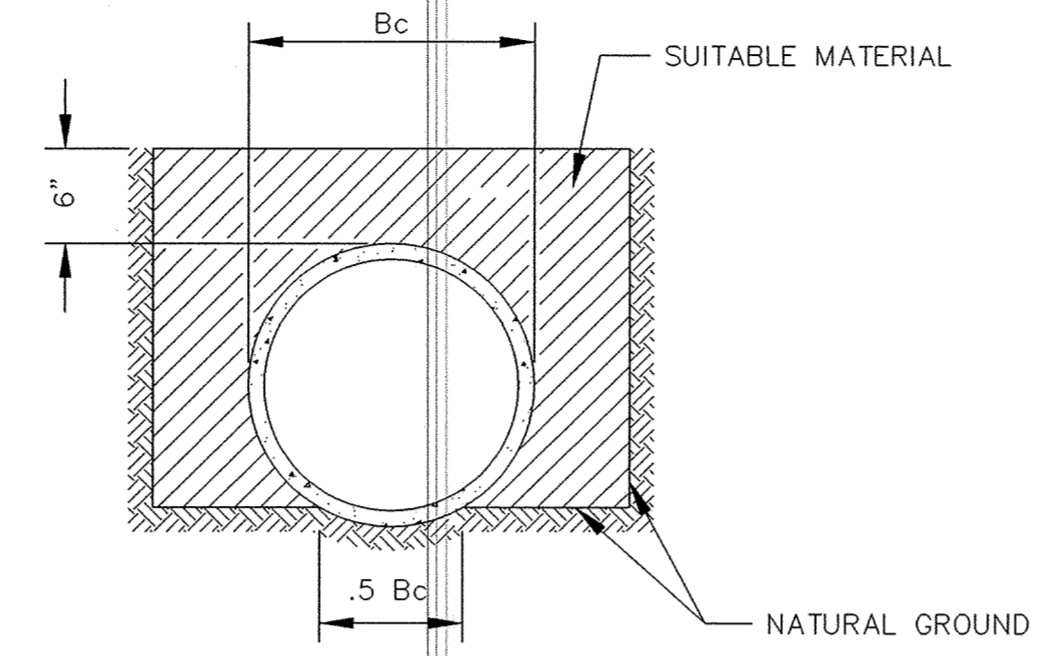


NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.

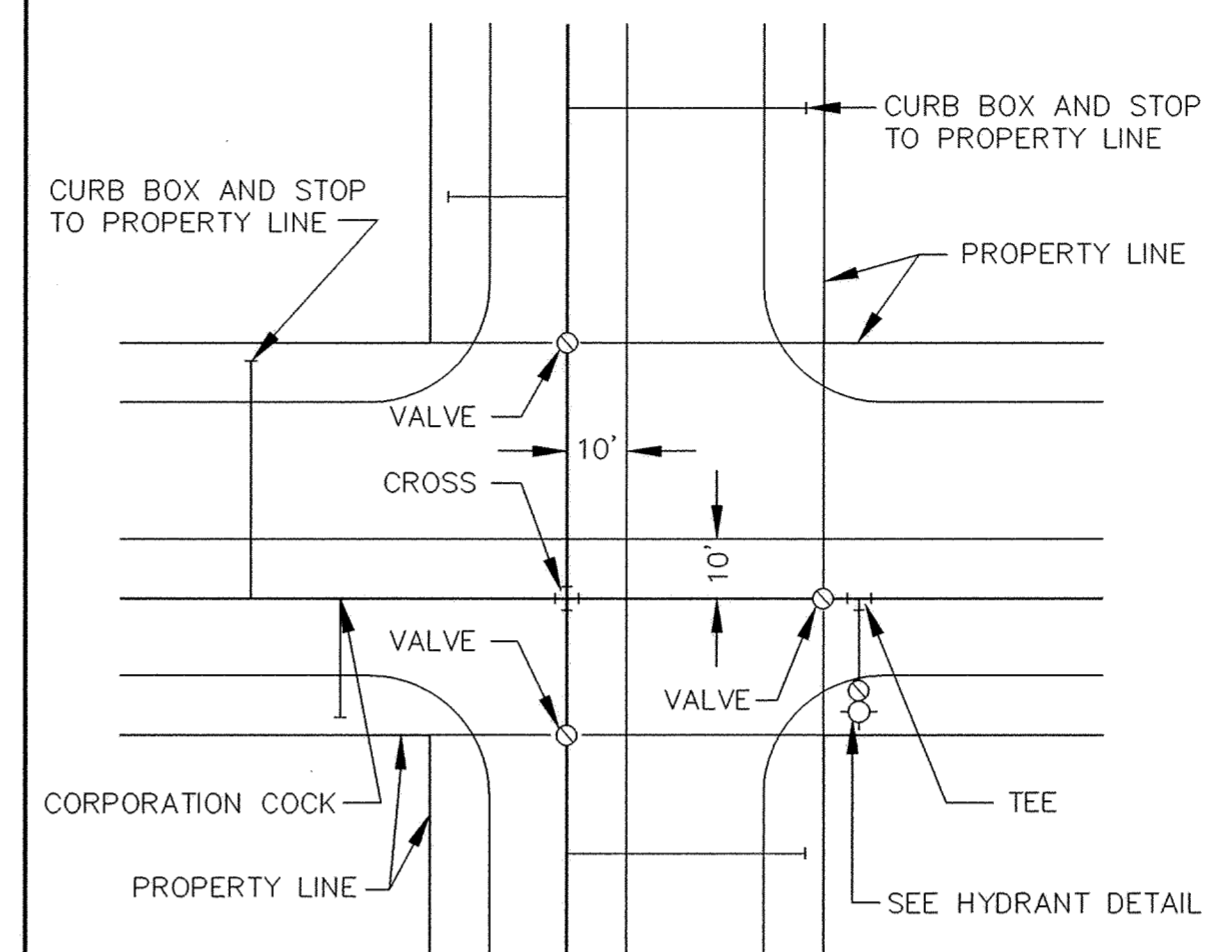
CLASS B PIPE BEDDING



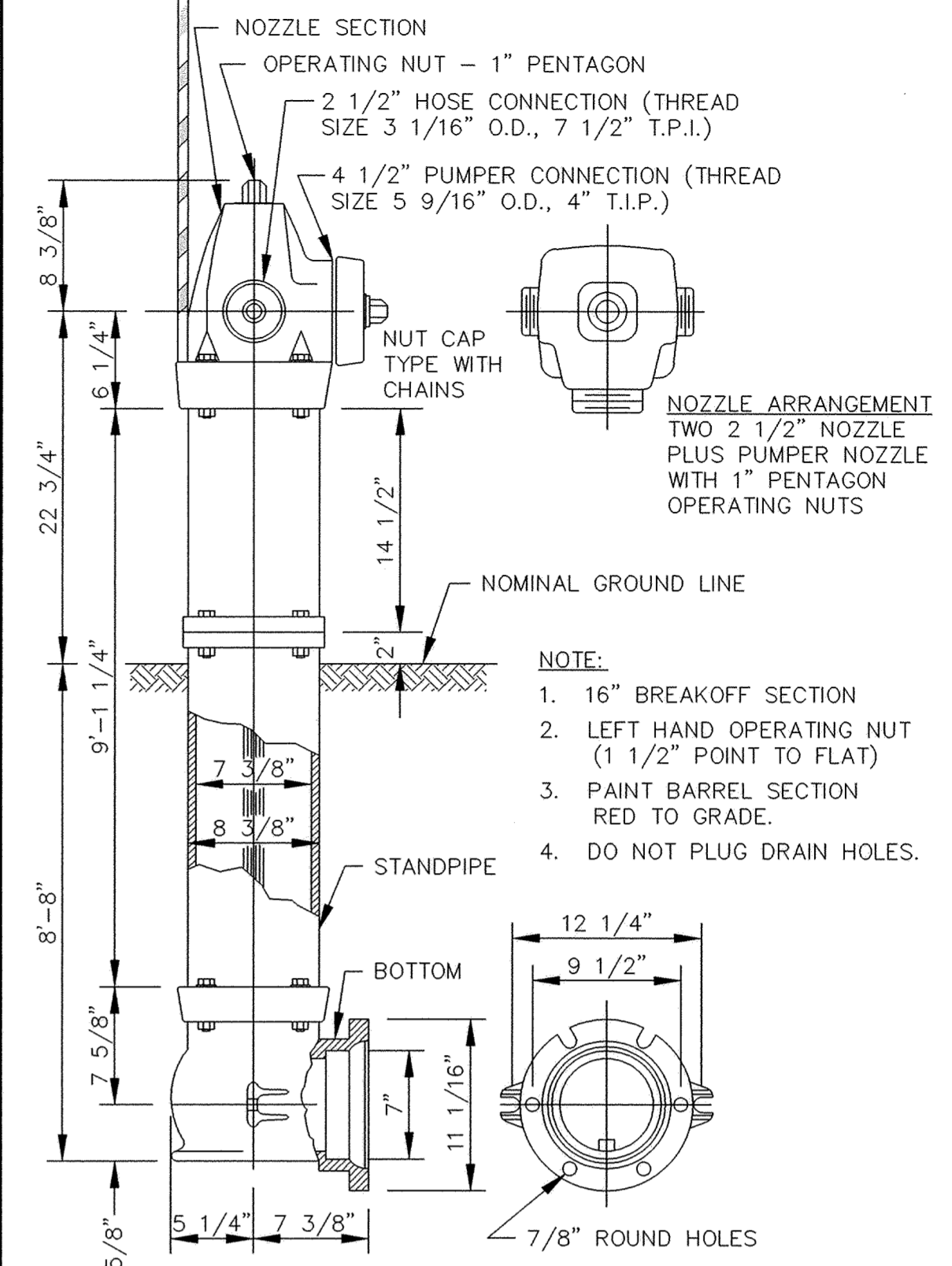
THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO FIT THE PIPE BARREL FOR AT LEAST 50% OF THE OUTSIDE DIAMETER. THE REMAINDER OF THE PIPE IS SURROUNDED TO A HEIGHT OF AT LEAST 6" ABOVE ITS TOP BY SELECT FILL MATERIALS, PLACED BY HAND TOOLS AND COMPACTED TO COMPLETELY FILL ALL SPACES UNDER AND ADJACENT TO THE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

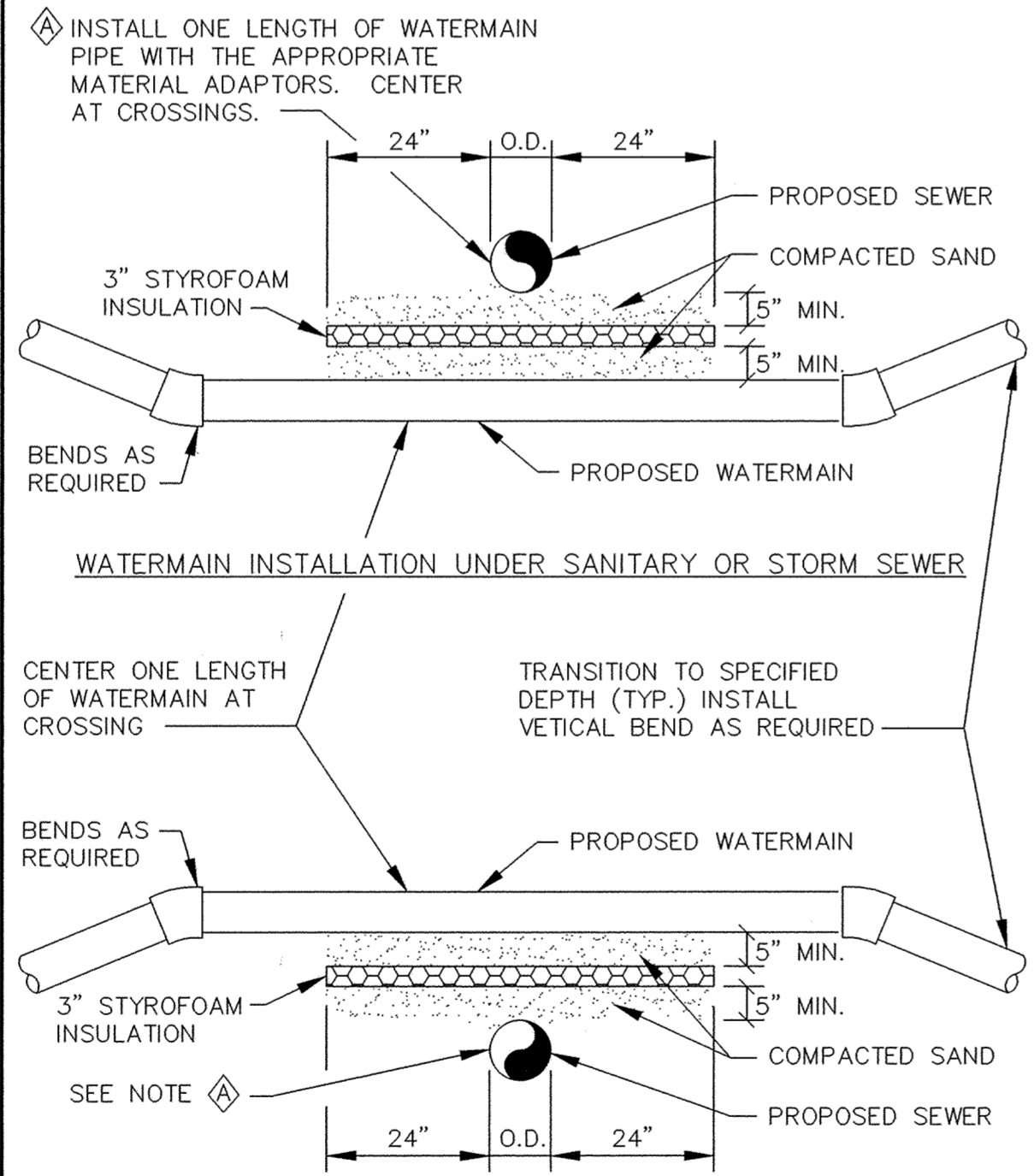


TYPICAL WATER LAYOUT



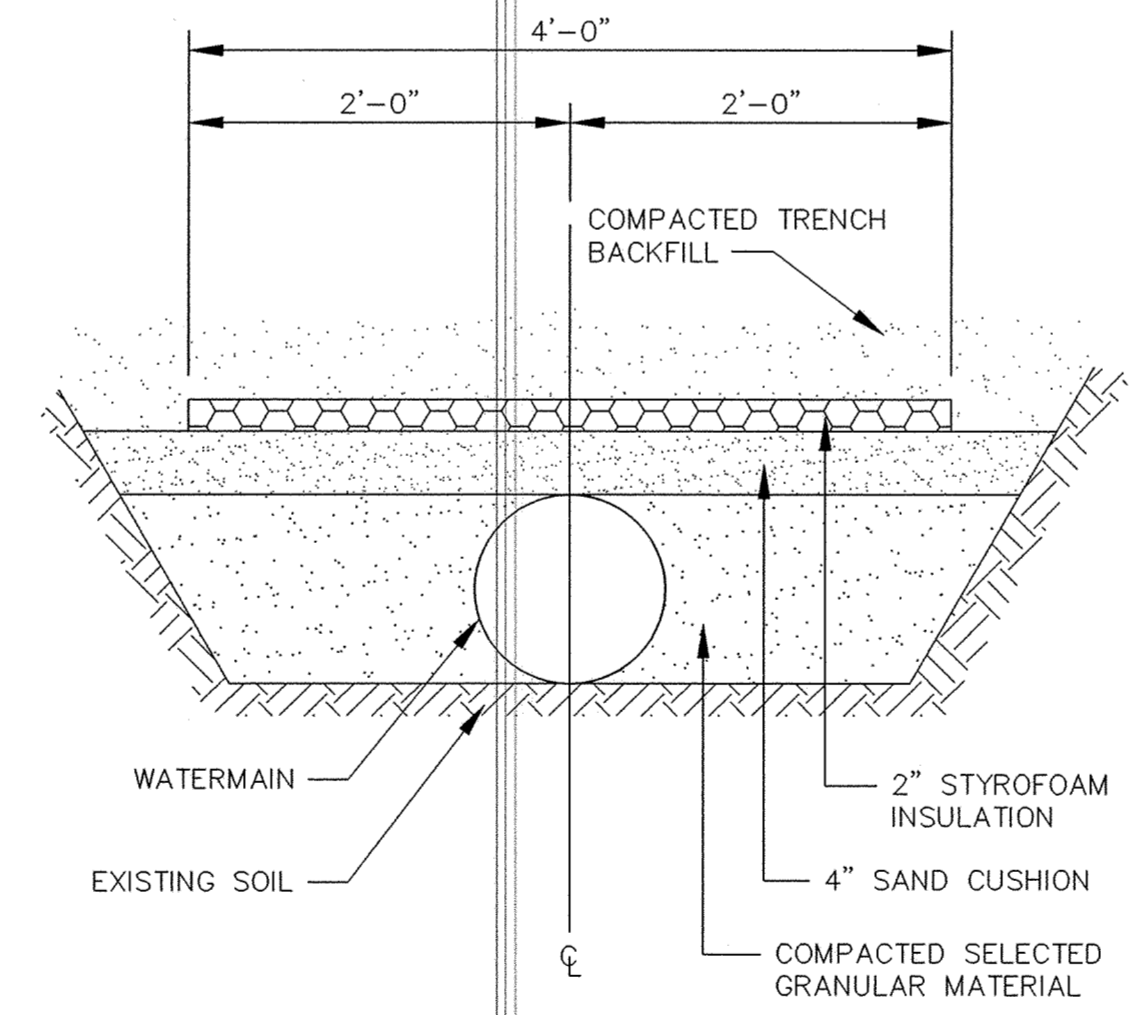
NOTE: HYDRANT LOCATING DEVICES REQUIRED - SEE SPECIFICATIONS.

PACER HYDRANT DETAIL

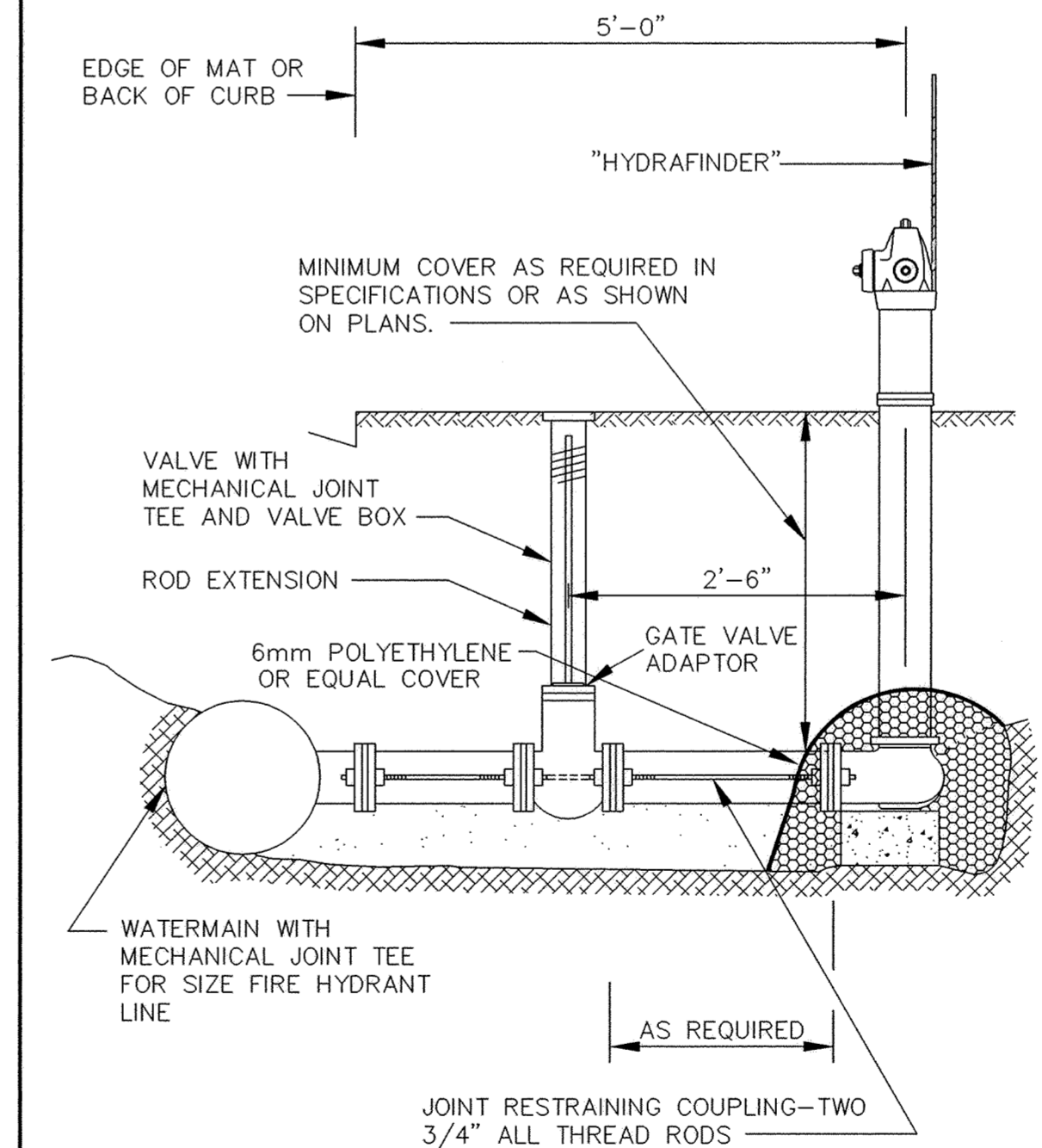


NOTES:  
 1. WHEN WATERMAIN AND SANITARY SEWER CROSSINGS HAVE LESS THAN 18" VERTICAL SEPARATION, INSTALL CROSSING AS SHOWN.  
 2. WHEN WATERMAIN COVER IS LESS THAN 7.5 FEET, INSTALL WATERMAIN UNDER SANITARY SEWER.

WATERMAIN CROSSING

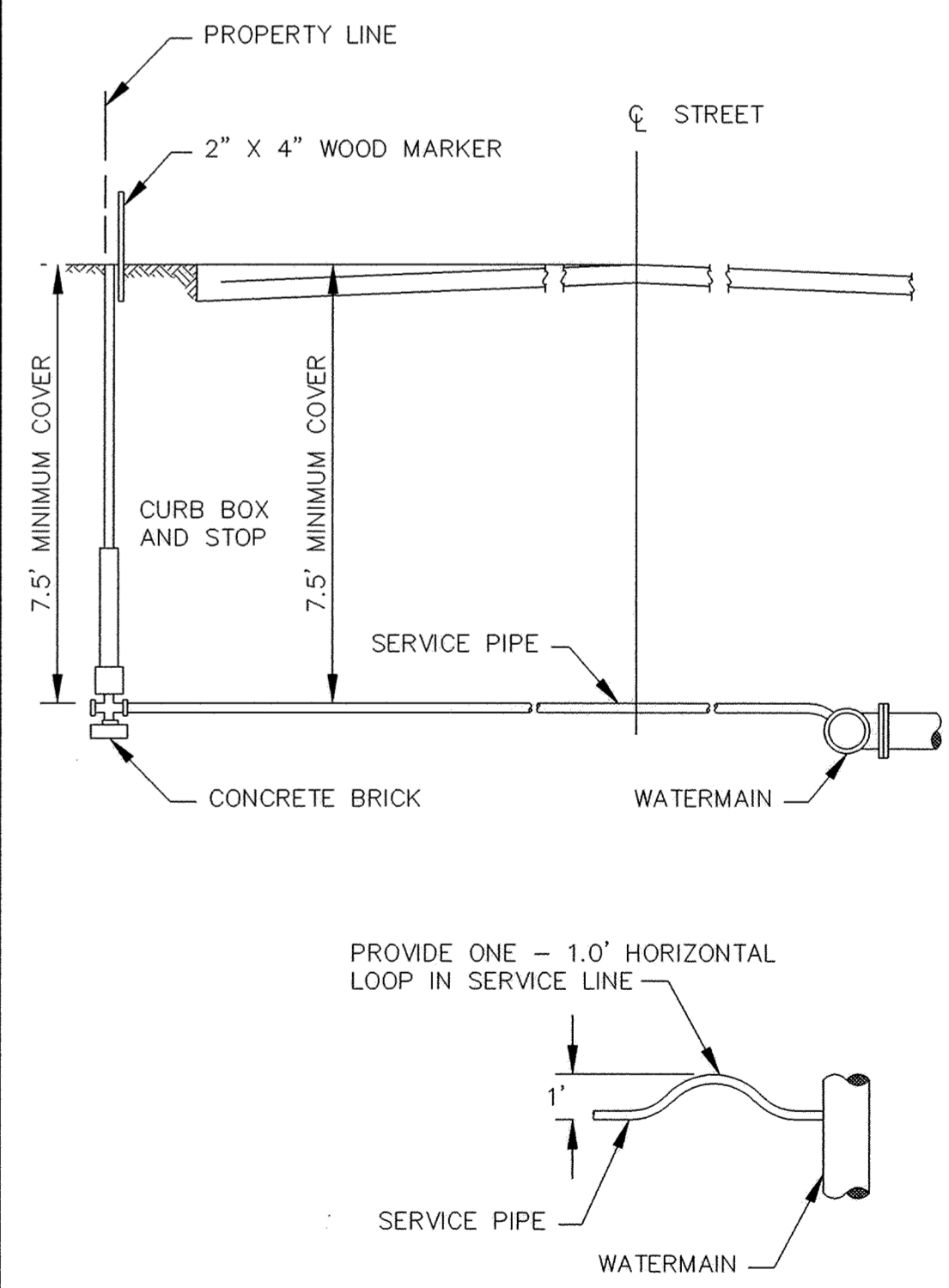


PIPE INSULATION DETAIL



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



TYPICAL SERVICE DETAIL

CONTRACTOR: RYAN CONTRACTING CO.  
 RECORD DRAWING CONFORMING TO CONSTRUCTION RECORDS.  
 BY AL SPILLES DATE 04/15/03  
 WESTWOOD PROFESSIONAL SERVICES

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

PREPARED FOR:  
**Van Den Berg Property**  
 10811 181st Avenue Northwest  
 Elk River, Minnesota 55330

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	04/15/03	AS	RECORD DRAWINGS

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

CITY OF ELK RIVER  
**VAN DEN BERG PROPERTY**  
 WATER MAIN DETAILS

SHEET NO.  
**6**  
 OF  
**8**

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER  
 VANDE.03

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