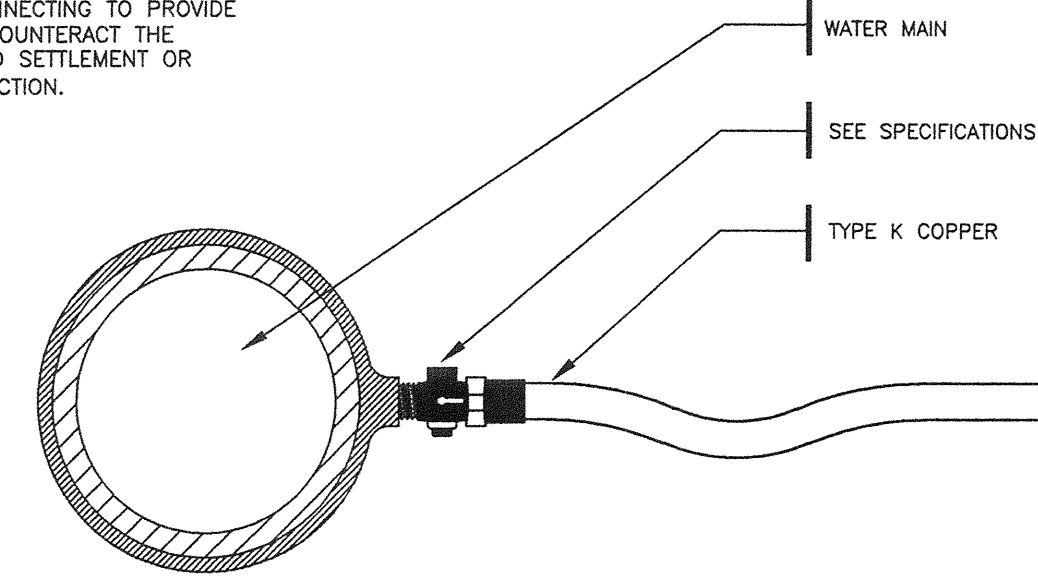
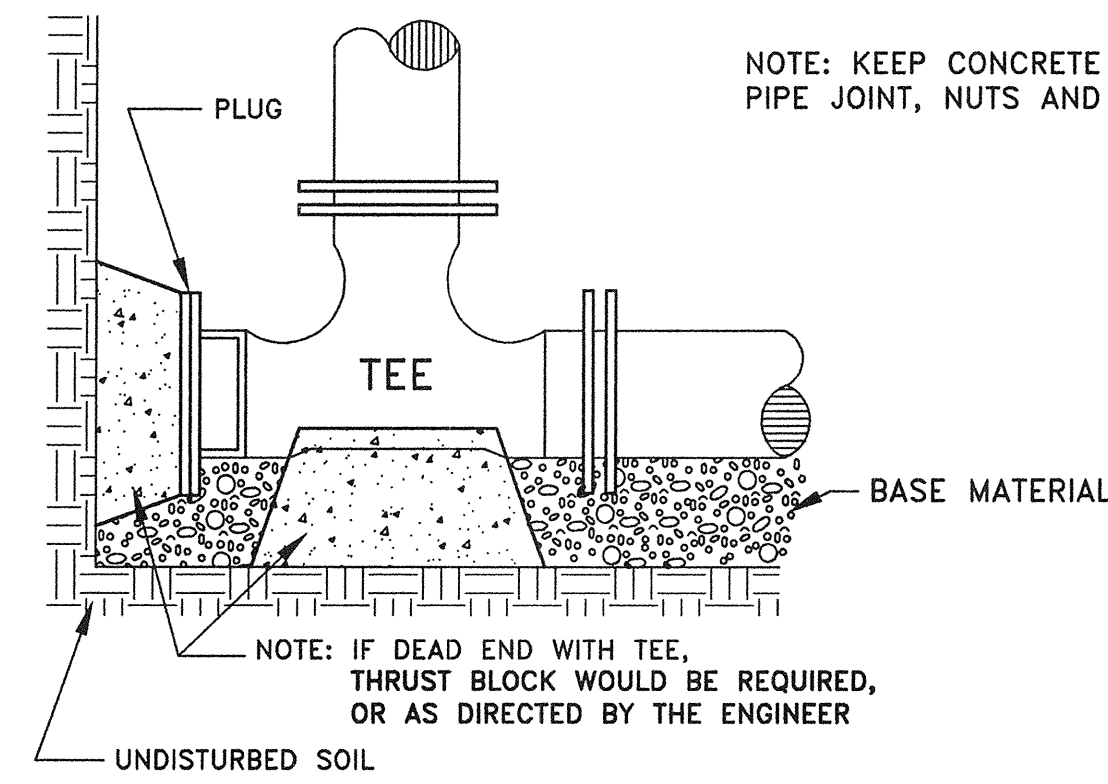


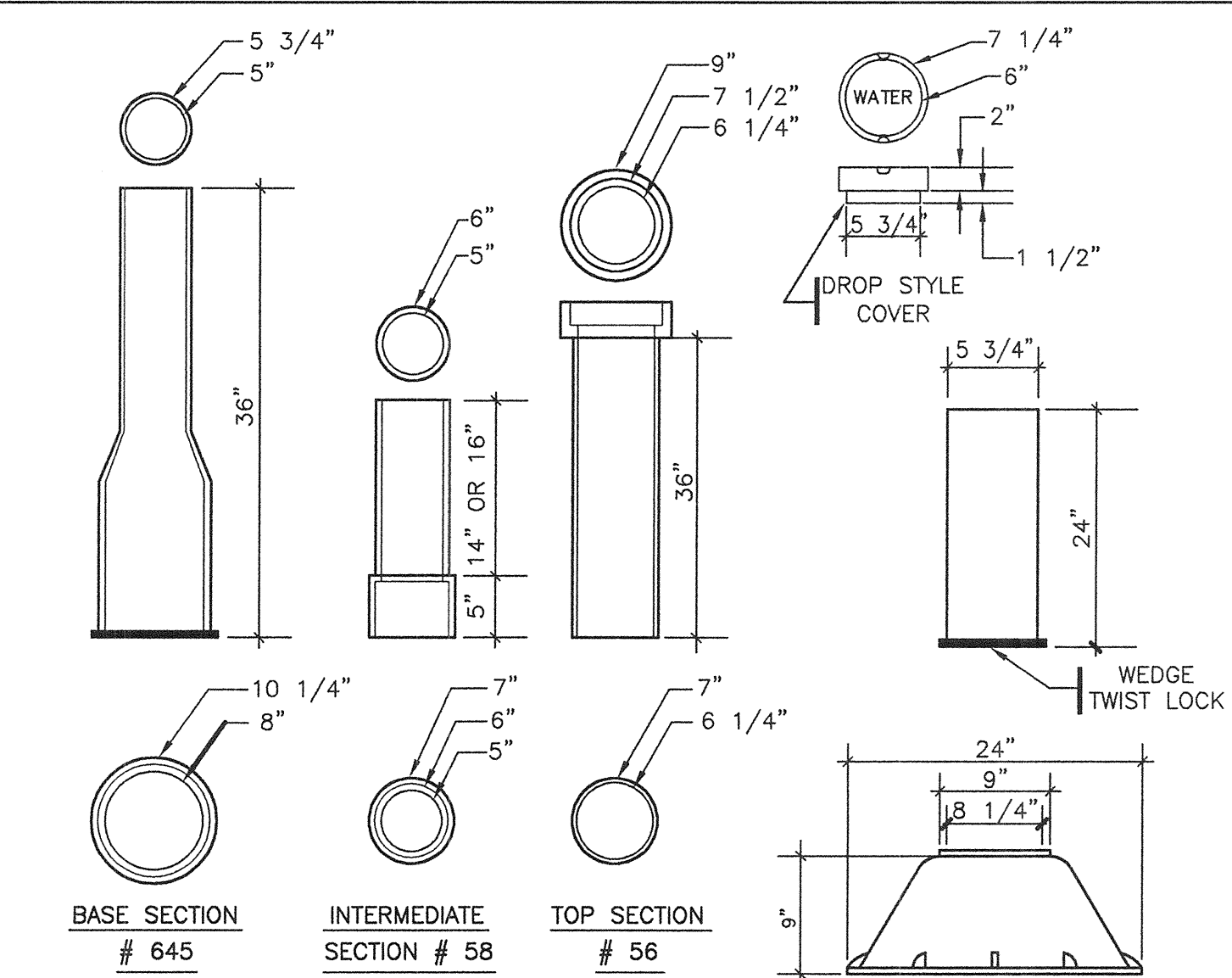
NOTE: SERVICE CONNECTIONS (DIRECT TAPS AND SERVICE CLAMPS) WILL BE INSTALLED SO THAT THE OUTLET IS AT AN ANGLE OF NOT MORE THAN 45° ABOVE THE HORIZONTAL. ALWAYS PUT A BEND OR "GOOSENECK" IN THE SERVICE LINE PRIOR TO CONNECTING TO PROVIDE FLEXIBILITY AND "GIVE" TO COUNTERACT THE EFFECTS OF A LOAD DUE TO SETTLEMENT OR EXPANSION AND/OR CONTRACTION.



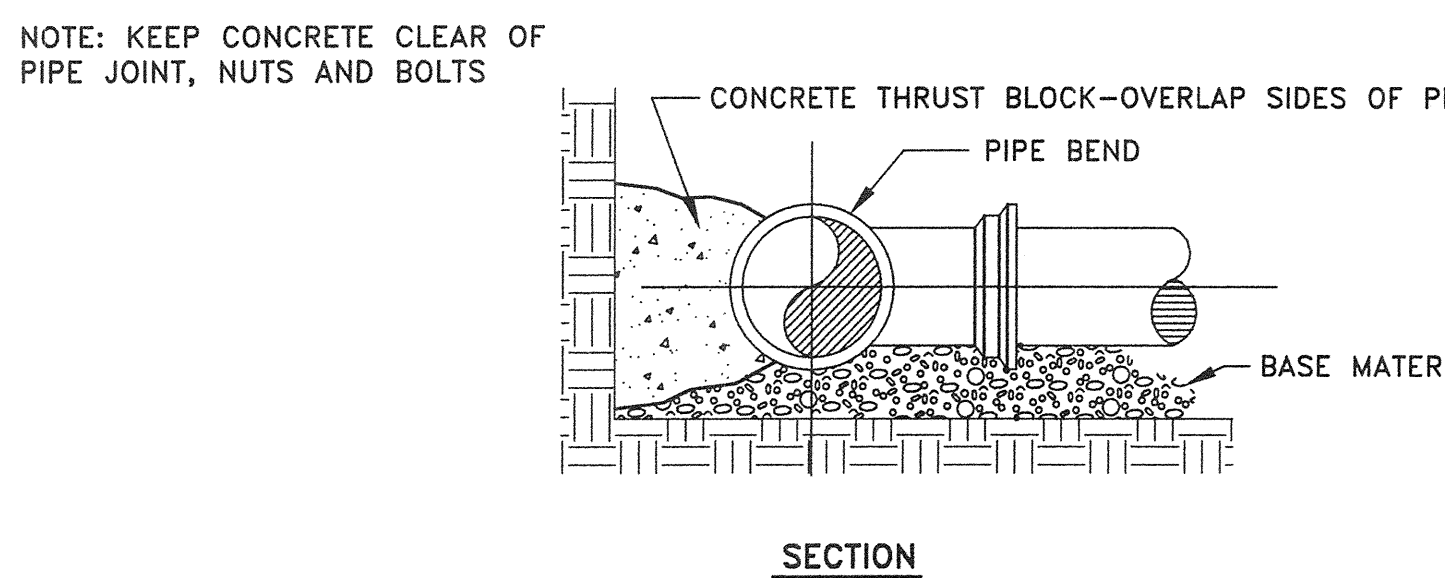
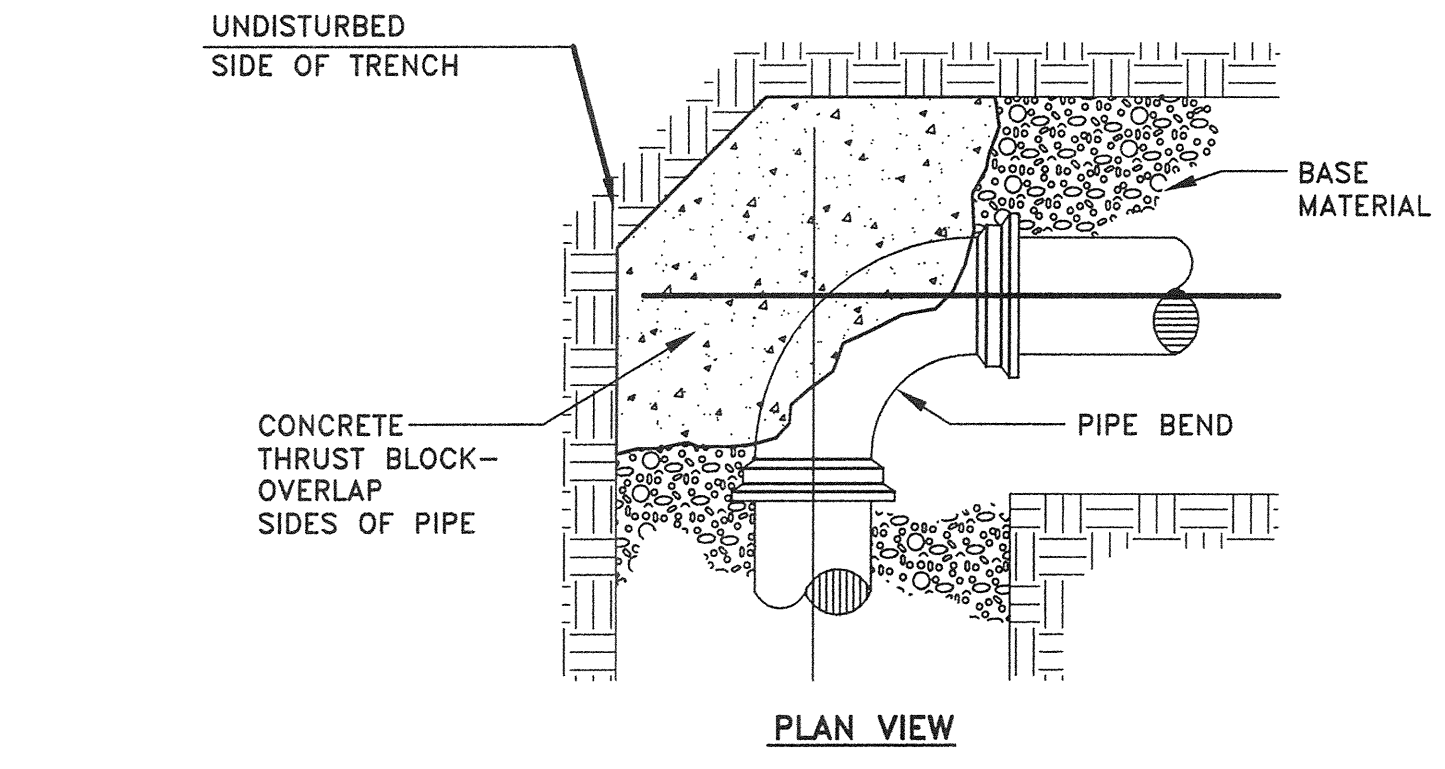
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL ON SHEET 8
WATER SERVICE
 (1 1/2" AND 2 1/2" C.C. OR IRON PIPE THREAD)
 N.T.S.



SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL
STANDARD TEE BLOCKING
 N.T.S.



NOTE: NUMBERS ARE FOR 5.25" BUFFALO VALVE BOXES
 VALVE BOX BASE FOR USE WITH # 160 AIR VALVES
 SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL
TYPICAL VALVE BOXES
 N.T.S.

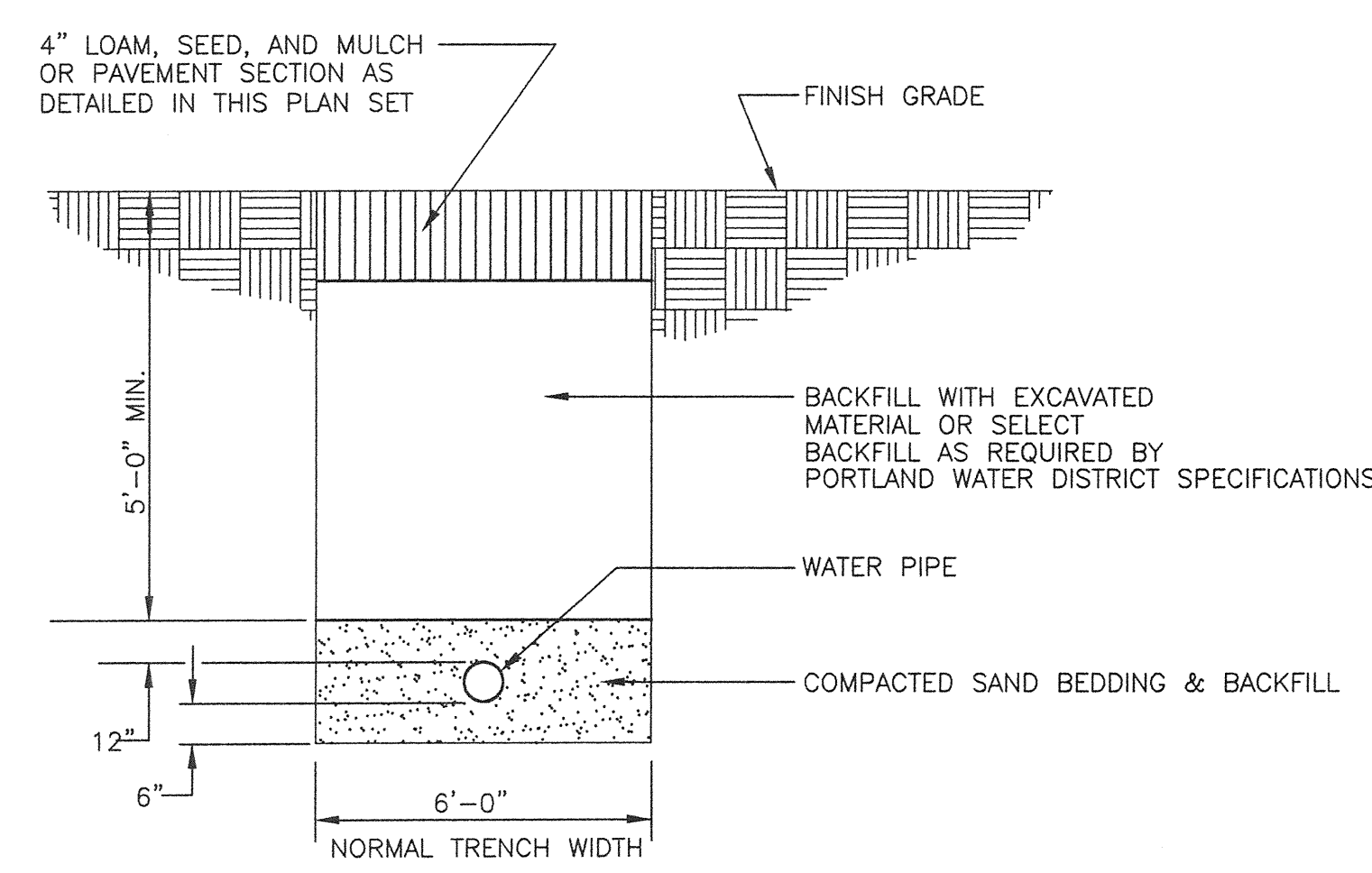


NOTE: KEEP CONCRETE CLEAR OF PIPE JOINT, NUTS AND BOLTS

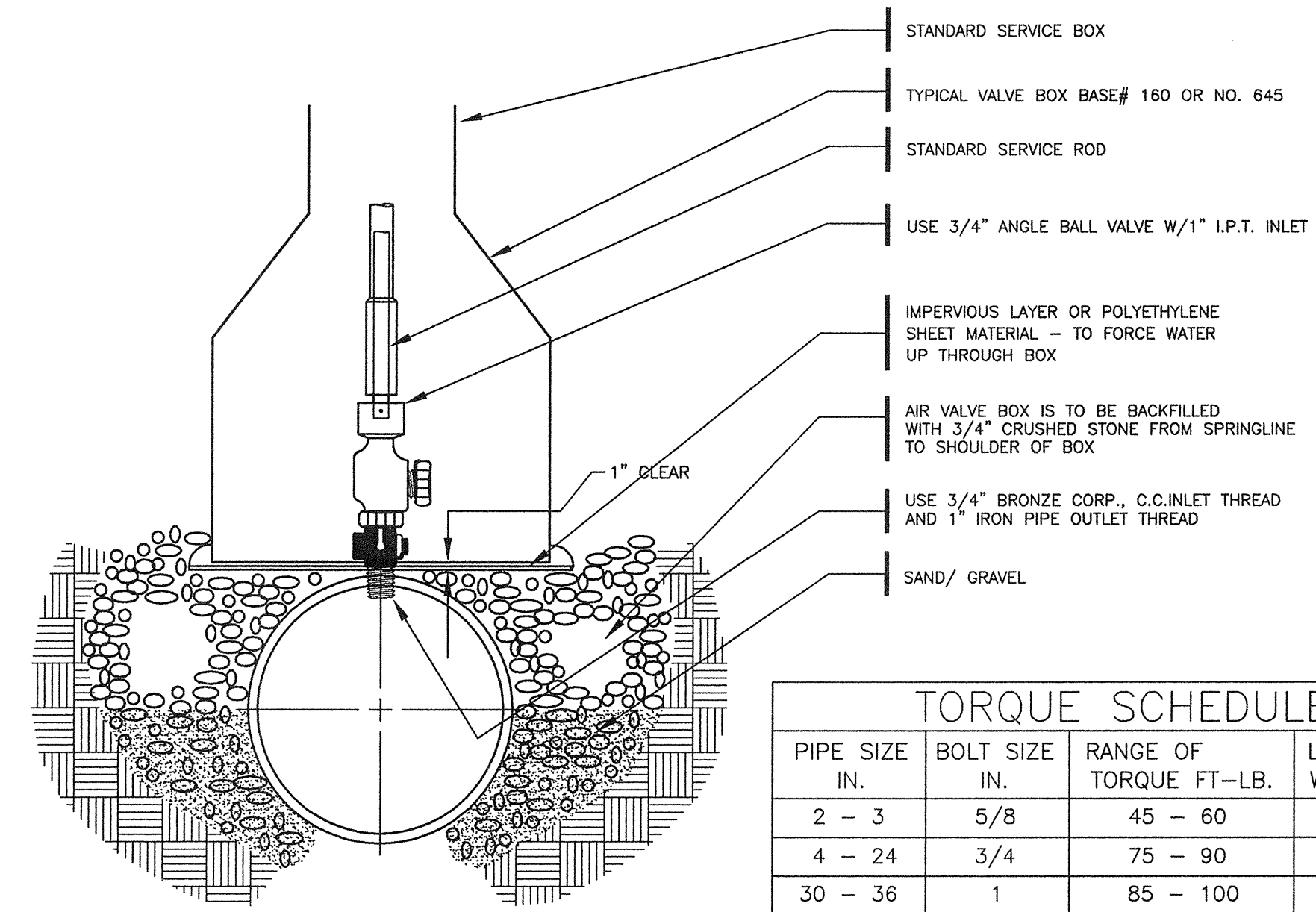
THRUST/RETAINER GLAND SCHEDULE	
1/4 BEND (90°)	USE POURED-IN-PLACE THRUST BLOCK w/RETAINERS
1/8 BEND (45°)	THRUST BLOCK w/RETAINERS
1/16 BEND (22 1/2°)	THRUST BLOCK
1/32 BEND (11 1/4°)	THRUST BLOCK

THE ABOVE SCHEDULE IS SUBJECT TO THE APPROVAL OF THE ON-SITE INSPECTOR DUE TO SOILS AND WORKING PRESSURES IN THE AREA.

SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL
TYPICAL THRUST BLOCK PLACEMENT ON BENDS
 N.T.S.



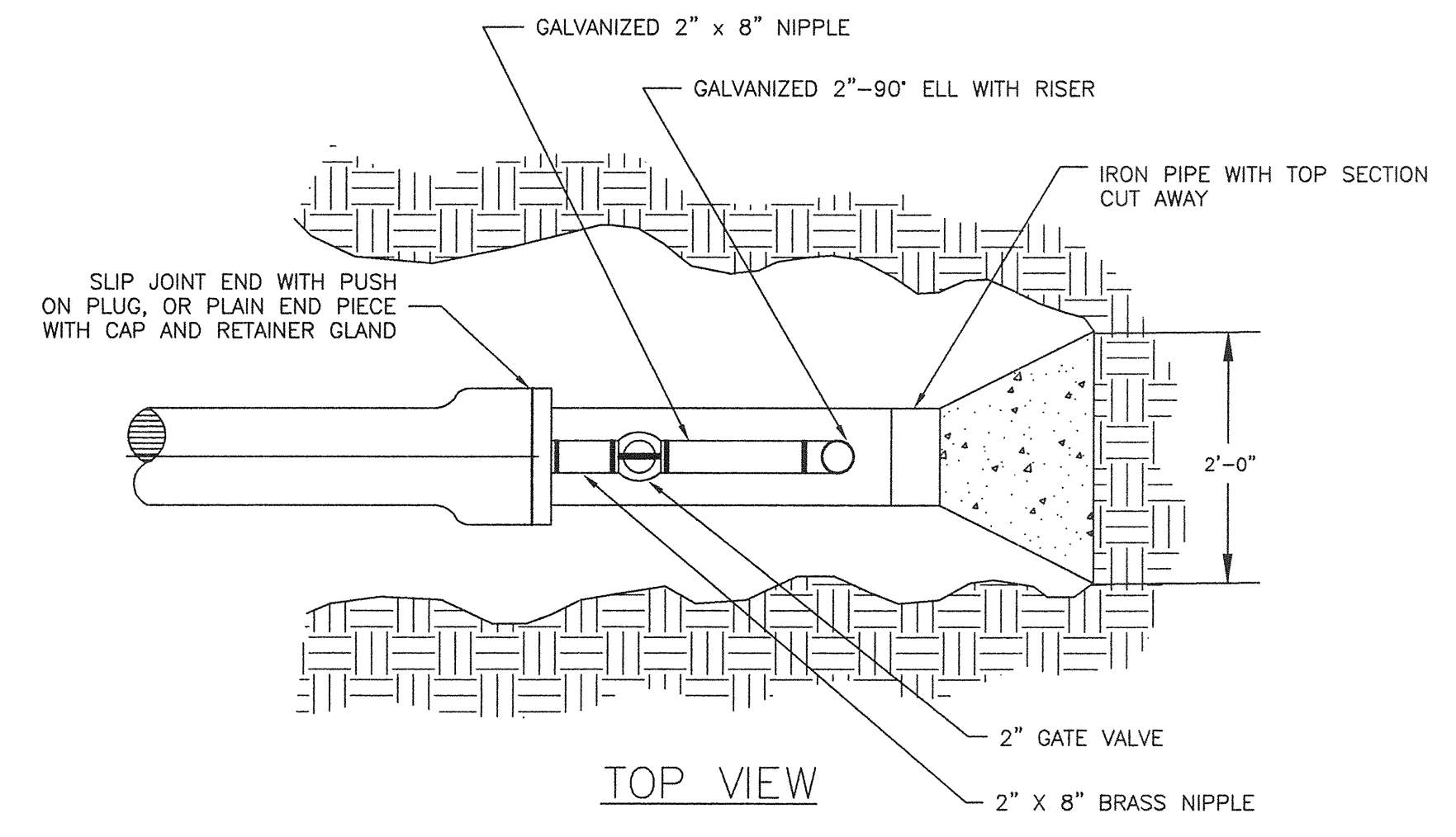
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL
WATER SERVICE TRENCH SECTION
 N.T.S.



NOTE: THE TORQUE LOADS MAY BE APPLIED WITH TORQUE MEASURING OR TORQUE INDICATING WRENCHES, WHICH MAY ALSO BE USED TO CHECK THE APPLICATION OF APPROXIMATE TORQUE LOADS APPLIED BY A PERSON TRAINED TO GIVE AN AVERAGE PULL ON A DEFINITE LENGTH OF REGULAR SOCKET WRENCH.

TORQUE SCHEDULE			
PIPE SIZE IN.	BOLT SIZE IN.	RANGE OF TORQUE FT.-LB.	LENGTH OF WRENCH IN *
2 - 3	5/8	45 - 60	8
4 - 24	3/4	75 - 90	10
30 - 36	1	85 - 100	12
42 - 48	1 1/4	105 - 120	14

SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL
TYPICAL AIR VALVE SECTION (1")
 N.T.S.

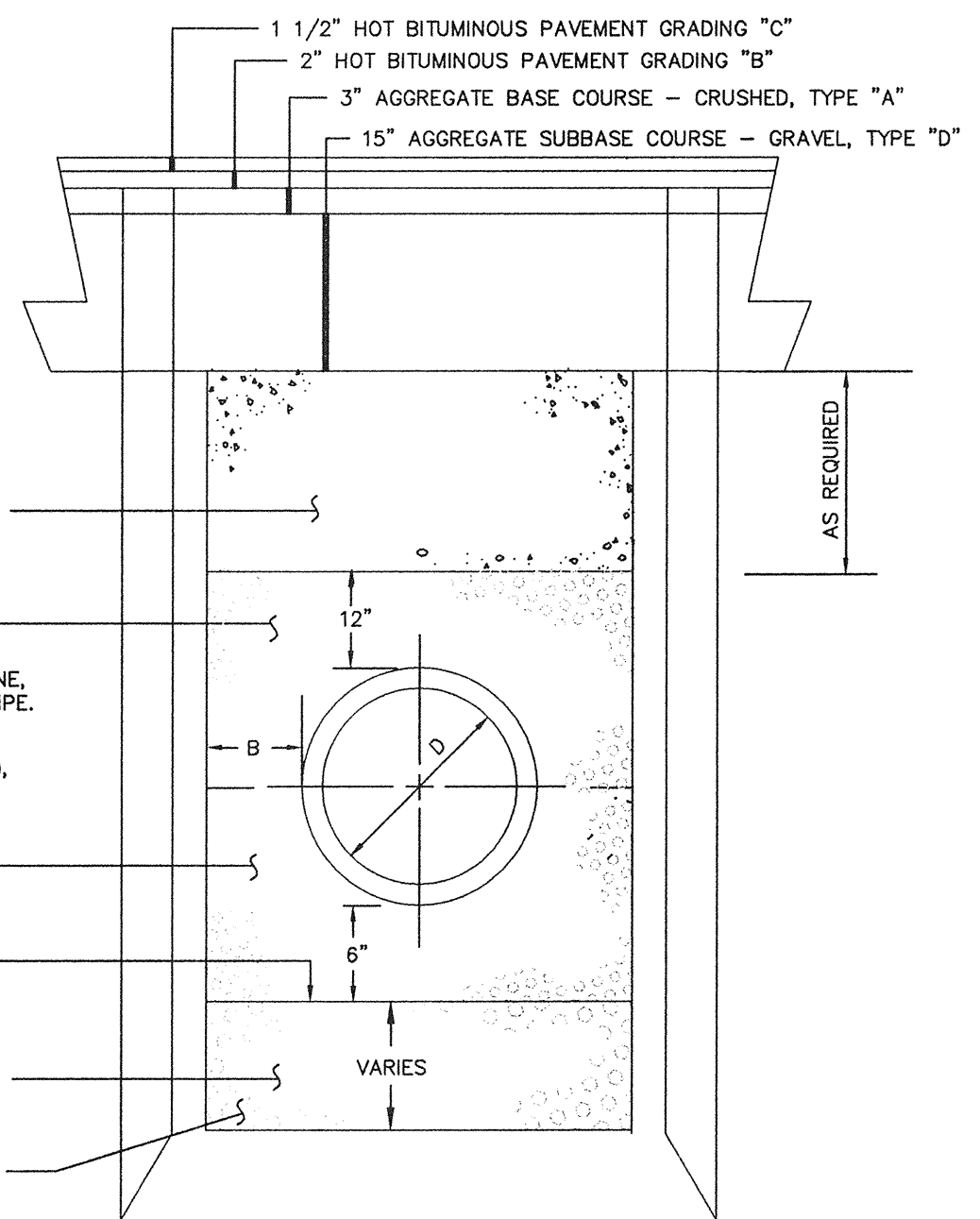


STANDARD 2" BLOW OFF
 N.T.S.

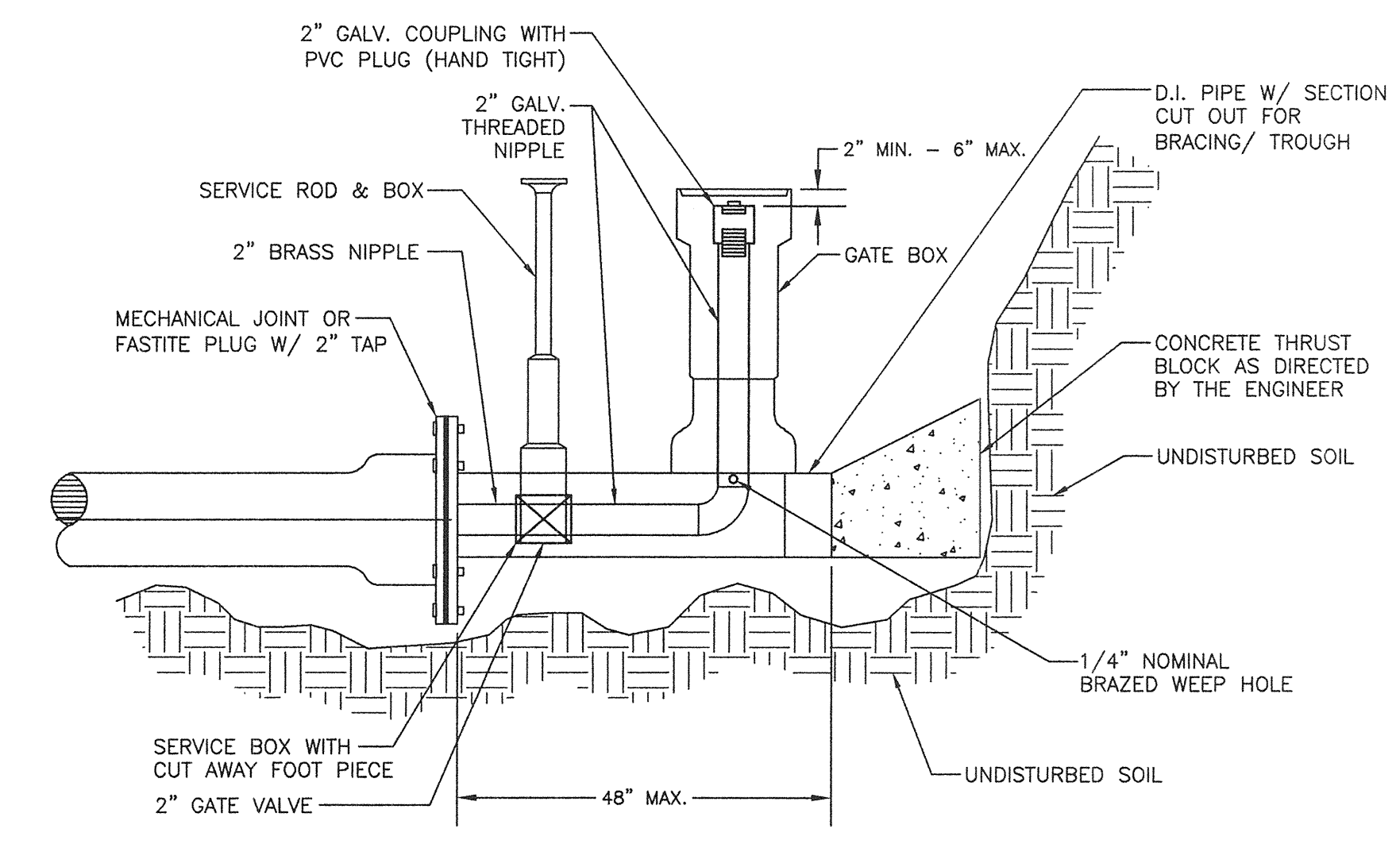
PIPE DIAMETER	DIMENSION
D	B
12"	0'-10"
15"	0'-8 1/4"
18"	0'-6 1/2"

NOTES: TRENCH PAVEMENT REPLACEMENT SHALL EXTEND 9" BEYOND EDGE OF TRENCH.

- COMMON BACKFILL FROM TRENCH EXCAVATION OR GRANULAR BORROW (IF ORDERED)
- COMPACTED SPECIAL BACKFILL
- FLEXIBLE PIPE: CRUSHED STONE, 703.30, 12" ABOVE TOP OF PIPE. SAND NOT ALLOWED.
- RIGID PIPE: SAND, 703.06 (b), 12" ABOVE TOP OF PIPE
- CRUSHED STONE FOR PIPE BEDDING, 703.30
- ESTABLISHED TRENCH PROFILE
- EXCAVATION BELOW ESTABLISHED TRENCH PROFILE
- 2" CRUSHED STONE



TYPICAL PIPE INSTALLATION DETAIL
 N.T.S.



ELEVATION VIEW

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 Portland, Maine

Date:
 JUNE 15, 2007

Issued For:
 CONSTRUCTION

Revisions:
 JUNE 28, 2007 - REVISED UTILITY AND ROOF DRAINAGE
 JULY 17, 2007 - CONSTRUCTION DRAWINGS

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Title:
 UTILITY AND DRAINAGE DETAILS

Scale:
 NONE

North:
 Sheet No:
10

