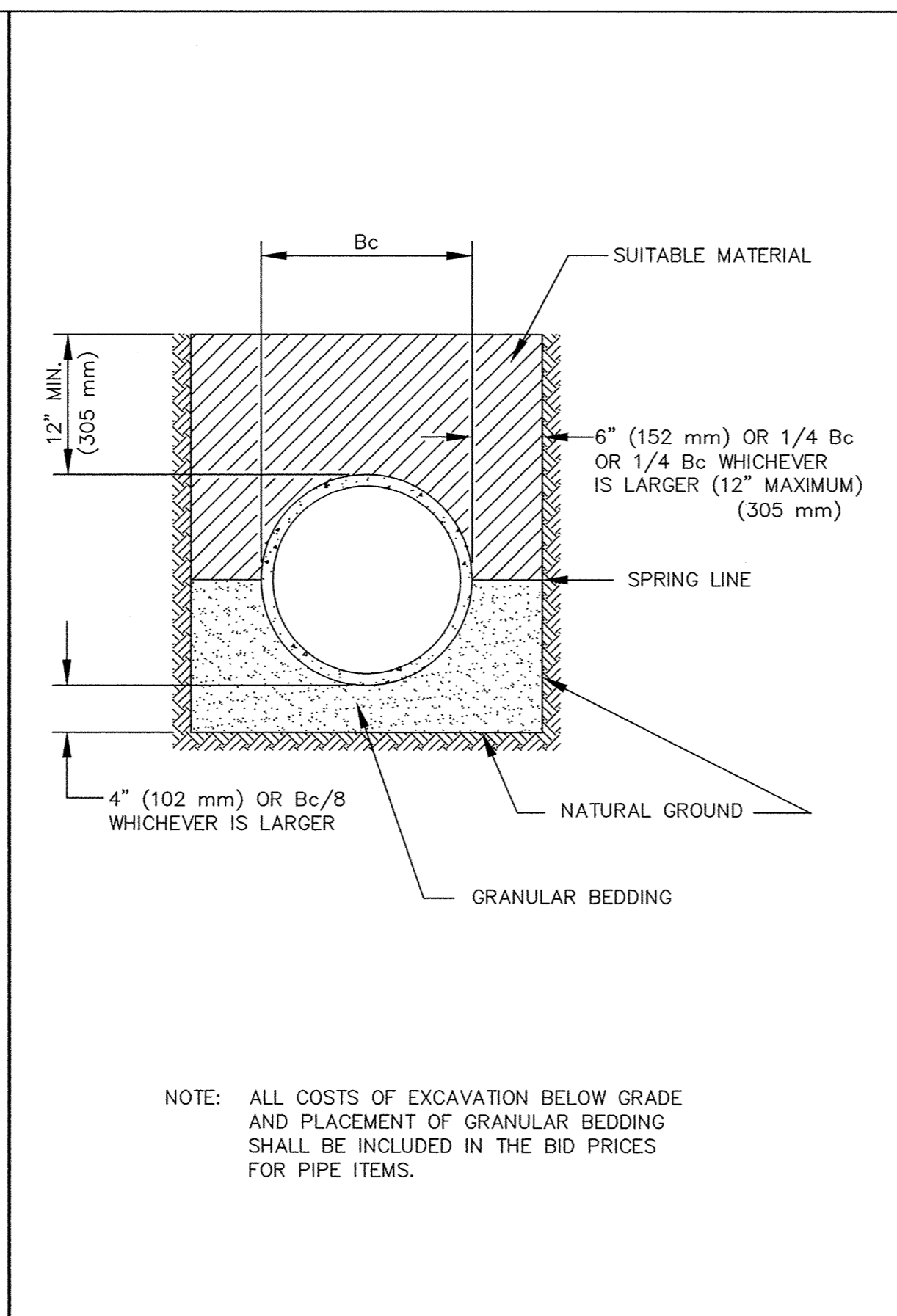
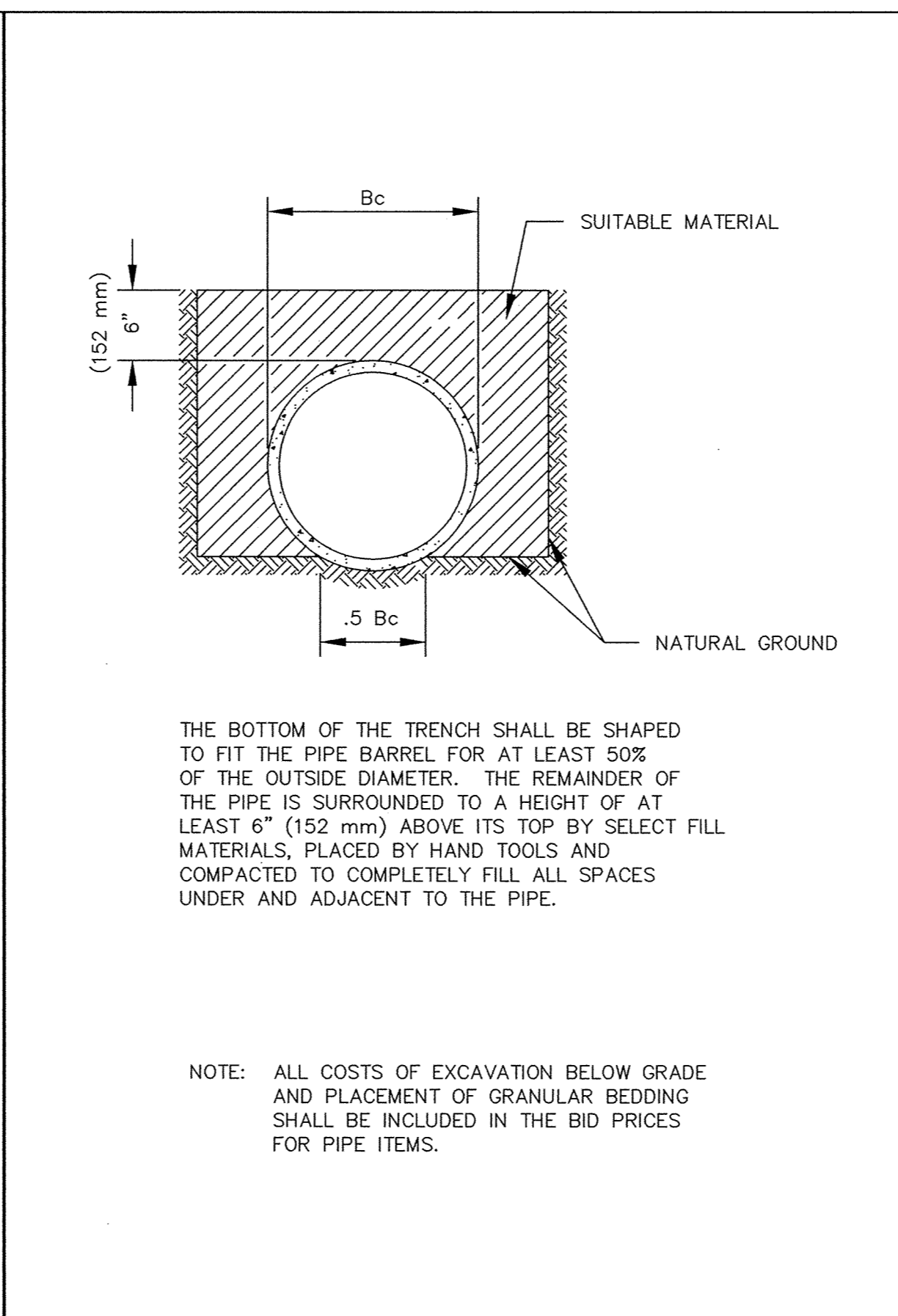


ROCK ENTRANCE ROAD



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

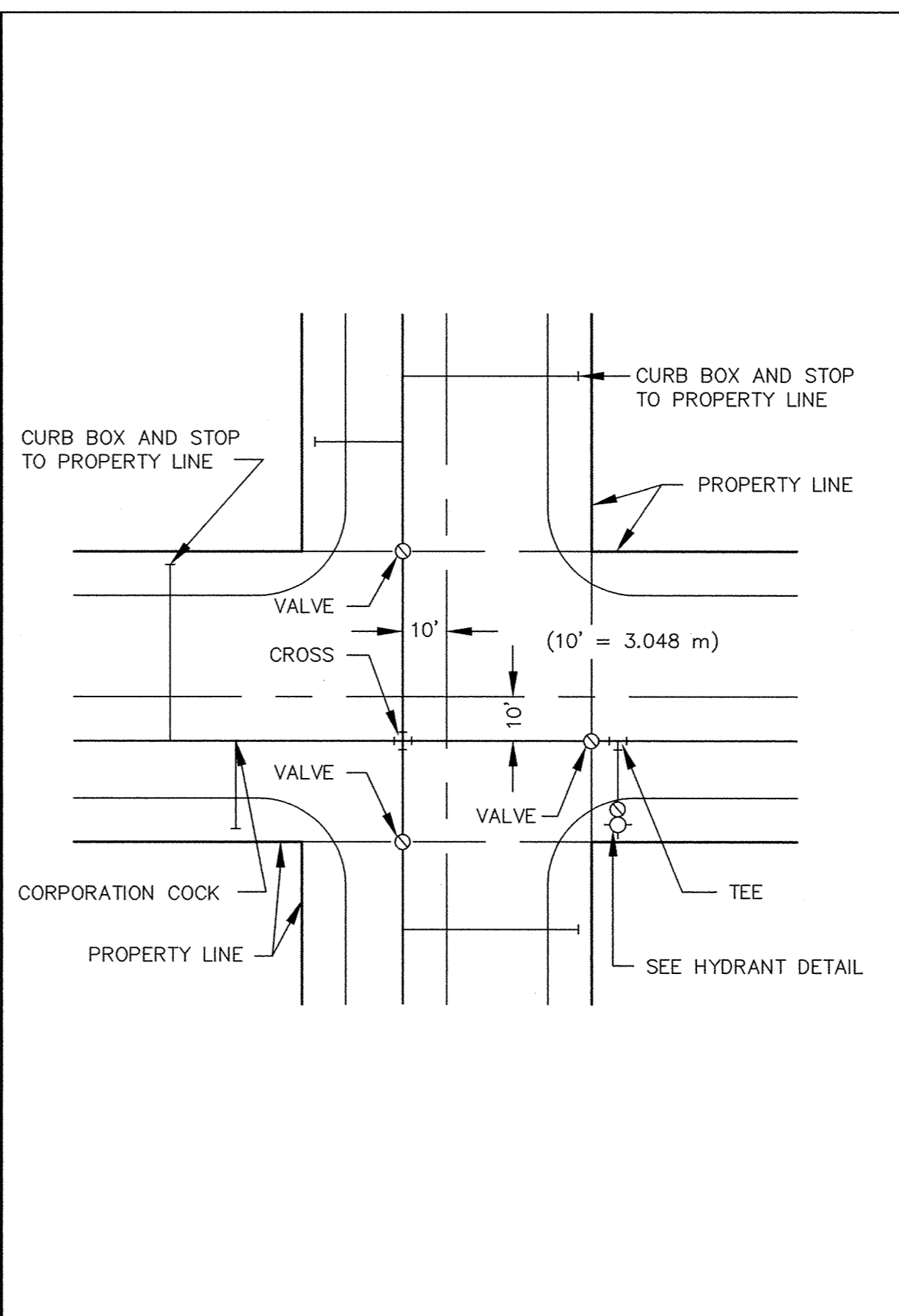
CLASS B PIPE BEDDING



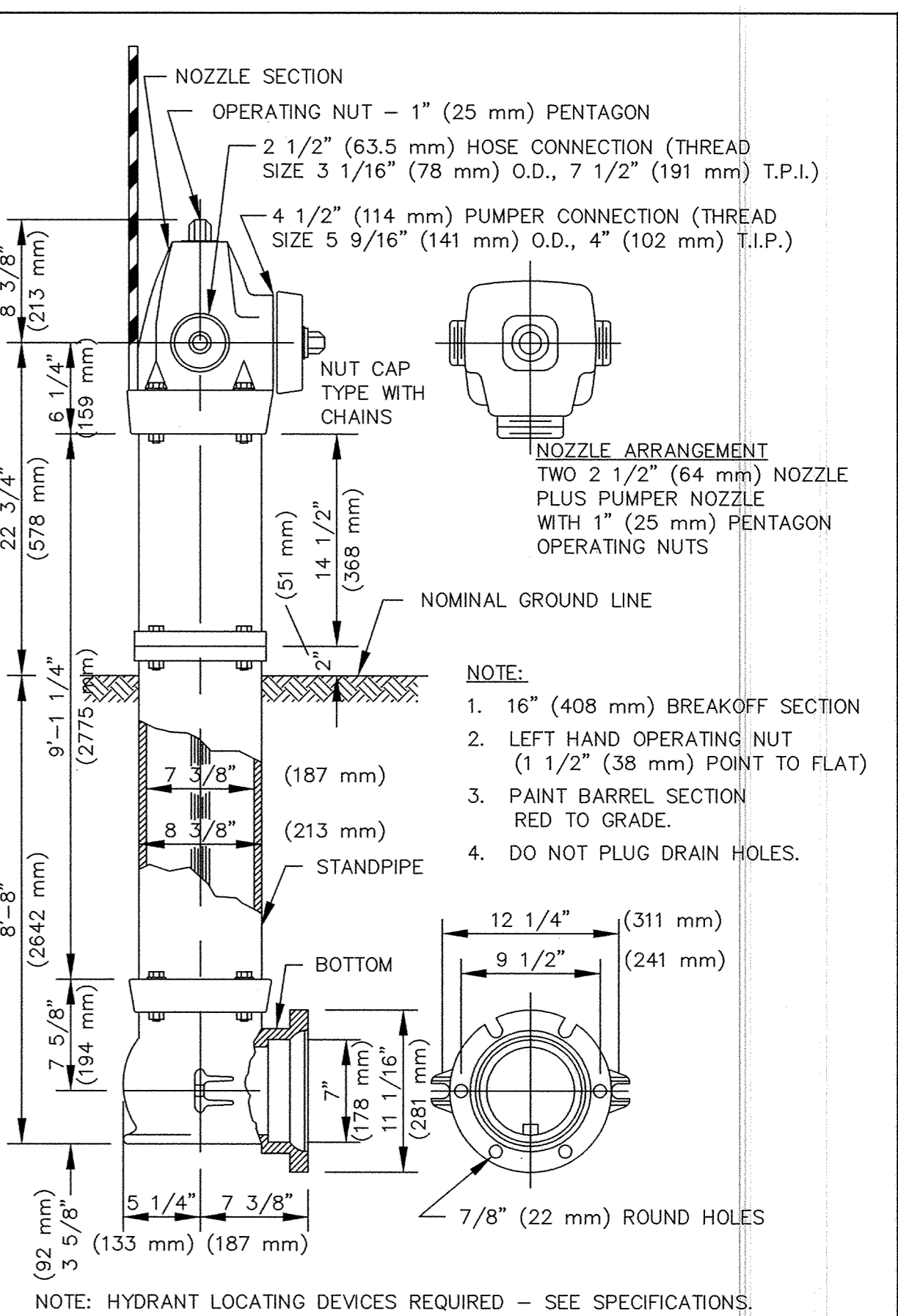
THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO FIT THE PIPE BARREL FOR AT LEAST 50% OF THE OUTSIDE DIAMETER. THE REMAINDER OF THE PIPE IS SURROUNDED TO A HEIGHT OF AT LEAST 6" (152 mm) ABOVE ITS TOP BY SELECT FILL MATERIALS, PLACED BY HAND TOOLS AND COMPACTED TO COMPLETELY FILL ALL SPACES UNDER AND ADJACENT 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



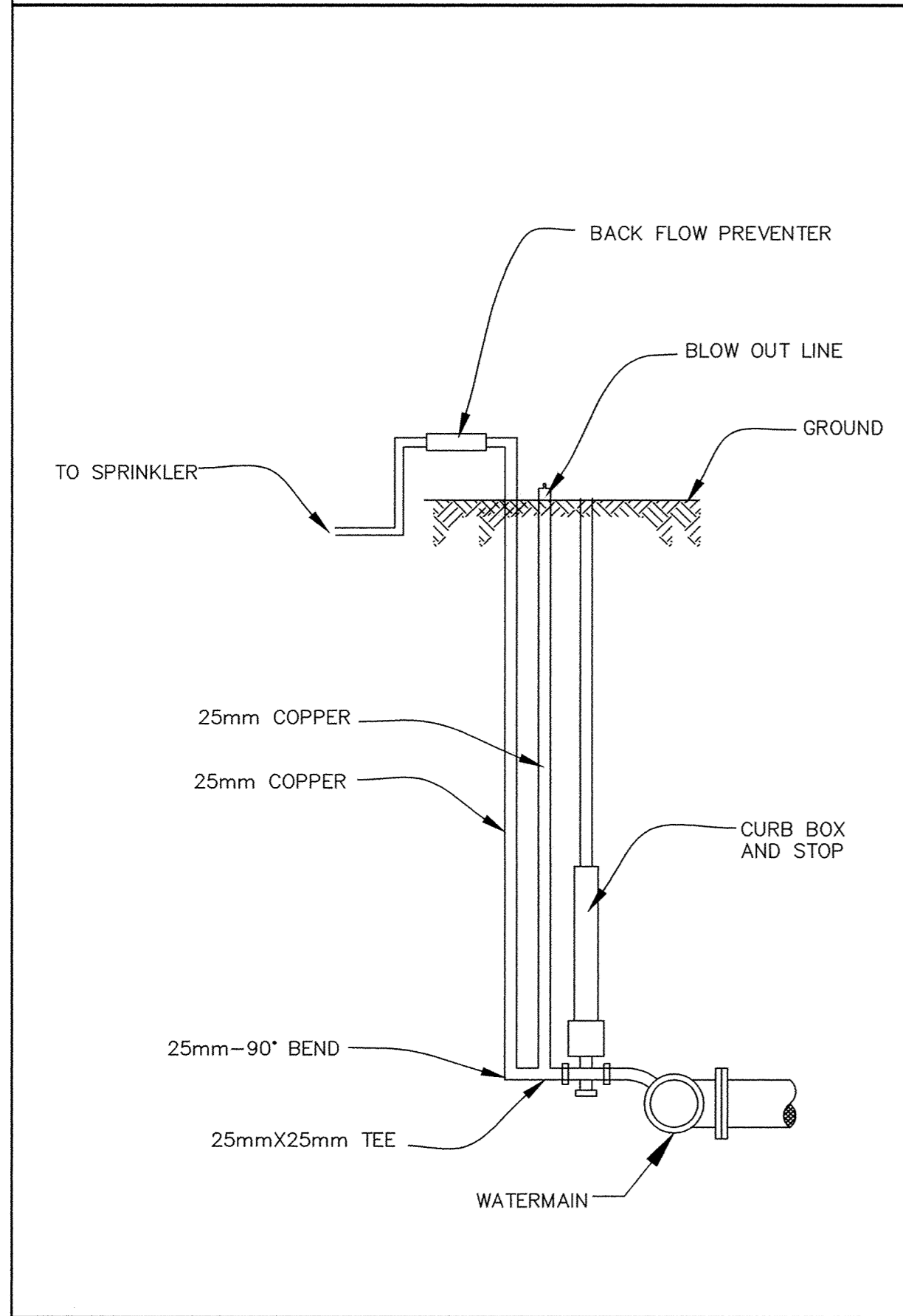
TYPICAL WATER LAYOUT



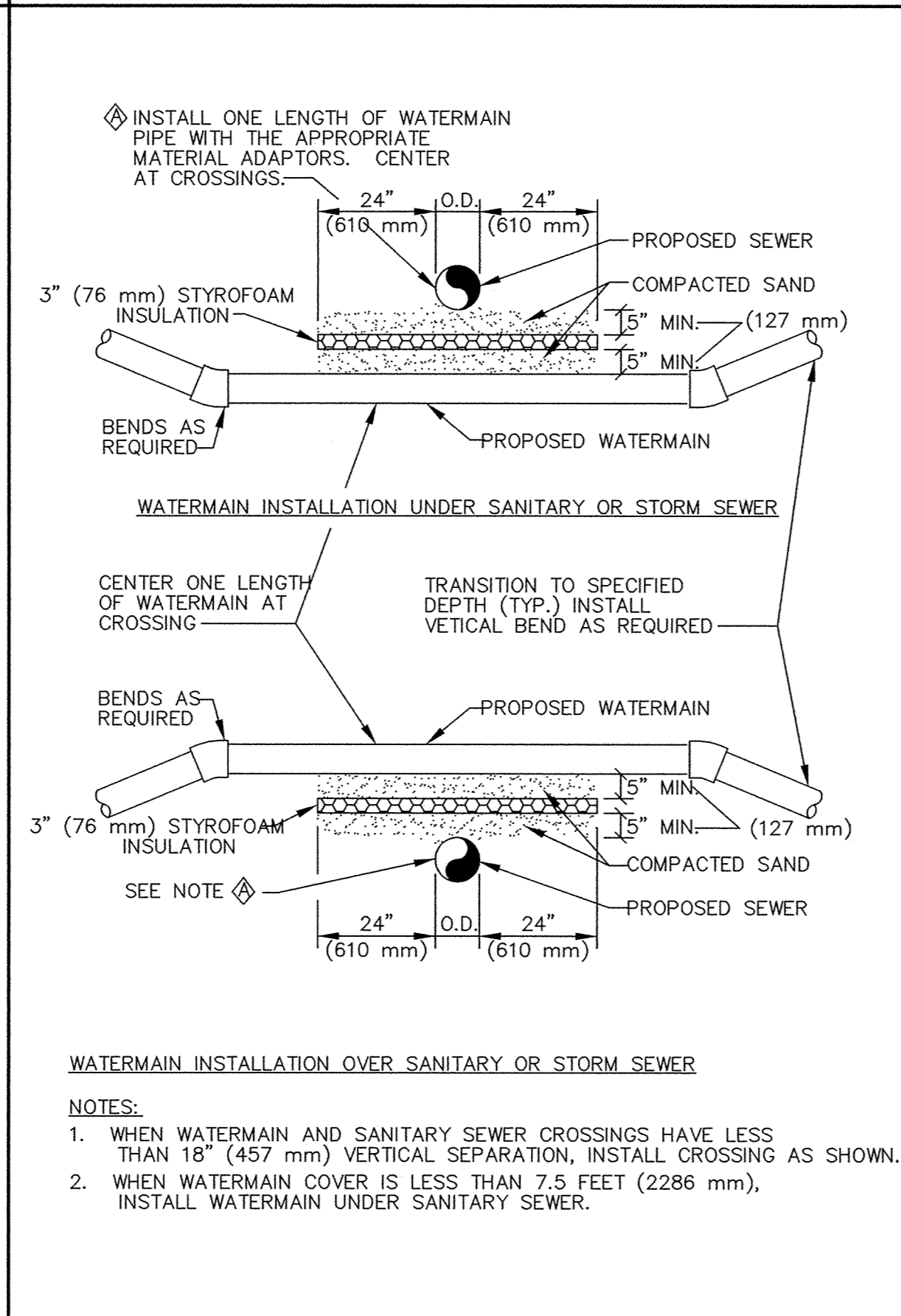
- NOTE:
1. 16" (408 mm) BREAKOFF SECTION
 2. LEFT HAND OPERATING NUT (1 1/2" (38 mm) POINT TO FLAT)
 3. PAINT BARREL SECTION RED TO GRADE.
 4. DO NOT PLUG DRAIN HOLES.

NOTE: HYDRANT LOCATING DEVICES REQUIRED - SEE SPECIFICATIONS.

PACER HYDRANT DETAIL

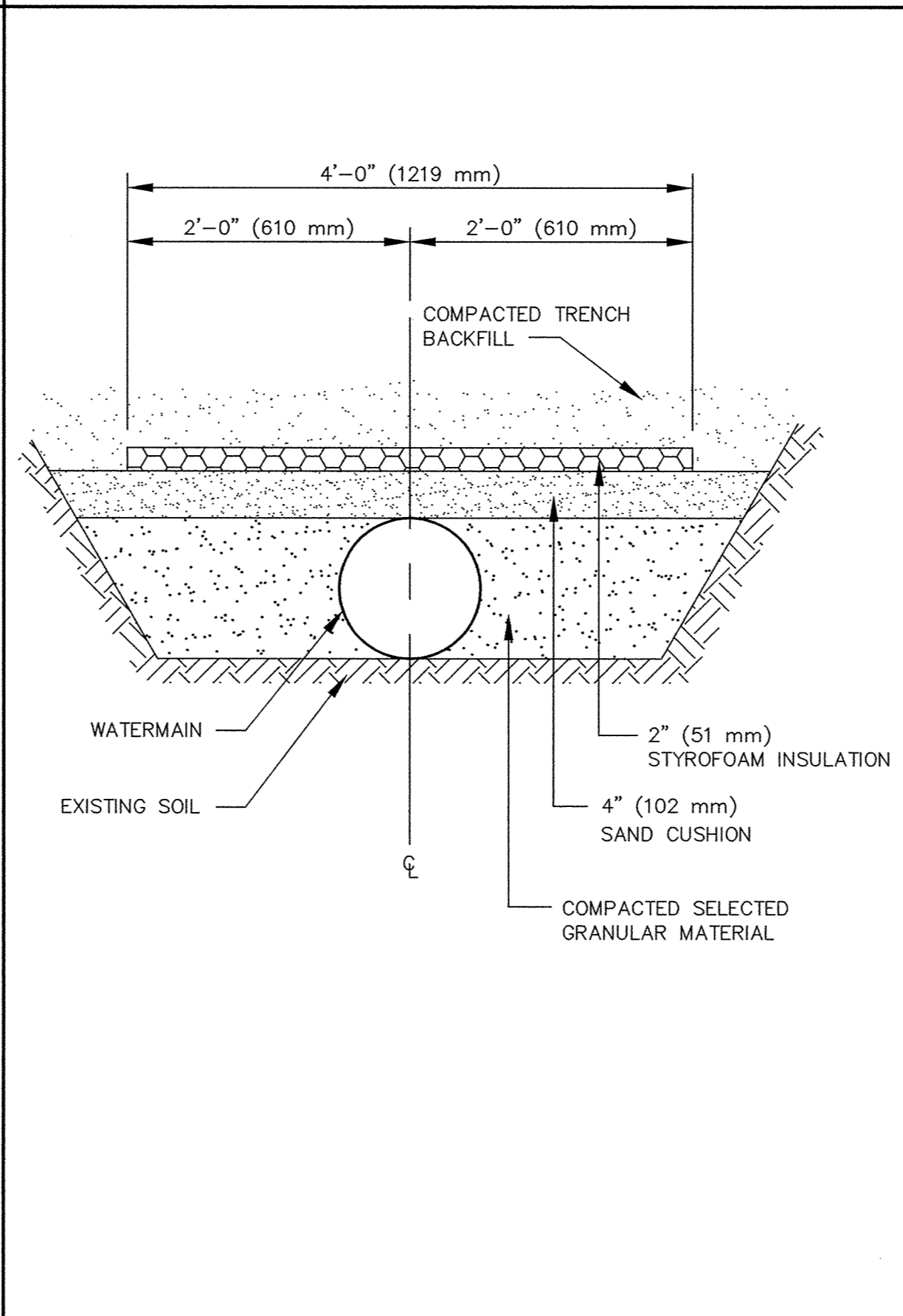


25mm COPPER RISER PIPE FOR SPRINKLER SYSTEM

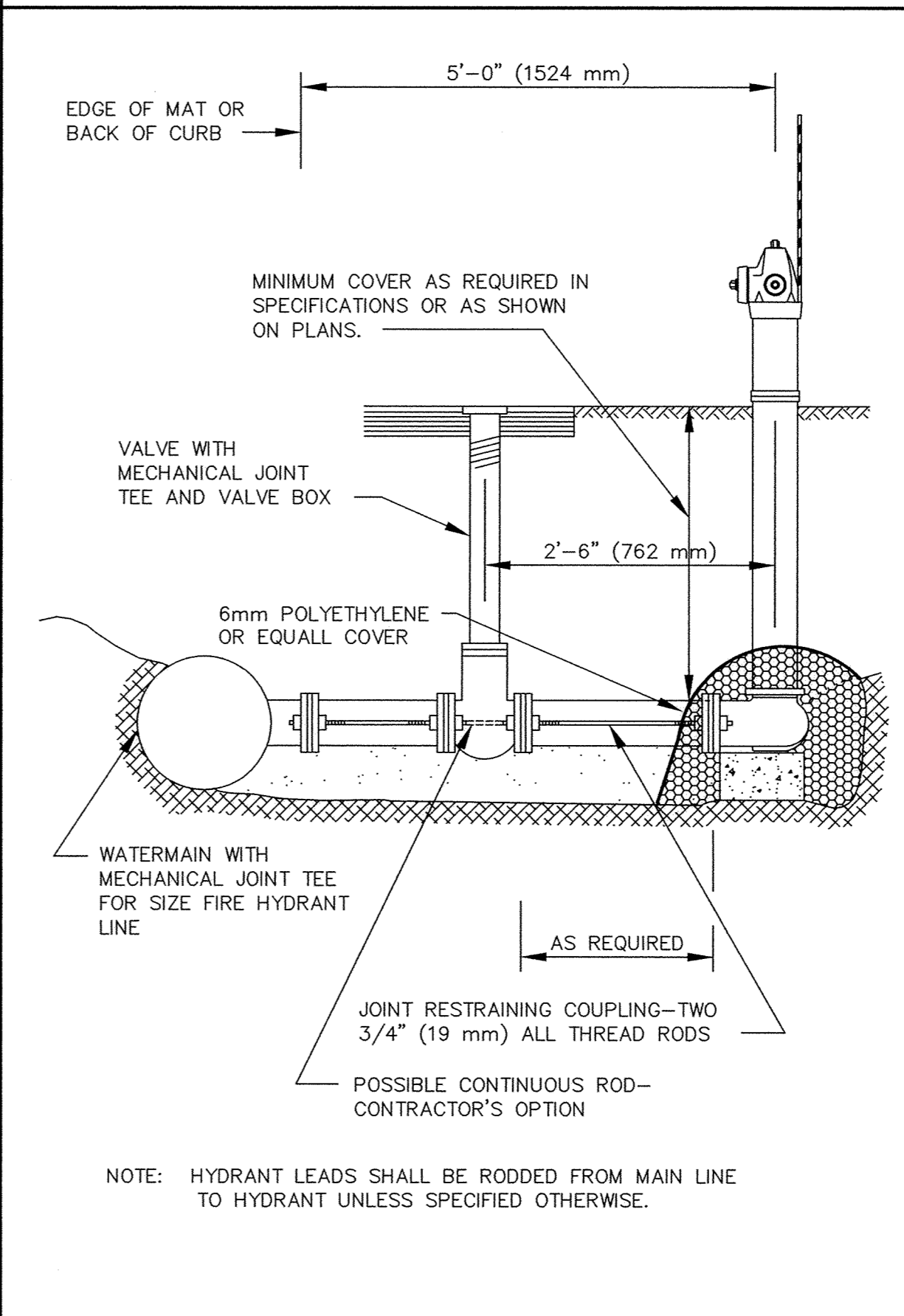


- NOTES:
1. WHEN WATERMAIN AND SANITARY SEWER CROSSINGS HAVE LESS THAN 18" (457 mm) VERTICAL SEPARATION, INSTALL CROSSING AS SHOWN.
 2. WHEN WATERMAIN COVER IS LESS THAN 7.5 FEET (2286 mm), INSTALL WATERMAIN UNDER SANITARY SEWER.

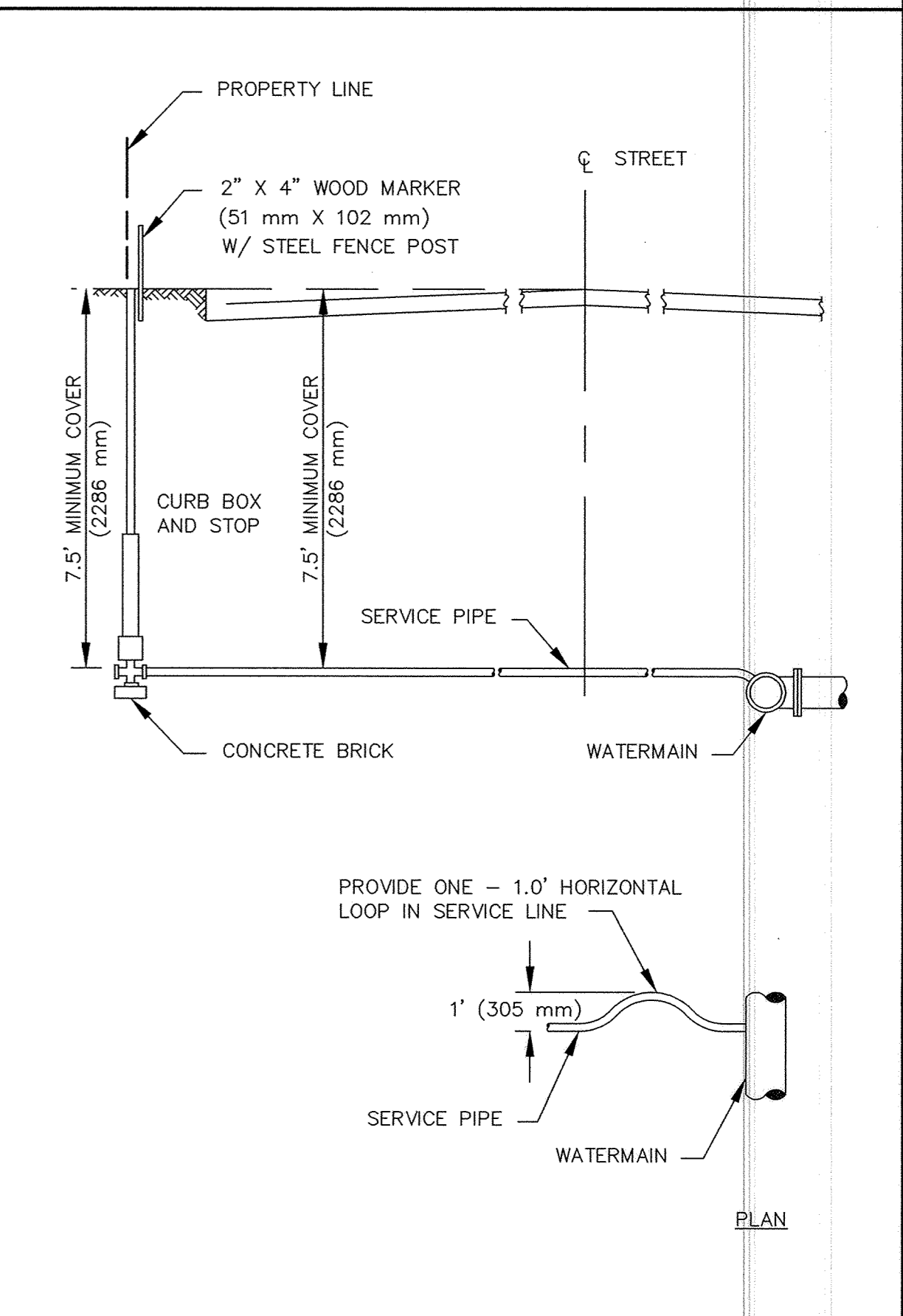
WATERMAIN CROSSING



PIPE INSULATION DETAIL



RODDING DETAIL



TYPICAL SERVICE DETAIL

DRAWN BY: _____ JOB DATE: SEPT. 1998
 APPROVED: _____ JOB NUMBER 800110J
 CAD DATE: October 13, 1998 3:55:02 p.m.
 CAD FILE: 800110j\dwgs\MISC\800110_D2.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 10/15/98 REG. NO. 15316

| NO. | DATE | BY | REVISION DESCRIPTION |
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Howard R. Green Company
 CONSULTING ENGINEERS

CITY OF ELK RIVER
 EASTERN AREA PHASE I IMPROVEMENTS
 WATERMAIN DETAILS

SHEET NO.
G-4