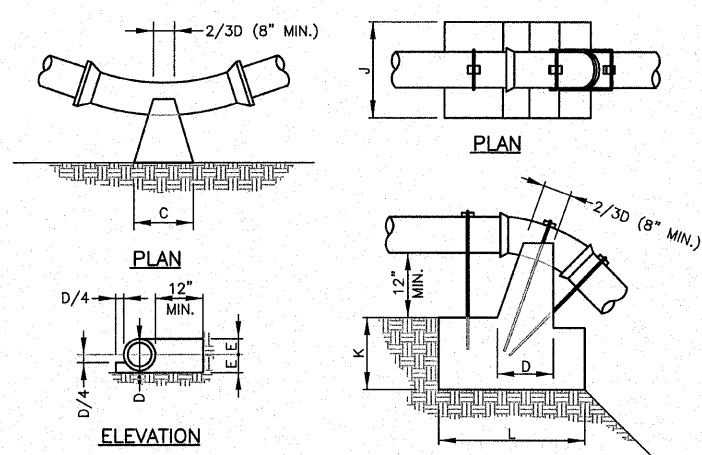


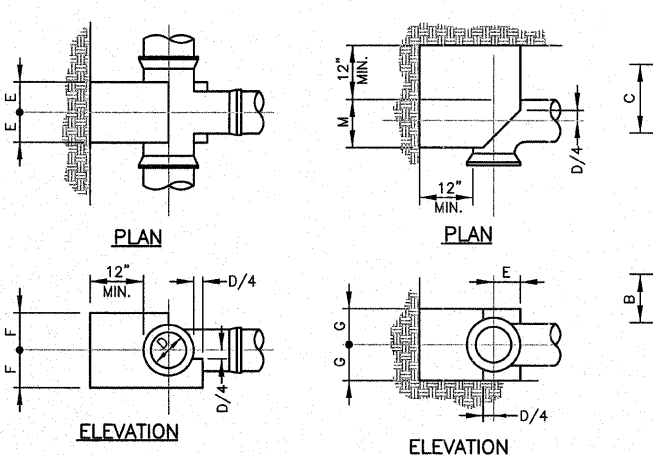
SPECIAL PROVISIONS FOR WATER MAIN CONSTRUCTION

- The proposed water main shall be constructed in accordance with the plans and "THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS," July, 2009.
- The minimum depth of bury shall be 42".
- All water mains must have a 12 gauge single strand tracer wire placed in the trench with the pipe during construction. The tracer wire shall be brought to above-grade at locations designated by the Director of Water. Locating Stations shall be furnished and installed by the Contractor. In no case shall tracer wire be more than 1,000 feet between Locating Stations. There shall be no splices between Locating Stations unless approved by the Director of Water. If allowed, the splices shall be clearly marked on the as-built plans.
- The completed water main shall be pressure tested at 100 PSI for a minimum of one (1) hour. The test shall be observed by City personnel.
- DISINFECTION shall be in accordance with "THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS," July, 2009. The location and frequency of sampling shall be shown in a sampling schedule in the construction plans. Sampling and analysis is the responsibility of the contractor. All sample results shall be submitted to the Director of Water.
- Protection of the water main from sanitary sewers, storm sewers, drains and other sources of potential contamination shall be in accordance with IEPA Rules and Regulations.
- FIRE HYDRANTS shall be installed at ten (10) feet from back of curb line or edge of surface or as directed by the Fire Official. Fire Hydrants shall also have a gate valve between it and the water main.
- IN-LINE GATE VALES shall be installed at locations determined by the Director or Water. These valves allow isolation of smaller sections of water main in the event of a main break or other emergency situations.
- BACKFILL OF WATERLINE UNDER PERMANENT TYPE SURFACES. Where the waterline is located in an area which now or will have a permanent type street or sidewalk surface, the backfill of the pipe to the level of the bottom of the permanent type surface shall be made with the materials specified for Select Granular Backfill. The remainder of the trench shall be backfilled the Aggregate Base Course Type B. The Aggregate Base Course, Type B shall be a minimum of eight (8) inch depth or as indicated on the plans.
- POLYVINYL CHLORIDE (PVC) PIPE under this provision shall be manufactured in the U.S.A. and shall be class 200 psi for water main with a Standard Dimension Ratio of 21 of the diameter specified. PVC Pipe shall meet all requirements of Type I, Grade I or Type I, Grade II of ASTM D1784 for PVC Compound, ASTM D2241.
- DUCTILE CAST IRON PIPE (DIP) under this provision shall be manufactured in the U.S.A. under the latest revision of Specification ANSI A21.51 (AWWA C151). Pipe shall be asphaltic coated and cement lined per the latest revision of ANSI A 21.4 (AWWA C104) and supplied with compression slip joints meeting the latest revision of ANSI A 21.11 (AWWA C110) unless otherwise specified on the Plans. The pipe is to be supplied in the size and class thickness as specified on the Plans.
- FITTINGS under this provision shall be manufactured in the U.S.A. and shall be ductile iron or gray iron, short body, lightweight and rated for 250 psi working pressure. All fittings shall be furnished with Mechanical Joints meeting or exceeding the latest revision of ANSI A21.11 (AWWA C110) and ANSI A21.10 (AWWA C110) unless otherwise indicated on the Material Proposal. All fittings shall be asphaltic coated and cement lined per the latest revision of ANSI A21.4 (AWWA C104).
- GATE VALVES under this provision shall be manufactured in the U.S.A. The minimum design, material and workmanship required for all gate valves shall conform to the specifications of AWWA C-500 and shall be furnished with "O" ring stem seals, non-rising stem and open left (counter clockwise). Gate valves shall be resilient seat type conforming to the standards of AWWA C-509.
- SST TAPPING SLEEVES under this provision shall be manufactured in the U.S.A. and the sleeve shall be 304 stainless steel body with a ductile iron flange that has a rubber seal. The sleeve shall have a full gridded SBR rubber gasket that wraps completely around the pipe for the full length of the sleeve. All nuts and bolts shall be 304 stainless steel. The sleeve shall have a built tolerance for variances in type and class for each pipe materials as shown on the material proposal. All Tapping Sleeves shall be furnished with a 304 stainless steel 3/4" NPT test plug for pressure testing and have a locator groove on the mating surface between tapping valve and sleeve to allow positive alignment (see specifications for Tapping Valve). Tapping sleeve shall be ROMAC, POWERSEAL, MUELLER.
- TAPPING VALVES under this provision shall be manufactured in the U.S.A. and shall be furnished with a combination Flange and Mechanical Joint for cast iron branch. These valves shall be resilient seat type conforming to AWWA C-509 except that the seat rings are to be of larger diameter to permit entry of full size tapping machine cutters. Valves are to be furnished with "O" ring stem seals, non-rising stem, are to open left (counter clockwise) and shall meet or exceed AWWA C-500 or C-509 Standards. Valves shall have a raised lip on the surface between valve and tapping sleeve (see specifications for SST TAPPING SLEEVE) which ensures positive alignment.
- VALVE BOXES under this provision shall be manufactured in the U.S.A. and shall be cast iron of suitable pattern for use with the supplied valves. Valve boxes shall be screw adjustable to lengths specified in Plans and have covers of at least six inch diameter. The word "WATER" shall be cast on the lid of each box.
- CUTTING-IN VALVES AND SLEEVES shall conform to Clow F-5067 and F-1220 or approved equal.
- STEEL CASING PIPE supplied under these provisions shall be 20'+1/4" in length unless otherwise specified, bituminous coated and meet all requirements of Specification ASTM A53, Grade B, for size and wall thickness as specified on the Plans.
- ELASTOMERIC SEALS (GASKETS) used for push on joints shall comply with ASTM Standard F477.
- FIRE HYDRANTS shall be Mueller A-423, 5 1/4" main valve opening, three way with 2 hose nozzles and 1 pumper nozzle 6" shoe, open right, Chicago Thread on nozzles, yellow with the bury as specified on the Schedule of Prices. These specifications have been adopted by the City of Effingham Water and Fire Department as the Standard Fire Hydrant for the City of Effingham and alternates will not be considered.
- The Contractor shall install restrained joints on all fittings. The restrained joint system shall consist of a UNI-FLANO2 Series 1500s "circle lock" for Ductile Iron and PVC pipe or equal. The retainer shall supply full circle contact and support of the pipe wall. The retainer shall also utilize screws that are designed to twist off at the correct installation torque leaving a hex head for future removal.
- All testing (pressure and sampling) shall be included in the cost of Water Main.



THRUST BLOCK FOR HORIZONTAL BENDS

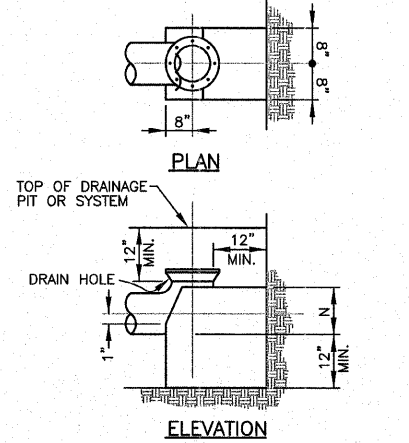
THRUST BLOCK FOR VERTICAL BENDS



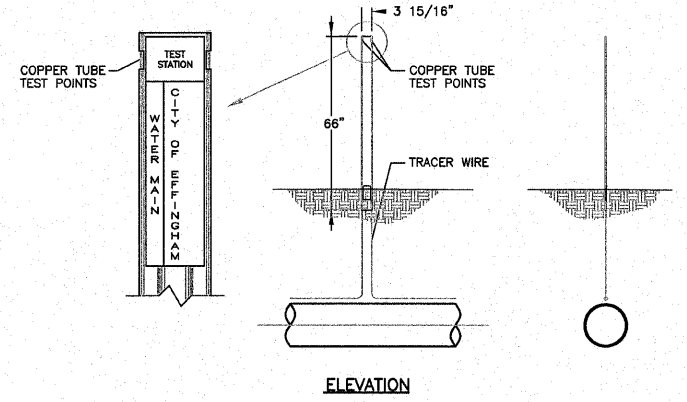
THRUST BLOCK FOR TEES

THRUST BLOCK FOR HORIZONTAL ELBOWS

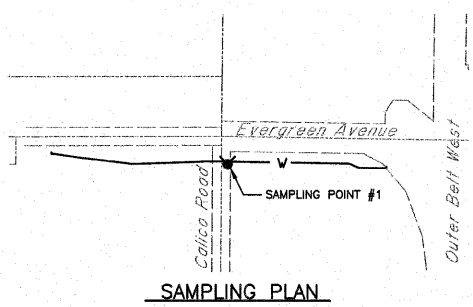
DIMENSION TABLE										
D	B	C	E	F	G	J	K	L	M	N
4'-8 1/2"	11"	1'-5"	8"	8"	8"	2'-6"	2'-6"	3'-6"	10"	10"
8"	1'-2"	1'-8"	9"	10"	9"	3'-0"	2'-9"	4'-0"	12"	12"
10"	1'-10"	2'-10"	1'-3"	1'-4"	1'-3"	4'-10"	4'-6"	6'-6"	1'-8"	1'-8"
12"	2'-0"	3'-0"	1'-6"	1'-8"	1'-8"	N/A	N/A	N/A	2'-0"	2'-0"



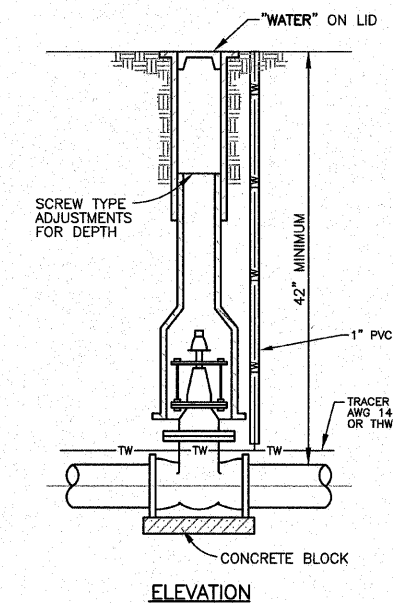
THRUST BLOCK AND DRAINAGE FOR FLUSHING/FIRE HYDRANTS



TRACER WIRE TEST STATION

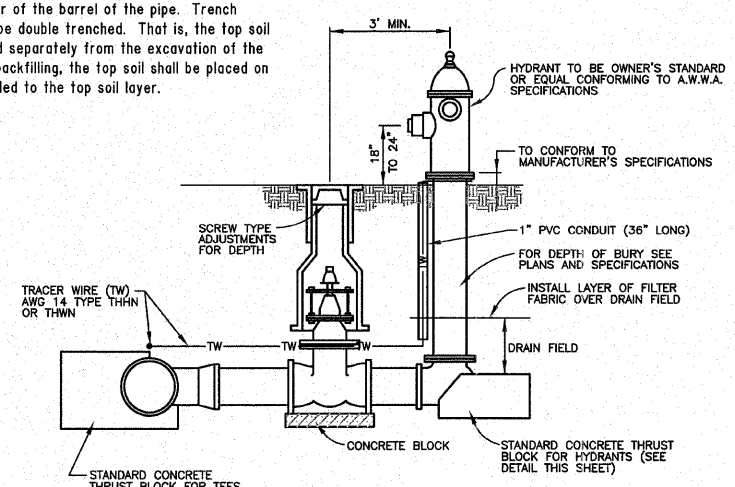


SAMPLING PLAN

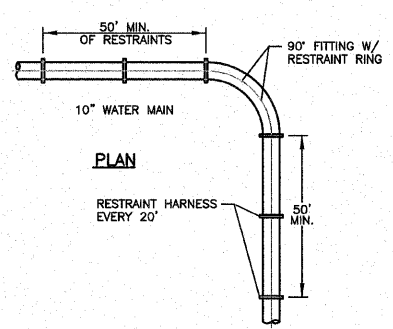


VALVE BOX INSTALLATION TO BE INSTALLED AT ROAD R.O.W. WHERE POSSIBLE

TRENCH WIDTH
The trench width at the ground surface may vary with, and depend upon, its depth, the nature of the ground encountered, and surface structures to be preserved. The minimum clear width of unshelved or shelved trench measured at the horizontal diameter of the pipe shall be six inches (6") greater than the outside diameter of the barrel of the pipe. Trench widths exceeding 18 inches shall be double trenched. That is, the top soil shall be excavated and stockpiled separately from the excavation of the remainder of the trench. When backfilling, the top soil shall be placed on top after the trench has been filled to the top soil layer.



FLUSHING/FIRE HYDRANT WITH AUXILIARY VALVE SETTING



BELL RESTRAINT HARNESS FOR ALL FITTINGS FOR PVC & DIP

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SPECIAL PROVISIONS AND STANDARD WATER MAIN DETAILS
EVERGREEN AVENUE
EFFINGHAM, ILLINOIS