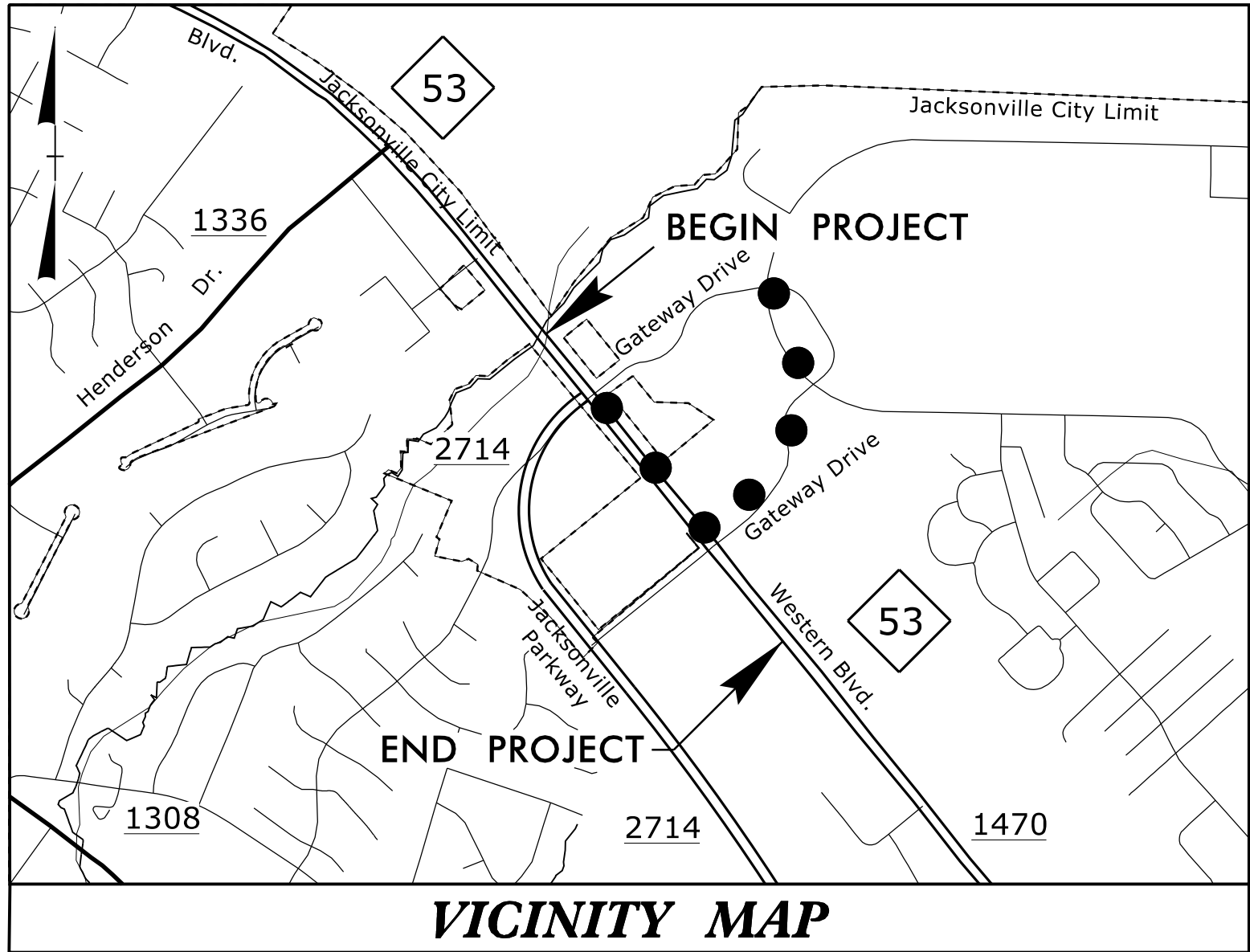


09.08/99

23-JUL-2025 10:10
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TIP PROJECT: U-5789

CONTRACT: _____



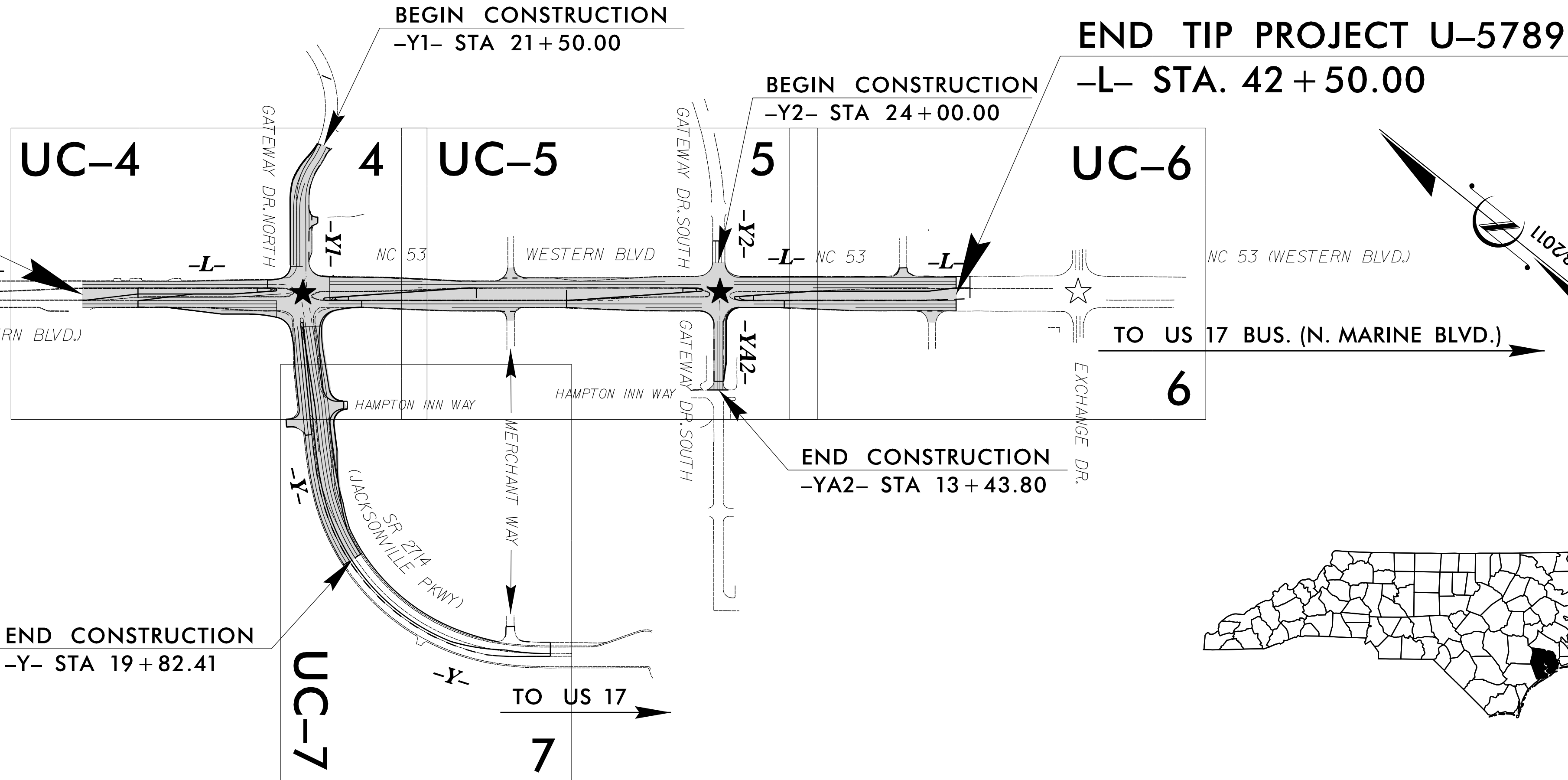
VICINITY MAP

OFF SITE DETOUR ● ● ●

BEGIN TIP PROJECT U-5789
-L- STA. 11 + 50.00

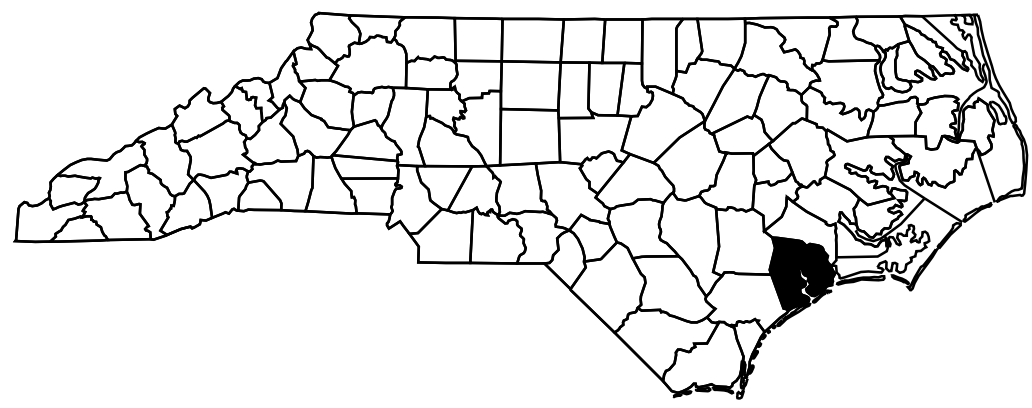
TO HENDERSON DR.

NC 53 (WESTERN BLVD.)

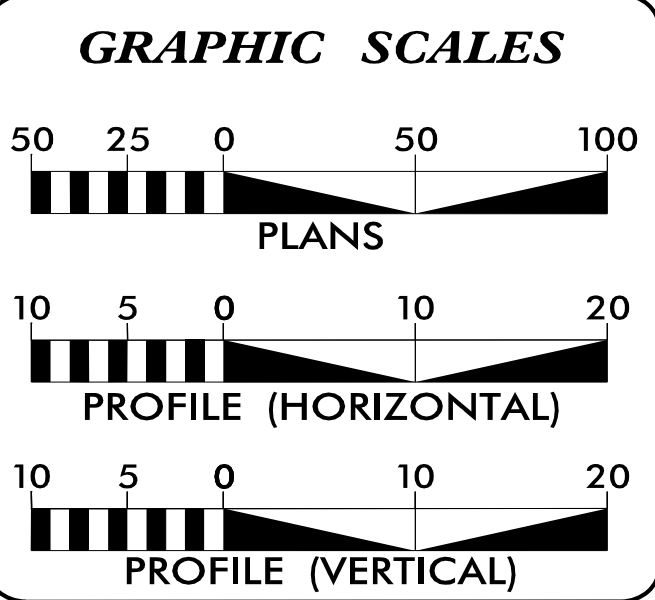


END TIP PROJECT U-5789
-L- STA. 42 + 50.00

TO US 17 BUS. (N. MARINE BLVD.)



DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



INDEX OF SHEETS	
SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3B	DETAILS
UC-4 THRU UC-7	UC PLAN SHEETS
UC-8 THRU UC-9	UC PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT	
(A) WATER - CITY OF JACKSONVILLE	
(B) SEWER - CITY OF JACKSONVILLE	

PREPARED IN THE OFFICE OF

Mead&Hunt

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Raleigh, North Carolina 27601
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KEVIN BARNES, PE
JENNIFER SMITH-MORTON, PE
ANDREW BRAME, EI

UTILITY DEPARTMENT MANAGER
UTILITY PROJECT MANAGER
PROJECT UTILITY DESIGNER

SEAL

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

TEVIN ASAMOAH
TIMOTHY G. GODWIN
RODNEY SCRUGGS

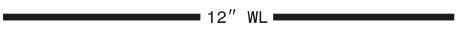
UTILITIES ENGINEER
DIVISION UTILITIES ENGINEER
SENIOR DIVISION UTILITY COORDINATOR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

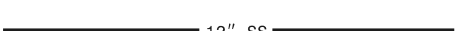
UTILITIES PLAN SHEET SYMBOLS

PROJECT REFERENCE NO.	SHEET NO.
U-5789	UC-2

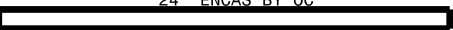
PROPOSED WATER SYMBOLS

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

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

NOTE

PAY ITEM

EXISTING UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	
End of Information	

*Underground Power Line	
*Underground Telephone Cable	
*Underground Telephone Conduit	
*Underground Fiber Optics Telephone Cable	
*Underground TV Cable	
*Underground Fiber Optics TV Cable	
*Underground Gas Pipeline	
Aboveground Gas Pipeline	
*Underground Water Line	
Aboveground Water Line	
*Underground Gravity Sanitary Sewer Line	
Aboveground Gravity Sanitary Sewer Line	
*Underground SS Forced Main Line	
Underground Unknown Utility Line	
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

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

UTILITY CONSTRUCTION

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" 2024.

2. THE EXISTING UTILITIES BELONG TO THE CITY OF JACKSONVILLE.
CONTACT: MICHAEL MOORE
PHONE: 910-938-5332

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 ENVIRONMENTAL 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 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. PROPOSED 24" WATER LINE FROM -Y1- LINE STATION 25+47 RT TO -Y1- LINE STATION 23+09 RT SHALL BE C905 PVC (JOINTS AND FITTINGS TO BE MECHANICALLY RESTRAINED DUCTILE IRON LINED WITH PROTECTO 401 OR EQUIVALENT). PROPOSED 12" WATER LINE FROM -Y1- LINE STATION 24+71 LT TO -Y1- LINE STATION 23+86 LT. SHALL BE D.I.R.J. (DUCTILE IRON RESTRAINED JOINT) PIPE.

2. ALL EXISTING WATER SERVICES TO BE REPLACED FROM THE MAIN LINE TO THE RIGHT-OF-WAY LINE. THE NEW WATER METER ASSEMBLY SHALL BE CONNECTED TO THE EXISTING SERVICE LINE ON THE CUSTOMER SIDE OF THE RGIHT-OF-WAY.

LIST OF STANDARD DRAWINGS

NONE

PROJECT REFERENCE NO.		SHEET NO.
U-5789		UC-3
DESIGNED BY:	KJB	
DRAWN BY:	ADB	
CHECKED BY:	KJB	
APPROVED BY:		
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		

UTILITY CONSTRUCTION

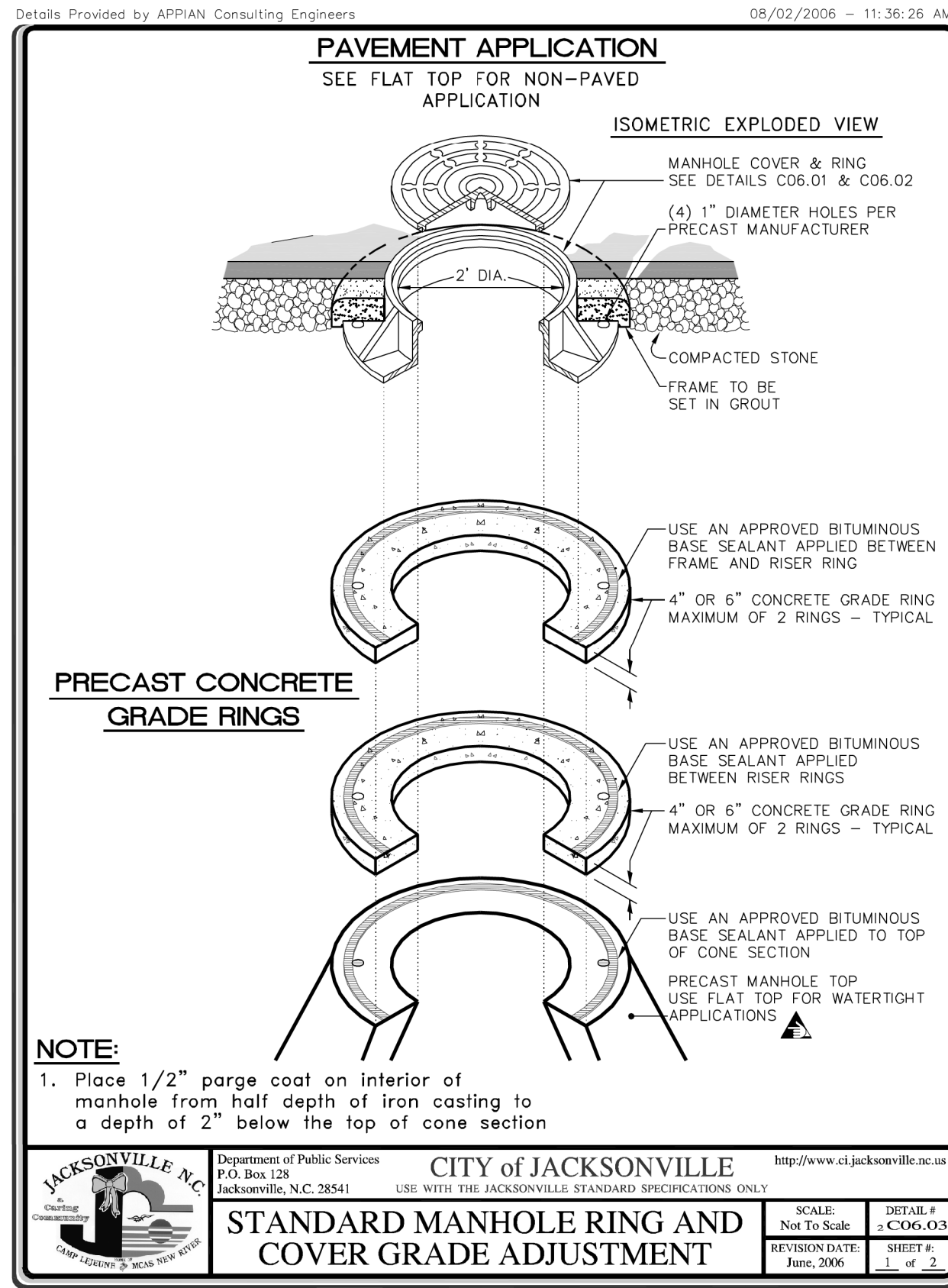
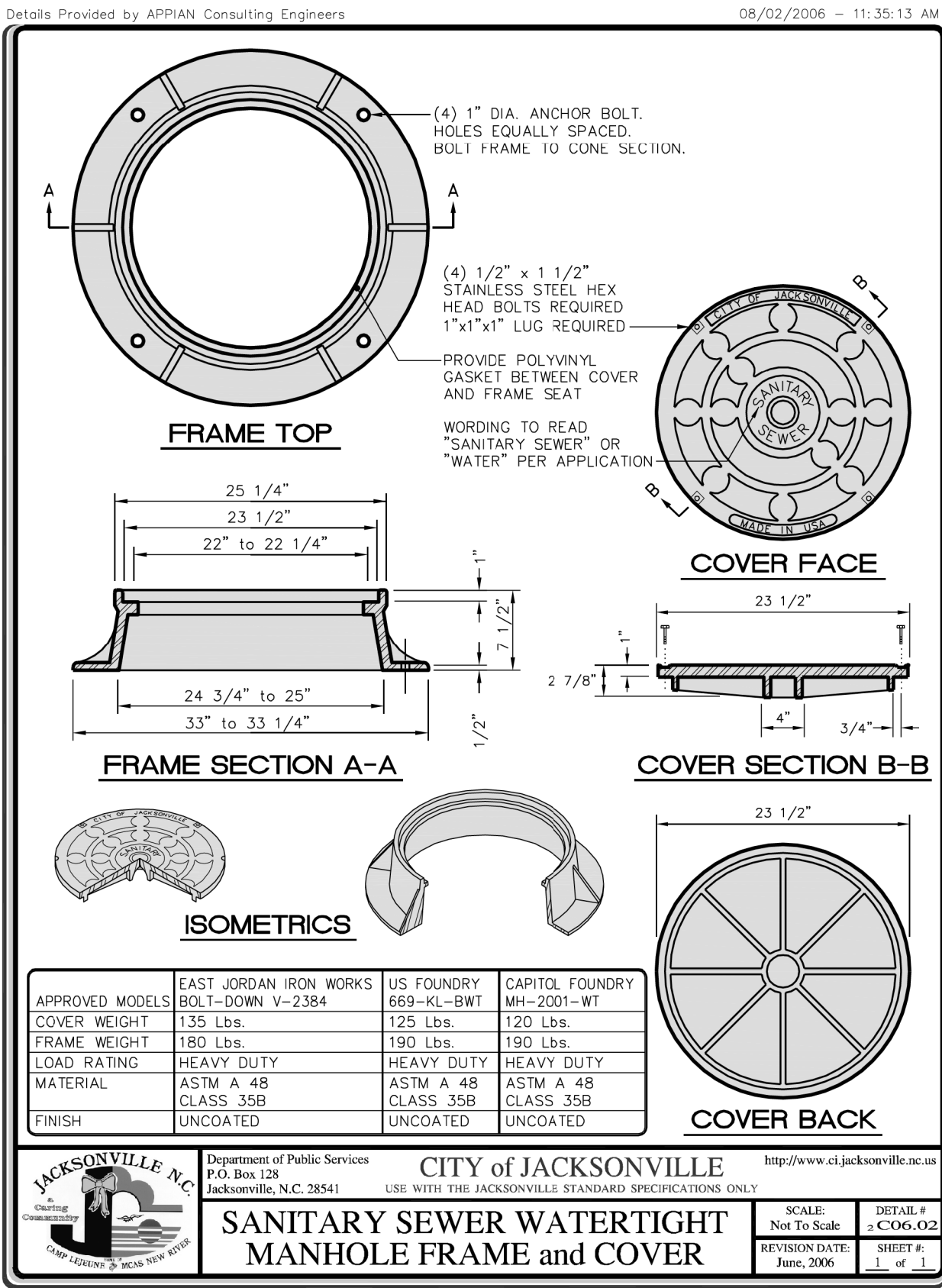
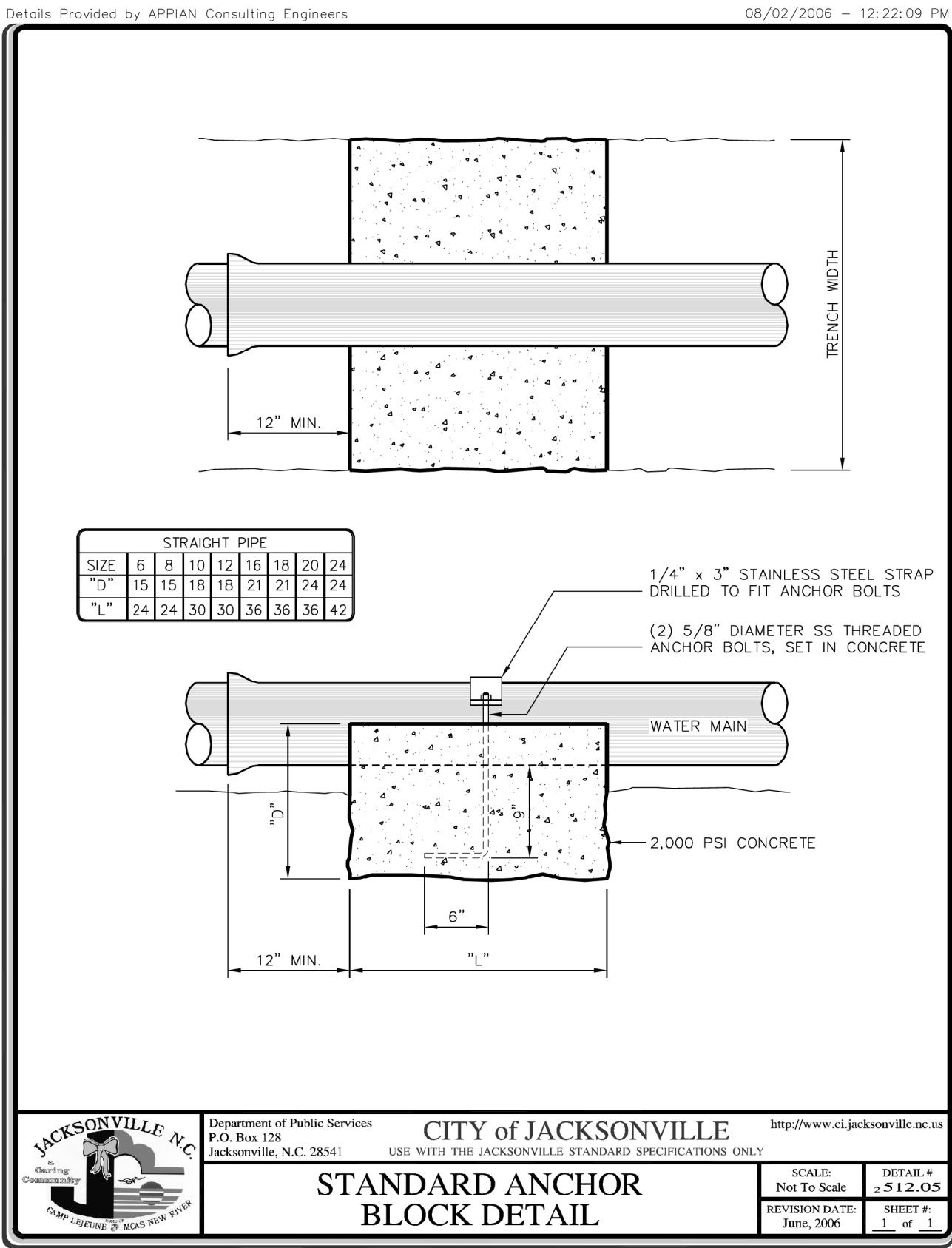
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CITY OF JACKSONVILLE - WATER/SEWER - TYPICAL DETAILS



24" PVC	
VERTICAL UPWARD BENDS REQUIRED RESTRAINT ON EACH SIDE (FT)	
ANGLE	24-INCH
11.25	5
22.5	9
45	18

12" DIP	
VERTICAL UPWARD BENDS REQUIRED RESTRAINT ON EACH SIDE (FT) (LENGTH IF POLY-WRAPPED)	
ANGLE	12-INCH
11.25	4 (4.5)
22.5	8 (9.2)
45	16.8 (19.1)
90	40.4 (46.1)

24" PVC	
VERTICAL DOWNWARD BENDS REQUIRED RESTRAINT ON EACH SIDE (FT)	
ANGLE	24-INCH
11.25	33
22.5	66
45	136

12" DIP	
VERTICAL DOWNWARD BENDS REQUIRED RESTRAINT ON EACH SIDE (FT) (LENGTH IF POLY-WRAPPED)	
ANGLE	12-INCH
11.25	14.8 (21.1)
22.5	29.8 (42.6)
45	41 (58.6)
90	150 (214.3)

24" PVC	
HORIZONTAL BENDS REQUIRED RESTRAINT ON EACH SIDE (FT)	
ANGLE	24-INCH
11.25	10
22.5	21
45	42

12" DIP	
HORIZONTAL BENDS REQUIRED RESTRAINT ON EACH SIDE (FT) (LENGTH IF POLY-WRAPPED)	
ANGLE	12-INCH
11.25	7 (8.2)
22.5	14.1 (16.5)
45	29.4 (34.3)
90	71.1 (82.9)

24" PVC	
LINE STOPS, AND IN-LINE ISOLATION VALVES REQUIRED	
LOCATION	24-INCH
IN-LINE ISOLATION VALVE	328
LINE STOP	328

12" DIP	
LINE STOPS, AND IN-LINE ISOLATION VALVES REQUIRED LENGTH IF POLY-WRAPPED	
LOCATION	12-INCH
IN-LINE ISOLATION VALVE	150 (214.3)
LINE STOP	150 (214.3)

- Notes:
1. PVC CALCULATIONS ARE PER EBAA RESTRAINT LENGTH CALCULATOR
 2. DIP CALCULATIONS ARE PER DIPRA RESTRAINT CALCULATOR
 3. CALCULATION ASSUMES SILT 1 / CLAY 1 TYPE SOIL (WORSE CASE SCENARIO), TYPE 4 BEDDING CONDITION, SAFETY FACTOR OF 1.5, 3' COVER FOR TOP AND 13' COVER FOR BOTTOM
 4. RESTRAINT USING A DESIGN PRESSURE OF 200 PSI
 5. REQUIRED RESTRAINED JOINT LENGTH WILL BE ROUNDED TO THE NEXT FULL JOINT OF PIPE.
 6. WHERE RESTRAINED LENGTHS ENCROACH UPON ONE ANOTHER ALL OF THE PIPE BETWEEN THE FITTINGS SHALL BE RESTRAINED.

RESTRAINED JOINT TABLE DETAIL A

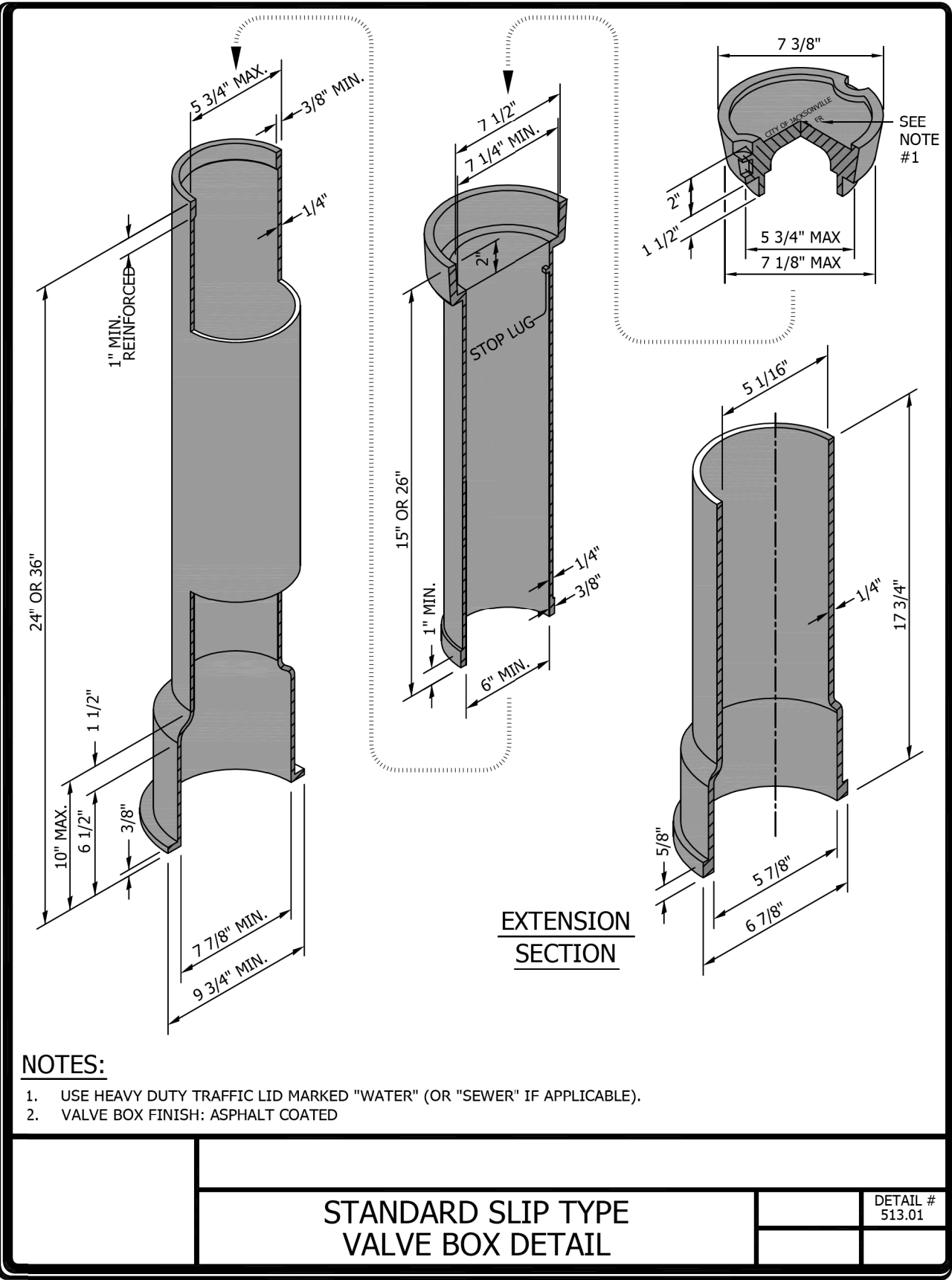
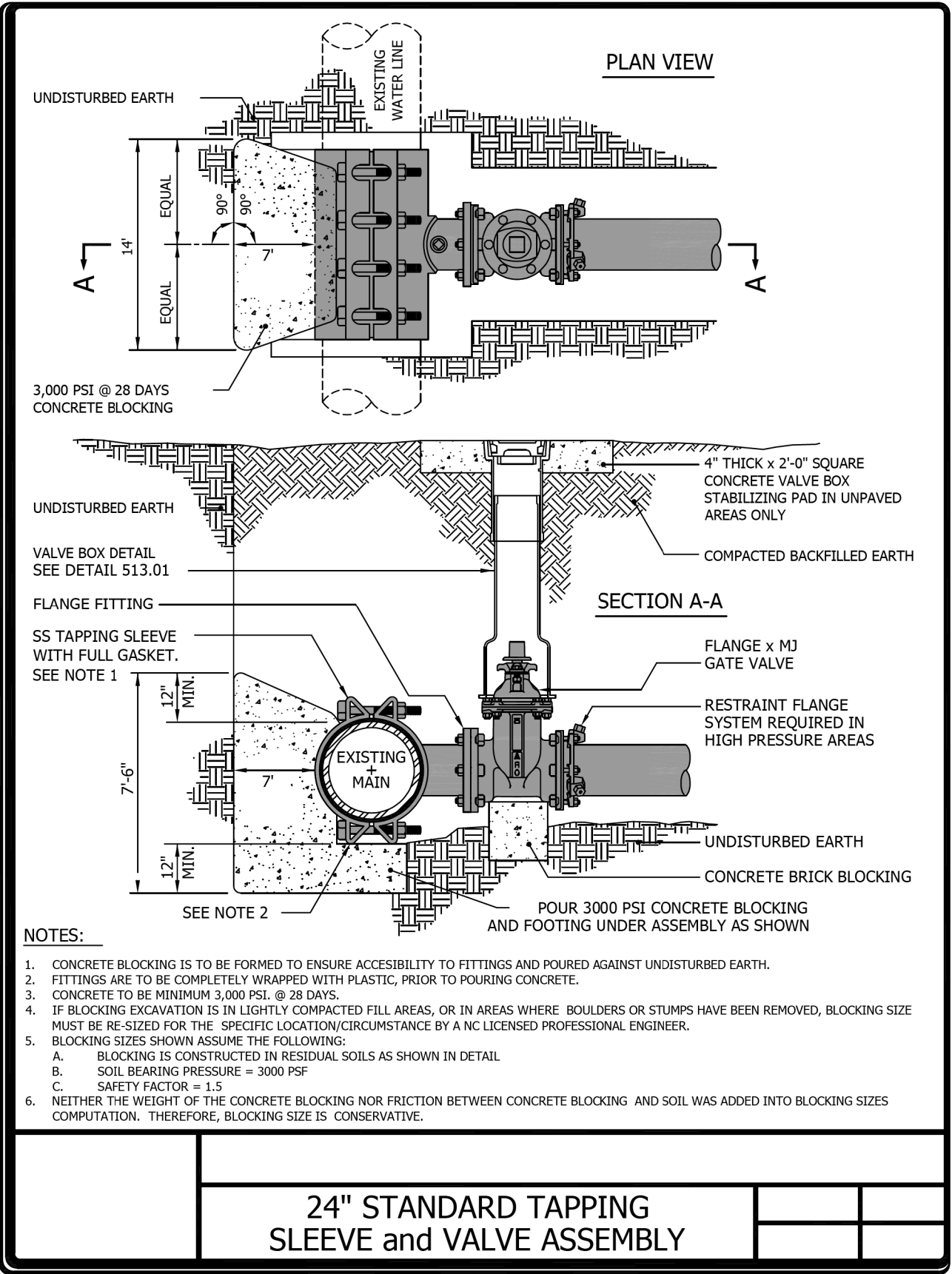
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\$\$\$\$\$SERNAME\$\$\$\$

CITY OF JACKSONVILLE - WATER/SEWER - TYPICAL DETAILS



PROJECT REFERENCE NO.		SHEET NO.
U-5789		UC-3B
DESIGNED BY:	KJB	PROFESSIONAL SEAL 033618 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
DRAWN BY:	ADB	
CHECKED BY:	KJB	
APPROVED BY:		
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

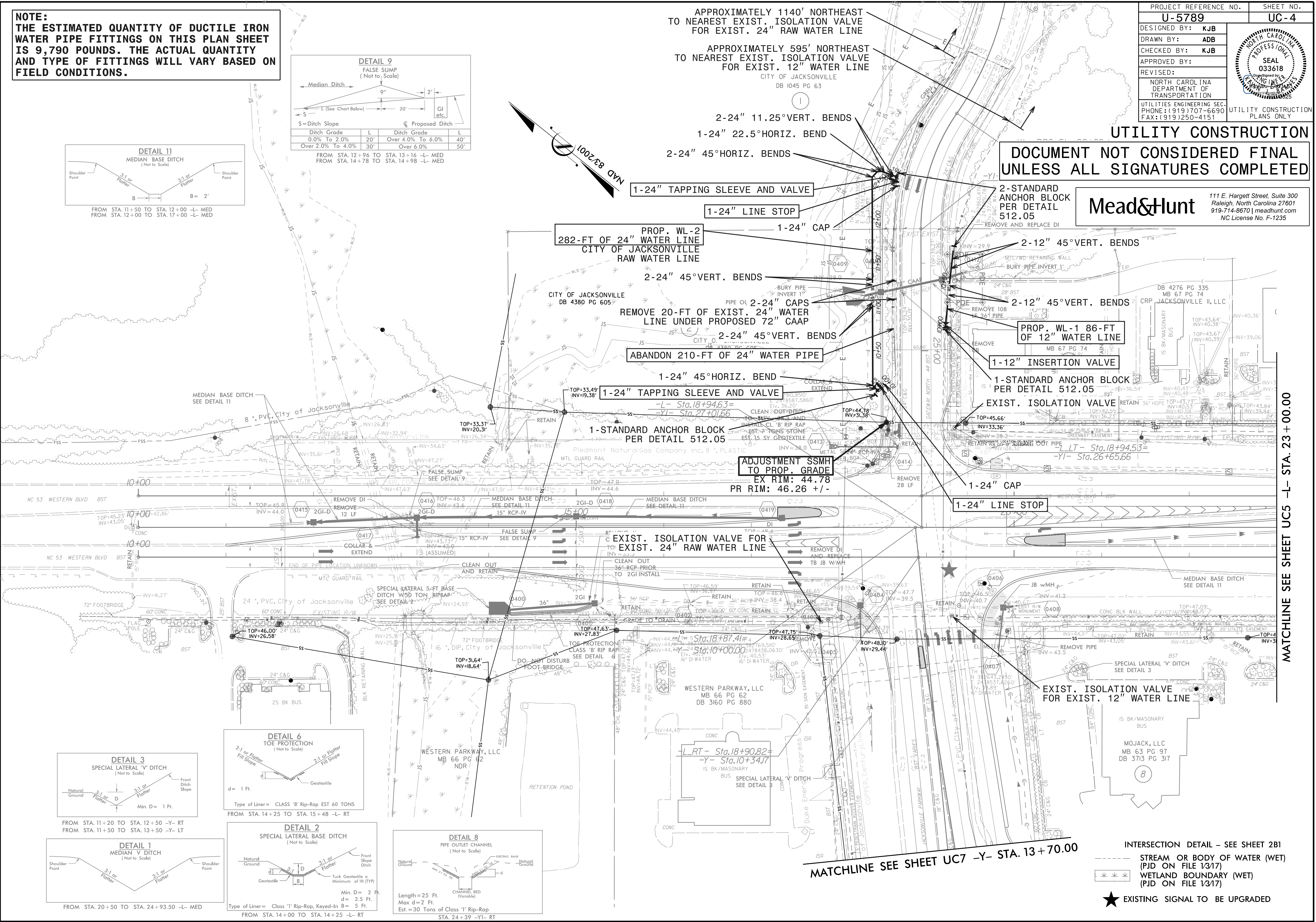
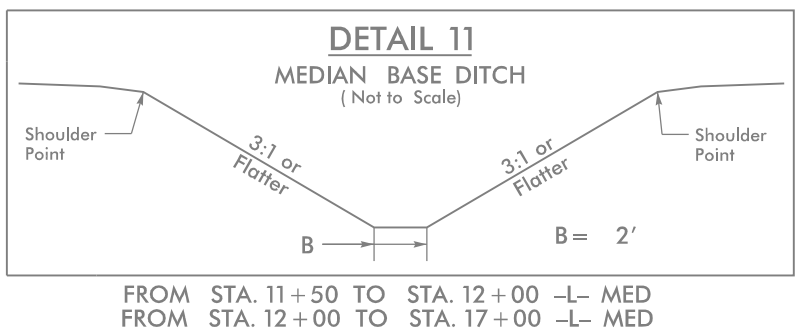
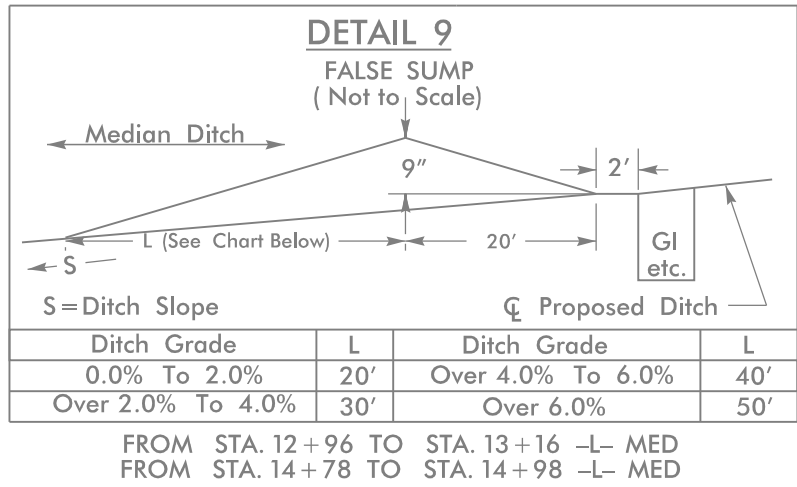
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NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON
WATER PIPE FITTINGS ON THIS PLAN SHEET
IS 9,790 POUNDS. THE ACTUAL QUANTITY
AND TYPE OF FITTINGS WILL VARY BASED ON
FIELD CONDITIONS.



PROJECT REFERENCE NO.	SHEET NO.
U-5789	UC-4
DESIGNED BY: KJB	PROFESSIONAL SEAL 033618 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
DRAWN BY: ADB	
CHECKED BY: KJB	
APPROVED BY:	
REVISED:	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

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MATCHLINE SEE SHEET UC5 -L- STA. 23 + 00.00

MATCHLINE SEE SHEET UC7 -Y- STA. 13 + 70.00

INTERSECTION DETAIL - SEE SHEET 2B1
STREAM OR BODY OF WATER (WET)
(PJD ON FILE 1/317)
WETLAND BOUNDARY (WET)
(PJD ON FILE 1/317)

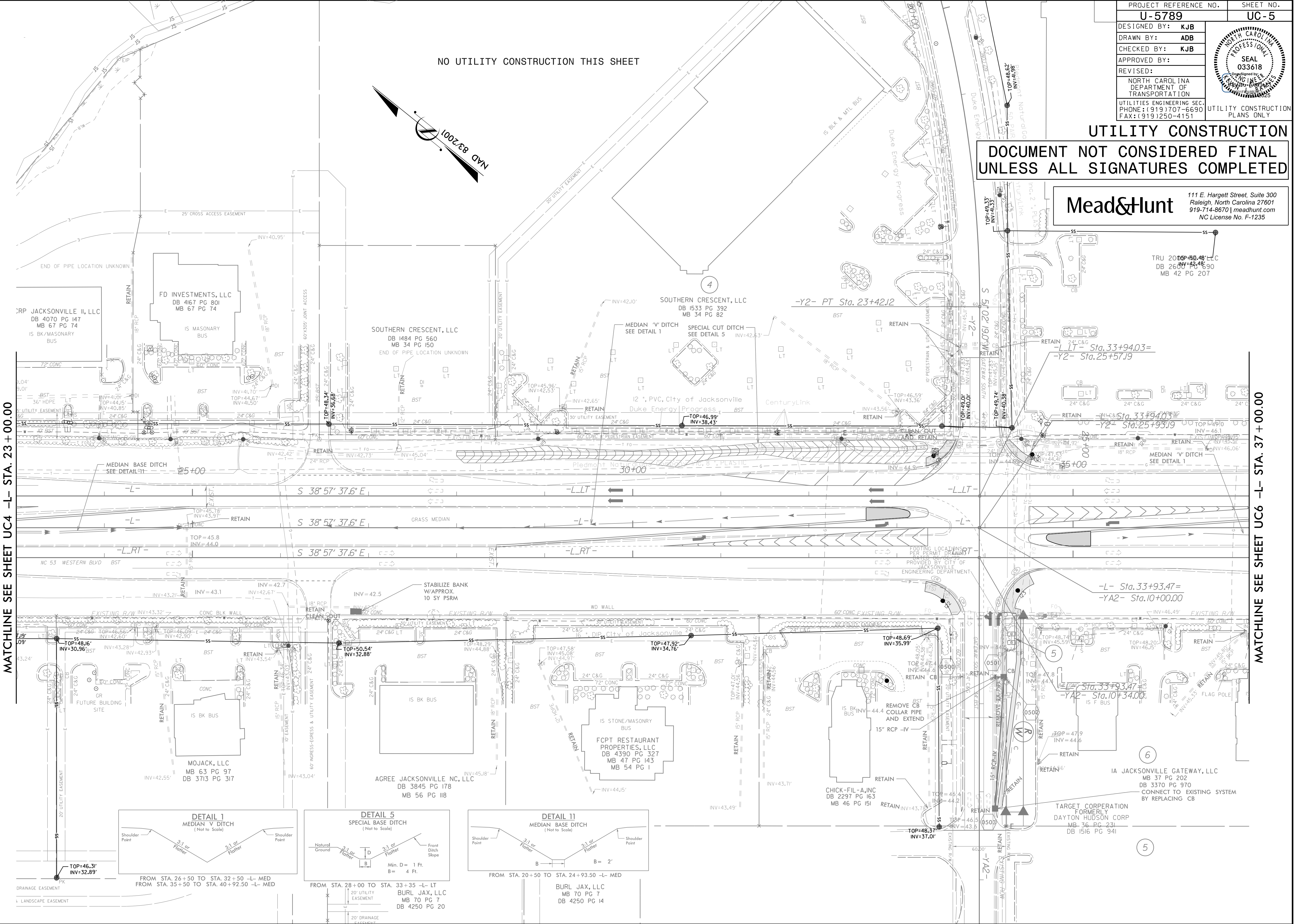
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MATCHLINE SEE SHEET UC6 -L- STA. 37 + 00.00



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TRU 2005 RE I, LLC
DB 2600 PG 690
MB 42 PG 207

LHL JACKSONVILLE, LLC
DB 4253 PG 777
MB 68 PG 66

WOODROW W. WILLIS, JR., et al
DB 1910 PG 712
MB 36 PG 65

CROSS POINTE DEVELOPERS, LLC
DB 1445 PG 305
MB 36 PG 65

THE CHARLEY GROUP, LLC
DB 3188 PG 280
MB 34 PG 189
MB 36 PG 65

WALTER C. WHITEHURST, JR.
DB 1605 PG 453
MB 34 PG 189
MB 36 PG 65

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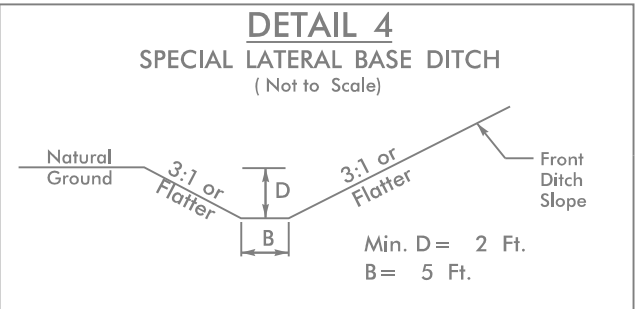
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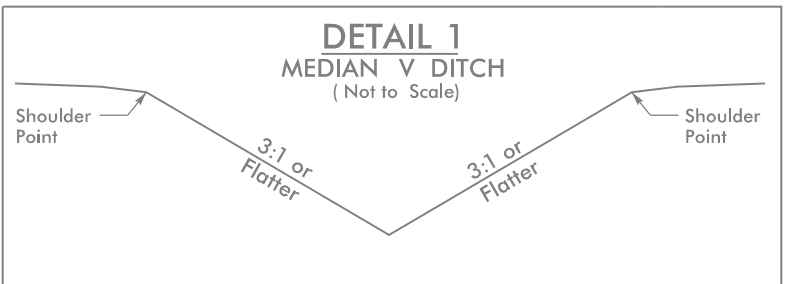
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PROJECT REFERENCE NO.		SHEET NO.
U-5789		UC-6
DESIGNED BY:	KJB	
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REVISED:		
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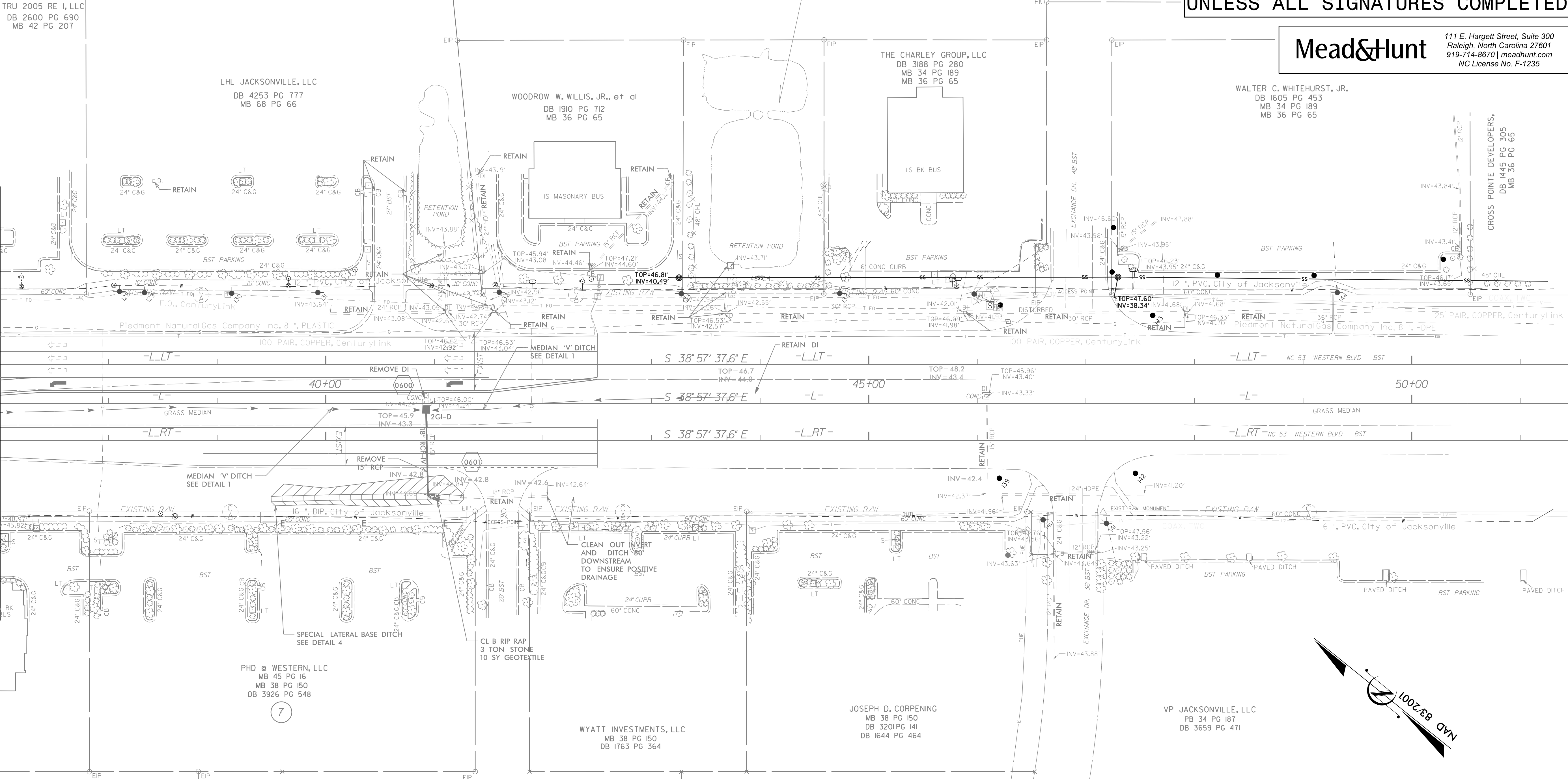
UTILITY CONSTRUCTION



FROM STA. 39+50 TO STA. 41+24 -L- RT



FROM STA. 35+50 TO STA. 40+92.50 -L- MED
FROM STA. 40+92.50 TO STA. 43+93 -L- MED

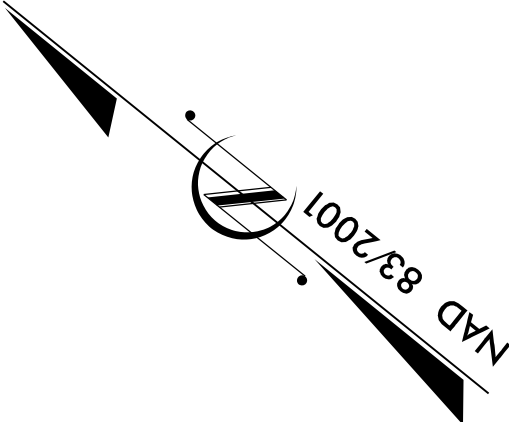


PHD @ WESTERN, LLC
MB 45 PG 16
MB 38 PG 150
DB 3926 PG 548

WYATT INVESTMENTS, LLC
MB 38 PG 150
DB 1763 PG 364

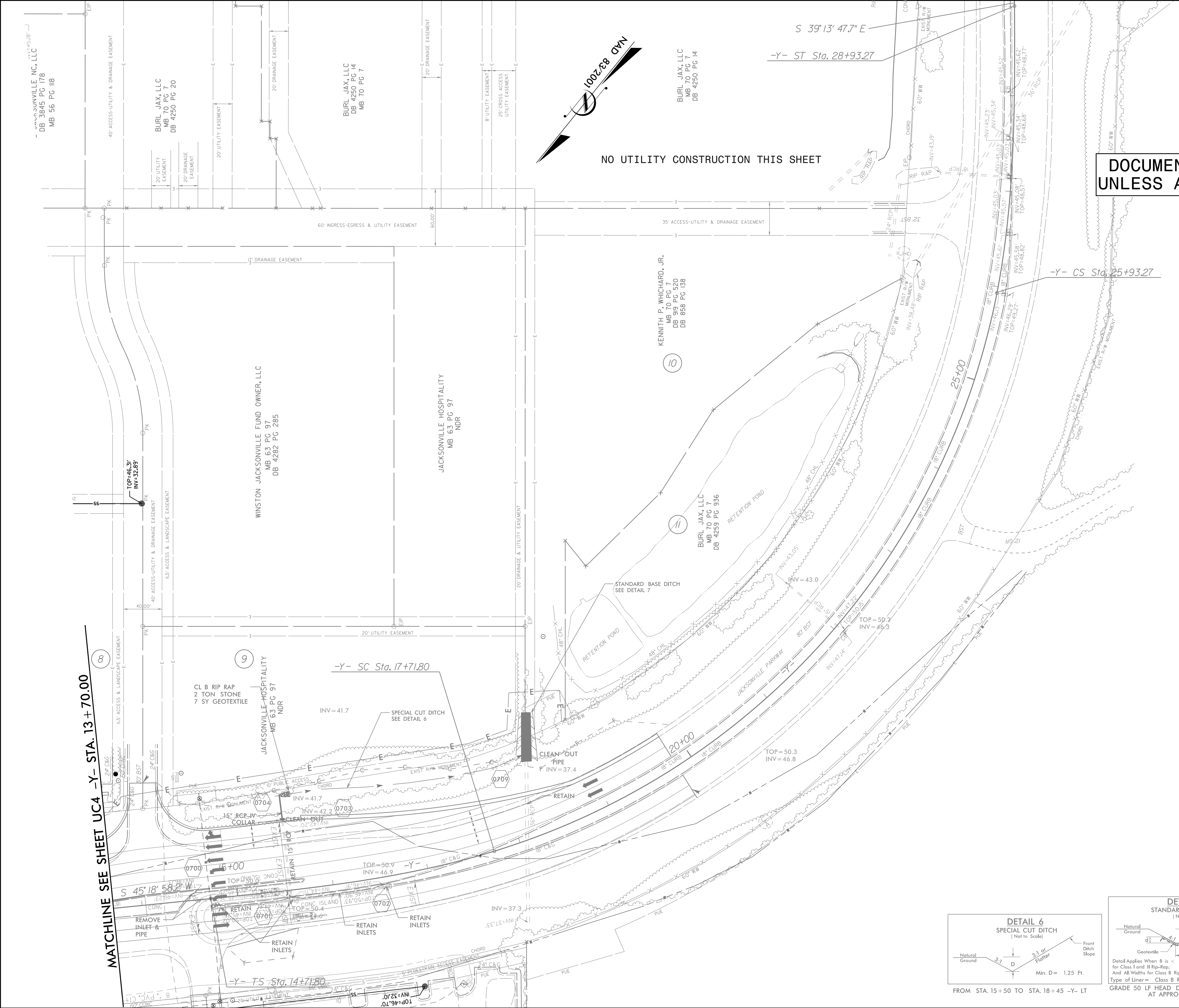
JOSEPH D. CORPENING
MB 38 PG 150
DB 3201 PG 141
DB 1644 PG 464

VP JACKSONVILLE, LLC
PB 34 PG 187
DB 3659 PG 471



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NO UTILITY CONSTRUCTION THIS SHEET

UTILITY CONSTRUCTION

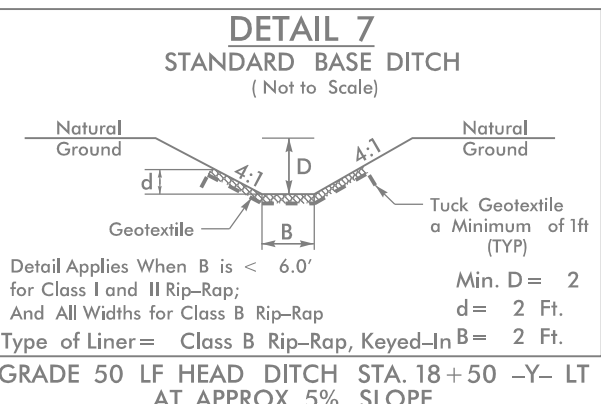
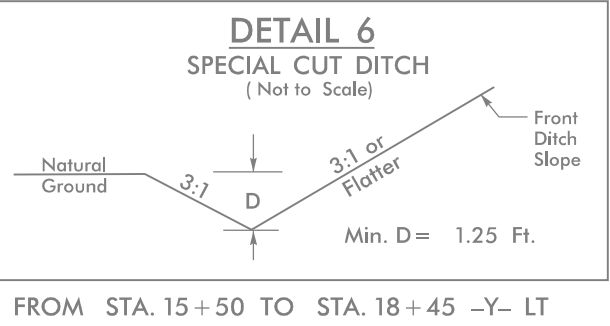
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PROJECT REFERENCE NO.		SHEET NO.	
U-5789		UC-7	
DESIGNED BY:	KJB		UTILITY CONSTRUCTION PLANS ONLY
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CHECKED BY:	KJB		
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION			
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

MATCHLINE SEE SHEET UC4 -Y- STA. 13+70.00



5/28/99

PROJECT REFERENCE NO.
U-5789

SHEET NO.
UC-8

DESIGNED BY: **KJB**

DRAWN BY: **ADB**

CHECKED BY: **KJB**

APPROVED BY:

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

UTILITY CONSTRUCTION
PLANS ONLY

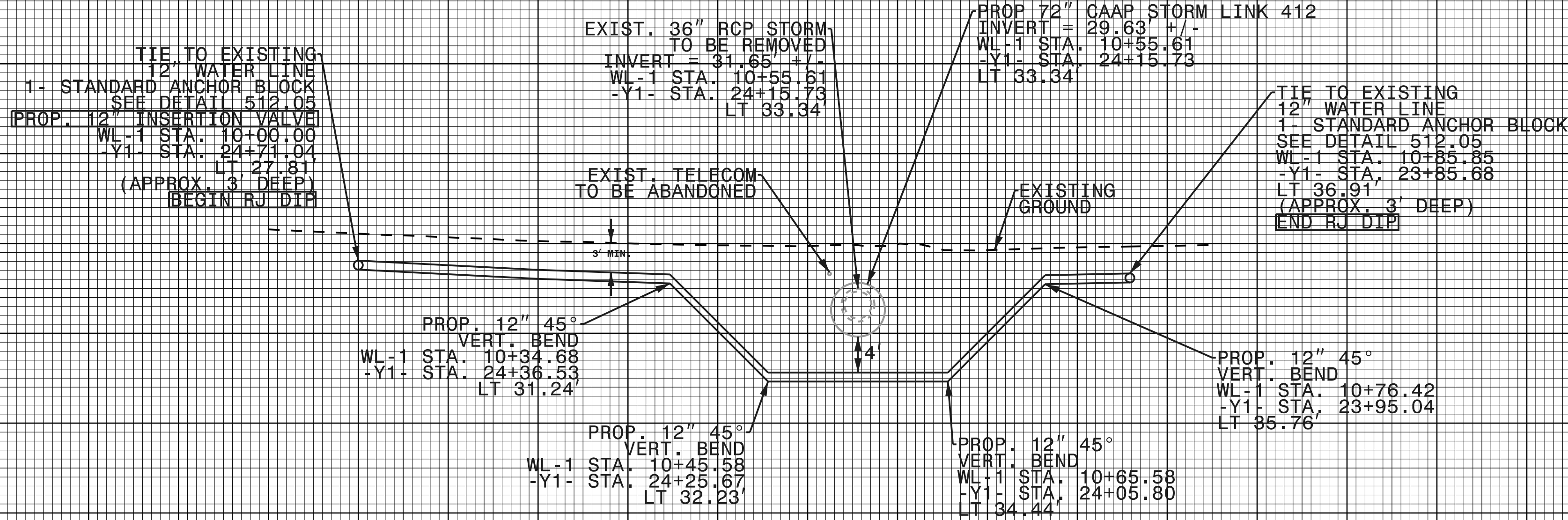
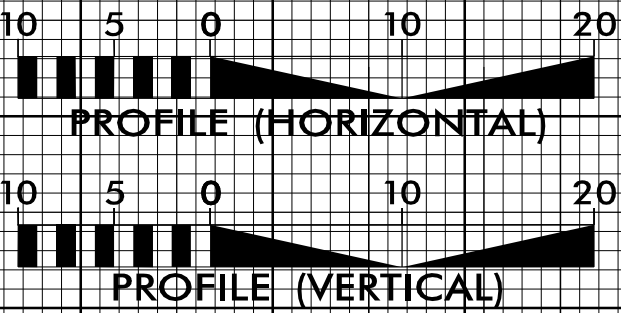
SEAL
033618

North Carolina
Professional Engineer
No. 033618
Exp. 12/31/2005

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

UTILITY CONSTRUCTION

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12" WATER LINE WL-1

SEE UC-4 FOR 12" WATER LINE PLAN

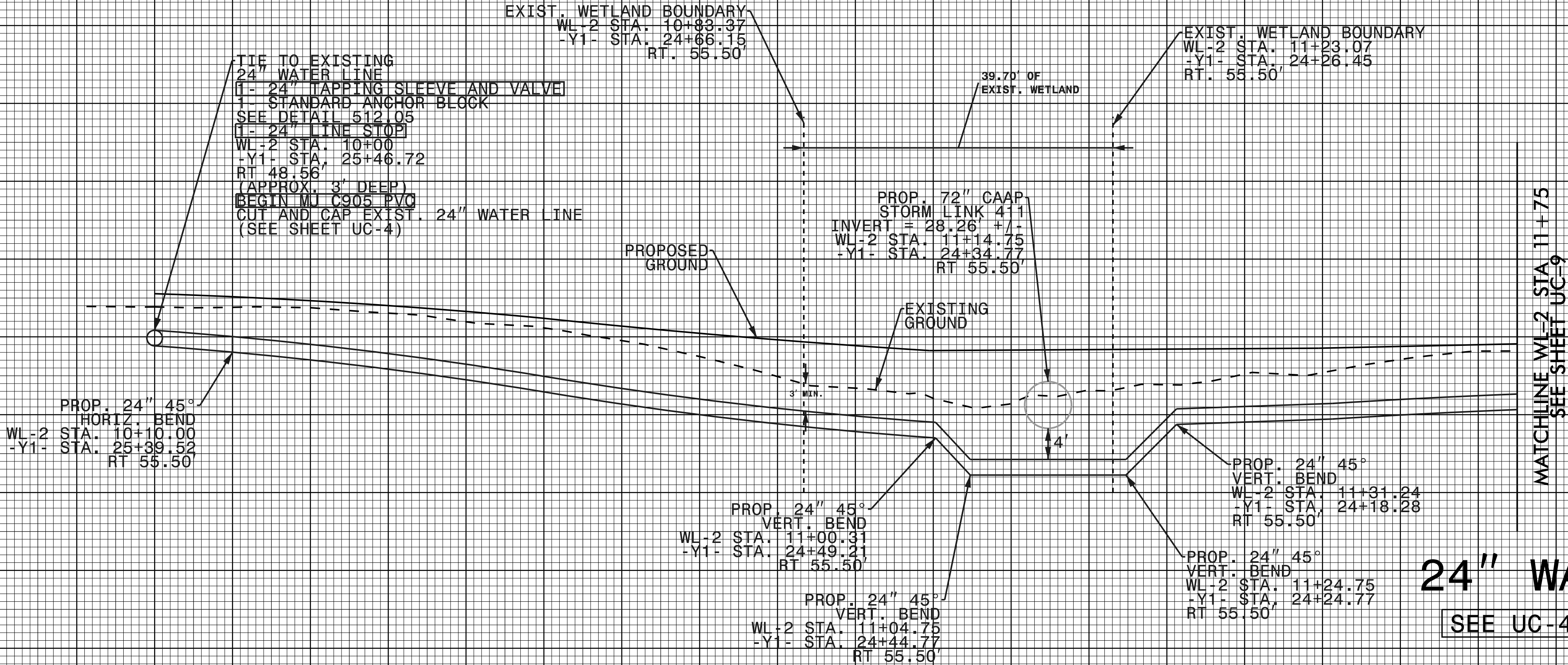
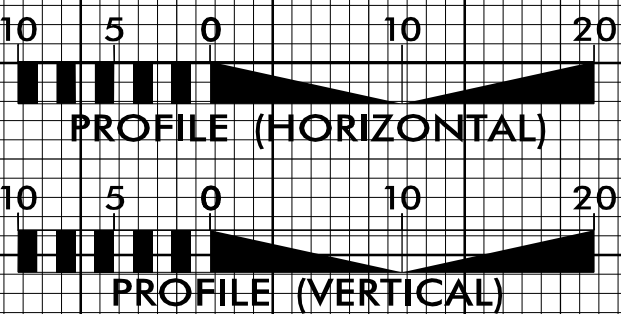
10 + 00

10 + 50

11 + 00

11 + 50

12 + 00



24" WATER LINE WL-2

SEE UC-4 FOR 24" WATER LINE PLAN

10 + 00

10 + 50

11 + 00

11 + 50

12 + 00

