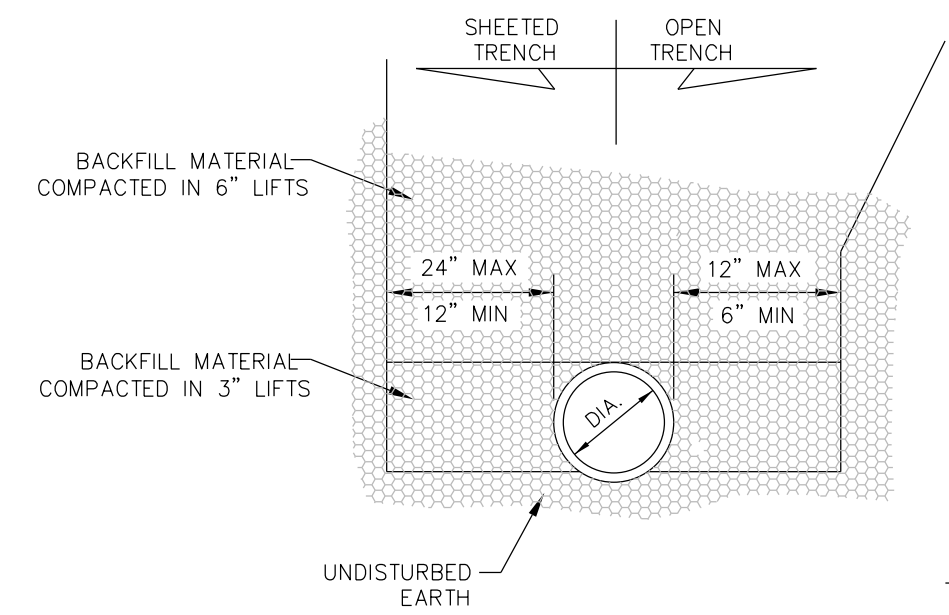


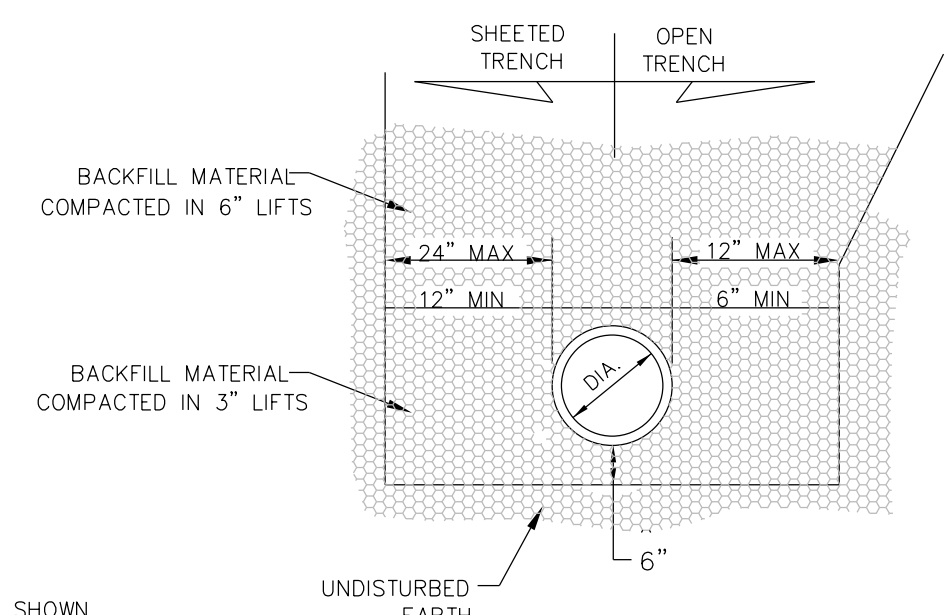
PROJECT TYPICAL DETAILS

PROJECT REFERENCE NO.	SHEET NO.
U-5312	UC-3C
DESIGNED BY: B.DIXON	
DRAWN BY: R.MOSS	
CHECKED BY: B.DIXON	
APPROVED BY:	
REVISED:	
MUNICIPAL ENGINEERING SERVICES COMPANY, PA.	UTILITY CONSTRUCTION PLANS ONLY
P.O. BOX 97 GARNER, NC 27529 (919) 772-5393	

UTILITY CONSTRUCTION



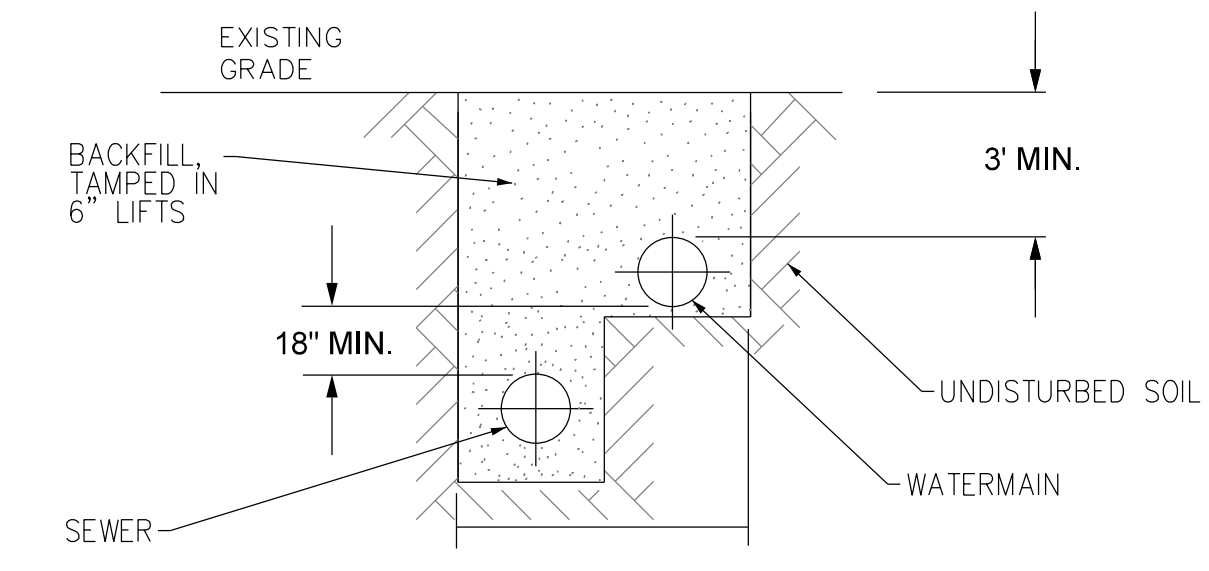
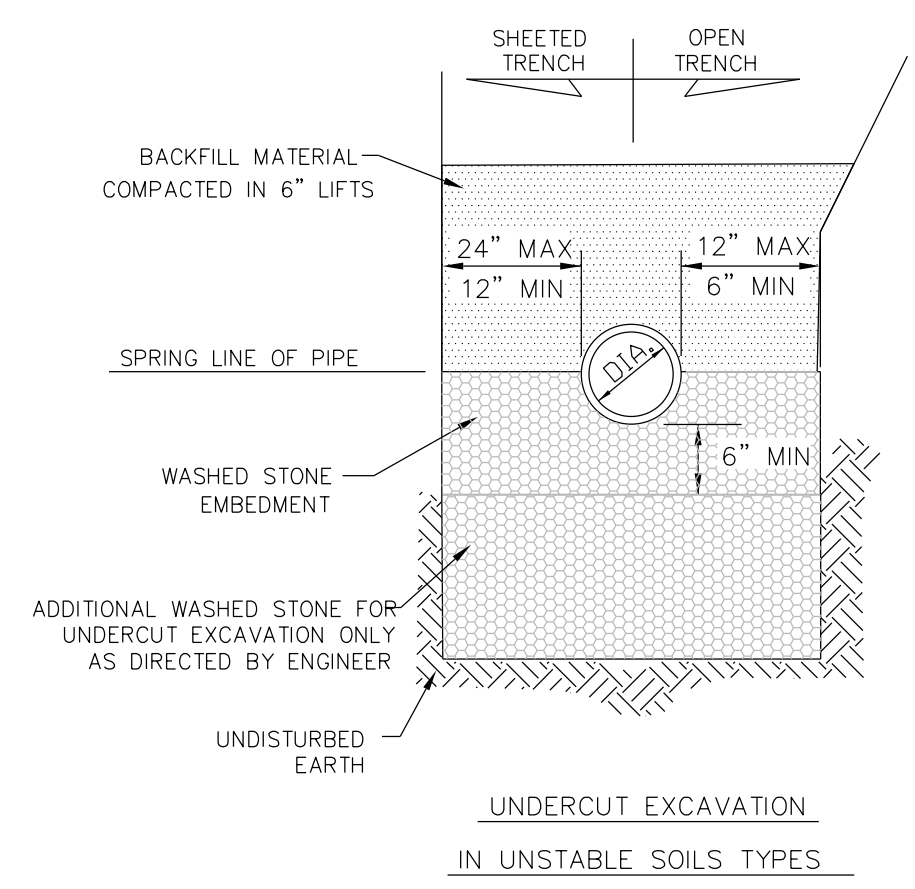
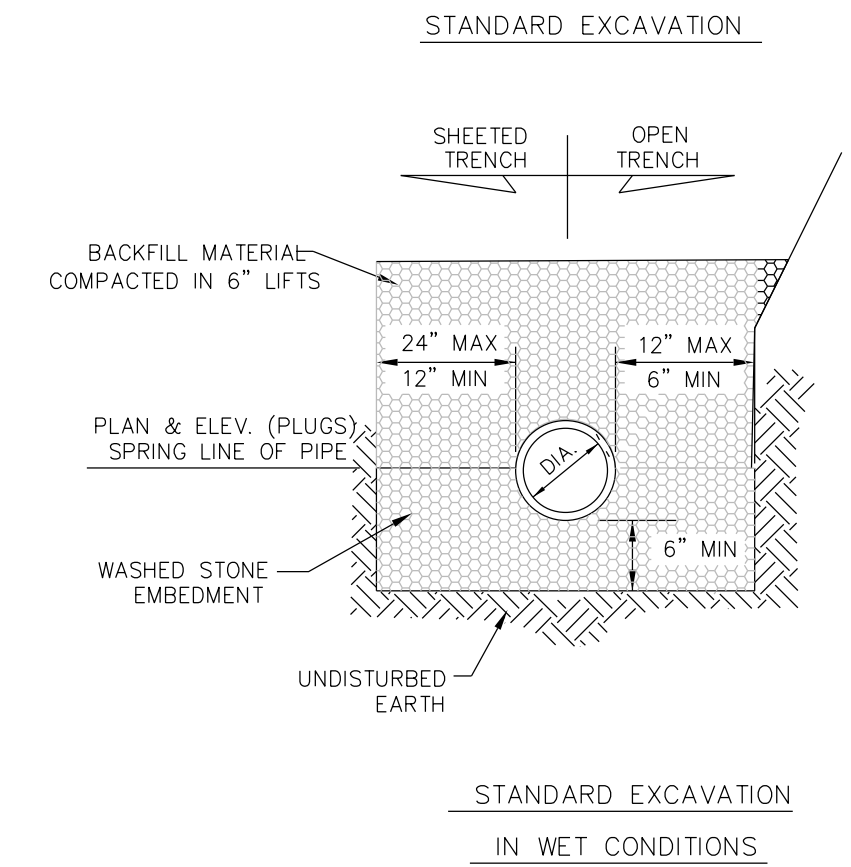
NOTE:
BELL HOLES NOT SHOWN



MAXIMUM TRENCH WIDTH AT TOP OF PIPE

NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
6	30	24	48
10	34	36	60
16	40	54	78

NOTES:
CONSTRUCTION OF TRENCHES SHALL BE IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE REGULATIONS.
NO BOULDERS OR STONES IN EXCESS OF 4" IN SIZE SHALL BE USED AS PART OF THE INITIAL BACKFILL.
PIPE BEDDING MATERIAL SHALL BE # 57 WASHED STONE.



NOTE: SEE "TYPICAL TRENCH DETAILS" (THIS SHEET) FOR ADDITIONAL NOTES.

TRENCH WITH BENCHED EXCAVATION FOR WATER AND SEWER

TYPICAL TRENCH DETAIL

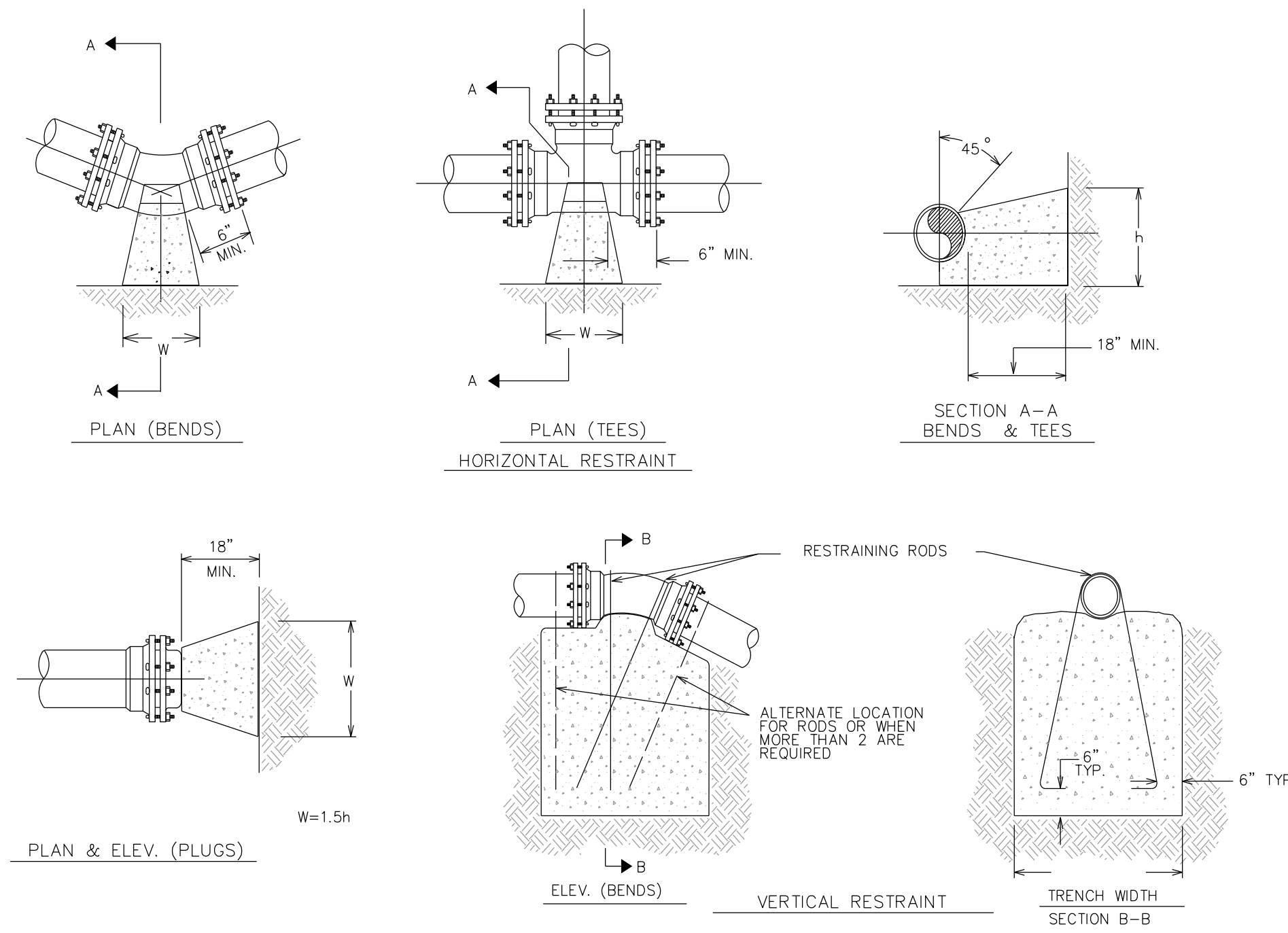
BASED ON TEST PRESSURE OF 200 P.S.I.

HORIZONTAL RESTRAINT (ALL AREAS GIVEN ARE IN SQUARE FEET)				VERTICAL RESTRAINT (ALL VOLUMES GIVEN ARE IN CUBIC YARDS)**														
PIPE SIZE	DEGREE OF BEND	LBS. STATIC THRUST *	ALLOWABLE SOIL BEARING (PSF)								PIPE SIZE	RESTRAINING RODS NO. REQ'D	DIA.	DEGREE OF BEND				
			1000	2000	3000	4000	5000	6000	7000	8000				11 1/4°	22 1/2°	45°		
6"	11 1/4°	1,385	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	22 1/2°	2,758	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	45°	5,409	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	90°	9,999	10	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	TEE/PLUG	7,068	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
10"	11 1/4°	3,846	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	22 1/2°	7,661	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	45°	15,028	15	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	90°	27,768	28	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
	TEE/PLUG	19,635	20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
16"	11 1/4°	9,854	10	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	22 1/2°	19,612	20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	45°	38,471	38	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
	90°	71,085	71	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
	TEE/PLUG	50,265	50	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25

* INCLUDES 1.25 SAFETY FACTOR

GENERAL NOTES:
1. CONCRETE SHALL BE CLASS "B".
2. CONCRETE SHALL NOT CONTACT BOLTS ENDS OF MECHANICAL JOINT FITTINGS.
3. CONSULT WITH ENGINEER FOR CONCRETE REQUIREMENTS ON MAINS LARGER THAN 16 INCHES. (FOR VERTICAL & HORIZONTAL BENDS)
4. ALLOWABLE SOIL BEARING SHALL BE DETERMINED BY THE ENGINEER.

THRUST RESTRAINT FOR WATER MAINS



THRUST BLOCKING FOR PIPE LINES