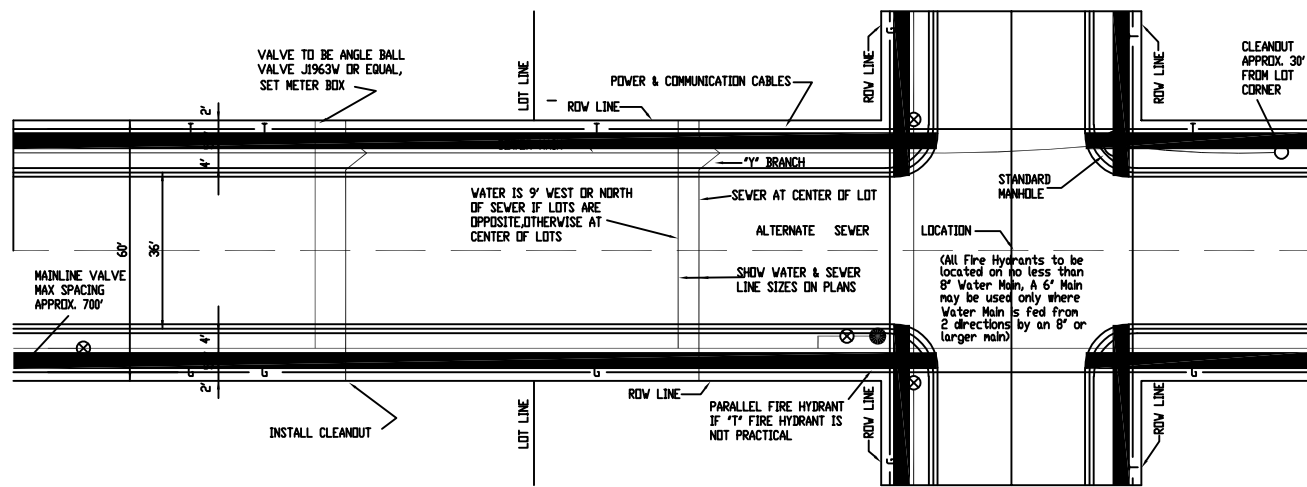
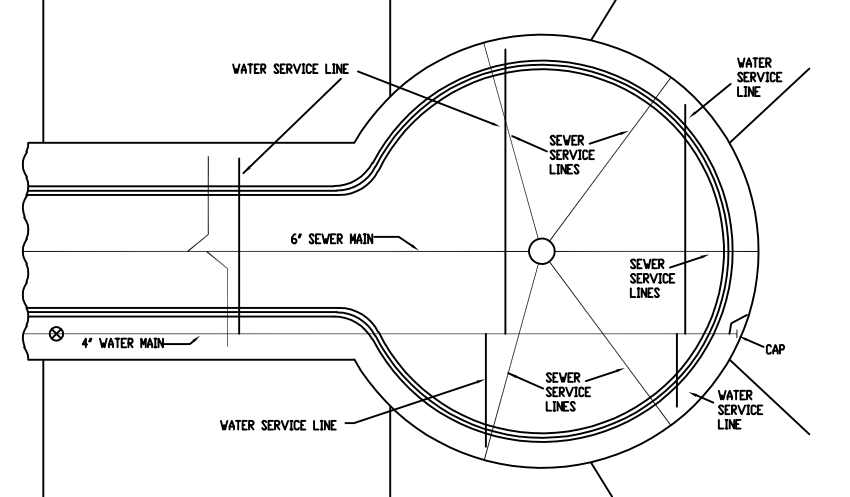


1. TELEPHONE SERVICE LINES WILL BE 24" DEEP WHEN INSTALLED ALONG WITH CABLE. WHEN INSTALLED AFTER CABLE OR GAS MAIN IS IN PLACE IT WILL BE LAID ABOVE GAS AND WATER MAINS.
2. ALL DIMENSIONS ARE REFERENCED TO ALLEY ROW OR CENTERLINE OF ALLEY.
3. LOCATION TOLERANCE WILL BE 6" IN EITHER DIRECTION HORIZONTALLY. ANY DEVIATION IN EXCESS OF ABOVE SHOULD BE AUTHORIZED BY THE CITY ENGINEER.
4. SANITARY SEWER MAINS WILL BE INSTALLED FIRST AND HAVE PRIORITY OVER OTHER UTILITIES BECAUSE OF GRADE REQUIREMENTS.
5. ALLEYS WILL NORMALLY BE EXCAVATED BELOW NATURAL GROUND FOR DRAINAGE PURPOSES.
6. T.V. CABLE MAY BE IN THE SAME DITCH AS TELEPHONE CABLE. UTILITIES COMPANY WILL CHECK WITH CITY ENGINEER FOR ALLEY GRADES.
7. DEPTH DIMENSIONS WILL APPLY TO STREETS AS WELL. FOR LOCATIONS OF UTILITIES SEE STANDARDS FOR STREET IN COMBINATION WITH THIS STANDARD.

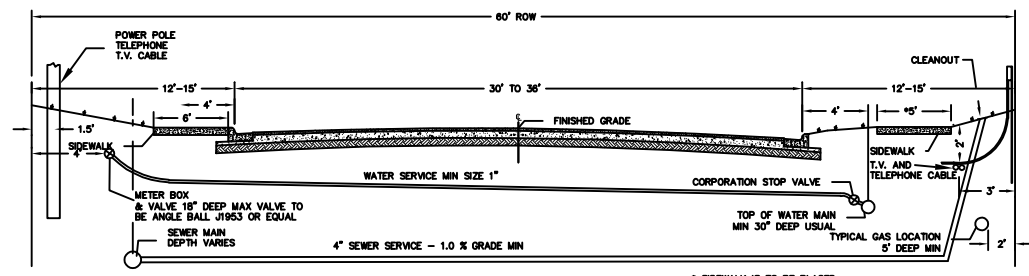


STANDARD LOCATIONS ASSIGNED FOR UTILITIES IN CITY STREETS
PLAN VIEW

NOTE: Short side water service to be located and tapped by Water Deptment Personnel. Contractor shall install short side sewer tap, sewer service line and water service line during initial construction phase prior to instalation of base course

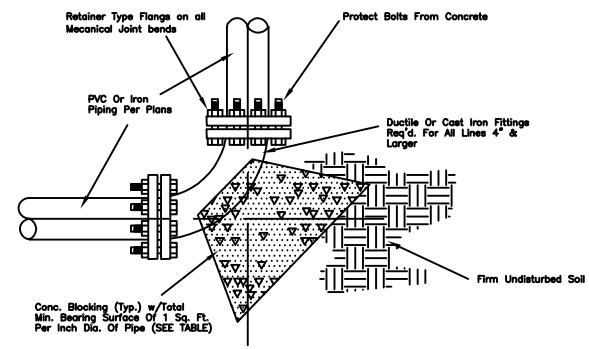


TYPICAL UTILITIES PLACEMENT IN CUL DE SAC
PLAN VIEW



TYPICAL SECTION RESIDENTIAL STREET

* SIDEWALK IS TO BE PLACED BETWEEN GAS LINE LOCATION AND WATER MAIN LOCATION

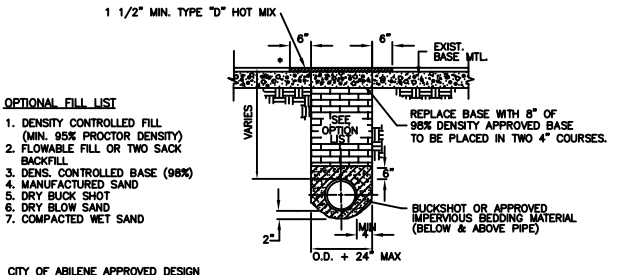


TYPICAL BLOCKING DETAIL

(A) GENERAL NOTES

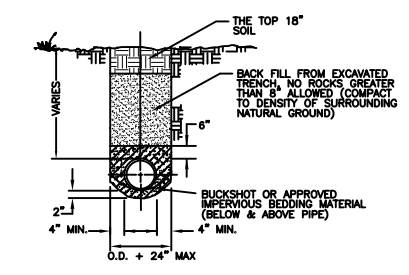
- (1) Construction Plans: All water Plans or any changes in Plans shall be approved by the Director of water Utilities or designated representatives before any construction begins on a project.
- (2) Sequence of work: The Contractor shall not move any equipment or materials on to the job site until the streets are rough cut and fill operations are completed, unless prior approval is sptained from the Engineer.
- (3) Trenching: All pipe trenches shall have a minimum width of 4 inches from the outside diameter of the pipe. Trench shall have a width adequate for proper bedding.
- (4) Pipe Deflection: No pipe shall be curved or deflected greater than the maximum specified by the pipe manufacture.
- (5) Backfilling and Jetting: After pipe has been inspected and approved by the Inspector, backfilling operations may begin. The Contractor shall provide adequate cover over the pipe before the trench is wheel loaded. Any trench less than three feet wide shall require Class I embedment above the pipe. Class I backfill is required for all traffic areas to subgrade. When jetting is required, jetting may began as soon as water is available, and the Contractor will be billed for the water used at the prevailing rates.
- (6) Inspection and Repairs: The Contractor shall notify the Inspector at least one day in advance before starting any new project, and any time a project is temporarily suspended, the Contractor shall give the Inspector reasonable notice when the construction is resumed. Failure to properly notify the Inspector may result in the City not accepting the work, whereupon the Contractor may be required to expose portions of the improvements to verify grade and/or compaction.
- (7) Field Changes to be authorized by Designated Water Dept. Personnel.

All water lines shall be inspected and approved by the Inspector before a letter of acceptance of such improvements by the City will be signed by the City Engineer. If the lines are found to be defective, the Inspector shall notify the Contractor and Developer in writing, and the parties concerned shall have ten (10) working days to correct such defects, damages or other requirements necessary to complete the project. If the Contractor fails to make such repairs in the allotted time, the Inspector shall have the authority to refuse to inspect any other project the Contractor has currently under construction.



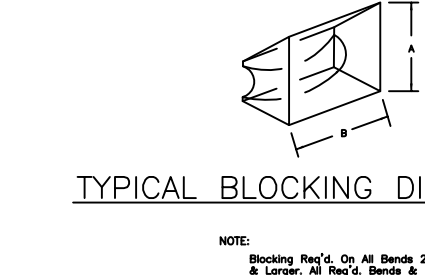
OPTIONAL FILL LIST

1. DENSITY CONTROLLED FILL (MIN. 98% PROCTOR DENSITY)
2. FLOWABLE FILL OR TWO SACK BACKFILL
3. DENS. CONTROLLED BASE (98%)
4. MANUFACTURED SAND
5. DRY BUCK SHOT
6. DRY BLOW SAND
7. COMPACTED WET SAND



TYPE "A" BACKFILL

ALL PAYEMENT, ROADWAYS, ALLEYS, DRIVEWAYS AND ALL AREAS INSIDE THE CITY R.O.W. OR AS DIRECTED BY THE ENGINEER.



TYPE "B" BACKFILL

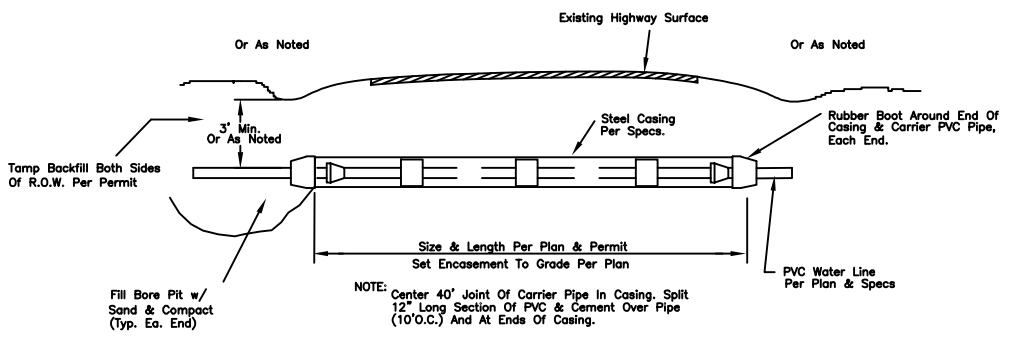
OUTSIDE ROADWAYS, RURAL AREAS AND UNDEVELOPED AREAS. (NON ROADWAY AREAS)

TYPICAL BLOCKING DIMENSIONS

NOTE: Blocking Req'd. On All Bends 2" & Larger. All Req'd. Bends & Fittings Are Not Labelled On The Plans. Pipe May Be Curved Up To 75% Of Mfg. Recommended Max. Curvature Without A Bend As Approved By Owner & Engineer

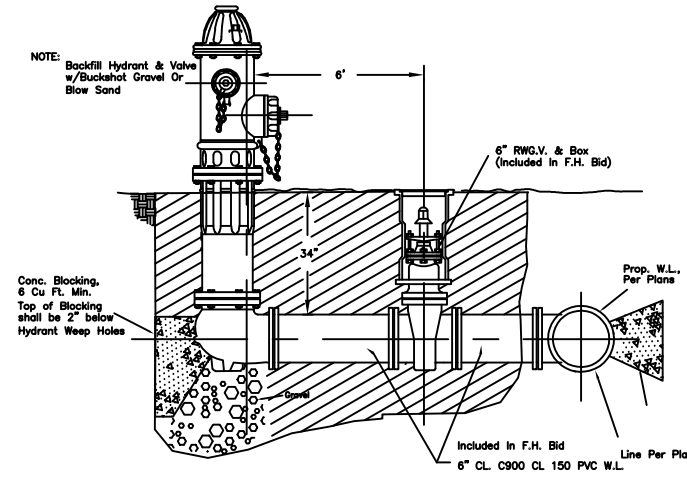
PIPE DIA. (INCHES)	MINIMUM SOIL BEARING (PSI)	TYPICAL DIMENSIONS OF BEARING AREA (INCHES A x B)	TYPICAL VOLUME OF CONC. REQUIRED (CUBIC FEET)
2	2.0	12" x 24"	3.0
2 1/2	2.5	12" x 30"	4.0
3	3.0	14" x 30"	4.5
4	4.0	18" x 32"	6.0
6	6.0	24" x 36"	9.0
8	8.0	29" x 40"	12.0
10	10.0	30" x 48"	15.0
12 x 14	12.0	36" x 48"	18.0

*Varies Considerably w/Distance Between Pipe And Bearing Point



NOTE: Center 40" Joint Of Carrier Pipe In Casing. Split 12" Long Section Of PVC & Cement Over Pipe (10'O.C.) And At Ends Of Casing.

TYPICAL HIGHWAY CROSSING ENCASEMENT FOR PVC PIPE



6" FIRE HYDRANT DETAIL

TYPICAL WATER SERVICE

- 3/4" and 1" brass service saddle for C900 PVC pipe (Ford S90 or Jones J-996)
- 3/4" corporation (Ford F1000 or Jones J-3401)
- 1" corporation (Ford F1000 or Jones J-3401)
- 3/4" angle meter stop (Ford BA43.332W or Jones J-1963W)
- 1" angle meter stop (Ford BA43-444W or Jones J-1963W)
- 3/4" or 1" service line- polyethylene water tubing CTS, 200 psi, SDR-9, PE3408, ASTM D-2737
- 1 1/2" or 2" double strap brass saddle (Ford 202B or Jones J-979)
- 1 1/2" corporation (Ford FB1000 or Jones J-1937)
- 2" corporation (Ford FB1000 or Jones J-1937)
- 1 1/2" angle meter stop (Ford FV43-66W or Jones J-4205)
- 2" angle meter stop (Ford FV43-777W or Jones J-4205)
- 1 1/2" or 2" service line- polyethylene water tubing CTS, 200 psi, SDR-9, PE3408, ASTM D-2737
- Meter box on all Water Service Stubs

CITY OF ABILENE, TEXAS
WATER DEPARTMENT

UTILITIES STANDARDS & PLACEMENT

DATE REVISED:	DATE:	SCALE:	TOTAL NO. SHEETS 1
07/28/08	Dec, 2013	No Scale	SHEET NO. 1