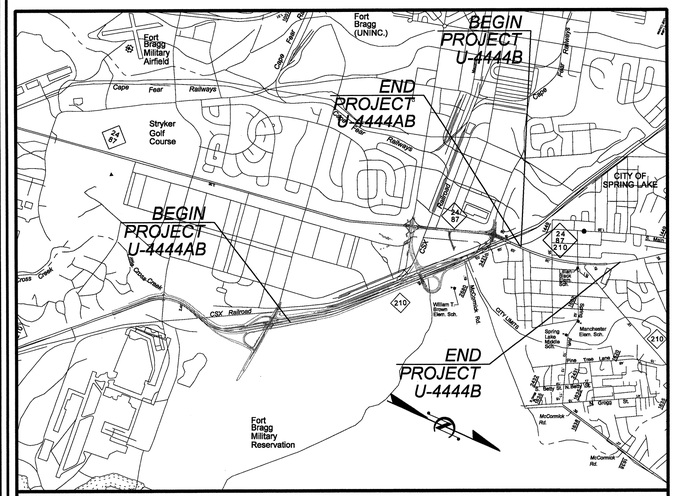
TIP PROJECT: U-4444AB/B

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
U-4444AB/B	UC-1

UTILITY CONSTRUCTION
CUMBERLAND COUNTY

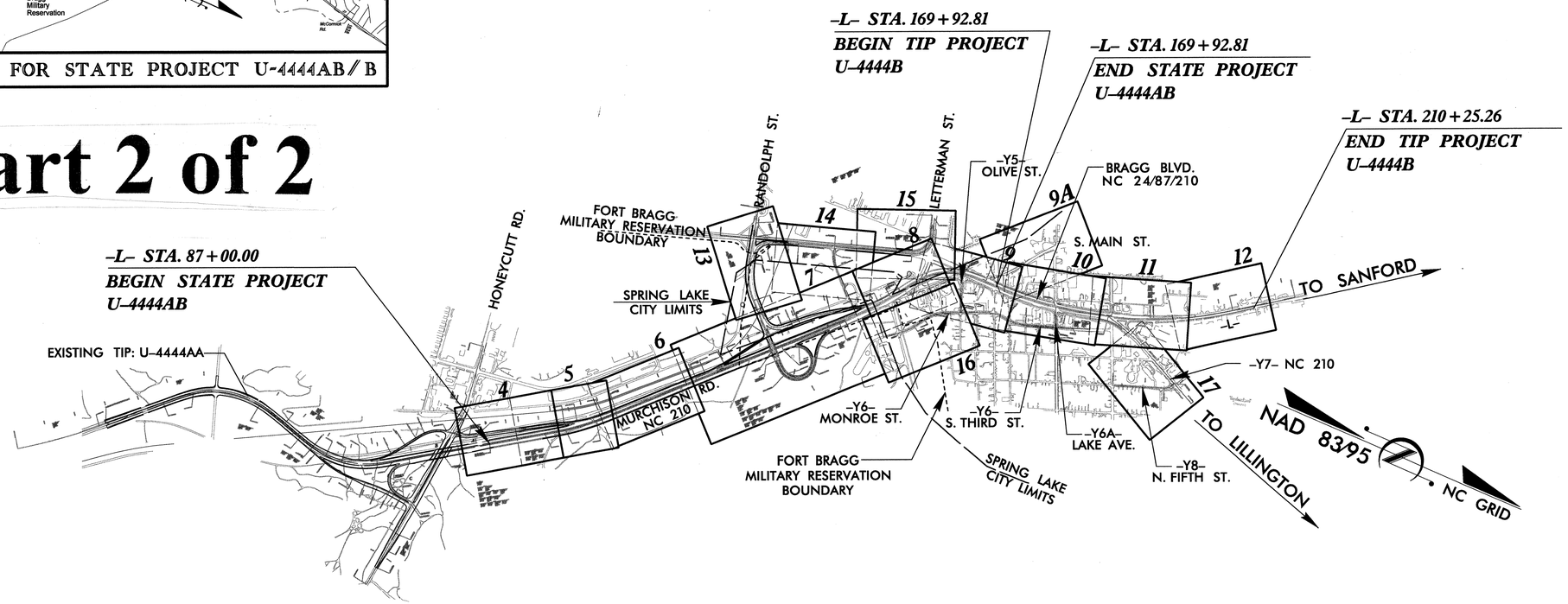


VICINITY MAP FOR STATE PROJECT U-4444AB/B

LOCATION: NC 210 (MURCHISON ROAD) FROM NORTH OF HONEYCUTT RD. TO NORTH OF NC 210 (LILLINGTON ROAD) IN SPRING LAKE

TYPE OF WORK: UTILITY CONSTRUCTION

Part 2 of 2



THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO THE POINTS SHOWN ON PLANS.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	LEGEND OF SYMBOLS
UC-3	OMITTED
UC-4 THRU UC-19	UTILITY CONSTRUCTION PLAN & PROFILE SHEETS
UC-20 & UC-21	CONSTRUCTION DETAILS

UTILITY OWNERS ON PROJECT

(1) WATER - TOWN OF SPRING LAKE, FAYETTEVILLE PWC

(2) SEWER - TOWN OF SPRING LAKE, OLD NORTH UTILITY SERVICES & FAYETTEVILLE PWC

PREPARED BY:
7-11-2012
NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

PREPARED FOR:
DIVISION OF HIGHWAYS
UTILITIES AND ENCROACHMENTS
ENGINEERING UNIT

1555 MAIL SERVICE CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. — UTILITIES SECTION ENGINEER
R. B. Wilkins, P.E. — UTILITIES SQUAD LEADER
AECOM Tech. Services — UTILITY CONSTRUCTION PROJECT DESIGNER

$$$$$SYSTIME$$$$$
$$$$$DGN$$$$$
$$$$$SENAME$$$$$

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-2

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Boundary or Site
- Potential Soil Contamination: Boundary or Site

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 — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- 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 — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite Marker — RW
- Existing Control of Access — CA
- Proposed Control of Access — CA
- 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
- Curb Cut Future Ramp — CCFR
- 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 — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (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
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?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 (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

ALL WATER LINES ON THIS SHEET OWNED BY THE FAYETTEVILLE PWC

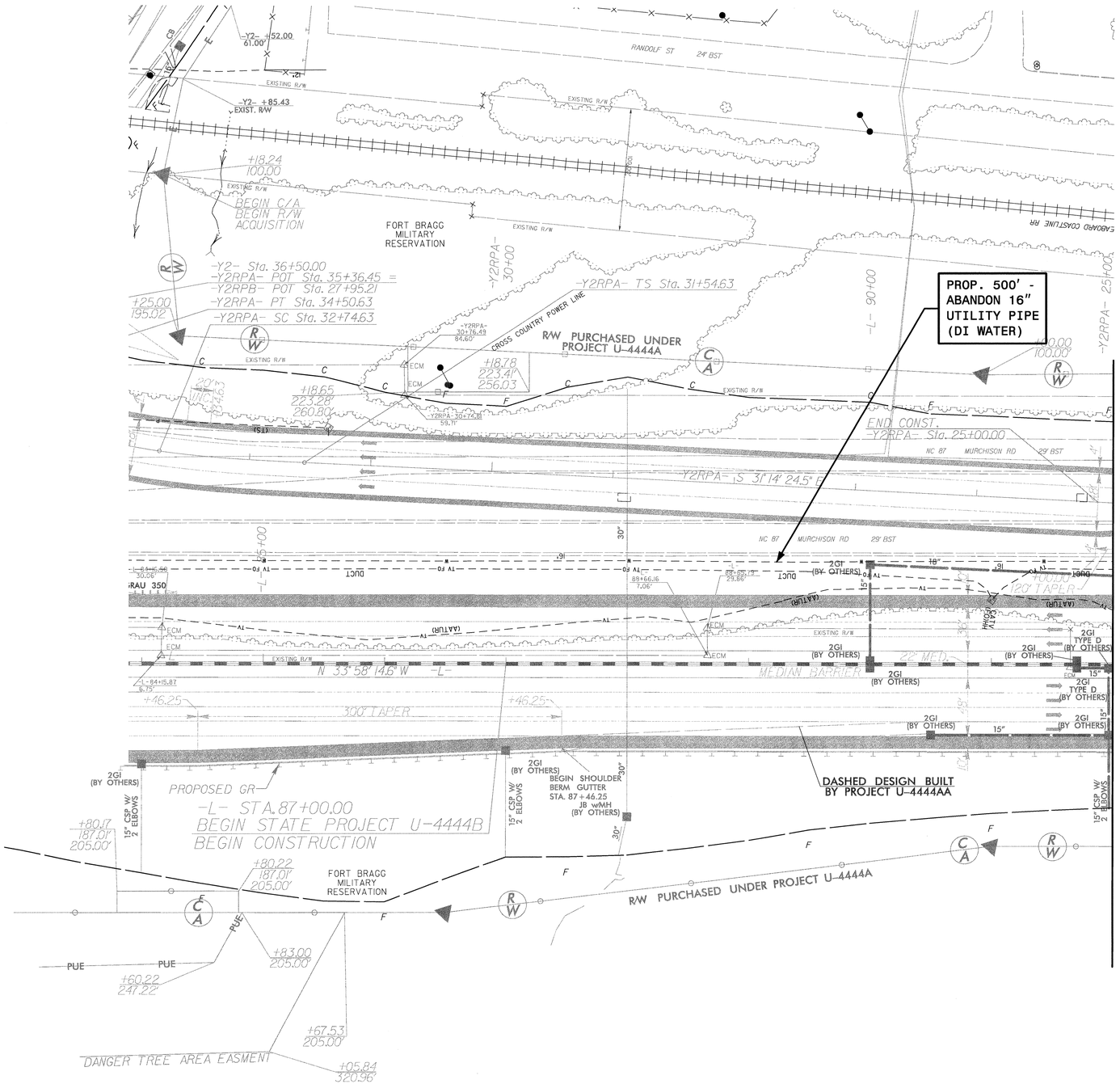
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB	UC-4

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL 3-28-2012

UTILITY CONSTRUCTION

NAD 83/95



Prepared by:

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

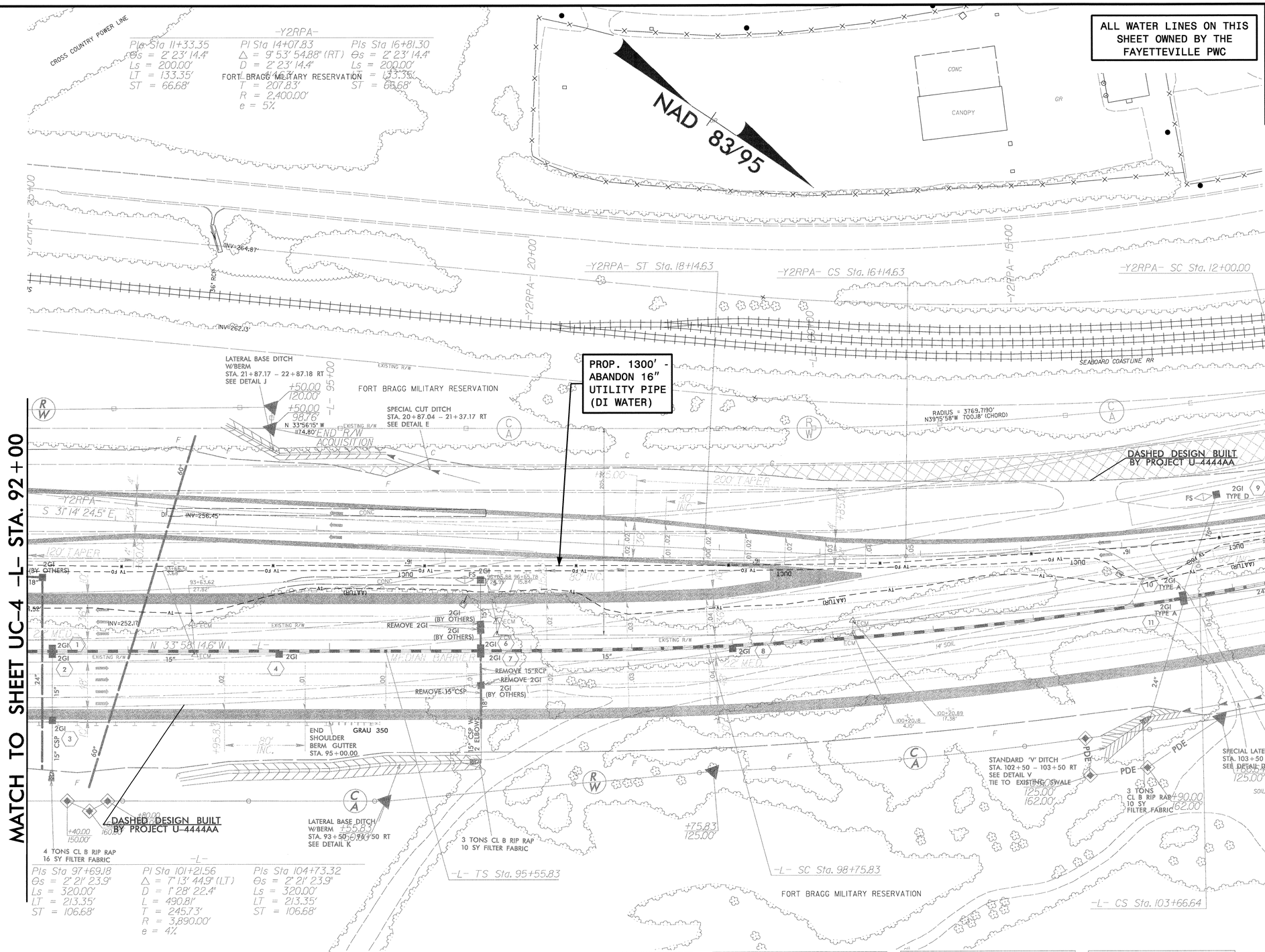
DATE: 3/28/2012
DGN: U-4444B_uc_PSH04.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-5

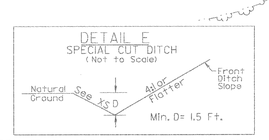
SCALE: 25 0 50

ALL WATER LINES ON THIS SHEET OWNED BY THE FAYETTEVILLE PWC

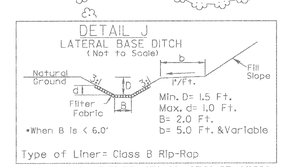
UTILITY CONSTRUCTION



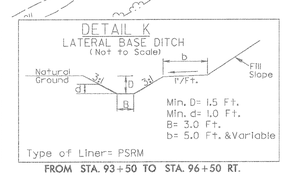
FROM STA. 103+50 TO STA. 107+50 RT.



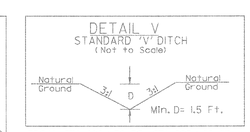
FROM STA. 20+87.04 TO STA. 21+37.17 RT. -Y2RPA-



FROM STA. 21+87.17 TO STA. 22+87.18 RT. -Y2RPA-



FROM STA. 93+50 TO STA. 96+50 RT.



FROM STA. 102+50 TO STA. 103+50 RT.

Prepared by:

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919-854-6200 919-854-6259 (fax)

DATE: 3/28/2012
DGN: U-4444B_Loc_PSH05.dgn

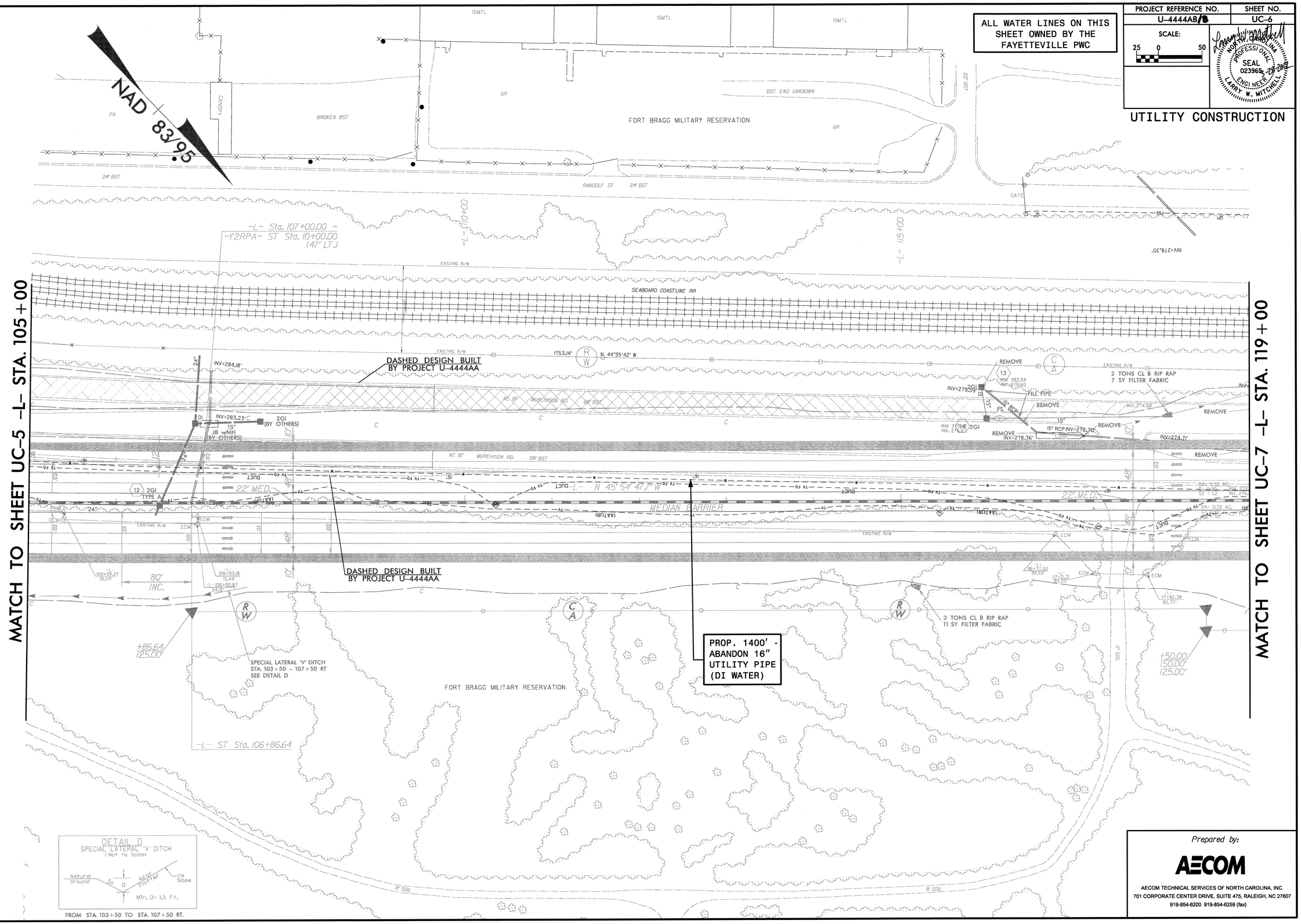
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-6

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL 2-8-2012

UTILITY CONSTRUCTION

ALL WATER LINES ON THIS SHEET OWNED BY THE FAYETTEVILLE PWC



Prepared by:

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701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/09/2012
DGN: U-4444B_uc_PSH06.dgn

12" FORCE MAIN SEWER OWNED BY OLD NORTH UTILITY SERVICES
16" WATER LINE OWNED BY THE FAYETTEVILLE PWC

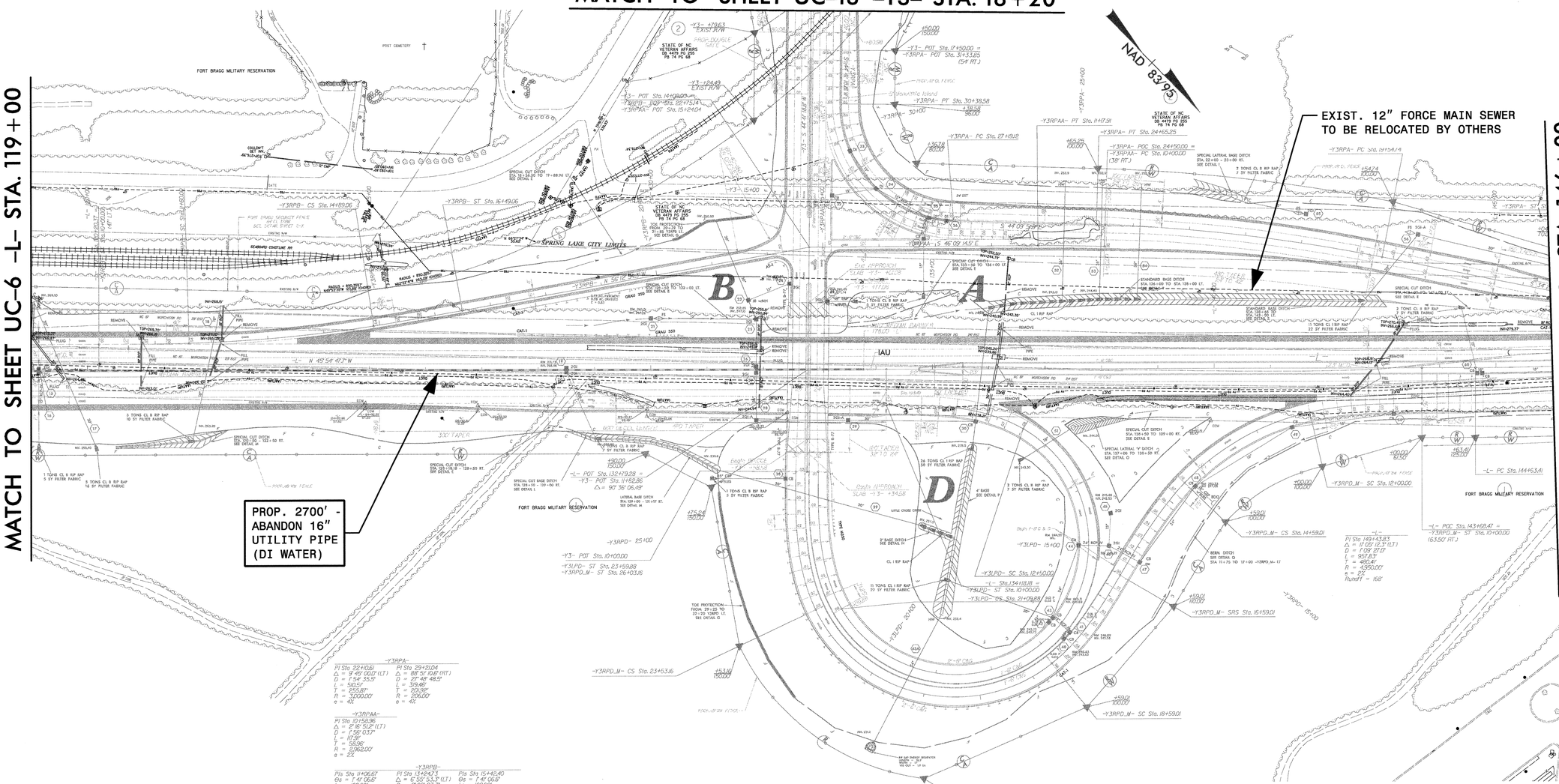
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-7

SCALE: 50 0 100

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL

UTILITY CONSTRUCTION

MATCH TO SHEET UC-13 -Y3- STA. 18+20



Prepared by:

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919-854-6200 919-854-6259 (fax)

DATE: 3/28/2012
DGN: U-4444B_UC_PSH07.dgn

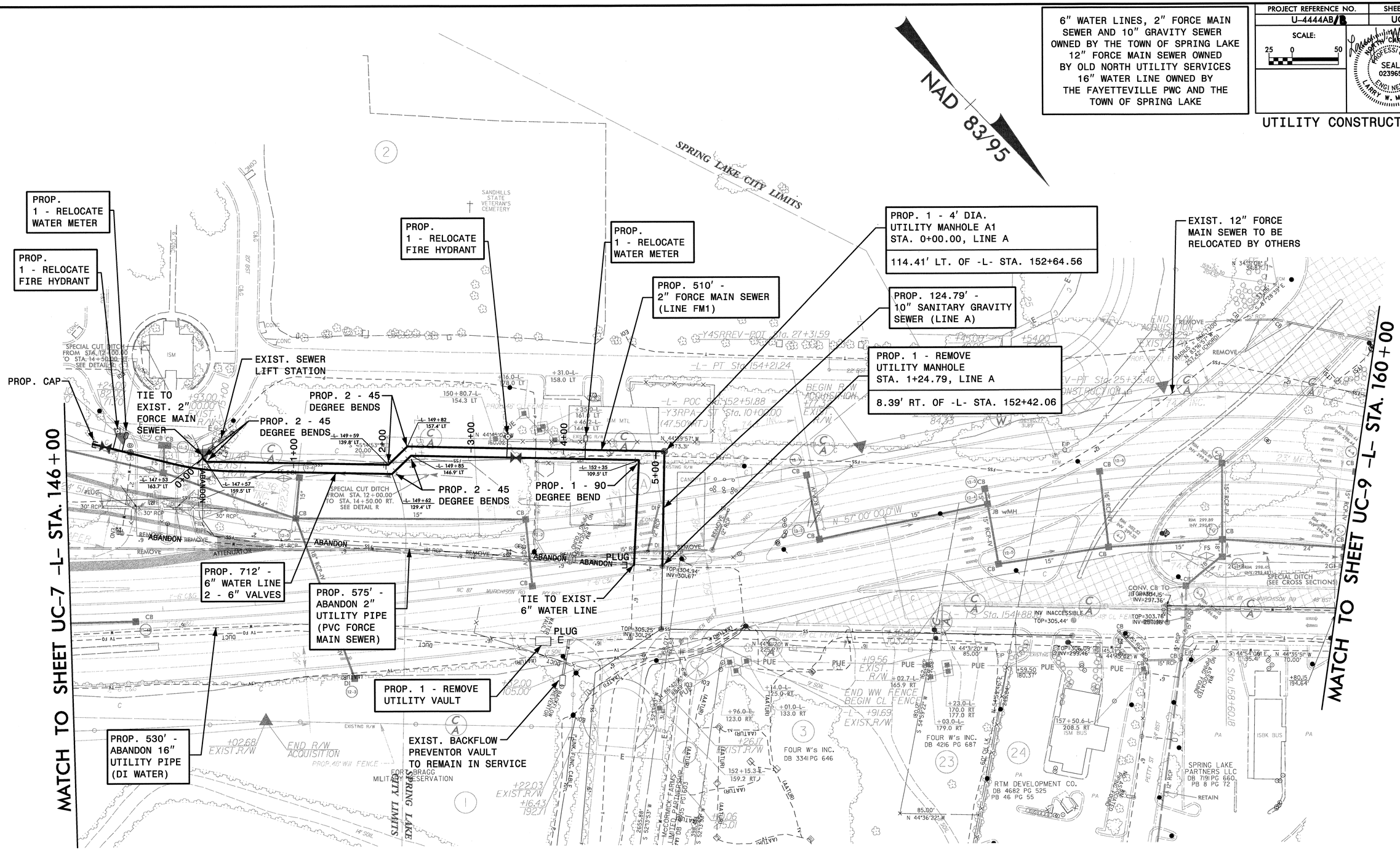
6" WATER LINES, 2" FORCE MAIN SEWER AND 10" GRAVITY SEWER OWNED BY THE TOWN OF SPRING LAKE
12" FORCE MAIN SEWER OWNED BY OLD NORTH UTILITY SERVICES
16" WATER LINE OWNED BY THE FAYETTEVILLE PWC AND THE TOWN OF SPRING LAKE

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-8

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL 3-28-2012

UTILITY CONSTRUCTION



SEE SHEET UC-18 FOR 2" FORCE MAIN SEWER (FM1) AND 10" GRAVITY SEWER (LINE A) PROFILES

Prepared by:

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/28/2012
DGN: U-4444B_UC_PSH08.dgn

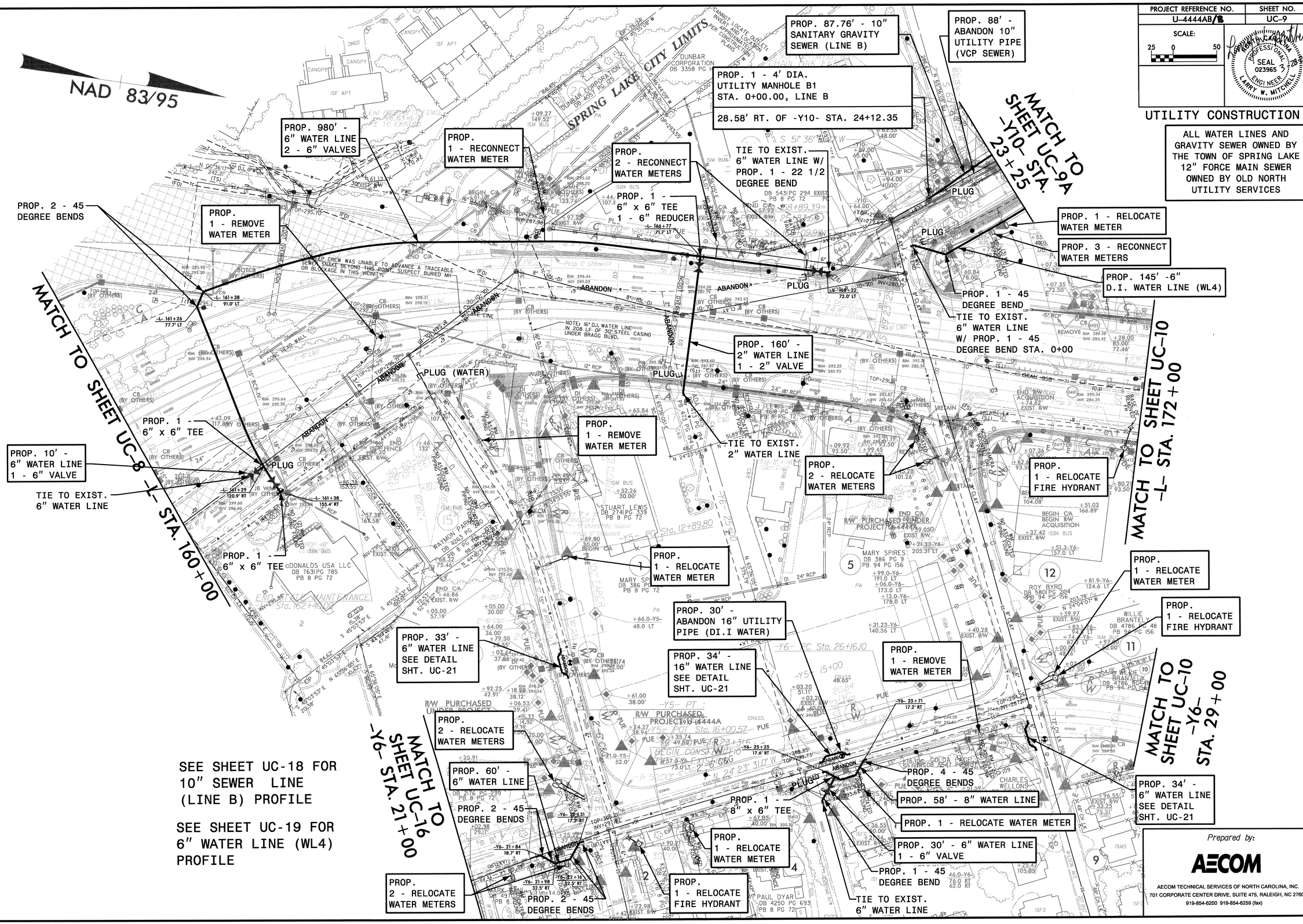
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-9

SCALE: 25 0 50

PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL

UTILITY CONSTRUCTION

ALL WATER LINES AND GRAVITY SEWER OWNED BY THE TOWN OF SPRING LAKE 12" FORCE MAIN SEWER OWNED BY OLD NORTH UTILITY SERVICES



Prepared by:

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
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919-854-6200 919-854-6259 (fax)

DATE: 3/28/2012
DGN: U-4444B_UC_PSH08.dgn

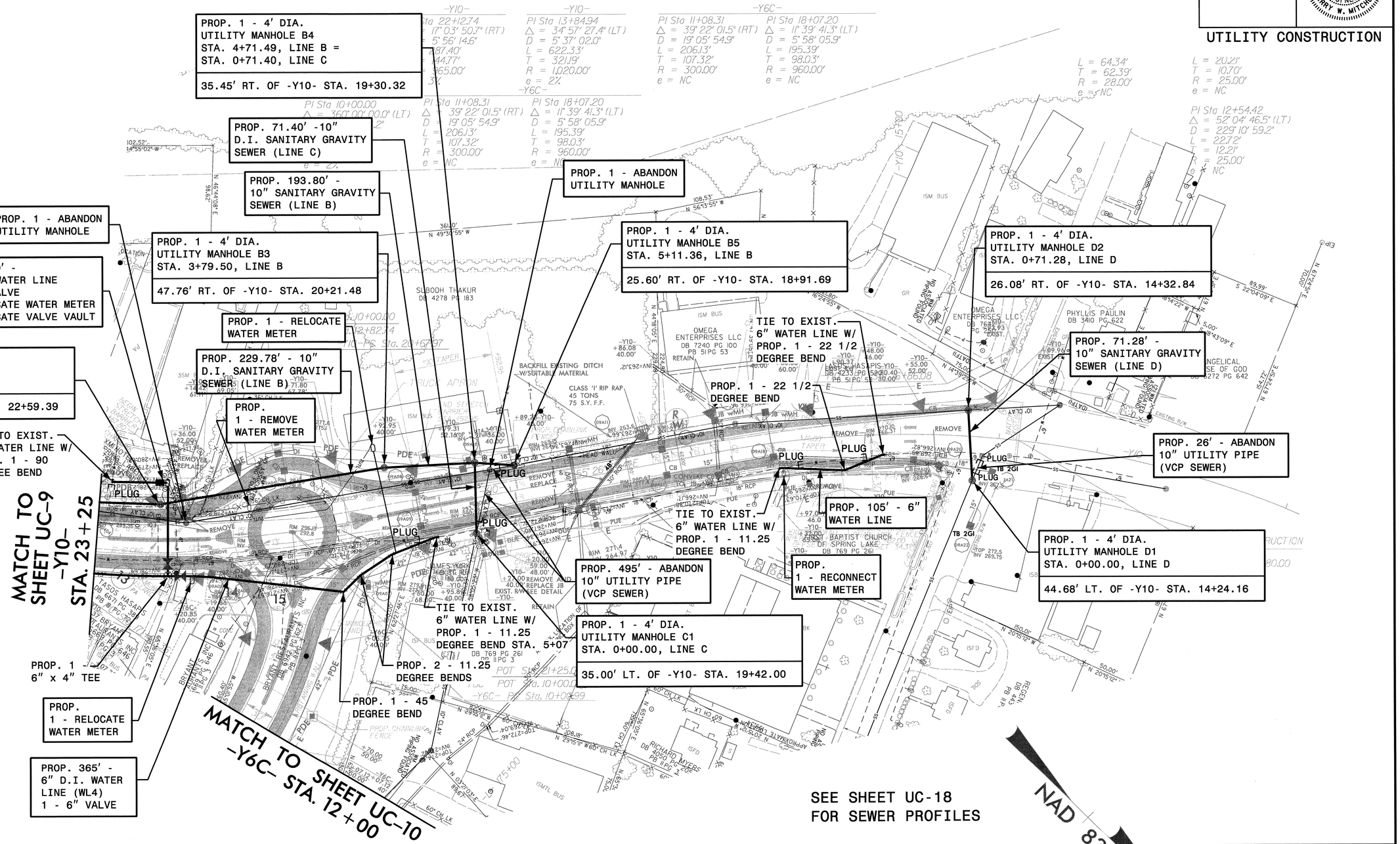
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-9A

SCALE: 25 0 50

SEAL 0239657 NORTH CAROLINA PROFESSIONAL ENGINEER LARRY W. MITCHELL

UTILITY CONSTRUCTION

ALL WATER LINES AND SEWER LINES OWNED BY THE TOWN OF SPRING LAKE



Prepared by:

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AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
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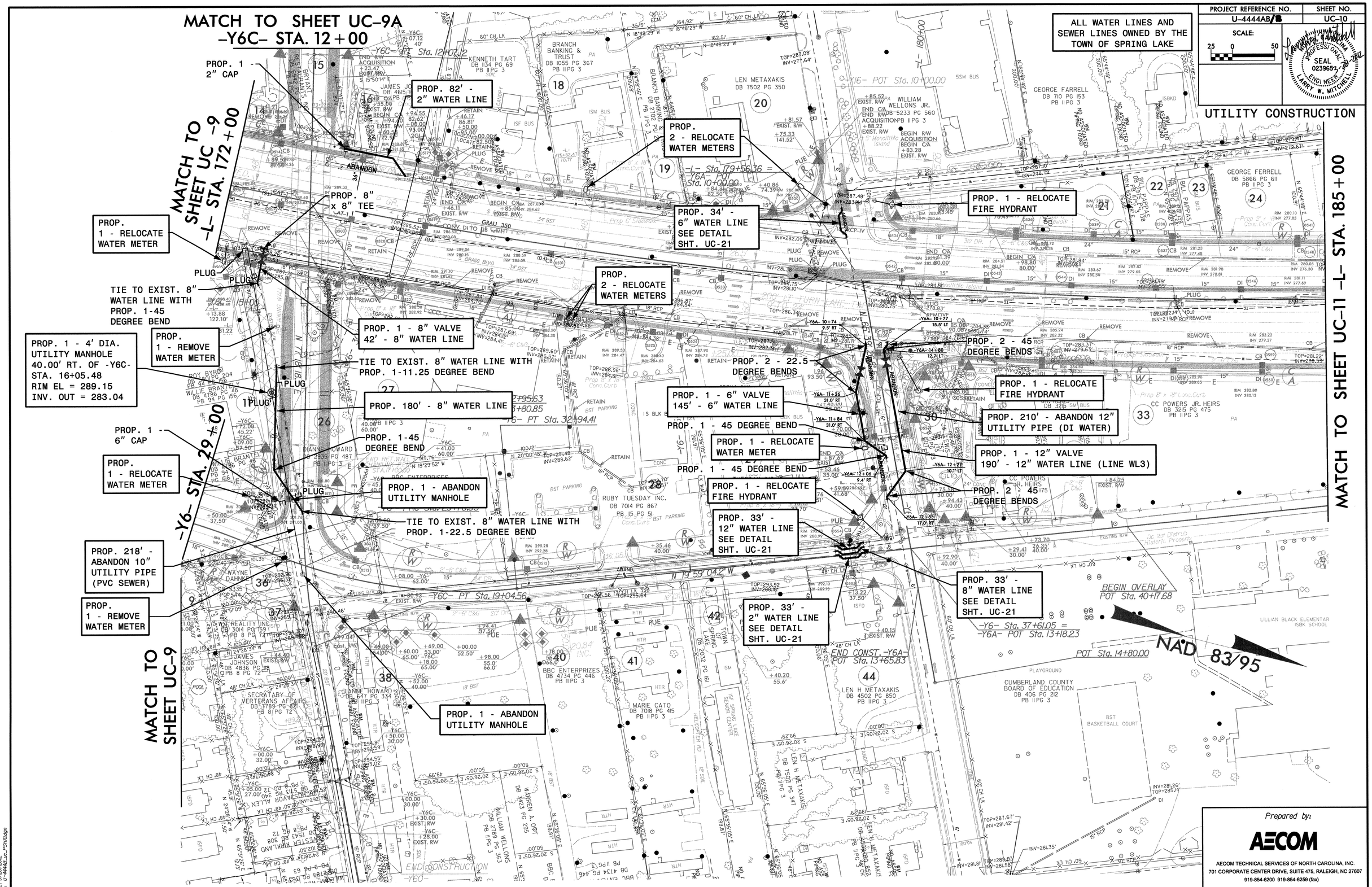
DATE: 3/28/2012
DGN: U-4444B_uc_PSH09A.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-10

SCALE: 25 0 50

SEAL 023965 ENGINEER LARRY W. MITCHELL

UTILITY CONSTRUCTION



Prepared by:

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/29/2022
DGN: U-4444B_uc_PSH02.dgn

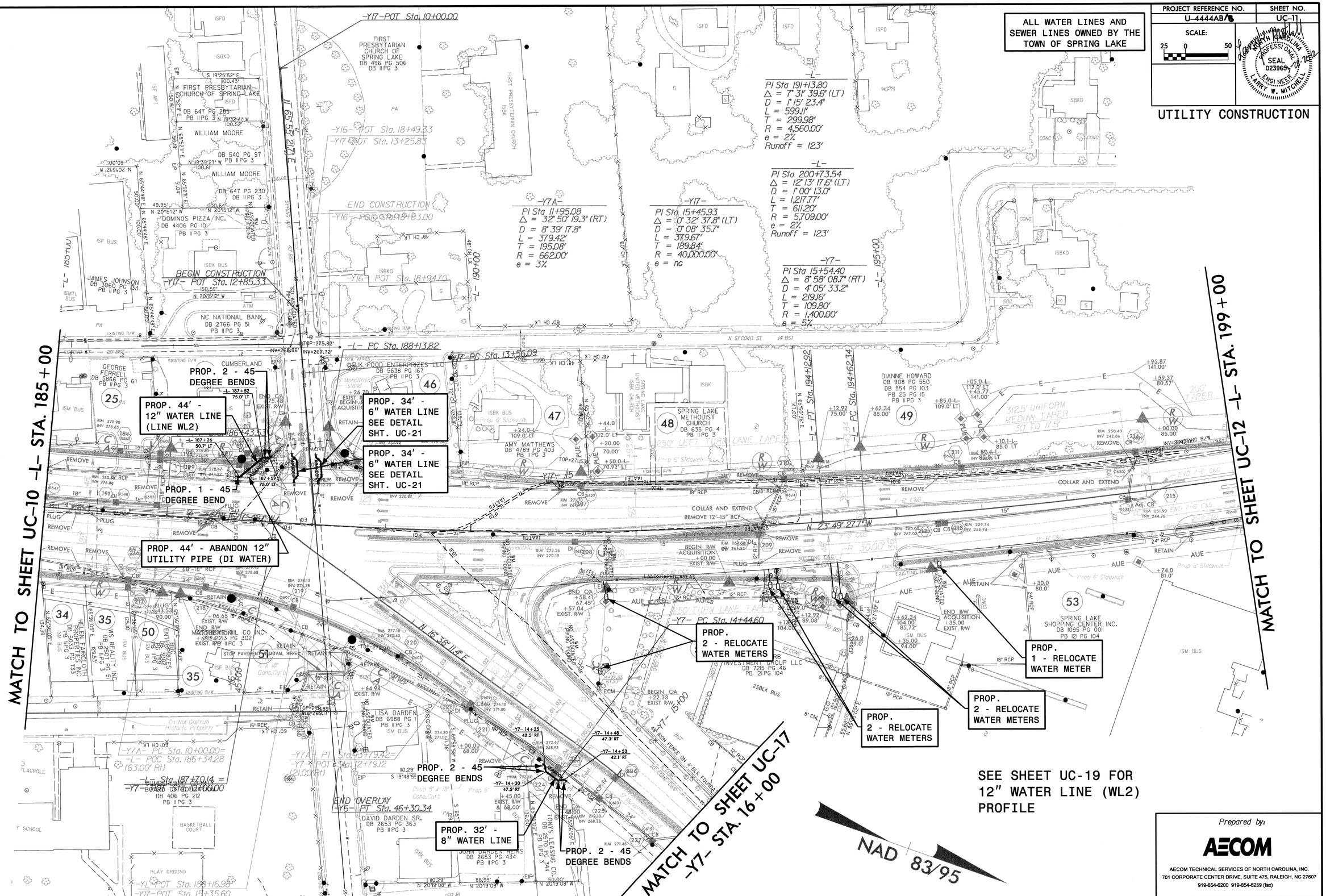
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-11

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL

UTILITY CONSTRUCTION

ALL WATER LINES AND SEWER LINES OWNED BY THE TOWN OF SPRING LAKE



SEE SHEET UC-19 FOR 12" WATER LINE (WL2) PROFILE

Prepared by:

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AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 1/28/2022
DGN: U-4444B_Uc_PSHU.dgn

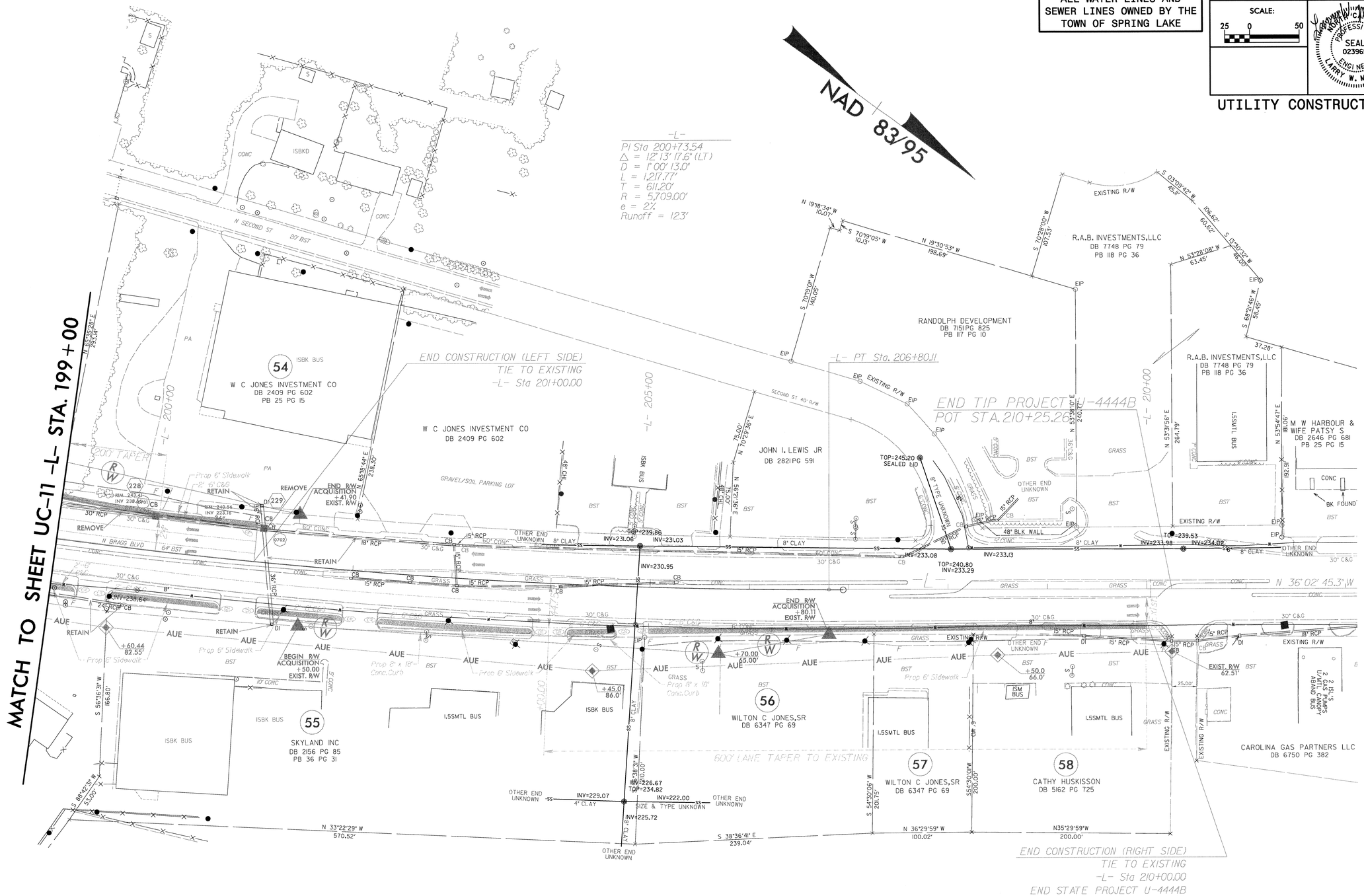
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-12

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL

ALL WATER LINES AND SEWER LINES OWNED BY THE TOWN OF SPRING LAKE

UTILITY CONSTRUCTION



NO KNOWN WATER LINE
OR SANITARY SEWER LINE
CONFLICTS ON THIS SHEET

Prepared by:

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 1/28/2022
DGN: U-4444B_uc_PSHIZ.dgn

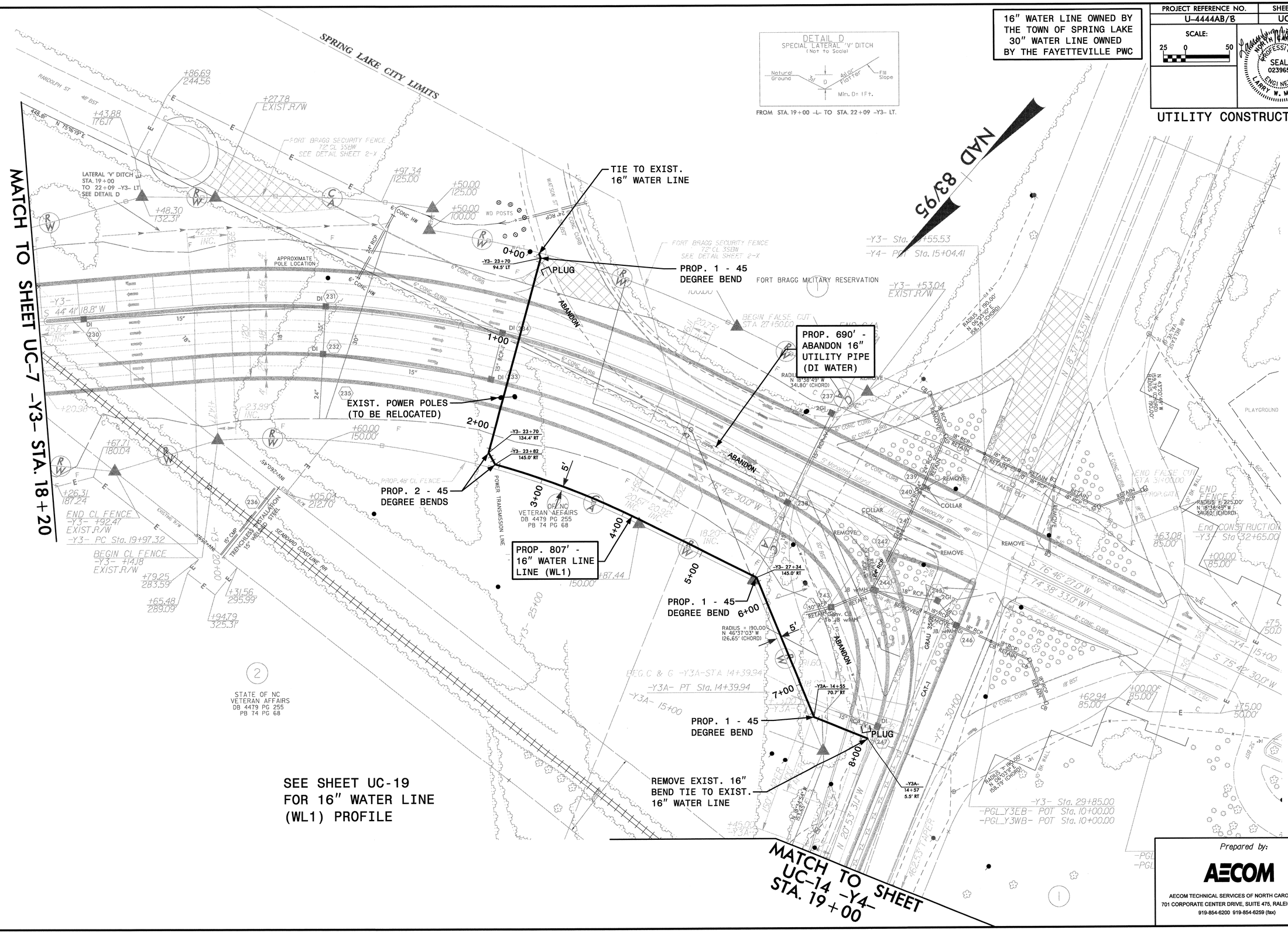
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-13

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL 7-13-2012

UTILITY CONSTRUCTION

16" WATER LINE OWNED BY THE TOWN OF SPRING LAKE
30" WATER LINE OWNED BY THE FAYETTEVILLE PWC



Prepared by:

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
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919-854-6200 919-854-6259 (fax)

DATE: 3/28/2012
DGN: U-4444B_uc_PSH13.dgn

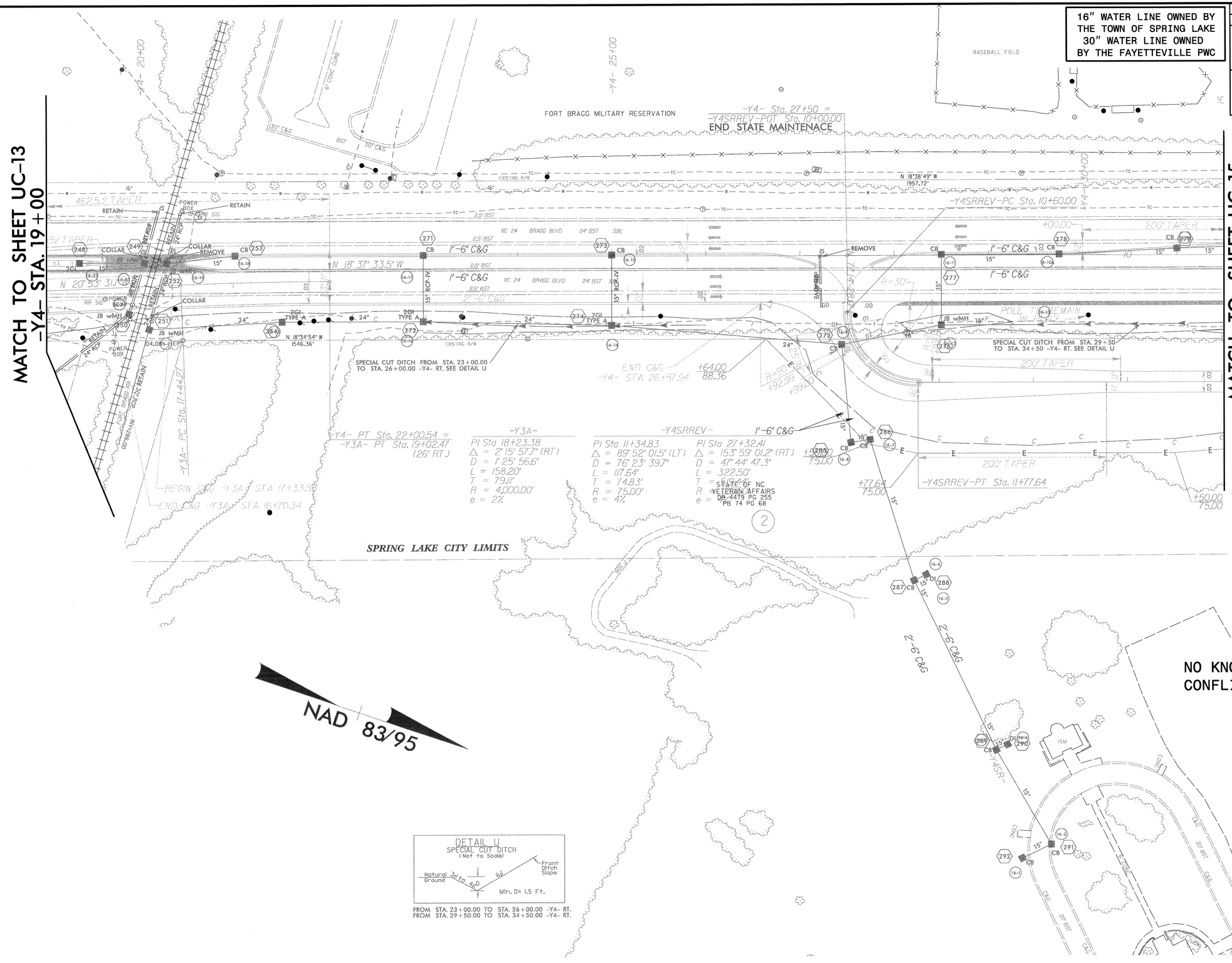
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-14

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL 2-28-12

UTILITY CONSTRUCTION

16" WATER LINE OWNED BY THE TOWN OF SPRING LAKE
30" WATER LINE OWNED BY THE FAYETTEVILLE PWC



Prepared by:

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
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919-854-6200 919-854-6259 (fax)

DATE: 3/28/2012
DGN: U-4444B_uc_PSH14.dgn

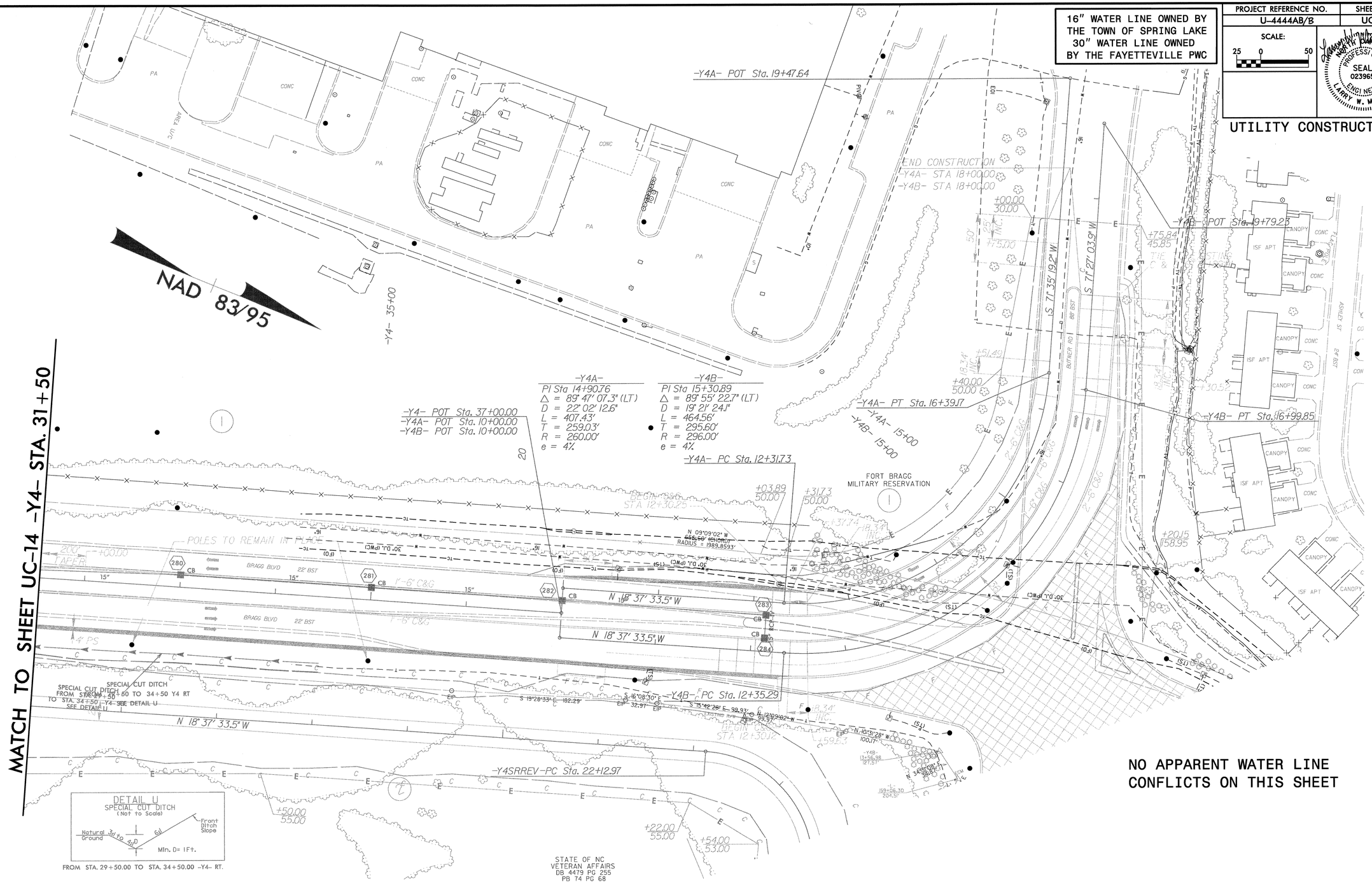
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-15

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL 1-18-2012

UTILITY CONSTRUCTION

16" WATER LINE OWNED BY THE TOWN OF SPRING LAKE
30" WATER LINE OWNED BY THE FAYETTEVILLE PWC



NO APPARENT WATER LINE CONFLICTS ON THIS SHEET

Prepared by:

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/28/2012
DGN: U-4444B_uc_PSHI5.dgn

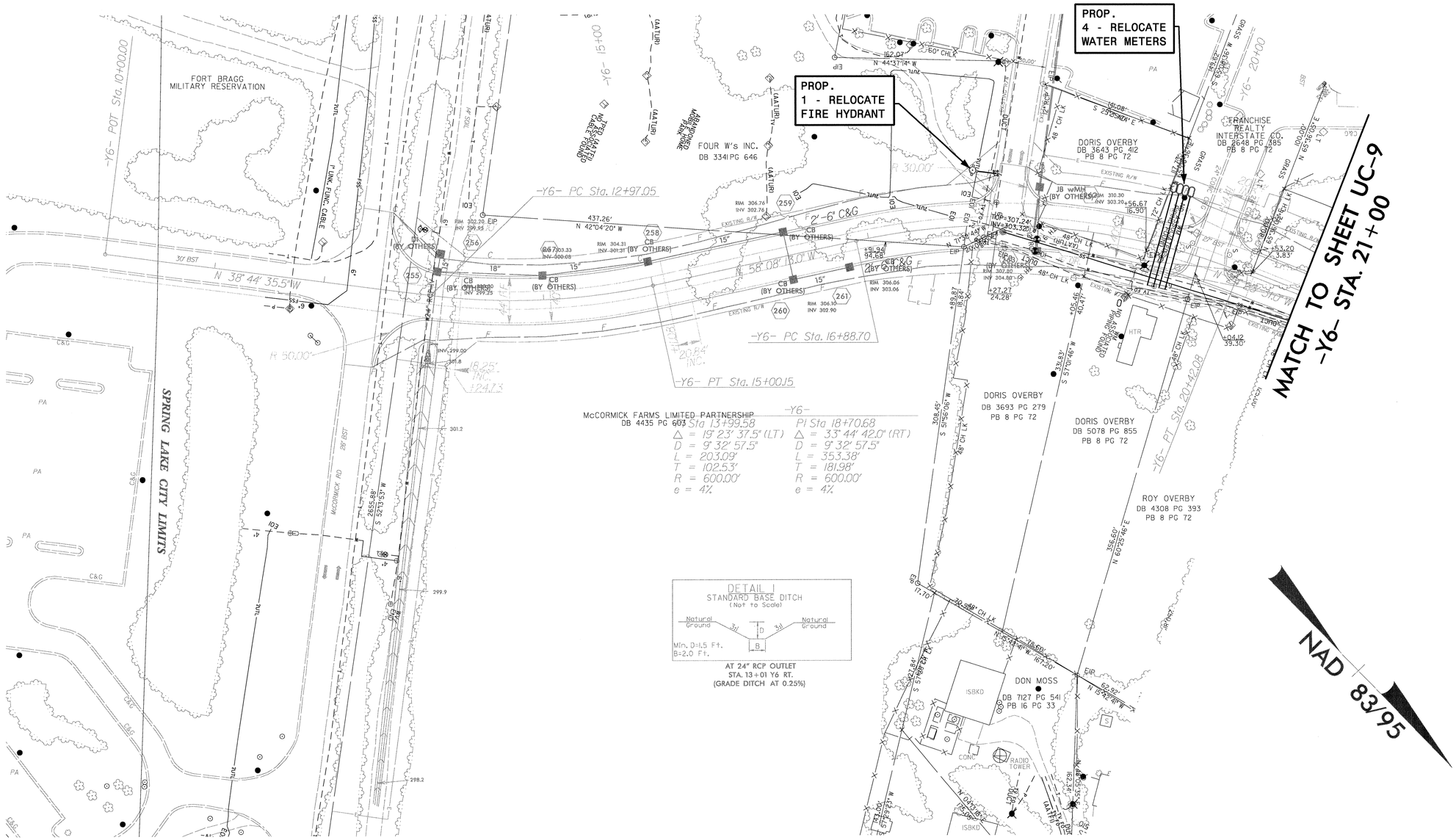
ALL WATER LINES AND SEWER LINES OWNED BY THE TOWN OF SPRING LAKE

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-16

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL

UTILITY CONSTRUCTION



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701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/28/2012
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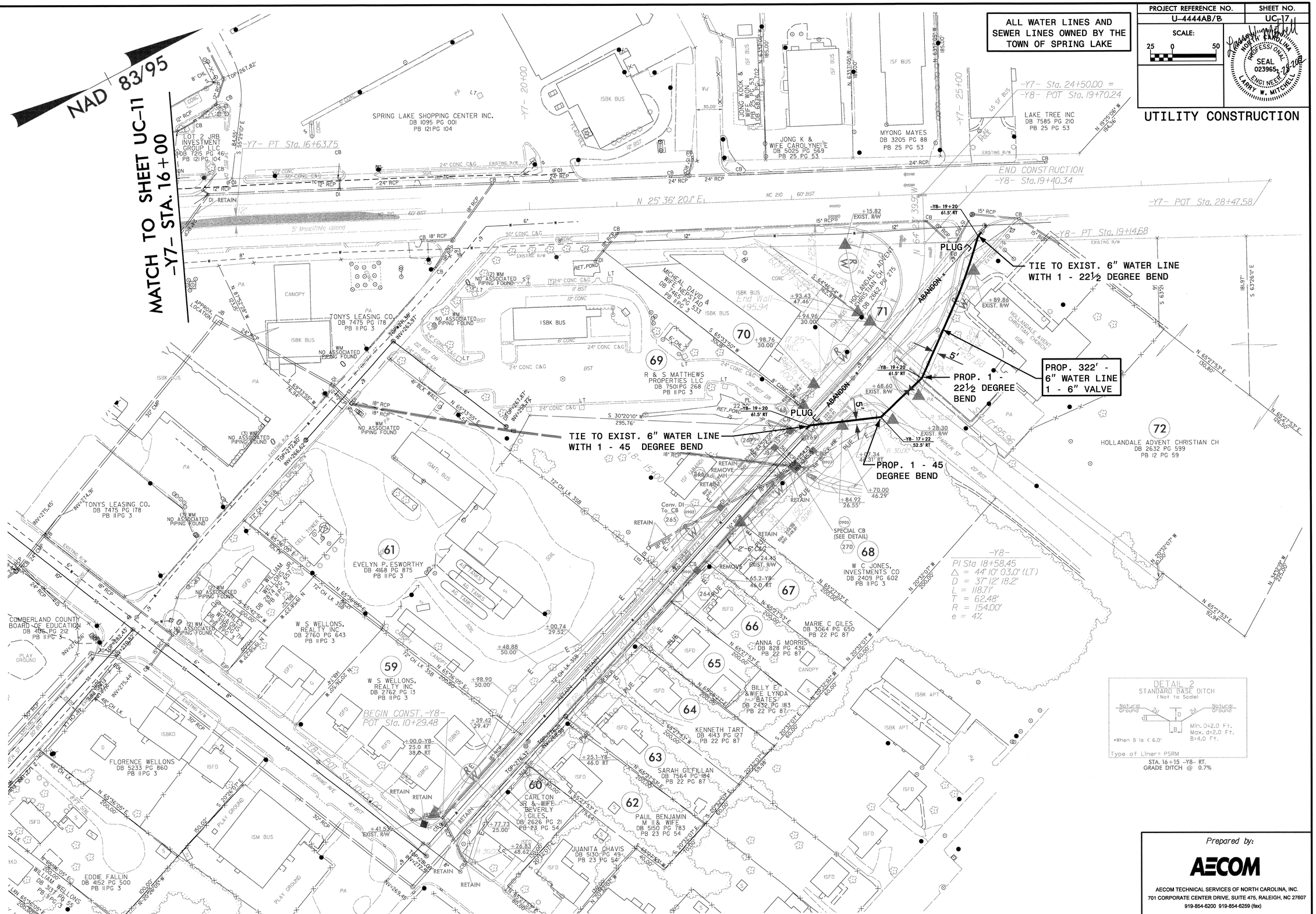
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-17

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL 3-28-2012

UTILITY CONSTRUCTION

ALL WATER LINES AND SEWER LINES OWNED BY THE TOWN OF SPRING LAKE



Prepared by:

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

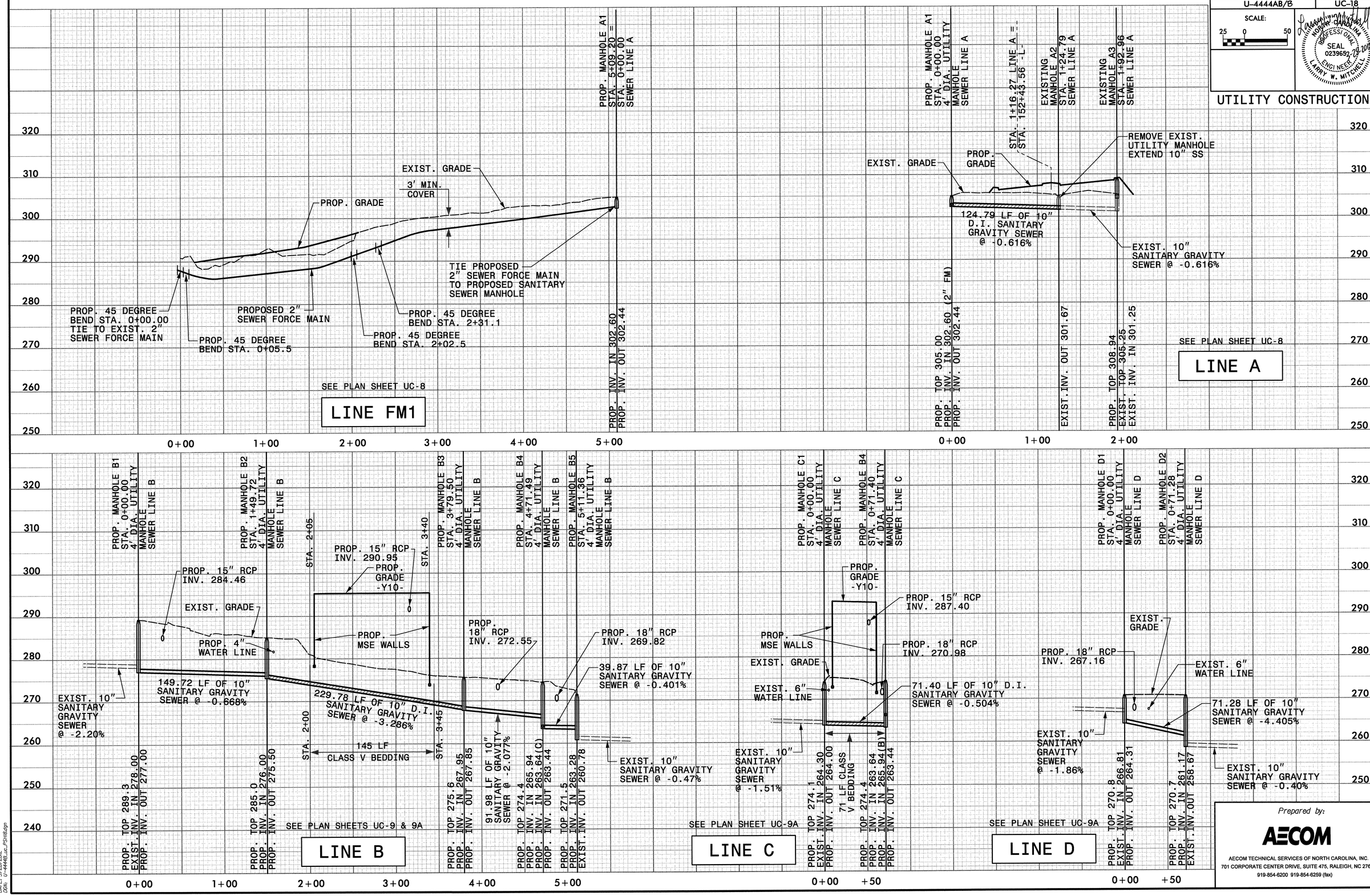
DATE: 3/28/2012
DGN: U-4444B_uc_PSHIT.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-18

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL 3-28-2012

UTILITY CONSTRUCTION



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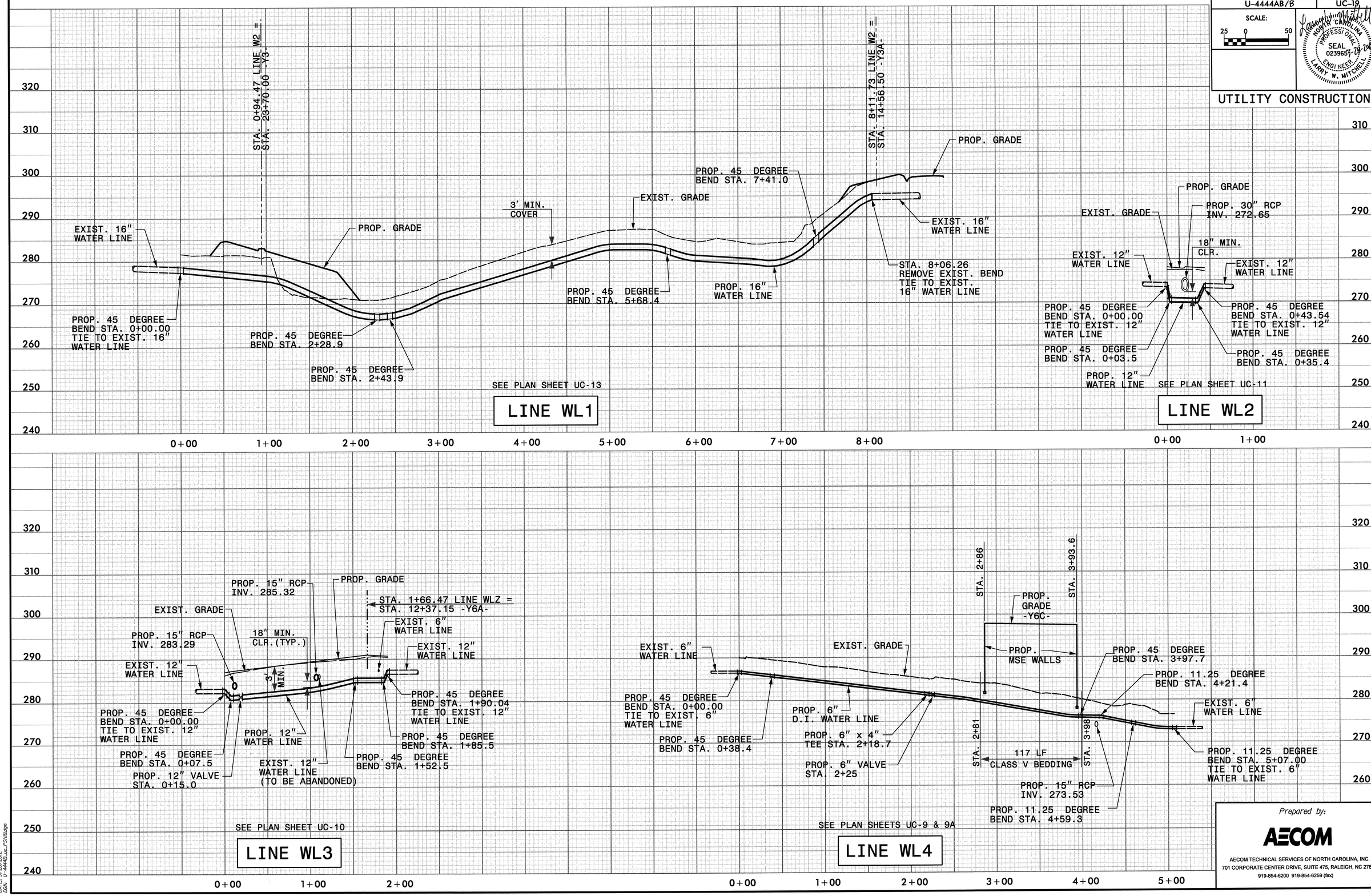
DATE: 3/28/2012
DGN: U-4444B_sht_PSHB.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-19

SCALE: 25 0 50

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL 3-29-2012

UTILITY CONSTRUCTION



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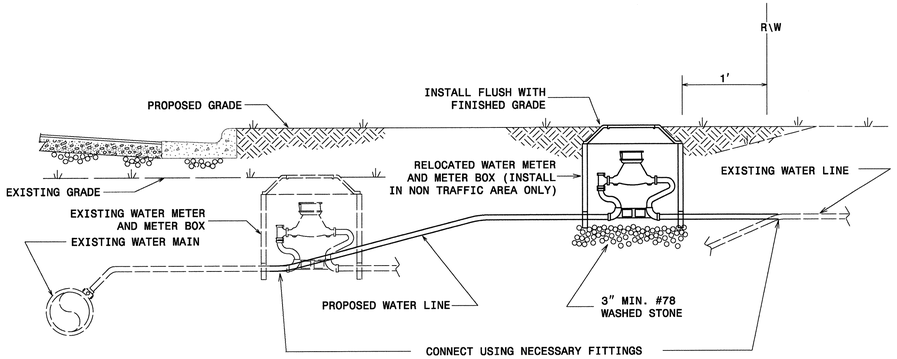
919-854-6200 919-854-6259 (fax)

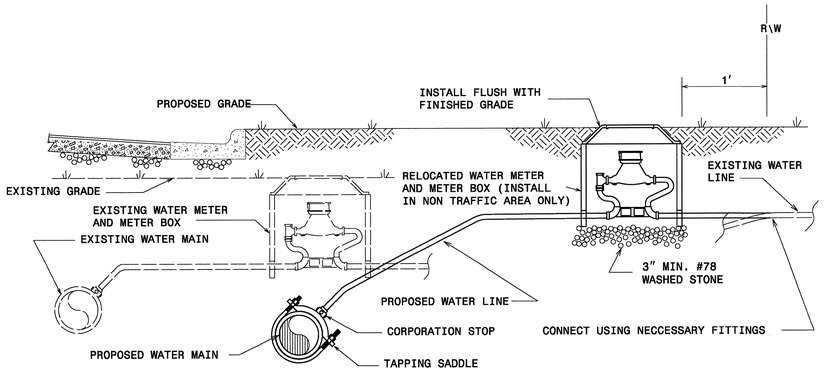
DATE: 3/28/2012
DGN: U-4444B_uc_PSH19.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-20

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL 3-28-2012

UTILITY CONSTRUCTION

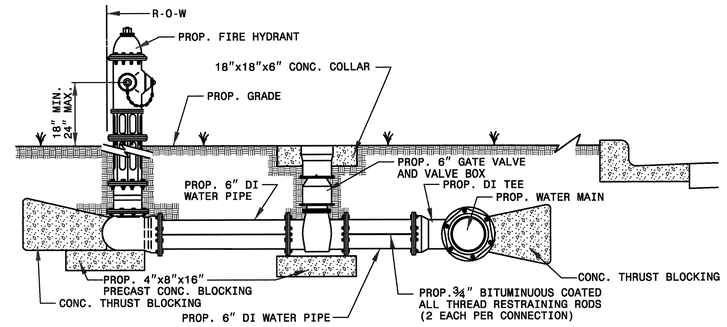




NOTES:

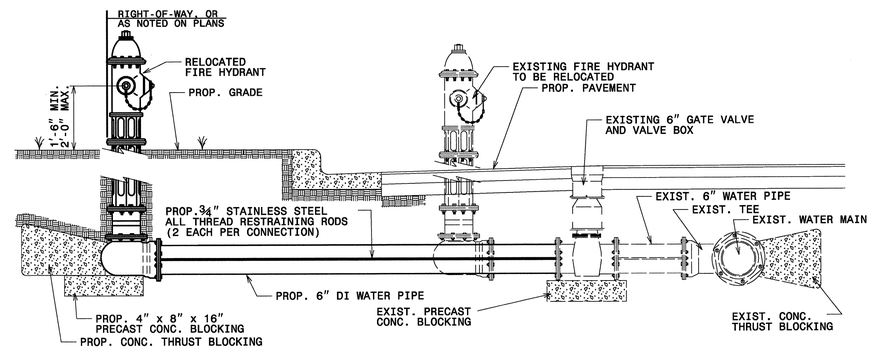
1. RELOCATION SHALL INCLUDE THE REMOVAL AND INSTALLATION AT THE APPROPRIATE LOCATION OF THE WATER METER, METER SETTER AND YOKE, METER VALVES, AND METER BOX WITH LID.
2. THE NEW WATER SERVICE LINE SHALL BE OF THE SAME TYPE AND GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
3. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUN OF 3' 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



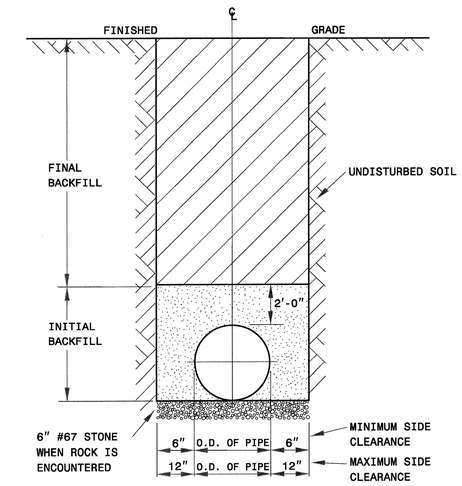
FIRE HYDRANT INSTALLATION DETAIL (UNPAVED AREAS)

NTS



FIRE HYDRANT RELOCATION DETAIL

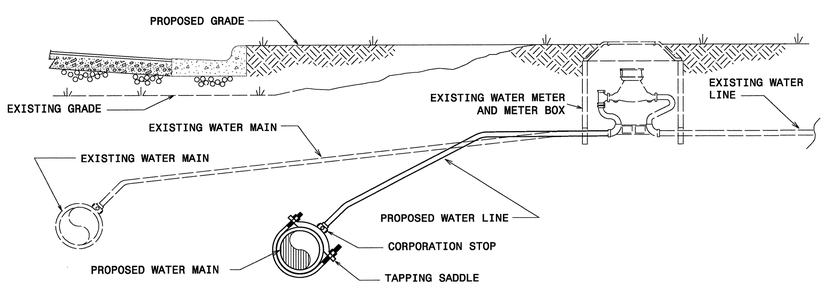
NTS



TRENCH & BACKFILL DETAIL

NOTES:

1. TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.
5. ACHIEVE 80% COMPACTION IN NON-TRAFFIC AREAS, AND 95% COMPACTION IN TRAFFIC AREAS.
6. IF IN EASEMENT 4" TOPSOIL, AND 12" CLEAN SELECT FILL IS REQUIRED.
7. NO BOULDERS 8" IN DIAMETER OR GREATER ALLOWED IN FINAL BACKFILL.

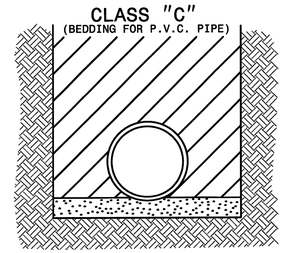


NOTES:

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 3' COVER BELOW FINISHED GRADE.

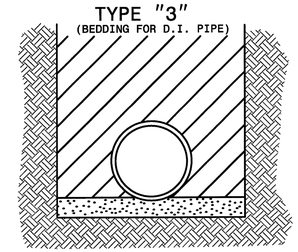
RECONNECT EXISTING WATER METER DETAIL

CLASS "C"
(BEDDING FOR P.V.C. PIPE)



PIPE BEDDED IN LOOSE MATERIAL, LIGHTLY TAMPED WITH A MINIMUM OF 6" UNDER PIPE. 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.

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



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.

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		

Prepared by:

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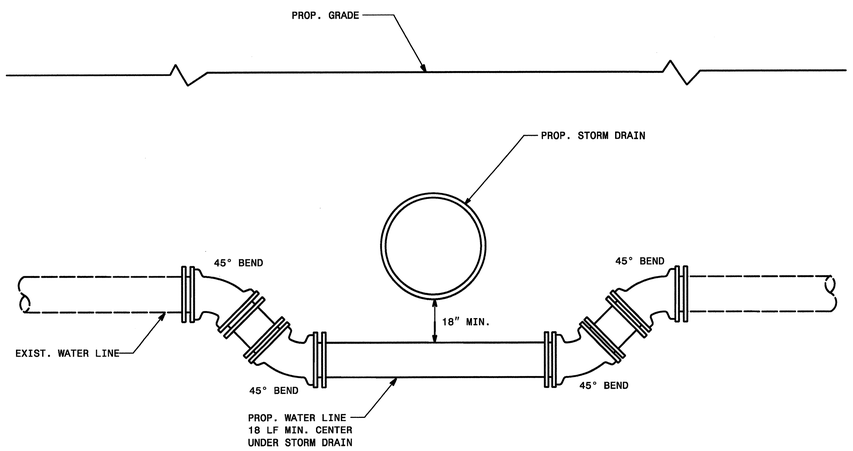
DATE: 3/28/2012
DGN: U-4444B_uc_PSH20.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UC-21

NORTH CAROLINA PROFESSIONAL SEAL 023965 ENGINEER LARRY W. MITCHELL 3-28-12

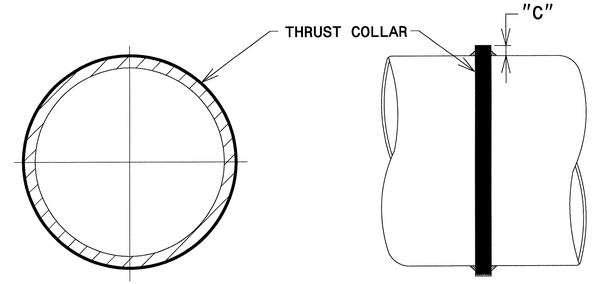
UTILITY CONSTRUCTION

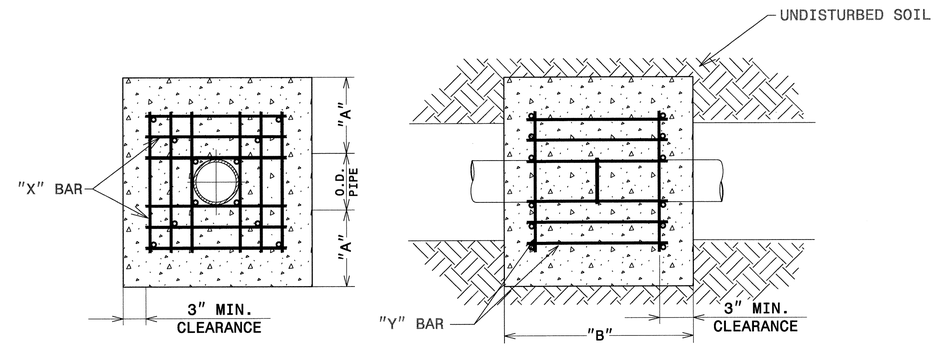


PROFILE

WATER MAIN RELOCATION AT PROPOSED STORM DRAIN CROSSING

NTS





REINFORCING REQUIREMENTS

I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WEIGHT	"Y" BAR LENGTH	"Y" BAR WEIGHT	NO. REQUIRED
6" - 36"	#5	2'-2"+ O.D. PIPE	1.043 LBS/FT	1'-1"	1.1 LBS. EACH	X-24, Y-12
48" & greater	#6	3'-0"+ O.D. PIPE	1.502 LBS/FT	1'-3"	1.9 LBS. EACH	X-24, Y-12

THRUST COLLAR, AND THRUST SCHEDULE

I.D. PIPE	"A"	"B"	"C-6"-18", 20"-24", 30"-36", 48"
6" - 36"	1'-4"	1'-7"	2" 3" 4"
48" & greater	1'-8"	1'-9"	6"

NOTES:

1. SEE CONSTRUCTION SPECIFICATIONS.
2. SEE STANDARD DETAIL FOR THRUST BLOCK LOCATIONS.
3. CONCRETE SHALL BE 2500 P.S.I.
4. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
5. THRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK(S) INSTALLATION SHALL BE MINIMUM WIDTH.
6. BACKFILL TAMPED IN 6" LAYERS.

THRUST COLLAR FOR WATER MAINS

NTS

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DATE: 3/28/2012
DGN: U-4444BJC_PSH21.dgn

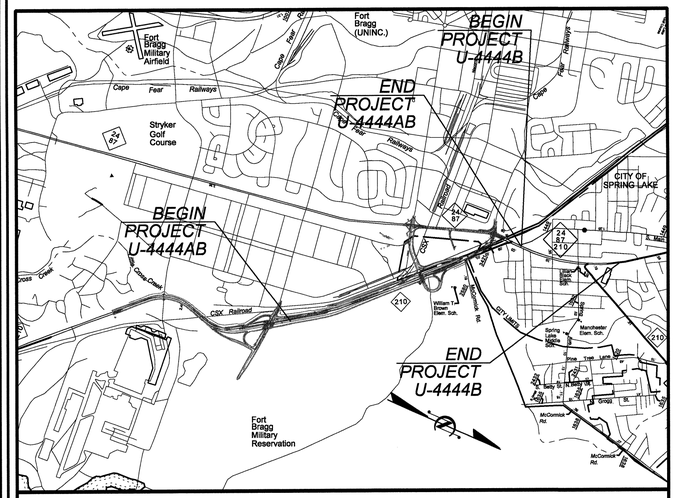
TIP PROJECT: U-4444AB/B

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
U-4444AB/B	UO-1

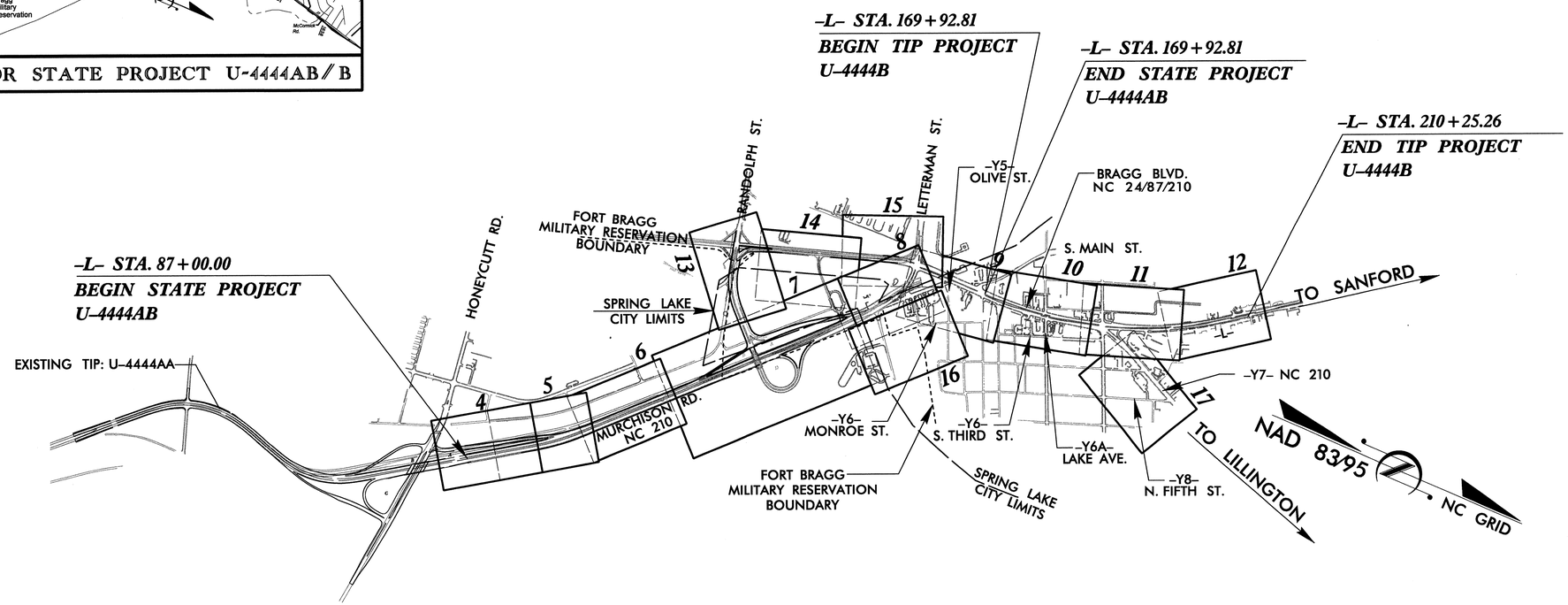
UTILITIES BY OTHERS
CUMBERLAND COUNTY



VICINITY MAP FOR STATE PROJECT U-4444AB/B

LOCATION: NC 210 (MURCHISON ROAD) FROM NORTH OF HONEYCUTT RD. TO NORTH OF NC 210 (LILLINGTON ROAD) IN SPRING LAKE

TYPE OF WORK: UTILITIES RELOCATION



THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO THE POINTS SHOWN ON PLANS.

METHOD OF CLEARING: Type _____

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	LEGEND OF SYMBOLS
UO-3	OMITTED
UO-4 THRU UO-17	UTILITIES BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

(1) POWER DISTRIBUTION - PROGRESS ENERGY & SANDHILLS UTILITY
(2) POWER TRANSMISSION - PROGRESS ENERGY
(3) TELECOMMUNICATIONS - CENTURYLINK
(4) CABLE TELEVISION - TIME WARNER CABLE

PREPARED BY:

AECOM

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701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
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PREPARED FOR:

DIVISION OF HIGHWAYS
UTILITIES AND ENCROACHMENTS
ENGINEERING UNIT

1555 MAIL SERVICE CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E.	UTILITIES SECTION ENGINEER
R. B. Wilkins, P.E.	UTILITIES SQUAD LEADER
AECOM Tech. Services	UTILITIES BY OTHERS PROJECT DESIGNER

$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$USERNAME$$$$

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-2

Note: Not to Scale

S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Boundary or Site
- Potential Soil Contamination: Boundary or Site

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 — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- 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 — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite Marker — RW
- Existing Control of Access — CA
- Proposed Control of Access — CA
- 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
- Curb Cut Future Ramp — CCFR
- 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 — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (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
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

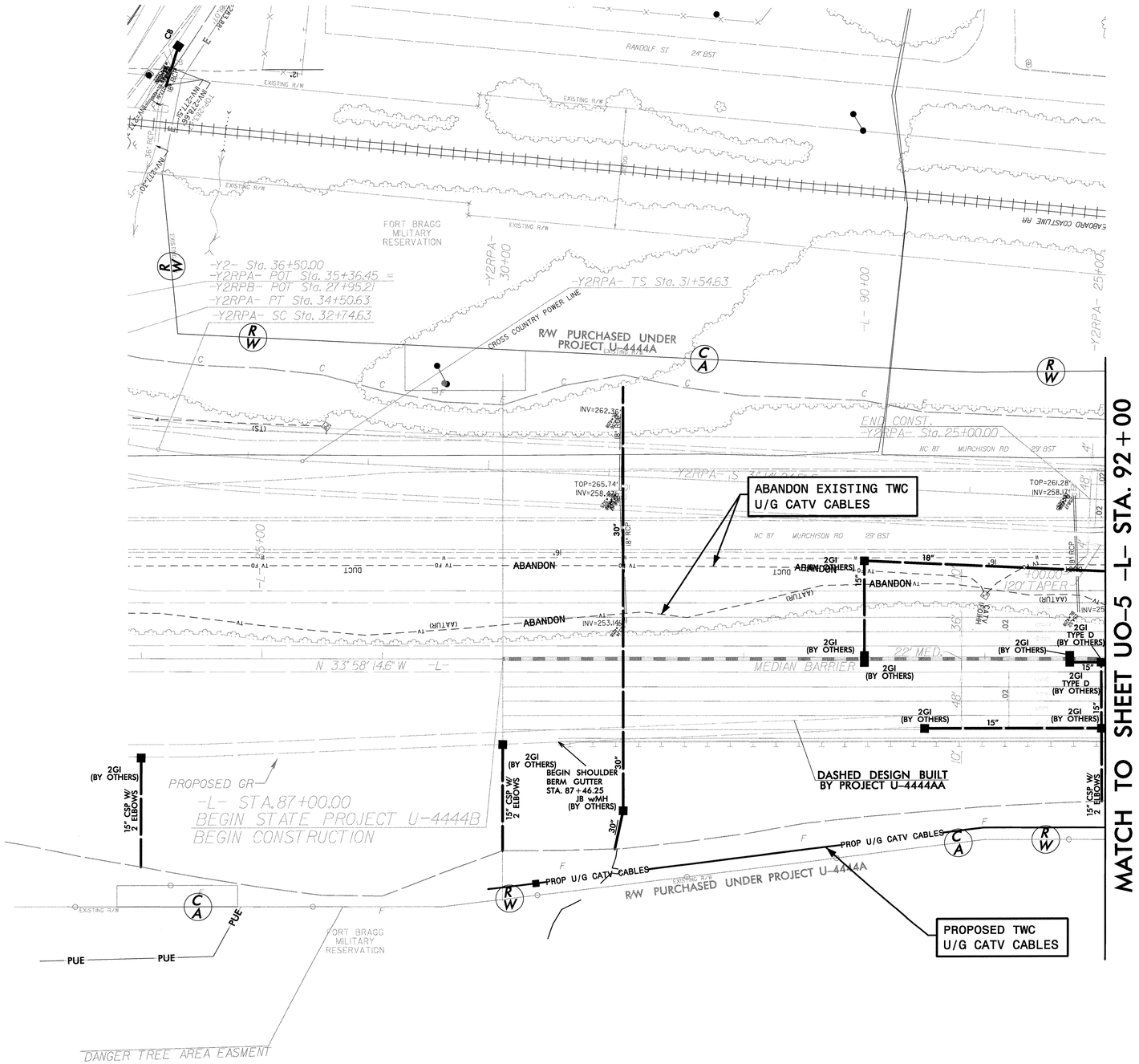
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According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

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-4

SCALE: 25 0 50

UTILITIES BY OTHERS

NAD 83/95



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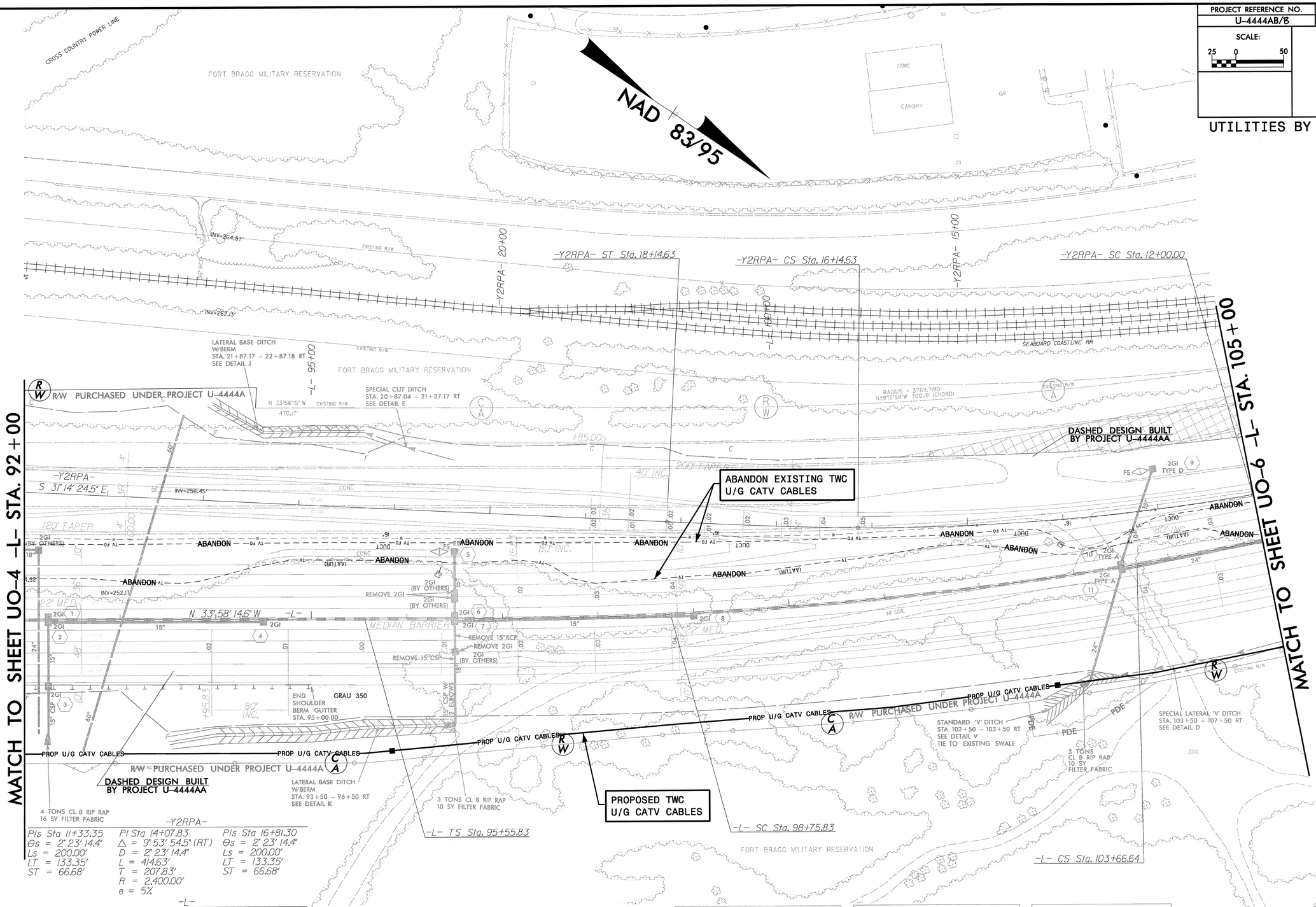
DATE: 3/29/2012
DGN: U-4444B_UO4_PSH04.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-5

SCALE: 25 0 50

UTILITIES BY OTHERS



-Y2RPA-

Pls Sta 11+33.35	Pi Sta 14+07.83	Pls Sta 16+81.30
Θs = 2° 23' 14.4"	Δ = 9° 53' 54.5" (RT)	Θs = 2° 23' 14.4"
Ls = 200.00'	D = 2° 23' 14.4"	Ls = 200.00'
LT = 133.35'	L = 414.63'	LT = 133.35'
ST = 66.68'	T = 207.83'	ST = 66.68'
	R = 2,400.00'	
	e = 5%	

-L-

Pls Sta 97+69.18	Pi Sta 101+21.56	Pls Sta 104+73.32
Θs = 2° 21' 23.9"	Δ = 7° 13' 44.9" (LT)	Θs = 2° 21' 23.9"
Ls = 320.00'	D = 1° 28' 22.4"	Ls = 320.00'
LT = 213.35'	L = 490.81'	LT = 213.35'
ST = 106.68'	T = 245.73'	ST = 106.68'
	R = 3,890.00'	
	e = 4%	

DETAIL D
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Fill Slope
Min. D= 1Ft.
FROM STA. 103+50 TO STA. 107+50 RT.

DETAIL E
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, See *S D, 4:1 or Flatter, Front Ditch Slope
Min. D= 1.5 Ft.
FROM STA. 20+87.04 TO STA. 21+37.17 RT. -Y2RPA-

DETAIL J
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, d, 3:1, D, B, 3:1, b, 1'/Ft., Fill Slope, Filter Fabric
Min. D= 1.5 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft. &Variable
*When B Is < 6.0'
Type of Liner= Class B Rip-Rap
FROM STA. 21+87.17 TO STA. 22+87.18 RT. -Y2RPA-

DETAIL K
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, d, 3:1, D, B, 3:1, b, 1'/Ft., Fill Slope
Min. D= 1.5 Ft.
Min. d= 1.0 Ft.
B= 3.0 Ft.
b= 5.0 Ft. &Variable
Type of Liner= PSRM
FROM STA. 93+50 TO STA. 96+50 RT.

DETAIL V
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground, 3:1, D, 3:1, Natural Ground
Min. D= 1.5 Ft.
FROM STA. 102+50 TO STA. 103+50 RT.

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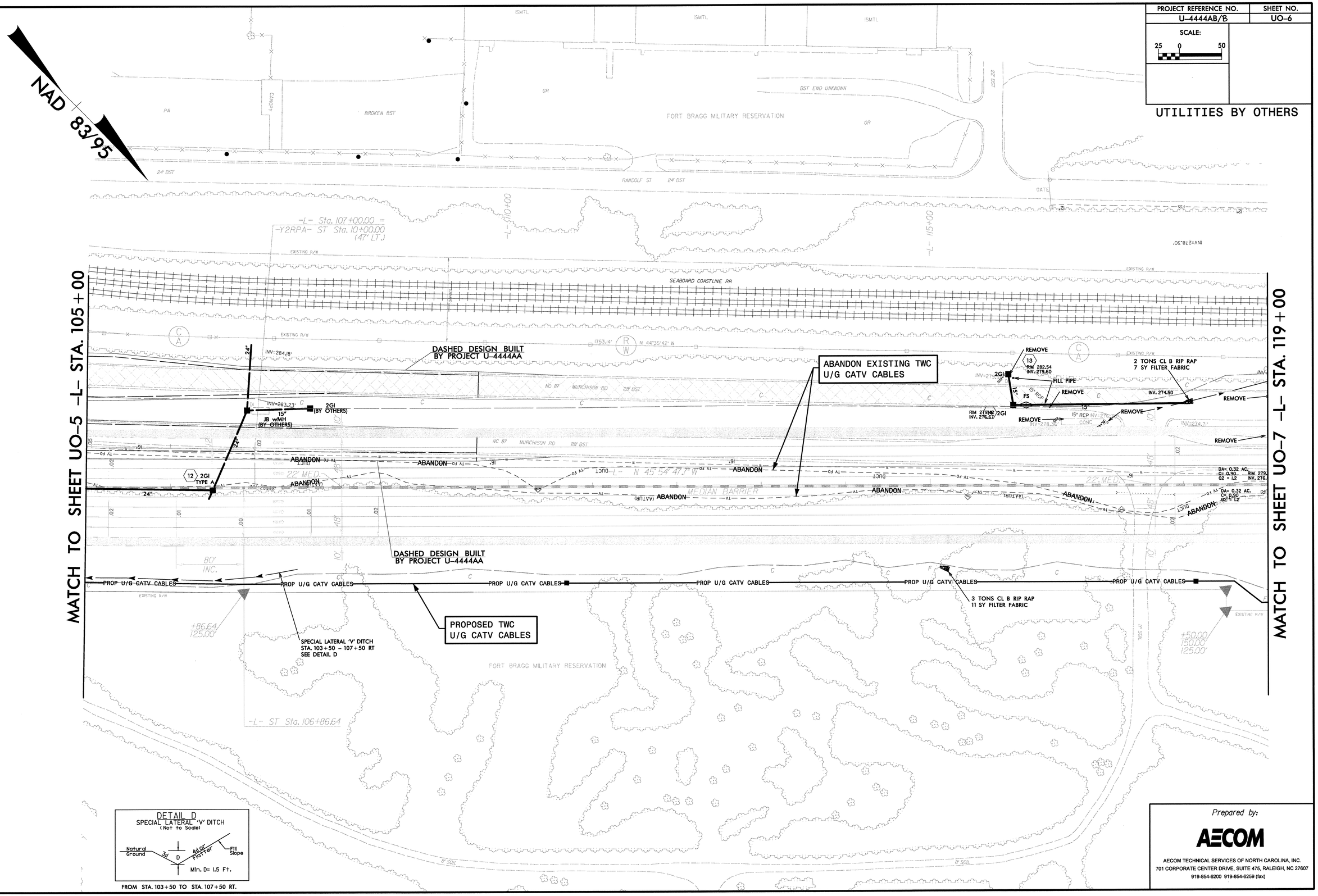
DATE: 3/29/2022
DGN: U-4444B_Uo_PSH05.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-6

SCALE: 25 0 50

UTILITIES BY OTHERS



Prepared by:

AECOM

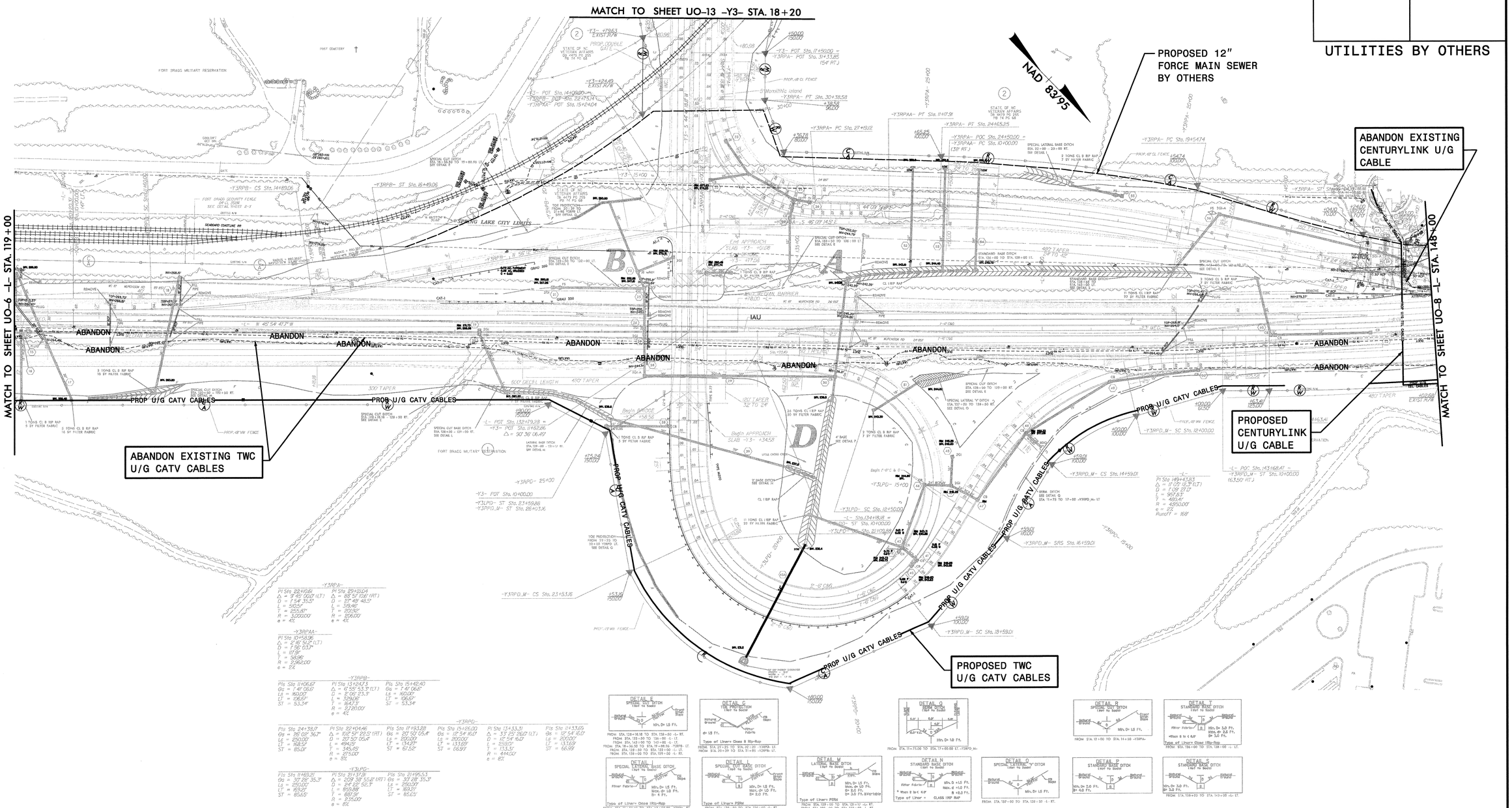
AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/29/2012
DGN: U-4444B_Uo_PSH06.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-7

SCALE: 50 0 100

UTILITIES BY OTHERS



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AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/29/2012
DGN: U-4444B_roo_PSH07.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-8

SCALE: 25 0 50

UTILITIES BY OTHERS

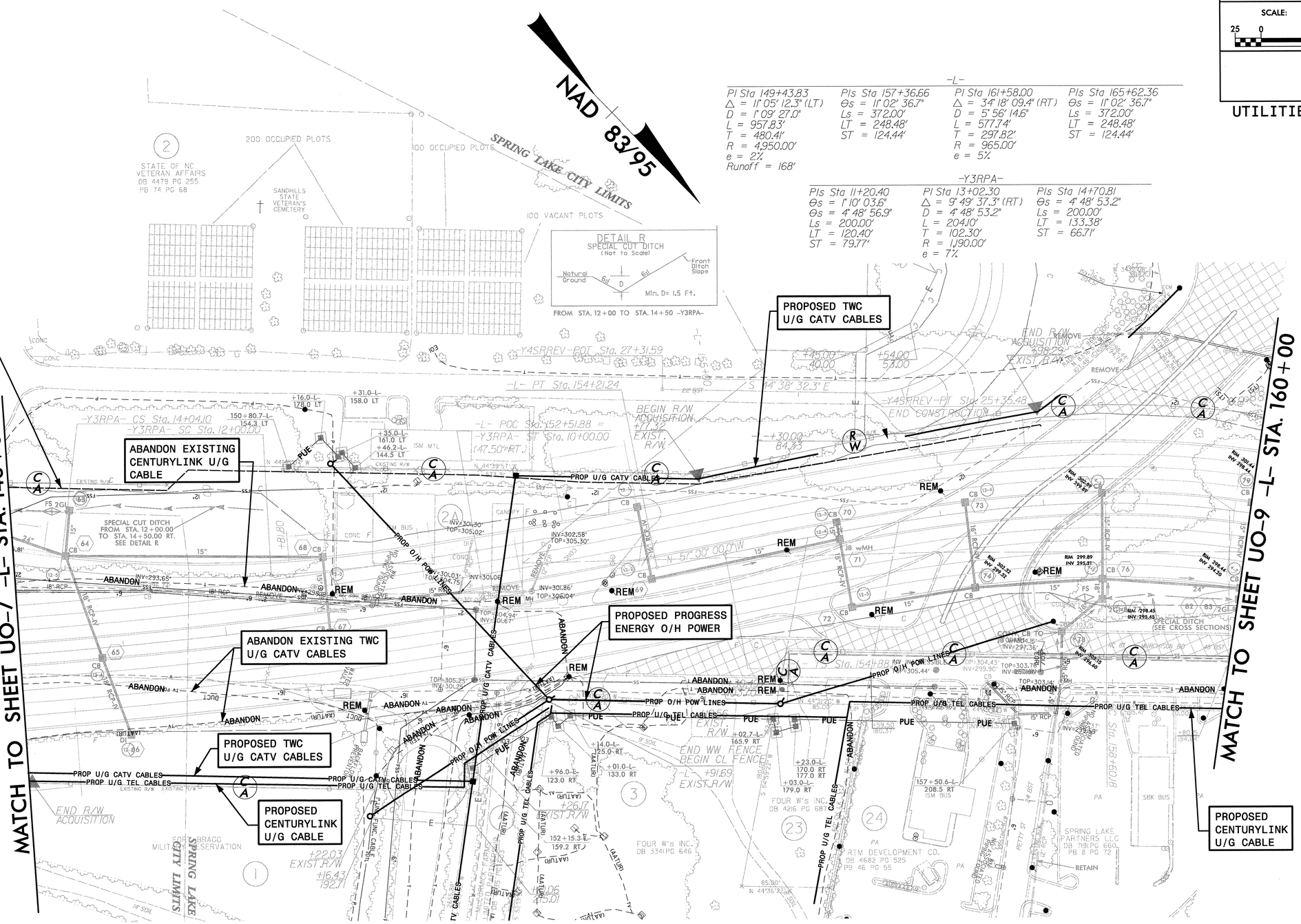
NAD 83/95

-L-

PI Sta 149+43.83	PIs Sta 157+36.66	PI Sta 161+58.00	PIs Sta 165+62.36
Δ = 11° 05' 12.3" (LT)	Θs = 11° 02' 36.7"	Δ = 34° 18' 09.4" (RT)	Θs = 11° 02' 36.7"
D = 1° 09' 27.0"	Ls = 372.00'	D = 5° 56' 14.6"	Ls = 372.00'
L = 957.83'	LT = 248.48'	L = 577.74'	LT = 248.48'
T = 480.41'	ST = 124.44'	T = 297.82'	ST = 124.44'
R = 4,950.00'		R = 965.00'	
e = 2%		e = 5%	
Runoff = 168'			

-Y3RPA-

PIs Sta 11+20.40	PI Sta 13+02.30	PIs Sta 14+70.81
Θs = 1° 10' 03.6"	Δ = 9° 49' 37.3" (RT)	Θs = 4° 48' 53.2"
Θs = 4° 48' 56.9"	D = 4° 48' 53.2"	Ls = 200.00'
Ls = 200.00'	L = 204.10'	LT = 133.38'
LT = 120.40'	T = 102.30'	ST = 66.71'
ST = 79.77'	R = 1,190.00'	
	e = 7%	



Prepared by:

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AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/29/2012
DGN: U-4444B_Uos_PSHOB.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-9

SCALE: 25 0 50

UTILITIES BY OTHERS

NAD 83/95

MATCH TO SHEET UO-9A -Y10- STA. 22+50

MATCH TO SHEET UO-10 -L- STA. 172+00

MATCH TO SHEET UO-8 -L- STA. 160+00

MATCH TO SHEET UO-10 -Y6- STA. 29+00

MATCH TO SHEET UO-16 -Y6- STA. 27+00

PROPOSED PROGRESS ENERGY O/H POWER

PROPOSED CENTURYLINK U/G CONDUIT

ABANDON EXISTING CENTURYLINK U/G CABLE

PROPOSED PROGRESS ENERGY O/H POWER AND TWC CATV

PROPOSED CENTURYLINK U/G CABLE

ABANDON EXISTING TWC U/G CATV CABLES

PROPOSED TWC U/G CATV CABLES

PROPOSED PROGRESS ENERGY O/H POWER

SPRING LAKE CITY LIMITS

R/W PURCHASED UNDER PROJECT U-4444A

R/W PURCHASED UNDER PROJECT U-4244A

-L-

PIs Sta 157+36.66	PI Sta 161+58.00	PIs Sta 165+62.36
Θs = 11° 02' 36.7"	Δ = 34° 18' 09.4" (RT)	Θs = 11° 02' 36.7"
Ls = 372.00'	D = 5° 56' 14.6"	Ls = 372.00'
LT = 248.48'	L = 577.74'	LT = 248.48'
ST = 124.44'	T = 297.82'	ST = 124.44'
	R = 965.00'	
	e = 5%	

-Y5-

PI Sta 13+79.55
Δ = 5° 08' 20.1" (LT)
D = 2° 51' 53.2"
L = 179.38'
T = 89.75'
R = 2,000.00'
e = NC

-Y6-

PI Sta 28+02.92
Δ = 34° 35' 27.5" (RT)
D = 9° 32' 57.5"
L = 362.24'
T = 186.83'
R = 600.00'
e = 4%

DATE: 3/29/2012
DGN: U-4444B_sbo_PSH03.dgn

Prepared by:

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701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-9A

SCALE: 25 0 50

UTILITIES BY OTHERS

-Y10-
PI Sta 22+12.74
Δ = 11° 03' 50.7" (RT)
D = 5° 56' 14.6"
L = 287.40'
T = 144.77'
R = 965.00'
e = 3%

-Y10-
PI Sta 13+84.94
Δ = 34° 57' 27.4" (LT)
D = 5° 37' 02.0"
L = 622.33'
T = 321.19'
R = 1,020.00'
e = 2%

-Y6C-
PI Sta 11+08.31
Δ = 39° 22' 01.5" (RT)
D = 19° 05' 54.9"
L = 206.13'
T = 107.32'
R = 300.00'
e = NC

-Y6C-
PI Sta 18+07.20
Δ = 11° 39' 41.3" (LT)
D = 5° 58' 05.9"
L = 195.39'
T = 98.03'
R = 960.00'
e = NC

-Y6R-
PI Sta 10+00.00
Δ = 360° 00' 00.0" (LT)
D = 127° 19' 26.2"
L = 282.74'
T = 0.00'
R = 45.00'
e = 2%

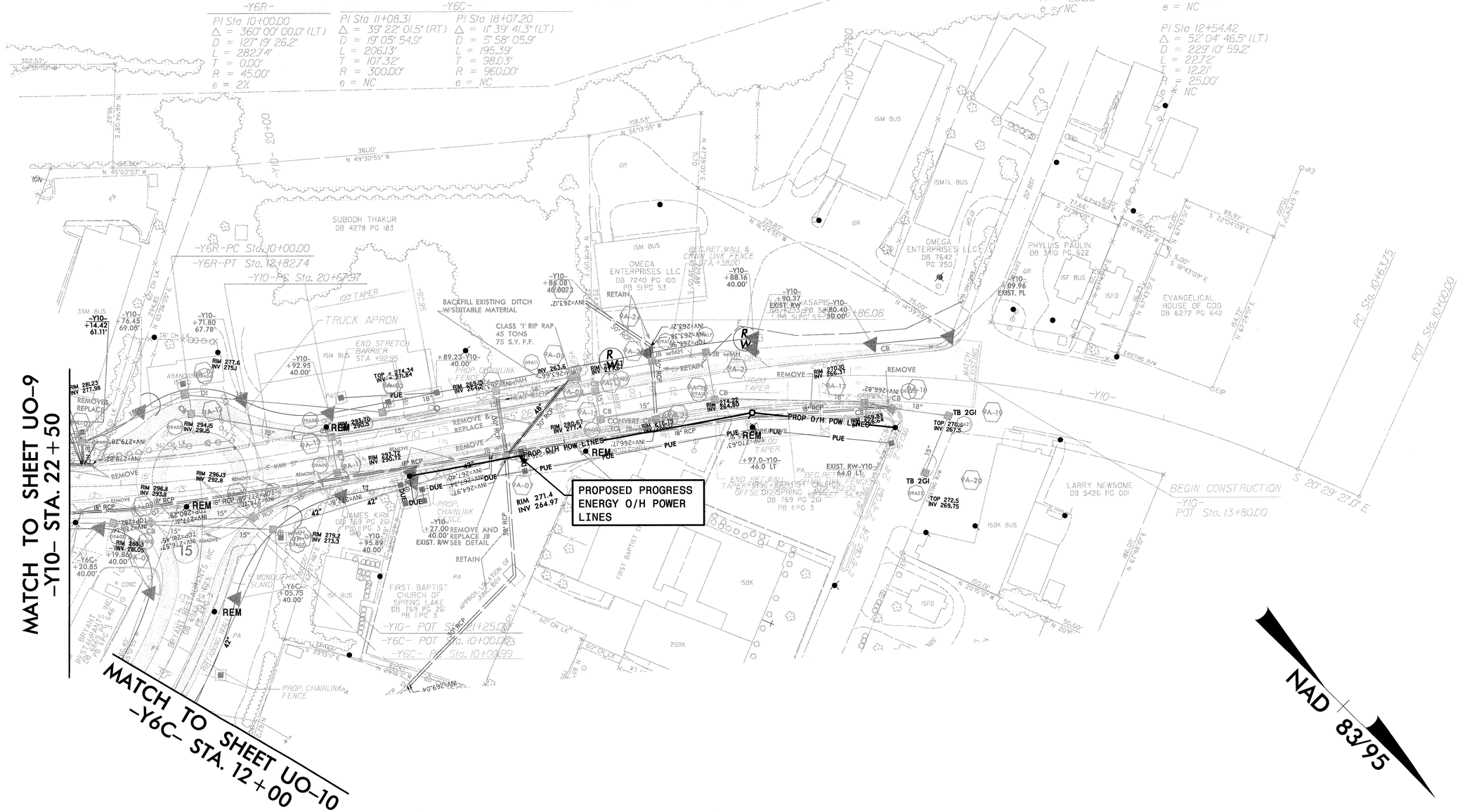
-Y6C-
PI Sta 11+08.31
Δ = 39° 22' 01.5" (RT)
D = 19° 05' 54.9"
L = 206.13'
T = 107.32'
R = 300.00'
e = NC

-Y6C-
PI Sta 18+07.20
Δ = 11° 39' 41.3" (LT)
D = 5° 58' 05.9"
L = 195.39'
T = 98.03'
R = 960.00'
e = NC

-10DR4-
PI Sta 10+92.79
Δ = 131° 39' 27.4" (RT)
D = 204° 37' 40.0"
L = 64.34'
T = 62.39'
R = 28.00'
e = NC

PI Sta 11+05.44
Δ = 46° 19' 25.9" (LT)
D = 229° 10' 59.2"
L = 20.21'
T = 10.70'
R = 25.00'
e = NC

PI Sta 12+54.42
Δ = 52° 04' 46.5" (LT)
D = 229° 10' 59.2"
L = 22.72'
T = 12.21'
R = 25.00'
e = NC



Prepared by:

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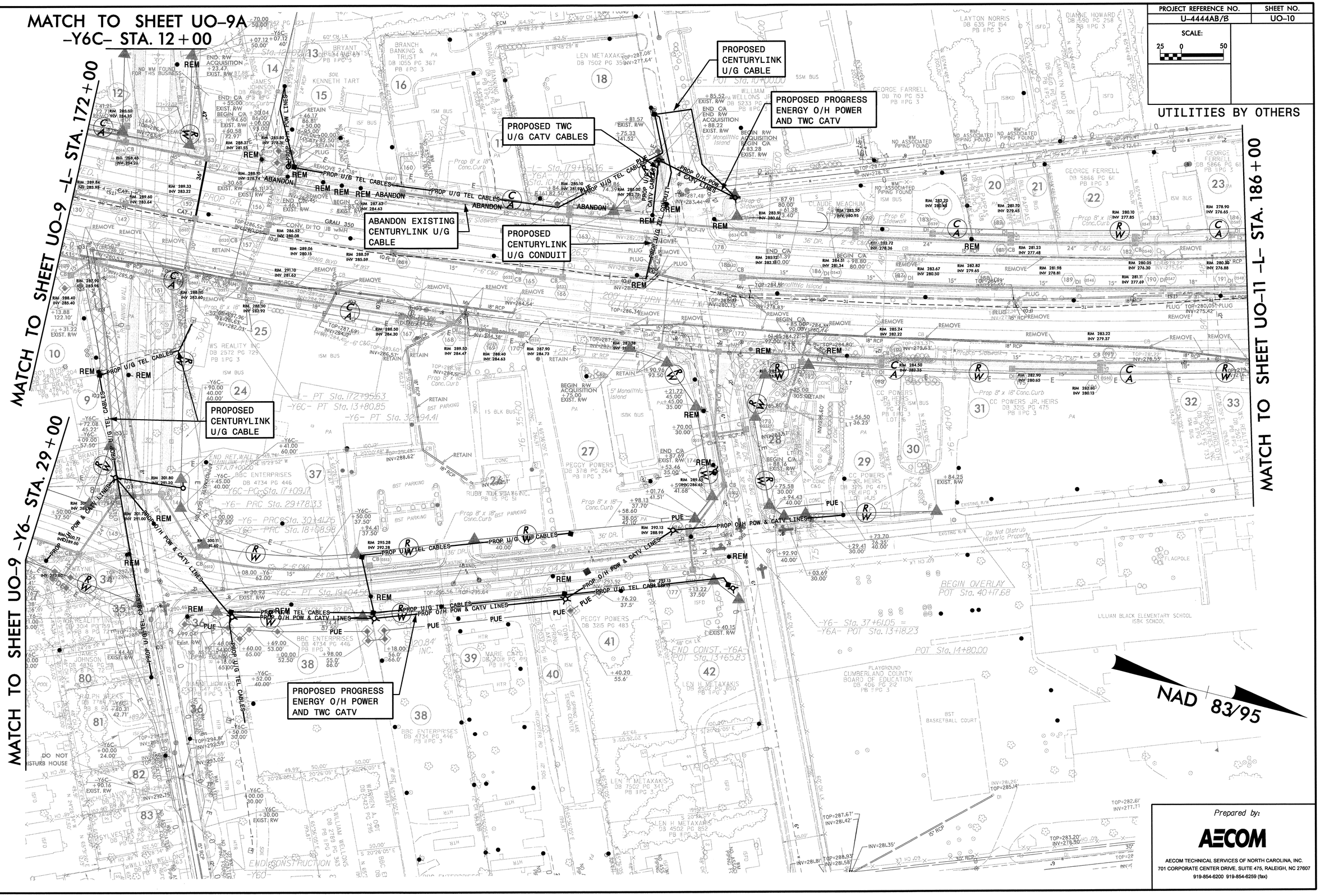
919-854-6200 919-854-6259 (fax)

DATE: 3/29/2012
DGN: U-4444B_Uo_PSHG9Adgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-10

SCALE: 25 0 50

UTILITIES BY OTHERS



Prepared by:

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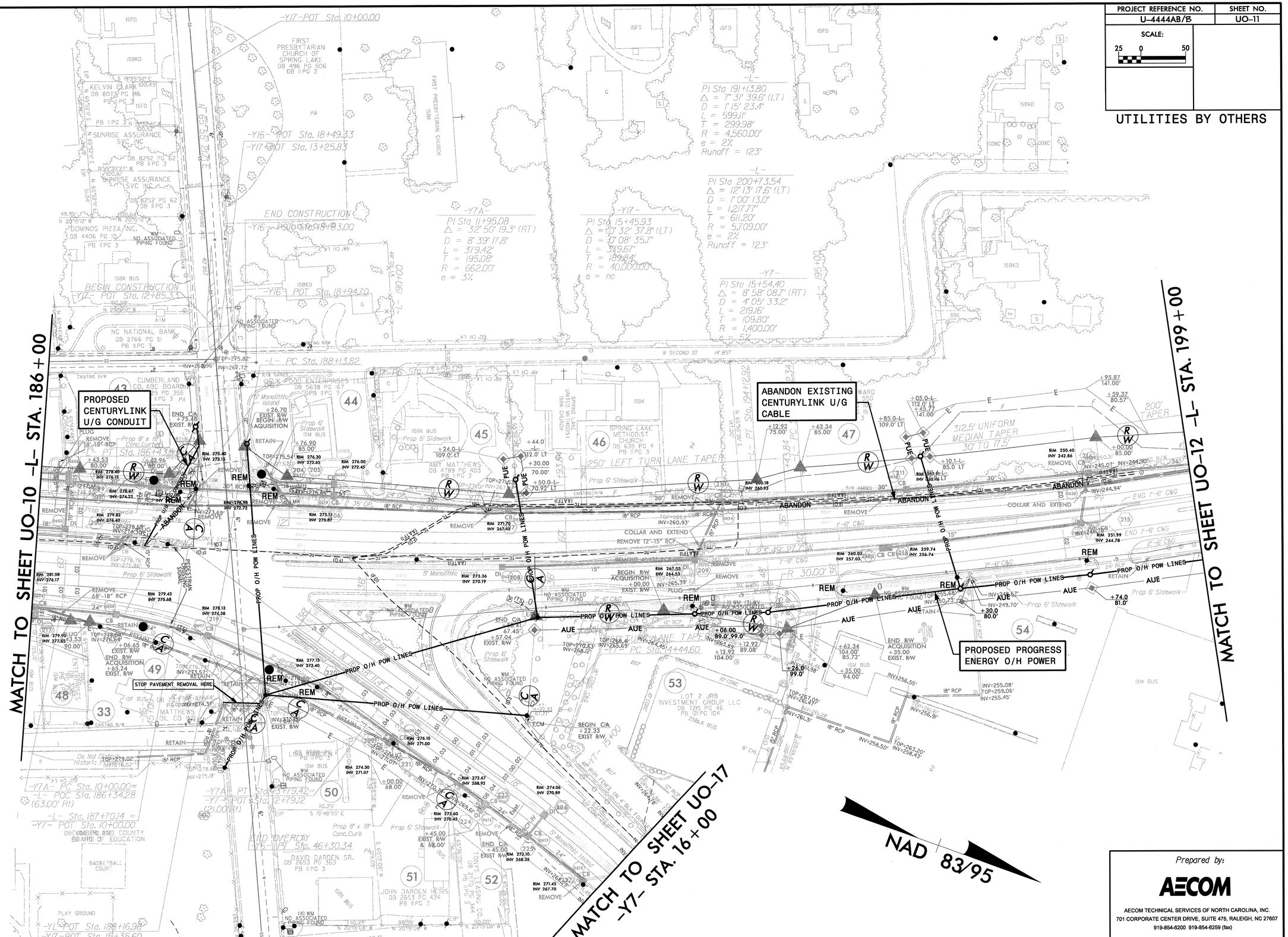
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/29/2012
DGN: U-4444B_uo_PSH10.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-11

SCALE: 25 0 50

UTILITIES BY OTHERS



Prepared by:

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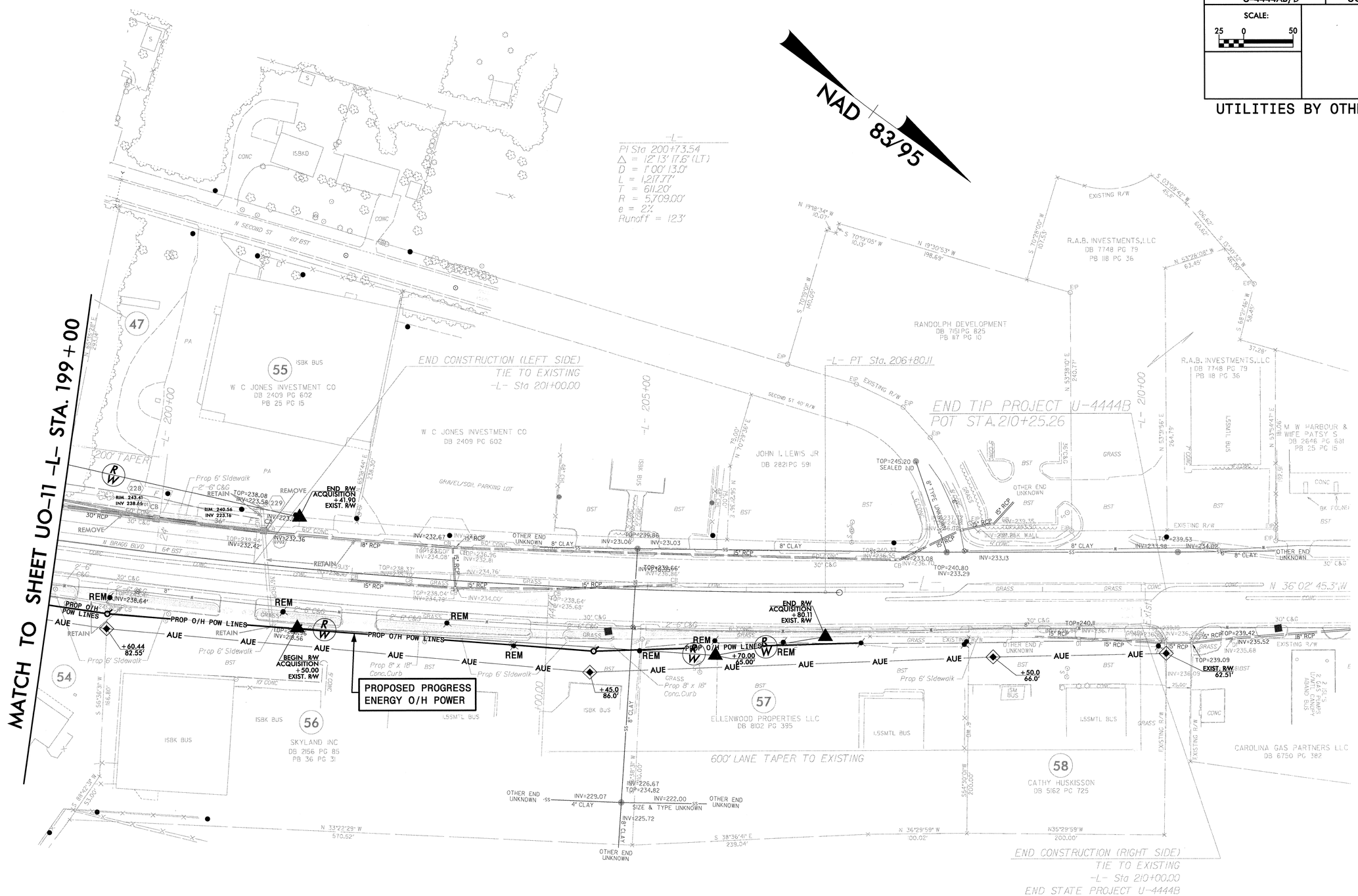
DATE: 3/29/2012
DGN: U-4444B_UO_PSHillsign

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-12

SCALE: 25 0 50

UTILITIES BY OTHERS



Prepared by:

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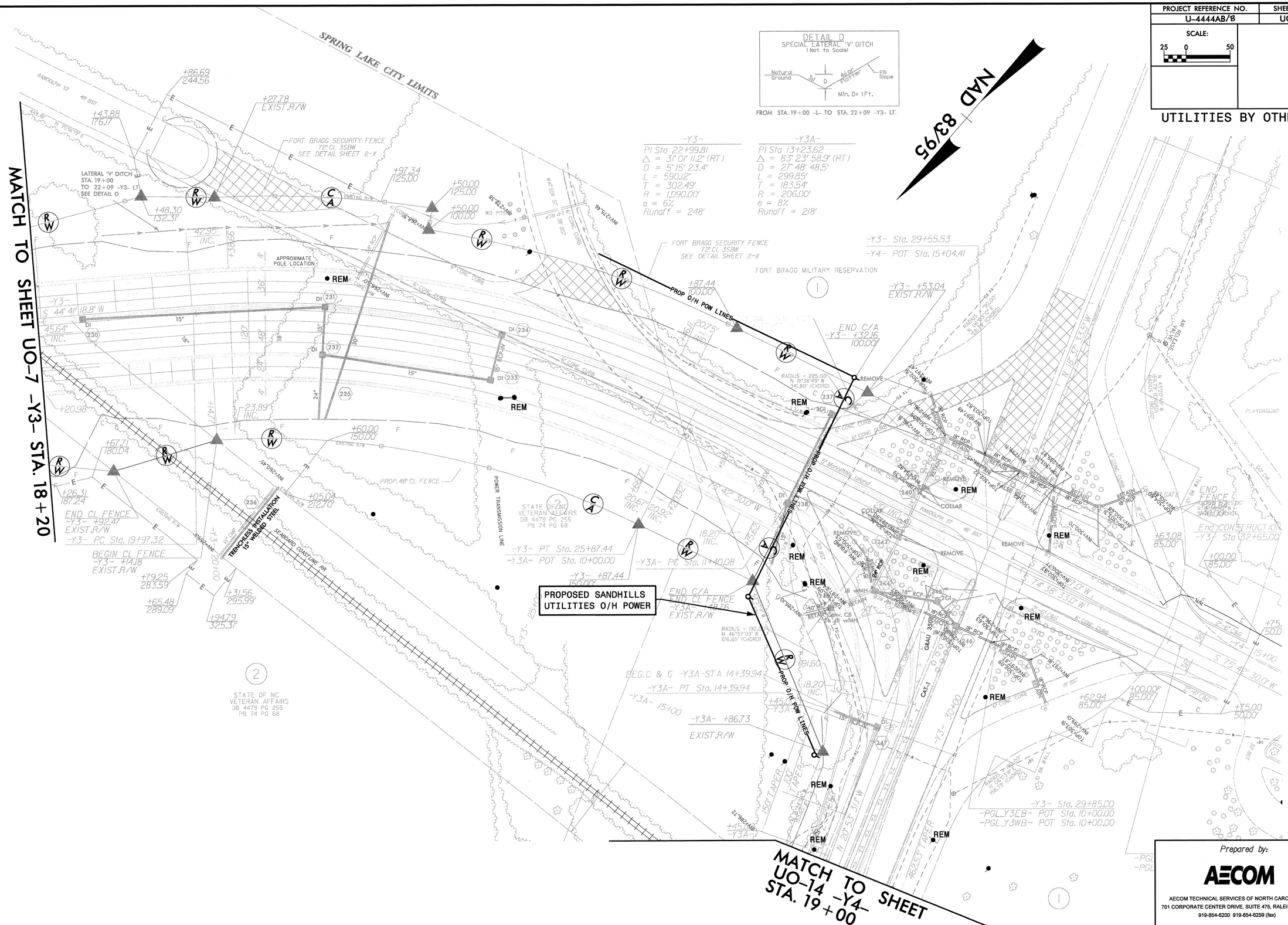
919-854-6200 919-854-6259 (fax)

DATE: 3/29/2012
DGN: U-4444B_UO_PSH12.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-13

SCALE: 25 0 50

UTILITIES BY OTHERS



Prepared by:

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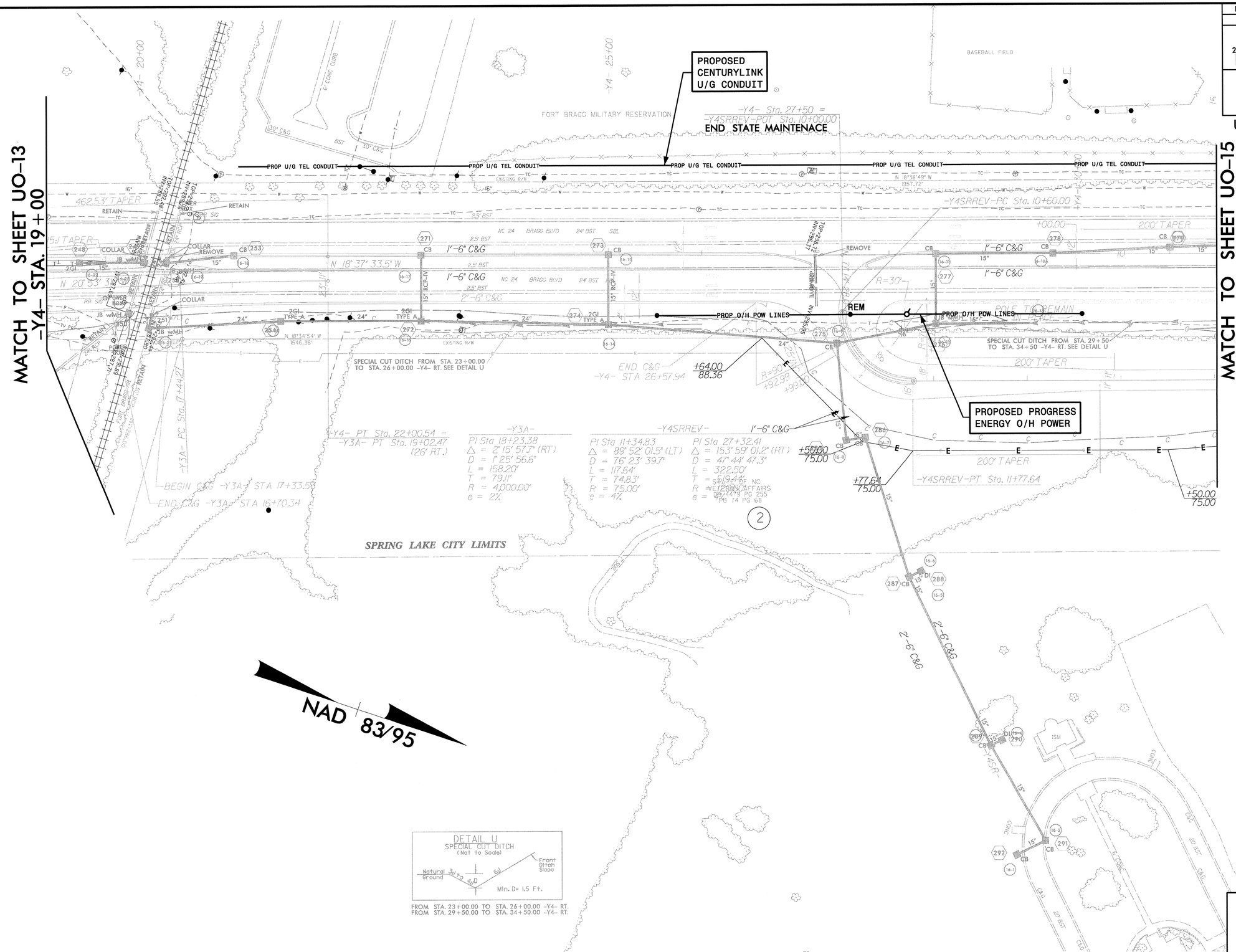
919-854-6200 919-854-6259 (fax)

DATE: 3/26/2012
DGN: U-4444BJ_Loc_PSH13.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-14

SCALE: 25 0 50

UTILITIES BY OTHERS



Prepared by:

AECOM

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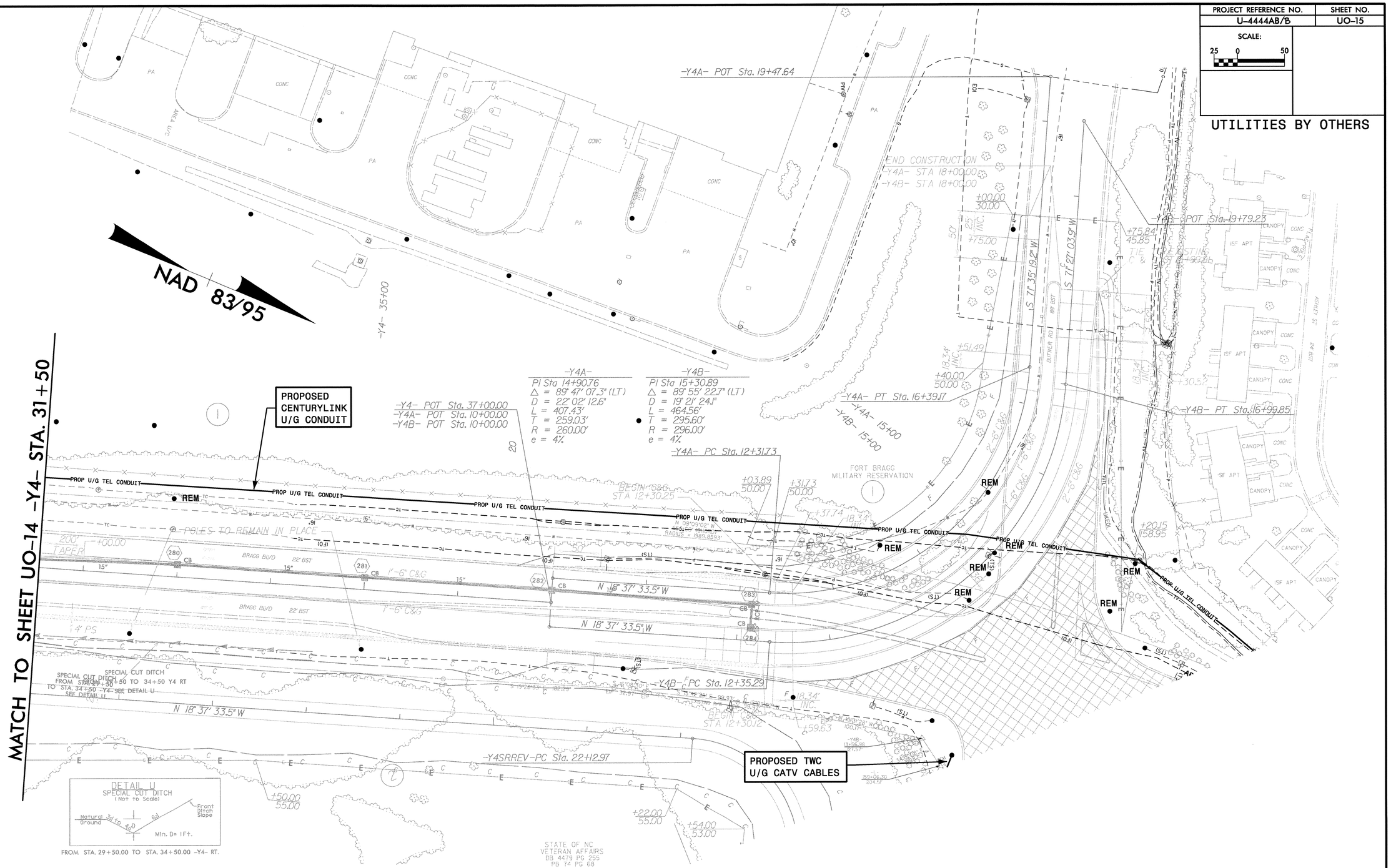
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/26/2012
DGN: U-4444AB_Uno_PSH14.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-15

SCALE: 25 0 50

UTILITIES BY OTHERS



Prepared by:

AECOM

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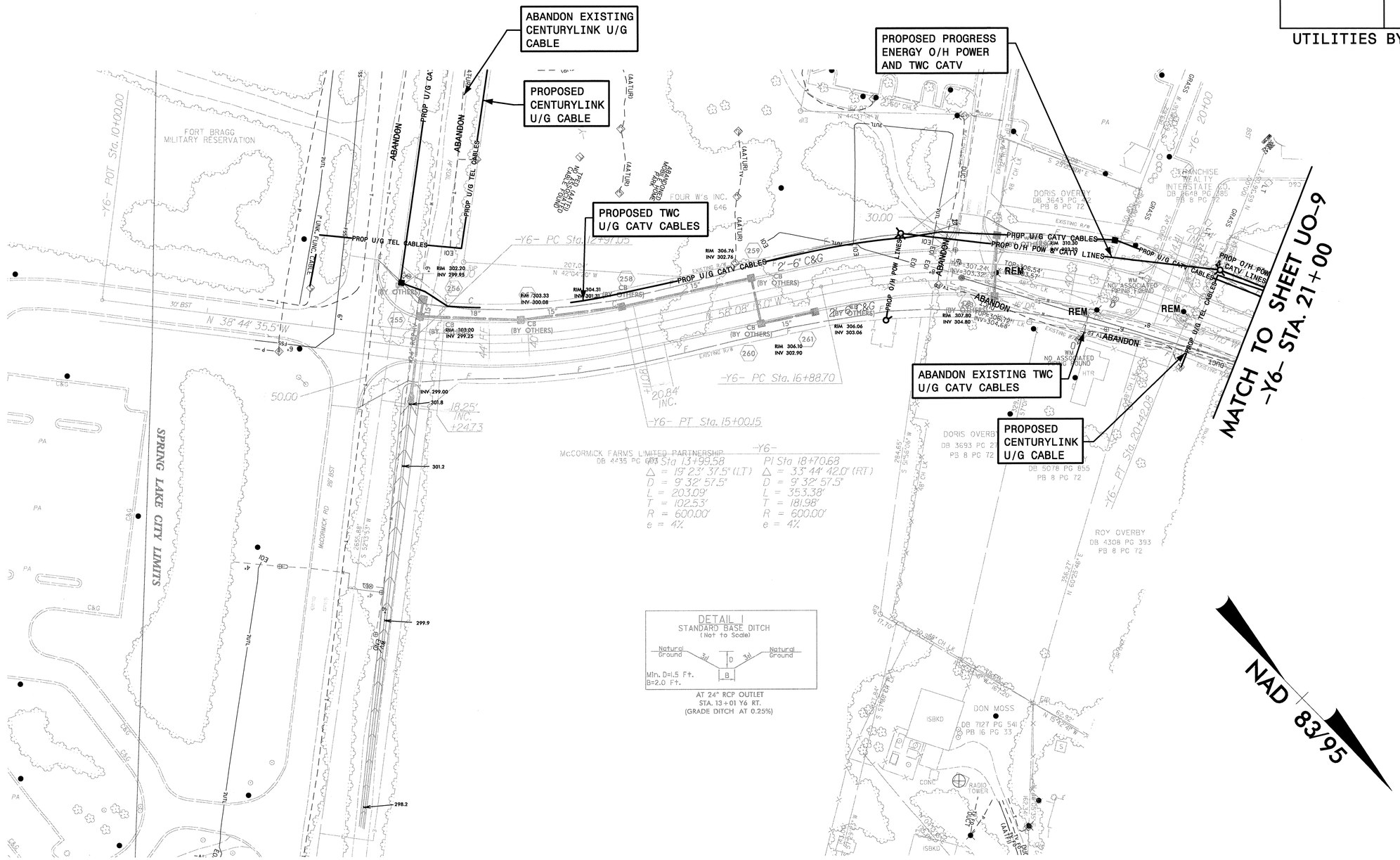
919-854-6200 919-854-6259 (fax)

DATE: 3/29/2012
DGN: U-4444B_Uo_PSHS.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-16

SCALE: 25 0 50

UTILITIES BY OTHERS



Prepared by:

AECOM

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701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/29/2012
DGN: U-4444B_UO0_PSHEet.dgn

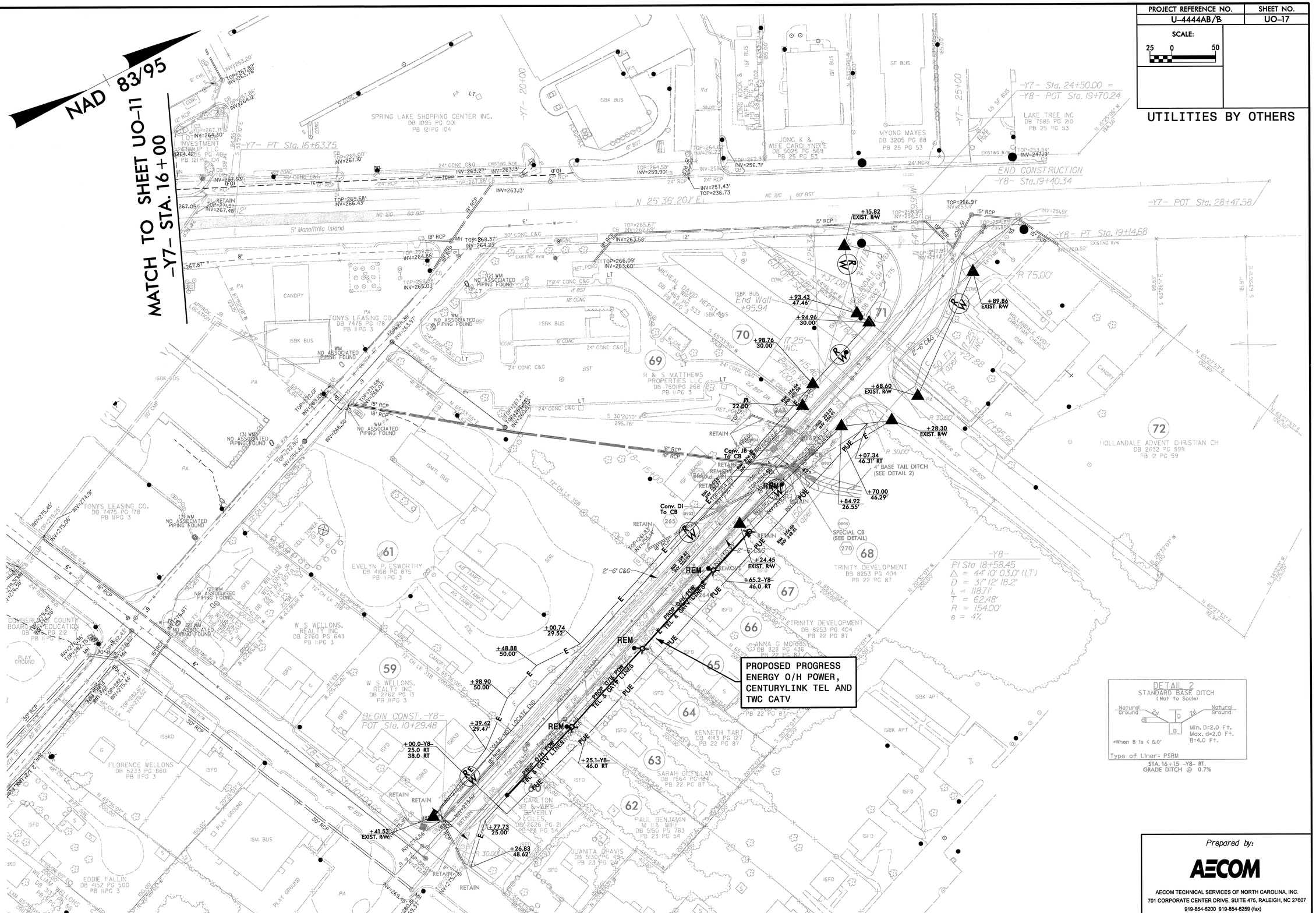
PROJECT REFERENCE NO.	SHEET NO.
U-4444AB/B	UO-17

SCALE: 25 0 50

UTILITIES BY OTHERS

NAD 83/95

MATCH TO SHEET UO-11
-Y7- STA. 16+00



Prepared by:

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701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

DATE: 3/29/2012
DGN: U-4444B_Uoo_PSHIT.dgn