5/14/99

PROJECT TYPICAL DETAILS

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
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NC LICENSE #P-0189

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

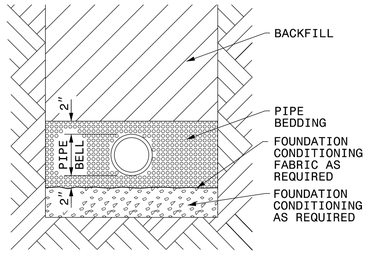
NORTH CAROLINA PROFESSIONAL SEAL 028912 ENGINEER ERIC M TWEED

DocuSigned by: Eric Tweed 30DC82B18190415 10/7/2016

UTILITY CONSTRUCTION

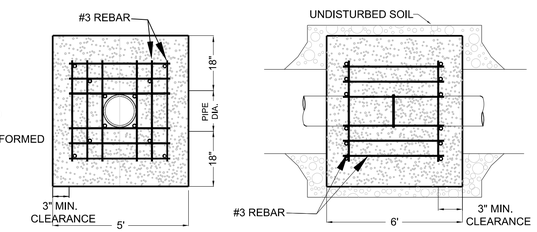
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

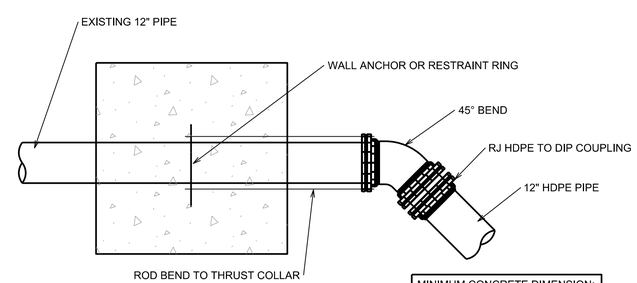
TRENCH DETAIL



PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III. 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 APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

NOTES:
1. CONCRETE SHALL BE 300 PSI AND TRANSIT MIXED.
2. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
3. BACKFILL TAMPED IN 8" LIFTS





$Sp = P \times [(Dr - 1)/2]$
$Sp = 200 \times [(11-1)/2]$
$Sp = 1000$ psi

Poisson Effect Pullout Calculation
$F = Sp \times \mu \times \pi \times Dm^2 \times [1/Dr - 1/Dr^2]$
$F = 1000 \times 0.45 \times 3.14 \times 10.29^2 \times [1/11 - 1/11^2]$
$F = 12{,}371$ lbs

Concrete Weight Calcultation
[LxWxH - PipeVolume] x Density = Wt
$[5 \times 5 \times 4 - 3.14 \times 0.53^2 \times 5] \times 145$ lbs/CuFt = Wt
Wt = 13,860 lbs

MINIMUM CONCRETE DIMENSION:
5' LONG
5' WIDE
4' HIGH

TIE-IN DETAIL

NO SCALE

$$$