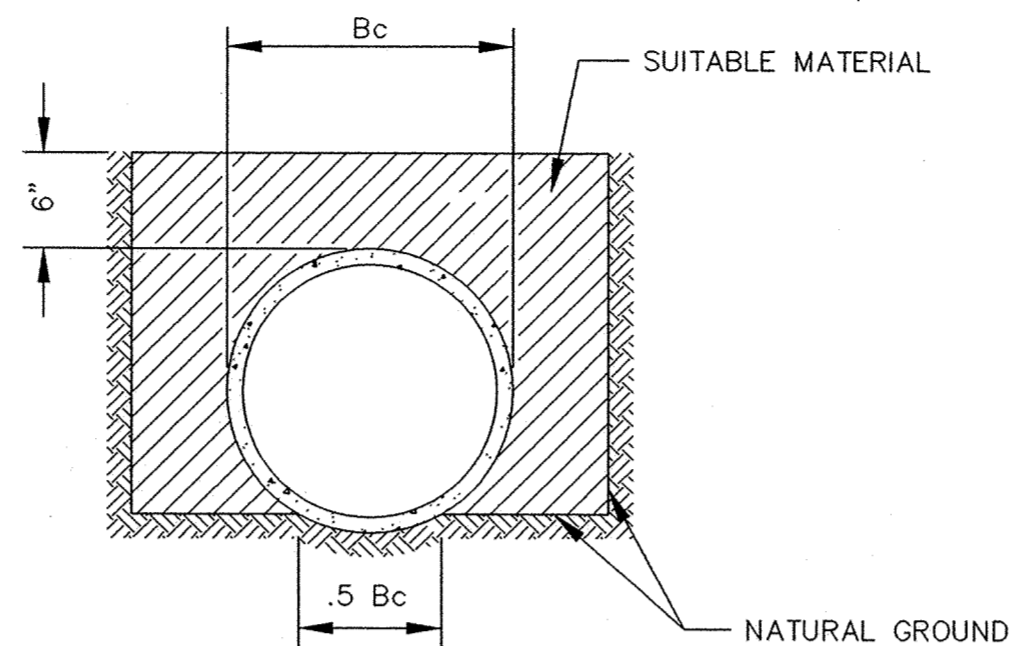


NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.

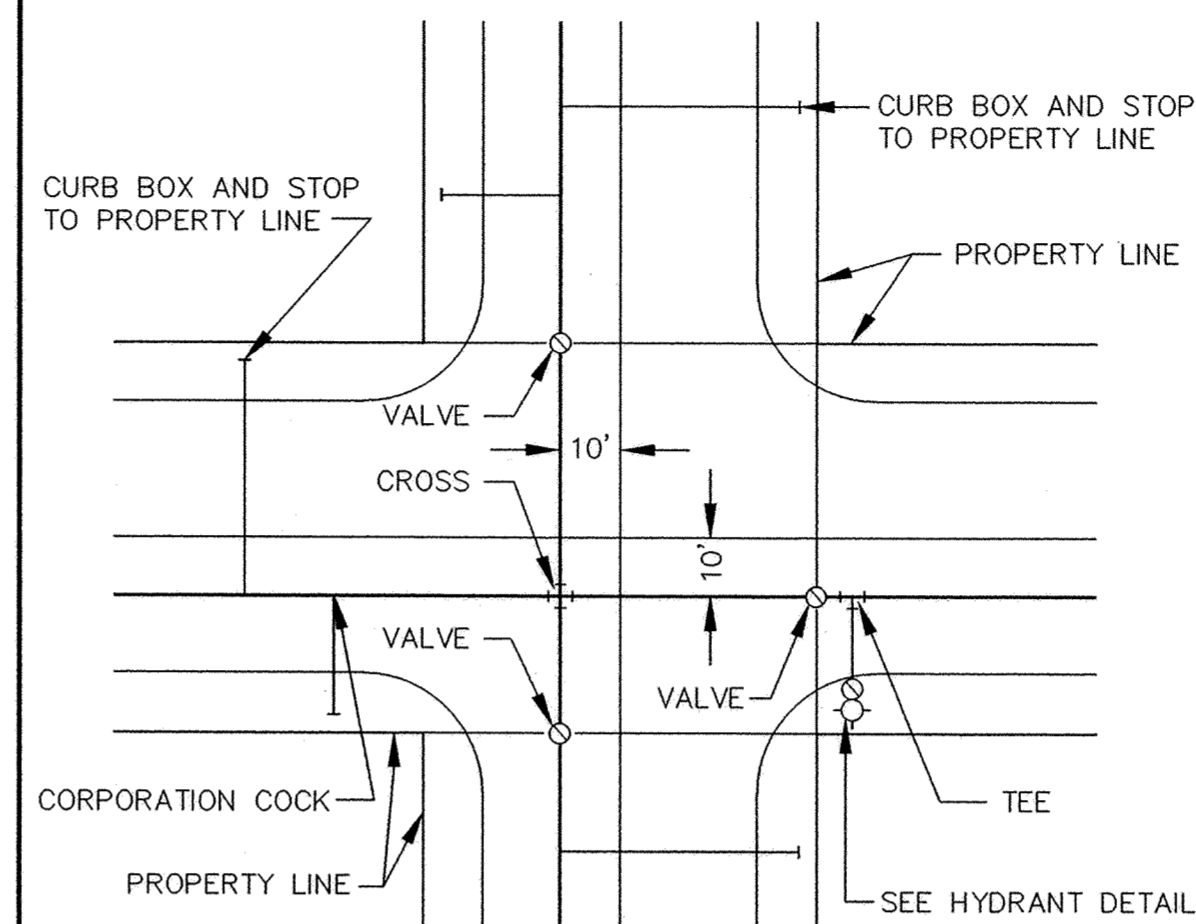
CLASS B PIPE BEDDING



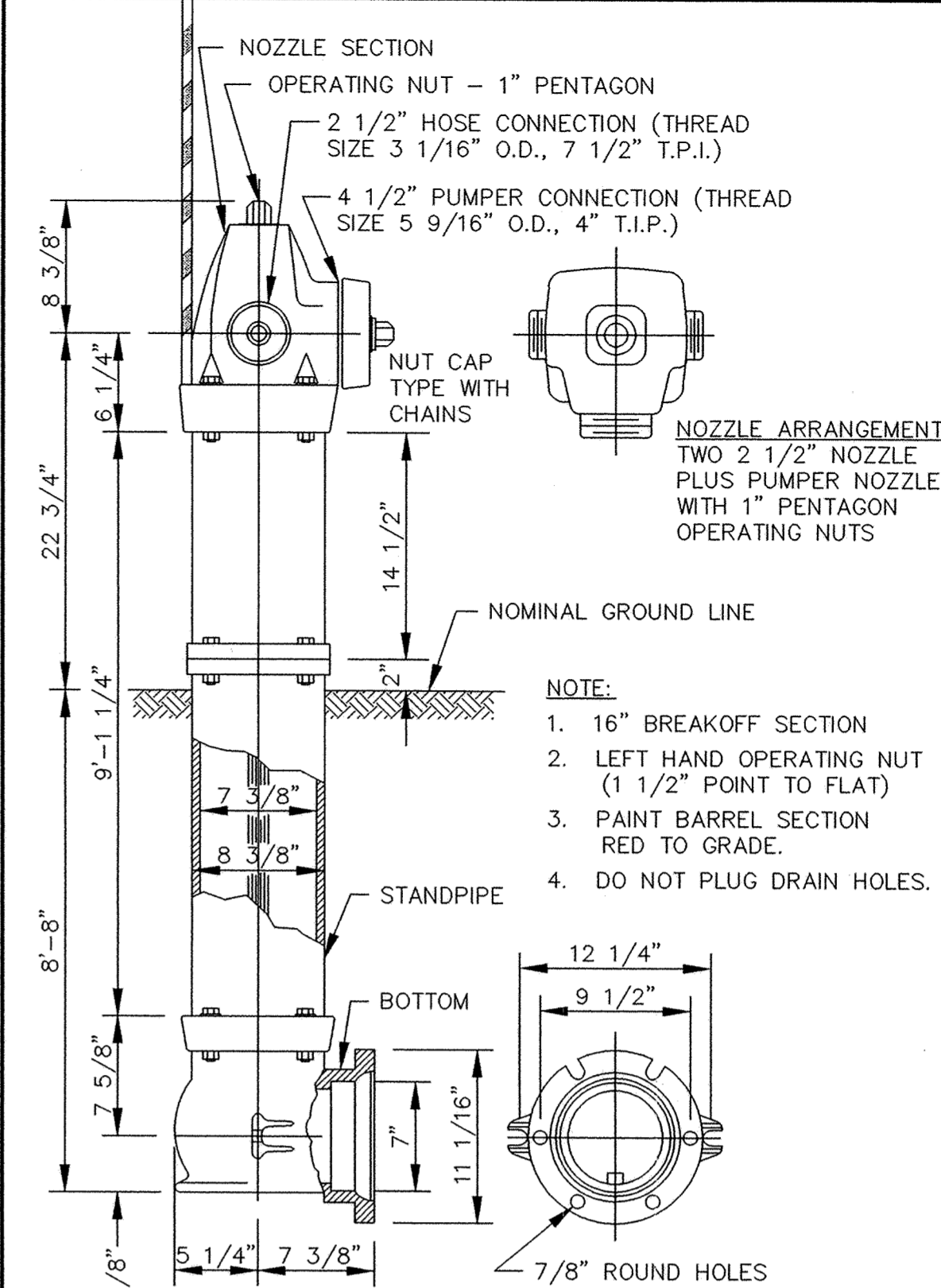
THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO FIT THE PIPE BARREL FOR AT LEAST 50% OF THE OUTSIDE DIAMETER. THE REMAINDER OF THE PIPE IS SURROUNDED TO A HEIGHT OF AT LEAST 6" ABOVE ITS TOP BY SELECT FILL MATERIALS, PLACED BY HAND TOOLS AND COMPACTED TO COMPLETELY FILL ALL SPACES UNDER AND ADJACENT TO THE PIPE.

NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.

CLASS C PIPE BEDDING



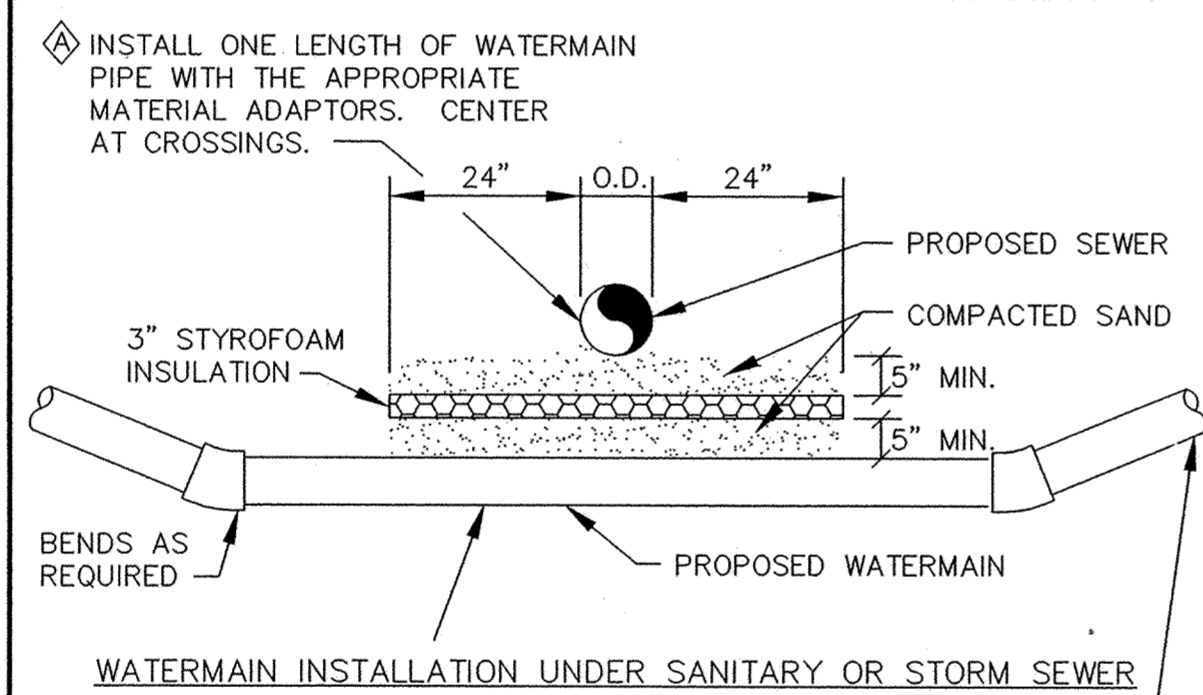
TYPICAL WATER LAYOUT



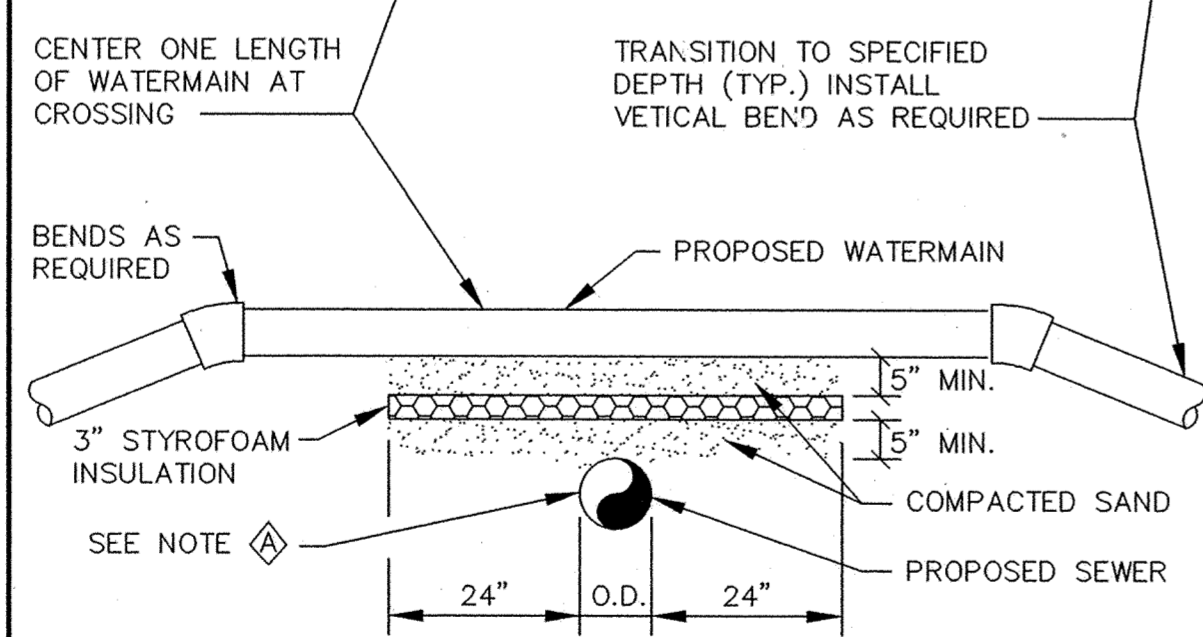
NOTE:
 1. 16" BREAKOFF SECTION
 2. LEFT HAND OPERATING NUT (1 1/2" POINT TO FLAT)
 3. PAINT BARREL SECTION RED TO GRADE.
 4. DO NOT PLUG DRAIN HOLES.

NOTE: HYDRANT LOCATING DEVICES REQUIRED - SEE SPECIFICATIONS.

PACER HYDRANT DETAIL



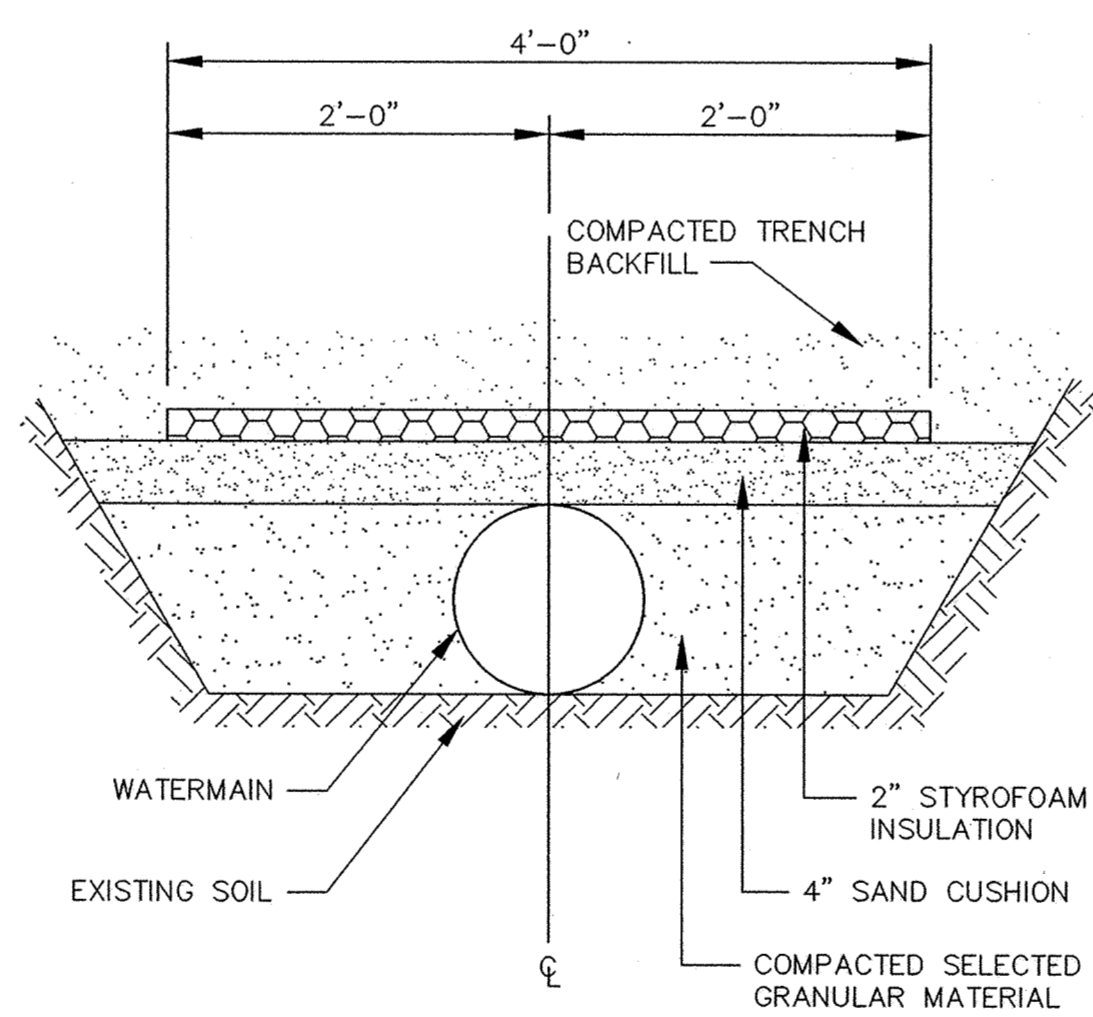
WATERMAIN INSTALLATION UNDER SANITARY OR STORM SEWER



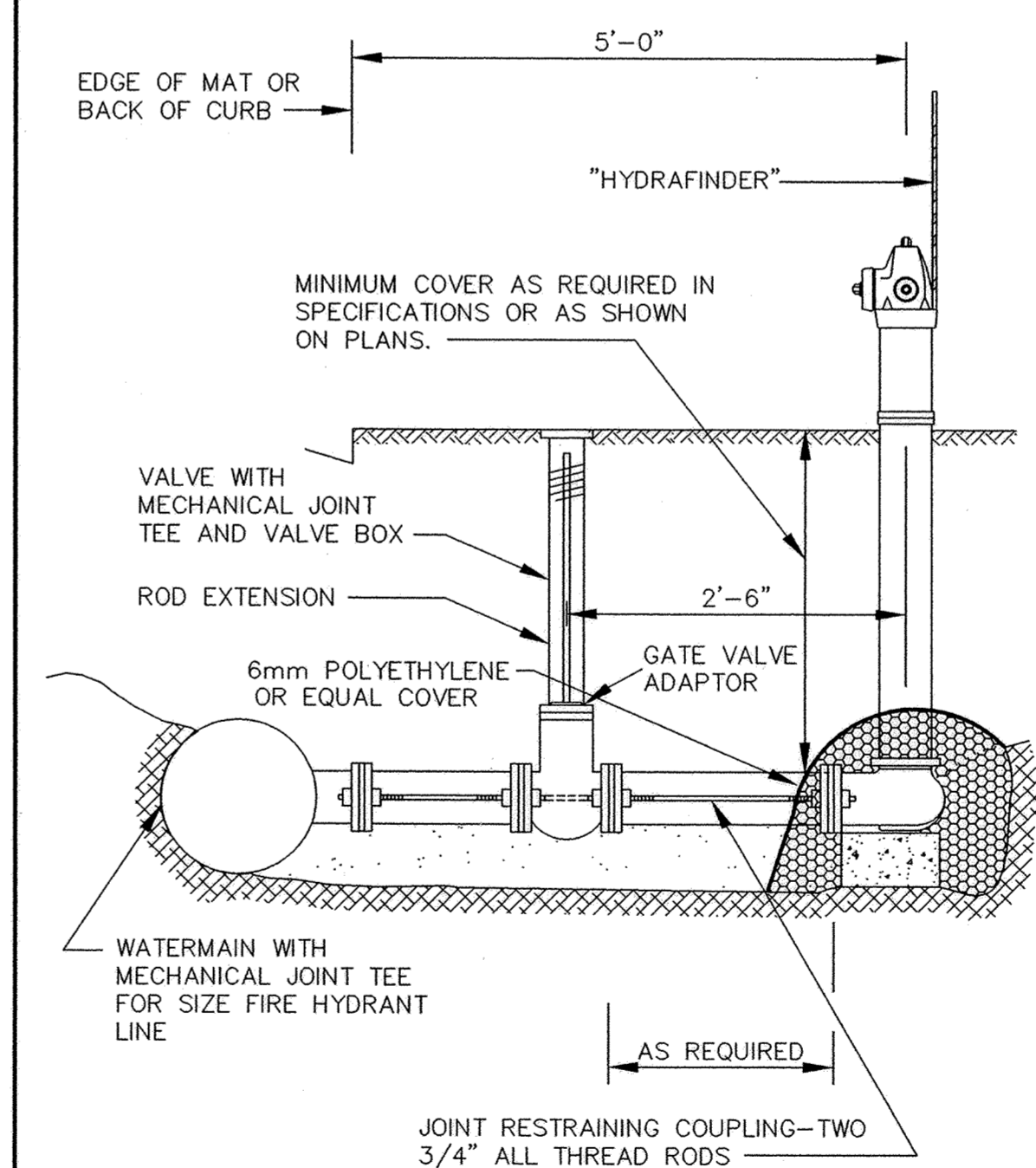
WATERMAIN INSTALLATION OVER SANITARY OR STORM SEWER

NOTES:
 1. WHEN WATERMAIN AND SANITARY SEWER CROSSINGS HAVE LESS THAN 18" VERTICAL SEPARATION, INSTALL CROSSING AS SHOWN.
 2. WHEN WATERMAIN COVER IS LESS THAN 7.5 FEET, INSTALL WATERMAIN UNDER SANITARY SEWER.

WATERMAIN CROSSING

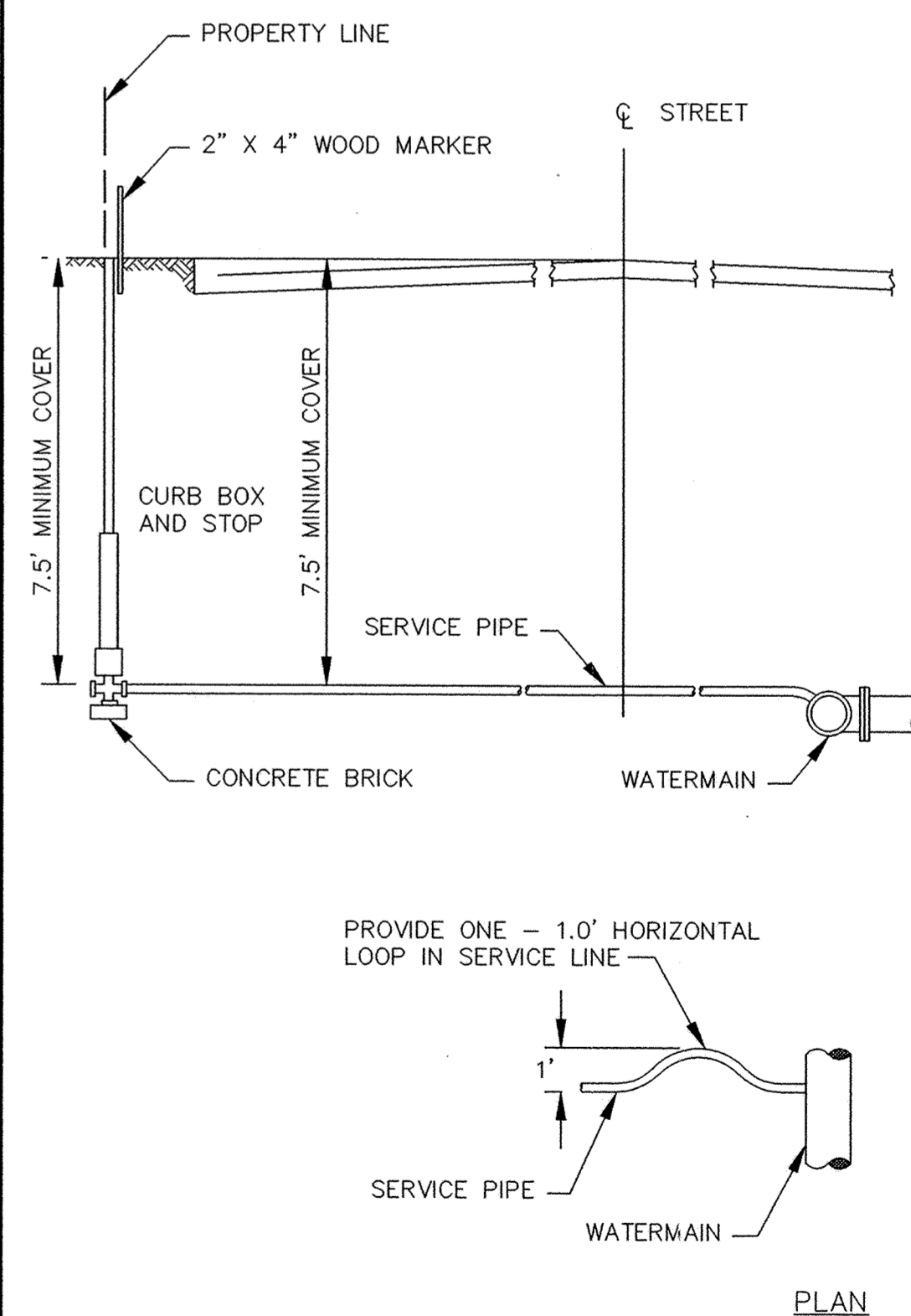


PIPE INSULATION DETAIL



RODDING DETAIL

NOTE: ALL HYDRANT LEADS SHALL BE RESTRAINED FROM THE MAIN TO THE HYDRANT THROUGH THE USE OF THREADED RODS OR MEGALUGS AS RESTRAINTS IN ACCORDANCE WITH THE STANDARD DETAIL PLATES.



TYPICAL SERVICE DETAIL

CONTRACTOR: RYAN CONTRACTORS
RECORD DRAWING
 CONFORMING TO CONSTRUCTION RECORDS.
 BY AL SPILLES DATE 01/30/04
 WESTWOOD PROFESSIONAL SERVICES, INC.

Westwood Professional Services, Inc.
 7599 Anagram Drive
 Eden Prairie, MN 55344
 Phone: 952/937-5150 Fax: 952/937-5822

CENTEX HOMES

DESIGNED BY: --- DRAWN BY: ---
 APPROVED: --- JOB NUMBER ---
 CAD DATE: April 14, 1999 11:14:59 a.m.
 CAD FILE: 230000m\ER-SM.DWG

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 DATE: _____ REG. NO. _____

NO.	DATE	BY	REVISION DESCRIPTION
1	01/30/04	AS	RECORD DRAWING

1326 ENERGY PARK DRIVE
 ST. PAUL, MINNESOTA 55108
 (612) 644-4389
Howard R. Green Company
 CONSULTING ENGINEERS

CITY OF ELK RIVER
ELK RIVER STATION - PHASE I
WATER MAIN DETAILS

SHEET NO.
14
 OF
16

ERSTA1.03