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850 PROJEC

See Sheet UC-1 For Index of Sheets See Sheet UC-2 For Standard Symbology Sheet

PROJECT **BEGIN PROJECT** N.T.S. VICINITY MAP

## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

# UTILITY CONSTRUCTION PLANS GUILFORD COUNTY

LOCATION: RANDLEMAN RD (SR1007) FROM ELMSLEY DR TO GLENDALE DR. TYPE OF WORK: WATER LINE RELOCATION

U-5850

T.I.P. NO.

UC-1

SHEET NO.

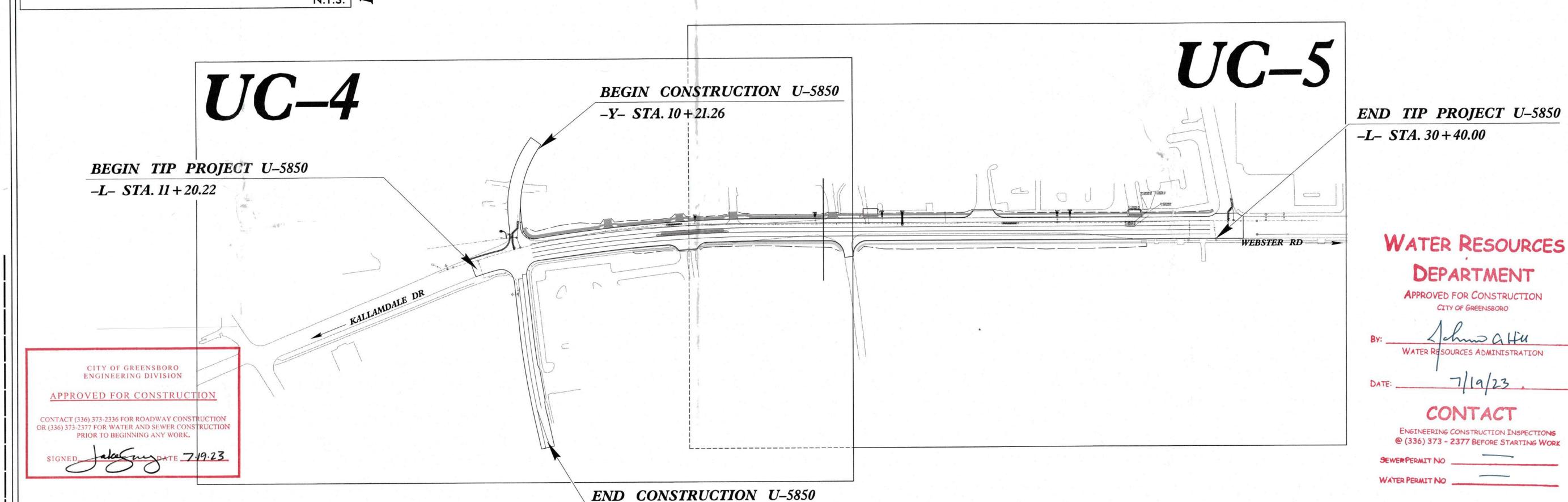
## SENSITIVE INFORMATION

Not to be copied or distributed without the express written permission of the City of Greensboro

L.F. X \$1.50 = \$ L.F. X \$1.50 = \$ L.F. X \$1.50 = \$ WATER SEWER ROADWAY TO BE PRIVATELY INSPECTED DATE FEES (\$) RECEIVED BY CITY OF GREENSBORO 267 D

APPLICATION FOR GRAVITY SEWER
FLOW TRACKING AND ACCEPTANCE REQUEST FOR
SEWER EXTENSION PERMIT APPLICATION

CHECK FOR WATER AND SEWER PERMITTING FEES FEE AMOUNT FOR WATER \$



-Y-STA.18+03.88

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF GREENSBORO.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

## GRAPHIC SCALES PLANS PROFILE (HORIZONTAL) *UC-6* PROFILE (VERTICAL)

## INDEX OF SHEETS

**DESCRIPTION:** SHEET NO.:

TITLE SHEET UTILITY SYMBOLOGY **NOTES** 

UC-3A THRU UC-3C DETAILS UC-4 THRU UC-5

UTILITY CONSTRUCTION SHEETS PROFILE SHEETS

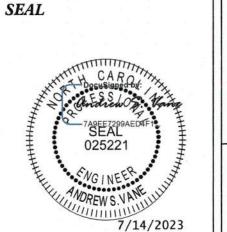
## WATER AND SEWER OWNERS ON PROJECT

(A) WATER - (CITY OF GREENSBORO) (B) SEWER - (CITY OF GREENSBORO)



NC License Number F-0991 NIKKI HONEYCUTT, PE CONSULTANT CONTACT #1

CONSULTANT CONTACT #2 ANDREW VANE, PE NATHAN ADKINS, EI CONSULTANT CONTACT #3





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

DEPARTMENT

APPROVED FOR CONSTRUCTION CITY OF GREENSBORO

WATER RESOURCES ADMINISTRATION

CONTACT

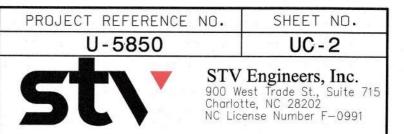
ALI KOUCHEKI, PE UTILITIES ENGINEER

C. DAYTON MARTIN, III UTILITIES REGIONAL ENGINEER

JON LOUGHRY UTILITIES AREA COORDINATOR

TANGA N. SAMPSON UTILITIES COORDINATOR

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS



## UTILITIES PLAN SHEET SYMBOLS

## PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
111/4 Degree Bend	+
22½ Degree Bend	++
45 Degree Bend	
90 Degree Bend	4
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	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

Gravity Sewer Line (Sized as Shown)	12" SS	
Force Main Sewer Line (Sized as Shown)	12" FSS	
Manhole (Sized per Note)		
Sewer Pump StationPS(SS)		

## PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

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

	EXISTING UTIL:	ITIES SYMBOLS
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	Fi	Aboveground Gravity Sanitary Sewer Line A/G Sanitary Sewer
Power Transformer	··· 🗹	*Underground SS Forced Main Line
Telephone Pedestal	··· I	Underground Unknown Utility Line
CATV Pedestal	·· ©	SUE Test Hole
Gas Valve	♦	Water Meter
Gas Meter	·· • • • • • • • • • • • • • • • • • •	Water Valve
Located Miscellaneous Utility Object	·· ⊙	Fire Hydrant
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout
End of Information	E.O.I.	
		*

*For Existing Utilities
Utility Line Drawn from Record
Designated Utility Line

## UTILITY CONSTRUCTION

## **GENERAL UTILITY NOTES:**

- 1. ALL UTILITY CONSTRUCTION, WORKMANSHIP, AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE CITY OF GREENSBORO STANDARD SPECIFICATIONS FOR WATER AND SEWER UTILITY CONSTRUCTION UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
- 2. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE ALIGNMENT AND ELEVATION OF ALL EXISTING WATER MAINS AT CONNECTION AND TAP LOCATIONS PRIOR TO CONSTRUCTION.
- 3. ALL CHANGES MADE DURING THE CONSTRUCTION PHASE SHALL BE APPROVED BY THE CITY OF GREENSBORO ENGINEERING DIVISION PRIOR TO CONSTRUCTION.
- 4. CONTRACTOR SHALL FIELD VERIFY POSSIBLE CONFLICTS WELL IN ADVANCE OF PIPE LAYING OPERATIONS AS TO ALLOW THE ADJUSTMENT OF LINE AND GRADE WELL BEFORE CONFLICT. FAILURE TO DO THIS ON THE PART OF THE CONTRACTOR MAY RESULT IN ADDITIONAL COST IN MATERIALS AND WORK TO THE CONTRACTOR, NOT PAID BY THE CITY.
- 5. DISTANCES AND/OR STATION REFERENCES SHOWN FOR WATER PIPE, VALVES, FITTINGS, REDUCERS OR HYDRANTS IN RELATION TO FIXED OBJECTS ARE APPROXIMATE.
- 6. THE CONTRACTORS SHALL BE RESPONSIBLE FOR PROVIDING RESTRAINED JOINT PIPE (IF INDICATED ON THE PLANS) OR THRUST BLOCKS AT ALL PROPOSED TEES, BENDS, TAPPING SLEEVES, REDUCERS AS SPECIFIED IN THE CITY OF GREENSBORO STANDARD SPECIFICATIONS FOR WATER AND SEWER UTILITY CONSTRUCTION. ALL THRUST BLOCKING SHALL CONFORM TO THE THRUST BLOCK DETAILS AS PER CITY OF GREENSBORO STD. NO. 106.
- 7. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL STATE ALL CULVERTS, WALLS, GATES, FENCES, HEDGES, SHRUBS, MAIL BOXES, DRIVEWAYS, LIGHT POLES, POWER POLES, SIGNS, WATER LINES, GAS LINES, GAS VALVES, TELEPHONE PEDESTALS, WATER METERS, WATER VALVES, SANITARY SEWERS, SANITARY SERVICE LATERALS, LAWNS, GARDENS, AND ANY OTHER EXISTING ITEM DISTURBED OR MOVED DUE TO CONSTRUCTION. FINISHED AREAS CONTIGUOUS TO RESIDENTIAL LAWNS SHALL BE LANDSCAPED IN A MANNER SUCH THAT SOIL PARTICLES SHALL NOT EXCEED 11/2 INCHES IN DIAMETER (SEE "SEEDBED PREPARATION FOR LAWN AREAS" IN CONTRACT SPECIAL PROVISIONS). THE COST OF THE WORK WILL BE INCLUDED IN THE UNIT BID AND CONSTRUCTION PRICES FOR OTHER BID ITEMS IN THE CONTRACT.
- 8. ALL WORK MUST BE PERFORMED WITHOUT DISRUPTING THE OPERATION OF ANY EXISTING SANITARY SEWER OR WATER SERVICE UNLESS APPROVED OTHERWISE IN ADVANCE BY THE CITY OF GREENSBORO.
- 9. THE CONTRACTOR SHALL USE CAUTION WHEN WORKING AROUND EXISTING GAS, SEWER, WATER ELECTRIC, TELEPHONE, FIBER OPTIC, OR CATV SERVICE LINES AND LATERALS, AND OTHER UTILITIES. ANY EXISTING UTILITY DAMAGED DURING CONSTRUCTION MUST BE REPLACED OR REPAIRED IMMEDIATELY. THE CONTRACTOR SHALL COORDINATE ANY NECESSARY UTILITY REPLACEMENT OR REPAIR OF THE UTILITY ONLY AFTER RECEIVING APPROVAL TO DO THE WORK FROM THE UTILITY OWNER. ANY AUTHORIZED REPAIRS ARE TO BE PER THE UTILITY OWNER'S APPROVED SPECIFICATIONS AND MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASSOCIATED REPAIR COSTS.
- 10. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS.
- 11. NO SUBSURFACE PLANS FOR THE ROADWAY ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHALL MAKE HIS/HER OWN INVESTIGATION AS TO THE SUBSURFACE CONDITION.
- 12. THE CONTRACTOR SHALL COORDINATE ALL CONNECTION AND TESTING ACTIVITIES WITH THE CITY OF GREENSBORO ENGINEERING DIVISION.
- 13. EXISTING UTILITY LOCATIONS SHOWN ON THE CONSTRUCTION PLANS WERE COMPILED BASED ON INFORMATION AVAILABLE TO THE ENGINEER. THESE LOCATIONS ARE NOT INTENDED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS WITH THE APPROPRIATE UTILITY COMPANIES. THE CONTRACTOR AGREES TO TAKE FULL RESPONSIBILITY FOR ANY AND ALL DAMAGES TO UTILITIES THAT MAY OCCUR DUE TO FAILURE TO EXACTLY LOCATE AND PROTECT ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION BY CONTACTING NORTH CAROLINA 811 (1-800-632-4949) OR THE APPROPRIATE UTILITY AUTHORITY AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO PERFORMING ANY EXCAVATION.

- 14. THE FOLLOWING REQUIREMENTS SHALL APPLY FOR THE PROPOSED ABANDONMENT OF EXISTING FACILITIES UNLESS OTHERWISE SHOWN ON THE PLANS OR APPROVED BY THE ENGINEER. ALL AREAS DISTURBED BY ABANDONMENT WILL BE RESTORED. ABANDONMENT SHALL BE ACCOMPLISHED AFTER TIE IN OF ALL EXISTING SERVICES TO THE NEW WATER MAIN.
- 15. TRAFFIC CONTROL IS REQUIRED FOR ALL CONSTRUCTION CAPTIVITIES WITHIN 15' OF THE EDGE OF ANY ROADWAY. TRAFFIC CONTROL DEVICES, PRACTICES, AND PROCEDURES SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) LATEST EDITION BY THE FEDERAL HIGHWAY ADMINISTRATION.
- 16. CONTRACTOR SHALL KEEP AND MAINTAIN A SET OF PLANS WITH ACCURATE LOCATIONS, MEASUREMENTS. AND OTHER DATA NOT READILY AVAILABLE FROM ABOVE GROUND "AS-BUILT" EFFORTS. A COPY OF THESE PLANS SHALL BE SUBMITTED TO THE OWNER AT THE COMPLETION OF THE PROJECT.
- 17. SERVICE CLEANOUTS AND METER BOXES SHALL NOT BE LOCATED IN DRIVEWAYS, SIDEWALKS, OR STREETS. SEE CITY OF GREENSBORO DETAIL #101 FOR TYPICAL INSTALLATION LOCATION.
- 18. THE MAXIMUM OPEN JOINT DEFLECTION FOR ALIGNMENT AND GRADE FOR 8-INCH WATER MAIN SHALL BE (5) DEGREES.
- 19. FOR REFERENCE TO CITY OF GREENSBORO STANDARD DETAILS, SEE SHEETS UC-3B AND UC-3C

PROJECT SPECIFIC NOTES:

- 1. PROPOSED WATER LINES SHALL BE DUCTILE IRON RESTRAINED JOINT PC350 PIPE UNLESS INDICATED OTHERWISE.
- 2. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.
- 3. CONSTRUCTION INSPECTION REQUIRED FOR W/L INSTALLATION. CALL (336) 373-2377 TO SCHEDULE AN INSPECTOR.
- 4. OPEN CUT AND REPAIR PAVEMENT PER COG STD. #107. CONTACT UTILITY COORDINATION AT (336) 373-2424 FOR PERMIT. NESTLEWAY DRIVE AND GLENDALE DRIVE: FOR MILLOUT AND OVERLAY REQUIREMENTS. IT WILL BE DETERMINED AT THE TIME OPEN CUT PERMITS ARE ISSUED BY UTILITY COORDINATION.

PROJECT REFERENCE NO. SHEET NO. UC-3 U-5850 DESIGNED BY: ARC

DRAWN BY: ARC CHECKED BY: ASV APPROVED BY: REVISED: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

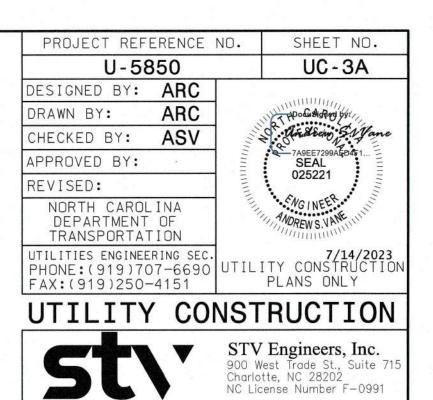
TOO GUN STORY DY 7A9EE7299A-0451.... SEAL 025221 ITILITIES ENGINEERING SEC PHONE: (919)707-6690 FAX: (919)250-4151 PLANS ONLY

UTILITY CONSTRUCTION

STV Engineers, Inc. 900 West Trade St., Suite Charlotte, NC 28202

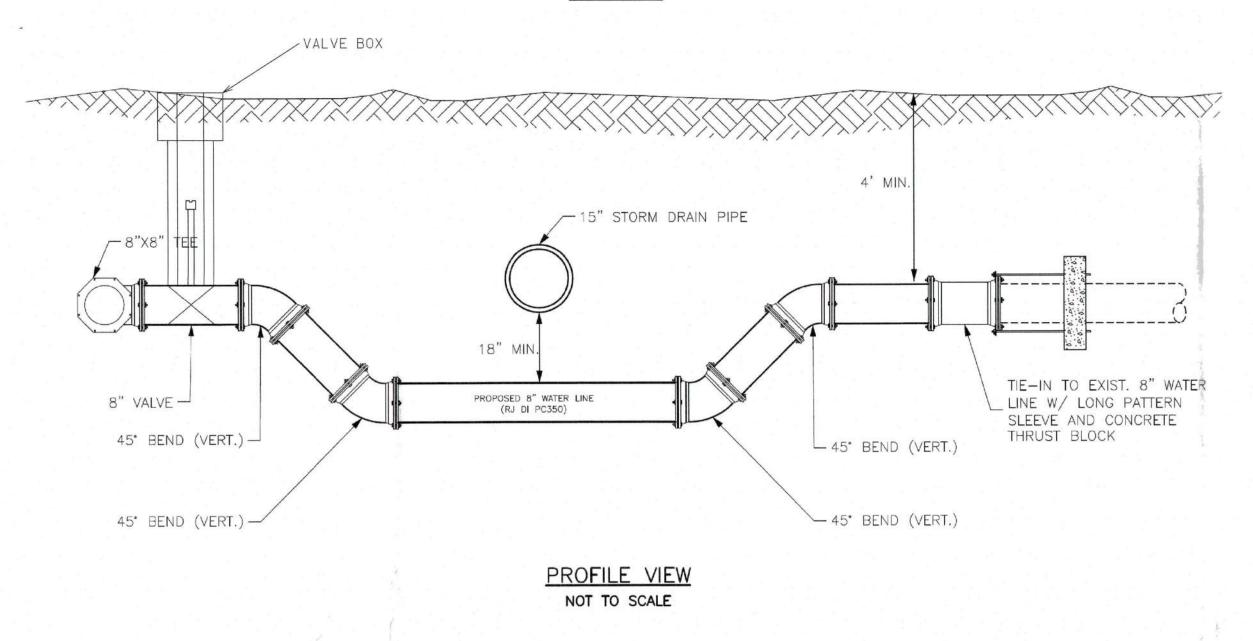
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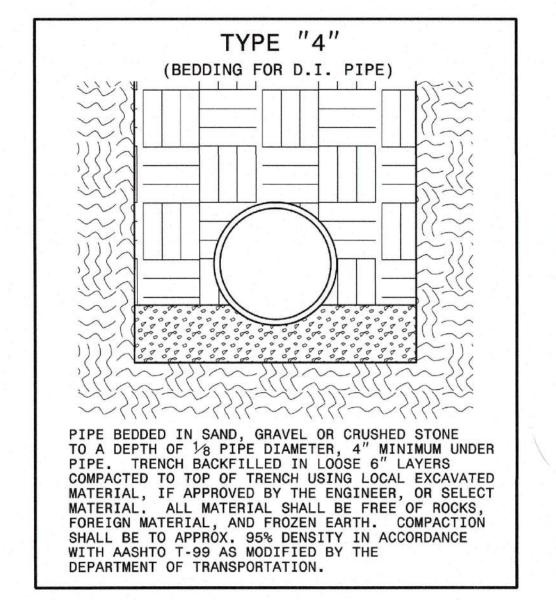
## PROJECT TYPICAL DETAILS



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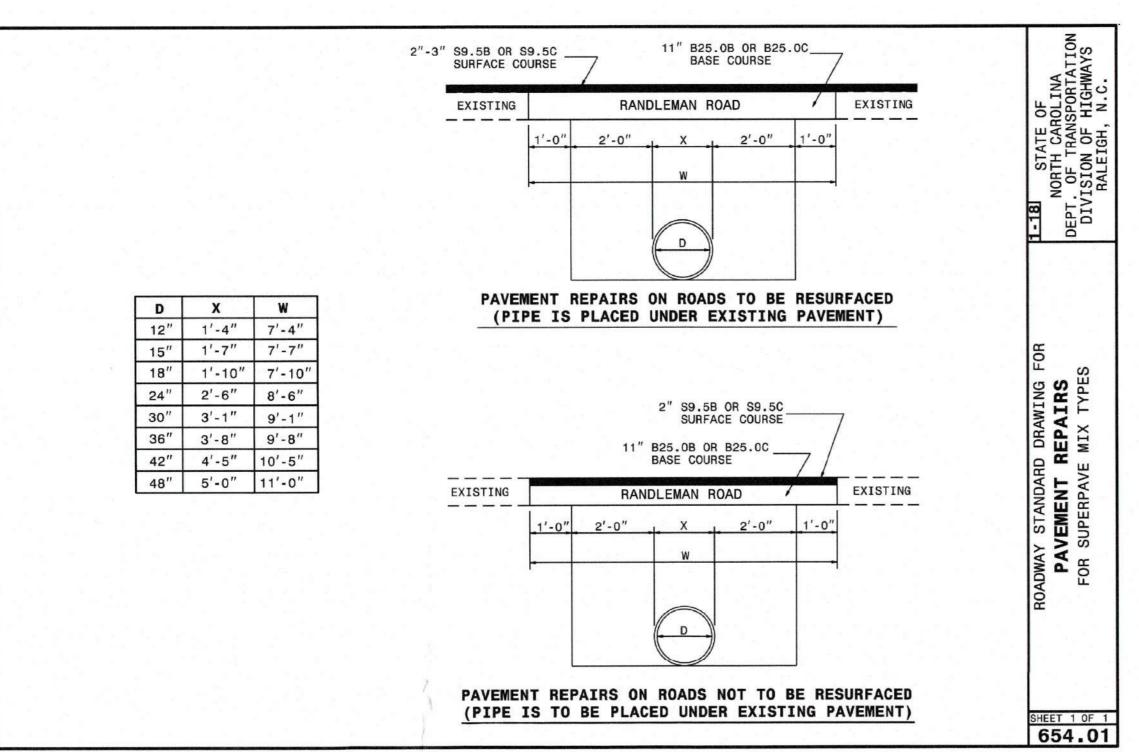
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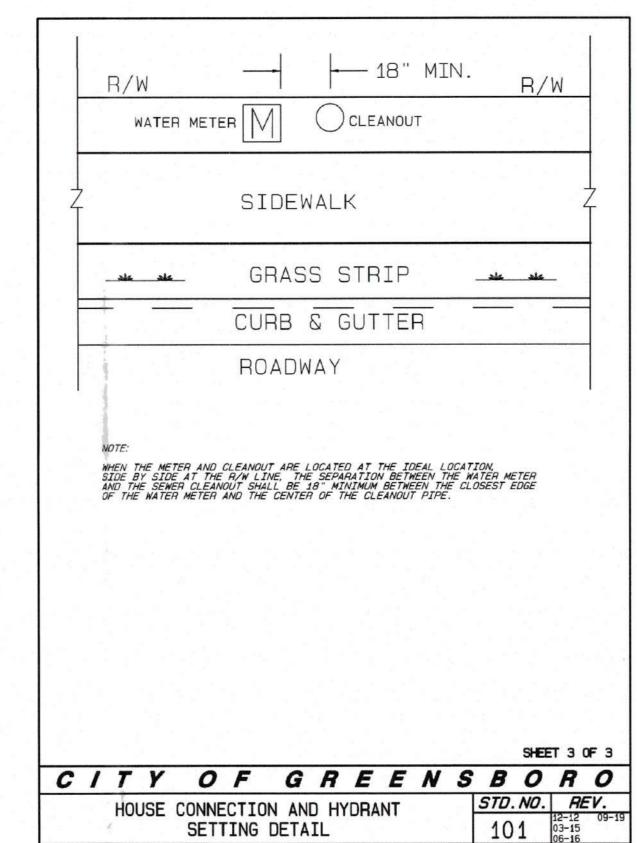


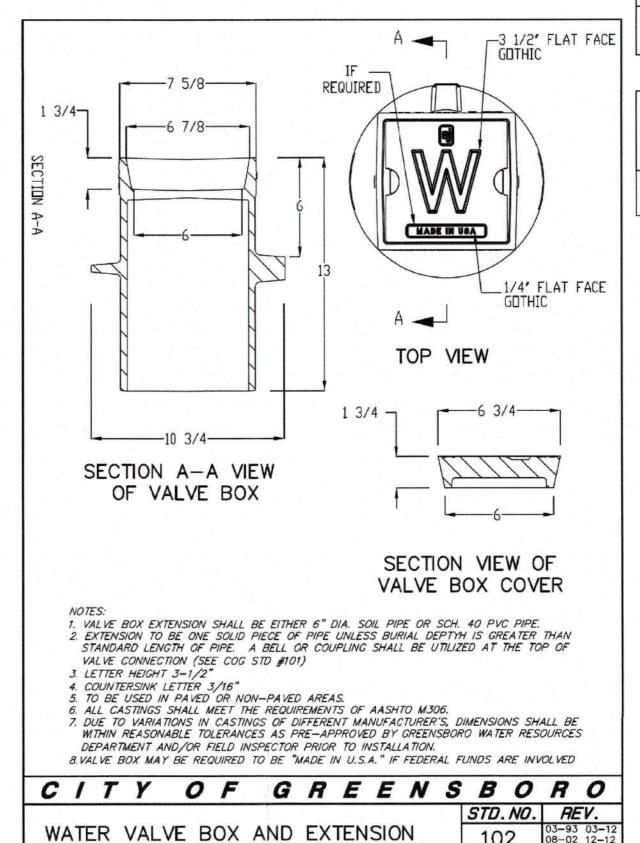


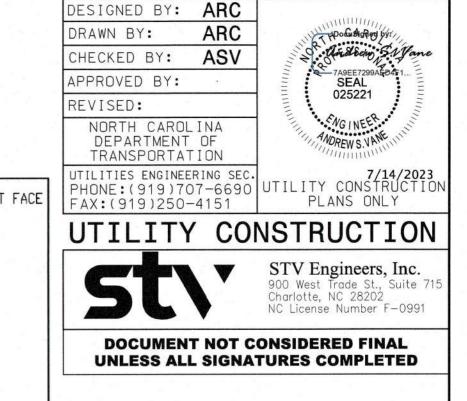
		ENCH WIDTH OF PIPE	
NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		

## PROJECT TYPICAL DETAILS





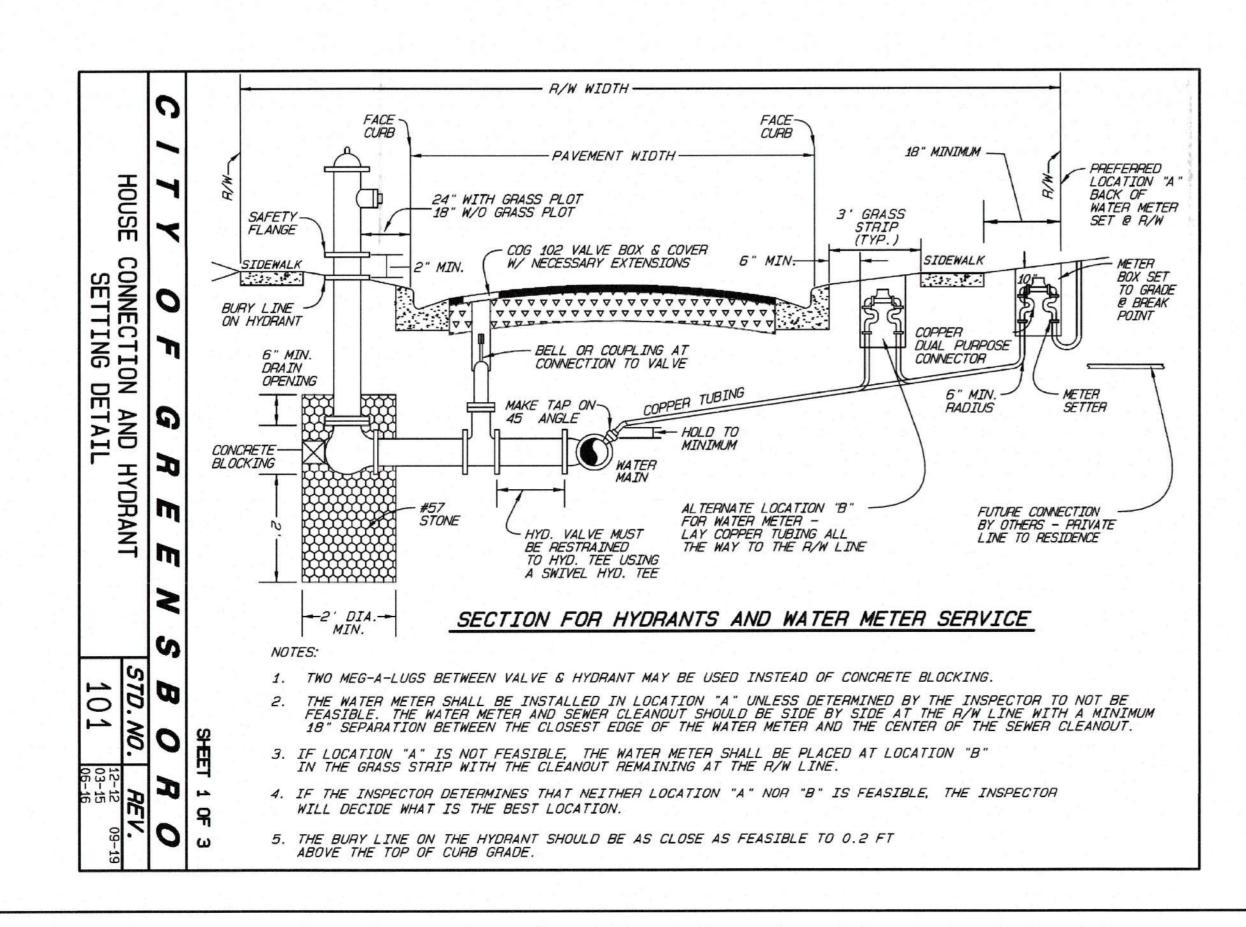




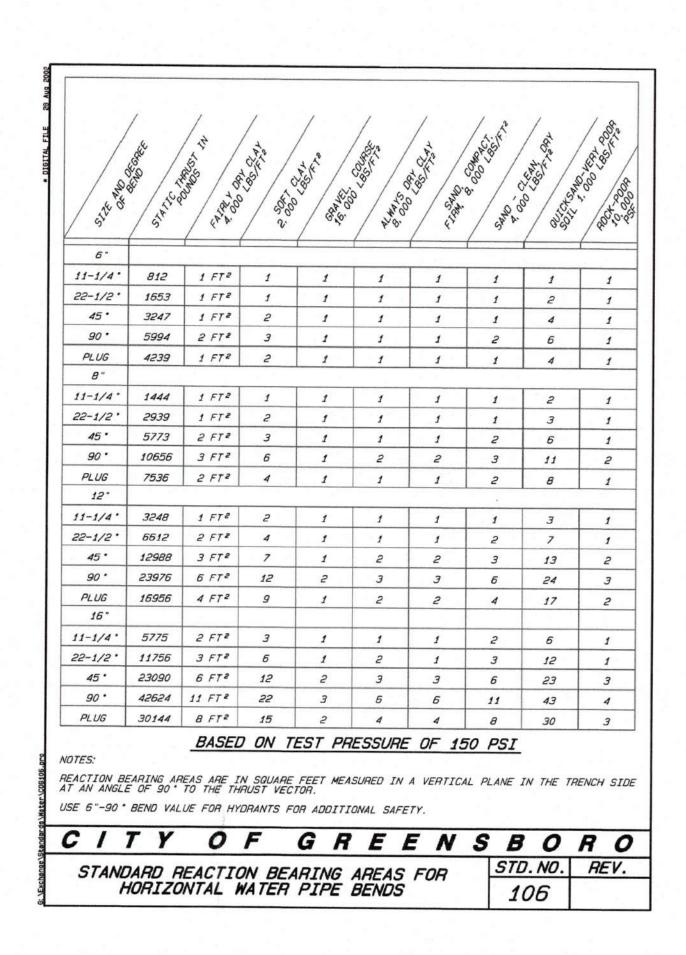
UC-3B

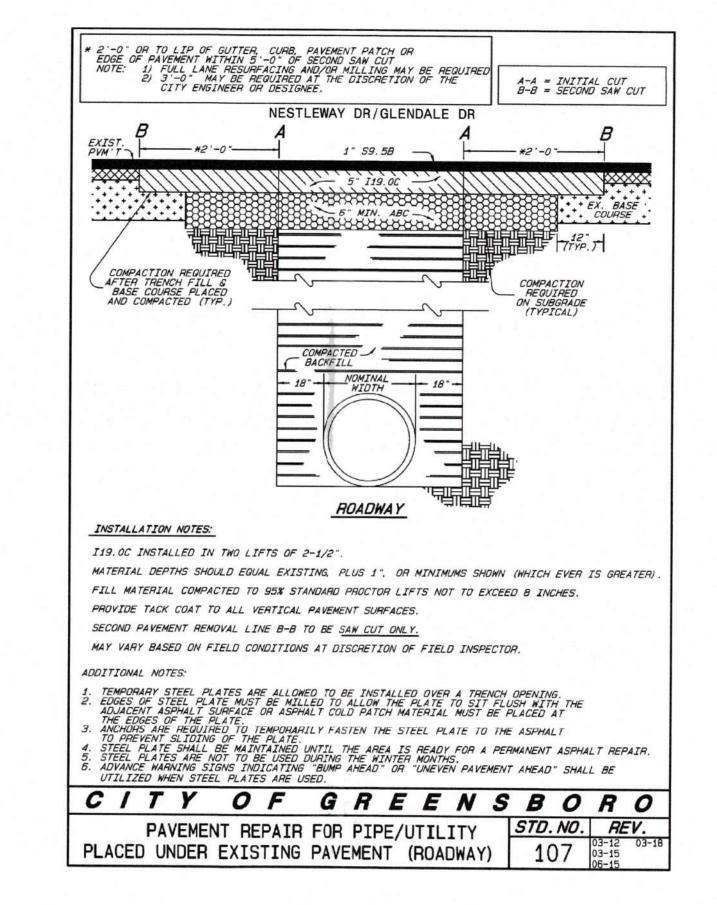
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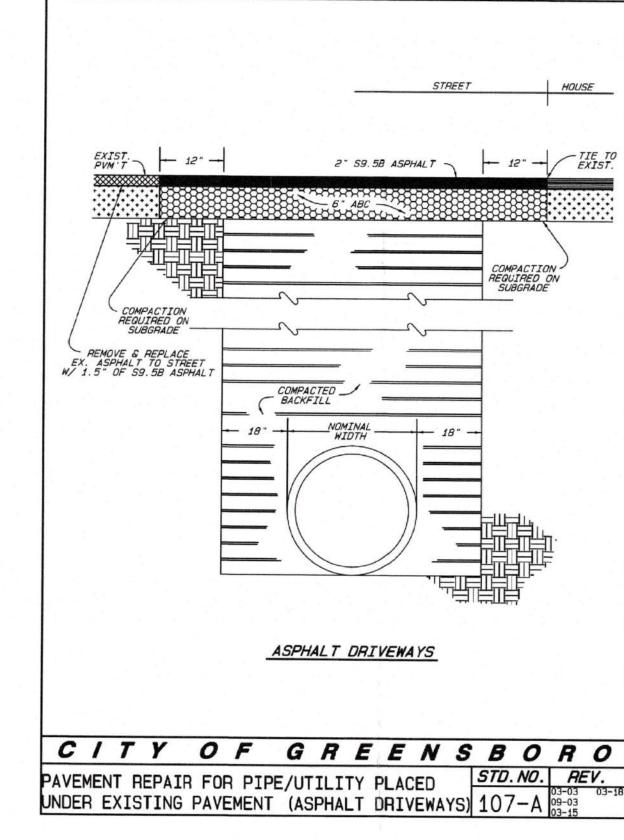
U-5850



## PROJECT TYPICAL DETAILS







PROJECT REFERENCE NO.

ARC

PHONE: (919)707-6690 UTILITY CONSTRUCTION

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

U-5850

DESIGNED BY: ARC

CHECKED BY: ASV

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION
UTILITIES ENGINEERING SEC

FAX: (919)250-4151

DRAWN BY:

REVISED:

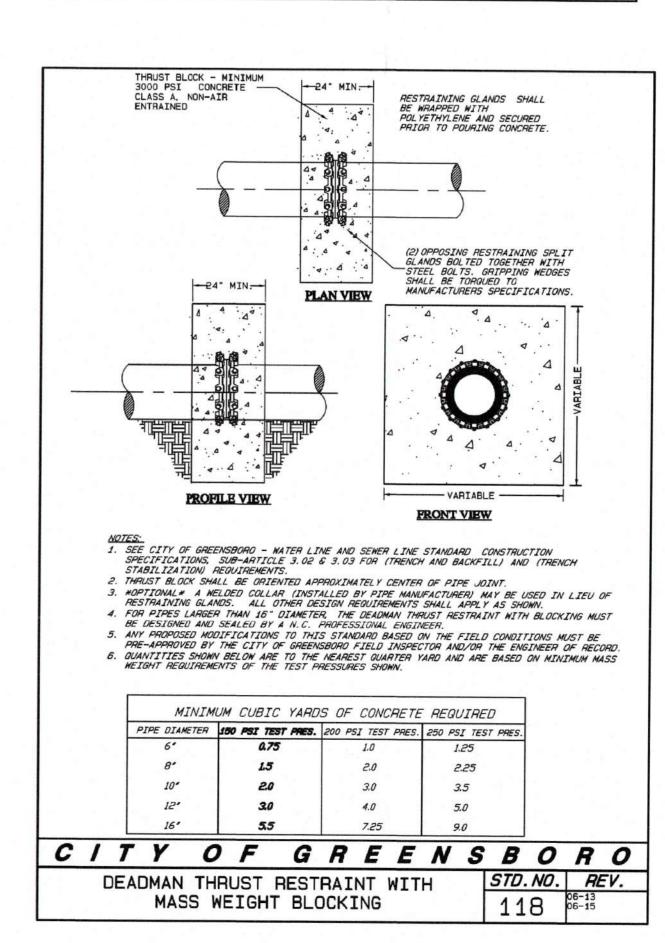
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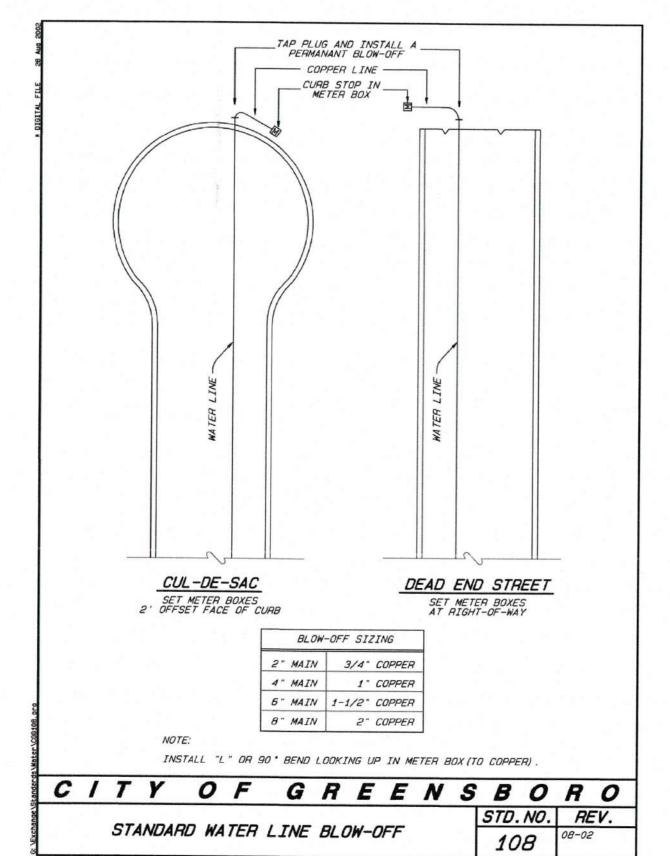
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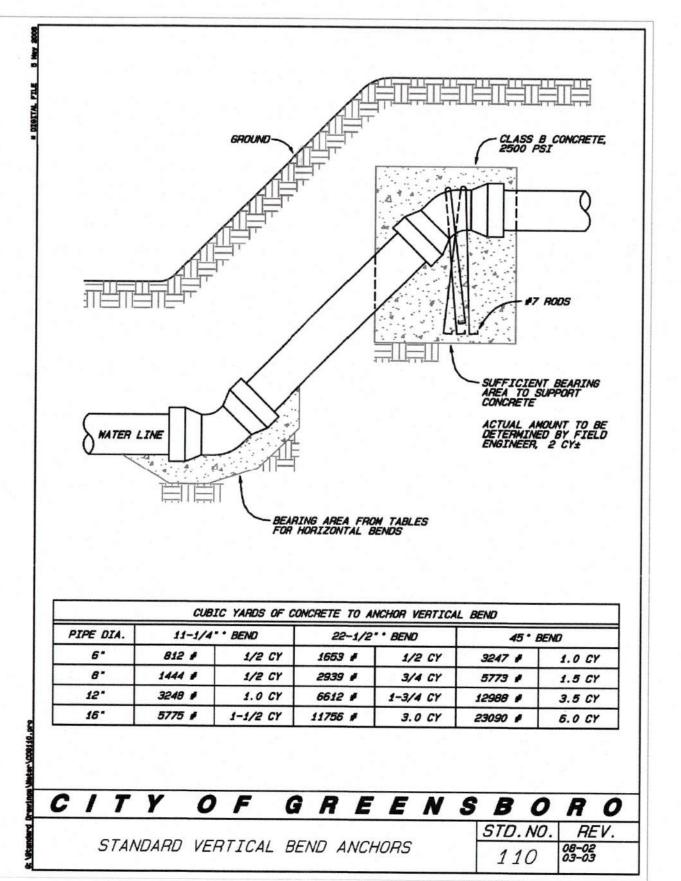
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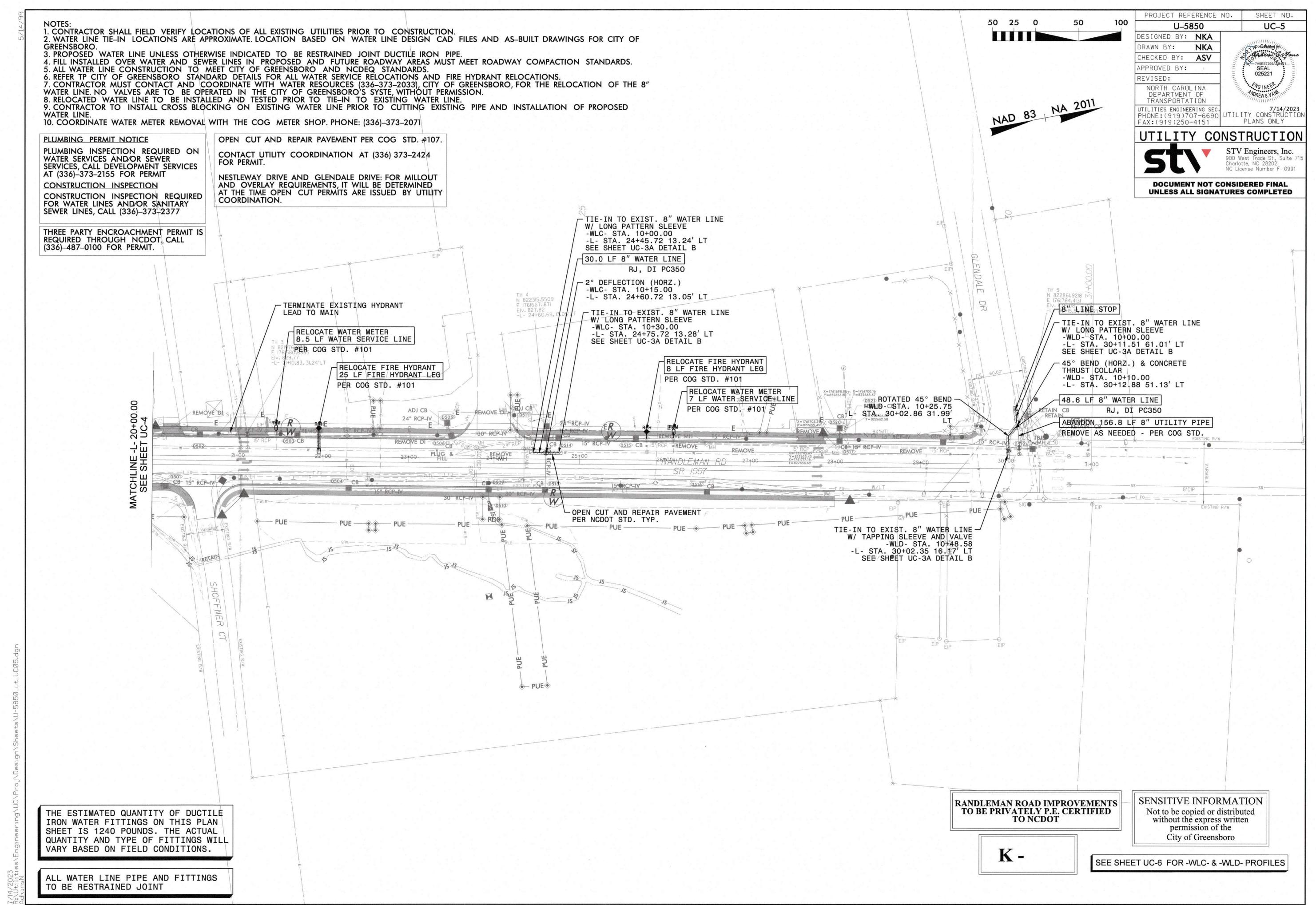
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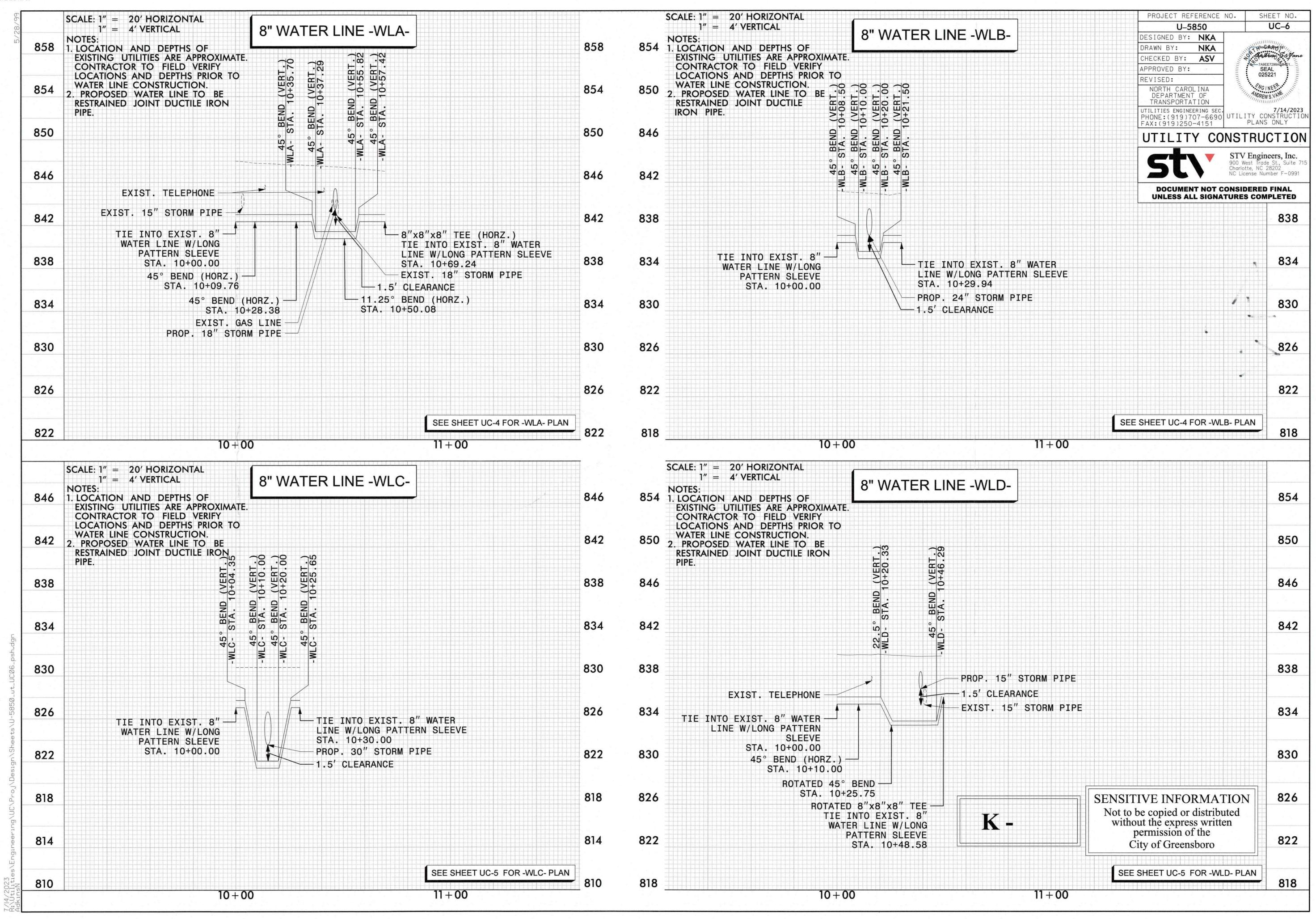












85 (421) 85 (421) VICINITY MAP N.T.S. STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

# UTILITIES BY OTHERS PLANS GUILFORD COUNTY

LOCATION: RANDLEMAN RD (SR1007) FROM ELMSLEY DR TO GLENDALE DR.

TYPE OF WORK: POWER, COMMUNICATIONS, AND GAS.

T.I.P. NO.

UO-1

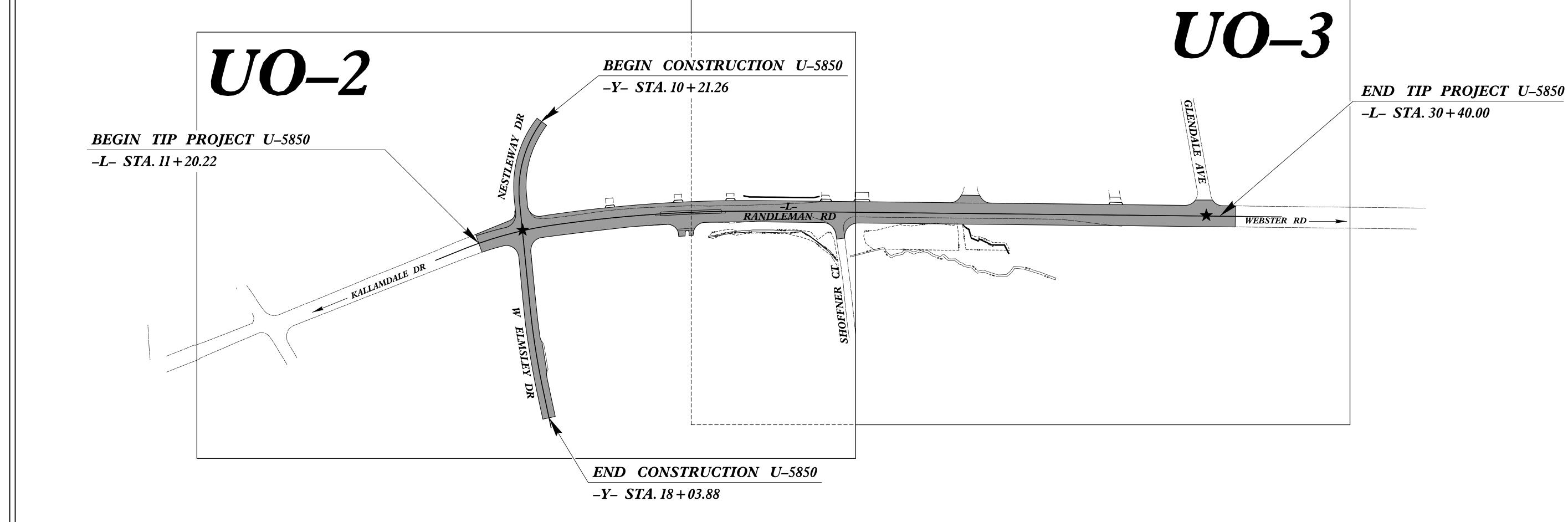
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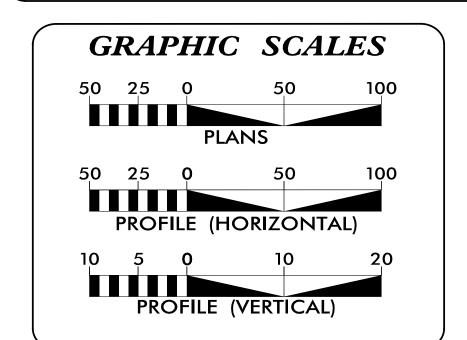
U-5850

ALL UTILITY WORK SHOWN ON THIS SHEET IS DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.









## INDEX OF SHEETS

SHEET NO.: **DESCRIPTION:** *UO-1* TITLE SHEET UO-2 THRU UO-3 UBO PLAN SHEETS

## UTILITY OWNERS WITH CONFLICTS

(A) POWER - DUKE ENERGY

(B) GAS - PNG

(C) FIBER- AT&T (D) CATV- CHARTER

(E) FIBER - SEGRA

PREPARED IN THE OFFICE OF: ▼ STV Incorporated 2151 HAWKINS ST. NC License Number F-0991



HIGHWAY DIVISION 7 1584 YANCEYVILLE STREET GREENSBORO, NC 27405 PHONE (336) 487–0000 FAX (336) 334–3637

Wright R. Archer, III, PE DIVISION ENGINEER

Phillip Vang PROJECT UTILITY COORDINATOR Laura Khin PROJECT UTILITY QA/QC

Oriana Roumillat, PE UTILITY PROJECT MANAGER

Bojan Cvijetic, PE

James B. Yates, MS, PE DIVISION UTILITY ENGINEER

