PROJECT REFERENCE NO.	SHEET NO.
B-3685	UC-4

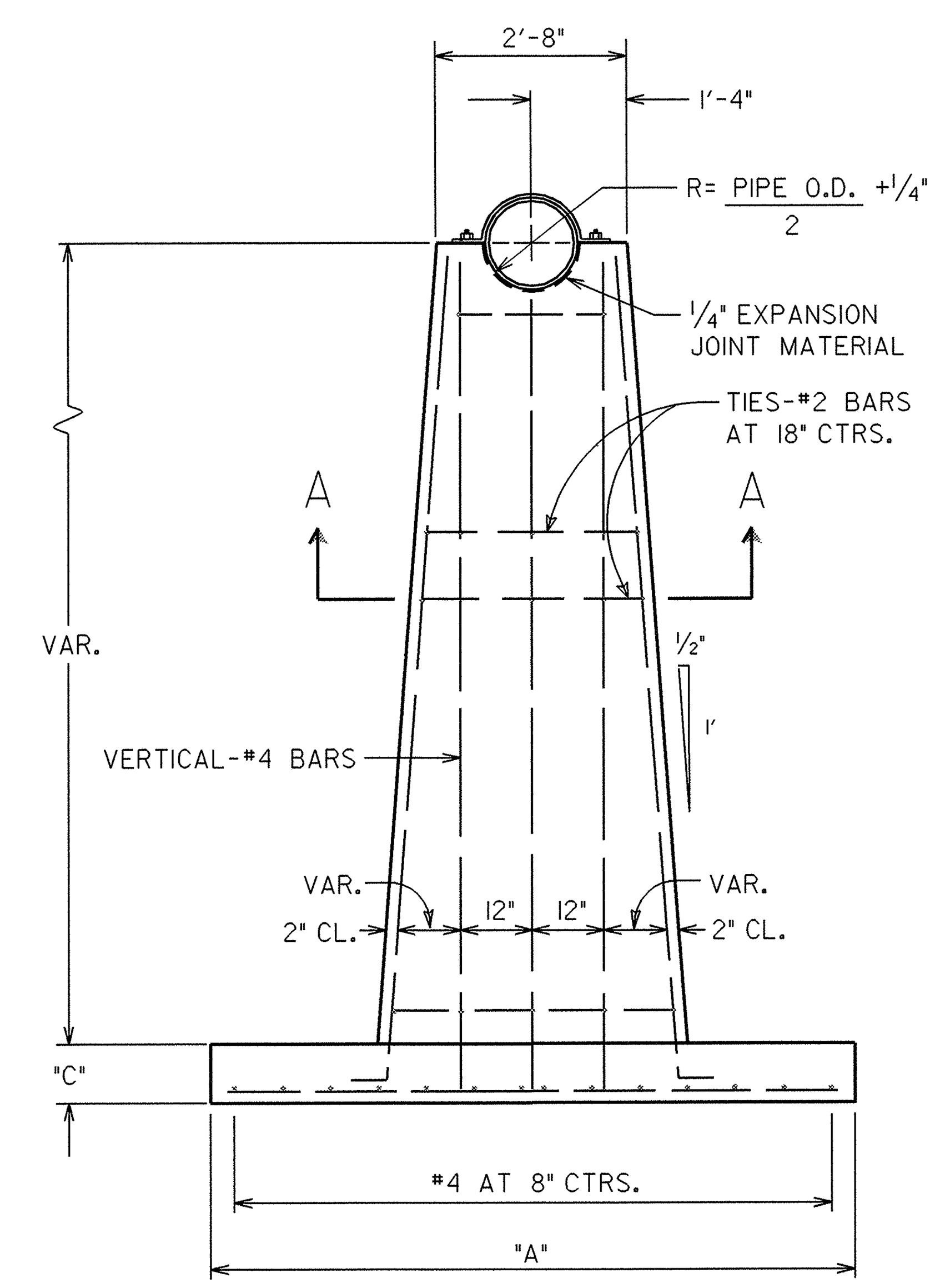
DESIGNED BY: DVJ
DRAWN BY: DVJ
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

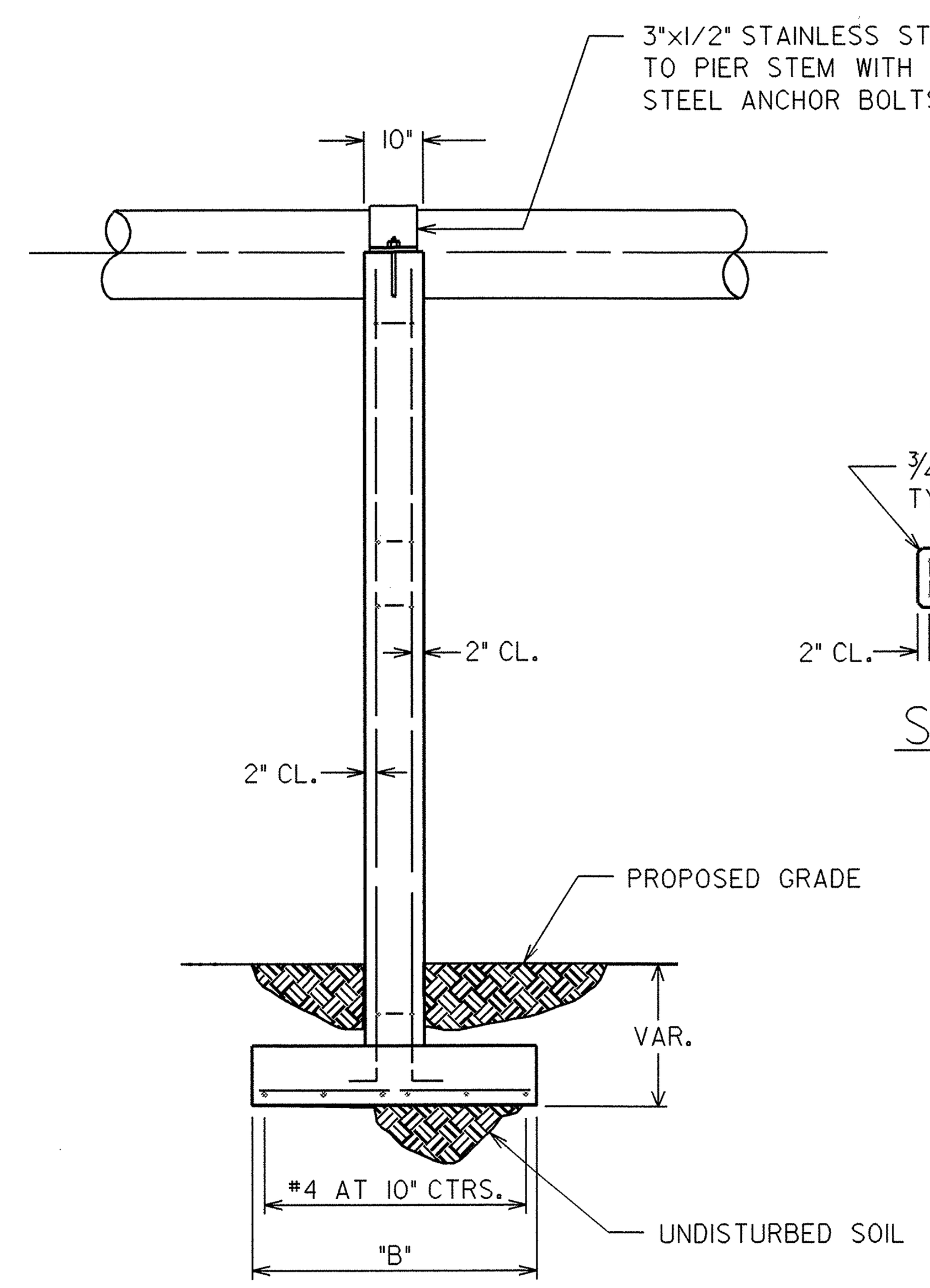
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

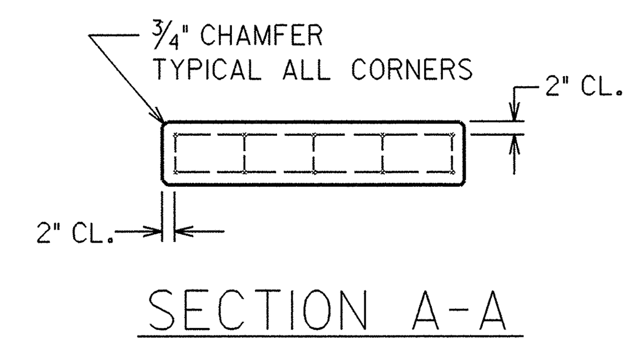
UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER 23041 COREY D. BOUSQUET 9/2/04

UTILITY CONSTRUCTION







FOOTING DIMENSIONS			
PIER HEIGHT	"A"	"B"	"C"
0' TO 5'	7'-0"	2'-4"	10"
5' TO 10'	8'-6"	3'-0"	10"
10' TO 15'	9'-0"	4'-0"	10"

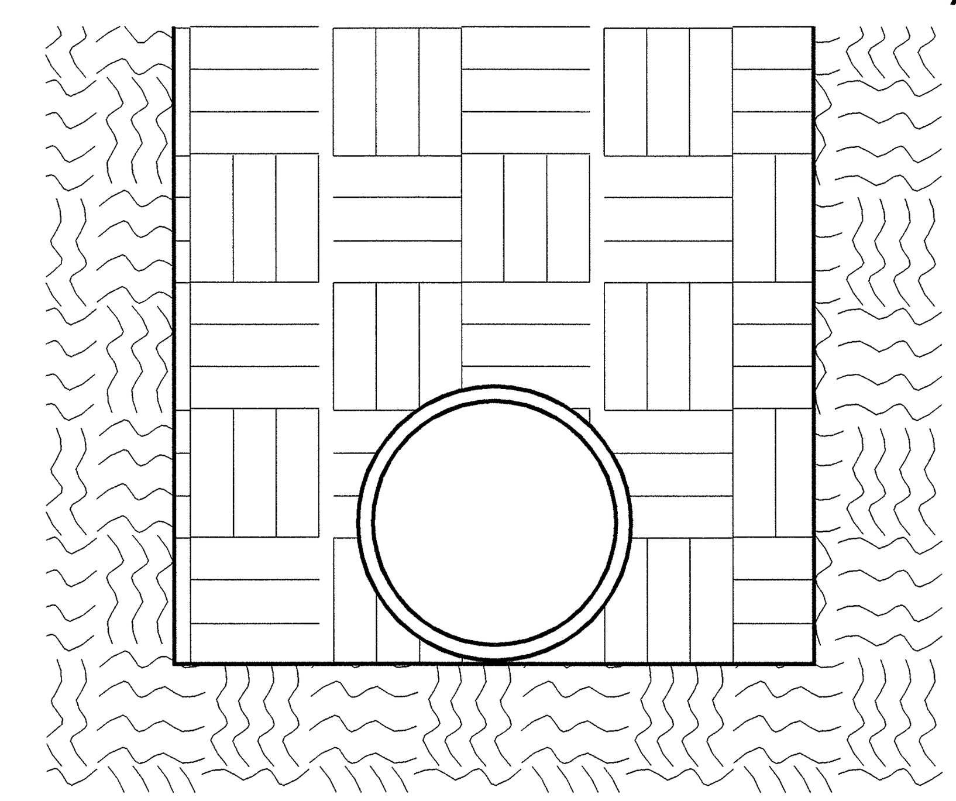
GENERAL NOTES:
1. ALL CONCRETE REINFORCING SHALL BE EPOXY COATED.
2. ALL CAST-IN-PLACE CONCRETE SHALL BE CLASS 'A'.
3. ELEVATION OF BOTTOM OF FOOTING SHALL BE DETERMINED BY THE ENGINEER.
4. NO CONCRETE SHALL BE PLACED UNTIL FORMS AND REINFORCING STEEL IS INSPECTED BY THE ENGINEER.

PIER DETAIL
4" THRU 16" PIPE

MAXIMUM TRENCH WIDTH AT TOP OF PIPE

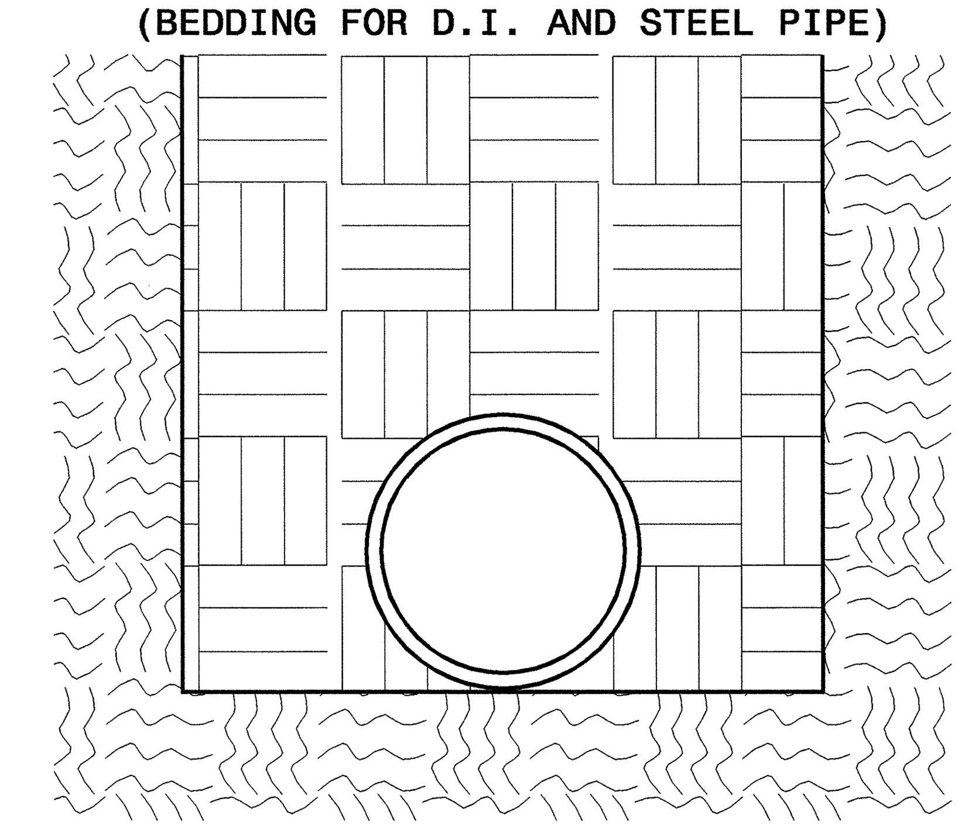
NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		

(BEDDING FOR GAS, WATER, AND SEWER IN BUFFER ZONE AREAS)



PIPE BEDDED IN FLAT-BOTTOM TRENCH. TRENCH EXCAVATION THROUGH BUFFER ZONE AREAS MUST BE BACKFILLED WITH SPOIL GENERATED DURING THE EXCAVATION OF THE TRENCH DURING UTILITY CONSTRUCTION. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

TYPE "2"
(BEDDING FOR D.I. AND STEEL PIPE)



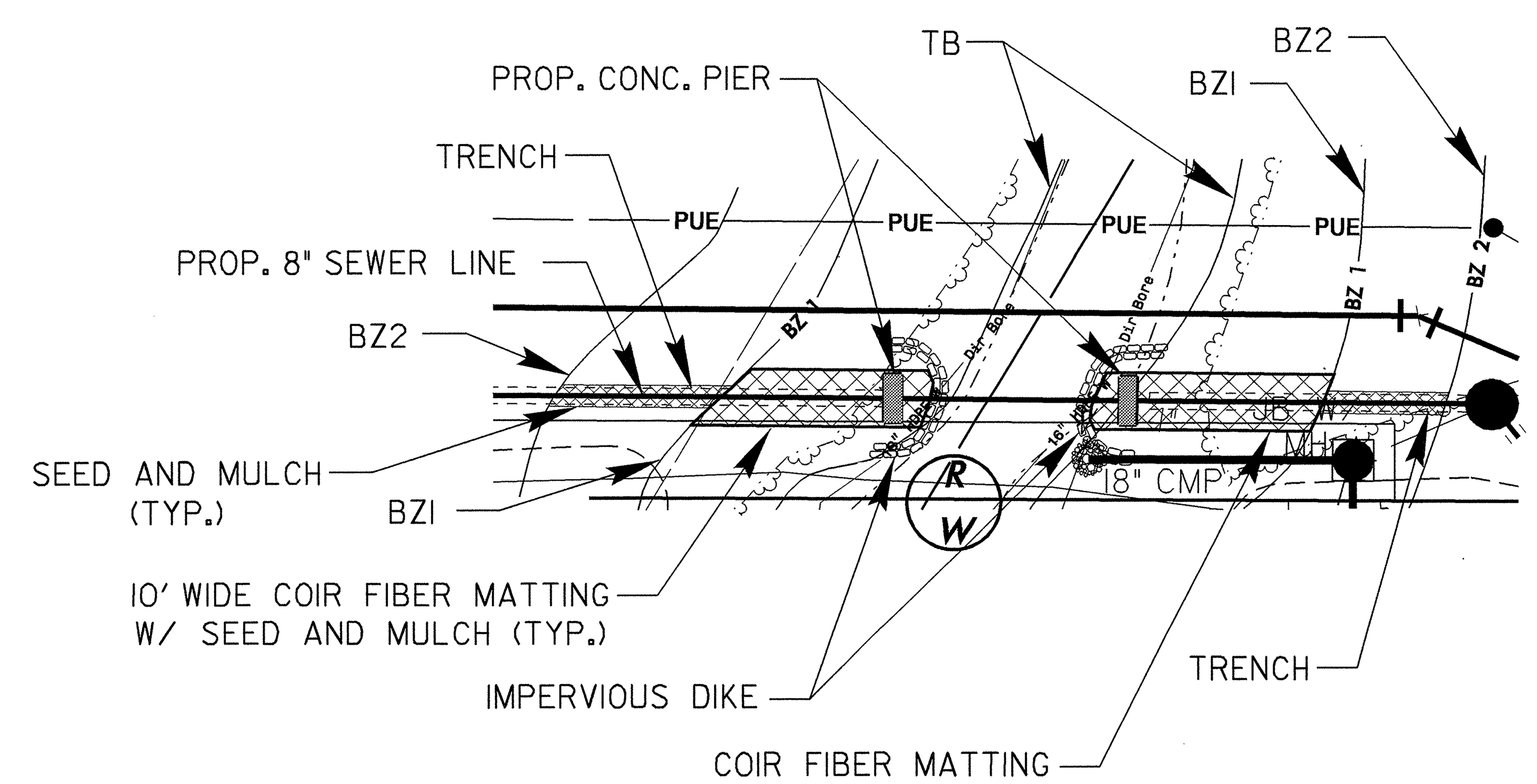
PIPE BEDDED IN FLAT-BOTTOM TRENCH. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL, IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

PHASING:

STEP 1: INSTALL IMPERVIOUS DIKE TO DIVERT THE STREAM DURING INSTALLATION OF THE CONCRETE PIERS.

STEP 2: AFTER INSTALLING CONCRETE PIERS AND PIPE IN THE BUFFER ZONES, BACKFILL WITH THE SAME SOIL REMOVED.

STEP 3: INSTALL SEED, MULCH AND COIR FIBER MATTING IN BUFFER ZONE 1, SEE SPECIAL PROVISIONS. INSTALL SEED AND MULCH IN BUFFER ZONE 2 OVER TRENCH.



STREAM PROTECTION FOR CONSTRUCTION OF 8" SEWER LINE CONCRETE PIERS DETAIL

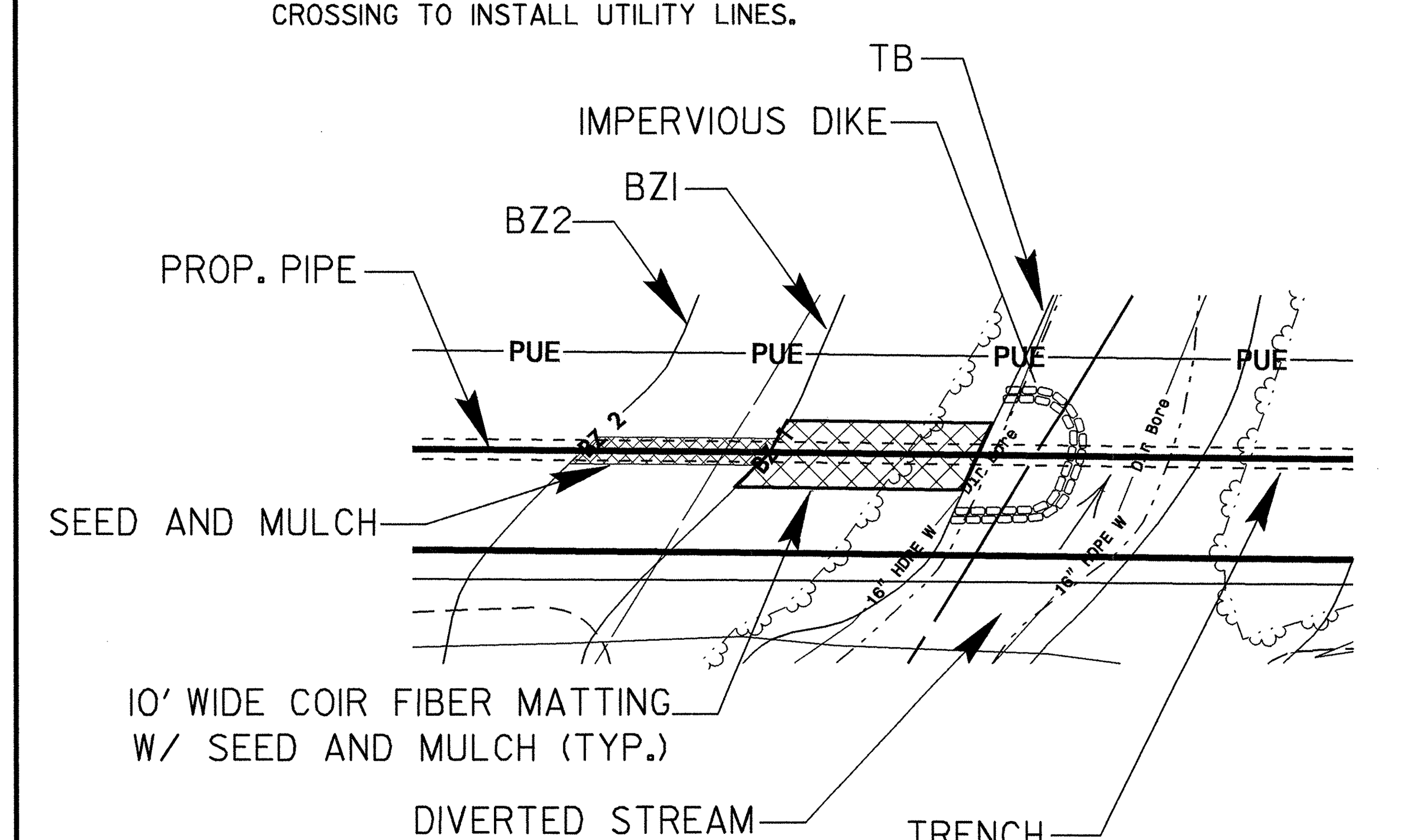
PHASING:

STEP 1: INSTALL IMPERVIOUS DIKE TO DIVERT THE STREAM DURING INSTALLATION OF THE UTILITY LINES.

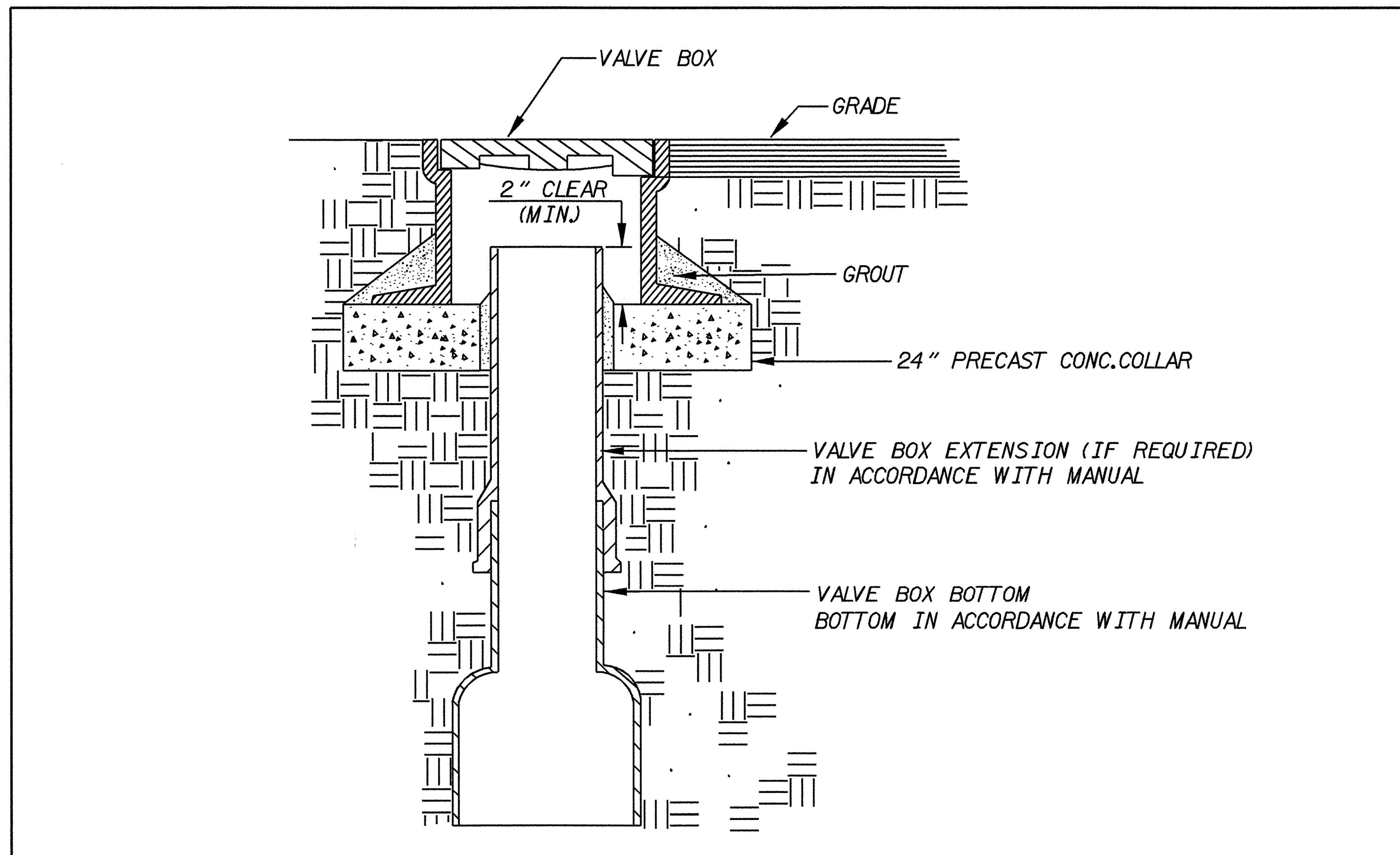
STEP 2: AFTER INSTALLING THE PIPES IN THE BUFFER ZONES AND STREAM, BACKFILL WITH THE SAME SOIL REMOVED.

STEP 3: INSTALL SEED, MULCH AND COIR FIBER MATTING IN BUFFER ZONE 1, SEE SPECIAL PROVISIONS. INSTALL SEED AND MULCH IN BUFFER ZONE 2 OVER TRENCH.

STEP 4: REMOVE IMPERVIOUS DIKE AND FOLLOW STEPS 1-3 TO COMPLETE STREAM CROSSING TO INSTALL UTILITY LINES.



16" WATER LINE, 8" WATER LINE, AND 6" GAS LINE STREAM CROSSING DETAIL



VALVE BOX DETAIL FOR VALVES 12" AND LARGER				GREENVILLE UTILITIES GREENVILLE,N.C.	Greenville Utilities	NO.	DATE	DESCRIPTION
SHEET	DWG.NO. W-6	DWG N.WOOTEN		WATER RESOURCES ENGINEERING				
1 OF 1	DATE 3-12-99	APP H.COREY		GREENVILLE,N.C.				