

TIP PROJECT: R-2307B / I-5717

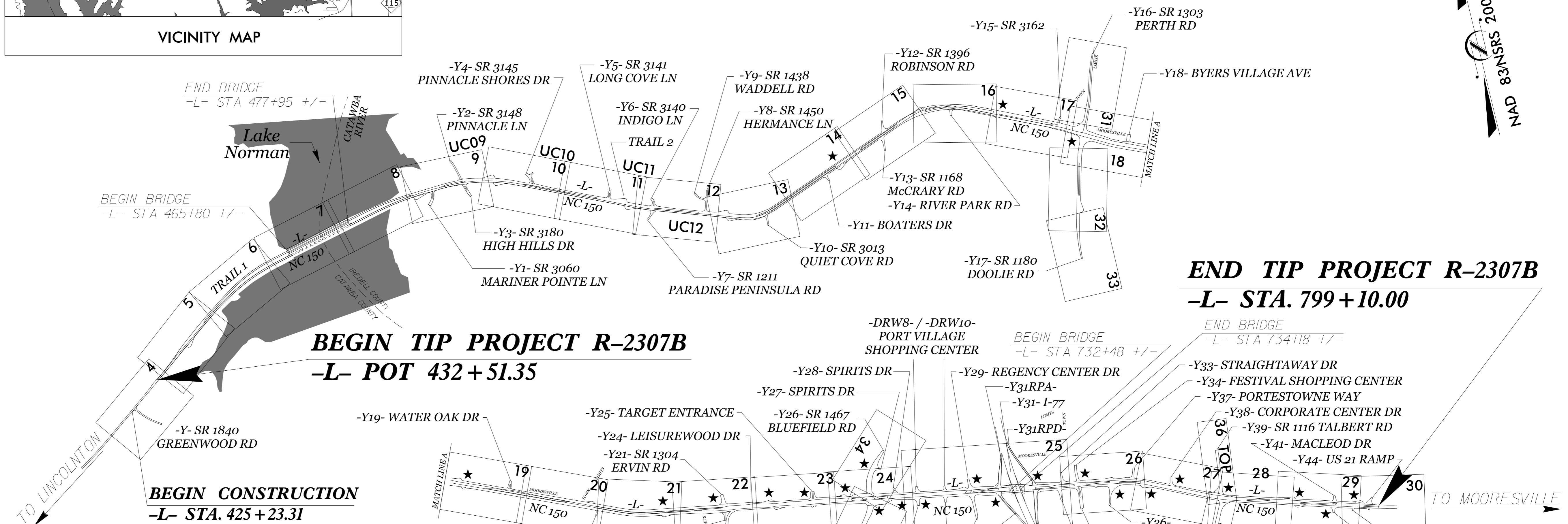
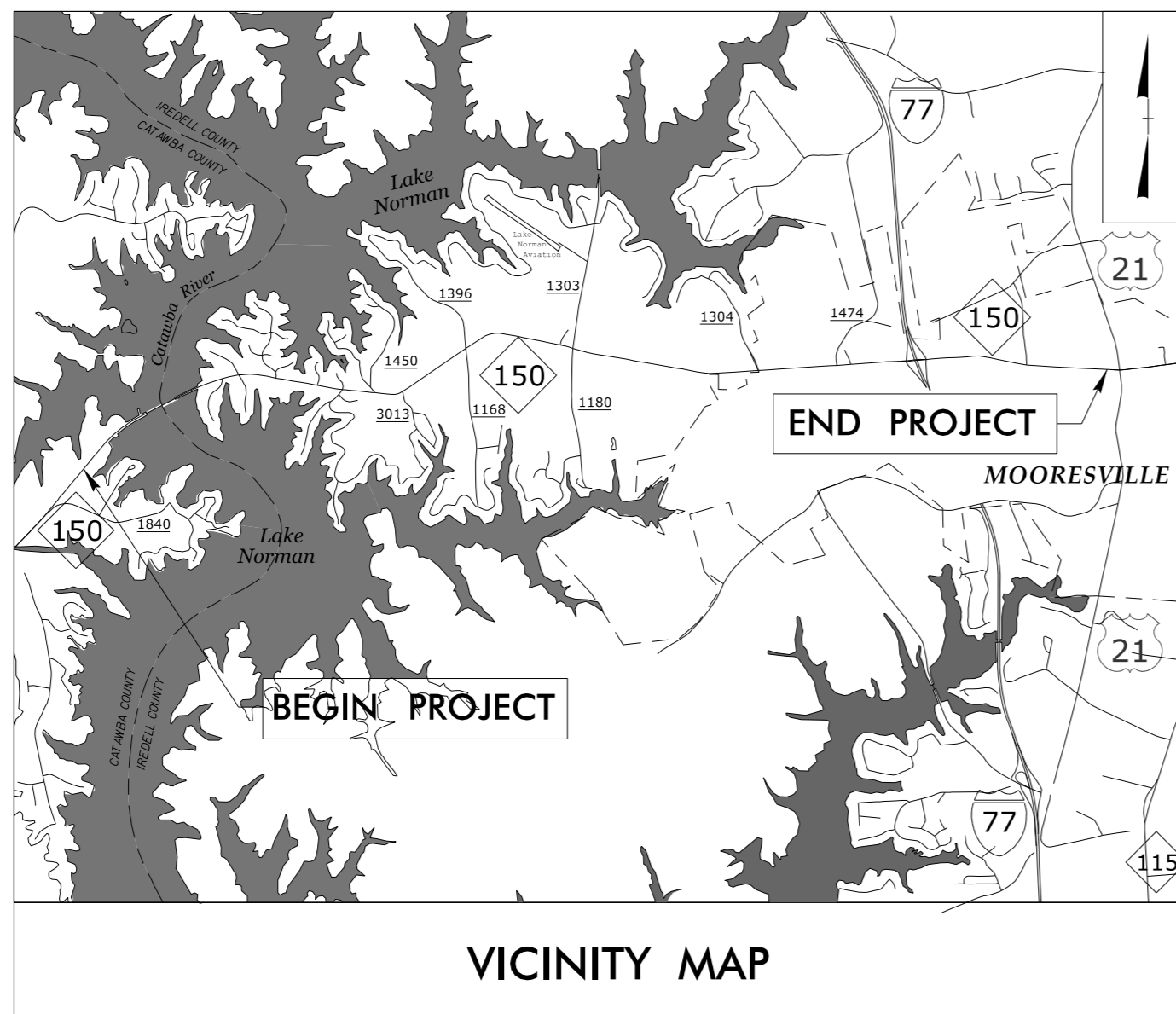
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
R-2307B / I-5717	UC-1

CATAWBA & IREDELL COUNTIES

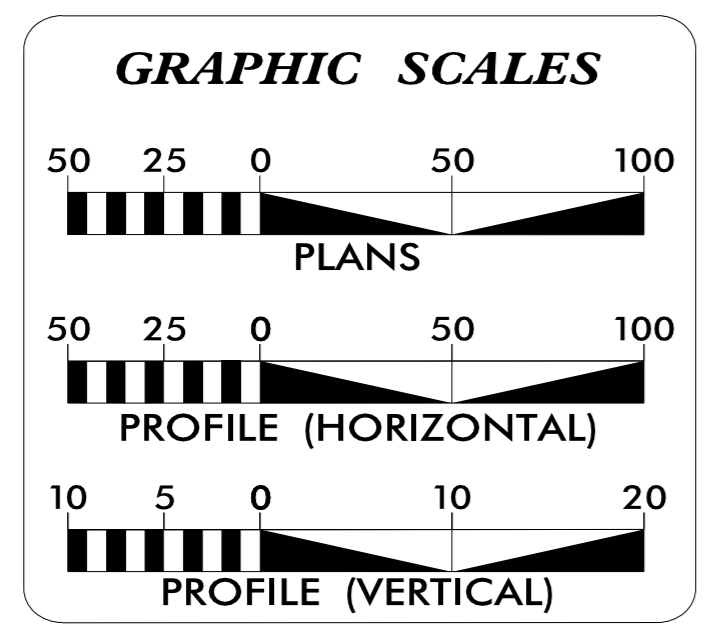
LOCATION: NC 150 FROM SR 1840 (GREENWOOD RD) IN CATAWBA COUNTY TO US 21 IN IREDELL COUNTY

TYPE OF WORK: WATER LINE RELOCATION



★ UPGRADE EXISTING OR NEW SIGNAL
A PORTION OF THIS PROJECT IS WITHIN THE CITY LIMITS OF MOORESVILLE.
PORTIONS OF THIS PROJECT HAVE CONTROL OF ACCESS
** 60 MPH FROM BEGINNING OF PROJECT TO WADDELL RD.
50 MPH FROM WADDELL RD TO END OF PROJECT.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD _____.



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC1	TITLE SHEET
UC2	UTILITY SYMBOLOGY
UC3A	NOTES
UC3B THRU UC3D	DETAILS
UC9 THRU UC12C	UTILITY CONSTRUCTION PLAN & PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT

(A) UTILITIES, INC.

PREPARED IN THE OFFICE OF

Dewberry 2610 WYCLIFF ROAD, SUITE 410
RALEIGH, NC 27607
919.881.9939
NCBELS: NO. F-0929

JOHN AKERS, PE	CONSULTANT CONTACT #1
PARROTT HOOD, PE	CONSULTANT CONTACT #2
JEFF WING, PE	CONSULTANT CONTACT #3

SEAL

8/21/2024

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

DONALD E. HAMPTON	UTILITIES REGIONAL ENGINEER
JONG-TAE YOON, PE	UTILITIES ENGINEER
AMY DUPREE YORK	UTILITIES AREA COORDINATOR
STEVEN C. TREXLER	UTILITIES COORDINATOR

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

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale *S.U.E. = *Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	-----
Property Monument	□ EDM
Parcel/Sequence Number	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- RLB
Proposed Wetland Boundary	----- RLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB
Existing Historic Property Boundary	----- HPB
Known Contamination Area: Soil	☠
Potential Contamination Area: Soil	☠
Known Contamination Area: Water	☠
Potential Contamination Area: Water	☠
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	----- JS
Buffer Zone 1	----- BZ 1
Buffer Zone 2	----- BZ 2
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	----- R W
Proposed Right of Way Line with Iron Pin and Cap Marker	△ R W
Proposed Right of Way Line with Concrete or Granite R/W Marker	▲ R W
Proposed Control of Access Line with Concrete CA Marker	△ C A
Existing Control of Access	△ C A
Proposed Control of Access	△ C A
Existing Easement Line	----- E
Proposed Temporary Construction Easement	----- E
Proposed Temporary Drainage Easement	----- TDE
Proposed Permanent Drainage Easement	----- PDE
Proposed Permanent Drainage / Utility Easement	----- DUE
Proposed Permanent Utility Easement	----- PUE
Proposed Temporary Utility Easement	----- TUE
Proposed Aerial Utility Easement	----- AUE
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- C
Proposed Slope Stakes Fill	----- F
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

Orchard	☼ ☼ ☼ ☼
Vineyard	□ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW
MINOR:	
Head and End Wall	----- CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ S
Storm Sewer	----- S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	●
H-Frame Pole	● ●
U/G Power Line LOS B (S.U.E.*)	----- P
U/G Power Line LOS C (S.U.E.*)	----- P
U/G Power Line LOS D (S.U.E.*)	----- P

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	⊠
U/G Telephone Cable LOS B (S.U.E.*)	----- T
U/G Telephone Cable LOS C (S.U.E.*)	----- T
U/G Telephone Cable LOS D (S.U.E.*)	----- T
U/G Telephone Conduit LOS B (S.U.E.*)	----- TC
U/G Telephone Conduit LOS C (S.U.E.*)	----- TC
U/G Telephone Conduit LOS D (S.U.E.*)	----- TC
U/G Fiber Optics Cable LOS B (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS C (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS D (S.U.E.*)	----- T FO

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	----- W
U/G Water Line LOS C (S.U.E.*)	----- W
U/G Water Line LOS D (S.U.E.*)	----- W
Above Ground Water Line	----- A/G Water

TV:

TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	⊠
U/G TV Cable LOS B (S.U.E.*)	----- TV
U/G TV Cable LOS C (S.U.E.*)	----- TV
U/G TV Cable LOS D (S.U.E.*)	----- TV
U/G Fiber Optic Cable LOS B (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS C (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS D (S.U.E.*)	----- TV FO

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	----- G
U/G Gas Line LOS C (S.U.E.*)	----- G
U/G Gas Line LOS D (S.U.E.*)	----- G
Above Ground Gas Line	----- A/G Gas

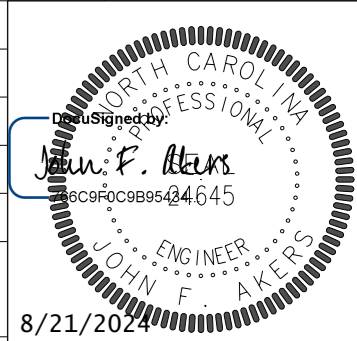
SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	----- SS
Above Ground Sanitary Sewer	----- A/G Sanitary Sewer
SS Forced Main Line LOS B (S.U.E.*)	----- FSS
SS Forced Main Line LOS C (S.U.E.*)	----- FSS
SS Forced Main Line LOS D (S.U.E.*)	----- FSS

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	----- ?UTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊠ UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

UTILITY CONSTRUCTION

PROJECT REFERENCE NO. R-2307B/I-5717	SHEET NO. UC-3A
DESIGNED BY: JFA	
DRAWN BY: ACB	
CHECKED BY: EPH	
APPROVED BY: JJW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

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 2024.

2. THE EXISTING UTILITIES BELONG TO UTILITIES, INC.

3. ALL WATER LINES SHALL BE INSTALLED IN COMPLIANCE WITH THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY 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.

UTILITY CONSTRUCTION

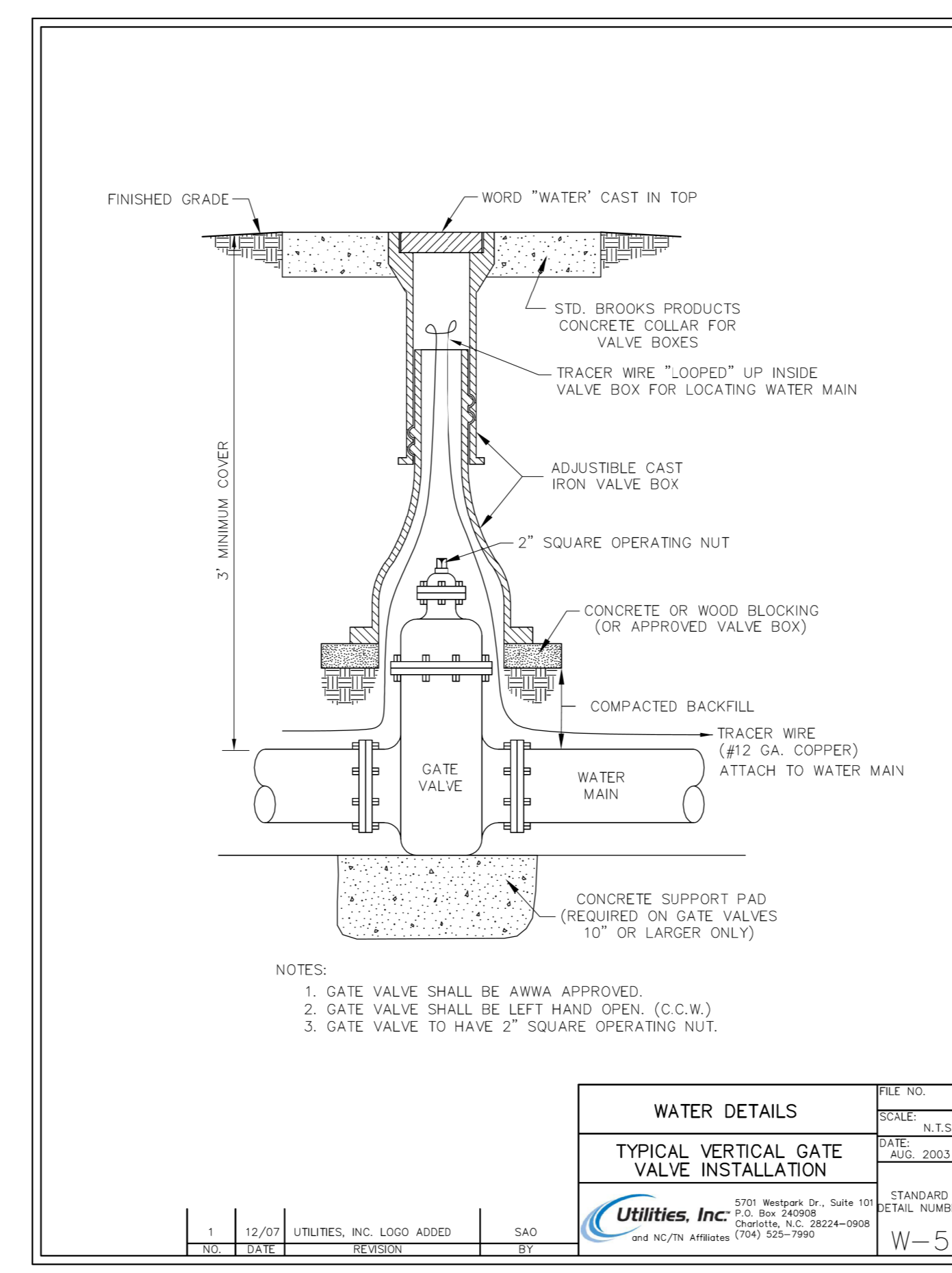
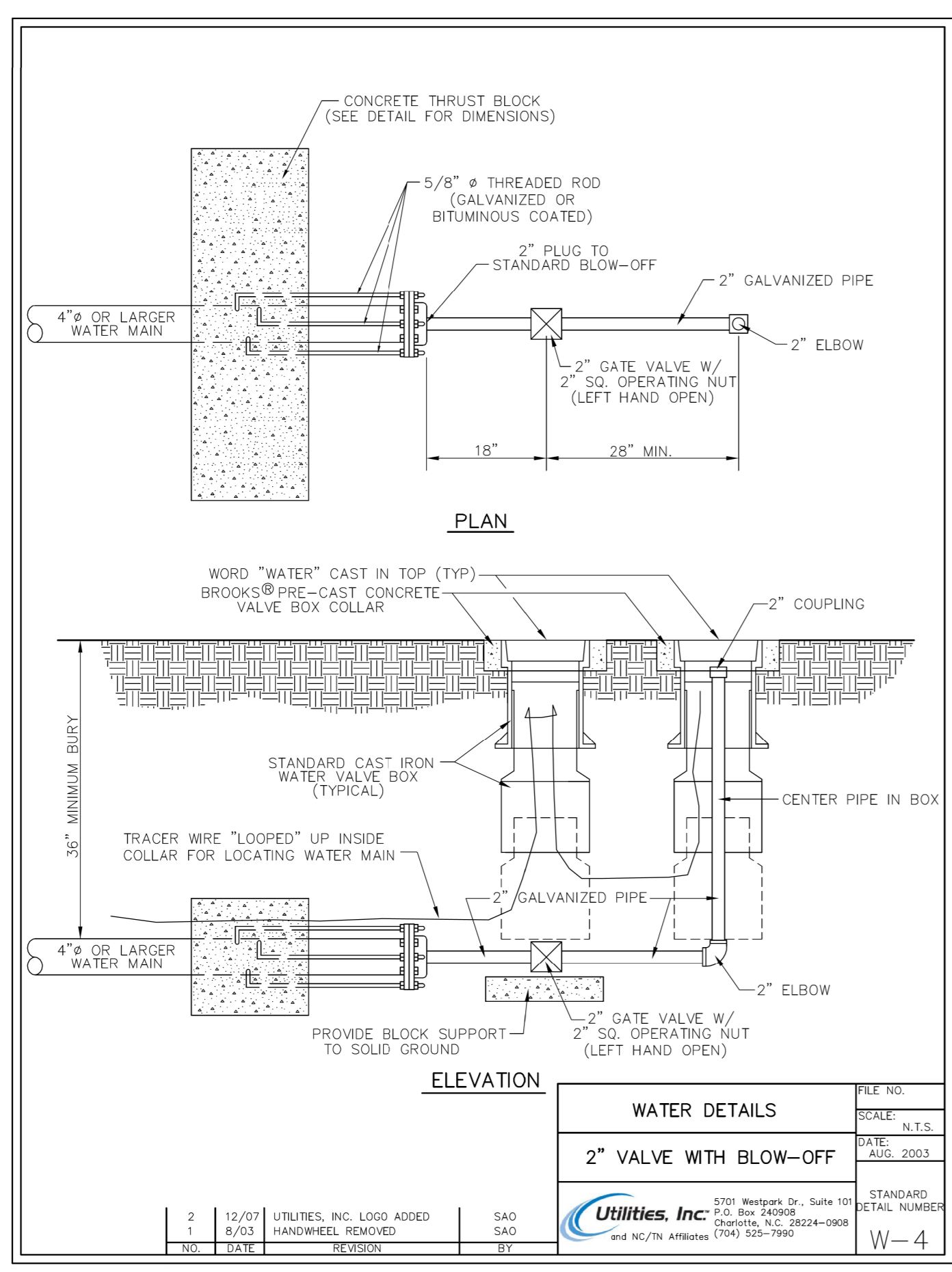
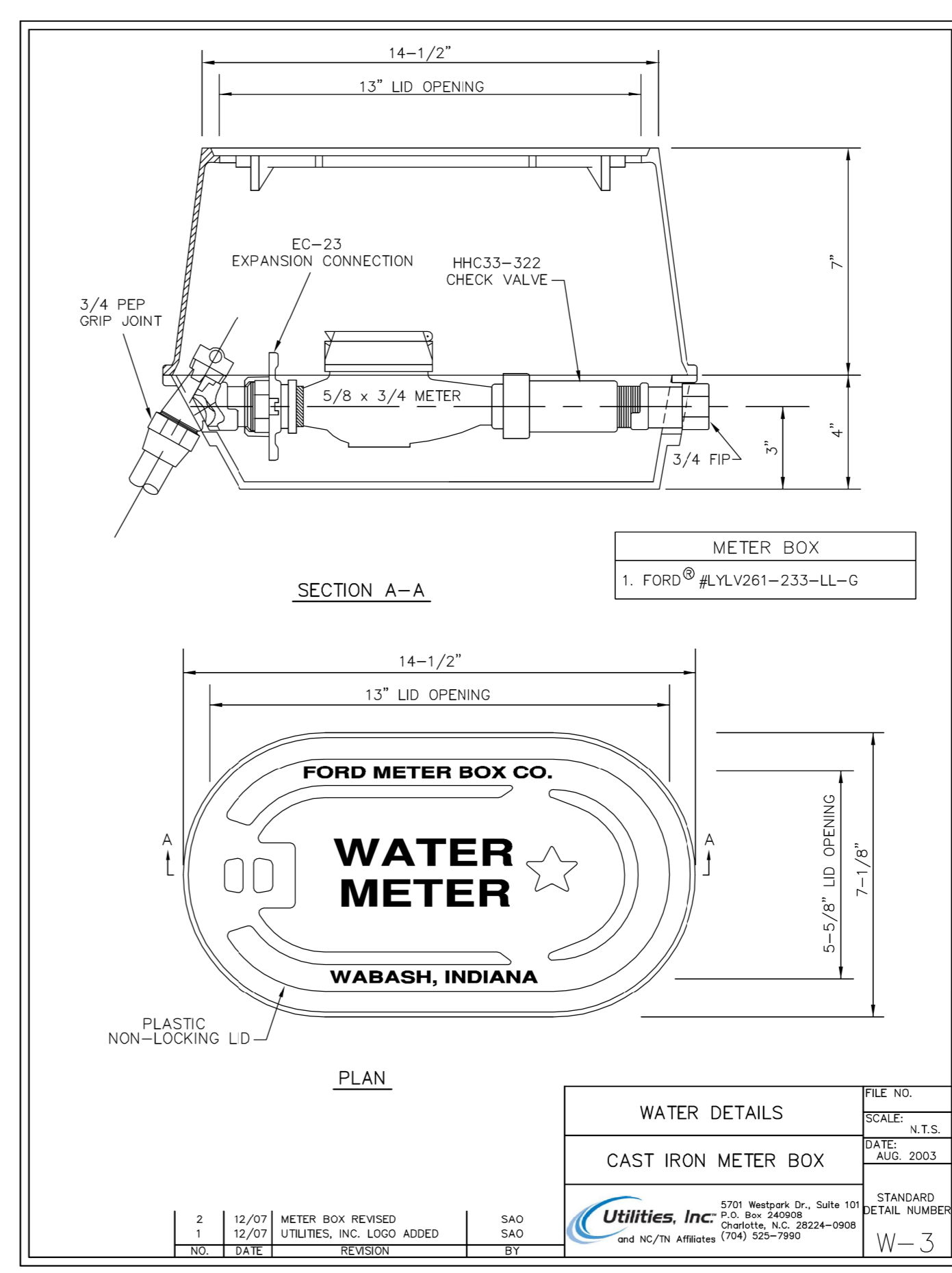
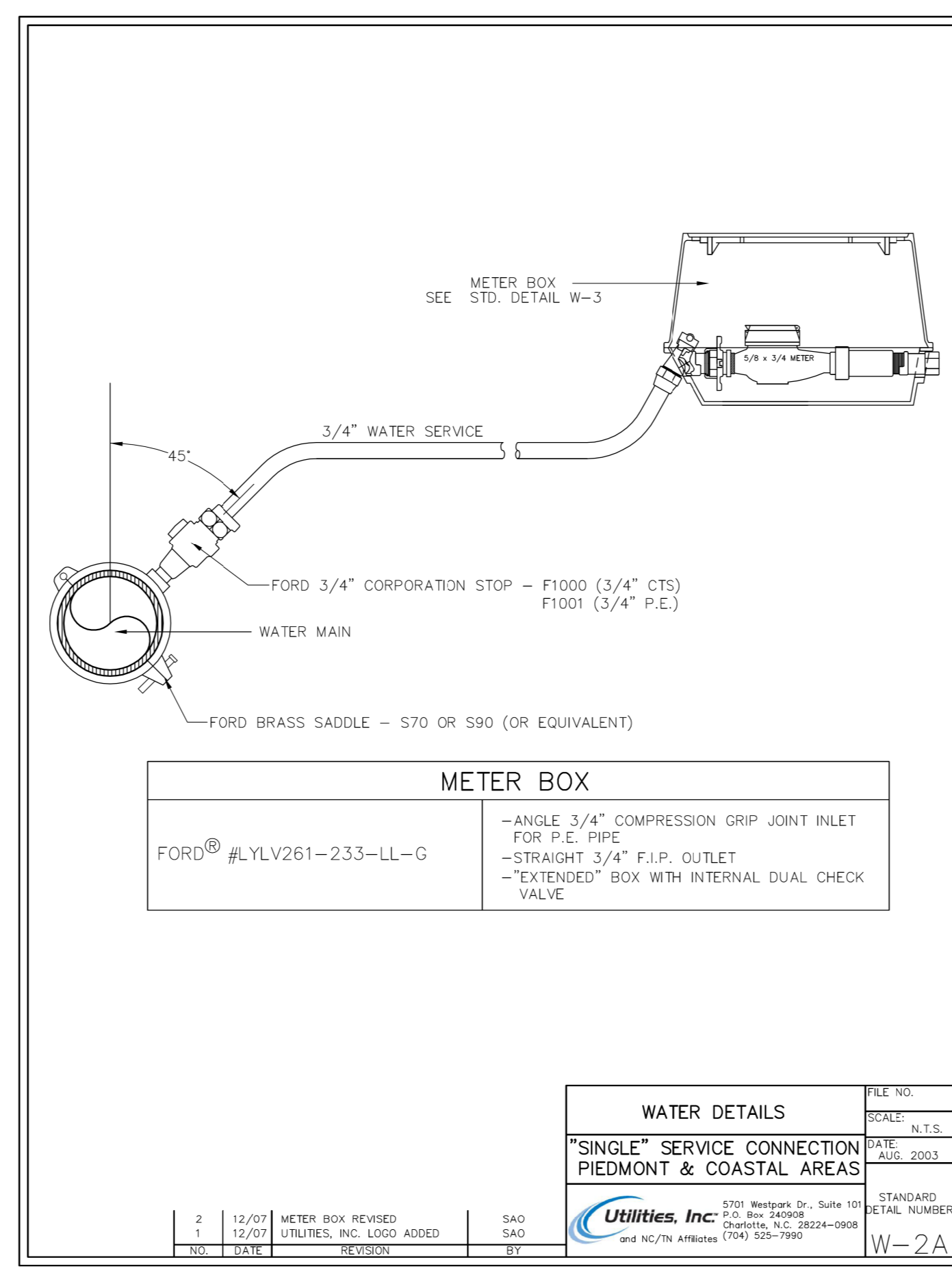
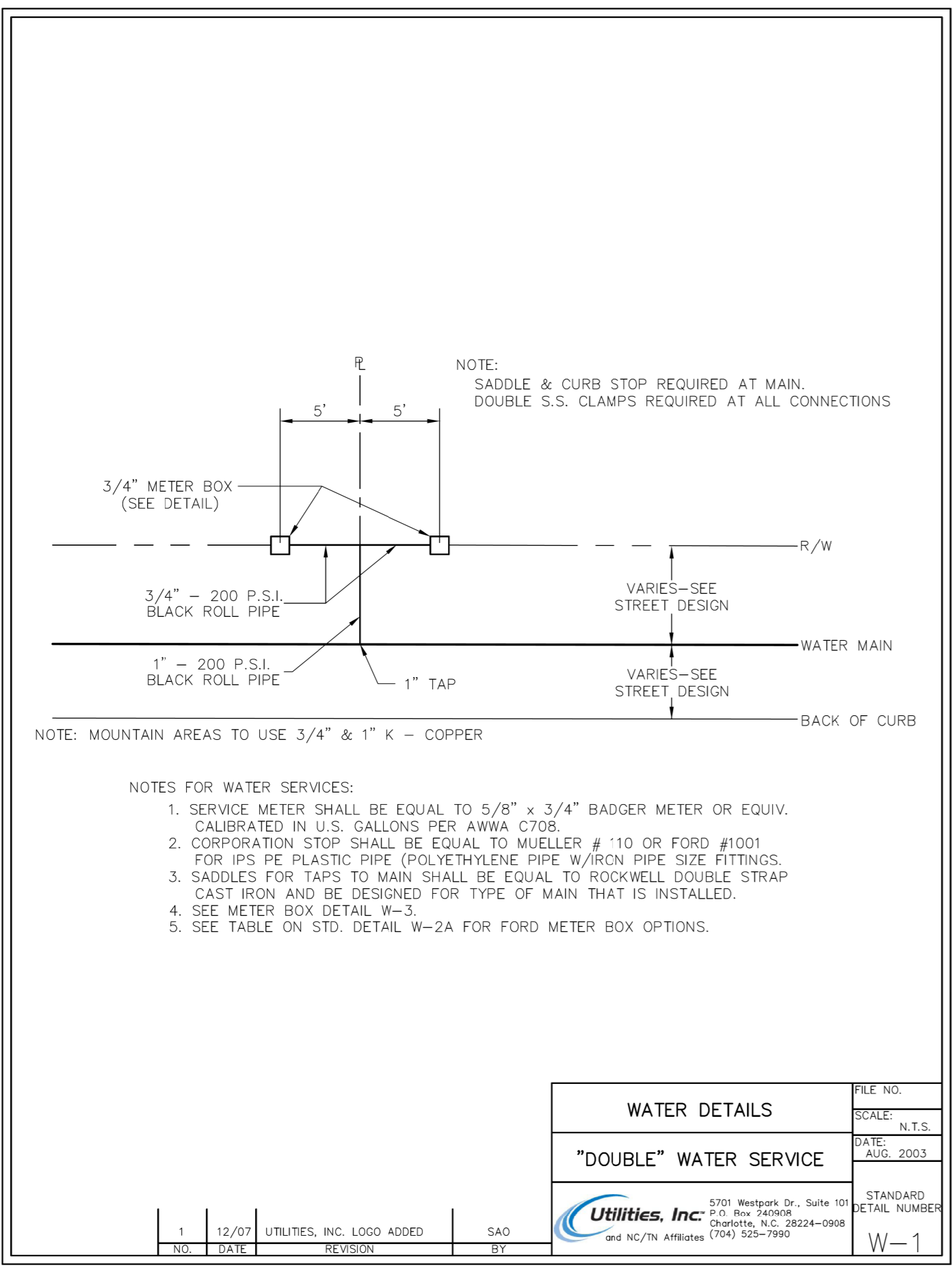
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

5/14/99

5/14/99

PROJECT REFERENCE NO. R-2307B/I-5717	SHEET NO. UC-3B
DESIGNED BY: JFA	
DRAWN BY: ACB	
CHECKED BY: EPH	
APPROVED BY: JJW	
REVISED:	8/21/2024
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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5/14/99

PLAN
UNDISTURBED EARTH
CONCRETE THRUST BLOCK
4" Ø & LARGER
BEND

ELEVATION
CONCRETE THRUST BLOCK
UNDISTURBED EARTH
4" Ø & LARGER
BEND

NOTE:
CARE SHALL BE TAKEN WHEN PLACING THRUST BLOCKS TO KEEP THE FITTING BOLTS FREE OF CONCRETE.

SIZE	11 1/4" BEND	22 1/2" BEND	45° BEND	90° BEND	TEE	PLUG
4	12	12	12	16	16	14
6	12	12	12	16	16	14
8	12	12	12	16	22	22
10	12	14	20	28	28	22
12	12	18	24	32	32	28
14	14	20	28	38	38	32
16	16	22	32	42	42	36
18	18	26	36	48	48	40
20	20	28	40	52	52	44
24	24	34	48	64	64	54
30	30	42	58	78	78	66
36	36	50	70	94	94	80
42	40	58	80	108	108	92
48	46	66	90	124	124	104

THRUST BLOCKS – DIMENSION "A"

FILE NO. _____
SCALE: N.T.S.
DATE: AUG. 2003
STANDARD DETAIL NUMBER _____

Utilities, Inc.
5701 Westpark Dr., Suite 101
P.O. Box 240908
Charlotte, N.C. 28224-0908
and NC/IN Affiliates (704) 525-7990

1 12/07 UTILITIES, INC. LOGO ADDED SAO
NO. DATE REVISION BY

W-6

PLAN
UNDISTURBED EARTH
CONCRETE THRUST BLOCK
4" Ø & LARGER
TEE

ELEVATION
CONCRETE THRUST BLOCK
UNDISTURBED EARTH
4" Ø & LARGER
TEE

NOTE:
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14	14	20	28	38	38	32
16	16	22	32	42	42	36
18	18	26	36	48	48	40
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1 12/07 UTILITIES, INC. LOGO ADDED SAO
NO. DATE REVISION BY

W-7

NOTE:
CARE SHALL BE TAKEN WHEN PLACING THRUST BLOCKS TO KEEP THE FITTING BOLTS FREE OF CONCRETE.

SIZE	11 1/4" BEND	22 1/2" BEND	45° BEND	90° BEND	TEE	PLUG
4	12	12	12	16	16	14
6	12	12	12	16	16	14
8	12	12	12	16	22	22
10	12	14	20	28	28	22
12	12	18	24	32	32	28
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16	16	22	32	42	42	36
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THRUST BLOCKS – DIMENSION "A"

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5701 Westpark Dr., Suite 101
P.O. Box 240908
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and NC/IN Affiliates (704) 525-7990

1 12/07 UTILITIES, INC. LOGO ADDED SAO
NO. DATE REVISION BY

W-8

PROJECT REFERENCE NO. R-2307B/I-5717	SHEET NO. UC-3C
DESIGNED BY: JFA	
DRAWN BY: ACB	
CHECKED BY: EPH	
APPROVED BY: JJW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 8/21/2024 UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

2'-0" MINIMUM
PUMPER NOZZLE TO FACE ROAD
FINISHED GRADE
ADJUSTABLE CAST IRON VALVE BOX (SEE DETAIL)
TEE CONNECTION TO WATER MAIN
6" GATE VALVE
5/8" Ø THREADED ROD GALV. OR BIT. COATED
THRUST BLOCK
CONCRETE SUPPORT PAD AND THRUST BLOCK
UNDISTURBED EARTH
ALL ENDS TO BE MECHANICAL JOINTS UNLESS OTHERWISE NOTED

NOTE: ALL VALVES SHALL BE LEFT HAND OPEN.

SIZE	11 1/4" BEND	22 1/2" BEND	45° BEND	90° BEND	TEE	PLUG
4	12	12	12	16	16	14
6	12	12	12	16	16	14
8	12	12	12	16	22	22
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1 12/07 UTILITIES, INC. LOGO ADDED SAO
NO. DATE REVISION BY

W-9

SHEETED TRENCH
OPEN TRENCH
12 GAUGE COPPER TRACER WIRE SECURED TO PIPE
SELECT MATERIAL COMPACTED IN 6" LIFTS
24" MAX 12" MIN
12" MAX 6" MIN
UNDISTURBED EARTH OR ROCK
NOTE: BELL HOLES NOT SHOWN

STANDARD EXCAVATION

NOTE:
MINIMUM 30" COVER IN PIEDMONT AND COASTAL AREAS
MINIMUM 40" COVER IN MOUNTAIN AREA
D.I.P. TO BE USED IF LESS THAN MINIMUM COVER

SIZE	11 1/4" BEND	22 1/2" BEND	45° BEND	90° BEND	TEE	PLUG
4	12	12	12	16	16	14
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and NC/IN Affiliates (704) 525-7990

1 12/07 UTILITIES, INC. LOGO ADDED SAO
NO. DATE REVISION BY

W-10

NOTES:

1. ALL PIPE AND FITTINGS SHALL BE APPROVED BY UTILITIES, INC.
2. CONTRACTOR TO COORDINATE NECESSARY OUTAGES WITH UTILITIES, INC. AND AFFECTED CUSTOMERS. MINIMUM 48 HOUR NOTICE REQUIRED.
3. NEW WATER MAIN TO BE SWABBED WITH A CHLORINE SOLUTION AND FLUSHED PRIOR TO PLACING INTO SERVICE.
4. ALL NEW FITTINGS AND PIPE TO BE RESTRAINED UTILIZING MEGA-LUGS, GRIP-RINGS OR APPROVED EQUAL.
5. ALL PIPE AND FITTINGS TO BE DUCTILE IRON.
6. UTILITIES, INC. PROJECT COORDINATOR TO BE PRESENT DURING WORK.
7. BACKFILL AND COMPACT TO UTILITIES, INC. OR N.C.D.O.T. REQUIREMENTS.
8. PROVIDE STONE BEDDING (NO. 5 OR NO. 57 STONE) TO SUPPORT RELOCATED WATER MAIN AND/OR NEW STORM DRAIN, AS APPROVED BY UTILITIES, INC. PROJECT COORDINATOR.
9. MJ RESTRAINTS NOT ALLOWED ON PVC PIPE.
10. DIMENSIONS ARE GIVEN AS GENERAL GUIDANCE. EXACT DIMENSIONS ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS AND AS DIRECTED BY UTILITIES, INC.

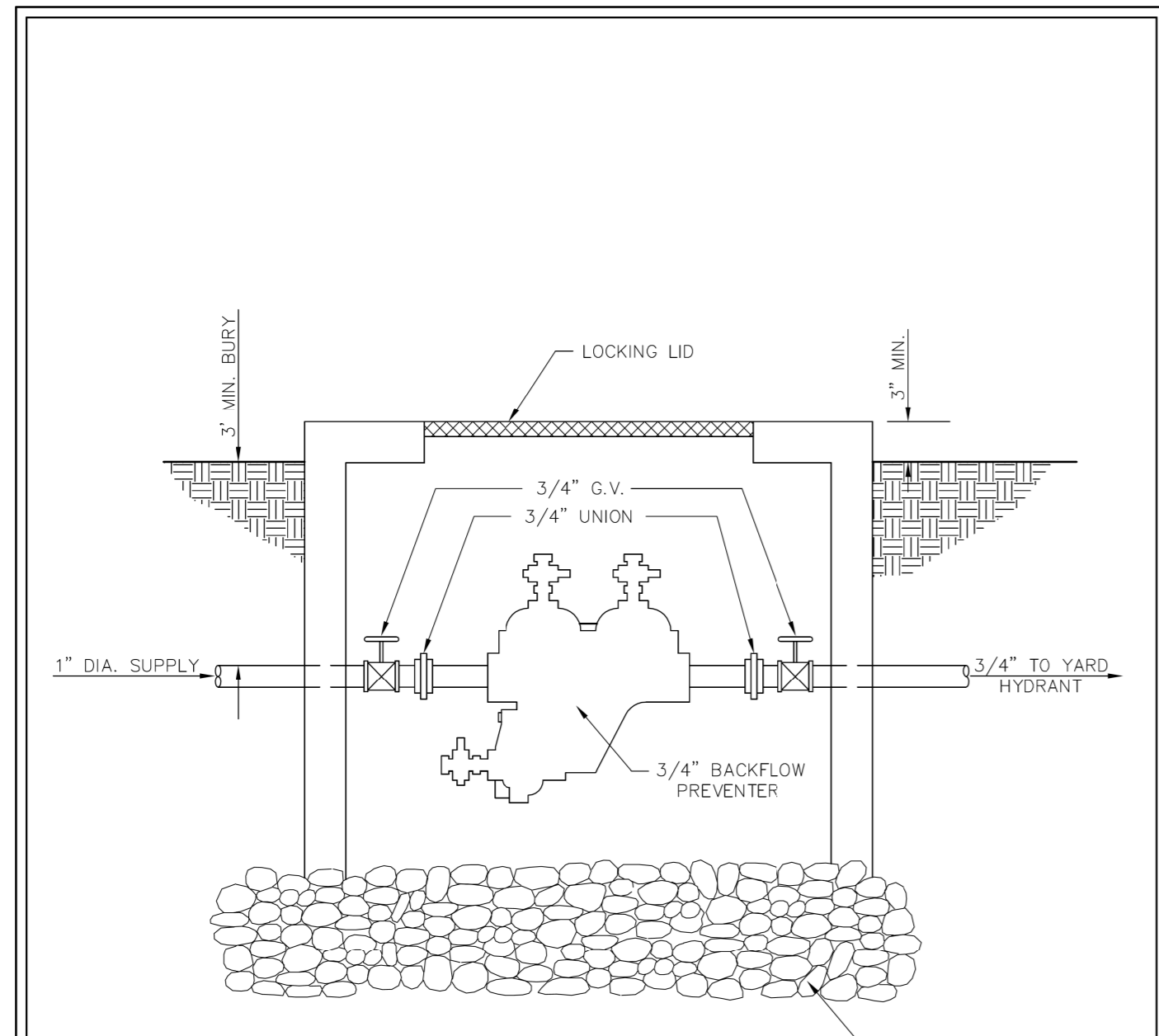
VERTICAL RELOCATION

HORIZONTAL RELOCATION

PIPE RELOCATION DETAIL
N.T.S.

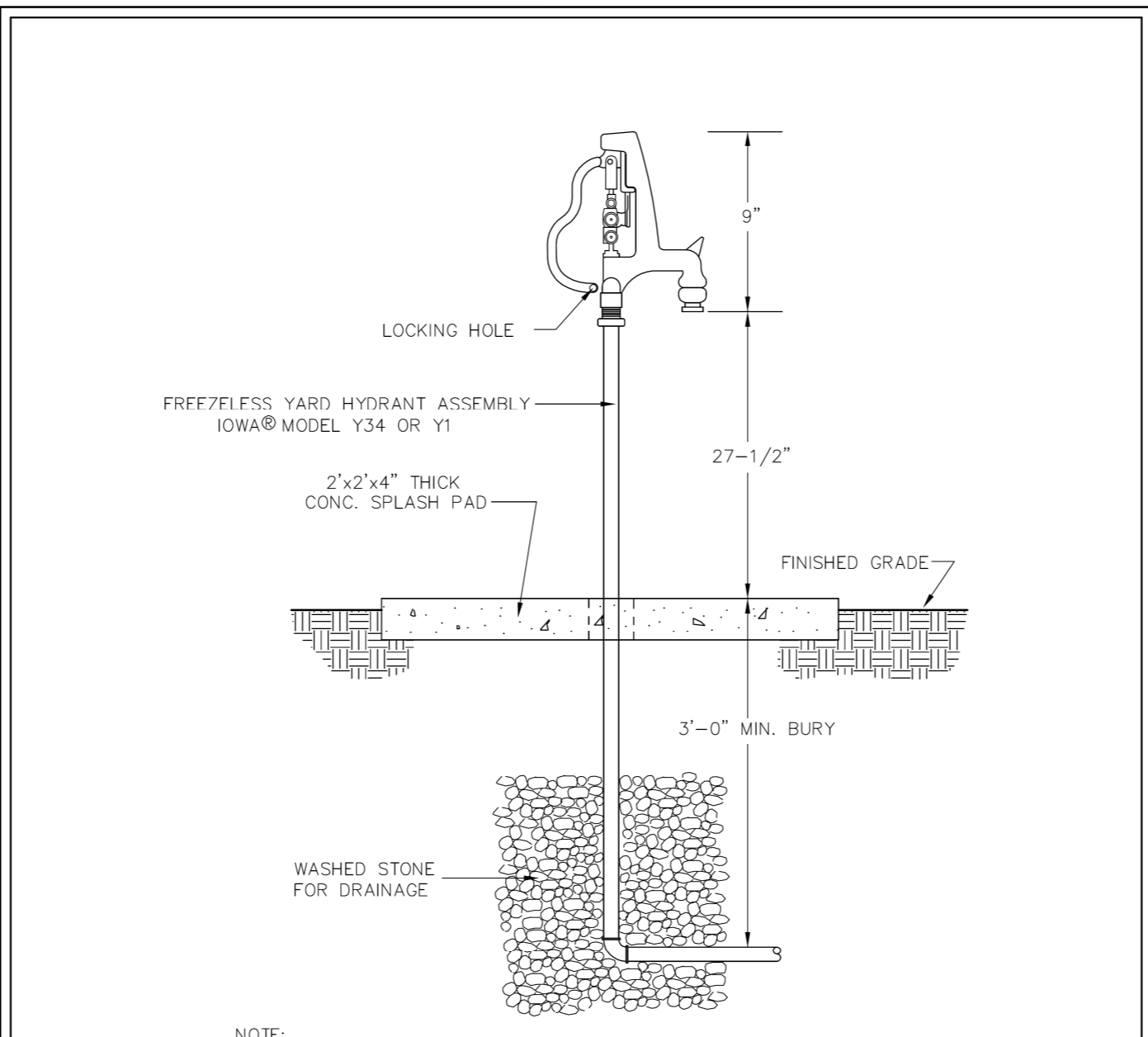
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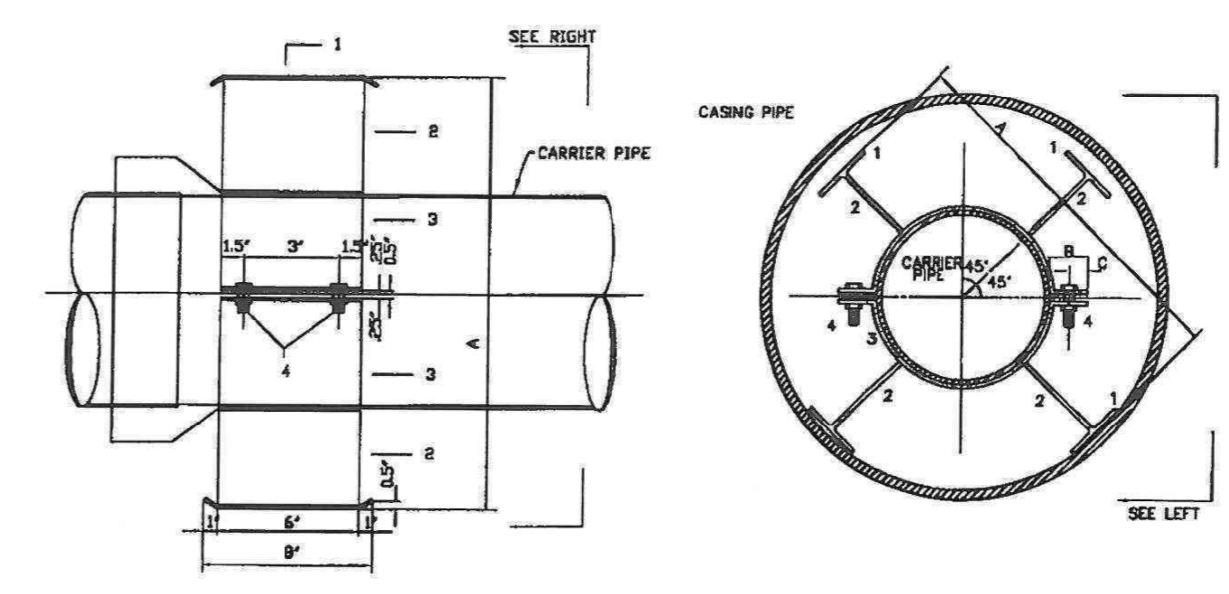
- NOTES:
1. VAULT MAY BE PRECAST OR BLOCK WITH REMOVABLE COVER.
 2. SET VAULT LEVEL ON WASHED STONE.
 3. GATE VALVES SHALL BE LEFT HAND OPEN.
 4. COVER SHALL HAVE WORD "WATER" CAST IN TOP.
 5. BACKFLOW PREVENTER TO BE WATTS #709 QT-3/4" OR APPROVED EQUAL.
 6. BACKFLOW PREVENTER TO BE INSTALLED ACCORDING TO CITY/COUNTY CODES.

WATER DETAILS		FILE NO.
BACKFLOW PREVENTOR VAULT		SCALE: N.T.S.
		DATE: AUG. 2003
5701 Westpark Dr., Suite 101 Charlotte, N.C. 28224-0908 and NC/IN Affiliates (704) 525-7980		STANDARD DETAIL NUMBER W-11
1	12/07	UTILITIES, INC. LOGO ADDED
NO.	DATE	REVISION
		BY SAO



NOTE: FREEZELESS HYDRANT TO BE IOWA® MODEL Y34 OR Y1 OR APPROVED EQUAL

WATER DETAILS		FILE NO.
FREEZELESS YARD HYDRANT		SCALE: N.T.S.
		DATE: AUG. 2003
5701 Westpark Dr., Suite 101 Charlotte, N.C. 28224-0908 and NC/IN Affiliates (704) 525-7980		STANDARD DETAIL NUMBER W-12
1	12/07	UTILITIES, INC. LOGO ADDED
NO.	DATE	REVISION
		BY SAO



CARRIER PIPE		DIMENSIONS			
NOMINAL DIA.	O. D.	A	B	C	
6"	6.90"	11"	1 1/4"	5/8"	
8"	9.05"	16 1/2"	2 1/4"	1"	
12"	13.20"	22 1/2"	3"	1 1/4"	
16"	17.40"	28 1/2"	3 1/2"	1 1/2"	
24"	25.80"	34 1/4"	4"	2"	
PIPE SUPPORT ASSEMBLY MARK NUMBER					
NOMINAL DIA.	1	2	3	4	
6"	8" x 2" x 1/4" PL	8" x 1 1/2" x 1/4" PL	8" x 1/4" PL	3/8" NUT & BOLT	
8"	8" x 3" x 1/4" PL	8" x 3 1/4" x 1/4" PL	8" x 1/4" PL	1/2" NUT & BOLT	
12"	8" x 4" x 1/4" PL	8" x 3 5/8" x 3/8" PL	8" x 3/8" PL	1/2" NUT & BOLT	
16"	8" x 4" x 3/8" PL	8" x 4 3/4" x 3/8" PL	8" x 3/8" PL	1/2" NUT & BOLT	
24"	8" x 4" x 3/8" PL	8" x 5 1/2" x 3/8" PL	8" x 3/8" PL	1/2" NUT & BOLT	

- NOTES:
1. PROVIDE TWO SPIDERS PER JOINT OF CARRIER PIPE.
 2. SPIDERS, NUTS, & WASHERS SHALL BE STAINLESS STEEL.
Alternative spiders may be used for cathodic protection conditions.
 3. ADJUST HEIGHT OF SPIDERS AS NECESSARY TO MAINTAIN SPECIFIED SLOPE.
 4. CASING PIPE NOT SHOWN.
 5. LEGS ROTATED OUT OF POSITION FOR CLARITY.

PROJECT REFERENCE NO. R-2307B/I-5717	SHEET NO. UC-3D
DESIGNED BY: JFA	
DRAWN BY: ACB	
CHECKED BY: EPH	
APPROVED BY: JJW	
REVISED:	8/21/2024
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

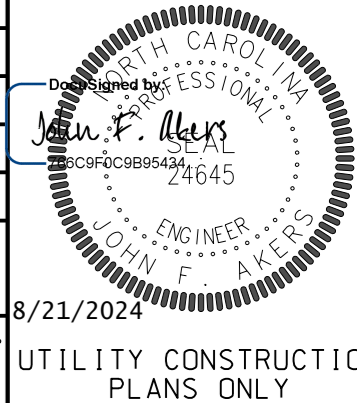
UTILITY CONSTRUCTION

5701 Westpark Dr., Suite 101
Charlotte, N.C. 28224-0908
(704) 525-7980

5/14/24

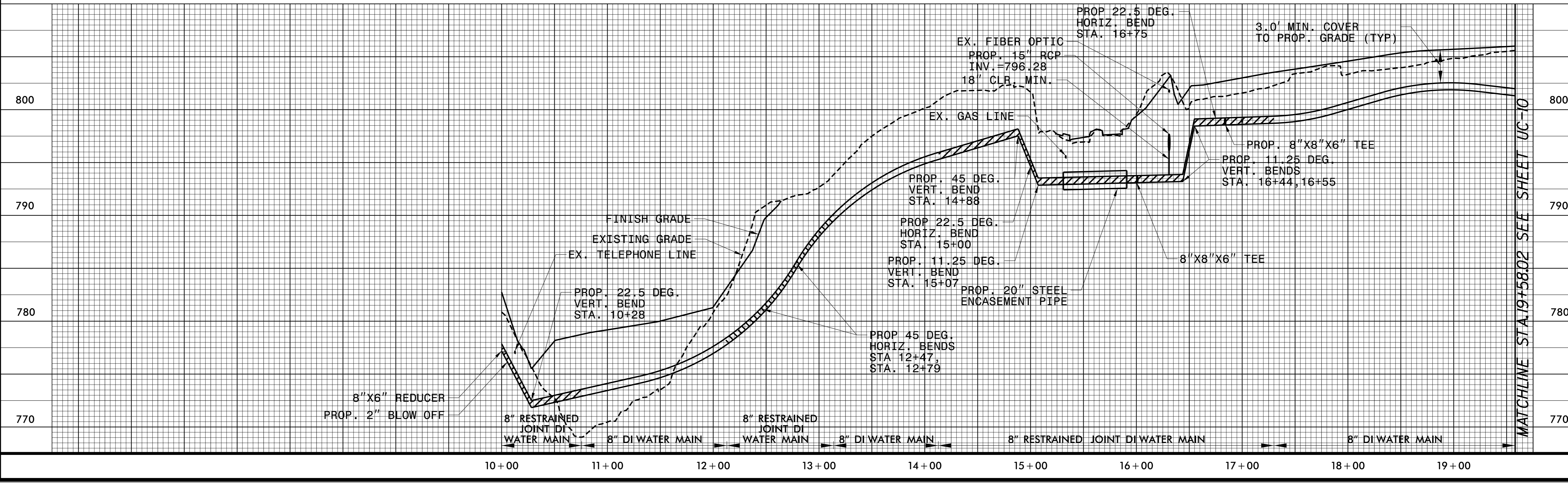
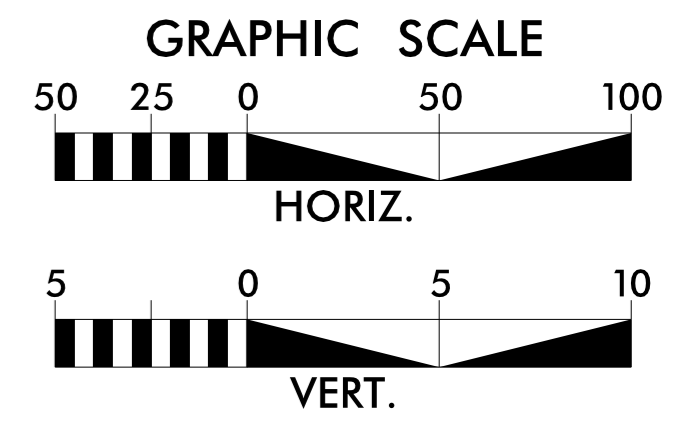
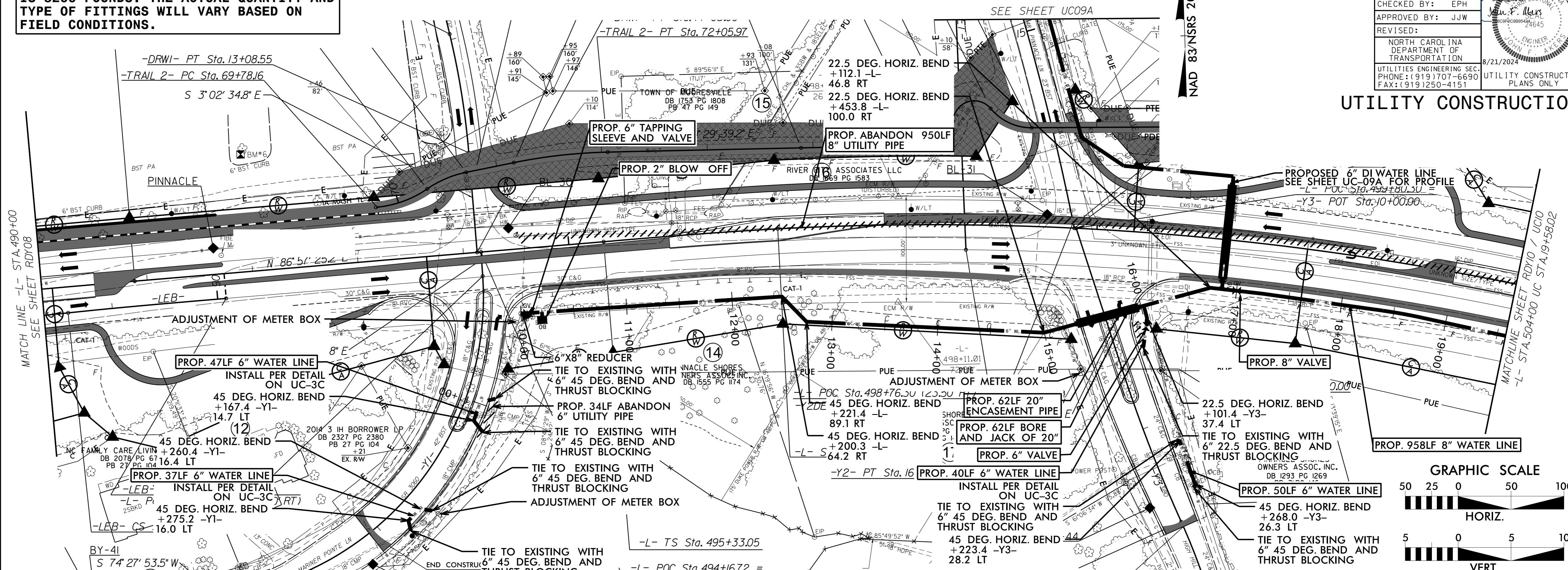
NOTE:
 THE ESTIMATED QUANTITY OF DUCTILE IRON
 WATER PIPE FITTINGS ON THIS PLAN SHEET
 IS 3200 POUNDS. THE ACTUAL QUANTITY AND
 TYPE OF FITTINGS WILL VARY BASED ON
 FIELD CONDITIONS.

Dewberry

PROJECT REFERENCE NO.	R-2307B / 1-5717	SHEET NO.	UC09
DESIGNED BY:	JFA		
DRAWN BY:	ACB		
CHECKED BY:	EPH		
APPROVED BY:	JJW		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		8/21/2024	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690		UTILITY CONSTRUCTION PLANS ONLY	
FAX: (919)250-4151			

NAD 83 NSRS 2007

UTILITY CONSTRUCTION



5/14/24

Dewberry

PROJECT REFERENCE NO. **R-2307B / 1-5717** SHEET NO. **UC09A**

DESIGNED BY: JFA
 DRAWN BY: ACB
 CHECKED BY: EPH
 APPROVED BY: JJW

REVISED:

NORTH CAROLINA
 DEPARTMENT OF
 TRANSPORTATION

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

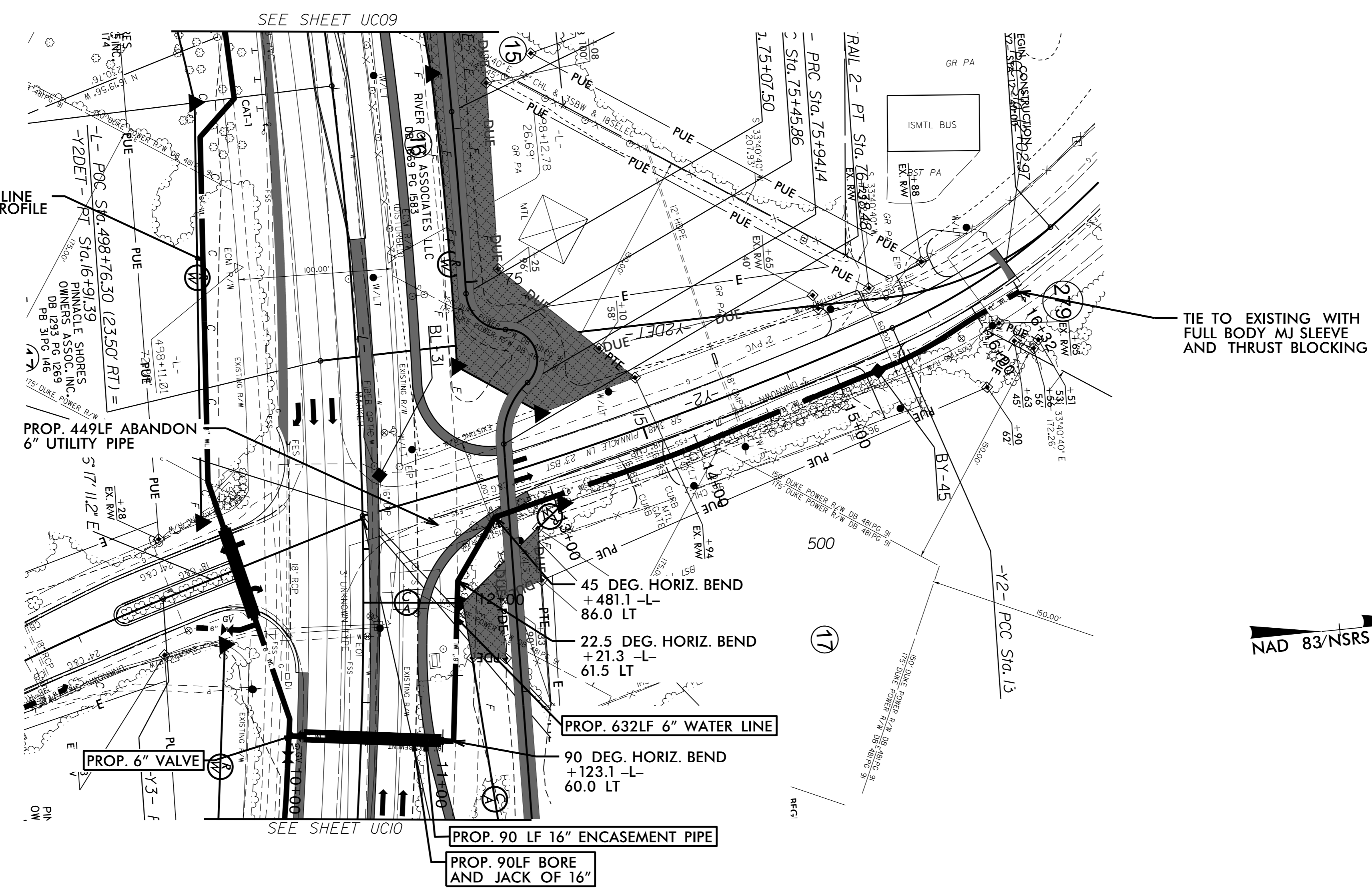
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8/21/2024

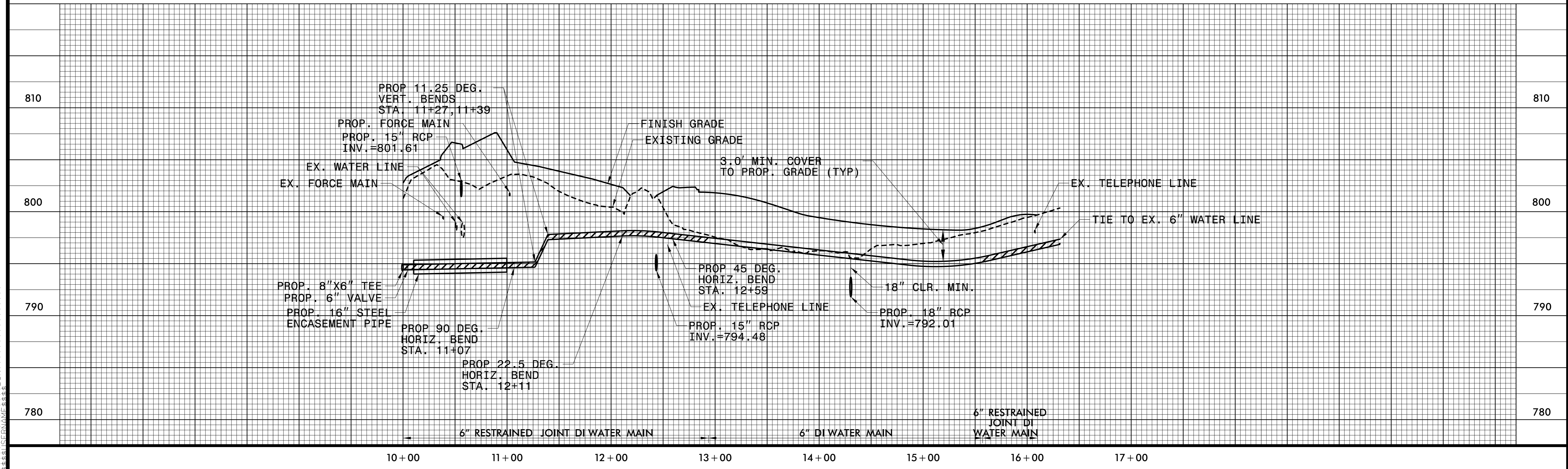
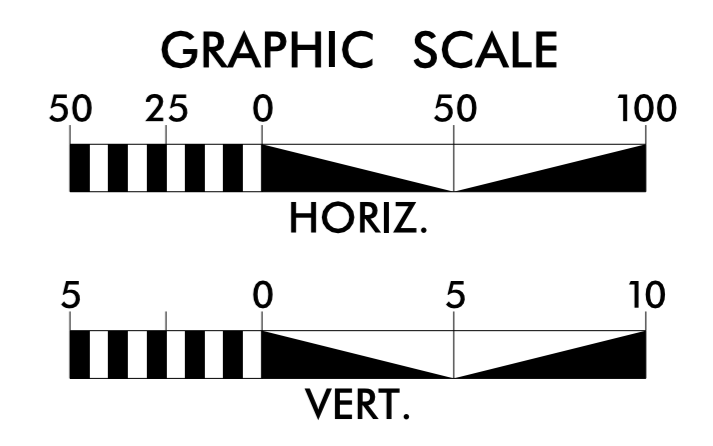
UTILITY CONSTRUCTION

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

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 500 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.



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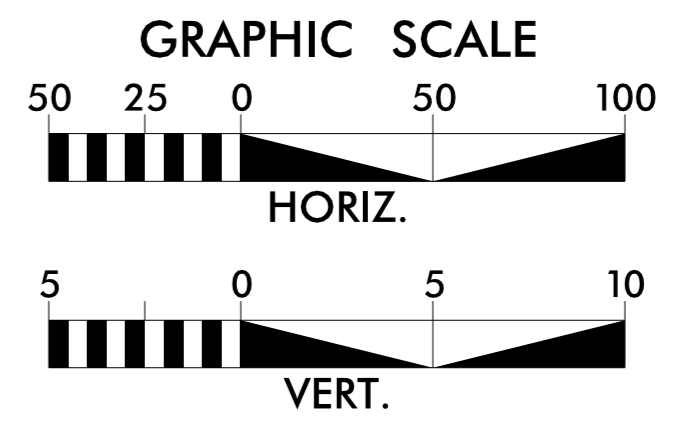
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5/14/09

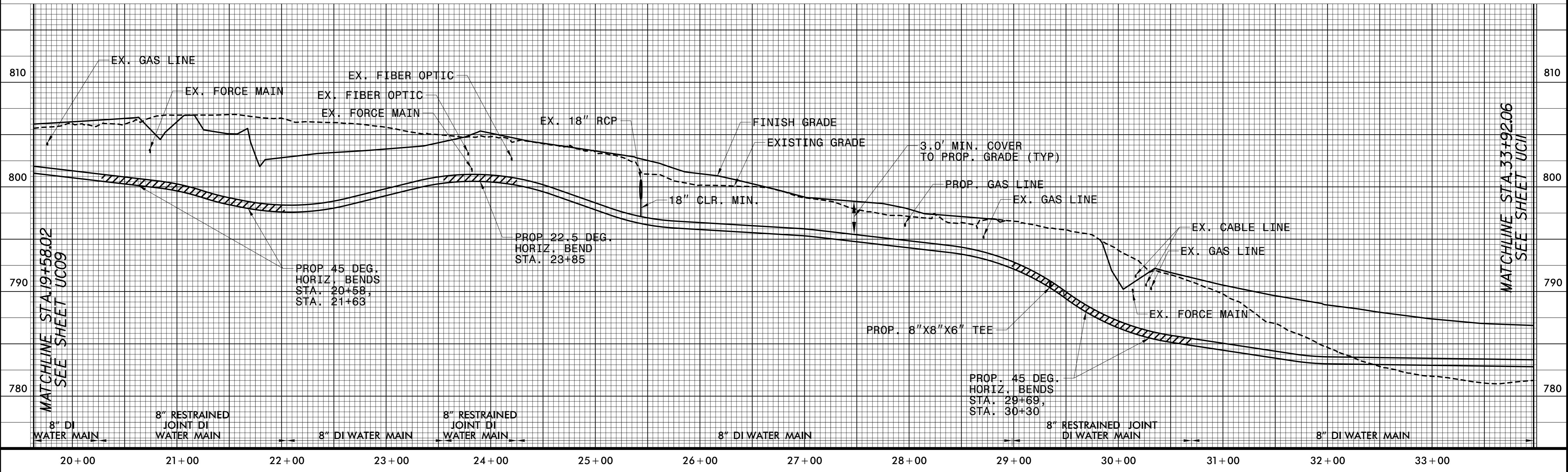
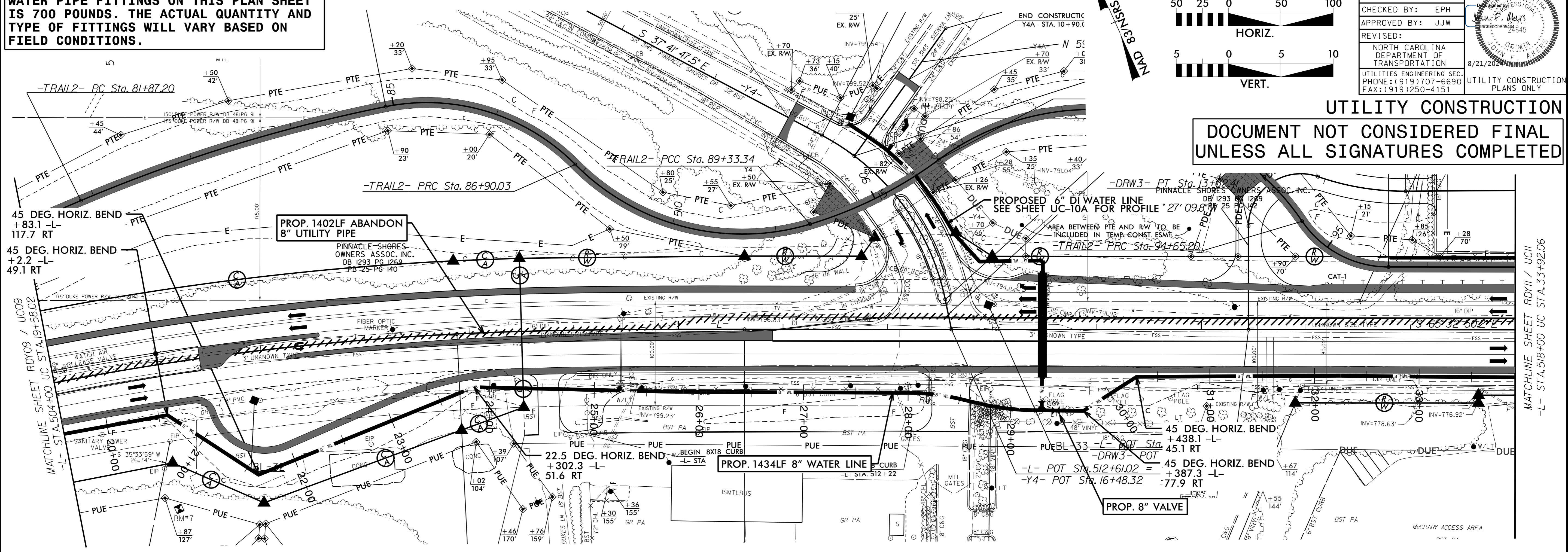
NOTE:
 THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 700 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.



PROJECT REFERENCE NO. R-2307B / 1-5717	SHEET NO. UC10
DESIGNED BY: JFA	
DRAWN BY: ACB	
CHECKED BY: EPH	
APPROVED BY: JJW	
REVISED:	8/21/2009
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	



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5/14/09

MATCHLINE SHEET RDY09 / UC09
-L- STA. 504+00 UC STA. 19+58.02

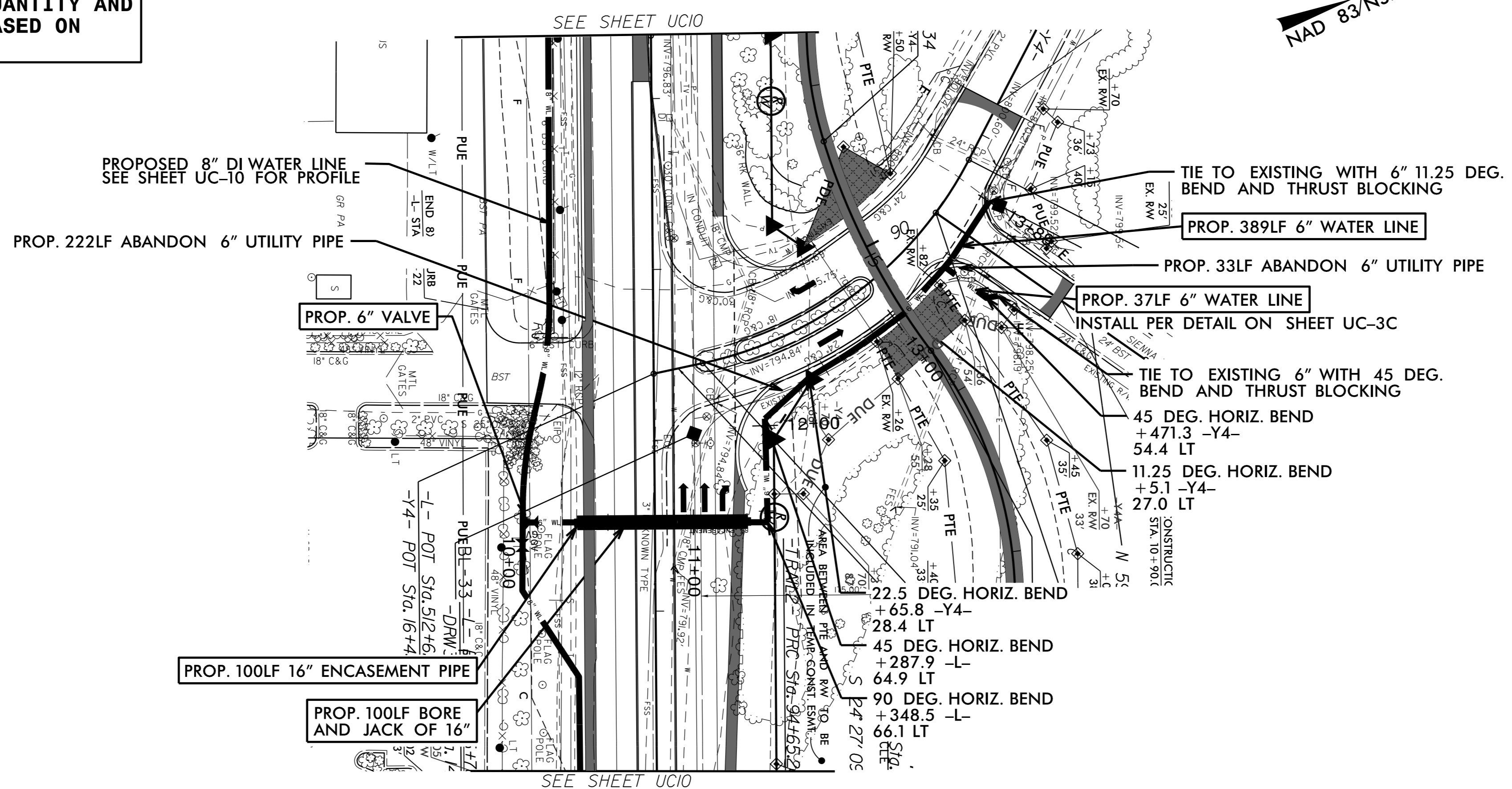
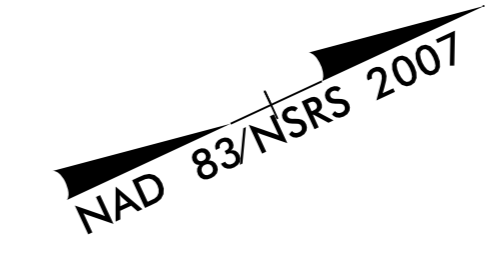
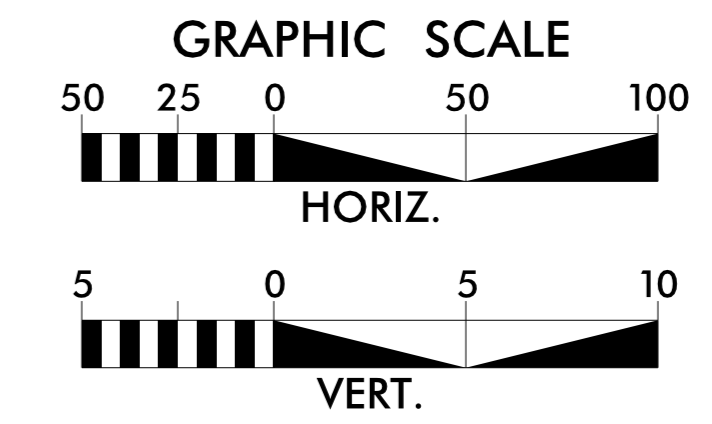
MATCHLINE STA. 33+92.06
SEE SHEET UC11

5/14/09

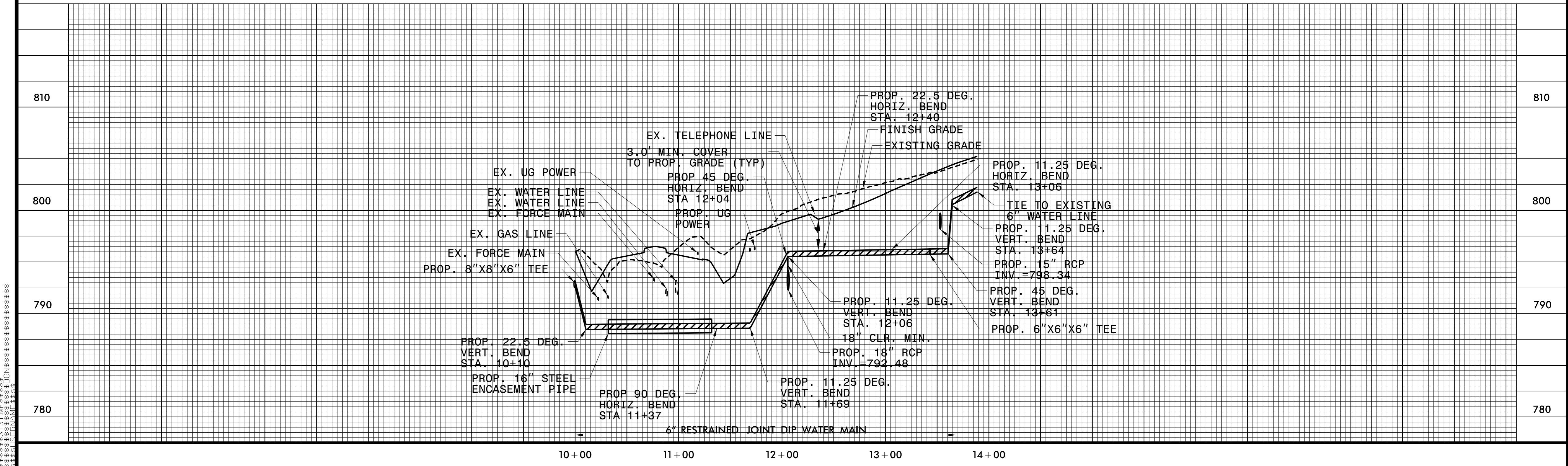
NOTE:
 THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1300 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.



PROJECT REFERENCE NO. R-2307B / 1-5717	SHEET NO. UC10A
DESIGNED BY: JFA	
DRAWN BY: ACB	
CHECKED BY: EPH	
APPROVED BY: JJW	
REVISED:	8/21/2024
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	



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5/14/09
 JFA
 ACB
 EPH
 JJW
 J. F. Ales
 License No. 6445
 State of North Carolina
 Professional Engineer

Dewberry

PROJECT REFERENCE NO. R-2307B / I-5717 SHEET NO. UC11

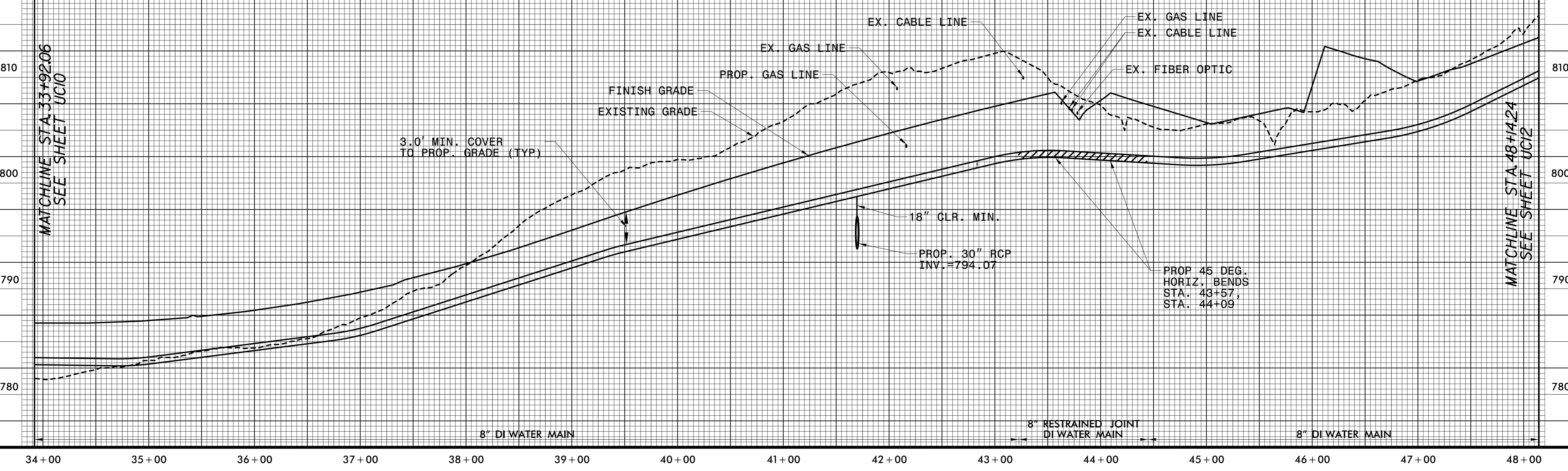
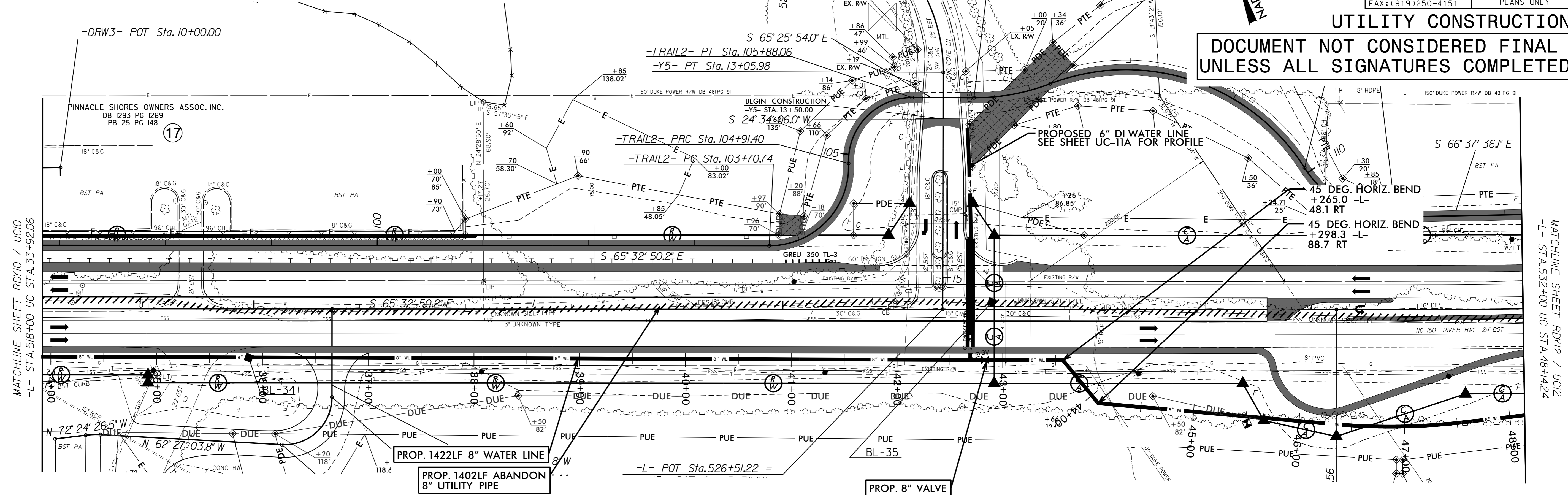
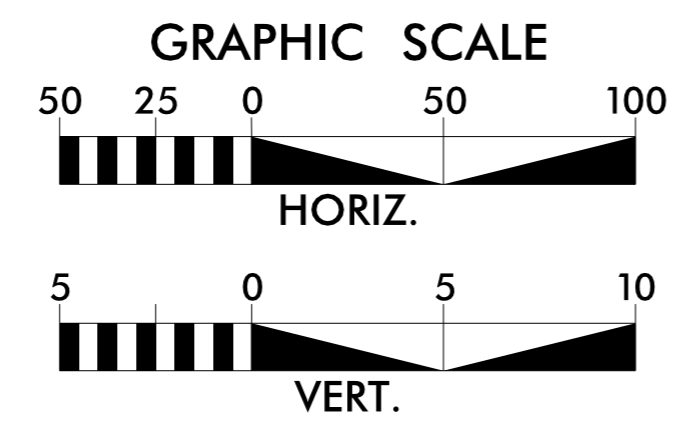
DESIGNED BY: JFA
 DRAWN BY: ACB
 CHECKED BY: EPH
 APPROVED BY: JJW

REVISOR: [Signature]

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

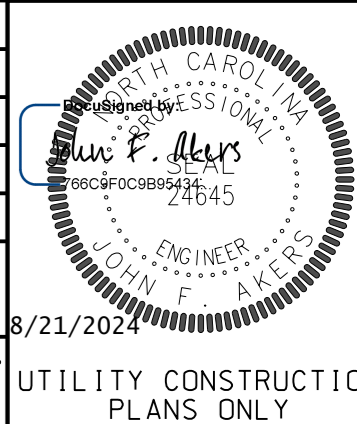
UTILITY CONSTRUCTION PLANS ONLY

NOTE:
 THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 600 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.



UTILITY CONSTRUCTION

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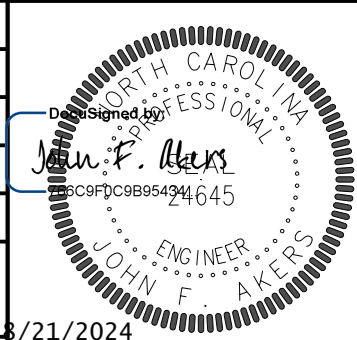


5/14/2007

MATCHLINE STA. 33+92.06 SEE SHEET UC10

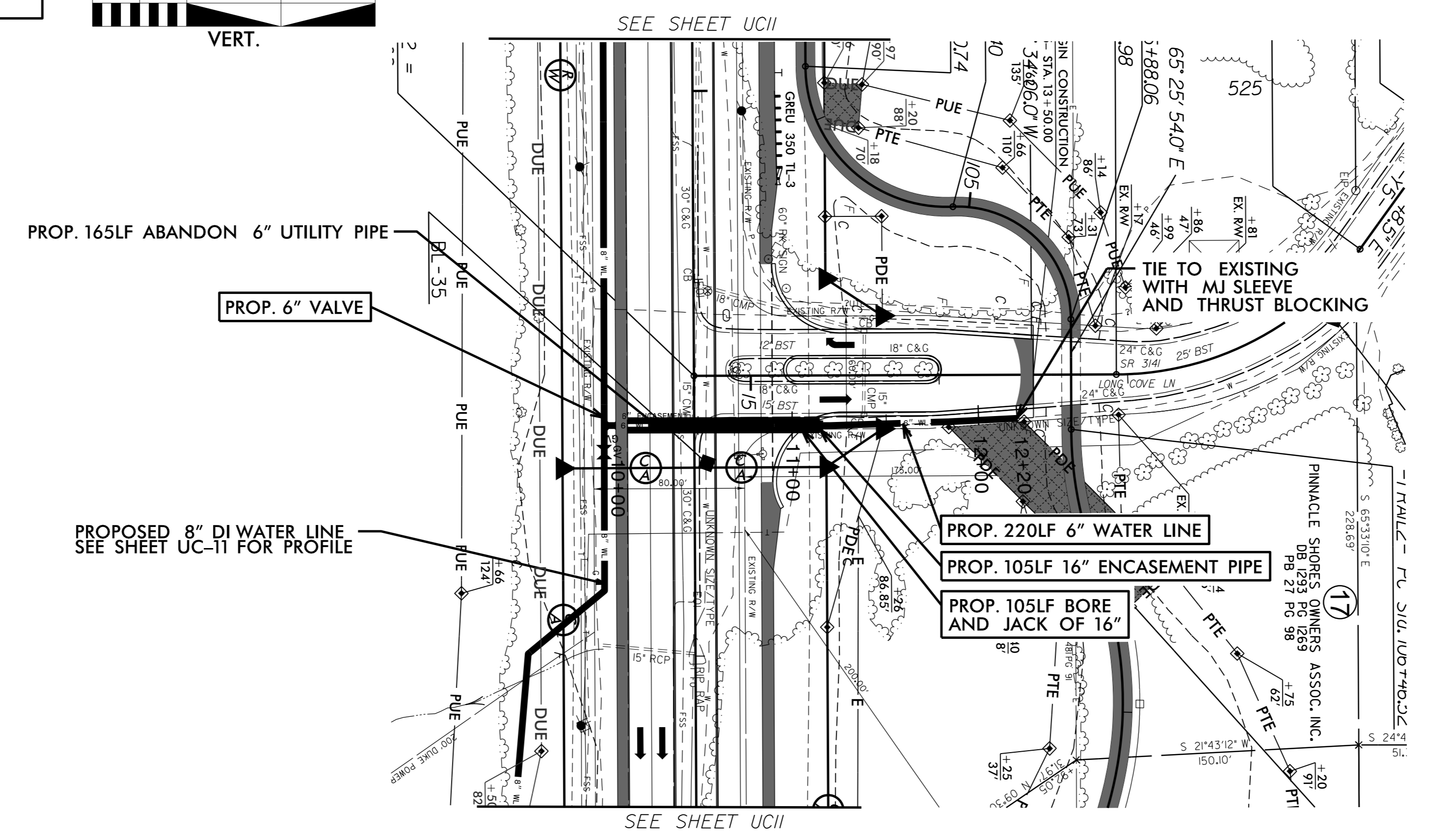
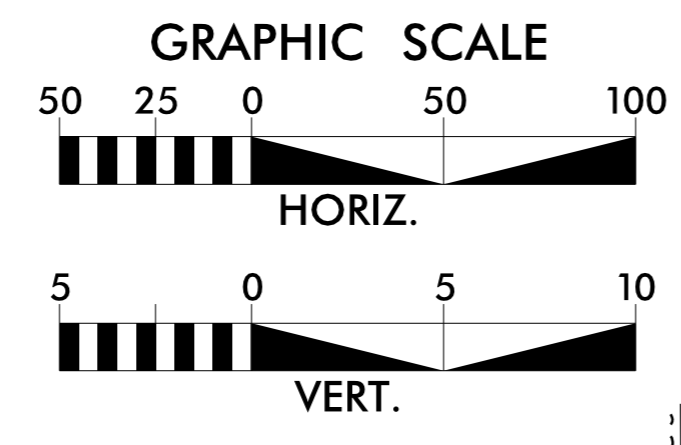
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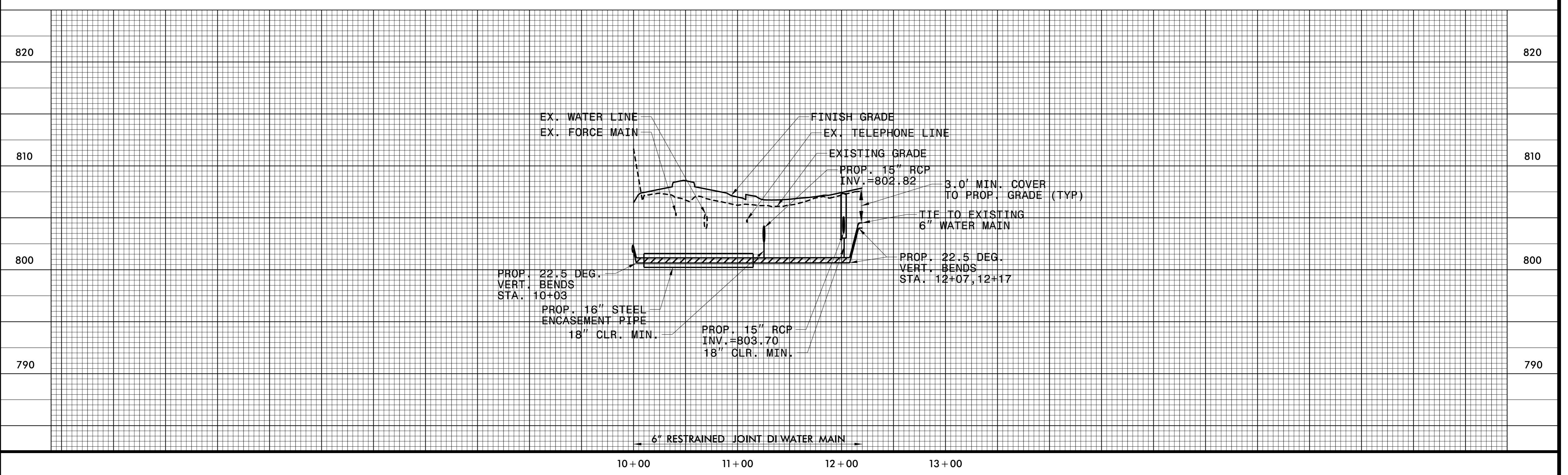
PROJECT REFERENCE NO.	SHEET NO.
R-2307B / 1-5717	UC11A
DESIGNED BY: JFA	
DRAWN BY: ACB	
CHECKED BY: EPH	
APPROVED BY: JJW	
REVISED:	8/21/2024
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

NO. 2307B 2007

NOTE:
 THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 600 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.



UTILITY CONSTRUCTION
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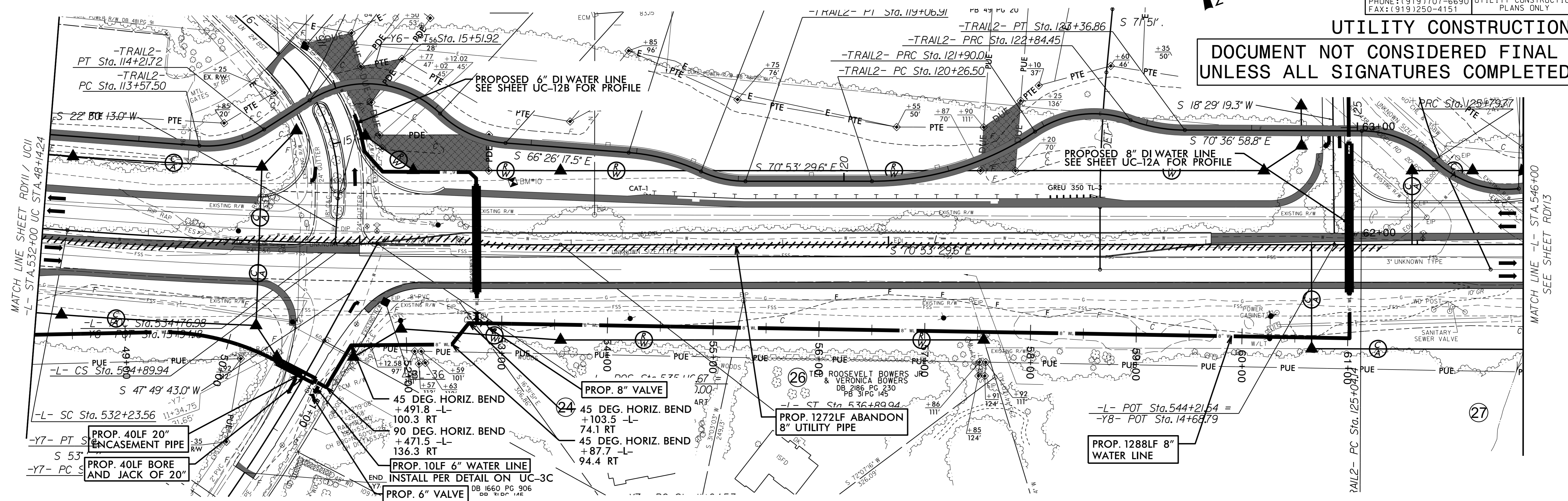
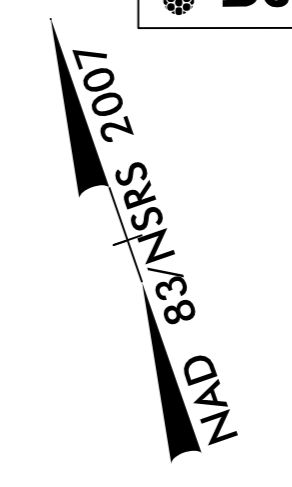
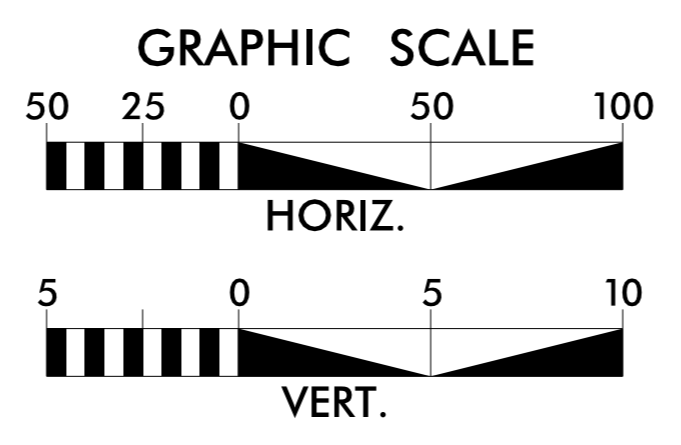
5/14/24

5/14/24

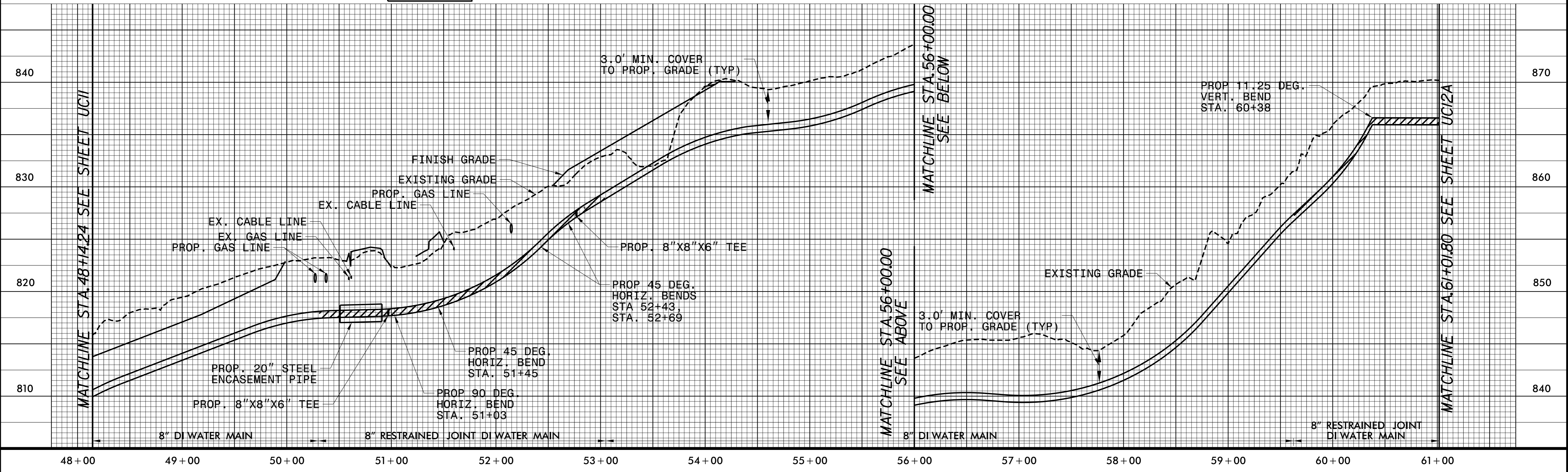


PROJECT REFERENCE NO. R-2307B / I-5717	SHEET NO. UC12
DESIGNED BY: JFA	
DRAWN BY: ACB	
CHECKED BY: EPH	
APPROVED BY: JJW	
REVISOR:	8/21/2024
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 800 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

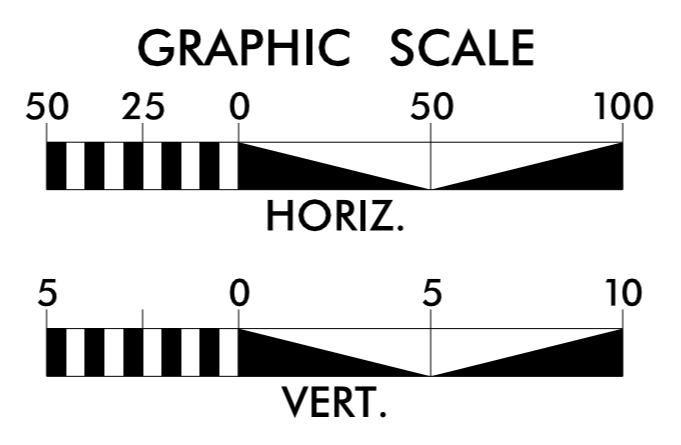


UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
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5/14/24

NOTE:
 THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 800 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.



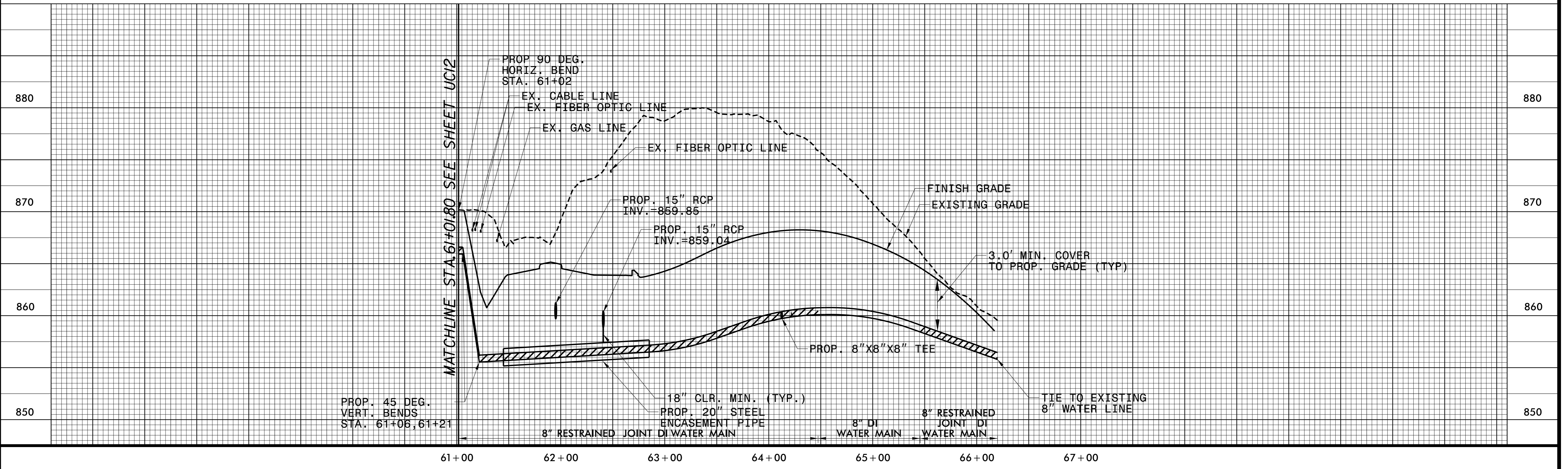
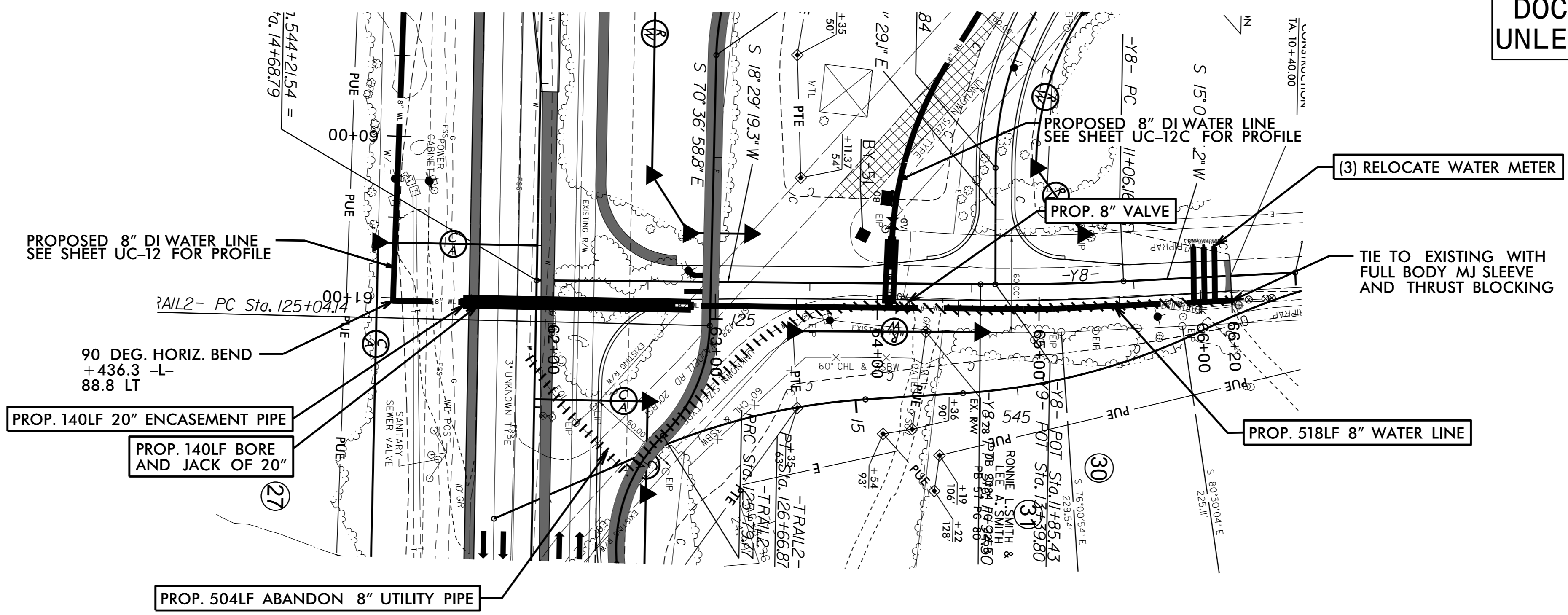
NAD 83/NSRS 2007



PROJECT REFERENCE NO. R-2307B / 1-5717	SHEET NO. UC12A
DESIGNED BY: JFA	
DRAWN BY: ACB	
CHECKED BY: EPH	
APPROVED BY: JJW	
REVISED:	8/21/2024
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

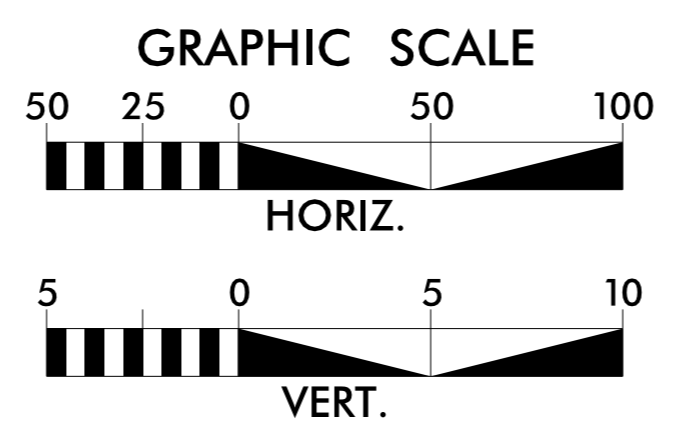
UTILITY CONSTRUCTION

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



5/14/09

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 900 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.



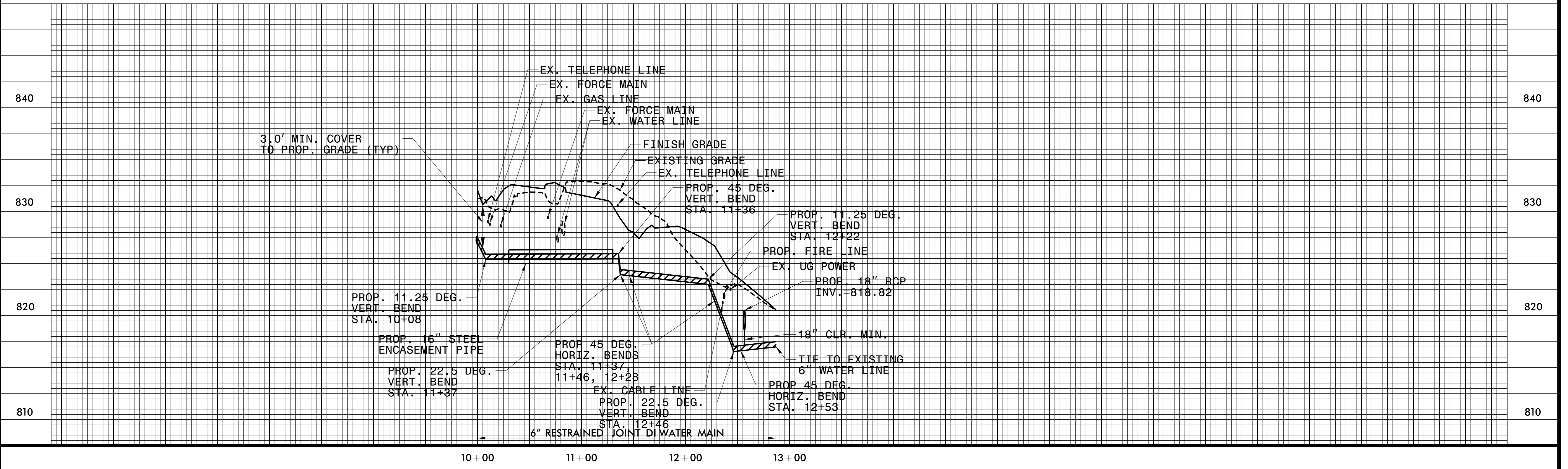
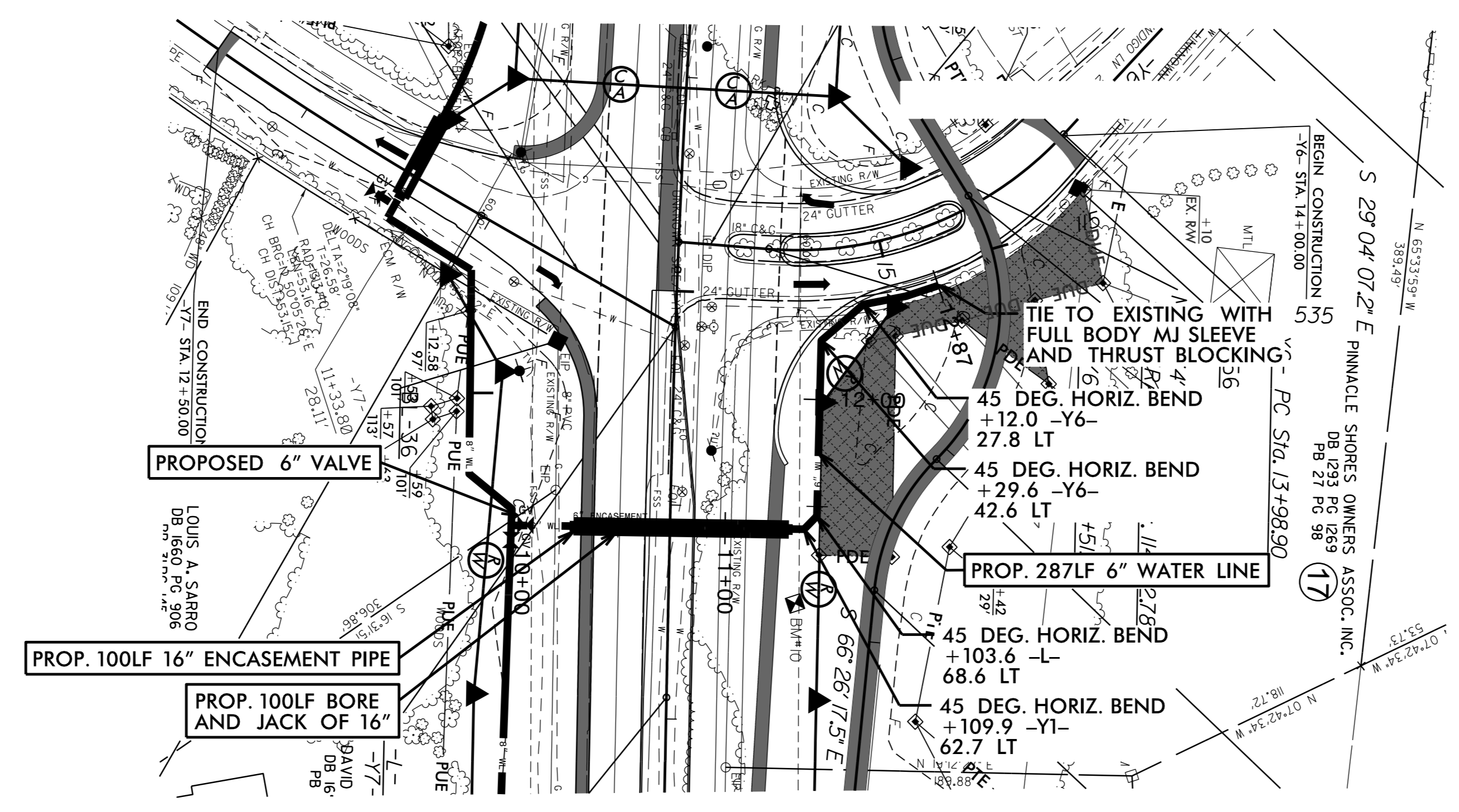
NAD 83/NSRS 2007



PROJECT REFERENCE NO. R-2307B / I-5717	SHEET NO. UC12B
DESIGNED BY: JFA	
DRAWN BY: ACB	
CHECKED BY: EPH	
APPROVED BY: JJW	
REVISED:	8/21/2024
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

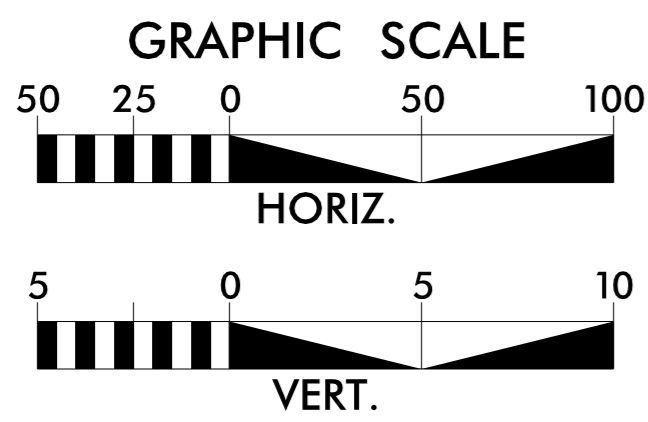
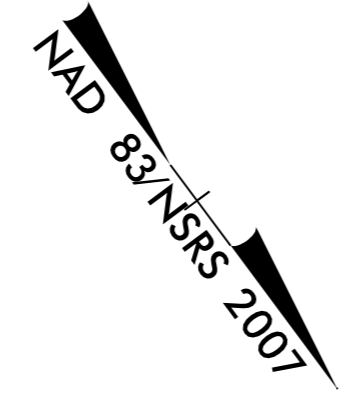
DOCUMENT NOT CONSIDERED FINAL
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5/14/09

5/14/09

NOTE:
 THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 500 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.



PROJECT REFERENCE NO. R-2307B / 1-5717		SHEET NO. UC12C	
DESIGNED BY: JFA			
DRAWN BY: ACB			
CHECKED BY: EPH			
APPROVED BY: JJW			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 8/21/2009		UTILITY CONSTRUCTION PLANS ONLY	
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UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

