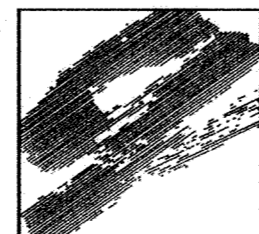


P:\99403\dwg\RECORD\9403DT@4.DWG 05/29/2003 09:13:44 AM CDT

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 6TH ADDITION
WATERMAIN DETAILS**

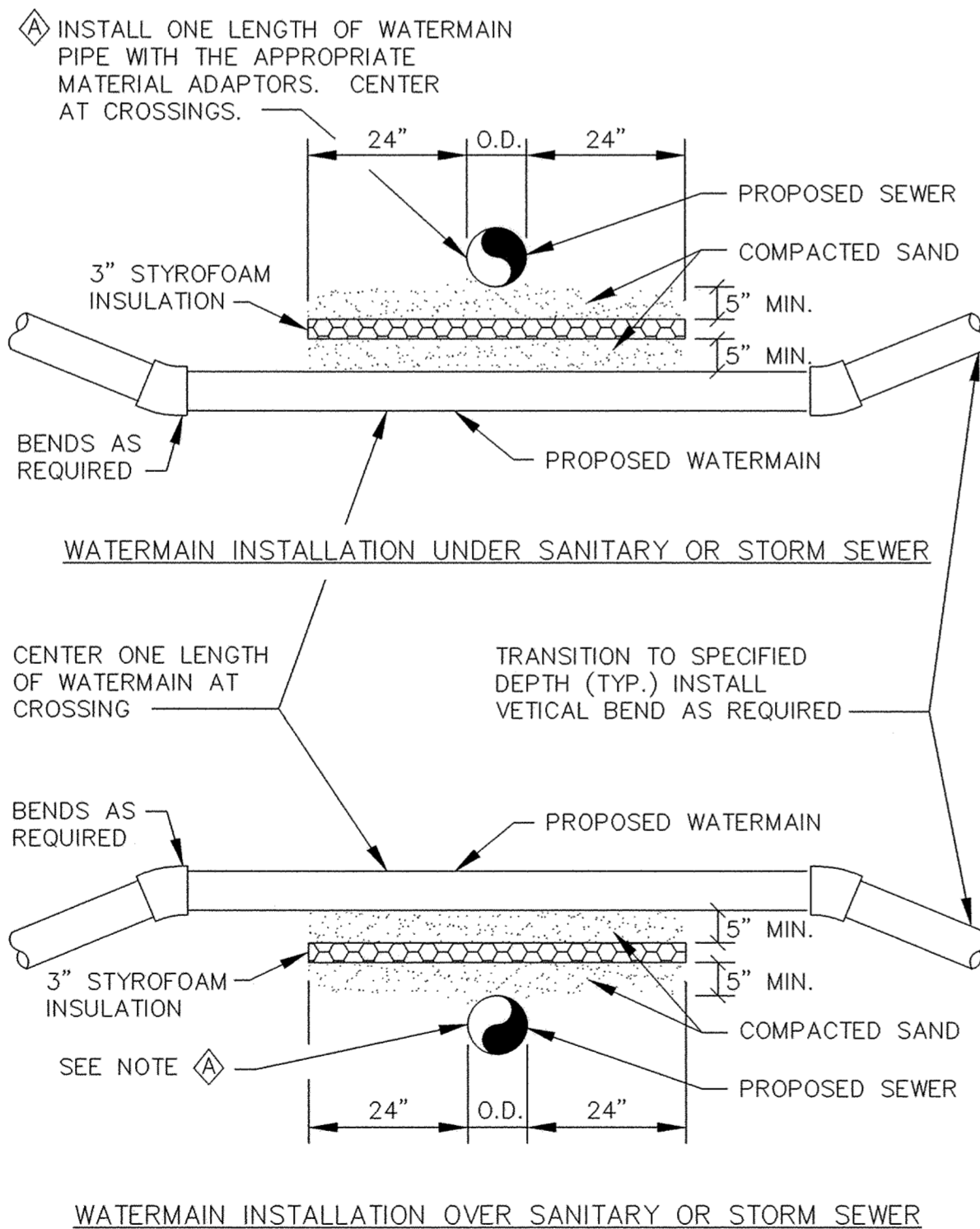
SHEET NO.
15
OF
18

CONTRACTOR: RYAN CONTRACTING CO.

RECORD DRAWING
CONFORMING TO CONSTRUCTION RECORDS.
BY AL SPILLES DATE 05/29/03
WESTWOOD PROFESSIONAL SERVICES, INC.

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

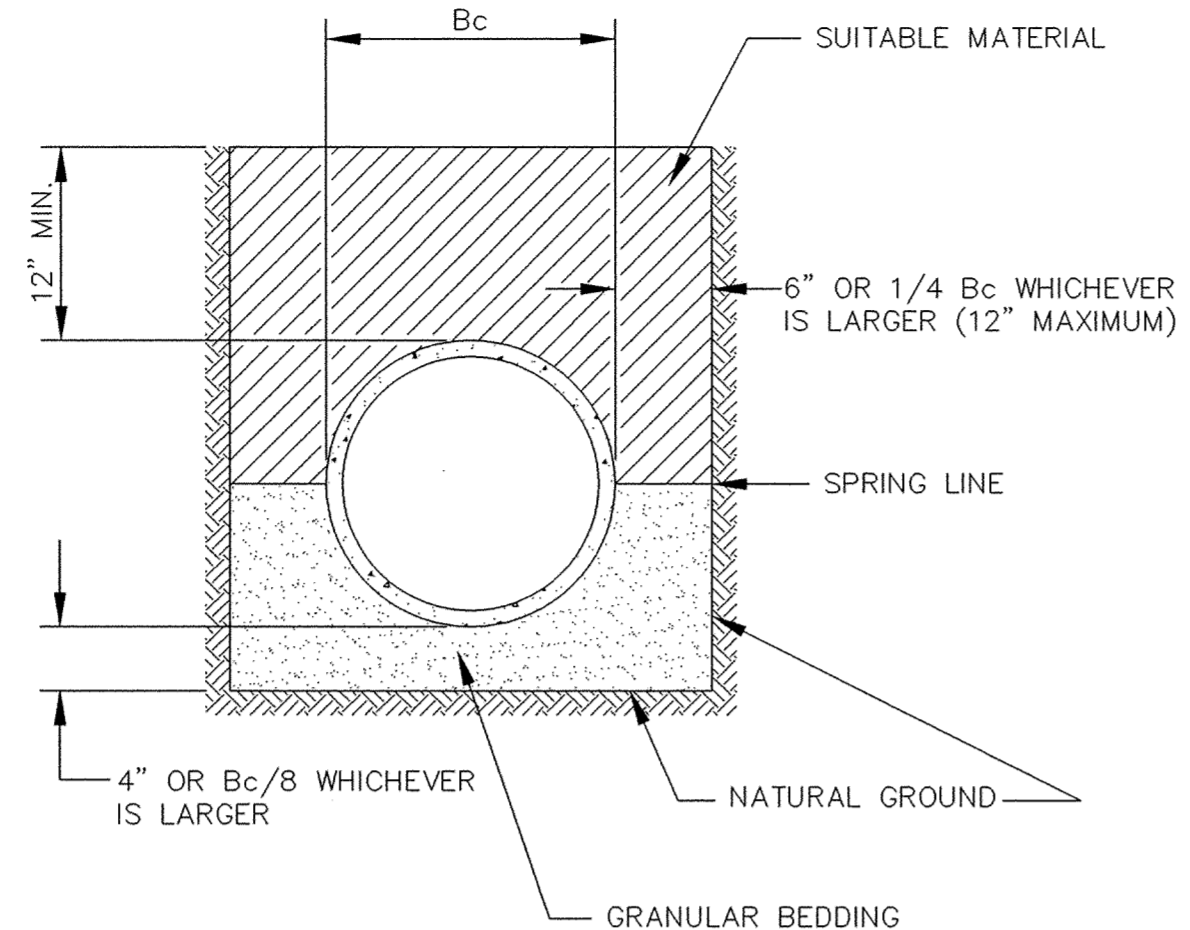
PREPARED FOR:
D.R. Horton, INC.
3459 Washington Drive
Suite 204
Eagan, Minnesota 55122



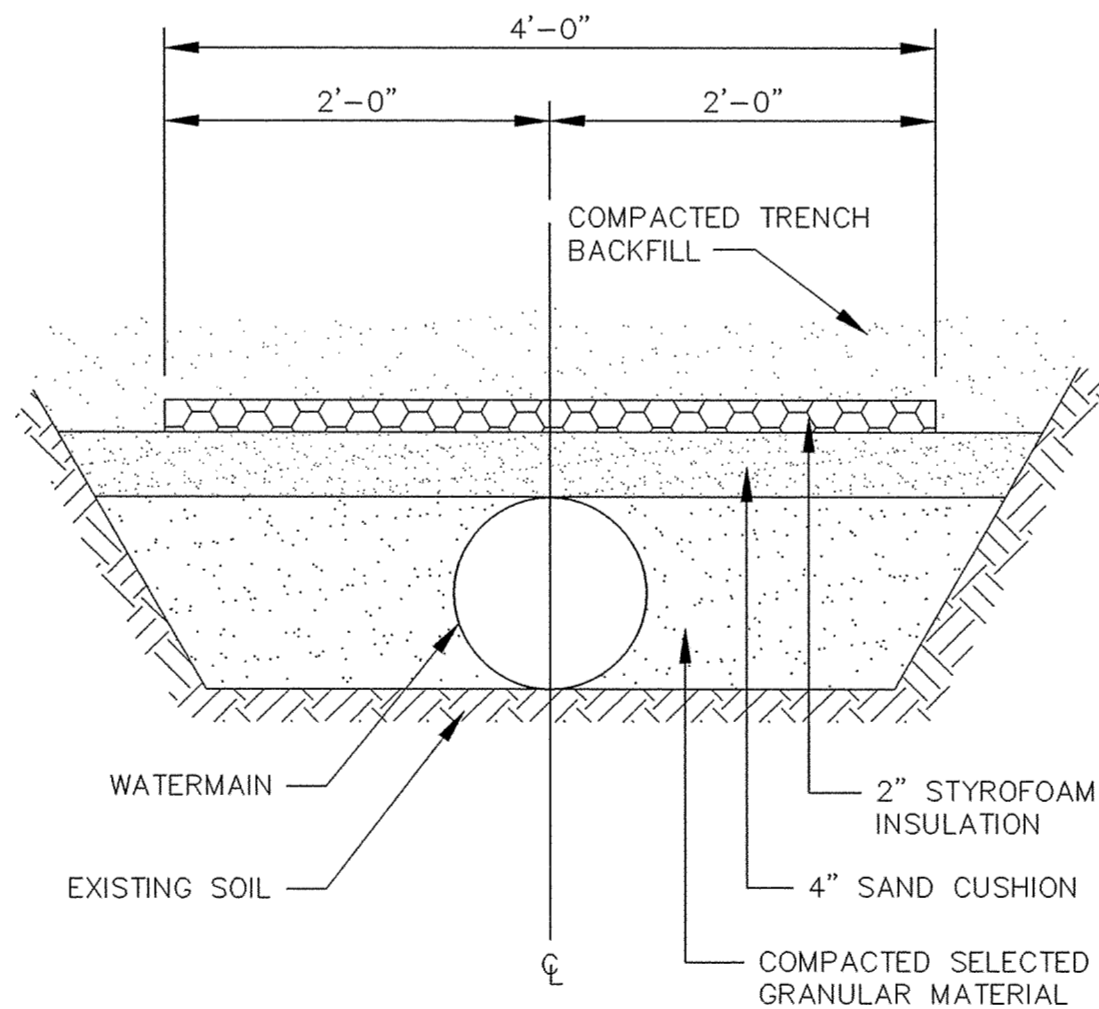
- NOTES:
1. WHEN WATERMAIN AND SANITARY SEWER CROSSINGS HAVE LESS THAN 18" VERTICAL SEPARATION, INSTALL CROSSING AS SHOWN.
 2. WHEN WATERMAIN COVER IS LESS THAN 7.5 FEET, INSTALL WATERMAIN UNDER SANITARY SEWER.

WATERMAIN CROSSING

CLASS B PIPE BEDDING

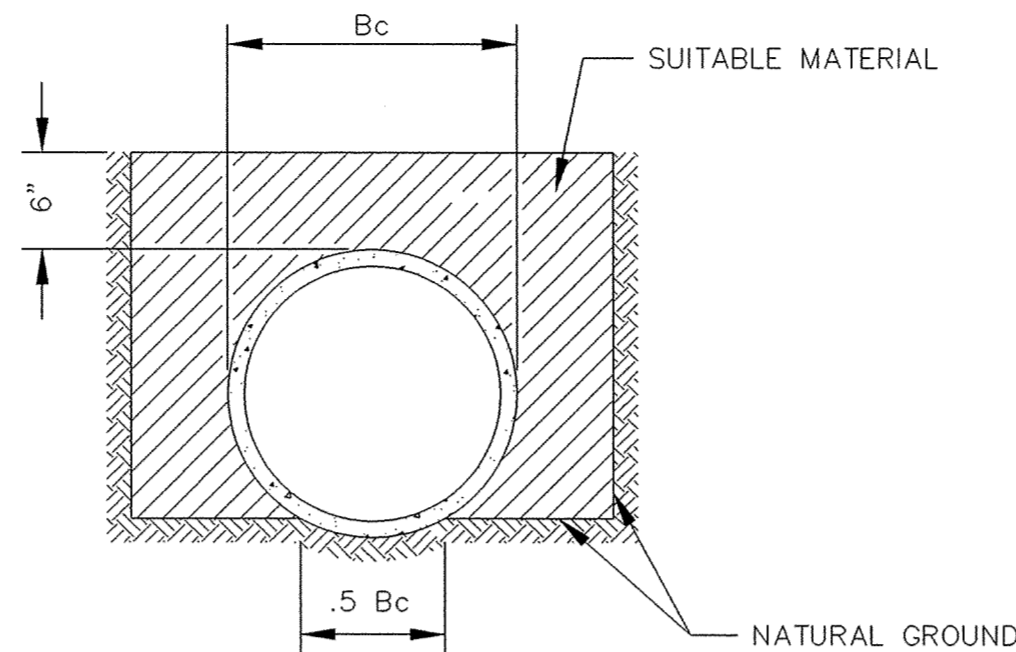


NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.



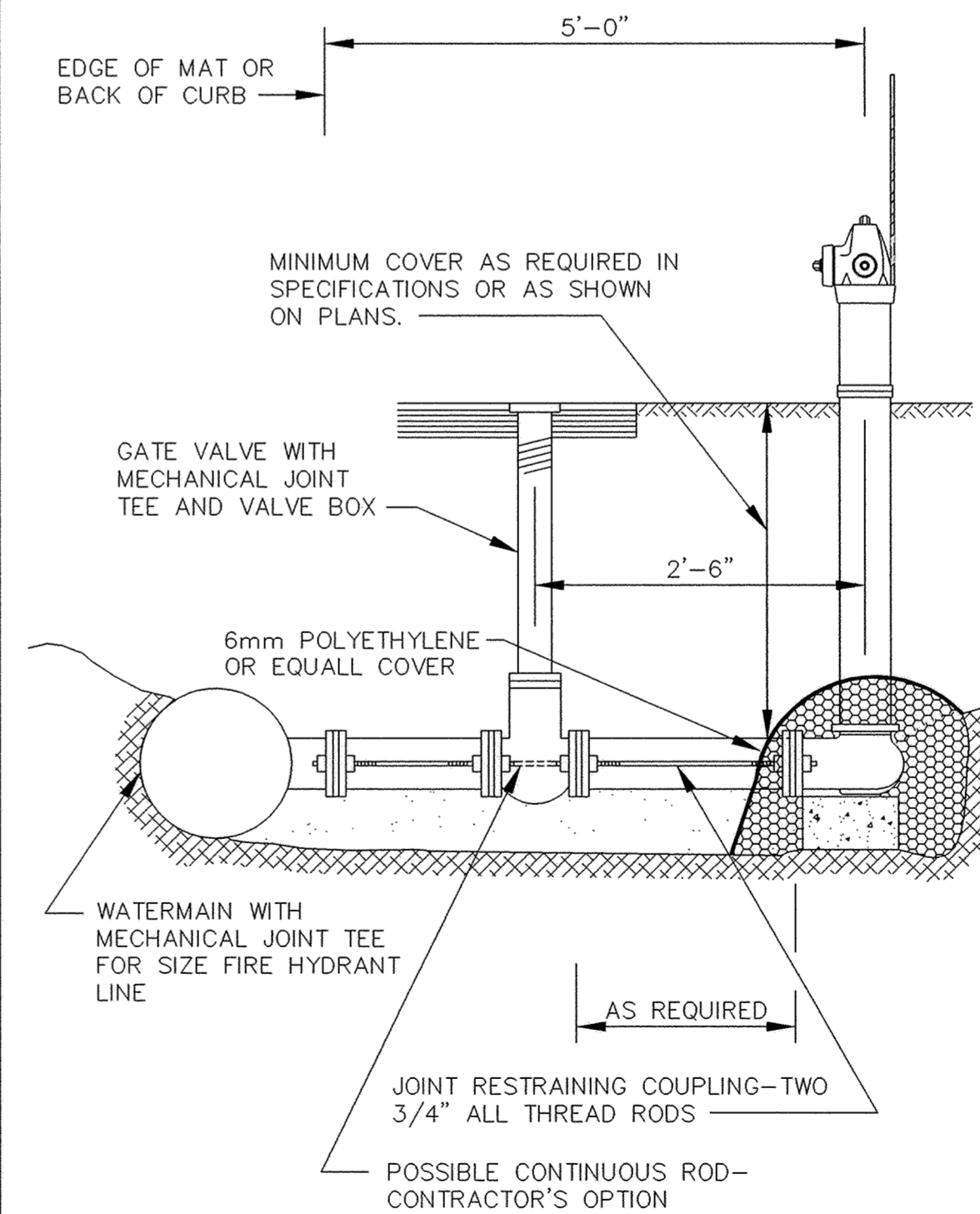
PIPE INSULATION DETAIL

CLASS C 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.

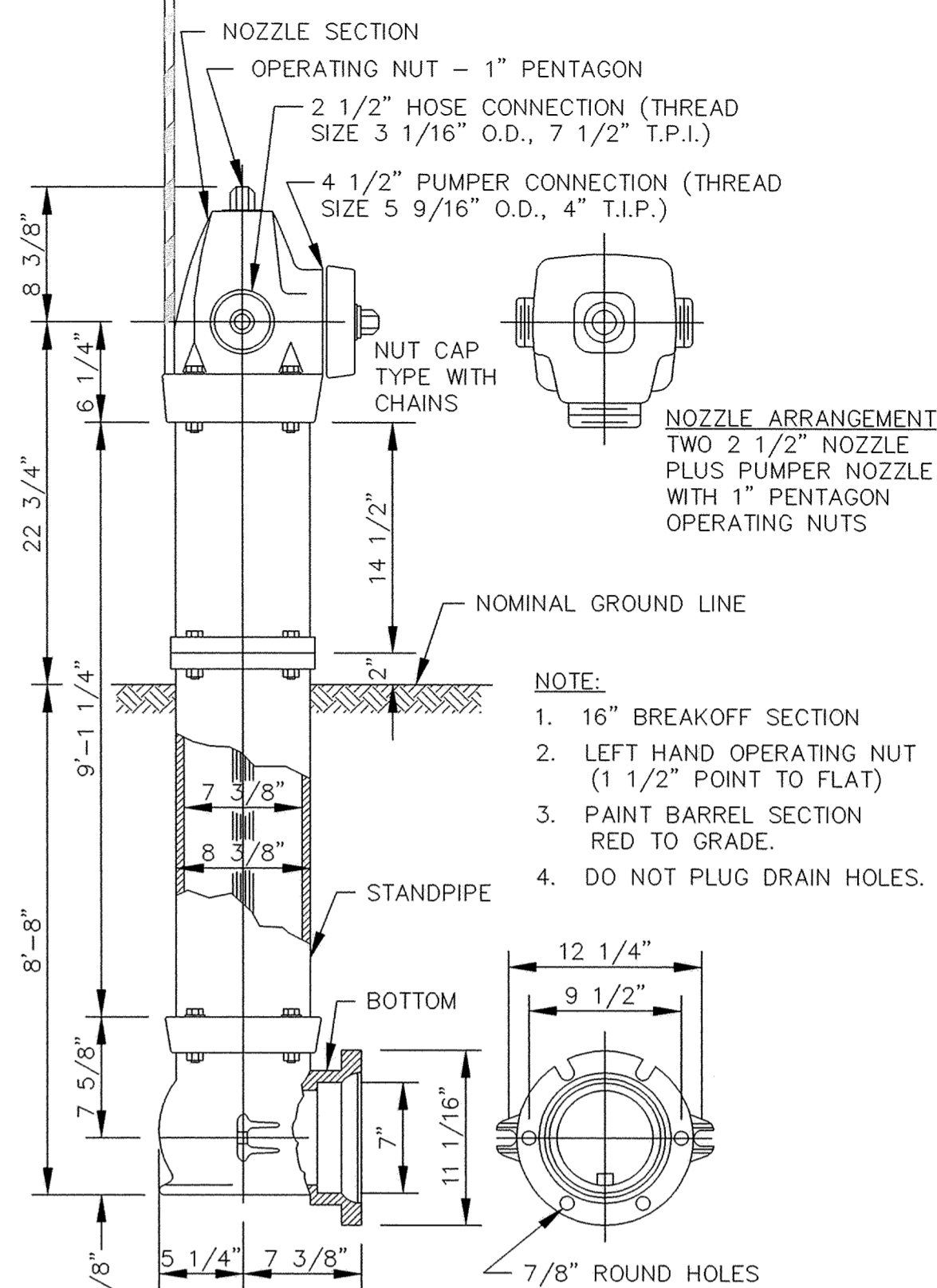
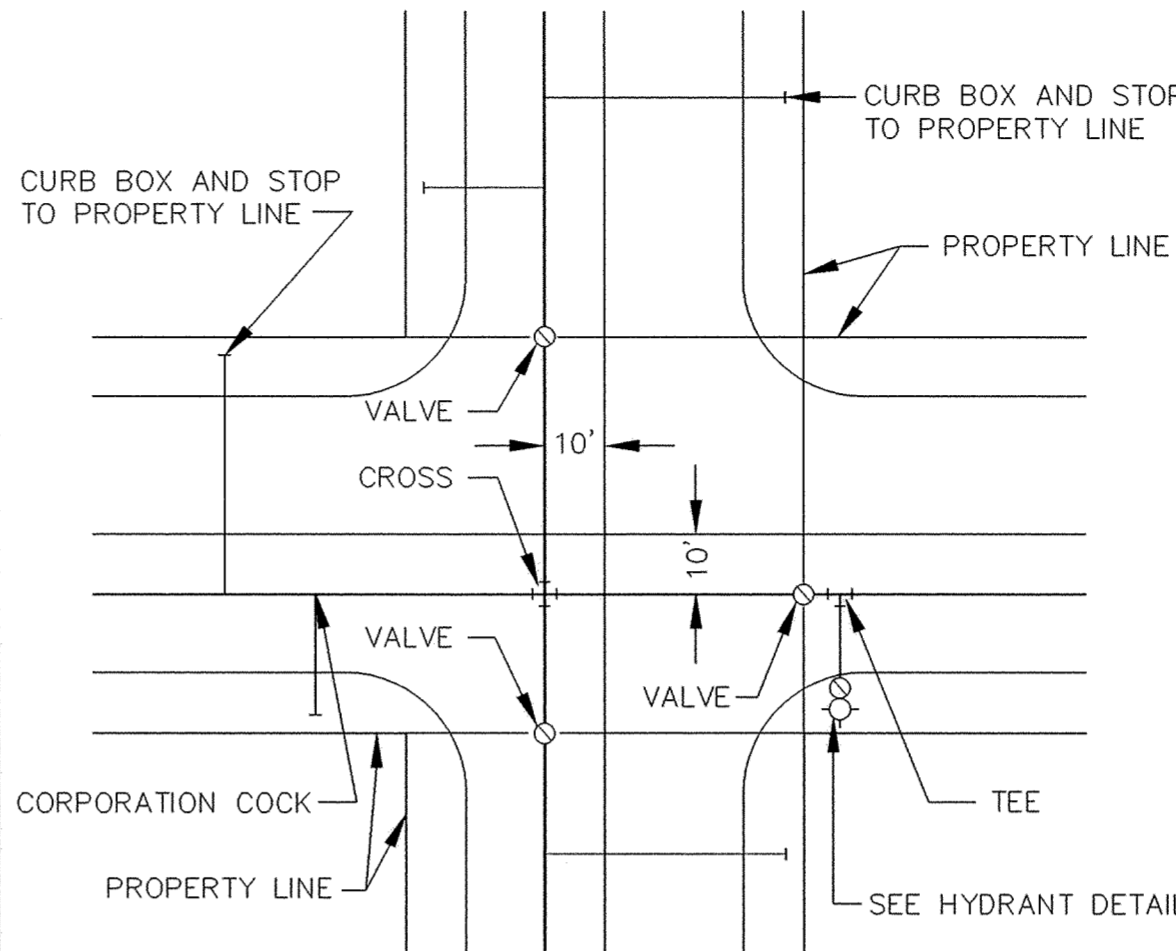
NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.



NOTE: HYDRANT LEADS SHALL BE RODDED FROM MAIN LINE TO HYDRANT UNLESS SPECIFIED OTHERWISE.

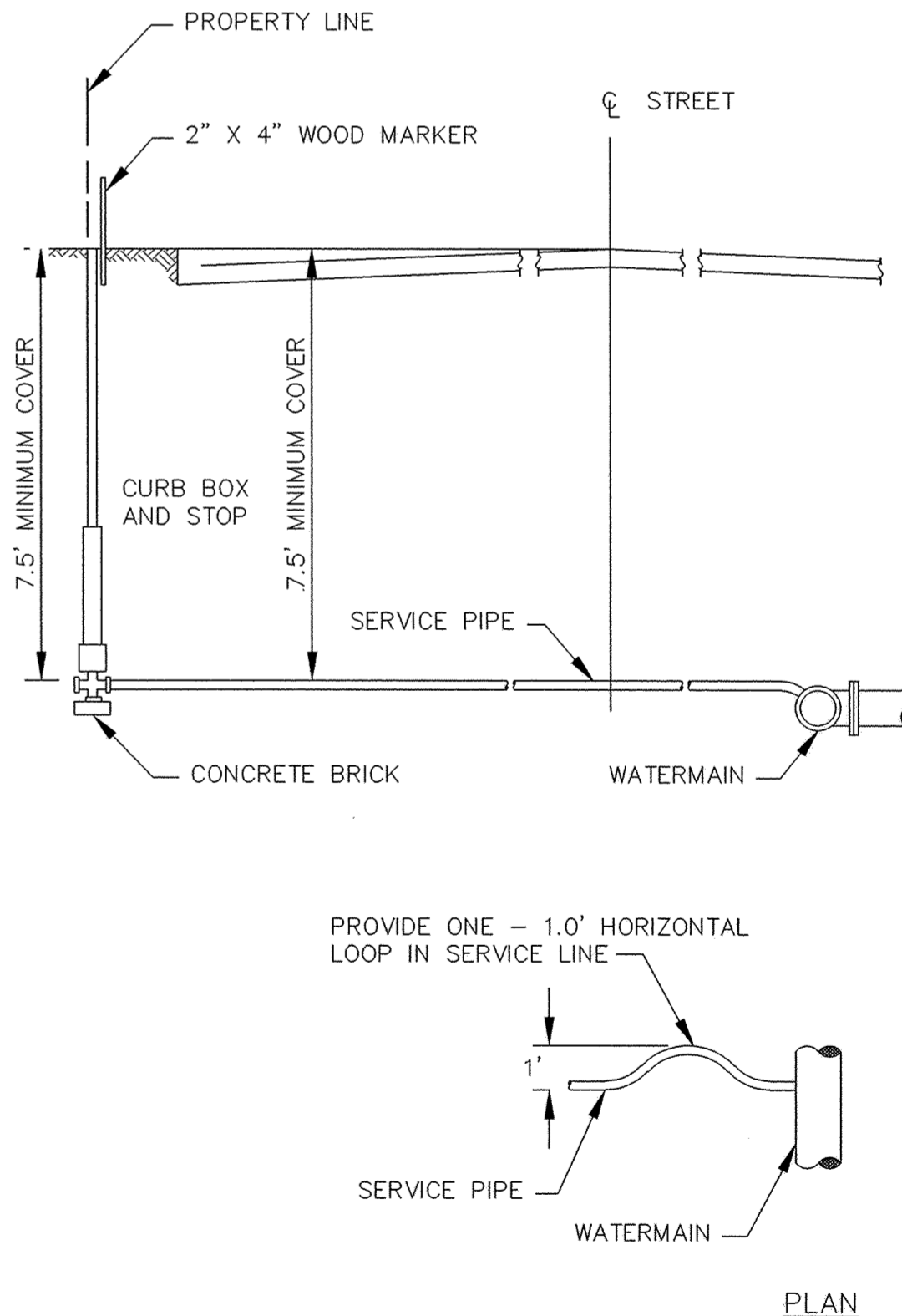
RODDING DETAIL

TYPICAL WATER LAYOUT



NOTE: HYDRANT LOCATING DEVICES REQUIRED - SEE SPECIFICATIONS.

PACER HYDRANT DETAIL



TYPICAL SERVICE DETAIL

DRAWING NUMBER
TROTT6.02
15

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER