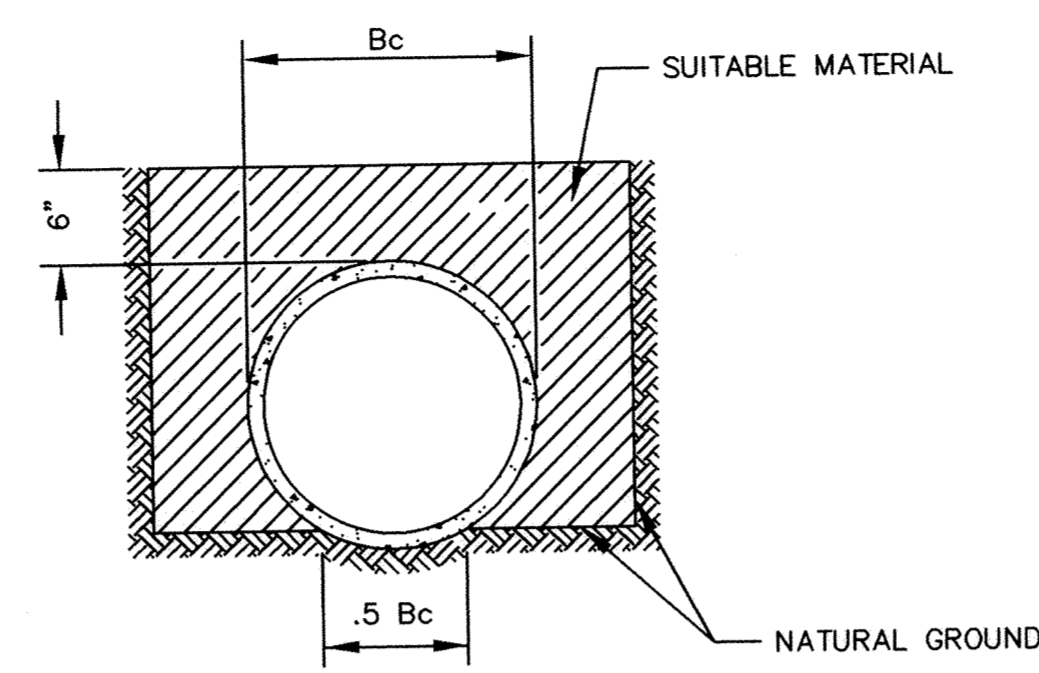


NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.

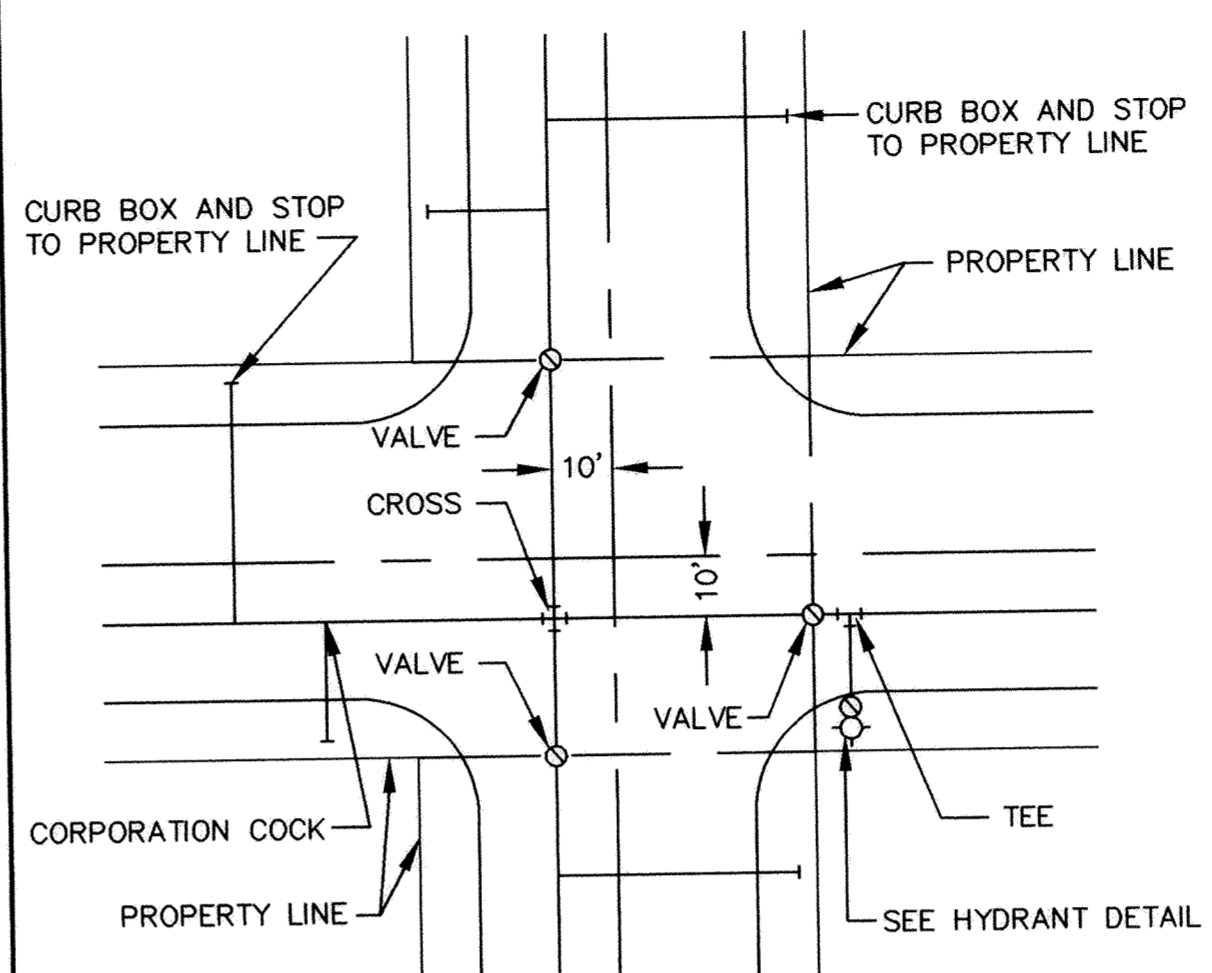
CLASS B PIPE BEDDING



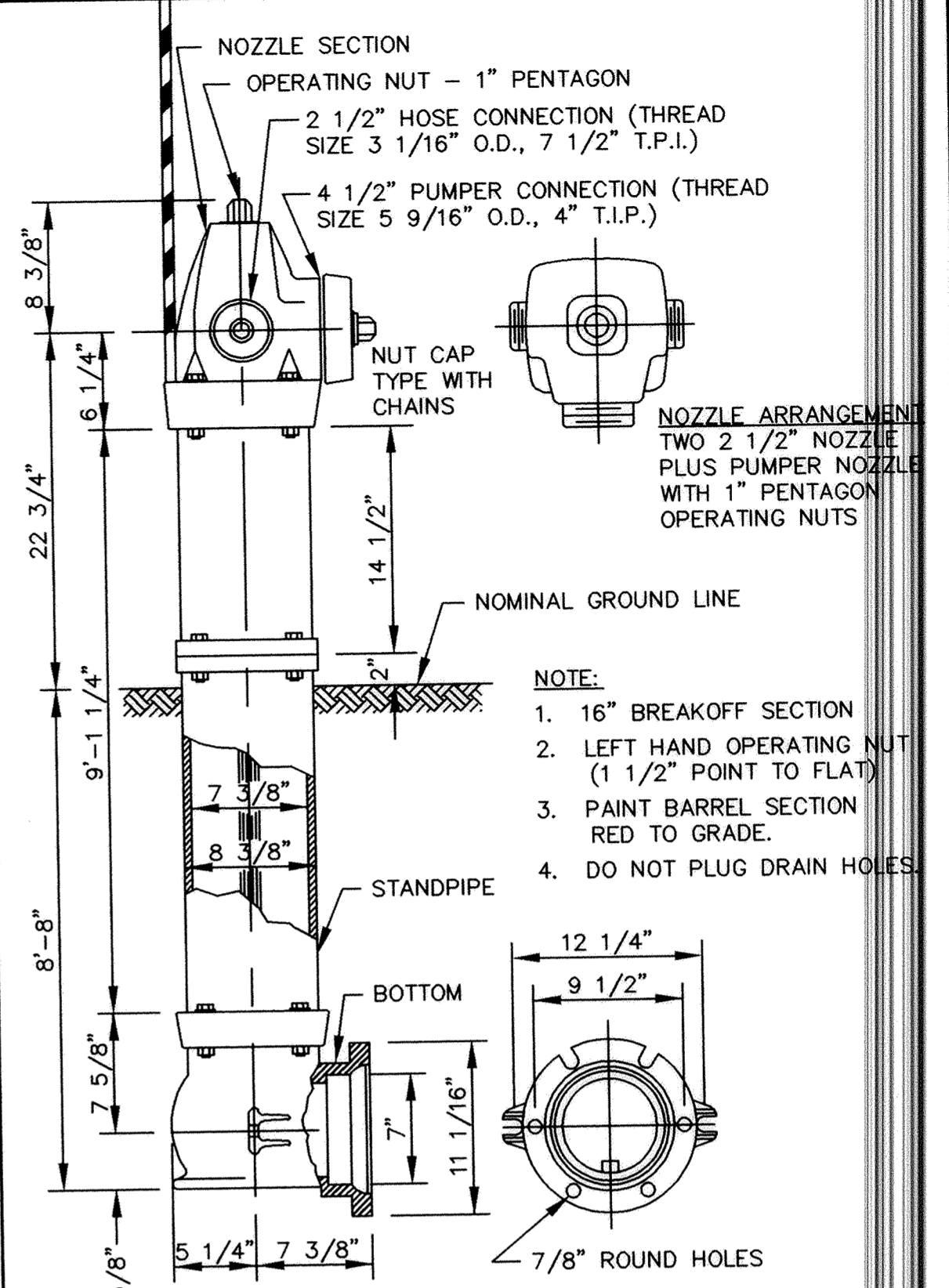
THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO FIT THE PIPE BARREL FOR AT LEAST 50% OF THE OUTSIDE DIAMETER. THE REMAINDER OF THE PIPE IS SURROUNDED TO A HEIGHT OF AT LEAST 6\"/>

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



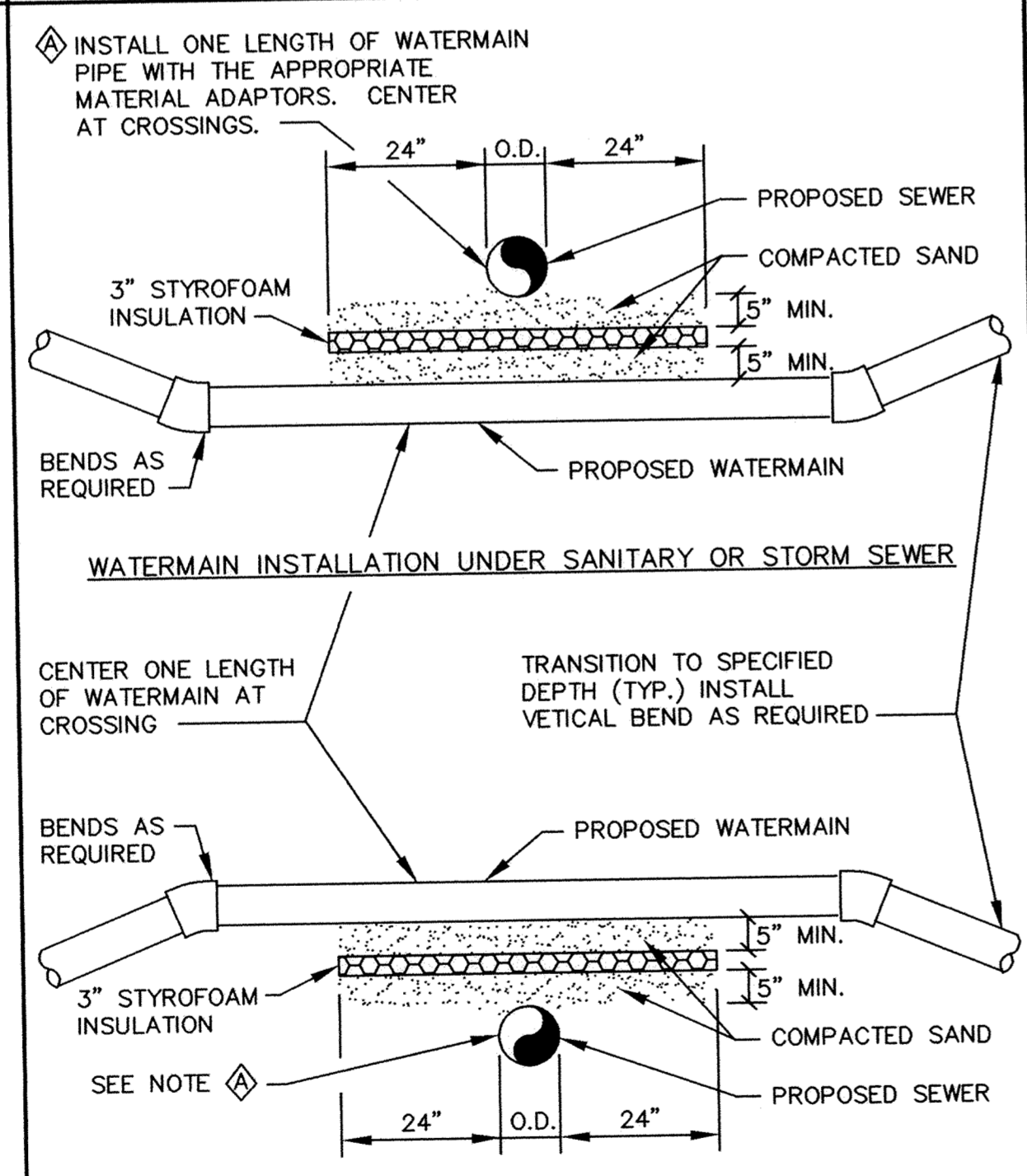
TYPICAL WATER LAYOUT



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

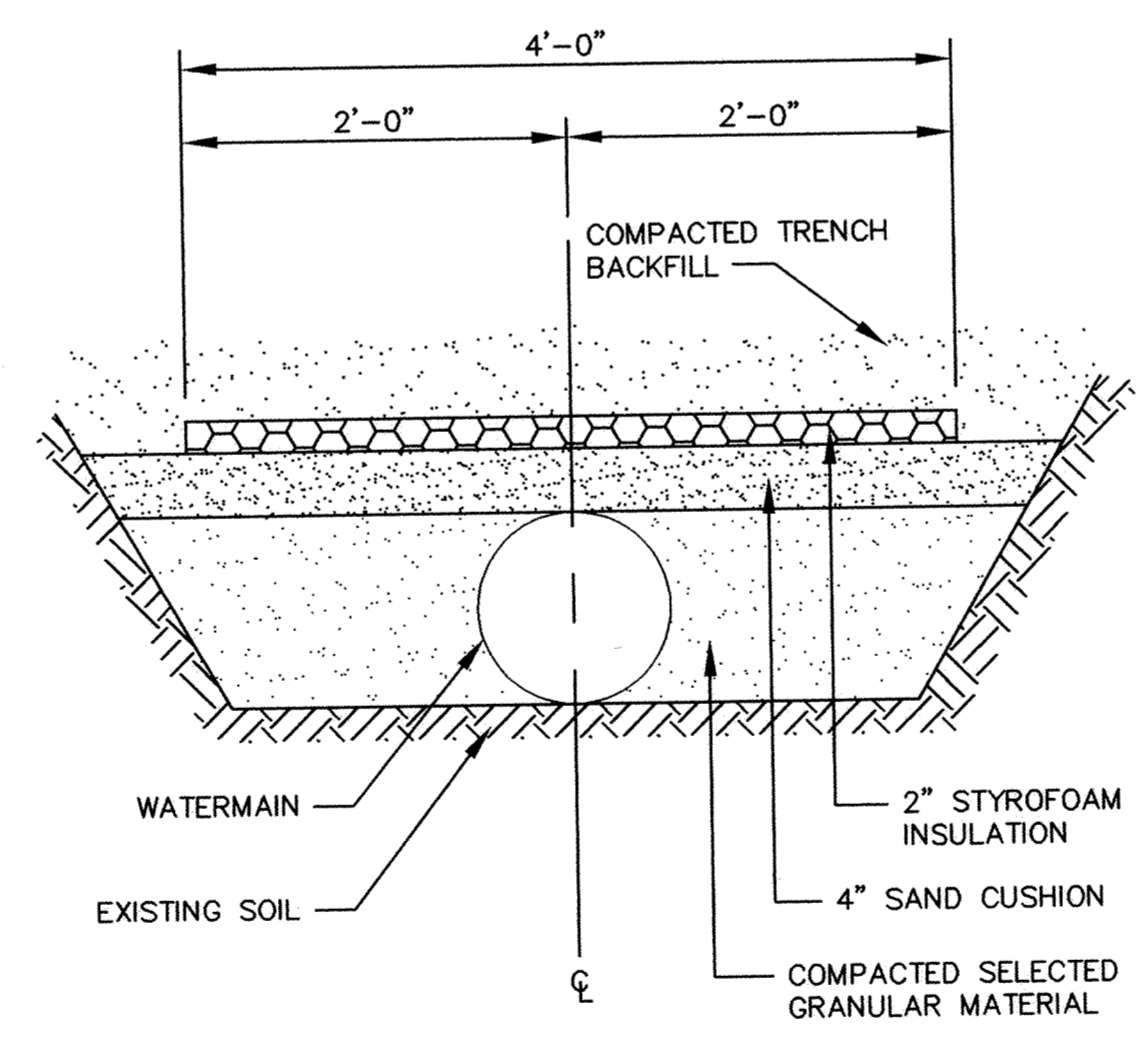
NOTE: HYDRANT LOCATING DEVICES REQUIRED - SEE SPECIFICATIONS.

PACER HYDRANT DETAIL

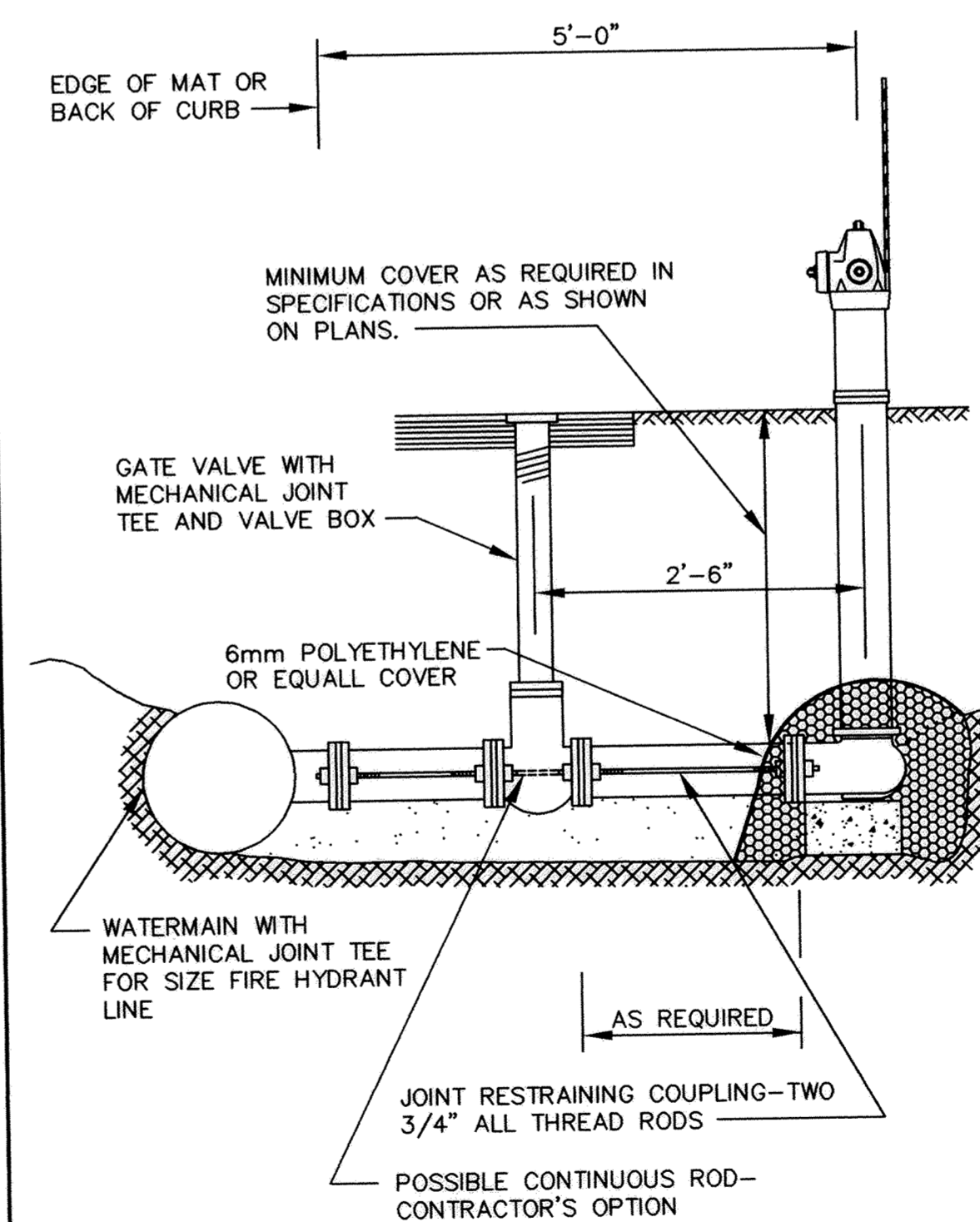


- NOTES:
- WHEN WATERMAIN AND SANITARY SEWER CROSSINGS HAVE LESS THAN 18" VERTICAL SEPARATION, INSTALL CROSSING AS SHOWN.
 - WHEN WATERMAIN COVER IS LESS THAN 7.5 FEET, INSTALL WATERMAIN UNDER SANITARY SEWER.

WATERMAIN CROSSING

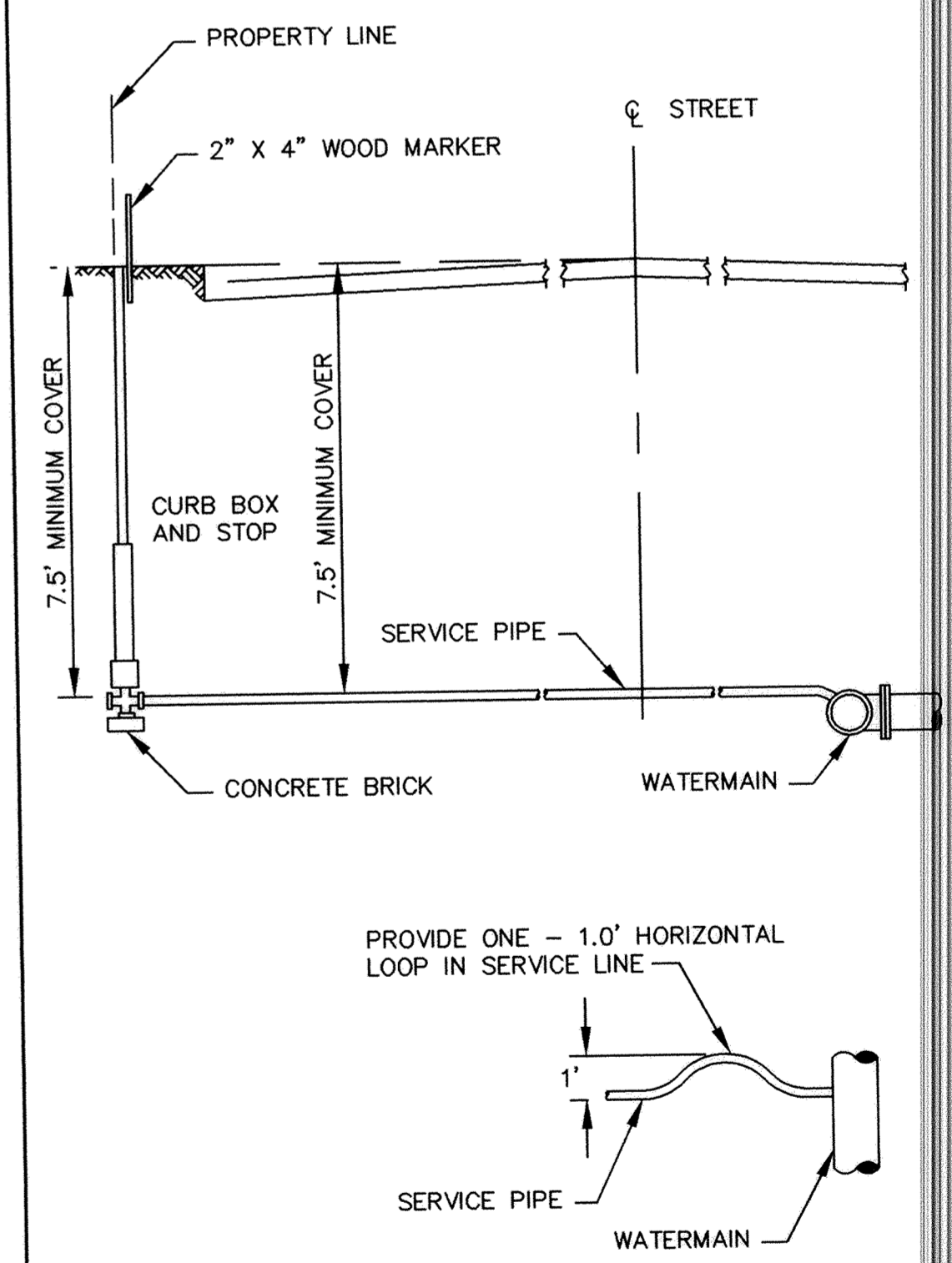


PIPE INSULATION DETAIL



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

RODDING DETAIL



RECORD PLAN
MARCH 2002

TYPICAL SERVICE DETAIL

DESIGNED BY: JMA DRAWN BY: RKM
APPROVED BY: TJM JOB NUMBER 807650
CAD DATE: June 28, 2000 7:18:04 a.m.
CAD FILE: 807650\807650-W.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. 15316

NO.	DATE	BY	REVISION DESCRIPTION

1326 ENERGY PARK DRIVE
ST. PAUL, MINNESOTA 55108
(651) 644-4389
Howard R. Green Company
CONSULTING ENGINEERS

CITY OF ELK RIVER
WESTERN AREA PHASE IV
STREET AND UTILITY IMPROVEMENTS

WATERMAIN DETAILS
S.A.P. 204-131-02, 204-126-03, S.P. 7102-99

SHEET NO.
13