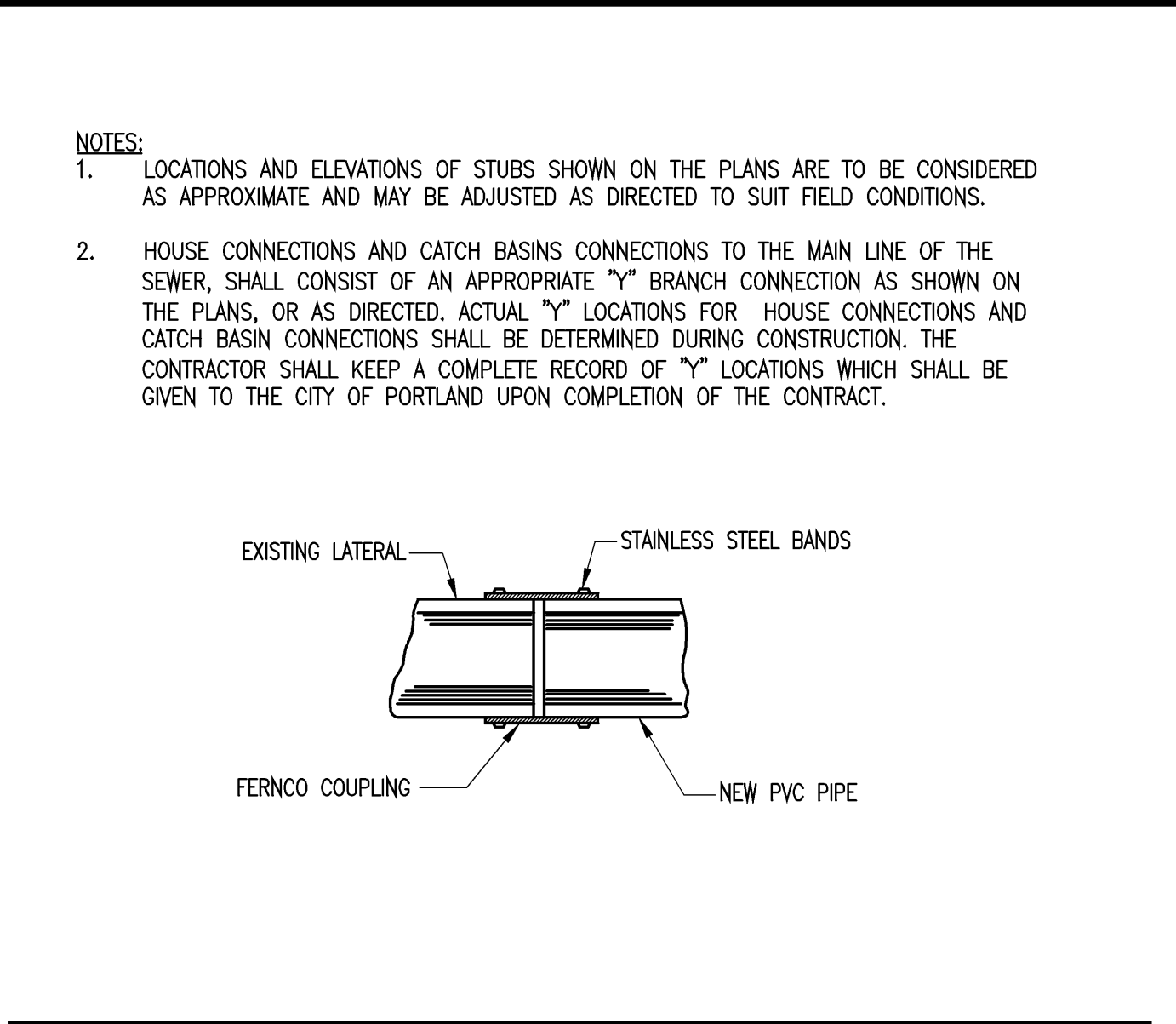
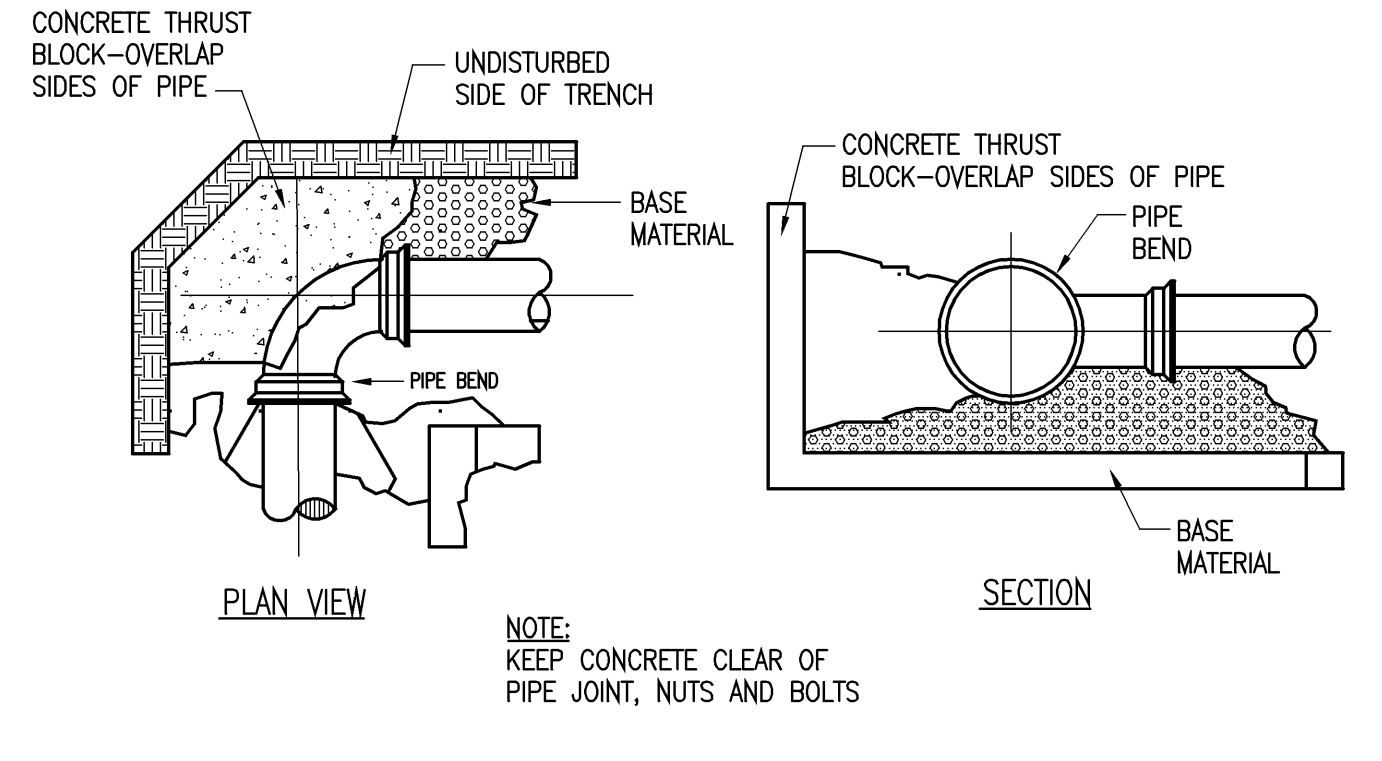


1000 GAL. GREASE TRAP
SCALE: NOT TO SCALE **11**



FERNCO COUPLING
SCALE: NOT TO SCALE **7**

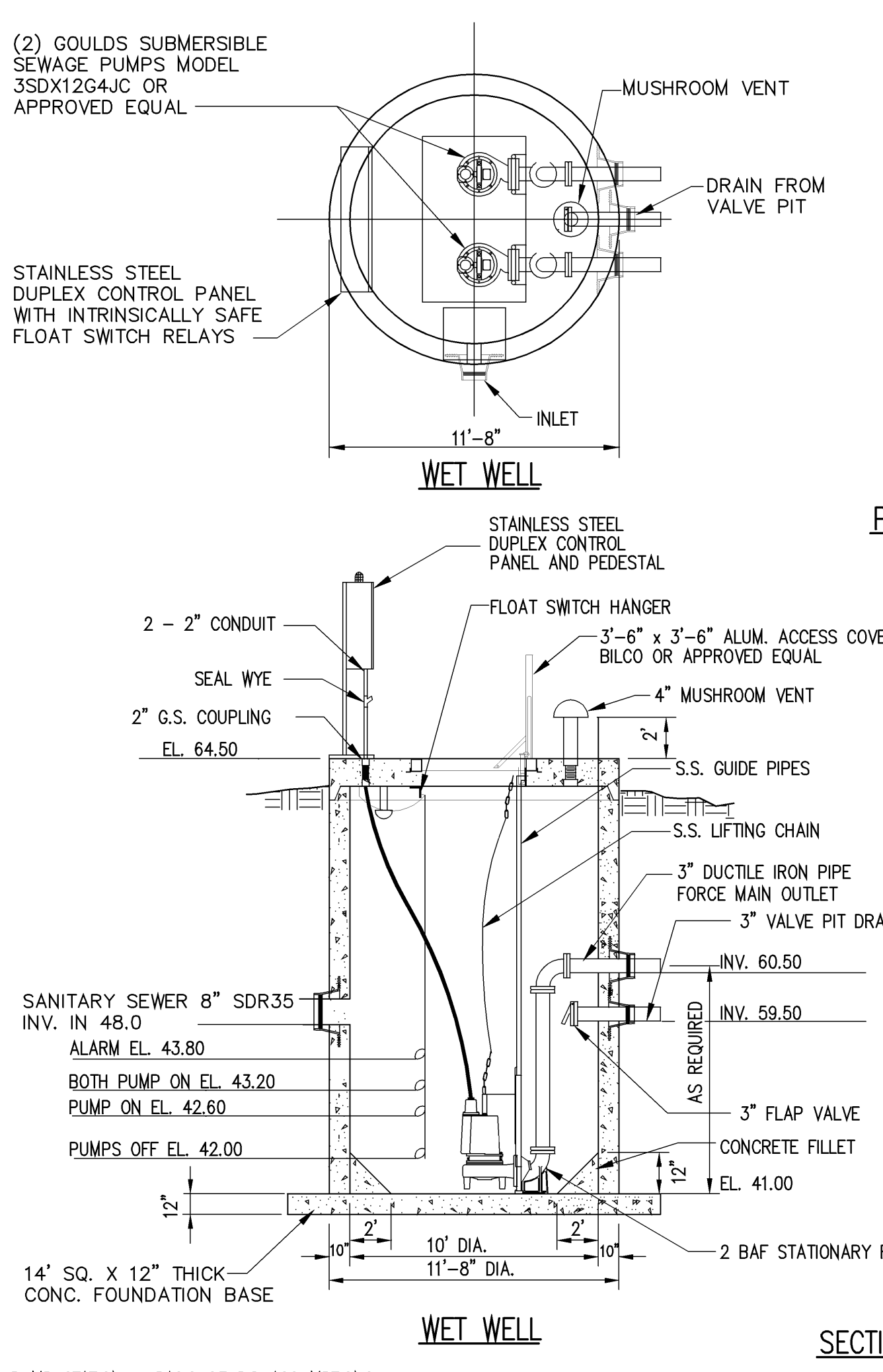


THRUST/RETAINER SCHEDULE

1/4 BEND (90°)	USE POURED-IN-PLACE THRUST BLOCK w/RETAINERS
1/2 BEND (45°)	THRUST BLOCK w/RETAINERS
1/16 BEND (22 1/2°)	THRUST BLOCK
1/32 BEND (11 1/4°)	THRUST BLOCK

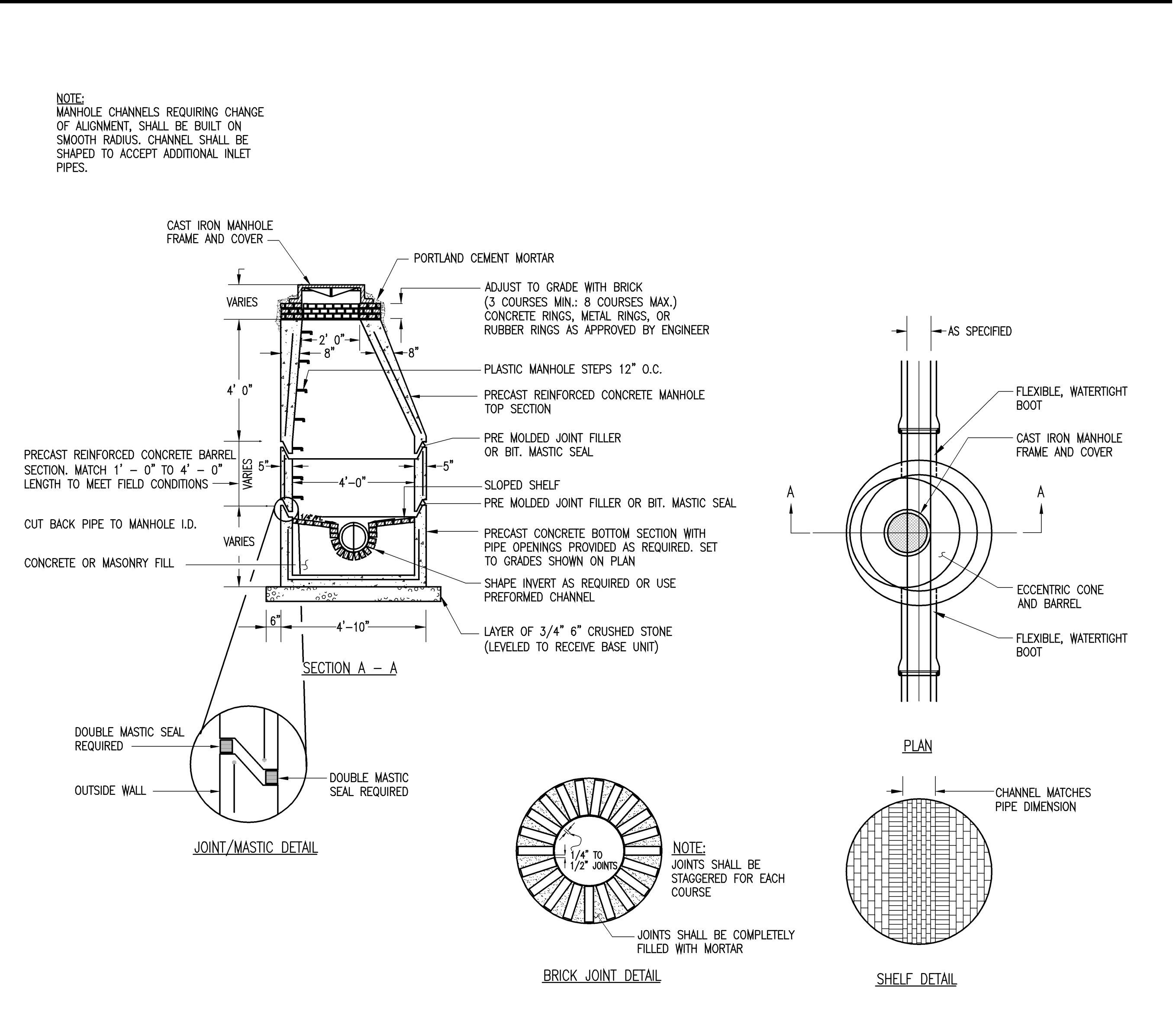
FORCEMAIN THRUST BLOCK
SCALE: NOT TO SCALE **8**

FORCEMAIN TERMINUS CONNECTION
SCALE: NOT TO SCALE **9**



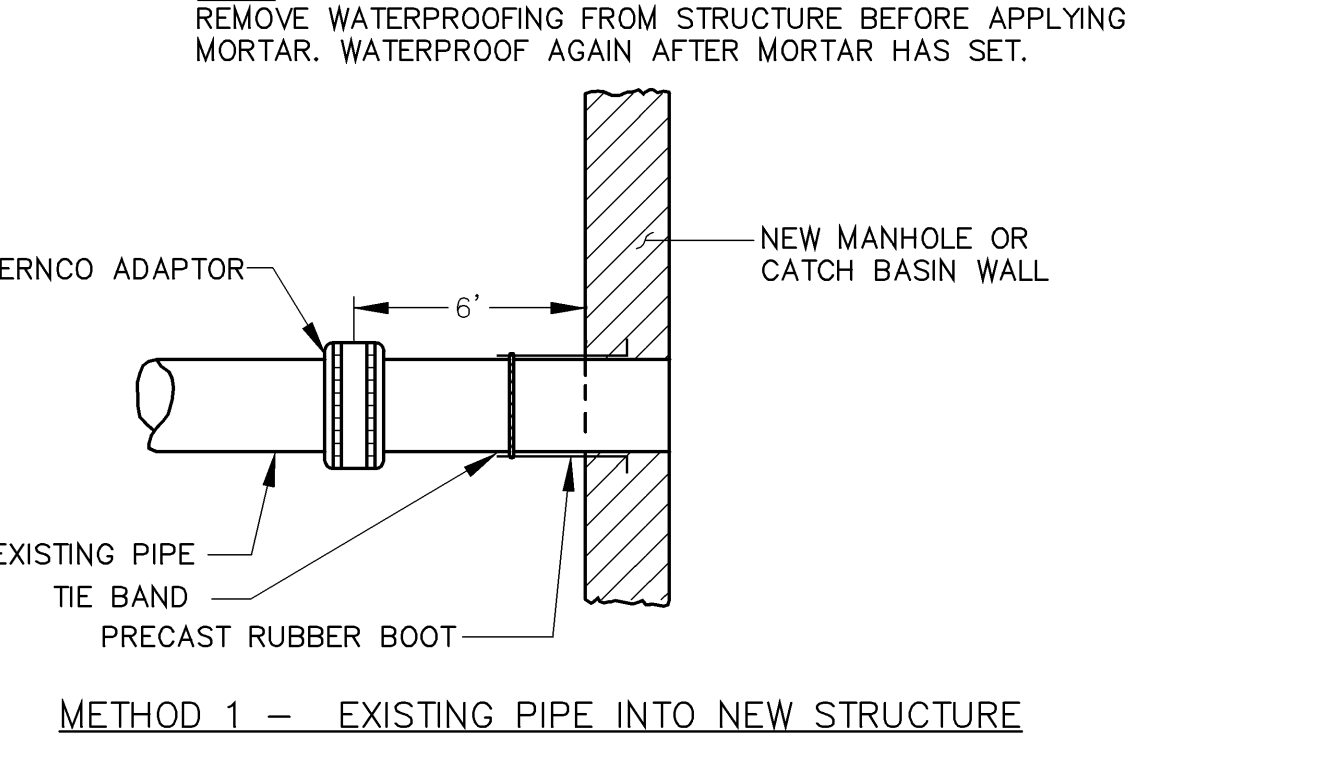
- PUMP STATION - BASIS OF BID ASSUMPTIONS:**
1. THERE IS NOT COMPLETE INFORMATION ON SOIL/ROCK/WATER AT THE PUMP STATION LOCATION. THEREFORE, THE CONTRACTOR SHOULD BASE THEIR BID ON THE FOLLOWING ASSUMPTIONS, WHICH WERE GENERATED USING THE CONDITIONS ENCOUNTERED IN NEARBY BORINGS.
 2. TOP OF BEDROCK LEVEL AT EL. 50.
 3. GROUNDWATER LEVEL AT EL. 62.
 4. NO ELEVATED PIEZOMETRIC HEAD EXISTS IN BEDROCK BELOW OVERBURDEN.
 5. OVERBURDEN SOIL BELOW EXISTING GROUND INCLUDES APPROX. 2' FILL, 19' MARINE DEPOSITS, AND 2' GLACIAL TILL (SEE BORING HA08-109 FOR NEAREST SUBSURFACE DATA).
 6. NEAREST ROCK CORE INDICATES HARD, FRESH TO SLIGHTLY WEATHERED SLATE WITH LOW TO HIGH ANGLE JOINTS, R02=80-100X (APPROX. 400' SOUTH OF PUMP STATION; SEE BORING HA08-104 FOR DETAILED DATA).

WASTEWATER PUMP STATION
SCALE: NOT TO SCALE **10**

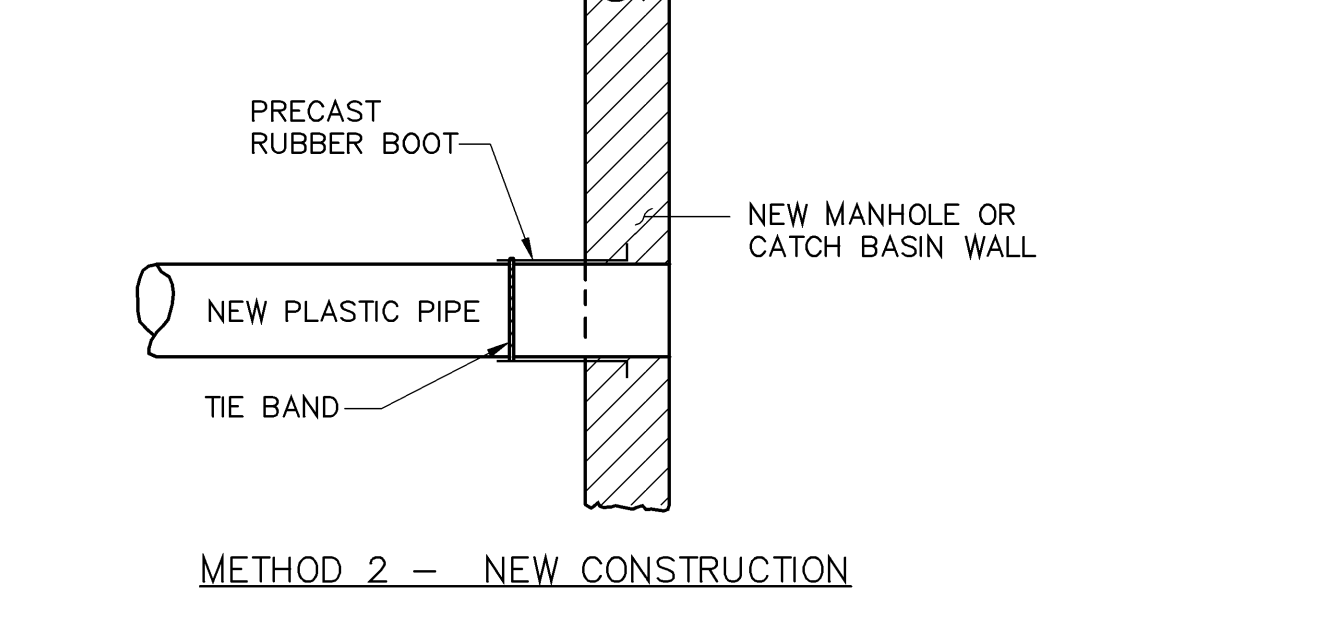


SANITARY MANHOLE - PRECAST CONCRETE TYPE "A"
SCALE: NOT TO SCALE **1**

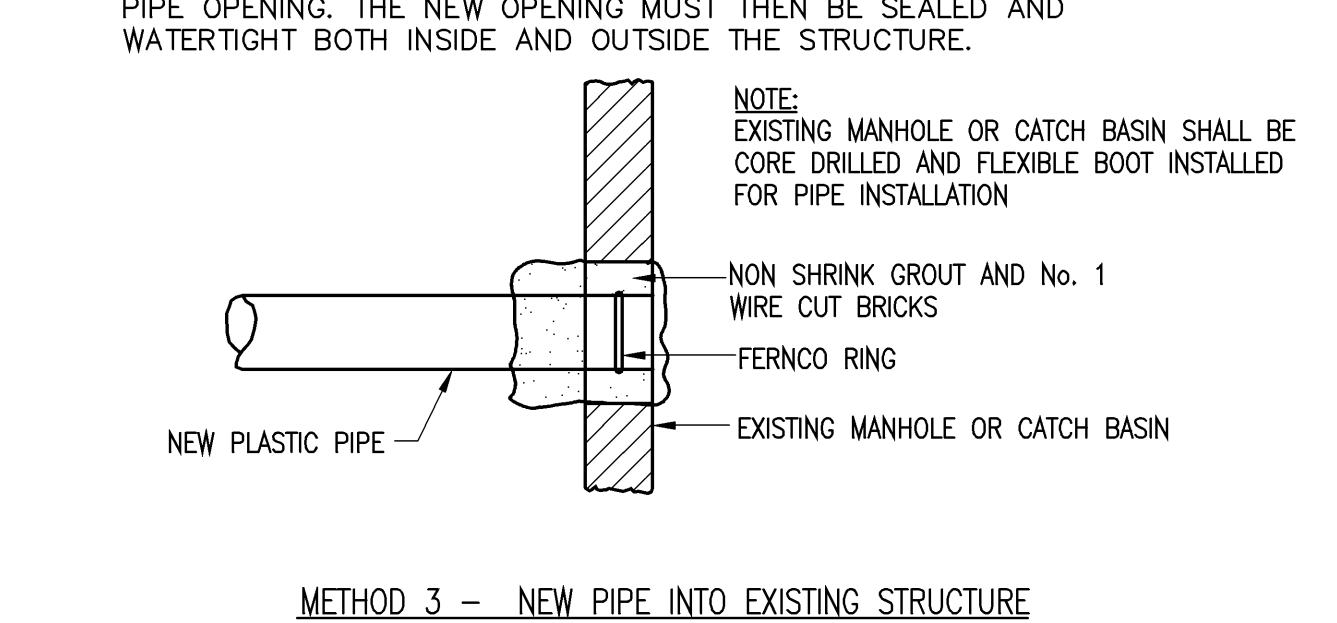
PLASTIC MANHOLE STEPS
SCALE: NOT TO SCALE **5**



METHOD 1 - EXISTING PIPE INTO NEW STRUCTURE



METHOD 2 - NEW CONSTRUCTION



METHOD 3 - NEW PIPE INTO EXISTING STRUCTURE

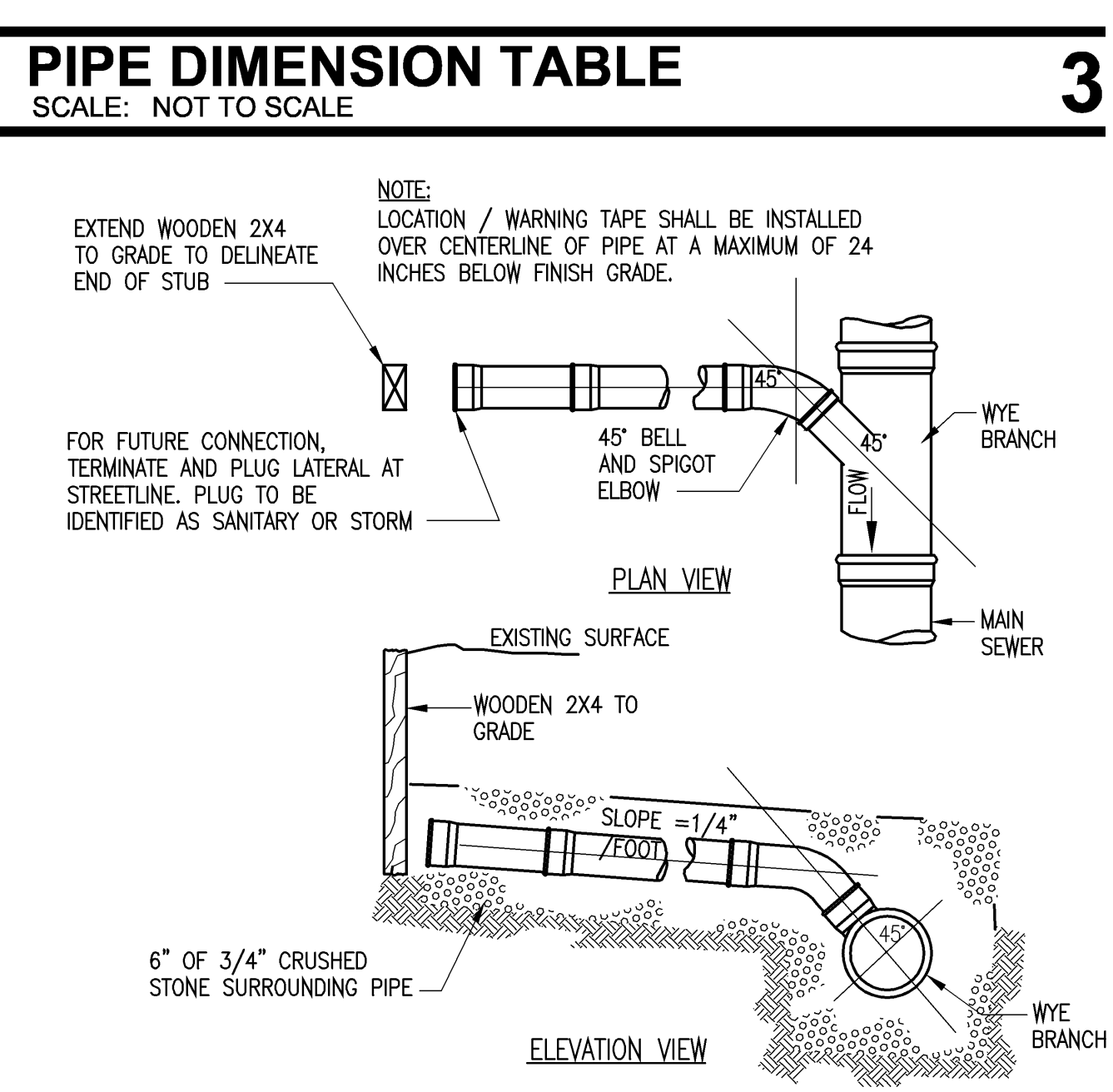
PIPE INSTALLATION
SCALE: NOT TO SCALE **2**

**TABLE OF DIMENSIONS
PVC, TRUSS, CMP, & POLYETHYLENE PIPE**

D	A	B	C	VOL. BASE /100'	UNSHEETED/O. D. SOCKET
8"	3'-0"	1'-1 1/2"	0'-1 1/2"	7.358	10.3/8"
10"	3'-0"	1'-0 3/8"	0'-0 5/8"	7.658	12 1/2"
12"	3'-0"	0'-11 3/8"	0'-0 5/8"	7.309	14 1/2"
14"	3'-0"	0'-10 3/8"	0'-0 5/8"	8.178	16 3/4"
16"	3'-0"	0'-8 1/4"	0'-0 3/4"	8.447	18"
18"	3'-0"	0'-8 1/4"	0'-0 3/4"	8.663	21 1/8"
20"	3'-0"	0'-7 3/8"	0'-0 3/4"	8.815	23 3/8"
24"	3'-0"	0'-6 1/4"	0'-0 7/8"	9.633	27 3/4"
30"	3'-0"	0'-5 1/4"	0'-1 1/8"	10.959	31 1/2"
36"	3'-0"	0'-4 1/4"	0'-1 1/8"	12.156	34 1/2"
42"	3'-0"	0'-3 3/4"	0'-1 3/8"	13.513	38 1/2"
48"	3'-0"	0'-3 3/4"	0'-1 3/8"	14.910	

A = WIDTH OF UNSHEETED TRENCH

PIPE DIMENSION TABLE
SCALE: NOT TO SCALE **3**



LATERAL WYE CONNECTION
SCALE: NOT TO SCALE **4**

SHEET NOTES

1. ALL CONCRETE SHALL BE CLASS "A" AND HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 PSI PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. PRECAST REINFORCED CONCRETE MANHOLE MANUFACTURED PER ASTM SPEC. C-478-67
3. SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
4. ALL MANHOLES SHALL HAVE A WATERPROOFING APPLIED TO THE EXTERIOR SURFACE.
5. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35. ALL PARTS OF CASTINGS, EXCEPT FINISHED SURFACE, SHALL RECEIVE A COAT OF OIL, TAR PITCH VARNISH OR ASPHALTUM PAINT WHICH SHALL BE SMOOTH AND TOUGH BUT NOT BRITTLE.
6. MANHOLES MAY BE CONSTRUCTED OF MASONRY, PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
7. ALL PRECAST MANHOLES AND CATCH BASINS SHALL BE IDENTIFIED BY STATION AND CESESE PAINTED ON THE SIDE OF THE STRUCTURE BY THE MANUFACTURER.
8. STORM AND SEWER MANHOLES SHALL HAVE SOLID COVERS WITH ONE DRILLED PICK HOLE.
9. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.

GENERAL NOTES

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Issue	Date & Issue Description	By	Check
1	09/22/08	W/W	A/M
2	12/03/08	W/W	A/M
3	01/23/09	W/W	A/M
4	10/26/09	W/W	FEM

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Project Name
P/W Terminal Enhancement

Project Number
08-8396-000

CAD File Name
T:\S330101\SHEETS\C12.02.DWG

Description
SANITARY SECTIONS & DETAILS

Scale
AS NOTED

C12.02

23 Oct 2009