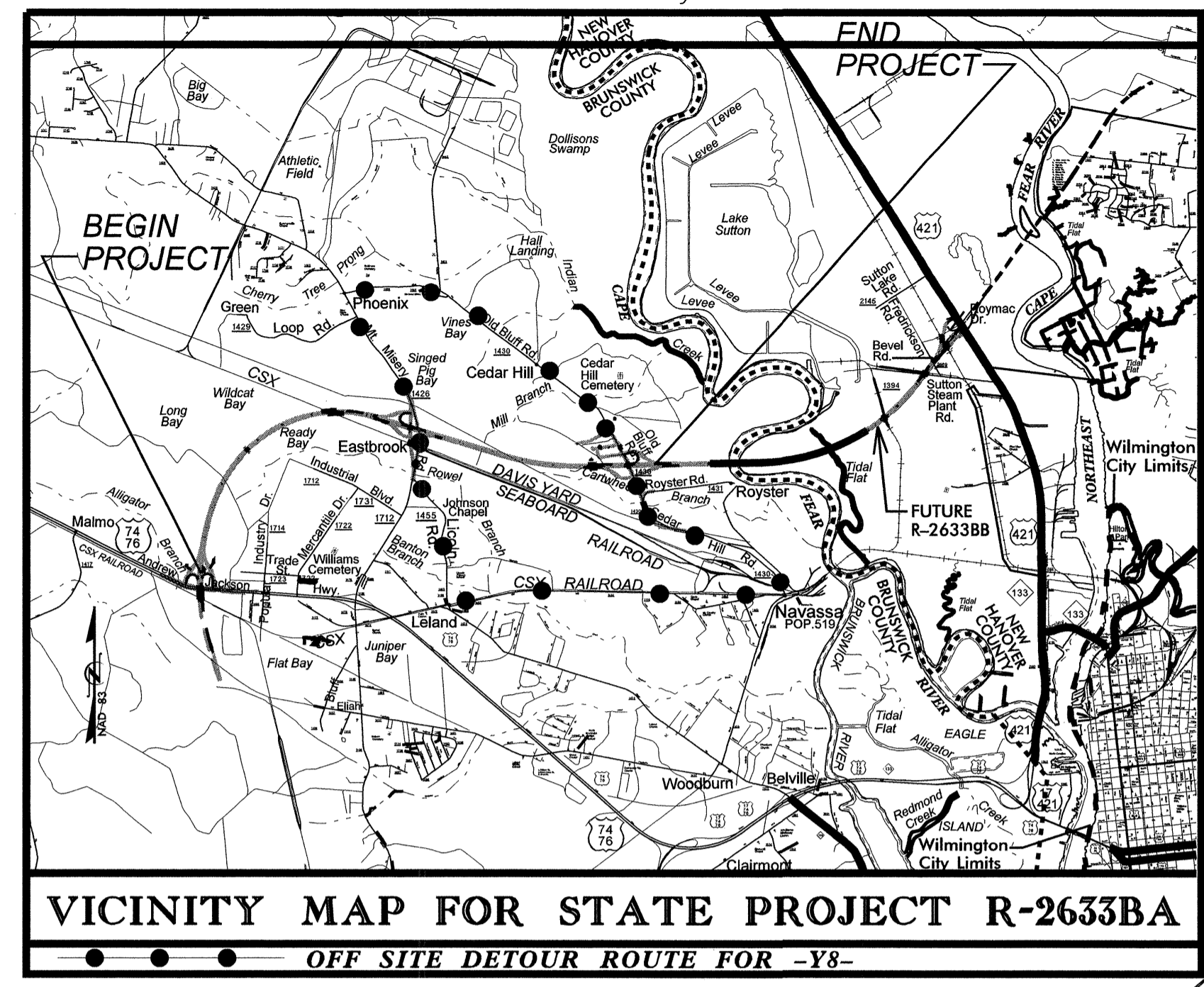


09/08/99 TIP PROJECT: R-2633BA

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

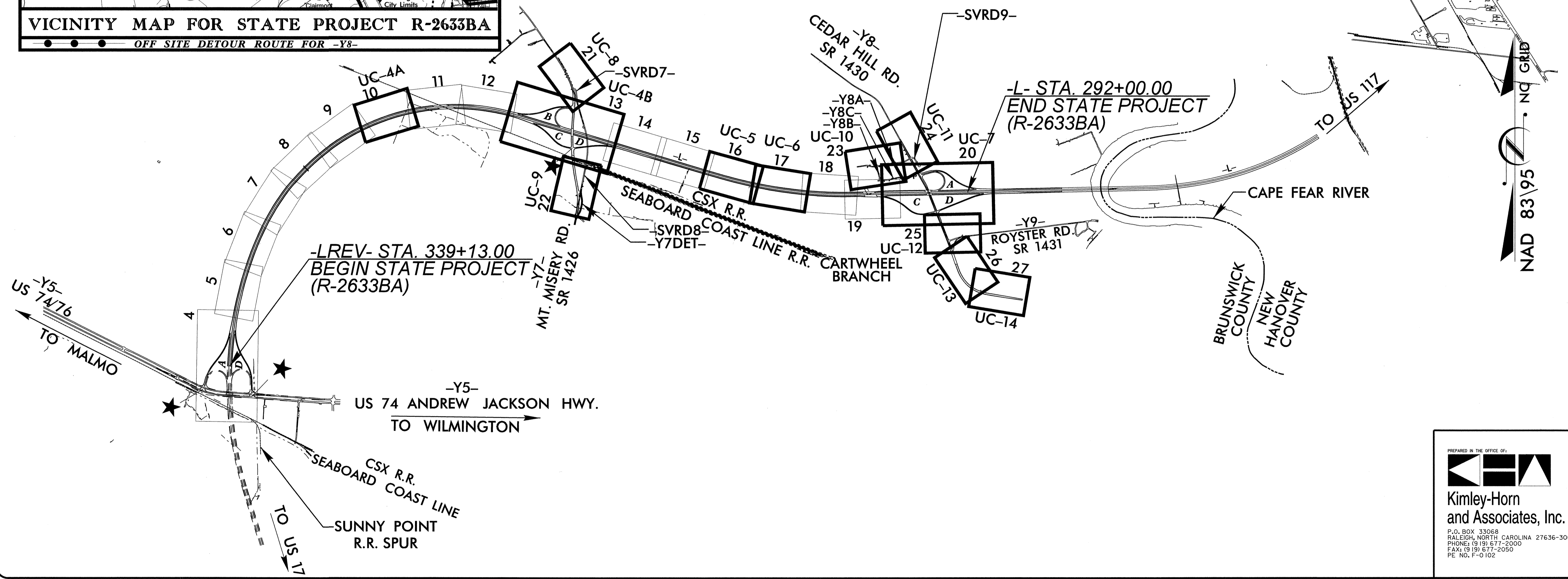


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

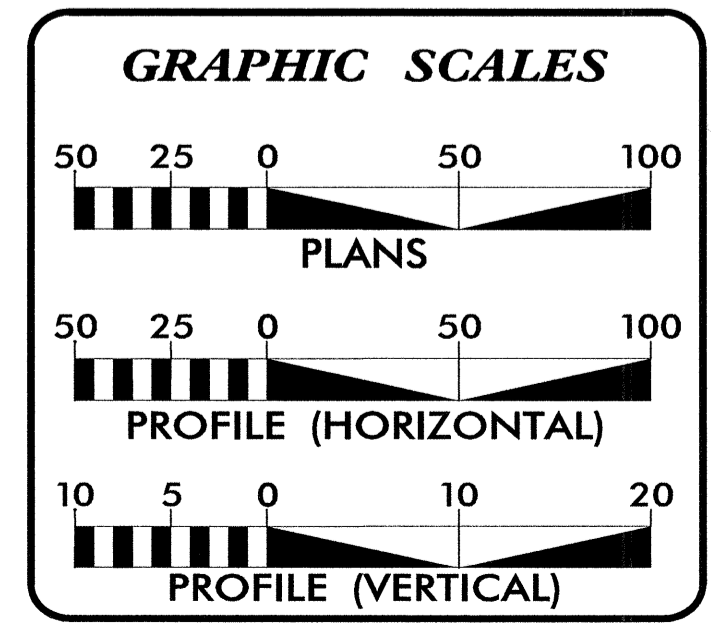
T.I.P. NO. <b>R-2633BA</b>	SHEET NO. <b>UC-1</b>
UTILITY CONSTRUCTION	

**UTILITY CONSTRUCTION PLANS  
BRUNSWICK &  
NEW HANOVER COUNTY**

**LOCATION: US 17 (WILMINGTON BYPASS) FROM SR 1430  
(CEDAR HILL ROAD) TO US 421 NORTH OF WILMINGTON**  
**TYPE OF WORK: UTILITY RELOCATIONS**



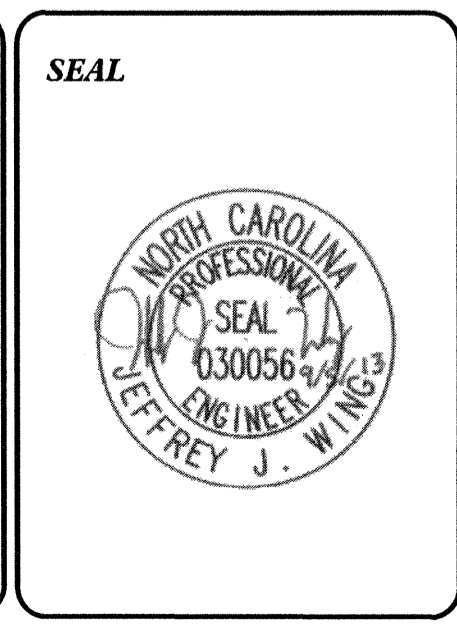
PREPARED IN THE OFFICE OF:  
  
**Kimley-Horn  
and Associates, Inc.**  
P.O. BOX 33068  
RALEIGH, NORTH CAROLINA 27636-3068  
PHONE: (919) 677-2000  
FAX: (919) 677-2050  
PE NO. F-0102



**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILITIES PLAN SHEET SYMBOLS
UC-3	UTILITY CONSTRUCTION NOTES
UC-3A	MISCELLANEOUS DETAILS
UC-4A THRU UC-14	UTILITY CONSTRUCTION PLAN SHEETS
UC-15 THRU UC-21	UTILITY CONSTRUCTION PROFILE SHEETS

- WATER AND SEWER OWNERS ON PROJECT**
- (1) WATER: BRUNSWICK COUNTY PUBLIC UTILITIES
  - (2) WATER: H2GO BRUNSWICK REGIONAL WATER AND SEWER
  - (3) WATER: CAPE FEAR PUBLIC UTILITY AUTHORITY
  - (4) WATER: TOWN OF NAVASSA
  - (5) SANITARY SEWER: BRUNSWICK COUNTY PUBLIC UTILITIES
  - (6) SANITARY SEWER: H2GO BRUNSWICK REGIONAL WATER AND SEWER
  - (7) SANITARY SEWER: CAPE FEAR PUBLIC UTILITY AUTHORITY
  - (8) SANITARY SEWER: TOWN OF NAVASSA



PREPARED IN THE OFFICE OF:  
  
**DIVISION OF HIGHWAYS  
UTILITIES ENGINEERING**

1555 MAIL SERVICES CENTER  
RALEIGH NC 27699-1555  
PHONE (919) 707-6690  
FAX (919) 250-4151

**Roger Worthington, P.E.** UTILITIES SECTION ENGINEER  
**R. B. Wilkins, P.E.** UTILITIES SQUAD LEADER PROJECT ENGINEER  
**Jeffrey J. Wing, P.E.** UTILITIES PROJECT DESIGNER

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

5/14/99

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## UTILITIES PLAN SHEET SYMBOLS

### PROPOSED WATER SYMBOLS

Waterline (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 Pipe by Bored and Jacked or Open Cut	

Thrust Collar	
Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	
Existing Grade	
Proposed Grade	

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: 2/11/2012

5/14/99

TIME TO CONSTRUCTION

# UTILITY CONSTRUCTION NOTES

## 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 UTILITIES BELONG TO CAPE FEAR PUBLIC UTILITY AUTHORITY, BRUNSWICK COUNTY PUBLIC UTILITIES, AND TOWN OF NAVASSA.

3. ALL WATERLINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH PUBLIC WATER SUPPLY SECTION (PWS). 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 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 DEPARTMENT. 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, ORIENTATION, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, ORIENTATION, AND TYPE MATERIAL OF THE EXISTING UTILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES, PRIOR TO ORDERING MATERIALS, 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 PROPOSED WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED BY THE DEPARTMENT.

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 NCDOT "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES."

## PROJECT SPECIFIC NOTES:

1. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE NCDOT "STANDARD SPECIFICATIONS" CONCERNING TRENCHLESS INSTALLATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE A BORE PATH DESIGNED, AND SIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.

2. ALL PROPOSED WATERLINES AND FITTINGS SHALL BE DI RJ PC 350.

3. ALL PROPOSED GRAVITY SEWER LINES SHALL BE PROTECTED 401 LINED DI PC 350 (PUSH-ON).

4. ALL PROPOSED SEWER FORCE MAINS SHALL BE PROTECTO 401 LINED DI PC 350 (RESTRAINED).

5. ALL VALVES SHALL BE 250 PSI RESILIENT SEAT GATE VALVES, OR CLASS 150B BUTTERFLY VALVES, UNLESS OTHERWISE SHOWN ON THE PLANS.

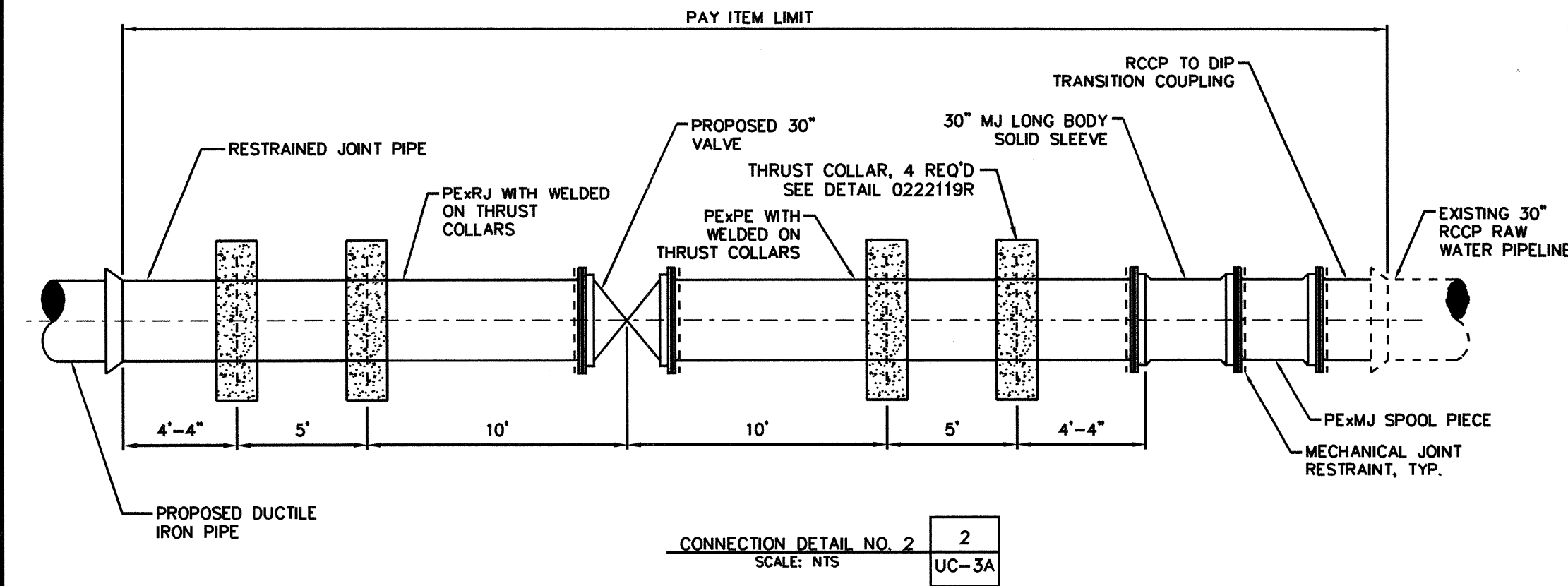
PREPARED IN THE OFFICE OF:  
**Kimley-Horn  
and Associates, Inc.**  
P.O. BOX 33068  
RALEIGH, NORTH CAROLINA 27636-3068  
PHONE: (919) 677-2000  
FAX: (919) 677-2050  
PE. NO. F-0102

PROJECT REFERENCE NO.	SHEET NO.
R-2633BA	UC-3
DESIGNED BY: JJW	
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
UTILITY CONSTRUCTION PLANS ONLY	

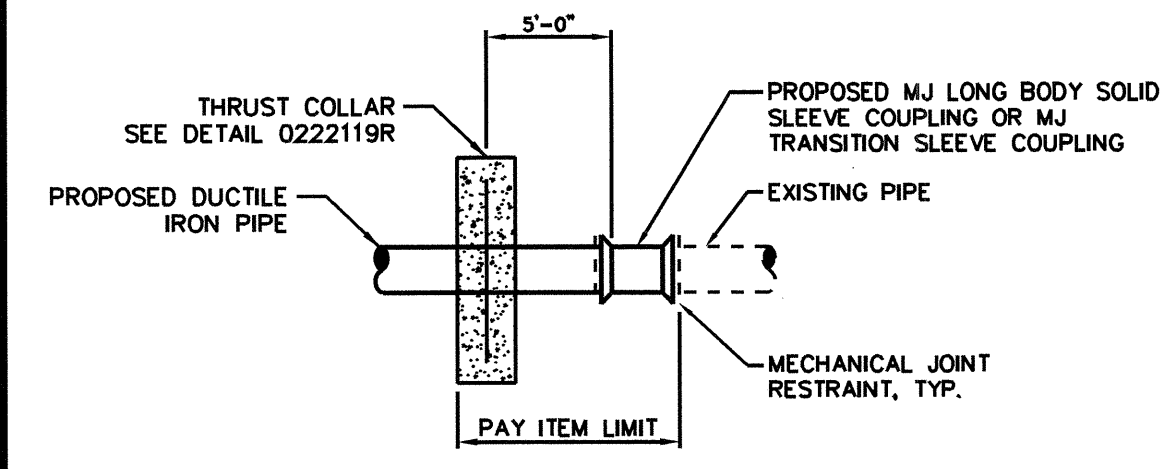
UTILITY CONSTRUCTION

PREPARED IN THE OFFICE OF:  
  
**Kimley-Horn and Associates, Inc.**  
 P.O. BOX 33068  
 RALEIGH, NORTH CAROLINA 27636-3068  
 PHONE: (919) 877-2000  
 FAX: (919) 877-2050  
 PE NO. F-0102

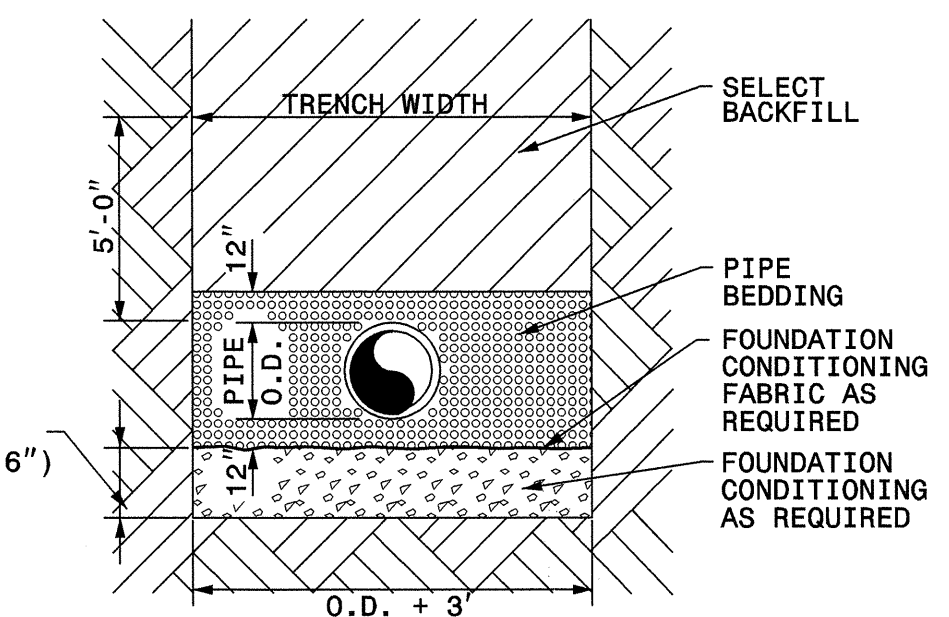
UTILITY CONSTRUCTION



CONNECTION DETAIL NO. 2  
 SCALE: NTS  
 UC-3A



CONNECTION DETAIL NO. 4  
 SCALE: NTS  
 UC-3A

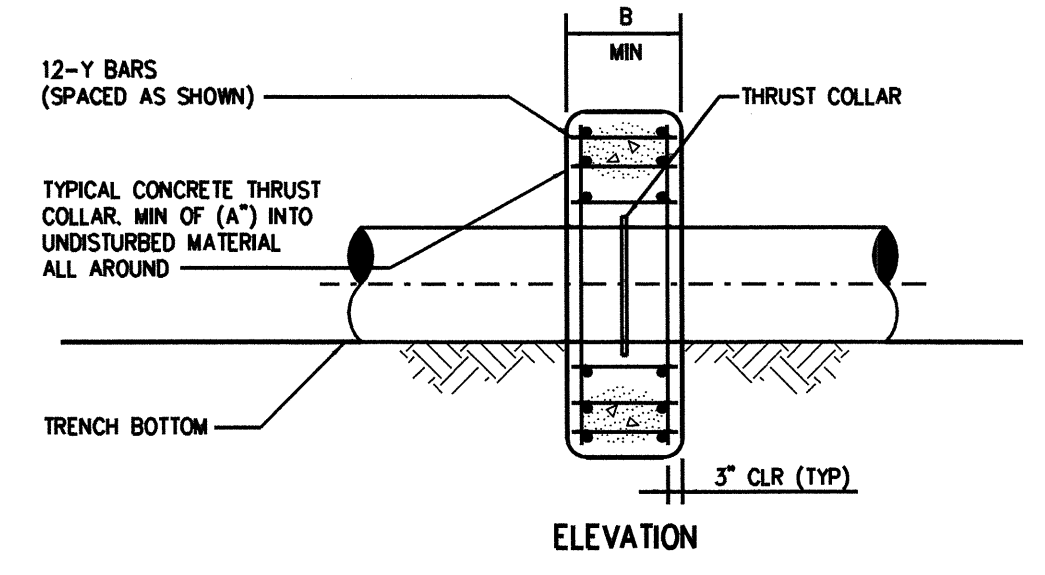


PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDING IS SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, WATER, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROXIMATELY 95% STD. PROCTOR DENSITY IN AREAS NOT UNDER PAVEMENT AND 98% IN AREAS UNDER PAVEMENT IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE NC DEPARTMENT OF TRANSPORTATION.

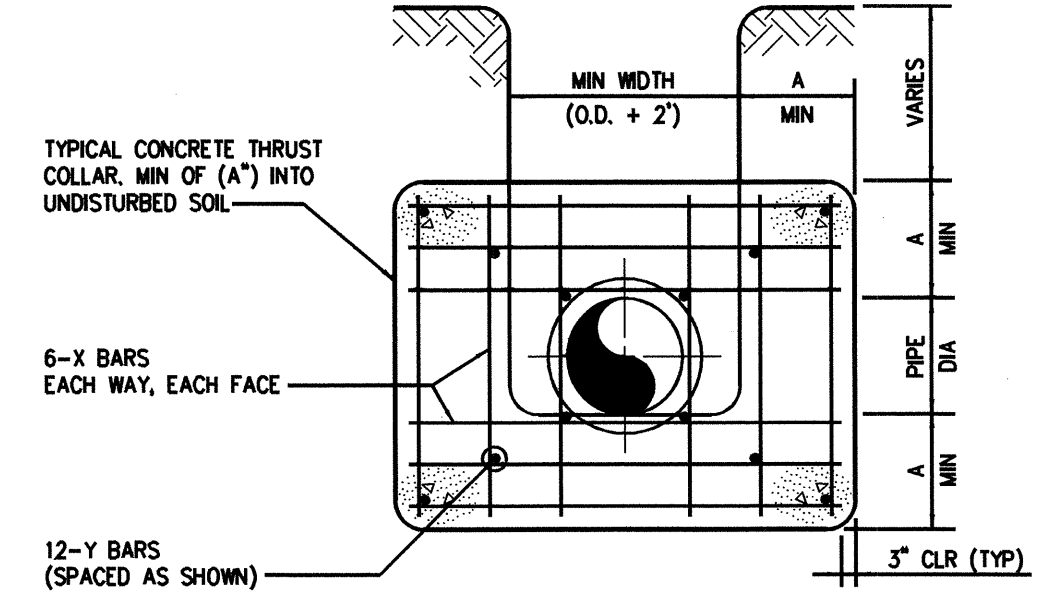
TYPICAL TRENCH DETAIL

NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY EXACT ELEVATION, LOCATION, ORIENTATION, DIMENSION, AND MATERIAL OF PIPING TO BE CONNECTED TO PRIOR ORDERING MATERIALS.
2. THE CONTRACTOR SHALL PROVIDE A MEANS TO KEEP ALL NEW PIPING COMPLETELY ISOLATED FROM EXISTING PIPING UNTIL ALL NEW PIPING HAS BEEN TESTED AND ACCEPTED BY NCDOT FOR SERVICE.
3. DESIGN PRESSURE IS 350 PSI
4. 12" OF NCDOT NO. 67 STONE BEDDING SHALL EXTEND UNDER ENTIRE LENGTH OF DIP IN THE CONNECTION PAY ITEM LIMIT.
5. ALL CONNECTION FITTINGS AND JOINTS SHALL BE RESTRAINED DIP USING MECHANICAL JOINT RESTRAINT.
6. CONCRETE THRUST COLLARS SHALL BE PLACED AND CURED THREE DAYS PRIOR TO CUTTING EXISTING PIPE.
7. CONTRACTOR SHALL CONTACT HANSON PIPE & PRECAST TO ARRANGE FOR A TECHNICIAN TO BE PRESENT TO PERFORM AN IDENTIFICATION OF THE RCCP CLASS AND TYPE, AND TO MEASURE THE PIPE FOR THE MANUFACTURE OF THE REQUIRED RCCP TO DIP TRANSITION COUPLINGS.



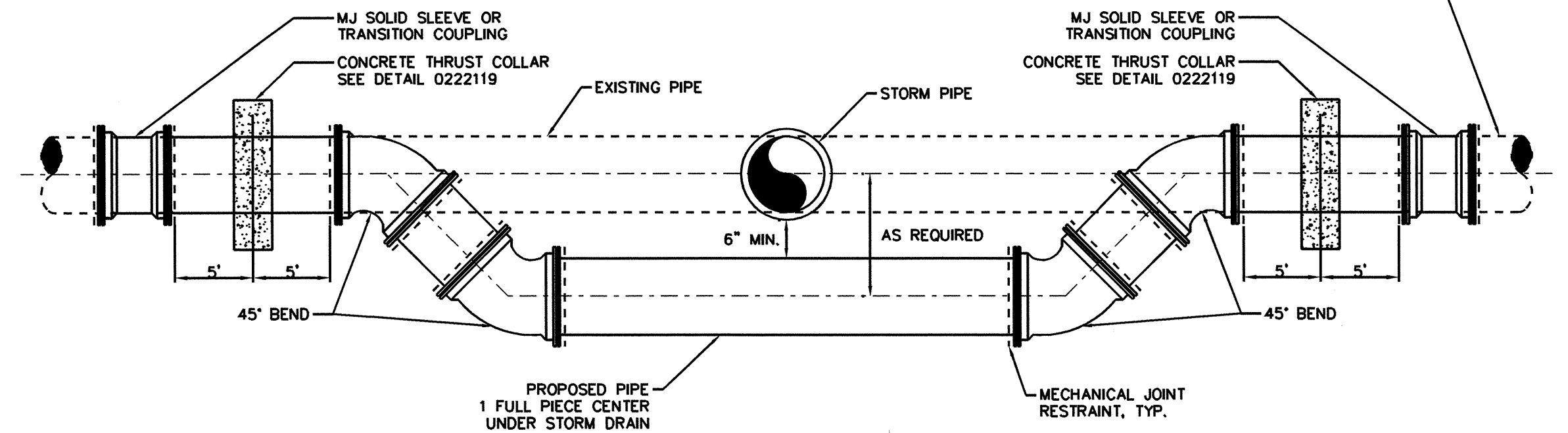
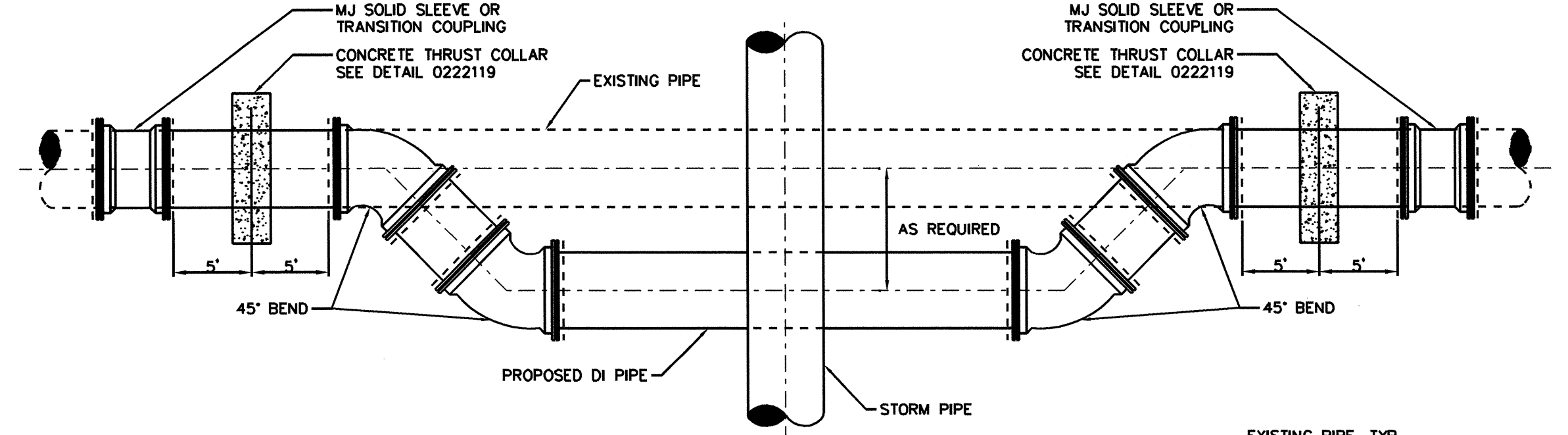
ELEVATION



THRUST COLLAR

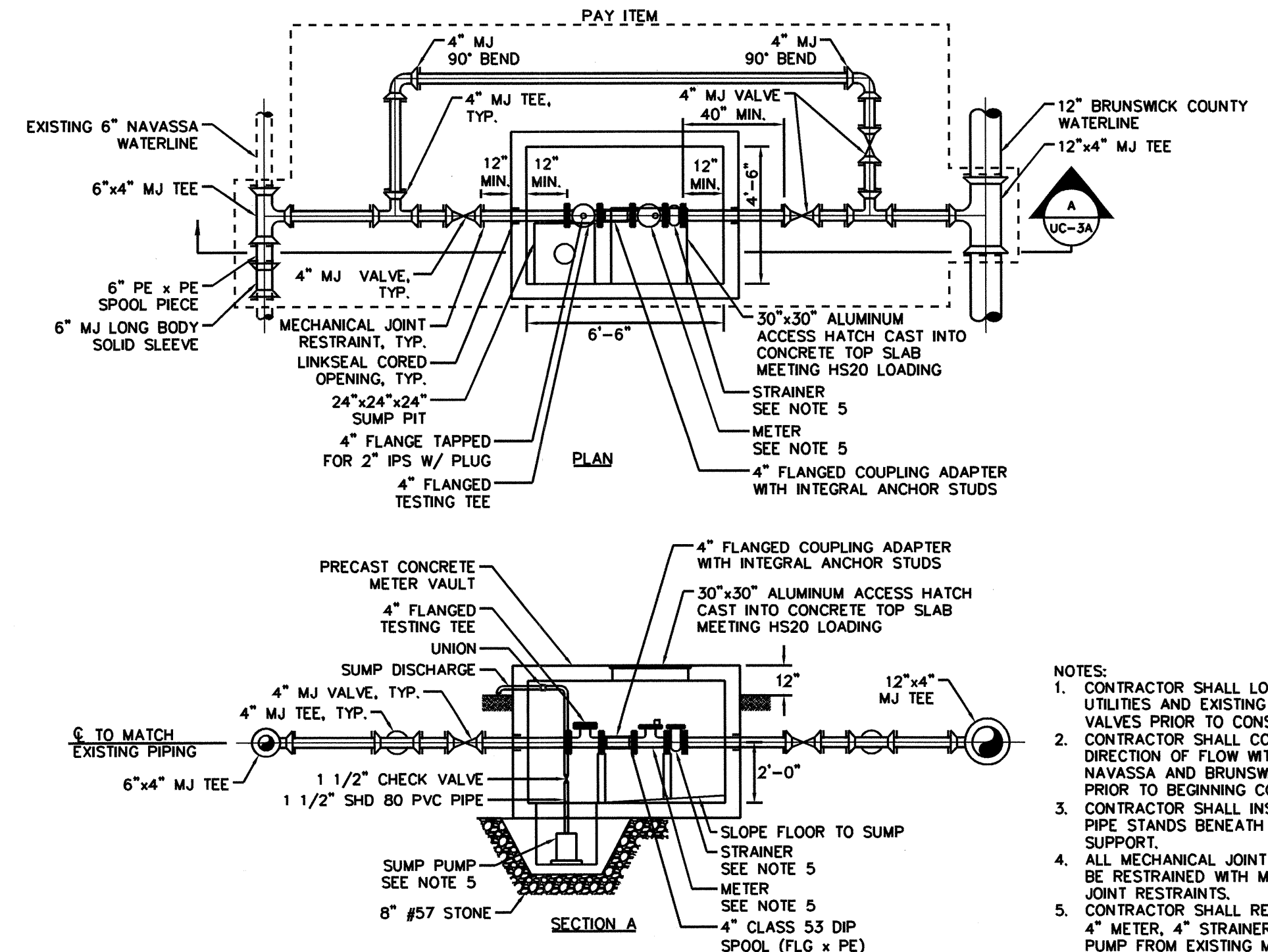
PIPE SIZE	X BARS	Y BARS	A	B
4"-36"	#5	#5	1'-4"	1'-7"
42" >	#6	#6	1'-8"	1'-9"

DETAIL 0222119R



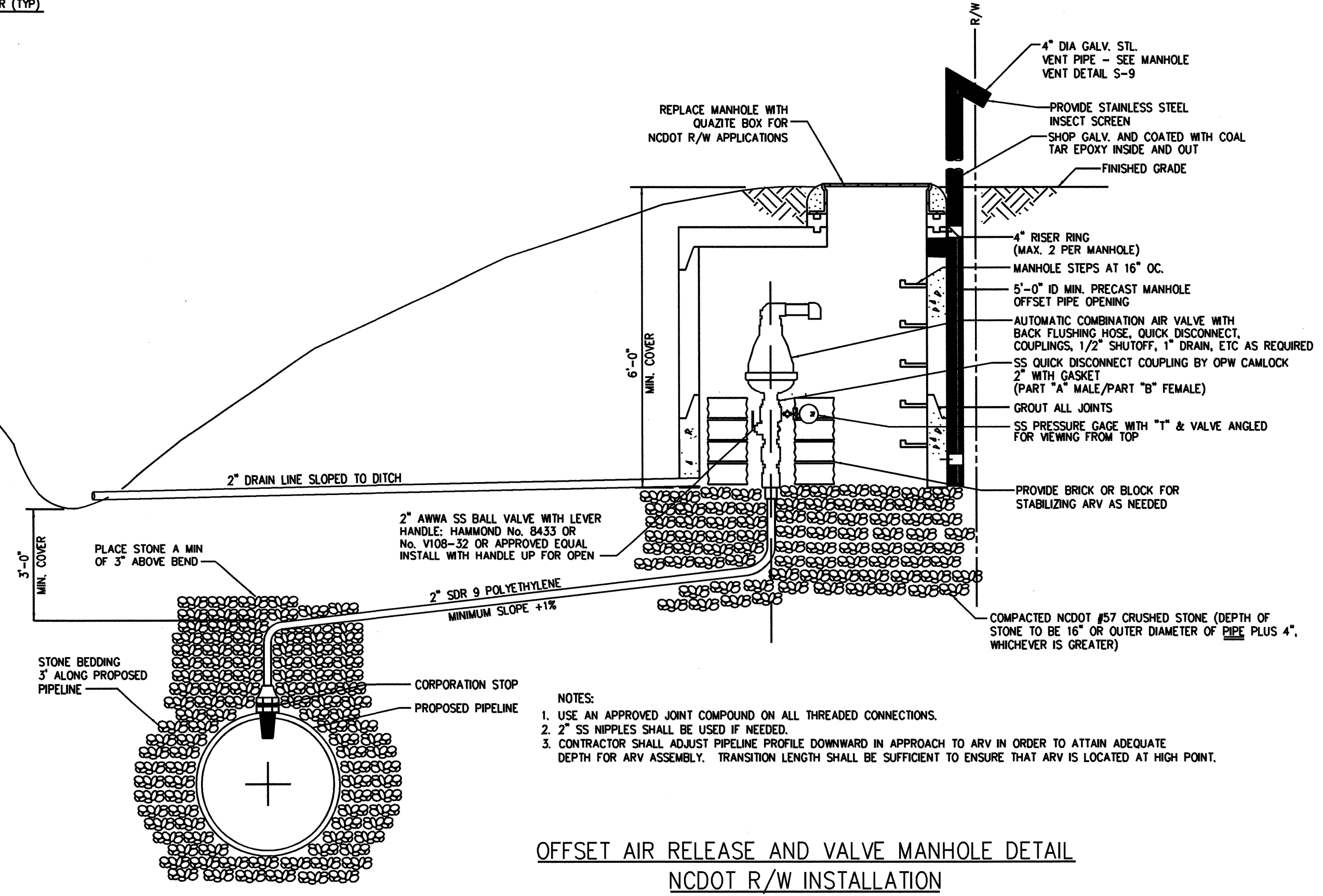
RELOCATION OR PROPOSED PIPE CROSSING AT STORM DRAIN CONFLICT

DETAIL 5  
 SCALE: NTS  
 UC-3A



METER VAULT DETAIL  
 SCALE: NTS  
 UC-3A

- NOTES:
1. CONTRACTOR SHALL LOCATE ALL UTILITIES AND EXISTING WATERLINE VALVES PRIOR TO CONSTRUCTION.
  2. CONTRACTOR SHALL CONFIRM DIRECTION OF FLOW WITH TOWN OF NAVASSA AND BRUNSWICK COUNTY PRIOR TO BEGINNING CONSTRUCTION.
  3. CONTRACTOR SHALL INSTALL TWO(2) PIPE STANDS BENEATH PIPING FOR SUPPORT.
  4. ALL MECHANICAL JOINT PIPE SHALL BE RESTRAINED WITH MECHANICAL JOINT RESTRAINTS.
  5. CONTRACTOR SHALL RELOCATE THE 4" METER, 4" STRAINER, AND SUMP PUMP FROM EXISTING METER VAULT.



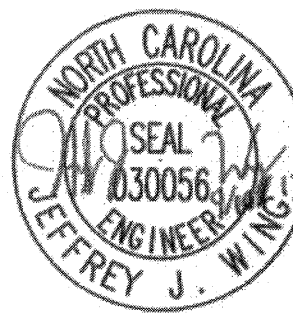
OFFSET AIR RELEASE AND VALVE MANHOLE DETAIL  
 NCDOT R/W INSTALLATION  
 DETAIL WS-3

TYPICAL DETAIL BY BRUNSWICK COUNTY, NORTH CAROLINA, DATE 06-05-12

5/14/99  
SYTIME

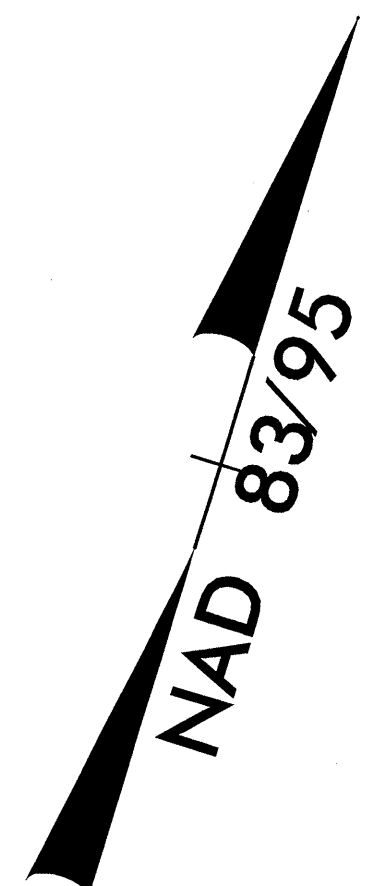
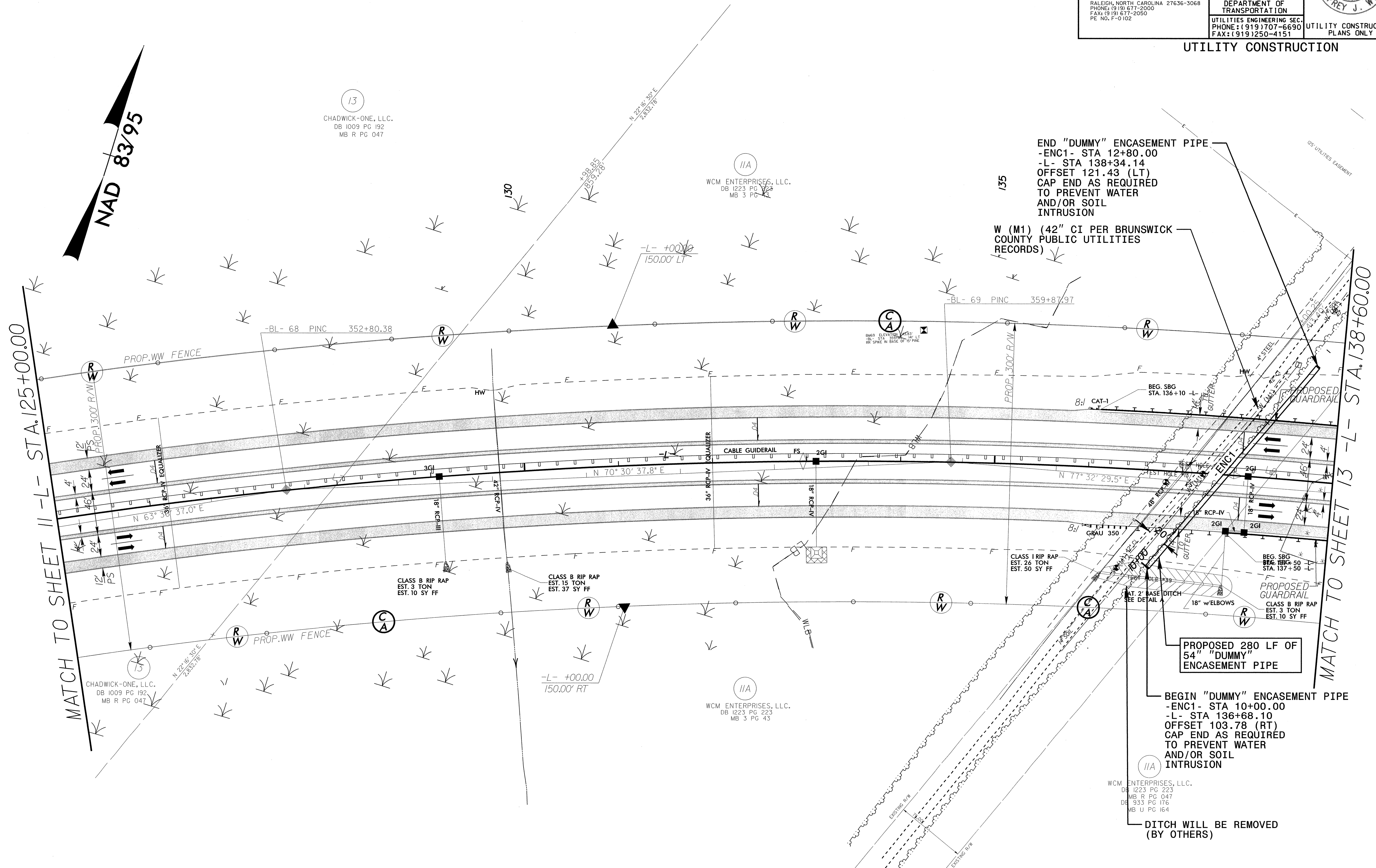
-L-  
PI Sta 133+87.91  
 $\Delta = 79^\circ 30' 50.4" (RT)$   
 $D = 0' 59' 47.2"$   
 $L = 7,979.74'$   
 $T = 4,783.41'$   
 $R = 5,750.00'$   
 $e = 4.0\%$

WATERLINE OWNER: BRUNSWICK COUNTY PUBLIC UTILITIES  
(--- W (M1) ---)

PROJECT REFERENCE NO. R-2633BA	SHEET NO. UC-4A
DESIGNED BY: JJW	
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

Kimley-Horn and Associates, Inc.  
P.O. BOX 33068  
RALEIGH, NORTH CAROLINA 27636-3068  
PHONE: (919) 677-2000  
FAX: (919) 677-2050  
PE NO. F-0102

UTILITY CONSTRUCTION



13  
CHADWICK-ONE, LLC.  
DB 1009 PG 192  
MB R PG 047

11A  
WCM ENTERPRISES, LLC.  
DB 1223 PG 223  
MB 3 PG 43

END "DUMMY" ENCASEMENT PIPE  
-ENC1- STA 12+80.00  
-L- STA 138+34.14  
OFFSET 121.43 (LT)  
CAP END AS REQUIRED  
TO PREVENT WATER  
AND/OR SOIL  
INTRUSION

W (M1) (42" CI PER BRUNSWICK COUNTY PUBLIC UTILITIES RECORDS)

PROPOSED 280 LF OF 54" "DUMMY" ENCASEMENT PIPE

BEGIN "DUMMY" ENCASEMENT PIPE  
-ENC2- STA 10+00.00  
-L- STA 136+68.10  
OFFSET 103.78 (RT)  
CAP END AS REQUIRED  
TO PREVENT WATER  
AND/OR SOIL  
INTRUSION

11A  
WCM ENTERPRISES, LLC.  
DB 1223 PG 223  
MB R PG 047  
DB 933 PG 176  
MB U PG 164

DITCH WILL BE REMOVED (BY OTHERS)

SEE SHEET UC-15 FOR -ENC1- PROFILE



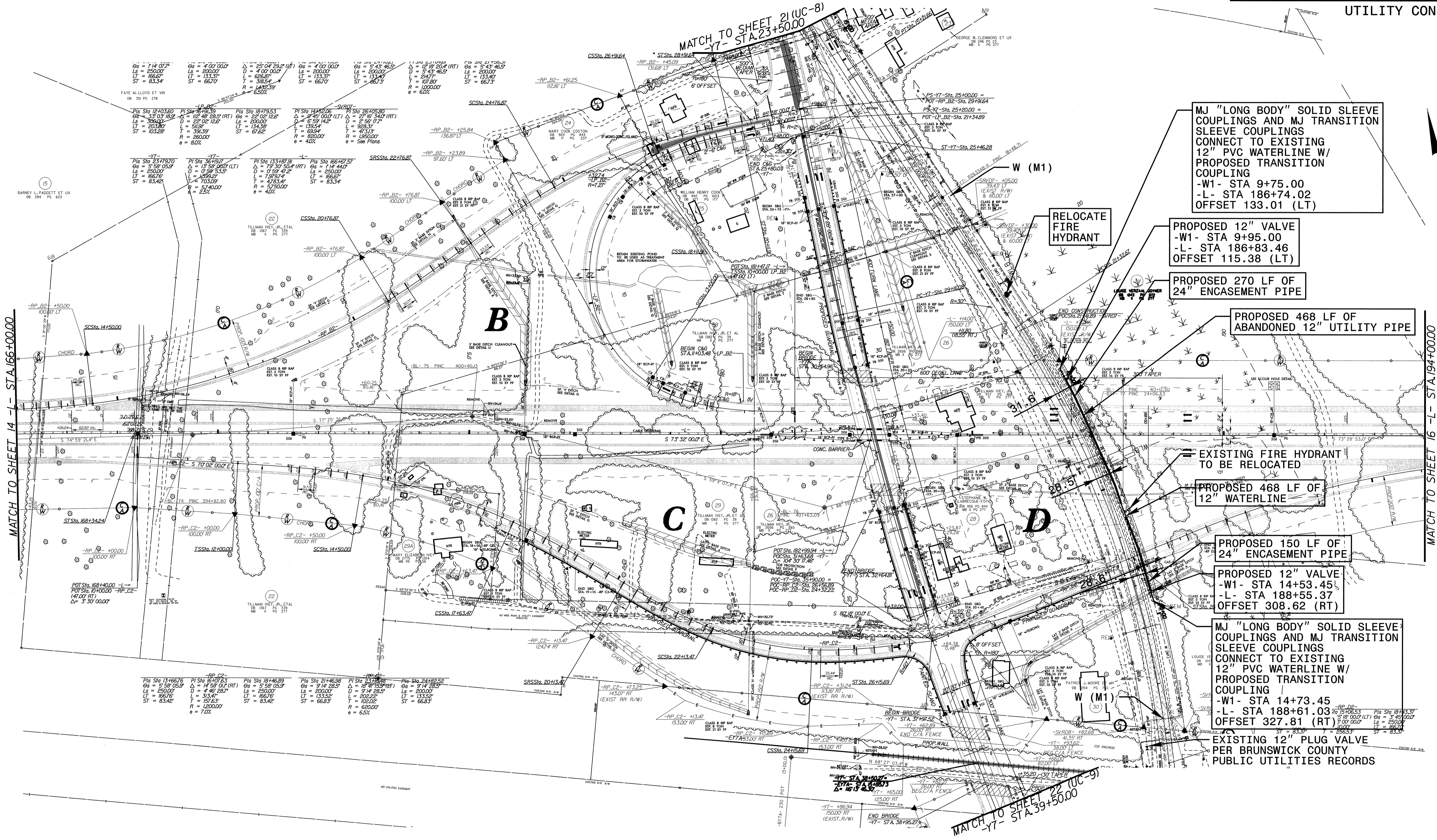
Kimley-Horn and Associates, Inc.

P.O. BOX 33068  
RALEIGH, NORTH CAROLINA 27636-3068  
PHONE: (919) 677-2000  
FAX: (919) 677-2050  
PE NO. F-0102

PROJECT REFERENCE NO. R-2633BA	SHEET NO. UC-4B
DESIGNED BY: JJJ	NORTH CAROLINA PROFESSIONAL ENGINEER 30056 JEFFREY J. WINGS
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

SCALE: 1"=100'



MJ "LONG BODY" SOLID SLEEVE COUPLINGS AND MJ TRANSITION SLEEVE COUPLINGS CONNECT TO EXISTING 12" PVC WATERLINE W/ PROPOSED TRANSITION COUPLING  
 -W1- STA 9+75.00  
 -L- STA 186+74.02  
 OFFSET 133.01 (LT)

PROPOSED 12" VALVE  
 -W1- STA 9+95.00  
 -L- STA 186+83.46  
 OFFSET 115.38 (LT)

PROPOSED 270 LF OF 24" ENCASEMENT PIPE

PROPOSED 468 LF OF ABANDONED 12" UTILITY PIPE

EXISTING FIRE HYDRANT TO BE RELOCATED

PROPOSED 468 LF OF 12" WATERLINE

PROPOSED 150 LF OF 24" ENCASEMENT PIPE

PROPOSED 12" VALVE  
 -W1- STA 14+53.45  
 -L- STA 188+55.37  
 OFFSET 308.62 (RT)

MJ "LONG BODY" SOLID SLEEVE COUPLINGS AND MJ TRANSITION SLEEVE COUPLINGS CONNECT TO EXISTING 12" PVC WATERLINE W/ PROPOSED TRANSITION COUPLING  
 -W1- STA 14+73.45  
 -L- STA 188+61.03  
 OFFSET 327.81 (RT)

EXISTING 12" PLUG VALVE PER BRUNSWICK COUNTY PUBLIC UTILITIES RECORDS

1. ALL WATERLINES SHALL BE CONSTRUCTED TO A MINIMUM DEPTH OF 48" UNLESS OTHERWISE SPECIFIED.  
 2. ALL WATERLINES SHALL BE CONSTRUCTED TO A MINIMUM COVER OF 48" UNLESS OTHERWISE SPECIFIED.  
 3. ALL WATERLINES SHALL BE CONSTRUCTED TO A MINIMUM COVER OF 48" UNLESS OTHERWISE SPECIFIED.  
 4. ALL WATERLINES SHALL BE CONSTRUCTED TO A MINIMUM COVER OF 48" UNLESS OTHERWISE SPECIFIED.  
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 8. ALL WATERLINES SHALL BE CONSTRUCTED TO A MINIMUM COVER OF 48" UNLESS OTHERWISE SPECIFIED.  
 9. ALL WATERLINES SHALL BE CONSTRUCTED TO A MINIMUM COVER OF 48" UNLESS OTHERWISE SPECIFIED.  
 10. ALL WATERLINES SHALL BE CONSTRUCTED TO A MINIMUM COVER OF 48" UNLESS OTHERWISE SPECIFIED.

MATCH TO SHEET 14 - L - STA. 166+00.00  
 MATCH TO SHEET 16 - L - STA. 194+00.00

MATCH TO SHEET 22 (UC-9)  
 -Y7- STA. 39+50.00

5/14/99

$PI\ Sta\ 243+38.67$   
 $\Delta = 17^\circ 38' 15.0" (LT)$   
 $D = 0' 29' 53.6"$   
 $L = 3,540.07'$   
 $T = 1,784.15'$   
 $R = 11,500.00'$   
 $e = 2.5\%$

WATERLINE OWNER: CAPE FEAR PUBLIC  
 UTILITY AUTHORITY (CFPUA)  
 (--- W (M3) --- AND --- W (M3) ---)

PREPARED IN THE OFFICE OF:  
  
**Kimley-Horn  
and Associates, Inc.**  
 P.O. BOX 33068  
 RALEIGH, NORTH CAROLINA 27636-3068  
 PHONE: (919) 677-2000  
 FAX: (919) 677-2050  
 PE NO. F-102

PROJECT REFERENCE NO. R-2633BA	SHEET NO. UC-5
DESIGNED BY: JJW	
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

**NOTES:**  
 1. CONTRACTOR SHALL CONTACT HANSON PIPE & PRECAST TO ARRANGE FOR A TECHNICIAN TO BE PRESENT TO PERFORM AN IDENTIFICATION OF THE RCCP CLASS AND TYPE, AND TO MEASURE THE PIPE FOR THE MANUFACTURE OF THE REQUIRED RCCP TO DIP TRANSITION COUPLINGS.  
 2. EXACT CONNECTION LOCATION WILL DEPEND ON THE LOCATION OF THE EXISTING JOINT, WHICH SHALL BE FIELD LOCATED BY THE CONTRACTOR.

**UTILITY CONSTRUCTION**

BEGIN "DUMMY" ENCASEMENT PIPE  
 -ENC2- STA 9+95.16  
 -L- STA 224+65.11  
 OFFSET 109.96 (LT)  
 CAP END AS REQUIRED TO PREVENT  
 WATER AND/OR SOIL INTRUSION

**CONNECTION DETAIL NO. 2**  
 CONNECT TO EXISTING  
 30" RCCP RAW WATER  
 PIPELINE W/ PROPOSED  
 RCCP x DIP TRANSITION  
 COUPLING  
 -W2- STA 9+55.04  
 -L- STA 224+21.02  
 OFFSET 154.10 (LT)  
 SEE NOTES 1 AND 2

**PROPOSED 30" VALVE**  
 -W2- STA 9+75.04  
 -L- STA 224+40.61  
 OFFSET 150.10 (LT)

**PROPOSED 30" 45° BEND**  
 -W2- STA 9+95.04  
 -L- STA 224+60.21  
 OFFSET 146.09 (LT)

**PROPOSED 30" 45° BEND**  
 -W2- STA 10+34.97  
 -L- STA 224+88.58  
 OFFSET 117.99 (LT)

**PROPOSED 1000 LF OF ABANDONED  
30" UTILITY PIPE**

**PROPOSED 220 LF OF  
42" "DUMMY" ENCASEMENT PIPE**

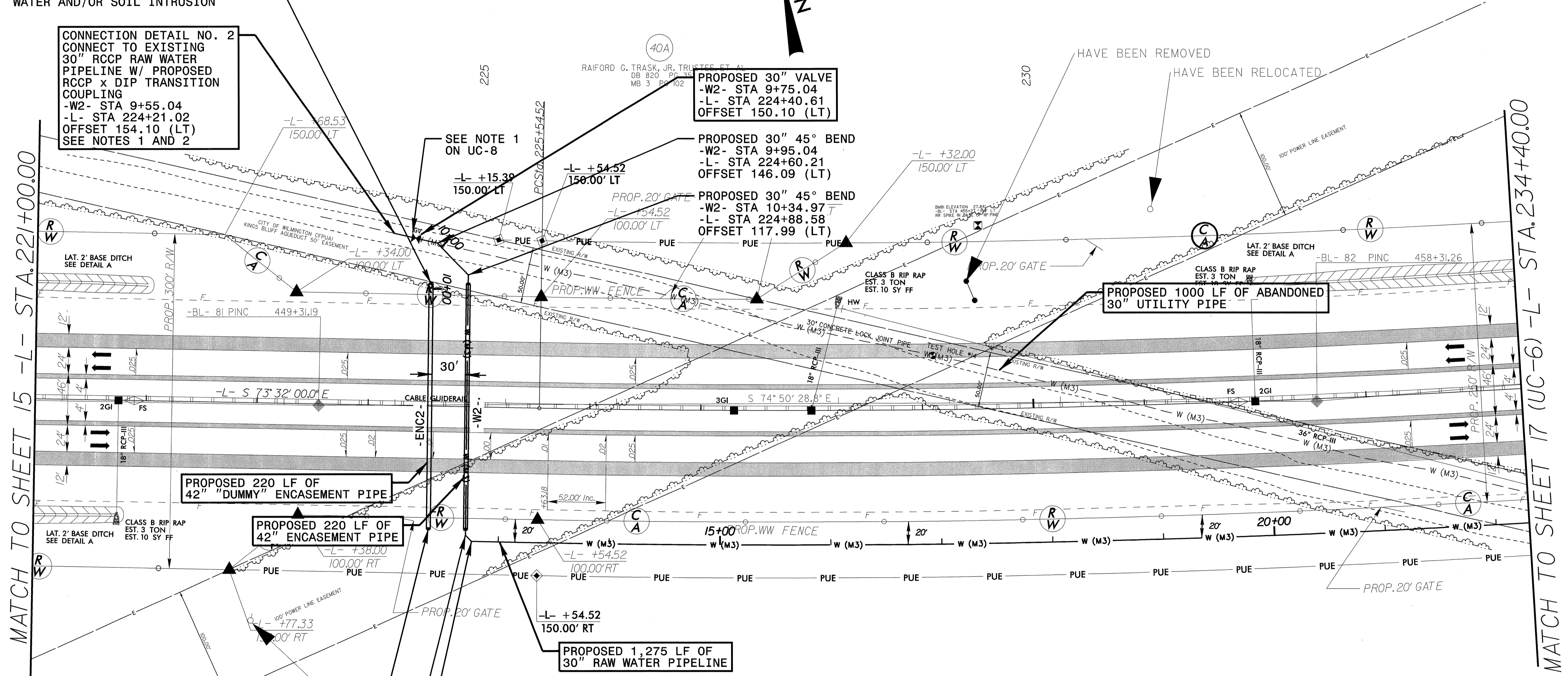
**PROPOSED 220 LF OF  
42" ENCASEMENT PIPE**

**PROPOSED 1,275 LF OF  
30" RAW WATER PIPELINE**

END "DUMMY" ENCASEMENT PIPE  
 -ENC2- STA 12+15.16  
 -L- STA 224+66.14  
 OFFSET 110.03 (RT)  
 CAP END AS REQUIRED TO PREVENT  
 WATER AND/OR SOIL INTRUSION

**PROPOSED 30" 45° BEND**  
 -W2- STA 12+68.00  
 -L- STA 224+89.66  
 OFFSET 115.04 (RT)

**PROPOSED 30" 45° BEND**  
 -W2- STA 12+75.85  
 -L- STA 224+95.22  
 OFFSET 120.58 (LT)



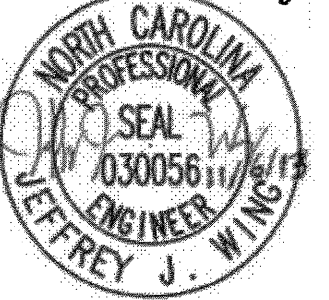
SEE SHEET UC-15 FOR -ENC2- PROFILE  
 SEE SHEET UC-17 FOR -W2- PROFILE

5/14/99

-L-  
PI Sta 243+38.67  
 $\Delta = 17^{\circ} 38' 15.0" (LT)$   
 $D = 0^{\circ} 29' 53.6"$   
 $L = 3540.07'$   
 $T = 1,784.15'$   
 $R = 11,500.00'$   
 $e = 2.5\%$

WATERLINE OWNER: CAPE FEAR PUBLIC  
UTILITY AUTHORITY (CFPUA)  
(--- W (M3) --- AND --- W (M3) ---)

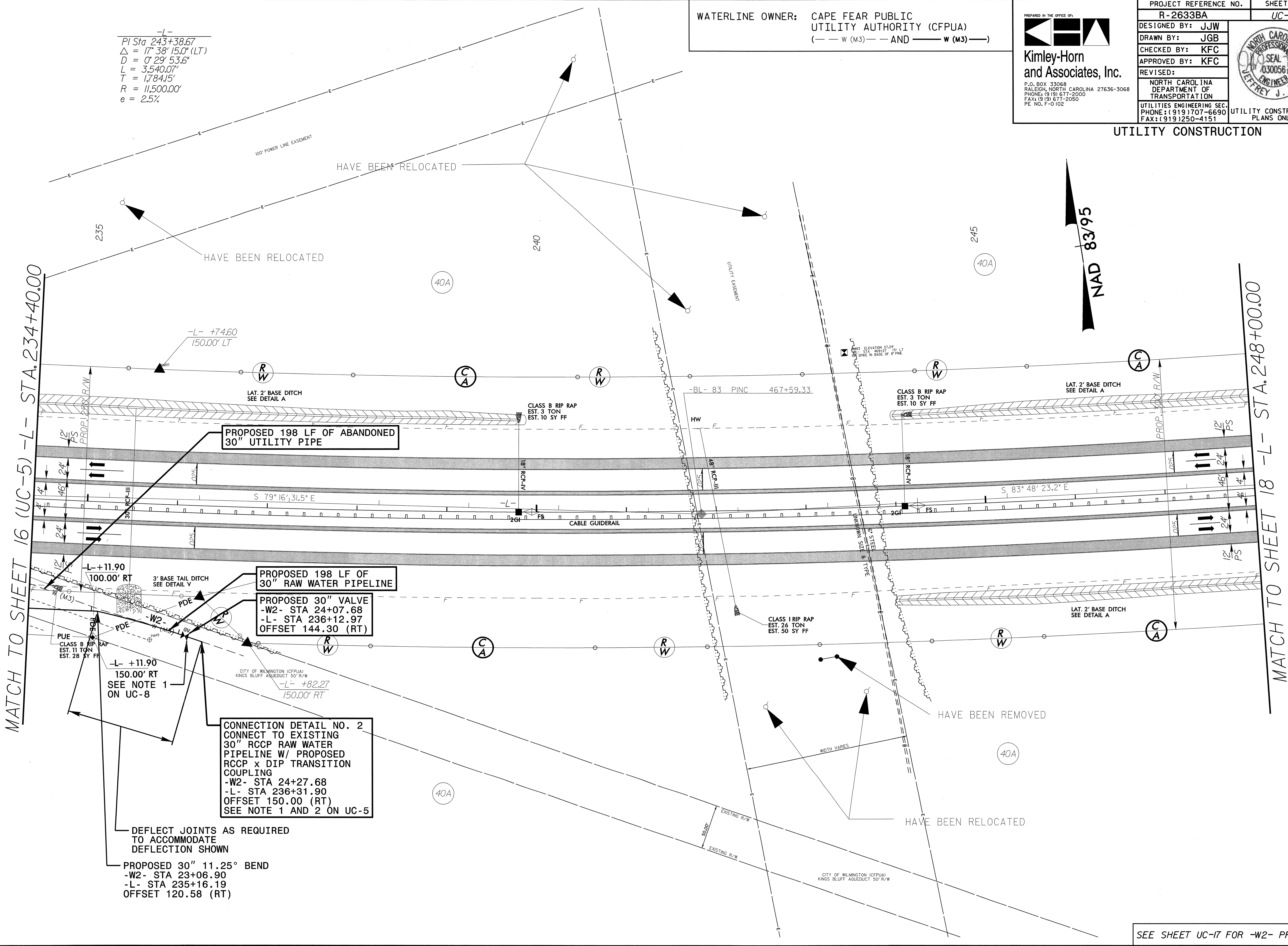
PREPARED IN THE OFFICE OF:  
**Kimley-Horn  
and Associates, Inc.**  
P.O. BOX 33068  
RALEIGH, NORTH CAROLINA 27636-3068  
PHONE: (919) 677-2000  
FAX: (919) 677-2050  
PE NO. F-0102

PROJECT REFERENCE NO. <b>R-2633BA</b>	SHEET NO. <b>UC-6</b>
DESIGNED BY: <b>JJW</b>	
DRAWN BY: <b>JGB</b>	
CHECKED BY: <b>KFC</b>	
APPROVED BY: <b>KFC</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

MATCH TO SHEET 16 (UC-5) -L- STA. 234+40.00

MATCH TO SHEET 18 -L- STA. 248+00.00



DEFLECT JOINTS AS REQUIRED  
TO ACCOMMODATE  
DEFLECTION SHOWN  
PROPOSED 30" 11.25° BEND  
-W2- STA 23+06.90  
-L- STA 235+16.19  
OFFSET 120.58 (RT)

CONNECTION DETAIL NO. 2  
CONNECT TO EXISTING  
30" RCCP RAW WATER  
PIPELINE W/ PROPOSED  
RCCP x DIP TRANSITION  
COUPLING  
-W2- STA 24+27.68  
-L- STA 236+31.90  
OFFSET 150.00 (RT)  
SEE NOTE 1 AND 2 ON UC-5

PROPOSED 198 LF OF  
30" RAW WATER PIPELINE  
PROPOSED 30" VALVE  
-W2- STA 24+07.68  
-L- STA 236+12.97  
OFFSET 144.30 (RT)

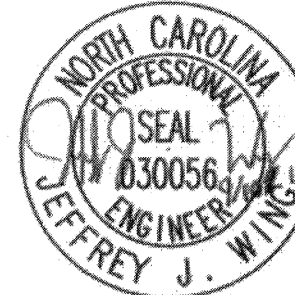
PROPOSED 198 LF OF ABANDONED  
30" UTILITY PIPE

SEE SHEET UC-17 FOR -W2- PROFILE



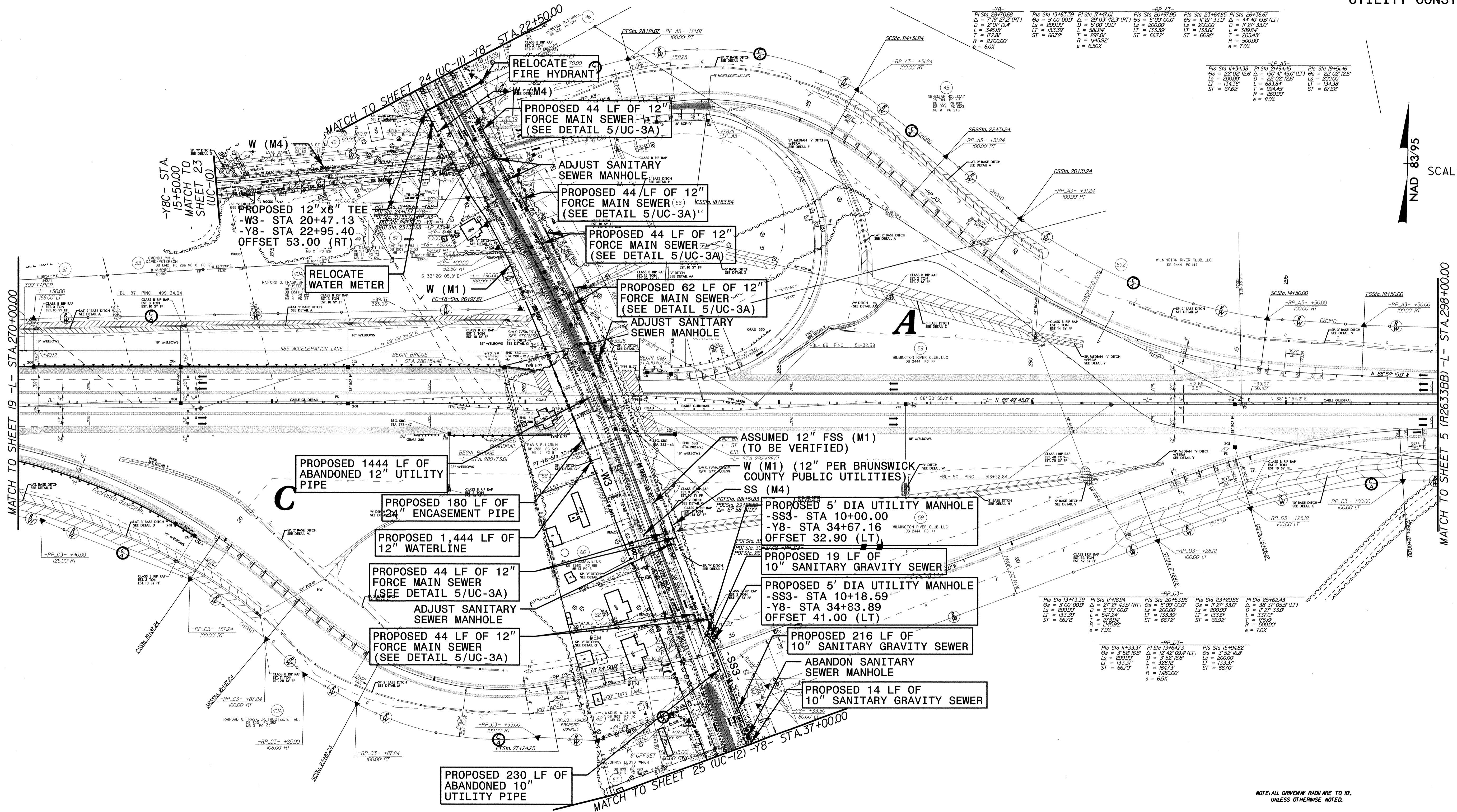
WATERLINE OWNER: TOWN OF NAVASSA  
 (--- W (M4) ---)  
 BRUNSWICK COUNTY PUBLIC UTILITIES  
 (--- W (M1) --- AND --- W (M) ---)  
 SEWER LINE OWNER: TOWN OF NAVASSA  
 (--- SS (M4) ---)  
 BRUNSWICK COUNTY PUBLIC UTILITIES  
 (--- FSS (M1) ---)

PREPARED IN THE OFFICE OF:  
  
**Kimley-Horn  
 and Associates, Inc.**  
 P.O. BOX 33068  
 RALEIGH, NORTH CAROLINA 27636-3068  
 PHONE: (919) 677-2000  
 FAX: (919) 677-2050  
 PE NO. F-0102

PROJECT REFERENCE NO. <b>R-2633BA</b>	SHEET NO. <b>UC-7</b>
DESIGNED BY: <b>JJW</b>	 NORTH CAROLINA PROFESSIONAL ENGINEER JEFFREY J. WINES 030056
DRAWN BY: <b>JGB</b>	
CHECKED BY: <b>KFC</b>	
APPROVED BY: <b>KFC</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

NAD 83/95  
 SCALE: 1"=100'



PI Sta 13+83.39 $\Delta = 7^{\circ} 19' 57.2" (RT)$ $D = 2^{\circ} 00' 19.4"$ $L = 545.15'$ $T = 172.81'$ $R = 27000.00'$ $e = 6.0X$	PI Sta 13+83.39 $\Delta = 5^{\circ} 00' 00.0"$ $D = 2000.00'$ $L = 133.39'$ $T = 66.72'$ $R = 2000.00'$ $e = 6.50X$	PI Sta 17+47.01 $\Delta = 29^{\circ} 03' 42.3" (RT)$ $D = 5^{\circ} 00' 00.0"$ $L = 133.39'$ $T = 297.01'$ $R = 144532'$ $e = 6.50X$	PI Sta 23+64.85 $\Delta = 1^{\circ} 07' 33.0" (LT)$ $D = 2000.00'$ $L = 133.39'$ $T = 66.92'$ $R = 2000.00'$ $e = 7.0X$	PI Sta 26+36.67 $\Delta = 44^{\circ} 40' 18.0" (LT)$ $D = 11^{\circ} 07' 33.0"$ $L = 365.84'$ $T = 205.43'$ $R = 5200.00'$ $e = 7.0X$
--	---	--	---	---

PI Sta 11+34.38 $\Delta = 22^{\circ} 02' 12.6" (LT)$ $D = 2000.00'$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$	PI Sta 21+94.45 $\Delta = 150^{\circ} 41' 45.0" (LT)$ $D = 22^{\circ} 02' 12.6"$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$
--	---

PI Sta 11+34.38 $\Delta = 22^{\circ} 02' 12.6" (LT)$ $D = 2000.00'$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$	PI Sta 21+94.45 $\Delta = 150^{\circ} 41' 45.0" (LT)$ $D = 22^{\circ} 02' 12.6"$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$
--	---

PI Sta 11+34.38 $\Delta = 22^{\circ} 02' 12.6" (LT)$ $D = 2000.00'$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$	PI Sta 21+94.45 $\Delta = 150^{\circ} 41' 45.0" (LT)$ $D = 22^{\circ} 02' 12.6"$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$
--	---

PI Sta 11+34.38 $\Delta = 22^{\circ} 02' 12.6" (LT)$ $D = 2000.00'$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$	PI Sta 21+94.45 $\Delta = 150^{\circ} 41' 45.0" (LT)$ $D = 22^{\circ} 02' 12.6"$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$
--	---

PI Sta 11+34.38 $\Delta = 22^{\circ} 02' 12.6" (LT)$ $D = 2000.00'$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$	PI Sta 21+94.45 $\Delta = 150^{\circ} 41' 45.0" (LT)$ $D = 22^{\circ} 02' 12.6"$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$
--	---

PI Sta 11+34.38 $\Delta = 22^{\circ} 02' 12.6" (LT)$ $D = 2000.00'$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$	PI Sta 21+94.45 $\Delta = 150^{\circ} 41' 45.0" (LT)$ $D = 22^{\circ} 02' 12.6"$ $L = 134.39'$ $T = 67.62'$ $R = 2000.00'$ $e = 8.0X$
--	---

NOTE: ALL DRAWING RADII ARE TO D,  
 UNLESS OTHERWISE NOTED.

SEE SHEET UC-18 FOR -W3- PROFILE  
 SEE SHEET UC-16 FOR -SS3- PROFILE

WATERLINE OWNER: BRUNSWICK COUNTY PUBLIC UTILITIES  
 (12" PVC WATERLINE)  
 (--- W (M1) --- AND --- W (M1) ---)  
 CAPE FEAR PUBLIC UTILITY  
 AUTHORITY (CFPUA)  
 (30" CONCRETE WATERLINE)  
 (--- W (M3) --- AND --- W (M3) ---)



PROJECT REFERENCE NO. R-2633BA	SHEET NO. UC-8
DESIGNED BY: JJW	
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

NOTE:  
1. THE GROUND SHALL BE MOUNDED AT A 4:1 SLOPE (MAX)  
AROUND THE PROPOSED GATE VALVES.

-Y7-

PI Sta 14+00.93 Δ = 9' 36" 16.6" (RT) D = 1' 29" 59.6" L = 640.35' T = 320.93' R = 3,820.00'	PIs Sta 18+67.29 Θs = 1' 52" 21.1" Θs = 5' 58" 14.3" Ls = 250.00' LT = 146.94' ST = 103.43'	PI Sta 21+34.33 Δ = 15' 33" 42.2" (RT) D = 4' 46" 28.7" L = 325.92' T = 163.97' R = 1,200.00' e = 8.0%
---	--	--

-SVRD7-

PI Sta 10+87.08 Δ = 8' 45" 00.0" (RT) D = 8' 51" 04.0" L = 103.54' T = 63.86' R = 70.00' e = 4.0%	PI Sta 14+52.06 Δ = 9' 45" 00.0" (LT) D = 6' 59" 14.2" L = 139.54' T = 69.94' R = 820.00' e = NC
---	--

COORDINATE THE INSTALLATION  
OF THE PROPOSED 30" RAW  
WATER PIPELINE WITH CAPE  
FEAR PUBLIC UTILITY  
AUTHORITY AND THE EXISTING  
BRIDGE DEMOLITION WORK

PROPOSED 190 LF OF  
ABANDONED 30" PIPE

PROPOSED 420 LF  
OF ABANDONED  
12" UTILITY PIPE

PROPOSED 12" 45° BEND  
-W9- STA 11+24.65  
-Y7- STA 20+27.46  
OFFSET 108.85 (LT)

ALL DUCTILE IRON PIPE AND FITTINGS  
SHALL BE POLYETHYLENE WRAPPED  
BETWEEN -W9- STA 10+00.00 AND  
-W9- STA 13+65.00

PROPOSED 12" VALVE  
-W9- STA 10+54.26  
-Y7- STA 19+84.75  
OFFSET 55.24 (LT)

PROPOSED 475 LF OF  
12" WATERLINE

RELOCATE  
FIRE HYDRANT

CONNECTION DETAIL NO. 4  
CONNECT TO EXISTING  
12" PVC WATERLINE W/  
PROPOSED TRANSITION  
COUPLING,  
-W9- STA 10+00.00  
-Y7- STA 19+42.46  
OFFSET 30.51 (LT)

RELOCATE  
WATER METER

PROPOSED 12" 45° BEND  
-W9- STA 10+23.63  
-Y7- STA 19+65.47  
OFFSET 32.01 (LT)

PROPOSED 30" VALVE  
-W4- STA 10+00.00  
-Y7- STA 21+44.25  
OFFSET 86.50 (RT)

CONNECTION DETAIL NO. 2  
CONNECT TO EXISTING  
30" RCCP RAW WATER  
PIPELINE W/ PROPOSED  
30" RCCP x DIP TRANSITION  
COUPLING,  
-W4- STA 9+80.00  
-Y7- STA 21+34.17  
OFFSET 104.22 (RT)  
SEE NOTE 1 AND 2 ON UC-5

BEGIN "DUMMY" ENCASUREMENT PIPE  
-ENC3- STA 10+00.00  
-Y7- STA 21+84.20  
OFFSET 62.01 (RT)  
CAP END AS REQUIRED TO PREVENT  
WATER AND/OR SOIL INTRUSION

PROPOSED 180 LF OF  
42" ENCASUREMENT PIPE

PROPOSED 180 LF OF  
42" "DUMMY" ENCASUREMENT PIPE

CONNECTION DETAIL NO. 2  
CONNECT TO EXISTING 30" RCCP  
RAW WATER PIPELINE W/  
PROPOSED 30" RCCP x DIP  
TRANSITION COUPLING,  
-W4- STA 12+83.11  
-Y7- STA 22+52.92  
OFFSET 166.26 (LT)  
SEE NOTE 1 AND 2 ON UC-5

PROPOSED 30" VALVE  
-W4- STA 12+63.11  
-Y7- STA 22+46.01  
OFFSET 147.85 (LT)

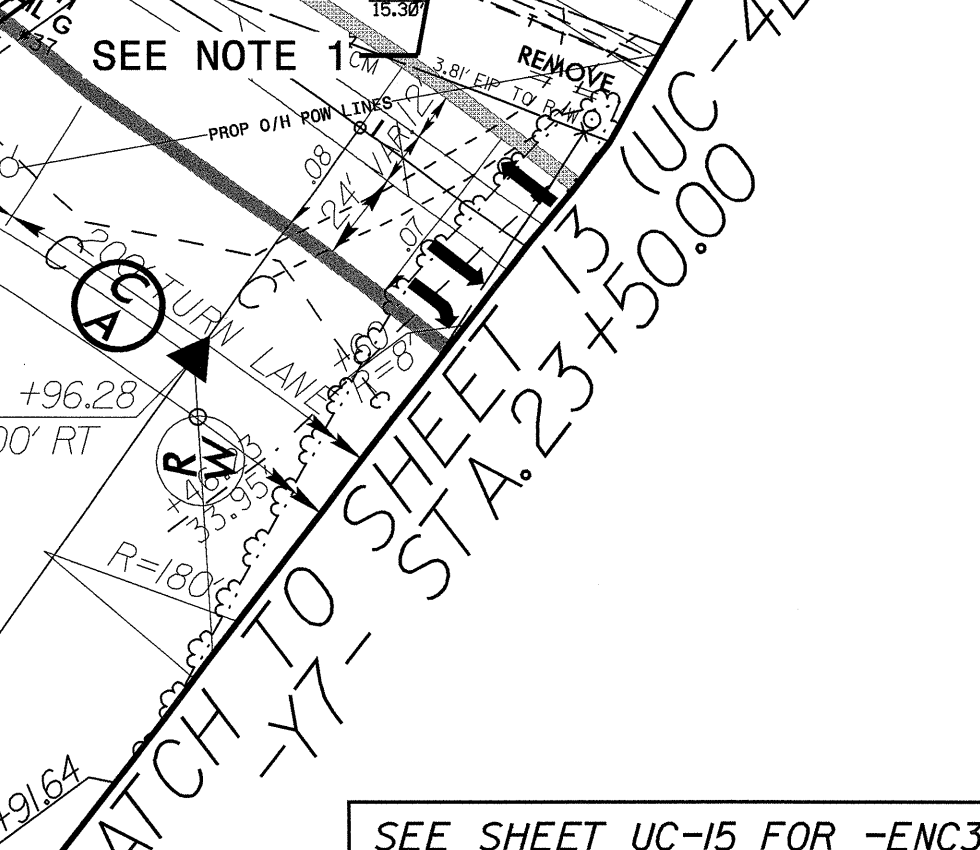
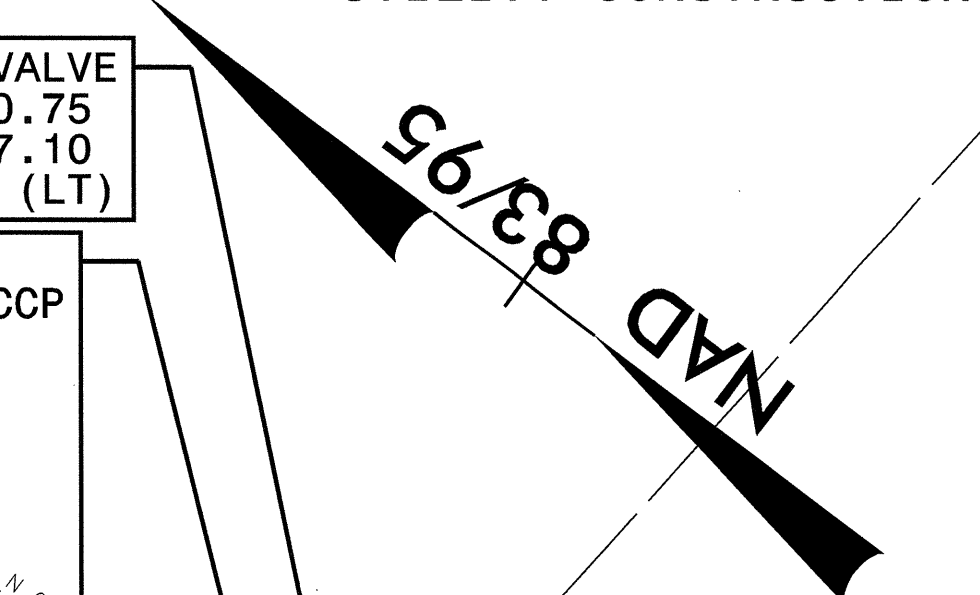
PROPOSED 30" 45° BEND  
-W4- STA 12+43.11 ET UX  
-Y7- STA 22+38.85  
OFFSET 129.51 (LT)

END "DUMMY" ENCASUREMENT PIPE  
-ENC3- STA 11+80.00  
-Y7- STA 22+52.20  
OFFSET 104.22 (LT)  
CAP END AS REQUIRED  
TO PREVENT WATER  
AND/OR SOIL INTRUSION

PROPOSED 30" 45° BEND  
-W4- STA 12+31.53  
-Y7- STA 22+29.23  
OFFSET 124.97 (LT)

CONNECTION DETAIL NO. 4  
CONNECT TO EXISTING  
12" PVC WATERLINE  
W/ PROPOSED  
TRANSITION COUPLING  
-W9- STA 14+65.75  
-Y7- STA 23+39.58  
OFFSET 110.24 (LT)

PROPOSED 12" 11.25°  
BEND  
-W9- STA 14+50.75  
-Y7- STA 23+26.36  
OFFSET 105.53 (LT)



SEE SHEET UC-15 FOR -ENC3- PROFILE  
SEE SHEET UC-21 FOR -W9- PROFILE  
SEE SHEET UC-19 FOR -W4- PROFILE

R/W Revisions September 17, 2008, Revised R/W on Parcels 15, 19, & 23 to cover driveway pipes -Y7- Sta. 17+20.35 (RT) to 21+20 (RT).  
 R/W Revisions September 17, 2008, Added R/W offset label at -Y7- Sta. 20+46.69, 69.83, RT.  
 R/W Revisions October 30, 2009, NAME AND DEED CORRECTION ON PARCEL 22, EXTENDED PDE TO INCLUDE PIPE ON PARCEL 15, CHANGED NAME ON PARCEL 16.  
 R/W Revisions October 30, 2009, REMOVED PARCELS 17 AND 18 - NO CLAIM NAME AND DEED CHANGE ON PARCEL 19.  
 R/W Revisions November 17, 2011, ADDED PROPERTY LINE AND ADDED PARCEL 16A.  
 R/W Revisions June 22, 2011, EXTENDED C/A TO -Y7- STA 20+46.00 RT, AND FENCE.  
 R/W Revisions September 9, 2008, REMOVED R/W ON PARCELS 16 AND 18A AND CHANGED R/W ON PARCEL 19.

5/14/99

WATERLINE OWNER: BRUNSWICK COUNTY PUBLIC UTILITIES  
 (--- W (M1) --- AND --- W (M1) ---)  
 H2GO BRUNSWICK REGIONAL WATER AND SEWER  
 (--- W (M2) ---)

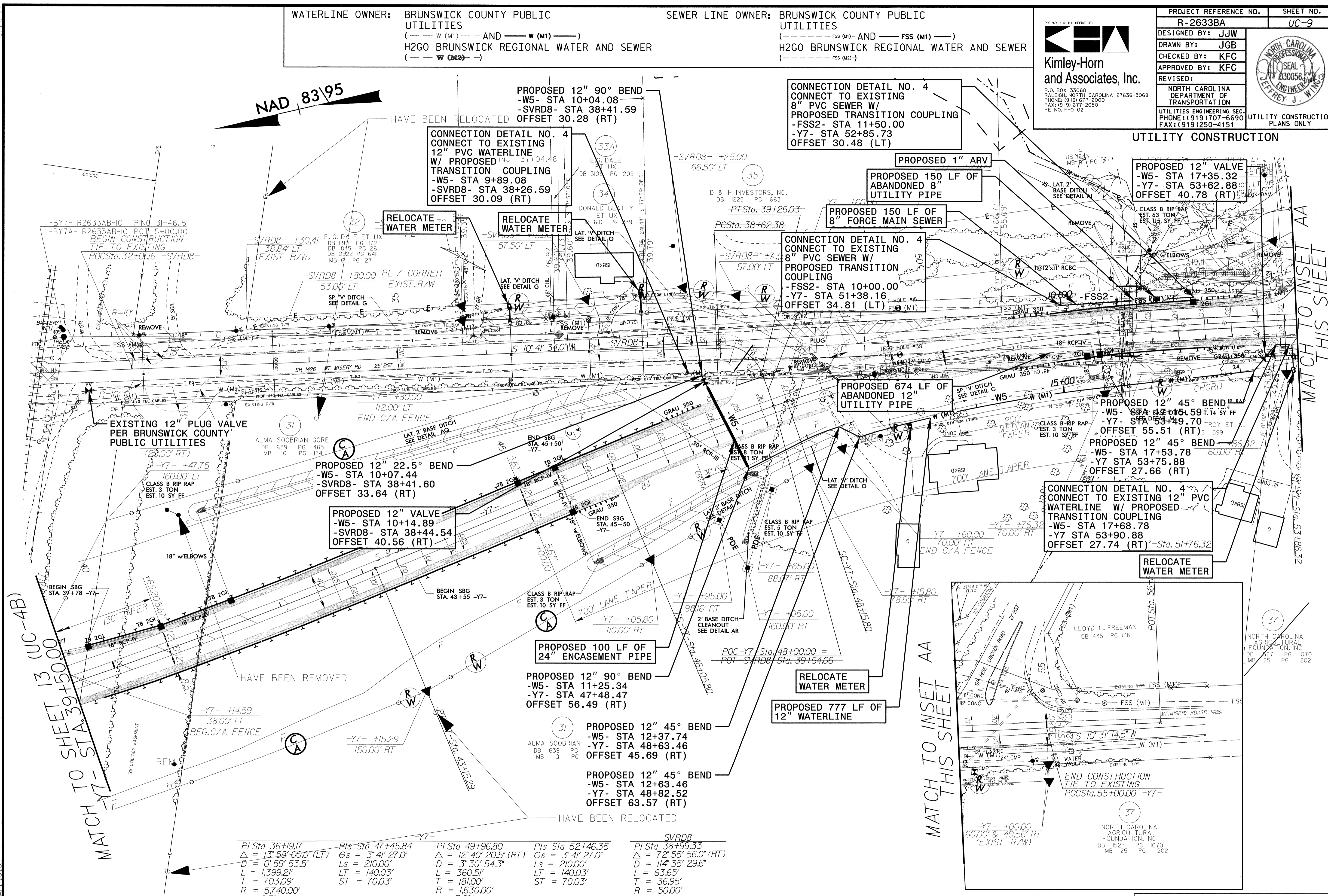
SEWER LINE OWNER: BRUNSWICK COUNTY PUBLIC UTILITIES  
 (----- FSS (M1) - AND - FSS (M1) -----)  
 H2GO BRUNSWICK REGIONAL WATER AND SEWER  
 (----- FSS (M2) -----)



P.O. BOX 33068  
 RALEIGH, NORTH CAROLINA 27636-3068  
 PHONE: (919) 677-2000  
 FAX: (919) 677-2050  
 PE NO. F-102

PROJECT REFERENCE NO. <b>R-2633BA</b>	SHEET NO. <b>UC-9</b>
DESIGNED BY: <b>JJW</b>	
DRAWN BY: <b>JGB</b>	
CHECKED BY: <b>KFC</b>	
APPROVED BY: <b>KFC</b>	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
REVISED:	UTILITY CONSTRUCTION PLANS ONLY

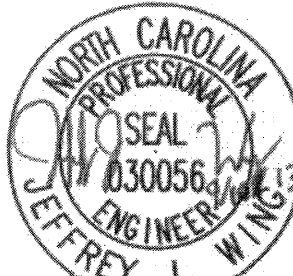
R/W REVISION: 10/30/09 - LABELED PDE ON PARCEL 31. NAME AND DEED CHANGE ON PARCEL 33. ADDED NEW PARCEL 35A. ADDED NEW PARCEL AND PROPERTY LINE PARCEL 33A, 35B, AND 35C. MOVED CU-DE-SAC FROM STA 31+50 TO 32+44.8 -SVRD8-  
 R/W REVISION: 1/11/11 - DELETED PARCEL 33 AND COMBINED WITH PARCEL 32 AND ADDED DEED BOOK 2922 PAGE 641. CHANGED MONUMENT TO PL/CORNER ON PARCEL 32.  
 R/W REVISION: 6/22/11 - CHANGED PARCEL OWNERS ON PARCELS 33A, 35 AND 35A.



PI Sta 36+19.17 $\Delta = 13^{\circ} 58' 00.0''$ (LT) $D = 0^{\circ} 59' 53.5''$ $L = 1,399.21'$ $T = 703.09'$ $R = 5,740.00'$ $e = 2.5\%$	Pls Sta 47+45.84 $\Delta_s = 3^{\circ} 41' 27.0''$ $L_s = 210.00'$ $LT = 140.03'$ $ST = 70.03'$	PI Sta 49+96.80 $\Delta = 12^{\circ} 40' 20.5''$ (RT) $D = 3^{\circ} 30' 54.3''$ $L = 360.51'$ $T = 181.00'$ $R = 1,630.00'$ $e = 7.0\%$	Pls Sta 52+46.35 $\Delta_s = 3^{\circ} 41' 27.0''$ $L_s = 210.00'$ $LT = 140.03'$ $ST = 70.03'$	-SVRD8- PI Sta 38+99.33 $\Delta = 72^{\circ} 55' 56.0''$ (RT) $D = 114^{\circ} 35' 29.6''$ $L = 63.65'$ $T = 36.95'$ $R = 50.00'$ $e = 4.0\%$
--	---	--	---	--

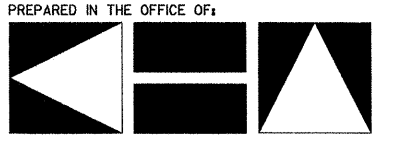
NOTE: ALL DRIVEWAY RADII ARE TO BE 10', UNLESS OTHERWISE NOTED.

SEE SHEET UC-16 FOR -FSS2- PROFILE  
 SEE SHEET UC-19 FOR -W5- PROFILE

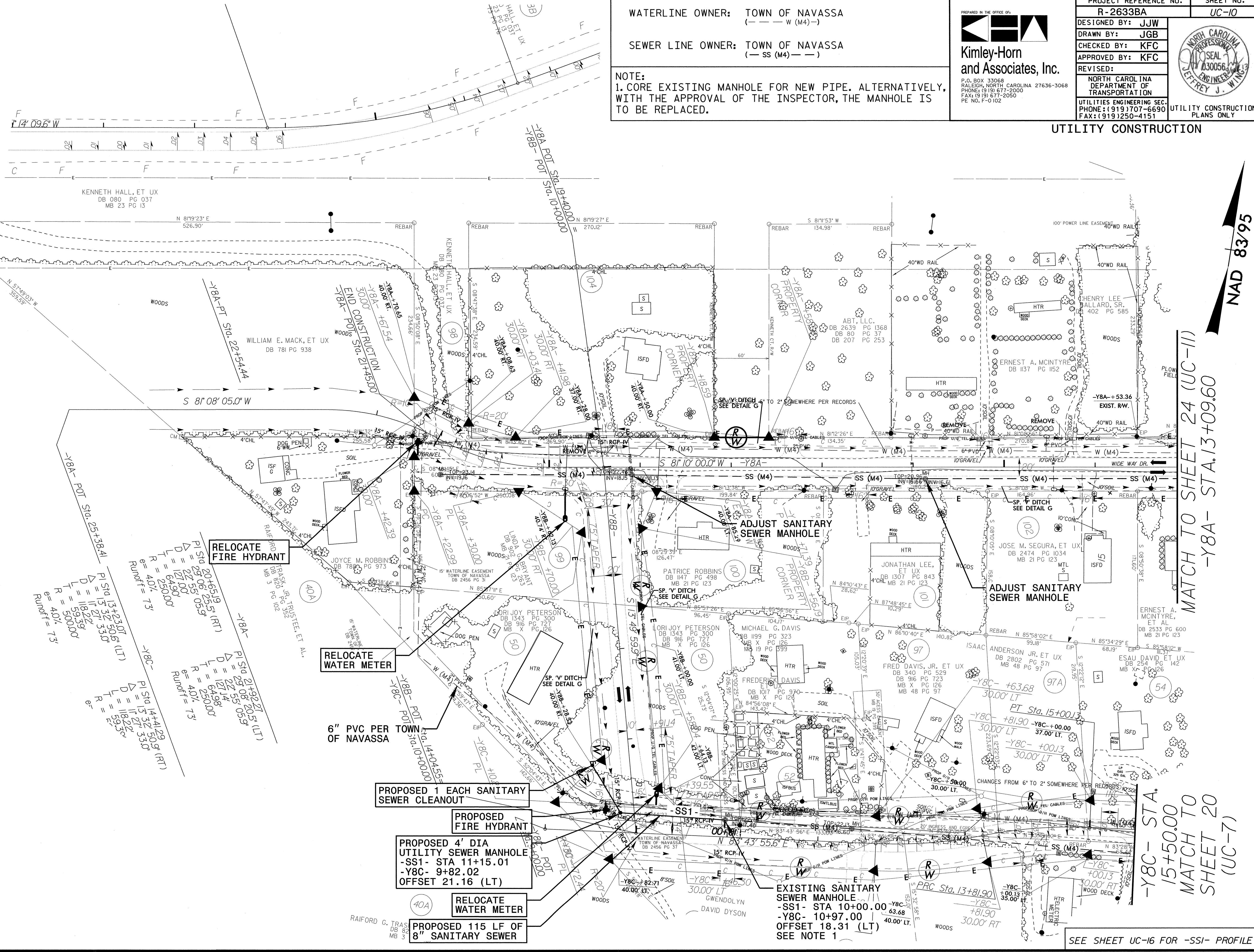
PROJECT REFERENCE NO.	R-2633BA	SHEET NO.	UC-10
DESIGNED BY:	JJW		
DRAWN BY:	JGB		
CHECKED BY:	KFC		
APPROVED BY:	KFC		
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		
UTILITY CONSTRUCTION			UTILITY CONSTRUCTION PLANS ONLY

WATERLINE OWNER: TOWN OF NAVASSA  
 (--- W (M4) ---)

SEWER LINE OWNER: TOWN OF NAVASSA  
 (--- SS (M4) ---)

PREPARED IN THE OFFICE OF:  
  
**Kimley-Horn and Associates, Inc.**  
 P.O. BOX 33068  
 RALEIGH, NORTH CAROLINA 27636-3068  
 PHONE: (919) 677-2000  
 FAX: (919) 677-2050  
 PE NO. F-6102

NOTE:  
 1. CORE EXISTING MANHOLE FOR NEW PIPE. ALTERNATIVELY, WITH THE APPROVAL OF THE INSPECTOR, THE MANHOLE IS TO BE REPLACED.



Revision: September 17, 2008. Revised r/w limits & labels at -Y8A- & -Y8B- due to new drainage ditches. REMOVED R/W ON PARCELS 98, 101, 101A, 102, 102A, 103, AND 104. ADDED R/W ON PARCEL 98. R/W REVISION: 1. 11 - REMOVED R/W ALONG -Y8A- AND ADDED PARCELS 101A AND 102A. ADDED TCE ON PARCELS 101A AND 102A. ADDED TCE DISTANCE ON PARCEL 100 TO MISS WELL. REDUCED R/W ALONG Y8B AND ADDED TCE. REDUCED SIGHT DISTANCE ON PARCELS 50, 51, 52, 53, 54, AND 97. REVISED CONSTRUCTION EASEMENT ON PARCELS 40, 50, 51, 53, 54, 97, 99, 100, 101, 101A, 102, 103 AND 103A. PARCELS 101A AND 102A REMOVED FROM PLANS, NO CLAIMS. 5/14/99

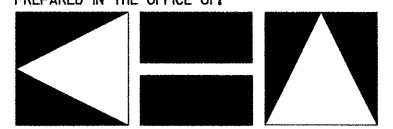
MATCH TO SHEET 24 (UC-11)  
 -Y8A- STA. 13+09.60  
 MATCH TO SHEET 20 (UC-7)  
 -Y8C- STA. 15+50.00

NAD 83/95

SEE SHEET UC-16 FOR -SSI- PROFILE

WATERLINE OWNER: BRUNSWICK COUNTY PUBLIC UTILITIES  
 (--- W (M1) --- AND --- W (M1) ---)  
 TOWN OF NAVASSA  
 (--- W (M4) ---)

SEWER LINE OWNER: BRUNSWICK COUNTY PUBLIC UTILITIES  
 (--- FSS (M1) ---)  
 TOWN OF NAVASSA  
 (--- SS (M4) ---)

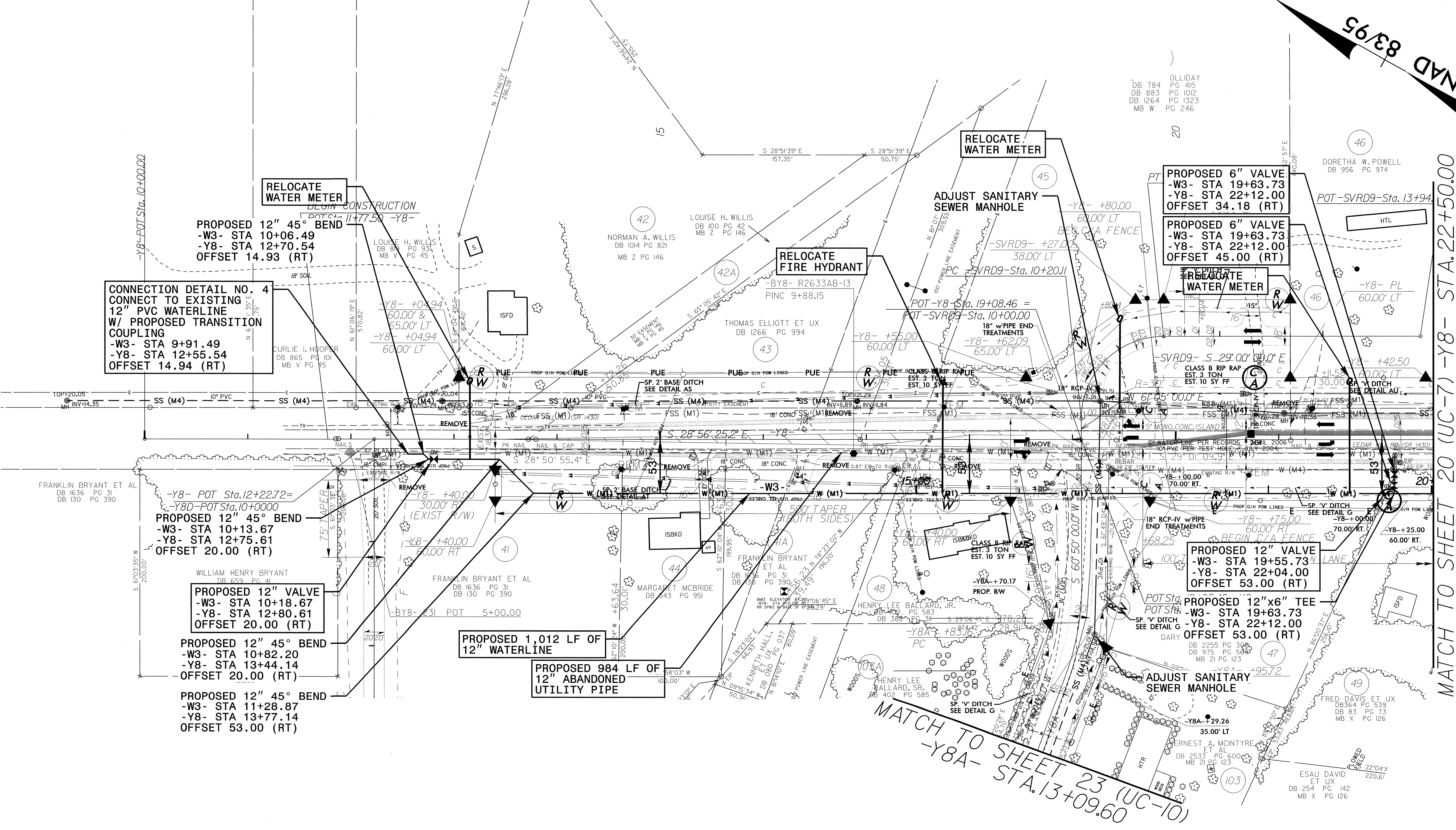
PREPARED IN THE OFFICE OF:  
  
**Kimley-Horn  
 and Associates, Inc.**  
 P.O. BOX 33068  
 RALEIGH, NORTH CAROLINA 27636-3068  
 PHONE: (919) 677-2000  
 FAX: (919) 677-2050  
 PE NO. F-0102

PROJECT REFERENCE NO.	SHEET NO.
R-2633BA	UC-11
DESIGNED BY: JJW	
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	



**-Y8A-**  
 PI Sta 11+85.37  
 $\Delta = 20' 20'' 00.0''$  (RT)  
 $D = 22' 55'' 05.9''$   
 $L = 88.72'$   
 $T = 44.83'$   
 $R = 250.00'$   
 $e = 2.0\%$

**-SVRD9-**  
 PI Sta 10+99.99  
 $\Delta = 89' 55'' 00.0''$  (RT)  
 $D = 71' 37'' 11.0''$   
 $L = 125.55'$   
 $T = 79.88'$   
 $R = 80.00'$   
 $e = 3.5\%$



**CONNECTION DETAIL NO. 4  
 CONNECT TO EXISTING  
 12" PVC WATERLINE  
 W/ PROPOSED TRANSITION  
 COUPLING**  
 -W3- STA 9+91.49  
 -Y8- STA 12+55.54  
 OFFSET 14.94 (RT)

**PROPOSED 12" 45° BEND**  
 -W3- STA 10+06.49  
 -Y8- STA 12+70.54  
 OFFSET 14.93 (RT)

**PROPOSED 12" 45° BEND**  
 -W3- STA 10+13.67  
 -Y8- STA 12+75.61  
 OFFSET 20.00 (RT)

**PROPOSED 12" VALVE**  
 -W3- STA 10+18.67  
 -Y8- STA 12+80.61  
 OFFSET 20.00 (RT)

**PROPOSED 12" 45° BEND**  
 -W3- STA 10+82.20  
 -Y8- STA 13+44.14  
 OFFSET 20.00 (RT)

**PROPOSED 12" 45° BEND**  
 -W3- STA 11+28.87  
 -Y8- STA 13+77.14  
 OFFSET 53.00 (RT)

**PROPOSED 1,012 LF OF  
 12" WATERLINE**

**PROPOSED 984 LF OF  
 12" ABANDONED  
 UTILITY PIPE**

**RELOCATE  
 WATER METER**

**ADJUST SANITARY  
 SEWER MANHOLE**

**RELOCATE  
 FIRE HYDRANT**

**PROPOSED 6" VALVE**  
 -W3- STA 19+63.73  
 -Y8- STA 22+12.00  
 OFFSET 34.18 (RT)

**PROPOSED 6" VALVE**  
 -W3- STA 19+63.73  
 -Y8- STA 22+12.00  
 OFFSET 45.00 (RT)

**RELOCATE  
 WATER METER**

**PROPOSED 12" VALVE**  
 -W3- STA 19+55.73  
 -Y8- STA 22+04.00  
 OFFSET 53.00 (RT)

**PROPOSED 12" x 6" TEE**  
 -W3- STA 19+63.73  
 -Y8- STA 22+12.00  
 OFFSET 53.00 (RT)

**ADJUST SANITARY  
 SEWER MANHOLE**

**MATCH TO SHEET 23 (UC-10)**  
 -Y8A- STA. 13+09.60

**MATCH TO SHEET 20 (UC-7) -Y8- STA. 22+50.00**

SEE SHEET UC-18 FOR -W3- PROFILE

RW Revision: September 17, 2008, Removed rw label at -Y8- Sta. 13+60' 60" LT.  
 RW Revision: September 17, 2008, Revised rw limits & labels at -Y8A- due to new drainage ditches.  
 RW Revision: October 28, 2008, Added permanent utility limits & labels at -Y8- Sta. 13+04.94 to Sta. 18+62.09.  
 RW Revision: 1/11 - CHANGED TRIANGLE PARCEL 41 TO 1/A.  
 RW REVISION: 103VII - REMOVED CONSTRUCTION EASEMENT ON PARCEL 47, REVISED CONSTRUCTION EASEMENT ON PARCELS 48, 103 AND 103A.

5/14/99

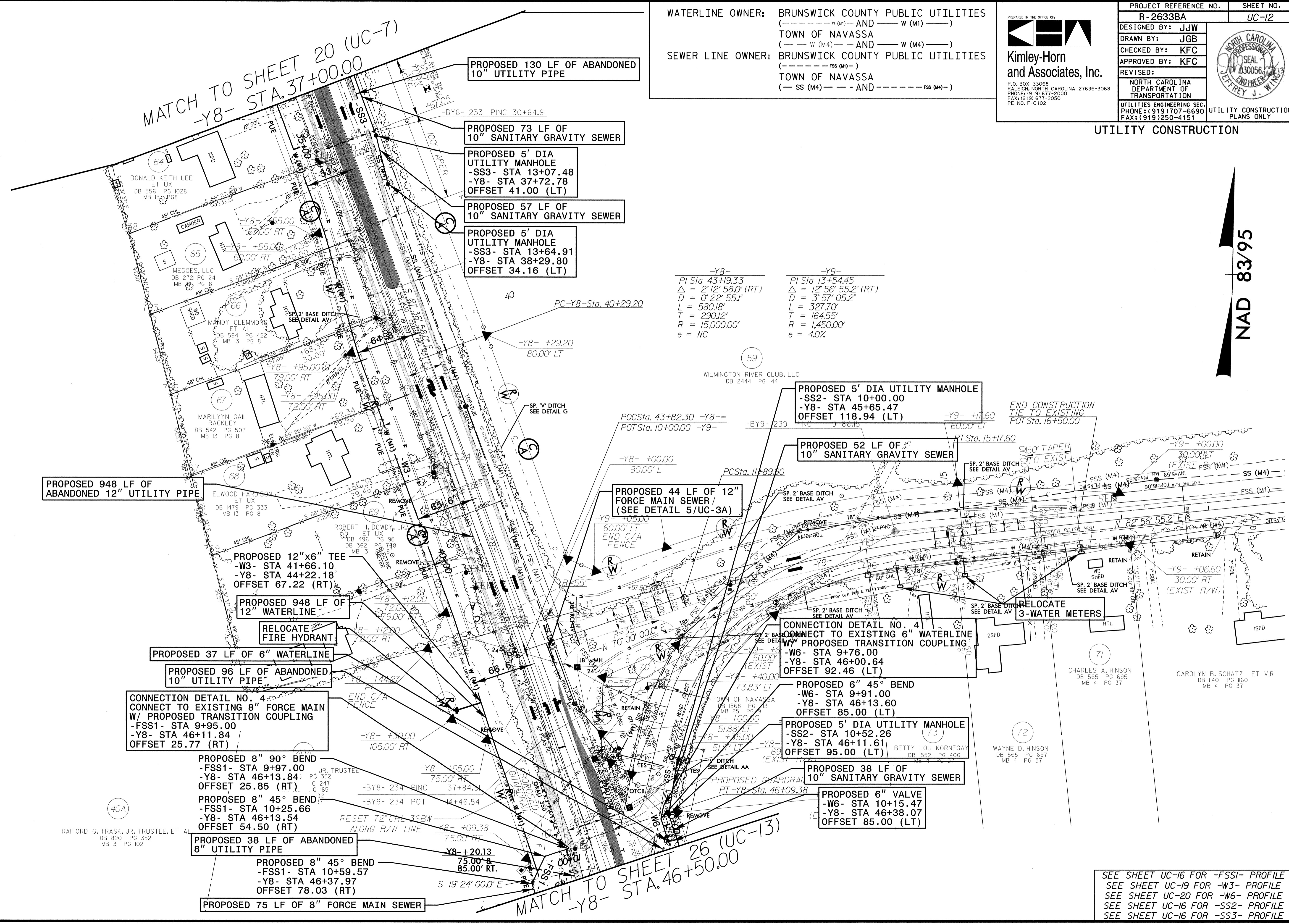
PREPARED IN THE OFFICE OF:  
  
**Kimley-Horn and Associates, Inc.**  
 P.O. BOX 33068  
 RALEIGH, NORTH CAROLINA 27636-3068  
 PHONE: (919) 677-2000  
 FAX: (919) 677-2050  
 FE NO. F-0102

WATERLINE OWNER: BRUNSWICK COUNTY PUBLIC UTILITIES  
 (--- W (M1) --- AND --- W (M1) ---)  
 TOWN OF NAVASSA  
 (--- W (M4) --- AND --- W (M4) ---)  
 SEWER LINE OWNER: BRUNSWICK COUNTY PUBLIC UTILITIES  
 (--- FSS (M1) ---)  
 TOWN OF NAVASSA  
 (--- SS (M4) --- AND --- FSS (M4) ---)

UTILITY CONSTRUCTION

NAD 83/95

5/14/99  
 R/W Revision: September 17, 2008, Revised r/w label from -Y8- to -Y9- at Sta. 12+85.69 50' RT & Sta. 17+06.60 30' RT.  
 R/W Revision: September 17, 2008, Removed -SVRD10- along with the L/W and monuments for the alignment.  
 R/W Revision: October 28, 2008, Added permanent utility limits & labels at -Y8- Sta. 36+07.99 to Sta. 43+19.00.  
 R/W Revision: 10/30/09 - ON PARCEL 69 MOVED MONUMENT TO #100, ENDED PUE AT INTERSECTION OF NEW R/W LINE MOVED C/A TO PROPERTY LINE MONUMENT.  
 R/W REVISION: 1/17/11 - CHANGED OWNER ON PARCEL 65 TO MEGOES, LLC AND UPDATED DB AND PG. ADDED PL ON MONUMENT ON PARCEL 69.  
 R/W REVISION: 9/27/11 - RESET CHAINLINK FENCE ON RIGHT OF WAY LINE ON PARCEL 70.



-Y8-  
 PI Sta 43+19.33  
 $\Delta = 2' 12" 58.0" (RT)$   
 $D = 0' 22" 55.1"$   
 $L = 580.18'$   
 $T = 290.12'$   
 $R = 15,000.00'$   
 $e = NC$

-Y9-  
 PI Sta 13+54.45  
 $\Delta = 12' 56" 55.2" (RT)$   
 $D = 3' 57" 05.2"$   
 $L = 327.70'$   
 $T = 164.55'$   
 $R = 1,450.00'$   
 $e = 4.0\%$

MATCH TO SHEET 20 (UC-7)  
 -Y8- STA. 37+00.00

MATCH TO SHEET 26 (UC-13)  
 -Y8- STA. 46+50.00

SEE SHEET UC-16 FOR -FSS1- PROFILE  
 SEE SHEET UC-19 FOR -W3- PROFILE  
 SEE SHEET UC-20 FOR -W6- PROFILE  
 SEE SHEET UC-16 FOR -SS2- PROFILE  
 SEE SHEET UC-16 FOR -SS3- PROFILE

R/W REVISION: 10/ /09 - ADDED PARCEL 75 LINCOLN DEVELOPMENT.  
 R/W REVISION: 02/ /10 - REVISED R/W ON PARCELS 74 AND 75 TO ACCOMMODATE WORK BRIDGE ALONG PROPOSED STRUCTURE.  
 R/W REVISION: 01/ /11 - CHANGED MONUMENT ON PARCEL 40 TO PC-ADDED R/W MONUMENTS ON EXISTING R/W-CHANGED PARCEL 75A TO RODGERS FAMILY PROPERTIES, LLC DB 2722 PG 0782.

5/14/99

WATERLINE OWNER: BRUNSWICK COUNTY PUBLIC UTILITIES  
 (--- W (M1) --- AND --- W (M1) ---)  
 TOWN OF NAVASSA  
 (--- W (M4) --- AND --- W (M4) ---)  
 CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA)  
 (--- W (M3) --- AND --- W (M3) ---)

SEWER LINE OWNER: BRUNSWICK COUNTY PUBLIC UTILITIES  
 (----- FSS (M1) -----)  
 TOWN OF NAVASSA  
 (--- SS (M4) ---)

PROJECT REFERENCE NO. R-2633BA SHEET NO. UC-13

DESIGNED BY: JJW  
 DRAWN BY: JGB  
 CHECKED BY: KFC  
 APPROVED BY: KFC

REVISED:

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

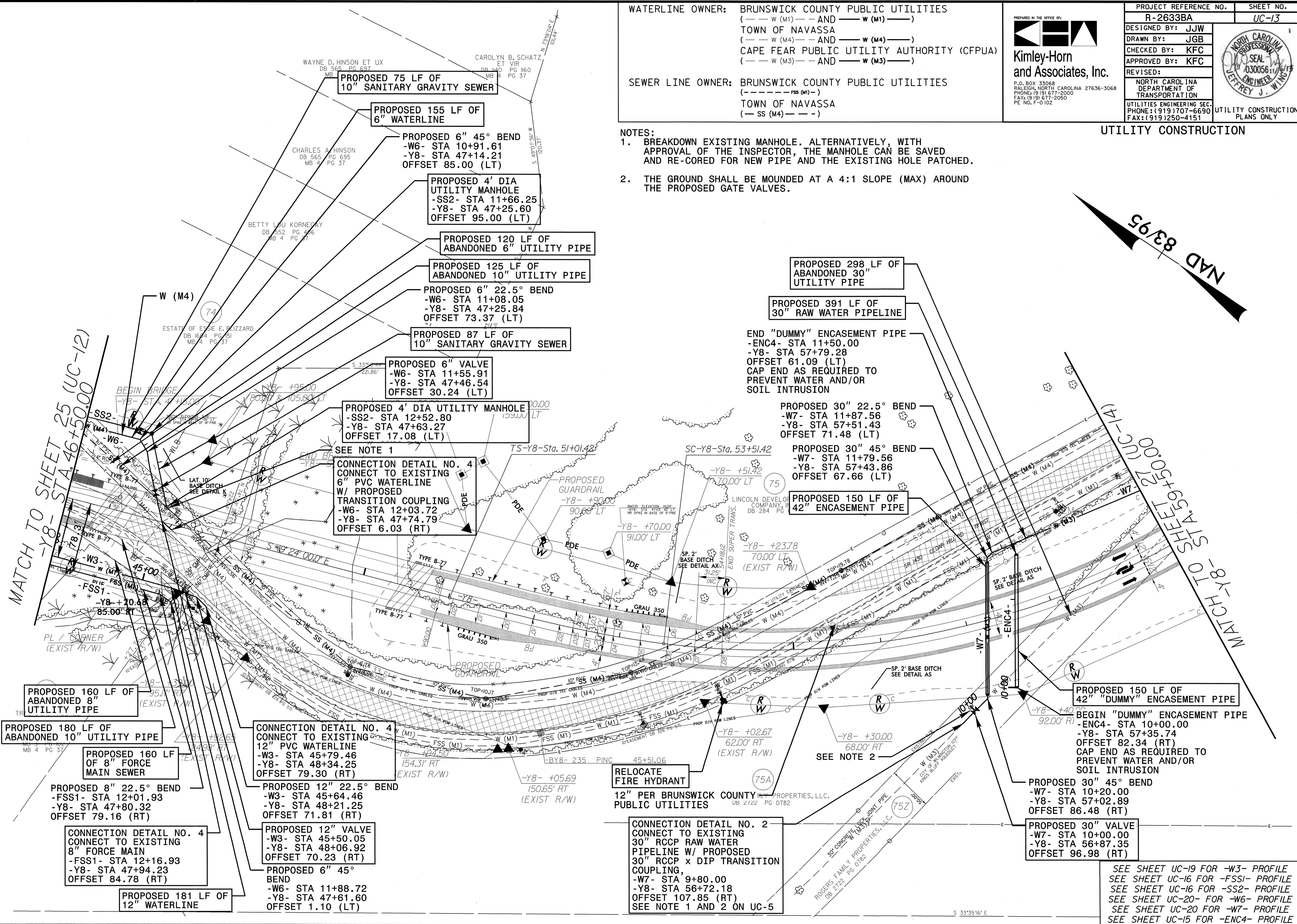
UTILITY CONSTRUCTION PLANS ONLY

Kimley-Horn and Associates, Inc.  
 P.O. BOX 33068 RALEIGH, NORTH CAROLINA 27636-3068  
 PHONE: (919) 677-2000 FAX: (919) 677-2050 PE NO. P-0102

NORTH CAROLINA PROFESSIONAL SEAL 030056 JEFFREY J. WING ENGINEER

- NOTES:
- BREAKDOWN EXISTING MANHOLE. ALTERNATIVELY, WITH APPROVAL OF THE INSPECTOR, THE MANHOLE CAN BE SAVED AND RE-CORED FOR NEW PIPE AND THE EXISTING HOLE PATCHED.
  - THE GROUND SHALL BE MOUNDED AT A 4:1 SLOPE (MAX) AROUND THE PROPOSED GATE VALVES.

UTILITY CONSTRUCTION



NAD 83/95

MATCH TO SHEET 25 (UC-12)  
 -Y8- STA 46+50.00

MATCH TO SHEETS 25 (UC-12) & 26 (UC-14)  
 -Y8- STA 51+50.00

PROPOSED 160 LF OF ABANDONED 8" UTILITY PIPE

PROPOSED 180 LF OF ABANDONED 10" UTILITY PIPE

PROPOSED 160 LF OF 8" FORCE MAIN SEWER

PROPOSED 8" 22.5° BEND  
 -FSS1- STA 12+01.93  
 -Y8- STA 47+80.32  
 OFFSET 79.16 (RT)

CONNECTION DETAIL NO. 4 CONNECT TO EXISTING 8" FORCE MAIN  
 -FSS1- STA 12+16.93  
 -Y8- STA 47+94.23  
 OFFSET 84.78 (RT)

PROPOSED 181 LF OF 12" WATERLINE

CONNECTION DETAIL NO. 4 CONNECT TO EXISTING 12" PVC WATERLINE  
 -W3- STA 45+79.46  
 -Y8- STA 48+34.25  
 OFFSET 79.30 (RT)

PROPOSED 12" 22.5° BEND  
 -W3- STA 45+64.46  
 -Y8- STA 48+21.25  
 OFFSET 71.81 (RT)

PROPOSED 12" VALVE  
 -W3- STA 45+50.05  
 -Y8- STA 48+06.92  
 OFFSET 70.23 (RT)

PROPOSED 6" 45° BEND  
 -W6- STA 11+88.72  
 -Y8- STA 47+61.60  
 OFFSET 1.10 (LT)

PROPOSED 6" VALVE  
 -W6- STA 11+55.91  
 -Y8- STA 47+46.54  
 OFFSET 30.24 (LT)

PROPOSED 4' DIA UTILITY MANHOLE  
 -SS2- STA 12+52.80  
 -Y8- STA 47+63.27  
 OFFSET 17.08 (LT)

SEE NOTE 1

CONNECTION DETAIL NO. 4 CONNECT TO EXISTING 6" PVC WATERLINE W/ PROPOSED TRANSITION COUPLING  
 -W6- STA 12+03.72  
 -Y8- STA 47+74.79  
 OFFSET 6.03 (RT)

PROPOSED 75 LF OF 10" SANITARY GRAVITY SEWER

PROPOSED 155 LF OF 6" WATERLINE

PROPOSED 6" 45° BEND  
 -W6- STA 10+91.61  
 -Y8- STA 47+14.21  
 OFFSET 85.00 (LT)

PROPOSED 4' DIA UTILITY MANHOLE  
 -SS2- STA 11+66.25  
 -Y8- STA 47+25.60  
 OFFSET 95.00 (LT)

PROPOSED 120 LF OF ABANDONED 6" UTILITY PIPE

PROPOSED 125 LF OF ABANDONED 10" UTILITY PIPE

PROPOSED 6" 22.5° BEND  
 -W6- STA 11+08.05  
 -Y8- STA 47+25.84  
 OFFSET 73.37 (LT)

PROPOSED 87 LF OF 10" SANITARY GRAVITY SEWER

PROPOSED 298 LF OF ABANDONED 30" UTILITY PIPE

PROPOSED 391 LF OF 30" RAW WATER PIPELINE

END "DUMMY" ENCASUREMENT PIPE  
 -ENC4- STA 11+50.00  
 -Y8- STA 57+79.28  
 OFFSET 61.09 (LT)  
 CAP END AS REQUIRED TO PREVENT WATER AND/OR SOIL INTRUSION

PROPOSED 30" 22.5° BEND  
 -W7- STA 11+87.56  
 -Y8- STA 57+51.43  
 OFFSET 71.48 (LT)

PROPOSED 30" 45° BEND  
 -W7- STA 11+79.56  
 -Y8- STA 57+43.86  
 OFFSET 67.66 (LT)

PROPOSED 150 LF OF 42" ENCASUREMENT PIPE

PROPOSED 150 LF OF 42" "DUMMY" ENCASUREMENT PIPE

BEGIN "DUMMY" ENCASUREMENT PIPE  
 -ENC4- STA 10+00.00  
 -Y8- STA 57+35.74  
 OFFSET 82.34 (RT)  
 CAP END AS REQUIRED TO PREVENT WATER AND/OR SOIL INTRUSION

PROPOSED 30" 45° BEND  
 -W7- STA 10+20.00  
 -Y8- STA 57+02.89  
 OFFSET 86.48 (RT)

PROPOSED 30" VALVE  
 -W7- STA 10+00.00  
 -Y8- STA 56+87.35  
 OFFSET 96.98 (RT)

RELOCATE FIRE HYDRANT  
 12" PER BRUNSWICK COUNTY PUBLIC UTILITIES

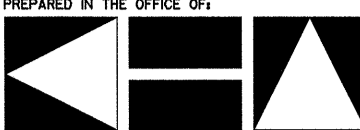
CONNECTION DETAIL NO. 2 CONNECT TO EXISTING 30" RCCP RAW WATER PIPELINE W/ PROPOSED 30" RCCP x DIP TRANSITION COUPLING.  
 -W7- STA 9+80.00  
 -Y8- STA 56+72.18  
 OFFSET 107.85 (RT)  
 SEE NOTE 1 AND 2 ON UC-5

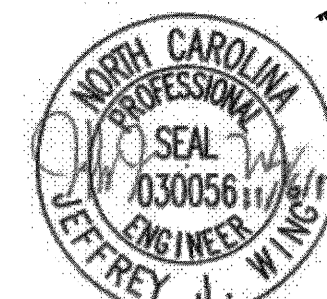
SEE SHEET UC-19 FOR -W3- PROFILE  
 SEE SHEET UC-16 FOR -FSS1- PROFILE  
 SEE SHEET UC-16 FOR -SS2- PROFILE  
 SEE SHEET UC-20 FOR -W6- PROFILE  
 SEE SHEET UC-20 FOR -W7- PROFILE  
 SEE SHEET UC-15 FOR -ENC4- PROFILE

5/14/99

WATERLINE OWNER: BRUNSWICK COUNTY PUBLIC UTILITIES  
 (--- W (M1) ---, --- FSS (M1) ---, AND --- W (M1) ---)  
 TOWN OF NAVASSA  
 (--- W (M4) ---)  
 CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA)  
 (--- W (M3) --- AND --- W (M3) ---)

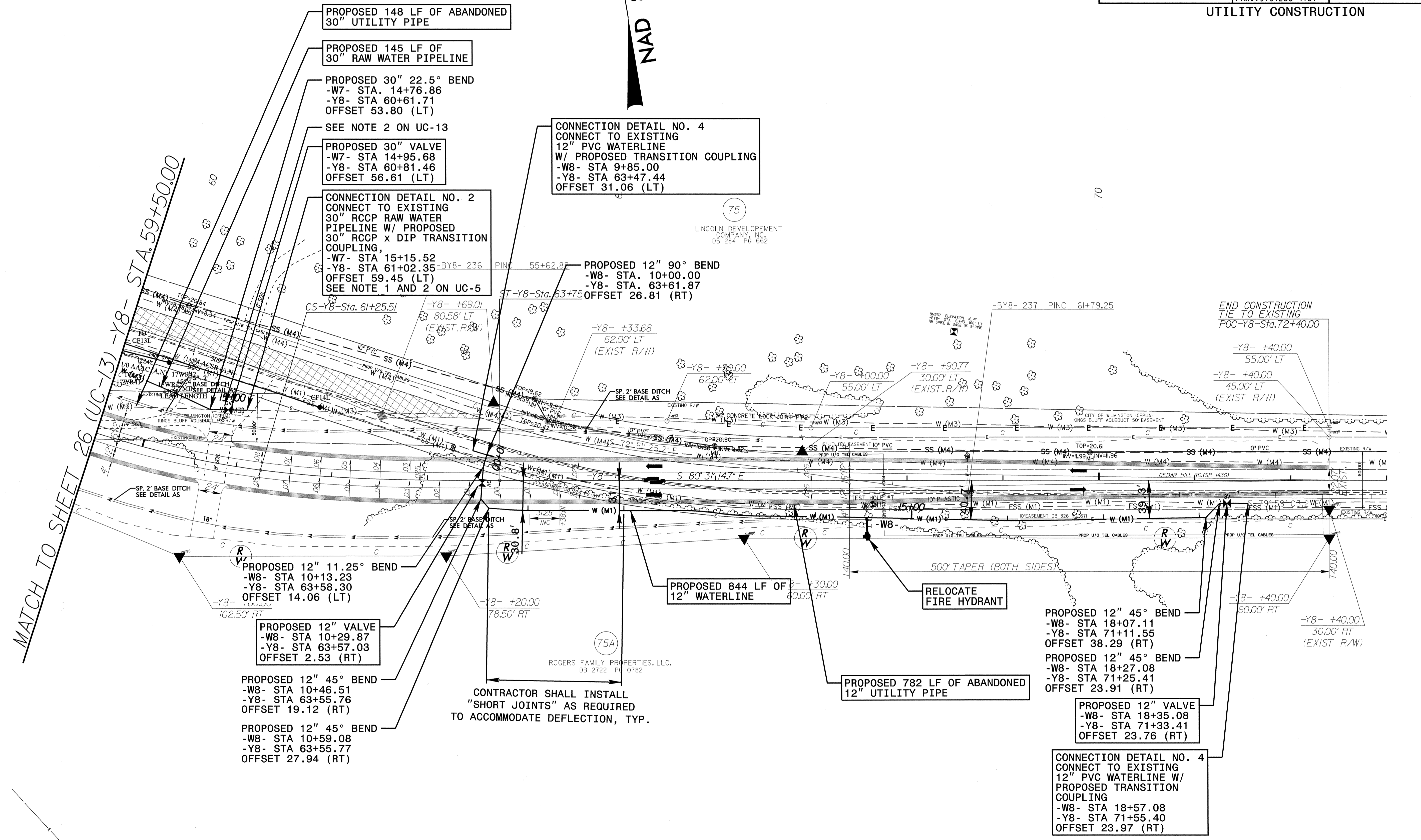
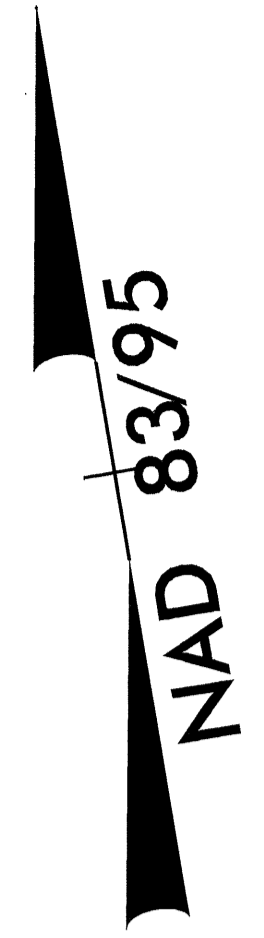
SEWER LINE OWNER: TOWN OF NAVASSA  
 (--- SS (M4) ---)

PREPARED IN THE OFFICE OF:  
  
**Kimley-Horn  
 and Associates, Inc.**  
 P.O. BOX 33068  
 RALEIGH, NORTH CAROLINA 27636-3068  
 PHONE: (919) 677-2000  
 FAX: (919) 677-2050  
 PE NO. F-102

PROJECT REFERENCE NO. <b>R-2633BA</b>	SHEET NO. <b>UC-14</b>
DESIGNED BY: <b>JJW</b>	
DRAWN BY: <b>JGB</b>	
CHECKED BY: <b>KFC</b>	
APPROVED BY: <b>KFC</b>	REVISED:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

-Y8-  
 Pls Sta 57+60.90 Pls Sta 62+08.98  
 $\Delta = 46' 12'' 00.0''$  (LT)  $\Theta_s = 7' 27'' 37.4''$   
 $D = 5' 58'' 05.9''$   $L_s = 250.00'$   
 $L = 774.09'$   $LT = 166.81'$   
 $T = 409.47'$   $ST = 83.47'$   
 $R = 960.00'$



5/14/99

CONTRACTOR SHALL INSTALL "SHORT JOINTS" AS REQUIRED TO ACCOMMODATE DEFLECTION, TYP.


SEE SHEET UC-20 FOR -W7- PROFILE  
 SEE SHEET UC-20 FOR -W8- PROFILE





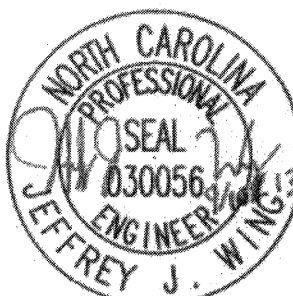
5/28/99

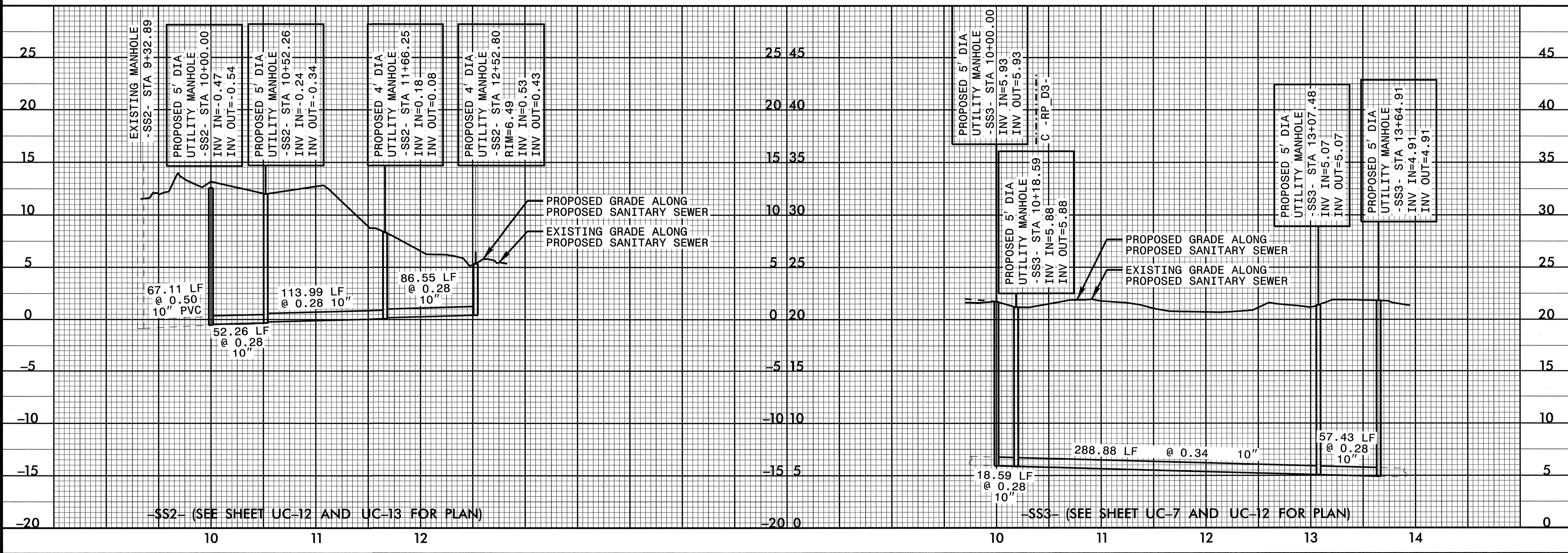
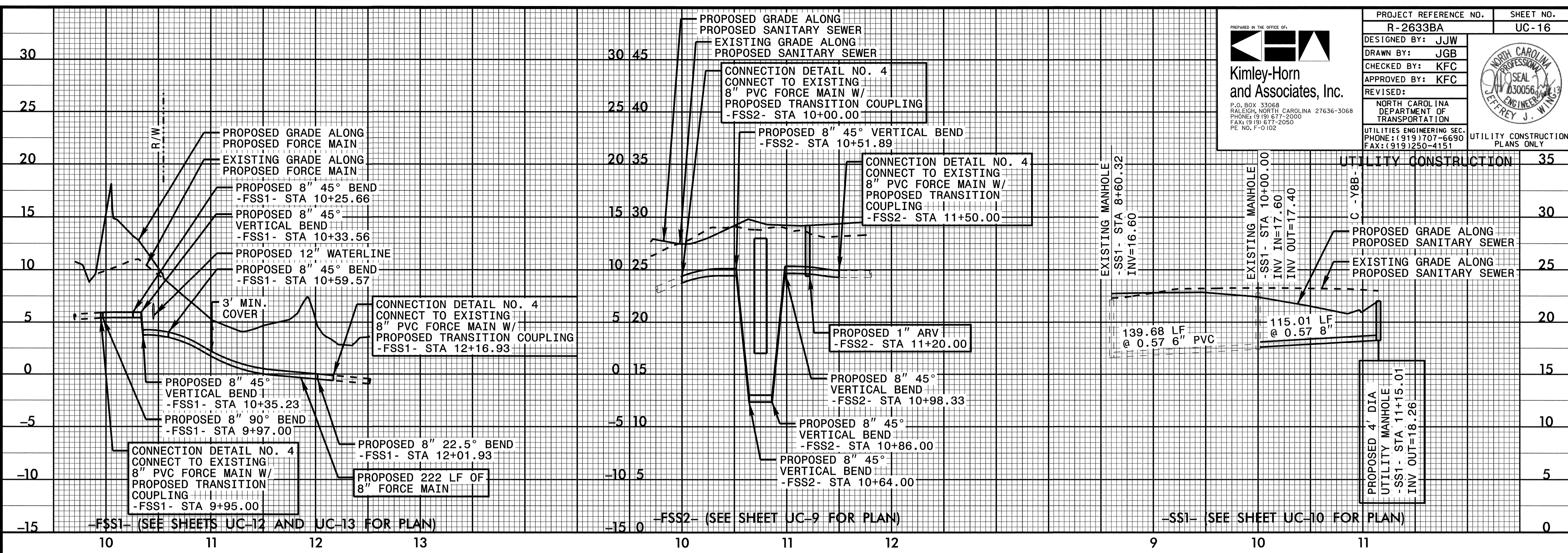
PREPARED IN THE OFFICE OF:



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and Associates, Inc.**

P.O. BOX 33068  
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FAX: (919) 677-2050  
PE NO. F-0102

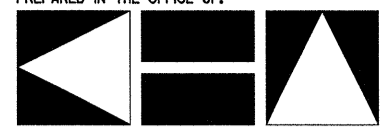
PROJECT REFERENCE NO. <b>R-2633BA</b>	SHEET NO. <b>UC-16</b>
DESIGNED BY: <b>JJW</b>	
DRAWN BY: <b>JGB</b>	
CHECKED BY: <b>KFC</b>	
APPROVED BY: <b>KFC</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	



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5/28/99

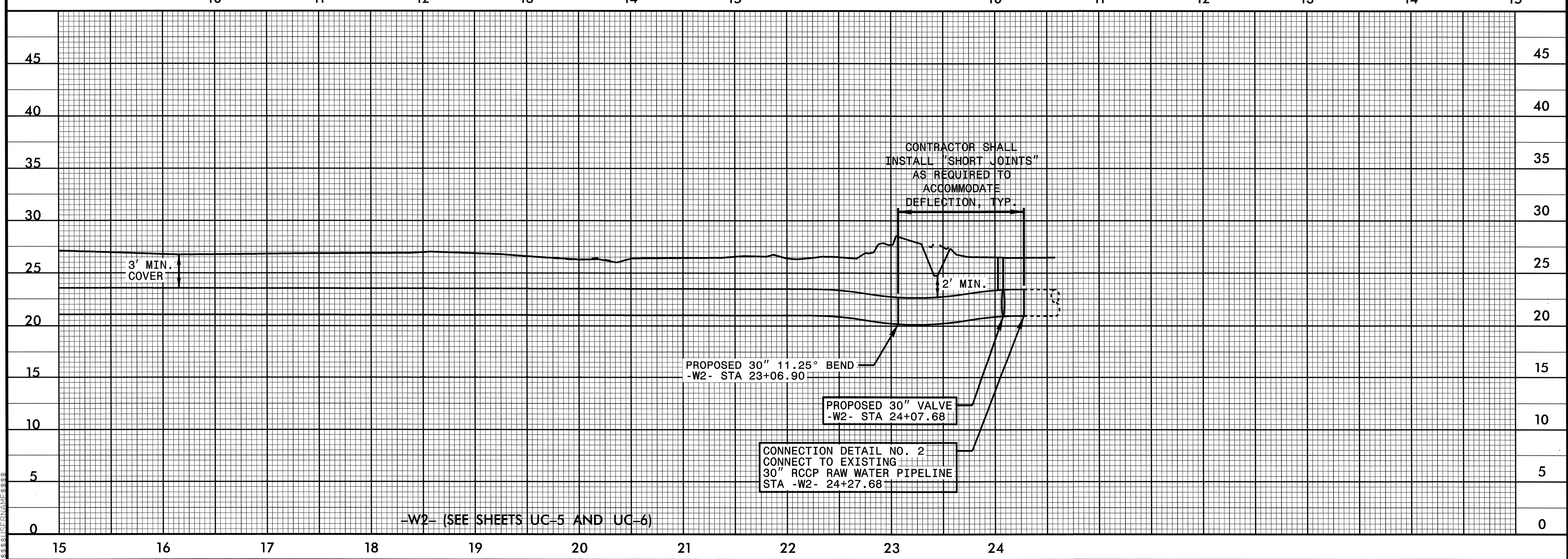
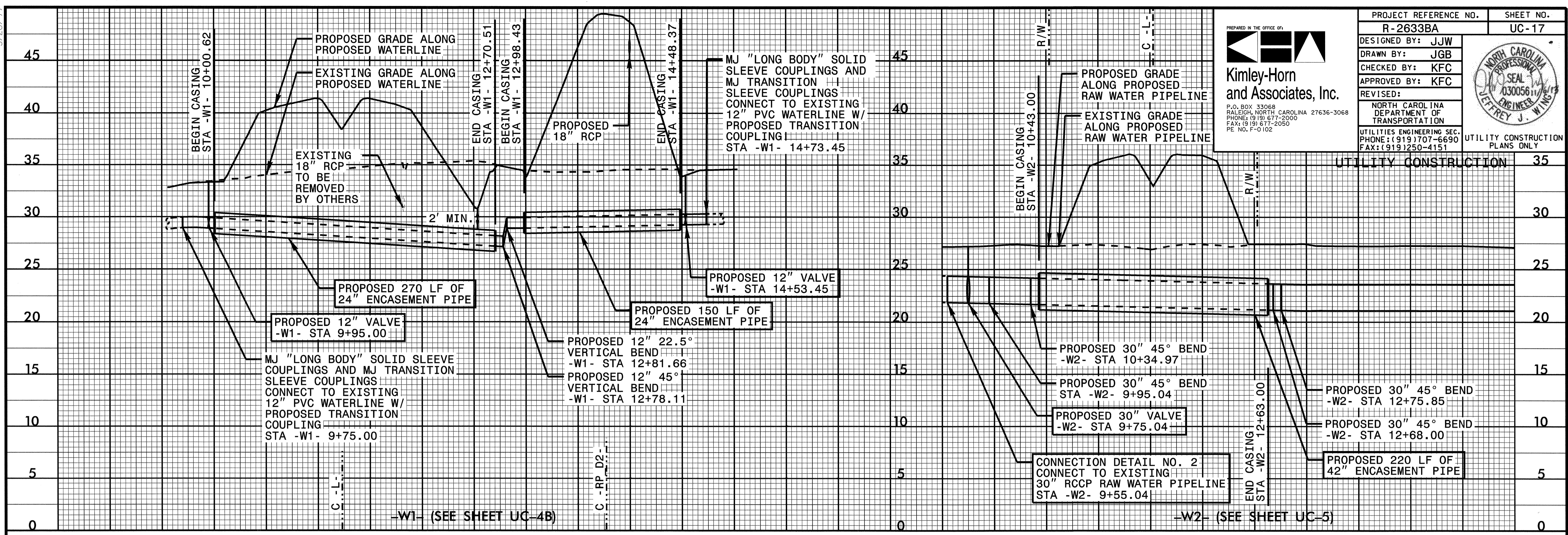
PREPARED IN THE OFFICE OF:



**Kimley-Horn  
and Associates, Inc.**

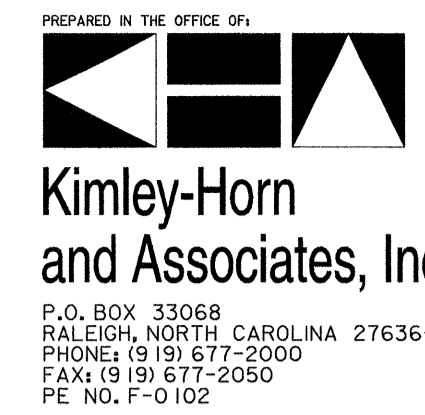
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RALEIGH, NORTH CAROLINA 27636-3068  
PHONE: (919) 677-2000  
FAX: (919) 677-2050  
PE NO. F-102


DESIGNED BY: JJW	
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

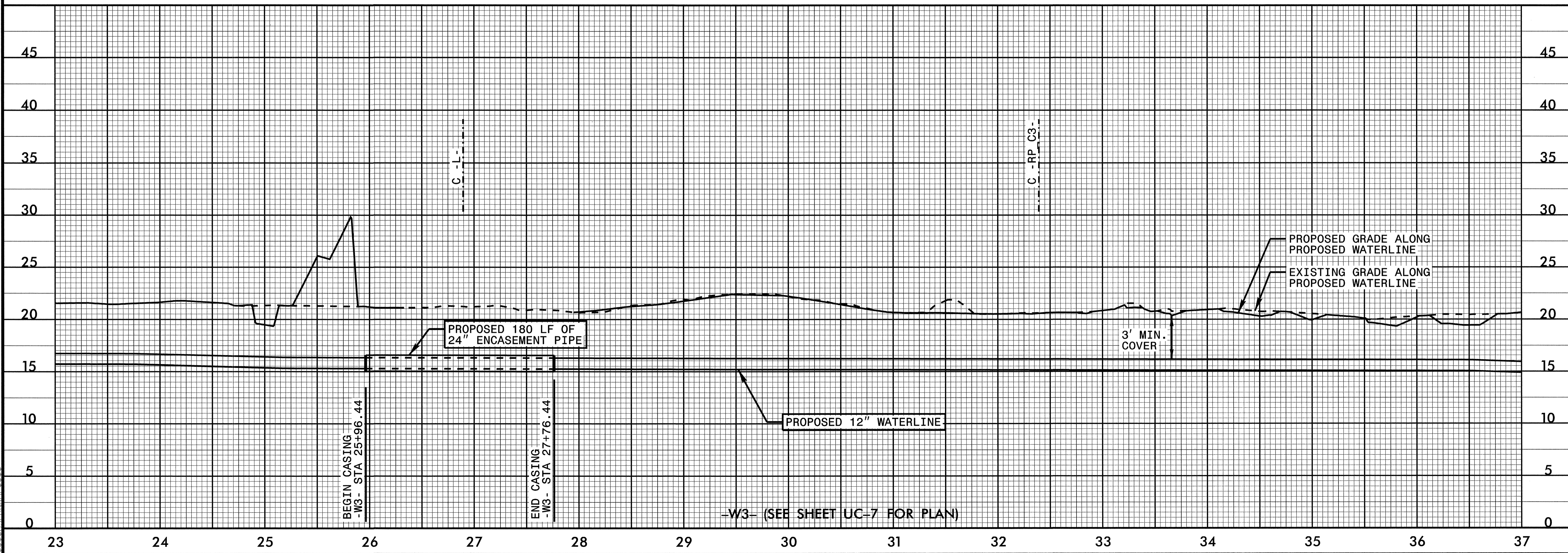
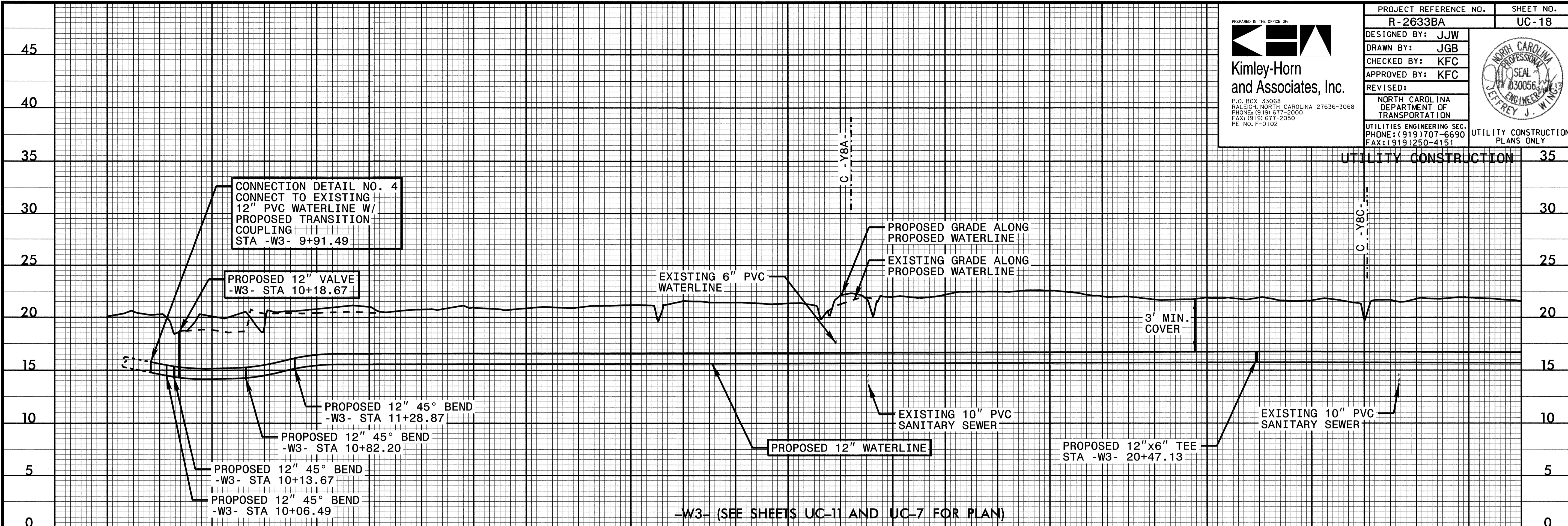


5/28/99

5/28/99



PROJECT REFERENCE NO. R-2633BA	SHEET NO. UC-18
DESIGNED BY: JJW	
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
UTILITY CONSTRUCTION PLANS ONLY	



SYTIME CONSTRUCTION

5/28/99

PROJECT REFERENCE NO. R-2633BA SHEET NO. UC-19

DESIGNED BY: JJW  
 DRAWN BY: JGB  
 CHECKED BY: KFC  
 APPROVED BY: KFC

REVISED:

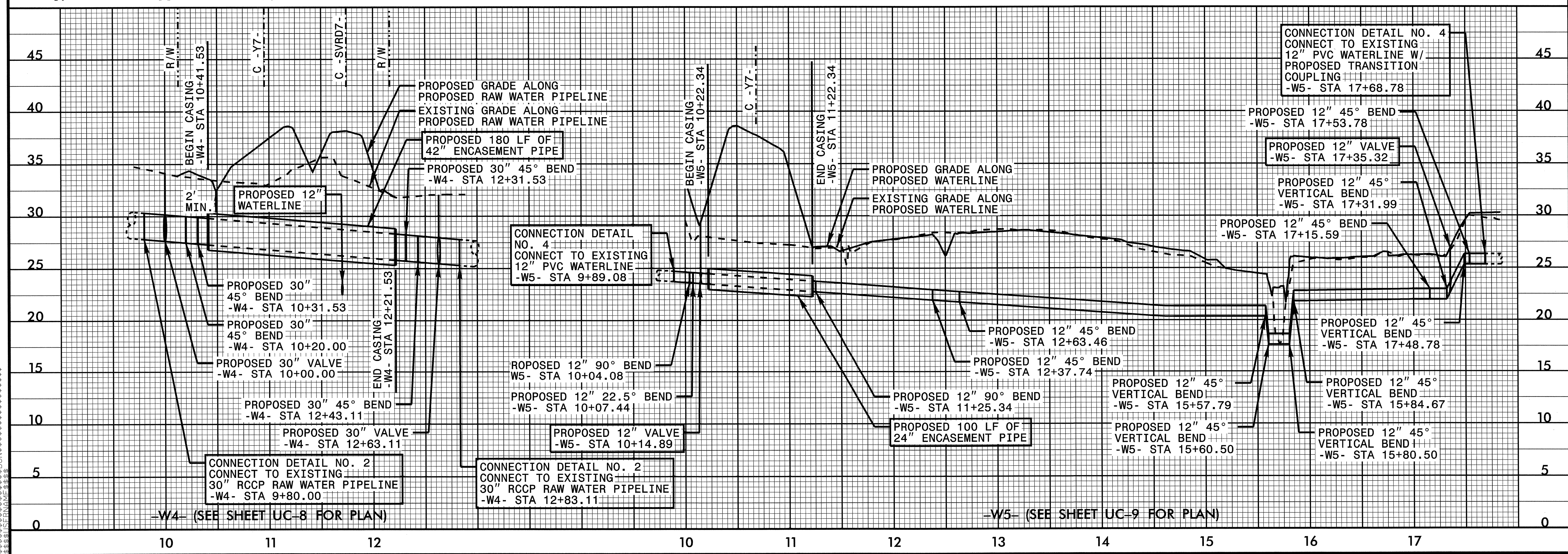
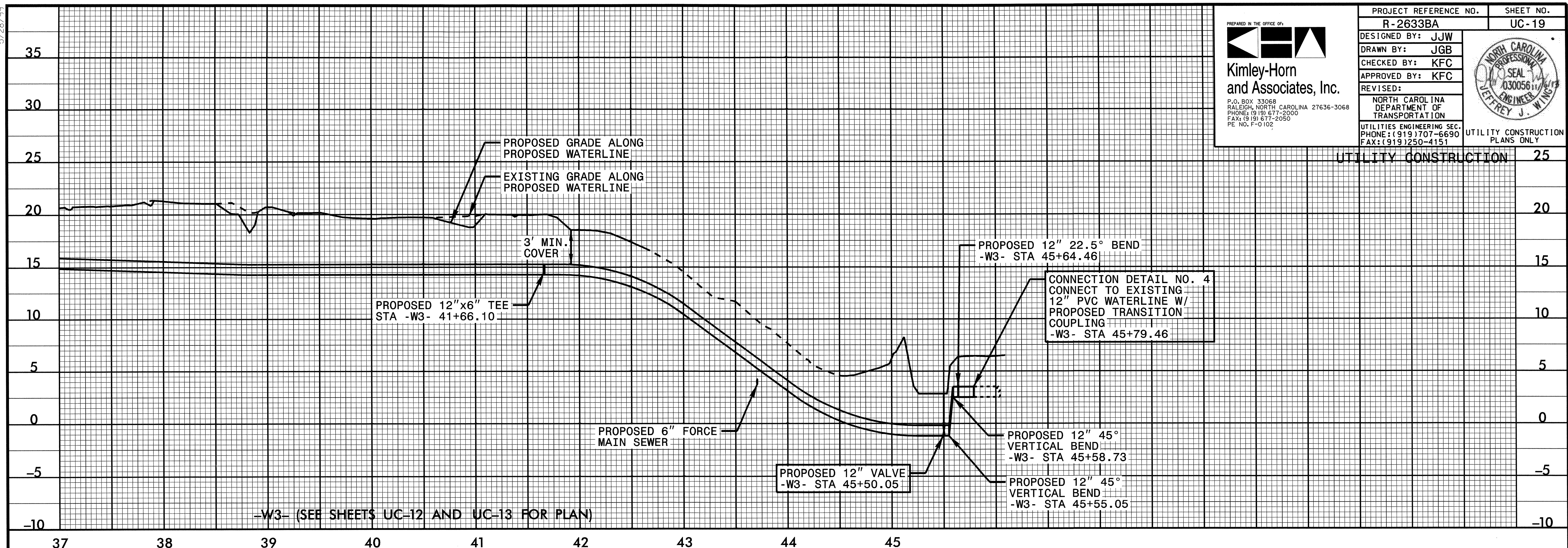
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

UTILITY CONSTRUCTION PLANS ONLY

Kimley-Horn and Associates, Inc.  
 P.O. BOX 33068 RALEIGH, NORTH CAROLINA 27636-3068  
 PHONE: (919) 677-2000 FAX: (919) 677-2050  
 PE NO. F-0102

SEAL  
 030056  
 JEFFREY J. WINGS



SYTIME


5/28/99

PROJECT REFERENCE NO. R-2633BA SHEET NO. UC-20

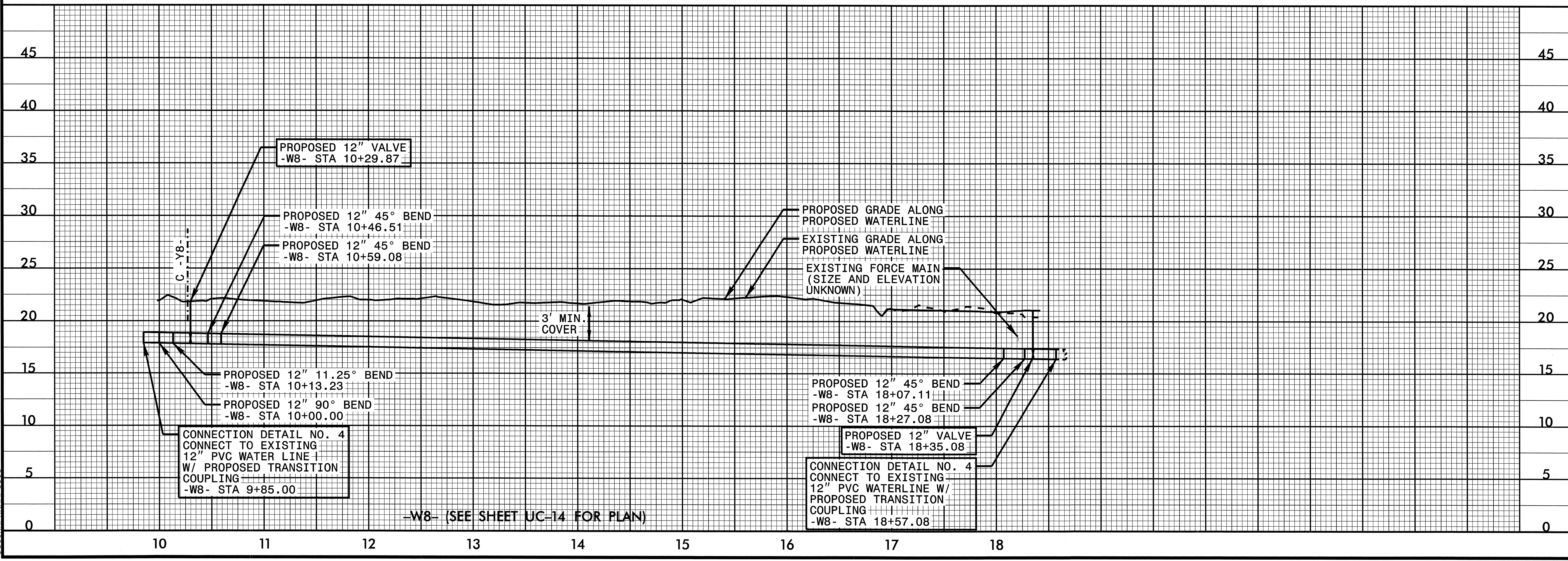
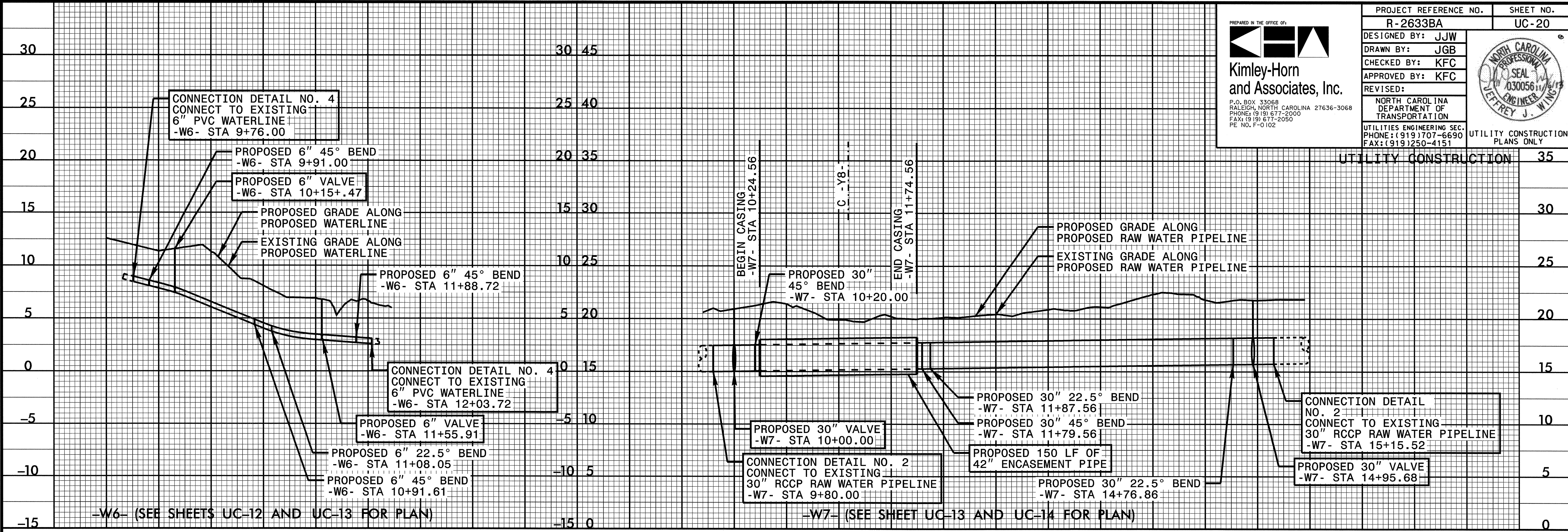
DESIGNED BY: JJW  
 DRAWN BY: JGB  
 CHECKED BY: KFC  
 APPROVED BY: KFC  
 REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 UTILITIES ENGINEERING SEC.  
 PHONE: (919) 707-6690  
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UTILITY CONSTRUCTION PLANS ONLY

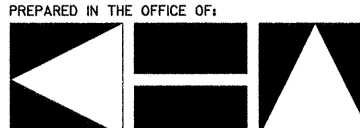


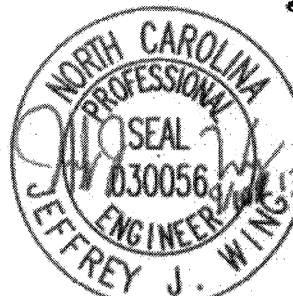
Kimley-Horn and Associates, Inc.  
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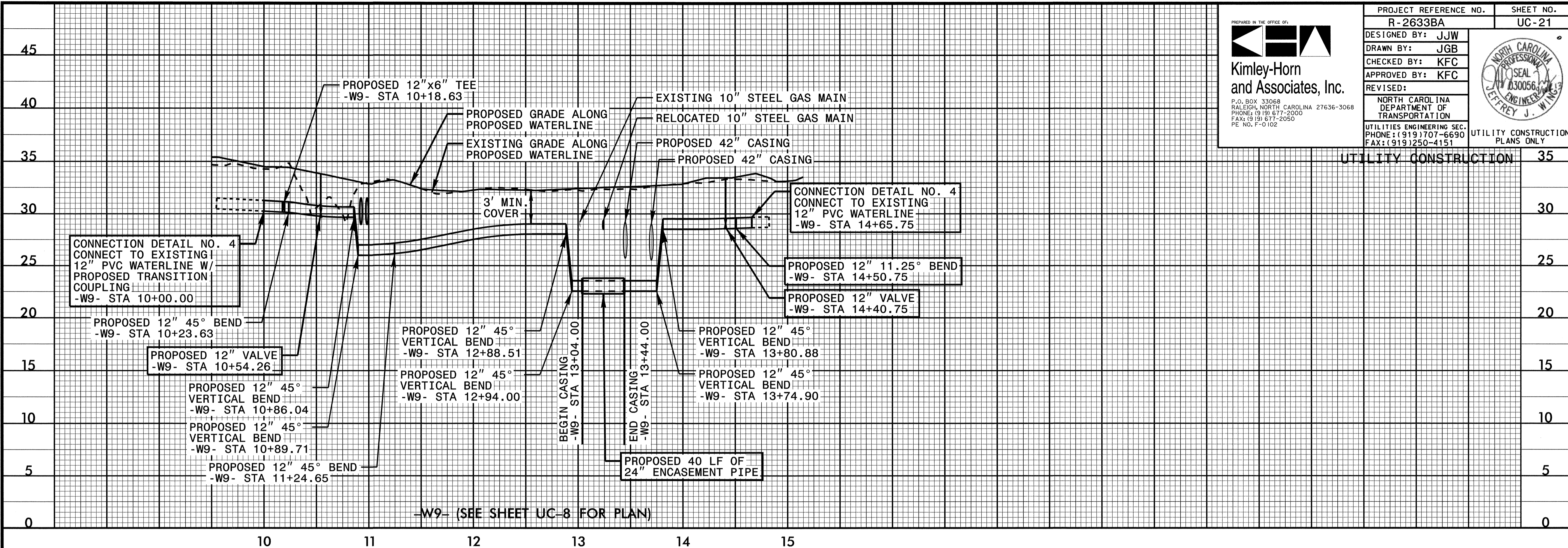


SYSTEMS ENGINEERING

5/28/99

PREPARED IN THE OFFICE OF:  
  
**Kimley-Horn  
and Associates, Inc.**  
 P.O. BOX 33068  
 RALEIGH, NORTH CAROLINA 27636-3068  
 PHONE: (919) 677-2000  
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 PE No. F-0102

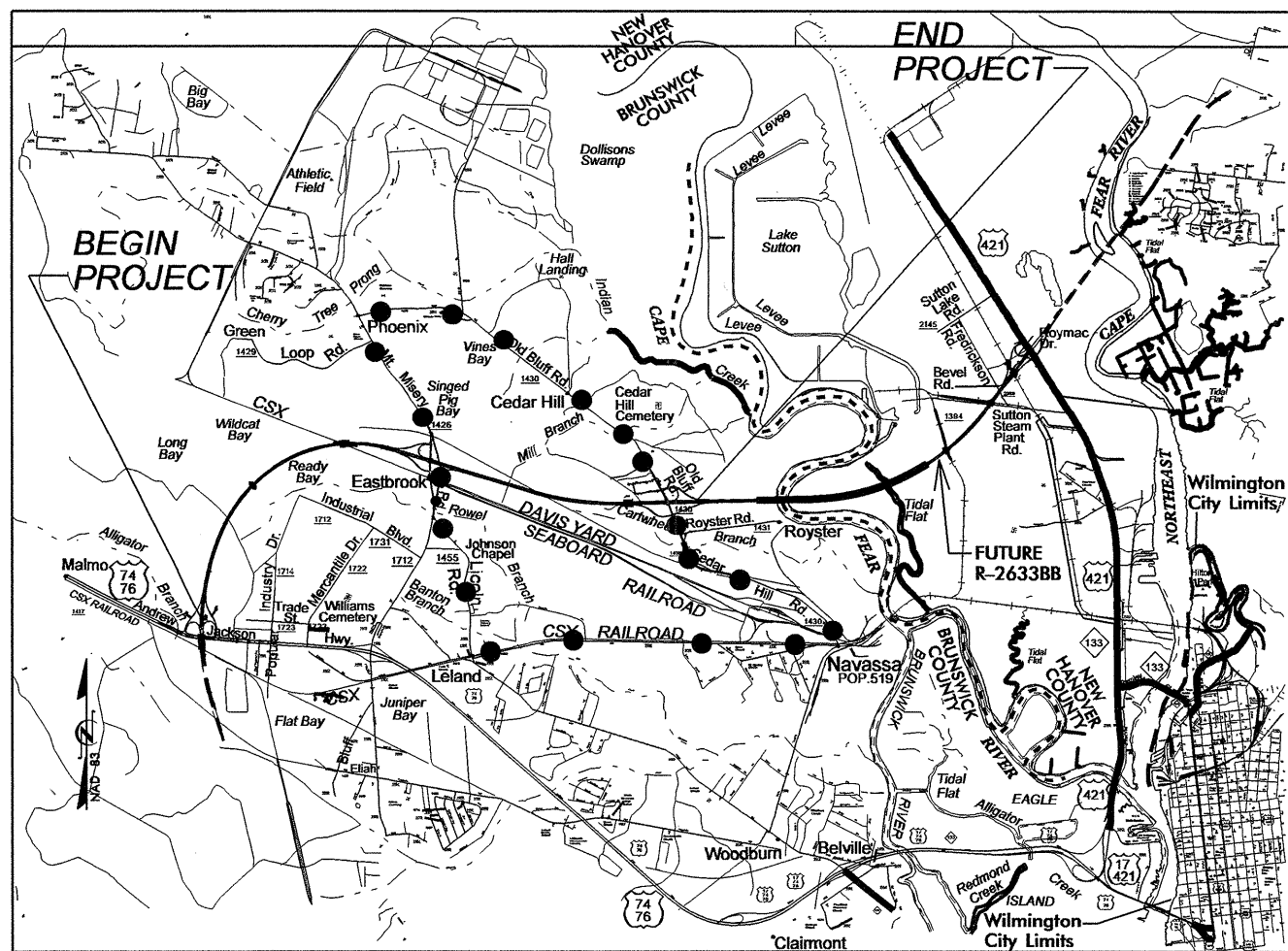
PROJECT REFERENCE NO.	SHEET NO.
R-2633BA	UC-21
DESIGNED BY: JJW	
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	 UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	



SYSTEMS

09/08/99

TIP PROJECT: R-2633BA



VICINITY MAP FOR STATE PROJECT R-2633BA

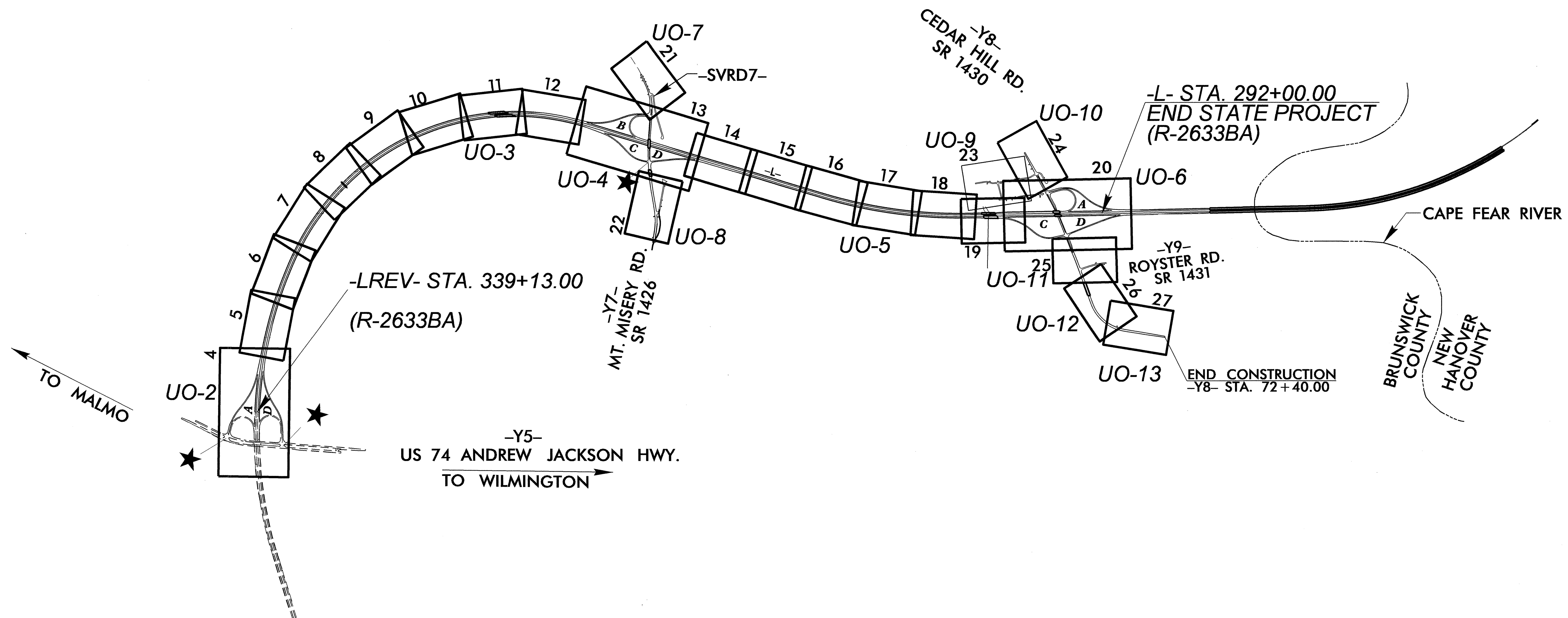
OFF SITE DETOUR ROUTE FOR -Y8-

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS  
BRUNSWICK-NEW HANOVER

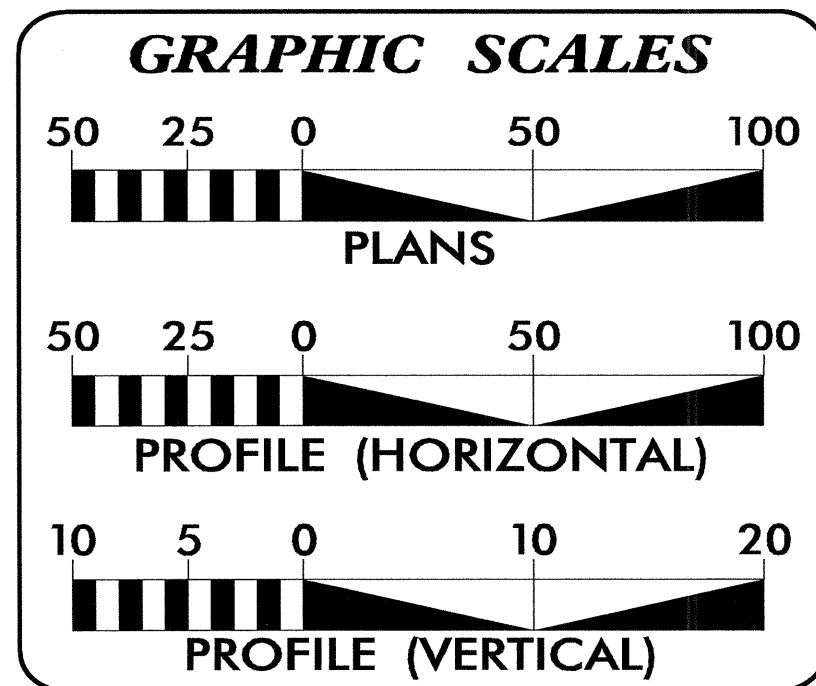
LOCATION: US 17(WILMINGTON BYPASS) FROM US 74/76  
EAST OF MALMO IN BRUNSWICK COUNTY TO  
SR 1430 (CEDAR HILL ROAD)

TYPE OF WORK: UTILITY RELOCATION



T.I.P. NO.	SHEET NO.
R-2633BA	UO-1

14-OCT-2013 09:25  
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INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-13	UTILITY BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT	
(A)	POWER : DUKE ENERGY
(B)	TELEPHONE : AT & T
(C)	CABLE TV : TIME WARNER CABLE
(C)	GAS : PIEDMONT NATURAL GAS

PREPARED IN THE OFFICE OF:  
**DIVISION OF HIGHWAYS**  
**UTILITIES UNIT**  
**UTILITIES ENGINEERING**

1555 MAIL SERVICES CENTER  
 RALEIGH NC 27699-1555  
 PHONE (919) 707-6690  
 FAX (919) 250-4151

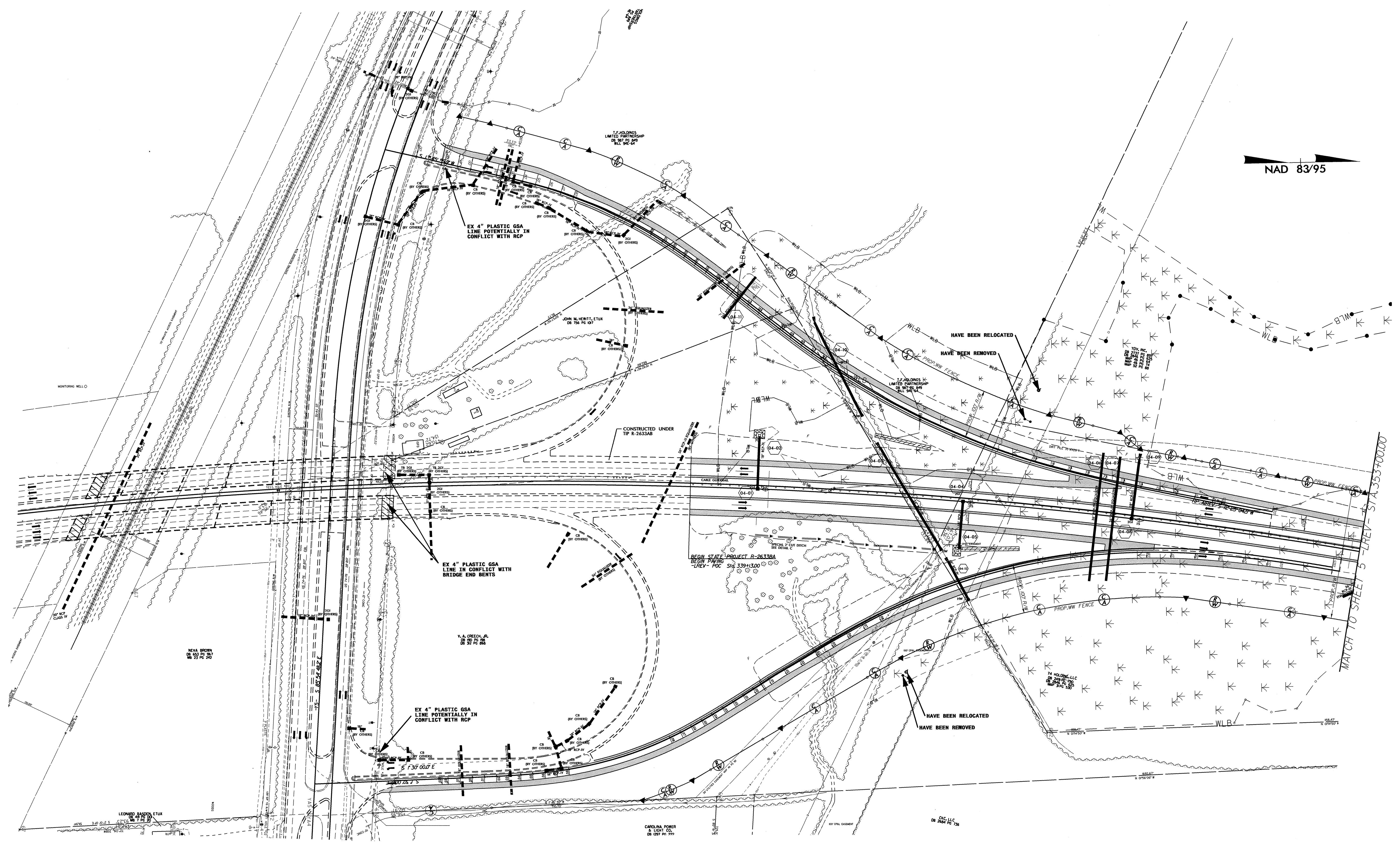
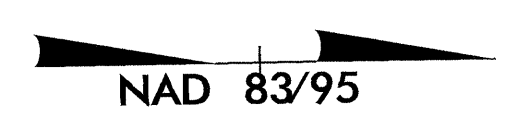
<u>Roger Worthington, P.E.</u>	UTILITIES SECTION ENGINEER
<u>R.B. Wilkins, P.E.</u>	UTILITIES SQUAD LEADER PROJECT ENGINEER
<u>Jong-Tae Yoon</u>	UTILITIES PROJECT DESIGNER

NAD 83/95 - NC GRID



# UTILITIES BY OTHERS

**NOTE:**  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS



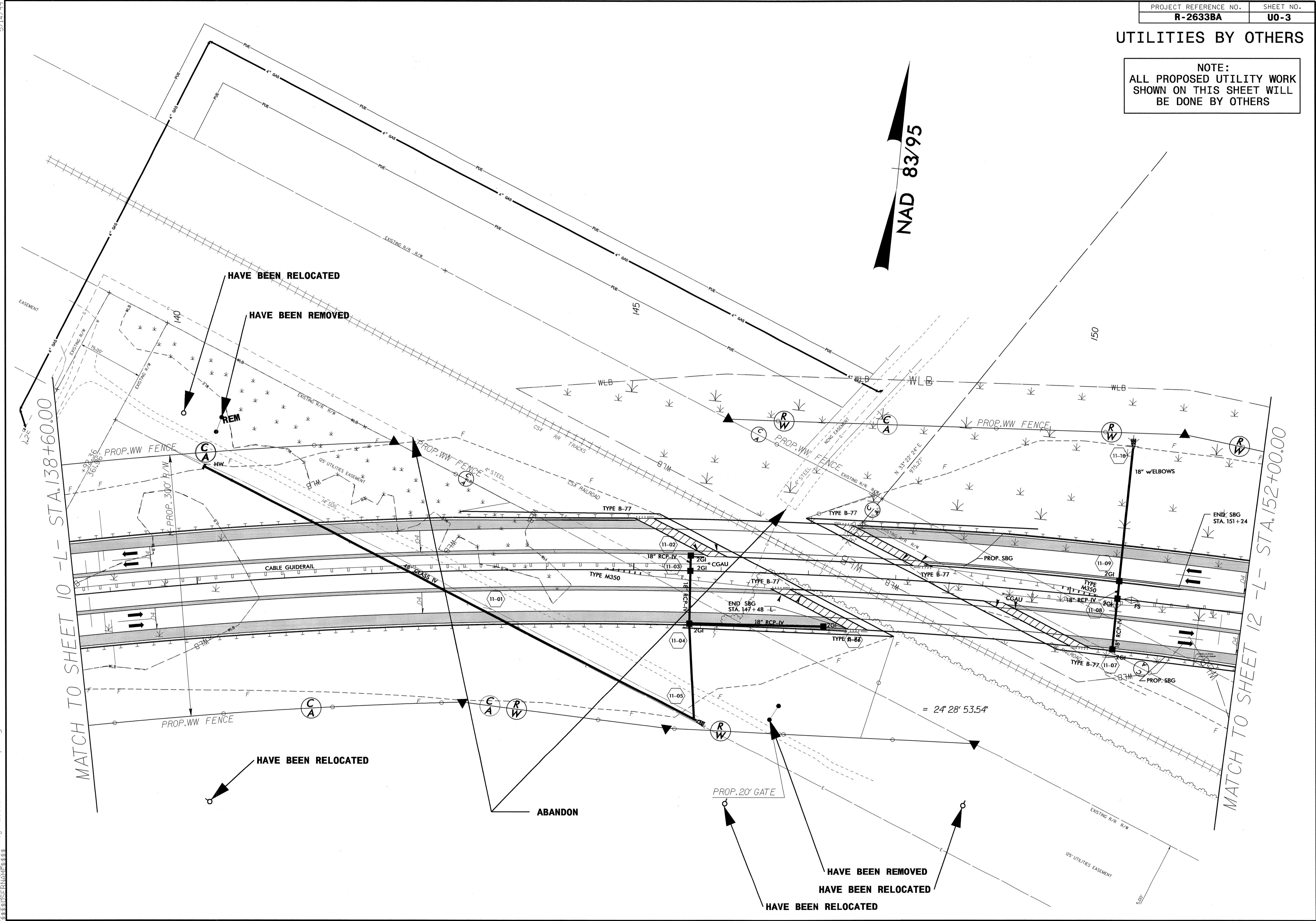
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 \$\$\$\$FRANF\$\$\$

**UTILITIES BY OTHERS**

**NOTE:**  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

**NAD 83/95**



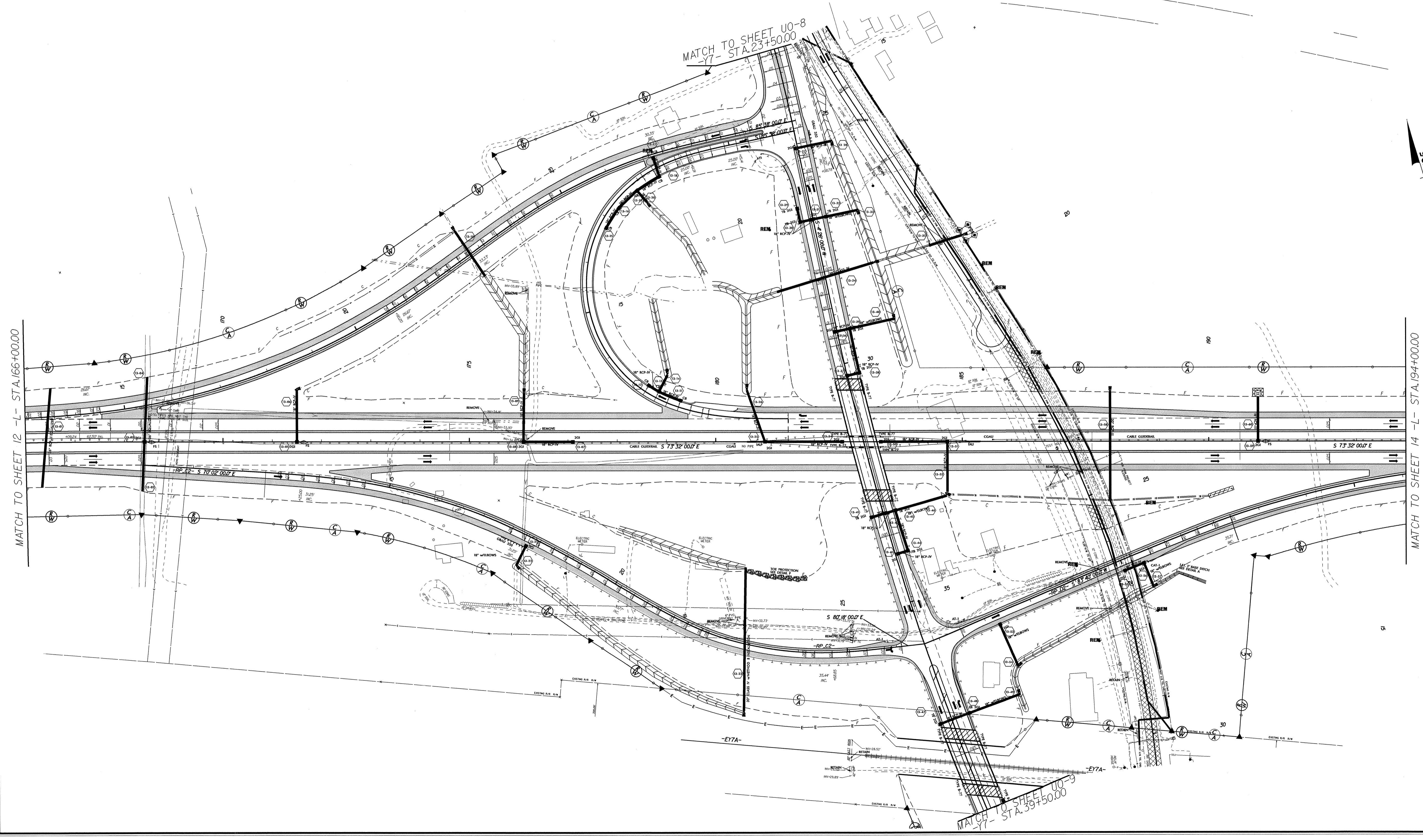
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**UTILITIES BY OTHERS**

**NOTE:**  
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SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

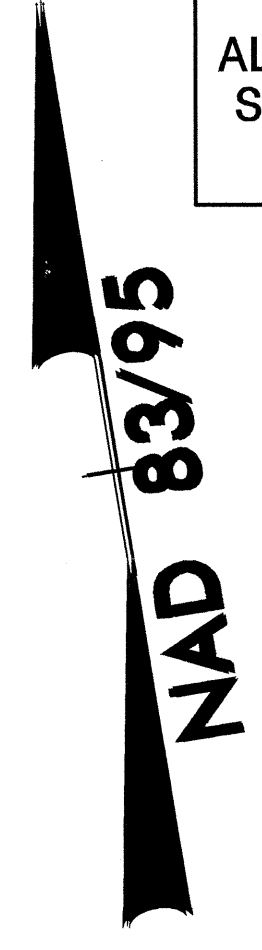
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**UTILITIES BY OTHERS**

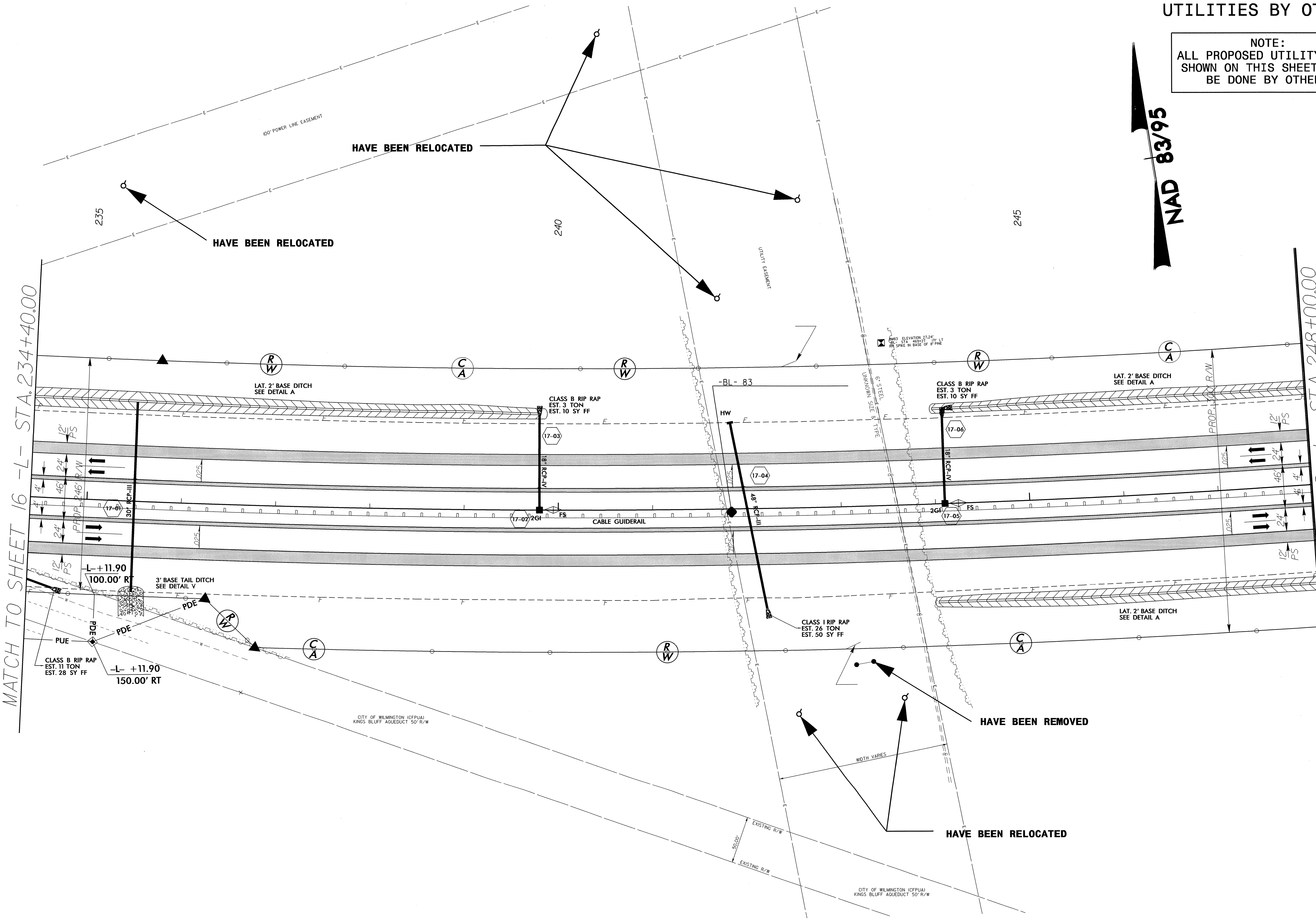
**NOTE:**  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS



MATCH TO SHEET 16 -L- STA. 234+40.00

MATCH TO SHEET 18 -L- STA. 248+00.00

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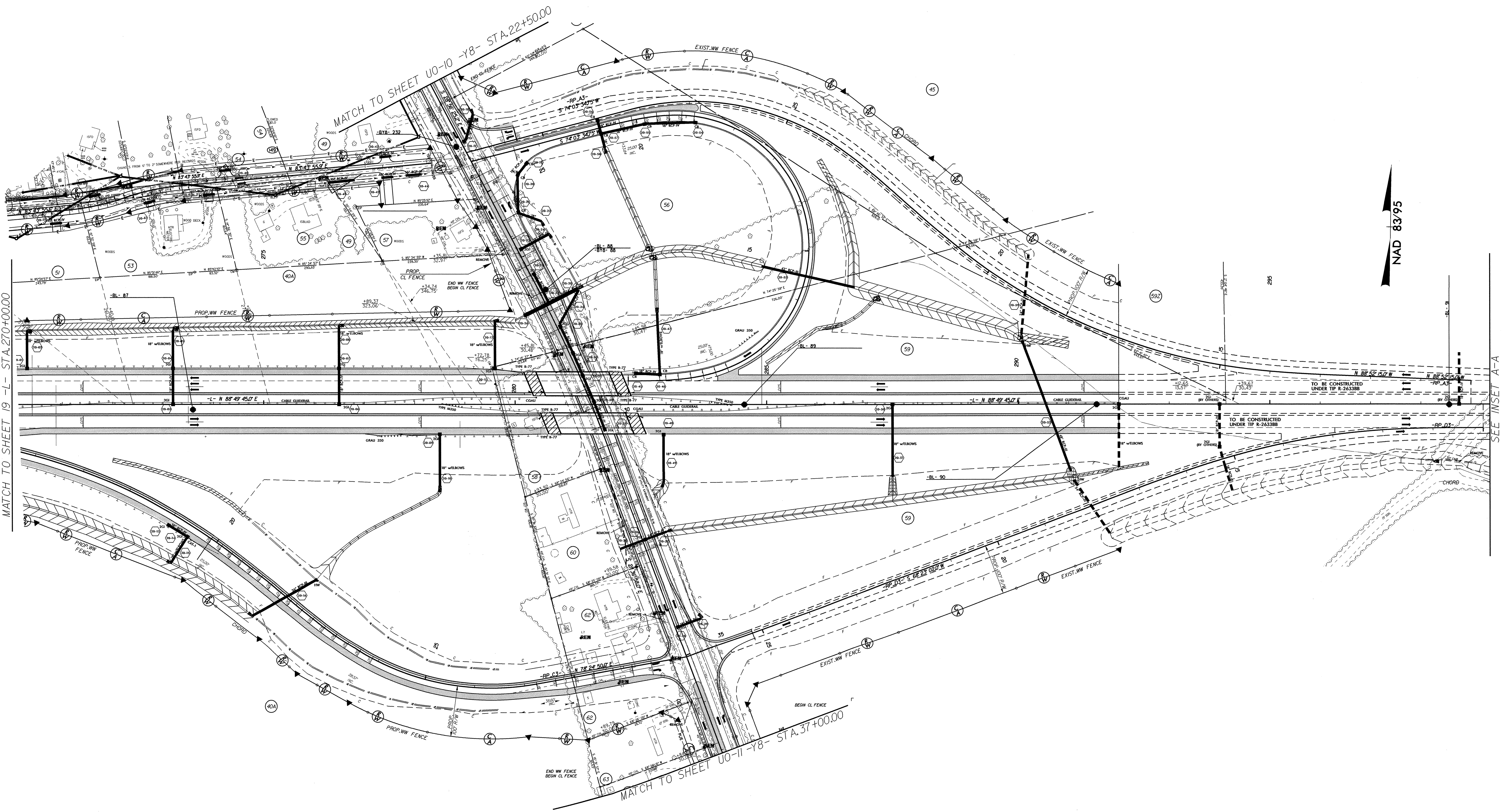
# UTILITIES BY OTHERS

**NOTE:**  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

5/14/09

MATCH TO SHEET 19-L- STA. 270+00.00

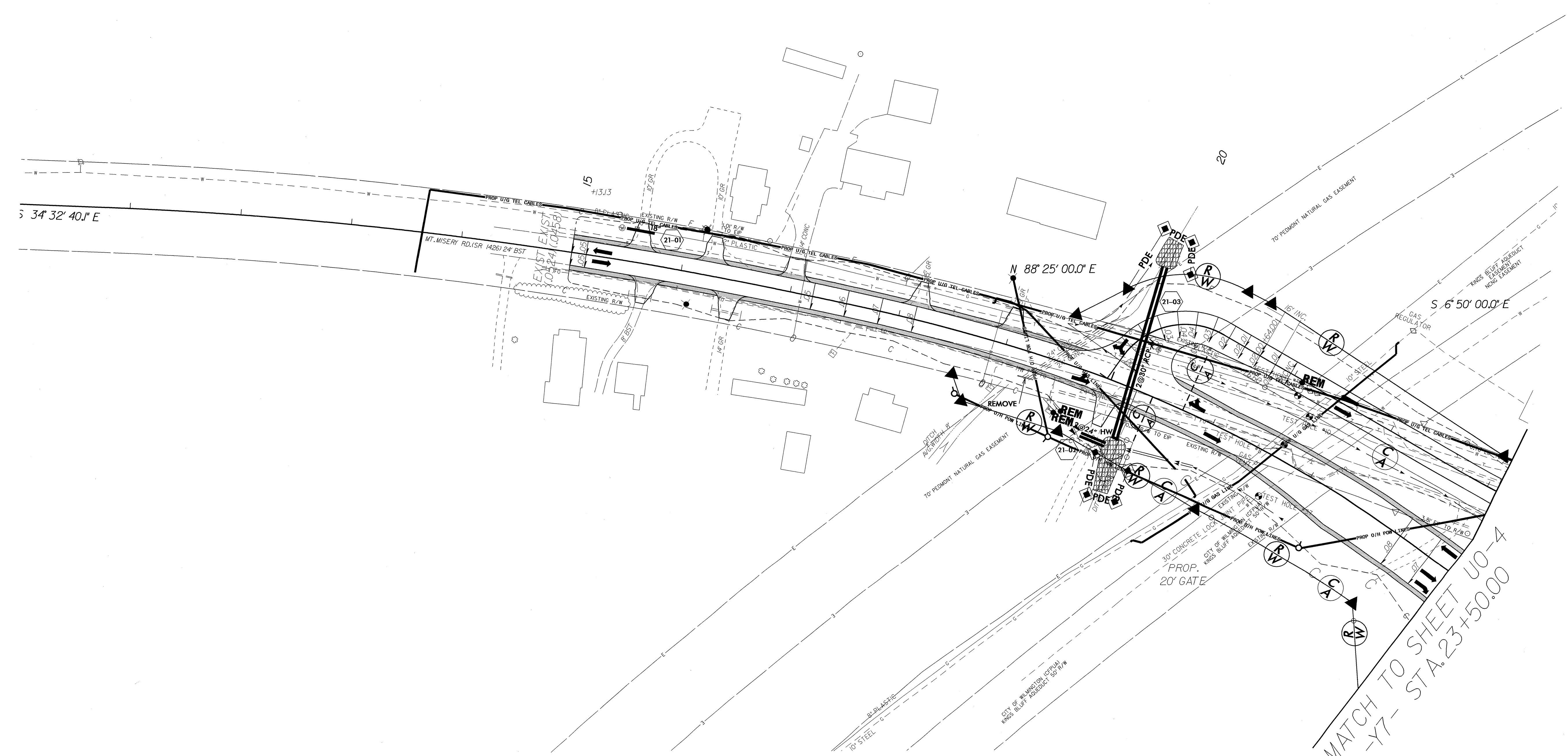
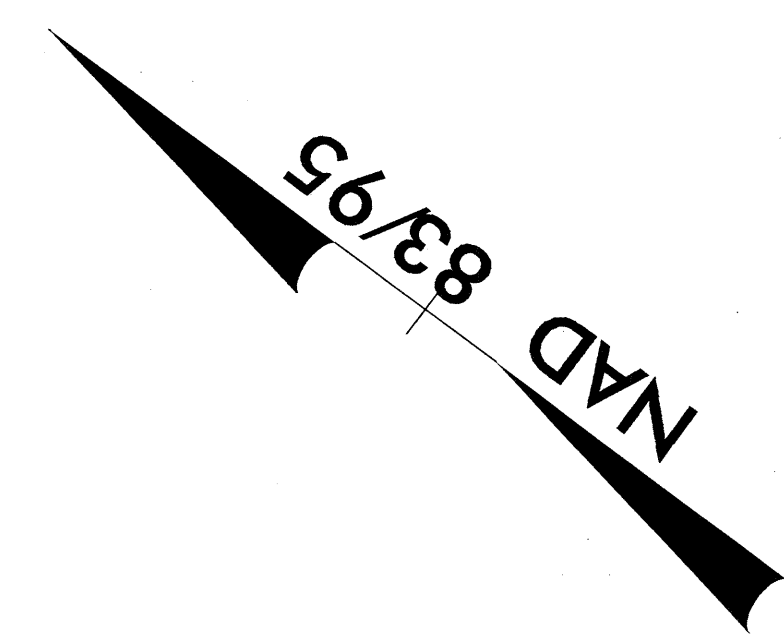
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SEE INSET A-A

### UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS



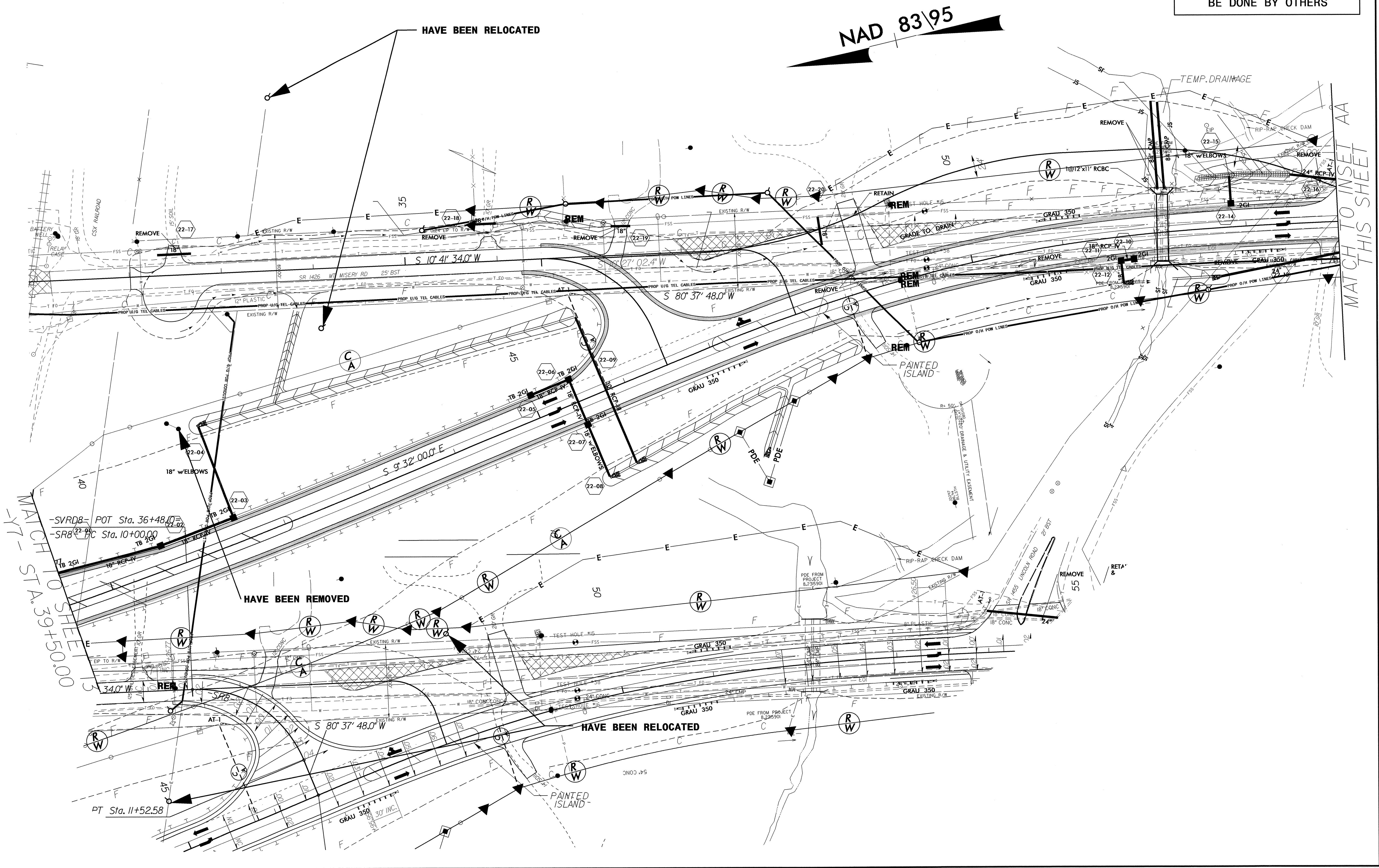
MATCH TO SHEET U0-4  
-Y7- STA. 23+50.00

5/14/99  
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UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

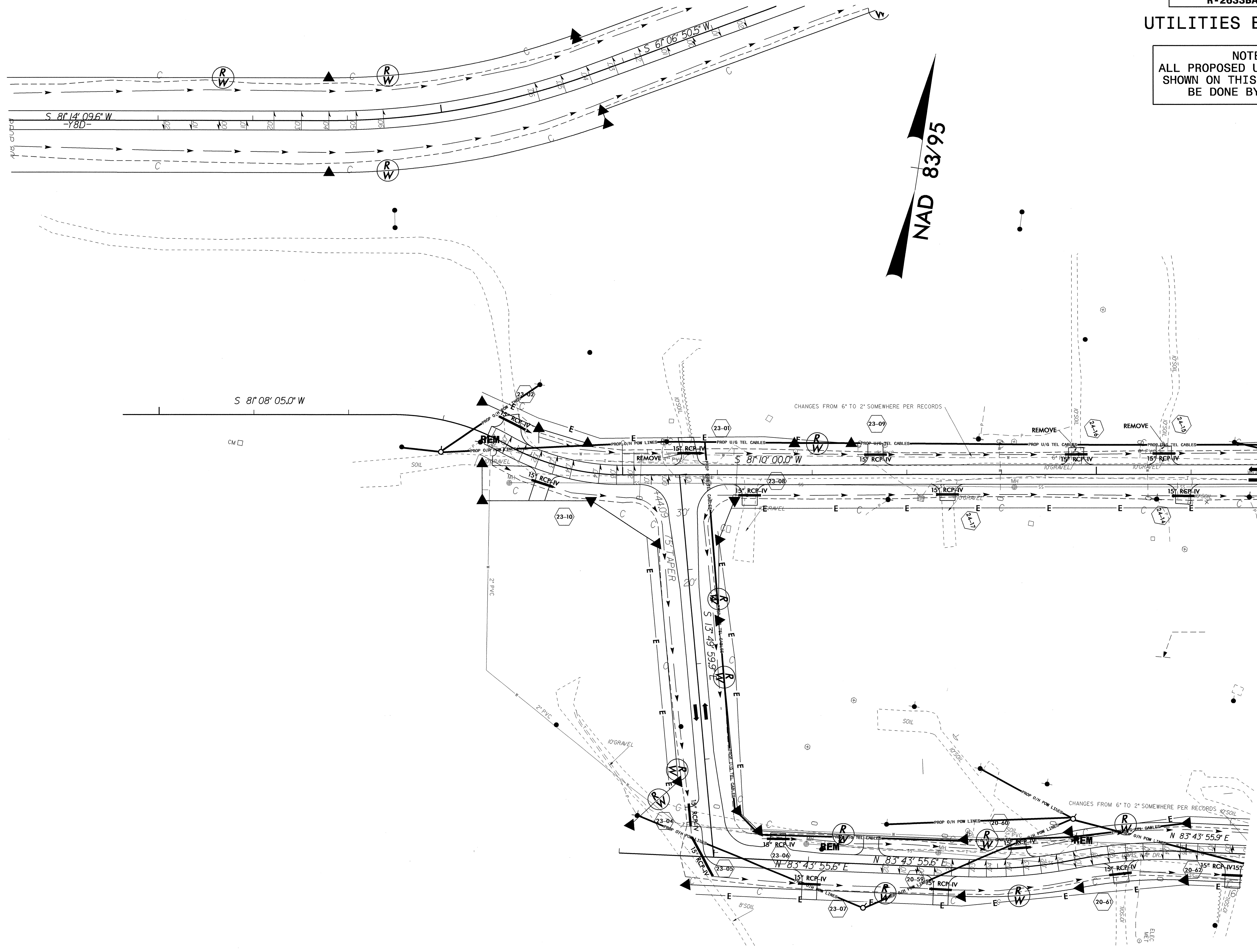
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3:53:51 PM  
LITTLE



### UTILITIES BY OTHERS

**NOTE:**  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

5/14/99



**NAD 83/95**

MATCH TO SHEET U0-10  
-Y8A- STA.13+09.60

09-SEP-2013 11:00 AM Proj: R2633BA\_UTI\_23\_U09\_psh.dgn  
\\utiles4\proj\p09\U09\U09.dwg



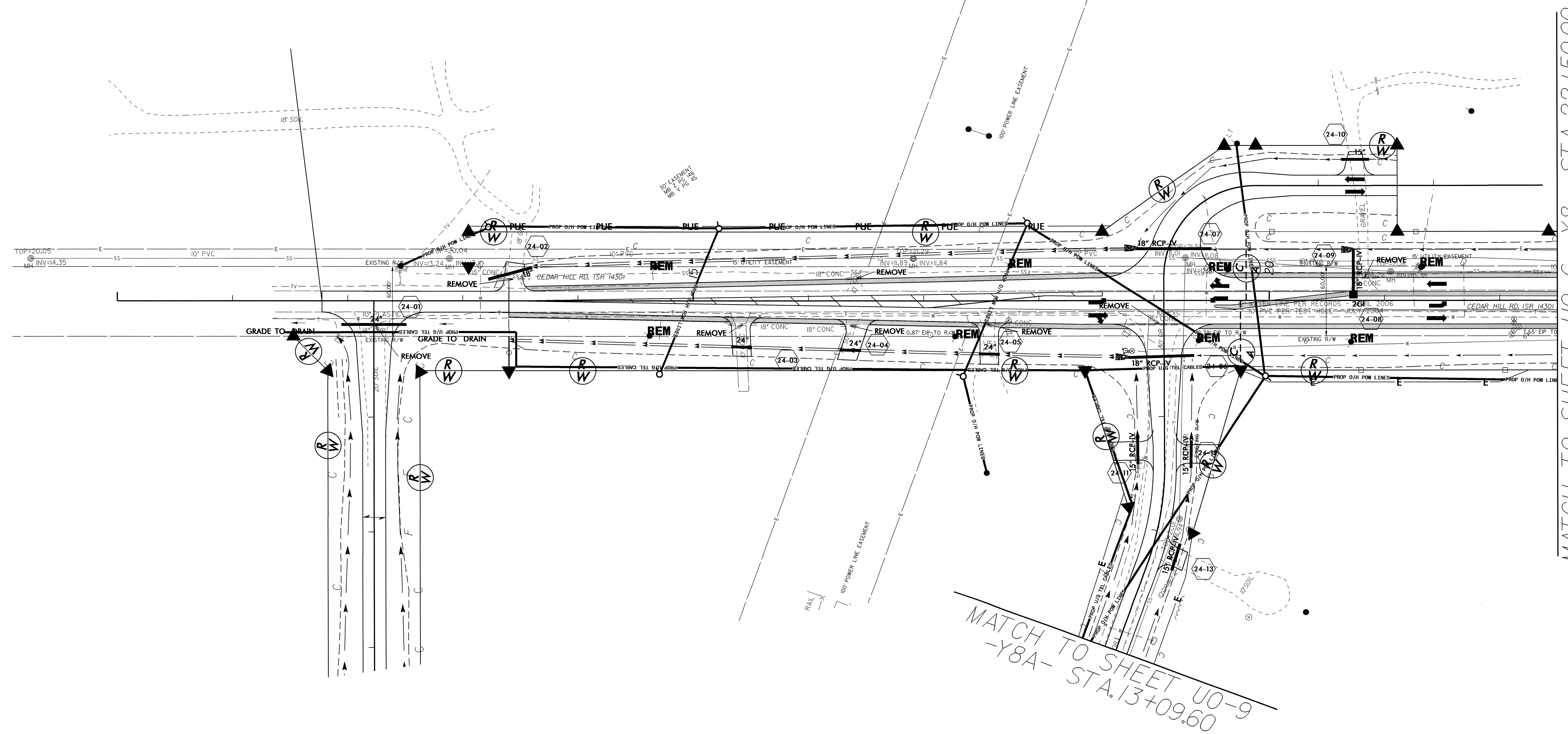
### UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

5/14/99

2.0%

NAD 83/95

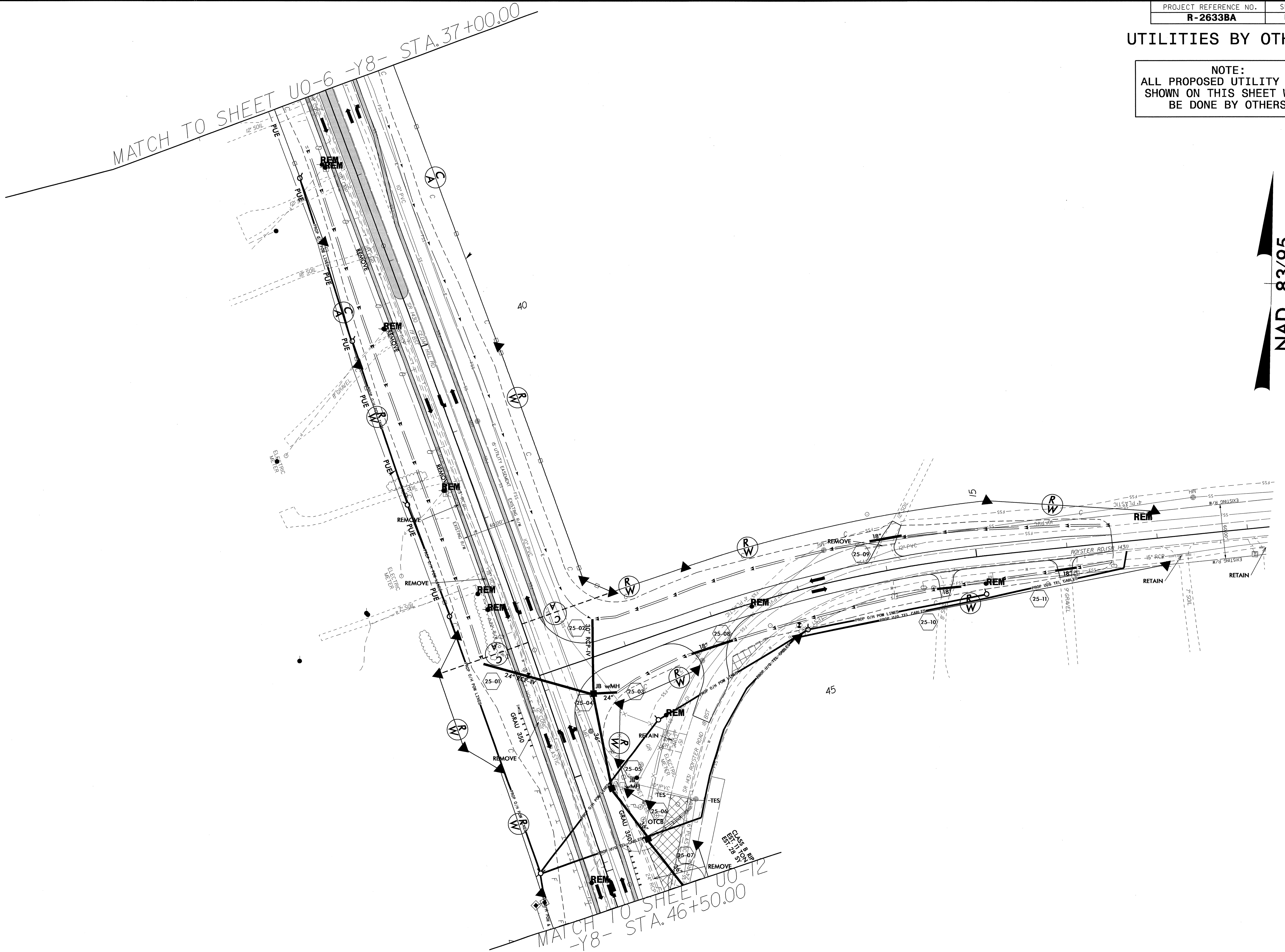
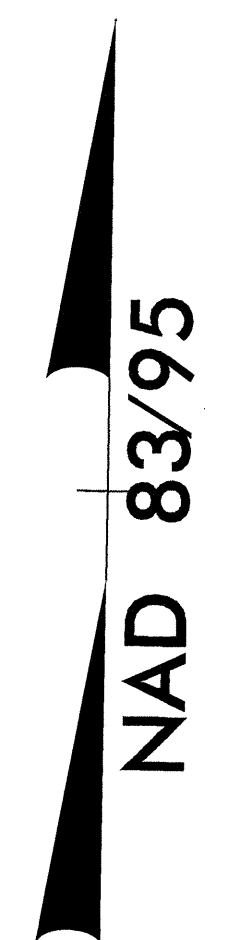


MATCH TO SHEET U0-6 -Y8- STA. 22+50.00

MATCH TO SHEET U0-9  
-Y8A- STA. 13+09.60

## UTILITIES BY OTHERS

**NOTE:**  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS



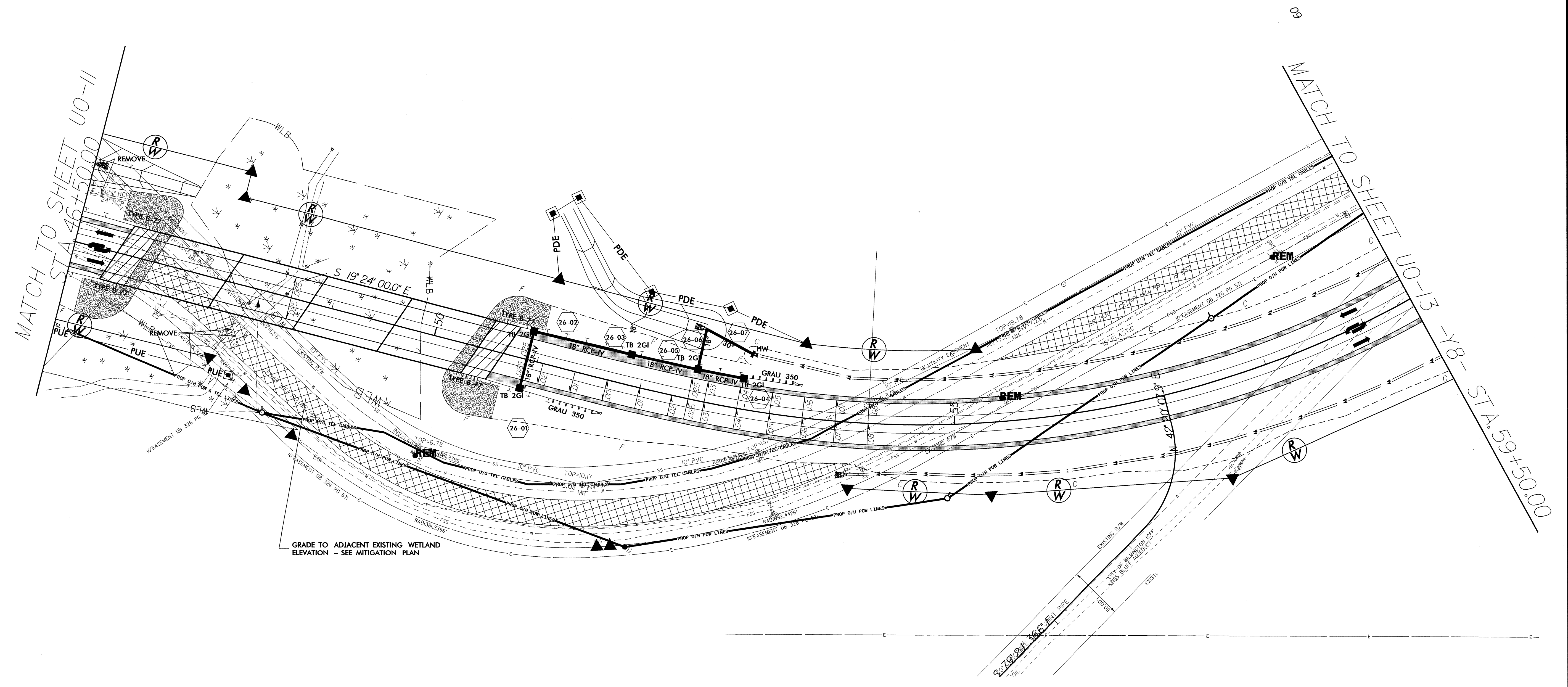
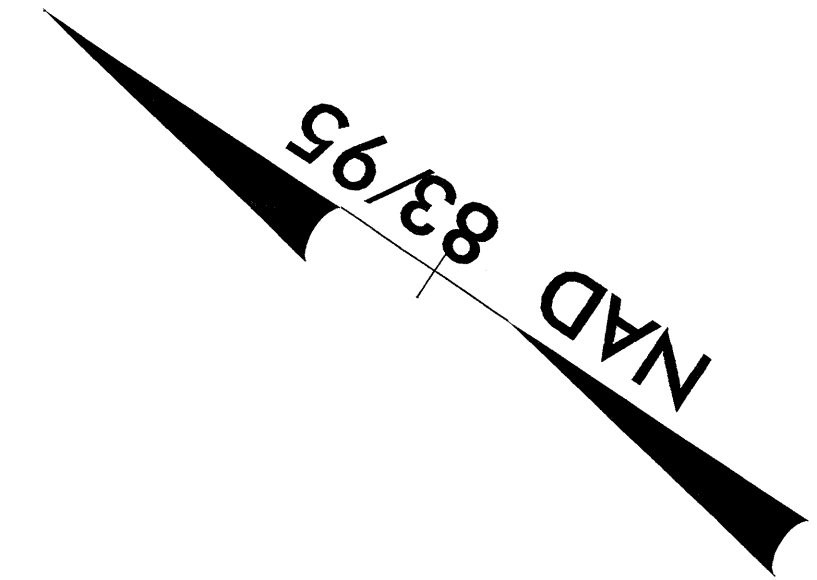
MATCH TO SHEET U0-6 -Y8- STA. 37+00.00

MATCH TO SHEET U0-12  
-Y8- STA. 46+50.00

5/14/99

### UTILITIES BY OTHERS

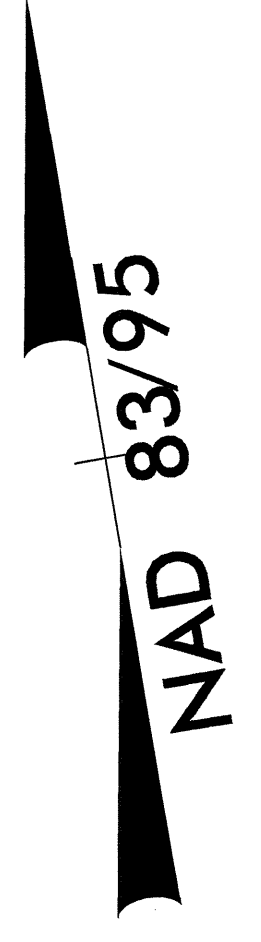
**NOTE:**  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS



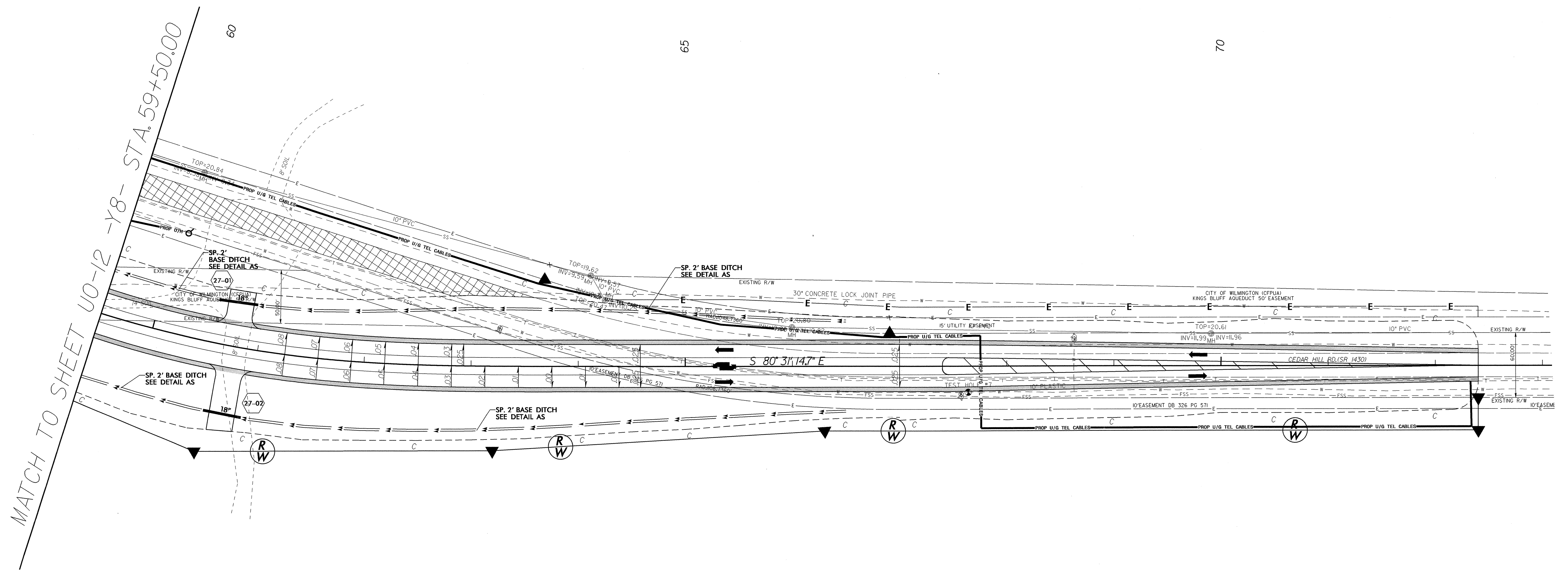
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**UTILITIES BY OTHERS**

**NOTE:**  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS



MATCH TO SHEET U0-12 -Y8- STA.59+50.00



5/14/99

09-SEP-2013 11:17 P:\o\N2633BA\_Ut\_27\_U013.psh.dgn