DocuSign Envelope ID: A27882DC-D5A5-405A-A857-A8420D030326

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-5840	UC-3A
DESIGNED BY: CTH	
DRAWN BY: CTH	
CHECKED BY: ASV	
APPROVED BY: XMD	
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

DocuSigned by: ANDREWS V. HINE, NORTH CAROLINA, ENGINEER, SEAL 025221
8/3/2018

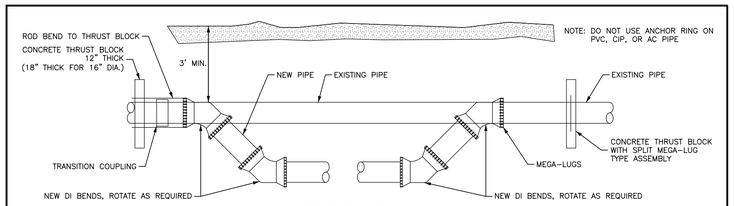
UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

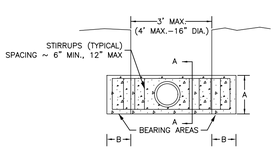
STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT TYPICAL DETAILS

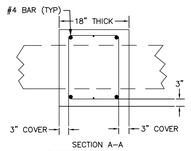


PROFILE VIEW
NOT TO SCALE



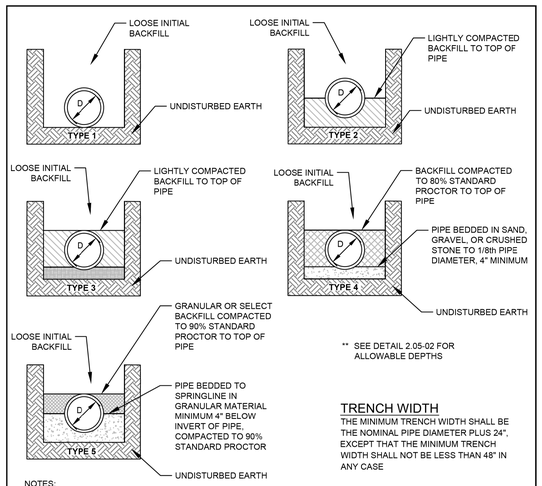
CONCRETE THRUST COLLAR (TYPICAL)
NOT TO SCALE

SIZE	"A"	"B"
4"	36"	24"
6"	36"	24"
8"	36"	30"
10"	36"	48"
12"	48"	48"
16"	48"	60"



SECTION A-A
NOT TO SCALE

OWNER TYPICAL DETAILS



** SEE DETAIL 2.05-02 FOR ALLOWABLE DEPTHS

TRENCH WIDTH

THE MINIMUM TRENCH WIDTH SHALL BE THE NOMINAL PIPE DIAMETER PLUS 24", EXCEPT THAT THE MINIMUM TRENCH WIDTH SHALL NOT BE LESS THAN 48" IN ANY CASE

NOTES:

1. MINIMUM ALLOWABLE DEPTH OF COVER IS 3 FT.
2. IN ROCK OR WET SOIL, PIPE MUST BE BEDDED IN AT LEAST 6" OF CRUSHED STONED EMBEDMENT MATERIAL BELOW THE INVERT OF THE PIPE.
3. GRANULAR MATERIALS ARE DEFINED PER THE AASHTO SOIL CLASSIFICATION SYSTEM (ASTMD3282) OR THE UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487), WITH THE EXCEPTION THAT GRAVEL BEDDING/BACKFILL ADJACENT TO THE PIPE IS LIMITED TO 2" MAXIMUM PARTICLE SIZE PER ANSI/AWWA C600
4. THESE PIPES ARE ADEQUATE FOR DEPTHS OF COVER FROM 3 FT. UP TO THE MAXIMUM SHOWN INCLUDING AN ALLOWANCE FOR A SINGLE H-20 TRUCK WITH A 1.5 IMPACT FACTOR UNLESS NOTED.
5. RING DEFLECTION LIMITED TO 3%, MINIMUM SAFETY FACTOR OF 2. EARTH LOAD BASED ON SOIL WEIGHT OF 120 PCF.

STANDARD DETAIL	
Metropolitan Sewerage District of Buncombe County, North Carolina	
TYPICAL TRENCH DETAIL FOR DUCTILE IRON PIPE - 1	
DATE APPROVED: MARCH 2017	2.05 - 01

Maximum Depth of Cover for Ductile Iron Pipe w/ Cement Lining

Pipe Size	Class	Type 1	Type 2	Type 3	Type 4	Type 5
4	350	53	61	69	85	100
6	350	26	31	37	47	65
8	350	16	20	25	34	50
10	350	11	15	19	28	45
12	350	10	15	19	28	44
14	250	–	11	15	23	36
14	300	–	13	17	26	42
14	350	–	14	19	27	44
16	250	–	11	15	24	34
16	300	–	13	17	26	39
16	350	–	15	20	28	44
18	250	–	10	14	22	31
18	300	–	13	17	26	36
18	350	–	15	19	28	41
20	250	–	10	14	22	30
20	300	–	13	17	26	35
20	350	–	15	19	28	38
24	200	–	8	12	17	25
24	250	–	11	15	20	29
24	300	–	13	17	24	32
24	350	–	15	19	28	37
30	200	–	8	12	16	24
24	250	–	11	15	19	27
30	300	–	12	16	21	29
30	300	–	12	16	21	29
30	350	–	15	19	25	33
36	200	–	8	12	15	23
36	250	–	10	14	18	25
36	300	–	12	16	20	28
36	350	–	15	19	24	32
42	200	–	8	12	15	22
42	250	–	10	14	17	25
42	300	–	12	16	20	27
42	350	–	15	19	23	32
48	200	–	8	11	15	22
48	250	–	10	13	17	24
48	300	–	12	15	19	27
48	350	–	15	18	22	30
54	200	–	8	11	14	22
54	250	–	10	13	16	24
54	300	–	13	15	19	27
54	350	–	15	18	22	30
60	200	–	8	11	14	22
60	250	–	10	13	16	24
60	300	–	13	15	19	26
60	350	–	15	18	22	30
64	200	–	8	11	14	21
64	250	–	10	13	16	24
64	300	–	12	15	19	26
64	350	–	15	17	21	29

SOURCE: Ductile Iron Pipe for Wastewater Applications, DIPRA 2006

STANDARD DETAIL	
Metropolitan Sewerage District of Buncombe County, North Carolina	
TYPICAL TRENCH DETAIL FOR DUCTILE IRON PIPE - 2	
DATE APPROVED: MARCH 2017	2.05 - 02

5/14/2018
R:\U-5840_Files\Water and Sewer\Sheet Files\U-5840_WS_UC3A.dgn
phillism2