA	National Electrical Manufacturers Association
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, Polyethylene
PED	Pedestrian
PG	Performance Grade
PH	Phase
PI	Point of Intersection
PL	Plate, Place, Polyethylene
\overline{P}	Property Line
POC	Point on Curve
PP	Power Pole, Polypropylene
PPB	Pedestrian Push Button
PR	Pair
PRC	Point of Reverse Curve
PROP	Proposed

REF STD SPEC SEC 1-01.2



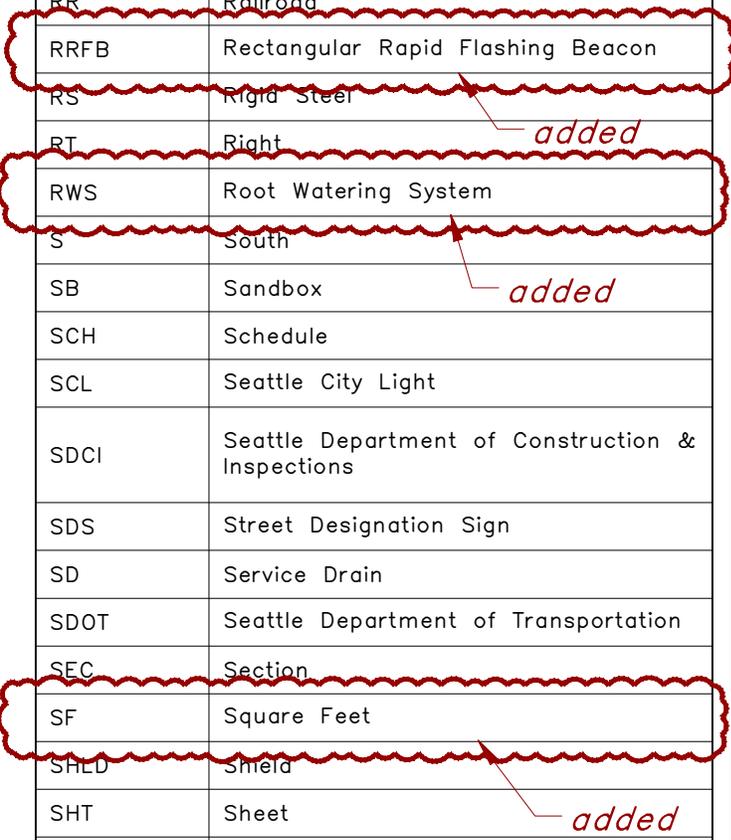
City of Seattle

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ABBREVIATIONS

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
RED	Reducer
REF	Refer/Reference
REINF	Reinforce/Reinforcement
RELOC	Relocate
REM	Remove
REPL	Replace
REQD	Required
RET	Retire/Retired
RET WALL	Retaining Wall
RF	Rock Facing
RGS	Rigid Galvanized Steel
RIT	Round Inlet Top

RJ	Restrained Joint
RLWY	Railway
RP	Rock Pocket
RPBA	Reduced Pressure Backflow Assembly
RR	Railroad
RRFB	Rectangular Rapid Flashing Beacon
RS	Rigid Steel
RT	Right
RWS	Root Watering System
S	South
SB	Sandbox
SCH	Schedule
SCL	Seattle City Light
SDCI	Seattle Department of Construction & Inspections
SDS	Street Designation Sign
SD	Service Drain
SDOT	Seattle Department of Transportation
SEC	Section
SF	Square Feet
SHLD	Shield
SHT	Sheet
SL	Sleeve, Street Light
§	Survey Line
SLHH	Street Light Handhole
SNS	Street Name Sign
SP	Strain Pole
SPCS	Spaces
SPEC	Specifications
SPR	Seattle Parks & Recreation
SPU	Seattle Public Utilities
SQ	Square
SS	Stainless Steel, Side Sewer-Combined
SSD	Sub-Surface Drain



REF STD SPEC SEC 1-01.2



City of Seattle

NOT TO SCALE

ABBREVIATIONS

SSS	Side Sewer-Sanitary
SSTONE	Sandstone
ST	Street
STA	Station
STD	Standard
STL	Steel
STL P	Steel Pipe
STM LOG	Steam Log
STRUCT	Structure/Structural
SVC	Service
SW	Sidewalk
SY	Square Yard
SYS	System
T	Tee
TB	Test Boring
TC	Traffic Control
TCB	Telephone Cable
TCD	Telephone Conduit
TCHH	Traffic Control Handhole
TD	Telephone Duct
TEB	Telephone Enclosure Box
TEL	Telephone
TEMP	Temporary
TF	Top Face
TH	Test Hole
THH	Telephone Handhole
TJO	Transfer of Jurisdiction Ordinance
TMH	Telephone Manhole
TMT	Treatment
TN	Ton
TOC	Top of Curb
TR	Traffic
TRCB	Traffic Signal Cable

TRCD	Traffic Signal Conduit
TRSCC	Traffic Signal Controller Cabinet
TVCB	Television Cable
TVCD	Television Conduit
TVHH	Television Handhole
TYP	Typical
UG	Underground
UIC	Underground Interconnect
UNC	Unified National Course
UP	Utility Pole
V	Valve, Variable
V/C	Vertical Curve
VAR	Variable/Varies
VB	Vertical Bend
VBOX	Valve Box
VCH or VC	Valve Chamber
VCP	Vitrified Clay Pipe
VEH	Vehicle
VERT	Vertical
VMS	Variable Message Sign
VO	Vacation Ordinance
W	Water, West
W/	With
WCR	Walkway Curb Ramp
WD	Wood/Wooden
WF	Wood Fence
WIF	Wrought Iron Fence
WM	Water Meter, Water Main
WMA	Warm Mix Asphalt
WMR	Water Main Radius
WP	Wood Pole
WS	Water Service
WSP	Wood Stave Pipe
WSTP	Wheel Stop

REF STD SPEC SEC 1-01.2



City of Seattle

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ABBREVIATIONS

added

ITEM	EXISTING	PROPOSED
Maintenance Holes		MH-7
Inlet Type 250A		
Inlet Type 250B		
Inlet Type 252		
Inlet Type 268		
Catch Basin round inlet top		
Private CB & Inlet		
Catch Basin Type 151 (pre 1985)		
Catch Basin Type 240A		
Catch Basin Type 240B		
Catch Basin Type 240C		
Catch Basin Type 240D		
Catch Basin Type 241		
Catch Basin Type 242A		
Catch Basin Type 242B		
Junction Box Type 277A		
Junction Box Type 277B		
Area Drain		

new symbols

REF STD SPEC SEC



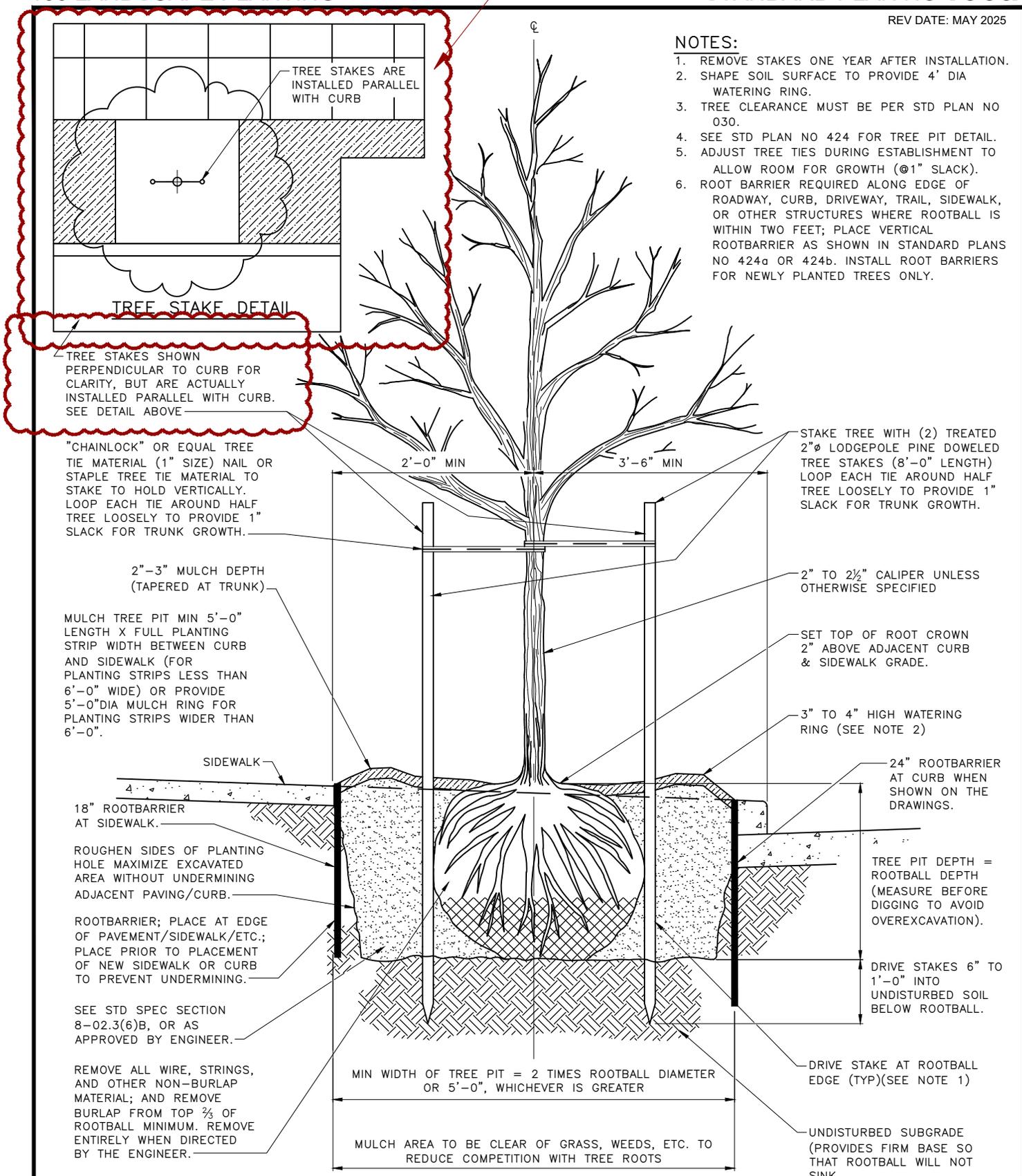
NOT TO SCALE

STANDARD SYMBOLS
SEWER & DRAINAGE

*new detail
& callout*

NOTES:

1. REMOVE STAKES ONE YEAR AFTER INSTALLATION.
2. SHAPE SOIL SURFACE TO PROVIDE 4' DIA WATERING RING.
3. TREE CLEARANCE MUST BE PER STD PLAN NO 030.
4. SEE STD PLAN NO 424 FOR TREE PIT DETAIL.
5. ADJUST TREE TIES DURING ESTABLISHMENT TO ALLOW ROOM FOR GROWTH (@1" SLACK).
6. ROOT BARRIER REQUIRED ALONG EDGE OF ROADWAY, CURB, DRIVEWAY, TRAIL, SIDEWALK, OR OTHER STRUCTURES WHERE ROOTBALL IS WITHIN TWO FEET; PLACE VERTICAL ROOTBARRIER AS SHOWN IN STANDARD PLANS NO 424a OR 424b. INSTALL ROOT BARRIERS FOR NEWLY PLANTED TREES ONLY.



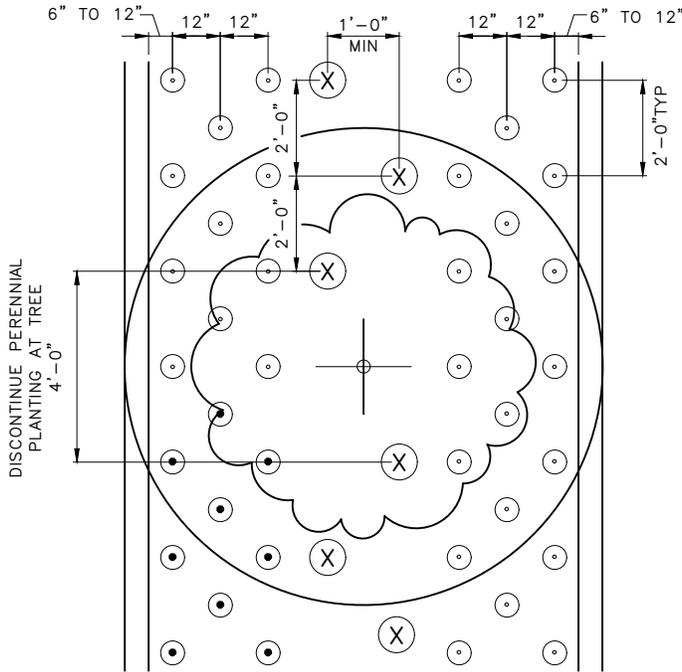
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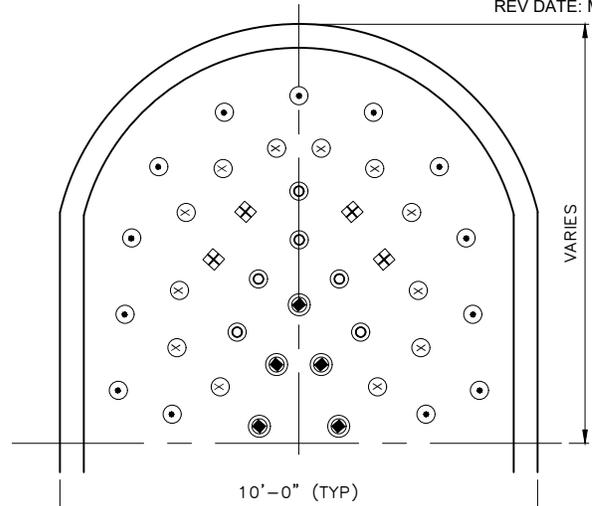
**DECIDUOUS TREE PLANTING
IN PLANTING STRIP**



QUANT PER 10'-0" LF MEDIAN

○ GROUNDCOVER	30
⊗ SHRUB	5

new detail & callout

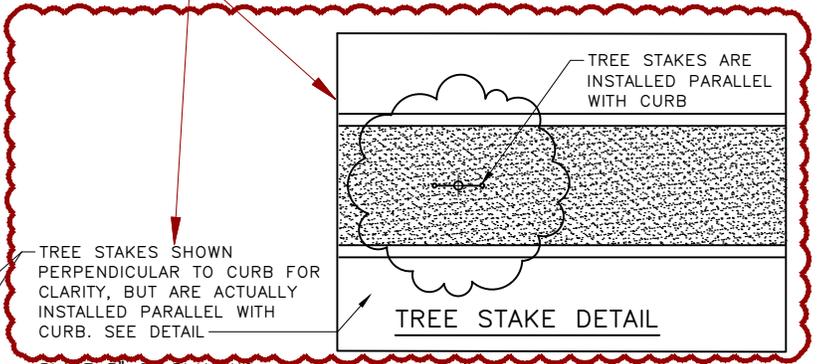


QUANT PER END CAP

◇ PERENNIAL TYPE 1	4
⊙ PERENNIAL TYPE 2	6
● PERENNIAL TYPE 3	5
⊕ EVERGREEN GROUNDCOVER TYPE 1	13
⊗ EVERGREEN GROUNDCOVER TYPE 2	12

END CAP DETAIL

DETAIL AT TREE PLAN



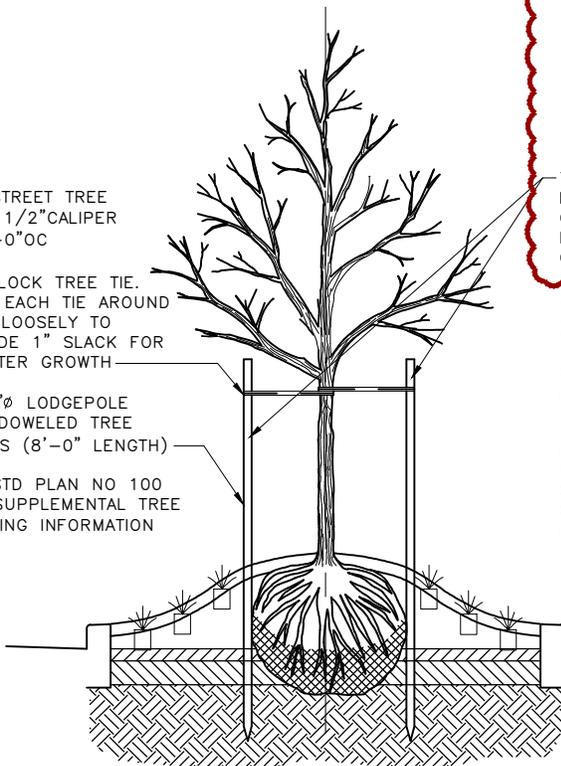
TREE STAKES SHOWN PERPENDICULAR TO CURB FOR CLARITY, BUT ARE ACTUALLY INSTALLED PARALLEL WITH CURB. SEE DETAIL

TYP STREET TREE
2"-2 1/2" CALIPER
@ 30'-0" OC

CHAINLOCK TREE TIE.
LOOP EACH TIE AROUND
TREE LOOSELY TO
PROVIDE 1" SLACK FOR
DIAMETER GROWTH

(2) 2"Ø LODGEPOLE
PINE DOWELED TREE
STAKES (8'-0" LENGTH)

SEE STD PLAN NO 100
FOR SUPPLEMENTAL
PLANTING INFORMATION



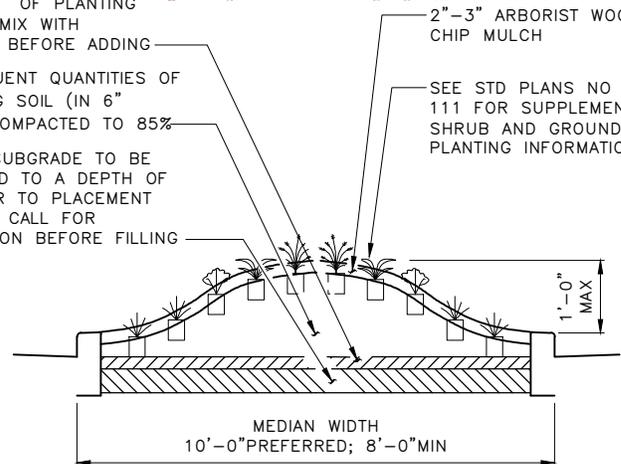
PLACE 3" OF PLANTING
SOIL & MIX WITH
SUBSOIL BEFORE ADDING

SUBSEQUENT QUANTITIES OF
PLANTING SOIL (IN 6"
LIFTS) COMPACTED TO 85%

NATIVE SUBGRADE TO BE
SCARIFIED TO A DEPTH OF
6" PRIOR TO PLACEMENT
OF FILL. CALL FOR
INSPECTION BEFORE FILLING

2"-3" ARBORIST WOOD
CHIP MULCH

SEE STD PLANS NO 110 &
111 FOR SUPPLEMENTAL
SHRUB AND GROUNDCOVER
PLANTING INFORMATION



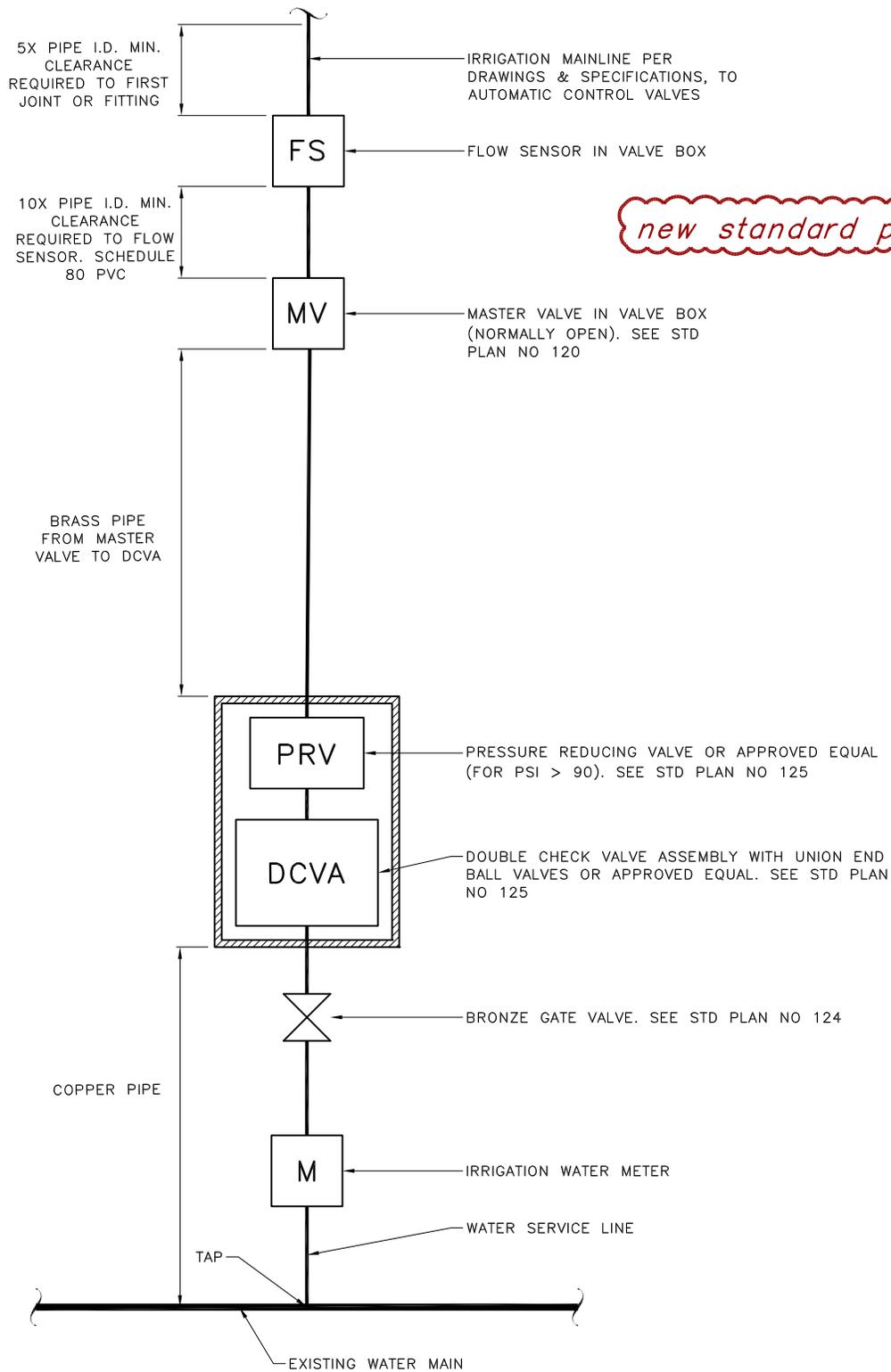
REF STD SPEC SEC 8-02



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MEDIAN PLANTING



REF STD SPEC SEC 8-03

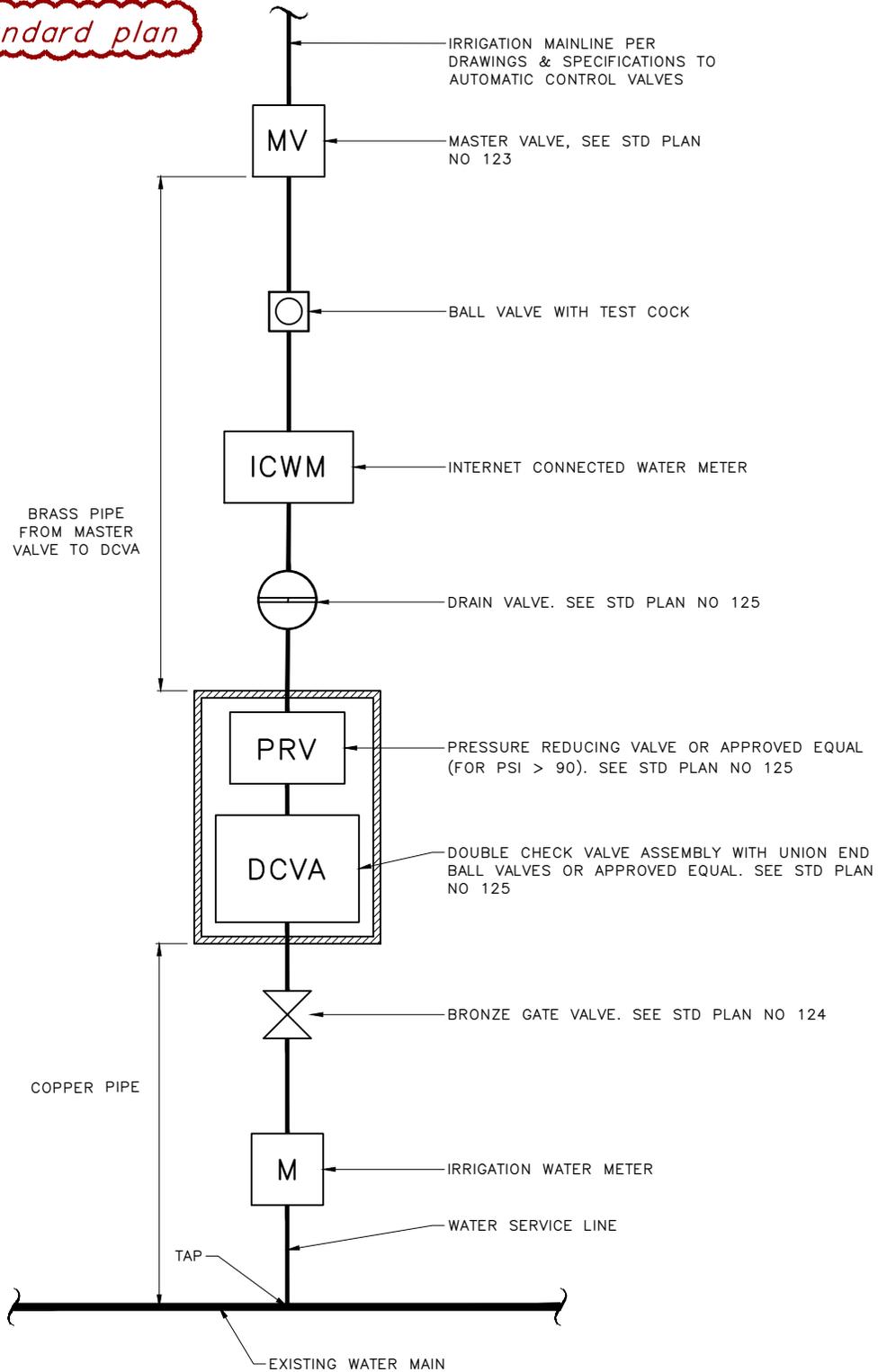


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IRRIGATION POINT OF CONNECTION DIAGRAM

new standard plan



REF STD SPEC SEC 8-03

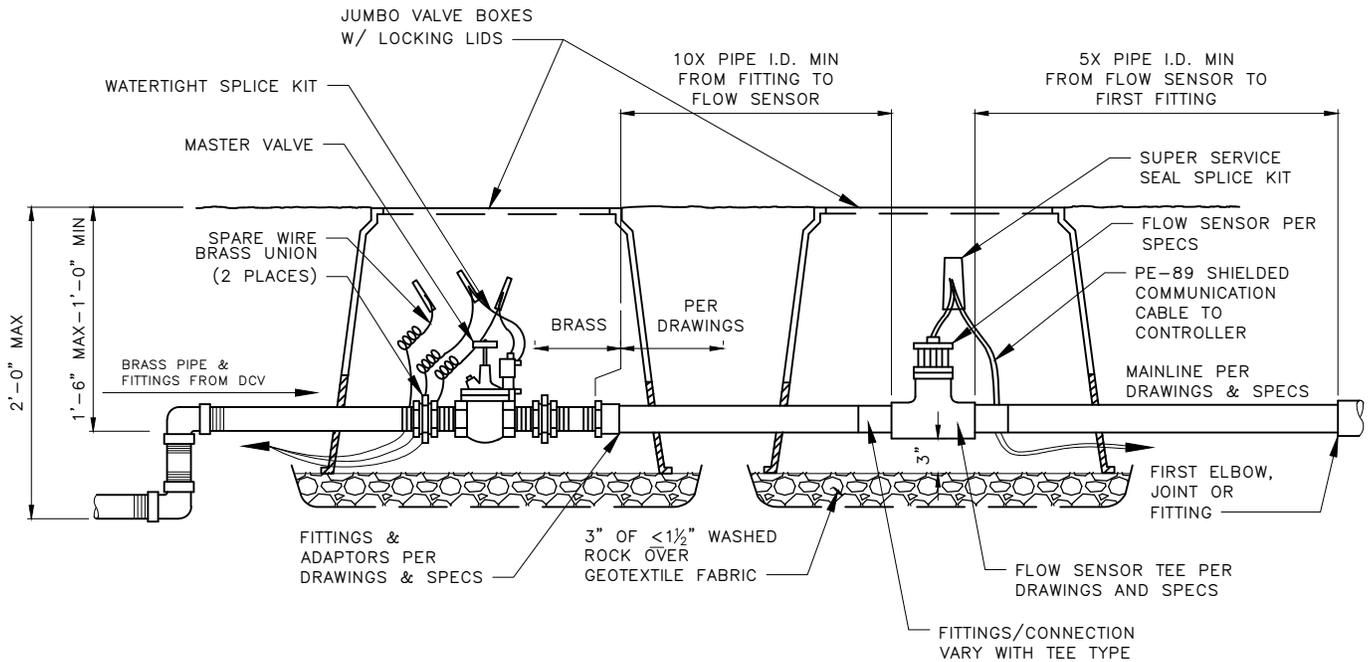


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IRRIGATION POINT OF CONNECTION
DIAGRAM FOR BATTERY
OPERATED CONTROLLERS

new standard plan



MASTER VALVE & FLOW SENSOR

NOTES:

1. USE TEFLON TAPE ON ALL THREADED FITTINGS.
2. FOR TWO-WIRE SYSTEMS, INSTALL COMMUNICATION WIRES AND DECODERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. SEE STD PLAN 115a FOR POINT OF CONNECTION DIAGRAM.

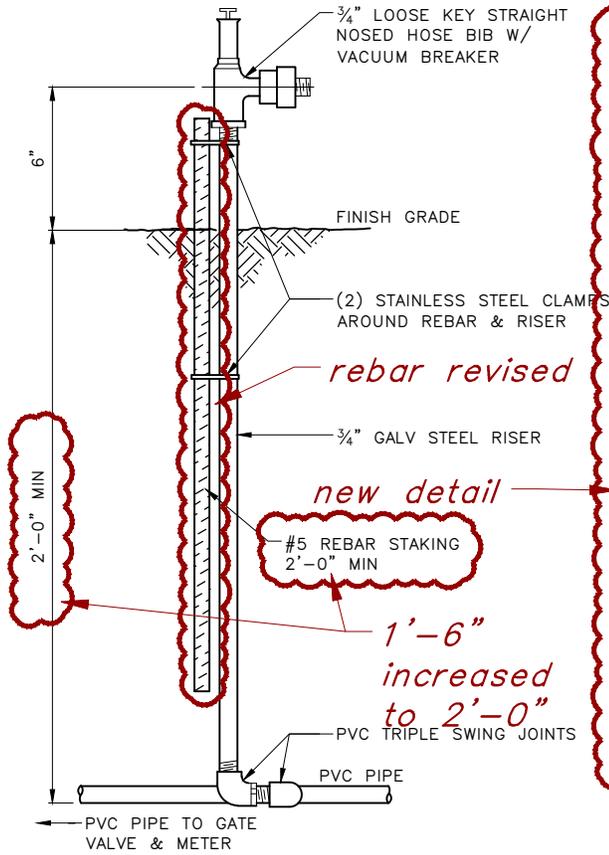
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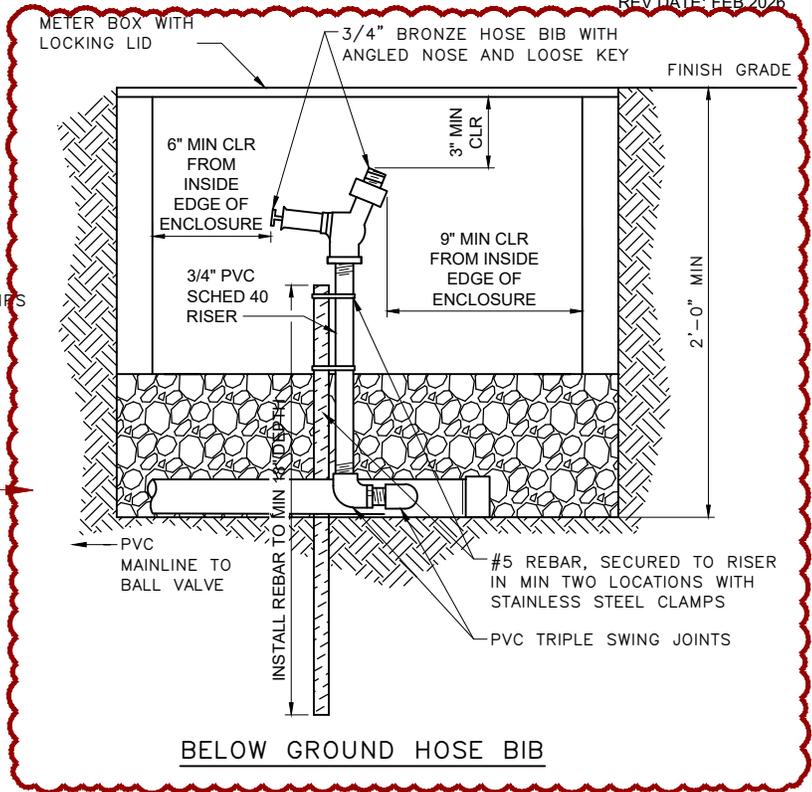
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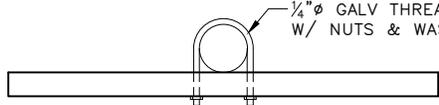
IRRIGATION
MASTER VALVE & FLOW SENSOR



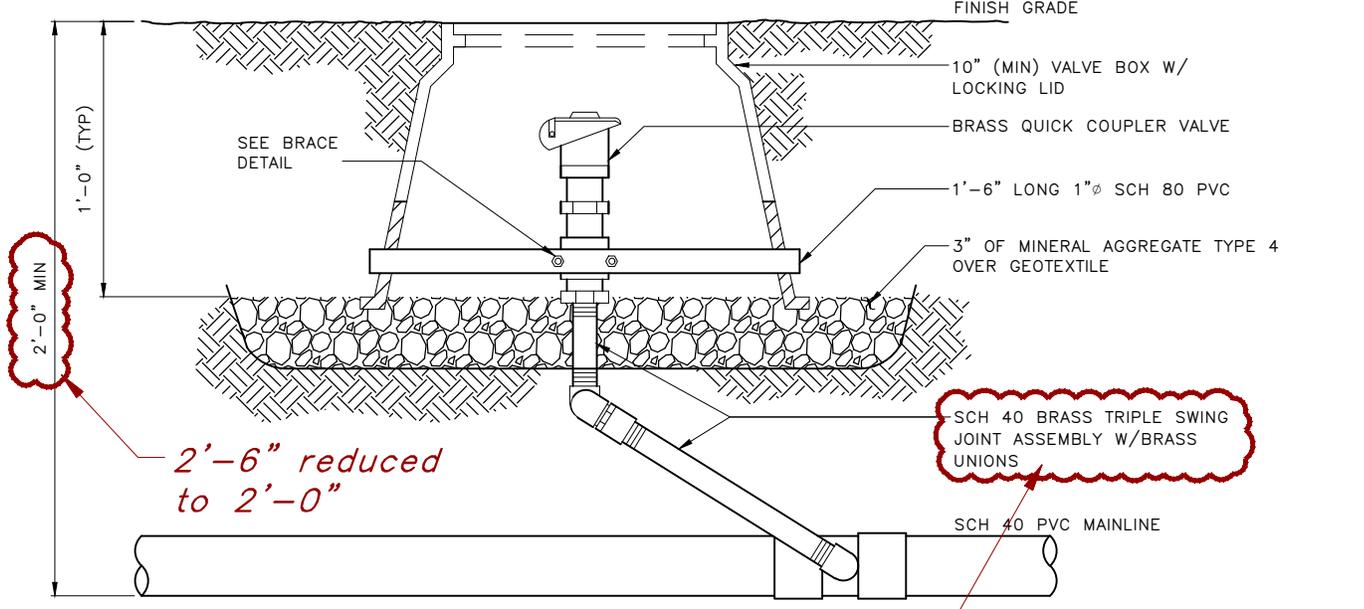
ABOVE GROUND HOSE BIB



BELOW GROUND HOSE BIB



BRACE DETAIL - PLAN VIEW



ELEVATION VIEW

QUICK COUPLER VALVE TURF OR BED AREAS

"PVC GALVANIZED" changed to "BRASS"

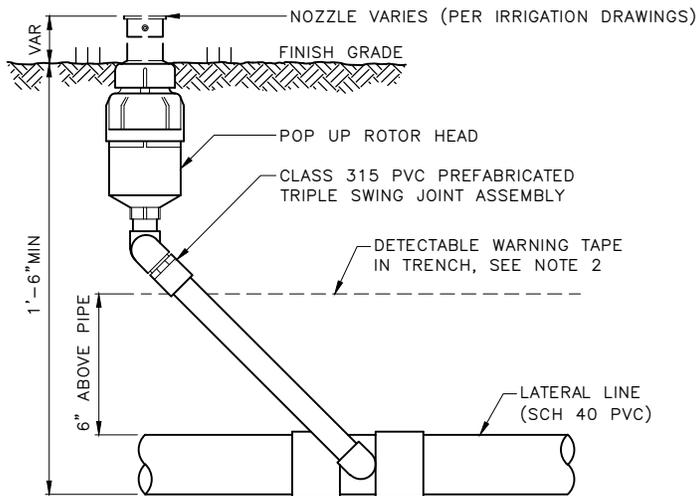
REF STD SPEC SEC 8-03



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IRRIGATION HOSE BIB ASSEMBLY AND QUICK COUPLER VALVE



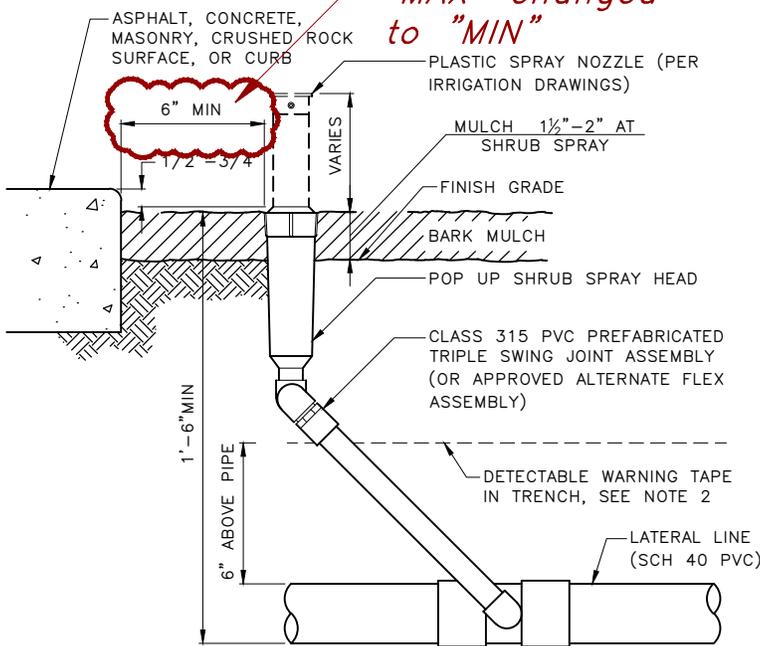
NOTE:

1. USE TEFLON TAPE ON ALL THREADED FITTINGS
2. DETECTABLE MARKING TAPE COLOR PER STANDARD SPECIFICATIONS SECTION 9-15.11 FOR POTABLE OR NON-POTABLE WATER

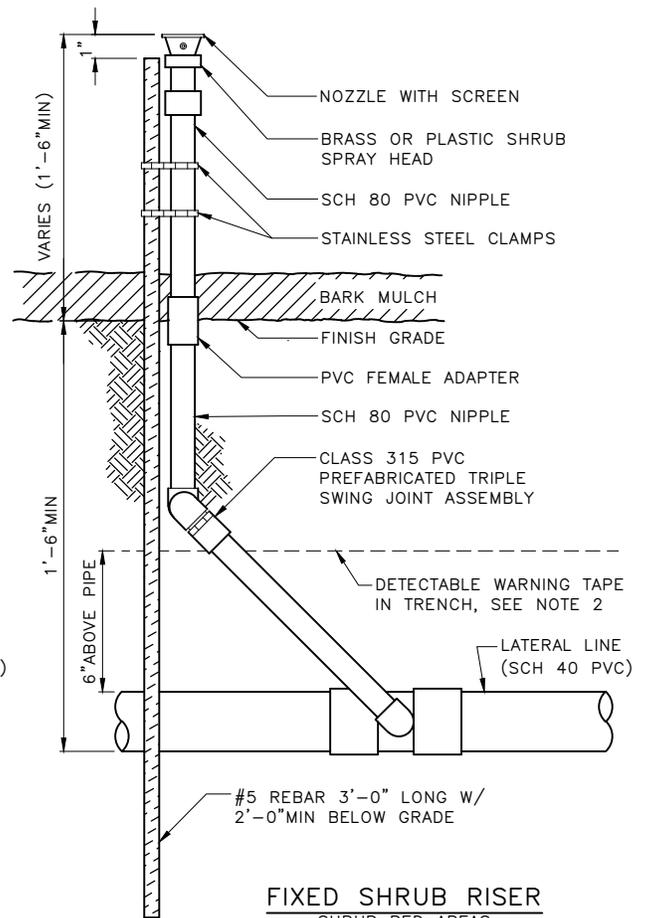
POP UP ROTOR HEAD

TURF AREAS

"MAX" changed to "MIN"



**POP UP ROTOR HEAD
(SHRUB BED AREAS)
AT EDGE OF PAVEMENT**



**FIXED SHRUB RISER
SHRUB BED AREAS**

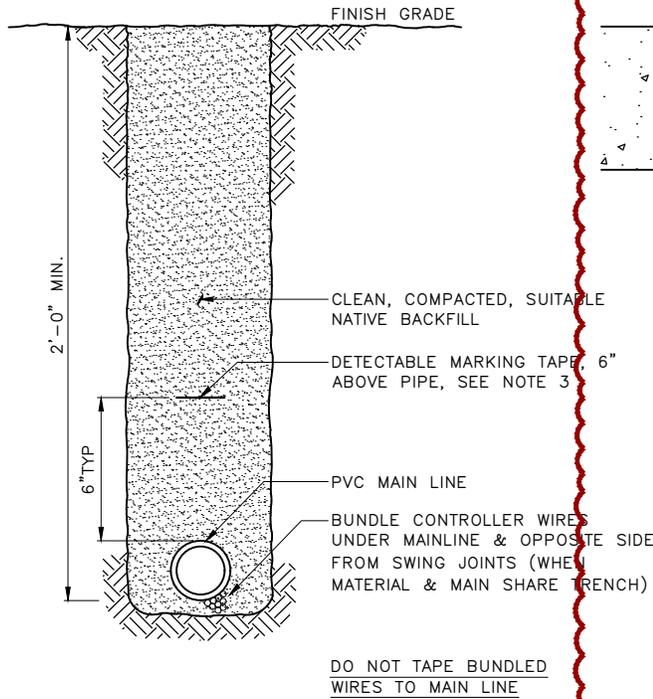
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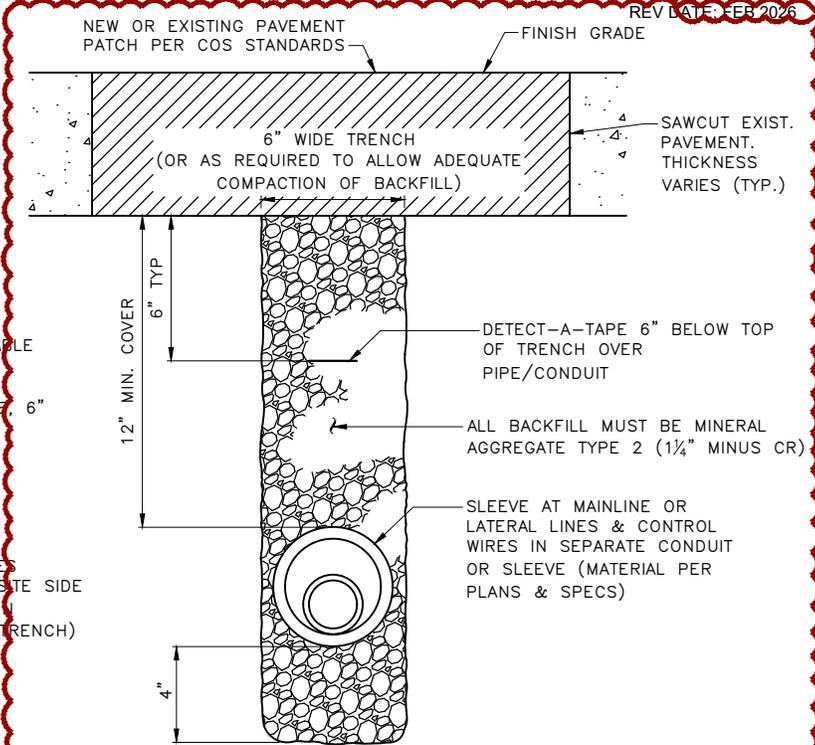
NOT TO SCALE

**POP UP & FIXED
IRRIGATION HEADS**

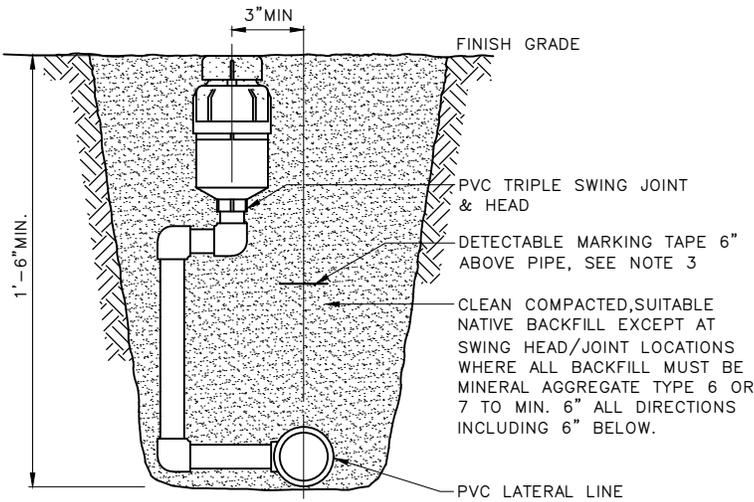


MAINLINE

detail revised

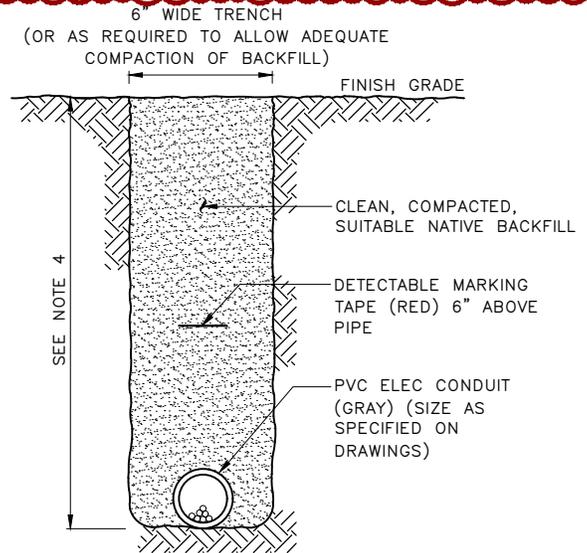


IRRIGATION SLEEVE TRENCHING UNDER PATHWAY OR SIDEWALK



LATERAL LINE

notes revised



ELECTRICAL SUPPLY TRENCH

NOTES:

1. SLEEVE ID MUST BE AT LEAST TWICE THE OD SIZE OF PIPE.
2. WIRES MUST BE IN SEPARATE CONDUIT SLEEVE EXCEPT UNDER ROADS WITH HEAVY VEHICLE TRAFFIC.
3. SLEEVES MUST BE REQUIRED UNDER ALL PAVED AREAS & WALL OR FOOTING PENETRATIONS.
4. FOR TRANSVERSE INSTALLATION (CROSSING THE PATHWAY), WITH VEHICULAR LOADING AND COVER IS LESS THAN 18 INCHES, USE CDF AS TRENCH BACKFILL.
5. FOR LONGITUDINAL INSTALLATION (ALONG THE PATHWAY), INSTALL LINE IN MIDWAY THE WIDTH OF THE PATH (NOT ALONG THE WHEEL PATH), THEN STANDARD TRENCH BACKFILL.

REF STD SPEC SEC 8-03

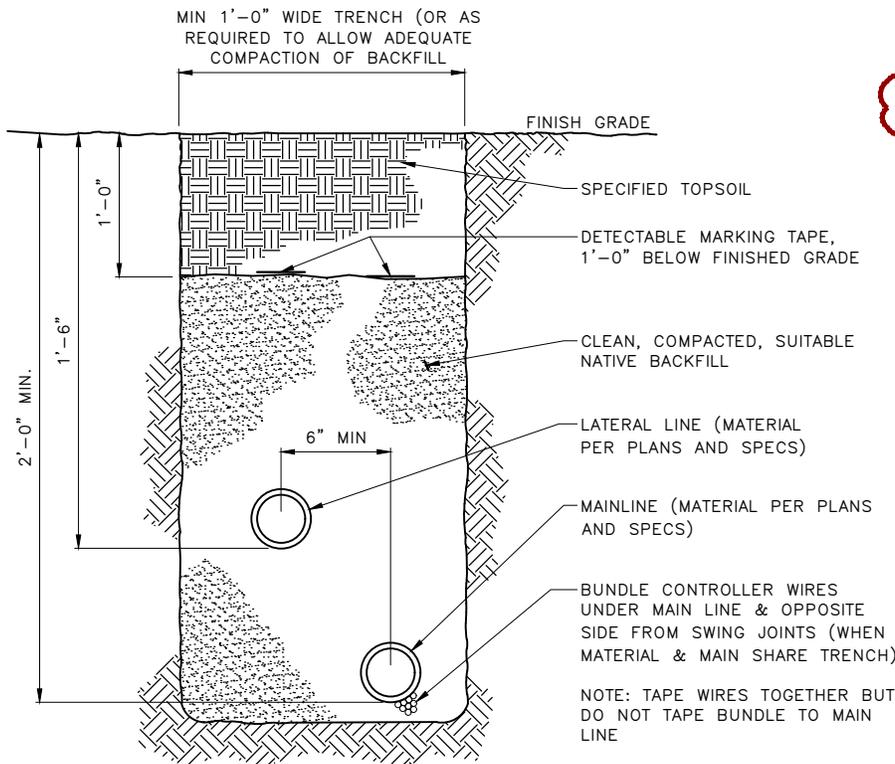


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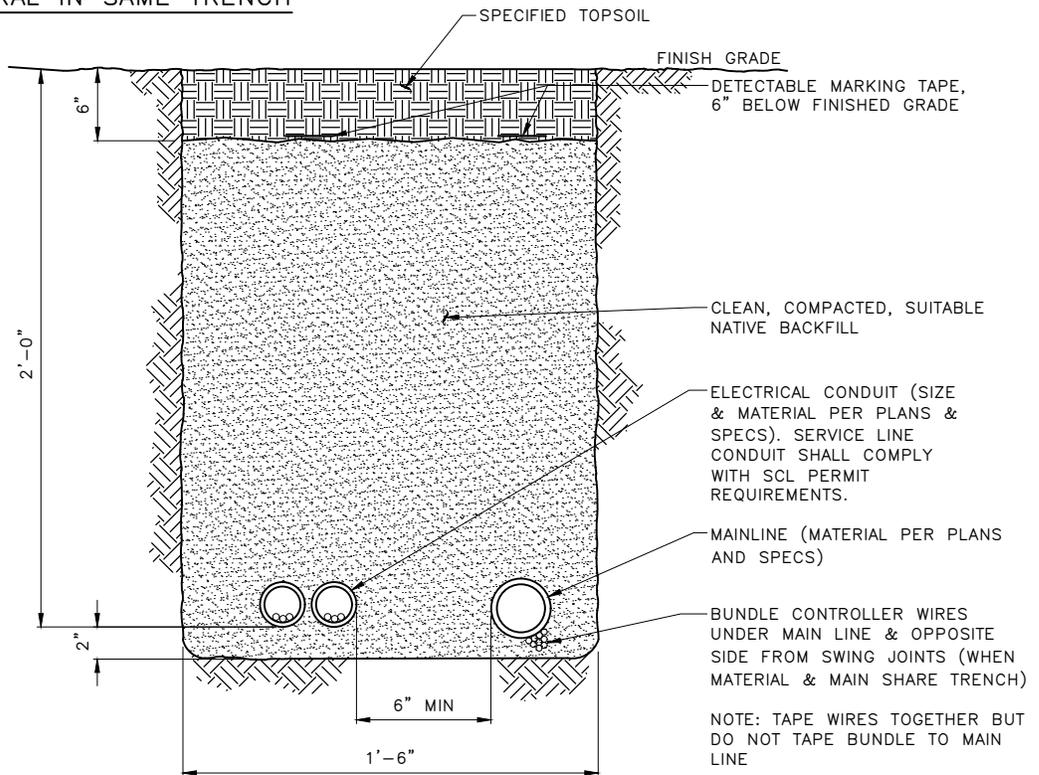
NOT TO SCALE

IRRIGATION TRENCHES

new standard plan



MAINLINE & LATERAL IN SAME TRENCH



MAINLINE & POWER SUPPLY IN SAME TRENCH

REF STD SPEC SEC 8-03

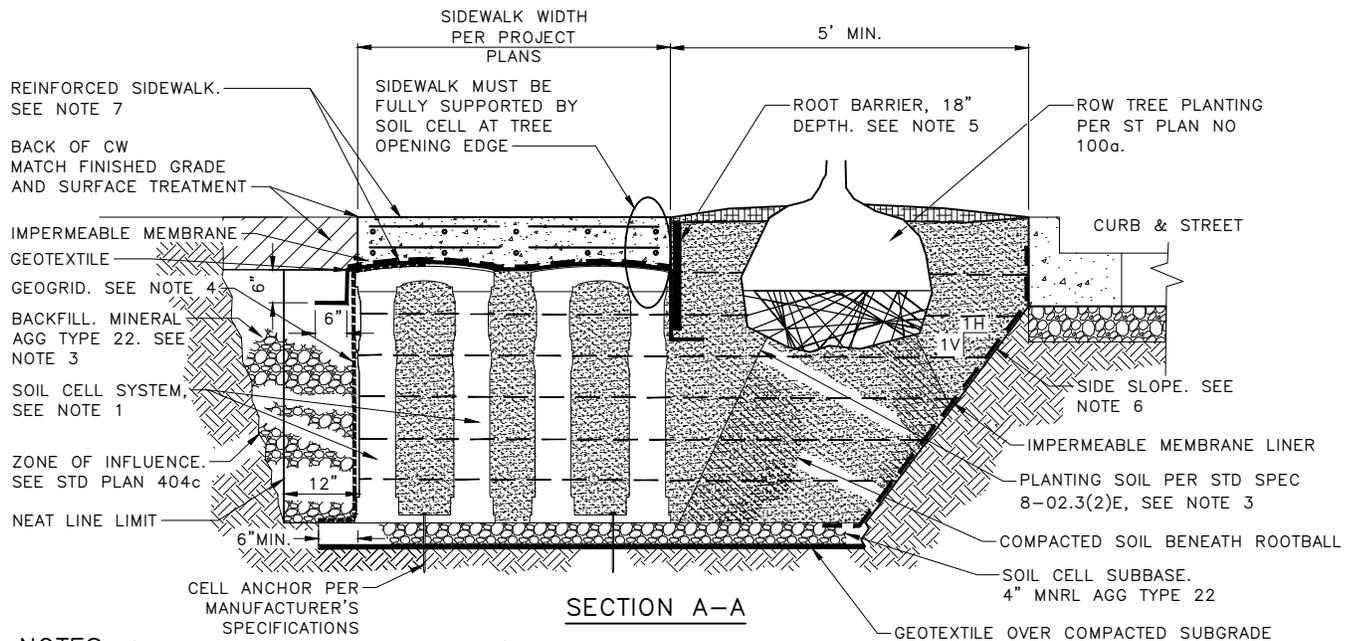
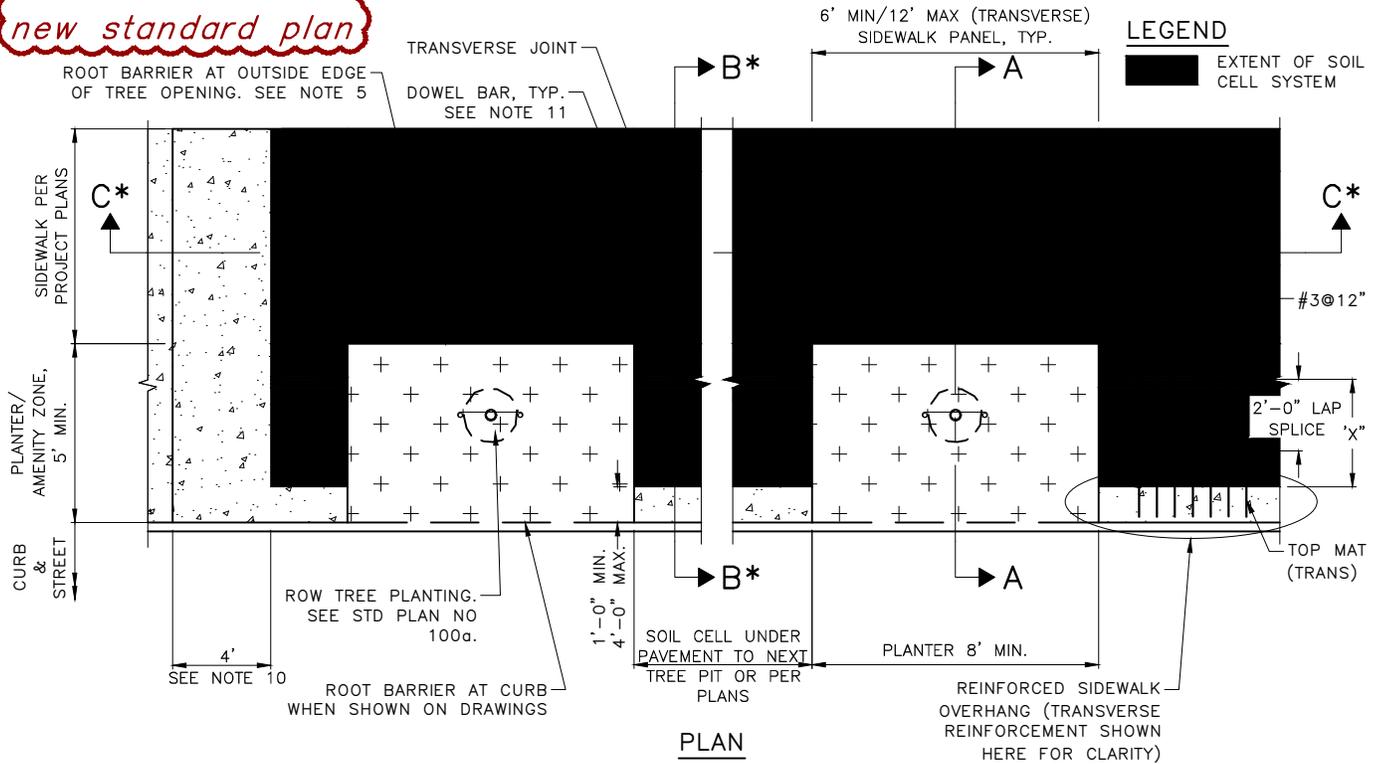


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IRRIGATION TRENCHES

new standard plan



NOTES: (SEE STD PLAN 150b FOR NOTES 6-11)

1. INSTALL SOIL CELL SYSTEM (SOIL CELL MODULAR COMPONENTS, GEOTEXTILE, GEOGRID, TIES, ETC.) PER MANUFACTURER'S SPECIFICATIONS.
 2. SOIL CELL SYSTEM DEPTH AND EXTENTS VARY BY PROJECT. SEE PROJECT PLANS.
 3. INSTALL BACKFILL AND SOIL IN 6" LIFTS. MOISTEN AND COMPACT SOIL BY TAMPING. COMPACT BACKFILL AFTER SOIL HAS BEEN PLACED TO BACKFILL LEVEL.
 4. WRAP GEOGRID AROUND OUTSIDE PERIMETER OF THE SOIL CELL SYSTEM. ALLOW FOR 6" BASE AND 12" DECK OVERLAP.
 5. INSTALL ROOT BARRIER PER STANDARD PLAN NO 100a.
- B* SEE SECTION B-B STANDARD PLAN 150b
 C* SEE SECTION C-C STANDARD PLAN 150b

REF STD SPEC SEC 8-02.3(27)

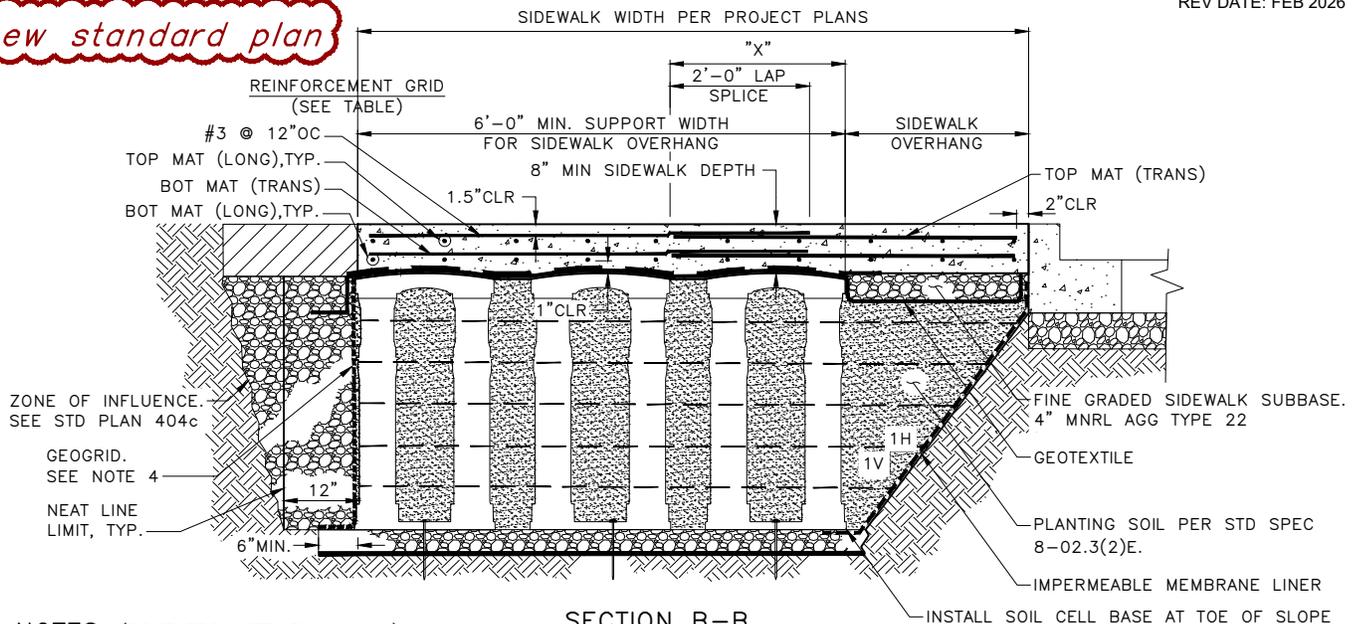


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SOIL CELL

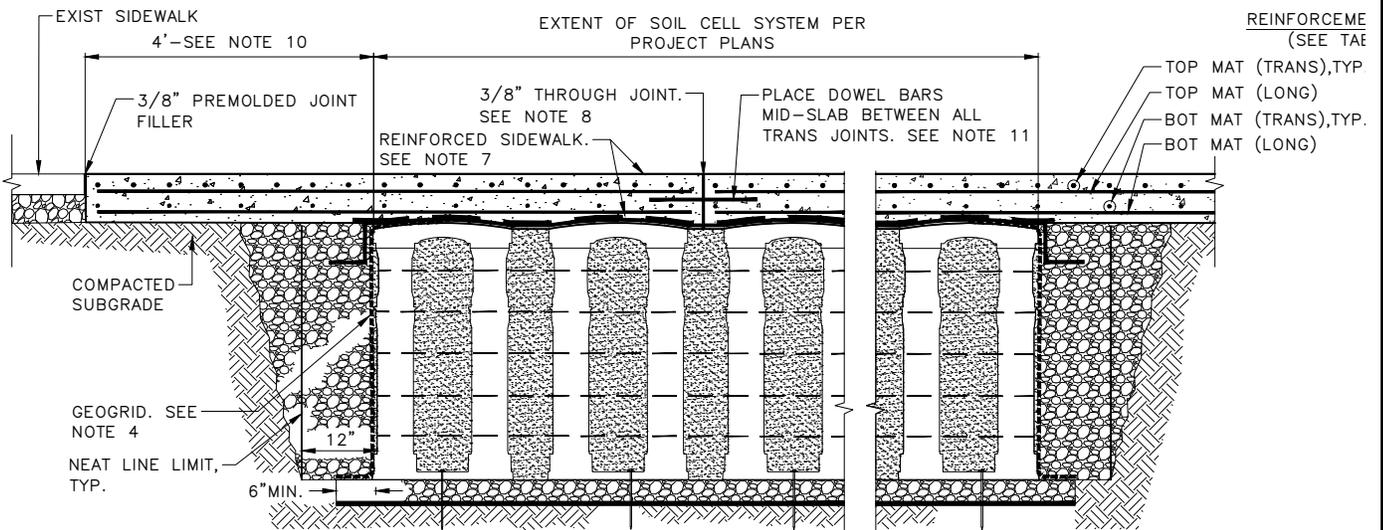
new standard plan



NOTES: (CONT FROM STD PLAN 150a)

SECTION B-B

6. INSTALL SIDE SLOPE BEGINNING AT BOTTOM OF ROADWAY SUBBASE TO TOP OF SOIL CELL AGGREGATE SUBBASE.
7. INSTALL REINFORCED SIDEWALK OVER IMPERMEABLE MEMBRANE LINER OVER GEOTEXTILE OVER SOIL CELL DECK. SEE TABLE FOR VARIABLE SIDEWALK DEPTHS AND REINFORCEMENT REQUIREMENTS.
8. 3/8" THROUGH AND CONTRACTION JOINTS MUST BE LOCATED AS REQUIRED BY SECTION 8-14.3(6). SOIL CELL SUPPORTED SIDEWALK JOINTS SHALL HAVE A MINIMUM INTERVAL OF 6' AND A MAXIMUM INTERVAL OF 12' IN THE LONGITUDINAL DIRECTION.
9. ALL REINFORCED SIDEWALK MUST BE CLASS 4000 CONCRETE. SIDEWALK FINISHING MUST BE AS REQUIRED BY SECTION 8-14.3(4)B.
10. PROVIDE REINFORCED CONC SIDEWALK SLAB ON GRADE TO SPAN 4' BEYOND SOIL CELL SUPPORT.
11. SEE STANDARD PLAN 405C FOR DOWEL BAR SIZE, SPACING AND PLACEMENT REQUIREMENTS.



SECTION C-C

SIDEWALK REINFORCEMENT GRID REQUIREMENTS

SIDEWALK OVERHANG	TOP MAT (TRANSVERSE)	TOP MAT (LONGITUDINAL)	MINIMUM AREA TOP/FT (IN ²)	BOTTOM MAT (LONGITUDINAL & TRANSVERSE)	MINIMUM AREA BOTTOM/FT (IN ²)	"x"
>3'-0" TO 4'-0"	#6 @ 6"OC	#3 @ 12"OC	0.78	#3 @ 12"OC	0.11	4'-6"
>2'-0" TO 3'-0"	#5 @ 6"OC	#3 @ 12"OC	0.50	#3 @ 12"OC	0.11	3'-0"
>1'-0" TO 2'-0"	#4 @ 6"OC	#3 @ 12"OC	0.25	#3 @ 12"OC	0.11	2'-3"

REINFORCED SIDEWALK NOTES:

- A. WHEN AN OVERHANG IS LESS THAN 1'-0" USE #3@12"OC FOR BOTH TOP & BOTTOM MAT TRANSVERSELY AND LONGITUDINALLY.
- B. TRANSVERSE STEEL IS IN THE DIRECTION OF OVERHANG IF ONE IS PRESENT.
- C. OVERHANG SLAB SECTIONS MUST BE 6' WIDE LONGITUDINALLY AT A MINIMUM AND CAN BE INCREASED TO A MAXIMUM OF 12'.

REF STD SPEC SEC 8-02.3(27)

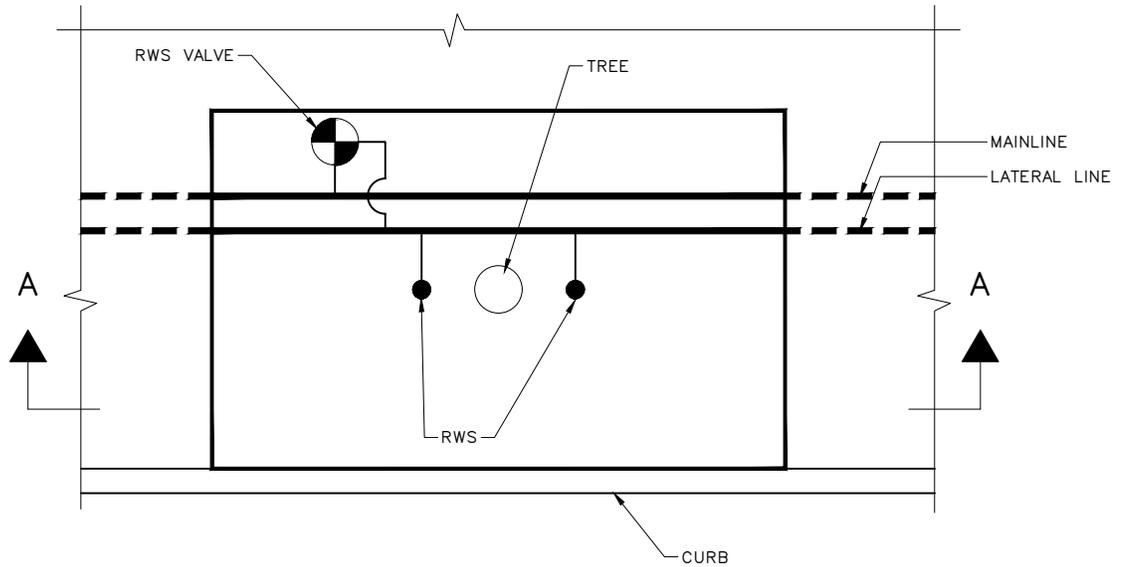


City of Seattle

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SOIL CELL

new standard plan

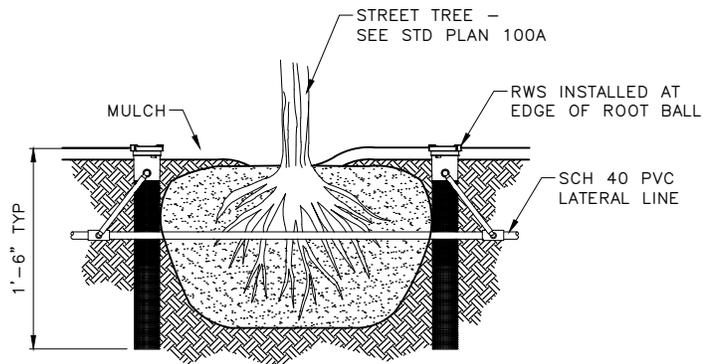


NOTES:

1. INSTALL A MINIMUM OF TWO ROOT WATERING SYSTEMS (RWS) PER TREE.
2. INSTALL IRRIGATION MAINLINE, LATERAL LINES, AND VALVE BOXES ON SIDEWALK SIDE.
3. INSTALL RWS A MINIMUM OF 12 INCHES FROM PAVEMENT EDGE AND 18 INCHES FROM BACK OF CURB.

TREE PIT IRRIGATION DETAILS

RWS = ROOT WATERING SYSTEM



SECTION A-A

REF STD SPEC SEC 8-03

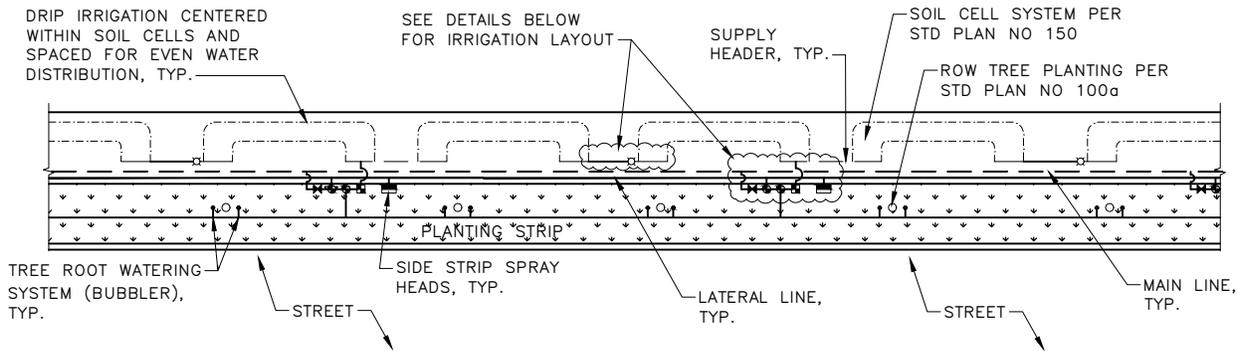


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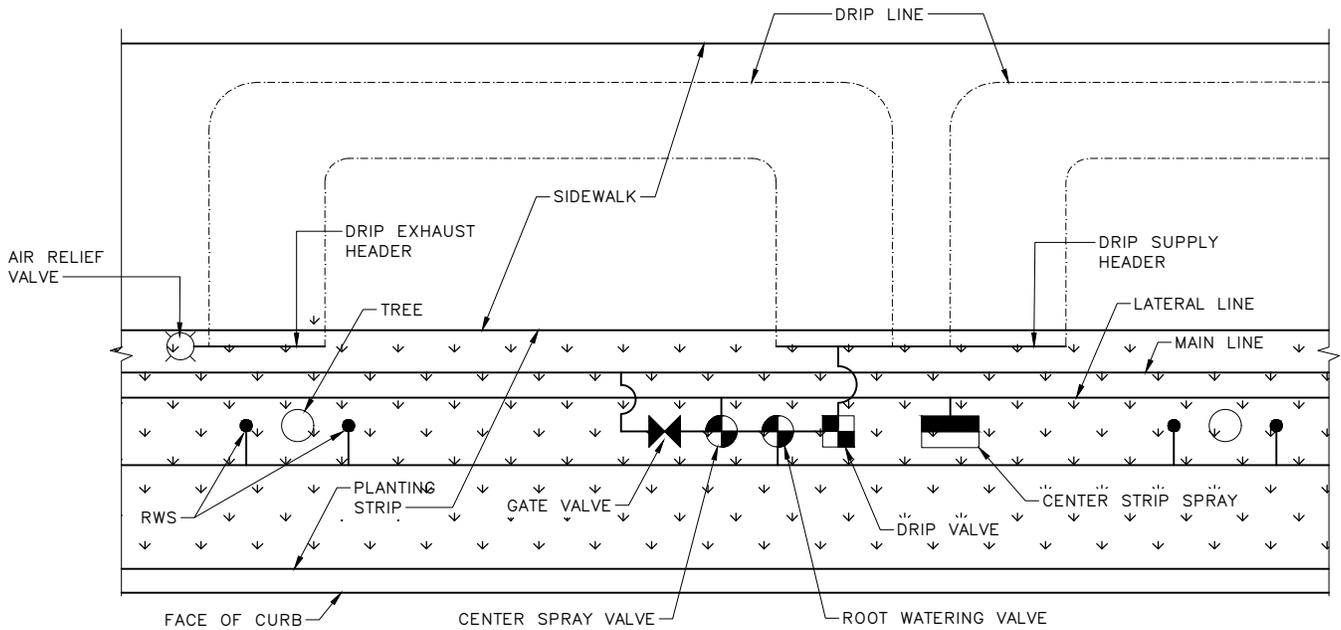
NOT TO SCALE

**IRRIGATION FOR TREE PITS
WITH SOIL CELLS**

new standard plan



IRRIGATION FOR SOIL CELLS WITH TREES IN PLANTING STRIP



IRRIGATION DETAIL FOR SOIL CELLS WITHIN PLANTING STRIPS

RWS = ROOT WATERING SYSTEM

NOTE: CENTER DRIP LINE IN SOIL CELLS PER MANUFACTURER

NOTES:

1. INSTALL A MINIMUM OF TWO ROOT WATERING SYSTEMS PER TREE.
2. CENTER DRIP TUBING IN SOIL CELLS PER MANUFACTURER.
3. INSTALL MAINLINE AND VALVE BOXES ON SIDEWALK SIDE OF PLANTING STRIP.
4. INSTALL SPRAY HEADS A MINIMUM OF 1 FOOT FROM CURB AND SIDEWALK.
5. ADJUST IRRIGATION LAYOUT AND SOIL CELL LAYOUT TO FIT PROJECT PLANS.

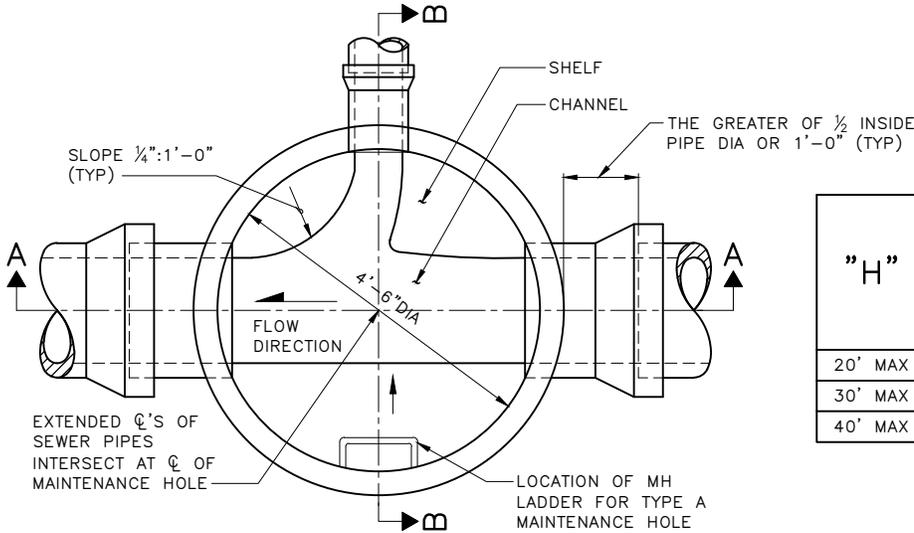
REF STD SPEC SEC 8-03



City of Seattle

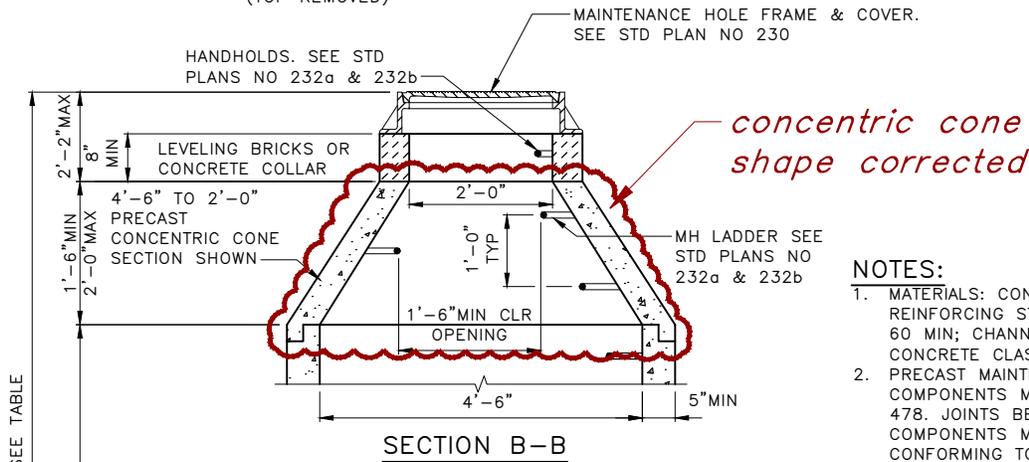
NOT TO SCALE

IRRIGATION FOR PLANTING STRIPS WITH SOIL CELLS



PLAN VIEW
(TOP REMOVED)

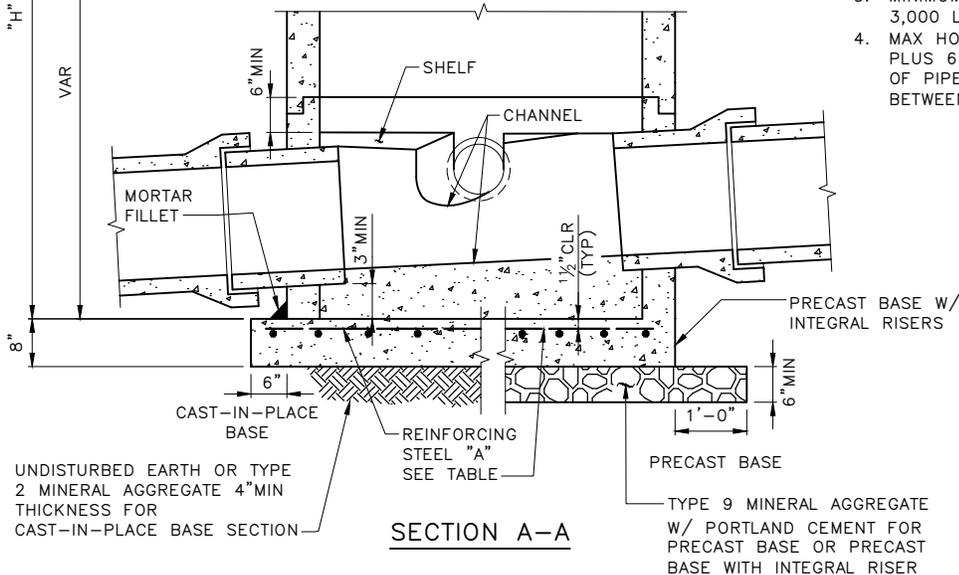
"H"	REINFORCING STEEL "A"	
	MIN. SQ IN/FT, TOP FACE, IN EACH DIRECTION	
	PRECAST BASE	CAST-IN-PLACE BASE
20' MAX	0.29	0.21
30' MAX	0.36	0.26
40' MAX	0.42	0.31



SECTION B-B

NOTES:

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



SECTION A-A

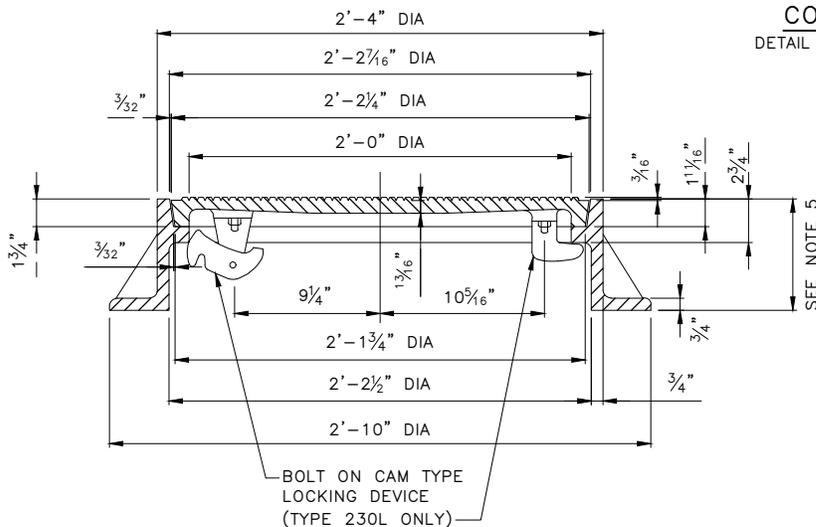
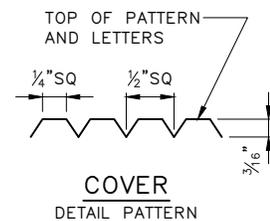
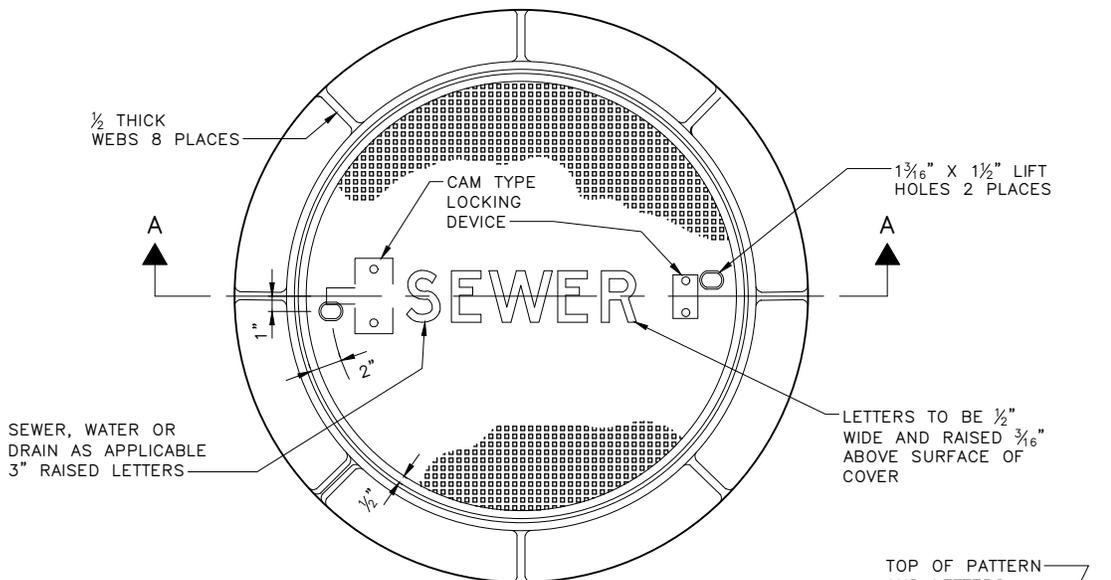
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

TYPE 204.5a MAINTENANCE HOLE



SECTION A-A

NOTES:

1. DESIGNATE LOCKING COVER AS TYPE 230L FOR USE IN NON-VEHICULAR TRAFFIC AREAS.
2. COVER THICKNESS IS MEASURED FROM THE BOTTOM OF THE PATTERN.
3. FRAMES MUST BE MANUFACTURED FROM CAST IRON OR DUCTILE IRON.
4. ~~COVERS MUST BE MANUFACTURED FROM DUCTILE IRON.~~
5. CASTING HEIGHTS:
 - MUST BE 10" WHEN IN ROADWAY.
 - MUST BE 7" WHEN NOT IN ROADWAY
 - SEE ALSO STD PLAN NO. 406.

note 5 revised

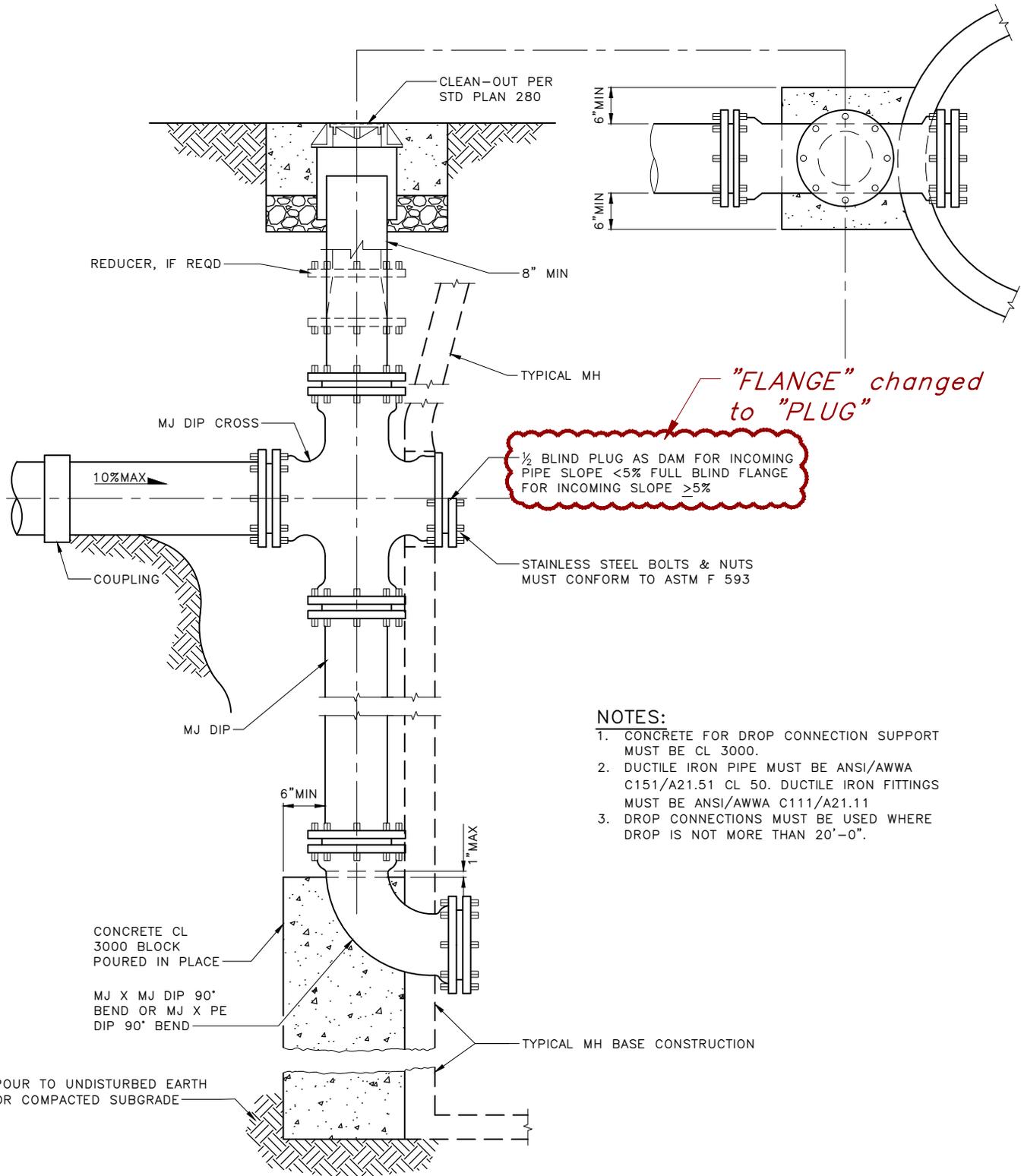
REF STD SPEC SEC 7-05, 9-12



City of Seattle

NOT TO SCALE

2'-0" DIAMETER
FRAME & COVER



"FLANGE" changed to "PLUG"

1/2 BLIND PLUG AS DAM FOR INCOMING PIPE SLOPE <5% FULL BLIND FLANGE FOR INCOMING SLOPE ≥5%

NOTES:

1. CONCRETE FOR DROP CONNECTION SUPPORT MUST BE CL 3000.
2. DUCTILE IRON PIPE MUST BE ANSI/AWWA C151/A21.51 CL 50. DUCTILE IRON FITTINGS MUST BE ANSI/AWWA C111/A21.11
3. DROP CONNECTIONS MUST BE USED WHERE DROP IS NOT MORE THAN 20'-0".

DUCTILE IRON OUTSIDE DROP CONNECTION

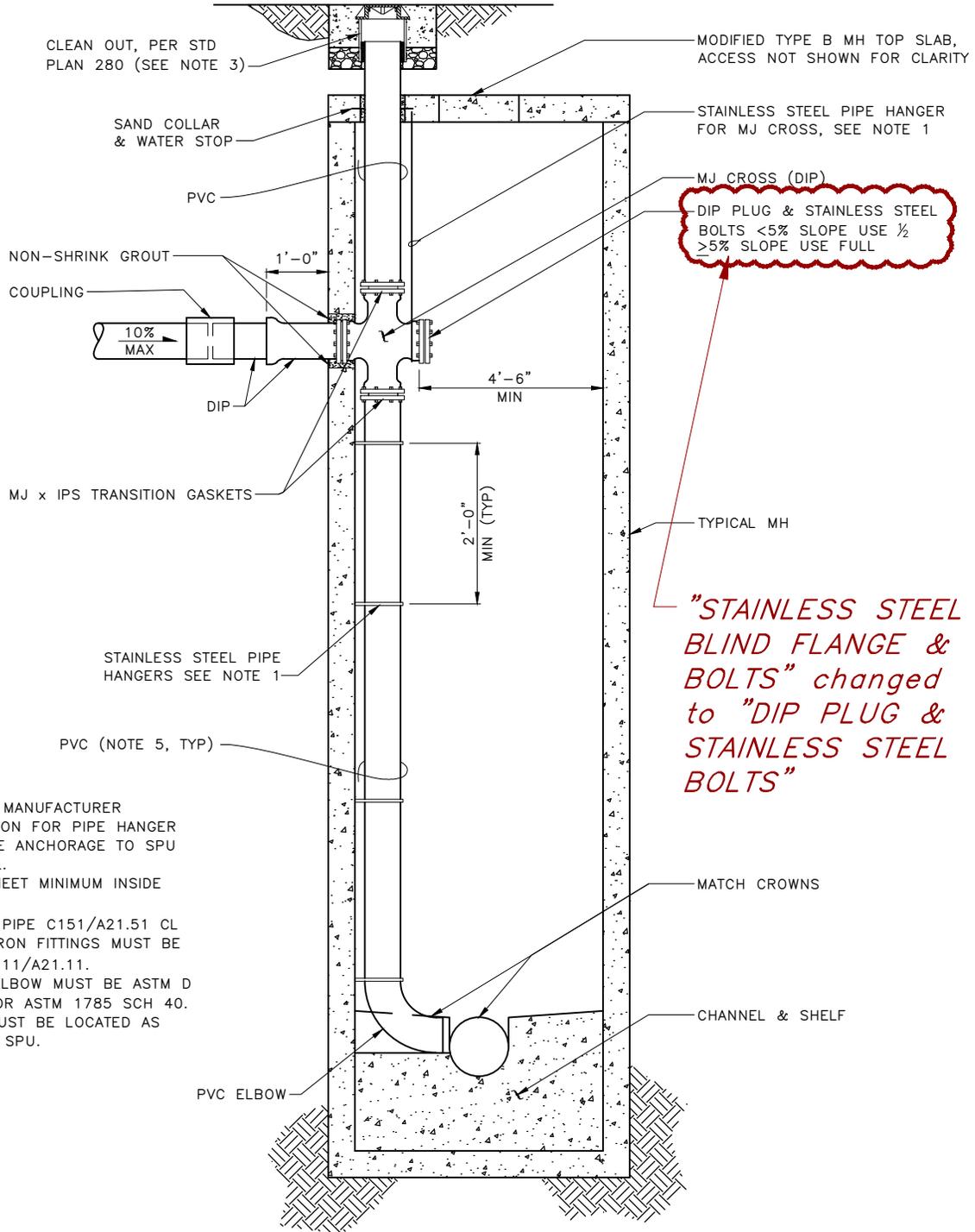
REF STD SPEC SEC 7-08



City of Seattle

NOT TO SCALE

OUTSIDE DROP CONNECTION



NOTES:

1. PROVIDE PIPE MANUFACTURER RECOMMENDATION FOR PIPE HANGER AND CONCRETE ANCHORAGE TO SPU FOR APPROVAL.
2. SIZE MH TO MEET MINIMUM INSIDE CLEARANCE.
3. DUCTILE IRON PIPE C151/A21.51 CL 50, DUCTILE IRON FITTINGS MUST BE ANSI/AWWA 6111/A21.11.
4. PVC PIPE & ELBOW MUST BE ASTM D 2241 CL200 OR ASTM 1785 SCH 40.
5. CLEAN-OUT MUST BE LOCATED AS APPROVED BY SPU.

INSIDE DROP
(18" DIAMETER PIPE MAXIMUM)

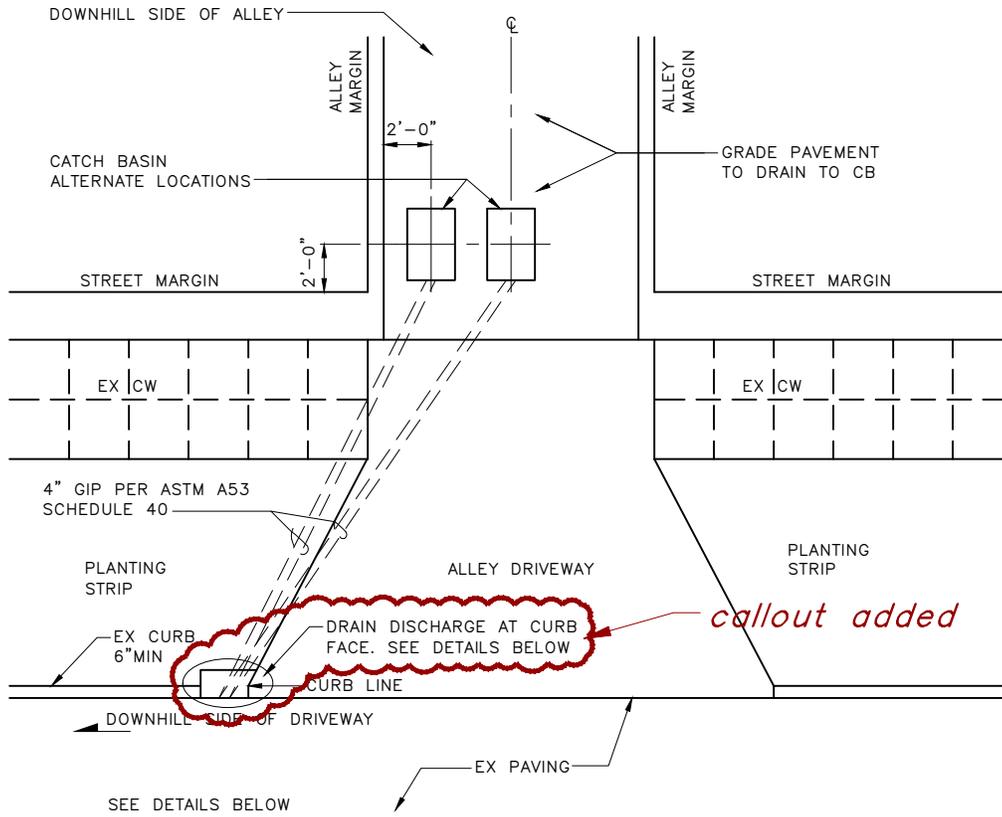
REF STD SPEC SEC 7-08



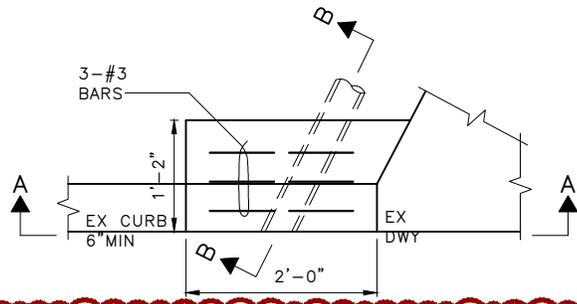
City of Seattle

NOT TO SCALE

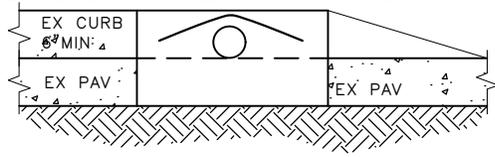
INSIDE DROP CONNECTION



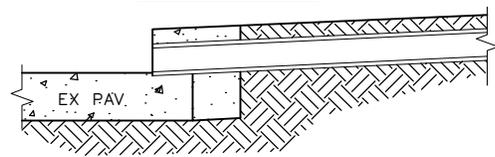
PLAN



DRAIN DISCHARGE AT CURB FACE - PLAN VIEW



SECTION A-A



SECTION B-B

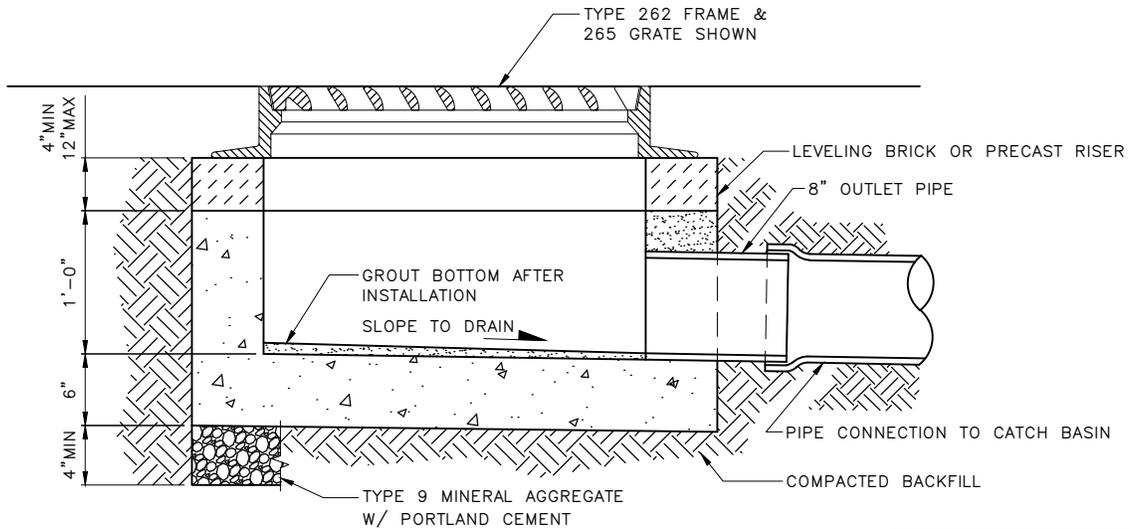
REF STD SPEC SEC 7-05, 7-08



City of Seattle

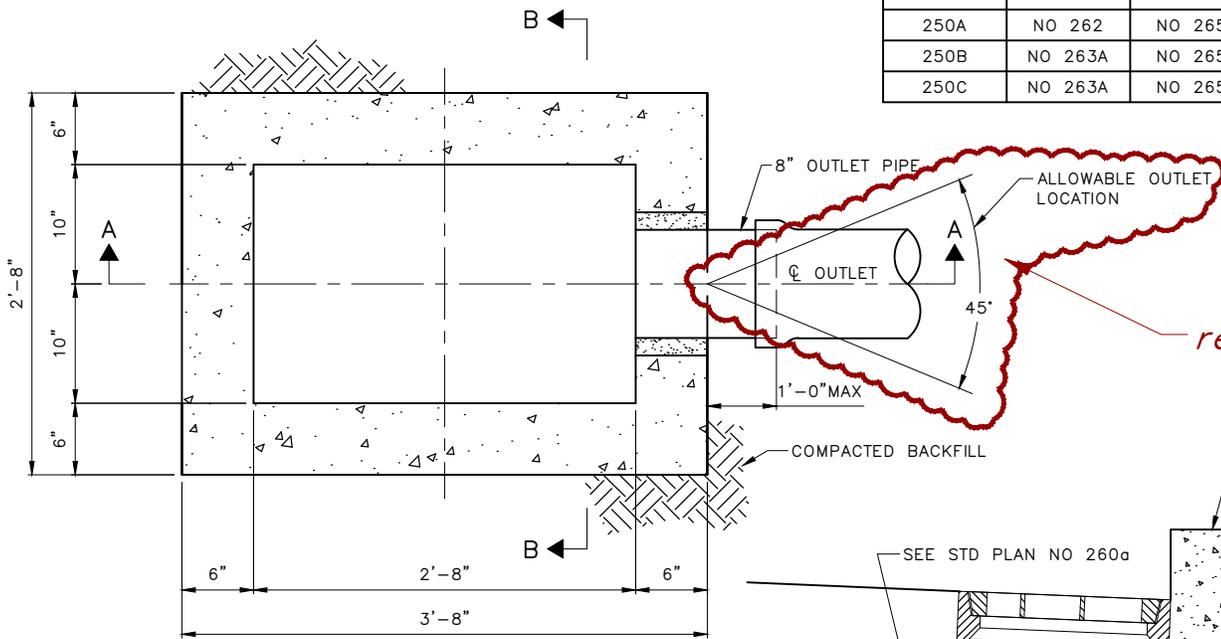
NOT TO SCALE

TYPE 241 CATCH BASIN INSTALLATIONS

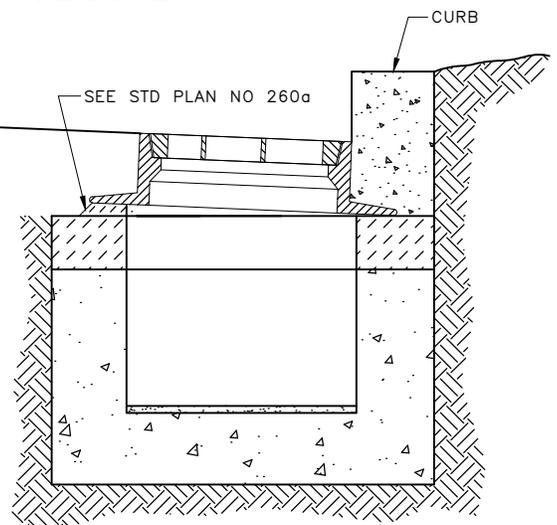


SECTION A-A

INLET TYPE	CASTING		
	FRAME	GRATE	HOOD
250A	NO 262	NO 265	NONE
250B	NO 263A	NO 265	NO 263A
250C	NO 263A	NO 265	NO 263B



PLAN VIEW



SECTION B-B
TYPE A ONLY

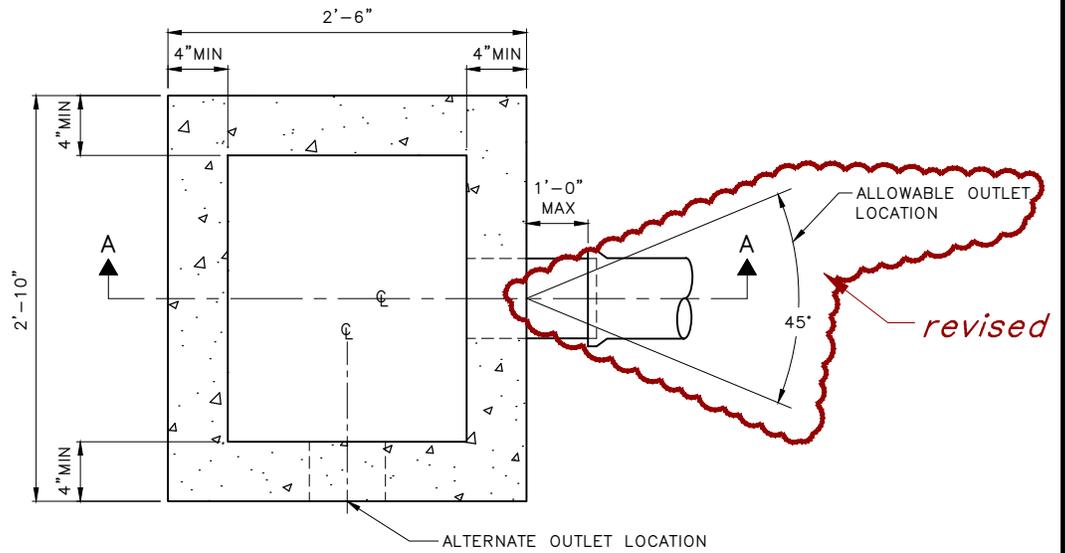
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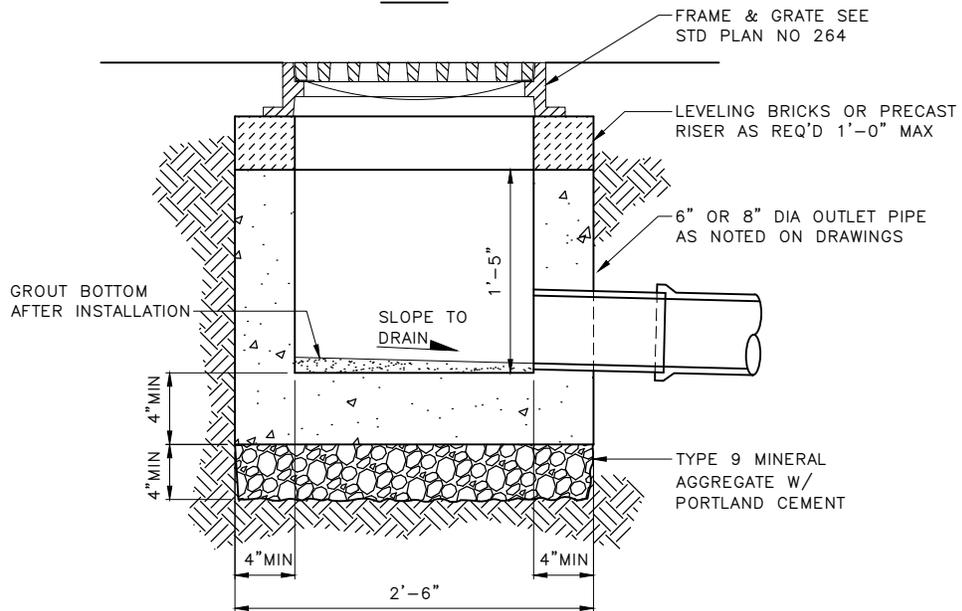
City of Seattle

NOT TO SCALE

TYPE 250 INLET



PLAN



SECTION A-A

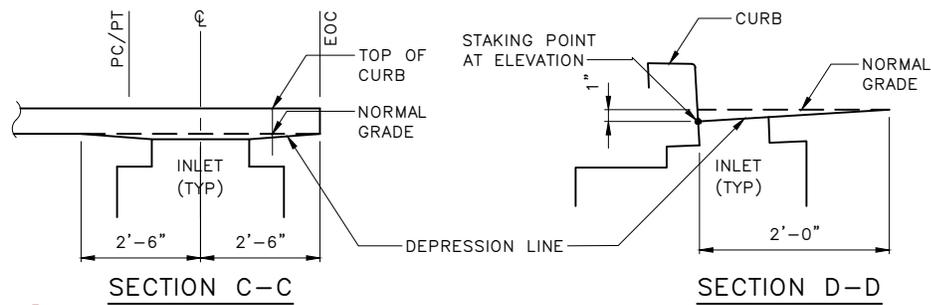
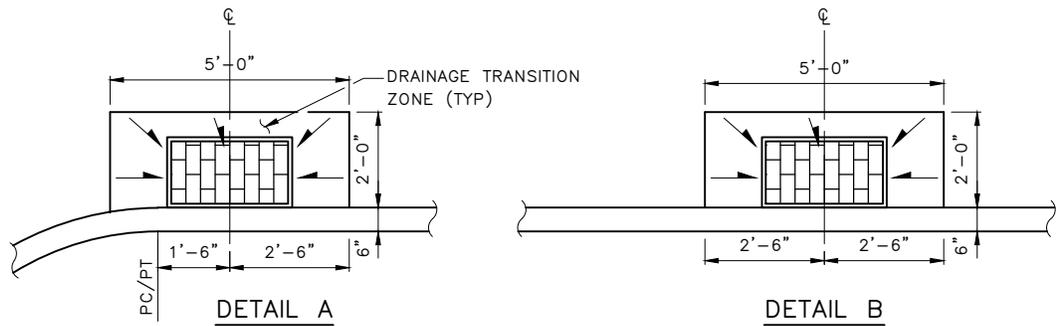
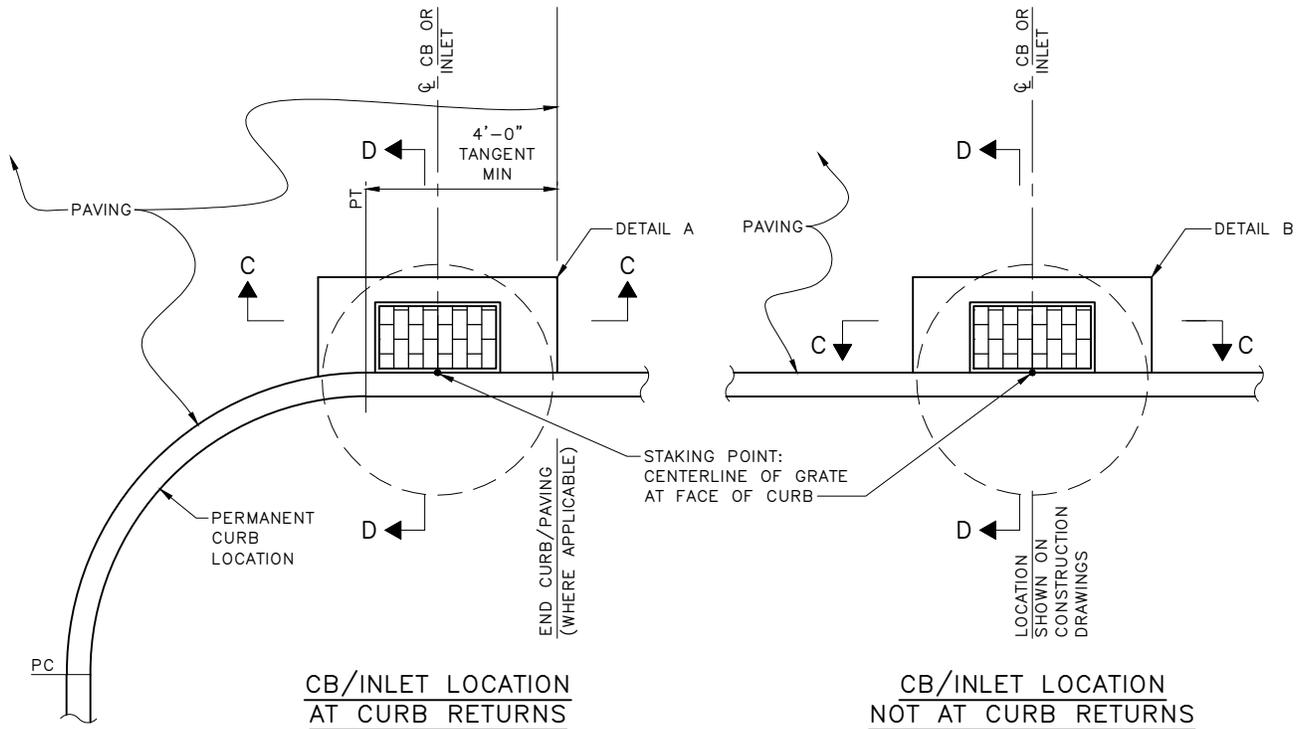
REF STD SPEC SEC 7-05



City of Seattle

NOT TO SCALE

TYPE 252 INLET



notes 1 & 2 revised, note 3 removed

- NOTES:**
1. CB AND INLET GRATES MUST NOT BE PLACED IN MARKED OR UNMARKED CROSSWALKS.
 2. CB AND INLETS MUST NOT BE PLACED IN MARKED OR UNMARKED CURB RAMP CLEAR AREAS.

REF STD SPEC SEC 7-05

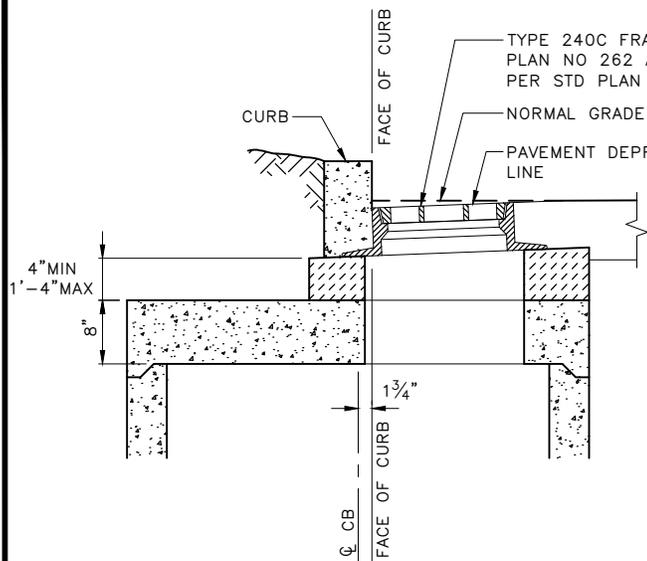


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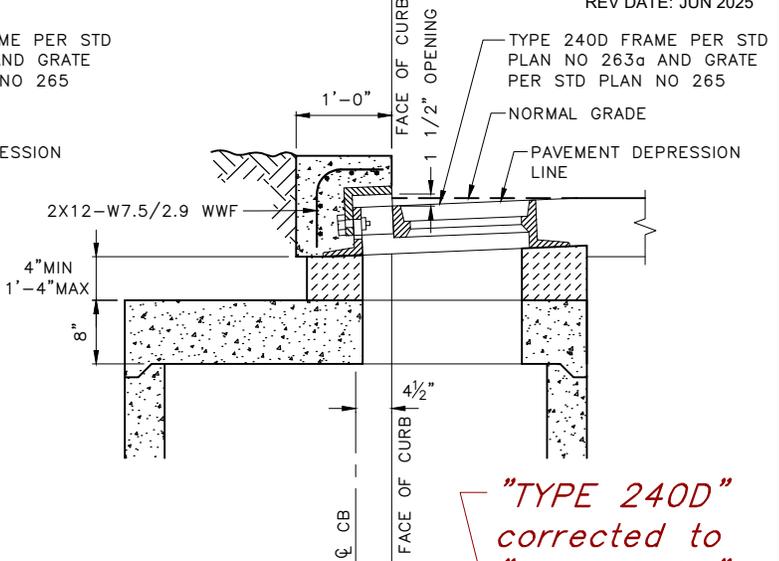
NOT TO SCALE

INLET / CATCH BASIN LOCATION & INSTALLATION

REV DATE: JUN 2025

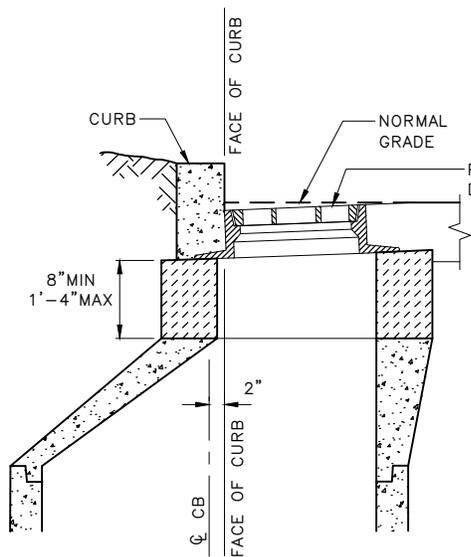


TYPE 240C CB

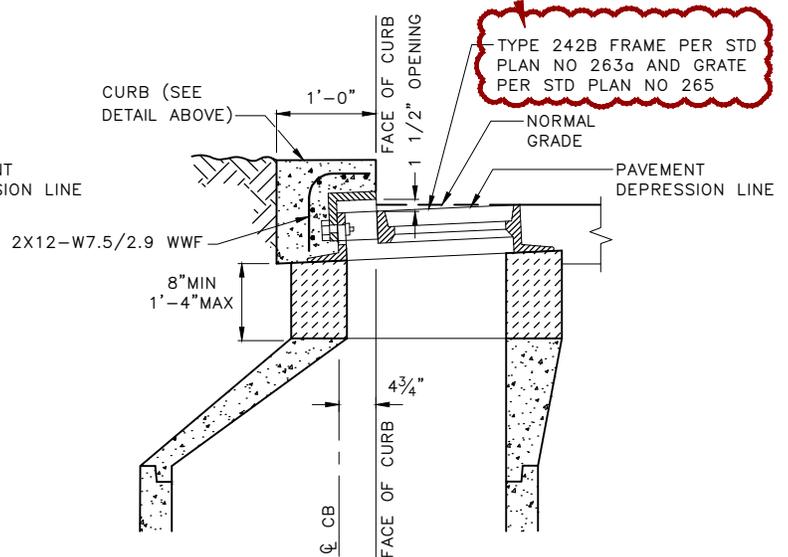


TYPE 240D CB

"TYPE 240D" corrected to "TYPE 242B"

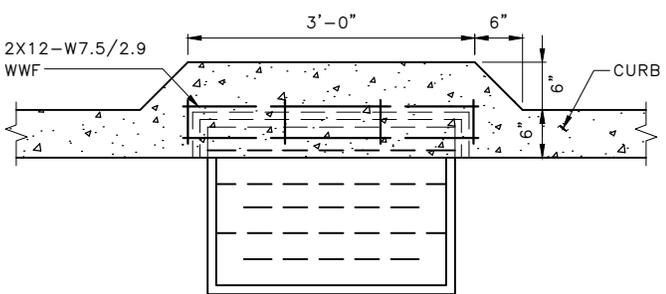


TYPE 242A CB
(TYPE 250A INLET SIMILAR)



TYPE 242B CB
(TYPE 250B INLET SIMILAR)

TYPE 242B FRAME PER STD PLAN NO 263a AND GRATE PER STD PLAN NO 265



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

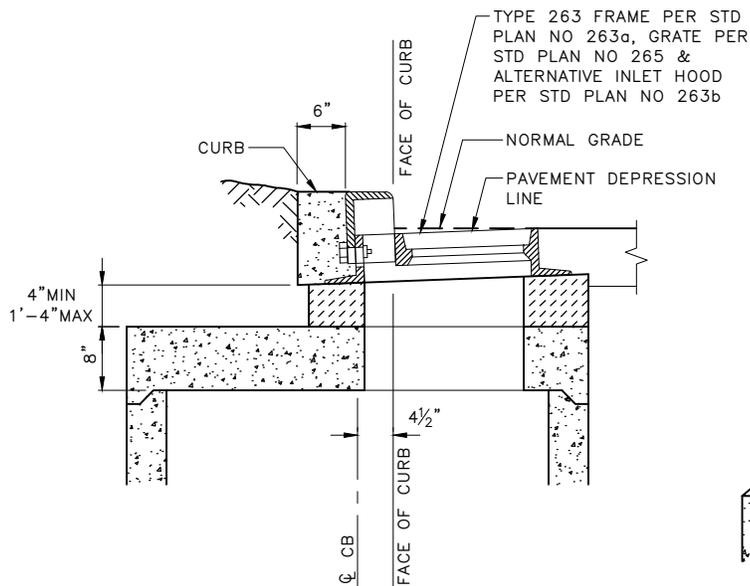
REF STD SPEC SEC 7-05



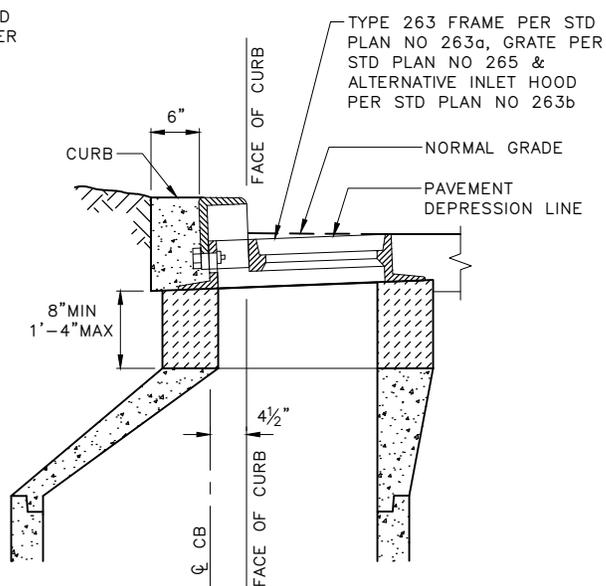
City of Seattle

NOT TO SCALE

CATCH BASIN & INLET INSTALLATION

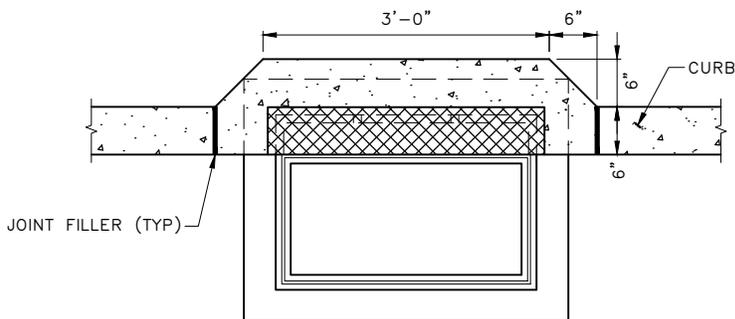


TYPE 240D CB



TYPE 242C CB

revised titles



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

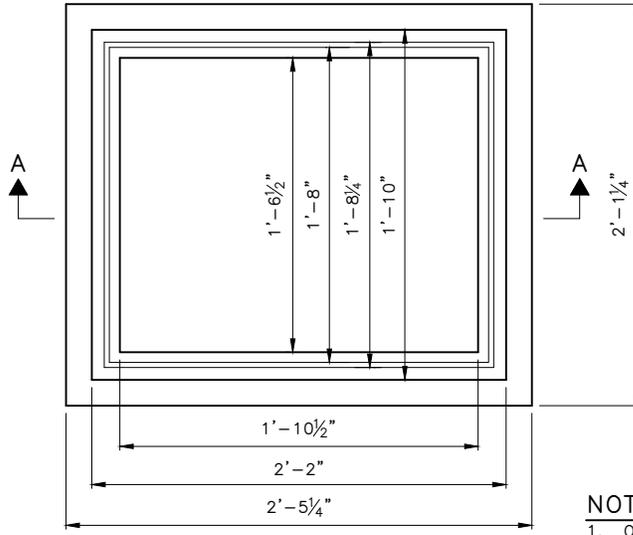
REF STD SPEC SEC 7-05



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NOT TO SCALE

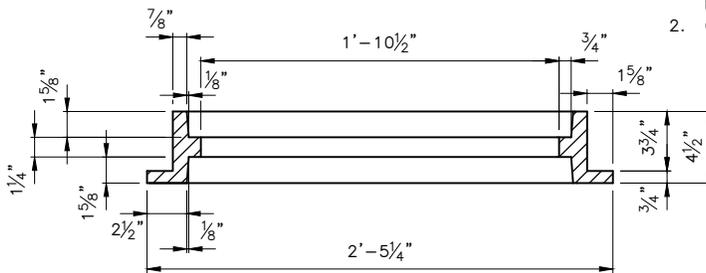
CATCH BASIN & INLET
INSTALLATION WITH STANDARD
PLAN 263B ALTERNATIVE HOOD



FRAME

NOTES:

1. OTHER GRATES ACCEPTABLE; SPECIFY VANE, SOLID COVER, BI-DIRECTIONAL VANE, ADA OR BEEHIVE ON PLANS.
2. GRATE MATERIAL: DUCTILE IRON

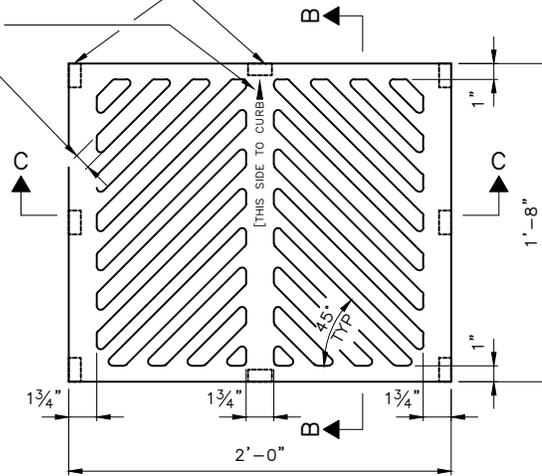


SECTION A-A

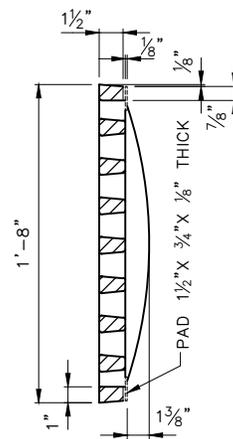
PAD 1 1/2" X 3/4" X 1/8" THICK (8 OPTIONAL)

EMBOSSED ON GRATE

1" OPENING (TYP)

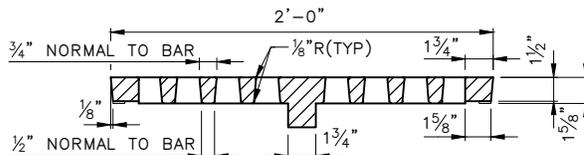


GRATE



SECTION B-B

Spec Sec 9-12.7(2) added



SECTION C-C

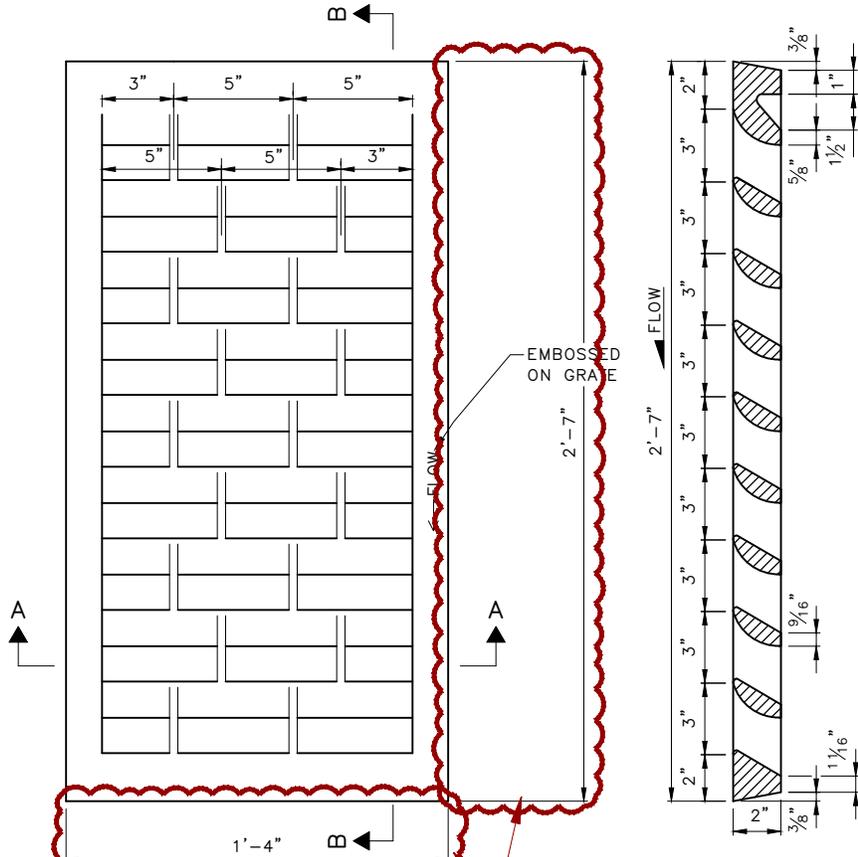
REF STD SPEC SEC 7-05, 9-12.7(2)



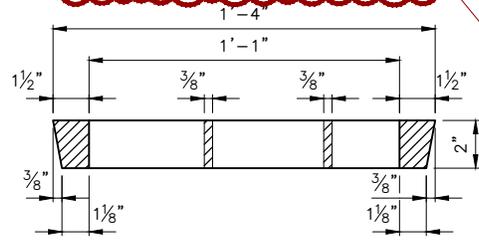
City of Seattle

NOT TO SCALE

INLET FRAME & GRATE



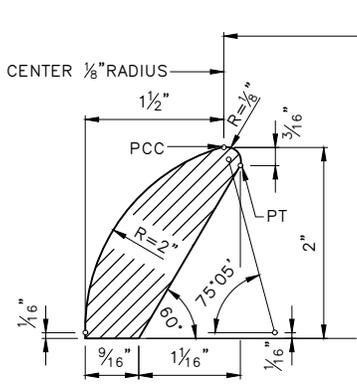
SECTION B-B
dimensions added



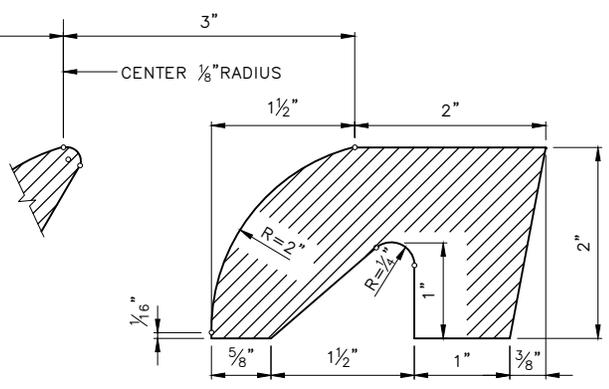
SECTION A-A

- NOTES:**
1. OTHER GRATES ACCEPTABLE; SPECIFY VANE, SOLID COVER, BI-DIRECTIONAL VANE, ADA OR BEEHIVE ON PLANS.
 2. GRATE MATERIAL: DUCTILE IRON
 3. FOR USE WITH TYPE 262 & 263 INLET FRAMES.

notes added



VANE DETAIL



END DETAIL

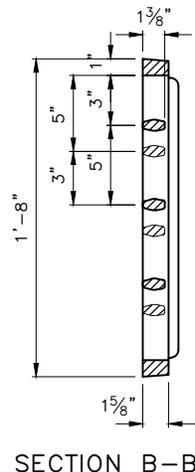
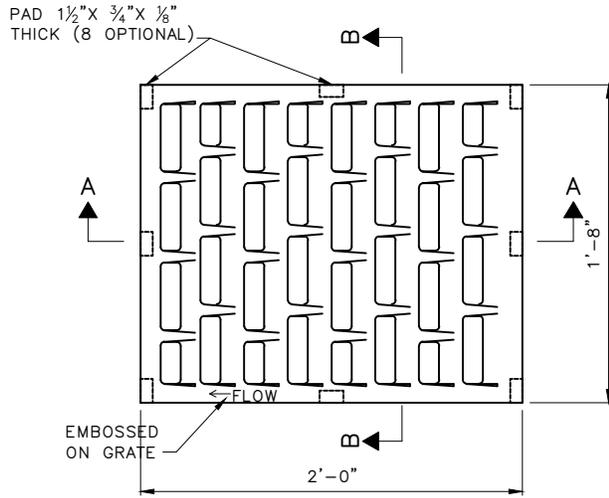
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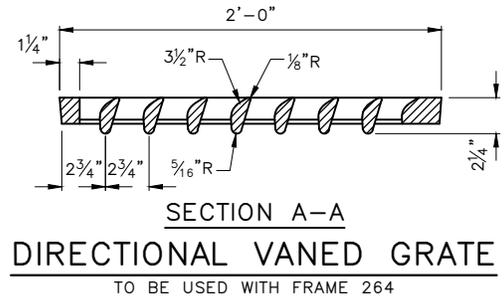
City of Seattle

NOT TO SCALE

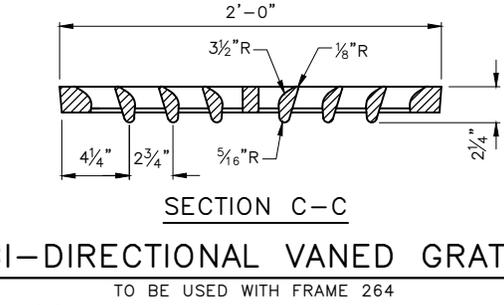
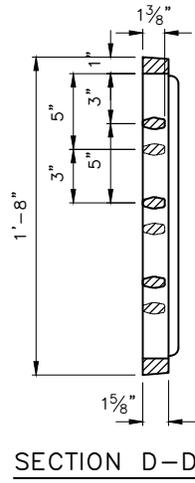
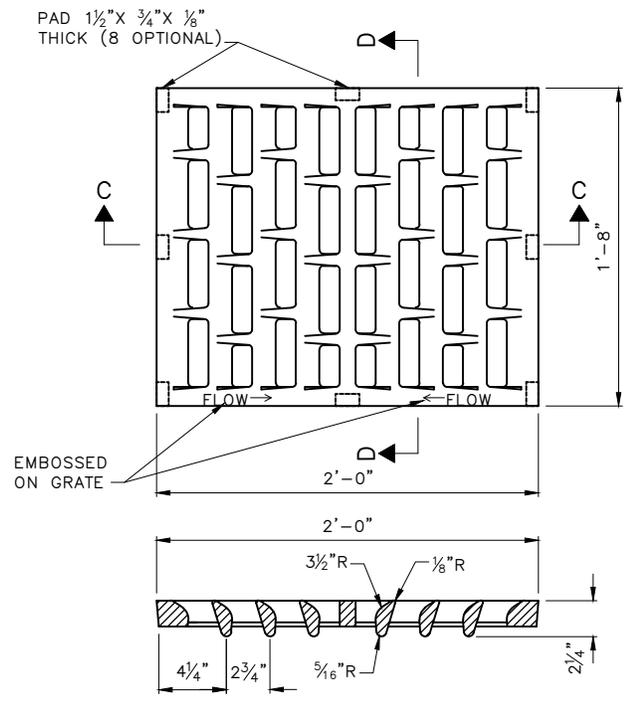
VANED GRATE



new standard plan



- NOTES:**
1. OTHER GRATES ACCEPTABLE; SPECIFY VANE, SOLID COVER, BI-DIRECTIONAL VANE, ADA OR BEEHIVE ON DRAWINGS.
 2. GRATE MATERIAL: DUCTILE IRON.
 3. FOR USE WITH TYPE 264 INLET FRAMES.



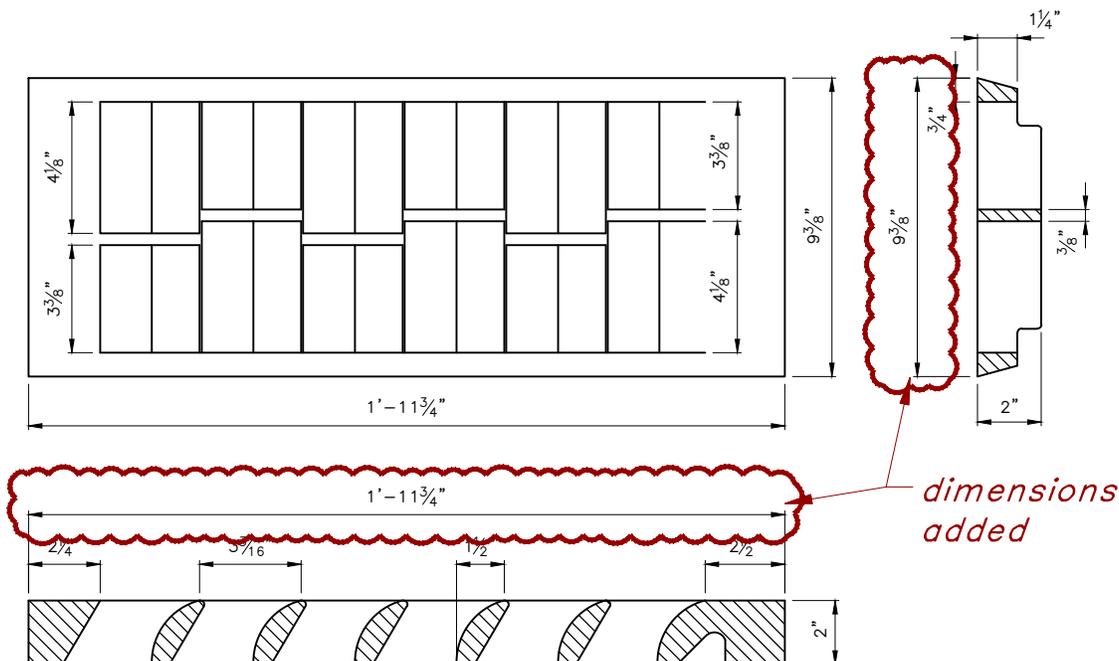
REF STD SPEC SEC 7-05, 9-12.7(2)



City of Seattle

NOT TO SCALE

VANED GRATES



dimensions added

typo on note 2 corrected

NOTES:

1. OPEN AREA 108 SQUARE INCHES.
2. OTHER GRATES ACCEPTABLE; SPECIFY VANE, SOLID COVER, BI-DIRECTIONAL VANE, ADA OR BEEHIVE ON PLANS.
3. SEE STD PLAN NO 200 FOR VANE AND END DETAIL.
4. STD PLAN NO 266 DIMENSIONS GOVERN ON END DETAIL.
5. REPLACEMENT VANED GRATE FOR TYPE 164 INLET FRAMES.

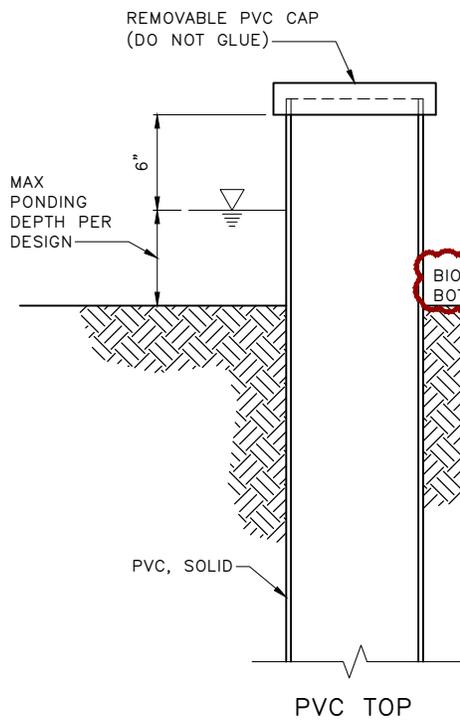
REF STD SPEC SEC 7-20.3(6), 9-12



City of Seattle

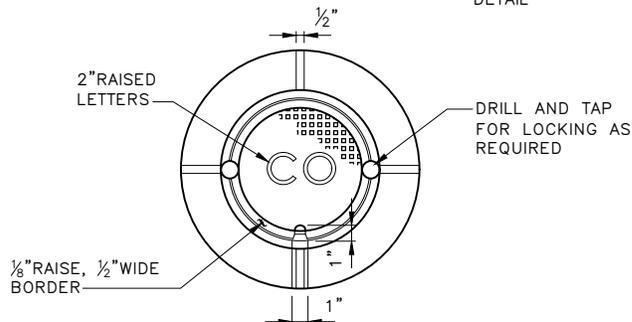
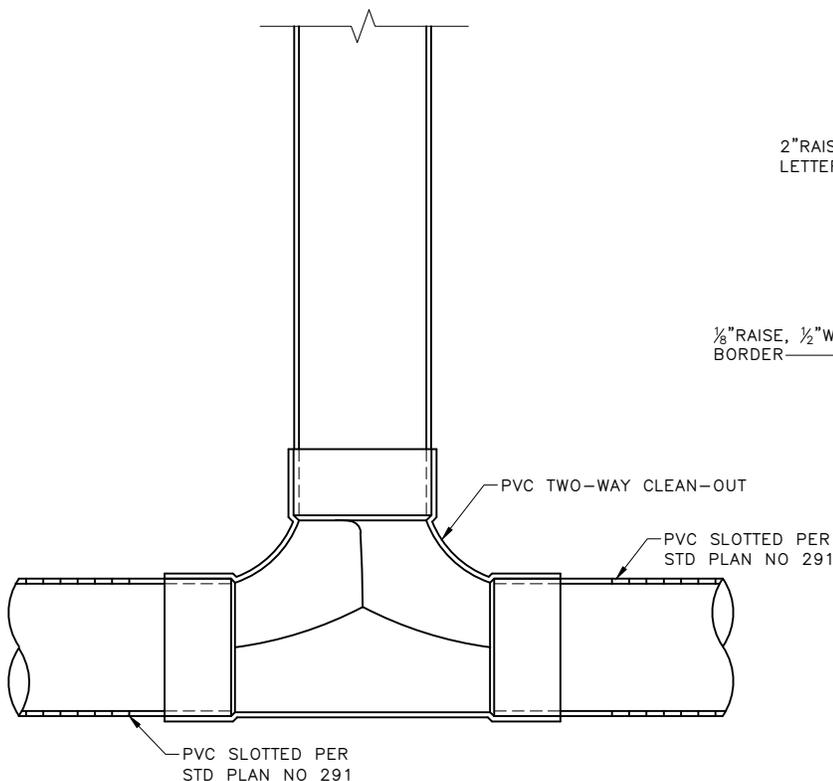
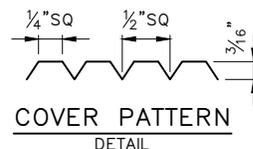
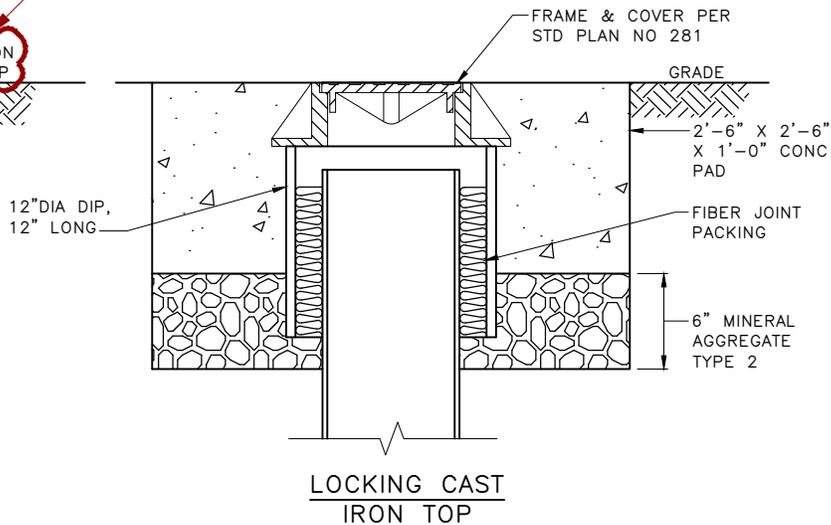
NOT TO SCALE

**TYPE 266 REPLACEMENT
VANED GRATE**

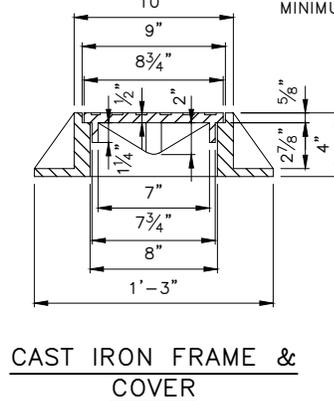


NOTE:
 USE LOCKING CLEAN-OUT IN CONCRETE WALK AREAS. DRILL AND TAP, APPLY ANTI-SEIZE COATING AND BOLT DOWN WITH 3/8" S.S. ALLEN-HEAD BOLTS - 2 PLACES.

callout revised



NOTE:
 MINIMUM DIAMETER = 6"



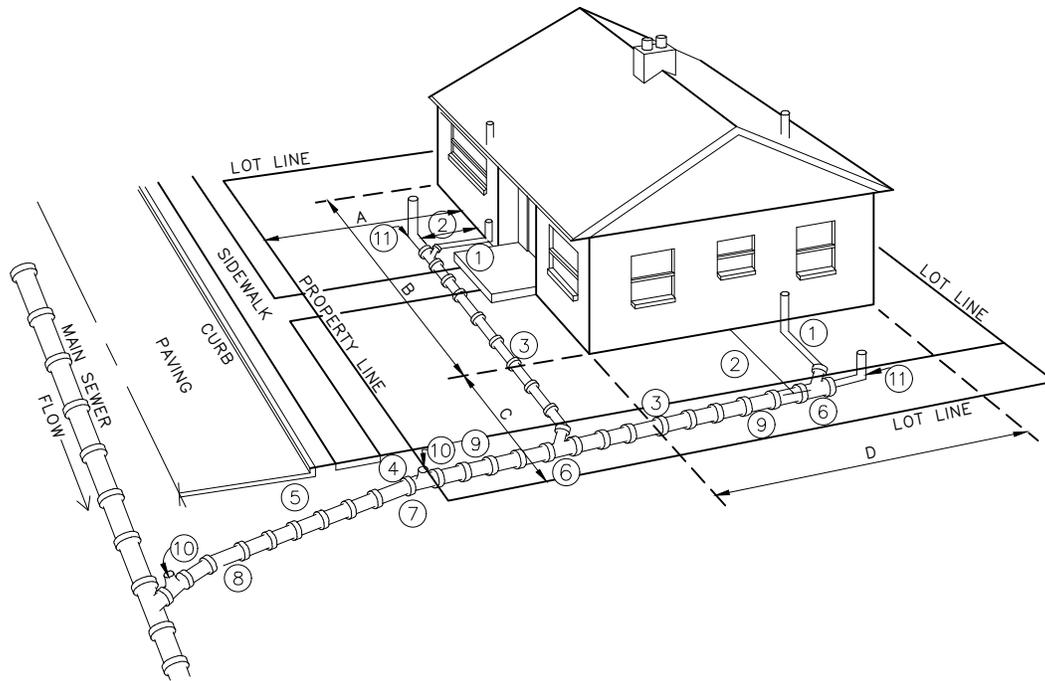
REF STD SPEC SEC 7-19



City of Seattle

NOT TO SCALE

**BIORETENTION UNDER DRAIN
 CLEAN-OUT AND
 OBSERVATION PORT**



NOTES:

1. ALL SANITARY PLUMBING OUTLETS MUST BE CONNECTED TO THE SANITARY SEWER OR COMBINED SEWER.
2. 2'-6" MIN DISTANCE FROM HOUSE, EXCEPT FOR SOIL PIPE CONNECTION.
3. 1'-6" MIN COVER OF PIPE.
4. 2'-6" MIN COVER AT PROPERTY LINE.
5. 5'-0" MIN COVER AT CURB LINE.
6. LAY PIPE IN STRAIGHT LINE BETWEEN BENDS. MAKE ALL CHANGES IN GRADE OR LINE WITH BENDS OR WYES.
7. STANDARD 4" TO 6" INCREASER.
8. 6" SEWER PIPE: MIN SIZE IN STREET, AND ELSEWHERE AS DIRECTED. 2% MIN GRADE, 100% MAX.
9. 4" SEWER PIPE: MIN SIZE ON PROPERTY. 2% MIN GRADE, 100% (45') MAX.
10. TEST "T" WITH PLUG.
11. CLEANOUT AT UPSTREAM END OF SIDE SEWER.
12. ALL CONSTRUCTION MUST BE IN ACCORDANCE WITH THE CURRENT SIDE SEWER ORDINANCE.

DIMENSIONS:

- A = FRONT YARD SETBACK
- B = LENGTH OF HOUSE
- C = SIDE YARD SETBACK
- D = WIDTH OF HOUSE

previous note 12 removed

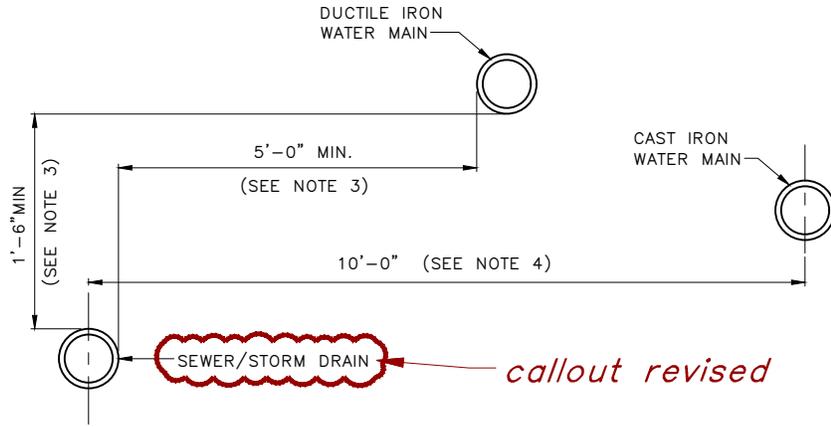
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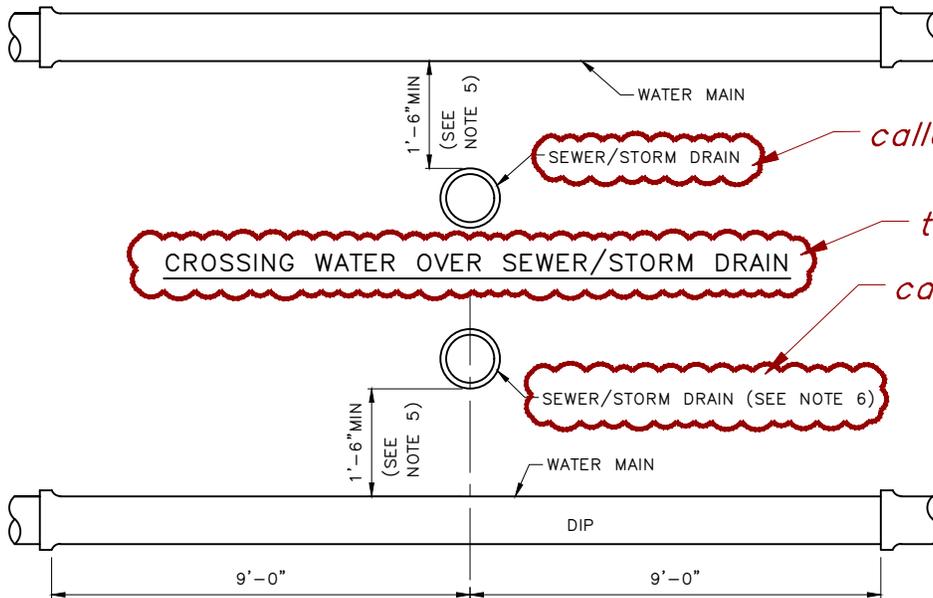
City of Seattle

NOT TO SCALE

SIDE SEWER INSTALLATION



PARALLEL INSTALLATION



STANDARD SINGLE 18'-0" NOMINAL LENGTH DUCTILE IRON WATER MAIN SECTION CENTERED AT THE POINT OF CROSSING

CROSSING WATER UNDER SEWER/STORM DRAIN

NOTES:

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

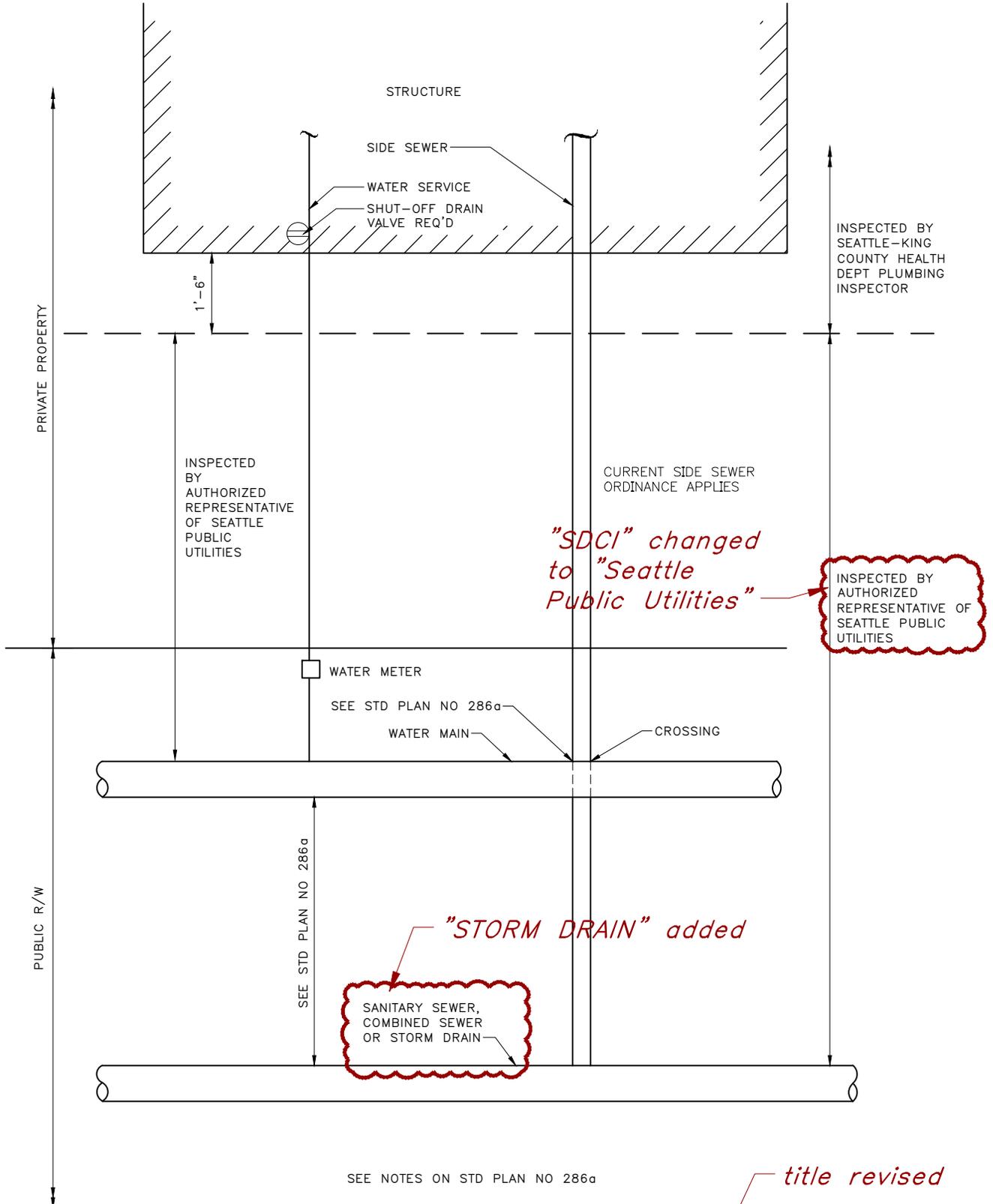
REF STD SPEC SEC 1-07.17, 7-11



City of Seattle

NOT TO SCALE

SPACING & CLEARANCES FOR SEWER/STORM DRAIN & WATER



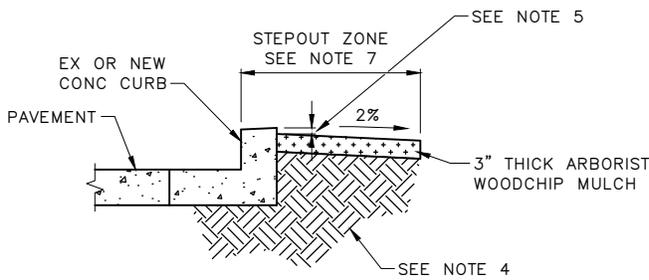
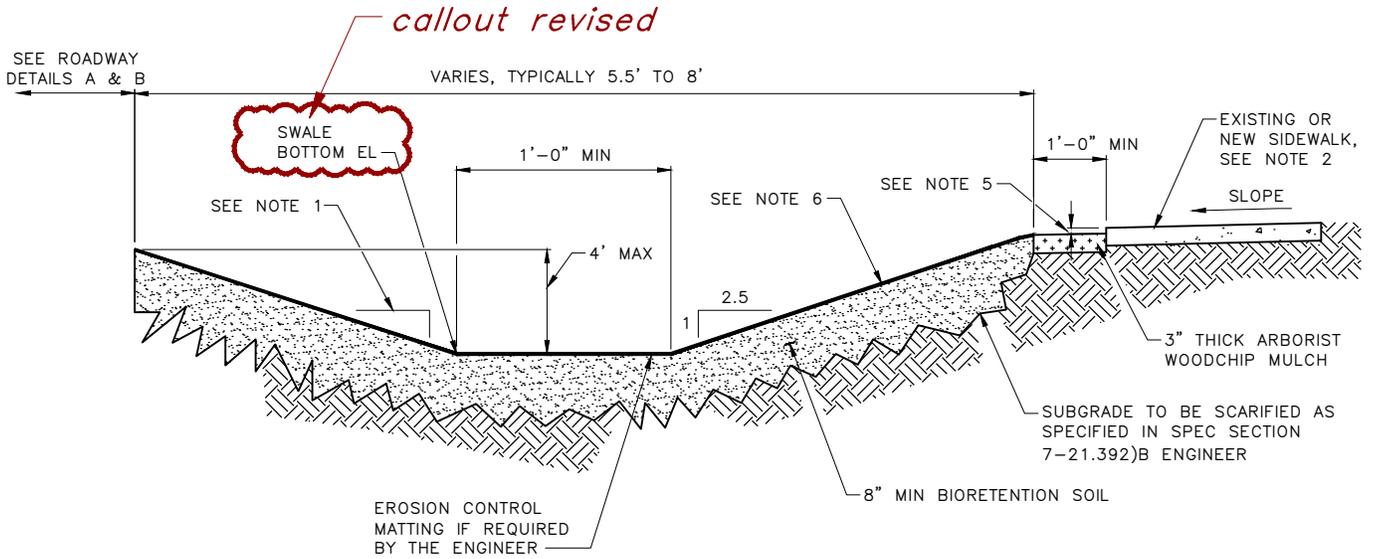
REF STD SPEC SEC 1-07.17, DIV 7



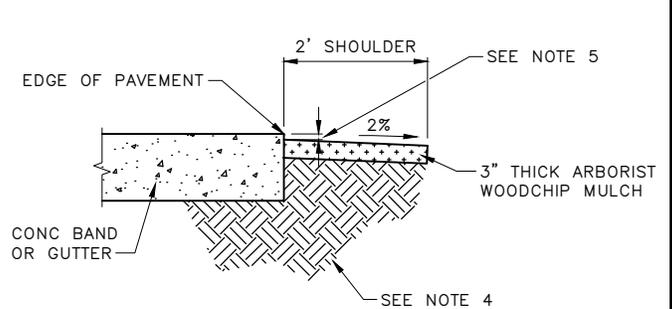
City of Seattle

NOT TO SCALE

SPACING & CLEARANCES FOR SEWER & WATER



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 MUST BE MIN 2'-0" FOR NON-MAJOR ARTERIAL STREETS, MIN 4'-0" FOR MAJOR ARTERIAL STREETS.

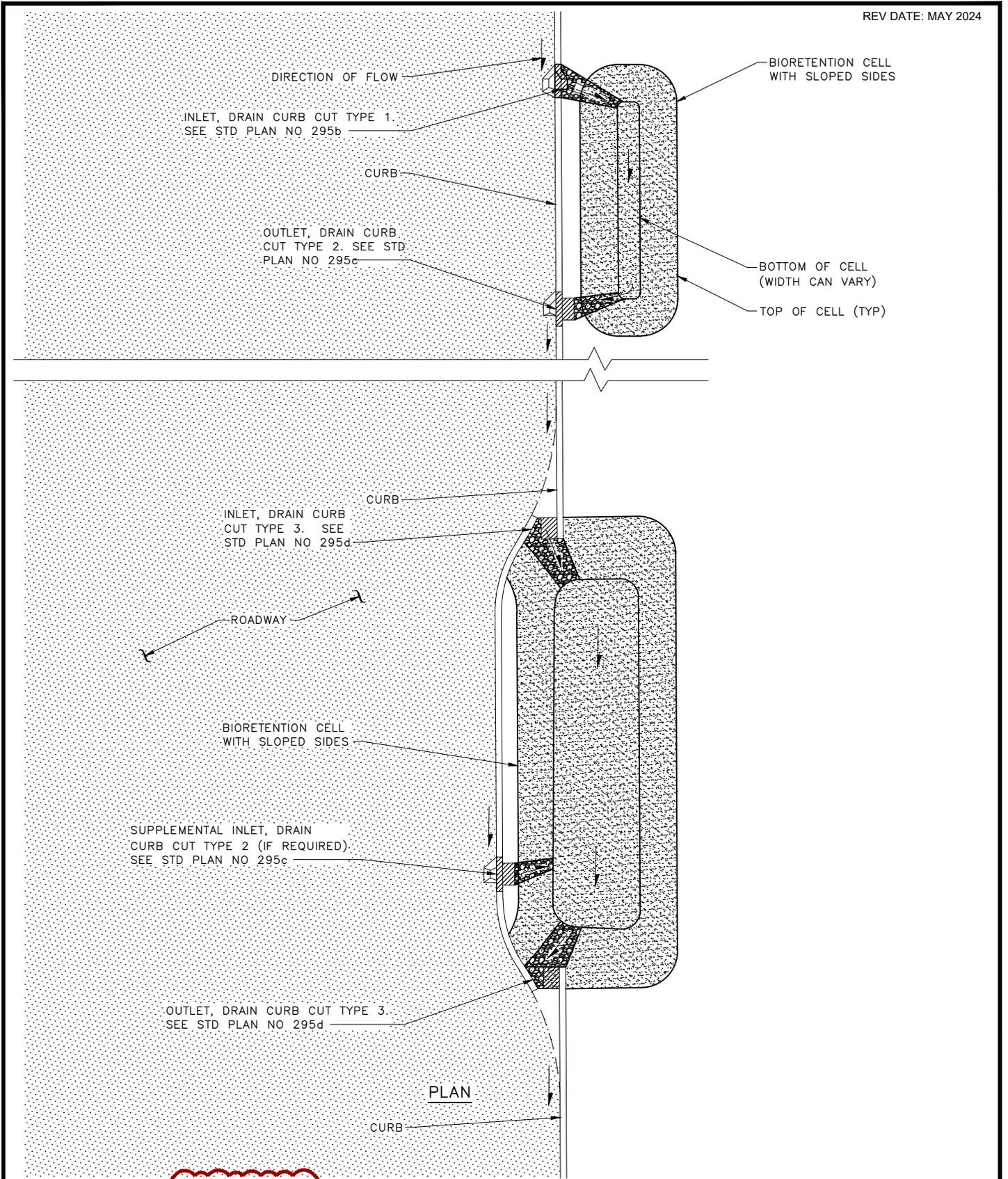
REF STD SPEC SEC 7-21



City of Seattle

NOT TO SCALE

VEGETATED CONVEYANCE SWALE
(NOT FOR WATER QUALITY TREATMENT)



REF STD SPEC SEC 7-21, 8-04

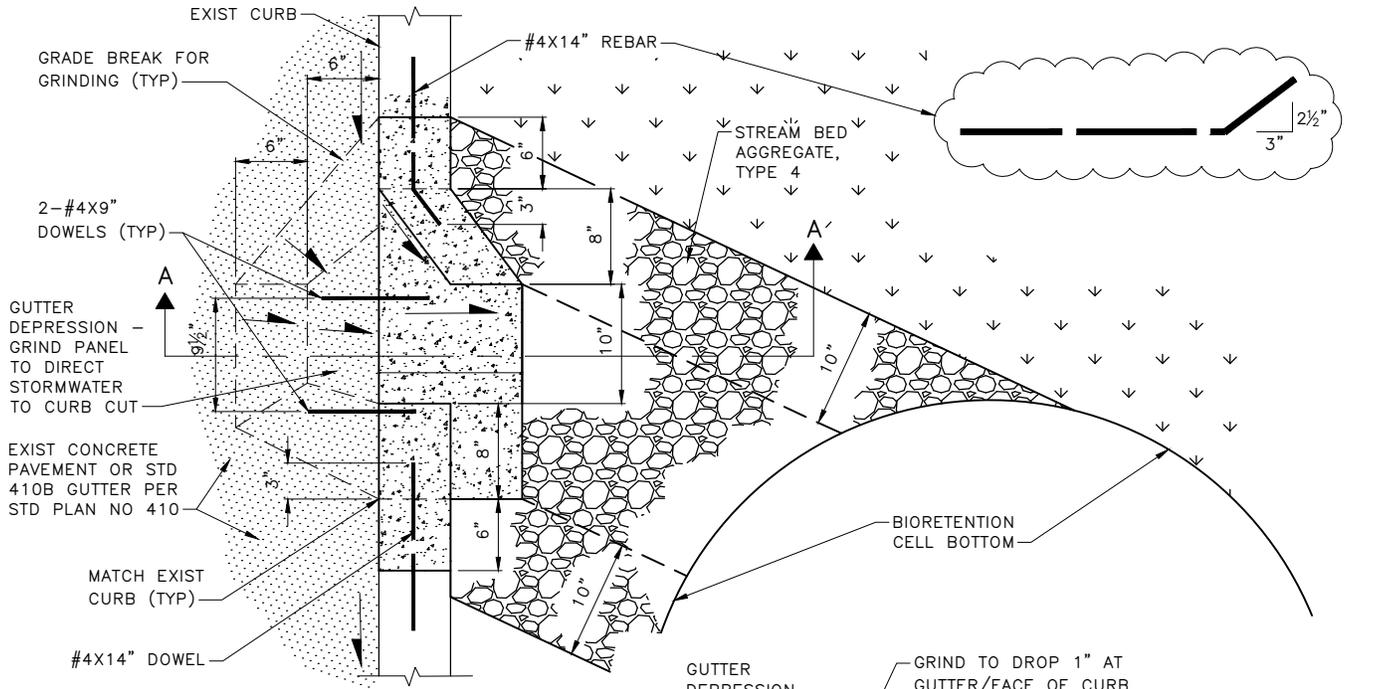
"8-04" added



City of Seattle

NOT TO SCALE

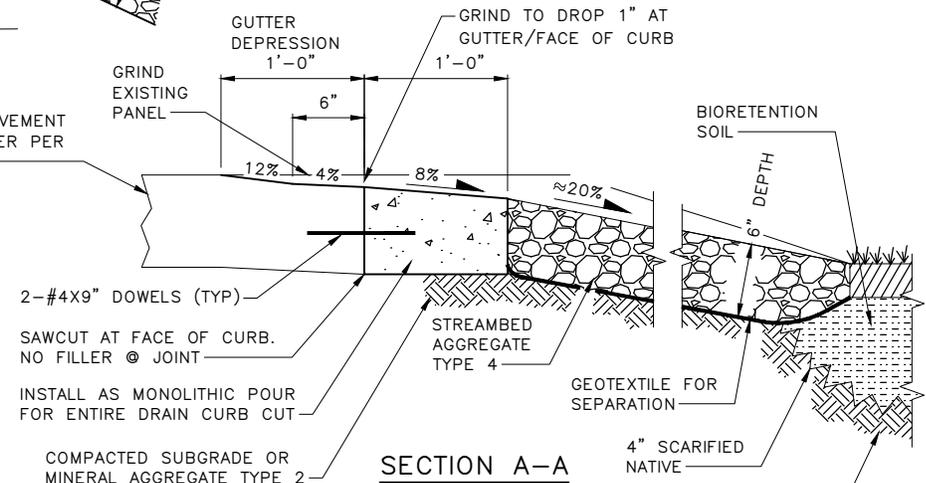
TYPICAL DRAIN CURB CUT LOCATION FOR BIORETENTION WITH SLOPED SIDES



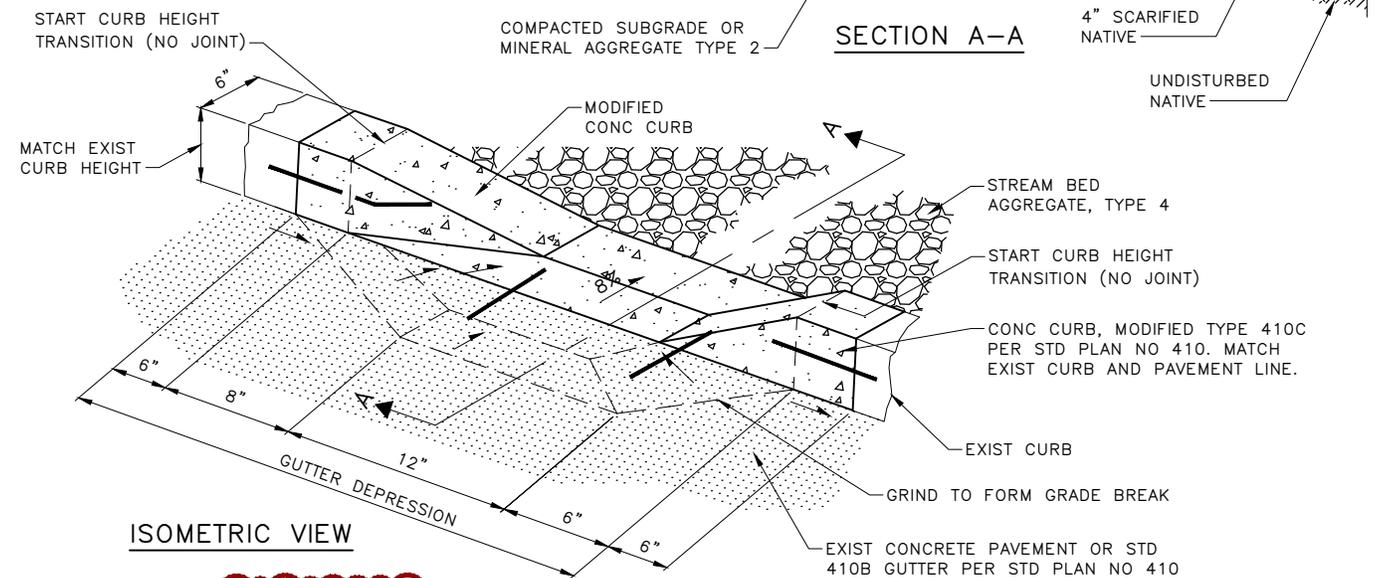
PLAN

NOTES:

1. DRAIN CURB CUTS MUST NOT BE LOCATED WITHIN CONCRETE ROAD PANEL JOINT.
2. USE DRAIN CURB CUT TYPE 1 WHERE GUTTER LINE LONGITUDINAL SLOPE IS 0 TO 5%. WHERE LONGITUDINAL SLOPE IS GREATER THAN 5%, DRAIN CURB CUT OPENING WILL BE DESIGNED BY THE ENGINEER.



SECTION A-A



ISOMETRIC VIEW

REF STD SPEC SEC 7-21, 8-04

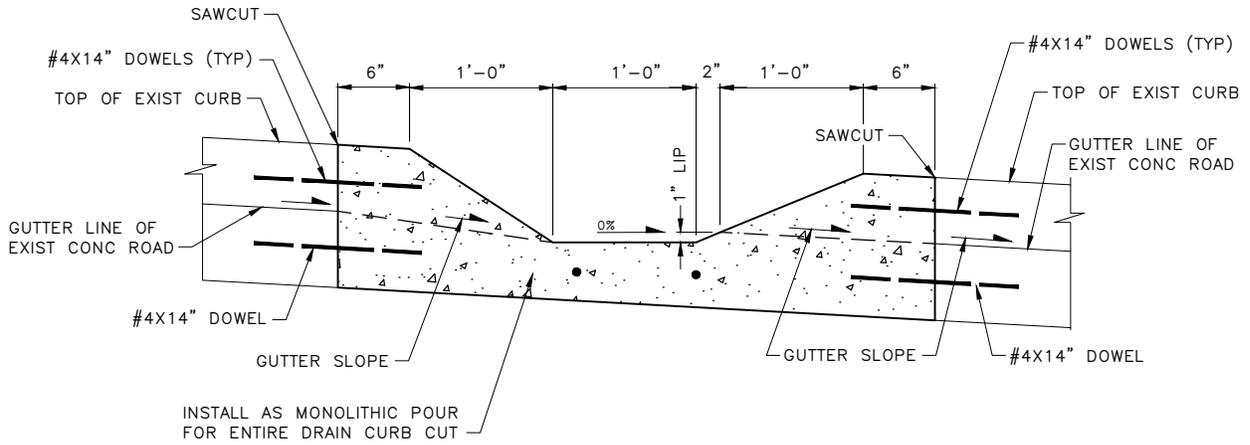
"8-04" added



City of Seattle

NOT TO SCALE

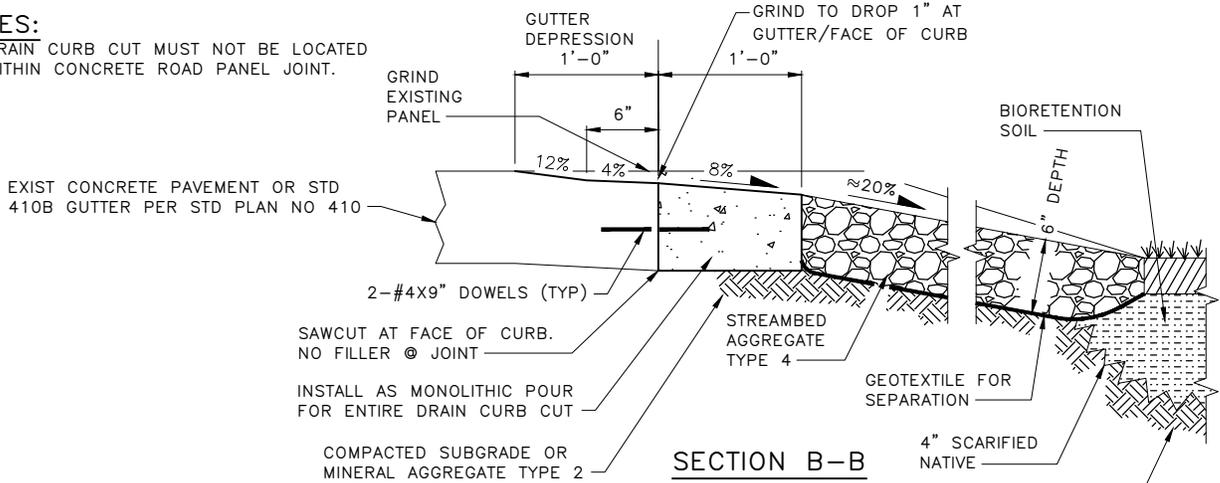
DRAIN CURB CUT TYPE 1



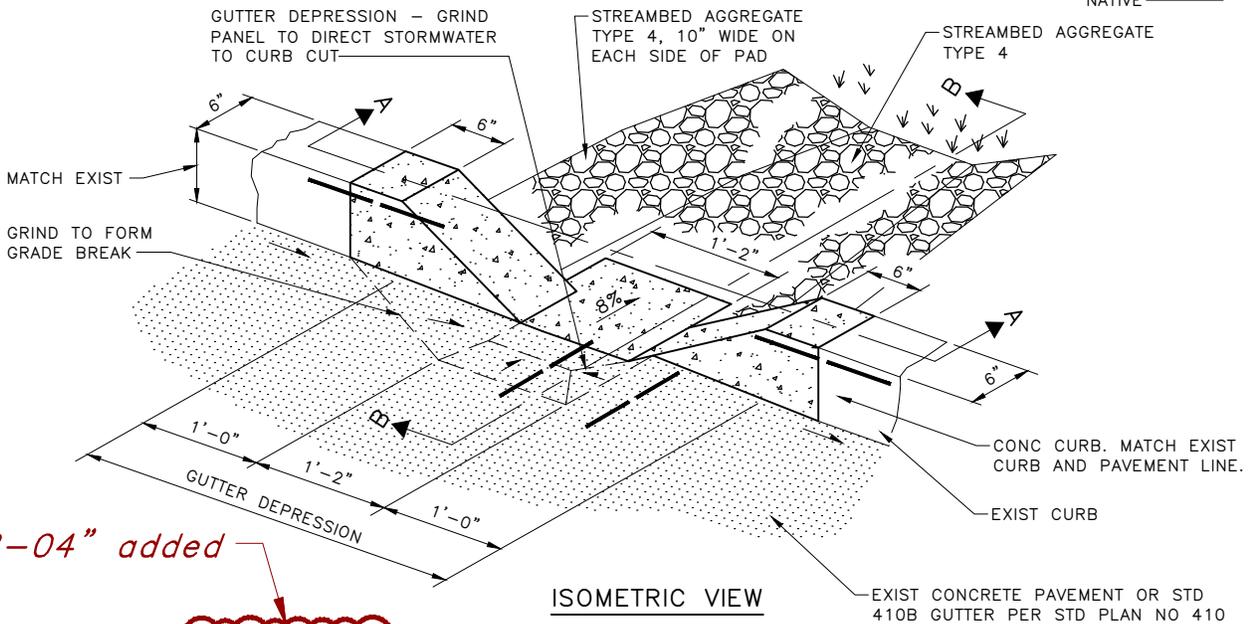
SECTION A-A

NOTES:

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



SECTION B-B



ISOMETRIC VIEW

"8-04" added

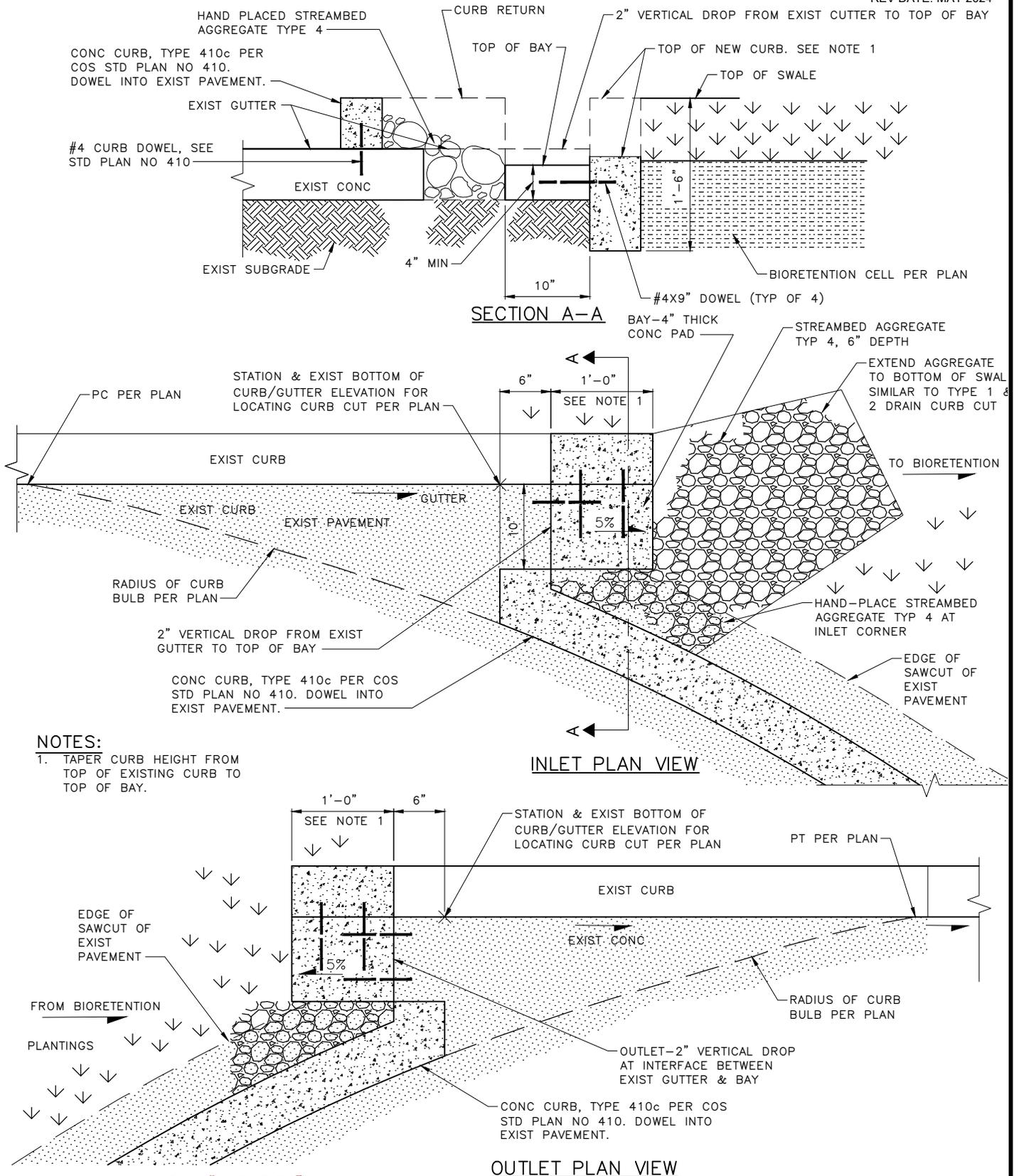
REF STD SPEC SEC 7-21, 8-04



City of Seattle

NOT TO SCALE

DRAIN CURB CUT TYPE 2



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

REF STD SPEC SEC 7-21, 8-04

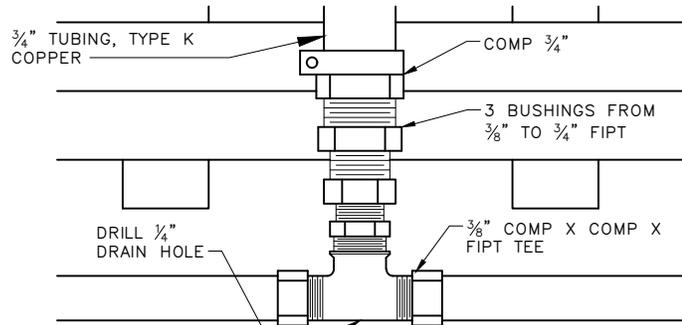
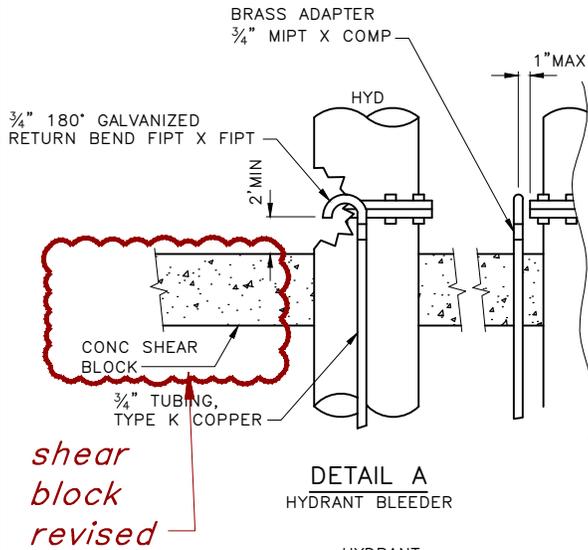
"8-04" added



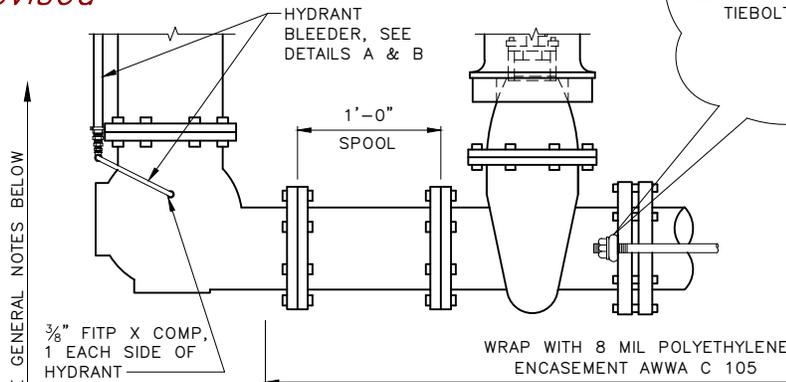
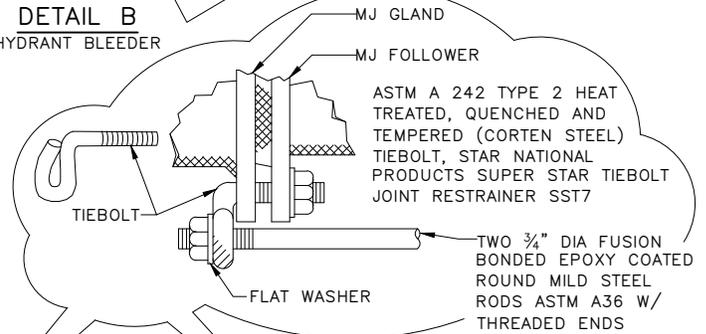
City of Seattle

NOT TO SCALE

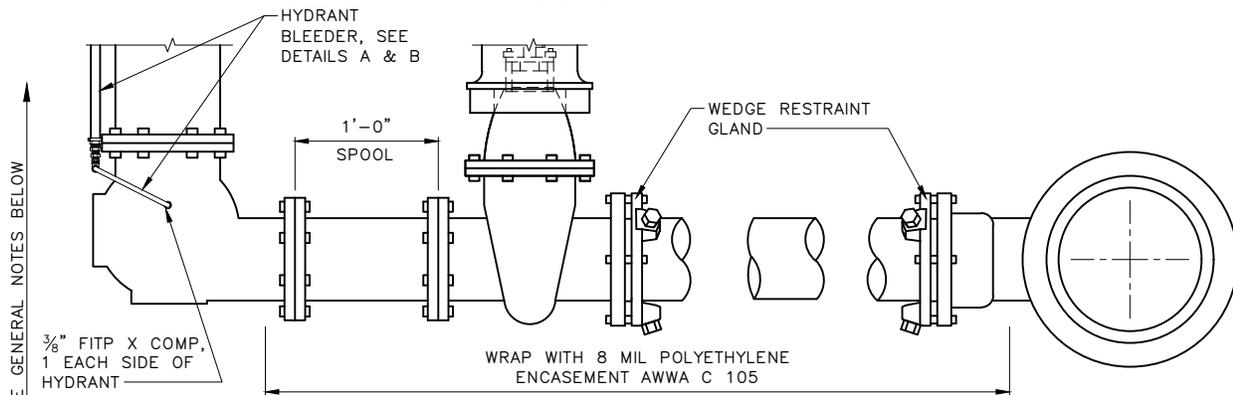
DRAIN CURB CUT TYPE 3



DETAIL B
HYDRANT BLEEDER



ALTERNATE A
TIEBOLT RESTRAINT



ALTERNATE B
MECHANICAL JOINT W/ WEDGE RESTRAINT GLANDS

NOTES:

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

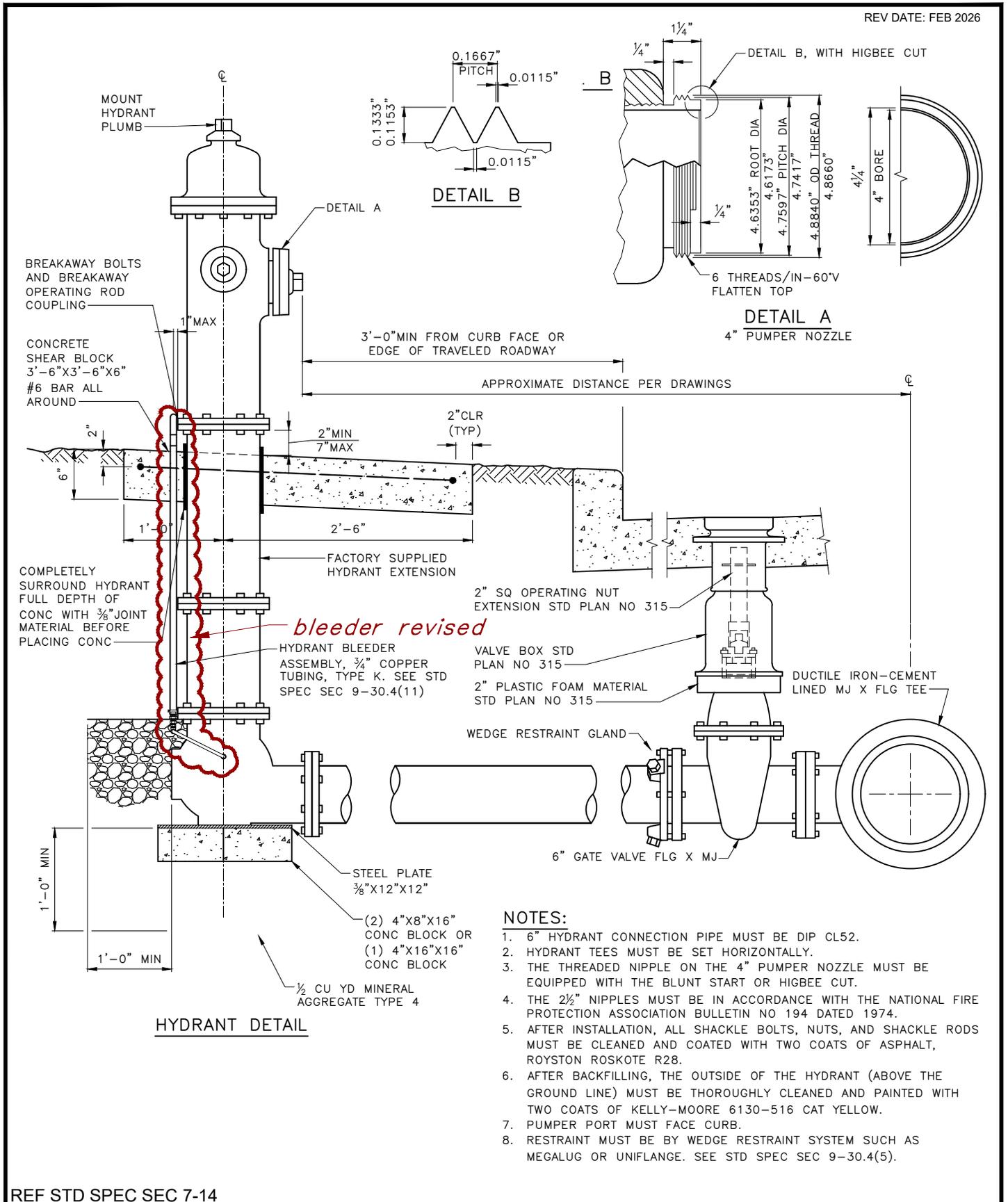
REF STD SPEC SEC 7-14



City of Seattle

NOT TO SCALE

**TYPE 310 HYDRANT SETTING
DETAIL**



REF STD SPEC SEC 7-14



City of Seattle

NOT TO SCALE

TYPE 311 HYDRANT SETTING
DETAIL

REV DATE: NOV 2025
CURB OR EDGE OF TRAVELED PORTION OF ROADWAY

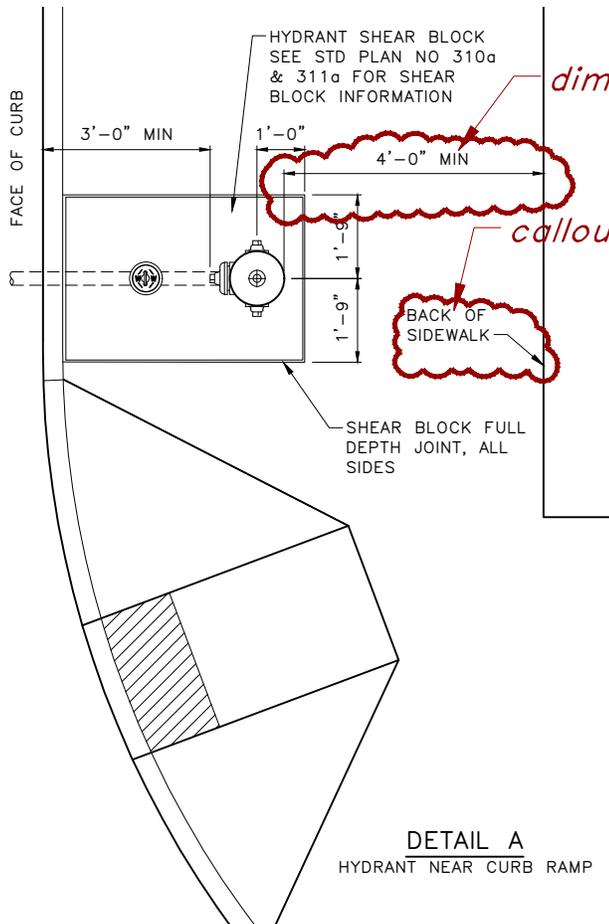
NOTES:

1. NO PARKING ZONE WITHIN 15'-0" RADIUS OF FIRE HYDRANT.
2. MIN DISTANCE FROM CENTER OF HYDRANT TO FIXED OBJECT 4'.
3. MIN DISTANCE FROM HYDRANT PUMPER PORT TO CURB FACE/ROADWAY 3'
4. MIN DISTANCE FROM HYDRANT TO ANY PART OF CURB RAMP MUST BE 2'
5. BLUE LANE MARKER MUST BE 6" OFFSET FROM CENTER OF ROADWAY IF CENTERLINE IS NOT STRIPED, OR 6" OFF STRIPED CENTERLINE. WHERE MEDIANS OR TWO-WAY LEFT TURN LANES EXIST, MARKER MUST BE INSTALLED WITH 6" OFFSET FROM THE LANE LINE CLOSEST TO THE HYDRANT.
6. HYDRANT PLACEMENT MUST MAINTAIN 4'-0" MINIMUM PEDESTRIAN ACCESSIBLE ROUTE.

note 6 added

INSTALL BLUE TYPE 2A LANE MARKER ADJACENT TO FIRE HYDRANTS. SEE NOTE 5 (TYP)

note 6 added



DETAIL A
HYDRANT NEAR CURB RAMP

3'-0" MIN, 15'-0" MAX ON CORNERS 7'-0" MAX MIDBLOCK

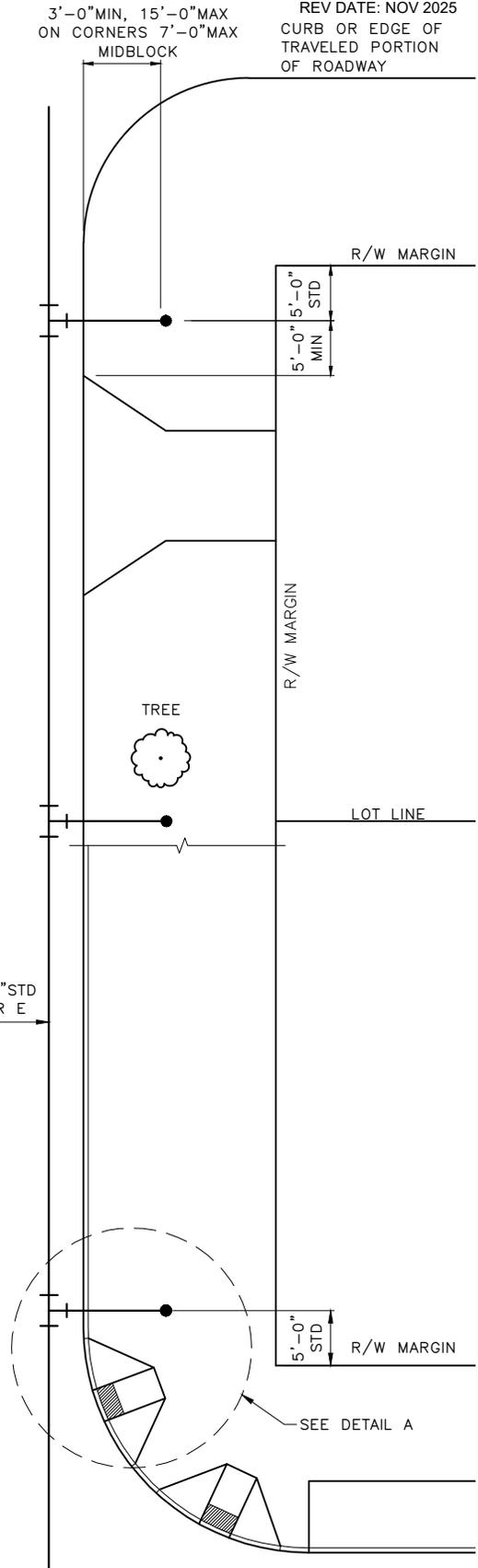
CORNER

MID-BLOCK

CORNER

G STREET

10'-0" STD N OR E



FIRE HYDRANT LOCATIONS & CLEARANCES

REF STD SPEC SEC 7-14, 8-08



City of Seattle

NOT TO SCALE

NOTES:

1. UNION POINT 2' OUTSIDE OF VAULT/METER BOX AND 2' FROM R/W MARGIN (MINIMUM) UNLESS OTHERWISE NOTED ON PLANS.
2. 5' CLEARANCE MINIMUM FROM EDGE OF NEW OR EXISTING TREES. IF EXCAVATION IS REQUIRED WITHIN ROOT ZONE OF EXISTING TREES, THE EXCAVATION MUST BE ACCOMPLISHED BY HAND METHODS, CONDUCTED TO PREVENT DAMAGE TO FEEDER AND SURFACE ROOTS, AND MINIMIZE COMPACTION OF SOILS. SEE STD PLAN NO 133.
3. 5' CLEAR FROM EDGE OF POLES.
4. 2' CLEAR FROM ANY PART OF DRIVEWAY OR ADA RAMP WING.
5. WATER SERVICE NOT TO BE INSTALLED IN DRIVEWAY, STREET CORNER, OR BEHIND ADA RAMP.
6. SIDE SEWER HORIZONTAL CLEARANCE 10' FOR CIP, GALVANIZED OR PLASTIC WATER PIPE OR 5' FOR DIP OR COPPER WATER PIPE.
7. SIDE SEWER VERTICAL CLEARANCE 1.5' MIN BELOW WATER.
8. VAULT HORIZONTAL CLEARANCE 3' MIN FROM OTHER UTILITIES. UNLESS OTHERWISE NOTED IN STD SPECS.
9. VERTICAL CLEARANCE 12" MIN FOR ALL OTHER UTILITY CROSSINGS UNLESS OTHERWISE NOTED IN STD SPECS.
10. ALLOWABLE LOCATION OF WATER SERVICE VAULT, 2' MINIMUM CLEAR OF BACK OF CURB.

PERMIT REQUIREMENTS WILL DETERMINE LOCATION AND ORIENTATION OF ALL SERVICE VAULTS & METER BOXES IN THE RIGHT OF WAY. VAULTS & METER BOXES SHOWN ON THIS STD PLAN ARE FOR GRAPHICAL PURPOSES ONLY.

EXCEPTIONS TO THE STANDARDS LOCATIONS REQUIRE CITY REVIEW AND APPROVAL.

notes 1, 2, 3, 4, 6 & 10 revised. "PERMIT REQUIREMENTS" revised, "EXCEPTIONS" relocated.

moved to actual crossing

VAULT/METER BOX LID TO BE LOCATED, WHERE POSSIBLE, OUTSIDE OF SIDEWALK

4" DOMESTIC/COMBO SERVICE VAULT, TYP

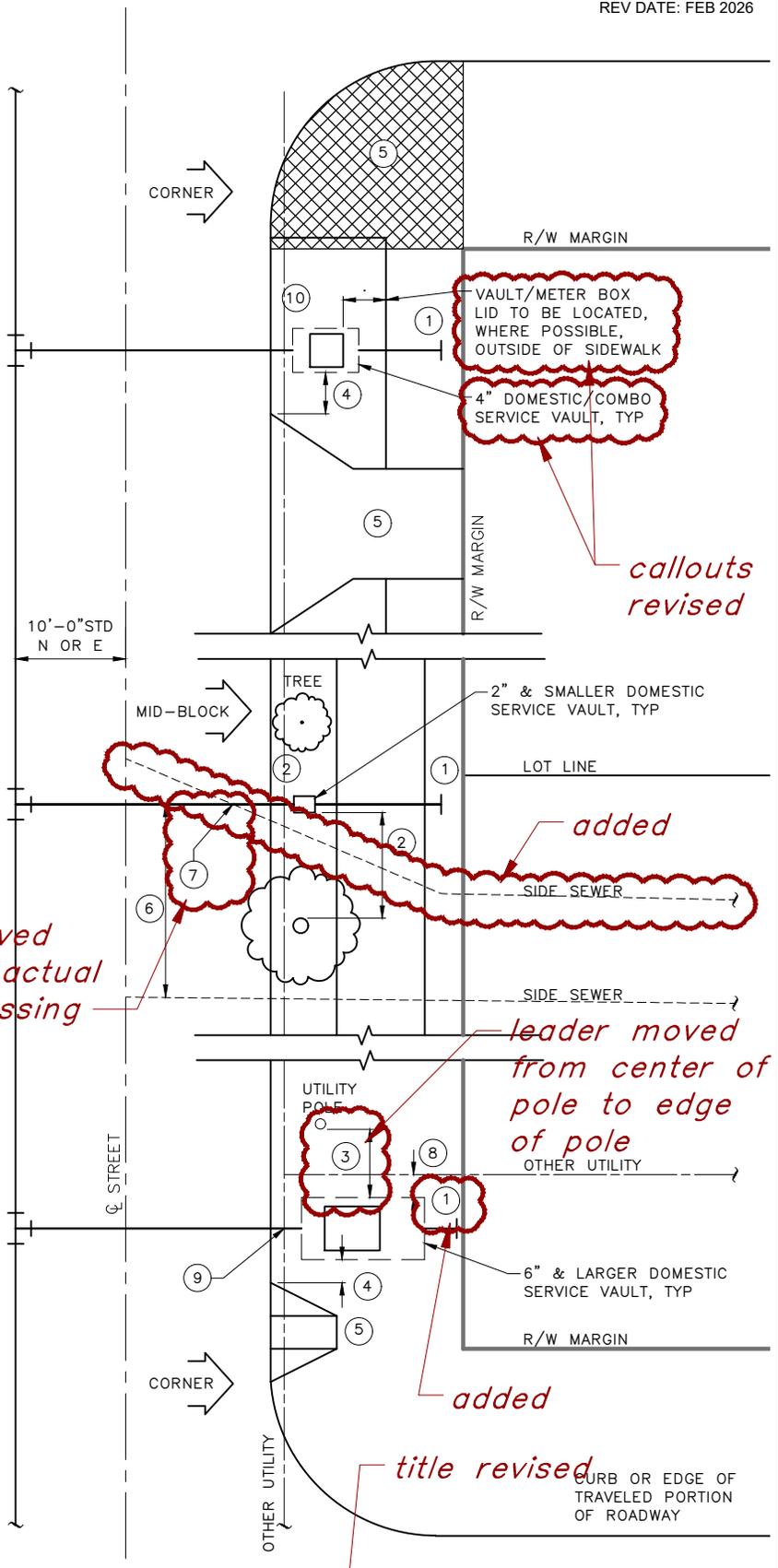
callouts revised

2" & SMALLER DOMESTIC SERVICE VAULT, TYP

leader moved from center of pole to edge of pole

6" & LARGER DOMESTIC SERVICE VAULT, TYP

title revised



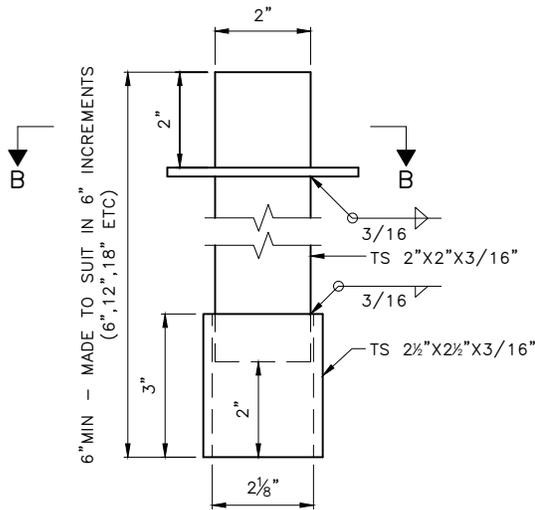
REF STD SPEC SEC 1-07.17(2)



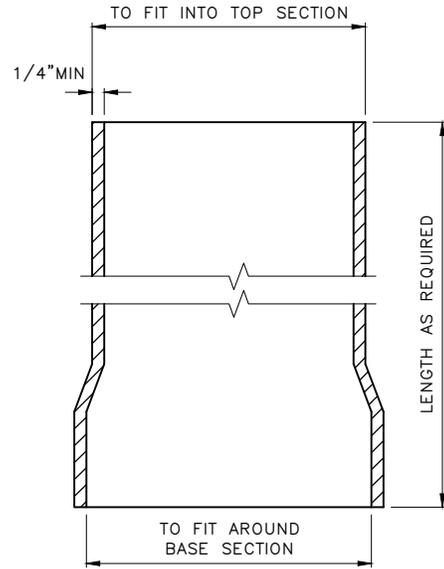
City of Seattle

NOT TO SCALE

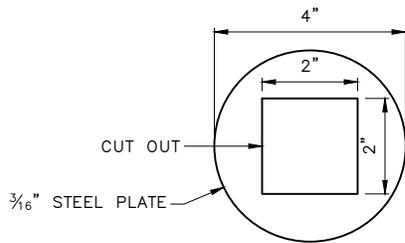
CLEARANCES FOR TYPICAL WATER SERVICE VAULTS & METER BOXES



OPERATING NUT EXTENSION DETAIL 1



EXTENSION PIECE 2
WHEN REQUIRED



SECTION B-B

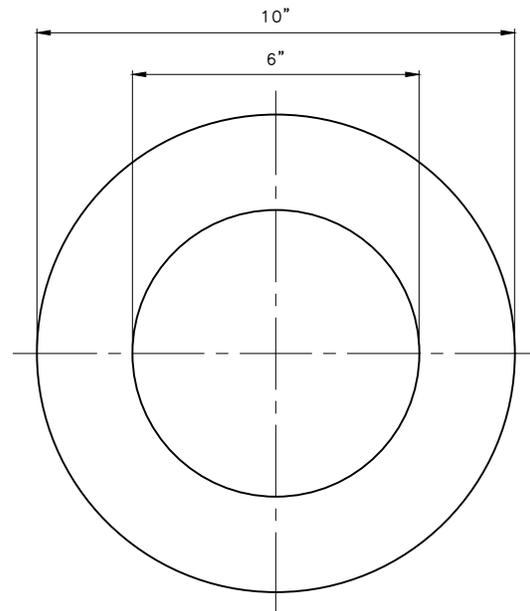
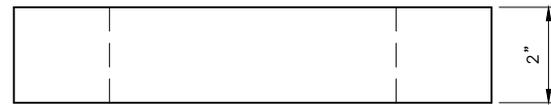
*previous note
2 removed*

NOTES:

1. FRAME AND COVER MUST BE TESTED FOR ACCURACY OF FIT AND MUST BE MARKED IN SETS FOR DELIVERY
2. VALVE BOXES MUST BE EAST JORDAN: COVER & TOP SECTION #3664, BOTTOM SECTION #8555; OR OLYMPIC FOUNDRY: LID #1908-33, TOP SECTION #1106-33, BASE SECTION #1301-33
3. ALL CASTINGS MUST BE DUCTILE OR GREY CAST IRON

LEGEND:

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



PLASTIC FOAM RING DETAIL

REF STD SPEC SEC 7-12, 9-30

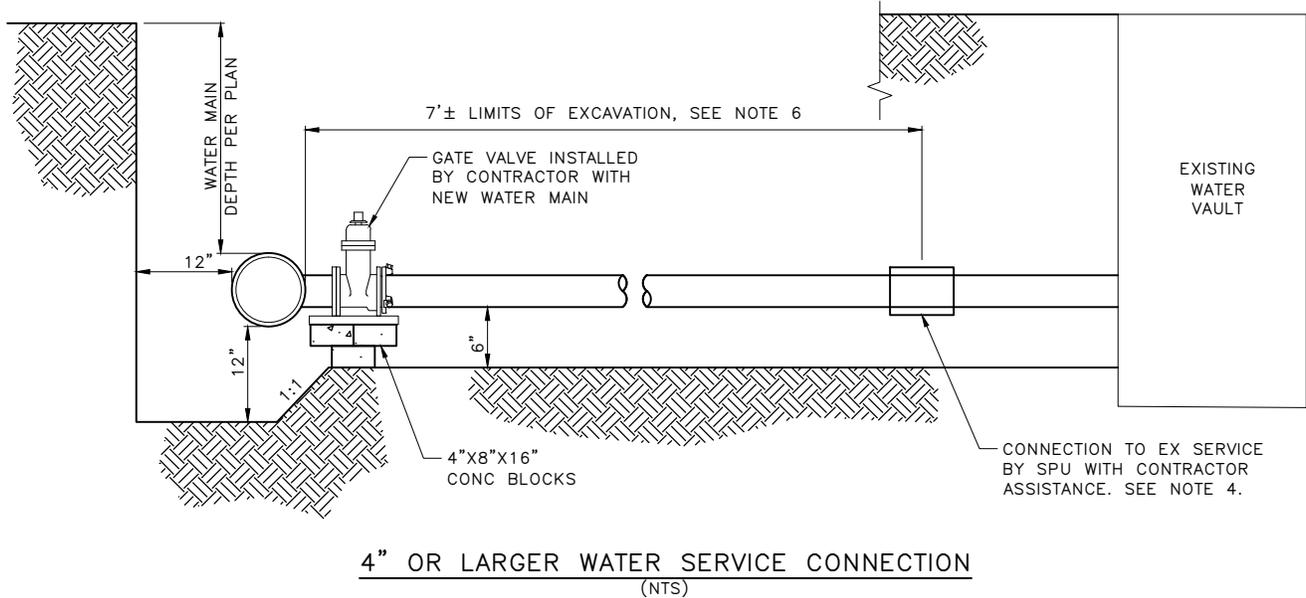
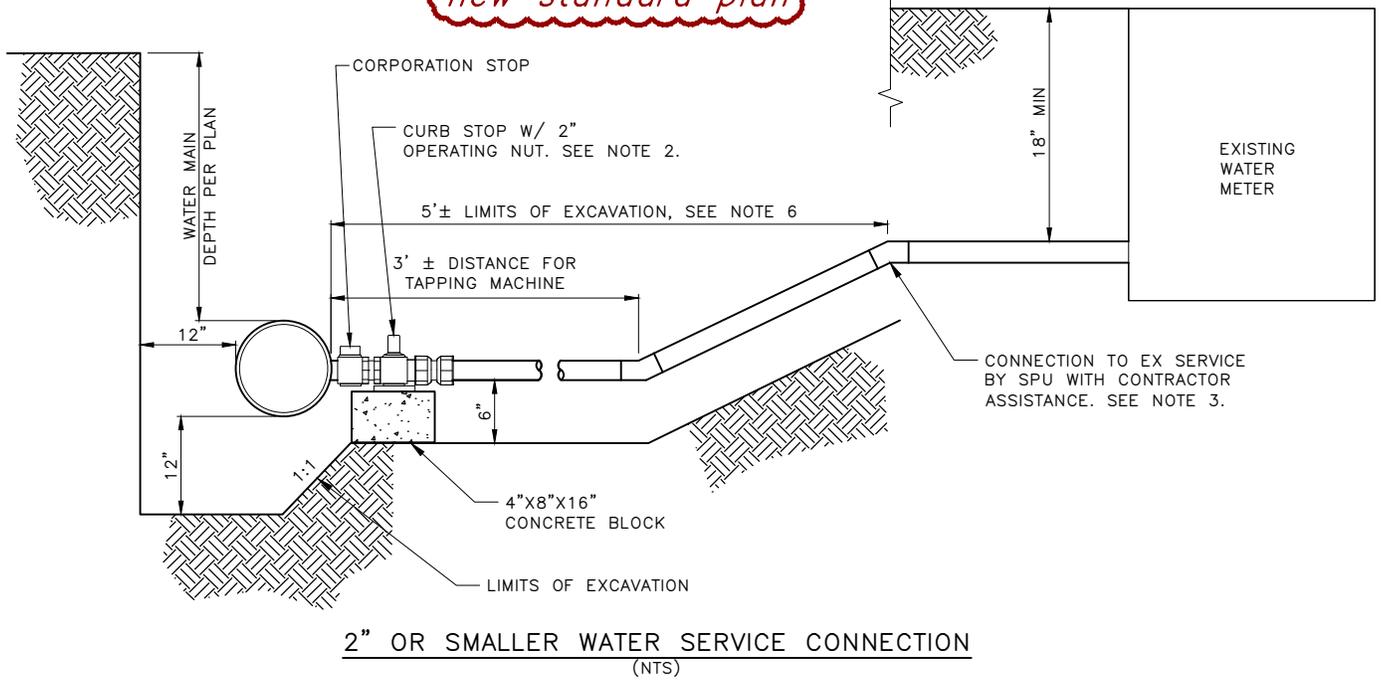


City of Seattle

NOT TO SCALE

CAST IRON VALVE BOX &
OPERATING NUT EXTENSION

new standard plan



NOTES:

1. SPU PROVIDES MATERIALS, INSTALLS, AND CONNECTS SERVICES 2" AND SMALLER WITH CONTRACTOR ASSISTANCE. CONTRACTOR PROVIDES MATERIALS FOR SERVICES 4" AND LARGER EXCEPT FOR SLEEVE TO EXISTING PIPE. SEE STANDARD SPECIFICATIONS SECTION 7-15.
2. CURB STOP IS INSTALLED FOR 1.5" AND 2" SERVICES. CONTRACTOR TO INSTALL VALVE BOX PER STD PLAN 315.
3. NON-COPPER SERVICES MUST BE RENEWED UP TO THE WATER METER.
4. WHERE INDICATED IN DRAWINGS OR THE WATER SERVICE TABLE, THE WATER SERVICE MUST BE RENEWED TO THE EXISTING VAULT.
5. BEDDING AND BACKFILL OF SERVICE LINES MUST BE THE SAME AS THE WATER MAIN.
6. LIMITS OF EXCAVATION MAY BE LARGER. REFER TO DRAWINGS FOR ACTUAL EXTENTS OF WATER SERVICE INSTALLATION.

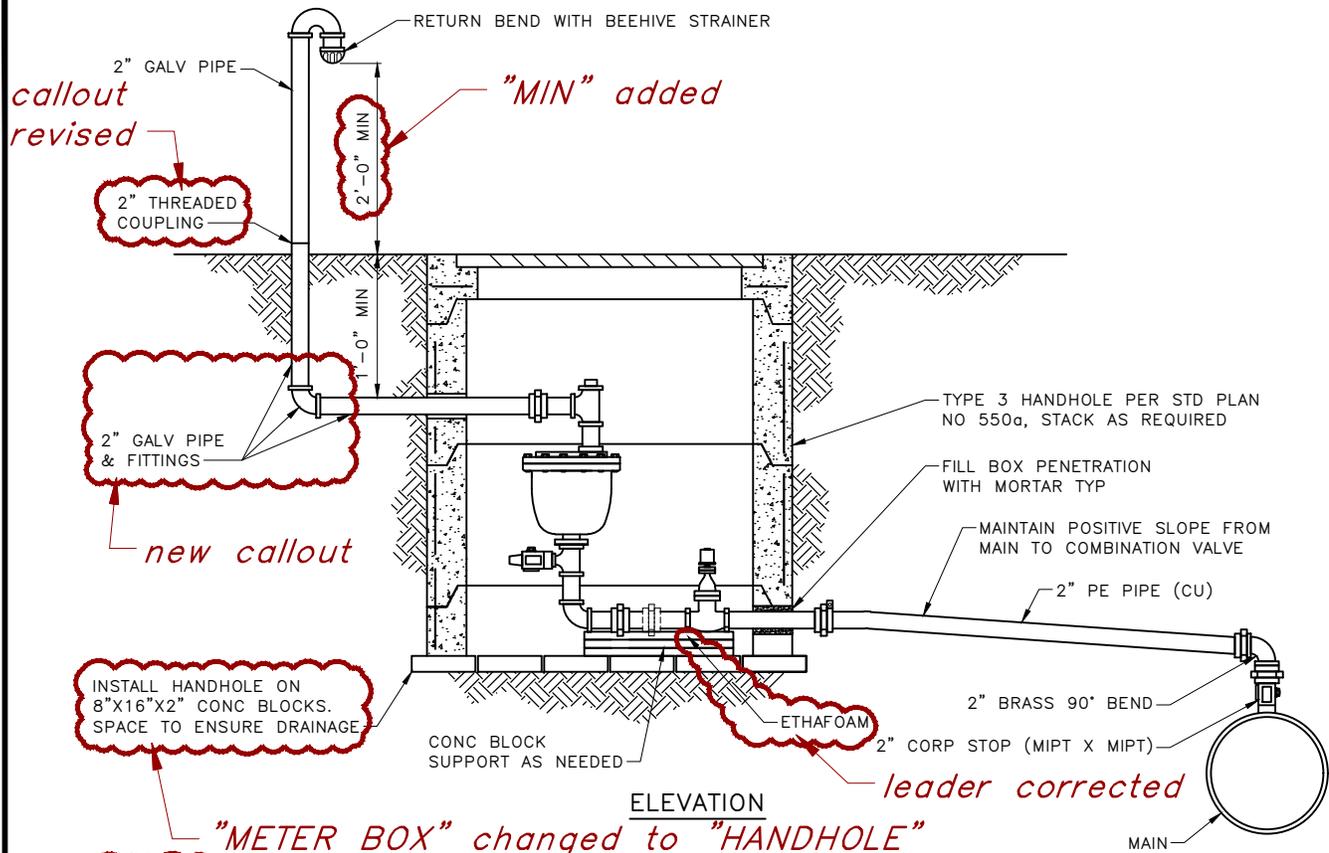
REF STD SPEC SEC 7-11, 7-15



City of Seattle

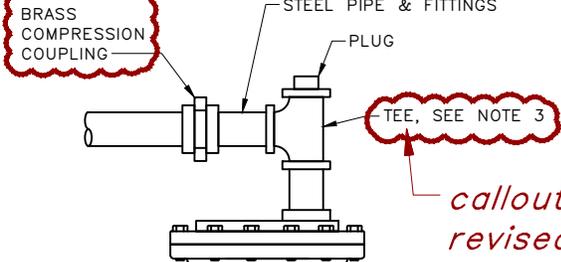
NOT TO SCALE

WATER SERVICE CONNECTION TO NEW WATER MAIN



ELEVATION

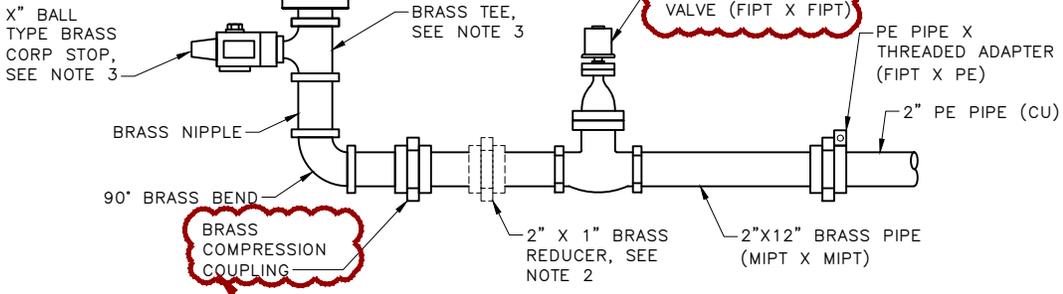
"METER BOX" changed to "HANDHOLE"



"BRASS" added

- NOTES:
1. COMBINATION AIR RELEASE AND VACUUM VALVE MUST BE A 2" SIZE MINIMUM UNLESS OTHERWISE SHOWN IN THE PLANS.
 2. FOR 1" COMBINATION VALVE, INSTALL 2" X 1" REDUCER BETWEEN GATE VALVE AND COUPLING.
 3. TEE MUST BE 2"x2"x1" WITH 1" CORP STOP FOR 2" COMBINATION VALVE. TEE MUST BE 1"x1"x¾" WITH ¾" CORP STOP FOR 1" COMBINATION VALVE.
 4. SET HANDHOLE WITHIN CITY ROW, FLUSH WITH SIDEWALK OR CURB ELEVATION IF LOCATED IN LAWN AREAS. SET HANDHOLE APPROXIMATELY 2" ABOVE FINISHED GRADE IF IN LANDSCAPED AREA.

all 4 notes revised



VALVE ASSEMBLY DETAIL

"UNION" replaced with "COMPRESSION COUPLING"

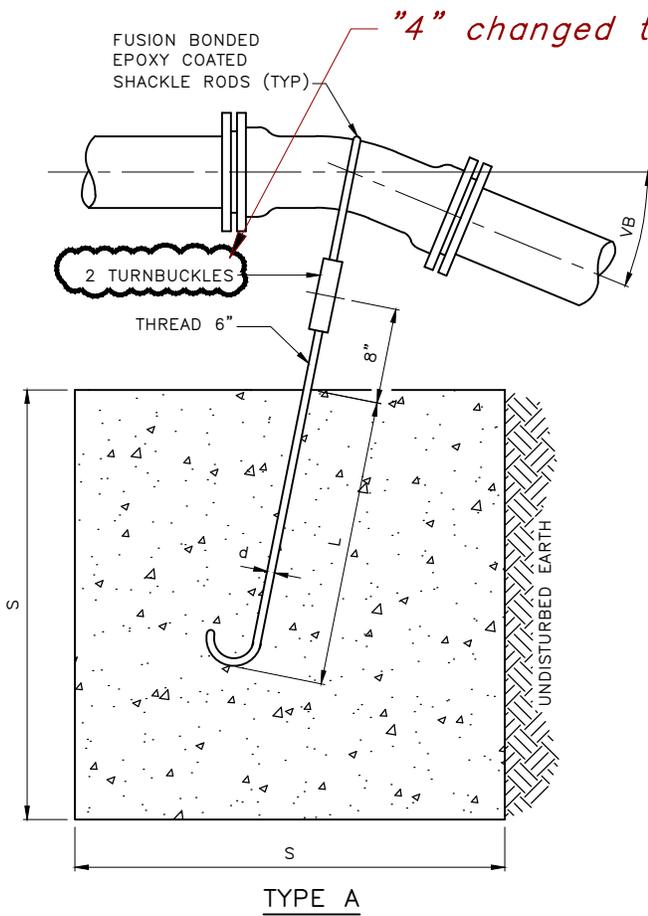
REF STD SPEC SEC 7-12



City of Seattle

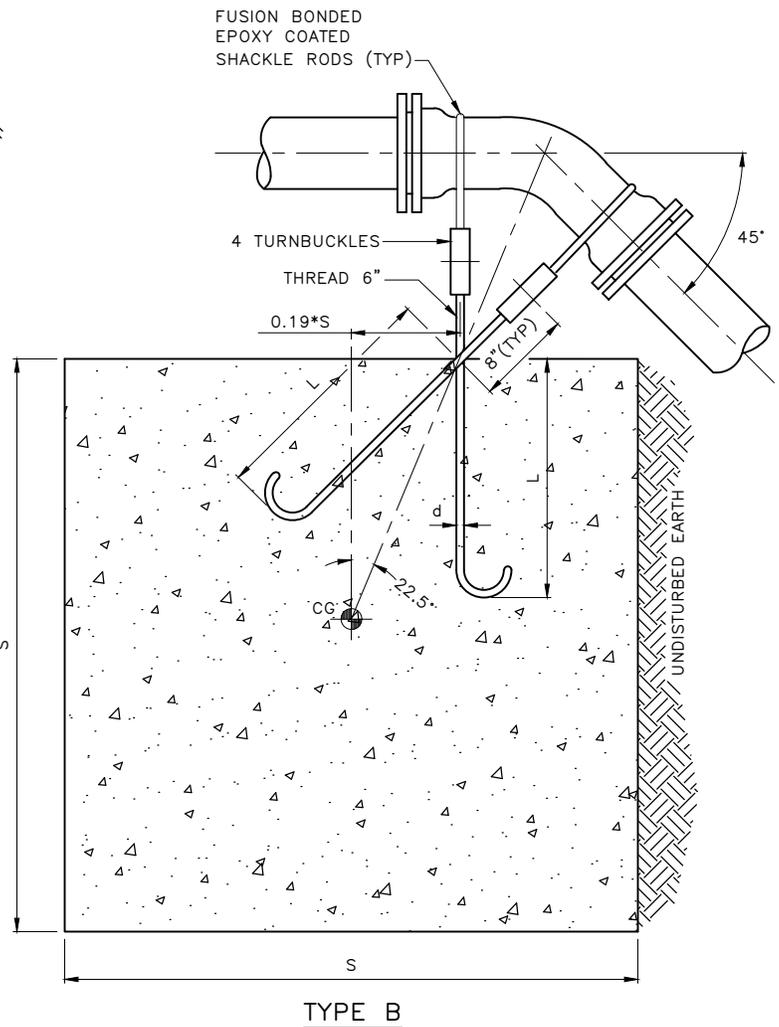
NOT TO SCALE

AIR RELEASE
AIR VACUUM VALVE



TYPE A BLOCKING FOR 11¼° & 22½° VERTICAL BENDS

PIPE SIZE NOM DIA INCHES	TEST PRESSURE PSI	VB VERTICAL BEND DEGREES	NO OF CU FT OF CONC BLOCKING	S SIDE OF CUBE FEET	d DIA OF SHACKLE RODS (2) INCHES	L DEPTH OF RODS IN CONCRETE INCHES
4"	300	11¼	8	2	¾	18
		22½	12	2¼		24
6"	300	11¼	12	2¼	¾	24
		22½	27	3		24
8"	300	11¼	16	2½	¾	24
		22½	43	3½		24
12"	300	11¼	64	4	1	24
		22½	125	5		36



TYPE B BLOCKING FOR 45° VERTICAL BENDS

PIPE SIZE NOM DIA INCHES	TEST PRESSURE PSI	VB VERTICAL BEND DEGREES	NO OF CU FT OF CONC BLOCKING	S SIDE OF CUBE FEET	d DIA OF SHACKLE RODS (2) INCHES	L DEPTH OF RODS IN CONCRETE INCHES
4"	300	45	27	3	¾	20
6"			64	4		
8"			125	5		
12"			216	6		

FOR NOTES SEE STD PLAN NO 330b

REF STD SPEC SEC 7-11

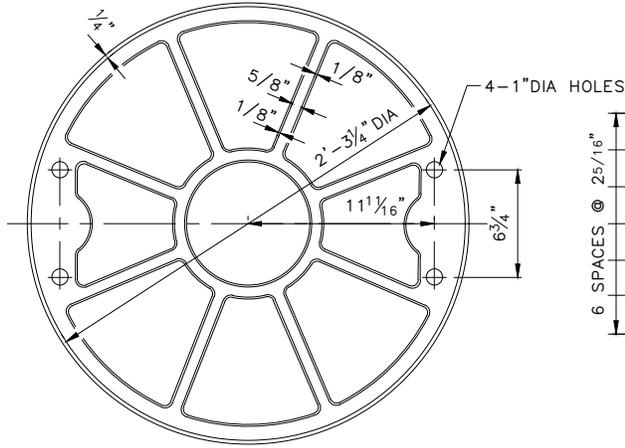


City of Seattle

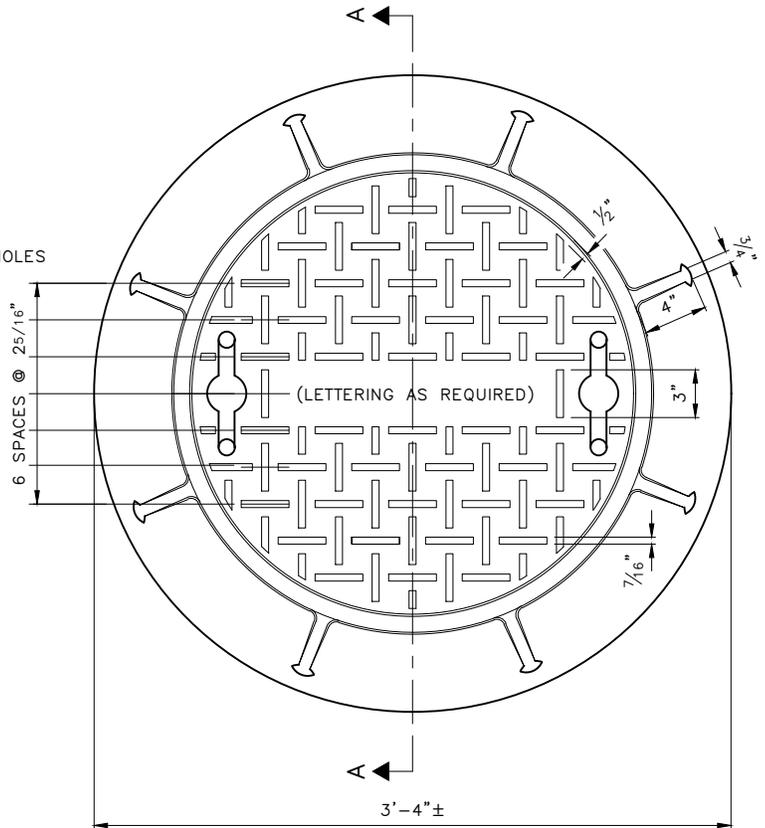
NOT TO SCALE

WATERMAIN THRUST BLOCKING VERTICAL FITTINGS

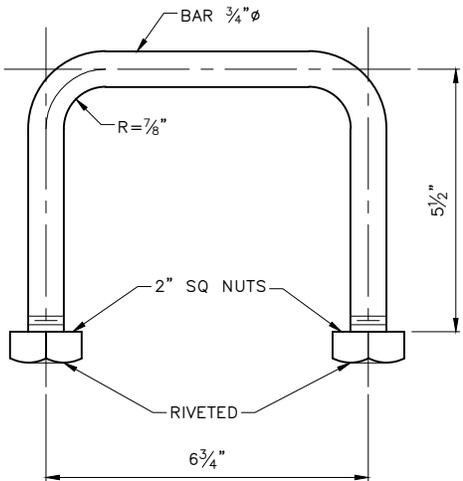
FRAME & COVER MUST BE TESTED FOR ACCURACY OF FIT AND MUST BE MARKED IN SETS FOR DELIVERY



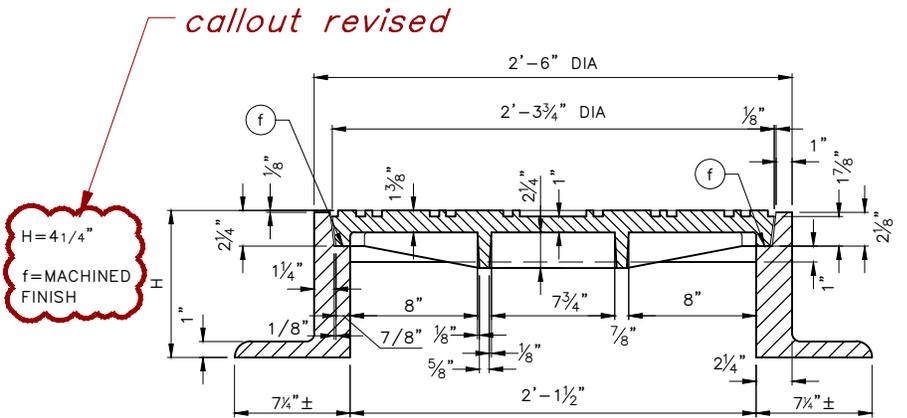
BOTTOM VIEW



TOP VIEW



LIFTING HANDLE
(2 REQUIRED)



SECTION A-A

NOTES:
1. CASTING HEIGHT (H) MUST BE 4 1/4" OR 9 1/4". WHERE CASTING IS WITHIN THE ROADWAY, 9 1/4" MUST BE USED.

notes added

REF STD SPEC SEC 7-12

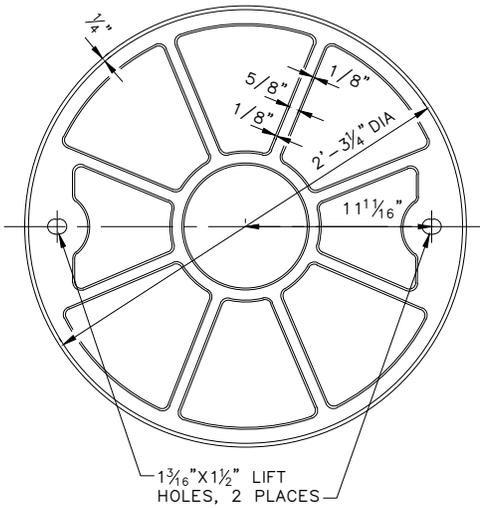


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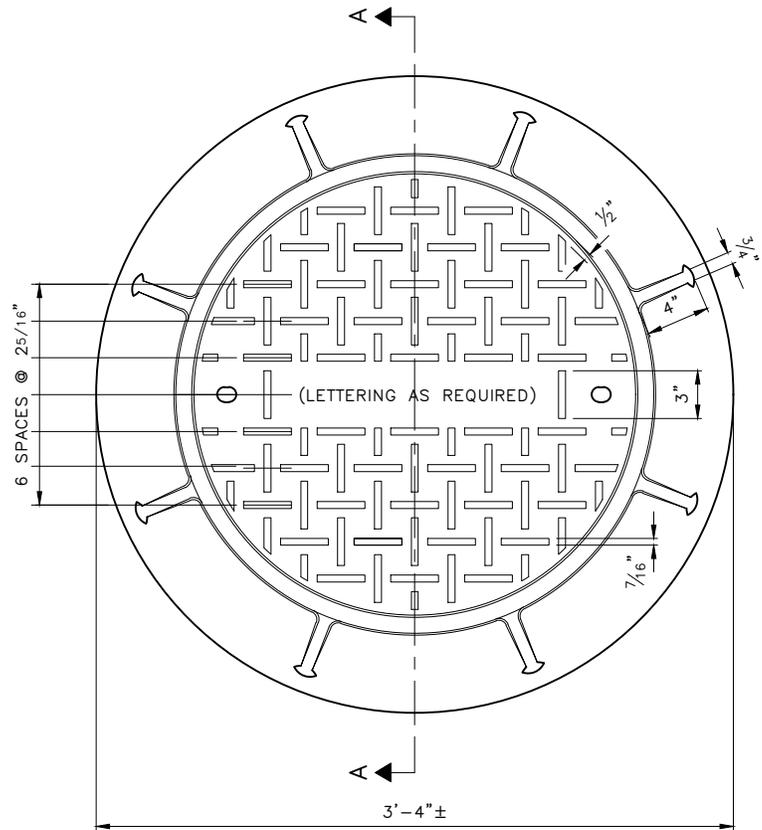
NOT TO SCALE

**TYPE 361a VALVE CHAMBER
FRAME & COVER IN
VEHICULAR TRAVELWAYS**

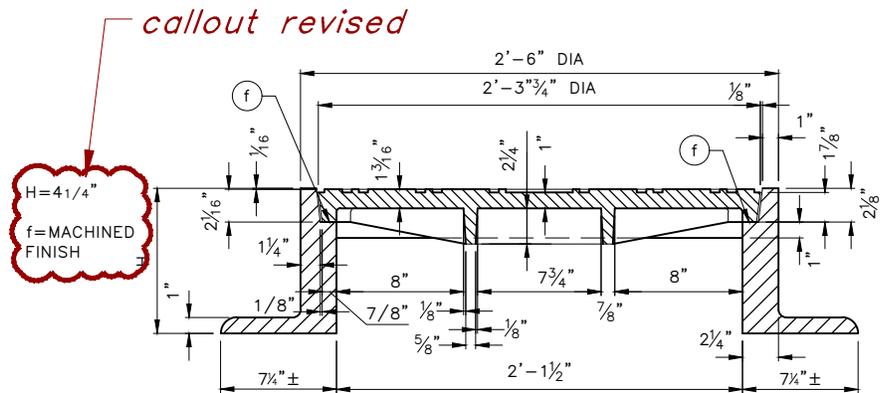
FRAME & COVER MUST BE TESTED FOR ACCURACY OF FIT AND MUST BE MARKED IN SETS FOR DELIVERY



BOTTOM VIEW



TOP VIEW



SECTION A-A

NOTES:
1. CASTING HEIGHT (H) MUST BE 4 1/4" OR 9 1/4". WHERE CASTING IS WITHIN THE ROADWAY, 9 1/4" MUST BE USED.

notes added

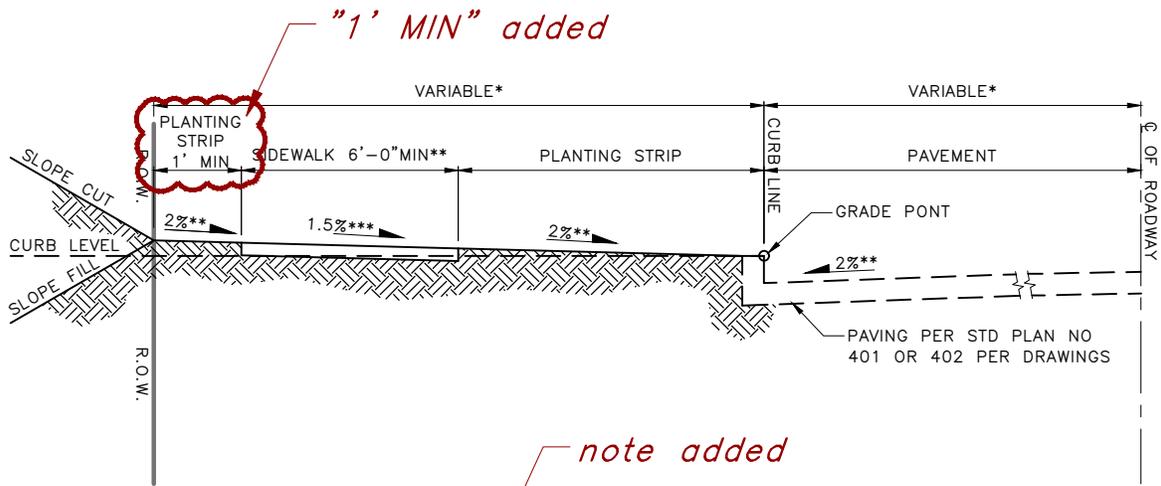
REF STD SPEC SEC 7-12



City of Seattle

NOT TO SCALE

TYPE 361b VALVE CHAMBER FRAME & COVER IN PEDESTRIAN PATHWAYS



NOTE:

1. POSITIVE DRAINAGE FLOW SLOPING FROM THE ROW LINE TO THE TOP OF CURB MUST BE PROVIDED.

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

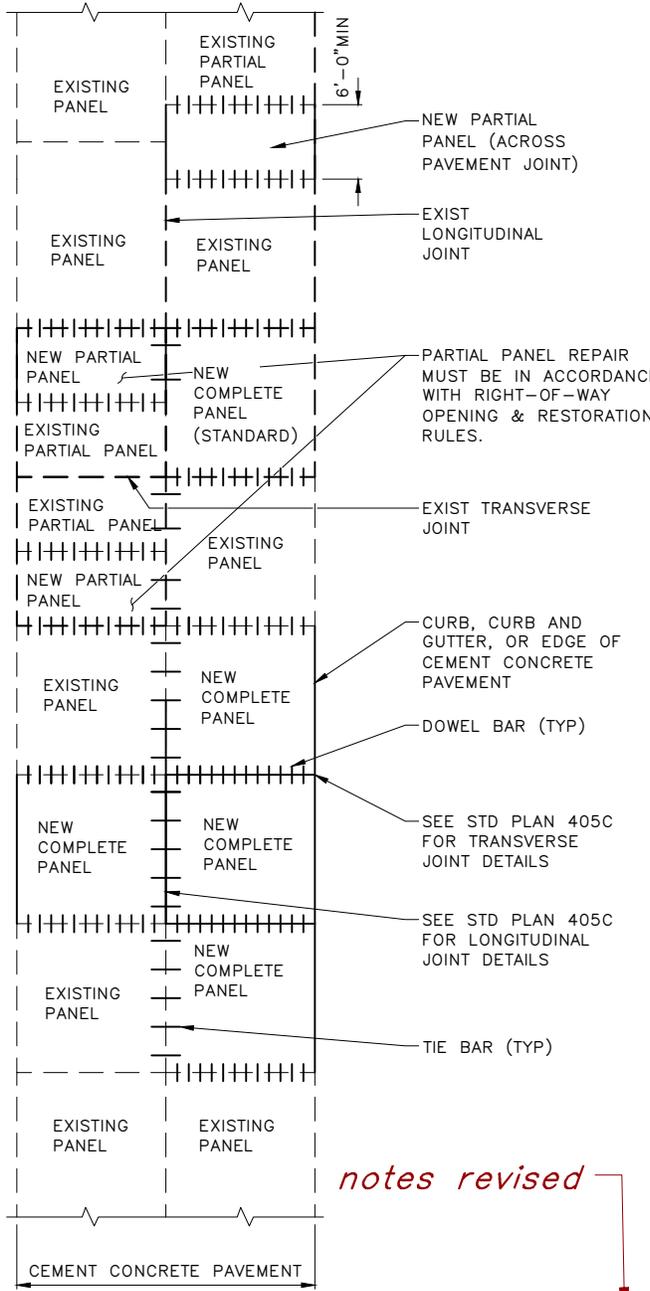
REF STD SPEC SEC 2-04



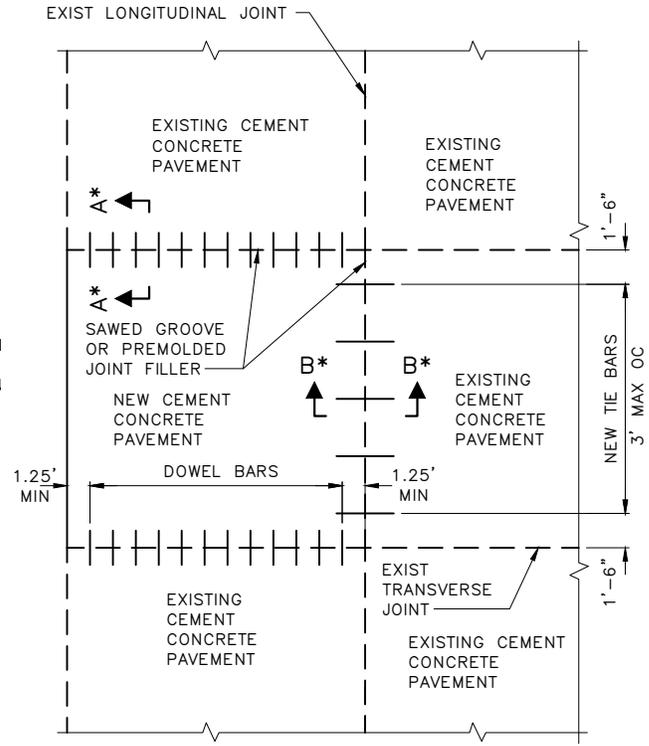
City of Seattle

NOT TO SCALE

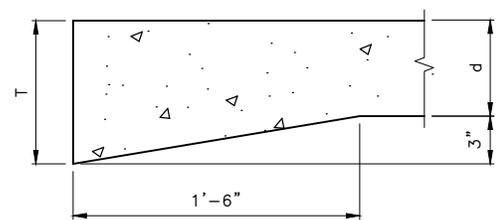
HALF SECTION, GRADING



PLAN VIEW
PANEL REPLACEMENT



PLAN VIEW
COMPLETE PANEL REPLACEMENT



THICKENED EDGE DETAIL
(REQUIRED ONLY WHERE SHOWN ON THE DRAWINGS)

notes revised

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

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

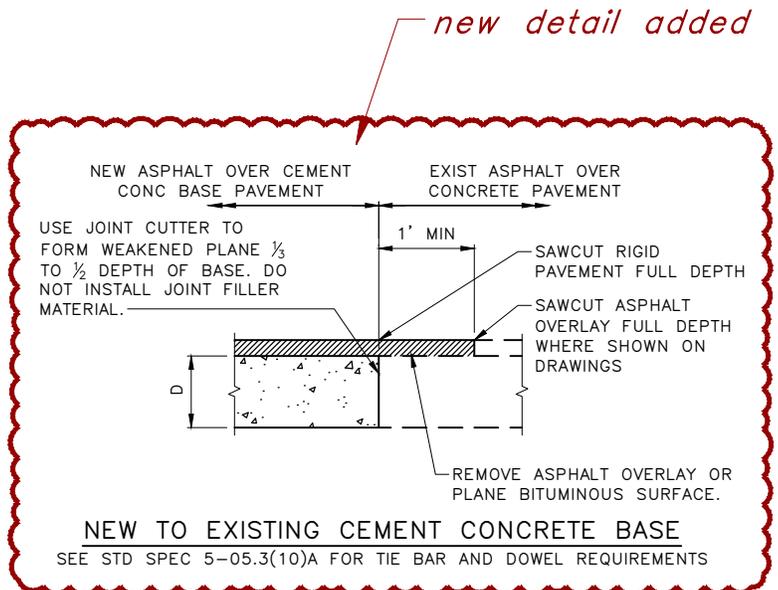
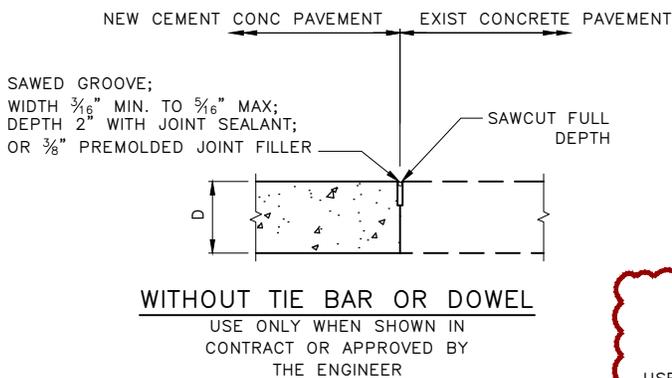
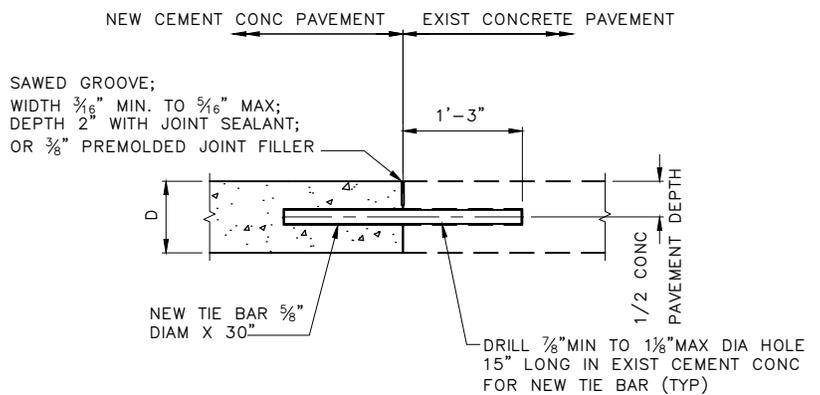
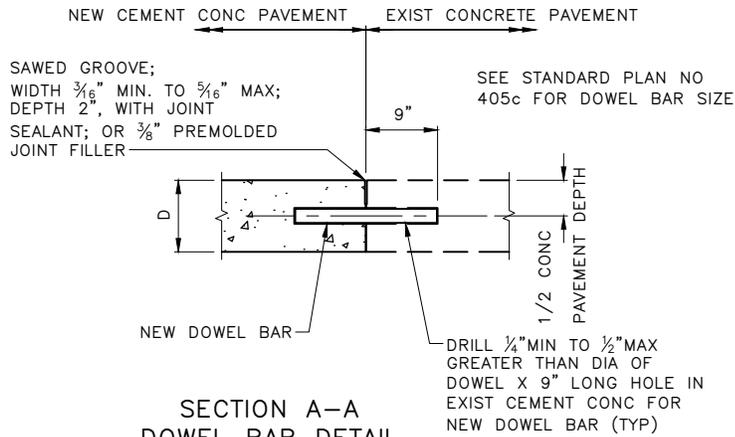
REF STD SPEC SEC 5-05



City of Seattle

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ROADWAY CONCRETE
PAVEMENT REPAIR



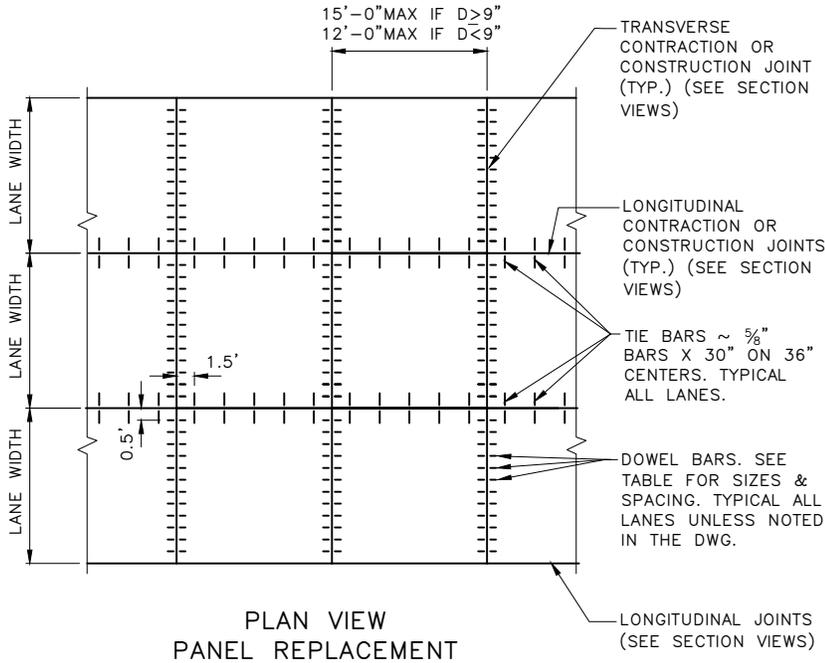
REF STD SPEC SEC 5-05



City of Seattle

NOT TO SCALE

**PAVEMENT REPAIR
DOWEL BAR AND
TIE BAR DETAILS**



NOTES:

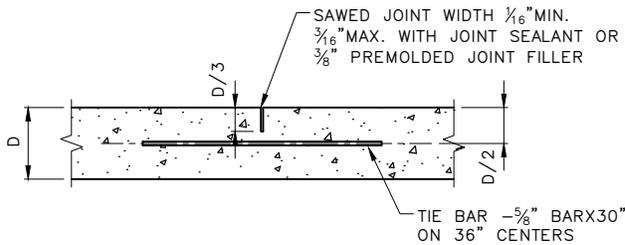
1. DO NOT PLACE LONGITUDINAL JOINTS OR SKEWED JOINTS WITHIN BIKE LANES.
2. WHEN A JOINT IS WITHIN 18 INCHES OF A CASTING JOINTS SHOULD BE SKEWED TO MEET THE CASTING AT 90 DEGREES UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR SHOWN ON THE DRAWINGS.
3. SEE STD PLAN NO 406 OR DRAWINGS FOR REBAR DETAIL AROUND CASTING
4. DOWEL BARS MUST NOT BE PLACED WITHIN 15 INCHES OF THE EDGE OF PAVEMENT OR A PARALLEL JOINT.
5. DOWEL BARS NOT REQUIRED FOR RESIDENTIAL PAVEMENT SECTIONS. SEE STD PLAN NO 401.
6. DO NOT INSTALL PREMOLDED JOINT FILLER IN CONSTRUCTION JOINTS OF CEMENT CONCRETE BASE PAVEMENTS.
7. CONTRACTION JOINTS IN CEMENT CONCRETE BASE PAVEMENTS MUST BE WEAKENED PLANE JOINTS PER STD SPEC SEC 5-05.3(8)A4.

note 3 revised, notes 6 & 7 added

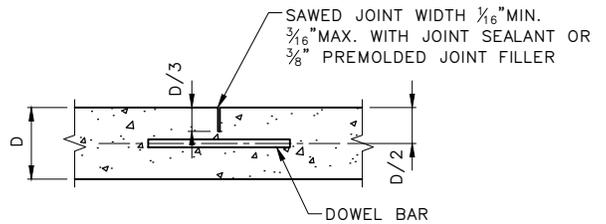
PLAN VIEW
PANEL REPLACEMENT

6" changed to 8"

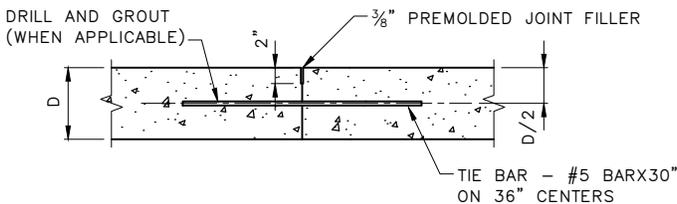
DEPTH (D) OF RDWY CEM. CONC	SOLID STEEL DOWEL BAR SIZE OUTSIDE DIAMETER (OD) X LENGTH (L) @ ON CENTER (OC)	TUBULAR DOWEL BAR SIZE OUTSIDE DIAMETER (OD), WALL THICKNESS X LENGTH (L) @ ON CENTER (OC)
<i>8" ≤ D < 9"</i>	1.00" OD X 18" L @ 12" OC	1.375" OD, 0.120: MIN X 18" L @ 12" OC
9" ≤ D < 11"	1.25" OD X 18" L @ 12" OC	1.375" OD, 0.120: MIN X 18" L @ 12" OC
11" ≤ D	1.50" OD X 18" L @ 12" OC	1.625" OD, 0.120: MIN X 18" L @ 12" OC



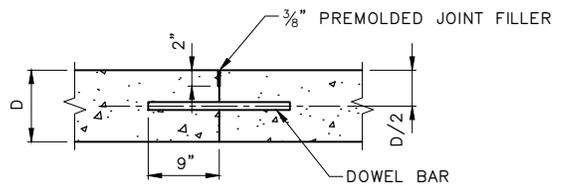
SECTION VIEW
LONGITUDINAL CONTRACTION JOINT



SECTION VIEW
TRANSVERSE CONTRACTION JOINT



SECTION VIEW
LONGITUDINAL CONSTRUCTION JOINT



SECTION VIEW
TRANSVERSE CONSTRUCTION JOINT

REF STD SPEC SEC 5-05

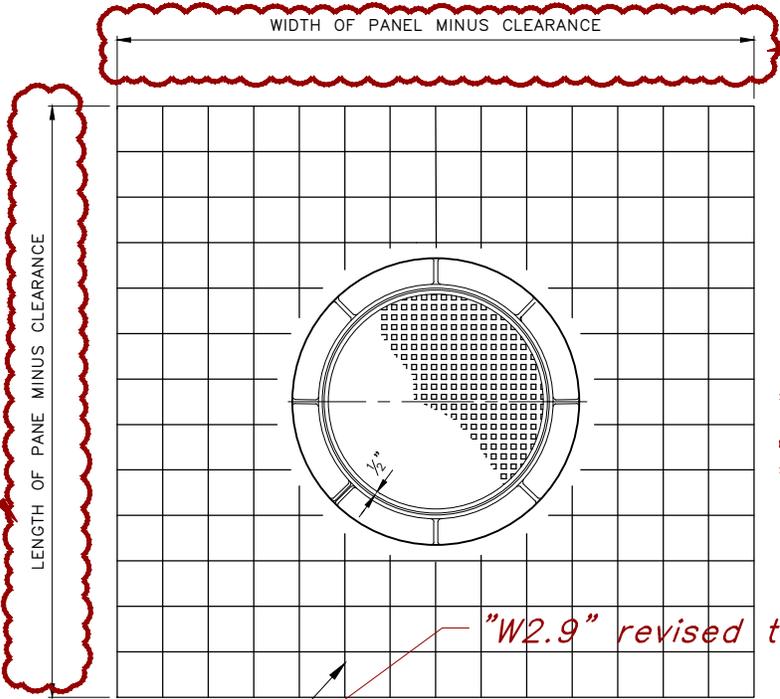


City of Seattle

NOT TO SCALE

ROADWAY CONCRETE PAVEMENT JOINTS

dimension revised



4"X4" W4.0 WIRE MESH

"W2.9" revised to "W4.0"

dimension revised

NOTES:

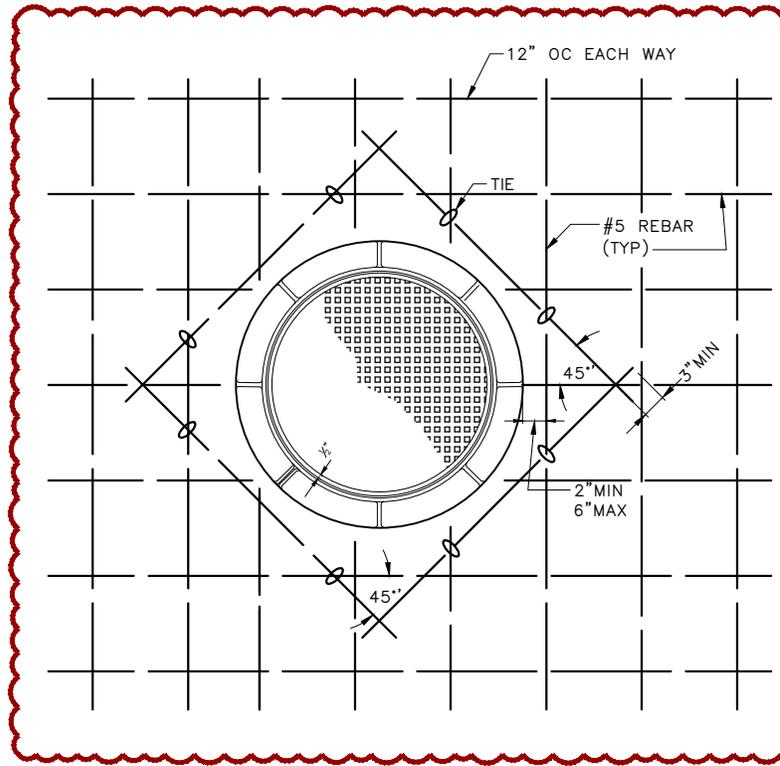
1. PLACE WIRE MESH AT 1/2 DEPTH OF CEMENT CONCRETE.
2. *THE DIMENSIONS OF THE MESH MUST BE ADJUSTED WHERE PAVEMENT JOINTS ARE ENCOUNTERED.
3. NO REINFORCING STEEL MUST BE WITHIN 2 1/2 INCHES (3 INCHES DESIRED) OF ANY CEMENT CONCRETE SURFACE OR JOINT.

CLEARANCE REQUIREMENTS:

1. 12" CLEARANCE FROM TRANSVERSE JOINTS.
2. 18" CLEARANCE FROM LONGITUDINAL JOINTS.
3. 3" CLEARANCE FROM SURFACES.
4. 3" CLEARANCE FROM CASTINGS.

added

detail revised



NOTES:

1. PLACE REBAR AT 1/2 DEPTH OF CEMENT CONCRETE.
2. NO REINFORCING STEEL MUST BE WITHIN 2 1/2 INCHES (3 INCHES DESIRED) OF ANY CEMENT CONCRETE SURFACE OR JOINT.
3. SEE CLEARANCE REQUIREMENTS

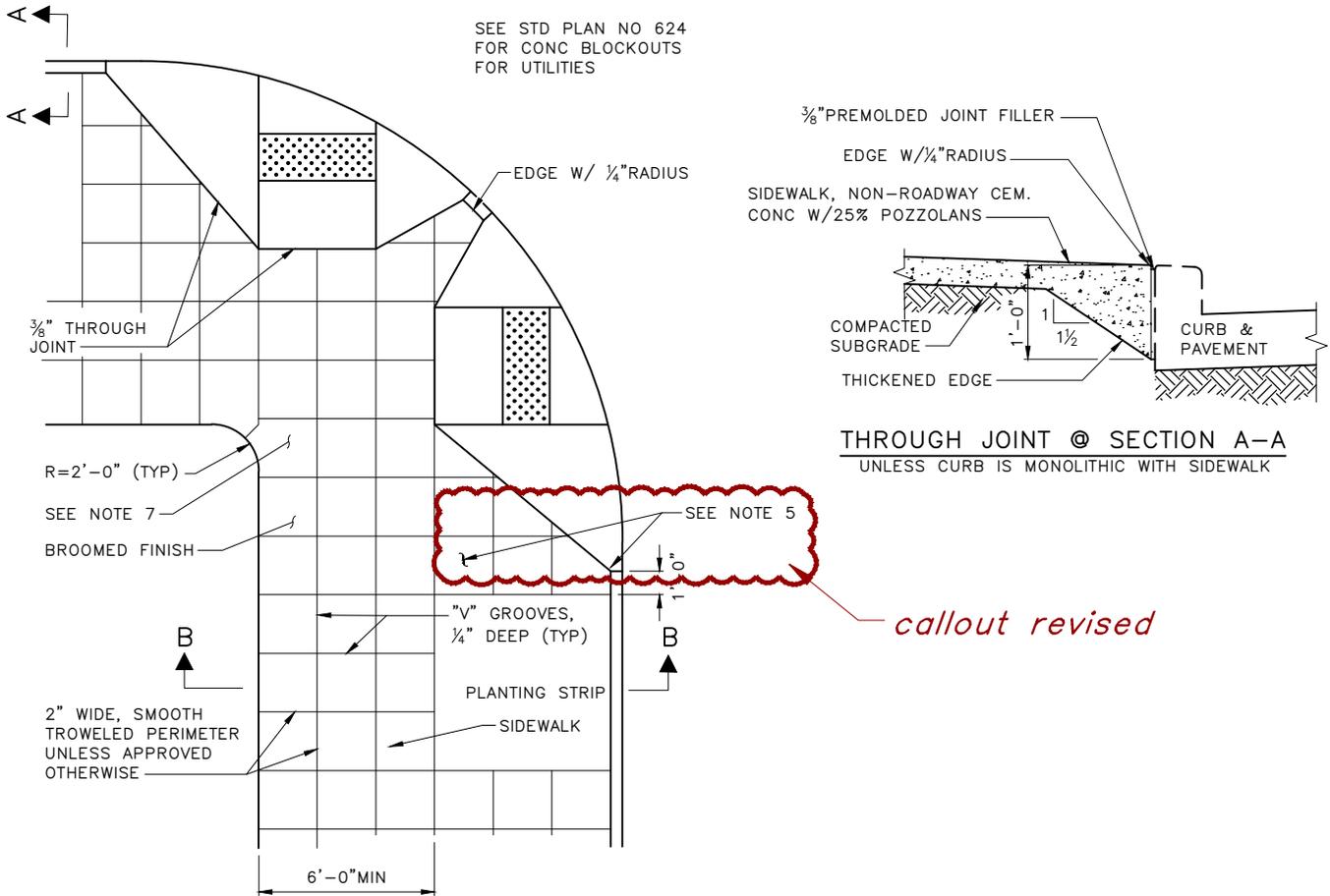
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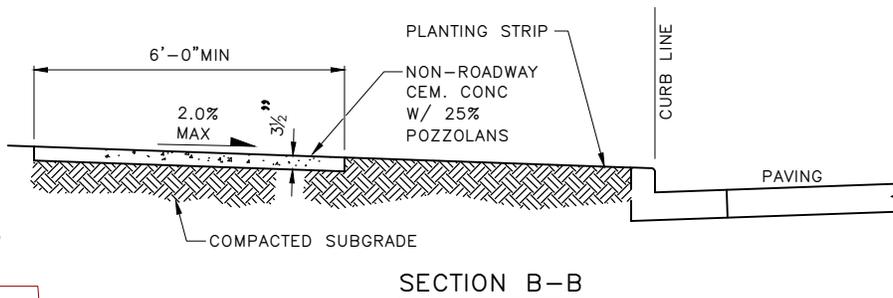
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NOT TO SCALE

FRAME & COVER CEMENT CONCRETE REINFORCEMENT DETAIL



TYPICAL SIDEWALK & CURB RAMP DETAIL



NOTES:

1. 3/8" THROUGH AND CONTRACTION JOINTS MUST BE LOCATED AS REQUIRED BY SECTION 8-14.3(6).
2. SAWCUT SCORING MUST MATCH PATTERN IN ADJACENT EXISTING SIDEWALK OR MUST BE A 2' SQUARE SCORING PATTERN UNLESS OTHERWISE PROVIDED BY THE ENVIRONMENT.
3. FOR CURB RAMPS, SEE STANDARD PLANS 422a TO 422i.
4. FOR TREE PITS, SEE STANDARD PLAN NO 424.
5. PROVIDE 12" MINIMUM BETWEEN EDGE OF RAMP WING AND PLANTING STRIP. AREA BEHIND RAMP WING MUST BE FILLED IN WITH SIDEWALK, AS LANDSCAPING IS NOT ALLOWED.
6. ALL SIDEWALK MUST BE NON-ROADWAY CEM CONC W/ 25% POZZOLANS.
7. 6'-0" MINIMUM CONTINUOUS SIDEWALK MUST BE MAINTAINED AROUND CORNERS.

REF STD SPEC SEC 8-14



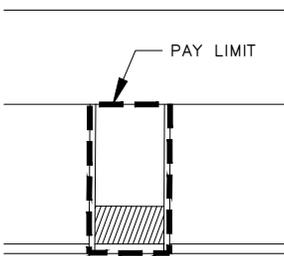
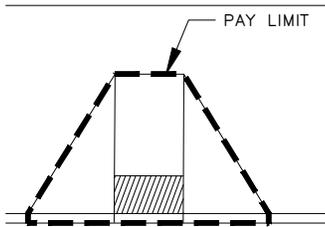
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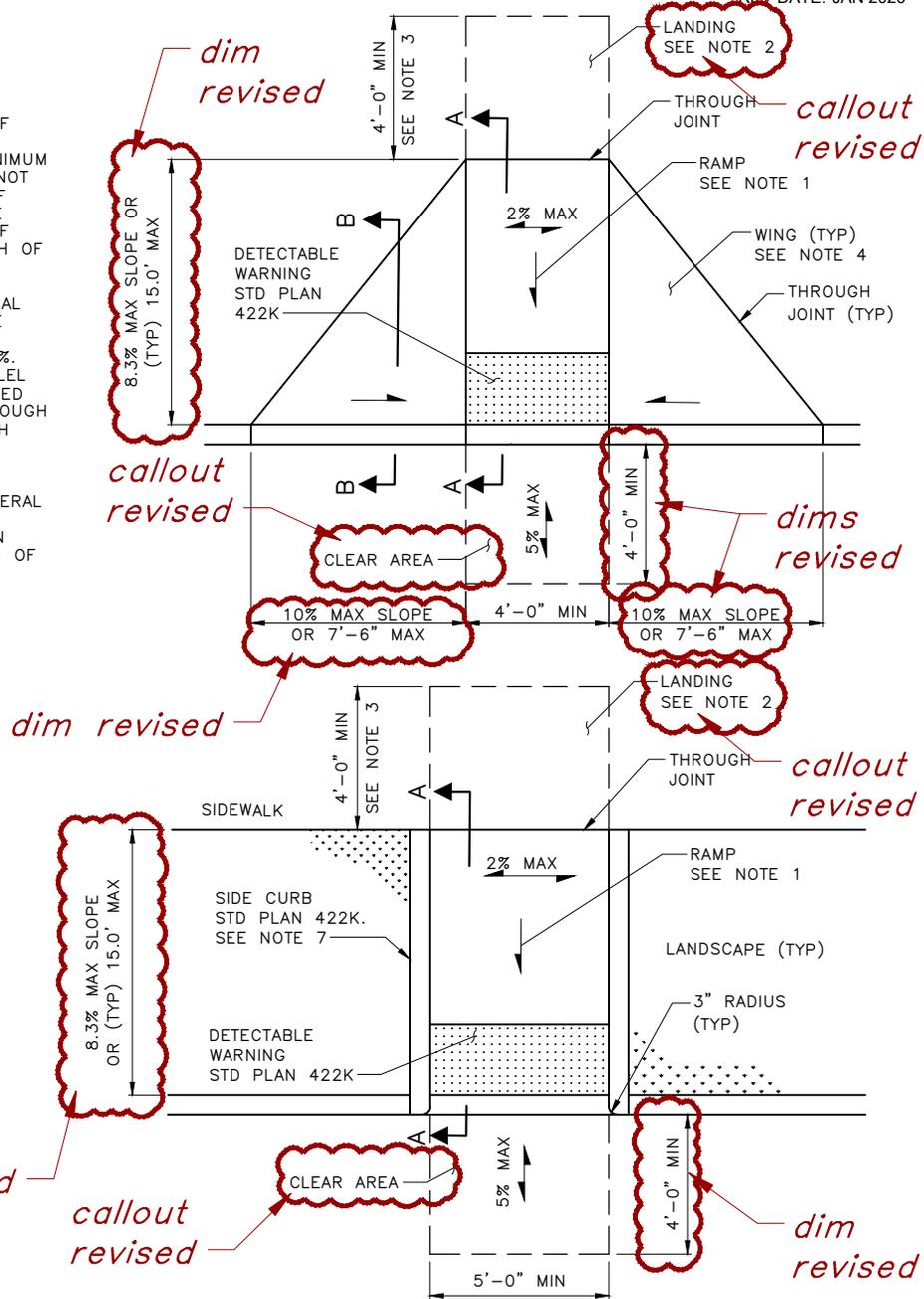
CONCRETE SIDEWALK DETAILS

NOTES:

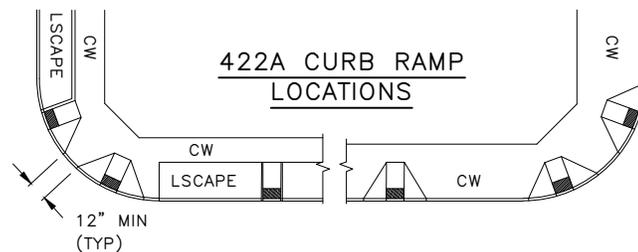
1. RAMP CENTERLINE MUST BE RADIAL/PERPENDICULAR TO THE ALIGNMENT OF THE FACE OF CURB.
2. THE SLOPE ON THE LANDING MUST BE A MINIMUM OF 0.5% IN ANY ONE DIRECTION AND MUST NOT EXCEED 2% IN THE APPLICABLE DIRECTION OF TRAVEL. UPPER LANDING AT THE TOP OF THE CURB RAMP MUST MATCH THE FULL WIDTH OF THE RAMP AND MUST HAVE A MINIMUM DEPTH OF 4'-0".
3. IF THE LANDING IS LIMITED AT THE BACK-OF-SIDEWALK BY A PERMANENT VERTICAL BARRIER, THE DEPTH OF THE TURNING SPACE MUST BE 5'-0" MINIMUM.
4. WINGS MUST HAVE A MAXIMUM SLOPE OF 10%. WINGS MUST HAVE A BRUSHED FINISH PARALLEL TO THE CURB. THE CONCRETE WALK THICKENED EDGE ALONG THE CURB MUST CONTINUE THROUGH EACH WING. WINGS MUST BE MONOLITHIC WITH THE CURB RAMP RUN.
5. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE PARALLEL TO THE CURB.
6. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTIONS.
7. RAMP WIDTH MUST BE 5'-0" MINIMUM WHEN SIDE CURB IS USED ON BOTH SIDES INSTEAD OF WINGS.



PAY LIMITS



PERPENDICULAR CURB RAMPS
(TYPE 422A)



REF STD SPEC SEC 8-14



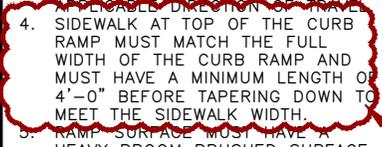
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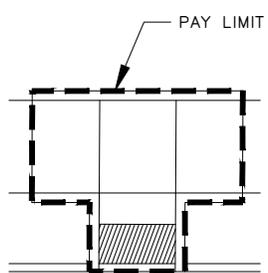
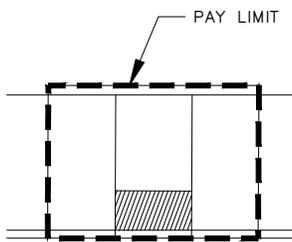
CURB RAMP DETAILS

NOTES:

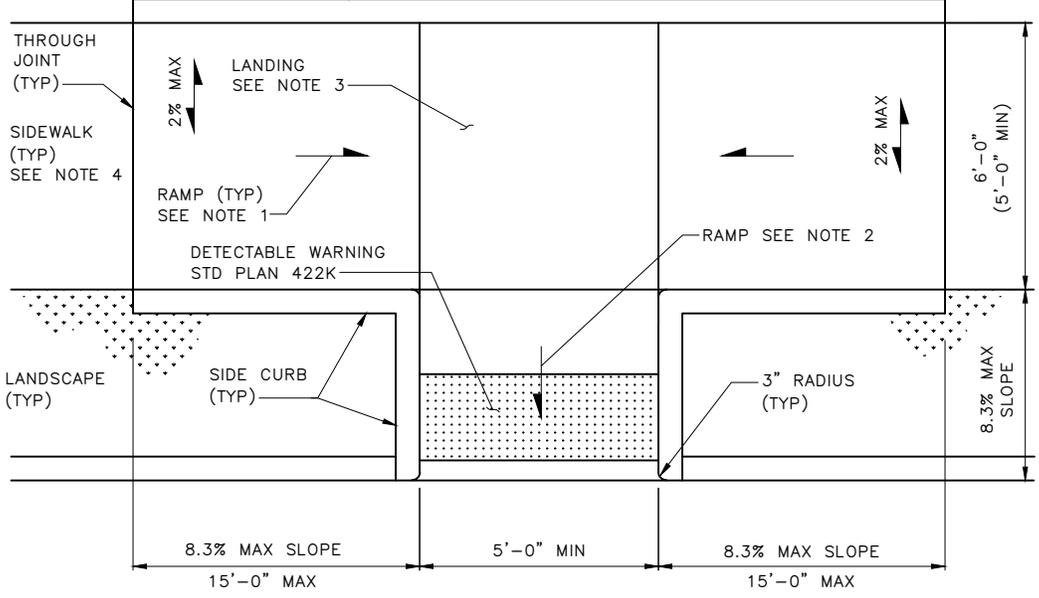
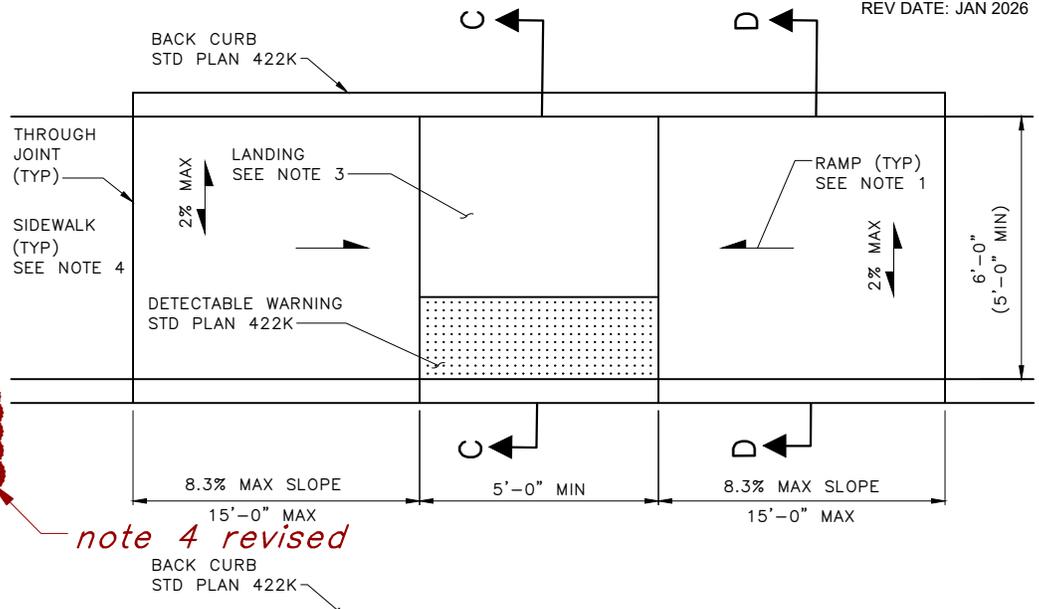
1. RAMP CENTERLINE(S) MUST BE PARALLEL TO THE ALIGNMENT OF THE FACE OF CURB. THE WIDTH OF THE RAMP MUST BE 6'-0" (5'-0" MINIMUM).
2. RAMP CENTERLINE MUST BE RADIAL/PERPENDICULAR TO THE ALIGNMENT OF THE FACE OF CURB.
3. THE SLOPE ON THE LOWER LANDING MUST BE A MINIMUM OF 0.5% IN ANY ONE DIRECTION AND MUST NOT EXCEED 2% IN THE APPLICABLE DIRECTION OF TRAVEL.
4. SIDEWALK AT TOP OF THE CURB RAMP MUST MATCH THE FULL WIDTH OF THE CURB RAMP AND MUST HAVE A MINIMUM LENGTH OF 4'-0" BEFORE TAPERING DOWN TO MEET THE SIDEWALK WIDTH.
5. RAMP SURFACE MUST HAVE HEAVY BROOM BRUSHED SURFACE RADIAL/PERPENDICULAR TO THE CURB.
6. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTIONS.



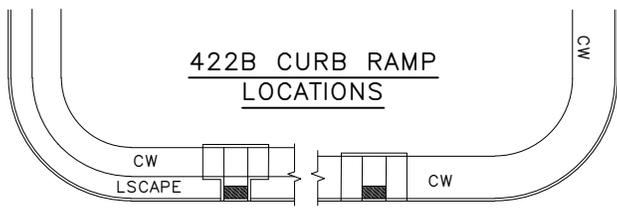
note 4 revised



PAY LIMITS



PARALLEL CURB RAMPS
(TYPE 422B)



REF STD SPEC SEC 8-14



City of Seattle

NOT TO SCALE

CURB RAMP DETAILS

NOTES:

1. RAMP CENTERLINE MUST BE PARALLEL TO THE ALIGNMENT OF THE FACE OF CURB. THE WIDTH OF THE RAMP MUST BE 6'-0" (5'-0" MINIMUM).
2. THE SLOPE ON THE LOWER LANDING MUST BE A MINIMUM OF 0.5% IN ANY ONE DIRECTION AND MUST NOT EXCEED 2% IN THE APPLICABLE DIRECTION OF TRAVEL.
3. SIDEWALK AT TOP OF THE CURB RAMP MUST MATCH THE FULL WIDTH OF THE CURB RAMP AND MUST HAVE A MINIMUM LENGTH OF 4'-0" BEFORE TAPERING DOWN TO MEET THE SIDEWALK WIDTH.
4. RADIAL TILE MUST BE USED, CUTTING OR ALTERING DETECTABLE WARNING SURFACES MUST BE FIRST APPROVED BY THE ENGINEER.
5. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE, RADIAL/PERPENDICULAR TO THE CURB.
6. REFER TO DETAILS 422K AND 422I FOR GENERAL NOTES AND TYPICAL SECTIONS.

2% MAX
 = MAX SLOPE IN EITHER DIRECTION

note 3 revised

dim removed

circle and dim added

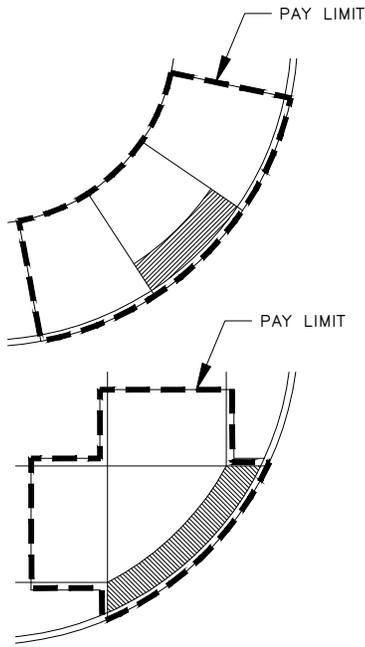
circle and dim added

callouts revised

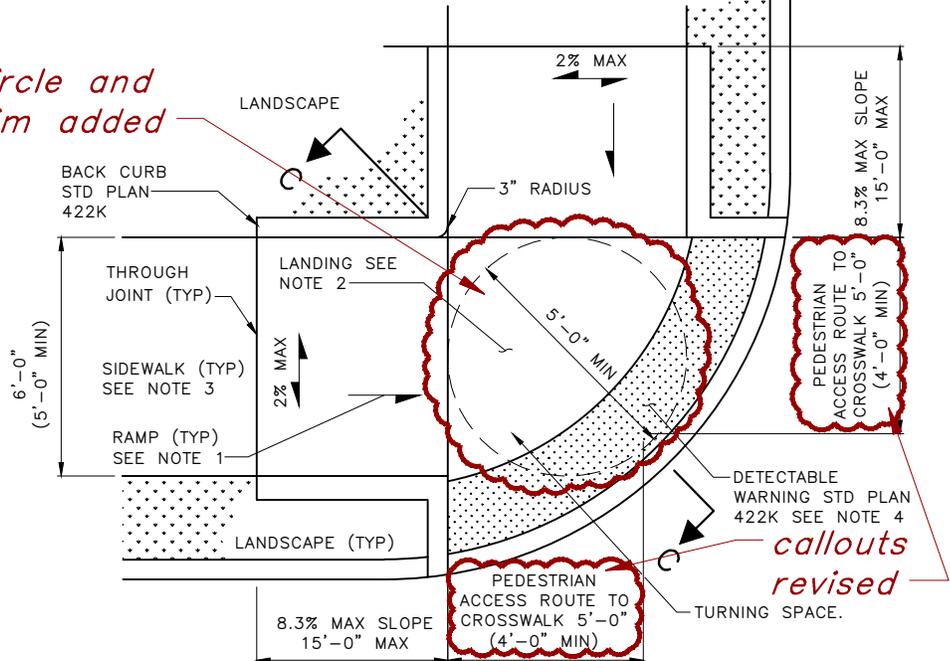
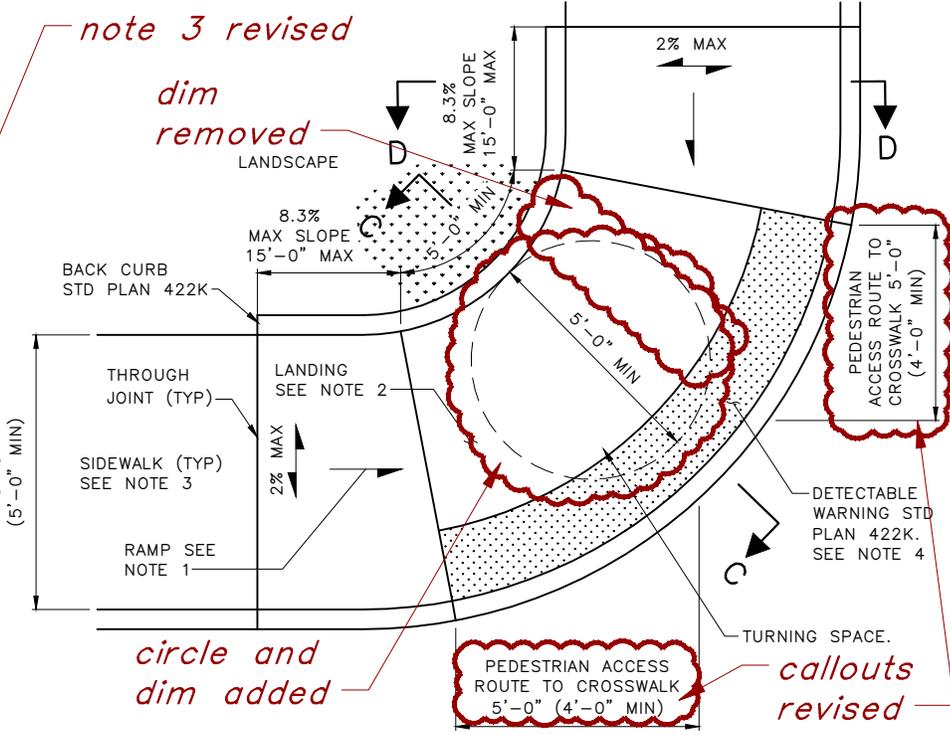
callouts revised

circle and dim added

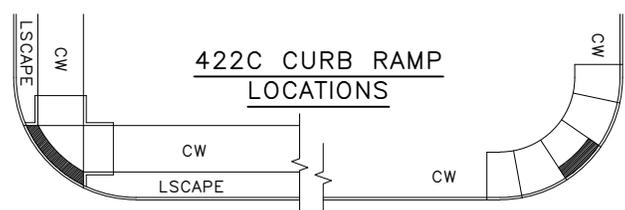
callouts revised



PAY LIMITS



PARALLEL CURB RAMPS (CORNER)
(TYPE 422C)



REF STD SPEC SEC 8-14



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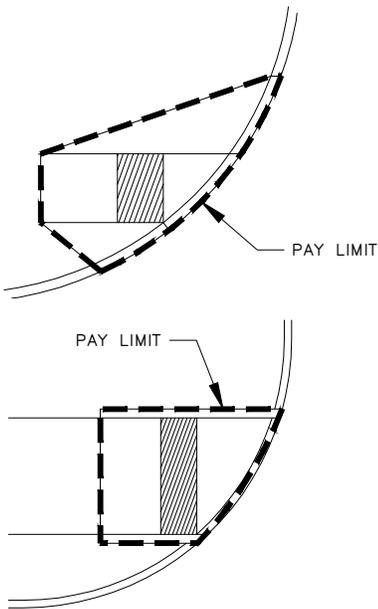
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CURB RAMP DETAILS

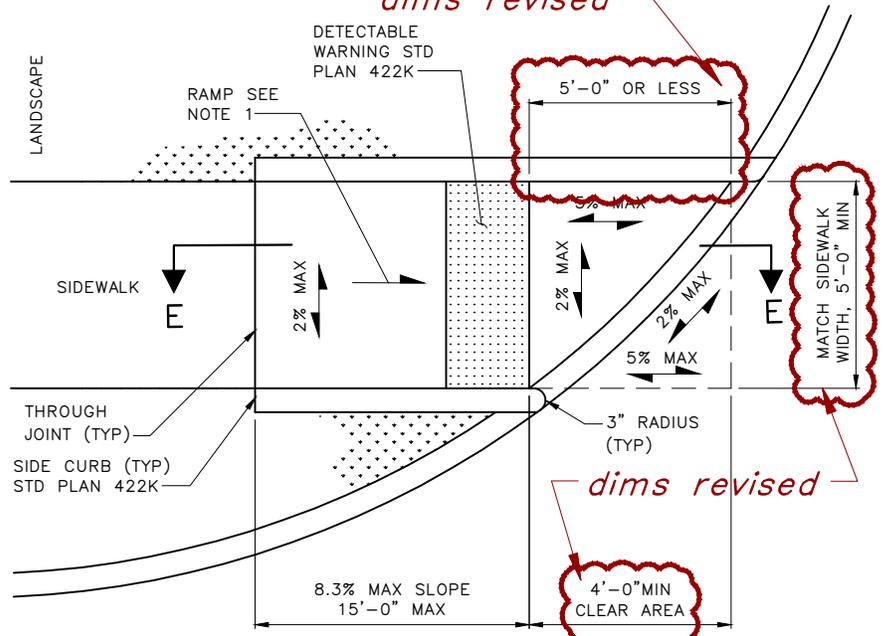
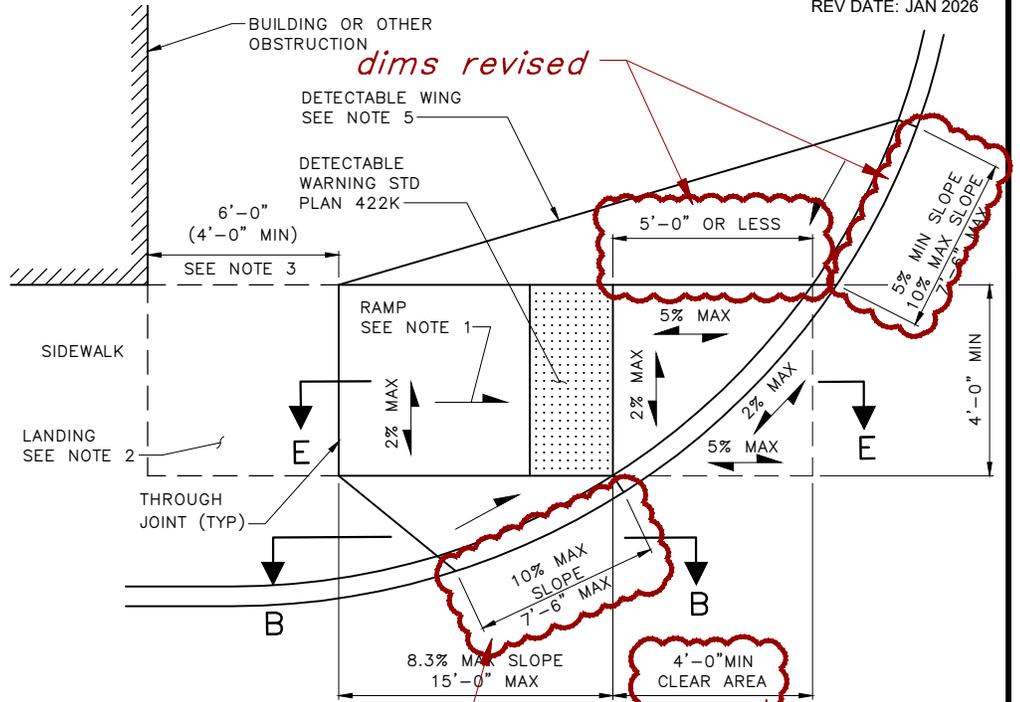
NOTES:

1. RAMP CENTERLINE MUST BE PARALLEL TO CROSSWALK AND/OR THE SIDEWALK.
2. THE SLOPE ON THE LANDING MUST BE A MINIMUM OF 0.5% IN ANY ONE DIRECTION AND MUST NOT EXCEED 2% IN THE APPLICABLE DIRECTION OF TRAVEL. UPPER LANDING AT THE TOP OF THE CURB RAMP MUST MATCH THE FULL WIDTH OF THE RAMP AND MUST HAVE A MINIMUM DEPTH OF 4'-0".
3. IF THE LANDING IS LIMITED AT THE BACK-OF-SIDEWALK BY A PERMANENT VERTICAL BARRIER, THE DEPTH OF THE TURNING SPACE MUST BE 5'-0" MINIMUM, MEASURED PARALLEL TO THE RUN OF THE CURB RAMP.
4. WINGS MUST HAVE A MAXIMUM SLOPE OF 10%. WINGS MUST HAVE A BRUSHED FINISH PARALLEL TO THE CURB. THE CONCRETE WALK THICKENED EDGE ALONG THE CURB MUST CONTINUE THROUGH EACH WING. WINGS MUST BE MONOLITHIC WITH THE CURB RAMP RUN.
5. WING ON THE OPEN SIDE OF THE CURB RAMP MUST HAVE A MINIMUM SLOPE OF 5% TO ASSIST PEDESTRIANS WITH VISUAL IMPAIRMENTS WHERE THE DETECTABLE WARNING SURFACE IS OFFSET FROM THE CURB LINE.
6. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED FINISH PERPENDICULAR TO THE PATH OF TRAVEL.
7. REFER TO DETAILS 422k AND 422l FOR GENERAL NOTES AND TYPICAL SECTIONS.

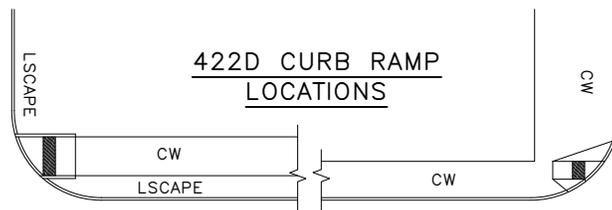
2% MAX
 = MAX SLOPE IN EITHER DIRECTION



PAY LIMITS



DIRECTIONAL CURB RAMPS
 (TYPE 422D)



422D CURB RAMP
 LOCATIONS

REF STD SPEC SEC 8-14



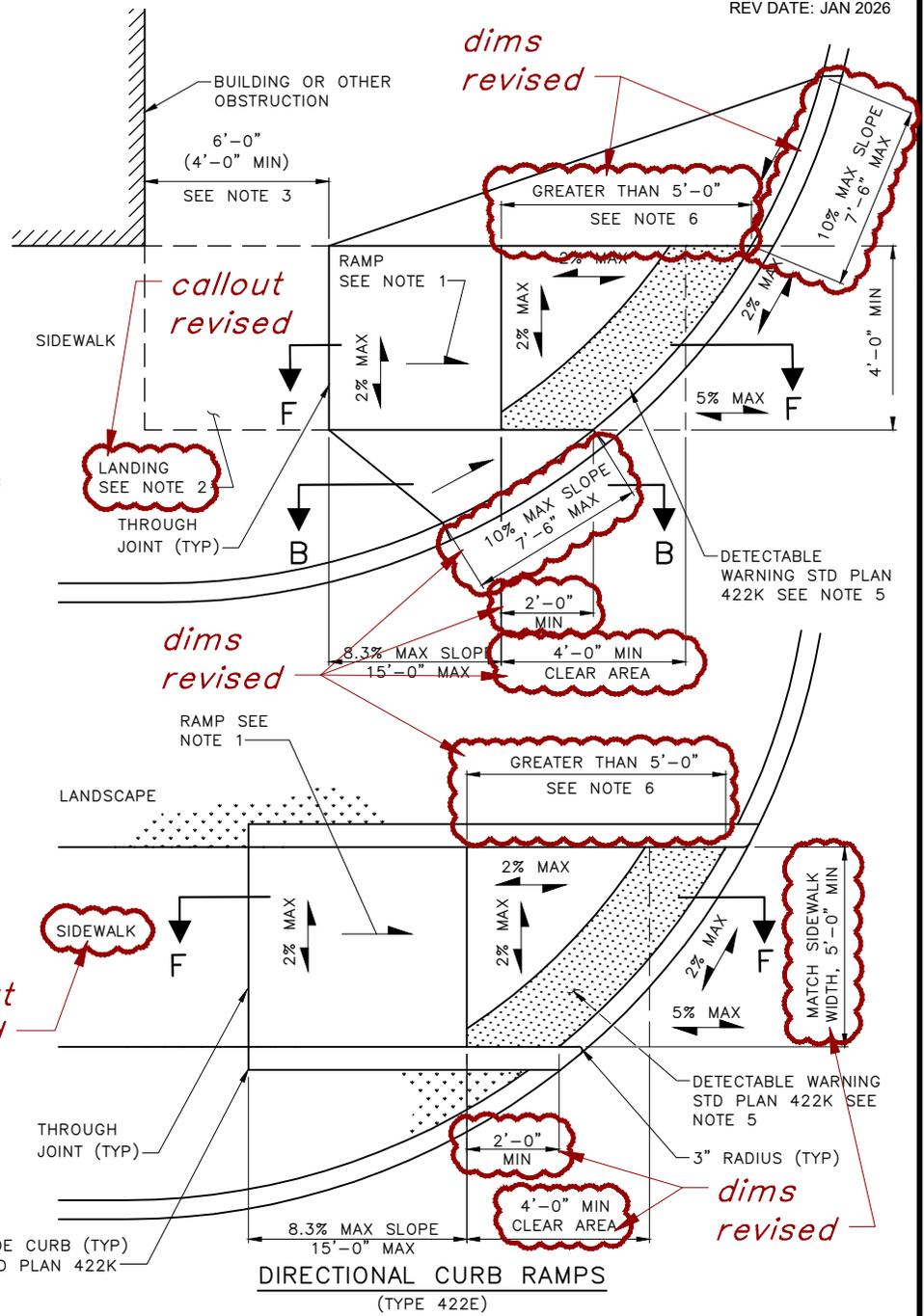
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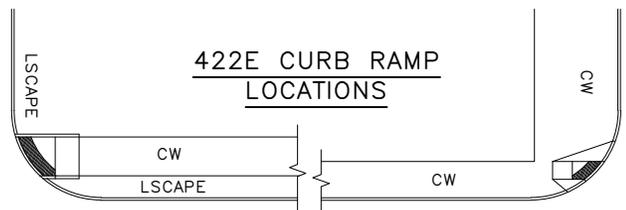
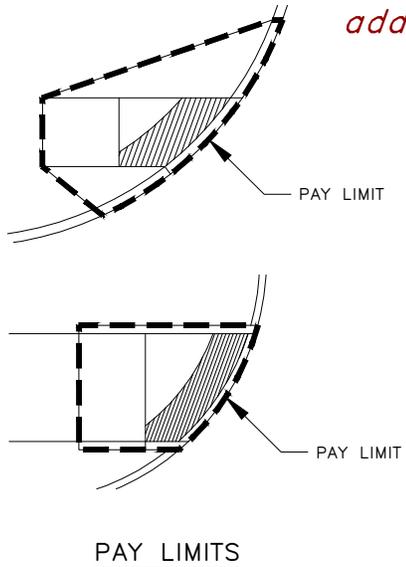
CURB RAMP DETAILS

NOTES:

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



2% MAX
= MAX SLOPE IN EITHER DIRECTION



REF STD SPEC SEC 8-14



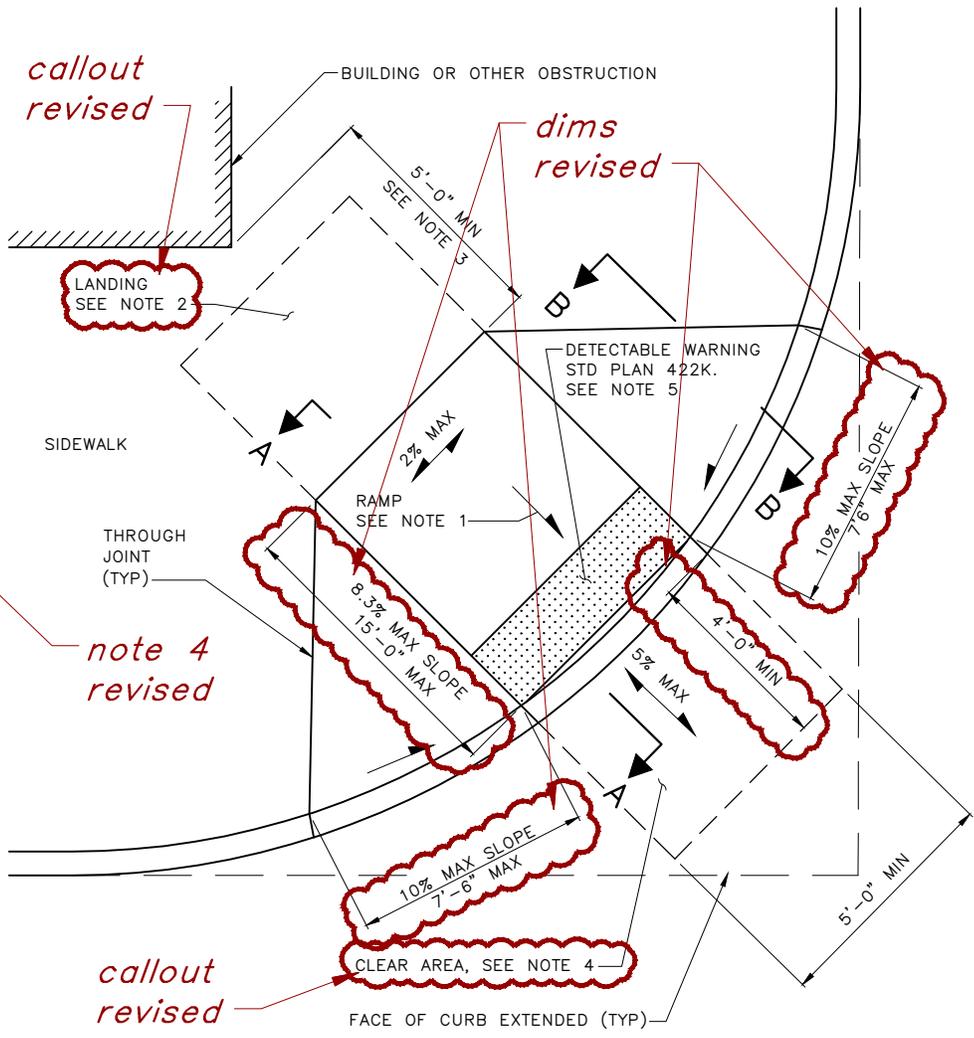
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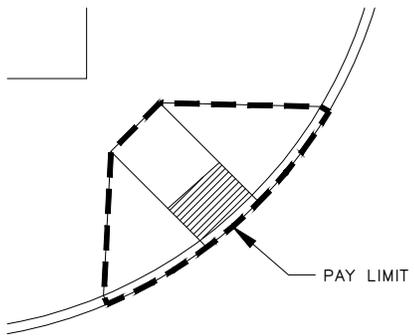
CURB RAMP DETAILS

NOTES:

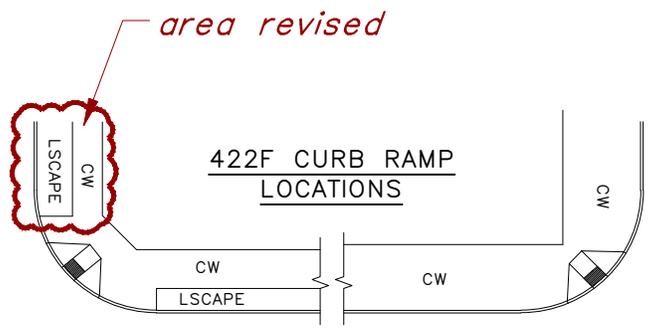
1. RAMP CENTERLINE MUST BE RADIAL/PERPENDICULAR TO THE ALIGNMENT OF THE FACE OF CURB.
2. THE SLOPE ON THE LANDING MUST BE A MINIMUM OF 0.5% IN ANY ONE DIRECTION AND MUST NOT EXCEED 2% IN THE APPLICABLE DIRECTION OF TRAVEL. UPPER LANDING AT THE TOP OF THE CURB RAMP MUST MATCH THE FULL WIDTH OF THE RAMP AND MUST HAVE A MINIMUM DEPTH OF 4'-0".
3. IF THE LANDING IS LIMITED AT THE BACK-OF-SIDEWALK BY A PERMANENT VERTICAL BARRIER, THE DEPTH OF THE TURNING SPACE MUST BE 5'-0" MINIMUM, MEASURED PARALLEL TO THE CURB OF THE CURB RAMP.
4. CLEAR AREA AT THE BOTTOM OF THE RAMP MUST BE 5'-0" MINIMUM IN WIDTH AND MUST EXTEND A MINIMUM OF 4'-0" BEYOND THE RAMP LOWER GRADE BREAK. THE CLEAR AREA MUST FALL WHOLLY WITHIN THE LEGAL CROSSWALK, MARKED OR UNMARKED. THE CLEAR AREA MUST FIT BEHIND LINES EXTENDING FROM THE FACE OF CURB RUNNING PARALLEL TO EACH ROADWAY. THERE IS NO ALLOWABLE EXEMPTION FOR MINIMUM CLEAR SPACE REQUIREMENTS AT SHARED DIAGONAL PERPENDICULAR CURB RAMP.
5. DETECTABLE WARNING SURFACE MUST BE 8" MAXIMUM FROM FACE OF CURB.
6. WINGS MUST HAVE A MAXIMUM SLOPE OF 10%. WINGS MUST HAVE A BRUSHED FINISH PARALLEL TO THE CURB. THE CONCRETE WALK THICKENED EDGE ALONG THE CURB MUST CONTINUE THROUGH EACH WING. WINGS MUST BE MONOLITHIC WITH THE CURB RAMP RUN.
7. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE PARALLEL TO THE CURB.
8. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTIONS.



2% MAX
= MAX SLOPE IN EITHER DIRECTION



SHARED DIAGONAL PERPENDICULAR CURB RAMP
(TYPE 422F)



REF STD SPEC SEC 8-14



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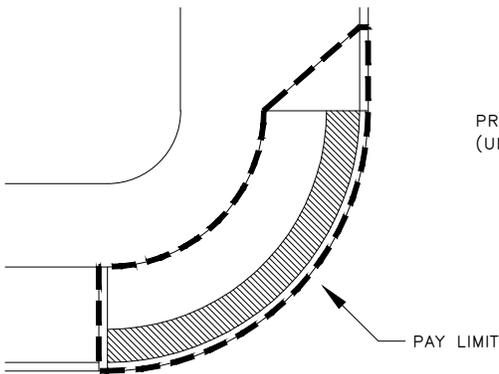
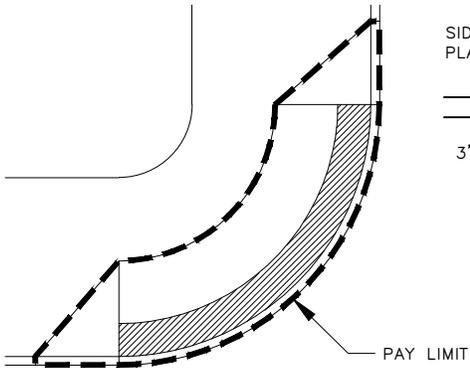
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CURB RAMP DETAILS

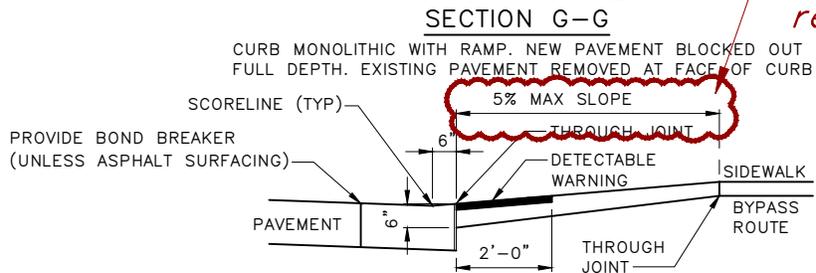
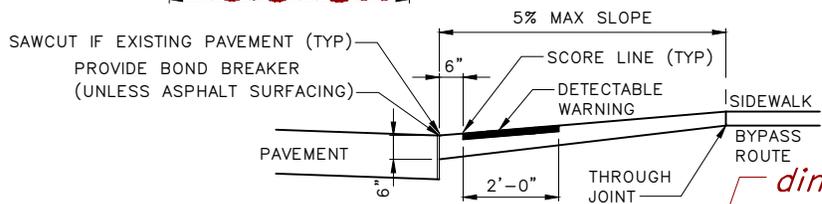
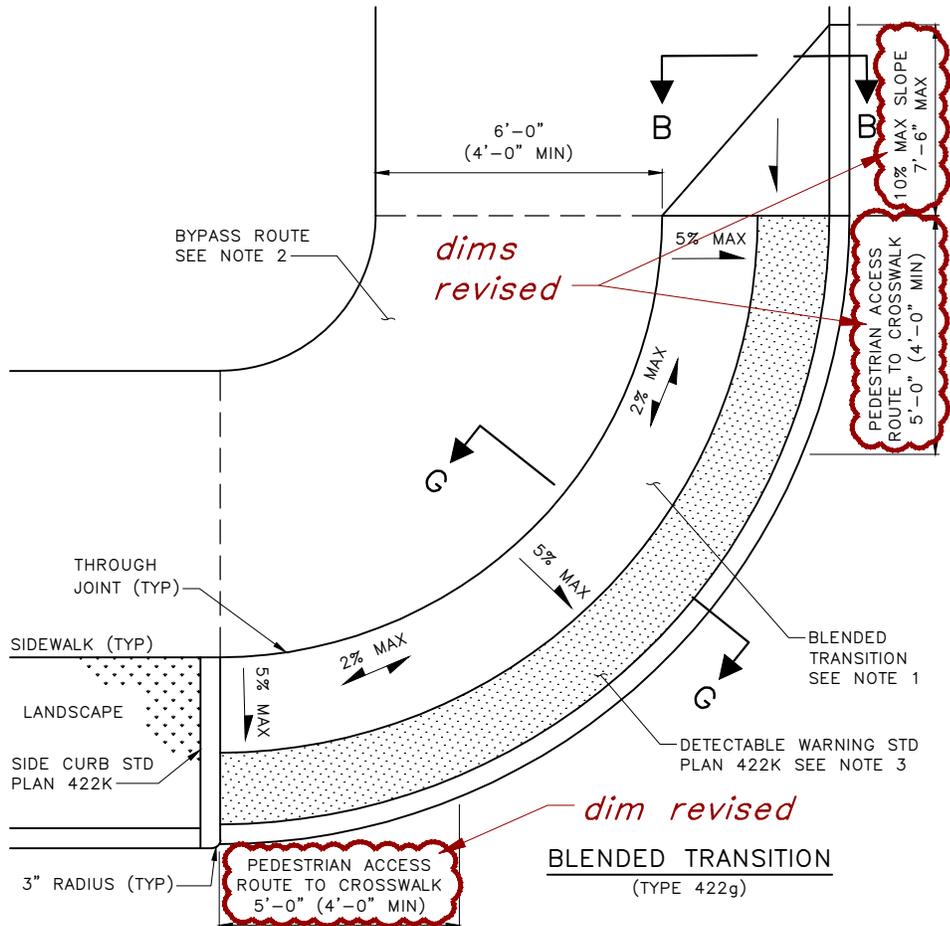
NOTES:

1. THE SIDEWALK MUST TRANSITION DOWN TO THE ROADWAY WITH A MAXIMUM RUNNING SLOPE OF 5%. THE CROSS SLOPE ON THE TRANSITION MUST NOT EXCEED 2% AT ANY POINT.
2. A BYPASS ROUTE MUST BE PROVIDED AT THE TOP OF THE BLENDED TRANSITION WITH A MINIMUM WIDTH OF 6'-0" (4'-0" MIN). THE CROSS SLOPE OF THE BYPASS ROUTE MUST BE A MINIMUM OF 0.5% IN ANY DIRECTION AND MUST NOT EXCEED 2% IN THE APPLICABLE DIRECTION OF TRAVEL.
3. RADIAL TILE MUST BE USED, CUTTING OR ALTERING DETECTABLE WARNING SURFACES MUST BE FIRST APPROVED BY THE ENGINEER.
4. WINGS MUST HAVE A MAXIMUM SLOPE OF 10%. WINGS MUST HAVE A BRUSHED FINISH PARALLEL TO THE CURB. THE CONCRETE WALK THICKENED EDGE ALONG THE CURB MUST CONTINUE THROUGH EACH WING. WINGS MUST BE MONOLITHIC WITH THE CURB RAMP RUN.
5. BLENDED TRANSITION SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE RADIAL/PERPENDICULAR TO THE CURB.
6. REFER TO DETAILS 422K AND 422L FOR GENERAL NOTES AND TYPICAL SECTION B.

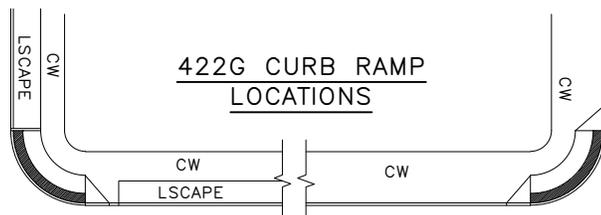
2% MAX
 = MAX SLOPE IN EITHER DIRECTION



PAY LIMITS



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



REF STD SPEC SEC 8-14



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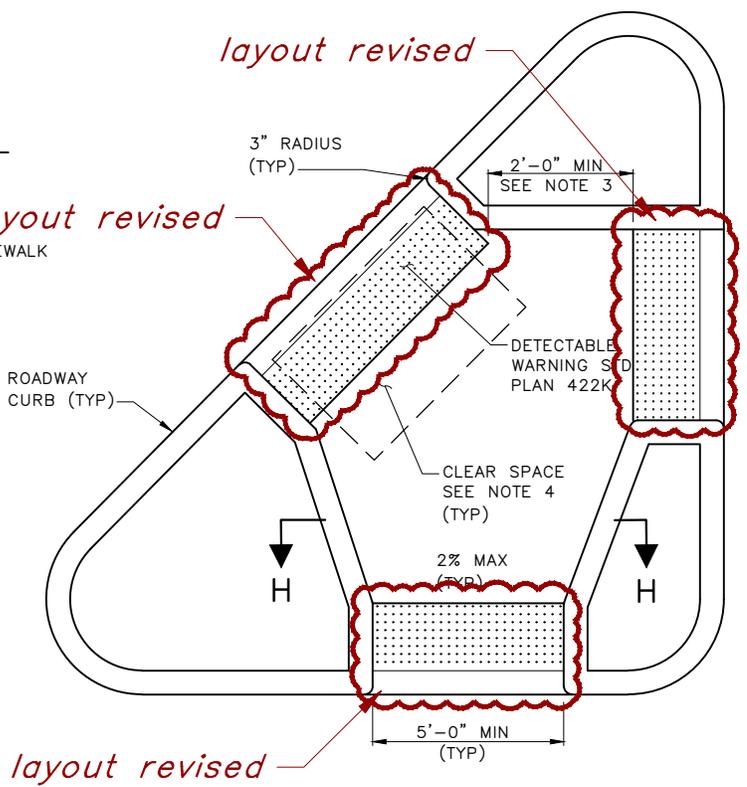
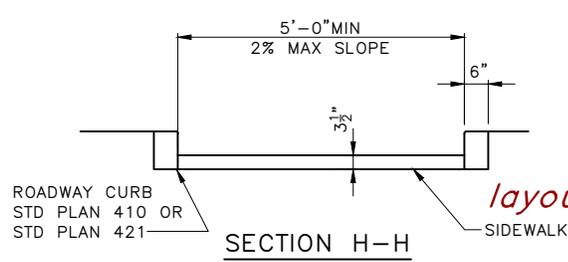
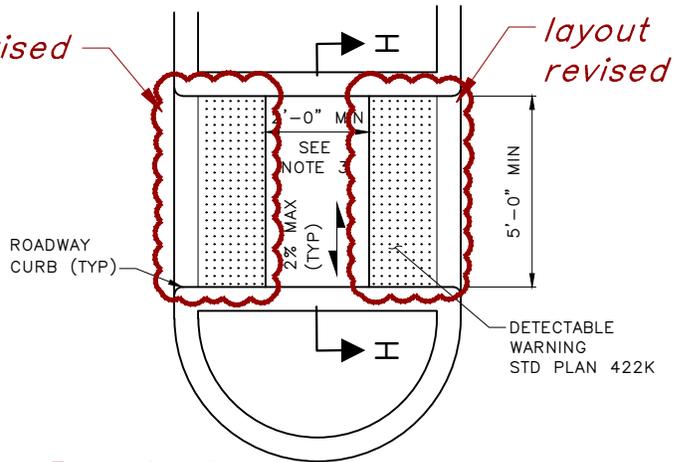
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CURB RAMP DETAILS

NOTES:

1. SIZE, SHAPE, AND/OR DIMENSIONS OF CHANNELIZING ISLANDS OR PEDESTRIAN REFUGE ISLANDS MAY VARY. DETAILS SHOWN ARE INTENDED TO SHOW MINIMUM REQUIRED CLEARANCES AND DETECTABLE WARNING SURFACE PLACEMENT LOCATIONS.
2. ACCESS THROUGH CHANNELIZING ISLANDS OR PEDESTRIAN REFUGE ISLANDS MAY BE PROVIDED USING STANDARD CONCRETE BARRIERS.
3. AT PEDESTRIAN REFUGE ISLANDS, DETECTABLE WARNING MUST NOT BE INSTALLED IF THE 2'-0" MINIMUM SEPARATION IN THE DIRECTION OF PEDESTRIAN TRAVEL BETWEEN DETECTABLE WARNING CANNOT BE PROVIDED.
4. PROVIDE A MINIMUM 6" DEPTH CLEAR SPACE FOR ACCESS FROM THE CHANNELIZING ISLAND OR PEDESTRIAN REFUGE ISLAND FOR EACH CROSSWALK.

2% MAX
 MAX SLOPE IN EITHER DIRECTION



ISLAND CUT-THROUGHS
(TYPE 422H)

title revised

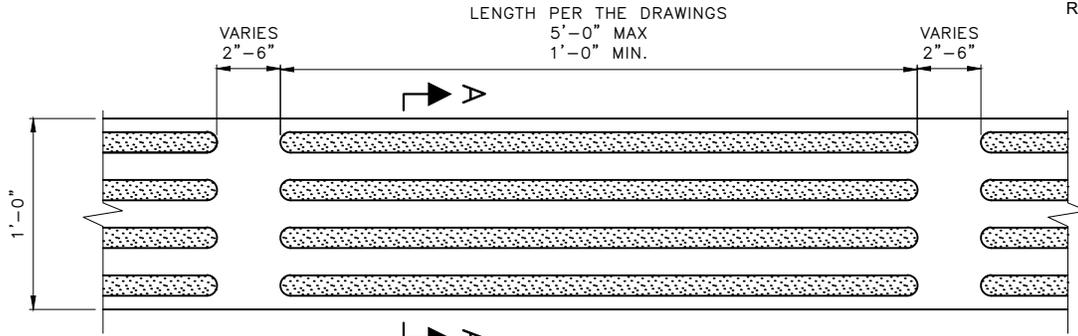
PEDESTRIAN REFUGE ISLAND DETAILS

REF STD SPEC SEC 8-14

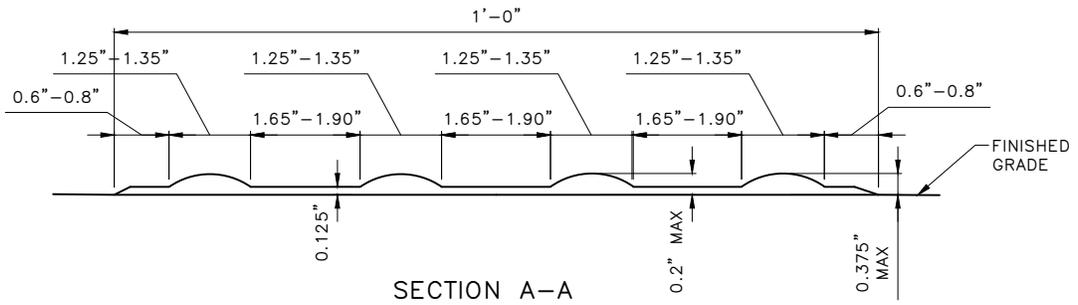


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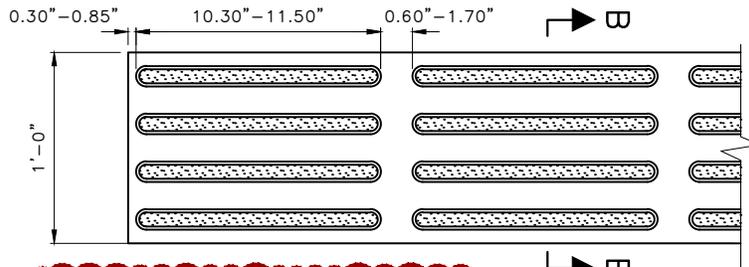
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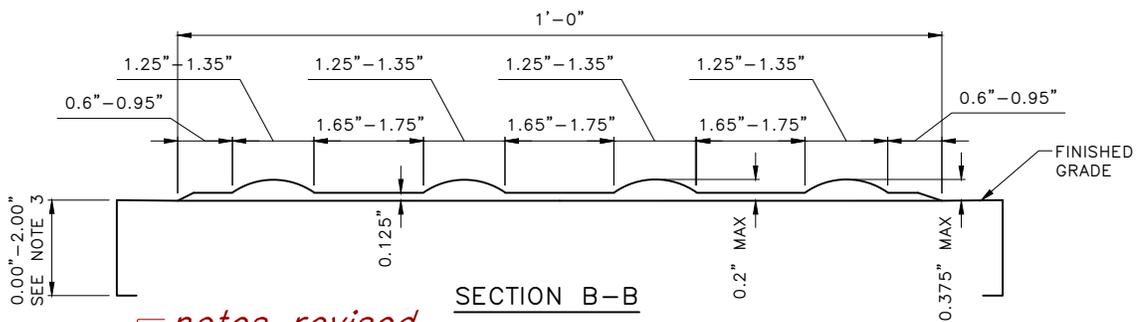
title changed — TACTILE DIRECTIONAL INDICATOR — SURFACE APPLIED



SECTION A-A



title changed — TACTILE DIRECTIONAL INDICATOR — CAST-IN-PLACE



SECTION B-B

notes revised

- NOTES:**
1. STRIP CENTERLINE MUST BE PARALLEL TO THE ALIGNMENT OF THE PEDESTRIAN ACCESS ROUTE.
 2. METHYL METHACRYLATE (MMA) TACTILE DIRECTIONAL INDICATOR MUST COMPLY WITH ALL THE DIMENSIONS RANGES SHOWN ON THIS STANDARD PLAN FOR SURFACE APPLIED, AND MUST BE APPROVED BY THE ENGINEER.
 3. PLASTIC SURFACE MOUNT TACTILE DIRECTIONAL INDICATOR MAY BE USED IN LIEU OF CAST-IN-PLACE IF APPROVED BY THE ENGINEER.

REF STD SPEC SEC 8-14, 9-36



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title changed
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TACTILE DIRECTIONAL INDICATORS

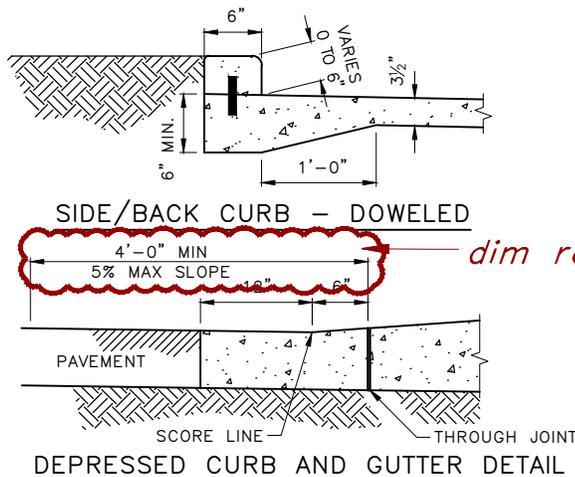
CURB RAMP GENERAL NOTES:

1. TWO CURB RAMPS MUST BE INSTALLED AT EACH CORNER UNLESS OTHERWISE DIRECTED BY ENGINEER. SHARED DIAGONAL PERPENDICULAR RAMPS MUST NOT BE INSTALLED UNLESS ALL OTHER DESIGN OPTIONS ARE UNABLE TO BE CONSTRUCTED DUE TO EXISTING SITE CONSTRAINTS.
2. CURB RAMPS MUST BE AS CLOSELY ALIGNED WITH THE SIDEWALK AND THE PEDESTRIAN STREET CROSSING SERVED AS POSSIBLE.
3. CURB RAMP MUST BE CONSTRUCTED WITH COMPANION RAMP ON OPPOSITE SIDE OF THE ROADWAY WHERE NO RAMP IS PROVIDED UNLESS OTHERWISE DIRECTED BY ENGINEER.
4. CURB RAMPS MUST HAVE A MAXIMUM RUNNING SLOPE OF 8.3% AND A MINIMUM WIDTH OF 4'-0". THE CROSS SLOPE OF CURB RAMPS MUST BE A MAXIMUM OF 2%. CURB RAMPS ARE NOT REQUIRED TO EXCEED A LENGTH OF 15'.
5. GRADE BREAKS AT THE TOP AND THE BOTTOM OF CURB RAMP RUNS MUST BE PERPENDICULAR TO THE PATH OF TRAVEL. CURB RAMP RUNS ARE DEFINED BY RUNNING SLOPES THAT EXCEED 5% BUT ARE NO MORE THAN 8.3%. SURFACES ABUTTING AT CURB RAMP GRADE BREAKS MUST BE FLUSH. AREAS ADJACENT TO CURB RAMPS OR CURB RAMP LANDINGS USABLE BY PEDESTRIANS MUST COMPLY WITH STANDARD PLAN SIDEWALK SLOPE LIMITS OR A CURB RAMP WING MUST BE PROVIDED AS SHOWN IN THE APPLICABLE CURB RAMP DETAILS. THE INSTALLATION OF CURBED EDGES MAY BE USED AT THE SIDES OR BACKS OF CURB RAMPS OR CURB RAMP LANDING WHERE THE ADJACENT SURFACE IS LANDSCAPED OR OTHERWISE NOT USABLE BY PEDESTRIANS.
6. THE COUNTER SLOPE OF THE GUTTER OR THE STREET AT THE BOTTOM OF CURB RAMP RUNS MUST BE 5% MAXIMUM. IF TURNING OR CHANGE OF ORIENTATION IS REQUIRED WITHIN THE PEDESTRIAN CROSSING AT THE BOTTOM OF CURB RAMP RUNS, THE SLOPE MUST BE 2% MAXIMUM IN ANY DIRECTION FOR A MINIMUM 4'-0" WIDTH X 4'-0" DEPTH MEASURED FROM THE RAMP BOTTOM GRADE BREAK.
7. CURB RAMPS WITH RUNS THAT TERMINATE AT THE ENTRANCE TO THE PEDESTRIAN STREET CROSSING MUST HAVE A CLEAR AREA AT THE BOTTOM OF THE RAMP. "CLEAR AREA" IS DEFINED AS A NAVIGABLE 4'-0" BY 4'-0" SPACE, EXTENDING FROM THE RAMP LOWER GRADE BREAK, THAT FALLS WHOLLY WITHIN THE LEGAL CROSSWALK, MARKED OR UNMARKED, AND OUTSIDE THE PARALLEL VEHICULAR TRAVEL LANE.
8. A 4'-0" MINIMUM WIDTH UNOBSTRUCTED PEDESTRIAN ACCESS ROUTE MUST BE PROVIDED FROM EACH CURB RAMP, BLENDED TRANSITION, OR FLUSH TRANSITION TO THE LEGAL CROSSWALK THAT IS SERVED, MARKED OR UNMARKED, AND LOCATED OUTSIDE THE PARALLEL VERTICAL TRAFFIC LANE.
9. DETECTABLE WARNING MUST BE PROVIDED AT CURB RAMPS AND AT LOCATIONS WHERE THE SIDEWALK AND ROADWAY ARE FLUSH. THE DETECTABLE WARNING SURFACE MUST HAVE A TRUNCATED DOME PATTERN AS SHOWN, WITH A MINIMUM DEPTH OF 2'-0", AND MUST BE PLACED AT THE BACK OF CURB BUT NO MORE THAN 8" FROM THE FACE OF CURB FOR MONOLITHIC CURBS OR ATYPICAL CURB WIDTHS. DETECTABLE WARNING MUST MATCH THE WIDTH OF THE RAMP RUN OR THE OPENING WHERE THE SIDEWALK AND ROADWAY ARE FLUSH. THE TRUNCATED DOMES ON THE DETECTABLE WARNING SURFACE SHOULD ALIGN WITH THE CURB RAMP RUN OR THE DIRECTION OF TRAVEL. DOMES MAY BE ON A RADIAL GRID PATTERN WHERE RADIAL DETECTABLE WARNING SURFACE IS PLACED AT CURB RADII.
10. DETECTABLE WARNING COLOR MUST BE "FEDERAL SAFETY YELLOW", UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
11. DETECTABLE WARNING SURFACES MUST NOT BE CUT OR ALTERED TO FIT UNLESS OTHERWISE DIRECTED BY THE ENGINEER. IT APPROVED, CUT OR ALTER THE DETECTABLE WARNING SURFACE PER THE MANUFACTURER'S DIRECTIONS. DETECTABLE WARNING SURFACES PLACED AT CURB RADII MUST MATCH THE CURB RADII WITHOUT GAPS OR INCONSISTENCIES IN PLACEMENT.
12. HANDHOLES, UTILITY CASTINGS, OR ANY OTHER SURFACE OBSTRUCTIONS MUST NOT BE INSTALLED IN THE CURB RAMP RUN(S) OR LANDING(S) UNLESS OTHERWISE DIRECTED BY THE ENGINEER. IF NECESSARY DUE TO EXISTING CONSTRAINTS, HANDHOLES, UTILITY CASTINGS, OR OTHER SURFACE OBSTRUCTIONS MAY BE LOCATED WITHIN A RAMP RUN, LANDING, OR TURNING SPACE BUT MUST ADHERE TO SURFACE REQUIREMENTS. LEVEL CHANGES BETWEEN SURFACES MUST NOT EXCEED 1/4" OR 1/2" WITH A 1:2 BEVEL. GAPS BETWEEN SURFACES OR GRATINGS MAY NOT EXCEED 1/2". SURFACES MUST BE FIRM, STABLE, AND SLIP RESISTANT.
13. HANDHOLES, UTILITY CASTINGS, OR OTHER SURFACE OBSTRUCTIONS MUST NOT REDUCE THE REQUIRED DEPTH OF DETECTABLE WARNING.
14. POLES, HYDRANTS AND OTHER ABOVE GROUND OBSTRUCTIONS MUST HAVE A MINIMUM LATERAL CLEARANCE OF 1'-0" FROM RAMP RUN(S) OR LANDING(S). EXCEPT FOR PUSHBUTTON POSTS.
15. ALL CHANGES IN LEVEL ACROSS JOINTS MUST BE FLUSH. ANY DIFFERENCE IN ELEVATION OF 3/16 INCH OR GREATER MUST BE REPAIRED OR REPLACED.
16. CURB RAMPS ARE DESIGNED TO ENSURE THAT WATER DOES NOT ACCUMULATE ON RAMP SURFACES AND IN FRONT OF THE CURB RAMP WHERE IT IS FLUSH WITH THE ROADWAY. THE CONTRACTOR MUST CHECK GRADE LINES AND GUTTER FLOW LINE PRIOR TO CONSTRUCTION. IF THE CHECK REVEALS THAT SITE CONDITIONS WOULD RESULT IN PONDING, OR WOULD CONFLICT WITH OBTAINING THE GRADES AT THE BOTTOM OF CURB RAMPS OR AT CURB RAMP LOWER LANDINGS AS SHOWN ON THE DRAWINGS OR PLANS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY AND STOP WORK ON THE CURB RAMP UNTIL DIRECTED TO CONTINUE BY THE ENGINEER.
17. DESIGN GUIDANCE: TO THE EXTENT FEASIBLE, USE 7.5% MAX FOR CURB RAMP RUNNING SLOPES IN STD PLANS 422a-422f, 4.5% MAX FOR BLENDED TRANSITIONS IN STD PLAN 422g, AND 1.5% MAX SLOPES FOR ALL LANDINGS.

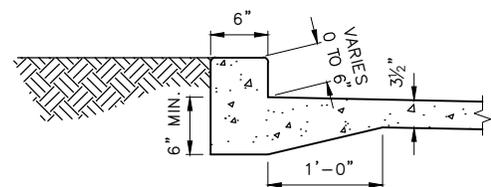
note 4 revised

note 18 added

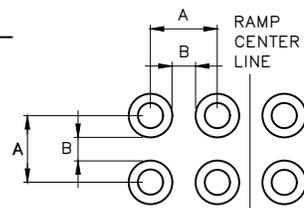
notes 8 & 9 revised



dim revised



	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	50% TO 65% OF D	
D	0.9"	1.4"



REF STD SPEC SEC 8-14

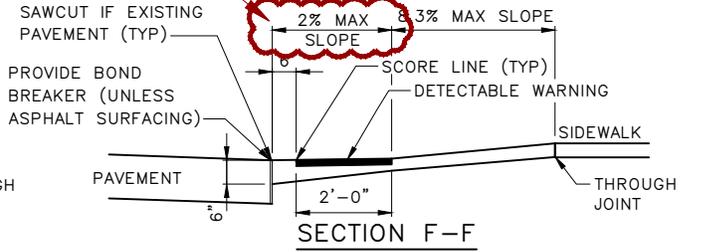
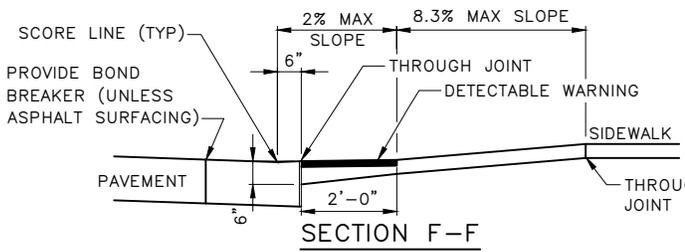
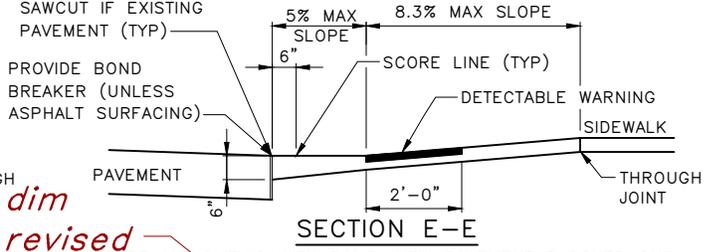
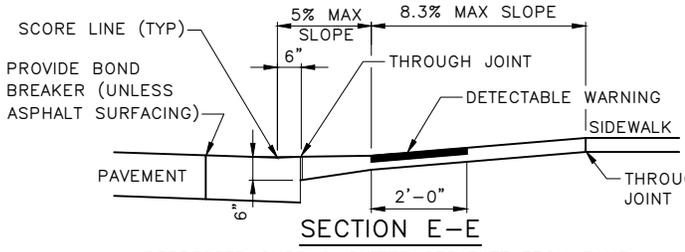
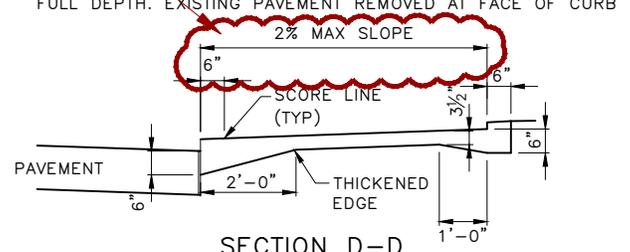
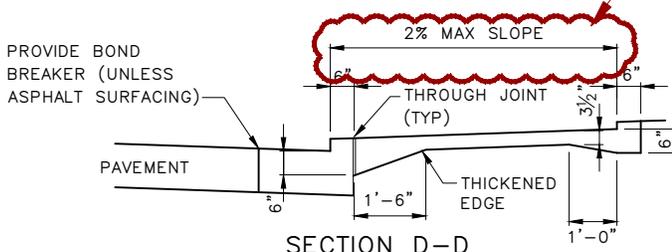
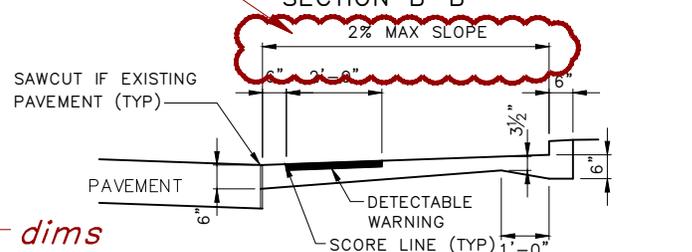
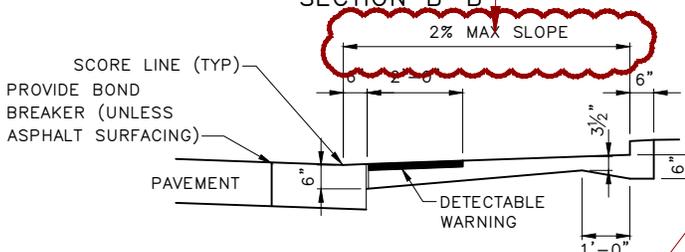
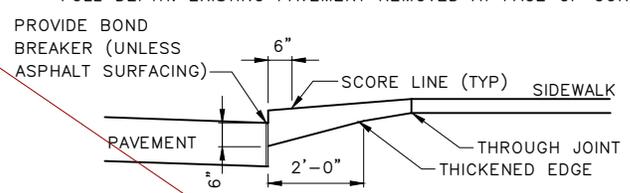
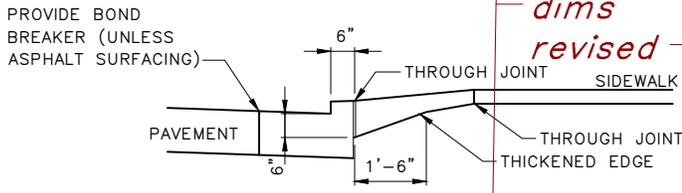
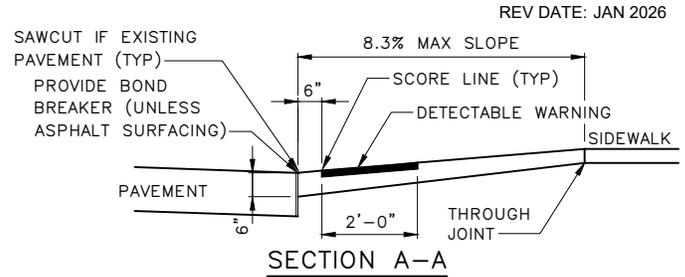
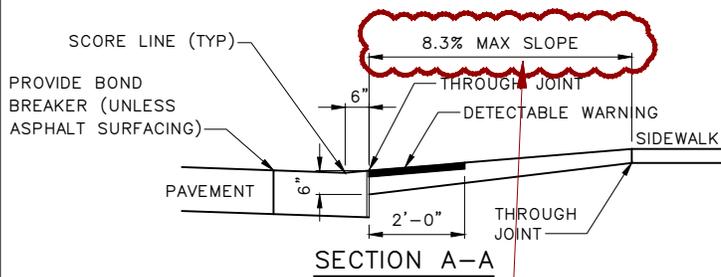
DETECTABLE WARNING TRUNCATED DOMES PATTERN



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CURB RAMP DETAILS



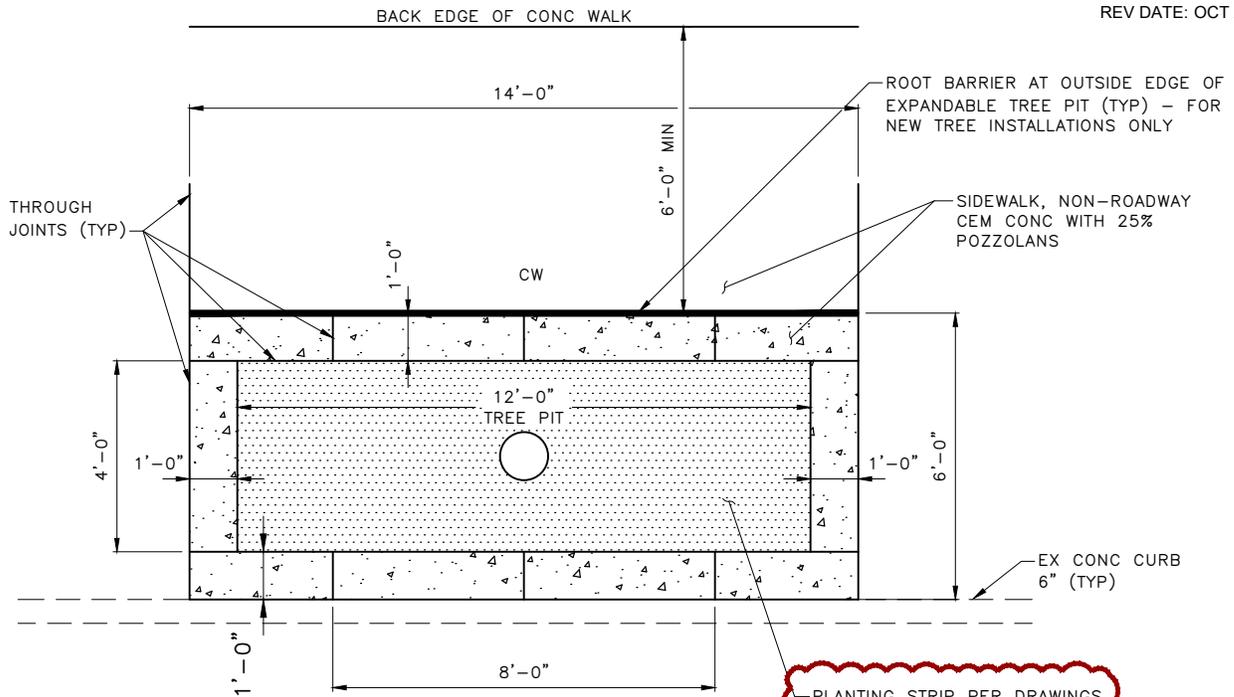
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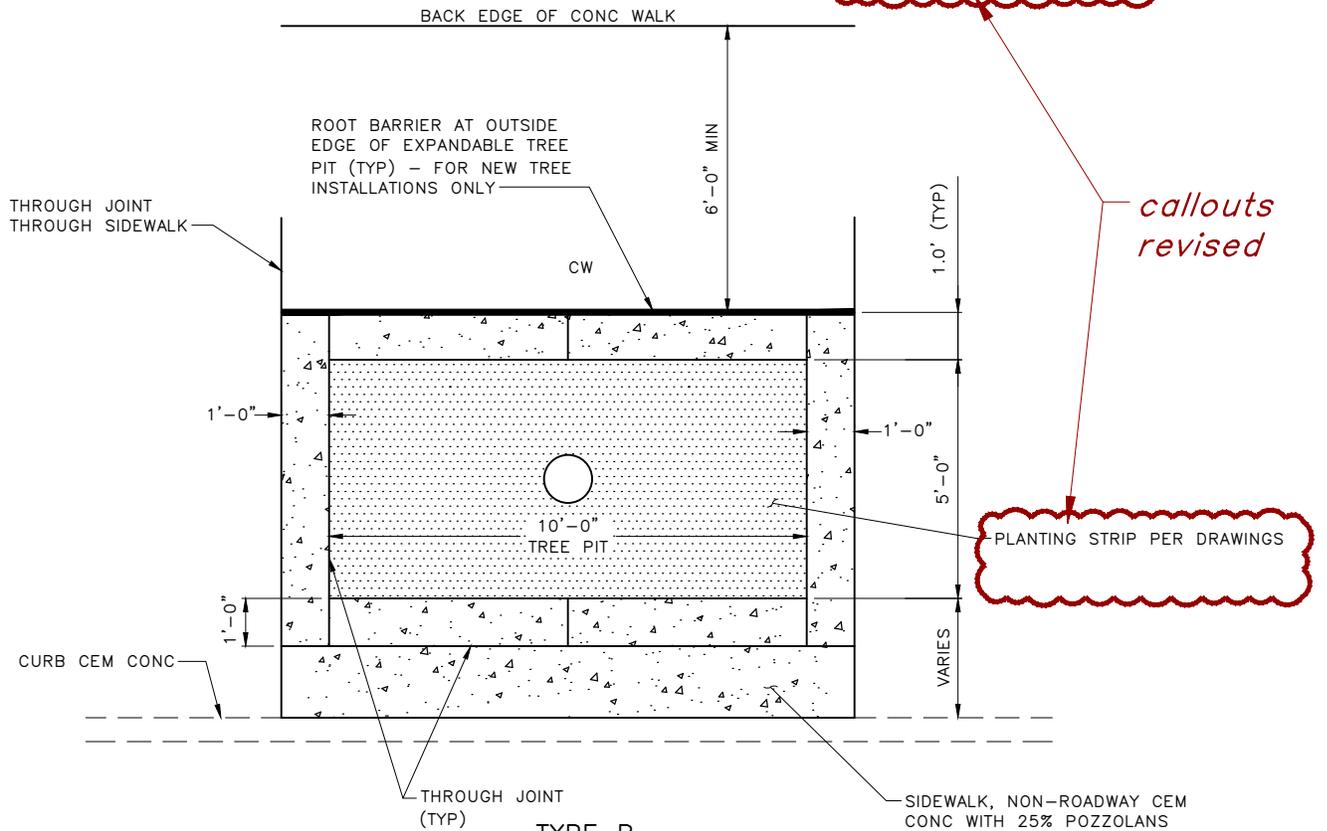
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NOT TO SCALE

CURB RAMP SECTIONS



TYPE A



TYPE B

NOTES:

1. SEE STD PLAN 420 FOR CW SCORING DETAILS.
2. INSTALL ROOT BARRIER PER STANDARD PLAN NO 100a.
3. WHEN INSTALLING NEW TREE PITS IN EXISTING SIDEWALK, REMOVE SIDEWALK TO FULL PANEL WIDTH. INSTALL TREE PIT AS SHOWN ON THIS DETAIL.

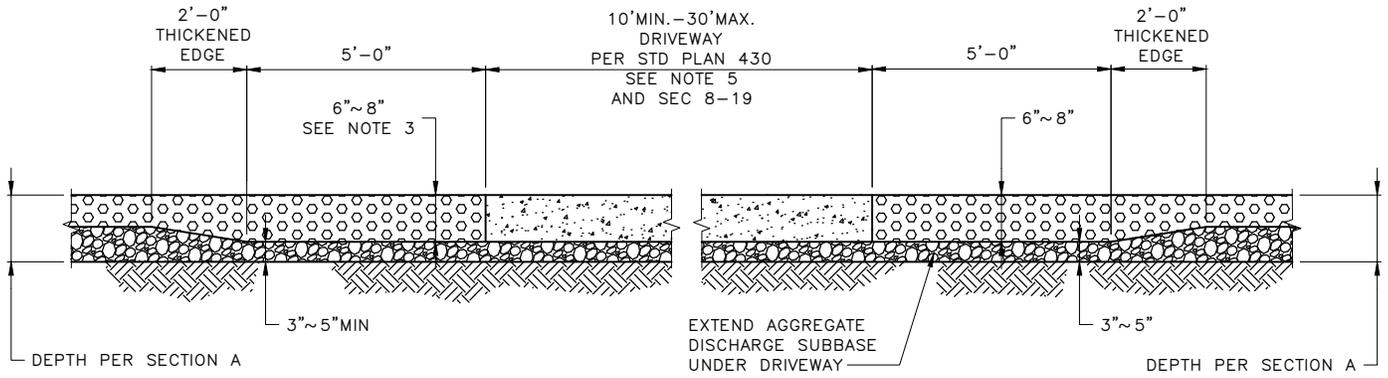
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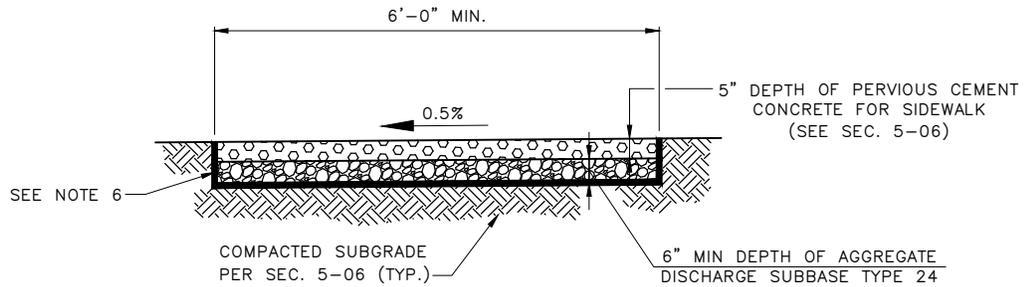
City of Seattle

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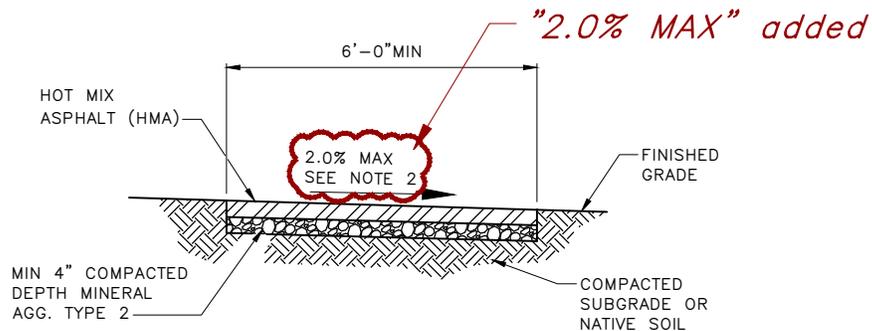
EXPANDABLE TREE PIT DETAIL



PERVIOUS CONC CEM SIDEWALK DEPTH TRANSITION AT DRIVEWAYS PROFILE VIEW



PERVIOUS CONC SECTION A



HOT MIX ASPHALT PAVEMENT SIDEWALK SECTION

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 MUST BE 8" MIN.
4. 6% MAX. PERVIOUS CEMENT CONCRETE PROFILE GRADE.
5. WHERE PERVIOUS CONCRETE IS SHOWN ON PLANS FOR ALLEY, PERVIOUS CONCRETE MUST 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.)
7. CONTRACTION JOINTS FOR PERVIOUS CONCRETE SIDEWALKS MUST BE PLACED AT A MAXIMUM OF 15 FT ON CENTER SPACING.

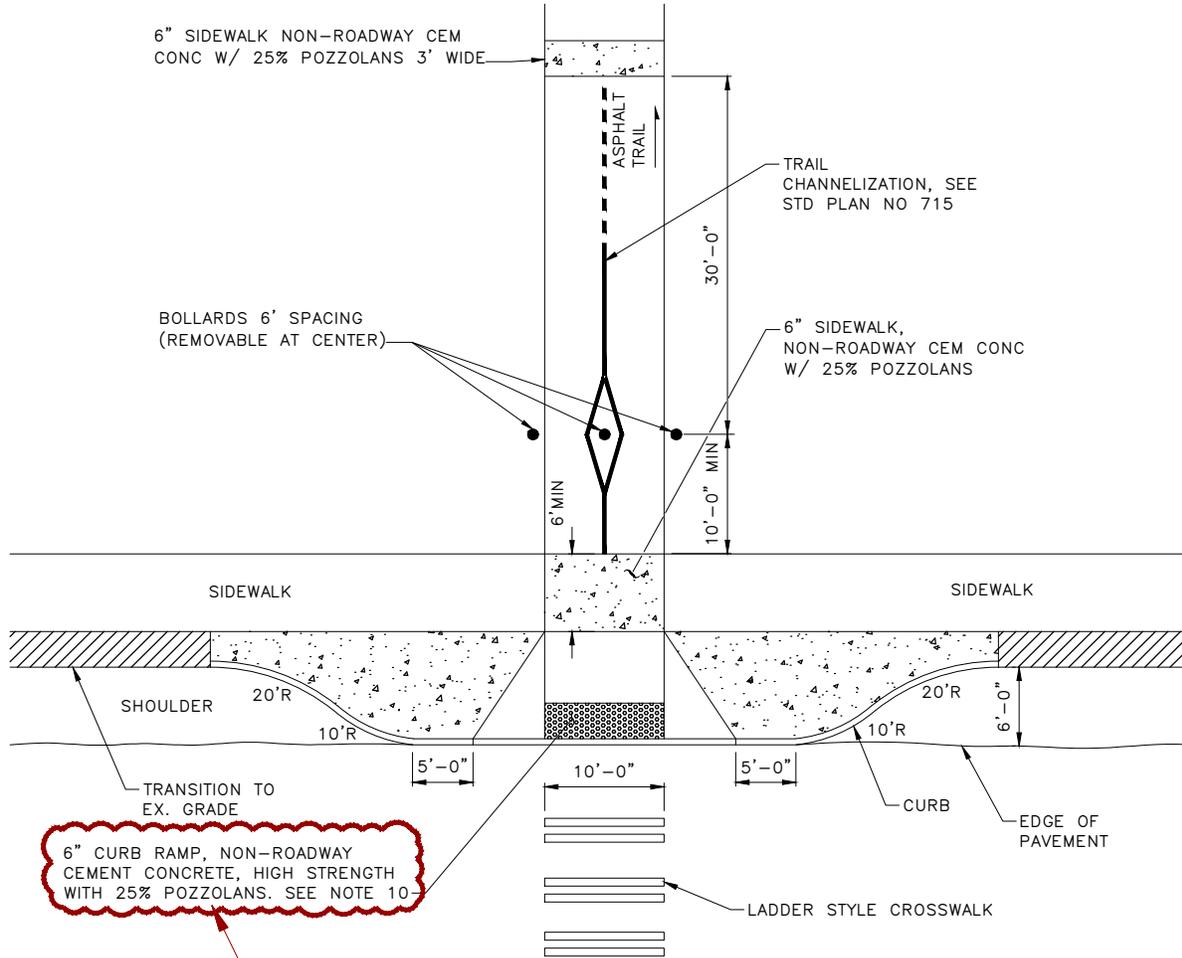
REF STD SPEC SEC 5-04, 5-06



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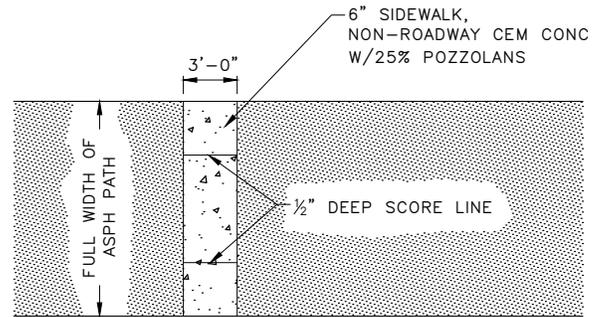
ALTERNATIVE WALKWAYS



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

NOTES:

1. FOR CURB RAMP AND DETECTABLE WARNING DETAILS SEE STANDARD PLAN NO 422 (SERIES).
2. FOR CROSSWALK DETAILS SEE STANDARD PLAN NO 712.
3. FOR BOLLARD DETAIL SEE STANDARD PLAN NO 463.
4. ASPHALT TRAIL CROSS SLOPE MINIMUM 1%, MAXIMUM 2%.
5. CEMENT CONCRETE WARNING PAD THICKNESS TO MATCH ASPHALT THICKNESS OR MINIMUM 6" THICK WHICHEVER IS GREATER.
6. CRUSHED ROCK ON EDGE OF TRAIL AS NEEDED TO DISBURSE DRAINAGE FLOW.
7. ALL CHANGES IN LEVEL ACROSS JOINTS MUST BE FLUSH WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 3/16 INCH.
8. ALL SLOPE GRADES MUST BE MEASURED OFF THE HORIZON-LINE. IF EXISTING SITE CONDITIONS CONFLICT WITH OBTAINING GRADES SHOWN, THE CONTRACTOR MUST MAKE MINIMUM ADJUSTMENTS TO THE GRADES TO ACCOMMODATE EXISTING SITE CONDITIONS, ADJUSTMENTS ARE SUBJECT TO APPROVAL BY THE ENGINEER.
9. ALL CEMENT CONCRETE WARNING PADS MUST BE BRUSHED FINISHED AND "V" GROOVED TO MATCH PATTERN IN ADJACENT SIDEWALKS.



10. CURB RAMP WIDTH, EXCLUDING WINGS, MUST MATCH THE WIDTH OF THE MULTI-PURPOSE TRAIL (SHARED USED PATH). 6" THICK.

REF STD SPEC SEC 8-22 8-14

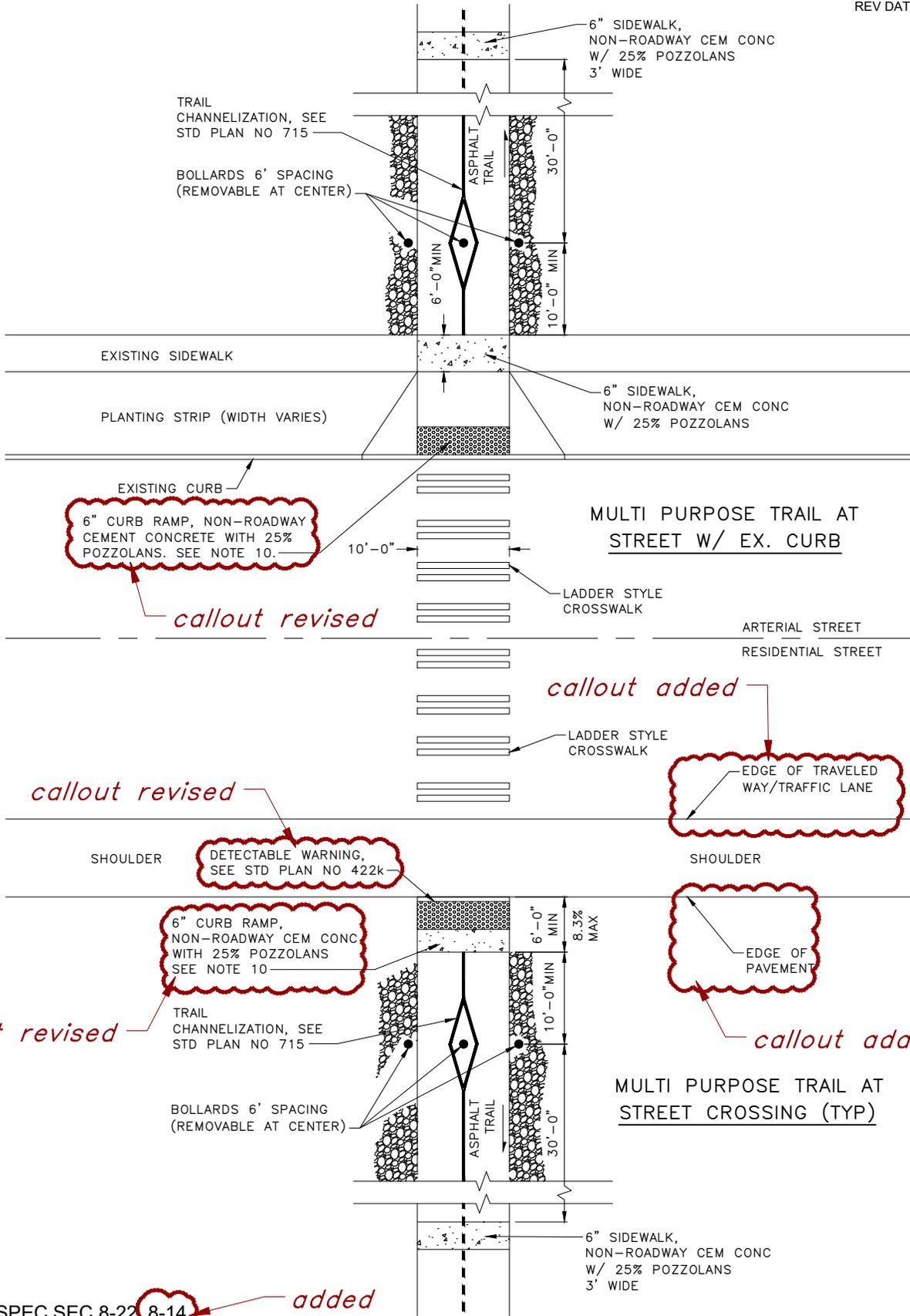
note 10 added



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MULTI-PURPOSE TRAIL
AT STREET CROSSING



callout revised

callout added

callout revised

callout revised

callout added

REF STD SPEC SEC 8-22

8-14

added



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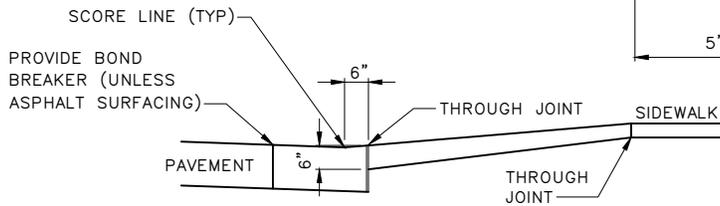
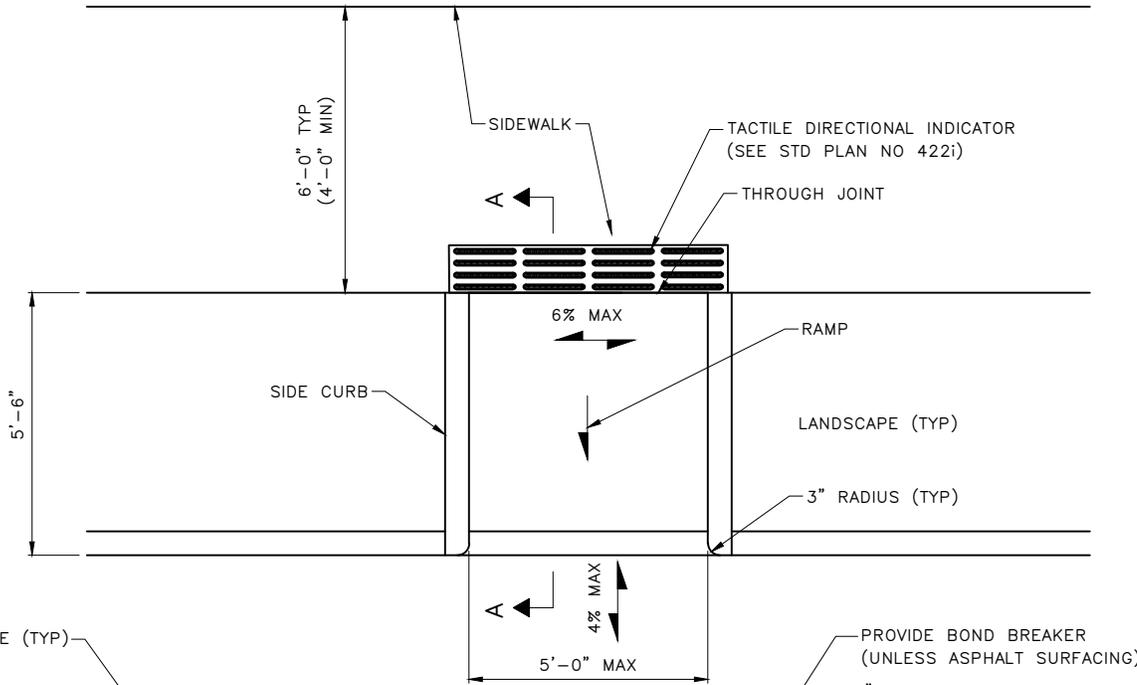
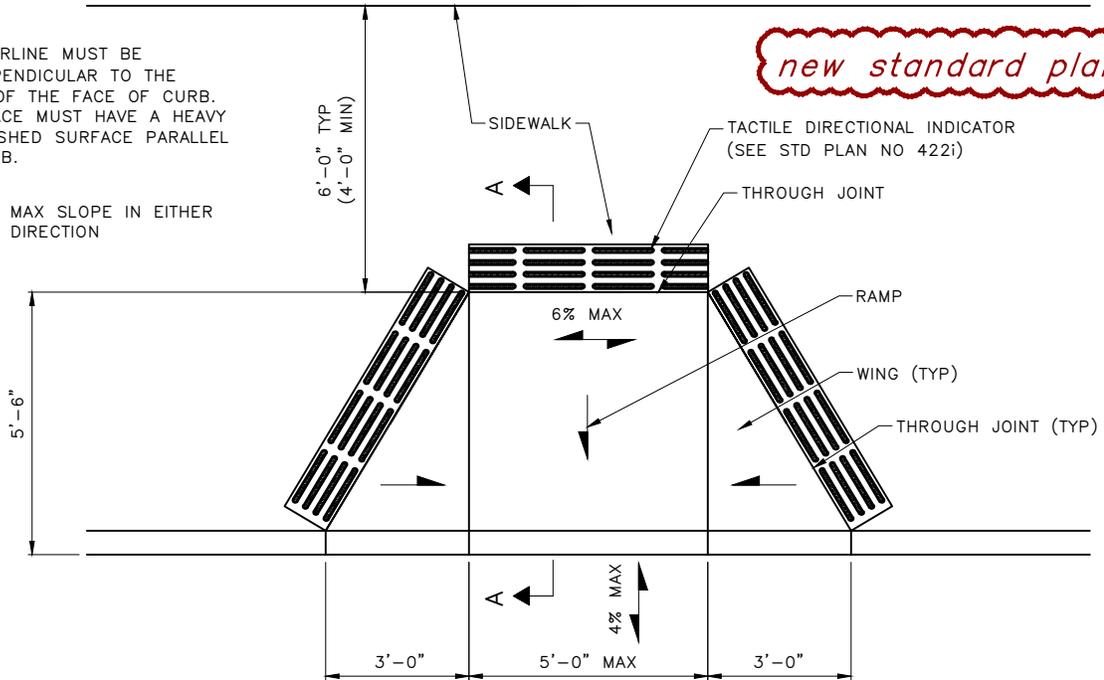
MULTI-PURPOSE TRAIL AT STREET CROSSING

NOTES:

1. RAMP CENTERLINE MUST BE RADIAL/PERPENDICULAR TO THE ALIGNMENT OF THE FACE OF CURB.
2. RAMP SURFACE MUST HAVE A HEAVY BROOM BRUSHED SURFACE PARALLEL TO THE CURB.

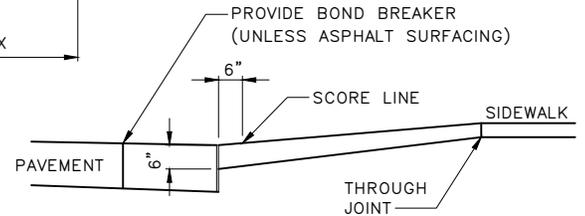
X% MAX = MAX SLOPE IN EITHER DIRECTION

new standard plan



SECTION A-A

DEPRESSED CURB & GUTTER SEPARATE FROM RAMP.



SECTION A-A

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

REF STD SPEC SEC 8-14

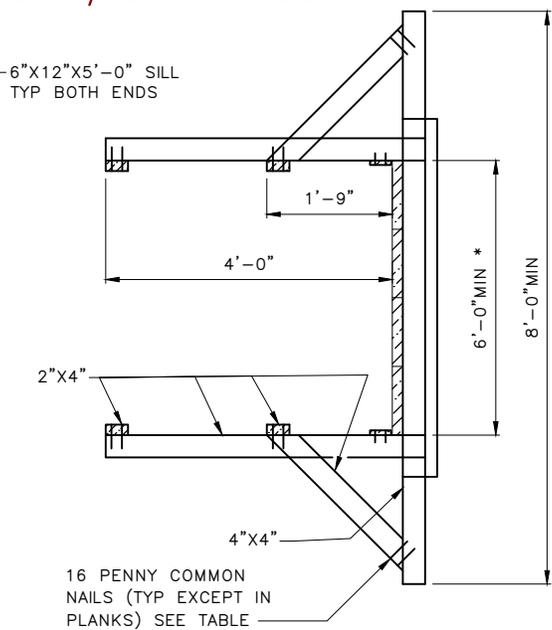
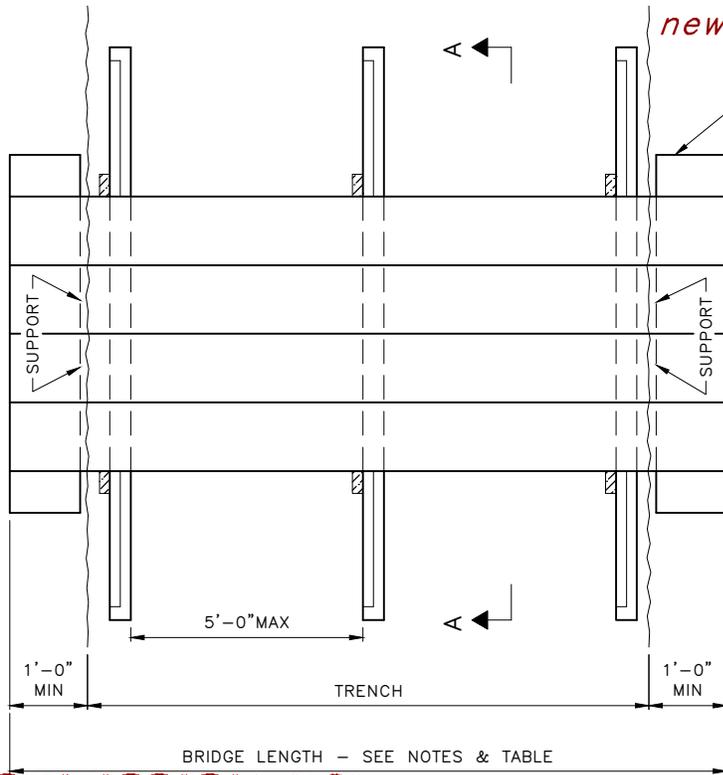


City of Seattle

NOT TO SCALE

WASTE ACCESS RAMP

renumbered due to new std plan no 456b

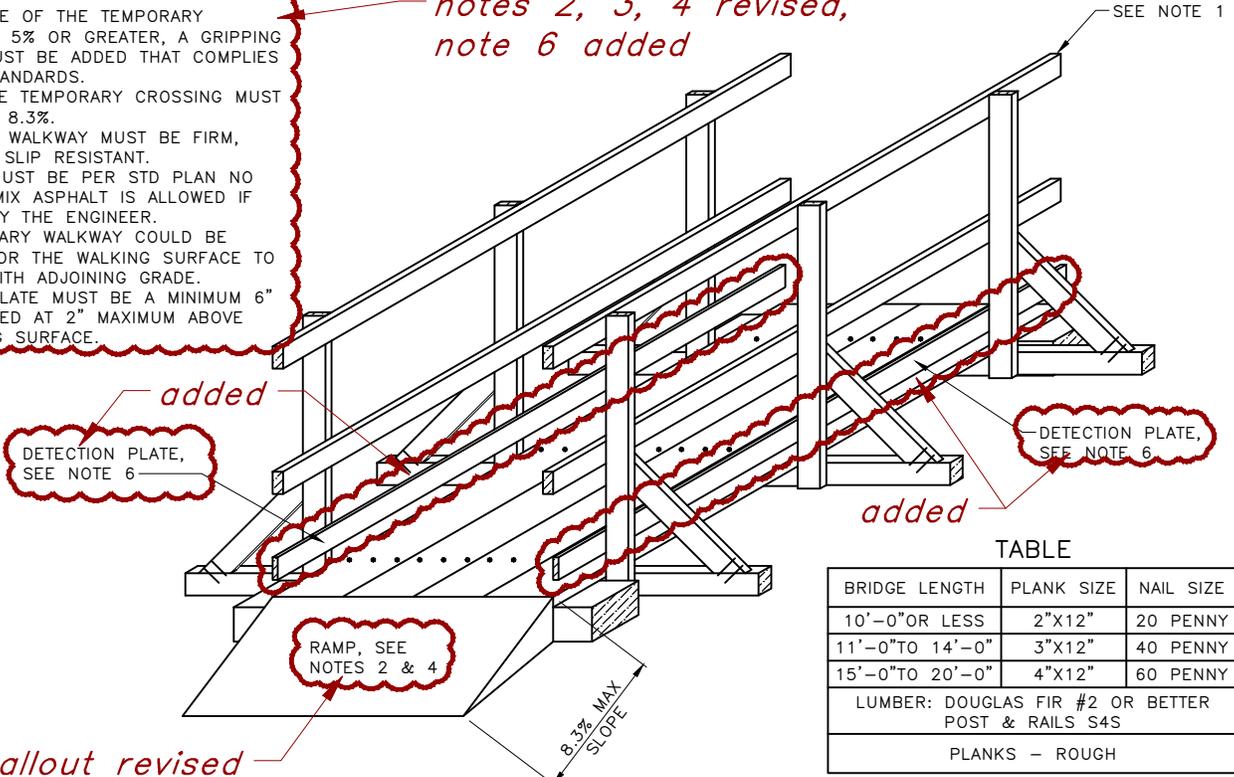


SECTION A-A
* UNLESS APPROVED BY SEATTLE DEPARTMENT OF TRANSPORTATION

NOTES:

1. IF THE SLOPE OF THE TEMPORARY CROSSING IS 5% OR GREATER, A GRIPPING HANDRAIL MUST BE ADDED THAT COMPLIES WITH ADA STANDARDS.
2. ENDS OF THE TEMPORARY CROSSING MUST NOT EXCEED 8.3%.
3. SURFACE OF WALKWAY MUST BE FIRM, STABLE AND SLIP RESISTANT.
4. THE RAMP MUST BE PER STD PLAN NO 456b. HOT MIX ASPHALT IS ALLOWED IF APPROVED BY THE ENGINEER.
5. THE TEMPORARY WALKWAY COULD BE RECESSED FOR THE WALKING SURFACE TO BE FLUSH WITH ADJOINING GRADE.
6. DETECTION PLATE MUST BE A MINIMUM 6" HEIGHT PLACED AT 2" MAXIMUM ABOVE THE WALKING SURFACE.

notes 2, 3, 4 revised, note 6 added



TABLE

BRIDGE LENGTH	PLANK SIZE	NAIL SIZE
10'-0" OR LESS	2"X12"	20 PENNY
11'-0" TO 14'-0"	3"X12"	40 PENNY
15'-0" TO 20'-0"	4"X12"	60 PENNY
LUMBER: DOUGLAS FIR #2 OR BETTER POST & RAILS S4S		
PLANKS - ROUGH		

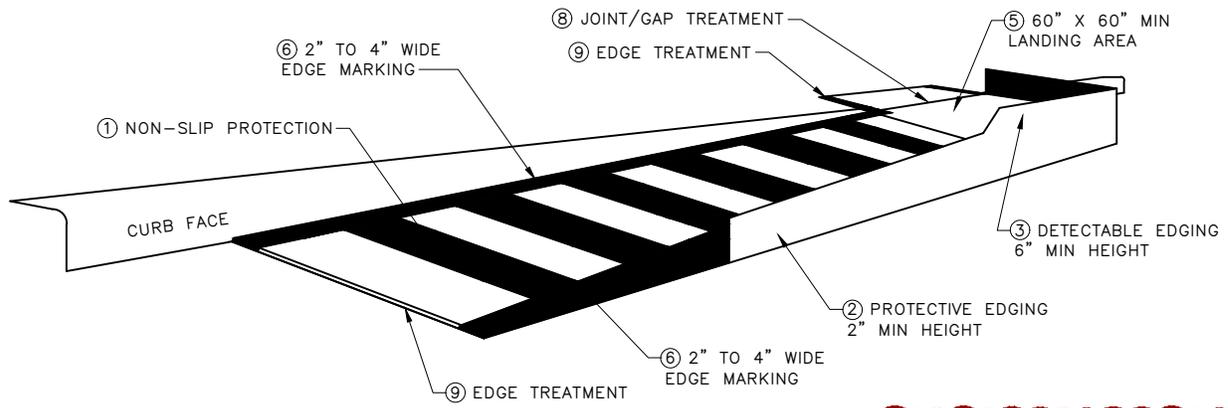
REF STD SPEC SEC 1-07.23



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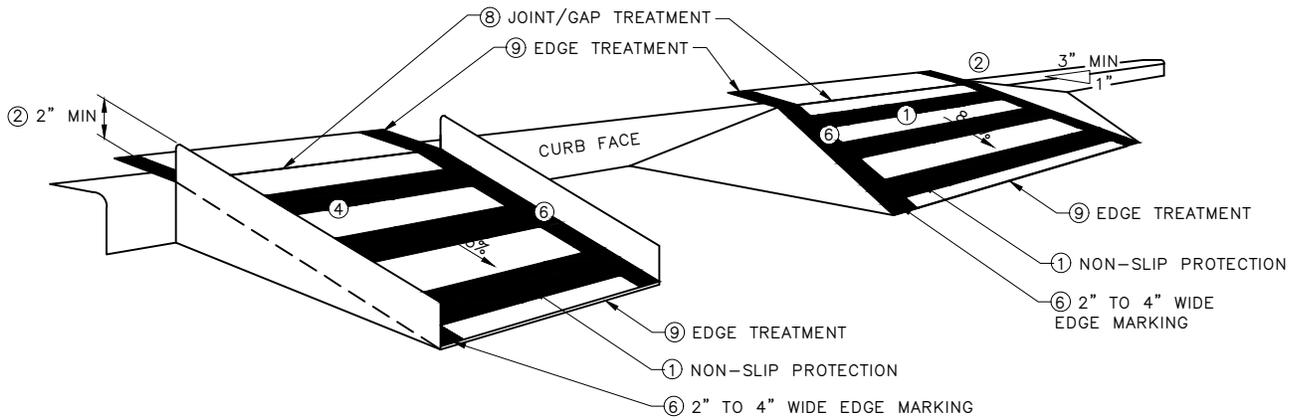
NOT TO SCALE

TEMPORARY PEDESTRIAN WALKWAY



TEMPORARY CURB RAMP
PARALLEL TO CURB

new standard plan



TEMPORARY CURB RAMP
PERPENDICULAR TO CURB

NOTES:

- ① CURB RAMPS ARE REQUIRED TO BE AT LEAST 48 INCHES WIDE WITH A FIRM, STABLE, AND NON-SLIP SURFACE.
- ② EDGE PROTECTION WITH A TWO-INCH MINIMUM HEIGHT IS REQUIRED FOR RAMPS WITH A RISE GREATER THAN SIX INCHES OR A SIDE APRON SLOPE GREATER THAN 33%.
- ③ EDGE PROTECTION IS REQUIRED ON RAMPS WITH A VERTICAL ELEVATION OVER SIX INCHES AND SHOW A CONTRASTING COLOR WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ CURB RAMPS AND LANDINGS ARE REQUIRED TO HAVE A 2% MAXIMUM CROSS SLOPE.
- ⑤ PROVIDE A CLEAR AREA OF AT LEAST 48 INCHES BY 48 INCHES ABOVE AND BELOW THE CURB RAMP. IF CLEAR AREA IS BOUND BY A VERTICAL OBSTRUCTION, THIS MUST BE INCREASED TO 60" MINIMUM.
- ⑥ MARK THE CURB RAMP WALKWAY EDGE WITH A CONTRASTING COLOR TWO TO FOUR INCHES WIDE UNLESS COLOR-CONTRASTING EDGING IS USED, AS REQUIRED BY ITEM 3 ABOVE.
- ⑦ WATER FLOW IN THE GUTTER SHOULD HAVE MINIMUM RESTRICTION.
- ⑧ LIMIT LATERAL JOINTS OR GAPS BETWEEN SURFACES TO BE LESS THAN HALF AN INCH WIDE.
- ⑨ CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED HALF AN INCH. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 INCHES HIGH AND BEVELED AT 1:2 WHEN BETWEEN 0.25 AND 0.5 INCHES HIGH.

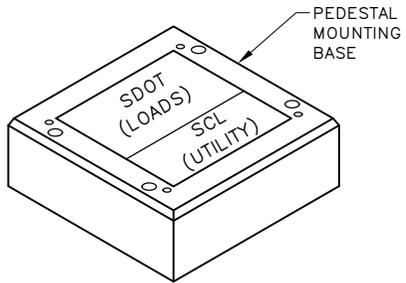
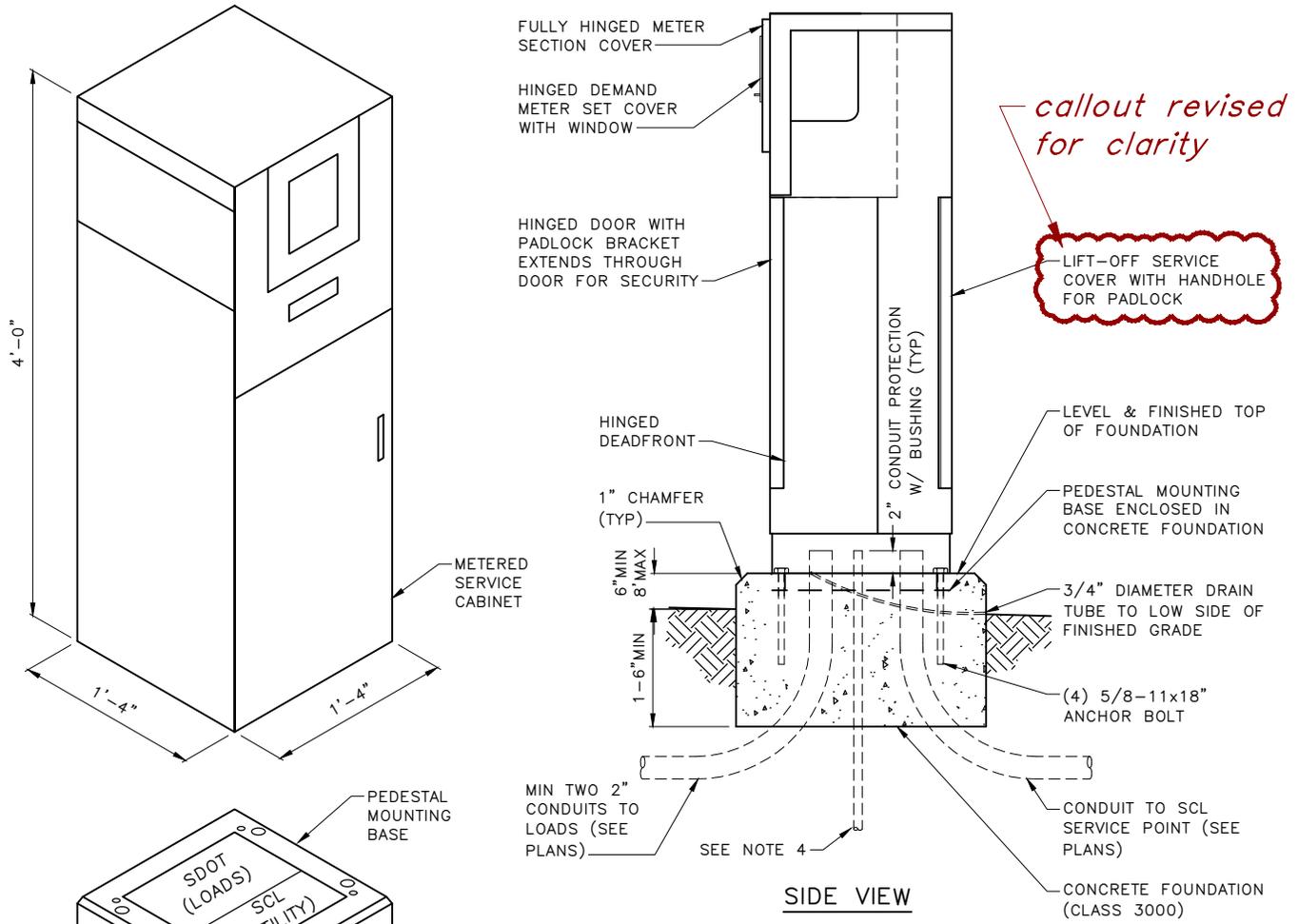
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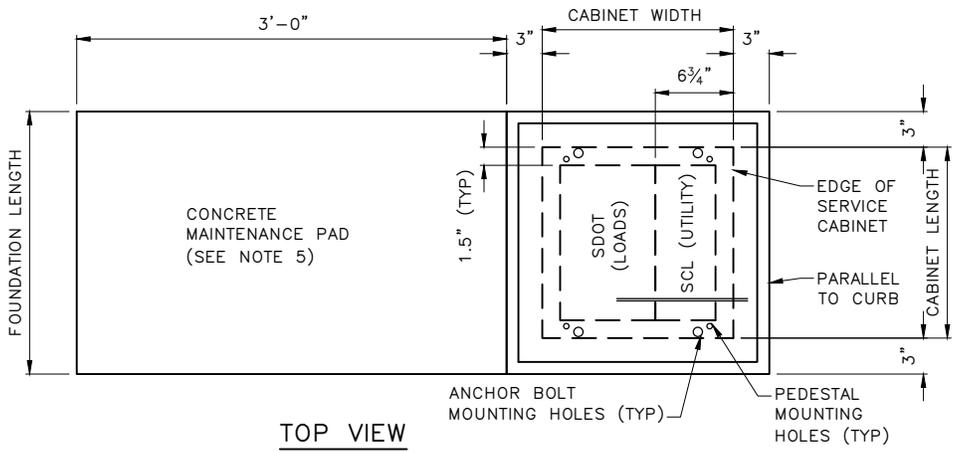
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**TEMPORARY PEDESTRIAN
CURB RAMP**



ISOMETRIC VIEW



TOP VIEW

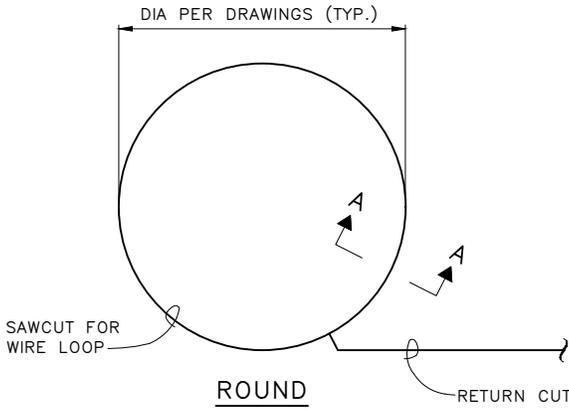
- NOTES:**
- 36" MINIMUM CLEARANCE MUST BE REQUIRED IN FRONT OF BOTH FRONT AND BACK CABINET DOOR.
 - SEAL CABINET TO FOUNDATION WITH GRAY OR CLEAR SILICON TO PREVENT MOISTURE FROM ENTERING THE CABINET.
 - EXACT SERVICE CABINET DIMENSIONS, ANCHOR BOLT LOCATIONS AND PEDESTAL MOUNTING HOLES MUST BE PROVIDED BY THE MANUFACTURER.
 - GROUND ROD 3/4"x120" COPPER CLAD WITH GROUND ROD CLAMP. A SECOND GROUND MUST BE INSTALLED A MINIMUM 8' AWAY IN A GROUND ROD HANDHOLE AS PER CITY OF SEATTLE STANDARD PLAN NO 550b. COORDINATE WITH ELECTRICAL INSPECTOR FOR LOCATION. INSTALL #4 AWG COPPER GROUND WIRE BETWEEN CABINET FOUNDATION AND GROUND ROD HANDHOLE
 - CABINET FOUNDATIONS INSTALLED IN A LANDSCAPE AREA MUST INCLUDE A CONCRETE SIDEWALK MAINTENANCE PAD ON THE SDOT DOOR SIDE OF THE FOUNDATION, SEE STD SPEC SEC 8-32.3(2)B

REF STD SPEC SEC 8-31, 8-32

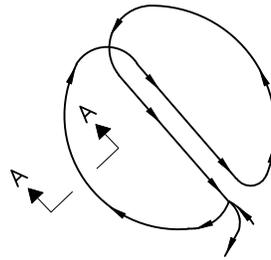


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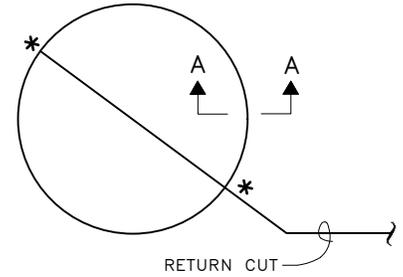
SERVICE CABINET FOUNDATION DETAIL



DIPOLE LOOP DETECTOR

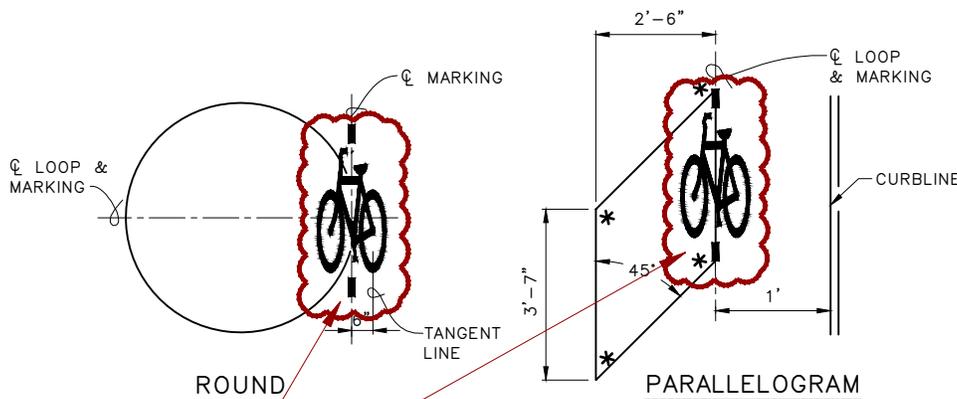


WINDING
DETAIL



ROUND

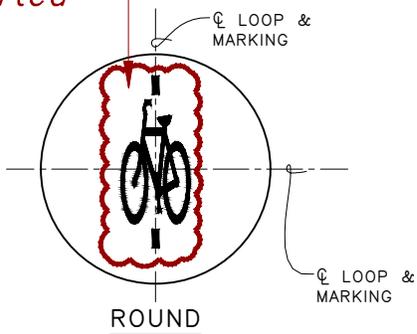
QUADRIPOLE LOOP DETECTOR



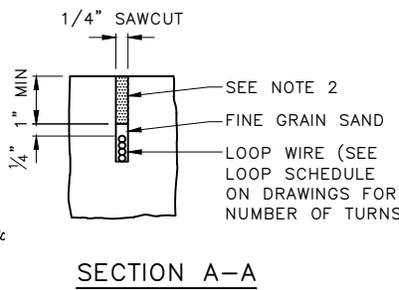
BICYCLE DIPOLE

***NOTE:**

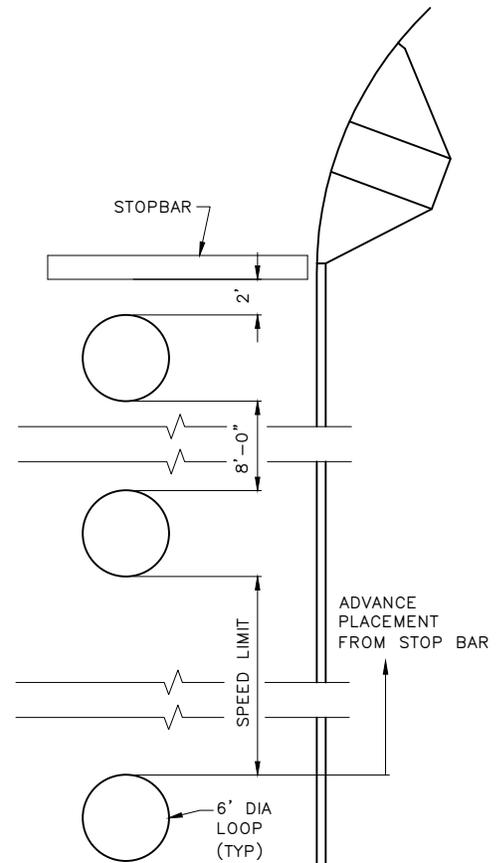
OVERLAP CUT FOR FULL DEPTH AT CORNERS (TYP) CHIP 1" BACK THEN ROUND OFF CORNERS WHERE LOOP WIRE WILL BE BENT 90° OR LESS.



BICYCLE QUADRIPOLE



SECTION A-A



STANDARD LOOP SPACING

NOTES:

1. SEE STD PLAN NO 772 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

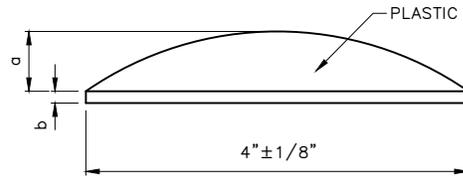
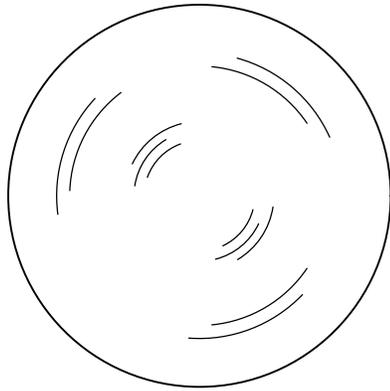
REF STD SPEC SEC 8-31



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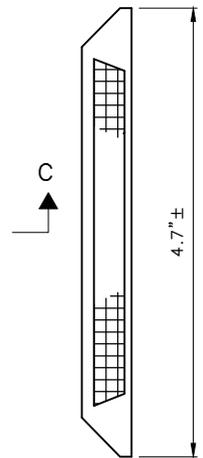
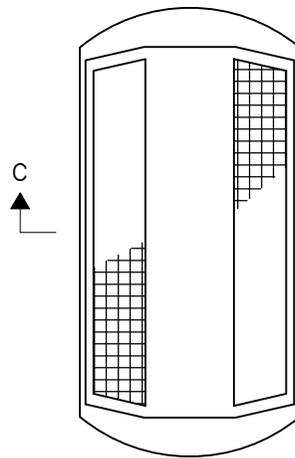
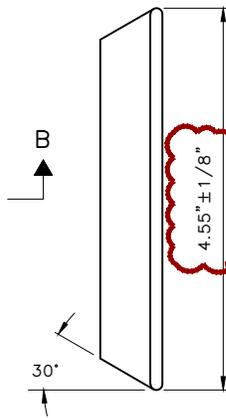
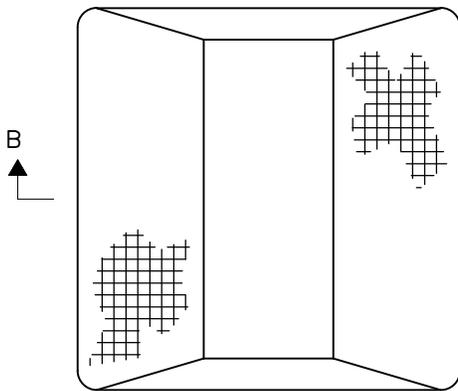
DETECTOR LOOP DETAILS



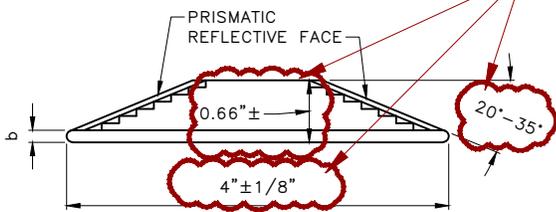
LANE MARKER—TYPE 1

$a = 5/8" \pm 1/8"$
 $b = 1/8" \pm 1/16"$

▲ DIRECTION OF TRAFFIC

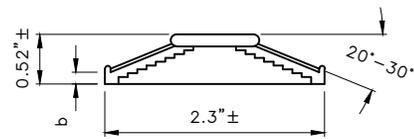


dimensions revised



SECTION B-B

LANE MARKER—TYPE 2A
 4" PRISMATIC REFLECTIVE MARKER



SECTION C-C

LANE MARKER—TYPE 2B

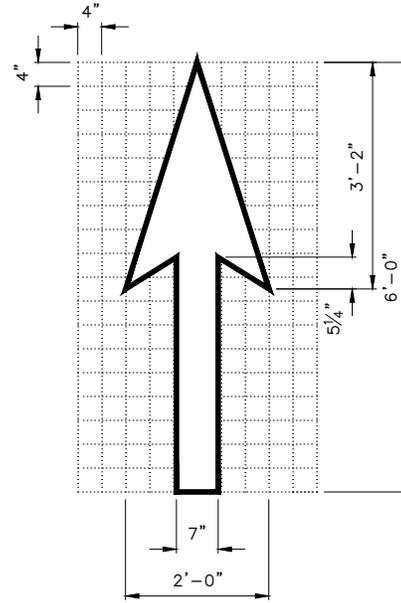
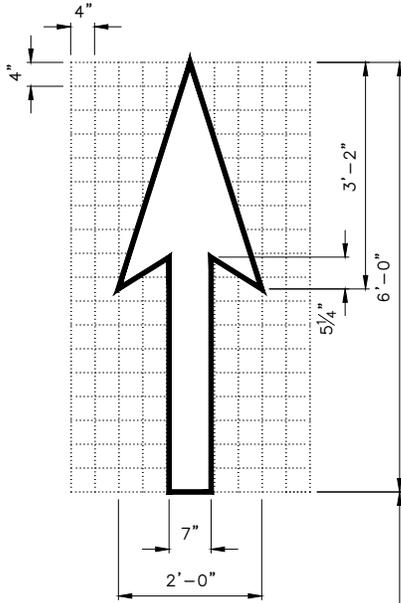
REF STD SPEC SEC 8-08



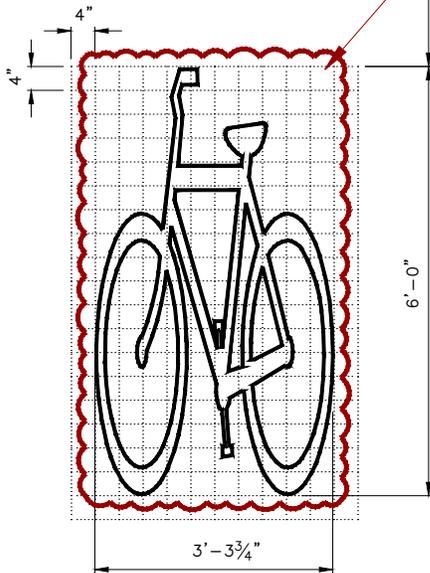
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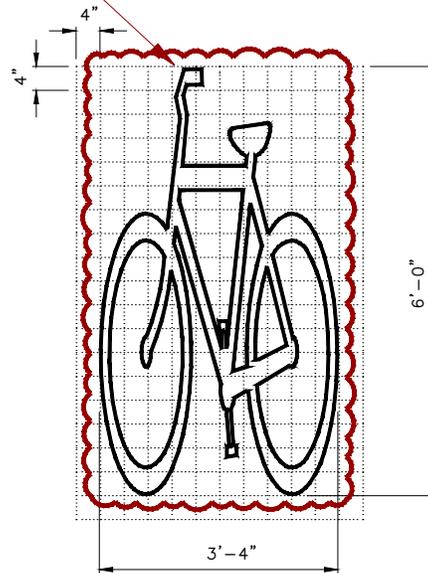
TRAFFIC BUTTONS &
 LANE MARKERS



770B
BICYCLE LANE THROUGH ARROW



bike revised



770A
BIKE SYMBOL WITH ARROW

770C
BIKE SYMBOL

tilte revised

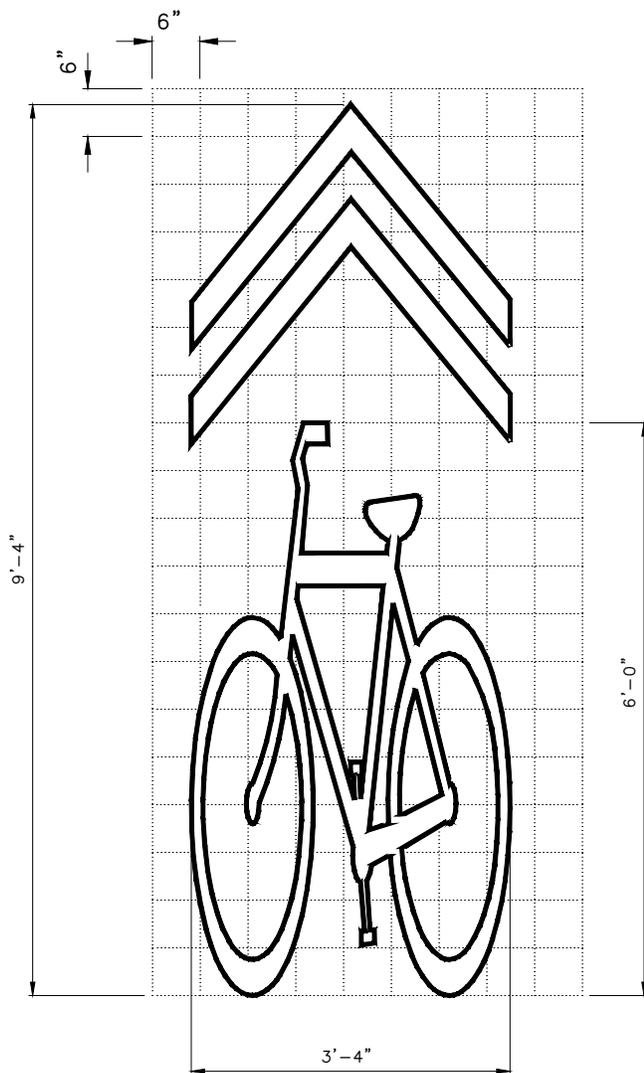
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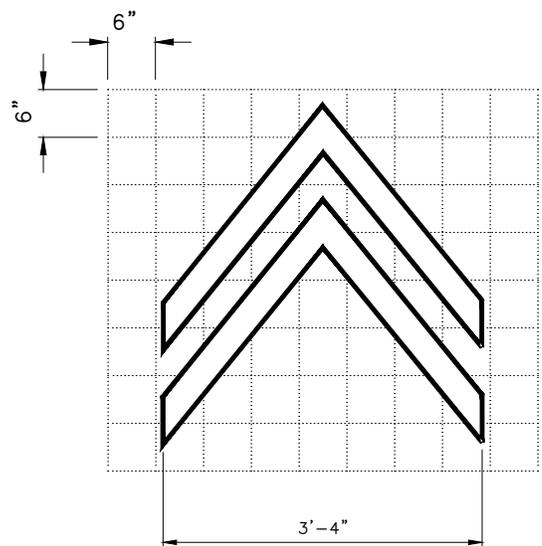
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BIKE SYMBOL WITH ARROW

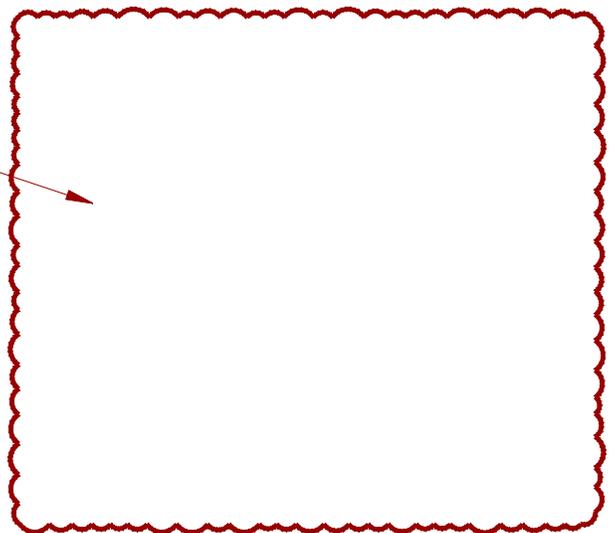


771A
SHARROW



771B
CHEVRON FOR SHARROW

bike symbol removed



REF STD SPEC SEC 8-22

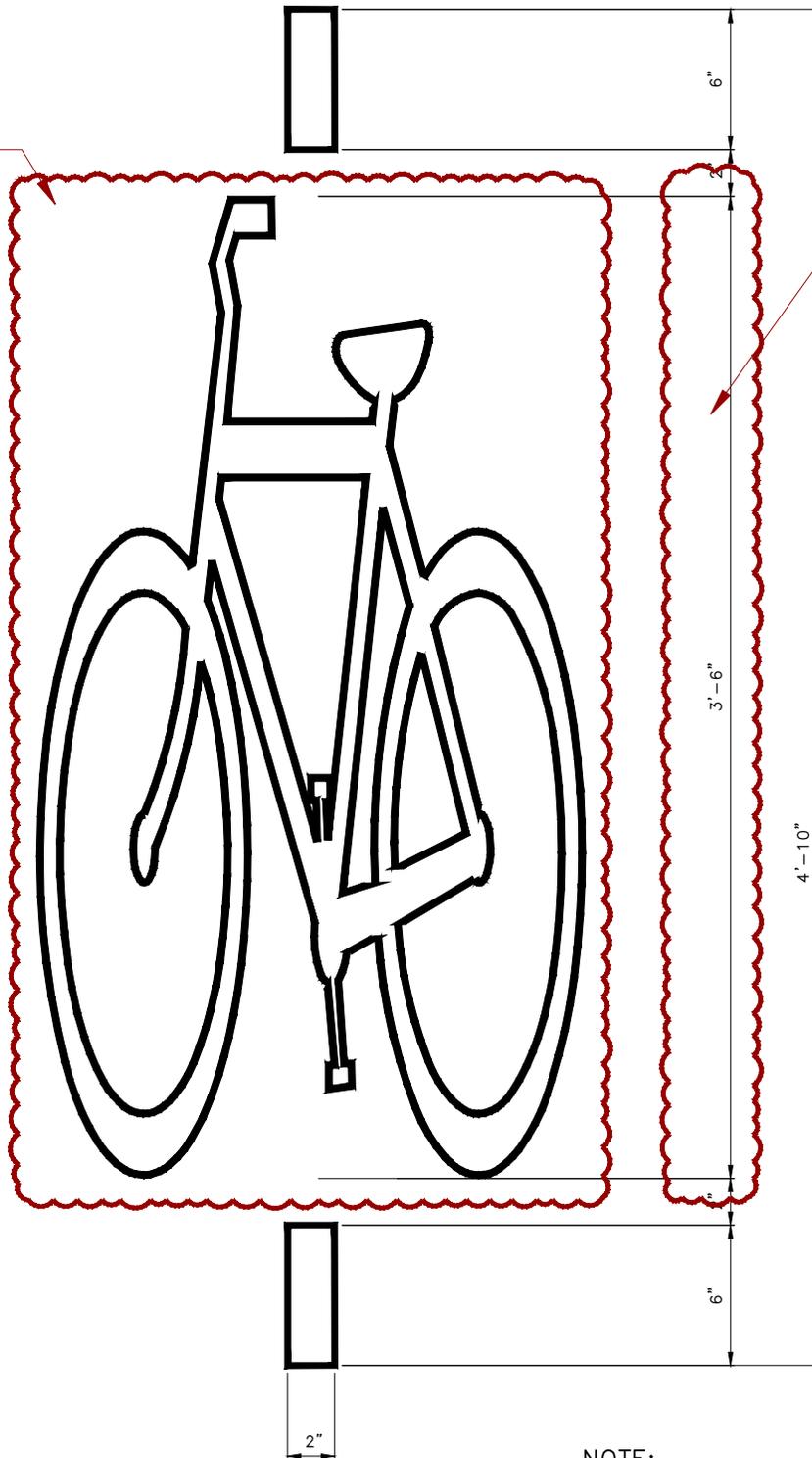


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SHARROW & BIKE SYMBOLS

bike symbol revised



dimension changed from 2'-0" to 3'-6"

NOTE:
SEE STD PLAN NO 530b FOR PLACEMENT

772
BICYCLE DETECTOR SYMBOL

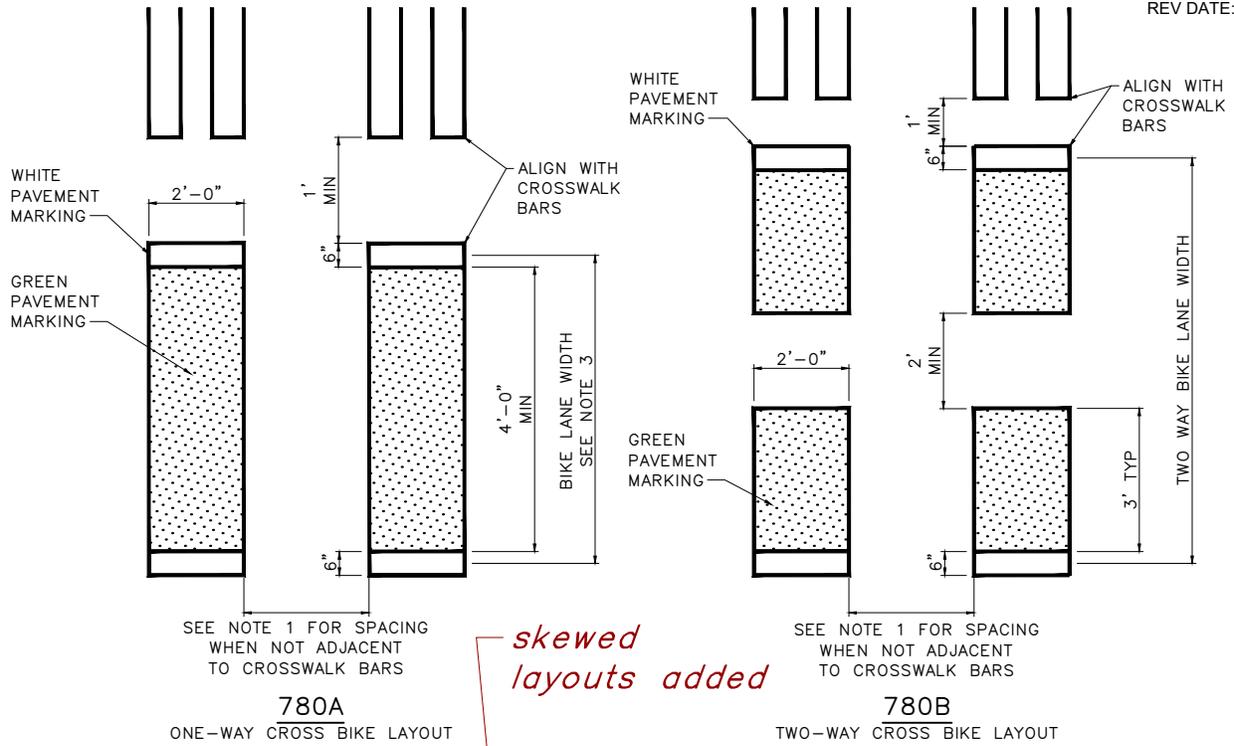
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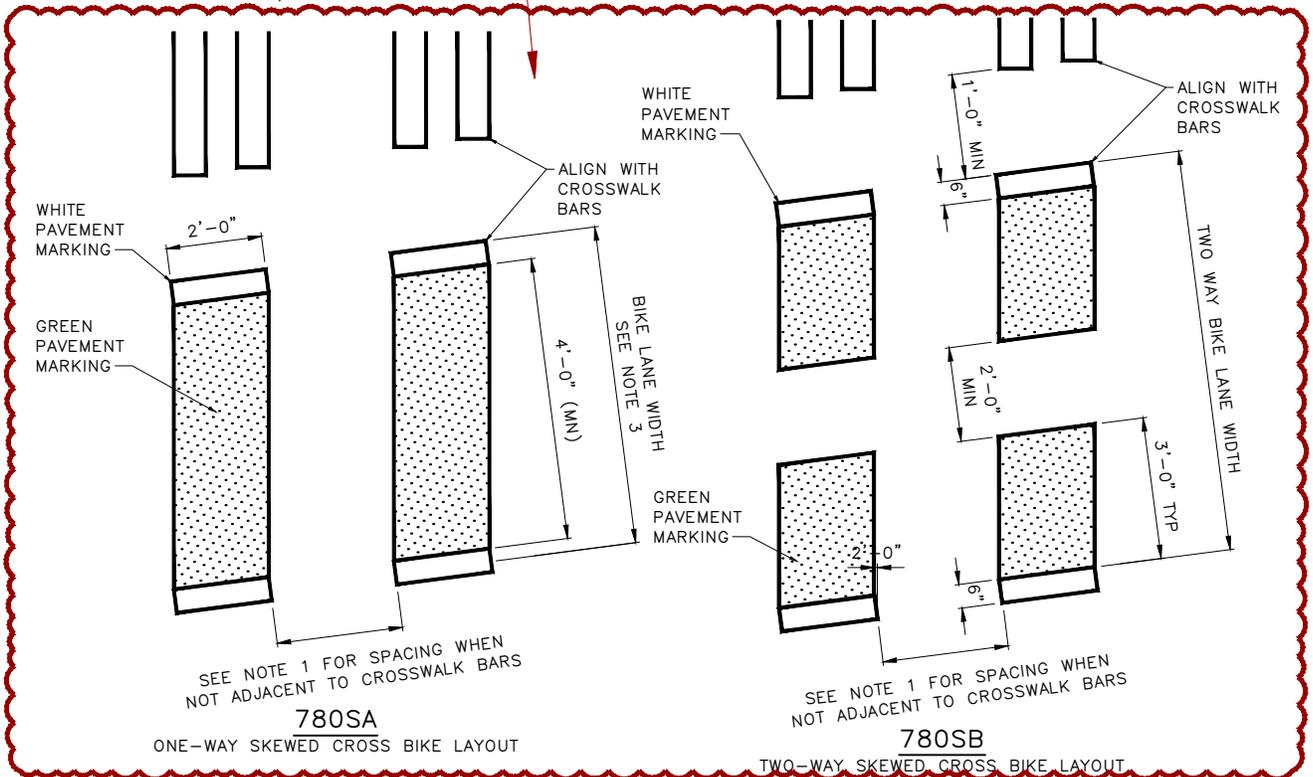
BICYCLE DETECTOR SYMBOL



skewed layouts added

NOTES:

1. WHERE STRIPED CROSSWALK DOES NOT EXIST, CROSS BIKE MUST BE PLACED AT LANE LINE AND 1/2 LANE WIDTH CONSISTENT WITH STANDARD PLAN 712. IF NO CROSSWALK OR LANE LINE EXISTS, CROSSBIKE MUST BE ALIGNED WITH DIRECTION OF CROSS-TRAFFIC AND MUST BE PLACED AT 5' ON CENTERS.
2. CROSS BIKE MATERIAL MUST BE MMA OR PRE-FORMED THERMOPLASTIC.
3. WHEN CONNECTING BIKE LANES OF VARYING WIDTH, THE CROSSBIKE WIDTH MUST BE SIZED TO THE NARROWER OF THE TWO FACILITIES.
4. FOR SKEWED CROSSING, THE WHITE PAVEMENT MARKINGS MUST BE ORIENTED TO ALIGN WITH DIRECTION OF BICYCLE TRAFFIC.



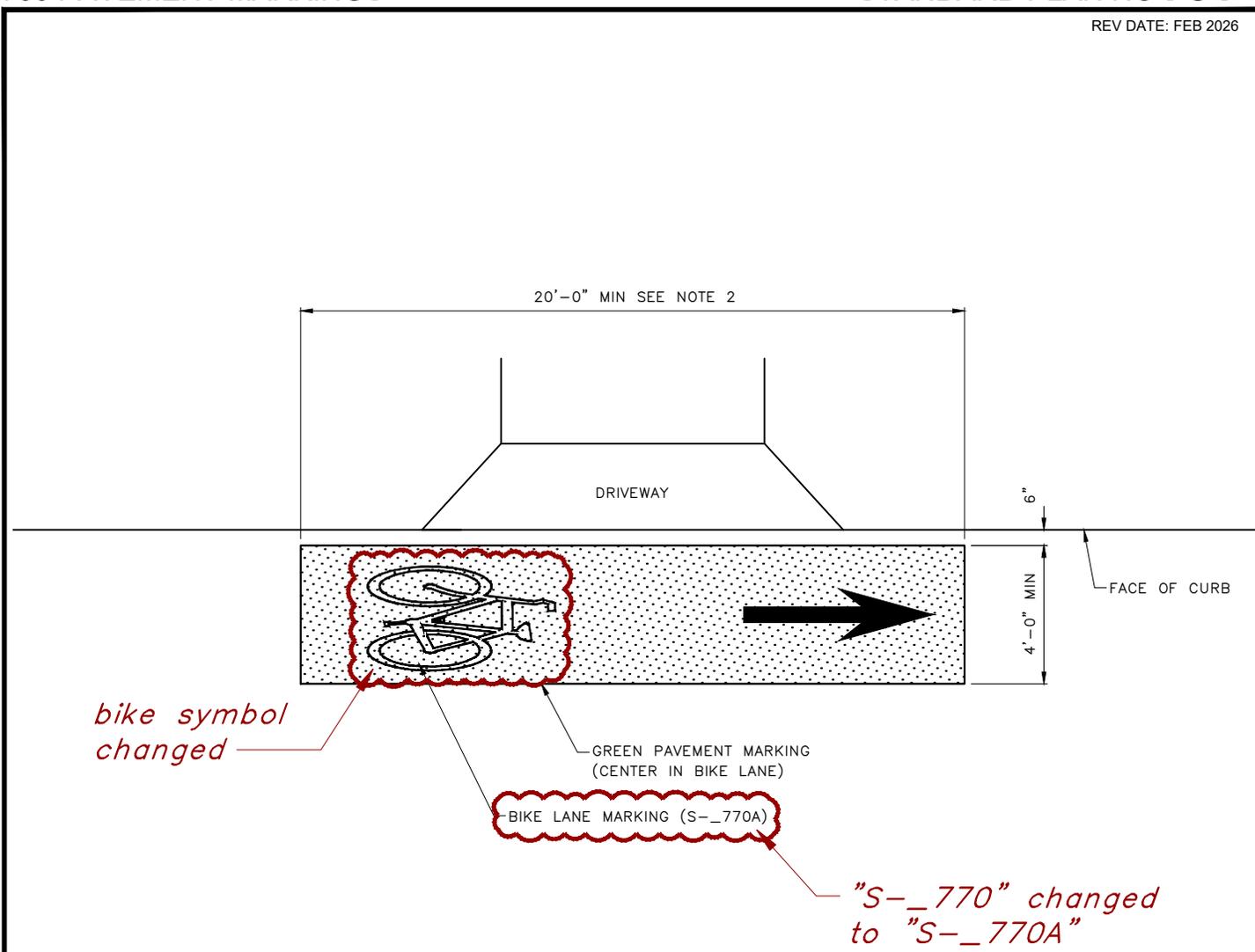
REF STD SPEC SEC 8-22



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NOT TO SCALE

**CROSS BIKE
PAVEMENT MARKING**



DRIVEWAY CROSSING LAYOUT

NOTES:

- 1. DRIVEWAY CROSSING MATERIAL MUST BE MMA OR PRE-FORMED THERMOPLASTIC
- 2. MATCH DRIVEWAY APRON IF WIDER THAN 20'

REF STD SPEC SEC 8-22



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NOT TO SCALE

BIKE LANE PAVEMENT MARKING AT DRIVEWAY