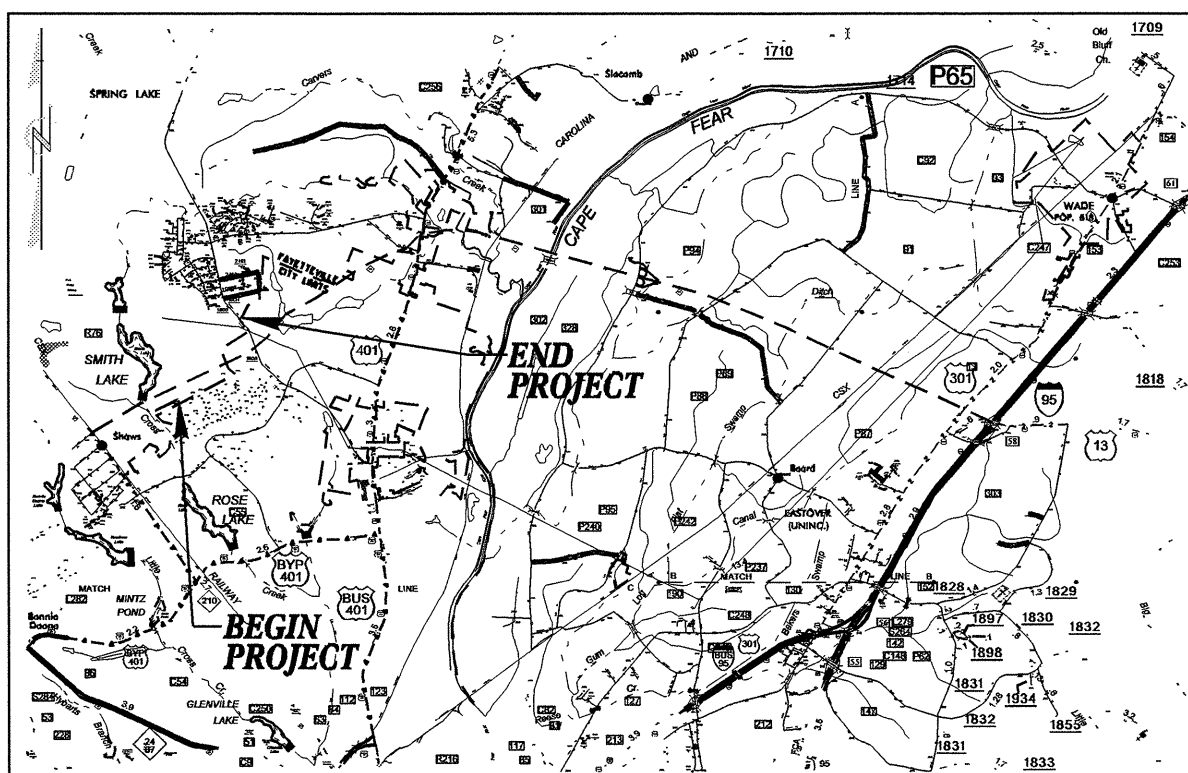


9/29/99

**PROJECT: X-0002CA**



VICINITY MAP

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS  
CUMBERLAND COUNTY**

**LOCATION: NC 24 EXTENSION (FAYETTEVILLE OUTER LOOP)  
FROM 1.3 MILES EAST OF NC87-NC210 TO WEST OF SR1600**

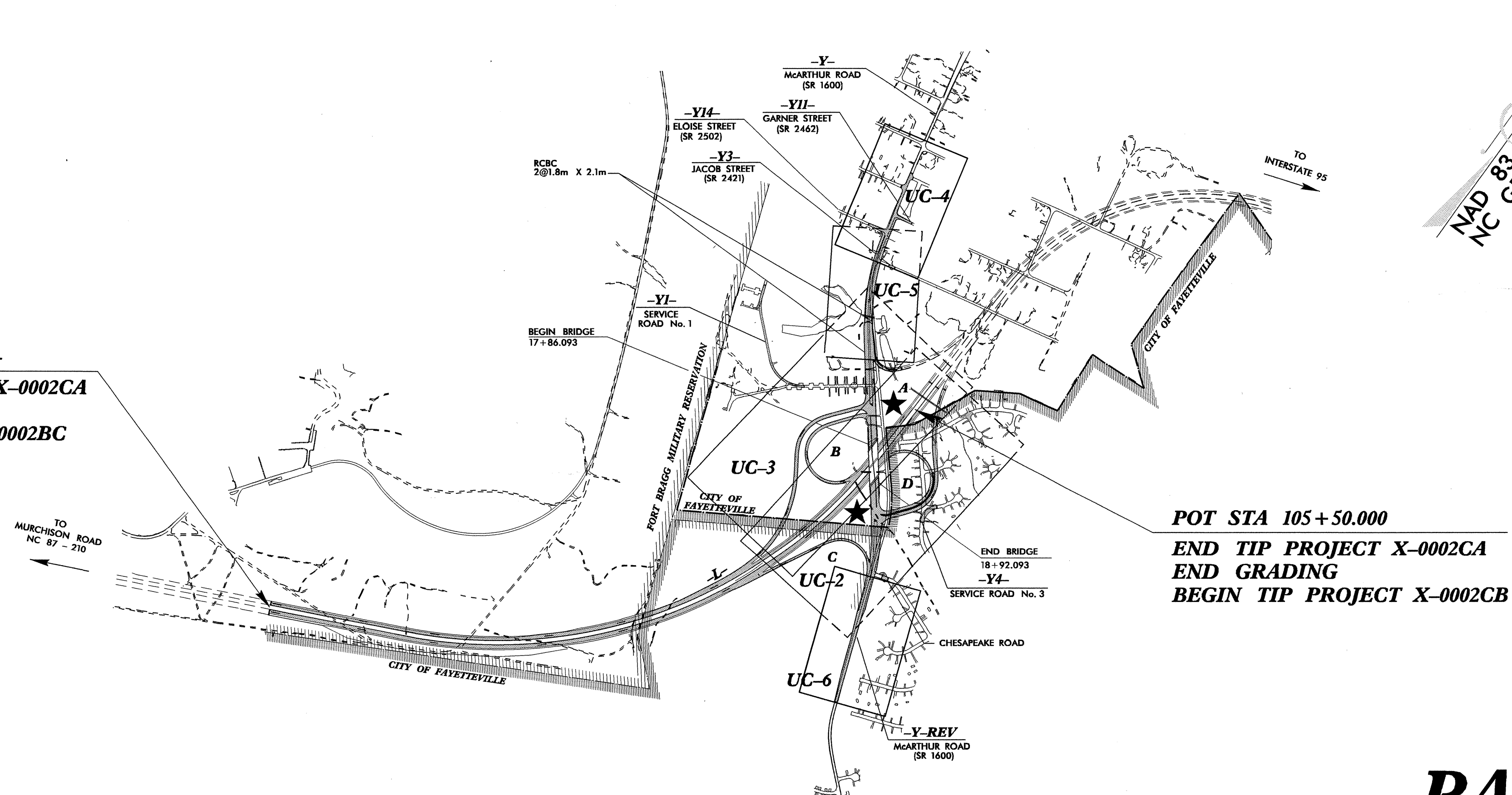
**TYPE OF WORK: UTILITY CONSTRUCTION**

**METRIC**

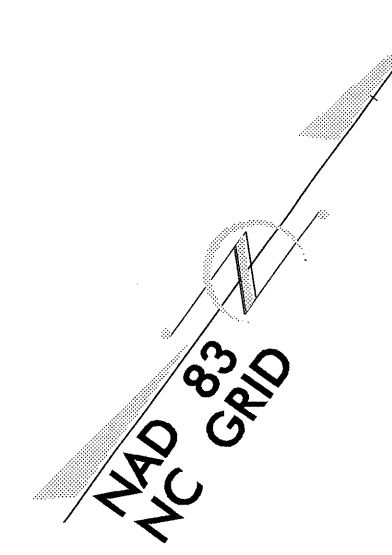
ALL DIMENSIONS IN THESE PLANS ARE IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

T.I.P. NO.	SHEET NO.
X-0002CA	UC-1

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 BEGIN GRADING  
 END TIP PROJECT X-0002BC

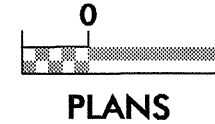


POT STA 105+50.000  
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 END GRADING  
 BEGIN TIP PROJECT X-0002CB

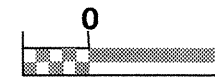


**PART 2 OF 2**

**GRAPHIC SCALES**



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

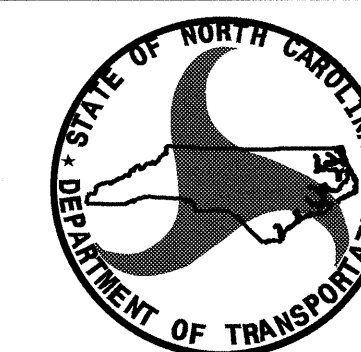
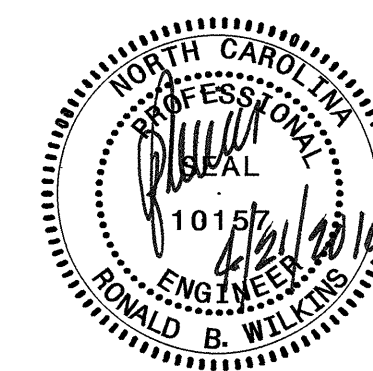
**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 THRU UC-6	UTILITY CONSTRUCTION PLAN SHEETS
UC-7 THRU UC-8	PROFILE SHEET
UC-9	DETAIL SHEET

**WATER AND SEWER OWNERS ON PROJECT**

- (1) WATER - FAYETTEVILLE PWC
- (2) SANITARY SEWER - FAYETTEVILLE PWC

SEAL

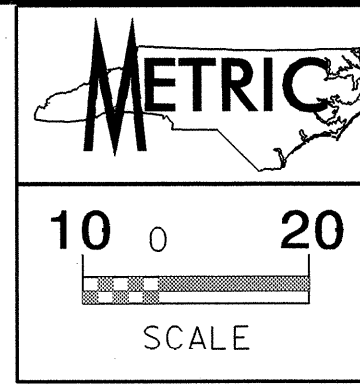


PREPARED IN THE OFFICE OF:  
**DIVISION OF HIGHWAYS  
 UTILITIES UNIT  
 UTILITY SECTION**

1591 MAIL SERVICES CENTER  
 RALEIGH NC 27699-1591  
 PHONE (919) 250-4128  
 FAX (919) 250-4119

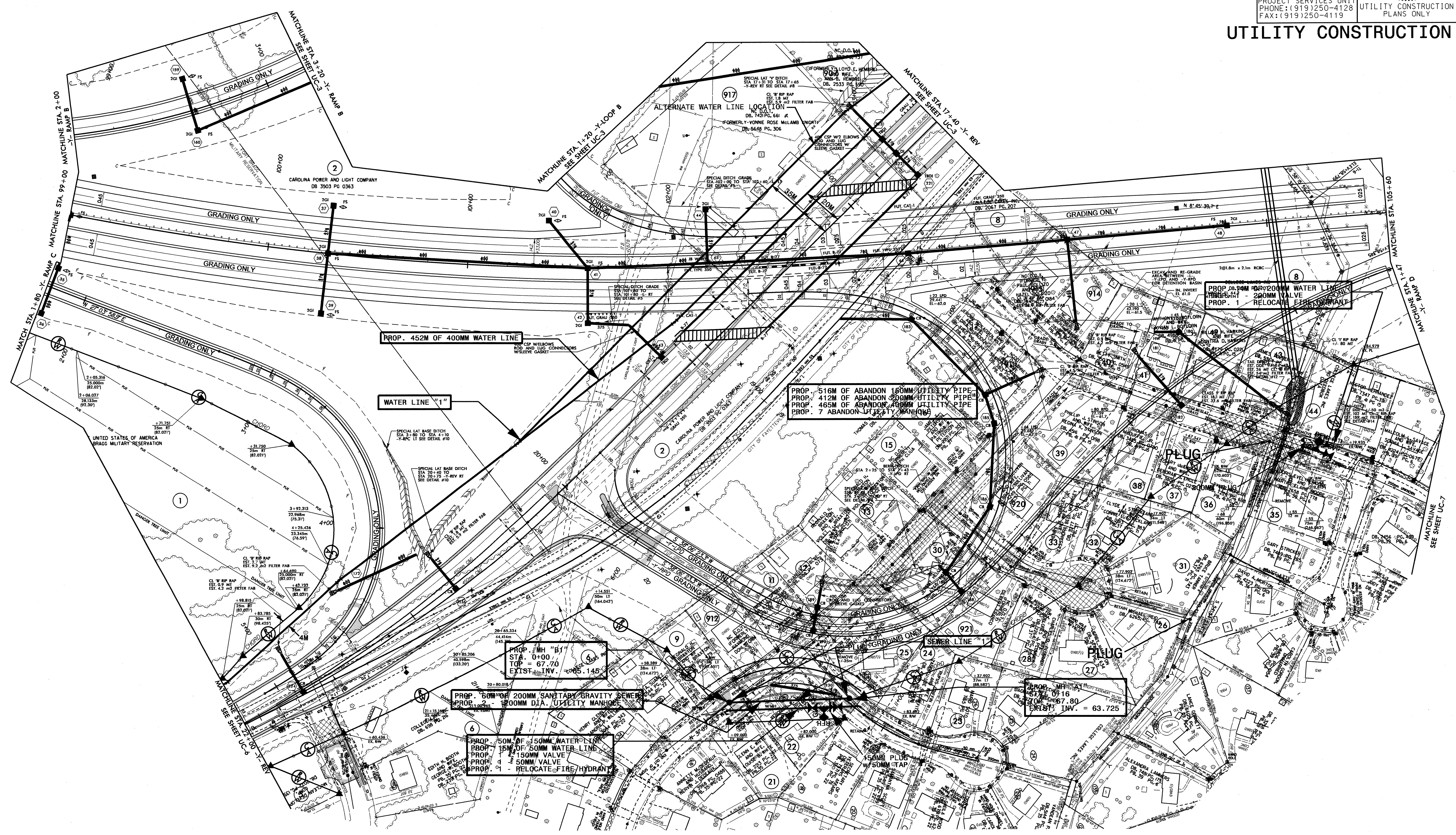
**Roger Worthington, P.E.** UTILITIES SECTION ENGINEER  
**R. B. WILKINS, P.E.** UTILITIES SQUAD LEADER PROJECT ENGINEER  
**MICHAEL R. BRIGHT** UTILITIES PROJECT DESIGNER

22-APR-2010 15:53 R:\Utility\Projects\X-0002ca.ut\_title\_uc1.psh.dgn




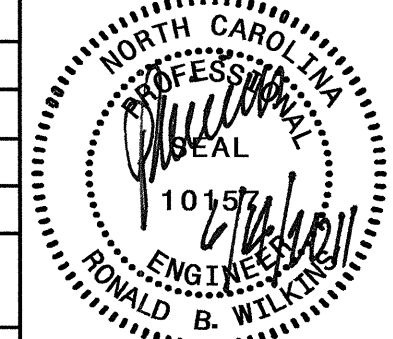
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DESIGNED BY: <b>MRB</b>	
DRAWN BY: <b>MRB</b>	
CHECKED BY: <b>RBW</b>	
APPROVED BY: <b>RBW</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

NAD 83  
NCGRID



05-APR-2010 16:05 H:\P\01\X-0002CA\U-10.UC-2.pdw  
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 10:11:11

# EXIST. WATER LINE OWNED BY OLD NORTH UTILITY SERVICES

 5 0 10 SCALE	PROJECT REFERENCE NO.	SHEET NO.
	X-0002CA	UC-2A
	DESIGNED BY: MRB	
	DRAWN BY: MRB	
	CHECKED BY: RBW	
APPROVED BY: RBW		
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 250-4128 FAX: (919) 250-4119		

1  
 THE UNITED STATES OF AMERICA  
 FORT BRAGG MILITARY RESERVATION

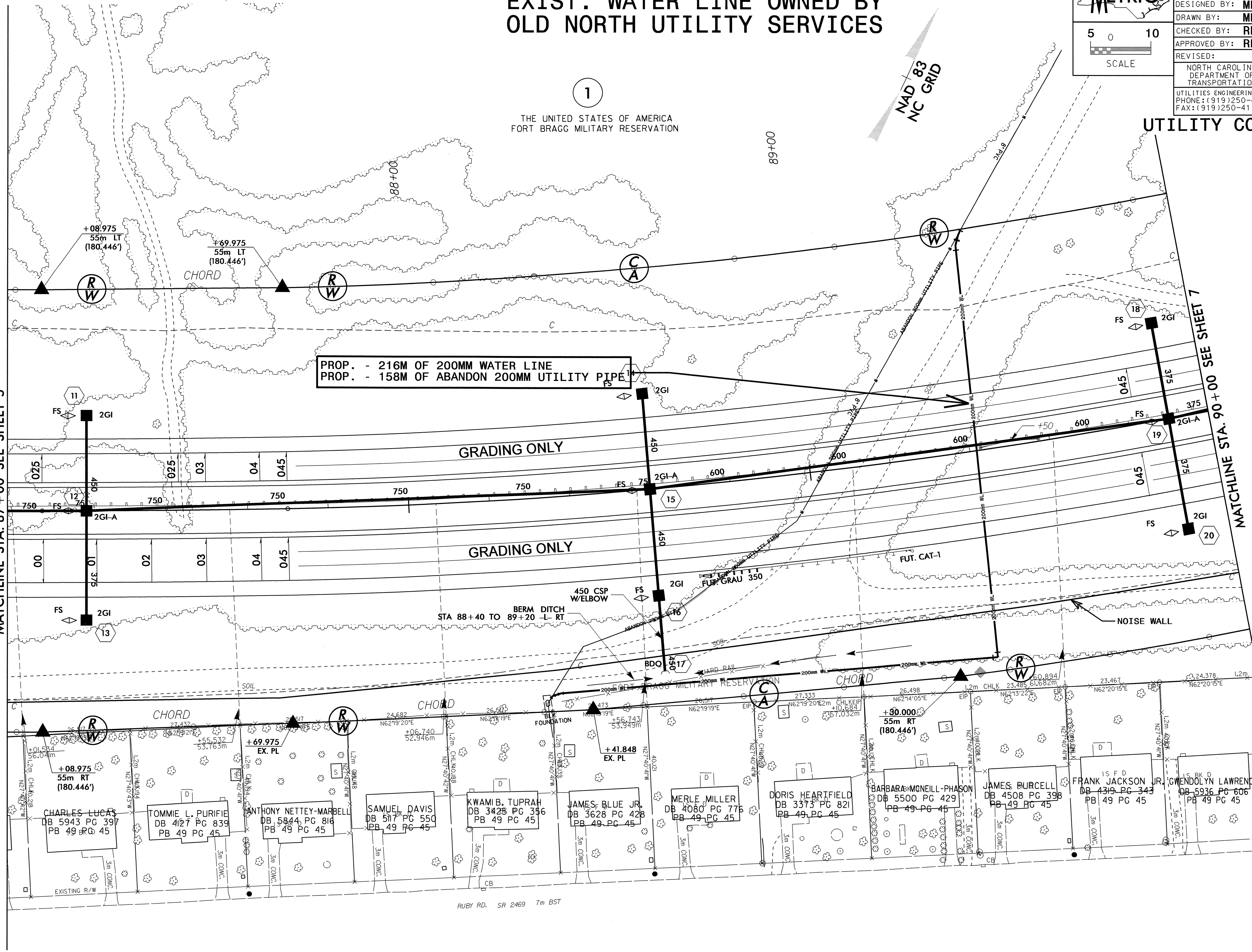
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UTILITY CONSTRUCTION

MATCHLINE STA. 87+00 SEE SHEET 5

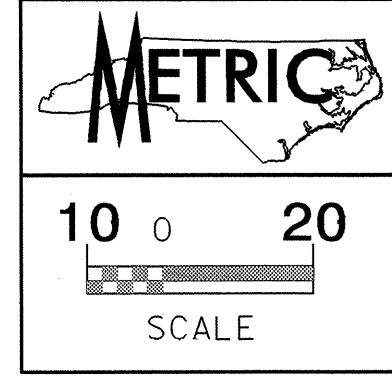
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PROP. - 216M OF 200MM WATER LINE  
 PROP. - 158M OF ABANDON 200MM UTILITY PIPE



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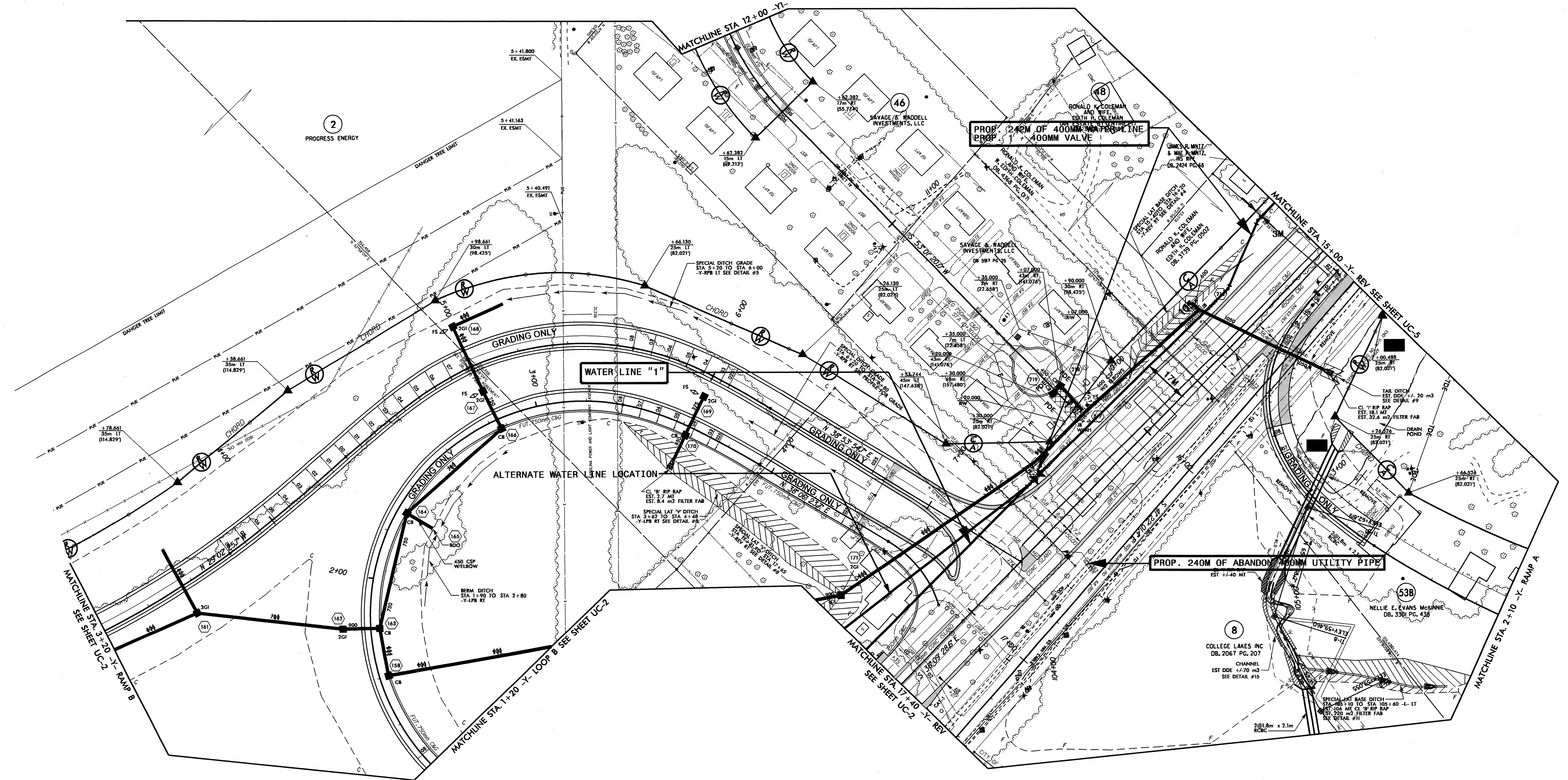
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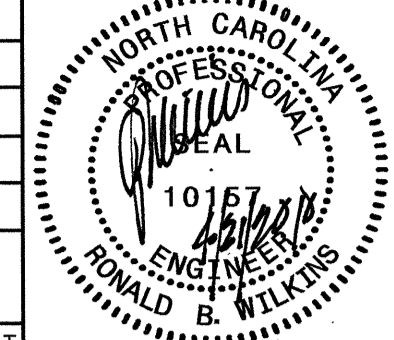
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DRAWN BY:	MRB		
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APPROVED BY:	RBW		
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
			UTILITY CONSTRUCTION PLANS ONLY

NAD 83  
NC GRID

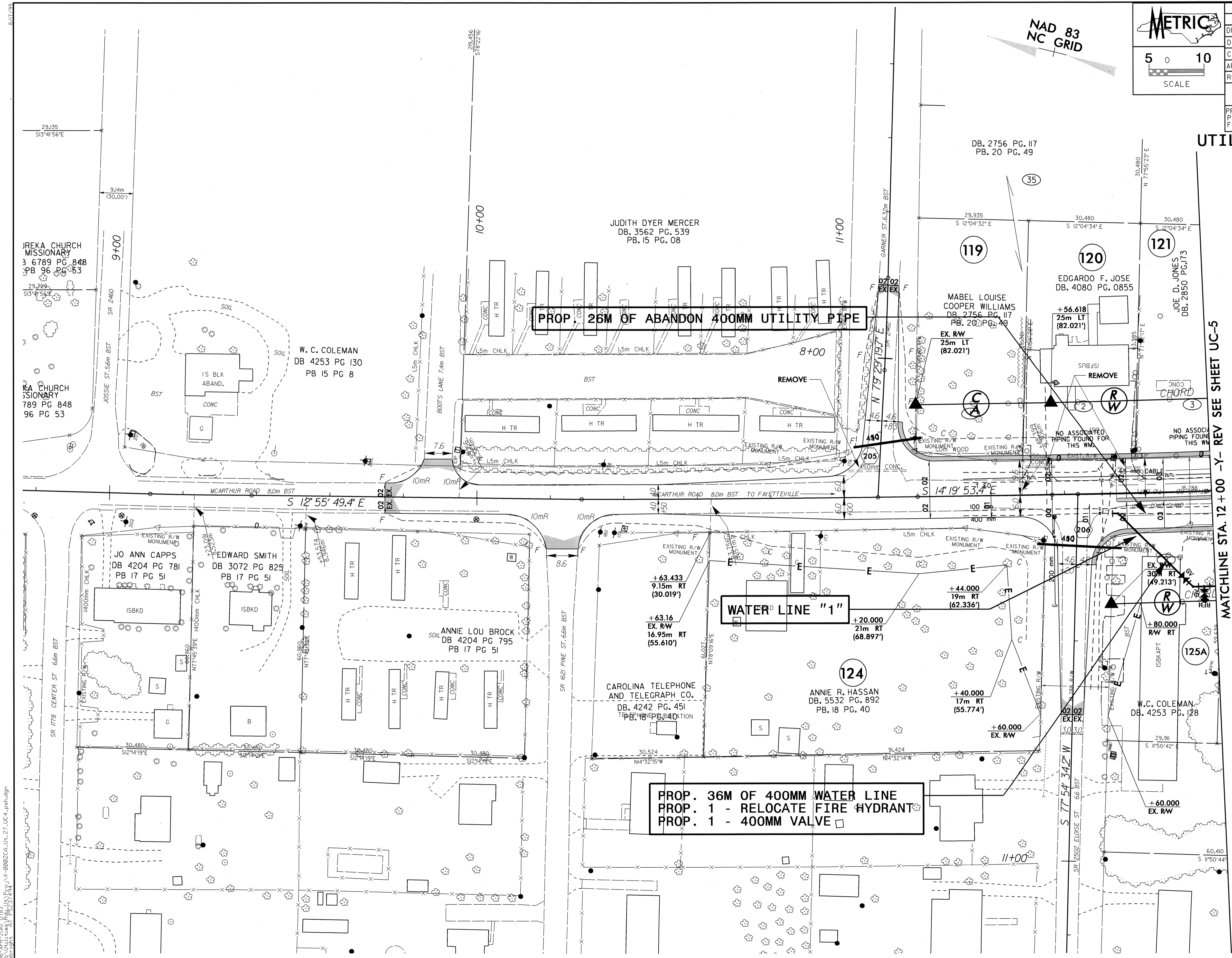
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	DRAWN BY:	MRB		
	CHECKED BY:	RBW		
	APPROVED BY:	RBW		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119		

**UTILITY CONSTRUCTION**



**PROP. 26M OF ABANDON 400MM UTILITY PIPE**


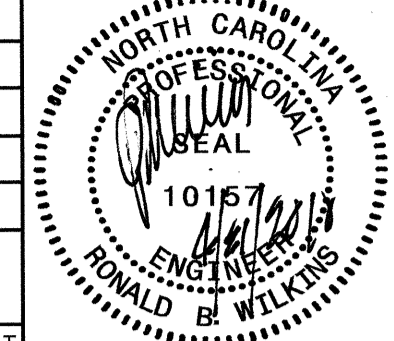
**WATER LINE "1"**

**PROP. 36M OF 400MM WATER LINE  
PROP. 1 - RELOCATE FIRE HYDRANT  
PROP. 1 - 400MM VALVE**

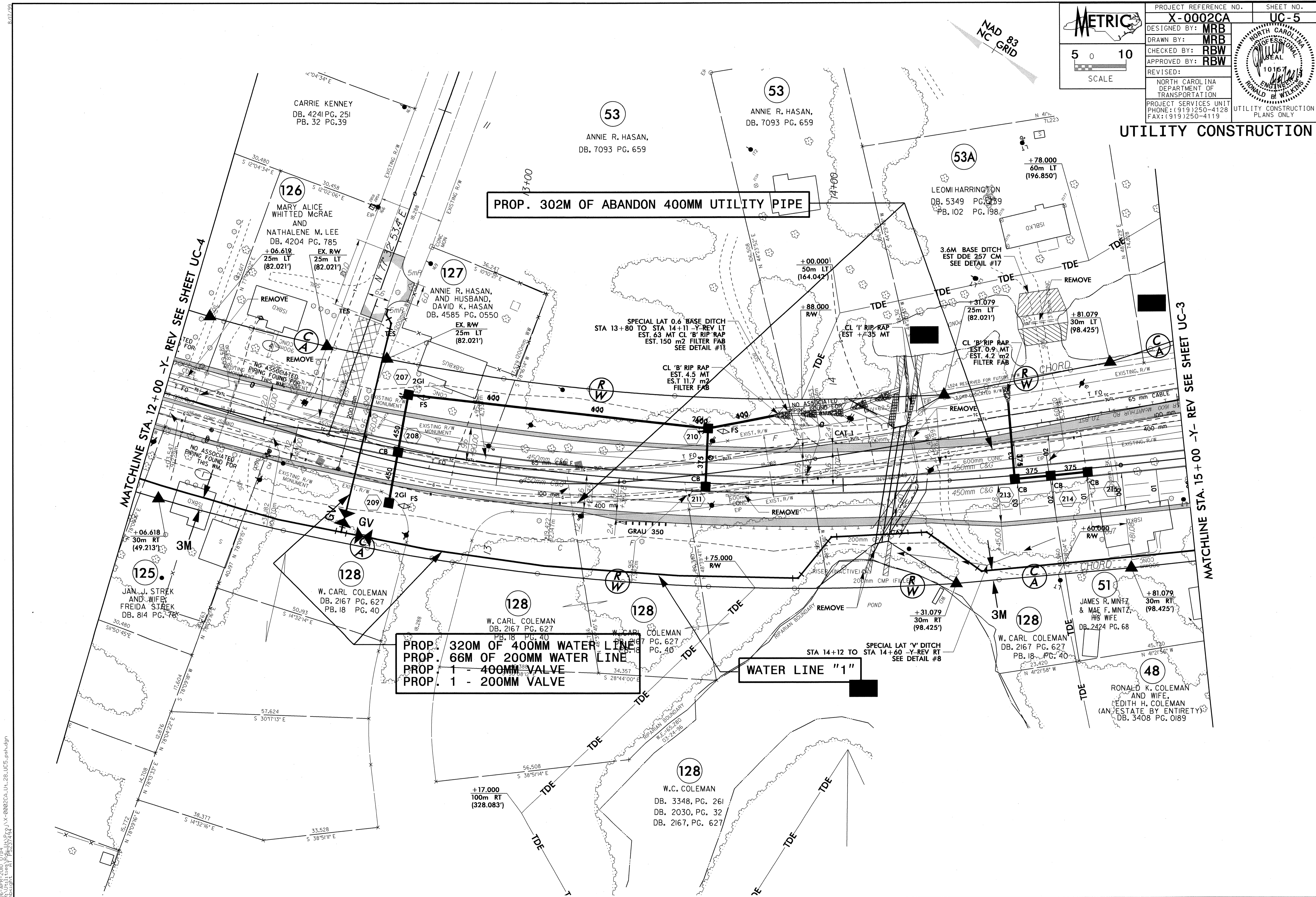
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	DESIGNED BY:	MRB		
	DRAWN BY:	MRB		
	CHECKED BY:	RBW		
	APPROVED BY:	RBW		
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119		

**UTILITY CONSTRUCTION**



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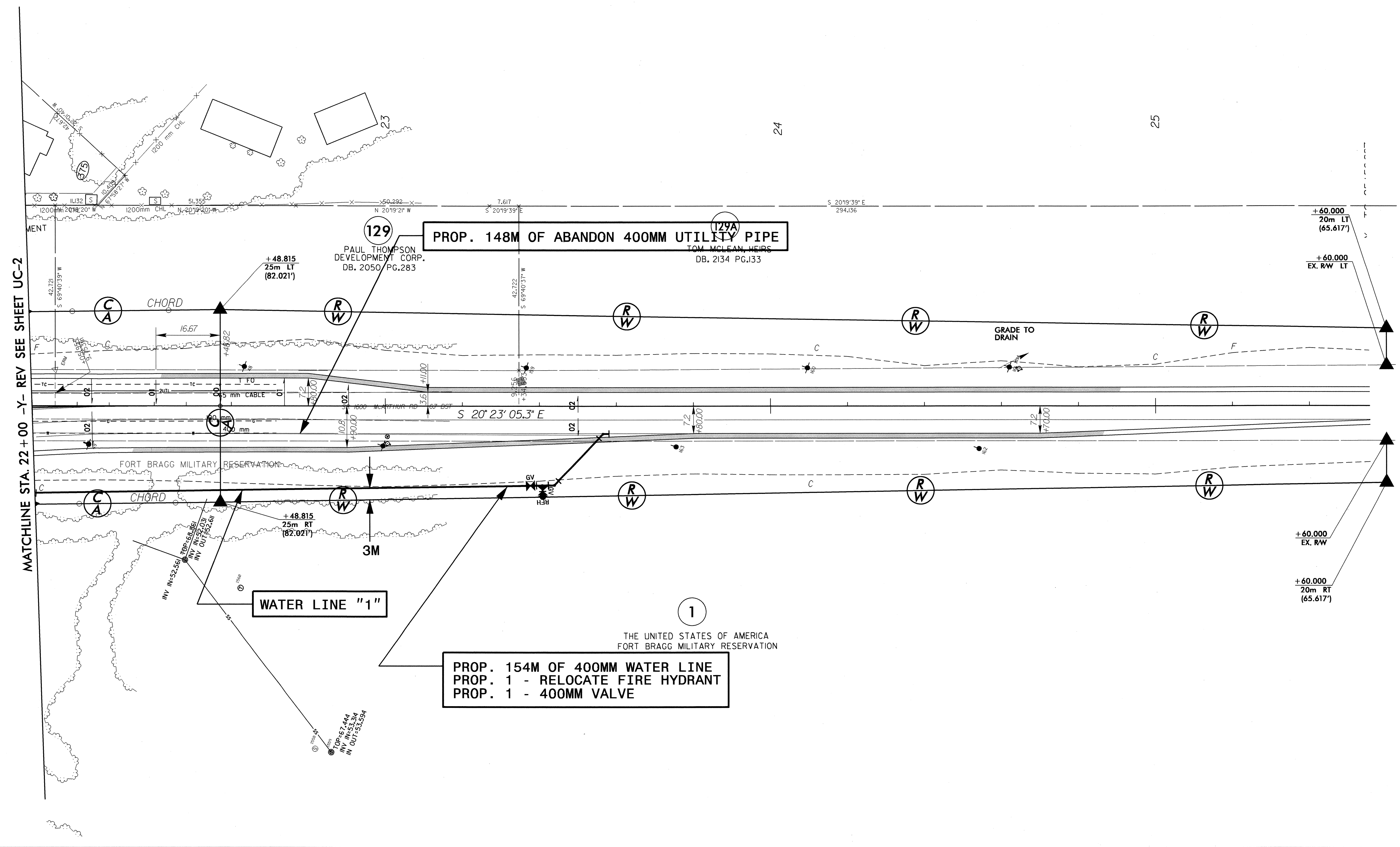
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NAD 83  
NC GRID

**METRIC**

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SCALE

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DESIGNED BY: <b>MRB</b>	
DRAWN BY: <b>MRB</b>	
CHECKED BY: <b>RBW</b>	
APPROVED BY: <b>RBW</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	



MATCHLINE STA. 22 + 00 -Y- REV SEE SHEET UC-2

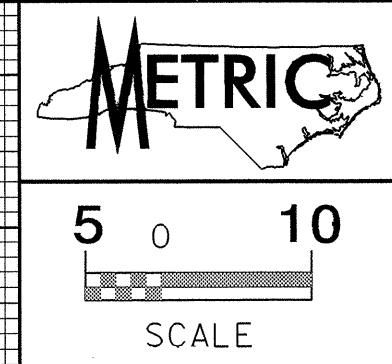
**PROP. 148M OF ABANDON 400MM UTILITY PIPE**

**WATER LINE "1"**

**PROP. 154M OF 400MM WATER LINE  
PROP. 1 - RELOCATE FIRE HYDRANT  
PROP. 1 - 400MM VALVE**

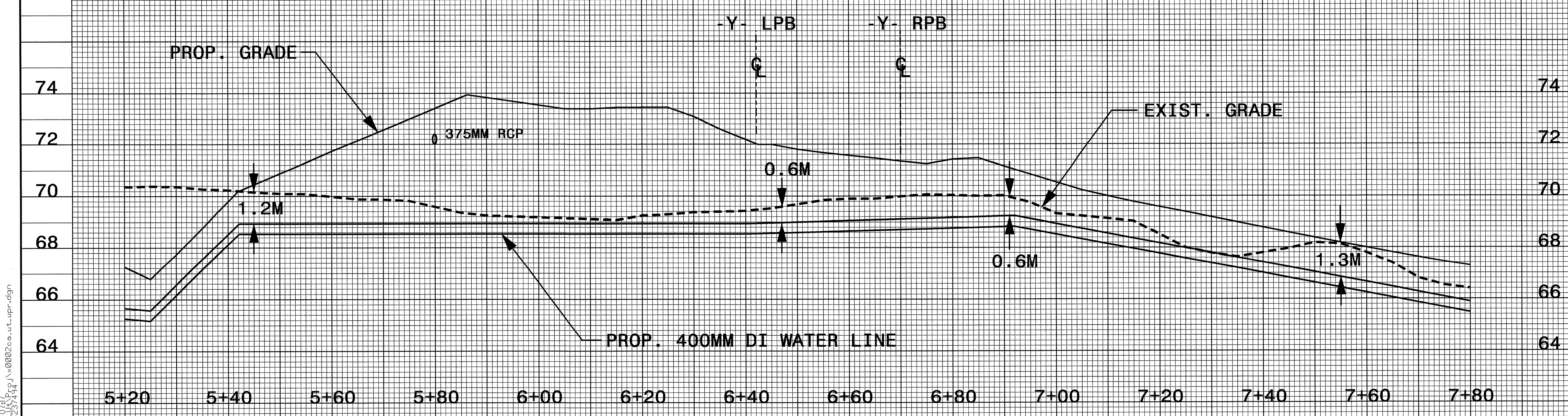
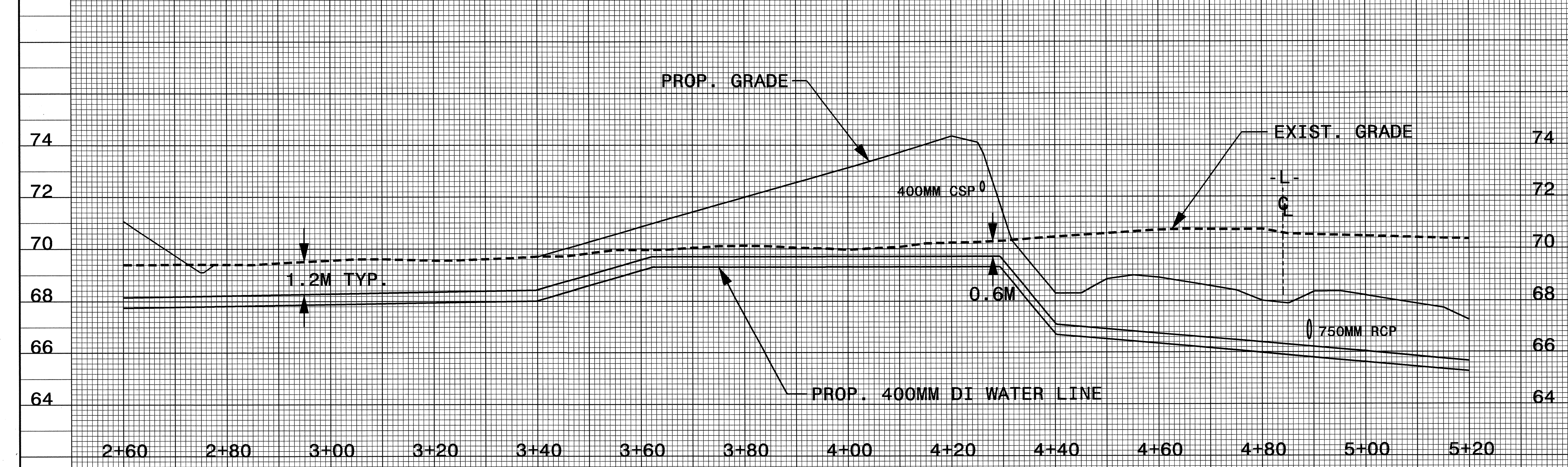
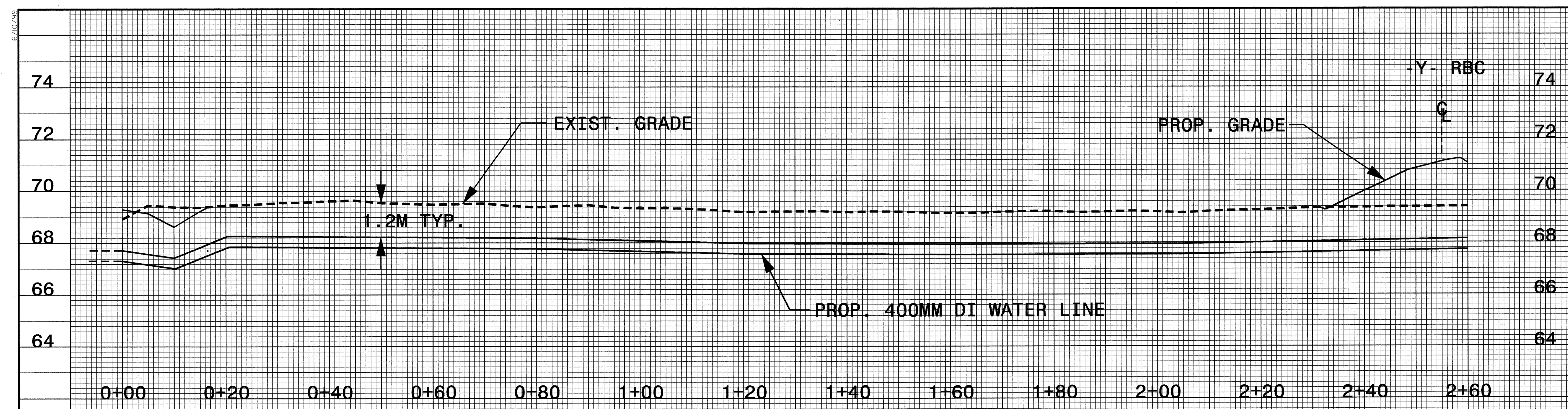
THE UNITED STATES OF AMERICA  
FORT BRAGG MILITARY RESERVATION

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PROJECT REFERENCE NO.	X-0002CA	SHEET NO.	UC-7
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DRAWN BY:	MRB		
CHECKED BY:	RBW		
APPROVED BY:	RBW		
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
			UTILITY CONSTRUCTION PLANS ONLY

**UTILITY CONSTRUCTION**

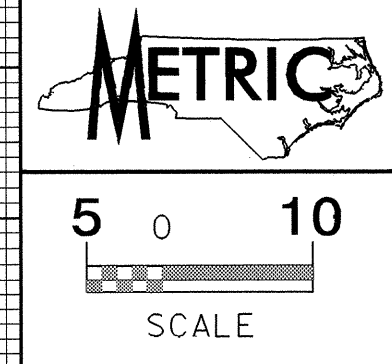


**WATER LINE "1"**

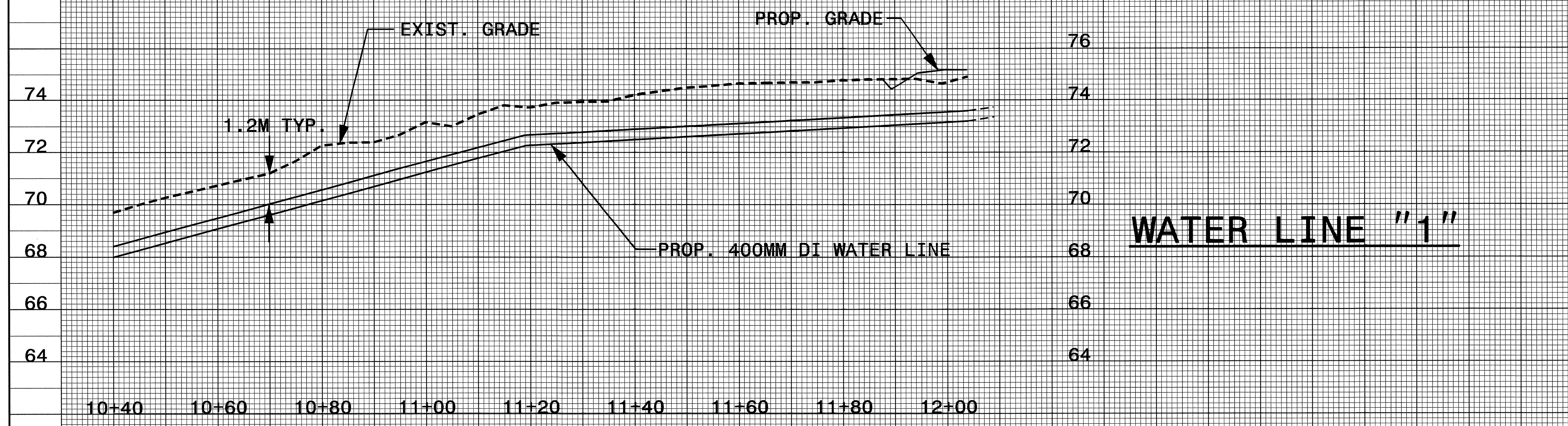
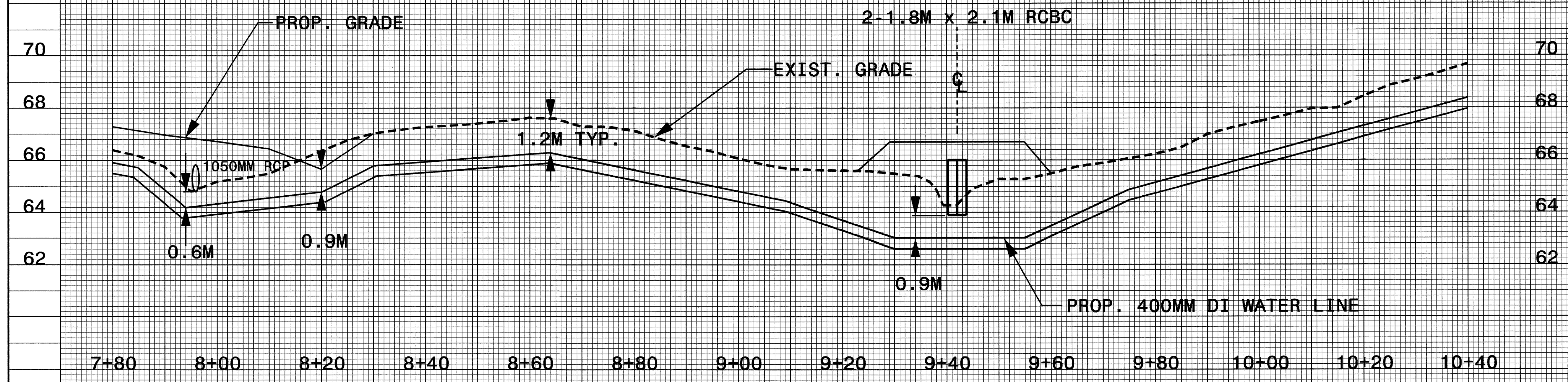
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8/00/200



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DRAWN BY:	MRB		
CHECKED BY:	RBW		
APPROVED BY:	RBW		
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UTILITY CONSTRUCTION PLANS ONLY			

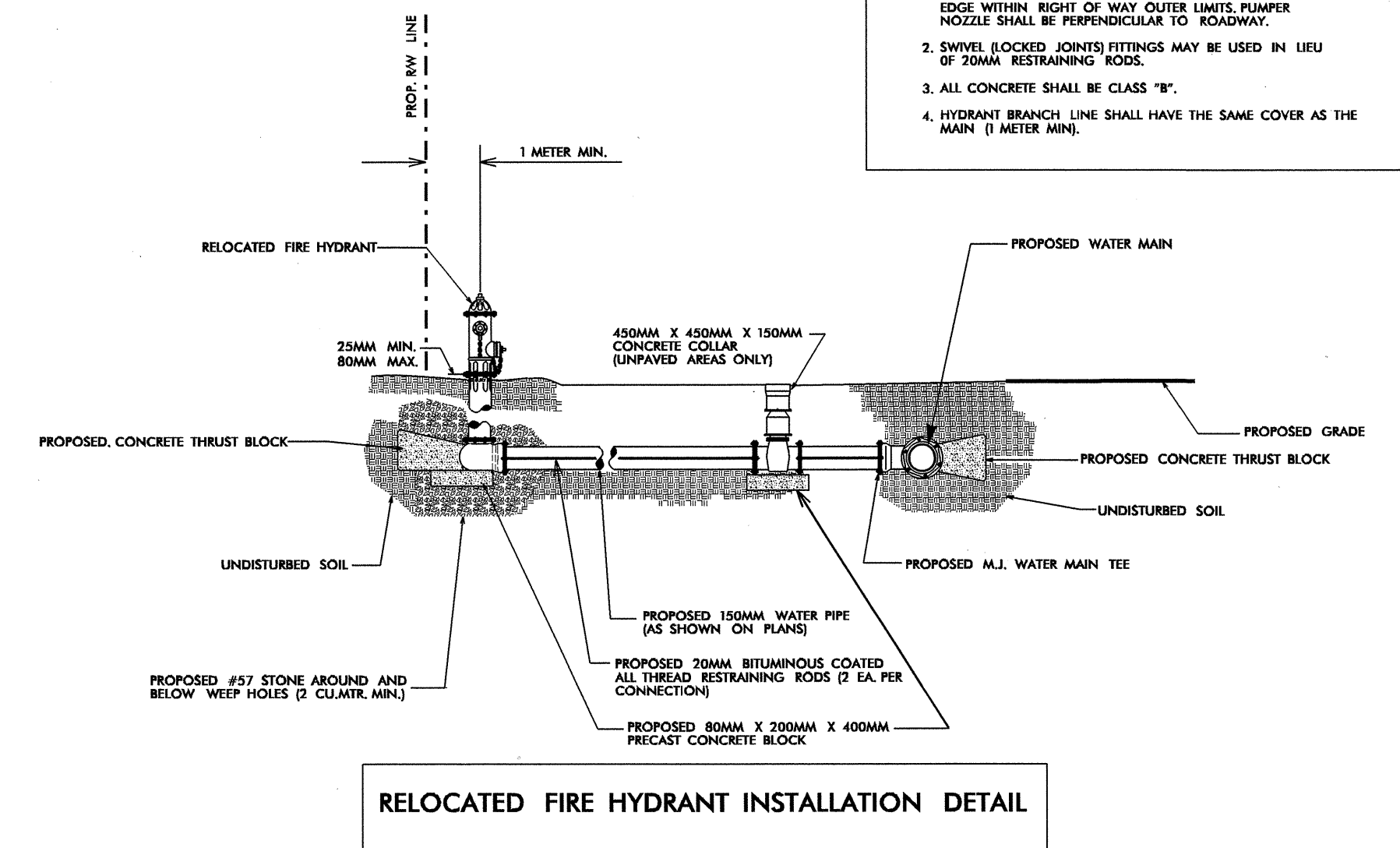


**WATER LINE "1"**

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UTILITY CONSTRUCTION

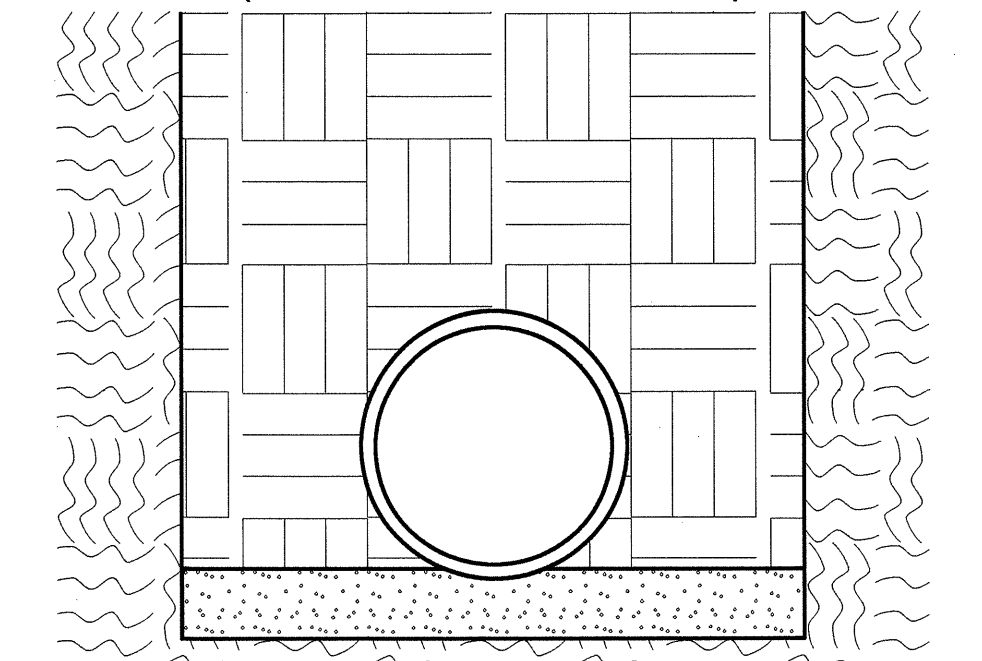
NOTE: DI FITTINGS, 150MM GATE VALVE, DI PIPE AND RESTRAINT INCIDENTAL TO FIRE HYDRANT.



RELOCATED FIRE HYDRANT INSTALLATION DETAIL

- GENERAL NOTES:
1. RELOCATED FIRE HYDRANTS SHALL BE PLACED A MINIMUM DISTANCE OF 2 METERS BACK OF CURB IN CURB AND GUTTER SECTIONS AND 2 METERS BACK OF DITCH IN ROADWAY SECTIONS WHERE THERE IS NO DITCH. THE HYDRANT SHALL BE PLACED AS FAR AS POSSIBLE FROM THE PAVEMENT EDGE WITHIN RIGHT OF WAY OUTER LIMITS. PUMPER NOZZLE SHALL BE PERPENDICULAR TO ROADWAY.
  2. SWIVEL LOCKED JOINTS FITTINGS MAY BE USED IN LIEU OF 20MM RESTRAINING RODS.
  3. ALL CONCRETE SHALL BE CLASS "B".
  4. HYDRANT BRANCH LINE SHALL HAVE THE SAME COVER AS THE MAIN (1 METER MIN.).

TYPE "3"  
(BEDDING FOR D.I. PIPE)

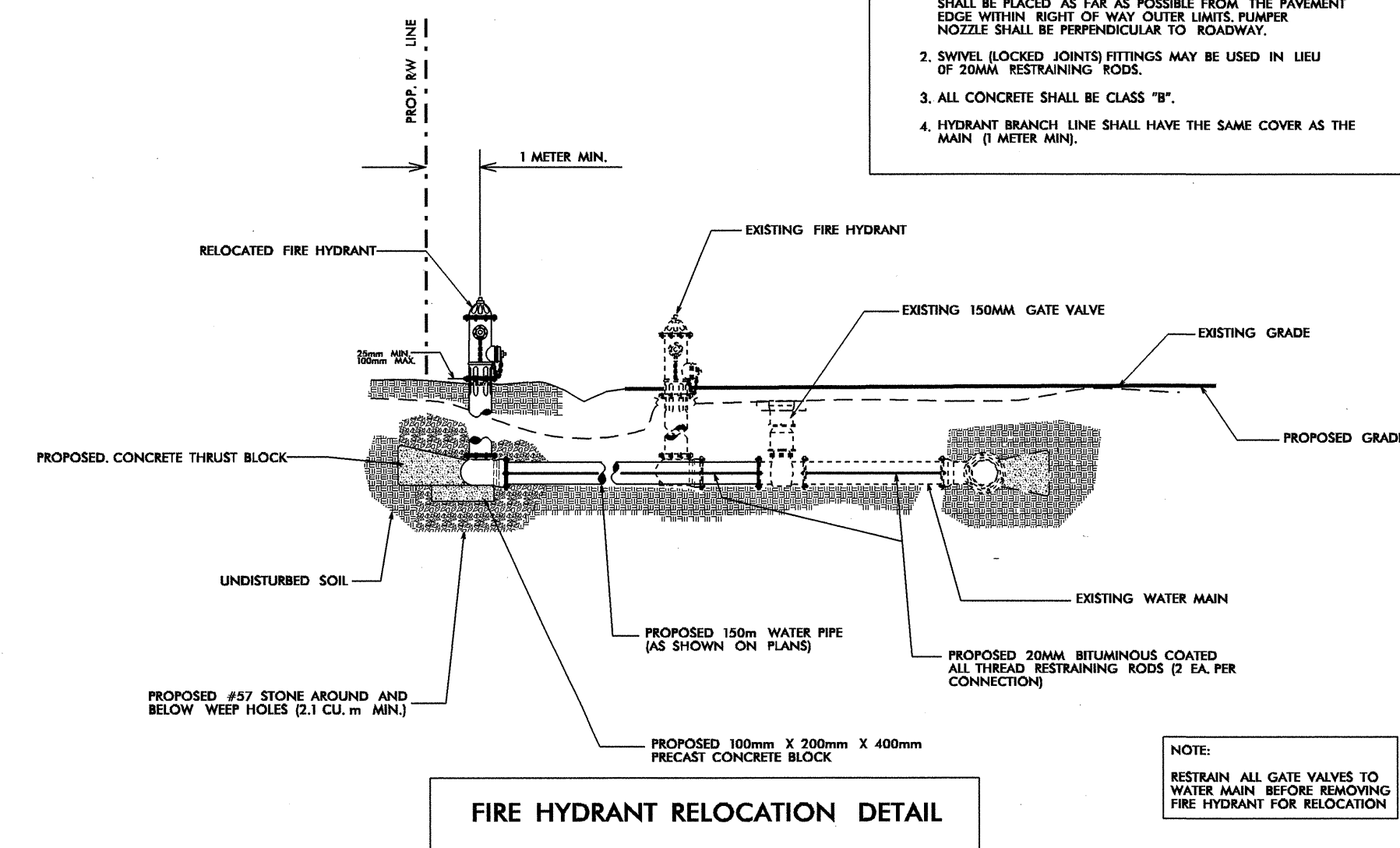


PIPE BEDDED IN 100MM MINIMUM LOOSE SOIL. TRENCH BACKFILLED IN LOOSE 150MM LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL. IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

MAXIMUM TRENCH WIDTH AT TOP OF PIPE

NOMINAL PIPE SIZE (mm)	TRENCH WIDTH (meters)	NOMINAL PIPE SIZE (mm)	TRENCH WIDTH (meters)
100	0.72	500	1.12
150	0.76	610	1.22
200	0.81	750	1.37
250	0.86	900	1.57
300	0.91	1050	1.68
350	0.97	1200	1.83
400	1.02	1400	1.98
450	1.07		

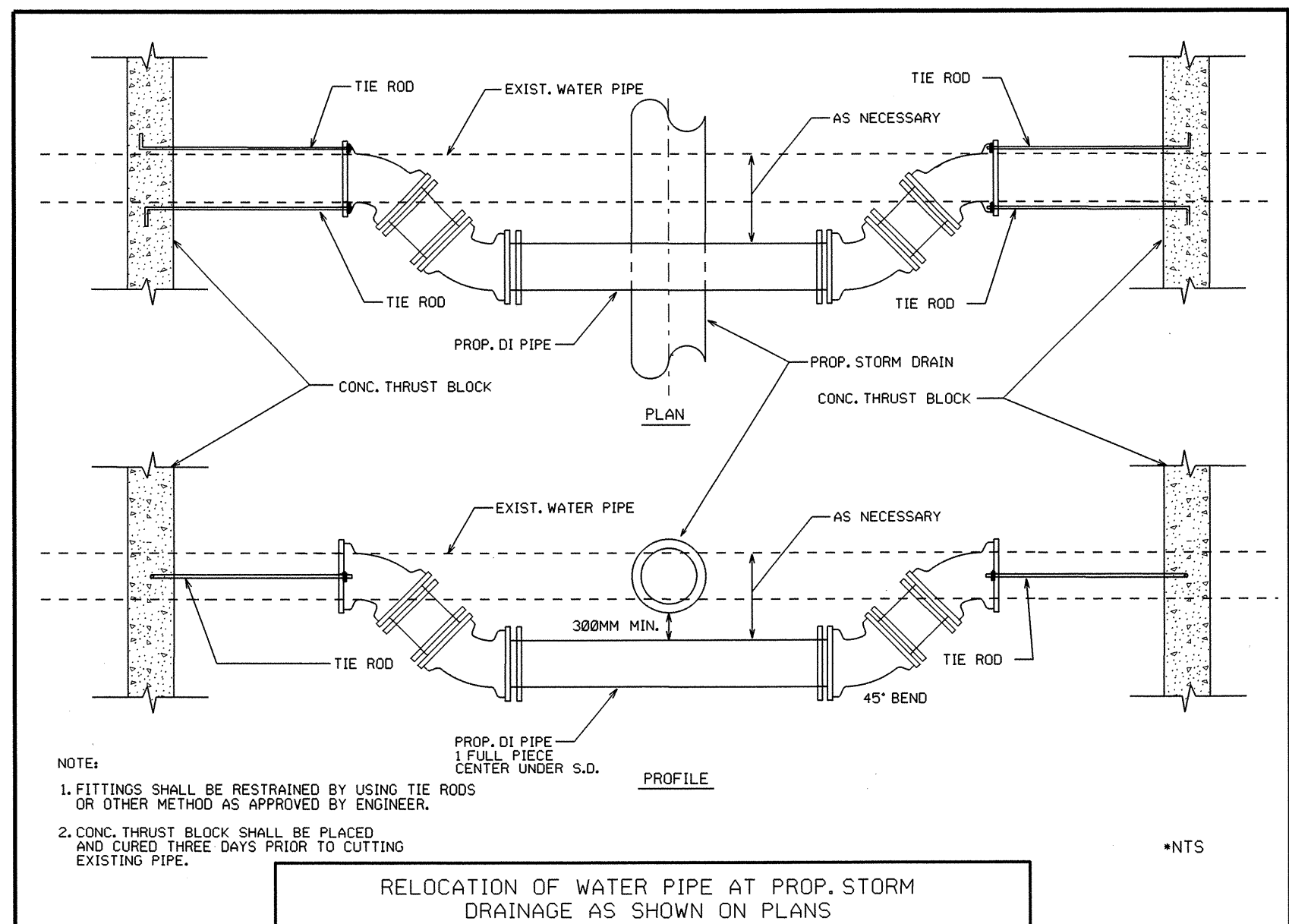
NOTE: DI FITTINGS, 150MM GATE VALVE, DI PIPE AND RESTRAINT INCIDENTAL TO FIRE HYDRANT.



FIRE HYDRANT RELOCATION DETAIL

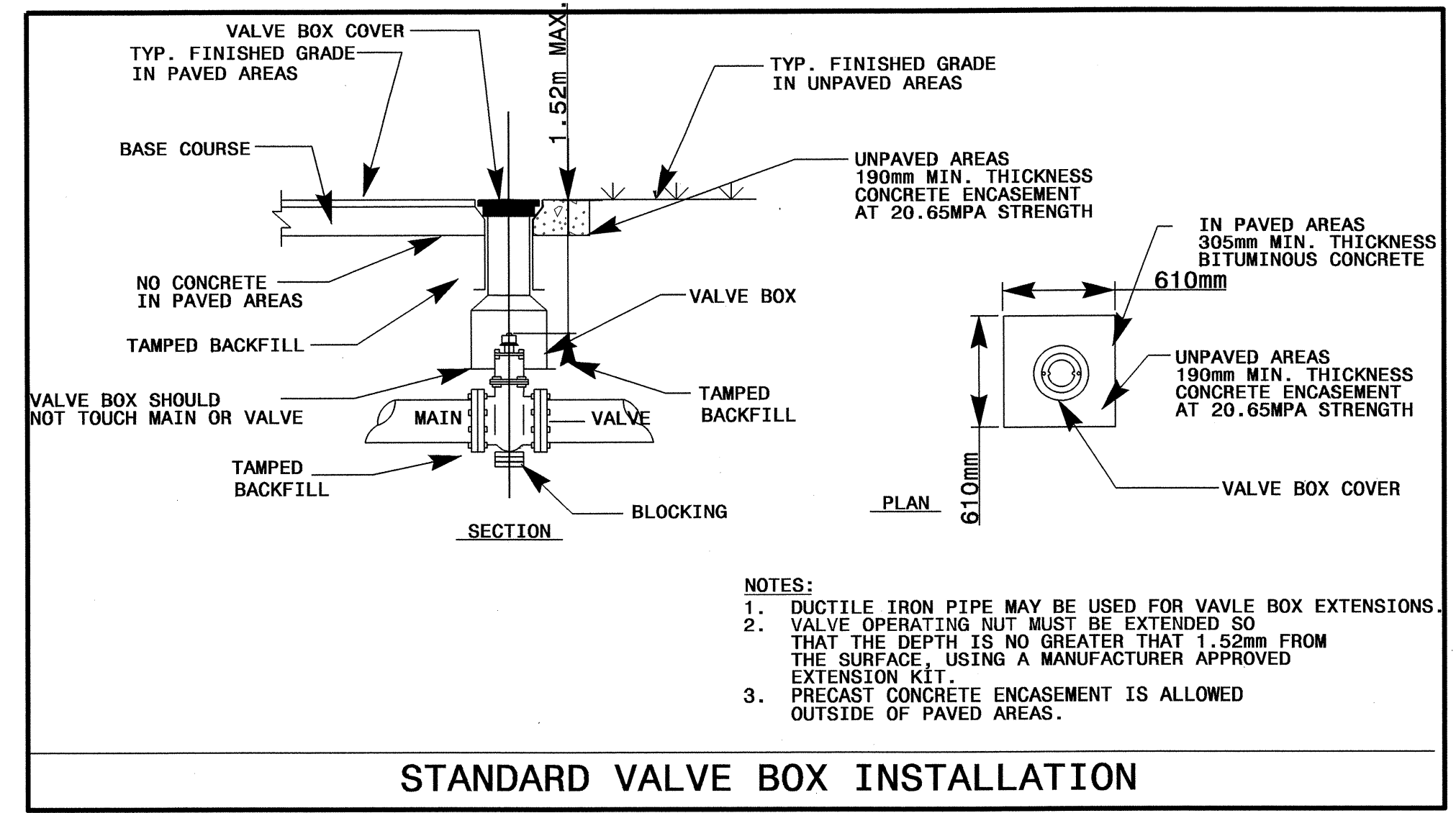
- GENERAL NOTES:
1. RELOCATED FIRE HYDRANTS SHALL BE PLACED A MINIMUM DISTANCE OF 2 METERS BACK OF CURB IN CURB AND GUTTER SECTIONS AND 2 METERS BACK OF DITCH IN ROADWAY SECTIONS WHERE THERE IS NO DITCH. THE HYDRANT SHALL BE PLACED AS FAR AS POSSIBLE FROM THE PAVEMENT EDGE WITHIN RIGHT OF WAY OUTER LIMITS. PUMPER NOZZLE SHALL BE PERPENDICULAR TO ROADWAY.
  2. SWIVEL LOCKED JOINTS FITTINGS MAY BE USED IN LIEU OF 20MM RESTRAINING RODS.
  3. ALL CONCRETE SHALL BE CLASS "B".
  4. HYDRANT BRANCH LINE SHALL HAVE THE SAME COVER AS THE MAIN (1 METER MIN.).

NOTE: RESTRAIN ALL GATE VALVES TO WATER MAIN BEFORE REMOVING FIRE HYDRANT FOR RELOCATION



- NOTE:
1. FITTINGS SHALL BE RESTRAINED BY USING TIE RODS OR OTHER METHOD AS APPROVED BY ENGINEER.
  2. CONC. THRUST BLOCK SHALL BE PLACED AND CURED THREE DAYS PRIOR TO CUTTING EXISTING PIPE.

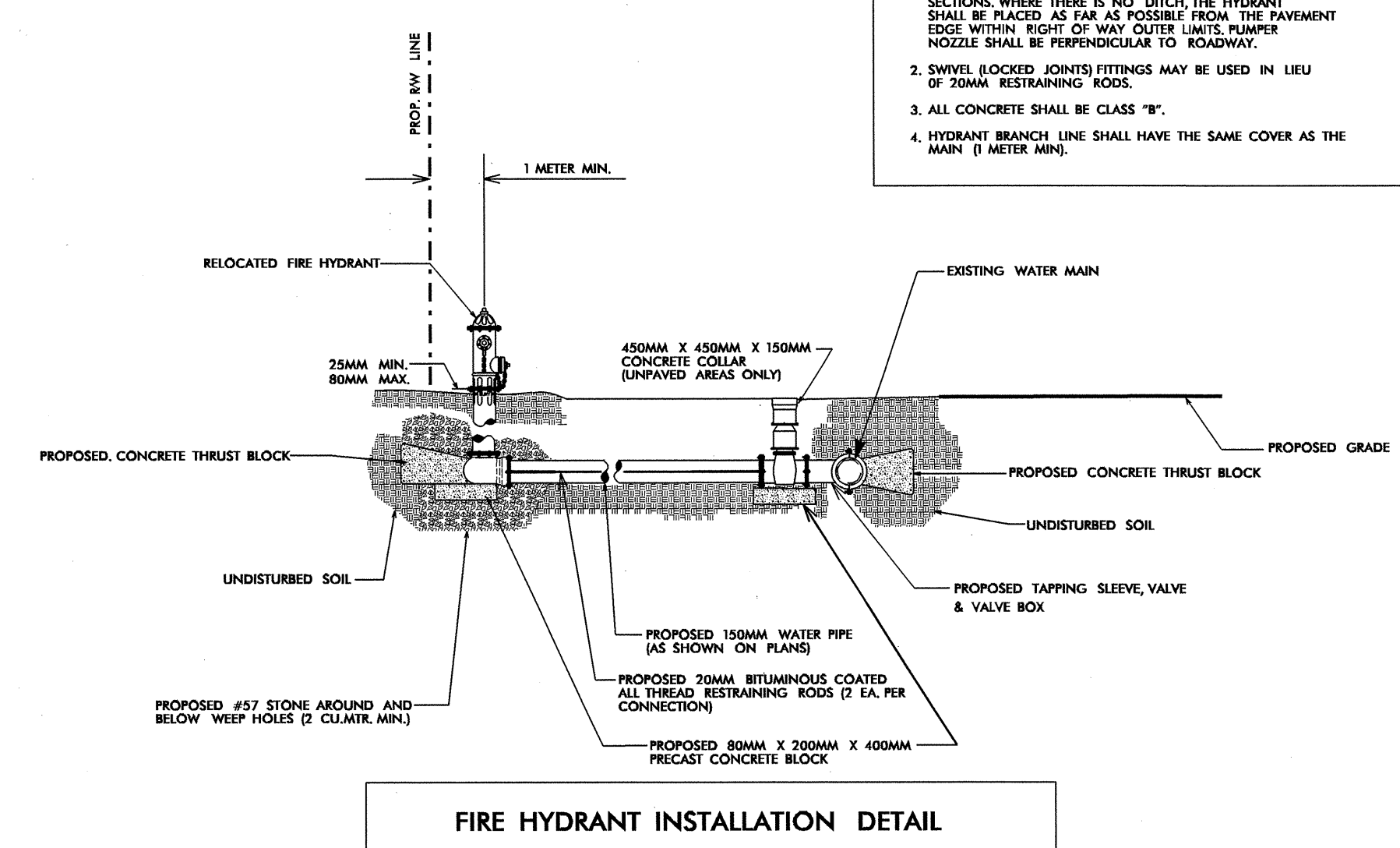
RELOCATION OF WATER PIPE AT PROP. STORM DRAINAGE AS SHOWN ON PLANS



- NOTES:
1. DUCTILE IRON PIPE MAY BE USED FOR VALVE BOX EXTENSIONS.
  2. VALVE OPERATING NUT MUST BE EXTENDED SO THAT THE DEPTH IS NO GREATER THAN 1.52mm FROM THE SURFACE USING A MANUFACTURER APPROVED EXTENSION KIT.
  3. PRECAST CONCRETE ENCASEMENT IS ALLOWED OUTSIDE OF PAVED AREAS.

STANDARD VALVE BOX INSTALLATION

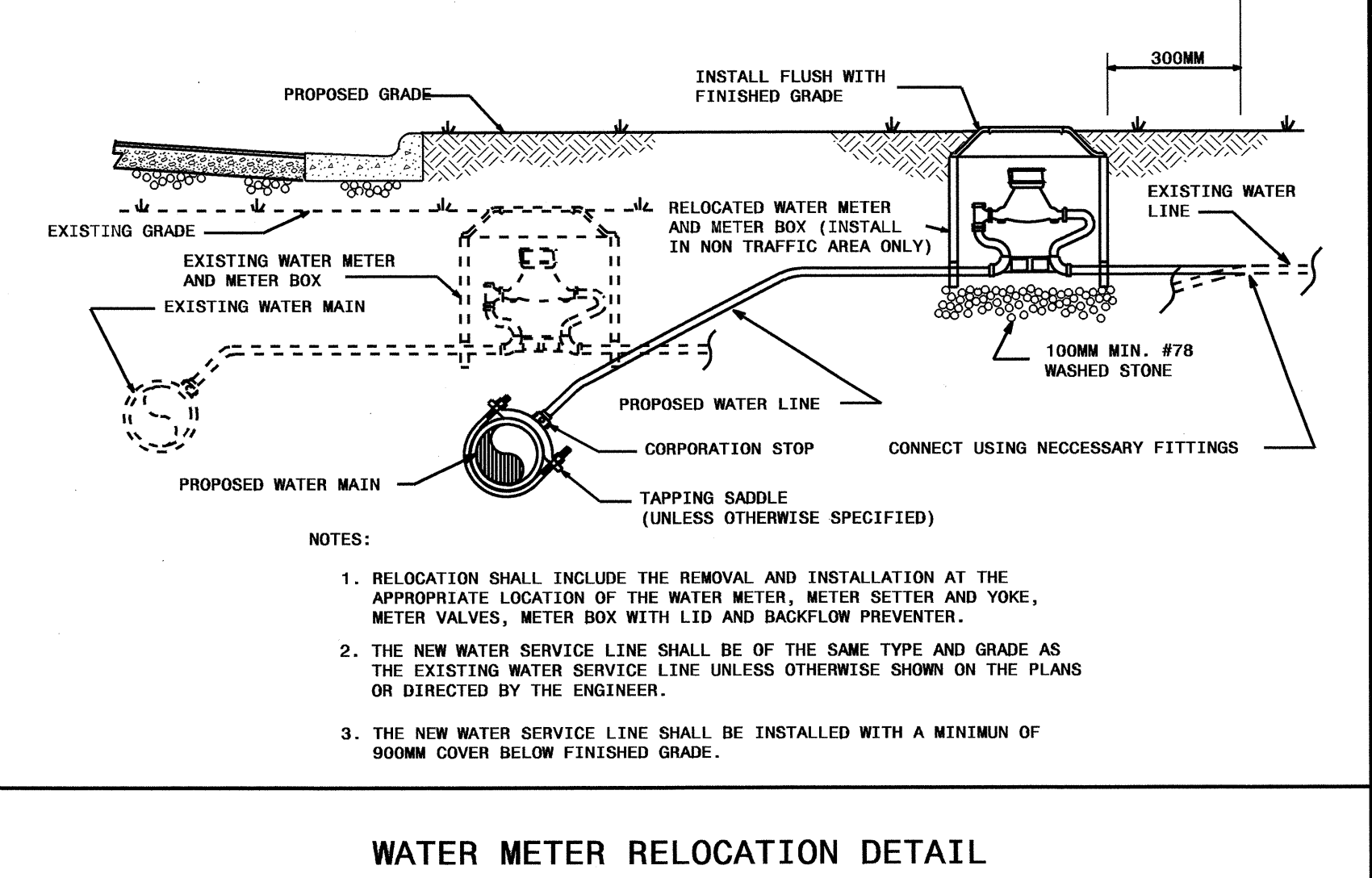
NOTE: DI FITTINGS, 150MM GATE VALVE, DI PIPE AND RESTRAINT INCIDENTAL TO FIRE HYDRANT.



FIRE HYDRANT INSTALLATION DETAIL

- GENERAL NOTES:
1. FIRE HYDRANTS SHALL BE PLACED A MINIMUM DISTANCE OF 2 METERS BACK OF CURB IN CURB AND GUTTER SECTIONS AND 2 METERS BACK OF DITCH IN ROADWAY SECTIONS WHERE THERE IS NO DITCH. THE HYDRANT SHALL BE PLACED AS FAR AS POSSIBLE FROM THE PAVEMENT EDGE WITHIN RIGHT OF WAY OUTER LIMITS. PUMPER NOZZLE SHALL BE PERPENDICULAR TO ROADWAY.
  2. SWIVEL LOCKED JOINTS FITTINGS MAY BE USED IN LIEU OF 20MM RESTRAINING RODS.
  3. ALL CONCRETE SHALL BE CLASS "B".
  4. HYDRANT BRANCH LINE SHALL HAVE THE SAME COVER AS THE MAIN (1 METER MIN.).

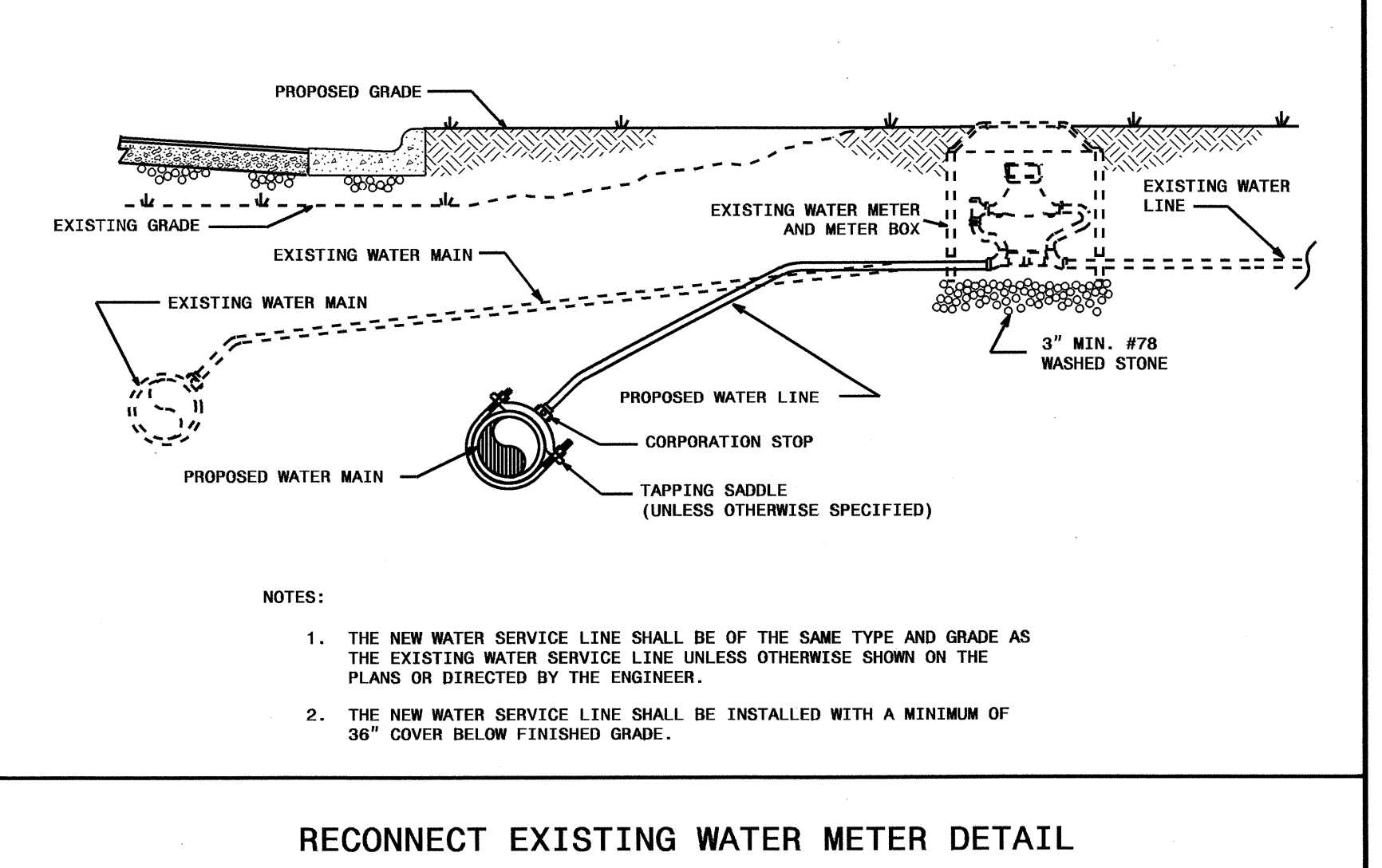
NOTE: TAPPING SADDLE, CORPORATION STOP, 20MM COPPER WATER PIPE, TYPE K INCIDENTAL TO WATER METER



- NOTES:
1. RELOCATION SHALL INCLUDE THE REMOVAL AND INSTALLATION AT THE APPROPRIATE LOCATION OF THE WATER METER, METER SETTER AND YOKE, METER VALVES, METER BOX WITH LID AND BACKFLOW PREVENTER.
  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 900MM COVER BELOW FINISHED GRADE.

WATER METER RELOCATION DETAIL

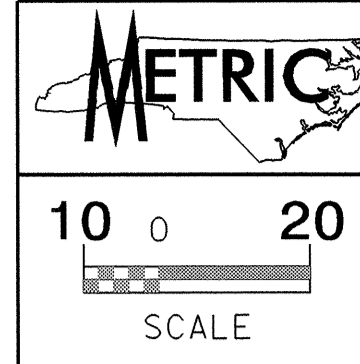
NOTE: TAPPING SADDLE, CORPORATION STOP, 20MM COPPER WATER PIPE, TYPE K INCIDENTAL TO WATER METER



- 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 36" COVER BELOW FINISHED GRADE.

RECONNECT EXISTING WATER METER DETAIL

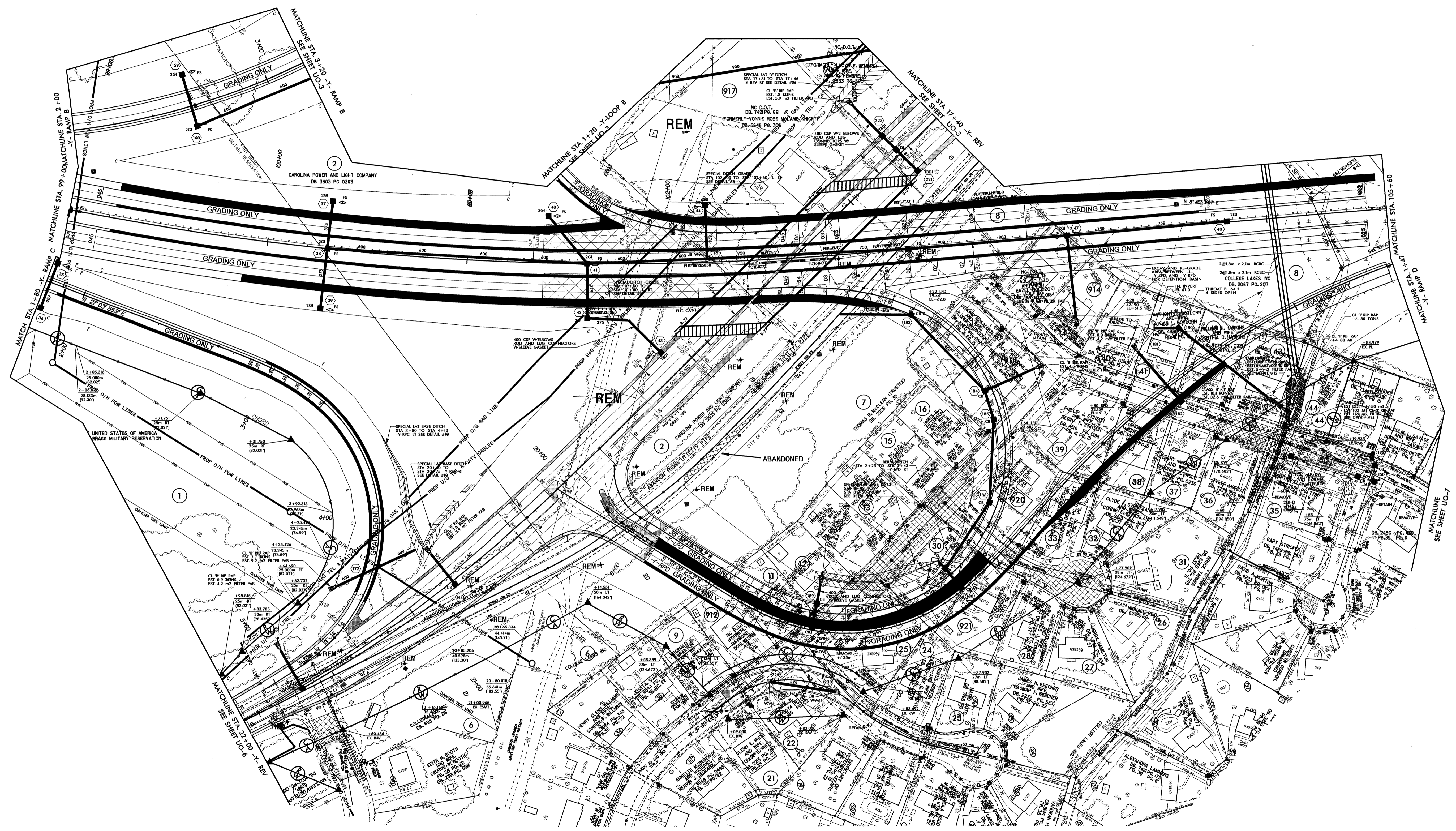





**UTILITIES BY OTHERS**

NOTE:  
ALL PROPOSED UTILITY WORK  
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BE DONE BY OTHERS

NAD 83  
NCGRID



**METRIC**

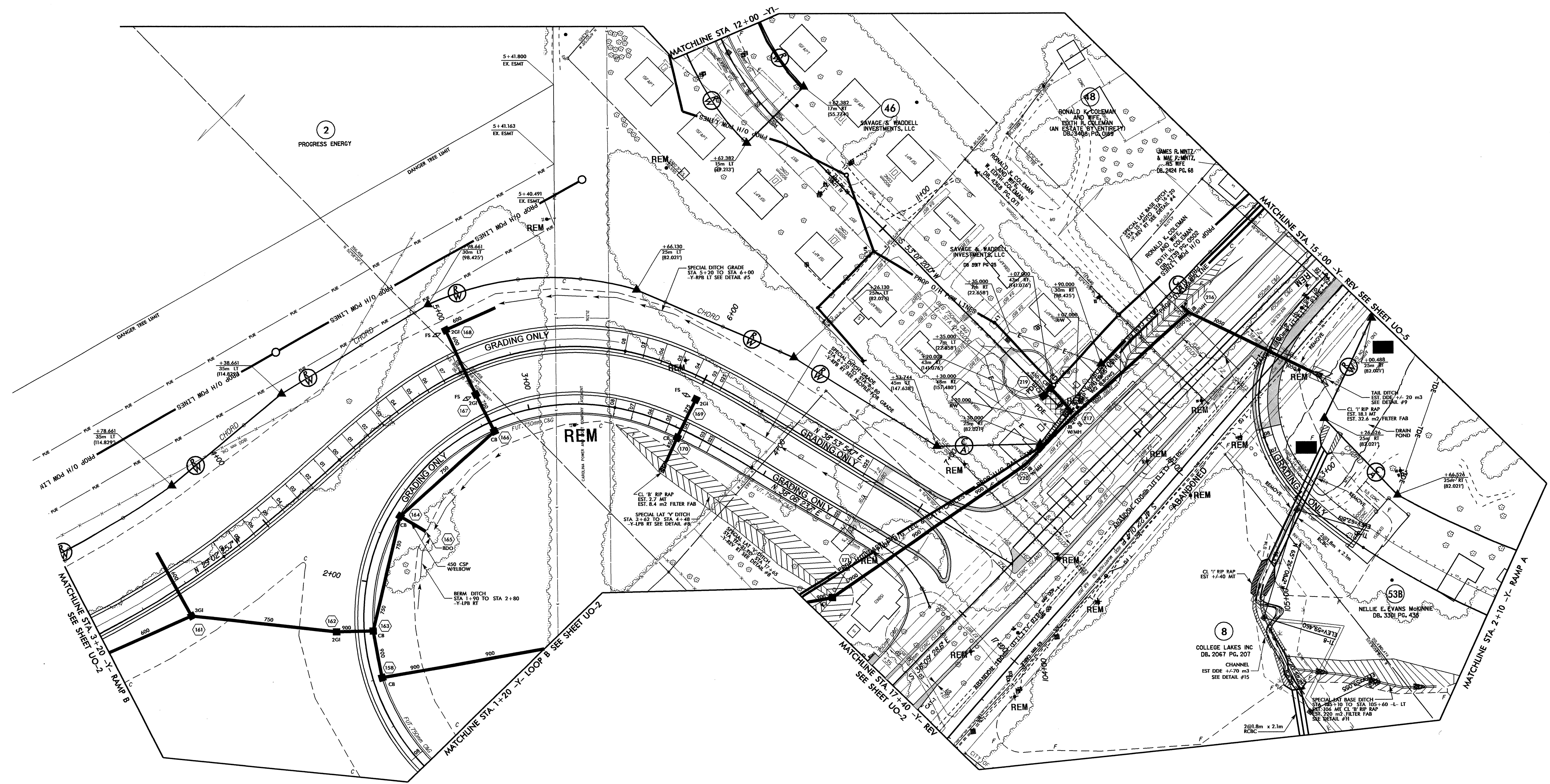


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SHEET NO. U0-3  
**UTILITIES BY OTHERS**

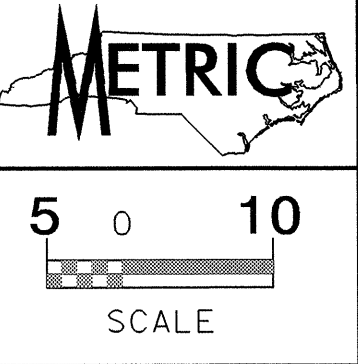
NOTE:  
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NAD 83  
NC GRID



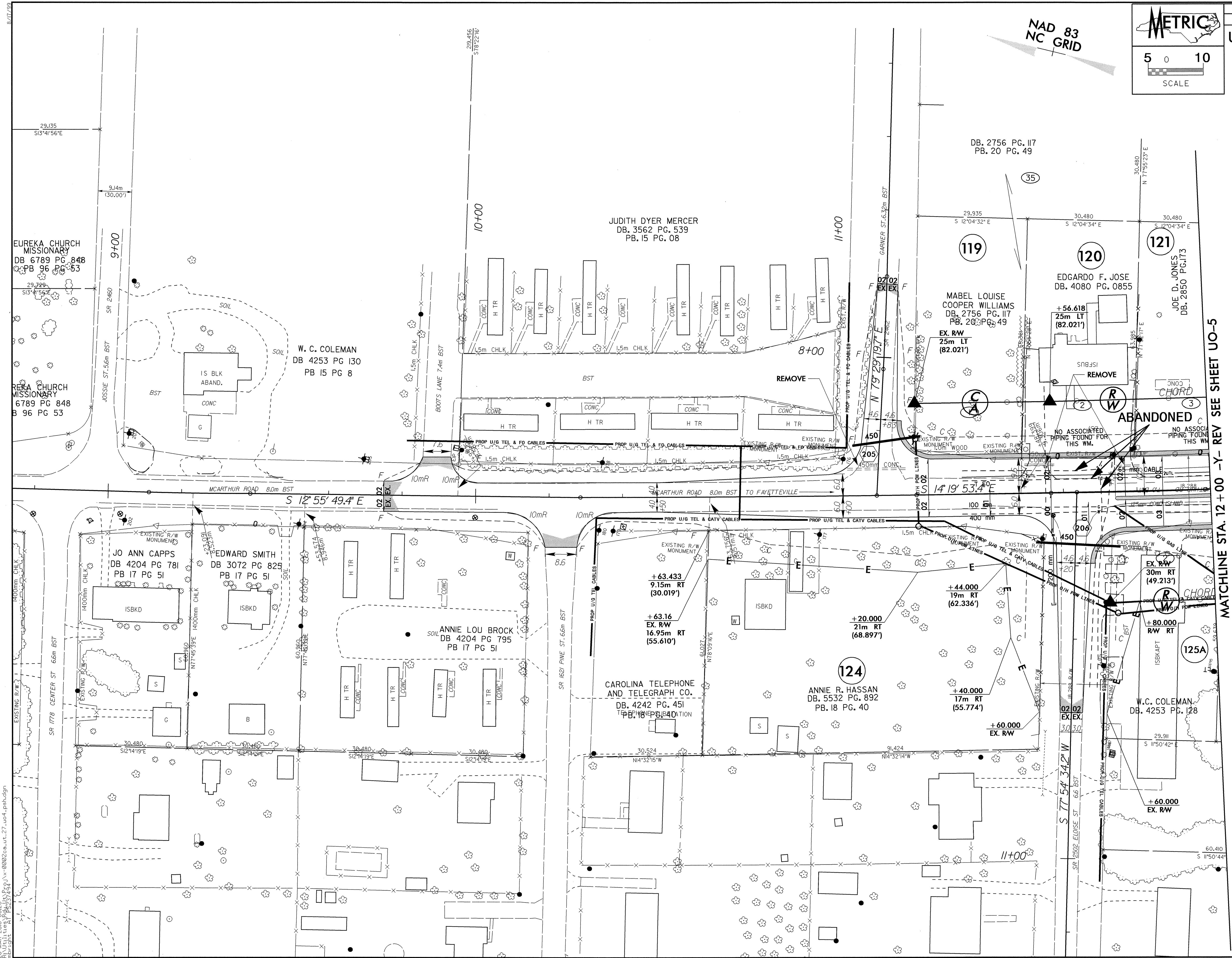
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UTILITIES BY OTHERS



NOTE:  
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BE DONE BY OTHERS

NAD 83  
NC GRID



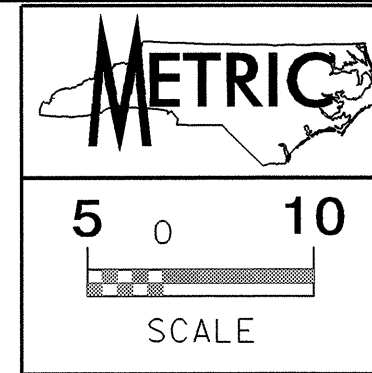
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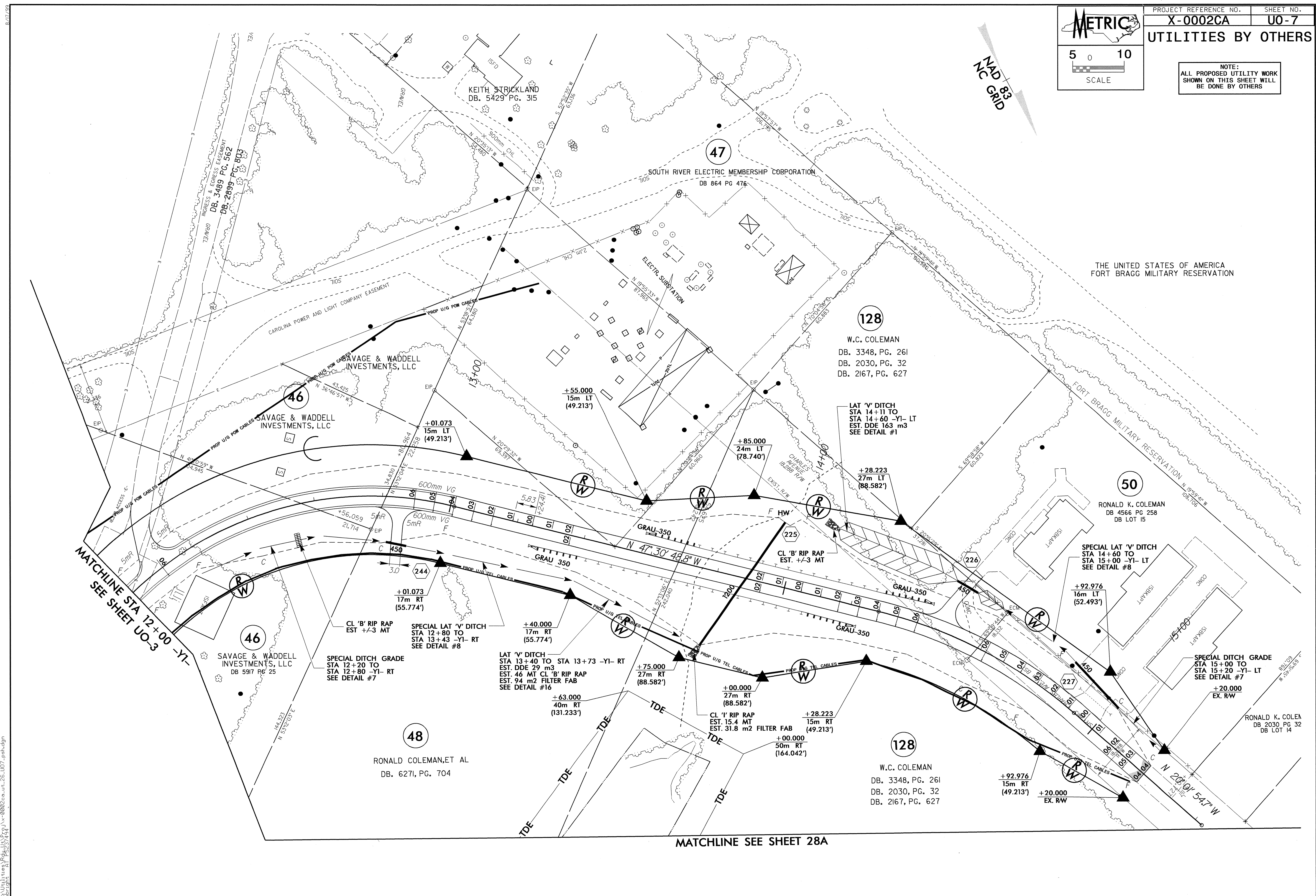




**UTILITIES BY OTHERS**

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

NAD 83  
GRID



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SEE SHEET UO-3

MATCHLINE SEE SHEET 28A

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