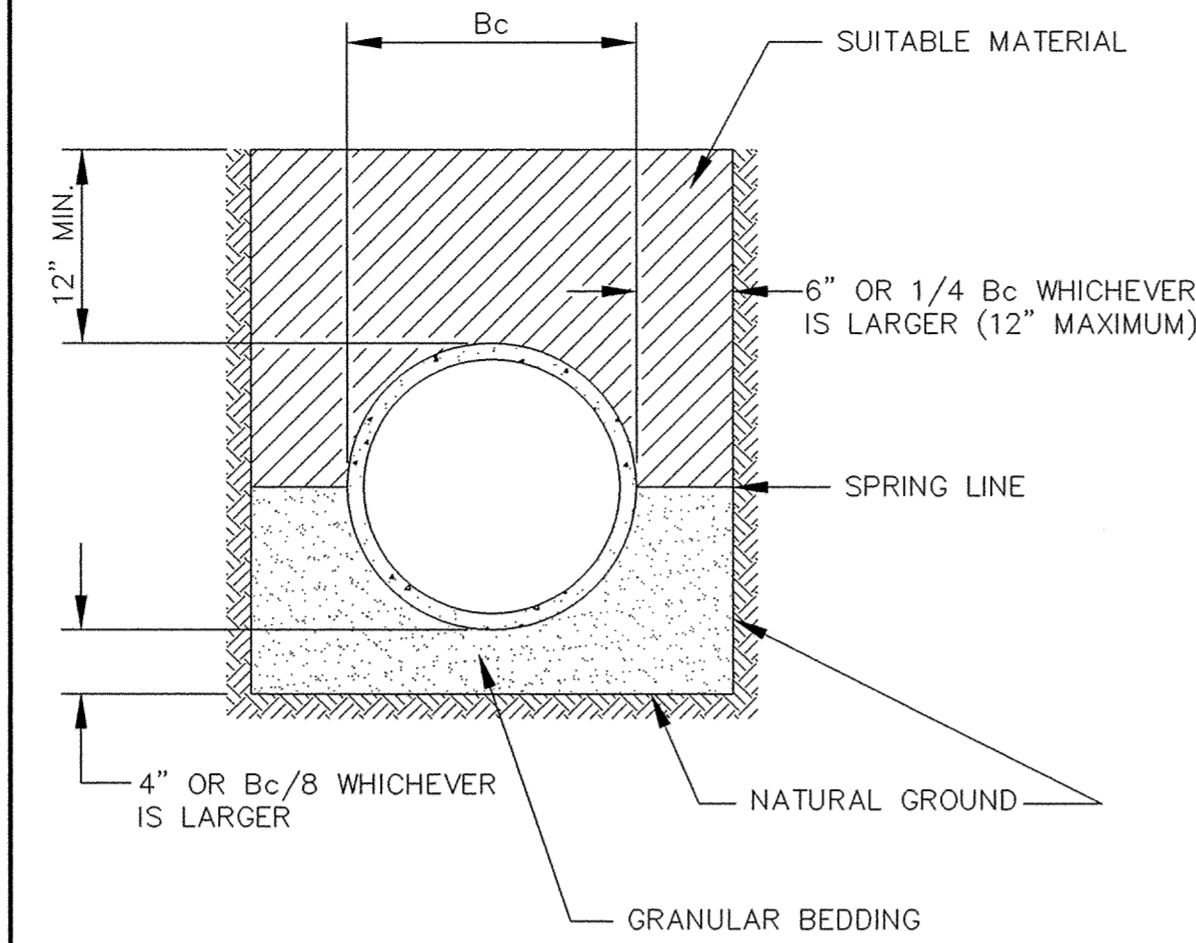
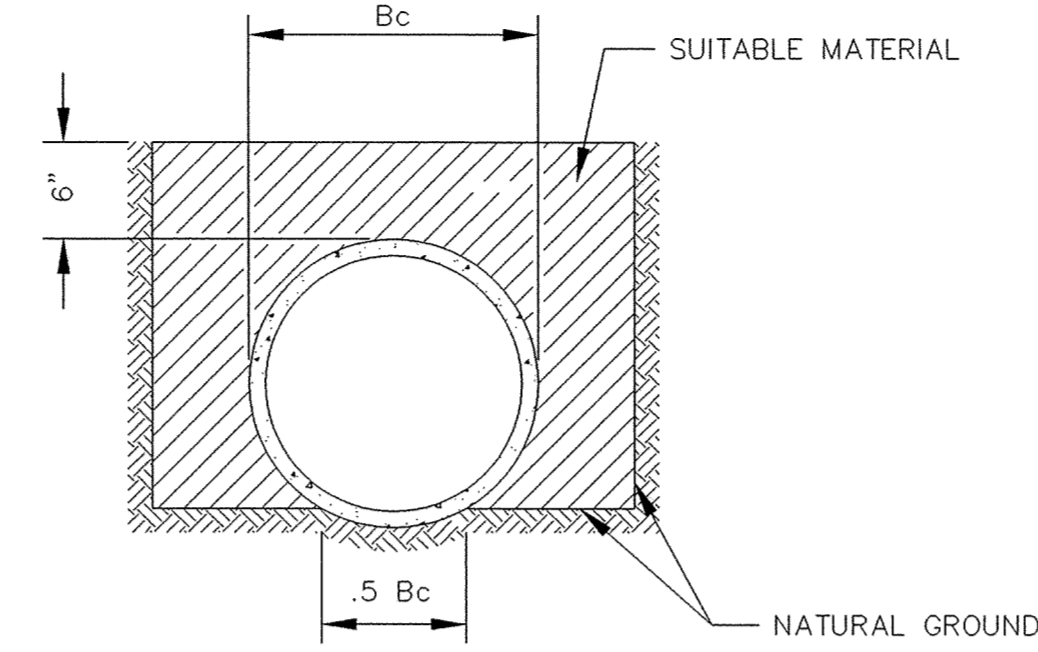


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NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.

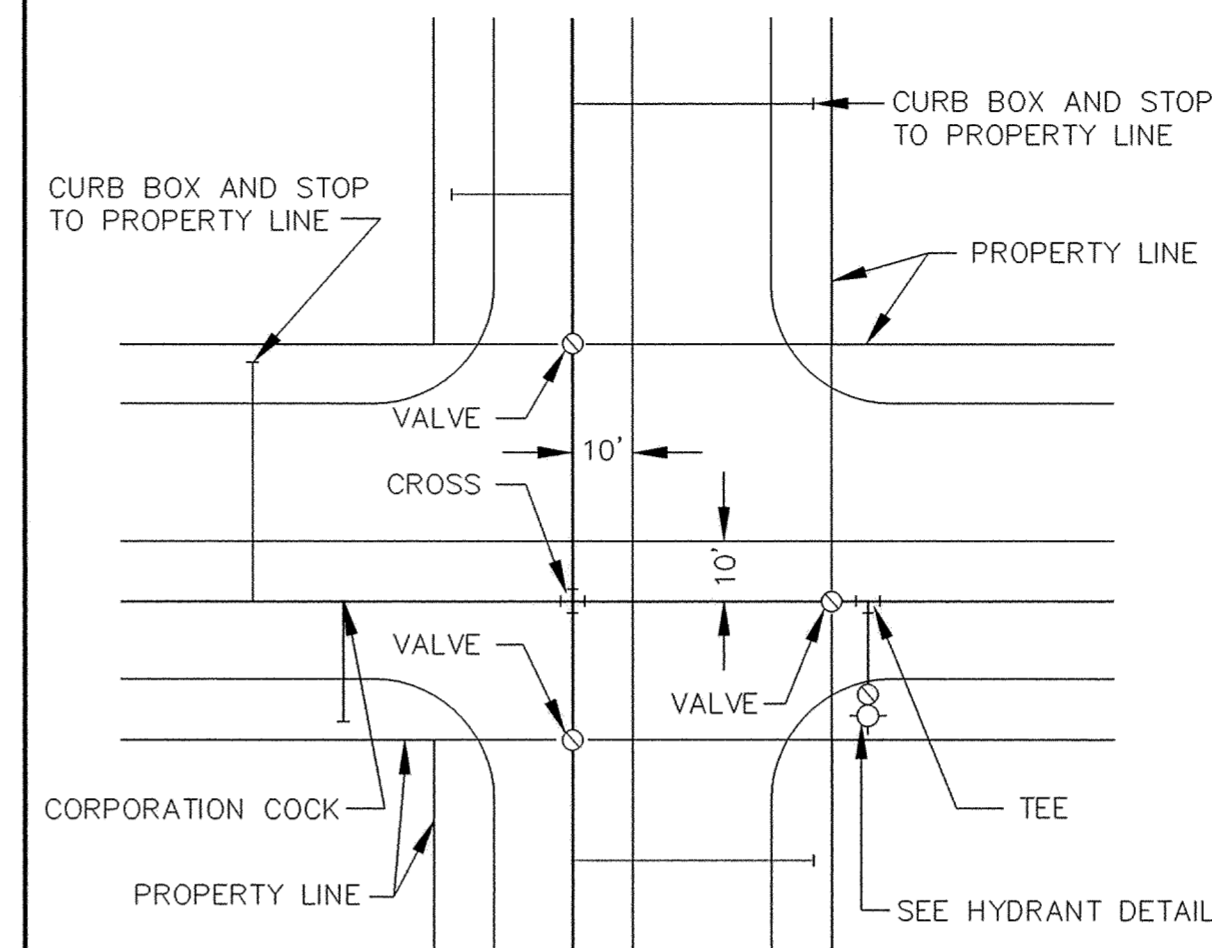
CLASS B PIPE BEDDING



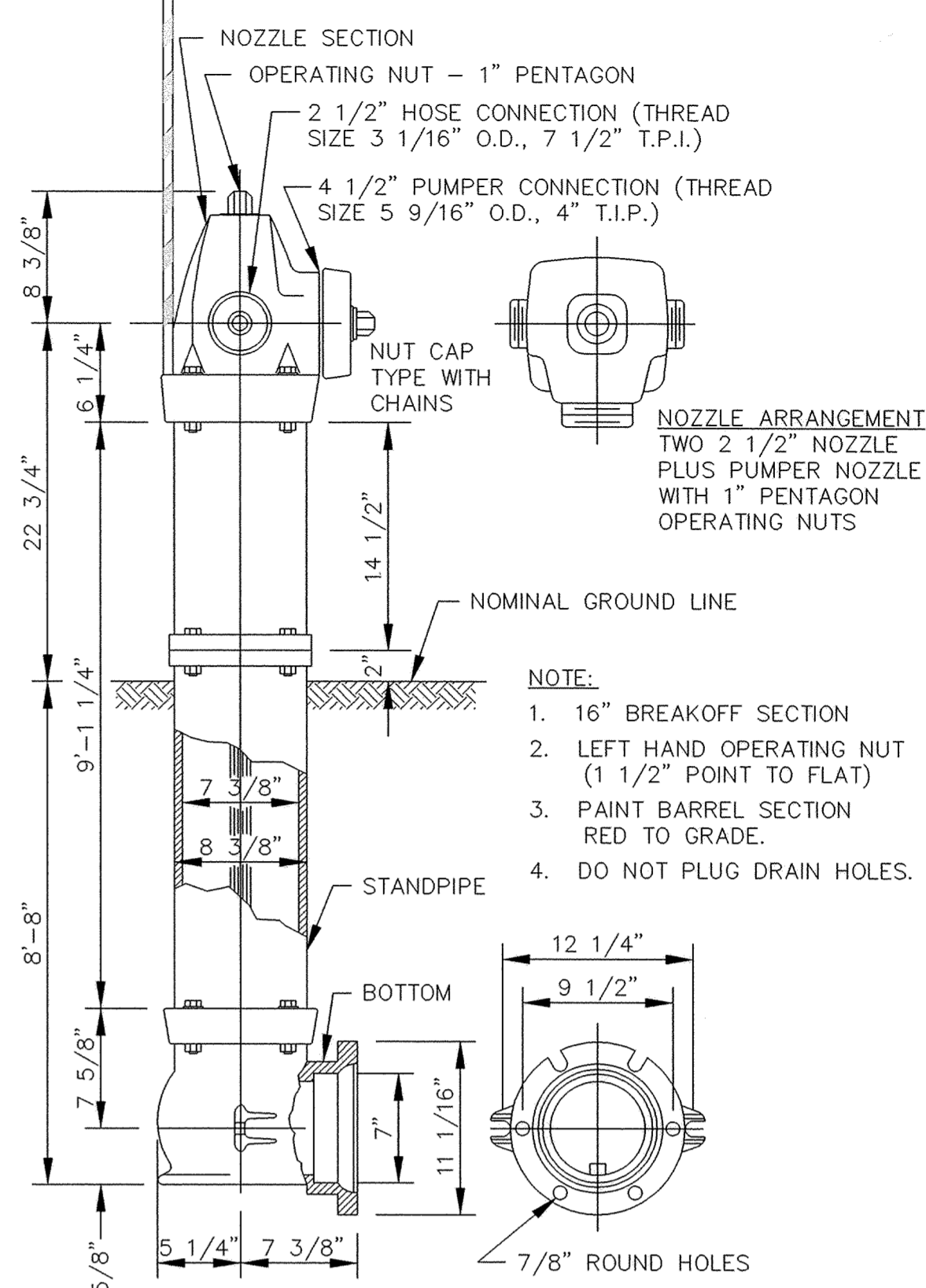
THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO FIT THE PIPE BARREL FOR AT LEAST 50% OF THE OUTSIDE DIAMETER. THE REMAINDER OF THE PIPE IS SURROUNDED TO A HEIGHT OF AT LEAST 6" ABOVE ITS TOP BY SELECT FILL MATERIALS, PLACED BY HAND TOOLS AND COMPACTED TO COMPLETELY FILL ALL SPACES UNDER AND ADJACENT TO THE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

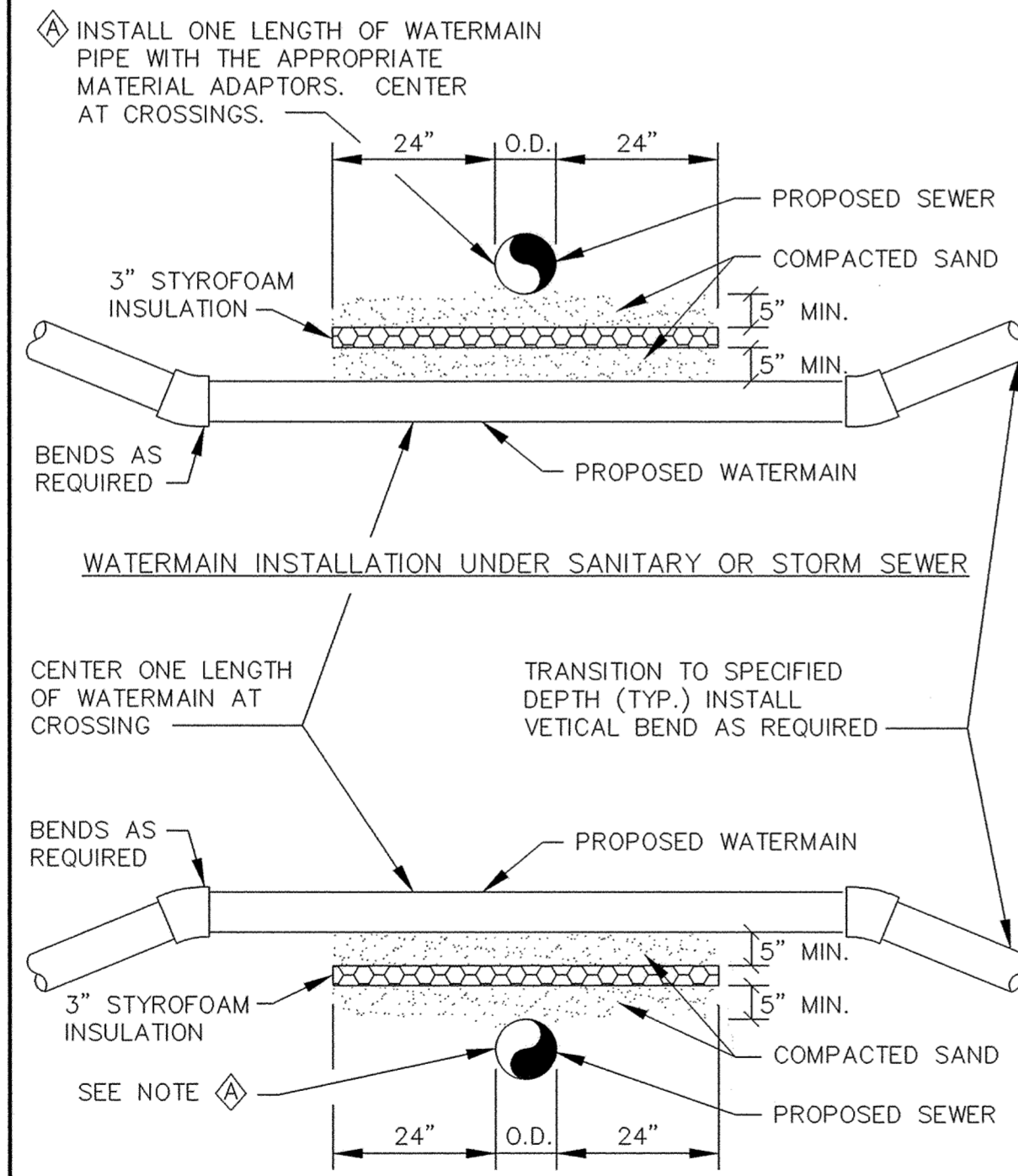


TYPICAL WATER LAYOUT



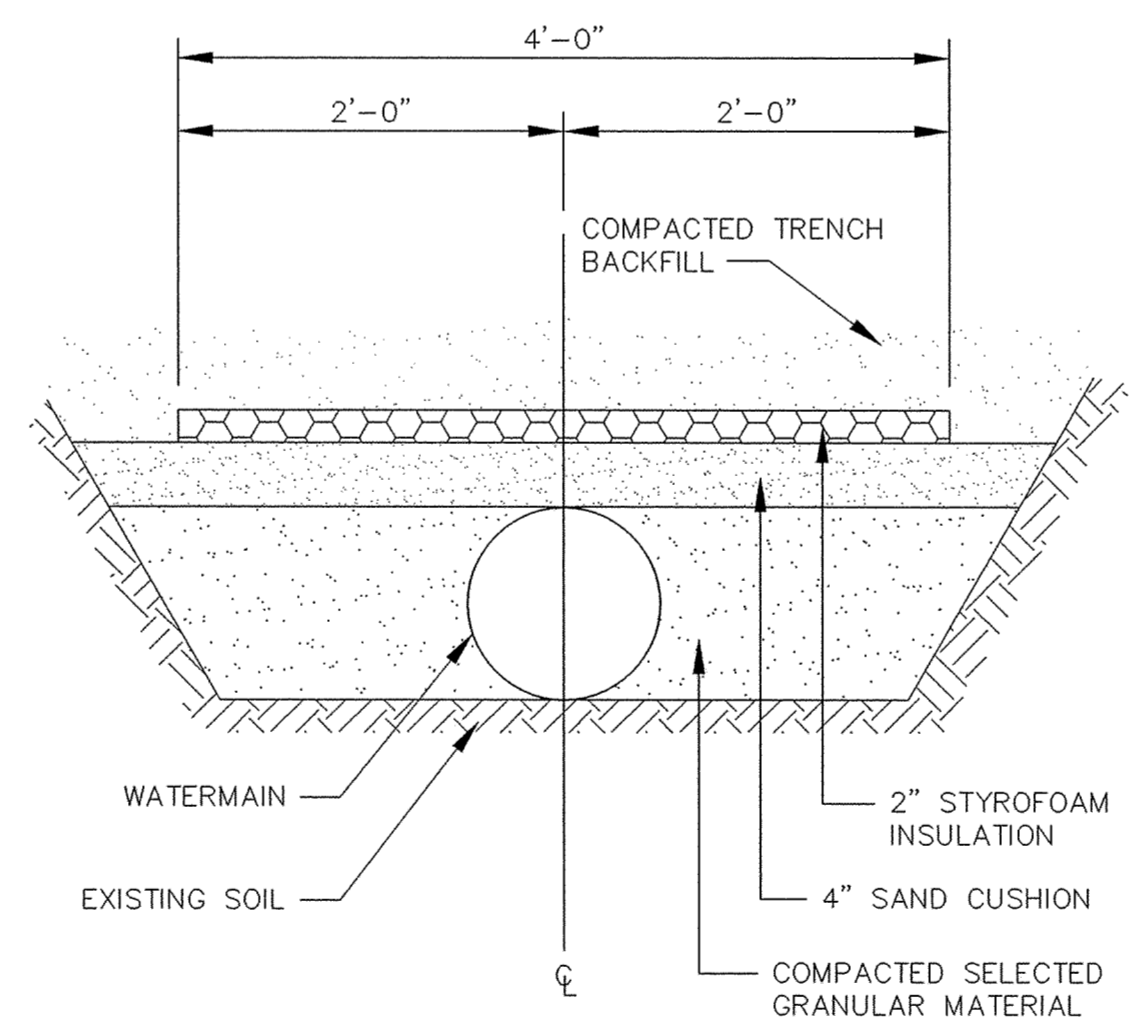
NOTE: HYDRANT LOCATING DEVICES REQUIRED - SEE SPECIFICATIONS.

PACER HYDRANT DETAIL

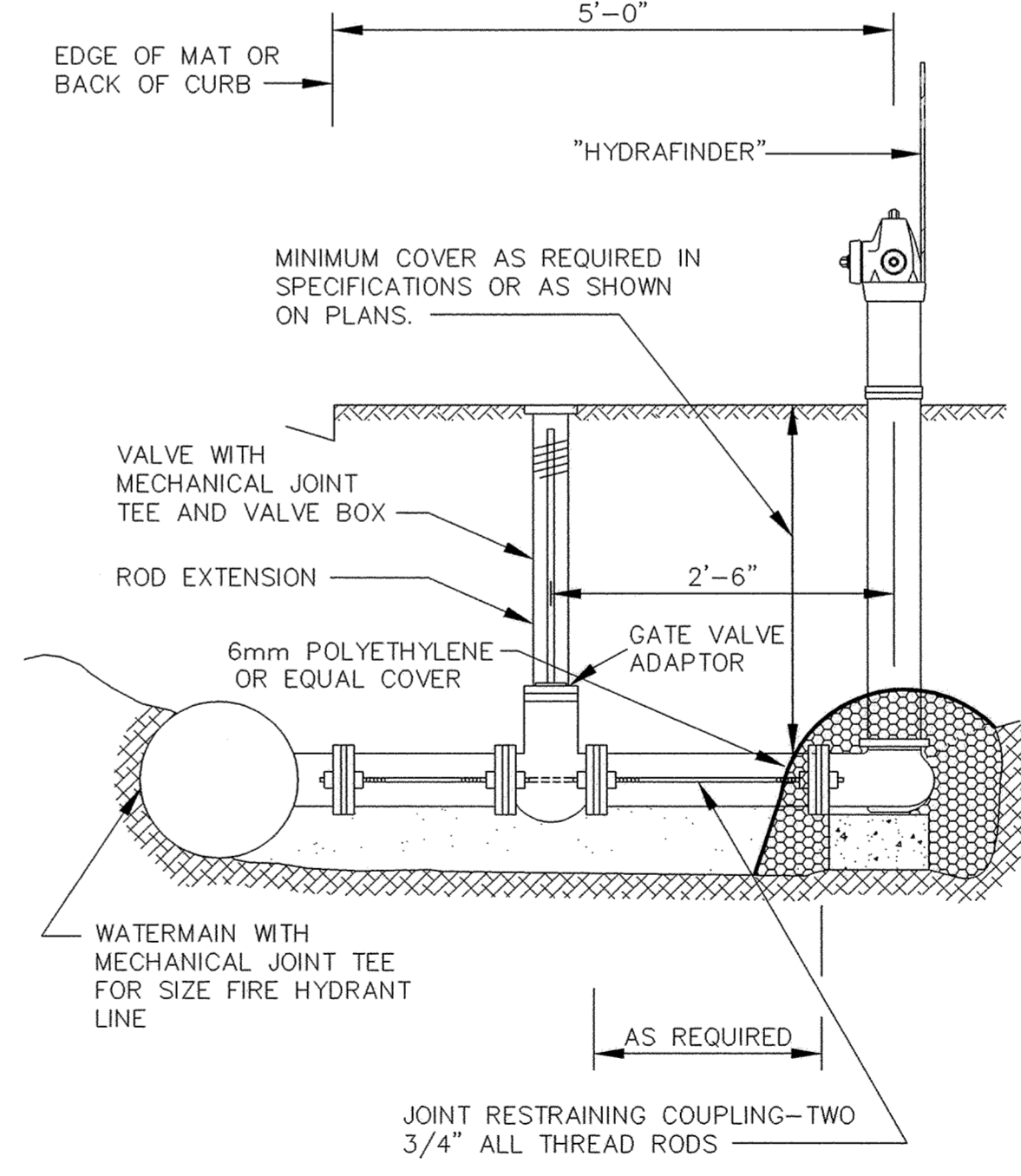


NOTES:
 1. WHEN WATERMAIN AND SANITARY SEWER CROSSINGS HAVE LESS THAN 18" VERTICAL SEPARATION, INSTALL CROSSING AS SHOWN.
 2. WHEN WATERMAIN COVER IS LESS THAN 7.5 FEET, INSTALL WATERMAIN UNDER SANITARY SEWER.

WATERMAIN CROSSING

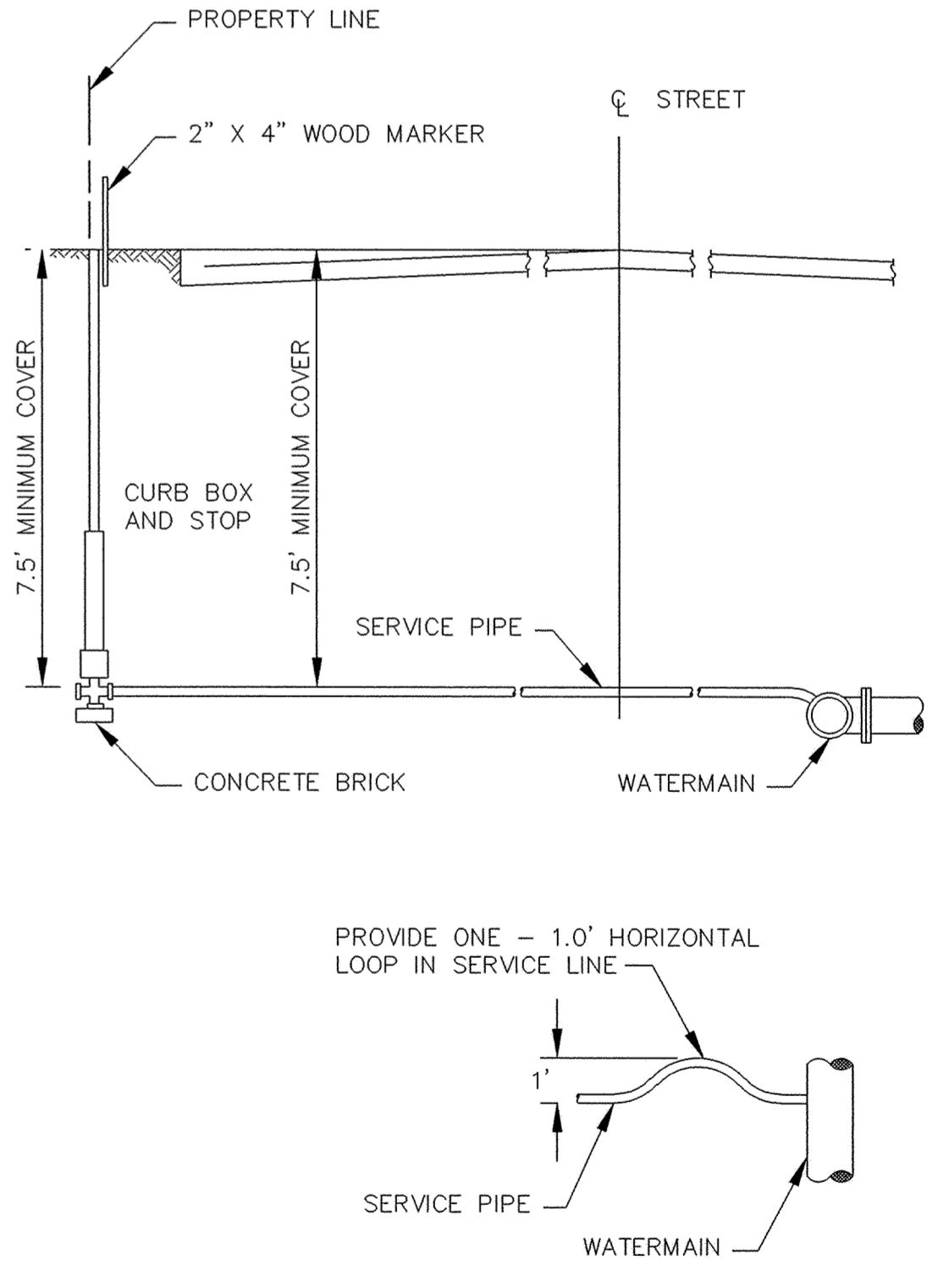


PIPE INSULATION DETAIL



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 05/29/03
 WESTWOOD PROFESSIONAL SERVICES

TYPICAL SERVICE DETAIL

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

PREPARED FOR:
D. R. Horton, Inc.
 20860 Kenbridge Court
 Lakeville, Minnesota 55044

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	05/29/03	GKB	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 EIGHTH ADDITION
WATER MAIN DETAILS

SHEET NO.
14
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17

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