

NOT TO SCALE

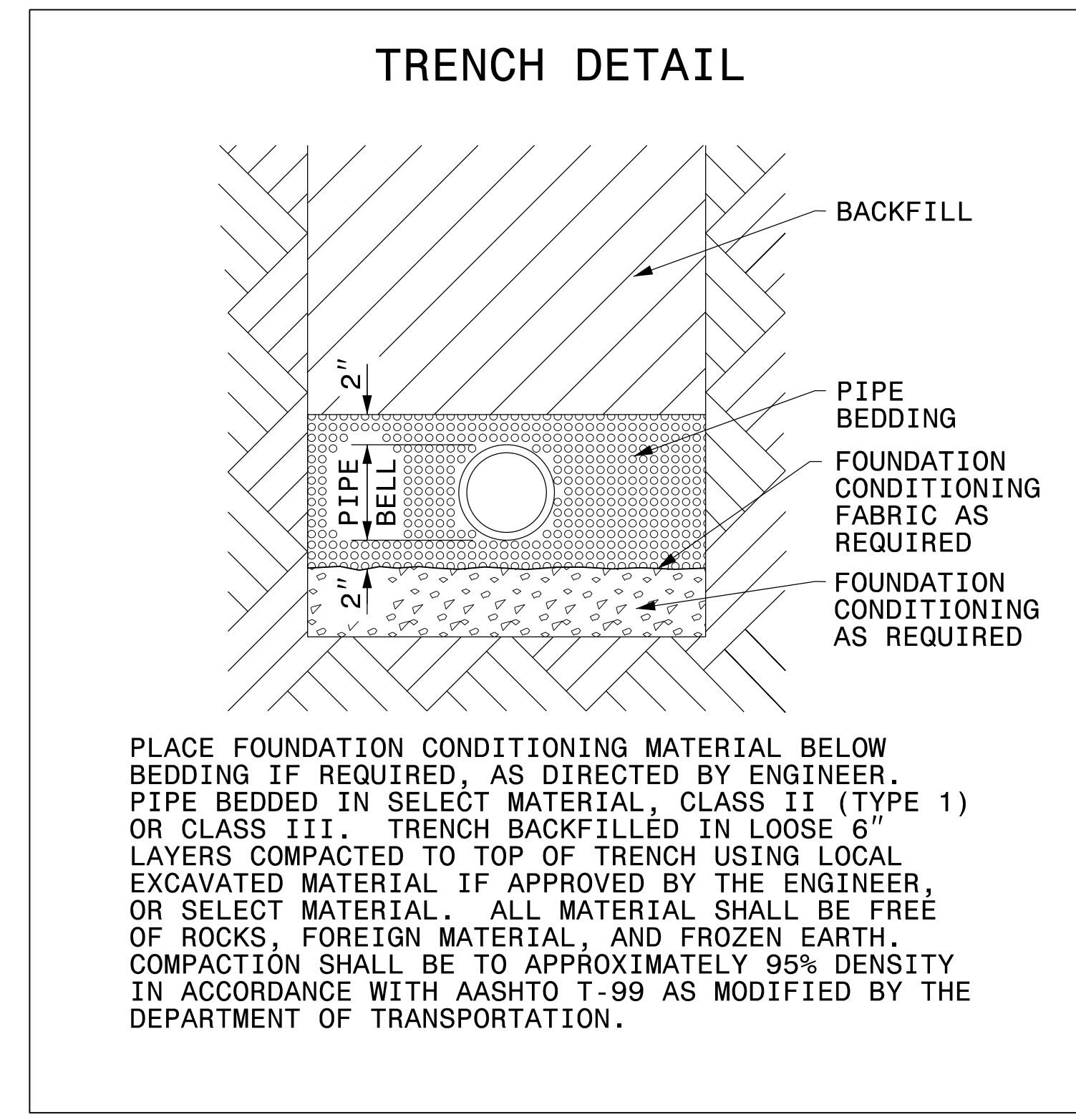
HINDE ENGINEERING
 License No. C-2639
 401 Harrison Oaks Blvd., Suite 220 Cary, NC 27513

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PROJECT REFERENCE NO. B-4786	SHEET NO. UC-3A
DESIGNED BY: JKC	
DRAWN BY: JKC	
CHECKED BY: CLS	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

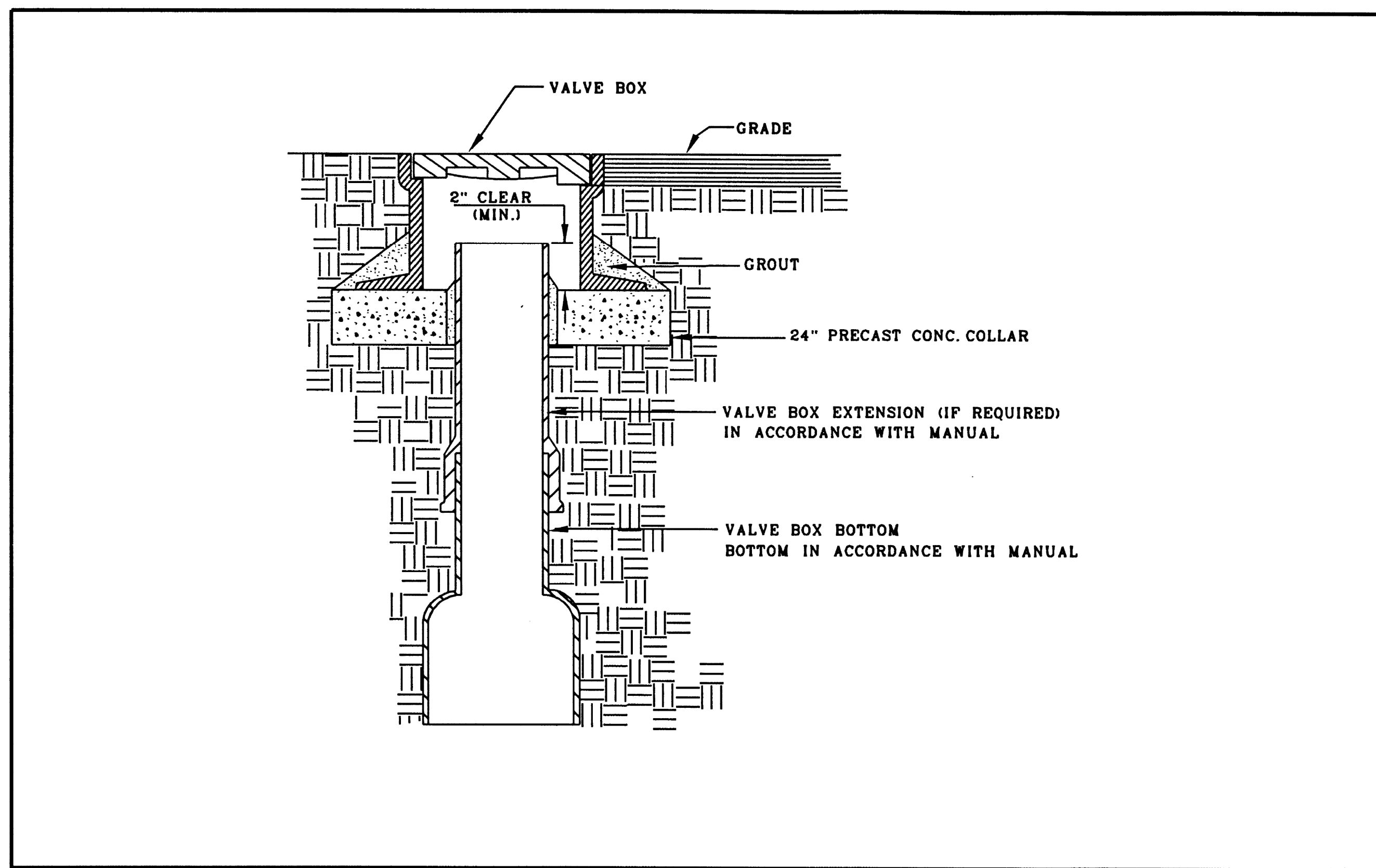
PROJECT TYPICAL DETAILS

UTILITY CONSTRUCTION



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		



RESULTANT THRUST AT FITTING AT 150 PSI WATER PRESSURE

NOM. PIPE DIA.	TOTAL POUNDS				
	DEAD END	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4"	2,700	3,800	2,100	1,100	530
6"	5,800	8,000	4,300	2,200	1,100
8"	9,700	13,600	7,400	3,800	1,900
10"	14,500	20,500	11,100	5,700	2,900
12"	20,500	29,000	15,700	8,000	4,000
14"	27,600	39,000	21,100	11,000	5,400
16"	35,700	50,400	27,300	14,000	7,000
18"	44,800	63,400	34,400	17,500	8,800
20"	55,000	77,000	42,100	21,500	10,800
24"	78,500	110,000	60,000	31,600	15,400
30"	120,600	170,600	92,300	47,100	23,600
36"	172,800	244,400	132,300	67,500	33,900
42"	233,300	330,000	178,600	91,000	45,700
48"	304,000	430,000	232,700	118,600	59,600
54"	384,100	543,200	294,000	149,000	75,300

SOIL BEARING LOAD (LB./SQ. FT.)

MUCK	0
SOFT CLAY	1,000
SILT	1,500
SANDY SILT	3,000
SAND	4,000
SANDY CLAY	6,000
HARD CLAY	9,000

POLYWRAP SHALL BE USED TO COVER FITTINGS AND BOLTS.

TO DETERMINE THE SIZE OF A CONCRETE THRUST BLOCK, DIVIDE THE TOTAL FORCE BY THE BEARING VALUES OF THE SOIL. THE QUOTIENT WILL BE THE SIZE OF THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET. APPROXIMATE VALUES FOR VARIOUS TYPES OF SOIL ARE LISTED IN TABLE.

NO RESPONSIBILITY CAN BE ASSUMED FOR THE ACCURACY OF THE DATA IN THIS TABLE DUE TO THE WIDE VARIATION OF BEARING LOAD CAPABILITIES FOR EACH SOIL TYPE.

TYPES OF THRUST BLOCKING

- THRU LINE CONNECTION, TEE
- THRU LINE CONNECTION, TEE CROSS USED AS TEE
- DIRECTION CHANGE, ELBOW
- CHANGE LINE SIZE, REDUCER
- DIRECTION CHANGE, TEE USED AS ELBOW
- DIRECTION CHANGE, CROSS USED AS ELBOW
- DIRECTION CHANGE

ONLY USE THRUST BLOCKING AT WATER LINE TIE-IN POINTS

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

THRUST BLOCKING DETAIL			GREENVILLE UTILITIES GREENVILLE, N.C.				NO.	DATE	DESCRIPTION
SHEET	DWG. NO. W-12	DWG. N. WOOTEN	WATER RESOURCES ENGINEERING GREENVILLE, N.C.						
1 OF 1	DATE 3-12-99	APP. H. COREY							

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