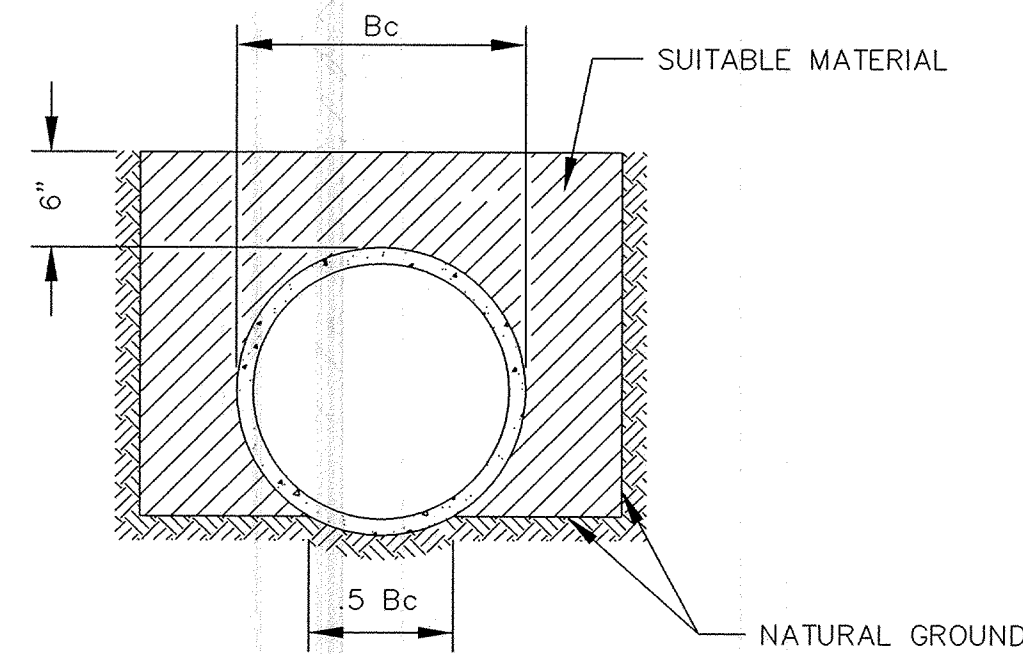
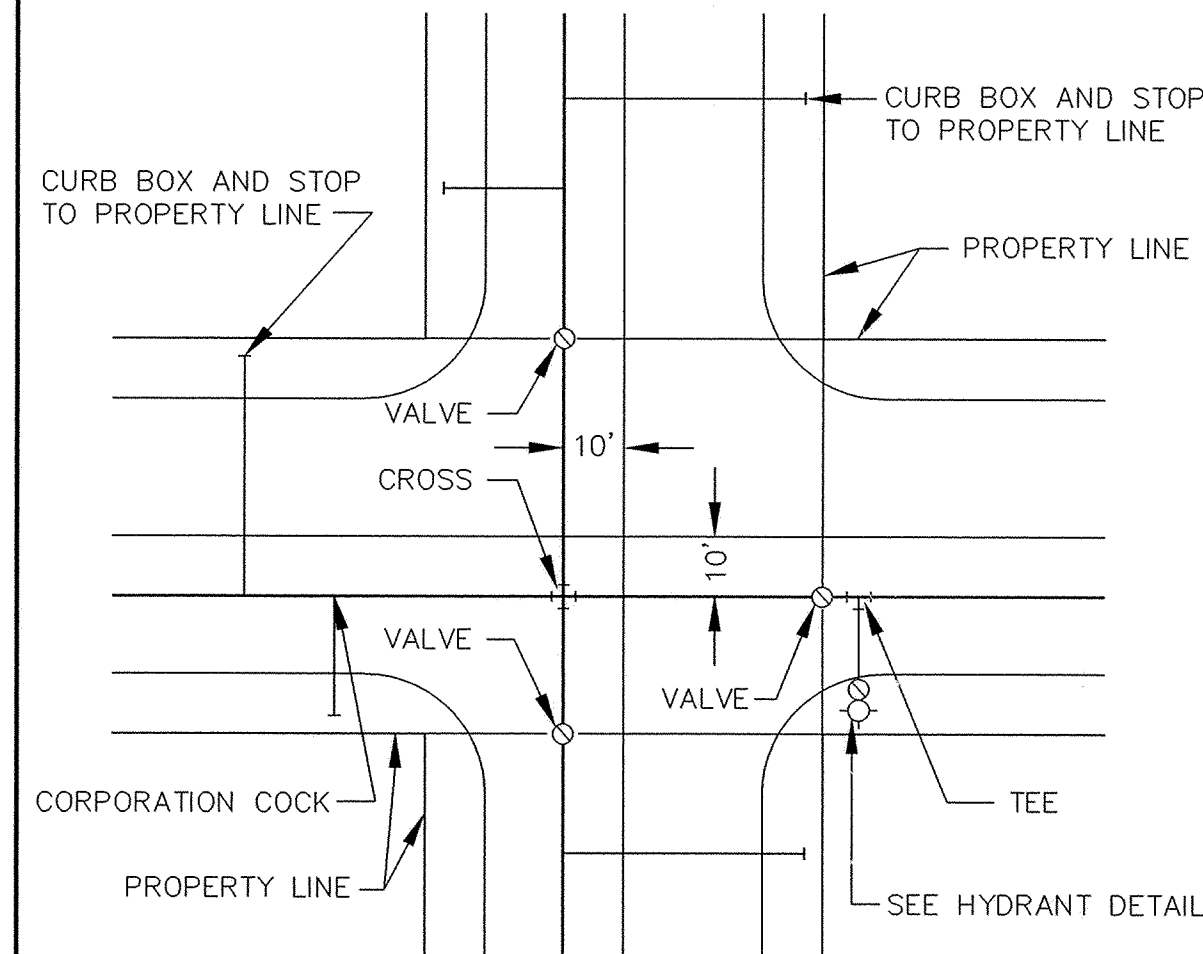


NOTE: ALL COSTS OF EXCAVATION BELOW GRADE
AND PLACEMENT OF GRANULAR BEDDING
SHALL BE INCLUDED IN THE BID PRICES
FOR PIPE ITEMS.

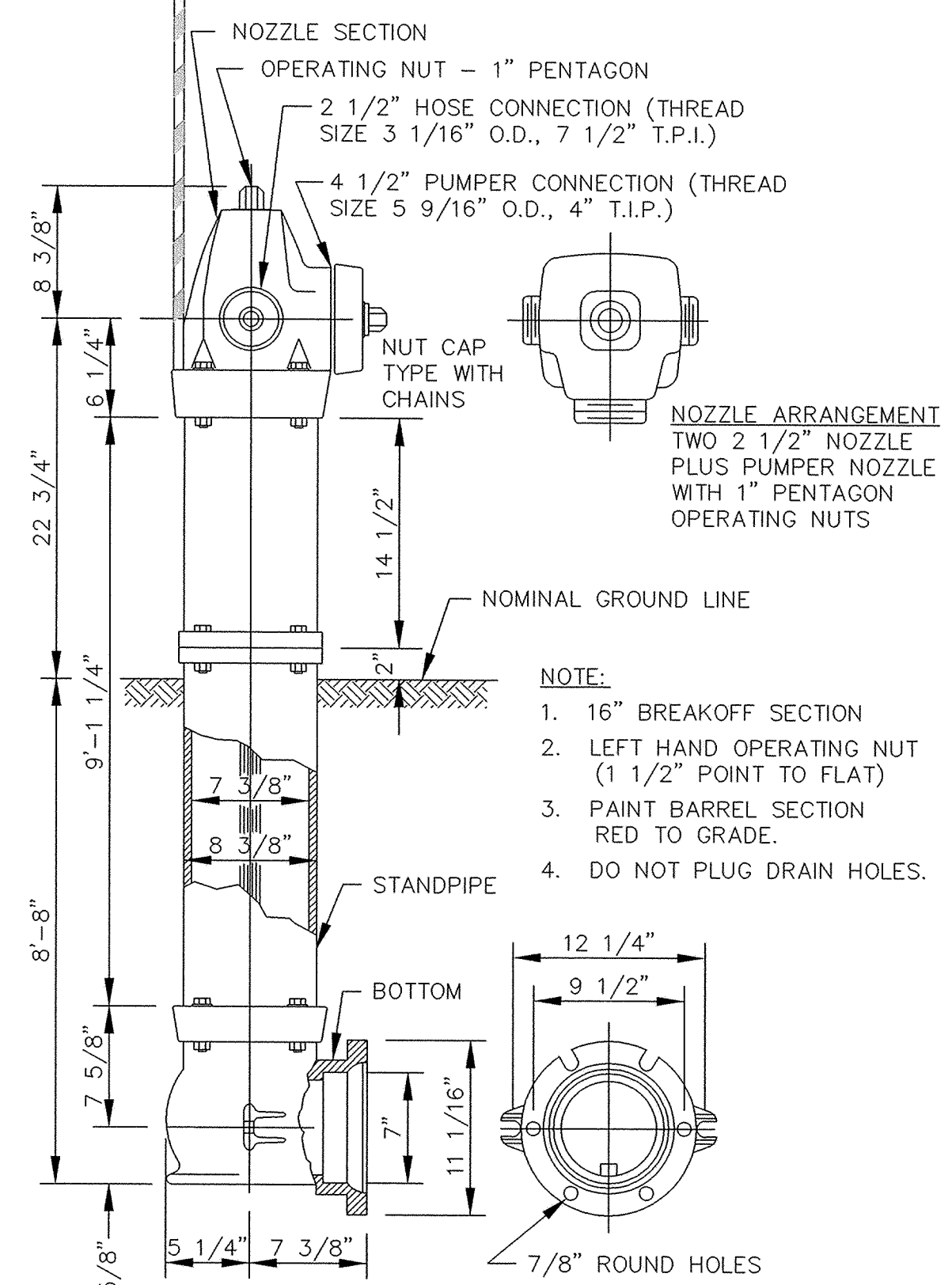


THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO FIT THE PIPE BARREL FOR AT LEAST 50% OF THE OUTSIDE DIAMETER. THE REMAINDER OF THE PIPE IS SURROUNDED TO A HEIGHT OF AT LEAST 6" ABOVE ITS TOP BY SELECT FILL MATERIALS, PLACED BY HAND TOOLS AND COMPACTED TO COMPLETELY FILL ALL SPACES UNDER AND ADJACENT TO THE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

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

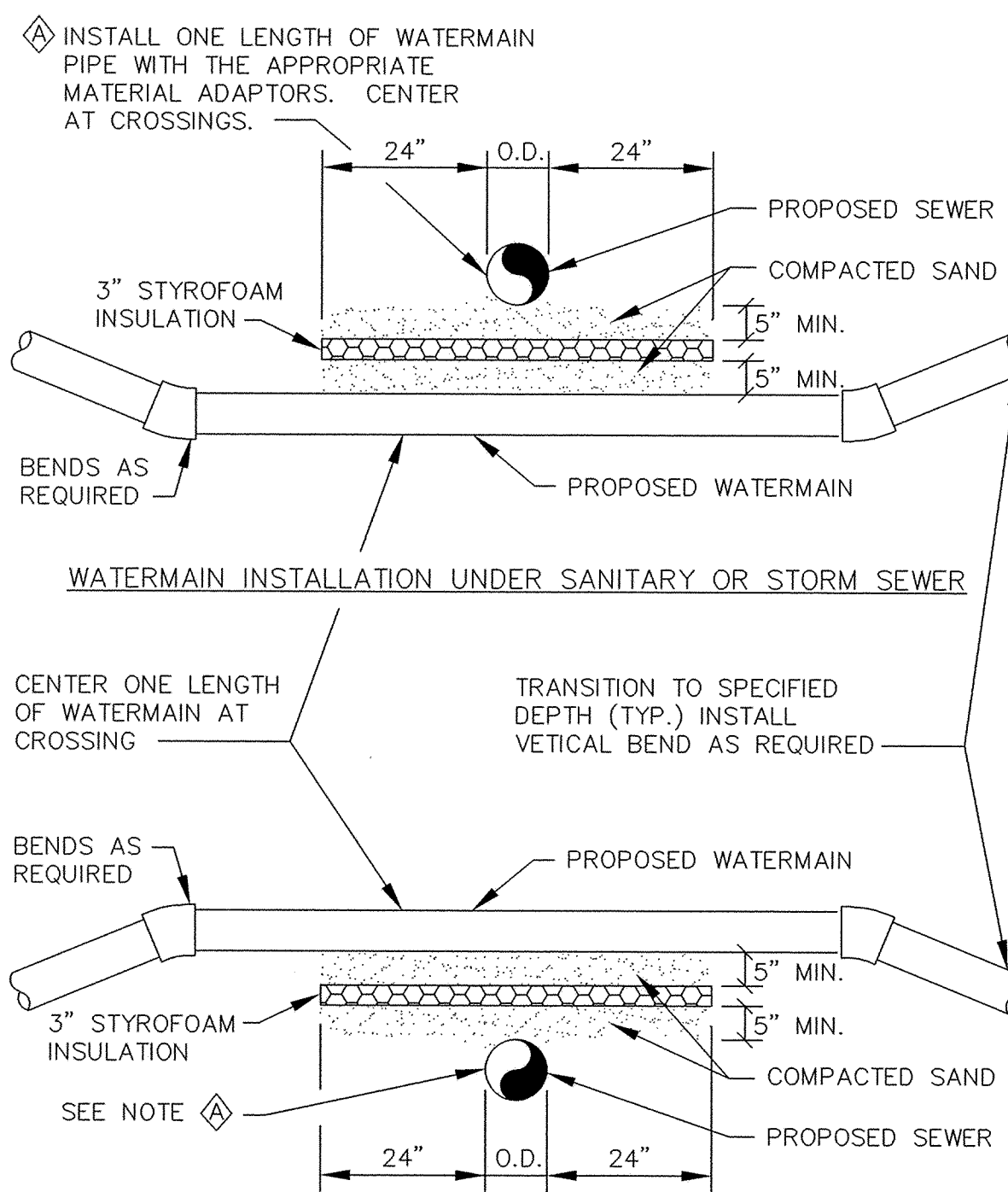


TYPICAL WATER LAYOUT



NOTE: HYDRANT LOCATING DEVICES REQUIRED – SEE SPECIFICATIONS.

PACER HYDRANT DETAIL

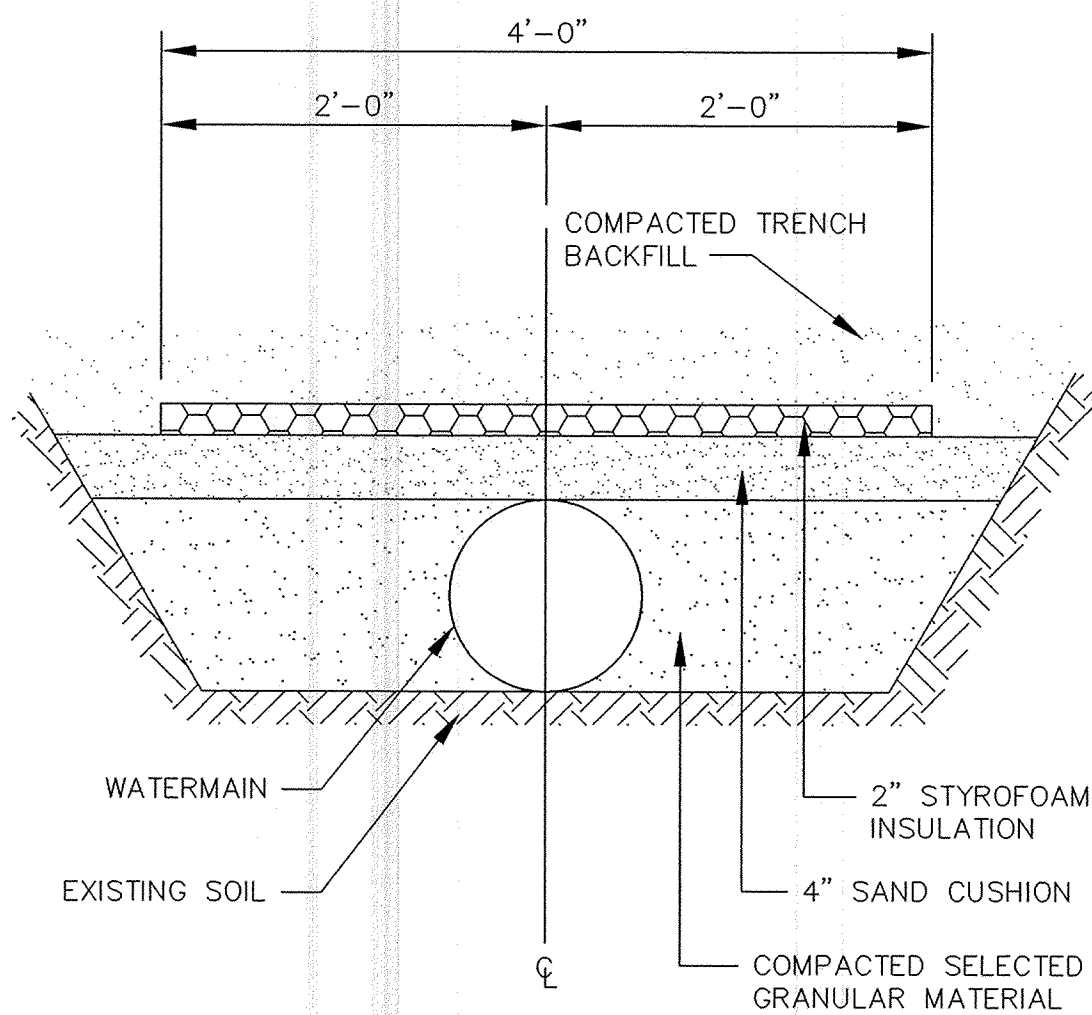


WATERMAIN INSTALLATION OVER SANITARY OR STORM SEWER

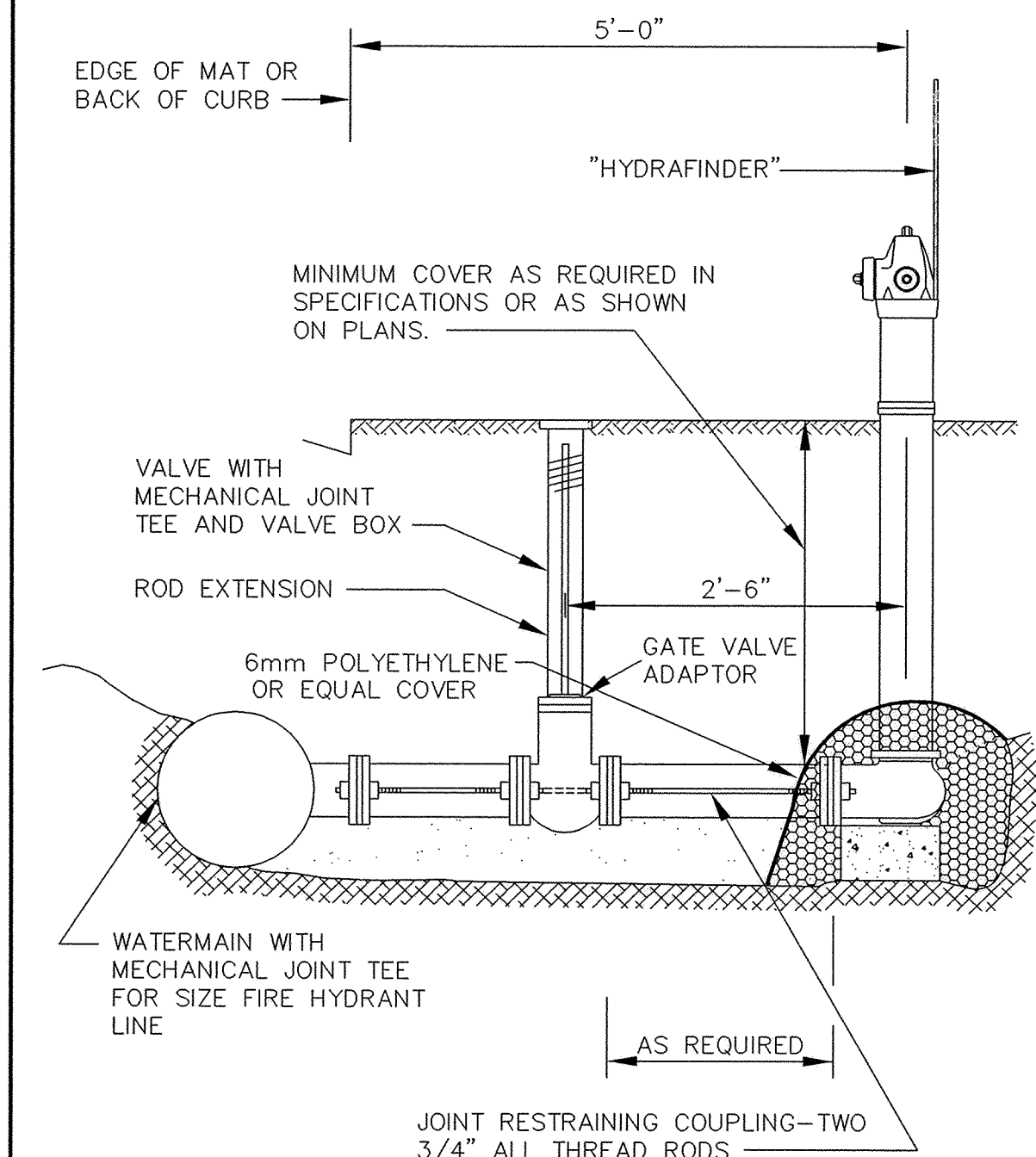
NOTES:

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

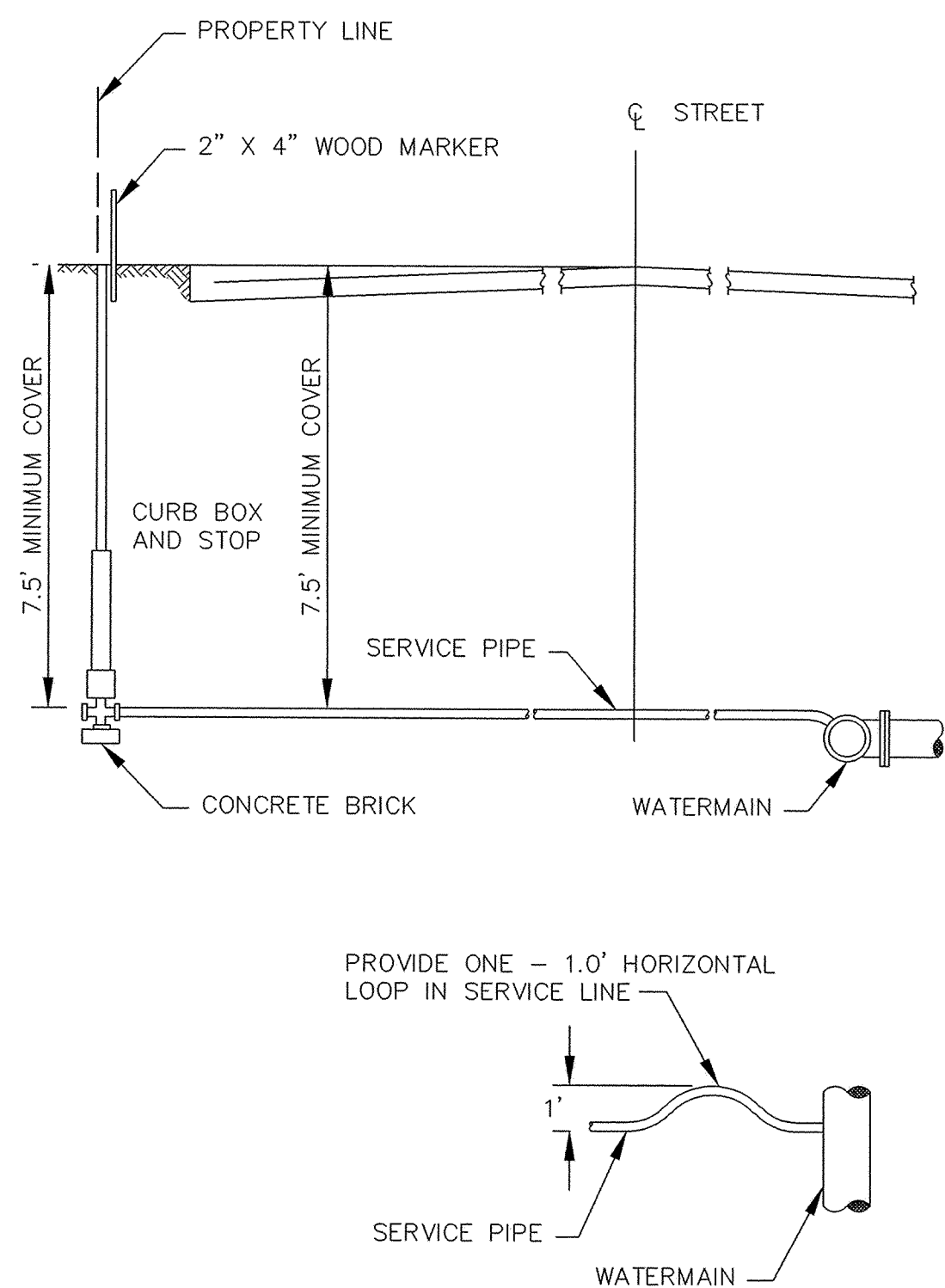


PIPE INSULATION DETAIL



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.

RODDING DETAIL



CONTRACTOR: RYAN CONTRACTING CO.

RECORD DRAWING
CONFORMING TO CONSTRUCTION RECORDS.
BY AL SPILLES DATE 05/04/05
WESTWOOD PROFESSIONAL SERVICES

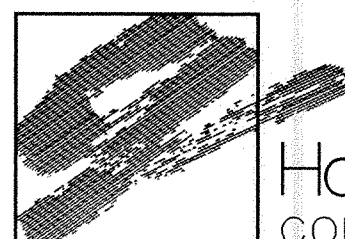
TYPICAL SERVICE DETAIL

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	05/04/05	AS	RECORD DRAWING



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

Howard R. Green Company
CONSULTING ENGINEERS

CITY OF ELK RIVER
TROTT BROOK FARMS SEVENTH ADDITION
WATER MAIN DETAILS

SHEET NO.
10
OF
12