## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

HB-0003

T.I.P. NO.

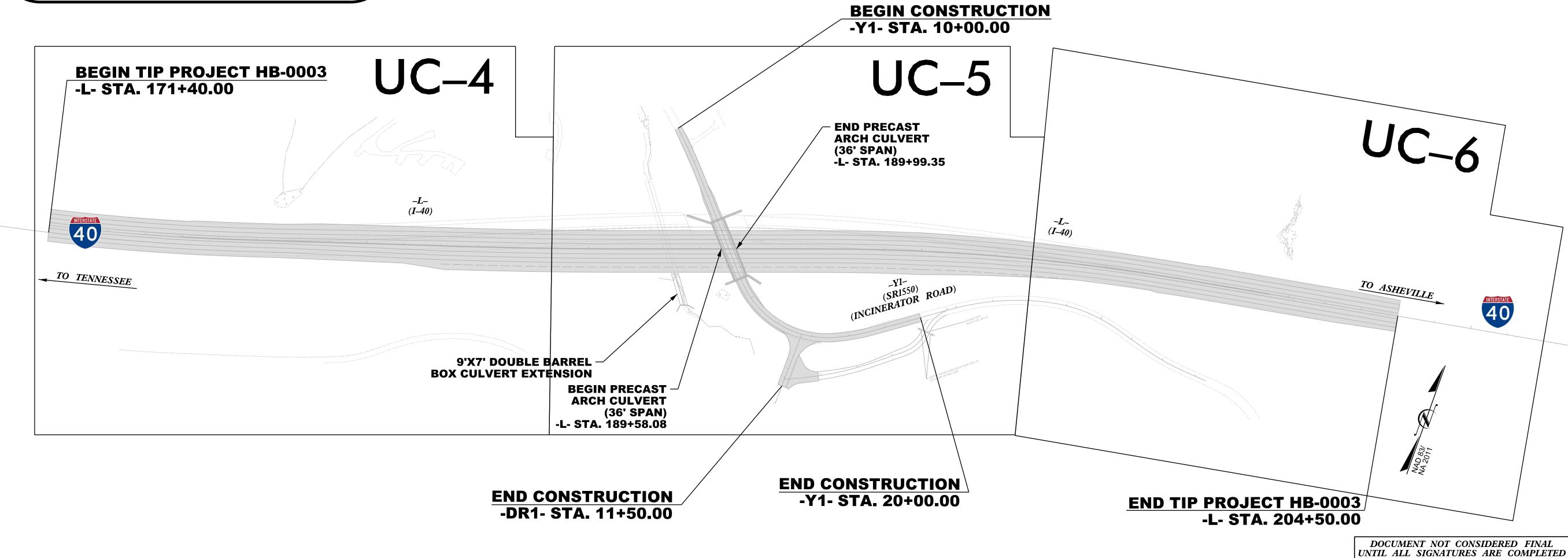
SHEET NO.

UC-1

# UTILITY CONSTRUCTION PLANS HAYWOOD COUNTY

LOCATION: BRIDGE 239 ON I-40 OVER SR1550 (INCINERATOR ROAD)

TYPE OF WORK: UTILITY CONSTRUCTION OF FORCE MAIN SEWER



# GRAPHIC SCALES PROFILE (HORIZONTAL) PROFILE (VERTICAL)

## INDEX OF SHEETS

**DESCRIPTION:** SHEET NO.: TITLE SHEET UTILITY SYMBOLOGY **NOTES DETAILS** UC-4 THRU UC-6 UTILITY CONSTRUCTION SHEETS PROFILE SHEET

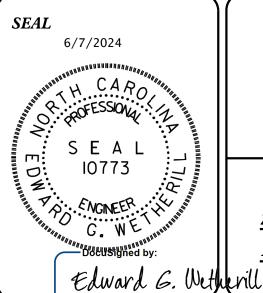
WATER AND SEWER OWNERS ON PROJECT

(A) SEWER - PACTIV EVERGREEN PAPER PLANT

(B) COMMUNICATIONS - NCDOT



UTILITY PROJECT MANAGER PANKIL K. PATEL TREVER REEVES UTILITY COORDINATOR





DIVISION OF HIGHWAYS DIVISION 14 253 Webster Road Sylva NC, 28779

ZACH SHULER, PE BRIDGE PROGRAM MANAGER ROBERT GOLDING DIVISION UTILITY COORDINATOR

# STATE OF NORTH CAROLINA

1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN

HB-0003 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

A/G Water

A/G Sanitary Sewer

UTILITY CONSTRUCTION

PROJECT REFERENCE NO. SHEET NO.

# UTILITIES PLAN SHEET SYMBOLS

### PROPOSED WATER SYMBOLS

11½ Degree Bend	······ <del>  •  </del>
22½ Degree Bend	
45 Degree Bend ······	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	GV
Butterfly Valve	BV
Tapping Valve	TGV
Line Stop	LS
Line Stop with Bypass	LS/BP
Blow Off	B0
Fire Hydrant	PFH
Relocate Fire Hydrant	REH
Remove Fire Hydrant	REM FH
Water Meter	PWM
Relocate Water Meter	RWM
Remove Water Meter	REM WM
Water Pump Station	PS(W)
RPZ Backflow Preventer	PRPZ
DCV Backflow Preventer	PBFP
Relocate RPZ Backflow Preventer	RRPZ
Relocate DCV Backflow Preventer	RBFP
PROPOSED SEWE	ER SYMBOLS
Gravity Sewer Line	
(Sized as Shown) Force Main Sewer Line	
(Sized as Shown)	
Manhole (Sized per Note)	•

## PROPOSED MISCELLANOUS UTILITIES SYMBOLS

Power Pole ····································	Thrust Block
Telephone Pole	Air Release Valve
Joint Use Pole	Utility Vault
Telephone Pedestal	Concrete Pier CP
Utility Line by OthersPROP U/G POW CABLES— (Type as Shown)	Steel Pier
Trenchless Installation ————————————————————————————————————	Remove Pole REM
Encasement by Open Cut	Plan Note
Encasement	Pay Item Note PAY ITEM
FYISTING LITTI	TTTES SYMBOLS

### EVIDITING DITETITED DIMENTO

	LXISTING GITLI	TILO STWIDOLO	
Power Pole	•	*Underground Power Line	
Telephone Pole	•	*Underground Telephone Cable	
Joint Use Pole	•	*Underground Telephone Conduit	
Utility Pole		*Underground Fiber Optics Telephone Cable —	
Utility Pole with Base		*Underground TV Cable	
H-Frame Pole	•—•	*Underground Fiber Optics TV Cable	
Power Transmission Line Tower		*Underground Gas Pipeline ————————————————————————————————————	
Water Manhole	₩	Aboveground Gas Pipeline ————————————————————————————————————	
Power Manhole		*Underground Water Line	
Telephone Manhole		Aboveground Water Line —	
Sanitary Sewer Manhole	⊕	*Underground Gravity Sanitary Sewer Line —	
Hand Hole for Cable	H <sub>H</sub>	Aboveground Gravity Sanitary Sewer Line —	А
Power Transformer		*Underground SS Forced Main Line	
Telephone Pedestal		Underground Unknown Utility Line ————————————————————————————————————	
CATV Pedestal		SUE Test Hole	<b>②</b>
Gas Valve		Water Meter	0
Gas Meter		Water Valve	⊗
Located Miscellaneous Utility Object	$\odot$	Fire Hydrant	ф
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout	<b>(+)</b>
End of Information	E.O.I.		

*For Existing Utilities	
Utility Line Drawn from Record (Type as Shown)	P
Designated Utility Line (Type as Shown)	— P — — —

### UTILITY CONSTRUCTION

# ETHERILL ENGINEERING

1223 Jones Franklin Ro Raleigh, N.C. 2760 License No. F-037 Bus: 919 851 807 Fax: 919 851 810

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - SURVEY/SUE - LITH ITTES - CONSTRUCTION OBSERVA

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11011	APPROVED BY: SLK	# m	SEAL
	REVISED:		
	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	WALLIAN TO	SEAL  10773  Docusioned by:  EMAN G WELLENGTH, INTERNATIONAL CO. WELLENGTH, INTERNATIONAL CO. W. C. W.
	UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILI	TY CONSTRUCTION PLANS ONLY

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UTILITY CONSTRUCTION

#### **GENERAL NOTES:**

- 1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATIONS "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.
- 2. THE EXISTING UTILITIES BELONG TO PACTIV EVERGREEN. CONTACT MR. JAMES CLARY. MILL MANAGER. AT 828-226-8716.
- 3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
- 4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT.
  THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND
  UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND
  CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
- 5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.
- 6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
- 7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
- 8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
- 9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, "SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.
- 10. CONTRACTOR IS RESPONSIBLE FOR MONITORING AND REPAIRING ANY ISSUES THAT ARISE FROM THE TEMPORARY DRIVEWAY ENTRANCE, ARV MANHOLE, AND PIPE CONNECTIONS.
- 11. CONTRACTOR IS RESPONSIBLE FOR THE RESTORATION OF THE SITE ONCE WORK IS COMPLETED (REMOVAL OF TEMPORARY DRIVEWAY ENTRANCE, REVEGETATION, ETC.).
- 12. WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWER MAINS.

#### PROJECT SPECIFIC NOTES:

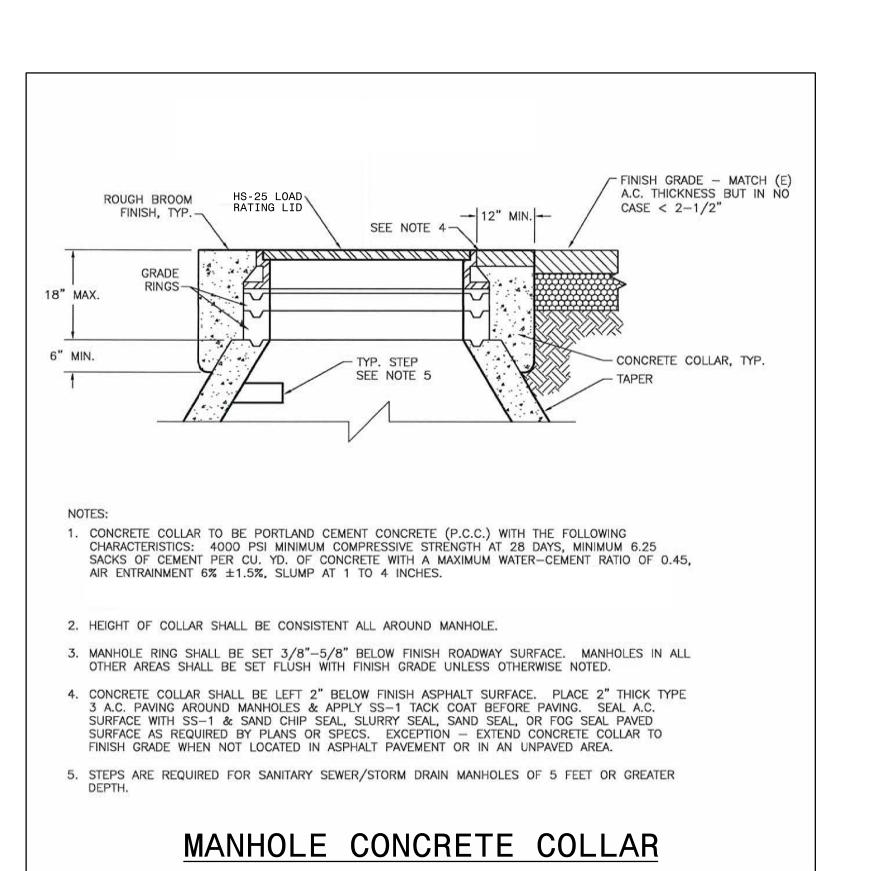
- 1. PROPOSED FORCE MAIN SEWER LINE (FSS-1) SHALL BE 6" PVC C900 DR18, INSTALLED BY OPEN CUT METHOD.
- 2. EXISTING AIR RELEASE VALVE AT -EY1- (INCINERATOR RD) STA. 20+30± SHALL HAVE 6" THICK CONCRETE COLLAR INSTALLED AROUND EXISTING MANHOLE. AND THE EXISTING MANHOLE LID SHALL BE REPLACED WITH AN HS-25 RATED LID.
- 3. CONTRACTOR TO BORE PROPOSED NCDOT CONDUITS FROM JUNCTION BOX TO JUNCTION BOX. IF HDD RIG CANNOT HANDLE ADDITIONAL RODS, CONTRACTOR SHOULD BORE FROM A MID-SPAN POINT (BORE PIT) BOTH WAYS TO EACH RESPECTIVE JUNCTION BOX, THEN COUPLE (E-LOC) THE CONDUITS TOGETHER.

#### SEWER INSTALLATION NOTES

- 1. CONTRACTOR SHALL FULLY INSTALL, PRESSURE & LEAKAGE TEST NEW SEWER MAIN PRIOR TO CONNECTION TO EXISTING SYSTEM.
- 2. CONTRACTOR SHALL PERFORM THE CONNECTION DURING OFF PEAK HOURS WITH A MAXIMUM SHUT DOWN TIME OF FIVE HOURS. CONTRACTOR TO COORDINATE WITH LANDFILL OWNER FOR WORKING HOURS PRIOR TO CONSTRUCTION.
- 3. DOWN TIME FOR FORCE MAIN SEWER SHALL BE DETERMINED BY LANDFILL OWNER PRIOR TO CONSTRUCTION AND COORDINATED WITH CONTRACTOR.
- 3. ANY TEST PERFORMED WITHOUT NOTIFICATION TO TOWN SHALL BE PERFORMED AT THE CONTRACTOR'S RISK. TESTING SHALL BE PERFORMED IN THE PRESENCE OF PACTIV EVERGREEN PERSONNEL. CONTACT MR. JAMES CLARY AT 828-226-8716.
- 4. NEW SEWER MAIN SHALL NOT BE CONNECTED TO EXISTING MAIN WITHOUT PRIOR APPROVAL AND COORDINATION WITH PACTIV EVERGREEN.
- 5. FOR NEW SEWER MAIN CONNECTIONS, USE LONG PATTERN SLEEVE AND THRUST COLLAR AS REQUIRED.
- 6. TRACER WIRE SHALL BE INSTALLED ALONG THE ENTIRE LENGTH OF PROPOSED FORCE MAIN SEWER FSS-1.
- 7. EXISTING FORCE MAIN SEWER SHALL BE ABANDONED IN PLACE WITH FLOWABLE FILL BETWEEN TIE-IN LOCATIONS AFTER CONNECTIONS ARE COMPLETE.
  REFER TO UTILITY ACCOMMODATION MANUAL AND 2024 STANDARD SPECIFICATIONS.

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## PROJECT TYPICAL DETAILS



45° MAX/ ANCHOR RODS -UNDISTURBED (2-PER FITTING) DIRECTION OF THRUST VERTICAL BENDS AND ANCHORS TEE UNDISTURBED SOIL DIRECTION OF THRUST DIRECTION OF THRUST UNDISTURBED HORIZONTAL BENDS TEE AND PLUG

CONCRETE THRUST BLOCKING SCHEDULE						CONCRETE SCHEDULE			ANCHOR ROD	
CONCINE INRUST BLOCKING SCHEDULE					VERTICAL BENDS			SIZE		
FITTING	ВІ	BEARING AREA IN SQUARE FEET			MIN. CU. YARDS CONCRETE				FOR VERTICAL	
SIZE	TEE/PLUG	90°	45°	22-1/2°	11-1/4°	90°	45°	22-1/2°	11-1/2°	BEND AND ANCHORS
4"	1	2	1	1	1	1	1	1	1	1/2"
6"	3	3	2	1	1	1	1	1	1	
8"	4	6	3	2	1	2	2	1	1	3/4"
10"	7	9	5	3	2	3	3	2	1	3/4
12"	9	12	7	4	2	5	3	2	1	7/8"
14"	12	17	9	5	3	6	4	3	2	
16"	16	22	12	6	3	8	6	3	2	
18"	20	27	15	8	4	10	7	4	2	
20"	24	34	18	10	5	12	9	5	3	
24"	34	48	26	14	7	17	12	7	4	1-1/8"
30"	53	75	41	21	11	27	19	10	5	
36"	77	108	59	30	15	38	27	15	8	1-3/8"

#### NOTES:

- 1. MINIMUM BEARING AREA (IN SQUARE FEET) AGAINST UNDISTURBED TRENCH WALL OF SAND.
- 2. AREAS SHOWN ARE FOR 150 PSI TEST PRESSURE. IF TEST PRESSURE IS OTHER THAN 150 PSI, ADJUST AREA
- OF REACTION BACKING IN DIRECT PROPORTION.

3. OTHER SOIL CONDITIONS: CEMENTED SAND OR HARDPAN - MULTIPLY ABOVE BY 0.5 GRAVEL OR HARD DRY CLAY - MULTIPLY ABOVE BY 0.7

- MULTIPLY ABOVE BY 2.0 SOFT CLAY MUCK: SECURE ALL FITTINGS WITH APPROVED HARNESS OR TIE ROD CLAMPS, WITH CONCRETE REACTION BACKING THE SAME AS LISTED FOR SAND CONDITIONS.

#### THRUST BLOCKING AND ANCHORING

LONG PATTER SLEEVE AND THRUST COLLAR



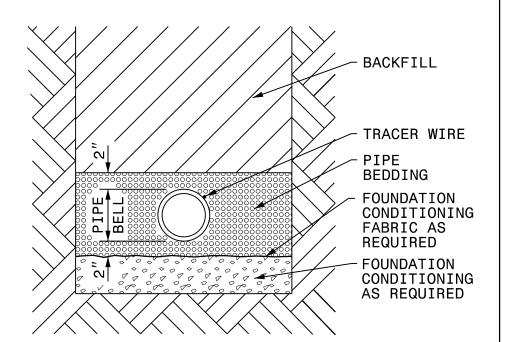
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATI

PROJECT REFERENCE NO. SHEET NO. HB-0003 UC-3A DESIGNED BY: PKP Fax: 919 851 8107 RAWN BY: TWR LESSIONA, L CHECKED BY: PPROVED BY: SLK 10773 REVISED: PO ENGINEERO ME NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC PHONE: (919)707-6690 UTILITY CONSTRUCTION FAX: (919)250-4151 PLANS ONLY FAX: (919)250-4151

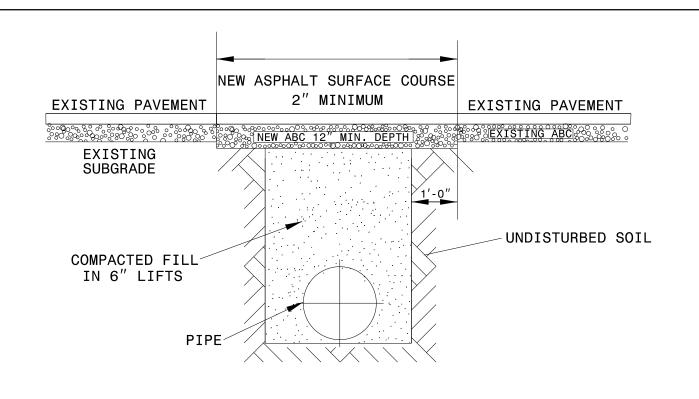
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UTILITY CONSTRUCTION



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.

#### TRENCH DETAIL



1. IN NCDOT MAINTAINED ROADWAYS ENCROACHMENT PAVEMENT PATCH

REQUIREMENTS SHALL TAKE PRECEDENCE. 2. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAWCUT MACHINE.

3. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT. 4. THE FINAL 1' OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A

DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-80 AS MODIFIED BY NCDOT. 5. THE ENTIRE THICKNESS AND VERTICAL EDGE OF CUT SHALL BE TACKED. 6. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 2" THICK. 7. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH. 8. REFER TO NCDOT STANDARDS FOR TRENCHES AND PIPE BEDDING FOR ADDITIONAL DETAILS.

9. NO HAND PATCHING ALLOWED. 10. PAVEMENT CUTS WITHIN NCDOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.

STANDARD ASPHALT PAVEMENT PATCH

