

# Executive Summary

The Executive Summary is a summation of this agreement and is not intended to be used as the agreement between the Department (North Carolina Department of Transportation) and the Party (Entity).

**Entity:** City of Durham

**County:** Durham

**TIP / WBS Element:**

**TIP:** U-0071

**WBS Element:** 34745.3.S2

**Scope:** The Project consists of Durham - East End Connector from North of NC 98 to NC 147 (Buck Dean Freeway).

**Funding:**

**Type:** Receivable

**Total Cost:** \$1,140,997.00

**Responsibilities:**

**Adjustment and relocation of utility lines:**

The City of Durham shall be responsible for water and sewer lines cost.

Upon completion of the utility lines relocation and adjustment covered under this Agreement; the City of Durham shall assume normal maintenance operations for these utility lines.

NORTH CAROLINA  
DURHAM COUNTY

**UTILITY AGREEMENT**

DATE: 12/10/2013

NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION

Project: U-0071

AND

WBS Elements: 34745.3.S2

CITY OF DURHAM

THIS AGREEMENT is made and entered into on the last date executed below, by and between the North Carolina Department of Transportation, an agency of the State of North Carolina, hereinafter referred to as the "Department" and the City of Durham, hereinafter referred to as the "Municipality";

WITNESSETH:

WHEREAS, the Department has prepared and adopted plans to make certain street and highway improvements under Project U-0071, in Durham County, said plans consists of Durham - East End Connector from North of NC 98 to NC 147 (Buck Dean Freeway); Durham County; said project having a right-of-way width as shown on the project plans on file with the Department's office in Raleigh, North Carolina; and,

WHEREAS, the parties hereto wish to enter into an agreement for certain utility work to be performed by the Department's construction contractor with full reimbursement by the Municipality for the costs thereof as hereinafter set out.

NOW, THEREFORE, it is agreed as follows:

1. The Department shall place provisions in the construction contract for Project U-0071 Durham County, for the contractor to adjust and relocate water and sewer lines. Said work shall be accomplished in accordance with project special provisions attached hereto as Exhibit "A", cost estimate attached hereto as Exhibit "B" and the plan sheets attached hereto as Exhibit "C".
2. The Municipality shall be responsible for water and sewer lines cost as shown on the attached Exhibit "C". The estimated cost to the Municipality is \$1,140,997.00 as shown on the attached Exhibit "B". It is understood by both parties that this is an estimated cost and is subject to change. The Municipality shall reimburse the Department for said costs as follows:

- A. Upon completion of the highway work, the Department shall submit an itemized invoice to the Municipality for cost incurred. Billing will be based upon the actual bid prices and actual quantities used.
  - B. Reimbursement shall be made by the Municipality in one final payment within sixty (60) days of said invoice.
  - C. If the Municipality does not pay said invoice within sixty (60) days of the date of the invoice, the Department shall charge interest on any unpaid balance at a variable rate of the prime plus (1%) in accordance with G.S. 136-27.3.
  - D. Said interest rate shall be set upon final execution of the Agreement by the Department. The Municipality will be notified of the set interest rate by the Department's approval letter upon receipt of the fully executed agreement.
  - E. Any cost incurred due to additional utility work requested by the Municipality after award of the construction contract, shall be solely the responsibility of the Municipality. The Municipality shall reimburse the Department 100% of the additional utility cost.
3. In the event the Municipality fails for any reason to pay the Department in accordance with the provisions for payment hereinabove provided, North Carolina General Statute 136-41.3 authorizes the Department to withhold so much of the Municipality's share of funds allocated to said Municipality by North Carolina General Statute, Section 136-41.1, until such time as the Department has received payment in full.
4. Upon the satisfactory completion of the relocations and adjustments of the utility lines covered under this Agreement, the Municipality shall assume normal maintenance operations to the said utility lines. Upon completion of the construction of the highway project, the Municipality shall release the Department from any and all claims for damages in connection with adjustments made to its utility lines; and, further, the Municipality shall release the Department of any future responsibility for the cost of maintenance to said utility lines. Said releases shall be deemed to be given by the Municipality upon completion of construction of the project and its acceptance by the Department from its contractor unless the Municipality notifies the Department, in writing, to the contrary prior to the Department's acceptance of the project.

5. It is further agreed that the following provisions shall apply regarding the utilities covered in this Agreement.
  - A. The Municipality obligates itself to service and to maintain its facilities to be retained and installed over and along the highway within the Department's right-of-way limits in accordance with the mandate of the North Carolina General Statutes and such other laws, rules, and regulations as have been or may be validly enacted or adopted, now or hereafter.
  - B. If at any time the Department shall require the removal of or changes in the location of the encroaching facilities which are being relocated at the Municipality's expense, the Municipality binds itself, its successors and assigns, to promptly remove or alter said facilities, in order to conform to the said requirement (if applicable per G.S. 136-27.1), without any cost to the Department.
6. Each of the parties covenants that if it enters into any subcontracts in order to perform any of its obligations under this contract, it shall require that the contractors and their subcontractors comply with the requirements of NC Gen. Stat. Article 2 of Chapter 64. In this E-Verify Compliance section, the words contractors, subcontractors, and comply shall have the meanings intended by N.C. Gen. Stat. 160A-20.1.
7. By Executive Order 24, issued by Governor Perdue, and N.C. G.S. § 133-32, it is unlawful for any vendor or contractor ( i.e. architect, bidder, contractor, construction manager, design professional, engineer, landlord, offeror, seller, subcontractor, supplier, or vendor), to make gifts or to give favors to any State employee of the Governor's Cabinet Agencies (i.e., Administration, Commerce, Correction, Crime Control and Public Safety, Cultural Resources, Environment and Natural Resources, Health and Human Services, Juvenile Justice and Delinquency Prevention, Revenue, Transportation, and the Office of the Governor).

IN WITNESS WHEREOF, this Agreement has been executed, in duplicate, the day and year heretofore set out, on the part of the Department and the Municipality by authority duly given.

L.S. ATTEST: CITY OF DURHAM  
BY: \_\_\_\_\_ BY: \_\_\_\_\_  
TITLE: \_\_\_\_\_ TITLE: \_\_\_\_\_  
DATE: \_\_\_\_\_

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

Approved by \_\_\_\_\_ of the local governing body of the City of Durham as attested to by the signature of Clerk of said governing body on \_\_\_\_\_(Date)

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

(SEAL)

\_\_\_\_\_  
(FINANCE OFFICER)

Federal Tax Identification Number

Remittance Address:

City of Durham

DEPARTMENT OF TRANSPORTATION

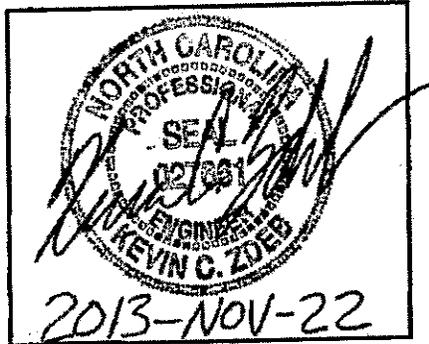
BY: \_\_\_\_\_  
(CHIEF ENGINEER)

DATE: \_\_\_\_\_

APPROVED BY BOARD OF TRANSPORTATION ITEM O: \_\_\_\_\_ (Date)

**PROJECT SPECIAL PROVISIONS**  
Utility Construction

 **M A ENGINEERING CONSULTANTS, INC.**  
598 E. Chatham Street, Suite 137, Cary, NC 27511



All proposed utility construction shall meet the applicable requirements (including, but not limited to: Division 15; Section 1034; and Section 1036) of the NC Department of Transportation's "Standard Specifications for Roads and Structures" dated January 2012.

Division 15 of the Standard Specifications is revised as follows:

**Page 15-1, Paragraph 2 of Article 1500-2:**

Provide access for Department personnel and the owner's representatives to all phases of construction. Notify Department personnel and the utility owner two weeks before commencement of any work and one week before service interruption. Keep utility owner's representatives informed of work progress and provide opportunity for inspection of construction and testing. *There is one water line on this project that belongs to the utility company listed below with their contact person.*

1. *City of Durham: The contact person for the City of Durham is Mr. Jeff Lecky, and he can be reached by phone at 919-560-4326, ext. 30273.*

*Any work on these utility lines, especially the operation of any valves, must be coordinated through the Engineer and the utility owner before initiating said work.*

**Page 15-2, Paragraph 3 of Article 1500-7:**

Provide As-Built plans of the installed utility. The plans shall include notations of the size and type of material installed, coordinates of utility controls, and horizontal and vertical locations of the piping. Provide 2 copies to the Utility Owner and 2 copies to the Engineer. *Provide the Utility Owner with 2 copies of surveyed As-Builts of the utility system constructed.*

**Page 15-6, Article 1510-3 (B), Line 21 and Leakage Formula:**

than the following amount when pressurized at 200 +/- 5 psi for 2 hours *in accordance with AWWA C605,*

$$W = LD(\sqrt{P}) \div 148,000$$

**Page 15-5, Article 1510-2 Materials, Line 23 Add the following sentences to the end of the paragraph:**

Use ductile iron Thickness Class 51 restrained joint pipe within the CSXT/NCRR Right-of-Way for the extension of the 12" diameter water line. Use ductile iron Thickness Class 51 pipe for 4" diameter pipe. Use ductile iron Thickness Class 50 pipe for 6" through 24" diameter pipe.

**Page 15-6, Article 1510-3 (B), paragraph beginning with Line 26:**

Sterilize water lines according to *section .1003 of the Rules Governing Public Water Supply Sections* and AWWA 651. Provide certified bacteriological and contaminant test results from *a state approved or state certified testing laboratory* in accordance with NCDENR requirements. Operate all valves and controls to assure thorough sterilization.

**Page 15-6, Article 1510-3 (B), Line 36:**

according to AWWA C651 Sections 4.6 and 4.7 *and section 4.4.3, the Continuous Feed Method. Chlorine solution shall start at 50 PPM and maintain a level of at least 10 PPM for the 24-hour process. If chlorine level falls below 10 PPM, then the disinfection needs to be repeated for another 24 hours.*

**Page 15-8, Article 1515-3 (A), Line 7:**

not in pavement. *All 12" gate valves and 14" / 16" butterfly valves shall be enclosed in a precast 4-ft diameter utility manhole. All butterfly valves 18" and larger shall be enclosed in a precast utility vault.*

Division 10 of the Standard Specifications is revised as follows:

**Page 10-59, Lines 18 to 20 Article 1036-7 WATER VALVES, (A) Gate Valves:**

Use iron body gate valves which conform to ANSI/AWWA C509 for resilient seat-type valves that are fully bronze mounted. For buried

**Page 10-59, Article 1036-7 WATER VALVES, add the following:**

(D) Butterfly Valves

Use butterfly valves which conform to AWWA C504 for Class 250 short body valves. Use butterfly valves with non-rising stems, 2" square operating nuts, open by turning counter

clockwise, and are equipped with an indicator arrow on the operating stem which will indicate whether the valve is in the open or closed position. 14" and 16" butterfly valves shall have mechanical joint ends. 20" and 24" butterfly valves shall have standard flange ends conforming to ANSI B16.1 Class 125 cast iron flanges.

**Abandon/Remove Sewer Lift Station**

The existing Lift Station shown on Parcel 40 shall be abandoned and/or removed as noted on Sheet UC-10 of the Utility Construction Plans, at approximate -L- Station 57+61 LT 11', and as directed by the Engineer.

Abandonment and/or removal of Lift Stations will be measured and paid for at the contract price per each for "Abandon/Remove Sewer Lift Station". Such price and payment will be full compensation for all labor, excavation, disconnection from power source, grouting, plugging of pipes, backfilling, removal and disposal of all the Lift Station components (wet well, interior piping, pumps, floats, control panel, electrical riser, back up generator, any unusable equipment, etc.), and other incidentals necessary to complete the work as required.

**UTILITY OWNER PREFERRED PRODUCT LIST**

**CITY OF DURHAM - WATER**

1. Resilient Seat Gate Valve: AMERICAN; or CLOW; or MUELLER; or KENNEDY; or WATEROUS; or approved equal.
2. Butterfly Valve: AMERICAN; or CLOW; or PRATT; or KENNEDY; or approved equal.
3. Hydrant: AMERICAN, model: Mark-73; or MUELLER, model: Centurion A421; or Kennedy, model: K81-A; or approved equal.
4. Hydrant Extension: AMERICAN; or MUELLER; or KENNEDY; or approved equal.
5. Hydrant Paint: KYANIZE PAINTS, INC., OSHA Safety Color: Alert Orange; or approved equal.
6. Water Meter: 5/8" or 1" NEPTUNE E-Coder; or approved equal.
7. Meter Copper Setter: FORD, 5/8" model: VHH71-12W-44-336; FORD, 1" model: VHH74-12W-44-336; or approved equals.
8. Polyethylene Meter Box: MID STATES PLASTICS, model: MSBCF1118-12; MSBCF1118-18XL; or approved equal.
9. Ductile Iron Meter Box Lid: CARSON, model: 65-45-12; or approved equal.
10. Corporation Stop: FORD, 3/4" model: F-1000-3-G; FORD, 1" model: F-1000-4-G; or approved equals.

**CITY OF DURHAM - SEWER**

1. Transition Couplings: FERNCO, model MR-51-88ARC for PVC pipe to D.I. pipe, model MR-02-88ARC for PVC pipe to Vitrified Clay (V.C.) pipe; MISSION RUBBER COMPANY LLC, model 0408-807 for D.I. pipe to V.C. pipe; or approved equals.

**CITY OF DURHAM - MISC**

1. Manhole Frames and Covers: DEWEY BROTHERS, model: 2001; or approved equal.
2. Watertight Manhole Casting Inserts: PRECO INDUSTRIES LTD., model: Sewerguard; or approved equal.
3. Plastic Manhole Steps: M. A. INDUSTRIES, Inc.; or approved equal.
4. Solid Rubber Ring Gasket: NORTHRUP AND COMPANY, model: Bond-O-Rubber Packing; or approved equal.
5. Air Release Valves: CRISPIN AIR VALVES, or approved equal.

**PRELIMINARY ESTIMATE FOR UTILITY CONSTRUCTION OF U-0071  
CITY OF DURHAM COST**

1/23/2014

ITEM NO.	SECTION #	PAY ITEM	UNITS	QUANTITY	TOTAL COST
		<b>WATER</b>			
5325600000-E	1510	6-INCH WATER LINE	LF	1117	
5325800000-E	1510	8-INCH WATER LINE	LF	2103	
5326200000-E	1510	12-INCH WATER LINE	LF	2112	
5546000000-E	1515	8-INCH GATE VALVE	EA	5	
5558000000-E	1515	12-INCH GATE VALVE	EA	9	
5571800000-E	1515	8-INCH TAPPING VALVE	EA	1	
5606000000-E	1515	2" BLOW OFF	EA	1	
5648000000-E	1515	RELOCATE WATER METER	EA	41	
5666000000-E	1515	FIRE HYDRANT	EA	4	
5672000000-E	1515	RELOCATE FIRE HYDRANT	EA	12	
5801000000-E	1530	ABANDON 8-INCH UTILITY PIPE	LF	2875	
5804000000-E	1530	ABANDON 12-INCH UTILITY PIPE	LF	541	
5815000000-N	1530	REMOVE WATER METER	EA	15	
5815500000-N	1530	REMOVE FIRE HYDRANT	EA	4	
5836000000-E	1540	24-INCH ENCASMENT PIPE	LF	634	
5872200000-E	1550	TRENCHLESS INSTALLATION OF 24" PIPE IN SOIL	LF	91	
5872210000-E	1550	TRENCHLESS INSTALLATION OF 24" PIPE NOT IN SOIL	LF	91	
<b>SUBTOT</b>					<b>\$594,174</b>

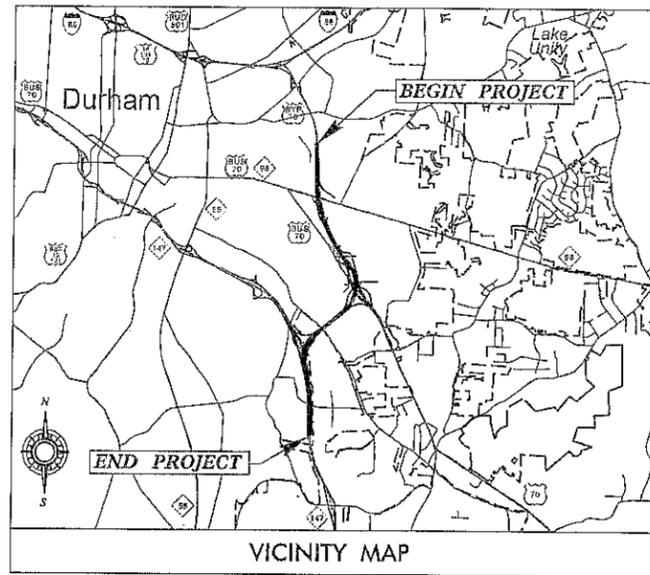
**PRELIMINARY ESTIMATE FOR UTILITY CONSTRUCTION OF U-0071  
CITY OF DURHAM COST**

1/23/2014

ITEM NO.	SECTION #	PAY ITEM	UNITS	QUANTITY	TOTAL COST
		<b>SEWER</b>			
5691300000-E	1520	8-INCH SANITARY GRAVITY SEWER	LF	2900	
5691500000-E	1520	12-INCH SANITARY GRAVITY SEWER	LF	362	
5775000000-E	1525	4-FT DIA UTILITY MANHOLE	EA	13	
5781000000-E	1525	UTILITY MANHOLE WALL 4-FT DIA	LF	34.9	
5801000000-E	1530	ABANDON 8-INCH UTILITY PIPE(sewer)	LF	5223	
5804000000-E	1530	ABANDON 12-INCH UTILITY PIPE(SEWER)	LF	268	
5816000000-N	1530	ABANDON UTILITY MANHOLE	EA	12	
5828000000-N	1530	REMOVE UTILITY MANHOLE	EA	13	
5835700000-E	1540	16-INCH ENCASMENT PIPE	LF	205	
5836000000-E	1540	24-INCH ENCASMENT PIPE	LF	309	
5872200000-E	1550	TRENCHLESS INSTALLATION OF 24" PIPE IN SOIL	LF	121	
5872210000-E	1550	TRENCHLESS INSTALLATION OF 24" PIPE NOT IN SOIL	LF	120	
<b>SUBTOT</b>					<b>\$546,823</b>
<b>UC TOTAL</b>					<b>\$1,140,997</b>

09/08/99

CONTRACT: TIP PROJECT: U-0071



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# DURHAM COUNTY

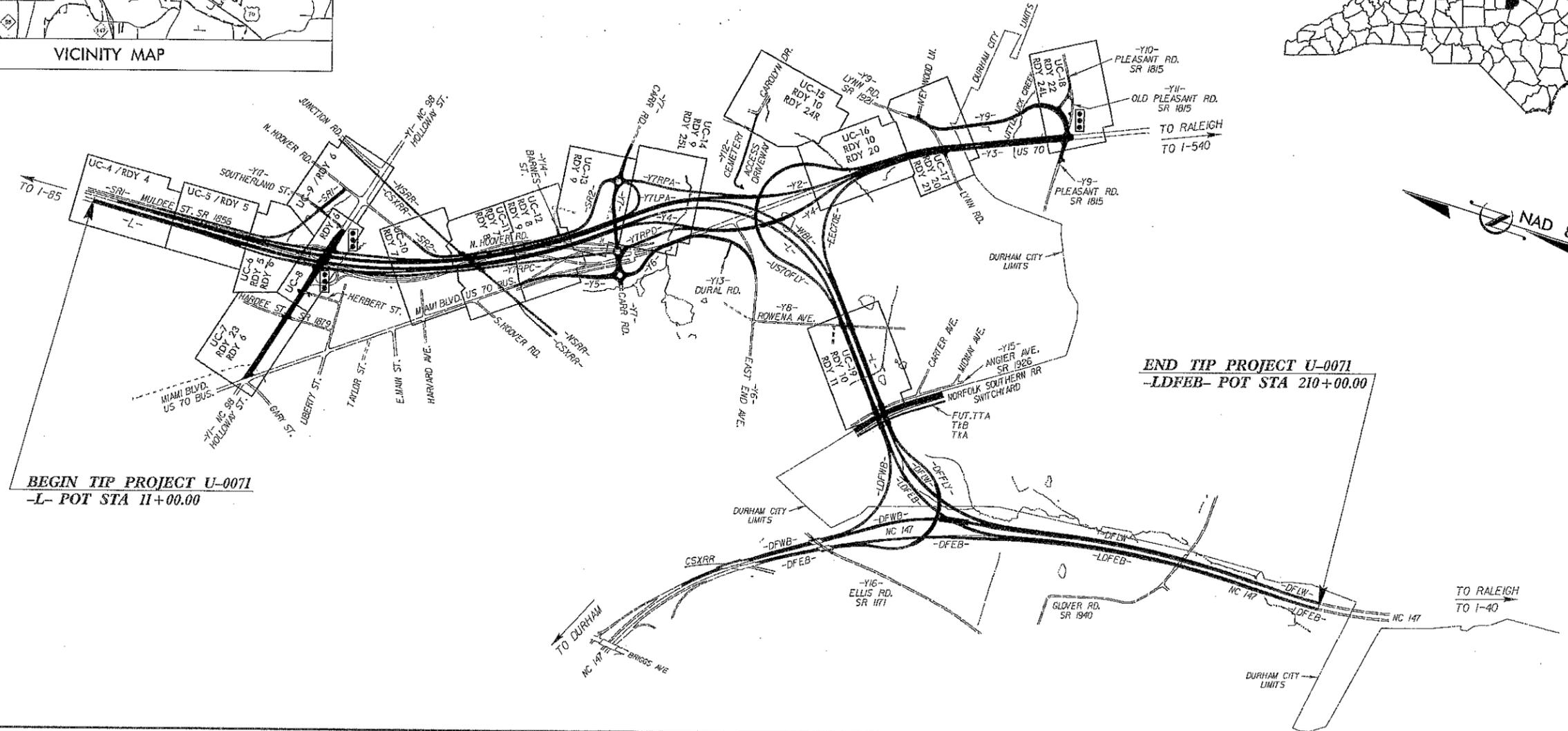
LOCATION: DURHAM EAST END CONNECTOR, FROM NC 147  
(BUCK DEAN FREEWAY) TO NORTH OF NC 98

TYPE OF WORK: UTILITIES CONSTRUCTION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-0071	UC-1	21

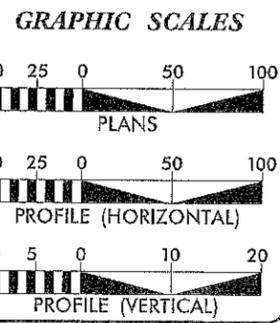
AGREEMENT PLANS

COST BREAKDOWN BY UTILITY OWNER LEGEND	
CITY OF DURHAM	■
NCDOT	■



BEGIN TIP PROJECT U-0071  
-L- POT STA 11+00.00

END TIP PROJECT U-0071  
-LDFEB- POT STA 210+00.00



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	SYMBOLGY SHEET
UC-3	NOTES SHEET
UC-4 TO UC-19	PLAN SHEETS

UTILITY OWNERS ON THIS PROJECT:  
WATER - CITY OF DURHAM  
SANITARY SEWER - CITY OF DURHAM

UTILITY DESIGN ENGINEER

UTILITY DESIGN BY:

**MA Engineering**  
CONSULTANTS, INC.  
398 East Chatham Street Suite 137 Cary, NC 27511  
Phone: 919.297.0220 Fax: 919.297.0221

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED FOR:  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
UTILITIES UNIT  
RALEIGH, NC

NCDOT ENGINEER:  
ROGER WORTHINGTON

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$DGN\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# UTILITIES PLAN SHEET SYMBOLS

## PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

## PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

## PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

NOTE

PAY ITEM

## EXISTING UTILITIES 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		Aboveground Gravity Sanitary Sewer Line	
Power Transformer		*Underground SS Forced Main Line	
Telephone Pedestal		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 (Type as Shown)   
Designated Utility Line (Type as Shown)

5/14/99  
REV: 2/1/2012

# UTILITY CONSTRUCTION

PROJECT REFERENCE NO. U-0071	SHEET NO. UC-3
UTILITY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PRELIMINARY PLANS	
MA Engineering CONSULTANTS, INC.	598 E. Chatham Street, Suite 107 Cary, N.C. 27513

## GENERAL 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 2012.
2. THE EXISTING WET UTILITIES BELONG TO THE CITY OF DURHAM.  
  
UTILITIES PRESENT:  
WATER LINE - VARIOUS SIZES  
GRAVITY SEWER - VARIOUS SIZES  
SANITARY FORCE MAIN - VARIOUS SIZES  
  
CONTACT: JEFF LECKY  
PHONE: 919-560-4326 EXT 30273
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER QUALITY. 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.

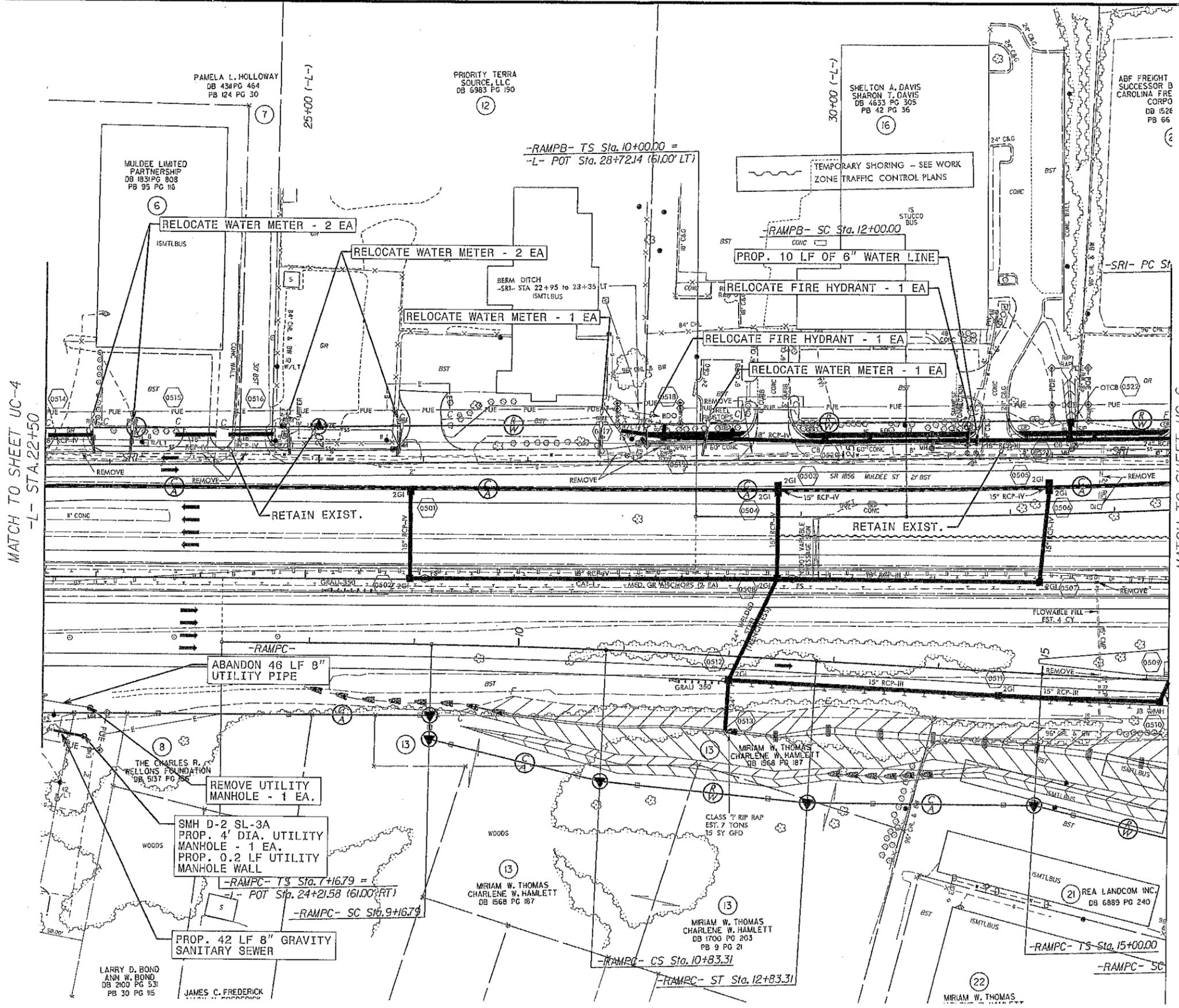
## PROJECT SPECIFIC NOTES:

1. ALL WATER LINE, 6-INCHES THROUGH 24-INCHES, SHALL BE DUCTILE IRON THICKNESS CLASS 50, EXCEPT WHERE NOTED ON THE PLANS. 4-INCH WATER LINE SHALL BE DUCTILE IRON THICKNESS CLASS 51.
2. ALL SANITARY FORCE MAIN PIPE AND FITTINGS, LESS THAN 3-INCHES, SHALL BE PVC SCHEDULE 80 SOCKET TYPE CONFORMING TO ASTM D2467 WITH SOLVENT CEMENT CONFORMING TO ASTM D2564.
3. ALL SANITARY FORCE MAIN PIPE, 3-INCHES THROUGH 4-INCHES, SHALL BE DUCTILE IRON THICKNESS CLASS 51. ALL SANITARY FORCE MAIN PIPE, 6-INCHES THROUGH 36-INCHES, SHALL BE DUCTILE IRON THICKNESS CLASS 50.
4. ALL SANITARY GRAVITY SEWER PIPE SHALL BE PVC SDR-35, EXCEPT WHERE NOTED ON THE PLANS.
5. ALL WATER LINE AND FORCE MAIN SEWER FITTINGS, 4-INCHES THROUGH 24-INCHES IN DIAMETER, SHALL BE PRESSURE CLASS 350 DUCTILE IRON RESTRAINED JOINT IN ACCORDANCE WITH ANSI A21.10 / AWWA C110 AND ANSI A21.4 / AWWA C104.
6. 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 PATH DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.
7. ANY BENDS OF PVC WATER PIPE NOT SPECIFICALLY CALLED OUT WITH A 90, 45, 22.5 OR 11.25 DEGREE BEND FITTING, SHALL BE CONSTRUCTED BY A RADIAL BEND OF THE PIPE AS NOTED ON THE PLANS OR IN ACCORDANCE WITH PIPE MANUFACTURE'S SPECIFICATIONS (WHICHEVER IS MORE STRINGENT) - OR A COMBINATION OF BEND FITTINGS AND A RADIAL BEND OF THE PIPE. DEFLECTION OF THE PIPE JOINTS ON PVC PIPE MATERIAL IS NOT AN ACCEPTABLE METHOD OF PIPE BENDING.
8. PROVIDE THRUST RESTRAINT ON THE EXISTING WATER LINE AND EXISTING FORCE MAIN SEWER LINE WHERE TIE-INS ARE MADE AS NECESSARY.
9. CONTRACTOR SHALL NOT OPERATE ANY VALVES ON THE EXISTING UTILITY SYSTEMS. CONTRACTOR SHALL CONTACT THE UTILITY OWNER TO CONDUCT STRATEGIC OPERATION OF VALVES FOR SERVICE INTERRUPTION IN ORDER TO PERFORM SPECIFIC WORK.
10. THE CITY OF DURHAM SHALL SUPPLY CONTRACTOR WITH NEW WATER METERS FOR INSTALLATION. THE CITY OF DURHAM SHALL RETAIN OWNERSHIP OF EXISTING WATER METERS TO BE REPLACED.
11. THE CITY OF DURHAM SHALL RETAIN OWNERSHIP OF EXISTING FIRE HYDRANTS TO BE REPLACED.
12. WHERE WATER LINE AND SANITARY FORCE MAIN ARE TO BE INSTALLED WITHIN A STEEL ENCASUREMENT PIPE, THE CARRIER PIPE SHALL BE RESTRAINED JOINT DUCTILE IRON SUCH AS TR-FLEX, OR APPROVED EQUAL.
13. WHERE SANITARY GRAVITY SEWER IS TO BE INSTALLED WITHIN A STEEL ENCASUREMENT PIPE, THE CARRIER PIPE SHALL BE PVC SDR-35.
14. ALL WATER SERVICE LINES SHALL BE 3/4 -INCH OR 1-INCH TYPE "K" COPPER PIPE UNLESS OTHERWISE NOTED.
15. ALL VALVES, 12" AND UNDER, SHALL BE RESILIENT WEDGE GATE VALVE.
16. ALL VALVES, 14" AND LARGER, SHALL BE BUTTERFLY VALVE AND INSTALLED INSIDE A PRECAST MANHOLE.
17. UTILITY MANHOLE SPACING SHALL NOT EXCEED 425 FEET, EXCEPT WHERE NOTED ON THE PLANS.
18. JACK AND BORE PITS SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS (W x L):  
BORE PIT: 10 FT BY 30 FT  
RECEIVING PIT: 10 FT BY 10 FT



UTILITY OWNERS ON THIS PROJECT:

- CITY OF DURHAM  
 UTILITY: WATER/SEWER  
 CONTACT: JEFF LECKY, PE  
 PHONE: (919) 560-4326 EXT. 30259



MATCH TO SHEET UC-4  
-L- STA. 22+50

MATCH TO SHEET UC-6  
-L- STA. 33+25

REVISIONS

NOTES:

- CONTRACTOR RESPONSIBLE FOR LOCATING AND RECONNECTING EXISTING SEWER CONNECTIONS. INSTALL NEW CLEANOUT AT PROPOSED RIGHT OF WAY LINE AS NECESSARY.

8/17/99  
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8/17/99

UTILITY OWNERS ON THIS PROJECT:

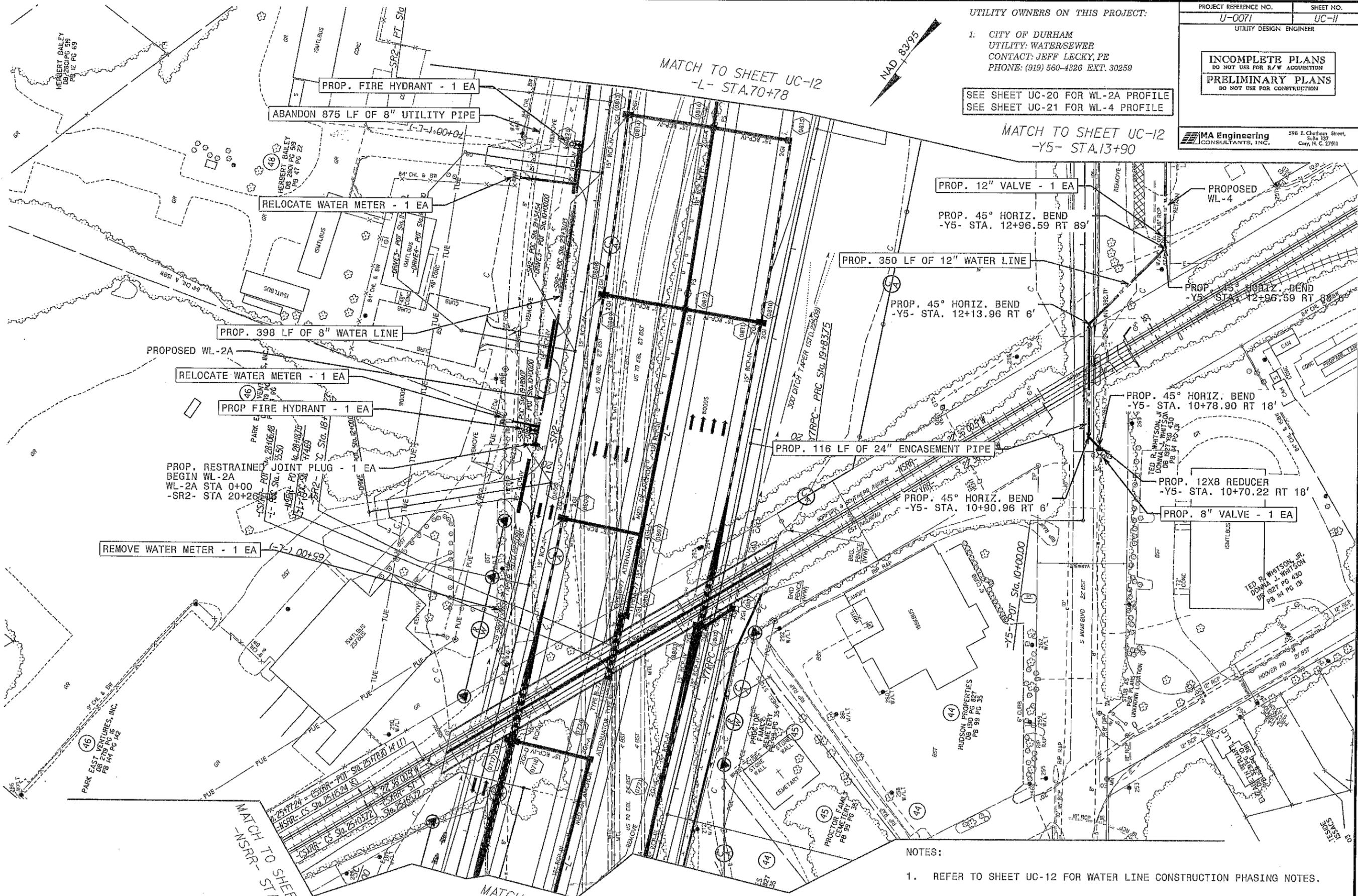
1. CITY OF DURHAM  
UTILITY: WATER/SEWER  
CONTACT: JEFF LECKY, PE  
PHONE: (919) 560-4326 EXT. 30259

PROJECT REFERENCE NO.	SHEET NO.
U-0071	UC-11
UTILITY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>MA Engineering</b> CONSULTANTS, INC. <div style="float: right; font-size: small;">           598 E. Chatham Street, Suite 137 Cary, N. C. 27511         </div>	

SEE SHEET UC-20 FOR WL-2A PROFILE  
SEE SHEET UC-21 FOR WL-4 PROFILE

MATCH TO SHEET UC-12  
-Y5- STA.13+90

MATCH TO SHEET UC-12  
-L- STA.70+78



REVISIONS

\*\*\*\*\*SYTIME\*\*\*\*\*  
\*\*\*\*\*DGN\*\*\*\*\*  
\*\*\*\*\*DATE\*\*\*\*\*

NOTES:

- REFER TO SHEET UC-12 FOR WATER LINE CONSTRUCTION PHASING NOTES.
- REFER TO SHEETS UC-11A AND UC-12A FOR INSTALLATION OF TEMPORARY 6" WATER LINE.
- THIS SHEET DEPICTS THE FINAL LOCATION OF THE WATER LINE AND APPURTENANCES ALONG -SR2-.

MATCH TO SHEET UC-10  
-NSRR- STA.23+99

MATCH TO SHEET UC-10  
-L- STA.62+00

PARK EAST VENTURES, INC.  
DB 150 PG 145  
PB 144 PG 142

HERBERT BAILEY  
DB 280 PG 59  
PB 12 PG 69

HERBERT BAILEY  
DB 280 PG 59  
PB 47 PG 22

TED R. WHITSON, JR.  
DONNA J. WHITSON  
DB 827 PG 430  
PB 34 PG 31

TED R. WHITSON, JR.  
DONNA J. WHITSON  
DB 827 PG 430  
PB 34 PG 31

HUDSON PROPERTIES  
DB 150 PG 827  
PB 88 PG 35

PROCTOR FARM  
CEMETERY  
DB 95 PG 36  
PB 95 PG 36

8/17/99

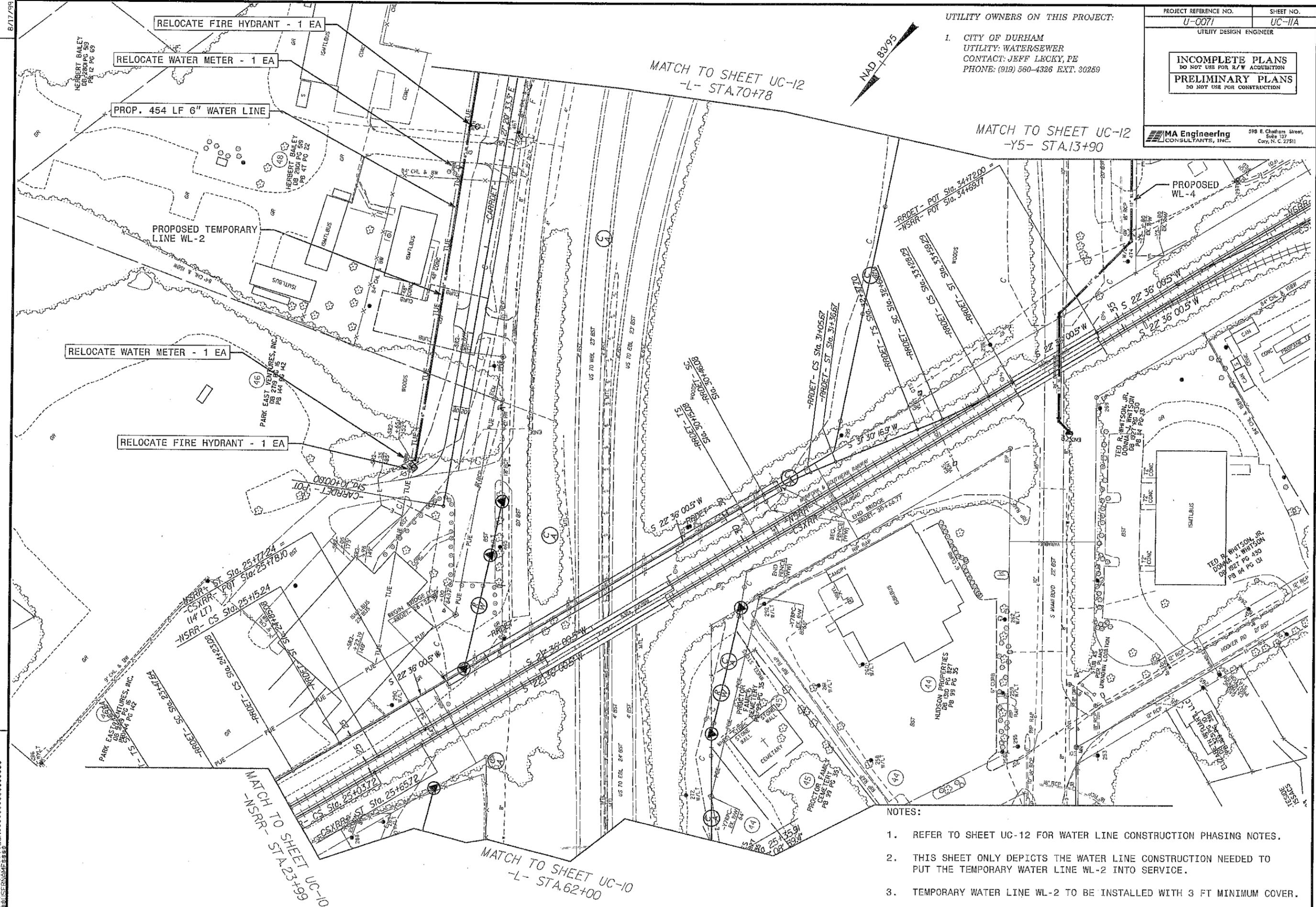
UTILITY OWNERS ON THIS PROJECT:

- 1. CITY OF DURHAM  
UTILITY: WATER/SEWER  
CONTACT: JEFF LECKY, PE  
PHONE: (919) 560-4326 EXT. 30259

PROJECT REFERENCE NO. U-0071	SHEET NO. UC-11A
UTILITY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>MA Engineering</b> CONSULTANTS, INC.	
<small>598 E. Chatham Street,          Suite 103          Cary, N. C. 27511</small>	

MATCH TO SHEET UC-12  
-L- STA.70+78

MATCH TO SHEET UC-12  
-Y5- STA.13+90



REVISIONS

\*\*\*\*\*SYTIME\*\*\*\*\*  
\*\*\*\*\*EDG\*\*\*\*\*  
\*\*\*\*\*\*\*\*\*\*

NOTES:

1. REFER TO SHEET UC-12 FOR WATER LINE CONSTRUCTION PHASING NOTES.
2. THIS SHEET ONLY DEPICTS THE WATER LINE CONSTRUCTION NEEDED TO PUT THE TEMPORARY WATER LINE WL-2 INTO SERVICE.
3. TEMPORARY WATER LINE WL-2 TO BE INSTALLED WITH 3 FT MINIMUM COVER.
4. TEMPORARY WATER LINE WL-2 SHALL BE PVC DR-18 OR C-900.

MATCH TO SHEET UC-10  
-NSRR- STA.23+99

MATCH TO SHEET UC-10  
-L- STA.62+00



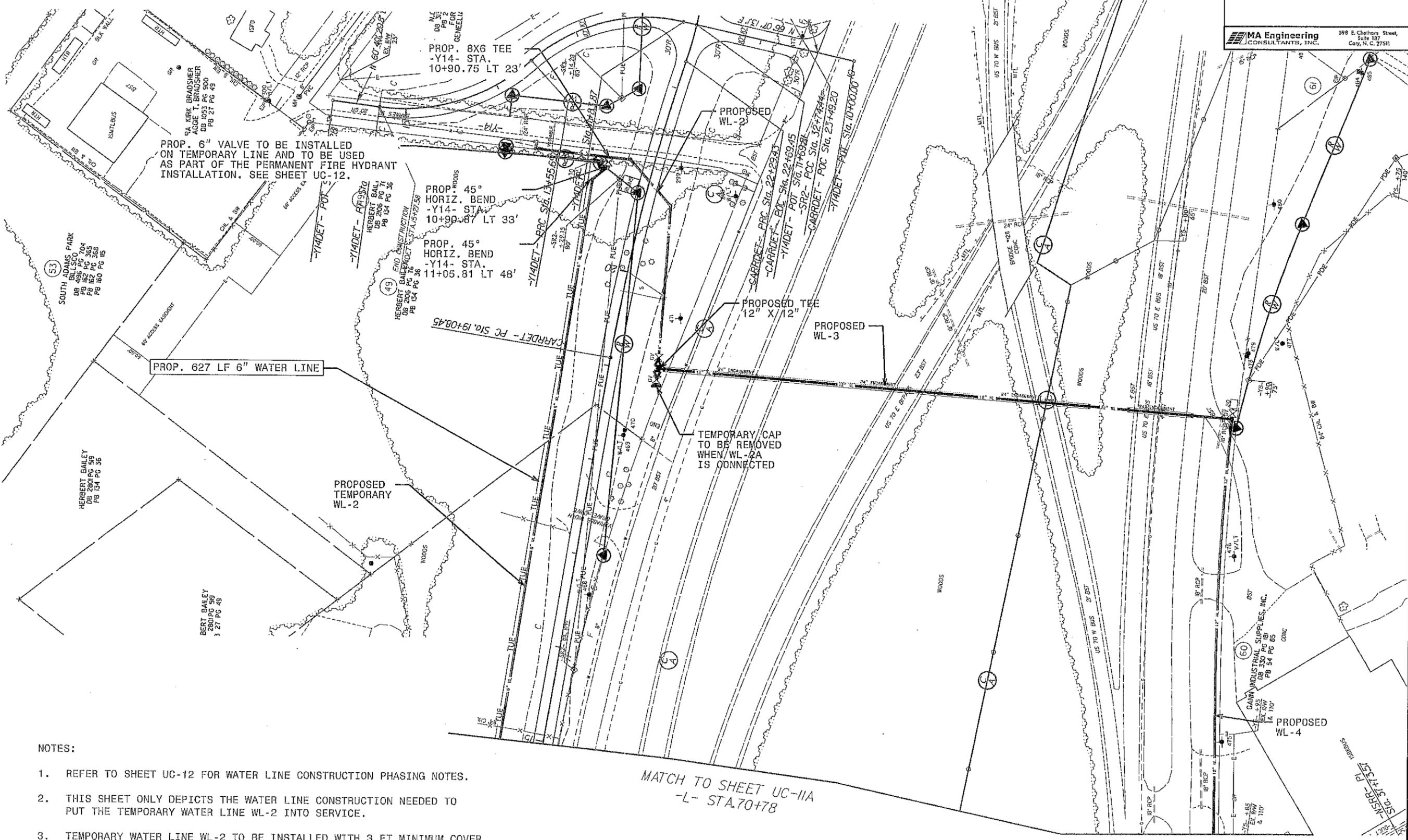
8/17/99

UTILITY OWNERS ON THIS PROJECT:

- 1. CITY OF DURHAM  
UTILITY: WATER/SEWER  
CONTACT: JEFF LECKY, PE  
PHONE: (919) 560-4326 EXT. 30259



PROJECT REFERENCE NO. U-0071	SHEET NO. UC-12A
UTILITY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>MA Engineering</b> CONSULTANTS, INC.	
398 E. Chatham Street, Suite 187 Cary, N. C. 27511	



PROP. 6" VALVE TO BE INSTALLED ON TEMPORARY LINE AND TO BE USED AS PART OF THE PERMANENT FIRE HYDRANT INSTALLATION. SEE SHEET UC-12.

PROP. 8X6 TEE  
-Y14- STA.  
10+90.75 LT 23'

PROP. 45°  
HORIZ. BEND  
-Y14- STA.  
10+90.87 LT 33'

PROP. 45°  
HORIZ. BEND  
-Y14- STA.  
11+05.81 LT 48'

PROPOSED TEE  
12" X 12"

PROPOSED WL-3

TEMPORARY CAP TO BE REMOVED WHEN WL-2A IS CONNECTED

PROP. 627 LF 6" WATER LINE

PROPOSED TEMPORARY WL-2

PROPOSED WL-4

MATCH TO SHEET UC-11A  
-L- STA.70+78

MATCH TO SHEET UC-11A  
-Y5- STA.13+90

NOTES:

1. REFER TO SHEET UC-12 FOR WATER LINE CONSTRUCTION PHASING NOTES.
2. THIS SHEET ONLY DEPICTS THE WATER LINE CONSTRUCTION NEEDED TO PUT THE TEMPORARY WATER LINE WL-2 INTO SERVICE.
3. TEMPORARY WATER LINE WL-2 TO BE INSTALLED WITH 3 FT MINIMUM COVER.
4. TEMPORARY WATER LINE WL-2 SHALL BE PVC DR-18 OR C-900.

REVISIONS

\*\*\*\*\*SYTIME\*\*\*\*\*  
 \*\*\*\*\*L\*\*\*\*\*  
 \*\*\*\*\*L\*\*\*\*\*

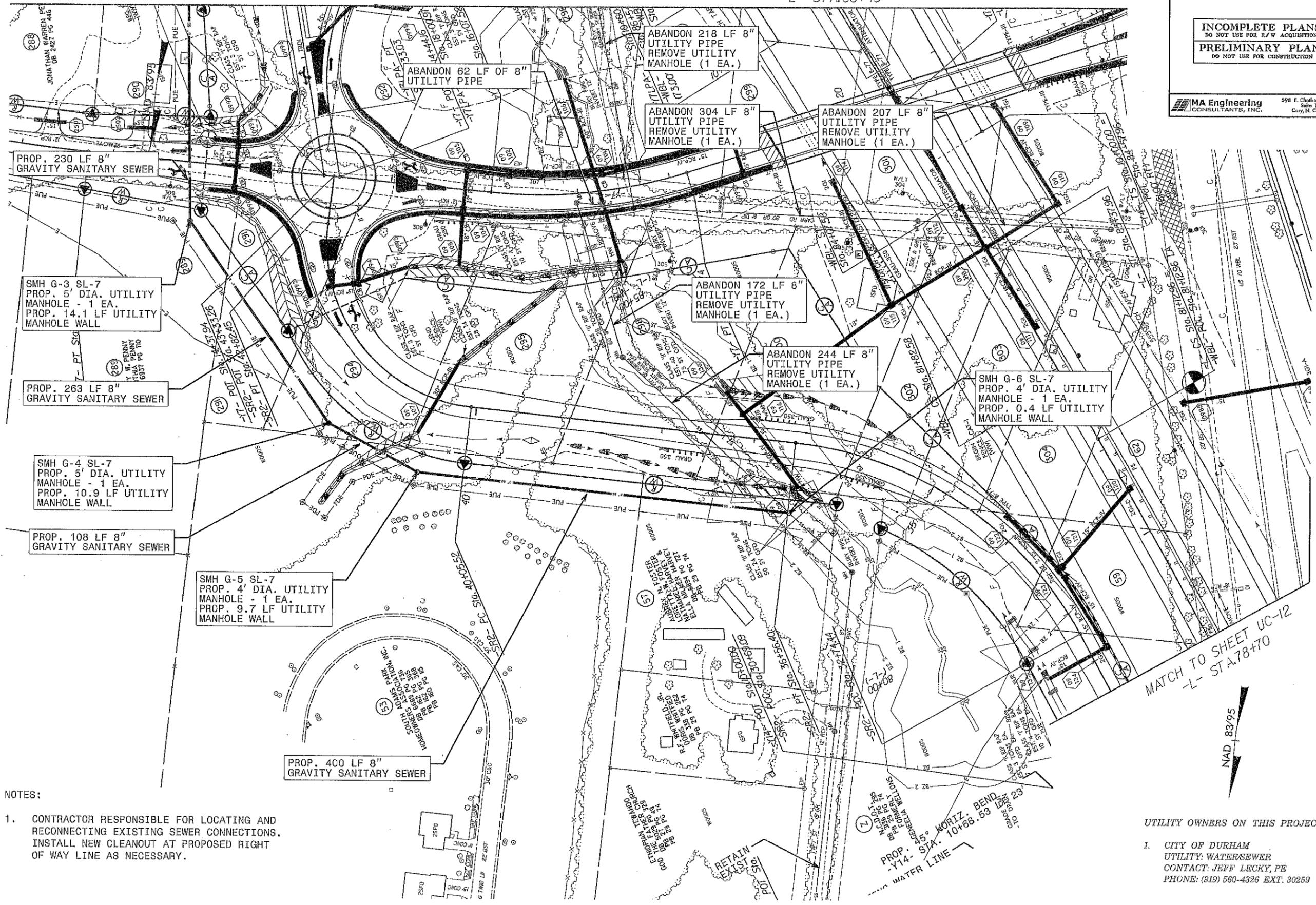
8/17/99

MATCH TO SHEET UC-14  
-L- STA.86+49

PROJECT REFERENCE NO. U-0071 SHEET NO. UC-13  
UTILITY DESIGN ENGINEER

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION  
**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

**MA Engineering**  
CONSULTANTS, INC. 598 E. Chatham Street,  
Suite 107  
Cary, N.C. 27511



REVISIONS

NOTES:

- CONTRACTOR RESPONSIBLE FOR LOCATING AND RECONNECTING EXISTING SEWER CONNECTIONS. INSTALL NEW CLEANOUT AT PROPOSED RIGHT OF WAY LINE AS NECESSARY.

UTILITY OWNERS ON THIS PROJECT:

- CITY OF DURHAM  
UTILITY: WATERSSEWER  
CONTACT: JEFF LECKY, PE  
PHONE: (919) 560-4326 EXT. 30259

\*\*\*\*\*SYSTEMS\*\*\*\*\*  
\*\*\*\*\*CONNECTION\*\*\*\*\*  
\*\*\*\*\*PLAN\*\*\*\*\*



MATCH TO SHEET UC-12  
-L- STA.78+70





MATCH TO SHEET UC-15

UTILITY OWNERS ON THIS PROJECT:

NOTES:

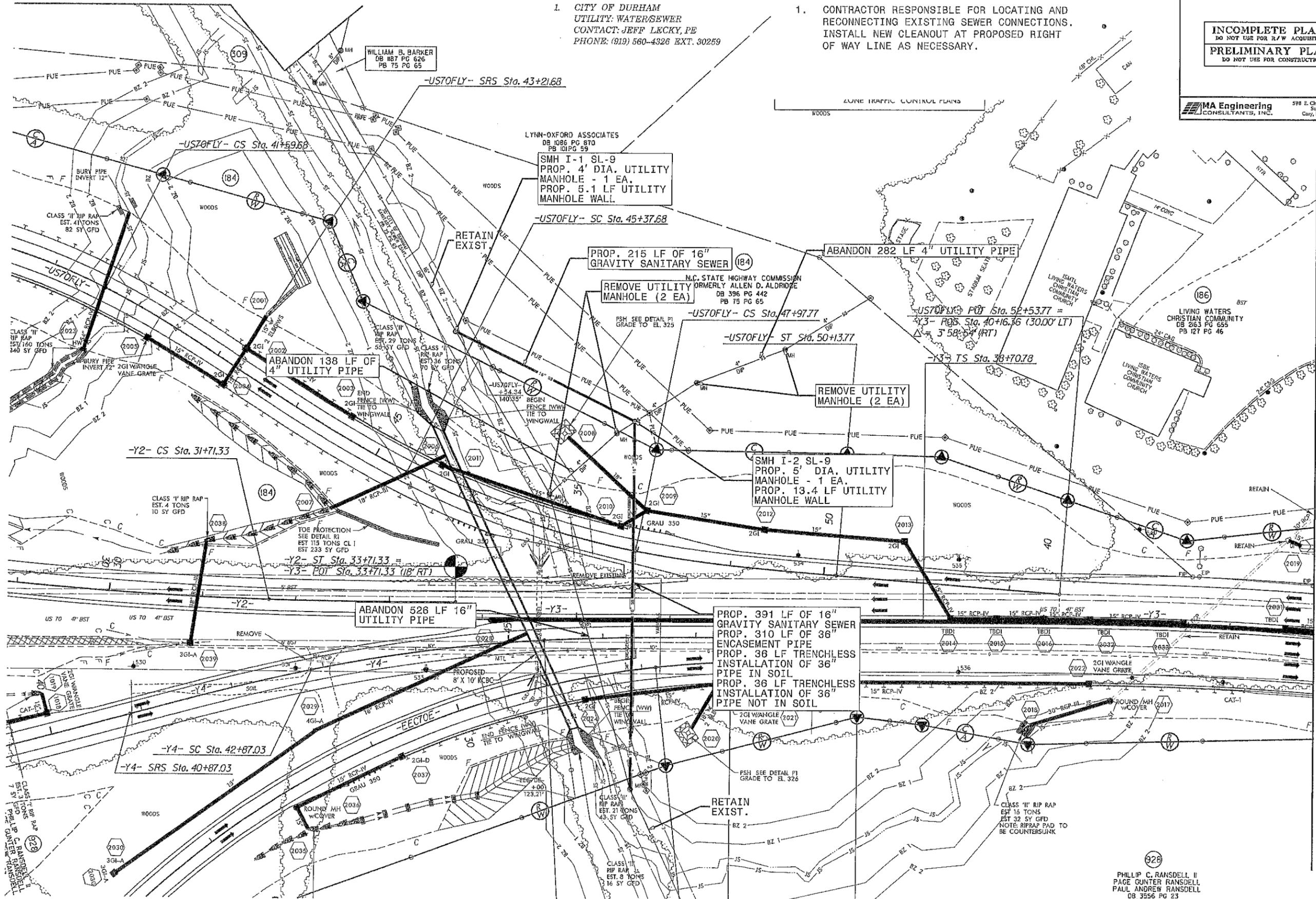
1. CITY OF DURHAM  
 UTILITY: WATER/SEWER  
 CONTACT: JEFF LECKY, PE  
 PHONE: (919) 560-4326 EXT. 30259

1. CONTRACTOR RESPONSIBLE FOR LOCATING AND RECONNECTING EXISTING SEWER CONNECTIONS. INSTALL NEW CLEANOUT AT PROPOSED RIGHT OF WAY LINE AS NECESSARY.

PROJECT REFERENCE NO. U-0071	SHEET NO. UC-16
UTILITY DESIGN ENGINEER	

**INCOMPLETE PLANS**  
 DO NOT USE FOR R/W ACQUISITION  
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

**MA Engineering**  
 CONSULTANTS, INC. 598 E. Chatham Street, Suite 137, Cary, N.C. 27511



REVISIONS

MATCH TO SHEET UC-15  
-Y3- STA. 42+91

929  
 PHILLIP C. RANDELL II  
 PAGE GUNTER RANDELL  
 PAUL ANDREW RANDELL  
 DB 3556 PG 23  
 DB 19 PG 4

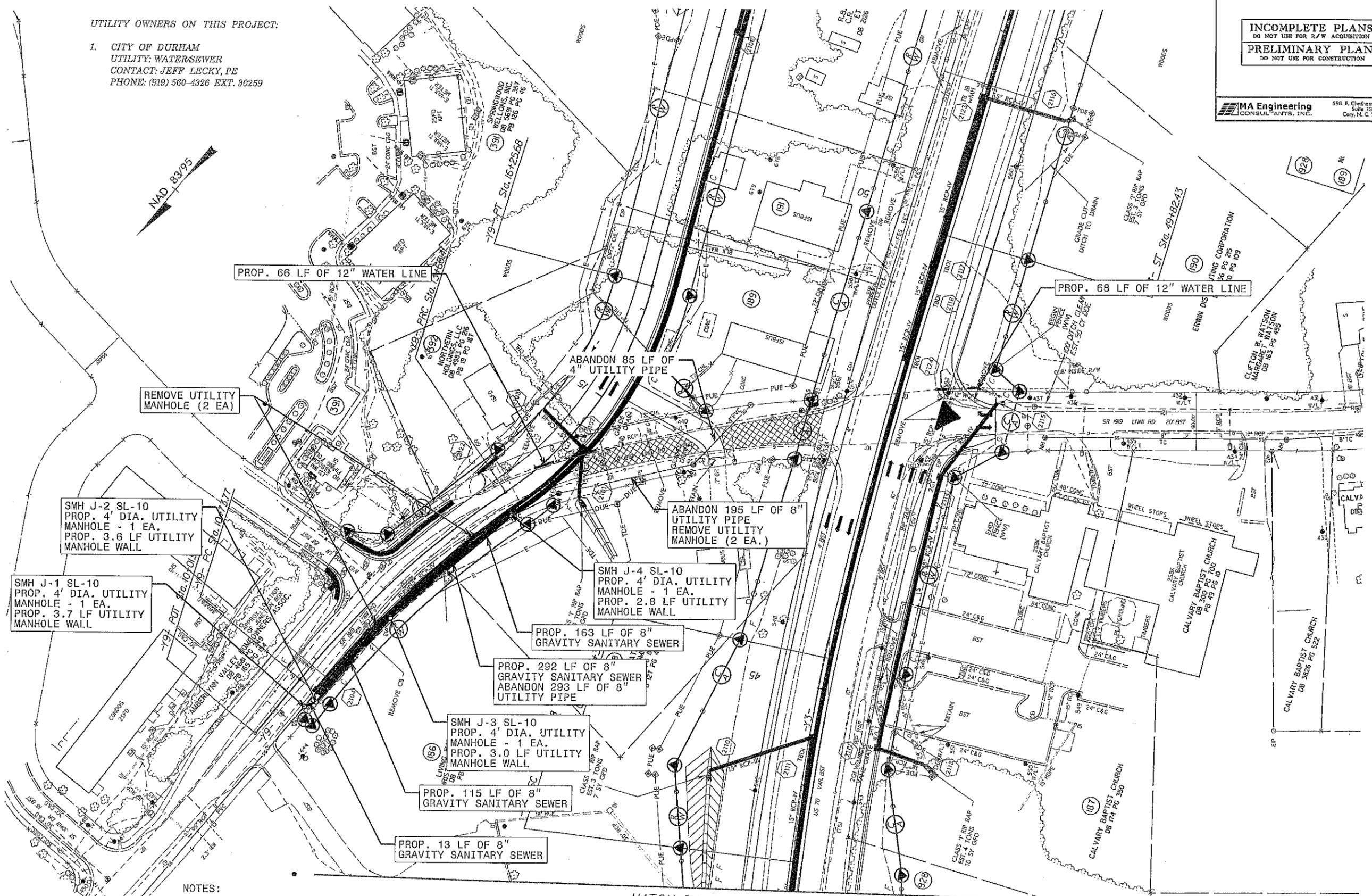
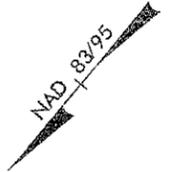
8/17/99

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION  
**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

**MA Engineering**  
CONSULTANTS, INC. 598 E. Chatham Street,  
Suite 137  
Cary, N.C. 27511

**UTILITY OWNERS ON THIS PROJECT:**

- CITY OF DURHAM  
UTILITY: WATER/SEWER  
CONTACT: JEFF LECKY, PE  
PHONE: (919) 560-4326 EXT. 30259



**NOTES:**

- CONTRACTOR RESPONSIBLE FOR LOCATING AND RECONNECTING EXISTING SEWER CONNECTIONS. INSTALL NEW CLEANOUT AT PROPOSED RIGHT OF WAY LINE AS NECESSARY.

MATCH TO SHEET UC-15  
-Y3- STA. 42+91

REVISIONS

\*\*\*\*\*SYTIME\*\*\*\*\*  
\*\*\*\*\*DUNN\*\*\*\*\*  
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