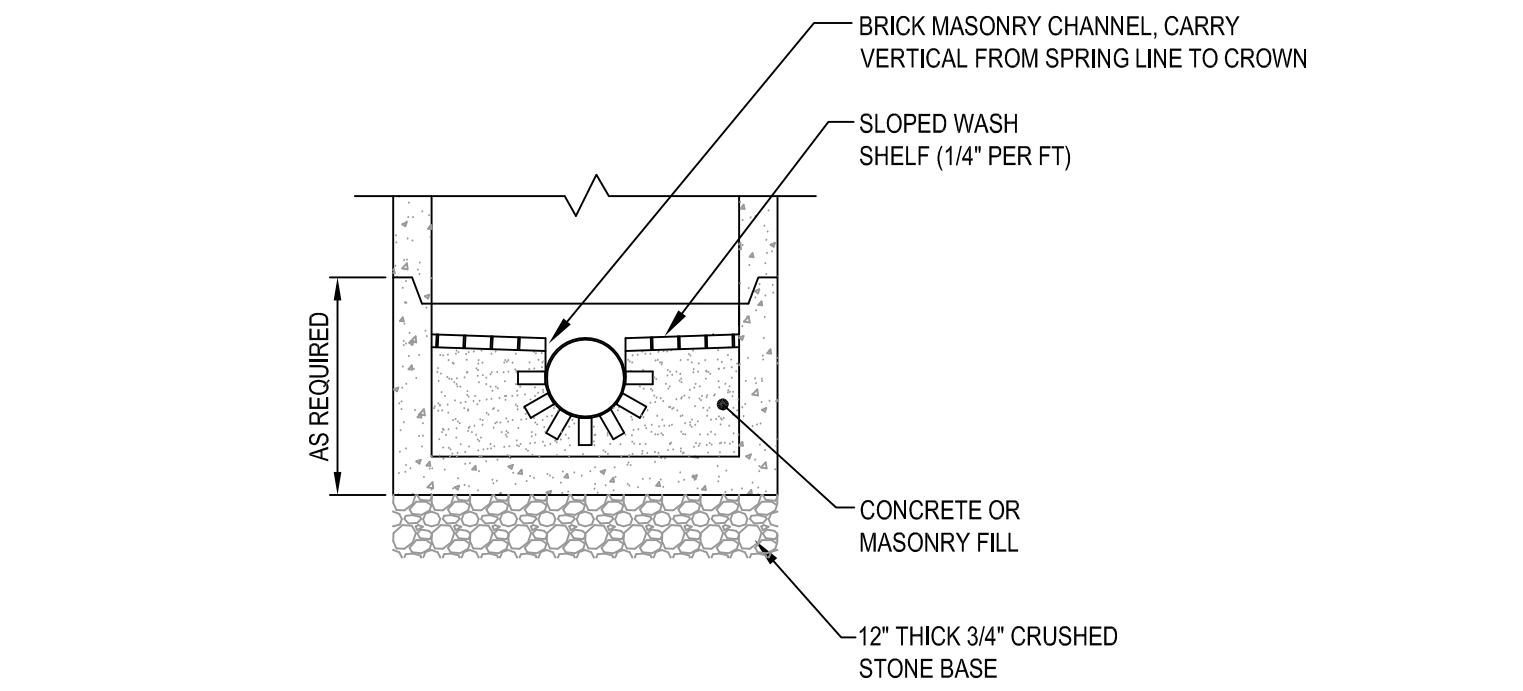
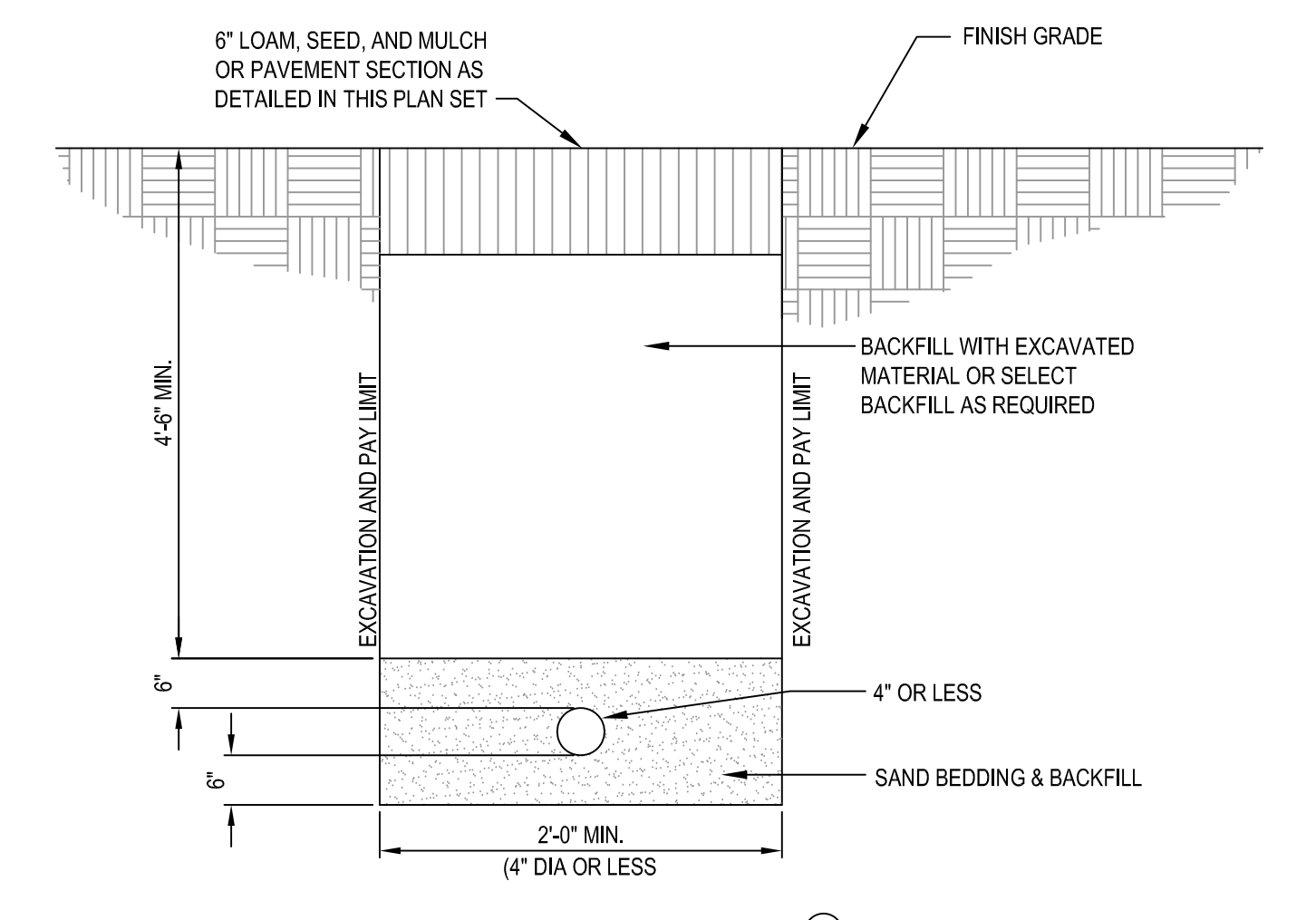


**A** 4'-0" DIA. PRECAST SANITARY SEWER OR DRAIN MANHOLE DETAIL  
N.T.S.



- NOTES:**
- BRICK CHANNEL TO BE AASHTO M-81-42 GRADE SA SEWER BRICK.
  - MANHOLE TEST TO BE ACCOMPLISHED AFTER CHANNEL INSTALLATION IS COMPLETE.
  - WHERE THE ALIGNMENT CHANGES OR SIDE FLOW ENTERS THE MANHOLE, CONSTRUCT CHANNEL WITH A SMOOTH RADIAL CHANNEL TO ACCOMPLISH ALL JUNCTIONAL CHANGE OF ALIGNMENT WITHIN MANHOLE.

**B** MANHOLE BRICK CHANNEL INSTALLATION DETAIL  
N.T.S.



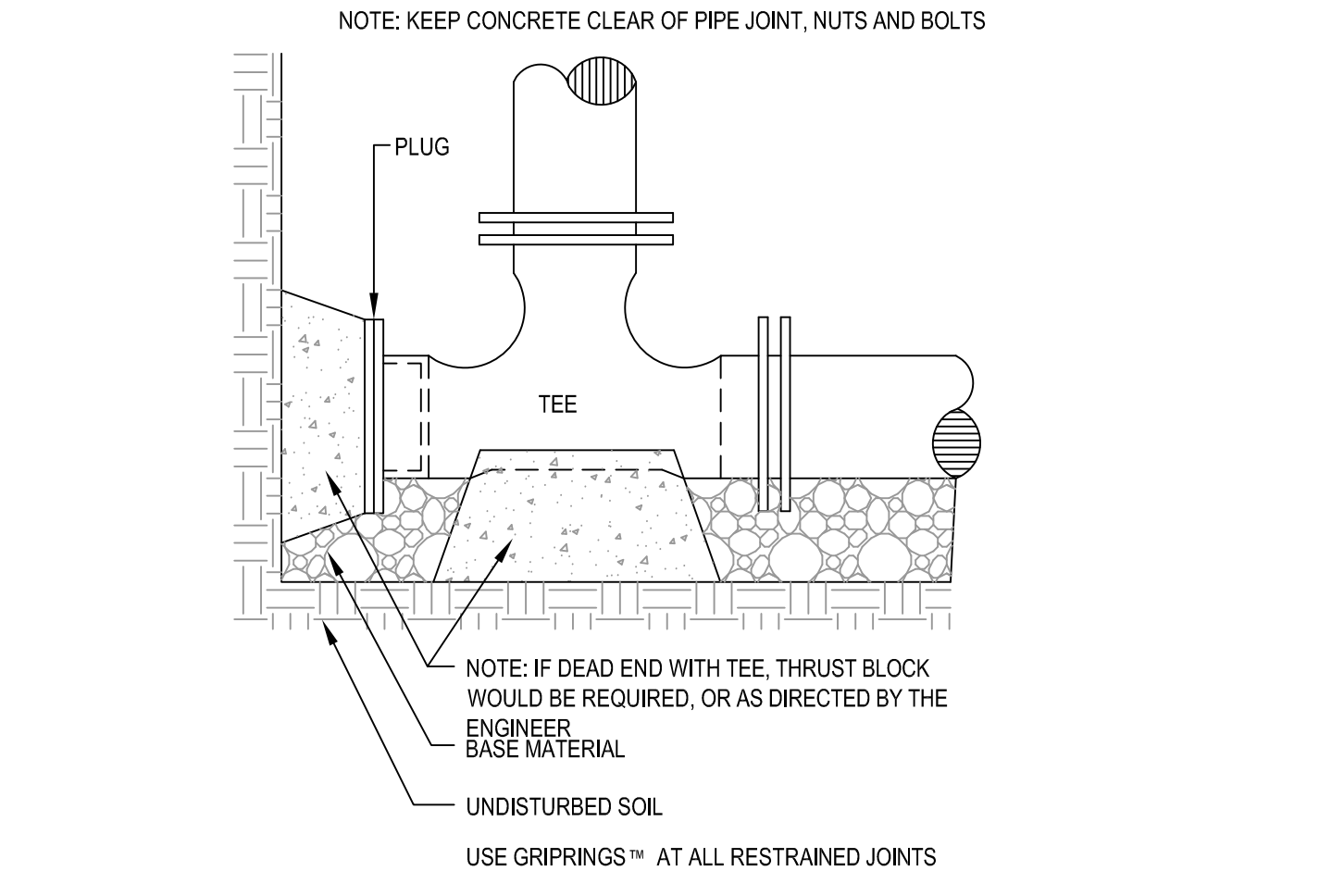
**D** WATER SERVICE TRENCH SECTION  
N.T.S.

- INSTALL POLY BARRIER BETWEEN PIPE AND ALL THRUST BLOCKS.
- ANY MODIFICATION TO THRUST BLOCK SIZING OR PIPE RESTRAINT REVISIONS SHALL BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO IMPLEMENTATION IN THE FIELD.
- ANY WORK RELATING TO WATER PIPING OR DETAILS SHALL BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT SPECIFICATIONS.
- ALL RESTRAINED JOINTS MUST HAVE GRIPRING™

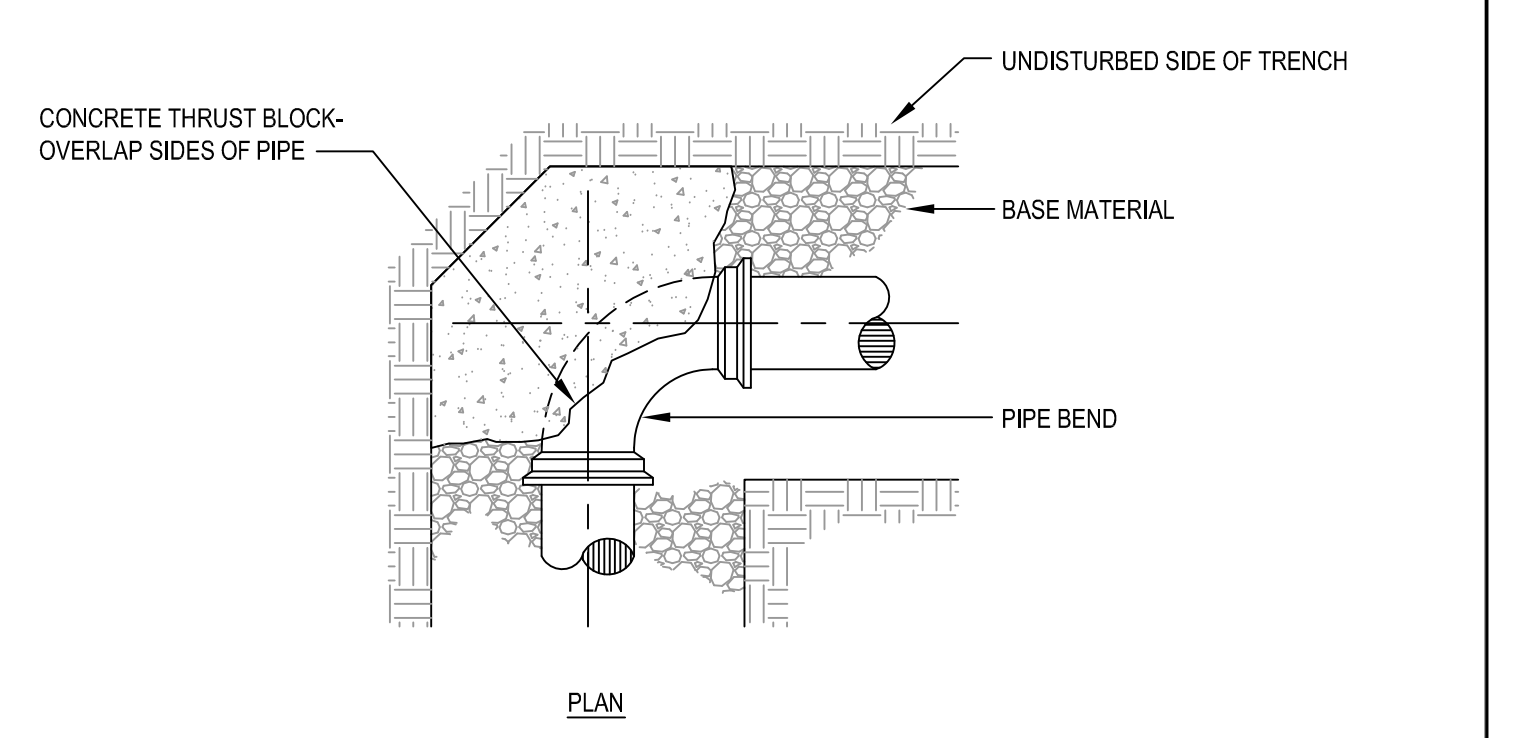
BEARING SURFACE REQUIRED IN SQUARE FEET

PIPE SIZE	1/32 BEND	1/16 BEND	1/8 BEND	1/4 BEND	TEES / CAPS
6" / 8"	5.0	5.0	5.0	6.5	5.0
12"	11.5	11.5	11.5	20.0	22.0

**E** THRUST BLOCK NOTES  
N.T.S.



**F** STANDARD TEE BLOCKING  
N.T.S.



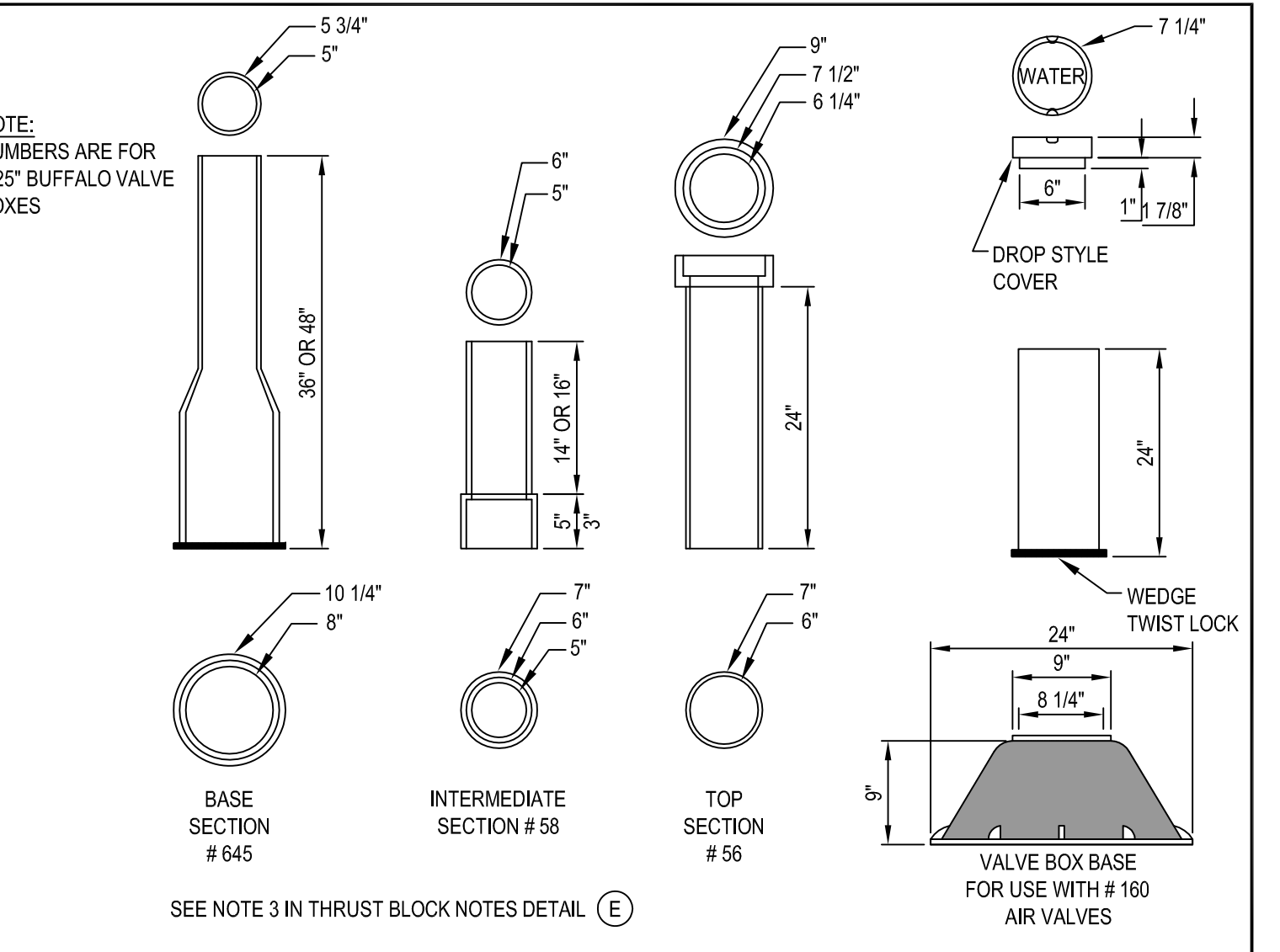
THRUST/RETAINER GLAND SCHEDULE

BEND	ANGLE	REQUIREMENT
1/4 BEND	(90°)	USE POURED-IN-PLACE THRUST BLOCK WITH GRIPRING™ MECHANICAL JOINT RESTRAINT
1/8 BEND	(45°)	THRUST BLOCK w/ GRIPRING™
1/16 BEND	(22 1/2°)	THRUST BLOCK w/ GRIPRING™
1/32 BEND	(11 1/4°)	THRUST BLOCK w/ GRIPRING™

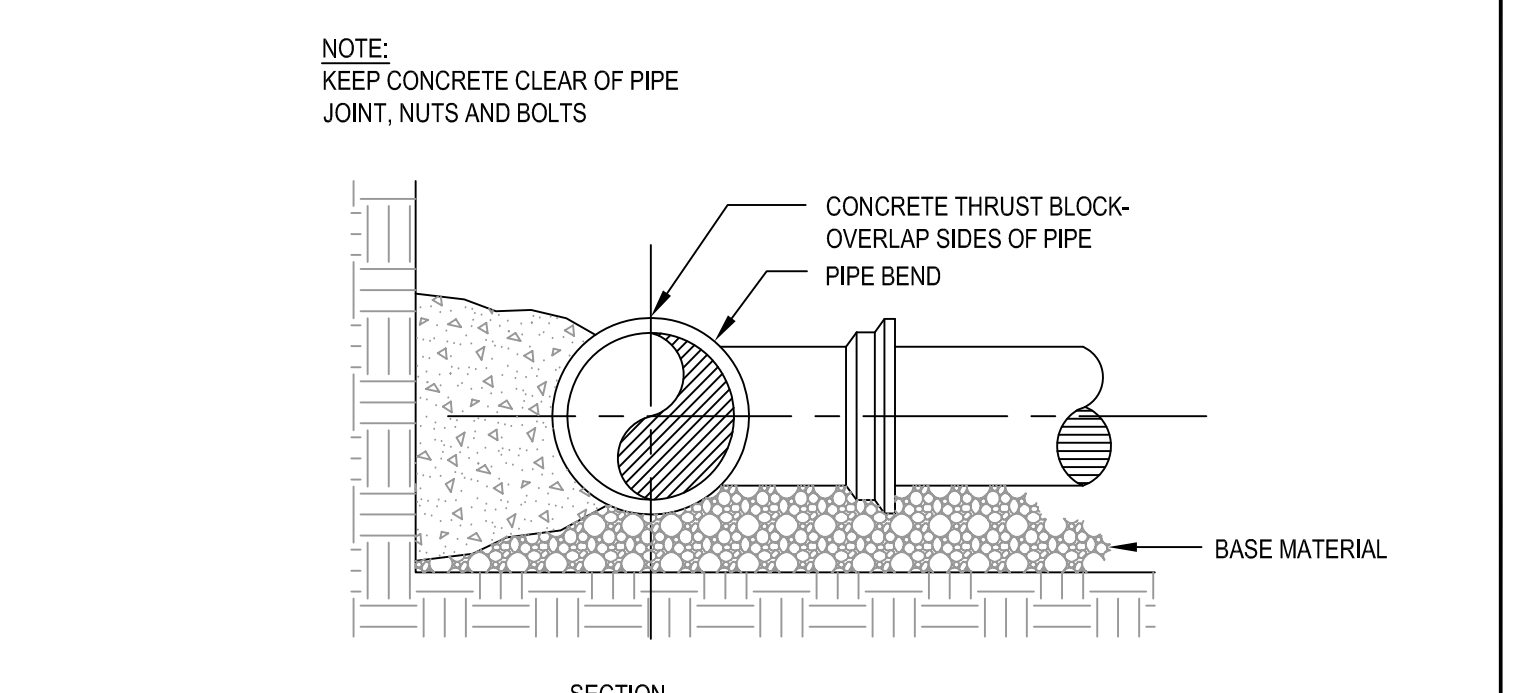
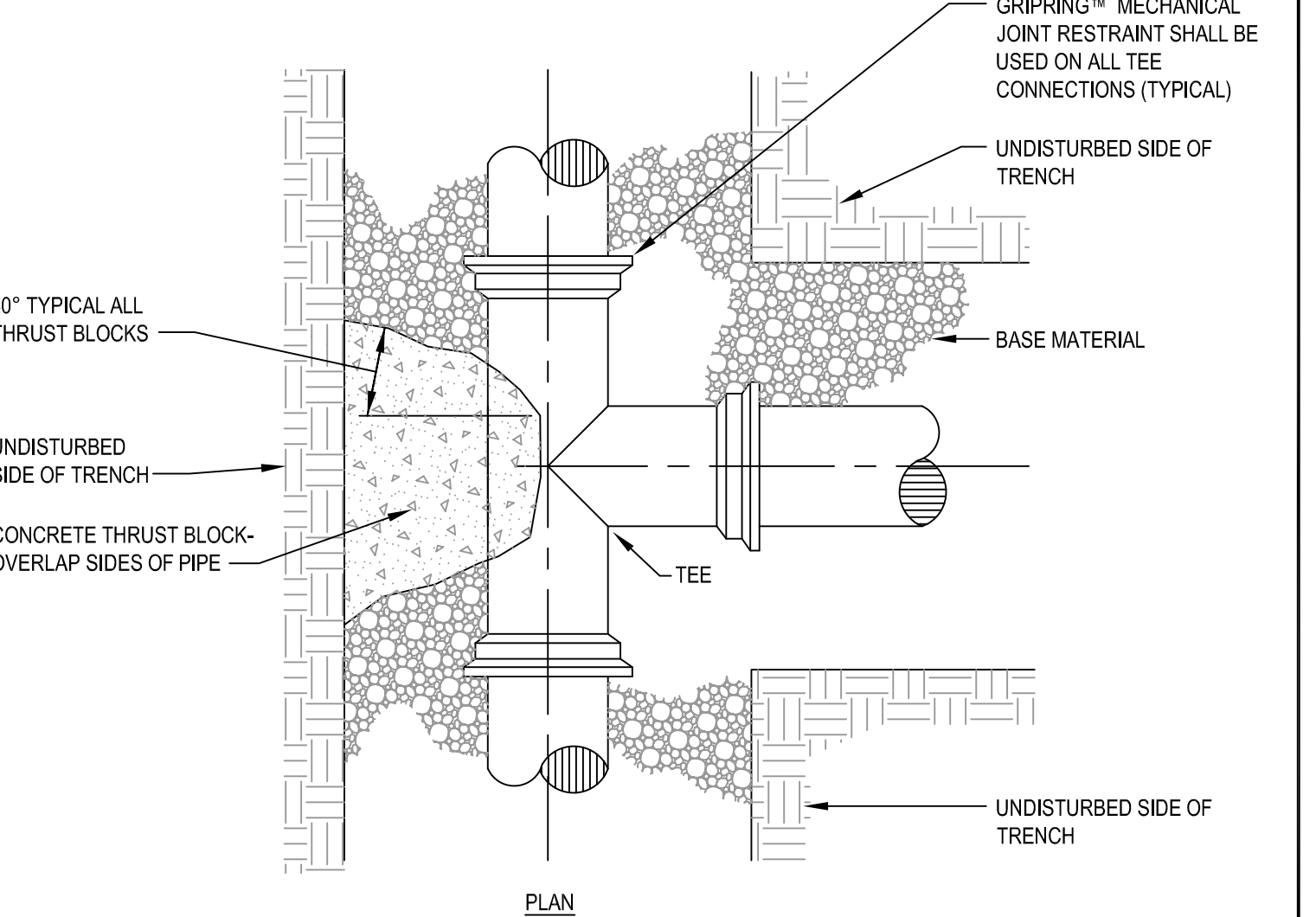
THE ABOVE SCHEDULE IS SUBJECT TO THE APPROVAL OF THE AQUA MAINE INSPECTOR DUE TO SOILS AND WORKING PRESSURES IN THE AREA.

- NOTES:**
- THE PORTLAND WATER DISTRICT MAY HAVE INSPECTION FEES AND REQUIRE OBSERVATION OF ALL PIPING INSTALLATION BEFORE BURIAL.
  - FOR WATER MAIN LAYOUT SEE DRAWING C-4.0
  - FOR WATER MAIN PROFILE SEE DRAWING C-10.0
  - FOR WATER MAIN SERVICE TRENCH DETAIL SEE DRAWING DETAIL D THIS SHEET.
  - CONTACT THE PORTLAND WATER DISTRICT FOR TESTING AND CHLORINATION REQUIREMENTS.
  - ALL HYDRANTS AND VALVES TO BE EPOXY COATED, NUTS & BOLTS TO BE STAINLESS STEEL.
  - SERVICE RODS FOR DOMESTIC SERVICE OR AIR VALVES TO BE STAINLESS STEEL.

**G** TYPICAL THRUST BLOCK PLACEMENT BENDS  
N.T.S.



**H** TYPICAL VALVE BOXES  
N.T.S.

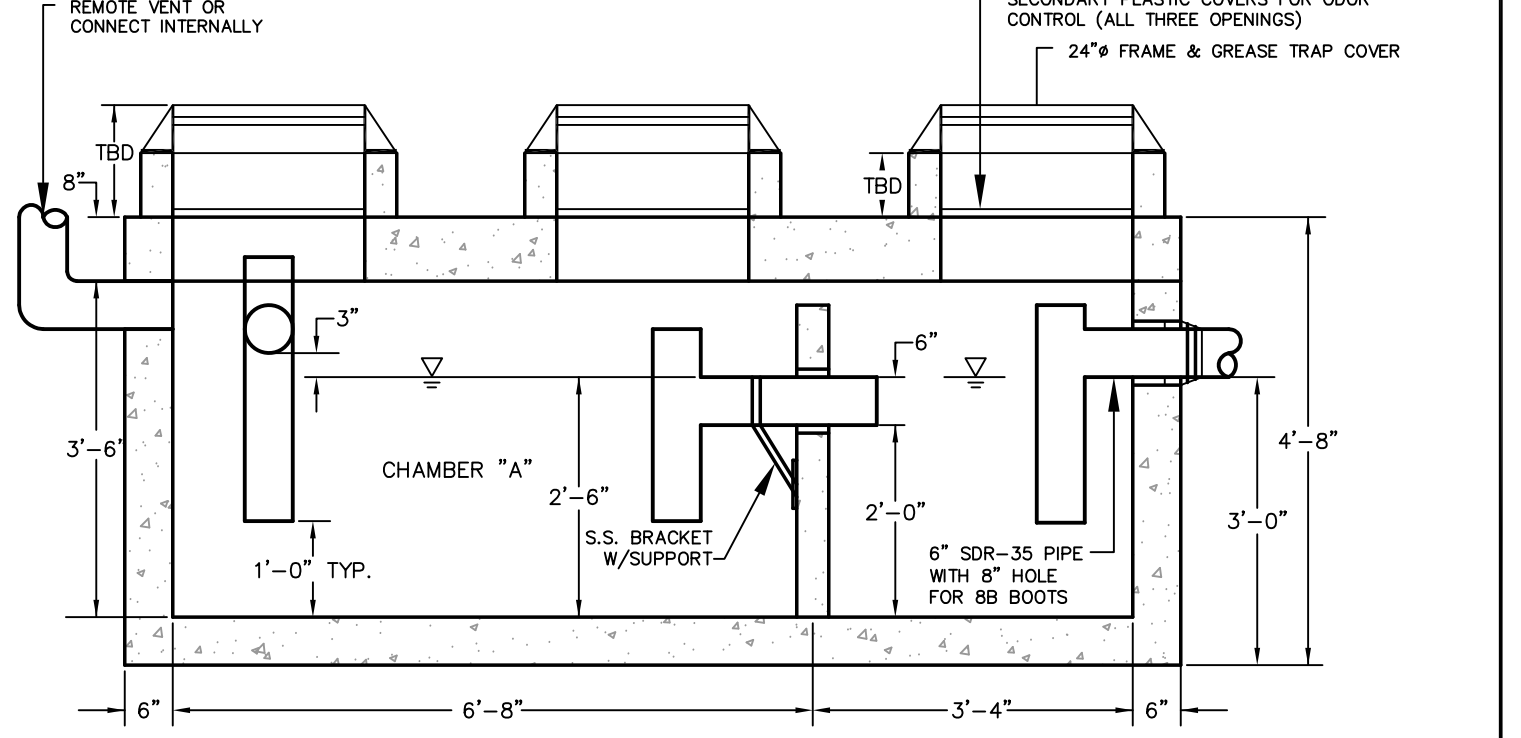
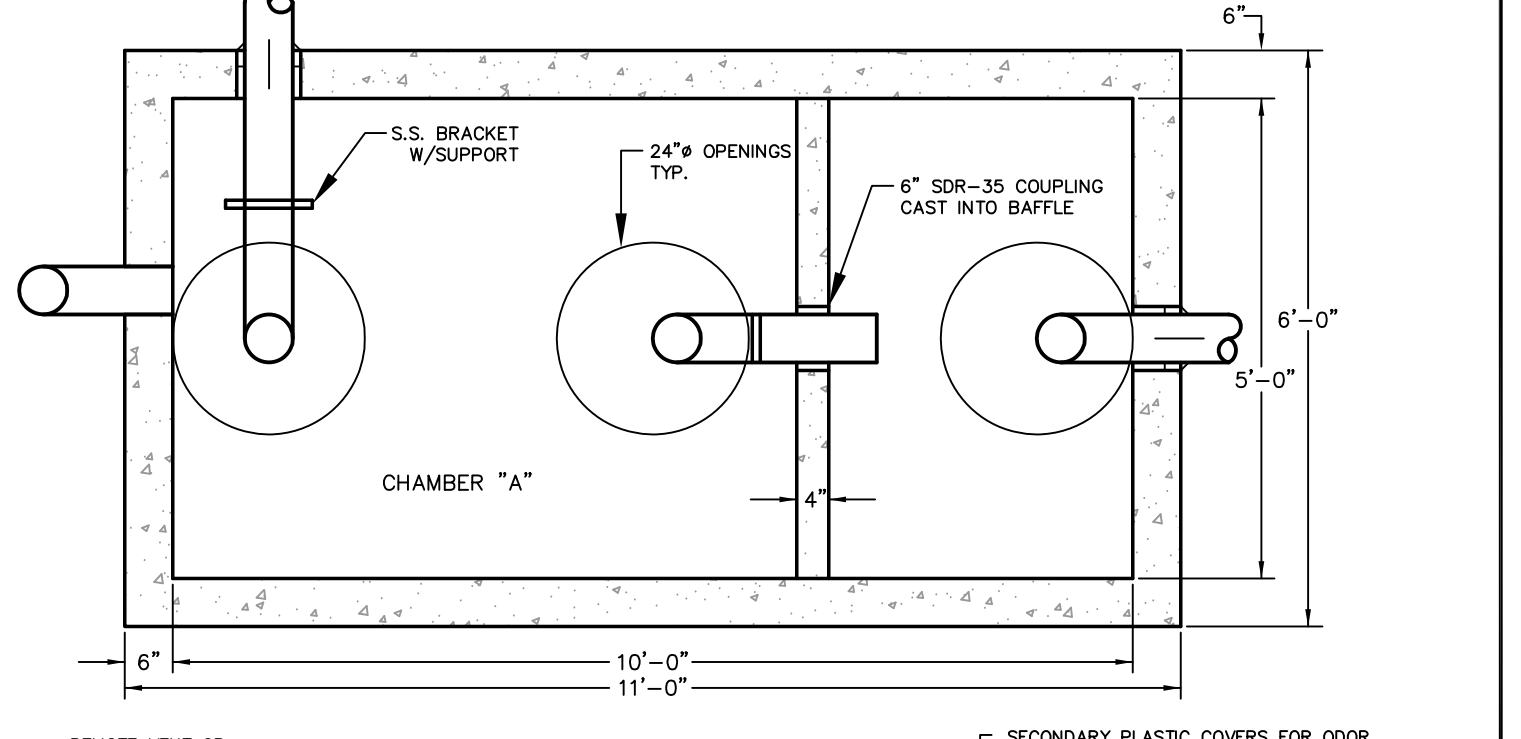


**I** TYPICAL THRUST BLOCK PLACEMENT TEES  
N.T.S.

**DESIGN NOTES:**

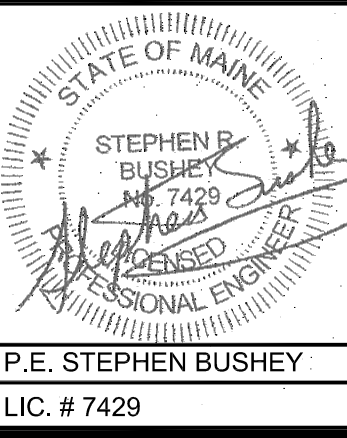
- CONCRETE 5000 PSI AT 28 DAYS.
- H-20 LOADING
- JOINTS SEALED WITH BUTYL RUBBER JOINT SEALANT (ASSHTO M-19)
- ALL TEES/BAFFLES PROVIDED BY PRECAST.

THIS STRUCTURE MUST DISCHARGE TO A CITY OF PORTLAND STANDARD MANHOLE WITH CHANNEL (CONTROL/SAMPLING MANHOLE). FORMULA FOR SIZING THE TRAP: CHAMBER "A" (2/3 OF TANK VOLUME) MUST BE EQUIVALENT TO THE AVERAGE DAILY PROCESS FLOW FROM THE FACILITY WITH NO SANITARY OR OTHER EXTRANEOUS WASTES FLOWING THROUGH IT.



**J** GREASE TANK DETAIL  
N.T.S.

REV	DATE	DESCRIPTION
5	07.22.14	REVISED DETAILS A AND J AND SUBMITTED AMENDED PLANS TO CITY AND MEDEP
4	05.03.13	REVISED AND RESUBMITTED TO CITY
3	04.18.13	REVISED PER CITY STAFF COMMENTS
2	04.09.13	SUBMITTED TO MEDEP STORMWATER DISCHARGE PERMIT
1	03.28.13	SUBMITTED TO CITY OF PORTLAND



PROJECT  
**MULTI-USE DEVELOPMENT**  
2282 CONGRESS ST., PORTLAND, ME

SHEET TITLE  
**UTILITY DETAILS**

CLIENT  
CJ DEVELOPERS, INC.  
35 PRIMROSE LANE, FREETPORT, MAINE 04032  
AND PORTLAND PROPERTY HOLDINGS, LLC  
2 MAIN STREET, SUITE 200, TOPSHAM, MAINE 04086

**FST** 100 YEARS  
**FAY, SPOFFORD & THORNDIKE**  
ENGINEERS · PLANNERS · SCIENTISTS  
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN: CMW DATE: OCTOBER 2013  
DESIGNED: SRB SCALE: N.T.S.  
CHECKED: SRB JOB NO. 3118  
FILE NAME: 3118-DET  
SHEET **C-8.1**