

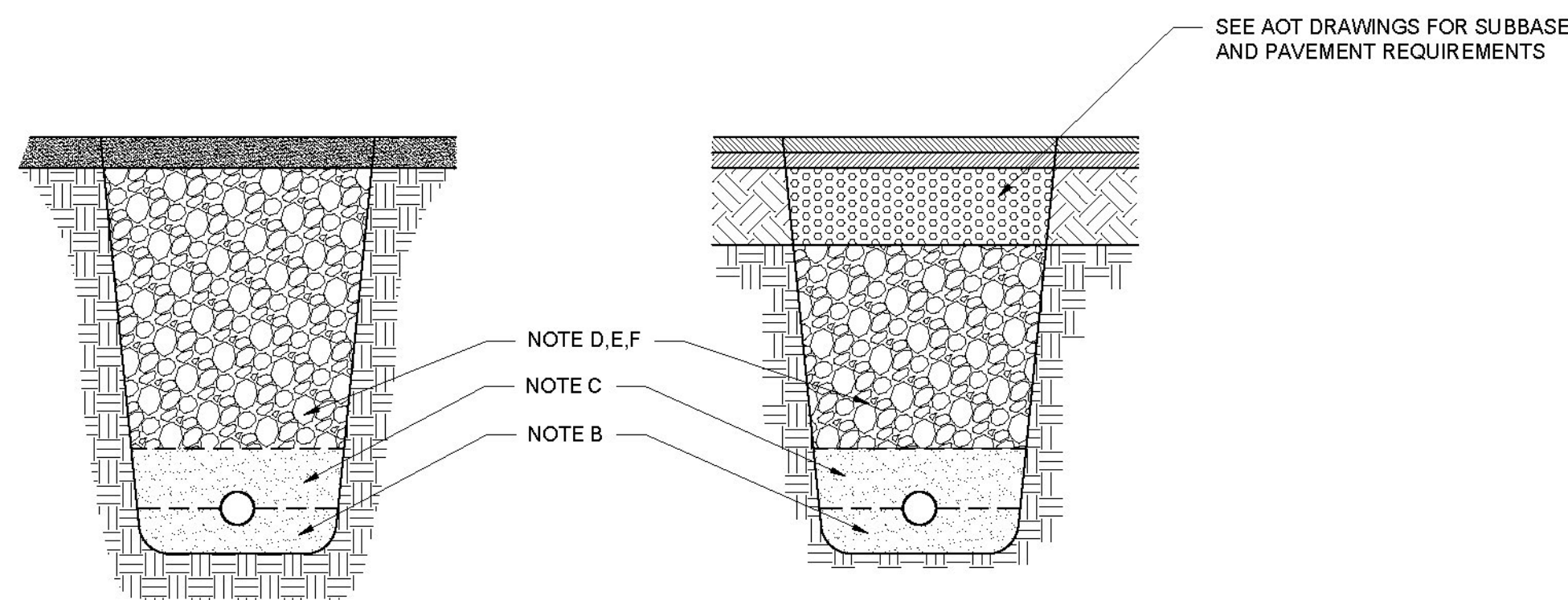
MINIMUM BEARING SURFACE AREA OF CONCRETE THRUST BLOCKS (IN SQUARE FEET)

REDUCERS			4-8"			10"			12"			SOIL CONDITION	SAFE BEARING LOAD (PSF)			
8X6	10X8	12X8	ENDS & TEES	90° ELB	45° ELB	22.5° OR LESS	ENDS & TEES	90° ELB	45° ELB	22.5° OR LESS	ENDS & TEES			90° ELB	45° ELB	22.5° OR LESS
3.0	5.0	6.0	4.0	6.0	3.0	2.0	6.0	8.0	5.0	2.0	8.0	12.0	6.0	3.0	SOUND SHALE	10000
3.0	5.0	6.0	4.5	6.5	3.5	2.0	8.0	11.0	6.0	3.0	10.0	14.0	7.5	4.0	CEMENTED GRAVEL AND SAND	4000
7.0	7.0	11.0	7.0	9.0	5.0	3.0	10.0	14.0	7.0	4.0	14.0	19.0	11.0	5.0	COARSE AND FINE COMPACT SAND	3000
8.0	9.0	14.0	15.0	20.0	10.0	5.0	21.0	31.0	15.0	8.0	30.0	40.0	20.0	10.0	MEDIUM CLAY (CAN BE SPADED)	2000
8.0	11.0	16.0	20.0	28.0	15.0	8.0	29.0	41.0	22.0	11.0	41.0	58.0	31.0	16.0	SOFT CLAY	1000

MAX WATER PRESSURE 300 PSI

C1 TYPICAL CONCRETE THRUST BLOCK DETAIL
Scale: NTS

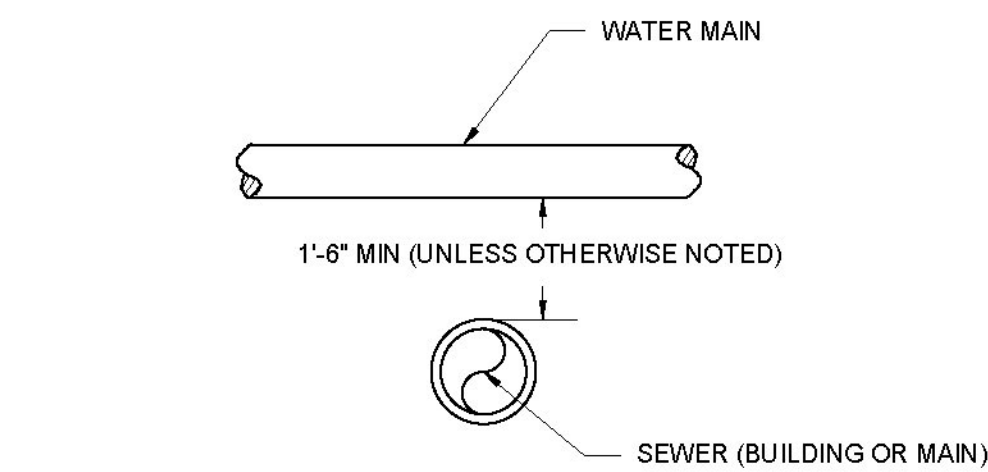
NOTES:
1. PLACE 3 MIL MINIMUM POLYETHYLENE SHEETING BETWEEN ALL CONCRETE THRUST BLOCKS AND PIPE AND/OR FITTINGS TO PREVENT BONDING



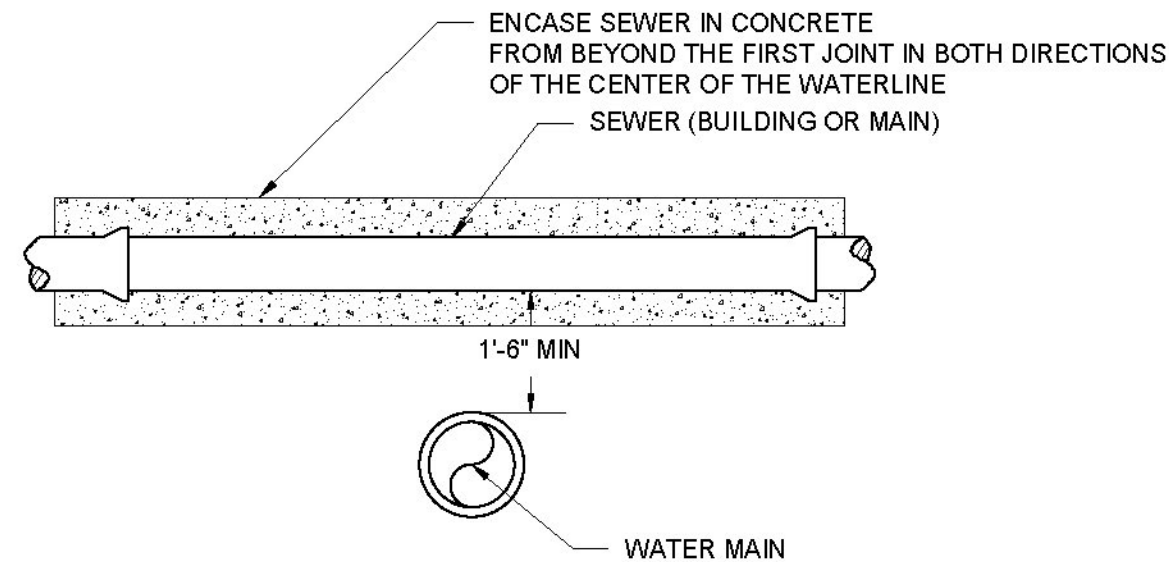
C2 TYPICAL TRENCH DETAIL
Scale: NTS

INSTALLATION SPECIFICATIONS

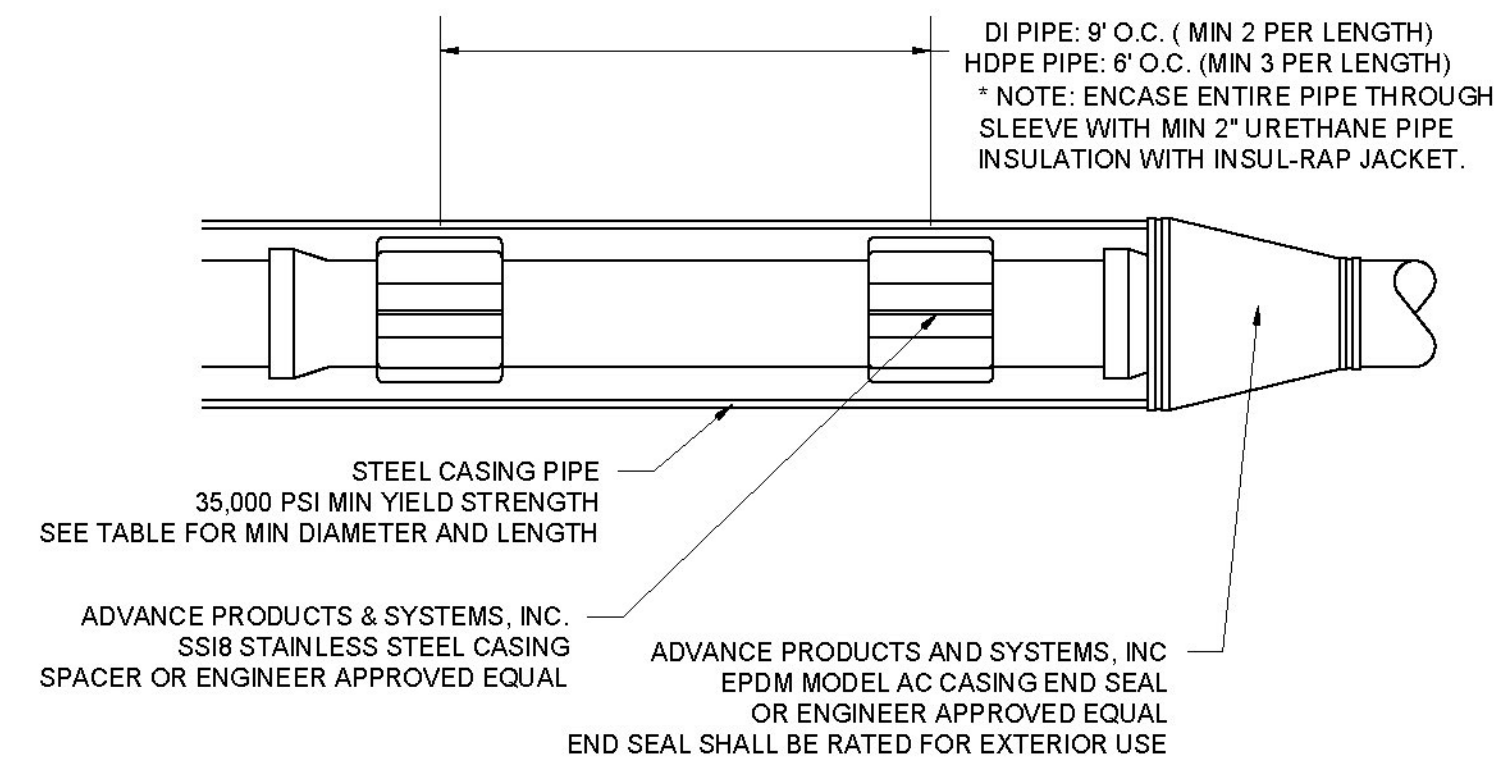
- A. MINIMUM BURIAL DEPTH 5'-6" (4'-0" FOR SEWER) IF CONDITIONS PREVENT MINIMUM BURIAL DEPTH, ALL SECTIONS OF LINE LESS THAN MIN. DEPTH SHALL BE INSULATED WITH 1" THICKNESS RIGID FOAM INSULATION PER FOOT LESS THAN MINIMUM (MIN. 2" THICKNESS 250 PSI)
- B. BED PIPE IN 6" OF 3/8" CRUSHED STONE. PIPE SHALL NOT BE LAID IN UNCOMPACTED SOIL OR IN WATER.
- C. BACKFILL OVER PIPE W/ 12" MIN 3/8" CRUSHED STONE ENTIRE WIDTH OF TRENCH
- D. REMAINDER OF BACKFILL TO BE SELECT MATERIAL OR GRANULAR BACKFILL FOR STRUCTURES NOT GREATER THAN 6" IN LARGEST DIMENSION. BACKFILL TO BE COMPACTED IN 6" LIFTS UNDER ROADS AND PAVED AREAS.
- E. SELECT MATERIAL SHALL CONSIST OF SUITABLE MATERIAL REMOVED FROM EXCAVATION, AND SHALL BE FREE OF CLODS, DEBRIS, FROZEN CHUNKS, PAVEMENT PIECES, LARGE STONES, ORGANIC MATERIAL OR ANY OTHER MATERIAL DEEMED UNSUITABLE BY THE ENGINEER.
- F. BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY IN ALL TRENCH EXCAVATIONS, (85% OF LAWN/GRASS AREA)



C4 WATER CROSSING SEWER - ABOVE
Scale: NTS



C5 WATER CROSSING SEWER - BELOW
Scale: NTS

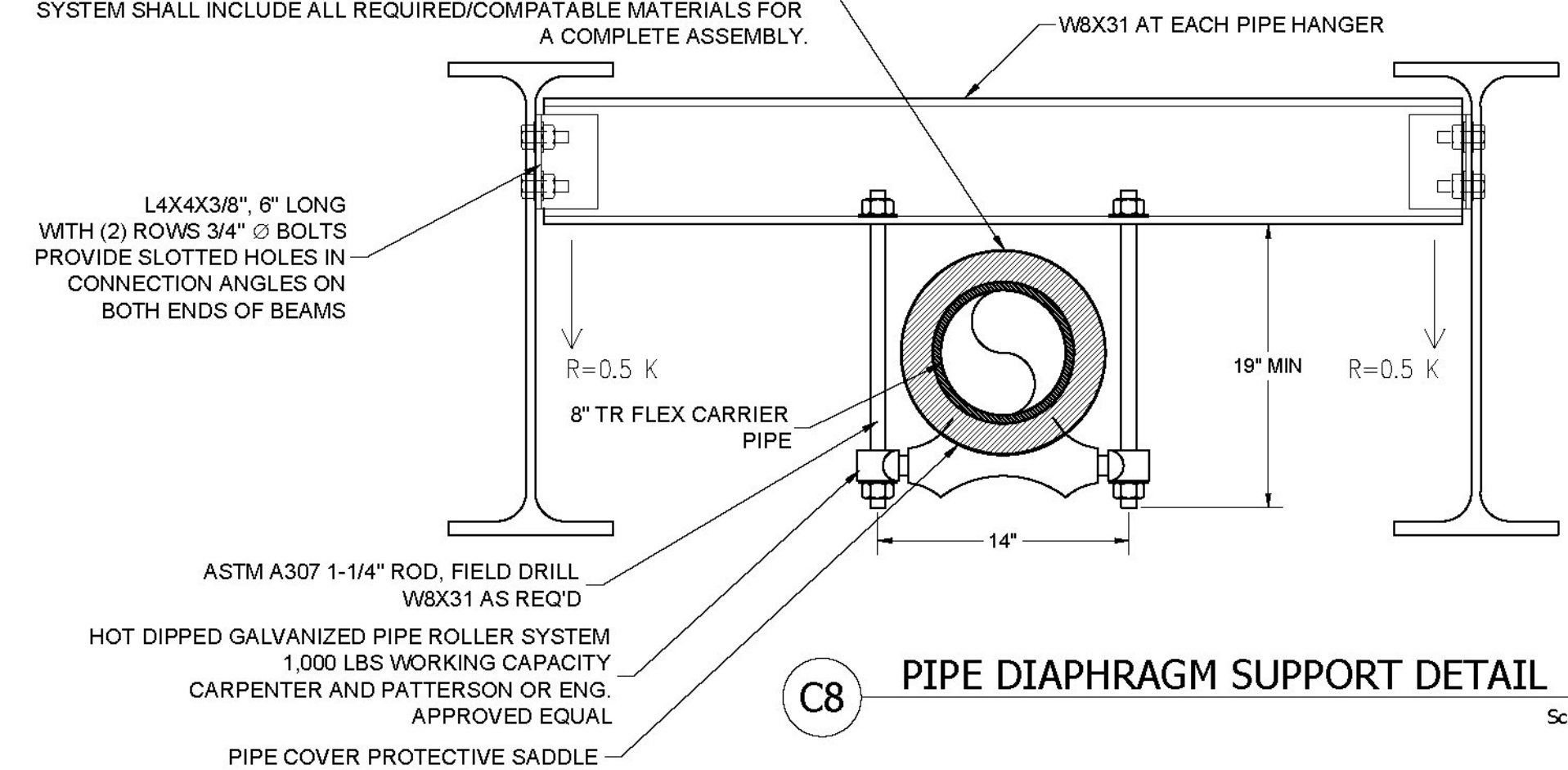


C7 SLEEVE PIPE DETAIL
Scale: NTS

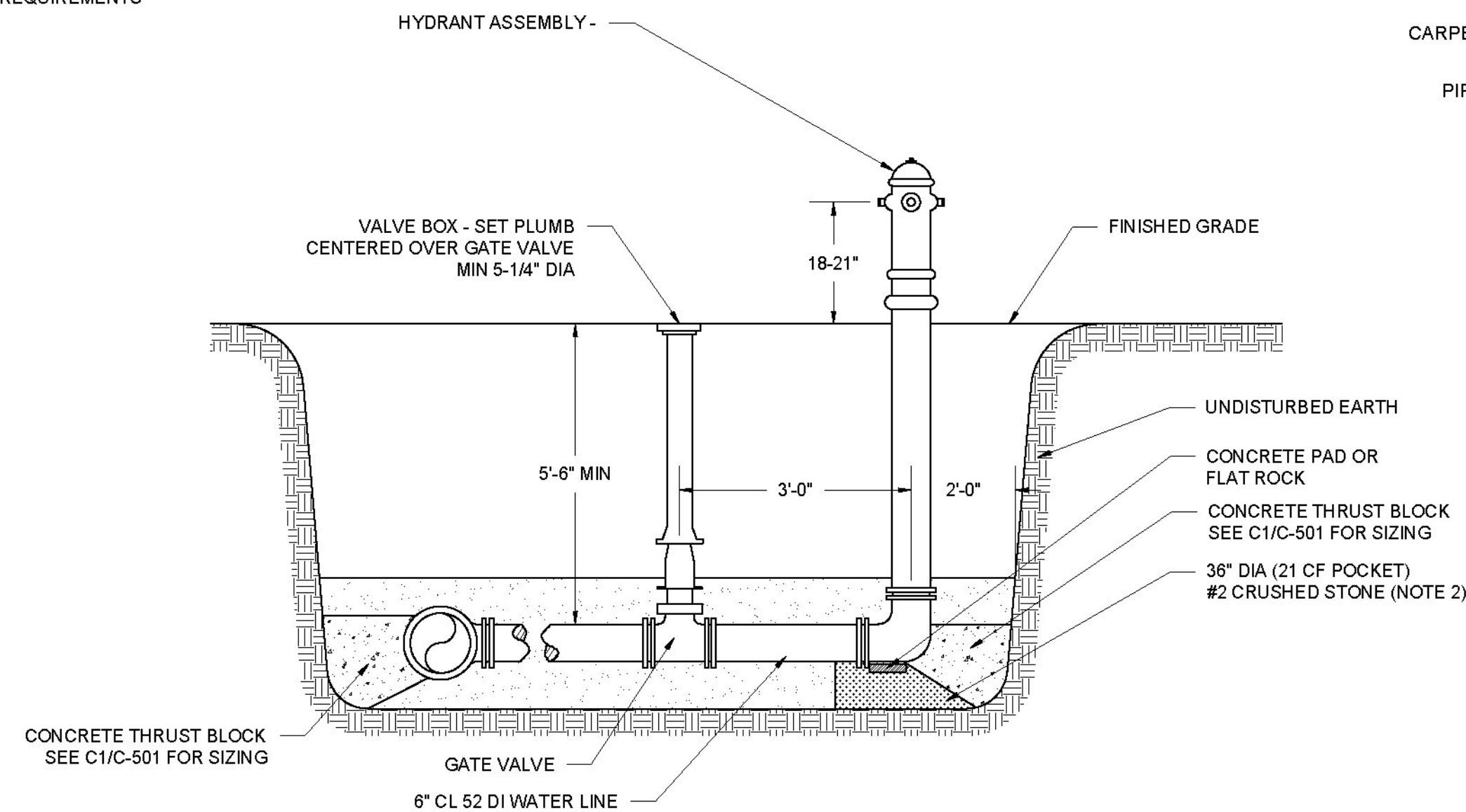
SLEEVE PIPE SIZE AND THICKNESS

CARRIER DIA	CASING DIA/MATL	MIN THICKNESS
3/4"-2" "K" CU	4" HDPE	N/A
4" DI	14" STEEL	0.312 inch
6" DI	16" STEEL	0.312 inch
8" DI	18" STEEL	0.312 inch
10" DI	20" STEEL	0.312 inch
12" DI	22" STEEL	0.312 inch
16" DI	28" STEEL	0.375 inch

2" INSULATION JACKET - TRYMER 2000 XP OR ENGINEER APPROVED EQUAL WITH ITW PABCO/CHILDERS ALUMINUM ROLL JACKET, 0.02 MIN THICKNESS. COVERING SHALL INCLUDE ALL PIPE JOINTS AND MANUAL RELEASE VALVES. SYSTEM SHALL INCLUDE ALL REQUIRED/COMPATIBLE MATERIALS FOR A COMPLETE ASSEMBLY.

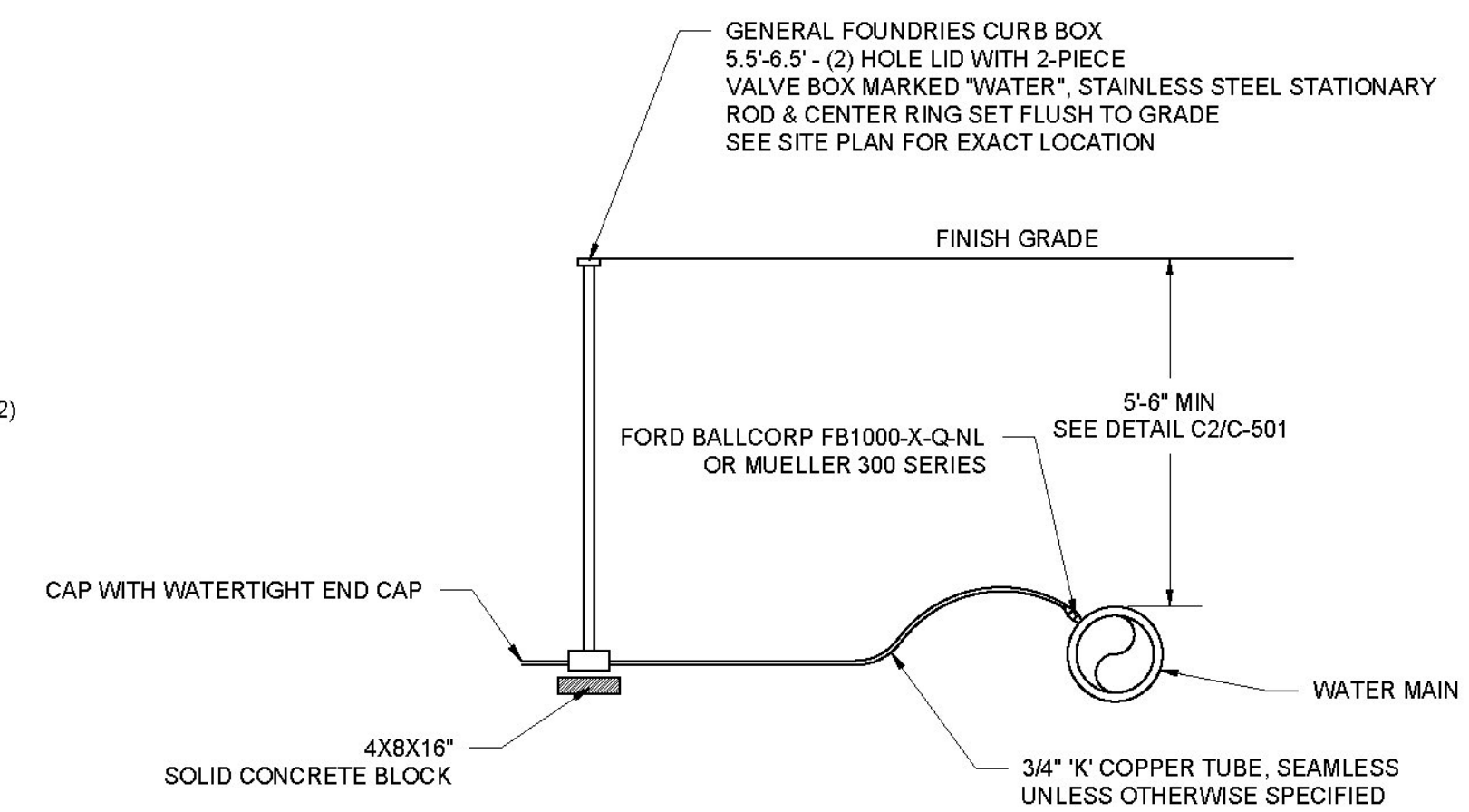


C8 PIPE DIAPHRAGM SUPPORT DETAIL
Scale: NTS



C6 HYDRANT ASSEMBLY DETAIL
Scale: NTS

NOTES:
1. ALL MECHANICAL JOINT FITTINGS SHALL HAVE "MEGALUG" RETAINER GLANDS
2. HYDRANT DRAIN SHALL BE PLUGGED IF HYDRANT IS LOCATED WITHIN 10 FEET OF A NON-PRESSURE RATED SEWERLINE OR MANHOLE OR IN AN AREA WITH SEASONAL HIGH WATER TABLE ABOVE DRAIN OR AS DESIGNATED BY THE ENGINEER



C9 WATER SERVICE TYPICAL
Scale: NTS

NOTES:
1. CONTRACTOR TO SUPPLY A MINIMUM OF (3) TIE DISTANCES FOR CORPORATIONS, CURB STOPS, END OF SERVICE AND ANY OTHER FITTINGS IN THE SERVICE LINE AS A PART OF ALL AS-BUILT DRAWINGS.

MSK ENGINEERING AND DESIGN, INC.
P.O. BOX 10, 150 DEPOT STREET
BENNINGTON, VERMONT 05201
PH: (802) 447-1402 FAX: (802) 445-1281

NO.	DATE	DESCRIPTION
1	12-19-2013	REVISED FOR PERMITTING

BRF-1000(16)
BENMONT AVENUE
BENNINGTON, VT

DRAWINGS THIS SHEET
WATERLINE DETAILS

NUMBER	DATE
	11-16-2013

DRAWN	CHECKED
.J.M.D.	.J.R.S.

SHEET NUMBER
70 of 75