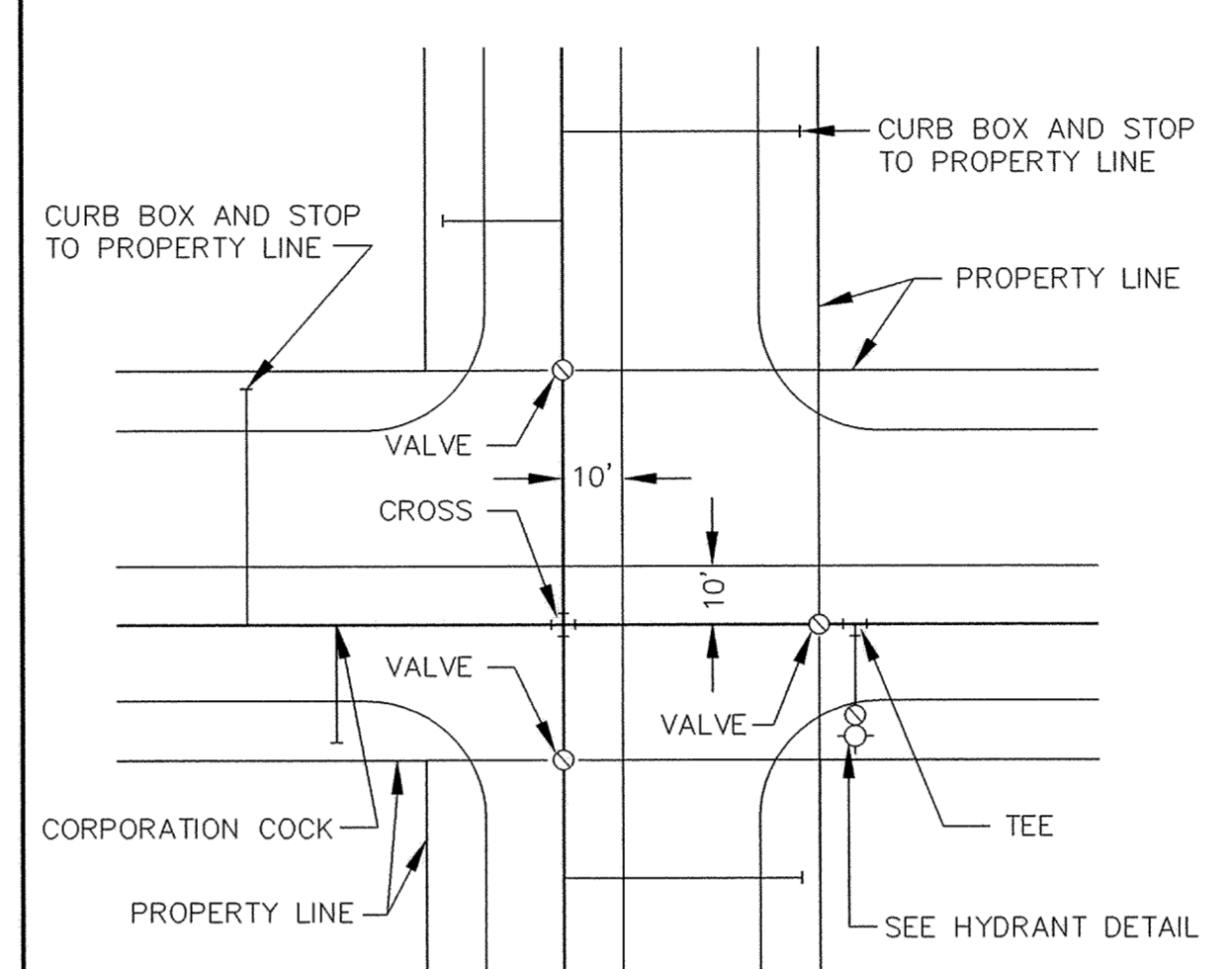
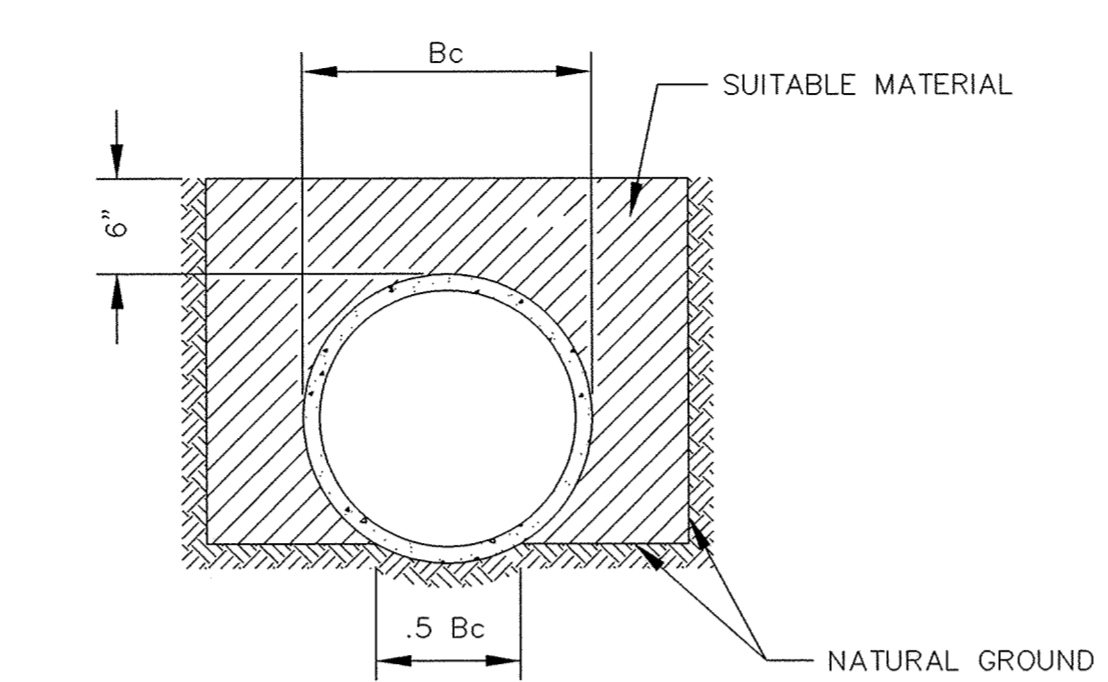


PACER HYDRANT DETAIL



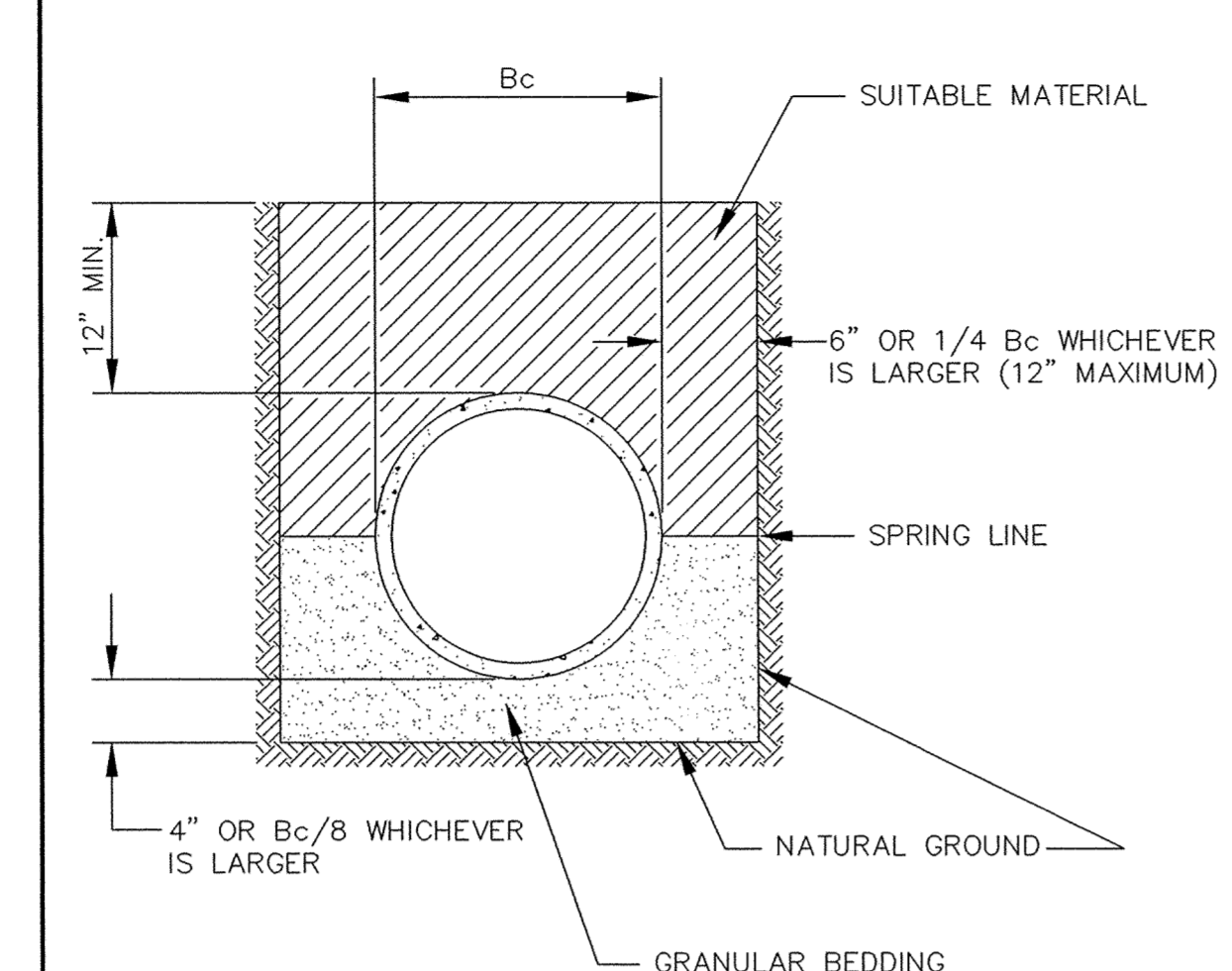
TYPICAL WATER LAYOUT



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.

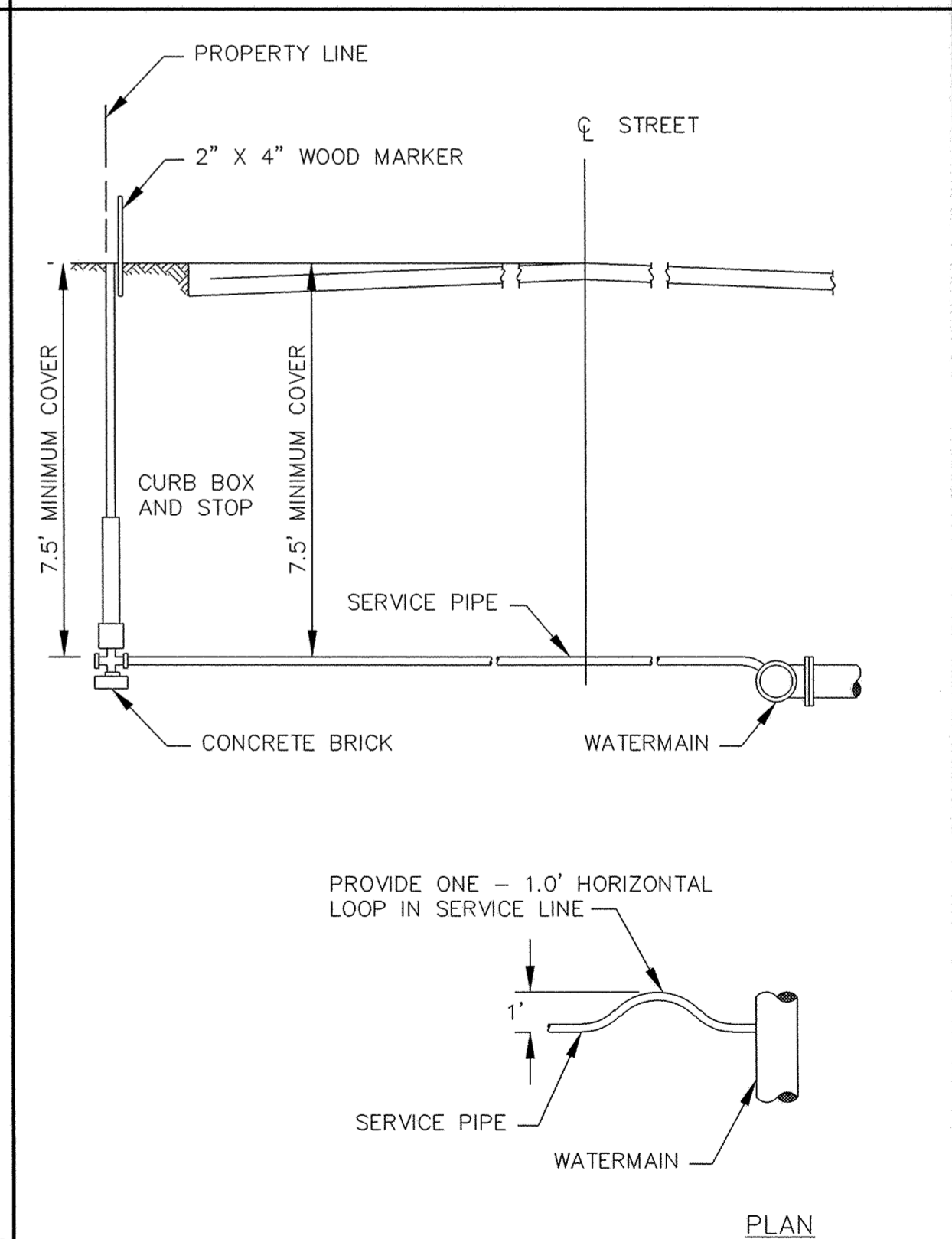
NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.

CLASS C PIPE BEDDING

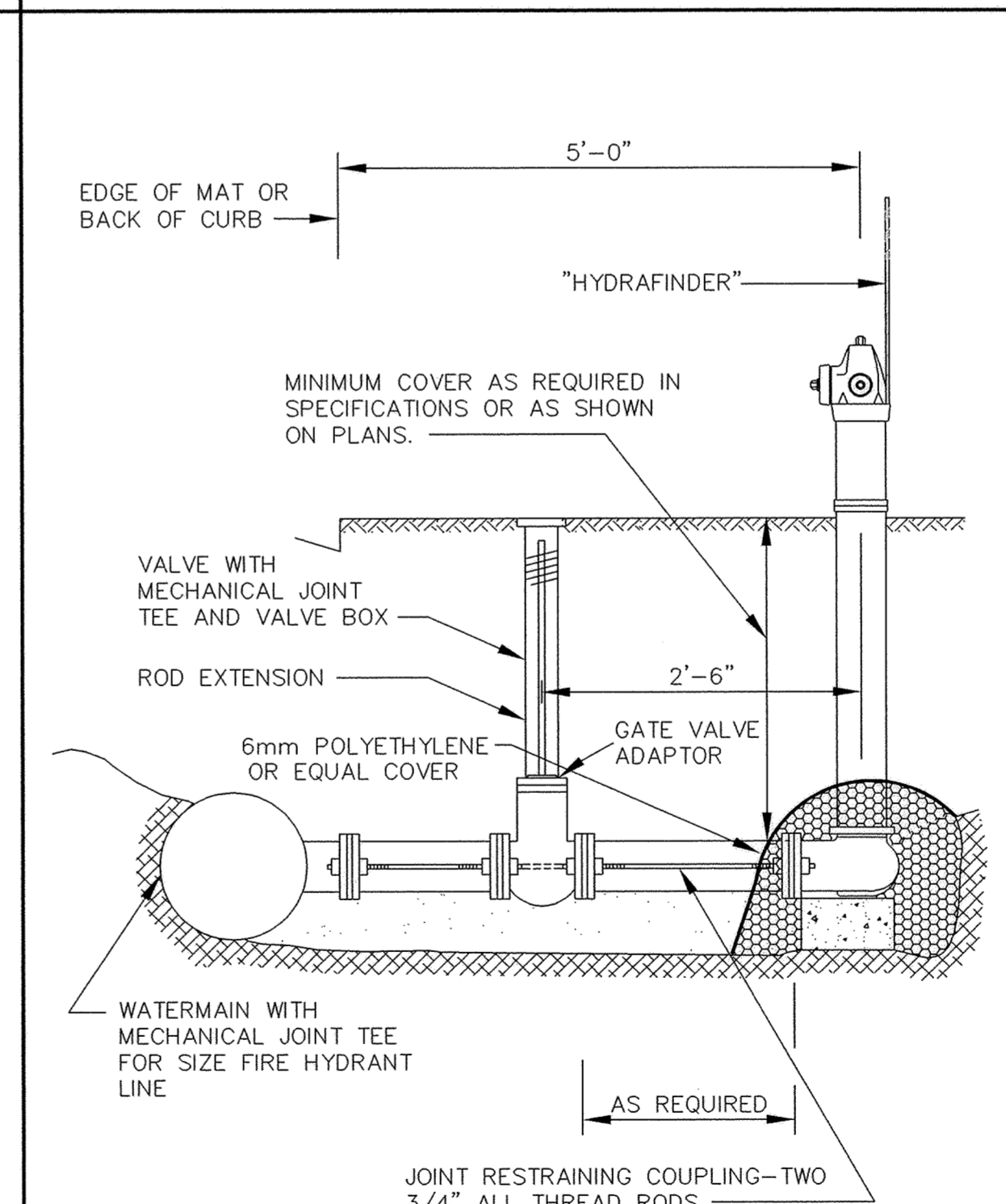


NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.

CLASS B PIPE BEDDING

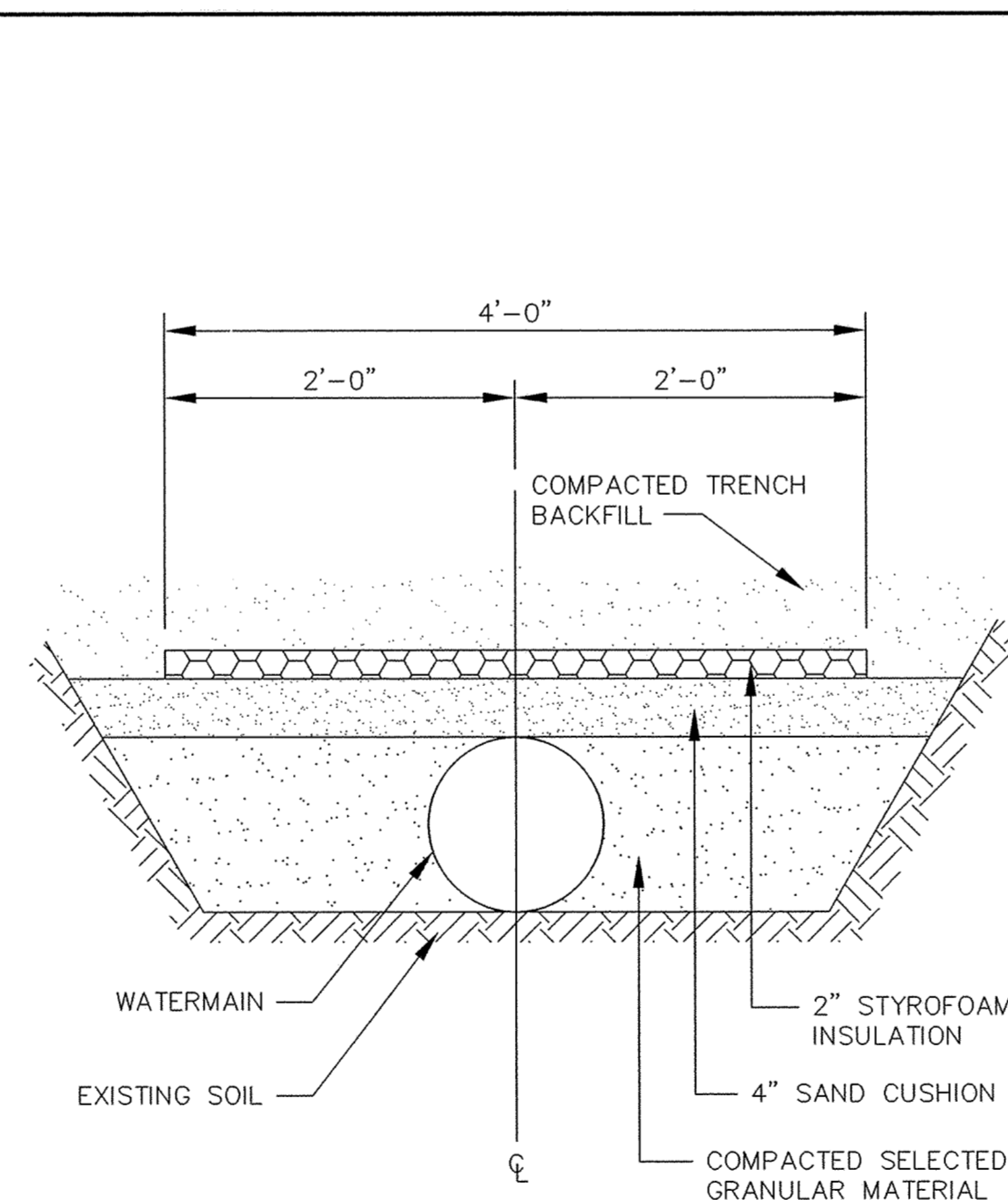


TYPICAL SERVICE DETAIL

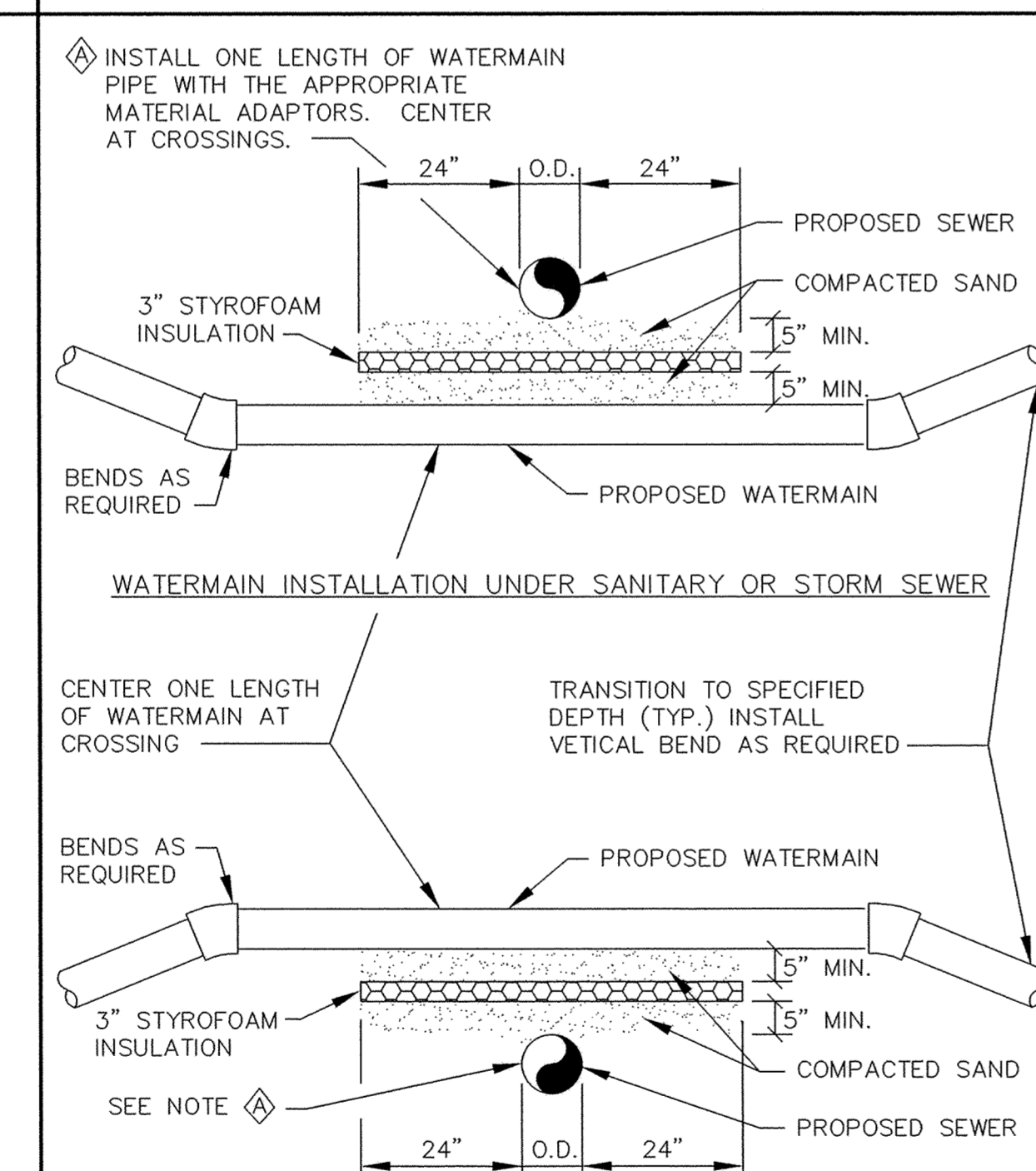


RODDING DETAIL

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.



PIPE INSULATION DETAIL



WATERMAIN CROSSING

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.

1326 ENERGY PARK DRIVE
ST. PAUL, MINNESOTA 55108
(612) 644-4389

Howard R. Green Company
CONSULTING ENGINEERS

CITY OF ELK RIVER
TROTT BROOK CROSSING - PHASE ONE
WATER MAIN DETAILS

SHEET NO.
15
OF
18

E-3 20011101DE@3.DWG

P:\20011101\dwg\RECORD\20011101DE@3.dwg 01/17/2005 10:21:59 AM CST

CONTRACTOR: RYAN CONTRACTING CO.
RECORD DRAWING
CONFORMING TO CONSTRUCTION RECORDS.
BY AL SPILLES DATE 01/21/05
WESTWOOD PROFESSIONAL SERVICES

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

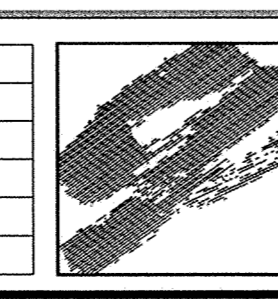
PREPARED FOR:
Foray Real Estate & Construction
9350 County Road 19
Corcoran, Minnesota 55357

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	01/21/05	AS	RECORD DRAWING



Howard R. Green Company
CONSULTING ENGINEERS