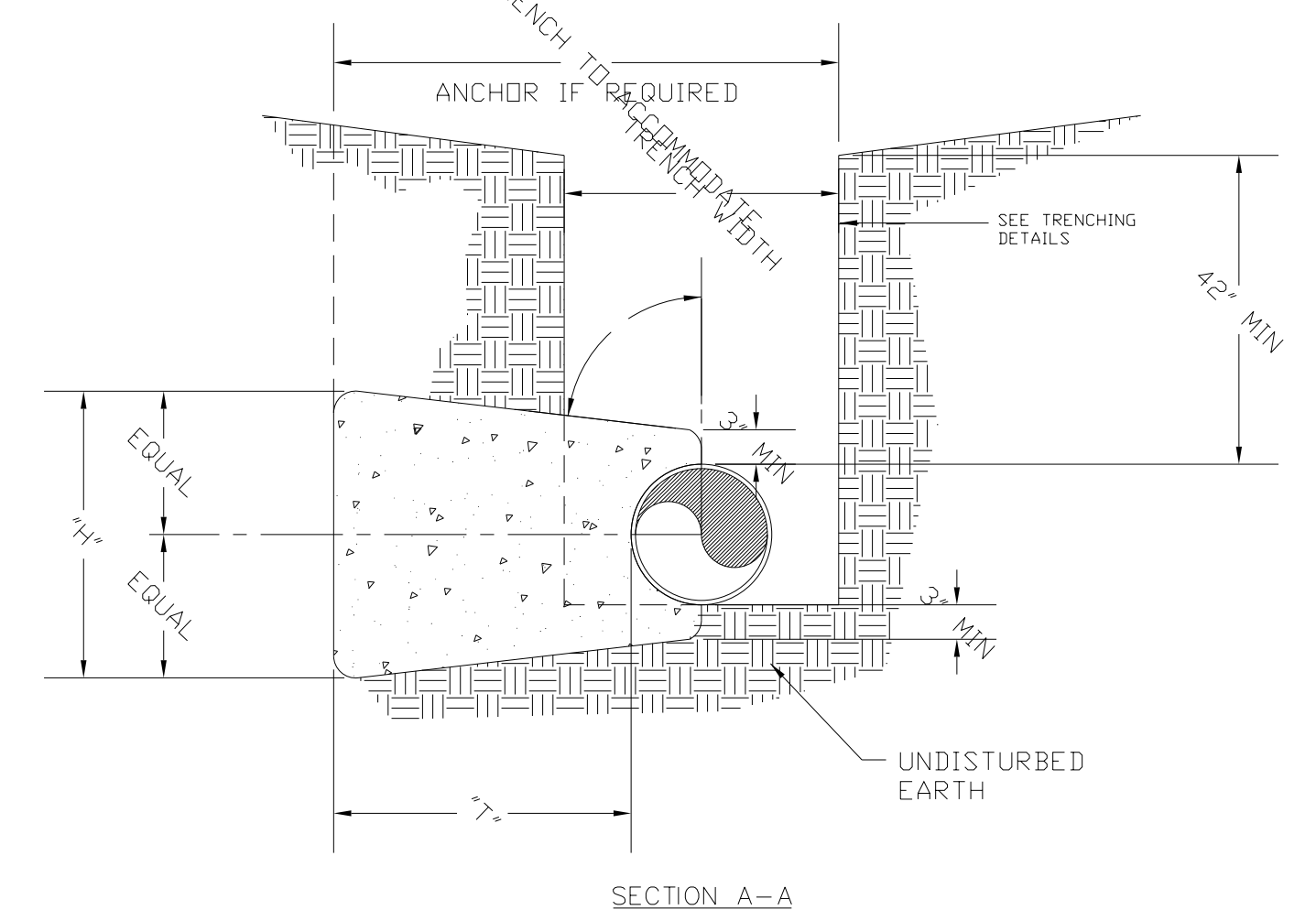
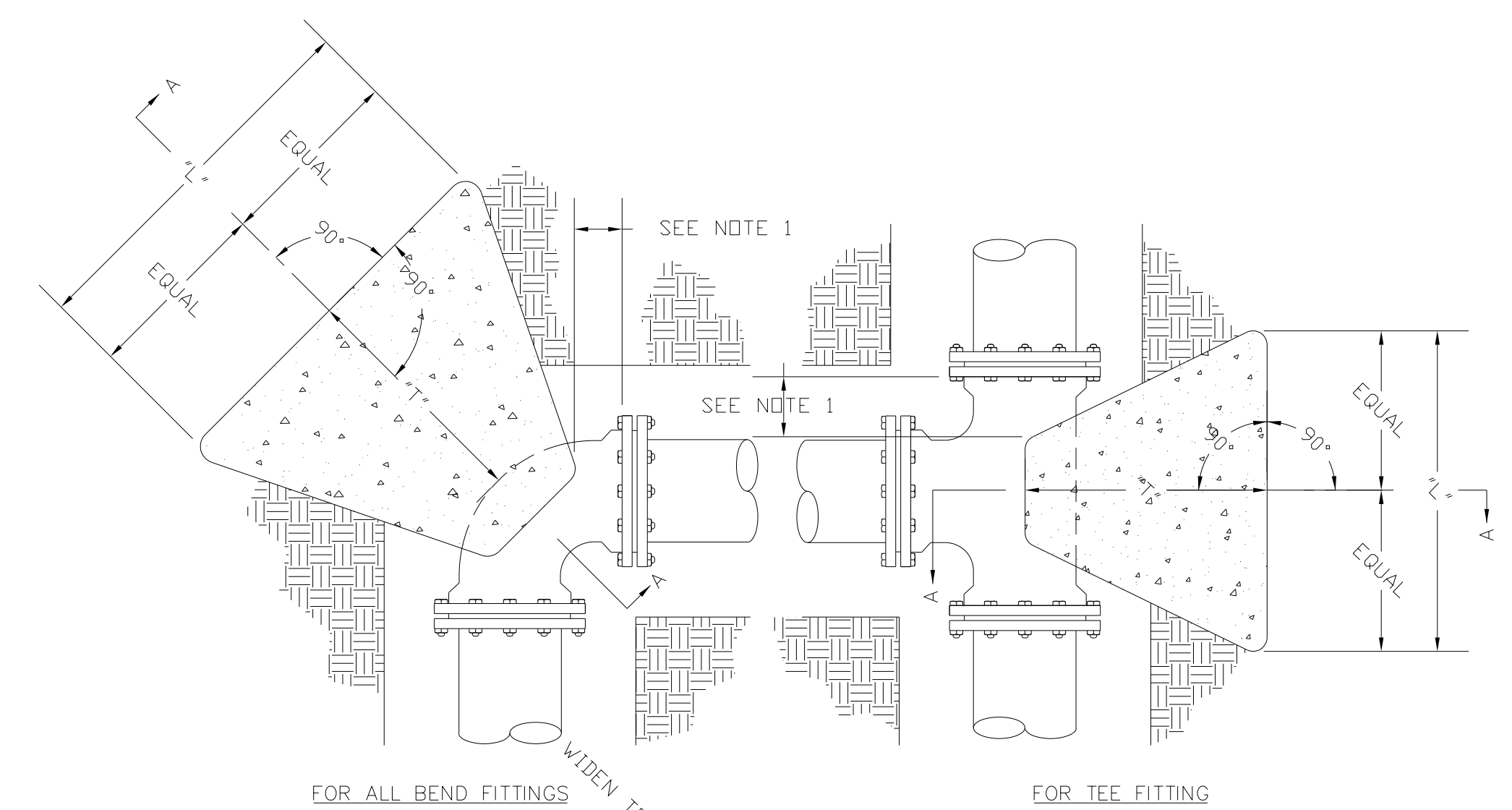


5/14/99

PROJECT TYPICAL DETAILS

PROJECT REFERENCE NO.	SHEET NO.
B-4484	UC-3B
DESIGNED BY: ARV	
DRAWN BY: ARV	
CHECKED BY: RLB	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
3/27/2020	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



- NOTES:**
- CONCRETE BLOCKING IS TO BE FORMED TO ENSURE ACCESSIBILITY TO FITTINGS AND POURED AGAINST UNDISTURBED EARTH.
 - ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE TO PREVENT CONCRETE FROM CONTACTING FITTINGS, BOLTS, OR ENDS OF MECHANICAL JOINT BENDS.
 - CONCRETE TO BE MINIMUM 3,000 PSI @ 28 DAYS.
 - WHEN SACKCRETE IS TO BE USED, IT SHALL BE PROPERLY MIXED PER MANUFACTURER SPECIFICATIONS.
 - FOR REQUIRED DIMENSIONS, SEE THRUST BLOCKING TABLE ON RIGHT

THRUST BLOCKING
NOT TO SCALE

TEST PRESSURE = 150 PSI

PIPE SIZE	TYPE FITTING	DIMENSIONS (FT)			VOLUME CONCRETE CU. YD.
		L	*H*	*T*	
<4 INCHES	11 1/4"	----	----	----	----
	22 1/2"	1.00	1.00	1.50	0.06
	45"	1.00	1.00	1.50	0.06
	90"	1.00	1.00	2.50	0.09
	TEE	1.00	1.00	2.00	0.07
4 INCHES	11 1/4"	1.00	1.00	2.50	0.09
	22 1/2"	1.00	1.00	2.50	0.09
	45"	1.00	1.00	2.50	0.09
	90"	1.50	1.50	2.50	0.15
	TEE	1.50	1.50	2.00	0.12
6 INCHES	11 1/4"	1.50	1.50	2.50	0.15
	22 1/2"	1.50	1.50	2.50	0.15
	45"	1.50	1.50	2.50	0.15
	90"	2.00	2.00	3.00	0.28
	TEE	2.00	2.00	2.50	0.23
8 INCHES	11 1/4"	2.00	2.00	2.50	0.23
	22 1/2"	2.00	2.00	2.50	0.23
	45"	2.00	2.00	2.75	0.25
	90"	3.00	3.00	3.00	0.39
	TEE	3.00	2.00	2.50	0.32
10 INCHES	11 1/4"	2.00	2.00	3.00	0.28
	22 1/2"	2.00	2.00	3.00	0.28
	45"	3.00	2.50	3.00	0.47
	90"	4.50	3.00	3.50	0.94
	TEE	4.50	3.00	3.00	0.81
12 INCHES	11 1/4"	2.00	2.00	3.00	0.28
	22 1/2"	2.00	2.00	3.00	0.28
	45"	3.00	2.50	3.00	0.47
	90"	4.50	3.00	3.50	0.94
	TEE	4.50	3.00	3.00	0.81
16 INCHES	11 1/4"	2.00	2.00	3.00	0.28
	22 1/2"	3.00	2.00	3.00	0.39
	45"	4.00	3.00	3.50	0.84
	90"	6.50	3.50	3.50	1.54
	TEE	6.50	3.50	3.00	1.32

TEST PRESSURE = 200 PSI

PIPE SIZE	TYPE FITTING	DIMENSIONS (FT)			VOLUME CONCRETE CU. YD.
		L	*H*	*T*	
<4 INCHES	11 1/4"	1.00	1.00	1.00	0.04
	22 1/2"	1.00	1.00	1.50	0.06
	45"	1.00	1.00	1.50	0.06
	90"	1.50	1.50	2.50	0.15
	TEE	1.50	1.50	2.00	0.12
4 INCHES	11 1/4"	1.00	1.00	2.50	0.09
	22 1/2"	1.00	1.00	2.50	0.09
	45"	1.50	1.50	2.50	0.15
	90"	1.50	1.50	2.50	0.15
	TEE	1.50	1.50	2.00	0.12
6 INCHES	11 1/4"	1.50	1.50	2.50	0.15
	22 1/2"	1.50	1.50	2.50	0.15
	45"	1.50	1.50	2.50	0.15
	90"	2.50	2.00	3.00	0.33
	TEE	2.50	2.00	2.50	0.28
8 INCHES	11 1/4"	2.00	2.00	2.50	0.23
	22 1/2"	2.00	2.00	2.50	0.23
	45"	2.00	2.00	2.75	0.23
	90"	4.00	2.00	3.00	0.50
	TEE	4.00	2.00	2.50	0.42
10 INCHES	11 1/4"	2.00	2.00	3.00	0.28
	22 1/2"	3.00	2.00	3.00	0.39
	45"	4.00	2.50	3.00	0.61
	90"	5.50	3.00	3.50	1.13
	TEE	5.50	3.00	3.00	0.97
12 INCHES	11 1/4"	2.00	2.00	3.00	0.28
	22 1/2"	3.00	2.00	3.00	0.39
	45"	4.00	2.50	3.00	0.61
	90"	5.50	3.00	3.50	1.13
	TEE	5.50	3.00	3.00	0.97
16 INCHES	11 1/4"	2.00	2.00	3.00	0.28
	22 1/2"	4.00	2.00	3.00	0.50
	45"	5.50	3.00	3.50	1.13
	90"	7.50	4.00	3.50	2.01
	TEE	7.50	4.00	3.00	1.72

- CHART NOTES:**
- IF BLOCKING EXCAVATION IS IN LIGHTLY COMPACTED FILL AREAS, OR IN AREAS WHERE BOULDERS OR STUMPS HAVE BEEN REMOVED, BLOCKING SIZE MUST BE RE-SIZED FOR THE SPECIFIC LOCATION/CIRCUMSTANCE BY A NC LICENSED PROFESSIONAL ENGINEER.
 - BLOCKING SIZES SHOWN IN THESE TABLES ASSUME THE FOLLOWING:
 - BLOCKING IS CONSTRUCTED IN RESIDUAL SOILS AS SHOWN IN DETAIL
 - SOIL BEARING PRESSURE = 2000 PSF
 - VELOCITY OF FLOW = 15 FPS
 - THIS DETAIL NOT APPLICABLE TO REDUCING BENDS.
 - NEITHER THE WEIGHT OF THE CONCRETE BLOCKING NOR FRICTION BETWEEN CONCRETE BLOCKING AND SOIL WAS ADDED INTO BLOCKING SIZES COMPUTATION. THEREFORE, BLOCKING SIZE IS CONSERVATIVE.

THRUST BLOCKING
NOT TO SCALE

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