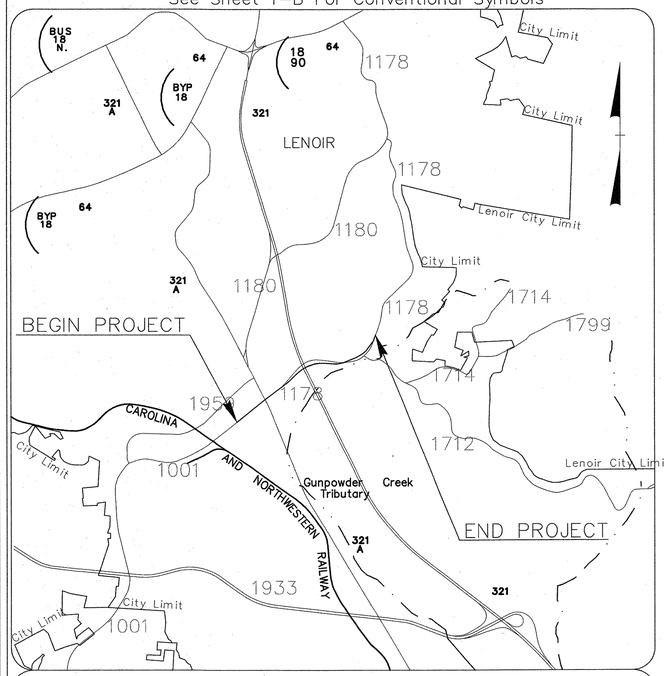
09/08/99

TIP PROJECT: U-2211B

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

FOR OFFSITE DETOUR ROUTES SEE TRAFFIC MANAGEMENT PLANS.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS

CALDWELL COUNTY

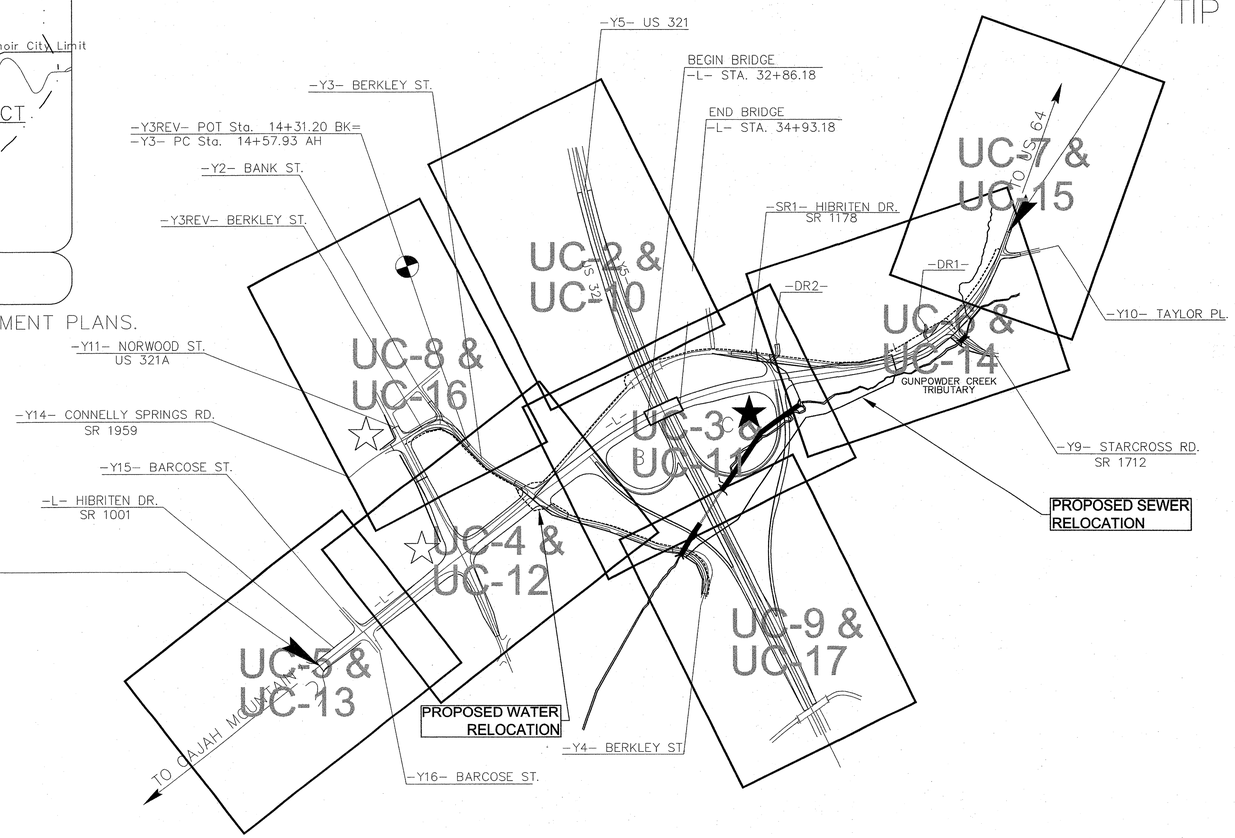
T.I.P. NO.	SHEET NO.
U-2211B	UC-1

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

LOCATION: LENOIR – SR 1001 (HIBRITEN DRIVE) FROM US 321A (NORWOOD STREET) TO SR 1712 (STARCROSS ROAD) EAST OF US 321

TYPE OF WORK: WATER AND SEWER

STA. 56+50 -L- END
TIP PROJECT U-2211B



STA. 10+55 -L- BEGIN
TIP PROJECT U-2211B

NAD 83/95

★ PROPOSED SIGNAL
☆ SIGNAL UPGRADE

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.	
UC-1	TITLE SHEET
UC-2 THRU UC-17	UTILITY CONSTRUCTION PLAN SHEETS
UC-18 THRU UC-23	PROFILE SHEETS
UC-24 THRU UC-28	DETAILS SHEETS

WATER AND SEWER OWNERS ON PROJECT

DESCRIPTION
(1) WATER – City of Lenoir
(2) SANITARY SEWER – City of Lenoir

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 037937 ENGINEER
3-19-12

UTILITY CONSTRUCTION PLANS ONLY

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES ENGINEERING SECTION
1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Bo Hemphill, P.E. UTILITIES PROJECT DESIGNER

PLAN SCALE: 1"= 50'

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-2

DESIGNED BY: RJM
DRAWN BY: RAB
CHECKED BY: JAW
APPROVED BY:
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

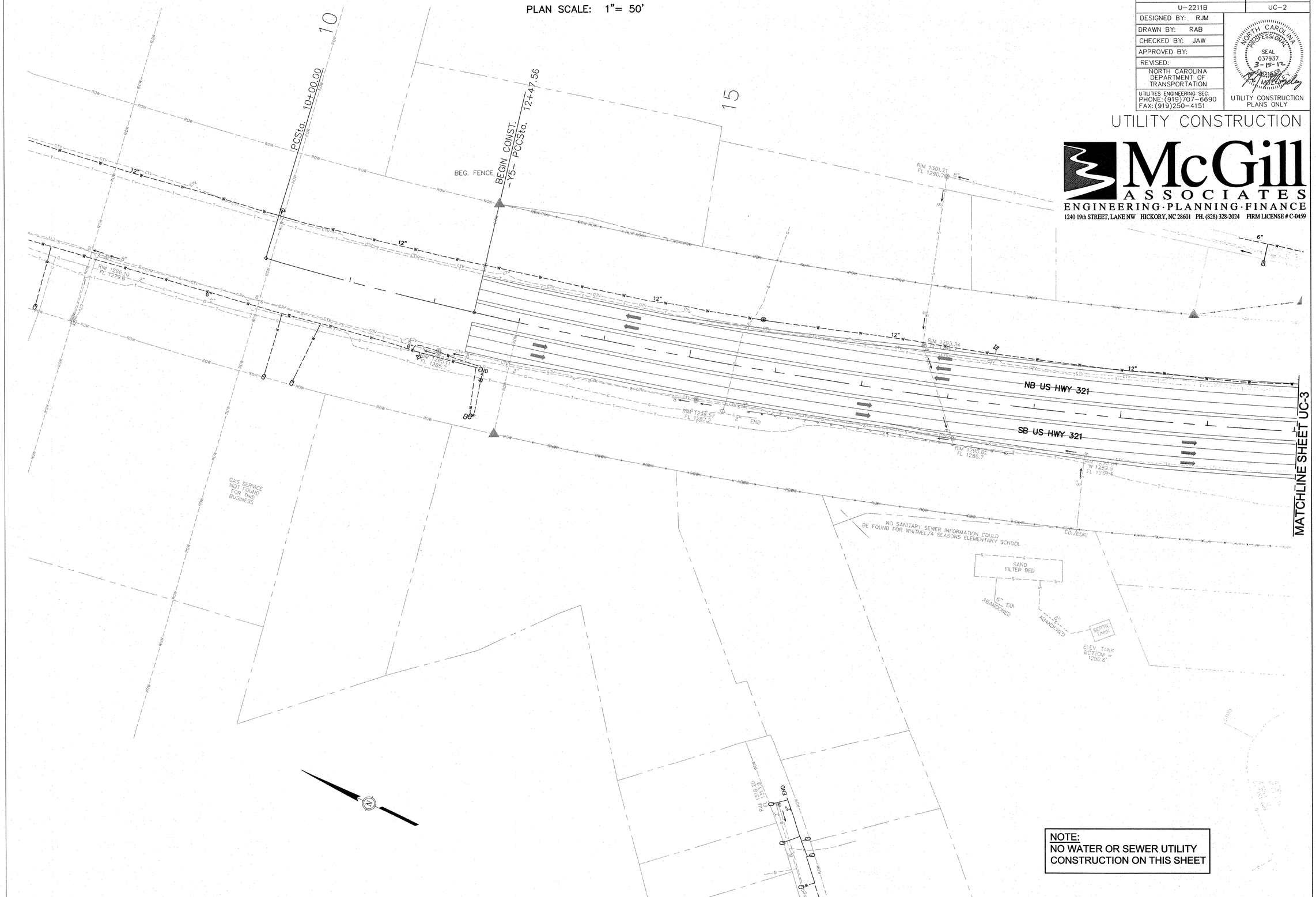
UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-15-12 ENGINEER R. McGILLIVRAY

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459



NOTE:
NO WATER OR SEWER UTILITY CONSTRUCTION ON THIS SHEET

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-3

DESIGNED BY: RJM
DRAWN BY: RAB
CHECKED BY: JAW
APPROVED BY:
REVISED:

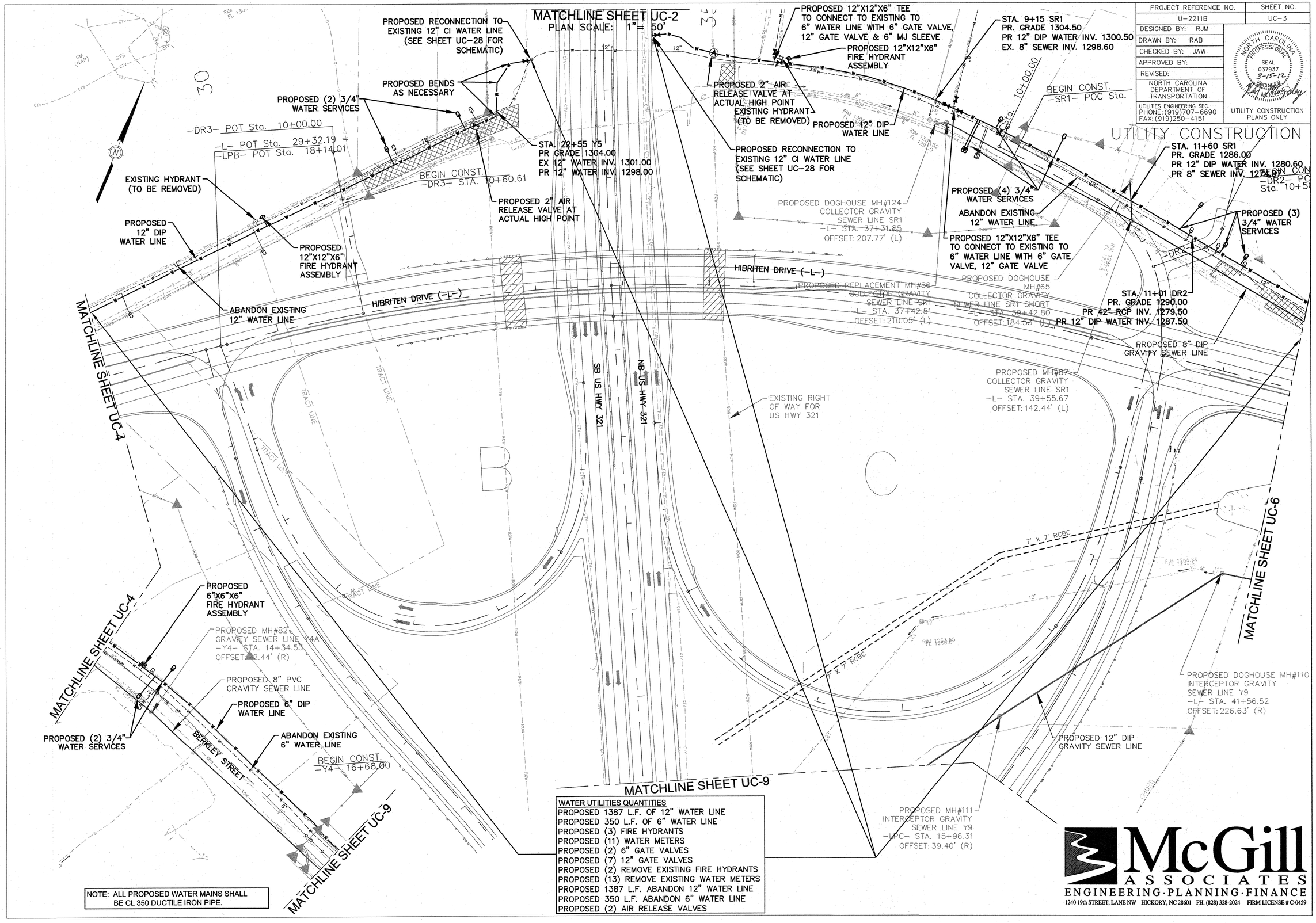
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-15-12 RICHARD J. MCGILL

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



WATER UTILITIES QUANTITIES
PROPOSED 1387 L.F. OF 12" WATER LINE
PROPOSED 350 L.F. OF 6" WATER LINE
PROPOSED (3) FIRE HYDRANTS
PROPOSED (11) WATER METERS
PROPOSED (2) 6" GATE VALVES
PROPOSED (7) 12" GATE VALVES
PROPOSED (2) REMOVE EXISTING FIRE HYDRANTS
PROPOSED (13) REMOVE EXISTING WATER METERS
PROPOSED 1387 L.F. ABANDON 12" WATER LINE
PROPOSED 350 L.F. ABANDON 6" WATER LINE
PROPOSED (2) AIR RELEASE VALVES

NOTE: ALL PROPOSED WATER MAINS SHALL BE CL 350 DUCTILE IRON PIPE.

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-4
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-14-12 ENGINEER

UTILITY CONSTRUCTION

McGill ASSOCIATES
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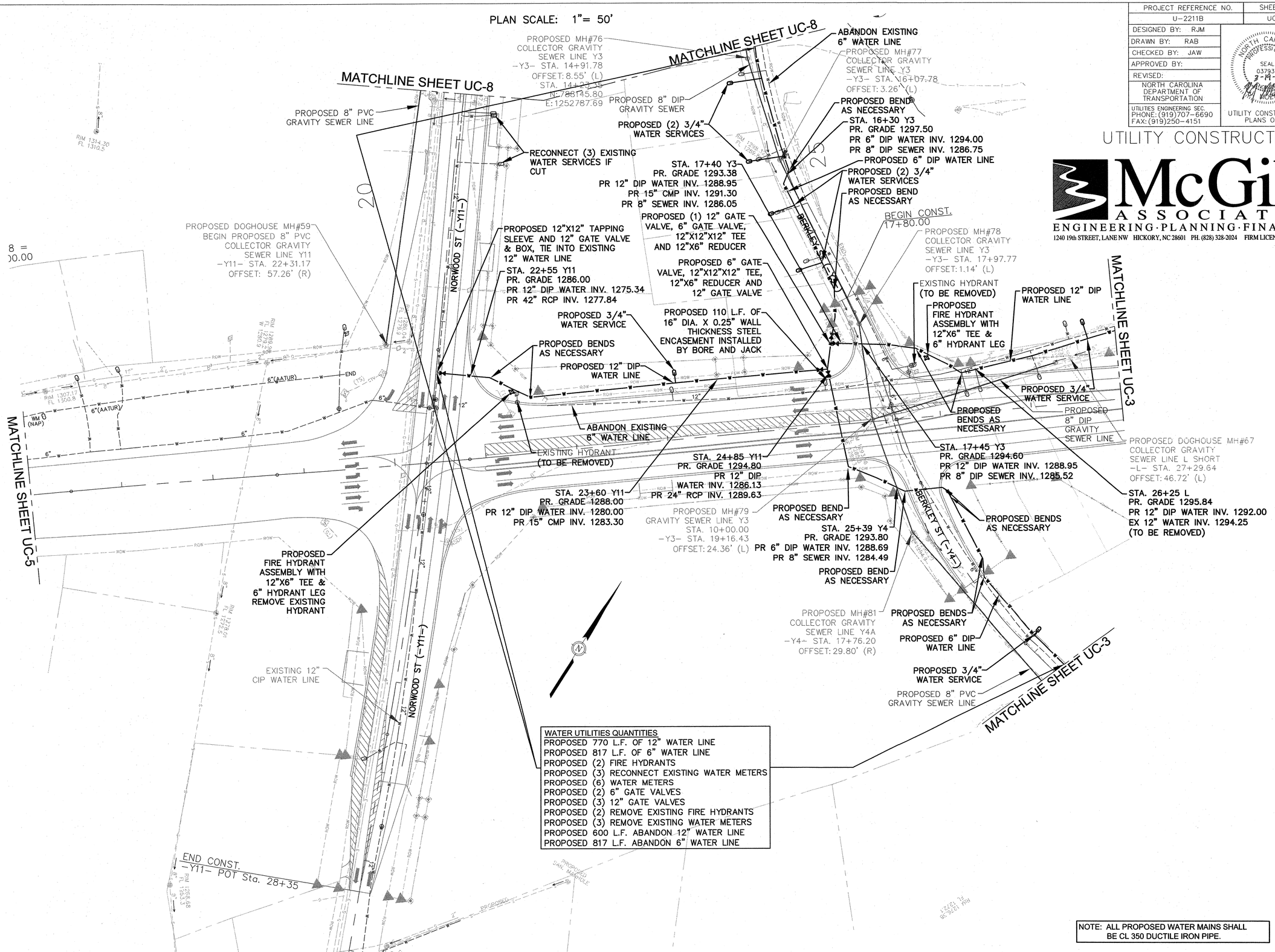
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

PLAN SCALE: 1"= 50'



WATER UTILITIES QUANTITIES
PROPOSED 770 L.F. OF 12" WATER LINE
PROPOSED 817 L.F. OF 6" WATER LINE
PROPOSED (2) FIRE HYDRANTS
PROPOSED (3) RECONNECT EXISTING WATER METERS
PROPOSED (6) WATER METERS
PROPOSED (2) 6" GATE VALVES
PROPOSED (3) 12" GATE VALVES
PROPOSED (2) REMOVE EXISTING FIRE HYDRANTS
PROPOSED (3) REMOVE EXISTING WATER METERS
PROPOSED 600 L.F. ABANDON 12" WATER LINE
PROPOSED 817 L.F. ABANDON 6" WATER LINE

NOTE: ALL PROPOSED WATER MAINS SHALL BE CL 350 DUCTILE IRON PIPE.

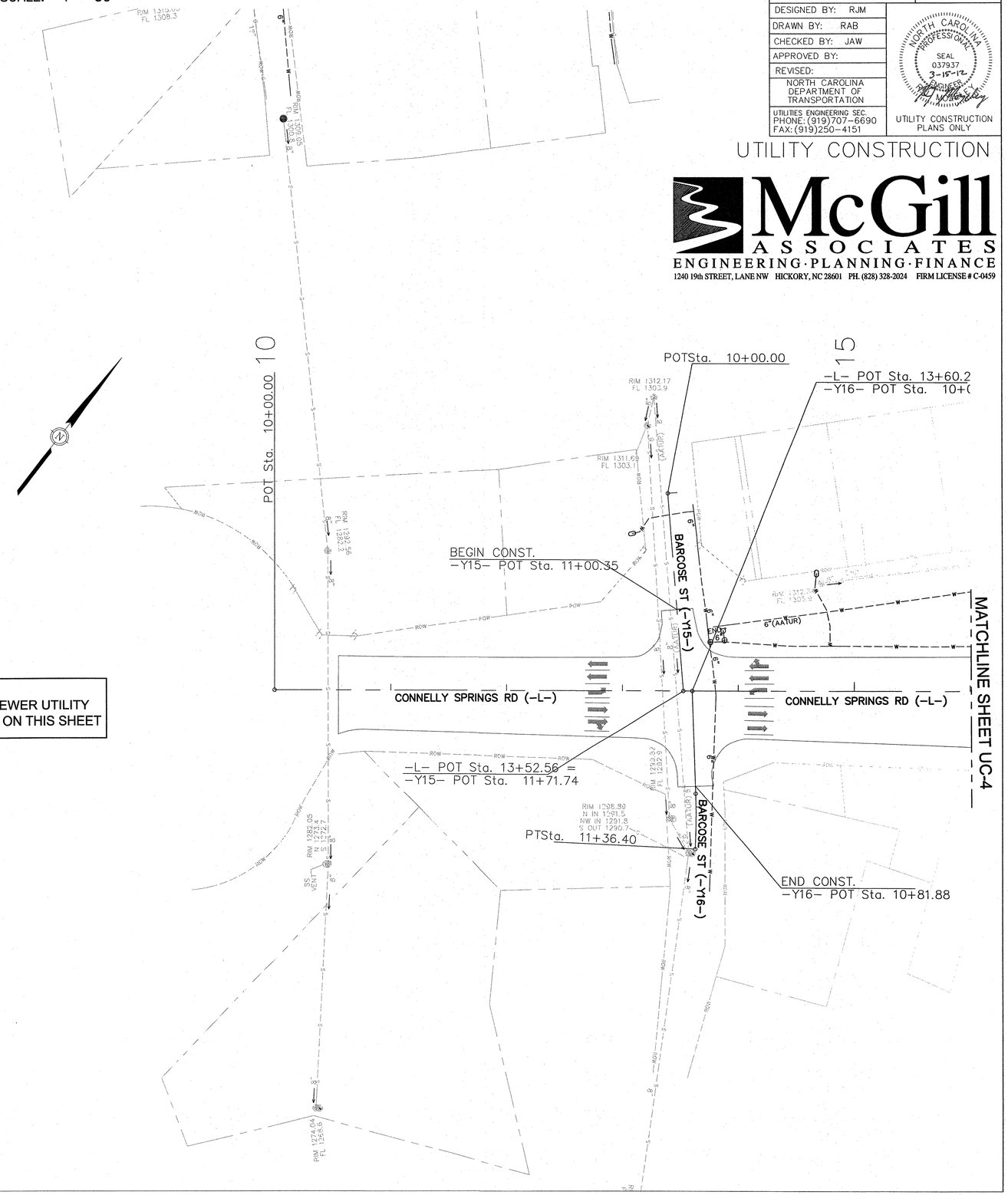
PLAN SCALE: 1"= 50'

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-5
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-15-12 ENGINEER

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459



NOTE:
NO WATER OR SEWER UTILITY CONSTRUCTION ON THIS SHEET

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-6
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

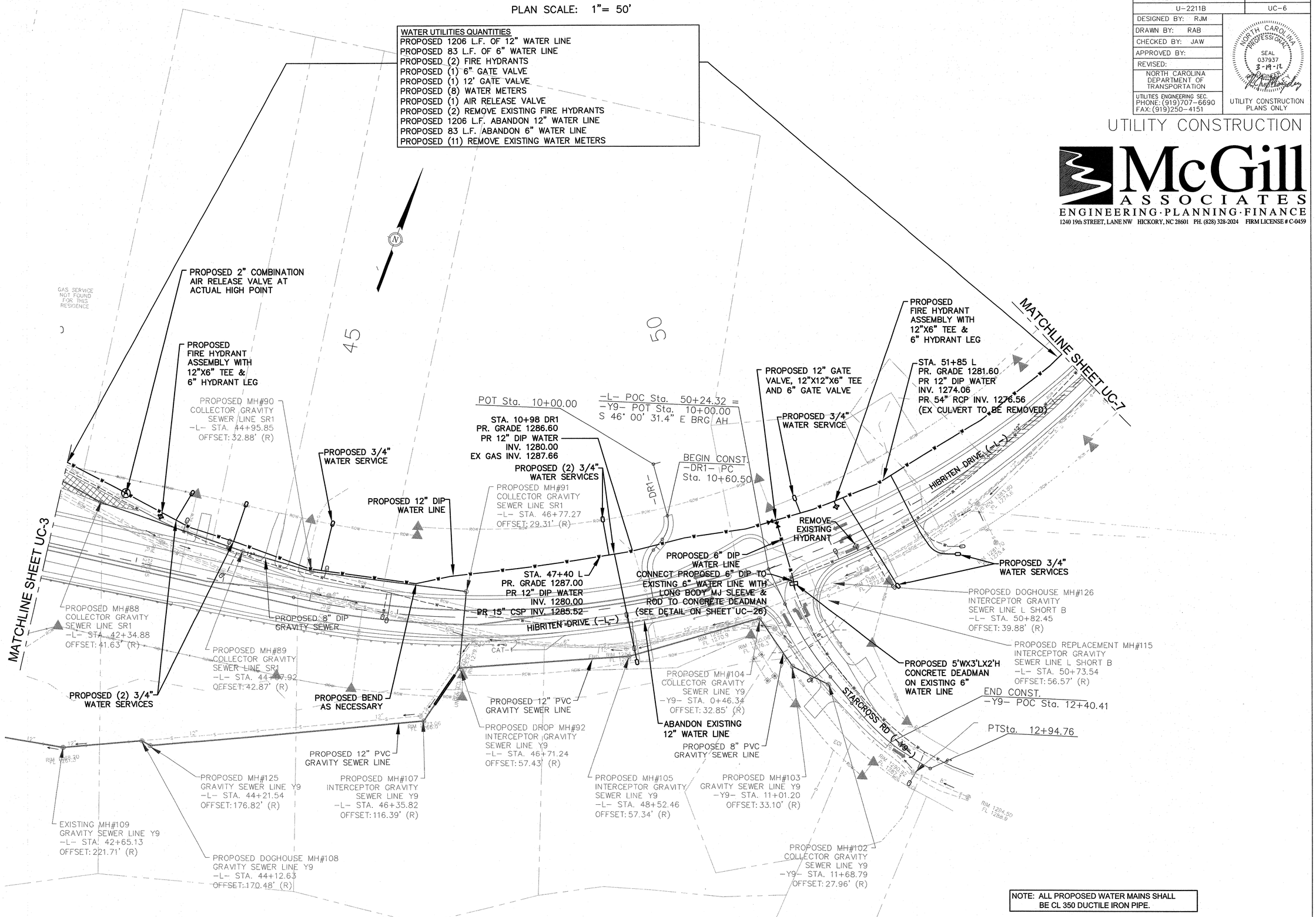
NORTH CAROLINA PROFESSIONAL SEAL 037937 3-19-12 ENGINEER

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

PLAN SCALE: 1"= 50'

WATER UTILITIES QUANTITIES
PROPOSED 1206 L.F. OF 12" WATER LINE
PROPOSED 83 L.F. OF 6" WATER LINE
PROPOSED (2) FIRE HYDRANTS
PROPOSED (1) 6" GATE VALVE
PROPOSED (1) 12' GATE VALVE
PROPOSED (8) WATER METERS
PROPOSED (1) AIR RELEASE VALVE
PROPOSED (2) REMOVE EXISTING FIRE HYDRANTS
PROPOSED 1206 L.F. ABANDON 12" WATER LINE
PROPOSED 83 L.F. ABANDON 6" WATER LINE
PROPOSED (11) REMOVE EXISTING WATER METERS



NOTE: ALL PROPOSED WATER MAINS SHALL BE CL 350 DUCTILE IRON PIPE.

PLAN SCALE: 1"= 50'

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-7
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-19-12 ENGINEER

UTILITY CONSTRUCTION

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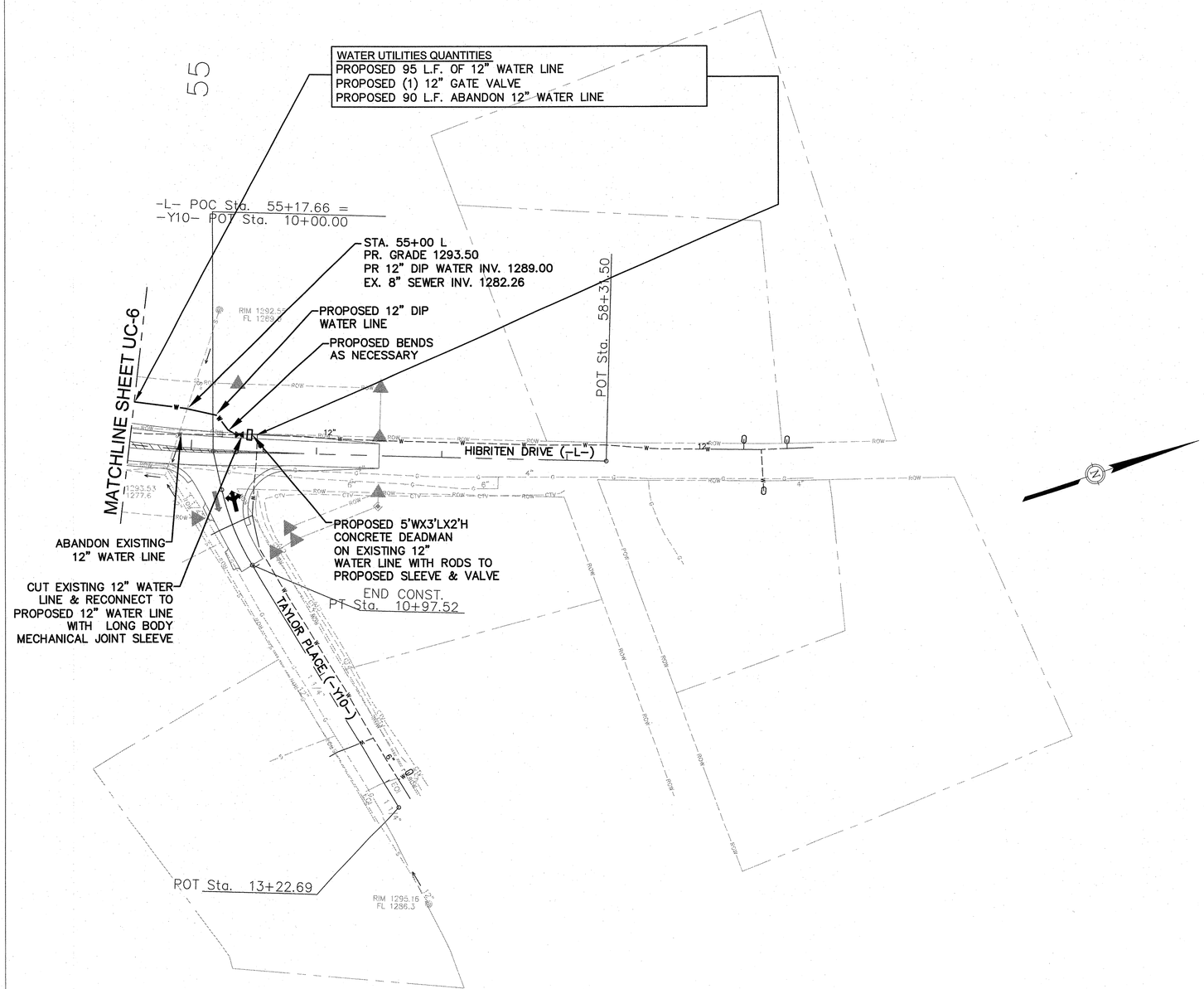
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459



NOTE: ALL PROPOSED WATER MAINS SHALL BE CL 350 DUCTILE IRON PIPE.

PLAN SCALE: 1"= 50'

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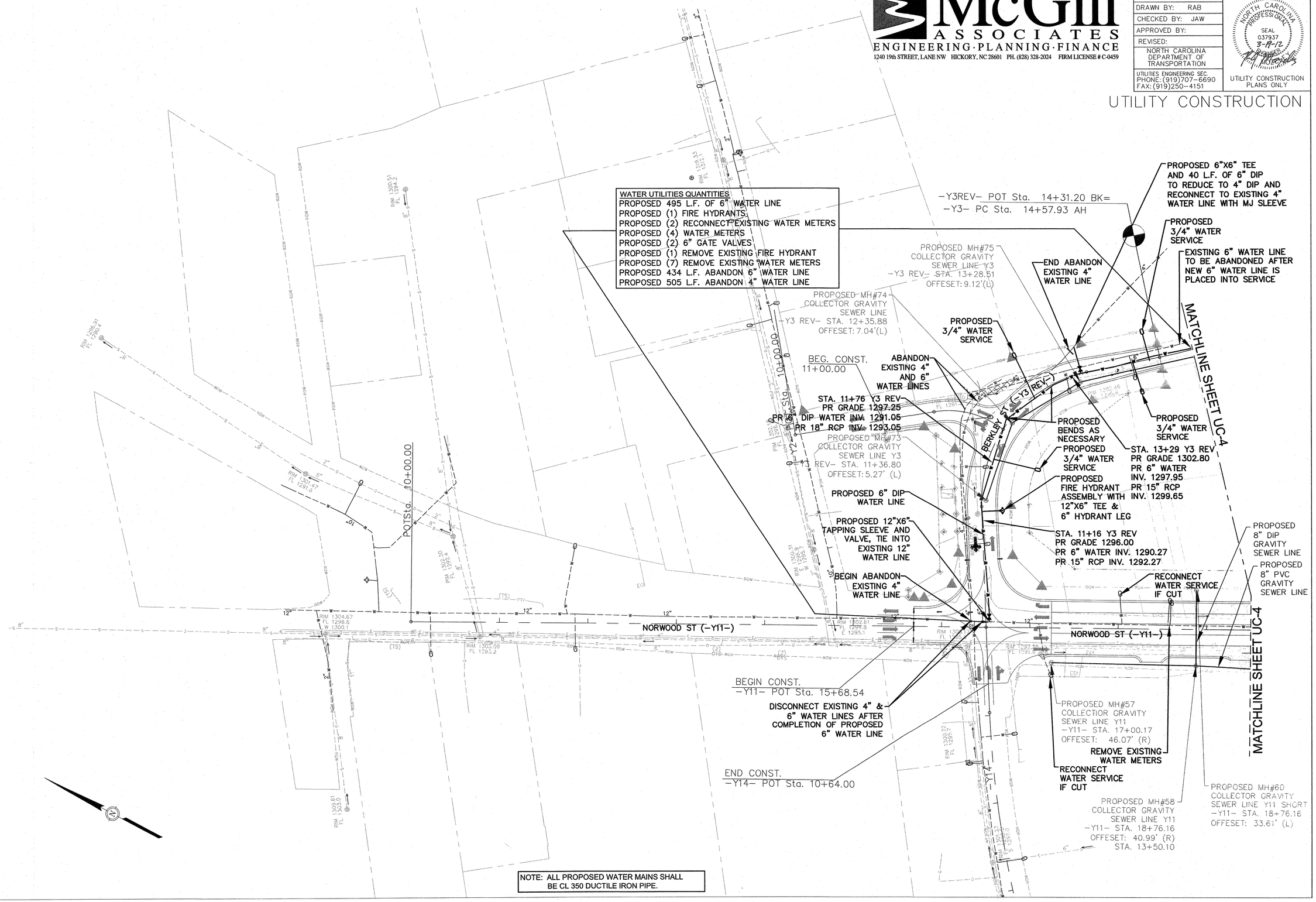
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-8
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-19-12 ENGINEER

UTILITY CONSTRUCTION



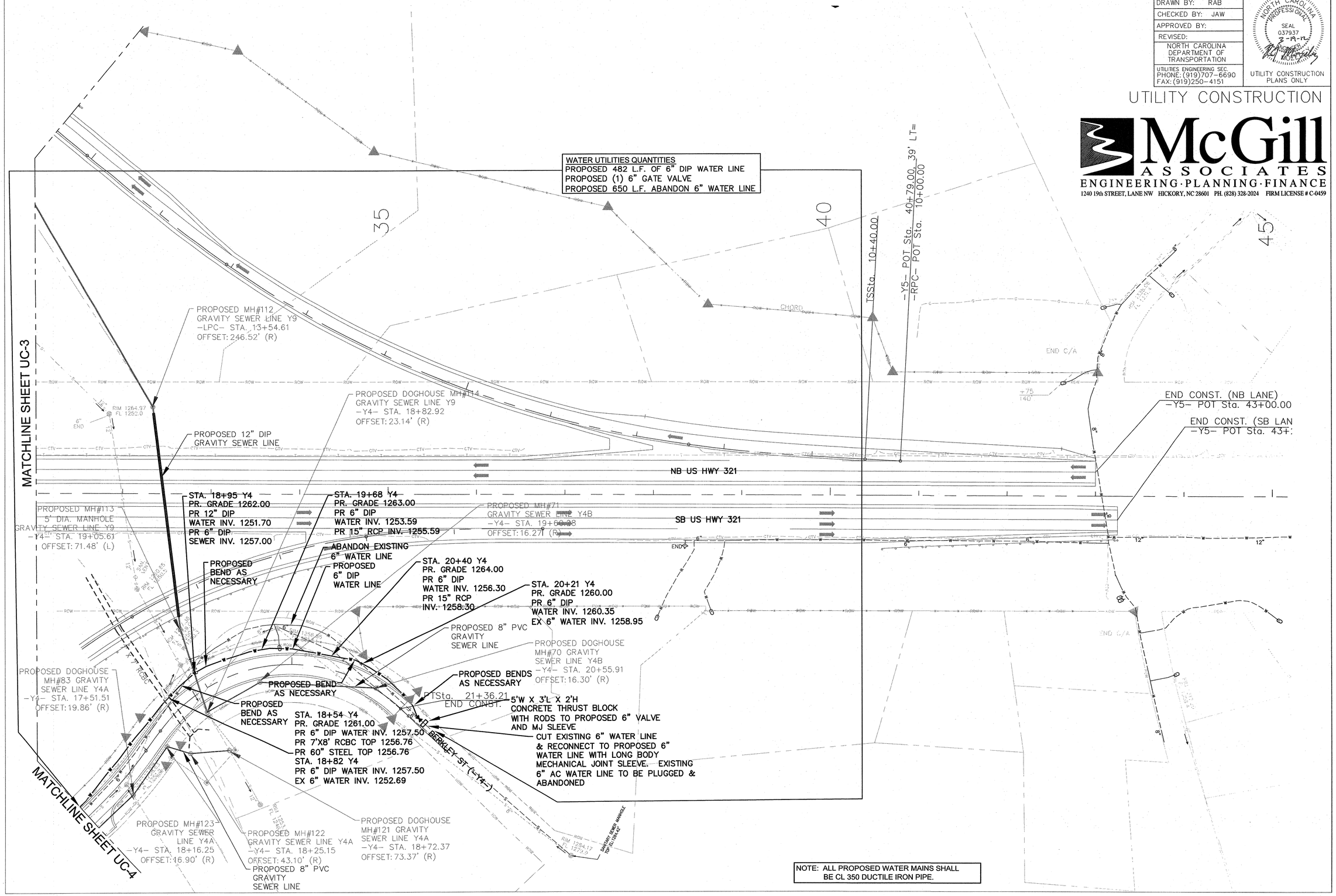
PLAN SCALE: 1"= 50'

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-9
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-19-12 ENGINEER

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459



NOTE: ALL PROPOSED WATER MAINS SHALL BE CL 350 DUCTILE IRON PIPE.

PLAN SCALE: 1"= 50'

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-10

DESIGNED BY: RJM
DRAWN BY: RAB
CHECKED BY: JAW
APPROVED BY:
REVISED:

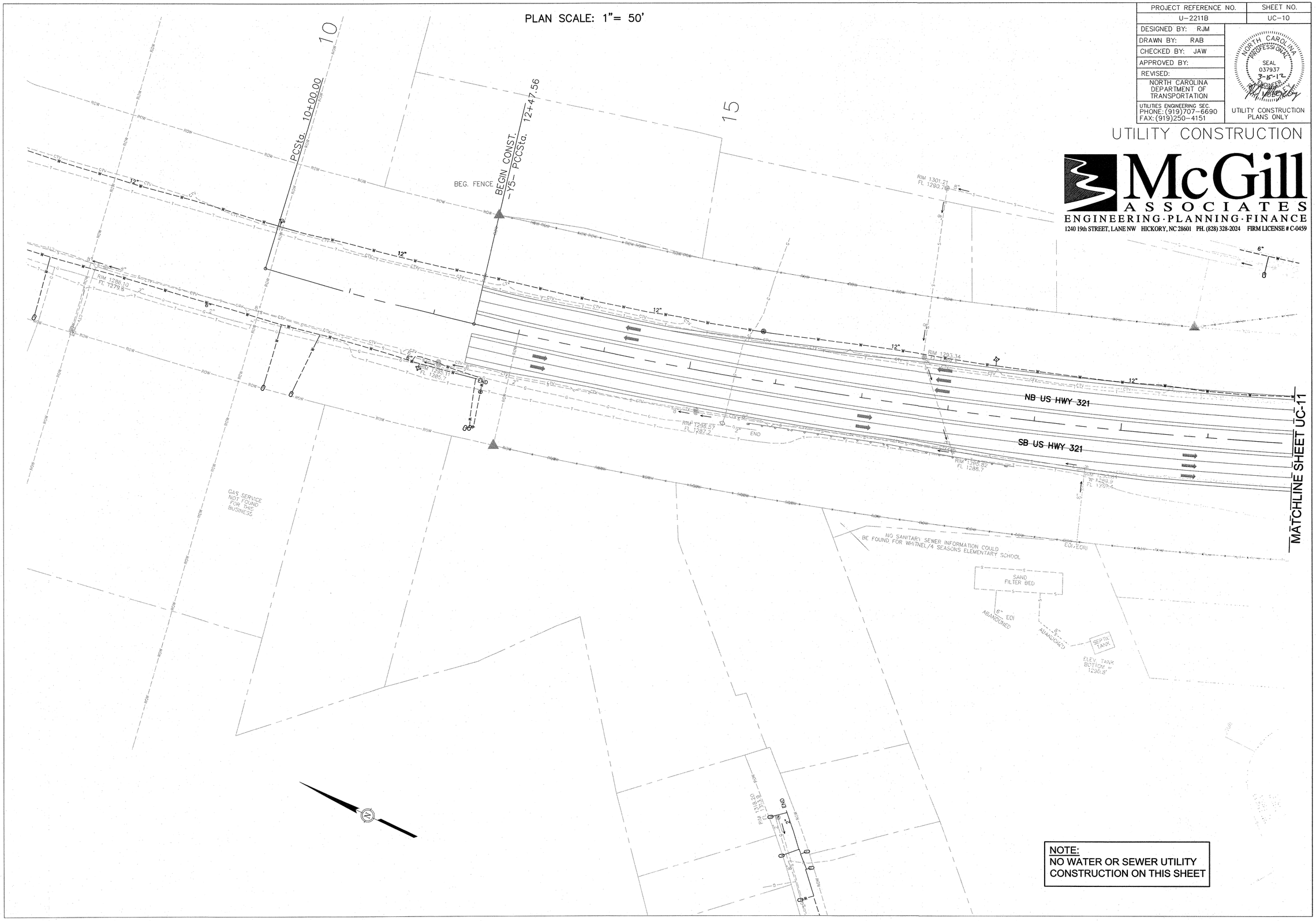
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

NORTH CAROLINA PROFESSIONAL SEAL 037937 ENGINEER
3-15-12

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING · PLANNING · FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

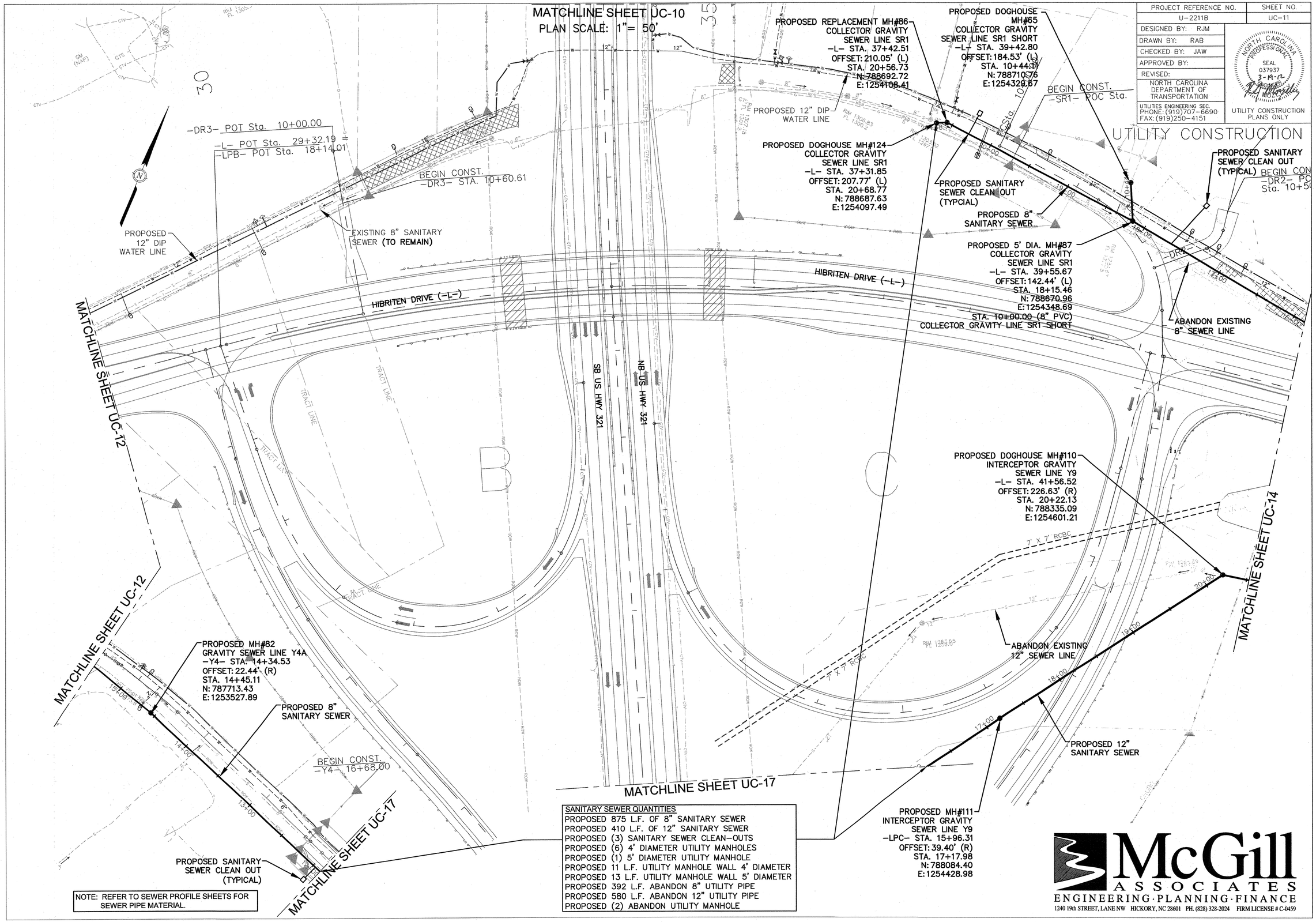


NOTE:
NO WATER OR SEWER UTILITY CONSTRUCTION ON THIS SHEET

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-11
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-19-12 ENGINEER

UTILITY CONSTRUCTION



NOTE: REFER TO SEWER PROFILE SHEETS FOR SEWER PIPE MATERIAL.

SANITARY SEWER QUANTITIES

PROPOSED 875 L.F. OF 8" SANITARY SEWER
PROPOSED 410 L.F. OF 12" SANITARY SEWER
PROPOSED (3) SANITARY SEWER CLEAN-OUTS
PROPOSED (6) 4' DIAMETER UTILITY MANHOLES
PROPOSED (1) 5' DIAMETER UTILITY MANHOLE
PROPOSED 11 L.F. UTILITY MANHOLE WALL 4' DIAMETER
PROPOSED 13 L.F. UTILITY MANHOLE WALL 5' DIAMETER
PROPOSED 392 L.F. ABANDON 8" UTILITY PIPE
PROPOSED 580 L.F. ABANDON 12" UTILITY PIPE
PROPOSED (2) ABANDON UTILITY MANHOLE

McGill ASSOCIATES
ENGINEERING · PLANNING · FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

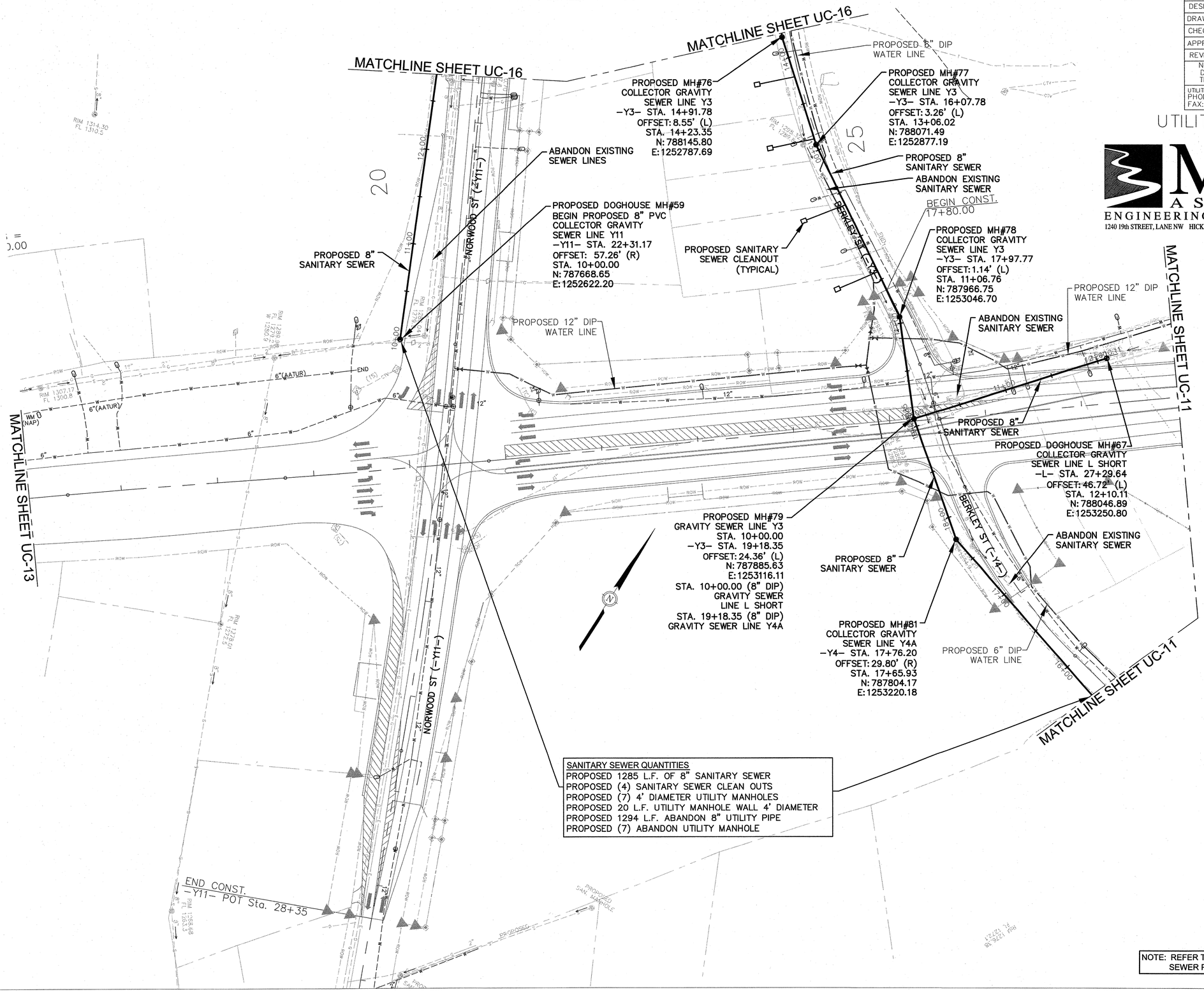
PLAN SCALE: 1"= 50'

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-12
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-19-12

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459



SANITARY SEWER QUANTITIES
PROPOSED 1285 L.F. OF 8" SANITARY SEWER
PROPOSED (4) SANITARY SEWER CLEAN OUTS
PROPOSED (7) 4' DIAMETER UTILITY MANHOLES
PROPOSED 20 L.F. UTILITY MANHOLE WALL 4' DIAMETER
PROPOSED 1294 L.F. ABANDON 8" UTILITY PIPE
PROPOSED (7) ABANDON UTILITY MANHOLE

NOTE: REFER TO SEWER PROFILE SHEETS FOR SEWER PIPE MATERIAL.

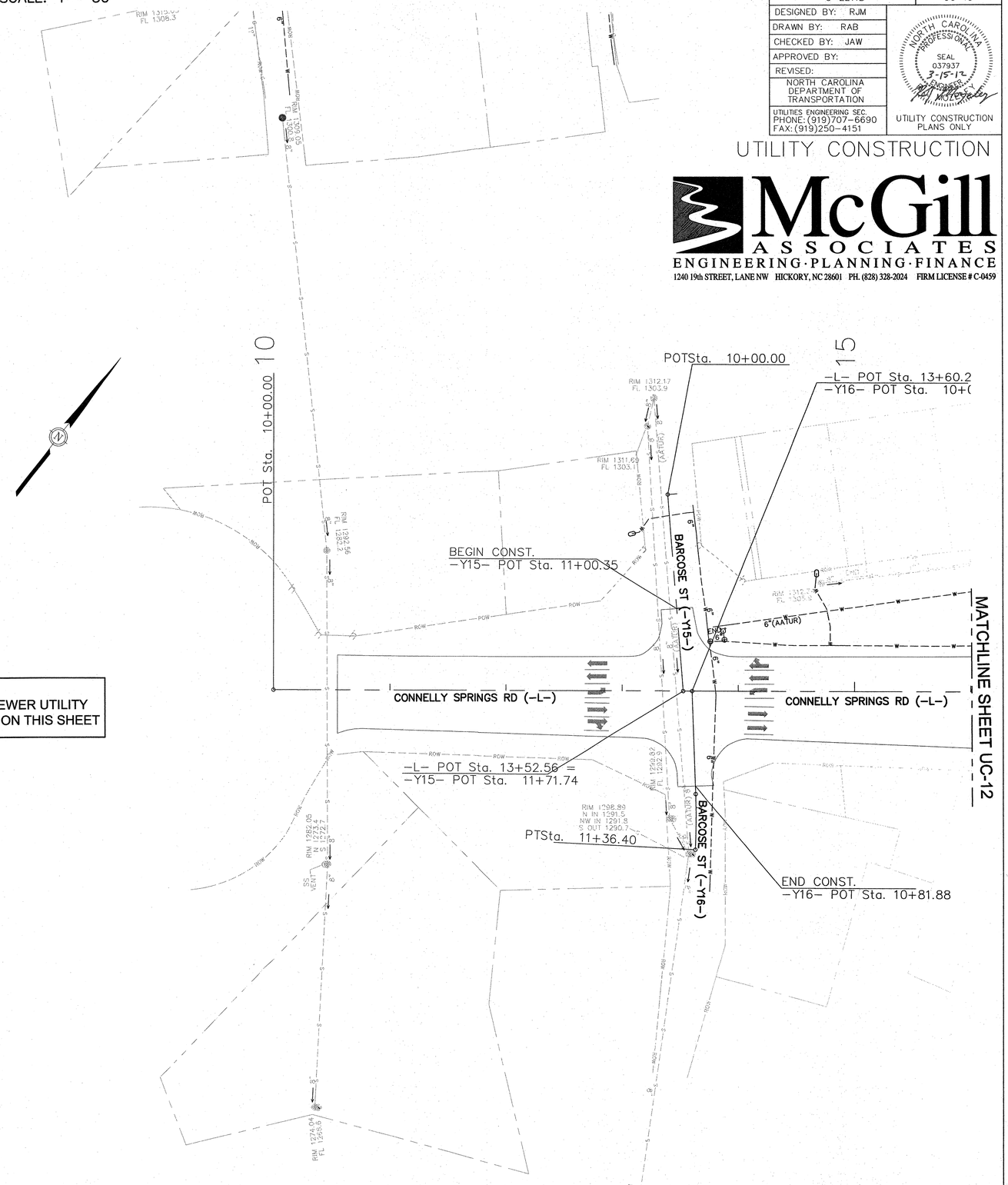
PLAN SCALE: 1"= 50'

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-13
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 ENGINEER 3-15-12

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459



NOTE:
NO WATER OR SEWER UTILITY CONSTRUCTION ON THIS SHEET

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-14
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

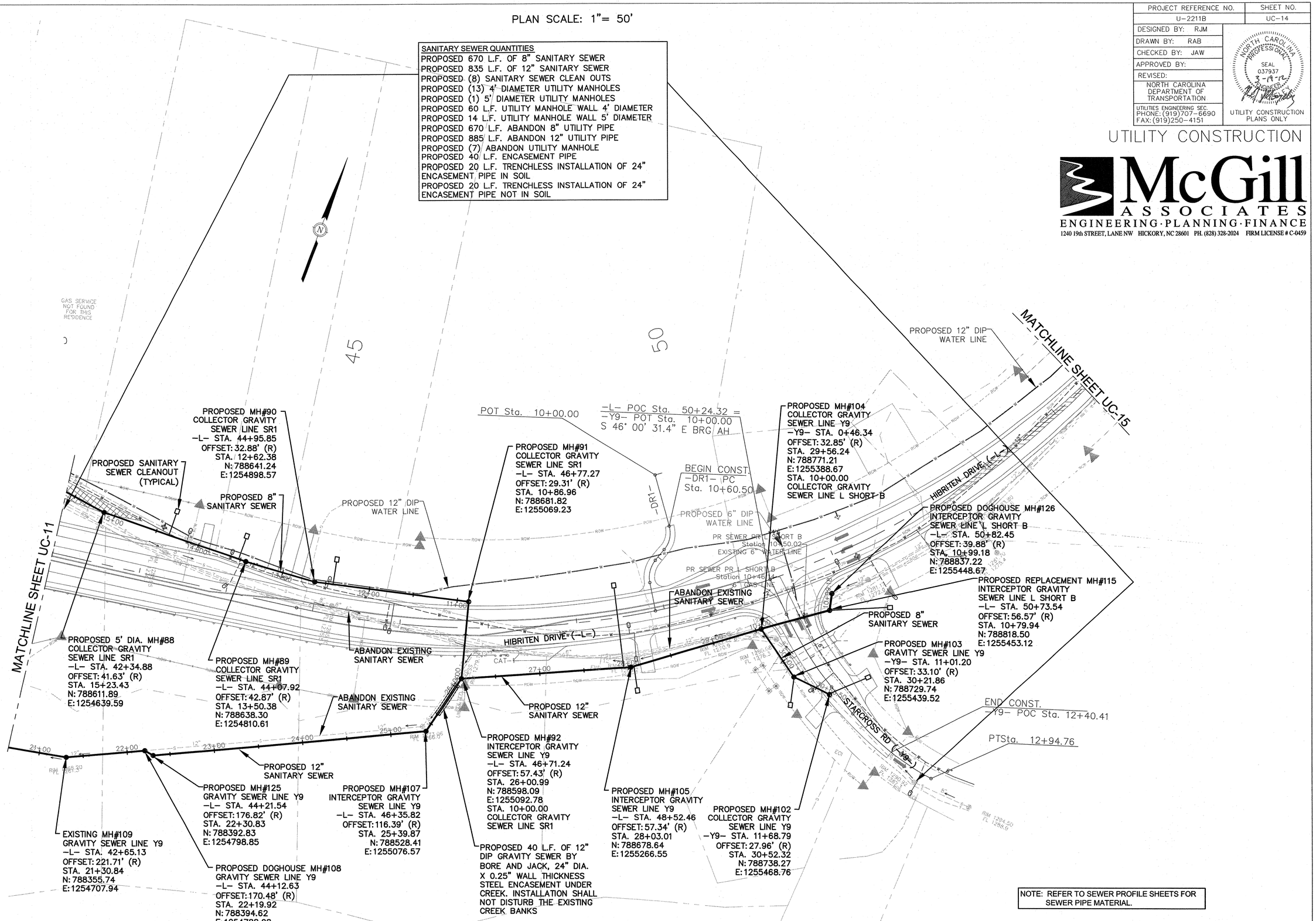
NORTH CAROLINA PROFESSIONAL SEAL 037937 3-19-12 ENGINEER

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

PLAN SCALE: 1"= 50'

SANITARY SEWER QUANTITIES
PROPOSED 670 L.F. OF 8" SANITARY SEWER
PROPOSED 835 L.F. OF 12" SANITARY SEWER
PROPOSED (8) SANITARY SEWER CLEAN OUTS
PROPOSED (13) 4' DIAMETER UTILITY MANHOLES
PROPOSED (1) 5' DIAMETER UTILITY MANHOLES
PROPOSED 60 L.F. UTILITY MANHOLE WALL 4' DIAMETER
PROPOSED 14 L.F. UTILITY MANHOLE WALL 5' DIAMETER
PROPOSED 670 L.F. ABANDON 8" UTILITY PIPE
PROPOSED 885 L.F. ABANDON 12" UTILITY PIPE
PROPOSED (7) ABANDON UTILITY MANHOLE
PROPOSED 40 L.F. ENCASEMENT PIPE
PROPOSED 20 L.F. TRENCHLESS INSTALLATION OF 24" ENCASEMENT PIPE IN SOIL
PROPOSED 20 L.F. TRENCHLESS INSTALLATION OF 24" ENCASEMENT PIPE NOT IN SOIL



NOTE: REFER TO SEWER PROFILE SHEETS FOR SEWER PIPE MATERIAL.

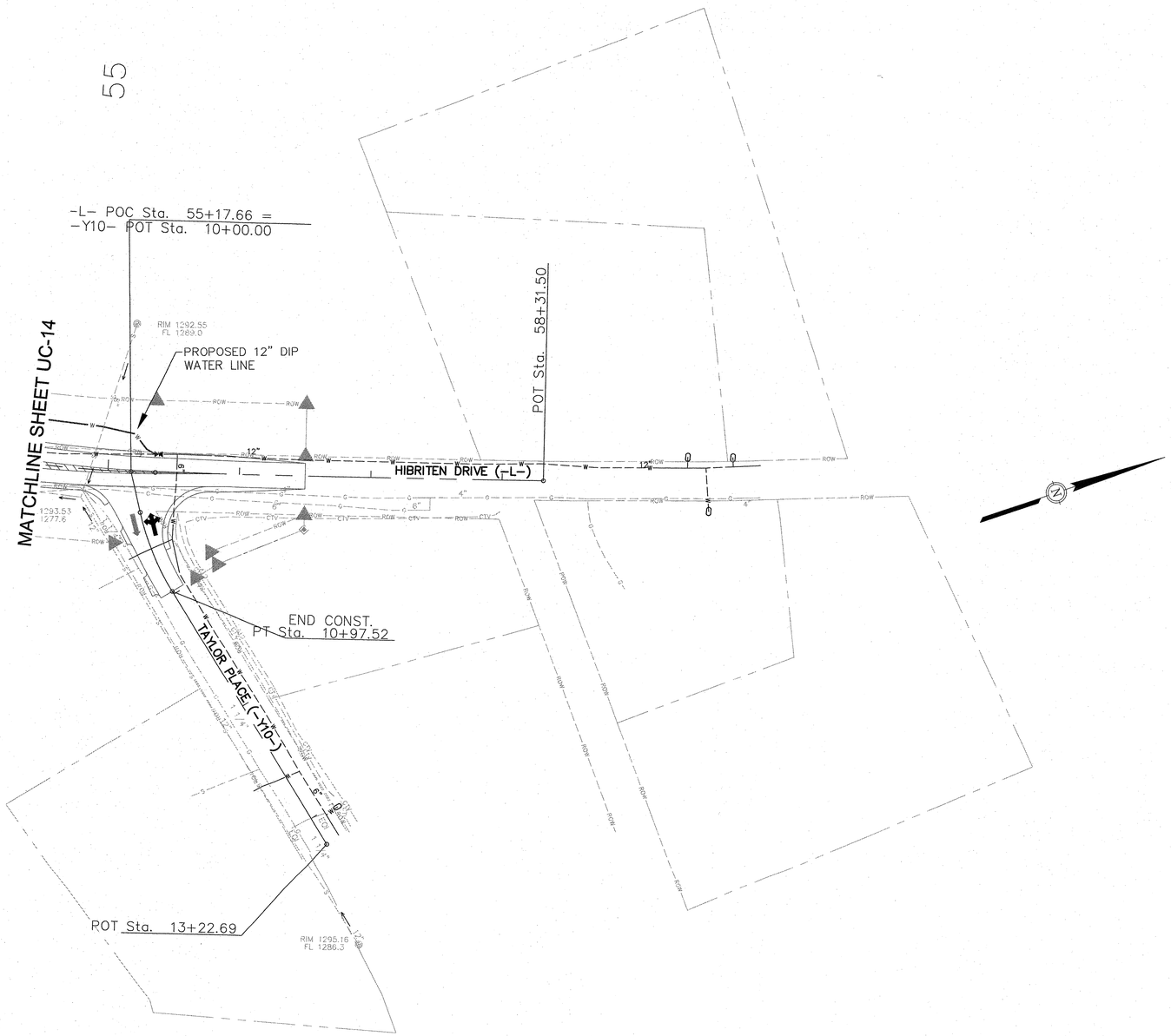
PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-15
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 ENGINEER 3-15-12

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

55



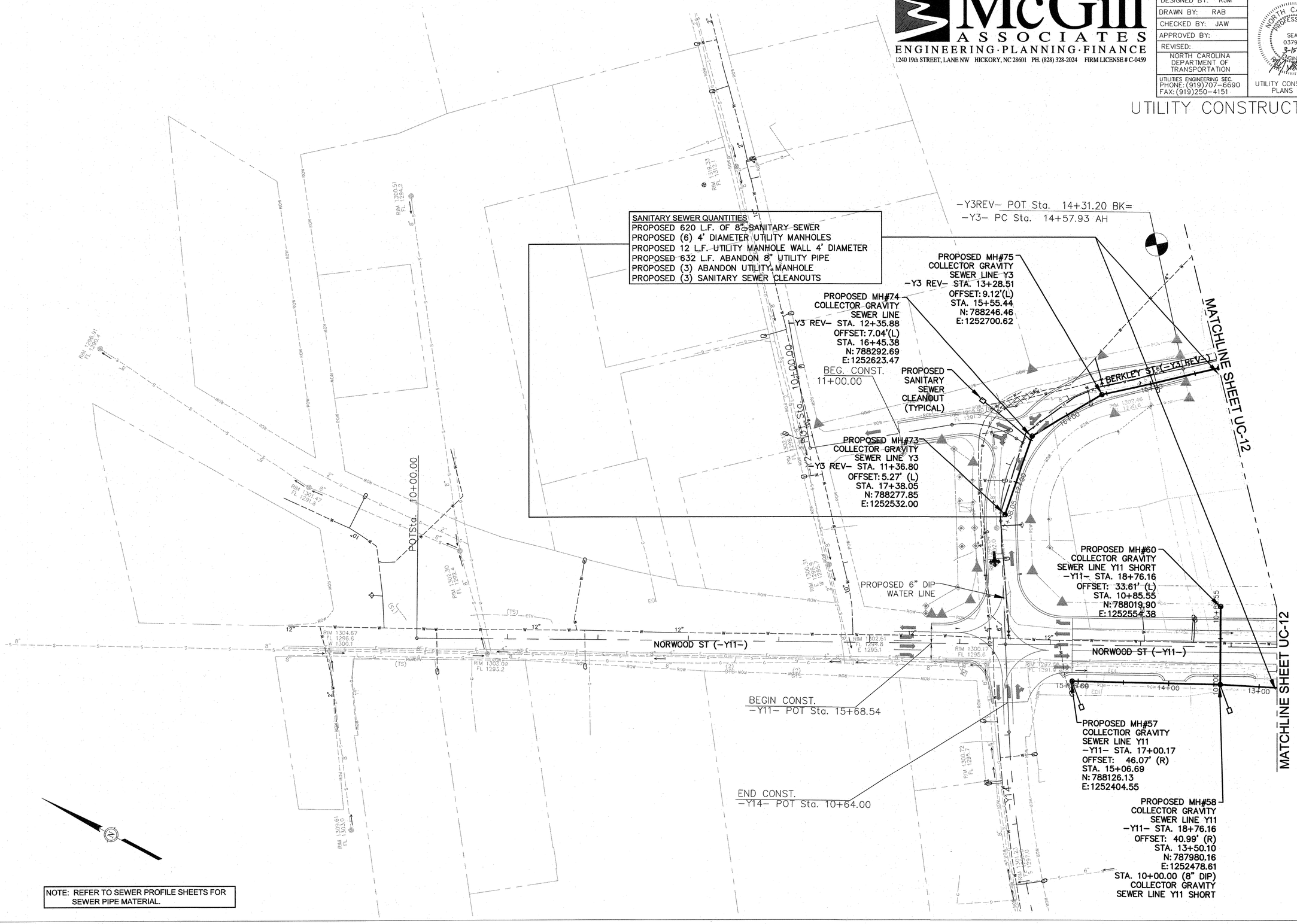
PLAN SCALE: 1"= 50'

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-16
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-15-17 ENGINEER

UTILITY CONSTRUCTION



PLAN SCALE: 1"= 50'

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-17
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

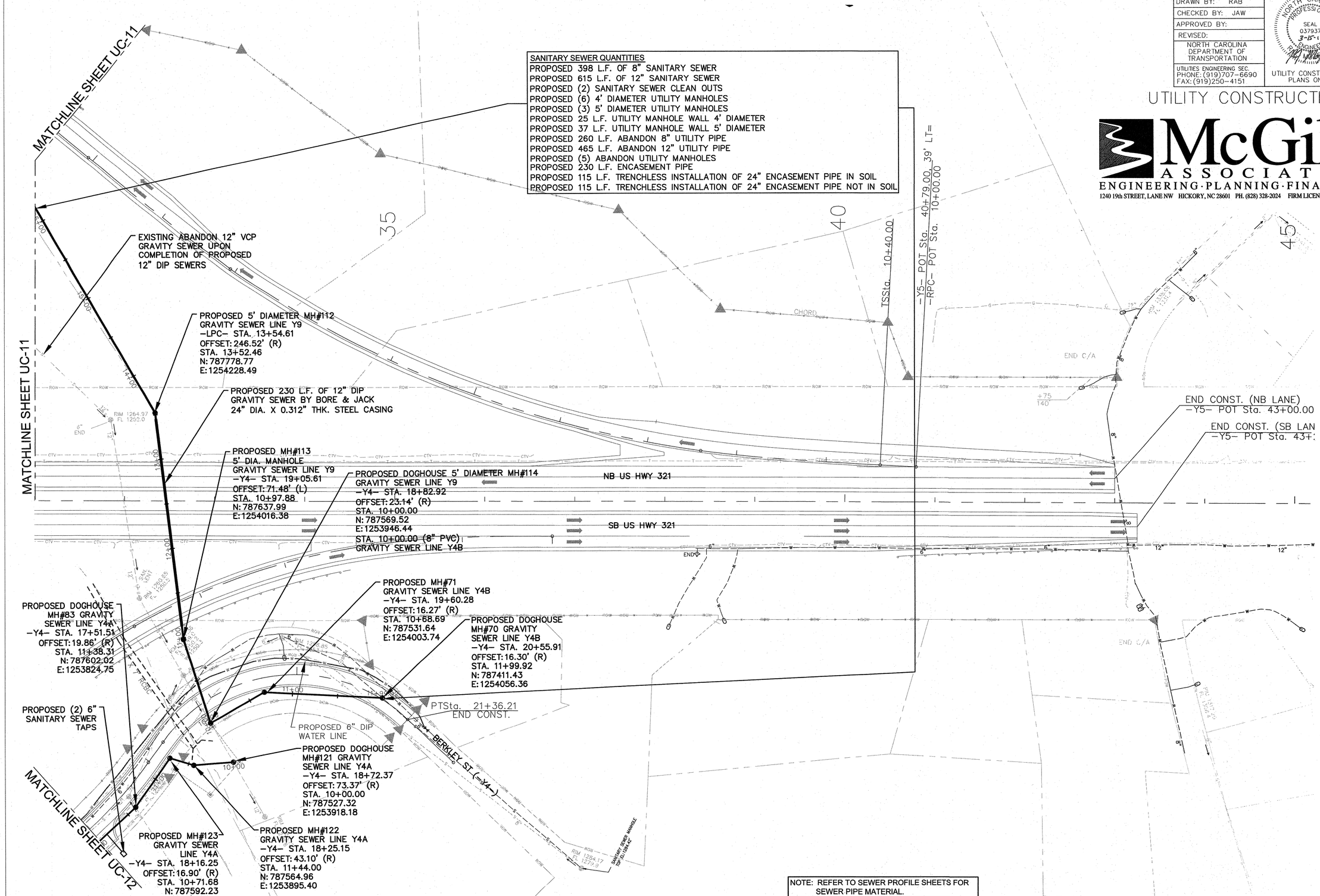
NORTH CAROLINA PROFESSIONAL SEAL 037937 3-15-12 ENGINEER

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

SANITARY SEWER QUANTITIES

PROPOSED 398 L.F. OF 8" SANITARY SEWER
PROPOSED 615 L.F. OF 12" SANITARY SEWER
PROPOSED (2) SANITARY SEWER CLEAN OUTS
PROPOSED (6) 4' DIAMETER UTILITY MANHOLES
PROPOSED (3) 5' DIAMETER UTILITY MANHOLES
PROPOSED 25 L.F. UTILITY MANHOLE WALL 4' DIAMETER
PROPOSED 37 L.F. UTILITY MANHOLE WALL 5' DIAMETER
PROPOSED 260 L.F. ABANDON 8" UTILITY PIPE
PROPOSED 465 L.F. ABANDON 12" UTILITY PIPE
PROPOSED (5) ABANDON UTILITY MANHOLES
PROPOSED 230 L.F. ENCASEMENT PIPE
PROPOSED 115 L.F. TRENCHLESS INSTALLATION OF 24" ENCASEMENT PIPE IN SOIL
PROPOSED 115 L.F. TRENCHLESS INSTALLATION OF 24" ENCASEMENT PIPE NOT IN SOIL



NOTE: REFER TO SEWER PROFILE SHEETS FOR SEWER PIPE MATERIAL.

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-18
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

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UTILITY CONSTRUCTION

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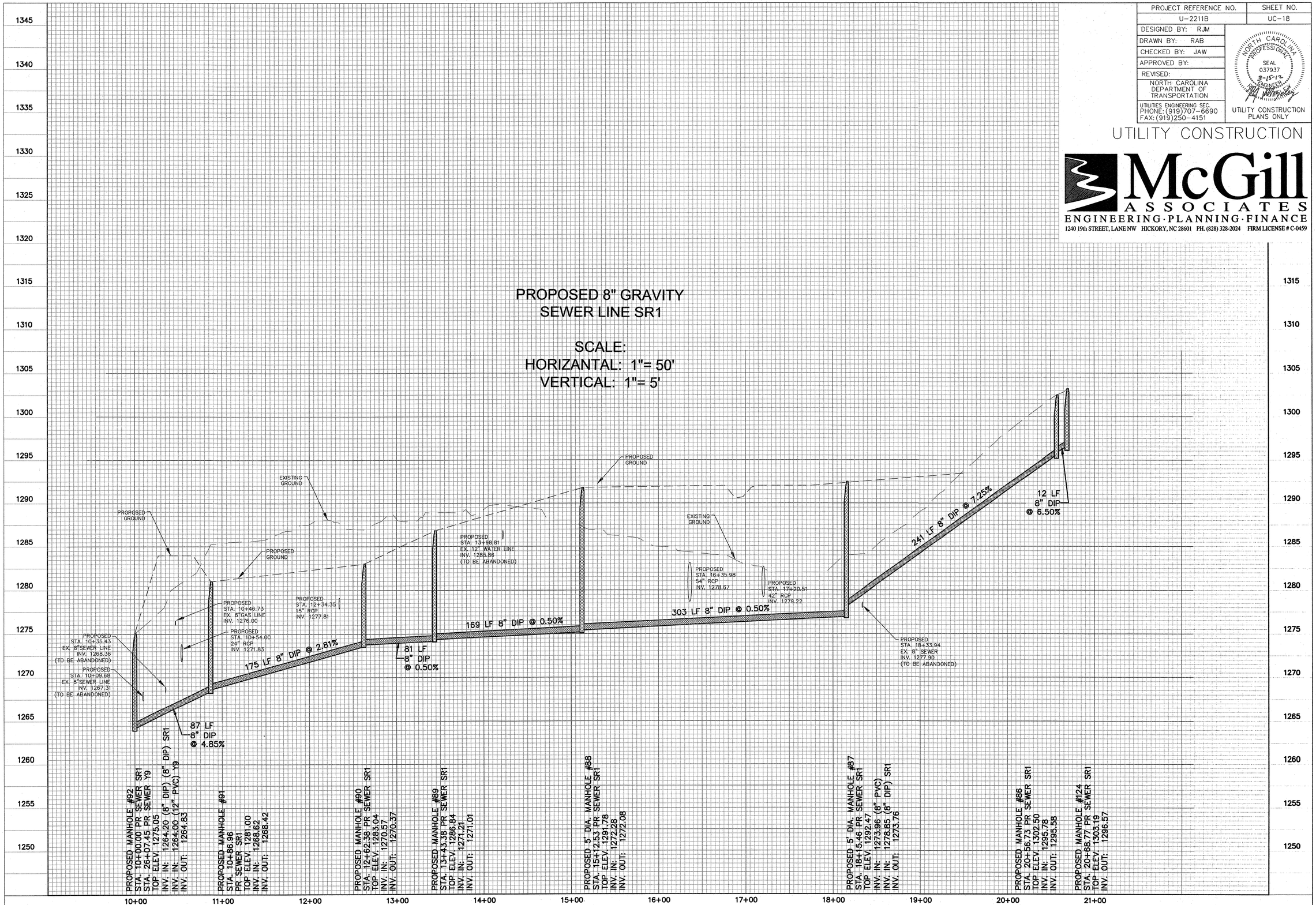

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U-2211B	UC-19
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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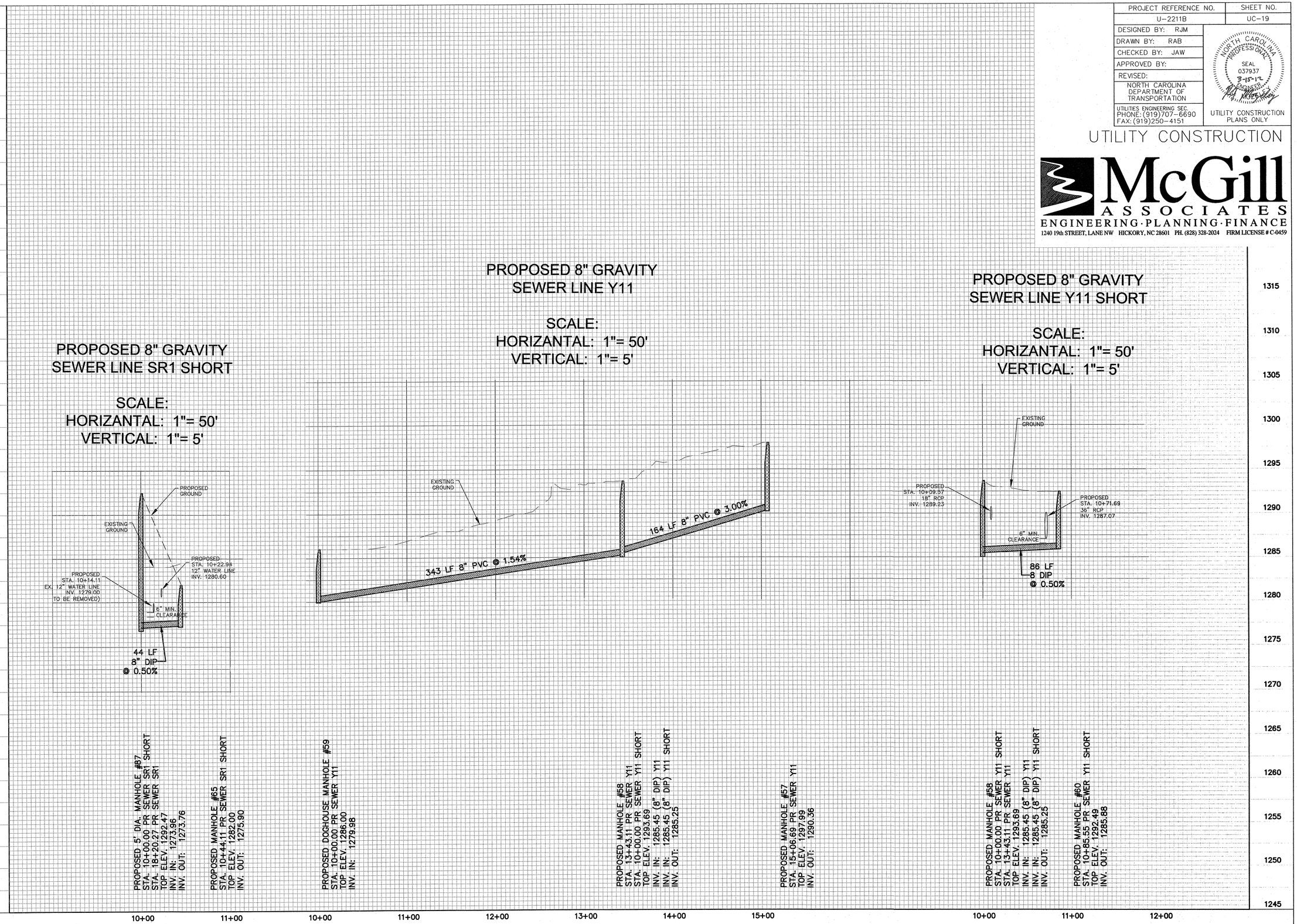

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-20

DESIGNED BY: RJM
DRAWN BY: RAB
CHECKED BY: JAW
APPROVED BY:
REVISED:

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

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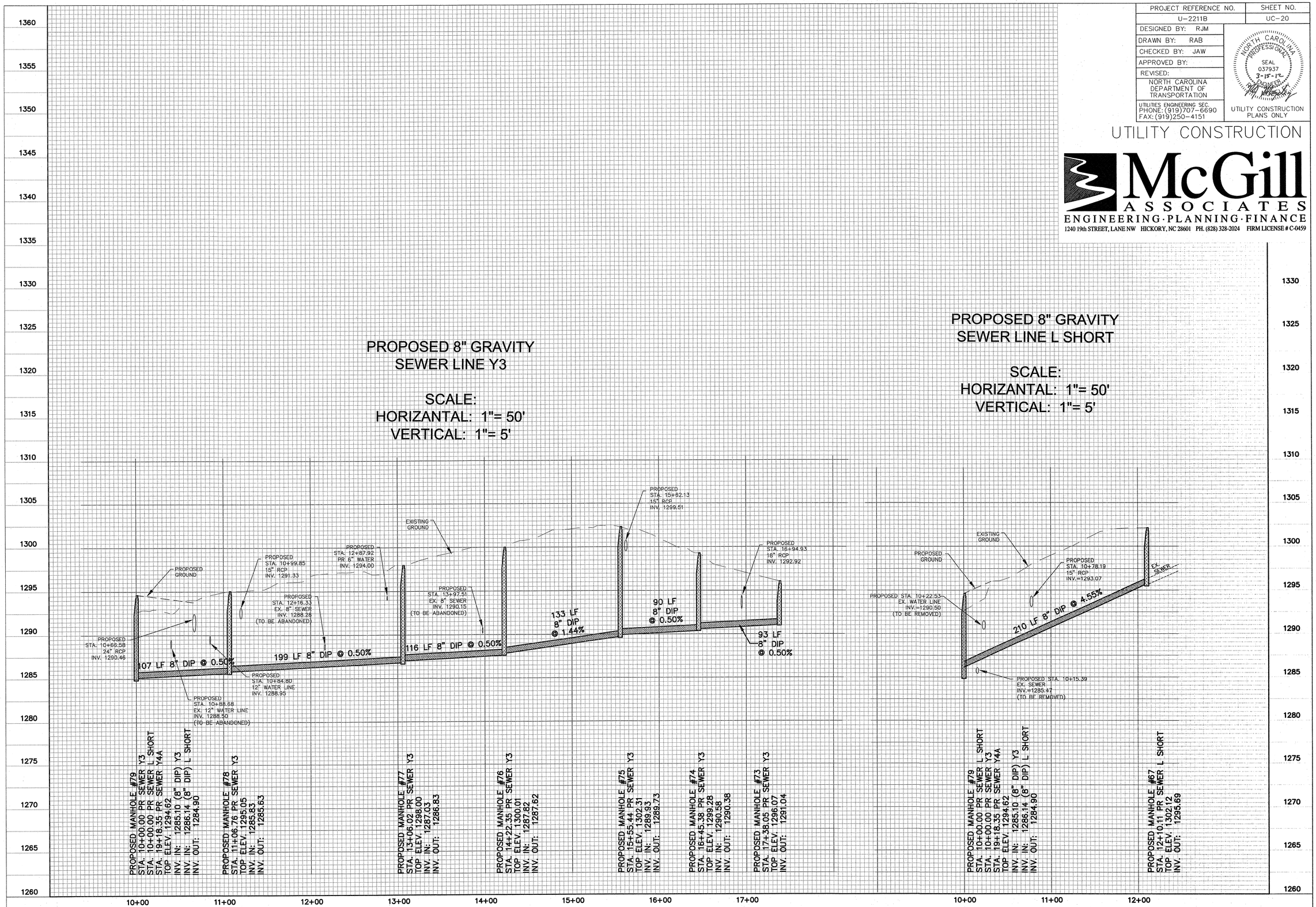

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DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

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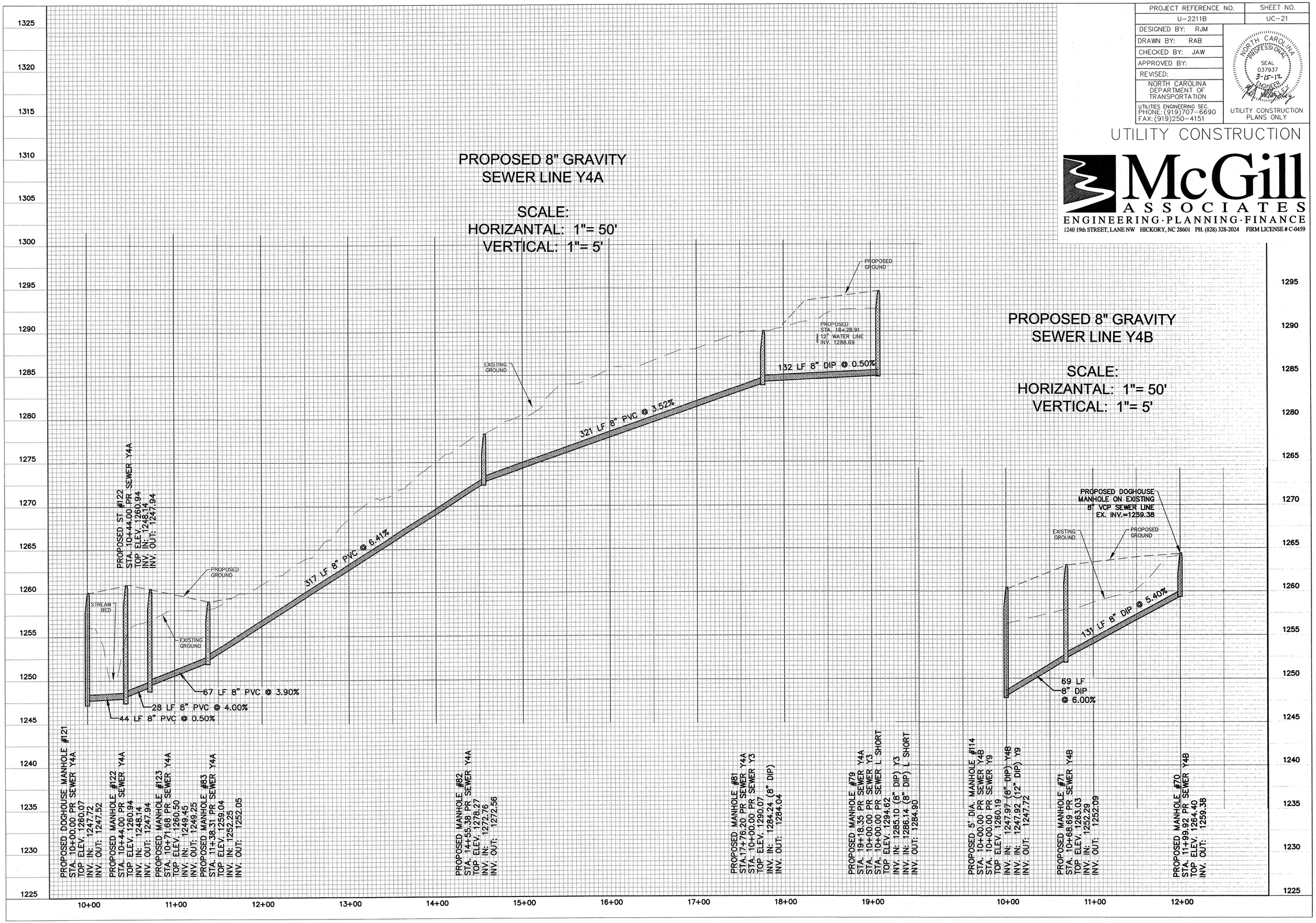

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-22
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

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UTILITY CONSTRUCTION

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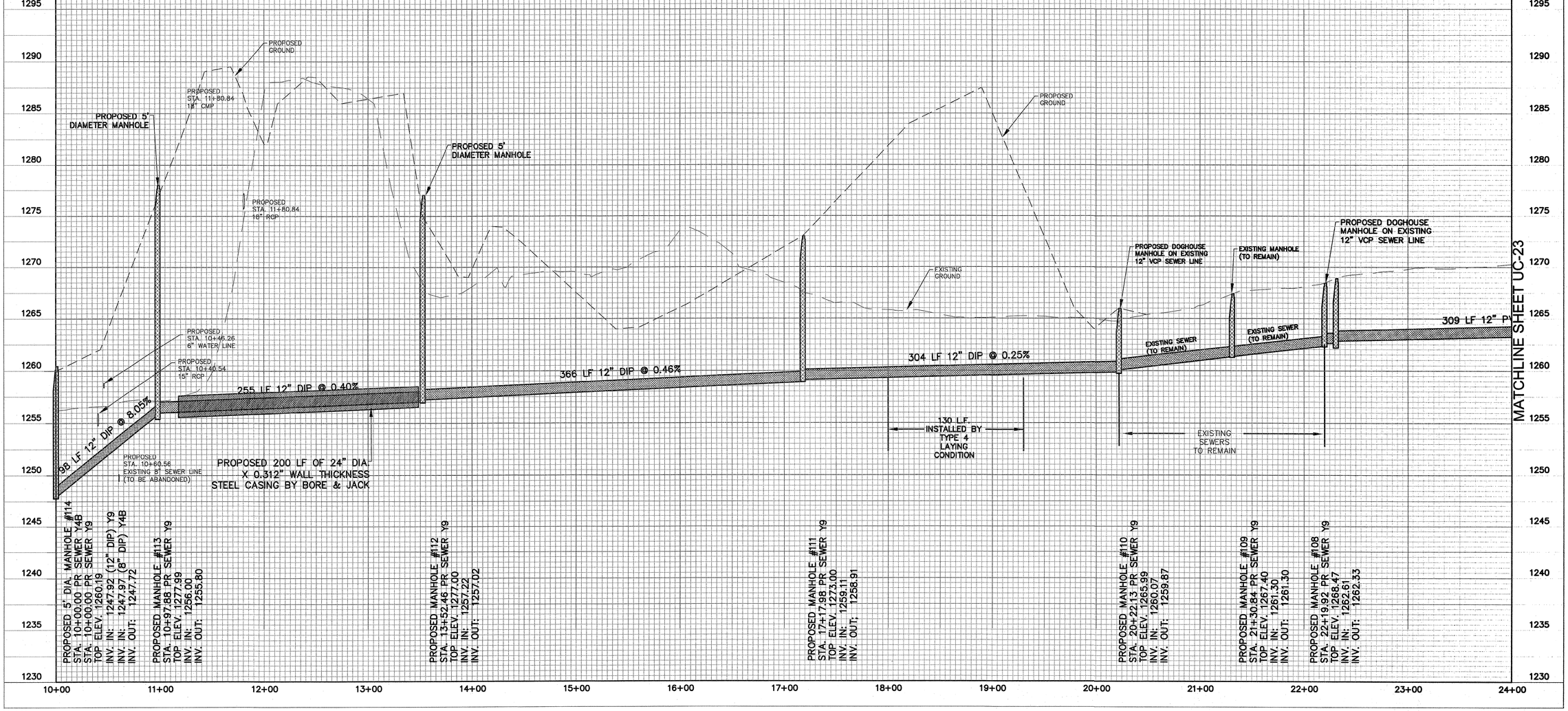
PROPOSED 8" GRAVITY SEWER LINE Y9

SCALE:
HORIZANTAL: 1"= 50'
VERTICAL: 1"= 5'



PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-23
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
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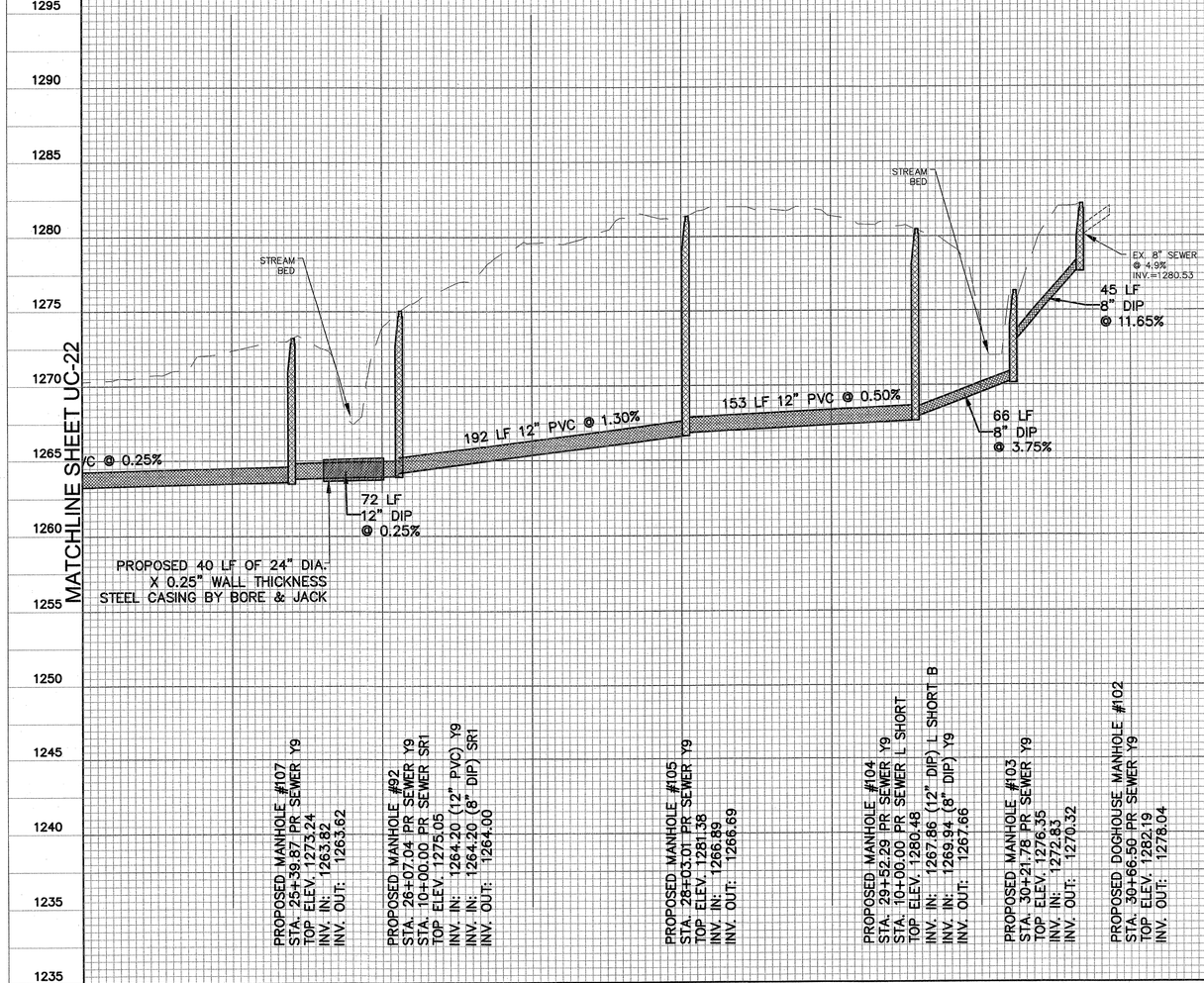
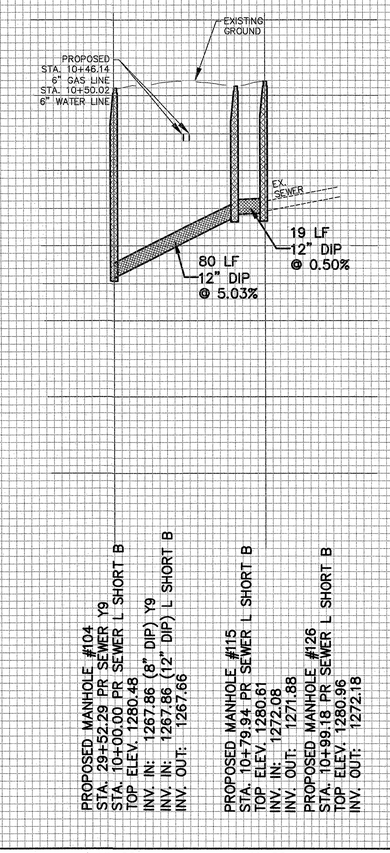
PROPOSED 8" GRAVITY SEWER LINE Y9

SCALE:
HORIZANTAL: 1"= 50'
VERTICAL: 1"= 5'



PROPOSED 8" GRAVITY SEWER LINE L SHORT B

SCALE:
HORIZANTAL: 1"= 50'
VERTICAL: 1"= 5'



PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-24
DESIGNED BY: RJM	
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CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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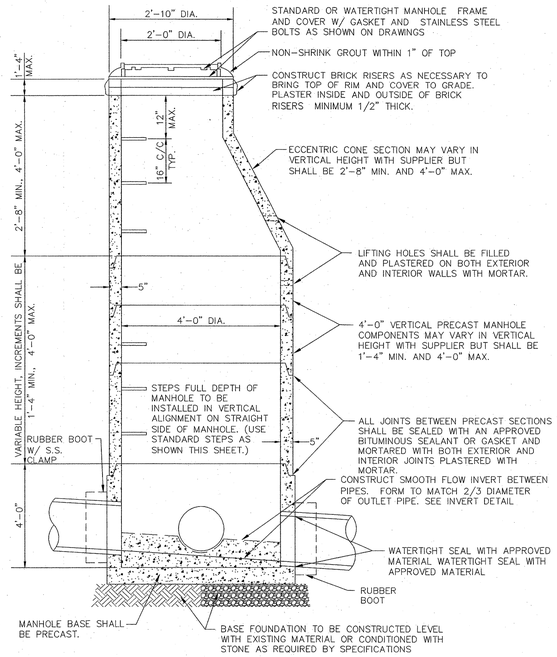


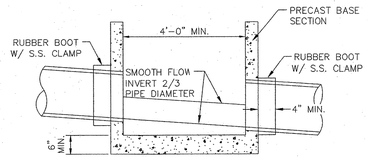
ELEVATION VIEW

PRECAST MANHOLE NOTES:

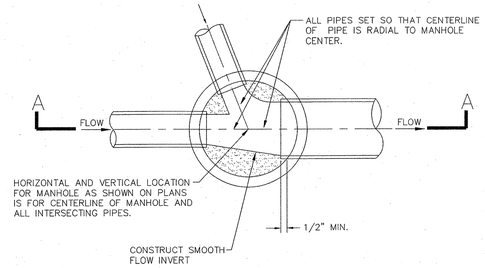
1. ALL PRECAST MANHOLE COMPONENTS SHALL MEET REQUIREMENTS OF ASTM C-478, LATEST REVISION.
2. ALL MANHOLES SHALL BE CONSTRUCTED PLUMB
3. ALL MANHOLE GRADES SHOWN ON THE PLANS ARE FOR THE INVERT OF THE MANHOLE CENTER.
4. IF MANHOLE IS SET IN LOCATION OF HIGH WATER TABLE OR UNDERGROUND WATER IS ENCOUNTERED, THE CONTRACTOR SHALL INSTALL UNDERDRAINS AND STONE AS DIRECTED IN THE FIELD BY THE ENGINEER.
5. STEPS SHALL BE INSTALLED ON STRAIGHT SIDE OF MANHOLE.

PRECAST CONCRETE MANHOLE

REVISION DATE - NOVEMBER 3, 2008



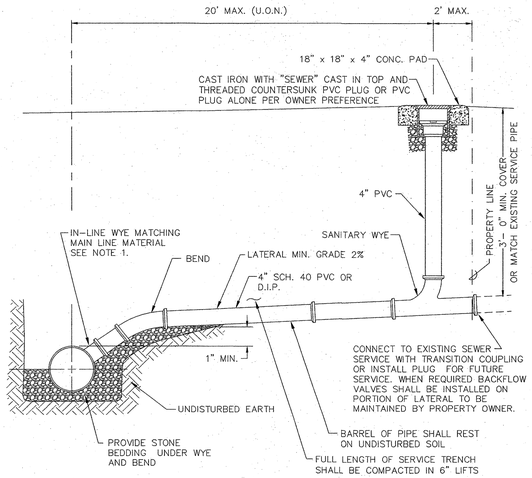
SECTION A-A



PLAN

MANHOLE INVERTS

REVISION DATE - NOVEMBER 3, 2008

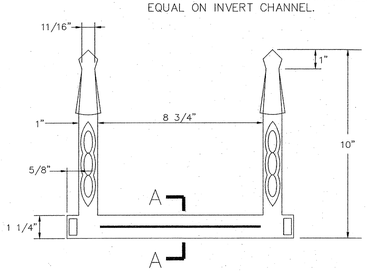


NOTE: TAPPING SADDLES ARE APPROVED FOR CONNECTIONS TO EXISTING SEWER LINES ONLY

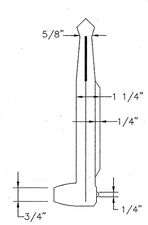
SANITARY SEWER CLEAN OUT

REVISION DATE - NOVEMBER 3, 2008

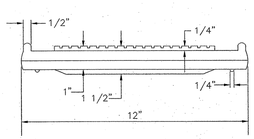
NOTE:
MANHOLES ON PLANS NOTED AS HIGH VELOCITY MANHOLES SHALL RECEIVE TWO COATS OF SIKAGARD 62, HIGH-BUILD, EPOXY RESIN COATING OR APPROVED EQUAL ON INVERT CHANNEL.



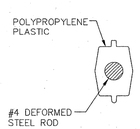
PLAN



SIDE ELEVATION



ELEVATION

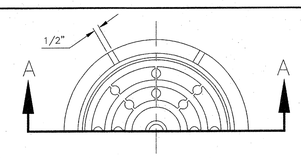


SECTION A-A

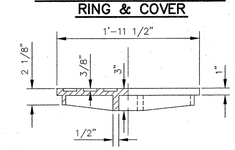
CONSTRUCTION NOTES 1. ALL STEPS SHALL PROTRUDE A MINIMUM OF 5" AND A MAXIMUM OF 7" FROM INSIDE FACE OF STRUCTURE WALL. 2. STEPS DIFFERING IN DIMENSIONS, CONFIGURATION, OR MATERIALS FROM THOSE SHOWN MAY ALSO BE USED PROVIDED THE CONTRACTOR HAS FURNISHED THE ENGINEER WITH DETAILS OF THE PROPOSED STEPS AND HAS RECEIVED PRIOR WRITTEN APPROVAL FROM THE ENGINEER FOR THE USE OF SAID STEPS.

MANHOLE STEPS

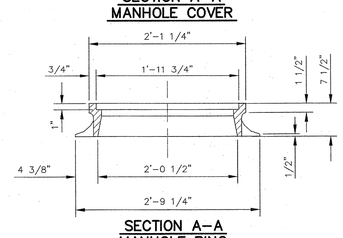
REVISION DATE - NOVEMBER 3, 2008



HALF PLAN OF MANHOLE RING & COVER



SECTION A-A MANHOLE COVER



SECTION A-A MANHOLE RING

NOTE: TRAFFIC BEARING RING AND COVER. MINIMUM WEIGHT 315 POUNDS

MANHOLE RING & COVER

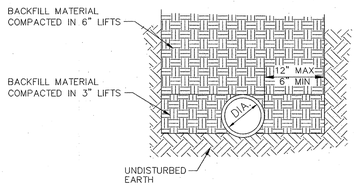
REVISION DATE - NOVEMBER 3, 2008

CONSTRUCTION NOTES:

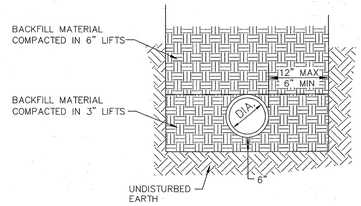
1. CONTRACTOR SHALL NOTIFY THE PROPER LOCAL AUTHORITIES AT LEAST ONE (1) WEEK PRIOR TO ANY ROAD BEING CLOSED FOR CONSTRUCTION, INCLUDING BUT NOT LIMITED TO THE LOCAL NEWSPAPER, RADIO STATION, FIRE DEPARTMENT, COUNTY SHERIFF'S DEPARTMENT, AMBULANCE, AND THE COUNTY EMERGENCY MANAGEMENT AGENCY. ALL TRAFFIC CONTROL SHALL CONFORM TO THE REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.
2. CONTRACTOR SHALL NOTIFY THE ENGINEER AFTER EXISTING BURIED UTILITIES HAVE BEEN LOCATED AND 24 HOURS PRIOR TO CONSTRUCTION. THE ENGINEER WILL EVALUATE THE LOCATION OF EXISTING UTILITIES AND DETERMINE WHETHER OR NOT THE PROPOSED SEWER LINE LOCATION SHOULD BE REVISED.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS DURING CONSTRUCTION AND SHALL REPAIR ROADS PER REQUIREMENTS OF THE DETAILS AND SPECIFICATIONS. OPEN CUTS OF EXISTING ROADS SHALL BE ALLOWED ONLY WHERE INDICATED ON THE DRAWINGS OR WHERE SPECIFIC PERMISSION IS GRANTED BY THE CITY OF LENOIR. SAND OR A SIMILAR MATERIAL APPROVED BY THE CITY OF LENOIR SHALL BE PLACED AS A PROTECTIVE BARRIER BETWEEN TRACK EQUIPMENT AND THE ROAD AND CLEANED UP PROPERLY AFTER CONSTRUCTION.

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND INVERT ELEVATIONS OF EXISTING MANHOLES PRIOR TO BEGINNING CONSTRUCTION.
2. EXISTING SEWER LINES SHALL REMAIN IN SERVICE DURING CONSTRUCTION UNTIL NEW LINE IS PLACED INTO SERVICE.
3. THE EXISTING GAS LINE AND EXISTING WATER LINE LOCATIONS ARE SHOWN AS APPROXIMATE ONLY. CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF THE EXISTING GAS LINE AND WATER LINE PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION.
4. CONTRACTOR SHALL NOTIFY THE CITY OF LENOIR AND THE NCDOT AT LEAST ONE (1) WEEK PRIOR TO BEGINNING CONSTRUCTION.
5. CONTRACTOR SHALL PROVIDE TEMPORARY PEDESTRIAN TRAFFIC PROTECTION SURROUNDING THE BORE PIT AND TRENCHES DURING CONSTRUCTION. ALL OPEN TRENCHES AND PITS SHALL BE BACKFILLED OVERNIGHT TO PROVIDE PROTECTION TO PEDESTRIANS AND VEHICULAR TRAFFIC.
6. ANY DAMAGE TO EXISTING DRIVES, STRUCTURES, CONCRETE PADS, OR BUILDINGS SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
7. OPEN CUTS OF EXISTING TOWN OF BLOWING ROCK ROADS SHALL BE ALLOWED ONLY WHERE INDICATED ON THE DRAWINGS. ANY UNNECESSARY DAMAGE TO TOWN OF BLOWING ROCK ROADS SHALL BE REPAIRED PER REQUIREMENTS OF THE CITY OF LENOIR STREET AND PUBLIC UTILITIES DEPARTMENTS AT NO ADDITIONAL COST TO THE OWNER.
8. EXISTING ASPHALT SHALL BE SAW-CUT PRIOR TO EXCAVATION FOR THE BORE PIT AND THE PROPOSED SEWER LINE.
9. ALL MANHOLES SHALL BE CONSTRUCTED WITH WATERTIGHT FRAMES AND COVERS UNLESS OTHERWISE NOTED.

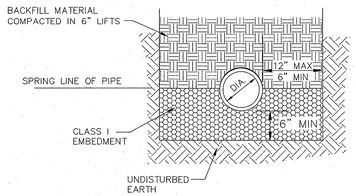


STANDARD EXCAVATION



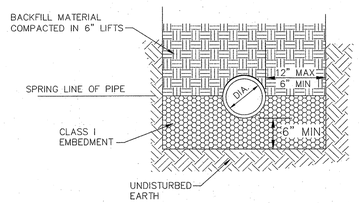
OVERCUT EXCAVATION

DUCTILE IRON GRAVITY SEWER

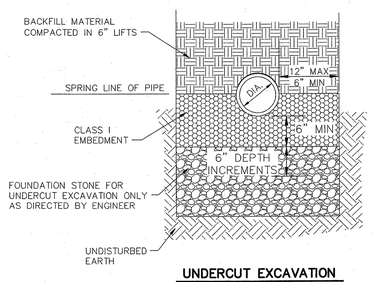


STANDARD EXCAVATION

PVC GRAVITY SEWER



STANDARD EXCAVATION IN WET CONDITIONS



UNDERCUT EXCAVATION IN UNSTABLE SOILS TYPES

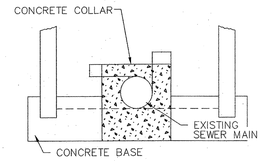
PIPE IN WET OR UNSTABLE CONDITIONS
ALL PIPE TYPES
(AS DIRECTED BY ENGINEER)

NOTES:

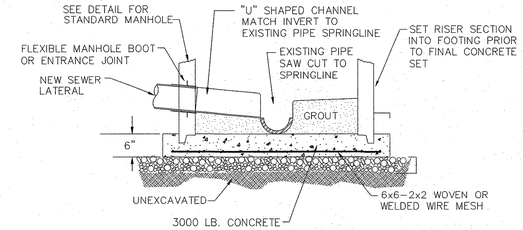
1. CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.
2. FOR UNIT PRICE CONTRACTS ONLY, PAYMENT FOR ROCK EXCAVATION AND SELECT BACKFILL IN TRENCH SHALL BE FOR ACTUAL QUANTITIES AND SHALL NOT EXCEED THE WIDTH OF TRENCH SHOWN ON THIS DETAIL.
3. FOR UNIT PRICE CONTRACTS ONLY, PAYMENT FOR FOUNDATION STONE UNDERCUT SHALL BE FOR THE LENGTH OF THE TRENCH REQUIRING UNDERCUT X 6" DEPTH INCREMENTS TO THE DEPTH REQUIRED.
4. CLASS I EMBEDMENT SHALL BE NCDOT STANDARD # 67 STONE OR APPROVED EQUAL. FOUNDATION STONE SHALL BE NCDOT STANDARD # 57 OR # 67 STONE OR APPROVED EQUAL.

TYPICAL GRAVITY SEWER TRENCHING DETAILS

REVISION DATE - NOVEMBER 3, 2008

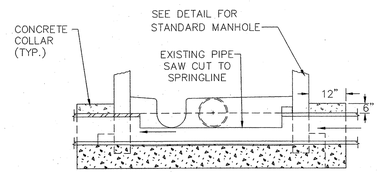


SECTION "C – C"



BASE FOUNDATION CONSTRUCTED LEVEL WITH EXISTING MATERIAL OR WITH STONE AS REQUIRED BY SPECIFICATIONS

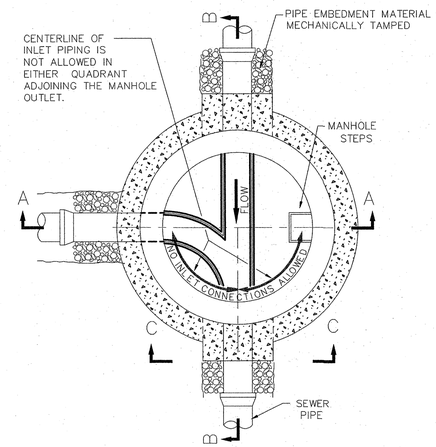
SECTION "A – A"



SECTION "B – B"

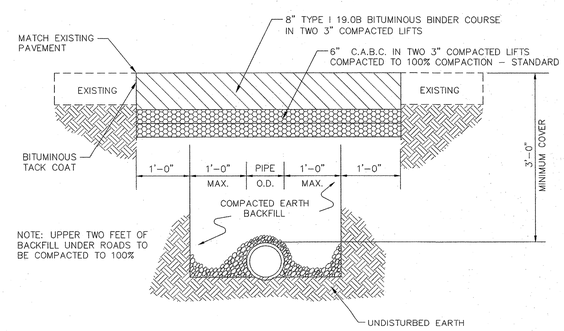
NOTES:

1. THIS DETAIL MUST BE USED FOR CONSTRUCTION OF ALL MANHOLES OVER EXISTING SEWER MAINS.
2. LATERALS 6" AND LARGER SHALL BE CONNECTED AT MANHOLES ONLY.
3. FLOW SHALL BE MAINTAINED DURING CONSTRUCTION.
4. MANHOLE BASE SHALL BE CAST IN PLACE.



SECTIONAL PLAN

NEW MANHOLE CONSTRUCTED OVER EXISTING SEWER PIPE



NOTES:

1. EDGE TO BE SAWED WITH A CONCRETE SAW TO A NEAT SQUARED EDGE. BROOMED CLEAN OF DUST BEFORE TACK COAT IS APPLIED.
2. EDGES TO BE TACKED WITH CRS-I OR CRS-II.
3. THICKNESS OF CABC STONE, I-19.0B BINDER AND SF 9.5A SURFACE COURSE SHALL MATCH EXISTING CONDITIONS IF GREATER THAN SHOWN ON DETAILS.
4. CONTRACTOR RESPONSIBLE FOR REPLACEMENT OF ANY PAVEMENT MARKINGS DISTURBED OR COVERED BY OVERLAY.

TYPICAL PAVEMENT REPAIRS

NOT TO SCALE

REVISION DATE - NOVEMBER 3, 2008

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-25
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-15-12 ENGINEER

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-26
DESIGNED BY: RJM	
DRAWN BY: RAB	
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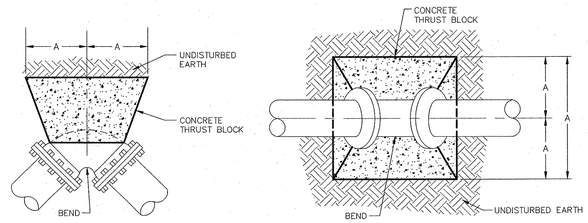
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-15-12 ENGINEER

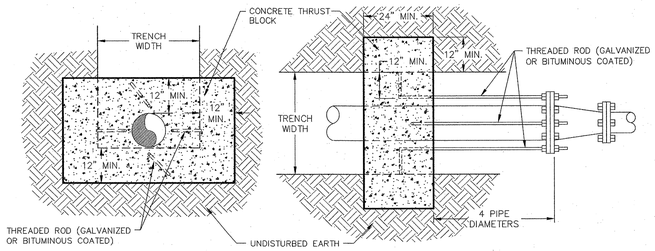
UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING · PLANNING · FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459



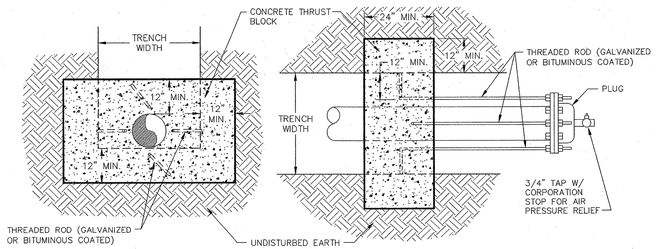
TYPICAL THRUST BLOCKS FOR BENDS

REVISION DATE - MARCH 14, 2012



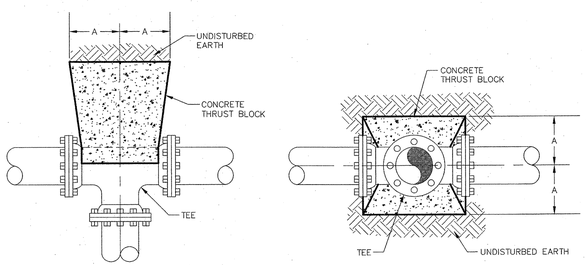
TYPICAL THRUST BLOCK FOR REDUCERS

REVISION DATE - MARCH 14, 2012



TYPICAL THRUST BLOCK FOR PLUGS

REVISION DATE - MARCH 14, 2012



TYPICAL THRUST BLOCKS FOR TEES

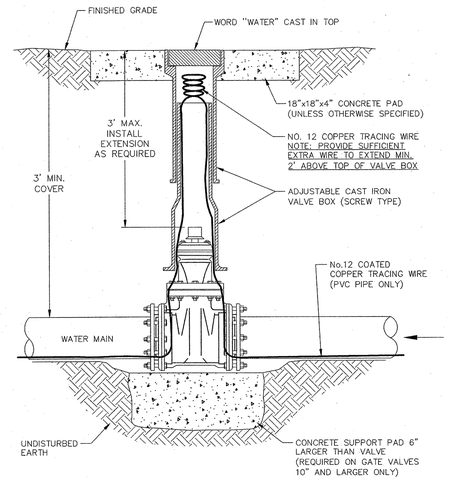
REVISION DATE - MARCH 14, 2012

NOTES:
1. FITTING JOINTS SHALL NOT BE POURED IN CONCRETE OR HAVE CONCRETE SPILLED ON THE BOLTS OR NUTS. THE FITTING SHALL BE WRAPPED IN A LAYER OF POLYETHYLENE PLASTIC PRIOR TO POURING THE THRUST BLOCK.
2. ROD AND EYE BOLT DIAMETER SHALL BE A MINIMUM OF 3/4" AND SHALL MATCH THE SIZE OF THE BOLT PROVIDED WITH THE FITTING.
3. CONTRACTOR SHALL REPLACE FITTING BOLTS WITH THREADED ROD FOR 1/2 OF THE BOLTS SUPPLIED WITH EACH FITTING. RODS SHALL BE EQUALLY SPACED.

	TYPE					
SIZE	11-1/4° BEND	22-1/2° BEND	45° BEND	90° BEND	TEE	PLUG
2-6	12	12	12	16	16	14
8	12	12	16	22	22	18
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	46	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

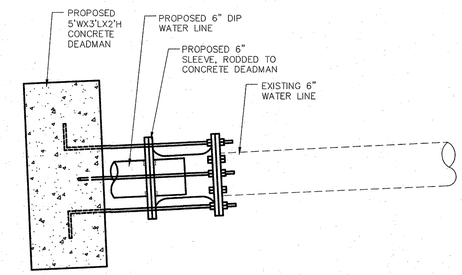
THRUST BLOCK DIMENSION "A"

REVISION DATE - NOVEMBER 3, 2008



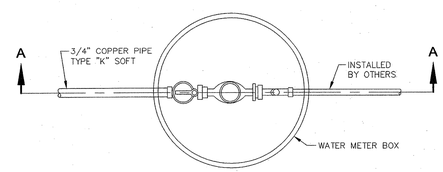
TYPICAL VERTICAL GATE VALVE INSTALLATION

REVISION DATE - NOVEMBER 3, 2008

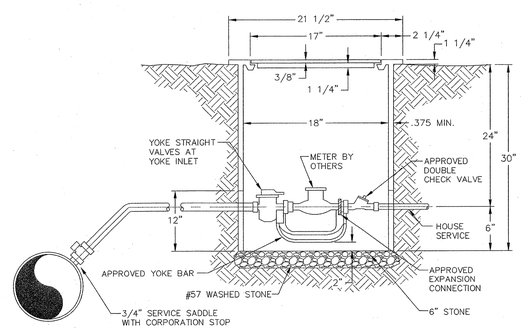


LONG BODY MECHANICAL JOINT SLEEVE CONNECTION

NOT TO SCALE



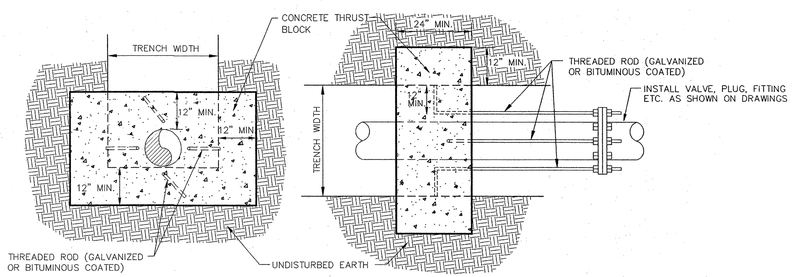
PLAN



SECTION A-A

5/8" WATER METER BOX DETAIL

REVISION DATE - MARCH 14, 2012



NOTES:
1. FITTING JOINTS SHALL NOT BE POURED IN CONCRETE OR HAVE CONCRETE SPILLED ON THE BOLTS OR NUTS. THE FITTING SHALL BE WRAPPED IN A LAYER OF POLYETHYLENE PLASTIC PRIOR TO POURING THE THRUST BLOCK.
2. ROD AND EYE BOLT DIAMETER SHALL BE A MINIMUM OF 3/4" AND SHALL MATCH THE SIZE OF THE BOLT PROVIDED WITH THE FITTING.
3. CONTRACTOR SHALL REPLACE FITTING BOLTS WITH THREADED ROD FOR 1/2 OF THE BOLTS SUPPLIED WITH EACH FITTING. RODS SHALL BE EQUALLY SPACED.

TYPICAL DEADMAN

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-27
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

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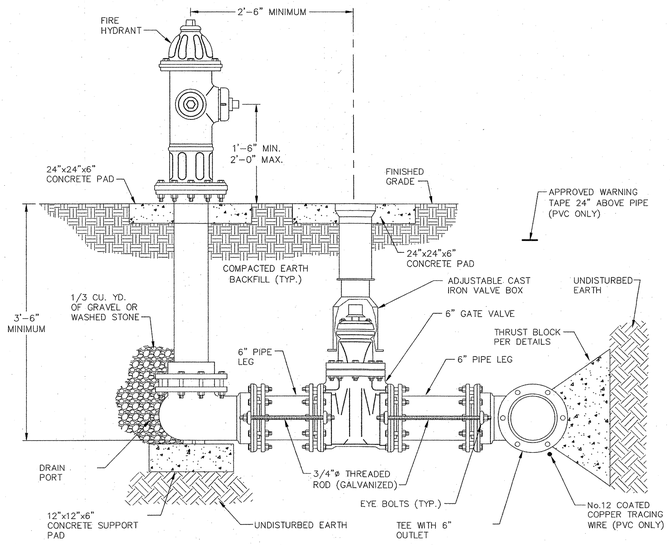
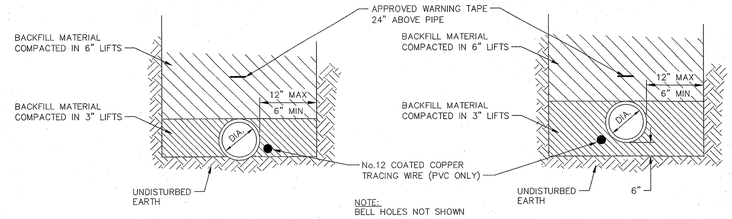
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459



TYPICAL FIRE HYDRANT ASSEMBLY DETAIL

REVISION DATE - NOVEMBER 3, 2008



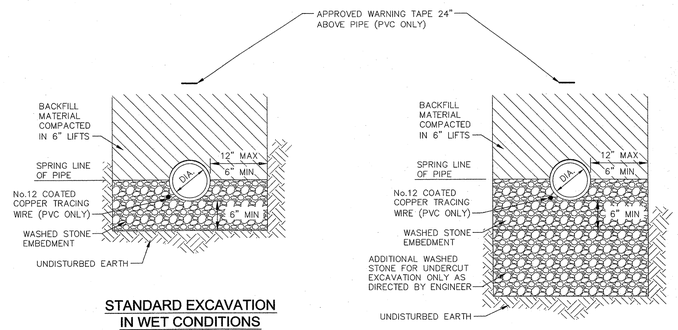
STANDARD EXCAVATION

OVERCUT EXCAVATION

NOTE:
1. CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.
2. PAYMENT FOR ROCK EXCAVATION AND SELECT BACKFILL IN TRENCH SHALL BE FOR ACTUAL QUANTITIES AND SHALL NOT EXCEED THE WIDTH OF TRENCH SHOWN ON THIS DETAIL.

TYPICAL TRENCHING DETAILS WATER LINES

REVISION DATE - FEB./MARCH 2012



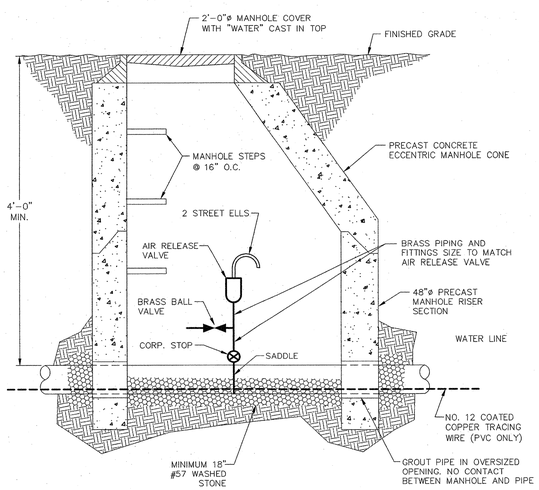
STANDARD EXCAVATION IN WET CONDITIONS

UNDERCUT EXCAVATION IN UNSTABLE SOILS TYPES

NOTE:
1. CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.
2. PAYMENT FOR ROCK EXCAVATION AND SELECT BACKFILL IN TRENCH SHALL BE FOR ACTUAL QUANTITIES AND SHALL NOT EXCEED THE WIDTH OF TRENCH SHOWN ON THIS DETAIL.
3. PAYMENT FOR WASHED STONE UNDERCUT SHALL BE FOR THE LENGTH OF THE TRENCH REQUIRING UNDERCUT X 6" DEPTH INCREMENTS TO THE DEPTH REQUIRED.

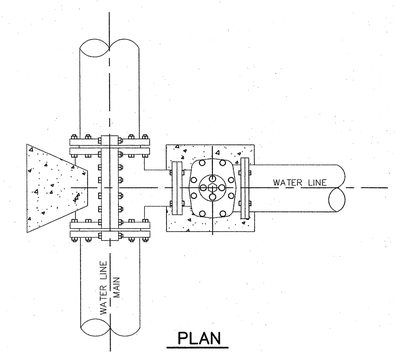
TYPICAL TRENCHING DETAILS PIPE WITH WASHED STONE EMBEDMENT

REVISION DATE - NOVEMBER 3, 2008

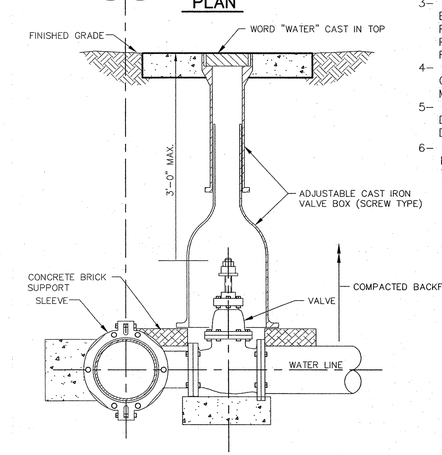


TYPICAL AIR RELEASE VALVE INSTALLATION

REVISION DATE - FEB./MARCH 2012



PLAN



SECTION

NOTES

1- TAPPING SLEEVE SHALL BE MUELLER, CLOW, AMERICAN OR APPROVED EQUAL.
2- TAPPING VALVE SHALL BE MUELLER, CLOW, AMERICAN OR APPROVED EQUAL.
3- SOLID CONCRETE OR BRICK BLOCKING SHALL BE USED AS FOOTING FOR DUCTILE IRON. PIPE. PVC PIPE SHALL REQUIRE A 3000 PSI FOOTING.
4- CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
5- SEE APPROPRIATE STANDARD DETAIL FOR THRUST BLOCK DIMENSIONS.
6- COVER FITTINGS WITH POLYETHYLENE PLASTIC PRIOR TO POURING THRUST BLOCKS

TAPPING SLEEVE AND VALVE WITH BOX INSTALLATION

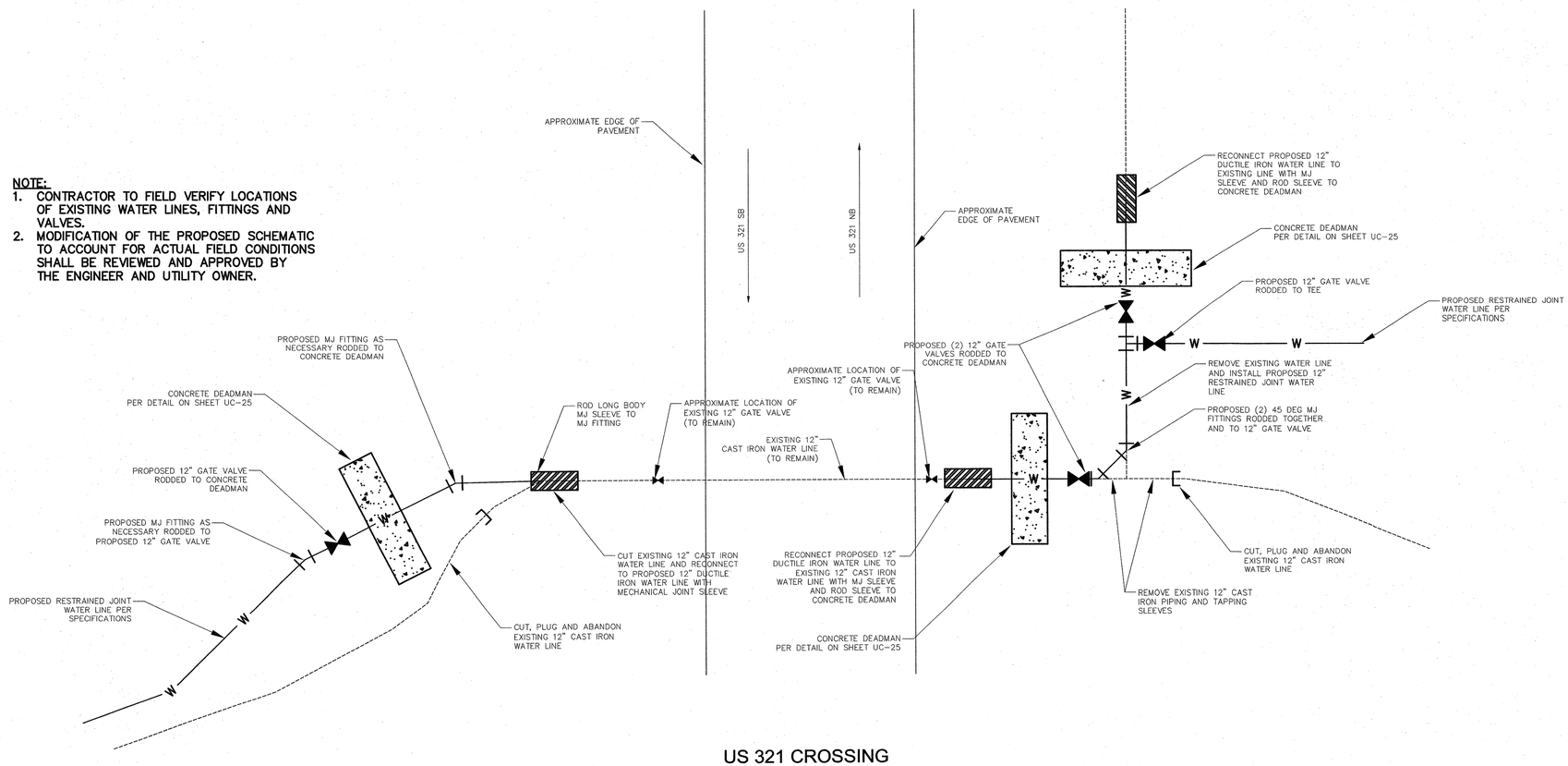
PROJECT REFERENCE NO.	SHEET NO.
U-2211B	UC-28
DESIGNED BY: RJM	
DRAWN BY: RAB	
CHECKED BY: JAW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 037937 3-15-22 ENGINEER

UTILITY CONSTRUCTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
1240 19th STREET, LANE NW HICKORY, NC 28601 PH. (828) 328-2024 FIRM LICENSE # C-0459

NOTE:
1. CONTRACTOR TO FIELD VERIFY LOCATIONS OF EXISTING WATER LINES, FITTINGS AND VALVES.
2. MODIFICATION OF THE PROPOSED SCHEMATIC TO ACCOUNT FOR ACTUAL FIELD CONDITIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER AND UTILITY OWNER.

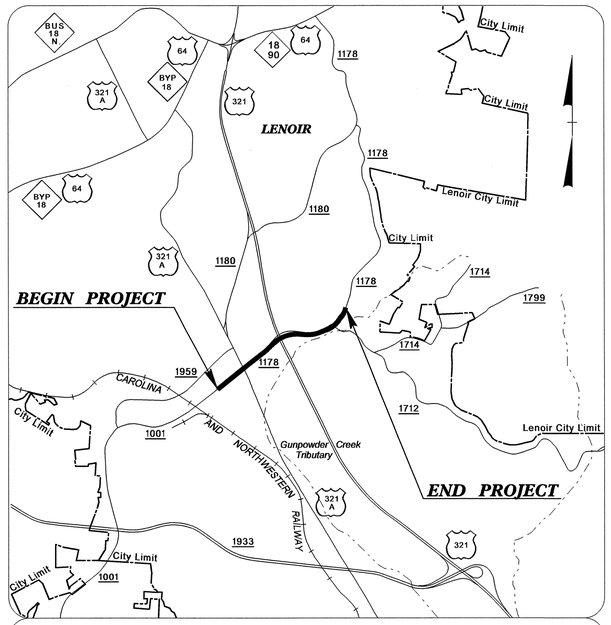


US 321 CROSSING
WATER LINE CONNECTION SCHEMATIC

SCALE: NOT TO SCALE

09/08/99

TIP PROJECT: U-2211B



VICINITY MAP

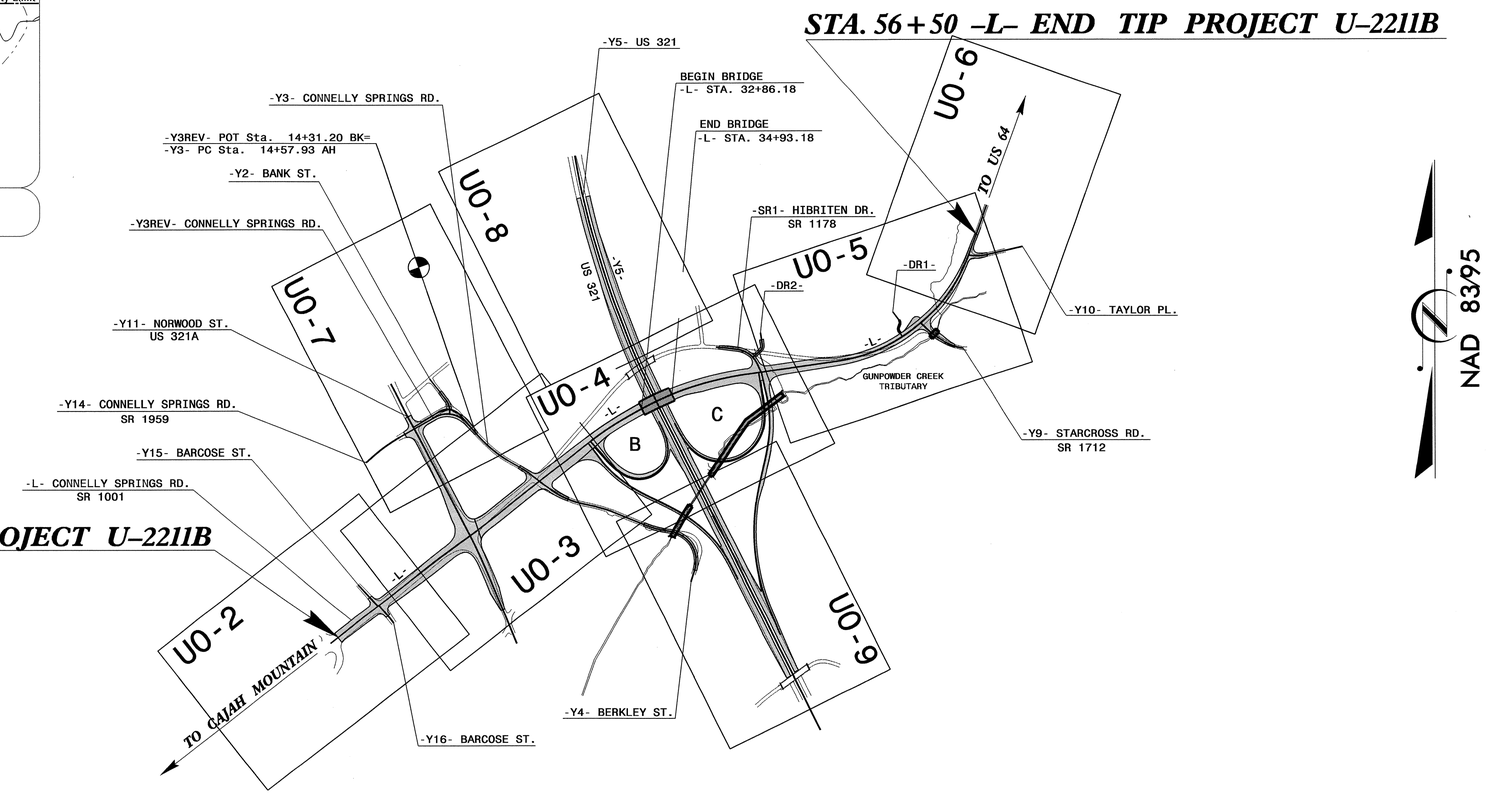
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
U-2211B	UO-1

UTILITIES BY OTHERS PLANS
CALDWELL COUNTY

LOCATION: LENOIR- SR 1001(CONNELLY SPRINGS ROAD) FROM US 321A (NORWOOD STREET) TO SR 1712 (STARCROSS ROAD) EAST OF US 321

TYPE OF WORK: POWER DISTRIBUTION, TELEPHONE, CATV, AND GAS PIPELINE RELOCATION



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 THRU UO-9	UTILITIES BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

(1) DUKE ENERGY - POWER (DISTRIBUTION)

(2) CHARTER COMMUNICATIONS - CABLE

(3) AT&T - TELEPHONE

(4) PIEDMONT NATURAL GAS - GAS

UTILITY DESIGN BY:
MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

NCDOT PROJECT ENGINEER:
CARL BARCLAY, P.E.
PREPARED FOR:
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
UTILITIES UNIT
RALEIGH, NC

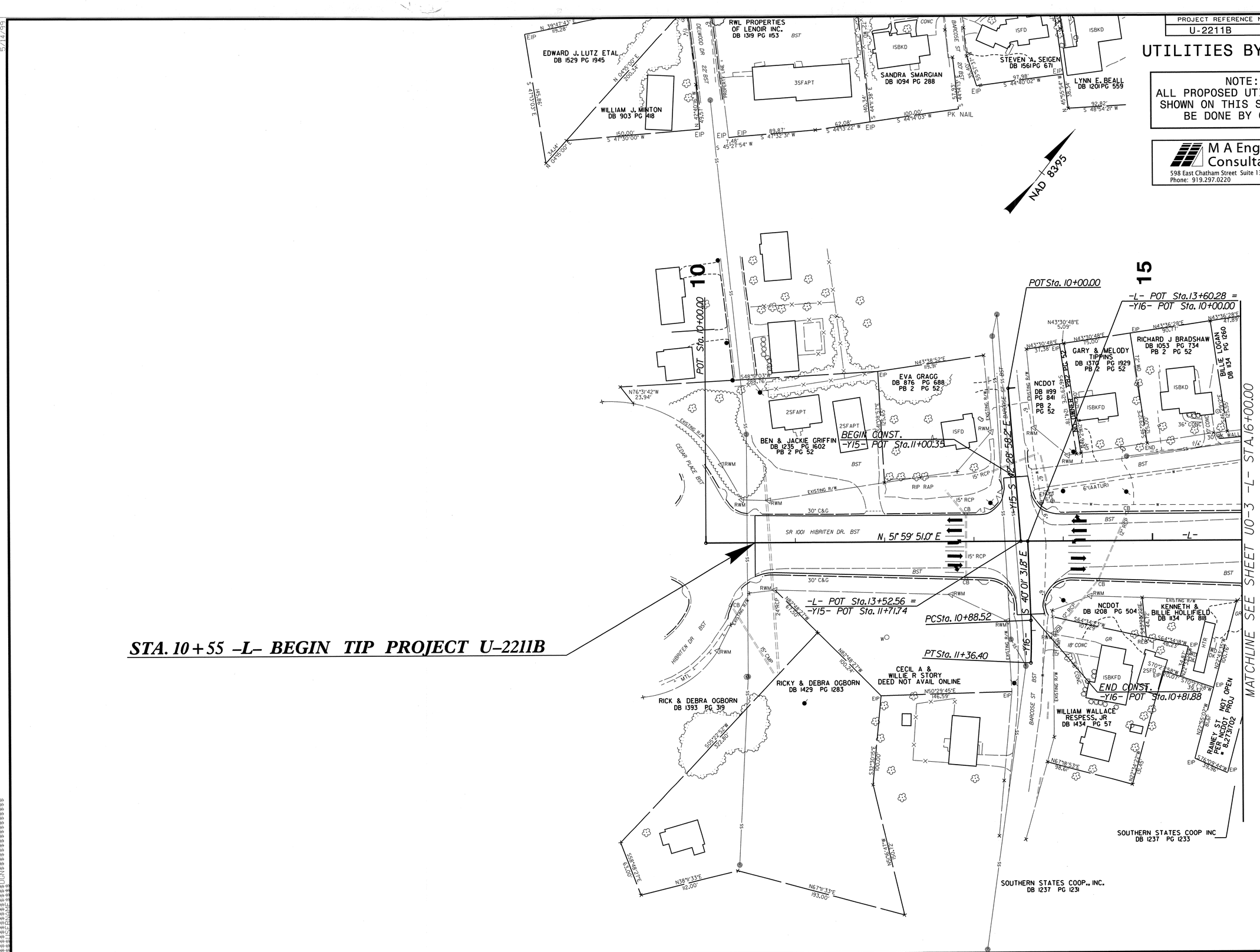
09-MAR-2012 11:27
R:\Utilities\Rdy_ut\Proj\u2211b_ut_uo_tsh_rev_by_bh.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	U0-2

UTILITIES BY OTHERS

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

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221



STA. 10 + 55 –L– BEGIN TIP PROJECT U–2211B

5/14/99

$$$$$SYSTIME$$$$
$$$$$SYSLOG$$$$
$$$$$DGN$$$$
$$$$$CELL$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	U0-3

UTILITIES BY OTHERS

NOTE:
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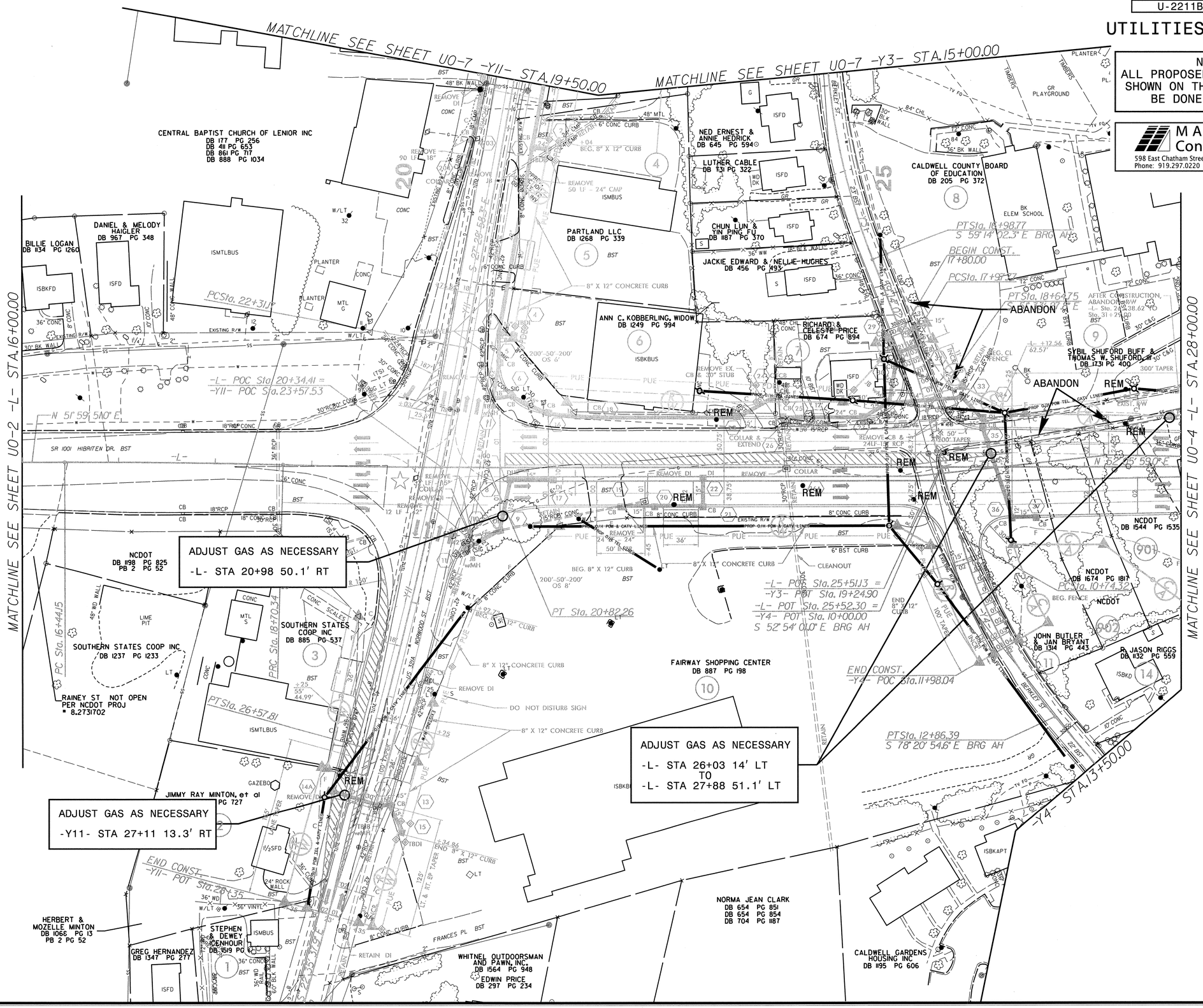
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221



PROJECT REFERENCE NO.	SHEET NO.
U-2211B	U0-4

UTILITIES BY OTHERS

NOTE:
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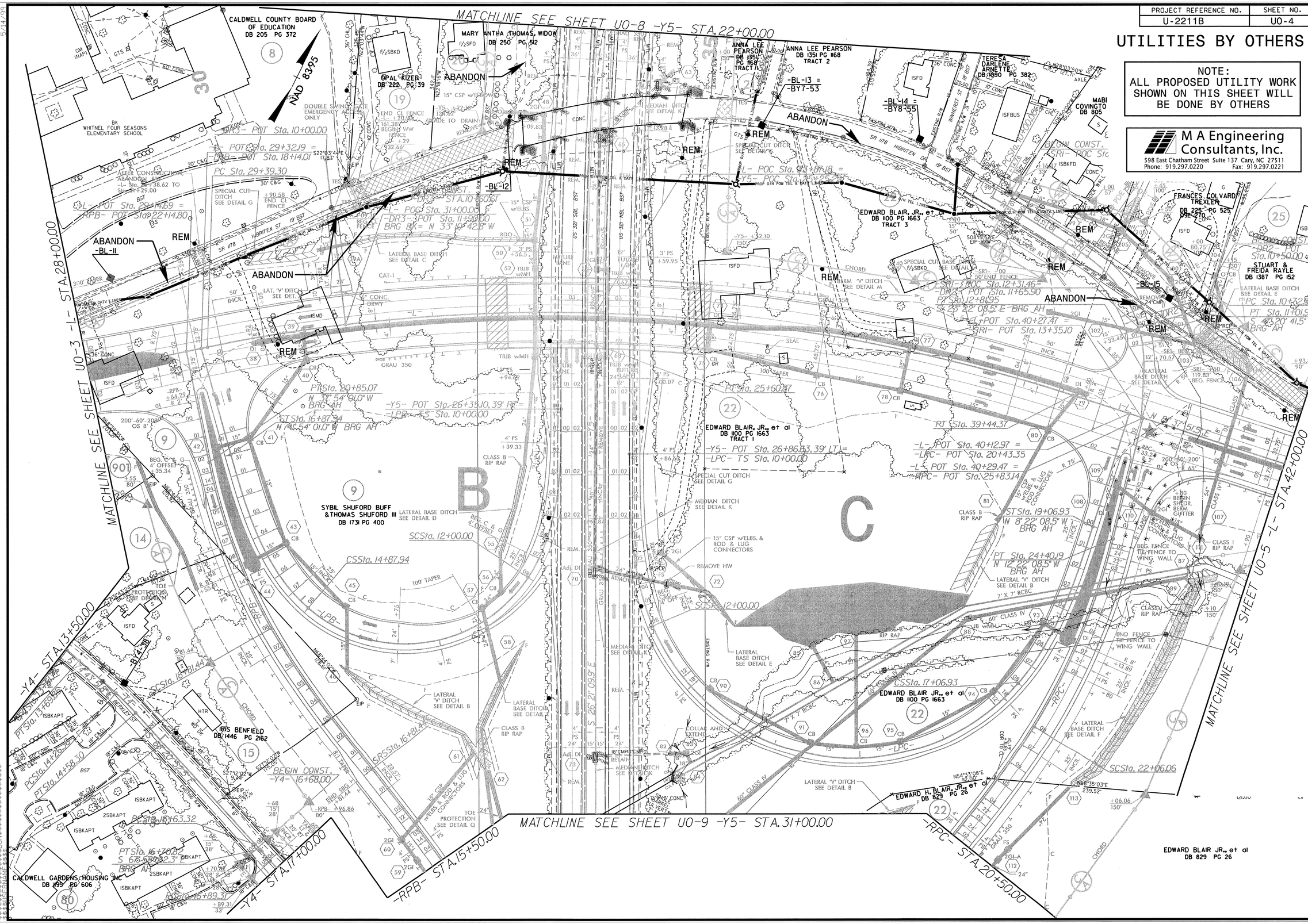
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221



PROJECT REFERENCE NO.	SHEET NO.
U-2211B	U0-5

UTILITIES BY OTHERS

NOTE:
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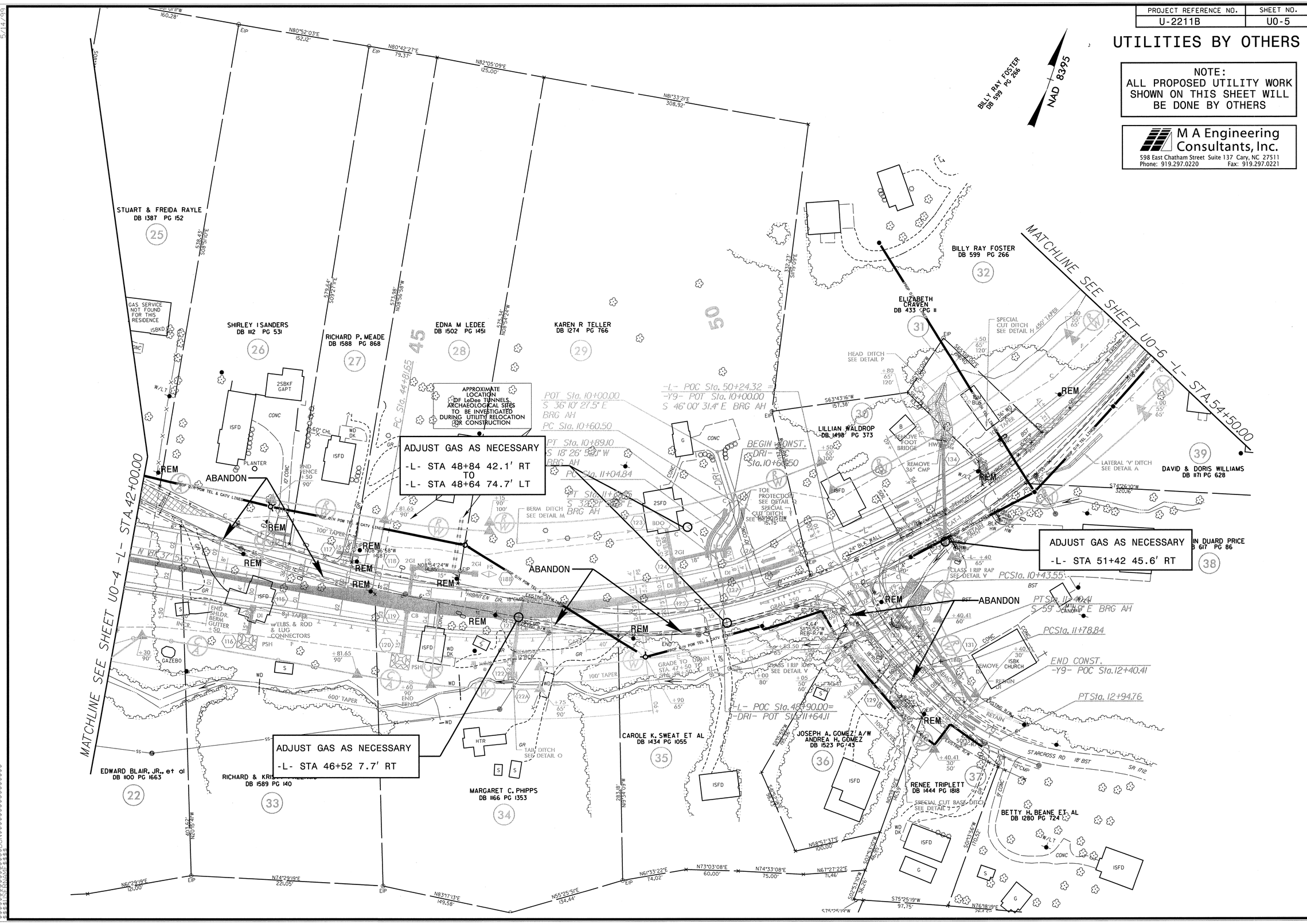
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221



PROJECT REFERENCE NO.	SHEET NO.
U-2211B	U0-6

UTILITIES BY OTHERS

NOTE:
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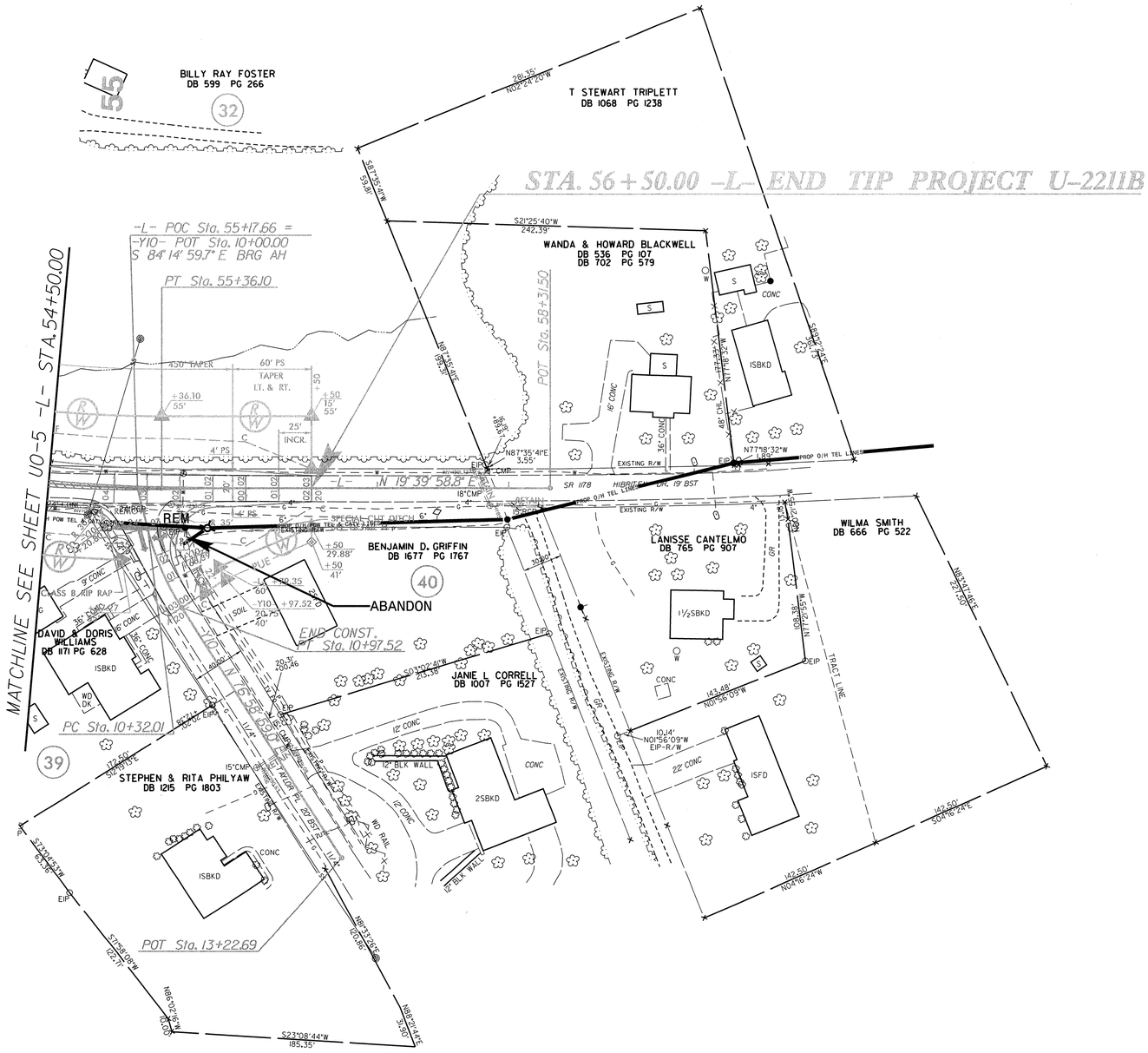
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221



PROJECT REFERENCE NO.	SHEET NO.
U-2211B	U0-7

UTILITIES BY OTHERS

NOTE:
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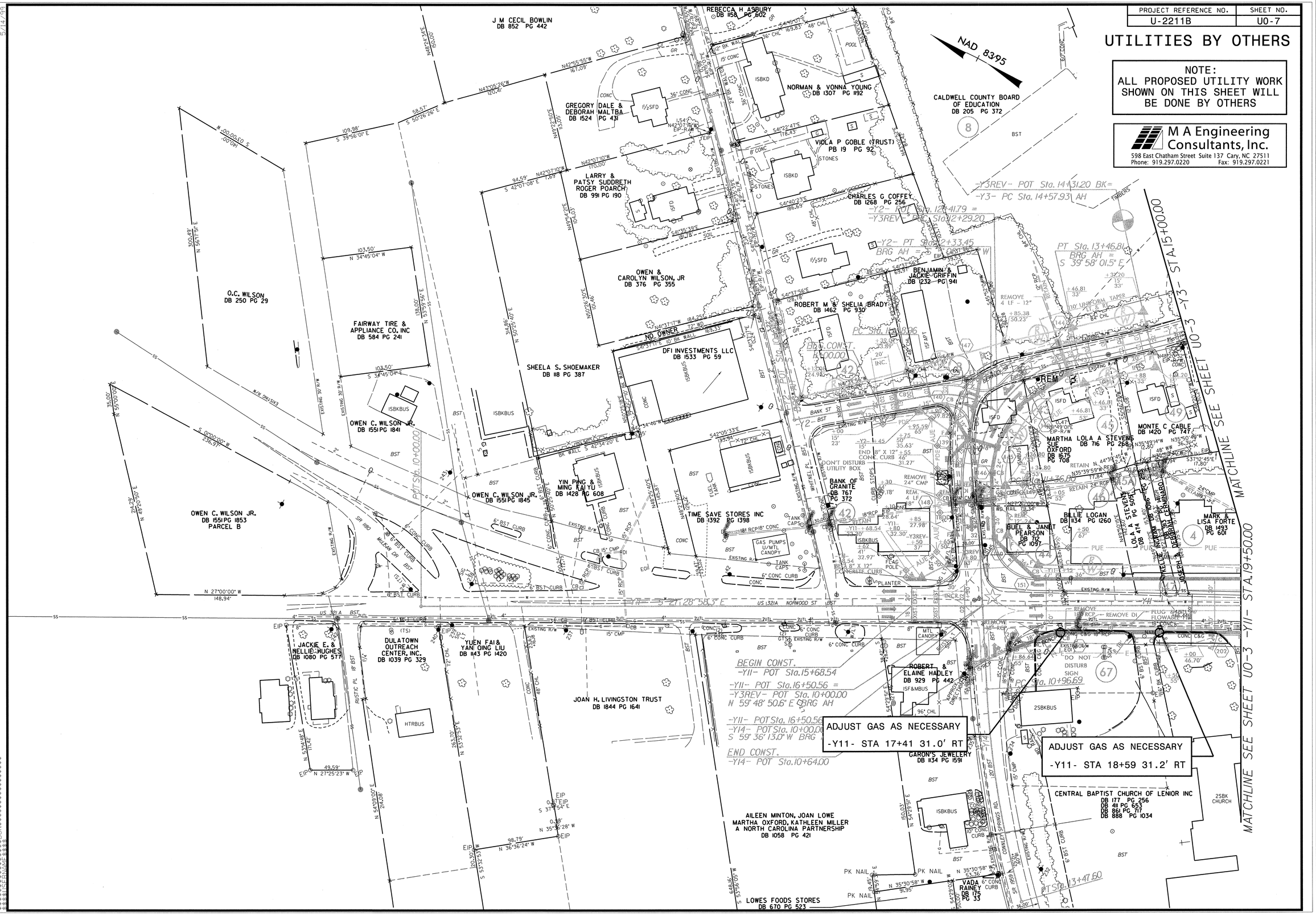
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221



PROJECT REFERENCE NO.	SHEET NO.
U-2211B	U0-8

UTILITIES BY OTHERS

NOTE:
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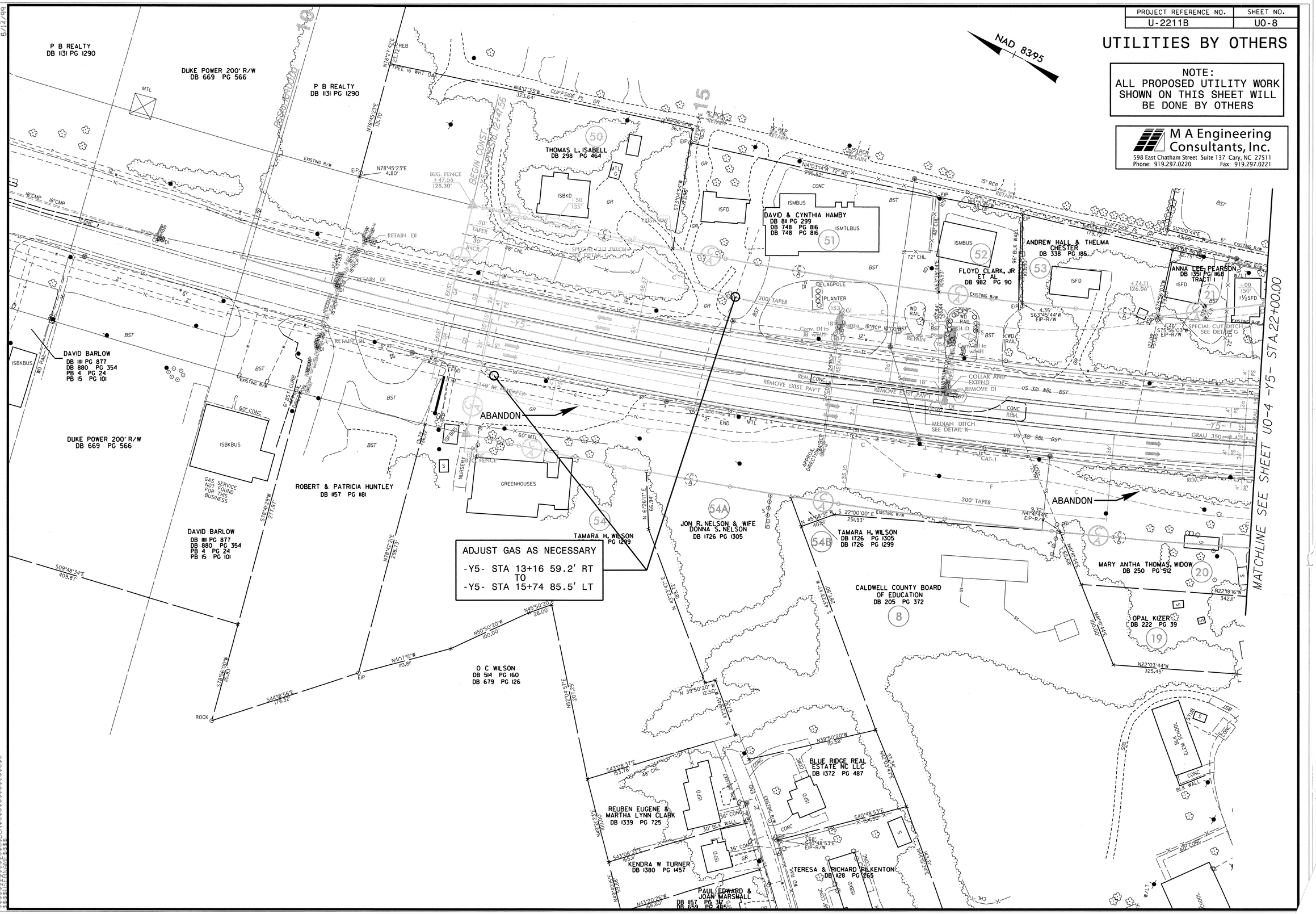
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

NAD 83/95



REVISIONS

6/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2211B	U0-9

UTILITIES BY OTHERS

NOTE:
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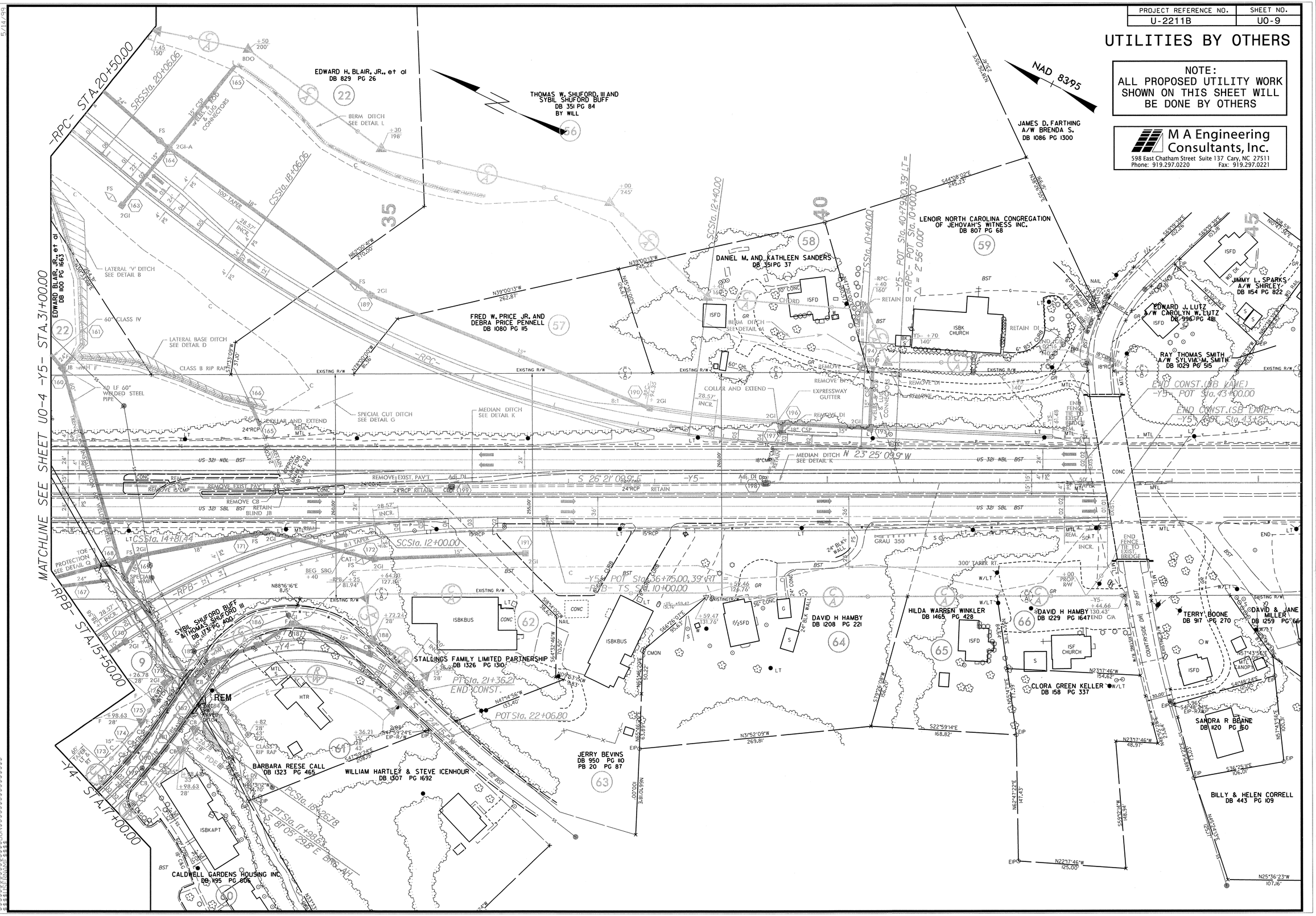
M A Engineering Consultants, Inc.
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Phone: 919.297.0220 Fax: 919.297.0221