

09/08/99

9/9/2021 R:\Utilities\Engineering\UC\Proj\Pump Station\282\_001\_R5021\ut\_ps\_tsh\_UCP01\_psh.dgn

TIP PROJECT: R-5021

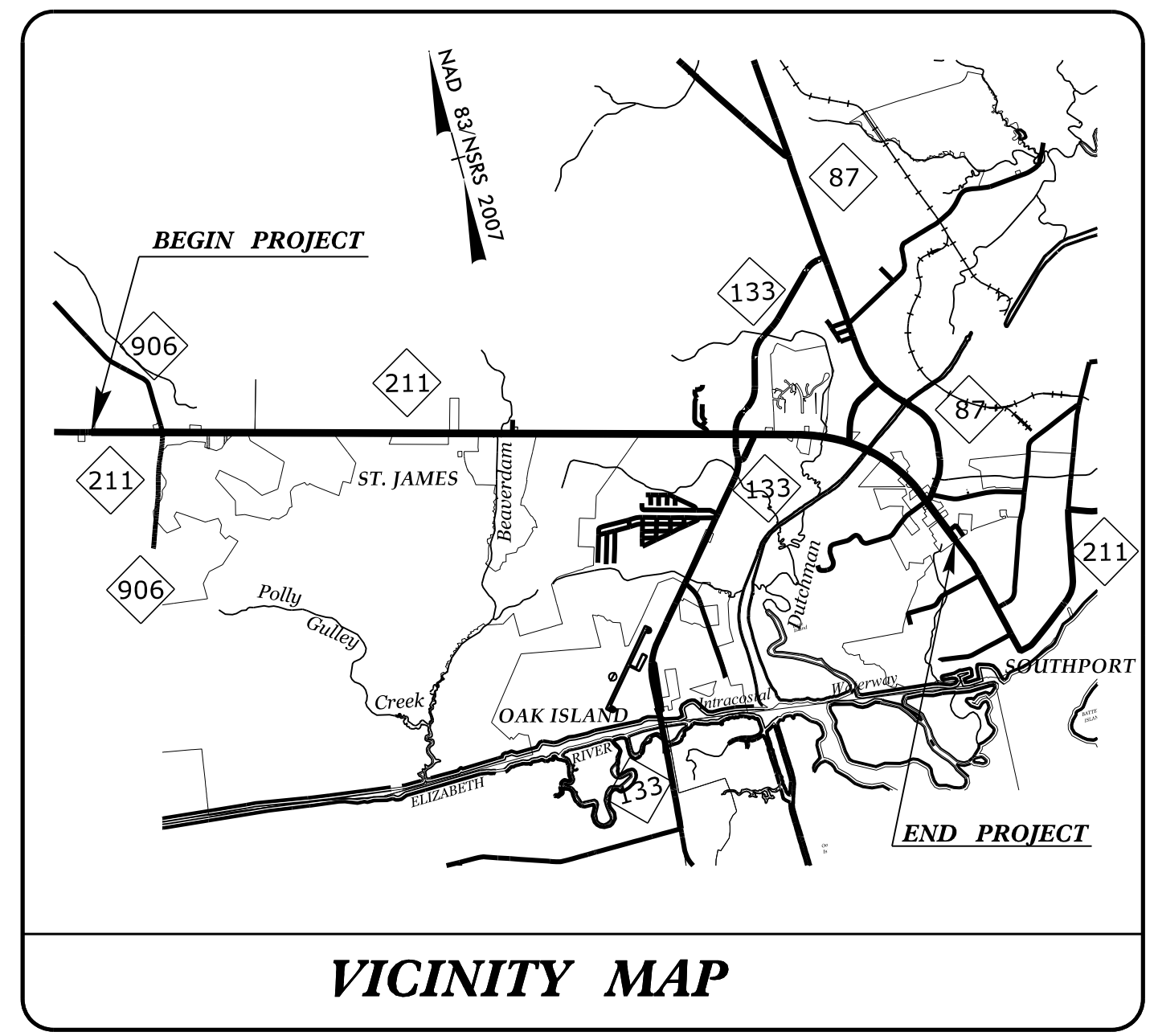
T.I.P. NO.	SHEET NO.
R-5021	UC-P1

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

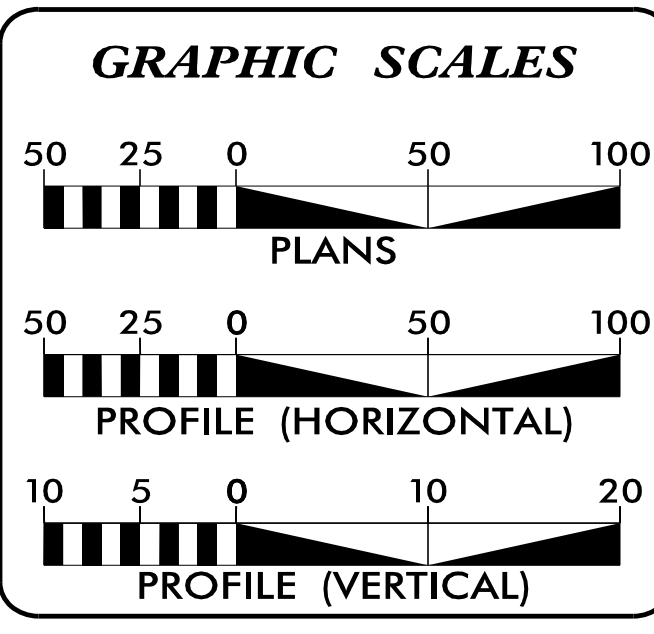
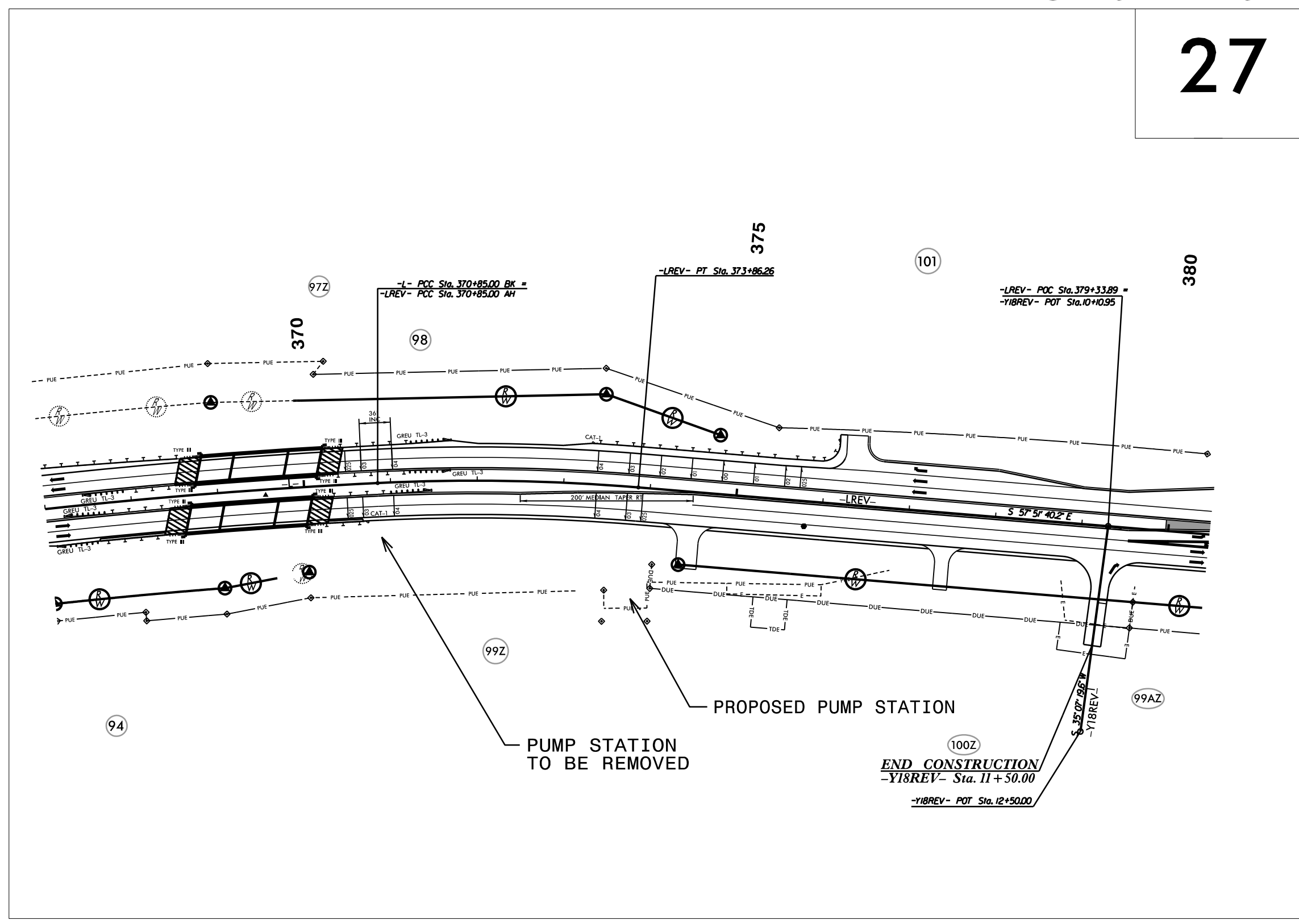
**UTILITY CONSTRUCTION  
PUMP STATION PLANS  
BRUNSWICK COUNTY**

LOCATION: NC 211 FROM WEST OF SR 1500 (MIDWAY ROAD)  
TO EAST OF NC 87  
TYPE OF WORK: PUMP STATION RELOCATION

**UC-P5  
27**



VICINITY MAP



INDEX OF SHEETS	
SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-P2	SYMBOL
UC-P3	NOTES
UC-P4 THRU UC-P11	PUMP STATION SHEETS
UC-P12 THRU UC-P16	ELECTRICAL SHEETS

**WATER AND SEWER OWNERS ON PROJECT**

(A) SANITARY SEWER - SE BRUNSWICK SANITARY DISTRICT

PREPARED IN THE OFFICE OF

**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
8601 SIX FORKS ROAD, FORUM 1 SUITE 700  
RALEIGH, NORTH CAROLINA 27615-3960  
NC LICENSE NO. F-0112  
1-888-521-4455 OR 919-878-9560

Kevin Nash, PE CONSULTANT CONTACT #1  
Daniel Tichinel, PE CONSULTANT CONTACT #2  
Aaron Stullenbarger CONSULTANT CONTACT #3

SEAL

DocuSigned by:  
Kevin Nash  
04337F4B269542E

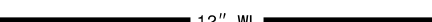

























**DIVISION OF HIGHWAYS UTILITIES UNIT**  
1555 MAIL SERVICES CENTER  
RALEIGH NC 27699-1555  
PHONE (919) 707-6690  
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Lonny Sleeper UTILITIES DIVISION ENGINEER  
Michael Bass ENGINEERING TECHNICIAN ADVANCED  
Steve Davis UTILITY DIVISION COORDINATOR


# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## UTILITIES PLAN SHEET SYMBOLS













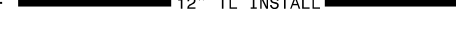


### PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ 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	


















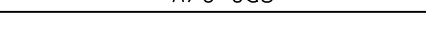



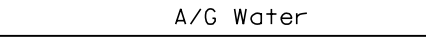

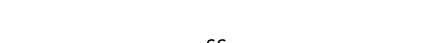















### PROPOSED SEWER SYMBOLS

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		Thrust Block	
Telephone Pole		Air Release Valve	
Joint Use Pole		Utility Vault	
Telephone Pedestal		Concrete Pier	
Utility Line by Others (Type as Shown)		Steel Pier	
Trenchless Installation		Plan Note	
Encasement by Open Cut		Pay Item Note	
Encasement			

### 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		Sanitary Sewer Cleanout	
End of Information			

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

5/14/99  
 2/9/2012  
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 REV: 2/1/2012

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# UTILITY CONSTRUCTION


## GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE MORE CONSERVATIVE REQUIREMENTS OF THE SOUTHEAST BRUNSWICK SANITARY DISTRICT "STANDARD SPECIFICATIONS AND DETAILS" DATED JUNE 2008, THE NCDOT 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES", OR THE NCDOT PUMP STATION SPECIAL PROVISIONS.
2. THE EXISTING UTILITIES BELONG TO SOUTHEAST BRUNSWICK SANITARY DISTRICT. THE DISTRICT'S CONTACT PERSON IS BRYAN MCCABE, AND HE CAN BE CONTACTED BY PHONE AT 910-471-1057.
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY & PUMP STATION 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. CONTRACTOR SHALL COORDINATE CLOSELY WITH NCDOT AND UTILITY OWNERS DURING INSTALLATION OF PUMP STATION & DEMOLITION OF EXISTING PUMP STATION FOR ANY NECESSARY SHUT DOWNS OR BY-PASS PUMPING. BY-PASS PUMPING IS THE CONTRACTOR'S RESPONSIBILITY.
2. NEW PUMP STATION SHALL BE IN SERVICE PRIOR TO DEMOLITION OF EXISTING PUMP STATION.
3. PUMPS, BASES, GUIDE RAILS, VALVES, AND ALL OTHER RELATED EQUIPMENT SHALL BE DELIVERED TO SOUTHEAST BRUNSWICK SANITARY DISTRICT WITH MINIMAL DAMAGE. COORDINATE DELIVERY WITH SOUTHEAST BRUNSWICK SANITARY DISTRICT. ITEMS THAT SOUTHEAST BRUNSWICK SANITARY DISTRICT DOES NOT WANT TO KEEP, SHALL BE DISPOSED OF BY THE CONTRACTOR.
4. ALL ELECTRICAL AND CONTROL EQUIPMENT SHALL BE DELIVERED TO SOUTHEAST BRUNSWICK SANITARY DISTRICT WITH MINIMAL DAMAGE. CONTRACTOR TO COORDINATE REMOVAL OF ELECTRICAL EQUIPMENT AND ELECTRIC SERVICE WITH THE POWER COMPANY.
5. SEWER PUMP STATION PLANS DESIGNED AND DRAWN AROUND THE FLYGT NP3153 HT PUMPS. CONTRACTOR IS RESPONSIBLE FOR ANY DESIGN CHANGES TO WET WELL, PUMP BASE PADS, PIPING, AND ANY OTHER RELATED PUMP STATION COMPONENTS IF CONTRACTOR CHOOSES TO USE AN APPROVED EQUAL.

PROJECT REFERENCE NO.	SHEET NO.
	UC-P3
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

## UTILITY CONSTRUCTION

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

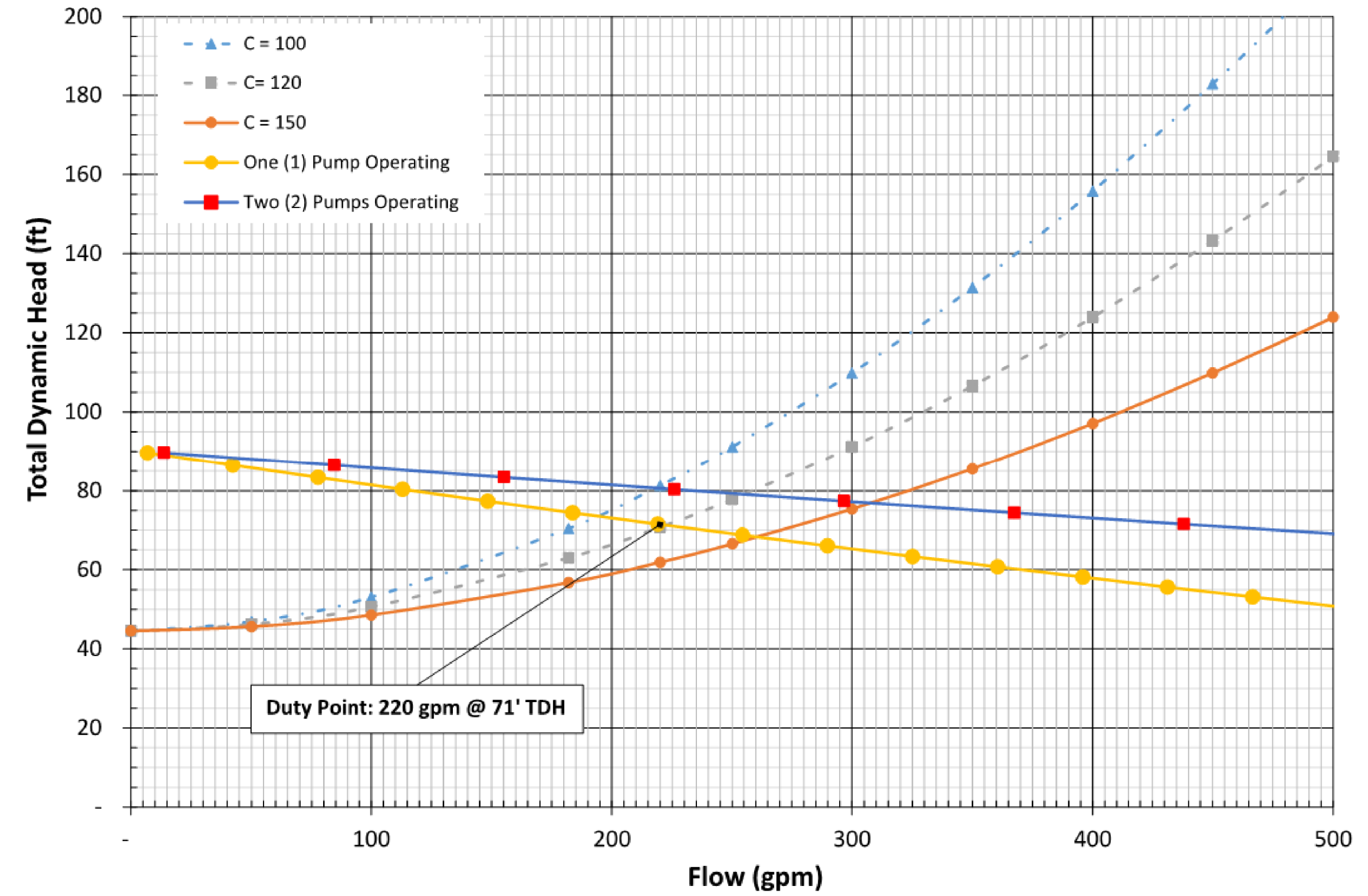
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R-5021	UC-P4
DESIGNED BY: DWT	
DRAWN BY: RAS	
CHECKED BY: JWC	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

**Southeast Brunswick Sanitary District SPS #4 - System Head & Pump Curve**

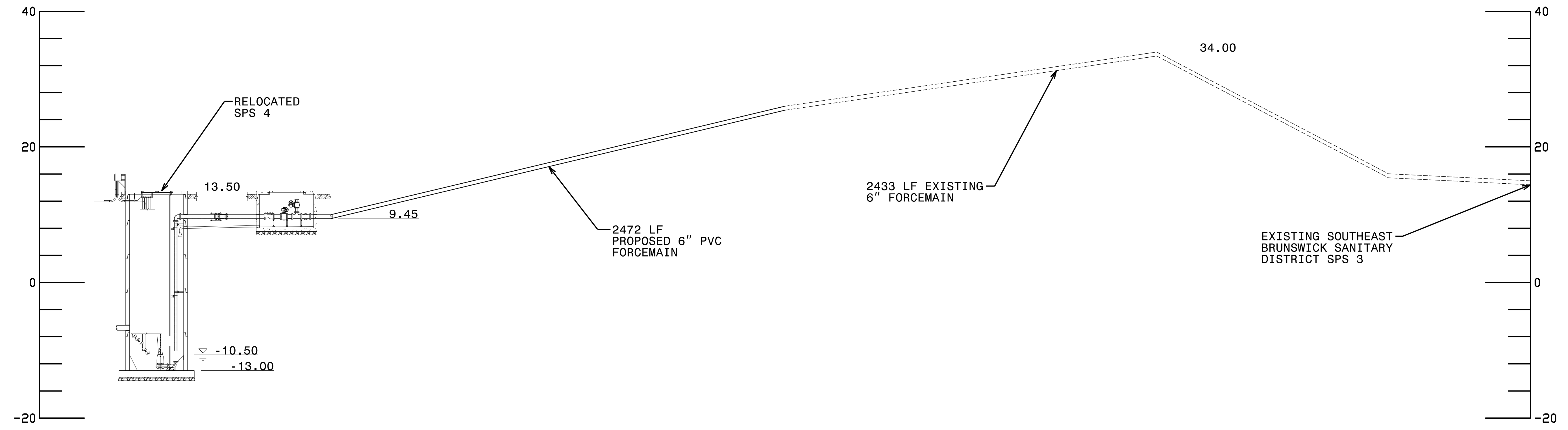
Hazen - Williams Method

Flygt Model NT 3153 HT, 230 mm Impeller



**UTILITY CONSTRUCTION**  
**DOCUMENT NOT CONSIDERED FINAL**  
**UNLESS ALL SIGNATURES COMPLETED**

- NOTES:**
1. THIS PROFILE ONLY SHOWS THE MAIN SEWER PROCESS FLOW TO DEVELOP THE SYSTEM CURVE.
  2. EXISTING FACILITIES ARE SHOWN AS DASHED, WHEREAS PROPOSED FACILITIES ARE SHOWN AS BLACK.
  3. EXISTING FACILITIES SHOWN ARE BASED ON NC-DOT R-3324 UTILITY CONSTRUCTION PLANS DATED 12/6/2012.




**PUMP STATION HYDRAULIC PROFILE**

NO HORIZONTAL SCALE  
 VERTICAL SCALE AS SHOWN

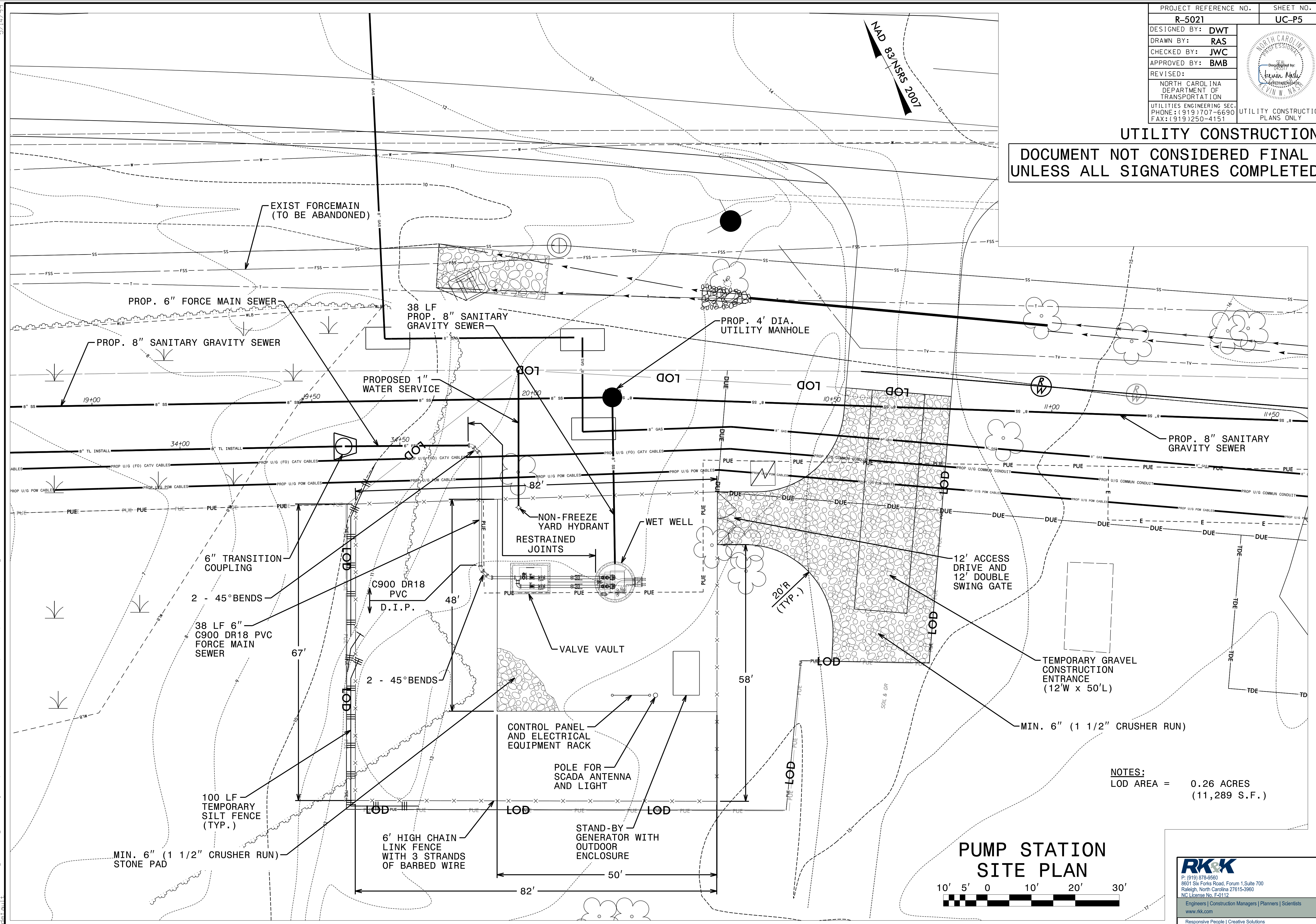


**RKK**  
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 Raleigh, North Carolina 27615-3960  
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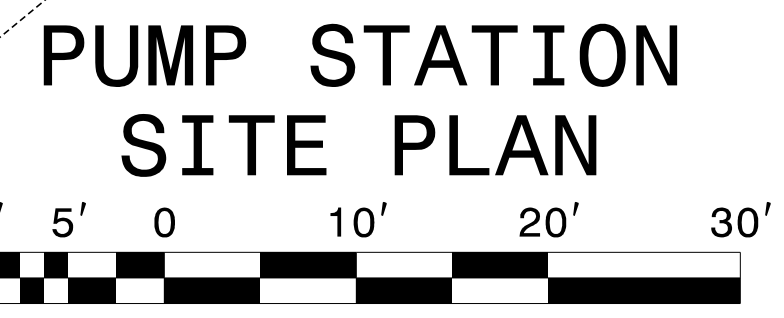
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R-5021	UC-P5
DESIGNED BY: DWT	
DRAWN BY: RAS	
CHECKED BY: JWC	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

**UTILITY CONSTRUCTION**  
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**NOTES:**  
LOD AREA = 0.26 ACRES (11,289 S.F.)

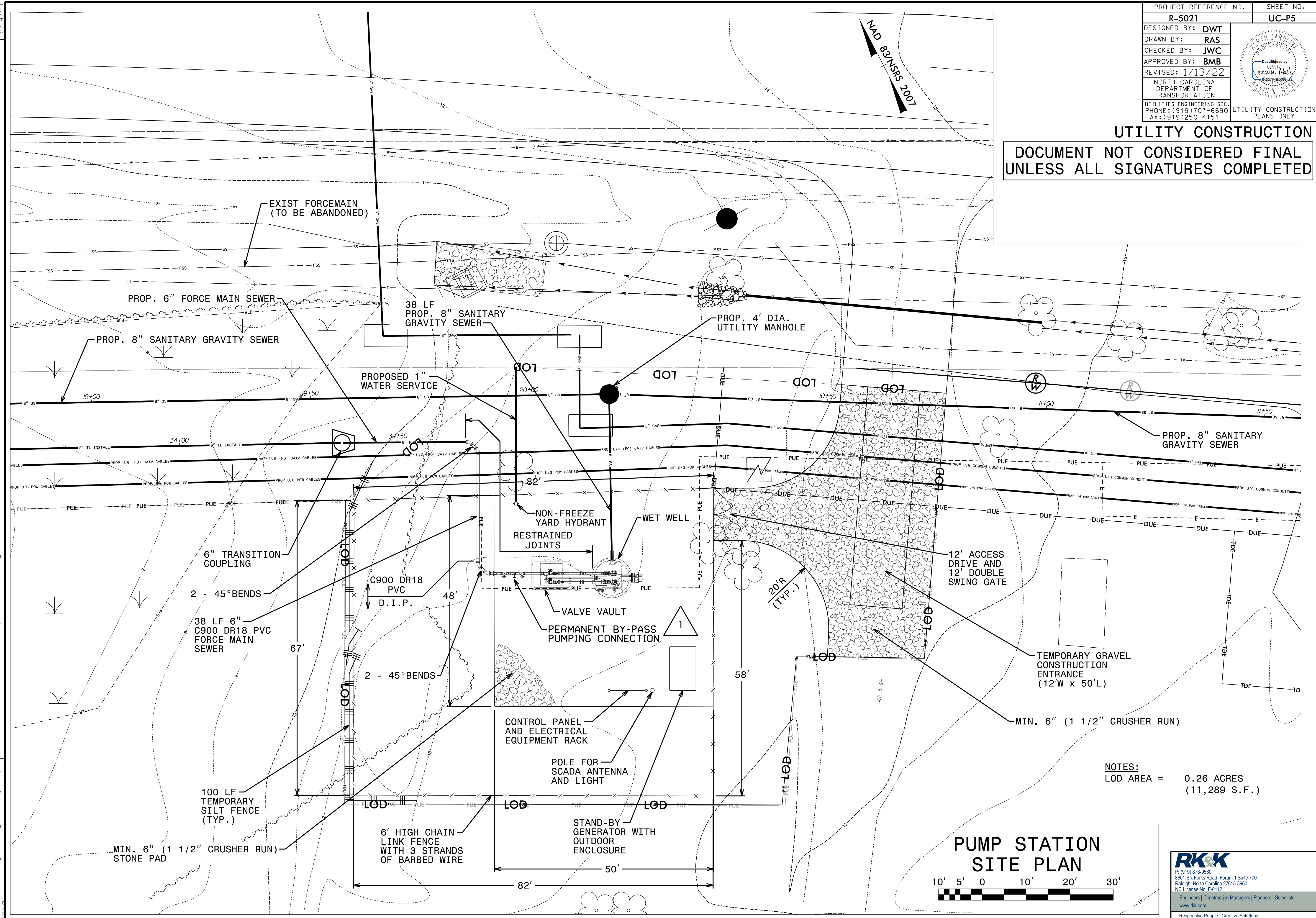
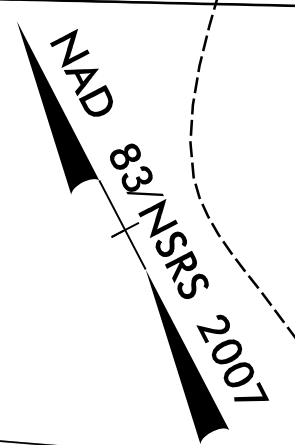


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R-5021	UC-P5
DESIGNED BY: DWT	
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CHECKED BY: JWC	
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REVISED: 1/13/22	
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UTILITY CONSTRUCTION

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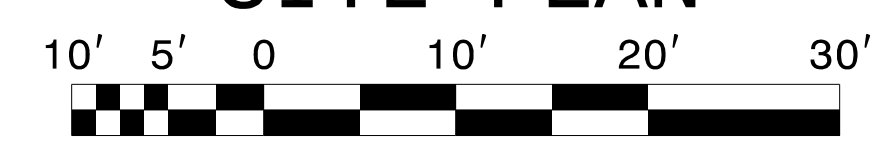
REVISIONS

01-13-2022 - 1. RELOCATED BYPASS TO OUTSIDE OF THE VALVE VAULT

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5/14/99  
5/19/2022

NOTES:  
LOD AREA = 0.26 ACRES  
(11,289 S.F.)


PUMP STATION  
SITE PLAN



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5/28/99

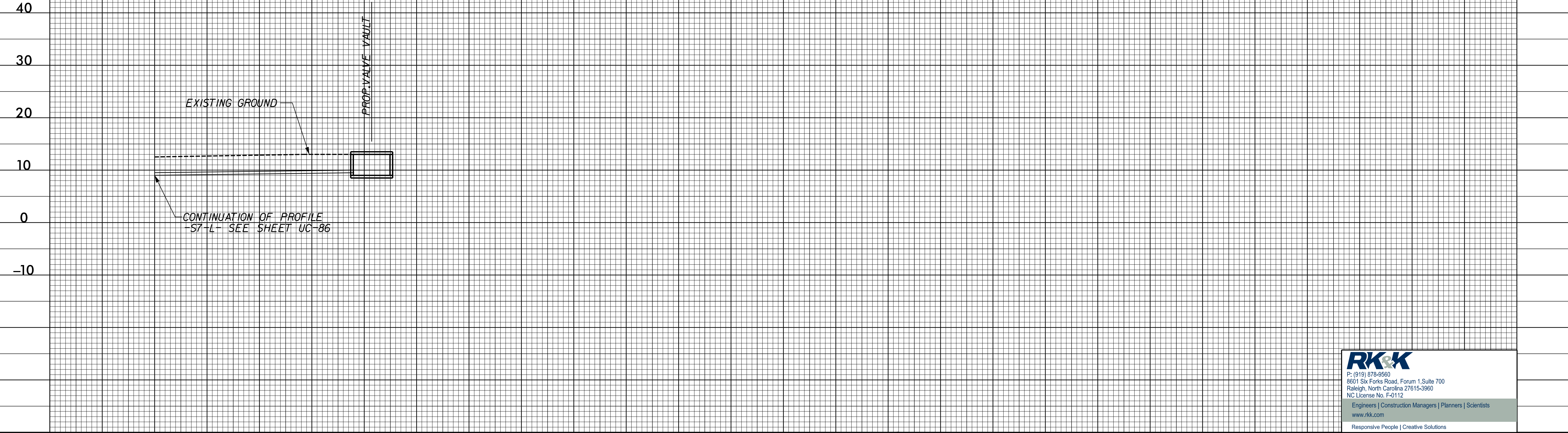
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PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-P6
DESIGNED BY: DWT	
DRAWN BY: RAS	
CHECKED BY: JWC	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

### PS-1



### PS-2




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# GENERAL NOTES

- PUMP STATION PIPING BETWEEN WETWELL & VALVE VAULT IS FLANGED-END TO PLAIN-END D.I.P., UNLESS SHOWN OTHERWISE.
- ALL PIPING LOCATED IN WET WELL AND VALVE VAULT SHALL BE FLANGE JOINT EPOXY COATING SYSTEM AND PROTECTO 401 LINED DUCTILE IRON CLASS 53. ALL BURIED PIPING OUTSIDE OF WET WELL AND VALVE VAULT SHALL BE MECHANICAL JOINT DUCTILE IRON CLASS 51 RESTRAINED JOINT UNLESS OTHERWISE NOTED.
- ALL D.I.P. & FITTINGS SHALL BE LINED WITH PROTECTO 401 AND EPOXY COATED. REPAIR CUT SECTIONS PRIOR TO INSTALLATION.
- PUMP STATION WET WELL INTERIOR SHALL BE LINED WITH RAVEN 400 COATING SYSTEM.
- ALL PIPE & CONDUIT PENETRATIONS IN WETWELL AND VALVE VAULT TO BE CORED AND FITTED WITH LINK SEAL.
- VALVE VAULT PIPING SHALL BE SUPPORTED WITH STAINLESS STEEL SUPPORT STANCHIONS AS SHOWN ON THE DRAWINGS.
- INSTALL A 1/4" TAP AND TEST COCK ON PIPING WITHIN VALVE VAULT.
- FOR ORIENTATION OF WETWELL AND VALVE VAULT SEE PLAN AND PROFILE SHEETS.
- SEWER PUMP STATION PLANS DESIGNED AND DRAWN AROUND THE FLYGT NP3153 HT PUMPS. CONTRACTOR IS RESPONSIBLE FOR ANY DESIGN CHANGES TO WET WELL, PUMP BASE PADS, PIPING, AND ANY OTHER RELATED PUMP STATION COMPONENTS IF CONTRACTOR CHOOSES TO USE AN APPROVED EQUAL.
- PUMP OPERATION SHALL BE CONTROLLED BY WET WELL CONTROL FLOAT SWITCHES. CONTROL FLOAT SWITCH ELEVATIONS SHOWN ARE APPROXIMATE AND MAY REQUIRE FIELD ADJUSTMENT BY CONTRACTOR.
- INFLUENT GRAVITY PIPE CONNECTION IN WET WELL SHALL UTILIZE AN INSIDE DROP PIPE.
- SEE PUMP STATION SECTION A-A FOR MATERIAL NOTES.

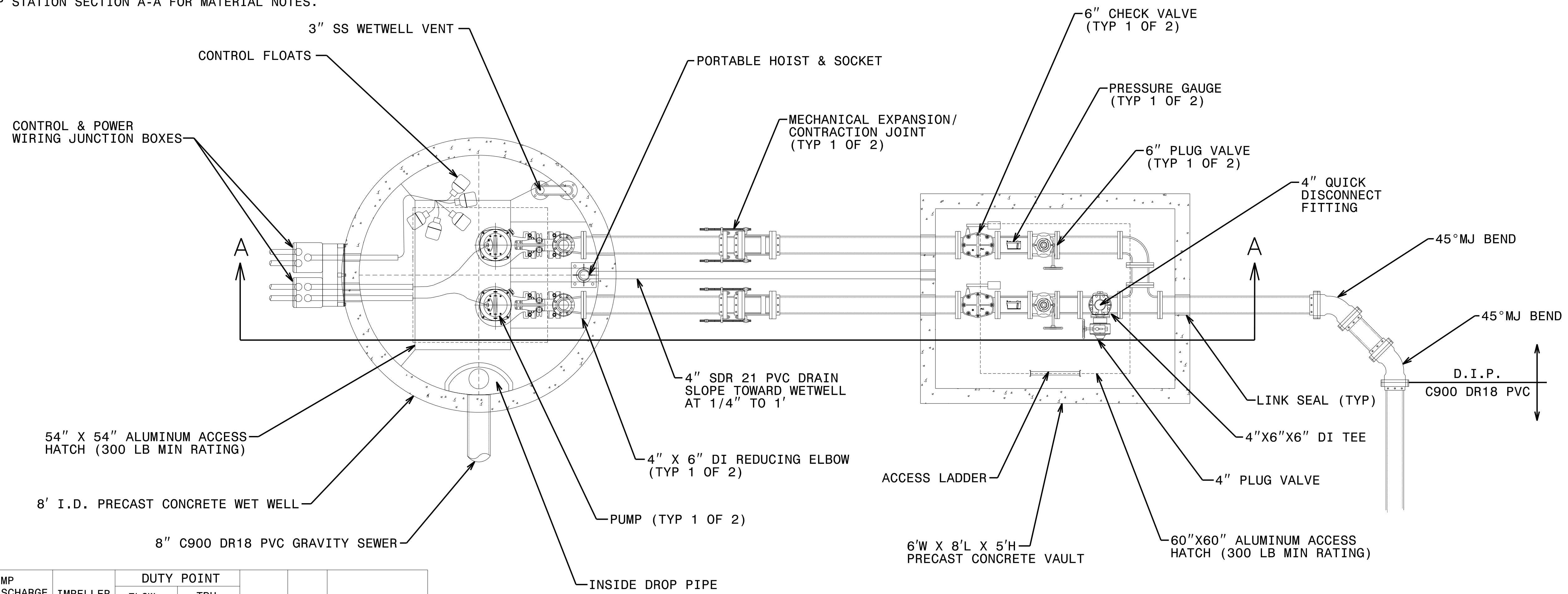
# SEQUENCE OF CONSTRUCTION

- CONTRACTOR SHALL VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO CONSTRUCTION.
- INSTALL E&S CONTROLS (I.E. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE & SILT FENCE). MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES DURING THE COURSE OF CONSTRUCTION.
- CLEAR & GRUB AS NEEDED WITHIN THE LIMITS OF DISTURBANCE TO INSTALL THE PUMP STATION. REMOVE TREES AS REQUIRED TO CONSTRUCT PUMP STATION SITE. TREES & STUMPS TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. CONTRACTOR SHALL MINIMIZE, TO THE EXTENT PRACTICAL, DISTURBANCE WITHIN THE PUMP STATION LIMITS OF DISTURBANCE.
- INSTALL WETWELL. INSTALL CONCRETE GROUT IN WETWELL BOTTOM PER PUMP MANUFACTURER REQUIREMENTS. APPLY RAVEN 400 COATING SYSTEM TO THE ENTIRE WETWELL INTERIOR. CONSTRUCT THE REMAINING PUMP STATION ITEMS, E.G., VALVE VAULT, GRAVEL PAD, ELECTRICAL, GRAVITY SEWER, FORCEMAIN, 1" WATER SERVICE, FENCING, ETC.
- COMPLETE PUMP STATION START-UP, TRAINING, AND ACCEPTANCE TESTING WITH SOUTHEAST BRUNSWICK SANITARY DISTRICT PRIOR TO PLACING PUMP STATION INTO SERVICE.
- UPON COMPLETION OF CONSTRUCTION AND SUCCESSFUL ESTABLISHMENT OF PERMANENT VEGETATIVE COVER, REMOVE EROSION AND SEDIMENT CONTROL MEASURES AND DEVICES WITH APPROVAL FROM SEDIMENT & EROSION CONTROL INSPECTOR.
- PUMP STATION SHALL BE IN SERVICE PRIOR TO DEMOLITION OF EXISTING PUMP STATION.

PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-P7
DESIGNED BY: DWT	
DRAWN BY: RAS	
CHECKED BY: JWC	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

## UTILITY CONSTRUCTION

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



PUMP STATION NUMBER	PUMP DISCHARGE DIAMETER	IMPELLER DIAMETER	DUTY POINT		RPM	HP	VOLTAGE / PHASE
			FLOW (GPM)	TDH (FT)			
4	4	230 MM	220	71	1800	12	480/3

**PUMP SPECIFICATIONS**  
NO SCALE

**PUMP STATION MECHANICAL PLAN**



**RK&K**  
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# GENERAL NOTES

- PUMP STATION PIPING BETWEEN WETWELL & VALVE VAULT IS FLANGED-END TO PLAIN-END D.I.P., UNLESS SHOWN OTHERWISE.
- ALL PIPING LOCATED IN WET WELL AND VALVE VAULT SHALL BE FLANGE JOINT EPOXY COATING SYSTEM AND PROTECTO 401 LINED DUCTILE IRON CLASS 53. ALL BURIED PIPING OUTSIDE OF WET WELL AND VALVE VAULT SHALL BE MECHANICAL JOINT DUCTILE IRON CLASS 51 RESTRAINED JOINT UNLESS OTHERWISE NOTED.
- ALL D.I.P. & FITTINGS SHALL BE LINED WITH PROTECTO 401 AND EPOXY COATED. REPAIR CUT SECTIONS PRIOR TO INSTALLATION.
- PUMP STATION WET WELL INTERIOR SHALL BE LINED WITH RAVEN 400 COATING SYSTEM.
- ALL PIPE & CONDUIT PENETRATIONS IN WETWELL AND VALVE VAULT TO BE CORED AND FITTED WITH LINK SEAL.
- VALVE VAULT PIPING SHALL BE SUPPORTED WITH STAINLESS STEEL SUPPORT STANCHIONS AS SHOWN ON THE DRAWINGS.
- INSTALL A 1/4" TAP AND TEST COCK ON PIPING WITHIN VALVE VAULT.
- FOR ORIENTATION OF WETWELL AND VALVE VAULT SEE PLAN AND PROFILE SHEETS.
- SEWER PUMP STATION PLANS DESIGNED AND DRAWN AROUND THE FLYGT NP3153 HT PUMPS. CONTRACTOR IS RESPONSIBLE FOR ANY DESIGN CHANGES TO WET WELL, PUMP BASE PADS, PIPING, AND ANY OTHER RELATED PUMP STATION COMPONENTS IF CONTRACTOR CHOOSES TO USE AN APPROVED EQUAL.
- PUMP OPERATION SHALL BE CONTROLLED BY WET WELL CONTROL FLOAT SWITCHES. CONTROL FLOAT SWITCH ELEVATIONS SHOWN ARE APPROXIMATE AND MAY REQUIRE FIELD ADJUSTMENT BY CONTRACTOR.
- INFLUENT GRAVITY PIPE CONNECTION IN WET WELL SHALL UTILIZE AN INSIDE DROP PIPE.
- SEE PUMP STATION SECTION A-A FOR MATERIAL NOTES.

# SEQUENCE OF CONSTRUCTION

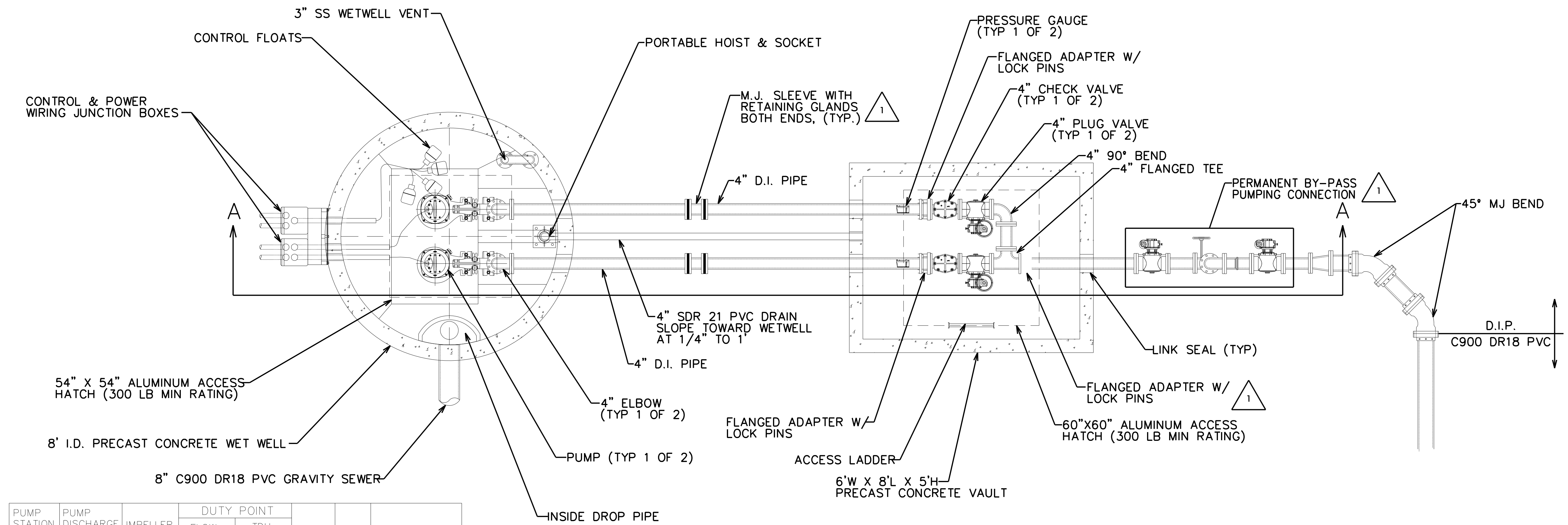
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO CONSTRUCTION.
- INSTALL E&S CONTROLS (I.E. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE & SILT FENCE). MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES DURING THE COURSE OF CONSTRUCTION.
- CLEAR & GRUB AS NEEDED WITHIN THE LIMITS OF DISTURBANCE TO INSTALL THE PUMP STATION. REMOVE TREES AS REQUIRED TO CONSTRUCT PUMP STATION SITE. TREES & STUMPS TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. CONTRACTOR SHALL MINIMIZE, TO THE EXTENT PRACTICAL, DISTURBANCE WITHIN THE PUMP STATION LIMITS OF DISTURBANCE.
- INSTALL WETWELL. INSTALL CONCRETE GROUT IN WETWELL BOTTOM PER PUMP MANUFACTURER REQUIREMENTS. APPLY RAVEN 400 COATING SYSTEM TO THE ENTIRE WETWELL INTERIOR. CONSTRUCT THE REMAINING PUMP STATION ITEMS, E.G., VALVE VAULT, GRAVEL PAD, ELECTRICAL, GRAVITY SEWER, FORCEMAIN, 1" WATER SERVICE, FENCING, ETC.
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- UPON COMPLETION OF CONSTRUCTION AND SUCCESSFUL ESTABLISHMENT OF PERMANENT VEGETATIVE COVER, REMOVE EROSION AND SEDIMENT CONTROL MEASURES AND DEVICES WITH APPROVAL FROM SEDIMENT & EROSION CONTROL INSPECTOR.
- PUMP STATION SHALL BE IN SERVICE PRIOR TO DEMOLITION OF EXISTING PUMP STATION.

PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-P7
DESIGNED BY: DWT	
DRAWN BY: RAS	
CHECKED BY: JWC	
APPROVED BY: BMB	
REVISED: 1/13/22	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

## UTILITY CONSTRUCTION

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

REVISIONS  
 01-13-2022 - 1. ADJUSTED CLEARANCE FROM ANY FITTING/FLANGE TO VAULT WALL TO 18" MINIMUM.  
 2. 4" PUMP DISCHARGE CONTINUED UNTIL AFTER THE VALVE VAULT.  
 3. BYPASS RELOCATED TO OUTSIDE OF VALVE VAULT.  
 4. ADDED RESTRAINED JOINT FLANGE ADAPTERS AND FLEX COUPLINGS IN VALVE VAULT.  
 SEE SOUTHEAST BRUNSWICK SANITARY DISTRICT STANDARD DETAILS FOR DUPLEX PUMP STATION.



PUMP STATION NUMBER	PUMP DISCHARGE DIAMETER	IMPELLER DIAMETER	DUTY POINT		RPM	HP	VOLTAGE/PHASE
			FLOW (GPM)	TDH (FT)			
4	4	230 MM	220	71	1800	12	480/3


## PUMP SPECIFICATIONS

NO SCALE

## PUMP STATION MECHANICAL PLAN

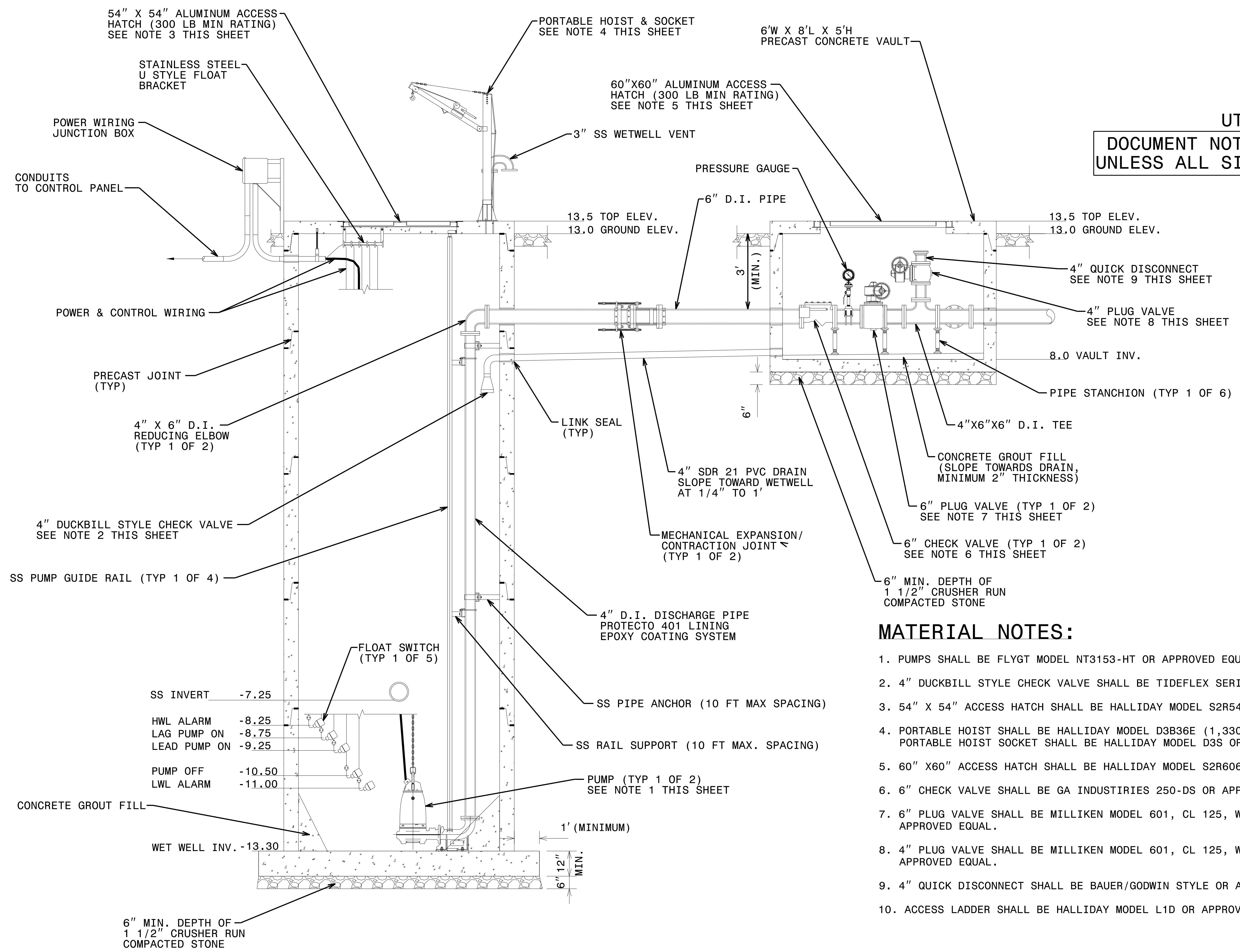


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PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-P8
DESIGNED BY: DWT	
DRAWN BY: RAS	
CHECKED BY: JWC	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

**UTILITY CONSTRUCTION**

**DOCUMENT NOT CONSIDERED FINAL  
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**MATERIAL NOTES:**

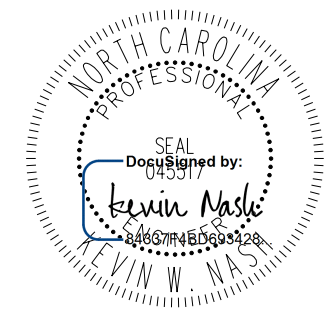
- PUMPS SHALL BE FLYGT MODEL NT3153-HT OR APPROVED EQUAL.
- 4" DUCKBILL STYLE CHECK VALVE SHALL BE TIDEFLEX SERIES TF2 OR APPROVED EQUAL.
- 54" X 54" ACCESS HATCH SHALL BE HALLIDAY MODEL S2R5454 OR APPROVED EQUAL.
- PORTABLE HOIST SHALL BE HALLIDAY MODEL D3B36E (1,330 LB RATING) OR APPROVED EQUAL. PORTABLE HOIST SOCKET SHALL BE HALLIDAY MODEL D3S OR APPROVED EQUAL.
- 60" X 60" ACCESS HATCH SHALL BE HALLIDAY MODEL S2R6060 OR APPROVED EQUAL.
- 6" CHECK VALVE SHALL BE GA INDUSTRIES 250-DS OR APPROVED EQUAL.
- 6" PLUG VALVE SHALL BE MILLIKEN MODEL 601, CL 125, WITH HANDWHEEL OPERATOR OR APPROVED EQUAL.
- 4" PLUG VALVE SHALL BE MILLIKEN MODEL 601, CL 125, WITH HANDWHEEL OPERATOR OR APPROVED EQUAL.
- 4" QUICK DISCONNECT SHALL BE BAUER/GODWIN STYLE OR APPROVED EQUAL.
- ACCESS LADDER SHALL BE HALLIDAY MODEL L1D OR APPROVED EQUAL.

**PUMP STATION SECTION A-A**



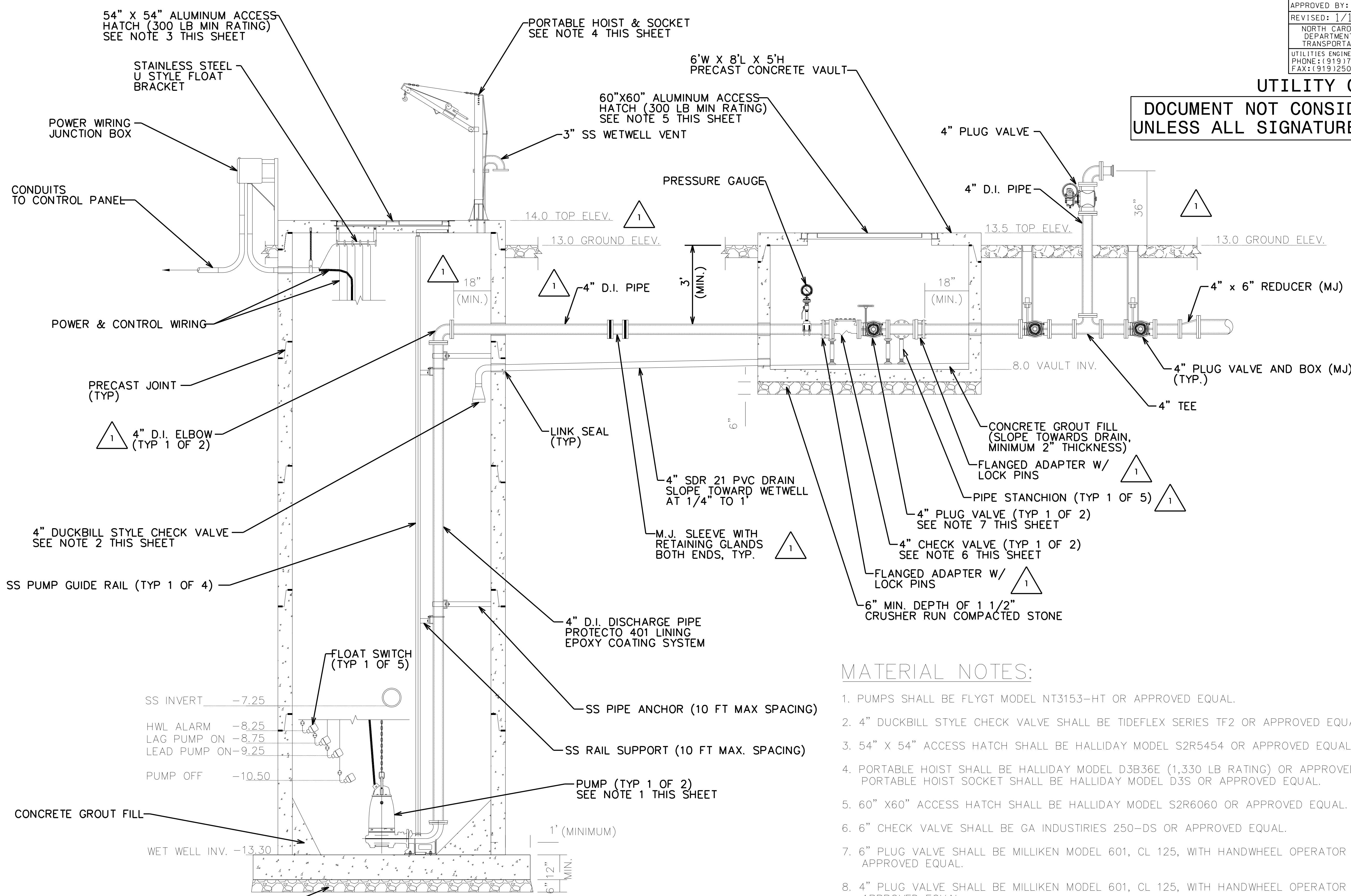

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PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-P8
DESIGNED BY: DWT	
DRAWN BY: RAS	
CHECKED BY: JWC	
APPROVED BY: BMB	
REVISED: 1/13/22	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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UTILITY CONSTRUCTION

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REVISIONS

01-13-2022 - 1. ADJUSTED CLEARANCE FROM ANY FITTING/FLANGE TO VAULT WALL TO 18" MINIMUM.  
 2. 4" PUMP DISCHARGE CONTINUED UNTIL AFTER THE VALVE VAULT.  
 3. BYPASS RELOCATED TO OUTSIDE OF VALVE VAULT.  
 4. ADDED RESTRAINED JOINT FLANGE ADAPTERS AND FLEX COUPLINGS IN VALVE VAULT.  
 5. SEE SOUTHEAST BRUNSWICK SANITARY DISTRICT STANDARD DETAILS FOR DUPLEX PUMP STATION.  
 6. RAISED PUMP STATION RIM TO ELEVATION 14.  
 7. FLYGT PUMP AS A SOLE SOURCE OR APPROVED EQUAL.

SS INVERT	-7.25
HWL ALARM	-8.25
LAG PUMP ON	-8.75
LEAD PUMP ON	-9.25
PUMP OFF	-10.50

PUMP STATION SECTION A-A



MATERIAL NOTES:

- PUMPS SHALL BE FLYGT MODEL NT3153-HT OR APPROVED EQUAL.
- 4" DUCKBILL STYLE CHECK VALVE SHALL BE TIDEFLEX SERIES TF2 OR APPROVED EQUAL.
- 54" X 54" ACCESS HATCH SHALL BE HALLIDAY MODEL S2R5454 OR APPROVED EQUAL.
- PORTABLE HOIST SHALL BE HALLIDAY MODEL D3B36E (1,330 LB RATING) OR APPROVED EQUAL. PORTABLE HOIST SOCKET SHALL BE HALLIDAY MODEL D3S OR APPROVED EQUAL.
- 60" X60" ACCESS HATCH SHALL BE HALLIDAY MODEL S2R6060 OR APPROVED EQUAL.
- 6" CHECK VALVE SHALL BE GA INDUSTRIES 250-DS OR APPROVED EQUAL.
- 6" PLUG VALVE SHALL BE MILLIKEN MODEL 601, CL 125, WITH HANDWHEEL OPERATOR OR APPROVED EQUAL.
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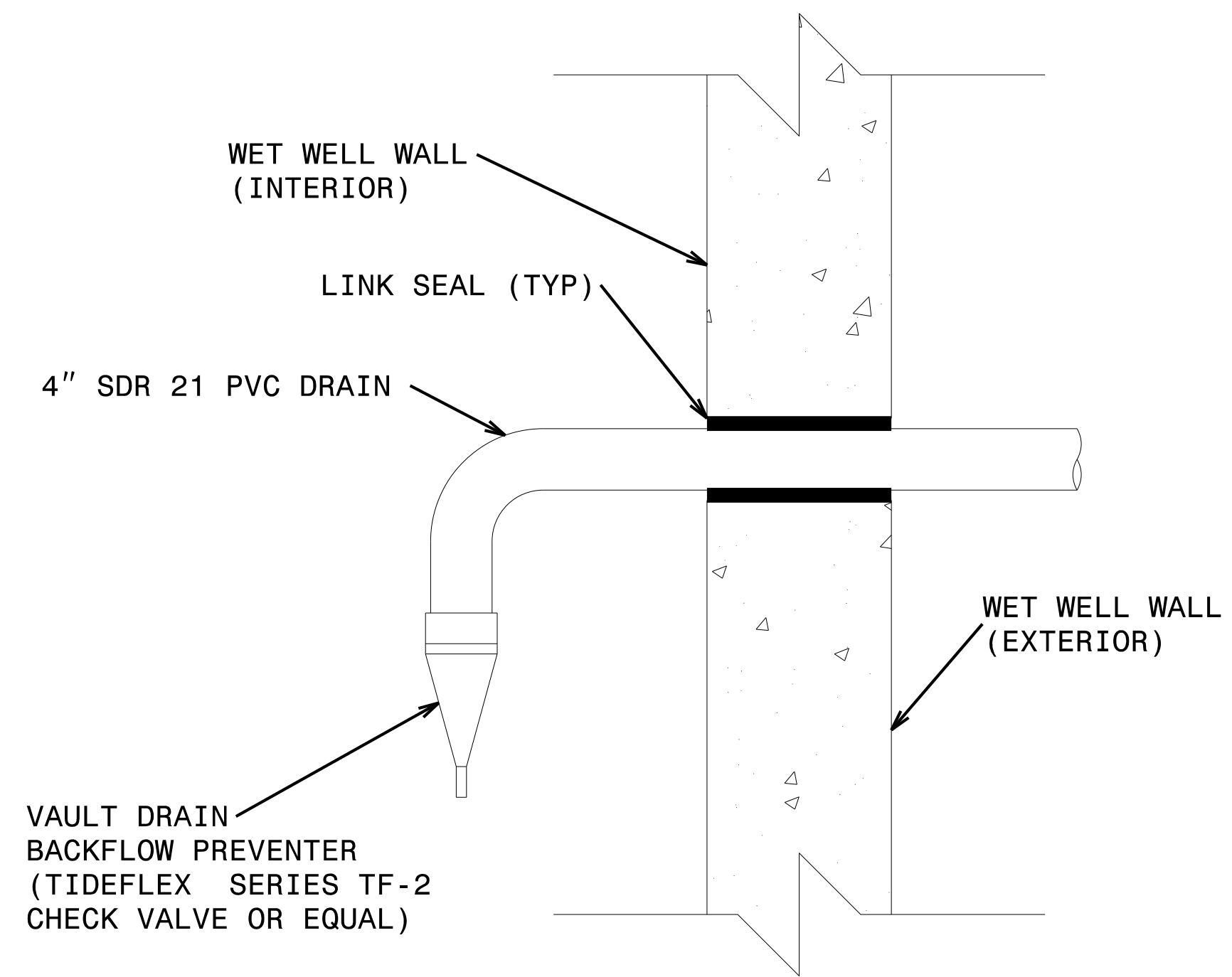
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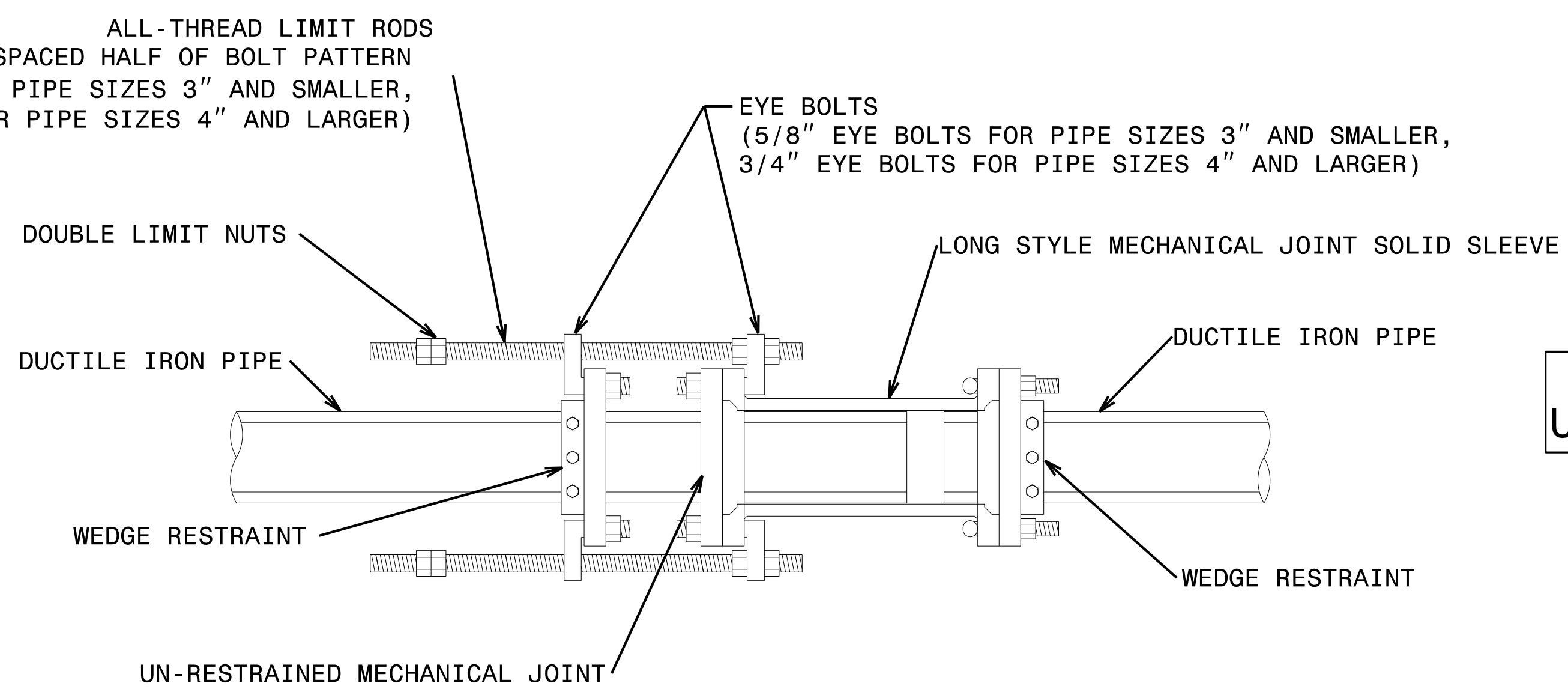
PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-P9
DESIGNED BY: DWT	
DRAWN BY: RAS	
CHECKED BY: JWC	
APPROVED BY: BMB	
REVISED:	
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**UTILITY CONSTRUCTION**

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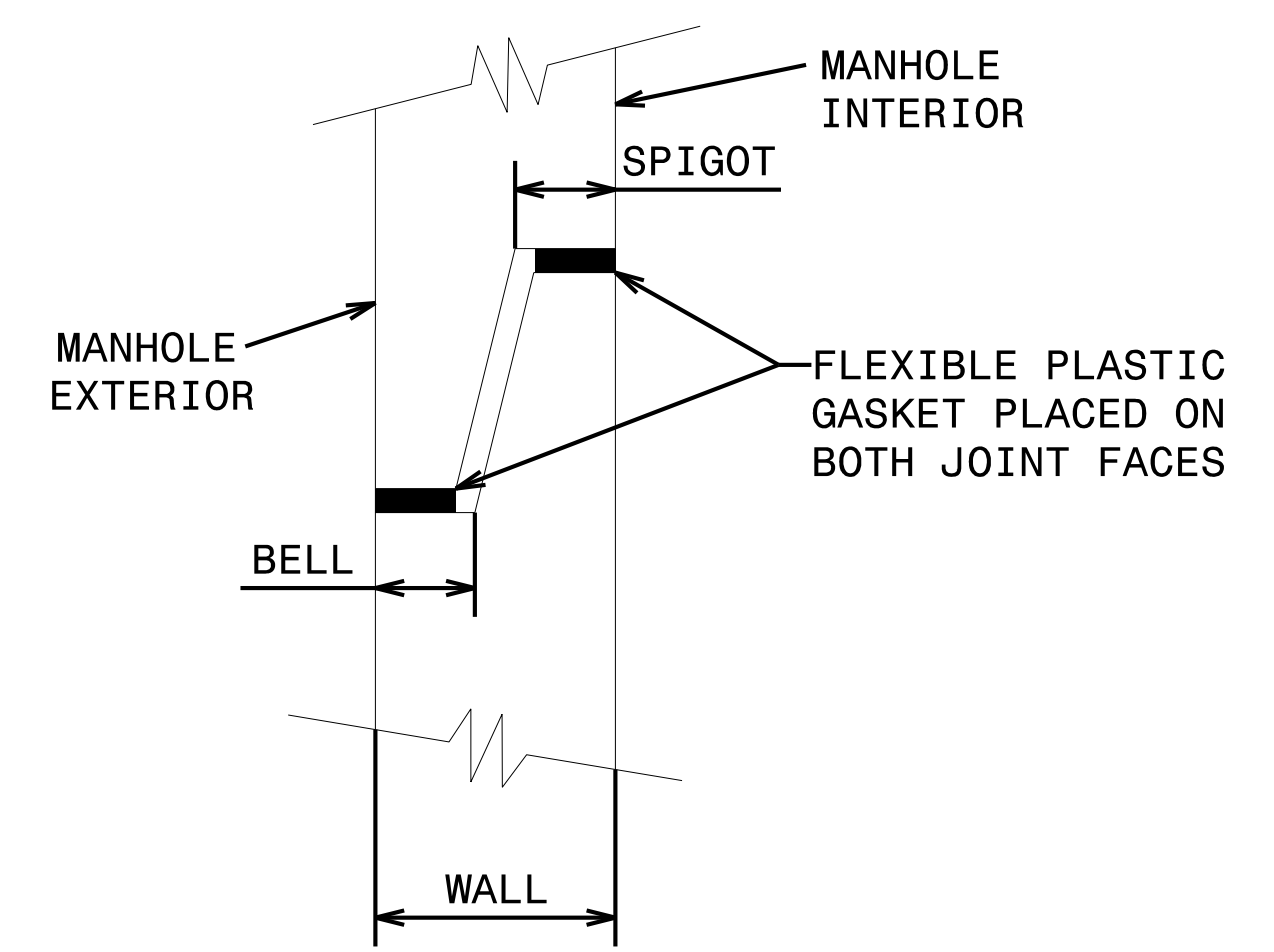


**VAULT DRAIN  
BACKFLOW PREVENTER DETAIL**  
NOT TO SCALE



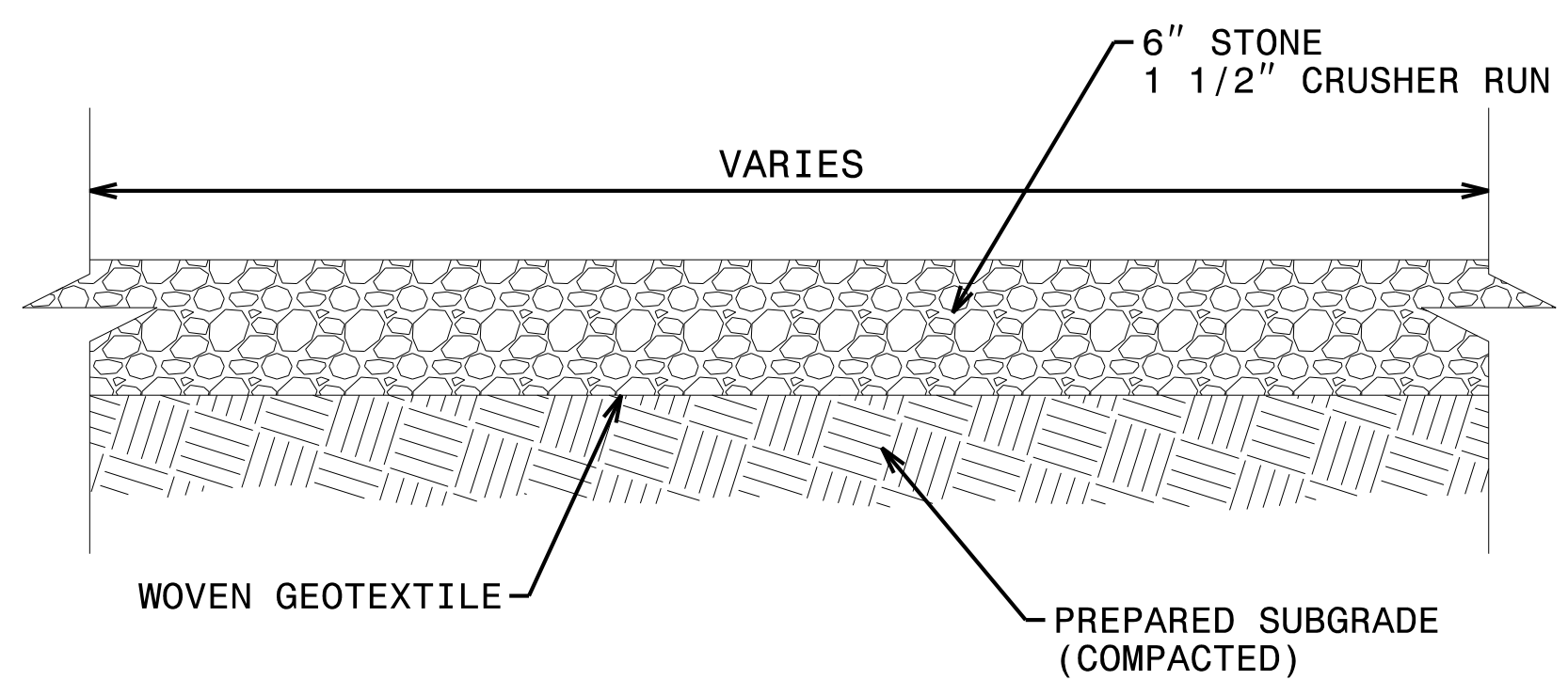
- NOTE :**
1. CONTRACTOR MUST SET DOUBLE LIMIT NUTS AT A DISTANCE THAT DOES NOT ALLOW THE PIPE TO BE PULLED OUT OF THE SOLID SLEEVE DURING EXPANSION.
  2. ABOVE DETAIL DEPICTS EXPANSION/CONTRACTION JOINT FOR PIPE SIZES 3" AND LARGER. EXPANSION/CONTRACTION JOINT FOR 2" PVC PIPE IS SIMILAR AND UTILIZES SPLIT CLAMP-STYLE RESTRAINT RINGS. RESTRAINT RING FOR BELL END OF PIPE SHALL BE NON-SERRATED AND THE RESTRAINT RING FOR THE PLAIN END OF PIPE SHALL BE SERRATED.

**EXPANSION/CONTRACTION JOINT  
DETAIL**  
NOT TO SCALE

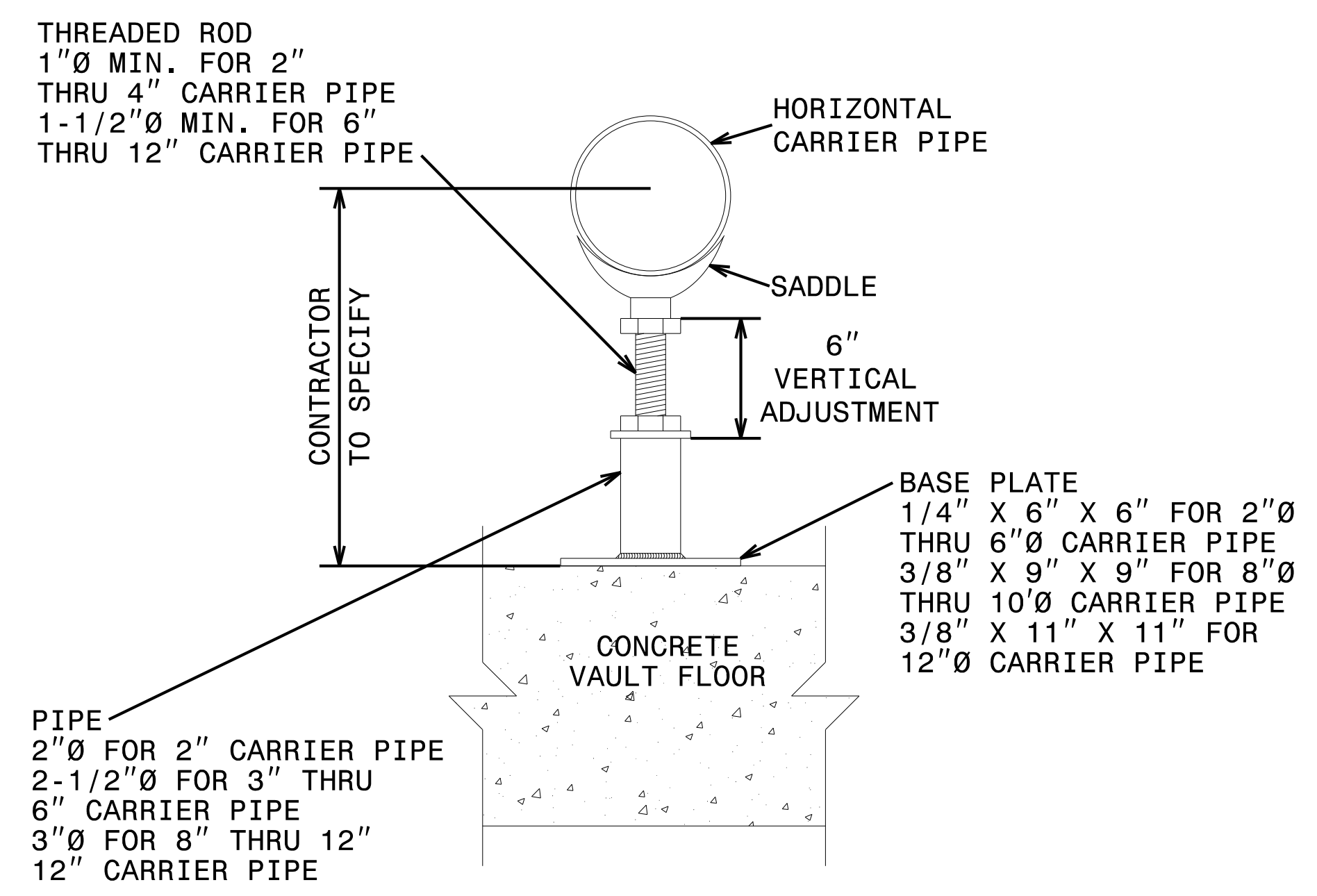


**NOTE:** CONTRACTOR SHALL COORDINATE JOINT LOCATIONS TO AVOID PIPE PENETRATIONS.

**PRECAST JOINT DETAIL**  
NOT TO SCALE




**PUMP STATION GRAVEL PAD /  
ENTRANCE TYPICAL SECTION**  
NOT TO SCALE



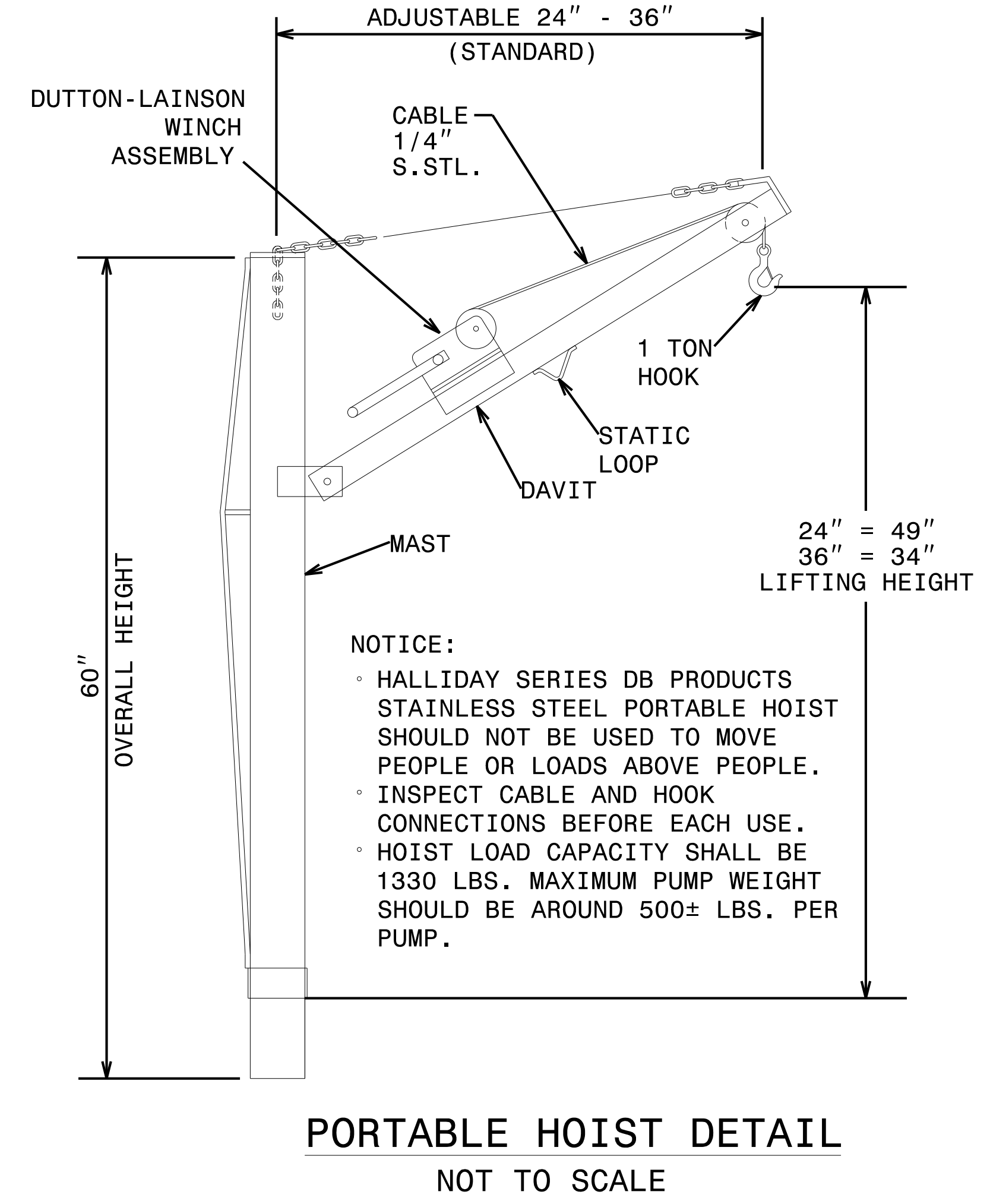
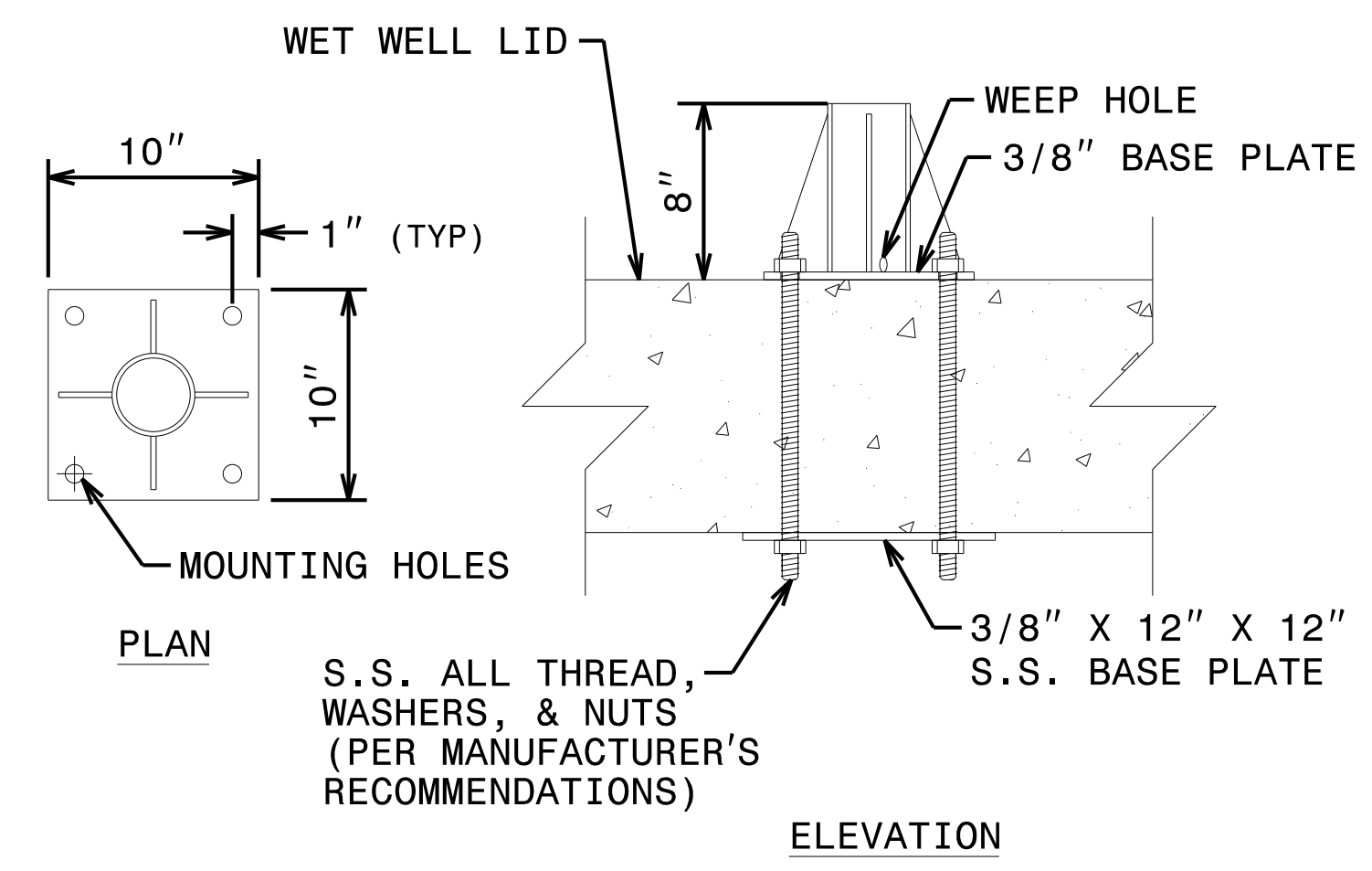
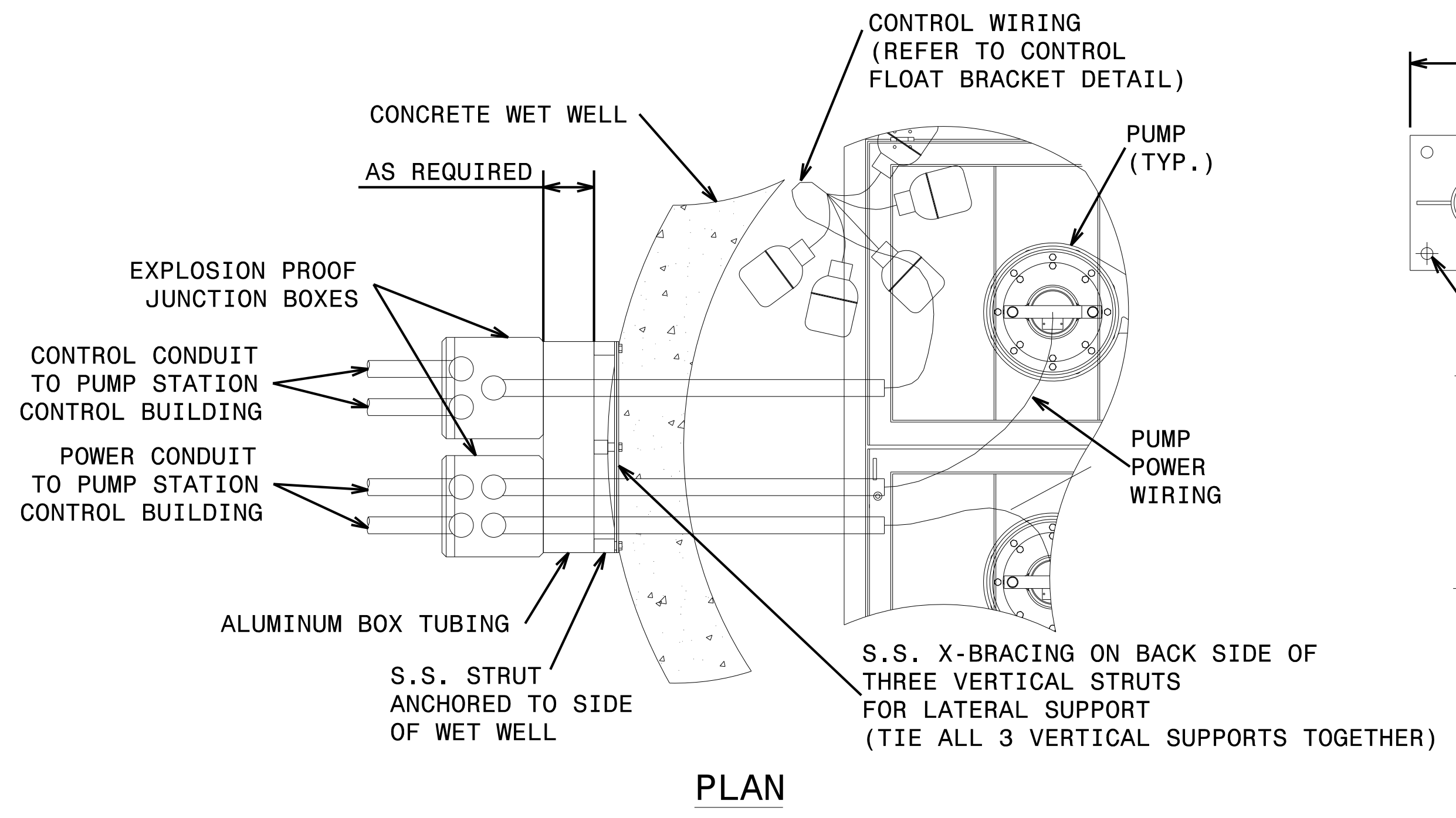
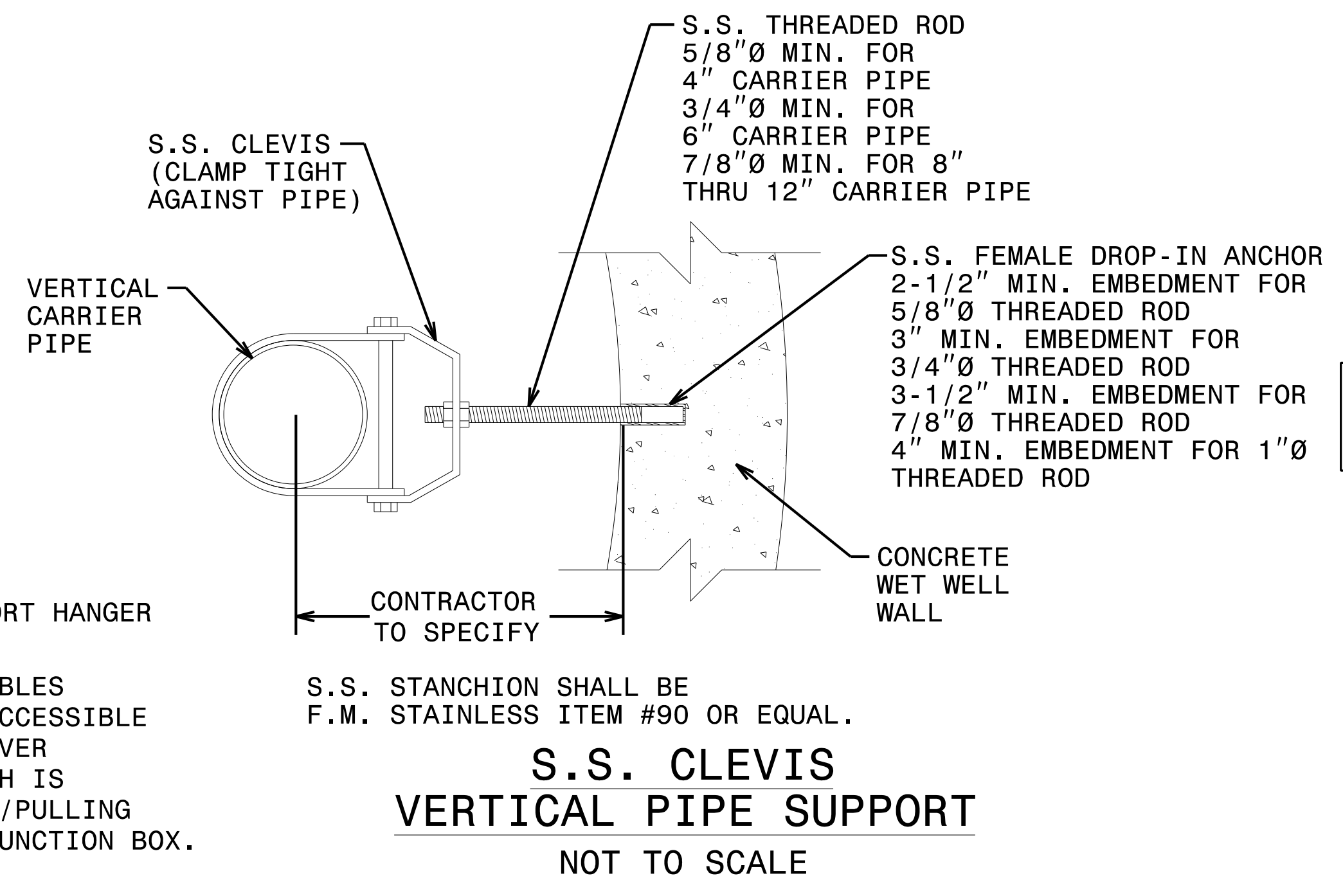
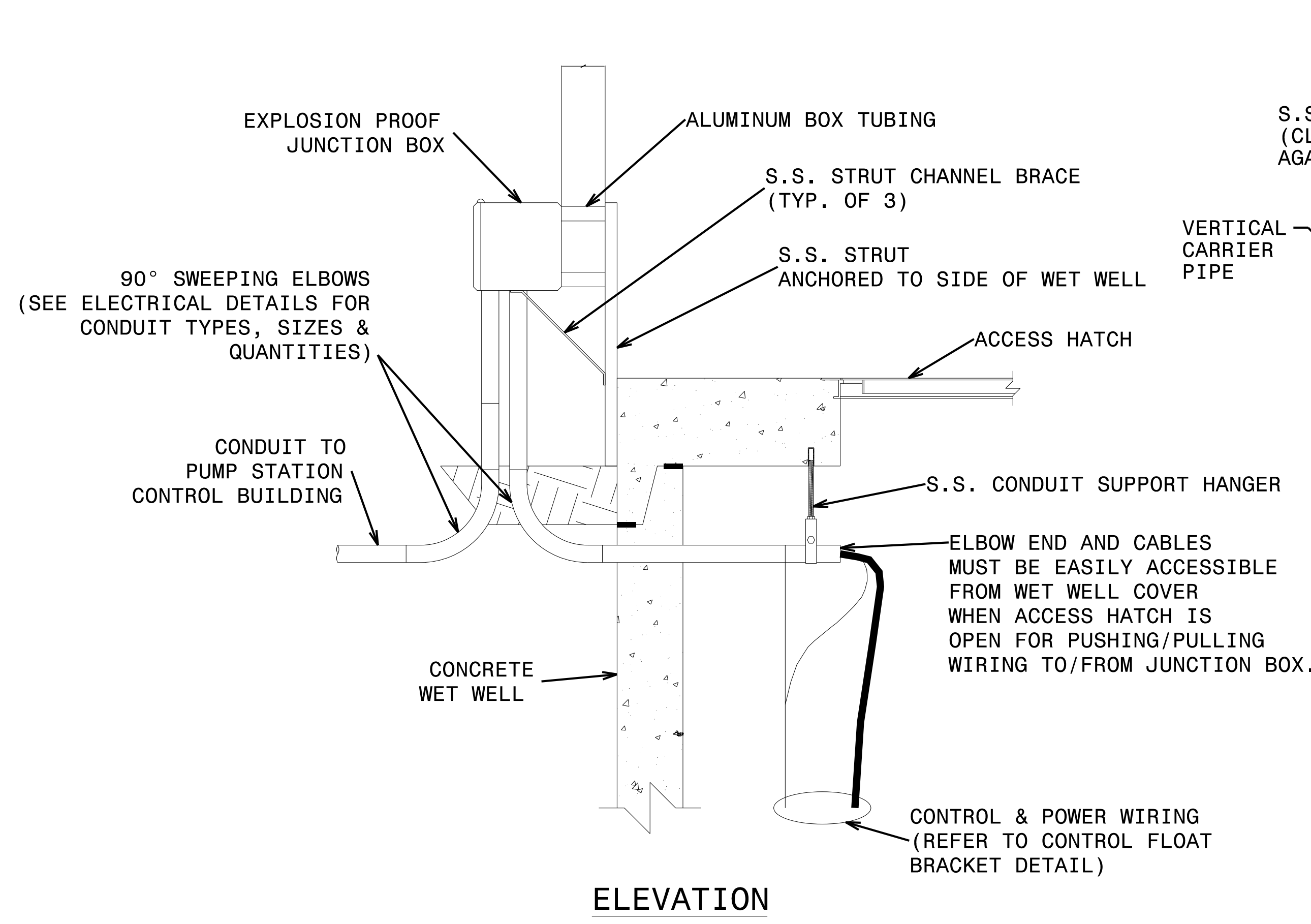
= PIPE STAND LOCATION ON PLAN VIEW DRAWINGS. STANCHION SHALL BE STAINLESS STEEL.

**STANCHION SADDLE HORIZONTAL  
PIPE SUPPORT**  
NOT TO SCALE

**PUMP STATION DETAILS**

PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-P10
DESIGNED BY: DWT	
DRAWN BY: RAS	
CHECKED BY: JWC	
APPROVED BY: BMB	
REVISED:	
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**UTILITY CONSTRUCTION**  
**DOCUMENT NOT CONSIDERED FINAL**  
**UNLESS ALL SIGNATURES COMPLETED**




NOTE: REFER TO ELECTRICAL PLANS AND DETAILS FOR FURTHER INFORMATION.

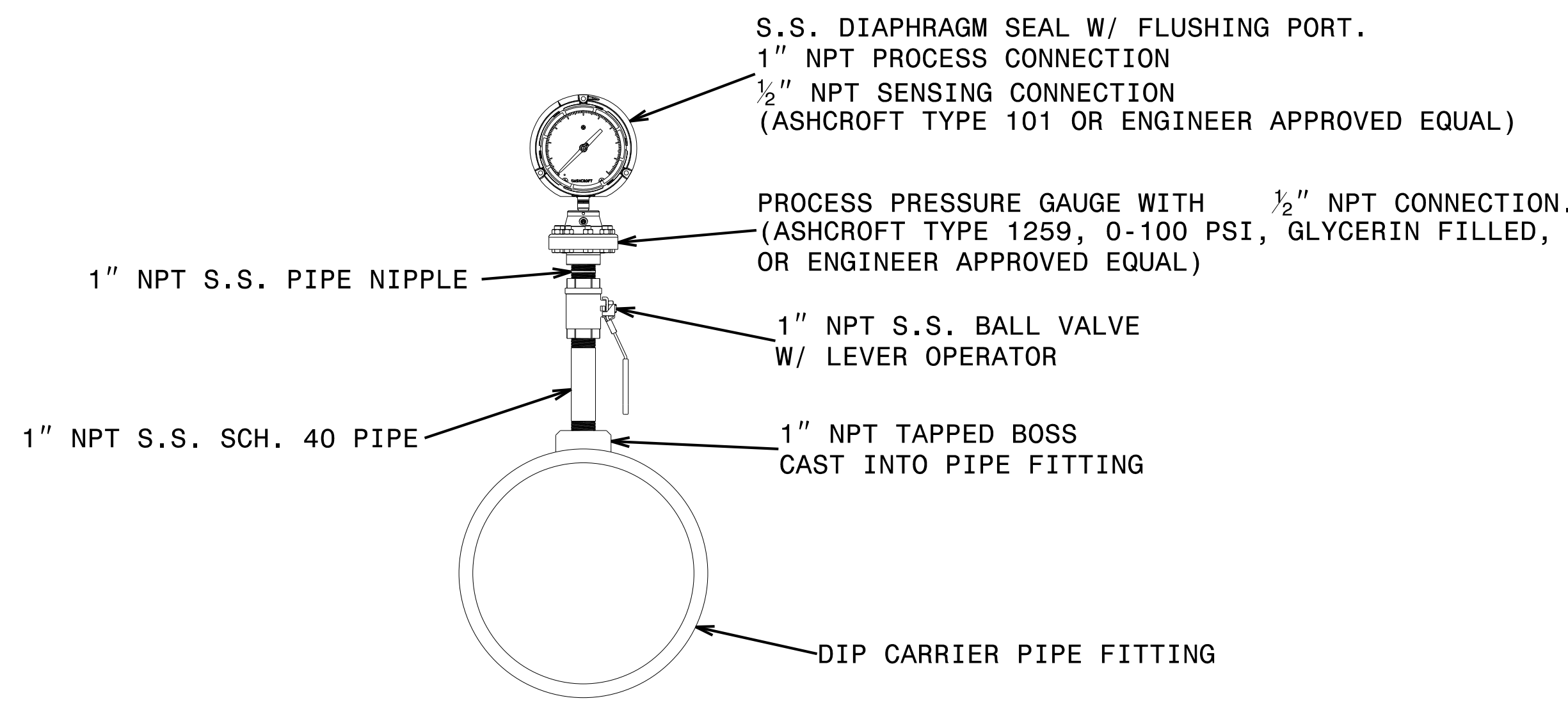
**JUNCTION BOX ARRANGEMENT**  
**DETAIL**  
 NOT TO SCALE

**PUMP STATION DETAILS**

5/14/99  
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 8/19/2021

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-P11
DESIGNED BY: DWT	
DRAWN BY: RAS	
CHECKED BY: JWC	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY



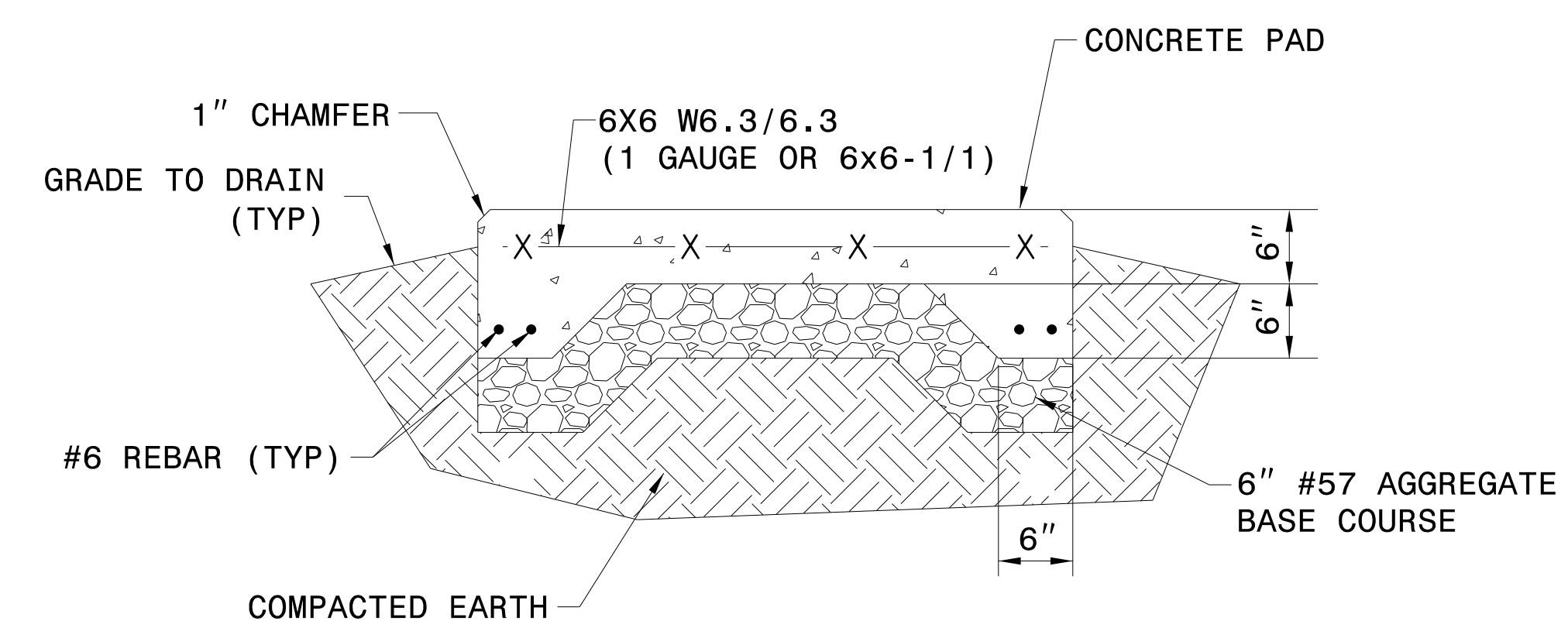
**PRESSURE GAUGE FOR SEWER APPLICATIONS**  
NOT TO SCALE

**UTILITY CONSTRUCTION**  
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

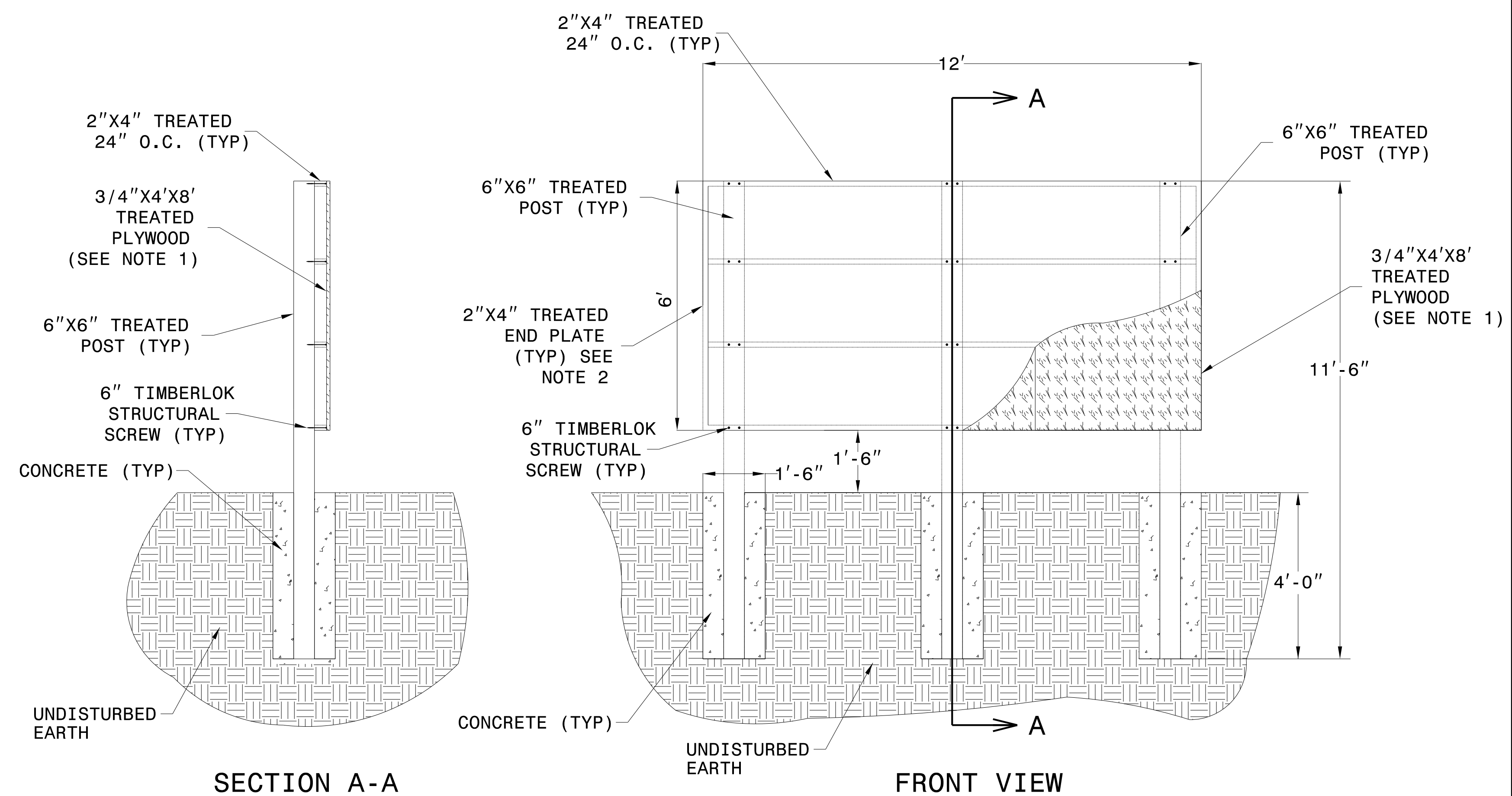
**ELECTRICAL BACKBOARD NOTES:**

- TREATED PLYWOOD SHALL BE ATTACHED TO 2X4 FRAME WITH 2-1/2" L EXTERIOR ACQ SCREWS @ 8" O.C.
- TREATED 2X4 END PLATES BE ATTACHED TO FRAME WITH 3 1/2" L EXTERIOR ACQ SCREWS.

**NOTE :** CONTRACTOR SHALL COORDINATE THE SIZE OF THE CONCRETE GENERATOR PAD WITH THE ACTUAL GENERATOR BEING FURNISHED. CONCRETE PAD SHALL EXTEND 6" BEYOND ALL SIDES OF THE GENERATOR.



**GENERATOR PAD DETAIL**  
NOT TO SCALE



**SECTION A-A**

**FRONT VIEW**

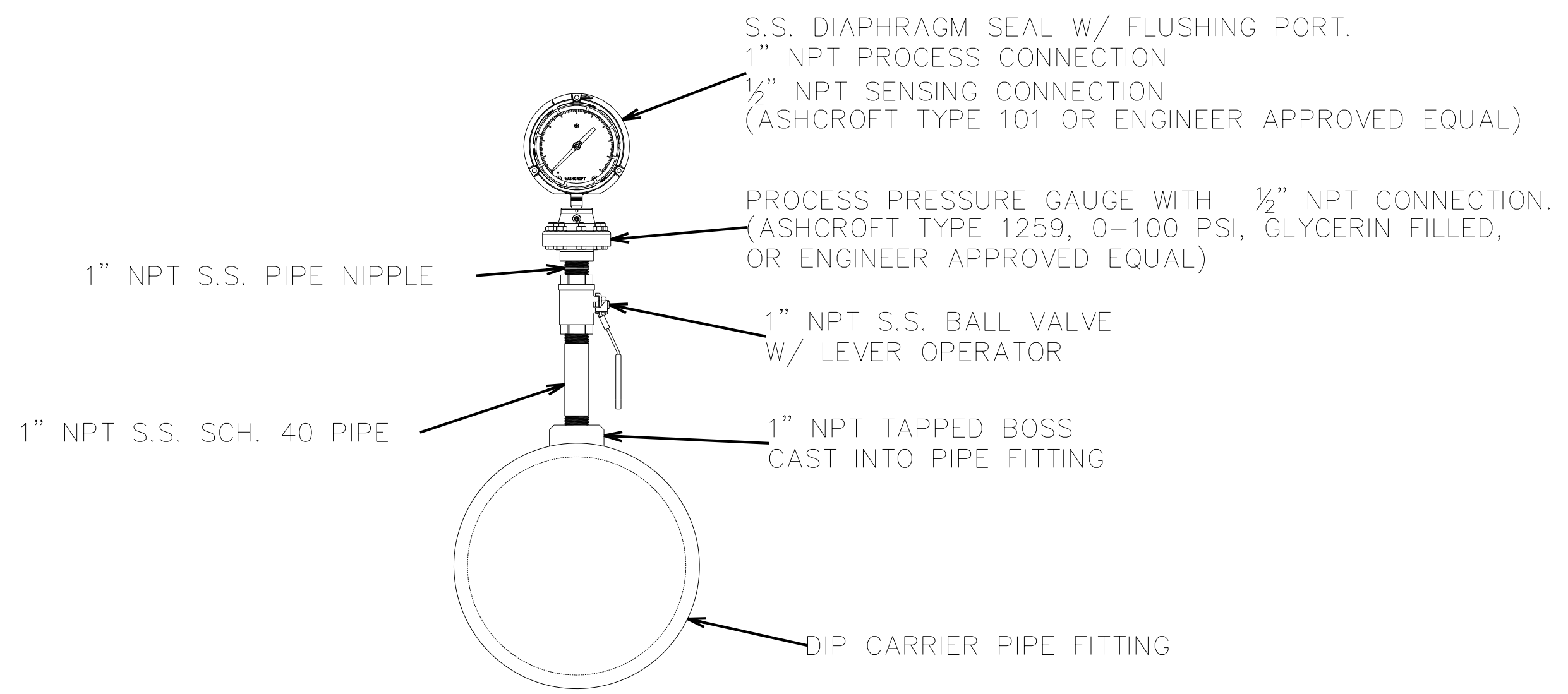
**ELECTRICAL BACKBOARD DETAIL**  
NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
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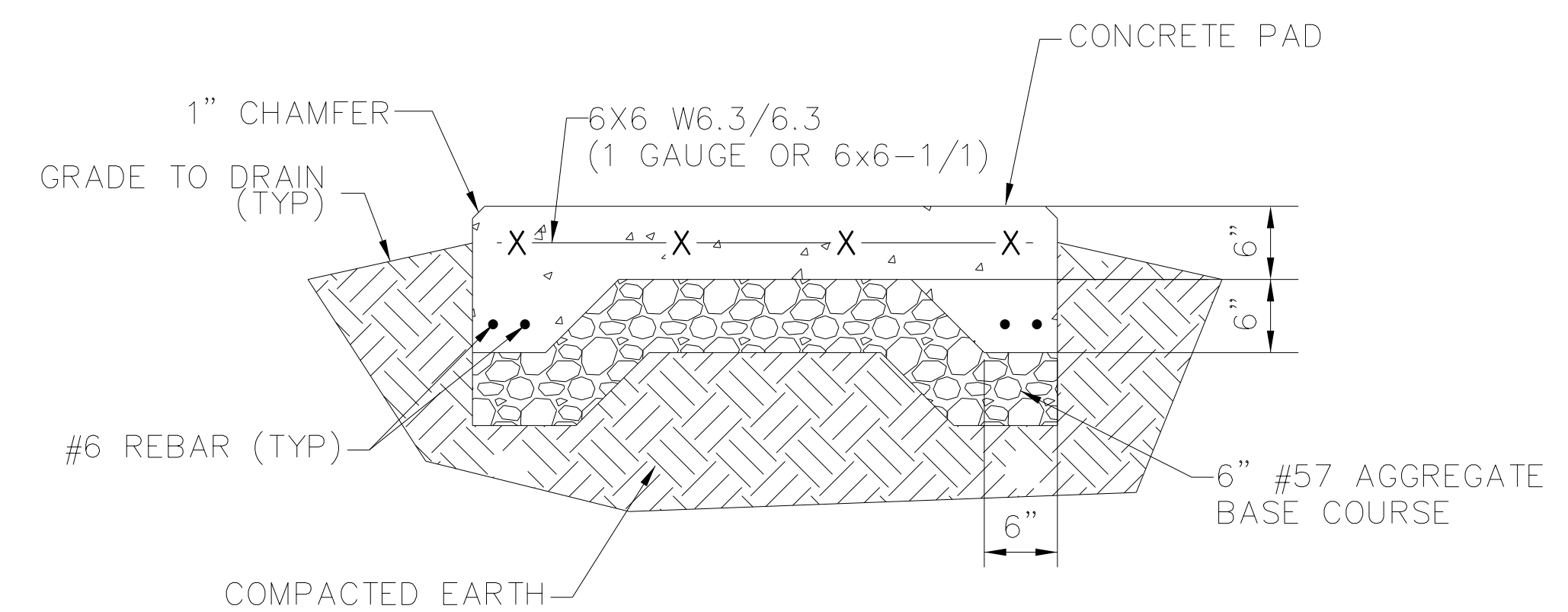
**UTILITY CONSTRUCTION**

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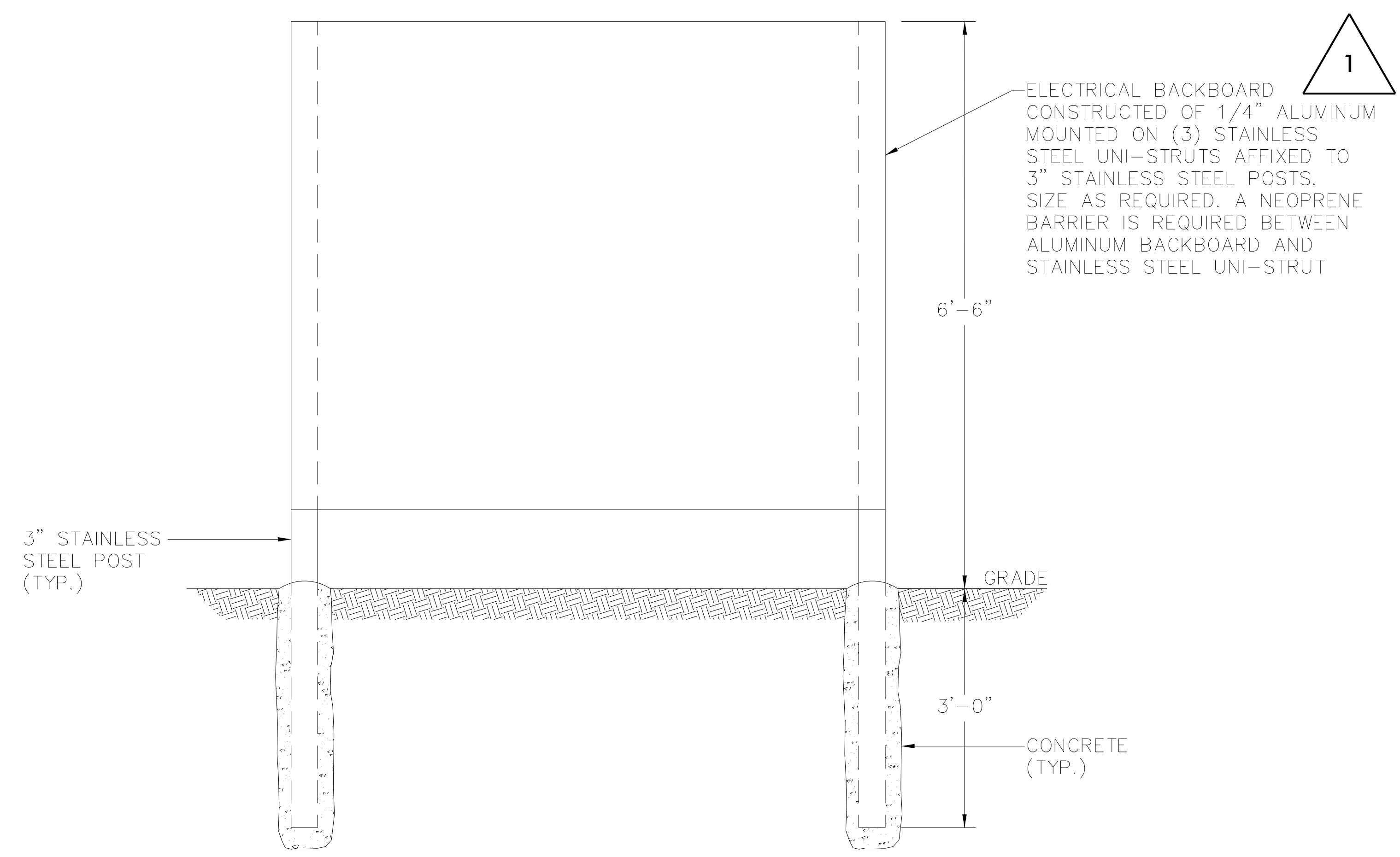


PRESSURE GAUGE FOR SEWER APPLICATIONS  
NOT TO SCALE

NOTE: CONTRACTOR SHALL COORDINATE THE SIZE OF THE CONCRETE GENERATOR PAD WITH THE ACTUAL GENERATOR BEING FURNISHED. CONCRETE PAD SHALL EXTEND 6" BEYOND ALL SIDES OF THE GENERATOR.



GENERATOR PAD DETAIL  
NOT TO SCALE



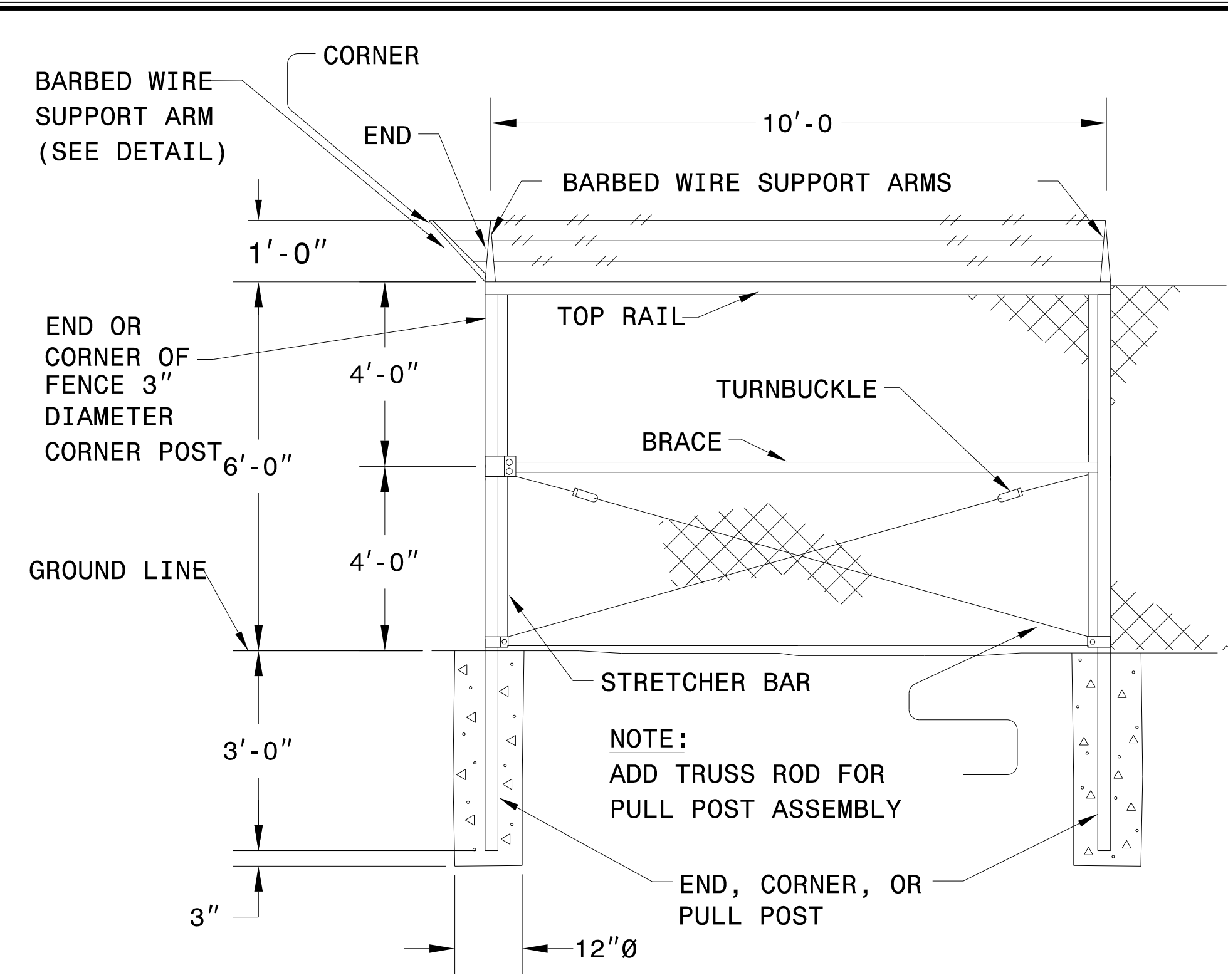
ELECTRICAL BACKBOARD DETAIL  
NOT TO SCALE

REVISIONS  
01-13-2022 - ELECTRICAL BACKBOARD MATERIAL CHANGED TO ALUMINUM

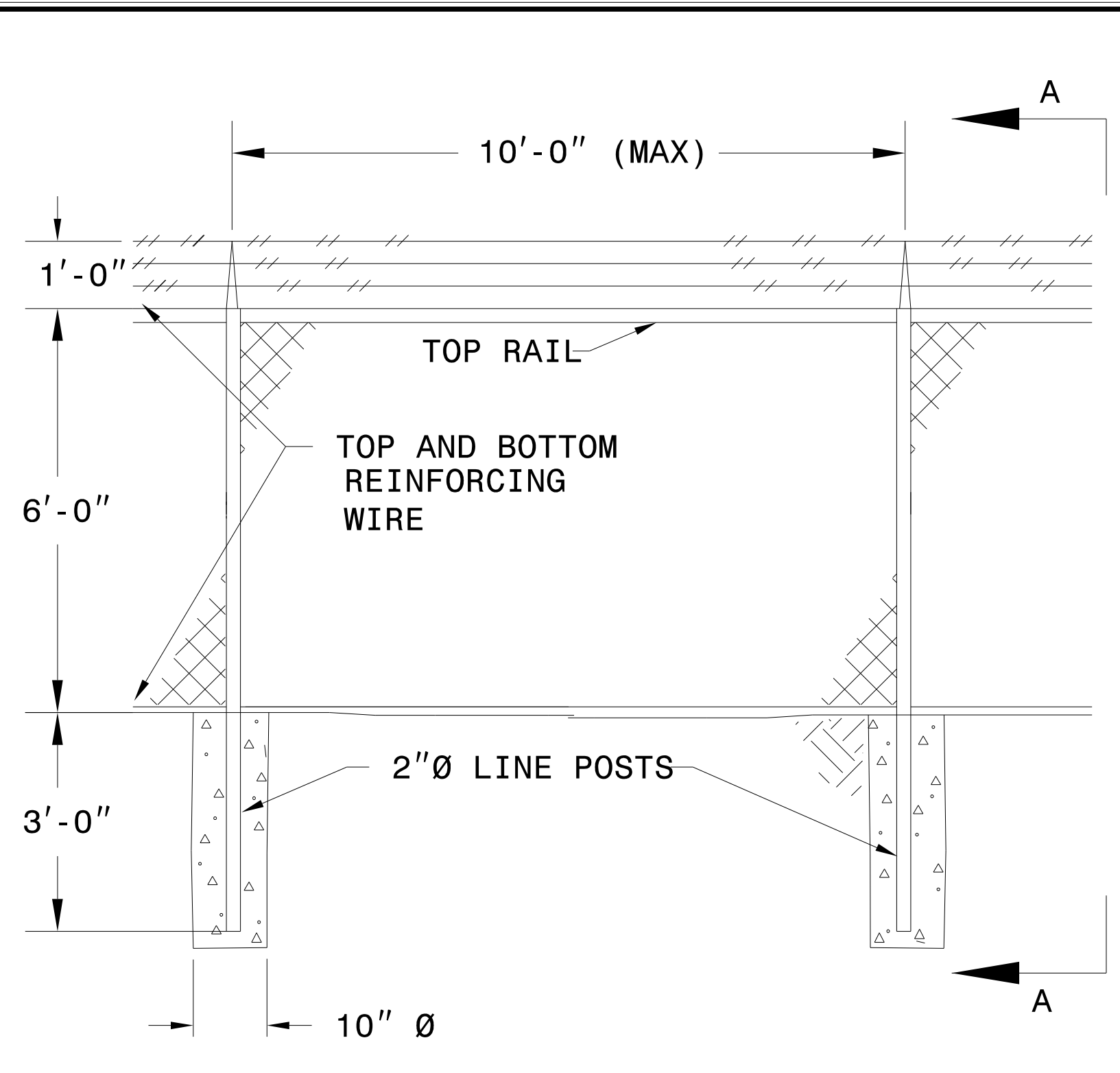
1/9/2022  
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PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-P12
DESIGNED BY: DWT	
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CHECKED BY: JWC	
APPROVED BY: BMB	
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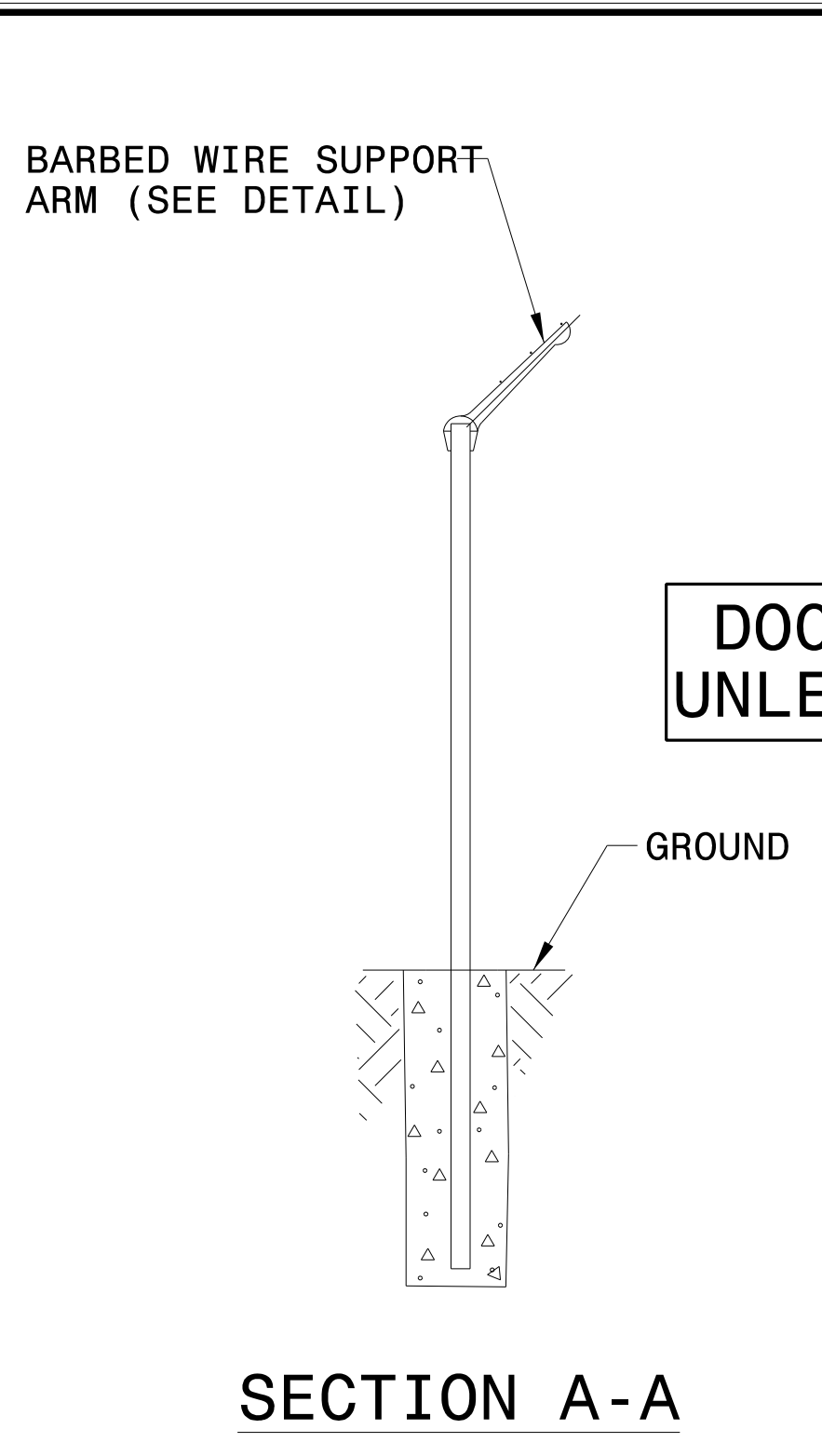
**UTILITY CONSTRUCTION**  
**DOCUMENT NOT CONSIDERED FINAL**  
**UNLESS ALL SIGNATURES COMPLETED**



**CORNER OR END PANEL ASS'Y**  
NOT TO SCALE

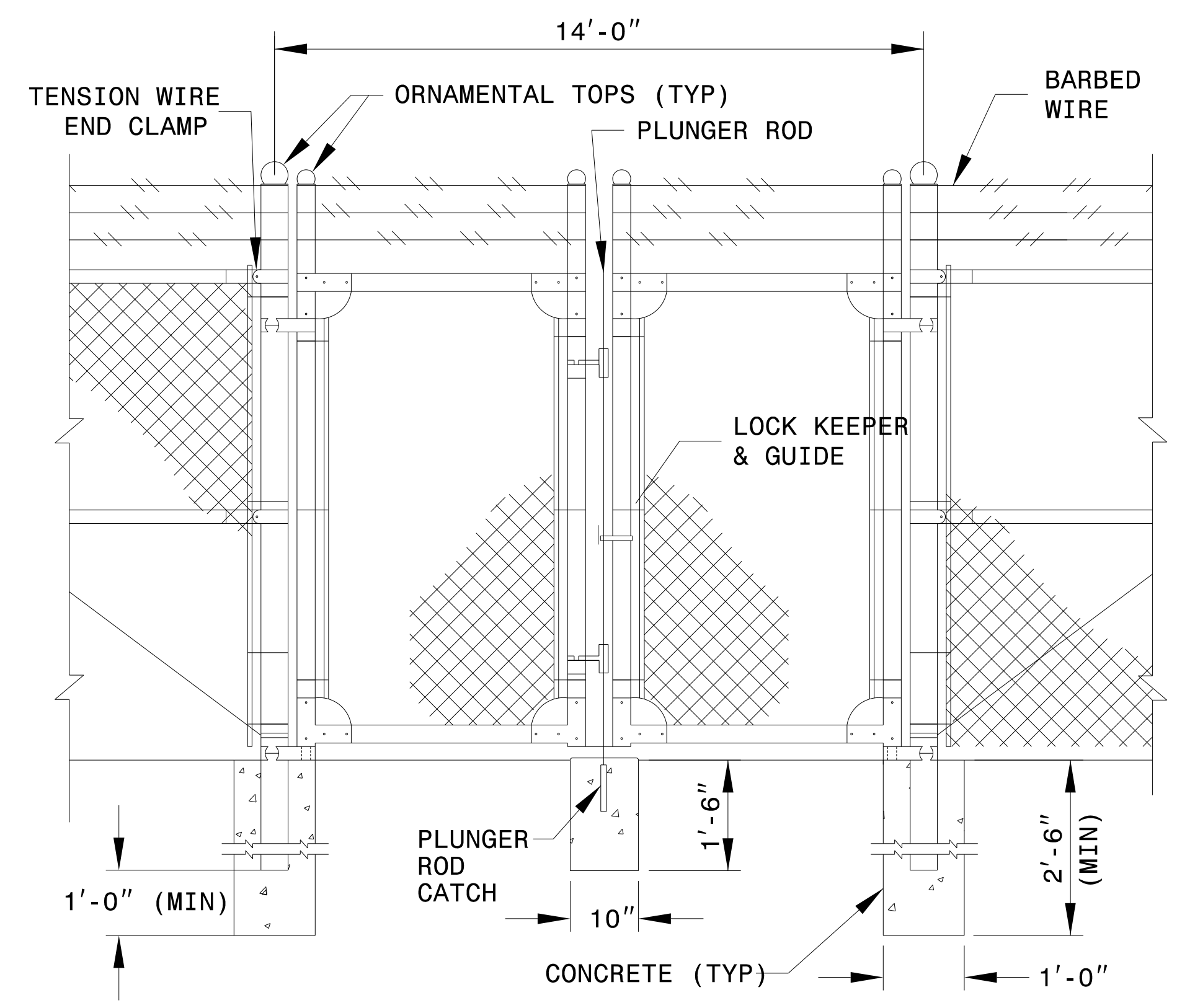


**TYPICAL LINE FENCE DETAIL**  
NOT TO SCALE



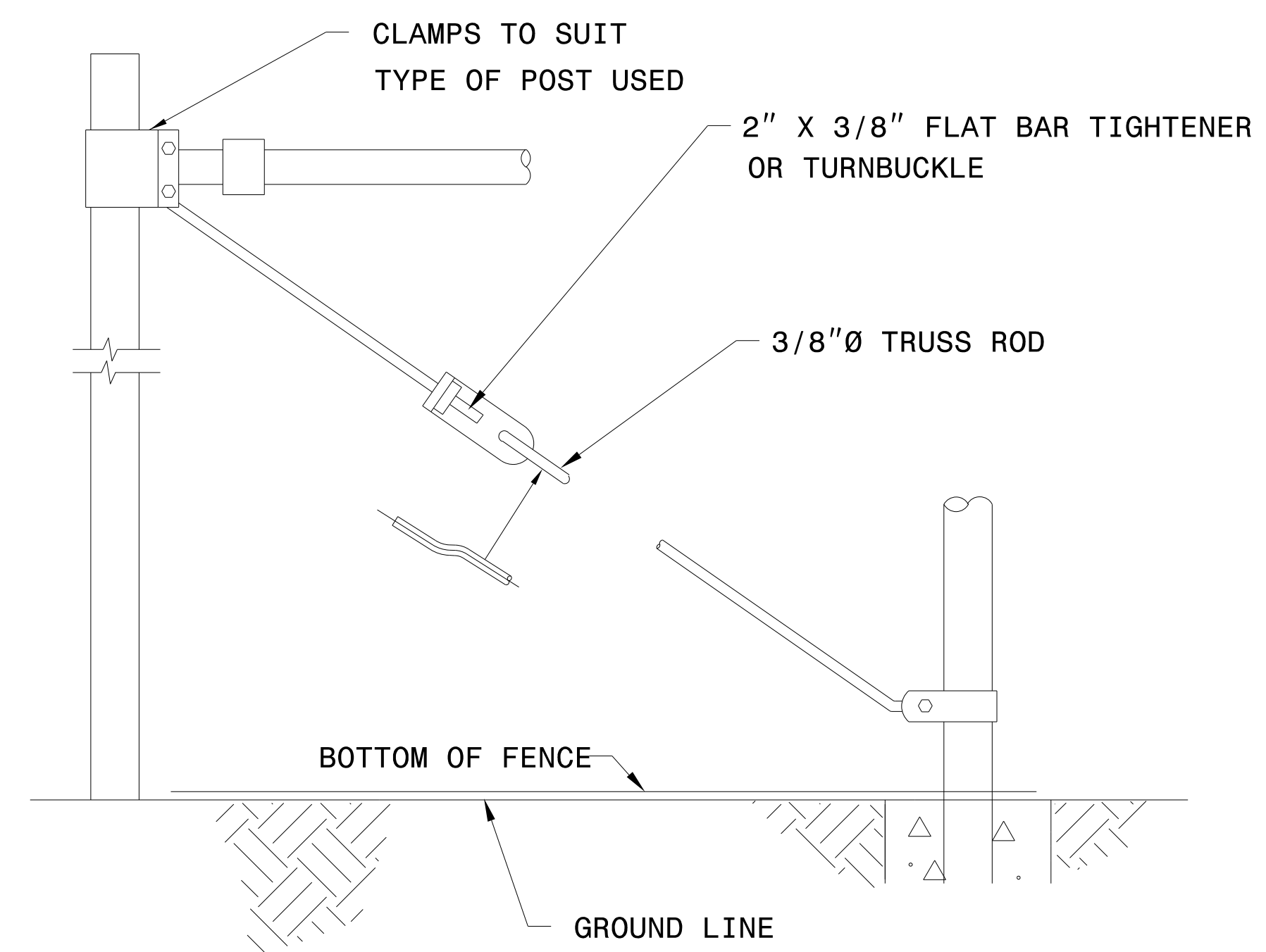
**SECTION A-A**

NOTE: TOP RAIL SHALL BE INSTALLED AT ALL LOCATIONS ON FENCE IN ACCORDANCE WITH SECTION 02820, PART 3.01B OF THE PROJECT SPECIFICATIONS.

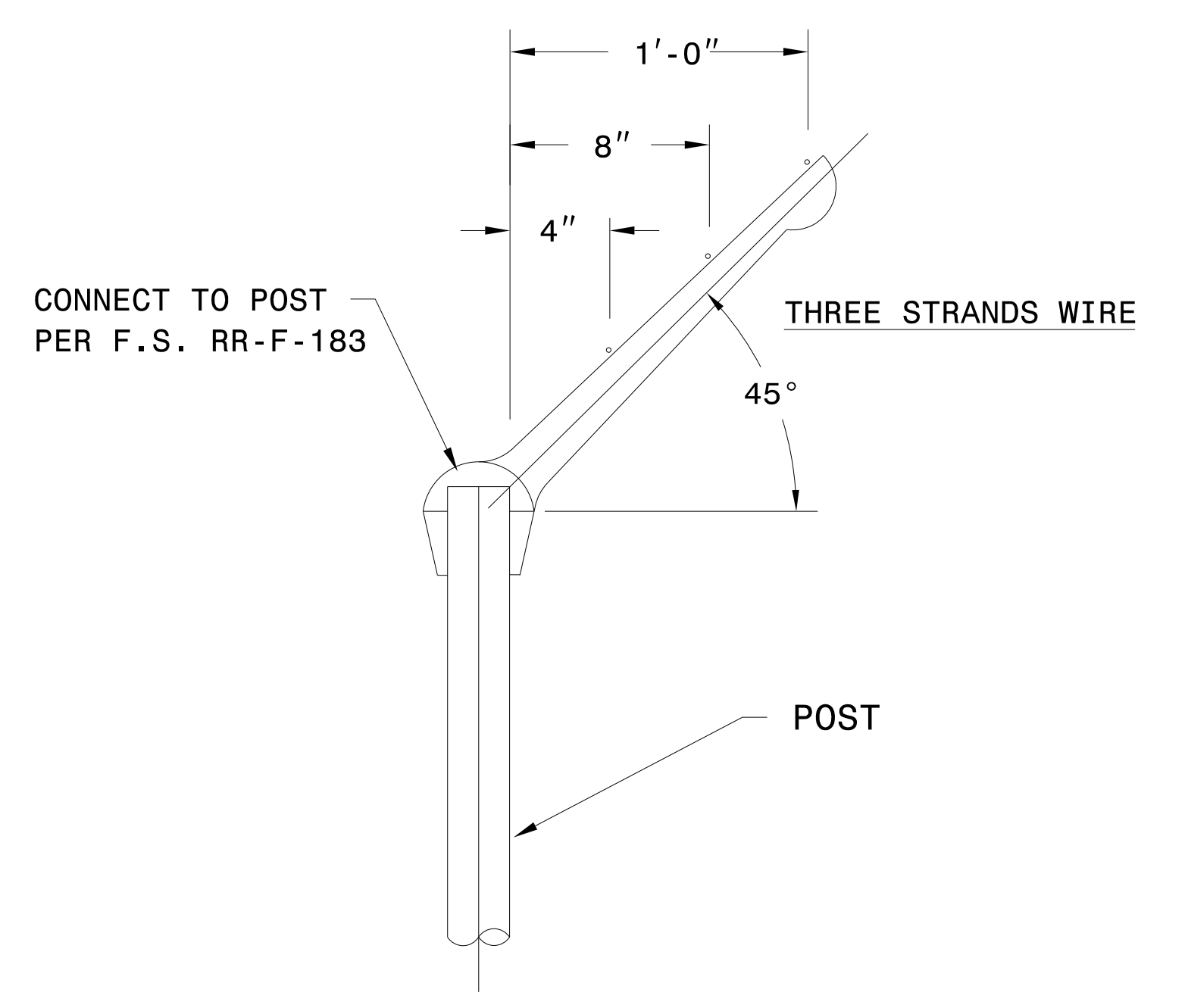


**DOUBLE SWING CHAIN-LINK GATE DETAIL**  
NOT TO SCALE

NOTE: THE FENCING SHALL BE #9 GAGE FENCE FABRIC, STANDARD 2" CHAIN LINK DIAMOND MESH.



**TRUSS ROD TIES TYPICAL DETAIL**  
NOT TO SCALE



**BARBED WIRE SUPPORT ARM AND POST CAP**  
NOT TO SCALE

5/14/99  
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PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-P13
DESIGNED BY: DWT	
DRAWN BY: RAS	
CHECKED BY: JWC	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

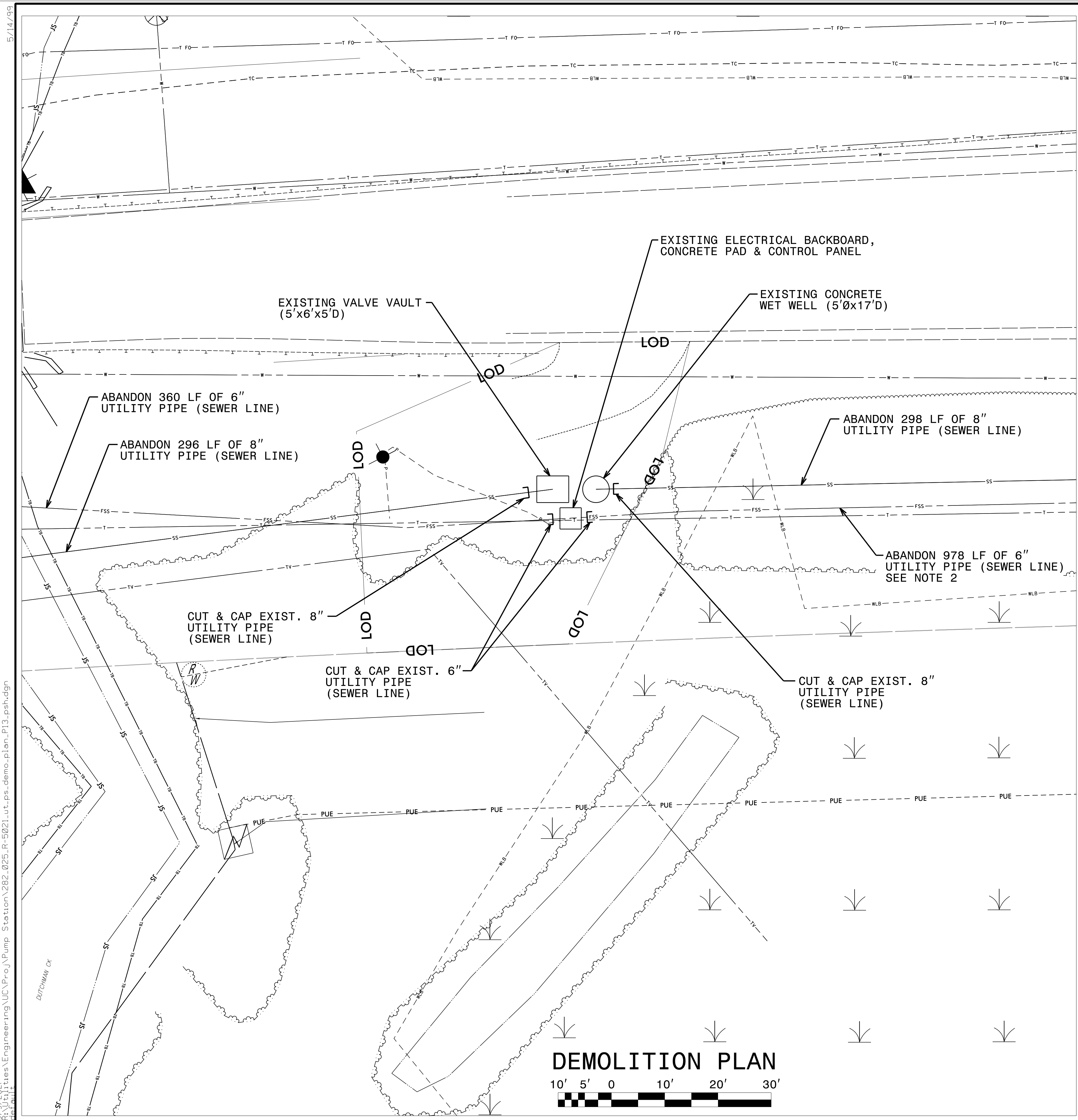
NAD 83/NRS 2007

UTILITY CONSTRUCTION

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DEMOLITION PLAN NOTES

1. RELOCATED PUMP STATION 4 SHALL BE IN SERVICE PRIOR TO EXISTING PUMP STATION 4 BEING DEMOLISHED.
2. DIMENSIONS AND SIZES ARE APPROXIMATE, BUT TO THE BEST POSSIBLE ACCURACY THRU INFORMATION PROVIDED TO RK&K AND RK&K'S OWN RESEARCH. CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO BEGINNING DEMOLITION OF EXISTING PUMP STATION.
3. ALL REMAINING SEWER IN BOTTOM OF WET WELL MUST BE PUMPED OUT BY A CERTIFIED SEWER/SEPTIC PUMPING COMPANY. COORDINATE PUMPING WITH THE SOUTHEAST BRUNSWICK SANITARY DISTRICT. WET WELL PUMPING AND SEWAGE DISPOSAL IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. PUMPS, BASES, GUIDE RAILS, VALVES, AND ALL OTHER RELATED EQUIPMENT SHALL BE DELIVERED TO SOUTHEAST BRUNSWICK SANITARY DISTRICT WITH MINIMAL DAMAGE. COORDINATE DELIVERY WITH SOUTHEAST BRUNSWICK SANITARY DISTRICT. ITEMS THAT SOUTHEAST BRUNSWICK SANITARY DISTRICT DOES NOT WANT TO KEEP, SHALL BE DISPOSED OF BY THE CONTRACTOR.
5. ALL ELECTRICAL AND CONTROL EQUIPMENT SHALL BE DELIVERED TO SOUTHEAST BRUNSWICK SANITARY DISTRICT WITH MINIMAL DAMAGE. CONTRACTOR TO COORDINATE REMOVAL OF ELECTRICAL EQUIPMENT AND ELECTRIC SERVICE WITH THE POWER COMPANY.
6. EXCAVATE WET WELL TO A DEPTH OF 3' BELOW FINISHED GRADE. DEMOLISH TOP 3-FT OF WET WELL.
7. EXCAVATE AND REMOVE VALVE VAULT & ELECTRICAL BACKBOARD CONCRETE PAD.
8. ONCE ALL SEWER IS REMOVED, WET WELL FLOOR SHALL BE DEMOLISHED & REMOVED AND BOTTOM SECTION OF WET WELL SHALL BE FILLED IN WITH NATIVE MATERIAL AND/OR #57 GRADED STONE TO A DEPTH OF 1' BELOW FINISH GRADE ELEVATION. FILL REMAINING 1' WITH TOP SOIL TO THE FINISH GRADE ELEVATION. SEED AND MULCH SITE TO SPECIFICATIONS.
9. LOD AREA = .06 AC (2,668 S.F.)

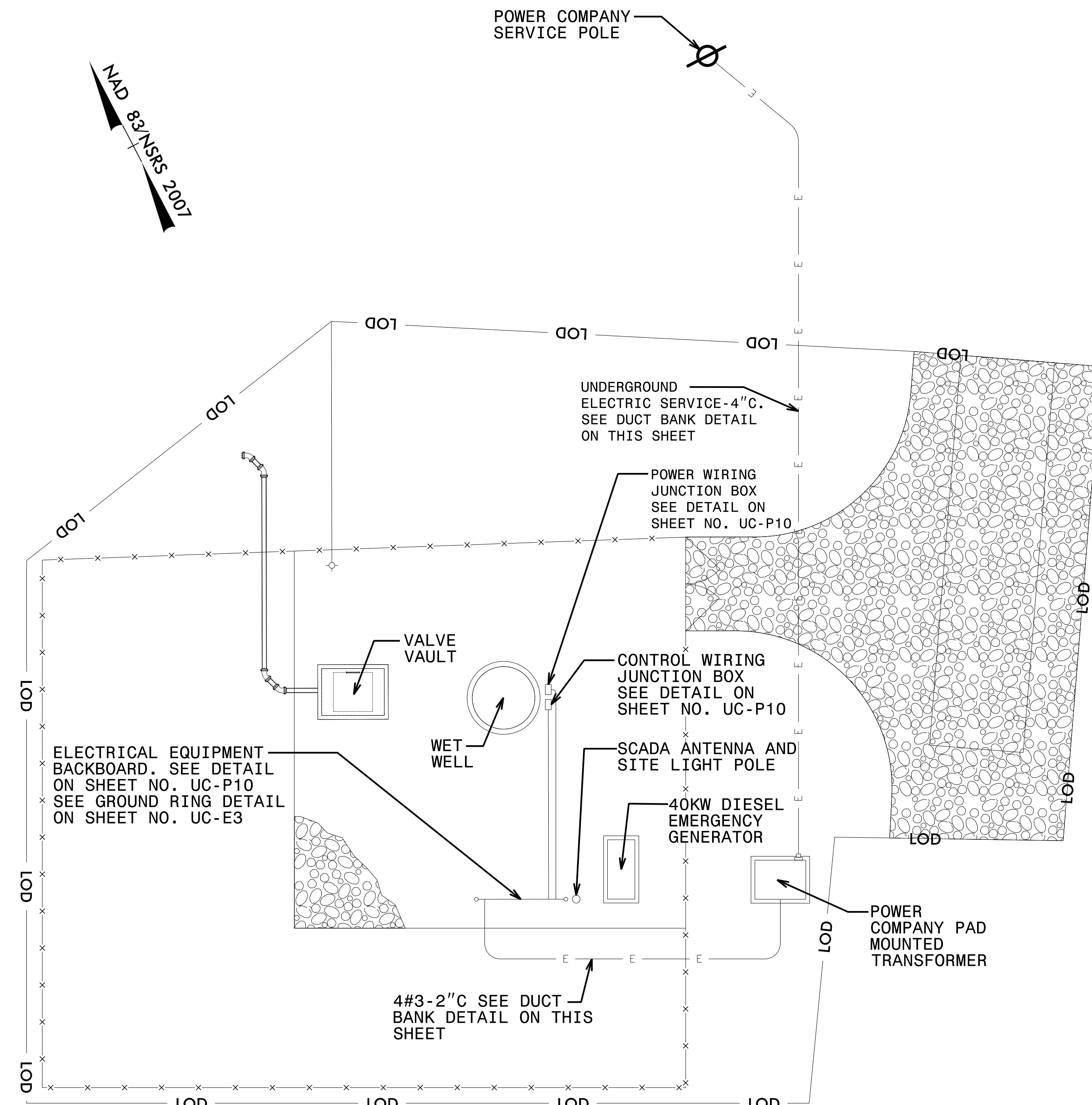


DEMOLITION PLAN  
10' 5' 0 10' 20' 30'

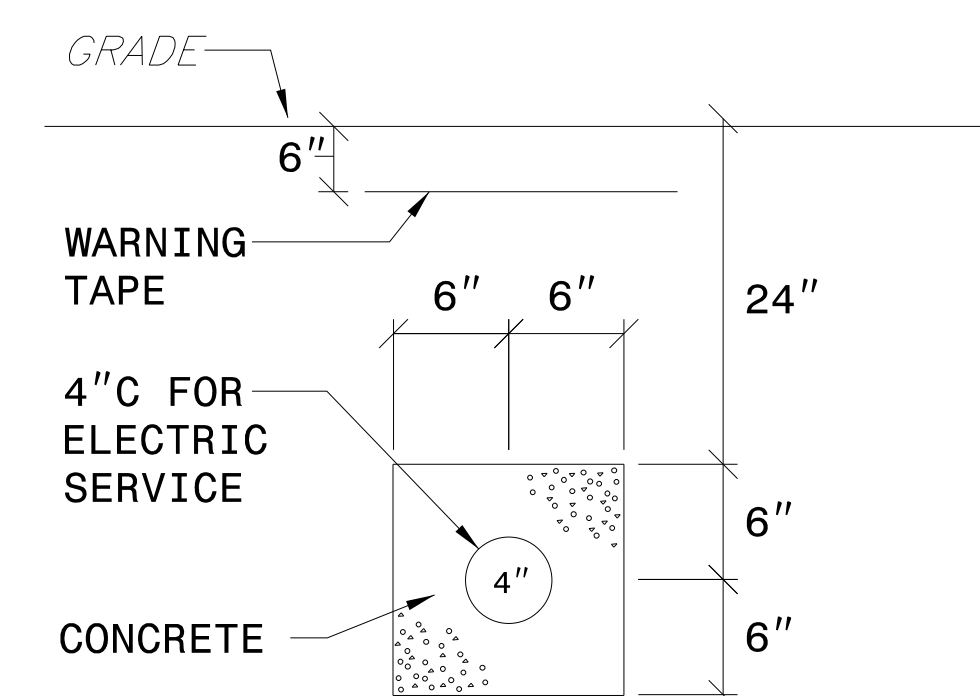
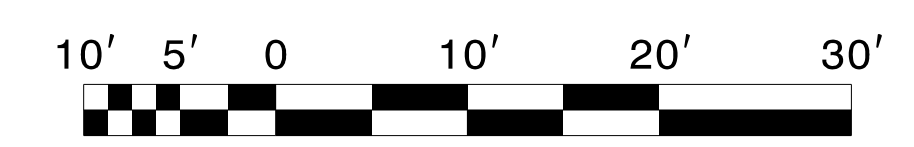
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**UTILITY CONSTRUCTION**

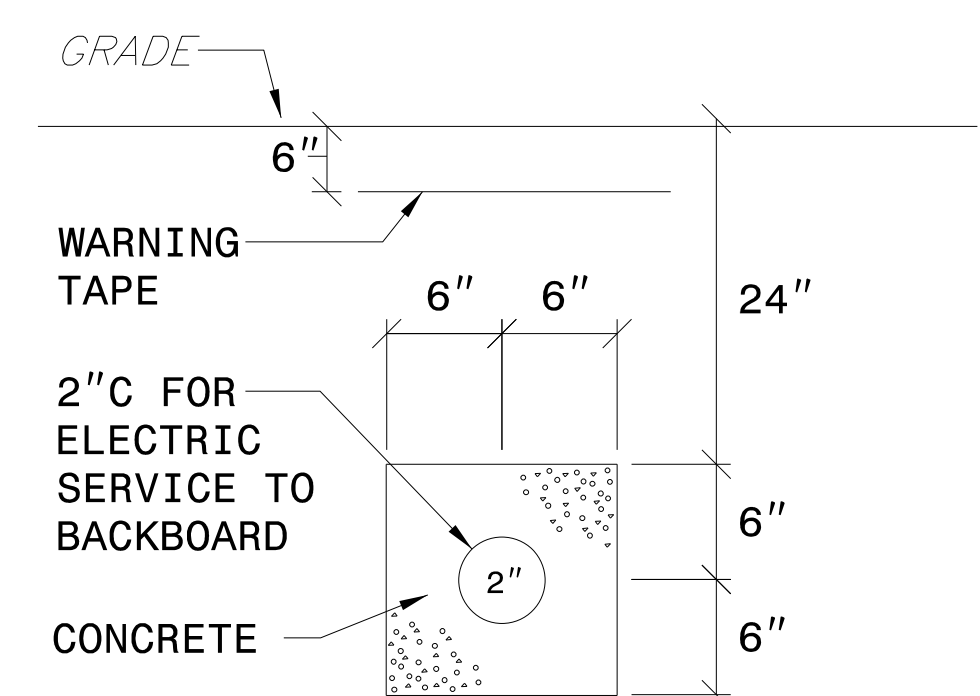
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**ELECTRICAL SITE PLAN**



**ELECTRIC SERVICE CONDUIT DUCT BANK DETAIL**



**CONDUIT DUCT BANK DETAIL**

**GENERAL ELECTRICAL NOTES (APPLICABLE TO ALL DRAWINGS)**

1. ALL FASTENERS AND MOUNTING HARDWARE USED FOR THE INSTALLATION OF ALL ELECTRICAL ITEMS SHALL BE 316 STAINLESS STEEL.
2. ALL ALUMINUM IN CONTACT WITH CONCRETE SHALL BE COATED WITH TWO COATS OF ZINC CHROMATE PRIMER OR BITUMINOUS PAINT TO PREVENT A REACTION BETWEEN THE ALUMINUM AND CONCRETE.
3. CONTRACTOR SHALL FURNISH AND INSTALL A SEPARATE INSULATED GROUND CONDUCTOR IN ALL CONDUITS. ALL GROUND CONDUCTORS SHALL BE #12 UNLESS NOTED OTHERWISE ON DRAWINGS.
4. CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ALL UNDERGROUND CONDUITS TO AVOID INTERFERENCES WITH UNDERGROUND PIPING.
5. RIGID ALUMINUM CONDUIT MAY BE USED ABOVE GRADE TO AND ON THE ELECTRICAL BACKBOARD. CONDUITS WITHIN THE WET WELL AND BELOW GROUND SHALL BE PVC COATED RIGID STEEL.

**SITE PLAN NOTES**

1. COORDINATE INSTALLATION OF ELECTRIC SERVICE WITH THE POWER COMPANY.

**ELECTRICAL ABBREVIATIONS**

A	-	AMPERES	NO.	-	NUMBER
ALUM.	-	ALUMINUM	P	-	POLE
C	-	CONDUIT	PH	-	PHASE
DWG.	-	DRAWING	TYP.	-	TYPICAL
GRD	-	GROUND	V	-	VOLTS
HP	-	HORSEPOWER	W	-	WIRE, WATT, WIDE
KW	-	KILOWATT	WP	-	WEATHERPROOF
KVA	-	KILOVOLT AMPERES	XFMR	-	TRANSFORMER

**ELECTRICAL SYMBOL SCHEDULE**

	-	DISCONNECT SWITCH
	-	JUNCTION BOX
	-	TRANSFORMER
	-	HOME RUN TO PANEL
	-	TICKS INDICATE NUMBER OF WIRES - NOT INCLUDING GROUND CONDUCTOR
	-	CIRCUIT BREAKER

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**UTILITY CONSTRUCTION**

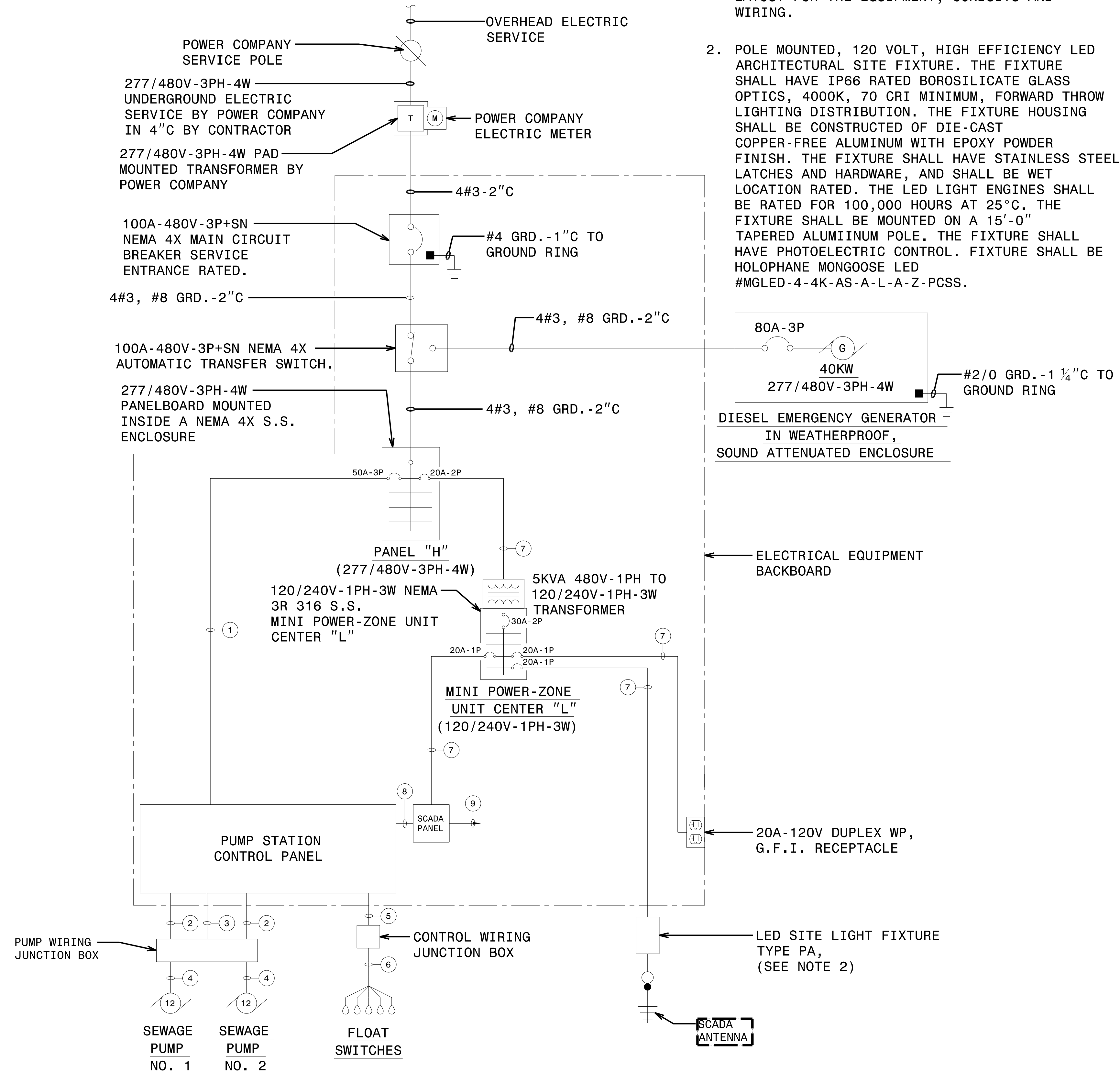
**DOCUMENT NOT CONSIDERED FINAL  
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**NOTES**

1. THE ARRANGEMENT OF CONTROL EQUIPMENT MOUNTED ON THE BACKBOARD SHALL BE DETERMINED BY THE CONTRACTOR. EQUIPMENT SHALL BE ARRANGED TO PROVIDE A CLEAN LAYOUT FOR THE EQUIPMENT, CONDUITS AND WIRING.
2. POLE MOUNTED, 120 VOLT, HIGH EFFICIENCY LED ARCHITECTURAL SITE FIXTURE. THE FIXTURE SHALL HAVE IP66 RATED BOROSILICATE GLASS OPTICS, 4000K, 70 CRI MINIMUM, FORWARD THROW LIGHTING DISTRIBUTION. THE FIXTURE HOUSING SHALL BE CONSTRUCTED OF DIE-CAST COPPER-FREE ALUMINUM WITH EPOXY POWDER FINISH. THE FIXTURE SHALL HAVE STAINLESS STEEL LATCHES AND HARDWARE, AND SHALL BE WET LOCATION RATED. THE LED LIGHT ENGINES SHALL BE RATED FOR 100,000 HOURS AT 25°C. THE FIXTURE SHALL BE MOUNTED ON A 15'-0" TAPERED ALUMINIUM POLE. THE FIXTURE SHALL HAVE PHOTOELECTRIC CONTROL. FIXTURE SHALL BE HOLOPHANE MONGOOSE LED #MGLED-4-4K-AS-A-L-A-Z-PCSS.

**WIRING LEGEND**

- 1 3#8, #10 GRD.-1"C
- 2 3#10, #10 GRD.-1"C
- 3 8#14, #12 GRD.-1"C
- 4 PUMP MOTOR AND SENSOR CABLES-2"C
- 6 FLOAT SWITCH CABLES-2"C
- 5 10#14, #12 GRD.-1"C
- 7 2#12, #12 GRD.-3/4"C
- 8 12#14, #12 GRD.-1"C
- 9 ANTENNA CABLE-1"C TO SCADA ANTENNA



**PUMP STATION ELECTRICAL ONE-LINE DIAGRAM**

**PANELBOARD "H" SCHEDULE**

VOLTAGE: 277/480V-3PH-4W	PANEL TYPE: ENCLOSURE MOUNTED, BREAKER
MAIN BUS BARS AND LUGS: 100A	MIN. A.I.C. RATING: 8,000
MAIN BREAKER: NONE	LOCATION: ELECTRICAL EQUIPMENT BACKBOARD

NOTES	HP	WATTS	LOCATION	POLE	AMP/TRIP	AMP/TRIP	POLE	LOCATION	WATTS	HP	NOTES
PUMP STATION CONTROL PANEL	24		ELECTRICAL BACKBOARD	3	50	1	2	ELECTRICAL BACKBOARD	5,000		TRANSFORMER FOR MINI POWER-ZONE CENTER "L"
SPARE						6					SPARE
SPARE						7	8	20	3		SPARE
SPARE						13	14				SPARE

**MINI POWER-ZONE UNIT CENTER "L" SCHEDULE**

VOLTAGE: 120/240V-1PH-3W	PANEL TYPE: SURFACE MOUNTED, BREAKER
MAIN BUS BARS AND LUGS: 100A	MIN. A.I.C. RATING: 8,000
MAIN BREAKER: 30A-2P	LOCATION: ELECTRICAL EQUIPMENT BACKBOARD

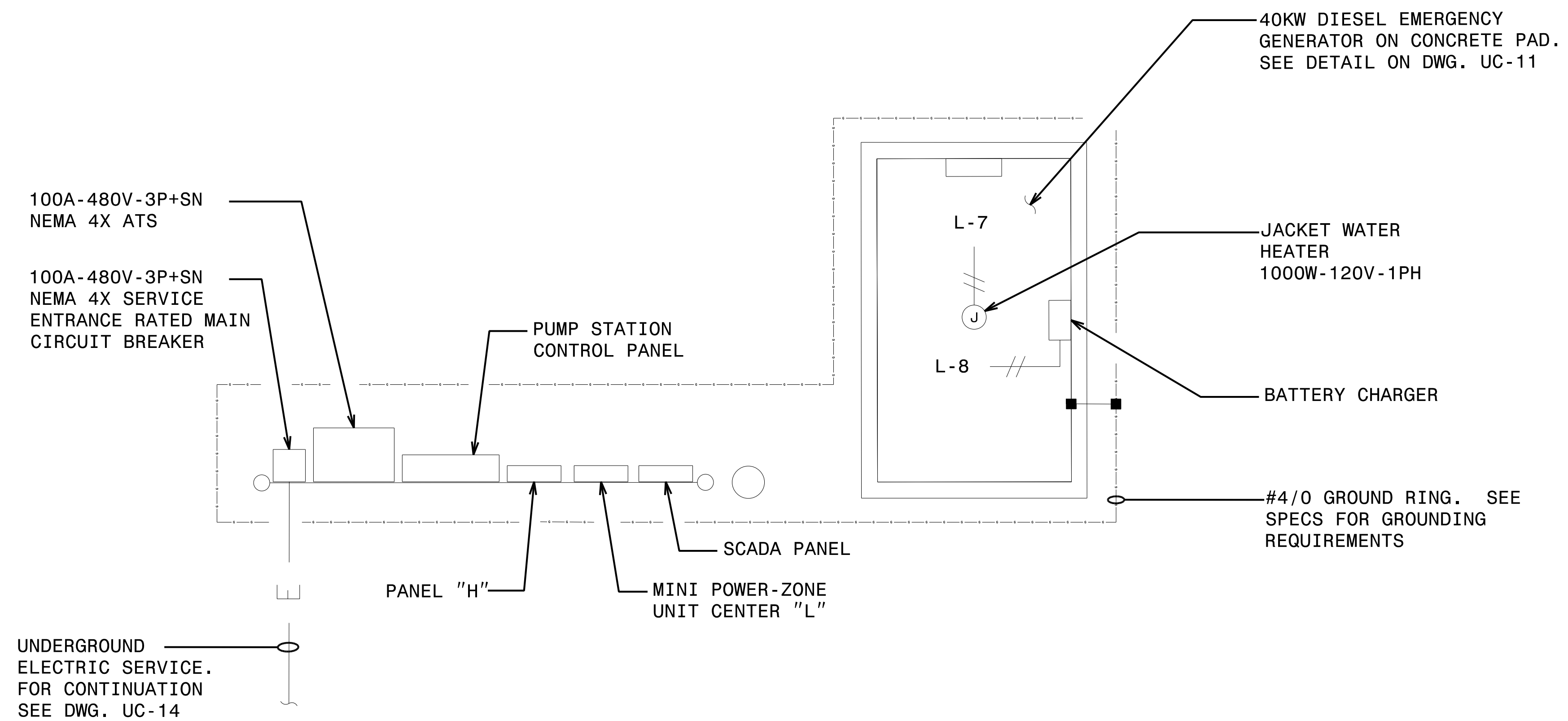
NOTES	HP	WATTS	LOCATION	POLE	AMP/TRIP	AMP/TRIP	POLE	LOCATION	WATTS	HP	NOTES	
SITE LIGHT		200	OUTSIDE	1	20	1	2	ELECTRICAL BACKBOARD	200		RECEPTACLE	
SPARE						3	4				SPARE	
SCADA PANEL		200	ELECTRICAL BACKBOARD	1	20	5	6				SPARE	
JACKET WATER HEATER		1000	GEN.	1	20	7	8	20	1	GEN.	200	BATTERY CHARGER
SPARE						9	10					SPARE

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PROJECT REFERENCE NO.	SHEET NO.
R-5021	UC-P16
DESIGNED BY: CMB	
DRAWN BY: CMB	
CHECKED BY: DTB	
APPROVED BY: DTB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

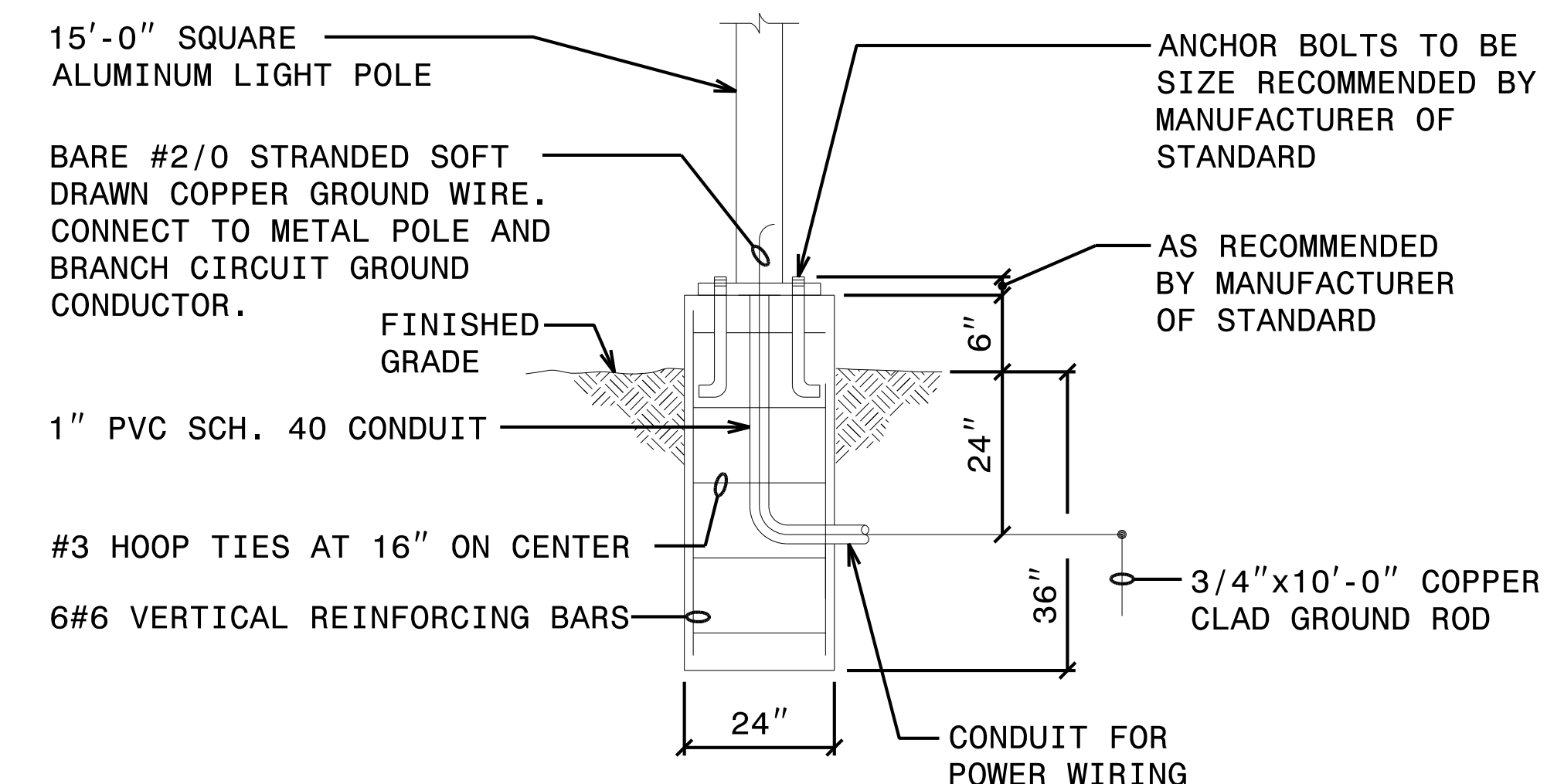
**UTILITY CONSTRUCTION**

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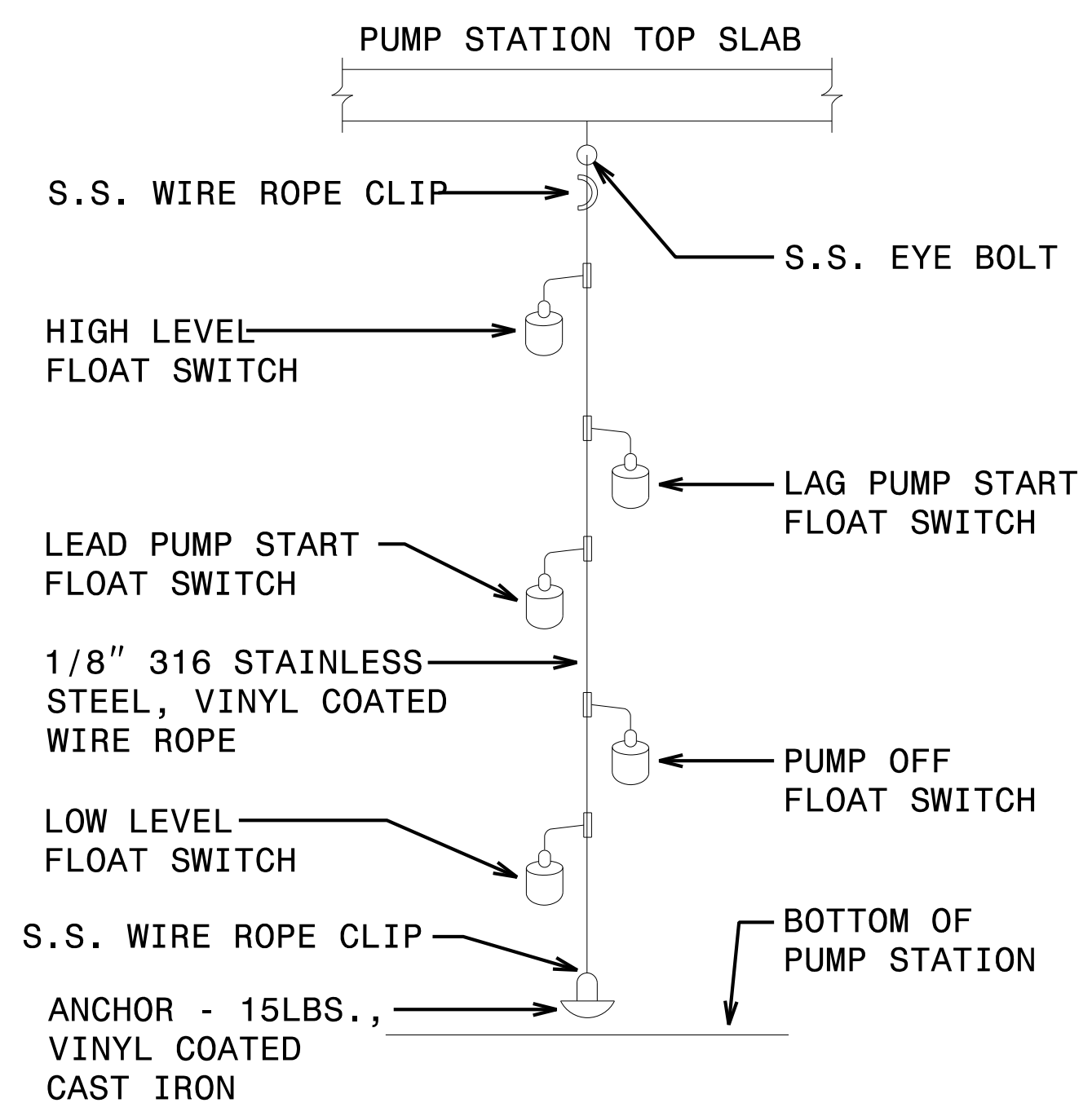
**ELECTRICAL EQUIPMENT LAYOUT**

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**SITE LIGHT FIXTURE AND SCADA  
ANTENNA POLE INSTALLATION DETAIL**

NO SCALE



**FLOAT SWITCH MOUNTING DETAIL**

NO SCALE

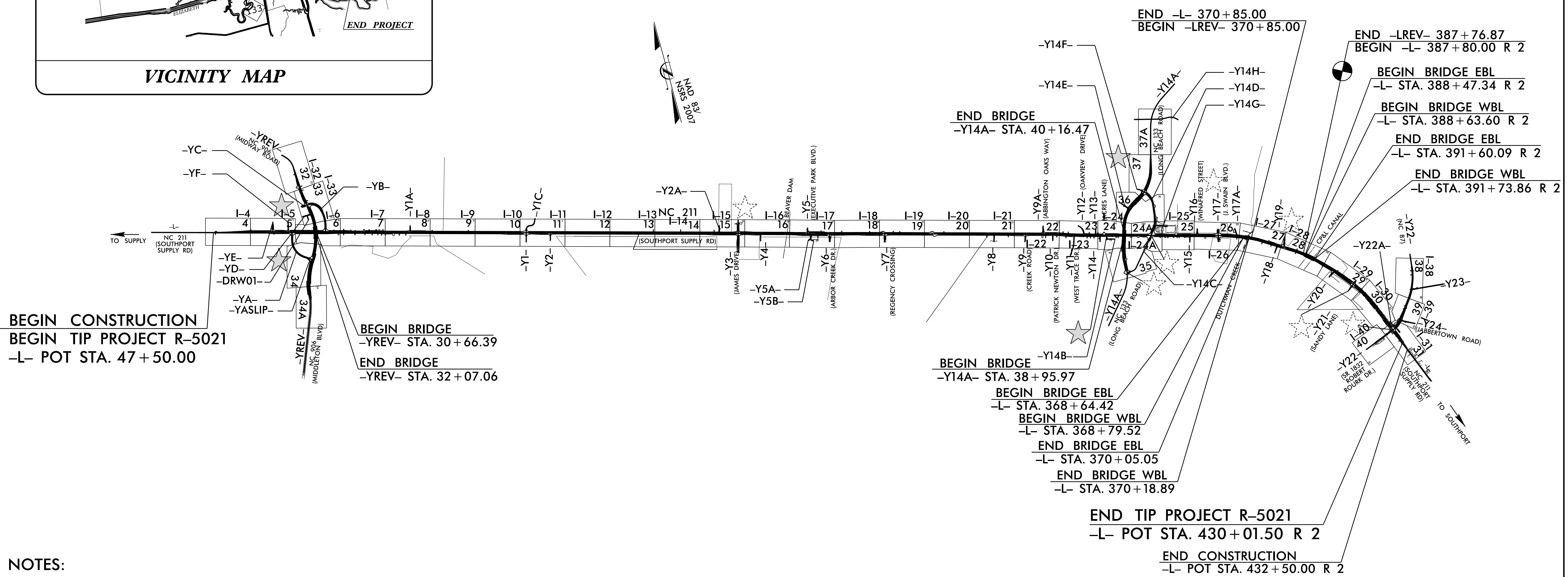
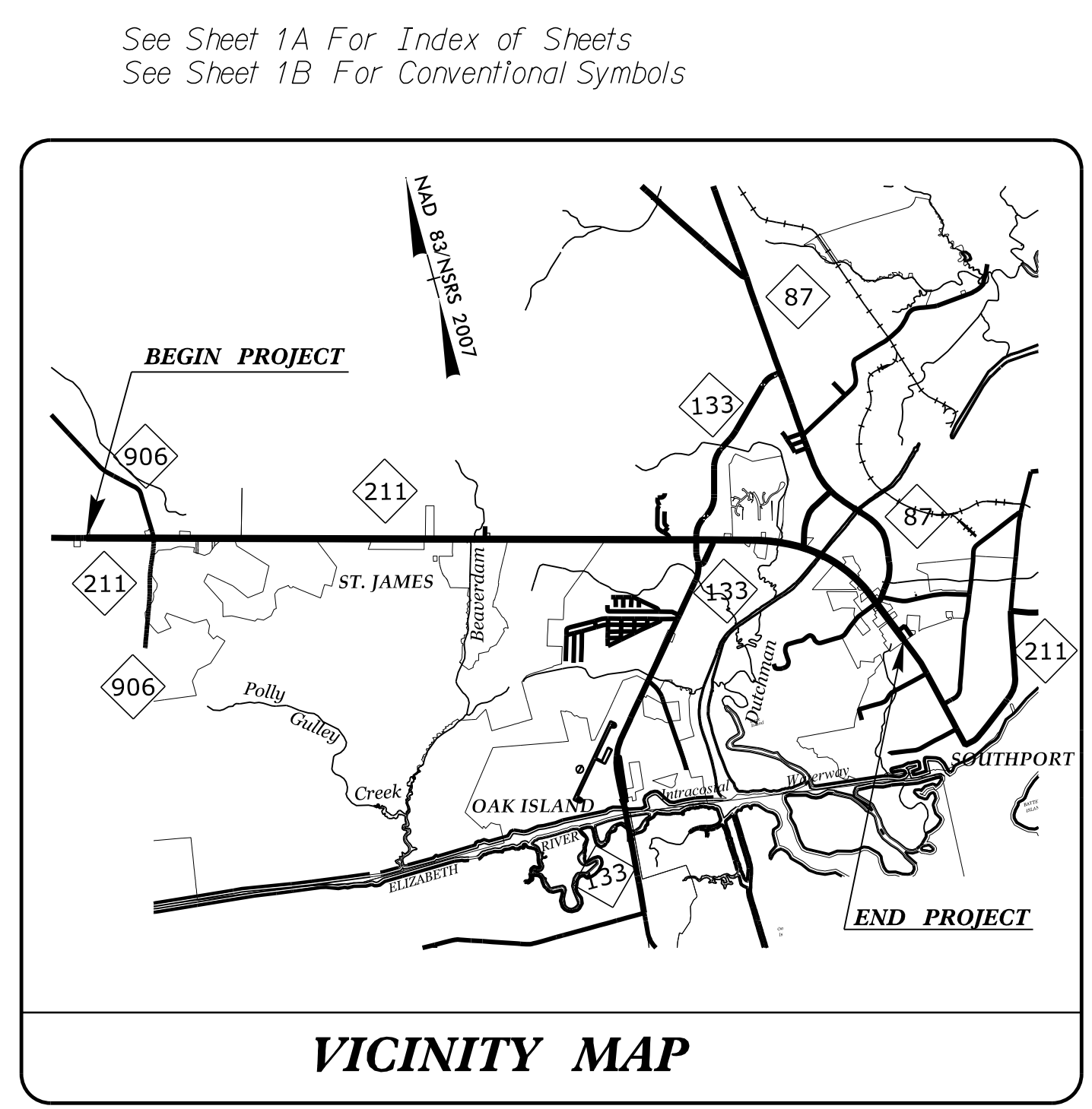
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**INDEX OF SHEETS  
BRUNSWICK COUNTY**

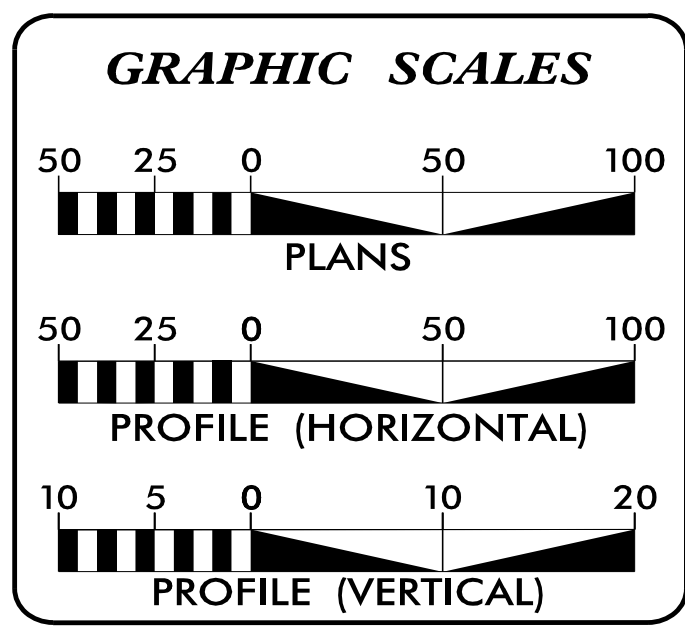
**LOCATION: NC 211 FROM WEST OF SR 1500 (MIDWAY ROAD)  
TO EAST OF NC 87**

**TYPE OF WORK: WATER AND SEWER RELOCATION**



**NOTES:**  
1. THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**INDEX OF SHEETS**

SHEET NO.:	DESCRIPTION:
I-1	TITLE SHEET
I-4 THRU I-33	PLAN SHEETS
I-38 THRU I-40	PLAN SHEETS

**WATER AND SEWER OWNERS ON PROJECT**

(A) WATER - BRUNSWICK COUNTY
(B) WATER - CITY OF SOUTHPORT
(C) SANITARY SEWER - BRUNSWICK COUNTY
(D) SANITARY SEWER - CITY OF SOUTHPORT
(E) SANITARY SEWER - SE BRUNSWICK SANITARY DISTRICT

PREPARED IN THE OFFICE OF

**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
8601 SIX FORKS ROAD, FORUM 1 SUITE 700  
RALEIGH, NORTH CAROLINA 27615-3960  
NC LICENSE NO. F-0112  
1-888-521-4455 OR 919-876-9560

Howard Woodall, PE	CONSULTANT CONTACT #1
Bryan Badey, PE	CONSULTANT CONTACT #2
Jordan Lawrence	CONSULTANT CONTACT #3

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

Lonny Sleeper	UTILITIES DIVISION ENGINEER
Michael Bass	ENGINEERING TECHNICIAN ADVANCED
Steve Davis	DIVISION UTILITY COORDINATOR

09/08/99  
 2/2/2022  
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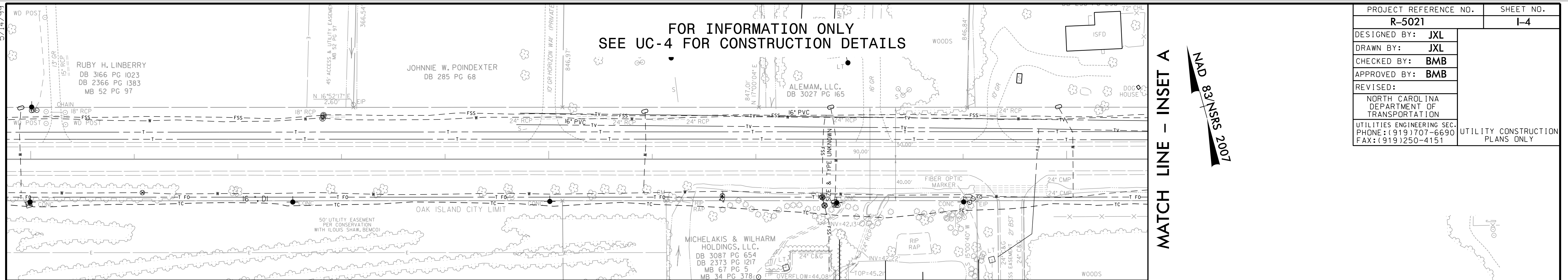
**TIP PROJECT: R-5021**

**CONTRACT: C204123**

PROJECT REFERENCE NO.	SHEET NO.
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DESIGNED BY: JXL	
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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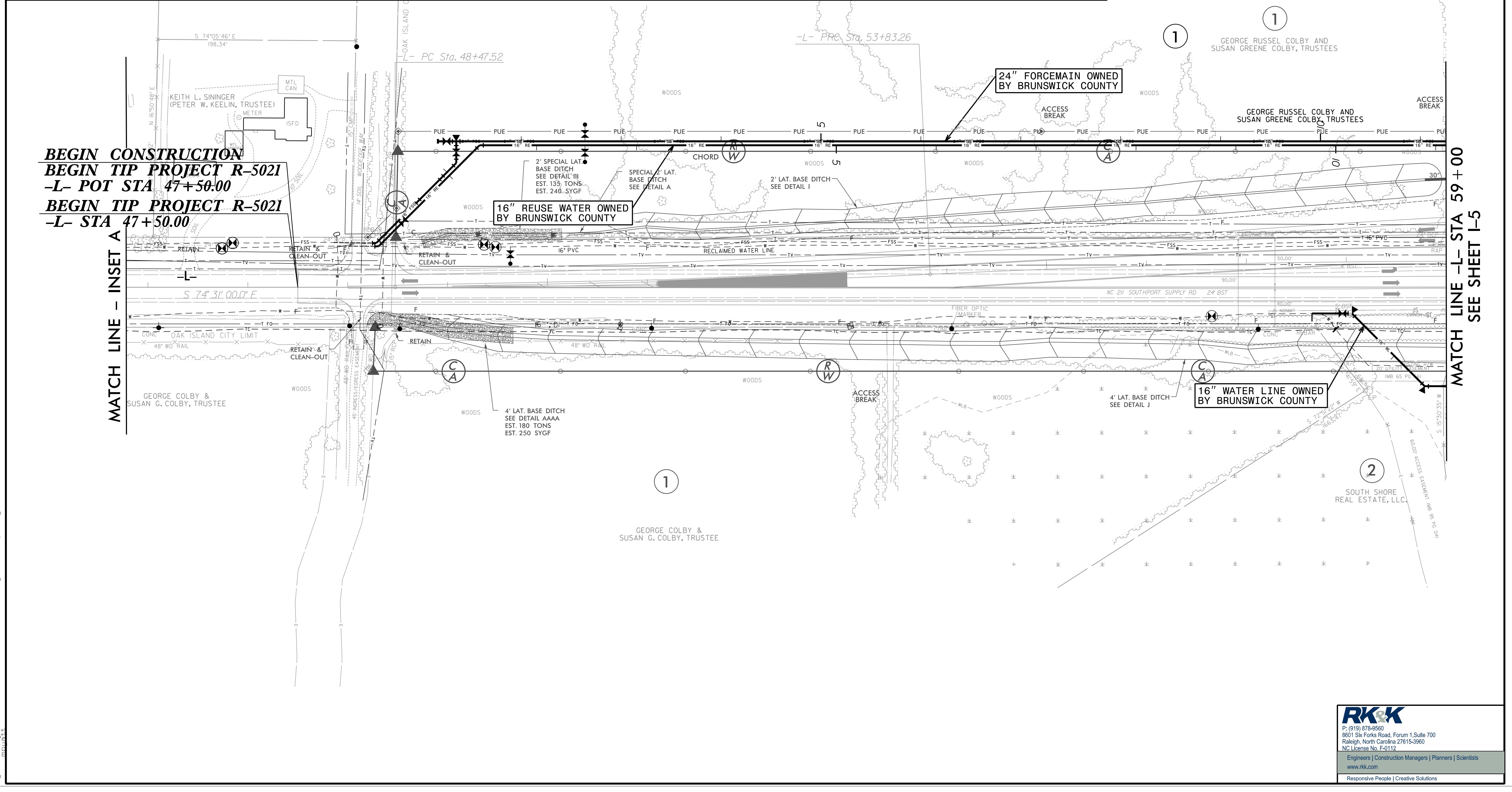
FOR INFORMATION ONLY  
SEE UC-4 FOR CONSTRUCTION DETAILS

MATCH LINE - INSET A



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**BEGIN TIP PROJECT R-5021**  
**-L- STA 47+50.00**

MATCH LINE - INSET A



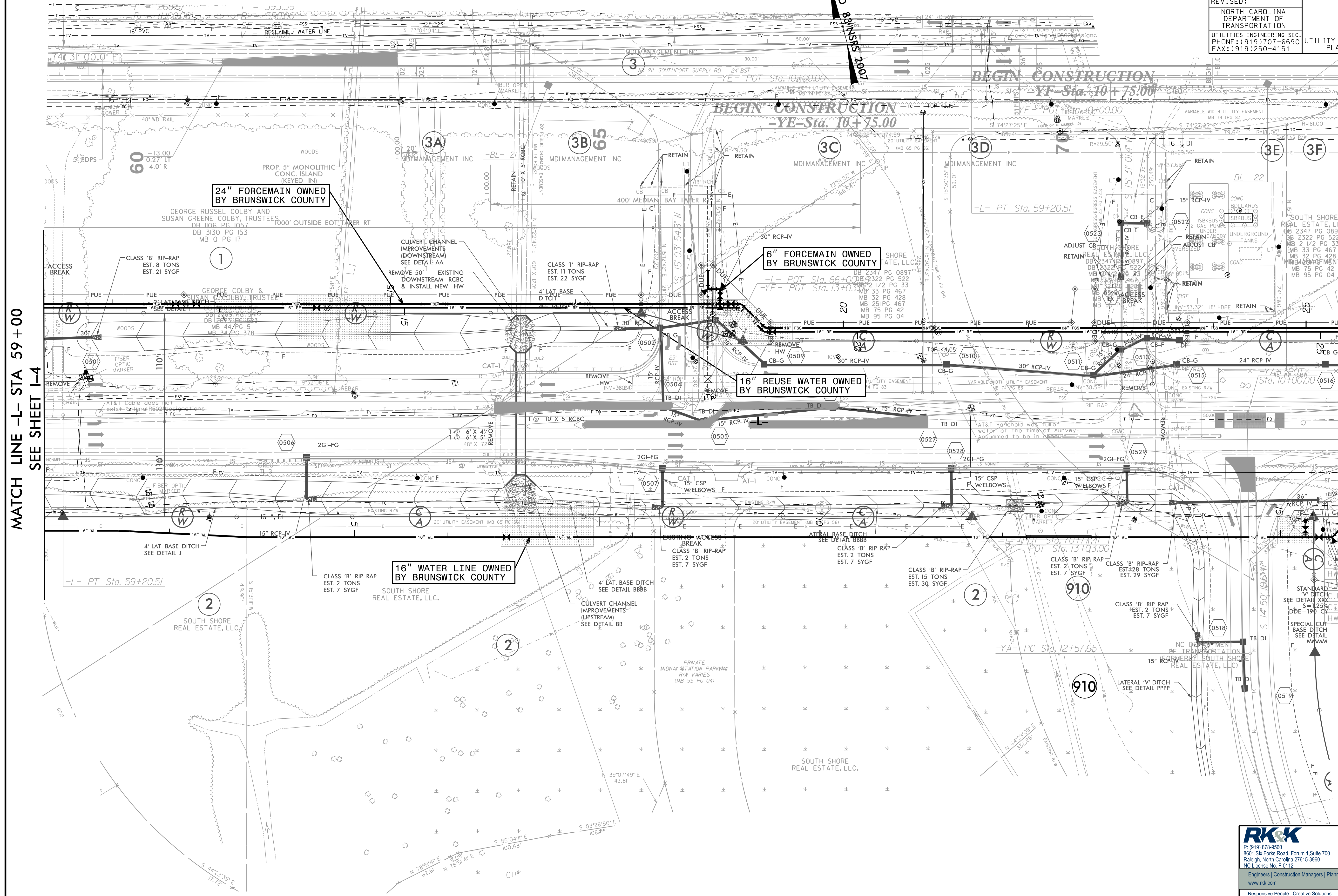
MATCH LINE -L- STA 59+00  
SEE SHEET I-5

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**RK&K**  
P: (919) 878-9560  
8601 Six Forks Road, Forum 1, Suite 700  
Raleigh, North Carolina 27615-3960  
NC License No. F-0112  
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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-5
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
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MATCH LINE -L- STA 59+00  
SEE SHEET I-4

MATCH LINE -L- STA 73+00  
SEE SHEET I-6

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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-6
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
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UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

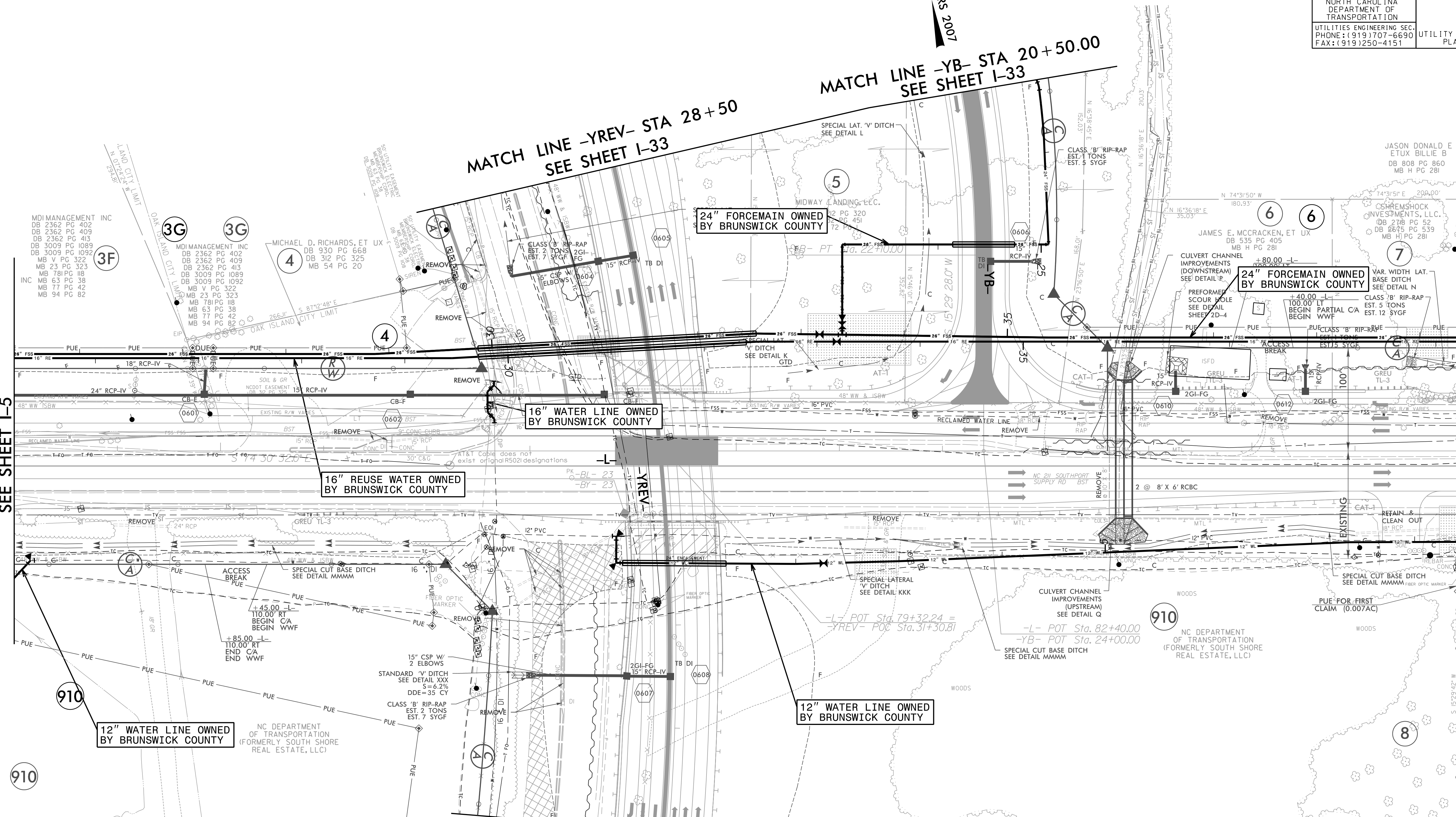
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SEE SHEET I-33

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SEE SHEET I-33

MATCH LINE -L- STA 73+00  
SEE SHEET I-5

MATCH LINE -L- STA 87+00  
SEE SHEET I-7



MDI MANAGEMENT INC  
DB 2362 PG 402  
DB 2362 PG 409  
DB 2362 PG 413  
DB 3009 PG 1089  
DB 3009 PG 1092  
MB V PG 322  
MB 23 PG 323  
MB 78 PG 118  
MB 63 PG 38  
MB 77 PG 42  
MB 94 PG 62

MDI MANAGEMENT INC  
DB 2362 PG 402  
DB 2362 PG 409  
DB 3009 PG 1089  
DB 3009 PG 1092  
MB V PG 322  
MB 23 PG 323  
MB 78 PG 118  
MB 63 PG 38  
MB 77 PG 42  
MB 94 PG 62

MICHAEL D. RICHARDS, ET UX  
DB 930 PG 668  
DB 312 PG 325  
MB 54 PG 20

24" FORCEMAIN OWNED BY BRUNSWICK COUNTY

24" FORCEMAIN OWNED BY BRUNSWICK COUNTY

16" WATER LINE OWNED BY BRUNSWICK COUNTY

16" REUSE WATER OWNED BY BRUNSWICK COUNTY

12" WATER LINE OWNED BY BRUNSWICK COUNTY

12" WATER LINE OWNED BY BRUNSWICK COUNTY

MATCH LINE -YREV- STA 35+00.00  
SEE SHEET I-34

5/14/99

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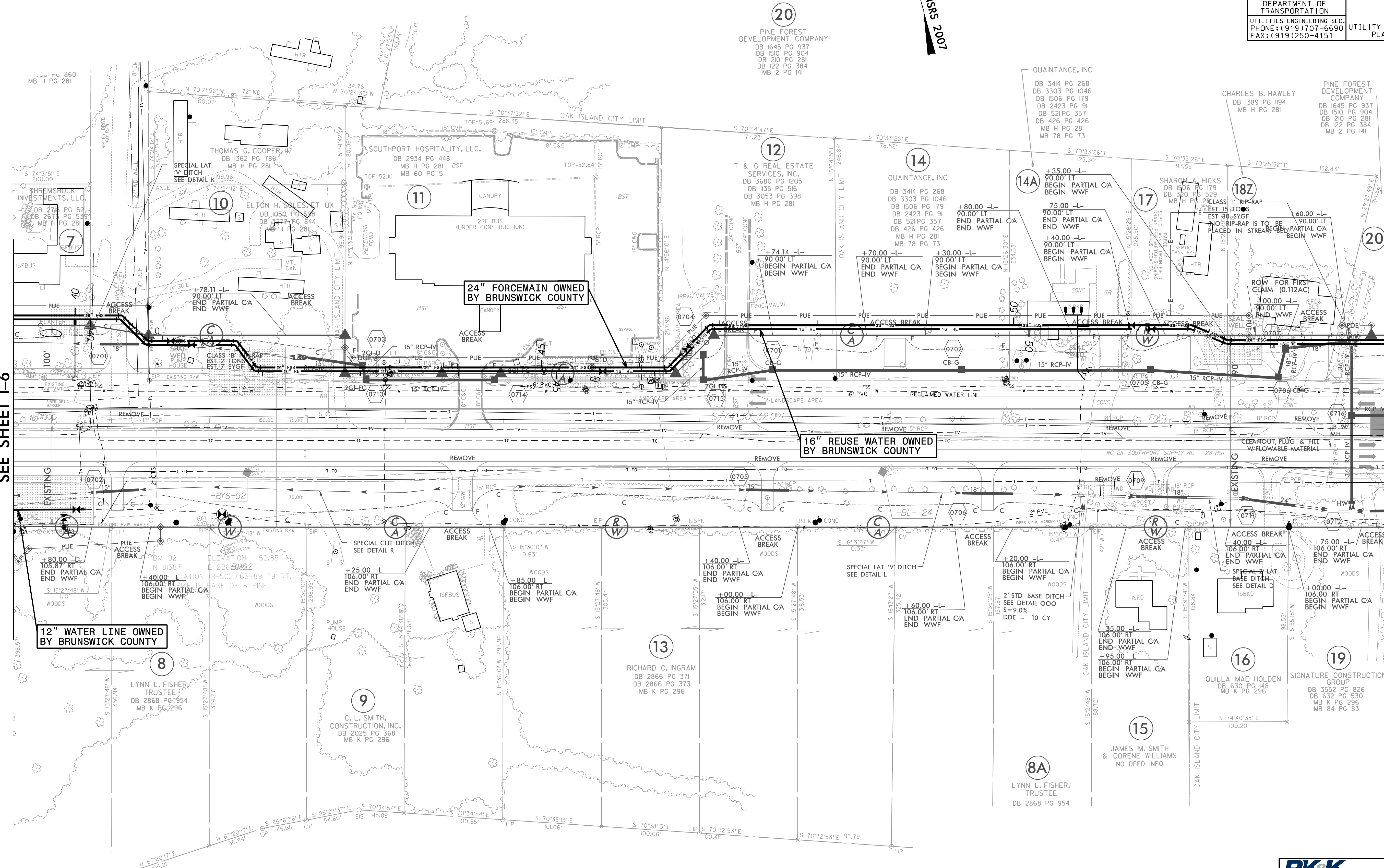
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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-7
DESIGNED BY: JXL	
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MATCH LINE -L- STA 87 + 00.00  
SEE SHEET I-6

MATCH LINE -L- STA 101 + 00.00  
SEE SHEET I-8



20  
PINE FOREST DEVELOPMENT COMPANY  
DB 1645 PG 937  
DB 1510 PG 904  
DB 210 PG 281  
DB 122 PG 384  
MB 2 PG 141

14  
QUAINTANCE, INC  
DB 3414 PG 268  
DB 3303 PG 1046  
DB 1506 PG 179  
DB 2423 PG 91  
DB 521 PG 357  
DB 426 PG 426  
MB H PG 281  
MB 78 PG 73

14A  
+35.00 -L-  
90.00' LT  
BEGIN PARTIAL CA  
END WWF

17  
SHARON A. HICKS  
DB 1506 PG 179  
DB 320 PG 529  
MB H PG 281

18Z  
EST. 15 TOWNSHIP  
EST. 30 S.V.G.F.  
NO RIP-RAP IS TO BE PLACED IN STREAM

20  
PINE FOREST DEVELOPMENT COMPANY  
DB 1645 PG 937  
DB 1510 PG 904  
DB 210 PG 281  
DB 122 PG 384  
MB 2 PG 141

24" FORCEMAIN OWNED BY BRUNSWICK COUNTY

16" REUSE WATER OWNED BY BRUNSWICK COUNTY

12" WATER LINE OWNED BY BRUNSWICK COUNTY

13  
RICHARD C. INGRAM  
DB 2866 PG 371  
DB 2866 PG 373  
MB K PG 296

9  
C. L. SMITH, CONSTRUCTION, INC.  
DB 2025 PG 368  
MB K PG 296

8A  
LYNN L. FISHER, TRUSTEE  
DB 2868 PG 954

15  
JAMES M. SMITH & CORENE WILLIAMS  
NO DEED INFO

16  
QUILLA MAE HOLDEN  
DB 630 PG 48  
MB K PG 296

19  
SIGNATURE CONSTRUCTION GROUP  
DB 3552 PG 826  
DB 632 PG 530  
MB K PG 296  
MB 84 PG 83

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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-8
DESIGNED BY: JXL	
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APPROVED BY: BMB	
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NAD 83 NRS 2007

20A  
EQUITY INVESTMENTS  
ASSOCIATION, L.L.C.  
DB 1645 PG 937

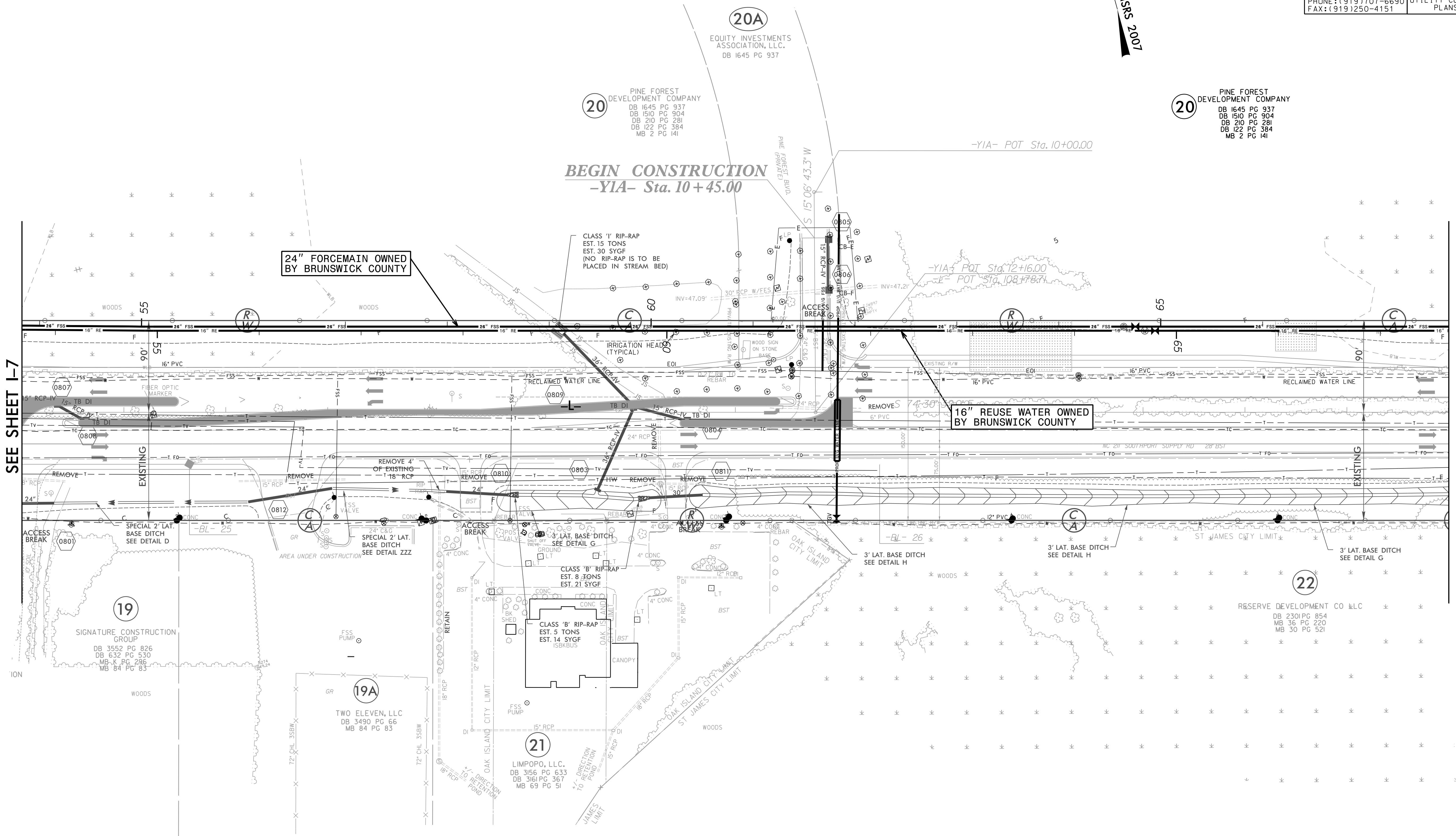
20  
PINE FOREST  
DEVELOPMENT COMPANY  
DB 1645 PG 937  
DB 1510 PG 904  
DB 210 PG 281  
DB 122 PG 384  
MB 2 PG 141

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PINE FOREST  
DEVELOPMENT COMPANY  
DB 1645 PG 937  
DB 1510 PG 904  
DB 210 PG 281  
DB 122 PG 384  
MB 2 PG 141

**BEGIN CONSTRUCTION**  
-YIA- Sta. 10+45.00

MATCH LINE -L- STA 101+00.00  
SEE SHEET I-7

MATCH LINE -L- STA 115+00.00  
SEE SHEET I-9



19  
SIGNATURE CONSTRUCTION  
GROUP  
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DB 632 PG 530  
MB K PG 286  
MB 84 PG 83

19A  
TWO ELEVEN, LLC  
DB 3490 PG 66  
MB 84 PG 83

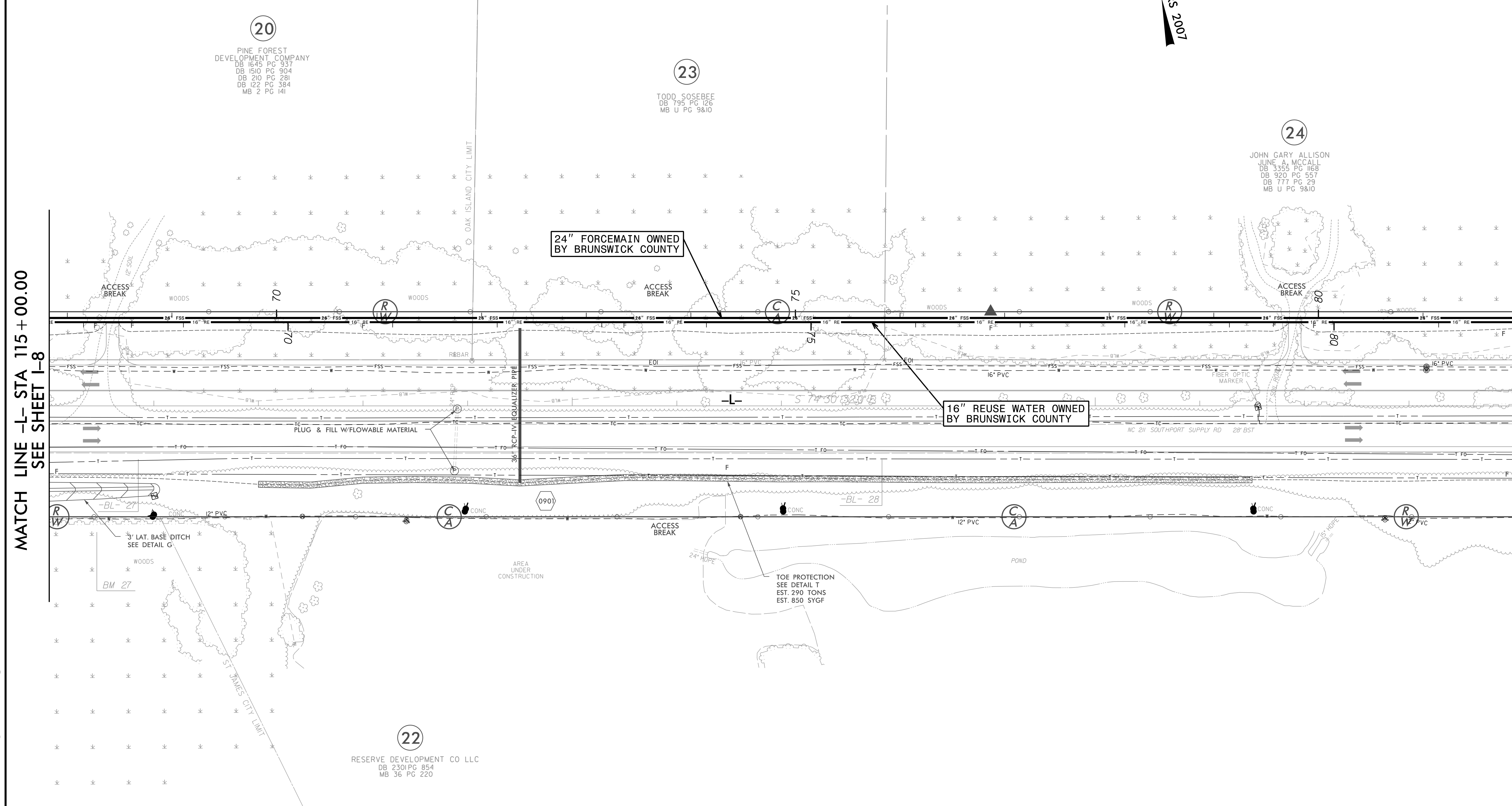
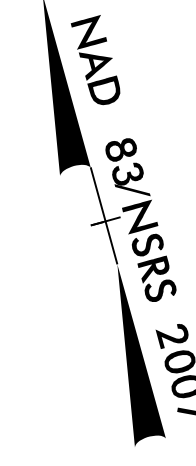
21  
LIMPOPO, L.L.C.  
DB 3156 PG 633  
DB 3161 PG 367  
MB 69 PG 51

22  
RESERVE DEVELOPMENT CO LLC  
DB 2301 PG 854  
MB 36 PG 220  
MB 30 PG 521

5/14/99  
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FOR INFORMATION ONLY  
SEE UC-9 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-9
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	



MATCH LINE -L- STA 115 + 00.00  
SEE SHEET I-8

MATCH LINE -L- STA 129 + 00.00  
SEE SHEET I-10

20  
PINE FOREST  
DEVELOPMENT COMPANY  
DB 1645 PG 337  
DB 1510 PG 904  
DB 210 PG 281  
DB 122 PG 384  
MB 2 PG 141

23  
TODD SOSEBEE  
DB 795 PG 126  
MB U PG 9810

24  
JOHN GARY ALLISON  
JUNE A. MCCALL  
DB 3355 PG 1168  
DB 920 PG 551  
DB 777 PG 29  
MB U PG 9810

22  
RESERVE DEVELOPMENT CO LLC  
DB 2301 PG 854  
MB 36 PG 220

24" FORCE MAIN OWNED  
BY BRUNSWICK COUNTY

16" REUSE WATER OWNED  
BY BRUNSWICK COUNTY

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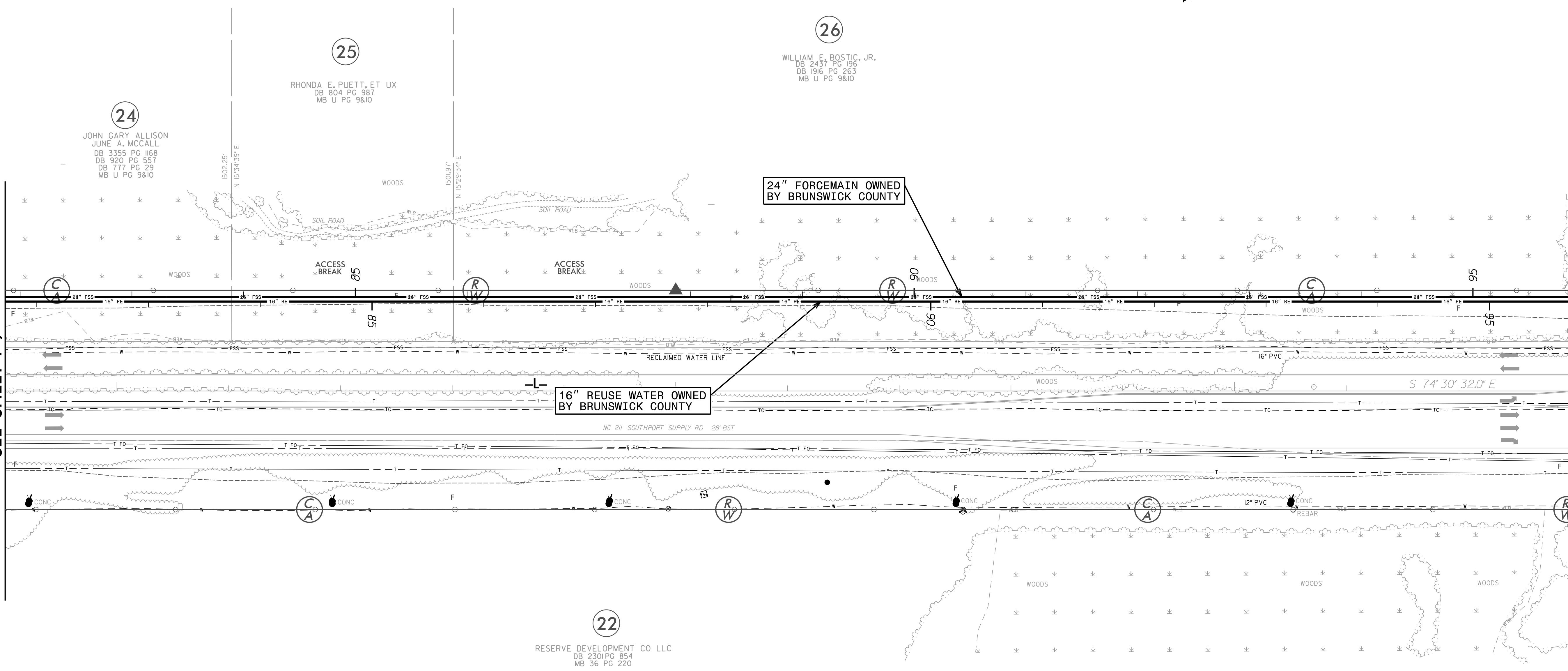
FOR INFORMATION ONLY  
SEE UC-10 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-10
DESIGNED BY: JXL	
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

NAD 83 NSRS 2007

MATCH LINE -L- STA 129 + 00.00  
SEE SHEET I-9

MATCH LINE -L- STA 143 + 00.00  
SEE SHEET I-11



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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-11
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

FOR INFORMATION ONLY  
SEE UC-11 FOR CONSTRUCTION DETAILS

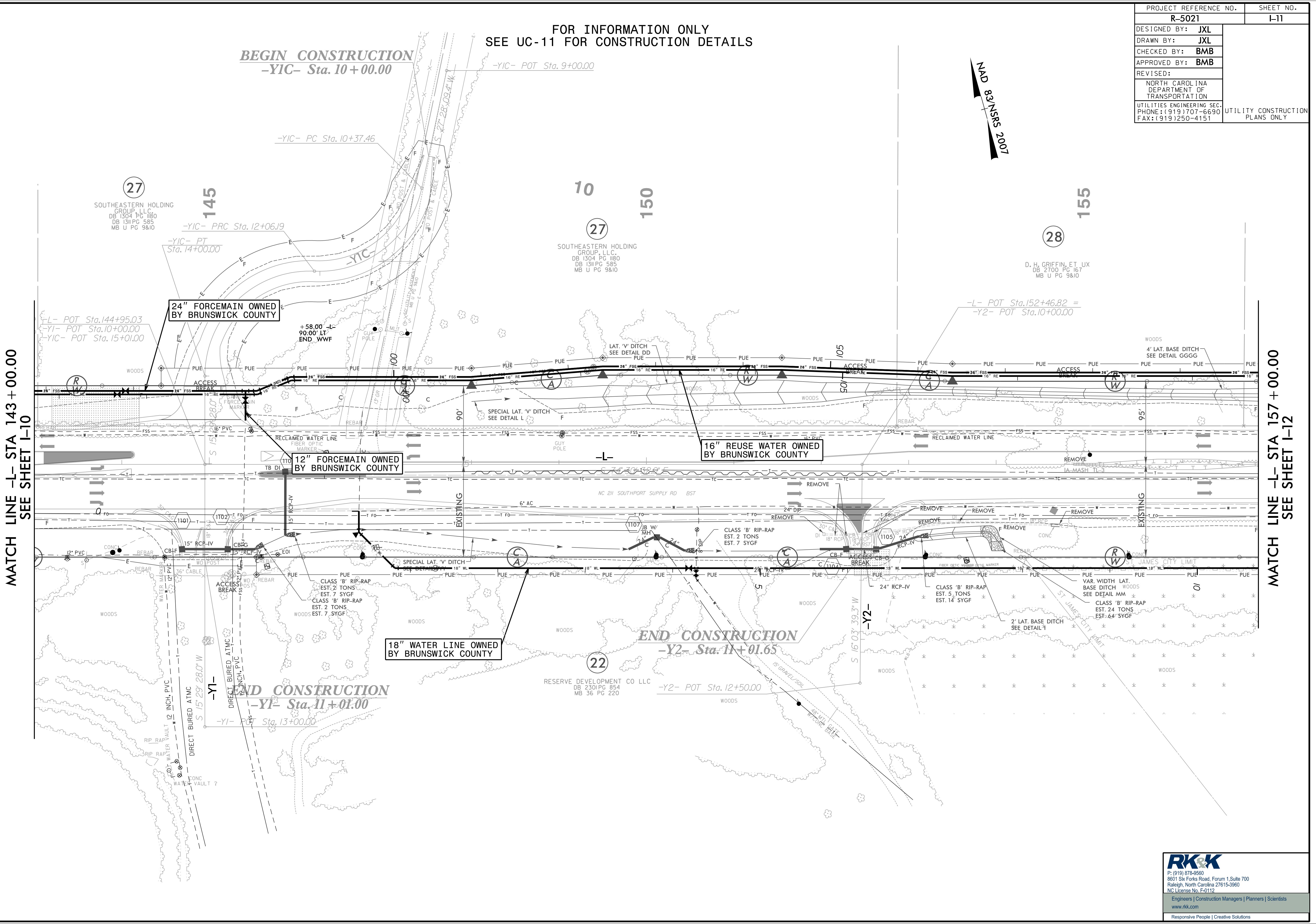
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-Y1C- Sta. 10+00.00

**END CONSTRUCTION**  
-Y2- Sta. 11+01.65

**END CONSTRUCTION**  
-Y1- Sta. 11+01.00

MATCH LINE -L- STA 143+00.00  
SEE SHEET I-10

MATCH LINE -L- STA 157+00.00  
SEE SHEET I-12



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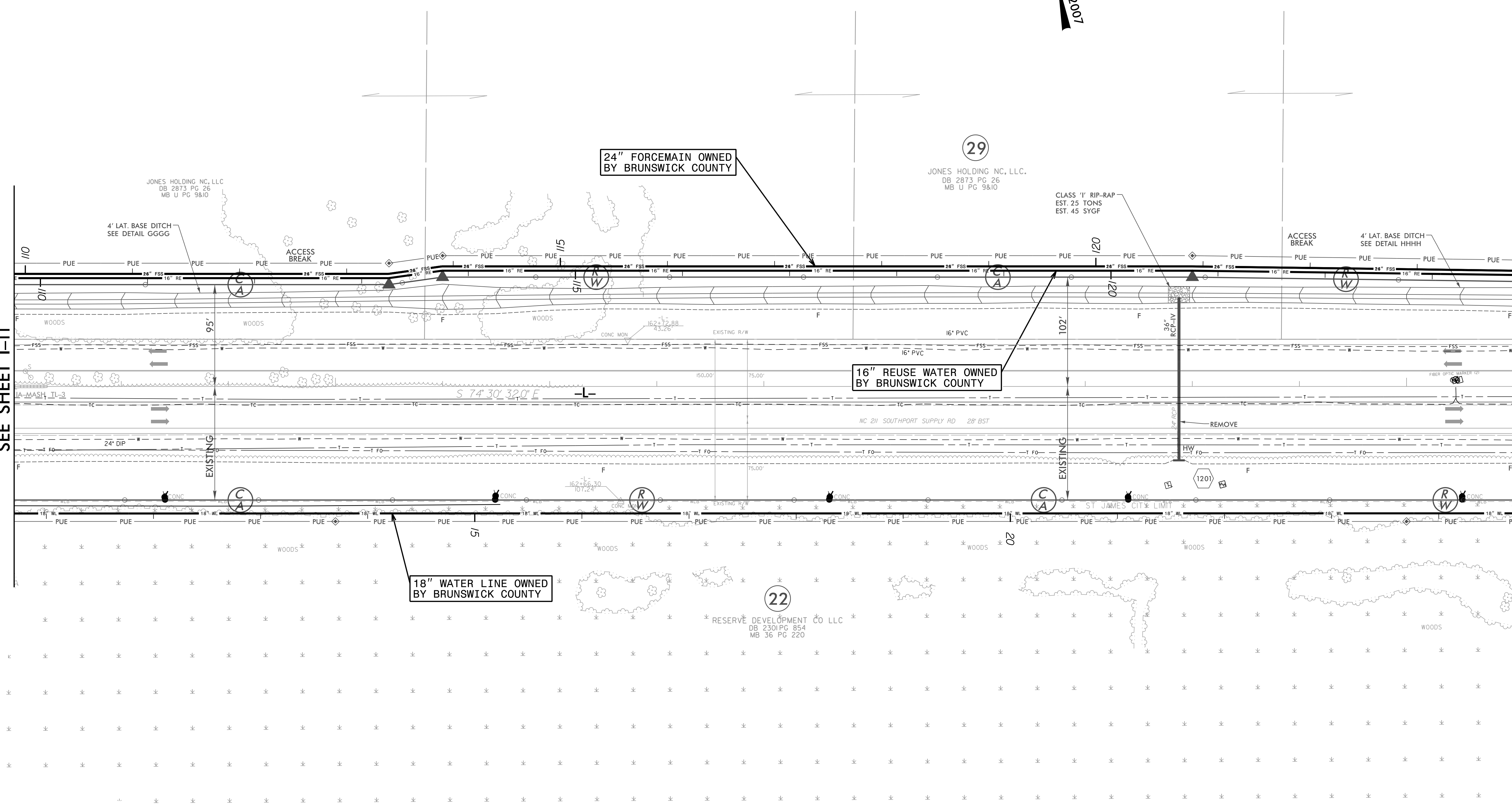
FOR INFORMATION ONLY  
SEE UC-12 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-12
DESIGNED BY: JXL	
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
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MATCH LINE -L- STA 157 + 00.00  
SEE SHEET I-11

MATCH LINE -L- STA 171 + 00.00  
SEE SHEET I-13



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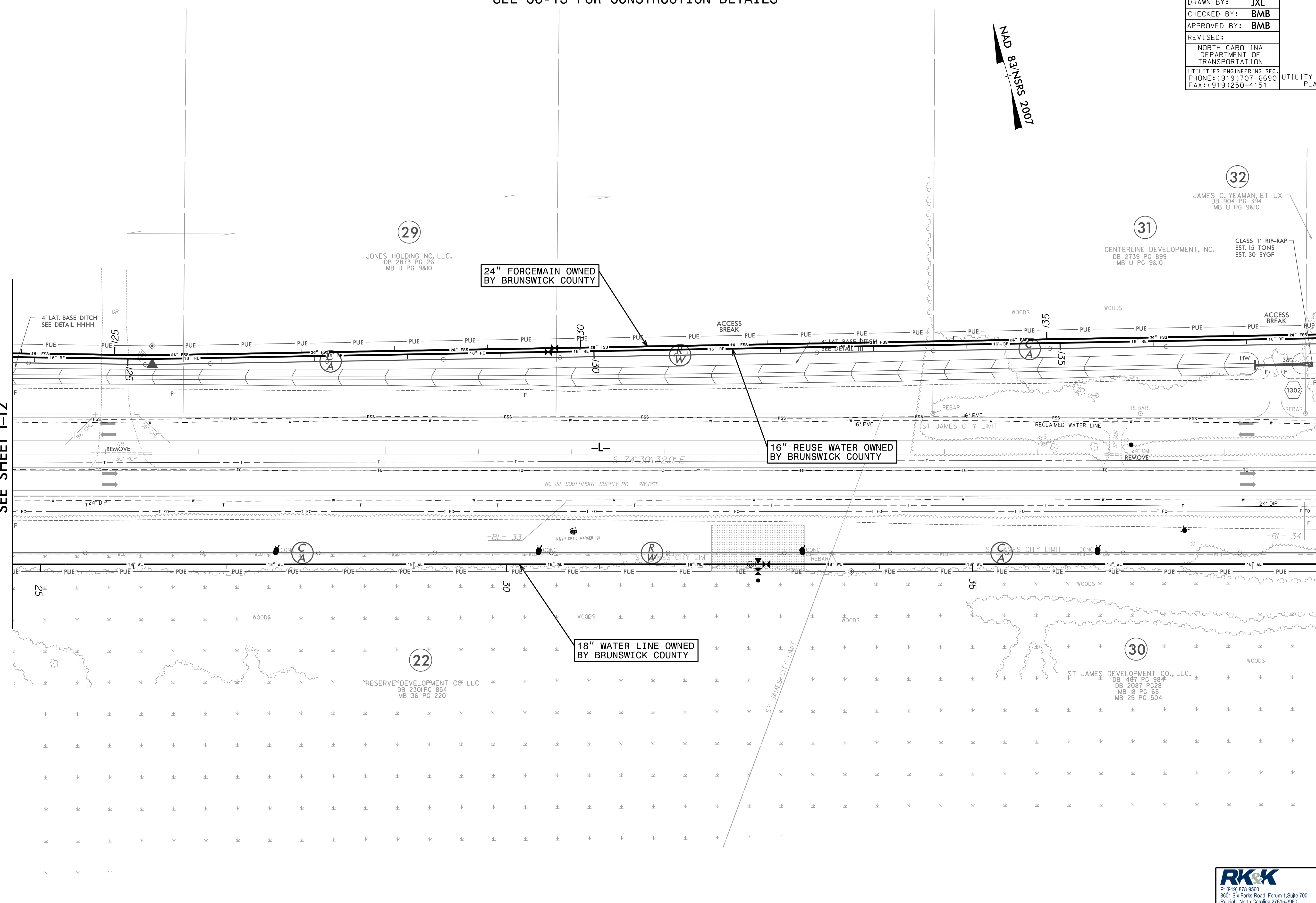
FOR INFORMATION ONLY  
SEE UC-13 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-13
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
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83/NSRS 2007

MATCH LINE -L- STA 171 + 00.00  
SEE SHEET I-12

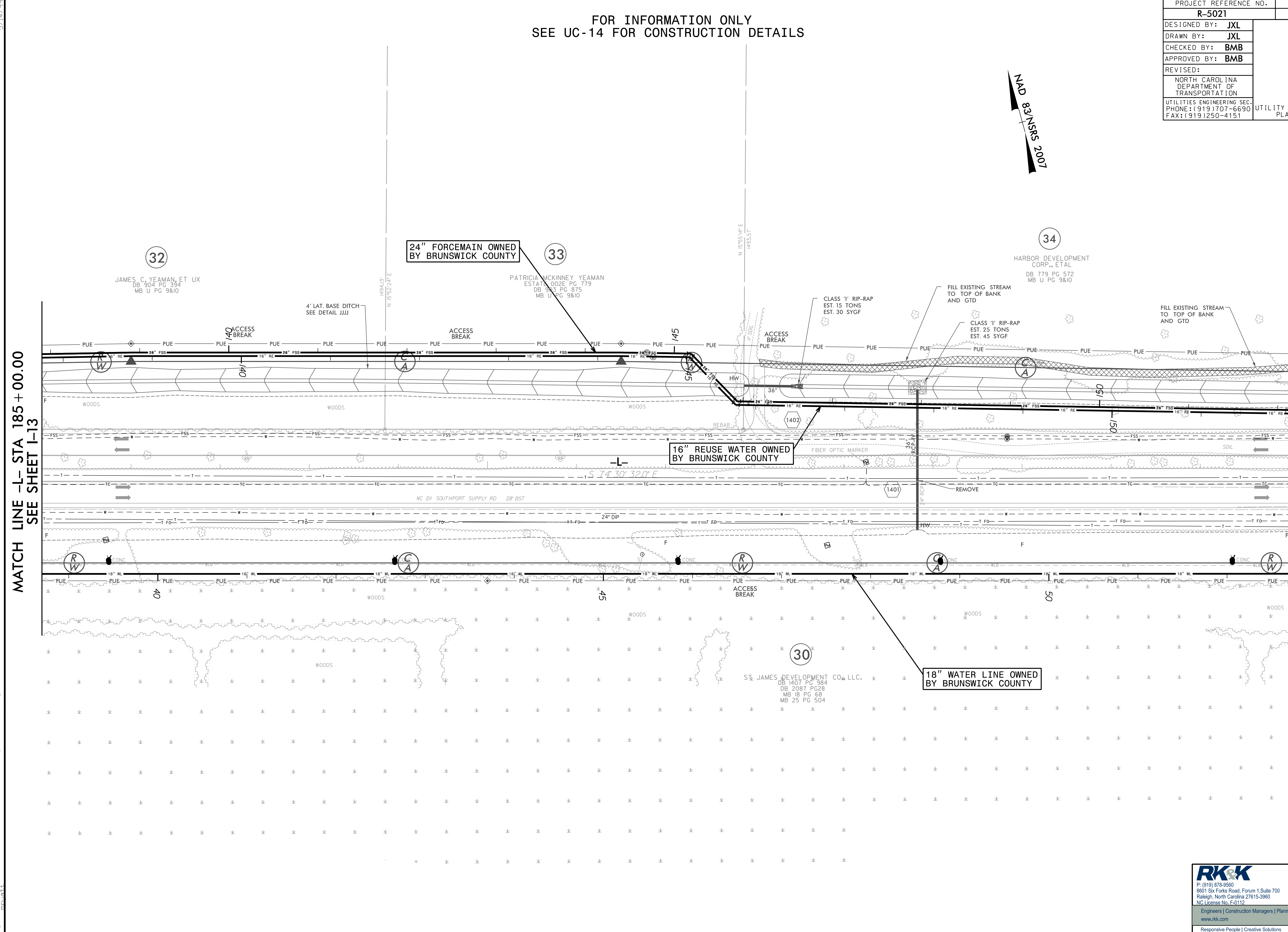
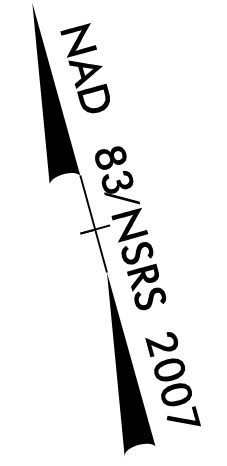
MATCH LINE -L- STA 185 + 00.00  
SEE SHEET I-14



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FOR INFORMATION ONLY  
SEE UC-14 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-14
DESIGNED BY: JXL	
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
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UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY



MATCH LINE -L- STA 185 + 00.00  
SEE SHEET I-13

MATCH LINE -L- STA 199 + 00.00  
SEE SHEET I-15

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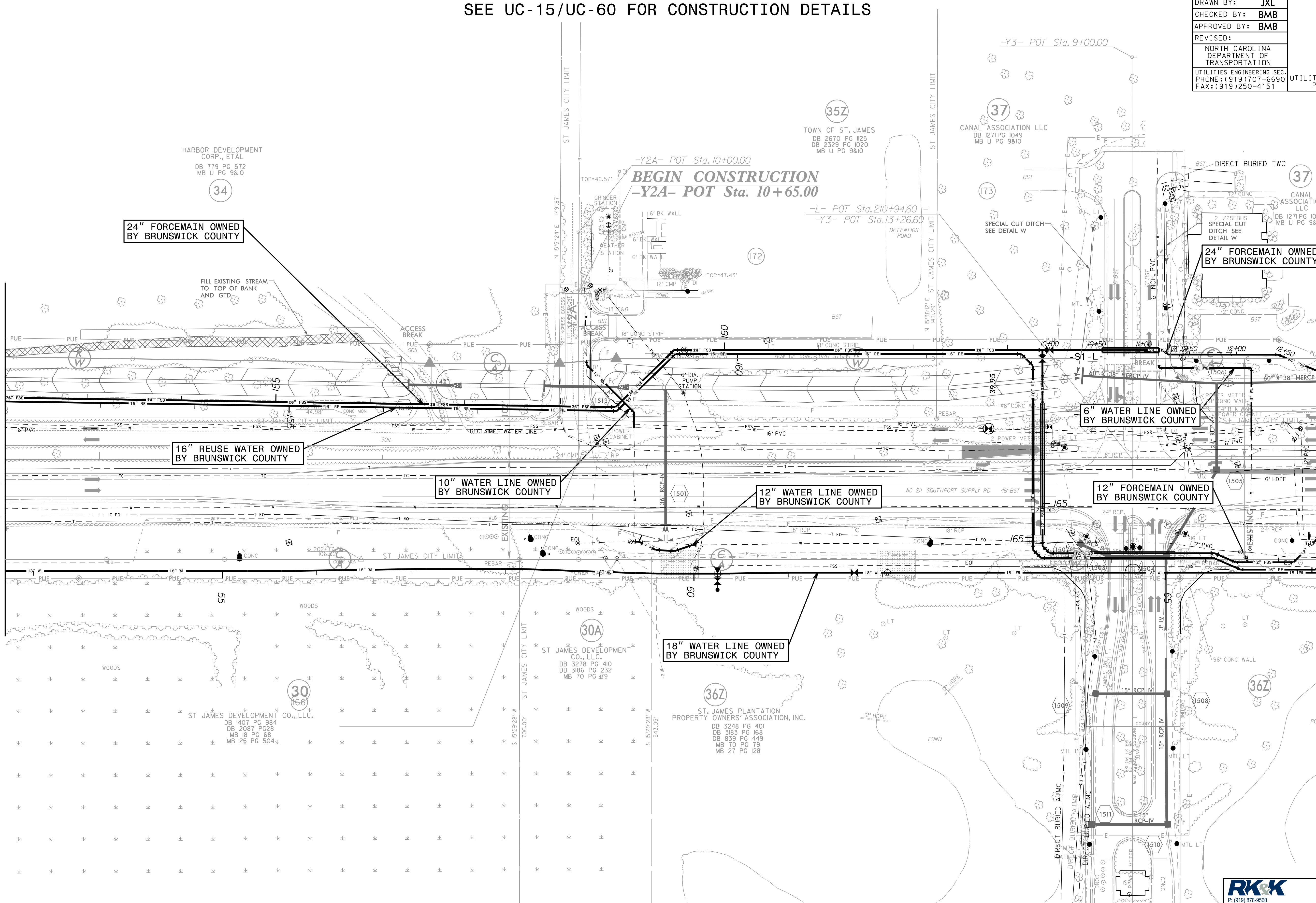


FOR INFORMATION ONLY  
SEE UC-15/UC-60 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-15
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
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UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

MATCH LINE -L- STA 199+00.00  
SEE SHEET I-14

MATCH LINE -L- STA 213+00.00  
SEE SHEET I-16



24" FORCEMAIN OWNED BY BRUNSWICK COUNTY

16" REUSE WATER OWNED BY BRUNSWICK COUNTY

10" WATER LINE OWNED BY BRUNSWICK COUNTY

12" WATER LINE OWNED BY BRUNSWICK COUNTY

6" WATER LINE OWNED BY BRUNSWICK COUNTY

12" FORCEMAIN OWNED BY BRUNSWICK COUNTY

18" WATER LINE OWNED BY BRUNSWICK COUNTY

24" FORCEMAIN OWNED BY BRUNSWICK COUNTY

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FOR INFORMATION ONLY  
SEE UC-16/UC-61 FOR CONSTRUCTION DETAILS

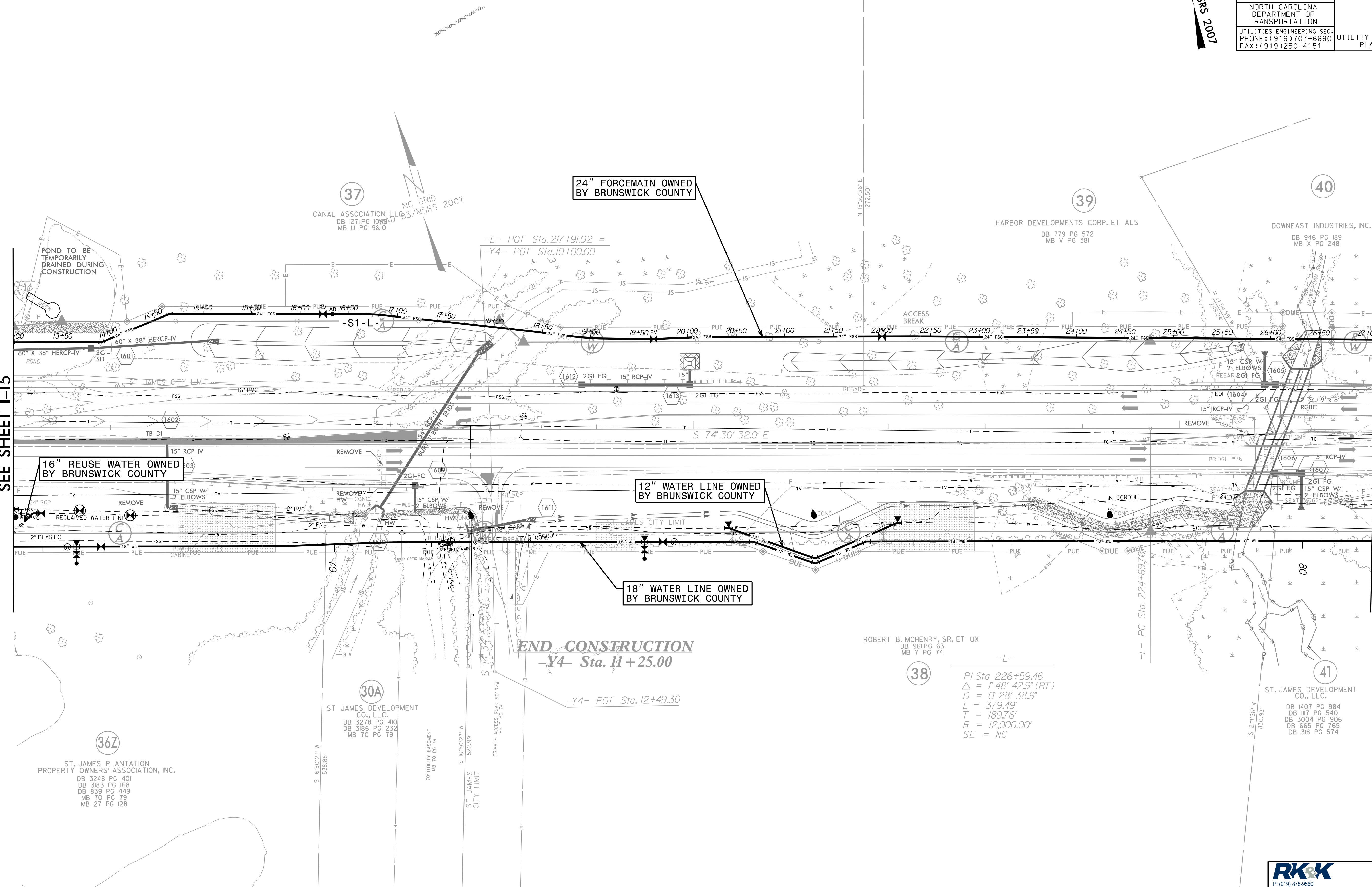
PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-16
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
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MATCH LINE -L- STA 213+00.00  
SEE SHEET I-15

MATCH LINE -L- STA 227+00.00  
SEE SHEET I-17



END CONSTRUCTION  
-Y4- Sta. 11+25.00

ROBERT B. MCHENRY, SR. ET UX  
DB 96 PG 63  
MB Y PG 74

38  
-L-  
PI Sta 226+59.46  
 $\Delta = 1' 48' 42.9''$  (RT)  
 $D = 0' 28' 38.9''$   
 $L = 379.49'$   
 $T = 189.76'$   
 $R = 12,000.00'$   
SE = NC

36Z  
ST. JAMES PLANTATION  
PROPERTY OWNERS' ASSOCIATION, INC.  
DB 3248 PG 401  
DB 3163 PG 168  
DB 3339 PG 449  
MB 70 PG 79  
MB 27 PG 128

30A  
ST. JAMES DEVELOPMENT  
CO., LLC.  
DB 3278 PG 410  
DB 3186 PG 232  
MB 70 PG 79

41  
ST. JAMES DEVELOPMENT  
CO., LLC.  
DB 1407 PG 984  
DB 1117 PG 540  
DB 3004 PG 906  
DB 665 PG 765  
DB 318 PG 574

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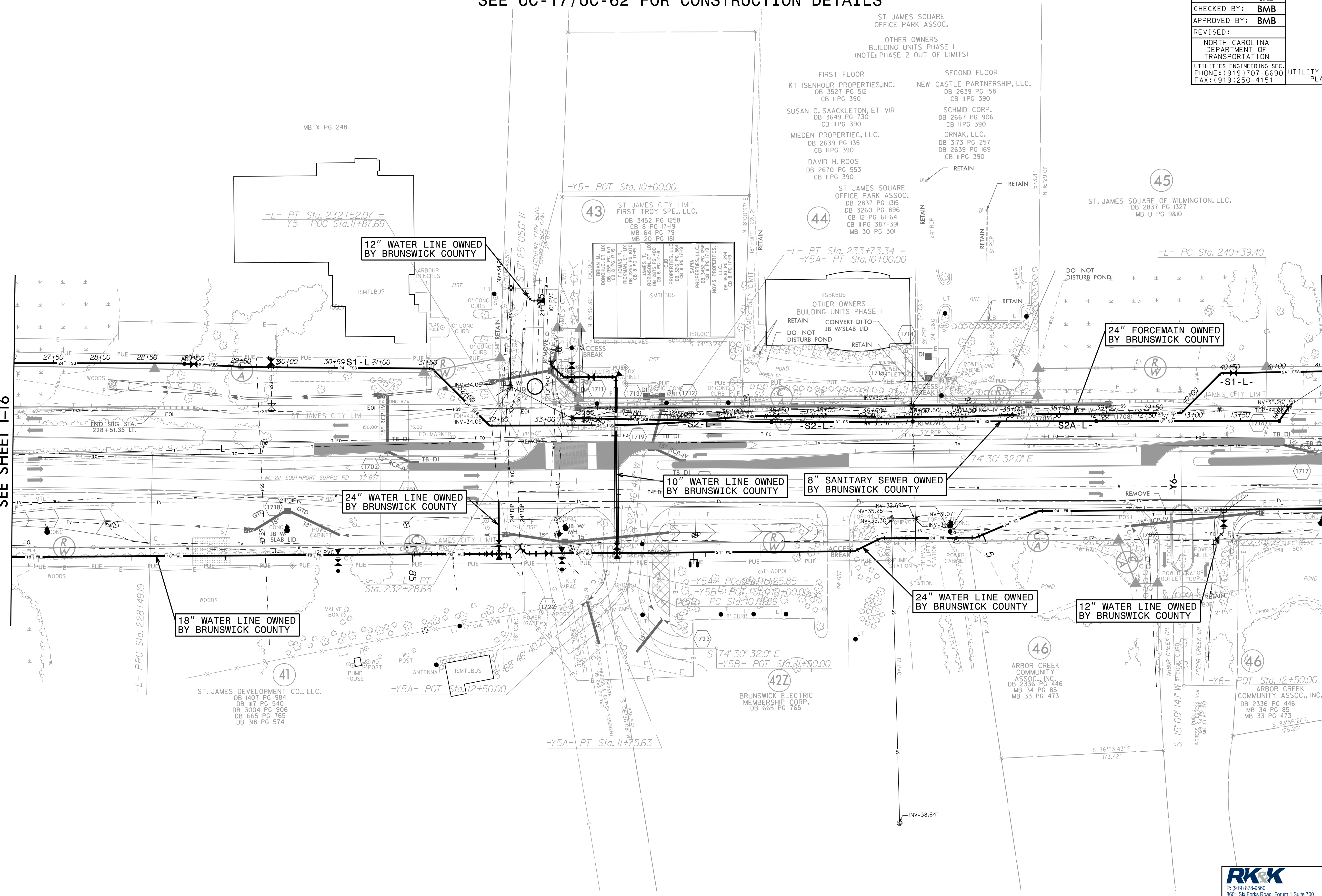
Engineering\UC\61\2022\Index of UC Sheets\R-5021-ut-r-dj16-UC61.psh.dgn

FOR INFORMATION ONLY  
SEE UC-17/UC-62 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-17
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
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CHECKED BY: BMB	
APPROVED BY: BMB	
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MATCH LINE -L- STA 227+00.00  
SEE SHEET I-16

MATCH LINE -L- STA 241+00.00  
SEE SHEET I-18



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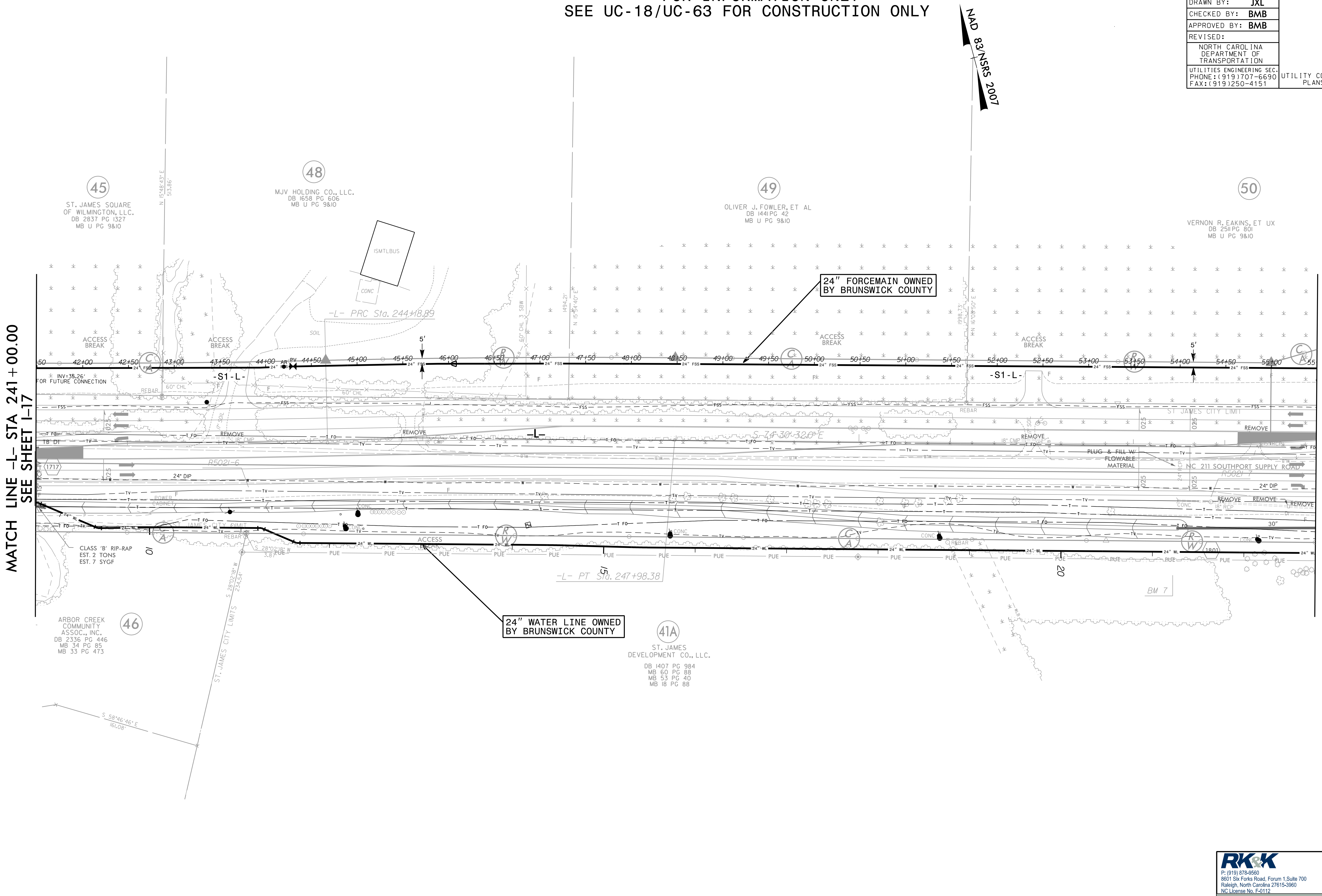
FOR INFORMATION ONLY  
SEE UC-18/UC-63 FOR CONSTRUCTION ONLY

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-18
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
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MATCH LINE -L- STA 241 + 00.00  
SEE SHEET I-17

MATCH LINE -L- STA 255 + 00.00  
SEE SHEET I-19



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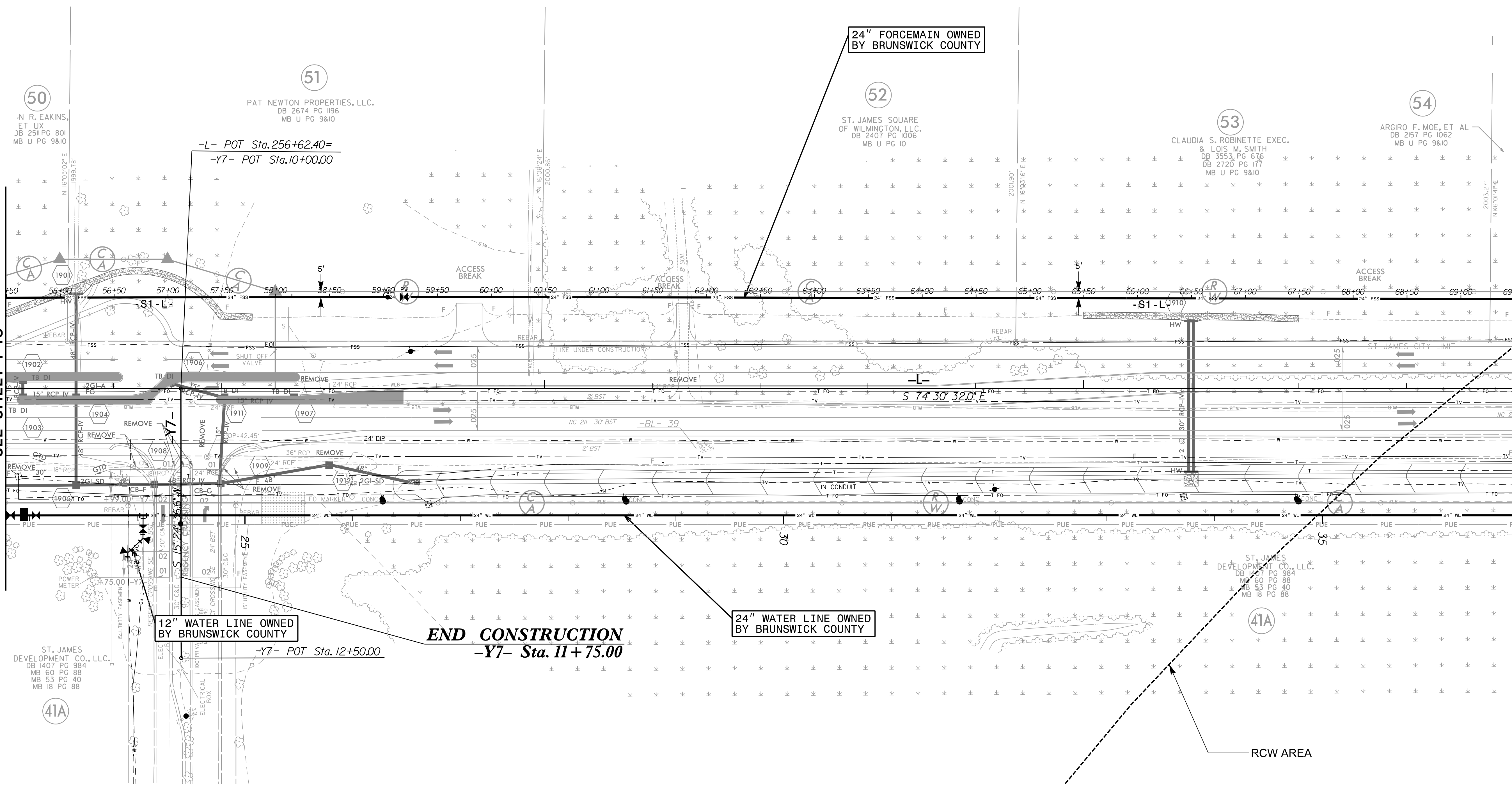
FOR INFORMATION ONLY  
SEE UC-19/UC-64 FOR CONSTRUCTION DETAILS

NAD  
83 NSRS  
2007

PROJECT REFERENCE NO.	SHEET NO.
R-5021	1-19
DESIGNED BY: JXL	
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
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MATCH LINE -L- STA 255 + 00.00  
SEE SHEET I-18

MATCH LINE -L- STA 269 + 00.00  
SEE SHEET I-20



24" FORCEMAIN OWNED BY BRUNSWICK COUNTY

12" WATER LINE OWNED BY BRUNSWICK COUNTY

END CONSTRUCTION  
-Y7- Sta. 11 + 75.00

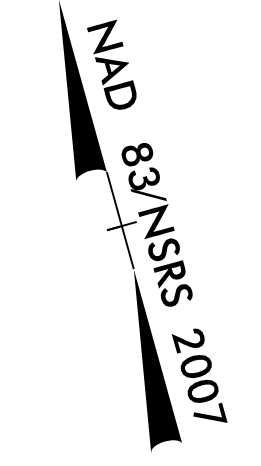
24" WATER LINE OWNED BY BRUNSWICK COUNTY

RCW AREA

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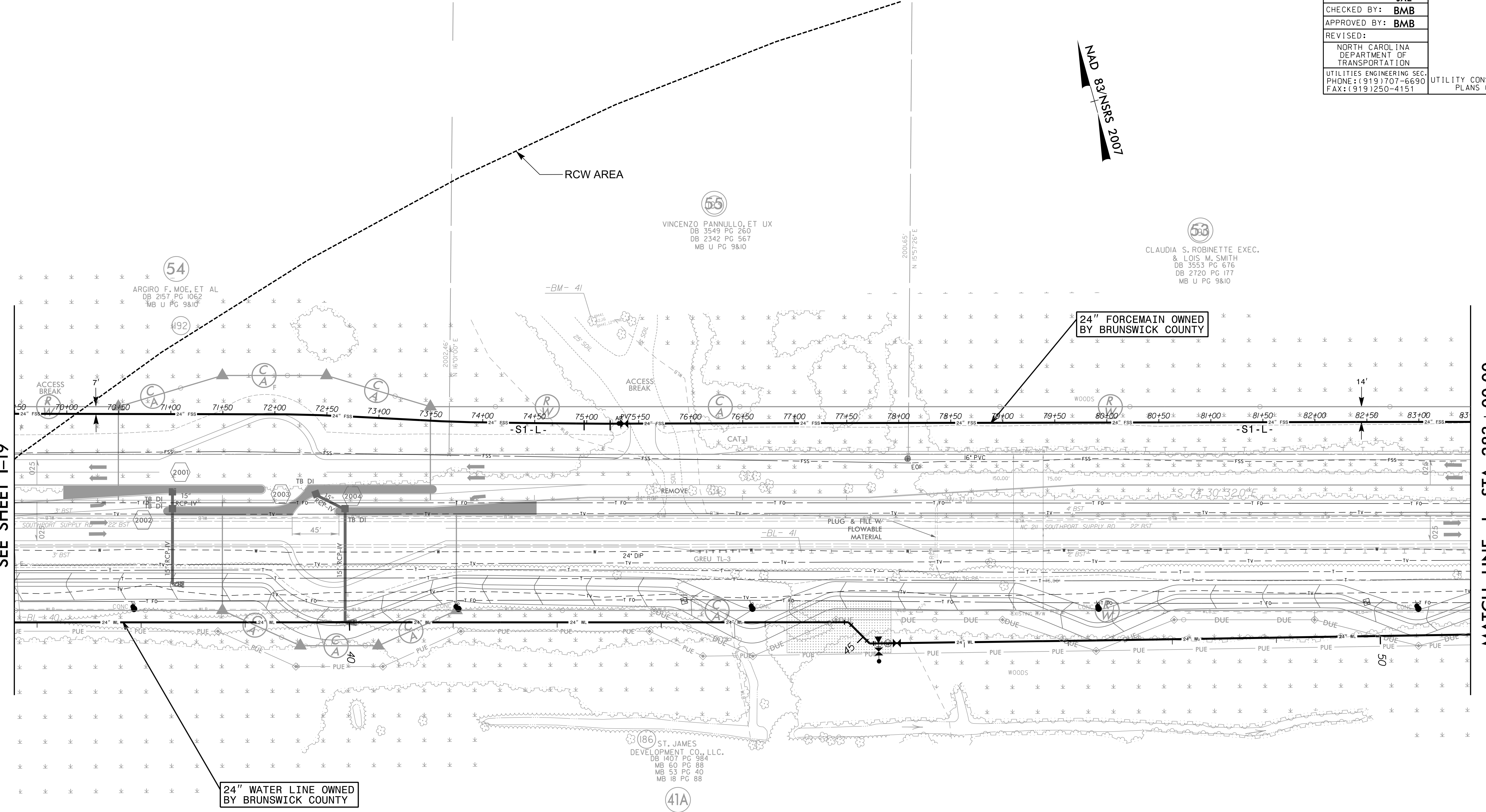
FOR INFORMATION ONLY  
SEE UC-20/UC-65 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-20
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
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MATCH LINE -L- STA 269 + 00.00  
SEE SHEET I-19

MATCH LINE -L- STA 283 + 00.00  
SEE SHEET I-21



VINCENZO PANNULLO, ET UX  
DB 3549 PG 260  
DB 2342 PG 567  
MB U PG 9&10

CLAUDIA S. ROBINETTE EXEC.  
& LOIS M. SMITH  
DB 3553 PG 676  
DB 2720 PG 177  
MB U PG 9&10

ARCIRO F. MOE, ET AL  
DB 2157 PG 1062  
MB U PG 9&10

ST. JAMES DEVELOPMENT CO., LLC.  
DB 1407 PG 984  
MB 60 PG 88  
MB 53 PG 40  
MB 18 PG 88

24" WATER LINE OWNED BY BRUNSWICK COUNTY

24" FORCEMAIN OWNED BY BRUNSWICK COUNTY

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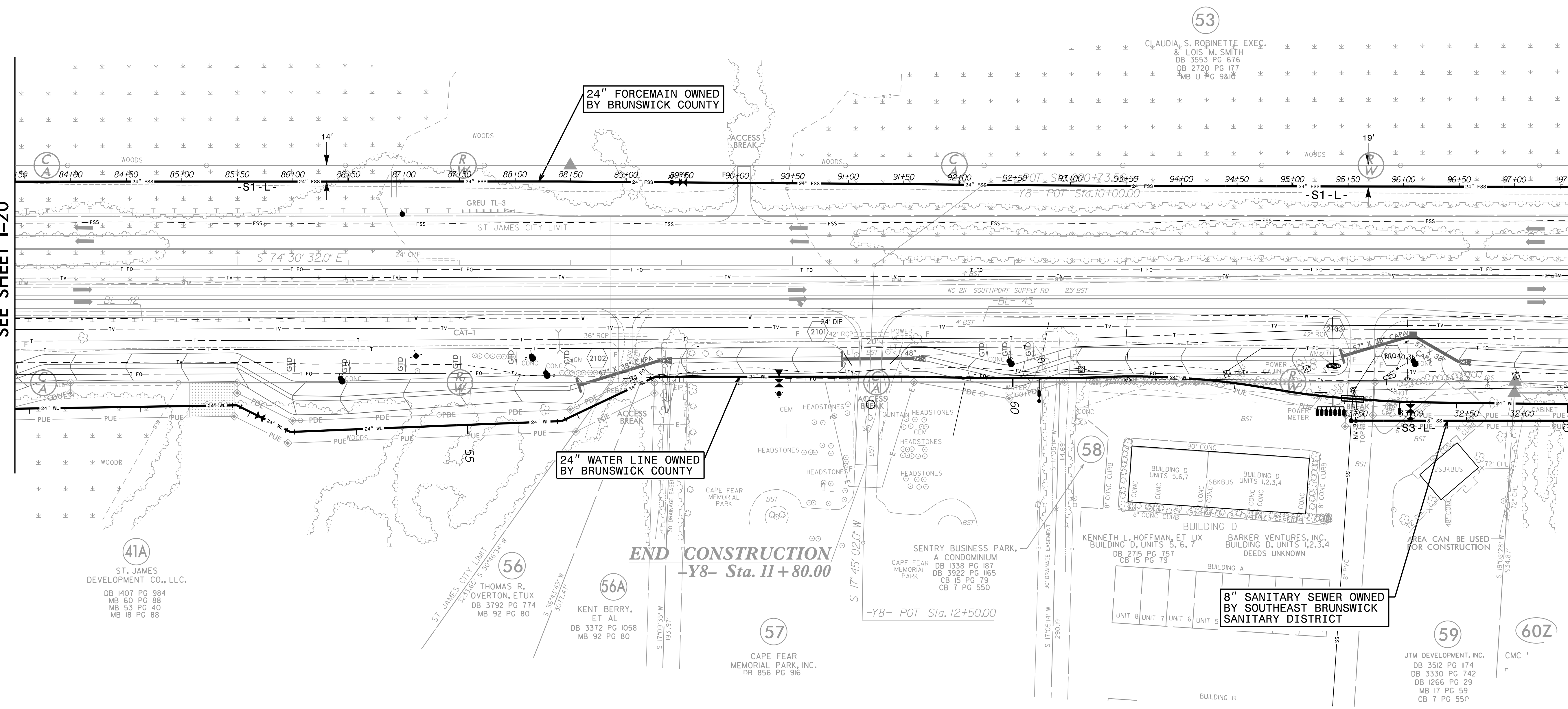
FOR INFORMATION ONLY  
SEE UC-21/UC-66 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-21
DESIGNED BY: JXL	
DRAWN BY: JXL	
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APPROVED BY: BMB	
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NAD 83 NRS 2007

MATCH LINE -L- STA 283 + 00.00  
SEE SHEET I-20

MATCH LINE -L- STA 297 + 00.00  
SEE SHEET I-22

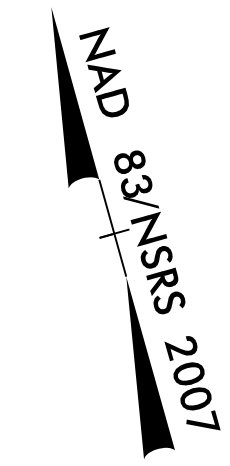


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FOR INFORMATION ONLY  
SEE UC-22/UC-67 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-22
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
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APPROVED BY: BMB	
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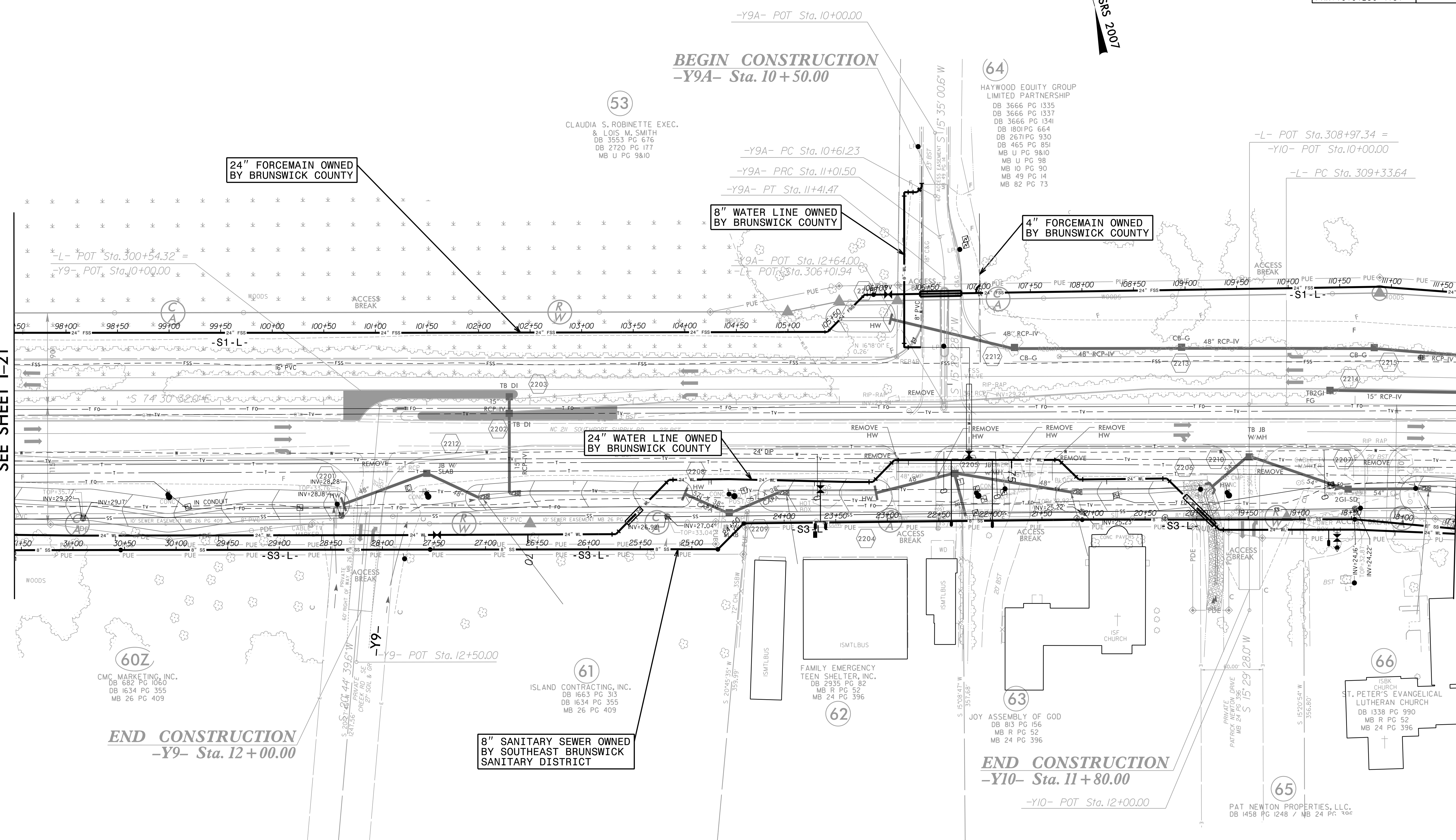
**BEGIN CONSTRUCTION**  
-Y9A- Sta. 10+50.00

**END CONSTRUCTION**  
-Y9- Sta. 12+00.00

**END CONSTRUCTION**  
-Y10- Sta. 11+80.00

MATCH LINE -L- STA 297 + 00.00  
SEE SHEET I-21

MATCH LINE -L- STA 311 + 00.00  
SEE SHEET I-23



53  
CLAUDIA S. ROBINETTE EXEC.  
& LOIS M. SMITH  
DB 3553 PG 676  
DB 2720 PG 177  
MB U PG 9&10

64  
HAYWOOD EQUITY GROUP  
LIMITED PARTNERSHIP  
DB 3666 PG 1335  
DB 3666 PG 1337  
DB 3666 PG 1341  
DB 1801 PG 664  
DB 2671 PG 930  
DB 465 PG 851  
MB U PG 9&10  
MB U PG 98  
MB IO PG 90  
MB 49 PG 14  
MB 82 PG 73

60Z  
CMC MARKETING, INC.  
DB 682 PG 1060  
DB 1634 PG 355  
MB 26 PG 409

61  
ISLAND CONTRACTING, INC.  
DB 1663 PG 313  
DB 1634 PG 355  
MB 26 PG 409

62  
FAMILY EMERGENCY  
TEEN SHELTER, INC.  
DB 2935 PG 82  
MB R PG 52  
MB 24 PG 396

63  
JOY ASSEMBLY OF GOD  
DB 813 PG 156  
MB R PG 52  
MB 24 PG 396

66  
ST. PETER'S EVANGELICAL  
LUTHERAN CHURCH  
DB 1338 PG 990  
MB R PG 52  
MB 24 PG 396

65  
PAT NEWTON PROPERTIES, LLC.  
DB 1458 PG 1248 / MB 24 PG 306

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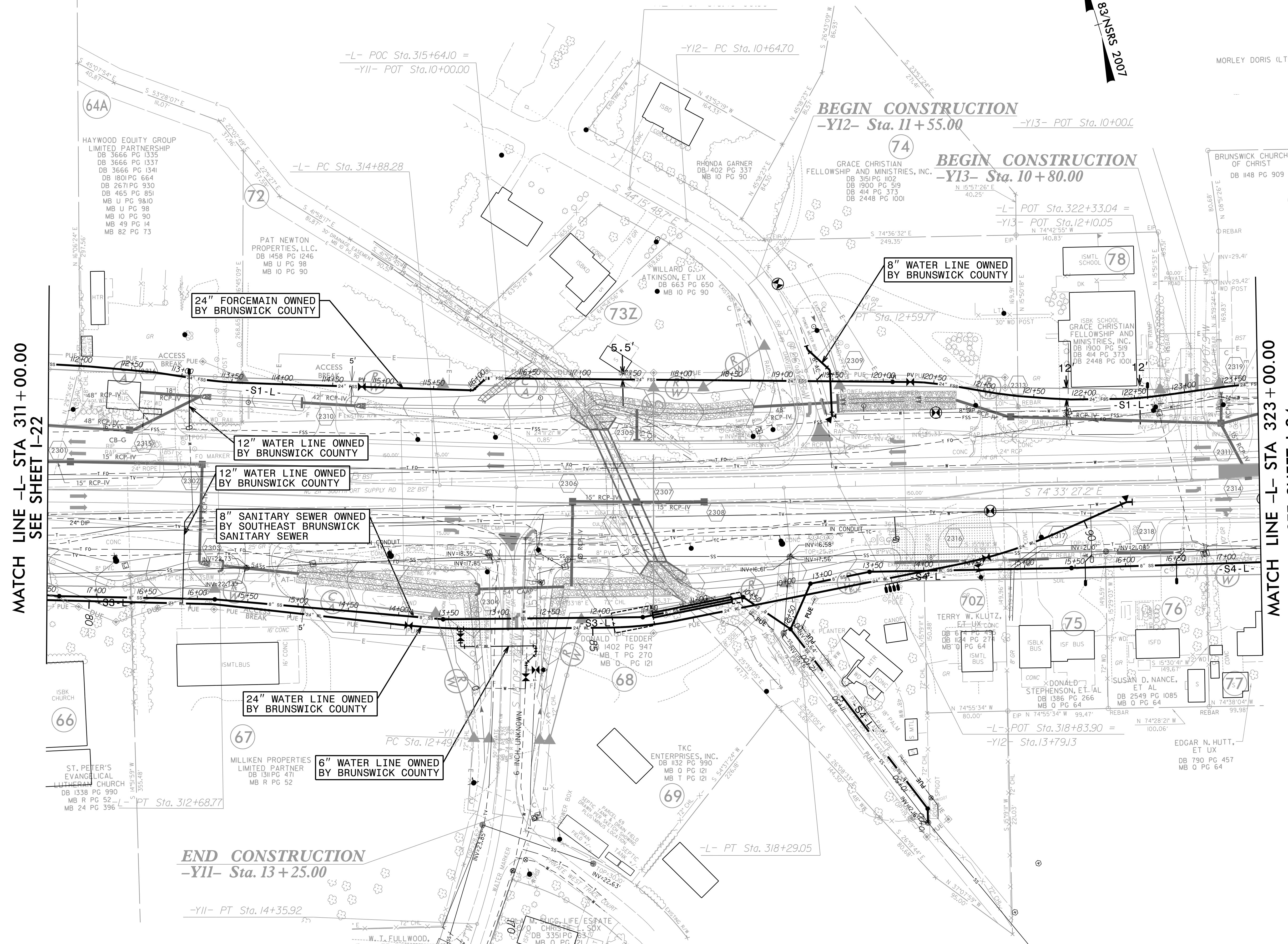
FOR INFORMATION ONLY  
SEE UC-23/UC-68 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-23
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
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APPROVED BY: BMB	
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MATCH LINE -L- STA 311 + 00.00  
SEE SHEET I-22

MATCH LINE -L- STA 323 + 00.00  
SEE SHEET I-24



**END CONSTRUCTION**  
-YII- Sta. 13 + 25.00

-YII- PT Sta. 14+35.92

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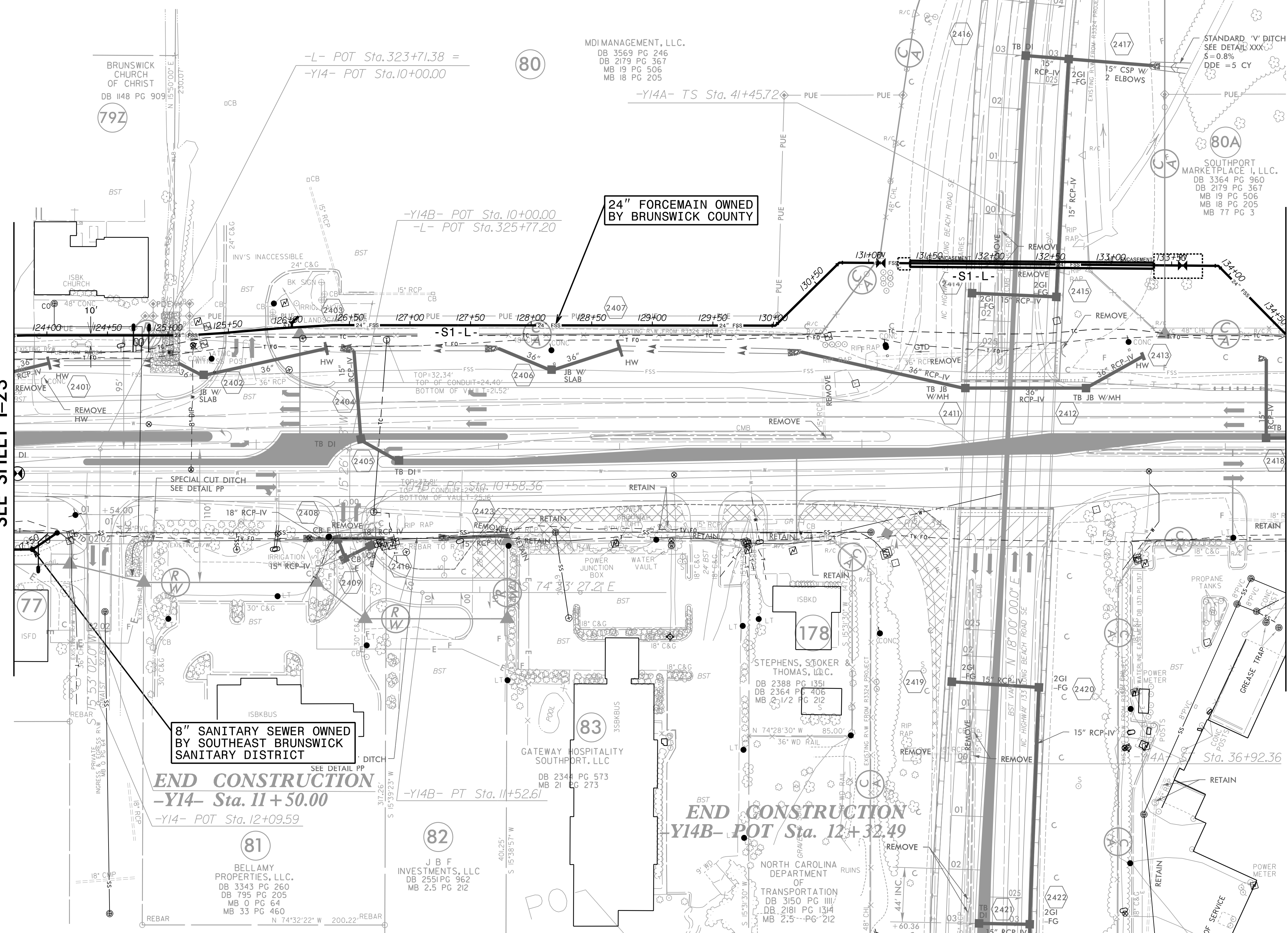
FOR INFORMATION ONLY  
SEE UC-24/UC-69 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-24
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
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MATCH LINE -L- STA 323 + 00.00  
SEE SHEET I-23

MATCH LINE -Y14A- STA 43 + 50.00  
SEE SHEET I-36

MATCH LINE -L- STA 333 + 50.00  
SEE SHEET I-24A



MATCH LINE -Y14A- STA 35 + 50.00  
SEE SHEET I-35

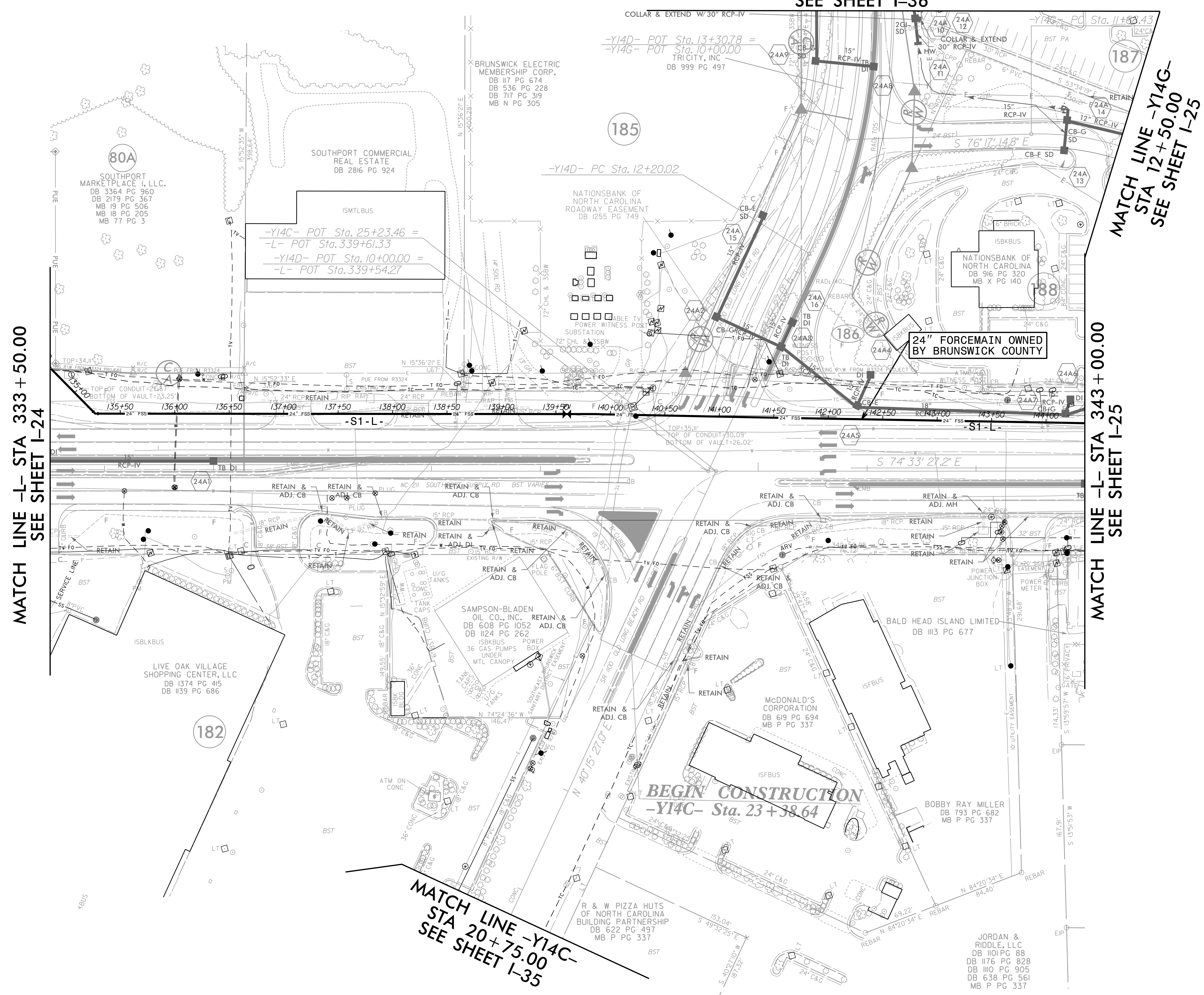
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SEE UC-24A/UC-70 FOR CONSTRUCTION DETAILS

MATCH LINE -Y14D- STA 14+50.00  
SEE SHEET I-36

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-24A
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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MATCH LINE -L- STA 333 + 50.00  
SEE SHEET I-24

MATCH LINE -L- STA 343 + 00.00  
SEE SHEET I-25

MATCH LINE -Y14G-  
STA 12+50.00  
SEE SHEET I-25

MATCH LINE -Y14C-  
STA 20+75.00  
SEE SHEET I-35

**BEGIN CONSTRUCTION**  
-Y14C- Sta. 23+38.64

-Y14C- POT Sta. 25+23.46 =  
-L- POT Sta. 339+61.33  
-Y14D- POT Sta. 10+00.00 =  
-L- POT Sta. 339+54.27

24" FORCEMAIN OWNED  
BY BRUNSWICK COUNTY

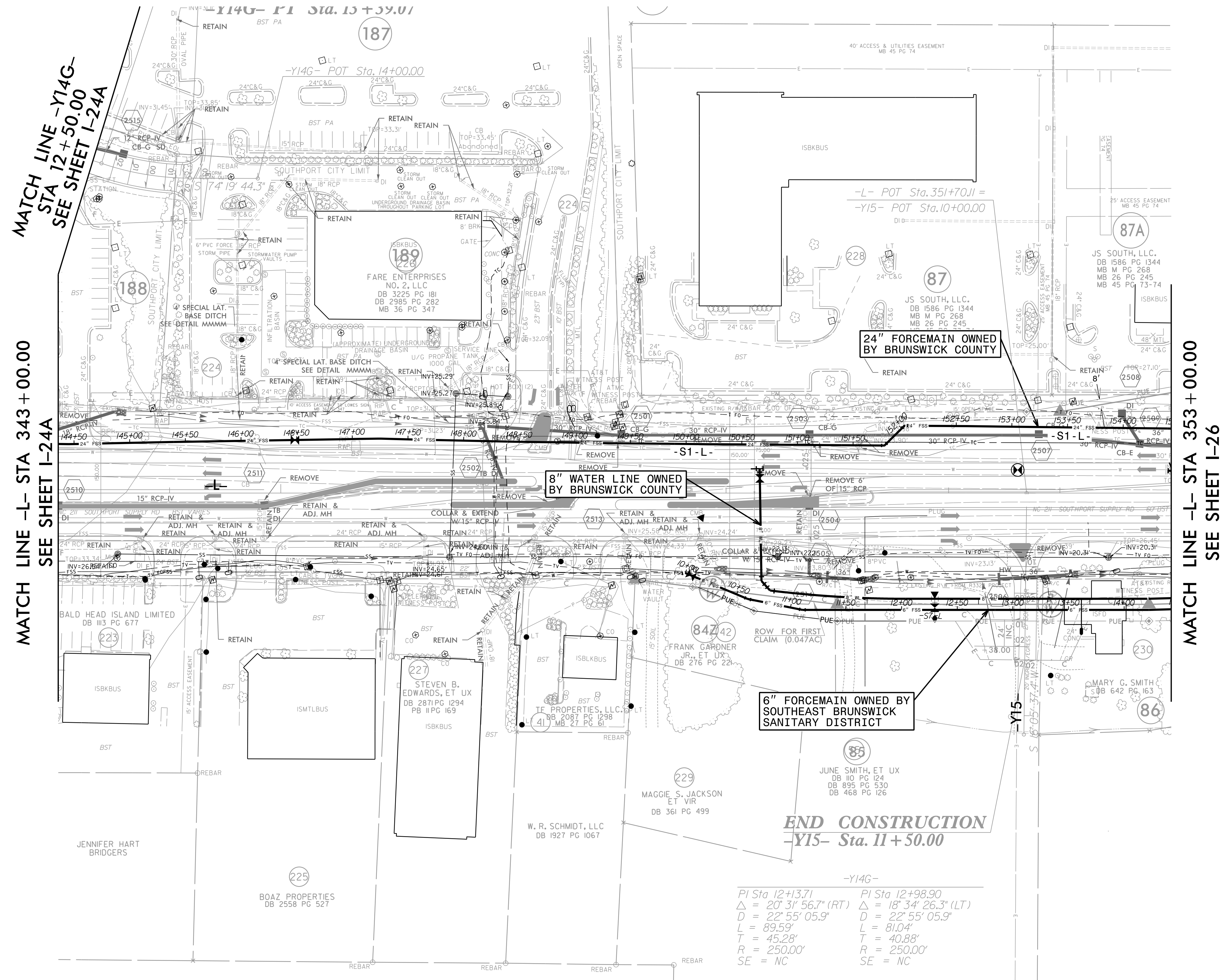
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SEE UC-25/UC-71 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-25
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
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APPROVED BY: BMB	
REVISED:	
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UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	



MATCH LINE -Y14G-  
STA 12+50.00  
SEE SHEET I-24A

MATCH LINE -L- STA 343+00.00  
SEE SHEET I-24A

MATCH LINE -L- STA 353+00.00  
SEE SHEET I-26

24" FORCE MAIN OWNED BY BRUNSWICK COUNTY

8" WATER LINE OWNED BY BRUNSWICK COUNTY

6" FORCE MAIN OWNED BY SOUTHEAST BRUNSWICK SANITARY DISTRICT

END CONSTRUCTION  
-Y15- Sta. 11+50.00

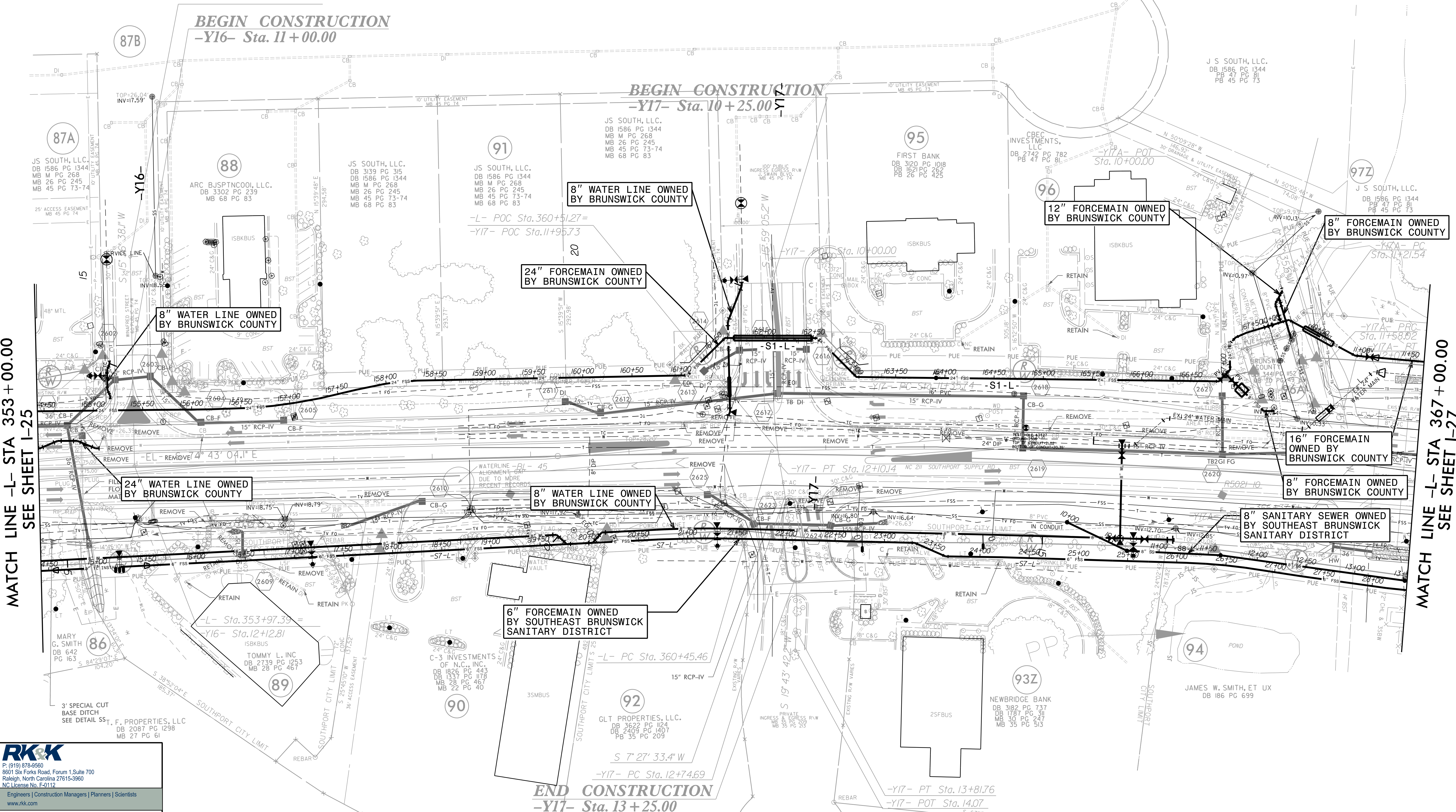
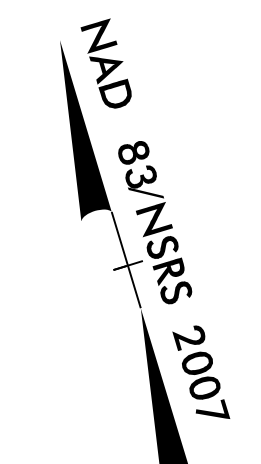
-Y14G-  
 PI Sta 12+13.71      PI Sta 12+98.90  
 $\Delta = 20' 31" 56.7" (RT)$        $\Delta = 18' 34" 26.3" (LT)$   
 $D = 22' 55" 05.9"$        $D = 22' 55" 05.9"$   
 $L = 89.59'$        $L = 81.04'$   
 $T = 45.28'$        $T = 40.88'$   
 $R = 250.00'$        $R = 250.00'$   
 $SE = NC$        $SE = NC$

NAD 83/NSRS 2007

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SEE UC-26/UC-72 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-26
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
REVISED:	
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INDEX of UC Sheets: R-5021-1-26-UC72-psd.dgn  
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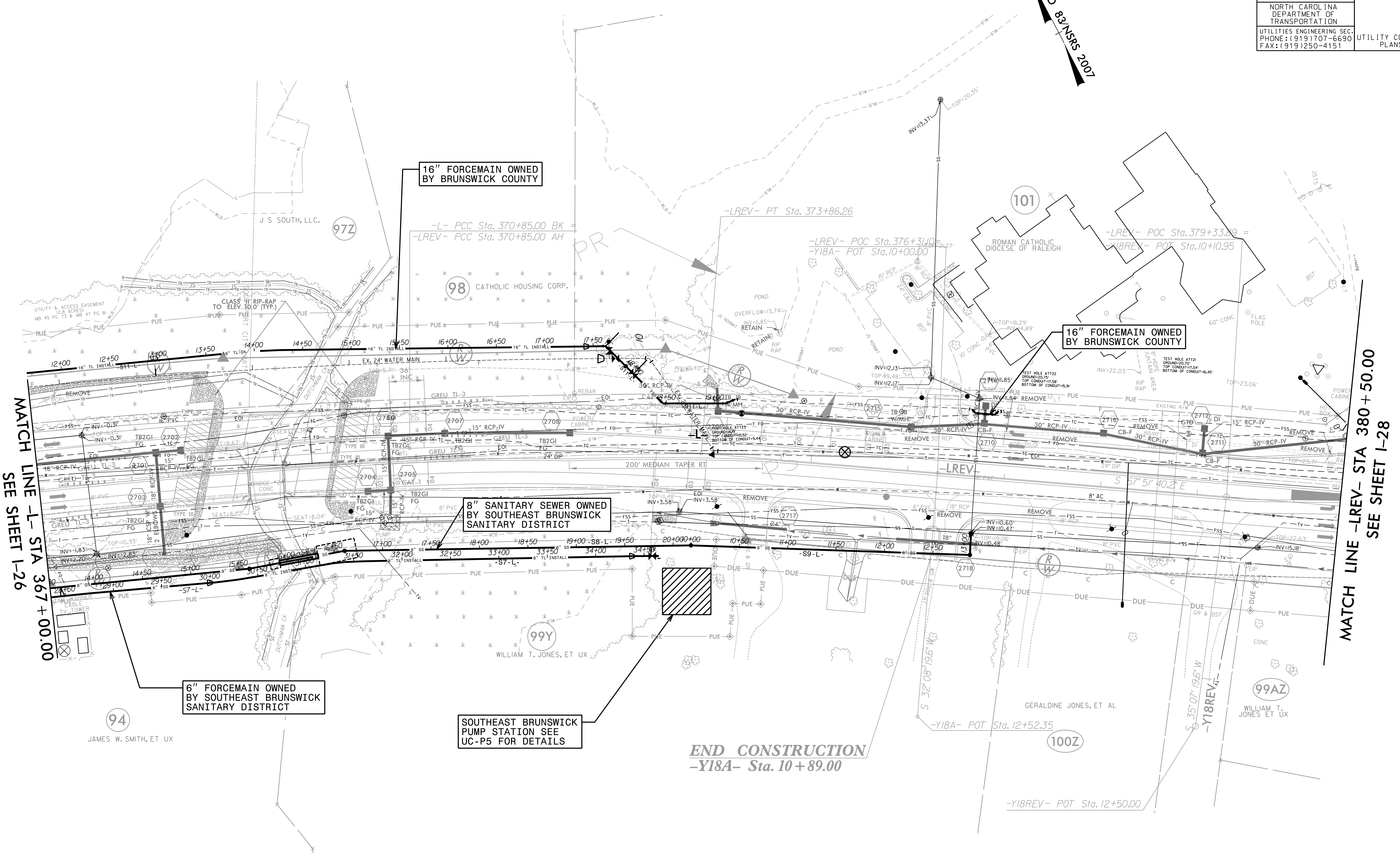
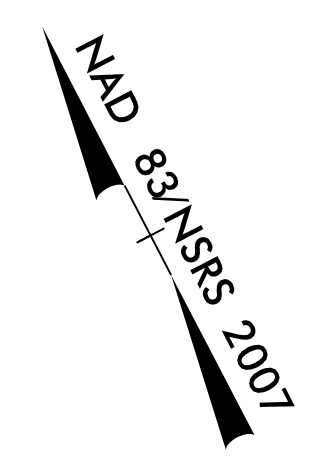
MATCH LINE -L- STA 353 + 00.00  
SEE SHEET I-25

MATCH LINE -L- STA 367 + 00.00  
SEE SHEET I-27

**END CONSTRUCTION**  
-Y17- Sta. 13 + 25.00

FOR INFORMATION ONLY  
SEE UC-27/UC-73 FOR CONSTRUCTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-27
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JXL	
CHECKED BY: BMB	
APPROVED BY: BMB	
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16" FORCEMAIN OWNED BY BRUNSWICK COUNTY

16" FORCEMAIN OWNED BY BRUNSWICK COUNTY

8" SANITARY SEWER OWNED BY SOUTHEAST BRUNSWICK SANITARY DISTRICT

6" FORCEMAIN OWNED BY SOUTHEAST BRUNSWICK SANITARY DISTRICT

SOUTHEAST BRUNSWICK PUMP STATION SEE UC-P5 FOR DETAILS

END CONSTRUCTION  
-Y18A- Sta. 10 + 89.00

MATCH LINE -L- STA 367 + 00.00  
SEE SHEET I-26

MATCH LINE -LREV- STA 380 + 50.00  
SEE SHEET I-28

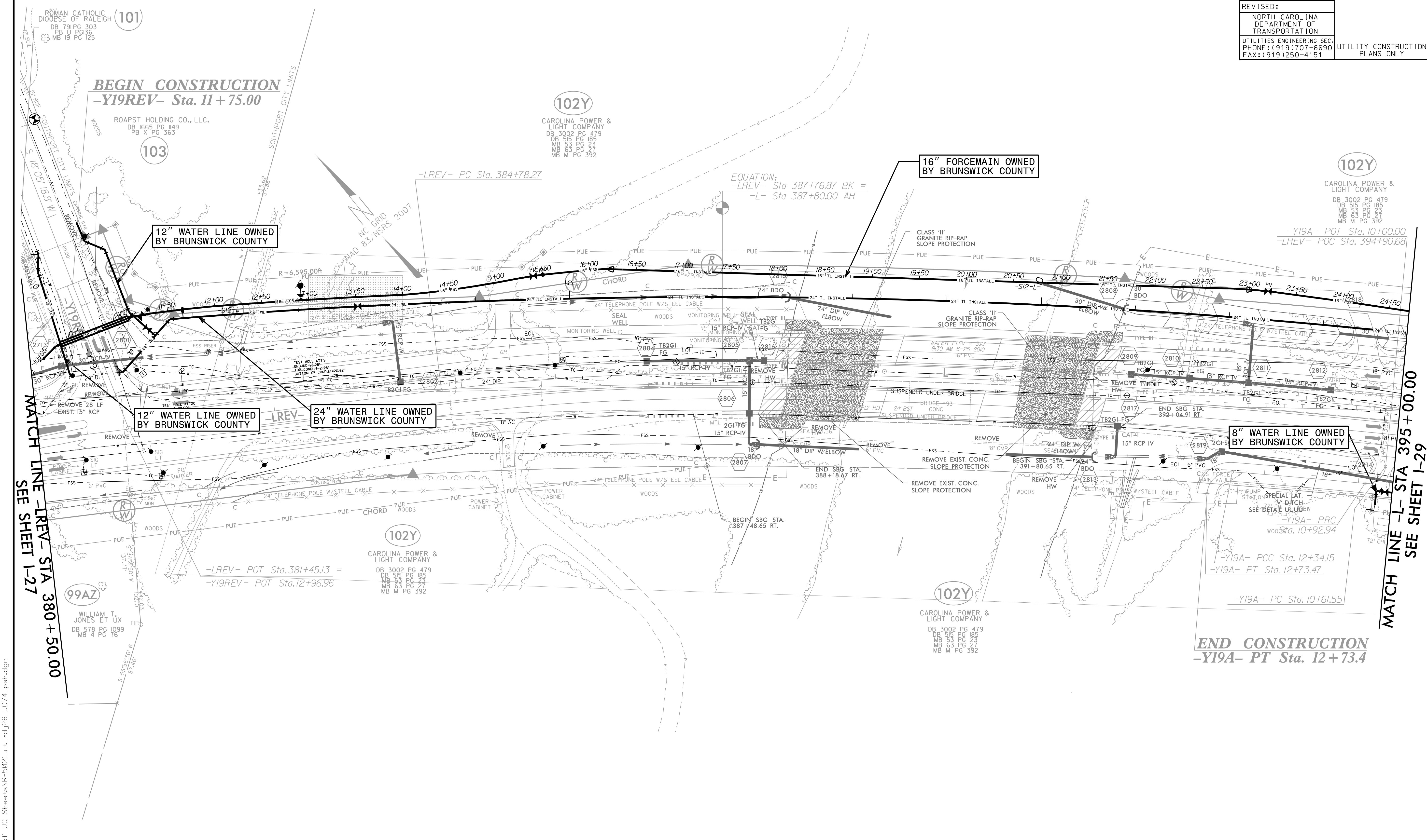
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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-28
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
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CHECKED BY: BMB	
APPROVED BY: BMB	
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**BEGIN CONSTRUCTION**  
-Y19REV- Sta. 11+75.00

**END CONSTRUCTION**  
-Y19A- PT Sta. 12+73.47

MATCH LINE -LREV- STA 380 + 50.00  
SEE SHEET I-27

MATCH LINE -L- STA 395 + 00.00  
SEE SHEET I-29

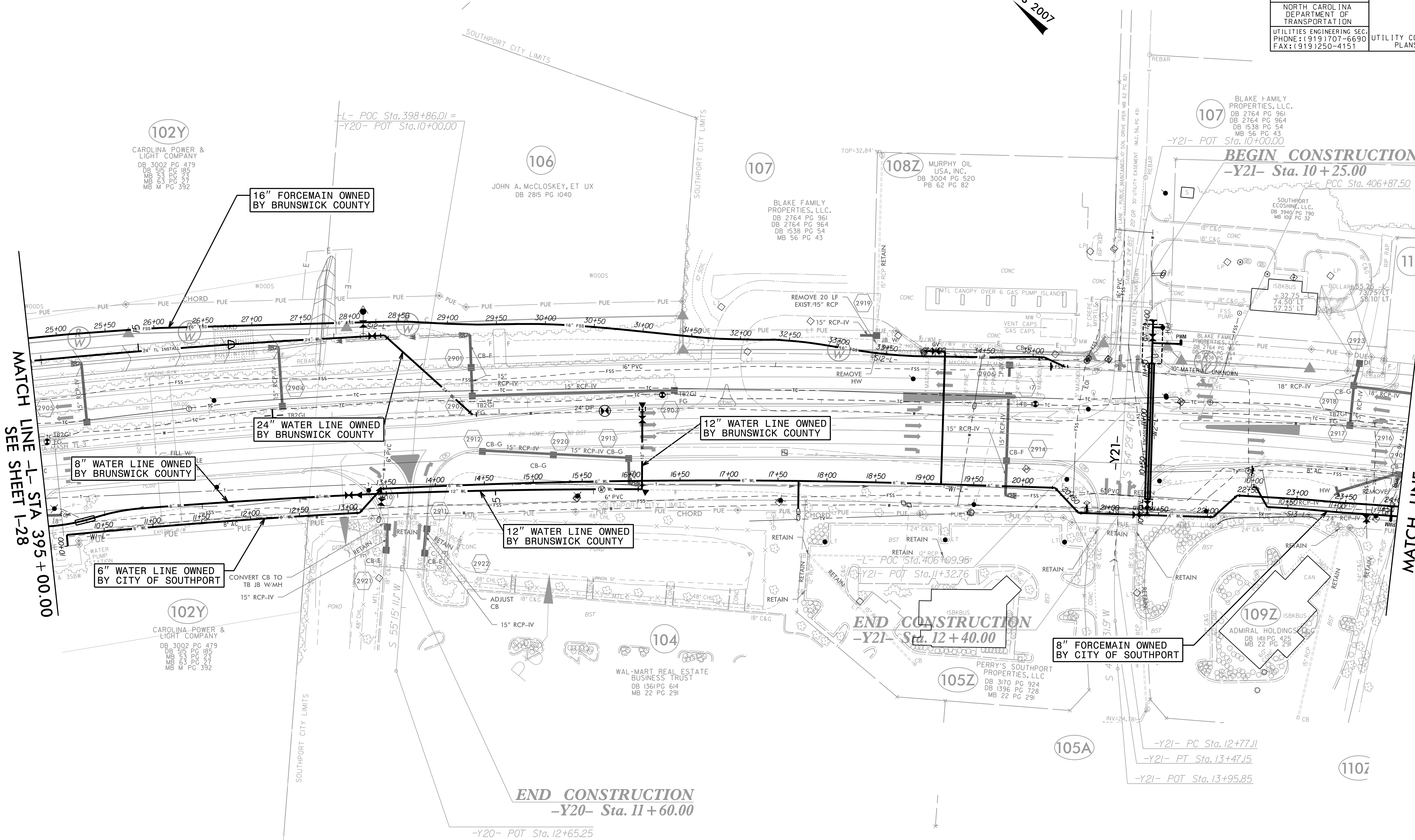
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SEE UC-29/UC-75 FOR CONSTRUCTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-29
DESIGNED BY: JXL	
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MATCH LINE -L- STA 395 + 00.00  
SEE SHEET I-28

MATCH LINE -L- STA 409 + 00.00  
SEE SHEET I-30

102Y  
CAROLINA POWER & LIGHT COMPANY  
DB 3002 PG 479  
MB 515 PG 185  
MB 533 PG 237  
MB 551 PG 277  
MB M PG 392

106  
JOHN A. McCLOSKEY, ET UX  
DB 2815 PG 1040

107  
BLAKE FAMILY PROPERTIES, LLC.  
DB 2764 PG 961  
DB 2764 PG 964  
DB 1538 PG 54  
MB 56 PG 43

108Z  
MURPHY OIL USA, INC.  
DB 3004 PG 520  
PB 62 PG 82

107  
BLAKE FAMILY PROPERTIES, LLC.  
DB 2764 PG 961  
DB 2764 PG 964  
DB 1538 PG 54  
MB 56 PG 43

BEGIN CONSTRUCTION  
-Y21- Sta. 10 + 25.00  
-L- PCC Sta. 406+87.50

8" WATER LINE OWNED BY BRUNSWICK COUNTY

24" WATER LINE OWNED BY BRUNSWICK COUNTY

12" WATER LINE OWNED BY BRUNSWICK COUNTY

12" WATER LINE OWNED BY BRUNSWICK COUNTY

6" WATER LINE OWNED BY CITY OF SOUTHPORT

8" FORCEMAIN OWNED BY CITY OF SOUTHPORT

102Y  
CAROLINA POWER & LIGHT COMPANY  
DB 3002 PG 479  
MB 515 PG 185  
MB 533 PG 237  
MB 551 PG 277  
MB M PG 392

104  
WAL-MART REAL ESTATE BUSINESS TRUST  
DB 1361 PG 614  
MB 22 PG 291

105Z  
PERRY'S SOUTHPORT PROPERTIES, LLC  
DB 3170 PG 924  
DB 1396 PG 728  
MB 22 PG 291

109Z  
ADMIRAL HOLDINGS  
DB 1411 PG 425  
MB 22 PG 291

END CONSTRUCTION  
-Y20- Sta. 11 + 60.00

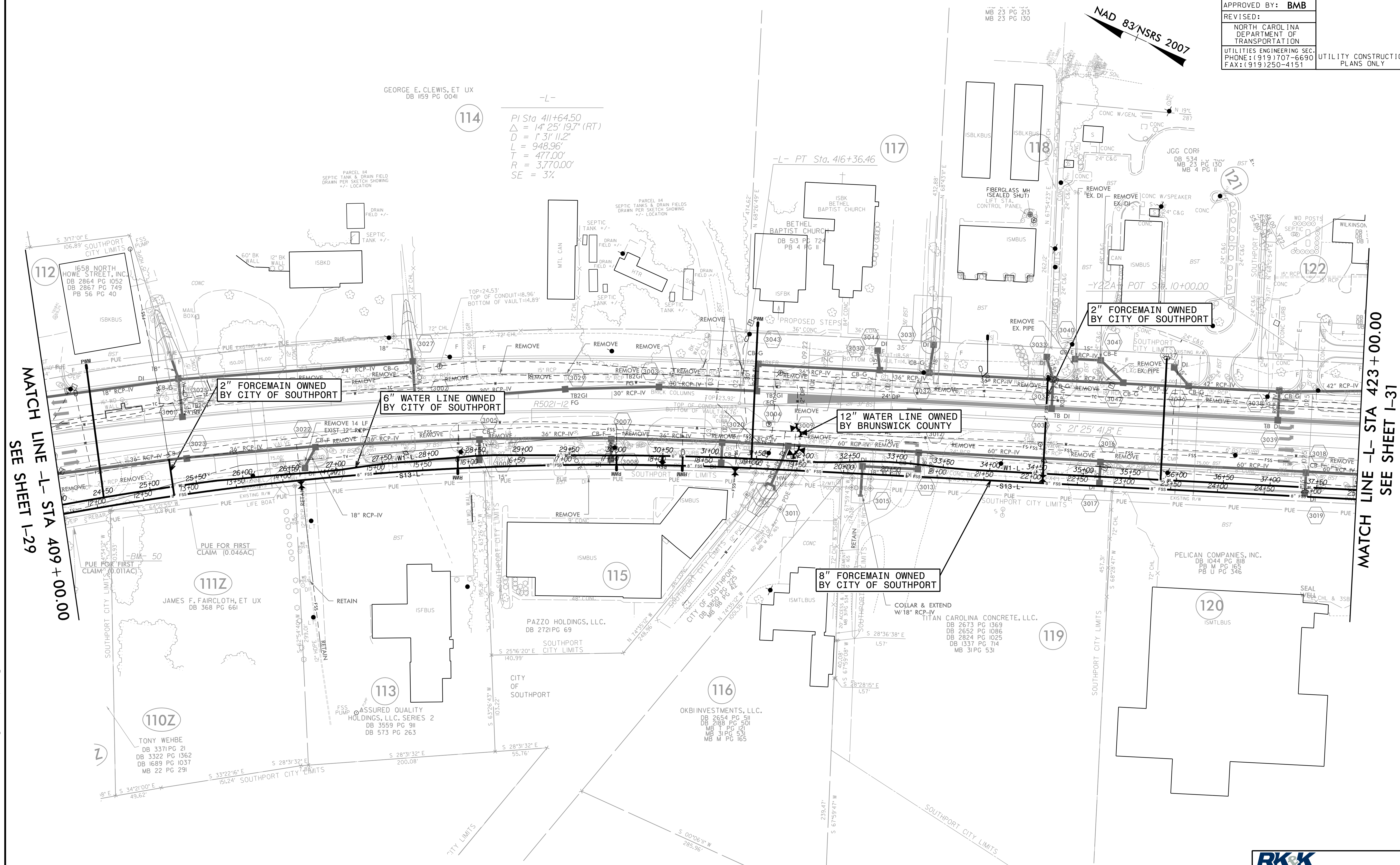
END CONSTRUCTION  
-Y21- Sta. 12 + 40.00

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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-30
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MATCH LINE -L- STA 409 + 00.00  
SEE SHEET I-29

MATCH LINE -L- STA 423 + 00.00  
SEE SHEET I-31

114  
 $PI\ Sta\ 411+64.50$   
 $\Delta = 14^\circ 25' 19.7'' (RT)$   
 $D = 1^\circ 31' 11.2''$   
 $L = 948.96'$   
 $T = 477.00'$   
 $R = 3,770.00'$   
 $SE = 3\%$

117  
 $-L- PT\ Sta.\ 416+36.46$

NAD 83/NSRS 2007

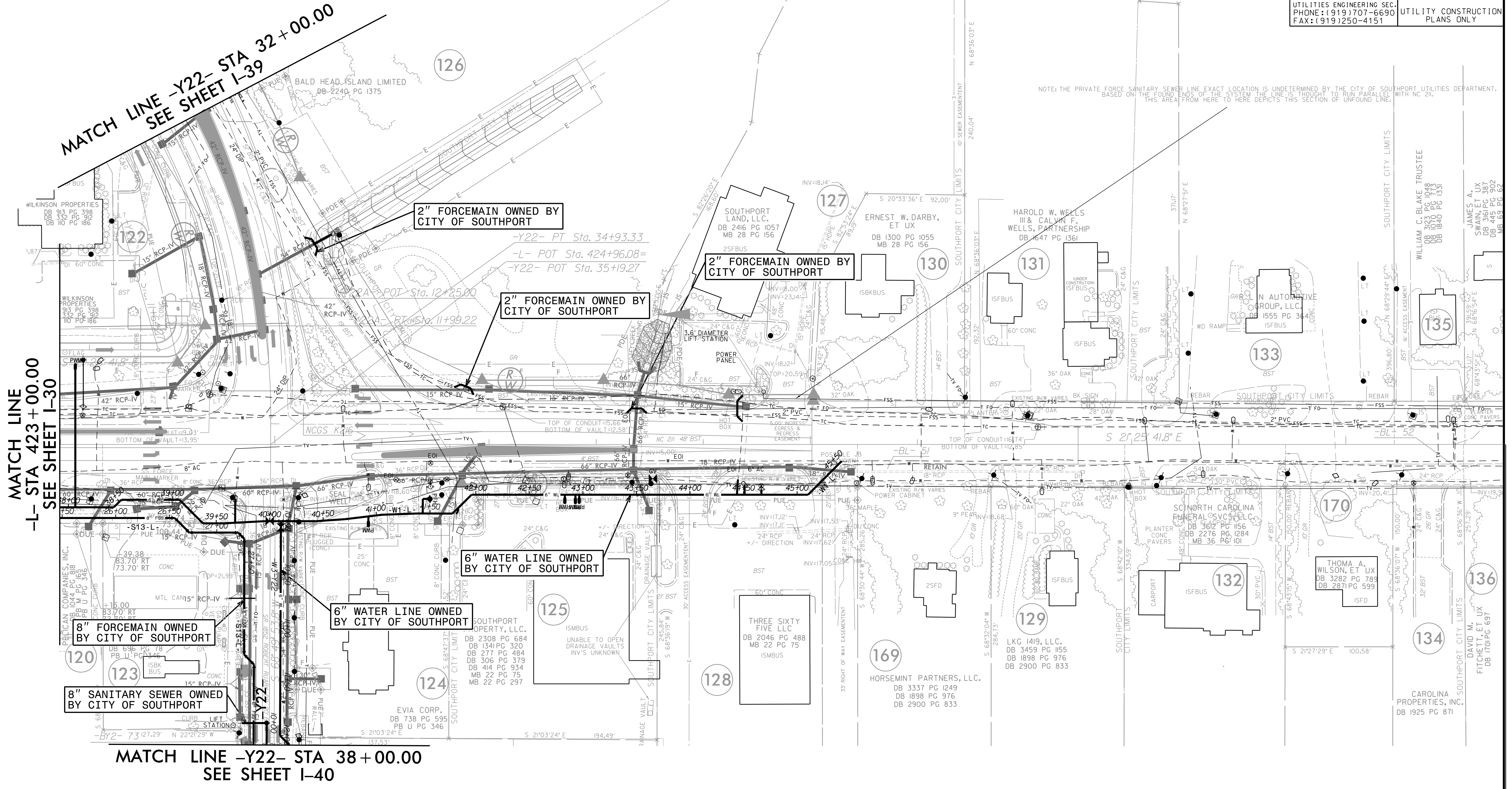
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NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-31
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MATCH LINE  
-L- STA 423+00.00  
SEE SHEET I-30

MATCH LINE -Y22- STA 32+00.00  
SEE SHEET I-39

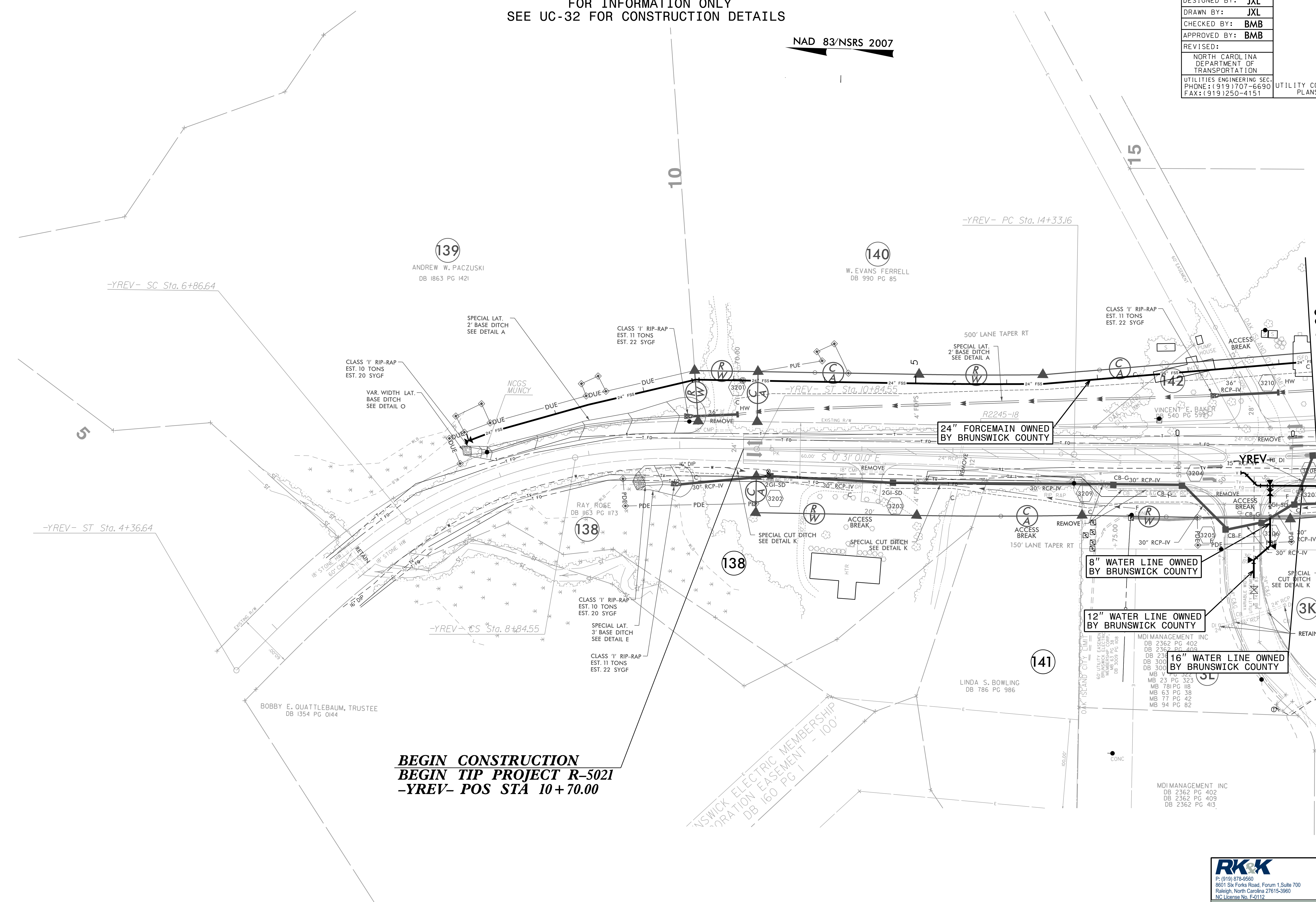
MATCH LINE -Y22- STA 38+00.00  
SEE SHEET I-40

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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-32
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
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SEE UC-32 FOR CONSTRUCTION DETAILS

NAD 83/NSRS 2007



MATCH LINE - YREV- STA 17 + 00.00  
SEE SHEET I-33

**BEGIN CONSTRUCTION**  
**BEGIN TIP PROJECT R-5021**  
**-YREV- POS STA 10 + 70.00**

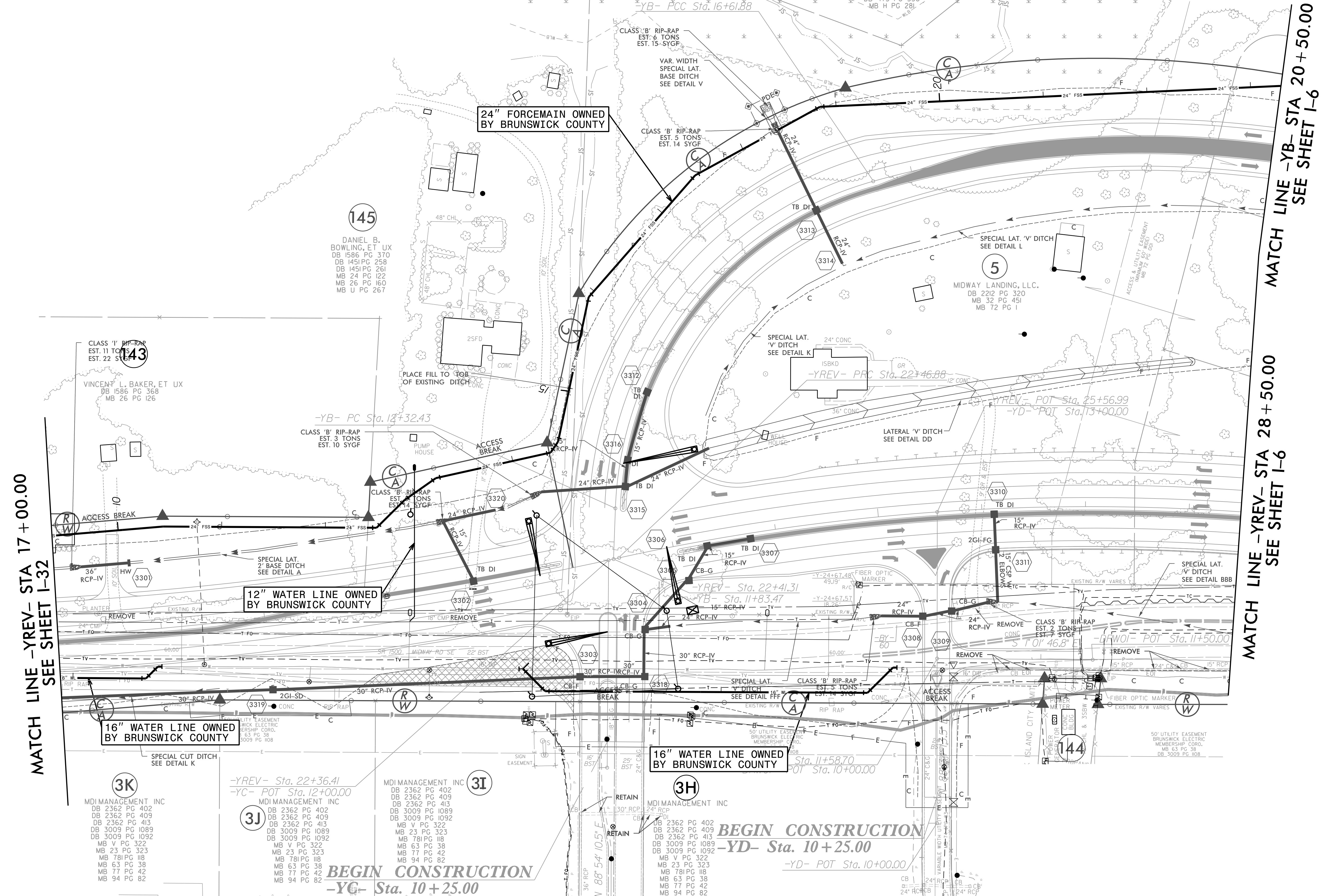
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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-33
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
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MATCH LINE -YREV- STA 17+00.00  
SEE SHEET I-32

MATCH LINE -YB- STA 20+50.00  
SEE SHEET I-6

MATCH LINE -YREV- STA 28+50.00  
SEE SHEET I-6

**BEGIN CONSTRUCTION**  
-YB- STA. 10+25.00

**BEGIN CONSTRUCTION**  
-YD- STA. 10+25.00

**3K**  
MDI MANAGEMENT INC  
DB 2362 PG 402  
DB 2362 PG 409  
DB 2362 PG 413  
DB 3009 PG 1089  
DB 3009 PG 1092  
MB V PG 322  
MB 23 PG 323  
MB 78 PG 118  
MB 63 PG 38  
MB 77 PG 42  
MB 94 PG 82

**3J**  
MDI MANAGEMENT INC  
DB 2362 PG 402  
DB 2362 PG 409  
DB 2362 PG 413  
DB 3009 PG 1089  
DB 3009 PG 1092  
MB V PG 322  
MB 23 PG 323  
MB 78 PG 118  
MB 63 PG 38  
MB 77 PG 42  
MB 94 PG 82

**3I**  
MDI MANAGEMENT INC  
DB 2362 PG 402  
DB 2362 PG 409  
DB 2362 PG 413  
DB 3009 PG 1089  
DB 3009 PG 1092  
MB V PG 322  
MB 23 PG 323  
MB 78 PG 118  
MB 63 PG 38  
MB 77 PG 42  
MB 94 PG 82

**3H**  
MDI MANAGEMENT INC  
DB 2362 PG 402  
DB 2362 PG 409  
DB 2362 PG 413  
DB 3009 PG 1089  
DB 3009 PG 1092  
MB V PG 322  
MB 23 PG 323  
MB 78 PG 118  
MB 63 PG 38  
MB 77 PG 42  
MB 94 PG 82

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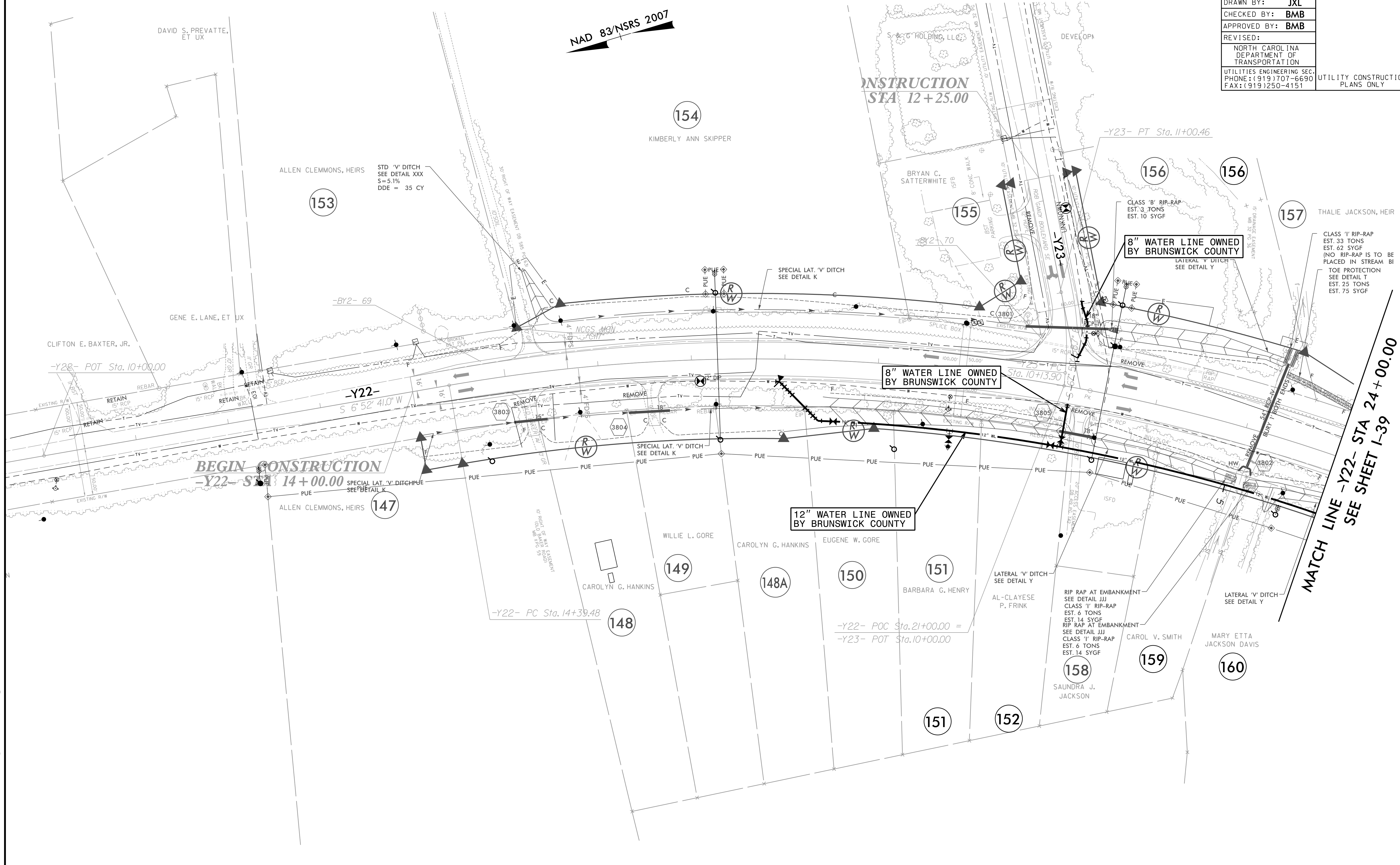
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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-38
DESIGNED BY: JXL	
DRAWN BY: JXL	
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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-39
DESIGNED BY: JXL	
DRAWN BY: JXL	
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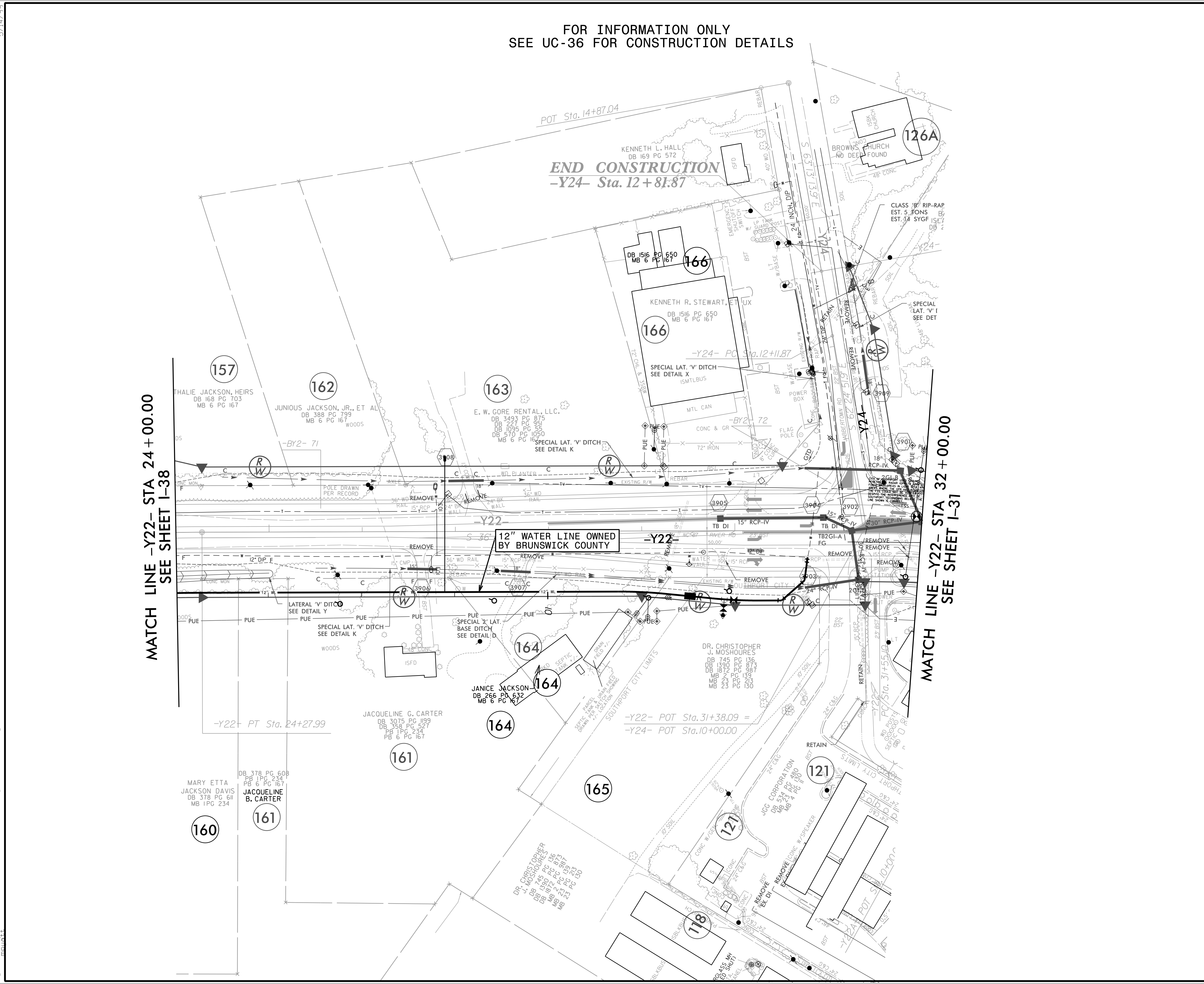
MATCH LINE -Y22- STA 24+00.00  
SEE SHEET I-38

MATCH LINE -Y22- STA 32+00.00  
SEE SHEET I-31

END CONSTRUCTION  
-Y24- Sta. 12+81.87

12" WATER LINE OWNED  
BY BRUNSWICK COUNTY

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2/2/2022  
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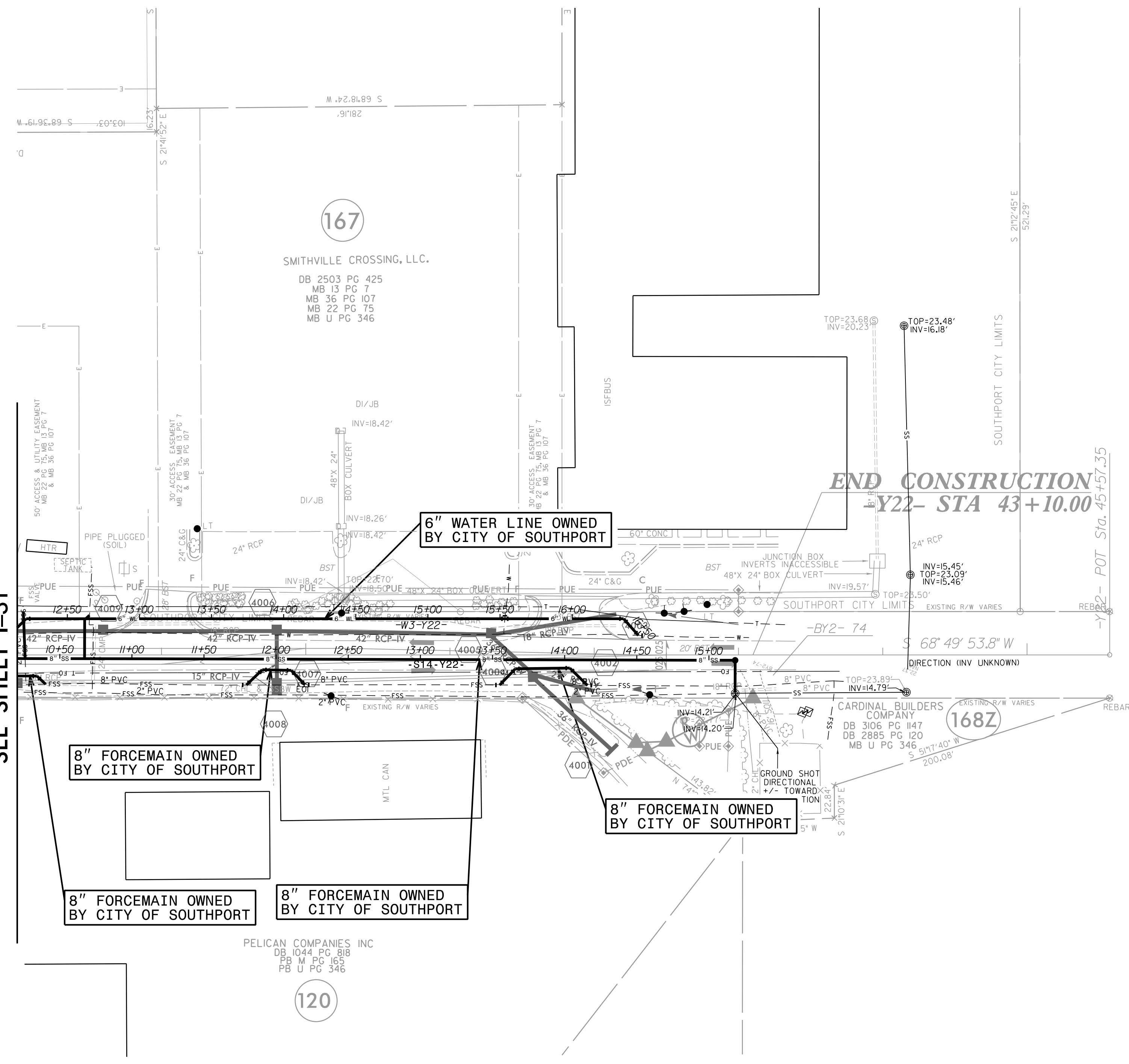
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PROJECT REFERENCE NO.	SHEET NO.
R-5021	I-40
DESIGNED BY: JXL	UTILITY CONSTRUCTION PLANS ONLY
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APPROVED BY: BMB	
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NAD 83 NSRS 2007

MATCH LINE -Y22- STA 38+00.00  
SEE SHEET I-31



END CONSTRUCTION  
-Y22- STA 43+10.00

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