09/08/99

TIP PROJECT: B–5534

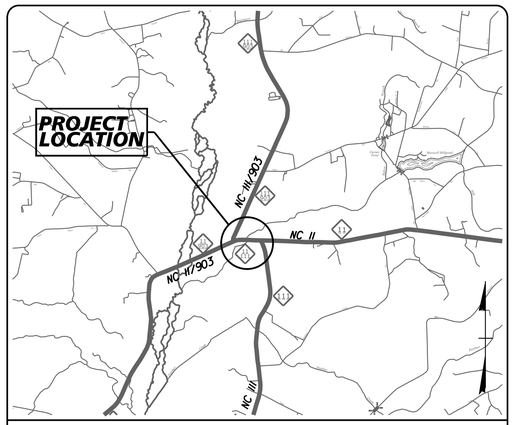
T.I.P. NO.	SHEET NO.
B–5534	UC–1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
DUPLIN COUNTY

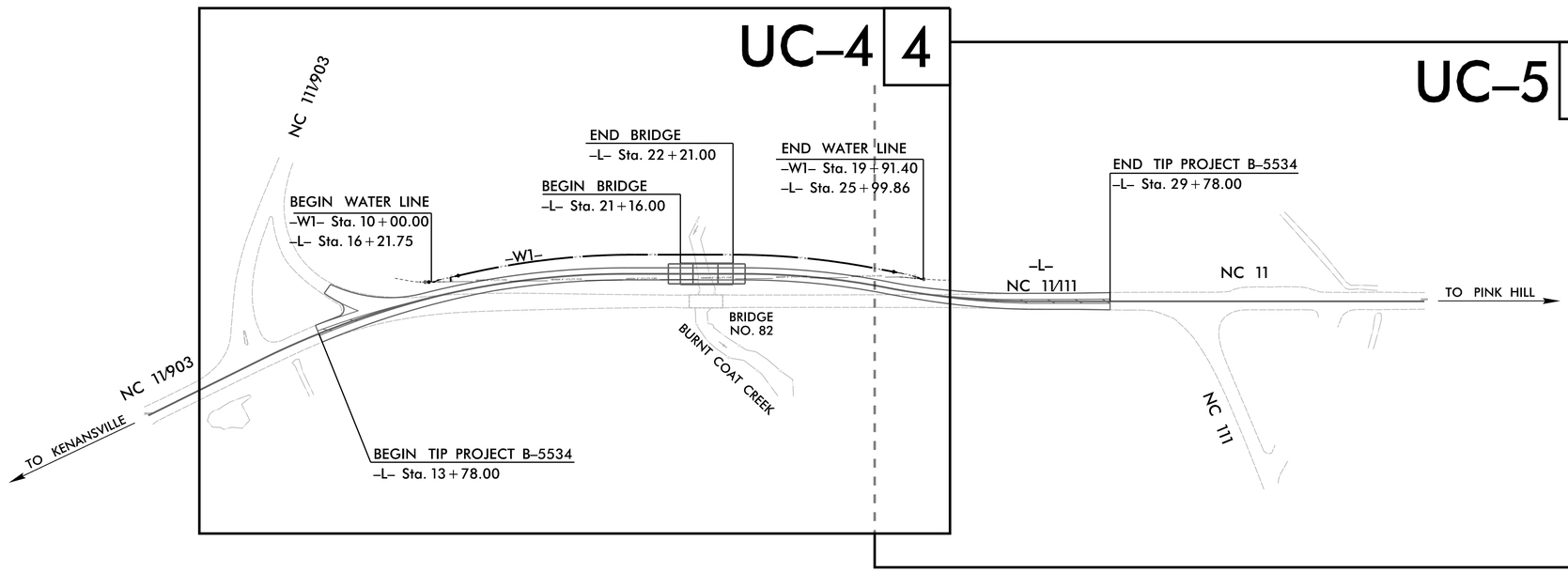
LOCATION: BRIDGE 82 OVER BURNT COAT CREEK ON NC 111

TYPE OF WORK: RELOCATION OF WATER LINE



VICINITY MAP *N.T.S.*

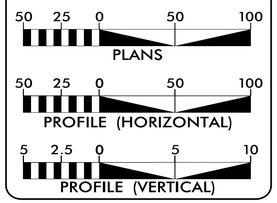
UC PLANS



THIS PROJECT IS NOT WITHIN A MUNICIPAL BOUNDARY

DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

GRAPHIC SCALES



INDEX OF SHEETS

WATER AND SEWER OWNERS ON PROJECT

(1) WATER – DUPLIN COUNTY
(2) SANITARY SEWER – DUPLIN COUNTY

PREPARED IN THE OFFICE OF

Kimley»Horn © 2020

NC LICENSE #F-0102
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NORTH CAROLINA 27601
PHONE: (919) 677-2000

Nathaniel Harvey, P.E. — *CONSULTANT CONTACT #1*
Cody Mangano, P.E. — *CONSULTANT CONTACT #2*

SEAL

DIVISION OF HIGHWAYS UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH NC 27699–1555
PHONE (919) 707–6690
FAX (919) 250–4151

Nabil Hamdan	*REGIONAL UTILITIES ENGINEER*
Kelvin Martin, E.I.	*SENIOR UTILITIES ENGINEER*
Kyle Pleasant	*UTILITIES AREA COORDINATOR*
Larry James Jr.	*UTILITIES COORDINATOR*

K:\DUR_Utilities_Roadway Utilities Projects\0I0336483 - B-5534\UC\Proj\B5534_ut_tsh_uc0I_pshdgn

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-5534	UC-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Item	Symbol
Water Line (Sized as Shown)	12" WL
11¼ Degree Bend	
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	BO
Fire Hydrant	PFH
Relocate Fire Hydrant	RFH
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 SEWER SYMBOLS

Item	Symbol
Gravity Sewer Line (Sized as Shown)	12" SS
Force Main Sewer Line (Sized as Shown)	12" FSS
Manhole (Sized per Note)	
Sewer Pump Station	PS(SS)

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

Item	Symbol
Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	TEL PED
Utility Line by Others (Type as Shown)	PROP O/H POW LINES
Trenchless Installation	12" TL INSTALL
Encasement by Open Cut	24" ENCAS BY OC
Encasement	24" ENCASEMENT
Thrust Block	
Air Release Valve	AR
Utility Vault	UV
Concrete Pier	CP
Steel Pier	SP
Plan Note	NOTE
Pay Item Note	PAY ITEM

EXISTING UTILITIES SYMBOLS

Item	Symbol
Power Pole	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.
*Underground Power Line	P
*Underground Telephone Cable	T
*Underground Telephone Conduit	TC
*Underground Fiber Optics Telephone Cable	T FO
*Underground TV Cable	TV
*Underground Fiber Optics TV Cable	TV FO
*Underground Gas Pipeline	G
Aboveground Gas Pipeline	A/G Gas
*Underground Water Line	W
Aboveground Water Line	A/G Water
*Underground Gravity Sanitary Sewer Line	SS
Aboveground Gravity Sanitary Sewer Line	A/G Sanitary Sewer
*Underground SS Forced Main Line	FSS
Underground Unknown Utility Line	?UTL
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

*For Existing Utilities

Item	Symbol
Utility Line Drawn from Record (Type as Shown)	W
Designated Utility Line (Type as Shown)	W

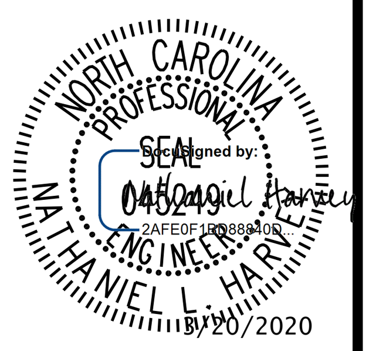
$$$$SYSTIME$$$$ $$$$$DGN$$$$ $$$$USERNAME$$$$

PREPARED BY:
Kimley»Horn ©2020
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

PROJECT REFERENCE NO.	SHEET NO.
B-5534	UC-3

DESIGNED BY:	NLH
DRAWN BY:	CDR
CHECKED BY:	CPM
APPROVED BY:	NLH
REVISED:	

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



UTILITY CONSTRUCTION PLANS ONLY

DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

UTILITY CONSTRUCTION

NCDOT GENERAL UTILITY NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.

2. THE EXISTING UTILITIES BELONG TO DUPLIN COUNTY.

3. ALL WATER LINE TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, 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 ENVIRONMENTAL AND NATURAL 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 AND THE UTILITY OWNER 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 A MINIMUM OF ONE WEEK PRIOR TO SERVICE INTERRUPTIONS AND TESTING. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPROTUNITY 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 ADDITONAL 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.

PROJECT SPECIFIC UTILITY NOTES:

1. ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT ITS EXPENSE, UNLESS PREVIOUSLY OBTAINED BY THE OWNER AND PROVIDED AT THE PRECONSTRUCTION CONFERENCE.

2. DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR WRITTEN CONSENT OF THE UTILITY OWNER OR THEIR REPRESENTATIVE OR THE ENGINEER MAY BE CAUSE FOR THE WORK TO BE UNACCEPTABLE.

3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD ANY FIELD CONDITIONS BE ENCOUNTERED THAT VARY FROM THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE UTILITY OWNER PRIOR TO CONSTRUCTION.

4. CONTRACTOR SHALL COORDINATE ALL WORK WITH UTILITY OWNER AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION, OR AS OTHERWISE SPECIFIED HEREIN.

5. UNLESS OTHERWISE INDICATED, ALL PROFILE ELEVATIONS ARE ALONG THE PIPE CENTERLINE.

6. CONTRACTOR SHALL NOTIFY PROPERTY OWNERS AND TENNANTS AT LEAST 7 DAYS PRIOR TO CONSTRUCTION THAT CONSTRUCTION ACTIVITY WILL TAKE PLACE IN THEIR AREA.

7. CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS FOR ALL UTILITY CONSTRUCTION PRIOR TO PLACING THE PIPELINE(S) IN SERVICE

8. PIPE ALIGNMENT SHOWN IS BASED ON STANDARD DUCTILE IRON MECHANICAL JOINT FITTINGS. JOINT DEFLECTIONS SHALL NOT EXCEED 75 PERCENT OF MANUFACTURER'S RECOMMENDED DEFLECTION. CONTRACTOR SHALL ADJUST PIPELINE ALIGNMENT AND DEFLECT JOINTS AS NECESSARY TO ACCOMMODATE THE STANDARD BENDS SHOWN.

9. MINIMUM PIPE COVER FOR DISTRIBUTION WATER MAINS SHALL BE 3 FEET.

10. ALL PRESSURIZED FITTINGS SHALL BE DUCTILE IRON RESTRAINED MECHANICAL JOINT WITH PRESSURE RATING EQUAL TO OR HIGHER THAN HOST PIPE, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

11. ALL MECHANICAL JOINTS SHALL BE FITTED WITH WEDGE-TYPE MECHANICAL RESTRAINT ACCESSORY KITS DESIGNED FOR THE INTENDED USE AND MATERIAL, AS APPROVED BY UTILITY OWNER.

CONSTRUCTION SEQUENCE:

1. FOR EACH WATER LINE RELOCATION, THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A DETAILED INSTALLATION, CONNECTION, AND SERVICE INTERRUPRTION PLAN FOR APPROVAL AT LEAST SEVEN (7) DAYS PRIOR TO THE RELOCATION. AT A MINIMUM, EACH PLAN SHALL ADDRESS THE FOLLOWING:

   A. SEQUENCE OF CONSTRUCTION OPERATIONS.

   B. PROCEDURE FOR FLUSHING, TESTING, AND DISINFECTION OF ALL AFFECTED PIPING AND VALVES, AS REQUIRED BY THE OWNER.

   C. PHASING AND SCHEDULE FOR ALL CONNECTIONS, INCLUDING PLANNED SERVICE OUTAGES, DURATION, AND CONTINGENCY PLAN.

2. NO INTERRUPTION OF SERVICE WILL BE PERMITTED UNTIL THE FOREGOING PLAN HAS BEEN APPROVED BY THE OWNER. THE OWNER'S PERSONNEL SHALL OPERATE THE OWNER'S EXISTING FACITLITIES INVOLVED IN THE INTERRUPTIONS OF SERVICE.

3. WRITTEN WATER SERVICE INTERRUPTION NOTICES SHALL BE PROVIDED TO ALL AFFECTED CUSTOMERS AT LEAST 72 HOURS PRIOR TO EACH PLANNED INTERRUPTION.

RECOMMENDED TEMPORARY CONNECTION SEQUENCE:

1. INSTALL PROPOSED TAPPING SLEEVE & VALVE ON EXISTING WATER LINE AT APPROXIMATE -W1- STA 10+39.20, OFFSET 9FT RT.

2. LAY PROPOSED LINE UPSTATION INCLUDING TEMPORARY 90° BEND AT -W1- STA 10+39.20, PROPOSED GATE VALVE AT -W1- 10+42.20, PROPOSED DIRECTIONAL DRILL, AND UP TO PROPOSED GATE VALVE AT -W1- STA 19+73.40.

3. FILL, FLUSH, DISINFECT, AND TEST INSTALLED WATER LINE.

4. AFTER PASSAGE OF ALL REQUIRED TESTS, CLOSE ALL NEWLY INSTALLED GATE VALVES, REMOVE TEMPORARY CONNECTION INCLUDING 90° BEND, AND MAKE FINAL CONNECTIONS AT BOTH ENDS OF -W1-.

5/14/99
$$$$$$$$$$$$$$SYSTIME$$$$$$$$$$$$$$$$$$$$$$$$
$$$$$$$$$$$$$$USERNAME$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$

5/14/99

PREPARED BY:

Kimley»Horn ©2020

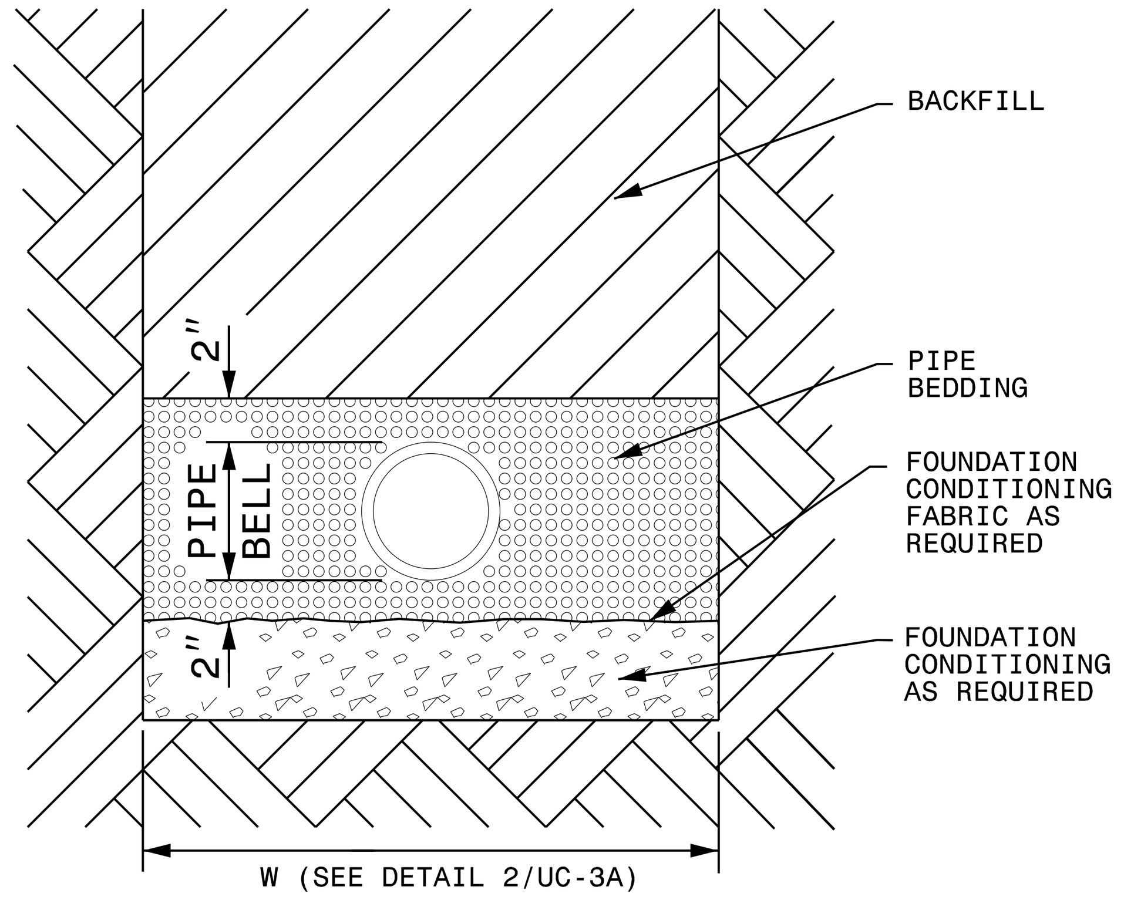
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

PROJECT REFERENCE NO.	SHEET NO.
B-5534	UC-3A
DESIGNED BY: NLH	
DRAWN BY: CDR	
CHECKED BY: CPM	
APPROVED BY: NLH	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045249 NATHANIEL L. HARVEY
DocuSigned by: Nathaniel Harvey 2AFE0F1BD88840D...
3/20/2020

DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

UTILITY CONSTRUCTION



NOTES:
1. PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER.
2. PIPE SHALL BE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III.
3. TRENCH SHALL BE BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL.
4. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH.
5. COMPACTION SHALL BE TO APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

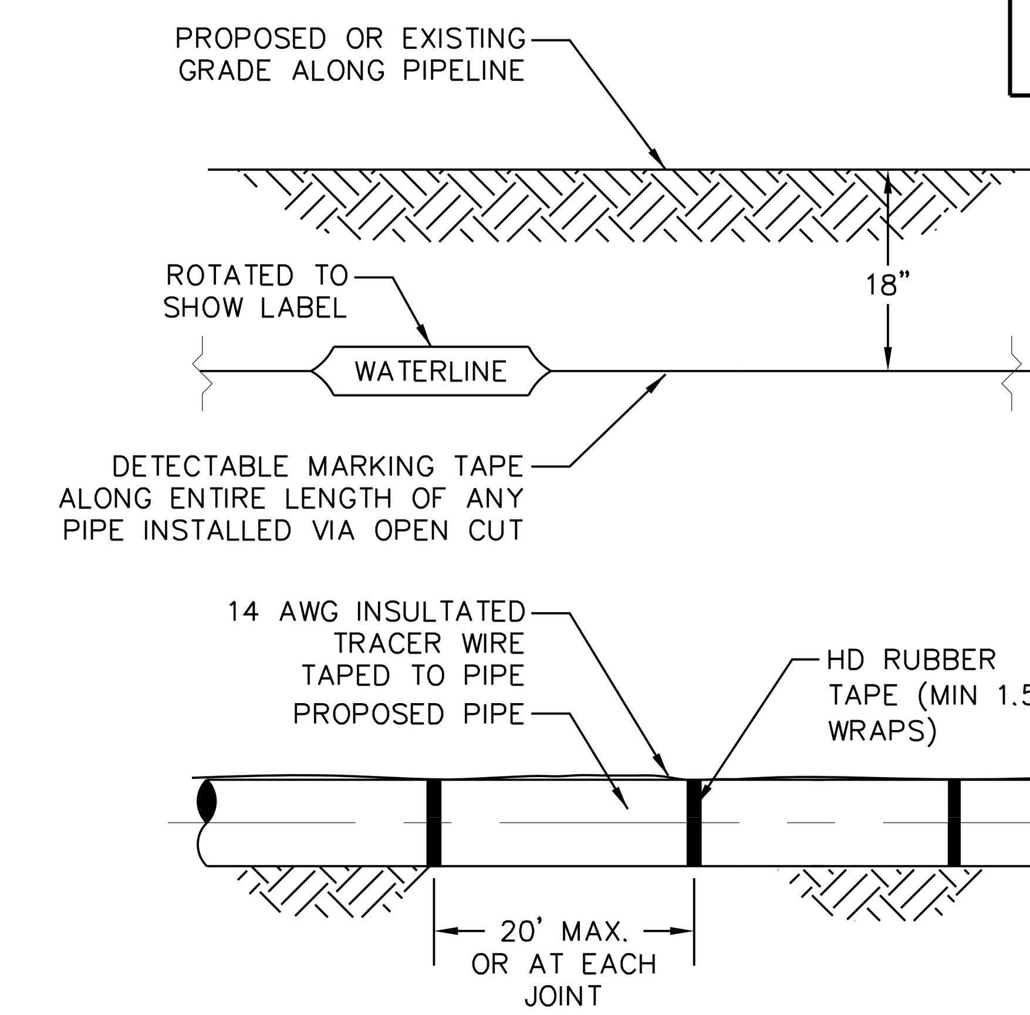
1 / UC-3A — TRENCH DETAIL
SCALE: N.T.S.

TRENCH EXCAVATION LIMITS

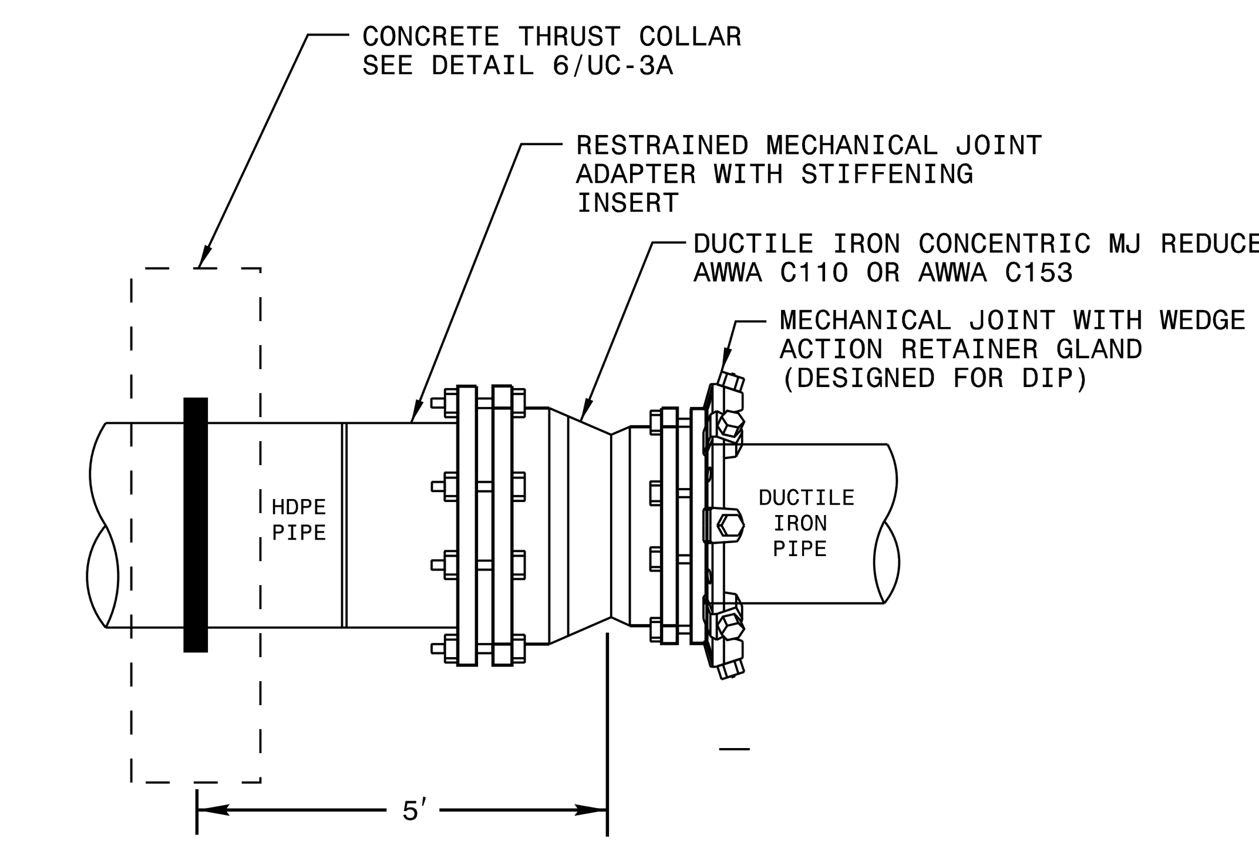
INTERNAL DIAMETER OF PIPE	W WIDTH OF TRENCH	
	MAX	W=MIN
4"-6"	3'-9"	2'-0"
8"-10"	3'-9"	2'-2"
12"	3'-9"	O.D.+2'
14"-16"	4'-2"	O.D.+2'
18"	4'-4"	O.D.+2'
20",21"	4'-8"	O.D.+2'
24"	4'-11"	O.D.+2'
27"	5'-9"	O.D.+2'
30"	6'-7"	O.D.+2'
36"	7'-4"	O.D.+2'

W = TRENCH WIDTH AT BOTTOM OF PIPE. TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS.

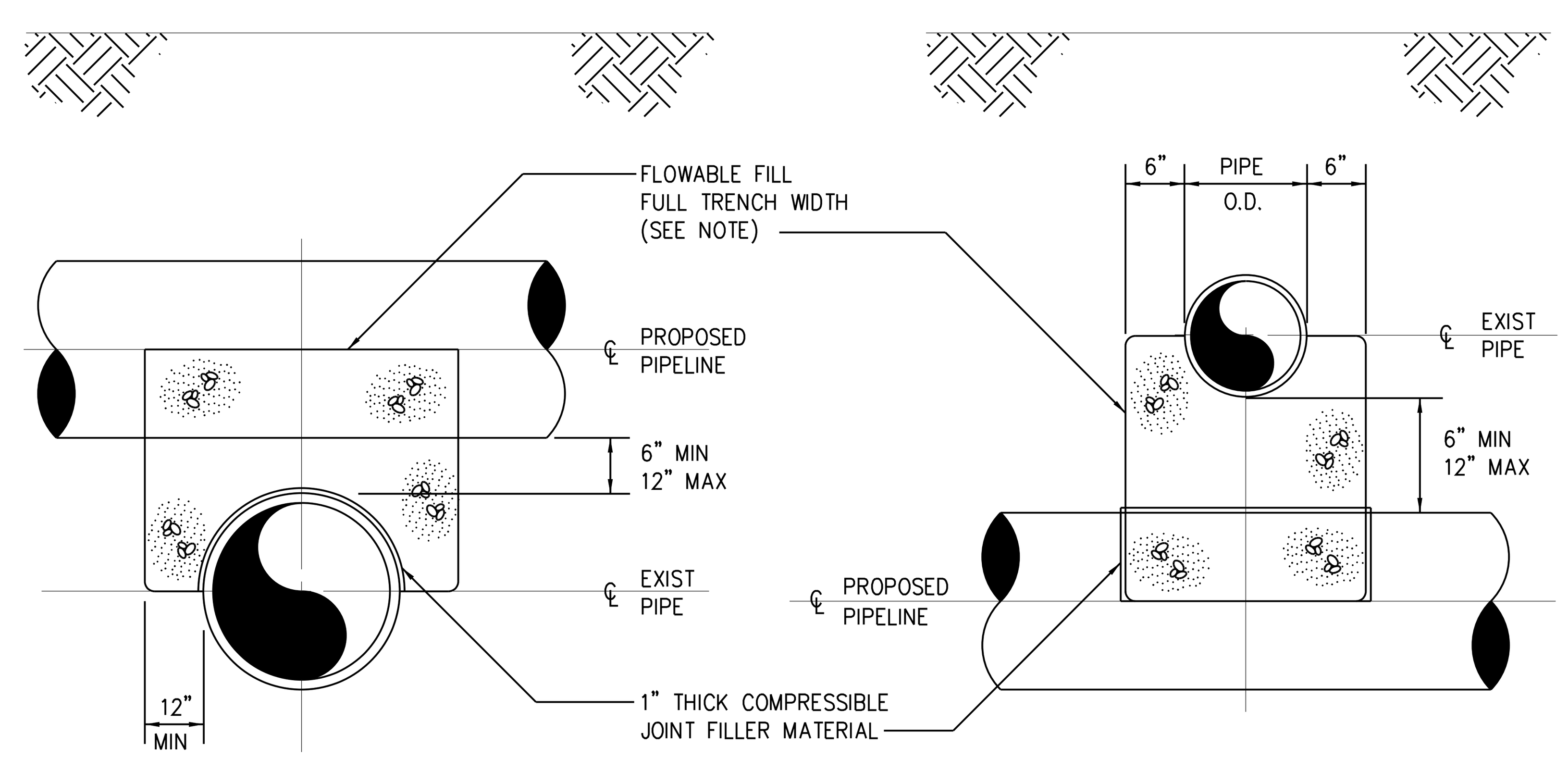
2 / UC-3A — TRENCH EXCAVATION LIMITS
SCALE: N.T.S.



3 / UC-3A — DETECTABLE MARKING TAPE AND WIRE
SCALE: N.T.S.

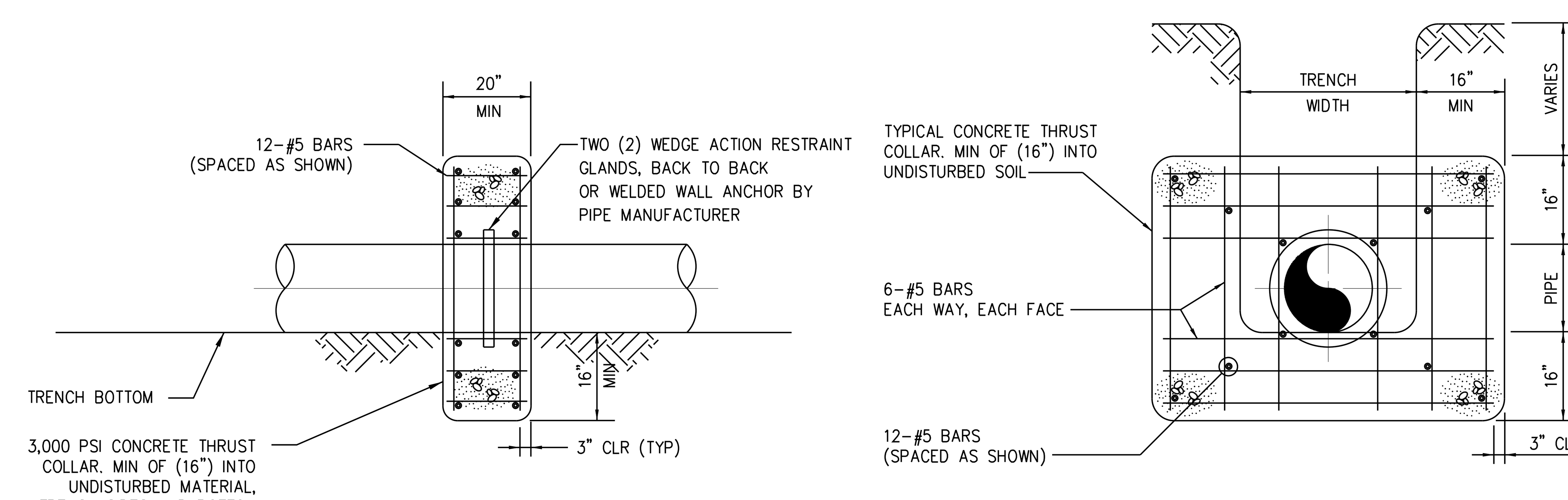


5 / UC-3A — HDPE TO DI PIPE TRANSITION DETAIL
SCALE: N.T.S.



NOTE: NO ENCASEMENT REQUIRED FOR VERTICAL SEPARATION GREATER THAN 12"

4 / UC-3A — PIPE CROSSING DETAIL
SCALE: N.T.S.



ELEVATION 1

ELEVATION 2

NOTES:
1. STABILIZE BASE IF REQUIRED, AS DIRECTED BY ENGINEER, TO SUPPORT THRUST COLLAR.
2. SOIL BEARING CAPACITY ASSUMED TO BE 2,000 PSF.

6 / UC-3A — THRUST COLLAR
SCALE: N.T.S.

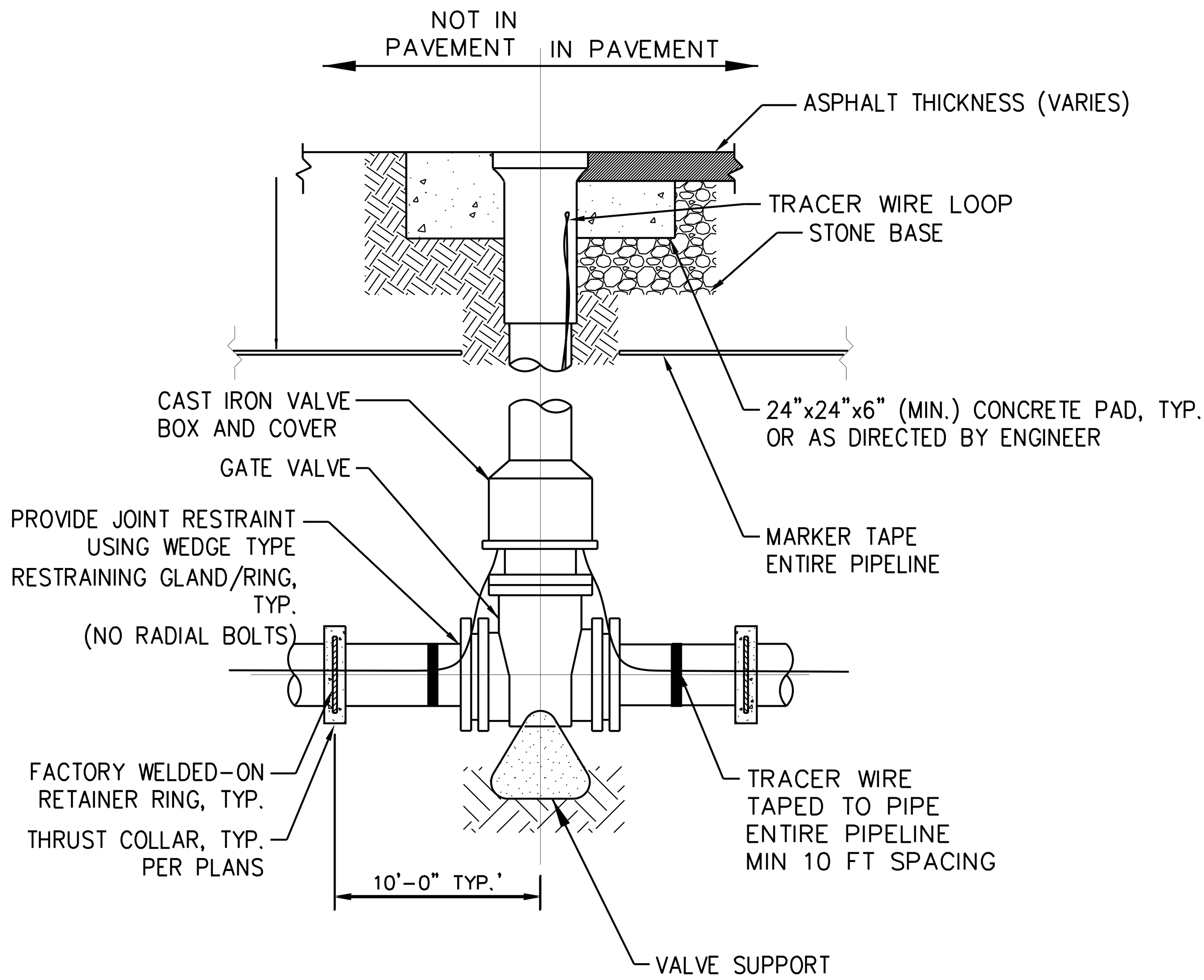
$$$$$$SYSTIME$$$$$ $$$$$$$$$DGN$$$$$$$$$$$$$$$$$ $$$$$USERNAME$$$$

PREPARED BY:
Kimley»Horn ©2020
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

PROJECT REFERENCE NO.	SHEET NO.
B-5534	UC-3B

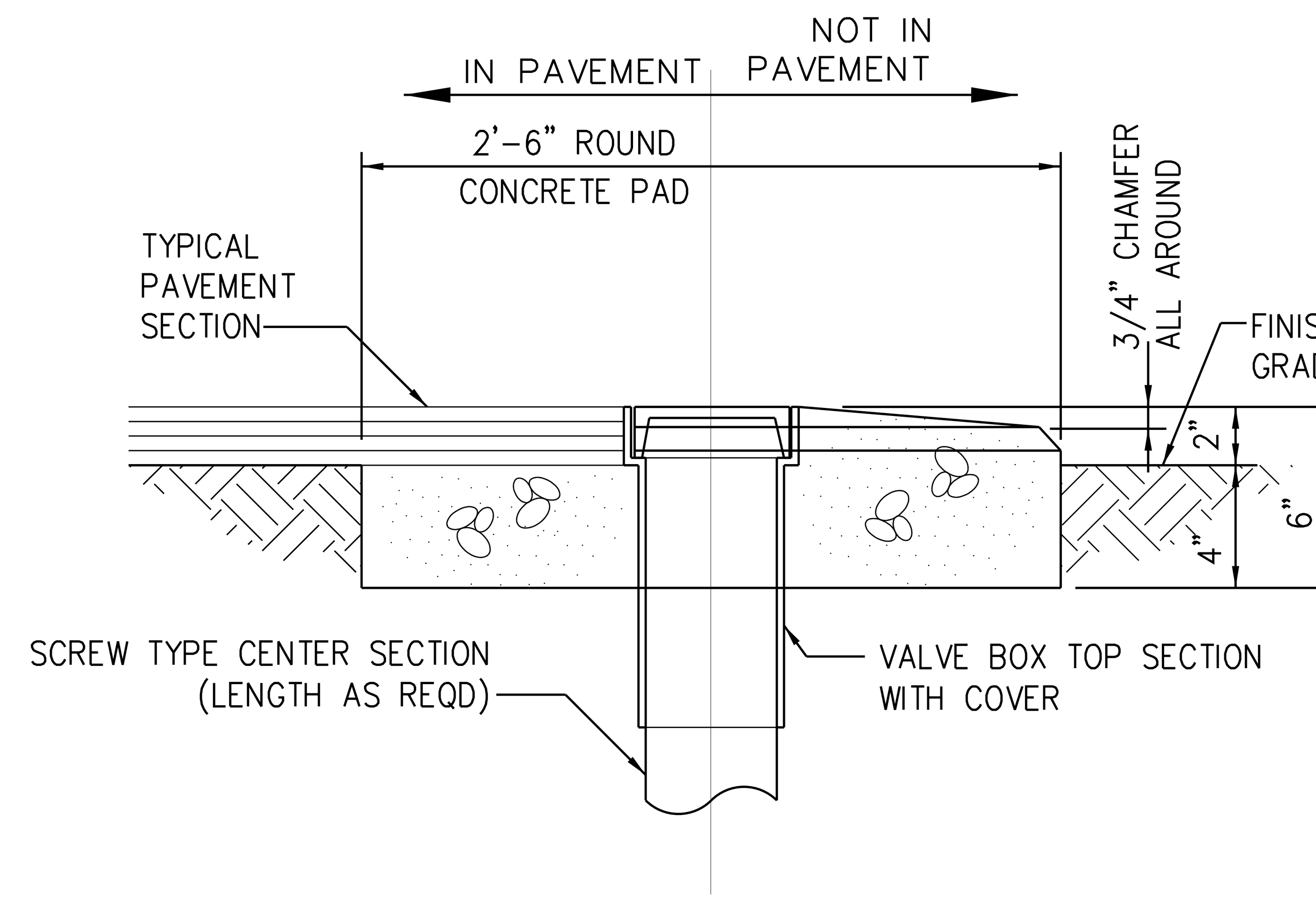
DESIGNED BY: NLH
DRAWN BY: CDR
CHECKED BY: CPM
APPROVED BY: NLH
REVISED:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045249 NATHANIEL L. HARVEY
DocuSigned by: Nathaniel Harvey 2AFE0F1BD88840D...
8/20/2020
UTILITY CONSTRUCTION PLANS ONLY
DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

UTILITY CONSTRUCTION



NOTES:
1. PROVIDE HDPE INSERTS IN ALL VALVE BOXES.

1 / UC-3B — GATE VALVE ASSEMBLY (FOR 4" THRU 12" VALVES)
SCALE: N.T.S.

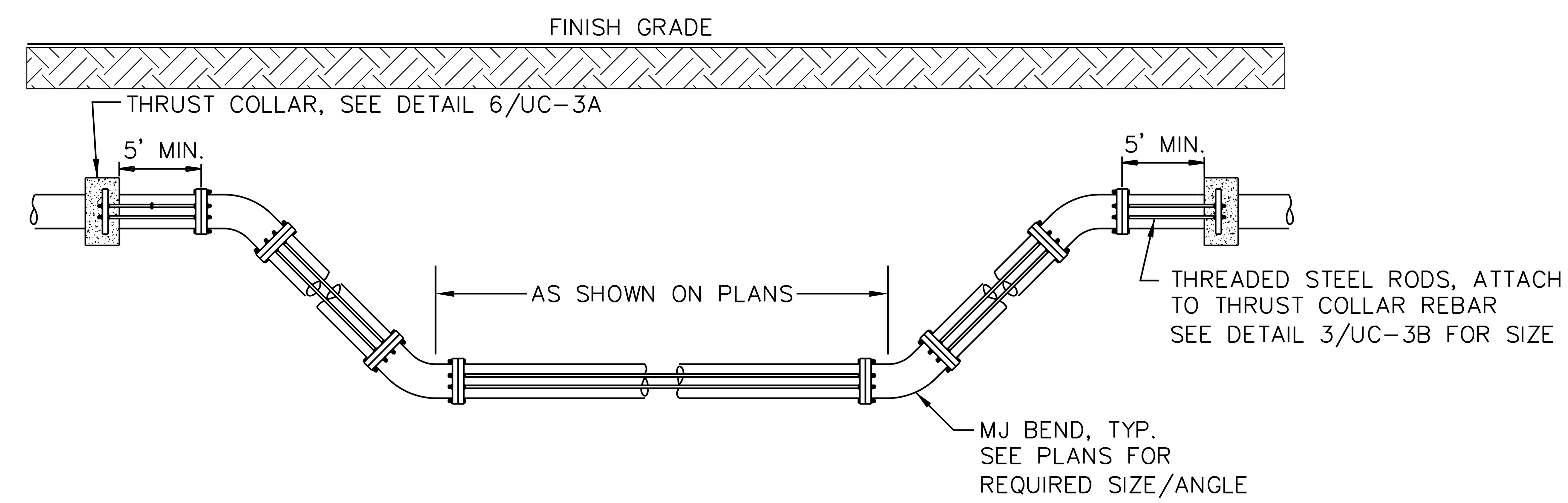


2 / UC-3B — VALVE BOX PAD
SCALE: N.T.S.

	DESIGN PRESSURE	
	200 PSI	
PIPE SIZE	ROD DIA	NUMBER REQ'D
4" TO 8"	3/4"	2
10" TO 20"	3/4"	4
24"	3/4"	6
30"	1"	6
36"	1"	8

1. THREADED RODS FOR PIPE DIAMETERS LARGER THAN 12" SHALL BE ASTM A193 (GRADE B7). ALL OTHER THREADED RODS SHALL BE ASTM A36.
2. RODS SHALL BE EQUALLY SPACED AROUND PIPE.

3 / UC-3B — THREADED ROD SCHEDULE
SCALE: N.T.S.



NOTES:
1. RODDING AND CONNECTING HARDWARE SHALL BE STAINLESS STEEL, HOT DIPPED GALVANIZED, OR COATED WITH MIN 2 COATS OF BITUMINOUS PAINT AFTER INSTALLATION.
2. CONCRETE SHALL NOT CONTACT OR OBSCURE MJ FITTINGS OR HARDWARE.
3. ALL PIPE AND FITTINGS BETWEEN THRUST COLLARS SHALL BE MECHANICALLY RESTRAINED.

4 / UC-3B — STANDARD MJ VETICAL BEND
SCALE: N.T.S.

5/14/99

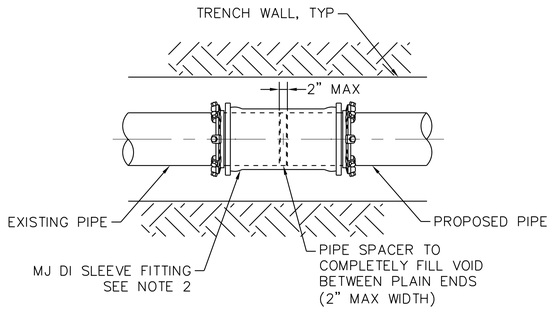
PREPARED BY:
Kimley»Horn ©2020
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

PROJECT REFERENCE NO.	SHEET NO.
B-5534	UC-3C
DESIGNED BY: NLH	
DRAWN BY: CDR	
CHECKED BY: CPM	
APPROVED BY: NLH	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

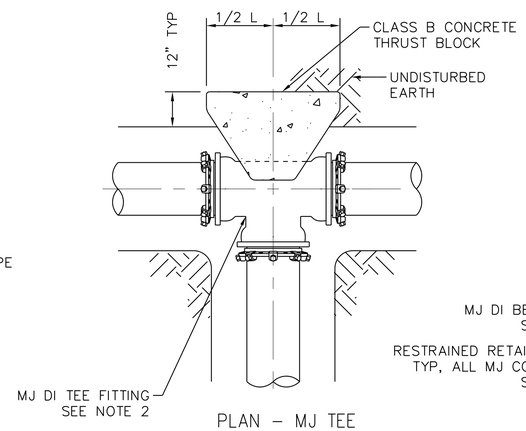
NORTH CAROLINA PROFESSIONAL SEAL 045247 ENGINEER NATHANIEL L HARRIS
5/20/2020

DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

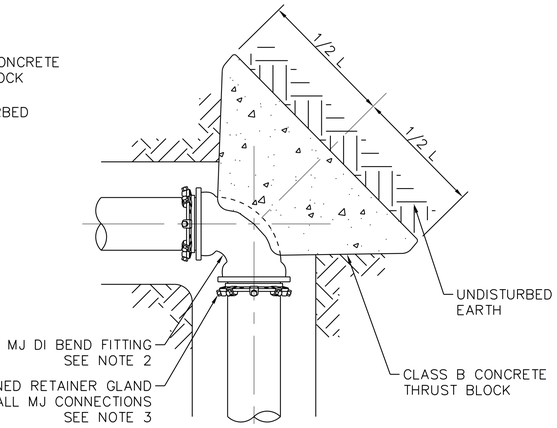
UTILITY CONSTRUCTION



PLAN – MJ SLEEVE

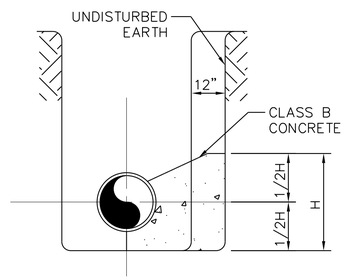


PLAN – MJ TEE



PLAN – MJ BEND

CONCRETE THRUST BLOCK SCHEDULE (DIMENSIONS IN FT)								
PIPE SIZE (IN)	FITTING							
	90° / TEE		45°		22.5°		11.25°	
	H	W	H	W	H	W	H	W
4	2.0	4.0	1.5	2.9	1.0	2.1	0.7	1.5
6	2.0	4.0	1.5	2.9	1.0	2.1	0.7	1.5
8	2.6	5.2	1.9	3.8	1.4	2.7	1.0	1.9
12	3.8	7.6	2.8	5.6	2.0	4.0	1.4	2.8
16	5.0	10.0	3.7	7.4	2.6	5.3	1.9	3.7
24	7.4	14.9	5.5	11.0	3.9	7.8	2.8	5.5
30	9.2	18.5	6.8	13.6	4.9	9.7	3.4	6.9
36	11.1	22.1	8.1	16.3	5.8	11.6	4.1	8.2



TYPICAL SECTION

NOTES:
1. THRUST BLOCK DIMENSIONS BASED ON AVERAGE SOIL PASSIVE BEARING STRENGTH OF 2000 PSF USING SF OF 1.5 AND DESIGN TEST PRESSURE OF 200 PSI. FOR PIPE SIZES NOT LISTED, USE DIMENSIONS FOR NEXT LARGER PIPE SIZE.
2. ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT (DI MJ) OF THE SAME OR HIGHER PRESSURE RATING AS THE HOST PIPE AND SHALL BE RESTRAINED AGAINST THRUST VIA RESTRAINT GLANDS AND CONCRETE THRUST BLOCKING.
3. RESTRAINT GLANDS DESIGNED FOR THE INTENDED USE. RESTRAINT GLANDS SHALL CONSIST OF MULTIPLE GRIPPING WEDGES INCORPORATED INTO A FOLLOWER GLAND AND BOLT–ACTUATED BY TORQUE–LIMITING TWIST OFF NUTS.
4. DIRECT CONTACT BETWEEN CONCRETE AND FITTINGS, PIPE, OR HARDWARE SHALL NOT BE PERMITTED. THRUST BLOCK SHALL NOT OBSTRUCT ACCESS TO RESTRAINT GLAND BOLTS.

1
UC–3C

THRUST RESTRAINT FOR FITTINGS

SCALE: N.T.S.

5/14/99

PREPARED BY:
Kimley»Horn
© 2020
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

PROJECT REFERENCE NO.	SHEET NO.
B-5534	UC-4
DESIGNED BY: NLH	
DRAWN BY: CDR	
CHECKED BY: CPM	
APPROVED BY: NLH	
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 045249 ENGINEER NATHANIEL L HARVEY
3/20/2020

DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

UTILITY CONSTRUCTION

THIS SHEET CORRESPONDS TO RDY-4

NC GRID
NAD 83/NA 2011

EXIST ASPHALT PAVEMENT REMOVAL,TYP

NEAREST EXISTING LINE VALVE WEST OF THE WESTERN WATER LINE -W1- TIE-IN IS APPROXIMATELY 350FT TO THE NORTHWEST IN THE EAST SIDE SHOULDER OF NC-111/NC-903.

JUNIUS KENNETH MAXWELL, II & VIRGINIA MAXWELL NICHOLS DB 1718 / 152

BEGIN ROCK PLATING -L- Sta.16+22.00 LT

START DIRECTIONAL DRILL -W1- STA 10+48.20

10"x8" DI RJ REDUCER

8" GATE VALVE

SEE INSET A FOR TEMPORARY CONNECTION DETAIL

49 LF 8" WATER LINE PC350 DI RJ

8" DI RJ 11.25° BEND

8" DI RJ 22.5° BEND

CONNECT TO EXISTING 8" WATER LINE WITH RESTRAINED 8" MJ DI LONG BODY SLEEVE

THRUST COLLAR, TYP

EX. R/W 50' LT

FAISON D. SMITH DB 565 / 323

BEGIN TIP PROJECT B-5534
BEGIN CONSTRUCTION
-L- POC Sta.13+78.00

LINDA GRADY SMITH DB 787 / 274

JEAN PATTERSON SMITH DB 1349 / 259

BEGIN ROCK PLATING -L- Sta.22+21.00 LT

END ROCK PLATING -L- Sta.21+16.00 LT

CLASS II RIP RAP TO ELEV. 72.0' (STRUCTURES PAY ITEM, TYP.)

INSTALL SBG -L- STA 20+66.00 TO 20+91.83 RT

889 LF DIRECTIONAL DRILLING OF 10" DR9 HDPE WATER LINE

5' MIN SEPARATION TO R/W LINE

15' MIN SEPARATION TO BRIDGE COMPONENTS

-W1-

ABANDON 974 LF 8" UTIITY PIPE

REMOVE EXIST ROADWAY FILL,TYP (SEE CROSS-SECTIONS)

REMOVE EXIST GUARDRAIL

TEMPORARY CUT DITCH SEE DETAIL 1

CLASS B RIP RAP EST 1 TONS EST 5 SY GFD

TEMPORARY CLASS B RIP RAP EST 1 TONS EST 5 SY GFD

REMOVE EXIST BRIDGE (STRUCTURE PAY ITEM)

LINDA MARIE BASS DB 1597 / 181

END ROCK PLATIN -L- Sta.25+48.00

END DIRECTIONAL DRILL -W1- STA 19+37.22

TOE PROTECTION CLASS 'B' RIPRAP EST 35 TONS EST 70 SY GFD SEE DETAIL 2

10"x8" DI RJ REDUCER

55 LF 8" WATER LINE PC350 DI RJ

8" GATE VALVE

8" DI RJ 11.25° BEND

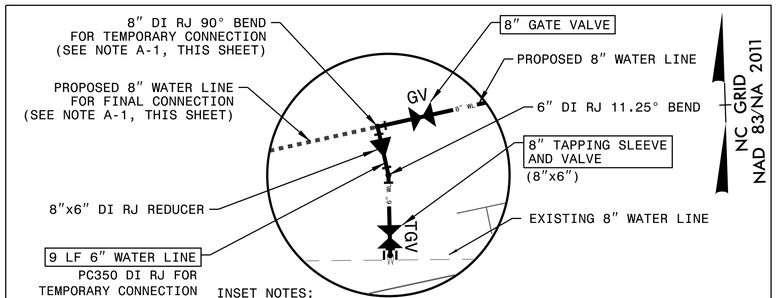
8" DI RJ 22.5° BEND

CONNECT TO EXISTING 8" WATER LINE WITH RESTRAINED 8" MJ DI LONG BODY SLEEVE

MATCHLINE -L- STA 26+20 (SEE SHEET UC-5)

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1,097 POUNDS.

SEE SHEET UC-6 FOR -W1- PROFILE



INSET NOTES:
A-1. REMOVE TEMPORARY 6" WATER LINE CONNECTION FROM 8" 90° BEND THROUGH 8"x6" TAPPING VALVE FOR FINAL CONNECTION.
A-2. SEE CONSTRUCTION SEQUENCE ON SHEET UC-3.

INSET A – TEMPORARY CONNECTION DETAIL SCALE: 1"=5'

PREPARED BY:

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

PROJECT REFERENCE NO.	SHEET NO.
B-5534	UC-5

DESIGNED BY:	NLH
DRAWN BY:	CDR
CHECKED BY:	CPM
APPROVED BY:	NLH
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

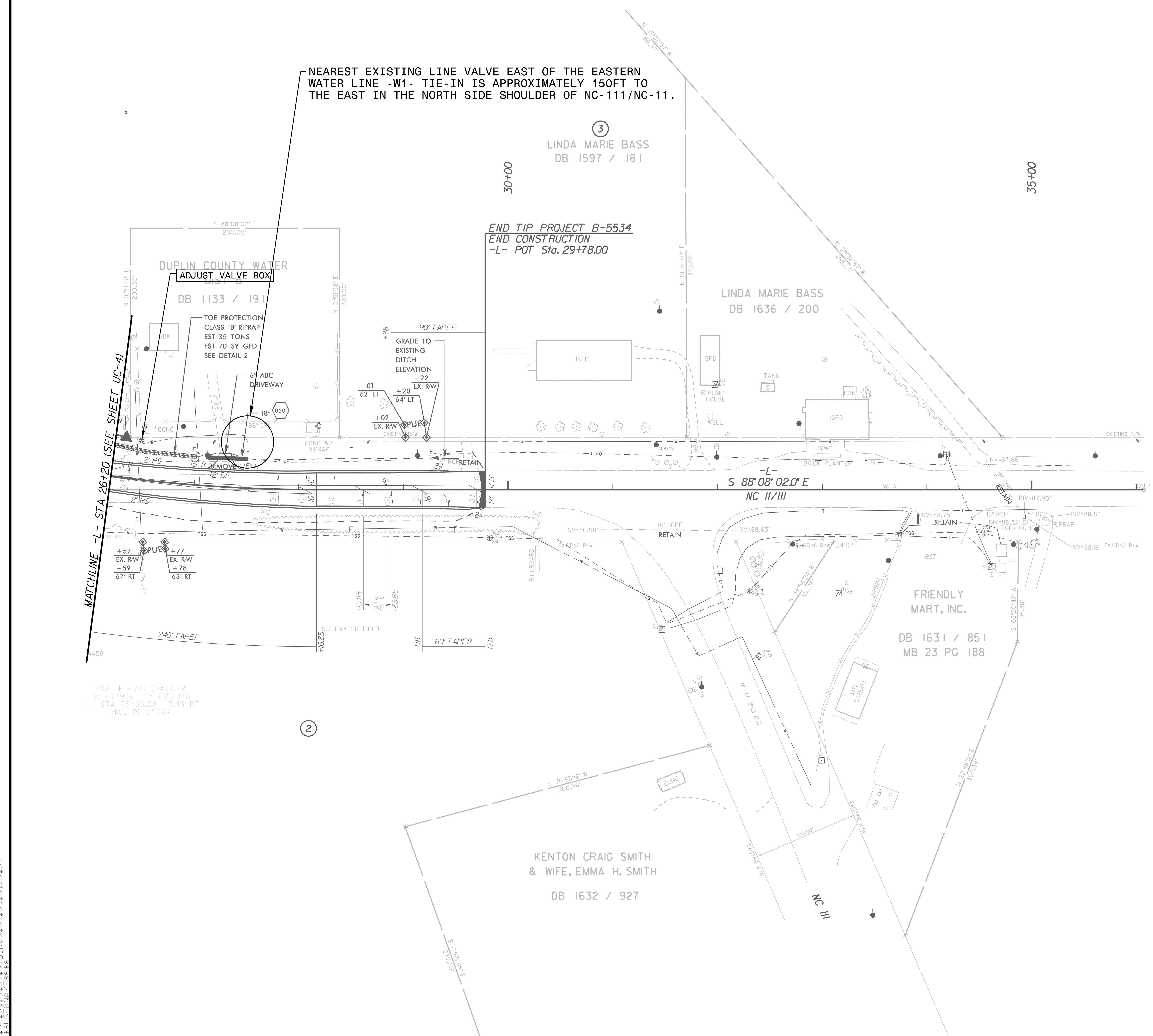
NORTH CAROLINA PROFESSIONAL SEAL 045249 ENGINEER NATHANIEL L. HARVEY
3/20/2020

UTILITY CONSTRUCTION PLANS ONLY

DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

UTILITY CONSTRUCTION

THIS SHEET CORRESPONDS TO RDY-5



NEAREST EXISTING LINE VALVE EAST OF THE EASTERN WATER LINE -W1- TIE-IN IS APPROXIMATELY 150FT TO THE EAST IN THE NORTH SIDE SHOULDER OF NC-111/NC-11.
LINDA MARIE BASS
DB 1597 / 181
30+00
35+00
END TIP PROJECT B-5534
END CONSTRUCTION
-L- POT Sta. 29+78.00
DUPLIN COUNTY WATER
ADJUST VALVE BOX
DB 1133 / 191
TOE PROTECTION CLASS 'B' RIPRAP EST 35 TONS EST 70 SY GFD SEE DETAIL 2
6" ABC DRIVEWAY
90' TAPER
GRADE TO EXISTING DITCH ELEVATION
LINDA MARIE BASS
DB 1636 / 200
ISFD
PUMP HOUSE
WELL
TANK
MATCHLINE -L- STA 26+20 (SEE SHEET UC-4)
REMOVE
RETAIN
-L-
S 88° 08' 02.0" E
NC 11/111
BRICK PLANTER
18" HDPE
BILLBOARD
240' TAPER
60' TAPER
CULTIVATED FIELD
FRIENDLY MART, INC.
DB 1631 / 851
MB 23 PG 188
KENTON CRAIG SMITH
& WIFE, EMMA H. SMITH
DB 1632 / 927
NC 111
NAD 83/NA 2011

5/14/99

NOTE:
PRIOR TO COMMENCING ANY WORK ON ANY TRENCHLESS INSTALLATION ON THIS PROJECT, PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION CERTIFIED BY AN ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE STANDARD SPECIFICATIONS.

-W1- SEE SHEET UC-4 FOR PLAN

PREPARED BY:
Kimley»Horn
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

PROJECT REFERENCE NO.	SHEET NO.
B-5534	UC-6

DESIGNED BY: NLH
DRAWN BY: CDR
CHECKED BY: CPM
APPROVED BY: NLH
REVISED:

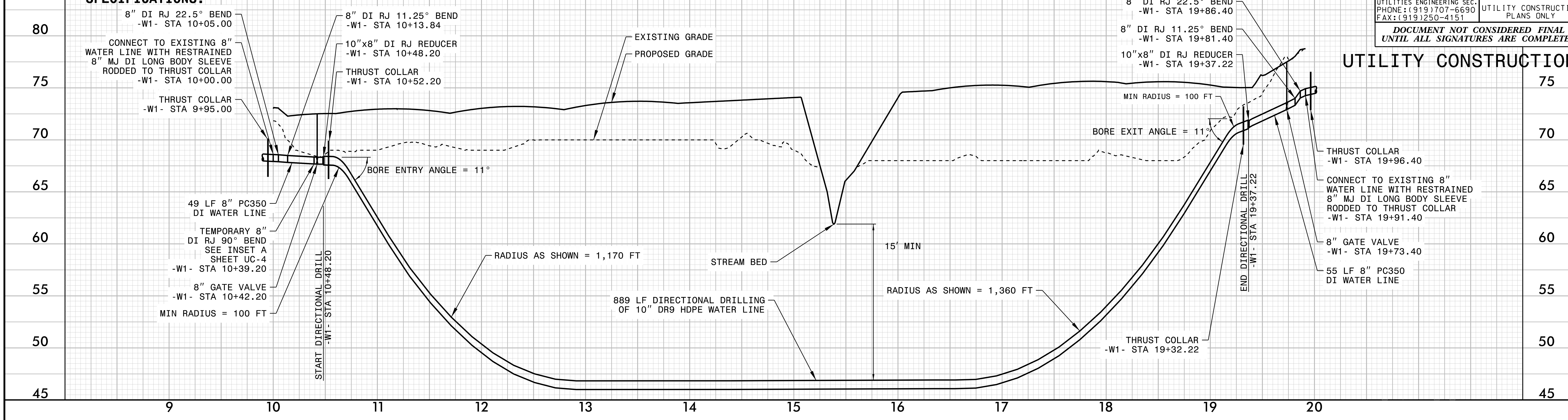
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL — NATHANIEL L. HARVEY — 8/20/2020

DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

UTILITY CONSTRUCTION



3/4/2020