City of Seattle

STANDARD PLANS FOR MUNICIPAL CONSTRUCTION

2008 EDITION

CITY OF SEATTLE

2008 edition

STANDARD PLANS

FOR

MUNICIPAL CONSTRUCTION

Prepared by
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Chuck Clarke, Director

Reviewed and Approved by

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2008 edition City of Seattle Standard Plans for Municipal Construction

PREFACE

The 2008 edition City of Seattle Standard Plans for Municipal Construction (henceforth referred to as the "2008 Standard Plans") have been prepared by Seattle Public Utilities in cooperation with Seattle Department of Transportation, Seattle Parks and Recreation, Department of Executive Administration, Seattle City Light, Seattle Center, and Fleets and Facilities.

The 2008 Standard Plans apply whenever any public or private construction is performed within the Rights-of-Way of the City of Seattle including work performed by private parties at their own expense under authority granted by ordinance of the City Council or by permit of the SDOT Street Use section. The 2008 Standard Plans are designed to be used in conjunction with the 2008 Standard Specifications for Road, Bridge and Municipal Construction (henceforth referred to as the "2008 Standard Specifications). Each individual 2008 Standard Plan has a reference to the applicable 2008 Standard Specifications section(s) located in the bottom left corner.

For the convenience of our users, 2008 Standard Plans that are new or have been revised from the 2005 edition Standard Plans are identified in the Table of Contents with a vertical bar along the left page margin, as well as bold type. Also, a revision date is located in the upper right corner of each individual Standard Plan to alert the reader to a Standard Plan that is new or has been recently revised.

Despite considerable efforts to produce 1) a completely error-free document, 2) a document consistent with the 2008 Standard Specifications, and 3) a web version of this document, some mistakes and inconsistencies seem to defy detection until after publication. Should you discover errors in this document or inconsistencies between or among the versions, please bring them to our attention by contacting the City's Construction Standards Engineer at the following web address: **http://www.seattle.gov/util/Engineering/Standard_Plans_&_Specs**

Should conflict be discovered between this hard copy version of the 2008 Standard Plans and any other version of the 2008 Standard Plans, this hard copy shall take precedence. Should conflict be discovered between any version of the 2008 Standard Plans and the hard copy of the 2008 Standard Specifications, the hard copy of the 2008 Standard Specifications shall take precedence.

My sincere thanks and appreciation to all those individuals in the many City Departments who participated in the effort of providing input, discussing, and reviewing this document, and to the many City Departments for agreeing on standardizing similar constructions. Additional thanks to Dean Huber of the Seattle Public Utilities Technical Resources section and his staff for drafting the individual 2008 Standard Plans and to the Seattle Public Utilities Information Technology section for preparing the web version of the 2008 Standard Plans.

The hardcopy version of this document is available at the Seattle Public Utilities Engineering Records Center located in the Seattle Municipal Tower, 700 Fifth Avenue, Suite 4700, Seattle, Washington 98104, 206-684-5132. The web version of the 2008 Standard Plans can be viewed and downloaded in pdf format at the web address listed above.

This Preface is for informational purposes only and is not to be used to interpret or affect the terms of the Contract between The City of Seattle as the Contracting Agency and the Contractor.

Brian Patton, P.E.
Director
Engineering Services and Engineering Support Divisions
Seattle Public Utilities

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2008 edition City of Seattle Standard Plans for Municipal Construction

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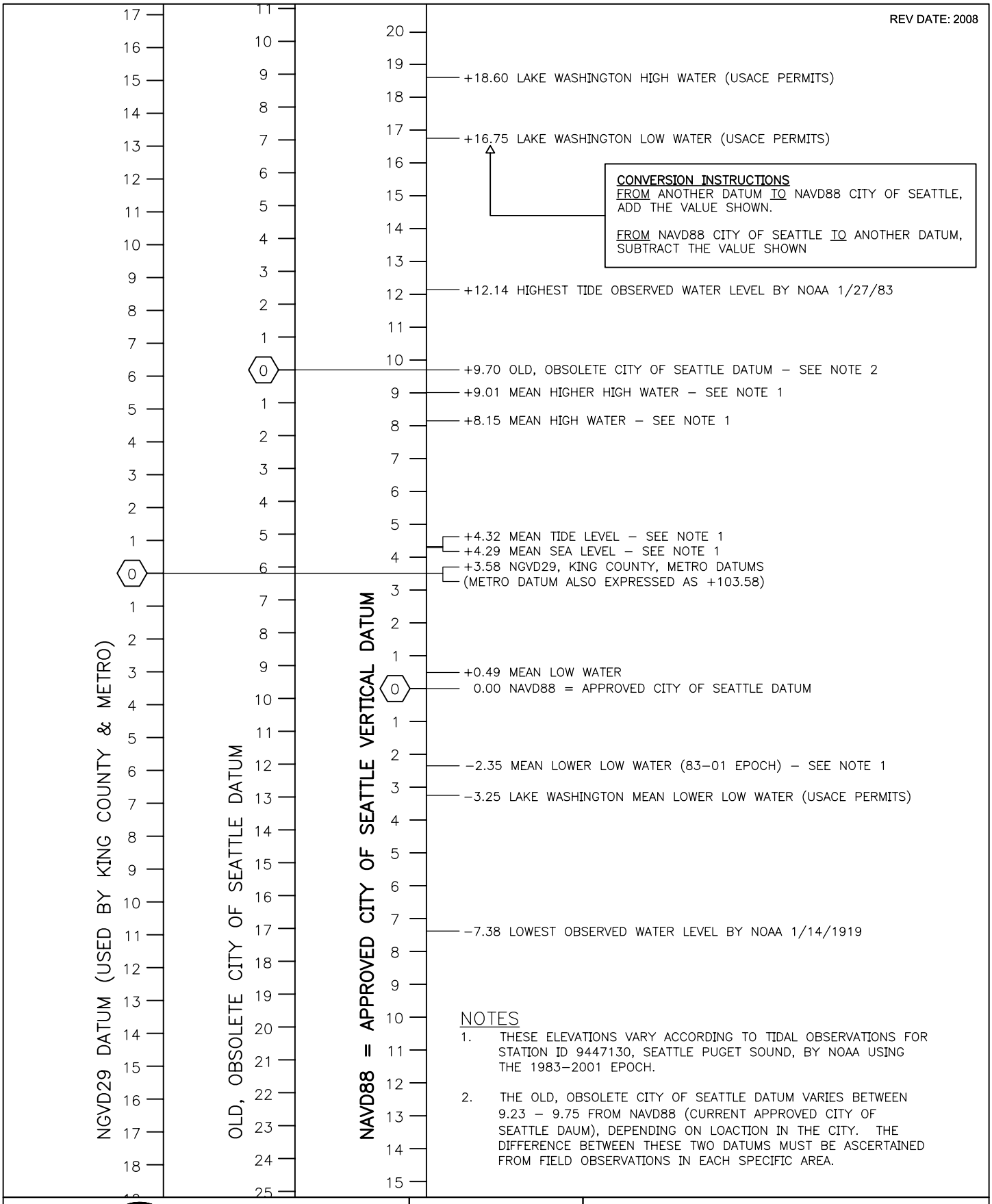
REV DATE: 2008



NOTES

1. THESE ELEVATIONS VARY ACCORDING TO TIDAL OBSERVATIONS FOR STATION ID 9447130, SEATTLE PUGET SOUND, BY NOAA USING THE 1983–2001 EPOCH.
2. THE OLD, OBSOLETE CITY OF SEATTLE DATUM VARIES BETWEEN 9.23 – 9.75 FROM NAVD88 (CURRENT APPROVED CITY OF SEATTLE DAUM), DEPENDING ON LOACTION IN THE CITY. THE DIFFERENCE BETWEEN THESE TWO DATUMS MUST BE ASCERTAINED FROM FIELD OBSERVATIONS IN EACH SPECIFIC AREA.

City of Seattle | NOT TO SCALE | ELEVATIONS & DATUMS

REV DATE: 2008

ABAN	Abandon(ed)
ABW	Asphalt Bike Way
ACV	Automatic Control Valve
ACP	Asphalt Concrete Pavement
ADA	Americans with Disabilities Act
ADJ	Adjust
AHD	Ahead
AIC	Aerial Interconnect Cable
AL	Aluminum
AP	Angle Point
APP	Approved
APPROX	Approximate
APWA	American Public Works Association
ASPH	Asphalt
ATB	Asphalt Treated Base
AV	Air Valve
AVB	Automatic Vacuum Breaker
AVE	Avenue
AVG	Average
AW	Asphalt Walk
AWG	American Wire Gage
AWWA	American Water Works Assoc..
B&B	Ball & Burlap
BC	Bolt Circle, Back of Curb
BF	Bottom Face
BFV	Butterfly Valve
BK	Back
BLDG	Building
BLK	Block
BLKG	Blocking
BLKHD	Bulkhead
BLRD	Bollard
BLVD	Boulevard

BM	Bench Mark
BO	Blow Off
BOC	Beginning of Curb
BPD	Backflow Prevention Device
BR	Bare Root, Brick
BRG	Bearing
BRKN	Broken
BSMT	Basement
BTW	Between
BV	Ball valve
BVC	Beginning of Vertical Curve
C&G	Curb & Gutter
CAL	Caliper
CB	Cable, Catch Basin
CBW	Concrete Bike Way
C–C	Center to Center
CC	Concrete Culvert
CD	Conduit
CDF	Controlled Density Fill
CEM	Cement
CF	Cubic Feet
CH	Chamber
CIP	Cast Iron Pipe
CL	Center Line or Class
℄	Center Line
CLF	Chain Link Fence
CLR	Clearance
CMP	Corrugated Metal Pipe
CO	Clean Out
COMP	Compression
CONC	Concrete
COND	Condition
CONN	Connect/Connection

REF STD SPEC SEC 1-01.2

REV DATE: 2008

CONSTR	Construction
CONT	Continuous
CORP	Corporation
COS	City of Seattle
CR	Cross, Curb Radius
CSB	Chief Seattle Base
CULV	Culvert
DW	Concrete Walk
CY	Cubic Yard
DB	Direct Burial Cable
DC	Direct Current
DCVA	Double Check Valve Assembly
DEPT	Department
DGV	District Gate Valve
DIA ø	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 Manhole
ENCL	Enclosure
ENGR	Engineer
EOC	End of Curb

EQ	Equal
EASL	Equivalent Single Axle Loads
ESMT	Easement
EV	Electrical Vault
EVC	End of Vertical Curb
EW	Each Way
EX	Existing
ECP	Expansion
FACB	Fire Alarm Cable
FAHH	Fire Alarm Handhole
FC	Face of Curb
FCS	Flow Control Structure
FDN	Foundation
FF	Far Face, Finished Floor
FG	Finished Grade
FIG	Figure
FIPT	Female Iron Pipe Thread
FLG	Flange
FLR	Floor
FLT	Flat Bar
FM	Force Main
FO or FOC	Fiber Optics
FS	Far Side
FT	Feet
FTG	Footing
G	Gas
G REG	Gas Regulator
GA	Gauge
GAL	Gallon
GALV	Galvanize/Galvanized
GAS V	Gas Valve
GFCI	Ground Fault Circuit Interrupter
GIP	Galvanized Iron Pipe

REF STD SPEC SEC 1-01.2

GM	Gas Meter
GND	Ground
GP	Guy Pole
GPM	Gallons Per Minute
GR	Grade
GRHH	Ground Rod Handhole
GS	Gas Service
GSP	Galvanized Steel Pipe
GV	Gate Valve
GVC	Gate Valve Chamber
GVL	Gravel
HMA	Hot Mix Asphalt
HB	Horizontal Bend
HEX	Hexagon/Hexagonal
HGL	Hydraulic Grade Line
HH	Handhole
HI	High
HORIZ	Horizontal
HPG	High Pressure Gas
HPS	High Pressure Sodium
HR	Hour
HSE	House
HT	Height
HYD	Hydrant
ID	Inside Diameter/Dimension
IE	Invert Elevation
IF	Inside Face
IN	Inch(es)
INL	Inlet
INT	Intersection
INV	Invert (Line)
IP(S)	Iron Pipe (Size)
IRC	Irrigation Controller

IRRG	Irrigation
ISO	Isolation Coupling
JB	Junction Box
JT	Joint
KV	Kilovolt
LAL	Limited Access Line
LBS	Pounds
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
LT	Left
LUM	Luminaire
MA	Mast Arm
MAX	Maximum
MB	Mailbox
MCV	Manual Control Valve
MDV	Manual Drain Valve
MH	Manhole
MIC	Monument in Case
MIN	Minimum
MIPT	Male Iron Pipe Thread
MISC	Miscellaneous
MJ	Mechanical Joint
ML $\underline{\text{M}}$	Monument Line
MNRL AGG	Mineral Aggregate
MOD	Modify/Modified
MON	Monument

REF STD SPEC SEC 1-01.2

REV DATE: 2008

MW	Monitor Well
N	North
NAD	North American Datum
NAVD	North American Vertical Datum
NF	Near Face
NGVD	National Geodetic Vertical Datum
NIC	Not in Contract
NO	Number
NOM	Nominal
NS	Near Side
NTS	Not To Scale
OC	On Center
OD	Outside Diameter/Dimension
OF	Outside Face
OH	Overhead
PAV	Pavement
PC	Point of Curvature
PCC	Point of Compound Curve
PDP	Perforated Drain Pipe
PE	Plain End
PED	Pedestrian
PG	Performance Grade
PH	Phase
PI	Point of Intersection
PL	Plate, Place
℄	Property Line
POC	Point on Curve
PP	Power Pole
PPB	Pedestrian Push Button
PR	Pair
PRC	Point of Reverse Curve
PROP	Proposed
PRKG	Parking

PRV	Pressure Reducing Valve
PS	Pipe Sewer Combined
PSD	Pipe Storm Drain
PSDD	Pipe Storm Drain Detention
PSI	Pounds per Square Inch
PSIA	Pounds per Square Inch Absolute
PSIG	Pounds per Square Inch Gauge
PSS	Pipe Sewer Sanitary
PT	Point of Tangency
PVB	Pressure Vacuum Breaker
PVC	Polyvinyl Chloride
PVT	Private
QTY	Quantity
R	Radius
R&R	Remove & Replace
R/W	Right of Way
RCP	Reinforced Concrete Pipe
RD	Roof Drain
RDWY	Roadway
RECONN	Reconnect
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

REF STD SPEC SEC 1-01.2

REV DATE: 2008

RLWY	Railway
RP	Rock Pocket
RPBA	Reduced Pressure Backflow Assembly
RR	Railroad
RS	Rigid Steel
RT	Right
S	South
SB	Sandbox
SCH	Schedule
SCL	Seattle City Light
SDS	Street Designation Sign
SD	Service Drain
SDOT	Seattle Department of Transportation
SEC	Section
SHLD	Shield
SHT	Sheet
SL	Sleeve, Street Light
$\mathbb{Q}$	Survey Line
SLHH	Street Light Handhole
SNS	Street Name Sign
SP	Strain Pole
SPCS	Spaces
SPEC	Specifications
SPU	Seattle Public Utilities
SQ	Square
SS	Stainless Steel, Side Sewer–Combined
SSD	Sub–Surface Drain
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
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
TN	Ton
TR	Traffic
TRCB	Traffic Signal Cable
TRCD	Traffic Signal Conduit
TRSCC	Traffic Signal Controller Cabinet
TVCB	Television Cable
TVHH	Television Handhole
TYP	Typical
UG	Underground
UIC	Underground Interconnect
UNC	Unified National Course
UP	Utility Pole

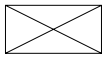
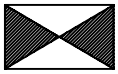
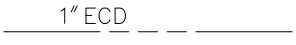
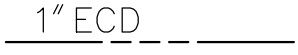
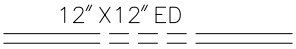
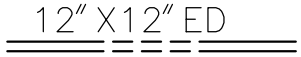
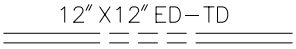
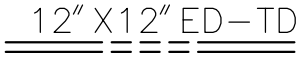
REF STD SPEC SEC 1-01.2

REV DATE: 2008

V	Valve, Variable
V/C	Vertical Curve
VAR	Variable/Varies
VB	Vertical Bend
VBOX	Valve Box
VCH or VC	Valve Chamber
VEH	Vehicle
VERT	Vertical
VMS	Variable Message Sign
VO	Vacation Ordinance
W	Water, West
W/	With
WCR	Wheel Chair Ramp
WD	Wood/Wooden
WF	Wood Fence
WIF	Wrought Iron Fence
WM	Water Meter, Water Main
WMR	Water Main Radius
WP	Wood Pole
WS	Water Service
WSP	Wood Stave Pipe
WU	Western Union
WV	Water Valve
WWF	Welded Wire Fabric
XP	Transmission Pole

REF STD SPEC SEC 1-01.2

REV DATE: 2003

ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Signal Controller Cabinet		.014		.020	ECAB PCABII or PCABIII draw to size
Electrical Vault		.014		.020	EVAULT / PEV draw to size
Electrical Cable (direct burial)		.014		.024	LT=ECd 6-1-1-1
Electrical Conduit		.014		.024	LT=ECd 6-1-1-1
Electrical Duct		.014		.024	LT=ECd 6-1-1-1
Combined Electrical & Telephone Duct		.014		.024	LT=ECd 6-1-1-1
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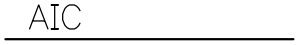
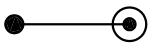
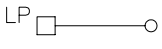
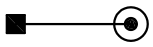
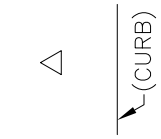
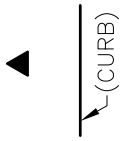
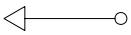
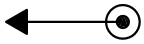
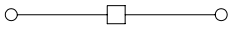
Aerial Interconnect Cable		.014		.024	
Transmission Pole (steel w/ conc base)		.014		.024	EXP PXP
City Wood Pole		.014		.024	EPP PWP
City Wood Pole w/ HPS		.014		.024	EPPLT PWP+PBARM+PLUM

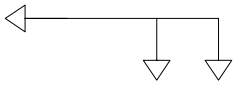
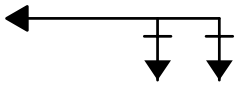
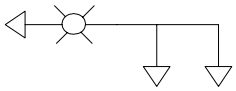
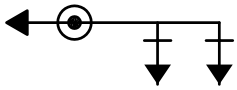
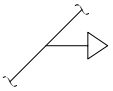
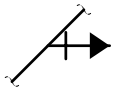
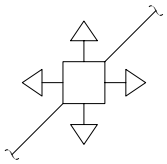
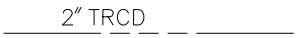
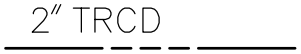
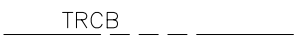
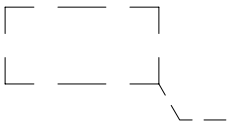
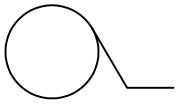
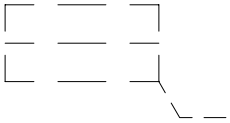
City of Seattle	NOT TO SCALE	STANDARD SYMBOLS ELECTRICAL

REV DATE: 2003

ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Light Pole (metal) w/ HPS		.014		.024	ELP PLP+PBARM+PLUM
Strain Pole (metal)		.014			ESP/PSP
Combined Lighting Strain Pole HPS		.014		.024	ESPLT PSP+PBARM+PLUM
Luminaire		.014			ELUM
Mercury Vapor Luminaire		.014			EMVL
Double Light Pole		.014			EDBLT
Utility Wood Pole		.014		.024	EPP/PUP
Utility Guy Pole		.014		.024	EPP/PUP
Anchor		.014		.024	EGUY/PGUY
Ground		.014		.024	GND

City of Seattle	NOT TO SCALE	STANDARD SYMBOLS ELECTRICAL

REV DATE: 2008

ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Traffic Signal Mast Arm Pole		.014		.028	ESIG PMAP+PMAST# +PSIGV
Traffic Signal Mast Arm Pole w/ Luminaire		.014		.028	ESIG+ELUM PMAP+PMAST#+ PLUM+PSIGV
Traffic Signal on Span Wire		.014		.028	ESIG/PSIGV
Multi-Directional Traffic Signal on Span Wire		.014			ESIG
Traffic Signal Conduit		.014		.028 or .031	LT=ECd 6-1-1-1
Traffic Signal Cable		.014		.028 or .031	LT=ECd 6-1-1-1
Detector Loop, Dipole (loop schedule)		.014		.020	ELOOP1 PLOOP## drawn to size
Detector Loop, Quadrapole (loop schedule)		.014			ELOOP2
Pressure Detector		.014			drawn to size

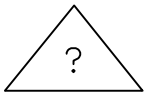
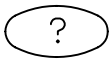
City of Seattle	NOT TO SCALE	STANDARD SYMBOLS ELECTRICAL

REV DATE: 2005

ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Signal Pedestal		.014		.020	EPEDP PPEDP
Vehicle Signal		.014			ESIG
Vehicle Signal w/ Backplate		.014		.020	ESIGNBK PSIGV
Vehicle Signal (optically programmed)		.014		.020	ESIGOP PSIGVOP
Pedestrian Signal		.014		.020	EPEDSIG PSIGP
Pedestrian Signal (optically programmed)		.014		.020	EPEDSGOP PSIGPOP
Pedestrian Push Button Pedestal		.014			EPPBP PPPBP
Pedestrian Push Button		.014		.020	EPPB PPPB
Illuminated SIgn		.014		.020	EILLSIGN PILLSIGN
Non-illuminated Sign		.014		.020	ENILSIGN PNILSIGN
Junction Box		.014			EJB
Handhole		.014		.020	EHH / PHH#
Traffic Control Handhole		.014		.020	EHH PHH#
Streel Light Handhole		.014		.020	EHH PHH#
Ground Rod Handhole		.014		.020	EHH PHH#
Fire Alarm Handhole		.014		.020	EHH

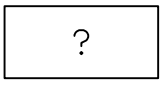
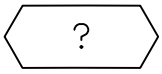
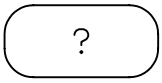
REV DATE: 2005

SIGNALIZATION

		CAD NOTES
	Vehicle & Pedestrian Signal Head (?=Identification Number)	PHEX
	Illuminated Traffic Sign (?=Identificaiton Number)	PBOX
	Cable Runs (?=Run Number per Wiring Schedule)	PTRI
	Removal/Relocation Item (?=Identification Number per Removal/Relocation Plan)	PCIR
	Construction Item (?=Identification Number per Signalization Plan)	POVAL

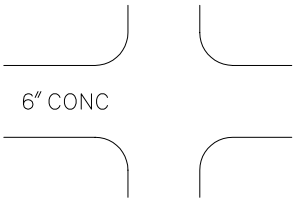
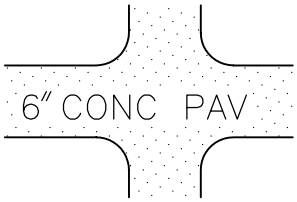
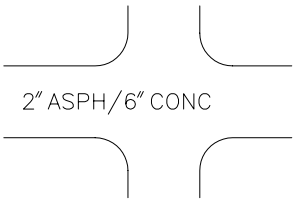
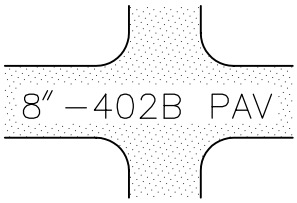
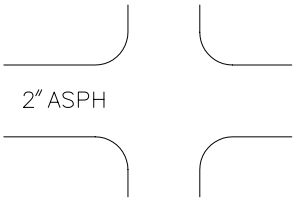
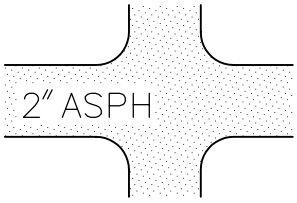
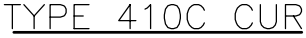
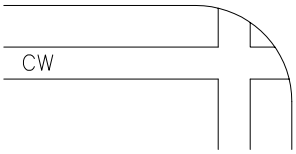
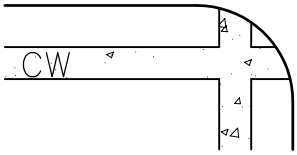
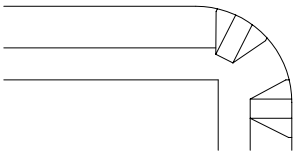
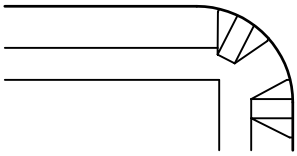
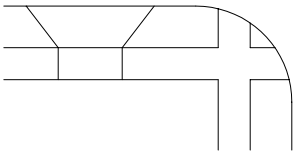
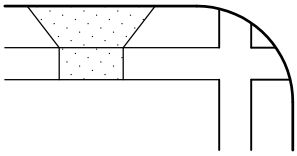
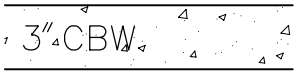
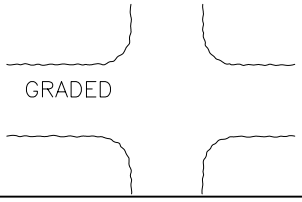
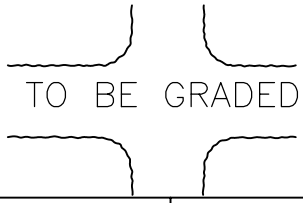
Signal Poles, Signal Pedestals, Push Button Pedestals & Push Buttons Identified by Number on Signalization Plan.

CHANNELIZATION & SIGNAGE

	Install Channelization Signage (?=Channelization / Signage Identified on Plan)	INSTALL
	Remove Channelization / Signage (?=Channelization / Signage Identified on Plan)	REMOVAL
	Relocate Signage (?=Signage Identified on Plan)	RELOCATE

City of Seattle	NOT TO SCALE	STANDARD SYMBOLS SIGNALIZATION / CHANNELIZATION & SIGNAGE

REV DATE: 2005

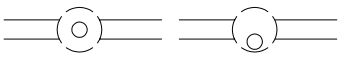
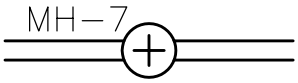
ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Cement Concrete Pavement		.014		.020	DOTS Color 22 Suggested scale 20 Angle 45
Asphalt Concrete Pavement		.014		.020	DOTS Color 22 Suggested scale 10 Angle 45
Asphalt Concrete Surfacing		.014		.020	DOTS Color 22 Suggested scale 10 Angle 45
Curb		.014		.028	
Cement Concrete Walk		.014		.020 .028	AR-CONC Color 22 Suggested scale 1.0 Angle 45
Curb Ramp		.014		.020 .028	EWCR user modified PWCR user modified AR-CONC
Conc Dwy		.014		.020 .028	DOTS Color 22 Suggested scale 20 Angle 45
Cement Concrete Bike Way		.014		.020	AR-CONC Color 22 Suggested scale 1.0 Angle 45
Asphalt Concrete Bike Way		.014		.020	DOTS Color 22 Suggested scale 10 Angle 45
Grading		.014		.020	SPU Customized Command: ASPH

City of Seattle

NOT TO SCALE

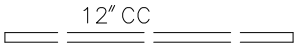
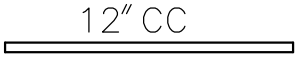
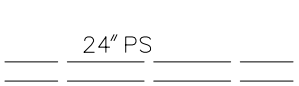
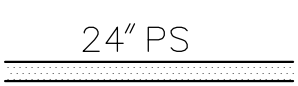
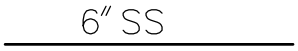
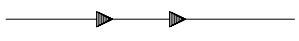
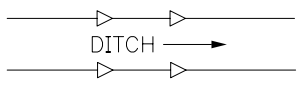
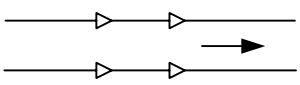
STANDARD SYMBOLS
PAVING

REV DATE: 2003

ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Manholes		.014		.031	EMH+ECASTC/ PMH LT=MH
Inlet Type 250A		.014		.031	EINL250A PINL250A
Inlet Type 250B		.014		.031	EINL250B PINL250B
Inlet Type 252		.014		.031	EINL252 PINL252
Inlet Type 268		.014			EINL250A
Catch Basin round inlet top		.014			ECB-RND
Private CB & Inlet		.014			ECB-PRIV
Catch Basin Type 151 (pre 1985)		.014			ECB151
Catch Basin Type 240A		.014		.031	ECB240A PCB240A
Catch Basin Type 240B		.014		.031	ECB240B PCB240B
Catch Basin Type 240C		.014		.031	ECB240C PCB240C
Catch Basin Type 240D				.031	PCB240D
Catch Basin Type 241		.014		.031	ECB241 PCB241
Catch Basin Type 242A		.014		.031	ECB242A PCB242A
Catch Basin Type 242B		.014		.031	ECB242B PCB242B
Catch Basin Type 277A		.014		.031	ECB277A PCB277A
Catch Basin Type 277B		.014		.031	ECB277B PCB277B
Sand Box		.014			ESB
Clean Out		.014		.031	ECO/PCO

City of Seattle	NOT TO SCALE	STANDARD SYMBOLS SEWER & DRAINAGE

REV DATE: 2003

ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Concrete Culvert		.014		.024	LT=PSS
Pipe Sewer Combined <1'-0"Dia		.014		.031	LT=PSS
Pipe Sewer Combined ≥1'-0"Dia		.014		.024	LT=PSS DOTS scale 10
Side Sewer Combined		.014		.028	LT=SD
Pipe Sewer Sanitary <1'-0"Dia		.014		.031	LT=PSS
Pipe Sewer Sanitary ≥1'-0"Dia		.014		.024	LT=PSS ANSI31 scale 20 / angle 90
Side Sewer Sanitary		.014		.028	LT=SD
Pipe Storm Drain <1'-0"Dia		.014		.031	LT-PSS
Pipe Storm Drain ≥1'-0"Dia		.014		.024	LT=PSS ANSI31 scale 10
Service Drain		.014		.028	LT=SD
Inlet & CB Connection		.014		.028	LT=SD
Open Ended Pipe		.014		.031	ETIC PTIC
Small Ditch or Stream		.014		.020	LT= ENDITCH LT= PNDITCH
Large Ditch or Stream		.014		.020	LT= WDITCH

City of Seattle	NOT TO SCALE	STANDARD SYMBOLS SEWER & DRAINAGE

REV DATE: 2003

ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Bench Mark (found or set)		.014			ESVBM
Brass Plug/Cap (found or set)		.014			ESVBP
Hub/Tack (found or set)		.014			ESVHUB
Monument in Case (found or set)		.014			ESVMIC
Conc. Mon. (found or set)		.014			ESVMON
Rebar/Cap, Pipe/Cap Rebar, Iron Pipe (found or set)		.014			ESVRB
Tack/Lead, Tack PK Nail, Spike (found or set)		.014			ESVTK
Bench Mark (not found)		.007			ESVNFBM
Brass Plug/Cap (not found)		.007			ESVNFBP
MIC. (not found)		.007			ESVNFMIC
Conc. Mon. (not found)		.007			ESVNFMON
Rebar/Cap, Pipe/Cap Rebar, Iron Pipe (not found)		.007			ESVNFRB
Tack/Lead, Tack PK Nail, Spike (not found)		.007			ESVNFTK
Survey Shot Point		.014			ESVSHOTP

City of Seattle	NOT TO SCALE	STANDARD SYMBOLS TOPOGRAPHIC & MISC

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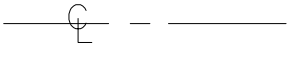
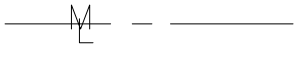
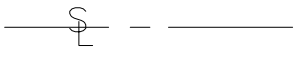
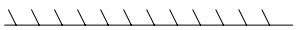
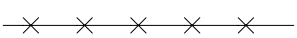
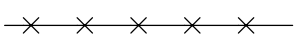
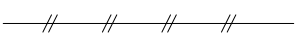
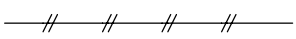
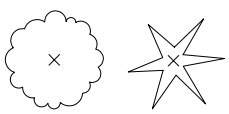
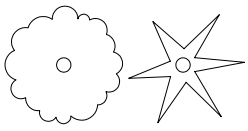
ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Center Line		.014			LT=CENTER3
Monument Line		.014			LT=CENTER3
Survey Line		.014			
Right of Way Line		.028			
Lot & Ownership Line		.014			
Permanent Easement Line		.031		.02	LT=EASEMENT
Temp Const Easement Line				.07	LT=DOT2
Vacated Street or Alley		.028			LT=PSS
State Highway Limited Access Line		.028			LT=BUILDING
Building		.014			LT=BUILDING
Chain Link Fence		.014		.014	LT=CHAIN_LINK_FENCE
Wood Fence		.014		.014	LT=WOOD_FENCE
Guardrail		.014		.014	LT=GUARD_RAIL
Rock Facing		.014		.012	SPU Customized Command: ROCKWALL
Rock Facing		.014			EROCK
Riprap		.014		.012	ERIPRAP PRIPRAP
Tree <1'-0" DIA		.014	PER DRAWINGS		EDECIDSM/ECONFSM PDECIDSM/PCONFSM draw to scale
Tree ≥1'-0" DIA		.014	PER DRAWINGS		ESTRUNK+ESDCANOP ESTRUNK+PSDCANOP draw to scale

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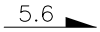
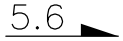
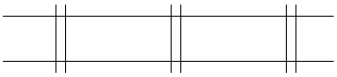
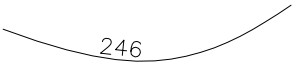
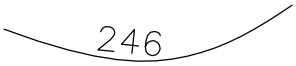
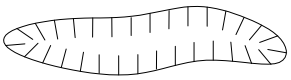
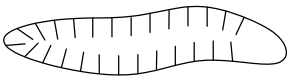
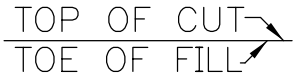
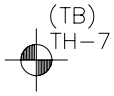
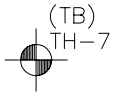
ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Shrub or Bush		.014		.020	ESHRUB PSHRUB
Ground, Grade Line		.014		.014	LT=DASHED2
Grade (arrow downhill)		.014		.014	
Rail Road Tracks		.014			SPU Customized Command
City Limits		.024			LT=BORDER
Slope Line				.014	
Contours		.014		.014	
Slope Angle Horiz:Vert		.014		.014	
Vertical Curve		.014		.014	
Depression		.014		.014	
Stump		.014			ESTUMP
Top of Cut Toe of Fill				.014	
Dimension Line		.014		.014	
Match Line		.014		.020	
Test Hole & Number (test boring)		.014		.003	ESVBM
Bench Mark		.014			ESVBM

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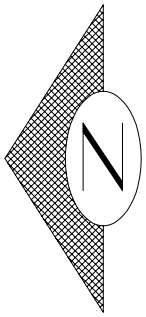
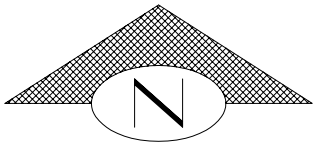
ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Monitor Well	MW ◯	.014			EMWELL
Street Name Sign	⊐	.014			ESNS
US Mail Box	US	.014			EMAILUS
Private Mail Box	▭	.014			EMAILPVT
Bollard	◯	.014	●		EBLRD/PBLRD
Post	□	.014			EPOST
Parking Meter	▭	.014			EPRKM
Rectangular Casting	□	.014			ECASTR
Circular Casting	◯	.014			ECASTC
Column	◯	.014			ECOLUMN
Jersey Barrier		.014	▭	.020	PJERSEY
Tree Pit	□	.014	□	.020	PTPIT or draw to scale
North Arrow horizontal					NORTHHOR
North Arrow vertical		.012			NORTHVER

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ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Telephone Cable (direct burial)	TCB	.014			LT=TEL 6-1-1 (typical)
Telephone Conduit	3" TCD	.014			
Telephone Duct	12" X 12" TD	.014			
Telephone Enclosure	TEB	.014			ETELENCL
Telephone Manhole	TMH	.014			draw to scale
Telephone Pole		.014			
Telephone Handhole	THH	.014			EHH draw to scale
Television Cable (direct Burial)	TVCB	.014			LT=TV 6-1-1-1
Television Handhole	TVHH	.014			EHH draw to scale
Telegraph Manhole	TELEG MH	.014			draw to scale
Steam Log	6" STM 14" X 14" LOG	.014			LT=STEAM 2-2
Steam Vault	STEAM VAULT	.014			draw to scale
Gas Main	12" G	.014			LT=GAS 6-1-6 (typical)
Gas Valve		.014			EVALVE
Gas Meter	GM	.014			EGM
Gas Regulator	G REG	.014			EGREG
Petroleum or Oil	OIL	.014			
Abandon(ed)	2" ECD(ABAN)	.014	2" ECD-ABAN	.024	

City of Seattle

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STANDARD SYMBOLS
PRIVATE UTILITIES

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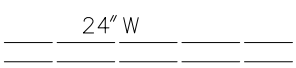
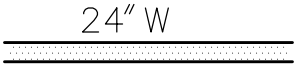
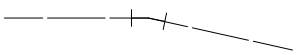
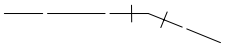
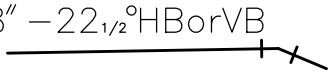
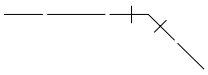
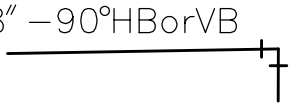
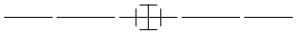
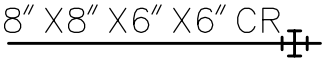
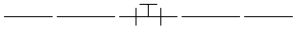
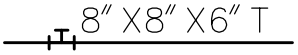
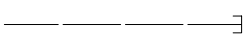
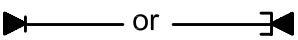
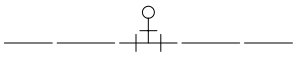
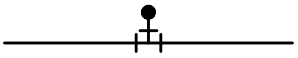
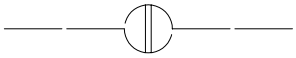
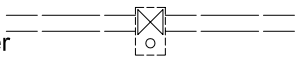
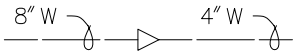
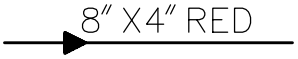
ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Watermain <8"Dia		.014		.031	LT=WATER 6-6 (typical)
Watermain ≤8"<1'-0"Dia		.014		.031	
Watermain ≥1'-0"Dia		.014		.031	DOTS scale 20
11 1/4° Bend w/ Conc Blocking		.014		.031	EHB11 PHB11 + PCONCBLK
22 1/2° Bend		.014		.031	EHB22 PHB22
45° Bend		.014		.031	EHB45 PHB45
90° Bend		.014		.031	EHB90 PHB90
Cross		.014		.031	ECROSS / PCROSS
Tee		.014		.031	ETEE / PTEE
Pipe Sleeve				.031	PSLEEVE
Plug w/ Conc Blocking		.014		.031	PTIC + PCONCBLK EPLUG
Hydrant		.014		.031	EHYD + ETEE PHYD + PTEE
Water Meter		.014		.031	EWM / PWM
Valve Box		.014			EVBX
Gate Valve		.014		.031	EVALVE PVALVE
Gate Valve w/ Chamber		.014		.031	EWGV PWGV
Gate Valve w/ Vault Chamber		.014		.031	EWGVVCH PWGVVCH
Reducer		.014		.031	ERED / PRED

City of Seattle	NOT TO SCALE	STANDARD SYMBOLS WATER

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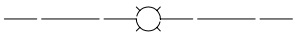
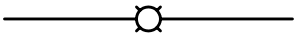
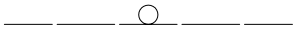
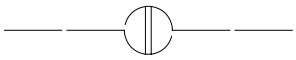
ITEM	EXISTING	LINE WEIGHT	PROPOSED	LINE WEIGHT	CAD NOTES
Air Valve		.014		.031	EAV / PAV
Blowoff		.014		.031	EBO / PBO
Butterfly Valve w/ Valve Box		.014		.031	EVALVE PVALVE
Butterfly Valve w/ Chamber		.014		.031	EWGV PWGV
Water Chamber		.014			EWCH
Sprinkler Head		.014			ESPRKHD
Irrigation Valve		.014			EIRRGV

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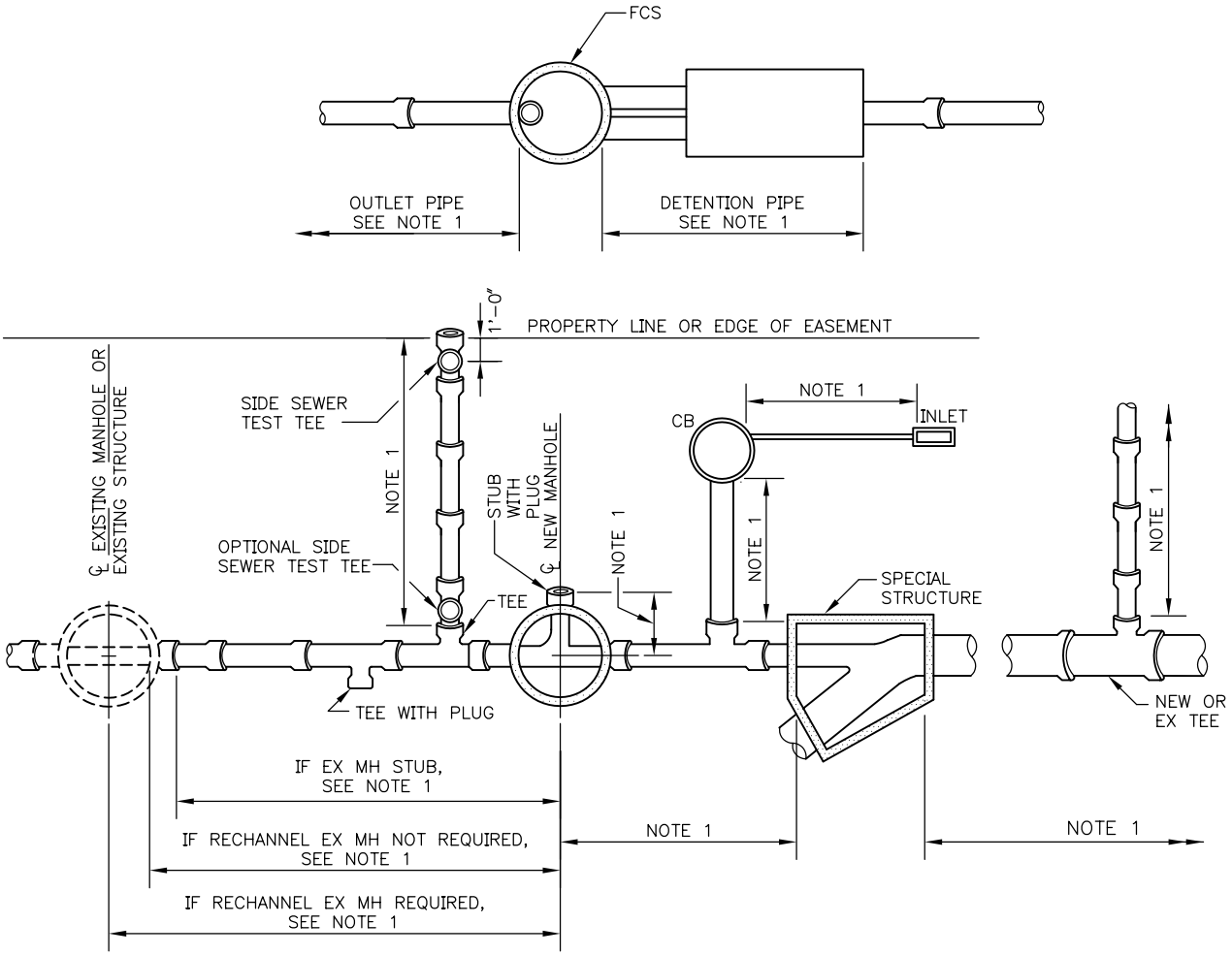


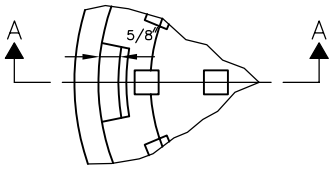
NOTES:

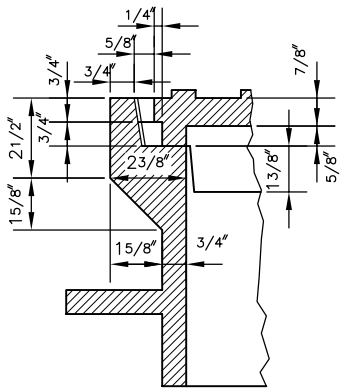
1. MEASUREMENT PER LINEAR FOOT. PIPE ENDING IN STRUCTURE MEASURED TO EITHER INSIDE FACE OR TO CENTERLINE OF STRUCTURE AS INDICATED, OR TO TEE OR WYE AS INDICATED.
2. TEE OR WYE INCLUDING PLUG – UNIT PRICE EACH
3. ALL PIPE SHALL BE MEASURED ON THE SLOPE ALONG THE CENTERLINE OF PIPE TO NEAREST 0.10 LF.

REF STD SPEC DIVISION 7

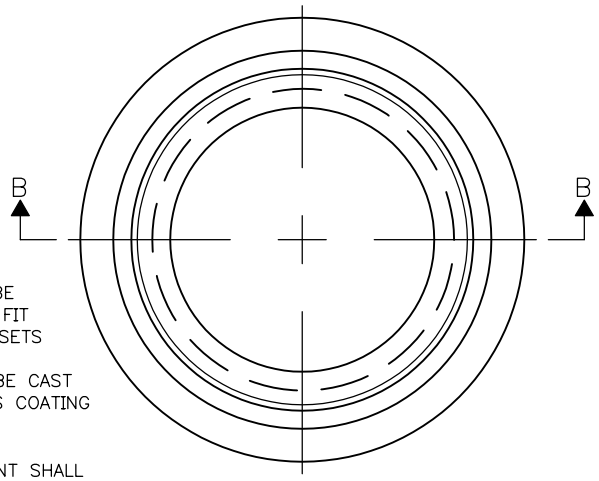
City of Seattle	NOT TO SCALE	SEWER/DRAINAGE MEASUREMENT DIAGRAM

REV DATE: 2008





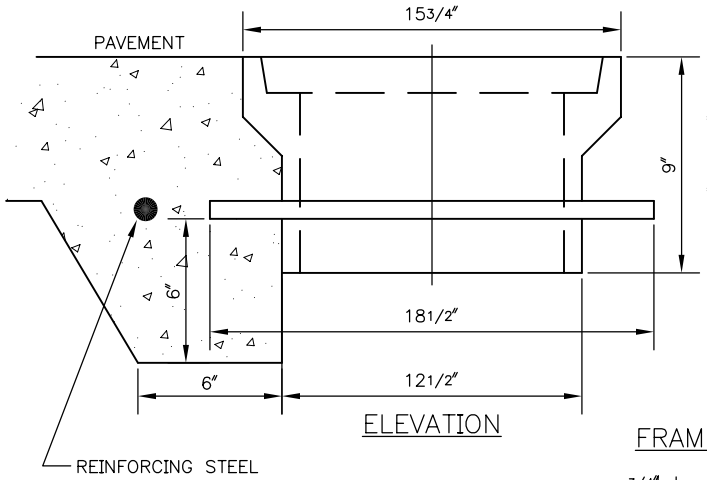
SECTION



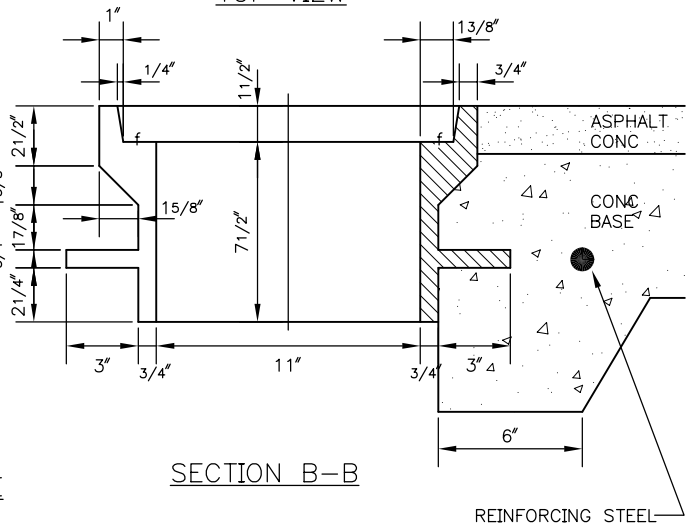
TOP VIEW

NOTES:

1. FRAME AND COVER SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS FOR DELIVERY
2. FRAME AND COVER SHALL BE CAST IRON AND HAVE BITUMINOUS COATING APPLIED TO ALL FACES
3. "f" =FINISH
4. CASTINGS IN RIGID PAVEMENT SHALL HAVE REINFORCING STEEL IN THE PAVEMENT.

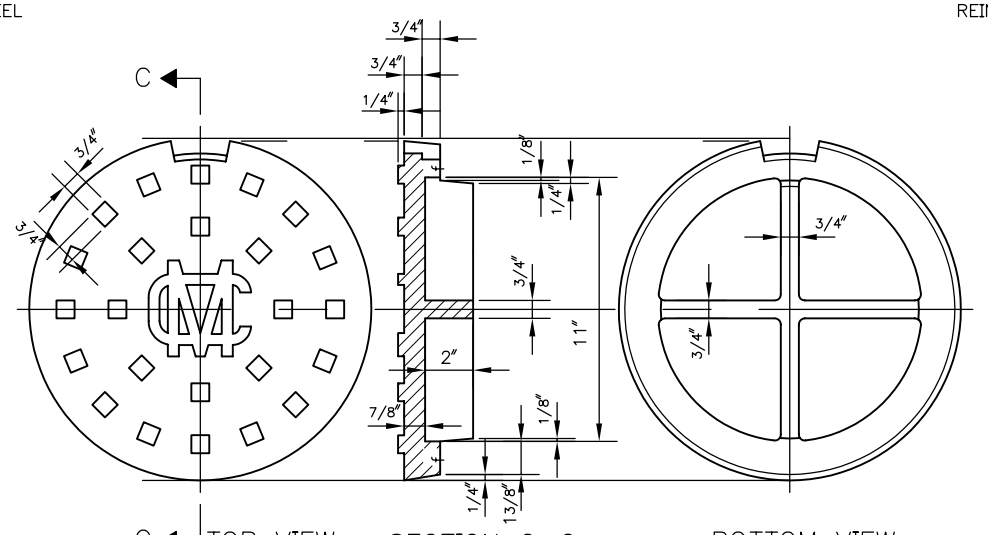


ELEVATION



SECTION B–B

FRAME



C TOP VIEW SECTION C–C BOTTOM VIEW

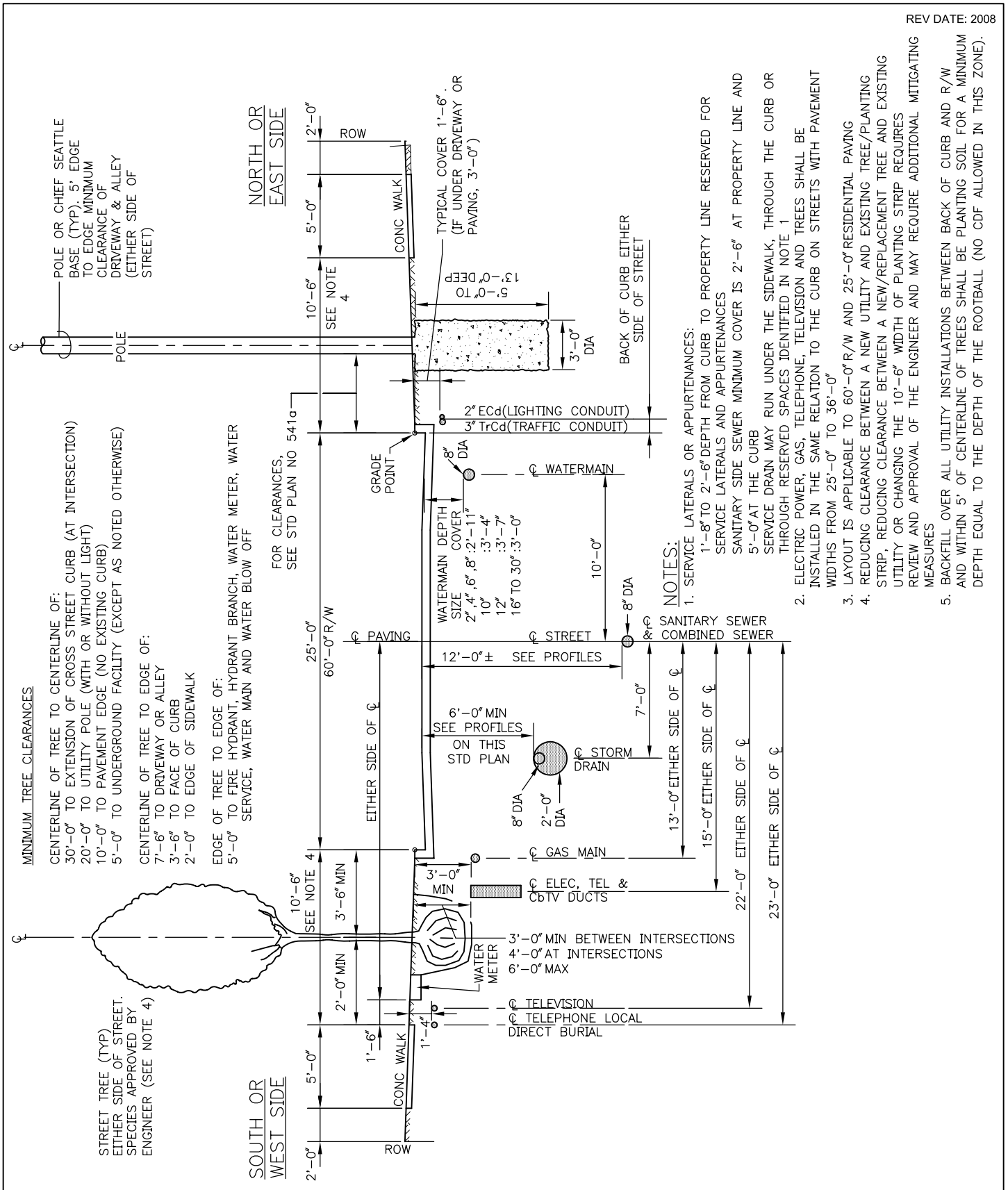
COVER

REF STD SPEC SEC 8-13

City of Seattle	NOT TO SCALE	MONUMENT FRAME & COVER

STANDARD PLAN NO 030

REV DATE: 2008

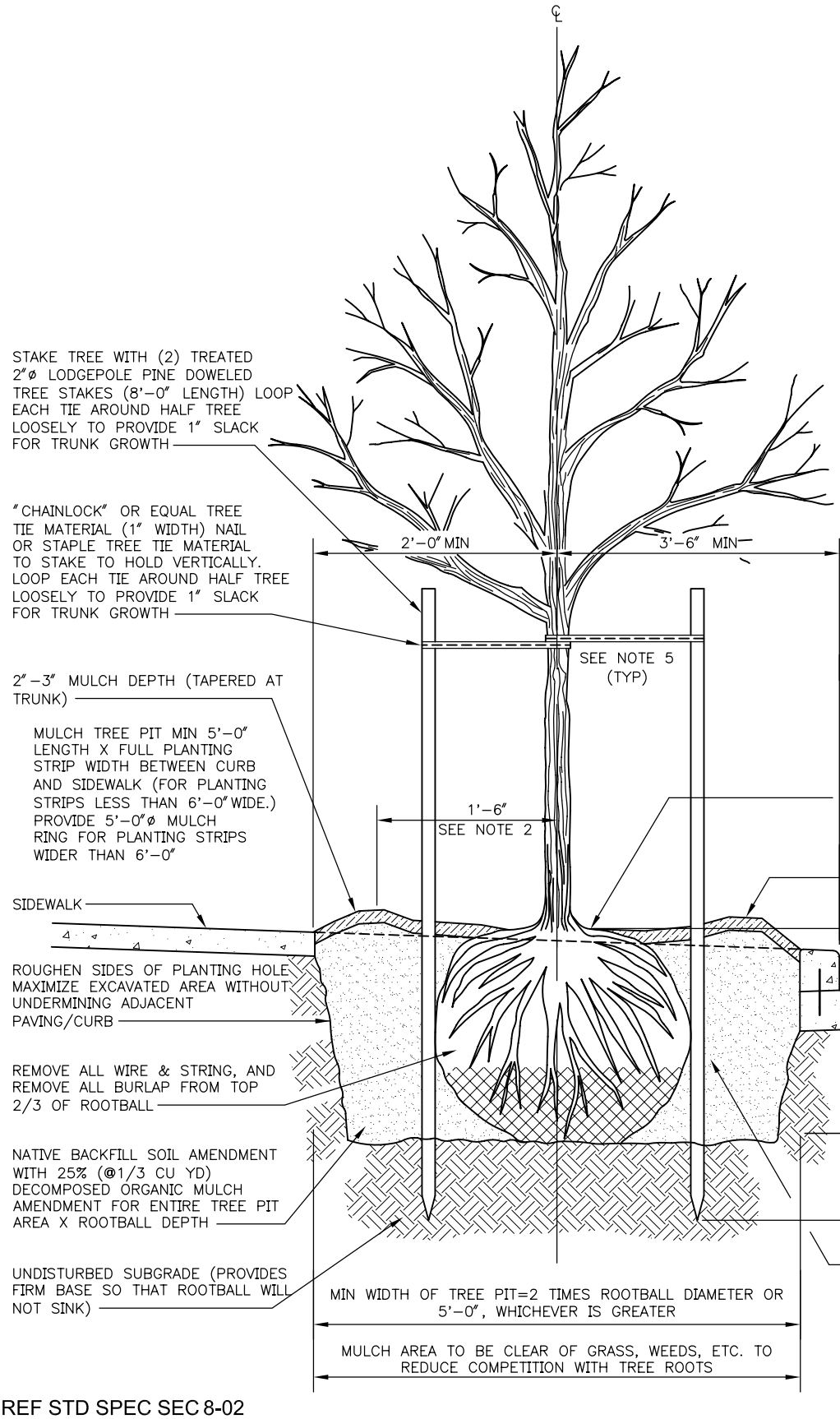


REF STD SPEC SEC 1-07.16, 1-07.17 & 1-07.28

City of Seattle	NOT TO SCALE	STANDARD LOCATIONS FOR UTILITIES (RESIDENTIAL STREET)

STANDARD PLAN NO 100a

REV DATE: 2008



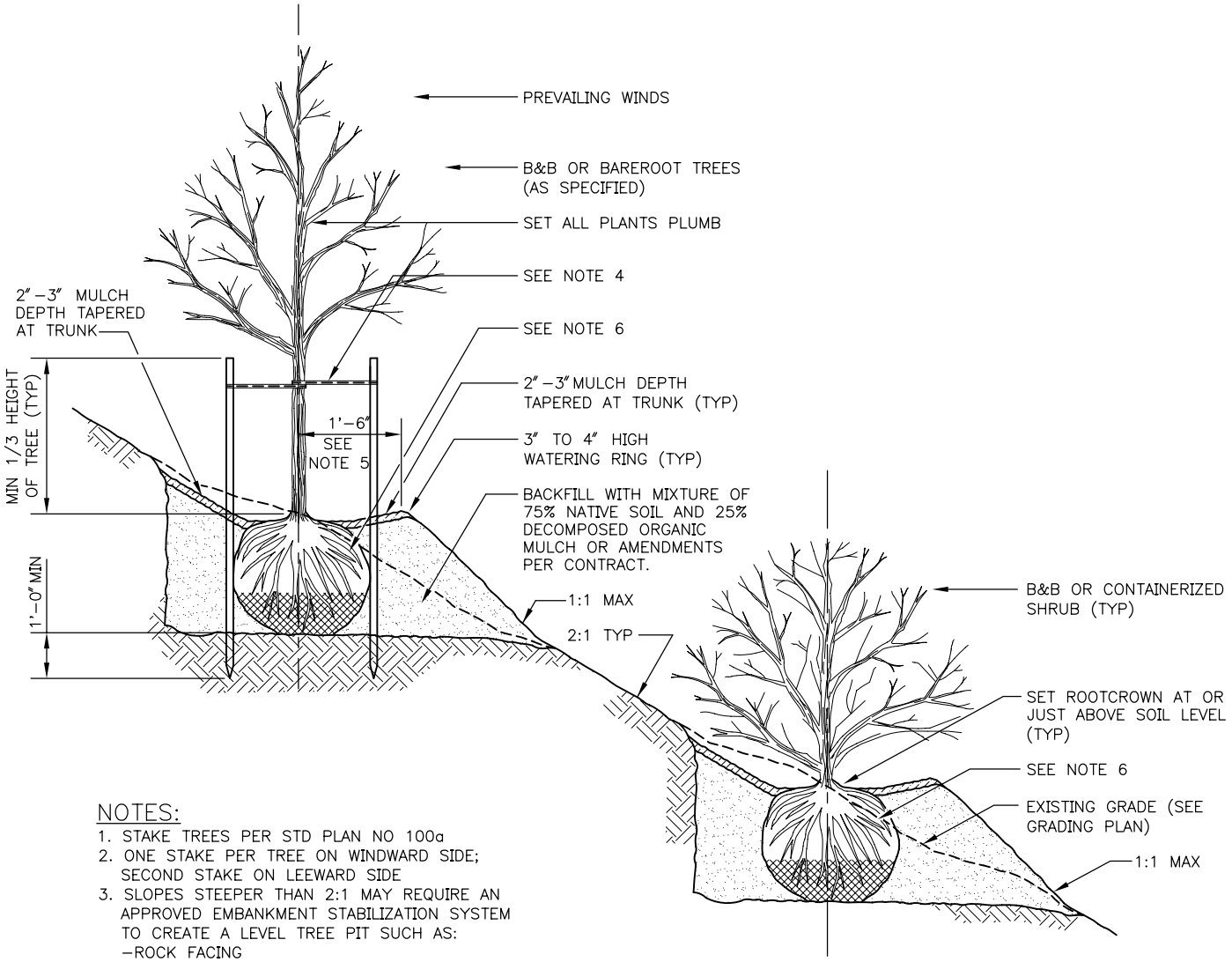
NOTES:

1. 1. INSTALLATION INCLUDES REMOVAL OF STAKES ONE YEAR AFTER INSTALLATION
2. SHAPE SOIL SURFACE TO PROVIDE 3' DIAMETER WATERING RING
3. TREE CLEARANCES SHALL 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 (18″ VERTICAL X 6' MIN. LENGTH) SHALL BE REQUIRED ALONG EDGE OF TREE PITS ADJACENT TO ASPHALT SIDEWALK OR TRAIL SURFACES AND EDGE OF TREE PITS ADJACENT TO CONCRETE SIDEWALK IF STANDARD 2'–0″ CLEARANCE BETWEEN TREE AND SIDEWALK CANNOT BE MET.

REF STD SPEC SEC 8-02

City of Seattle	NOT TO SCALE	DECIDUOUS TREE PLANTING IN PLANTING STRIP

REV DATE: 2003



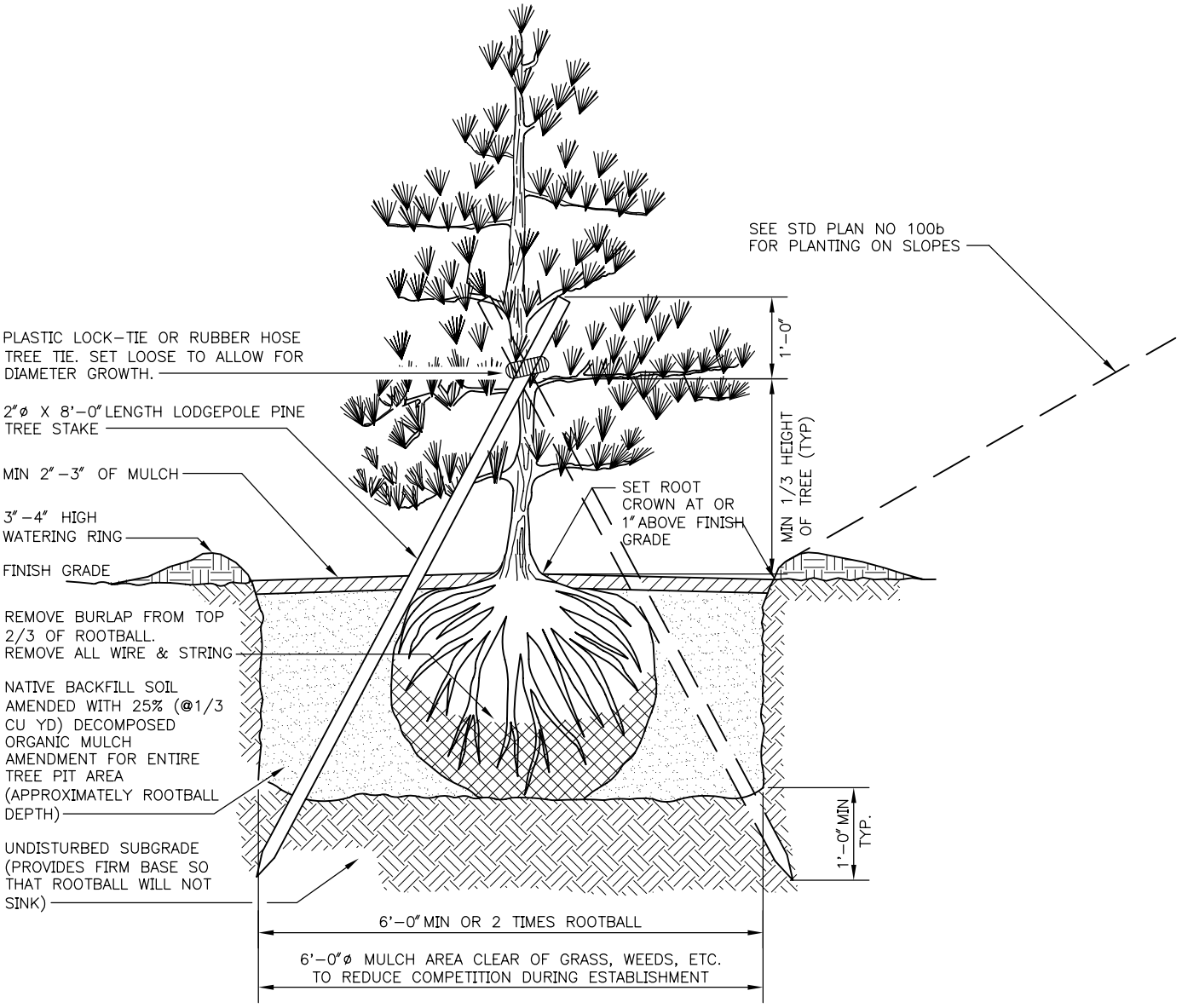
NOTES:

1. STAKE TREES PER STD PLAN NO 100a
2. ONE STAKE PER TREE ON WINDWARD SIDE; SECOND STAKE ON LEEWARD SIDE
3. SLOPES STEEPER THAN 2:1 MAY REQUIRE AN APPROVED EMBANKMENT STABILIZATION SYSTEM TO CREATE A LEVEL TREE PIT SUCH AS:
   –ROCK FACING
   –PRECAST CONCRETE WALL UNITS
   –TIMBER WALL
   –MANUFACTURED SLOPE RETENTION UNITS
4. CHAINLOCK TREE TIE. LOOP EACH TIE AROUND TREE LOOSELY TO PROVIDE 1″ SLACK FOR DIAMETER GROWTH.
5. SHAPE SOIL TO PROVIDE 3′ DIAMETER OR ROOTBALL DIAMETER, WHICHEVER IS GREATER, WATERING RING.
6. REMOVE ALL WIRE AND STRING. REMOVE TOP 2/3 OF BURLAP.

REF STD SPEC SEC 8-02

City of Seattle	NOT TO SCALE	TREE & SHRUB PLANTING ON SLOPES

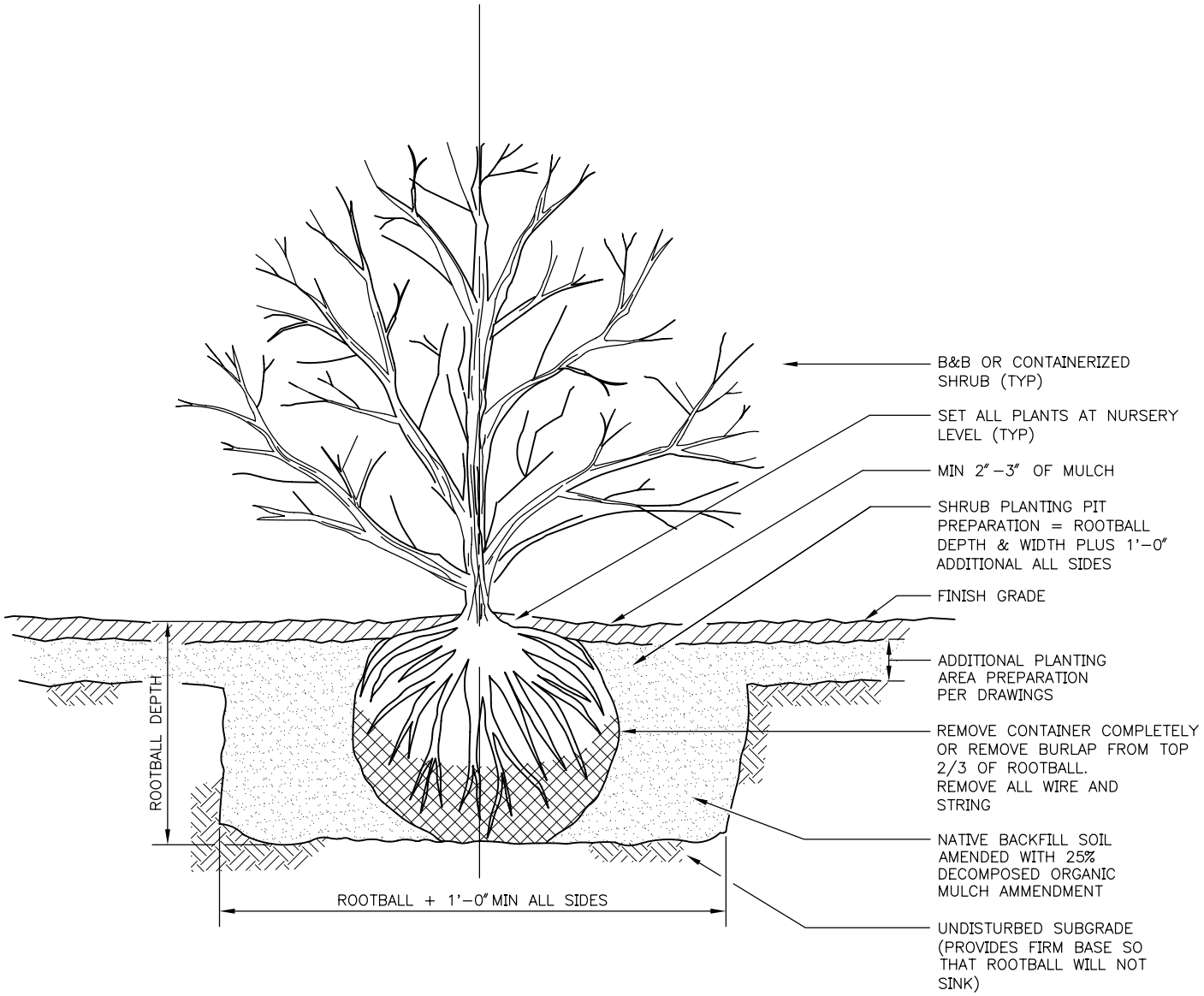
REV DATE: 2003



REF STD SPEC SEC 8-02

City of Seattle	NOT TO SCALE	CONIFEROUS TREE PLANTING

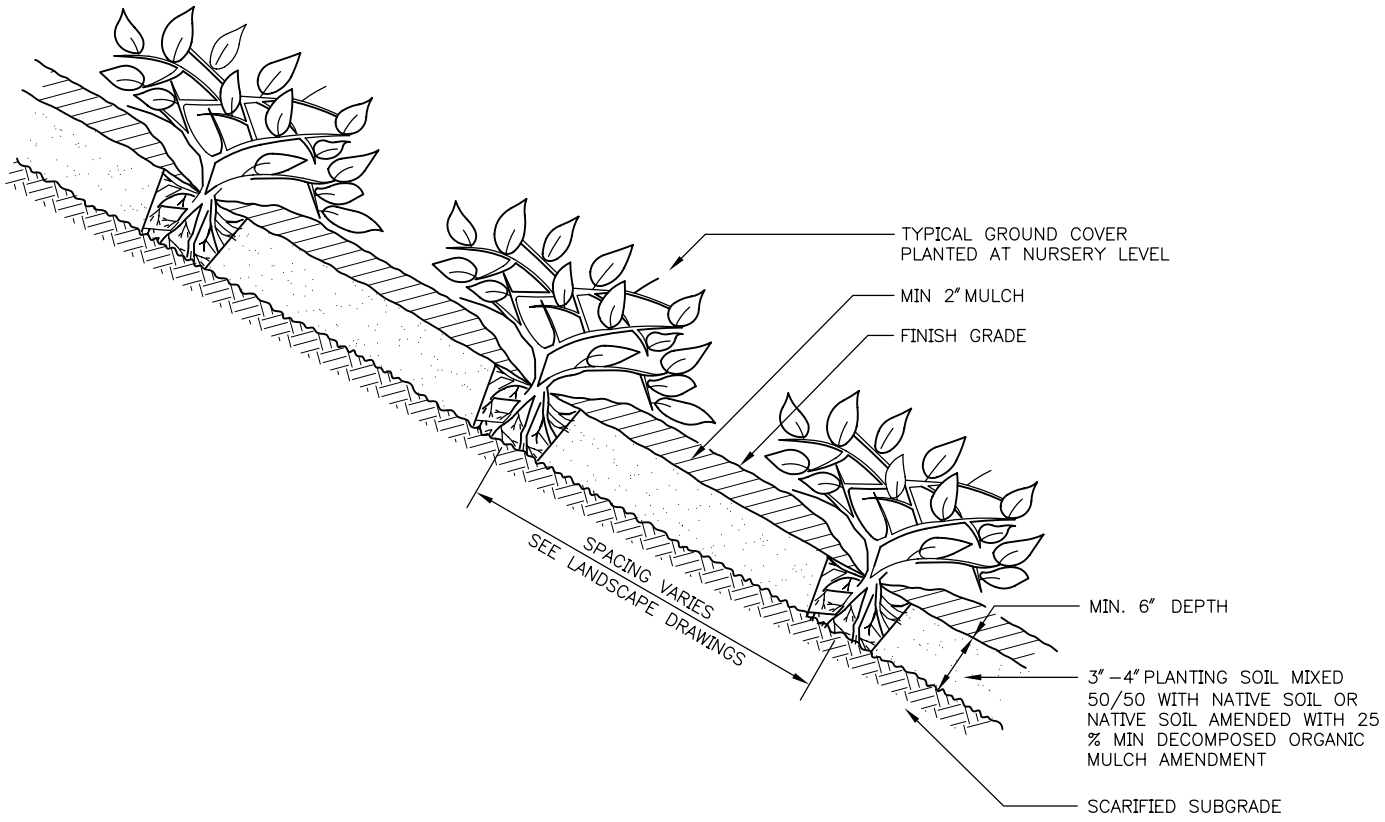
REV DATE: 2003



REF STD SPEC SEC 8-02

City of Seattle	NOT TO SCALE	SHRUB PLANTING

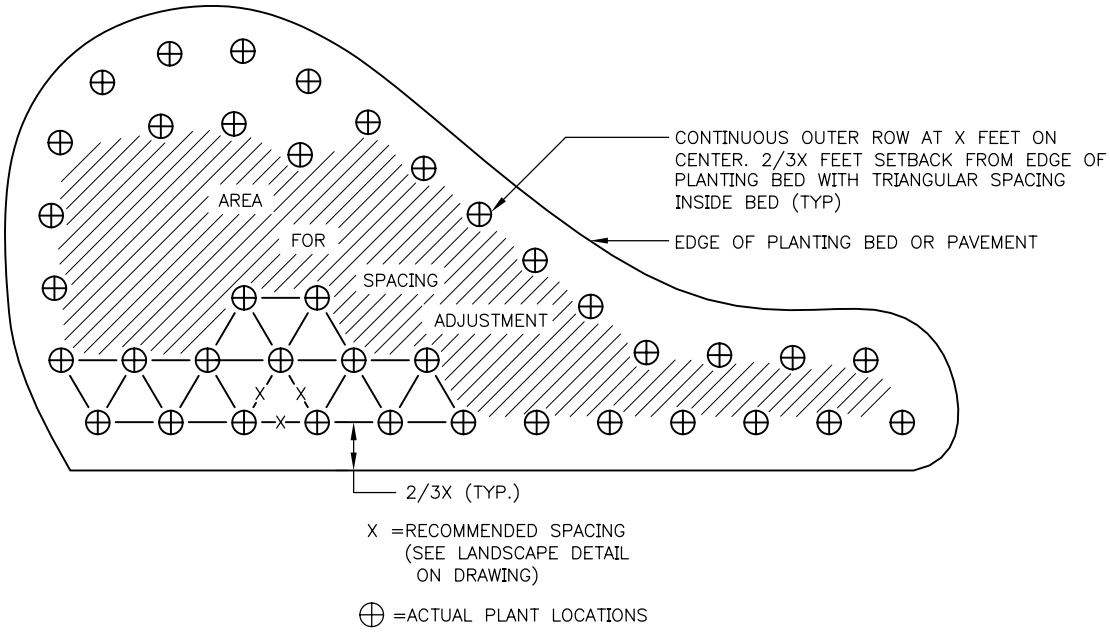
REV DATE: 2003



REF STD SPEC SEC 8-02

City of Seattle	NOT TO SCALE	GROUND COVER PLANTING

REV DATE: 2003

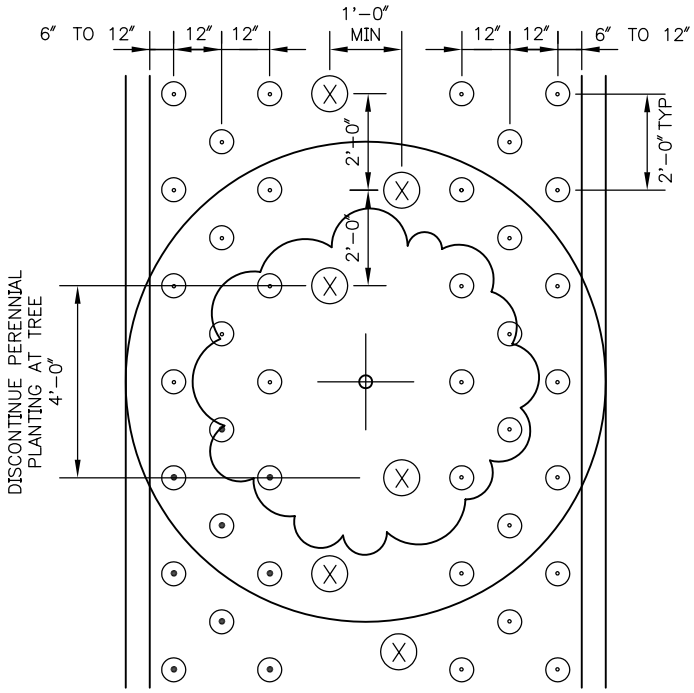


REF STD SPEC SEC 9-14

City of Seattle	NOT TO SCALE	PLANTING PATTERN

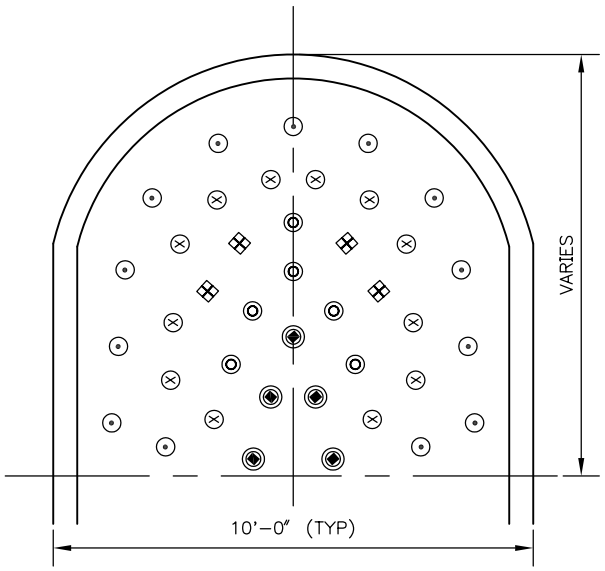
STANDARD PLAN NO 113

REV DATE: 2008



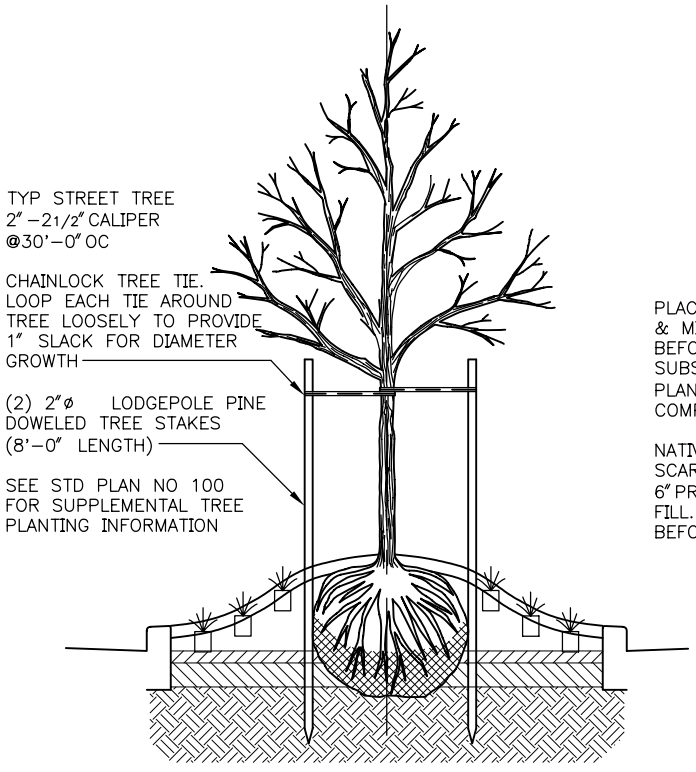
	QUANT PER 10′–0″ LF MEDIAN
⊙ GROUNDCOVER	30
Ⓧ SHRUB	5

DETAIL AT TREE
PLAN

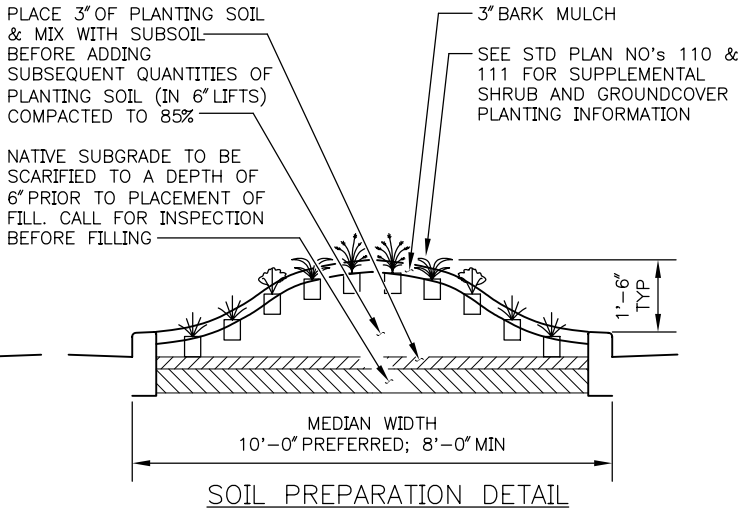


	QUANT PER END CAP
◈ PERENNIAL TYPE 1	4
◎ PERENNIAL TYPE 2	6
◉ PERENNIAL TYPE 3	5
⊙ EVERGREEN GROUNDCOVER TYPE 1	13
Ⓧ EVERGREEN GROUNDCOVER TYPE 2	12

END CAP DETAIL



ELEVATION



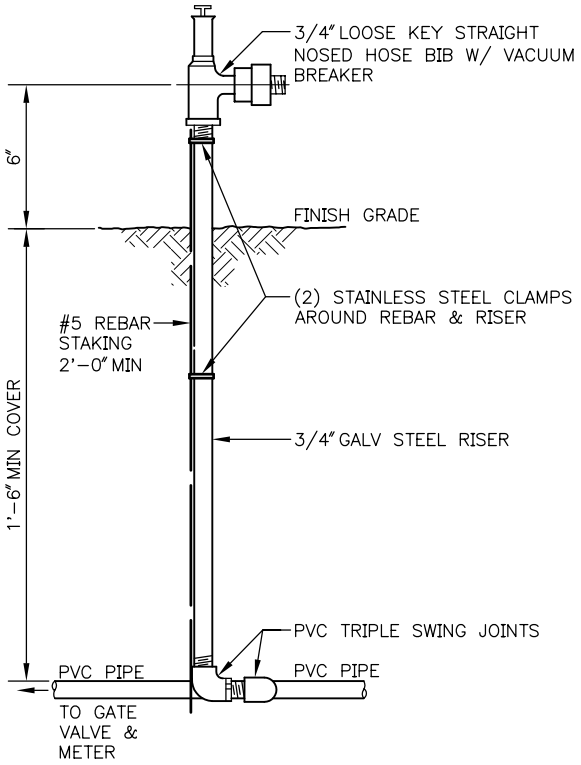
SOIL PREPARATION DETAIL

REF STD SPEC SEC 8-02

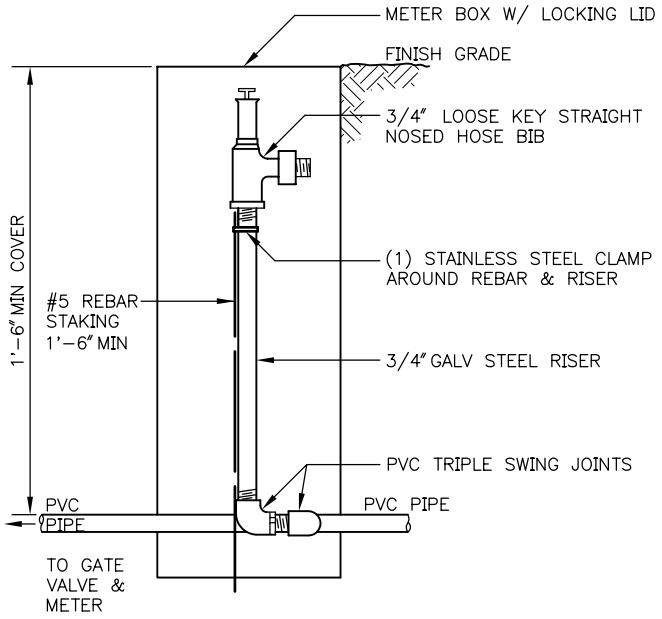
City of Seattle	NOT TO SCALE	MEDIAN PLANTING

STANDARD PLAN NO 121

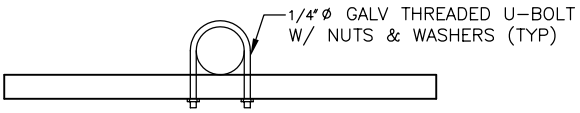
REV DATE: 2003



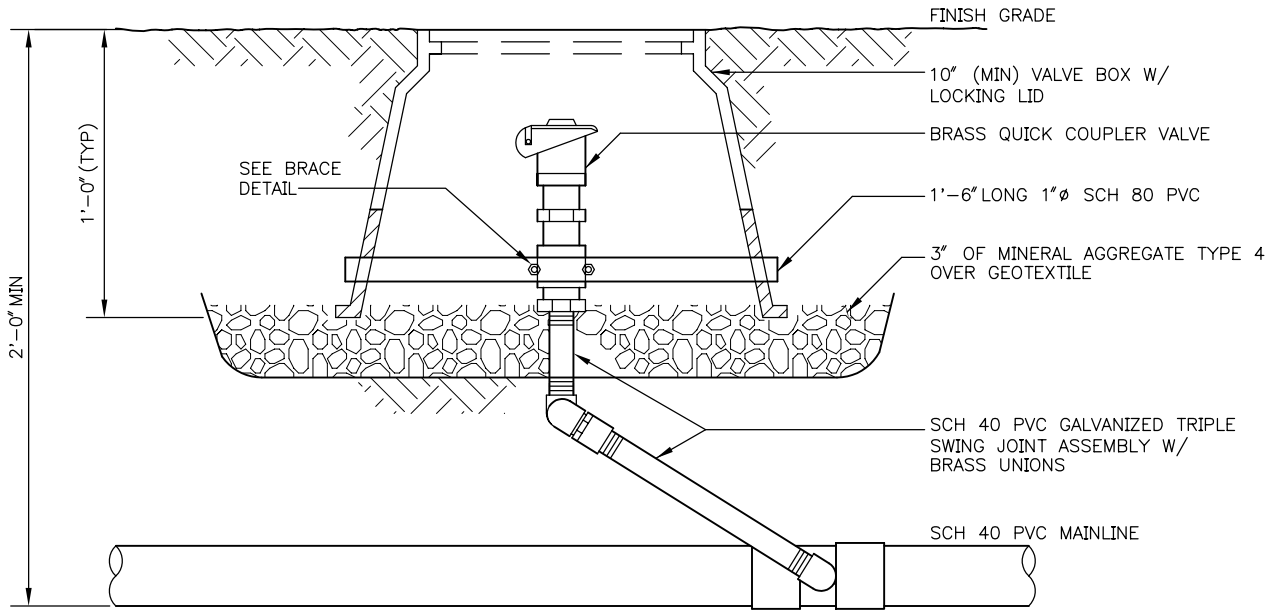
ABOVE GROUND HOSE BIB



BELOW GROUND HOSE BIB



BRACE DETAIL – PLAN VIEW



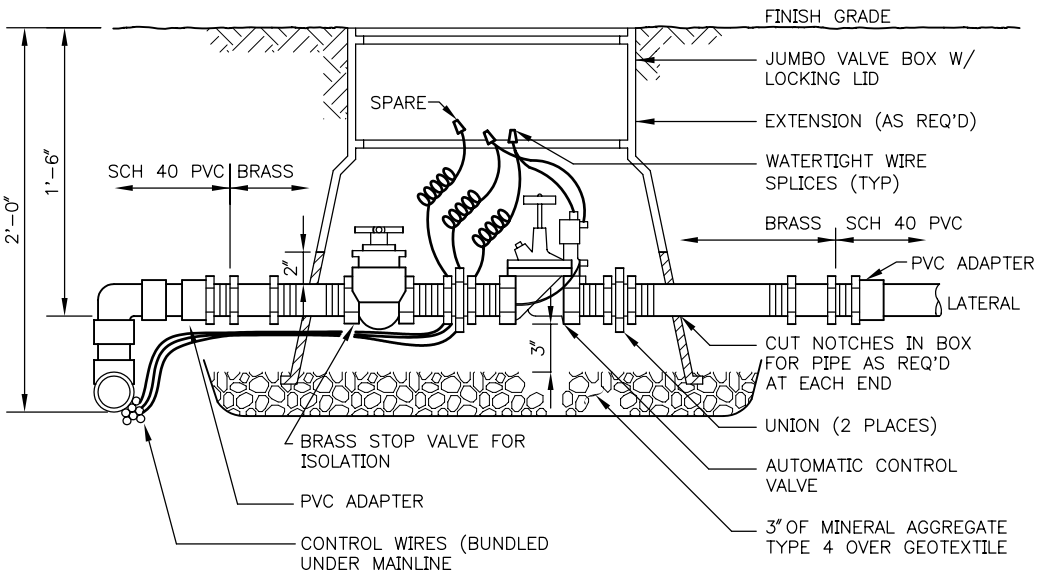
ELEVATION VIEW

QUICK COUPLER VALVE
TURF OR BED AREAS

REF STD SPEC SEC 8-03

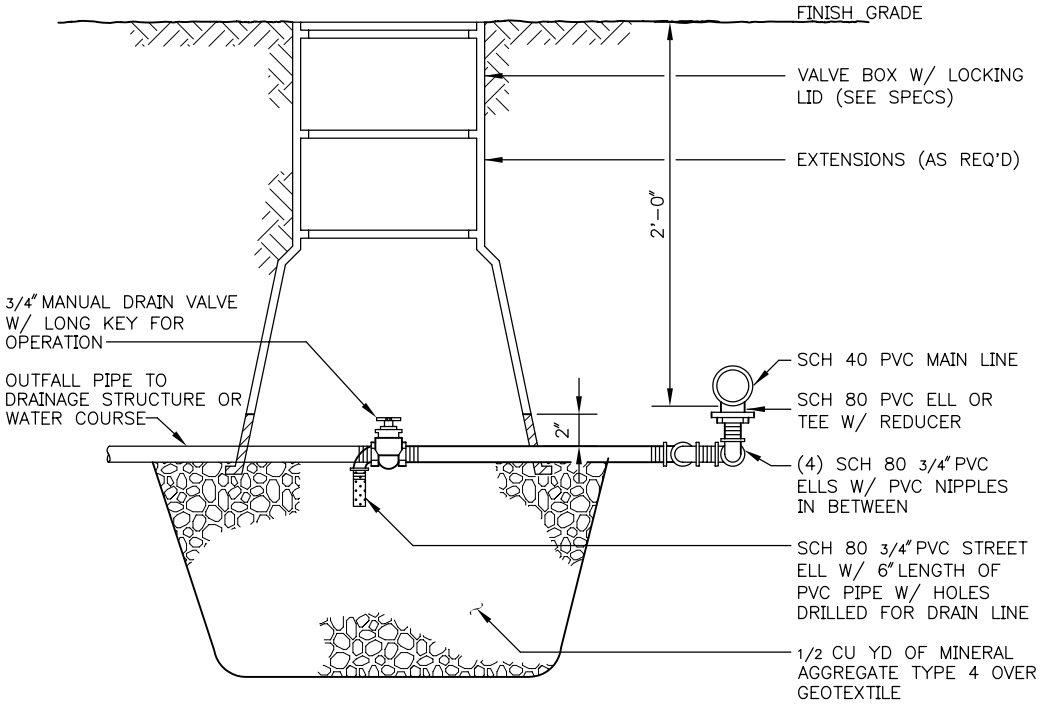
City of Seattle	NOT TO SCALE	HOSE BIB ASSEMBLY AND QUICK COUPLER VALVE

REV DATE: 2003



NOTE:
"U" SHAPED CUT-OUT IN VALVE BOX THAT ALLOWS 2" CLEARANCE FROM TOP OF PIPE TO TOP OF "U"

AUTOMATIC CONTROL VALVE

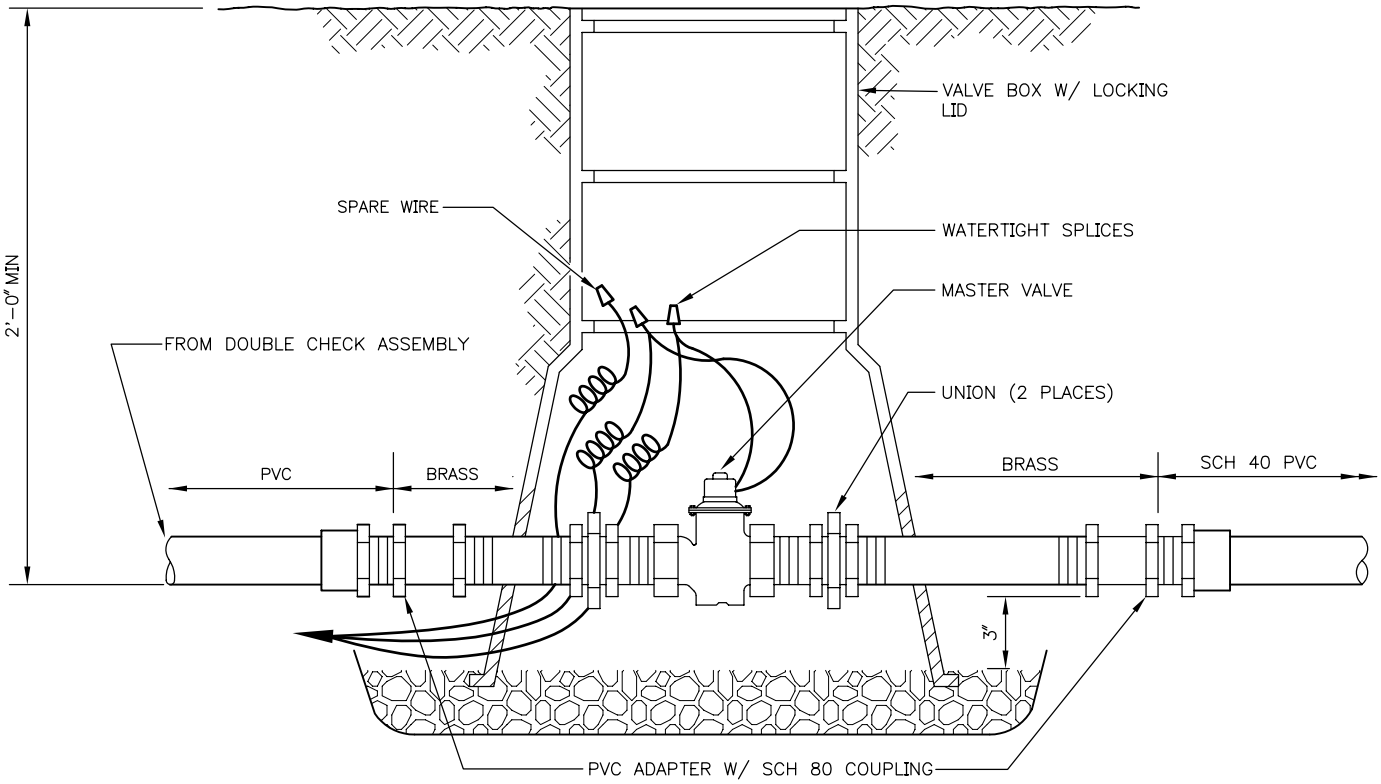


MANUAL DRAIN VALVE

REF STD SPEC SEC 8-03

City of Seattle	NOT TO SCALE	IRRIGATION VALVES

REV DATE: 2003

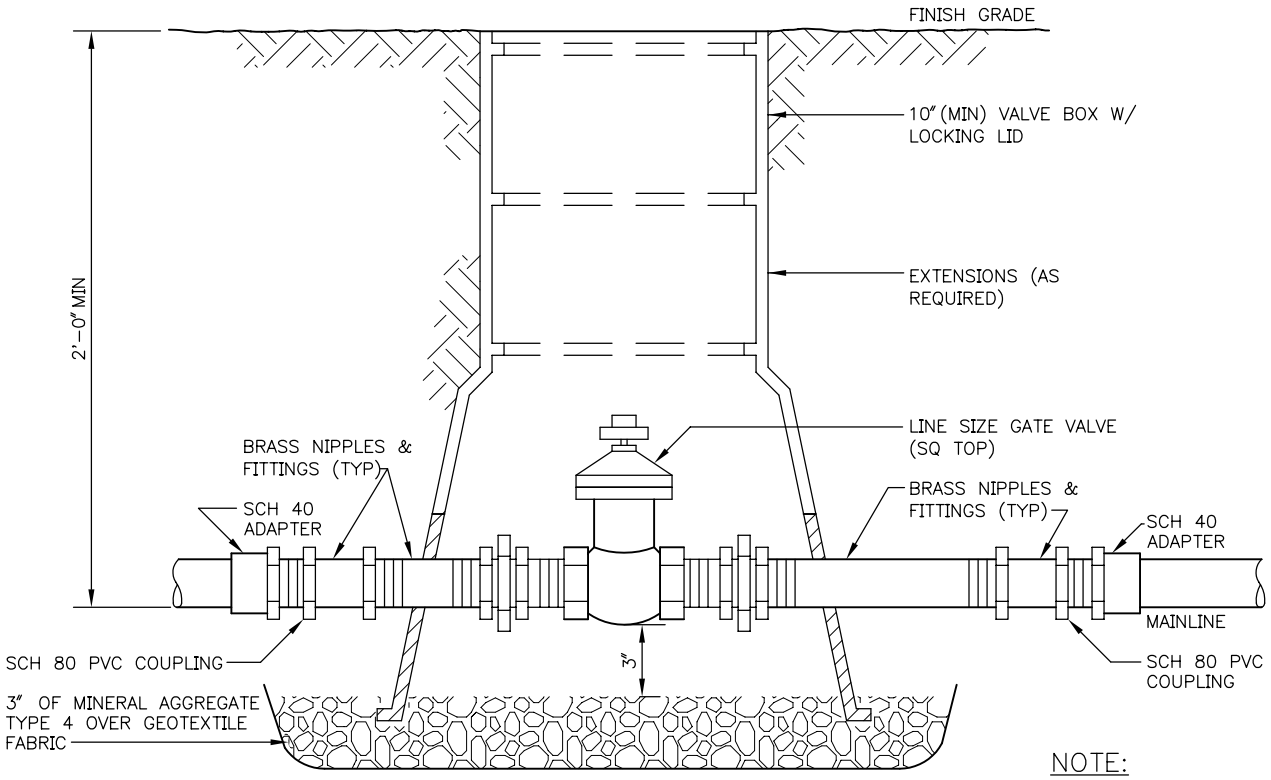


MASTER VALVE

REF STD SPEC SEC 8-03

City of Seattle	NOT TO SCALE	IRRIGATION VALVES

REV DATE: 2003



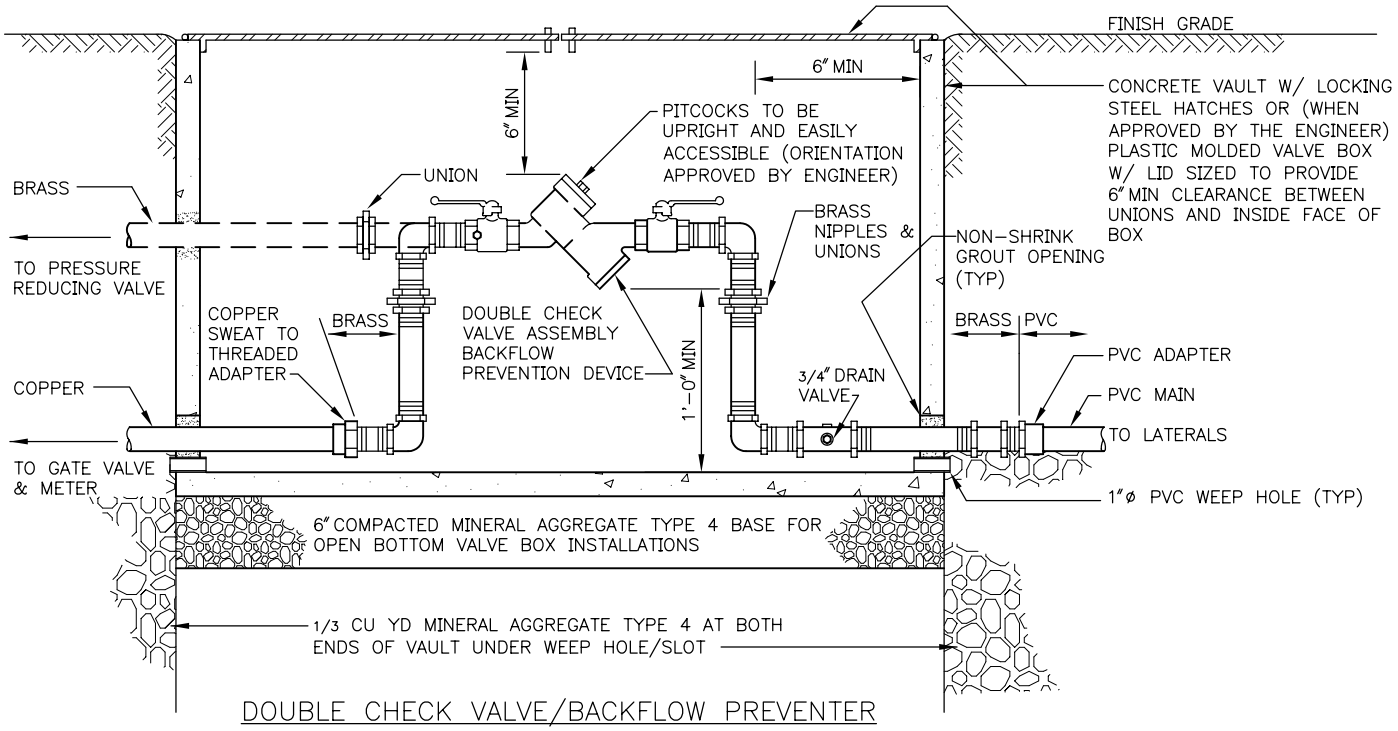
GATE VALVE – 2 1/2" & LARGER

REF STD SPEC SEC 8-03

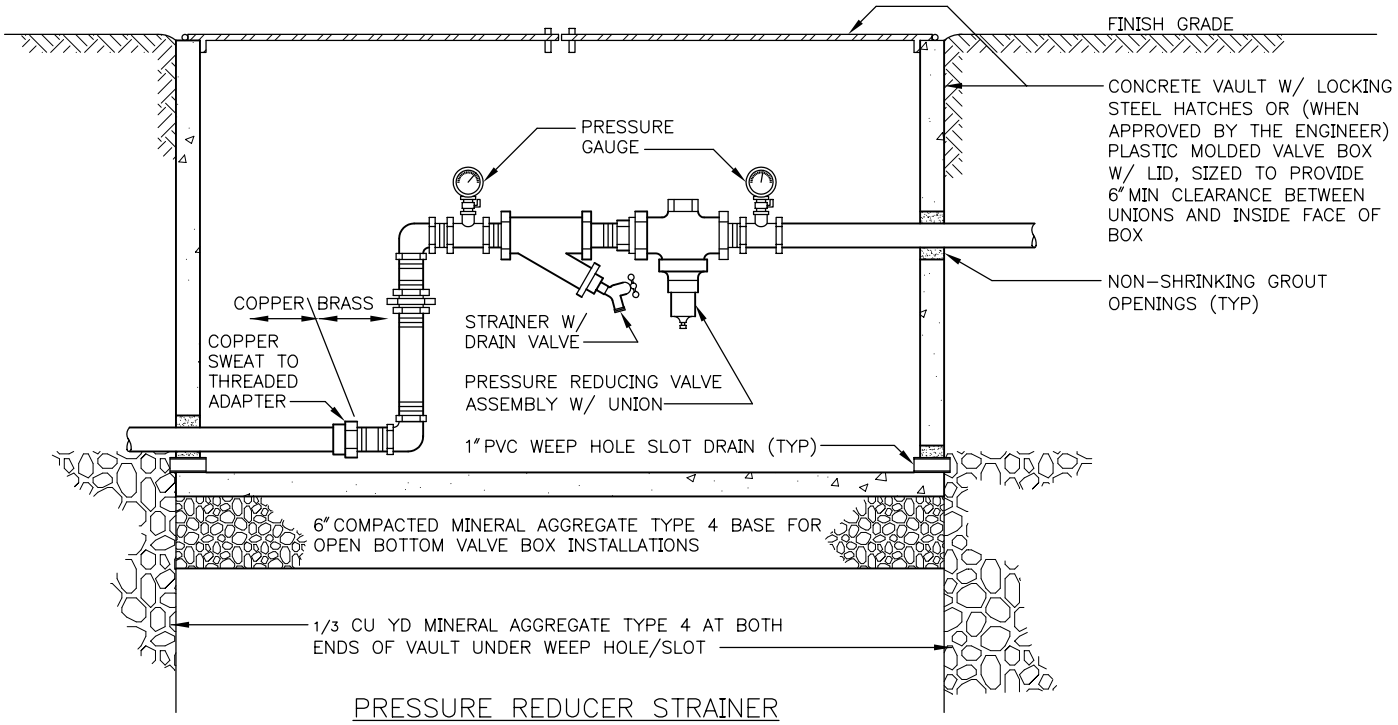
City of Seattle	NOT TO SCALE	IRRIGATION VALVES

STANDARD PLAN NO 125

REV DATE: 2003



DOUBLE CHECK VALVE/BACKFLOW PREVENTER



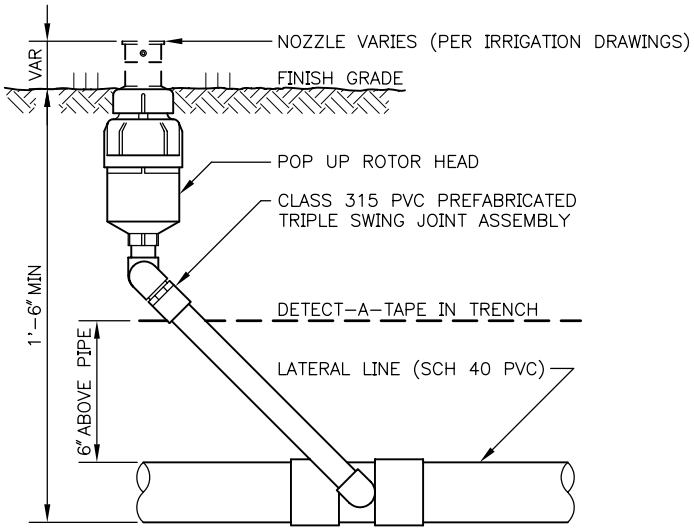
PRESSURE REDUCER STRAINER

(LOCATE DOWNSTREAM FROM BACKFLOW PREVENTION DEVICE)

REF STD SPEC SEC 8-03

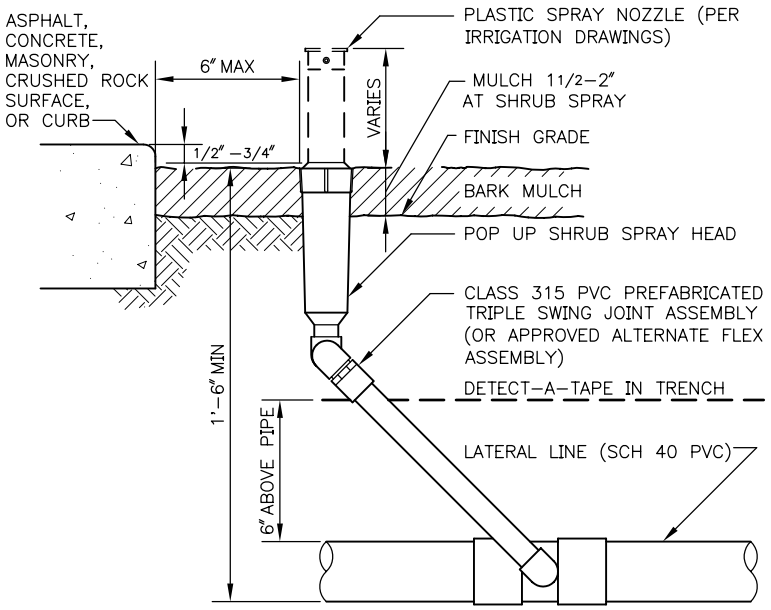
City of Seattle	NOT TO SCALE	IRRIGATION VALVES

REV DATE: 2003

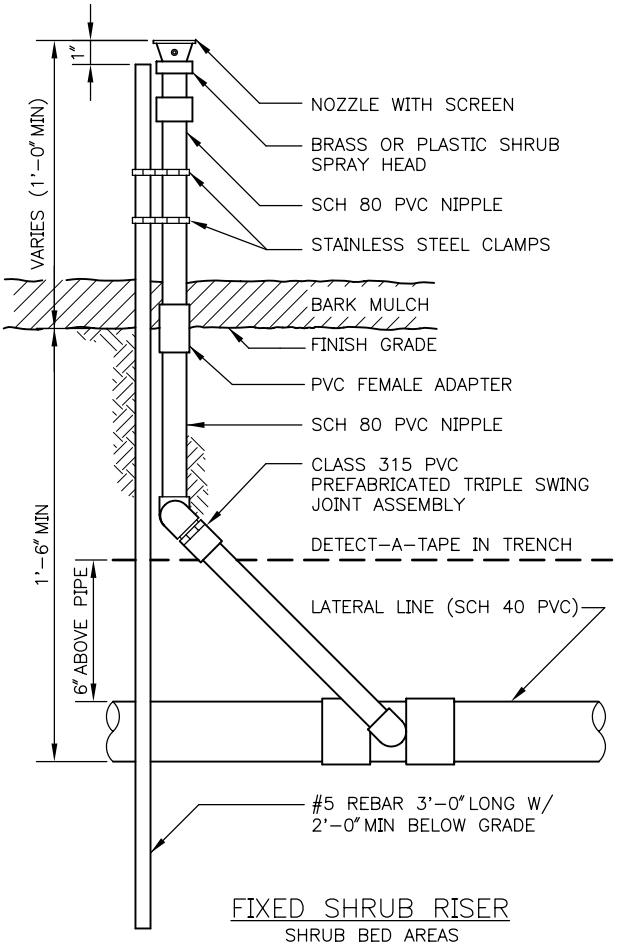


POP UP ROTOR HEAD
TURF AREAS

NOTE:
USE TEFLON TAPE ON ALL THREADED FITTINGS



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

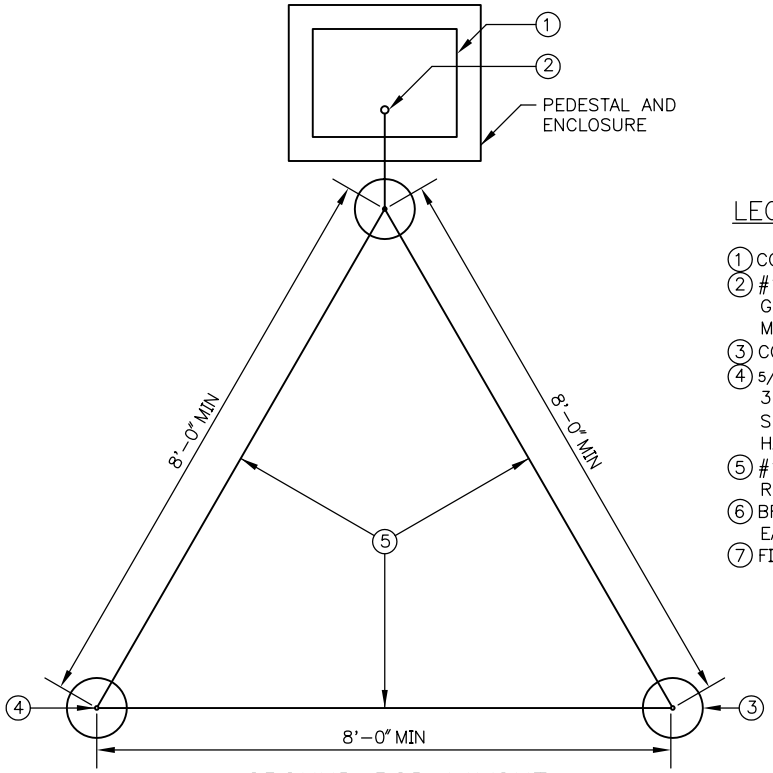


FIXED SHRUB RISER
SHRUB BED AREAS

REF STD SPEC SEC 8-03

City of Seattle	NOT TO SCALE	POP UP & FIXED IRRIGATION HEADS

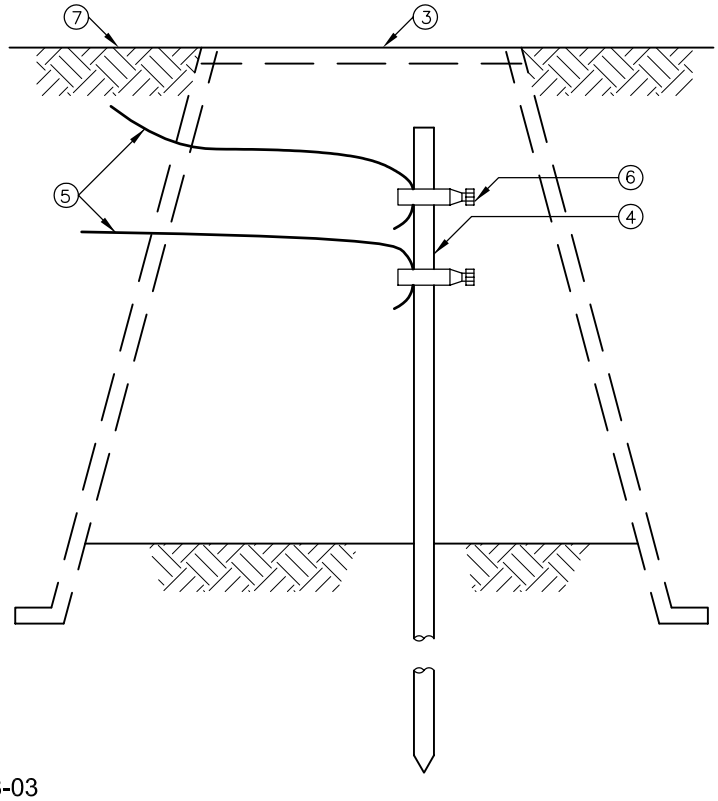
REV DATE: 2003



GROUND ROD LAYOUT

LEGEND

1. CONTROLLER
2. #10 AWG SOLID BARE COPPER WIRE FROM GROUNDING ROD TO CONTROLLER MAKE WIRE AS SHORT AS POSSIBLE
3. COVER GROUNDING ROD WITH 10" ROUND VALVE BOX
4. 5/8" X10'-0" COPPER CLAD GROUNDING ROD. INSTALL 3 RODS IN SOIL IN A TRIANGULAR PATTERN, SPACES 8'-0" MIN APART. GROUNDING GRID TO HAVE A RESISTANCE OF 10 OHMS OR LESS
5. #10 AWG BARE COPPER WIRE BETWEEN GROUNDING RODS
6. BRASS WIRE CLAMP. USE SEPARATE CLAMP FOR EACH WIRE
7. FINISH GRADE

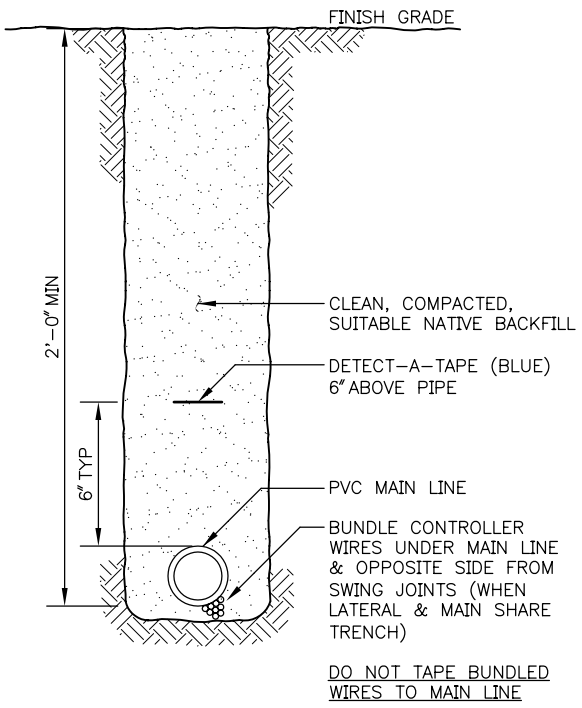


REF STD SPEC SEC 8-03

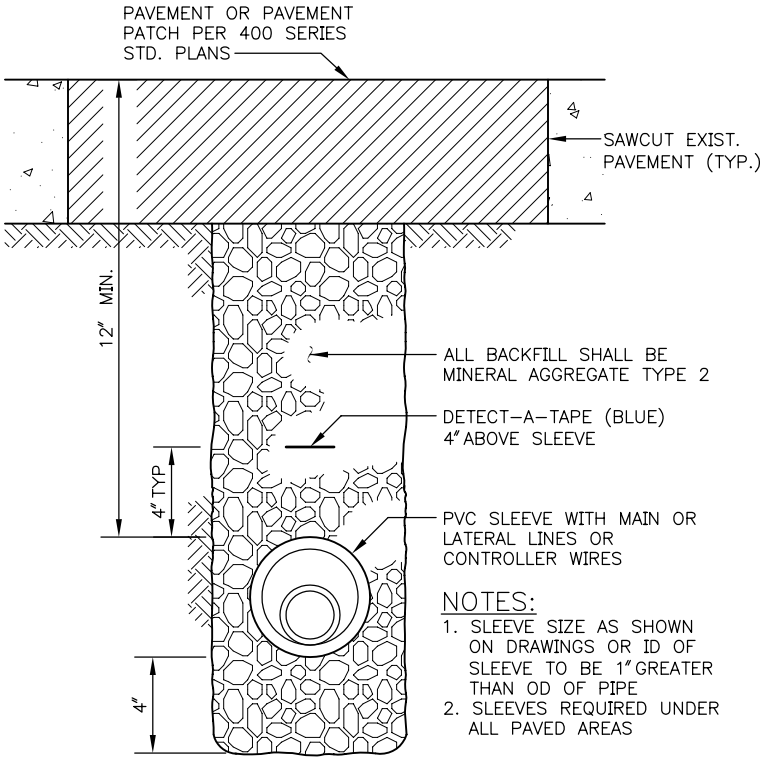
City of Seattle	NOT TO SCALE	IRRIGATION CONTROLLER PEDESTAL AND ENCLOSURE GROUNDING

STANDARD PLAN NO 128

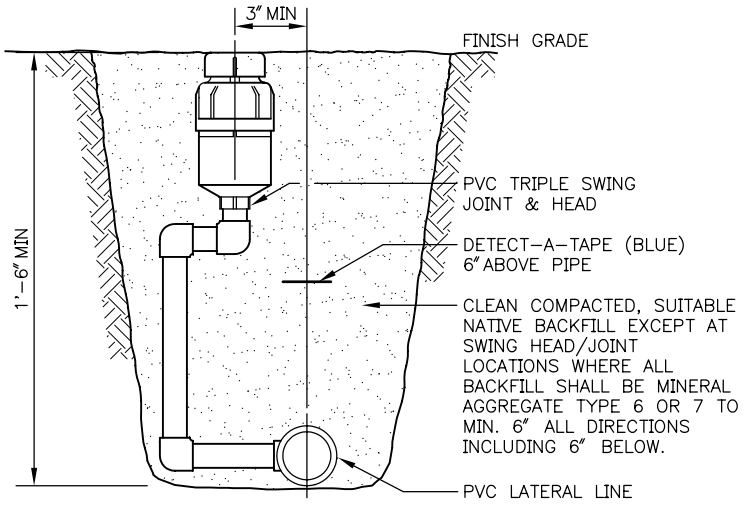
REV DATE: 2003



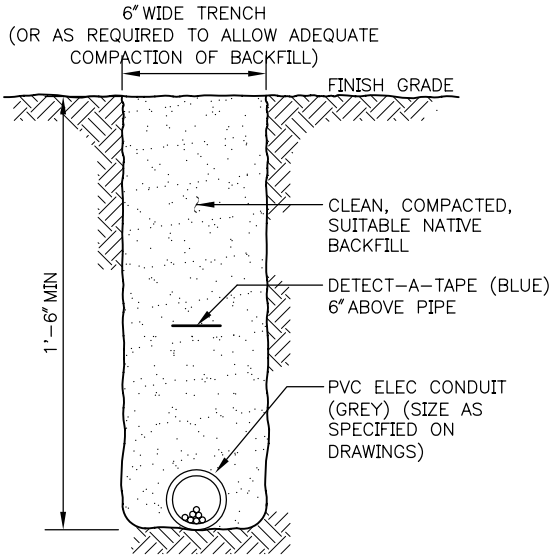
MAIN LINE



SLEEVE TRENCHING



LATERAL LINE



POWER SUPPLY TRENCH

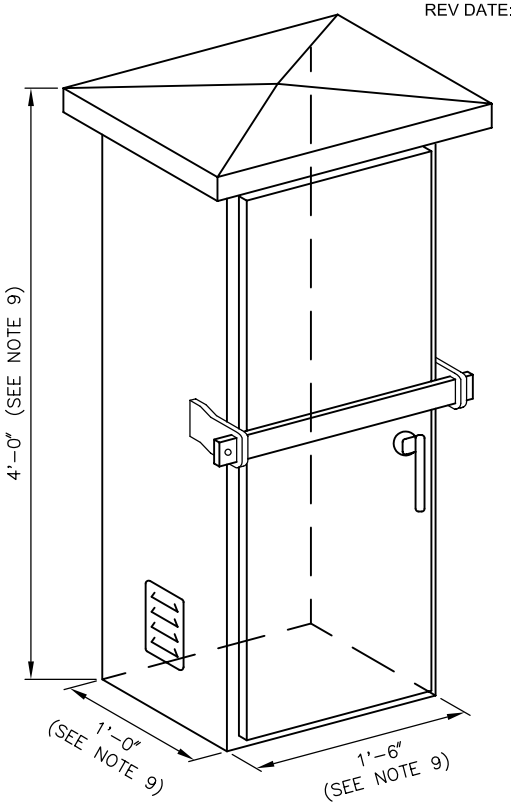
REF STD SPEC SEC 8-03

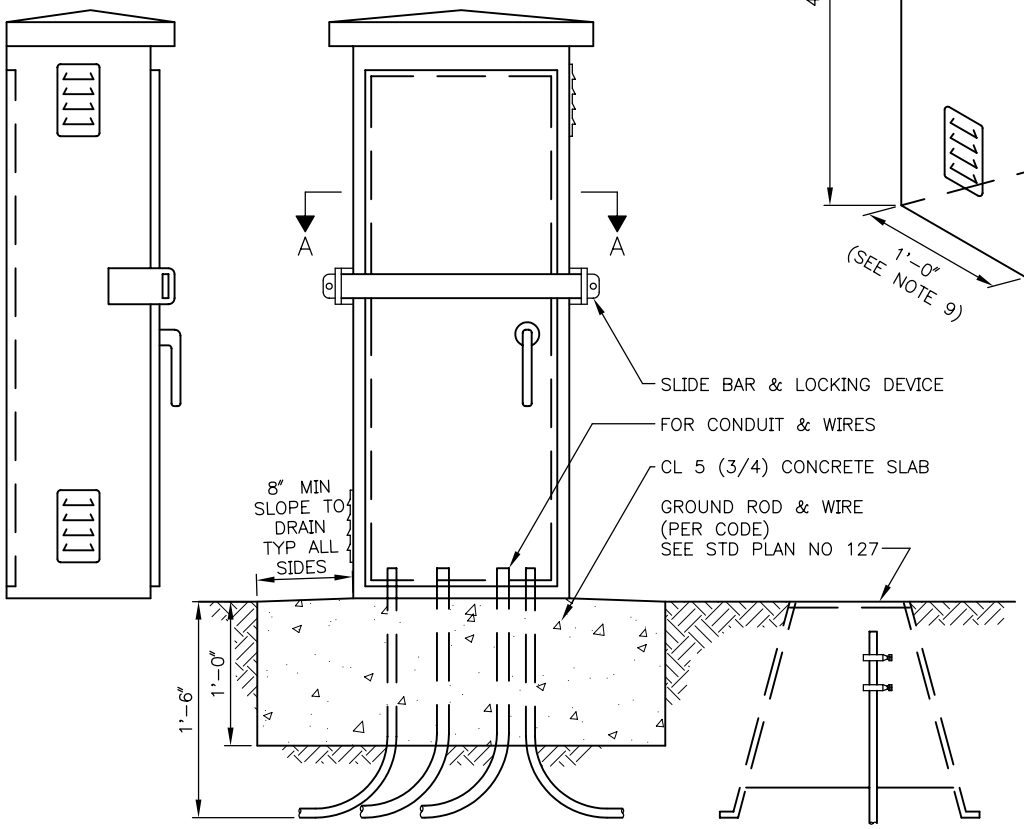
City of Seattle	NOT TO SCALE	IRRIGATION TRENCHES

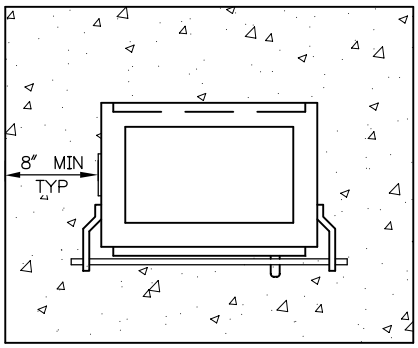
REV DATE: 2003

NOTES:

1. NEMA 3R RAINPROOF CABINET
2. NO 12 GA PREGALVANIZED STEEL WELDED SEAM CONSTRUCTION
3. TWO SCREENED, GASKETED LOUVERED VENTS
4. REMOVABLE EQUIPMENT MOUNTING PAN
5. VANDALPROOF LOCKABLE SLIDE BAR ACROSS FRONT DOOR
6. PADMOUNT DESIGN WITH 2″ INSIDE FLANGE ON BOTTOM
7. DOOR:
   3 POINT LATCH
   CONCEALED HINGE
   LIFT–OFF TYPE (UPON OPENING)
   CLOSED CELL NEOPRENE GASKET
8. PAINT:
   OVEN BAKED ENAMEL
   DARK GREEN OUTSIDE
   WHITE INSIDE
   PREGALVANIZED METAL TREATED WITH COPPER SULFATE PRIOR TO PAINTING
9. ACTUAL CABINET DIMENSIONS ARE PROJECT SPECIFIC AND WILL BE SPECIFIED ON THE DRAWINGS.







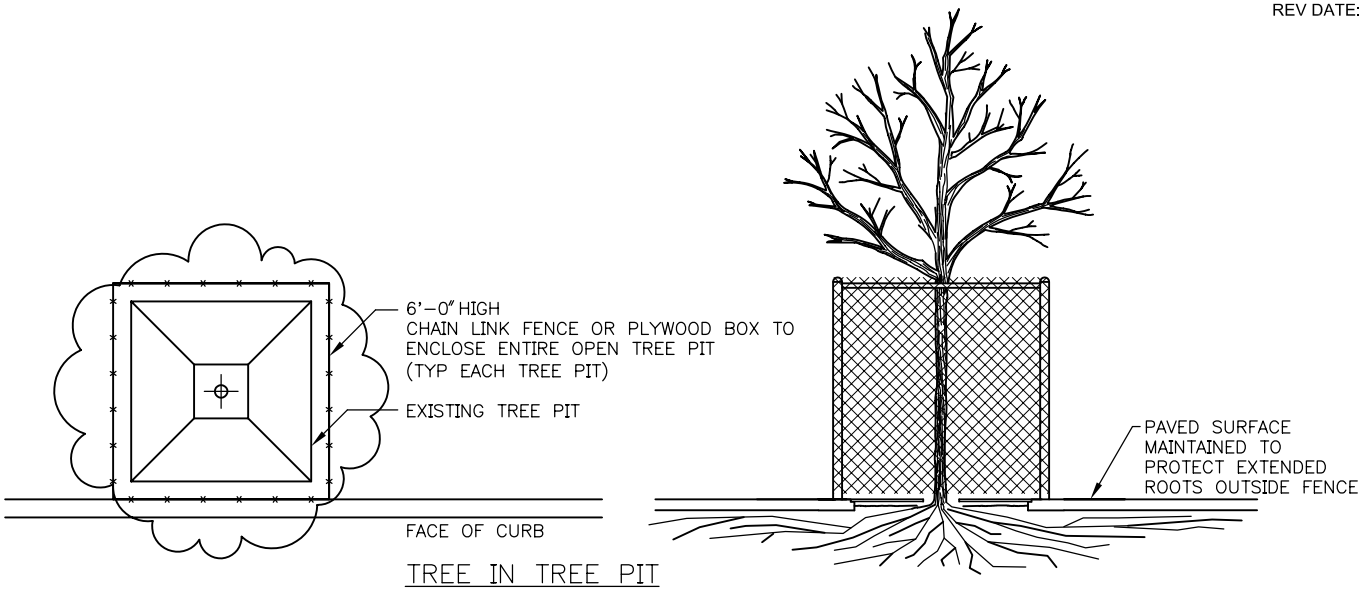
SECTION A–A

REF STD SPEC SEC 8-03

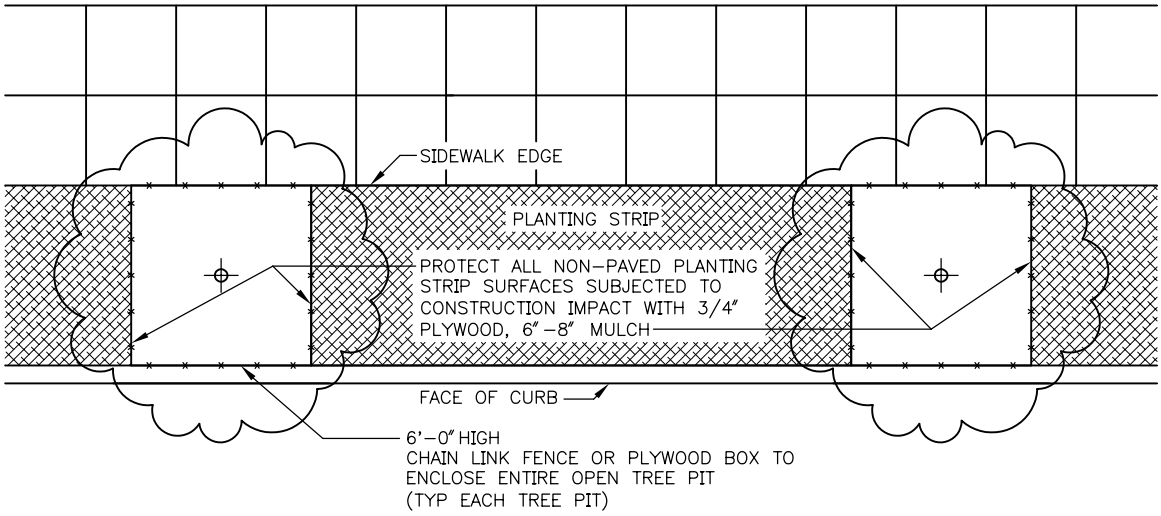
City of Seattle	NOT TO SCALE	IRRIGATION CONTROLLER CABINET

STANDARD PLAN NO 132

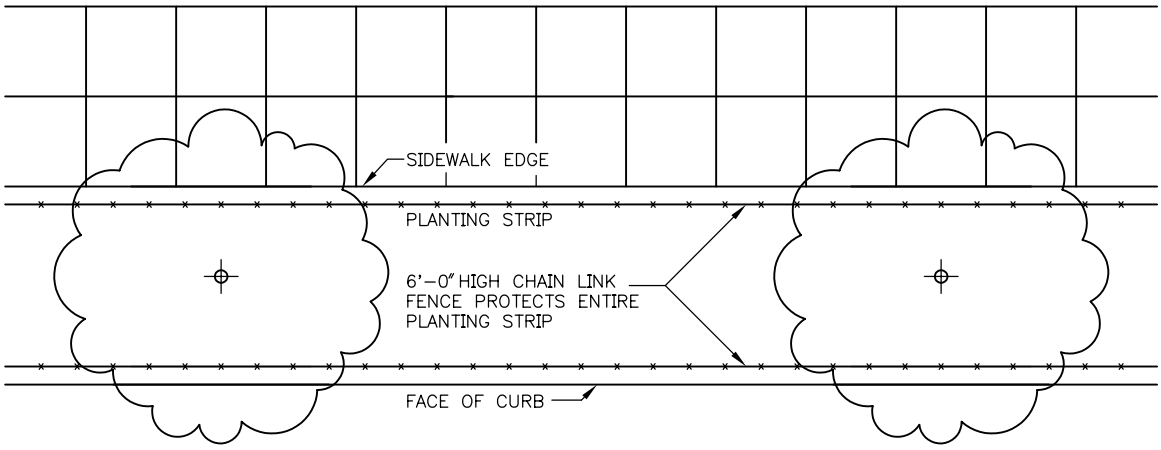
REV DATE: 2008



TREE IN TREE PIT



TREE IN PLANTING STRIP-OPTION 1

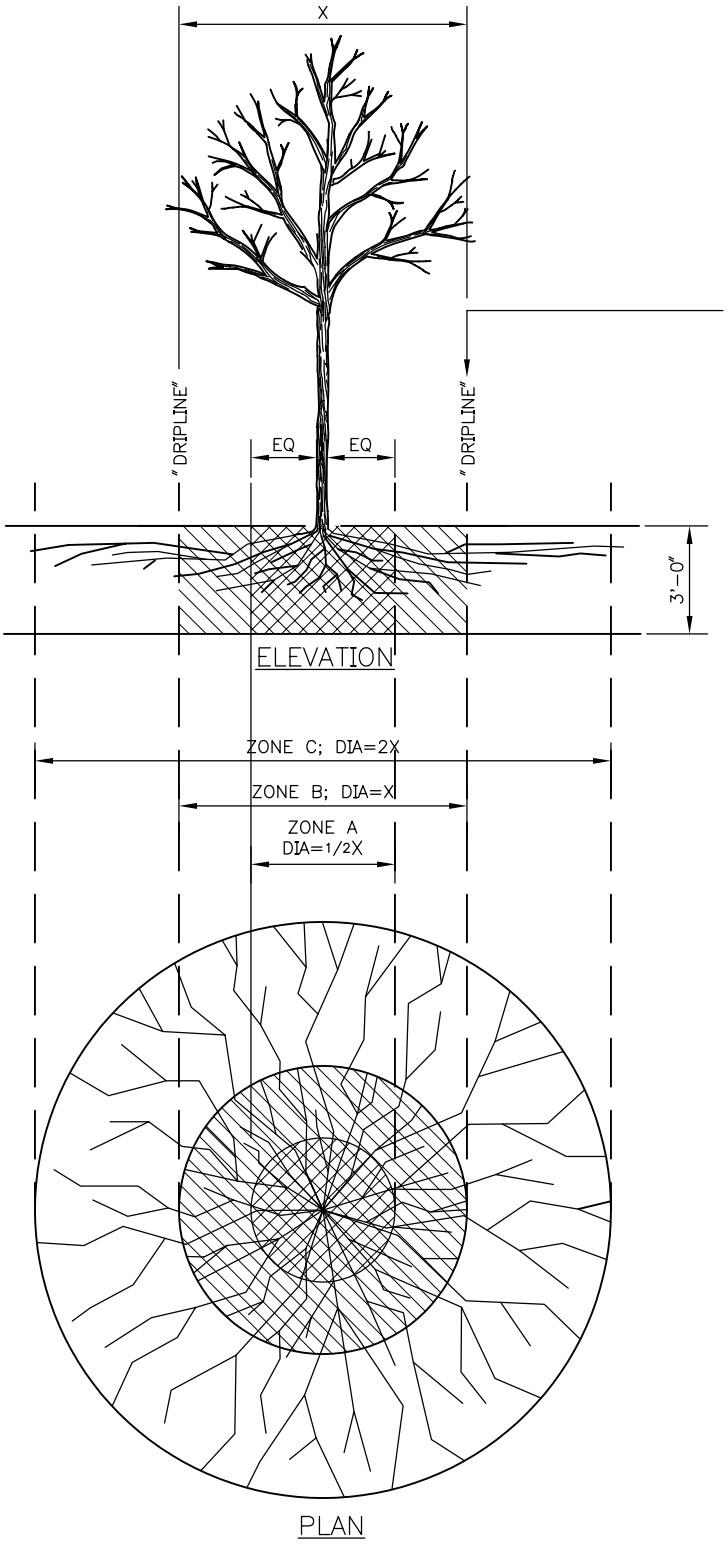


TREE IN PLANTING STRIP-OPTION 2

REF STD SPEC SEC 1-07.16(2)

City of Seattle	NOT TO SCALE	TREE PROTECTION DURING CONSTRUCTION

REV DATE: 2008



FENCING/ROOT PROTECTION

CHAIN LINK FENCING TO BE PROVIDED AND MAINTAINED AT DRIPLINE (UNLESS OTHERWISE APPROVED BY THE ENGINEER)

ENGINEER'S APPROVAL REQUIRED FOR USE/ACCESS WITHIN ZONE B. PERMISSION FOR USE/ACCESS REQUIRES SURFACE PROTECTION FOR ALL UNFENCED, UNPAVED SURFACES WITHIN ZONE B

* SURFACE PROTECTION MEASURES

1. MULCH LAYER, 6"–8" DEPTH
2. 3/4" PLYWOOD
3. STEEL PLATES

TRENCHING/EXCAVATION

ZONE A (CRITICAL ROOT ZONE)

1. NO DISTURBANCE ALLOWED WITHOUT SITE–SPECIFIC INSPECTION AND APPROVAL OF METHODS TO MINIMIZE ROOT DAMAGE
2. SEVERANCE OF ROOTS LARGER THAN 2" DIA REQUIRES ENGINEER'S APPROVAL
3. TUNNELING REQUIRED TO INSTALL LINES 3'–0" BELOW GRADE OR DEEPER

ZONE B (DRIPLINE)

1. OPERATION OF HEAVY EQUIPMENT AND/OR STOCKPILING OF MATERIALS SUBJECT TO ENGINEERS APPROVAL. SURFACE PROTECTION* MEASURES REQUIRED
2. TRENCHING ALLOWED AS FOLLOWS:
   - EXCAVATION BY HAND OR WITH HAND–DRIVEN TRENCHER MAY BE REQUIRED
   - LIMIT TRENCH WIDTH. DO NOT DISTURB ZONE A MAINTAIN 2/3 OR MORE OF ZONE B IN UNDISTURBED CONDITION
3. TUNNELING MAY BE REQUIRED FOR TRENCHES DEEPER THAN 3'–0"

ZONE C (FEEDER ROOT ZONE)

1. OPERATION OF HEAVY EQUIPMENT AND/OR STOCKPILING OF MATERIALS SUBJECT TO ENGINEERS APPROVAL. SURFACE PROTECTION* MEASURES MAY BE REQUIRED
2. TRENCHING WITH HEAVY EQUIPMENT ALLOWED AS FOLLOWS:
   - MINIMIZE TRENCH WIDTH
   - MAINTAIN 2/3 OR MORE OF ZONE C IN UNDISTURBED CONDITION

REF STD SPEC SEC 1-07.16 (2)

City of Seattle	NOT TO SCALE	TREE PROTECTION DURING TRENCHING, TUNNELING OR EXCAVATION

REV DATE: 2008

		TREES IN PLANTING STRIPS	TREES IN TREE PITS
HEAVY EQUIPMENT OPERATION	ROOT PROTECTION	ALL NON–PAVED PLANTING STRIP SURFACES SUBJECT TO IMPACT (COMP ACTION) BY CONSTRUCTION ACTIVITY SHALL BE PROTECTED WITH 6″–8″ MULCH LAYER OR 3/4″ PLYWOOD PANELS PROVIDE WOOD PLANKING OR STEEL PANELS UNDER BACKHOE STABILIZERS PLACED ANYWHERE IN THE PLANTING STRIP [1–07.16(2)] NO STORAGE OF MATERIALS OR EQUIPMENT IN THE PLANTING STRIP SHALL BE ALLOWED WITHOUT PROPER SURFACE PROTECTION AND WRITTEN AUTHORIZATION FROM THE ENGINEER	RETAIN EXISTING PAVING DURING CONSTRUCTION SCHEDULE PAVEMENT REPLACEMENT TO MINIMIZE EXPOSURE OF SURFACE ROOTS TO DRYING, EQUIPMENT DAMAGE, COMP ACTION, ETC. EXPOSURE FOR LONGER THAN 48 HOURS REQUIRES MULCH APPLICATION
	CANOPY PROTECTION	OVERHEAD BRANCHING LIKELY TO BE DAMAGED BY EQUIPMENT OPERATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER WITH PREVENTIVE MEASURES (PRUNING OR TIE–BACK OF BRANCHES) APPROVED BY THE ENGINEER AND PROPERLY EXECUTED BEFORE COMMENCEMENT OF THE WORK	
	TRUNK PROTECTION	PROTECT PER STD PLAN NO 132	
SIDEWALK RECONSTRUCTION		ROOT PRUNE ONLY AS APPROVED BY THE ENGINEER MAINTAIN 2′–0″ MIN CLEARANCE FROM FLARE OF TRUNK WHEN SETTING FORMS.	PROVIDE 5′–0″ X5′–0″ OR 4′–0″ X6′–0″ (24 SQ FT MIN) TREE PITS IN NEW SIDEWALK FOR NEW TREES. TREE PIT SIZE FOR EXISTING TREES SHALL BE ELONGATED (8′–0″ TO 12′–0″ +). PITS MAY BE REQUIRED TO MINIMIZE ROOT IMPACTS WHILE MAINTAINING REQUIRED SIDEWALK WIDTH
TRENCH OR TUNNELING		SEE STD PLAN NO 133	

REF STD SPEC SEC 1-07.16(2)

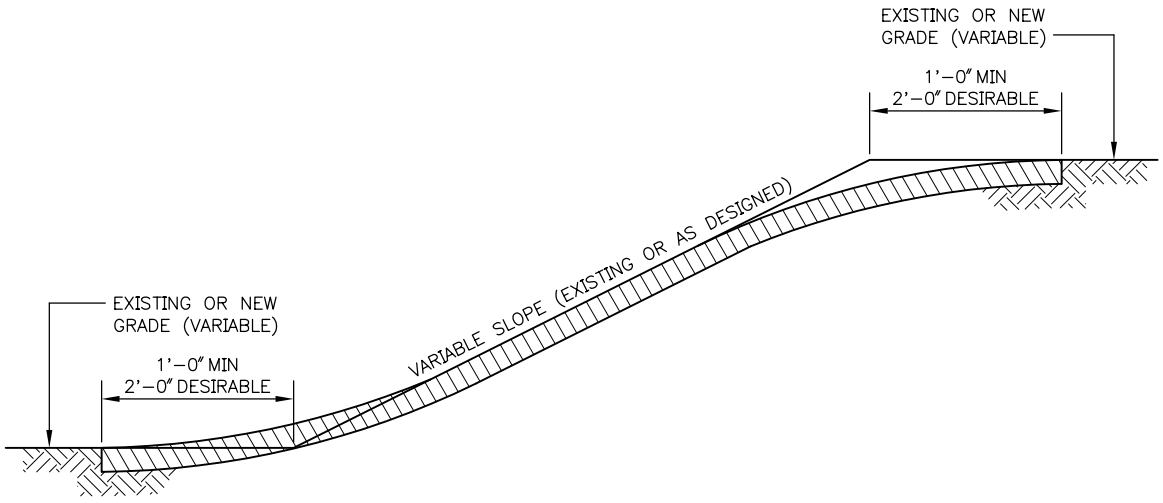
City of Seattle

NOT TO SCALE

CONSTRUCTION AROUND EXISTING TREES

STANDARD PLAN NO 140

REV DATE: 2003

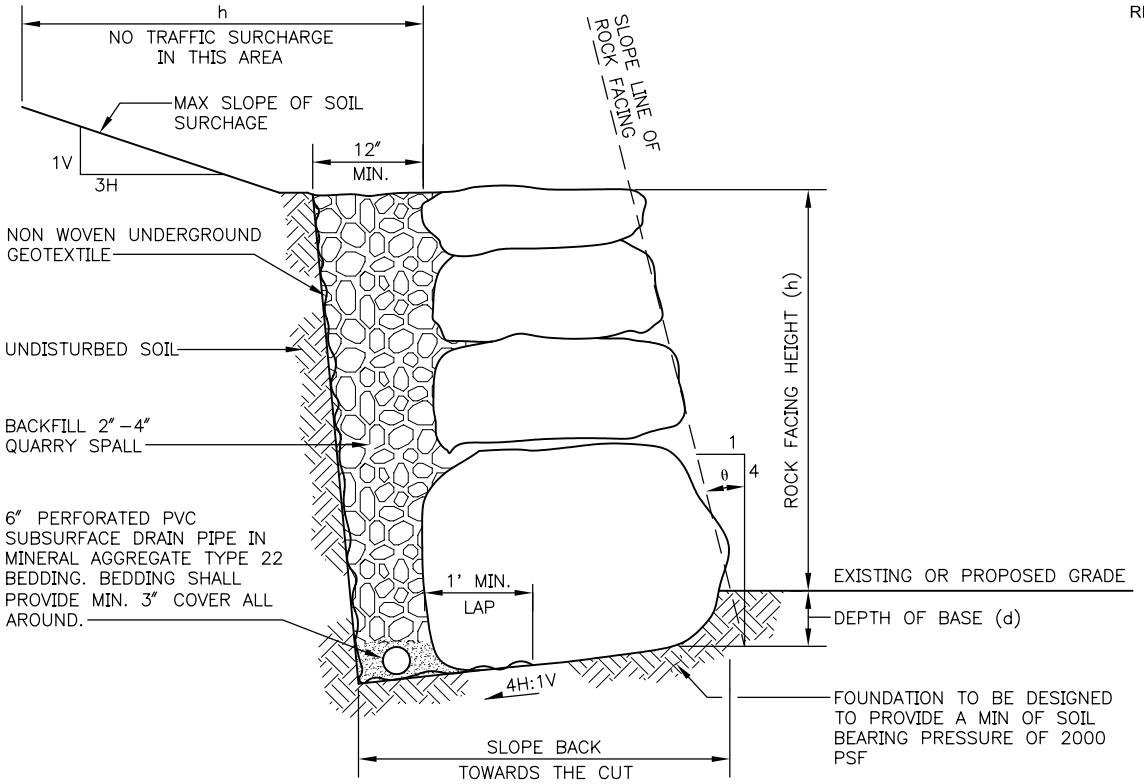


REF STD SPEC SEC 2-03

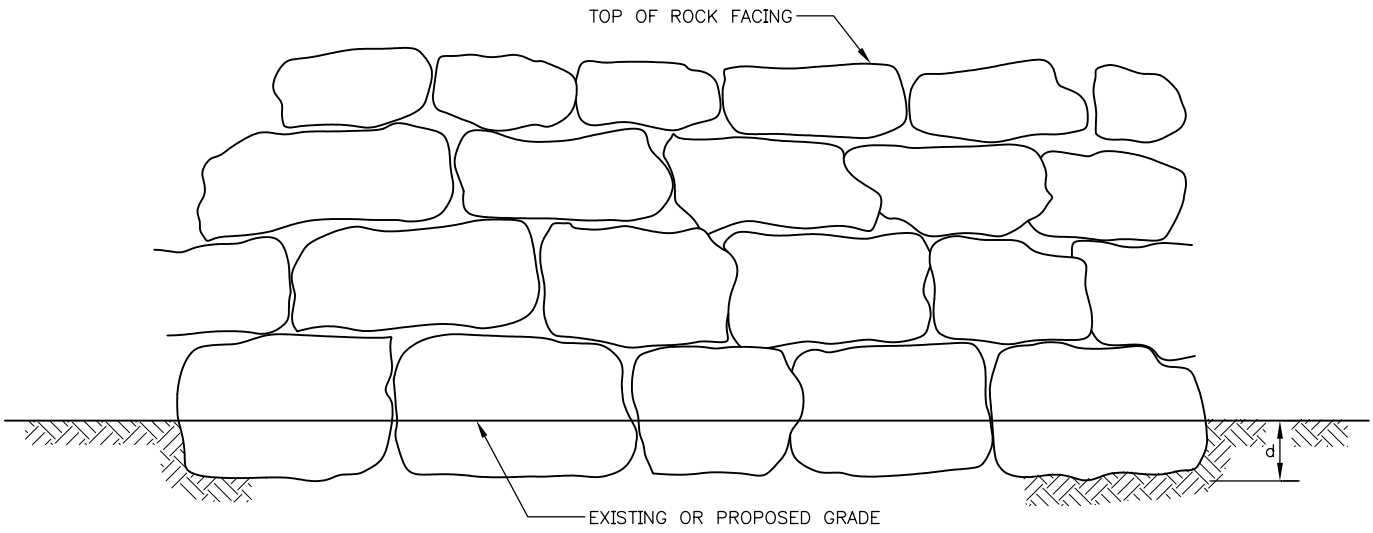
City of Seattle	NOT TO SCALE	SLOPE ROUNDING

STANDARD PLAN NO 141

REV DATE: 2003



SECTION



ELEVATION

(h)	(d)	MINIMUM ROCK SIZE(BASE)	SIZE(TOP)
2 FEET	3 INCHES	2–MAN	1–MAN
4 FEET	6 INCHES	3–MAN	2–MAN
6 FEET	9 INCHES	4–MAN	2–MAN
8 FEET	12 INCHES	5–MAN	2–MAN

ø = 14° ±1°

REF STD SPEC SEC 2-08

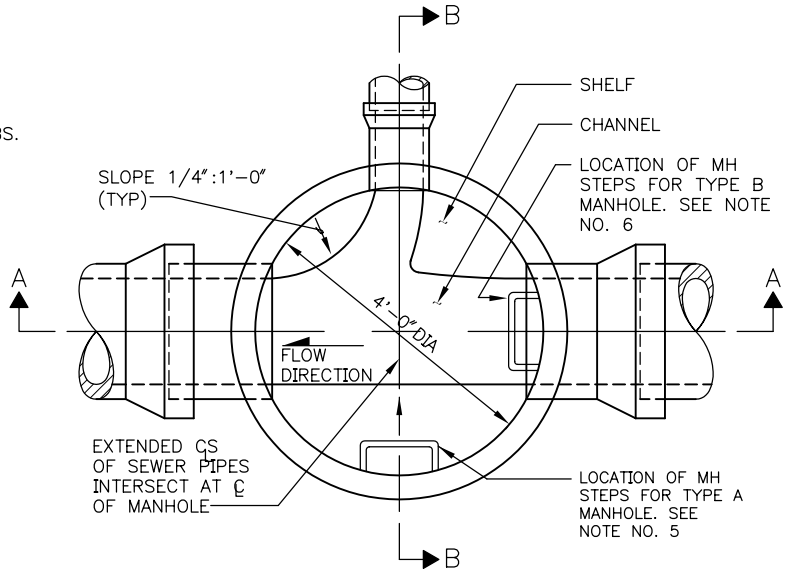
City of Seattle	NOT TO SCALE	ROCK FACING

STANDARD PLAN NO 200a

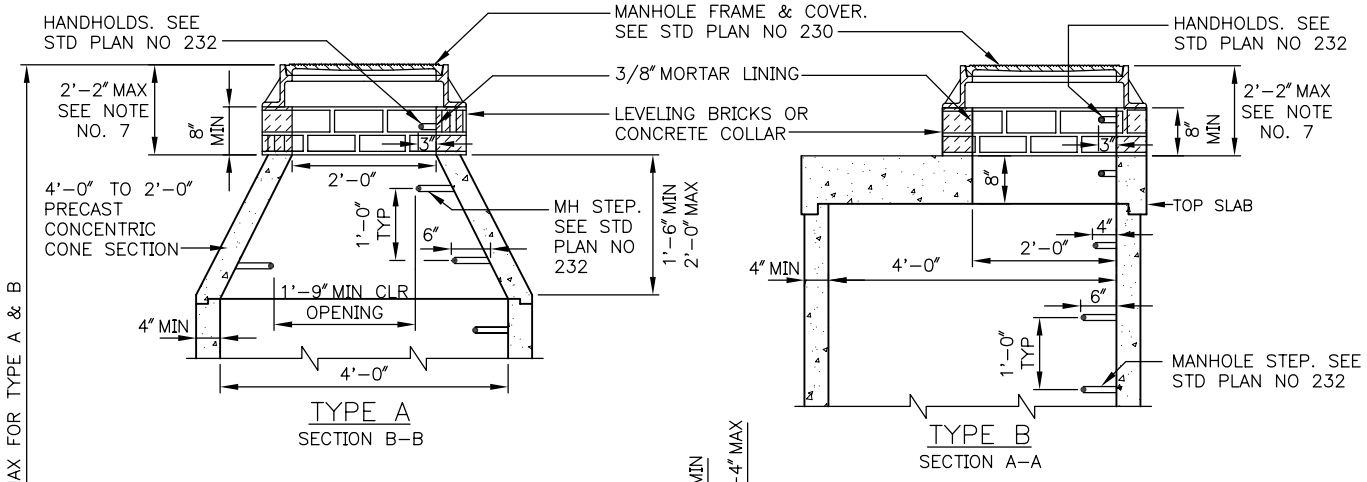
REV DATE: 2003

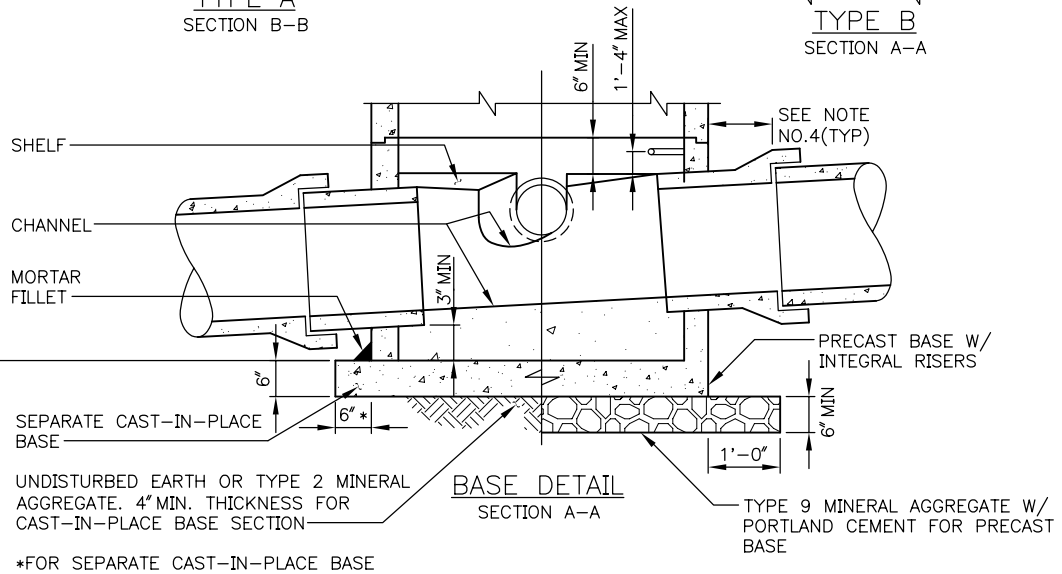
NOTES:

1. TYPE A MANHOLE DESIGNATES MANHOLES WITH PRECAST CONCENTRIC CONE SECTIONS.
2. TYPE B MANHOLE DESIGNATES MANHOLES WITH TOP SLABS.
3. TOP SLAB AND BASE SECTION DETAILS, SEE STANDARD PLAN NO 200b.
4. MAXIMUM DIMENSION FROM OUTSIDE MANHOLE WALL TO THE FIRST PIPE JOINT, THE GREATER OF 1/2 INSIDE PIPE DIAMETER OR 1'–0".
5. FOR TYPE A MANHOLE, LOCATE MANHOLE STEPS ON THE SIDE PERPENDICULAR TO THE DIRECTION OF THE FLOW IN THE CHANNEL.
6. FOR TYPE B MANHOLE, LOCATE MANHOLE STEPS OPPOSITE TO THE DOWNSTREAM OPENING.
7. TOTAL HEIGHT OF AN EXTENSION, MANHOLE FRAME AND LEVELING BRICKS SHALL NOT EXCEED 2'–2".
8. MANHOLE BASE SECTIONS SHOWN IN SECTION A–A AND SECTION B–B ARE TYPICAL FOR TYPE A AND TYPE B MANHOLES.
9. THE MAXIMUM HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS THE MANHOLE WALL THICKNESS. THE MINIMUM HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 4 INCHES. MINIMUM DISTANCE BETWEEN HOLES IS 8 INCHES.
10. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.



PLAN VIEW
(TOP REMOVED)

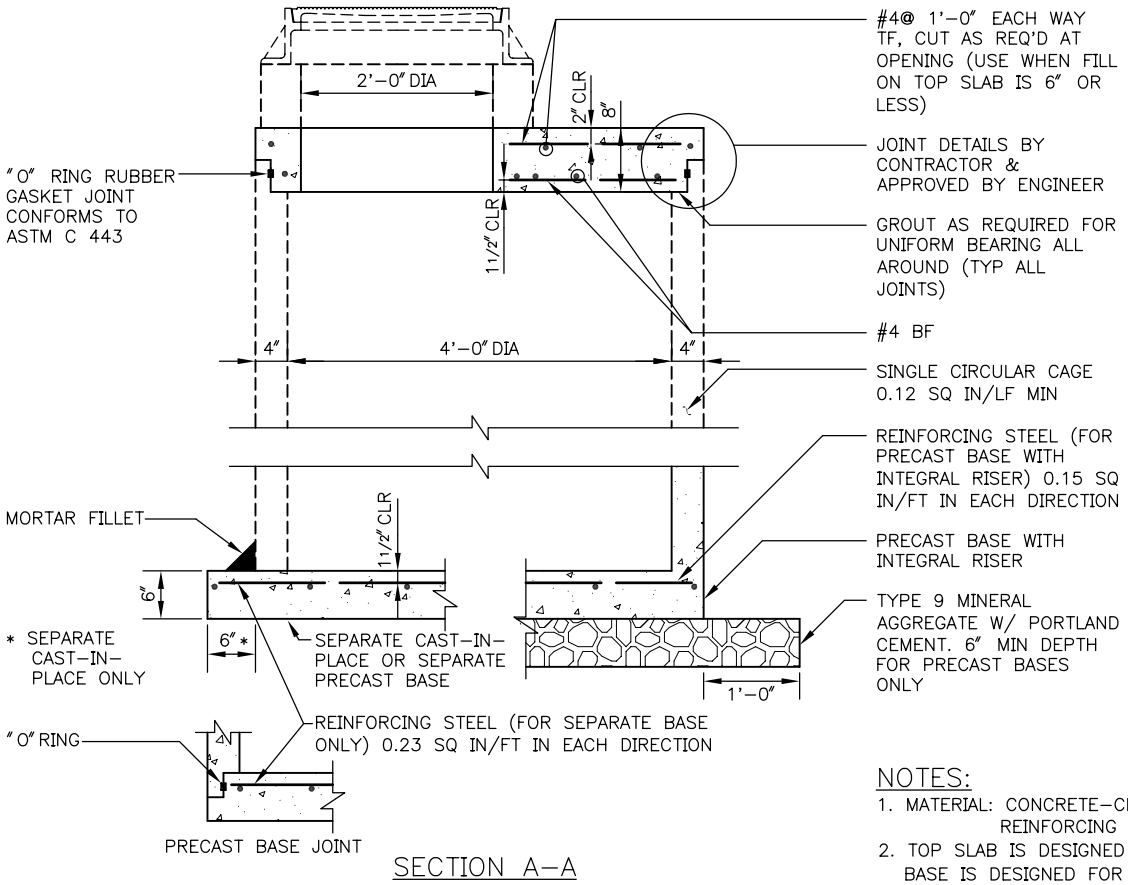




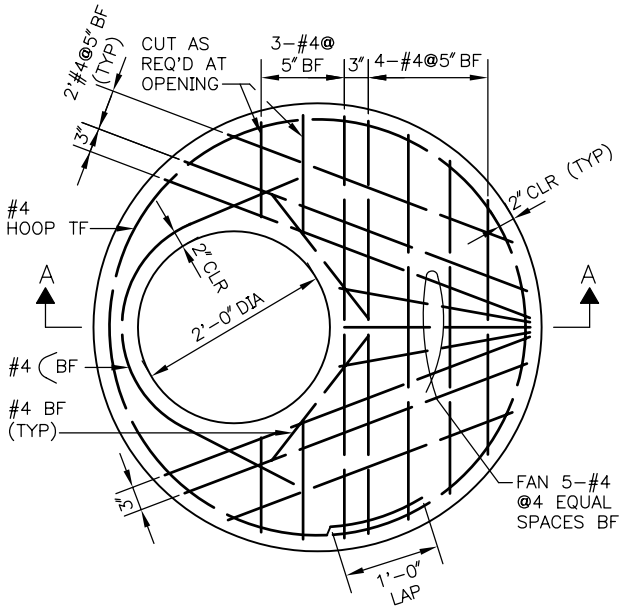
REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 200 MANHOLE

REV DATE: 2003



SECTION A-A



TYPE 200 MH-TOP SLAB

NOTES:

1. MATERIAL: CONCRETE-CLASS AX
   REINFORCING STEEL-ASTM A 615 GR 60
2. TOP SLAB IS DESIGNED FOR 3'-0" MAX COVER
   BASE IS DESIGNED FOR 20'-0" MAX COVER
3. HEIGHT 8'-0" TO 12'-0":
   MIN. REQUIRED SOIL BEARING = 3300 LBS/SQ FT
4. HEIGHT 12'-0" TO 20'-0":
   MIN. REQUIRED SOIL BEARING = 3800 LBS/SQ FT

REF STD SPEC SEC 7-05

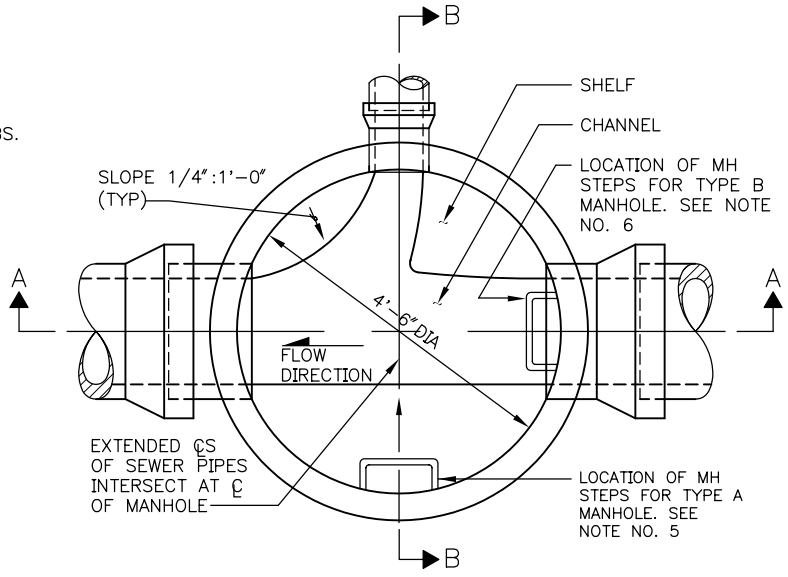
City of Seattle	NOT TO SCALE	TYPE 200 MANHOLE TOP & BOTTOM SLABS

STANDARD PLAN NO 201a

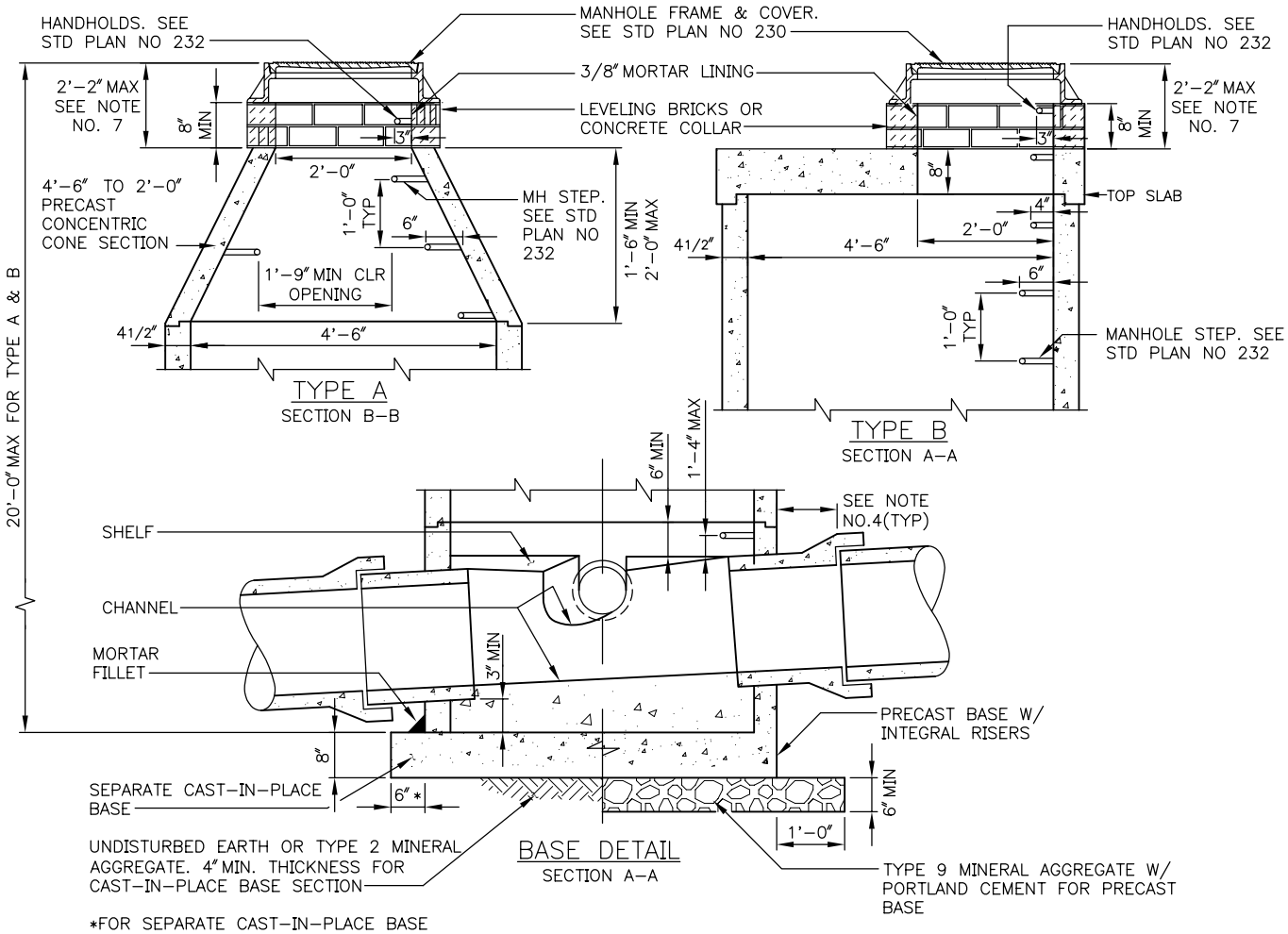
REV DATE: 2003

NOTES:

1. TYPE A MANHOLE DESIGNATES MANHOLES WITH PRECAST CONCENTRIC CONE SECTIONS.
2. TYPE B MANHOLE DESIGNATES MANHOLES WITH TOP SLABS.
3. TOP SLAB AND BASE SECTION DETAILS, SEE STANDARD PLAN NO 201b.
4. MAXIMUM DIMENSION FROM OUTSIDE MANHOLE WALL TO THE FIRST PIPE JOINT, THE GREATER OF 1/2 INSIDE PIPE DIAMETER OR 1'–0".
5. FOR TYPE A MANHOLE, LOCATE MANHOLE STEPS ON THE SIDE PERPENDICULAR TO THE DIRECTION OF THE FLOW IN THE CHANNEL.
6. FOR TYPE B MANHOLE, LOCATE MANHOLE STEPS OPPOSITE TO THE DOWNSTREAM OPENING.
7. TOTAL HEIGHT OF AN EXTENSION, MANHOLE FRAME AND LEVELING BRICKS SHALL NOT EXCEED 2'–2".
8. MANHOLE BASE SECTIONS SHOWN IN SECTION A–A AND SECTION B–B ARE TYPICAL FOR TYPE A AND TYPE B MANHOLES.
9. THE MAXIMUM HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS THE MANHOLE WALL THICKNESS. THE MINIMUM HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 4 INCHES. MINIMUM DISTANCE BETWEEN HOLES IS 8 INCHES.
10. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.



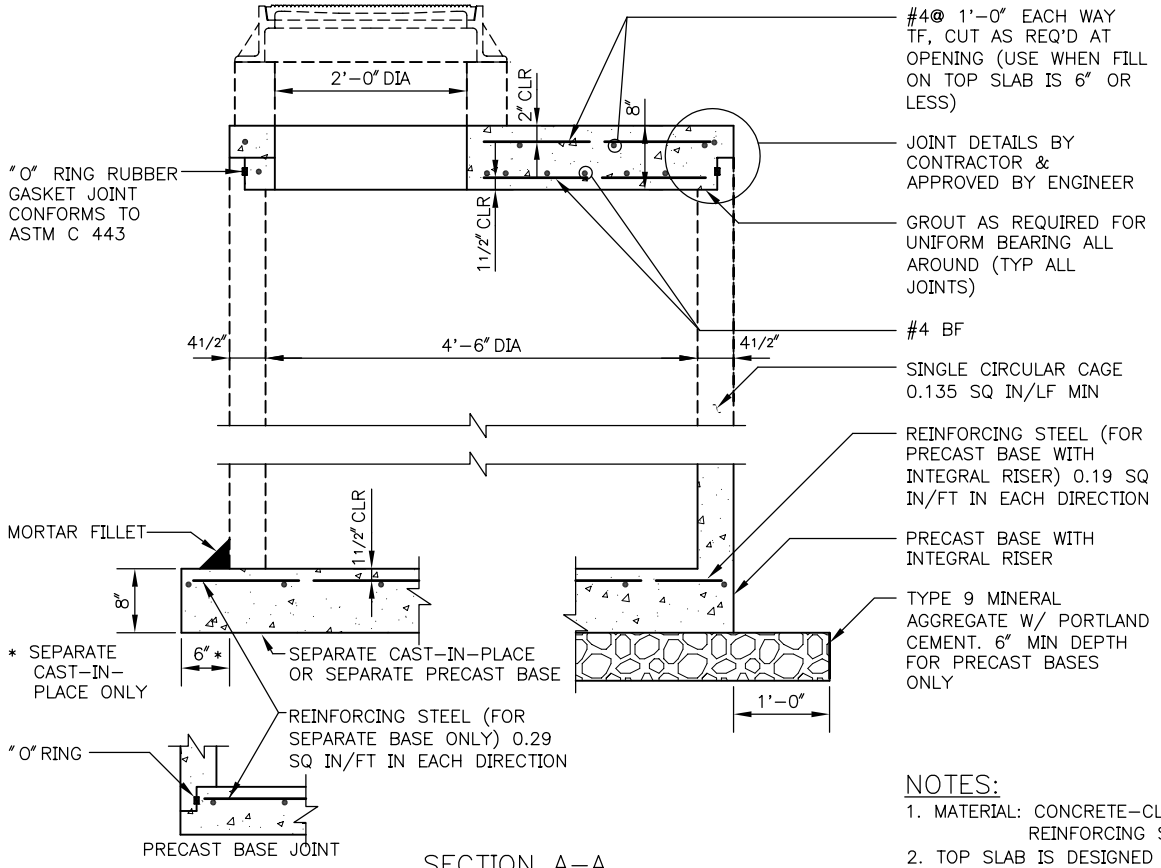
PLAN VIEW
(TOP REMOVED)



REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 201 MANHOLE

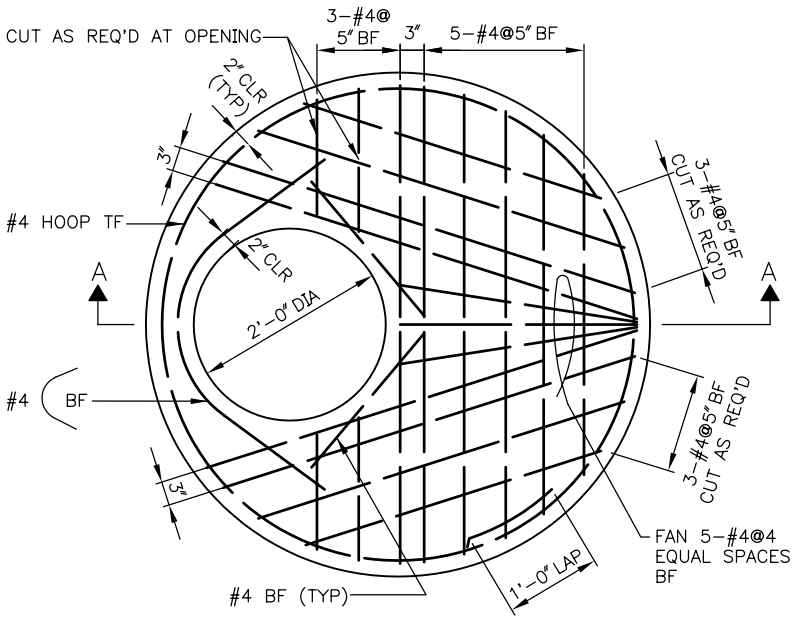
REV DATE: 2003



NOTES:

1. MATERIAL: CONCRETE–CLASS AX
   REINFORCING STEEL–ASTM A 615 GR 60
2. TOP SLAB IS DESIGNED FOR 3'–0" MAX COVER
   BASE IS DESIGNED FOR 20'–0" MAX COVER
3. HEIGHT 8'–0" TO 12'–0":
   MIN. REQUIRED SOIL BEARING = 3300 LBS/SQ FT
4. HEIGHT 12'–0" TO 20'–0":
   MIN. REQUIRED SOIL BEARING = 3800 LBS/SQ FT

SECTION A–A

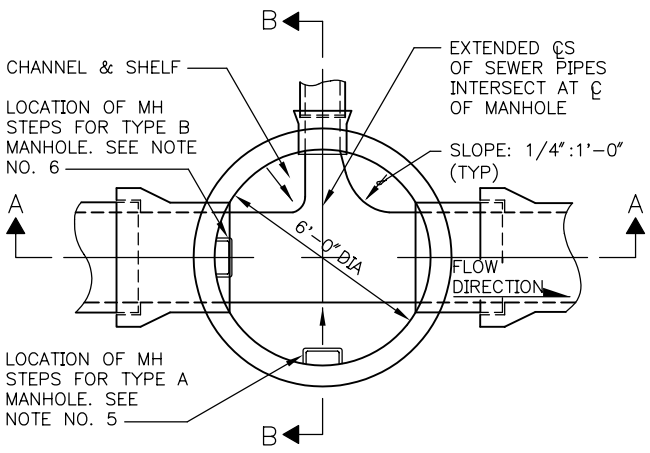


TYPE 201 MH–TOP SLAB

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 201 MANHOLE TOP & BOTTOM SLABS

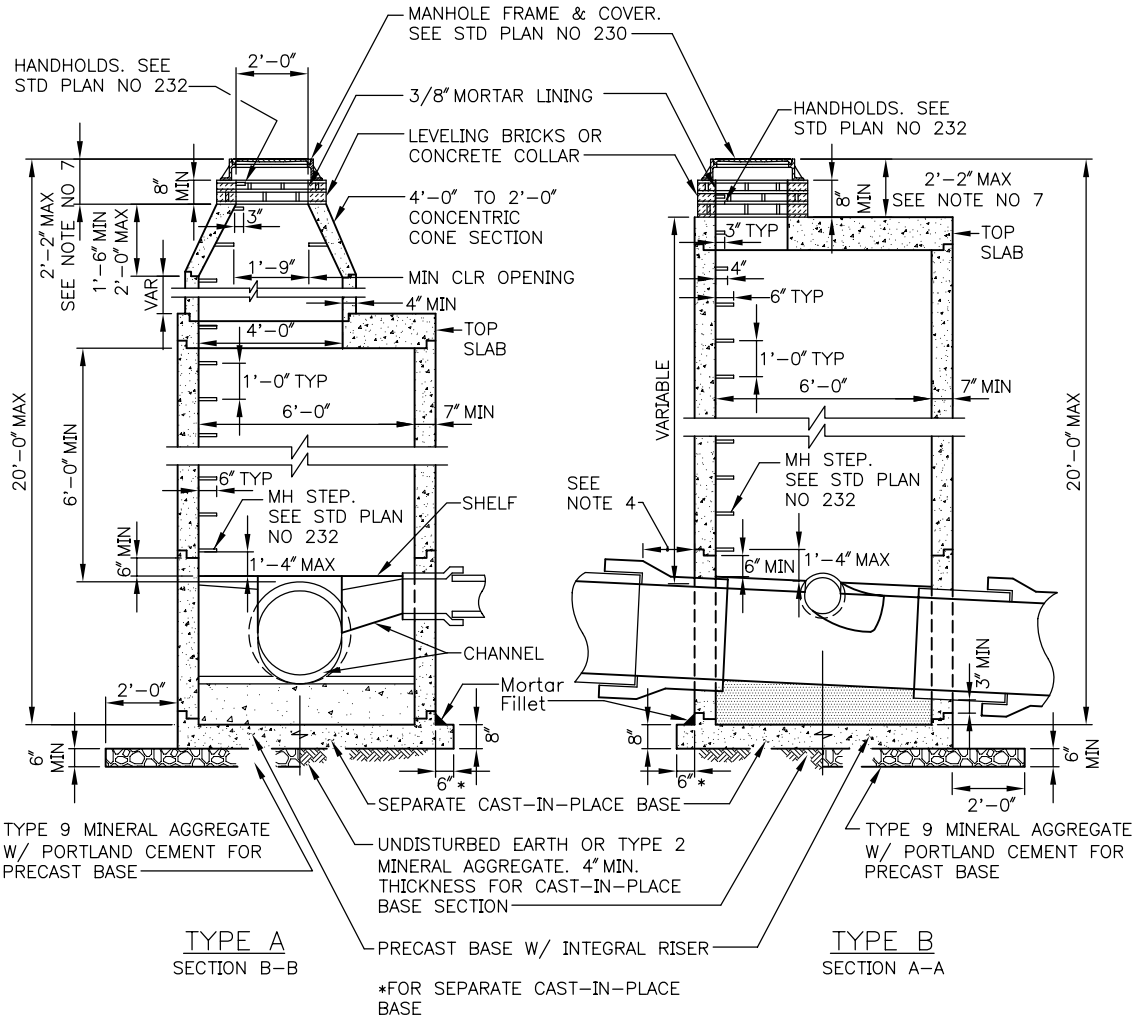
REV DATE: 2003



PLAN VIEW
(TOP REMOVED)

NOTES:

1. MH 202 TYPE A DESIGNATES A MANHOLE TOP SLAB WITH A 4′–0″ DIA ACCESS.
2. MH 202 TYPE B DESIGNATES A MANHOLE TOP SLAB WITH A 2′–0″ DIA ACCESS.
3. TOP SLAB AND BASE SECTION DETAILS, SEE STANDARD PLAN NO 202b.
4. MAXIMUM DIMENSION FROM OUTSIDE MANHOLE WALL TO THE FIRST PIPE JOINT. THE GREATER OF 1/2 INSIDE PIPE DIAMETER OR 1′–0″.
5. FOR TYPE A MANHOLE, LOCATE MANHOLE STEPS ON THE SIDE PERPENDICULAR TO THE DIRECTION OF THE FLOW IN THE CHANNEL.
6. FOR TYPE B MANHOLE, LOCATE MANHOLE STEPS OPPOSITE TO THE DOWNSTREAM OPENING.
7. TOTAL HEIGHT OF AN EXTENSION, MANHOLE FRAME & COVER AND LEVELING BRICKS SHALL NOT EXCEED 2′–2″.
8. MANHOLE BASE SECTIONS SHOWN IN SECTION A–A AND SECTION B–B ARE TYPICAL FOR TYPE A AND TYPE B MANHOLES.
9. THE MAXIMUM HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS THE MANHOLE WALL THICKNESS. THE MINIMUM HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 4 INCHES. MINIMUM DISTANCE BETWEEN HOLES IS 1′–0″ INCHES.
10. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.

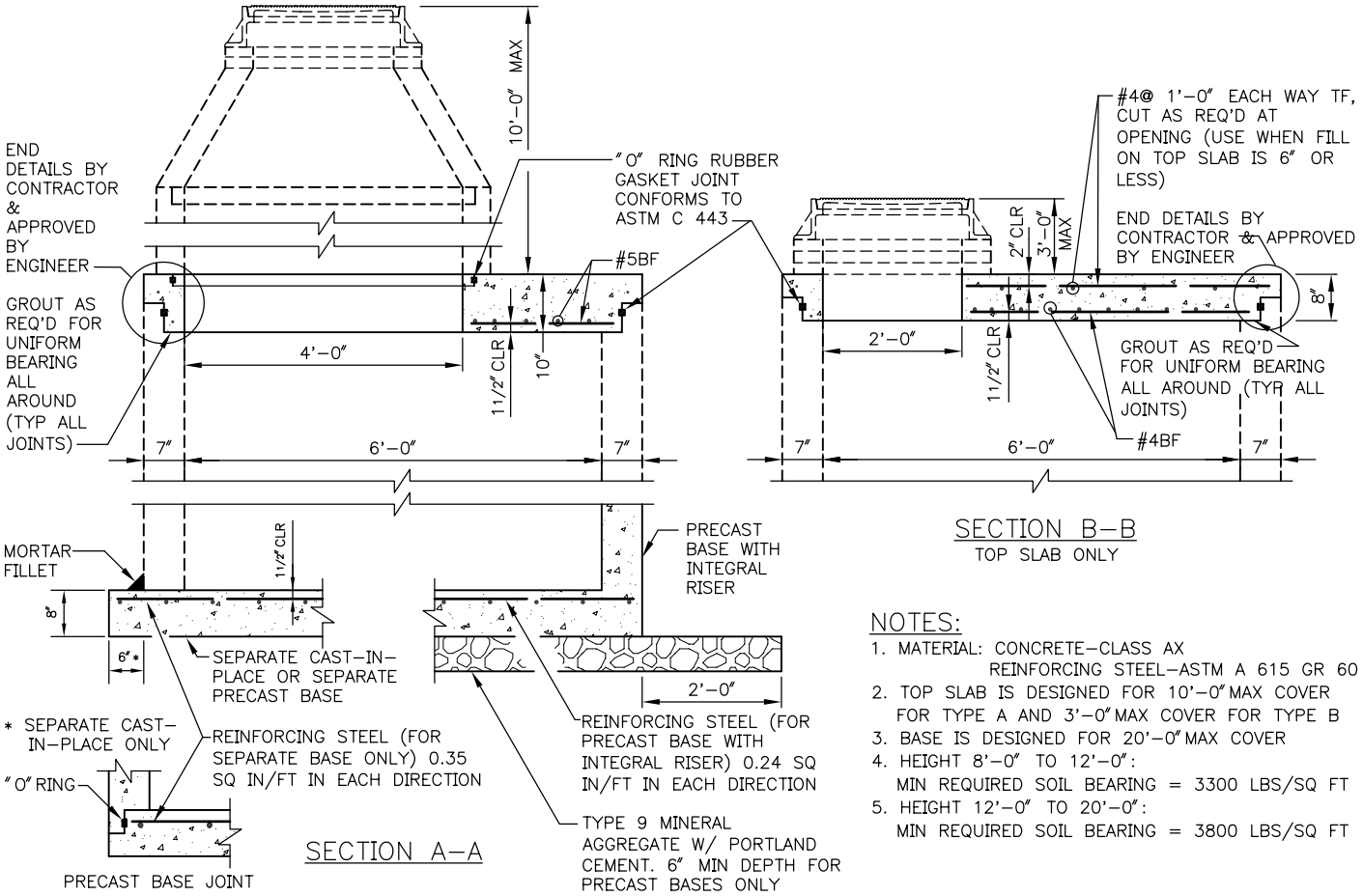


REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 202 MANHOLE

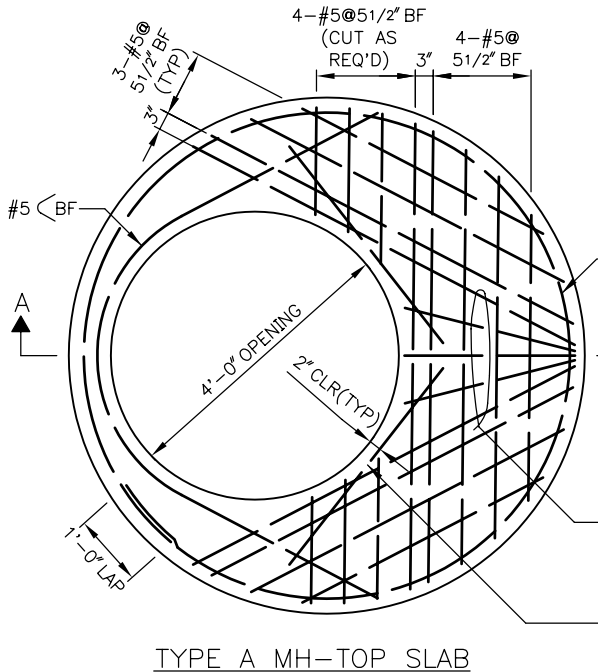
STANDARD PLAN NO 202b

REV DATE: 2003

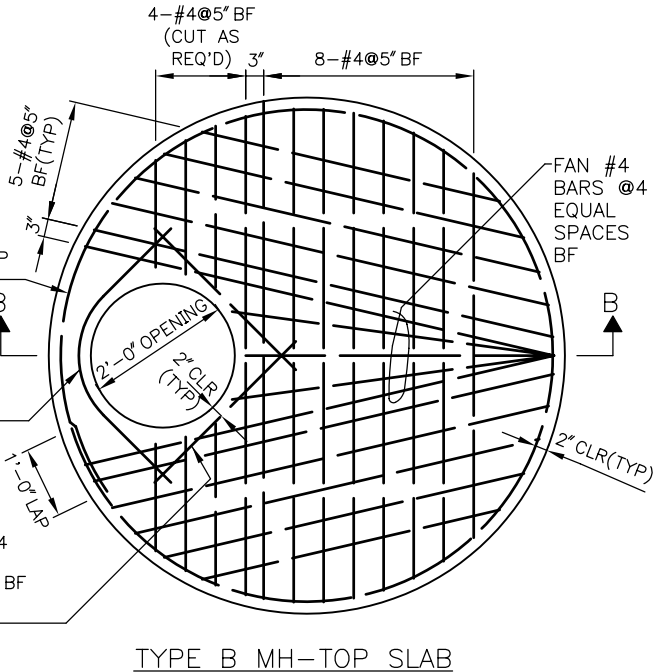


NOTES:

1. MATERIAL: CONCRETE-CLASS AX
   REINFORCING STEEL-ASTM A 615 GR 60
2. TOP SLAB IS DESIGNED FOR 10'-0" MAX COVER FOR TYPE A AND 3'-0" MAX COVER FOR TYPE B
3. BASE IS DESIGNED FOR 20'-0" MAX COVER
4. HEIGHT 8'-0" TO 12'-0":
   MIN REQUIRED SOIL BEARING = 3300 LBS/SQ FT
5. HEIGHT 12'-0" TO 20'-0":
   MIN REQUIRED SOIL BEARING = 3800 LBS/SQ FT



TYPE A MH-TOP SLAB



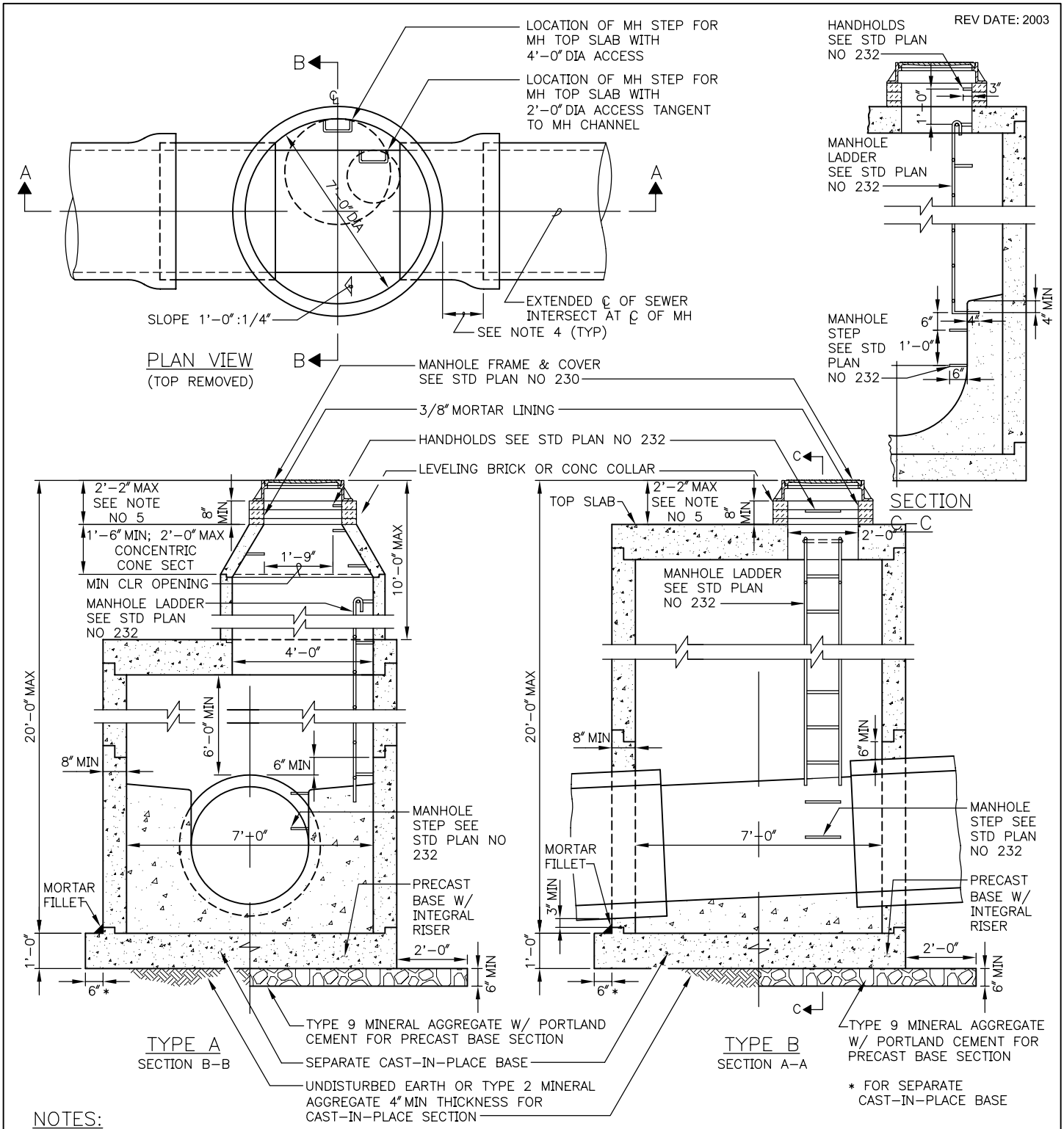
TYPE B MH-TOP SLAB

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 202 MANHOLE TOP & BOTTOM SLABS

STANDARD PLAN NO 203a

REV DATE: 2003



NOTES:

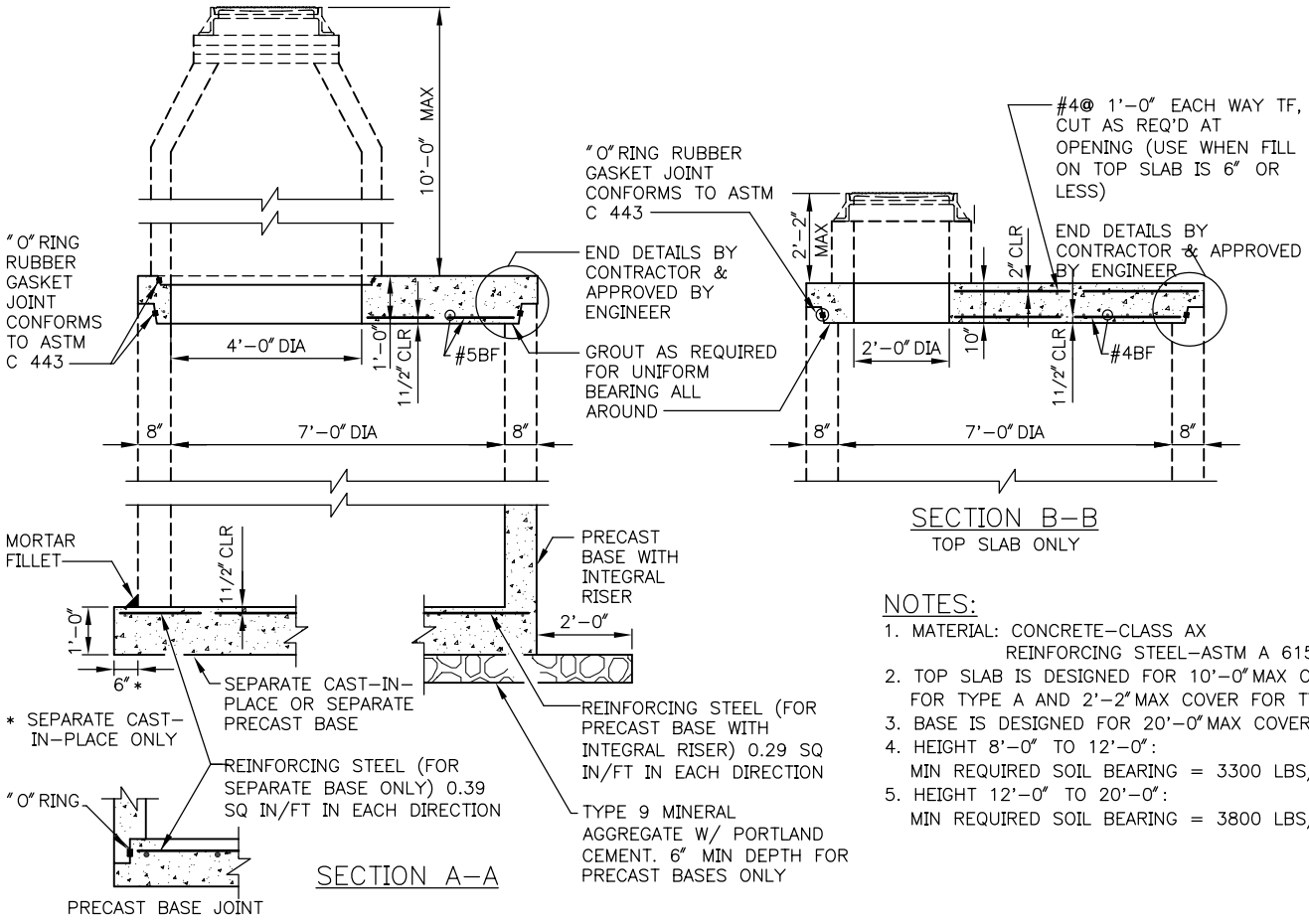
1. TYPE A MH DESIGNATES A MH TOP SLAB WITH A 4'–0" DIA ACCESS.
2. TYPE B MH DESIGNATES A MH TOP SLAB WITH A 2'–0" DIA ACCESS.
3. TOP SLAB AND BASE SECTION DETAILS, SEE STD PLAN NO 203b.
4. MAX DIMENSION FROM OUTSIDE MH WALL TO THE FIRST PIPE FLEX JOINT. THE GREATER OF 1/2 INSIDE PIPE DIAMETER OR 1'–0".
5. TOTAL HEIGHT OF FRAME EXTENSIONS, MH FRAME AND COVER, AND LEVELING BRICKS SHALL NOT EXCEED 2'–2".
6. MH BASE SECTIONS SHOWN IN SECTION A–A AND SECTION B–B ARE TYPICAL FOR TYPE A AND TYPE B MHS.
7. MAX HOLE SIZE IS EQUAL TO THE OUTSIDE DIAMETER OF THE PIPE PLUS THE MH WALL THICKNESS. MIN DISTANCE BETWEEN HOLES IS 1'–0".
8. PRECAST MH COMPONENTS SHALL CONFORM TO ASTM C 478. JOINTS BETWEEN PRECAST COMPONENTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443.

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 203 MANHOLE

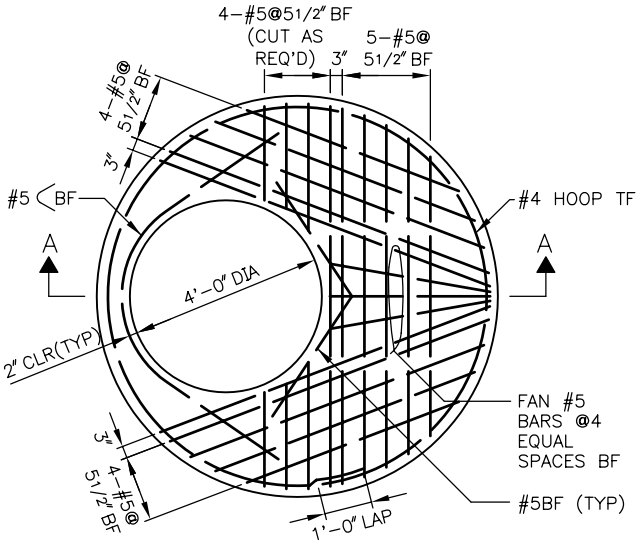
STANDARD PLAN NO 203b

REV DATE: 2008

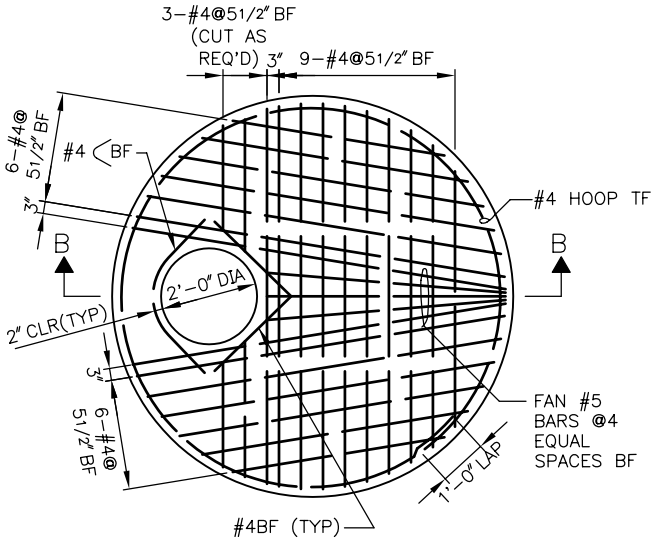


NOTES:

1. MATERIAL: CONCRETE-CLASS AX
   REINFORCING STEEL-ASTM A 615 GR 60
2. TOP SLAB IS DESIGNED FOR 10'-0" MAX COVER FOR TYPE A AND 2'-2" MAX COVER FOR TYPE B
3. BASE IS DESIGNED FOR 20'-0" MAX COVER
4. HEIGHT 8'-0" TO 12'-0":
   MIN REQUIRED SOIL BEARING = 3300 LBS/SQ FT
5. HEIGHT 12'-0" TO 20'-0":
   MIN REQUIRED SOIL BEARING = 3800 LBS/SQ FT



TYPE A MH-TOP SLAB



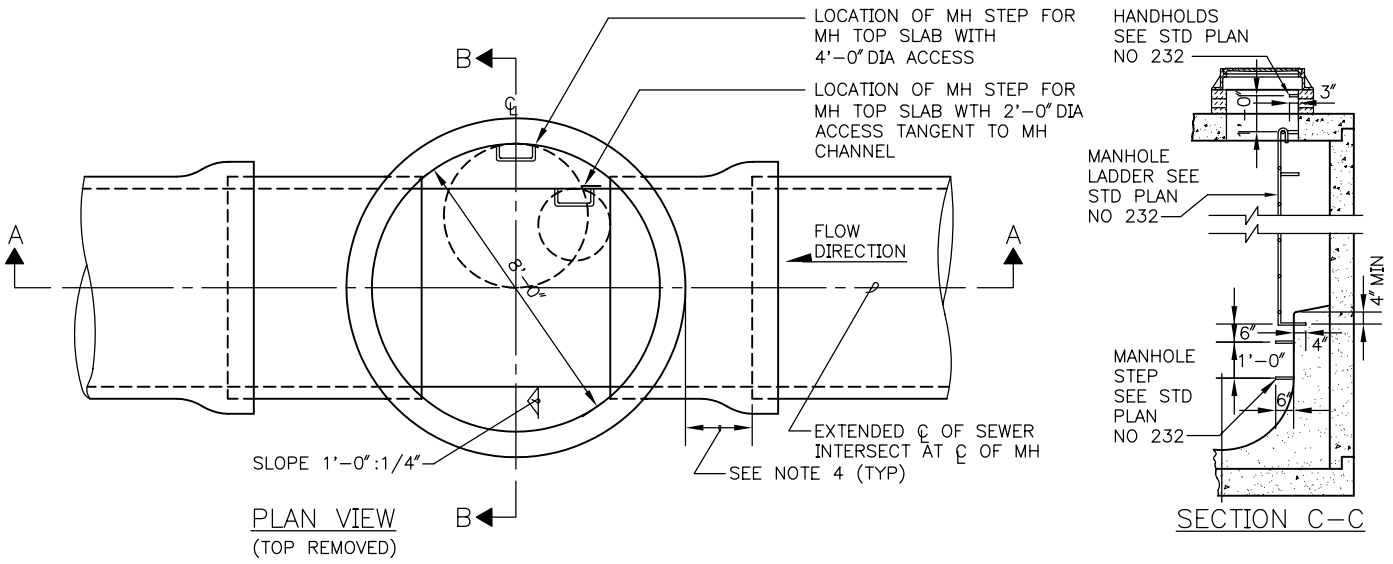
TYPE B MH-TOP SLAB

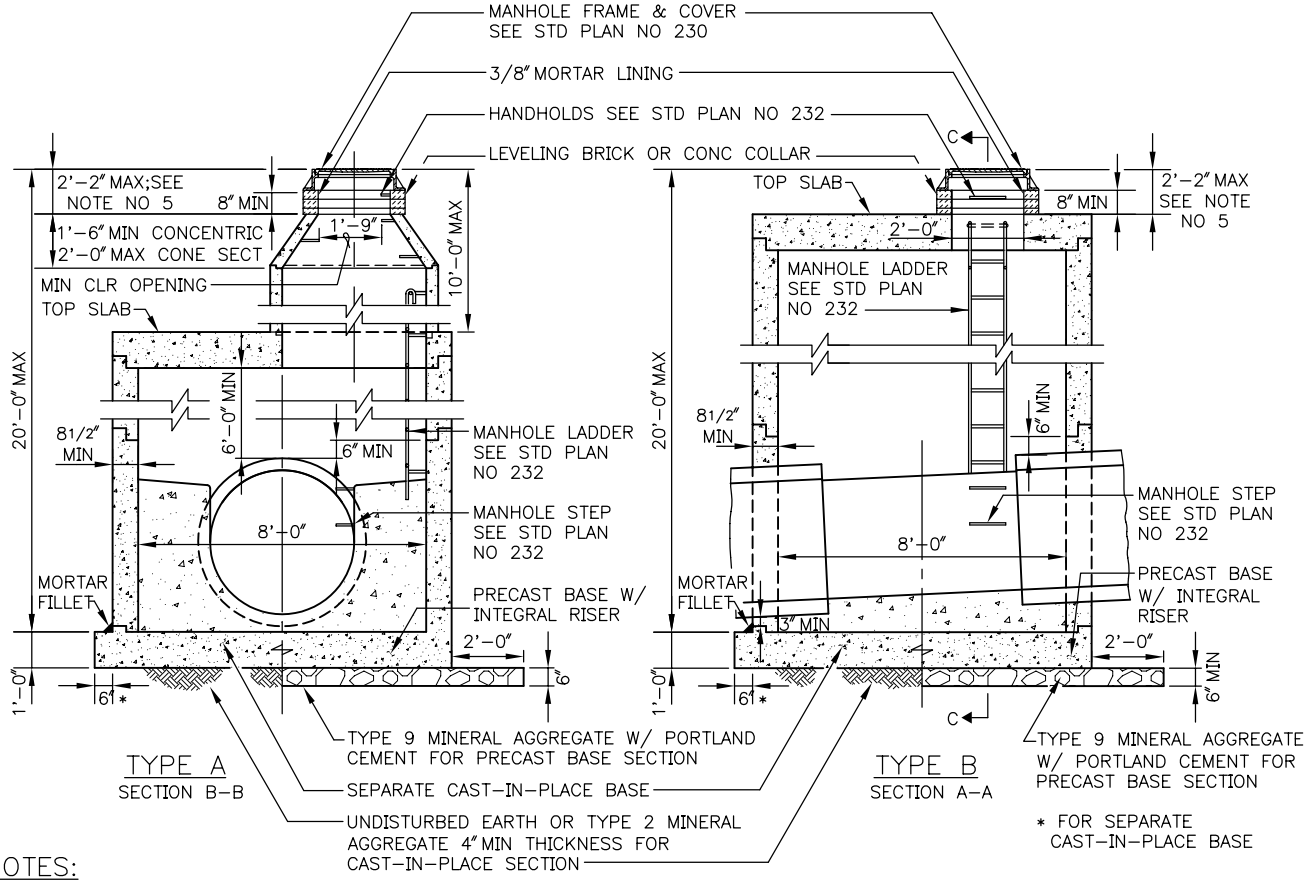
REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 203 MANHOLE TOP & BOTTOM SLABS

STANDARD PLAN NO 204a

REV DATE: 2003





NOTES:

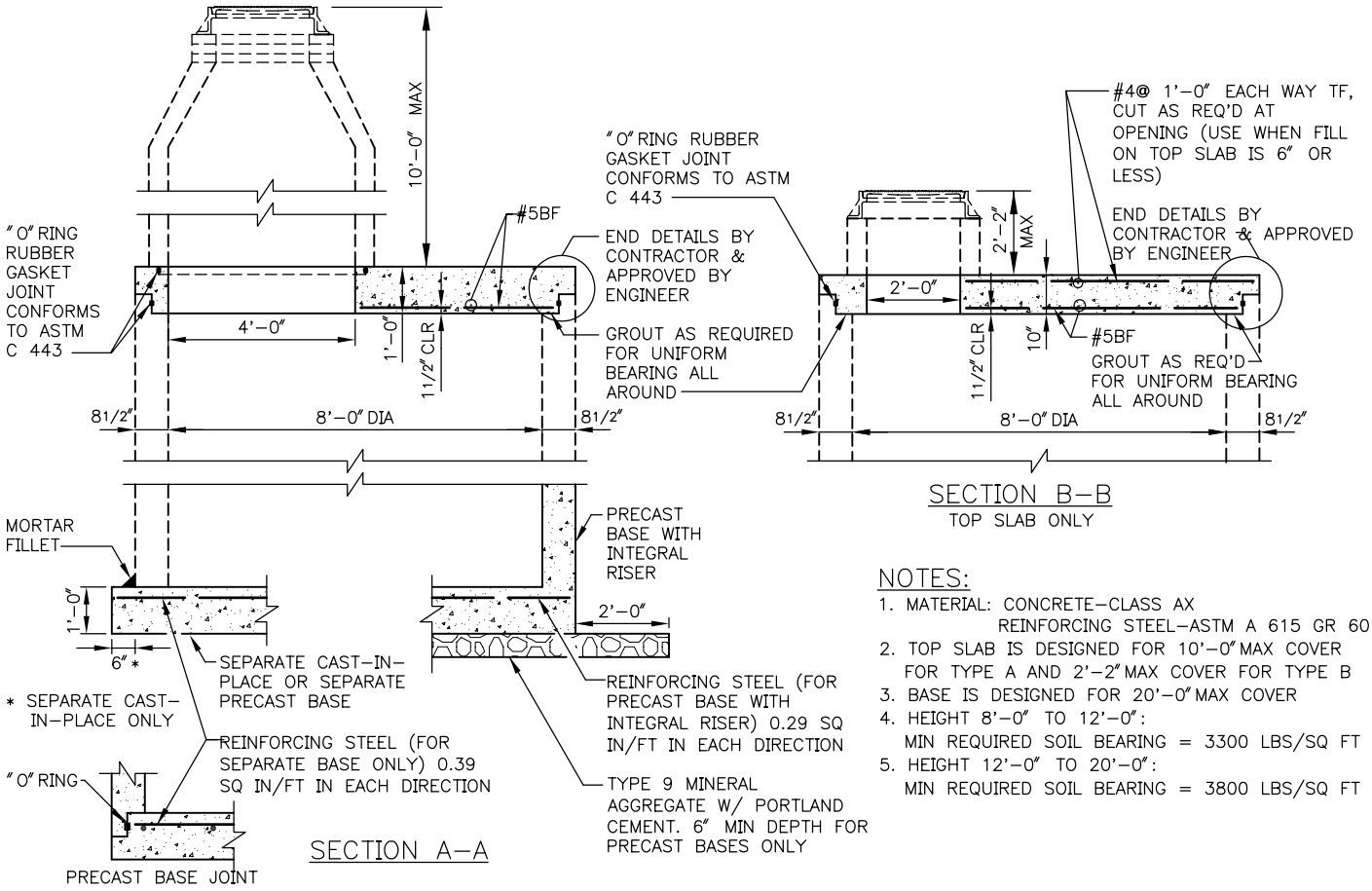
1. TYPE A MH DESIGNATES A MH TOP SLAB WITH A 4'-0" DIA ACCESS.
2. TYPE B MH DESIGNATES A MH TOP SLAB WITH A 2'-0" DIA ACCESS.
3. TOP SLAB AND BASE SECTION DETAILS, SEE STD PLAN NO 204.B.
4. MAX DIMENSION FROM OUTSIDE MH WALL TO THE FIRST PIPE JOINT. THE GREATER OF 1/2 INSIDE PIPE DIAMETER OR 1'-0".
5. TOTAL HEIGHT OF FRAME EXTENSIONS, MH FRAME AND COVER, AND LEVELING BRICKS SHALL NOT EXCEED 2'-2".
6. MH BASE SECTIONS SHOWN IN SECTION A-A AND SECTION B-B ARE TYPICAL FOR TYPE A AND TYPE B MHS.
7. MAX HOLE SIZE IS EQUAL TO THE OUTSIDE DIAMETER OF THE PIPE PLUS THE MH WALL THICKNESS. MIN DISTANCE BETWEEN HOLES IS 1'-0".

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 204 MANHOLE

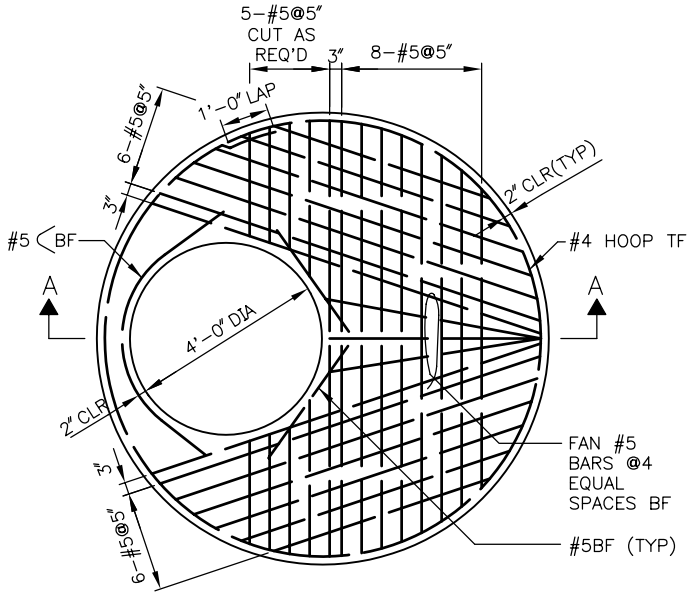
STANDARD PLAN NO 204b

REV DATE: 2008

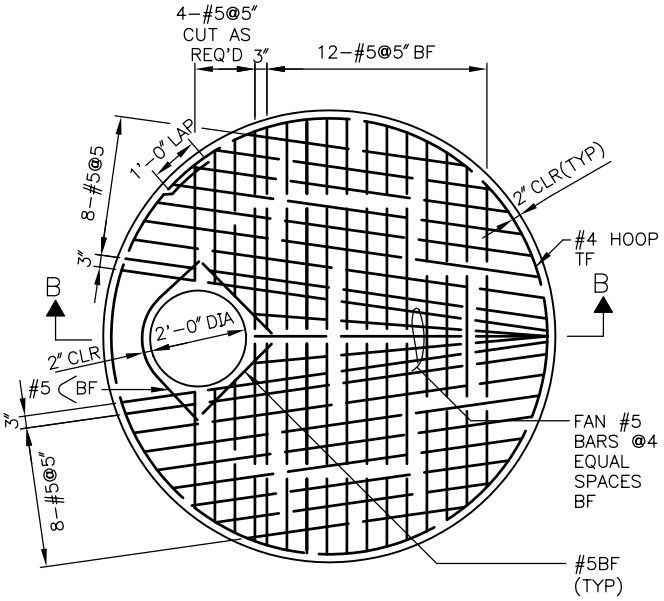


NOTES:

1. MATERIAL: CONCRETE-CLASS AX
   REINFORCING STEEL-ASTM A 615 GR 60
2. TOP SLAB IS DESIGNED FOR 10'-0" MAX COVER FOR TYPE A AND 2'-2" MAX COVER FOR TYPE B
3. BASE IS DESIGNED FOR 20'-0" MAX COVER
4. HEIGHT 8'-0" TO 12'-0":
   MIN REQUIRED SOIL BEARING = 3300 LBS/SQ FT
5. HEIGHT 12'-0" TO 20'-0":
   MIN REQUIRED SOIL BEARING = 3800 LBS/SQ FT



TYPE A MH-TOP SLAB



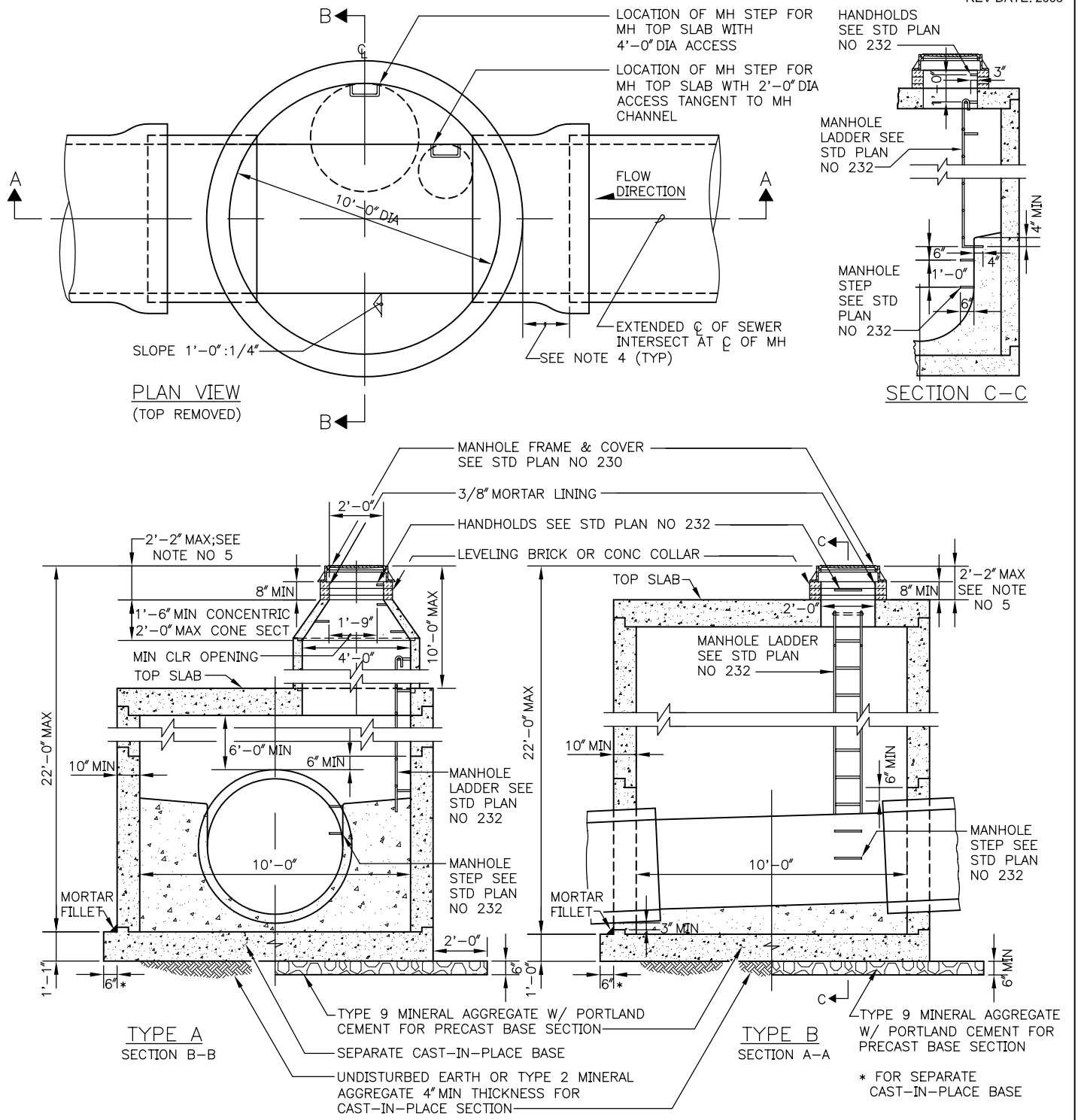
TYPE B MH-TOP SLAB

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 204 MANHOLE TOP & BOTTOM SLABS

STANDARD PLAN NO 205a

REV DATE: 2003



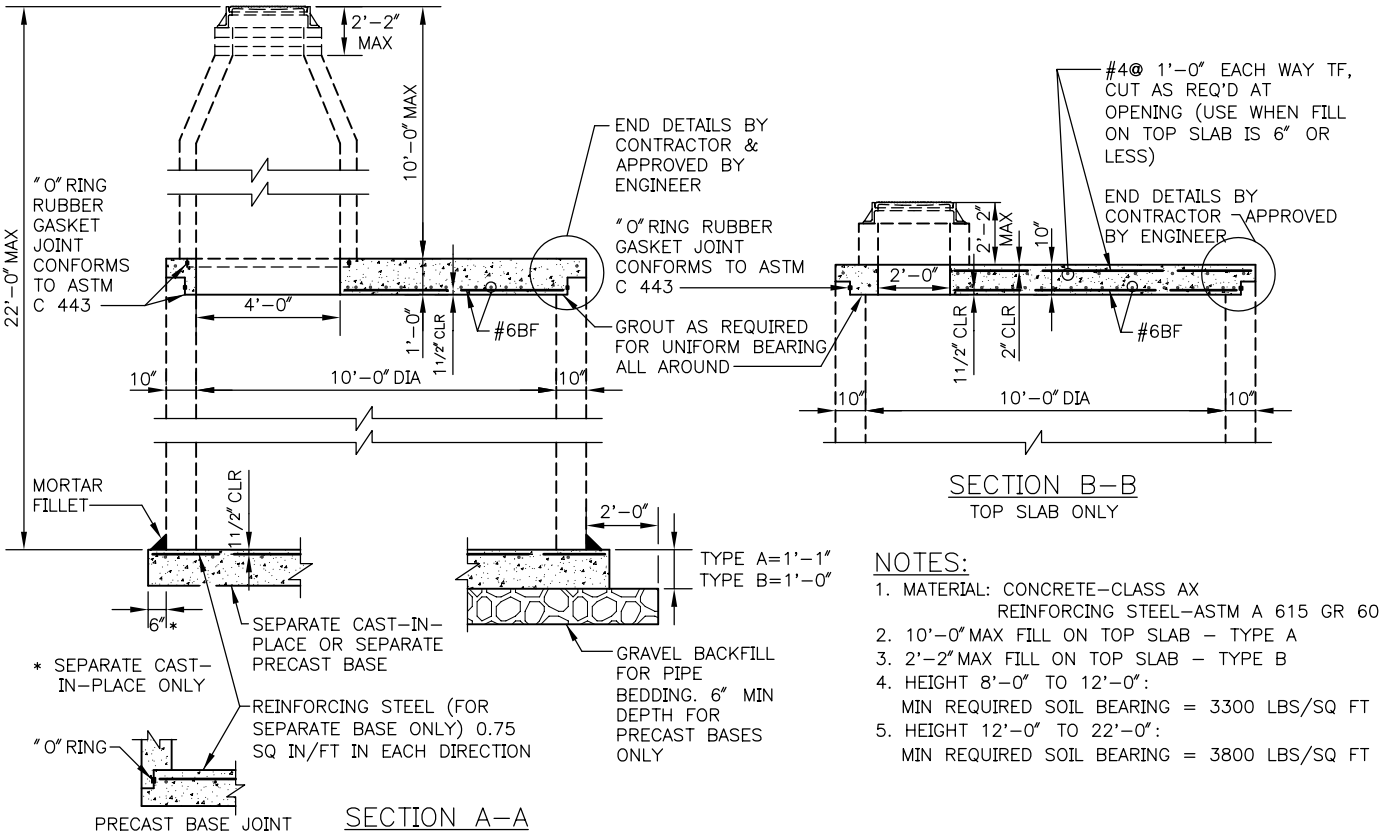
NOTES:

1. TYPE A MH DESIGNATES A MH TOP SLAB WITH A 4'–0" DIA ACCESS.
2. TYPE B MH DESIGNATES A MH TOP SLAB WITH A 2'–0" DIA ACCESS.
3. TOP SLAB AND BASE SECTION DETAILS, SEE STD PLAN NO 205b.
4. MAX DIMENSION FROM OUTSIDE MH WALL TO THE FIRST PIPE JOINT. THE GREATER OF 1/2 INSIDE PIPE DIAMETER OR 1'–0".
5. TOTAL HEIGHT OF FRAME EXTENSIONS, MH FRAME AND COVER, AND LEVELING BRICKS SHALL NOT EXCEED 2'–2".
6. MH BASE SECTIONS SHOWN IN SECTION A–A AND SECTION B–B ARE TYPICAL FOR TYPE A AND TYPE B MHS.
7. MAX HOLE SIZE IS EQUAL TO THE OUTSIDE DIAMETER OF THE PIPE PLUS THE MH WALL THICKNESS. MIN DISTANCE BETWEEN HOLES IS 1'–0".

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 205 MANHOLE

REV DATE: 2008

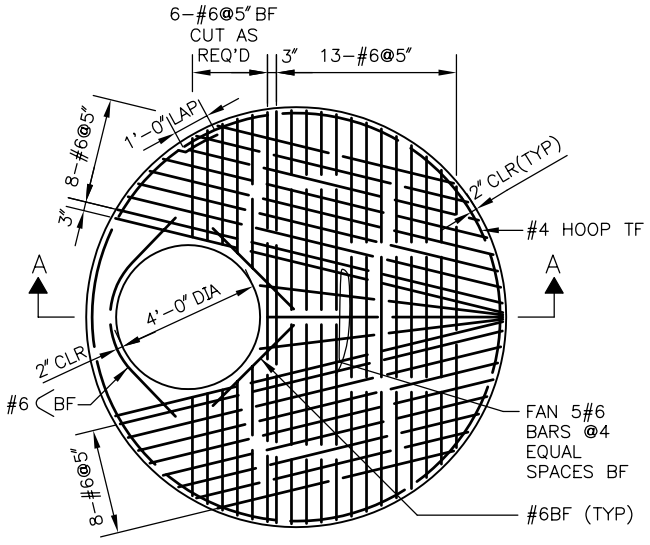


SECTION A–A

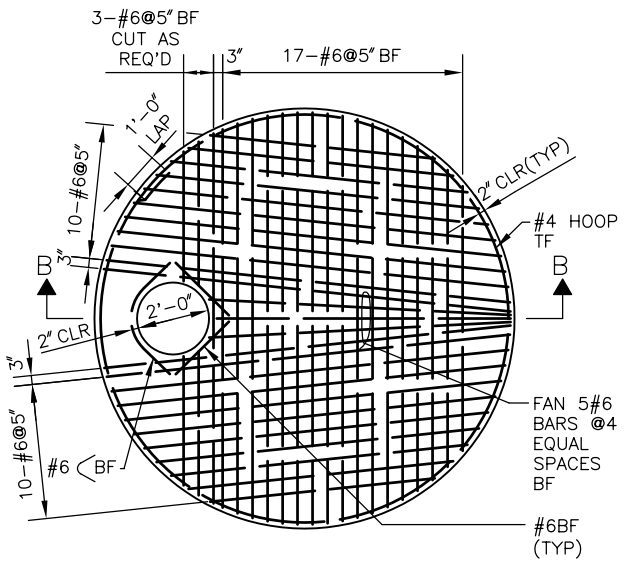
SECTION B–B
TOP SLAB ONLY

NOTES:

1. MATERIAL: CONCRETE–CLASS AX
   REINFORCING STEEL–ASTM A 615 GR 60
2. 10'–0" MAX FILL ON TOP SLAB – TYPE A
3. 2'–2" MAX FILL ON TOP SLAB – TYPE B
4. HEIGHT 8'–0" TO 12'–0":
   MIN REQUIRED SOIL BEARING = 3300 LBS/SQ FT
5. HEIGHT 12'–0" TO 22'–0":
   MIN REQUIRED SOIL BEARING = 3800 LBS/SQ FT



TYPE A MH–TOP SLAB



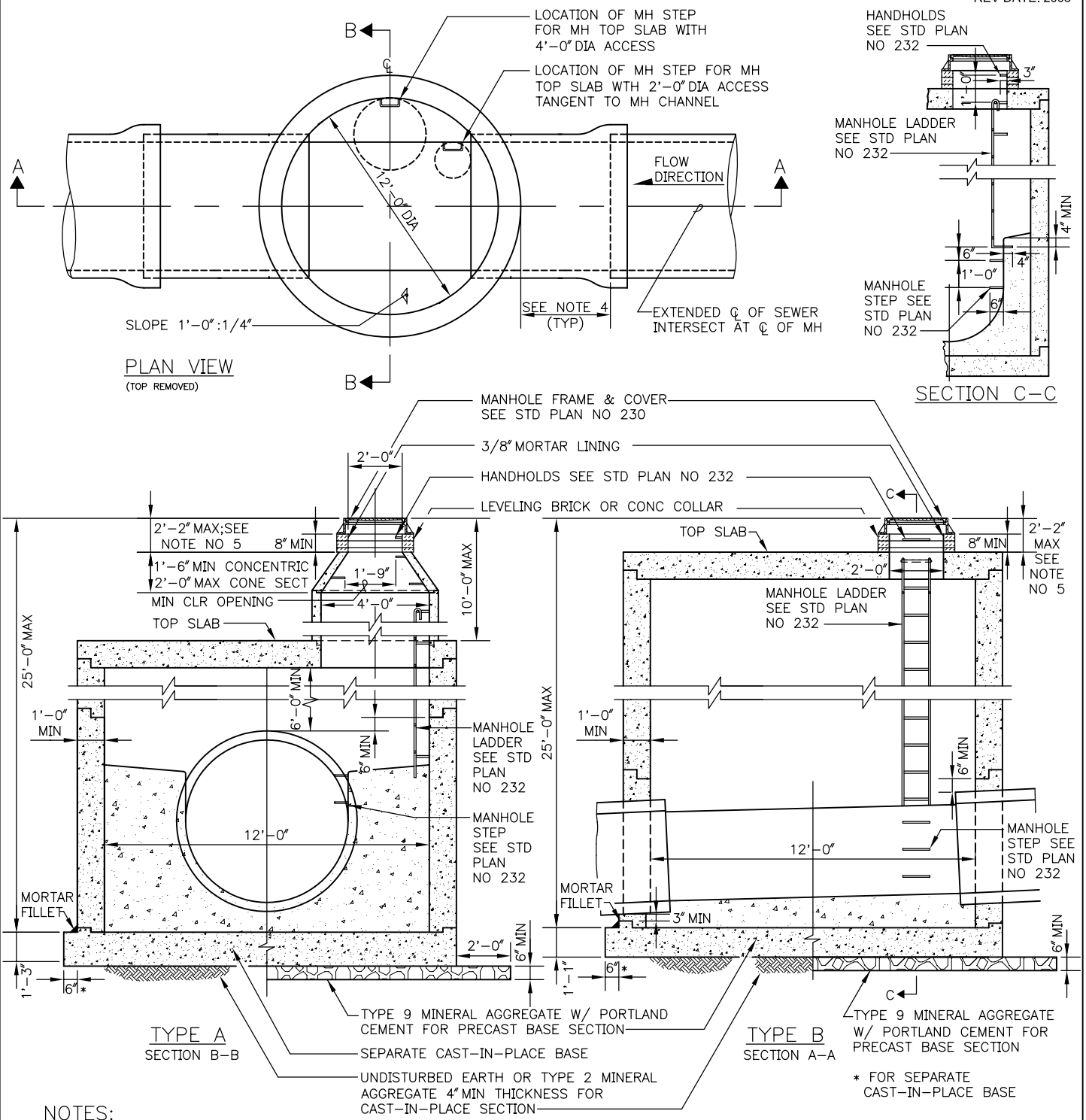
TYPE B MH–TOP SLAB

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 205 MANHOLE TOP & BOTTOM SLABS

STANDARD PLAN NO 206a

REV DATE: 2003



NOTES:

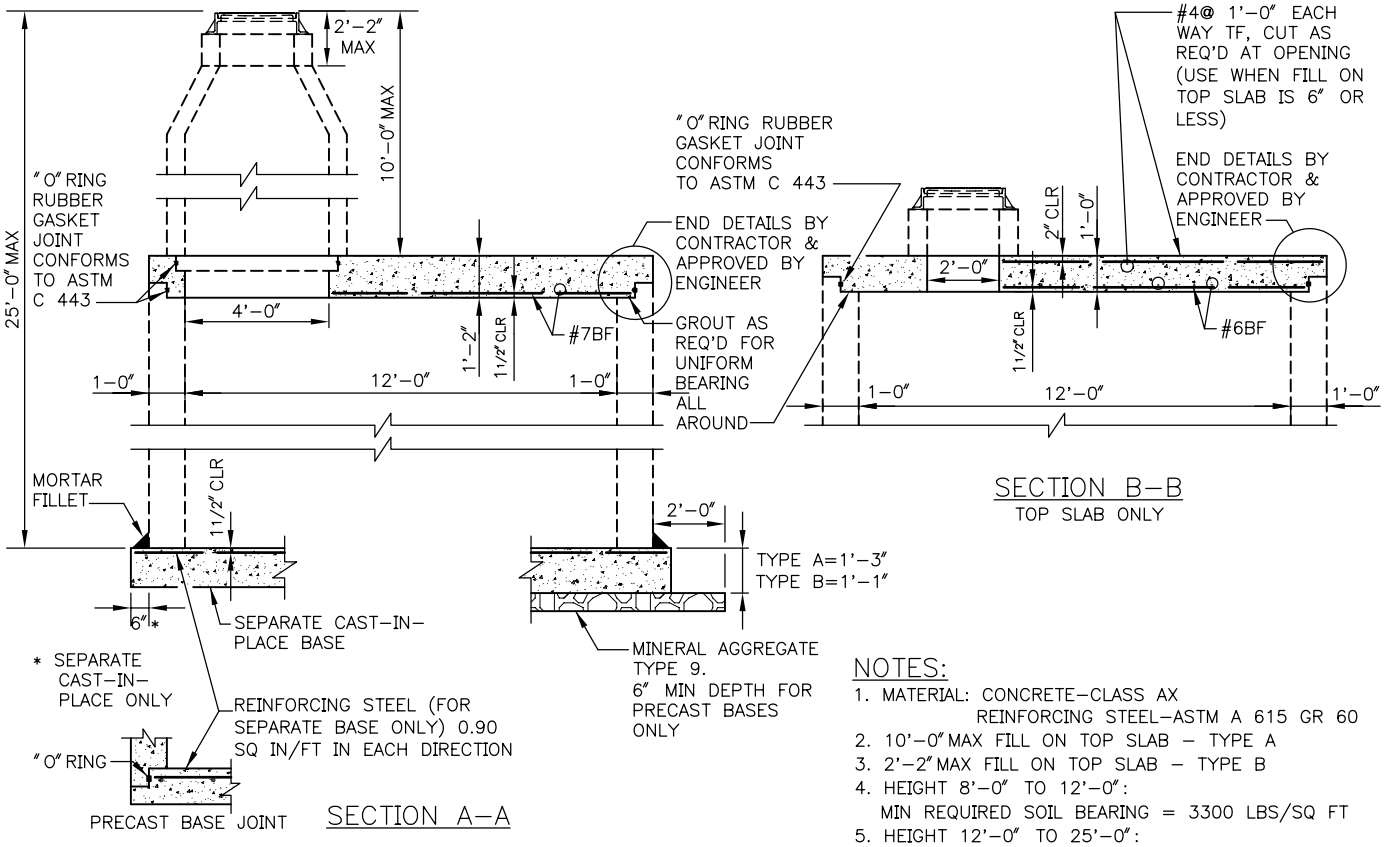
1. TYPE A MH DESIGNATES A MH TOP SLAB WITH A 4'–0" DIA ACCESS.
2. TYPE B MH DESIGNATES A MH TOP SLAB WITH A 2'–0" DIA ACCESS.
3. TOP SLAB AND BASE SECTION DETAILS, SEE STD PLAN NO 206b.
4. MAX DIMENSION FROM OUTSIDE MH WALL TO THE FIRST PIPE JOINT, THE GREATER OF 1/2 INSIDE PIPE DIAMETER OR 1'–0" EXCEPT PVC AND CMP.
5. TOTAL HEIGHT OF FRAME EXTENSIONS, MH FRAME AND COVER, AND LEVELING BRICKS SHALL NOT EXCEED 2'–2".
6. MH BASE SECTIONS SHOWN IN SECTION A–A AND SECTION B–B ARE TYPICAL FOR TYPE A AND TYPE B MHS.
7. MAX HOLE SIZE IS EQUAL TO THE OUTSIDE DIAMETER OF THE PIPE PLUS THE MH WALL THICKNESS. MIN DISTANCE BETWEEN HOLES IS 1'–0".

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 206 MANHOLE

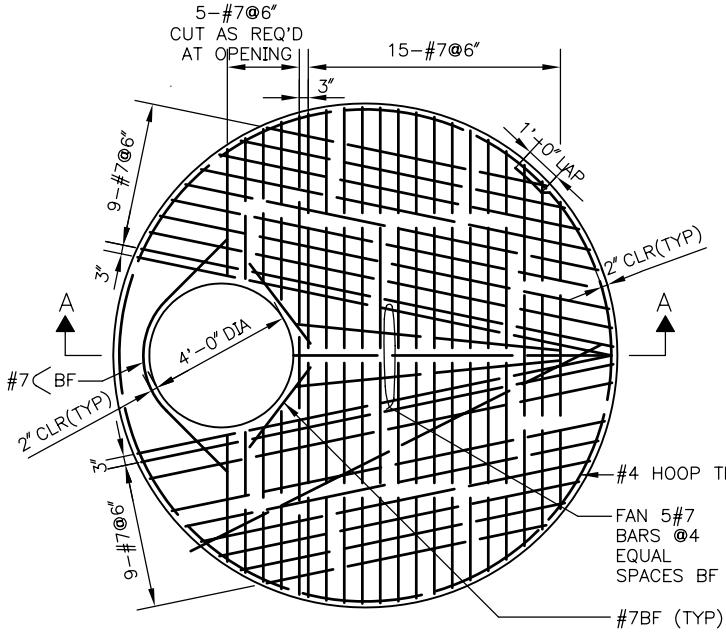
STANDARD PLAN NO 206b

REV DATE: 2008

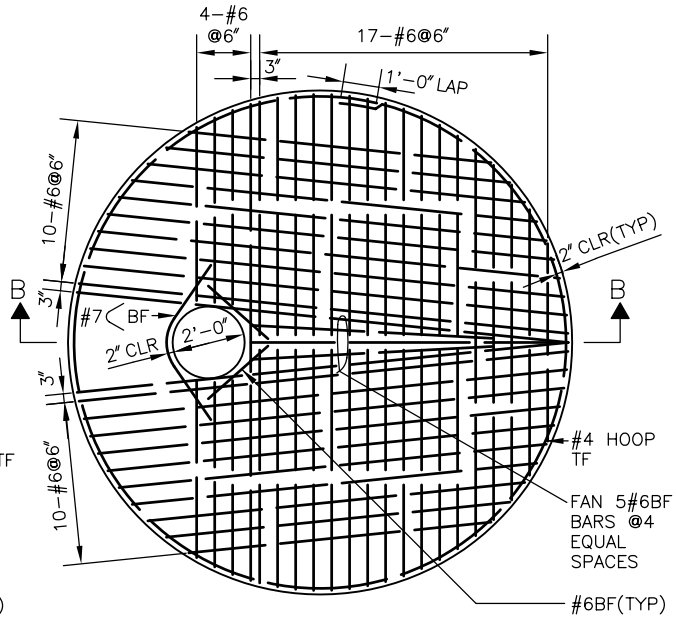


NOTES:

1. MATERIAL: CONCRETE-CLASS AX
   REINFORCING STEEL-ASTM A 615 GR 60
2. 10'-0" MAX FILL ON TOP SLAB - TYPE A
3. 2'-2" MAX FILL ON TOP SLAB - TYPE B
4. HEIGHT 8'-0" TO 12'-0":
   MIN REQUIRED SOIL BEARING = 3300 LBS/SQ FT
5. HEIGHT 12'-0" TO 25'-0":
   MIN REQUIRED SOIL BEARING = 3800 LBS/SQ FT



TYPE A MH-TOP SLAB



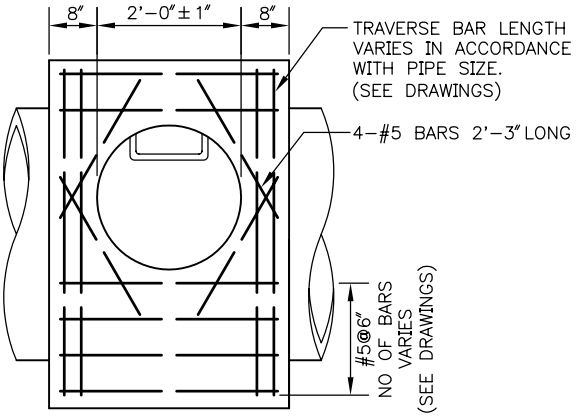
TYPE B MH-TOP SLAB

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 206 MANHOLE TOP & BOTTOM SLABS

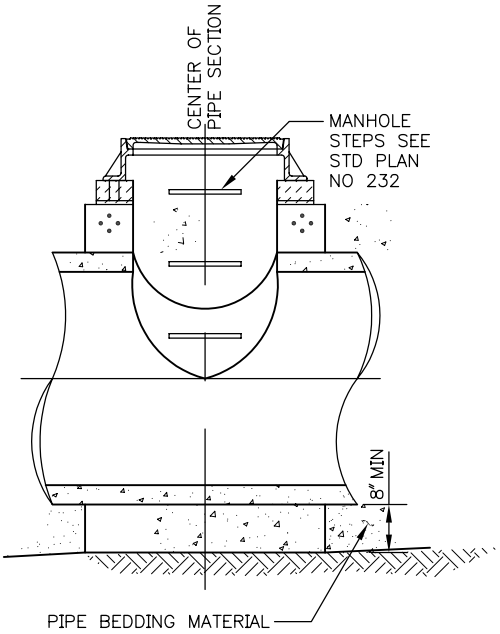
STANDARD PLAN NO 207

REV DATE: 2003

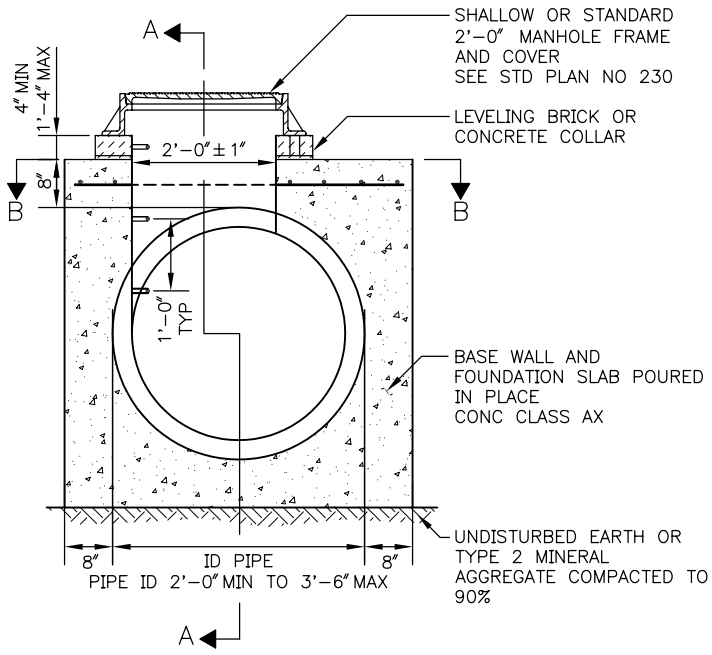


SECTION B–B

NOTE:
REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A 615 GR 60 AND SHALL HAVE A MIN COVER OF 2″



SECTION A–A

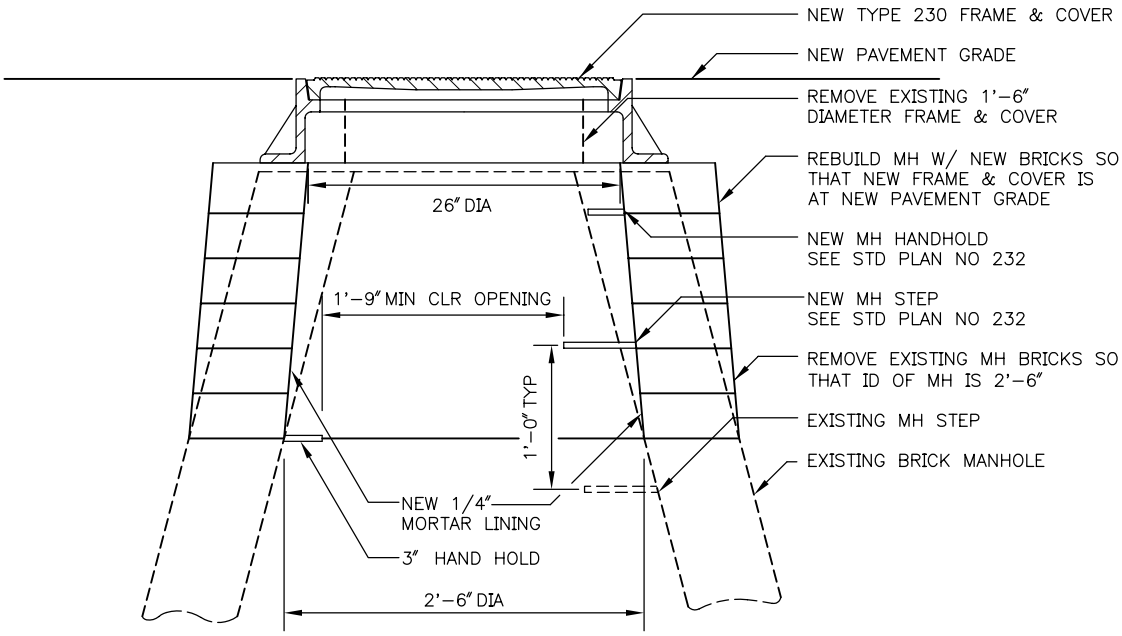


SECTION THRU ℄

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 207 MANHOLE

REV DATE: 2003



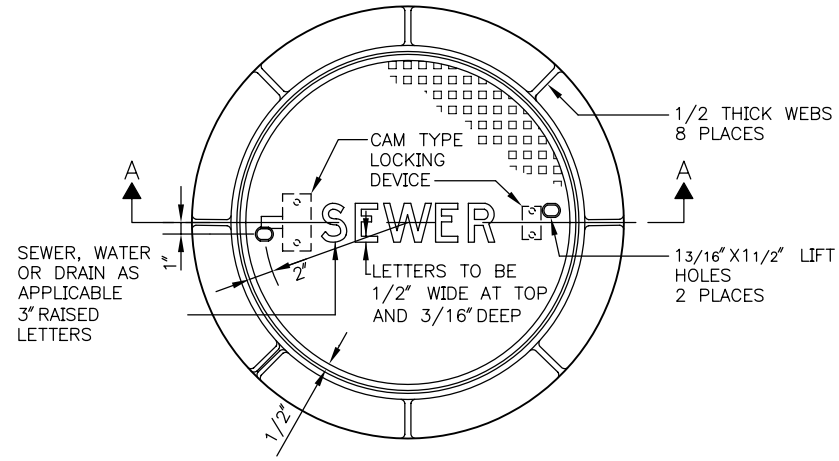
NOTES:

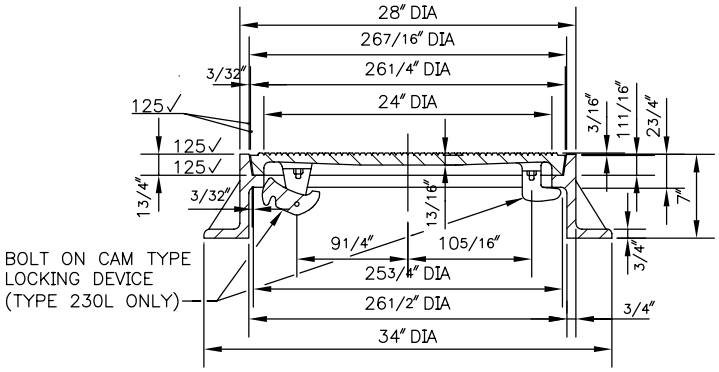
1. NEW MANHOLE STEPS AND HANDHOLDS SHALL BE INSTALLED AND LOCATED 1'–0" OC FROM THE FIRST EXISTING STEP IN THE MANHOLE AND SHALL MATCH THE EXISTING TYPE OF STEP. ANY SUBSTITUTIONS SHALL BE APPROVED BY THE ENGINEER. A MINIMUM 1'–9" CLEAR OPENING SHALL BE MAINTAINED.
2. FOR 7" RIGID PAVEMENT, THE RING AND COVER SHALL BE CONSTRUCTED TO THE FINISHED GRADE OF THE PAVEMENT. REINFORCEMENT SHALL BE PLACED AROUND THE CASTING AT MID–POINT BETWEEN THE FINISH GRADE OF THE RIGID PAVEMENT AND THE TOP OF THE FLANGE. #4 REINFORCING BARS SHALL BE USED IN THE CONFIGURATION OF 2 SEPARATE SQUARES OFF–ROTATED 45 DEGREES FROM EACH OTHER AND GIVING A MINIMUM CLEARANCE OF 2" AT THE SHORTEST DISTANCE WITH THE FRAME.
3. FOR PAVEMENT DEPTH GREATER THAN 7", USE FRAME EXTENSION(S) AS SHOWN IN STANDARD PLAN NO 231 TO BRING THE COVER UP TO THE LEVEL OF THE FINISHED PAVEMENT WITHOUT EMBEDDING BOTTOM FLANGE OF THE CASTING IN THE PAVEMENT.

REF STD SPEC SEC 7-05

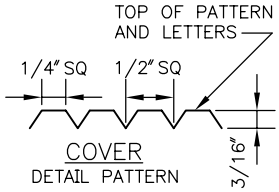
City of Seattle	NOT TO SCALE	REBUILD EXISTING BRICK MANHOLE

REV DATE: 2005





SECTION
A–A



COVER
DETAIL PATTERN

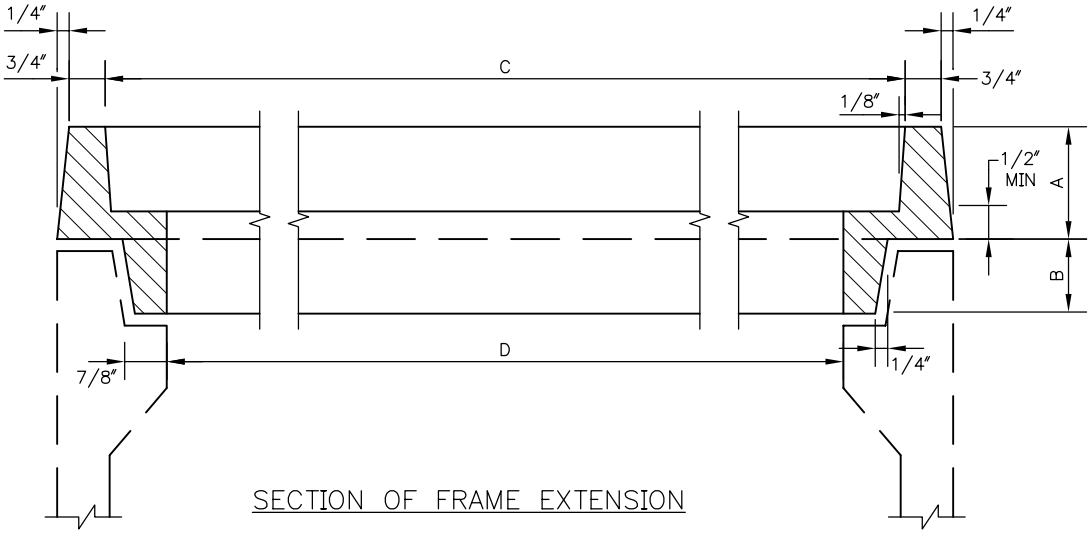
NOTES:

1. DESIGNATE LOCKING COVER AS TYPE 230L FOR USE IN NON–VEHICULAR TRAFFIC AREAS.
2. FOR 7" RIGID PAVEMENT, THE FRAME AND COVER SHALL BE CONSTRUCTED TO THE FINISHED GRADE OF THE PAVEMENT. REINFORCEMENT SHALL BE PLACED AROUND THE CASTING AT MID–POINT BETWEEN THE FINISHED GRADE OF THE PAVEMENT AND THE TOP OF THE FLANGE. #4 REINFORCING BARS SHALL BE USED IN THE CONFIGURATION OF 2 SEPARATE SQUARES OFF–ROTATED 45 DEGREES FROM EACH OTHER AND GIVING A CLEARANCE OF 2 INCHES AT THE SHORTEST DISTANCE WITH THE FRAME
3. FOR RIGID PAVEMENT DEPTH GREATER THAN 7", USE FRAME EXTENSION(S) (STANDARD PLAN NO 231) TO BRING THE COVER UP TO THE LEVEL OF THE FINISHED PAVEMENT WITHOUT EMBEDDING THE BOTTOM FLANGE OF THE CASTING IN THE PAVEMENT
4. COVER THICKNESS IS MEASURED FROM THE BOTTOM OF THE PATTERN
5. REFER TO SECTION 5–05 FOR OTHER REQUIREMENTS FOR REINFORCING BARS
6. FRAMES SHALL BE MANUFACTURED FROM CAST IRON OR DUCTILE IRON
7. COVERS SHALL BE MANUFACTURED FROM DUCTILE IRON

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	2'-0" DIAMETER FRAME & COVER

REV DATE: 2003



SECTION OF FRAME EXTENSION

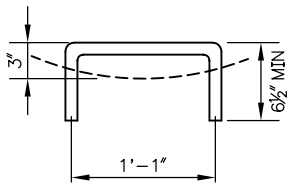
NOTES:

1. DIMENSION "A" REFERS TO HEIGHT OF FRAME EXTENSION ABOVE MANHOLE FRAME
2. DIMENSIONS "B", "C" AND "D" SHALL MATCH THE MANHOLE FRAME AND COVER THAT THE FRAME EXTENSION TO BE USED ON
3. WHEN FRAME EXTENSIONS ARE USED ON A NEW MANHOLE FRAME AND COVER, THE FRAME EXTENSION SHALL BE PERMANENTLY ATTACHED TO THE MANHOLE FRAME AT THE FACTORY, NOT IN THE FIELD. APPROVAL OF ATTACHMENT METHOD IS REQUIRED
4. FRAME EXTENSIONS SHALL BE DUCTILE OR CAST IRON

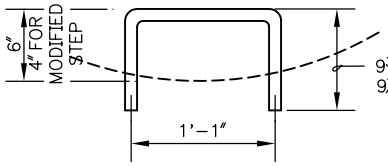
REF STD SPEC SEC 7-20

City of Seattle	NOT TO SCALE	FRAME EXTENSIONS

REV DATE: 2005

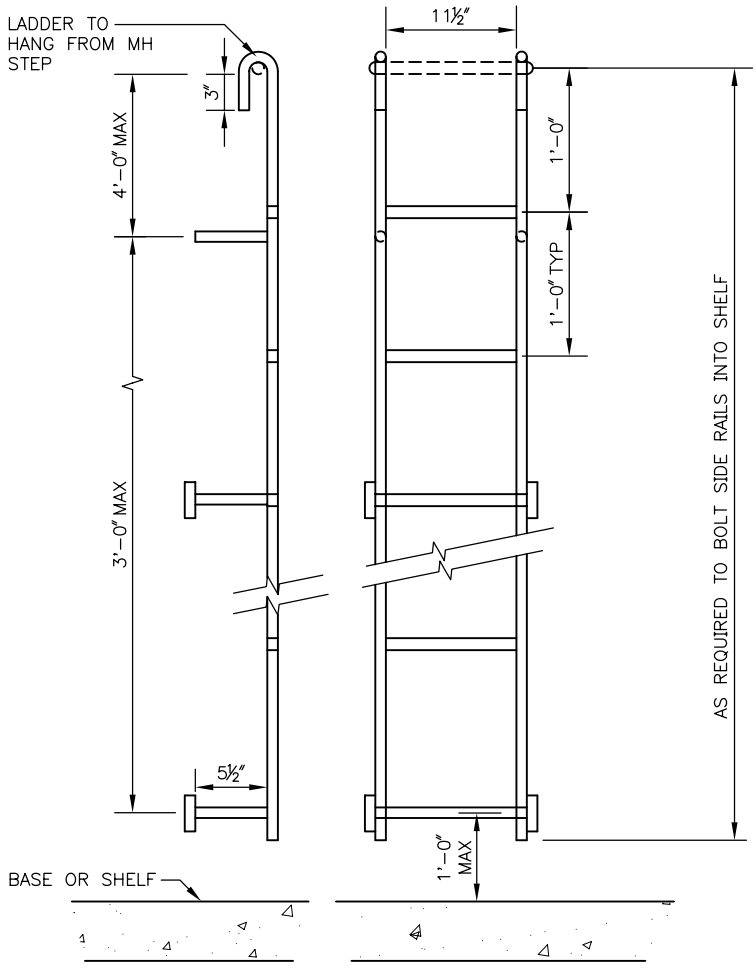


HANDHOLD



STEP

9⅜" FOR BLOCK OR BRICK MH SECTION
9½" FOR PRECAST MH SECTION
7" FOR MODIFIED STEP FOR PRECAST MH SECTION



LADDER

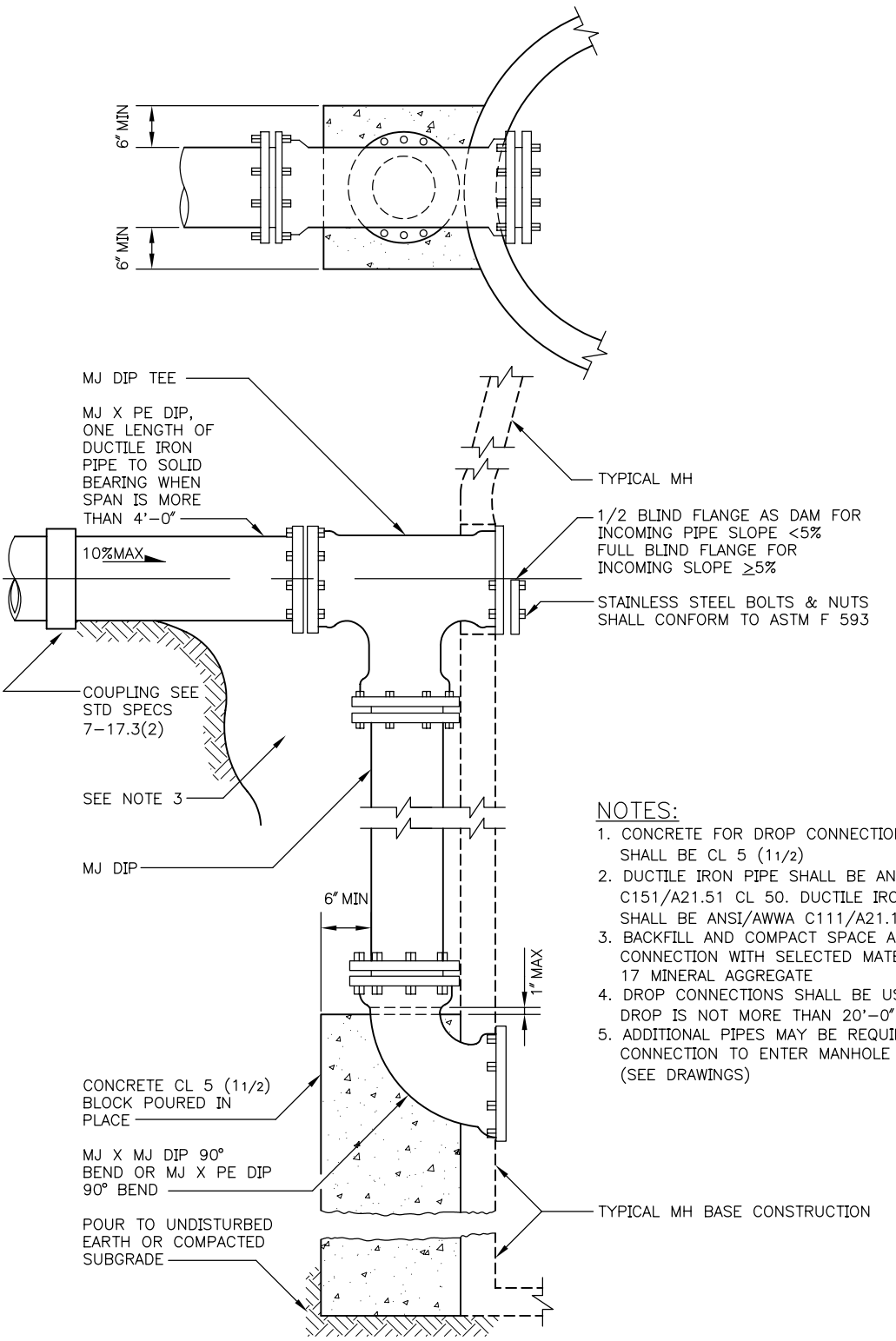
NOTE:

1. DIMENSIONS FOR THE MH LADDER AND STEP ARE MINIMUM REQUIREMENTS ONLY.
2. STEPS AND HANDHOLDS SHALL BE INSTALLED AT 1'–0" SPACING. WHEN THE DISTANCE FROM THE LAST (HIGHEST) STEP OR HANDHOLD TO THE TOP OF THE MH FRAME EXCEEDS 1'–0" AND ANOTHER STEP OR HANDHOLD CANNOT BE INSTALLED BECAUSE OF THE LOCATION OF THE MH FRAME, A HANDHOLD SHALL BE INSTALLED BETWEEN THE TOP 2 LAYERS OF BRICK.
3. IF BOTH STEPS AND LADDER ARE REQ'D IN ANY MH, THEY SHALL BE FROM THE SAME MANUFACTURER.

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	MANHOLE LADDER, STEP AND HANDHOLD

REV DATE: 2005



NOTES:

1. CONCRETE FOR DROP CONNECTION SUPPORT SHALL BE CL 5 (1 1/2)
2. DUCTILE IRON PIPE SHALL BE ANSI/AWWA C151/A21.51 CL 50. DUCTILE IRON FITTINGS SHALL BE ANSI/AWWA C111/A21.11
3. BACKFILL AND COMPACT SPACE AROUND DROP CONNECTION WITH SELECTED MATERIAL OR TYPE 17 MINERAL AGGREGATE
4. DROP CONNECTIONS SHALL BE USED WHERE DROP IS NOT MORE THAN 20'-0"
5. ADDITIONAL PIPES MAY BE REQUIRED FOR DROP CONNECTION TO ENTER MANHOLE STRUCTURE (SEE DRAWINGS)

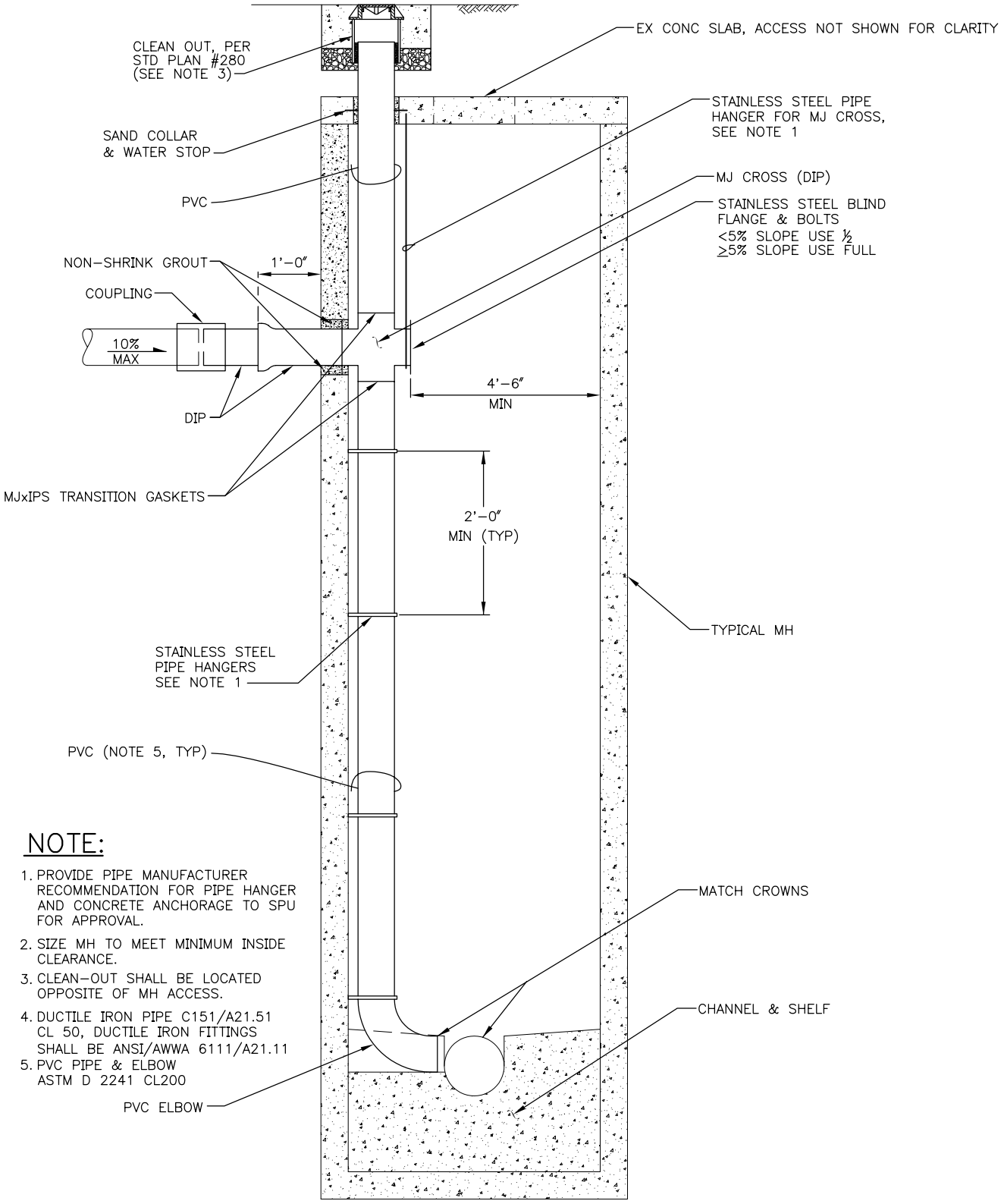
DUCTILE IRON OUTSIDE DROP CONNECTION

REF STD SPEC SEC 7-08

City of Seattle	NOT TO SCALE	OUTSIDE DROP CONNECTION

STANDARD PLAN NO 233b

REV DATE: 2005



NOTE:

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

INSIDE DROP

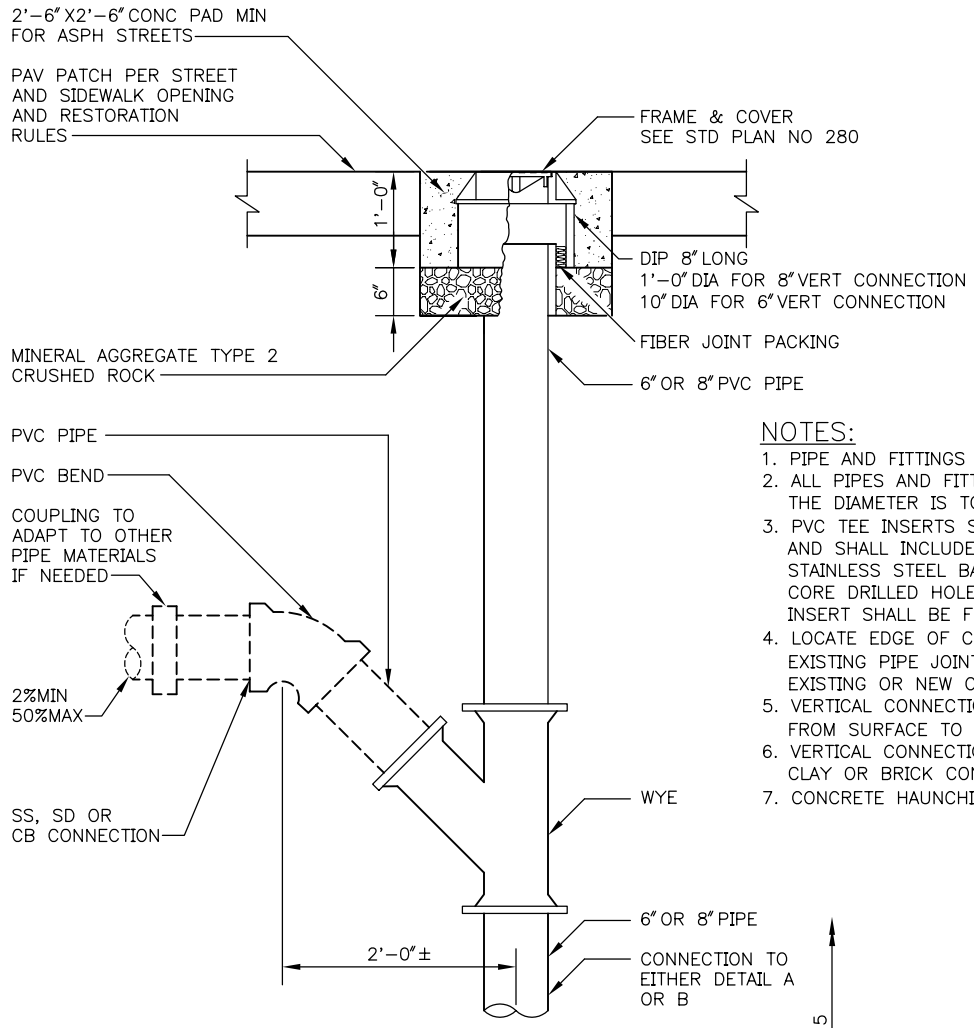
(18" DIAMETER PIPE MAXIMUM)

REF STD SPEC SEC 7-08

City of Seattle	NOT TO SCALE	INSIDE DROP CONNECTION

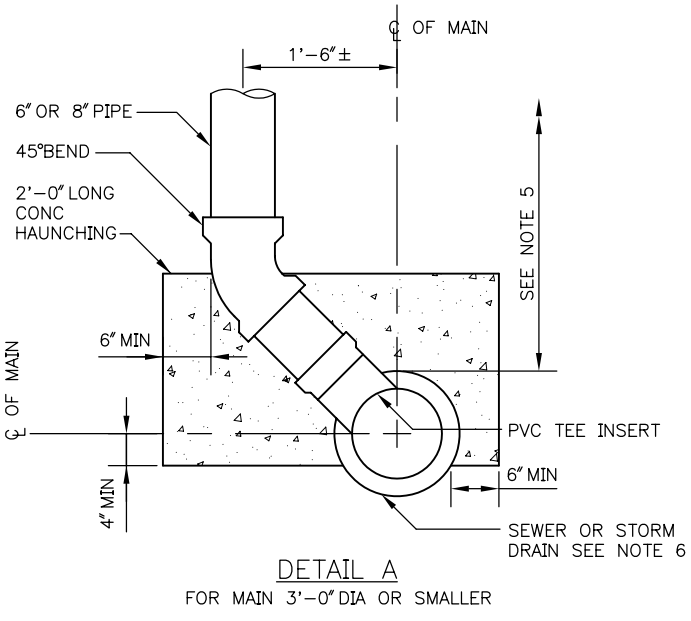
STANDARD PLAN NO 234

REV DATE: 2003

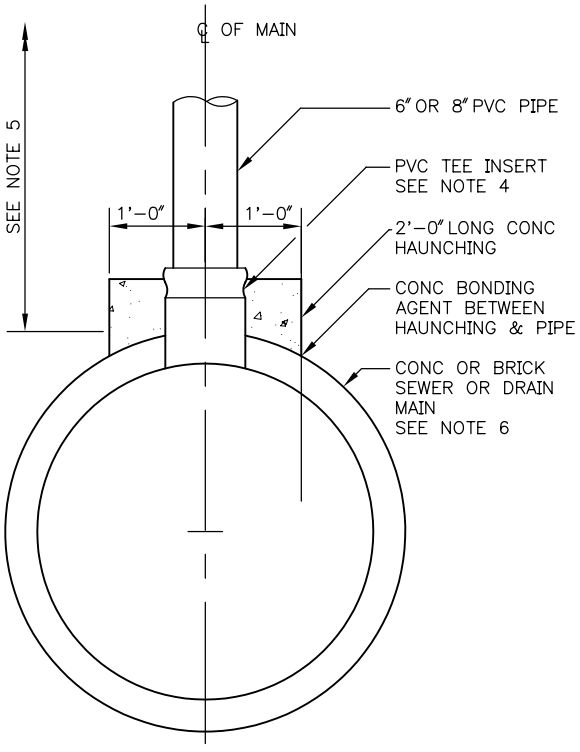


NOTES:

1. PIPE AND FITTINGS SHALL BE PVC PER ASTM D 3034 SDR 35
2. ALL PIPES AND FITTINGS ARE TO BE THE SAME DIAMETER. THE DIAMETER IS TO BE SPECIFIED ON THE PLANS
3. PVC TEE INSERTS SHALL BE BY "INSERT A TEE" OR EQUAL AND SHALL INCLUDE RUBBER SLEEVE, PVC ADAPTER HUB AND STAINLESS STEEL BAND. INSERT SHALL BE INSTALLED IN A CORE DRILLED HOLE PER MANUFACTURER'S INSTRUCTIONS. INSERT SHALL BE FLUSH WITH THE INSIDE WALL OF THE MAIN.
4. LOCATE EDGE OF CORE DRILLED HOLE 1'-0" MINIMUM FROM EXISTING PIPE JOINT AND 2'-0" FROM THE EDGE OF ANY EXISTING OR NEW CONNECTIONS
5. VERTICAL CONNECTION SHALL NOT BE USED UNLESS DEPTH FROM SURFACE TO TOP OF PIPE IS 20'-0" OR GREATER
6. VERTICAL CONNECTIONS ON MAINS OTHER THAN CONCRETE, CLAY OR BRICK CONSTRUCTION SHALL BE PER DRAWINGS
7. CONCRETE HAUNCHING IS TO BE CLASS 5 (1 1/2) CONCRETE



DETAIL A
FOR MAIN 3'-0" DIA OR SMALLER



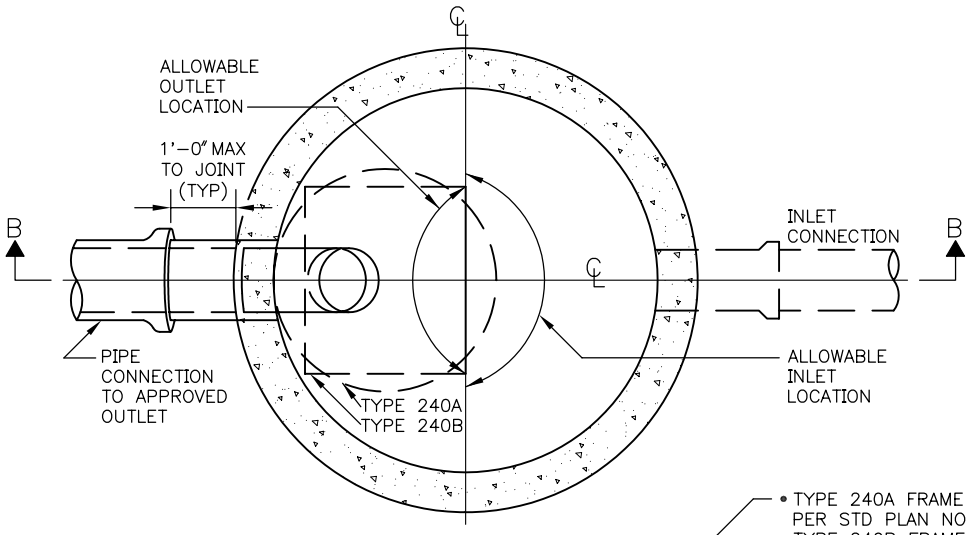
DETAIL B
FOR MAIN 3'-6" DIA OR LARGER

REF STD SPEC SEC 7-08 & 7-17

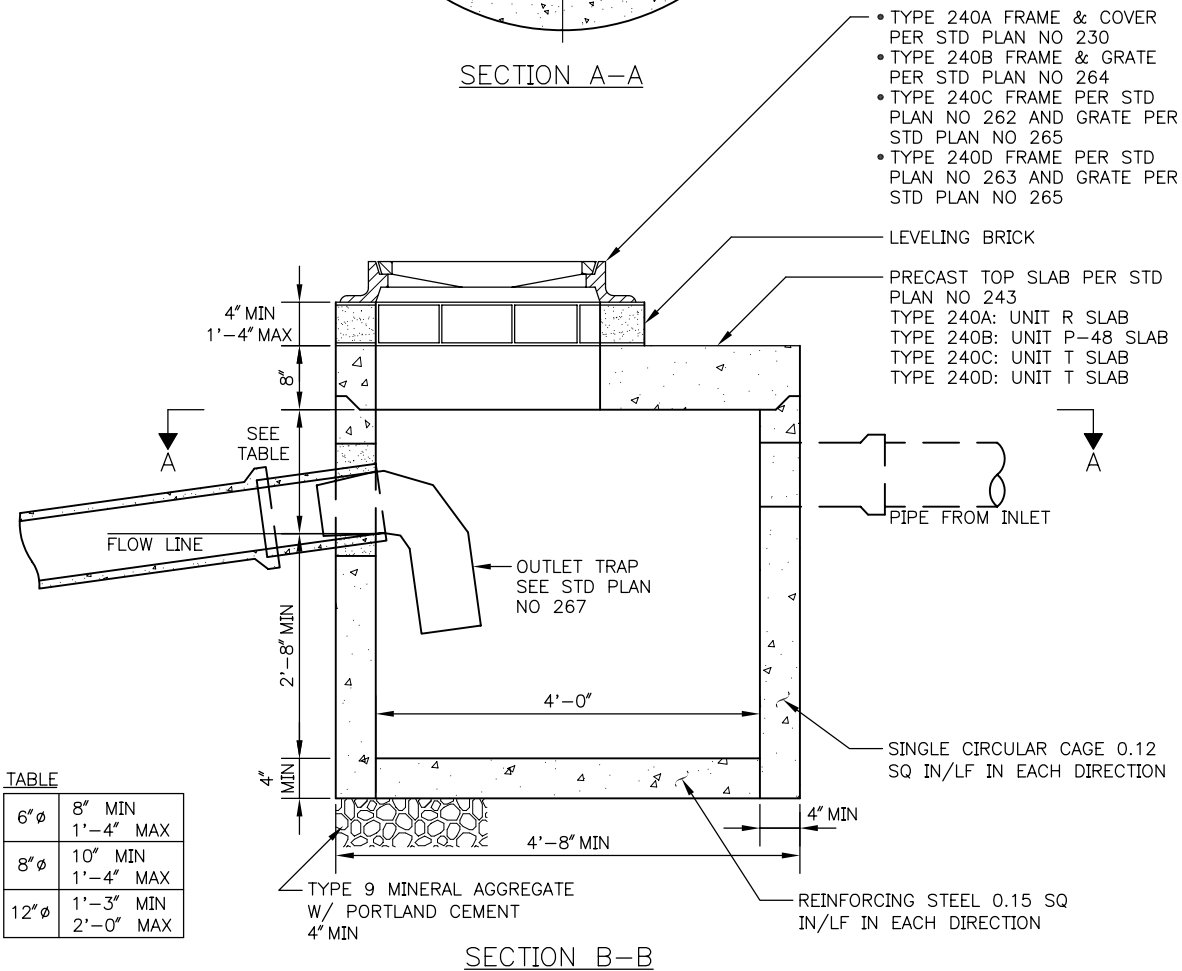
City of Seattle	NOT TO SCALE	6" OR 8" VERTICAL CONNECTION

STANDARD PLAN NO 240

REV DATE: 2008



SECTION A–A



TABLE

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

SECTION B–B

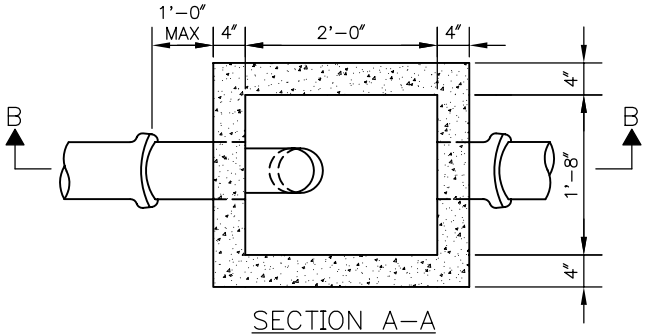
NOTES:

1. FRAME & GRATE OR FRAME & COVER SHALL BE LOCATED OVER TRAP
2. INVERT OF INLET PIPE SHALL BE 2" MIN ABOVE INVERT OF OUTLET PIPE
3. FRAME AND GRATE SHALL BE LOCATED OVER OUTLET TRAP

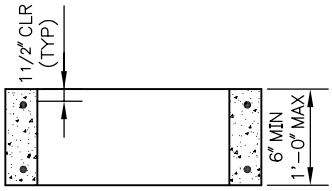
REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 240 CATCH BASIN

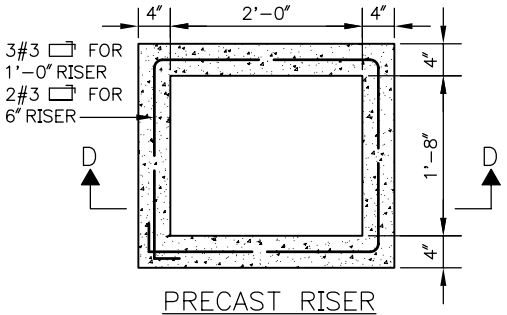
REV DATE: 2005



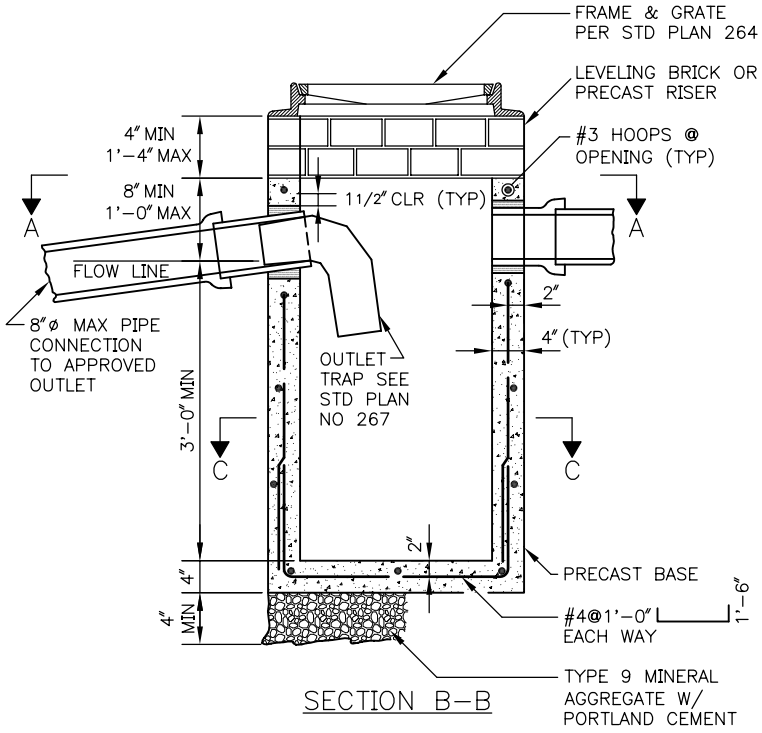
SECTION A–A



SECTION D–D



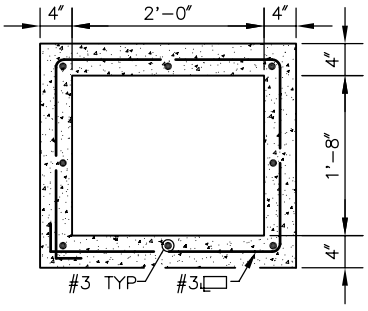
PRECAST RISER REINFORCING



SECTION B–B

NOTES:

1. THIS CATCH BASIN IS FOR INSTALLATIONS IN ALLEYS AND UNPAVED AREAS IN THE RIGHT–OF–WAY. ANY OTHER USE IN THE R/W WILL REQUIRE APPROVAL OF SPU
2. FOR CURB DISCHARGE INSTALLATION SEE STD PLAN NO 241b
3. INSTALL PER STD PLAN NO 261
4. MATERIAL: CONCRETE CLASS AX REINFORCING STEEL ASTM A615 GR60
5. INLET INVERT EL. TO BE HIGHER THAN OUTLET INVERT EL.



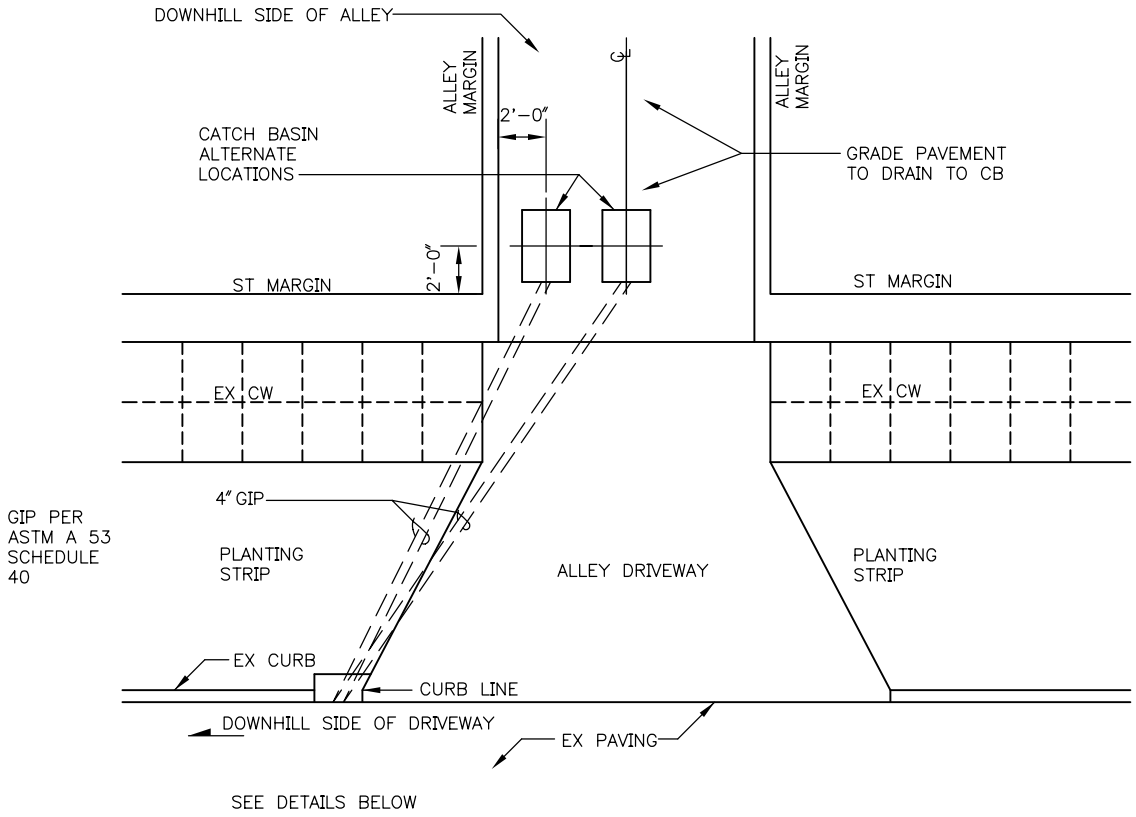
SECTION C–C

REF STD SPEC SEC 7-05

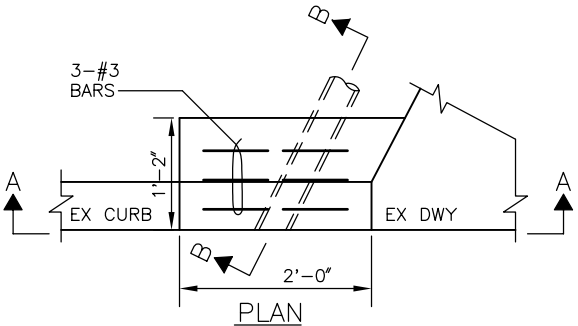
City of Seattle	NOT TO SCALE	TYPE 241 CATCH BASIN

STANDARD PLAN NO 241b

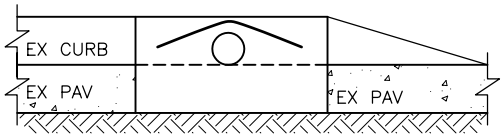
REV DATE: 2005



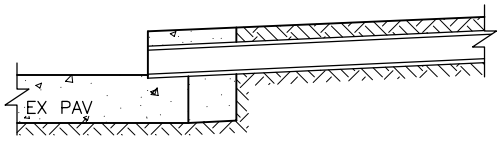
PLAN



PLAN



SECTION A-A



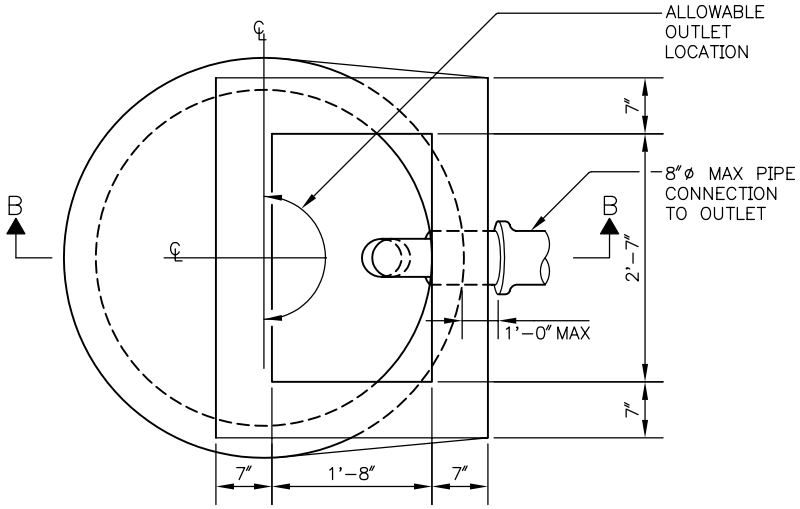
SECTION B-B

REF STD SPEC SEC 7-05 & 7-08

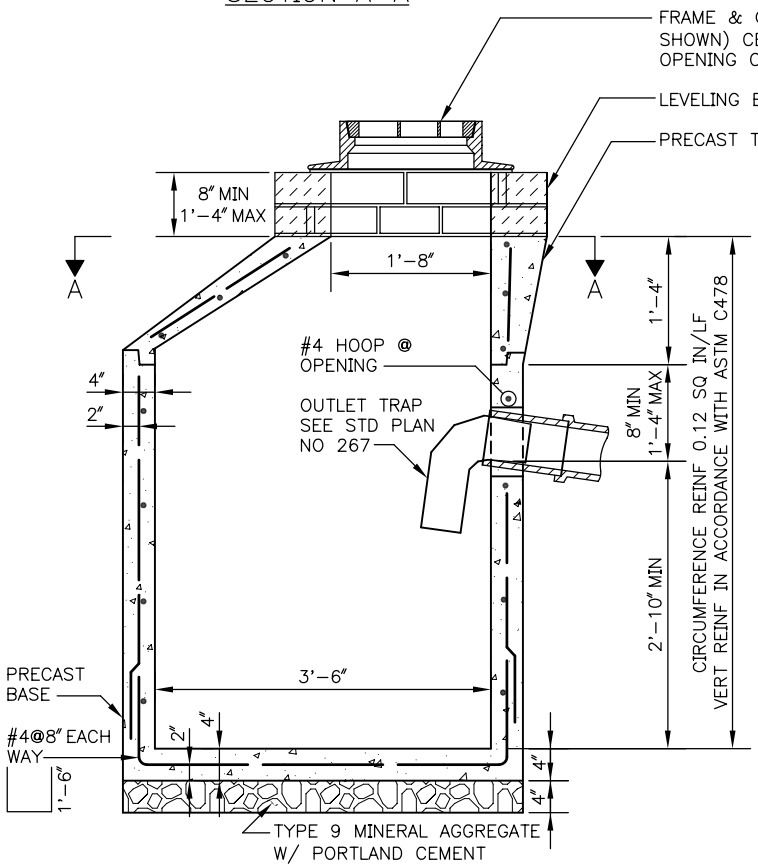
City of Seattle	NOT TO SCALE	TYPE 241 CATCH BASIN INSTALLATIONS

STANDARD PLAN NO 242

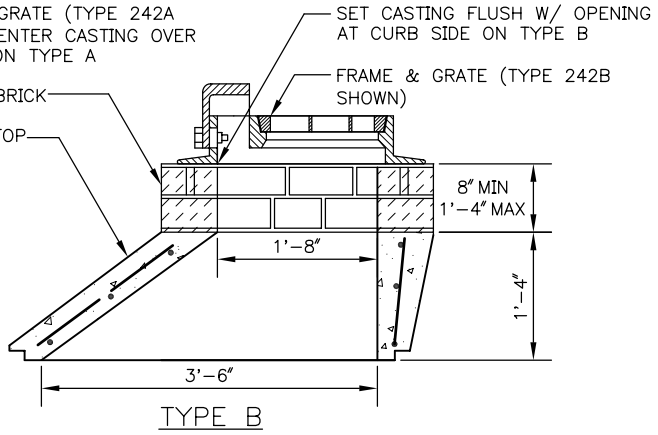
REV DATE: 2005



SECTION A-A



TYPE A
SECTION B-B



TYPE B

CB TYPE	CASTING	
	FRAME	GRATE
A OR A.1	NO 262	NO 265
B OR B.1	NO 263	NO 265

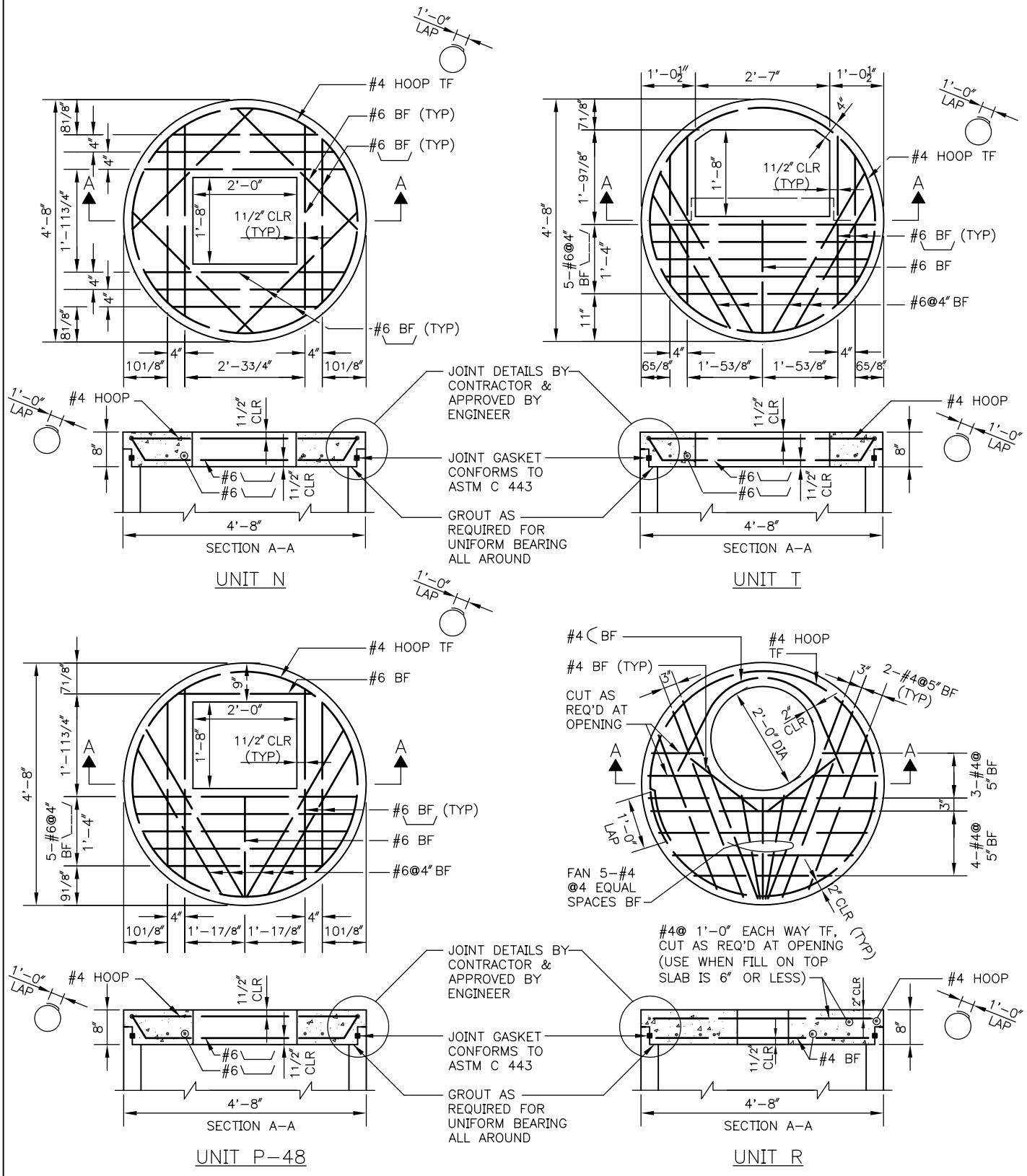
NOTES:

1. MATERIAL: CONCRETE: CLASS AX
   REINFORCING STEET: ASTM A 615 GR 60
2. INSTALL & LOCATE PER STD PLANS
   NOS 260 & 261
3. A.1 OR B.1 CAN ONLY BE USED WHEN
   SPECIFIED ON CONTRACT PLANS
4. FOR TYPE 242A.1 OR B.1 ROTATE
   CATCH BASIN 180° FROM STANDARD.
   SEE STD PLAN NO 260
5. OUTLET TRAP TO BE LOCATED DIRECTLY
   BELOW FRAME AND GRATE

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 242 CATCH BASIN

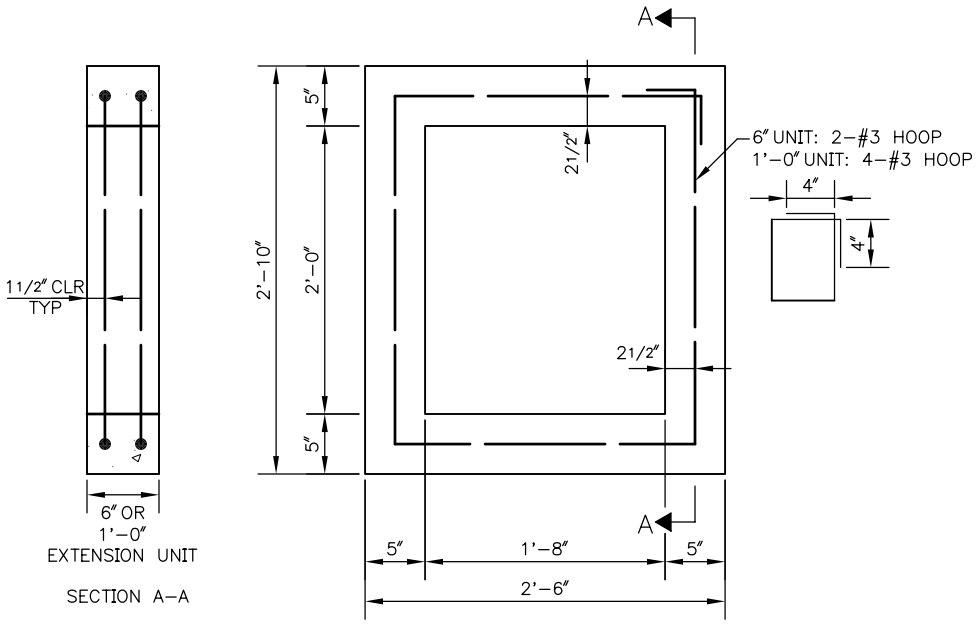
REV DATE: 2003



REF STD SPEC SEC 7-05

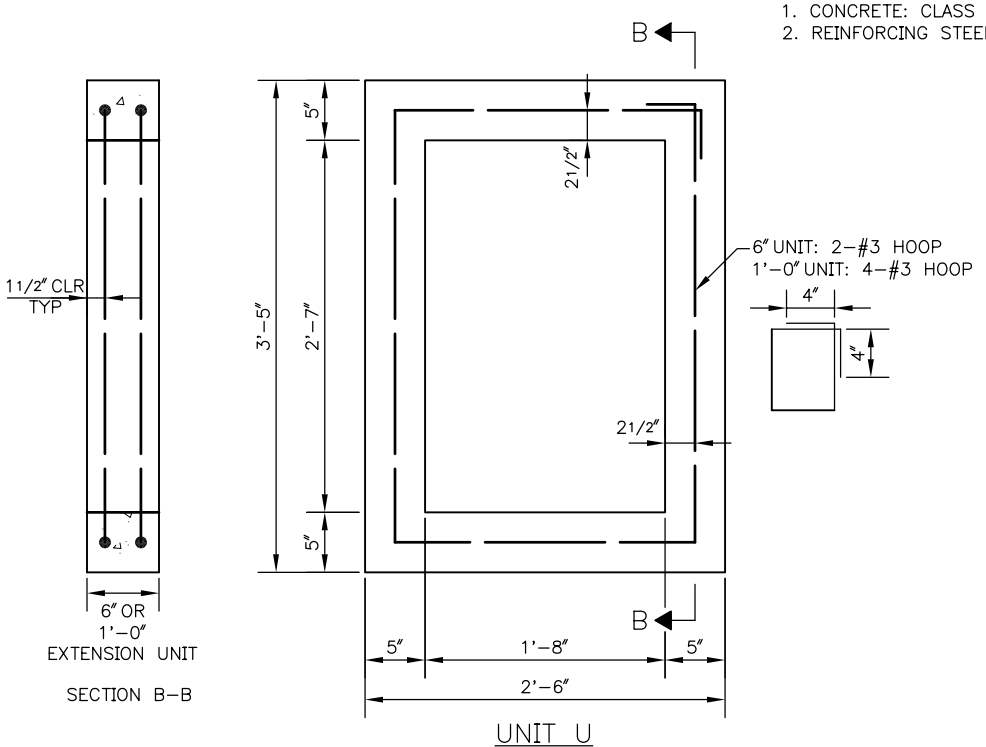
City of Seattle	NOT TO SCALE	PRECAST CATCH BASIN TOP SLAB

REV DATE: 2003



UNIT S

NOTES:
1. CONCRETE: CLASS AX
2. REINFORCING STEEL: ASTM A615 GR 60



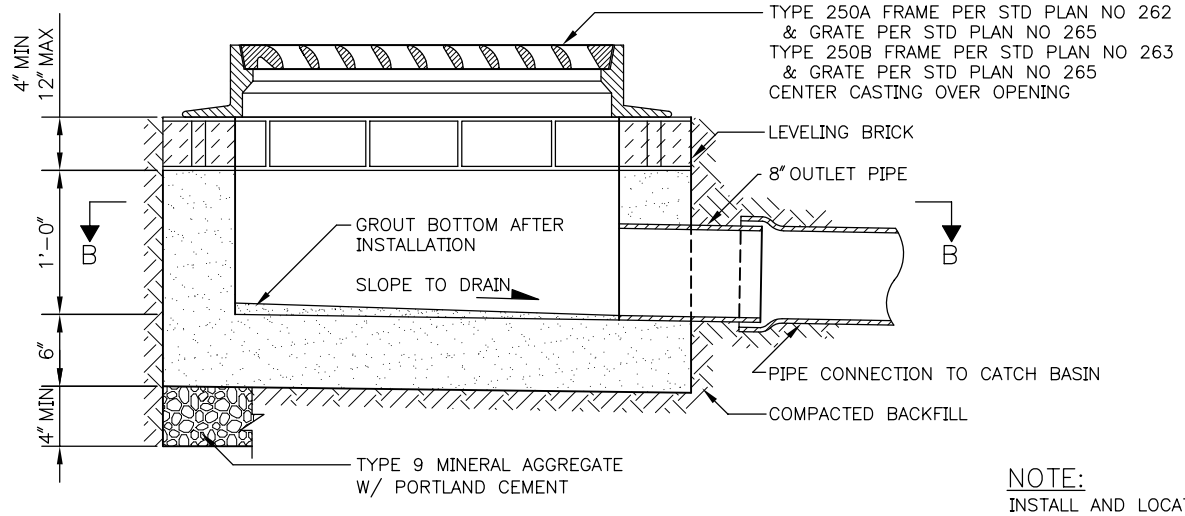
UNIT U

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	PRECAST CATCH BASIN EXTENSION RISERS

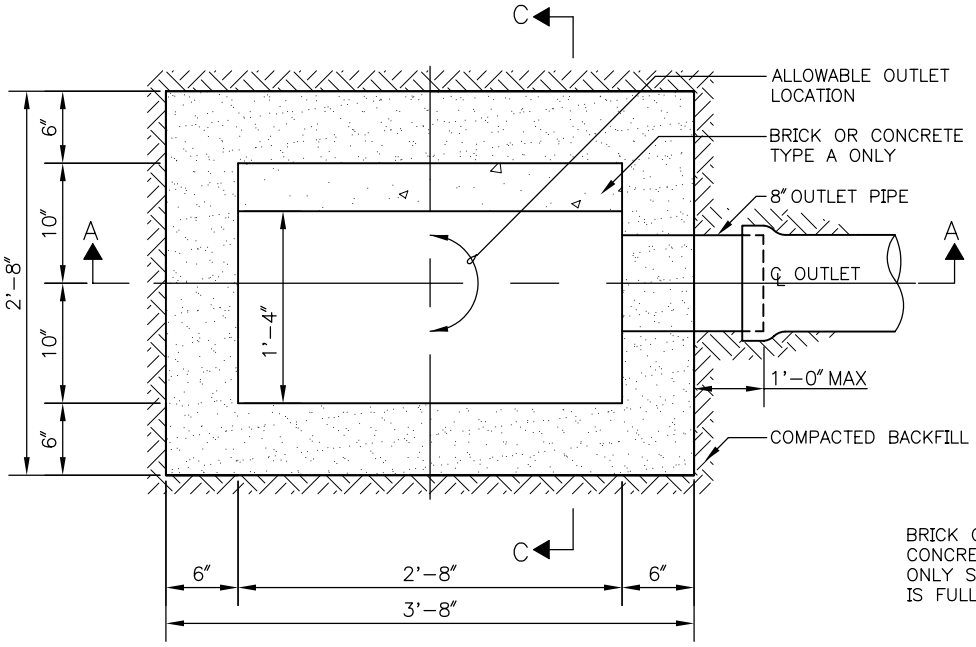
STANDARD PLAN NO 250

REV DATE: 2008

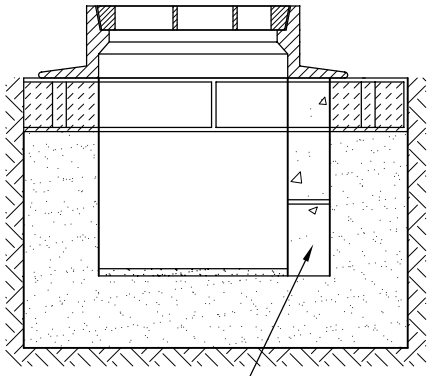


SECTION A–A

NOTE:
INSTALL AND LOCATE
PER STD PLAN NO 260



SECTION B–B



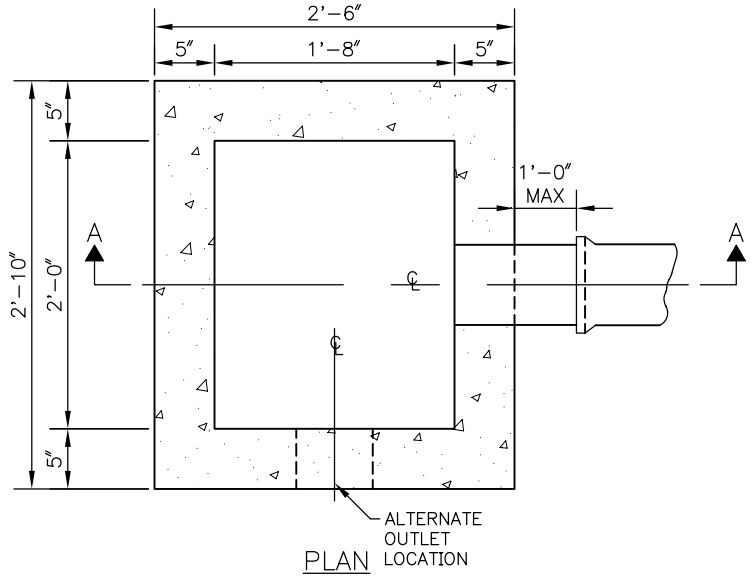
SECTION C–C
TYPE A ONLY

NOTE:
PROVIDE MINIMUM REINFORCING STEEL AS REQUIRED BY AASHTO.

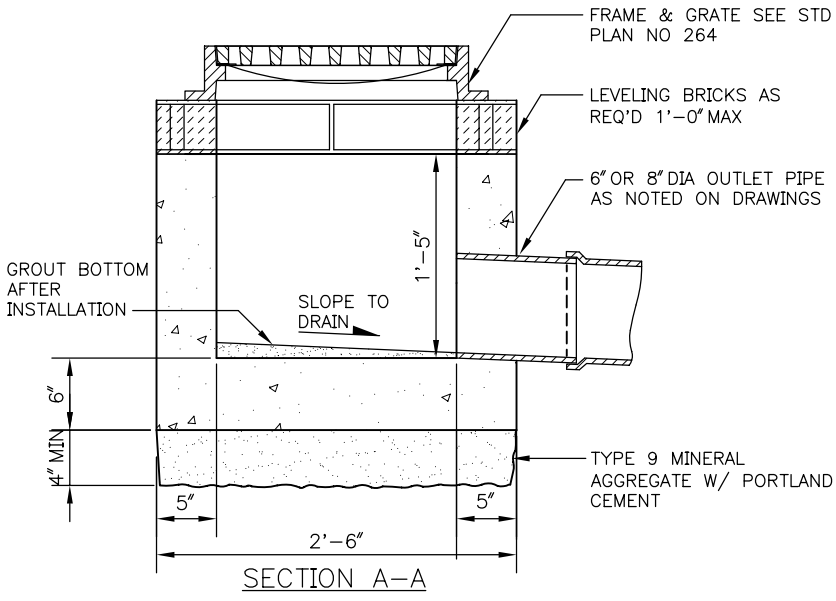
REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 250 INLET

REV DATE: 2008



PLAN



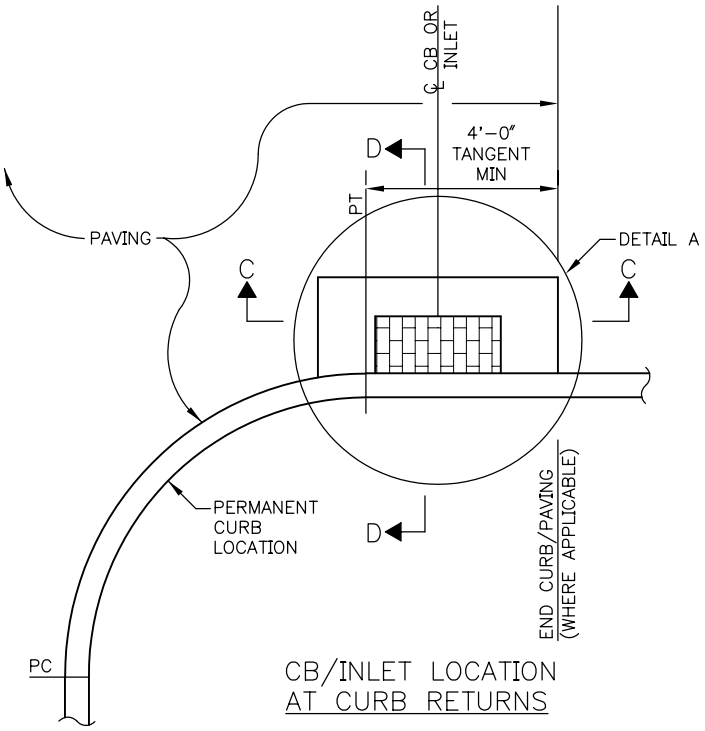
SECTION A–A

NOTE:
PROVIDE MINIMUM REINFORCING STEEL AS REQUIRED BY AASHTO.

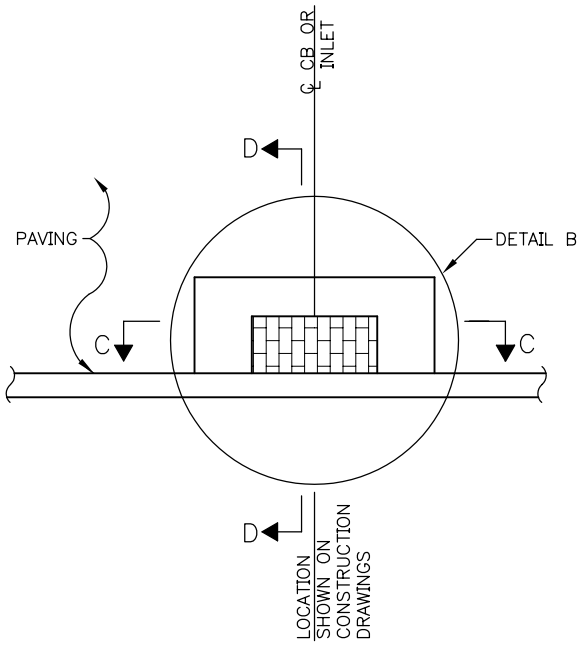
REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	TYPE 252 INLET

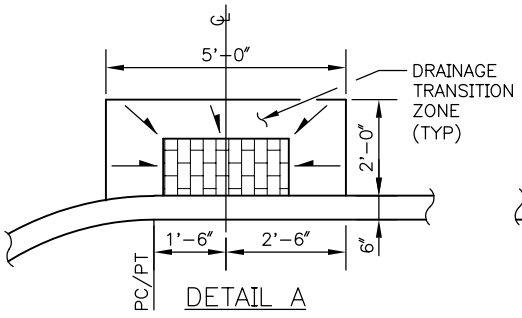
REV DATE: 2005



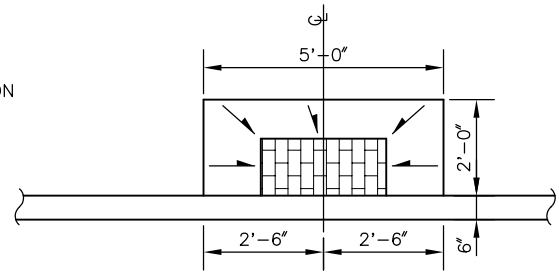
CB/INLET LOCATION
AT CURB RETURNS



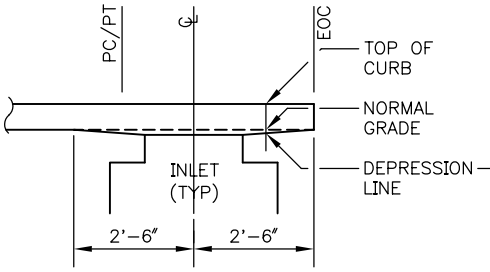
CB/INLET LOCATION
NOT AT CURB RETURNS



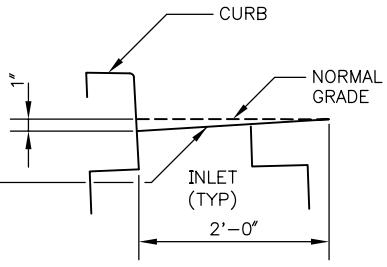
DETAIL A



DETAIL B



SECTION C–C



SECTION D–D

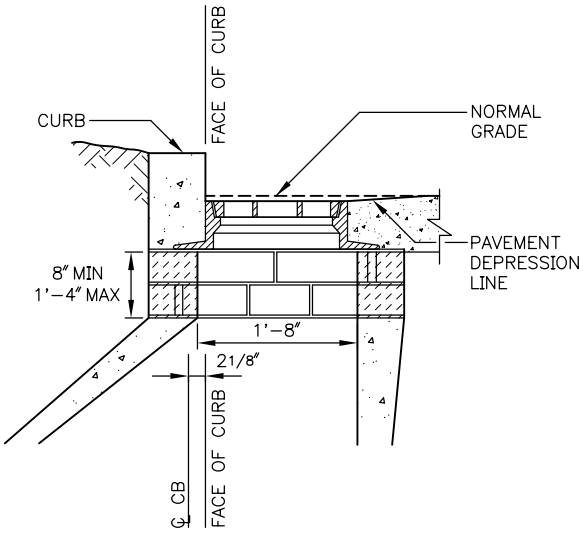
NOTE

INLET/CB SHALL NOT BE PLACED IN CROSSWALKS OR IN FRONT OF WHEELCHAIR RAMPS

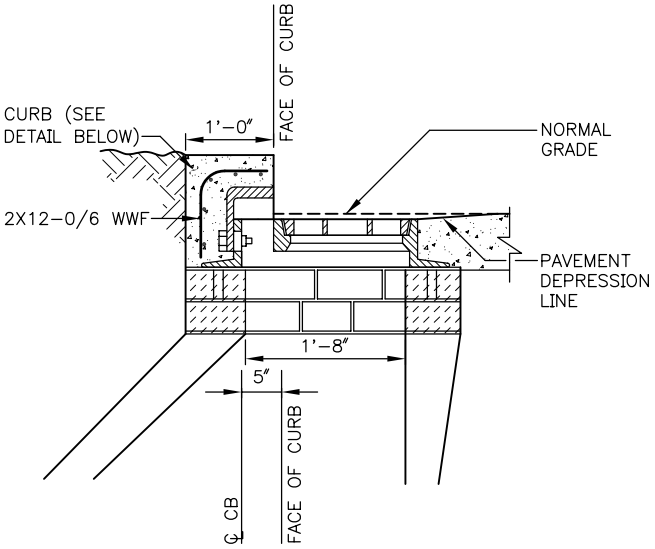
REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	INLET / CATCH BASIN LOCATION & INSTALLATION

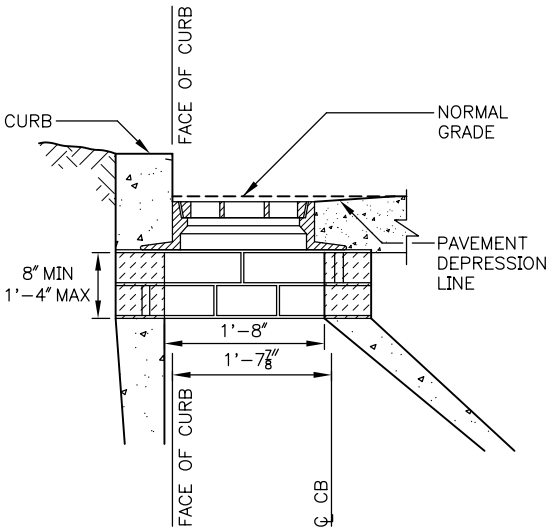
REV DATE: 2005



TYPE 242A CB
(TYPE 250A INLET SIMILAR)
NOTE – TYPE 240C GRATE

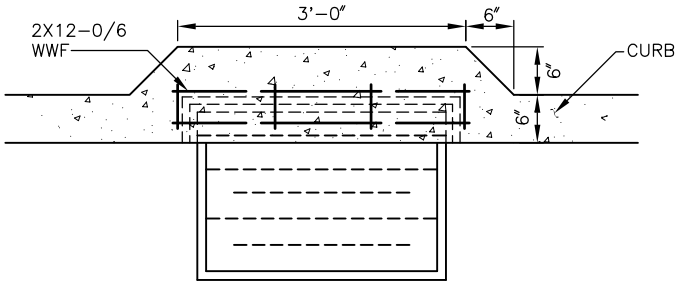


TYPE 242B CB
(TYPE 250B INLET SIMILAR)



TYPE 242A.1 CB

NOTES:
1. TYPE 242A.1 OR B.1 INSTALLATION IS ROTATED 180° FROM TYPE 242A OR 242B
2. A.1 IS SHOWN, B.1 IS SIMILAR
3. A.1 OR B.1 CAN ONLY BE USED WHEN SPECIFIED ON DRAWINGS

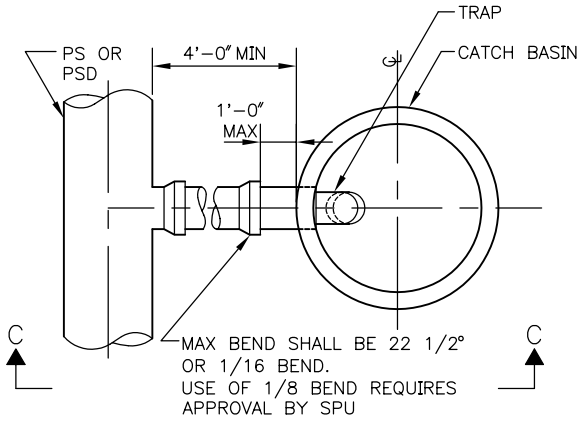


CURB DETAIL (PLAN VIEW) FOR
TYPE 242B CB & TYPE 250B INLET

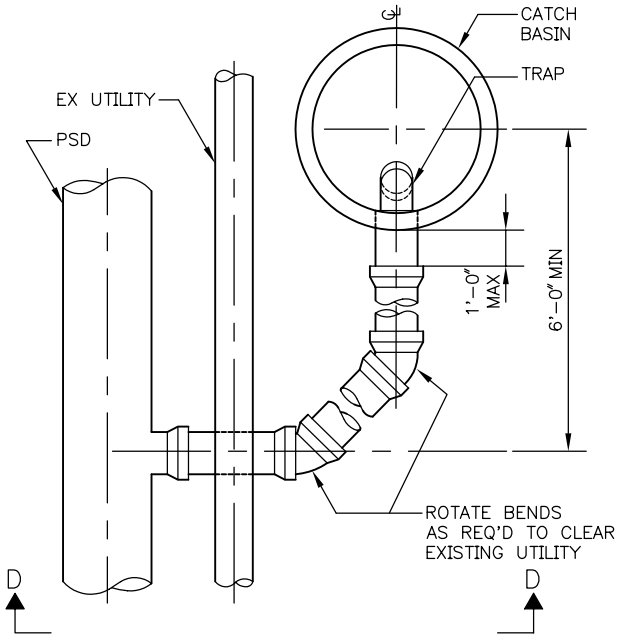
REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	CATCH BASIN & INLET INSTALLATION

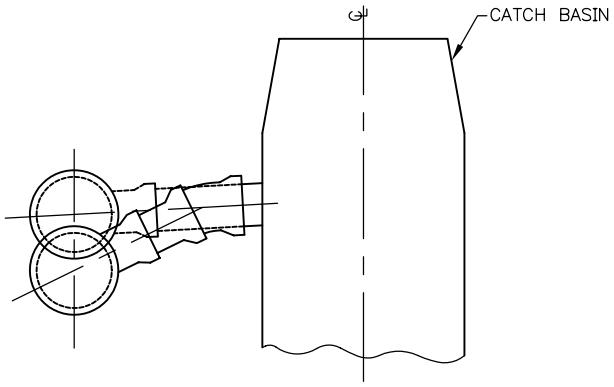
REV DATE: 2003



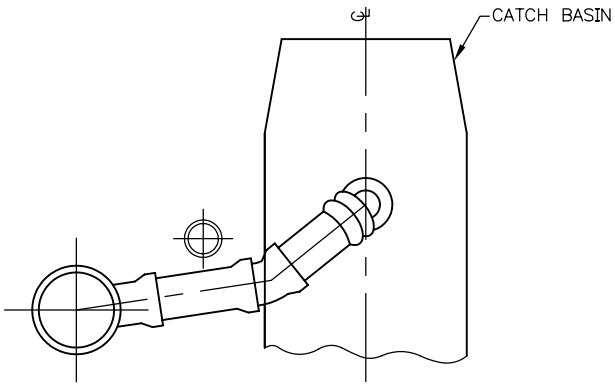
TYPE A



TYPE B



SECTION C–C



SECTION D–D

NOTES:

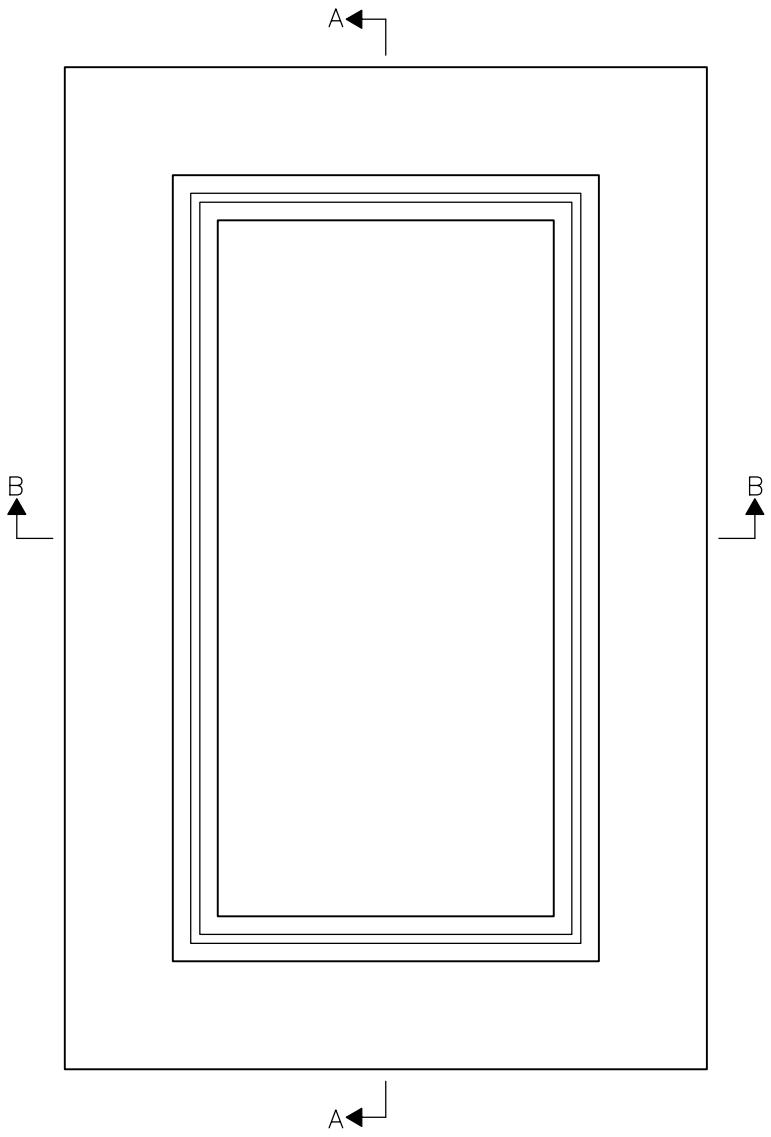
1. CONNECTIONS SHALL MAINTAIN A MINIMUM OF 2% AND A MAXIMUM OF 50% GRADE
2. TYPE A CONNECTION MAY BE USED UNDER THE FOLLOWING CIRCUMSTANCES:
   A. THE MAXIMUM OF 50% GRADE IS NOT EXCEEDED
   B. THERE IS NO INTERFERENCE WITH EXISTING OR PROPOSED UTILITIES

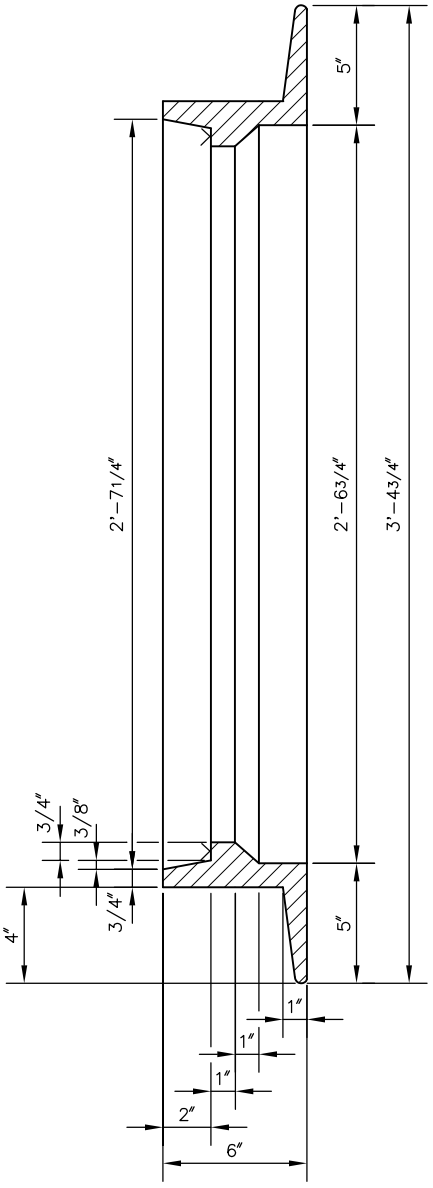
REF STD SPEC SEC 7-08

City of Seattle	NOT TO SCALE	TYPICAL CATCH BASIN CONNECTION

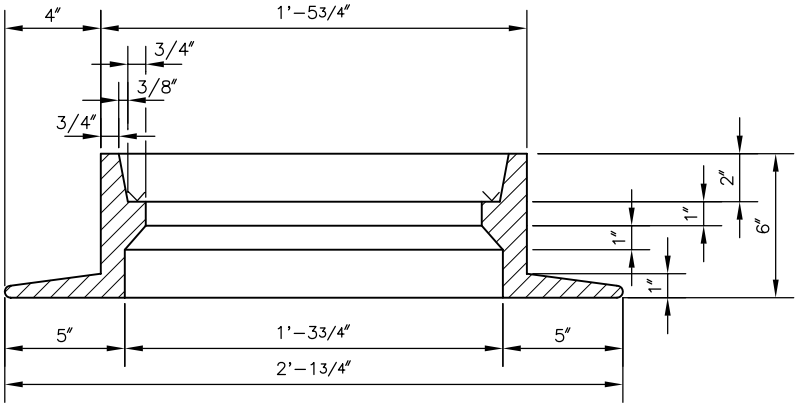
STANDARD PLAN NO 262

REV DATE: 2003





SECTION A–A

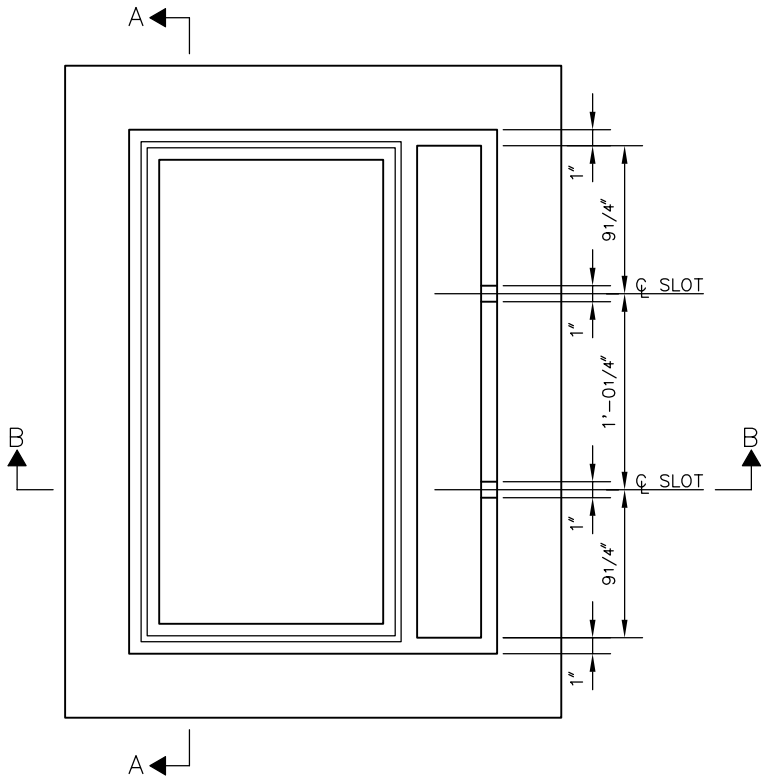


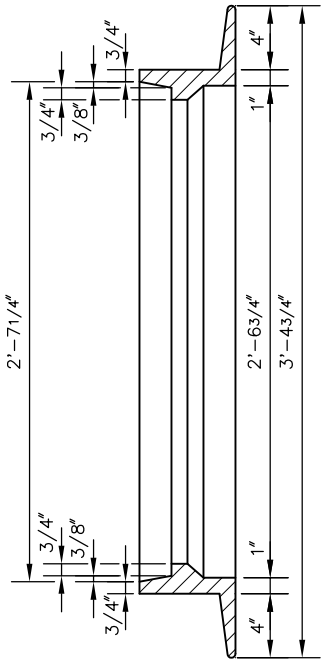
SECTION B–B

REF STD SPEC SEC 9-12

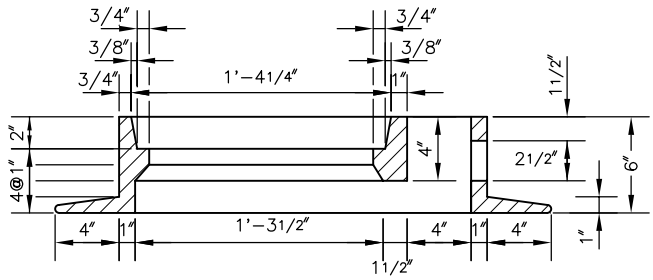
City of Seattle	NOT TO SCALE	TYPE 262 INLET FRAME

REV DATE: 2003

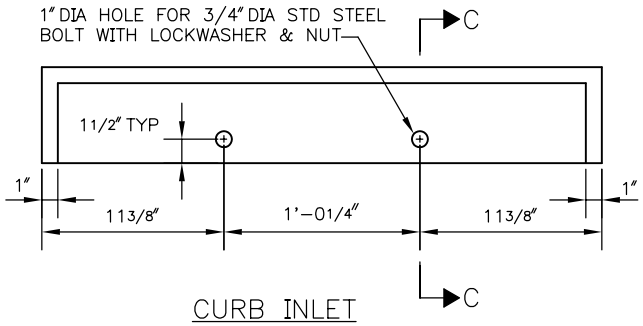




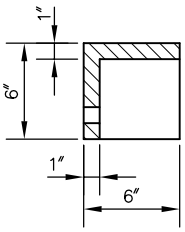
SECTION A–A



SECTION B–B



CURB INLET



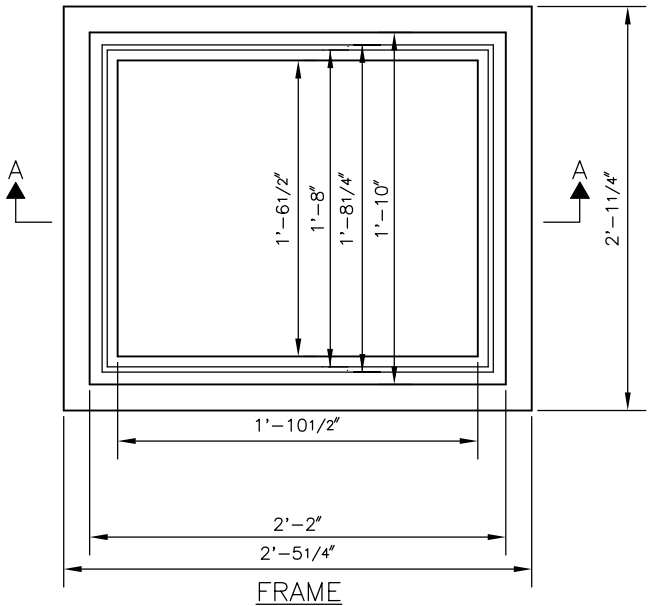
SECTION C–C

REF STD SPEC SEC 9-12

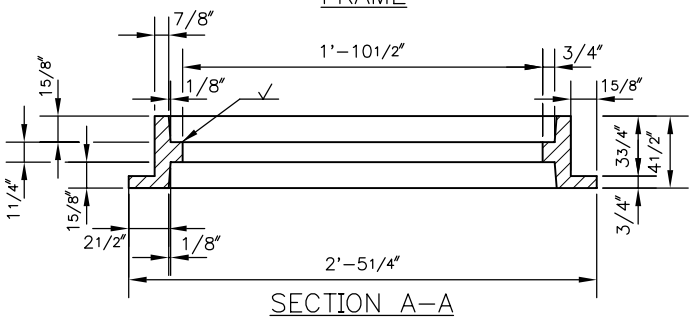
City of Seattle	NOT TO SCALE	TYPE 263 INLET FRAME

STANDARD PLAN NO 264

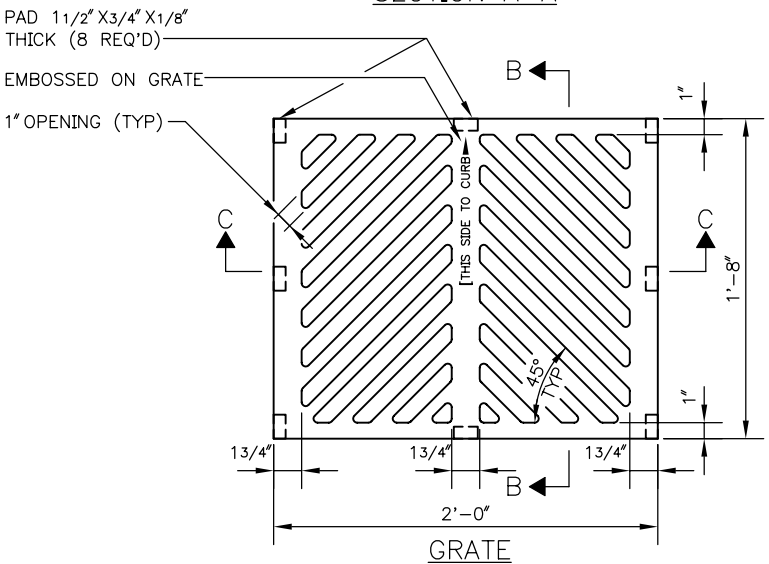
REV DATE: 2003



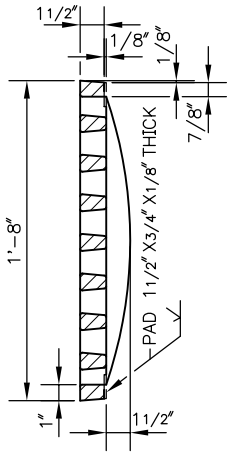
FRAME



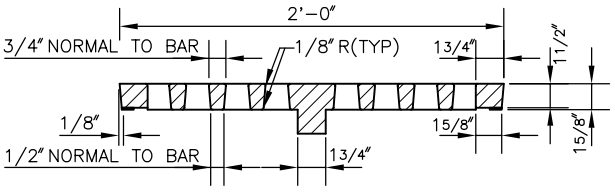
SECTION A–A



GRATE



SECTION B–B



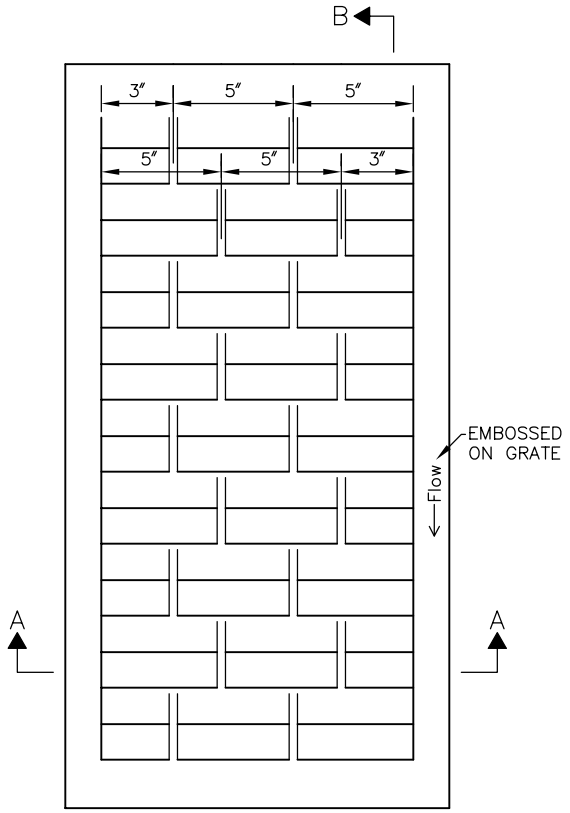
SECTION C–C

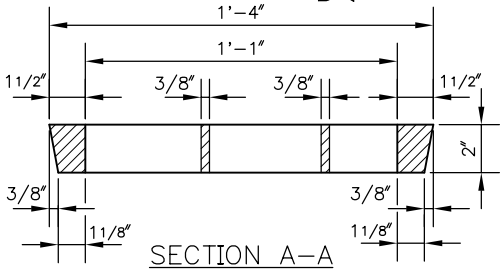
GRATE MATERIAL: DUCTILE IRON

REF STD SPEC SEC 7-05

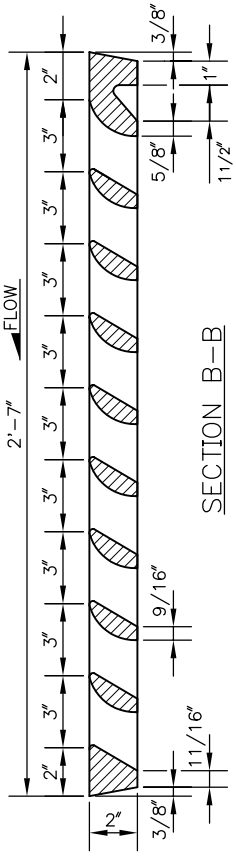
City of Seattle	NOT TO SCALE	INLET FRAME & GRATE

REV DATE: 2003



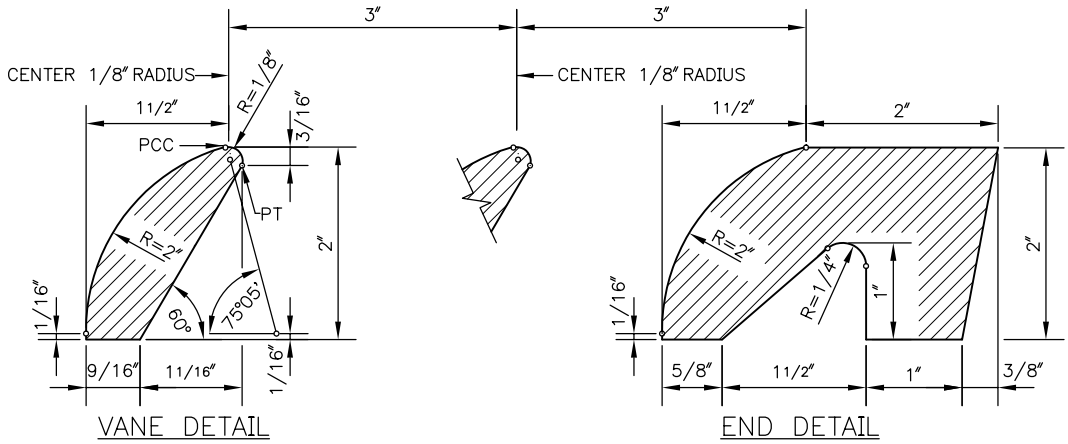


SECTION A–A



SECTION B–B

GRATE MATERIAL:
DUCTILE IRON



VANE DETAIL

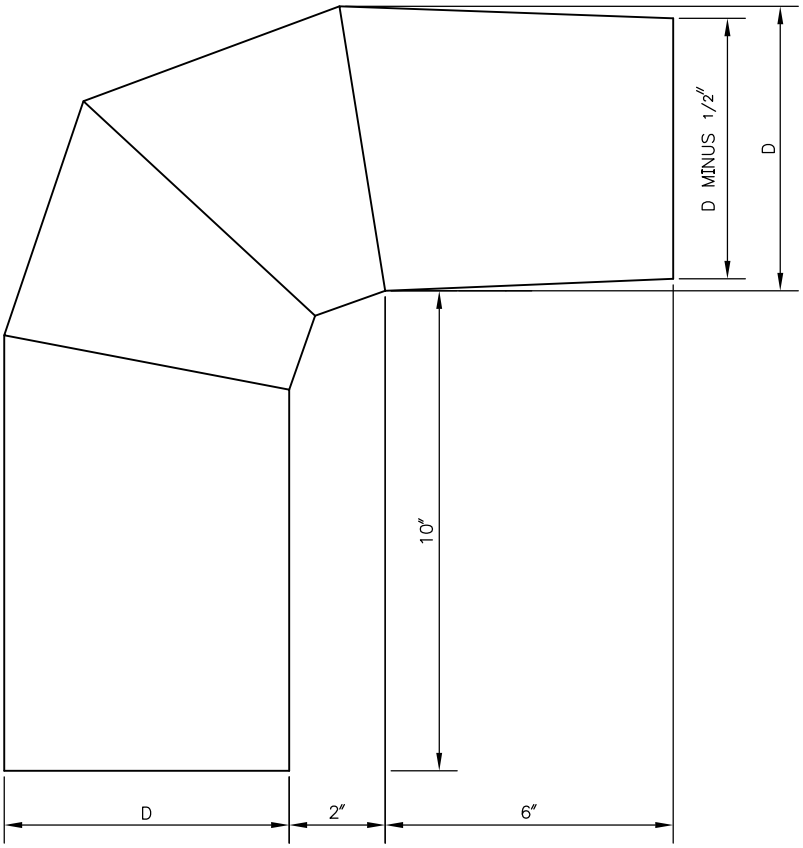
END DETAIL

REF STD SPEC SEC 7-05

City of Seattle	NOT TO SCALE	VANED GRATE

STANDARD PLAN NO 267a

REV DATE: 2008



NOTES:

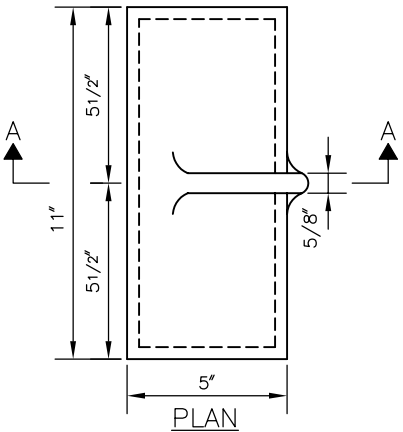
1. 1. TRAP TO BE MADE OF 22 GA (0.0336″) SHEET METAL OR 18GA (0.05″) ALUMINUM
2. ALL JOINTS TO BE SEAMED AND SOLDERED, OR WELDED
3. ALL LONGITUDINAL JOINTS TO BE RIVETED OR WELDED
4. DIAMETER "D" IS NOMINAL DIAMETER OF OUTLET PIPE

REF STD SPEC SEC 9-12

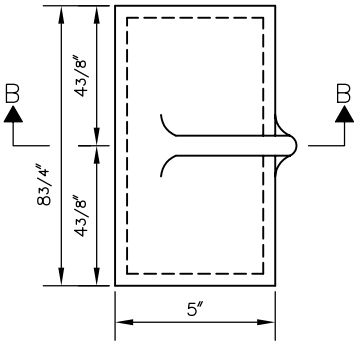
City of Seattle	NOT TO SCALE	OUTLET TRAP

STANDARD PLAN NO 267b

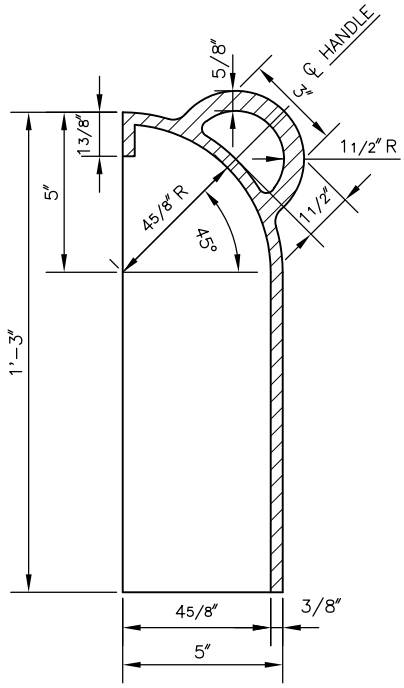
REV DATE: 2003



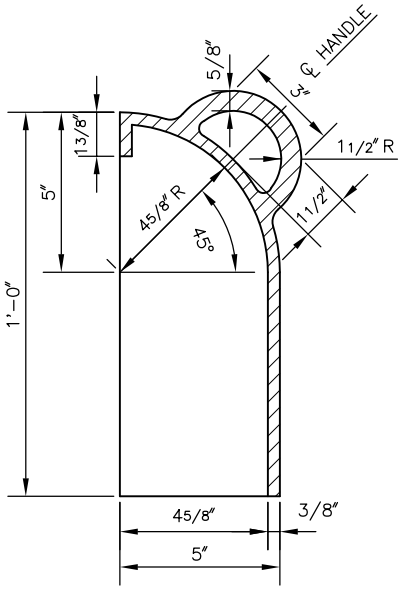
PLAN
TYPE C TRAP



PLAN
TYPE D TRAP

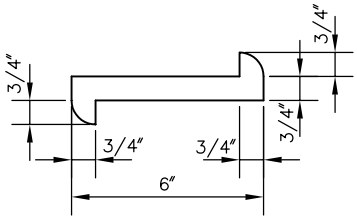


SECTION A–A

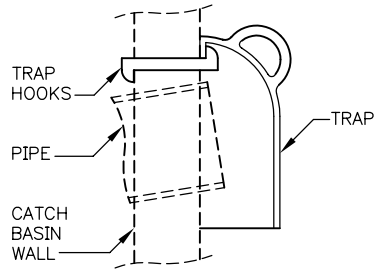


SECTION B–B

NOTES:
1. TYPE 267C TRAP TO BE USED WITH 8″ ID OUTLET PIPE. TYPE 267D TRAP TO BE USED WITH 4″ OR 6″ ID OUTLET PIPE
2. TRAP MAY BE CAST IRON ASTM A 48 CLASS 25 OR CAST STEEL ASTM A 27 GRADE 70–36
3. TRAP AND TRAP HOOK TO HAVE A BITUMINOUS COATING INSIDE AND OUT



TRAP HOOK
TRAP HOOKS MAY BE ROUND OR SQUARE IN CROSS–SECTION



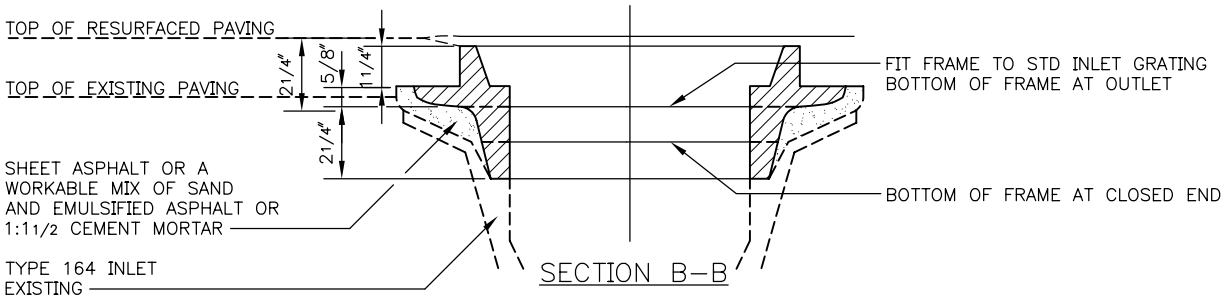
TRAP INSTALLATION

REF STD SPEC SEC 7-05

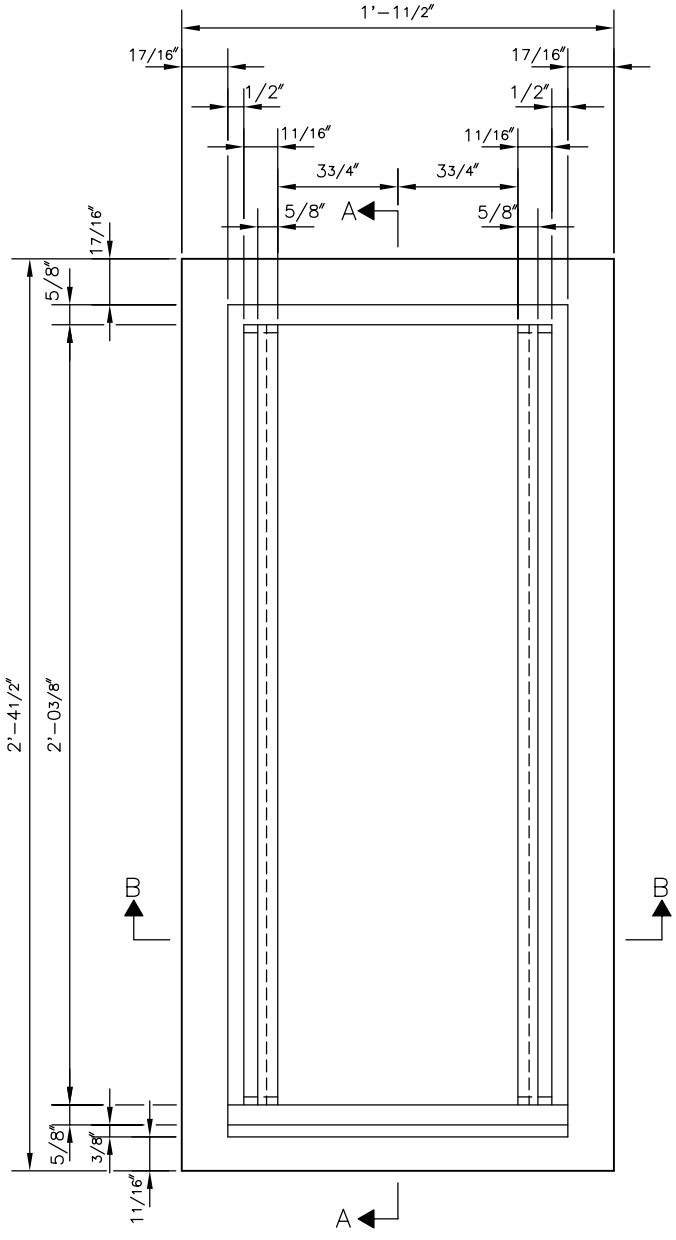
City of Seattle	NOT TO SCALE	OUTLET TRAP (FOR DOPAR USE ONLY)

STANDARD PLAN NO 268

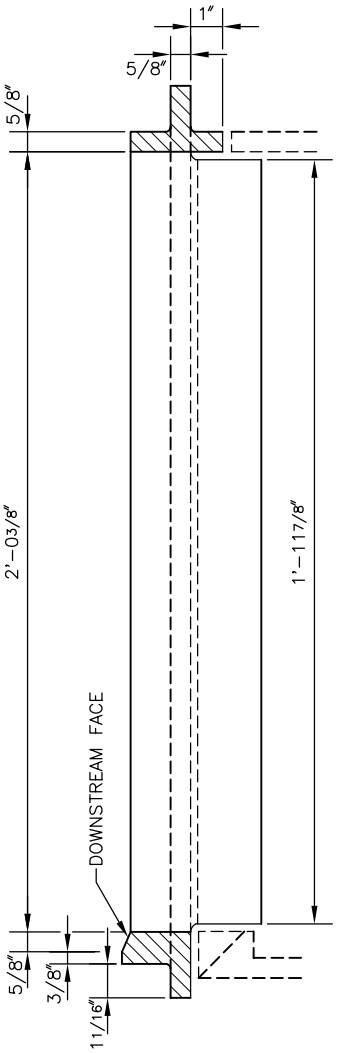
REV DATE: 2008



SECTION B–B



PLAN



SECTION A–A

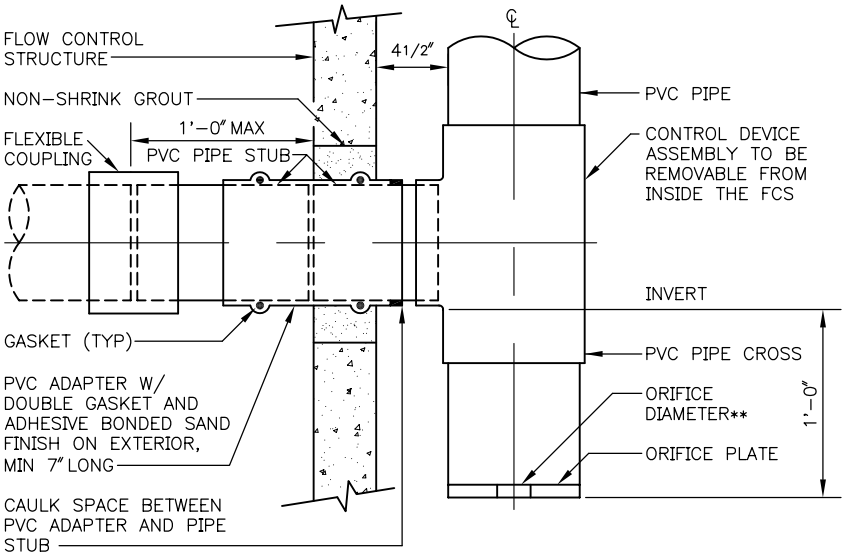
THESE DIMENSIONS MAY BE CHANGED IF NECESSARY TO FIT EXISTING CASTINGS

REF STD SPEC SEC 9-05

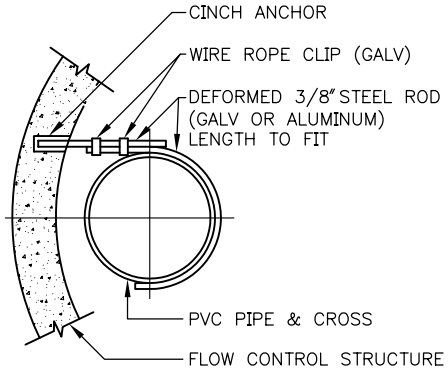
City of Seattle	NOT TO SCALE	EXTENSION FOR INLET

STANDARD PLAN NO 270

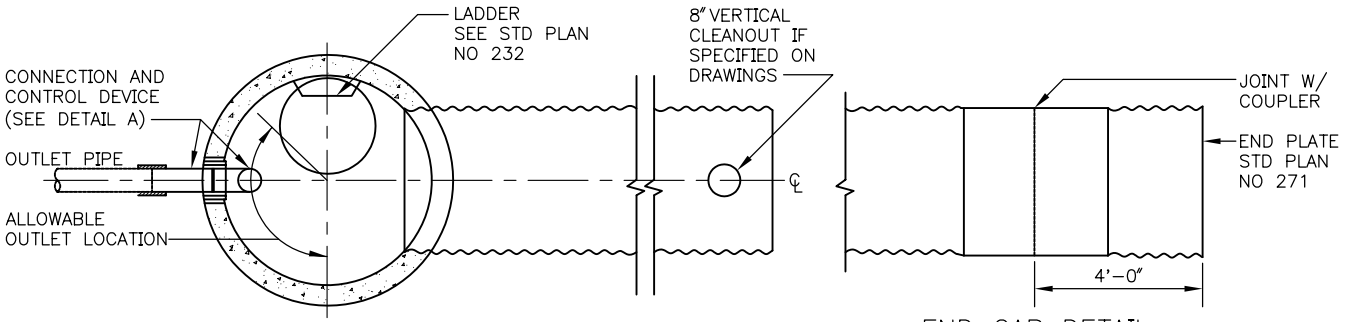
REV DATE: 2003



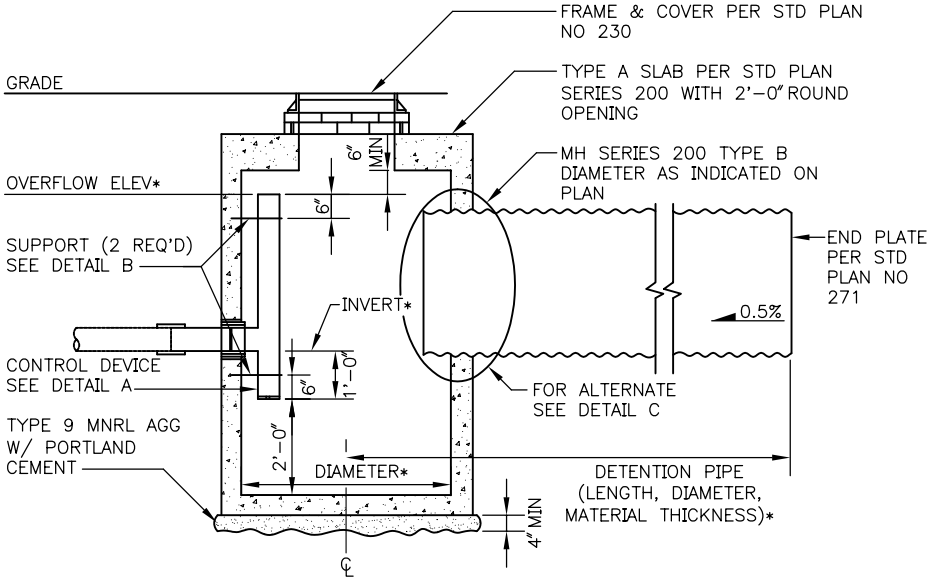
CONNECTION & CONTROL DEVICE
DETAIL A



PIPE SUPPORT
DETAIL B

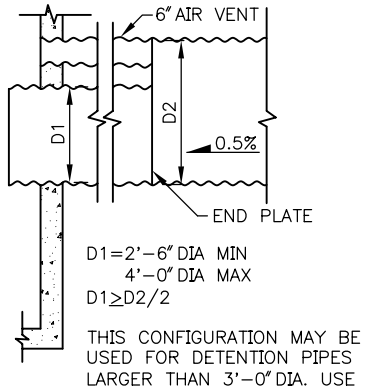


END CAP DETAIL
(WHEN REQUIRED)



FLOW CONTROL STRUCTURE & DETENTION PIPE

*SPECIFIC DESIGN INFORMATION AS INDICATED ON CONSTRUCTION DRAWINGS
NOTE – INVERT OF DETENTION PIPE HIGHER THAN INVERT OF OUTLET PIPE



D1=2'-6" DIA MIN
4'-0" DIA MAX
D1≥D2/2

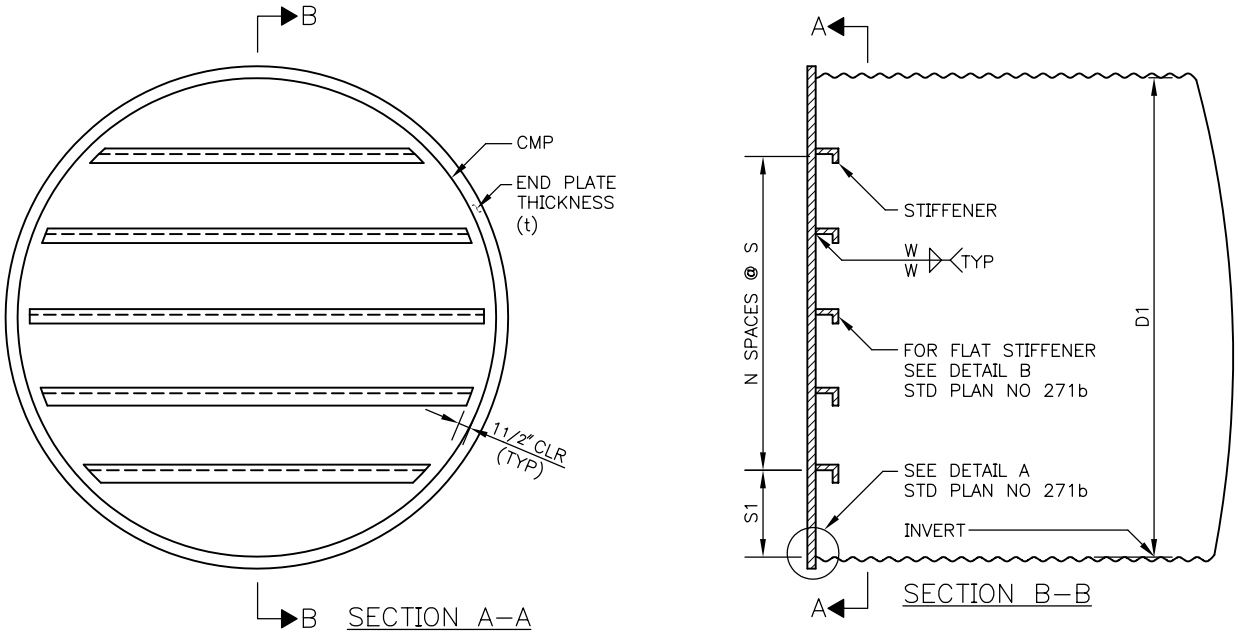
THIS CONFIGURATION MAY BE USED FOR DETENTION PIPES LARGER THAN 3'-0" DIA. USE CONFIGURATION SHOWN ON CONSTRUCTION DRAWING PROFILE

DETAIL C

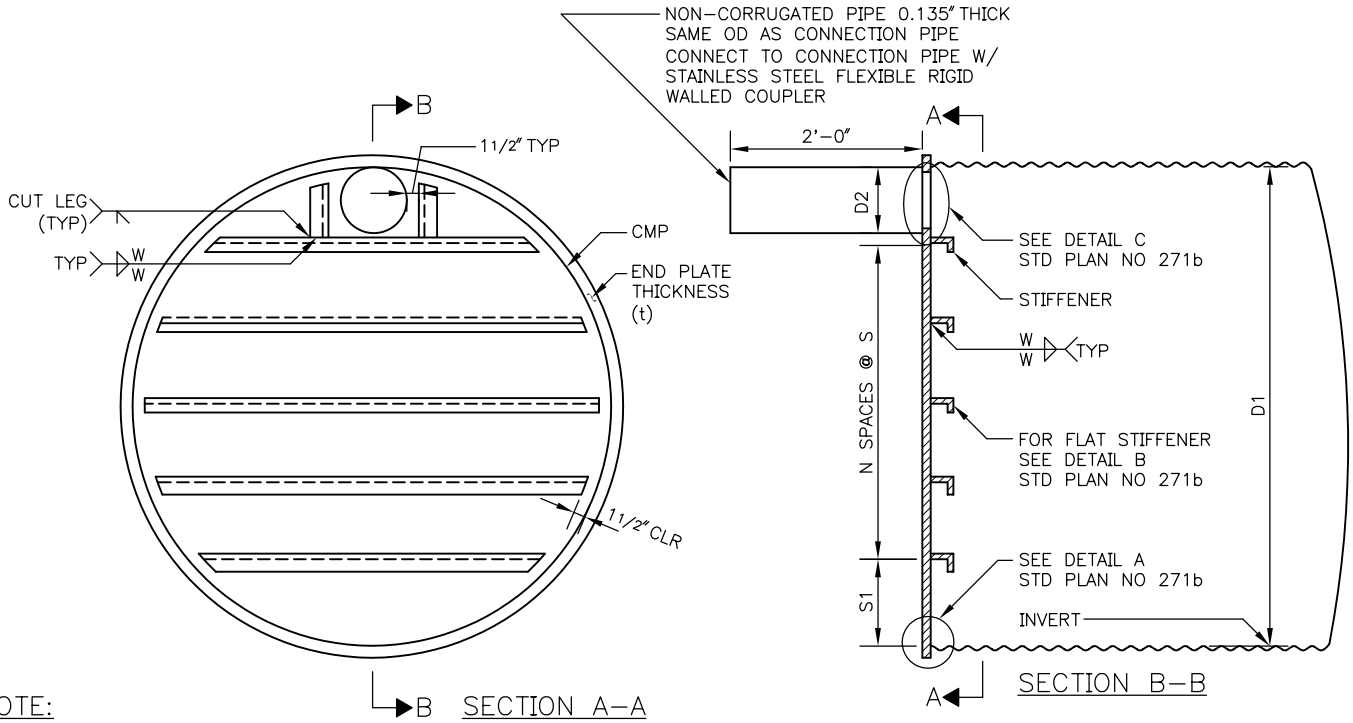
REF STD SPEC SEC 7-16

City of Seattle	NOT TO SCALE	FLOW CONTROL STRUCTURE

REV DATE: 2003



TYPE A



TYPE B

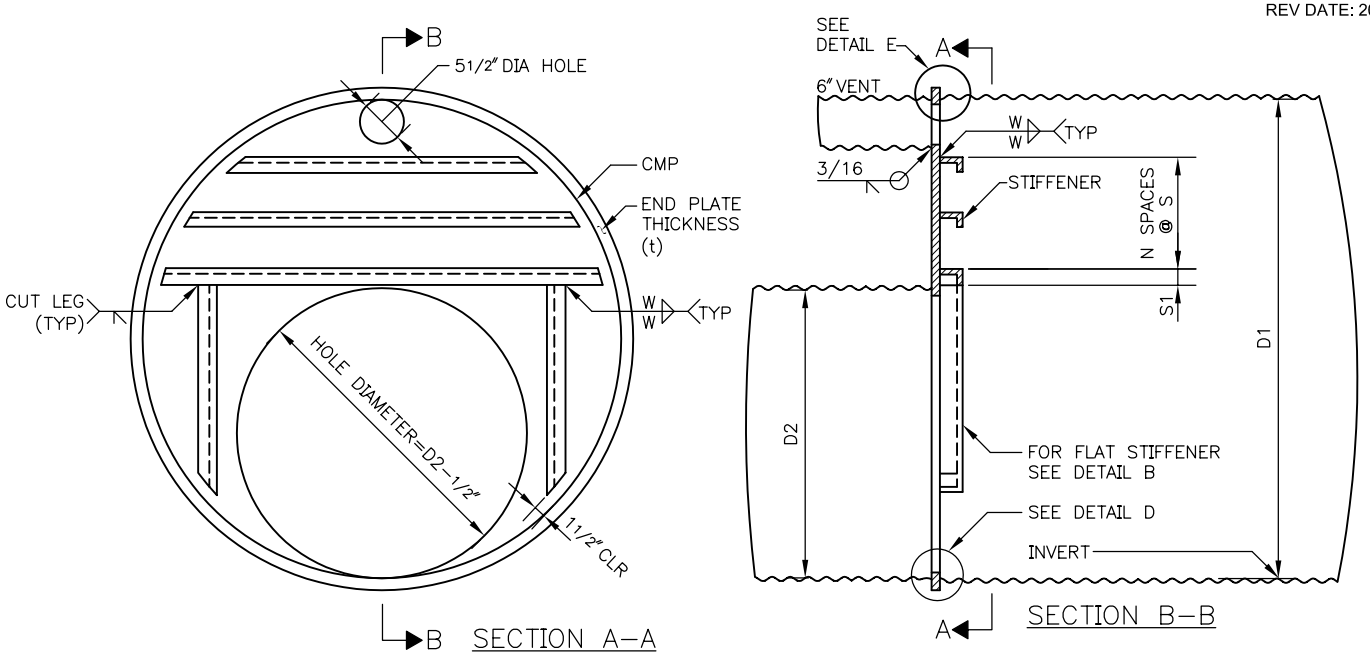
NOTE:
FOR D1, D2, t, S, S1, N & W VALUES AND GENERAL NOTES SEE STD PLAN NO 271c

REF STD SPEC SEC 7-16

City of Seattle	NOT TO SCALE	DETENTION STRUCTURE END PLATE DETAILS

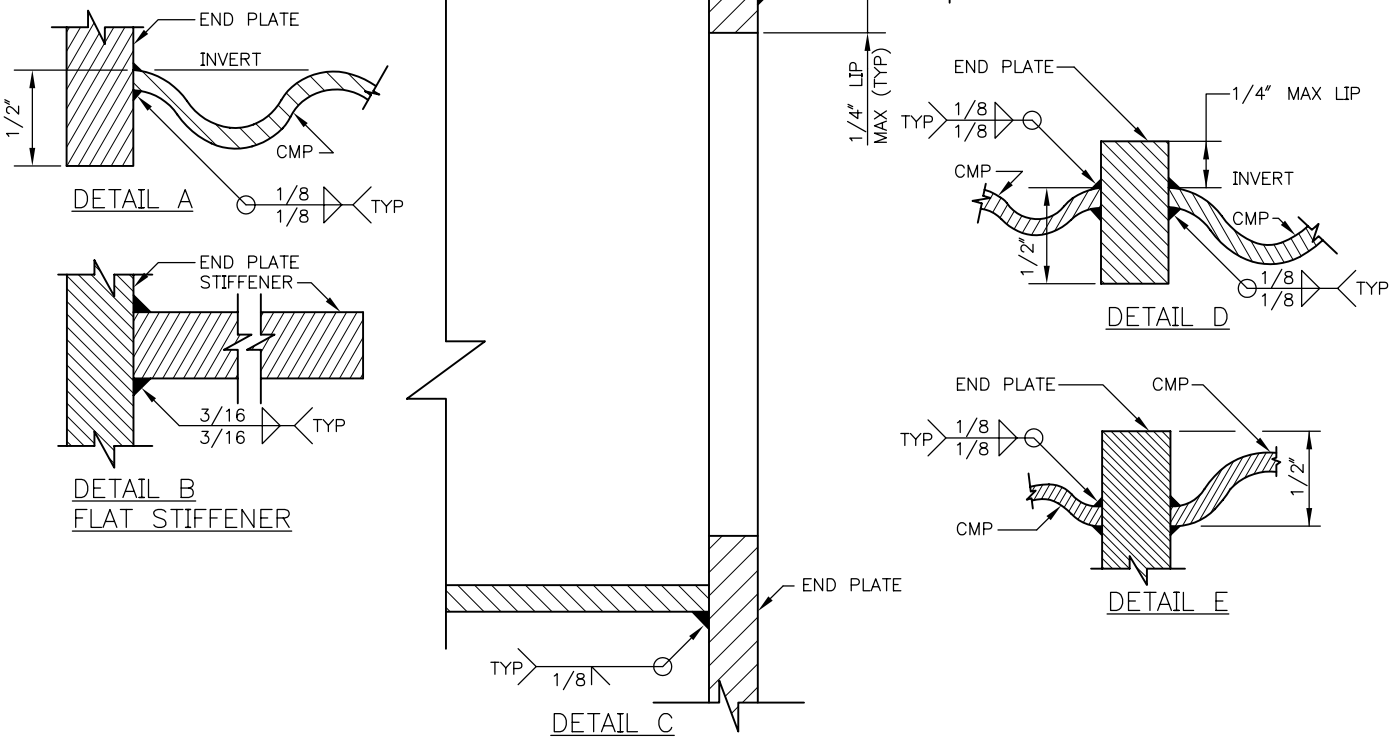
STANDARD PLAN NO 271b

REV DATE: 2003



NOTE:
FOR D1, D2, t, S, S1, N & W VALUES AND GENERAL NOTES SEE STD PLAN NO 271c

TYPE C



REF STD SPEC SEC 7-16

City of Seattle	NOT TO SCALE	DETENTION STRUCTURE END PLATE DETAILS

REV DATE: 2003

PIPE DIAMETER		END PLATE THICKNESS	STIFFENER TYPE & SIZE	STIFFENER SPACING			SIZE W
D1	D2	t		S1	S	N	
TYPE A							
30″	–	1/4″	FLAT 2 1/2″ X 1/4″	6″	6″	3	3/16″
36″	–	1/4″	FLAT 3″ X 1/4″	6″	6″	4	3/16″
48″	–	1/4″	FLAT 4 1/4″ X 1/4″	8″	8″	4	3/16″
60″	–	3/8″	L 2 1/2″ X2″ X 3/8″	10″	10″	4	1/4″
72″	–	3/8″	L 3″ X3″ X 3/8″	6″	10″	6	1/4″
TYPE B							
30″	6″	1/4″	FLAT 2 1/2″ X 1/4″	5 1/2″	5 1/2″	3	3/16″
	8″			5″	5″	3	
	12″			4″	6″	2	
36″	6″	1/4″	FLAT 3″ X 1/4″	6″	5 1/2″	4	3/16″
	8″			6″	5″	4	
	12″			5 1/2″	5 1/2″	3	
48″	6″	1/4″	FLAT 4 1/4″ X 1/4″	8″	8″	4	3/16″
	8″			6″	8″	4	
	12″			4″	7 1/2″	4	
60″	6″	3/8″	L 2 1/2″ X2″ X 3/8″	7″	9″	5	1/4″
	8″			10″	10″	4	
	12″			6″	10″	4	
72″	6″	3/8″	L 3″ X3″ X 3/8″	8″	8″	7	1/4″
	8″			8″	9″	6	
	12″			8″	10″	5	
TYPE C							
48″	30″	1/4″	FLAT 4 1/4″ X 1/4″	2″	8″	1	3/16″
60″	36″	3/8″	L 2 1/2″ X2″ X 3/8″	2″	7″	2	1/2″
72″	36″	3/8″	L 2″ X3″ X 3/8″	3″	8 1/2″	3	1/4″

NOTES:

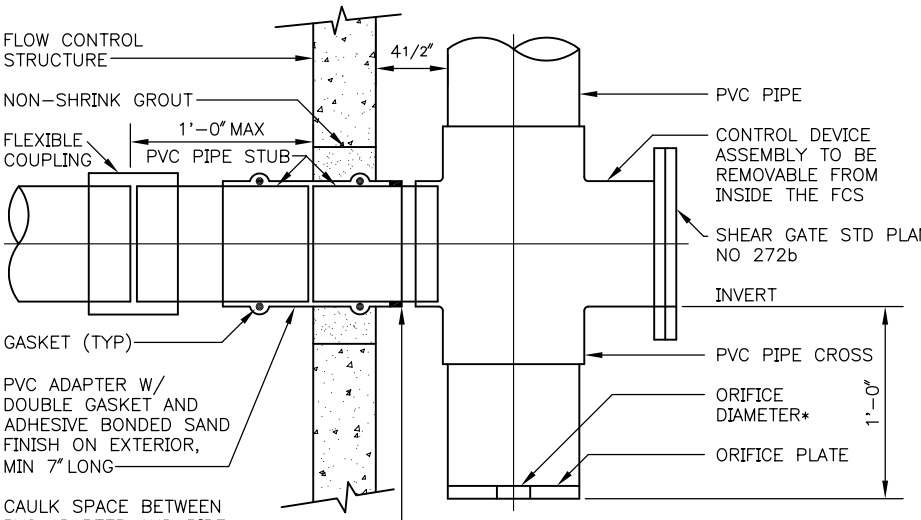
1. DESIGNS VALID FOR PIPE INSTALLED WITH 6′–0″ OR LESS OF COVER FROM CROWN OF PIPE TO GRADE. MAXIMUM WATER SURCHARGE 3′–0″ ABOVE CROWN OF PIPE
2. END PLATE MATERIAL: ALUMINUM 6061–T6
3. DESIGNS SHALL BE USED ONLY FOR ALUMINUM CMP

REF STD SPEC SEC 7-16

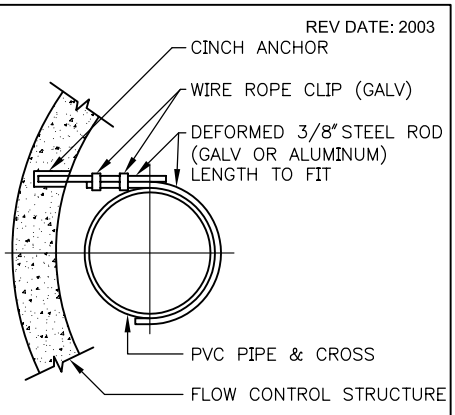
City of Seattle	NOT TO SCALE	DETENTION STRUCTURE END PLATE DETAILS

STANDARD PLAN NO 272a

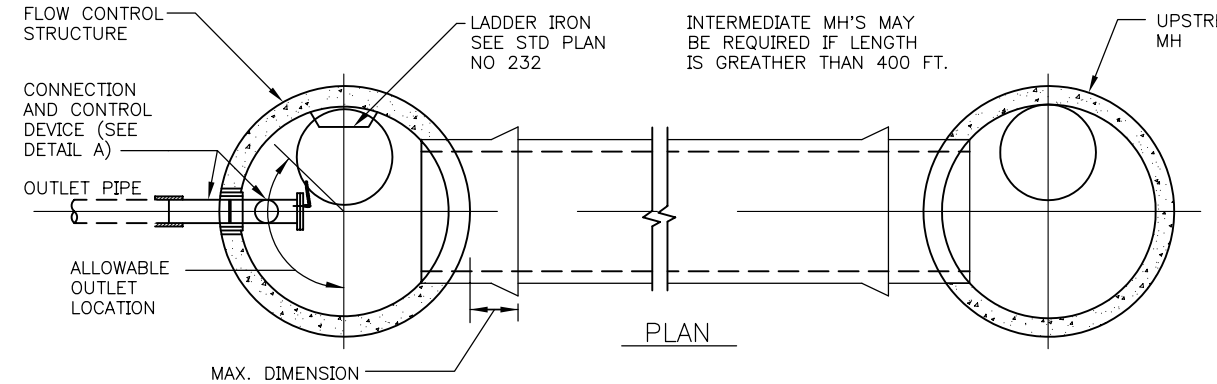
REV DATE: 2003



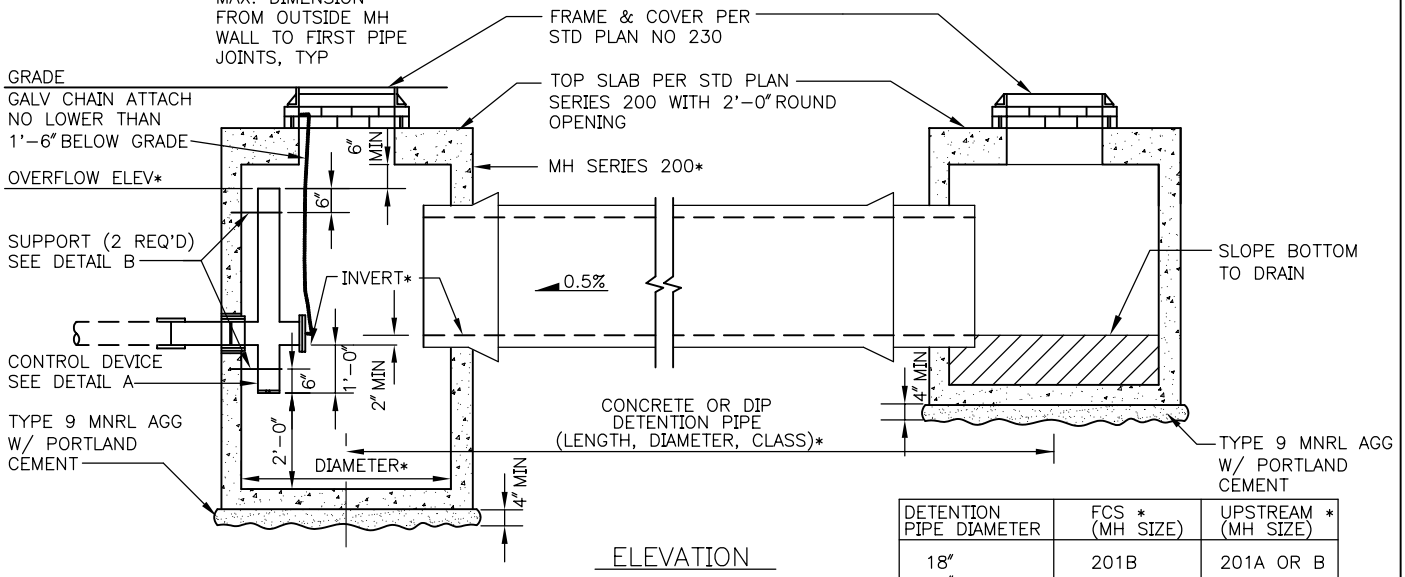
CONNECTION & CONTROL DEVICE
DETAIL A



PIPE SUPPORT
DETAIL B



PLAN



ELEVATION

FLOW CONTROL STRUCTURE & DETENTION PIPE

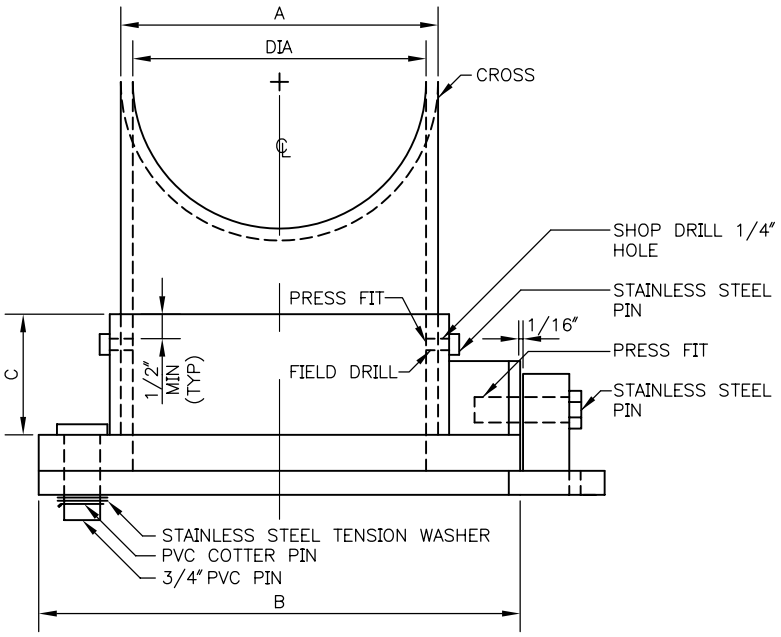
DETENTION PIPE DIAMETER	FCS * (MH SIZE)	UPSTREAM * (MH SIZE)
18"	201B	201A OR B
24"	201B	201A OR B
30"	202B	202B
36"	202B	202B
48"	203B	203B
60"	204B	204B
72"	205B	205B

*SPECIFIC DESIGN INFORMATION AS INDICATED ON CONSTRUCTION DRAWINGS

REF STD SPEC SEC 7-16

City of Seattle	NOT TO SCALE	FLOW CONTROL STRUCTURE (CONC OR DIP DETENTION PIPE)

REV DATE: 2003

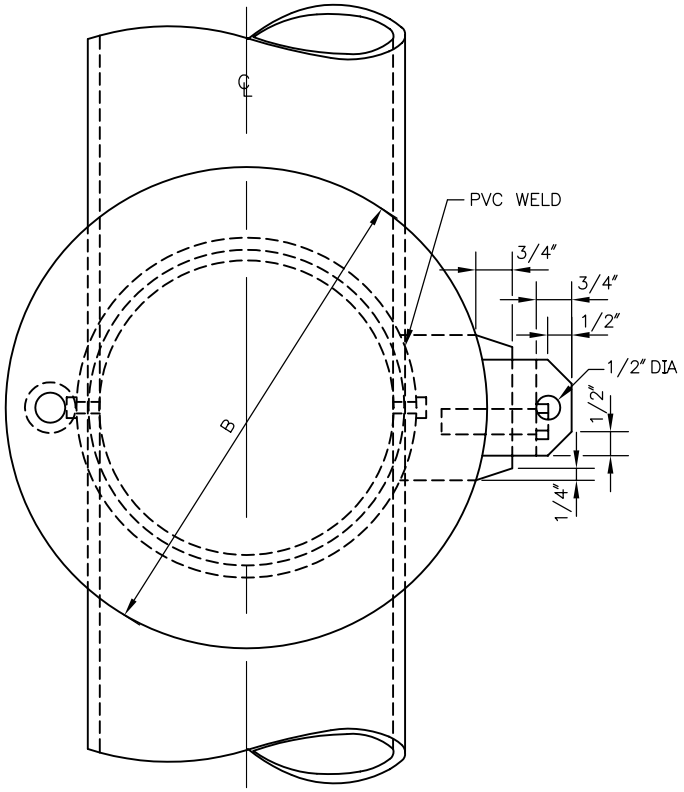


TOP VIEW

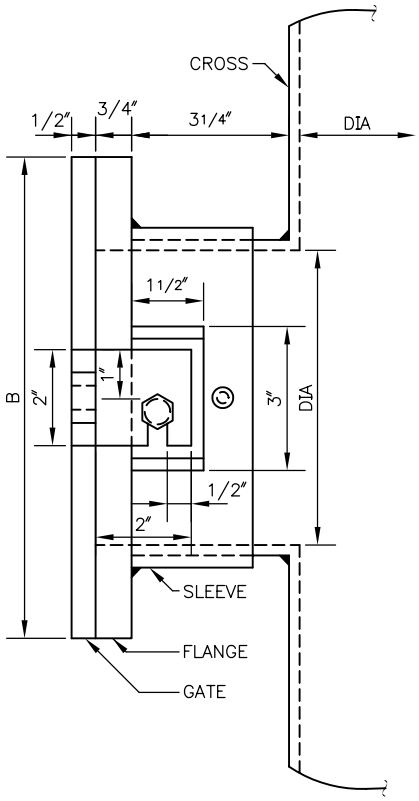
DIA	A	B*	C*
4"	4 1/2"	8"	2"
6"	6 5/8"	10"	2 1/2"
8"	8 5/8"	12"	3"
10"	10 3/4"	14"	3"
12"	12 3/4"	16"	3"

*MINIMUM

DIA=OUTLET PIPE DIAMETER



FRONT VIEW



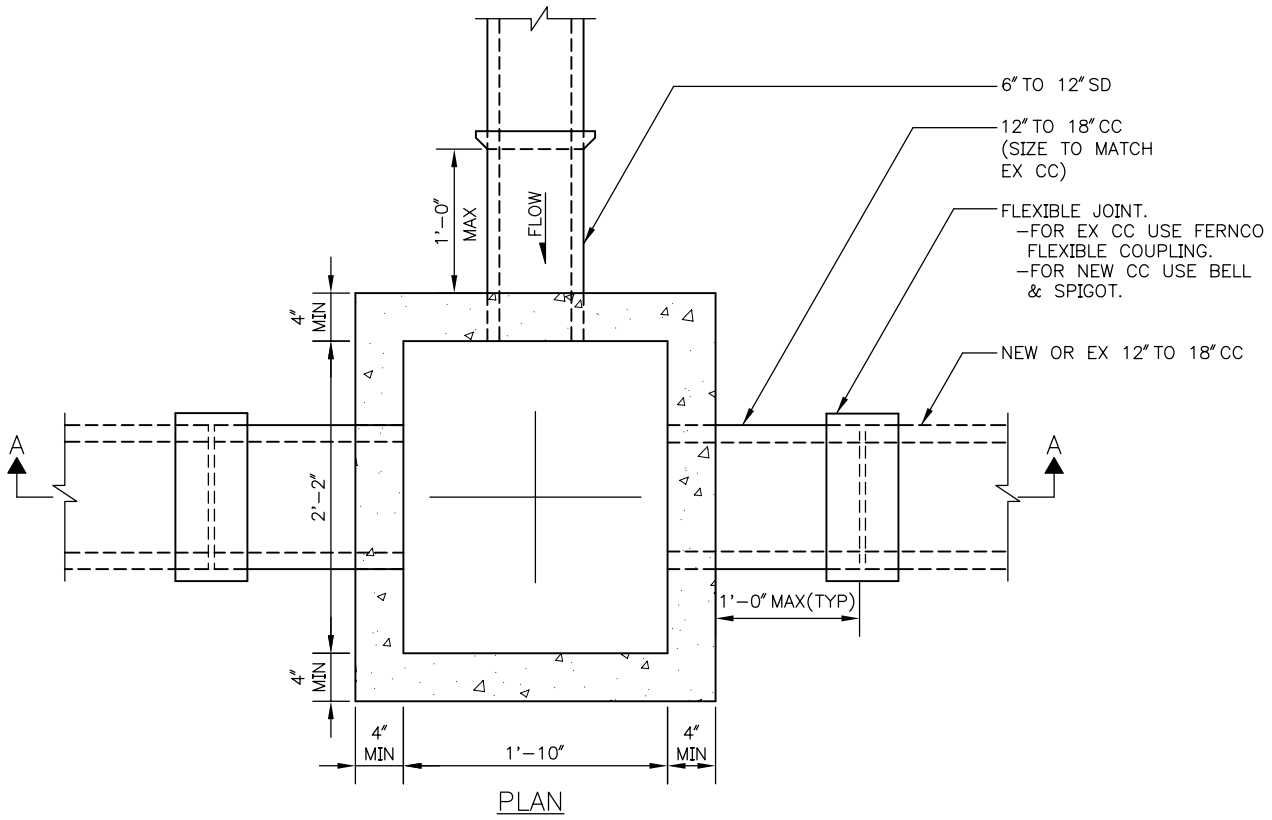
SIDE VIEW

REF STD SPEC SEC 7-16

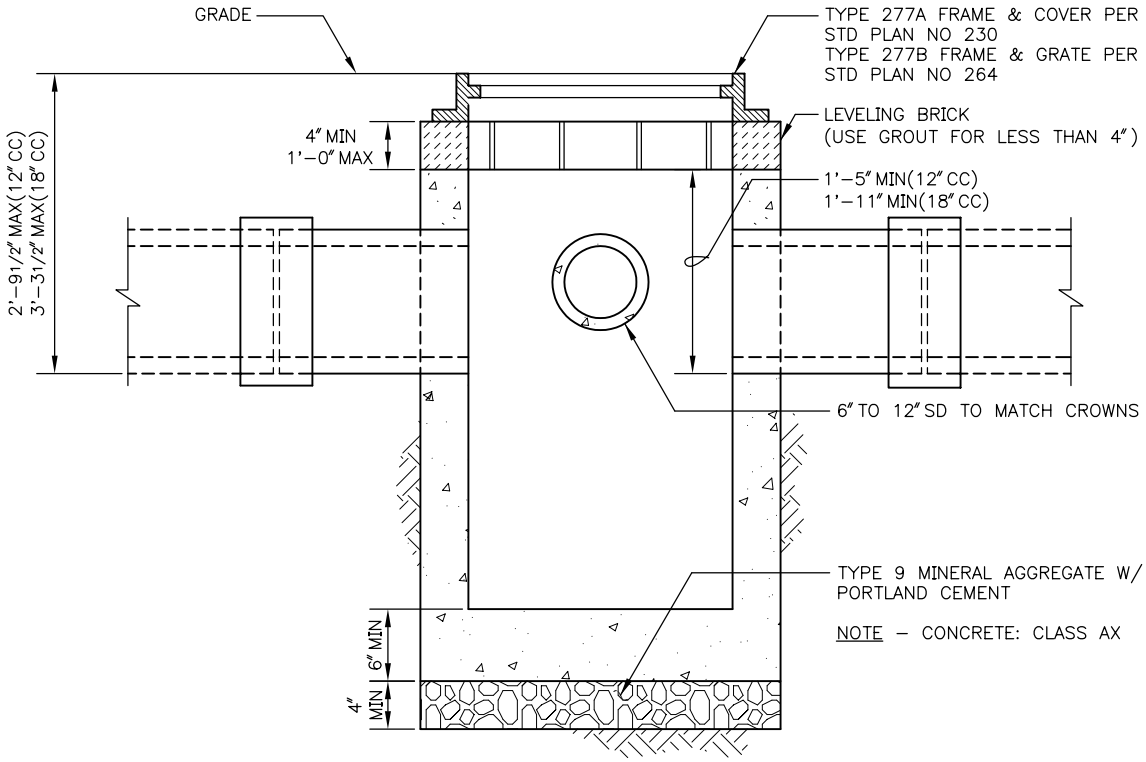
City of Seattle	NOT TO SCALE	PVC SHEAR GATE

STANDARD PLAN NO 277

REV DATE: 2008



PLAN



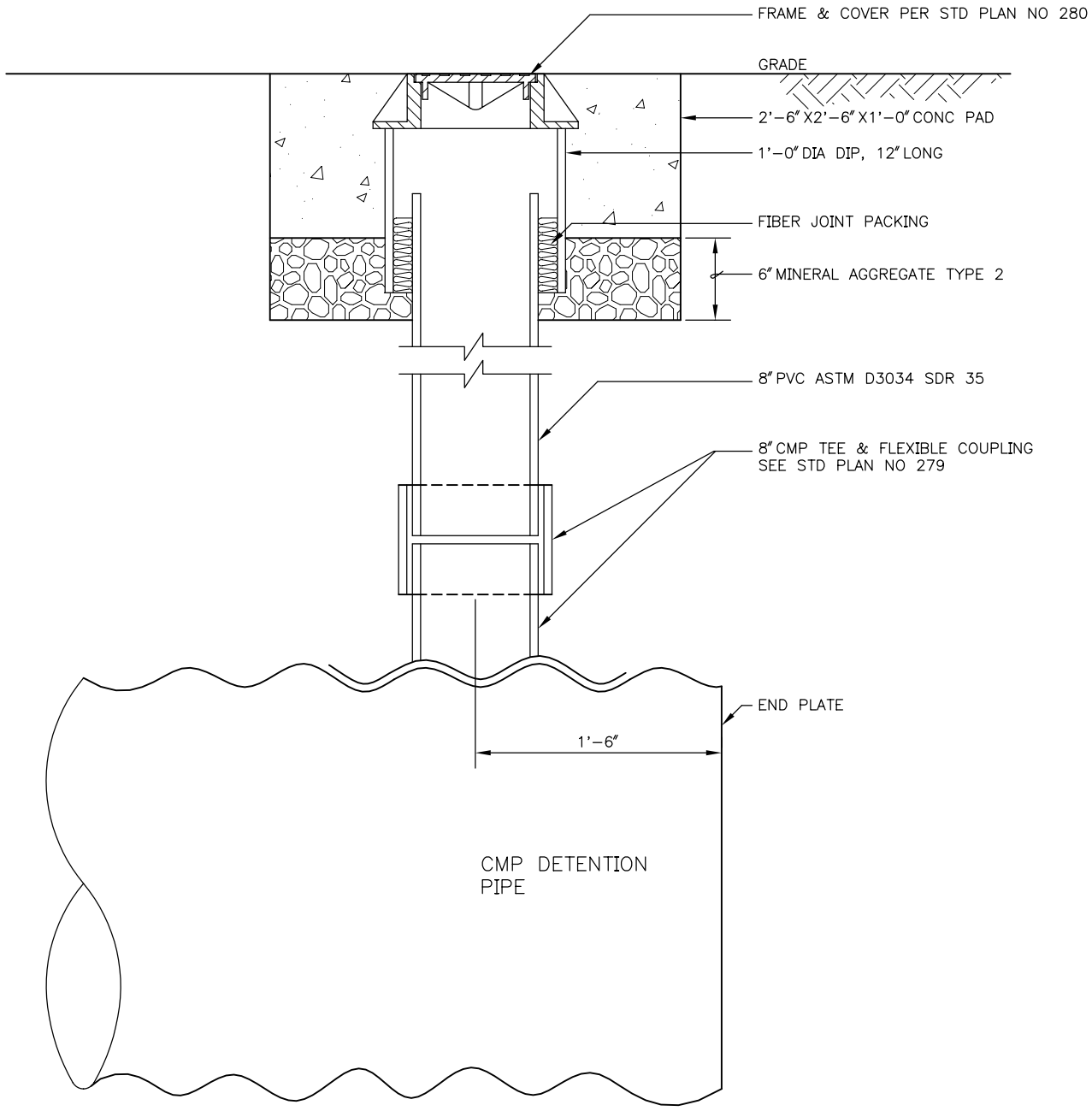
SECTION
A–A

REF STD SPEC SEC 7-02 & 9-12.9

City of Seattle	NOT TO SCALE	TYPE 277 JUNCTION BOX & INSTALLATION

STANDARD PLAN NO 278

REV DATE: 2003

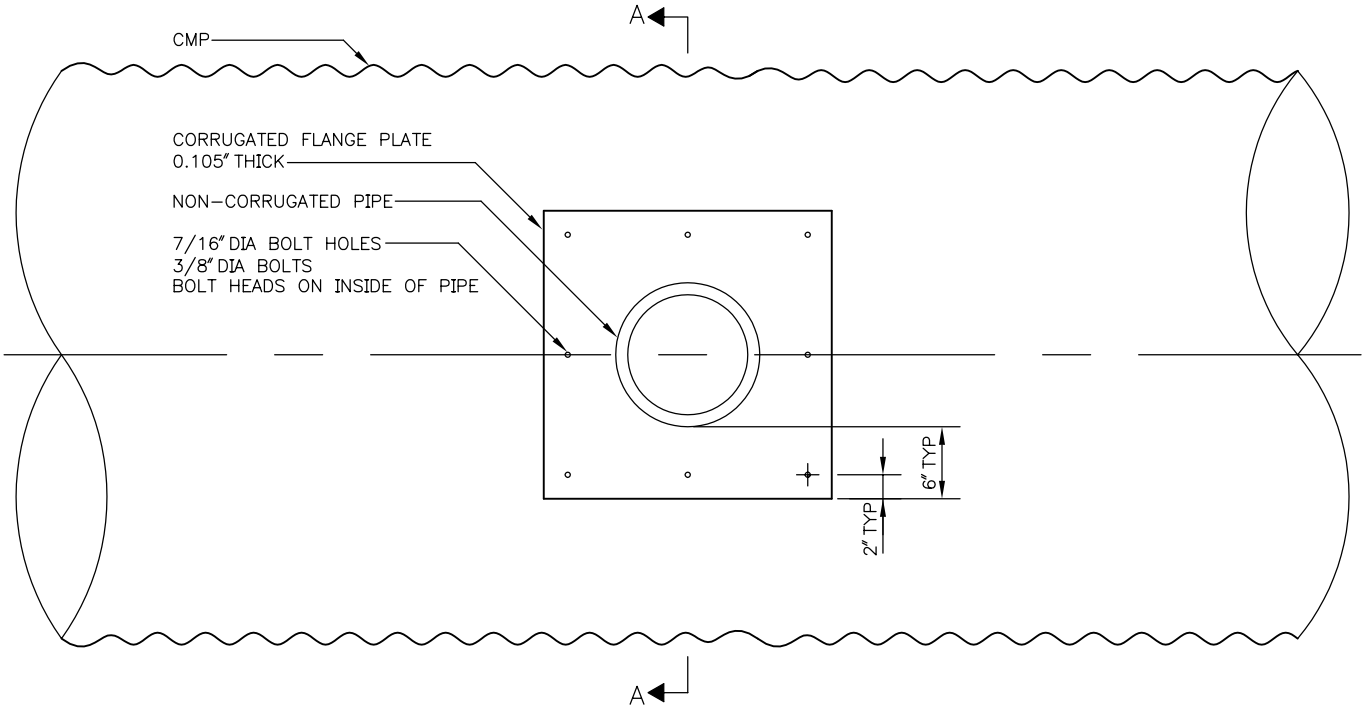


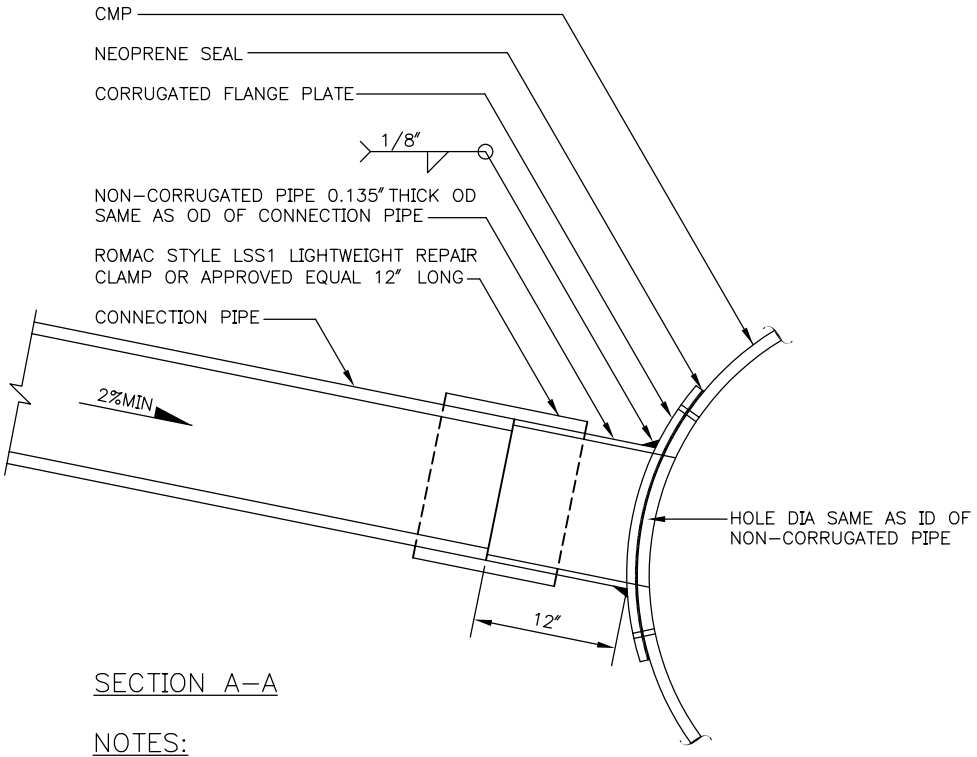
REF STD SPEC SEC 7-19 & 7-16.2

City of Seattle	NOT TO SCALE	VERTICAL CLEAN OUT/ CORRUGATED METAL PIPE

STANDARD PLAN NO 279

REV DATE: 2005





SECTION A-A

NOTES:

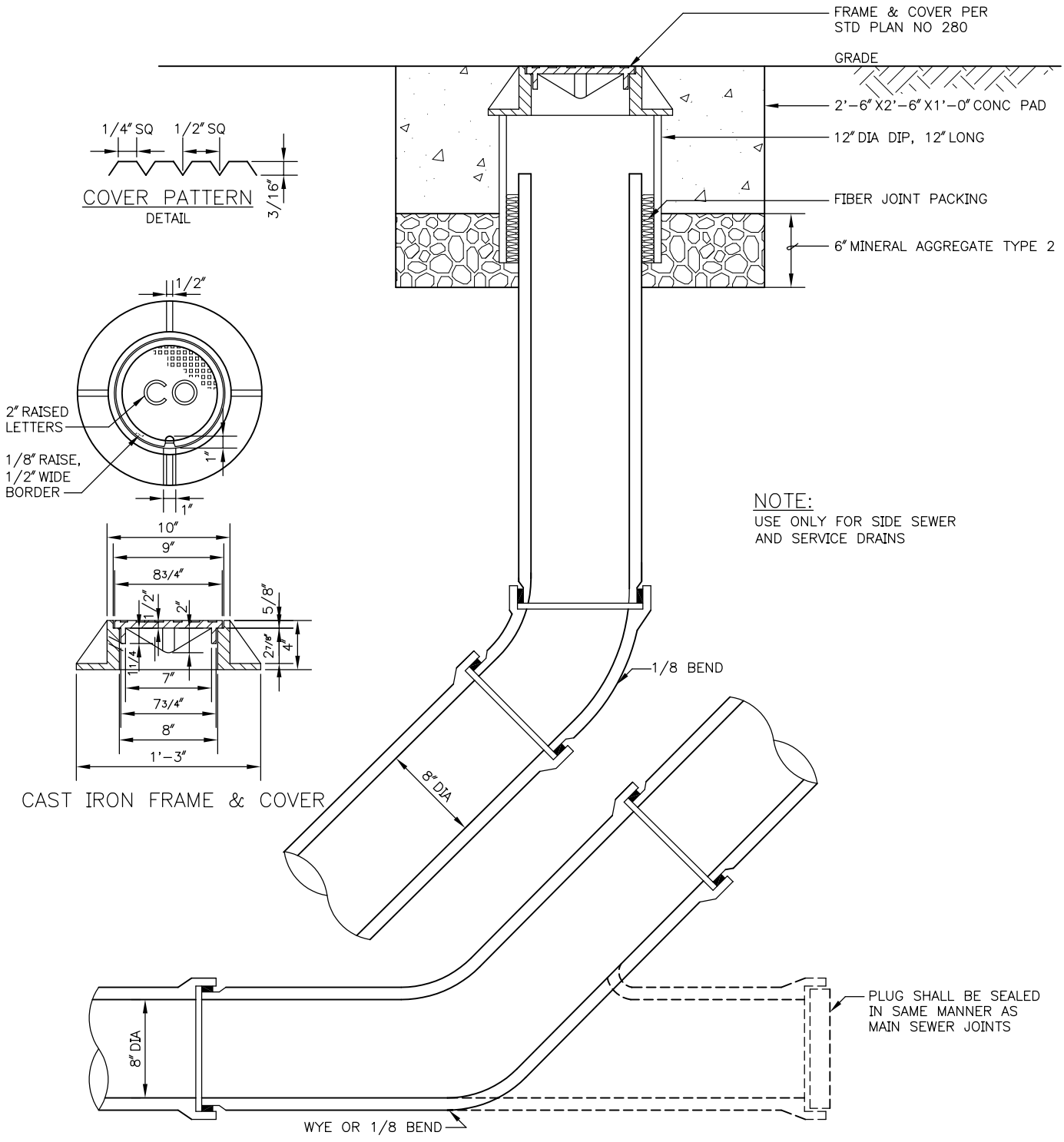
1. CORRUGATED FLANGE PLATE AND NON-CORRUGATED PIPE TO BE SAME MATERIAL AND HAVE SAME COATING AS CMP
2. BOLTS TO BE GALV STEEL MEETING ASTM A 307 OR STAINLESS STEEL MEETING ASTM A 193

REF STD SPEC SEC 7-17 & 7-16.2

City of Seattle	NOT TO SCALE	TEE INSTALLATION CORRUGATED METAL PIPE

STANDARD PLAN NO 280

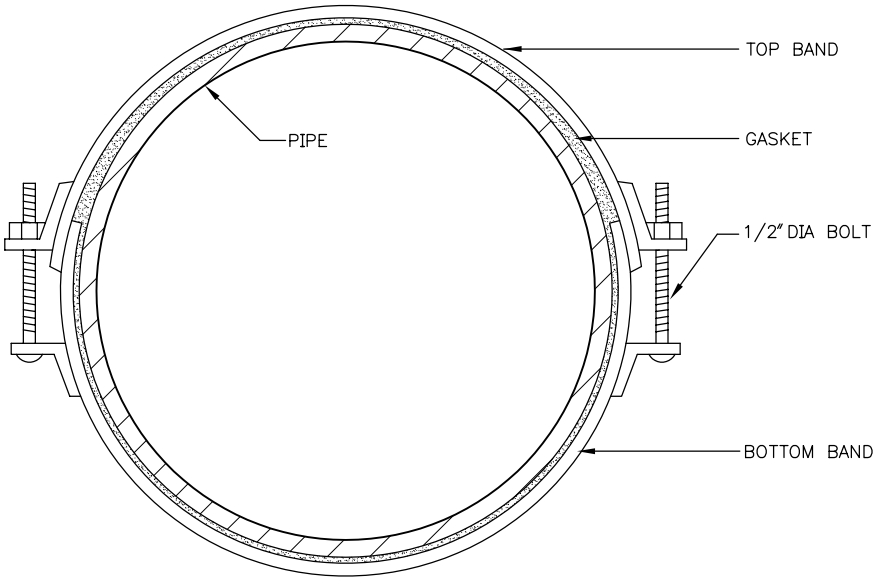
REV DATE: 2003

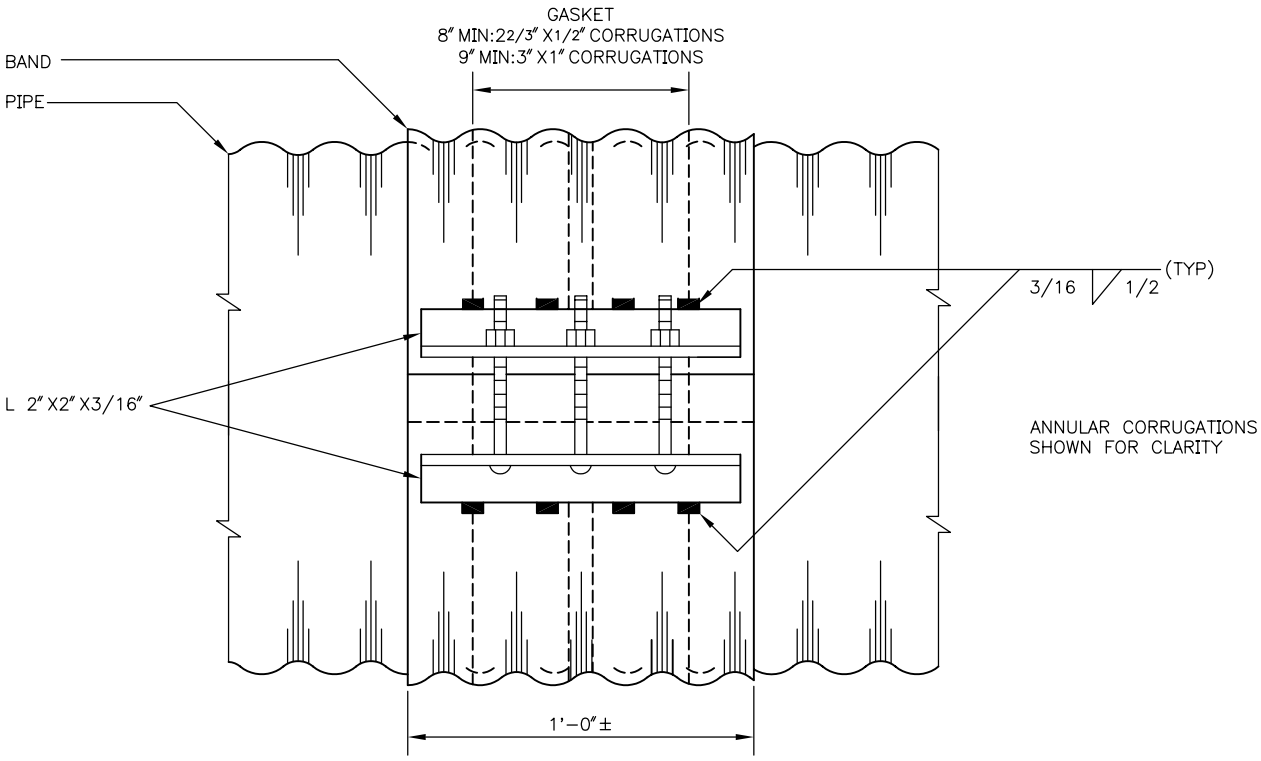


REF STD SPEC SEC 7-19

City of Seattle	NOT TO SCALE	8" CLEAN-OUT

REV DATE: 2003





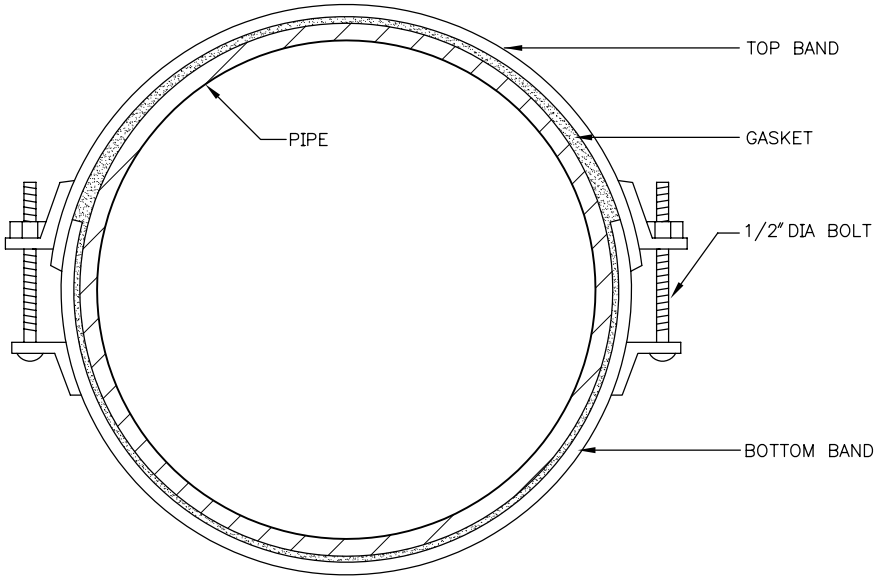
FOR PIPES LESS THAN 48" DIAMETER
(HELICAL OR ANNULAR)

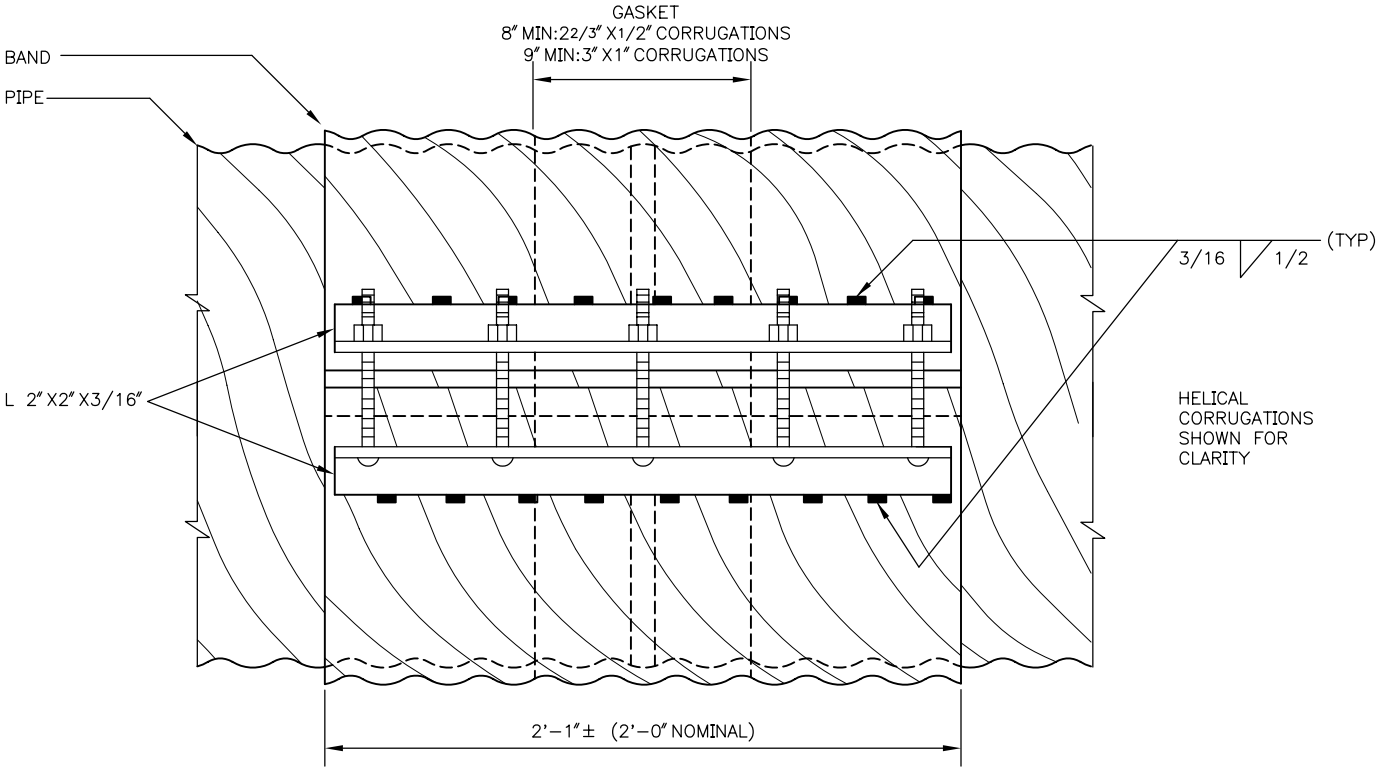
REF STD SPEC SEC 7-16.2 & 9-05

City of Seattle	NOT TO SCALE	CORRUGATED METAL PIPE COUPLING BANDS

STANDARD PLAN NO 282b

REV DATE: 2003





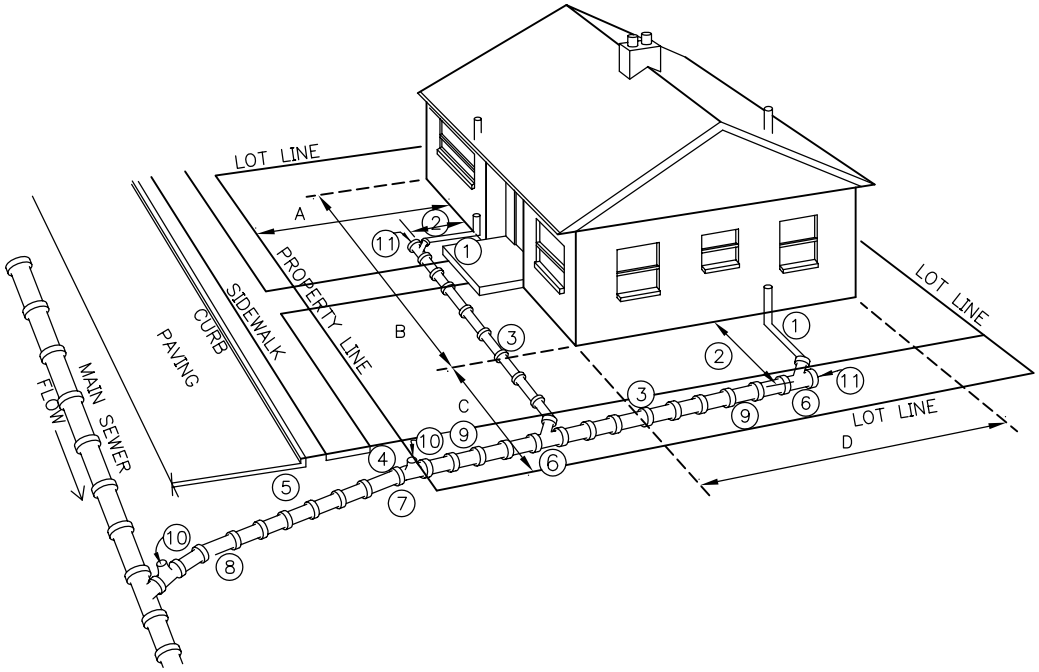
FOR PIPES 48" DIAMETER & LARGER
(HELICAL OR ANNULAR)

REF STD SPEC SEC 7-16.2 & 9-05

City of Seattle	NOT TO SCALE	CORRUGATED METAL PIPE COUPLING BANDS

STANDARD PLAN NO 283

REV DATE: 2003



NOTES:

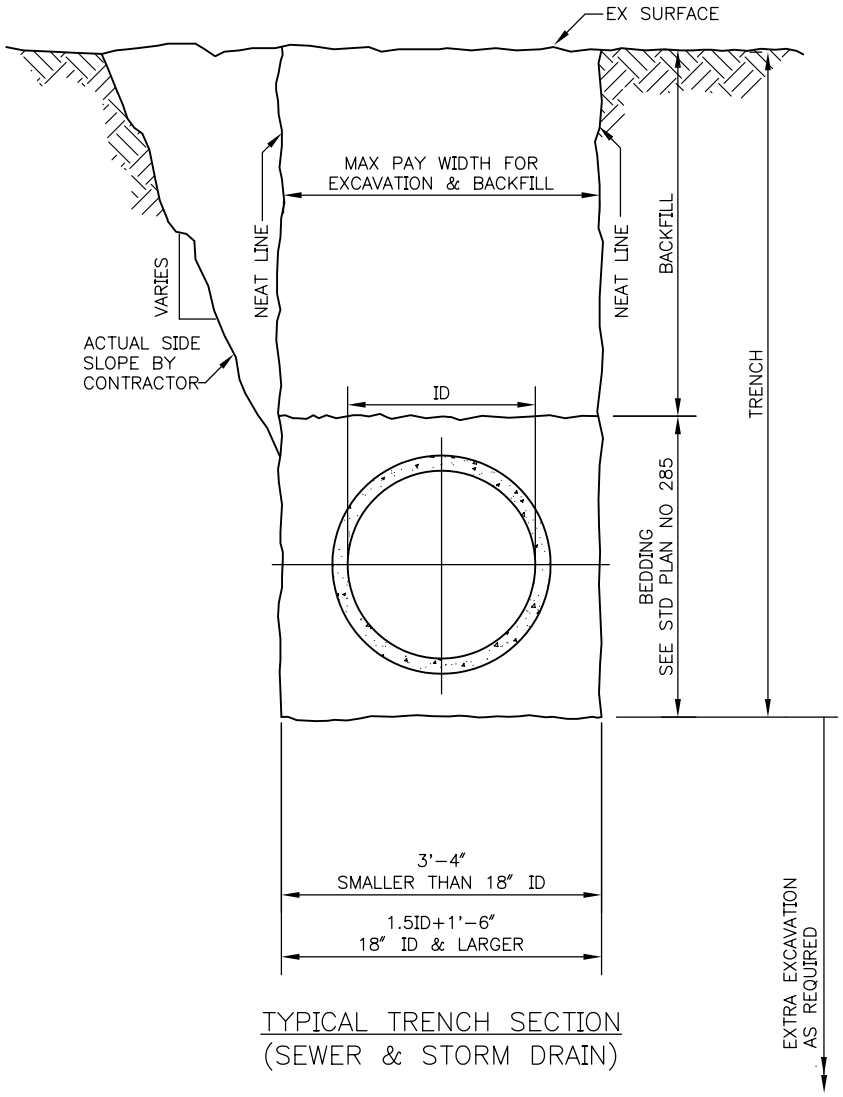
1. ALL HOUSE PLUMBING OUTLETS MUST BE CONNECTED TO THE SEWER. NO DOWNSPOUTS OR STORM DRAINAGE MAY BE CONNECTED, EXCEPT TO A SEPARATE STORM DRAINAGE SYSTEM.
2. 2'–6" MIN DISTANCE FROM HOUSE, EXCEPT FOR SOIL PIPE CONNECTION.
3. 1'–6" MIN COVER OF PIPE.
4. 2'–6" MIN COVER AT PROPERTY LINE.
5. 5'–0" MIN 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. REMOVABLE PLUG.

A. CONSTRUCTION IN STREET MUST BE DONE BY A LICENSED SIDE SEWER CONTRACTOR.
B. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT SIDE SEWER ORDINANCES.
C. ALL CONSTRUCTION REQUIRES A PERMIT AND PAYMENT OF FEE. COMPLETE LEGAL DESCRIPTIONS OF PROPERTY AND DIMENSIONS A, B, C AND D THAT SHOW THE SIZE AND LOCATION OF THE HOUSE ARE REQUIRED FOR ISSUANCE OF THE PERMIT.
D. ORDINANCE 97016 APPLIES TO INSTALLATION OF SIDE SEWER.

REF STD SPEC SEC 7-18

City of Seattle	NOT TO SCALE	SIDE SEWER INSTALLATION

REV DATE: 2003



TYPICAL TRENCH SECTION
(SEWER & STORM DRAIN)

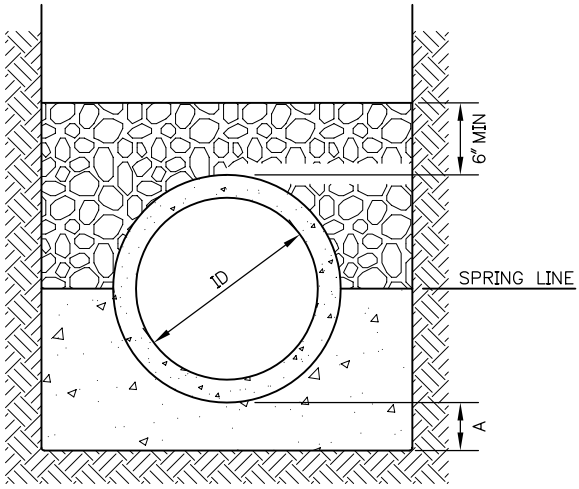
NOTE:
FOR PAVEMENT REMOVAL
AND RESTORATION SEE
STD PLAN NO 404

REF STD SPEC SEC 7-17

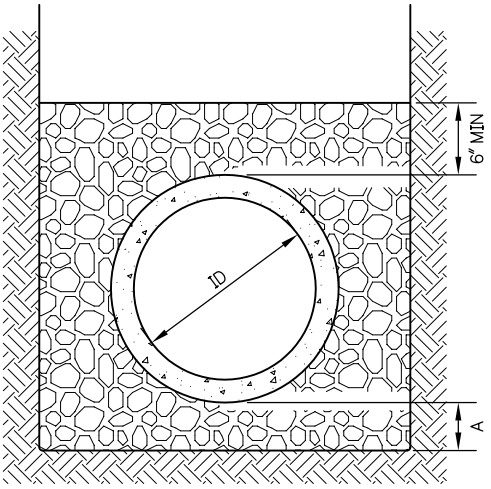
City of Seattle	NOT TO SCALE	TYPICAL SEWER TRENCH SECTION

STANDARD PLAN NO 285

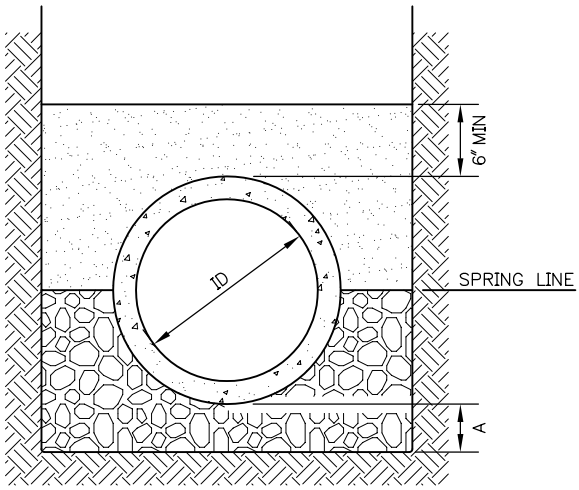
REV DATE: 2003



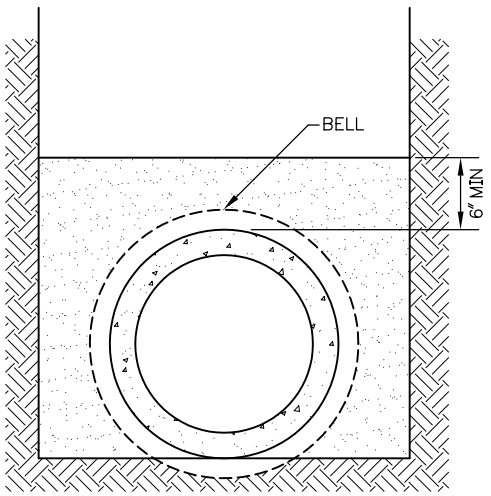
CLASS A BEDDING
(CONCRETE BEDDING)



CLASS B BEDDING



CLASS C BEDDING



CLASS D BEDDING

MINERAL AGGREGATE PER STD SPEC 4-01
TYPE 9 FOR RIGID PIPE
TYPE 22 FOR FLEXIBLE PIPE

CONCRETE
(4 SACK MIN 1 1/2" MAX AGGREGATE)

SELECTED NATIVE MATERIAL

NOTES:
1. FOR TRENCH WIDTH SEE STD PLAN NO 284
2. A=4" WHEN ID IS LESS THAN 2'-6"
   A=6" WHEN ID IS 2'-6" OR MORE
3. FOR CLASS D BEDDING EXCAVATE FOR BELL

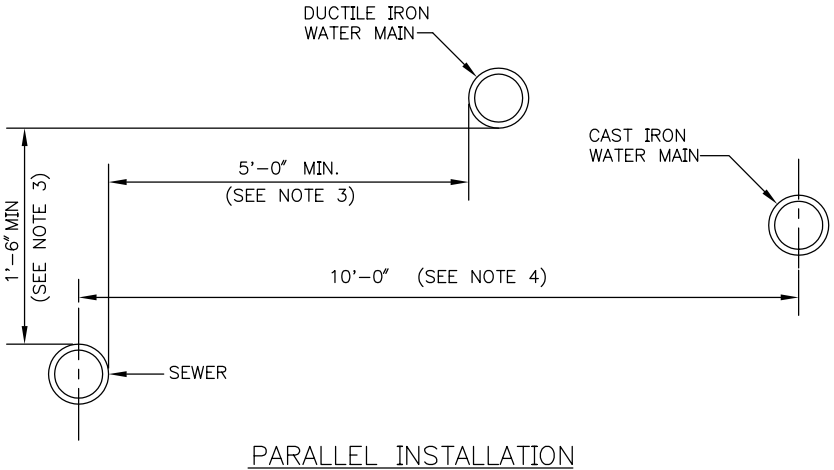
REF STD SPEC SEC 7-17

City of Seattle	NOT TO SCALE	PIPE BEDDING SEWER / STORM DRAIN

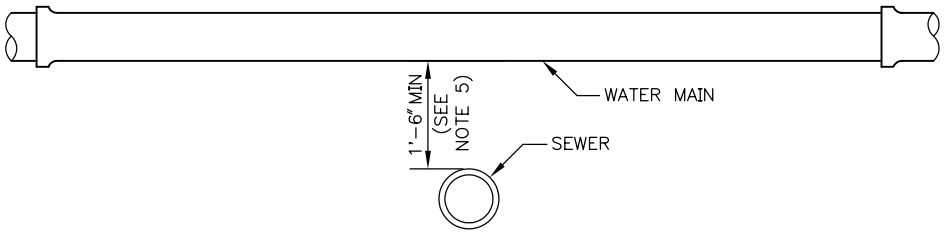
REV DATE: 2005

NOTES

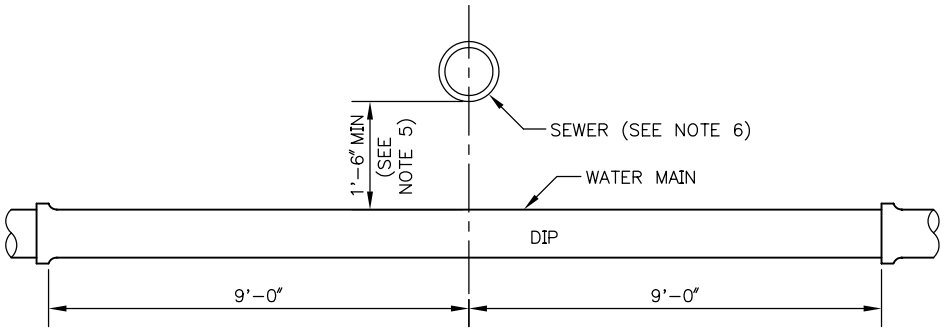
1. EXCEPTIONS TO STD PLAN NO. 286 SHALL BE APPROVED BY SEATTLE PUBLIC UTILITIES, WATER QUALITY DIVISION.
2. "SEWER" INCLUDES SANITARY SEWER, COMBINED SEWER AND SIDE SEWER.
3. WHERE MINIMUM CLEARANCES CANNOT BE MET, SEWER SHALL BE CONSTRUCTED OF MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS INCLUDING WATER MAIN PRESSURE TESTING REQUIREMENTS.
4. NO VERTICAL CLEARANCE REQUIRED.
5. IF MINIMUM VERTICAL SEPARATION CANNOT BE MET, WATER MAIN SHALL BE A STANDARD SINGLE 18'–0" NOMINAL LENGTH DUCTILE IRON WATER MAIN SECTION CENTERED AT THE POINT OF CROSSING.
6. SEWER SHALL 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.
8. ORDINANCE 97016 APPLIES TO SIDE SEWERS. SEE STD SPEC SEC 1–07.17(2)A.



PARALLEL INSTALLATION



CROSSING WATER OVER SEWER



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

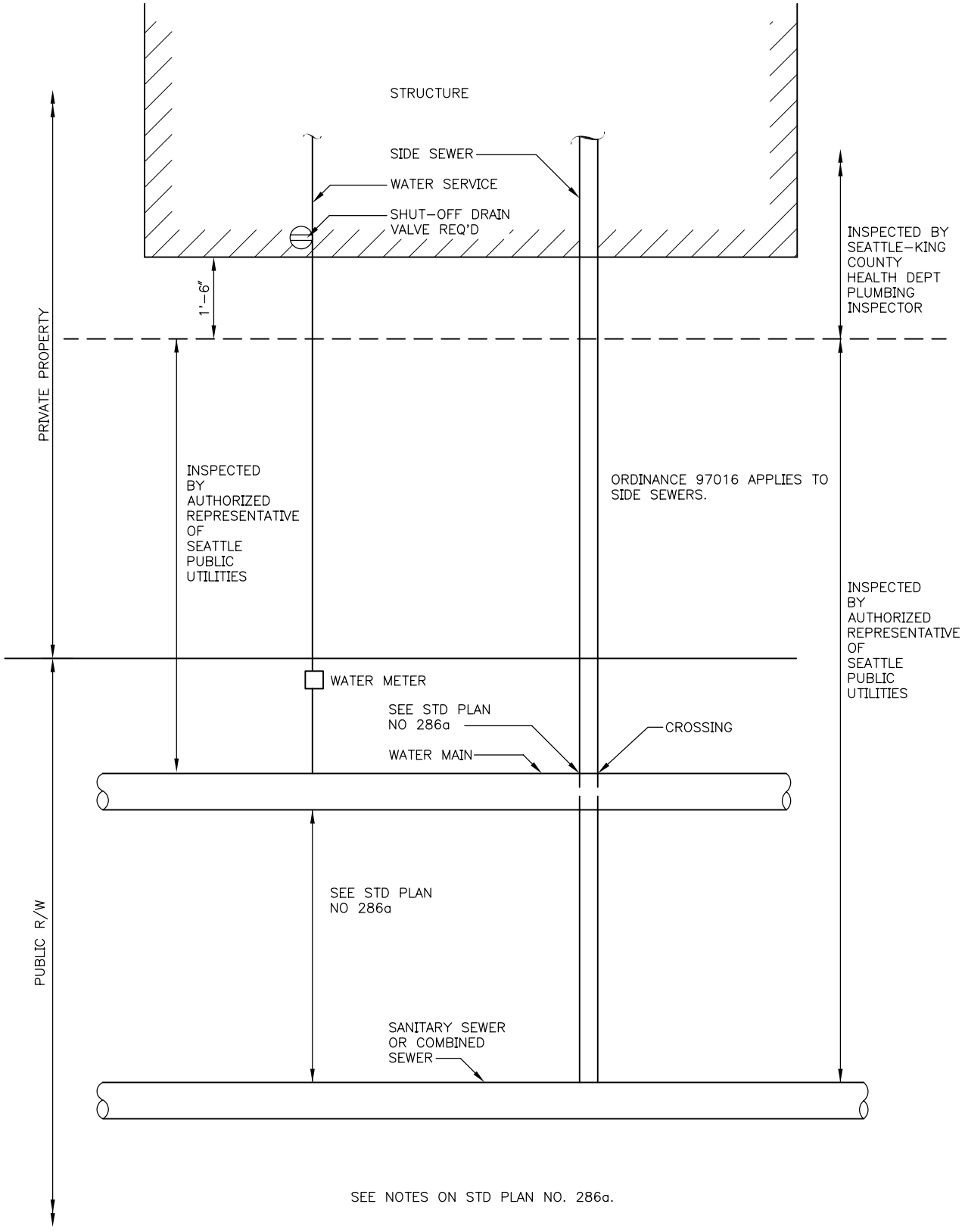
CROSSING WATER UNDER SEWER

REF STD SPEC SEC 1-07.17 & 7-11

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

STANDARD PLAN NO 286b

REV DATE: 2003

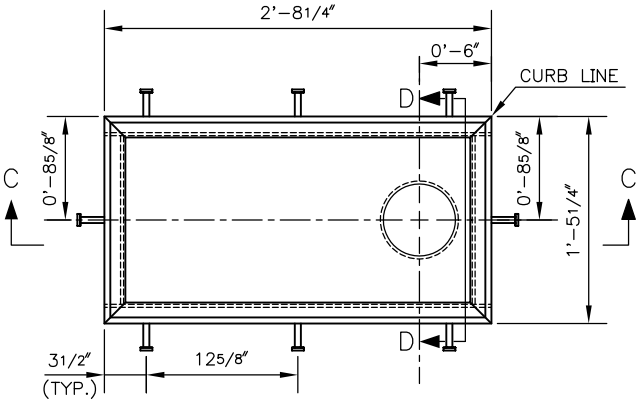


SEE NOTES ON STD PLAN NO. 286a.

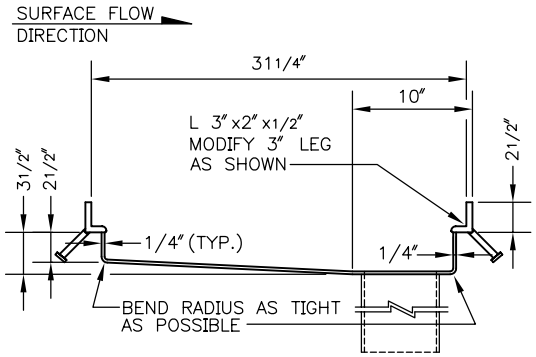
REF STD SPEC SEC 1-07.17 & DIV 7

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

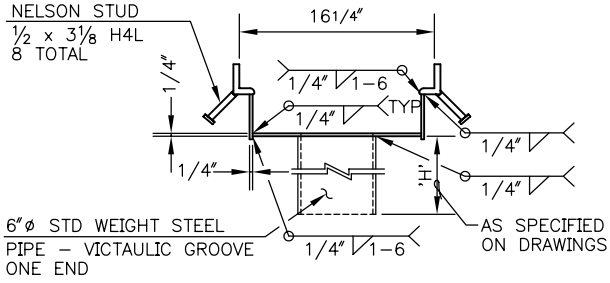
REV DATE: 2003



PLAN VIEW – BRIDGE DRAIN



SECTION C–C



SECTION D–D

NOTES:

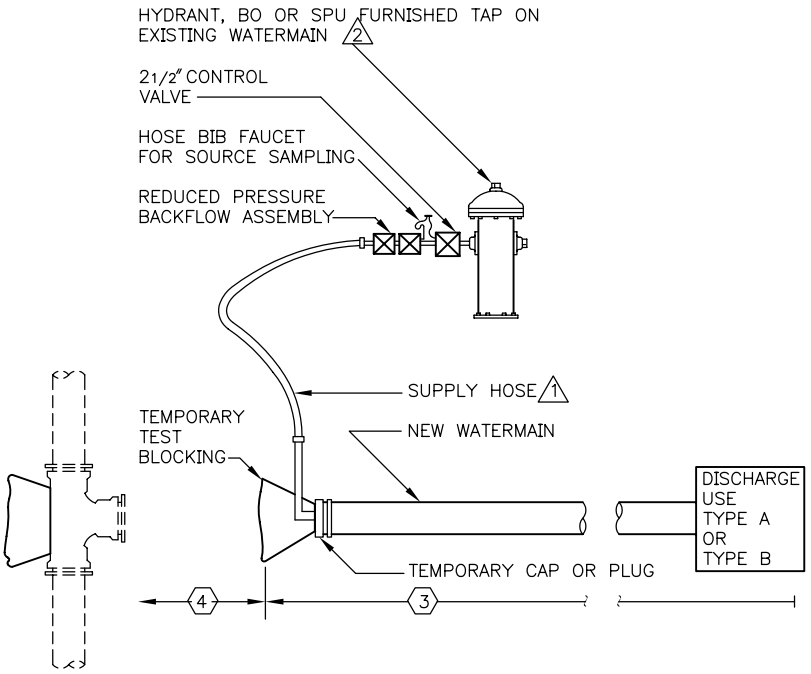
1. ALL 1/4" STEEL & L3" x 2" x 1/2" TO BE A–36.
2. 6" ø PIPE TO BE STANDARD WEIGHT STEEL.
3. AFTER FABRICATION, DRAIN ASSEMBLY TO BE HOT DIP GALVANIZED.
4. VANED GRATE TO BE PER STD PLAN NO 265.

REF STD SPEC SEC 6-01 & 6-02

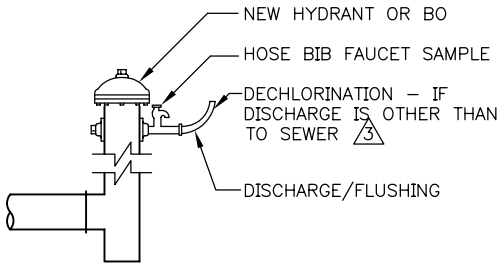
City of Seattle	NOT TO SCALE	BRIDGE DRAIN

STANDARD PLAN NO 300a

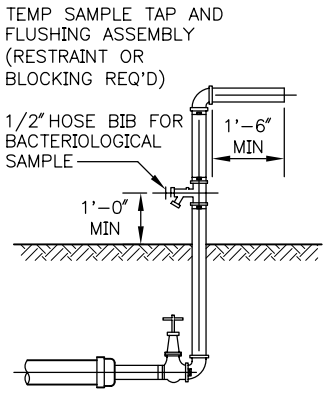
REV DATE: 2003



DETAIL 1
TEMPORARY
FLUSHING/TESTING CONN



TYPE A



TYPE B

NOTES

1. ALL FITTINGS SHALL BE DUCTILE IRON
2. ALL EXCAVATION SHALL PROVIDE A MINIMUM OF 1'–0" CLEAR AROUND PIPE AND FITTINGS.
3. THESE PLANS ARE FOR DIP AND CIP WATERMAINS 12" OR SMALLER DIA OTHER SIZES AND TYPES SEE PROJECT DRAWINGS
4. REDUCED PRESSURE BACKFLOW ASSEMBLY (RPBA) SHALL BE INSTALLED AS A UNIT (TWO SHUT–OFF VALVES, RELIEF PORT, TWO CHECK VALVES AND FOUR TEST COCKS). WHEN RPBA IS CONNECTED TO HYDRANT AND THE HOSE BIB FAUCET SAMPLE THEY SHALL BE CAPPED WHEN NOT IN USE. ASSEMBLY SHALL BE TESTED WHEN INSTALLED BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER (BAT) AND A CURRENT TEST REPORT SHALL BE ON SITE. FOR INSTALLATION PROCEDURES CALL 684–3536.

LEGEND

△1 CLEAN & DISINFECTED POTABLE WATER HOSE ONLY. SIZE FLUSHING RISER PER TABLE IN STD SPEC SEC 7–11.3(12)

△2 HYDRANT PERMIT REQUIRED

△3 CHECK WITH SEWER UTILITY BEFORE DISCHARGE TO SEWERS

⟨1⟩ CONTRACTOR TO DETERMINE ALIGNMENT & GRADE OF EXISTING PIPE PRIOR TO INSTALLING NEW WATERMAIN. ENGINEER TO DETERMINE OUTSIDE DIAMETER OF EXISTING PIPE WHEN CONTRACTOR EXCAVATES TO DETERMINE ALIGNMENT & GRADE.

⟨2⟩ ALL EXCAVATION, PIPE, FITTINGS (EXCEPT AS NOTED BELOW), OTHER MATERIAL, BEDDING, BACKFILL, COMPACTION & STREET RESTORATION BY CONTRACTOR. ALL MATERIALS SHALL BE ON JOB SITE PRIOR TO SHUTDOWN OF EXISTING MAIN.

⟨3⟩ INSTALLED BY CONTRACTOR

⟨4⟩ CONNECTION PIPE: CONTRACTOR FURNISHED, INSTALLED BY SPU

⟨5⟩ WATERMAIN WITH PLAIN ENDS

⟨6⟩ MECHANICAL JOINT SLEEVE WITH SPACER CUT TO FIT GAP, FURNISHED AND INSERTED AT TIME OF CONNECTION BY SPU

⟨7⟩ TAPPING SLEEVE & TAPPING VALVE FURNISHED AND INSTALLED BY SPU

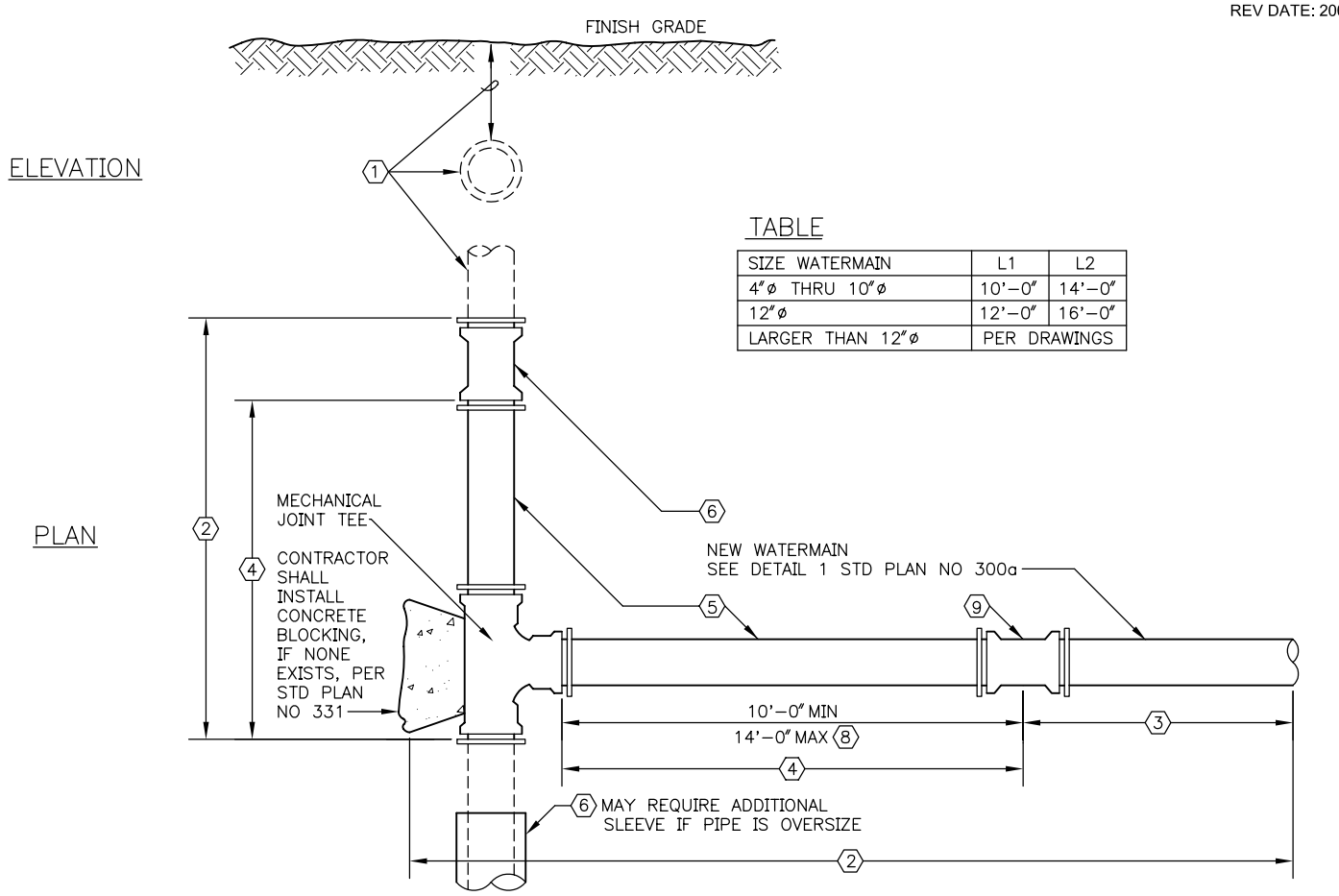
⟨8⟩ APPLIES TO PIPES 4" THROUGH 12". ALL LARGER SIZES TO BE ADDRESSED ON DRAWINGS

⟨9⟩ MECHANICAL JOINT SLEEVE, FURNISHED BY CONTRACTOR AND INSTALLED BY SPU, SPACERS BY SPU WHERE REQUIRED

REF STD SPEC SEC 7-11

City of Seattle	NOT TO SCALE	CONNECTIONS TO EXISTING WATERMAINS

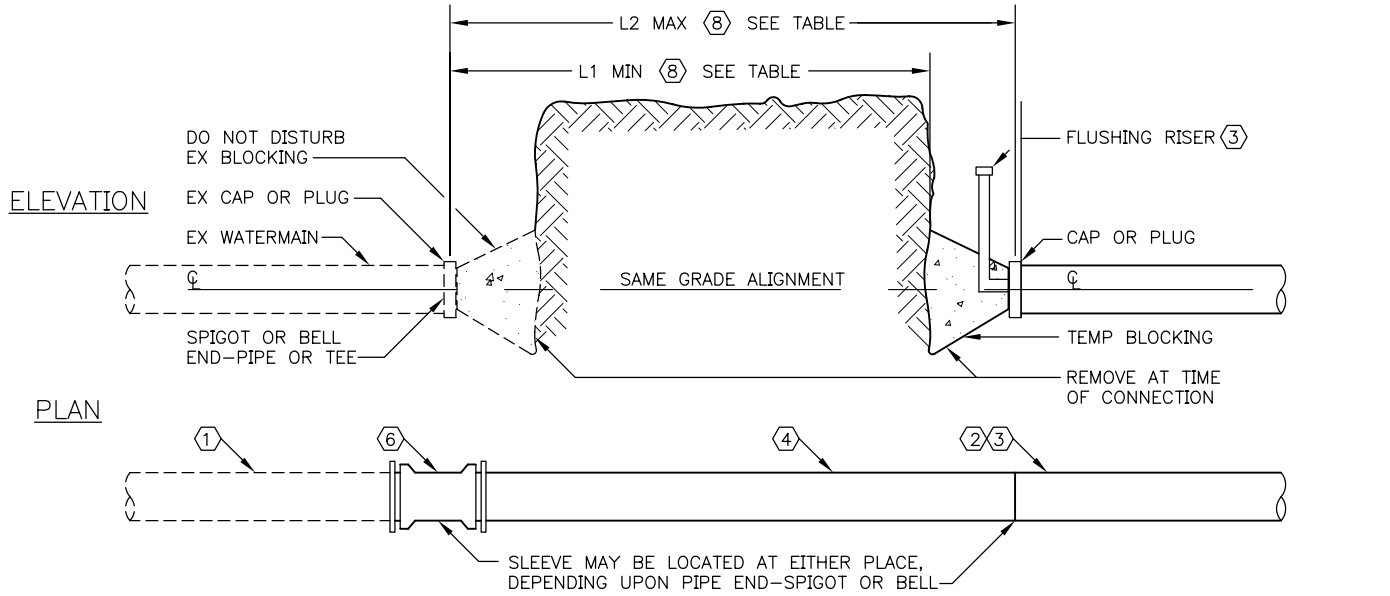
REV DATE: 2003



TABLE

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

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



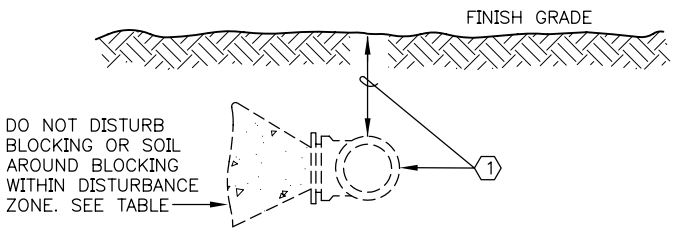
CONNECTIONS TO EXISTING MAIN, STUB OR END OUTLET OF TEE OR CROSS

REF STD SPEC SEC 7-11

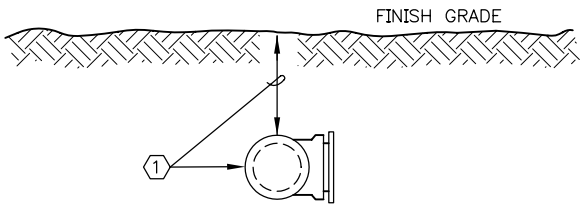
FOR LEGEND ⬡ AND NOTES SEE STD PLAN NO 300a

City of Seattle	NOT TO SCALE	CONNECTIONS TO EXISTING WATERMAINS

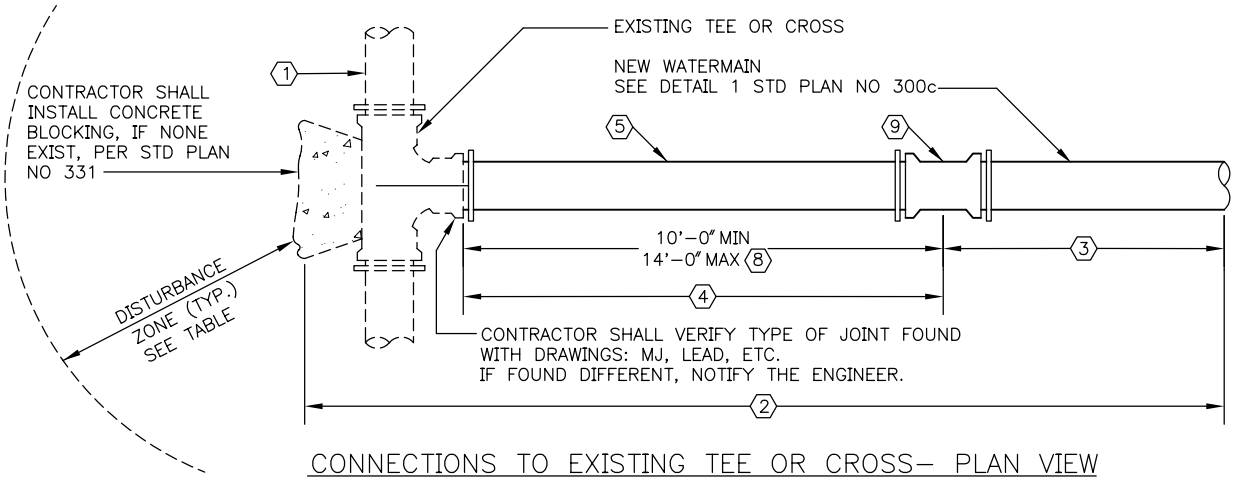
REV DATE: 2003



EXISTING PLUGGED TEE OR CROSS



NEW PLUGGED TEE OR CROSS

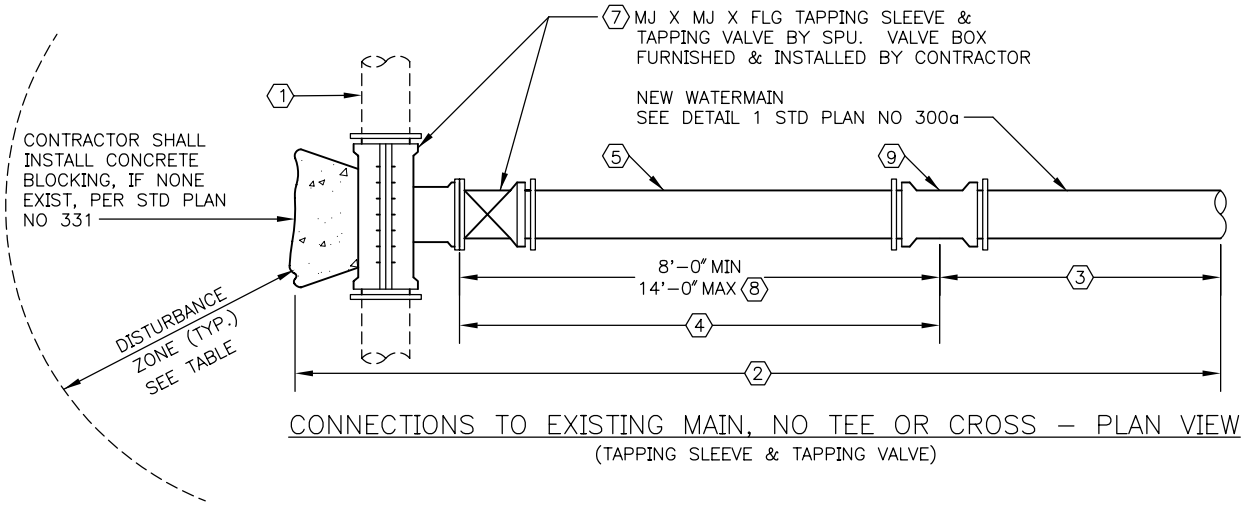


CONNECTIONS TO EXISTING TEE OR CROSS– PLAN VIEW

TABLE

SIZE WATERMAIN	DISTURBANCE ZONE
UP TO & INCLUDING 10"ø	10'–0"
OVER 10"ø	12'–0"

* SPU MAY INCREASE DISTURBANCE ZONE.
SEE CONTRACT DOCUMENTS



CONNECTIONS TO EXISTING MAIN, NO TEE OR CROSS – PLAN VIEW
(TAPPING SLEEVE & TAPPING VALVE)

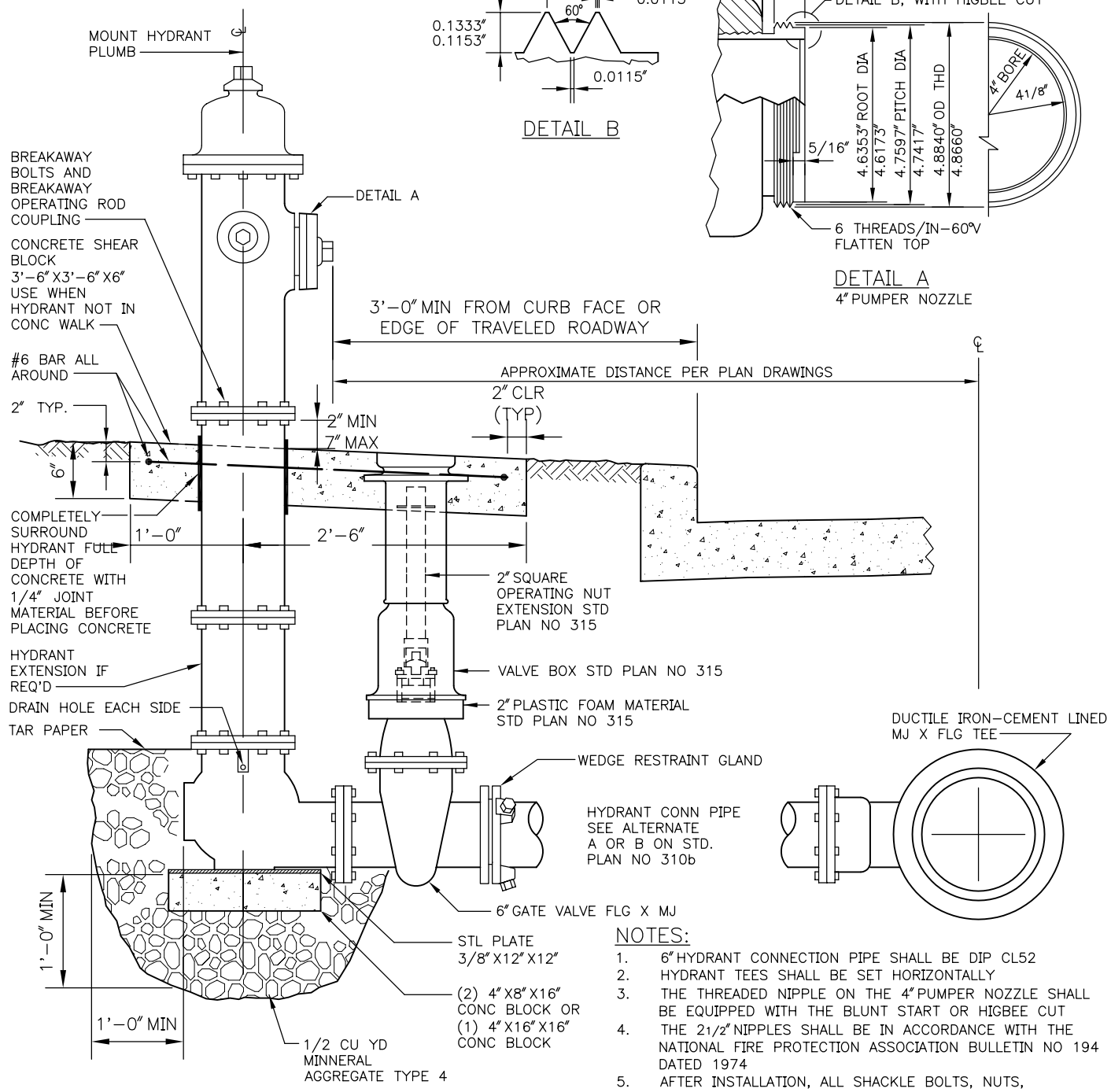
REF STD SPEC SEC 7-11

FOR LEGEND ⬡ AND NOTES SEE STD PLAN NO 300a

City of Seattle	NOT TO SCALE	CONNECTIONS TO EXISTING WATERMAINS

STANDARD PLAN NO 310a

REV DATE: 2008



HYDRANT DETAIL

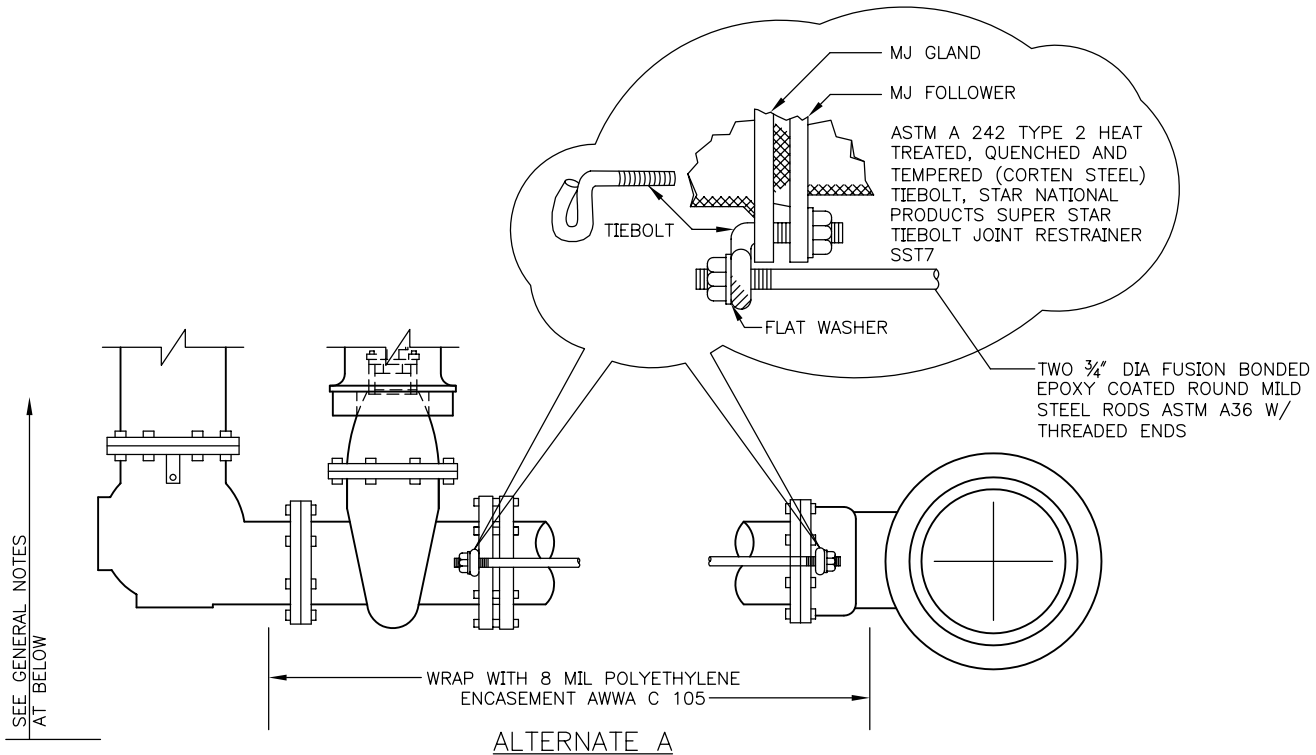
NOTES:

1. 6" HYDRANT CONNECTION PIPE SHALL BE DIP CL52
2. HYDRANT TEES SHALL BE SET HORIZONTALLY
3. THE THREADED NIPPLE ON THE 4" PUMPER NOZZLE SHALL BE EQUIPPED WITH THE BLUNT START OR HIGBEE CUT
4. THE 2 1/2" NIPPLES SHALL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION BULLETIN NO 194 DATED 1974
5. AFTER INSTALLATION, ALL SHACKLE BOLTS, NUTS, MECHANICAL JOINT GLANDS AND SHACKLE RODS SHALL BE CLEANED AND COATED WITH TWO COATS OF ROYSTON R28 MASTIC.
6. AFTER BACKFILLING, THE OUTSIDE OF THE HYDRANT (ABOVE THE GROUND LINE) SHALL BE THOROUGHLY CLEANED AND PAINTED WITH TWO COATS OF KELLY-MOORE LUXLITE 43-616 CAT YELLOW
7. PUMPER PORT TO FACE CURB
8. RESTRAINT SHALL BE BY WEDGE RESTRAINT SYSTEM SUCH AS MEGALUG OR UNIFLANGE. SEE STD SPEC 9-30.5(5)

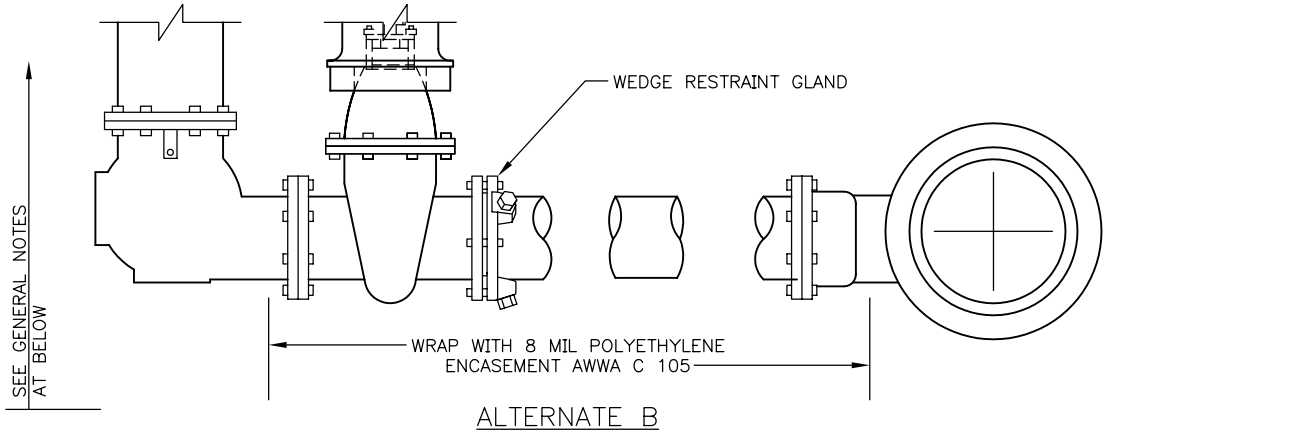
REF STD SPEC SEC 7-14

City of Seattle	NOT TO SCALE	TYPE 310 HYDRANT SETTING DETAIL

REV DATE: 2008



ALTERNATE A
TIEBOLT RESTRAINT



ALTERNATE B
MECHANICAL JOINT W/ WEDGE RESTRAINT GLANDS

GENERAL NOTES:

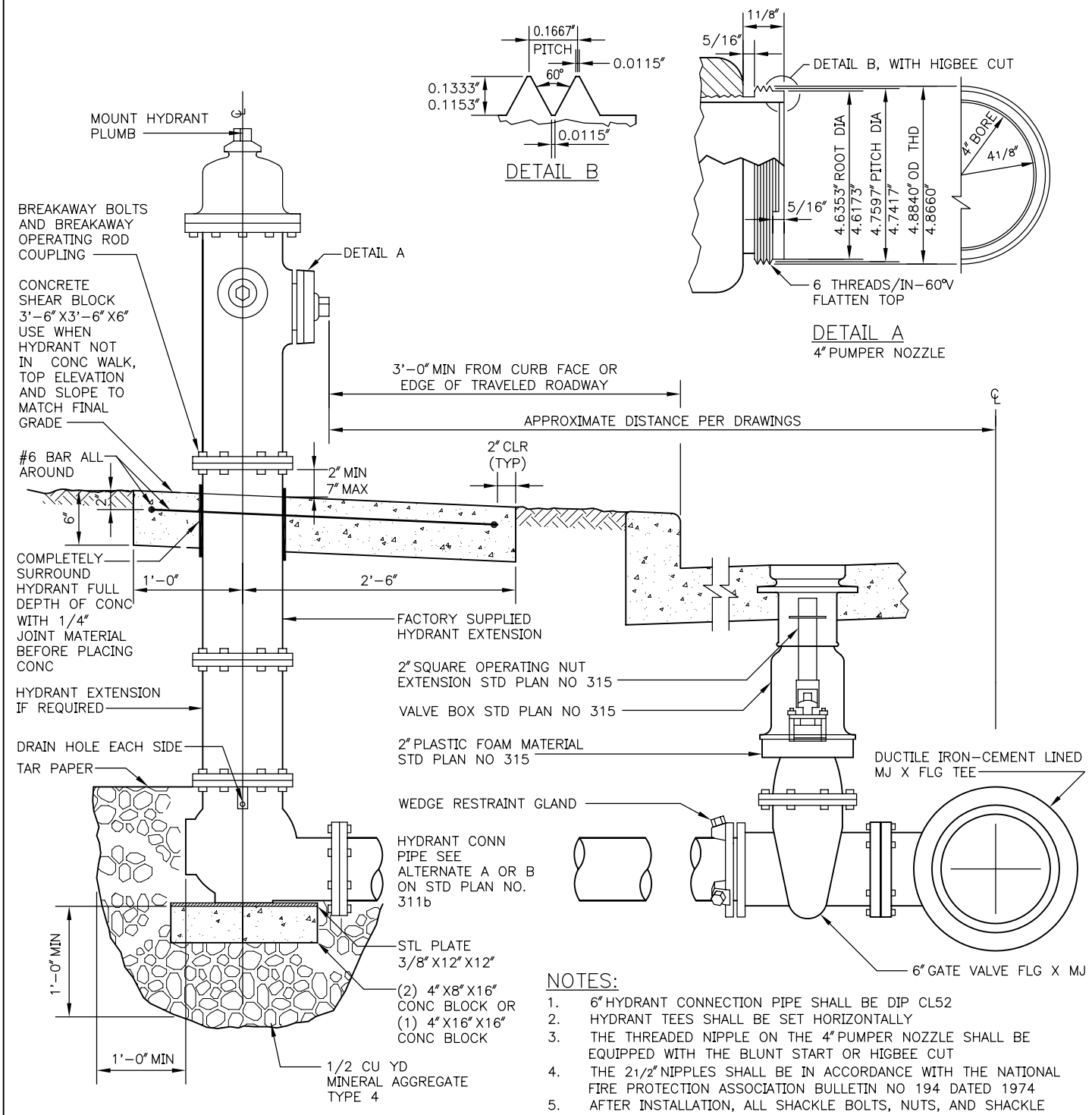
1. WHERE WATERMAINS ARE INSTALLED WITH POLYETHYLENE ENCASEMENT OR TAPE COATINGS, THE HYDRANT BARREL AND VALVE SHALL BE SIMILARLY ENCASED, COATED AND/OR JOINTS BONDED. WHERE WATERMAIN IS THERMOPLASTIC COATED, THE HYDRANT BARREL SHALL BE TAPE COATED
2. WHERE 6" GATE VALVE IS TO BE LOCATED WITHIN A PARKING–PERMITTED AREA, A SECOND 6" GATE VALVE SHALL 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

STANDARD PLAN NO 311a

REV DATE: 2008



HYDRANT DETAIL

DETAIL B

DETAIL A
4" PUMPER NOZZLE

NOTES:

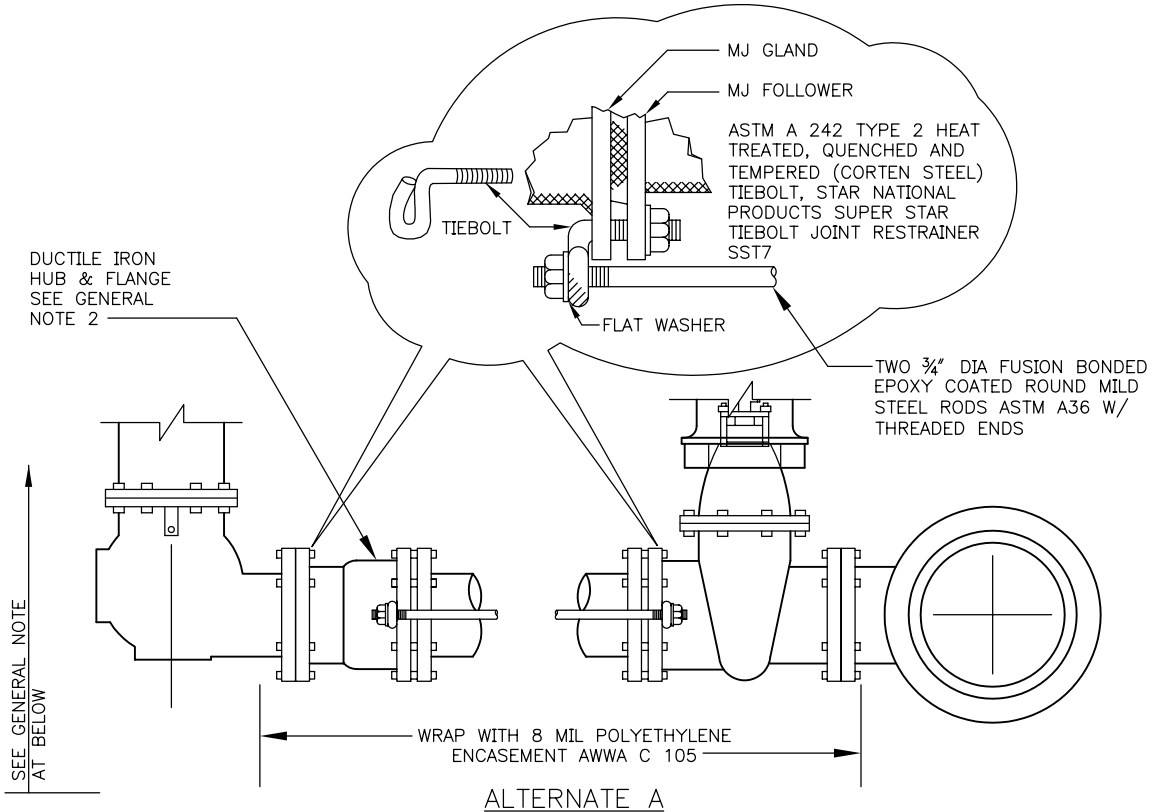
1. 6" HYDRANT CONNECTION PIPE SHALL BE DIP CL52
2. HYDRANT TEES SHALL BE SET HORIZONTALLY
3. THE THREADED NIPPLE ON THE 4" PUMPER NOZZLE SHALL BE EQUIPPED WITH THE BLUNT START OR HIGBEE CUT
4. THE 2 1/2" NIPPLES SHALL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION BULLETIN NO 194 DATED 1974
5. AFTER INSTALLATION, ALL SHACKLE BOLTS, NUTS, AND SHACKLE RODS SHALL BE CLEANED AND COATED WITH TWO COATS OF ASPHALT, ROYSTON ROSKOTE R28
6. AFTER BACKFILLING, THE OUTSIDE OF THE HYDRANT (ABOVE THE GROUND LINE) SHALL BE THOROUGHLY CLEANED AND PAINTED WITH TWO COATS OF KELLY-MOORE LUXLITE 43-616 CAT YELLOW
7. PUMPER PORT TO FACE CURB
8. PUMPER PORT TO BE FITTED WITH QUICK CONNECT ADAPTOR PER FIRE MARSHAL
9. RESTRAINT SHALL BE BY WEDGE RESTRAINT SYSTEM USCH AS MEGALUG OR UNIFLANGE. SEE STD SPEC SEC 9-30.5(5).

REF STD SPEC SEC 7-14

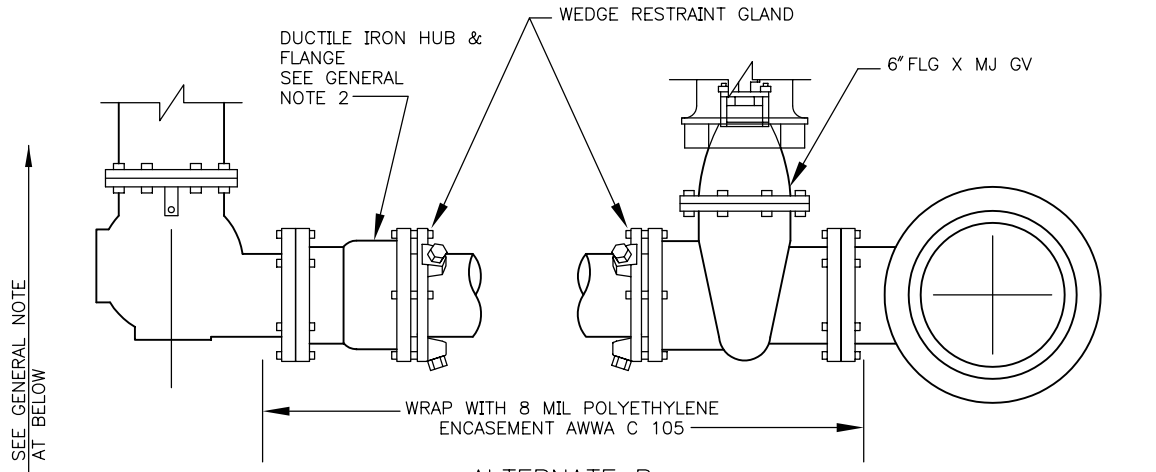
City of Seattle	NOT TO SCALE	TYPE 311 HYDRANT SETTING DETAIL

STANDARD PLAN NO 311b

REV DATE: 2008



ALTERNATE A
TIEBOLT RESTRAINT



ALTERNATE B
MECHANICAL JOINT W/ WEDGE RESTRAINT GLANDS

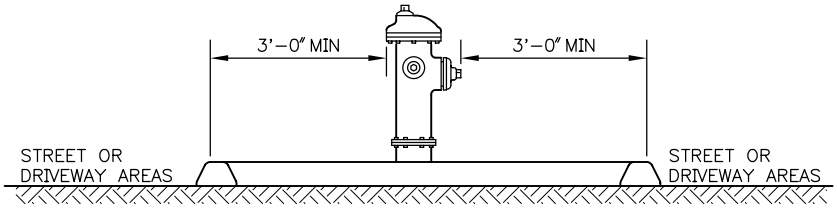
GENERAL NOTES:

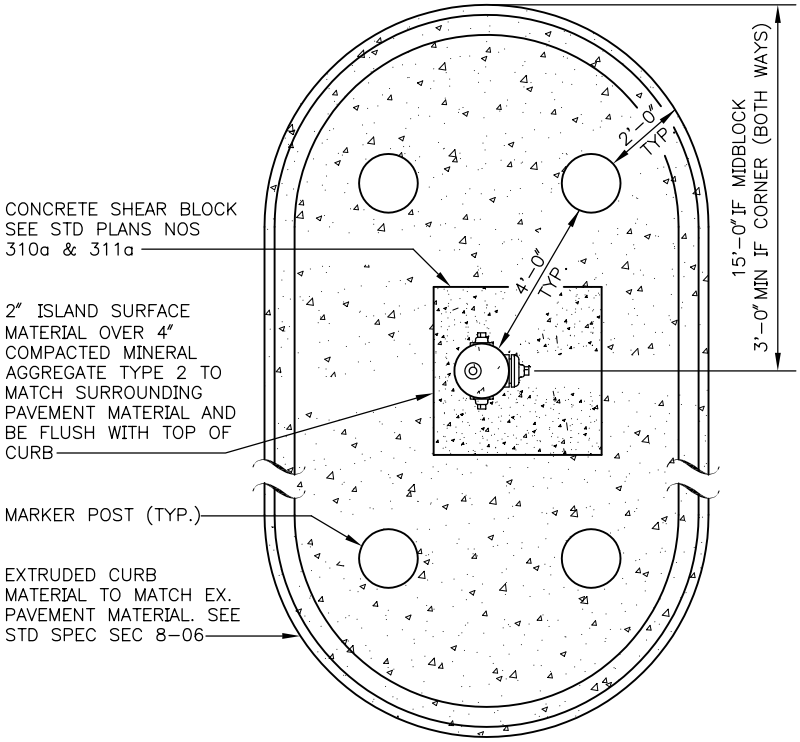
1. WHERE WATERMAINS ARE INSTALLED WITH POLYETHYLENE ENCASEMENT OR TAPE COATINGS, THE HYDRANT BARREL AND VALVE SHALL BE SIMILARLY ENCASED, COATED AND/OR JOINTS BONDED. WHERE WATERMAIN IS THERMOPLASTIC COATED, THE HYDRANT BARREL SHALL BE TAPE COATED
2. WHERE 6" GATE VALVE IS TO BE LOCATED WITHIN A PARKING–PERMITTED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

REF STD SPEC SEC 7-14

City of Seattle	NOT TO SCALE	TYPE 311 HYDRANT SETTING DETAIL

REV DATE: 2008

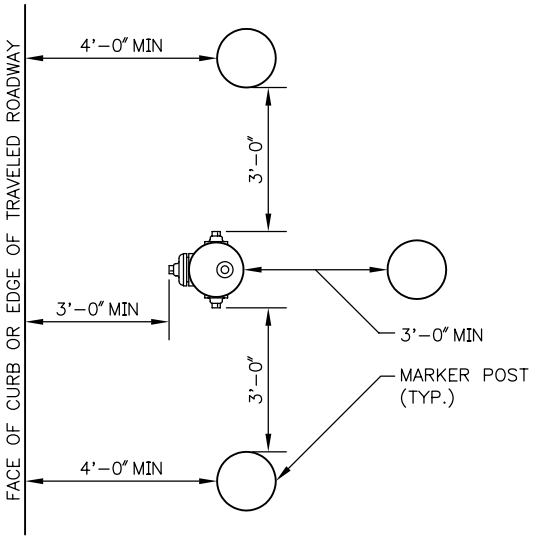




TRAFFIC ISLAND MARKER POST LAYOUT FOR
FIRE HYDRANTS IN PARKING AREAS

NOTES

1. LAYOUT OF MARKER POST SHALL BE VERIFIED FIRST WITH SPU AND SDOT
2. MARKER POST WITH HIGH INTENSITY REFLECTORIZED BANDS PROVIDED BY SPU



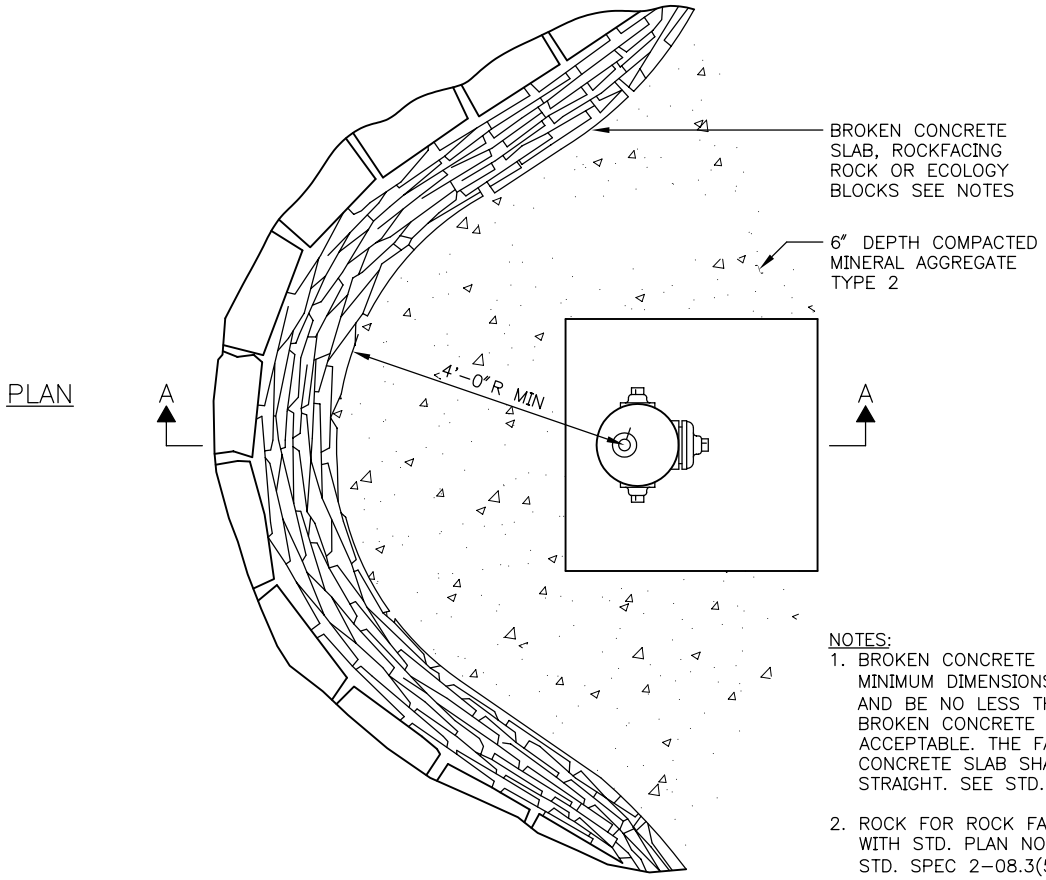
MARKER POST LAYOUT FOR
FIRE HYDRANTS IN PARKING AREAS

REF STD SPEC SEC 7-14

City of Seattle	NOT TO SCALE	FIRE HYDRANT MARKER LAYOUT

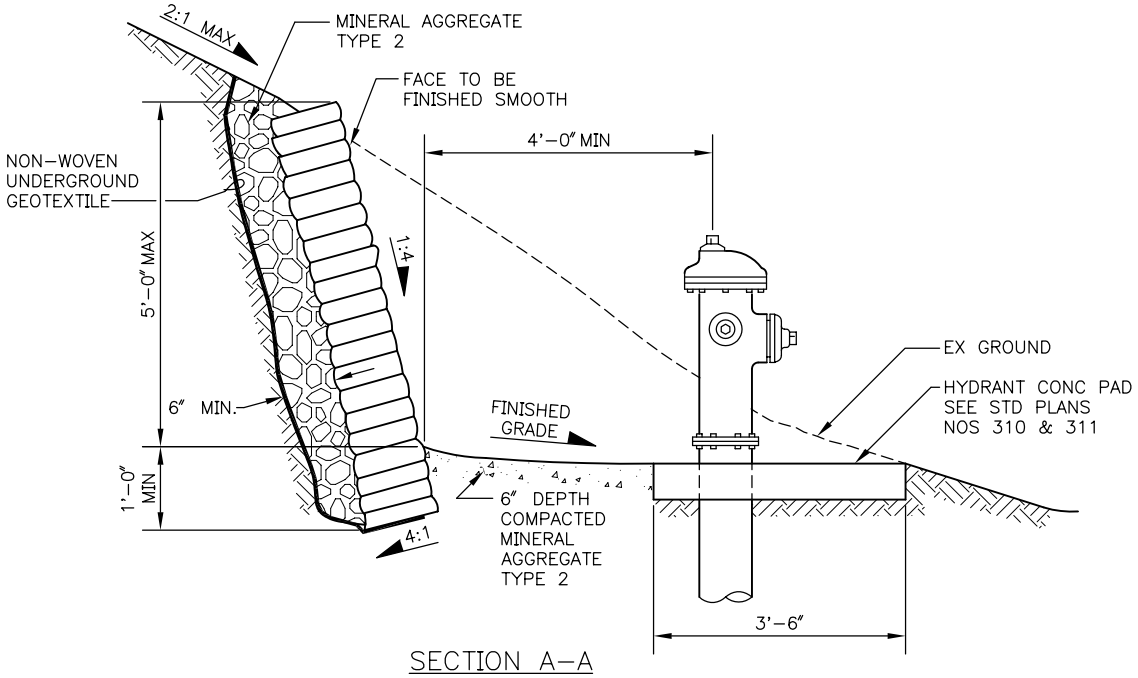
STANDARD PLAN NO 313

REV DATE: 2003



NOTES:

1. BROKEN CONCRETE SLABS SHALL HAVE MINIMUM DIMENSIONS OF 3'-0" x 1'-6" AND BE NO LESS THAN 3 1/2" THICK. BROKEN CONCRETE SIDEWALK IS ACCEPTABLE. THE FACE SIDE OF CONCRETE SLAB SHALL BE STRAIGHT. SEE STD. SPEC SEC 8-15.3(5)A
2. ROCK FOR ROCK FACING SHALL COMPLY WITH STD. PLAN NO. 141 SEE STD. SPEC 2-08.3(5)



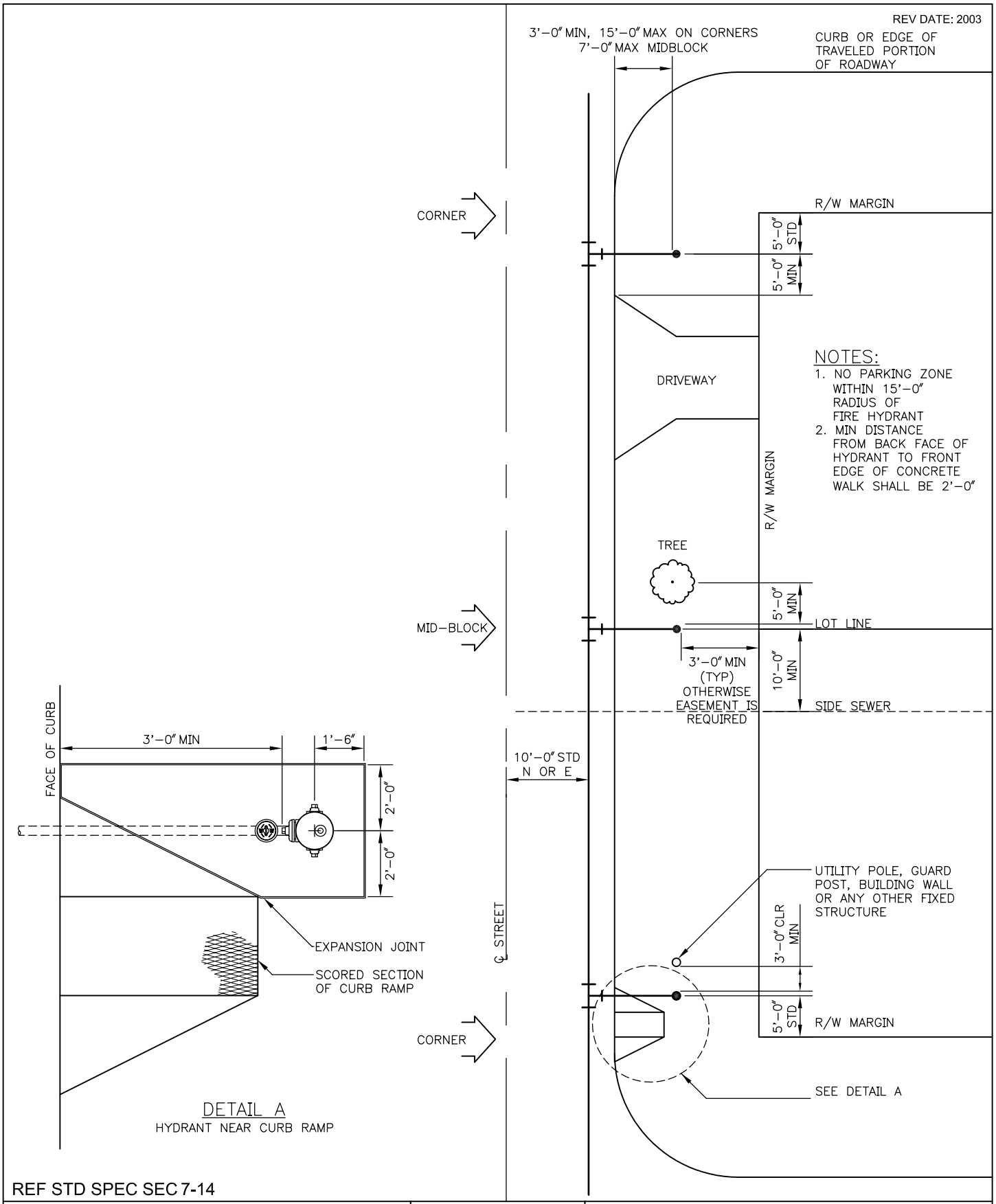
SECTION A-A

REF STD SPEC SEC 2-08, 7-14 & 8-15

City of Seattle	NOT TO SCALE	WALL REQUIREMENTS FOR HYDRANTS

STANDARD PLAN NO 314

REV DATE: 2003

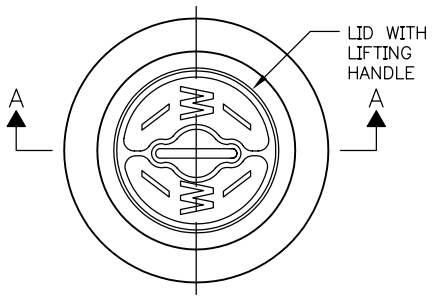


REF STD SPEC SEC 7-14

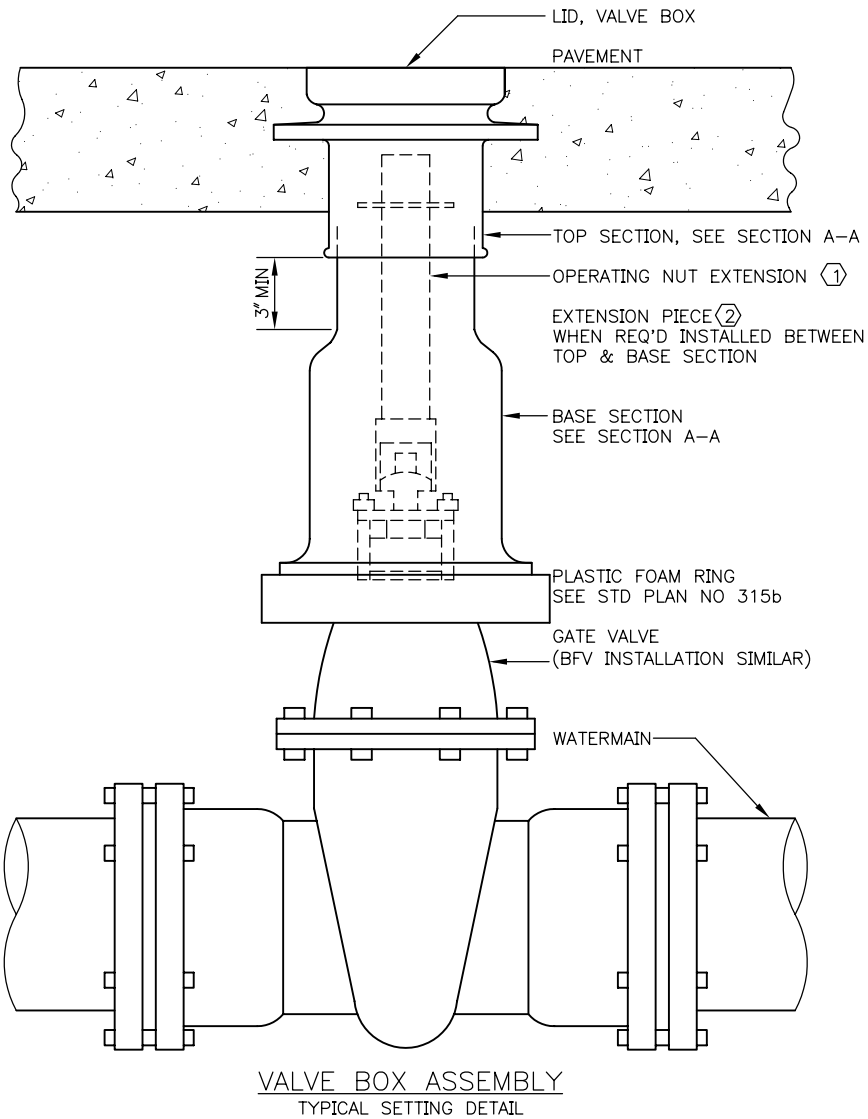
City of Seattle	NOT TO SCALE	FIRE HYDRANT LOCATIONS & CLEARANCES

STANDARD PLAN NO 315a

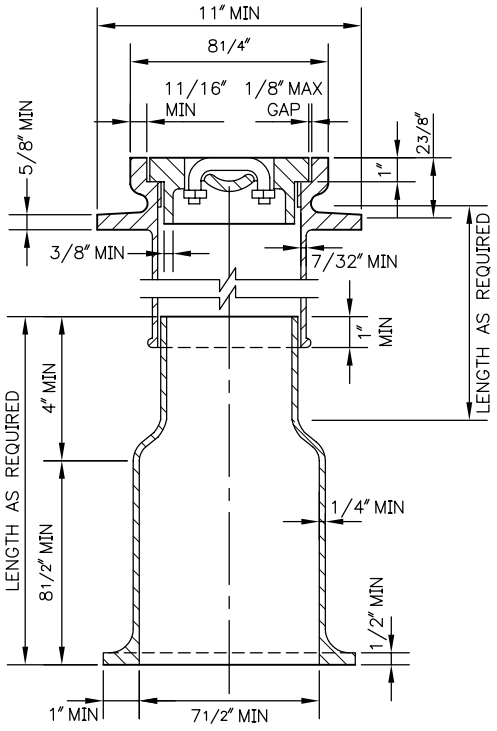
REV DATE: 2003



PLAN



VALVE BOX ASSEMBLY
TYPICAL SETTING DETAIL



SECTION A–A

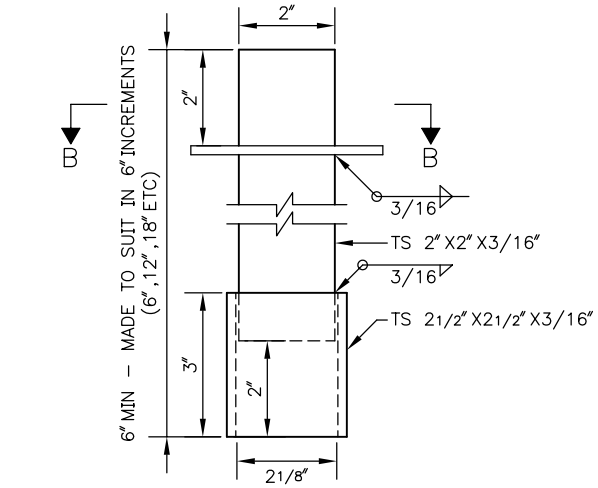
NOTE:
VALVE BOX FOR USE ON 12" OR SMALLER VALVE INSTALLATIONS

REF STD SPEC SEC 7-12

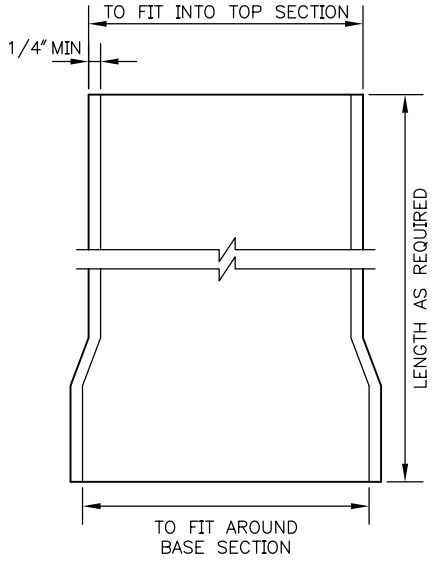
FOR LEGEND ⬡ AND NOTES SEE STD PLAN NO 315b

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

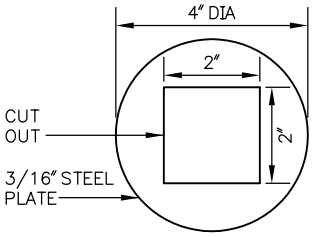
REV DATE: 2003



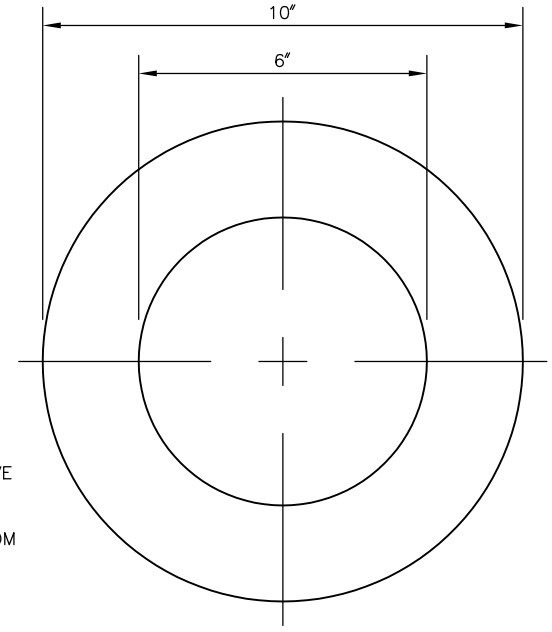
OPERATING NUT EXTENSION DETAIL 1



EXTENSION PIECE 2
WHEN REQUIRED



SECTION B–B



PLASTIC FOAM RING DETAIL

NOTES:

1. FRAME AND COVER SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS FOR DELIVERY
2. CASTINGS AND EXTENSIONS SHALL BE HOT–DIPPED IN ASPHALTIC VARNISH ROYSTON ROSKOTE #612XM OR 2 COATS OF MASTIC ROYSTON INSIDE AND OUT.
3. VALVE BOXES SHALL BE RICH #045: TOP SECTION, LID AND BASE; OR OLYMPIC FOUNDRY: LID #1908–33, TOP SECTION #1106–33, BASE SECTION #1301–33
4. ALL CASTINGS SHALL BE DUCTILE OR GREY CAST IRON

LEGEND:

(1) AN OPERATING NUT EXTENSION SHALL BE INSTALLED WHEN THE GROUND SURFACE IS MORE THAN 2′–6″ ABOVE THE VALVE OPERATING NUT. THE OPERATING NUT EXTENSION SHALL EXTEND INTO THE TOP SECTION OF THE STANDARD VALVE BOX AND SHALL CLEAR THE BOTTOM OF THE LID BY 6″ MIN

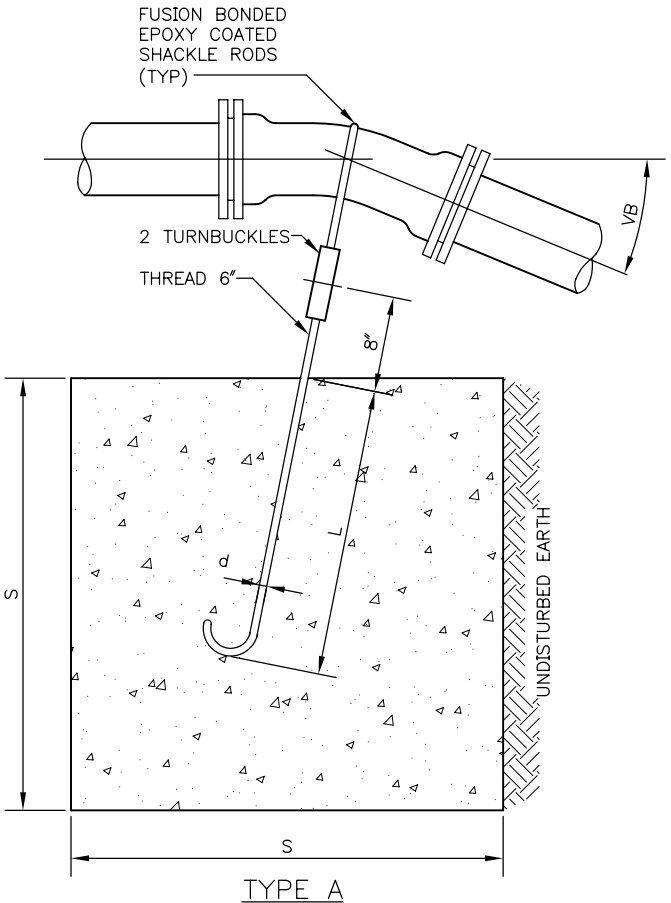
(2) EXTENSION PIECES (WHEN USED) SHALL CONFORM TO MINIMUM THICKNESS REQUIREMENTS AND SHALL FIT INTO THE TOP SECTION AND OVER THE BOTTOM SECTION

REF STD SPEC SEC 7-12 & 9-30

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

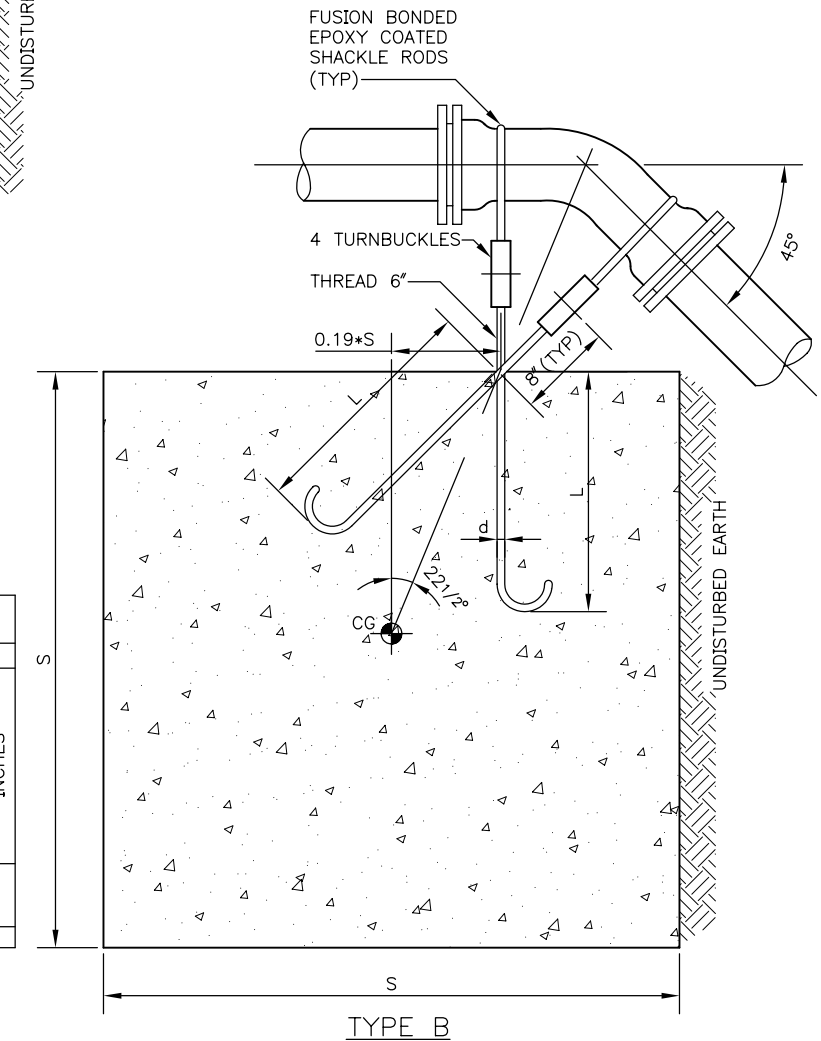
STANDARD PLAN NO 330a

REV DATE: 2003



TYPE A

TYPE A BLOCKING FOR 11 1/4° & 22 1/2° VERTICAL BENDS						
		VB		S	d	L
PIPE SIZE NOM DIA INCHES	TEST PRESSURE PSI	VERTICAL BEND DEGREES	NO OF CU FT OF CONC BLOCKING	SIDE OF CUBE FEET	DIA OF SHACKLE RODS (2) INCHES	DEPTH OF RODS IN CONCRETE INCHES
4"	300	11 1/4	8	2	3/4	18
		22 1/2	12	2 1/4		24
6"	300	11 1/4	12	2 1/4	3/4	24
		22 1/2	27	3		
8"	300	11 1/4	16	2 1/2	3/4	24
		22 1/2	43	3 1/2		
12"	300	11 1/4	64	4	1	24
		22 1/2	125	5	1	36



TYPE B

TYPE B BLOCKING FOR 45° VERTICAL BENDS						
		VB		S	d	L
PIPE SIZE NOM DIA INCHES	TEST PRESSURE PSI	VERTICAL BEND DEGREES	NO OF CU FT OF CONC BLOCKING	SIDE OF CUBE FEET	DIA OF SHACKLE RODS (4) INCHES	DEPTH OF RODS IN CONCRETE INCHES
4"	300	45	27	3	3/4	20
6"			64	4		
8"			125	5		
12"			216	6	1	30

FOR NOTES SEE STD PLAN NO 330b

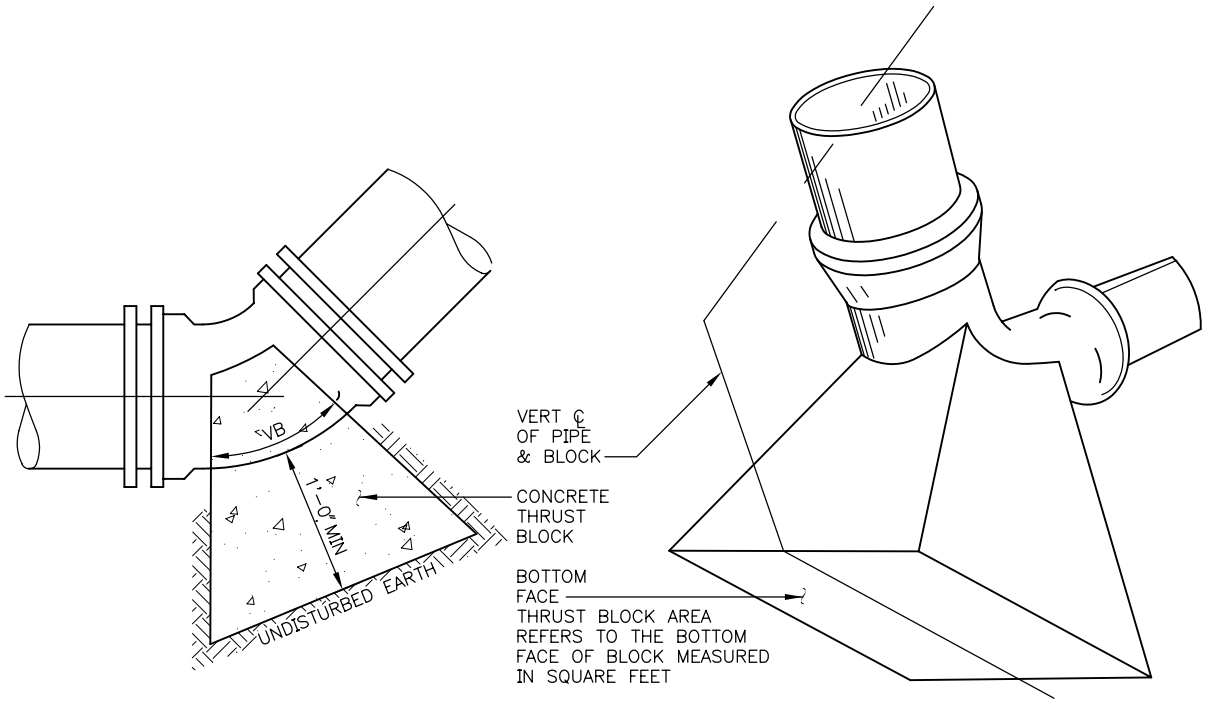
REF STD SPEC SEC 7-11

City of Seattle

NOT TO SCALE

WATERMAIN THRUST BLOCKING
VERTICAL FITTINGS

REV DATE: 2003



TYPE C

TYPE "C" BLOCKING FOR 11 1/4°, 22 1/2°, 45° AND 90° VERTICAL BENDS THRUST BLOCK AREA IN SQUARE FEET									
SOIL	FIRM SILT OR FIRM SILTY SAND			COMPACT SAND			COMPACT SAND & GRAVEL		
PIPE SIZE / FITTING	90° BEND	TEE 45°BEND & DEAD END	11 1/4° & 22 1/2° BEND	90° BEND	TEE 45°BEND & DEAD END	11 1/4° & 22 1/2° BEND	90° BEND	TEE 45°BEND & DEAD END	11 1/4° & 22 1/2° BEND
4"	5.8	4.2	1.7	2.9	2.1	1.0	2.2	1.6	1.0
6"	13.3	9.4	3.8	6.7	4.7	1.9	5.0	3.5	1.4
8"	23.3	16.7	6.7	11.7	8.4	3.4	8.8	6.3	2.5
12"	53.0	37.5	15.0	26.5	18.8	7.5	20.0	14.0	5.6
AREAS CALCULATED ON 300 PSI TEST PRESSURE AND 3'-0" MIN COVER OVER WATERMAIN									

NOTES:

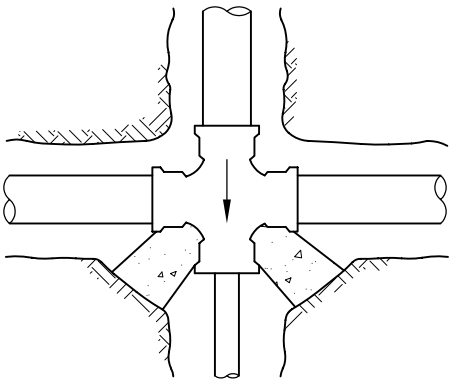
1. LOCATION AND SIZE OF BLOCKING FOR PIPE LARGER THAN 12" DIAMETER AND FOR SOIL TYPES DIFFERENT THAN SHOWN SHALL BE DETERMINED BY THE ENGINEER
2. ALL BLOCKING FOR VERTICAL FITTINGS (POURED IN PLACE) SHALL BEAR AGAINST UNDISTURBED NATIVE GROUND
3. ALL POURED THRUST BLOCKS SHALL BE BACKFILLED AFTER MIN. 1 DAY. PRESSURE TESTING SHALL OCCUR AFTER CONCRETE HAS REACHED f'c
4. ALL BLOCKING SHALL BE CONCRETE CL 5 (1 1/2)
5. AFTER INSTALLATION, SHACKLE RODS & TURNBUCKLES SHALL BE CLEANED AND COATED WITH 2 COATS OF ASPHALTIC VARNISH, ROYSTON ROYKOTE #612M OR APPROVED EQUAL
6. SHACKLE RODS SHALL BE FUSION BONDED EPOXY COATED ROUND MILD STEEL, ASTM A 36, WITH THREADS ON ENDS ONLY
7. BLOCKING AGAINST FITTINGS SHALL BEAR AGAINST THE GREATEST FITTING SURFACE AREA POSSIBLE, BUT SHALL NOT COVER OR ENCLOSE BELL ENDS, JOINT BOLTS OR GLANDS REASONABLE ACCESS TO BOLTS AND GLANDS SHALL BE PROVIDED

REF STD SPEC SEC 7-11

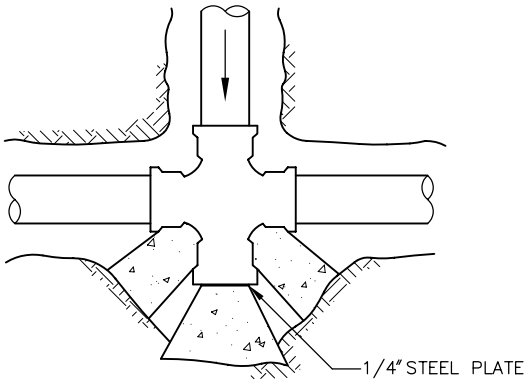
City of Seattle	NOT TO SCALE	WATERMAIN THRUST BLOCKING VERTICAL FITIINGS

STANDARD PLAN NO 331a

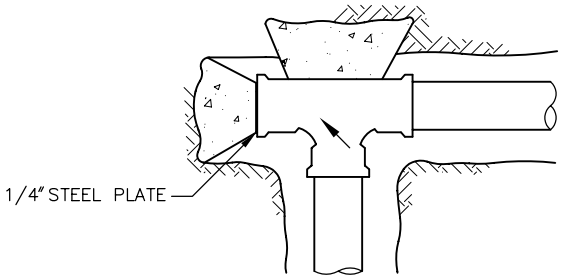
REV DATE: 2003



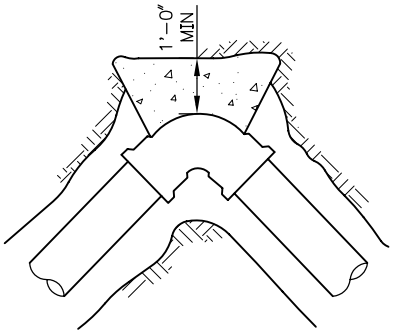
UNBALANCED CROSS



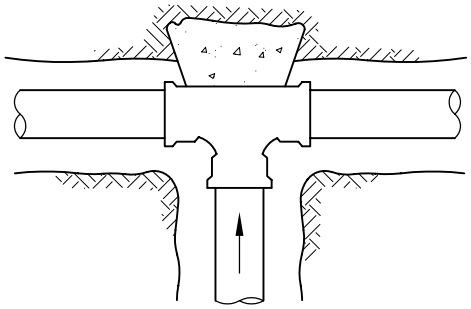
CROSS WITH PLUG



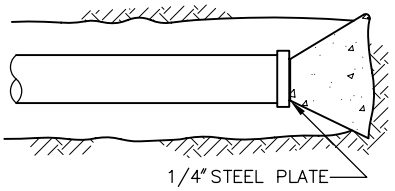
PLUGGED TEE



HORIZONTAL BEND



TEE



PIPE & CAP

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

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

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

ECOLOGY BLOCKS, PER STD PLAN NO 460, MAY BE USED IN LIEU OF POURED-IN-PLACE BLOCKING FOR FITTINGS IN SHADED PORTION OF TABLE

REF STD SPEC SEC 7-11

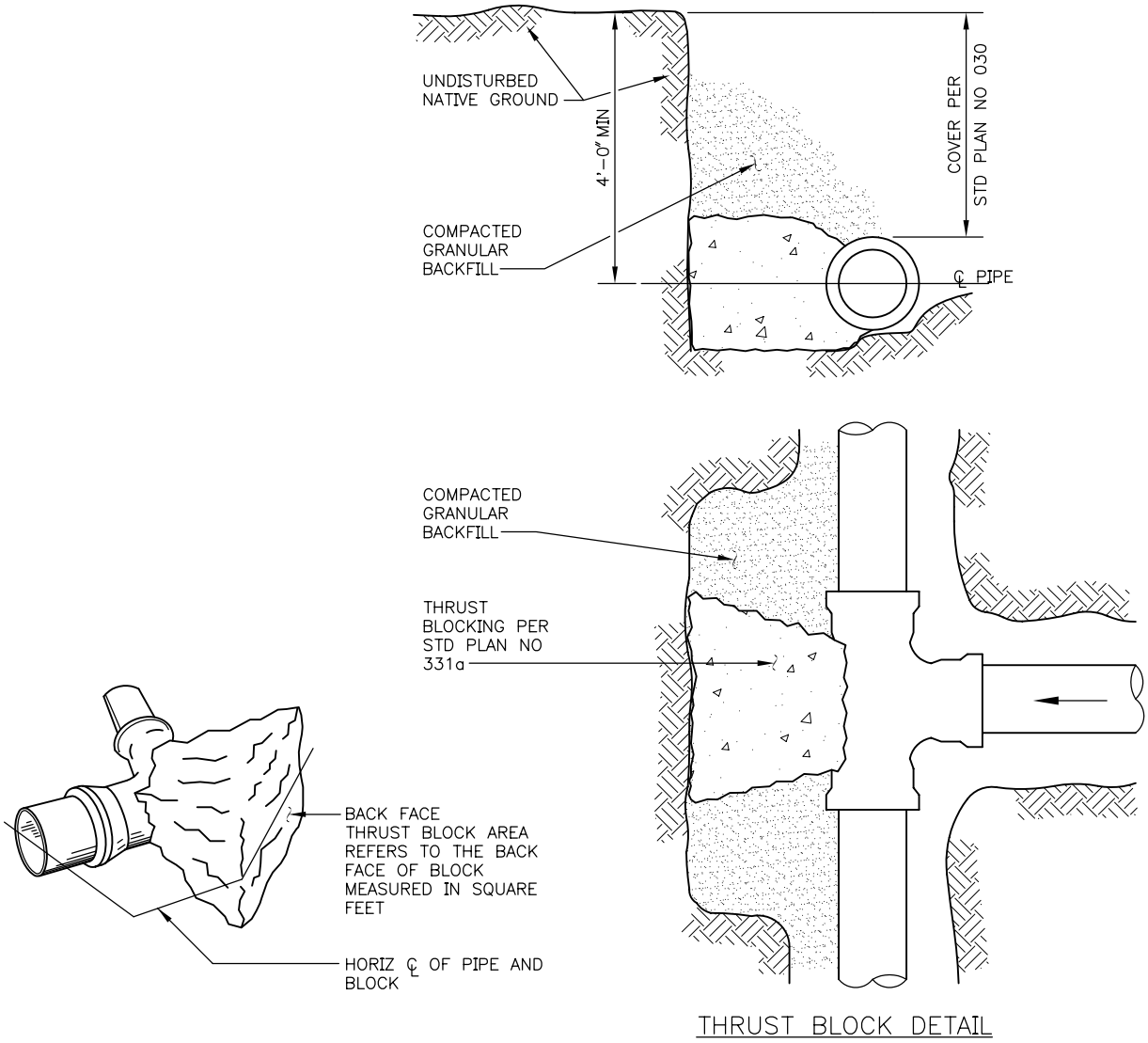
FOR NOTES SEE STD PLAN NO 331b

City of Seattle

NOT TO SCALE

WATERMAIN THRUST BLOCKING
HORIZONTAL FITTINGS

REV DATE: 2003



THRUST BLOCK DETAIL

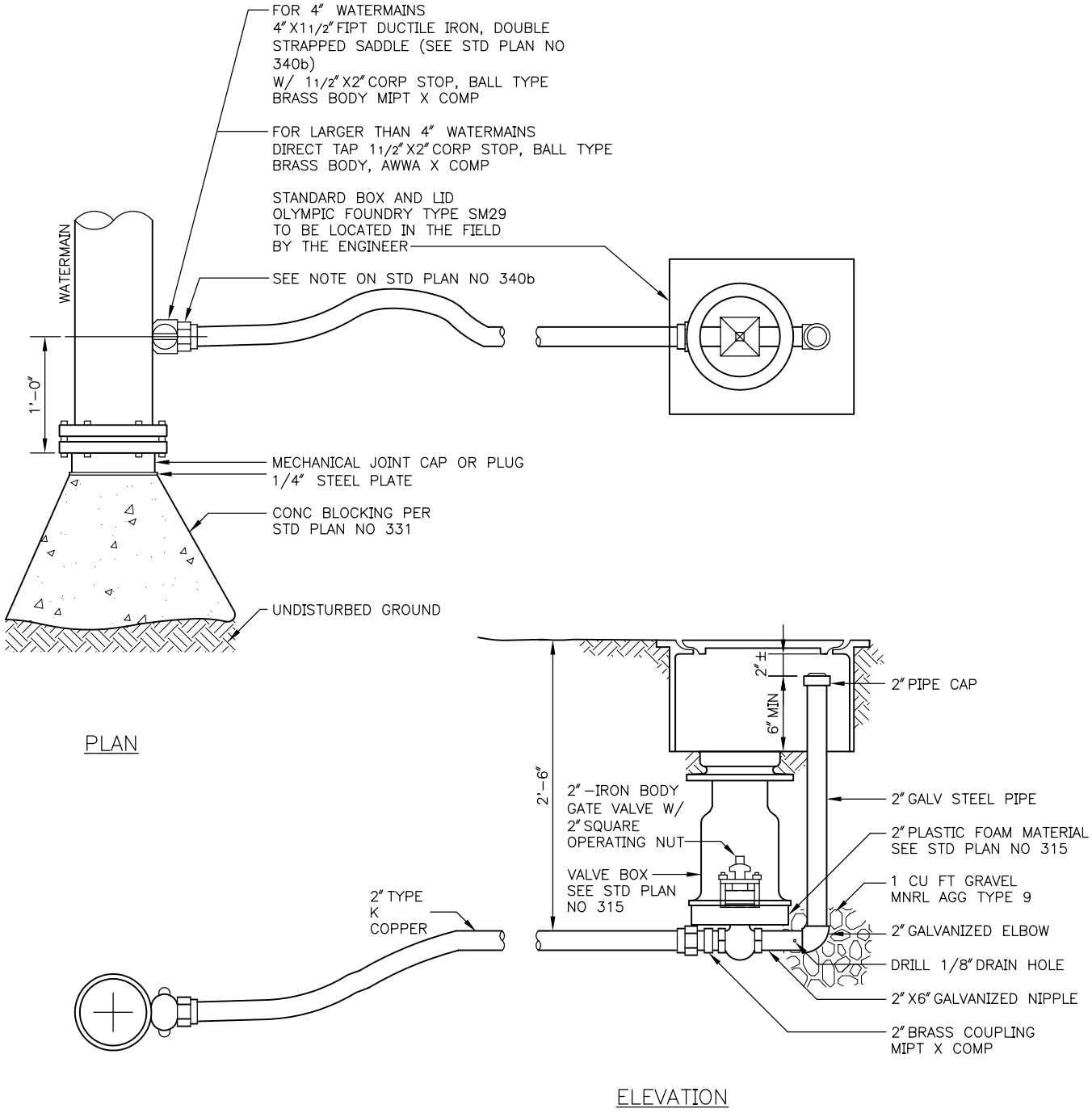
NOTES:

1. LOCATION AND SIZE OF BLOCKING FOR PIPE LARGER THAN 12" DIAMETER AND FOR SOIL TYPES DIFFERENT THAN SHOWN SHALL BE DETERMINED BY THE ENGINEER.
2. ALL BLOCKING FOR HORIZONTAL FITTINGS (POURED IN PLACE) SHALL BEAR AGAINST UNDISTURBED NATIVE GROUND.
3. ALL POURED THRUST BLOCKS SHALL BE BACKFILLED AFTER MIN. 1 DAY. PRESSURE TESTING SHALL OCCUR AFTER CONCRETE HAS REACHED f'c.
4. ALL BLOCKING TO BE CONCRETE CL 5 (1 1/2).
5. BLOCKING AGAINST FITTINGS SHALL BEAR AGAINST THE GREATEST FITTING SURFACE AREA POSSIBLE, BUT SHALL NOT COVER OR ENCLOSE BELL ENDS, JOINT BOLTS OR GLANDS. ACCESS TO BOLTS AND GLANDS SHALL BE PROVIDED.
6. ALL HORIZONTAL BLOCKING THRUST AREAS SHALL BE CENTERED ON PIPE.
7. WHERE POURED-IN-PLACE BLOCKING IS REQUIRED AT A POINT OF CONNECTION TO AN EXISTING WATERMAIN, THE BLOCKING SHALL BE INSTALLED PRIOR TO CONNECTION.
8. TEMPORARY BLOCKING, IF USED, SHALL BE APPROVED BY ENGINEER.

REF STD SPEC SEC 7-11

City of Seattle	NOT TO SCALE	WATERMAIN THRUST BLOCKING HORIZONTAL FITTINGS

REV DATE: 2003

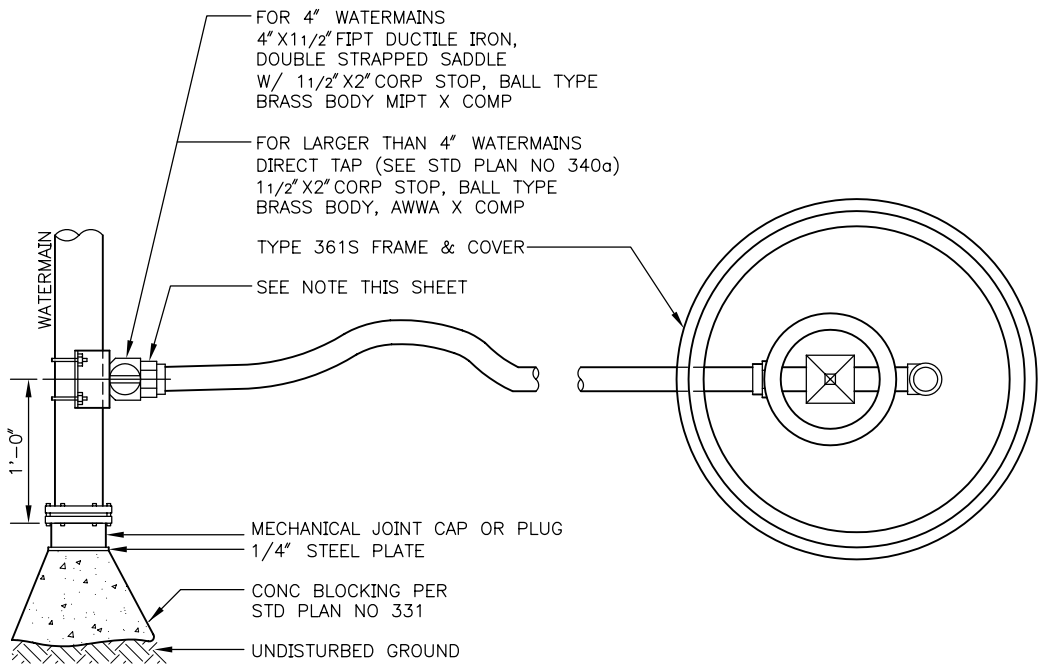


REF STD SPEC SEC 7-11

City of Seattle	NOT TO SCALE	2" BLOW OFF TYPE A NON TRAFFIC INSTALLATION

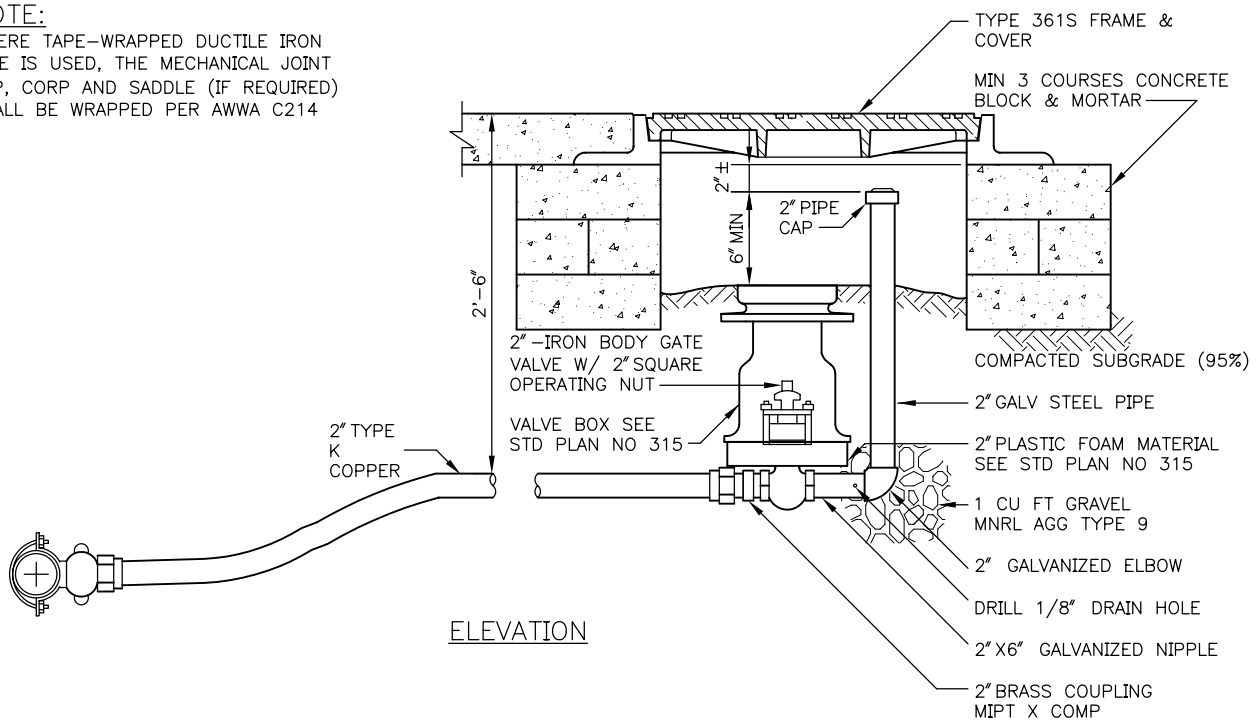
STANDARD PLAN NO 340b

REV DATE: 2003



PLAN

NOTE:
WHERE TAPE-WRAPPED DUCTILE IRON PIPE IS USED, THE MECHANICAL JOINT CAP, CORP AND SADDLE (IF REQUIRED) SHALL BE WRAPPED PER AWWA C214



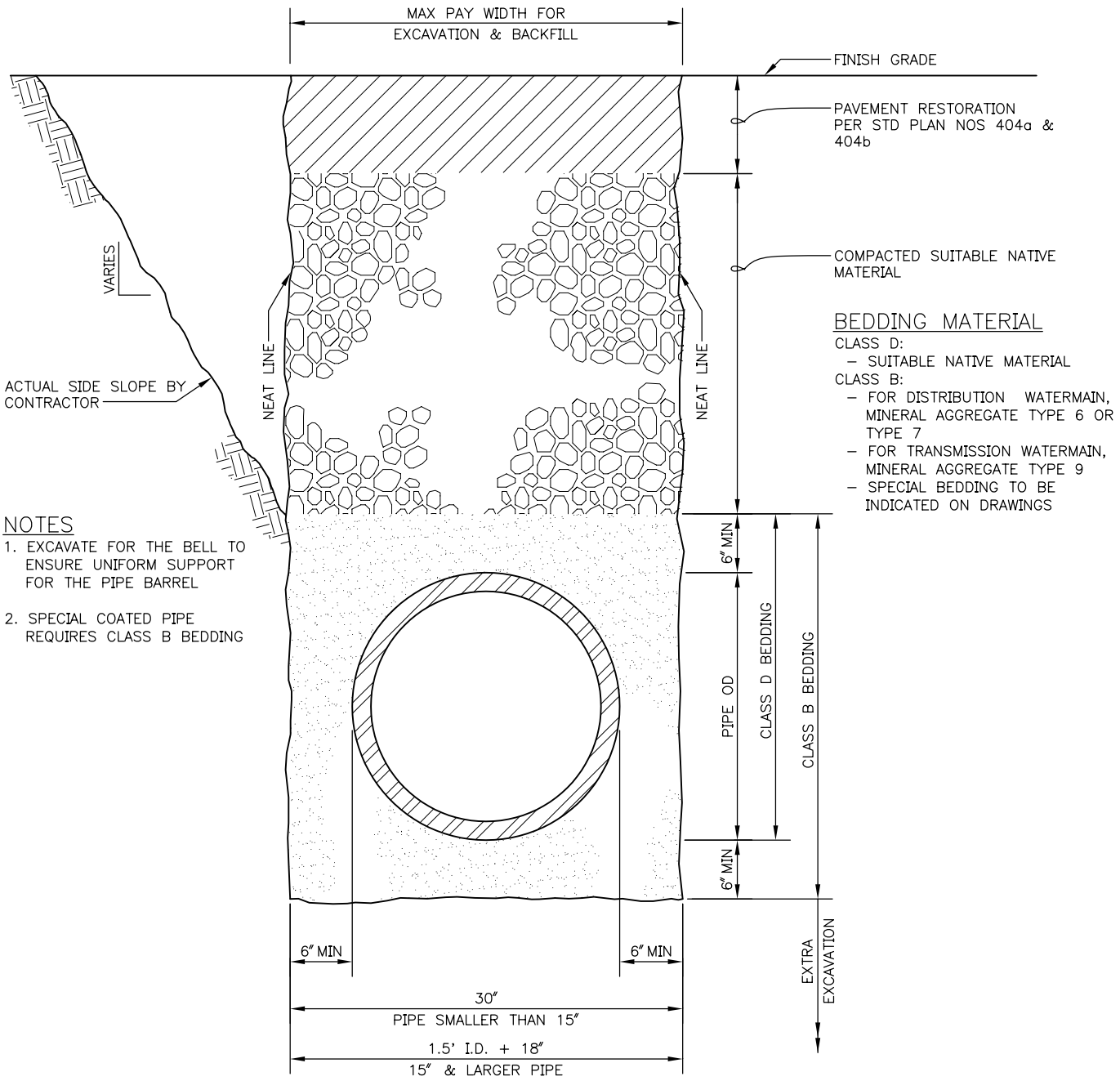
ELEVATION

REF STD SPEC SEC 7-11

City of Seattle	NOT TO SCALE	2" BLOW OFF DETAIL TYPE B TRAFFIC INSTALLATION

STANDARD PLAN NO 350

REV DATE: 2003



BEDDING MATERIAL

CLASS D:
- SUITABLE NATIVE MATERIAL

CLASS B:
- FOR DISTRIBUTION WATERMAIN, MINERAL AGGREGATE TYPE 6 OR TYPE 7
- FOR TRANSMISSION WATERMAIN, MINERAL AGGREGATE TYPE 9
- SPECIAL BEDDING TO BE INDICATED ON DRAWINGS

NOTES

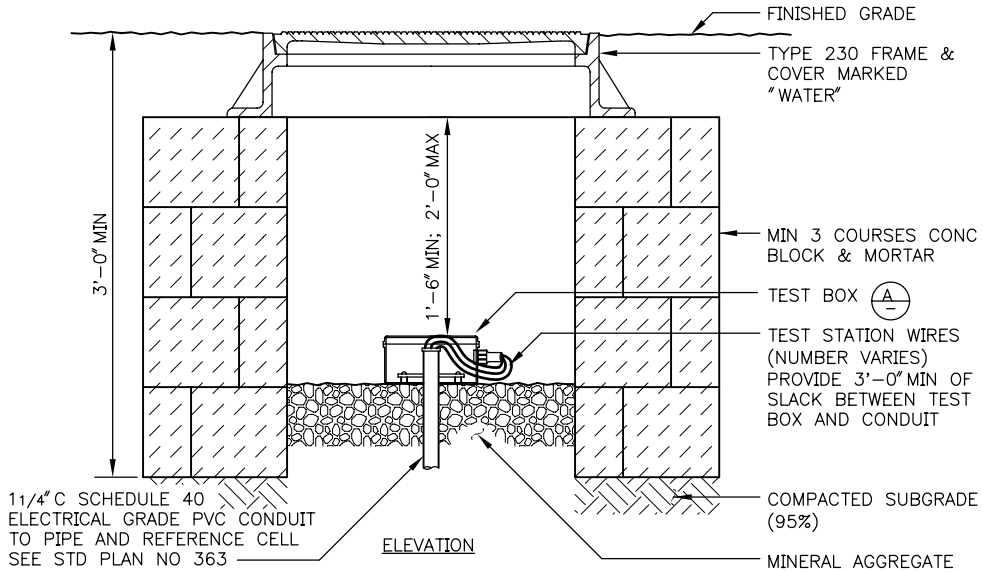
1. EXCAVATE FOR THE BELL TO ENSURE UNIFORM SUPPORT FOR THE PIPE BARREL
2. SPECIAL COATED PIPE REQUIRES CLASS B BEDDING

REF STD SPEC SEC 7-10

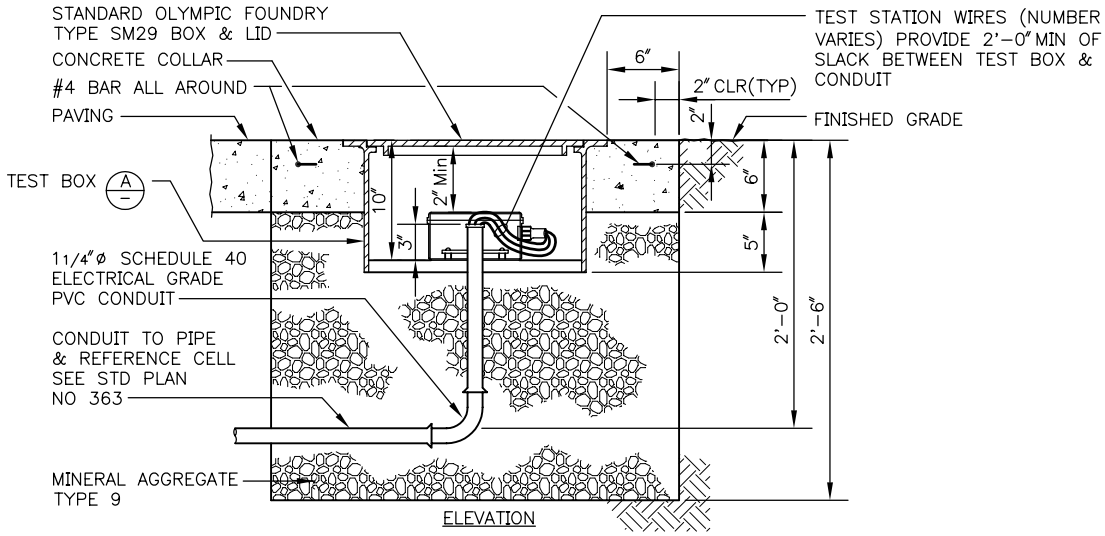
City of Seattle	NOT TO SCALE	WATERMAIN TRENCH AND BEDDING

STANDARD PLAN NO 360

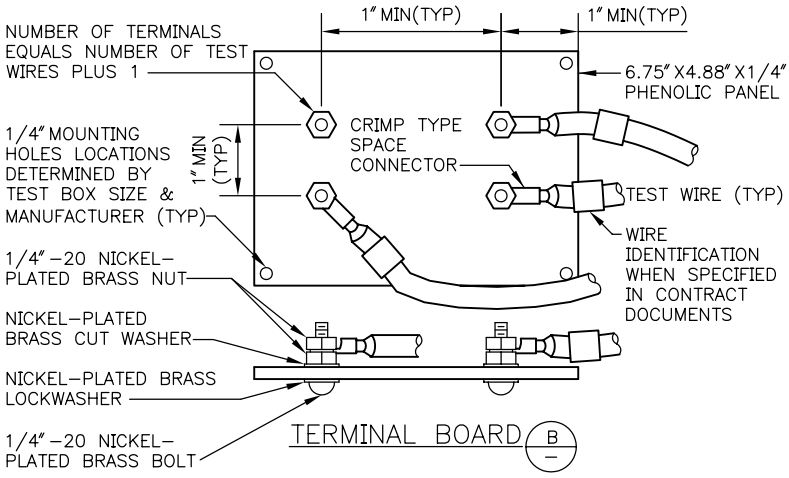
REV DATE: 2003



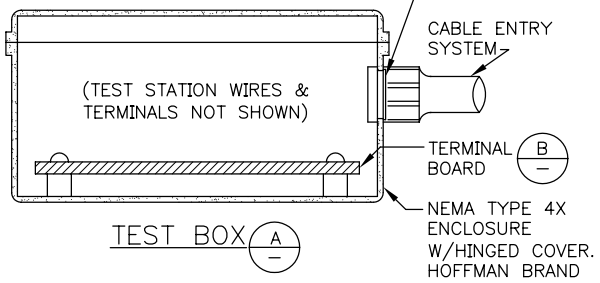
ELECTROLYSIS TEST STATION – TRAFFIC AREA



ELECTROLYSIS TEST STATION – NON-TRAFFIC AREA



TERMINAL BOARD B

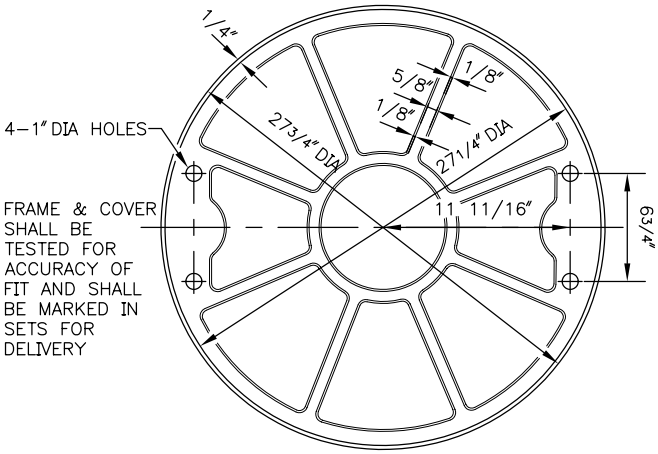


TEST BOX A

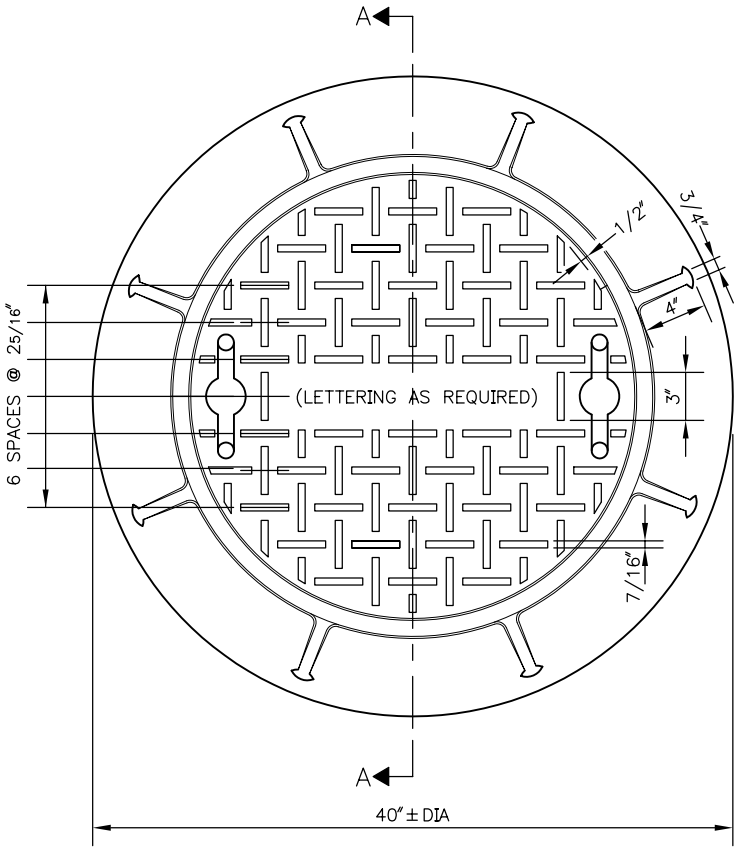
REF STD SPEC SEC 7-11

City of Seattle	NOT TO SCALE	WATERMAIN ELECTROLYSIS TEST STATION

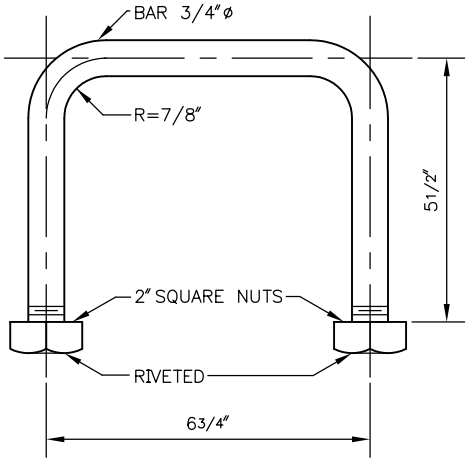
REV DATE: 2003



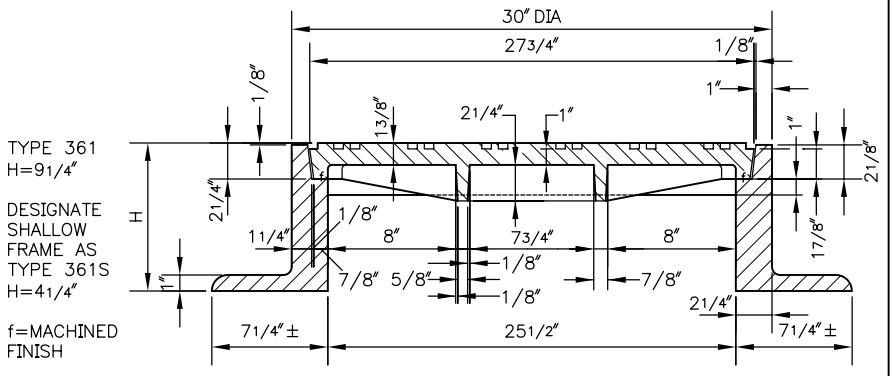
BOTTOM VIEW



TOP VIEW



LIFTING HANDLE
(2 REQUIRED)

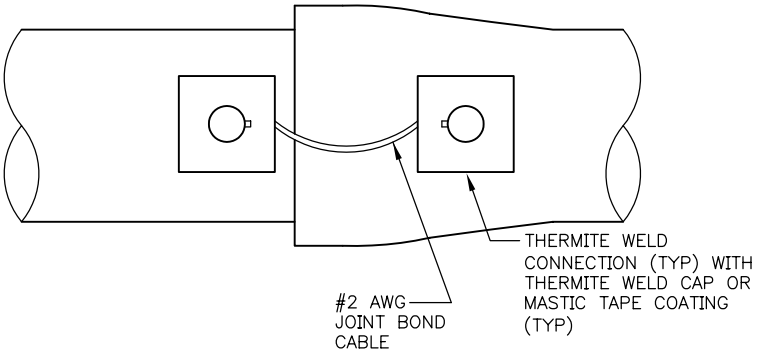


SECTION A–A

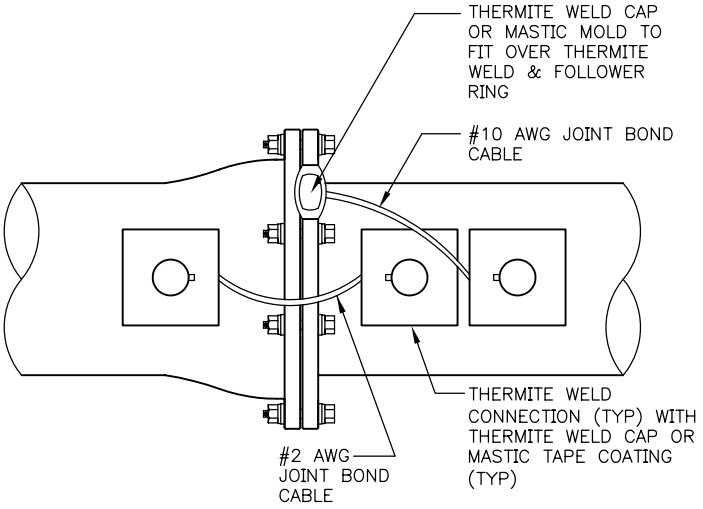
REF STD SPEC SEC 7-12

City of Seattle	NOT TO SCALE	TYPE 361 VALVE CHAMBER FRAME & COVER

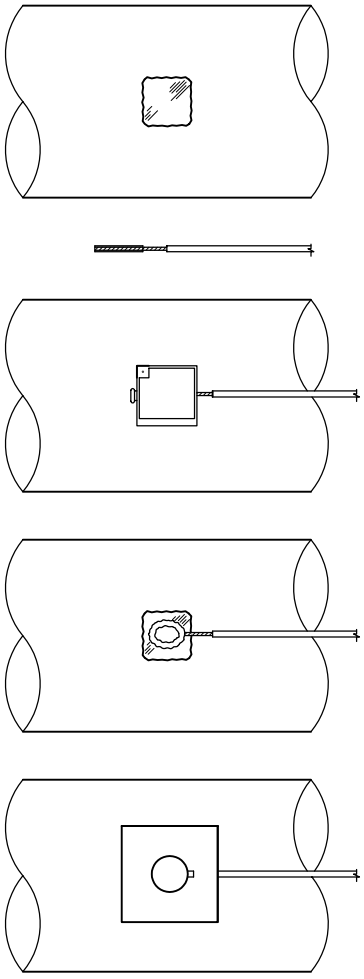
REV DATE: 2003



SLIP JOINT BOND CONNECTION



MECHANICAL JOINT BOND CONNECTION



CONNECTION SEQUENCE:

1. REMOVE PIPE COATING TO BRIGHT & CLEAN METAL
2. STRIP INSULATION FROM TEST STATION WIRE, INSTALL ADAPTER SLEEVE
3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR AND IGNITE
4. REMOVE SLAG AND ALLOW TO COOL
5. 16 OUNCE HAMMER TEST PER STD. SPEC SEC 7– 11.3(15)01
6. FINAL CONNECTION TO BE MADE WATERTIGHT WITH MASTIC COATING OR PREFORMED THERMITE WELD CAP

THERMITE WELD CONNECTION

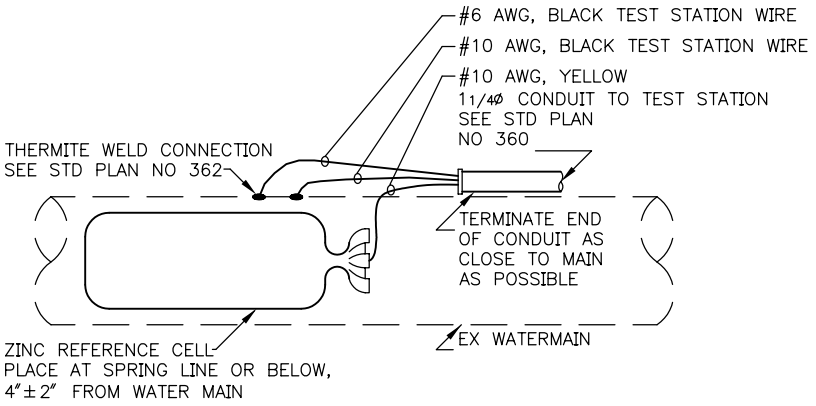
REF STD SPEC SEC 7-11

City of Seattle	NOT TO SCALE	JOINT BONDING FOR DIP WATERMAINS & JOINTS BONDING DETAIL

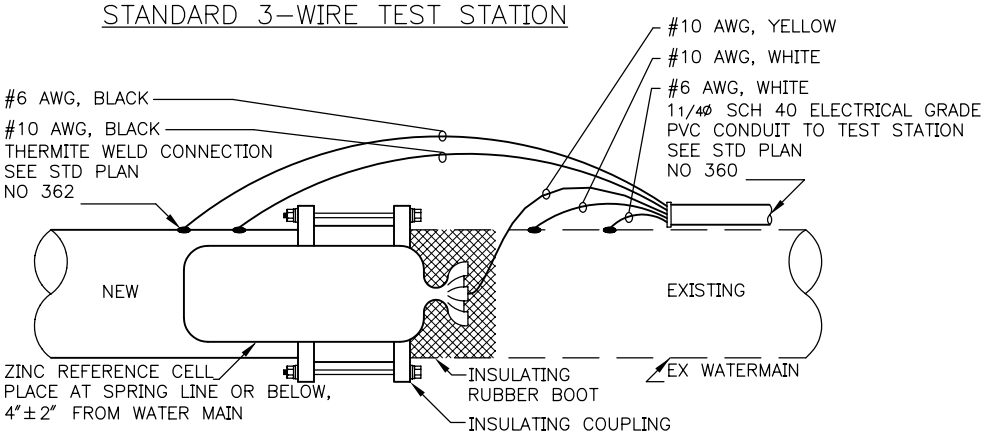
STANDARD PLAN NO 363

REV DATE: 2003

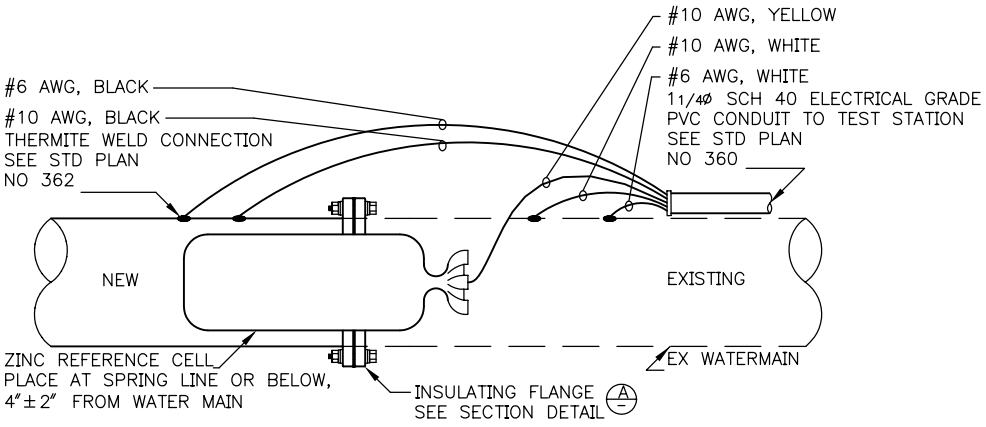
NOTE:
WIRE INSTALLATION PER
STD SPEC SEC 9-30.12(3)



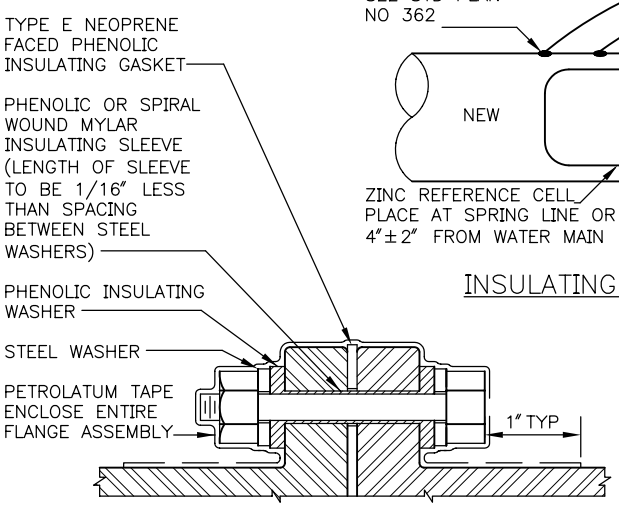
STANDARD 3-WIRE TEST STATION



INSULATING COUPLING 5-WIRE TEST STATION



INSULATING FLANGE 5-WIRE TEST STATION



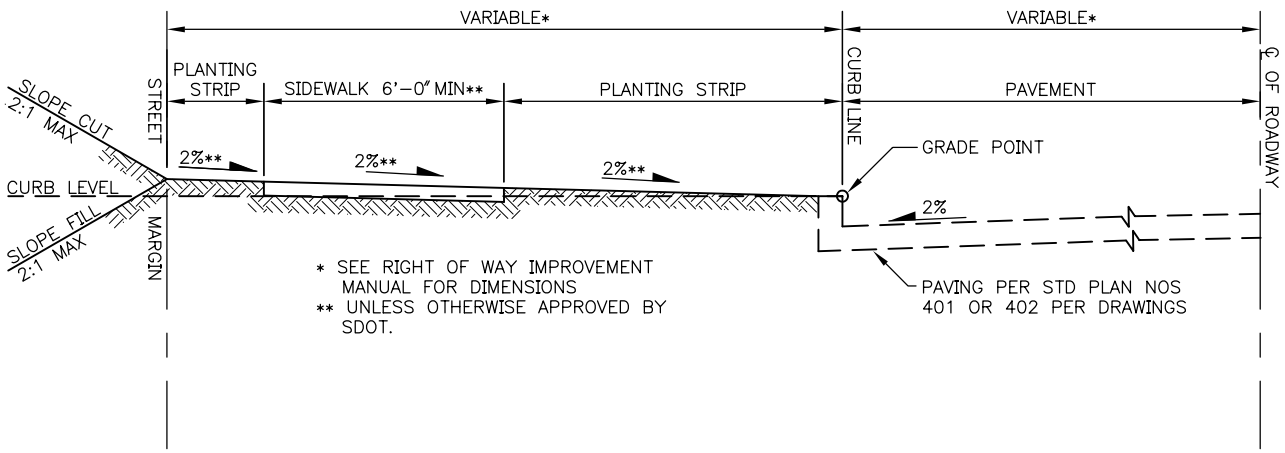
A
INSULATING FLANGE SECTION DETAIL

REF STD SPEC SEC 7-11.3(15) & 9-30.12

City of Seattle	NOT TO SCALE	ELECTROLYSIS TEST STATION WIRE INSTALLATION DETAILS

STANDARD PLAN NO 400

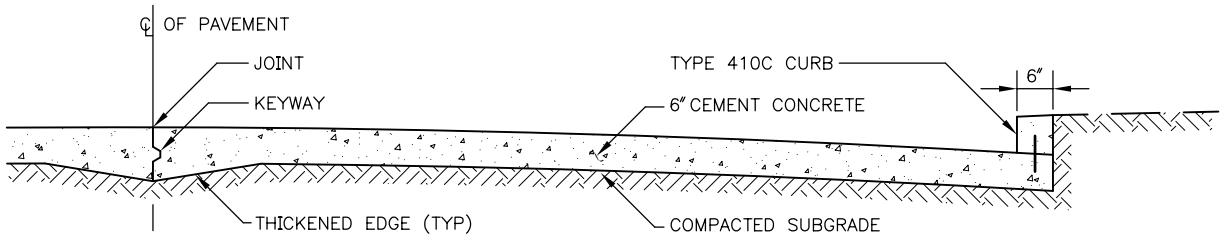
REV DATE: 2008



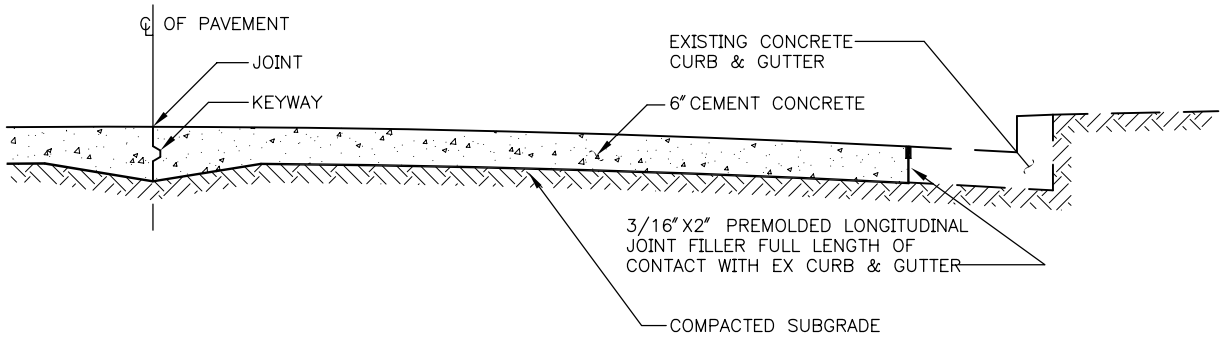
REF STD SPEC SEC 2-03

City of Seattle	NOT TO SCALE	HALF SECTION, GRADING

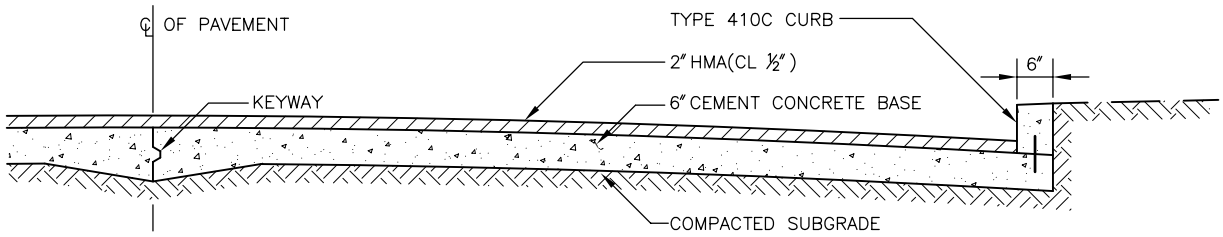
REV DATE: 2008



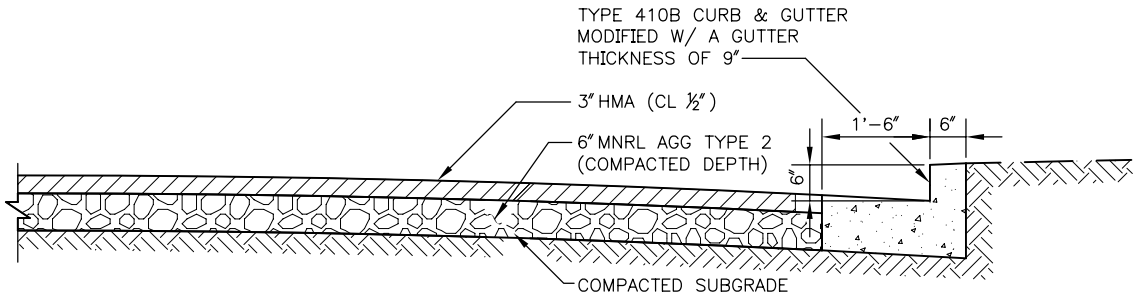
401A–CEMENT CONCRETE PAVEMENT WITH INTEGRAL CURB



401B–CEMENT CONCRETE PAVEMENT WITH EXISTING CURB & GUTTER



401C–HOT MIX ASPHALT ON CEMENT CONCRETE BASE



401D–HOT MIX ASPHALT OVER CRUSHED ROCK BASE

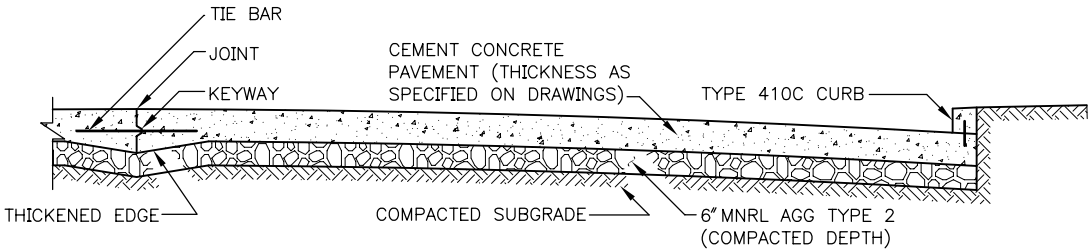
NOTES:

1. CONC CL 6 (1 1/2) UNLESS OTHERWISE SPECIFIED ON DRAWINGS
2. FOR JOINT DETAILS, SEE STD PLAN NO 405
3. 3 MILLION EASL'S UNLESS OTHERWISE SPECIFIED ON DRAWINGS
4. USE ASPHALT PG 64–22 UNLESS OTHERWISE SPECIFIED ON DRAWINGS

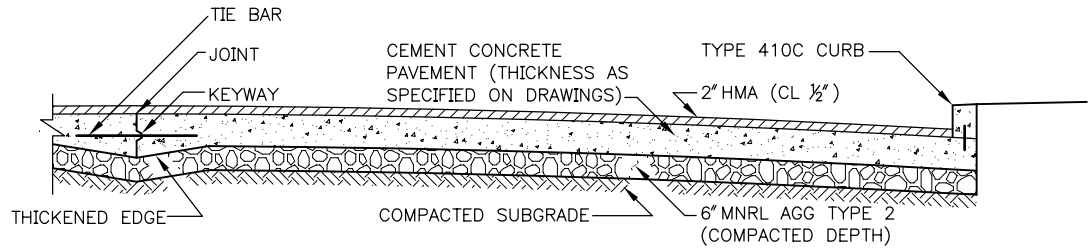
REF STD SPEC SEC 4-04, 5-04, 5-05 & 8-04

City of Seattle	NOT TO SCALE	RESIDENTIAL PAVEMENT SECTIONS

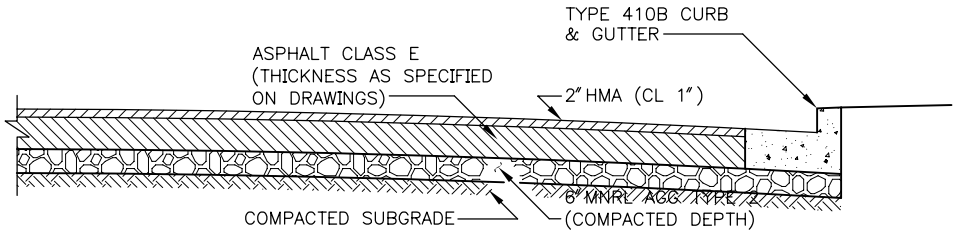
REV DATE: 2008



402A–CEMENT CONCRETE PAVEMENT ON CRUSHED ROCK



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



402D–HOT MIX ASPHALT ON CRUSHED ROCK BASE

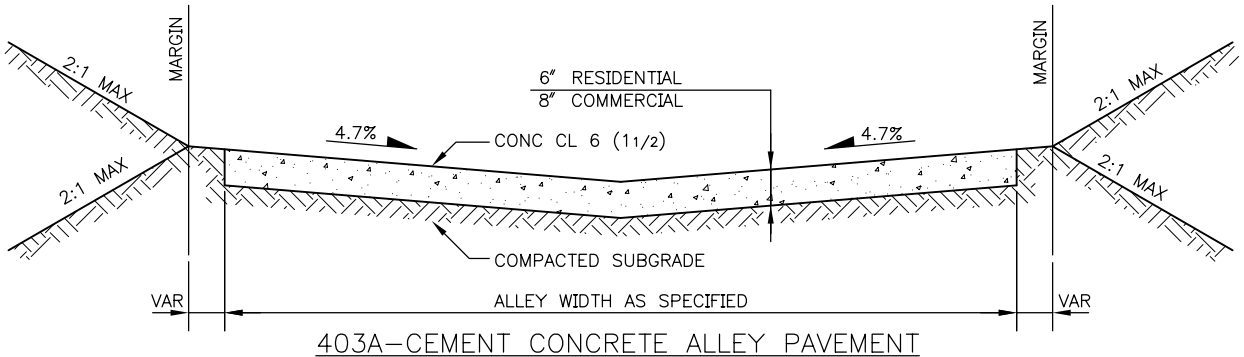
NOTES:

1. PAVEMENT WIDTH AND THICKNESS AS SPECIFIED ON DRAWINGS
2. CONC CL 6.5 (1 1/2) UNLESS OTHERWISE SPECIFIED ON DRAWINGS
3. TIE BARS AND DOWELL BARS ARE REQUIRED FOR CEMENT CONCRETE PAVEMENT AND BASE (SEE STD PLAN NO 405)
4. FOR THICKENED EDGE AND JOINT DETAILS, SEE STD PLAN NO 405
5. 10 MILLION ESAL'S UNLESS OTHERWISE SPECIFIED ON DRAWINGS
6. USE ASPHALT PG 64–22 UNLESS OTHERWISE SPECIFIED ON DRAWINGS

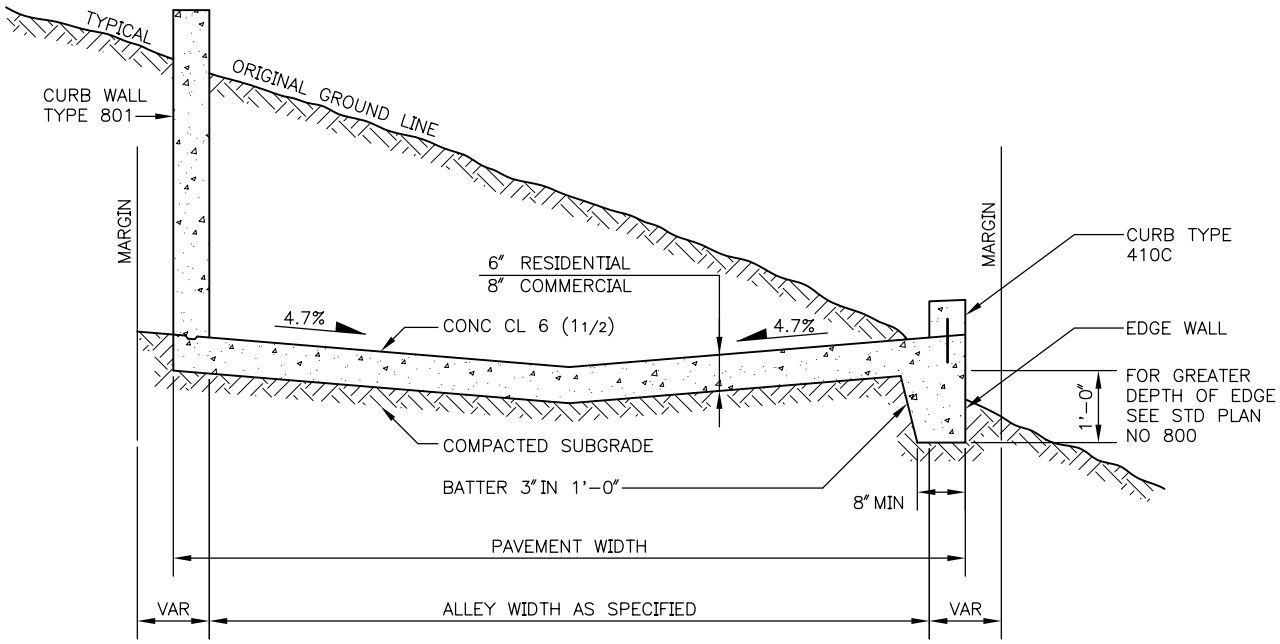
REF STD SPEC SEC 4-04, 5-04, 5-05 & 8-04

City of Seattle	NOT TO SCALE	COMMERCIAL AND ARTERIAL PAVEMENT SECTIONS

REV DATE: 2003



403A–CEMENT CONCRETE ALLEY PAVEMENT



CEMENT CONCRETE ALLEY PAVEMENT
403B–FOR SHALLOW EMBANKMENT AREA

NOTES:

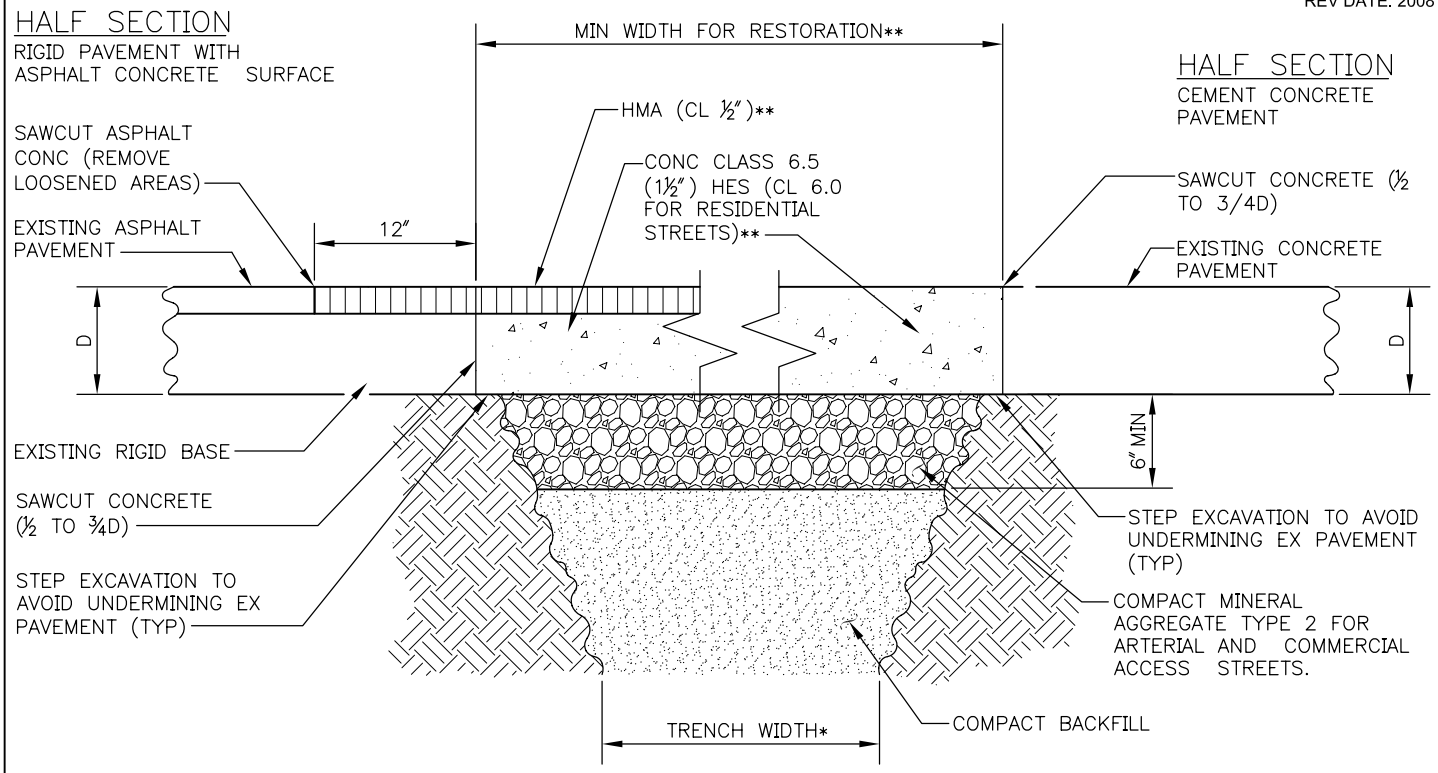
1. WHEN ALLEY PAVEMENT IS 16'–0" OR WIDER PLACE CONSTRUCTION JOINT TYPE II PER STD PLAN NO 405 ALONG CENTERLINE OF ALLEY
2. CONC CL 6(1 1/2)
3. SPECIFIC APPLICATION OF THIS STANDARD PLAN SHALL CONSIDER ADA ACCESSIBLE ROUTE FOR ENTIRE ALLEY

REF STD SPEC SEC 5-05

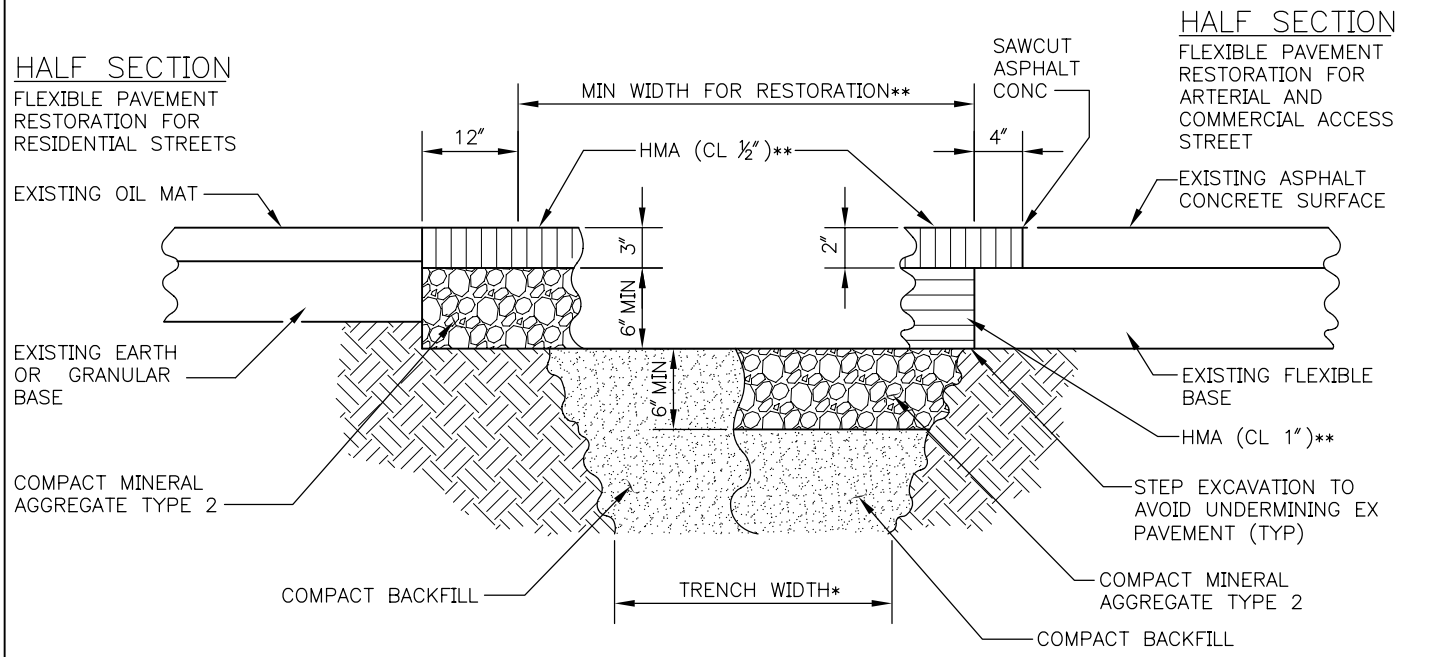
City of Seattle	NOT TO SCALE	CEMENT CONCRETE ALLEY PAVEMENTS

STANDARD PLAN NO 404a

REV DATE: 2008



TYPICAL PATCH FOR RIGID PAVEMENT



TYPICAL PATCH FOR FLEXIBLE PAVEMENT

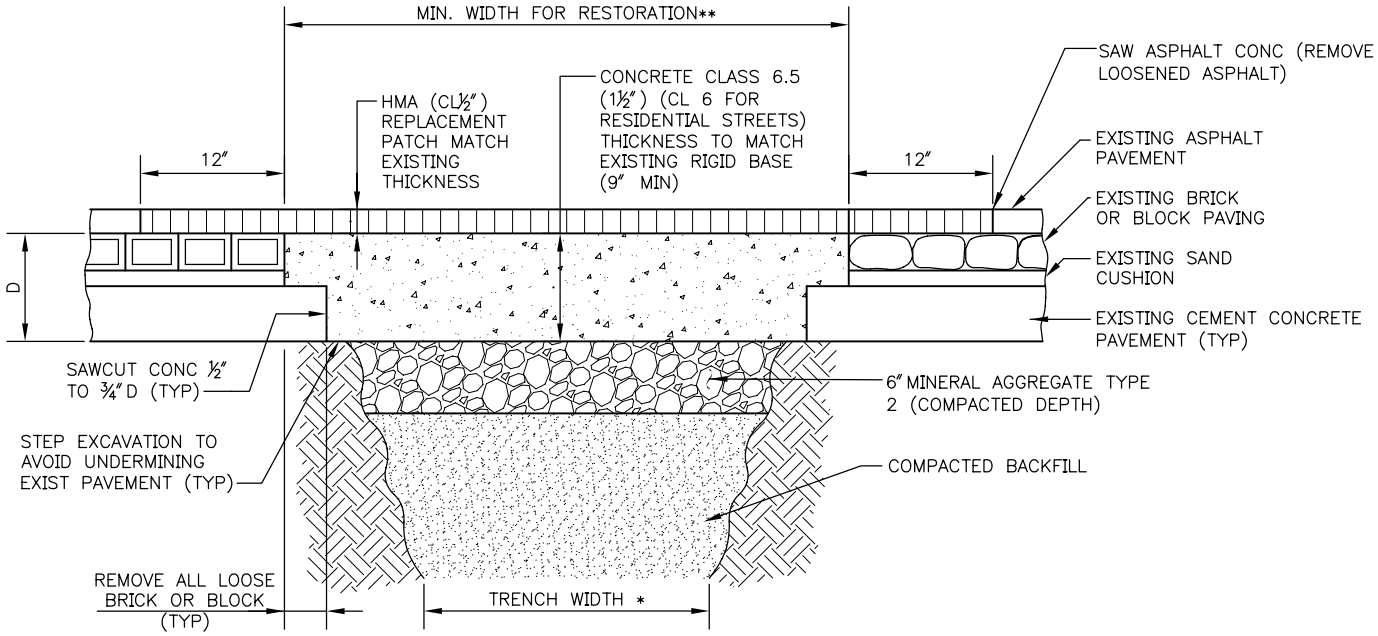
* TRENCH WIDTH SHALL MEET THE MAX PAY TRENCH WIDTH AS CALLED OUT ON STD PLAN NOS 284 & 350

** MIN WIDTH AND DEPTH OF RESTORATION SHALL BE INCREASED TO MEET THE REQUIREMENTS OF "STREET AND SIDEWALK PAVEMENT OPENING AND RESTORATION RULES"

REF STD SPEC SEC 2-02, 5-04 & 5-05

City of Seattle	NOT TO SCALE	PAVEMENT PATCHING

REV DATE: 2008



ASPHALT OVER RIGID BASE OF BRICK OR STONE BLOCK PAVEMENT

NOTES:

1. WHEN A STONE OR BRICK PAVEMENT IS OVERLAYED WITH HMA, THE STREET SURFACE PAVEMENT BECOMES AN ASPHALT CONC STREET OVER RIGID BASE
2. IF A STONE OR BRICK PAVEMENT IS NOT OVERLAYED, THE METHOD OF RESTORATION IS IN KIND

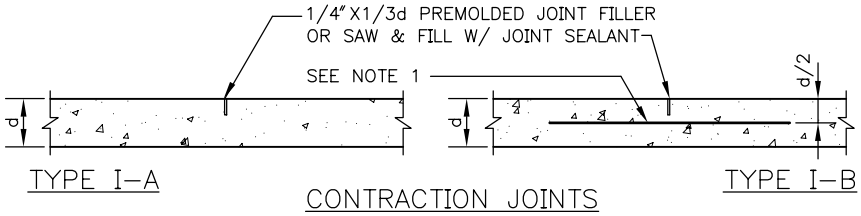
* MIN. TRENCH WIDTH SHALL MEET THE MAX PAY TRENCH WIDTH AS CALLED OUT ON STD PLAN NOS. 284 & 350

** ACTUAL WIDTH AND DEPTH OF RESTORATION SHALL MEET REQUIREMENTS OF "STREET AND SIDEWALK PAVEMENT OPENING AND RESTORATION RULES"

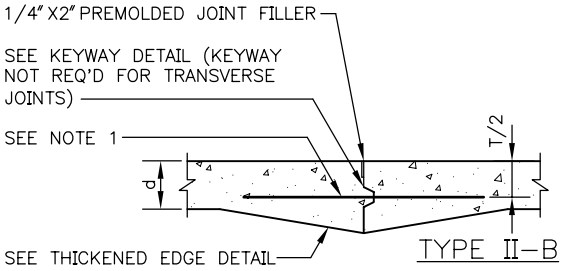
REF STD SPEC SEC 2-02, 5-04 & 5-05

City of Seattle	NOT TO SCALE	PAVEMENT PATCHING

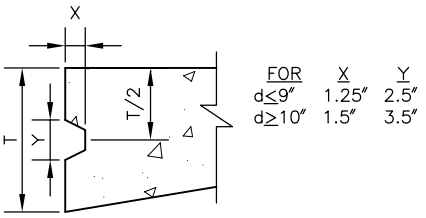
REV DATE: 2003



CONTRACTION JOINTS



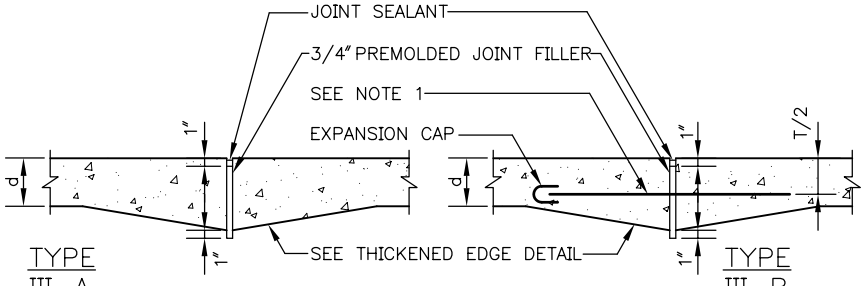
CONSTRUCTION JOINTS



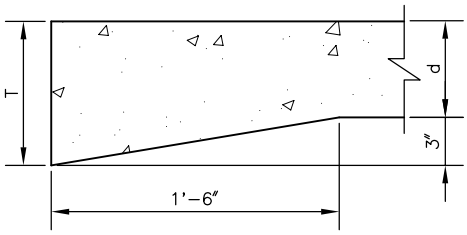
FOR	X	Y
d≤9"	1.25"	2.5"
d≥10"	1.5"	3.5"

KEYWAY DETAIL

FOR JOINTS WITH THICKENED EDGE T=d+3"
OTHERWISE T=d

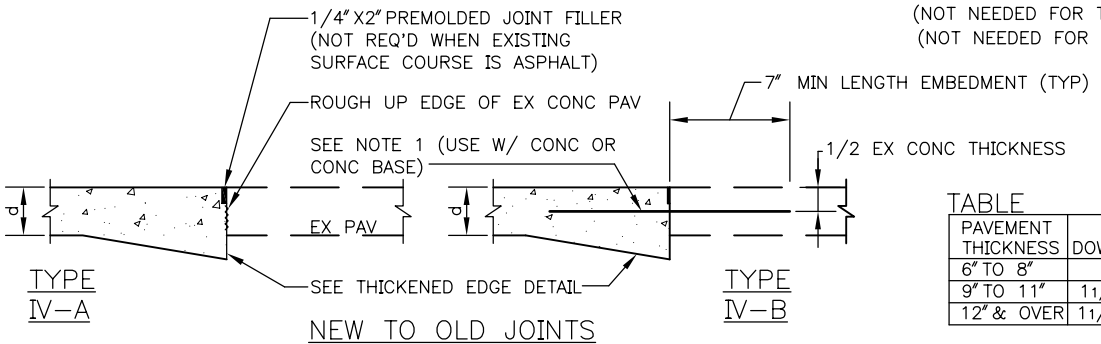


THROUGH JOINTS



THICKENED EDGE DETAIL

(NOT NEEDED FOR TYPE A JOINTS WIDTH d≥10")
(NOT NEEDED FOR TYPE B JOINTS WIDTH d≥9")



NEW TO OLD JOINTS

TABLE

PAVEMENT THICKNESS	DOWEL BAR SIZE
6" TO 8"	1" X18" @12"
9" TO 11"	1 1/4" X18" @12"
12" & OVER	1 1/2" X18" @12"

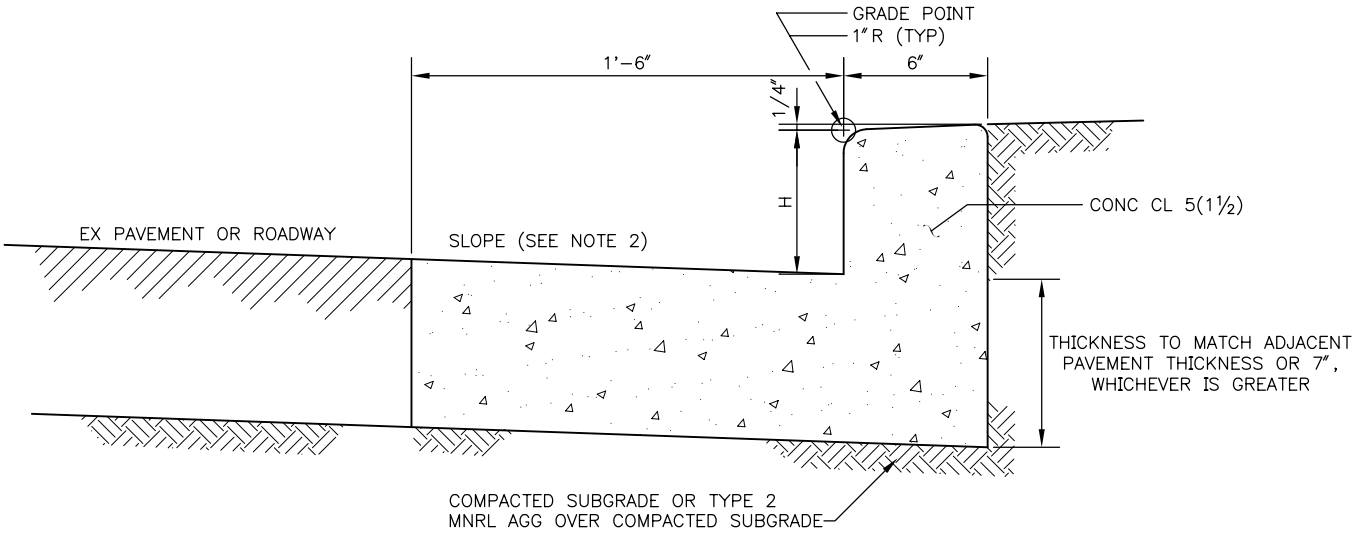
NOTES:

1. WHERE REQUIRED AT LONGITUDINAL JOINTS, TIE BARS SHALL BE 5/8" X2'–6" @ 3'–0", DEFORMED GRADE 40 OR BETTER, EPOXY COATED. WHERE REQUIRED AT TRANSVERSE JOINTS, DOWEL BARS SHALL BE SIZED AS SHOWN IN THE TABLE, SMOOTH ROUND GRADE 60 OR BETTER, EPOXY COATED AND GREASED
2. LONGITUDINAL JOINT SPACING SHOULD NOT EXCEED 15'–6" (TO BACK OF CURB). TRANSVERSE JOINT SPACE SHALL NOT EXCEED 15'–0". THE AREA OF THE PANEL SHALL NOT EXCEED 225 SQUARE FEET
3. JOINT OFFSETS AT RADIUS POINTS SHOULD BE AT LEAST 1'–6" LONG
4. JOINT INTERSECTION ANGLES OF LESS THAN 60 DEGREES SHALL BE USED
5. WHEN A JOINT IS CLOSER THAN 1'–0" TO A CASTING, THEN A MINOR ADJUSTMENT IN THE JOINT LOCATION SHOULD BE MADE BY SKEWING OR SHIFTING THE JOINT ALIGNMENT TO MEET THE CASTING AT 90° OR NORMAL TO THE CASTING.
6. WHERE POSSIBLE, LONGITUDINAL JOINTS SHOULD MATCH LANE MARKINGS
7. LONGITUDINAL JOINTS ARE TO BE CONSTRUCTION JOINTS UNLESS PAVED BY MACHINE CAPABLE OF PLACING AND FINISHING CONCRETE FOR TWO OR MORE PANEL WIDTHS (IN WHICH CASE A CONTRACTION JOINT IS ALLOWED)
8. DOWEL BARS SHALL NOT BE PLACED WITHIN 1'–0" OF THE EDGE OF PAVEMENT OR A PARALLEL JOINT

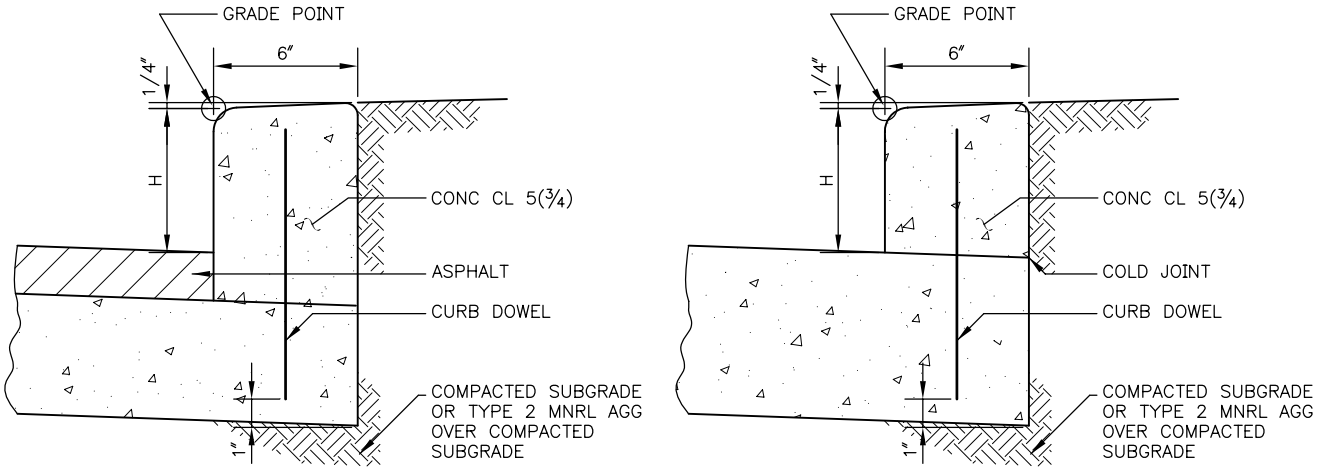
REF STD SPEC SEC 5-05 & 6-02

City of Seattle	NOT TO SCALE	TYPES OF JOINTS FOR CONCRETE PAVEMENT

REV DATE: 2005



410B CURB & GUTTER



410C CURB

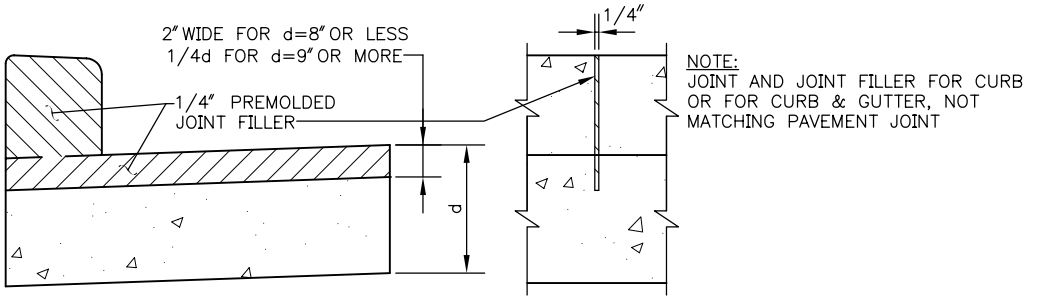
NOTES:

1. "H" SHALL BE 6" FROM FINISHED ROADWAY GRADE UNLESS OTHERWISE SHOWN ON DRAWINGS
2. GUTTER SHALL BE SLOPED THE SAME AS ADJACENT PAVEMENT OR 2% MIN, WHICHEVER IS GREATER.
3. SEE STD PLAN NO 411 FOR CURB DOWELS

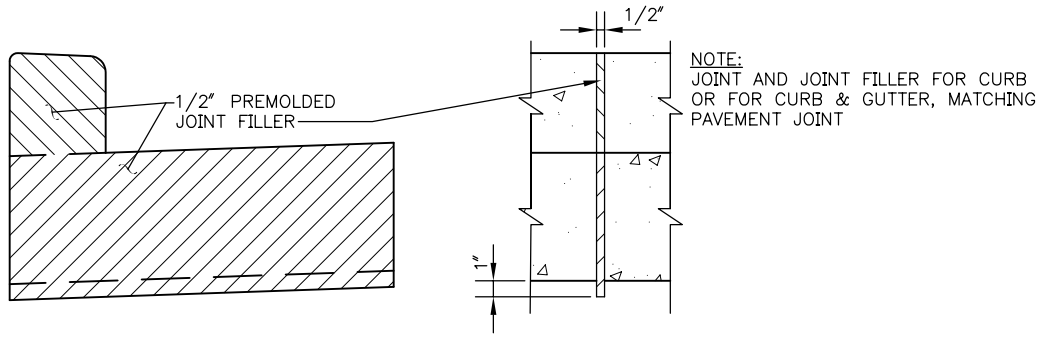
REF STD SPEC SEC 8-04

City of Seattle	NOT TO SCALE	TYPE 410 CURB

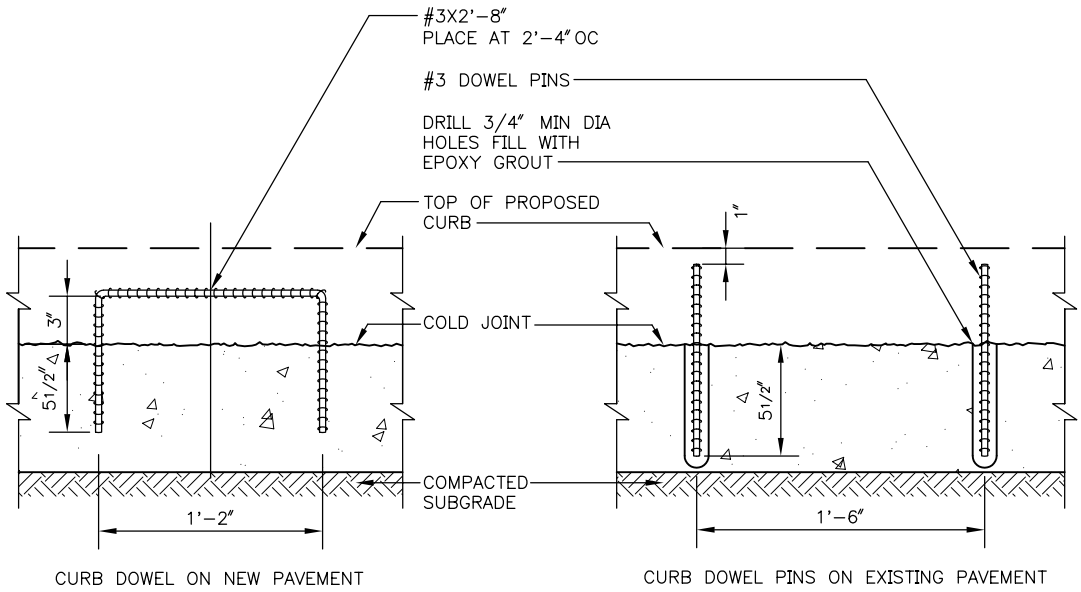
REV DATE: 2003



CONTRACTION JOINT FOR
CURB OR CURB & GUTTER



THROUGH JOINT FOR
CURB OR CURB & GUTTER

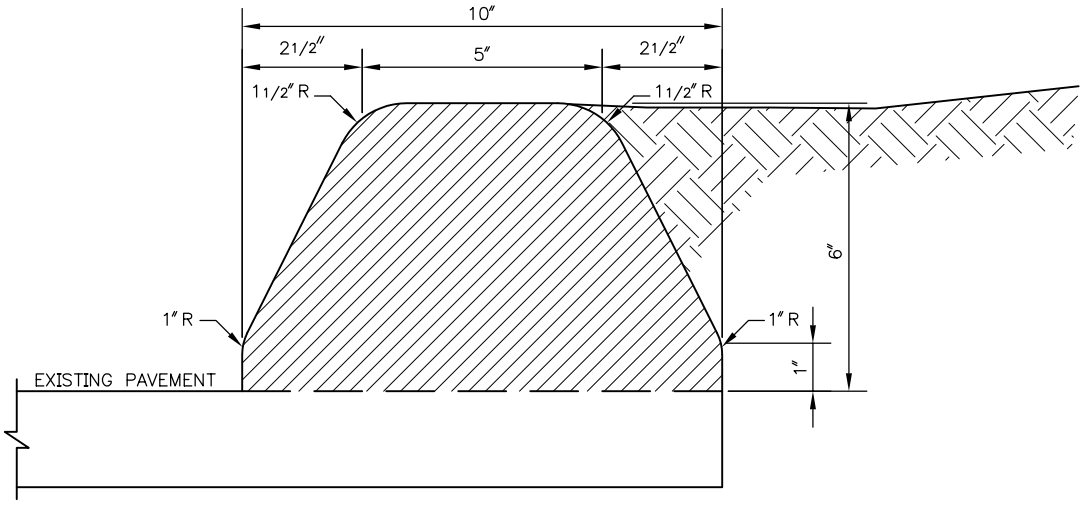


DOWELS FOR DOWELLED CURB CONSTRUCTION

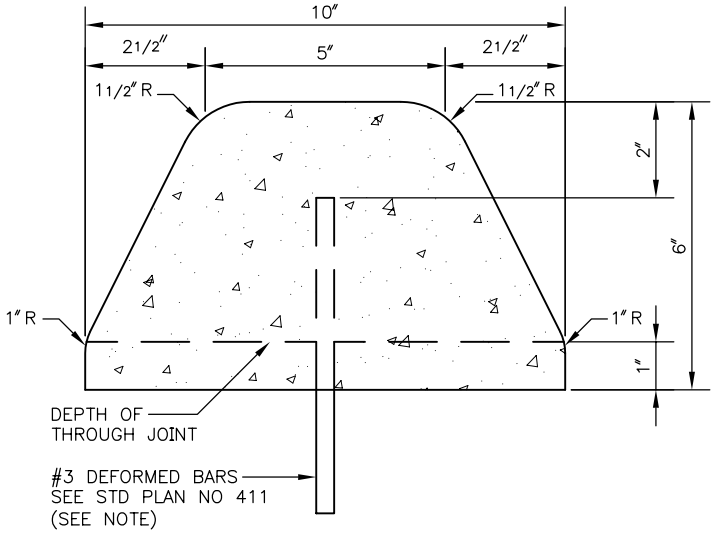
REF STD SPEC SEC 6-02 & 8-04

City of Seattle	NOT TO SCALE	CURB JOINTS & DOWELS

REV DATE: 2003



EXTRUDED ASPHALT CONCRETE CURB



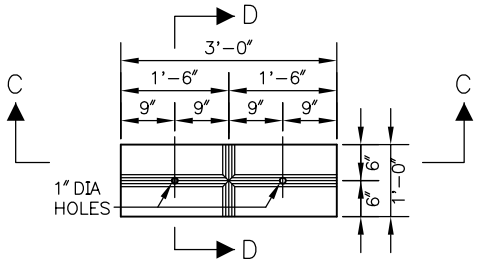
EXTRUDED CEMENT CONCRETE CURB

NOTE:
ALTERNATELY, THE USE OF EPOXY BONDING AGENT, IN PLACE OF #3 DEFORMED BARS, WILL BE ALLOWED.

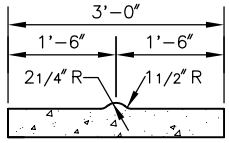
REF STD SPEC SEC 8-06

City of Seattle	NOT TO SCALE	EXTRUDED CURB

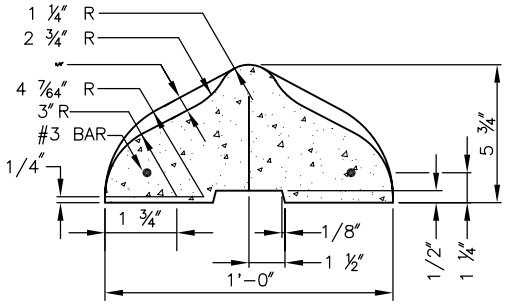
REV DATE: 2005



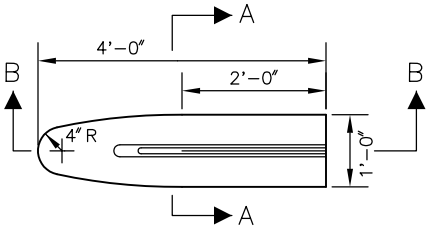
413C CURB PLAN



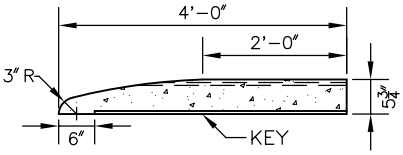
SECTION C–C



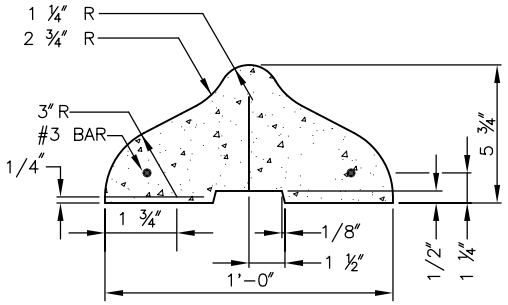
SECTION D–D



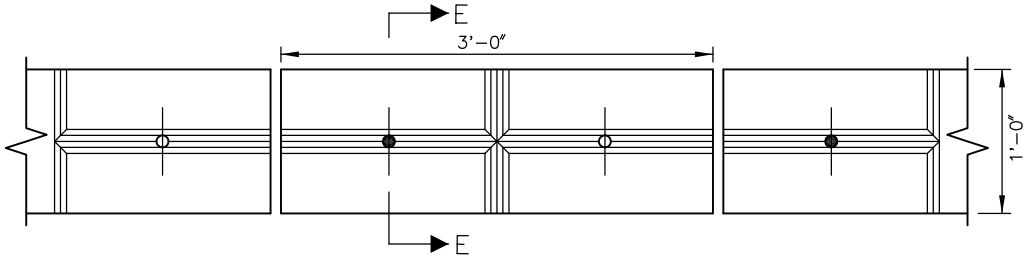
413C NOSING



SECTION B–B

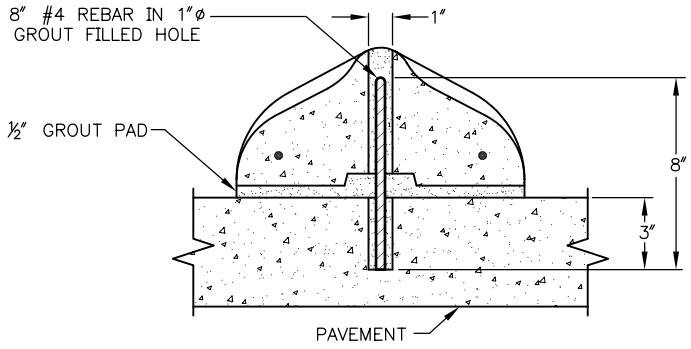


SECTION A–A



INSTALLATION DETAIL FOR
STRAIGHT 413C CURB

NOTE: INSTALL 8" #4 REBAR IN EVERY OTHER HOLE AND FILL HOLE WITH GROUT

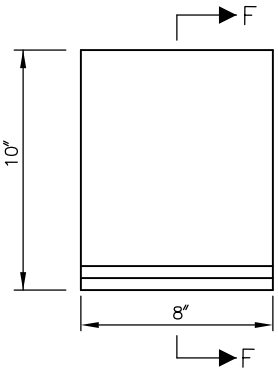


SECTION E–E

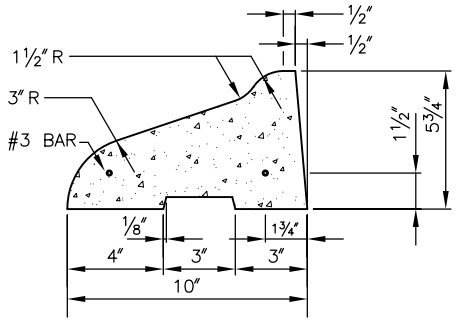
REF STD SPEC SEC 8-07

City of Seattle	NOT TO SCALE	TRAFFIC CURB PRECAST CEMENT CONCRETE 3' AND 4' SECTIONS

REV DATE: 2005

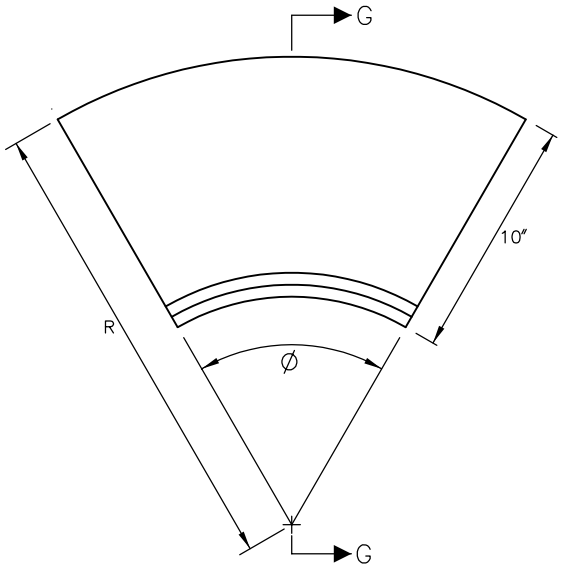


PLAN

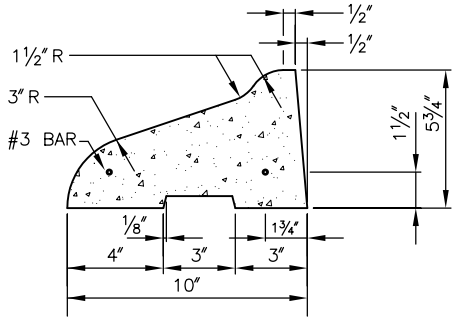


SECTION F–F

8″ STRAIGHT 413A CURB



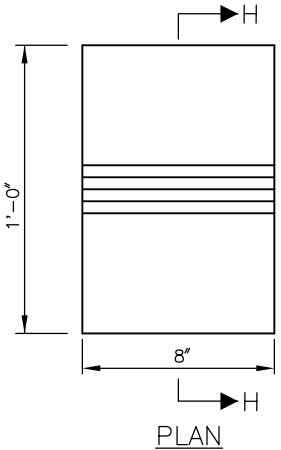
413A RADIAL CURB



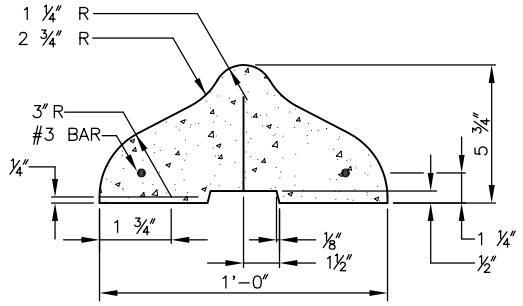
SECTION G–G

413 A RADIAL CURB		
UNIT	RADIUS	CURB RETURN ANGLE(ø)MULTIPLE
R1	1'– 3″	45°00'
R2	1'–10″	30°00'
R3	2'– 6″	22°30'
R4	5'– 0″	11°27.54'
R5	10'– 0″	5°43.77'
FOR RADII GREATER THAN 10'–0″ USE SEGMENTS OF STRAIGHT CURB		

RADIUS CURB TABLE



PLAN

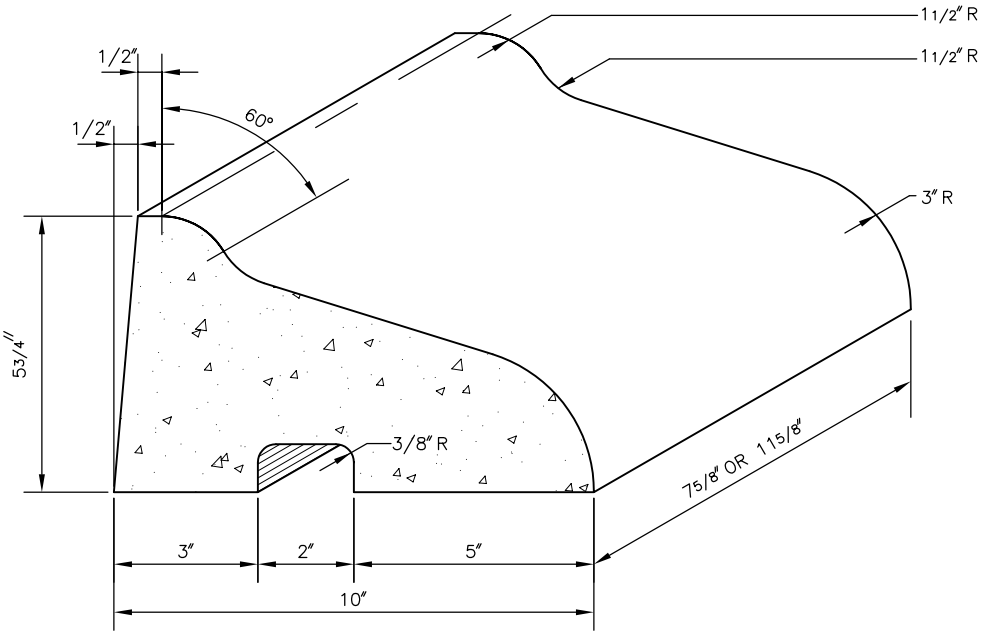


SECTION H–H

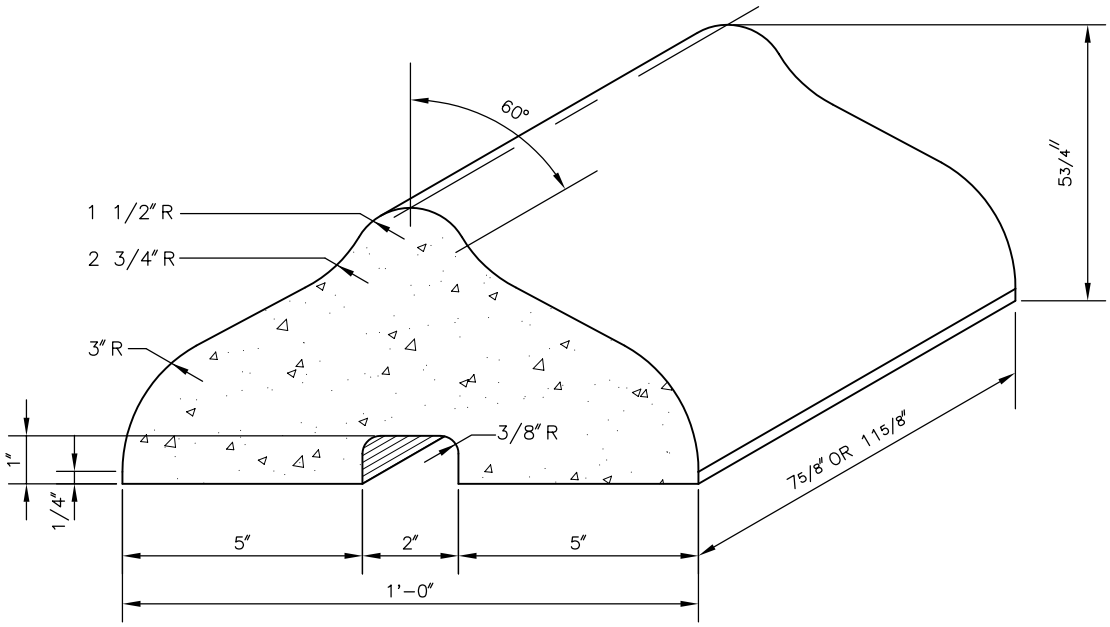
REF STD SPEC SEC 8-07

City of Seattle	NOT TO SCALE	TRAFFIC CURB PRECAST CEMENT CONCRETE 8" SECTION AND RADIAL

REV DATE: 2003



414 A BLOCK



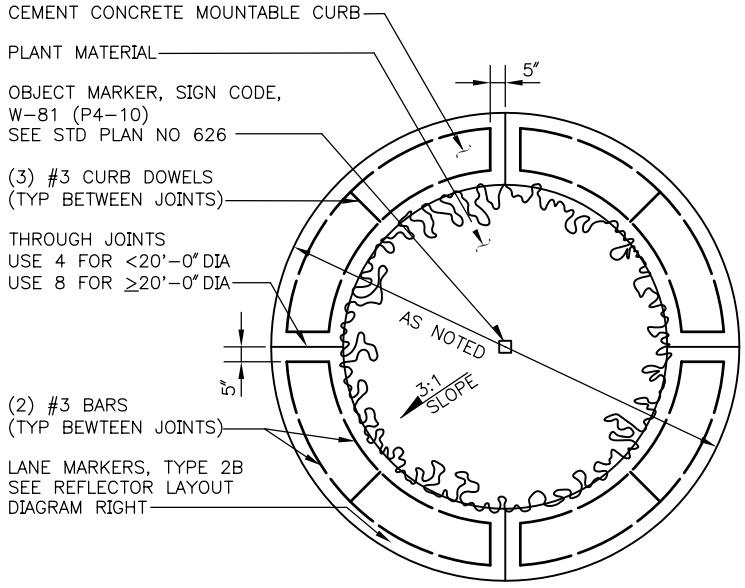
414 C BLOCK

REF STD SPEC SEC 8-07

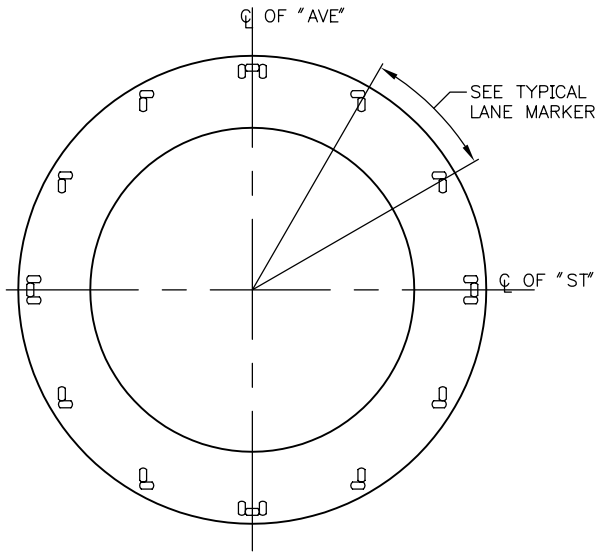
City of Seattle	NOT TO SCALE	BLOCK TRAFFIC CURBS PRECAST CEMENT CONCRETE

STANDARD PLAN NO 415

REV DATE: 2003



TYPICAL TRAFFIC CIRCLE

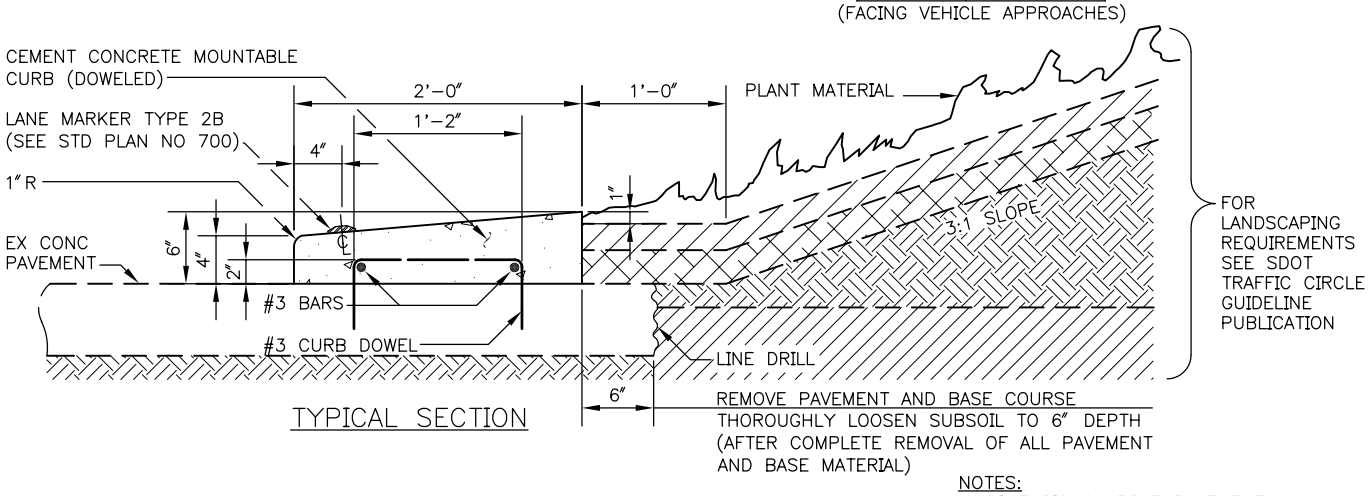


TRAFFIC CIRCLE REFLECTOR LAYOUT

SPACING CHART

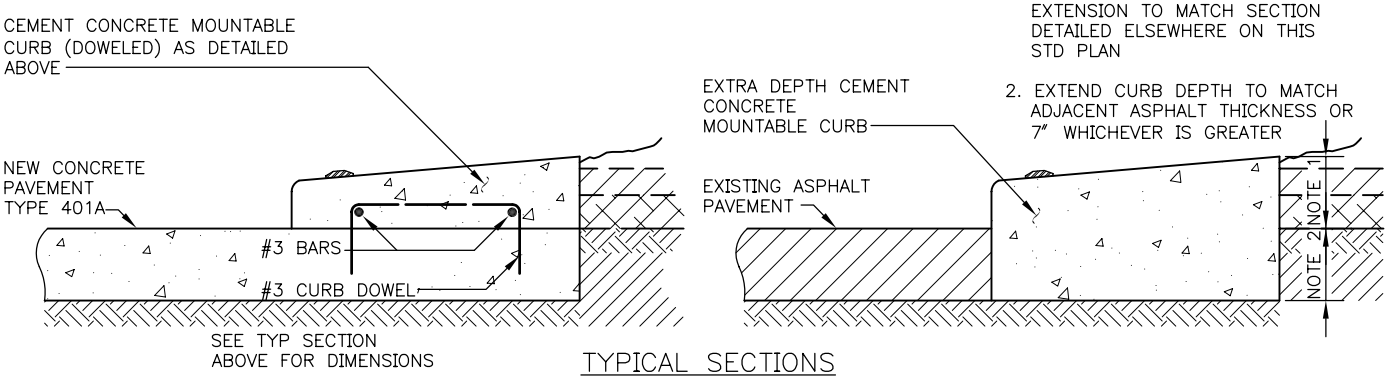
DIAMETER OF CIRCLE	DEGREE OF SPACING
≤12'-0"	EVERY 45°
≤20'-0"	EVERY 30°
>20'-0"	EVERY 22 1/2°

(FACING VEHICLE APPROACHES)



TYPICAL SECTION

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



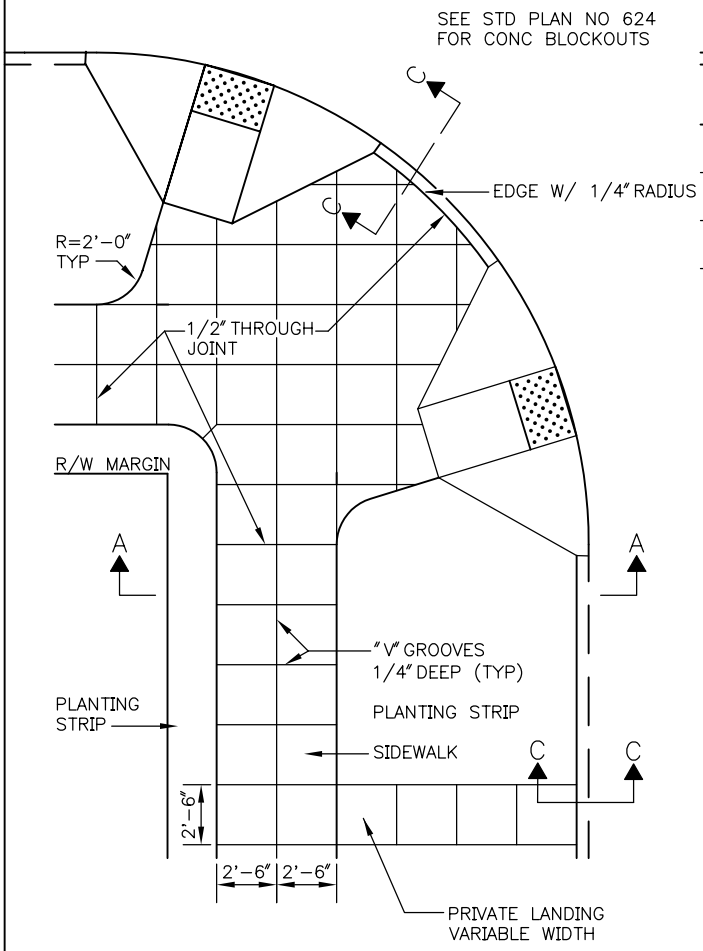
TYPICAL SECTIONS

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

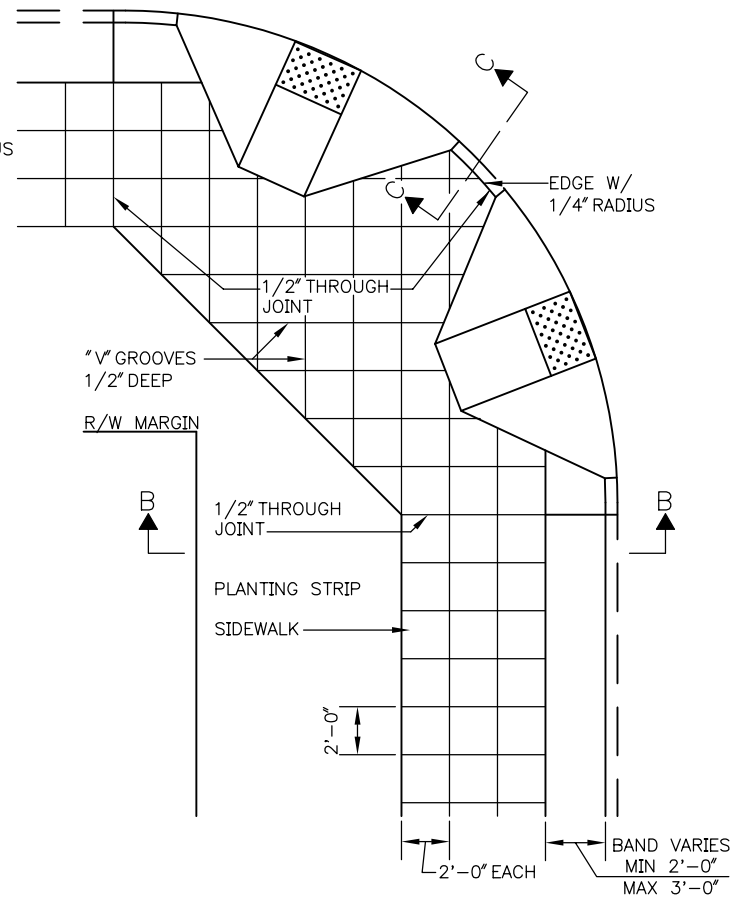
City of Seattle	NOT TO SCALE	TRAFFIC CIRCLE DETAILS

STANDARD PLAN NO 420

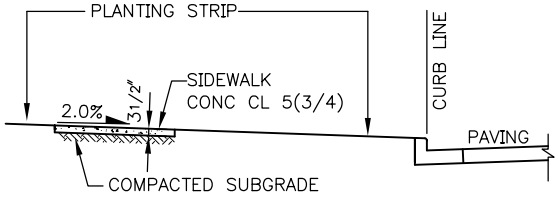
REV DATE: 2005



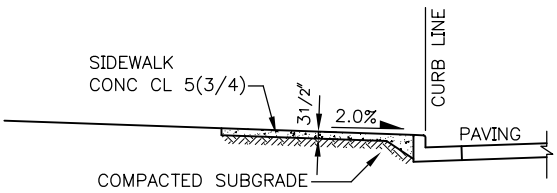
SIDEWALK
5'-0" WIDE



SIDEWALK
GREATER THAN
5'-0" WIDE



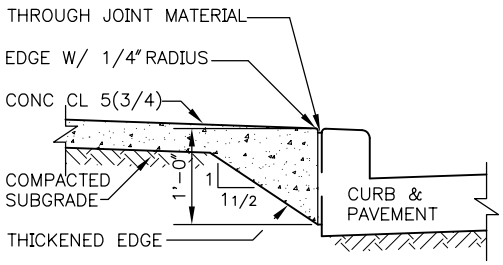
SECTION A–A



SECTION B–B

NOTES:

1. WHEN PLANTING STRIP PAVEMENT IS APPROVED, JOINT MATERIAL WILL BE REQUIRED AT THE PERIMETER OF THE PLANTING STRIP PAVEMENT
2. WHEN EXISTING PARKING METERS ARE TO BE REMOVED FOR NEW SIDEWALK CONSTRUCTION, CONTACT SEATTLE DEPARTMENT OF TRANSPORTATION A MINIMUM OF 2 WORKING DAYS PRIOR TO SCHEDULED WORK TO COORDINATE REMOVAL OF METER HEADS

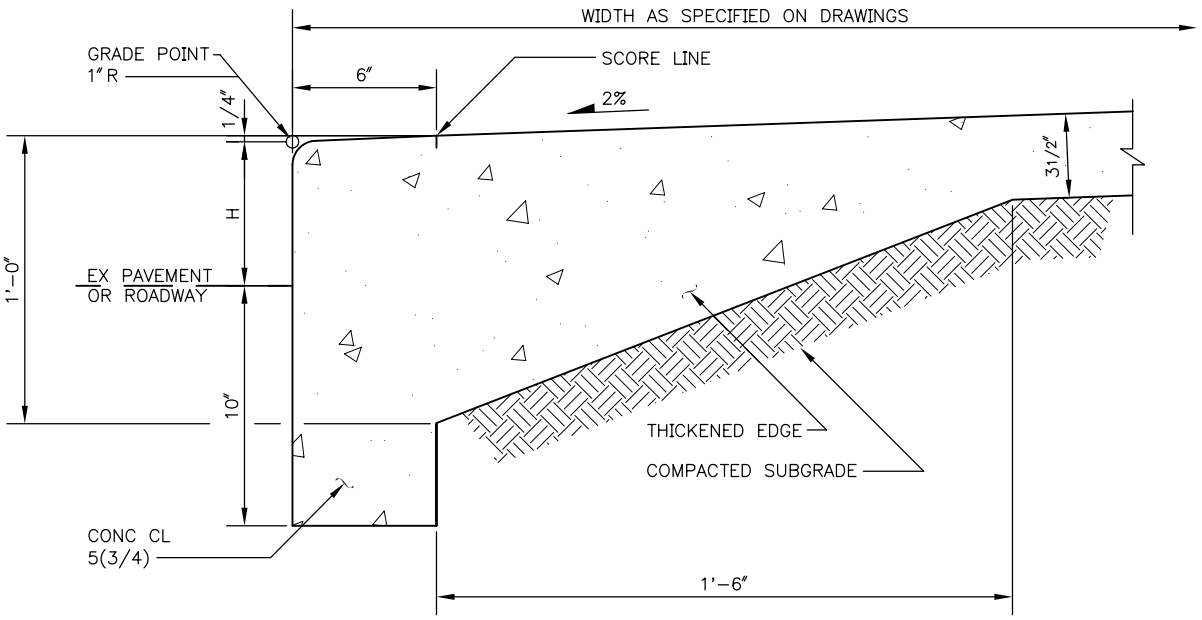


SECTION C–C

REF STD SPEC SEC 8-14

City of Seattle	NOT TO SCALE	CONCRETE SIDEWALK DETAILS

REV DATE: 2003



NOTES:

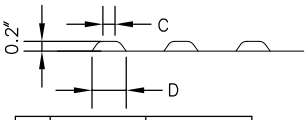
1. "H" SHALL BE 6" FROM FINISHED GRADE UNLESS OTHERWISE SPECIFIED
2. VERTICAL BACKFACE OF CURB SHALL BE FORMED AGAINST NATIVE EARTH WHERE PRACTICAL, OTHERWISE BY BACKFORM LEFT IN PLACE

REF STD SPEC SEC 8-14

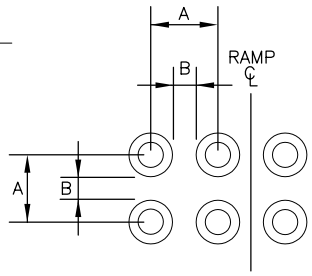
City of Seattle	NOT TO SCALE	SIDEWALK WITH MONOLITHIC CURB

STANDARD PLAN NO 422a

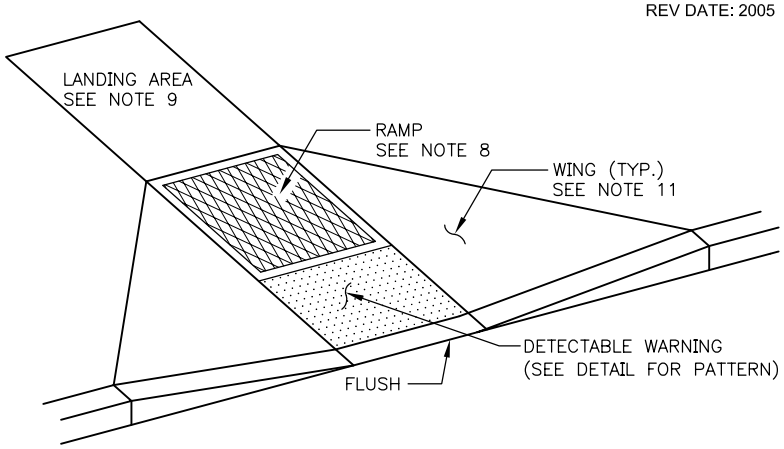
REV DATE: 2005

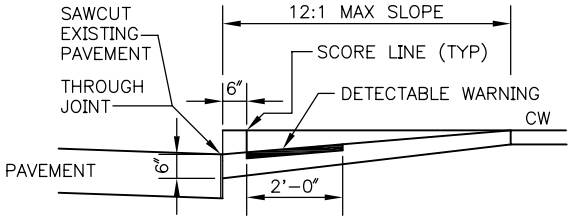


	MIN.	MAX.
A	1.6 ″	2.4 ″
B	0.65 ″	1.5 ″
C	50% TO 65% OF D	
D	0.9 ″	1.4 ″



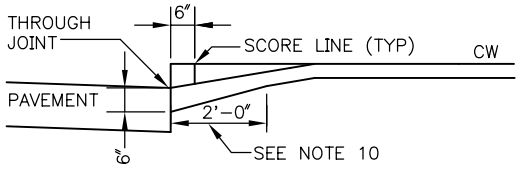
TRUNCATED DOMES PATTERN –DETECTABLE WARNING



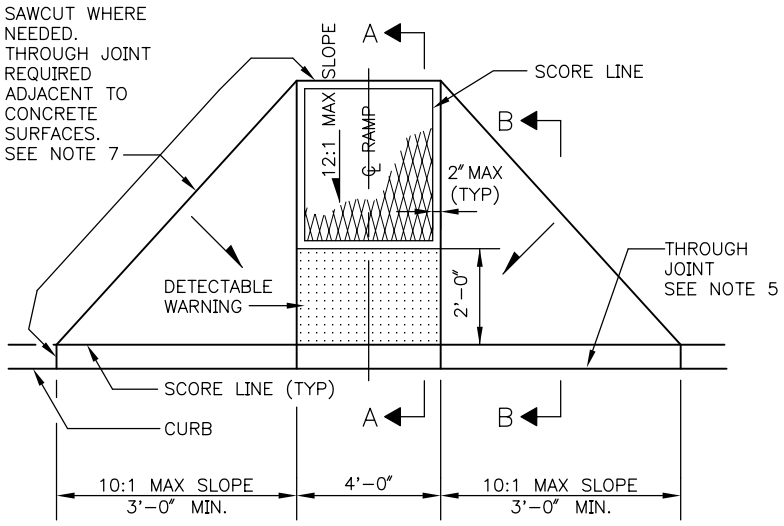


SECTION A–A

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



SECTION B–B



NOTES:

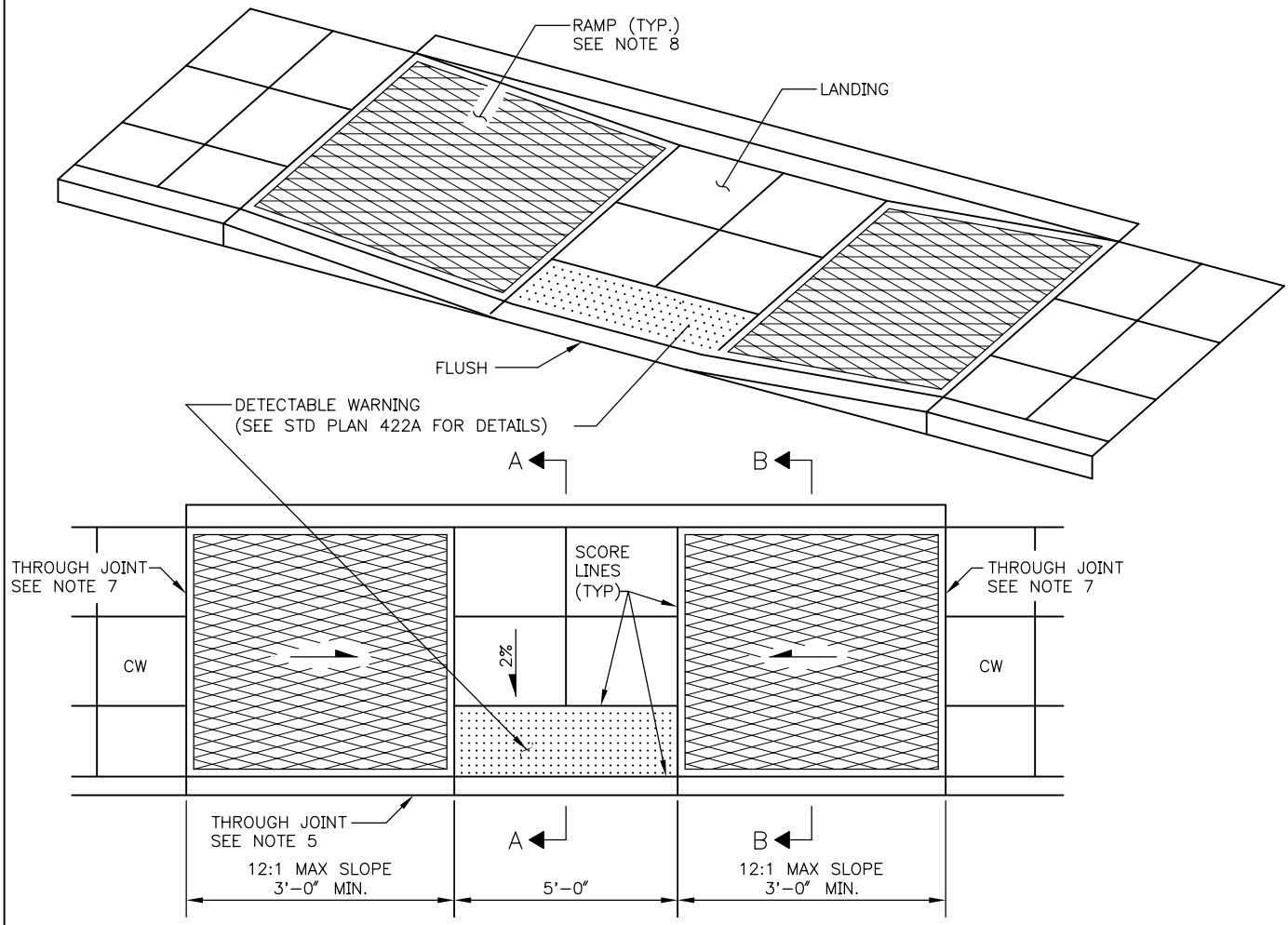
1. TWO CURB RAMPS SHALL BE INSTALLED AT EACH CORNER UNLESS DIRECTED OTHERWISE BY SDOT. SEE STD PLAN NO 422b.
2. CURB RAMPS SHALL BE CONSTRUCTED WITH COMPANION RAMPS ON OPPOSITE SIDES OF THE STREET UNLESS DIRECTED OTHERWISE BY SDOT
3. WHERE CURB IS INSTALLED AT A LOCATION WITH NO SIDEWALK, CURB SHALL BE DEPRESSED FOR FUTURE CURB RAMP INSTALLATION.
4. TYPE 422a CURB RAMP SHALL BE USED. HOWEVER IF NOT FEASIBLE, THEN TYPE 422b CURB RAMP MAY BE INSTALLED WITH THE APPROVAL OF SDOT
5. NEW PAVEMENT SHALL BE BLOCKED OUT FULL DEPTH. EXISTING PAVEMENT SHALL BE REMOVED AT THE FACE OF THE CURB.
6. MIN DISTANCE BETWEEN ADJACENT CURB RAMPS SHOULD BE 3′–0″.
7. CURB RAMPS SHALL BE ISOLATED FROM ALL OTHER CONCRETE BY THROUGH JOINTS.
8. RAMPS SHALL HAVE A COARSE TEXTURED SURFACE OBTAINED WITH A 3/4″ 9–11 FLATTENED EXPANDED METAL MESH BEING PRESSED INTO THE STILL FRESH CONCRETE. THE LONG AXIS OF THE DIAMOND PATTERN SHALL BE ALIGNED WITH THE SLOPE OF THE RAMP.
9. ADDITIONAL SIDEWALK PAVING MAY BE NECESSARY IN THE PLANTING STRIP OR AT THE BACK OF SIDEWALK TO ACCOMODATE ACCESS TO THE RAMP. A MINIMUM 4′–0″x 4′–0″ 2% GRADE LANDING SHALL BE PROVIDED AT THE TOP OF RAMP ON TYPE 422a.
10. THE SIDEWALK THICKENED EDGE SHALL BE CONTINUED THROUGH BOTH WINGS ON TYPE 422a AND BOTH RAMPS ON TYPE 422b. SEE STD. PLAN NO 420.
11. THE WINGS ON TYPE 422a SHALL HAVE A SLIGHTLY BRUSHED FINISH PARALLEL TO THE CURB.
12. MIN LATERAL CLEARANCE FROM INLETS, POLES, HYDRANTS AND OTHER ABOVE GROUND OBSTACLES SHALL BE 1′–0″ MINIMUM FROM THE SCORED AND THE DETECTABLE WARNING PORTIONS OF THE CURB RAMP.
13. INLETS SHALL BE SO LOCATED THAT GUTTER FLOW DOES NOT FLOW PAST THE CURB RAMP.
14. DECTECTABLE WARNING SURFACE SHALL BE "CITY OF SEATTLE SAFETY YELLOW", AND SHALL BE LOCATED 6 INCHES OFF THE CURB FACE. SEE STD SPEC SEC 8–3(7)A.
15. CURB RAMP SHALL BE PERPENDICULAR TO THE CURB.
16. THE RAMP PORTION OF THE TYPE 422a CURB RAMP SHALL BE WHOLLY CONTAINED WITHIN THE MARKED CROSSING (SEE STD PLAN NO. 422b)

REF STD SPEC SEC 8-14

City of Seattle	NOT TO SCALE	CURB RAMP DETAILS

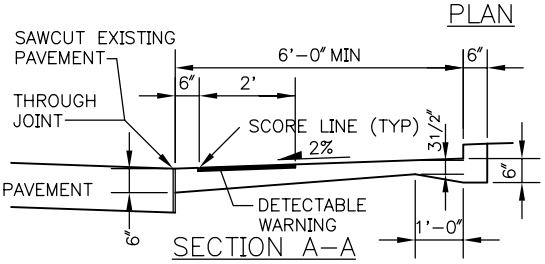
STANDARD PLAN NO 422b

REV DATE: 2005



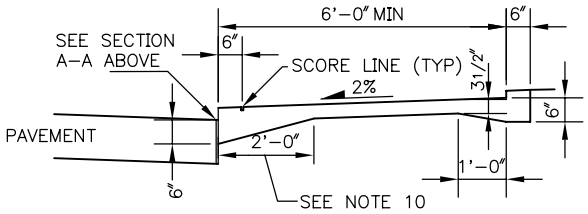
THE LANDING PORTON OF THE TYPE 422b CURB RAMP SHALL BE WHOLLY CONTAINED WITHIN THE MARKED CROSSING

PLAN



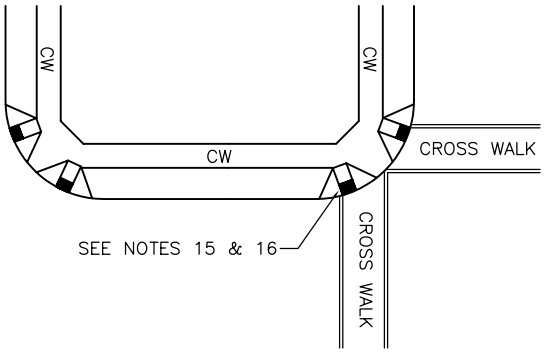
SECTION A–A

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



SECTION B–B

SEE STD PLAN NO 422a FOR NOTES

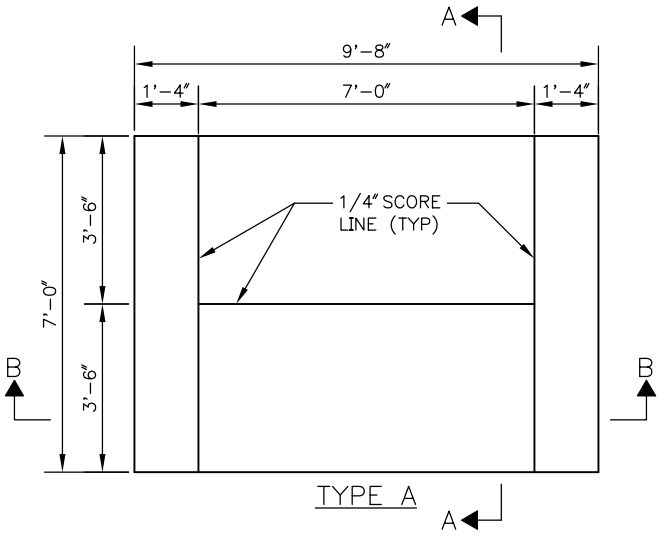


TYPICAL CURB RAMP LOCATIONS

REF STD SPEC SEC 8-14

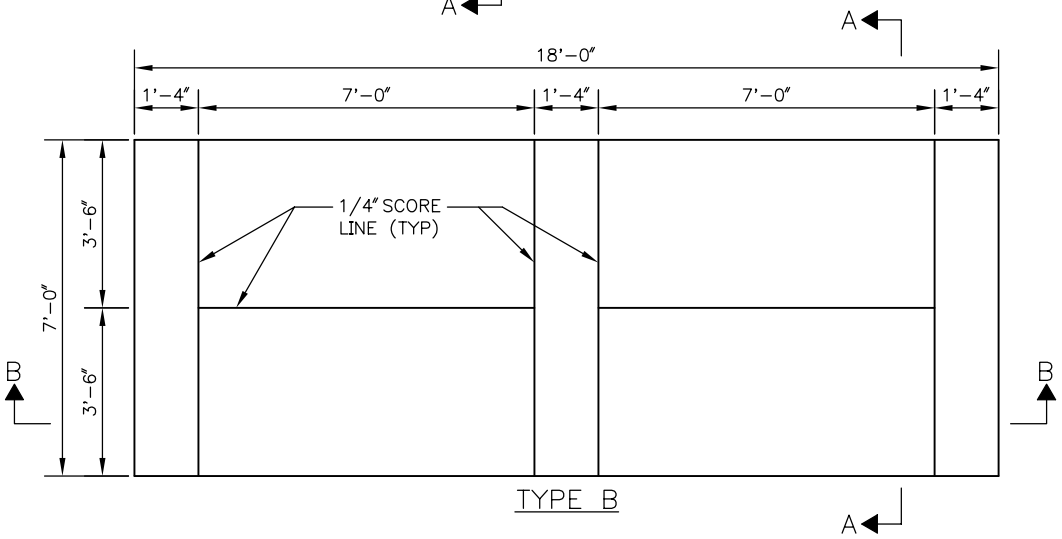
City of Seattle	NOT TO SCALE	CURB RAMP DETAILS

REV DATE: 2003

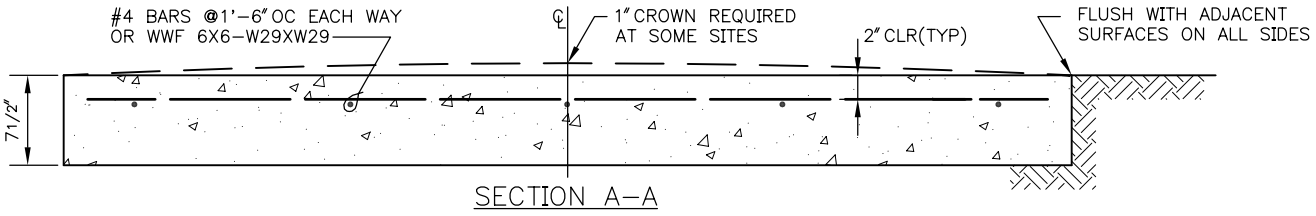


TYPE A

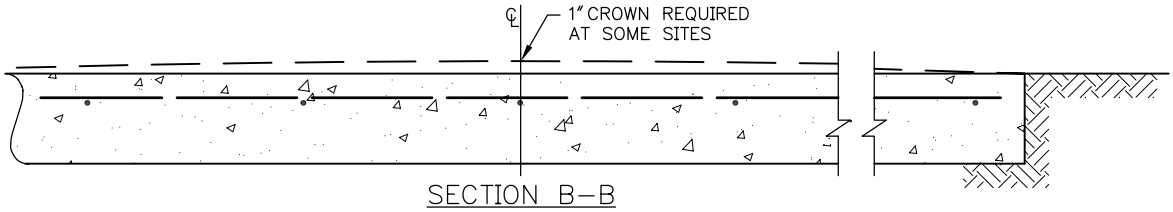
NOTE:
CONCRETE SHALL BE 3000 PSI MIN @28 DAYS. STEEL TROWEL SURFACE W/ BROOM FINISH



TYPE B



SECTION A-A

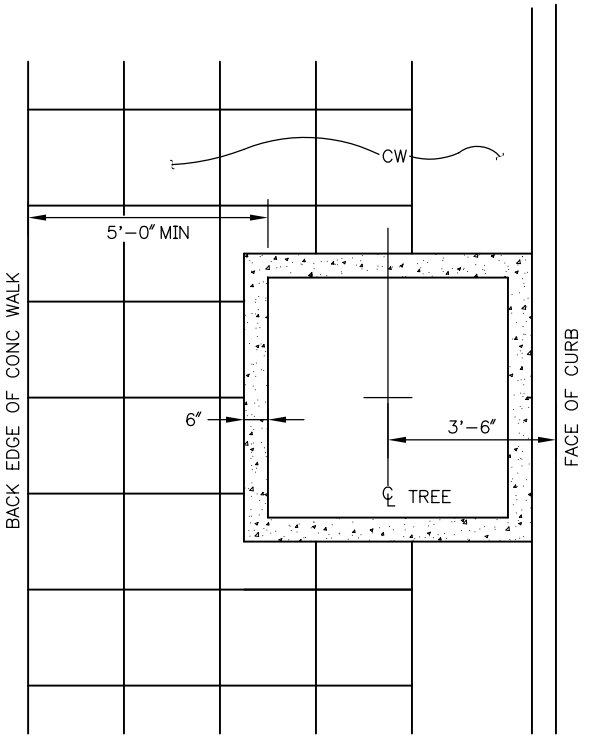


SECTION B-B

REF STD SPEC SEC 8-14

City of Seattle	NOT TO SCALE	BUS SHELTER FOOTING

REV DATE: 2003



FOR ADDITIONAL SIDEWALK
SCORING REQUIREMENTS
SEE STD PLAN NO 420

TREE PIT DIMENSIONAL REQUIREMENTS:
- 24 SQ FT MIN TREE PIT SIZE
- 3'–6" MIN REQ'D BETWEEN TREE ℄ & FACE OF CURB
- 2'–0" MIN REQ'D BETWEEN TREE ℄ & CONC SIDEWALK
- 5'–0" MIN CONC WALKING SURFACE

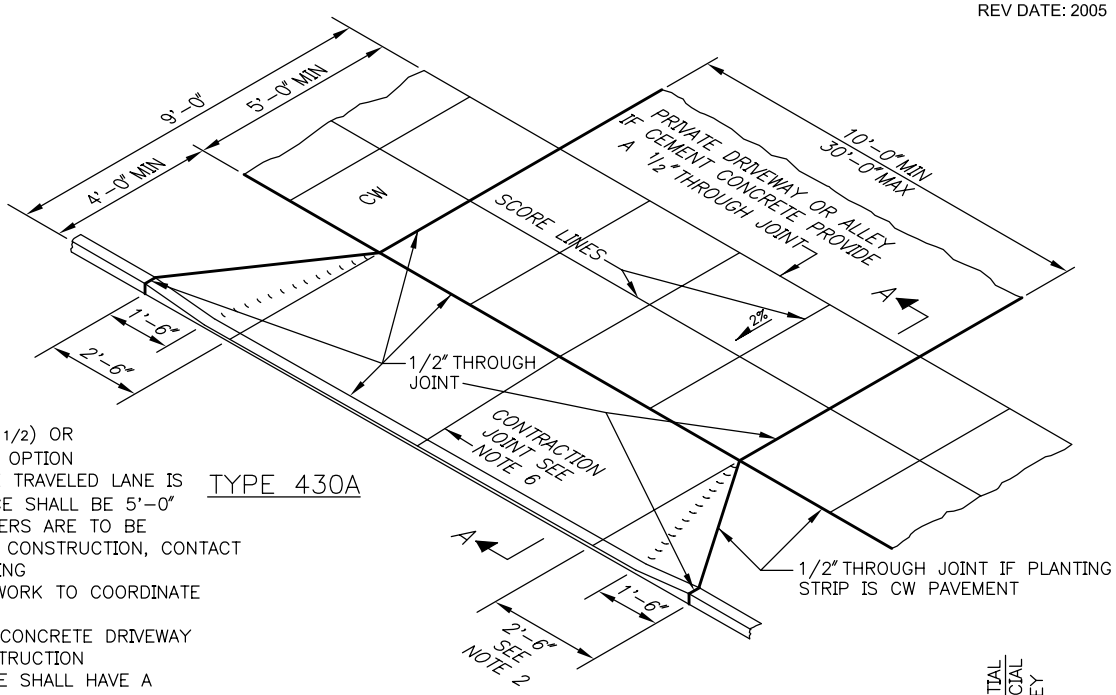
NOTE:
INSTALLATIONS REQUIRING LESS THAN STANDARD MIN CLEARANCES SHALL BE ALLOWED ONLY WITH SPECIFIC APPROVAL BY SEATTLE TRANSPORTATION

REF STD SPEC SEC 8-02 & 8-14

City of Seattle	NOT TO SCALE	TREE PIT DETAIL

STANDARD PLAN NO 430

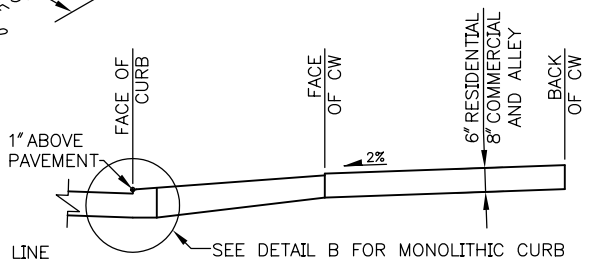
REV DATE: 2005



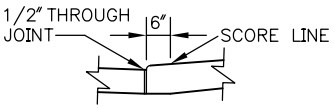
TYPE 430A

NOTES:

1. CONCRETE SHALL BE CL 6 (1 1/2) OR CL 6 (3/4) AT CONTRACTOR'S OPTION
2. ON ARTERIAL STREETS WHERE TRAVELED LANE IS NEXT TO CURB, THIS DISTANCE SHALL BE 5'-0"
3. WHEN EXISTING PARKING METERS ARE TO BE REMOVED FOR NEW DRIVEWAY CONSTRUCTION, CONTACT SDOT A MINIMUM OF 2 WORKING DAYS PRIOR TO SCHEDULED WORK TO COORDINATE REMOVAL OF METER HEADS
4. REF STD PLAN NO 431 FOR CONCRETE DRIVEWAY PLACED WITH SIDEWALK CONSTRUCTION
5. THE RAMP SECTION CONCRETE SHALL HAVE A COARSE TEXTURED SURFACE OBTAINED BY A 3/4" 9-11 FLATTENED EXPANDED METAL MESH BEING PRESSED INTO THE STILL FRESH CONCRETE. THE LONG AXIS OF THE DIAMOND PATTERN SHALL BE ALIGNED WITH THE SLOPE OF THE RAMP
6. DRIVEWAY WIDTH GREATER THAN 15'-0" SHALL HAVE A TRANSVERSE CONTRACTION JOINT AT OR NEAR CENTER
7. THIS DISTANCE IS 1'-0", HOWEVER ON ARTERIALS AND COMMERCIAL STREETS WHERE THE LANE OF TRAVEL IS ADJACENT TO CURB THIS DISTANCE SHALL BE 3'-6"

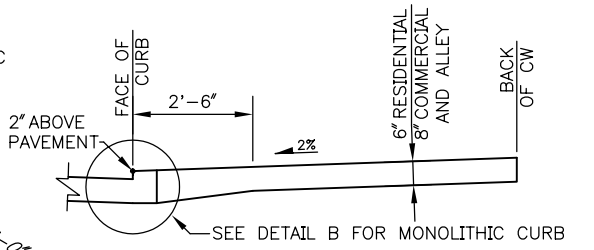


SECTION A-A

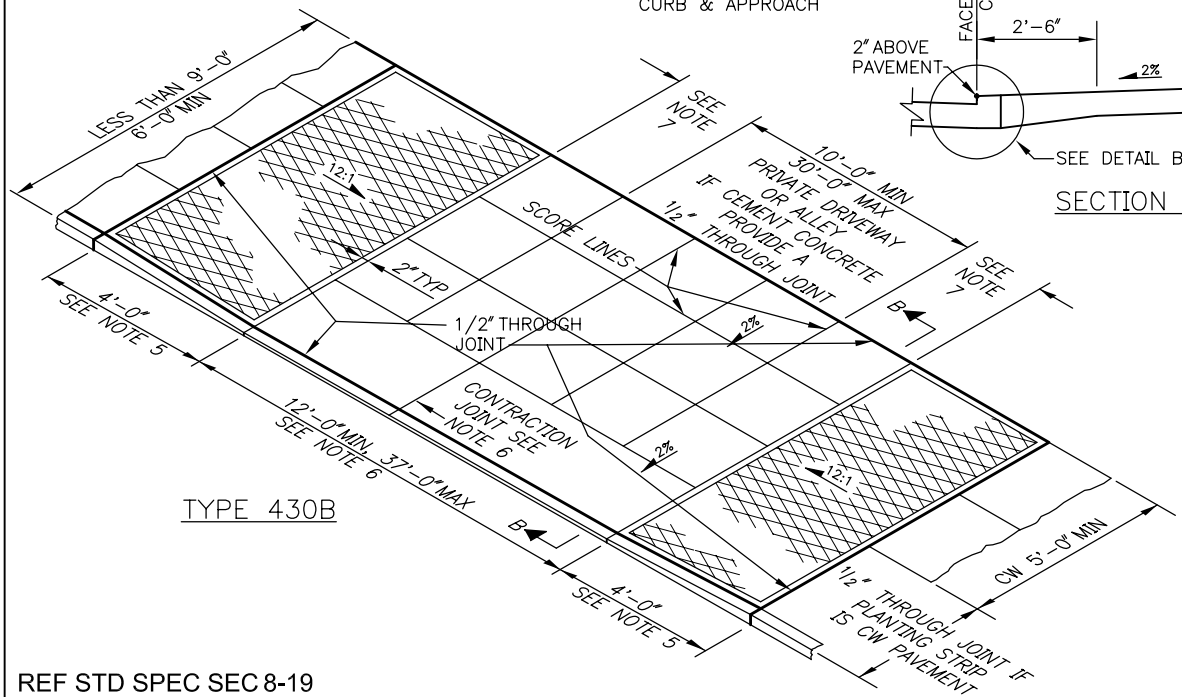


DETAIL B

DRIVEWAY W/ MONOLITHIC CURB & APPROACH



SECTION B-B

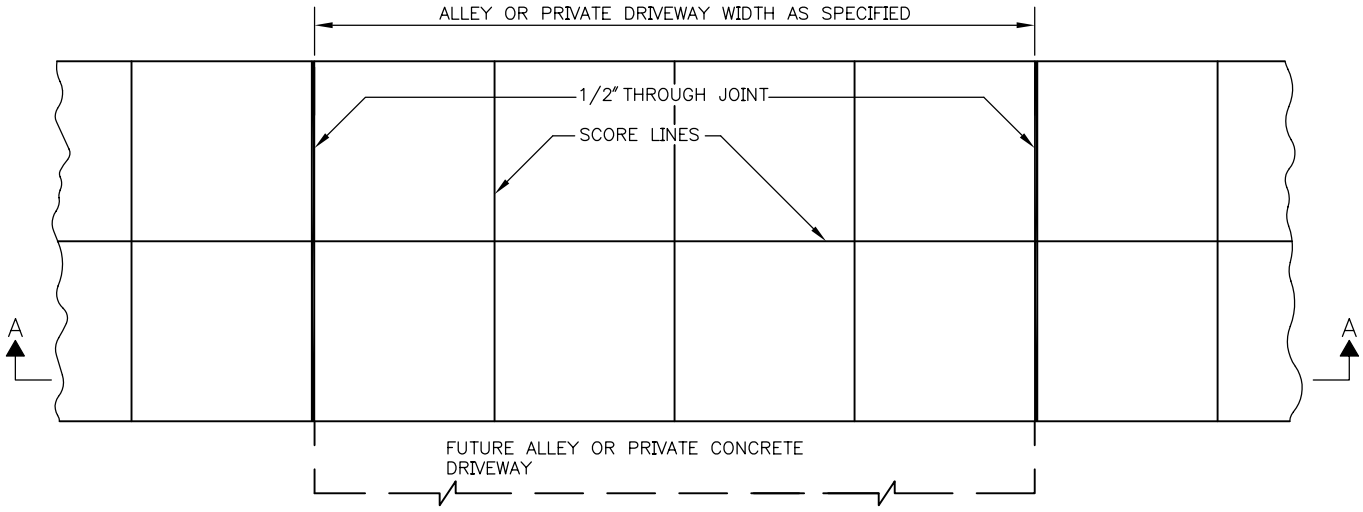


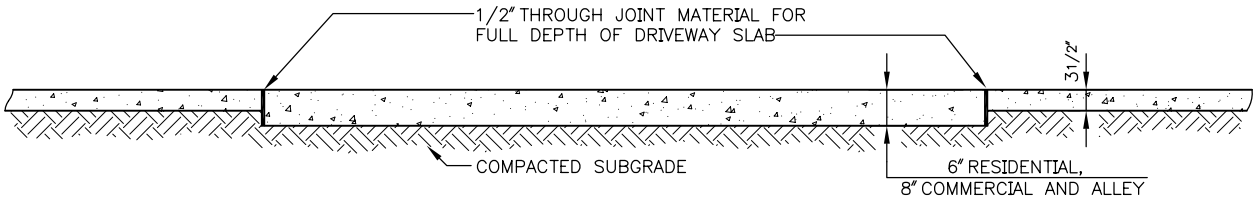
TYPE 430B

REF STD SPEC SEC 8-19

City of Seattle	NOT TO SCALE	TYPE 430 DRIVEWAY

REV DATE: 2003





SECTION A–A

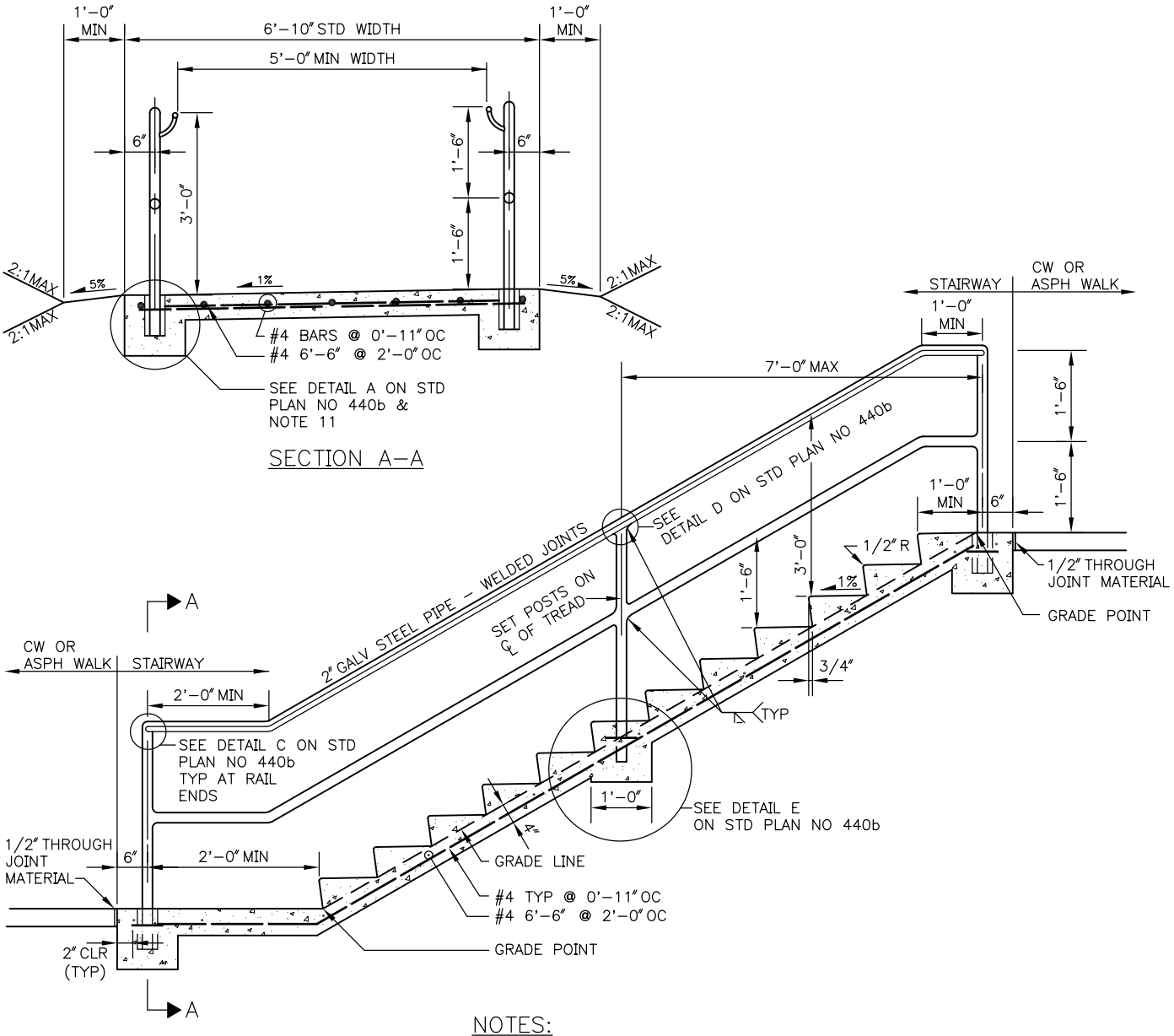
NOTES:

1. DRIVEWAY WIDTH GREATER THAN 15'–0" SHALL HAVE TRANSVERSE CONTRACTION JOINT AT ITS CENTER
2. DRIVEWAY CONCRETE SHALL BE CLASS 6(3/4) OR 6(1½) AT CONTRACTOR'S OPTION
3. SIDEWALK CONCRETE SHALL BE CLASS 5(3/4)

REF STD SPEC SEC 8-14 & 8-19

City of Seattle	NOT TO SCALE	CONCRETE DRIVEWAY PLACED WITH SIDEWALK CONSTRUCTION

REV DATE: 2005



NOTES:

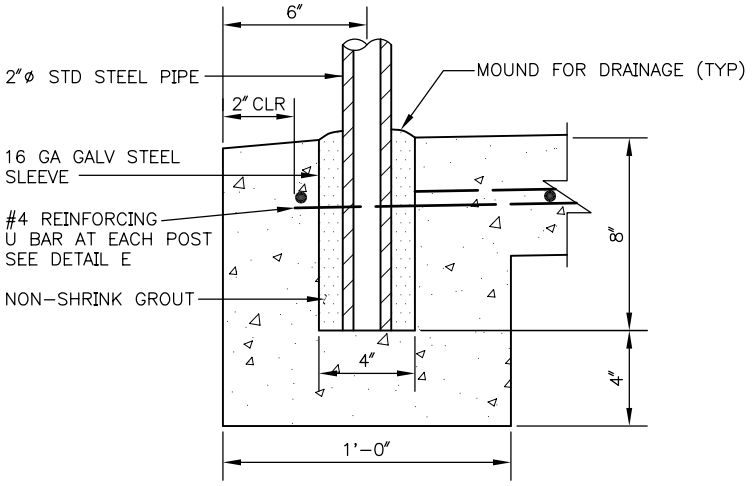
1. FLIGHTS OF STAIRS SHOULD BE SHORT (MAX 20 STEPS PER FLIGHT BEFORE A LANDING IS REQUIRED)
2. AVOID FEWER THAN 2 STEPS PER FLIGHT
3. STEPS IN FLIGHT MUST HAVE UNIFORM TREAD RUNS AND UNIFORM RISER HEIGHTS WITH TOLERANCE OF ± 3/8"
4. TREADS SHALL BE 11" MIN, 12" MAX. RISERS SHALL BE 5" MIN, 7" MAX
5. LANDINGS BETWEEN FLIGHTS OF STEPS MUST HAVE SAME WIDTH AS STEPS AND A MIN LENGTH OF 4'–0"
6. FLIGHTS OF 4 OR MORE STEPS SHALL HAVE HANDRAILS ON BOTH SIDES
7. HANDRAILS SHALL BE CONTINUOUS ACROSS LANDINGS BETWEEN FLIGHTS OF STEPS
8. HANDRAILS SHALL BE GALVANIZED AFTER FABRICATION
9. PIPE MATERIAL SHALL BE ASTM A53
10. REINFORCING STEEL SHALL BE ASTM A615 GR 60
11. FOR FORMAL DRAINAGE PICK–UP SEE DETAIL B ON STD PLAN NO. 440b (THIS IS OPTIONAL AND MUST BE CALLED OUT ON DRAWINGS)
12. PIPE DIAMETERS SHOWN ARE "NOMINAL" DIAMETERS AS GIVEN IN AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL
13. CONCRETE CLASS CL6(3/4)

REF STD SPEC SEC 8-18

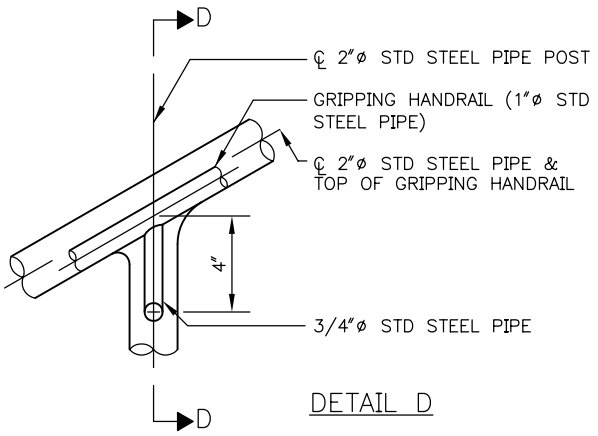
City of Seattle	NOT TO SCALE	CEMENT CONCRETE STAIRWAY & HANDRAIL

STANDARD PLAN NO 440b

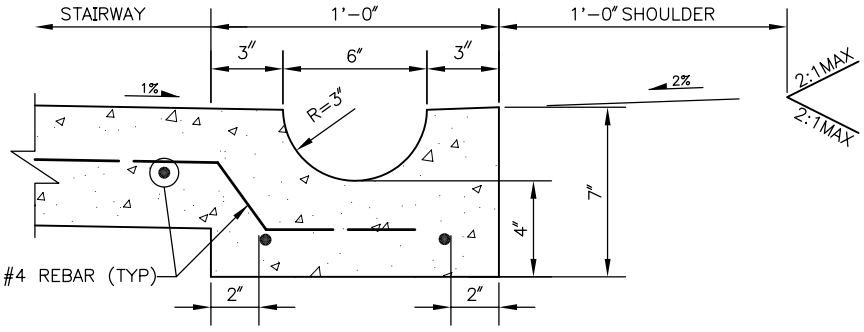
REV DATE: 2003



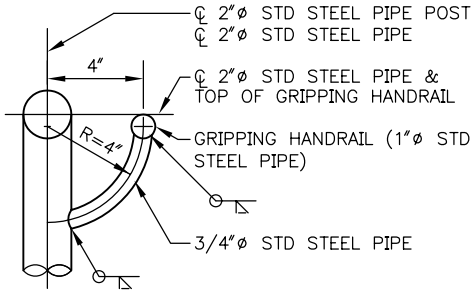
DETAIL A



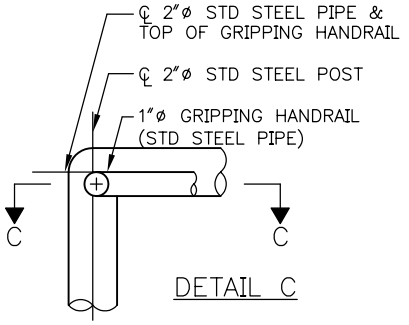
DETAIL D



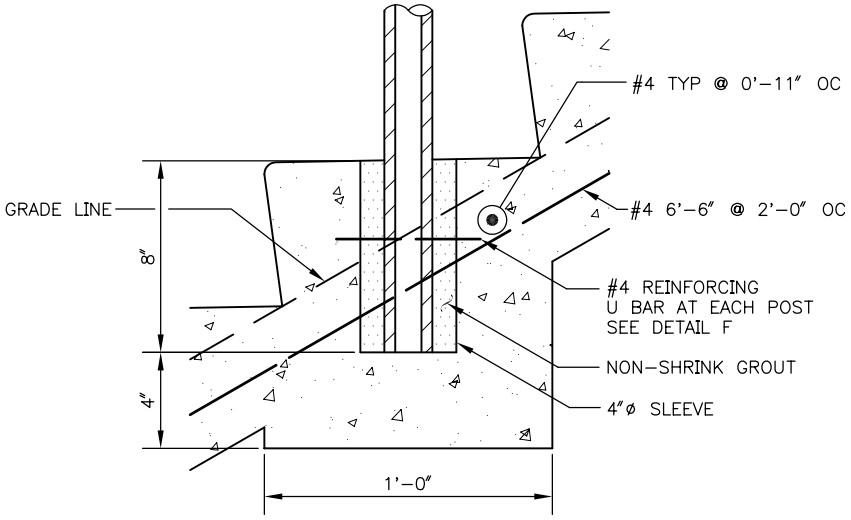
DETAIL B
SEE NOTE 11 ON STD PLAN NO 440a



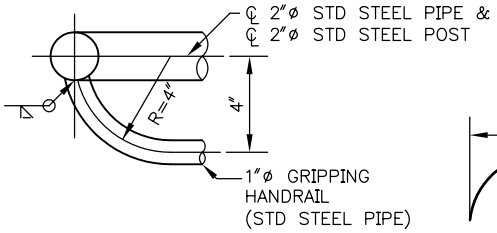
SECTION D–D



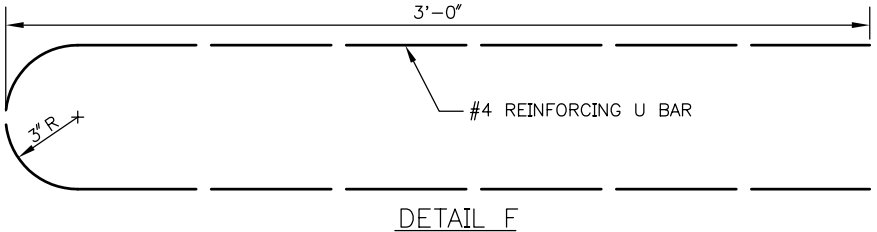
DETAIL C



DETAIL E



SECTION C–C



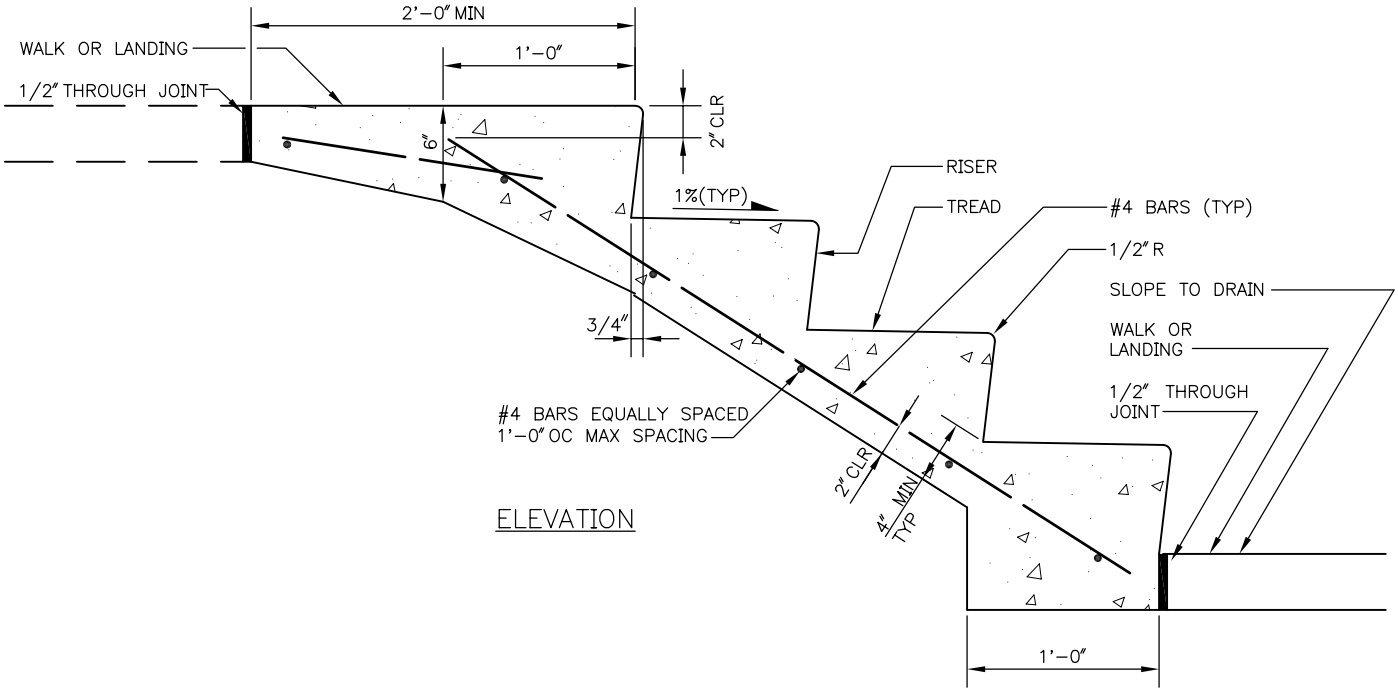
DETAIL F

REF STD SPEC SEC 8-18

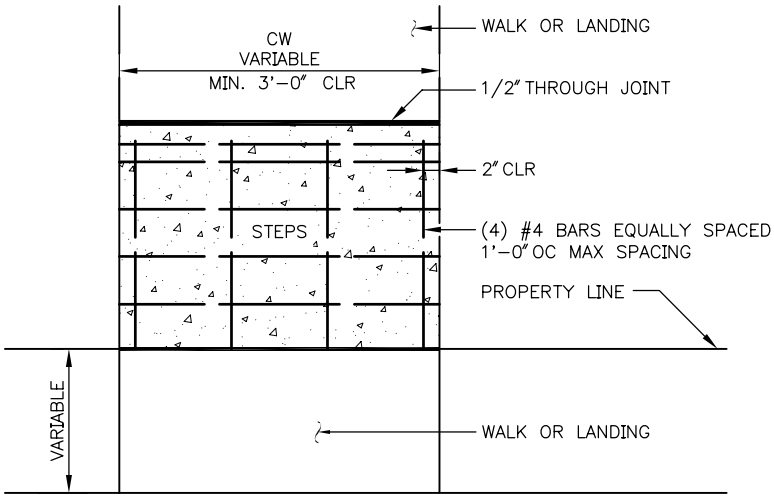
City of Seattle	NOT TO SCALE	CEMENT CONCRETE STAIRWAY & HANDRAIL

STANDARD PLAN NO 441

REV DATE: 2005



ELEVATION



PLAN

NOTES:

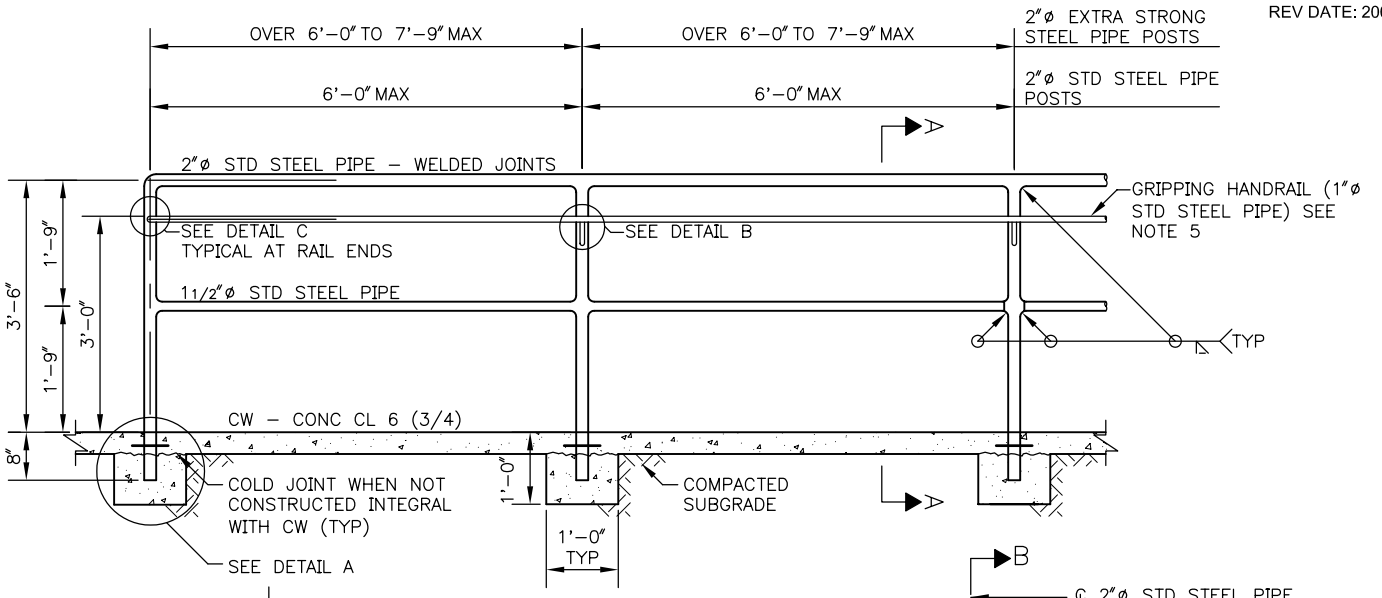
1. CEMENT CONCRETE SHALL BE CL 6 (3/4) TROWEL FINISH
2. NUMBER OF STEPS SHALL SUIT INDIVIDUAL CONDITIONS WITH UNIFORM TREAD AND RISER DIMENSIONS AS FOLLOWS:
   TREADS SHALL BE 11" MIN – 1'–0" MAX
   RISERS SHALL BE 5" MIN – 7" MAX
3. STEP WIDTH SHALL MATCH WIDTH OF EXISTING WALK, BUT SHALL BE NO LESS THAN 2'–6" WIDE
4. STEPS WITH 4 OR MORE RISERS MUST INCLUDE HANDRAIL. SEE STD PLAN NO 440
5. REINFORCING STEEL ASTM A 615 GR60
6. TREAD SLOPES OUTWARD @1%

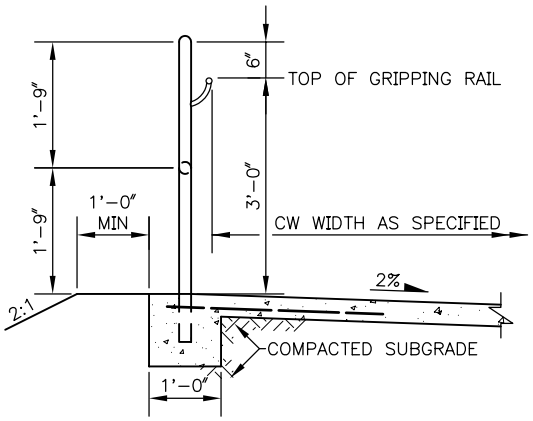
REF STD SPEC SEC 8-18

City of Seattle	NOT TO SCALE	CEMENT CONCRETE STEPS

STANDARD PLAN NO 442

REV DATE: 2003

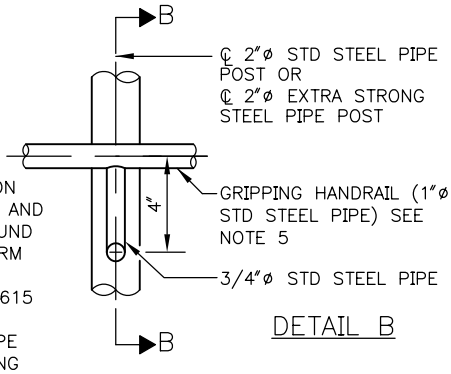




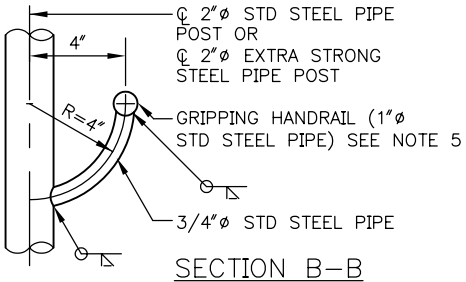
SECTION A–A

NOTES:

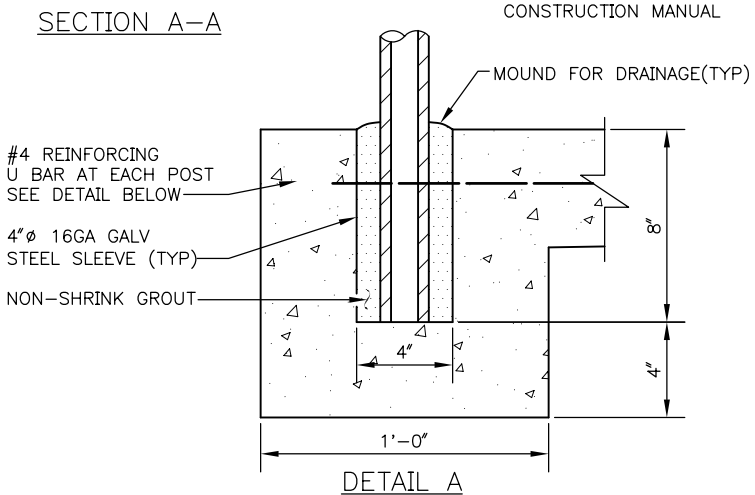
1. RAILING SHALL BE HOT DIP GALVANIZED AFTER FABRICATION
2. ALL POSTS SHALL BE PLUMB AND RAILS PARALLEL TO THE GROUND
3. PIPE MATERIAL SHALL CONFORM TO ASTM A 53
4. REINFORCING STEEL ASTM A 615 GR 60
5. IF THE CONCRETE WALK SLOPE IS 5% OR GREATER A GRIPPING HANDRAIL IS REQUIRED
6. PIPE DIAMETERS SHOWN ARE "NOMINAL" DIAMETERS AS GIVEN IN AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL



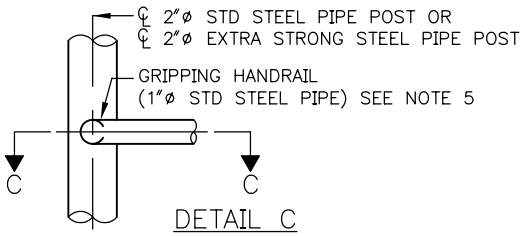
DETAIL B



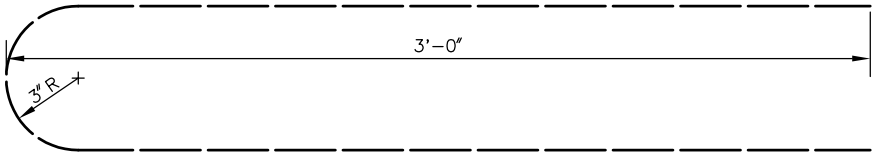
SECTION B–B



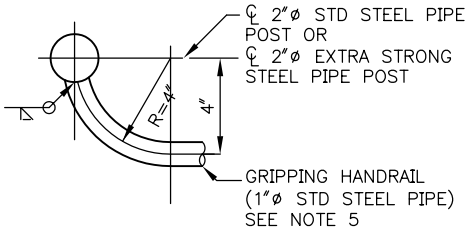
DETAIL A



DETAIL C



DETAIL D

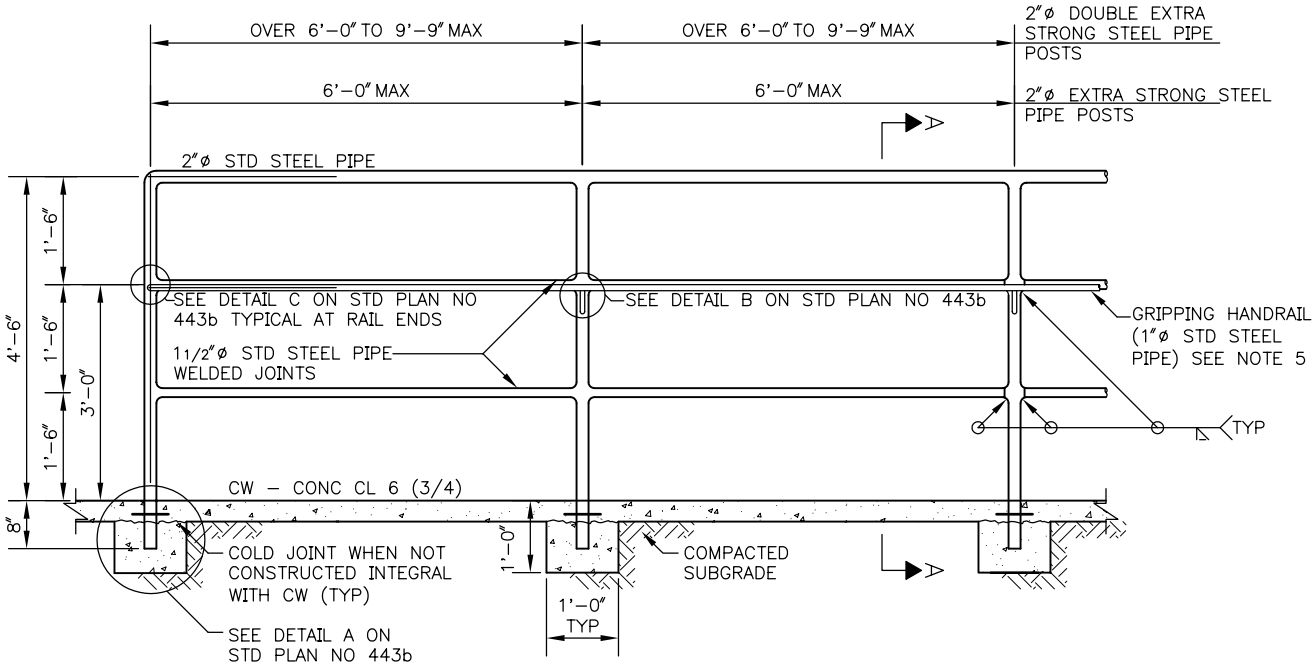


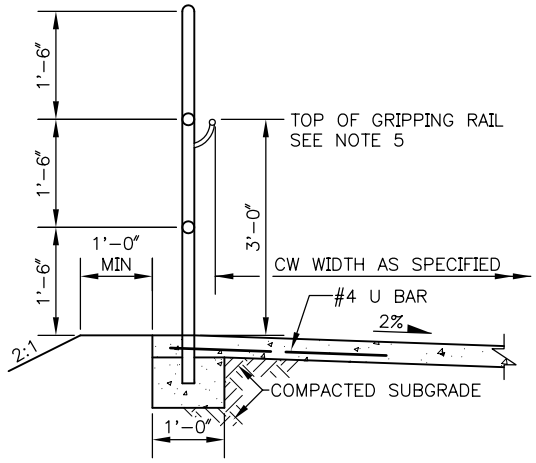
SECTION C–C

REF STD SPEC SEC 8-14 & 8-18

City of Seattle	NOT TO SCALE	STEEL PIPE HANDRAIL

REV DATE: 2003





SECTION A–A

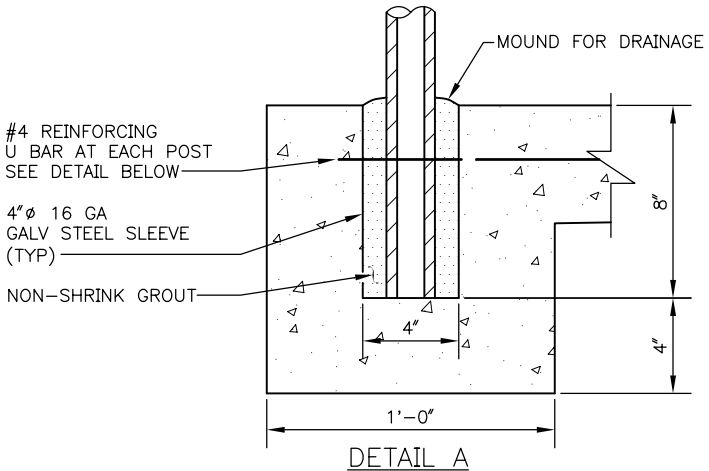
NOTES:

1. RAILING SHALL BE HOT DIP GALVANIZED AFTER FABRICATION
2. ALL POSTS SHALL BE PLUMB AND RAILS PARALLEL TO GRADE
3. PIPE MATERIAL SHALL CONFORM TO ASTM A53
4. REINFORCING STEEL ASTM A615 GR 60
5. IF THE CONCRETE WALK SLOPE IS 5% OR GREATER A GRIPPING HANDRAIL IS REQUIRED
6. PIPE DIAMETERS SHOWN ARE "NOMINAL" DIAMETERS AS GIVEN IN AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL

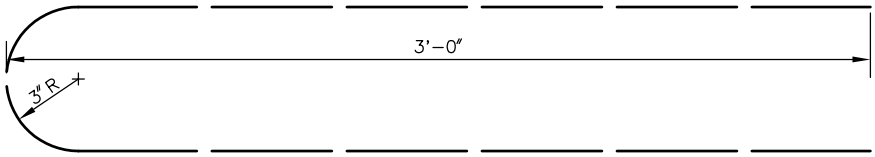
REF STD SPEC SEC 8-18

City of Seattle	NOT TO SCALE	STEEL PIPE RAILING FOR BIKE PATH

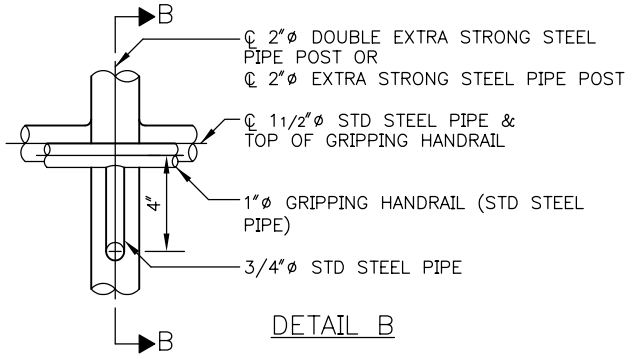
REV DATE: 2003



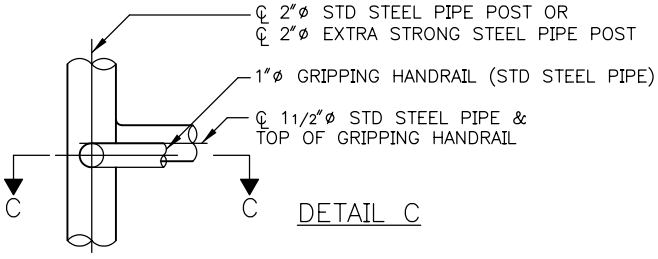
DETAIL A



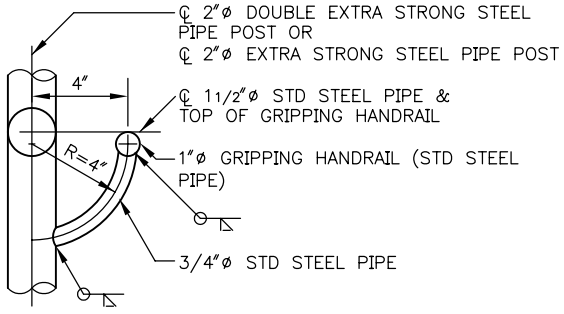
U BAR DETAIL



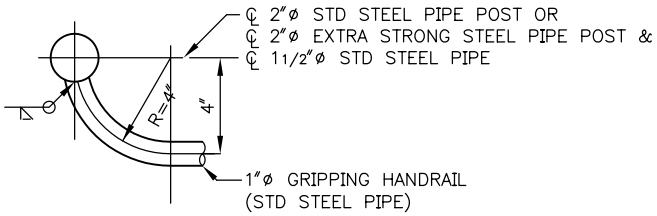
DETAIL B



DETAIL C



SECTION B-B



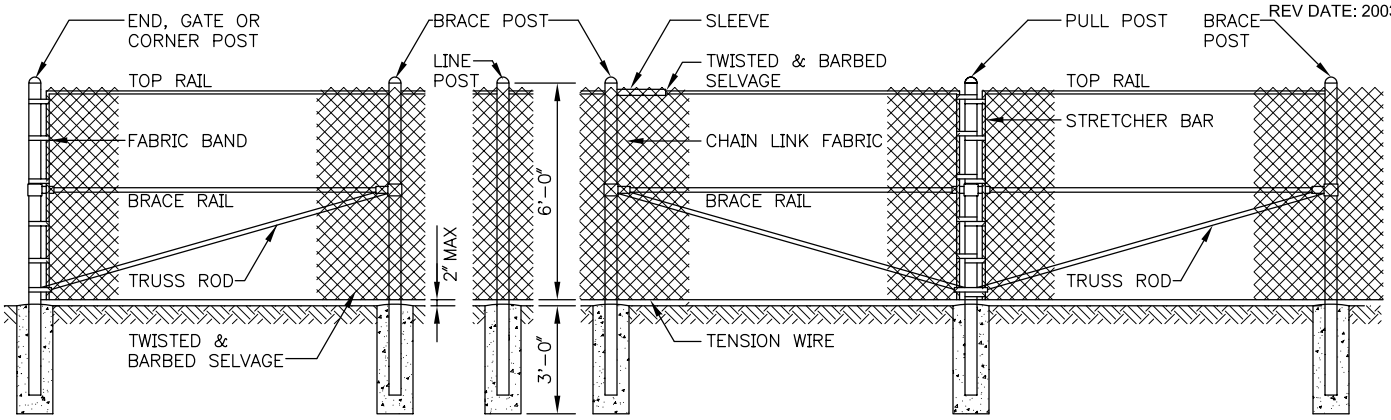
SECTION C-C

REF STD SPEC SEC 8-18

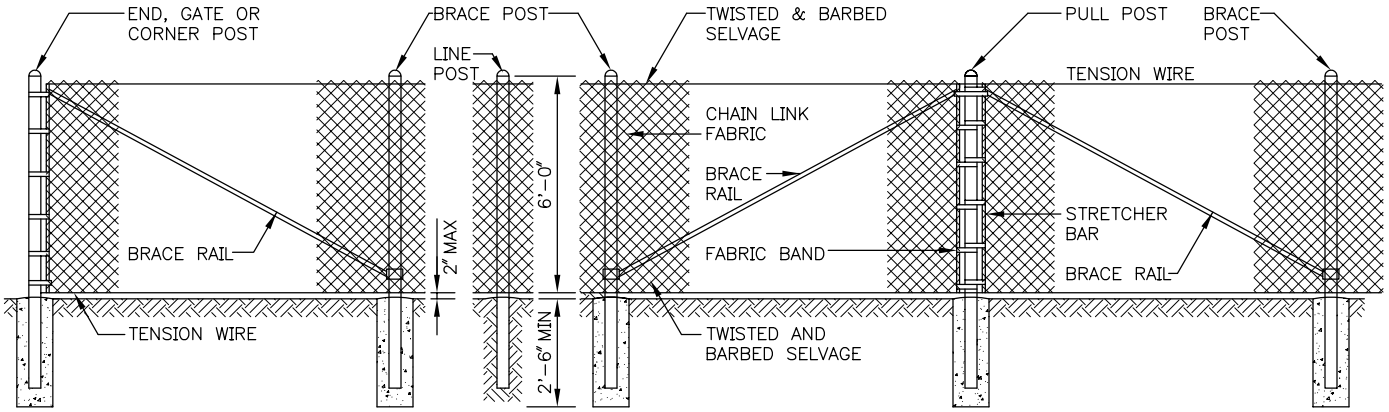
City of Seattle	NOT TO SCALE	STEEL PIPE RAILING FOR BIKE PATH

STANDARD PLAN NO 450a

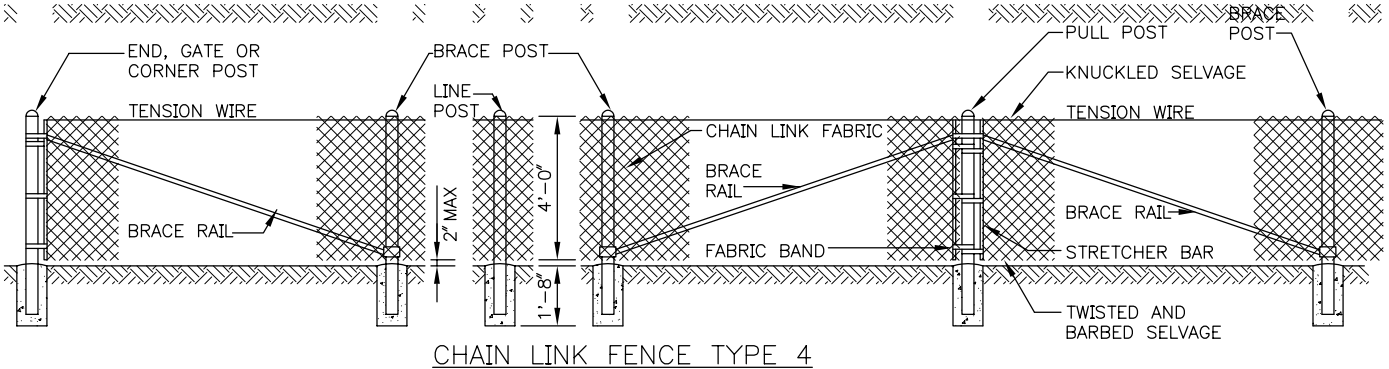
REV DATE: 2003



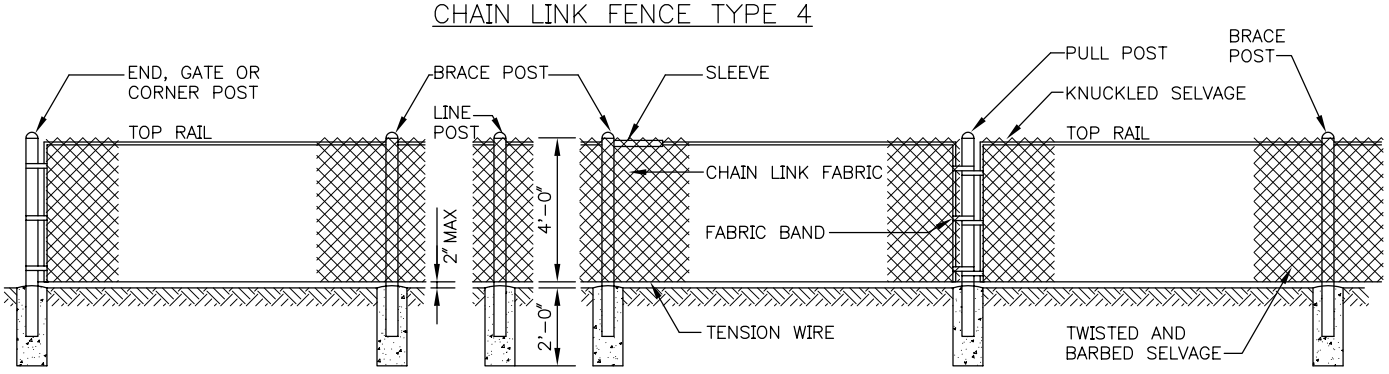
CHAIN LINK FENCE TYPE 1



CHAIN LINK FENCE TYPE 3



CHAIN LINK FENCE TYPE 4



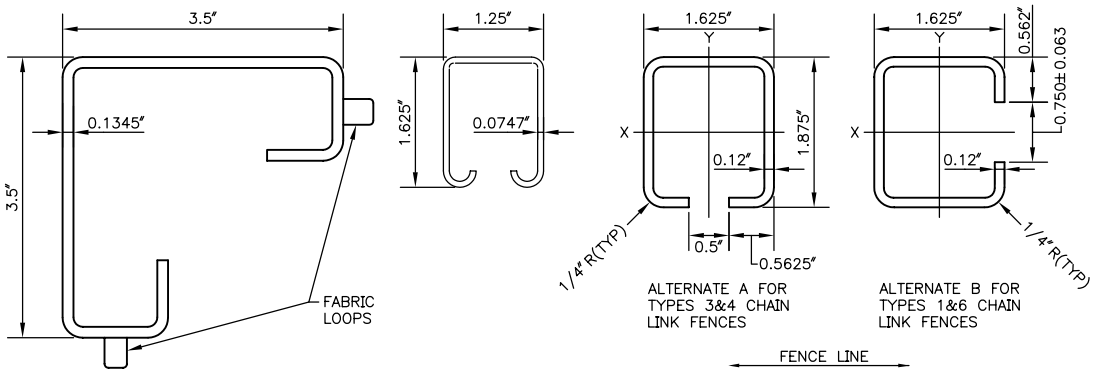
CHAIN LINK FENCE TYPE 6

REF STD SPEC SEC 8-12

City of Seattle	NOT TO SCALE	CHAIN LINK FENCE

STANDARD PLAN NO 450b

REV DATE: 2003



END, CORNER & PULL POST RAIL & BRACE LINE POST

ROLL FORMED SECTIONS

TYPE	MEMBER											
	BRACE RAIL & TOP RAIL						LINE & BRACE POST					
	ROUND		H-COLUMN		ROLL FORMED		ROUND		H-COLUMN		ROLL FORMED	
	ID PIPE INCHES	WEIGHT PER FT POUNDS	SIZE INCHES	WEIGHT PER FT POUNDS	SIZE INCHES	WEIGHT PER FT POUNDS	ID PIPE INCHES	WEIGHT PER FT POUNDS	SIZE INCHES	WEIGHT PER FT POUNDS	SIZE INCHES	WEIGHT PER FT POUNDS
1			1.25X1.62	1.35			2	3.65	2 1/4	4.0		
3	1.25	2.27			1 5/8X1 1/4	1.35	1 1/2	2.72	1 7/8	2.72	1 5/8X1 7/8	2.34
4							1 1/2	2.72	1 7/8	2.72	1 5/8X1 7/8	2.34
6			1.25X1.62	1.35			2	3.65	2 1/4	4.0		

TYPE	MEMBER						
	END, CORNER & PULL POSTS				GATE POST		ALL POSTS
	ROUND		ROLL FORMED		ROUND		
	ID PIPE INCHES	WEIGHT PER FT POUNDS	SIZE INCHES	WEIGHT PER FT POUNDS	ID PIPE INCHES	WEIGHT PER FT POUNDS	LENGTH
1	2 1/2	5.79					8'-8"
3	2	3.65	3 1/2X 3 1/2	5.14	3 1/2	9.1	8'-8"
4	2	3.65					5'-6"
6	2 1/2	5.79					5'-6"

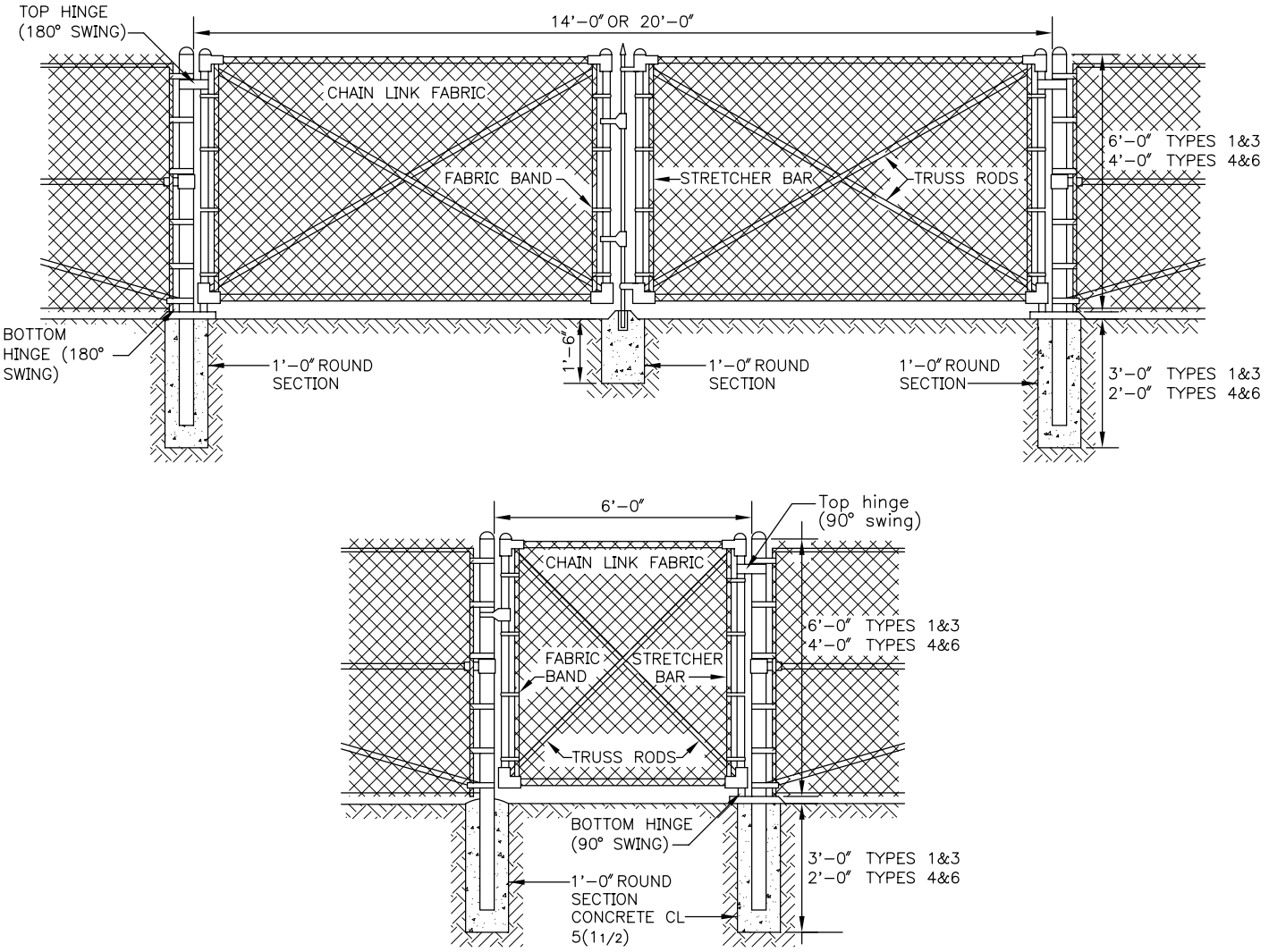
NOTES:

1. ALL CONCRETE POST BASES SHALL BE 10" MINIMUM DIAMETER, CL 5 (1 1/2)
2. POSTS SHALL BE SPACED AT 10'-0" MAXIMUM INTERVALS UNLESS OTHERWISE DIRECTED BY THE ENGINEER
3. TOP OR BOTTOM TENSION WIRES SHALL BE PLACED WITHIN THE LIMITS OF THE FIRST FULL FABRIC WEAVE
4. THE ILLUSTRATIVE DETAIL SHOWN HEREON SHALL NOT BE CONSTRUED AS LIMITING TO HARDWARE DESIGN OR POST SELECTION FOR ANY PARTICULAR FENCE TYPE
5. CONCRETE OR GROUT AROUND POST AT GROUND LINE SHALL BE MOUNDED FOR DRAINAGE

REF STD SPEC SEC 8-12

City of Seattle	NOT TO SCALE	CHAIN LINK FENCE

REV DATE: 2003



NOTES:

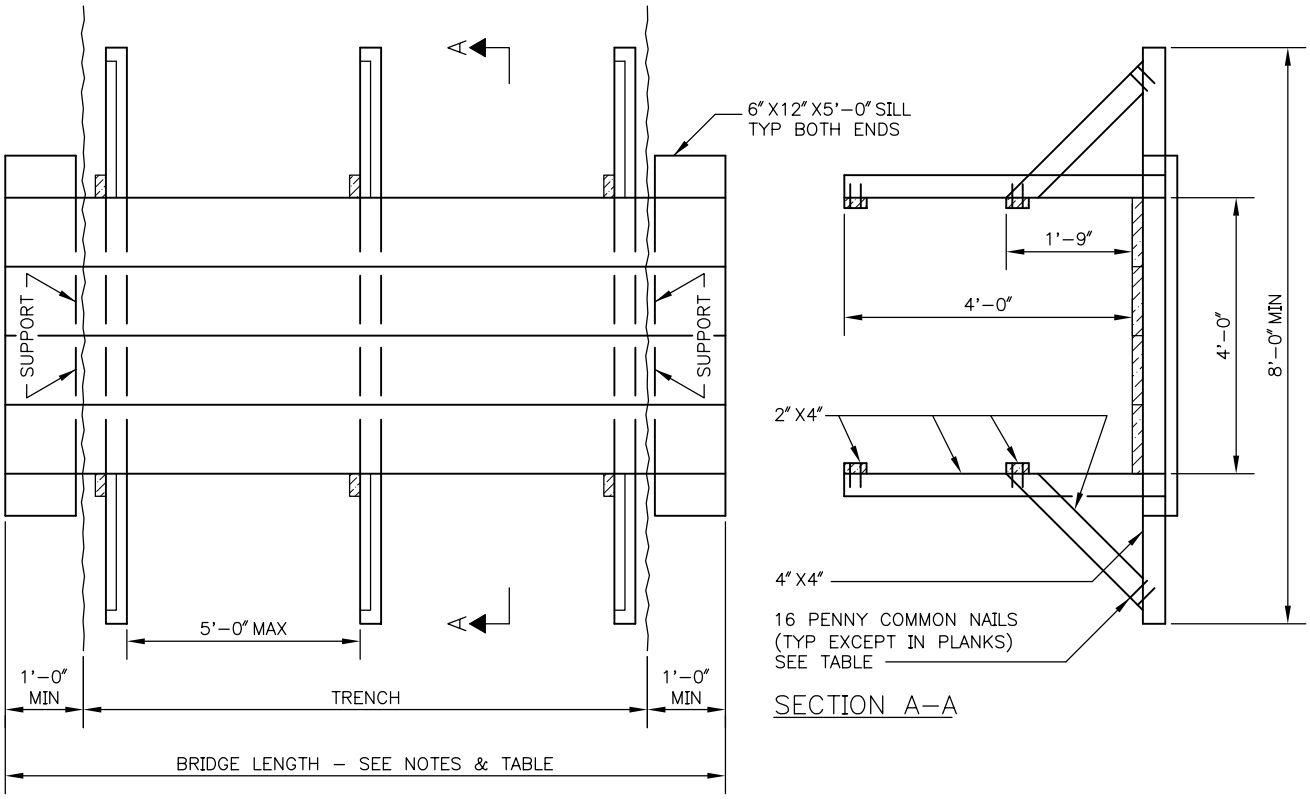
1. FENCE FABRIC SHALL BE SECURED TO GATE FRAMES WITH KNUCKLED SELVAGE ALONG TOP EDGE FOR TYPES 4&6 CHAIN LINK FENCE INSTALLATIONS
2. MINIMUM POST LENGTH:
   TYPES 1&3: 8'–8"
   TYPES 4&6: 5'–6"
3. CONCRETE OR GROUT AROUND POST AT GROUND LINE SHALL BE MOUNDED FOR DRAINAGE

REF STD SPEC SEC 8-12

City of Seattle	NOT TO SCALE	CHAIN LINK GATES

STANDARD PLAN NO 456

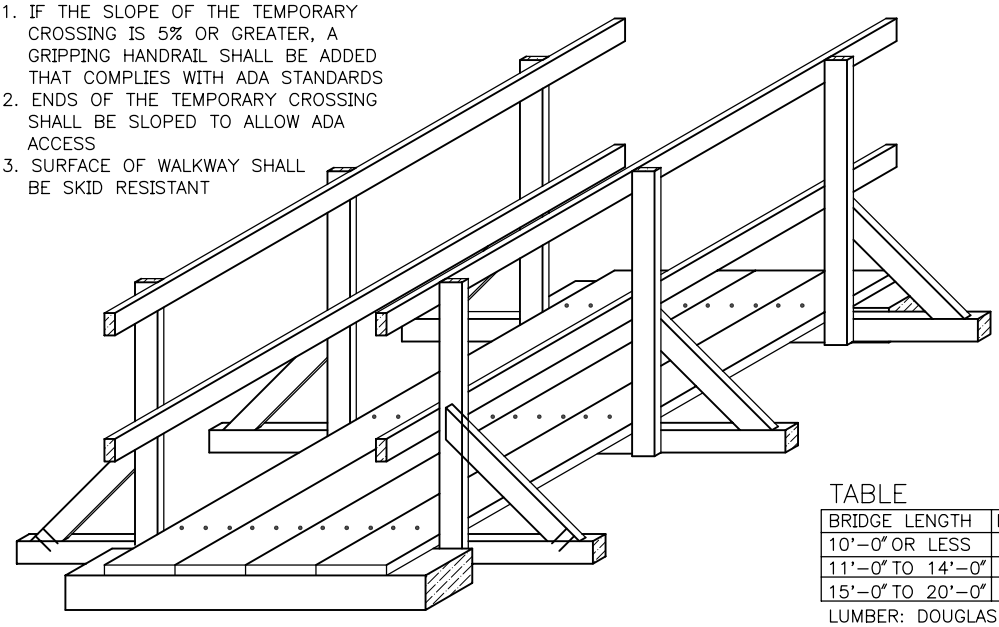
REV DATE: 2003



SECTION A–A

NOTE:

1. IF THE SLOPE OF THE TEMPORARY CROSSING IS 5% OR GREATER, A GRIPPING HANDRAIL SHALL BE ADDED THAT COMPLIES WITH ADA STANDARDS
2. ENDS OF THE TEMPORARY CROSSING SHALL BE SLOPED TO ALLOW ADA ACCESS
3. SURFACE OF WALKWAY SHALL BE SKID RESISTANT



TABLE

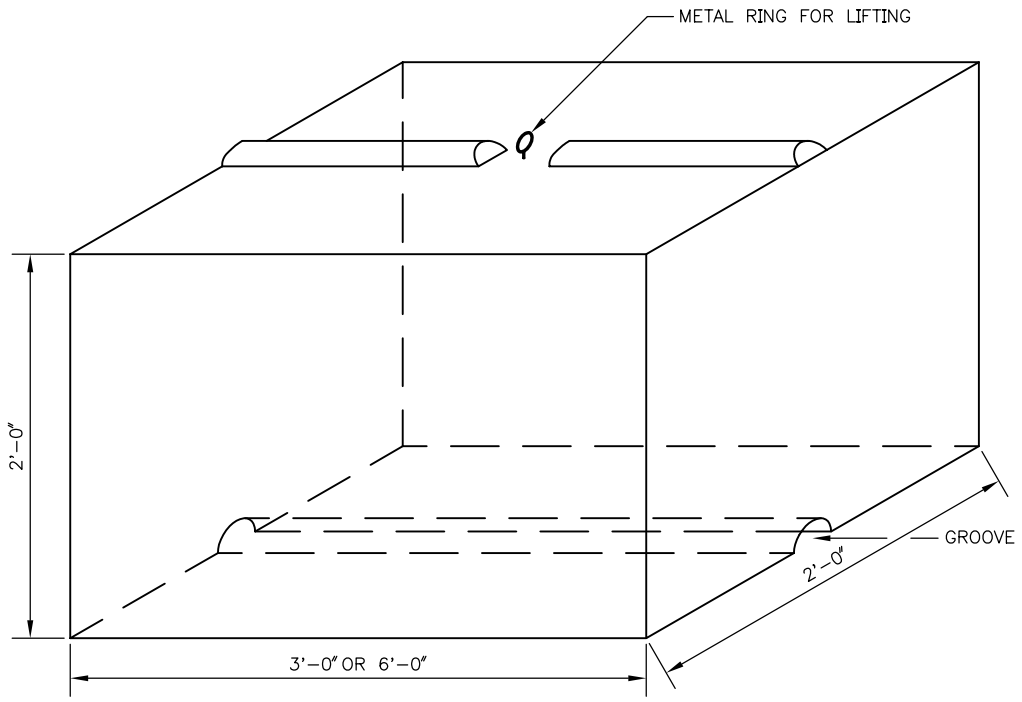
BRIDGE LENGTH	PLANK SIZE	NAIL SIZE
10′–0″ OR LESS	2″ X12″	20 PENNY
11′–0″ TO 14′–0″	3″ X12″	40 PENNY
15′–0″ TO 20′–0″	4″ X12″	60 PENNY

LUMBER: DOUGLAS FIR #2 OR BETTER
POSTS & RAILS S4S
PLANKS – ROUGH

REF STD SPEC SEC 1-07.23

City of Seattle	NOT TO SCALE	TEMPORARY PEDESTRIAN WALKWAY

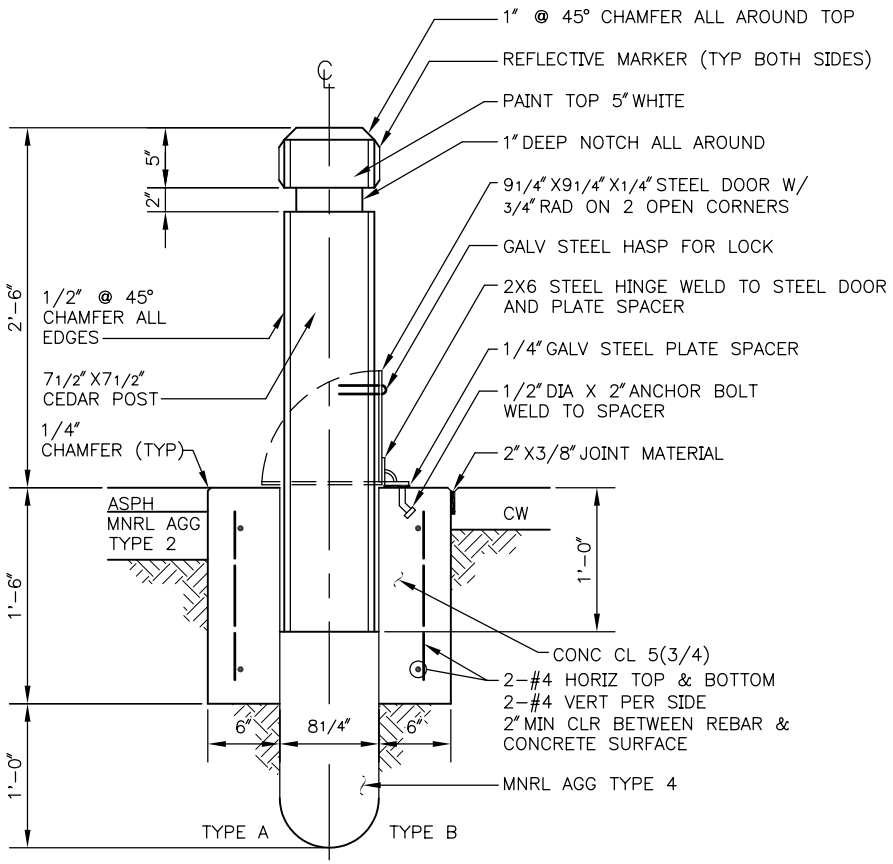
REV DATE: 2003



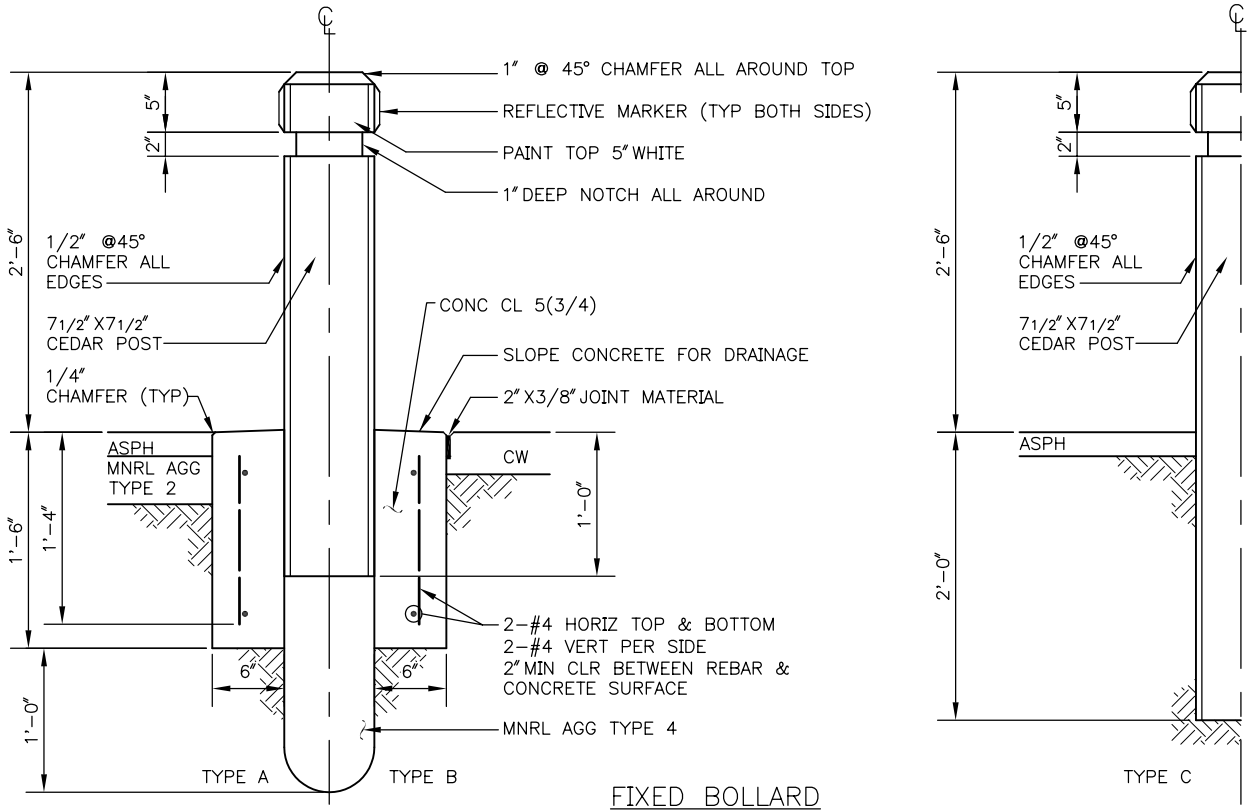
CONCRETE TONGUE & GROOVE BLOCK

City of Seattle	NOT TO SCALE	ECOLOGY BLOCK, CONCRETE

REV DATE: 2003



REMOVABLE BOLLARD

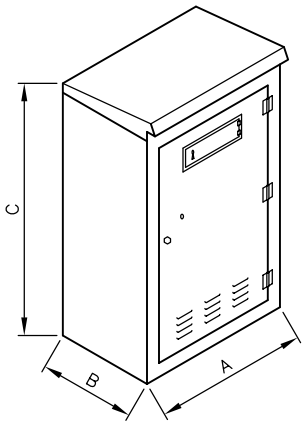


FIXED BOLLARD

REF STD SPEC SEC 8-02

City of Seattle	NOT TO SCALE	FIXED & REMOVABLE WOOD BOLLARD

REV DATE: 2008

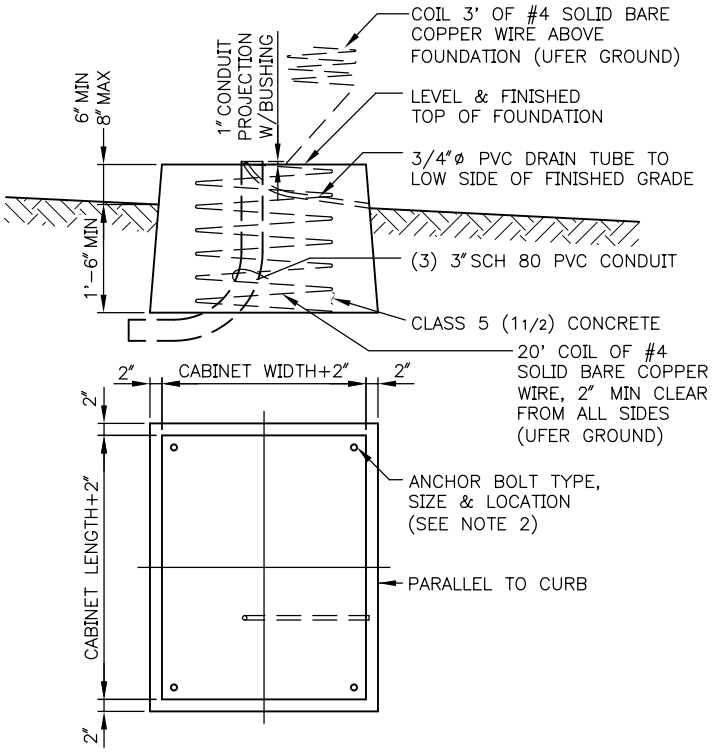


DIMENSION	TYPE II	TYPE III	AUXILIARY
A	30″	44″	24″
B	17″	25 ½″	22″
C	38″ TO 52″	50″ TO 58″	–

SIGNAL CONTROLLER CABINET–TYPES II & III

NOTES:

1. TRAFFIC SIGNAL CONTROLLER CABINET SHALL BE FURNISHED BY THE CITY
2. EXACT CABINET DIMENSIONS & ANCHOR BOLT LOCATIONS SHALL BE PROVIDED BY THE TRAFFIC SIGNAL SHOPS
3. PLACE CABINET DOOR ON SIDEWALK SIDE OF FOUNDATION
4. SEAL CABINET TO FOUNDATION WITH GREY OR CLEAR SILICON TO PREVENT MOISTURE FROM ENTERING THE CABINET



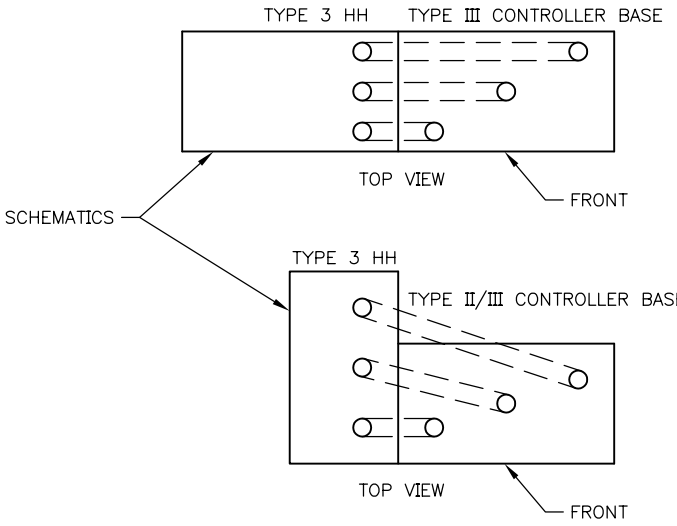
SIGNAL CONTROLLER FOUNDATION–TYPES II & III

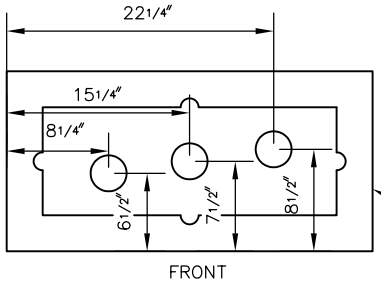
SEE STD PLAN NO 500b FOR CONDUIT LAYOUT

REF STD SPEC SEC 8-31 & 8-32

City of Seattle	NOT TO SCALE	SIGNAL CONTROLLER CABINET & FOUNDATION

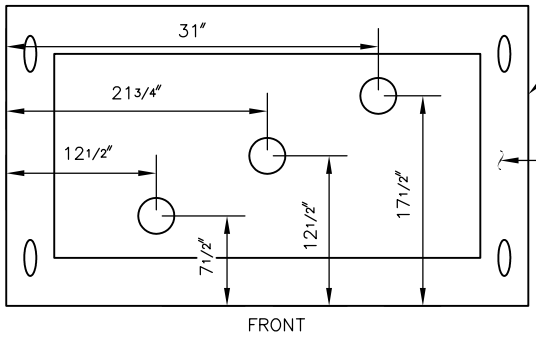
REV DATE: 2008





CONDUIT LAYOUT–TYPE II SIGNAL CONTROLLER FOUNDATION

ALL MEASUREMENTS TO CENTER OF CONDUIT



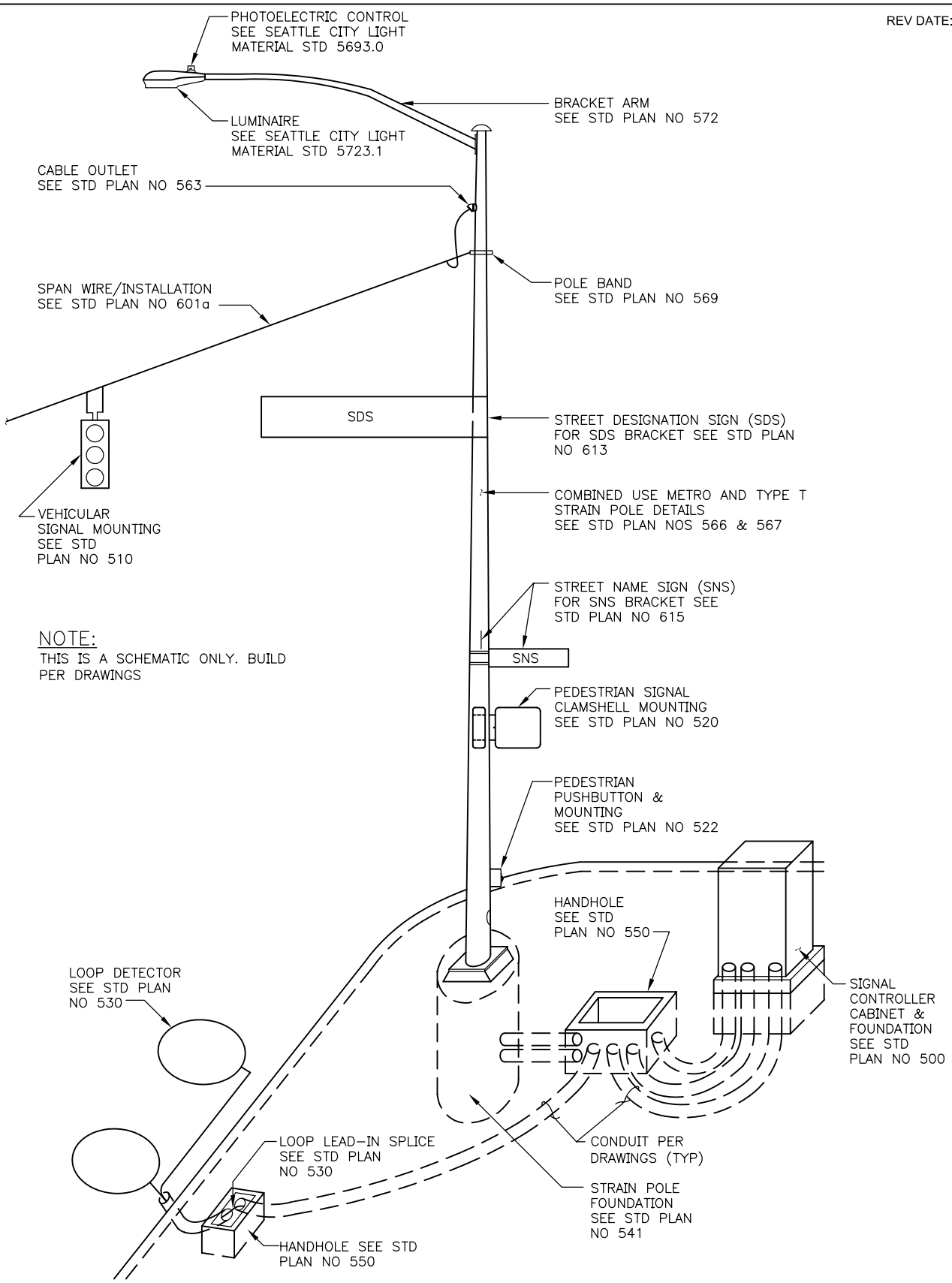
CONDUIT LAYOUT–TYPE III SIGNAL CONTROLLER FOUNDATION

REF STD SPEC SEC 8-31 & 8-32

City of Seattle	NOT TO SCALE	SIGNAL CONTROLLER FOUNDATION CONDUIT LAYOUT

STANDARD PLAN NO 502

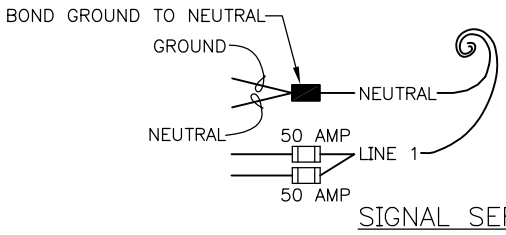
REV DATE: 2008



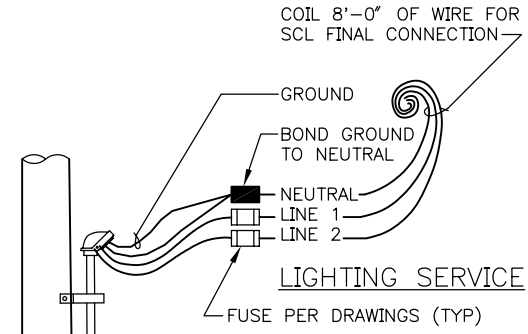
REF STD SPEC SEC 9-31, 9-32, 9-33 & 9-34

City of Seattle	NOT TO SCALE	SIGNALIZED INTERSECTION SPAN WIRE TYPE CONFIGURATION

REV DATE: 2008



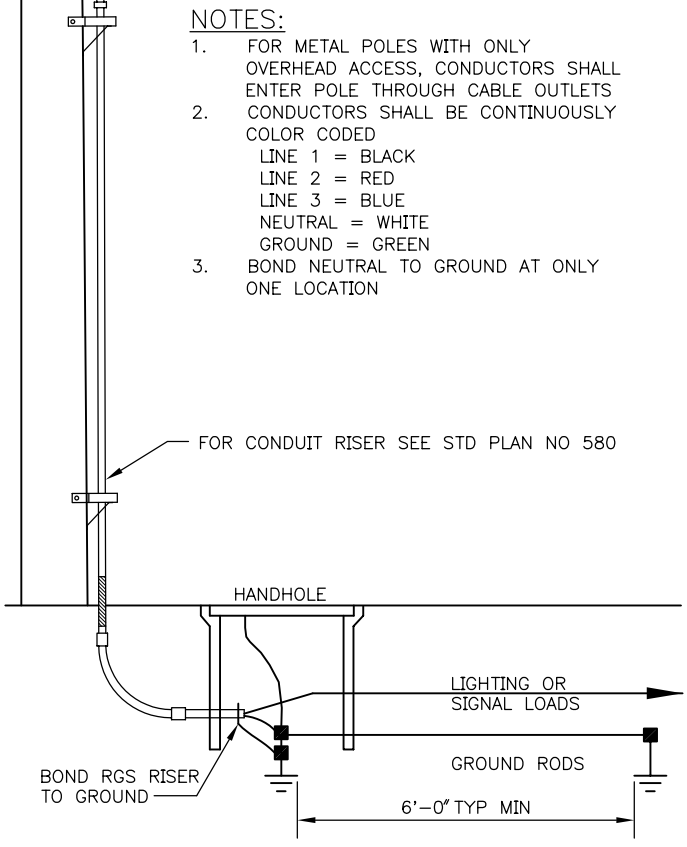
SIGNAL SERVICE



LIGHTING SERVICE

NOTES:

1. FOR METAL POLES WITH ONLY OVERHEAD ACCESS, CONDUCTORS SHALL ENTER POLE THROUGH CABLE OUTLETS
2. CONDUCTORS SHALL BE CONTINUOUSLY COLOR CODED
   - LINE 1 = BLACK
   - LINE 2 = RED
   - LINE 3 = BLUE
   - NEUTRAL = WHITE
   - GROUND = GREEN
3. BOND NEUTRAL TO GROUND AT ONLY ONE LOCATION

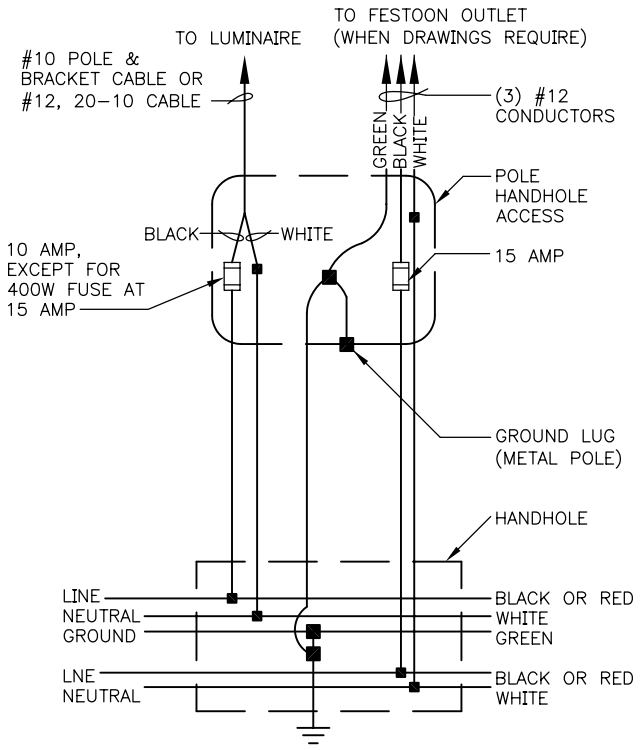


OVERHEAD SERVICE CONNECTION

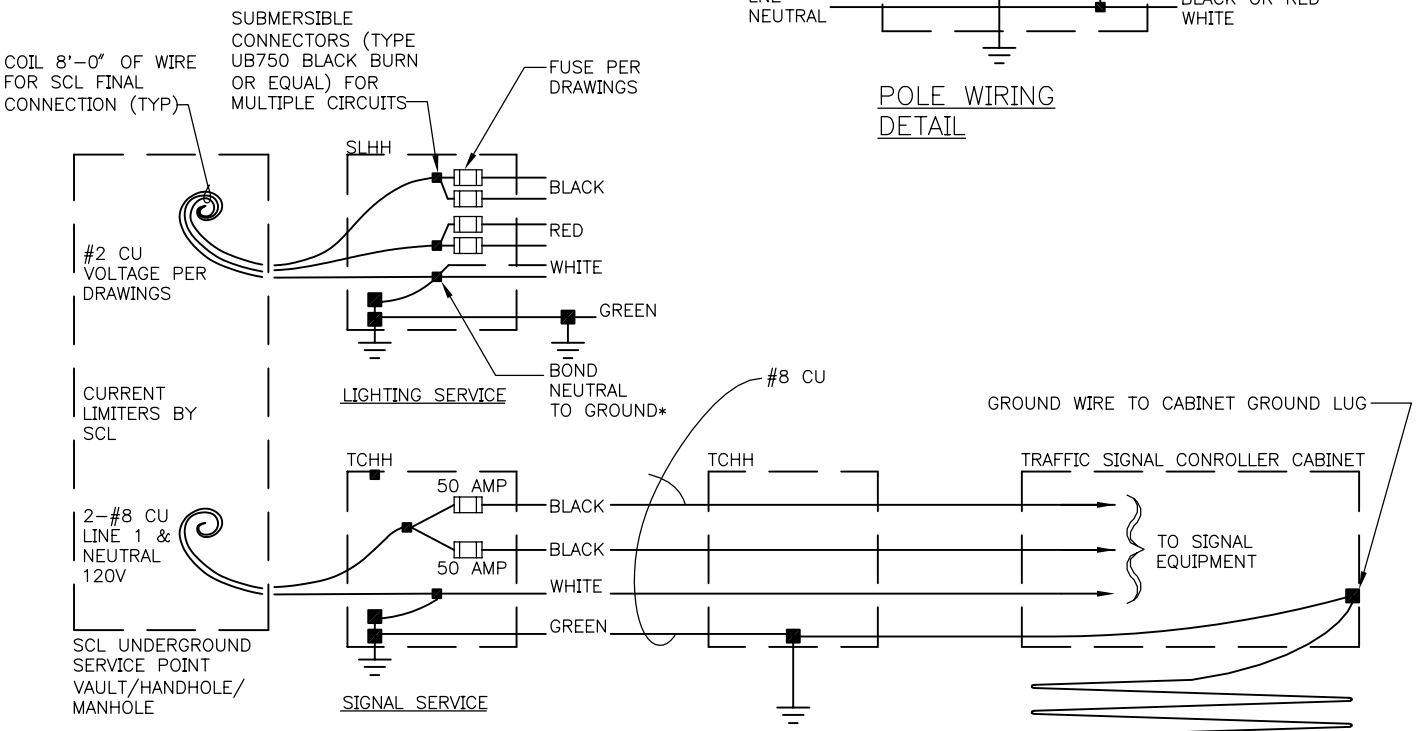
REF STD SPEC SEC 8-30, 8-31, 9-31, & 9-32

City of Seattle	NOT TO SCALE	SIGNAL & LIGHTING SERVICE CONNECTION & LIGHT POLE WIRING DETAIL

REV DATE: 2008



POLE WIRING DETAIL



UNDERGROUND SERVICE CONNECTION

NOTES:

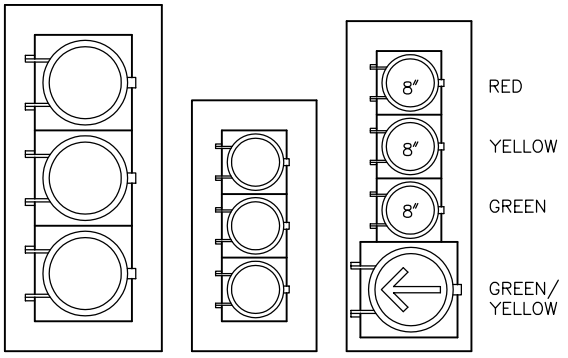
1. *SCL MAY REQUIRE NEUTRAL TO BE BONDED TO GROUND IN SCL SERVICE POINT.
2. BOND NEUTRAL TO GROUND AT ONLY ONE LOCATION.

REF STD SPEC SEC 8-30 & 9-31

City of Seattle	NOT TO SCALE	SIGNAL & LIGHTING SERVICE CONNECTION & LIGHT POLE WIRING DETAIL

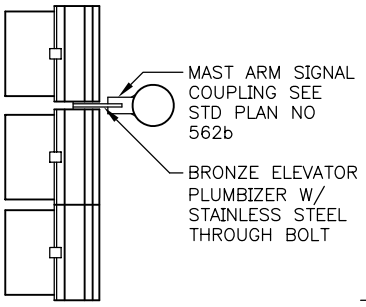
STANDARD PLAN NO 510a

REV DATE: 2008

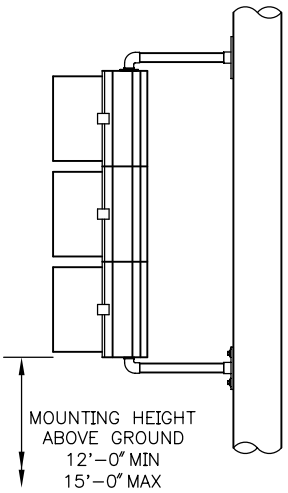


TYPICAL SIGNAL FACES

W/ TUNNEL VISORS &
5″ BACKPLATE (LOUVERED)



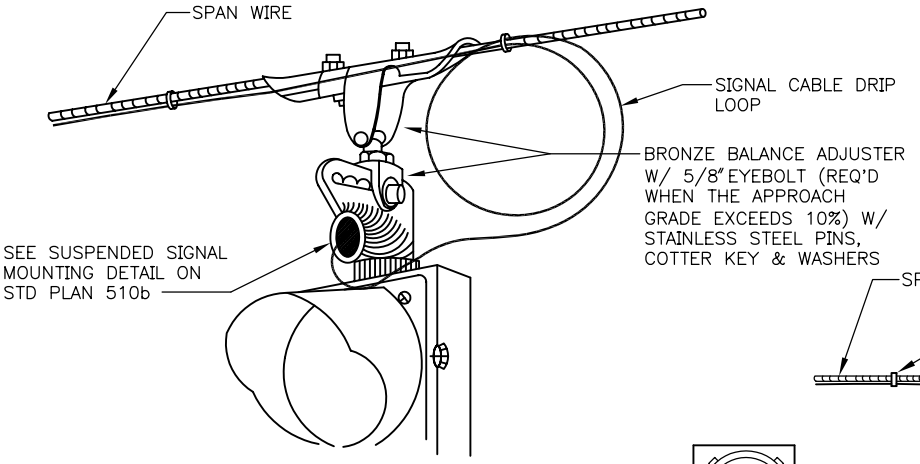
MAST ARM MOUNTING



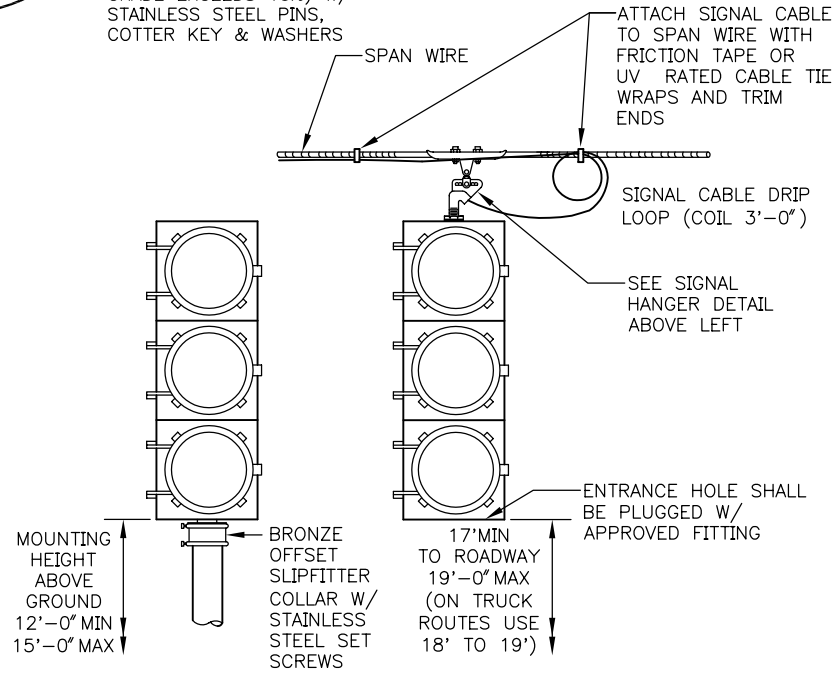
BRACKET MOUNTING

FOR SIGNAL HEAD BRACKET ASSEMBLY
SEE STD PLAN NO 511

NOTE:
BACKPLATES HAVE
BEEN OMITTED
FROM VARIOUS
VIEWS FOR CLARITY



SIGNAL HANGER DETAIL



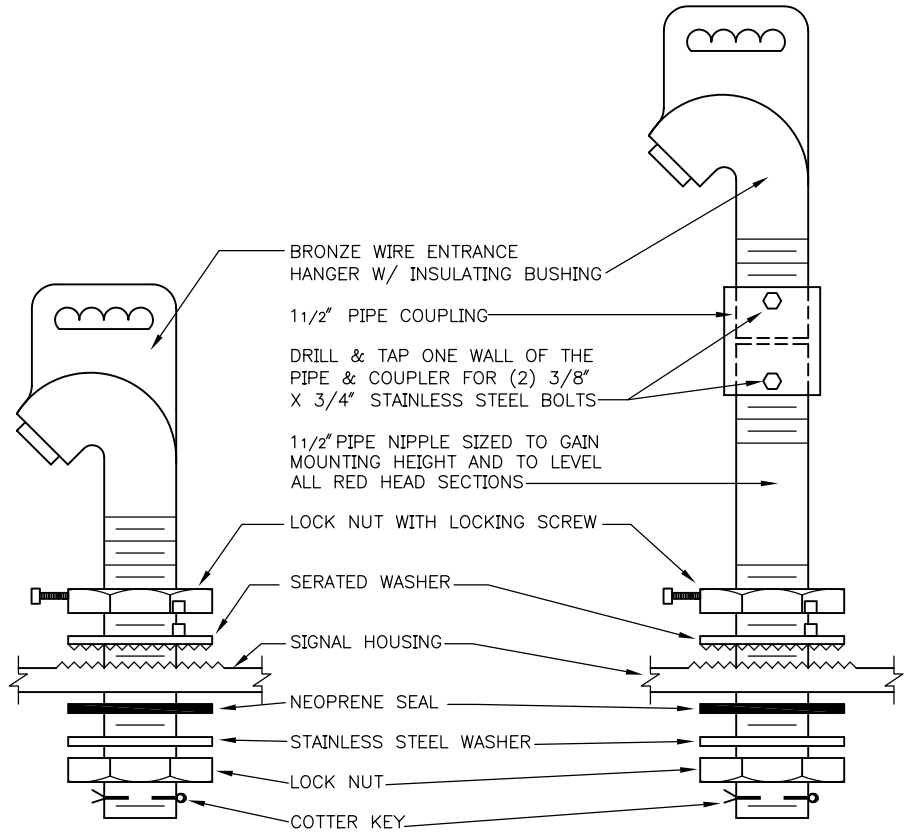
PEDESTAL TOP MOUNTING

FOR PEDESTAL SEE STD PLAN NO 524b

REF STD SPEC SEC 8-31

City of Seattle	NOT TO SCALE	VEHICULAR SIGNAL MOUNTING

REV DATE: 2003



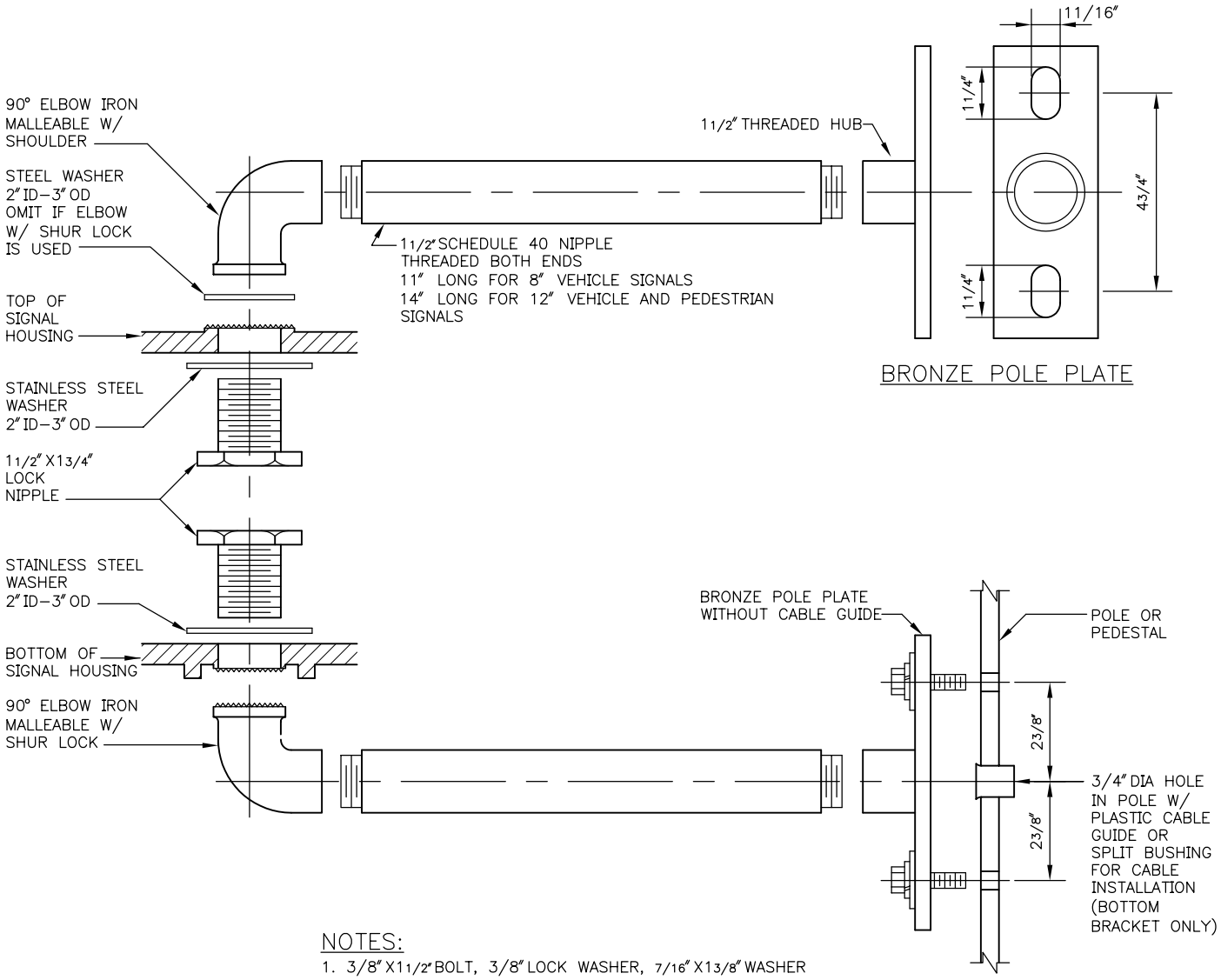
SUSPENDED SIGNAL MOUNTING DETAIL

REF STD SPEC SEC 8-31

City of Seattle	NOT TO SCALE	VEHICULAR SIGNAL MOUNTING

STANDARD PLAN NO 511

REV DATE: 2003



NOTES:

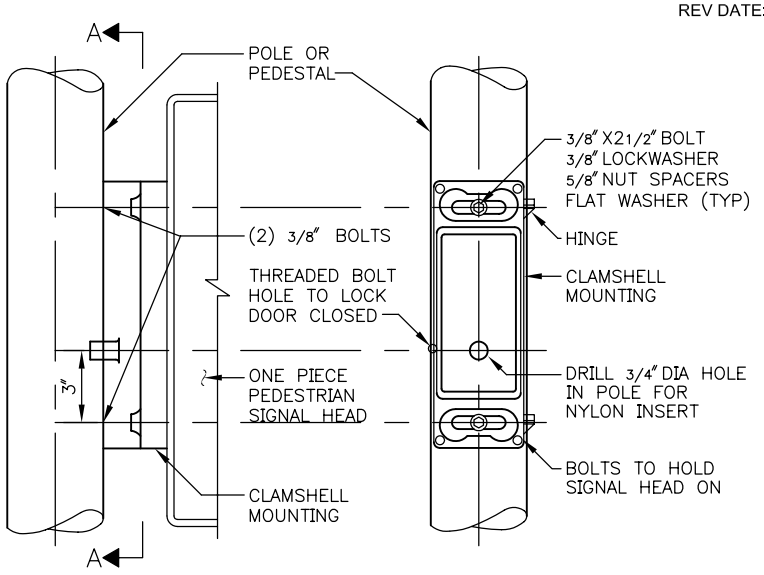
1. 3/8″ X 1 1/2″ BOLT, 3/8″ LOCK WASHER, 7/16″ X 1 3/8″ WASHER 4 OF EACH REQUIRED PER ASSEMBLY; ALL STAINLESS STEEL.
2. MOUNTING SHALL BE AS FOLLOWS:
   - –ON METAL POLES THINNER THAN 7 GAUGE, USE 3/8″ STAINLESS STEEL RIVNUTS.
   - –ON METAL POLES 7 GAUGE OR THICKER, DRILL AND TAP FOR 3/8″ BOLT (STAINLESS STEEL RIVNUTS OPTIONAL).
   - –ON POLES FILLED OR MADE WITH CONCRETE USE 3/8″ X 2 1/2″ MIN STUD BOLT ANCHORS, SLEEVE TYPE.
   - –ON WOOD POLES USE 1 1/2″ X 2 1/2″ LAG BOLTS.

REF STD SPEC SEC 8-31

City of Seattle	NOT TO SCALE	SIGNAL HEAD BRACKET ASSEMBLY

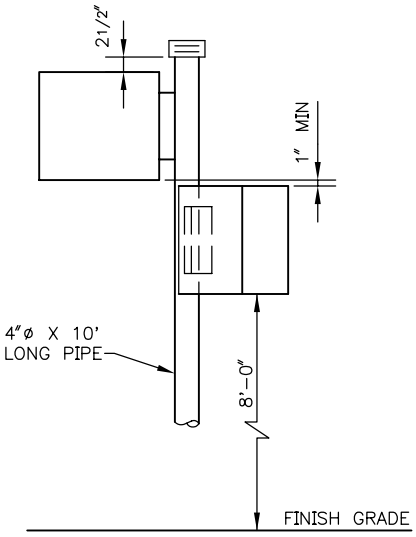
STANDARD PLAN NO 520

REV DATE: 2008

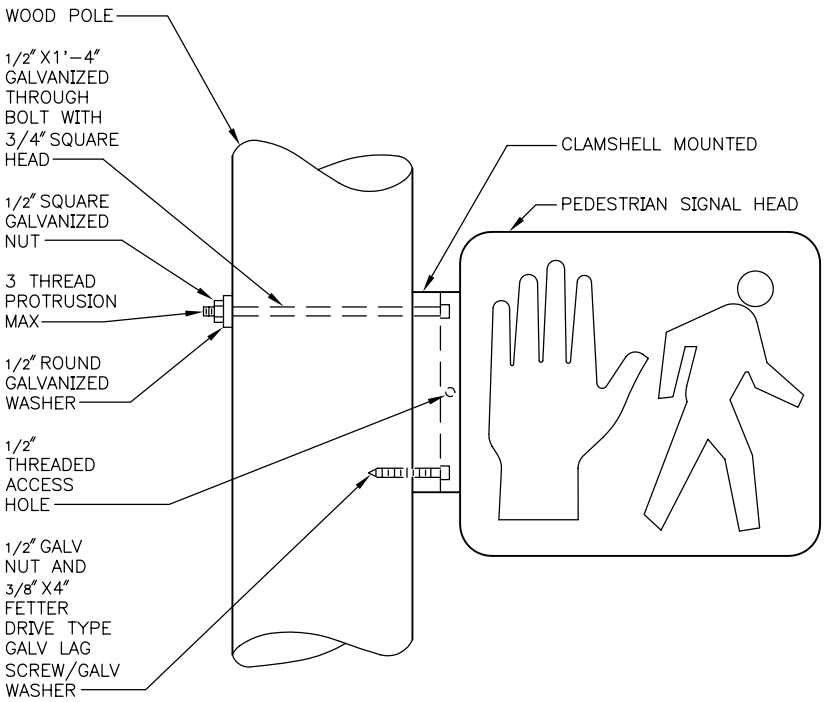


ELEVATION SECTION A–A

METAL POLE MOUNT



PEDESTAL MOUNT



WOOD POLE MOUNT

NOTES:

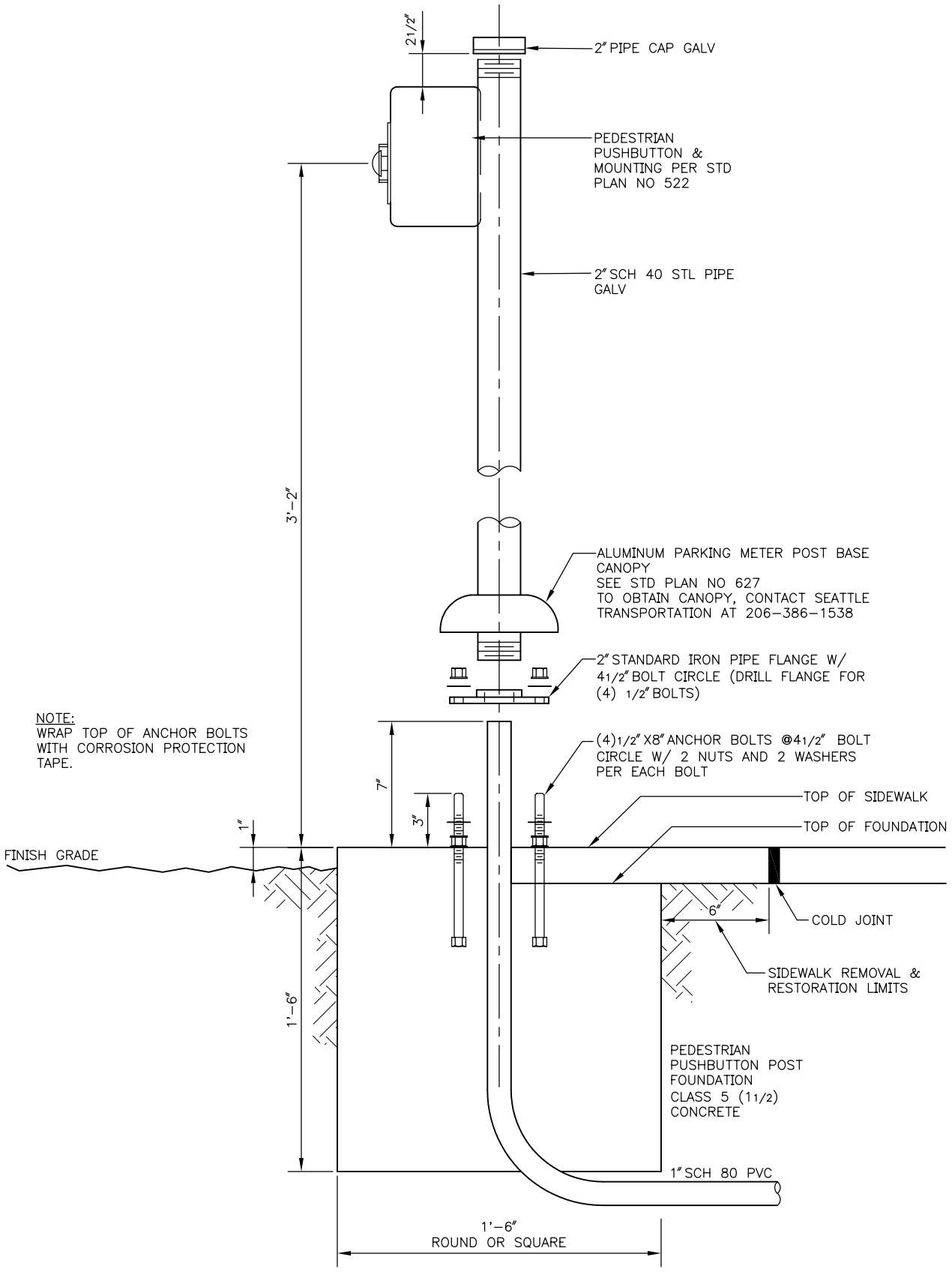
1. BOLT AND WASHERS SHALL BE STAINLESS STEEL
2. MOUNTING SHALL BE AS FOLLOWS:
   - –ON METAL POLES THINNER THAN 7 GAUGE, USE 3/8" STAINLESS STEEL RIVNUTS
   - –ON METAL POLES 7 GAUGE OR THICKER, DRILL AND TAP FOR 3/8" BOLT (STAINLESS STEEL RIVNUTS OPTIONAL)
   - –ON POLES FILLED WITH OR MADE FROM CONCRETE USE 3/8" X 2 1/2" STUD BOLT ANCHORS WITH HEX NUT
3. FOR STREET NAME SIGN PEDESTAL INSTALLATION, SEE STD PLAN NO 623

REF STD SPEC SEC 8-31

City of Seattle	NOT TO SCALE	PEDESTRIAN SIGNAL CLAMSHELL MOUNTING

STANDARD PLAN NO 521

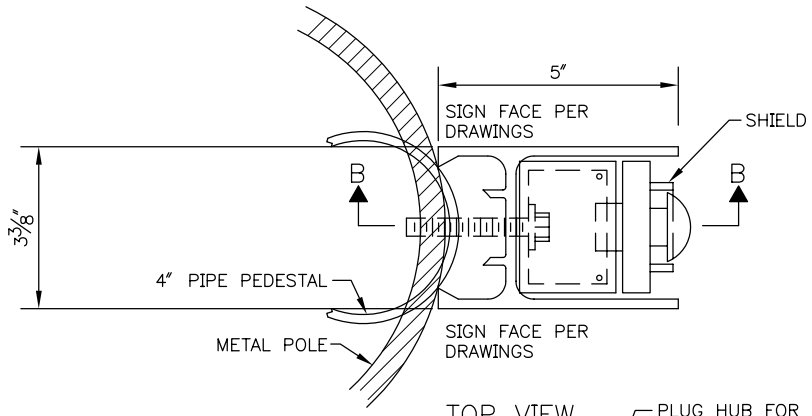
REV DATE: 2008



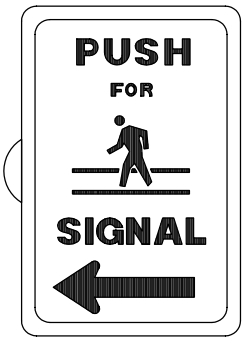
REF STD SPEC SEC 8-31 & 8-32

City of Seattle	NOT TO SCALE	PEDESTRIAN PUSHBUTTON POST & FOUNDATION

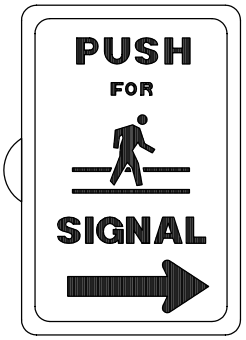
REV DATE: 2005



TOP VIEW



R–37L
MODIFIED
(PART NO H3)



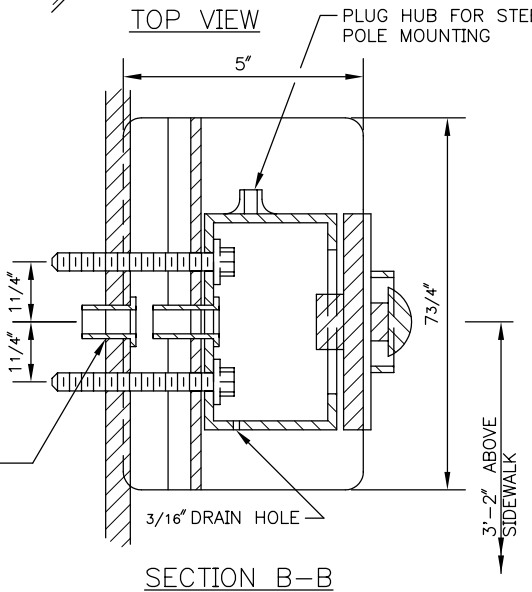
R–37R
MODIFIED
(PART NO H3R)

FOR WOOD POLE
USE 3/8″ GALV THRU BOLT FOR TOP HOLE & 3/8″X4″ GALV LAG BOLT & WASHER FOR BOTTOM HOLE

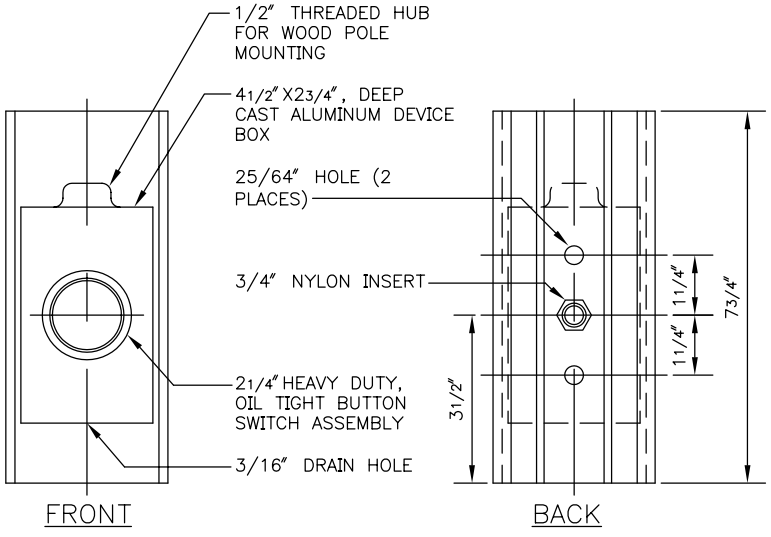
FOR METAL POLE
DRILL & TAP POLE FOR 3/8″X3 1/2″ STAINLESS STEEL BOLTS & WASHERS

–USE 3/8″X2 3/4″ BOLT FOR 4″ PIPE PEDESTAL

DRILL HOLE FOR 3/4″ NYLON INSERT (TYP)



SECTION B–B



PPB ASSEMBLY

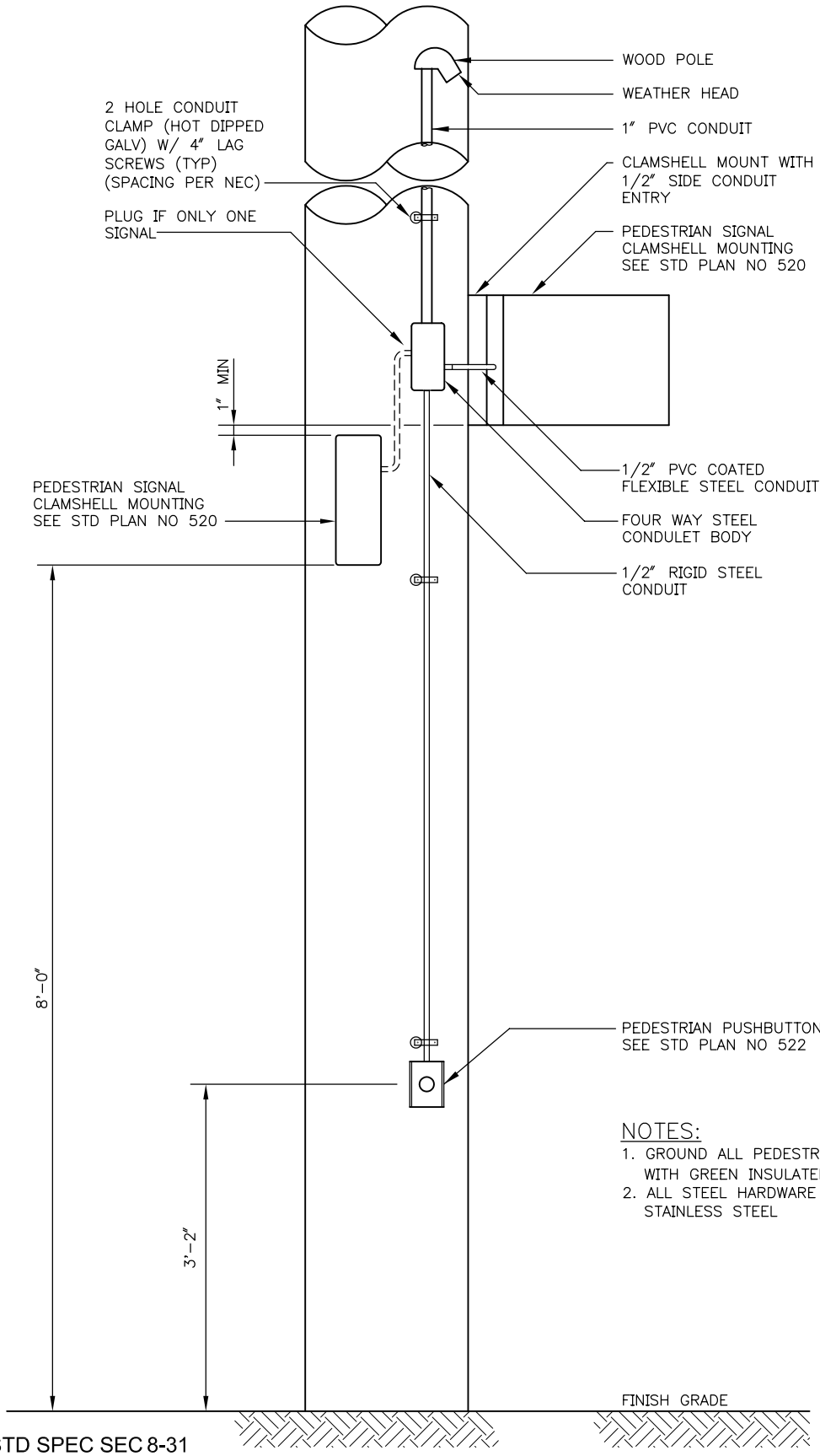
NOTES:
1. MOLDED ONE–PIECE ALUMINUM CONSTRUCTION
2. SIGNS SHALL BE FABRICATED FROM BAKED–ON ENAMEL DIRECTLY ON BOTH SIDES OF THE EXTRUSION

REF STD SPEC SEC 8-31

City of Seattle	NOT TO SCALE	PEDESTRIAN PUSHBUTTON & MOUNTING

STANDARD PLAN NO 523

REV DATE: 2008



NOTES:

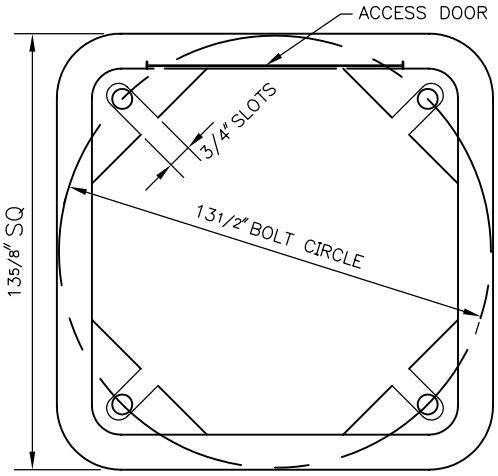
1. GROUND ALL PEDESTRIAN SIGNALS AND PUSHBUTTONS WITH GREEN INSULATED #8 COPPER WIRE
2. ALL STEEL HARDWARE SHALL BE HOT DIP GALV OR STAINLESS STEEL

REF STD SPEC SEC 8-31

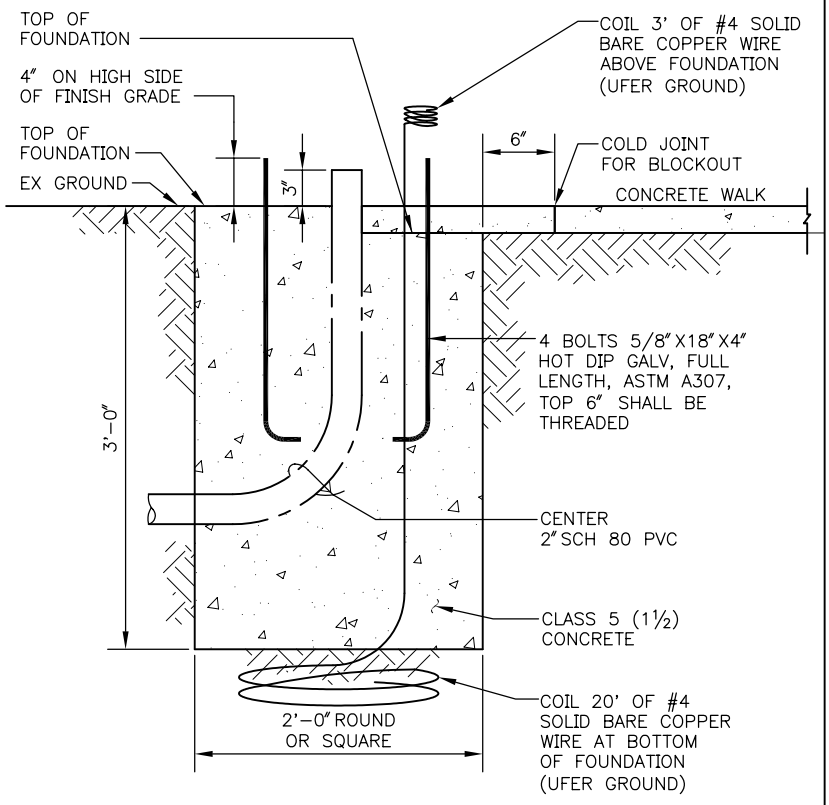
City of Seattle	NOT TO SCALE	PEDESTRIAN SIGNAL & PUSHBUTTON MOUNTED ON WOOD POLE

STANDARD PLAN NO 524a

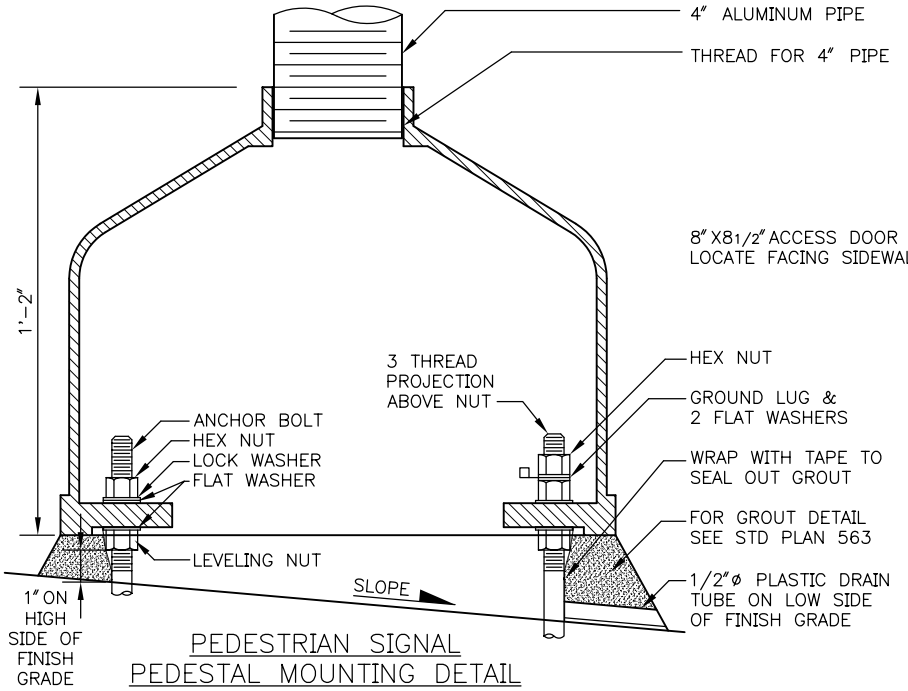
REV DATE: 2008



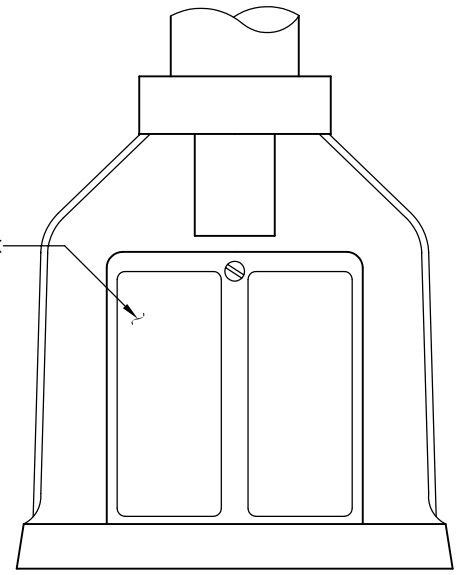
BOTTOM VIEW



PEDESTAL FOUNDATION



PEDESTRIAN SIGNAL PEDESTAL MOUNTING DETAIL

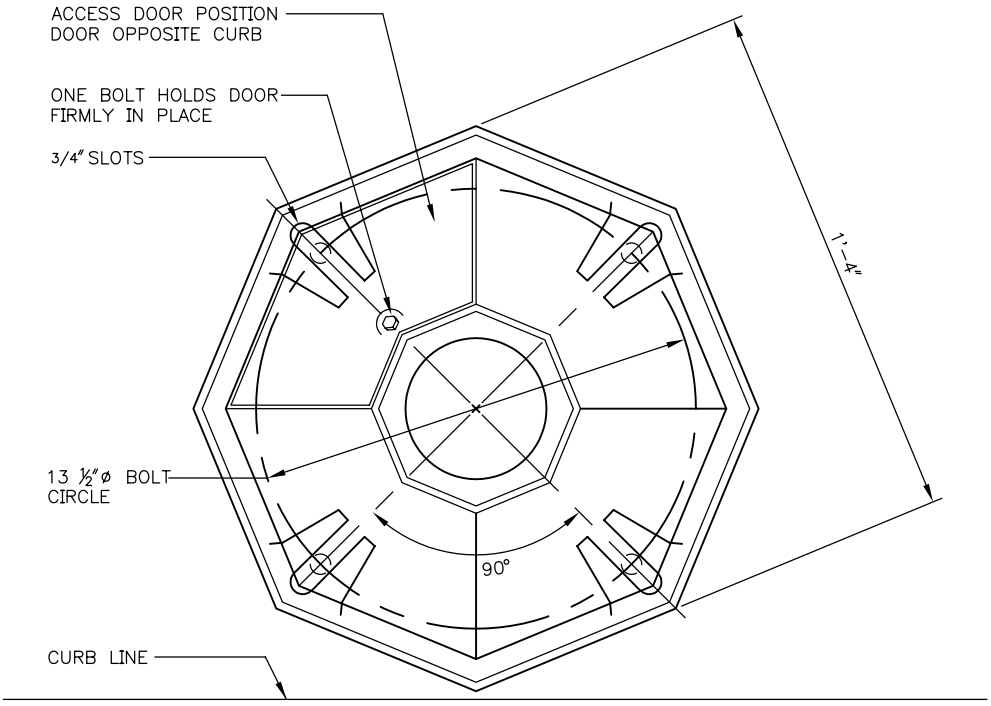


SQUARE ALUMINUM BASE PEDESTAL

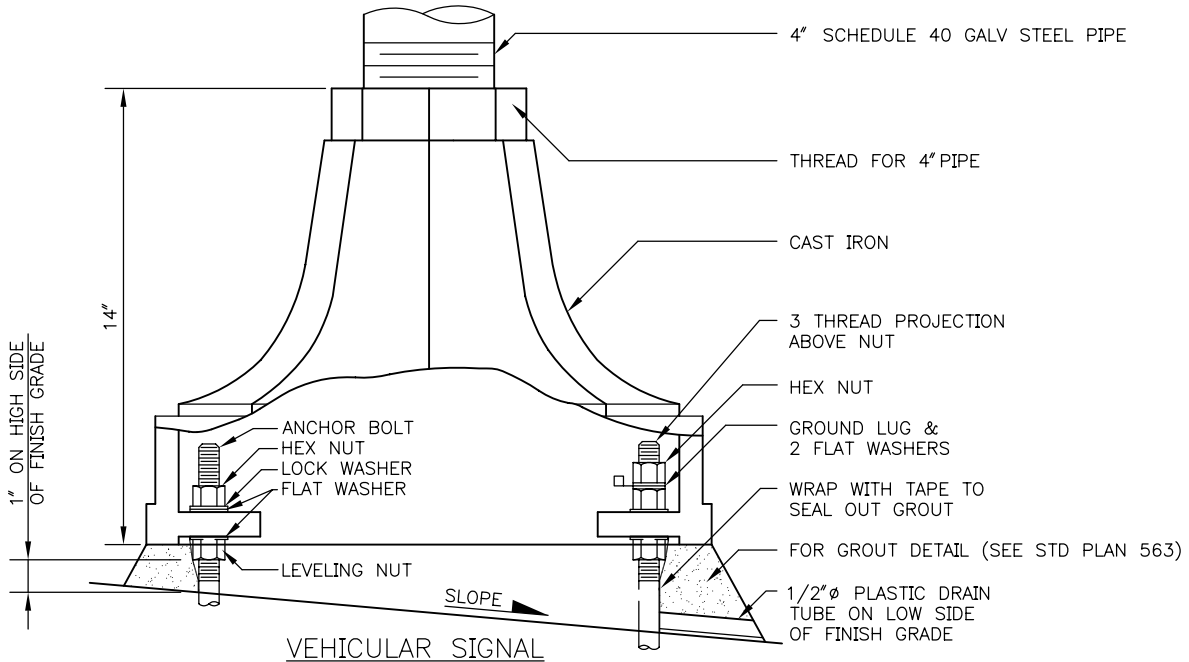
REF STD SPEC SEC 8-32

City of Seattle	NOT TO SCALE	PEDESTAL & FOUNDATION

REV DATE: 2008



OCTAGONAL BASE



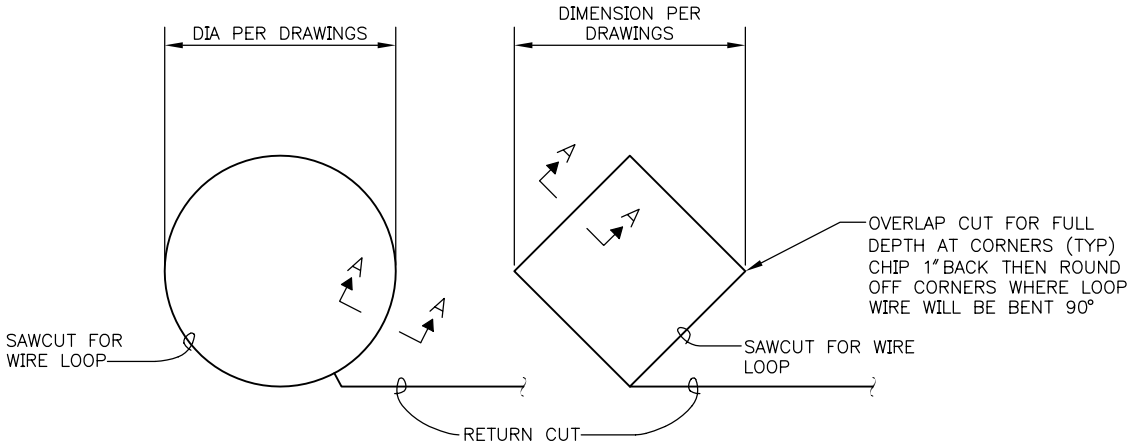
VEHICULAR SIGNAL
PEDESTAL MOUNTING DETAIL
(MAY INCLUDE PEDESTRIAN SIGNAL)

REF STD SPEC SEC 8-32

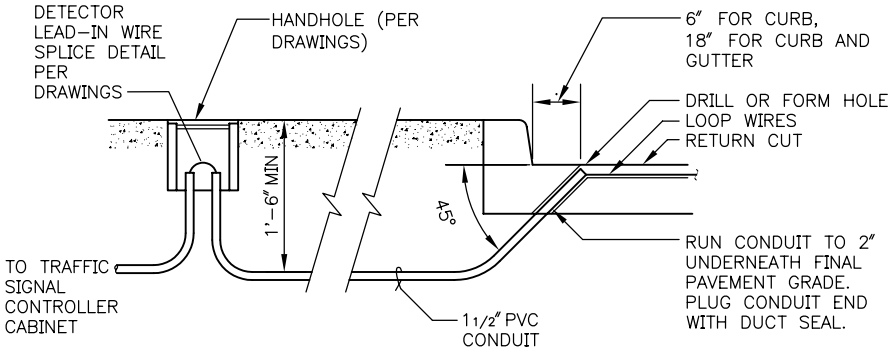
SEE STD PLAN NO. 524a
FOR PEDESTAL FOUNDATION

City of Seattle	NOT TO SCALE	PEDESTAL

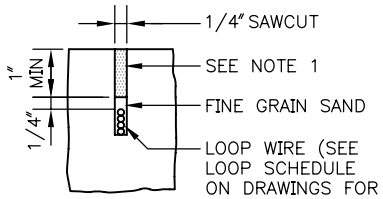
REV DATE: 2008



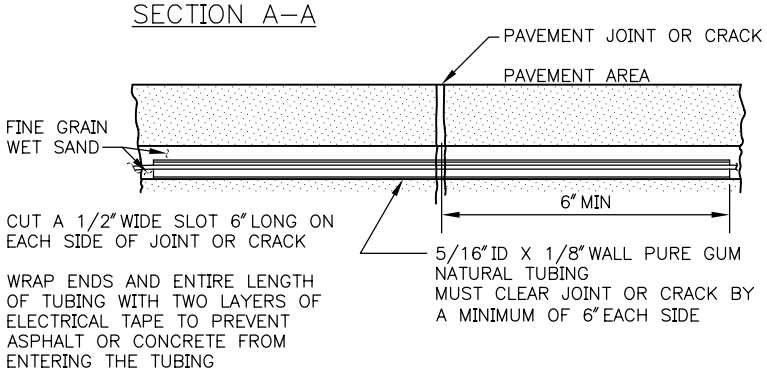
DIPOLE LOOP DETECTORS



CURB/PAVEMENT ENTRANCE FOR DETECTOR LOOP WIRES



SECTION A-A



PAVEMENT JOINT OR CRACK DETAIL

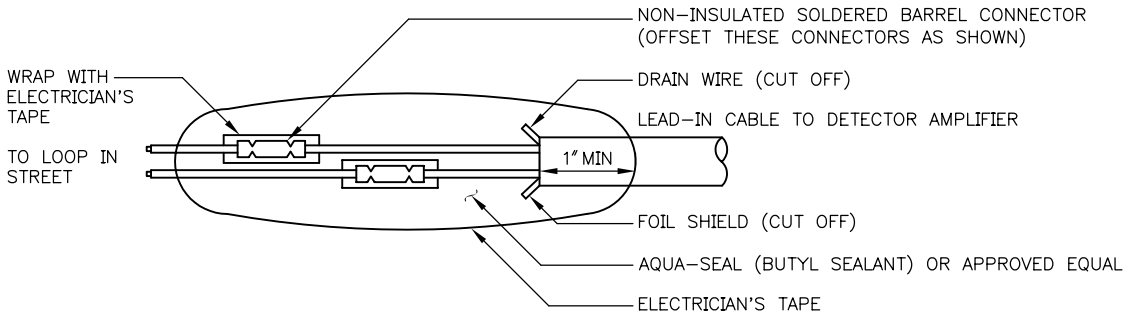
NOTES:

1. FILL CUT AFTER VERTICAL PLACEMENT AND TESTING WITH HOT PAVING GRADE LIQUID ASPHALT ASTM D 312 TYPE III OR QUICK SETTING HIGH STRENGTH GROUT
2. SHARP EDGE TOOLS SHALL NOT BE USED IN PLACING CONDUCTORS IN SAW CUTS
3. EACH PAIR OF LOOP WIRES IN THE RETURN CUT SHALL BE TWISTED A MINIMUM OF 3 TURNS PER FOOT AND MAY SHARE COMMON RETURN CUTS WITH OTHER TWISTED PAIRS
4. TAPE LOOP WIRE A MINIMUM OF 2 TURNS AT EACH CORNER
5. REMOVE SHARP CORNER EDGES IN SAW CUTS WHERE LOOP WIRE WILL BE BENT AROUND
6. PERFORM RESISTANCE AND CONTINUITY TESTS PRIOR TO SEALING LOOP WIRES
7. COIL 5'-0" OF LOOP WIRE IN HANDHOLE

REF STD SPEC SEC 8-31, 9-32

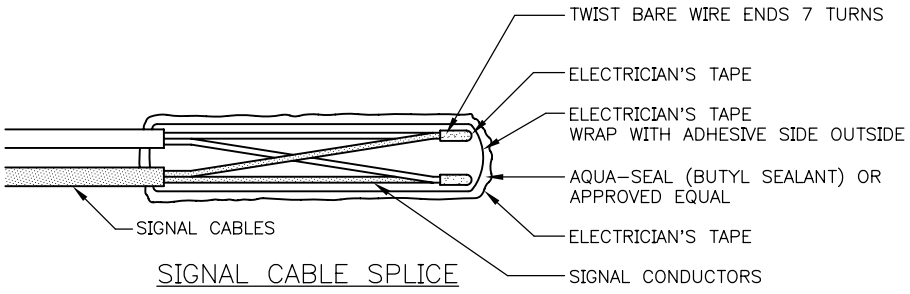
City of Seattle	NOT TO SCALE	LOOP DETECTORS

REV DATE: 2003



DETECTOR LEAD–IN WIRE SPLICE DETAIL

NOTE:
SOLDER CONNECTION AFTER CRIMPING

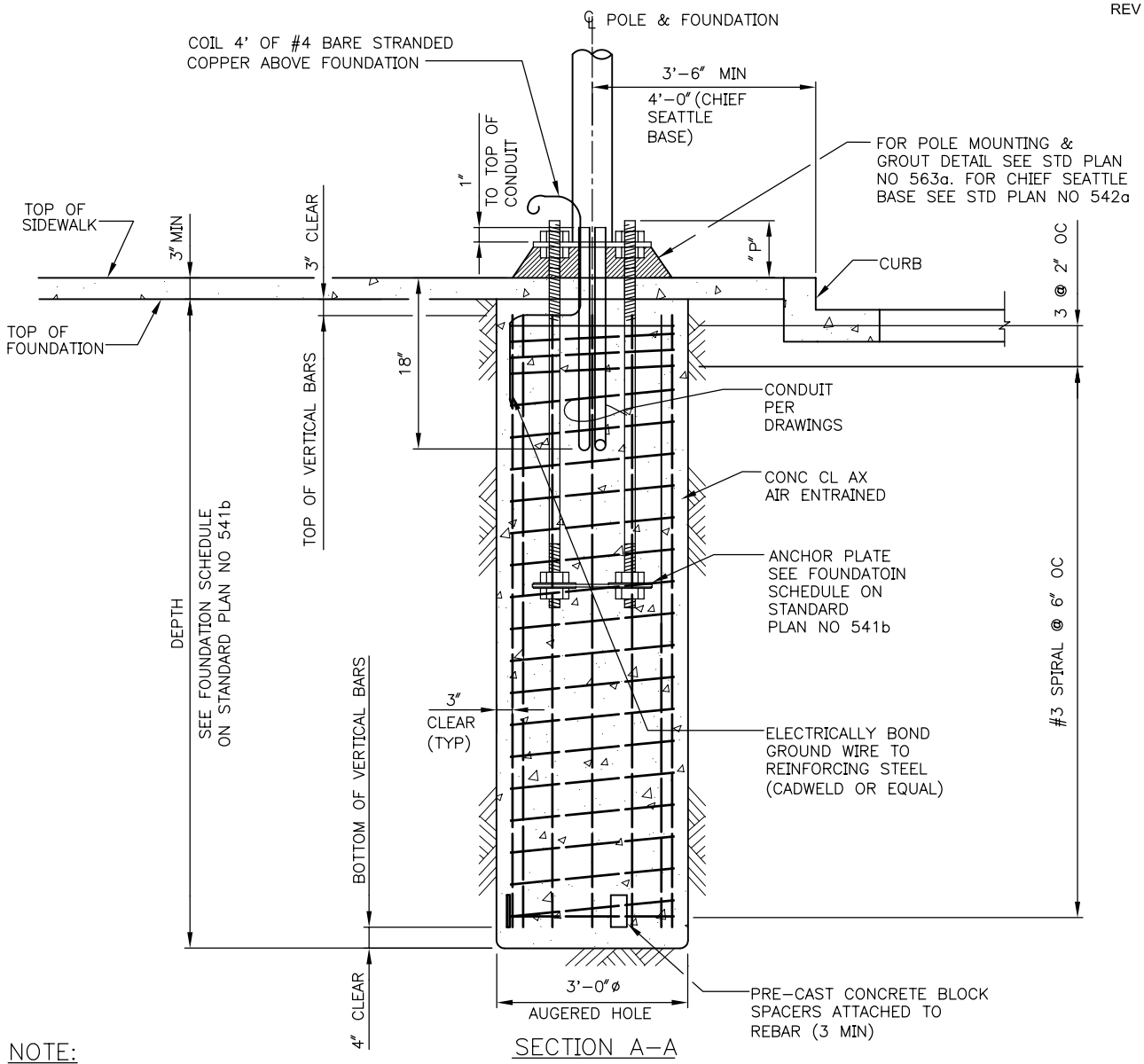


SIGNAL CABLE SPLICE

REF STD SPEC SEC 8-31

City of Seattle	NOT TO SCALE	DETECTOR LOOP WIRE AND SIGNAL CABLE SPLICE

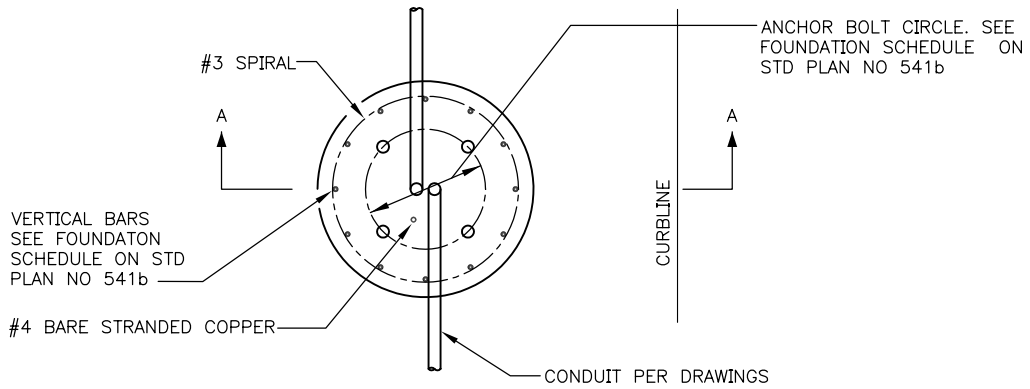
REV DATE: 2008



SECTION A–A

NOTE:

1. FOR STEEL MAST ARM POLE FOUNDATION SCHEDULE, SEE STD PLAN NO 562b



PLAN VIEW

STRAIN POLE FOUNDATION IN SIDEWALK

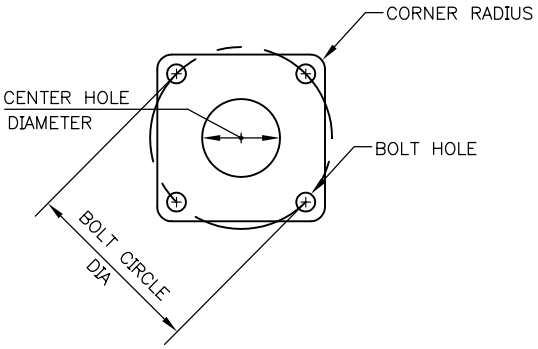
REF STD SPEC SEC 8-32, 6-02

City of Seattle	NOT TO SCALE	STRAIN POLE FOUNDATION DETAIL (TYPE T, V, X & Z)

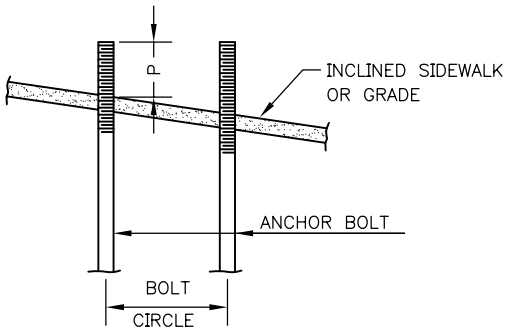
REV DATE: 2008

FOUNDATION SCHEDULE											
POLE TYPE	PROJECTION		VERTICAL REINFORCING	DEPTH (LATERAL BEARING)		ANCHOR BOLTS (TOTAL 4 PER POLE)	ANCHOR PLATE DIMENSIONS				
	P	P* (CHIEF SEATTLE BASE)		100#/SF/FT	150/SF/FT		SIZE	BOLT CIRCLE DIA	BOLT HOLE	CENTER HOLE	CORNER RADIUS
T	7½″	8″	8 #7	8′–0″	7′–6″	1½″ DIA X 60″	⅜″ X 16″ X 16″	14½″	1⅝″	10″	1⅝″
V	9″	9″	8 #8	9′–6″	8′–6″	1¾″ DIA X 72″	⅜″ X 16″ X 16″	18″	1⅞″	12½″	1⅝″
X	10″	10″	12 #8	12′–6″	10′–6″	2″ DIA X 72″	⅜″ X 18″ X 18″	20″	2⅛″	14″	2″
Z	11½″	11½″	12 #8	15′–0″	13′–0″	2½″ DIA X 72″	½″ X 20″ X 20″	22″	2⅝″	15″	2¼″

* SEE STD PLAN NO 542a



ANCHOR PLATE



INCLINED CONDITION

POLE FOUNDATION NOTES

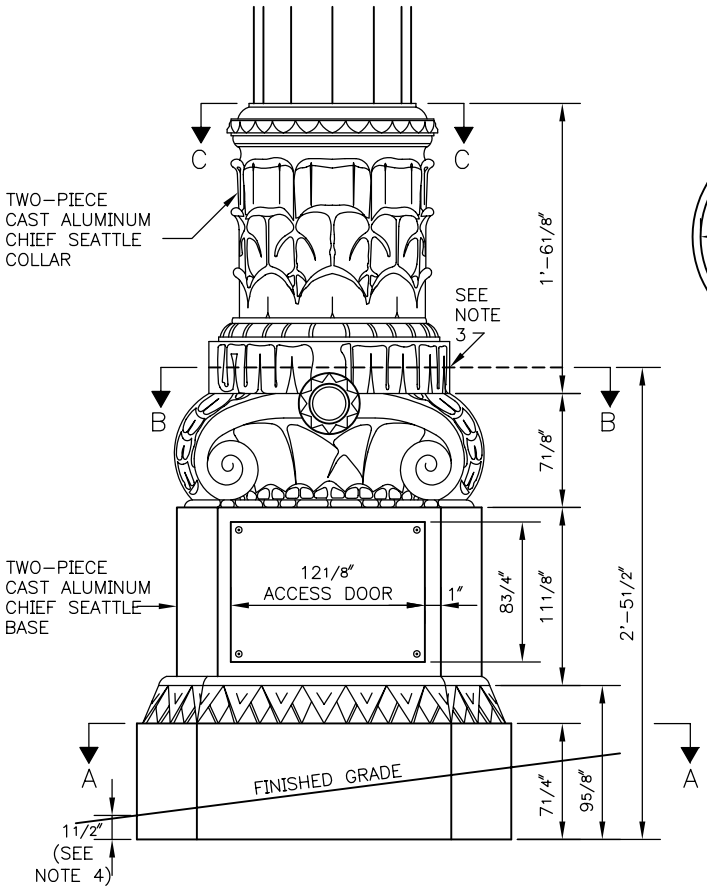
1. CONCRETE STRENGTH SHALL BE CLASS AX AIR ENTRAINED, 3/4″ MAX SIZE COARSE AGGREGATE.
2. ANCHOR BOLTS FOR TYPE V,X,Z: ASTM F1554–99, GRADE 105, CLASS 2A INCLUDING SUPPLEMENTARY REQUIREMENTS S2, S3 AND S5. ANCHOR BOLTS FOR TYPE T: ASTM A576 (TYPE 1040 OR 1045) FY=55 KSI MIN., ASTM A675 GRADE 90 OR ASTM A36 MOD FY=55 KSI. NUTS: ASTM A563 HEAVY HEX GRADE DH. HARDENED STEEL WASHERS: ASTM F436.
3. ANCHOR PLATE: ASTM A36. HOT DIP GALVANIZED.
4. ALL REINFORCING BARS SHALL BE DEFORMED BILLET STEEL CONFORMING TO ASTM CLASS A615, GRADE 60.
5. ANCHOR BOLTS SHALL BE HOT DIP GALVANIZED ASTM A153 INCLUDING NUTS & WASHERS (FULL LENGTH) WITH 18″ OF THREADS ON TOP & 12″ ON BOTTOM
6. LATERAL BEARING IS BASED ON THE SOIL CLASSIFICATION USED IN THE 1997 UNIFORM BUILDING CODE UNDER TABLE 18–I–A.
7. TAPE THE TOP OF ANCHOR BOLTS WITH CORROSION PROTECTION TAPE PER STD SPEC SEC 8–32.3(2)A PRIOR TO POURING CONCRETE.

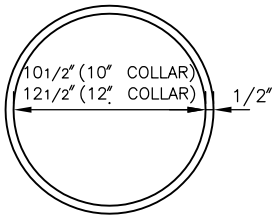
REF STD SPEC SEC 8-32

City of Seattle	NOT TO SCALE	STRAIN POLE FOUNDATION SCHEDULE & NOTES (TYPE T,V,X & Z)

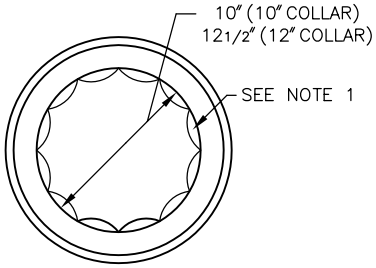
STANDARD PLAN NO 542a

REV DATE: 2008

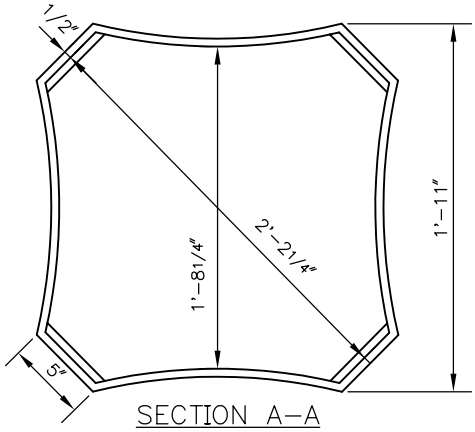




SECTION B–B
PLAN VIEW (TOP)



SECTION C–C
PLAN VIEW



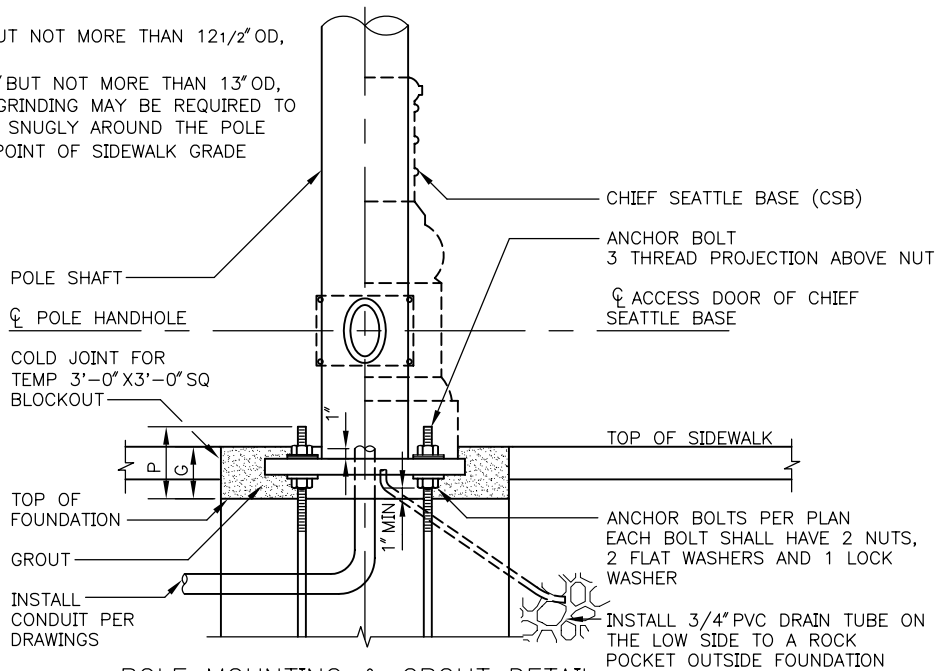
SECTION A–A
PLAN VIEW (BOTTOM)

NOTES:

1. FOR POLE DIAMETER GREATER THAN 9 1/2" BUT NOT MORE THAN 10" OD, A 10" COLLAR SHALL BE USED & THE FLUTES ON THE TOP OF THE COLLAR MAY HAVE TO BE GROUND OFF TO ALLOW A SNUG FIT AGAINST THE POLE
2. FOR POLE DIAMETER GREATER THAN 10" BUT NOT MORE THAN 12 1/2" OD, A 12" COLLAR SHALL BE USED
3. FOR POLE DIAMETER IN EXCESS OF 12 1/2" BUT NOT MORE THAN 13" OD, THE COLLAR SHALL NOT BE USED. SOME GRINDING MAY BE REQUIRED TO ALLOW THE TWO PIECE CAST BASE TO FIT SNUGLY AROUND THE POLE
4. BASE SHALL BE EMBEDDED 1 1/2" AT LOW POINT OF SIDEWALK GRADE

REFER TO STANDARD PLAN ON 541b

POLE TYPE	G	P
T	6 1/2"	8"
V	6 1/2"	9"
X	7"	10"
Z	11 1/2"	11 1/2"



POLE MOUNTING & GROUT DETAIL

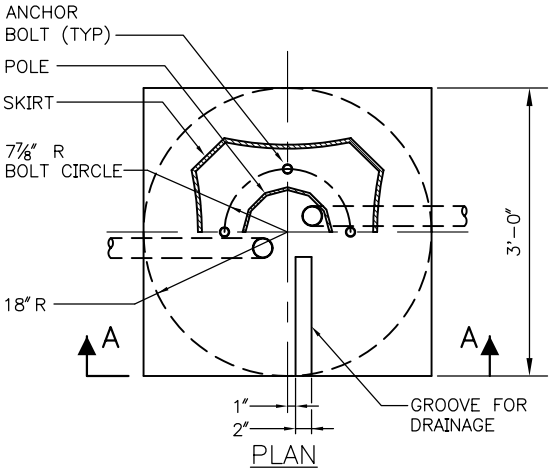
REF STD SPEC SEC 8-32

City of Seattle

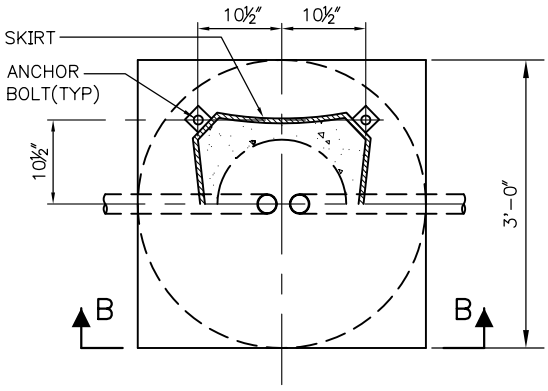
NOT TO SCALE

CHIEF SEATTLE BASE (CSB)

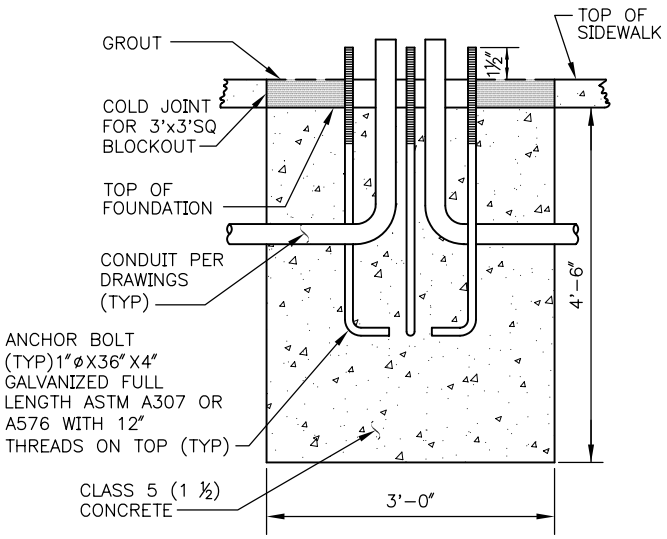
REV DATE: 2008



PLAN



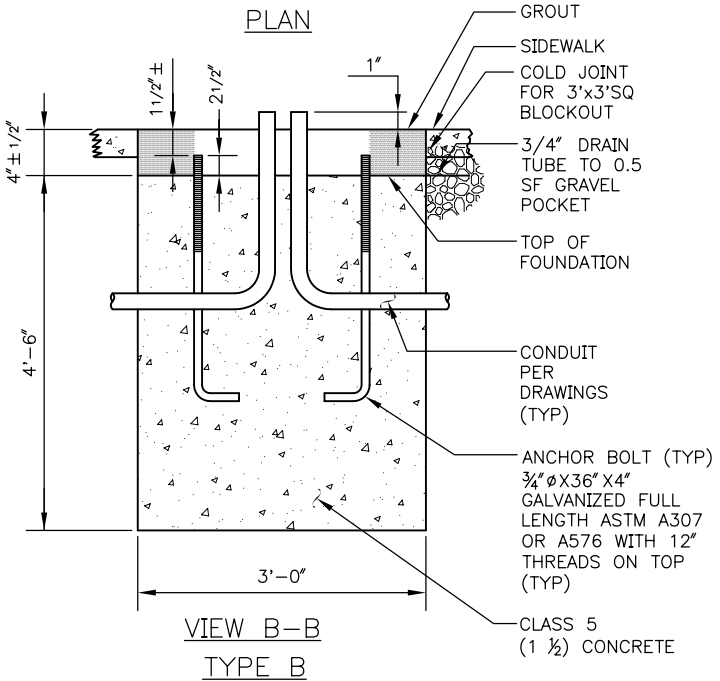
PLAN



VIEW A–A

TYPE A

BOLT PATTERN MUST BE DIAMOND SHAPE TO CURB.



VIEW B–B

TYPE B

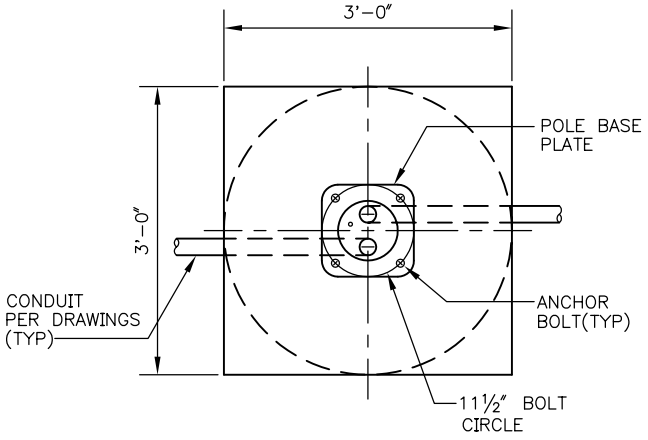
TO BE USED FOR CONCRETE FILLED POLE, BOLTS ARE PARALLEL TO CURB.

NOTES:
1. FOR TYPE "A" FOUNDATION ALIGN THE CHIEF SEATTLE BASE ACCESS COVER ON THE SAME SIDE WITH THE POLE HANDHOLE, AND CONDUITS.
2. INSTALL UFER GROUND IN FOUNDATION (SEE STD PLAN NO 524a)

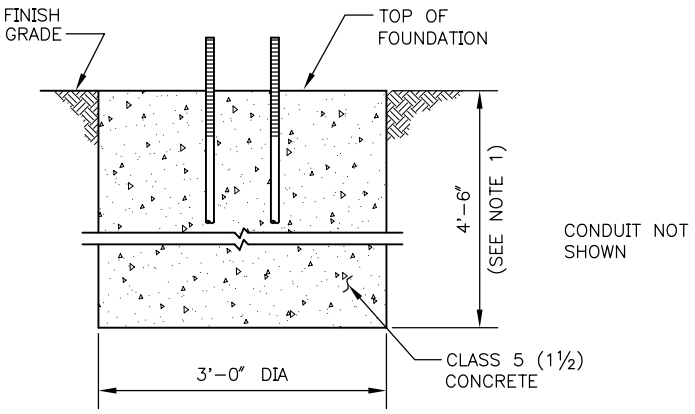
REF STD SPEC SEC 8-32

City of Seattle	NOT TO SCALE	CHIEF SEATTLE STREET LIGHT POLE FOUNDATION

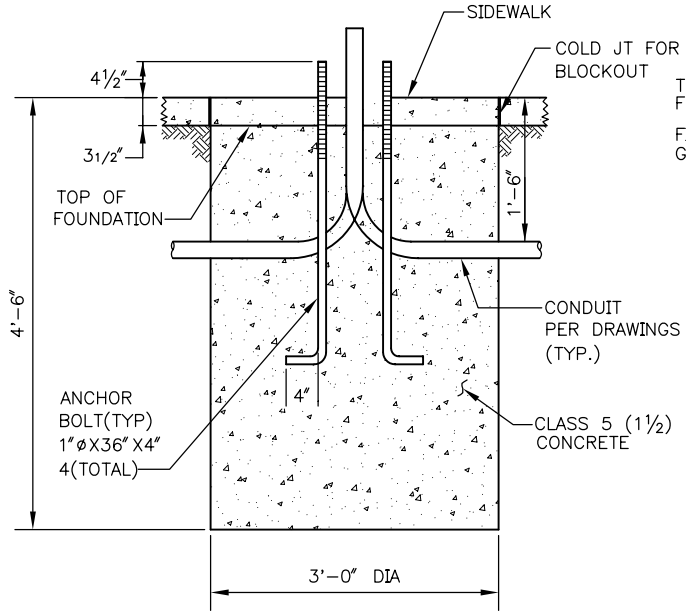
REV DATE: 2008



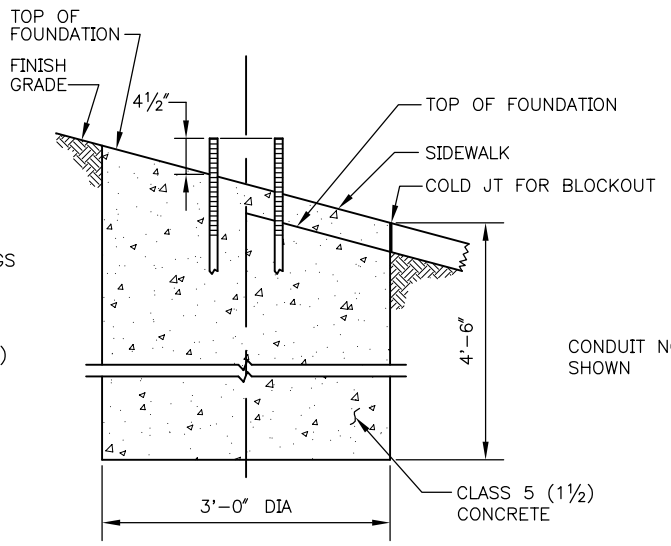
PLAN



IN EARTH



IN SIDEWALK



ON AN INCLINE

NOTES:
1. BOLT CIRCLE–11½" TYP. (TRANSFORMER BASE–15" TYP.)
2. SEE STD PLAN NO 563a FOR POLE MOUNTING AND GROUT DETAIL.
3. ANCHOR BOLTS SHALL BE HOT DIP GALVANIZED (ASTM A153) FULL LENGTH AND FABRICATED FROM ASTM A307 OR A576 WITH 12" THREADS ON TOP.
4. INSTALL UFER GROUND IN FOUNDATION (SEE STD PLAN NO 524a)

REF STD SPEC SEC 8-32

City of Seattle	NOT TO SCALE	STREET LIGHT POLE FOUNDATIONS

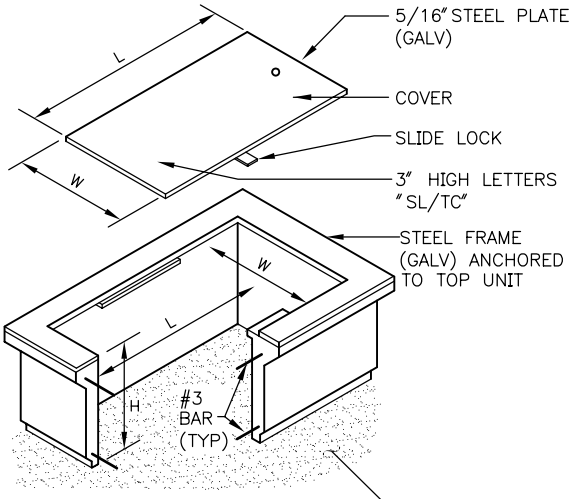
REV DATE: 2008

HANDHOLE SCHEDULE

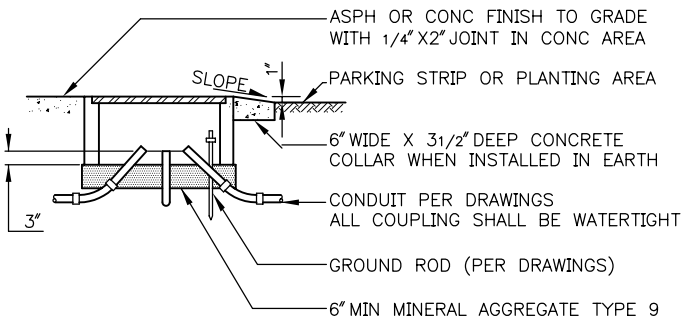
HANDHOLE TYPE	TOP UNIT INSIDE DIMENSIONS			EXTENSION UNIT(E)	COVER DIMENSIONS	
	L	W	H	H	L	W
1	19″	14″	12″	12″	17	13″
2	28″	17″	12″	12″	26 5/8″	17 1/2″
3	36″	24″	12″	12″	35″	24″
4	24″ DIA		VAR	NA	NA	NA
5	36″	24″	32″	NA	35″	24″
6	42″	42″	38 1/2″	NA	33 1/2″	35 1/2″
GRHH	8″ DIA			NA		

NOTES:

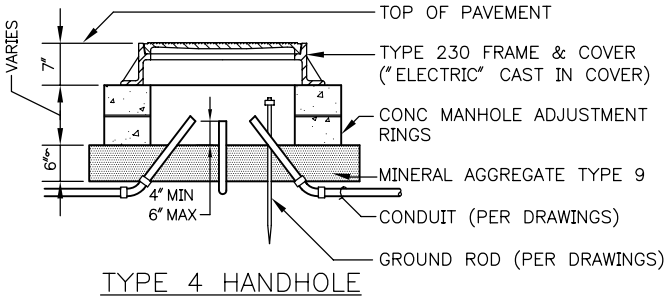
1. THE COVER SHALL HAVE 1/16″ TO 1/8″ CLEARANCE ON EACH EDGE WITHIN THE FRAME AFTER GALVANIZING
2. THE GROUND ROD SHALL EXTEND 4″ ABOVE THE BOTTOM OF THE HANDHOLE OR MINERAL AGGREGATE
3. TYPE 1, 2, 3, 5 & 6 HANDHOLE COVERS SHALL HAVE "TC" AND/OR "SL" ON THEM, AS APPROPRIATE
4. TYPE 4 HANDHOLE SHALL BE INSTALLED IN ROADWAYS, PARKING LOTS, ETC
5. FOR PAVEMENT DEPTH GREATER THAN 7″ USE FRAME EXTENSIONS (SEE STD PLAN NO 231) TO BRING THE COVER UP TO THE LEVEL OF THE FINISHED PAVEMENT WITHOUT EMBEDDING THE BOTTOM FLANGE OF THE CASTING IN THE PAVEMENT
6. A 4' LENGTH OF #8 THWN OR THHN COPPER WIRE SHALL BE SECURED FROM THE HANDHOLE COVER TO THE FRAME. WITH A 4'–0″ LENGTH FROM FRAME THAT CAN BE HOOKED UP TO A GROUND ROD
7. ALL HANDHOLE COVERS AND FRAMES SHALL HAVE A NON–SKID SURFACE (SEE STD SPEC SEC 9–34.6)



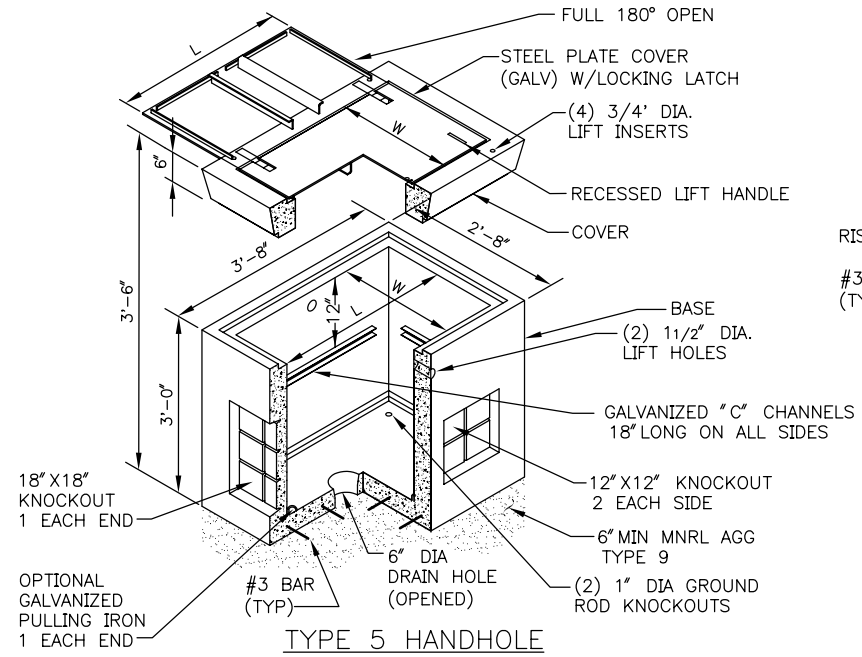
TYPE 1&2 HANDHOLE



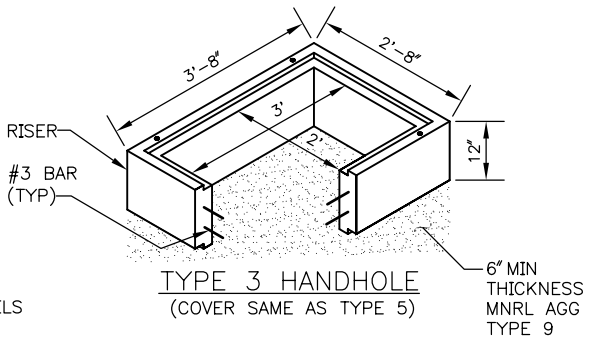
HANDHOLE INSTALLATION DETAIL



TYPE 4 HANDHOLE
TRAFFIC BEARING



TYPE 5 HANDHOLE

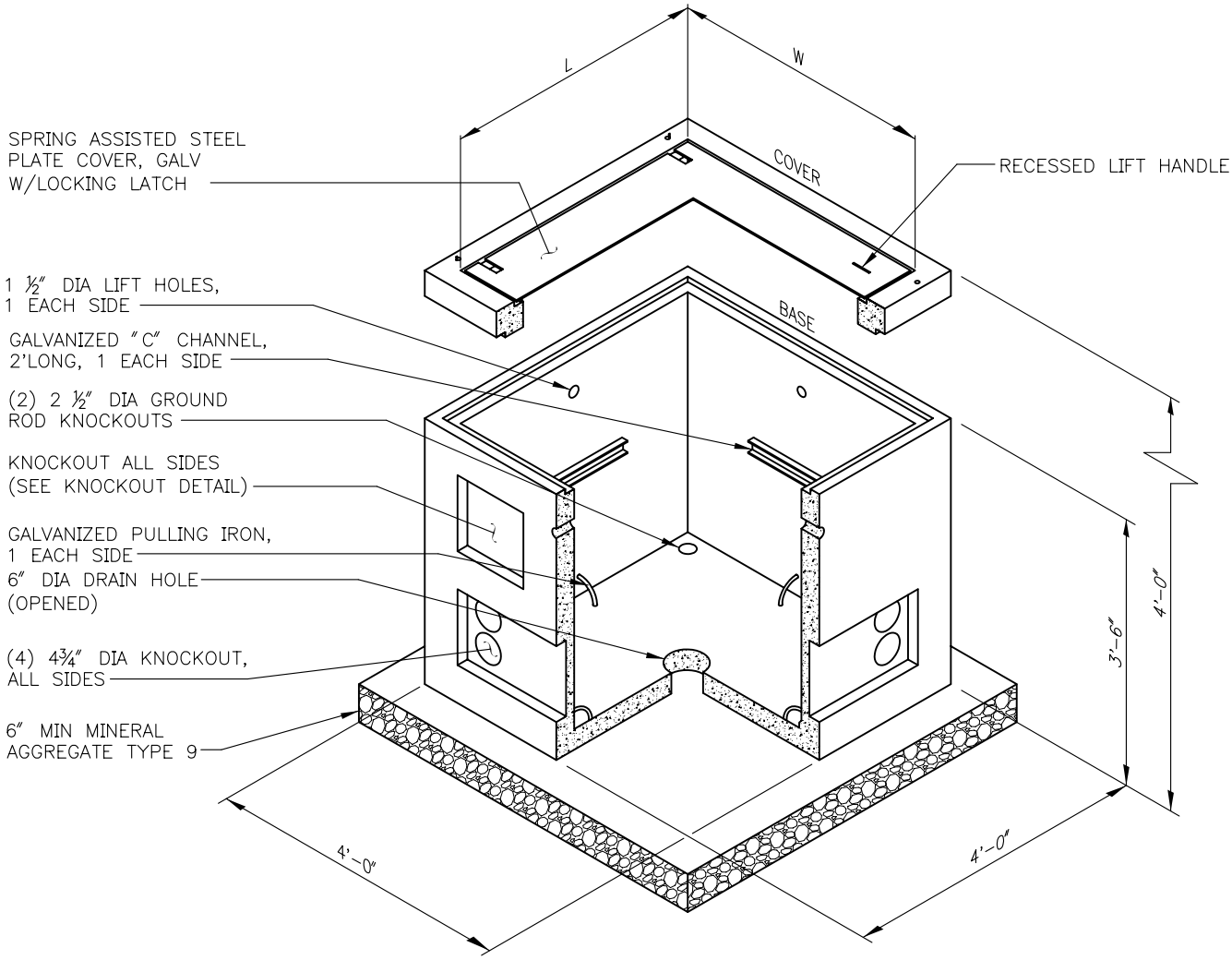


TYPE 3 HANDHOLE
(COVER SAME AS TYPE 5)

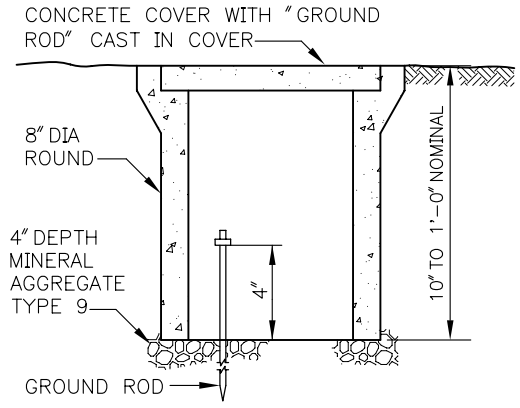
REF STD SPEC SEC 8-33

City of Seattle	NOT TO SCALE	HANDHOLES

REV DATE: 2008



TYPE 6 HANDHOLE



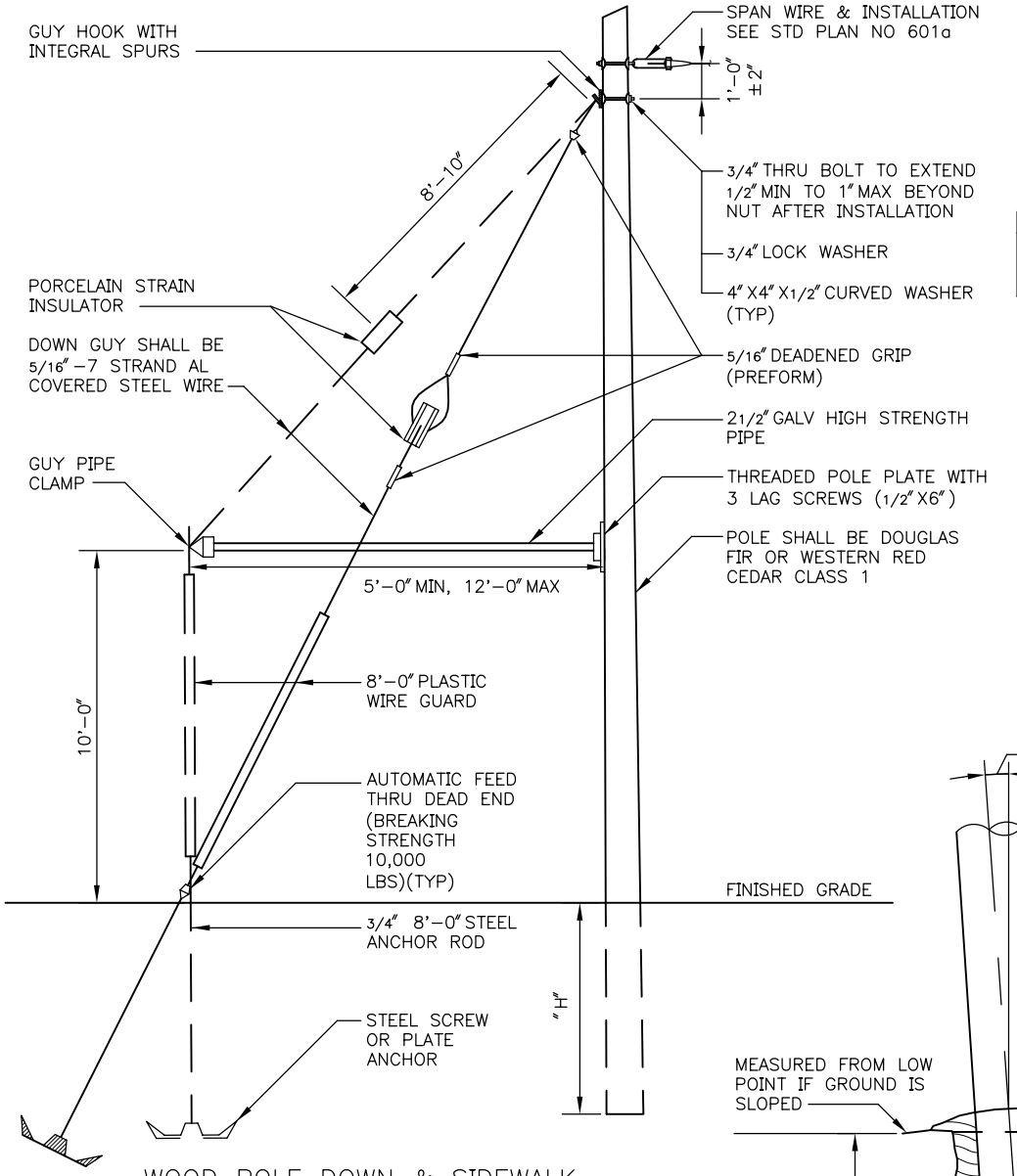
GROUND ROD HANDHOLE (GRHH)

REF STD SPEC SEC 8-33

City of Seattle	NOT TO SCALE	HANDHOLES

STANDARD PLAN NO 560

REV DATE: 2008

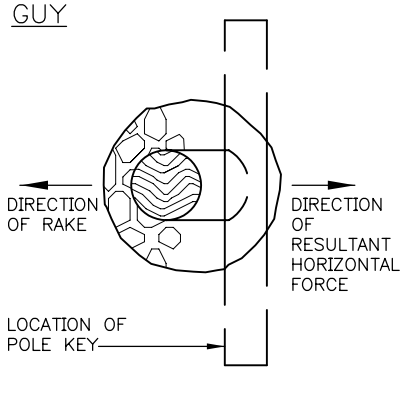


WOOD POLE DOWN & SIDEWALK GUY

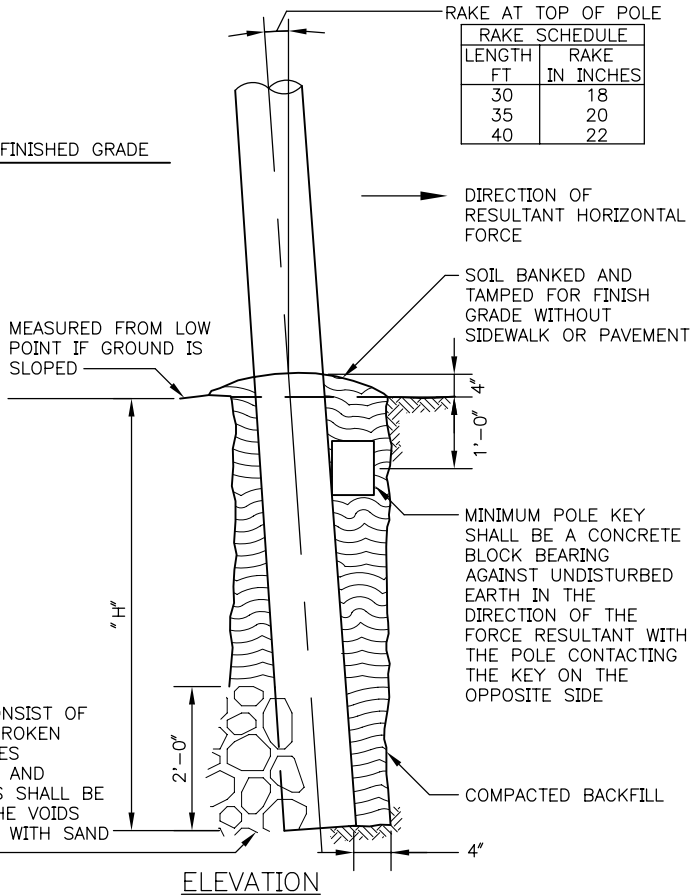
POLES SHALL BE MARKED (BRANDED) BY MANUFACTURER WITH THE FOLLOWING INFORMATION:

1. CLASS
2. LENGTH
3. MANUFACTURER
4. TYPE OF PRESERVATIVE

LENGTH OF POLE	"H"
20'-0" & 25'-0"	5'-0"
30'-0"	5'-6"
35'-0" & 40'-0"	6'-0"



PLAN



RAKE SCHEDULE	
LENGTH FT	RAKE IN INCHES
30	18
35	20
40	22

POLE TOE SHALL CONSIST OF BUILDING BLOCKS, BROKEN CONCRETE OR STONES LAYERED WITH SAND AND GRAVEL. THE LAYERS SHALL BE WELL TAMPED SO THE VOIDS ARE FILLED SOLIDLY WITH SAND AND GRAVEL.

ELEVATION

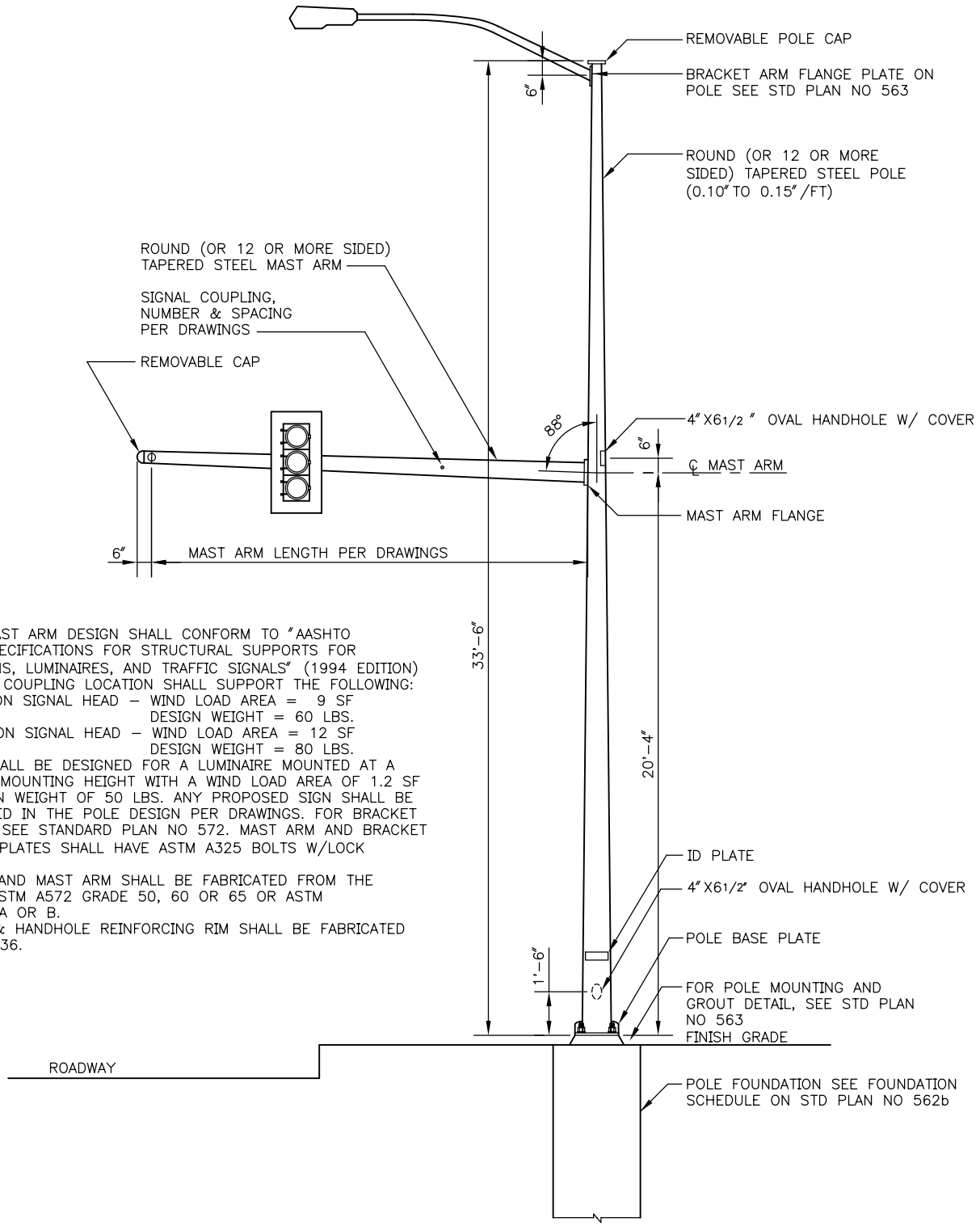
WOOD POLE KEYING STANDARD

REF STD SPEC SEC 8-32 AND SCL CONSTRUCTION GUIDELINES D6-4

City of Seattle	NOT TO SCALE	WOOD STRAIN POLES

STANDARD PLAN NO 562a

REV DATE: 2008



NOTES:

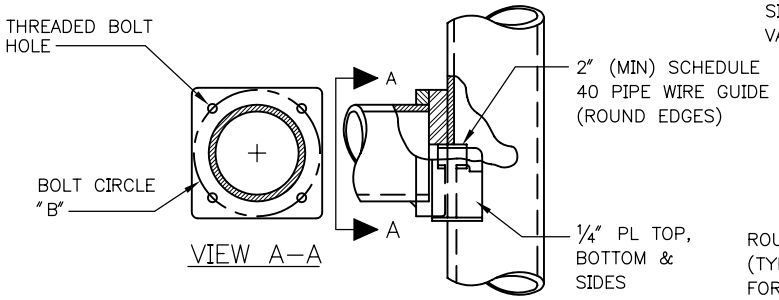
1. POLE AND MAST ARM DESIGN SHALL CONFORM TO "AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" (1994 EDITION)
2. EACH SIGNAL COUPLING LOCATION SHALL SUPPORT THE FOLLOWING:
   FOR 3 SECTION SIGNAL HEAD – WIND LOAD AREA = 9 SF
   DESIGN WEIGHT = 60 LBS.
   FOR 4 SECTION SIGNAL HEAD – WIND LOAD AREA = 12 SF
   DESIGN WEIGHT = 80 LBS.
3. THE POLE SHALL BE DESIGNED FOR A LUMINAIRE MOUNTED AT A NOMINAL 35' MOUNTING HEIGHT WITH A WIND LOAD AREA OF 1.2 SF AND A DESIGN WEIGHT OF 50 LBS. ANY PROPOSED SIGN SHALL BE ACCOMMODATED IN THE POLE DESIGN PER DRAWINGS. FOR BRACKET ARM DESIGN, SEE STANDARD PLAN NO 572. MAST ARM AND BRACKET ARM FLANGE PLATES SHALL HAVE ASTM A325 BOLTS W/LOCK WASHERS.
4. POLE SHAFT AND MAST ARM SHALL BE FABRICATED FROM THE FOLLOWING: ASTM A572 GRADE 50, 60 OR 65 OR ASTM A595 GRADE A OR B.
5. ALL PLATES & HANDHOLE REINFORCING RIM SHALL BE FABRICATED FROM ASTM A36.

REF STD SPEC SEC 8-32

City of Seattle	NOT TO SCALE	STEEL MAST ARM POLE

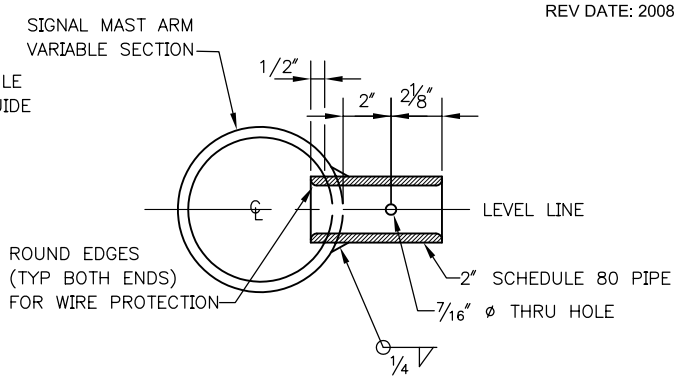
STANDARD PLAN NO 562b

REV DATE: 2008



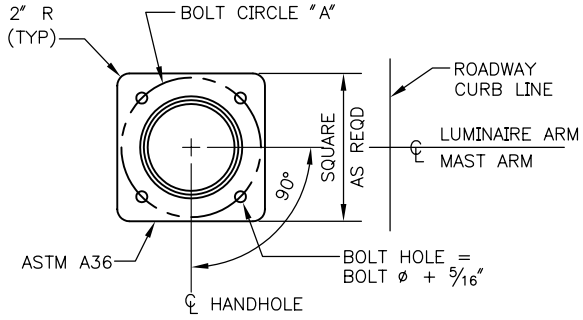
VIEW A–A

MAST ARM FLANGE

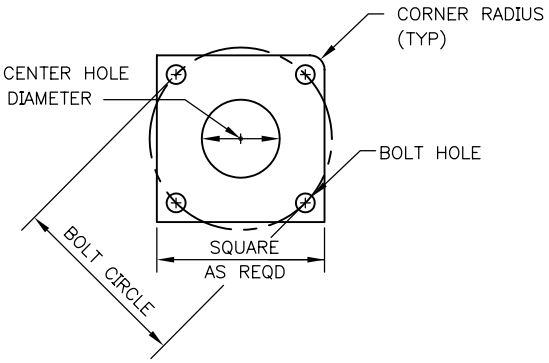


SIGNAL COUPLING

COUPLING TO BE FABRICATED & INSTALLED BEFORE GALVANINZING



POLE BASE PLATE



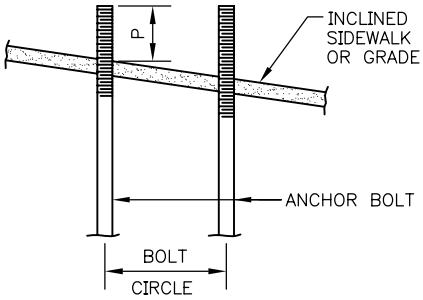
ANCHOR PLATE

PER FOUNDATION SCHEDULE

POLE FOUNDATION NOTES

1. CONCRETE STRENGTH SHALL BE CLASS AX AIR ENTRAINED.
2. ANCHOR BOLTS SHALL HAVE Fy = 55 KSI MIN, NUTS: ASTM A563 HEAVY HEX GRADE DH. HARDENED STEEL WASHERS: ASTM F436.
3. BOTTOM ANCHOR PLATE: ASTM A36. HOT DIP GALVANIZED.
4. ALL REINFORCING BARS SHALL BE DEFORMED BILLET STEEL CONFORMING TO ASTM CLASS A615, GRADE 60.
5. ANCHOR BOLTS SHALL BE HOT DIP GALVANIZED ASTM A153 INCLUDING NUTS & WASHERS (FULL LENGTH) WITH A MINIMUM OF 18" OF THREADS ON TOP & 12" ON BOTTOM.
6. LATERAL BEARING IS BASED ON THE SOIL CLASSIFICATION USED IN THE 1997 UNIFORM BUILDING CODE UNDER TABLE 18–I–A.
7. TAPE THE TOP OF ANCHOR BOLTS WITH CORROSION PROTECTION TAPE PER STD SPEC SEC 8–32.3(2)A PRIOR TO POURING CONCRETE.
8. SEE STD PLAN NO 541a FOR FOUNDATION DETAILS.

MAST ARM SCHEDULE			POLE SCHEDULE		
MAST ARM LENGTH	FLANGE PLATE		POLE BASE PLATE		
	BOLT CIRCLE B	THREATED BOLT DIA	SIZE	BOLT CIRCLE "A"	BOLT HOLE
15'–0" TO 30'–0"	11"	1"–8NC	1½" X 16" X 16"	14½"	1 13/16"
31'–0" TO 40'–0"	12"	1¼"–7NC	1¾" X 18" X 18"	16½"	2 1/16"
41'–0" TO 45'–0"	13⅛"	1¼"–7NC	1¾" X 18" X 18"	18"	2 1/16"
46'–0" TO 60'–0"	14"	1½"–6NC	2" X 20" X 20"	20"	2 5/16"



INCLINED CONDITION

FOUNDATION SCHEDULE											
MAST ARM LENGTH	FOUNDATION DEPTH (LATERAL BEARING)		ANCHOR BOLTS (FY=55 KSI MIN.)			VERTICAL REINFORCING	ANCHOR PLATE DIMENSIONS				
	150#/SF/FT	100#/SF/FT	PROJECTION	BOLT CIRCLE DIA	SIZE		SIZE	BOLT CIRCLE DIA	BOLT HOLE	CENTER HOLE	CORNER RADIUS
15'–30'	7'–6"	8'–0"	7½"	14½"	1½" X 60"	8 #7	⅜" X 16" X 16"	14½"	1⅝"	10"	1⅝"
31'–40'	8'–6"	9'–6"	9"	16½"	1¾" X 72"	8 #8	⅜" X 16" X 16"	16½"	1⅞"	12½"	1⅝"
41'–45'	8'–6"	9'–6"	9"	18"	1¾" X 72"	8 #8	⅜" X 16" X 16"	18"	1⅞"	12½"	1⅝"
46'–60'	10'–6"	12'–6"	10"	20"	2" X 72"	12 #8	⅜" X 18" X 18"	20"	2⅛"	14"	2"

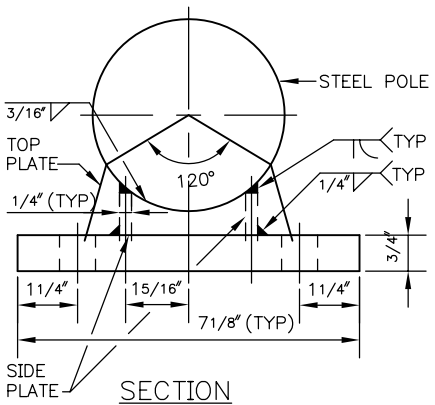
REF STD SPEC SEC 8-32

City of Seattle

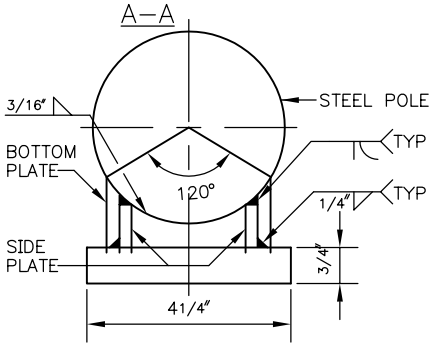
NOT TO SCALE

STEEL MAST ARM POLE FOUNDATION SCHEDULE & DETAIL (W/O METRO TROLLEY LOADS)

REV DATE: 2008

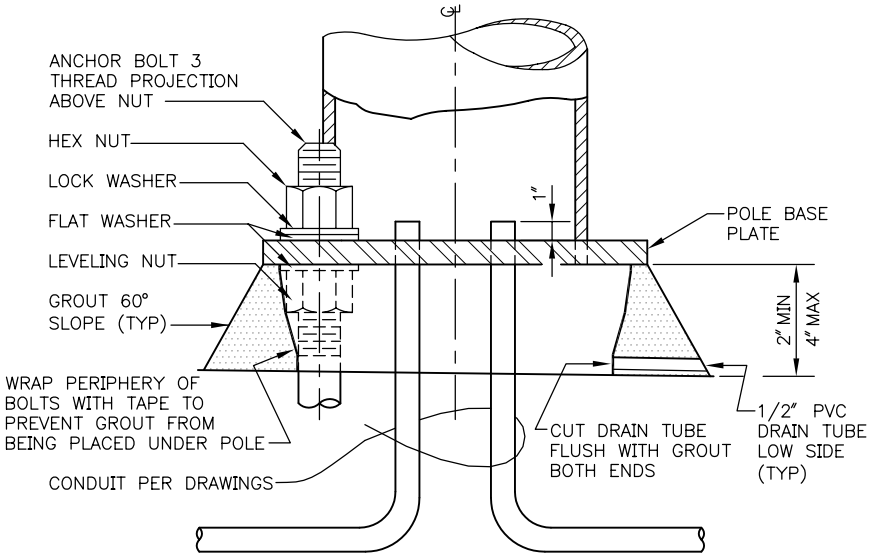


SECTION A–A



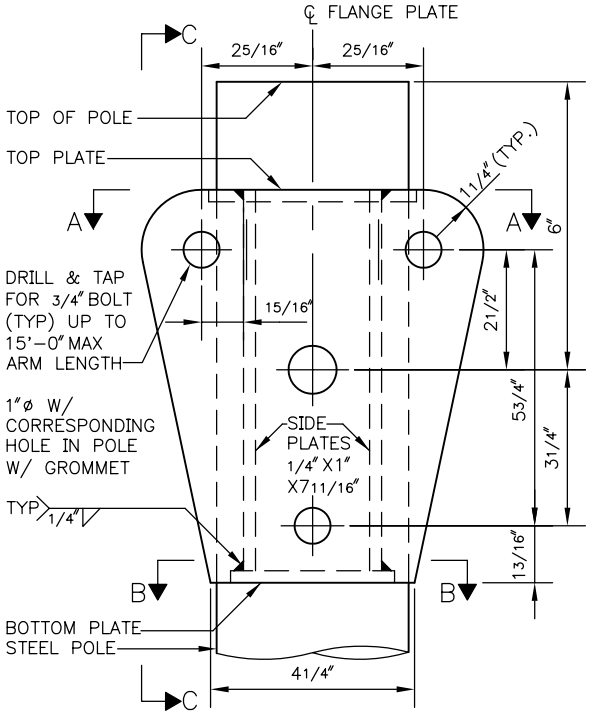
SECTION B–B

NOTE:
GROUT SHALL BE PREMIXED, NON–SHRINK AND NON–METALLIC

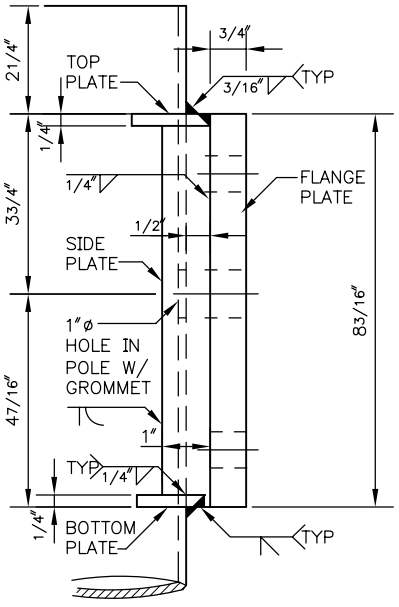


POLE MOUNTING & GROUT DETAIL

(EXCEPT FOR POLES W/ CHIEF SEATTLE BASE SEE STANDARD PLAN NO 542a)



BRACKET ARM FLANGE PLATE ON POLE



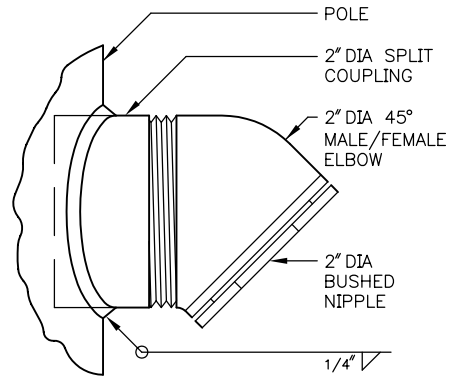
SECTION C–C

STRUCTURAL CARBON STEEL PLATES SHALL BE ASTM A36

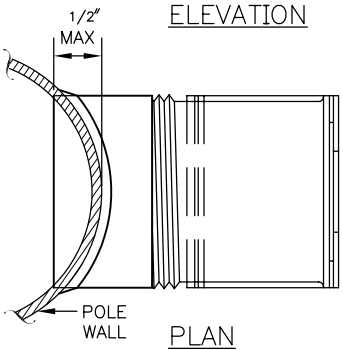
REF STD SPEC SEC 8-32

City of Seattle	NOT TO SCALE	MISCELLANEOUS STEEL POLE DETAILS

REV DATE: 2008

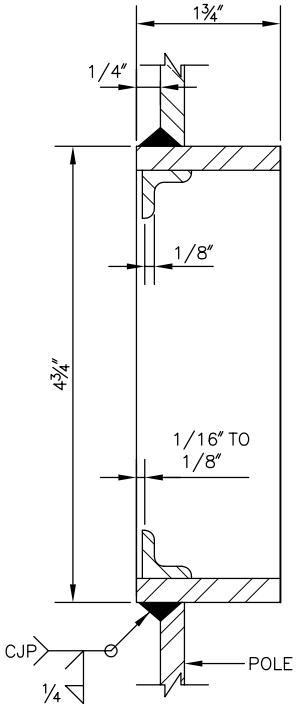


ELEVATION

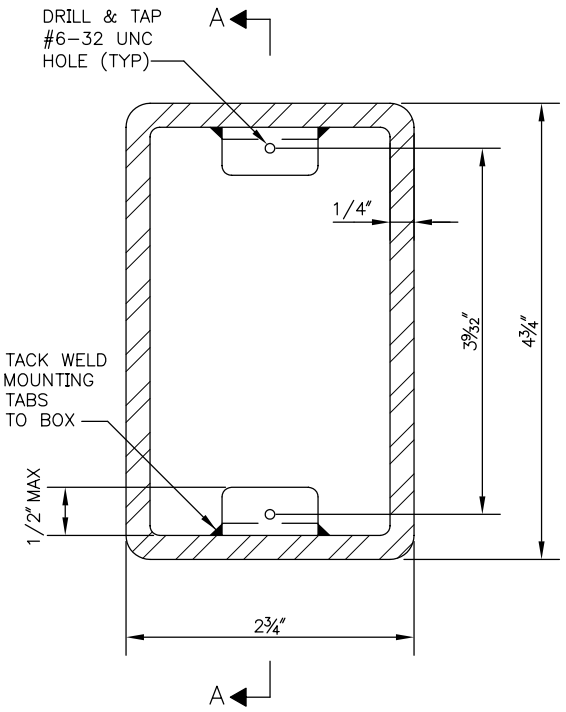


PLAN

CABLE OUTLET DETAIL



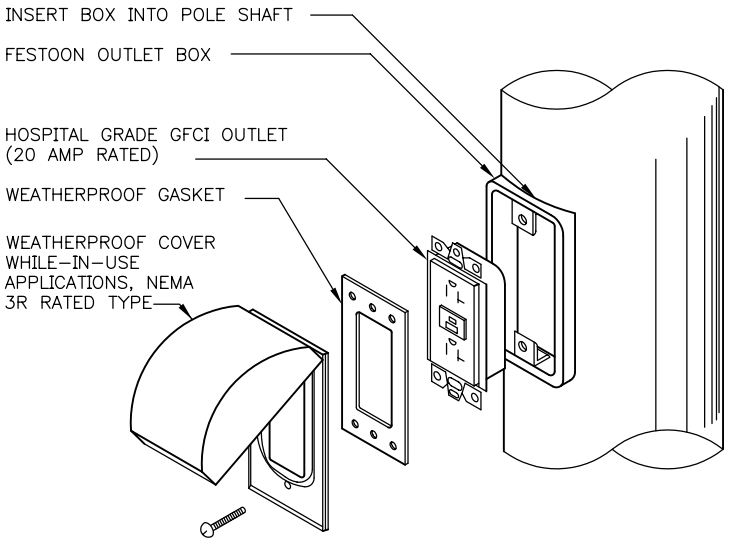
SECTION A–A



FESTOON OUTLET BOX

NOTES:

1. ALL OUTLETS SHALL BE PLUGGED WITH THREADED INSERT PLUGS DURING SHIPMENT TO PREVENT DAMAGE TO THREADS
2. REMOVE BURRS AND SHARP EDGES TO PREVENT DAMAGE TO ELECTRICAL CABLE
3. SPLIT COUPLING SHALL EXTEND INTO THE POLE 1/2" MAX AS SHOWN

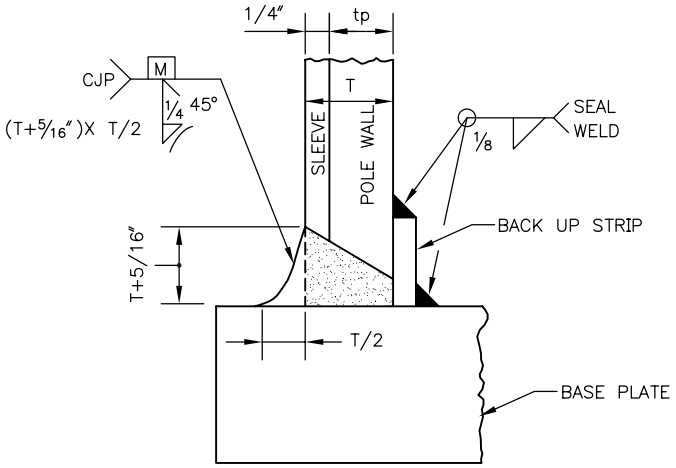


FESTOON OUTLET DETAIL
(METAL POLES)

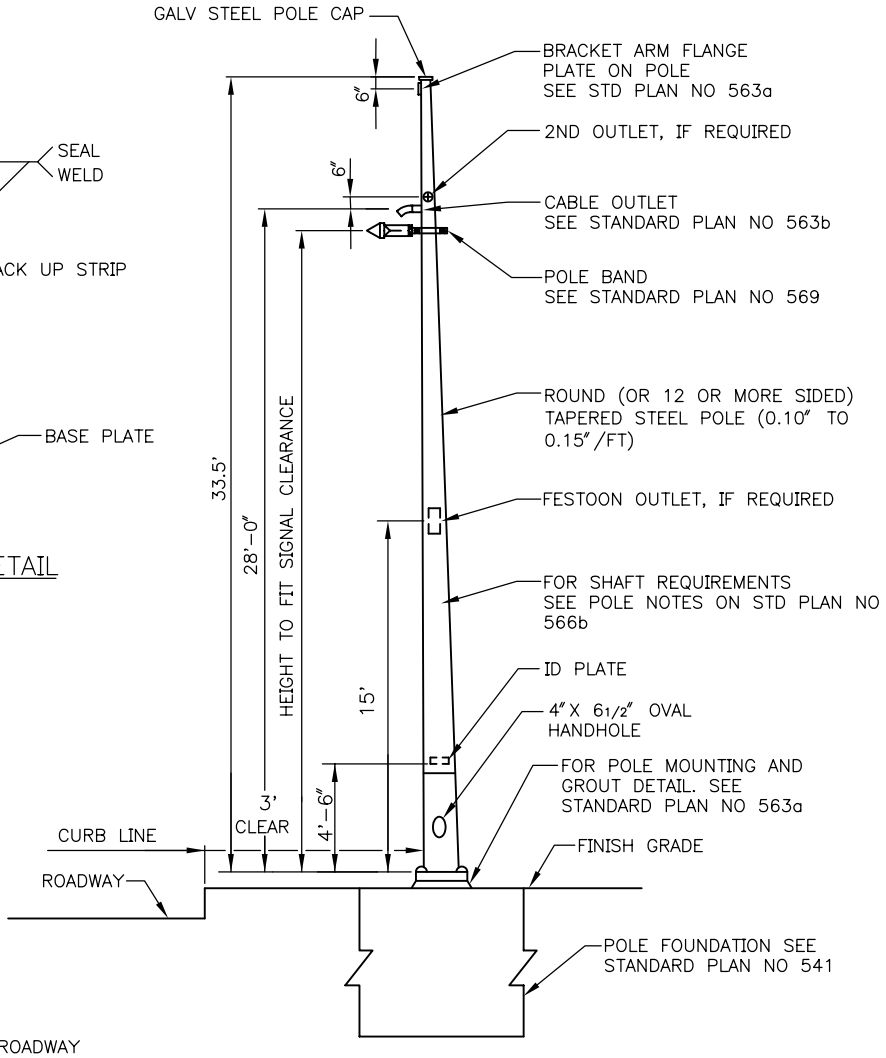
REF STD SPEC SEC 8-30 & 8-32

City of Seattle	NOT TO SCALE	MISCELLANEOUS STEEL POLE DETAILS

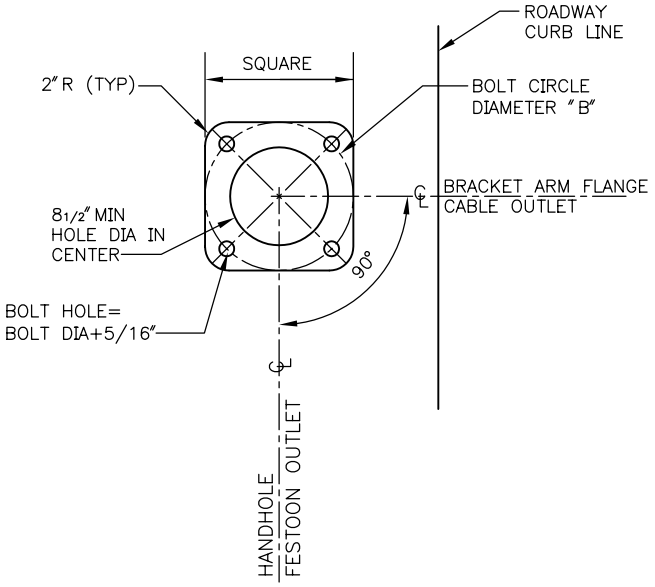
REV DATE: 2008



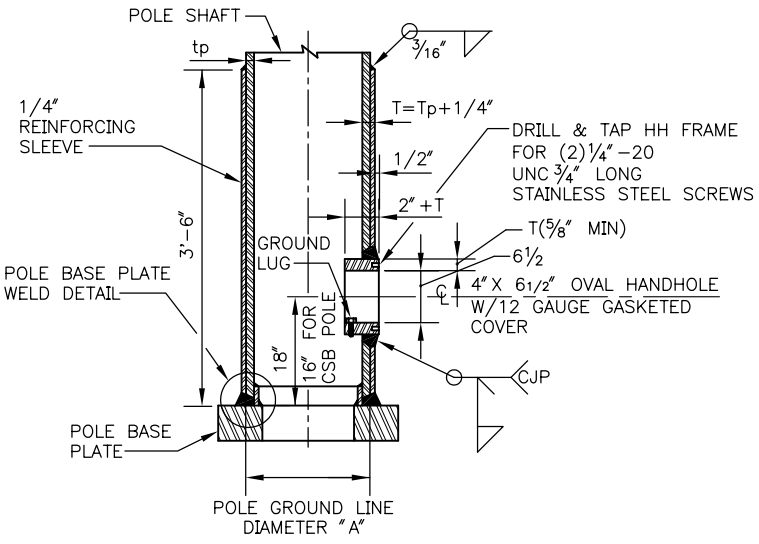
POLE BASE PLATE WELD DETAIL



STRAIN POLE



POLE BASE PLATE



POLE BASE DETAIL

REF STD SPEC SEC 8-32

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

REV DATE: 2008

POLE TYPE	DEAD LOAD MOMENT KIP-FT (AT GROUND LINE)	POLE SCHEDULE						
		GROUND LINE DIA. "A"		POLE BASE PLATE SIZE		BOLT CIRCLE DIA. "B"	BOLT HOLE	ANCHOR BOLTS
		STD	CSB	STD	CSB			
V	51	12″	12″	1¾″ X 18″ X 18″	1¾″ X 23″ X 23″	18'	2 1/16″	1¾″ DIA. X 72″
X	93	14″	12″ ½″	2″ X 20″ X 20″	2″ X 23″ X 23″	20″	2 5/16″	2″ DIA. X 72″
Z	164	15″	–	2½″ X 23″ X 23″	–	22″	2 13/16″	2½″ DIA. X 72″

POLE NOTES

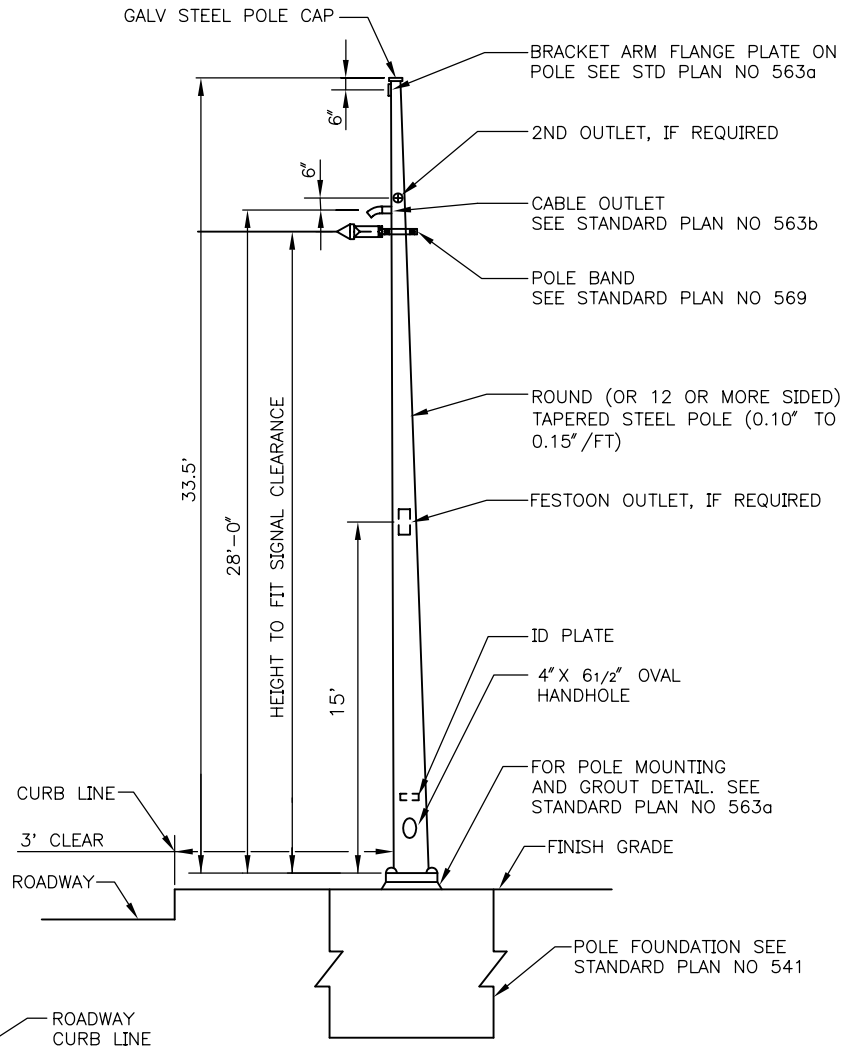
1. THE YIELD MOMENT SHALL BE 2X THE DEAD LOAD MOMENT. THE ULTIMATE PLASTIC MOMENT SHALL BE 2.5 X THE DEAD LOAD MOMENT.
2. POLE SHAFT AND REINFORCING SLEEVE. ASTM A572 GRADE 50, 60 OR 65 (Fy = 50, 60 OR 65 KSI RESPECTIVELY), OR ASTM A595 GRADE A OR B (Fy = 55 OR 60 KSI RESPECTIVELY).
3. BASE PLATE AND HANDHOLE REINFORCING RIM: ASTM A36 OR ASTM A572 GRADE 42. BASE PLATE Fy $\geq$ 0.65 POLE SHAFT Fy. THE BASE PLATE THICKNESS MAY BE REDUCED BY ¼″ IF ASTM A572 GRADE 42 STEEL IS USED.
4. REINFORCING SLEEVE SHALL BE FABRICATED FROM THE SAME MATERIAL TYPE AND YIELD STRENGTH AS THE POLE SHAFT.
5. POLE SHAFTS SHALL HAVE NO MORE THAN TWO LONGITUDINAL WELDS IN EACH PLY.
6. MINIMUM SHAFT WALL THICKNESS OF EACH PLY SHALL BE 0.239″ (3 GAUGE). POLE SHALL HAVE A MAXIMUM OF TWO PLYS NOT INCLUDING THE ¼″ REINFORCING SLEEVE.
7. MAXIMUM SILICON CONTENT IN STEEL SHALL BE 0.04%. SEE STD SPEC SECTION 9-33.1(3) FOR GENERAL GALVANIZING REQUIREMENTS.
8. POLE DIAMETER FOR 12 OR MORE SIDED POLES SHALL BE MEASURED FROM THE POINT TO POINT DIMENSION.
9. POLES SHALL MEET DEFLECTION CRITERIA STATED IN STD SPEC SECTION 9-33.2(2) WITH THE DEAD LOAD APPLIED AT 25' ABOVE GROUNDLINE.
10. POLE STRENGTH SHALL MEET REQUIREMENTS OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (1994 EDITION).

REF STD SPEC SEC 8-32, 9-33

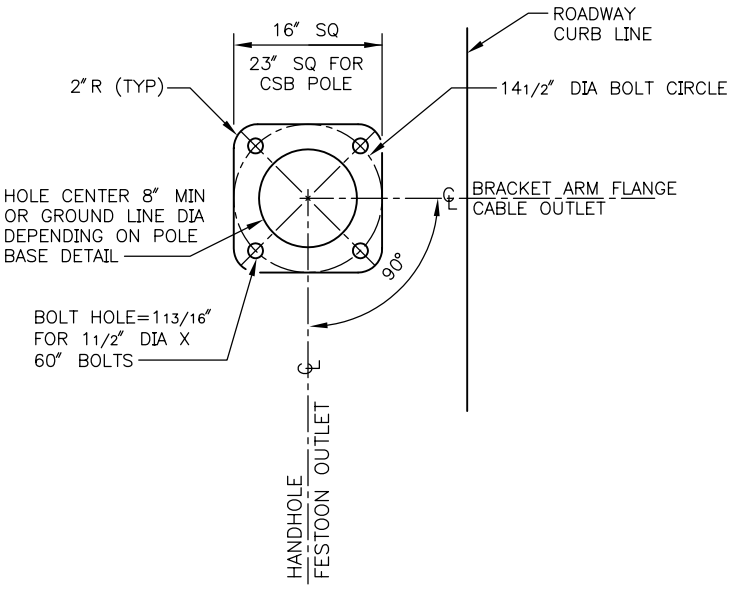
City of Seattle	NOT TO SCALE	COMBINED USE METRO STRAIN POLE DETAILS (TYPE V,X,Z POLES)

STANDARD PLAN NO 567a

REV DATE: 2008



STRAIN POLE



POLE BASE PLATE

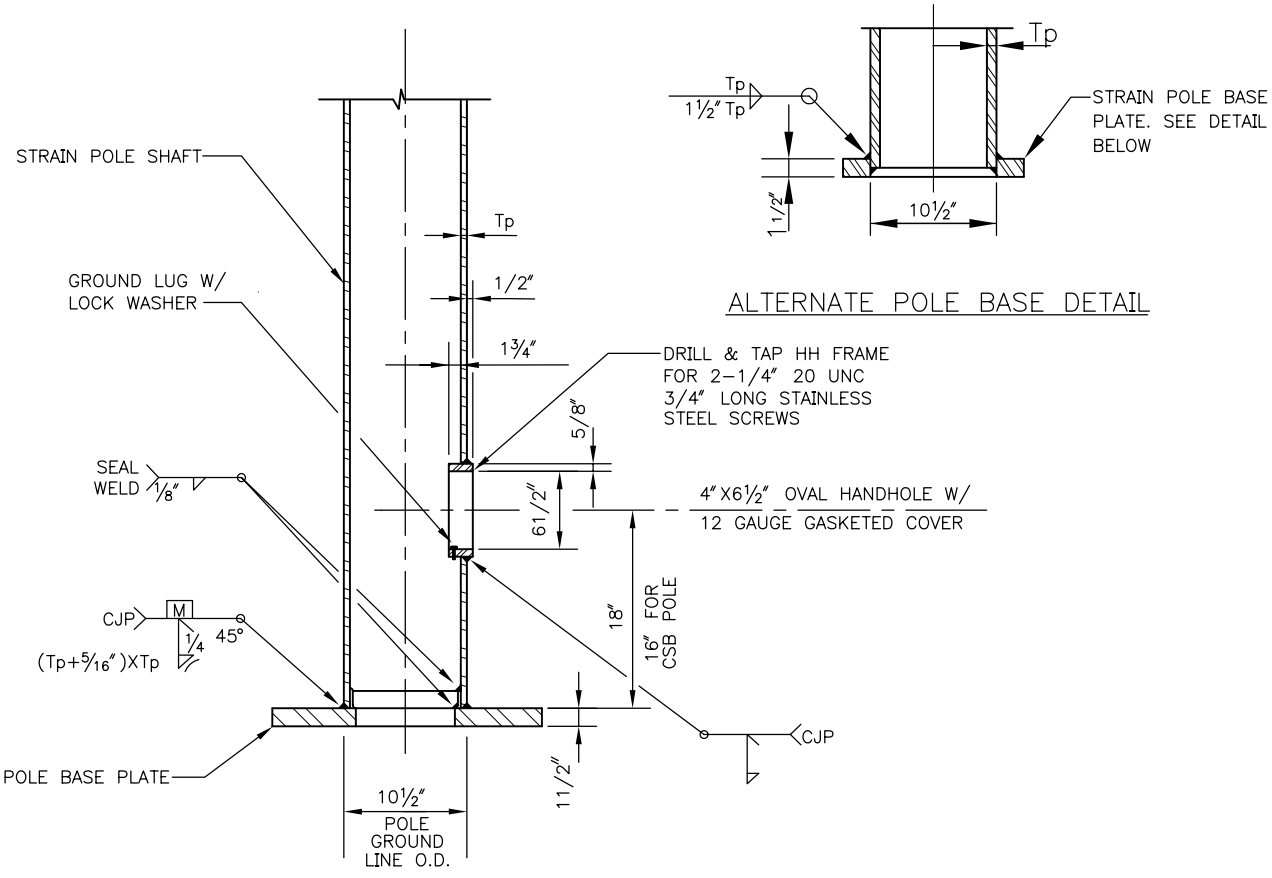
REF STD SPEC SEC 8-32

City of Seattle	NOT TO SCALE	TYPE T STRAIN POLE DETAILS TRAFFIC SIGNAL ONLY

REV DATE: 2008

POLE NOTES

1. THE DEAD LOAD MOMENT AT THE GROUNDLINE SHALL BE 40 KIP–FT. THE YIELD MOMENT SHALL BE 2X DEAD LOAD MOMENT.
2. POLE STRENGTH SHALL MEET REQUIREMENTS OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS. (1994 EDITION)
3. POLE SHAFT: ASTM A572 GRADE 50, 60, OR 65 (Fy=50, 60, OR 65 KSI RESPECTIVELY), OR ASTM A595 GRADE A OR B (Fy=55 OR 60 KSI RESPECTIVELY).
4. POLE BASE PLATE AND HANDHOLE REINFORCING RIM: ASTM A36 OR ASTM A572 GRADE 42. BASE PLATE Fy≥0.65 POLE SHAFT Fy. THE BASE PLATE THICKNESS MAY BE REDUCED BY 1/4″ IF ASTM A572 GRADE 42 STEEL IS USED.
5. POLE SHAFTS SHALL HAVE NO MORE THAN 2 LONGITUDINAL WELDS IN EACH PLY.
6. MINIMUM SHAFT WALL THICKNESS OF EACH PLY SHALL BE 0.239″ (3 GAUGE). THE POLE SHALL HAVE A MAXIMUM OF 2 PLYS.
7. MAXIMUM SILICON CONTENT IN STEEL SHALL BE 0.04%. SEE STD SPEC SEC 9–33.1(3) FOR GENERAL GALVANIZING REQUIREMENTS.
8. POLE DIAMETER FOR 12 OR MORE SIDED POLES SHALL BE MEASURED FROM THE POINT TO POINT DIMENSION.
9. POLES SHALL MEET DEFLECTION CRITERIA STATED IN THE STD SPEC SEC 9–33.2(2) WITH THE DEAD LOAD APPLIED AT 27' ABOVE GROUNDLINE.
10. THE POLES SHALL BE COMPACT AND MUST MEET REQUIREMENTS IN AASHTO SECTION 4, TABLE 1.4 1B (1).



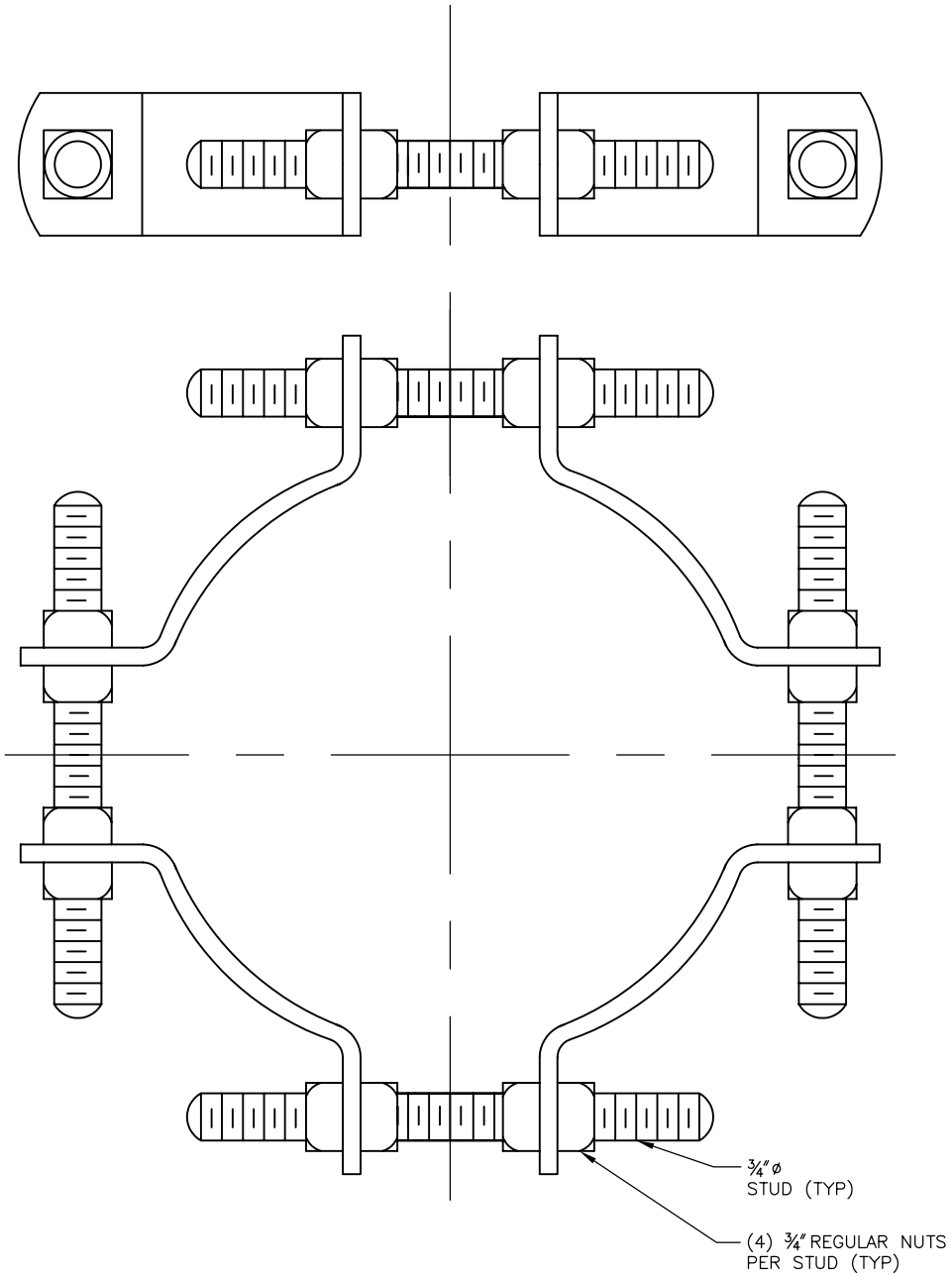
ALTERNATE POLE BASE DETAIL

POLE BASE DETAIL

REF STD SPEC SEC 8-32, 9-33

City of Seattle	NOT TO SCALE	TYPE T STRAIN POLE DETAILS TRAFFIC SIGNAL ONLY

REV DATE: 2008



ADJUSTABLE 4–WAY BAND

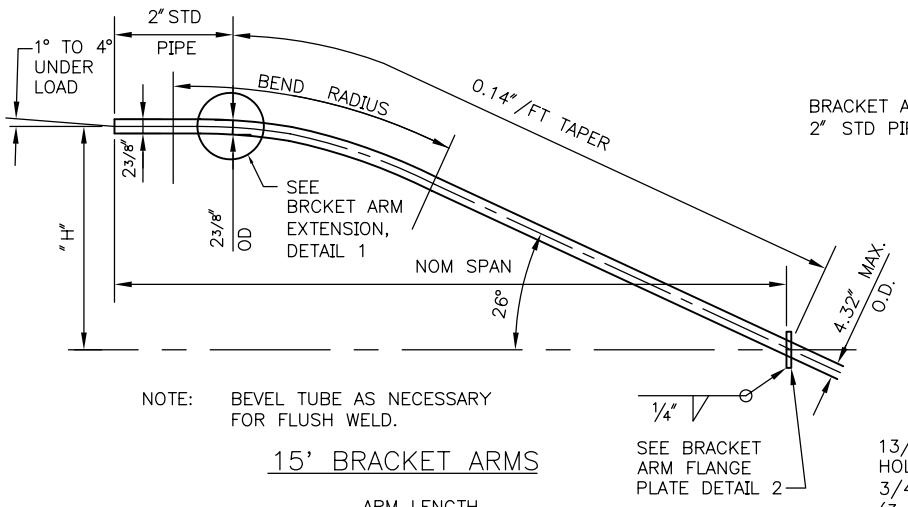
NOTES:
1. ASSEMBLY SHALL HAVE AN ULTIMATE TENSILE STRENGTH OF 20,000 LB.
2. ALL PARTS SHALL BE HOT DIP GALV PER ASTM A123.

REF STD SPEC SEC 8-31, 9-32

City of Seattle	NOT TO SCALE	POLE BAND

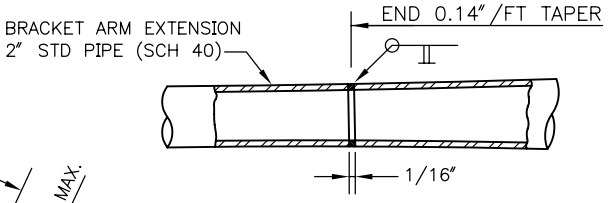
STANDARD PLAN NO 572

REV DATE: 2008

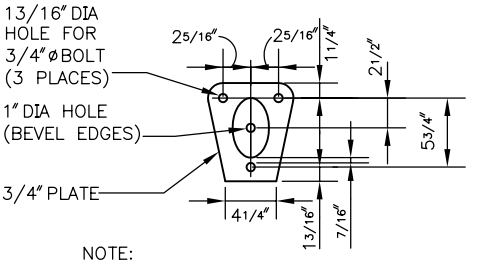


NOTE: BEVEL TUBE AS NECESSARY FOR FLUSH WELD.

15' BRACKET ARMS

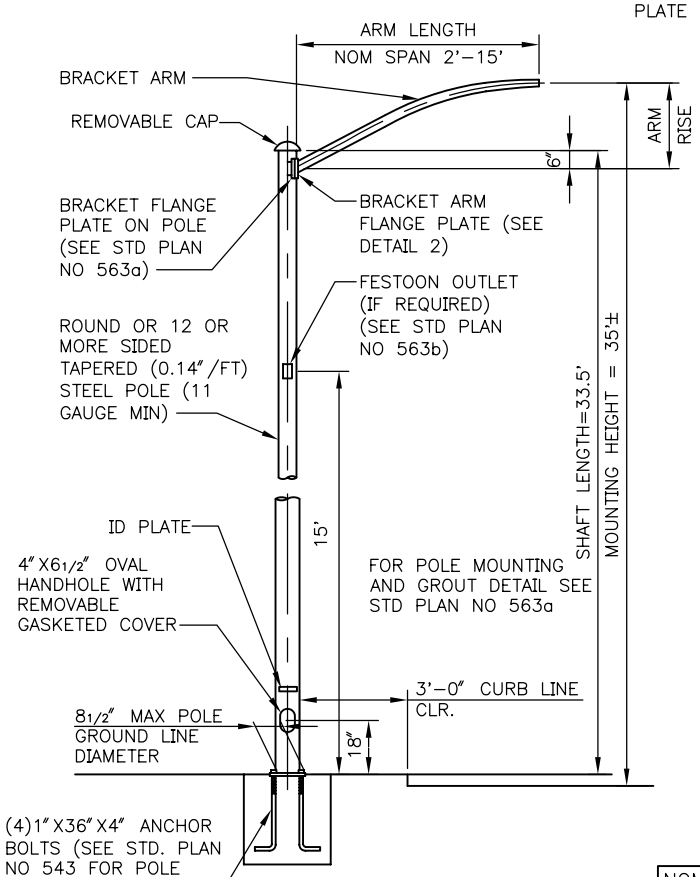


BRACKET ARM EXTENSION DETAIL 1

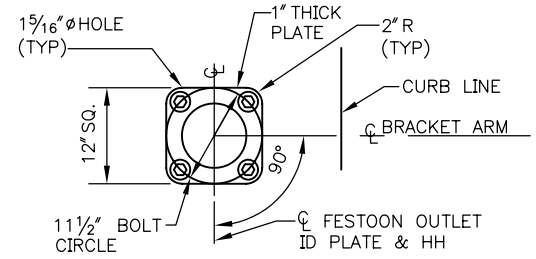


NOTE:
FLANGE DIMENSIONS AND HOLE LOCATIONS MUST MATCH THOSE ON FLANGE PLATE ON POLE (SEE STD PLAN NO 563a)

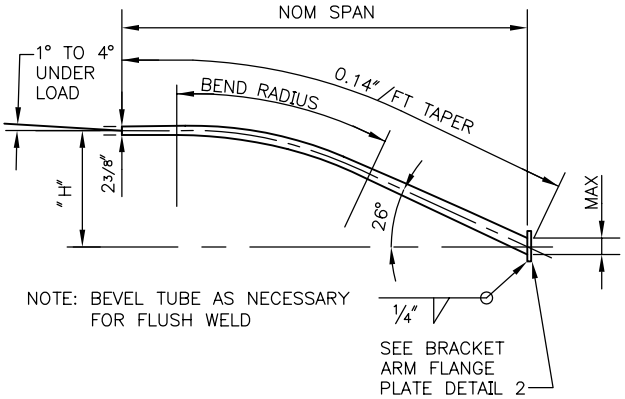
BRACKET ARM FLANGE PLATE DETAIL 2



STEEL STREET LIGHT POLE



POLE BASE PLATE



NOTE: BEVEL TUBE AS NECESSARY FOR FLUSH WELD

2' THRU 12' BRACKET ARMS

NOM. SPAN	H*	BEND RADIUS	TUBE REQUIREMENT
2'	51/4"	—	2" STD PIPE
4'	12"	6'	11 GAUGE
6'	18"	9'	11 GAUGE
8'	24"	13'	11 GAUGE
10'	30"	15'	11 GAUGE
12'	33'	17'	11 GAUGE
15'	36"	17'	11 GAUGE

MATERIAL SPECIFICATION

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

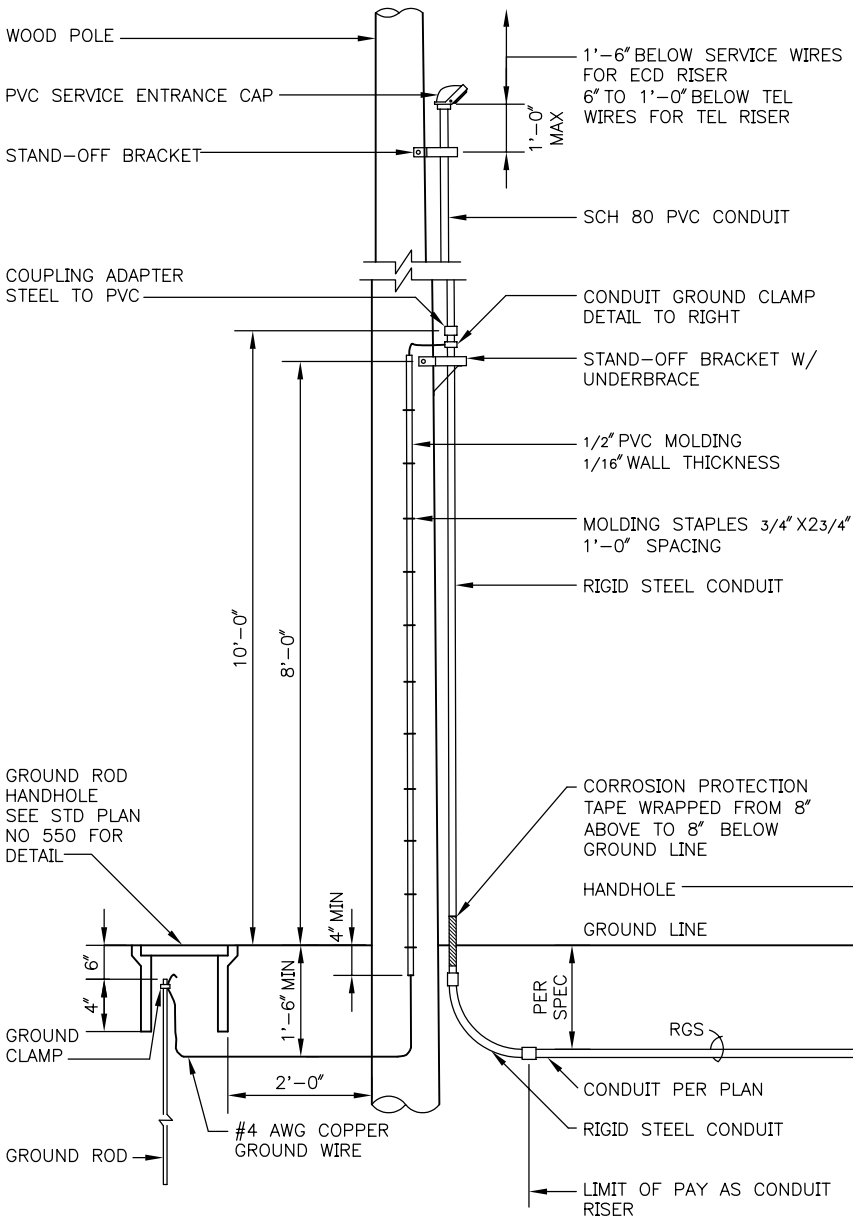
* THESE DIMENSIONS ARE ONLY ILLUSTRATIVE OF THE GENERAL OUTLINE AND MATERIALS USED IN THE CONSTRUCTION OF THESE ARMS AND ARE NOT INTENDED TO EXCLUDE MANUFACTURER'S STANDARD PRODUCTS.

REF STD SPEC SEC 8-32

City of Seattle	NOT TO SCALE	STEEL STREET LIGHT POLE WITH BRACKET ARM

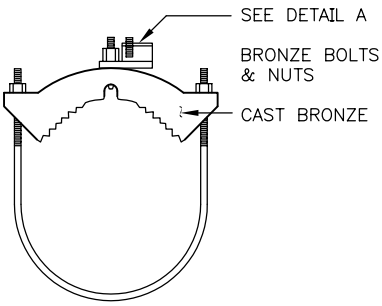
STANDARD PLAN NO 580

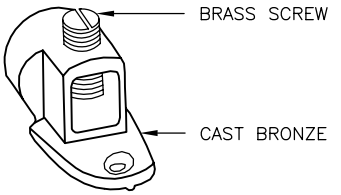
REV DATE: 2008



CONDUIT RISER (WITH STAND-OFF BRACKET*)

*WHEN THERE WILL BE ONLY ONE CONDUIT (1 1/2" OR SMALLER) ON THE POLE, ONE HOLE MALLEABLE IRON CLAMPS WITH 4" LAG SCREWS SHALL BE USED TO SECURE THE CONDUIT TO THE POLE IN LIEU OF THE STAND-OFF BRACKETS





DETAIL A

CONDUIT GROUND CLAMP DETAIL

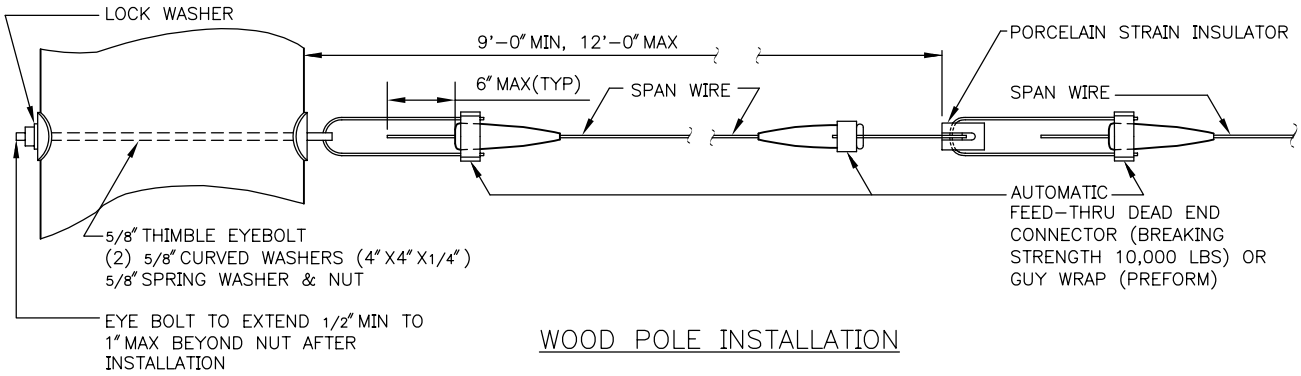
NOTES:

1. ON POLES WITH EXISTING CONDUITS, NEW CONDUITS SHALL BE INSTALLED IN ACCORDANCE WITH THIS STANDARD PLAN.
2. RIGID STEEL CONDUIT SHALL BE GROUNDED JUST BELOW COUPLING, APPROXIMATELY 8'-0" TO 10'-0" ABOVE GROUND, AS SHOWN
3. WHEN 2 OR MORE RIGID STEEL CONDUITS ARE INSTALLED ON ONE POLE, ONE CONDUIT SHALL BE GROUNDED AS SHOWN. THE CONDUIT SUPPORTS & STRAPS SHALL SERVE AS A BONDING DEVICE BETWEEN THE STEEL CONDUITS
4. THE GROUND WIRE SHALL BE ONE CONTINUOUS LENGTH. INSERT THE GROUND WIRE FORM THE BOTTOM OF THE GROUND CLAMP & BEND OVER THE CLAMP BEFORE TIGHTENING
5. PLACE GROUND WIRE IN QUADRANT BETWEEN POLE FACE & SECONDARY NEUTRAL
6. ALL STEEL HARDWARE SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123
7. CONDUIT CLAMP SPACING SHALL BE PER THE NEC WITH A MINIMUM OF TWO HOLE CLAMP PER 10'-0" LENGTH OF CONDUIT

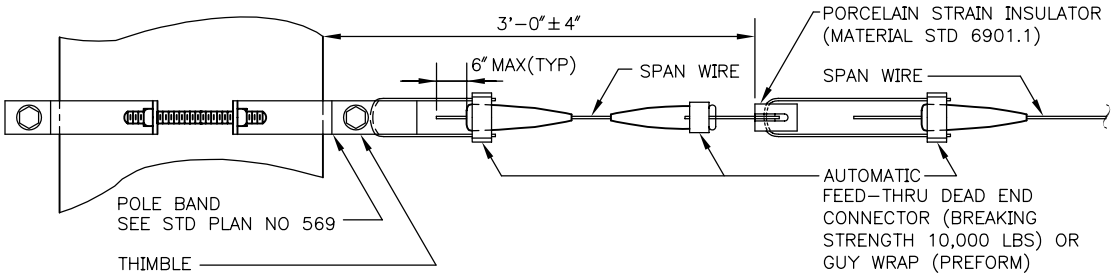
REF STD SPEC SEC 8-33, SCL CONSTRUCTION GUIDELINES U 7-10

City of Seattle	NOT TO SCALE	CONDUIT RISER

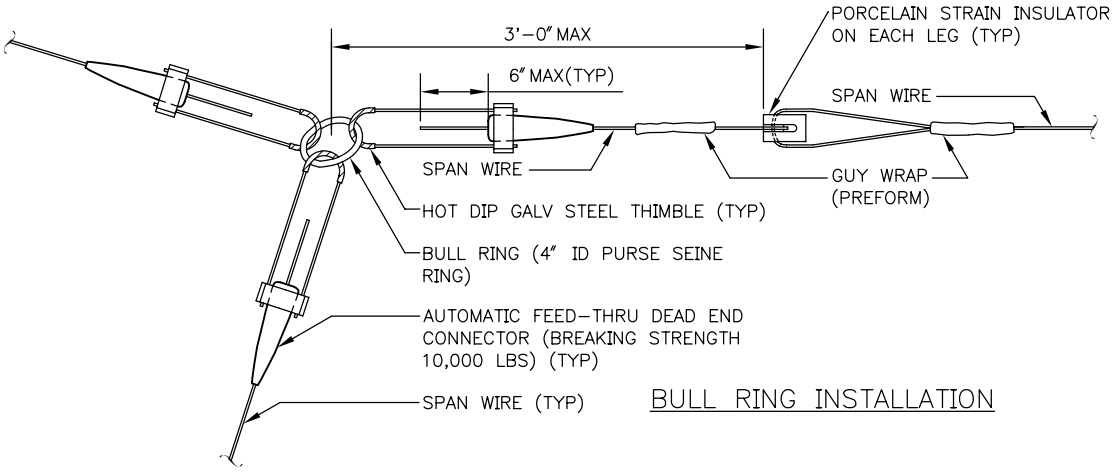
REV DATE: 2008



WOOD POLE INSTALLATION



METAL POLE INSTALLATION



BULL RING INSTALLATION

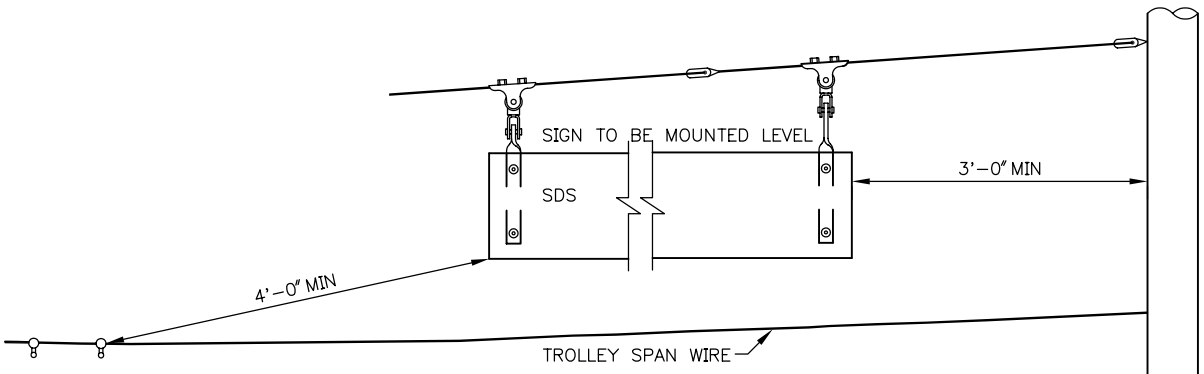
NOTES:

1. ALL STEEL HARDWARE TO BE HOT DIP GALVANIZED OR STAINLESS STEEL UNLESS OTHERWISE STIPULATED IN THE DRAWINGS
2. SPAN WIRE SHALL BE ALUMINUM COATED STEEL
3. SPREAD THIMBLE TO FIT THE BAIL OF THE AUTOMATIC DEAD END

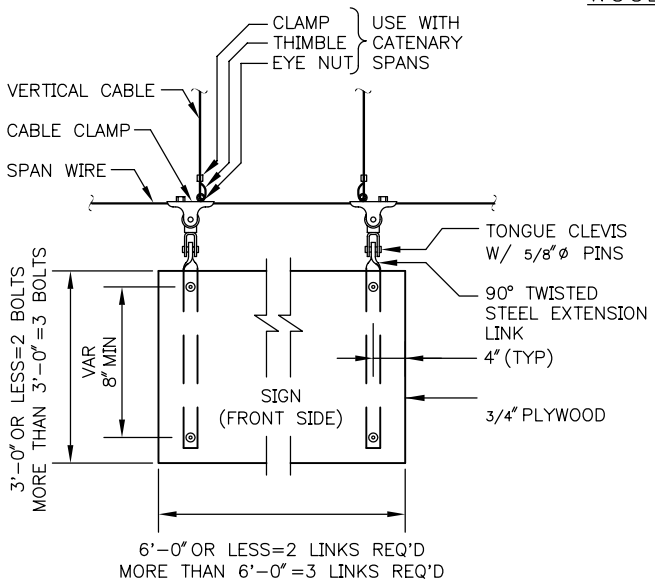
REF STD SPEC SEC 8-21 & SCL MATERIAL STANDARD 6901.1

City of Seattle	NOT TO SCALE	SPAN WIRE INSTALLATION

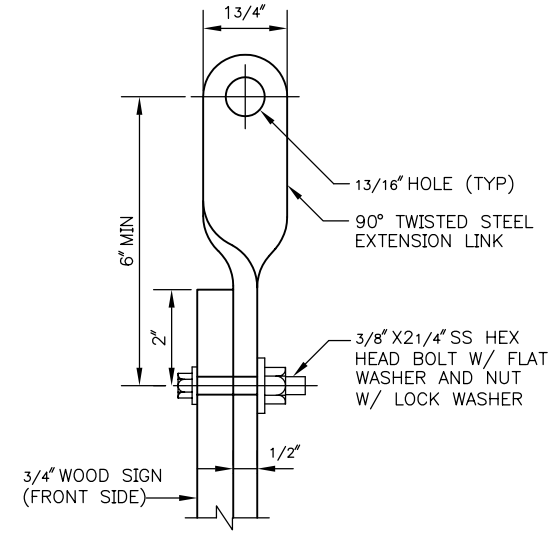
REV DATE: 2003



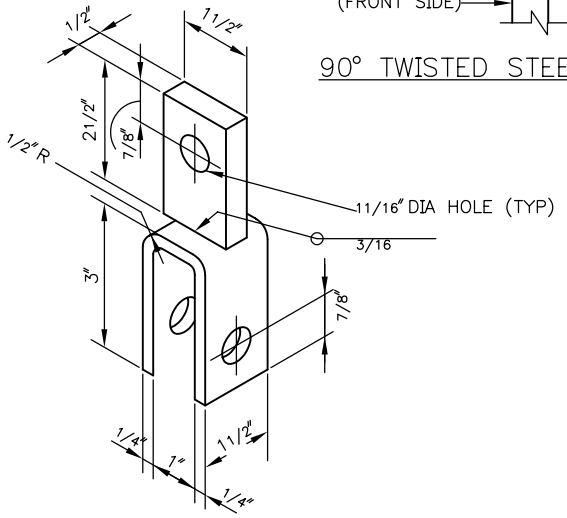
STREET DESIGNATION SIGN
WOOD SIGNS ONLY



SPAN WIRE MOUNTED
WOOD SIGN



90° TWISTED STEEL EXTENSION LINK



TONGUE CLEVIS

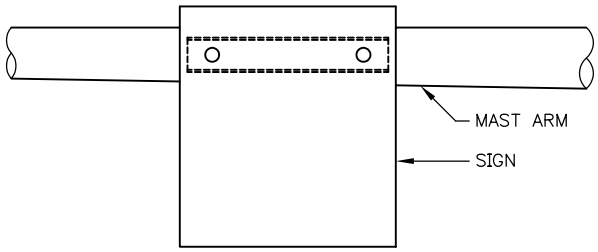
NOTES

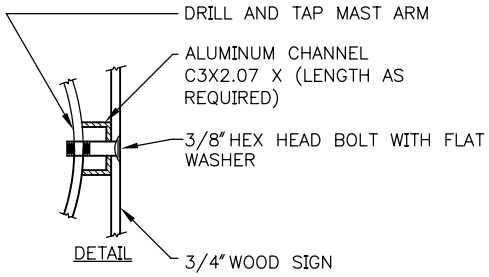
1. ALL HARDWARE SHALL BE STAINLESS STEEL. OTHER THAN HARDWARE SHALL BE HOT DIP GALVANIZED.
2. NEOPRENE GASKETS SHALL NOT BE USED FOR SPAN WIRE OR AERIAL CONNECTIONS.

REF STD SPEC SEC 8-21

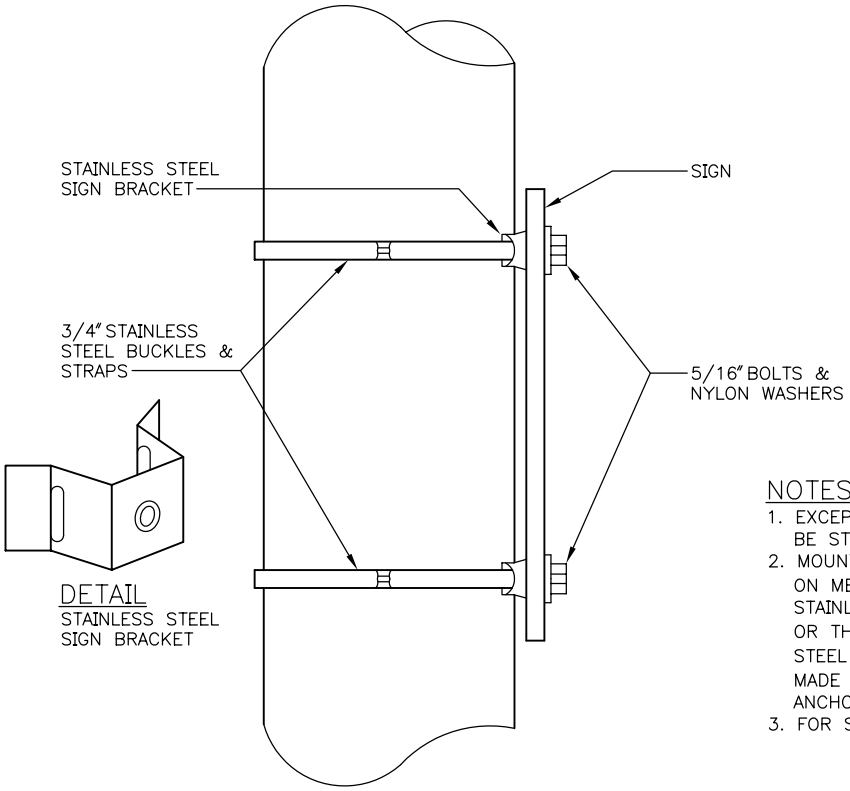
City of Seattle	NOT TO SCALE	OVERHEAD WOOD SIGNS SPANWIRE MOUNTED

REV DATE: 2003





SIGN MOUNTING ON MAST ARM



TEMPORARY SIGN MOUNTING ON METAL POLE

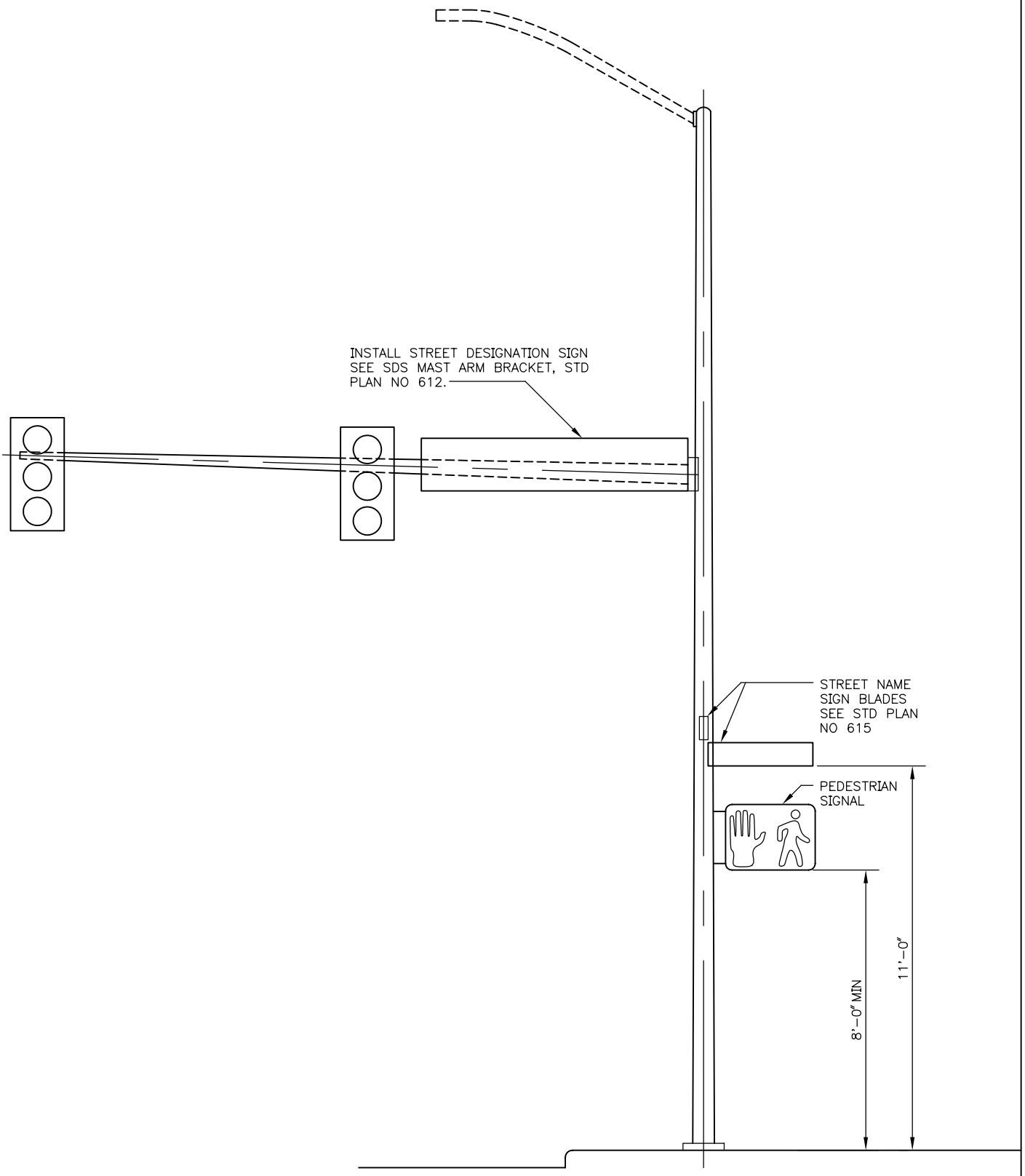
NOTES:

1. EXCEPT AS NOTED OTHERWISE, ALL HARDWARE SHALL BE STAINLESS STEEL.
2. MOUNTING OF TRAFFIC SIGNS SHALL BE AS FOLLOWS: ON METAL POLE THINNER THAN 7 GAUGE, USE 3/8" STAINLESS STEEL RIVNUTS ON METAL POLES 7 GAUGE OR THICKER, DRILL AND TAP FOR 3/8" BOLT (STAINLESS STEEL RIVNUT OPTIONAL) ON POLES FILLED WITH OR MADE FROM CONCRETE, USE 3/8" X 2 1/2" MIN STUD BOLT ANCHORS WITH HEX NUT
3. FOR SIGN FEATURE, CONTACT TRAFFIC ENGINEER

REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	SIGN INSTALLATION (NON-SPANWIRE MOUNTING)

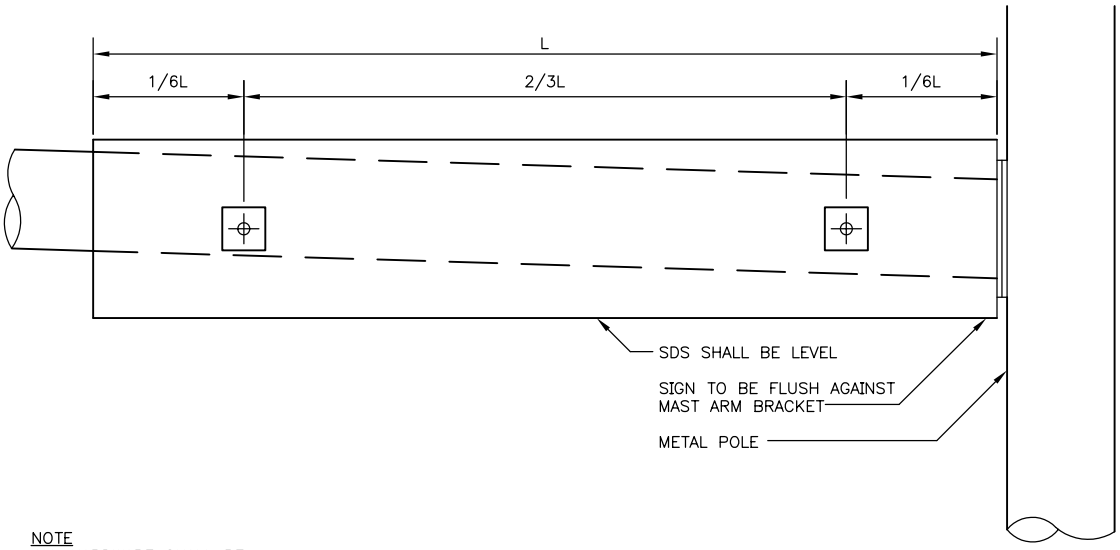
REV DATE: 2008



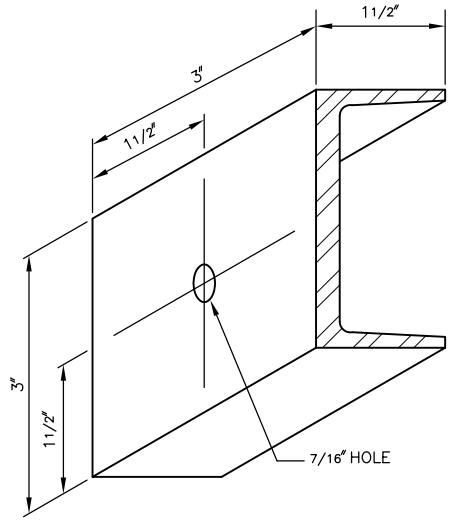
REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	STANDARD SIGN INSTALLATION STEEL POLES

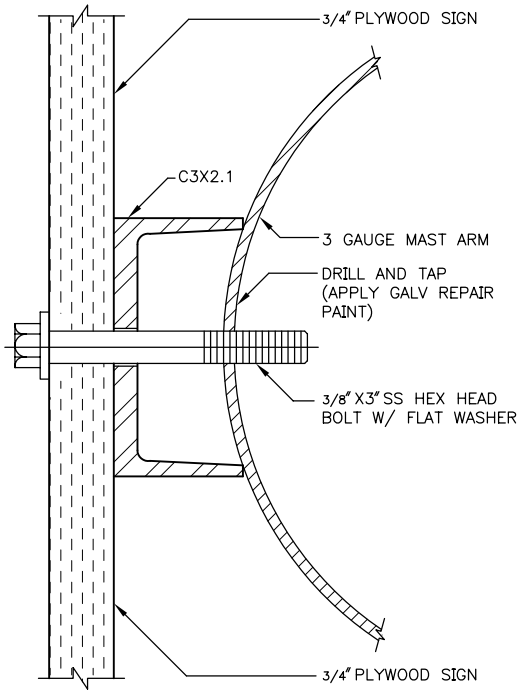
REV DATE: 2003



NOTE
ALL HARDWARE SHALL BE STAINLESS STEEL.



C3X2.1 EXTRUDED Al

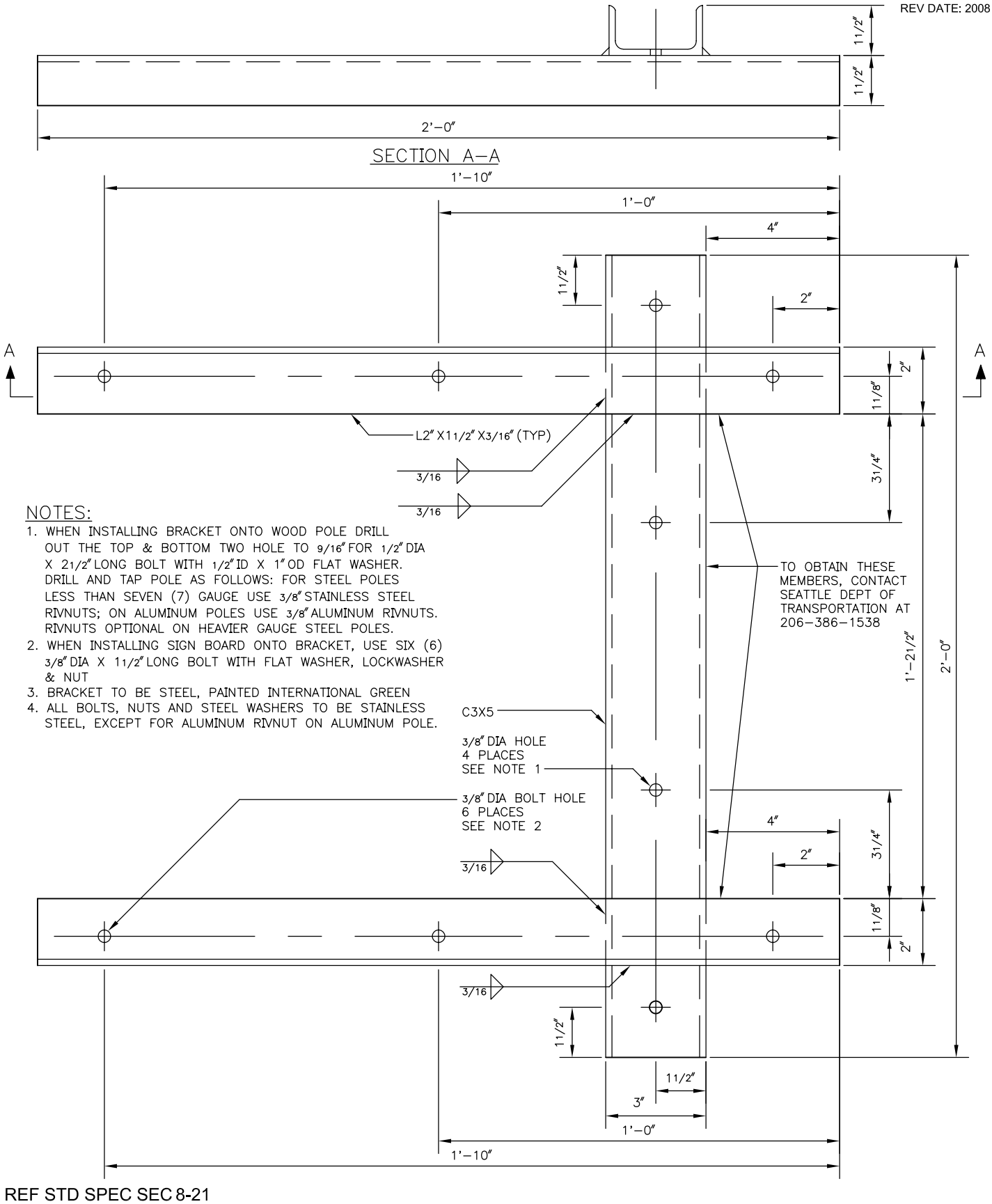


REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	SDS BRACKET FOR STEEL MAST ARM POLES

STANDARD PLAN NO 613

REV DATE: 2008



NOTES:

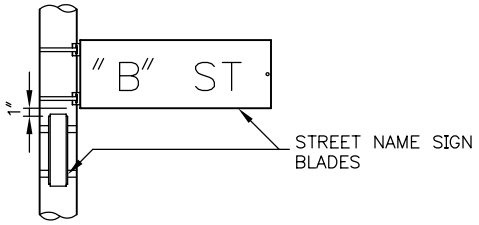
1. WHEN INSTALLING BRACKET ONTO WOOD POLE DRILL OUT THE TOP & BOTTOM TWO HOLE TO 9/16″ FOR 1/2″ DIA X 21/2″ LONG BOLT WITH 1/2″ ID X 1″ OD FLAT WASHER. DRILL AND TAP POLE AS FOLLOWS: FOR STEEL POLES LESS THAN SEVEN (7) GAUGE USE 3/8″ STAINLESS STEEL RIVNUTS; ON ALUMINUM POLES USE 3/8″ ALUMINUM RIVNUTS. RIVNUTS OPTIONAL ON HEAVIER GAUGE STEEL POLES.
2. WHEN INSTALLING SIGN BOARD ONTO BRACKET, USE SIX (6) 3/8″ DIA X 11/2″ LONG BOLT WITH FLAT WASHER, LOCKWASHER & NUT
3. BRACKET TO BE STEEL, PAINTED INTERNATIONAL GREEN
4. ALL BOLTS, NUTS AND STEEL WASHERS TO BE STAINLESS STEEL, EXCEPT FOR ALUMINUM RIVNUT ON ALUMINUM POLE.

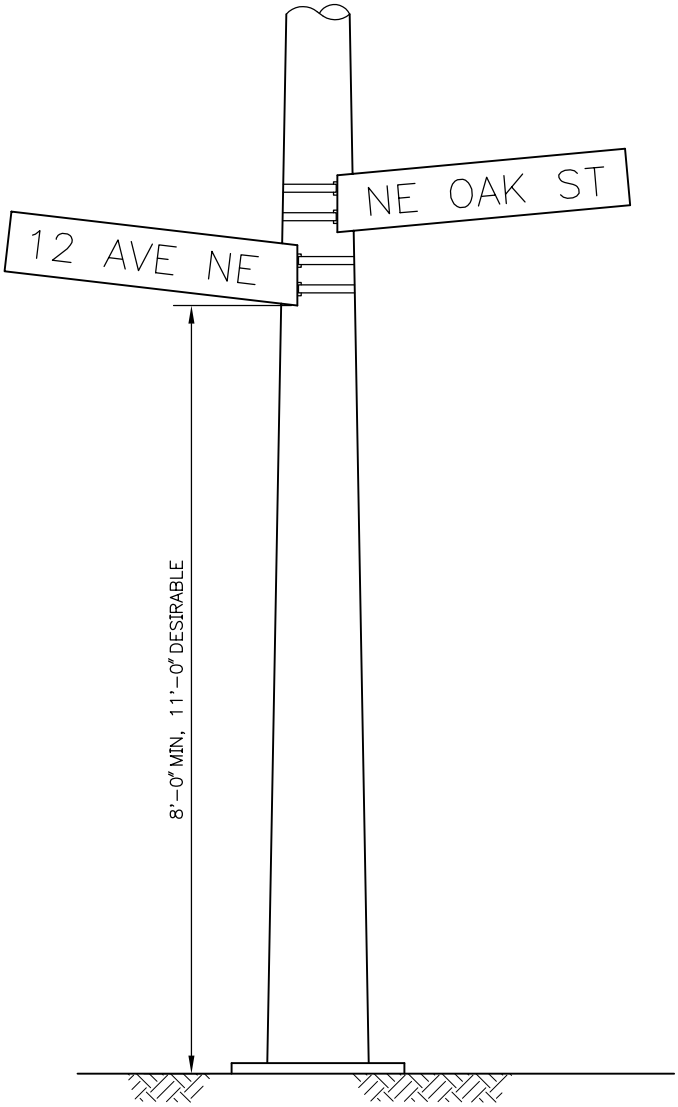
REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	SDS BRACKET FOR STEEL OR WOOD POLES

STANDARD PLAN NO 615

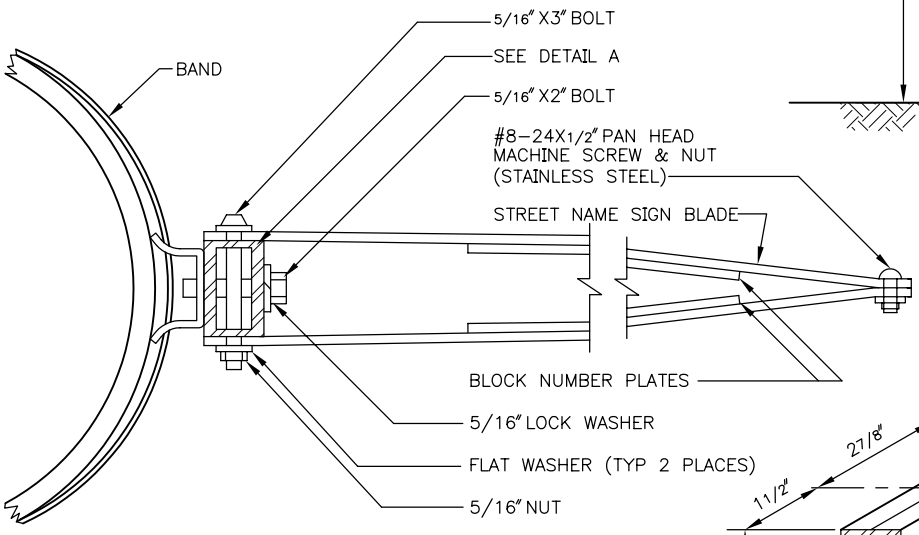
REV DATE: 2007



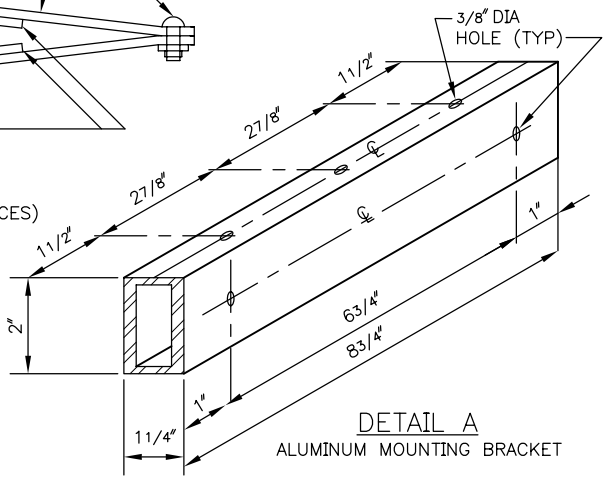


NOTES:

1. STAGGER SNS BLADES WITH THE "AVENUE" DESIGNATION BLADE BELOW THE "STREET" DESIGNATION BLADE
2. SNS SHALL BE INSTALLED PARALLEL TO CORRESPONDING STREET
3. ALL NUTS, BOLTS & WASHERS TO BE STAINLESS STEEL EXCEPT ALUMINUM RIV NUTS ON ALUMINUM POLES.



INSTALL SIGN MOUNTING TO POLE WITH BANDS AS SHOWN ON STD PLAN NO 601C



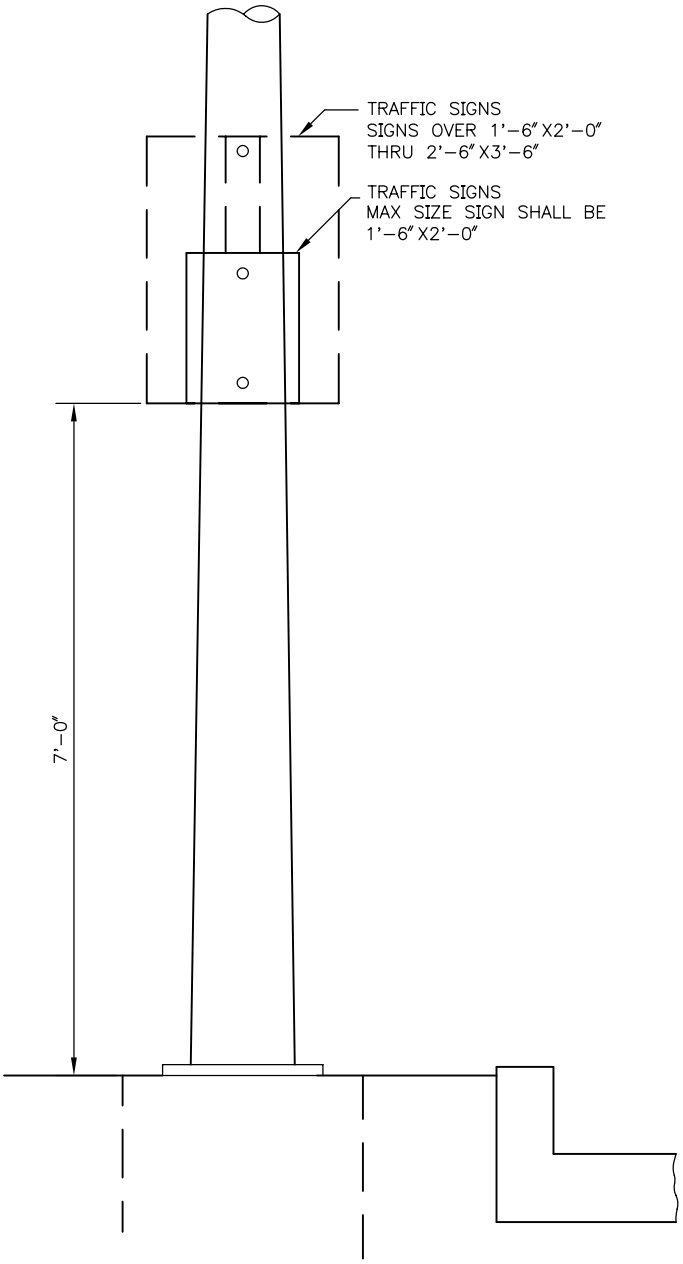
DETAIL A
ALUMINUM MOUNTING BRACKET

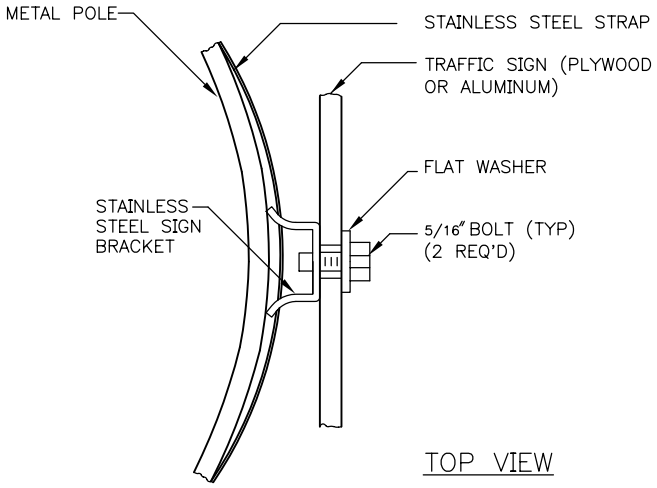
REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	SNS BRACKET FOR STEEL POLES

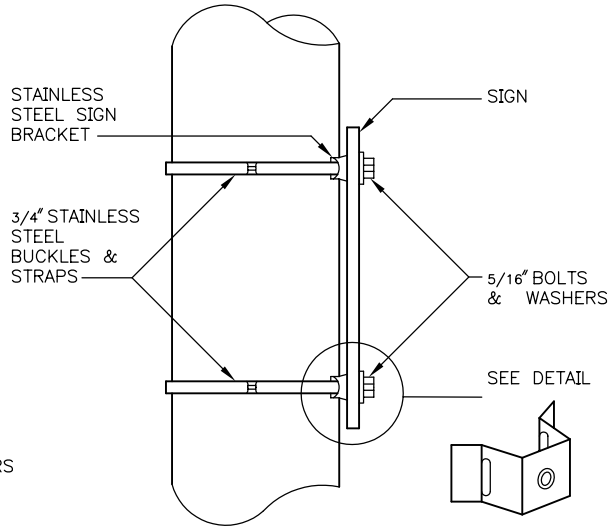
STANDARD PLAN NO 616

REV DATE: 2008





TOP VIEW



SIDE VIEW

DETAIL
STAINLESS
STEEL SIGN
BRACKET

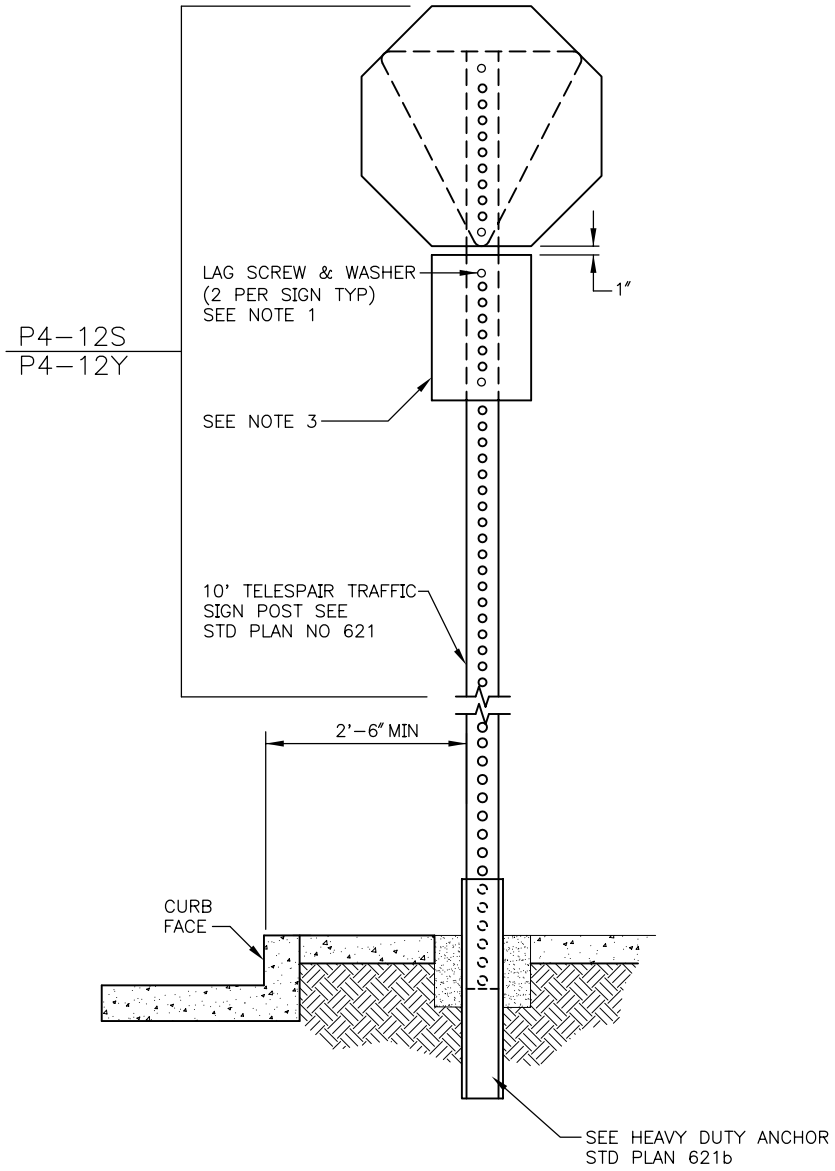
NOTES:

1. ON POLES FILLED WITH OR MADE FROM CONCRETE USE 5/16" X 21/2" MIN STUD BOLT ANCHORS WITH HEX NUT
2. FOR SIGNS OVER 2'–6" X3'–6" USE STD PLAN NO 612. MOUNT SIGNS VERTICALLY ON STRAIN POLE WITH THREE (3) FASTENERS MIN
3. FOR DARK COLORED POLES PAINT BAND TO MATCH POLE
4. ALL HARDWARE TO BE STAINLESS STEEL.

REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	TRAFFIC SIGN MOUNTING ON METAL POLES

REV DATE: 2008



POST ANCHOR INSTALLATIONS

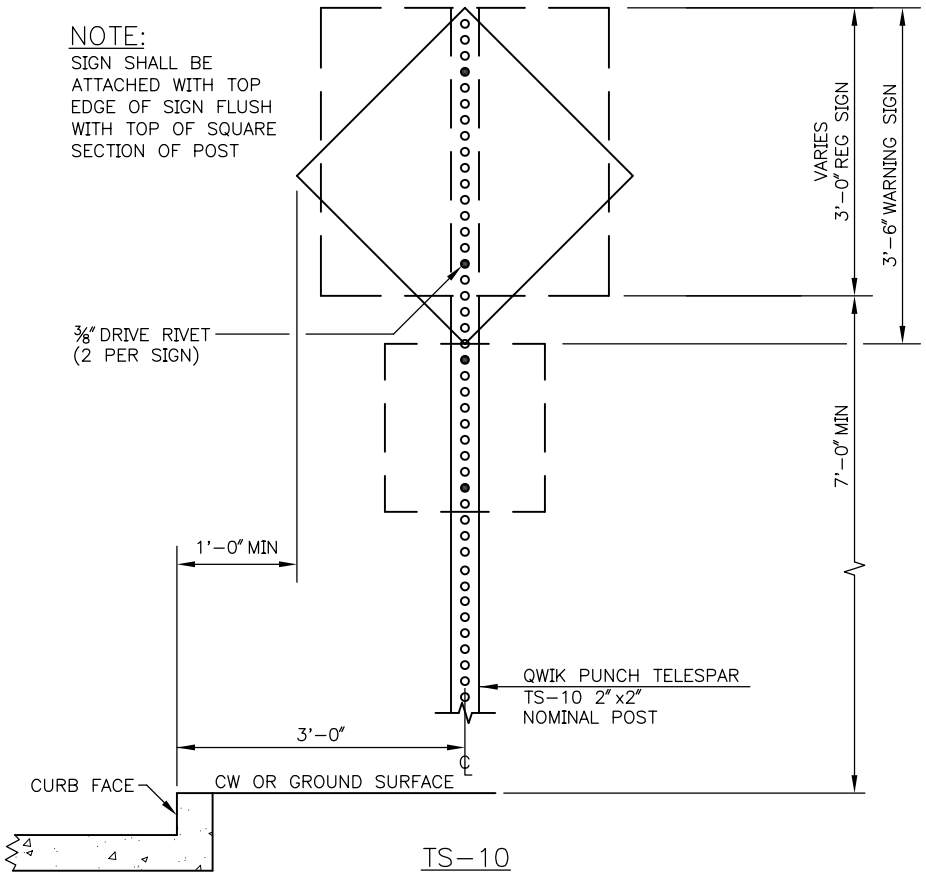
NOTES:

1. 5/16″ X 31/4″ GALVANIZED OR PLATED LAG SCREW & 3/8″ ID X 1″ OD NYLON WASHER
2. CONTACT SEATTLE TRANSPORTATION (684–5087) FOR DETAILS REGARDING SIGN MESSAGE AND FOUNDATION

REF STD SPEC SEC 8-21

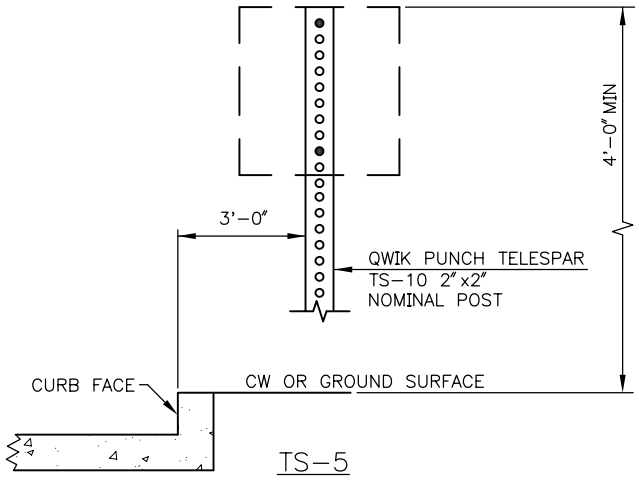
City of Seattle	NOT TO SCALE	STOP AND YIELD SIGN WOOD POST AND ANCHOR INSTALLATION

REV DATE: 2005



TS-10

(SEE STD PLAN 621b FOR POST ANCHOR DETAILS)



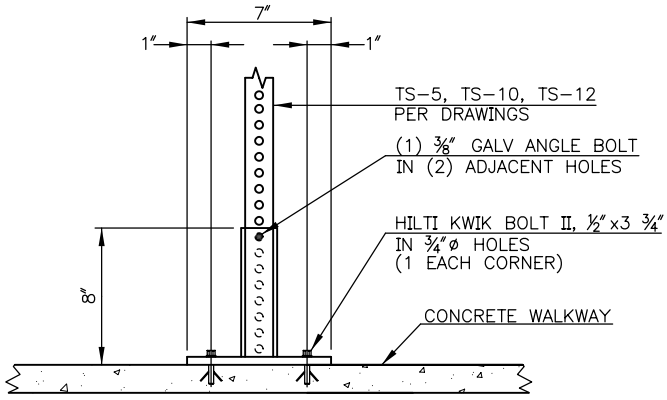
TS-5

(SEE STD PLAN 621b FOR POST ANCHOR DETAILS)

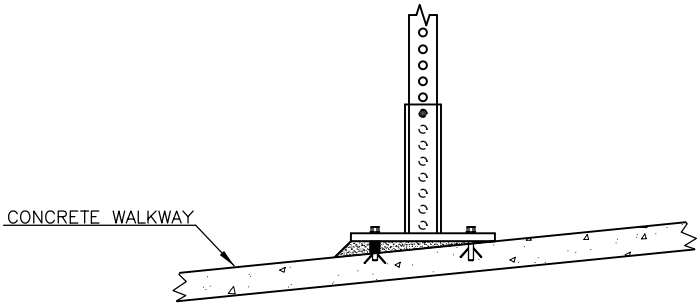
REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	WARNING AND REGULATORY SIGN POST

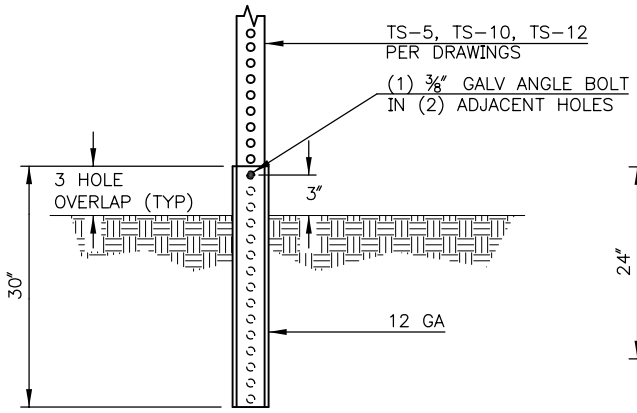
REV DATE: 2005



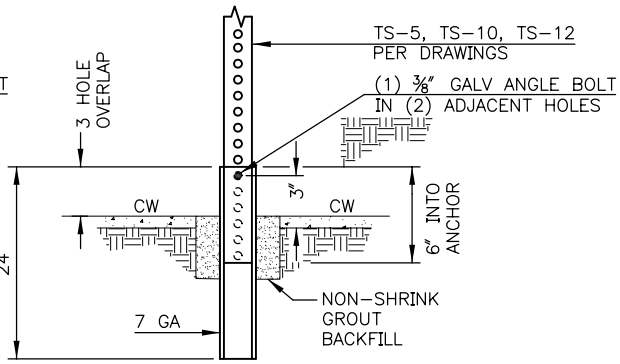
SURFACE MOUNT



NOTE: FOR UNLEVEL SIDEWALKS INSERT WASHERS AS SPACERS BETWEEN PLATE AND SIDEWALK. GROUT ALL SPACE AS SHOWN. IF BOLT CANNOT PENETRATE SIDEWALK AT LEAST 2″, CONTACT THE ENGINEER.



LIGHT DUTY ANCHOR

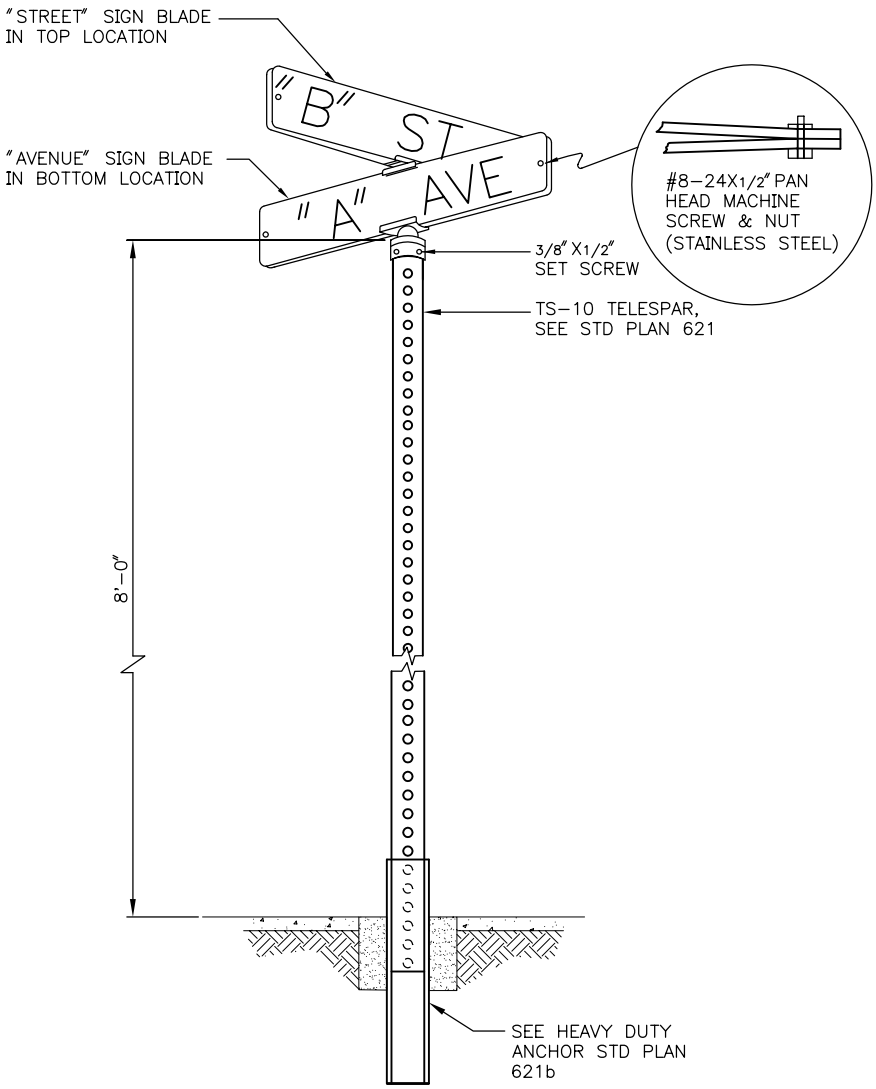


HEAVY DUTY ANCHOR

REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	WARNING AND REGULATORY SIGN POST ANCHOR INSTALLATIONS

REV DATE: 2008



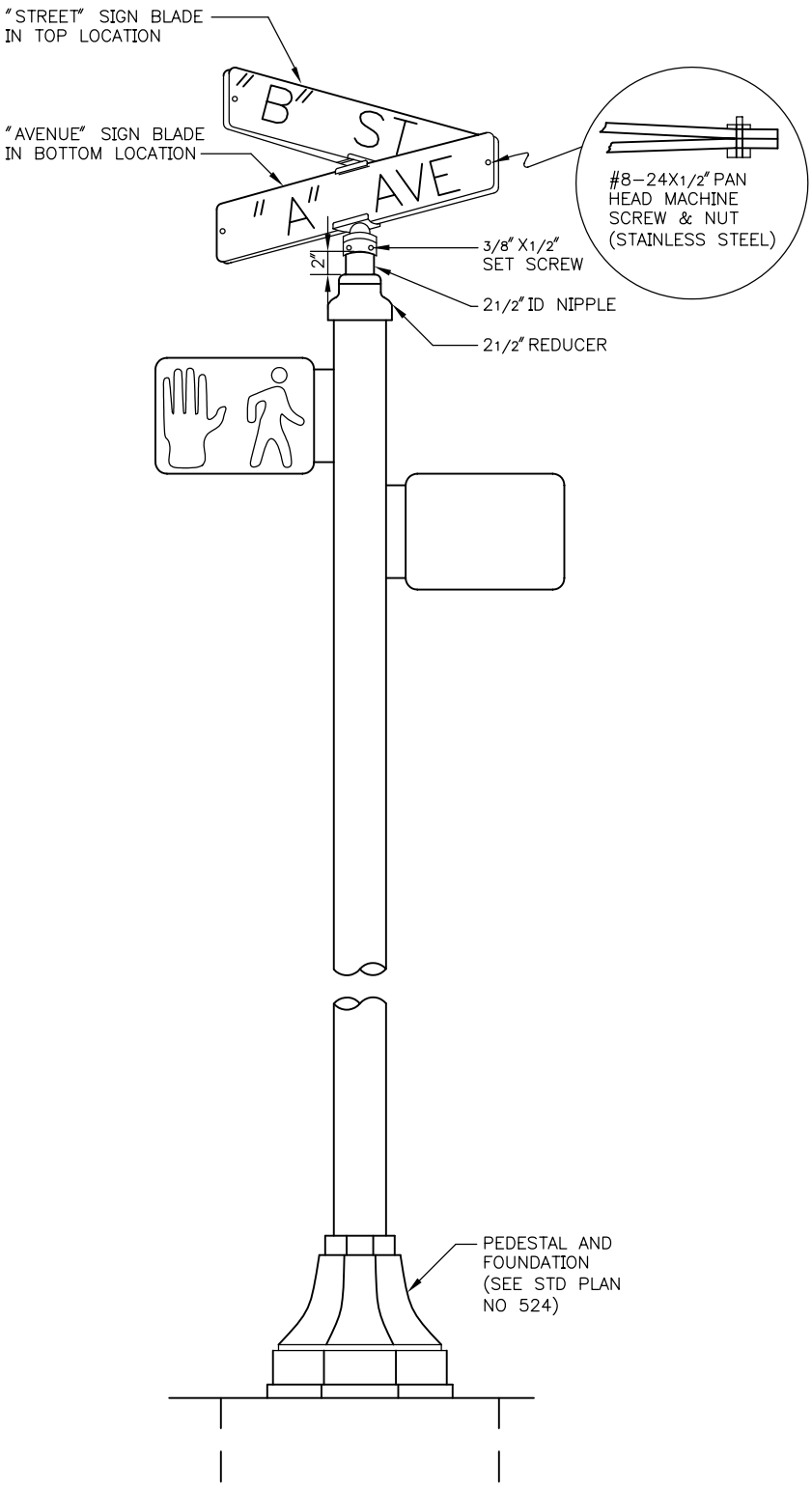
NOTES:

1. SNS BLADE SHALL BE INSTALLED PARALLEL TO CORRESPONDING STREET
2. INSTALLATION OF SNS ON ANY OTHER METAL POLE SHALL REQUIRE REVIEW AND APPROVAL BY THE ENGINEER
3. SNS/SP RELOCATION: OLD CONCRETE SHALL BE REMOVED AND NEW CONCRETE BASE SHALL BE CONSTRUCTED
4. CITY OF SEATTLE SHALL FABRICATE SNS BLADES AND SUPPLY MOUNTING HARDWARE AT PROJECT OR CONTRACTOR EXPENSE

REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	STREET NAME SIGN INSTALLATION

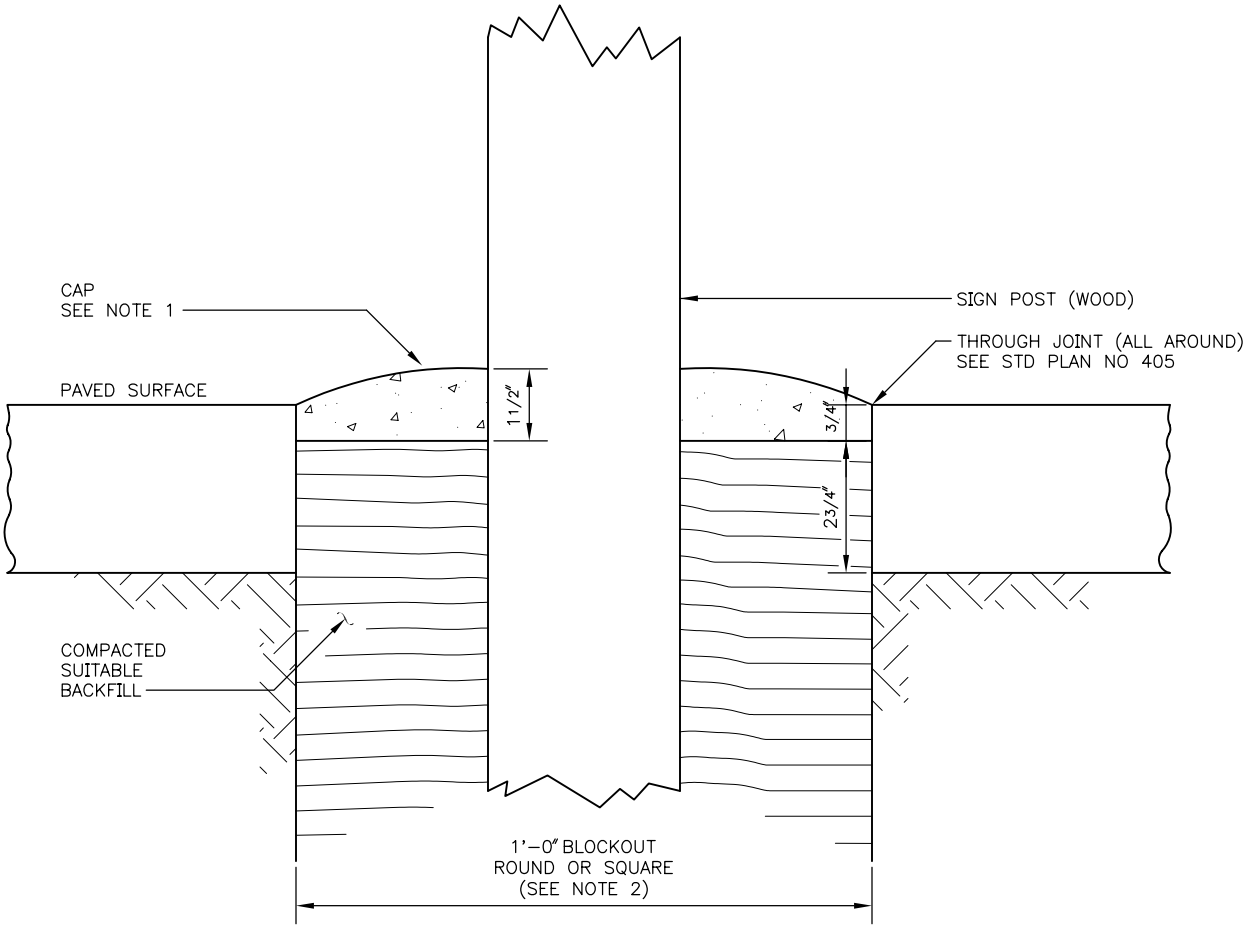
REV DATE: 2008



REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	STREET NAME SIGN PEDESTAL INSTALLATION

REV DATE: 2003



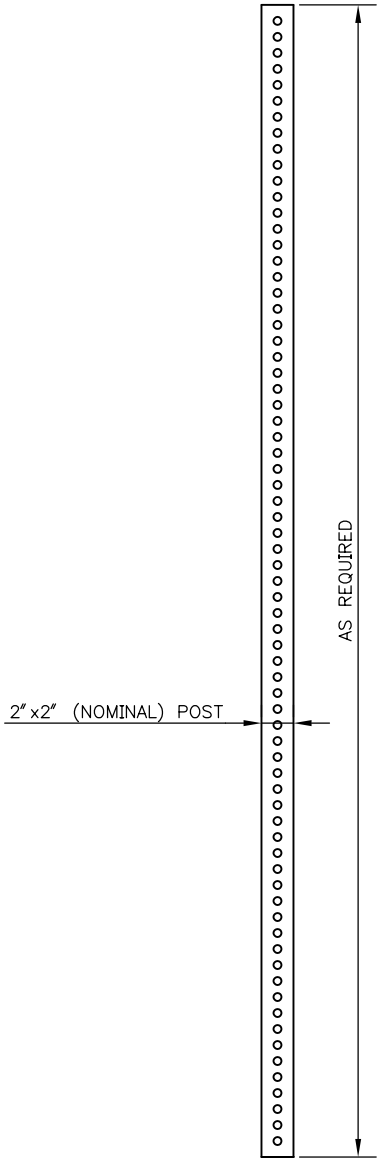
NOTES:

1. CAP SHALL BE MADE OF THE SAME MATERIAL AS THE SURROUNDING PAVED SURFACE AND SHALL BE MOUNDED FOR DRAINAGE AWAY FROM POST
2. BLOCKOUTS SHALL BE PROVIDED FOR POST LOCATIONS WHERE NEW CONCRETE PAVEMENT (SIDEWALK, ROADWAY, ETC) IS BEING INSTALLED
3. WHERE POST IS BEING INSTALLED IN EXISTING PAVED AREAS, HOLE IN PAVED SURFACE SHALL NOT EXCEED 1'–0" NOMINAL DIAMETER

REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	POST CAP

REV DATE: 2008



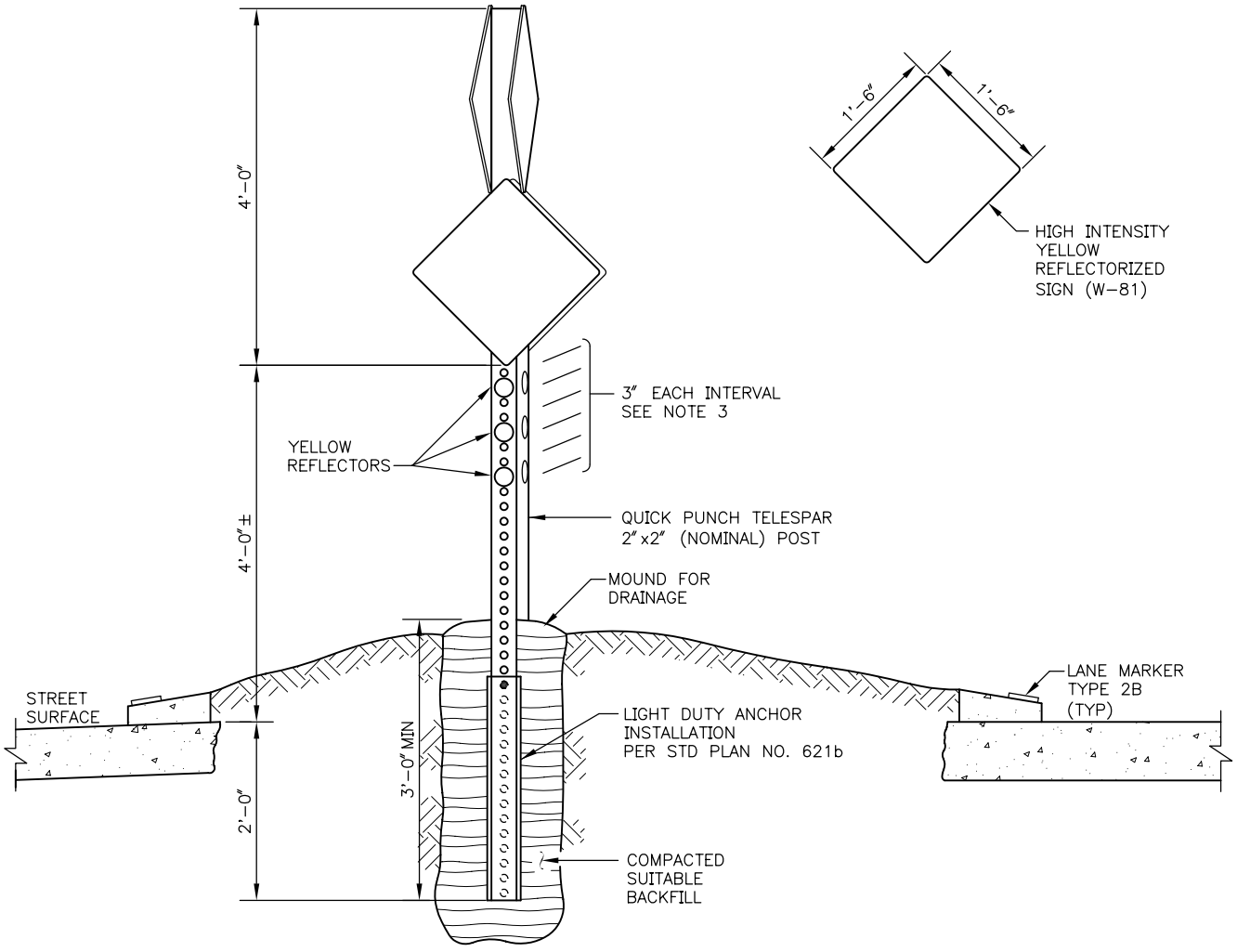
QWIK PUNCH TELESPAR STANDARD SIGN POST
(TS-5, TS-10, TS-12)

NOTES:
1. SEE STD PLAN NO 620

REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	TRAFFIC SIGN POSTS

REV DATE: 2005



(TS-10)

NOTES:

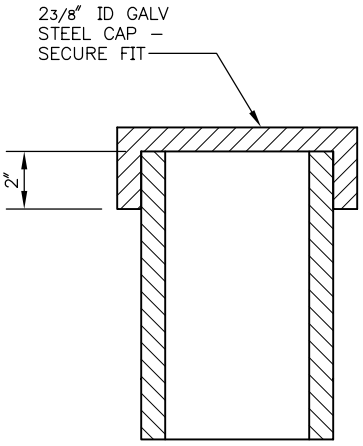
1. IN THE CASE WHERE ALL APPROACHES OF THE INTERSECTION ARE PRIMARILY AT THE SAME LEVEL WITH RESPECT TO GRADES (LESS THAN 3%) THE LOWER SET OF SIGNS SHALL FACE THE HIGHER TRAFFIC VOLUME STREET
2. IN THE CASE WHERE AN APPROACH HAS A GRADE LARGER THAN 3% THE HIGHER SIGNS WILL FACE THE STEEPEST APPROACH TO ALLOW BETTER SIGHT DISTANCE
3. PLACE A MINIMUM OF THREE (3) REFLECTORS ON EACH AND EVERY SIDE OF POST OR PLACE THREE (3) HIGH INTENSITY REFLECTORIZED STRIPS COMPLETELY AROUND POST

REF STD SPEC SEC 8-21

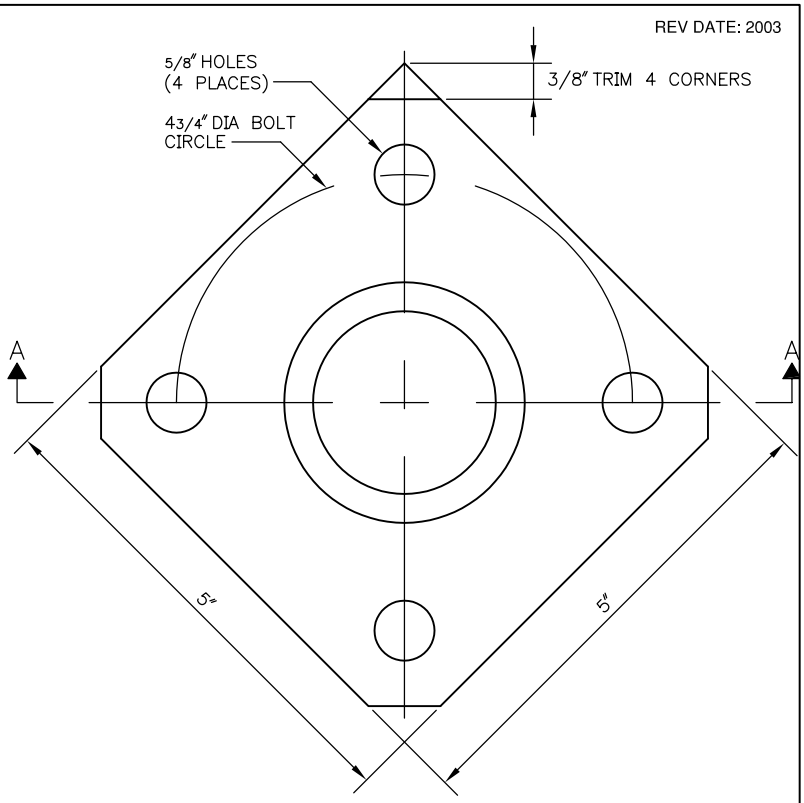
City of Seattle	NOT TO SCALE	OBJECT MARKER INSTALLATION

STANDARD PLAN NO 627

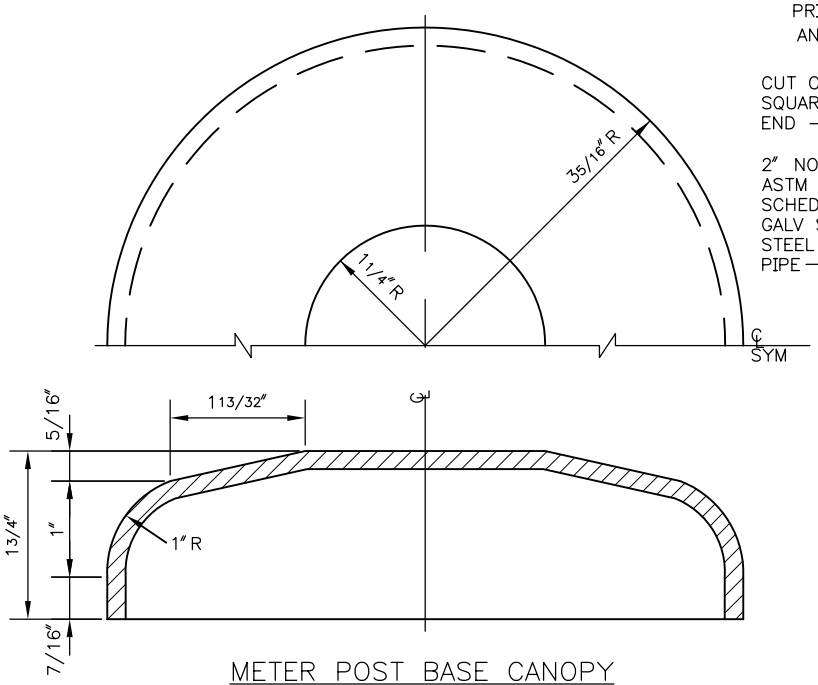
REV DATE: 2003



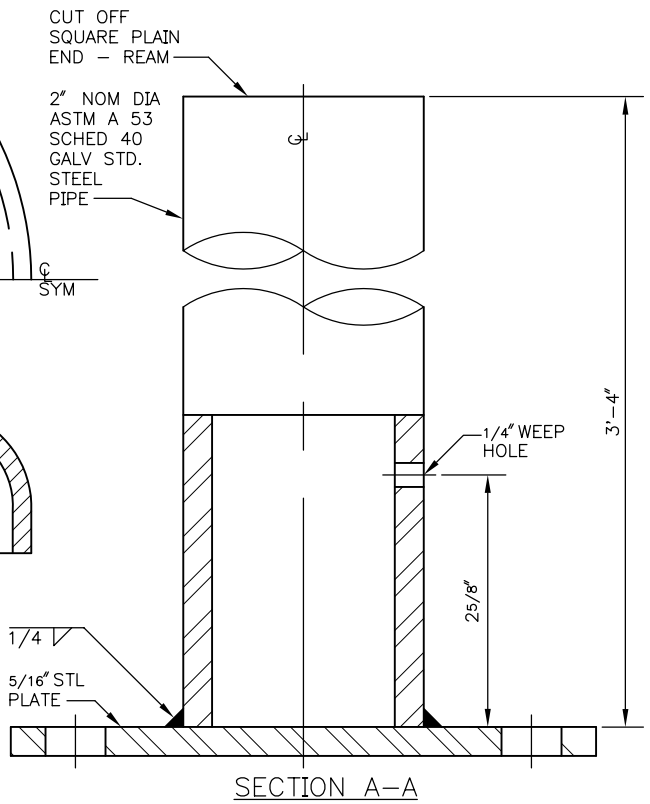
METER POST CAP
(TO BE USED W/ SIGN INSTALLATION)



METER POST
PRIME WITH "RUSTOLEUM" OR APPROVED EQUAL
AND PAINT WITH TWO (2) COATS OF ALUMINUM



METER POST BASE CANOPY
MATERIAL: 0.062' 2–5–0 ALUM

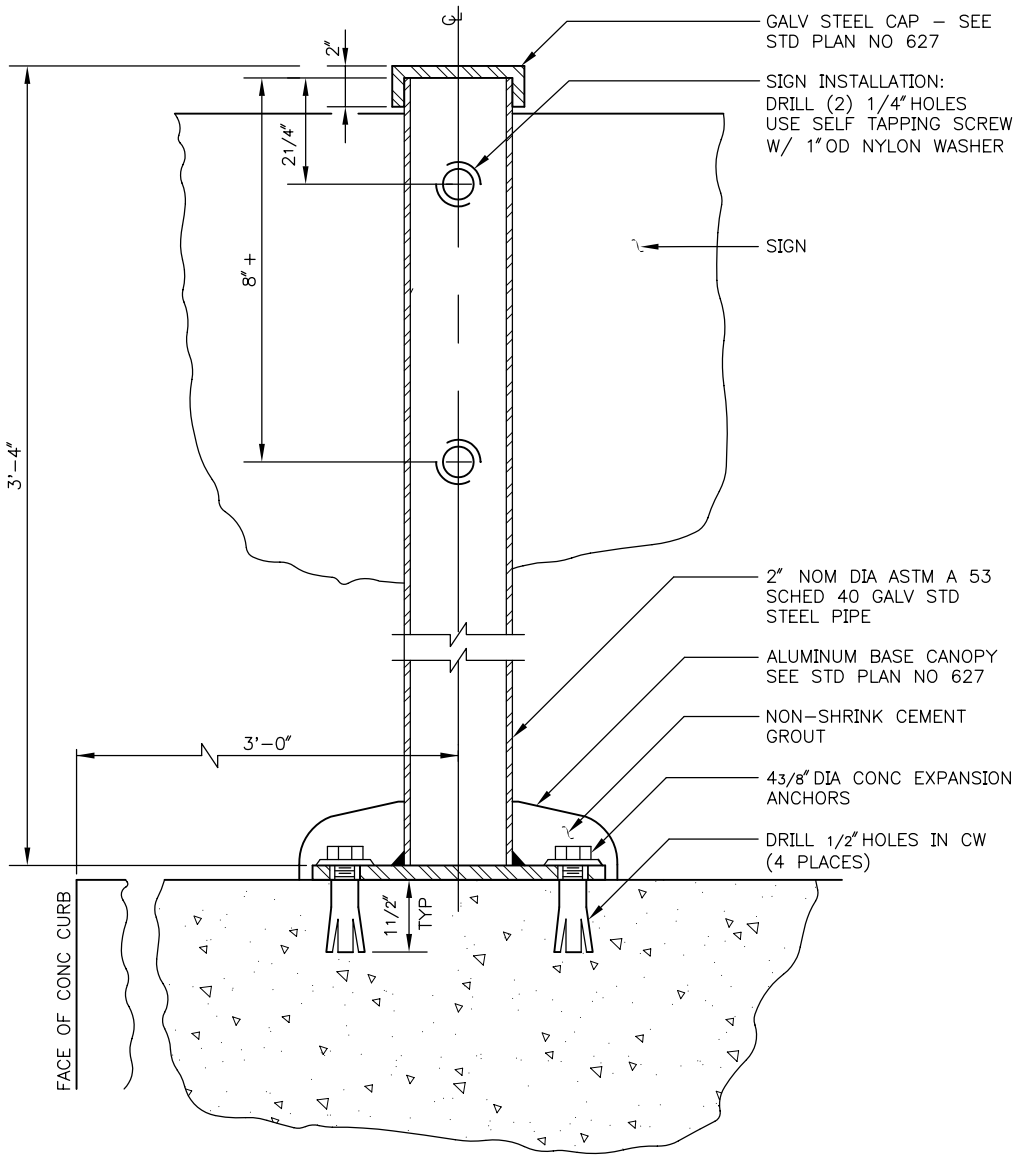


SECTION A–A

REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	PARKING METER POST & ACCESSORIES

REV DATE: 2003

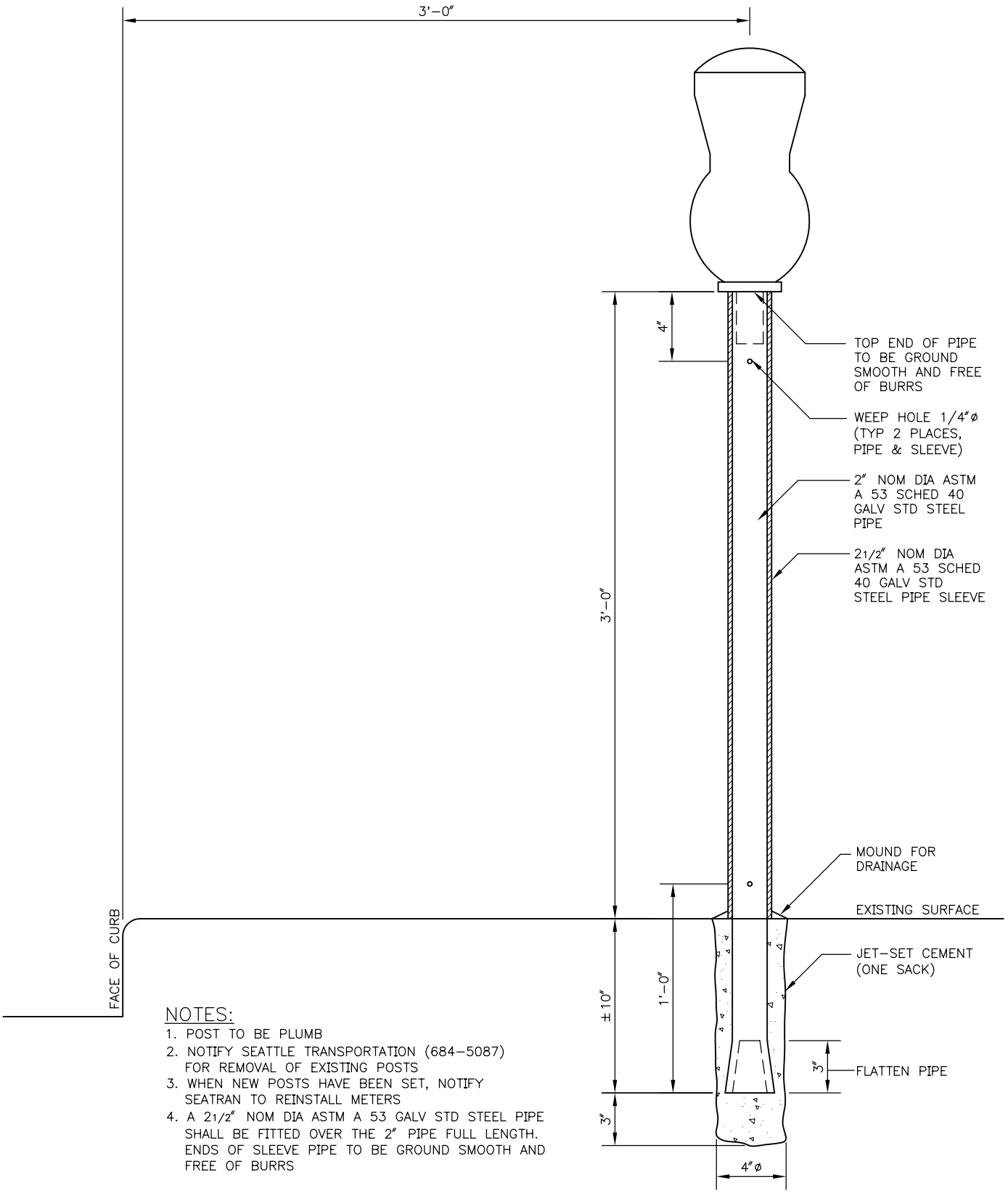


REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	SURFACE MOUNT METER POST INSTALLATION DETAIL

STANDARD PLAN NO 629

REV DATE: 2003



NOTES:

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

REF STD SPEC SEC 8-21

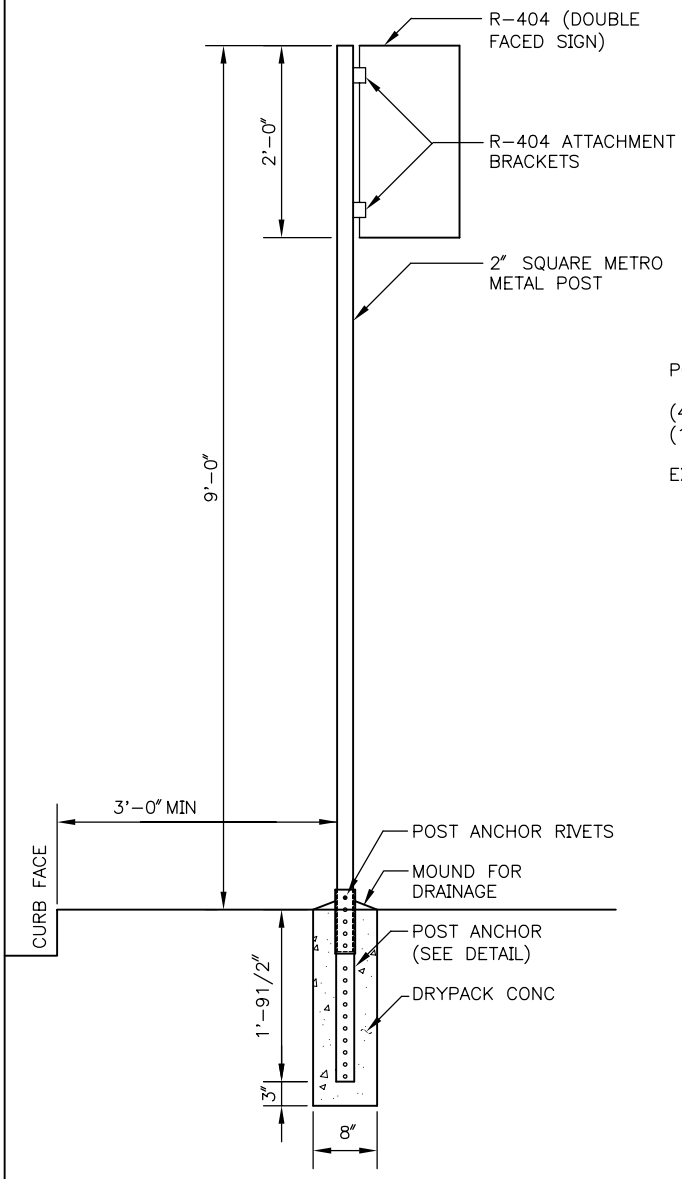
City of Seattle	NOT TO SCALE	DIRECT BURIAL METER POST INSTALLATION DETAIL

STANDARD PLAN NO 630

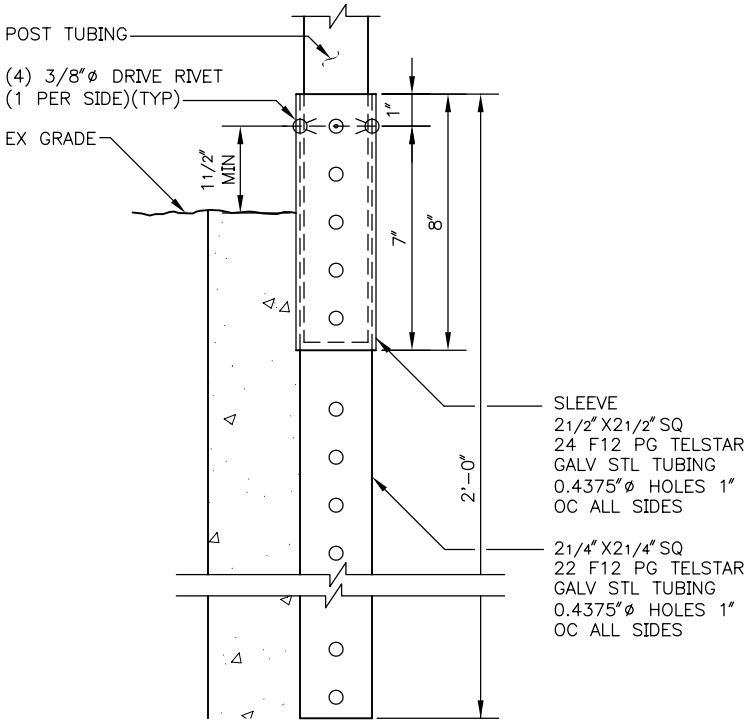
REV DATE: 2005

NOTES:

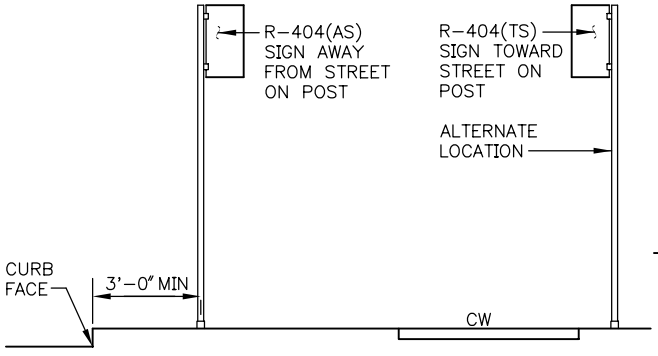
1. POST ANCHOR RIVETS SHALL BE 1 1/2" ABOVE GROUND LEVEL
2. ATTACHMENT BRACKETS SHALL FACE AWAY FROM STREET AS WHEN POST IS LOCATED 3'–0" FROM EDGE OF CURB. ATTACHMENT BRACKETS SHALL FACE TOWARDS STREET (TS) WHEN POST IS LOCATED AT BACK SIDE OF SIDEWALK
3. FOR POST RELOCATIONS, OLD CONCRETE SHALL BE REMOVED FROM POST
4. ALL SIGNS, STRUCTURES AND HARDWARE PROVIDED BY METRO EXCEPT WHERE NOTED OTHERWISE ON THIS STD PLAN.
5. WHERE SURFACE MOUNTED BUS ZONE SIGNS ARE REQUIRED ON SLOPED SIDEWALK, THE CONTRACTOR SHALL PLUMB THE POST BY BUILDING A NON–SHRINK GROUT PAD UNDER PEDESTAL ASSEMBLY WITH SMOOTH 1H TO 1V TAPER ON THE GROUT EDGE. THE BOLT ANCHOR LENGTH SHALL BE ADJUSTED TO PROVIDE A MIN 3 1/2 INCH EMBEDMENT THROUGH THE GROUT INTO THE EXISTING CONCRETE.



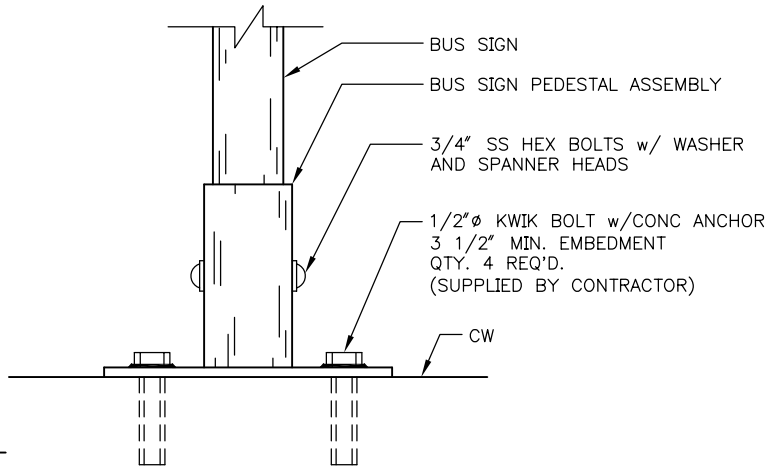
DIRECT BURIAL INSTALLATION



POST ANCHOR DETAIL



SIGN LOCATION DETAIL



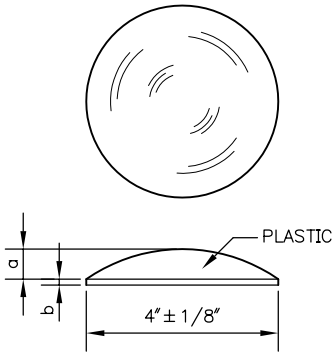
SURFACE MOUNT INSTALLATION

REF STD SPEC SEC 8-21

City of Seattle	NOT TO SCALE	METRO BUS ZONE SIGN INSTALLATION

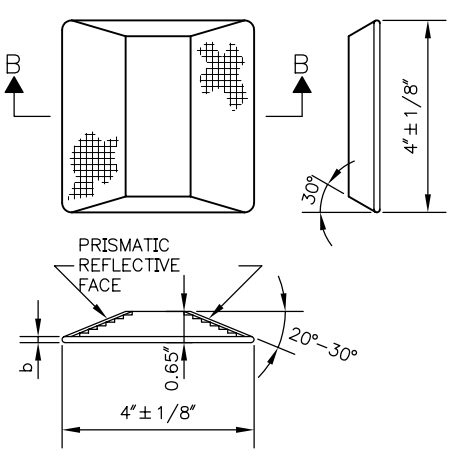
REV DATE: 2003

a=5/8″ ± 1/8″
b=1/8″ ± 1/16″



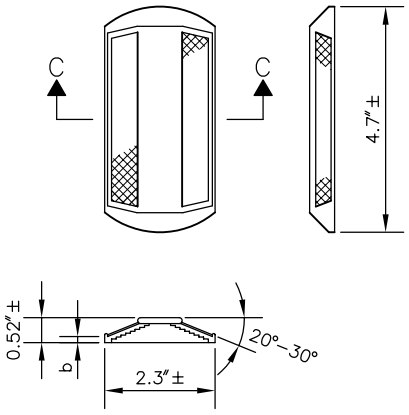
LANE MARKER–TYPE 1

DIRECTION OF TRAFFIC



SECTION B–B

LANE MARKER–TYPE 2A
4″ PRISMATIC REFLECTIVE MARKER



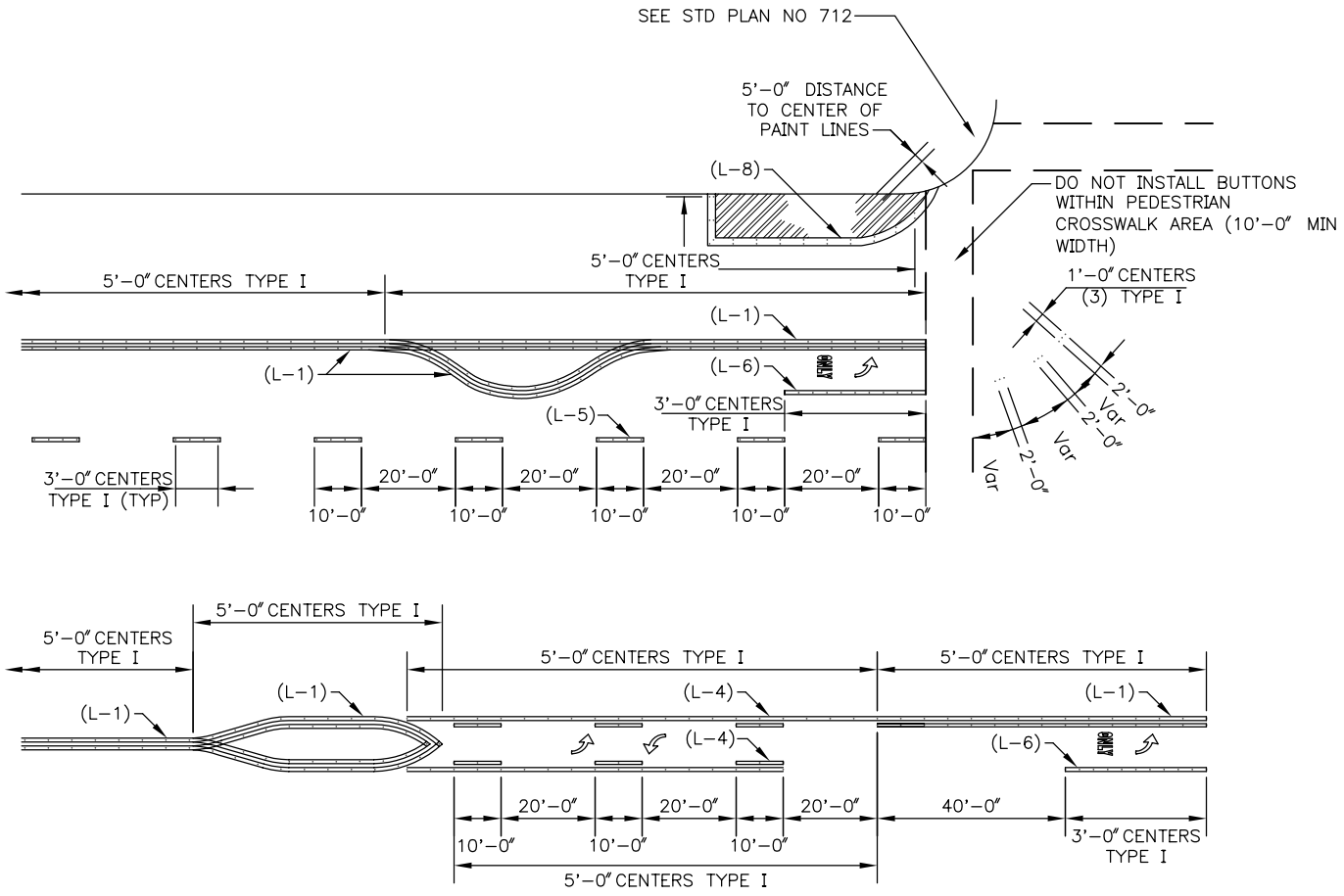
SECTION C–C

LANE MARKER–TYPE 2B

REF STD SPEC SEC 9-21

City of Seattle	NOT TO SCALE	TRAFFIC BUTTONS & LANE MARKERS

REV DATE: 2008



TYPICAL TYPE 1 TRAFFIC BUTTON (4") INSTALLATION DETAILS

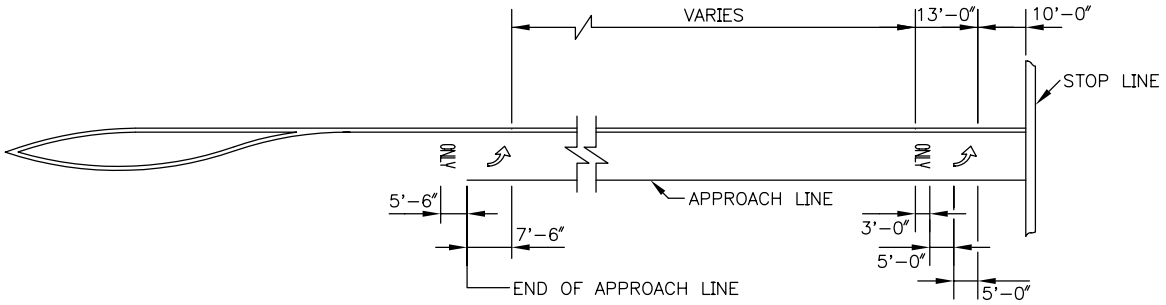
TRAFFIC BUTTONS SHALL BE INSTALLED TO CONFORM WITH TYPE OF PAVEMENT MARKING (DESIGNATED AS L–1, L–4, L–5, ETC) AND ARE TO BE ARRANGED AND SPACED AS SHOWN ON THIS DRAWING. COLOR OF TRAFFIC BUTTONS IS TO MATCH COLOR OR PAVEMENT MARKINGS. TRAFFIC BUTTONS SHALL BE INSTALLED PRIOR TO ANY PAINT LINE INSTALLATION, EXISTING CHANNELIZATION IN CONFLICT WITH NEW OR REVISED CHANNELIZATION SHALL BE REMOVED (SEE STD SPEC SEC 2–02.3(3)J)

REF STD SPEC SEC 8-08

City of Seattle	NOT TO SCALE	CHANNELIZATION STANDARD

STANDARD PLAN NO 711

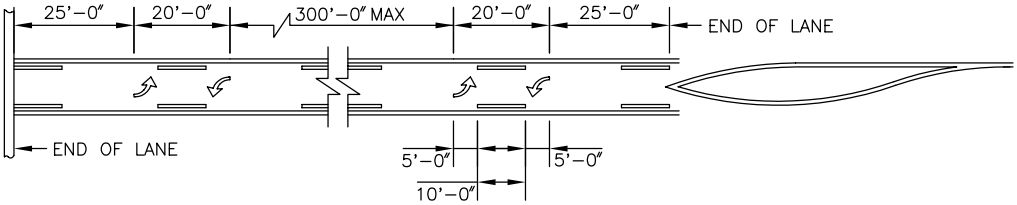
REV DATE: 2003



TYPICAL LEFT TURN CHANNELIZATION

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

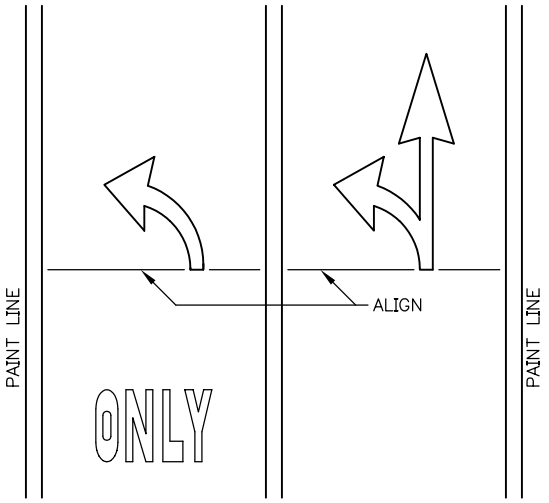
APPROACH LINE LENGTH	LEGEND SETS
LESS THAN 50 FEET	1 SET AT X–WALK END OF POCKET
50 FEET–120 FEET	2 SETS
125 FEET–300 FEET	3 SETS (SECOND LEGEND LOCATED MIDWAY BETWEEN FIRST AND LAST LEGENDS)
OVER 300 FEET	ADDITIONAL SETS SPACED AT APPROX 100 FT INTERVALS BETWEEN FIRST AND LAST SETS



TYPICAL TWO WAY LEFT TURN LANES

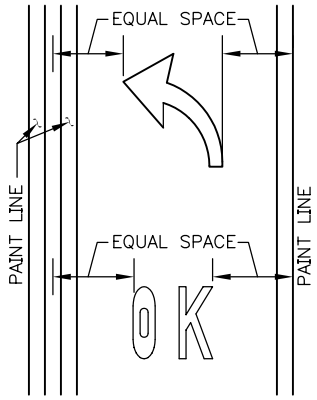
NUMBER OF LEGEND SETS REQUIRED BASED ON THE LENGTH OF TYPICAL TWO WAY LEFT TURN LANES

LANE LENGTH	LEGEND SETS
LESS THAN 50 FEET	1 SET (CENTERED BETWEEEN BOTH ENDS OF LANE)
0 FEET–300 FEET	2 SETS
OVER 300 FEET	3 SETS (SECOND LEGEND LOCATED MIDWAY BETWEEN FIRST AND LAST LEGENDS) ADDITIONAL SETS SPACED AT APPROX 300 FT INTERVALS

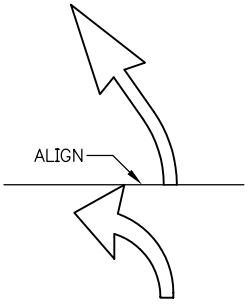


LEGEND PLACEMENT

LEGENDS IN ADJACENT LANES SHALL BE ALIGNED AS SHOWN



LEGENDS SHALL BE CENTERED WITHIN THE LANE TO WHICH THEY APPLY, AS SHOWN



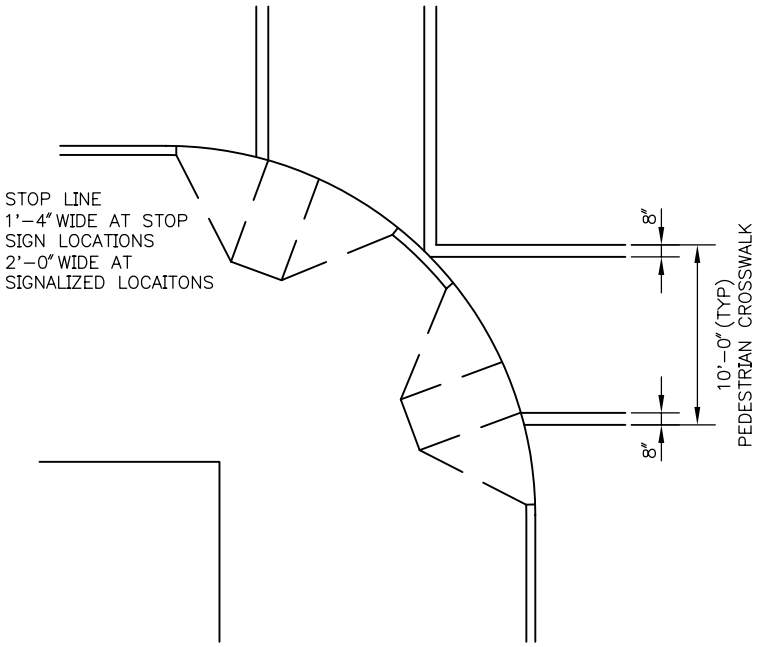
LEGEND COMBINATIONS

OBLIQUE LEFT & 90° LEFT LEGENDS AND OBLIQUE RIGHT & 90° RIGHT LEGENDS MAY BE COMBINED AS SHOWN

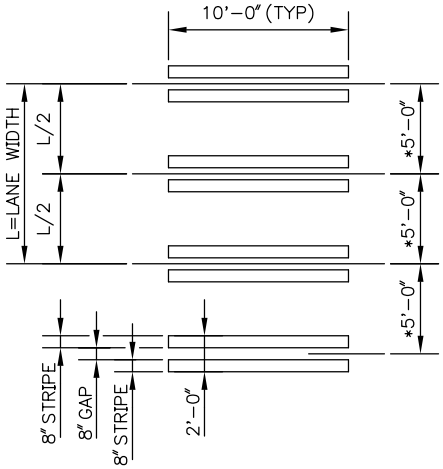
REF STD SPEC SEC 8-22

City of Seattle	NOT TO SCALE	TYPICAL LEFT TURN CHANNELIZATION AND LEGEND PLACEMENT

REV DATE: 2003



TYPICAL PEDESTRIAN
CROSSWALKS & STOP LINES



TYPICAL LADDER
PEDESTRIAN CROSSWALKS

* WHERE TRAFFIC LANE LINES ARE NOT USED, LADDER BARS SHALL BE 5'-0" CENTER TO CENTER, BEGINNING AT THE MARKED CENTERLINE OF THE ROADWAY

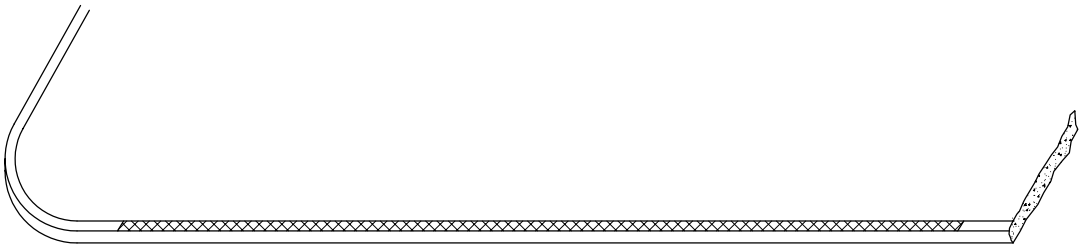
NOTES:

1. EXACT LOCATION OF CROSSWALK LINES AND STOP LINES SHALL BE DESIGNATED BY SEATTLE DEPARTMENT OF TRANSPORTATION
2. EXISTING CROSSWALKS IN CONFLICT WITH NEW OR REVISED CROSSWALKS SHALL BE REMOVED BY MACHINE GRINDING

REF STD SPEC SEC 8-22

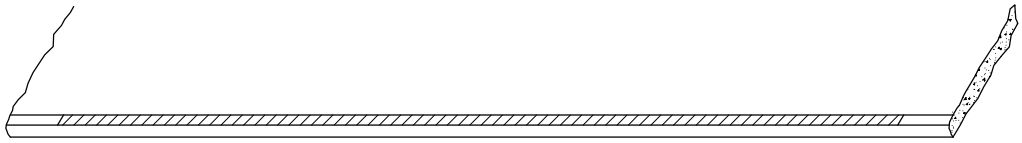
City of Seattle	NOT TO SCALE	TYPICAL CROSSWALK & STOP LINE INSTALLATION DETAILS

REV DATE: 2003

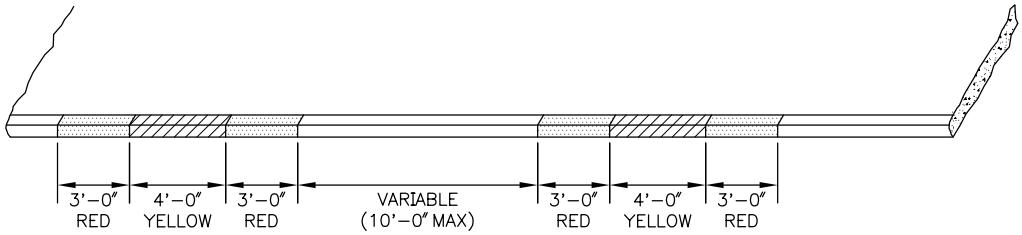


L–10
PASSENGER LOAD ZONE, ETC
(WHITE)

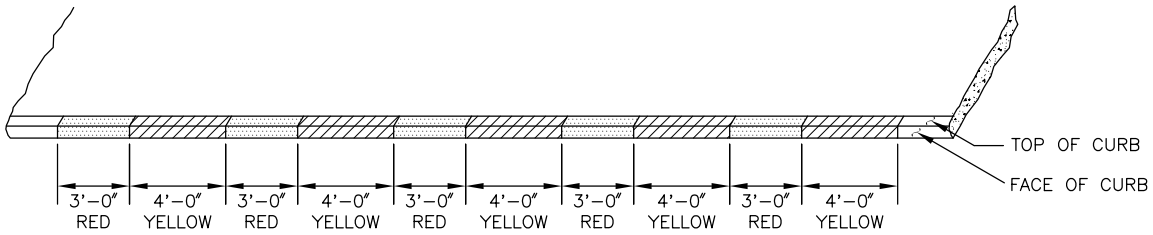
L–11
TOW–AWAY ZONE
(RED)



L–12
COMMERCIAL LOAD, TRUCK LOAD, LOAD & UNLOAD ZONE, ETC
(YELLOW)



L–13
BUS ZONE (NON PARKING METERED AREAS)
BUS ZONES ARE PAINTED ON TOP & FACE OF CURB



L–13
BUS ZONE (PARKING METERED AREAS)
BUS ZONES ARE PAINTED ON TOP & FACE OF CURB

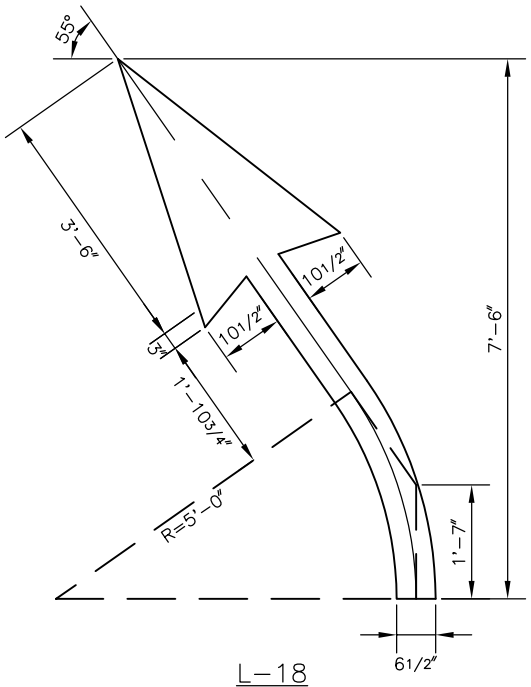
NOTES:

1. TOTAL LENGTH OF CURB MARKINGS SHALL BE AS SHOWN ON DRAWINGS
2. PAINT SHALL BE APPLIED NEATLY ON THE CURB AND ALL PAINT SMEARS ON ADJACENT SURFACES SHALL BE REMOVED

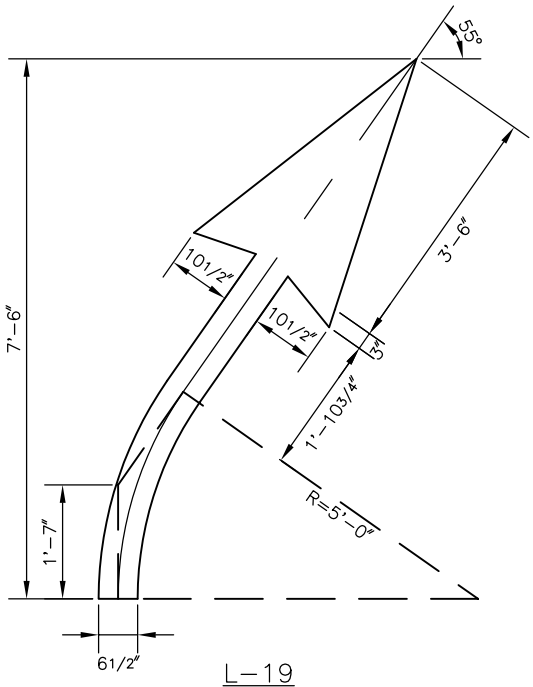
REF STD SPEC SEC 8-22

City of Seattle	NOT TO SCALE	CURB SPACE MARKING DETAILS

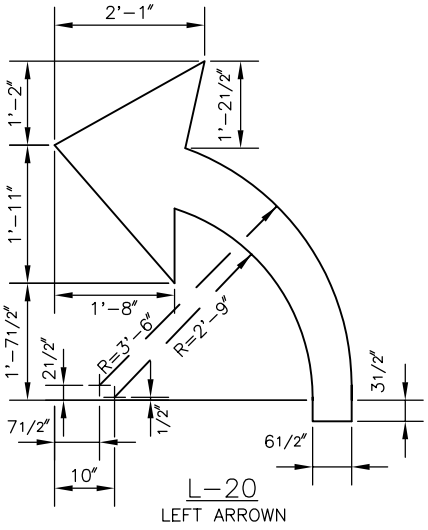
REV DATE: 2003



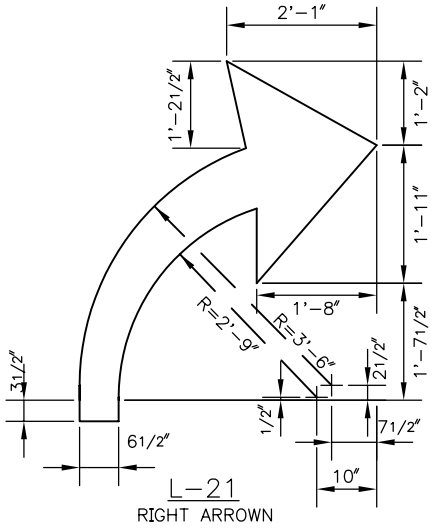
L-18
OBLIQUE LEFT ARROW



L-19
OBLIQUE RIGHT ARROW



L-20
LEFT ARROWN

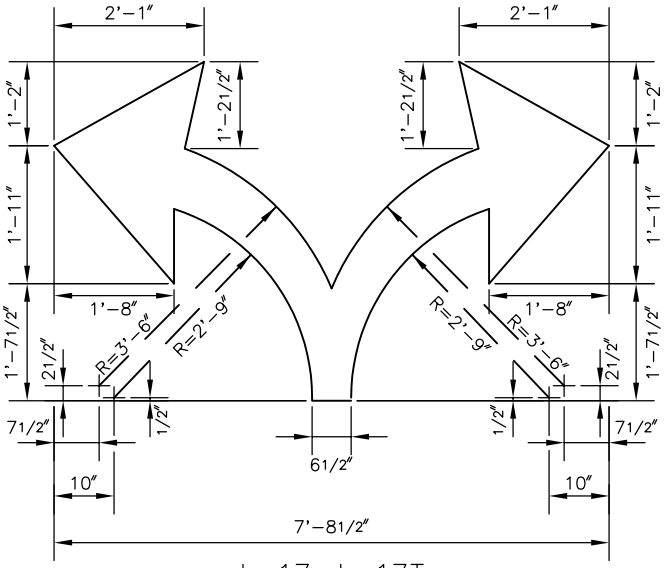


L-21
RIGHT ARROWN

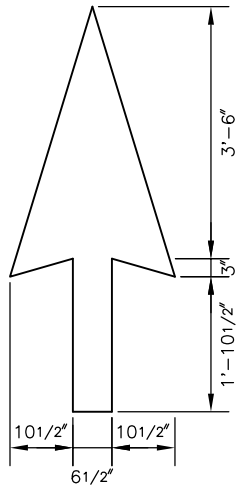
REF STD SPEC SEC 8-22

City of Seattle	NOT TO SCALE	PAVEMENT MARKINGS LEGENDS/SYMBOLS

REV DATE: 2005

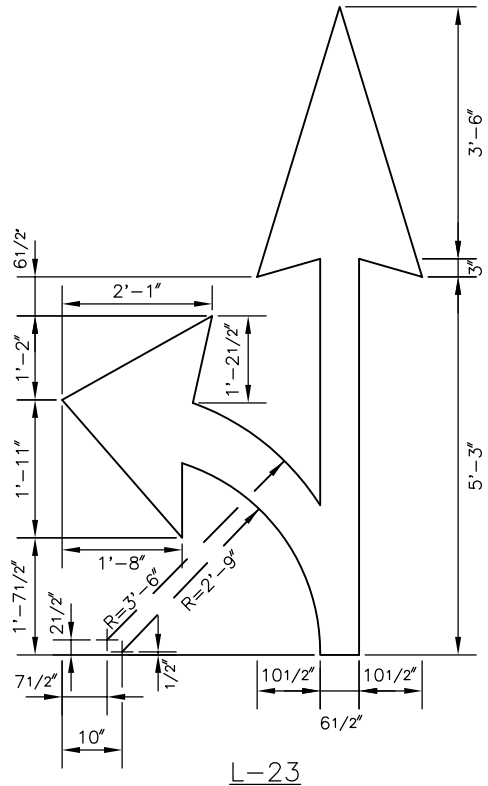


L-17, L-17T
LEFT & RIGHT ARROWS

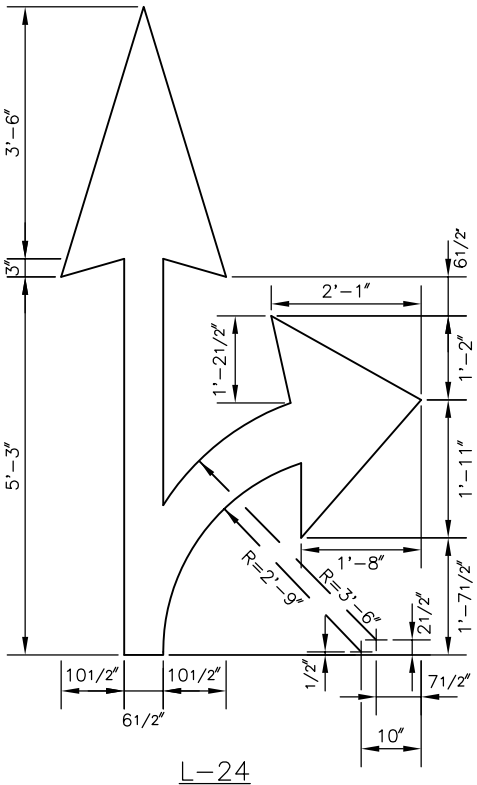


L-22, L-22T
THROUGH ARROW

NOTE:
"T" = THERMOPLASTIC



L-23
LEFT & THROUGH ARROWS

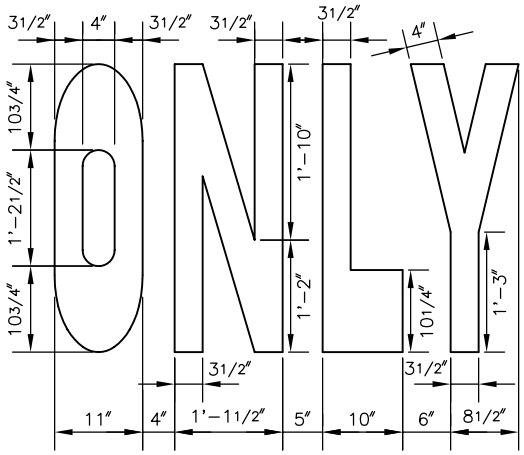


L-24
RIGHT & THROUGH ARROWS

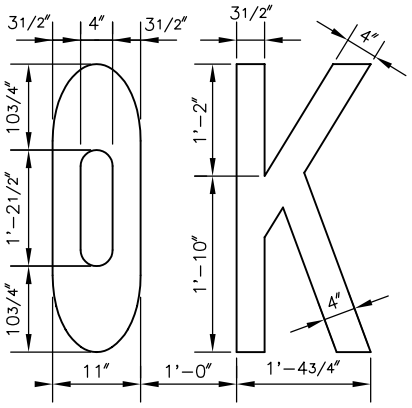
REF STD SPEC SEC 8-22

City of Seattle	NOT TO SCALE	PAVEMENT MARKINGS LEGENDS/SYMBOLS

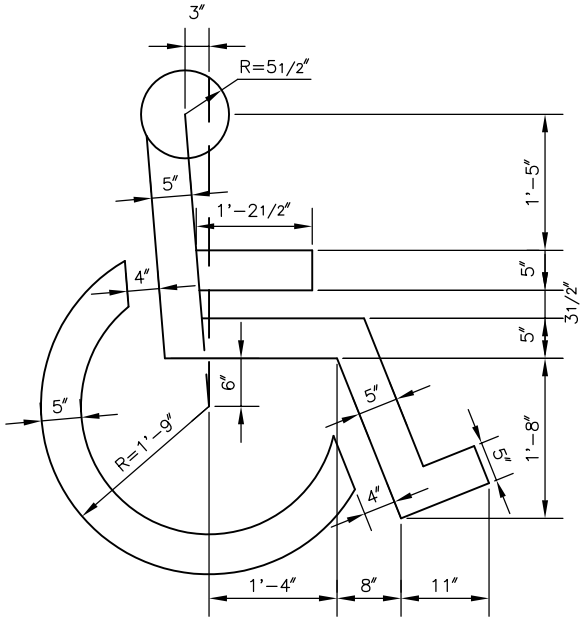
REV DATE: 2005



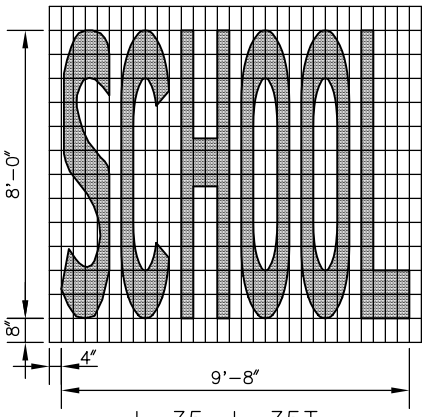
L-25, L-25T
"ONLY" LEGEND



L-26, L-26T
"OK" LEGEND



L-29, L-29T
DISABLED PERSON SYMBOL



L-35, L-35T
"SCHOOL" LEGEND

NOTE:
"T" = THERMOPLASTIC

REF STD SPEC SEC 8-22

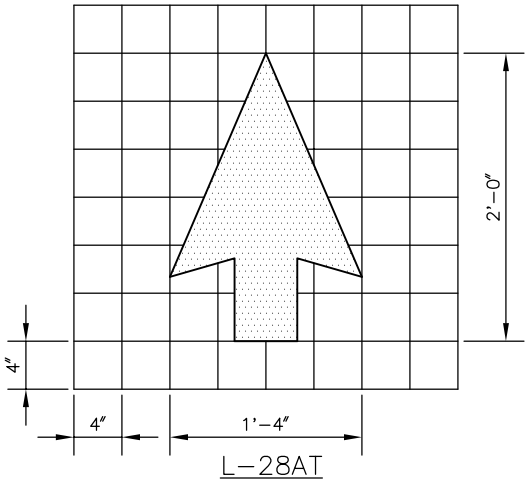
City of Seattle

NOT TO SCALE

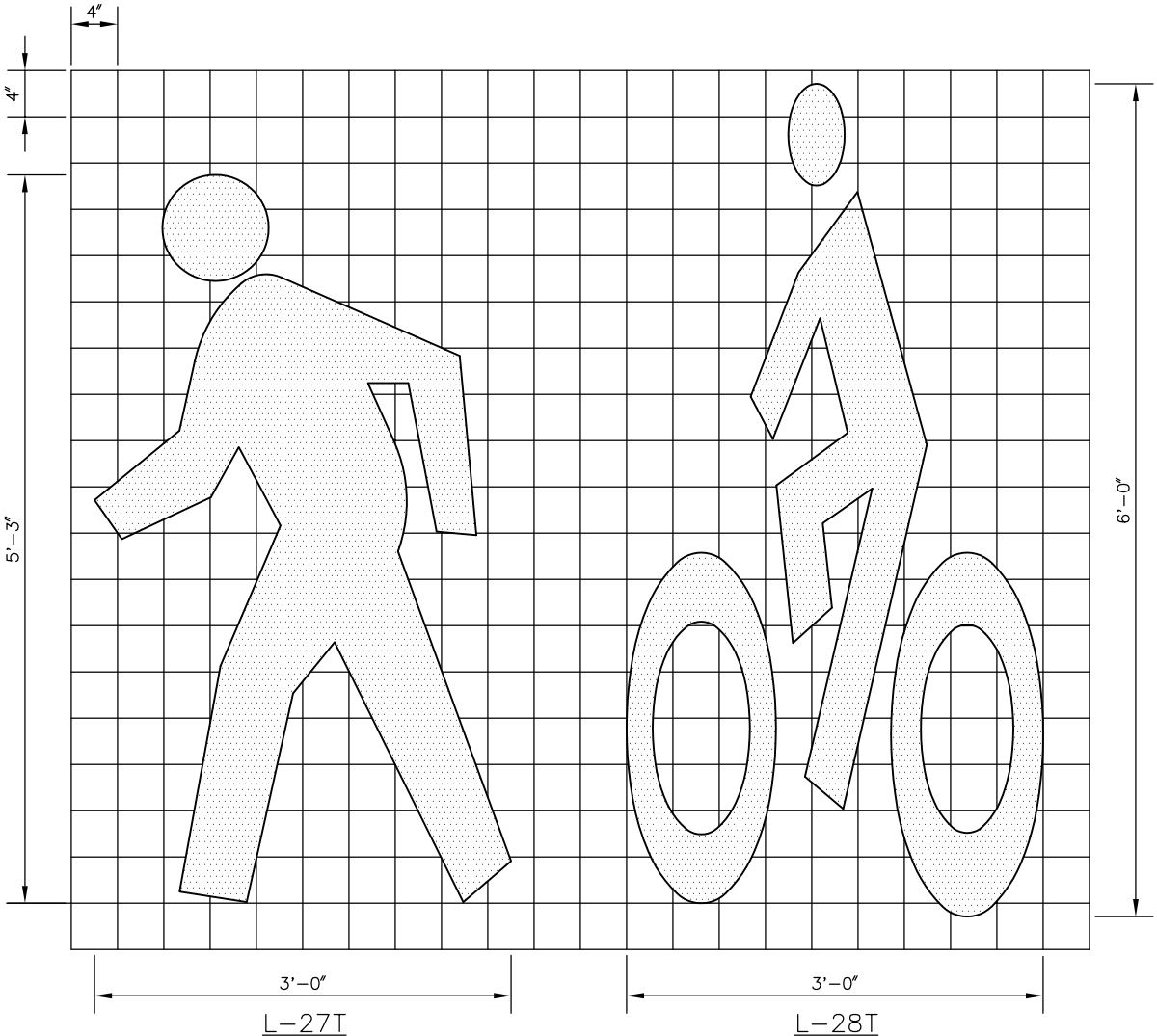
PAVEMENT MARKINGS
LEGENDS/SYMBOLS

REV DATE: 2005

NOTES:
1. "T" = THERMOPLASTIC
2. L–28AT INCLUDE BICYCLE SYMBOL AND ARROW



L–28AT



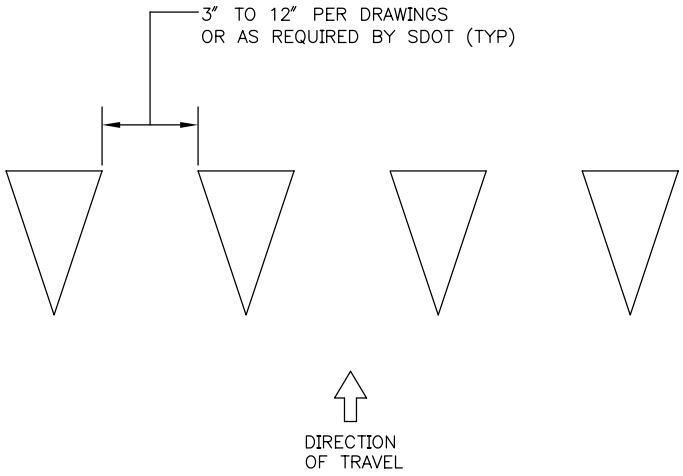
L–27T
PEDESTRIAN STYLE

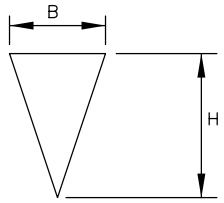
L–28T
BICYCLIST SYMBOL
(INCLUDES L–28A, LT–28AT)
(SEE NOTE 2)

REF STD SPEC SEC 8-22

City of Seattle	NOT TO SCALE	BICYCLIST & PEDESTRIAN SYMBOLS

DATE: 2005





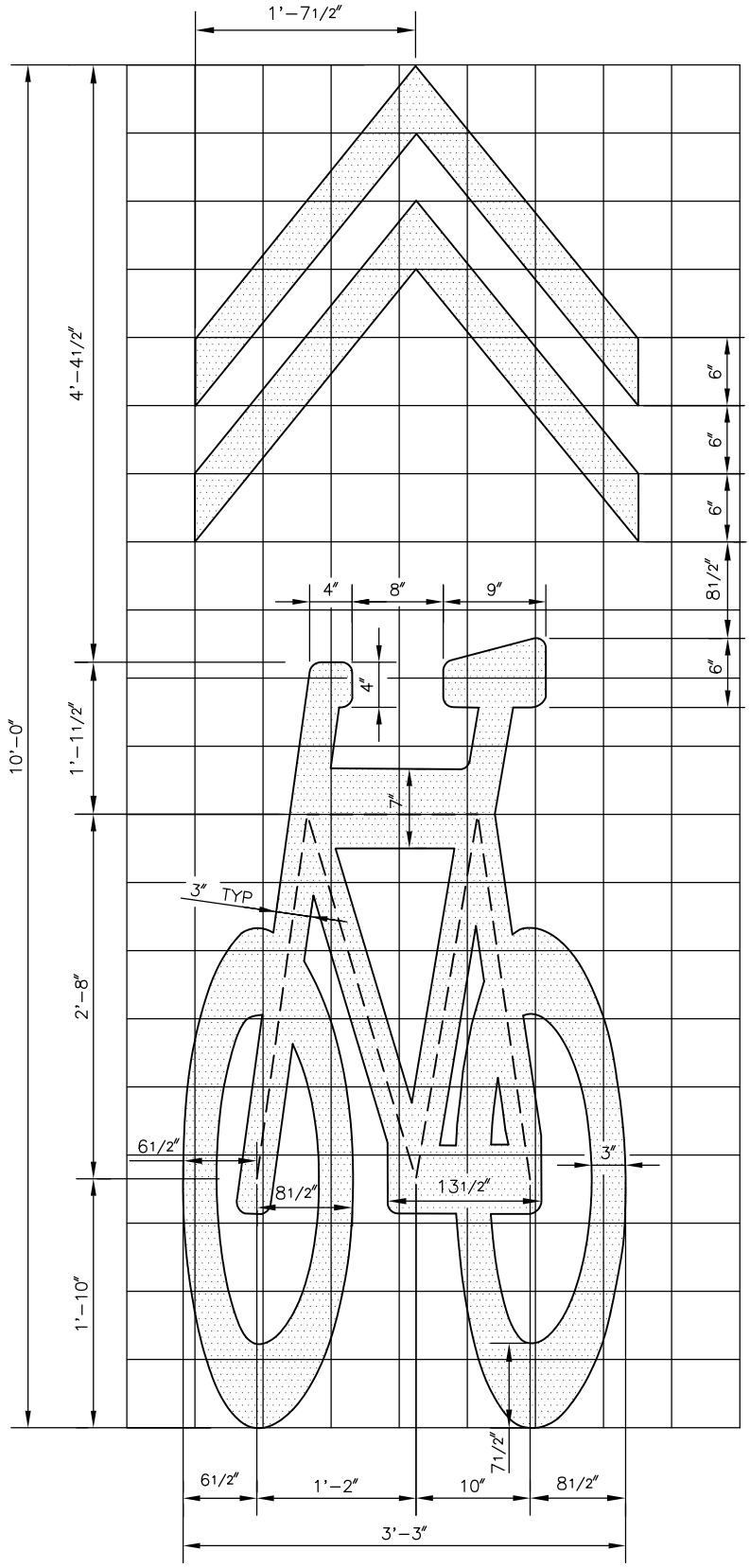
(1.5 x B)=H

B= BASE WIDTH (12″ OR 24″ TYPICALLY)
H= HEIGHT (18″ OR 36″ TYPICALLY)

L−9A, L−9AT
YIELD LINE

City of Seattle	NOT TO SCALE	PAVEMENT MARKINGS LEGENDS / SYMBOLS

REV DATE: 2008



L-28BT
SHARROW

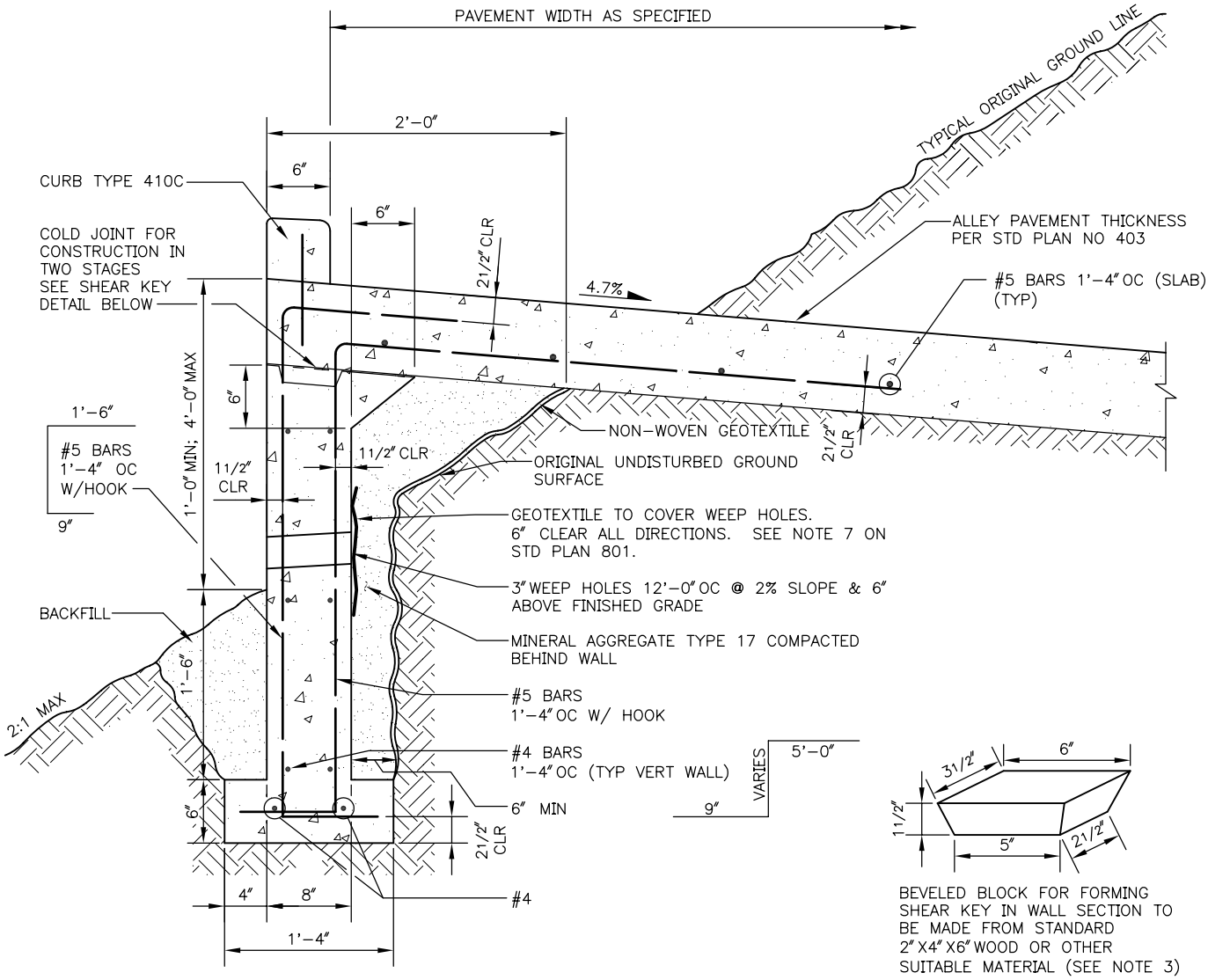
NOTES:
1. ALL ROUNDED CORNERS SHALL HAVE A 1" RADIUS

REF STD SPEC SEC 8-22

City of Seattle	NOT TO SCALE	BICYCLE SYMBOL

STANDARD PLAN NO 800

REV DATE: 2008



BEVELED BLOCK FOR FORMING SHEAR KEY IN WALL SECTION TO BE MADE FROM STANDARD 2" X4" X6" WOOD OR OTHER SUITABLE MATERIAL (SEE NOTE 3)

SHEAR KEY

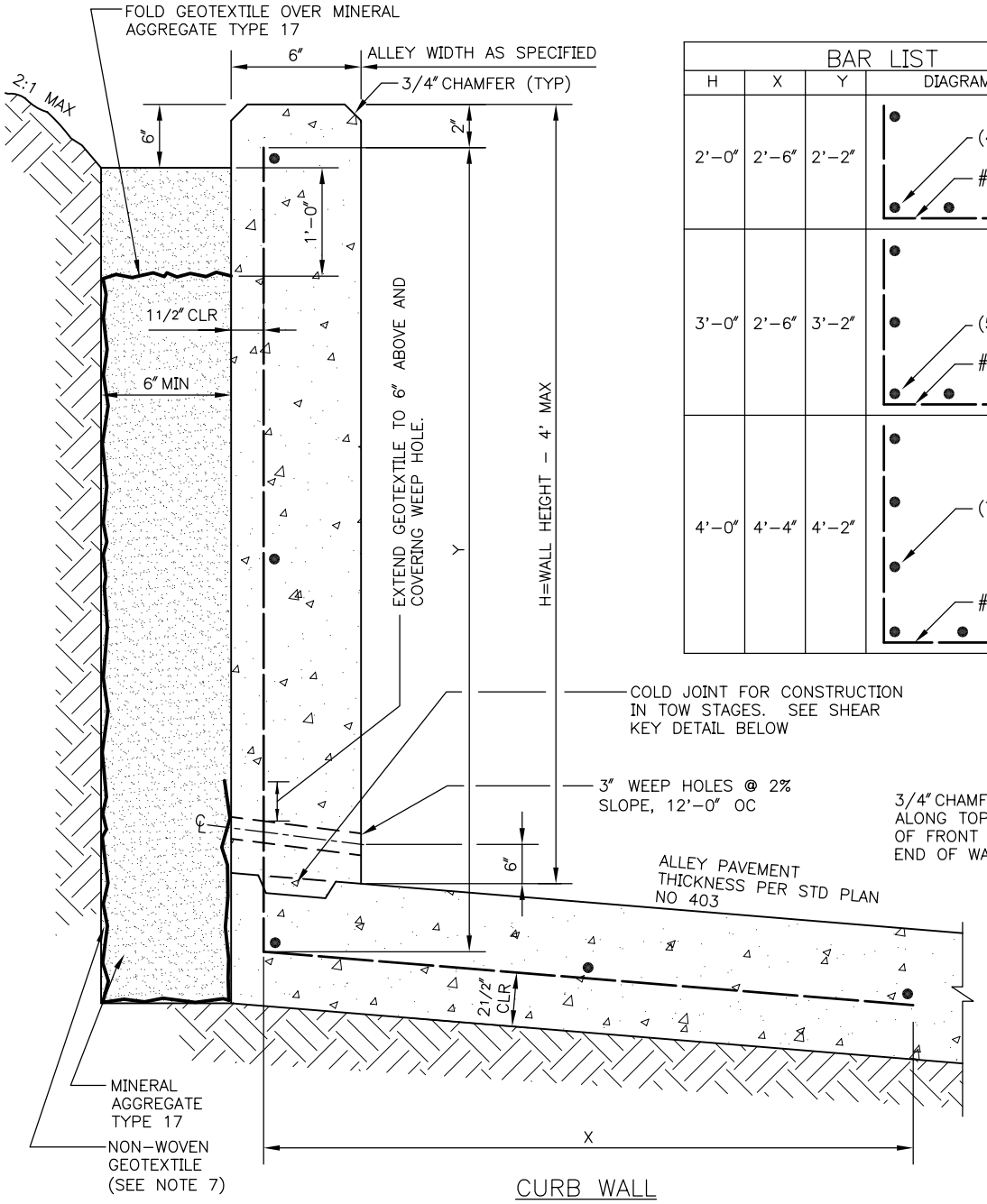
NOTES:

1. BASE OF SUPPORT WALL TO BE BEARING ON COMPACTED SUITABLE MATERIAL
2. BACK FORM FOR SUPPORT WALL MAY BE OMITTED AND CONCRETE PLACED AGAINST NATIVE EARTH WHEN GROUND CONDITIONS PERMIT. CLEARANCE TO REINF STEEL IN BACK FACE SHALL BE 21/2"
3. WHEN CONSTRUCTION OF ALLEY PAVEMENT IS NOT PLACED INTEGRAL WITH SUPPORT WALL, SHEAR KEYS SHALL BE INSTALLED 1'–6" ON CENTERS
4. CONCRETE FOR SUPPORT WALL SHALL BE CL 6 (11/2)
5. REINFORCING STEEL ASTM A615 GR 60
6. VEHICULAR & PEDESTRIAN RAILING PER RIGHT OF WAY IMPROVEMENT MANUAL

REF STD SPEC SEC 5-05

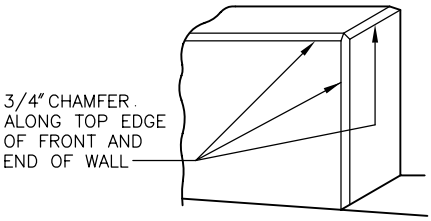
City of Seattle	NOT TO SCALE	SUPPORT WALL

REV DATE: 2008

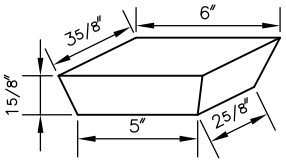


CURB WALL

BAR LIST			
H	X	Y	DIAGRAM
2'-0"	2'-6"	2'-2"	(4) #4, #4@1'-6" OC
3'-0"	2'-6"	3'-2"	(5) #4, #4@1'-6" OC
4'-0"	4'-4"	4'-2"	(7) #4, #4@1'-0" OC



CURB WALL DETAIL



SHEAR KEY

BEVELED BLOCK FOR FORMING SHEAR KEY IN WALL SECTION TO BE MADE FROM STANDARD 2"X4"X6" WOOD OR OTHER SUITABLE MATERIAL (SEE NOTE 4)

NOTES:

1. MATCH WALL THROUGH JOINTS WITH PAVEMENT THROUGH JOINTS. DISCONTINUE HORIZONTAL REINFORCEMENT AT JOINTS AND MAINTAIN 11/2" CLEAR TO ALL REINFORCING AT JOINTS
2. CONC CL 6 (11/2) FOR CURB WALL
3. MAX HEIGHT 4'-0" (MIN PAVEMENT WIDTH IS 12'-0" FOR WALLS HIGHER THAN 3'-0")
4. WHEN CONSTRUCTION OF WALL IS NOT PLACED INTEGRAL WITH ALLEY PAVEMENT, SHEAR KEY INDENTATIONS SPACED 1'-6" OC SHALL BE INSTALLED IN THE PAVEMENT SLAB
5. REINF STEEL ASTM A615 GR 60
6. ANY RAILING ON TOP OF WALL PER RIGHT OF WAY IMPROVEMENT MANUAL
7. NON-WOVEN GEOTEXTILE TO BE MODERATE SURVIVABILITY, ANY CLASS PER TABLES 1 AND 2 STD SPEC SEC 9-37

REF STD SPEC SEC 5-05

City of Seattle	NOT TO SCALE	CURB WALL