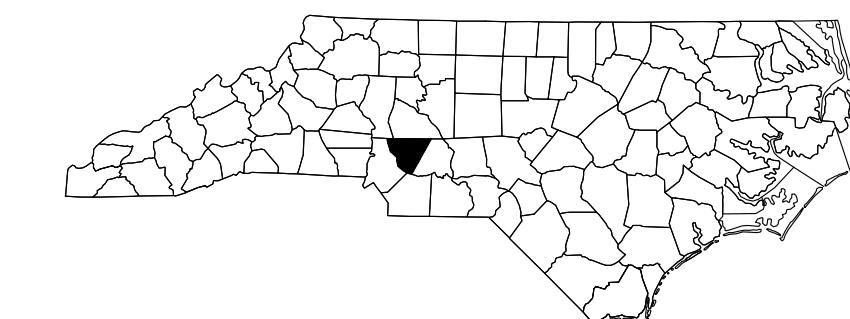


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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4910A	UC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40373.1.1	STP-1445(4)	PE	
40373.2.D1	HPP-1445(7)	U-4910A (R/W & UTIL)	
40373.3.3	STPDA-1445(008)	CONSTR	

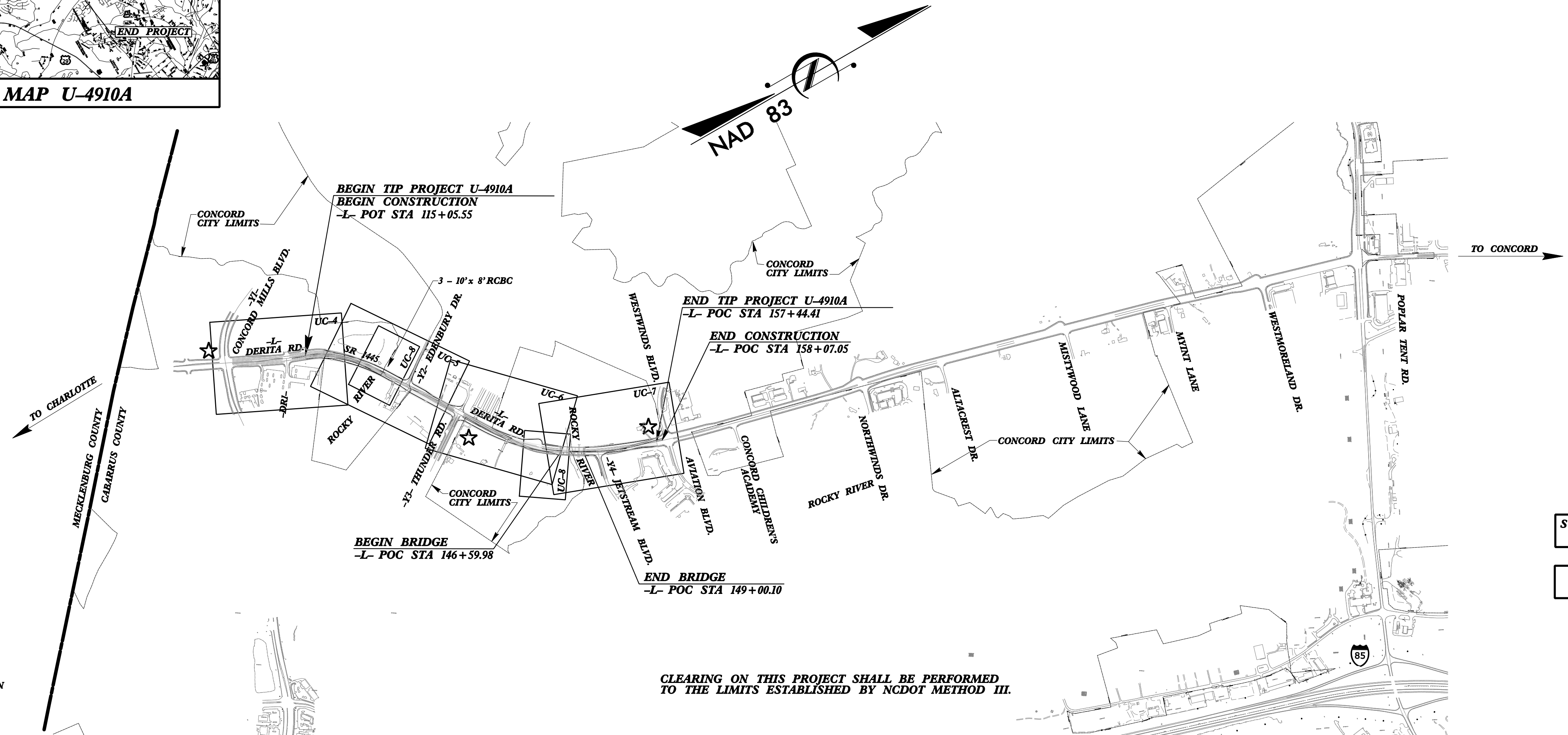
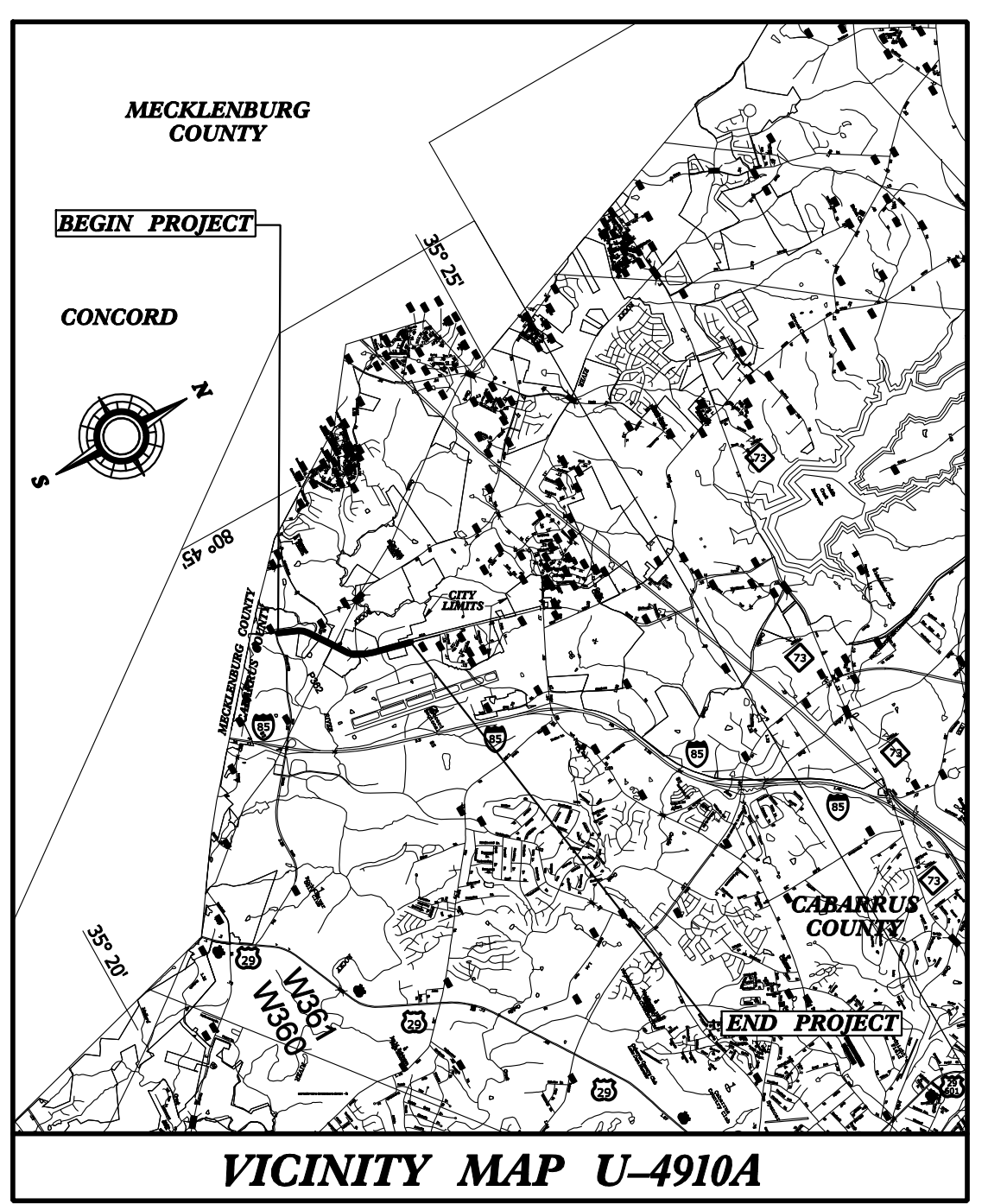


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CABARRUS COUNTY

**LOCATION: NORTH OF SR 2894 CONCORD MILLS BOULEVARD
TO AVIATION BOULEVARD.**
TYPE OF WORK: UTILITY CONSTRUCTION.

CONTRACT NO: TIP PROJECT: U-4910A

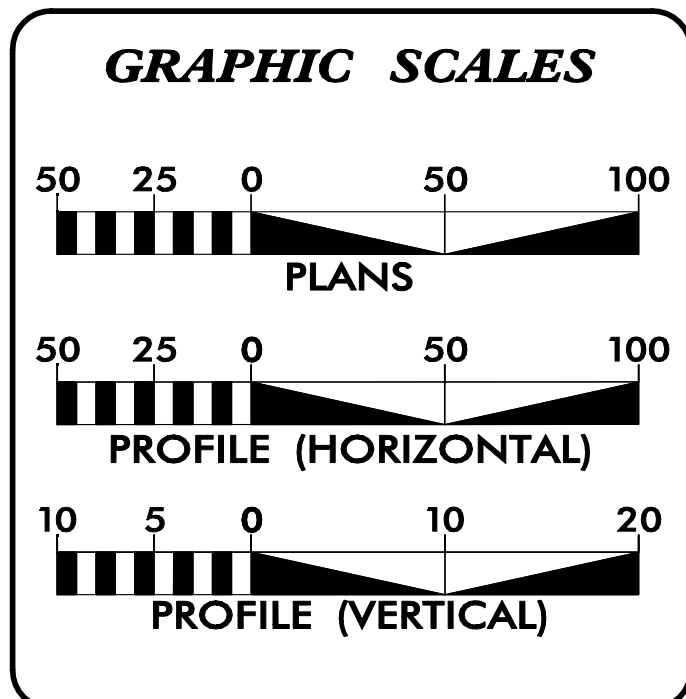
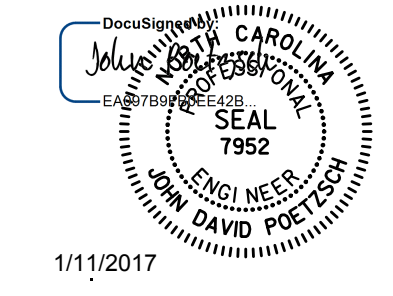


☆ - EXISTING SIGNALIZED INTERSECTION
★ - PROPOSED SIGNALIZED INTERSECTION

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

SUBMITTAL: 100% UTILITY CONST. PLANS
DATE: JANUARY 11, 2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	LEGEND OF SYMBOLS SHEET
UC-3	UTILITY GENERAL NOTES
UC-4 to UC-8	UTILITY CONSTRUCTION PLANS
UC-9 to UC-10	UTILITY CONSTRUCTION PROFILES
UC-11 to UC-13	CONSTRUCTION DETAILS SHEETS

WATER AND SEWER OWNERS ON PROJECT

(1) WATER - CITY OF CONCORD

(2) SANITARY SEWER - WATER AND SEWER AUTHORITY OF CABARRUS COUNTY

Prepared in the Office of:
AECOM
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOV. 25, 2014

LETTING DATE: FEB. 21, 2017

KEVIN J. VAN METRE, P.E.
PROJECT ENGINEER

JOHN D. POETZSCH, P.E.
PROJECT UTILITY DESIGN ENGINEER

DIVISION OF HIGHWAYS

P.E.
STATE HIGHWAY DESIGN ENGINEER

USER: sw/insong
DATE: 1/11/2017
TIME: 12:09:58 PM
DWG: U-4910A_UC-1st2.dgn

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	+
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	PFH
Relocate Fire Hydrant	RFH
Remove Fire Hydrant	REM FH
Water Meter	PWM
Relocate Water Meter	RWM
Remove Water Meter	REM WM
Water Pump Station	PST(W)
RPZ Backflow Preventer	PRPZ
DCV Backflow Preventer	PBFP
Relocate RPZ Backflow Preventer	RPRZ
Relocate DCV Backflow Preventer	RBFP

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	⊖
Telephone Pole	⊖
Joint Use Pole	⊖
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" ENCASEMENT

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

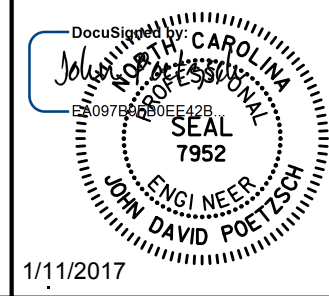
EXISTING UTILITIES SYMBOLS

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	TEL PED	Underground Unknown Utility Line	?UTL
CATV Pedestal	⊠	SUE Test Hole	•
Gas Valve	◇	Water Meter	⊙
Gas Meter	◇	Water Valve	•
Located Miscellaneous Utility Object	•	Fire Hydrant	◇
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout	⊙
End of Information	E.O.I.		

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

5/14/99

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PROJECT REFERENCE NO. <i>U-4910A</i>	SHEET NO. <i>UC-3</i>
RW SHEET NO.	
SCALE: NONE	UTILITIES ENGINEER 
Prepared in the Office of: AECOM	NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 415 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)

UTILITY CONSTRUCTION NOTES

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2012.
2. THE EXISTING WATER DISTRIBUTION AND SANITARY SEWER COLLECTION UTILITIES ARE OWNED BY THE CITY OF CONCORD. THE SANITARY SEWER OUTFALLS ARE OWNED BY THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY.
3. ALL WATER LINES AND SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES. 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 OPPROTUNITY 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. WATER MAINS OR SEWER LINES CROSSING UNDER STORM DRAIN PIPE SHALL HAVE 24" MIN VERTICAL CLEARANCE UNLESS SPECIFIED ON THE PLAN/PROFILES.
2. ALL WORK PERFORMED REGARDING THE SANITARY SEWER OUTFALLS SHOWN ON SHEET UC-8 WILL COMPLY WITH THE FOLLOWING NOTE:
ALL SEWER MATERIALS, EQUIPMENT, LABOR, AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S STANDARD SPECIFICATIONS.

UTILITY CONSTRUCTION

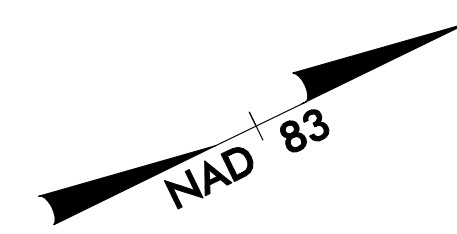
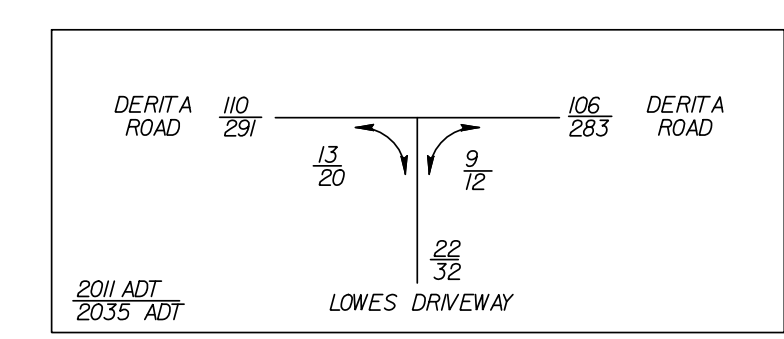
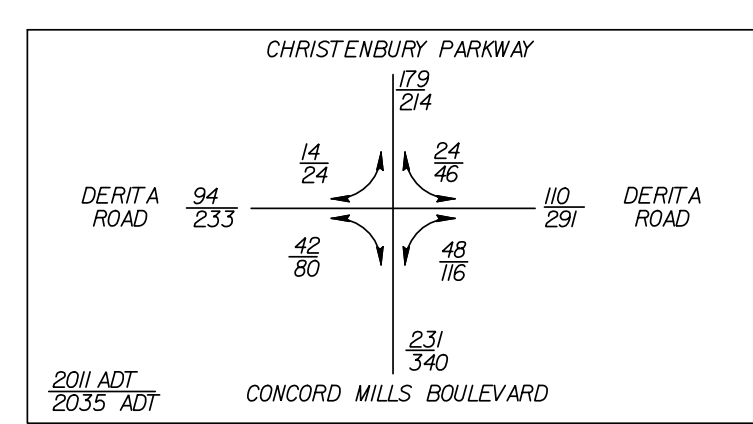
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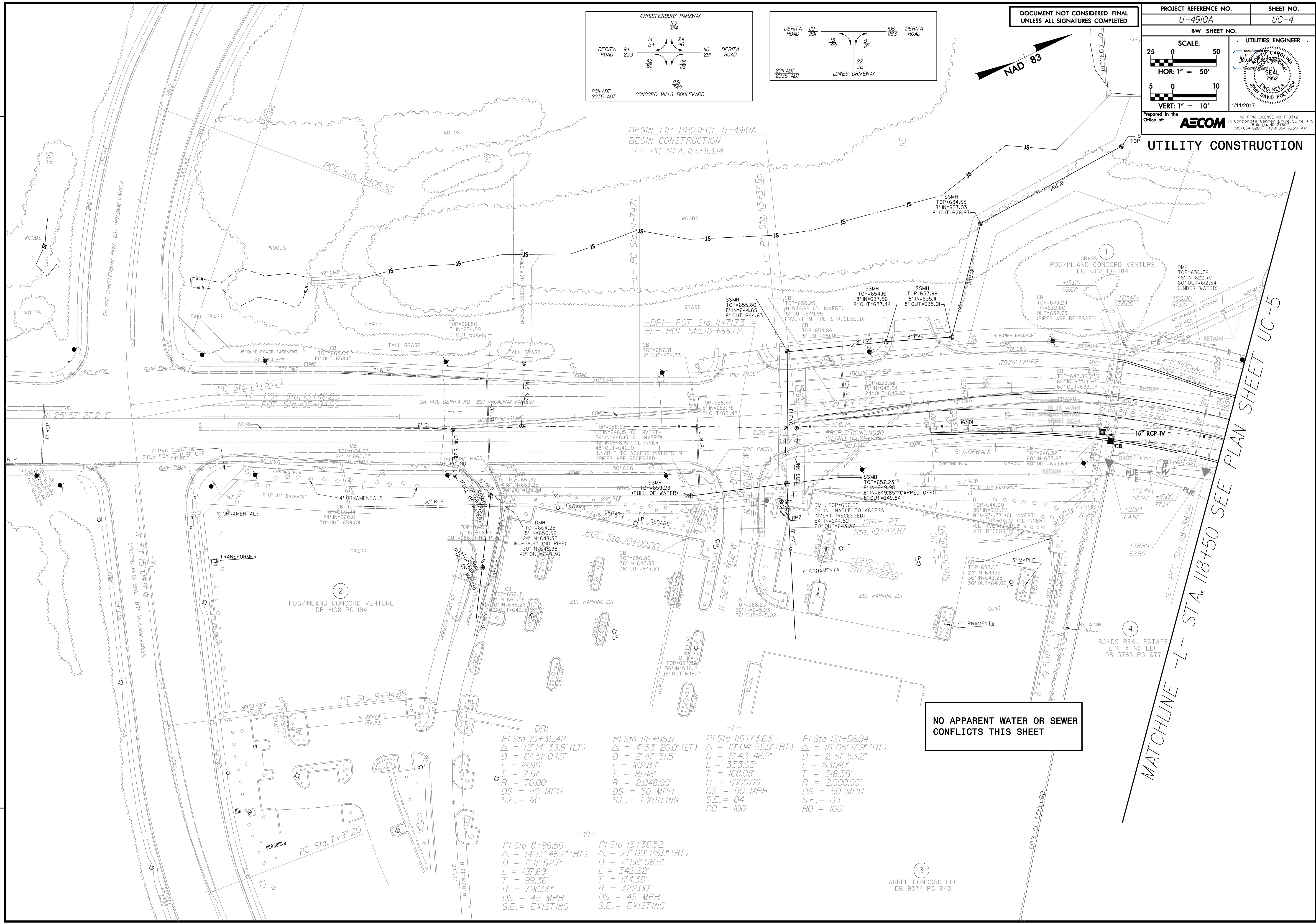
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PROJECT REFERENCE NO. U-4910A	SHEET NO. UC-4
RW SHEET NO.	
UTILITIES ENGINEER	
1/11/2017	
Prepared in the Office of: 	
NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 4175 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)	

UTILITY CONSTRUCTION



MATCHLINE -L- STA. 118+50 SEE PLAN SHEET UC-5



NO APPARENT WATER OR SEWER
CONFLICTS THIS SHEET

-DRI- PI Sta 10+35.42 Δ = 12'14" 33.9" (LT) D = 8'1" 5'04.0" L = 14.96' T = 7.5' R = 70.00' DS = 40 MPH S.E. = NC	-L- PI Sta 112+56.17 Δ = 4'33" 20.0" (LT) D = 2'47" 51.5" L = 162.84' T = 81.46' R = 2,048.00' DS = 50 MPH S.E. = EXISTING	-L- PI Sta 116+73.63 Δ = 19'04" 55.9" (RT) D = 5'43" 46.5" L = 333.05' T = 168.08' R = 1,000.00' DS = 50 MPH S.E. = 04 RO = 100'	-L- PI Sta 121+56.94 Δ = 18'05" 17.9" (RT) D = 2'51" 53.2" L = 631.40' T = 318.35' R = 2,000.00' DS = 50 MPH S.E. = 03 RO = 100'
---	--	---	---

-YI- PI Sta 8+96.56 Δ = 14'13" 46.2" (RT) D = 7'11" 52.7" L = 197.69' T = 99.36' R = 796.00' DS = 45 MPH S.E. = EXISTING	-YI- PI Sta 15+38.52 Δ = 27'09" 26.0" (RT) D = 7'56" 08.5" L = 342.22' T = 174.38' R = 722.00' DS = 45 MPH S.E. = EXISTING
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REVISIONS

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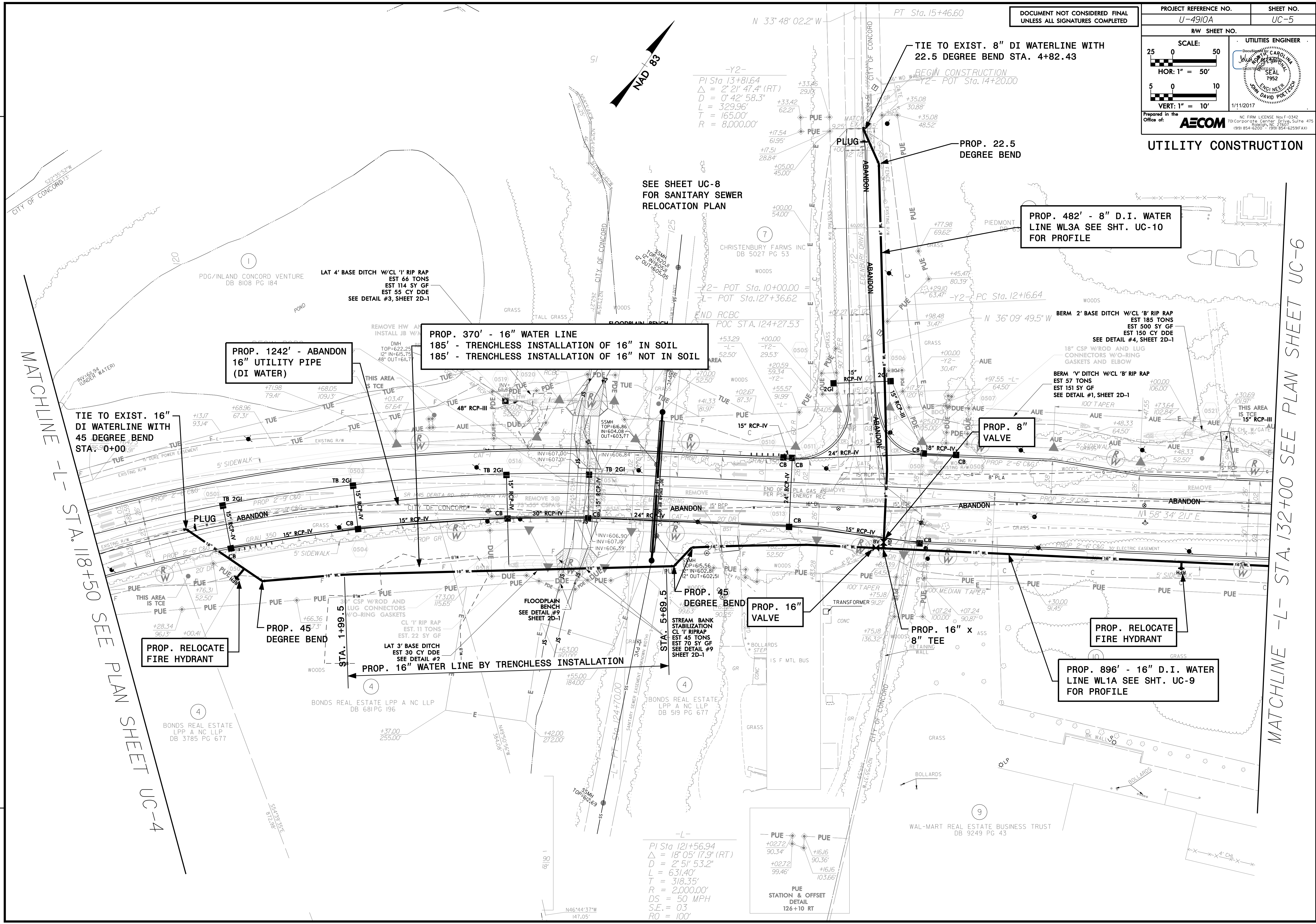
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 AGREE CONCORD LLC
 DB 9374 PG 240

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RW SHEET NO.	
SCALE: 25 0 50 HOR: 1" = 50' 5 0 10 VERT: 1" = 10'	UTILITIES ENGINEER AECOM 1/11/2017

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 Raleigh, NC 27607
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UTILITY CONSTRUCTION



MATCHLINE -L- STA. 118+50 SEE PLAN SHEET UC-4

MATCHLINE -L- STA. 132+00 SEE PLAN SHEET UC-6

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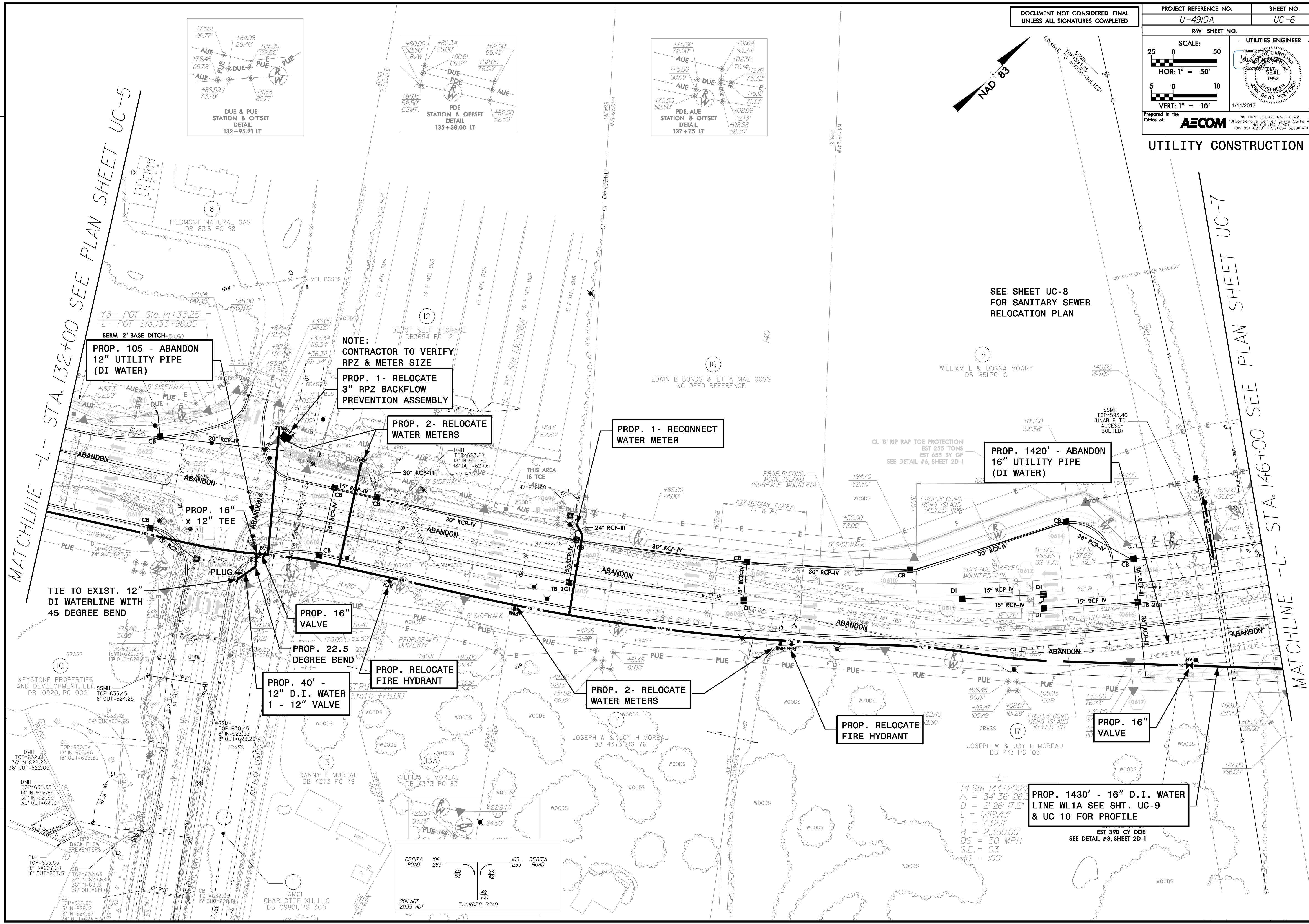
-L-
 PI Sta. 121+56.94
 $\Delta = 18' 05" 17.9" (RT)$
 $D = 2' 5' 53.2"$
 $L = 631.40'$
 $T = 318.35'$
 $R = 2,000.00'$
 $DS = 50 MPH$
 $S.E. = 03$
 $RO = 100'$

PUE STATION & OFFSET
 DETAIL
 126+10 RT

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PROJECT REFERENCE NO. U-4910A	SHEET NO. UC-6
RW SHEET NO.	
SCALE: 25 0 50 HOR: 1" = 50' 5 0 10 VERT: 1" = 10'	UTILITIES ENGINEER
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UTILITY CONSTRUCTION



**PROP. 105 - ABANDON
12" UTILITY PIPE
(DI WATER)**

**NOTE:
CONTRACTOR TO VERIFY
RPZ & METER SIZE**

**PROP. 1- RELOCATE
3" RPZ BACKFLOW
PREVENTION ASSEMBLY**

**PROP. 2- RELOCATE
WATER METERS**

**PROP. 1- RECONNECT
WATER METER**

**PROP. 1420' - ABANDON
16" UTILITY PIPE
(DI WATER)**

**TIE TO EXIST. 12"
DI WATERLINE WITH
45 DEGREE BEND**

PROP. 16" VALVE

**PROP. 22.5
DEGREE BEND**

**PROP. 40' -
12" D.I. WATER
1 - 12" VALVE**

**PROP. RELOCATE
FIRE HYDRANT**

**PROP. 2- RELOCATE
WATER METERS**

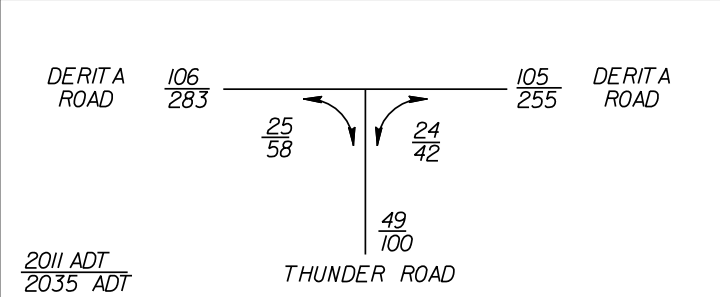
**PROP. RELOCATE
FIRE HYDRANT**

PROP. 16" VALVE

**PROP. 1430' - 16" D.I. WATER
LINE WL1A SEE SHT. UC-9
& UC 10 FOR PROFILE**

PI Sta 144+20.2
 $\Delta = 34' 36" 26"$
 $D = 2' 26" 17.2"$
 $L = 1419.43'$
 $T = 732.11'$
 $R = 2,350.00'$
 $DS = 50 \text{ MPH}$
 $SE = 03$
 $RO = 100'$

EST 390 CY DDE
SEE DETAIL #3, SHEET 2D-1



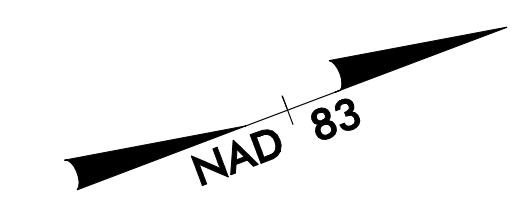
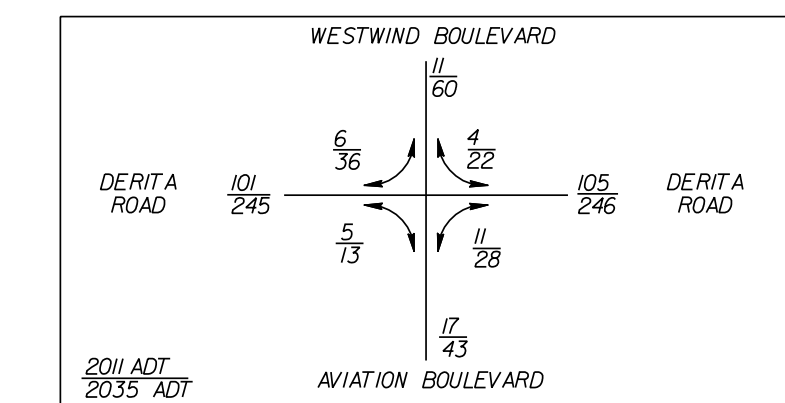
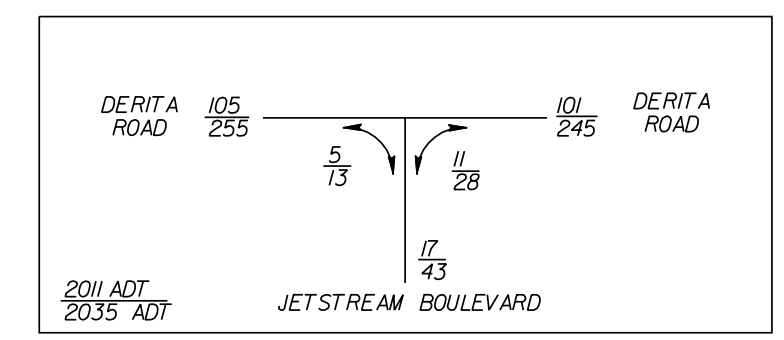
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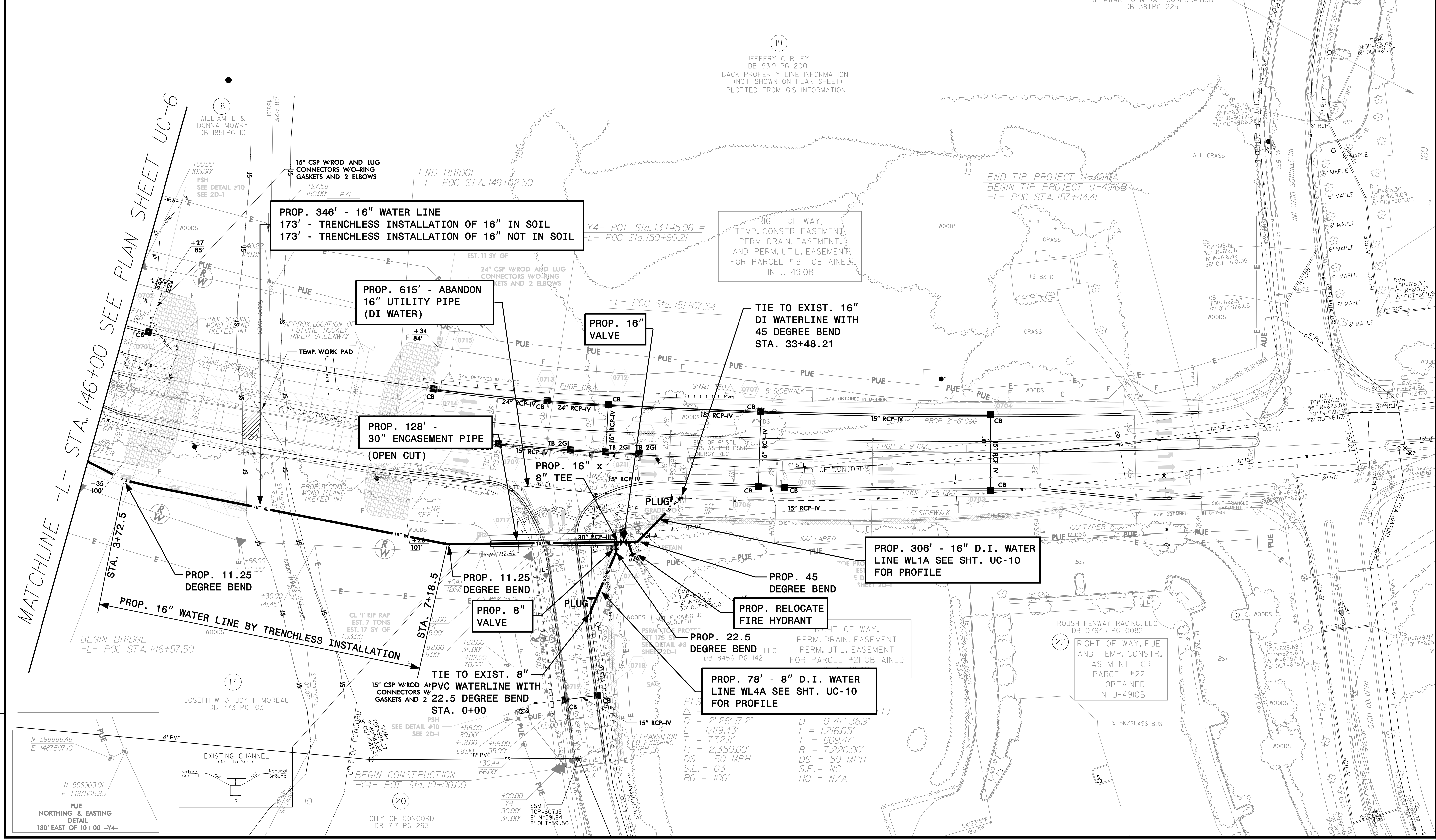
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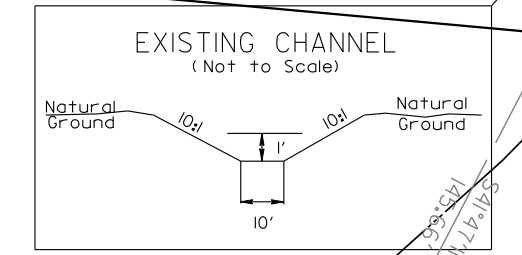
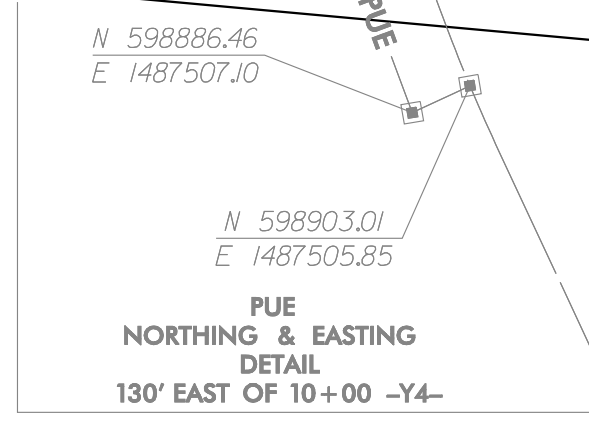
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RW SHEET NO.	
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UTILITY CONSTRUCTION



MATCHLINE -L- STA. 146+00 SEE PLAN SHEET UC-6



TIE TO EXIST. 8" 15" CSP W/ROD AND PVC WATERLINE WITH CONNECTORS W/ GASKETS AND 2 22.5 DEGREE BEND STA. 0+00

PROP. 78' - 8" D.I. WATER LINE WL4A SEE SHT. UC-10 FOR PROFILE

PROP. 306' - 16" D.I. WATER LINE WL1A SEE SHT. UC-10 FOR PROFILE

TIE TO EXIST. 16" DI WATERLINE WITH 45 DEGREE BEND STA. 33+48.21

PROP. 16" VALVE

PROP. 615' - ABANDON 16" UTILITY PIPE (DI WATER)

PROP. 346' - 16" WATER LINE 173' - TRENCHLESS INSTALLATION OF 16" IN SOIL 173' - TRENCHLESS INSTALLATION OF 16" NOT IN SOIL

PROP. 128' - 30" ENCASEMENT PIPE (OPEN CUT)

PROP. 16" X 8" TEE

PROP. 8" VALVE

PROP. RELOCATE FIRE HYDRANT

PROP. 11.25 DEGREE BEND

PROP. 16" WATER LINE BY TRENCHLESS INSTALLATION

PROP. 11.25 DEGREE BEND

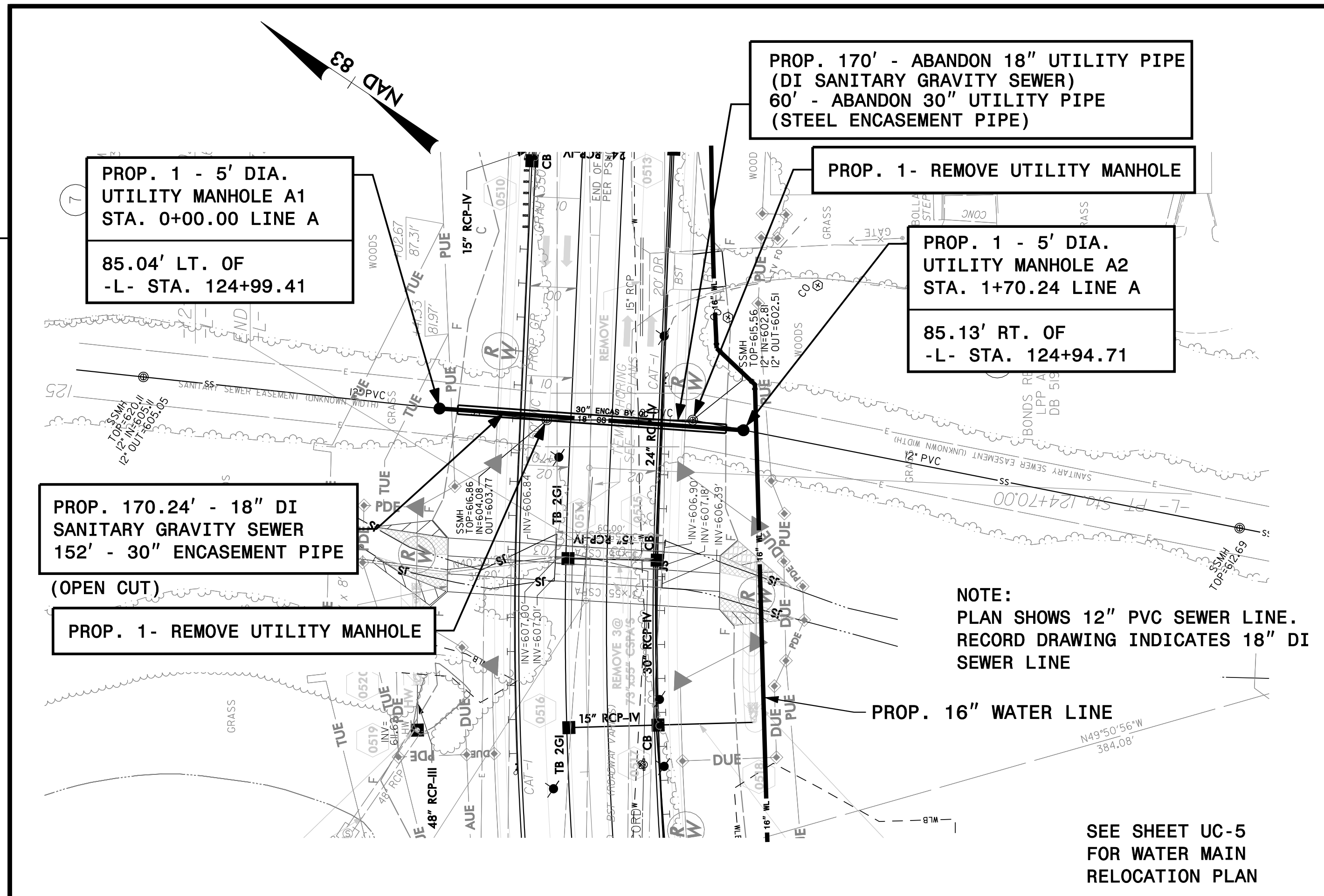
PROP. 22.5 DEGREE BEND

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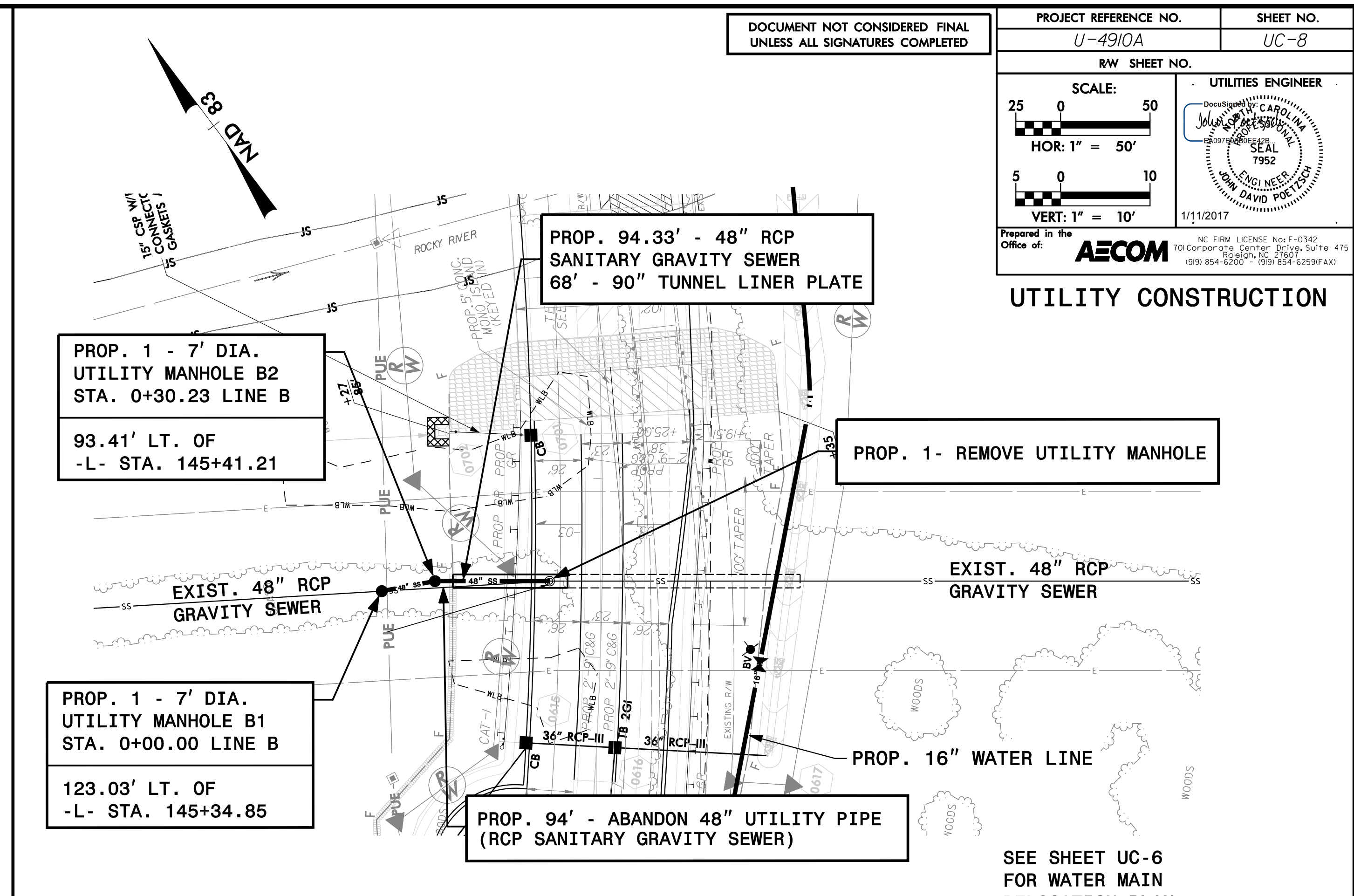
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PROJECT REFERENCE NO. U-4910A	SHEET NO. UC-8
RW SHEET NO.	
SCALE: 25 0 50 HOR: 1" = 50' 5 0 10 VERT: 1" = 10'	UTILITIES ENGINEER AECOM 1/11/2017



CHRISTENBURY 18" DI SEWER (LINE A)



ROCKY RIVER 48" RCP SEWER (LINE B)

	PROP. MH A1 STA. 0+00.00	EXIST. MH STA. 0+60.26 (TO BE REMOVED)	Sta. 0+85.07 = Sta. 124+97.06 -L-	PROP. MH A2 STA. 1+70.24	EXIST. MH STA. 1+41.81 (TO BE REMOVED)		PROP. MH B1 STA. 0+00.00 (SEALED TOP)	PROP. MH B2 STA. 0+30.23 (SEALED TOP)	EXIST. MH STA. 0+94.33 (TO BE REMOVED)	439' TO NEXT MH	
640						640	630				630
630						630	620				620
620						620	610				610
610						610	600				600
600						600	590				590
590						590	580				580
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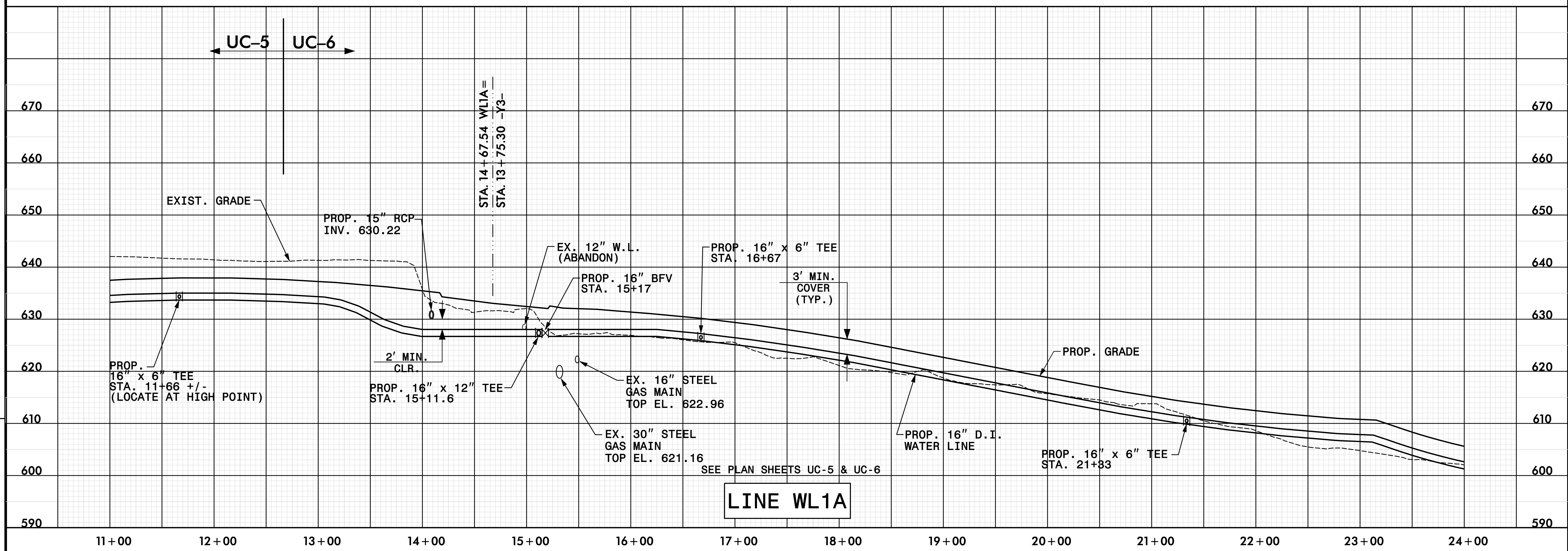
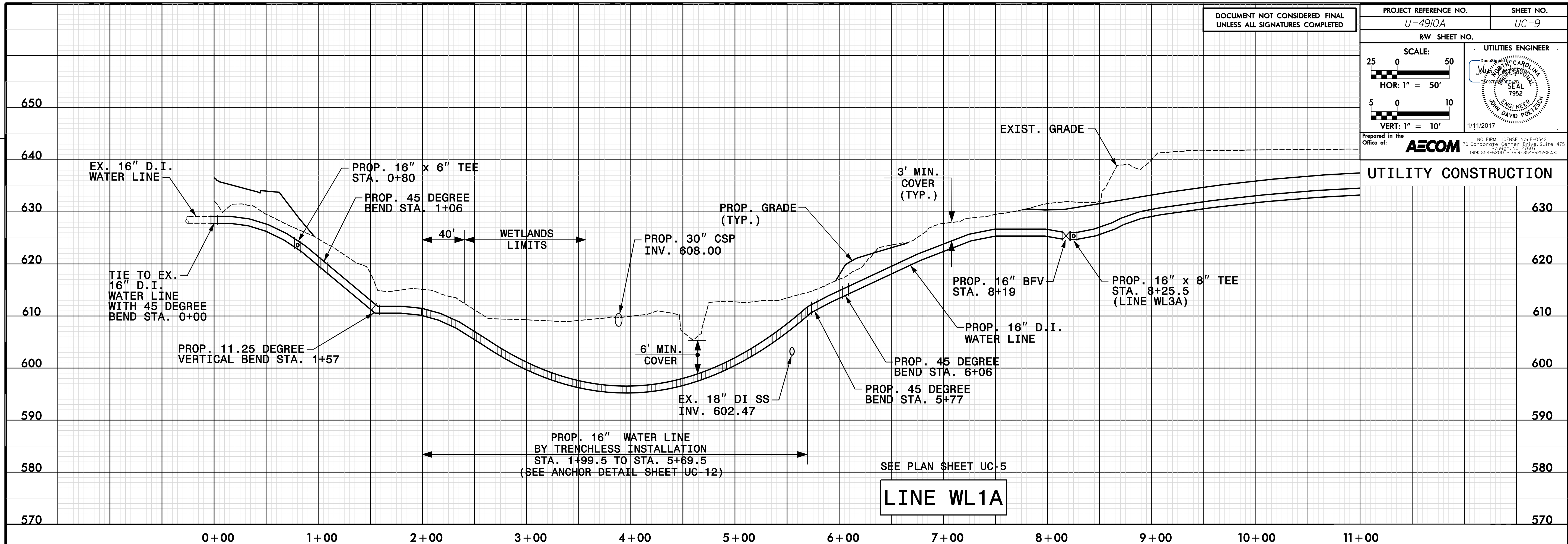
REVISIONS

Revisions:

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RW SHEET NO.	
SCALE: HOR: 1" = 50' VERT: 1" = 10'	UTILITIES ENGINEER [Signature] 1/11/2017



REVISIONS

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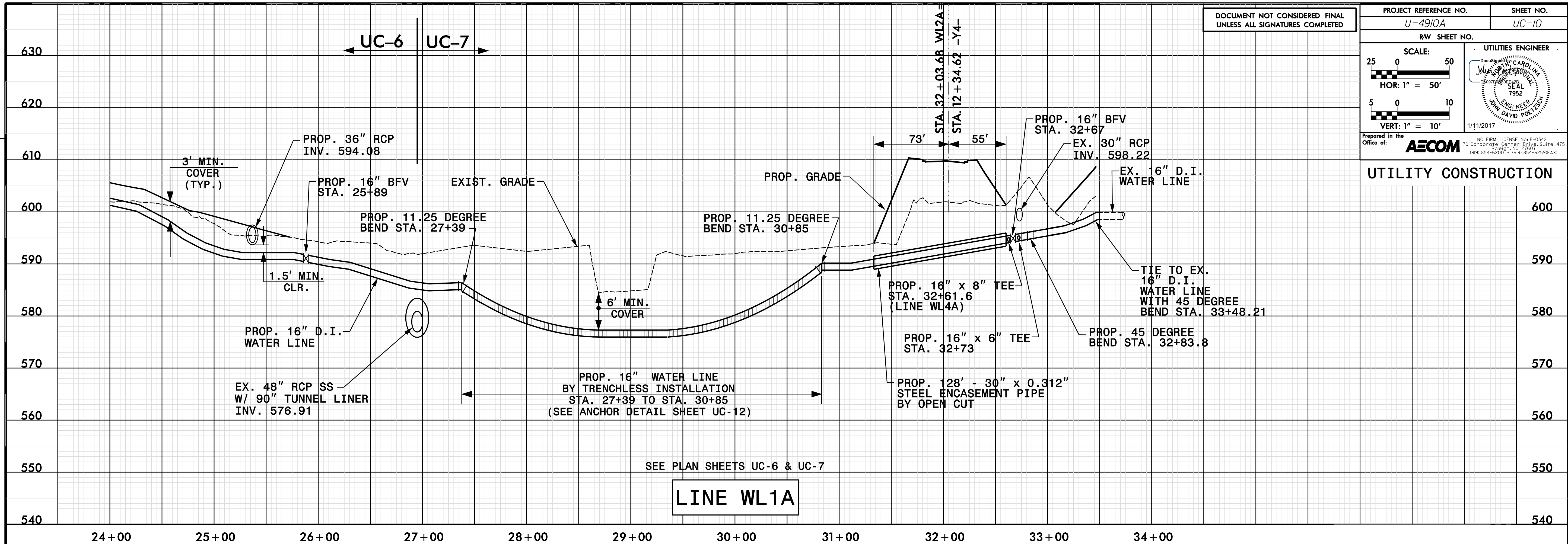
UTILITY CONSTRUCTION

LINE WL1A

LINE WL1A

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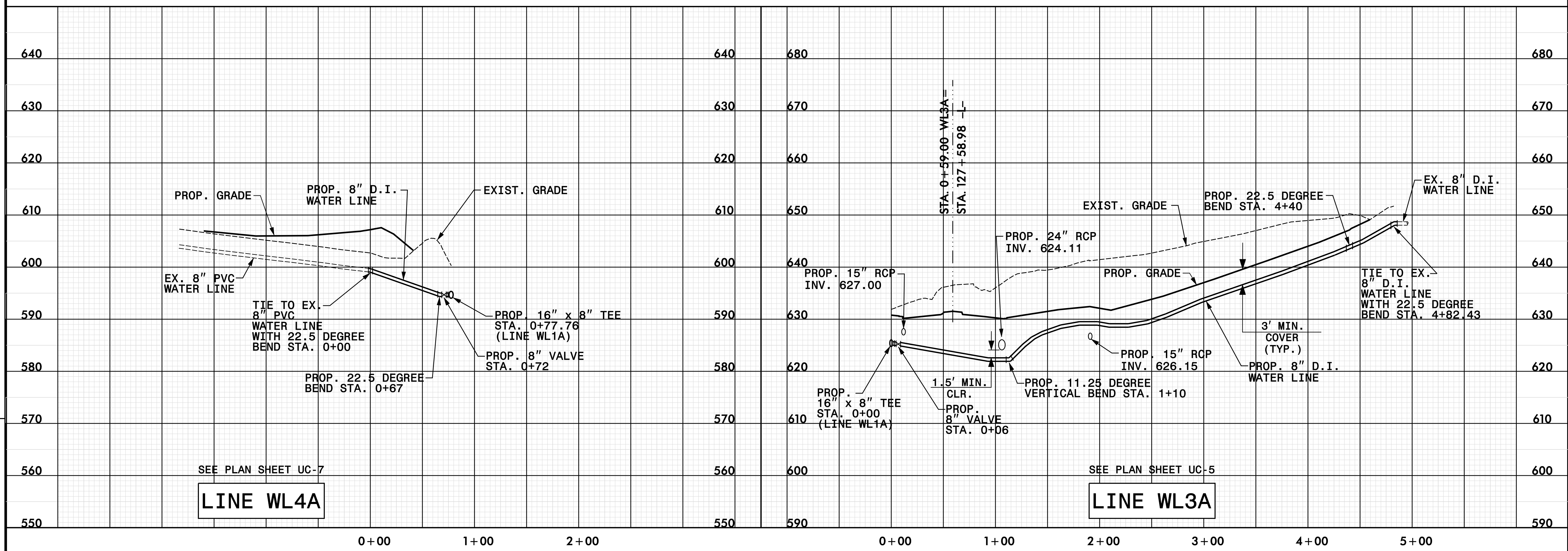
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RW SHEET NO.	
SCALE: HOR: 1" = 50' VERT: 1" = 10'	UTILITIES ENGINEER [Signature] 1/11/2017
Prepared in the Office of: AECOM NC FIRM LICENSE No. F-0342 701 Corporate Center Blvd., Suite 4175 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)	



UTILITY CONSTRUCTION

REVISIONS

Revisions:



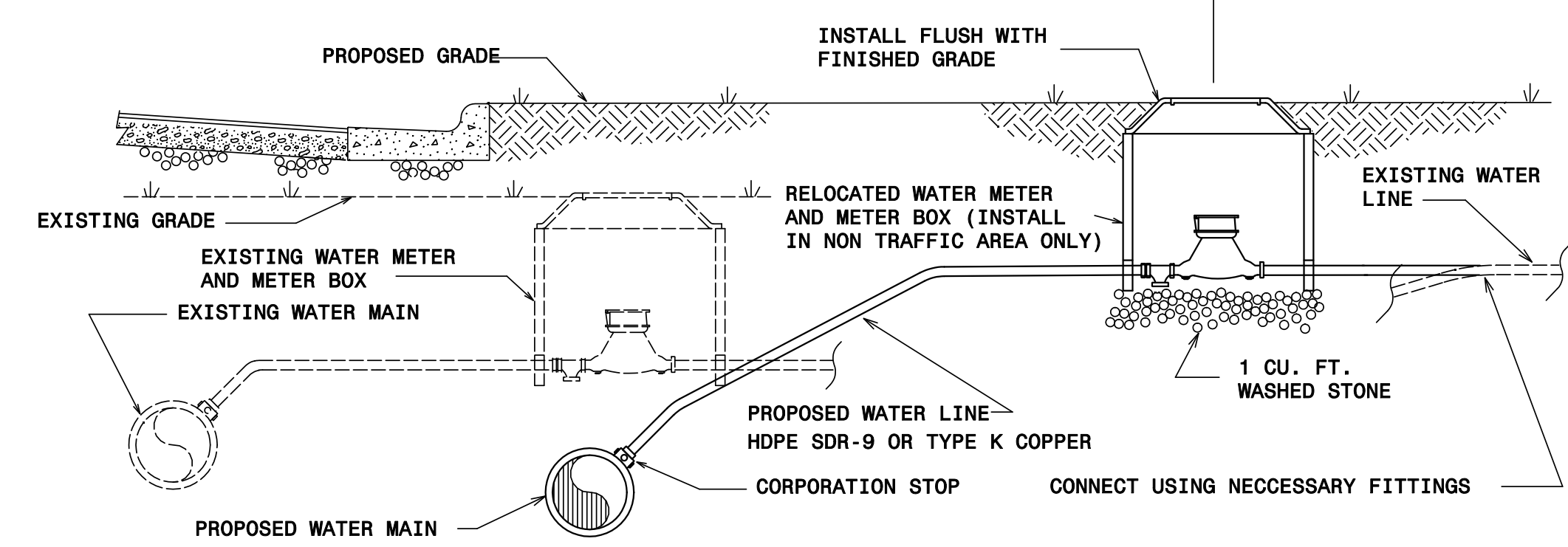
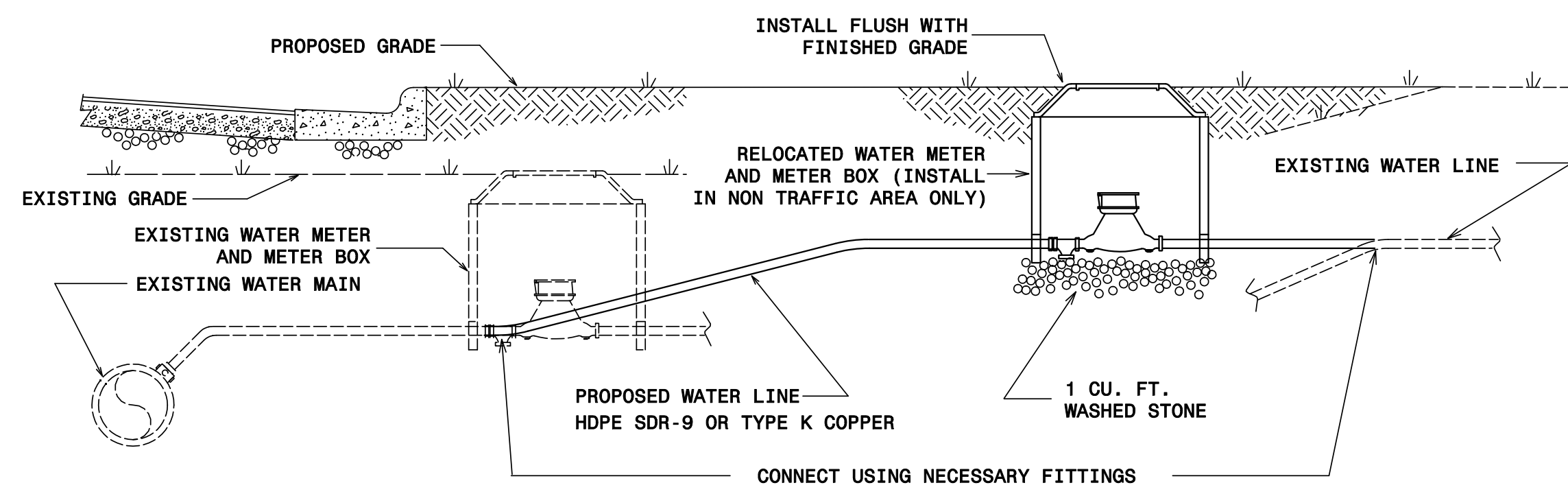
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DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO. U-4910A	SHEET NO. UC-11
RW SHEET NO.	
UTILITIES ENGINEER	

Prepared in the Office of: **AECOM**
NC FIRM LICENSE No. F-0342
701 Corporate Center Blvd., Suite 4175
Raleigh, NC 27607
(919) 854-6200 • (919) 854-6259(FAX)

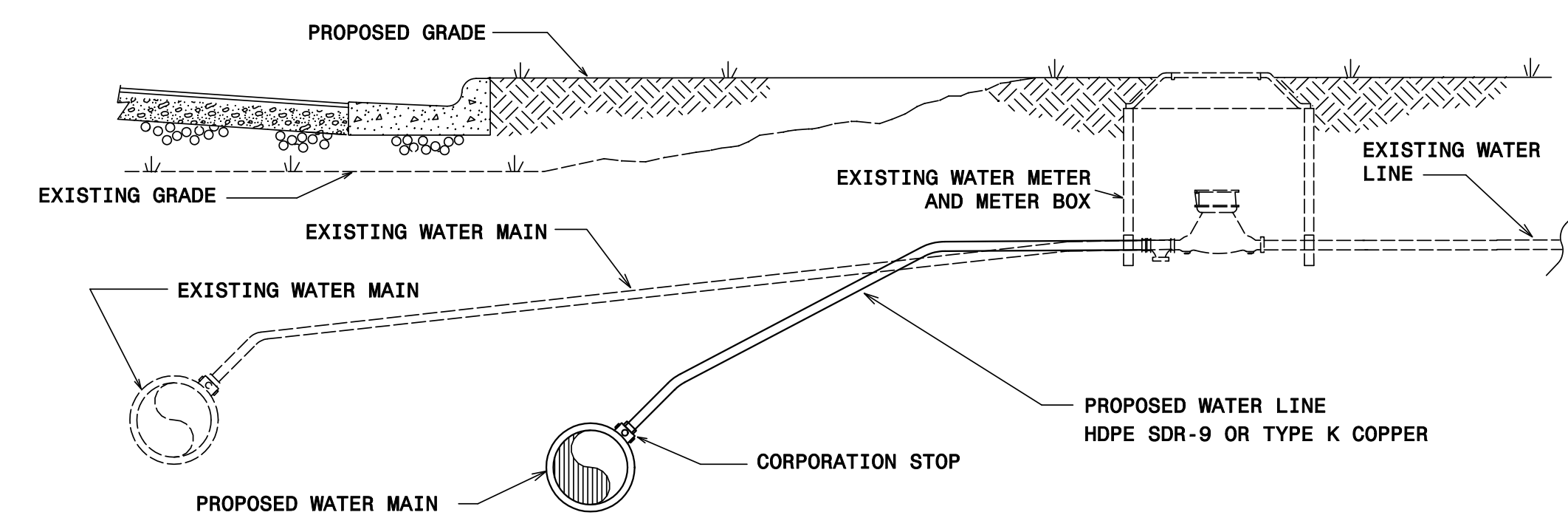
UTILITY CONSTRUCTION



NOTES:

1. RELOCATION SHALL INCLUDE THE REMOVAL AND INSTALLATION AT THE APPROPRIATE LOCATION OF THE WATER METER, CURB STOP & CLAMPING DEVICE, METER VALVES, AND METER BOX WITH LID.
2. THE NEW WATER SERVICE LINE SHALL BE OF THE SAME TYPE AND GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
3. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUM OF 12", MAXIMUM OF 24" COVER BELOW FINISHED GRADE.
4. THE OWNER RESERVES THE RIGHT TO ADD OR DELETE WATER SERVICE TAPS AND TO CHANGE LOCATIONS FROM THOSE SHOWN.

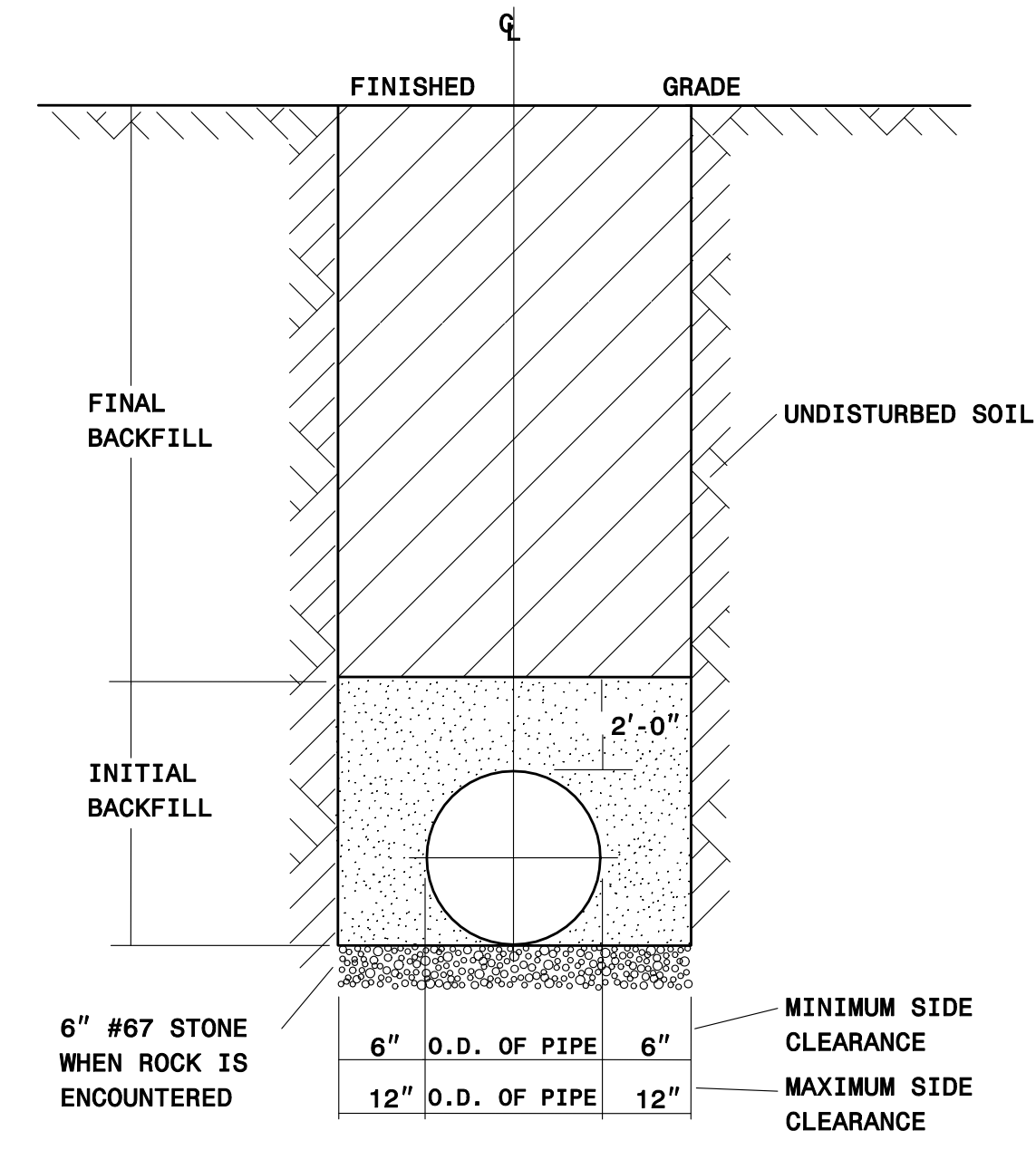
WATER METER RELOCATION DETAILS



NOTES:

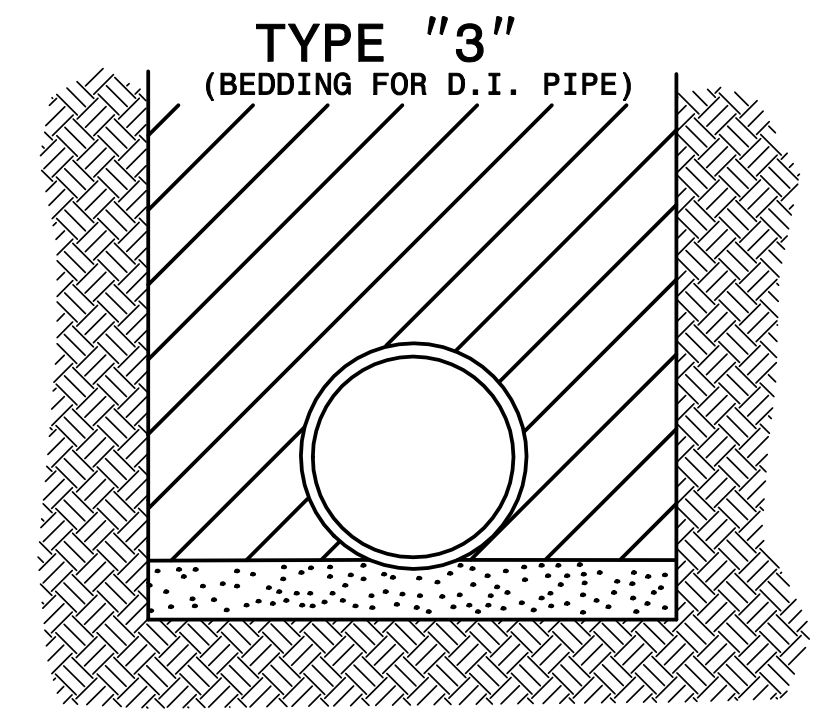
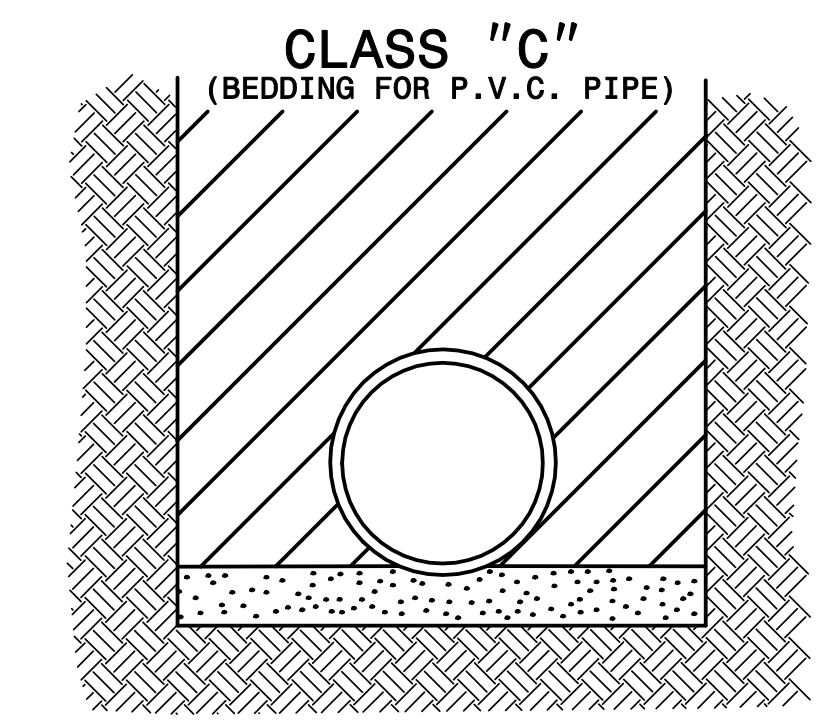
1. THE NEW WATER SERVICE LINE SHALL BE OF THE SAME TYPE AND GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
2. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUM OF 12", MAXIMUM OF 24" COVER BELOW FINISHED GRADE.

RECONNECT EXISTING WATER METER DETAIL



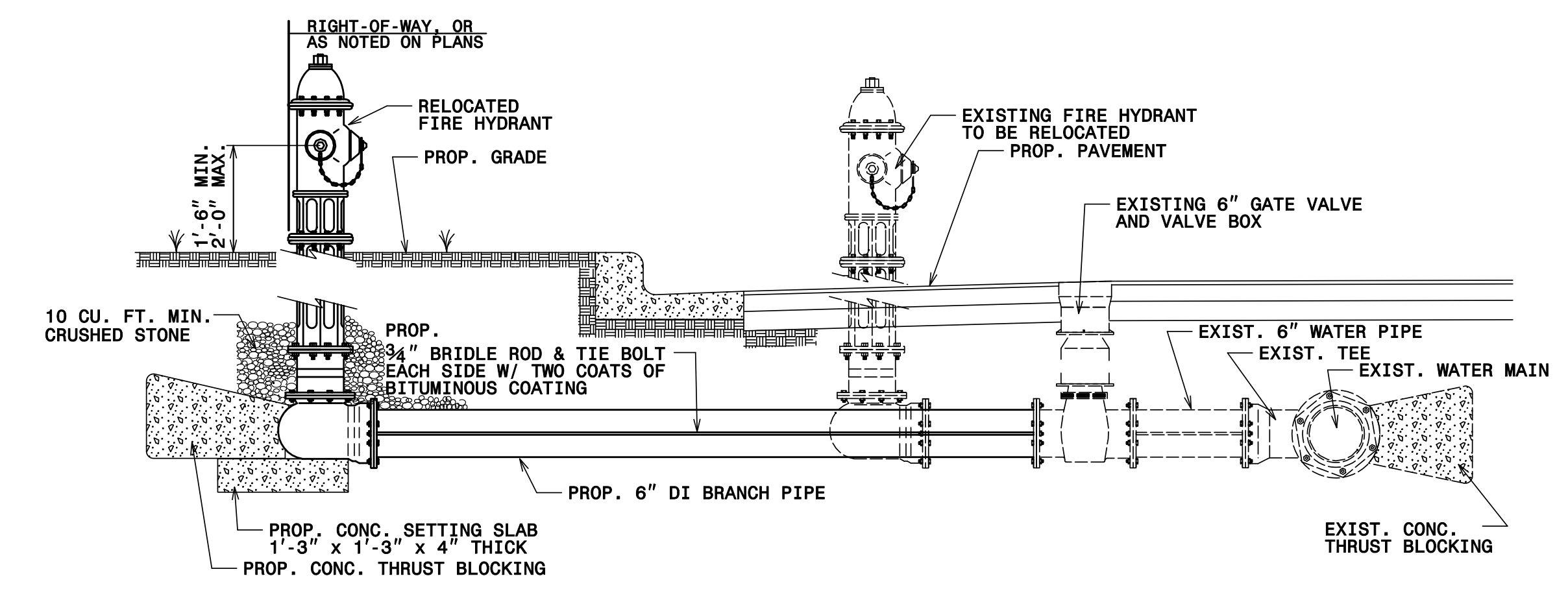
TRENCH & BACKFILL DETAIL

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		



PIPE BEDDED IN LOOSE MATERIAL, LIGHTLY TAMPED WITH A MINIMUM OF 6" UNDER PIPE. TRENCH BACKFILLED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL, IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

PIPE BEDDED IN 4" MINIMUM LOOSE SOIL. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.



FIRE HYDRANT RELOCATION DETAIL

NTS

REVISIONS

Revisions:

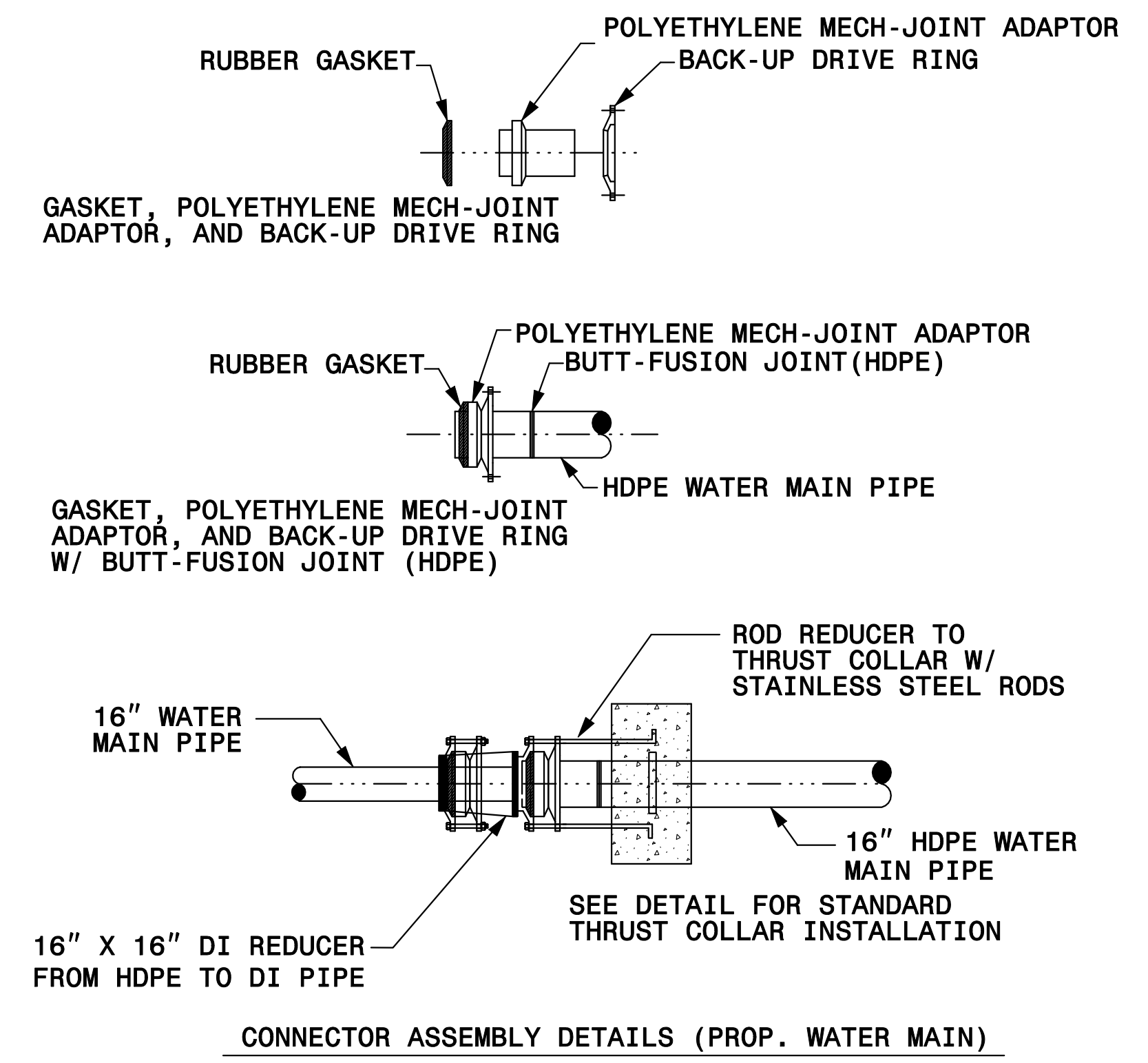
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DOCUMENT NOT CONSIDERED FINAL
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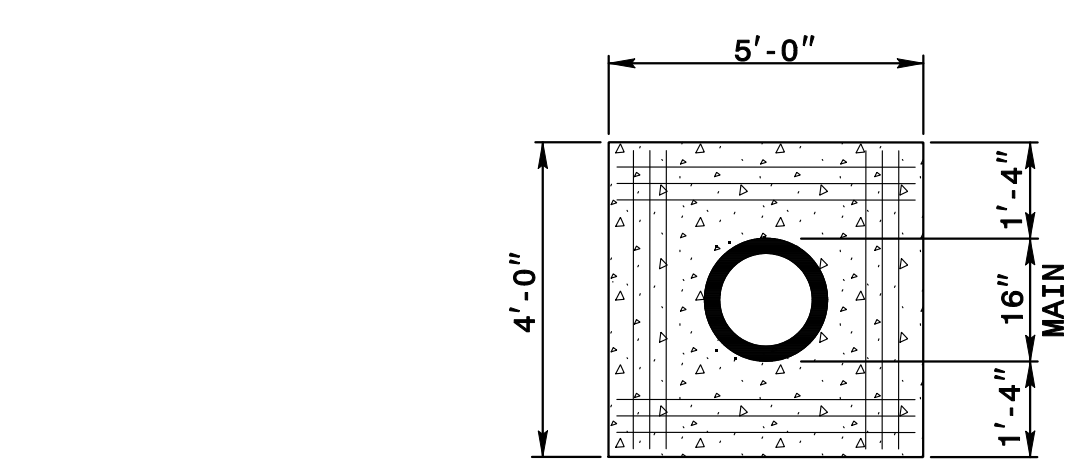
PROJECT REFERENCE NO. <i>U-4910A</i>	SHEET NO. <i>UC-12</i>
RW SHEET NO.	
UTILITIES ENGINEER	

Prepared in the Office of: **AECOM**
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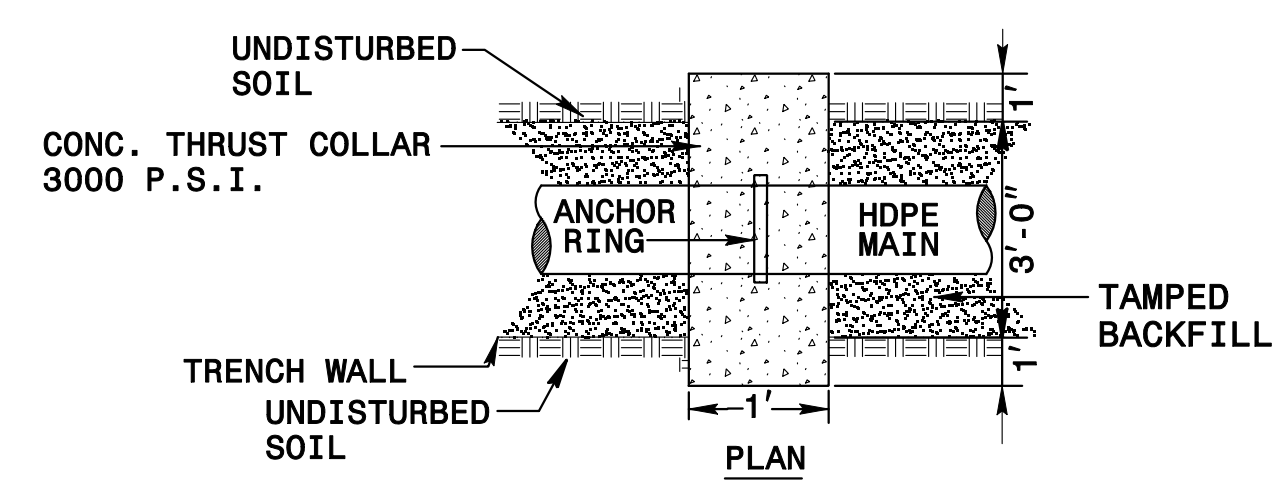
UTILITY CONSTRUCTION



CONNECTOR ASSEMBLY DETAILS (PROP. WATER MAIN)



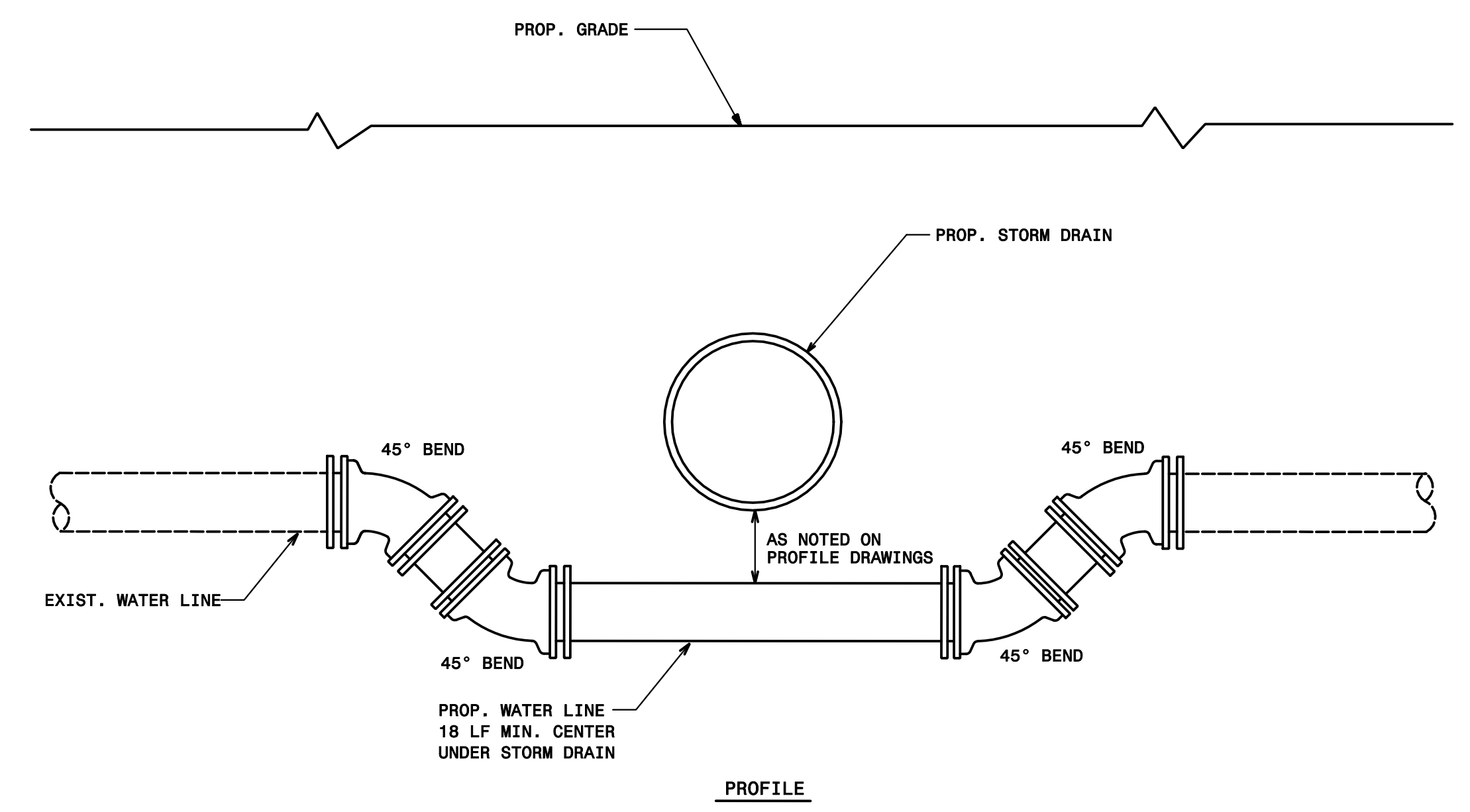
REINFORCING
NOTE:
 6" TO 16" MAINS = 12-NO. 7 BARS
 BARS PLACED AS SHOWN



THRUST COLLAR DETAIL

TRENCHLESS INSTALLATION ANCHOR DETAIL FOR HDPE PIPE

NTS



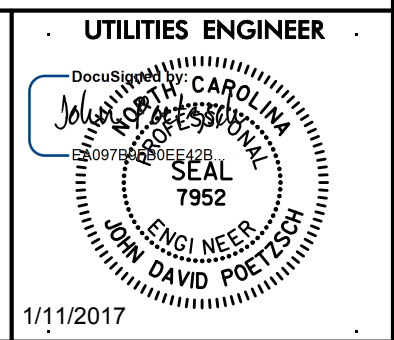
**WATER MAIN RELOCATION
 AT PROPOSED STORM DRAIN CROSSING**

NTS

REVISIONS

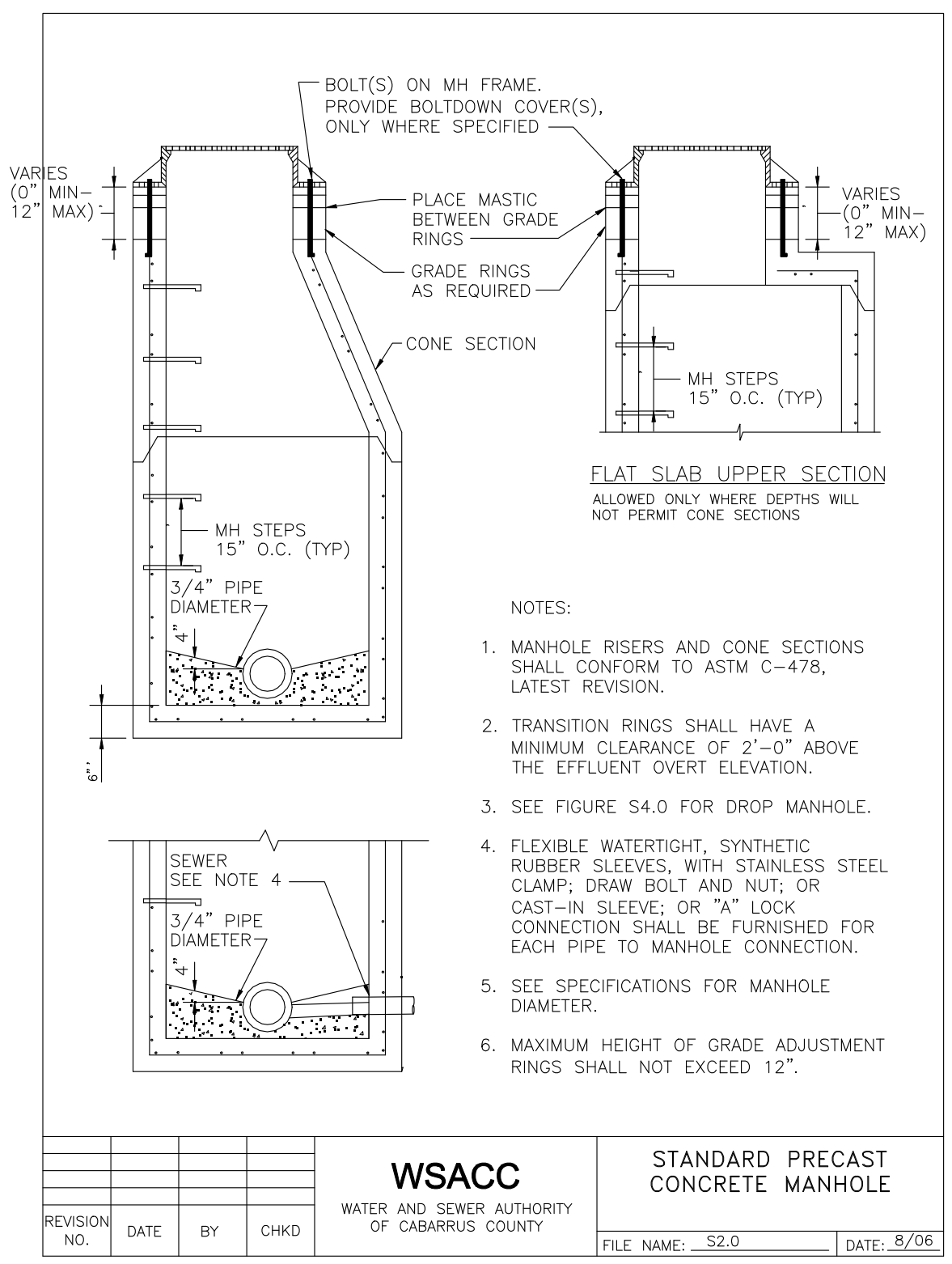
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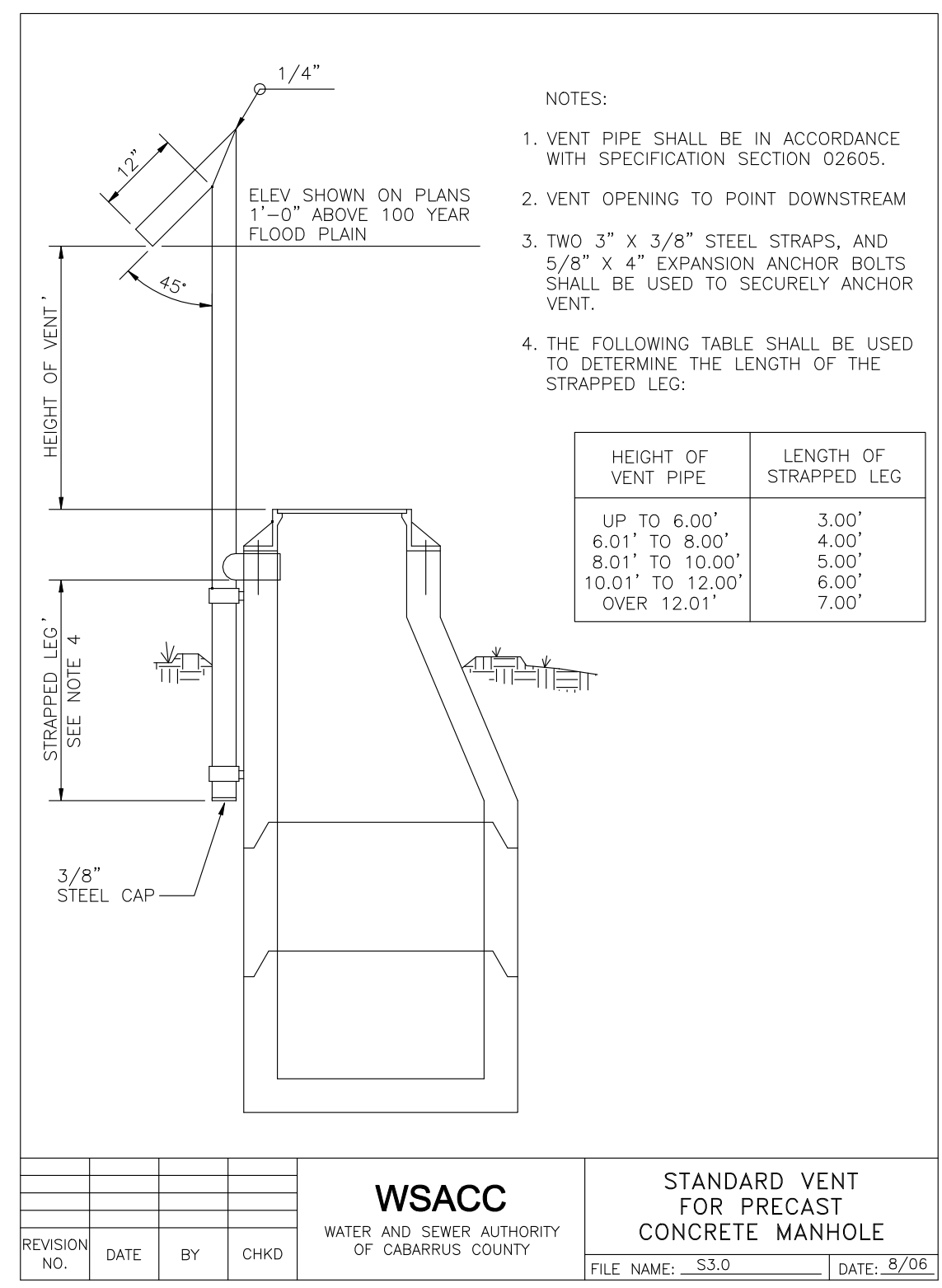


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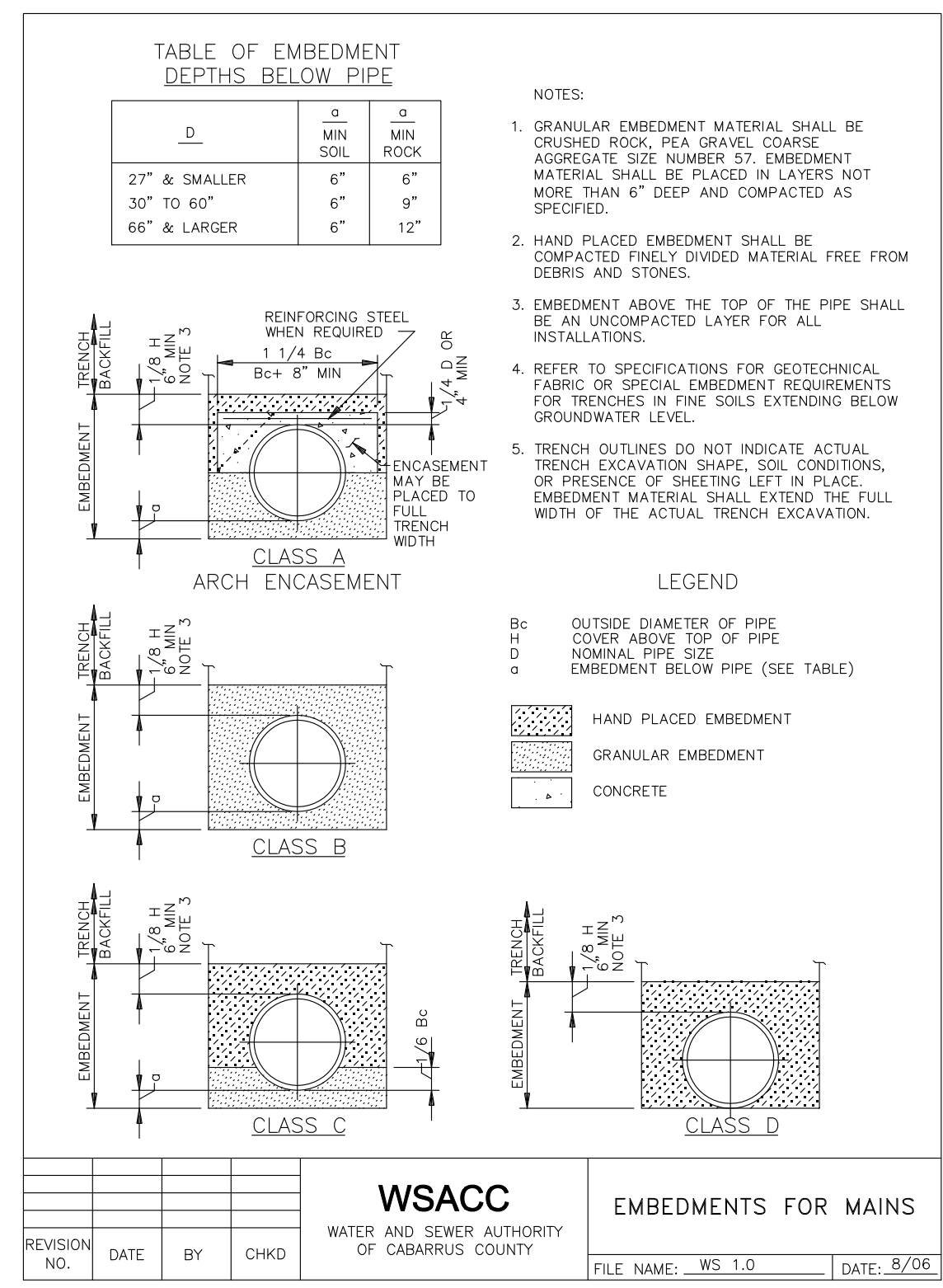
UTILITY CONSTRUCTION



WSACC
WATER AND SEWER AUTHORITY
OF CABARRUS COUNTY
STANDARD PRECAST CONCRETE MANHOLE
FILE NAME: S2.0 DATE: 8/06

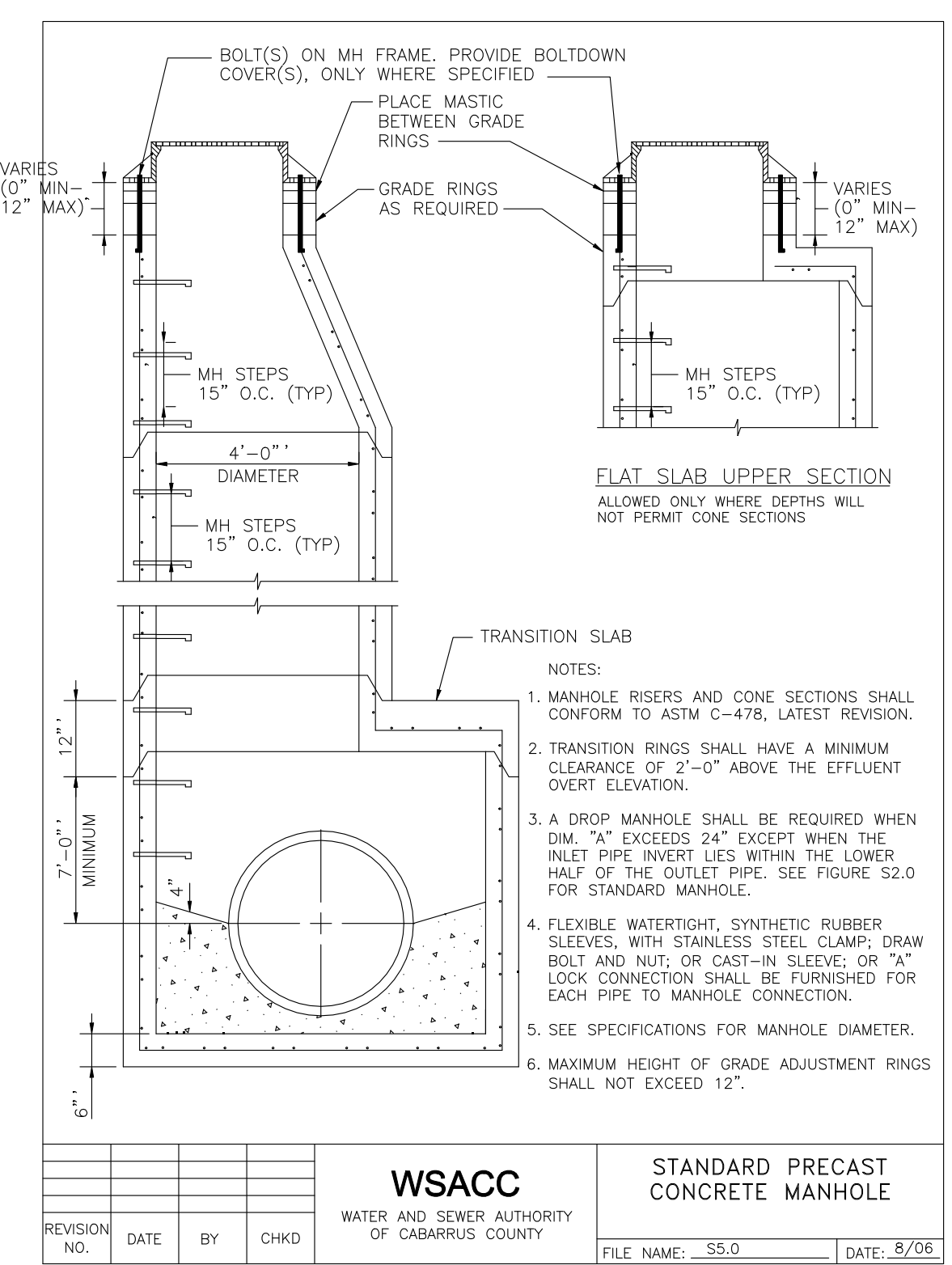


WSACC
WATER AND SEWER AUTHORITY
OF CABARRUS COUNTY
STANDARD VENT FOR PRECAST CONCRETE MANHOLE
FILE NAME: S3.0 DATE: 8/06

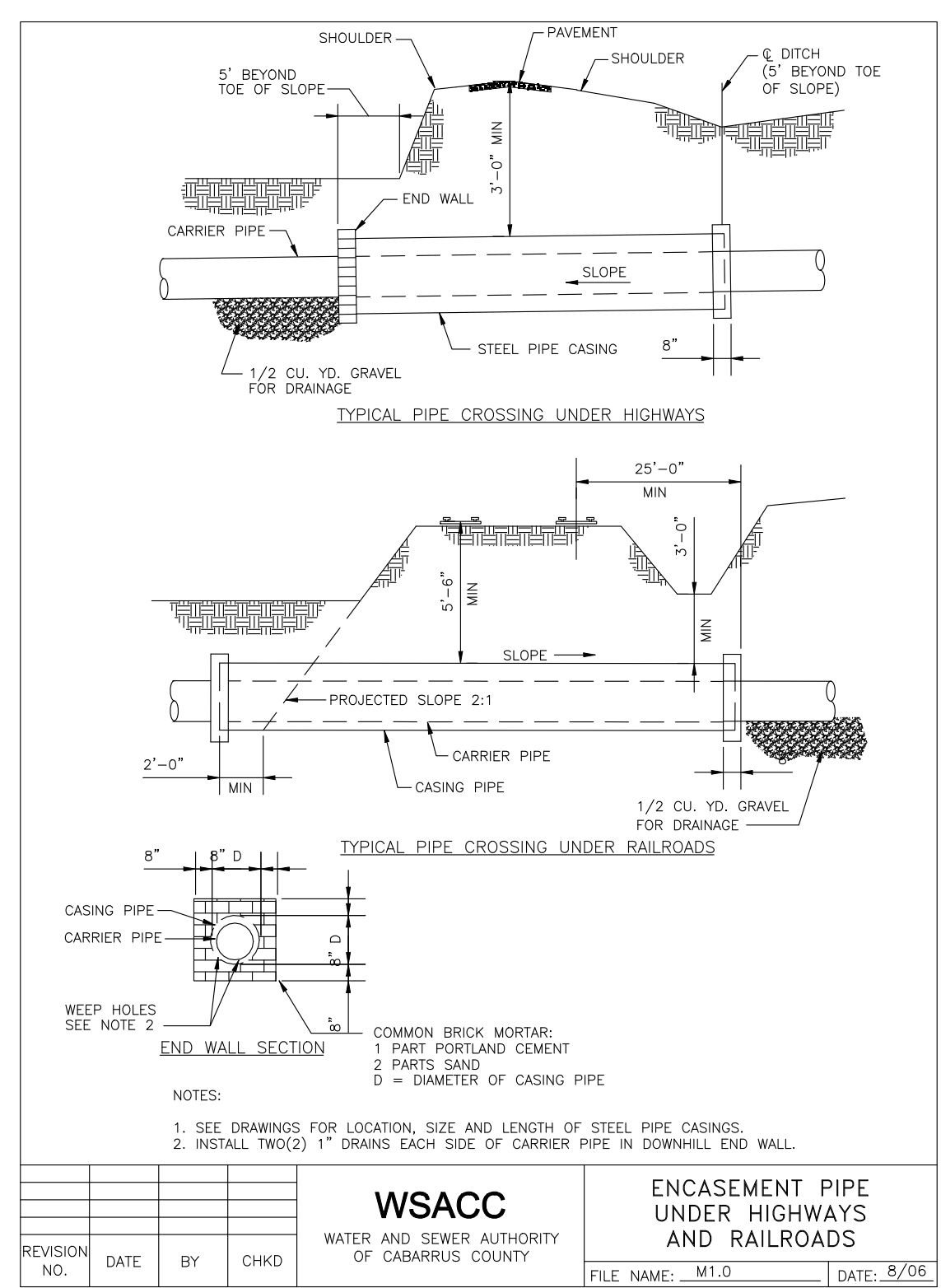


WSACC
WATER AND SEWER AUTHORITY
OF CABARRUS COUNTY
EMBEDMENTS FOR MAINS
FILE NAME: WS.1.0 DATE: 8/06

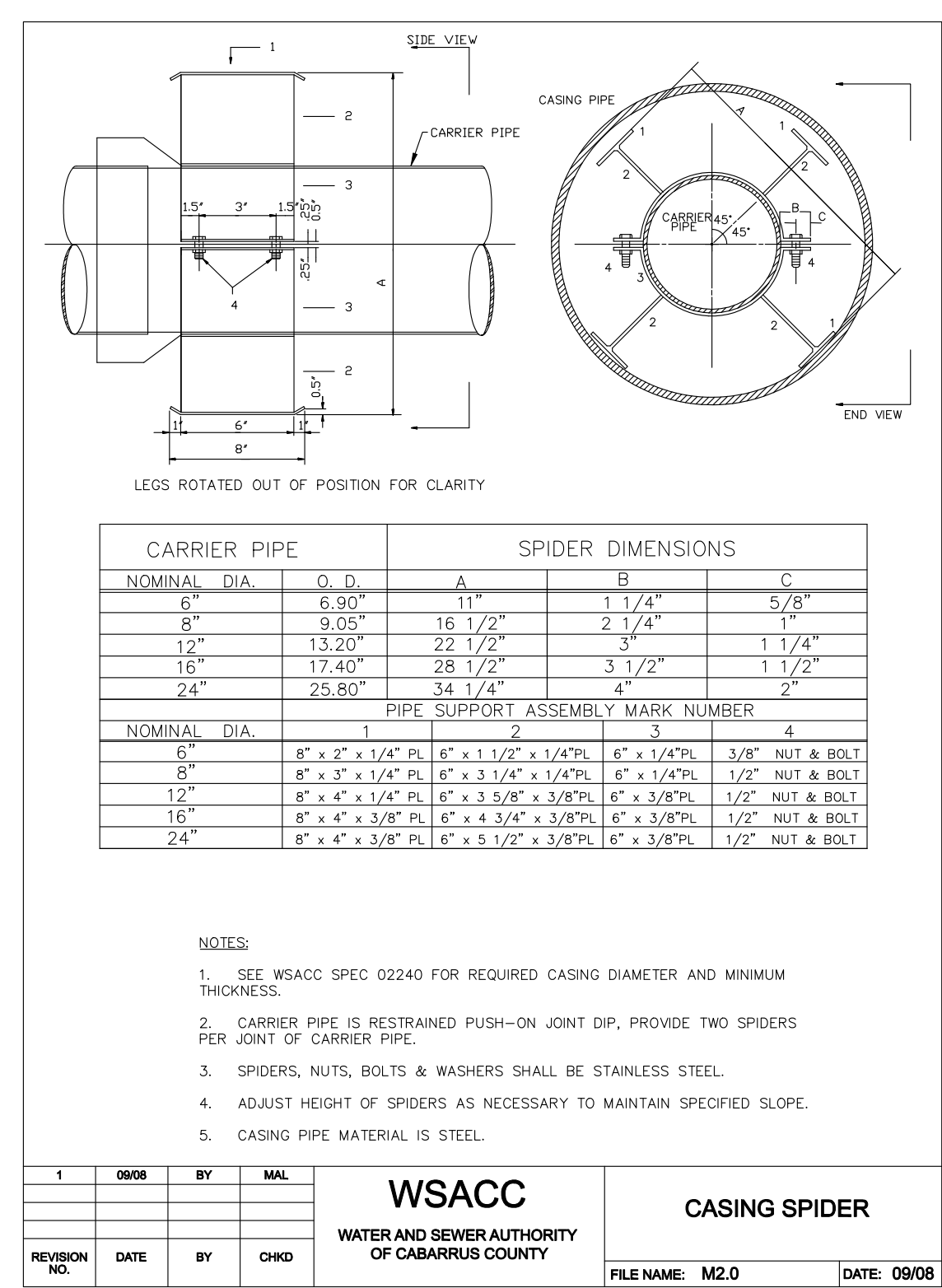
REVISIONS



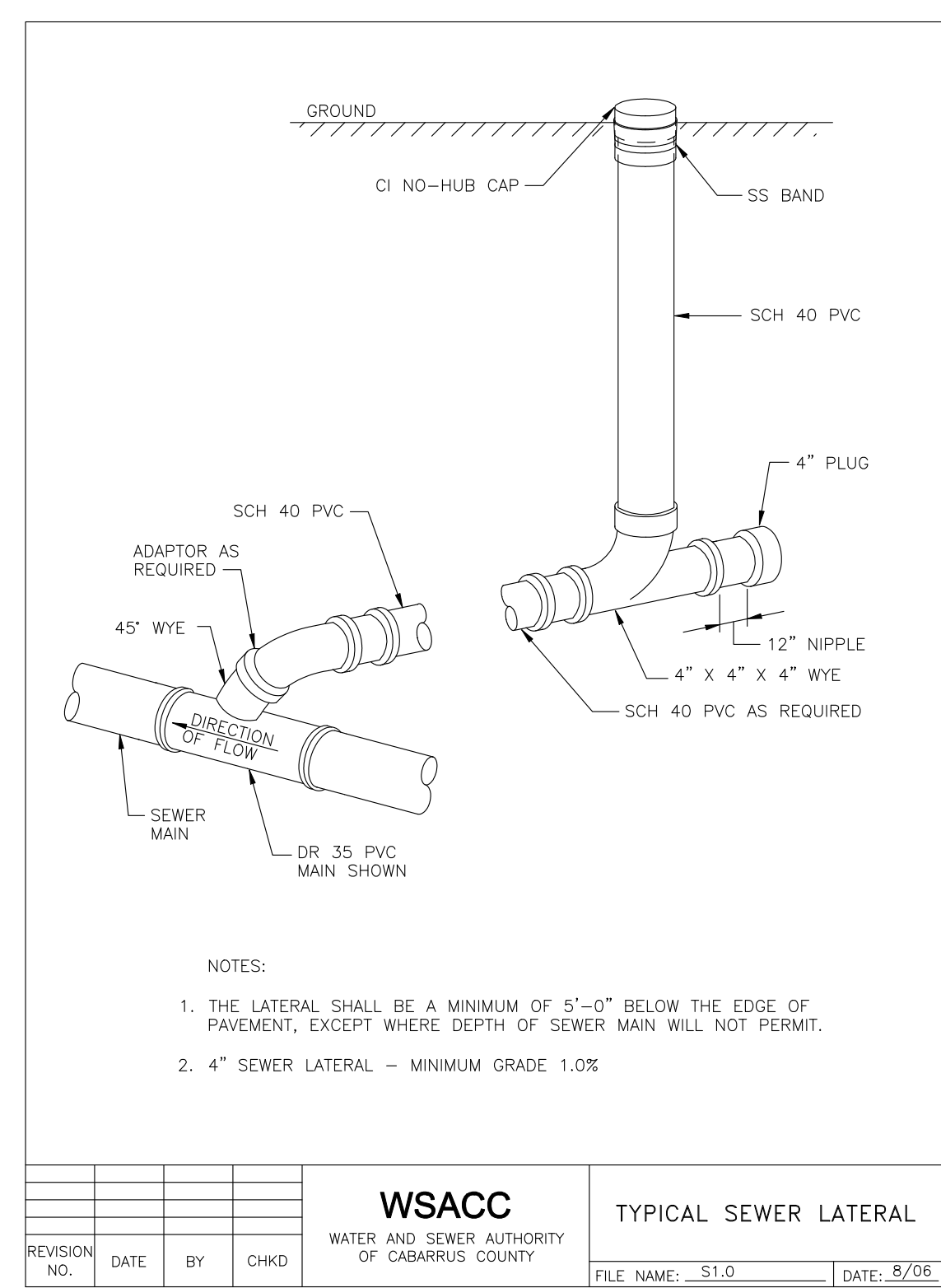
WSACC
WATER AND SEWER AUTHORITY
OF CABARRUS COUNTY
STANDARD PRECAST CONCRETE MANHOLE
FILE NAME: S5.0 DATE: 8/06



WSACC
WATER AND SEWER AUTHORITY
OF CABARRUS COUNTY
ENCASMENT PIPE UNDER HIGHWAYS AND RAILROADS
FILE NAME: M1.0 DATE: 8/06



WSACC
WATER AND SEWER AUTHORITY
OF CABARRUS COUNTY
CASING SPIDER
FILE NAME: M2.0 DATE: 09/08



WSACC
WATER AND SEWER AUTHORITY
OF CABARRUS COUNTY
TYPICAL SEWER LATERAL
FILE NAME: S1.0 DATE: 8/06

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