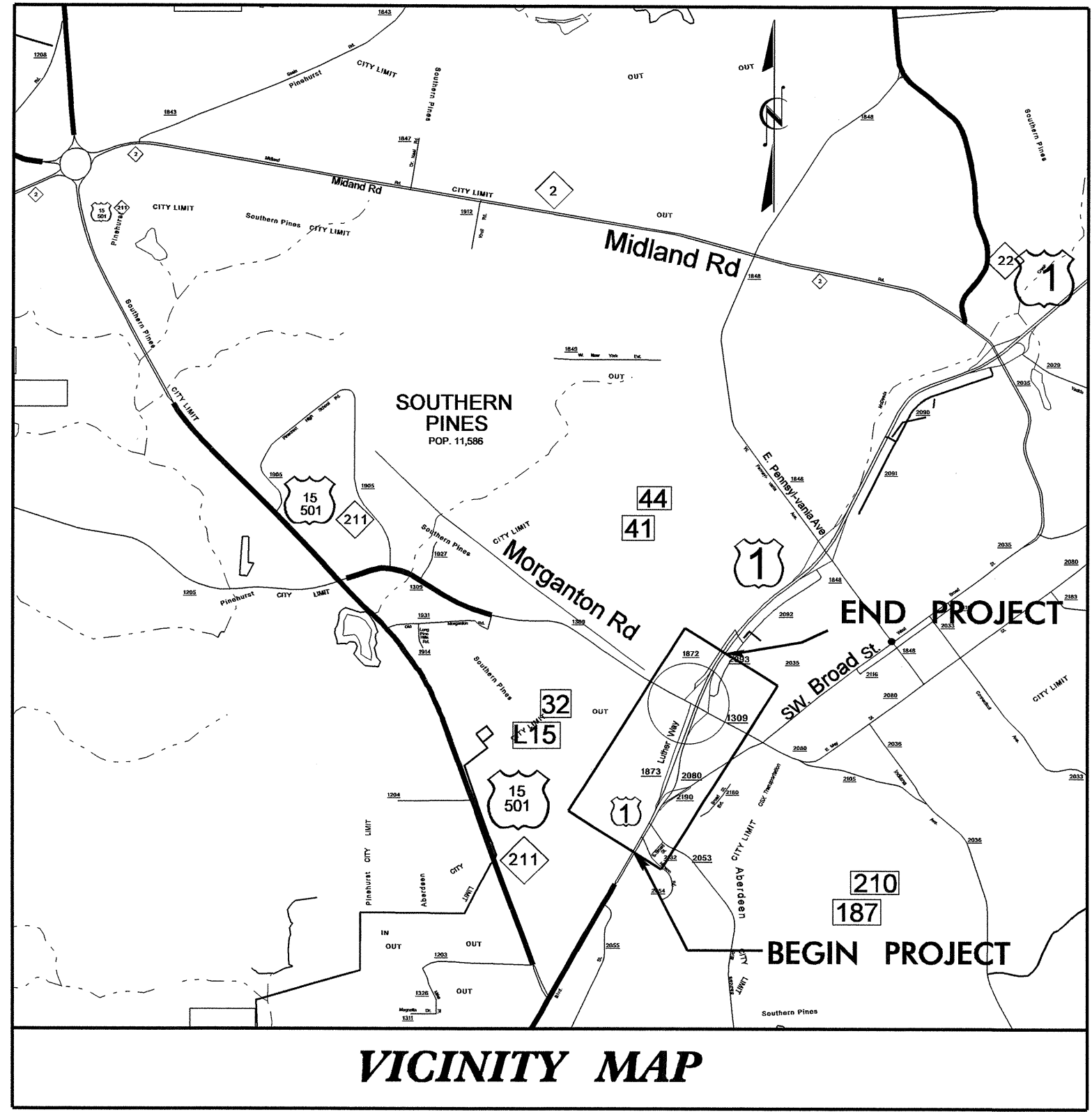


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

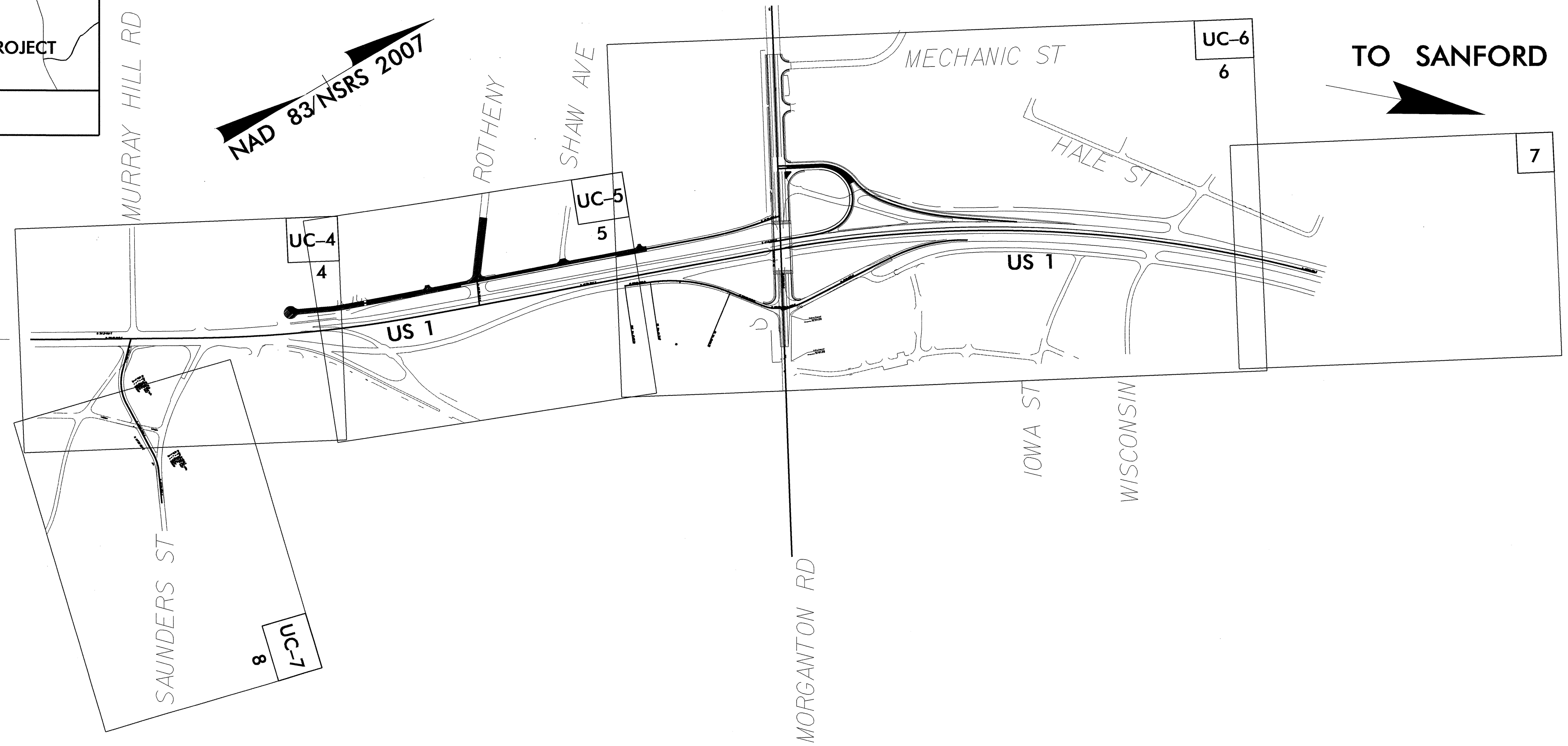
UTILITY CONSTRUCTION PLANS
MOORE COUNTY

LOCATION: PINEHURST-SOUTHERN PINES - SR 1309
(MORGANTON RD) AND US 1 (SANDHILLS BLVD)

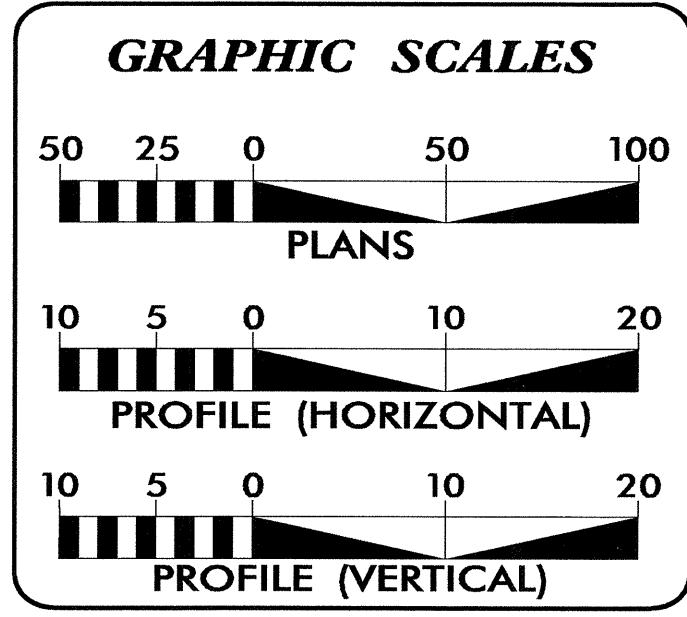
TYPE OF WORK: UTILITY CONSTRUCTION



VICINITY MAP



TIP U-3324

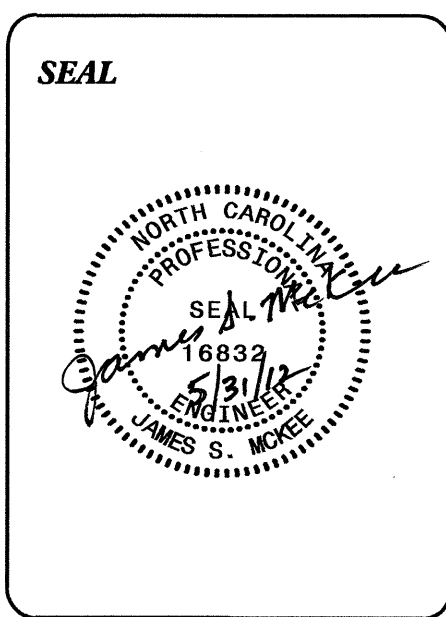


INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-1A	UTILITY SYMBOLOGY
UC-2	UTILITY LINE COORDINATES
UC-3	NOTES
UC-4 THRU UC-7	UTILITY CONSTRUCTION SHEETS
UC-8 THRU UC-17	WATER LINE PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT

(1) WATER - TOWN OF SOUTHERN PINES
(2) SANITARY SEWER - TOWN OF SOUTHERN PINES



PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT

1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Steve McKee, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
John A. Nigro, P.E. UTILITIES PROJECT DESIGNER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	12" WL
11¼ Degree Bend	++
22½ Degree Bend	+X
45 Degree Bend	+X
90 Degree Bend	+†
Plug	⊥
Tee	⊕
Cross	⊕
Reducer	▶
Gate Valve	GV
Butterfly Valve	BV
Tapping Valve	TGV
Line Stop	LS
Line Stop with Bypass	LS/BP
Blow Off	BO
Fire Hydrant	PH
Relocate Fire Hydrant	REH
Remove Fire Hydrant	REM FH
Water Meter	PWM
Relocate Water Meter	RWM
Remove Water Meter	REM WM
Water Pump Station	PS(W)
RPZ Backflow Preventer	RPZ
DCV Backflow Preventer	DBFP
Relocate RPZ Backflow Preventer	RRPZ
Relocate DCV Backflow Preventer	RDBFP

PROPOSED SEWER SYMBOLS

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

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	o
Telephone Pole	o
Joint Use Pole	o
Telephone Pedestal	TEL PED
Utility Line by Others (Type as Shown)	PROP O/H POW LINES
Trenchless Installation	12" TL INSTALL
Encasement by Open Cut	24" ENCAS BY OC
Encasement	24" ENCASUREMENT

Thrust Block	
Air Release Valve	AR
Utility Vault	UV
Concrete Pier	CP
Steel Pier	SP
Plan Note	NOTE
Pay Item Note	PAY ITEM

EXISTING UTILITIES SYMBOLS

Power Pole	•	*Underground Power Line	P
Telephone Pole	•	*Underground Telephone Cable	T
Joint Use Pole	•	*Underground Telephone Conduit	TC
Utility Pole	•	*Underground Fiber Optics Telephone Cable	T FO
Utility Pole with Base	□	*Underground TV Cable	TV
H-Frame Pole	•—•	*Underground Fiber Optics TV Cable	TV FO
Power Transmission Line Tower	⊗	*Underground Gas Pipeline	G
Water Manhole	⊙	Aboveground Gas Pipeline	A/G Gas
Power Manhole	⊙	*Underground Water Line	W
Telephone Manhole	⊙	Aboveground Water Line	A/G Water
Sanitary Sewer Manhole	⊙	*Underground Gravity Sanitary Sewer Line	SS
Hand Hole for Cable	⊕	Aboveground Gravity Sanitary Sewer Line	A/G Sanitary Sewer
Power Transformer	⊕	*Underground SS Forced Main Line	FSS
Telephone Pedestal	⊕	Underground Unknown Utility Line	UUL
CATV Pedestal	⊕	SUE Test Hole	•
Gas Valve	◇	Water Meter	o
Gas Meter	⊕	Water Valve	⊕
Located Miscellaneous Utility Object	o	Fire Hydrant	◇
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout	⊕
End of Information	E.O.I.		

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

5/14/99
 31-MAY-2012 07:44
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 REV: 2/1/2012

UTILITY CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
U-3324	UC-3
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

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" DATED JANUARY 2012.
2. THE EXISTING UTILITIES BELONG TO TOWN OF SOUTHERN PINES.
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER QUALITY. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

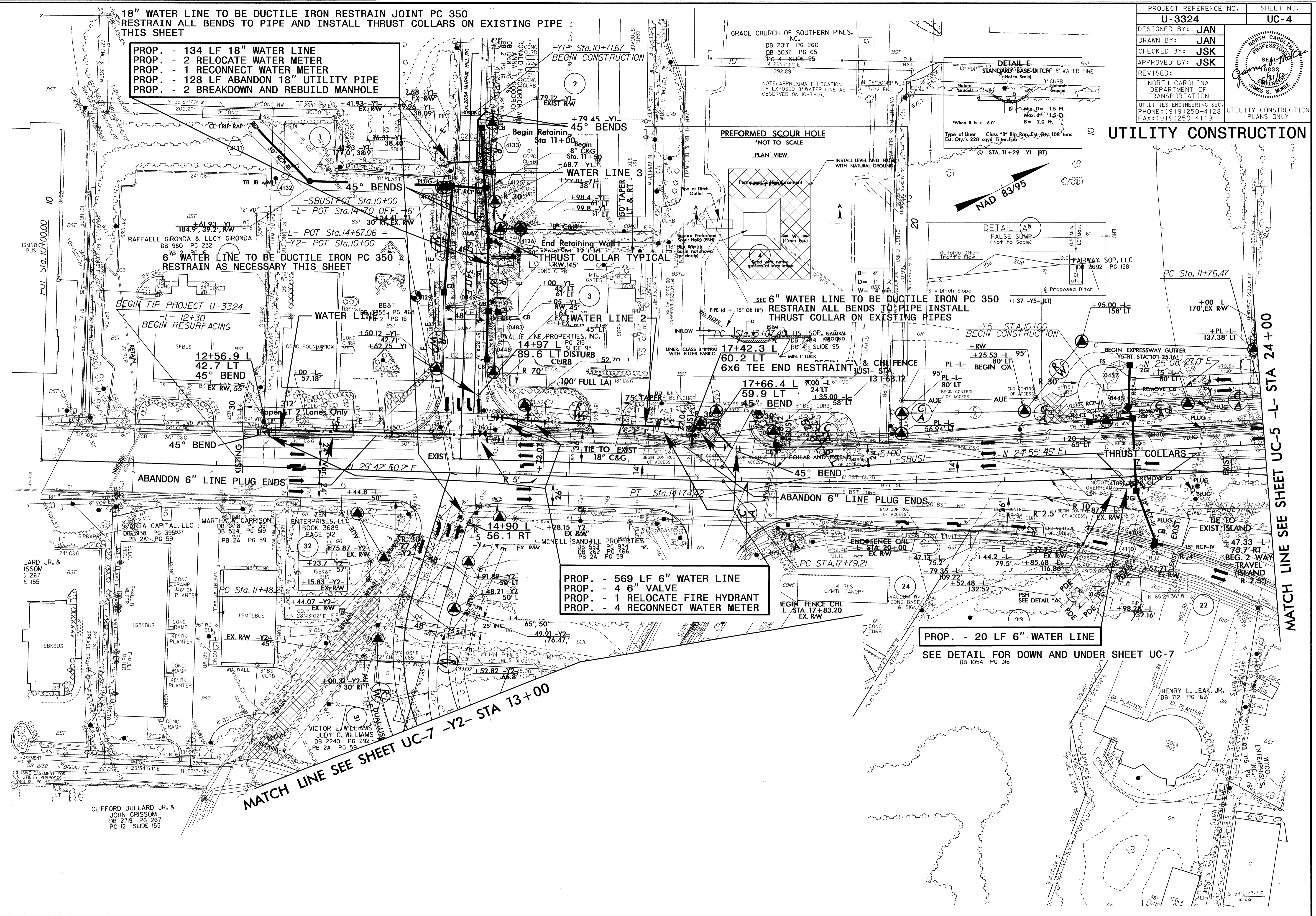
PROJECT SPECIFIC NOTES:

1. NCDOT STANDARD SPECIFICATIONS FOR ROAD AND STRUCTURES JANUARY 2012 AND TOWN OF SOUTHERN PINES WATER MAIN CONSTRUCTION SPECIFICATIONS CURRENT AT TIME OF LET SHALL BE USED. MEASUREMENT AND PAYMENT FOR WORK WILL BE IN ACCORDANCE WITH NCDOT'S "STANDARD SPECIFICATIONS FOR ROAD AND STRUCTURES" (DATED JANUARY 2012).
2. TOWN OF SOUTHERN PINES SHALL BE NOTIFIED TO WITNESS ALL WATER LINE TESTING. TOWN OF SOUTHERN PINES WILL TAKE ALL SAMPLES TO BE BACTERIOLOGICAL TESTED 72 HOURS AFTER FLUSHING AND REFILLING.
3. CONTRACTOR SHALL LOCATE, BASED ON PROJECT DATUM, ALL CONNECTIONS TO EXISTING WATER LINES, FITTINGS, AND VALVES. AS-BUILTS OF PROPOSED LINES SHALL INCLUDE COORDINATES FOR HORIZONTAL LOCATIONS TO CENTER OF PIPES, FITTINGS, AND VALVES AND VERTICAL LOCATIONS TO TOP OF PIPES, FITTINGS, AND VALVES.
4. FOR BREAKDOWN AND REBUILD OF MANHOLES AT -L- STATION 14+90/56.1 RT AND -L- STATION 14+97/89.6 LT CONTRACTOR SHALL PROVIDE NEW ECCENTRIC CONE AND MANHOLE FRAME AND COVER. ANY NEW STEPS TO BE 16" CENTER ON CENTER ABOVE ANY EXISTING STEPS.

LIST OF STANDARD DRAWINGS

840.52	PRECAST MANHOLE 4', 5', 6' DIAMETER
840.54	MANHOLE FRAME AND COVER
1515.01	WATER METER
1515.02	FIRE HYDRANT

UTILITY CONSTRUCTION



18" WATER LINE TO BE DUCTILE IRON RESTRAIN JOINT PC 350
 RESTRAIN ALL BENDS TO PIPE AND INSTALL THRUST COLLARS ON EXISTING PIPE
 THIS SHEET

PROP. - 134 LF 18" WATER LINE
 PROP. - 2 RELOCATE WATER METER
 PROP. - 1 RECONNECT WATER METER
 PROP. - 128 LF ABANDON 18" UTILITY PIPE
 PROP. - 2 BREAKDOWN AND REBUILD MANHOLE

6" WATER LINE TO BE DUCTILE IRON PC 350
 RESTRAIN AS NECESSARY THIS SHEET

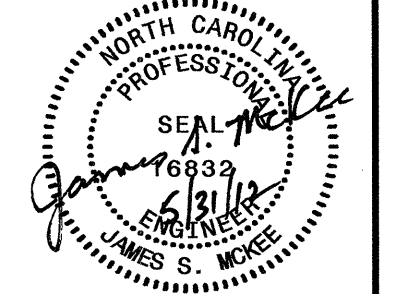
PROP. - 569 LF 6" WATER LINE
 PROP. - 4 6" VALVE
 PROP. - 1 RELOCATE FIRE HYDRANT
 PROP. - 4 RECONNECT WATER METER

PROP. - 20 LF 6" WATER LINE
 SEE DETAIL FOR DOWN AND UNDER SHEET UC-7

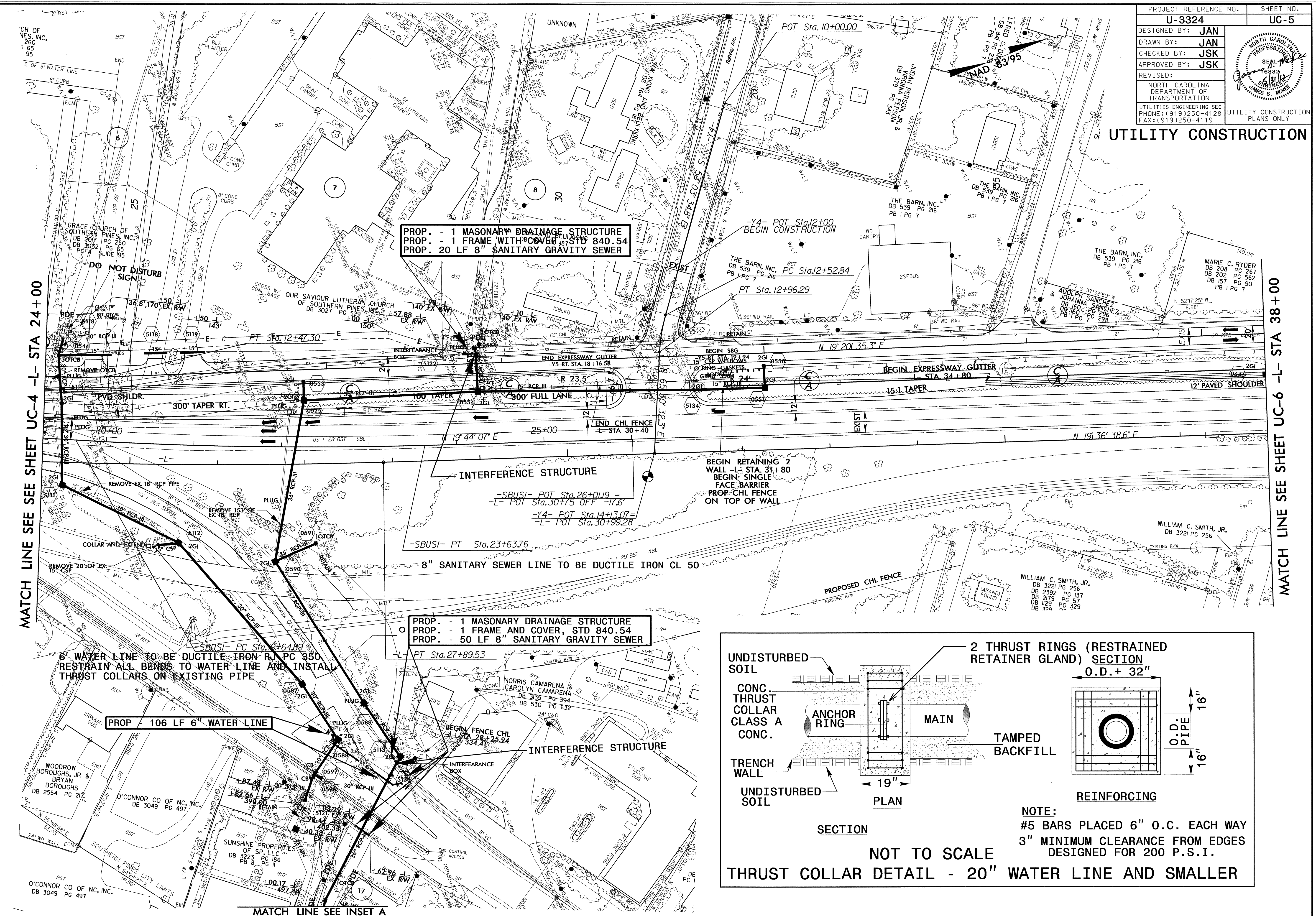
MATCH LINE SEE SHEET UC-7 -Y2- STA 13+00

MATCH LINE SEE SHEET UC-5 -L- STA 24+00

5/14/99
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UTILITY CONSTRUCTION



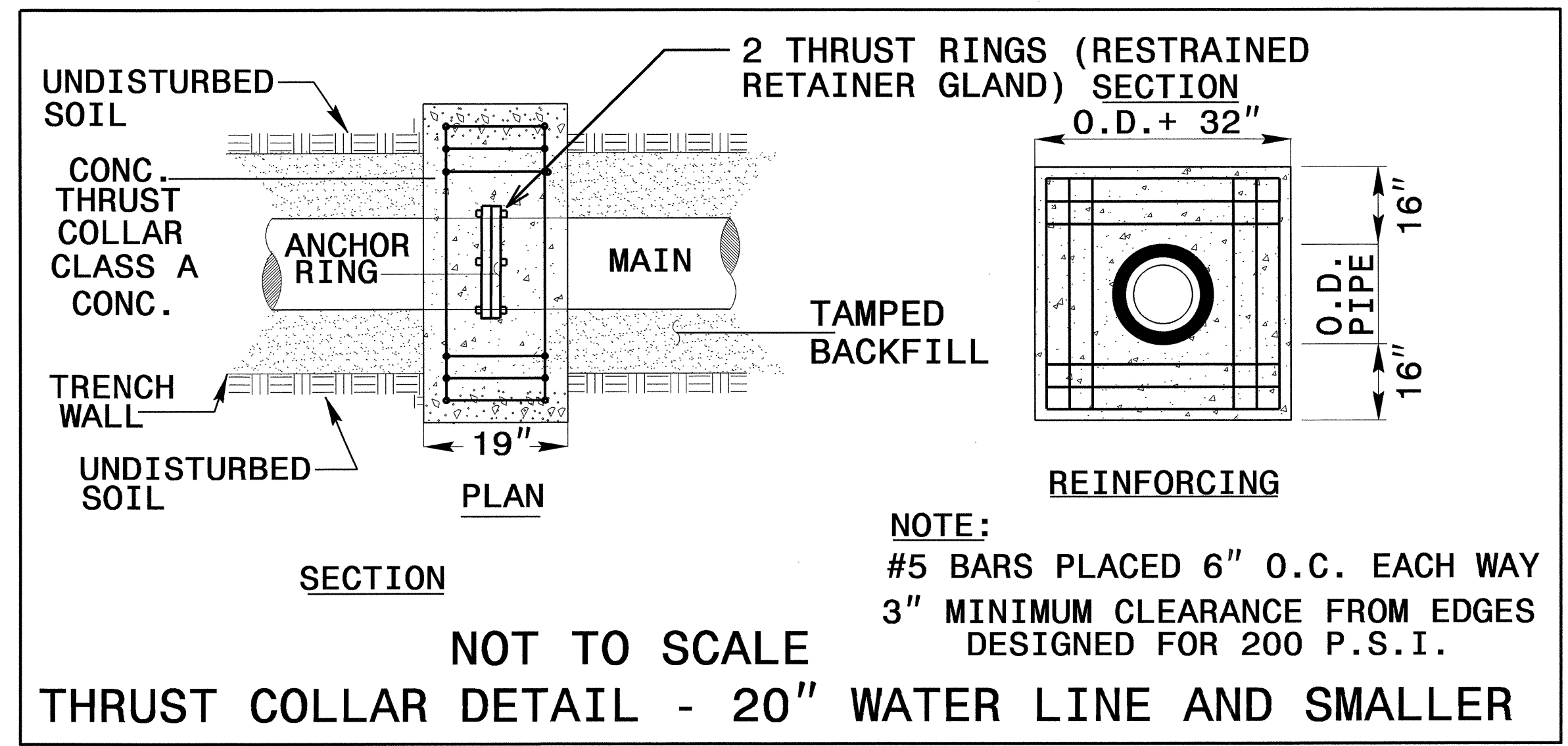
MATCH LINE SEE SHEET UC-4 -L- STA 24+00

MATCH LINE SEE SHEET UC-6 -L- STA 38+00

PROP. - 1 MASONRY DRAINAGE STRUCTURE
 PROP. - 1 FRAME WITH COVER, STD 840.54
 PROP. 20 LF 8" SANITARY GRAVITY SEWER

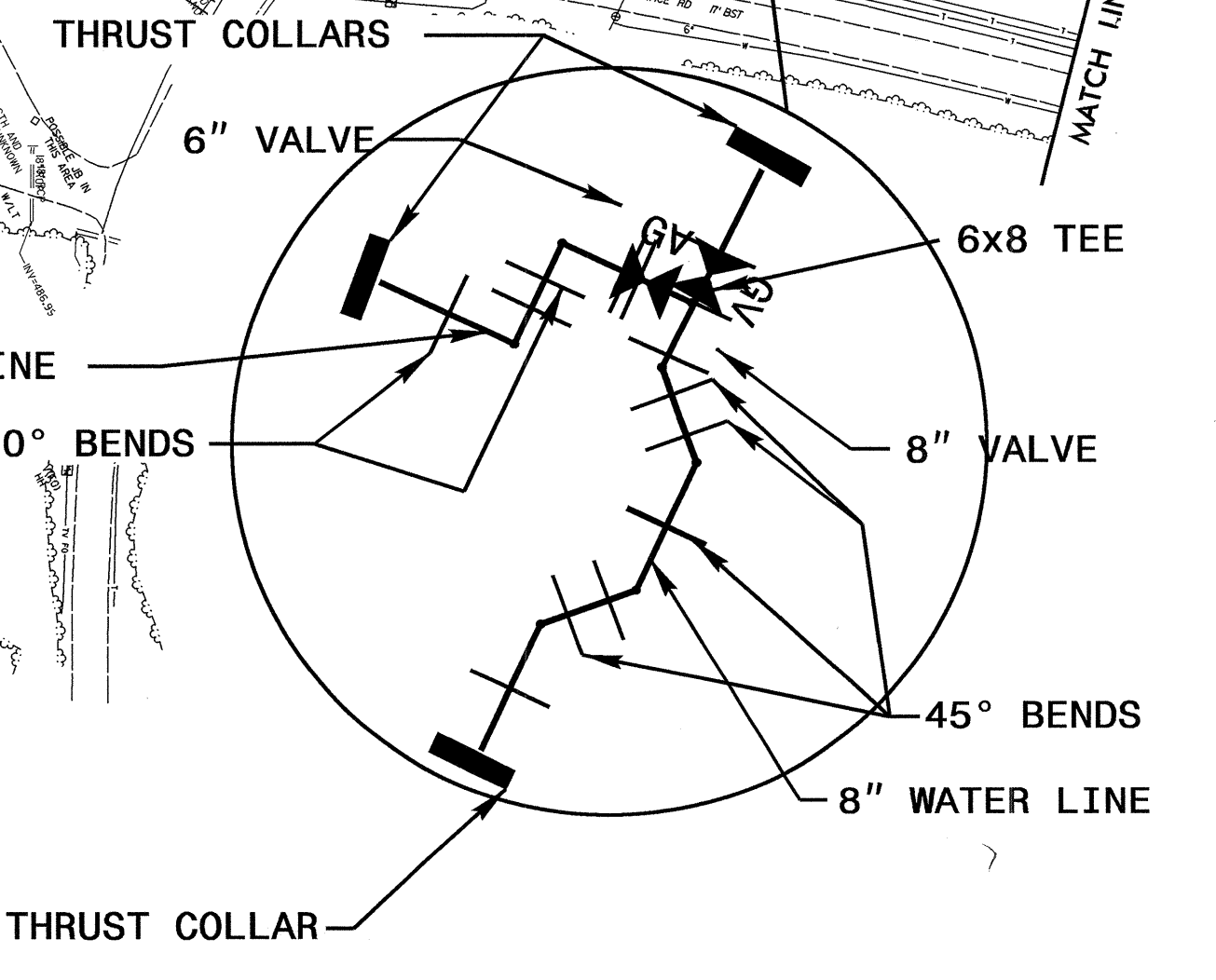
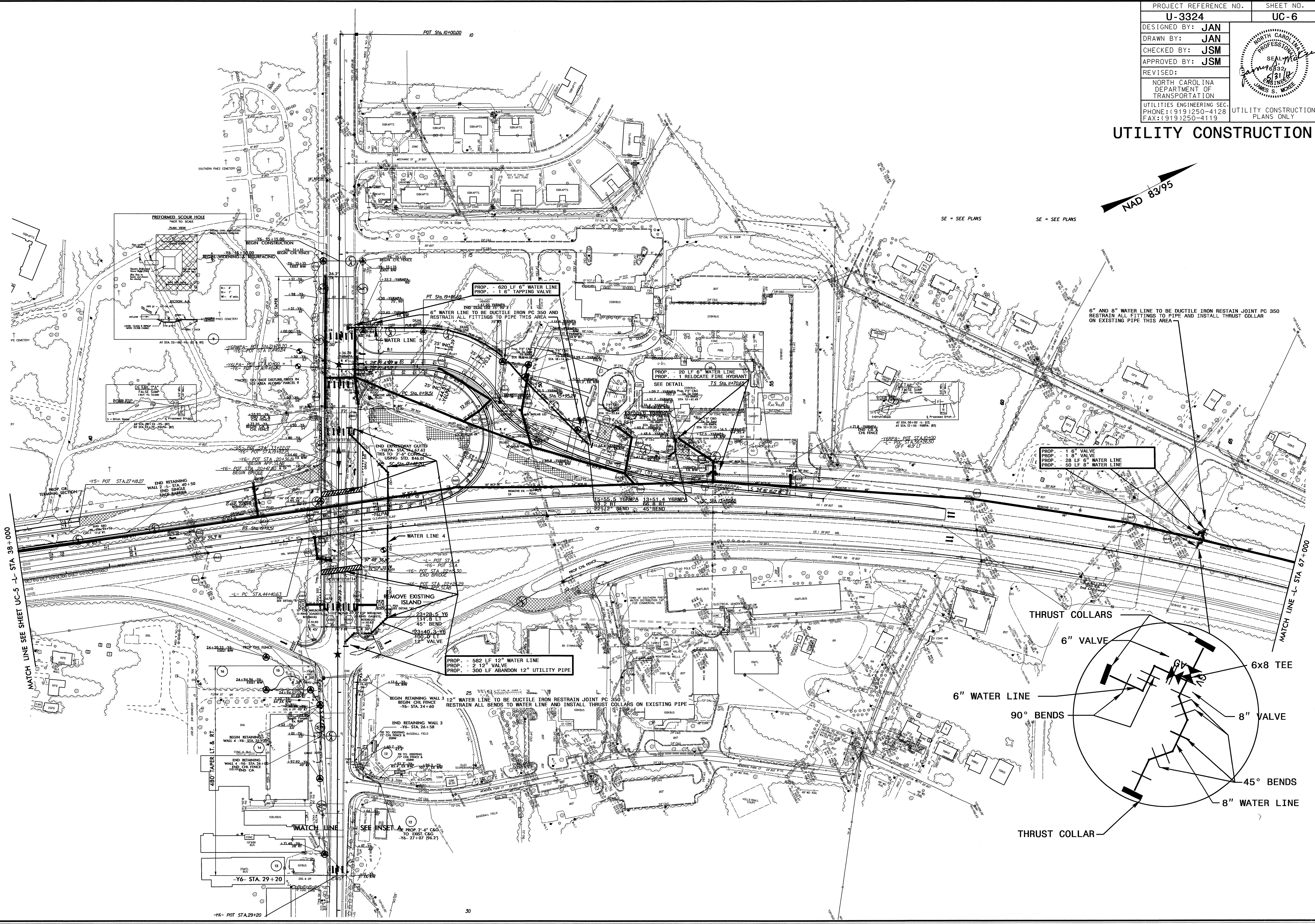
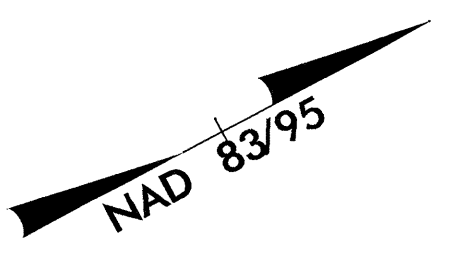
PROP. - 1 MASONRY DRAINAGE STRUCTURE
 PROP. - 1 FRAME AND COVER, STD 840.54
 PROP. - 50 LF 8" SANITARY GRAVITY SEWER

PROP. 106 LF 6" WATER LINE

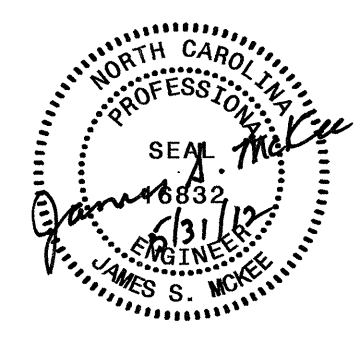


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UTILITY CONSTRUCTION



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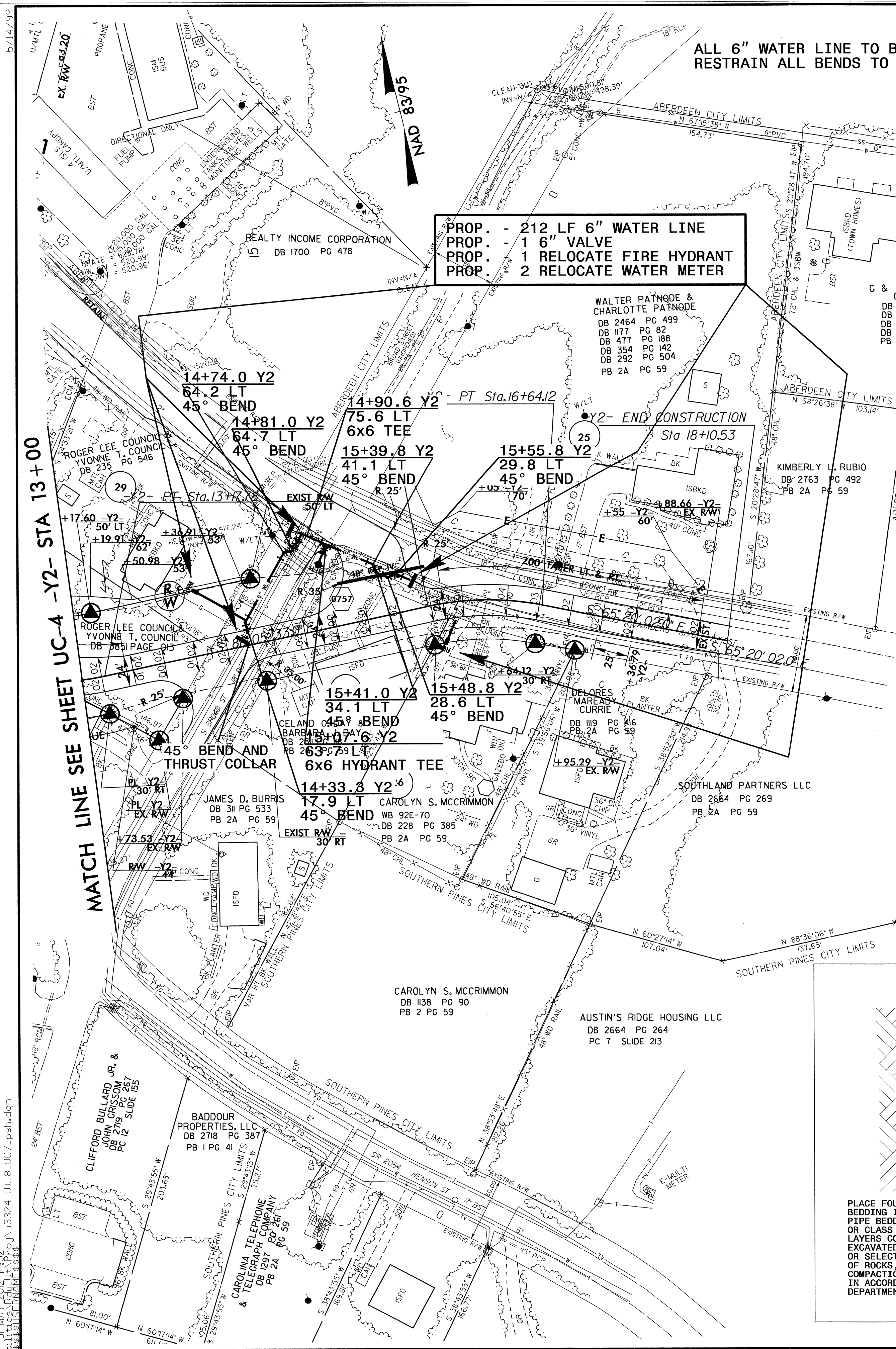
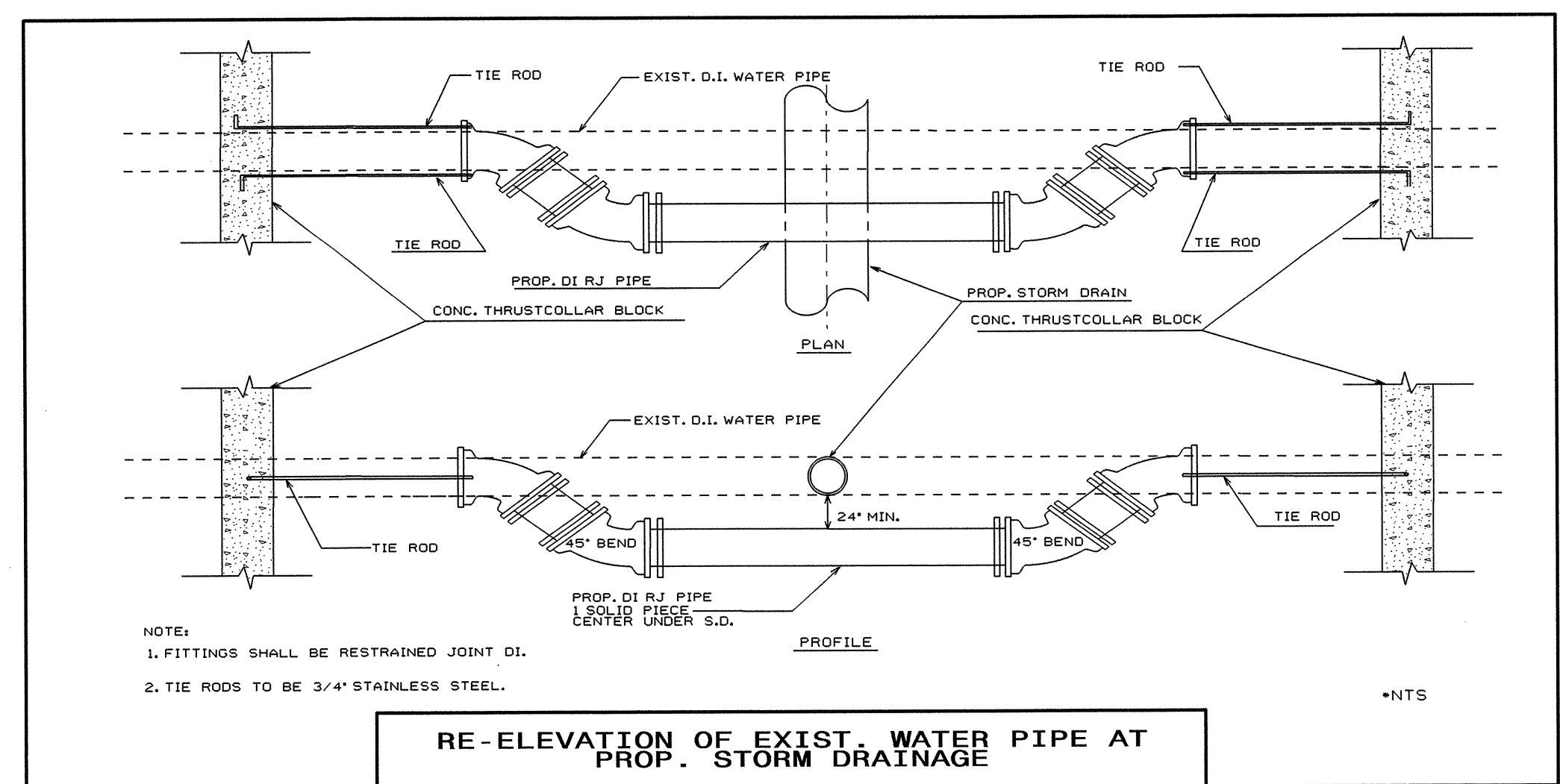
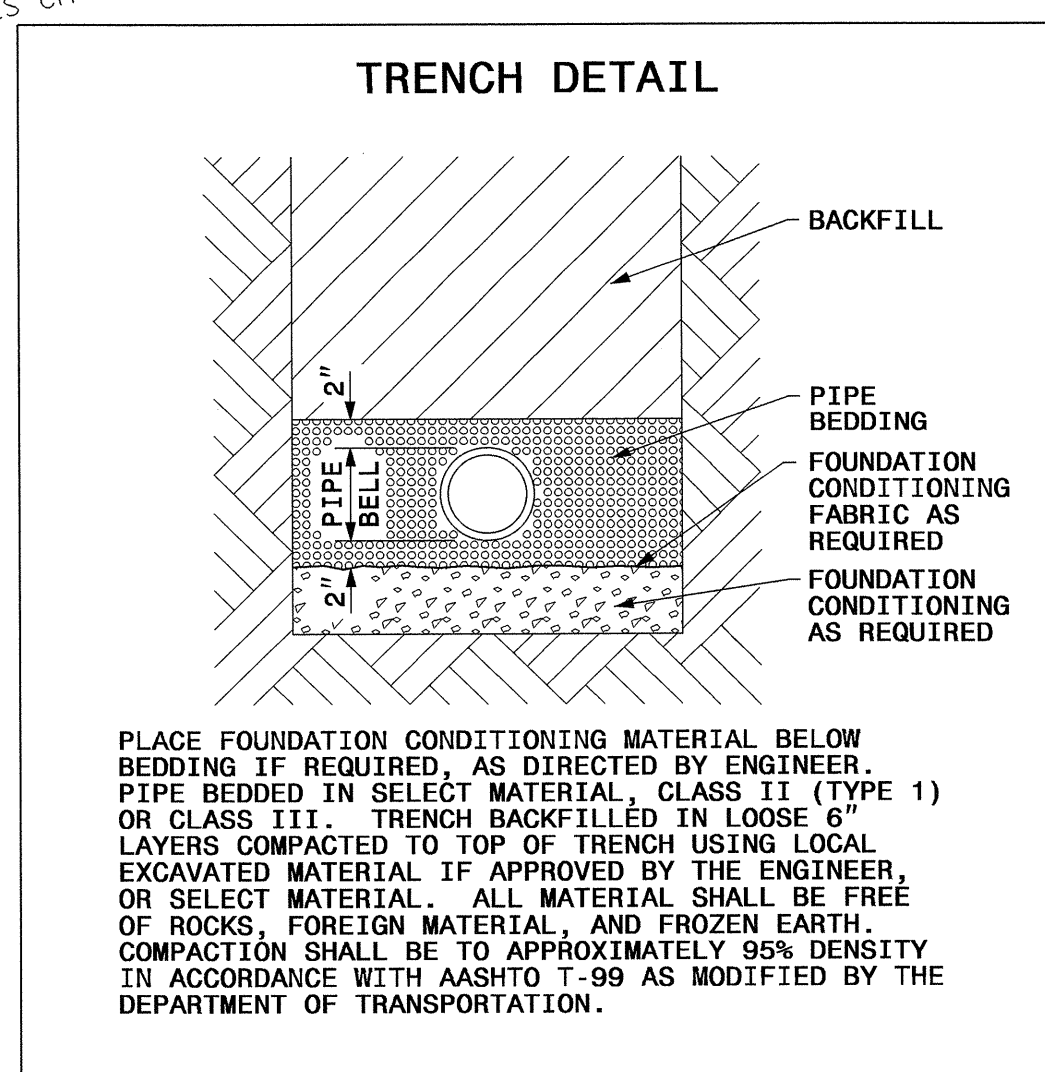
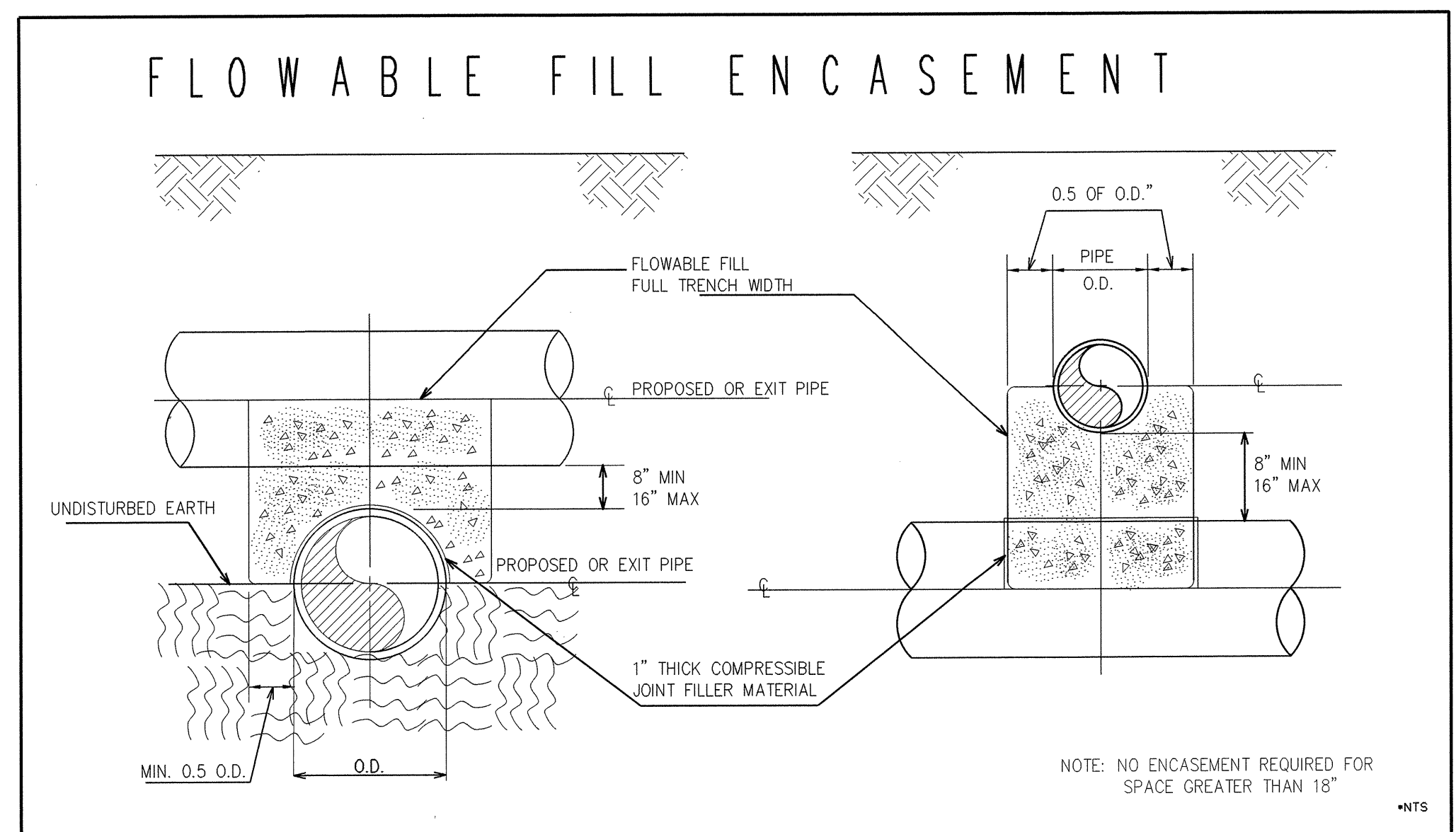
UTILITY CONSTRUCTION

**ALL 6" WATER LINE TO BE DUCTILE IRON RESTRAIN JOINT PC 350
 RESTRAIN ALL BENDS TO WATER LINE AND INSTALL THRUST COLLARS ON EXISTING PIPE THIS SHEET**

**PROP. - 212 LF 6" WATER LINE
 PROP. - 1 6" VALVE
 PROP. - 1 RELOCATE FIRE HYDRANT
 PROP. - 2 RELOCATE WATER METER**

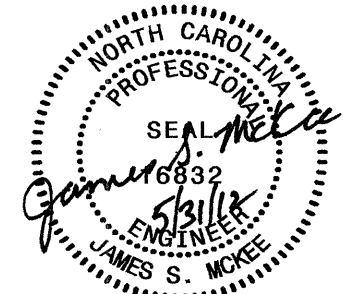
MAXIMUM TRENCH WIDTH AT TOP OF PIPE

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

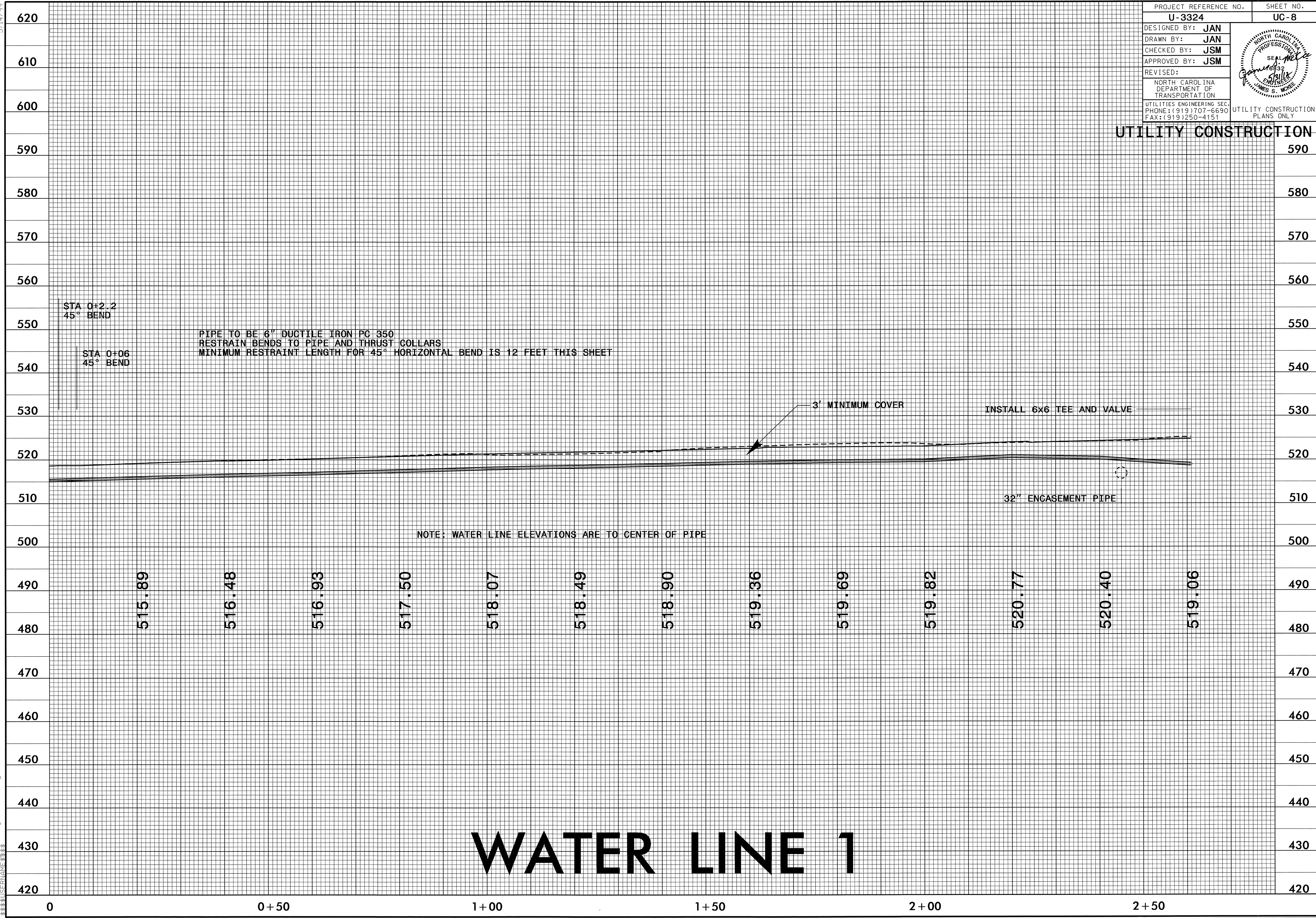


5/14/99
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 MATCH LINE SEE SHEET UC-4 -Y2- STA 13+00

5/14/99

PROJECT REFERENCE NO. U-3324	SHEET NO. UC-8
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



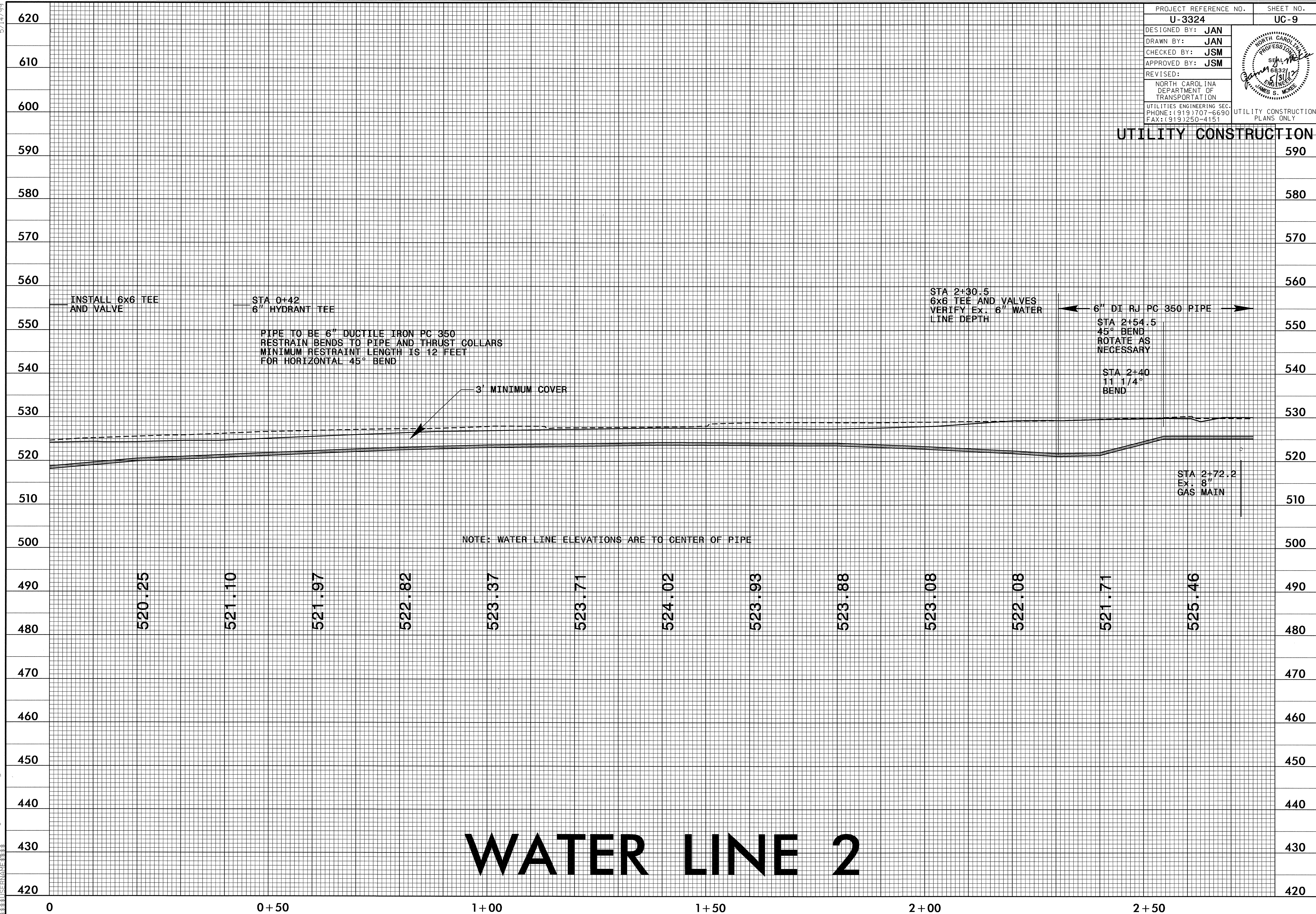
WATER LINE 1

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-3324	UC-9
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



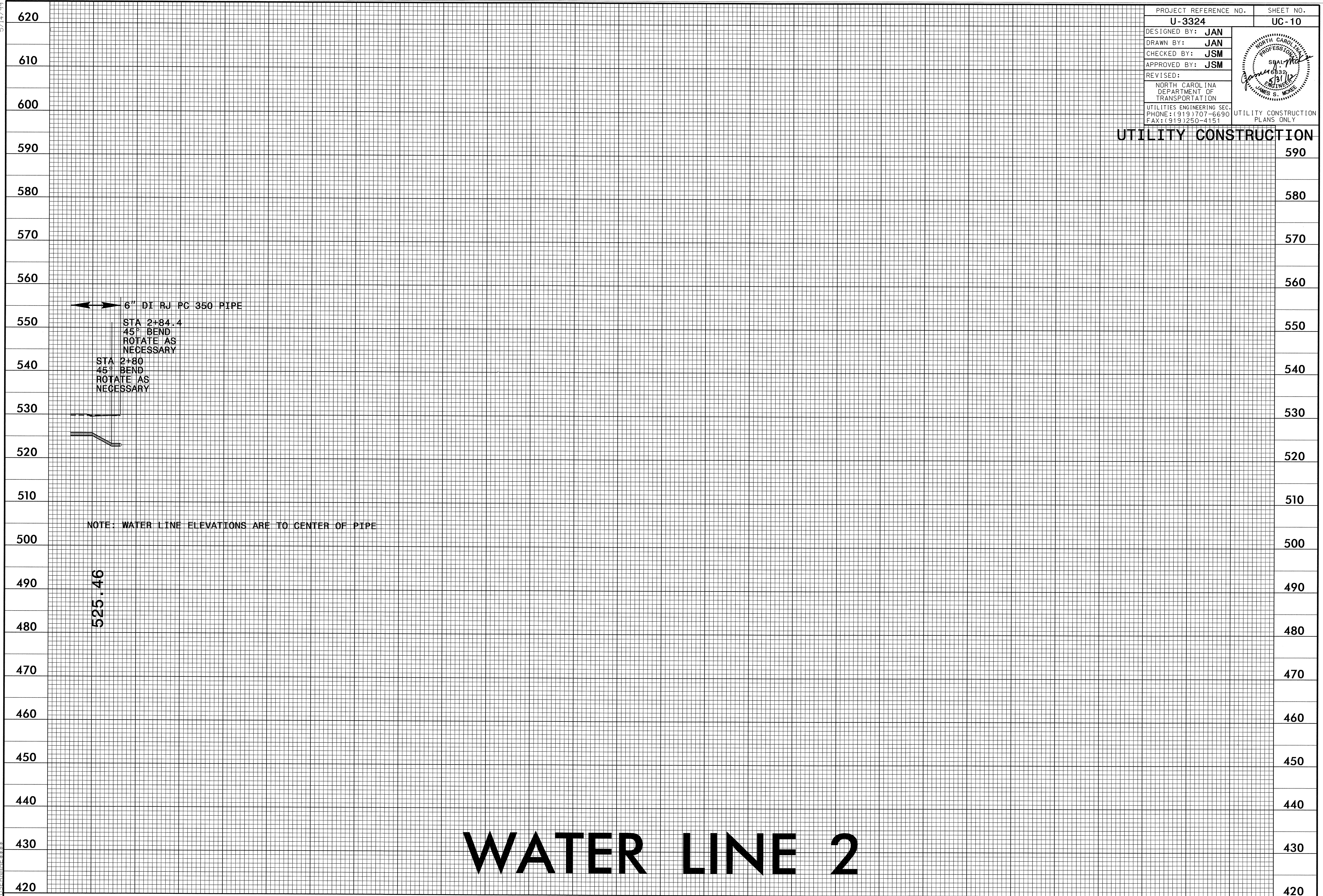
WATER LINE 2

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5/14/99

PROJECT REFERENCE NO. U-3324	SHEET NO. UC-10
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION



←→ 6" DI RJ PC 350 PIPE

STA 2+84.4
45° BEND
ROTATE AS
NECESSARY

STA 2+80
45° BEND
ROTATE AS
NECESSARY

NOTE: WATER LINE ELEVATIONS ARE TO CENTER OF PIPE

525.46

WATER LINE 2

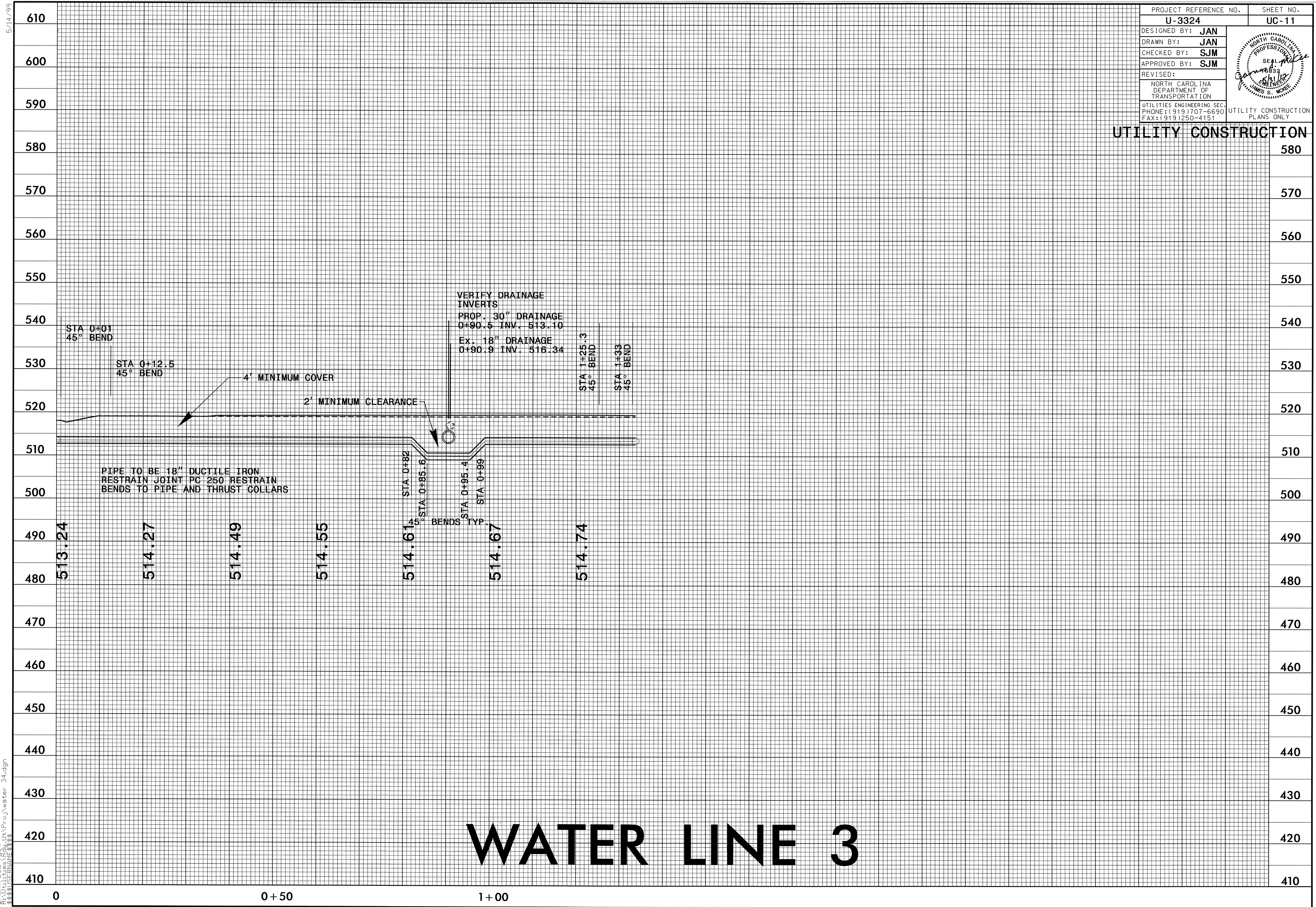
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-3324	UC-11
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: SJM	
APPROVED BY: SJM	
REVISIED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



PIPE TO BE 18" DUCTILE IRON
 RESTRAIN JOINT PC 250 RESTRAIN
 BENDS TO PIPE AND THRUST COLLARS

VERIFY DRAINAGE
 INVERTS
 PROP. 30" DRAINAGE
 0+90.5 INV. 513.10
 Ex. 18" DRAINAGE
 0+90.9 INV. 516.34

4' MINIMUM COVER

2' MINIMUM CLEARANCE

STA 0+82
 STA 0+85.6
 STA 0+95.4
 STA 0+99

STA 1+25.3
 45° BEND
 STA 1+33
 45° BEND


BENDS TYP

WATER LINE 3

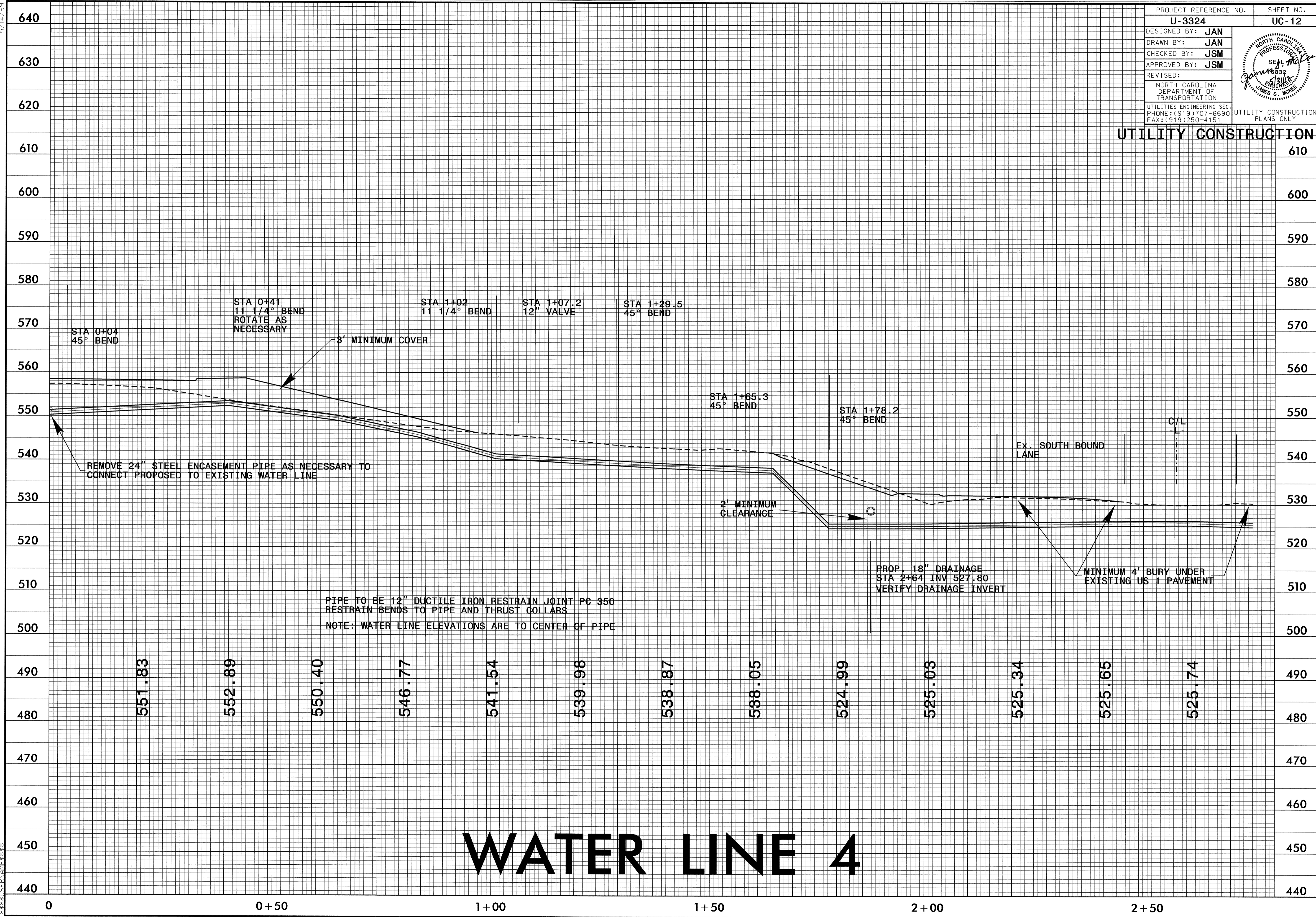
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0 0+50 1+00

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-3324	UC-12
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION




PIPE TO BE 12" DUCTILE IRON RESTRAIN JOINT PC 350
 RESTRAIN BENDS TO PIPE AND THRUST COLLARS
 NOTE: WATER LINE ELEVATIONS ARE TO CENTER OF PIPE

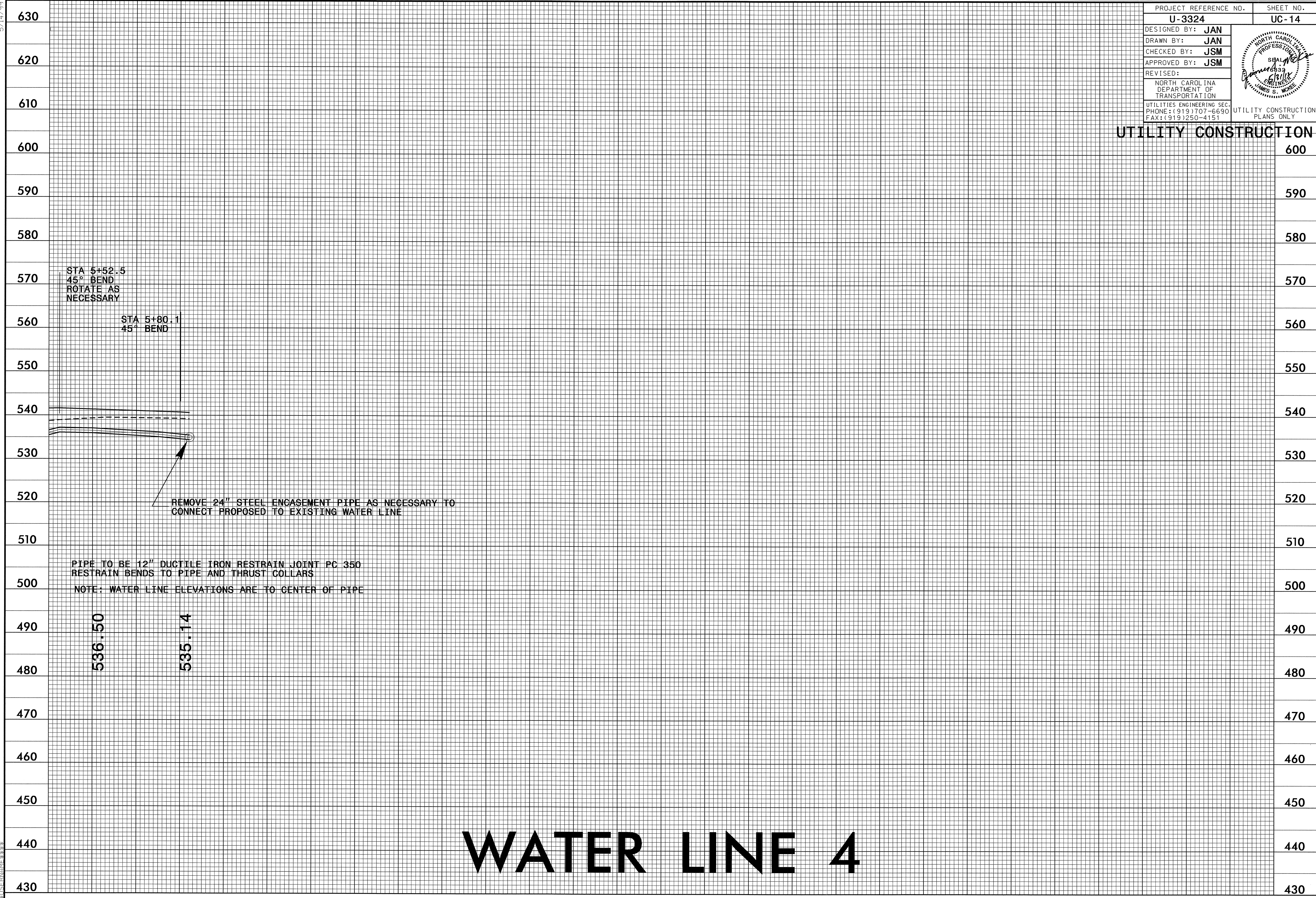
WATER LINE 4

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-3324	UC-14
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION



STA 5+52.5
45° BEND
ROTATE AS
NECESSARY

STA 5+80.1
45° BEND

REMOVE 24" STEEL ENCASEMENT PIPE AS NECESSARY TO
CONNECT PROPOSED TO EXISTING WATER LINE

PIPE TO BE 12" DUCTILE IRON RESTRAIN JOINT PC 350
RESTRAIN BENDS TO PIPE AND THRUST COLLARS

NOTE: WATER LINE ELEVATIONS ARE TO CENTER OF PIPE

536.50

535.14

WATER LINE 4

5+50

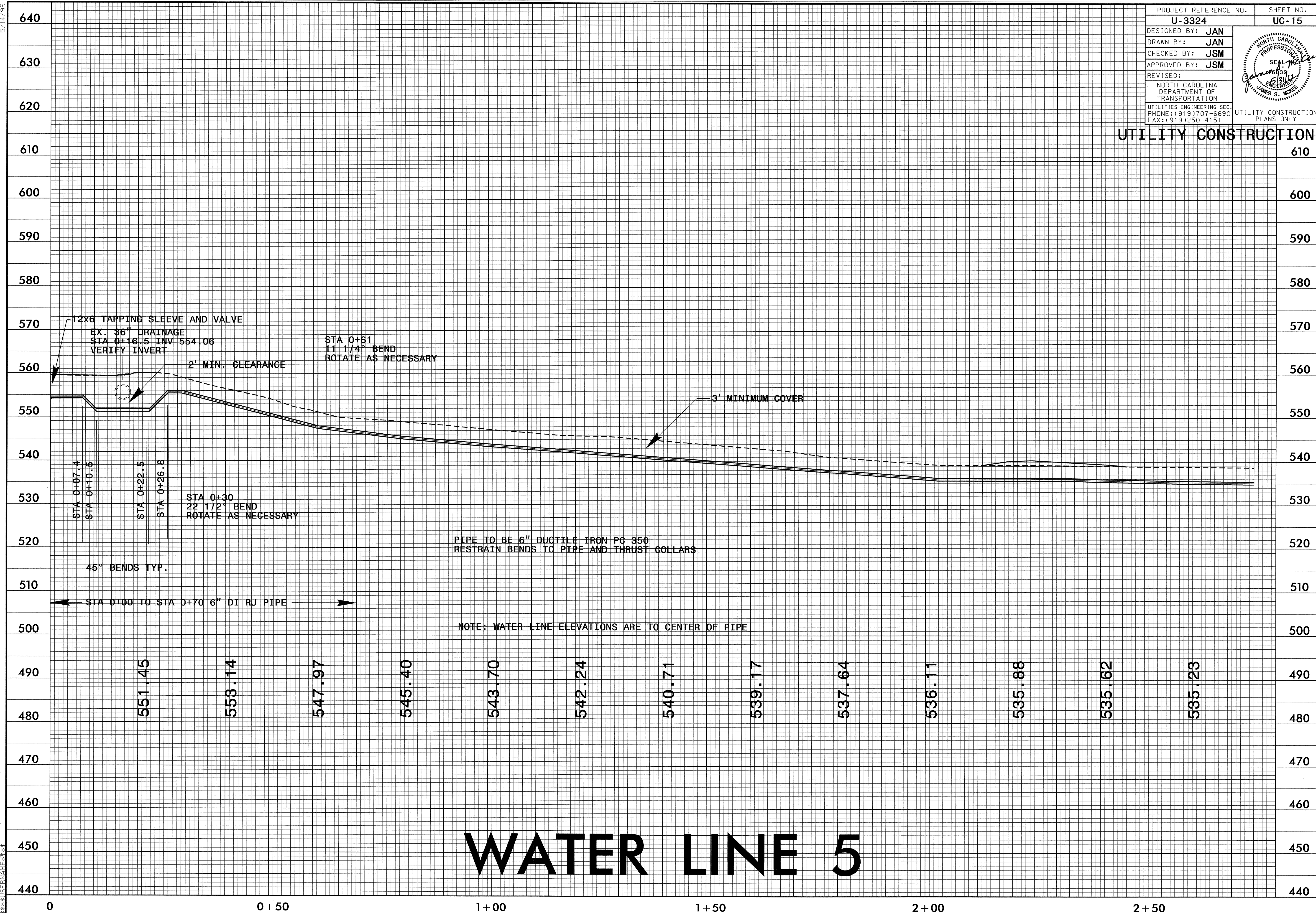
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-3324	UC-15
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	


UTILITY CONSTRUCTION



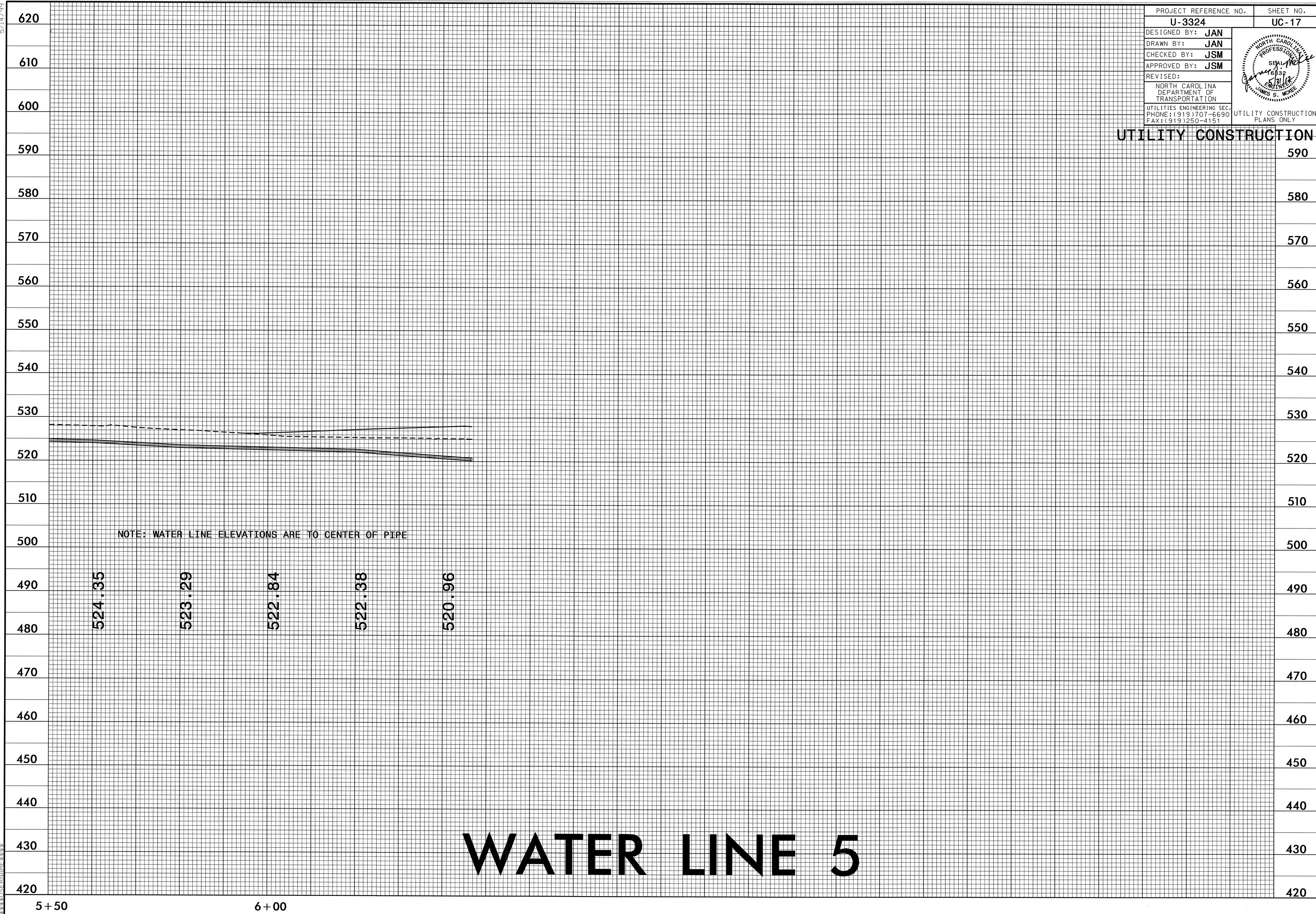
WATER LINE 5

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5/14/99

PROJECT REFERENCE NO. U-3324	SHEET NO. UC-17
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION



WATER LINE 5

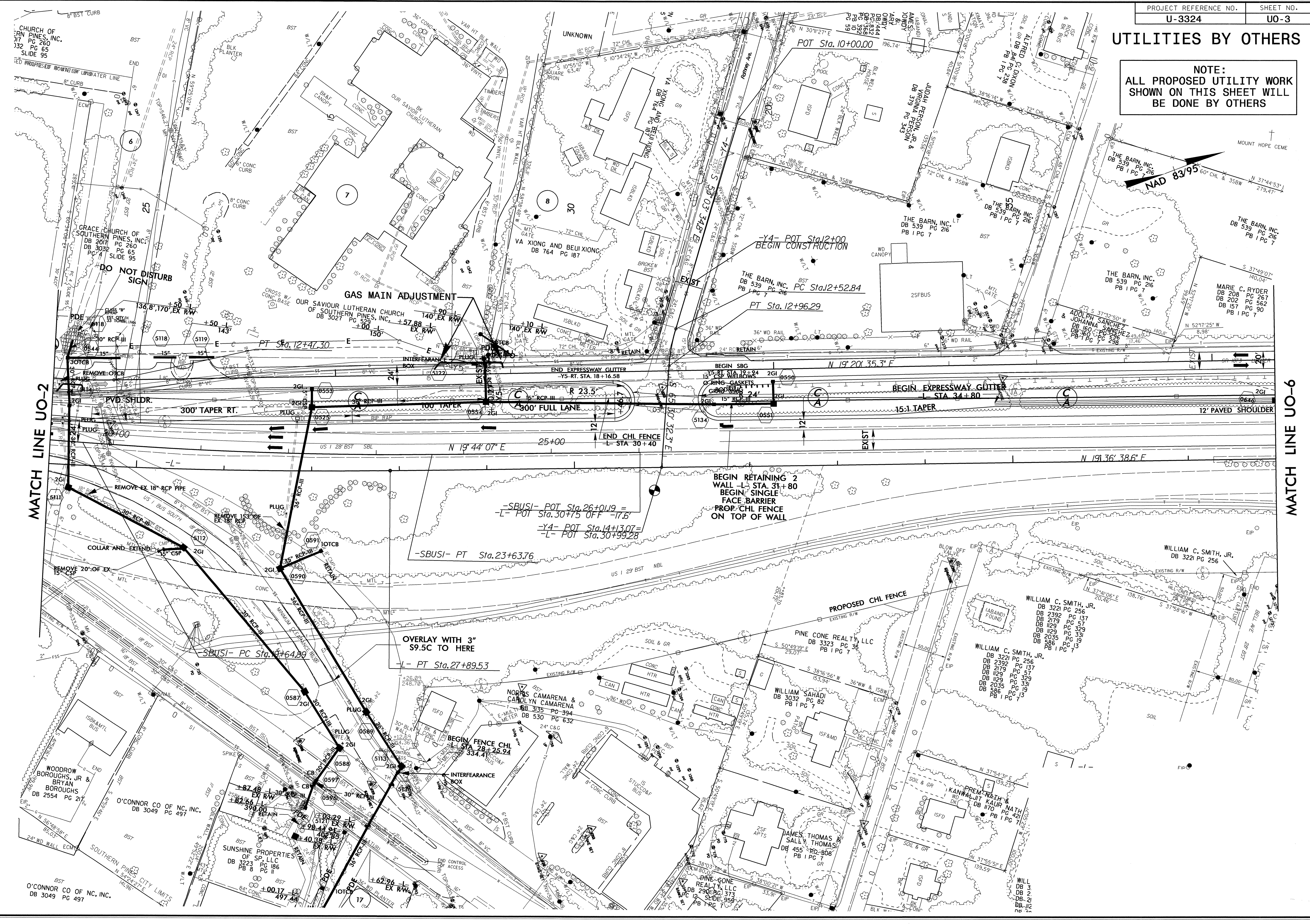
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5 + 50

6 + 00

UTILITIES BY OTHERS

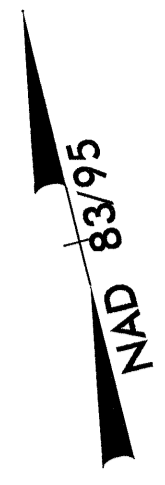
NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS



31-MAY-2012 15:54
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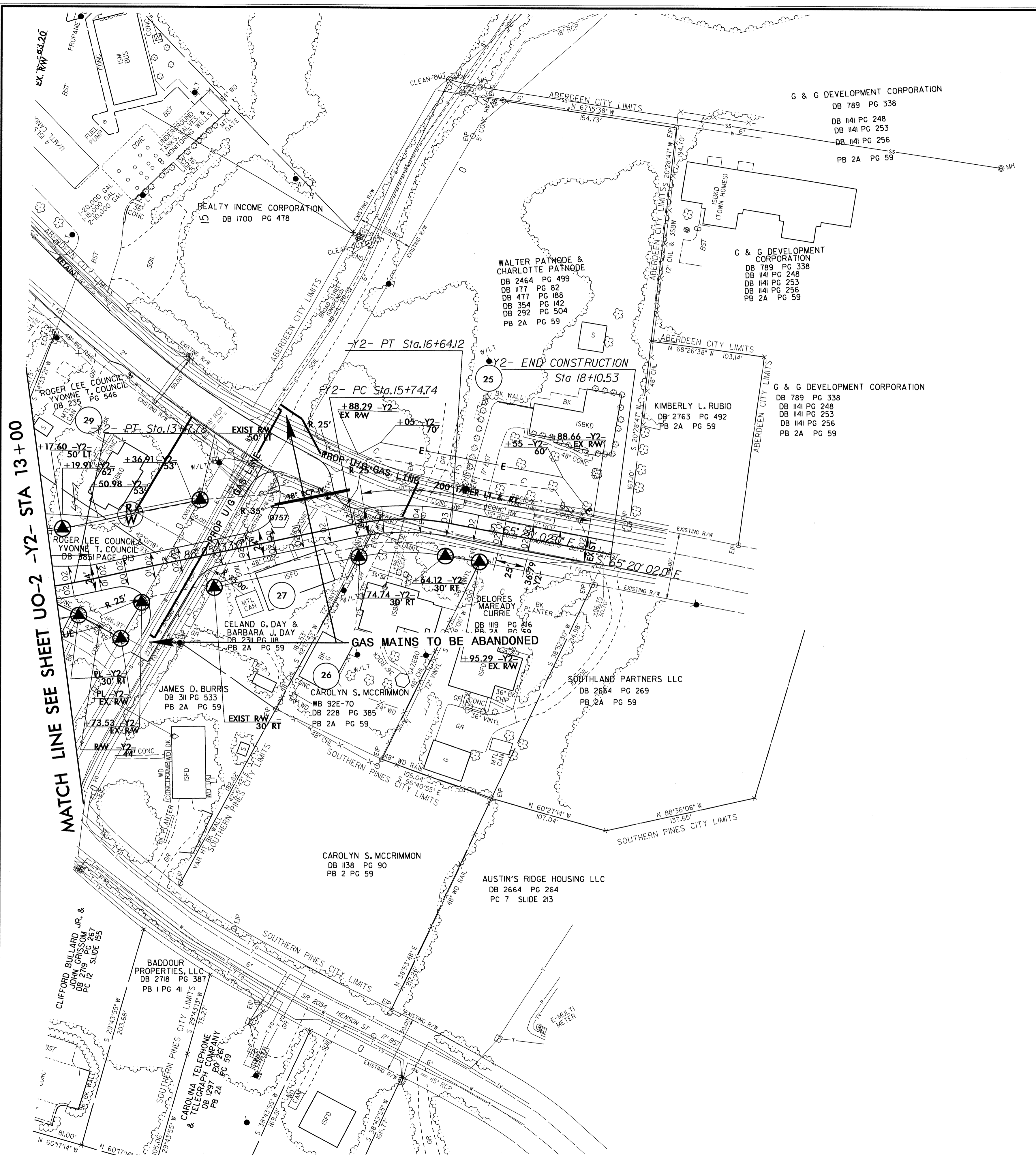
UTILITIES BY OTHERS

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



-Y2-

PI Sta 12+37.15	PI Sta 16+20.03
$\Delta = 43^{\circ} 08' 06.0''$ (LT)	$\Delta = 22^{\circ} 45' 31.0''$ (RT)
$D = 25^{\circ} 27' 53.2''$	$D = 25^{\circ} 27' 53.2''$
$L = 169.39'$	$L = 89.37'$
$T = 88.94'$	$T = 45.28'$
$R = 225.00'$	$R = 225.00'$
SE = SEE PLANS	SE = SEE PLANS



MATCH LINE SEE SHEET UO-2 -Y2- STA 13+00

31-MAY-2016 15:58
RA\U\3324\3324\U0-5.dgn