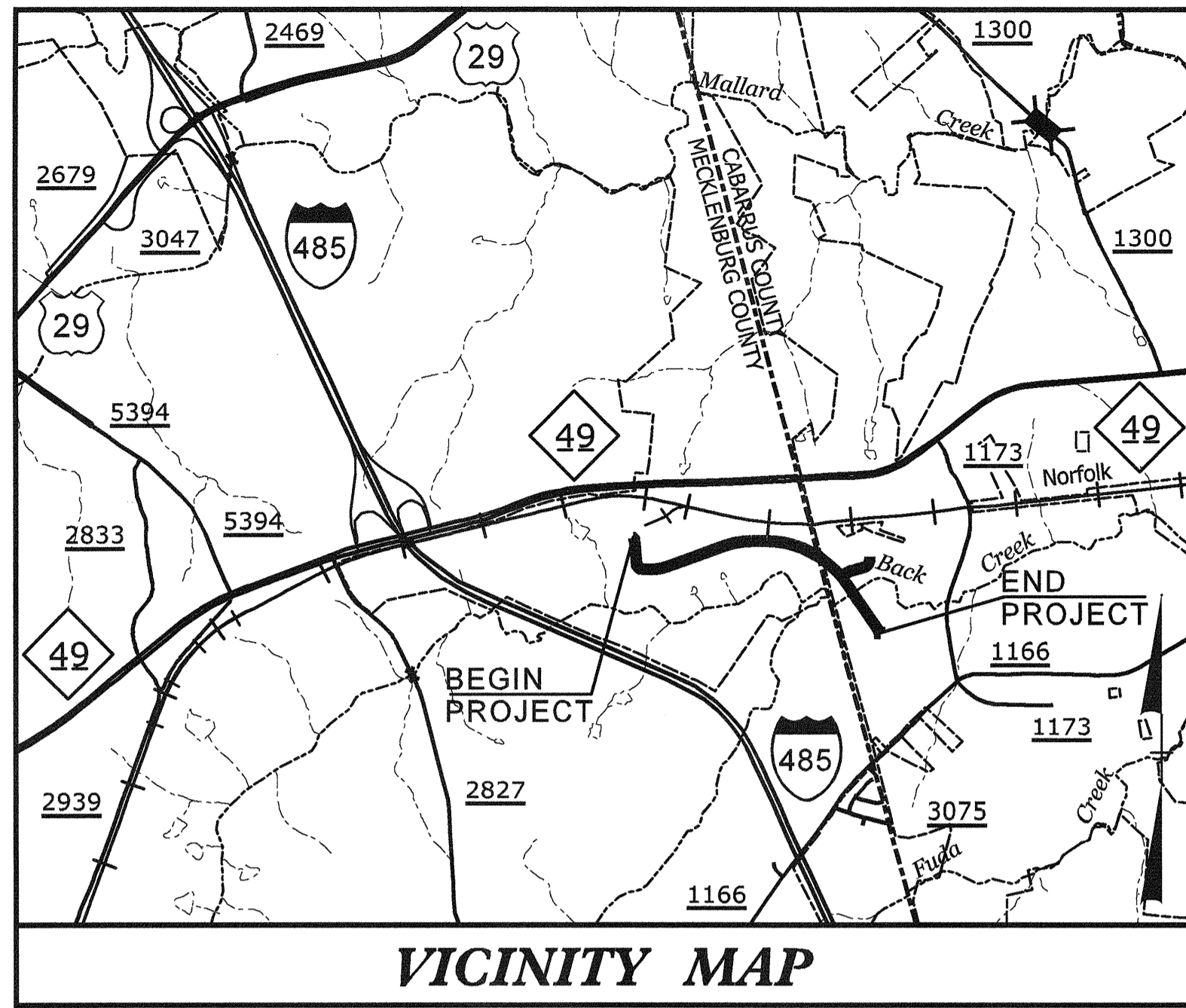


TIP PROJECT: P-5208E



VICINITY MAP

STATE OF NORTH CAROLINA  
RAIL DIVISION

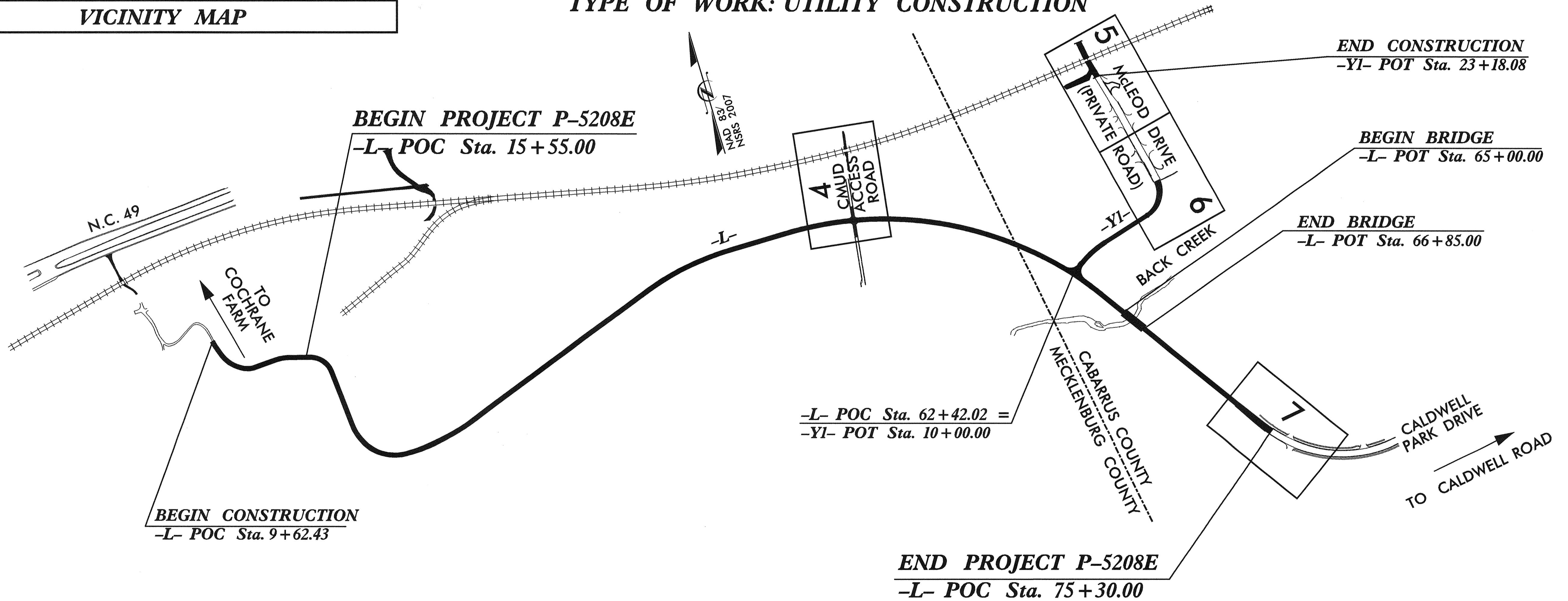


T.I.P. NO.	SHEET NO.
P-5208E	UC-1

# UTILITY CONSTRUCTION PLANS MECKLENBURG /CABARRUS COUNTIES

**LOCATION: CALDWELL PARK DRIVE EXTENSION  
ON NEW LOCATION FROM COCHRANE FARM PROPERTY  
TO EXISTING CALDWELL PARK DRIVE**

**TYPE OF WORK: UTILITY CONSTRUCTION**



\$\$\$\$\$SYSTEM\$\$\$\$\$  
\$\$\$\$\$DCN\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$

GRAPHIC SCALE	
20 10 0 20 40 PLANS	
DESIGNED BY:	KCZ
CHECKED BY:	KCZ
DATE:	01-30-2013

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY SHEET
UC-3	UTILITY NOTES & DETAIL SHEET
UC-4 THRU UC-7	UTILITY CONSTRUCTION PLAN SHEETS

WATER AND SEWER OWNERS ON PROJECT	
(1) WATER - TOWN OF HARRISBURG	
(2) SANITARY GRAVITY SEWER - TOWN OF HARRISBURG	
(3) SANITARY FORCE MAIN - CHARLOTTE-MECKLENBURG UTILITY DEPARTMENT (CMUD)	

SEAL

2013-JAN-30

PREPARED IN THE OFFICE OF:

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

Roger Worthington, P.E. UTILITIES SECTION ENGINEER  
Xxxx Xxxx, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER  
Xxxx Xxxx UTILITIES PROJECT DESIGNER

Note: Not to Scale

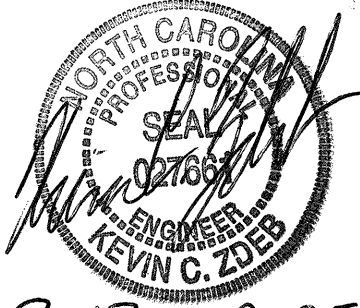
\*S.U.E. = *Subsurface Utility Engineering*

STATE OF NORTH CAROLINA  
RAIL DIVISION

# UTILITIES PLAN SHEET SYMBOLS



PROJECT REFERENCE NO.	SHEET NO.
P-5208E	UC-2
DESIGNED BY: KCZ	
DRAWN BY: KCZ	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	



UTILITY CONSTRUCTION

### Water

Proposed Back Flow Preventor	
Relocate Back Flow Preventor	
Existing Water Valve	
Proposed Valve	
Proposed Tapping Valve	
Existing Water Meter	
Proposed Water Meter	
Proposed Water Meter / Vault	
Relocate Water Meter	
Remove Water Meter	REM WM
Existing Hydrant	
Prop Hydrant	
Relocate Hydrant	
Remove Hydrant	REM FH

Proposed RPZ Back Flow Preventor	
Relocate RPZ Back Flow Preventor	
Water Cross	
Water Plug	
Water Reducer	
Water Tee	
Water Pump Station	
Water Thrust Block	
Blow Off Valve	
Air Release Valve	
Water Line Stop	
Water Line Stop w Bypass	

### Utility By Other Symbols

Proposed Tel Pole	
Proposed Power Pole	
Proposed Joint Use Power, Tel Pole	
Proposed Joint Use Power, CATV Pole	
Proposed Joint Use Power, Tel, CATV Pole	
Proposed Joint Use Tel, CATV Pole	

### Sewer

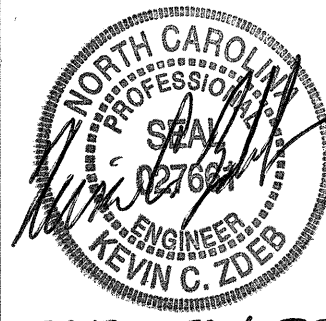
Existing Manhole	
Proposed UT Manhole	
Remove UT Manhole	REM UT MH
Abandon Utility Manhole	ABAND MH
Sewer Line Stop	
Sewer Line Stop w Bypass	

Sewer Cross	
Sewer Plug	
Sewer Reducer	
Sewer Tee	
Sewer Pump Station	
Sewer Thrust Block	

PUE Monument	
Concrete Pier	
Steel Pile Pier	
Test Hole (SUE)	
Prop Utility Vault	

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REVISIONS



PROJECT REFERENCE NO.	SHEET NO.
P-5208E	UC-3
DESIGNED BY: KCZ	
DRAWN BY: KCZ	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. 2013-JAN-30	
PHONE: (919) 707-6690	UTILITY CONSTRUCTION PLANS ONLY
FAX: (919) 250-4151	

# UTILITY CONSTRUCTION NOTES

## GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2012.
2. THE EXISTING UTILITIES BELONG TO:  
  
CHARLOTTE-MECKLENGURG UTILITY DEPT  
CONTACT: WILLIAM DEAL  
PHONE: 704-391-5150  
  
TOWN OF HARRISBURG  
CONTACT: DEREK SLOCUM  
PHONE: 704-455-4758
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER QUALITY. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

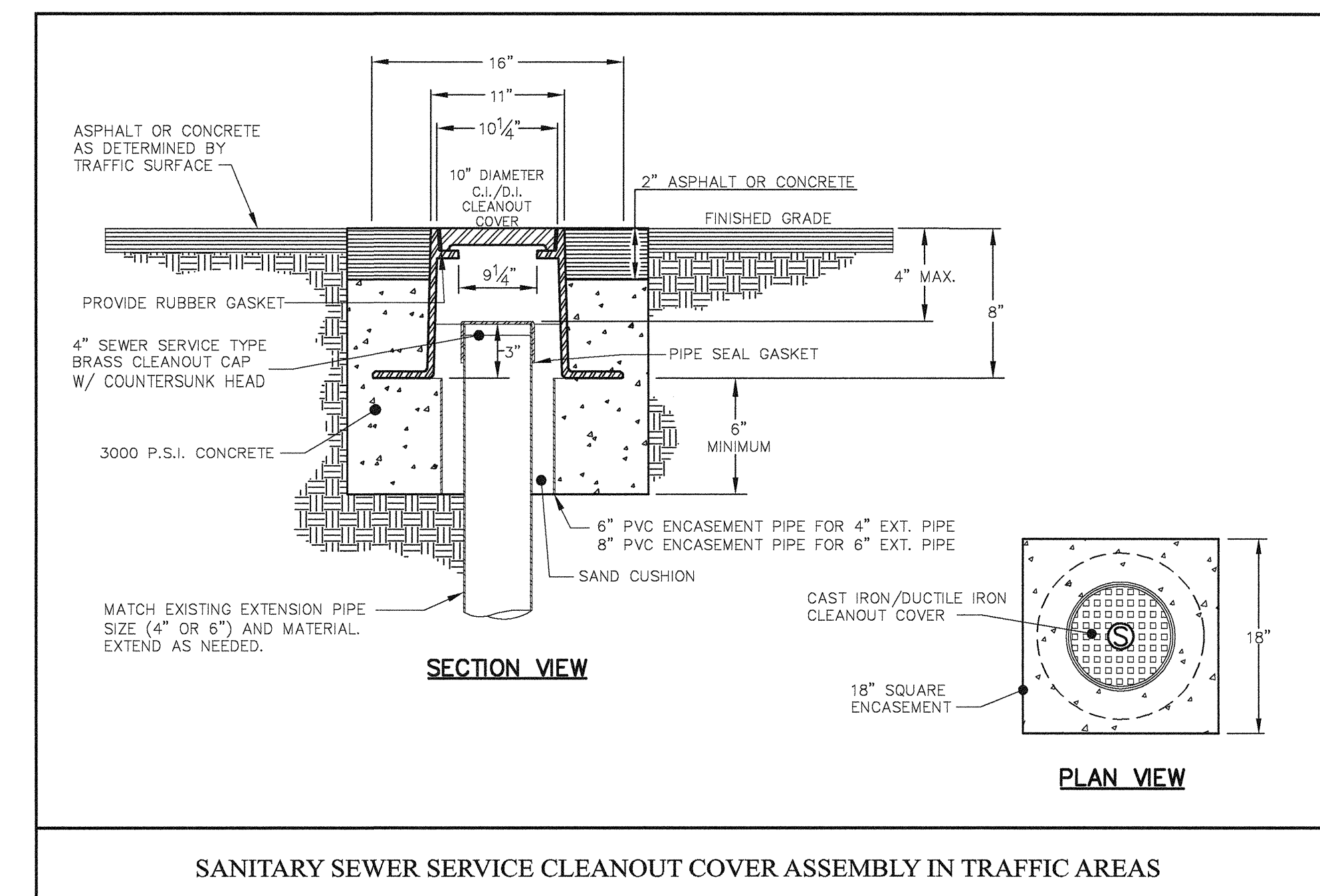
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.
6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

## PROJECT SPECIFIC NOTES:

1. NO RELOCATION OF WATER LINES, HYDRANTS, OR SANITARY SEWER LINES ARE ANTICIPATED.
2. SANITARY SEWER CLEAN OUT ON McCLEOD DRIVE REQUIRES ADJUSTMENT TO PROPOSED ROADWAY GRADE. SEE SHEET UC-6 FOR LOCATION. SEE DETAIL ON THIS SHEET FOR CLEAN OUT COVER ASSEMBLY.
3. VALVE BOX ADJUSTMENTS REQUIRED ON CALDWELL PARK DRIVE. SEE SHEET UC-7 FOR LOCATIONS.

## UTILITY CONSTRUCTION

## UTILITY CONSTRUCTION DETAIL



SANITARY SEWER SERVICE CLEANOUT COVER ASSEMBLY IN TRAFFIC AREAS

SHEET: UTILITY CONSTRUCTION NOTES AND DETAIL	
PROJECT NO.: P-5208E	COUNTY: CARRIUS / MECKLEBURG
DESIGNED BY: KCZ	
CHECKED BY: KCZ	DATE: 01-30-2013

0503DEL\_P21a1

REVISIONS

UTILITY OWNERS ON THIS SHEET:

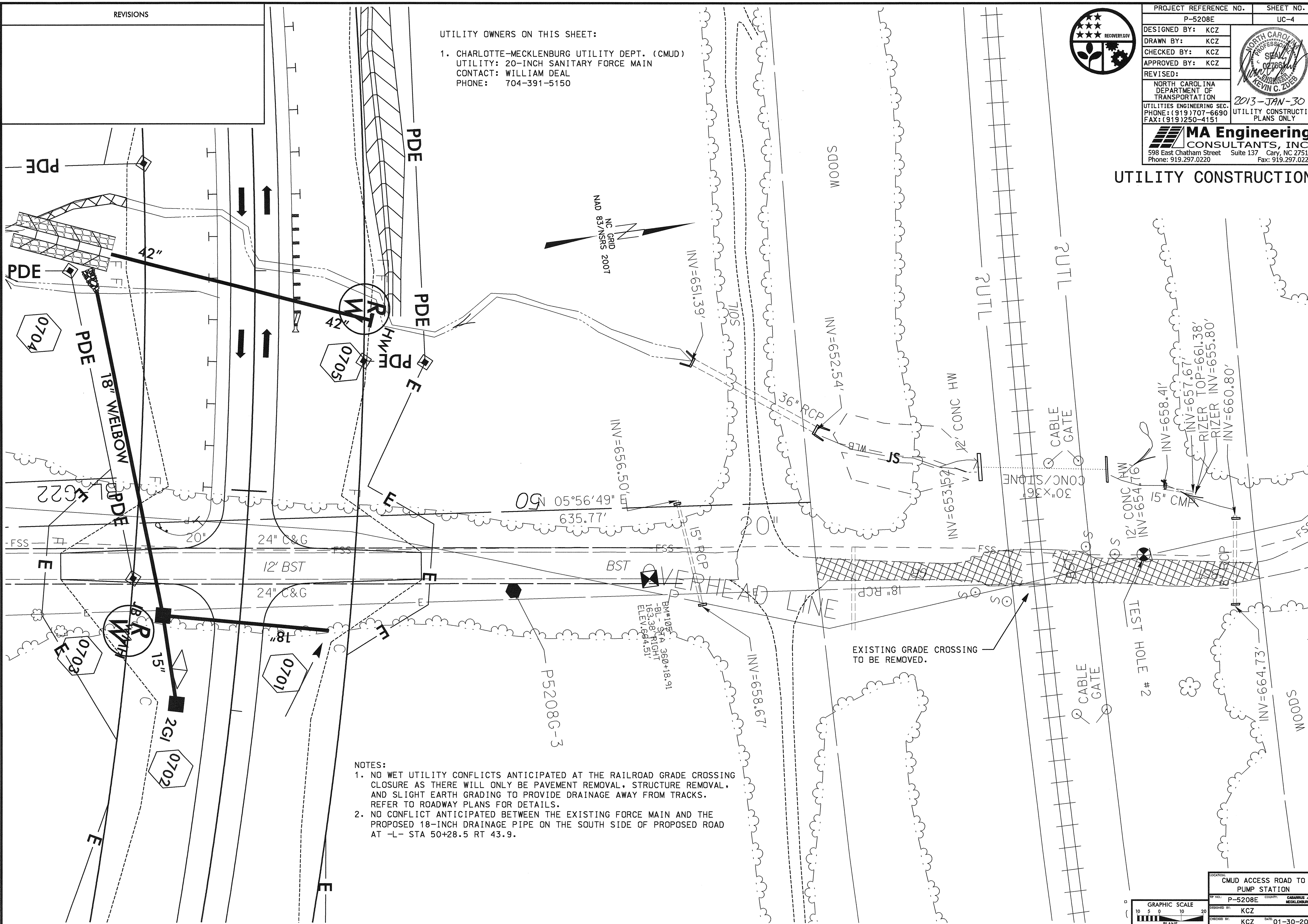
- 1. CHARLOTTE-MECKLENBURG UTILITY DEPT. (CMUD)  
UTILITY: 20-INCH SANITARY FORCE MAIN  
CONTACT: WILLIAM DEAL  
PHONE: 704-391-5150



PROJECT REFERENCE NO.	SHEET NO.
P-5208E	UC-4
DESIGNED BY: KCZ	
DRAWN BY: KCZ	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC.	
PHONE: (919) 707-6690	UTILITY CONSTRUCTION PLANS ONLY
FAX: (919) 250-4151	

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

UTILITY CONSTRUCTION



NOTES:

- 1. NO WET UTILITY CONFLICTS ANTICIPATED AT THE RAILROAD GRADE CROSSING CLOSURE AS THERE WILL ONLY BE PAVEMENT REMOVAL, STRUCTURE REMOVAL, AND SLIGHT EARTH GRADING TO PROVIDE DRAINAGE AWAY FROM TRACKS. REFER TO ROADWAY PLANS FOR DETAILS.
- 2. NO CONFLICT ANTICIPATED BETWEEN THE EXISTING FORCE MAIN AND THE PROPOSED 18-INCH DRAINAGE PIPE ON THE SOUTH SIDE OF PROPOSED ROAD AT -L- STA 50+28.5 RT 43.9.

GRAPHIC SCALE: 1" = 10' (0, 5, 10, 20)

PLANS

LOCATION: CMUD ACCESS ROAD TO PUMP STATION

PROJECT NO.: P-5208E COUNTY: CLATSOP

DESIGNED BY: KCZ

CHECKED BY: KCZ DATE: 01-30-2013


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REVISIONS

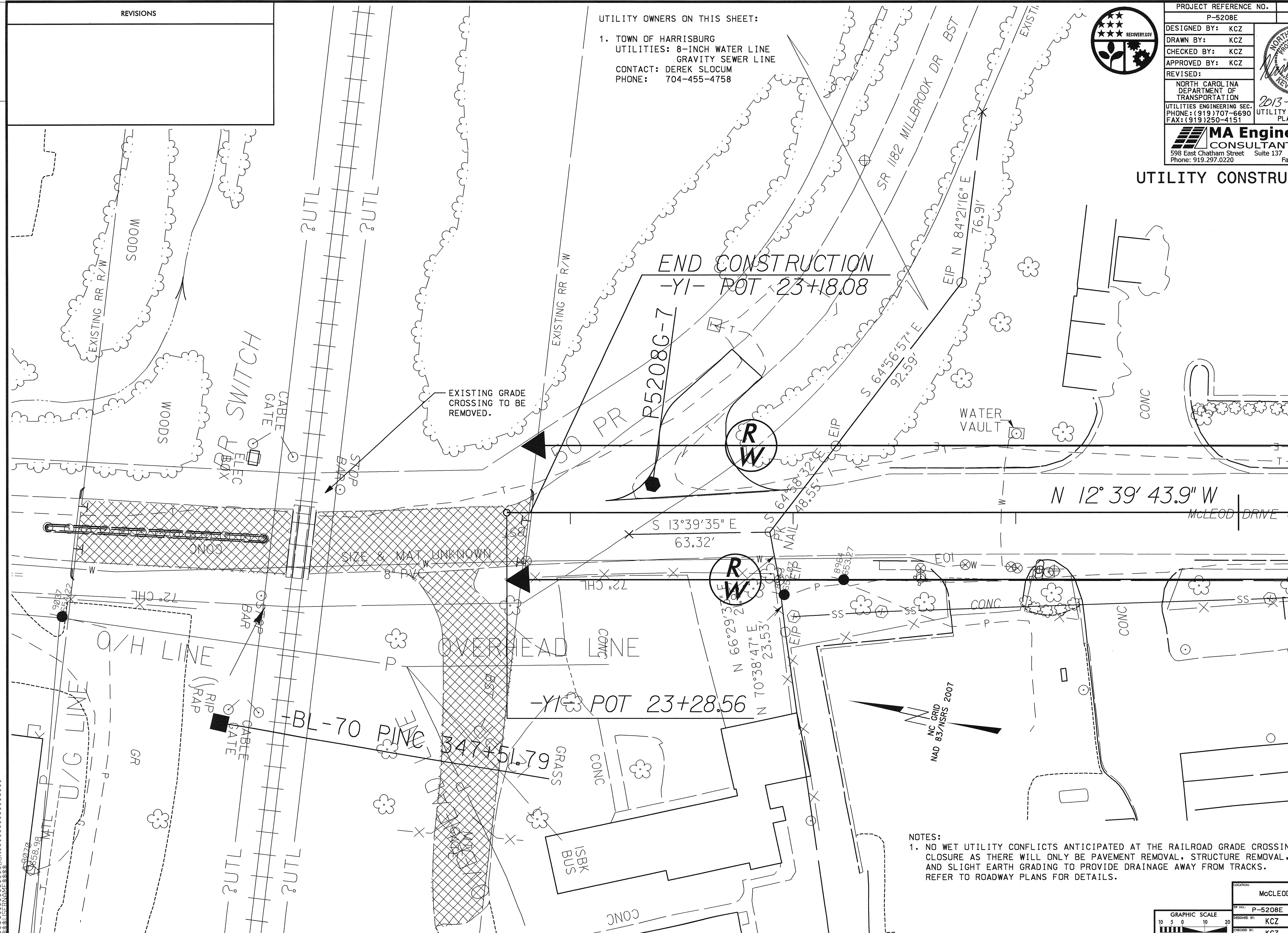
UTILITY OWNERS ON THIS SHEET:

- 1. TOWN OF HARRISBURG
- UTILITIES: 8-INCH WATER LINE
- GRAVITY SEWER LINE
- CONTACT: DEREK SLOCUM
- PHONE: 704-455-4758



PROJECT REFERENCE NO. P-5208E	SHEET NO. UC-5
DESIGNED BY: KCZ	
DRAWN BY: KCZ	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	2013-JAN-30
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
<b>MA Engineering</b> CONSULTANTS, INC. 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

### UTILITY CONSTRUCTION



MATCH LINE - UC-6 - STA 19+75

- NOTES:
1. NO WET UTILITY CONFLICTS ANTICIPATED AT THE RAILROAD GRADE CROSSING CLOSURE AS THERE WILL ONLY BE PAVEMENT REMOVAL, STRUCTURE REMOVAL, AND SLIGHT EARTH GRADING TO PROVIDE DRAINAGE AWAY FROM TRACKS. REFER TO ROADWAY PLANS FOR DETAILS.

GRAPHIC SCALE 10 5 0 10 20 PLANS	LOCATION: McLEOD DRIVE PROJECT NO.: P-5208E COUNTY: CABARRUS / MECKLENBURG DESIGNED BY: KCZ CHECKED BY: KCZ DATE: 01-30-2013
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0503DEL\_P21a1

REVISIONS



PROJECT REFERENCE NO.	SHEET NO.
P-5208E	UC-6
DESIGNED BY: KCZ	
DRAWN BY: KCZ	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
MA Engineering CONSULTANTS, INC. 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220	

2013-JAN-30  
UTILITY CONSTRUCTION PLANS ONLY

### UTILITY CONSTRUCTION

UTILITY OWNERS ON THIS SHEET:

- TOWN OF HARRISBURG  
UTILITY: GRAVITY SEWER LINE  
CONTACT: DEREK SLOCUM  
PHONE: 704-455-4758

#### NOTES:

- NO CONFLICTS ANTICIPATED WITH THE GRAVITY SEWER LINE ITSELF. ONLY NEED TO RAISE CLEAN OUT TO PROPOSED ROAD GRADE AT -Y1- STA 17+58.57 LT 11.9.

MATCH LINE - UC-5 - STA 19+75

PRIVATE ROAD)

P5208G-8  
7E

5E

R  
W

R  
W

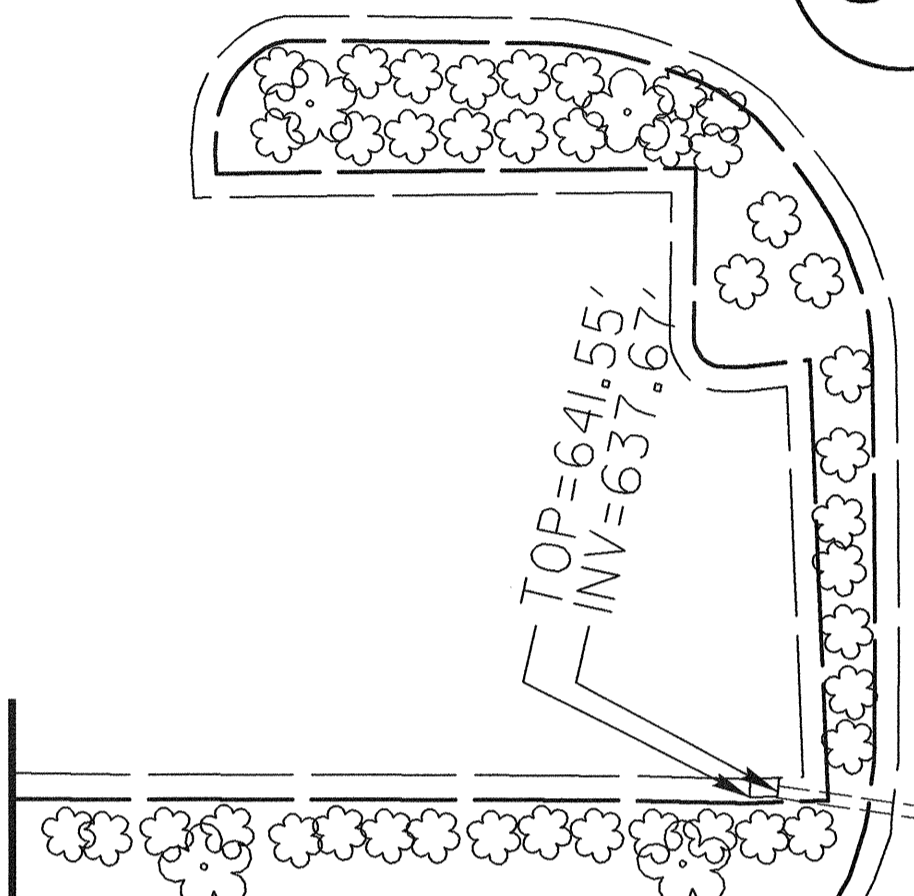
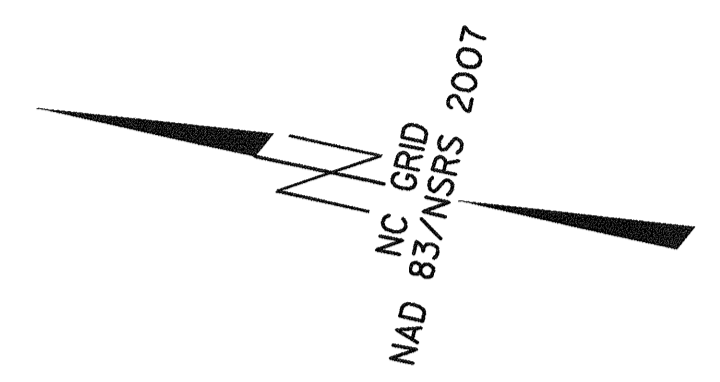
0816

-Y1- PT 17+70.39

-Y1- PCC 17+10.73

-Y1- PC 14+57.35

RAISE CLEAN OUT COVER TO PROPOSED ROAD GRADE. INSTALL CLEAN OUT COVER ASSEMBLY FOR TRAFFIC AREA. REFER TO SHEET UC-3 FOR DETAIL.



60' ACCESS EASEMENT

15" RCP

MCF

INV=625.55'  
TOP=622.27'

TOP=631.81'  
INV=624.02'

INV=614.97'  
TOP=618.56'

18" RCP  
INV=614.87'

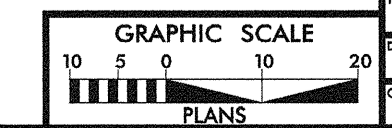
INV=614.11'

N 74°29'39" E  
297.15'

8" PVC

TOP=615.86'  
INV=608.96'

(ATUR)



LOCATION:	McCLEOD DRIVE
PROJECT NO.:	P-5208E
COUNTY:	CAMARUS / MCLENNAND
DESIGNED BY:	KCZ
CHECKED BY:	KCZ
DATE:	01-30-2013

PLANNING & DESIGN SERVICES, INC.

0503DEL\_P21a1

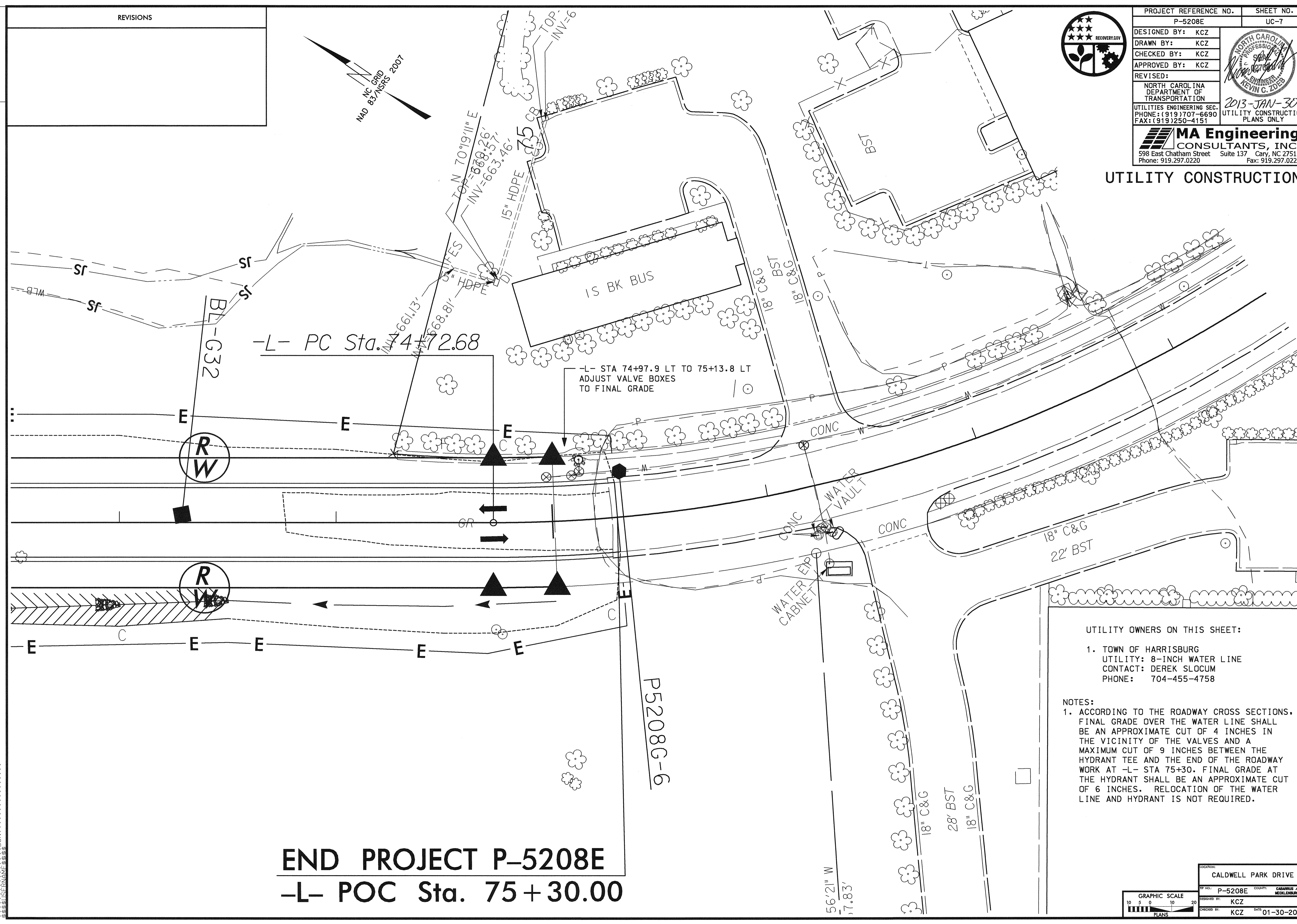
REVISIONS

NC GRID  
MAD 83/MSRS 2007



PROJECT REFERENCE NO. P-5208E	SHEET NO. UC-7
DESIGNED BY: KCZ	
DRAWN BY: KCZ	
CHECKED BY: KCZ	
APPROVED BY: KCZ	
REVISED:	2013-JAN-30
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
<b>MA Engineering</b> <b>CONSULTANTS, INC.</b> 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

### UTILITY CONSTRUCTION



-L- PC Sta. 74+72.68

-L- STA 74+97.9 LT TO 75+13.8 LT  
ADJUST VALVE BOXES  
TO FINAL GRADE

**END PROJECT P-5208E**  
**-L- POC Sta. 75 + 30.00**

#### UTILITY OWNERS ON THIS SHEET:

1. TOWN OF HARRISBURG  
UTILITY: 8-INCH WATER LINE  
CONTACT: DEREK SLOCUM  
PHONE: 704-455-4758

#### NOTES:

1. ACCORDING TO THE ROADWAY CROSS SECTIONS, FINAL GRADE OVER THE WATER LINE SHALL BE AN APPROXIMATE CUT OF 4 INCHES IN THE VICINITY OF THE VALVES AND A MAXIMUM CUT OF 9 INCHES BETWEEN THE HYDRANT TEE AND THE END OF THE ROADWAY WORK AT -L- STA 75+30. FINAL GRADE AT THE HYDRANT SHALL BE AN APPROXIMATE CUT OF 6 INCHES. RELOCATION OF THE WATER LINE AND HYDRANT IS NOT REQUIRED.

GRAPHIC SCALE  
10 5 0 10 20  
PLANS

LOCATION: CALDWELL PARK DRIVE  
PROJECT NO.: P-5208E COUNTY: CALDWELL / MECKLENBURG  
DESIGNED BY: KCZ  
CHECKED BY: KCZ DATE: 01-30-2013