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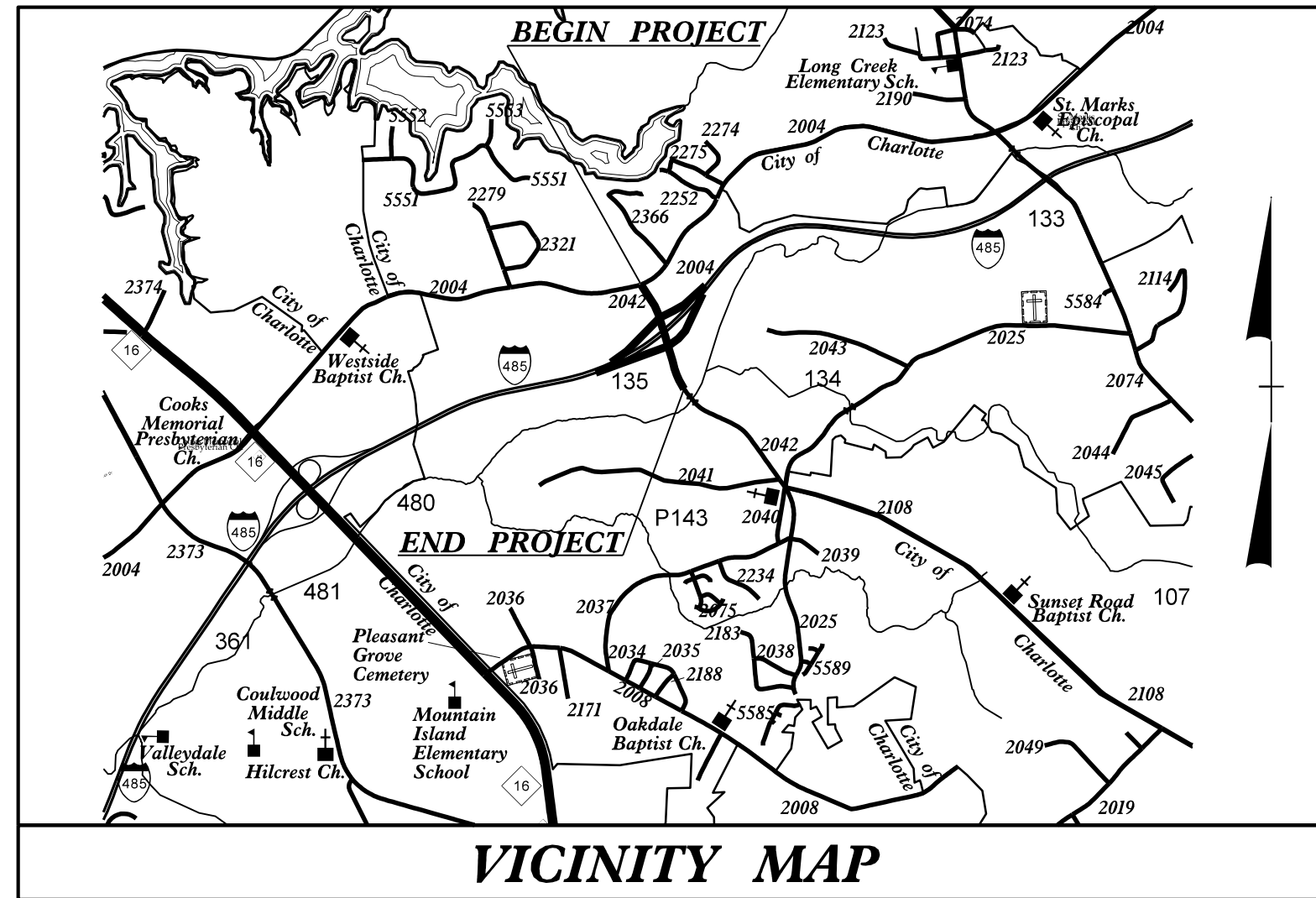
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TIP PROJECT: R-2248G

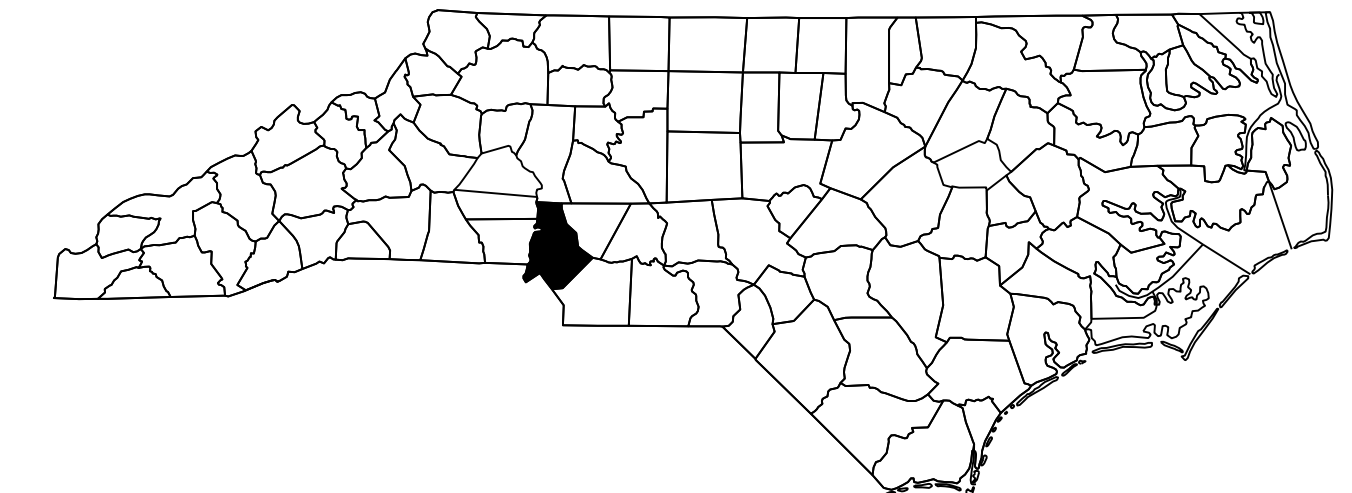
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
R-2248G	UC-1

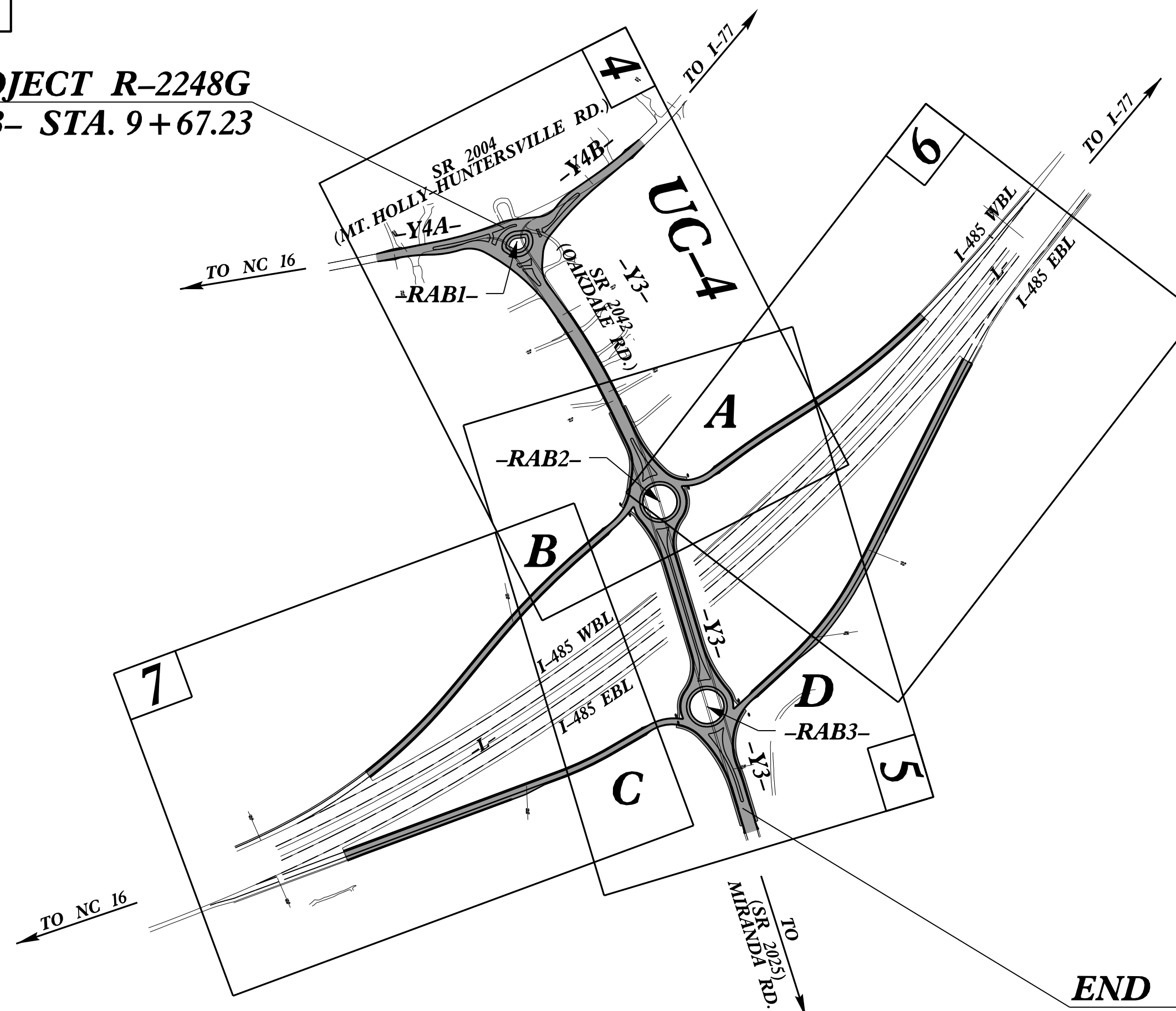


UTILITY CONSTRUCTION PLANS MECKLENBURG COUNTY

**LOCATION: I-485 CHARLOTTE OUTER LOOP INTERCHANGE WITH
SR 2042 (OAKDALE ROAD)**
**TYPE OF WORK: WATER SERVICE AND FIRE HYDRANT
RELOCATIONS**



BEGIN TIP PROJECT R-2248G
-Y3- STA. 9+67.23

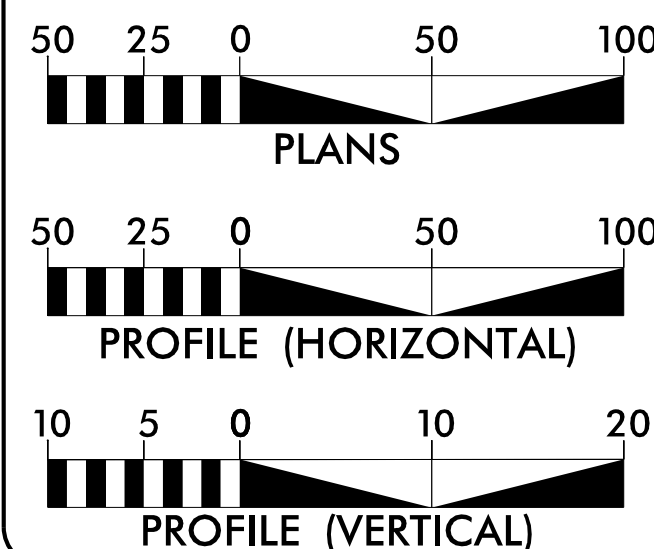


END TIP PROJECT R-2248G
-Y3- STA. 29+00.00

NAD 83/NA 2011

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ____.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	SYMBOLGY SHEET
UC-3	GENERAL NOTES SHEET
UC-3A THRU UC-3C	DETAIL SHEETS
UC-4	UTILITY PLAN SHEET

WATER AND SEWER OWNERS ON PROJECT

(1) WATER - CHARLOTTE WATER

HINDE ENGINEERING
License No. C-2639
7520 E. Independence Blvd., Suite 230 Charlotte, NC 28227

PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING**

1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
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 DESIGN ENGINEER
Corey Bousquet, P.E. HINDE ENGINEERING PROJECT MANAGER

5/14/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



PROJECT REFERENCE NO. R-2248G SHEET NO. UC-2

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Table listing proposed water symbols including Water Line (Sized as Shown), various Degree Bends (11 1/4, 22 1/2, 45, 90), Plug, Tee, Cross, Reducer, Gate Valve, Butterfly Valve, Tapping Valve, Line Stop, Line Stop with Bypass, Blow Off, Fire Hydrant, Relocate Fire Hydrant, Remove Fire Hydrant, Water Meter, Relocate Water Meter, Remove Water Meter, Water Pump Station, RPZ Backflow Preventer, DCV Backflow Preventer, Relocate RPZ Backflow Preventer, Relocate DCV Backflow Preventer.

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Table listing proposed miscellaneous utilities symbols including Power Pole, Telephone Pole, Joint Use Pole, Telephone Pedestal, Utility Line by Others (Type as Shown), Trenchless Installation, Encasement by Open Cut, Encasement.

Table listing miscellaneous utilities symbols including Thrust Block, Air Release Valve, Utility Vault, Concrete Pier, Steel Pier, Plan Note, Pay Item Note.

EXISTING UTILITIES SYMBOLS

Table listing existing utilities symbols including Power Pole, Telephone Pole, Joint Use Pole, Utility Pole, Utility Pole with Base, H-Frame Pole, Power Transmission Line Tower, Water Manhole, Power Manhole, Telephone Manhole, Sanitary Sewer Manhole, Hand Hole for Cable, Power Transformer, Telephone Pedestal, CATV Pedestal, Gas Valve, Gas Meter, Located Miscellaneous Utility Object, Abandoned According to Utility Records, End of Information.

Table listing existing utilities symbols including Underground Power Line, Underground Telephone Cable, Underground Telephone Conduit, Underground Fiber Optics Telephone Cable, Underground TV Cable, Underground Fiber Optics TV Cable, Underground Gas Pipeline, Aboveground Gas Pipeline, Underground Water Line, Aboveground Water Line, Underground Gravity Sanitary Sewer Line, Aboveground Gravity Sanitary Sewer Line, Underground SS Forced Main Line, Underground Unknown Utility Line, SUE Test Hole, Water Meter, Water Valve, Fire Hydrant, Sanitary Sewer Cleanout.

PROPOSED SEWER SYMBOLS

Table listing proposed sewer symbols including Gravity Sewer Line (Sized as Shown), Force Main Sewer Line (Sized as Shown), Manhole (Sized per Note), Sewer Pump Station.

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

NC000... J:\F55-2015... \Projects\Engineering\UC\Pro\A\Pro-2248G-ut-..._sym_UC2_psh.dgn



PROJECT REFERENCE NO. R-2248G	SHEET NO. UC-3
DESIGNED BY: CDB	
DRAWN BY: CDB	
CHECKED BY: CDB	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. 2/12/2015 PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION

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-WATER.
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 OPPROTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITONAL 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.

LIST OF STANDARD DRAWINGS

- 1515.01 WATER METER
- 1515.02 FIRE HYDRANT

PROJECT SPECIFIC NOTES:

1. ALL 12-INCH AND SMALLER DIAMETER PIPE SHALL BE DUCTILE IRON PRESURE CLASS 350, UNLESS OTHERWISE NOTED ON THE UTILITY CONSTRUCTION PLANS.
2. ALL 16-INCH AND LARGER DIAMETER PIPE SHALL BE DUCTILE IRON PRESSURE CLASS 250, UNLESS OTHERWISE NOTED ON THE UTILITY CONSTRUCTION PLANS.
3. VALVES ON WATER MAINS SMALLER THAN 16-INCH IN DIAMETER SHALL BE DIRECT BURY GATE VALVES, UNLESS OTHERWISE NOTED ON THE UTILITY CONSTRUCTION PLANS.
4. VALVES ON WATER MAINS 16-INCHES IN DIAMETER AND LARGER SHALL BE BUTTERFLY VALVES, UNLESS OTHERWISE NOTED ON THE UTILITY CONSTRUCTION PLANS.
5. DUCTILE IRON RESTRAINED JOINT PIPE SHALL BE USED IN LIEU OF THRUST BLOCKING ON PROPOSED WATER LINE RELOCATIONS.
6. WALL BLOCKING SHALL BE USED ON EXISTING WATER LINES AT THE PROPOSED RELOCATION TIE-IN POINTS.
7. CONTRACTOR SHALL CONNECT ALL WATER LINES AND SERVICE CONNECTIONS USING NECESSARY FITTINGS.
8. ALL BACKFLOW PREVENTORS ARE THE RESPONSIBILITY OF THE PROPERTY OWNER.
9. THE CHARLOTTE-WATER (CLTWater) STANDARD DETAILS LOCATED ON THEIR WEBSITE AT <http://charmeck.org/city/charlotte/Utilities/ConstructionProjects/Pages/Design%20Manual.aspx> SHALL SUPERCEDE ANY CLTWater DETAILS SHOWN IN THIS PLAN SET.
10. FOR THE FIRE HYDRANTS TO BE REMOVED, THE CONTRACTOR SHALL CONTACT CHARLOTTE-WATER TO DETERMINE A SUITABLE LOCATION TO STOCKPILE THE FIRE HYDRANT AND ASSOCIATED ITEMS.
11. CONTRACTOR IS REQUIRED TO CONTACT BILL DEAL, PE, OF CHARLOTTE-WATER, AT (980) 722-0786 AT LEAST 1 WEEK PRIOR TO ANY WATER AND SEWER CONSTRUCTION.

UTILITY CONSTRUCTION

OWNER'S DETAILS (CLTWater)

NOT TO SCALE



PROJECT REFERENCE NO.	R-2248G	SHEET NO.	UC-3A
DESIGNED BY:	CDB		
DRAWN BY:	CDB		
CHECKED BY:	CDB		
APPROVED BY:	CDB		
REVISID:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION			2/11/2015
UTILITIES ENGINEERING SEC.			PHONE: (919) 707-6690
FAX: (919) 250-4151			FAX: (919) 250-4151

1" OR 3/4" SERVICE CONNECTION
(SHORT SIDE - IN PAVEMENT)

METER BOX IN SIDEWALK
(REQUIRES PRIOR CMU APPROVAL)

NO.	DESCRIPTION
1	WATER MAIN
2	DOUBLE STRAP SERVICE SADDLE - CC (TAPER) THREAD OUTLET
3	BALL CORPORATION STOP - CC (TAPER) THREAD x CTS COMPRESSION
4	TYPE K COPPER TUBING OR SDR9 HDPE (POLY) TUBING WITH INSERT STIFFENERS
5	5/8" x 3/4" ANGLE BALL VALVE WITH LOCK WINGS - CTS COMPRESSION x YOKE STAR NUT
6	5/8" DUCTILE IRON YOKE BAR
7	5/8" METER ASSEMBLY (BY CMUD) WITH AMR TRANSMITTER
8	5/8" x 3/4" BRASS 90° YOKE STAR NUT x CTS COMPRESSION CONNECTOR
9	CONCRETE METER BOX - SEE STD. DETAILS
10	HDPE METER BOX LID WITH AMR TRANSMITTER BRACKET
11	AWG #12 GAUGE COPPER TRACER WIRE (THWN) - WITH BLUE INSULATION - TERMINATE IN METER BOX WITH 24" EXCESS WIRE (COILED)
12	SOLID STANDARD CONCRETE BRICKS - DIAGONAL AT CORNERS - 4 EACH.

METER DETAIL
(SIDE)

METER DETAIL
(END)

METER BOX IN SIDEWALK DETAIL
(REQUIRES PRIOR CMU APPROVAL)
(BOX SHALL BE SUPPORTED BY CONCRETE SIDEWALK - AS SHOWN)

NOTE:

A. MIN. DISTANCE CENTER TO CENTER ON SERVICES OR TO BELLS OR SPIGOTS SHALL BE 3'-0" AS MEASURED ALONG THE MAIN.

B. CENTER ANGLE BALL VALVE - 90° CONNECTOR (5) - (8) IN METER BOX.

C. SHOWN AS 3/4" SERVICE, USE 1" COMPONENTS FOR 1" DOMESTIC SERVICE.

D. TRACER WIRE IS NOT REQUIRED WITH ALL COPPER TUBING SERVICE.

E. WHEN METER BOX MUST BE PLACED IN CONCRETE, IT SHALL BE COMPLETELY IN, AND CENTERED IN CONCRETE PANEL, PER CDOT / NCDOT REQUIREMENTS.

F. CMUD MAINTENANCE ENDS WITH 90° CONNECTOR (8).

1" OR 3/4" SERVICE CONNECTION
(LONG SIDE - PLAN VIEW)

1" OR 3/4" SERVICE CONNECTION
(LONG SIDE - PROFILE VIEW)

ROAD WITH SIDE DITCH

NO.	DESCRIPTION
1	WATER MAIN
2	DOUBLE STRAP SERVICE SADDLE - CC (TAPER) THREAD OUTLET
3	BALL CORPORATION STOP - CC (TAPER) THREAD x CTS COMPRESSION
4	TYPE K COPPER TUBING OR SDR9 HDPE (POLY) TUBING WITH INSERT STIFFENERS
5	5/8" x 3/4" ANGLE BALL VALVE WITH LOCK WINGS - CTS COMPRESSION x YOKE STAR NUT
6	5/8" DUCTILE IRON YOKE BAR
7	5/8" METER ASSEMBLY (BY CMUD) WITH AMR TRANSMITTER
8	5/8" x 3/4" BRASS 90° YOKE STAR NUT x CTS COMPRESSION CONNECTOR
9	CONCRETE METER BOX - SEE STD. DETAILS
10	HDPE METER BOX LID WITH AMR TRANSMITTER BRACKETS
11	AWG #12 GAUGE COPPER TRACER WIRE (THWN) - WITH BLUE INSULATION - TERMINATE IN METER BOX WITH 24" EXCESS WIRE (COILED)
12	SOLID STANDARD CONCRETE BRICKS - DIAGONAL AT CORNERS - 4 EACH.

DETAIL AT MAIN
(LONG SIDE)

DETAIL AT MAIN
(SHORT SIDE)

NOTE:

A. MIN. DISTANCE CENTER TO CENTER ON SERVICES OR TO BELLS OR SPIGOTS SHALL BE 3'-0" AS MEASURED ALONG THE MAIN.

B. CENTER ANGLE BALL VALVE - 90° CONNECTOR (5) - (8) IN METER BOX.

C. SHOWN AS 3/4" SERVICE, USE 1" COMPONENTS FOR 1" DOMESTIC WATER SERVICE.

D. TRACER WIRE IS NOT REQUIRED WITH ALL COPPER TUBING SERVICE.

E. WHEN METER BOX MUST BE PLACED IN CONCRETE, IT SHALL BE COMPLETELY IN, AND CENTERED IN CONCRETE PANEL, PER CDOT / NCDOT REQUIREMENTS.

F. CMUD MAINTENANCE ENDS WITH 90° CONNECTOR (8).

METER BOX BOX
PLAN VIEW

SECTION A-A

SECTION C-C RIB DETAIL

SECTION B-B

LID

BOTTOM VIEW

NOTE:

A. MATERIAL SHALL BE HIGH DENSITY POLYETHYLENE.

B. LOAD RATING = HS20.

C. COLOR SHALL BE CHARLOTTE GRAY.

D. SUPPLIER / MANUFACTURER: SOUTHEASTERN DISTRIBUTORS MODEL MB 16 - HD.

METER BOX BODY WEIGHT = 13.50 LBS.

LID WEIGHT - INCLUDING REBARS - 5.30 LBS.

3/4 - INCH SERVICE LID

DETAIL OF 3/4 INCH LID MOUNT

1 - INCH SERVICE LID

DETAIL OF 1 INCH LID MOUNT

NOTE:

MATERIAL - HIGH DENSITY POLYETHYLENE (HDPE) - RECYCLED

COLOR - CHARLOTTE GRAY

LOAD RATING - HEAVY DUTY

MANUFACTURER - DFW PLASTICS INC. OR APPROVED EQUAL

UTILITY CONSTRUCTION

NO SCALE
 STANDARD NO. K-1
 DATE 5.13.2011
 CHARLOTTE-MECKLENBURG UTILITIES STANDARD DETAILS WATER

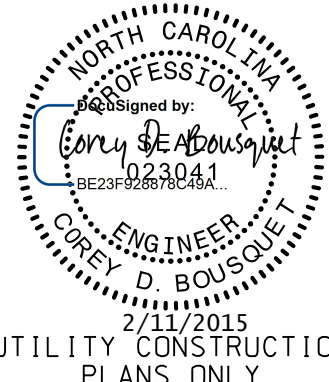
NO SCALE
 STANDARD NO. PP
 DATE 7.14.2011
 WATER METER BOX - PLASTIC LID FOR 3/4 - INCH AND 1 - INCH WATER SERVICES
 CHARLOTTE-MECKLENBURG UTILITIES STANDARD DETAILS WATER

OWNER'S DETAILS (CLTWater)

NOT TO SCALE



PROJECT REFERENCE NO.	SHEET NO.
R-2248G	UC-3B
DESIGNED BY: CDB	
DRAWN BY: CDB	
CHECKED BY: CDB	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	2/11/2015
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY



UTILITY CONSTRUCTION

CMUD PUBLIC FIRE HYDRANTS

PRIVATE FIRE HYDRANTS

CMUD / CFD COLOR LEGEND				
COLOR:	SHADE:			
OSHA SAFETY YELLOW				
OSHA SAFETY BLUE				
OSHA SAFETY PURPLE				
OSHA SAFETY RED				
OSHA SAFETY GREEN				
OSHA SAFETY WHITE				

CHARLOTTE FIRE DEPARTMENT STANDARDS COLOR SCHEME FOR PRIVATE FIRE HYDRANTS				
CLASSIFICATION	BARREL	TOP / BONNET	STORZ PUMPER NOZZLE	IRON PUMPER NOZZLE
5 - PRIVATE THROUGH WATER METER	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW	NOT PAINTED	OSHA SAFETY RED
6 - PRIVATE via METER AND FIRE BOOSTER PUMP	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW	NOT PAINTED	OSHA SAFETY WHITE
7 - PRIVATE (1/2" AND SMALLER MAIN OR LIMITED SUPPLY)	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW	NOT PAINTED	OSHA SAFETY BLUE
8 - PRIVATE (1/2" INCH OUTLET YARD HYDRANT)	OSHA SAFETY RED	OSHA SAFETY RED	N/A	OSHA SAFETY RED

INDUSTRY STANDARD - NOT ADOPTED OR USED BY CMUD/CFD				
CLASSIFICATION	FLOW CAPACITY (GPM AT 20 PSI RESIDUAL)	BARREL	TOP / BONNET	PUMPER NOZZLE
CLASS AA	1500 OR GREATER	CHROME YELLOW	LIGHT BLUE	LIGHT BLUE
CLASS A	1000 TO 1499	CHROME YELLOW	GREEN	GREEN
CLASS B	500 TO 999	CHROME YELLOW	ORANGE	ORANGE
CLASS C	LESS TO 500	CHROME YELLOW	RED	RED

NOTES:

A. PUBLIC FIRE HYDRANTS ARE (1) CONNECTED DIRECTLY TO CMUD WATER DISTRIBUTION SYSTEM, (2) OWNED AND MAINTAINED BY CMUD, AND (3) LOCATED WITHIN THE ROAD RIGHT-OF-WAY OR CMUD WATER MAIN EASEMENT.

B. PRIVATE FIRE HYDRANTS ALL NON-PUBLIC FIRE HYDRANTS, INCLUDING HYDRANTS (1) SERVED VIA CMUD WATER METER, (2) SERVED VIA PRIVATE WATER SYSTEM, AND ARE (3) LOCATED OUTSIDE THE ROAD RIGHT-OF-WAY AND (4) PRIVATELY OWNED AND MAINTAINED.

MANUFACTURERS:

SOUTHERN METER C.H. 5/8" x 3/4" METER BOX BODY
 BROOKS #36MB METER BOX BODY
 OLDCASTLE #MB36 METER BODY
 BES #C09W METER BOX BODY
 CHRISTY B9 METER BOX BODY

NOTES:

A. METER BOX SHALL ACCOMMODATE COMPANION PLASTIC METER BOX LID - SEE STANDARD DETAIL.

B. MINOR DIMENSION VARIATIONS ARE PERMITTED, BASED ON MANUFACTURER'S PRODUCT LINES, PROVIDED THE CMUD STANDARD PLASTIC LID FITS PROPERLY.

C. CONCRETE SHALL BE MINIMUM f'c = 3000 PSI COMPRESSIVE STRENGTH.

D. DESIGN SHALL CONFORM TO ASTM C858-SPECIFICATIONS FOR "UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURE".

E. STEEL REINFORCING DESIGN SHALL CONFORM TO ASTM C 857.

F. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND A 82.

WEIGHT - 70 LB. (MIN.) - 85 LB (MAX.)

CMUD PUBLIC FIRE HYDRANTS

PRIVATE FIRE HYDRANTS

CMUD / CFD COLOR LEGEND				
COLOR:	SHADE:			
OSHA SAFETY YELLOW				
OSHA SAFETY BLUE				
OSHA SAFETY PURPLE				
OSHA SAFETY RED				
OSHA SAFETY GREEN				
OSHA SAFETY WHITE				

CHARLOTTE FIRE DEPARTMENT STANDARDS COLOR SCHEME FOR PRIVATE FIRE HYDRANTS				
CLASSIFICATION	BARREL	TOP / BONNET	STORZ PUMPER NOZZLE	IRON PUMPER NOZZLE
5 - PRIVATE THROUGH WATER METER	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW	NOT PAINTED	OSHA SAFETY RED
6 - PRIVATE via METER AND FIRE BOOSTER PUMP	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW	NOT PAINTED	OSHA SAFETY WHITE
7 - PRIVATE (1/2" AND SMALLER MAIN OR LIMITED SUPPLY)	OSHA SAFETY YELLOW	OSHA SAFETY YELLOW	NOT PAINTED	OSHA SAFETY BLUE
8 - PRIVATE (1/2" INCH OUTLET YARD HYDRANT)	OSHA SAFETY RED	OSHA SAFETY RED	N/A	OSHA SAFETY RED

INDUSTRY STANDARD - NOT ADOPTED OR USED BY CMUD/CFD				
CLASSIFICATION	FLOW CAPACITY (GPM AT 20 PSI RESIDUAL)	BARREL	TOP / BONNET	PUMPER NOZZLE
CLASS AA	1500 OR GREATER	CHROME YELLOW	LIGHT BLUE	LIGHT BLUE
CLASS A	1000 TO 1499	CHROME YELLOW	GREEN	GREEN
CLASS B	500 TO 999	CHROME YELLOW	ORANGE	ORANGE
CLASS C	LESS TO 500	CHROME YELLOW	RED	RED

NOTES:

A. PUBLIC FIRE HYDRANTS ARE (1) CONNECTED DIRECTLY TO CMUD WATER DISTRIBUTION SYSTEM, (2) OWNED AND MAINTAINED BY CMUD, AND (3) LOCATED WITHIN THE ROAD RIGHT-OF-WAY OR CMUD WATER MAIN EASEMENT.

B. PRIVATE FIRE HYDRANTS ALL NON-PUBLIC FIRE HYDRANTS, INCLUDING HYDRANTS (1) SERVED VIA CMUD WATER METER, (2) SERVED VIA PRIVATE WATER SYSTEM, AND ARE (3) LOCATED OUTSIDE THE ROAD RIGHT-OF-WAY AND (4) PRIVATELY OWNED AND MAINTAINED.

MANUFACTURERS:

SOUTHERN METER #C.H. 2 METER BOX BODY
 BROOKS #65MB METER BOX BODY
 OLDCASTLE PRECAST #MB65 METER BOX BODY

NOTES:

A. METER BOX SHALL ACCOMMODATE COMPANION PLASTIC METER BOX LID - SEE STANDARD DETAIL.

B. MINOR DIMENSION VARIATIONS ARE PERMITTED BASED ON MANUFACTURER'S PRODUCT LINES, PROVIDED THE CMUD STANDARD PLASTIC LID FITS PROPERLY.

C. CONCRETE SHALL BE MINIMUM f'c = 3000 PSI COMPRESSIVE STRENGTH.

D. DESIGN SHALL CONFORM TO ASTM C858-SPECIFICATIONS FOR "UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURE".

E. STEEL REINFORCING DESIGN SHALL CONFORM TO ASTM C 857.

F. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND A 82.

WEIGHT - 150 LB. (MIN.) - 170 LB (MAX.)

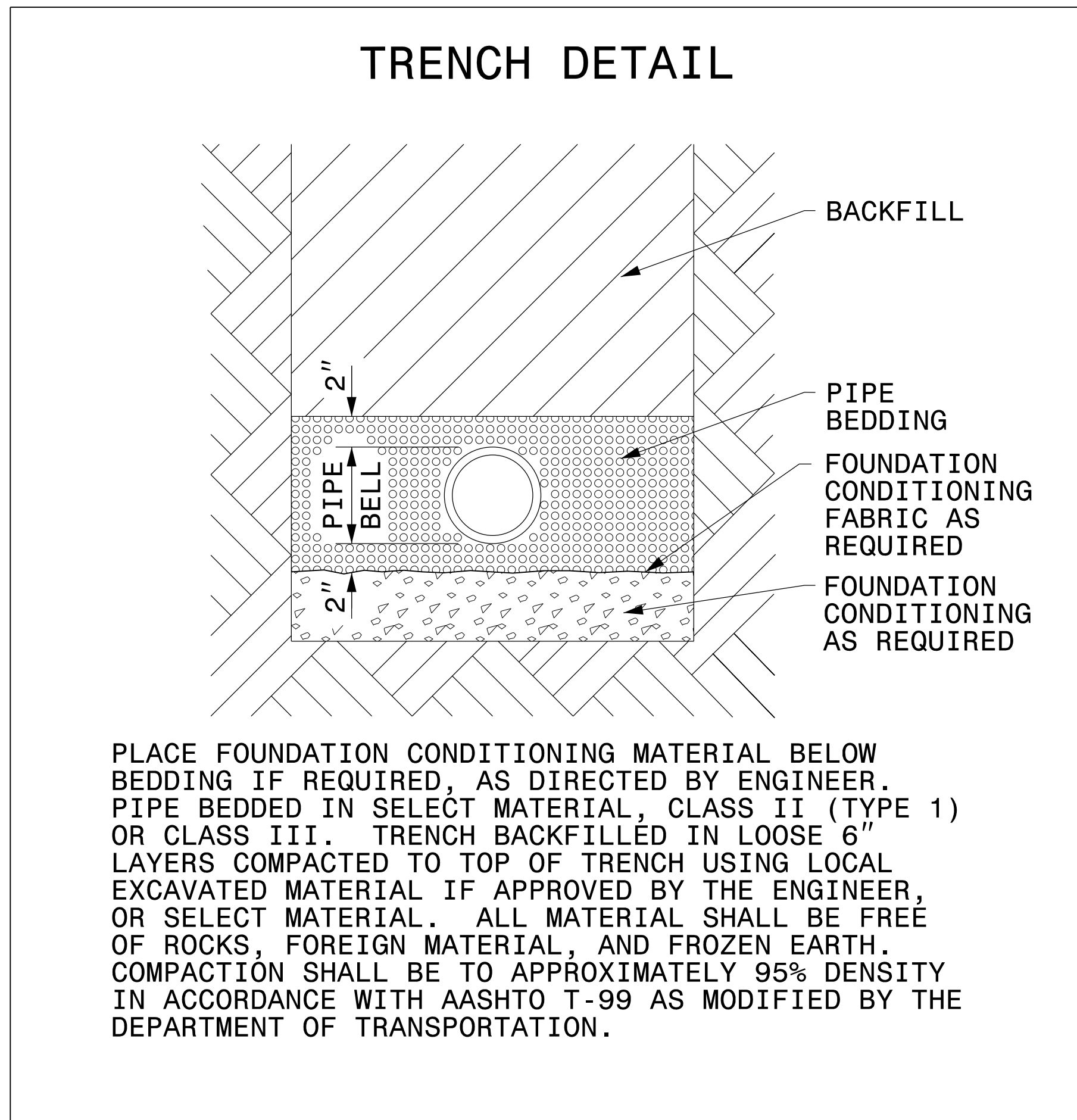
OWNER'S DETAILS (CLTWater) NCDOT BEDDING AND TRENCH WIDTH DETAILS

NOT TO SCALE



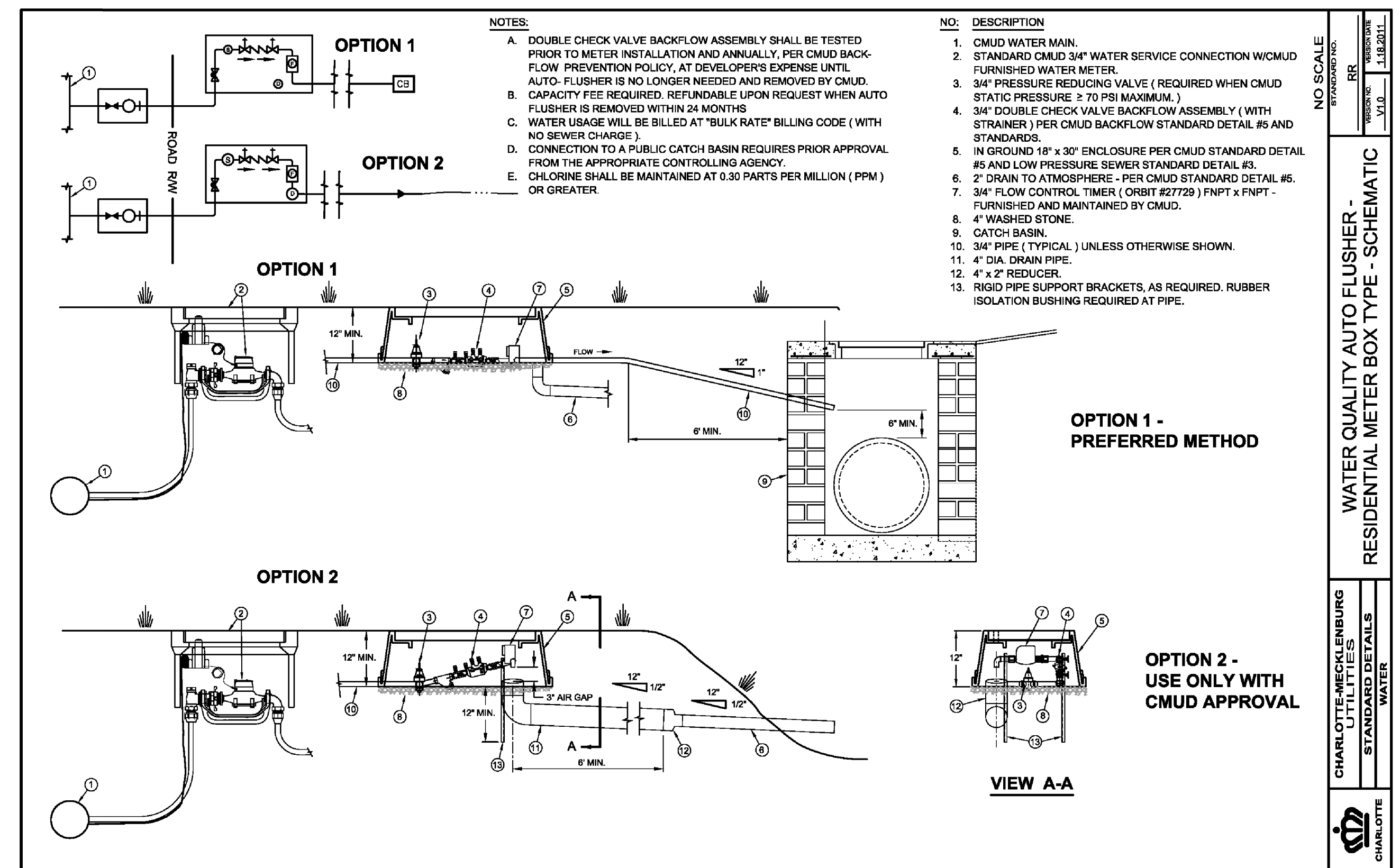
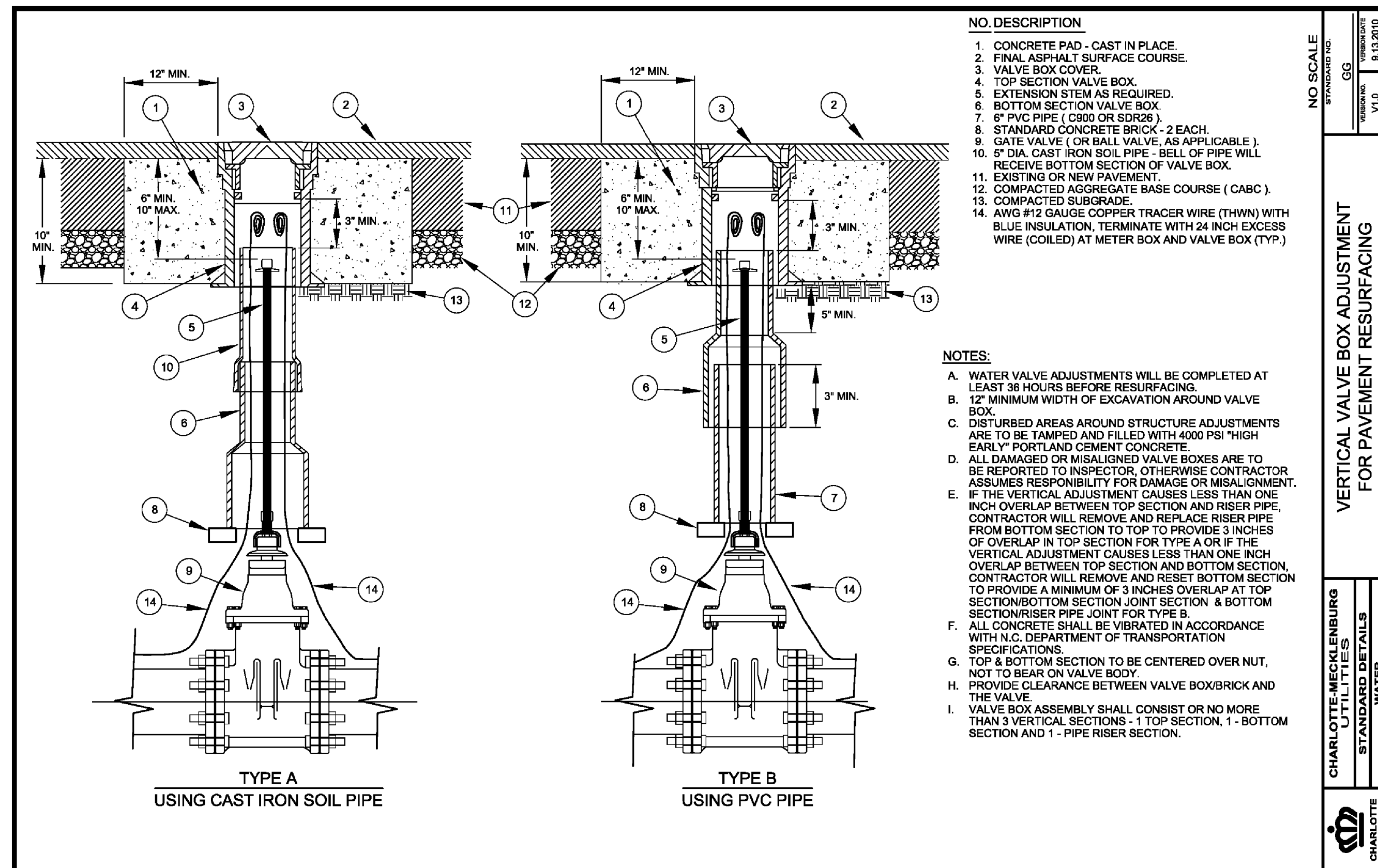
PROJECT REFERENCE NO. R-2248G	SHEET NO. UC-3C
DESIGNED BY: CDB	
DRAWN BY: CDB	
CHECKED BY: CDB	
APPROVED BY:	
REVISID:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	2/11/2015 UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



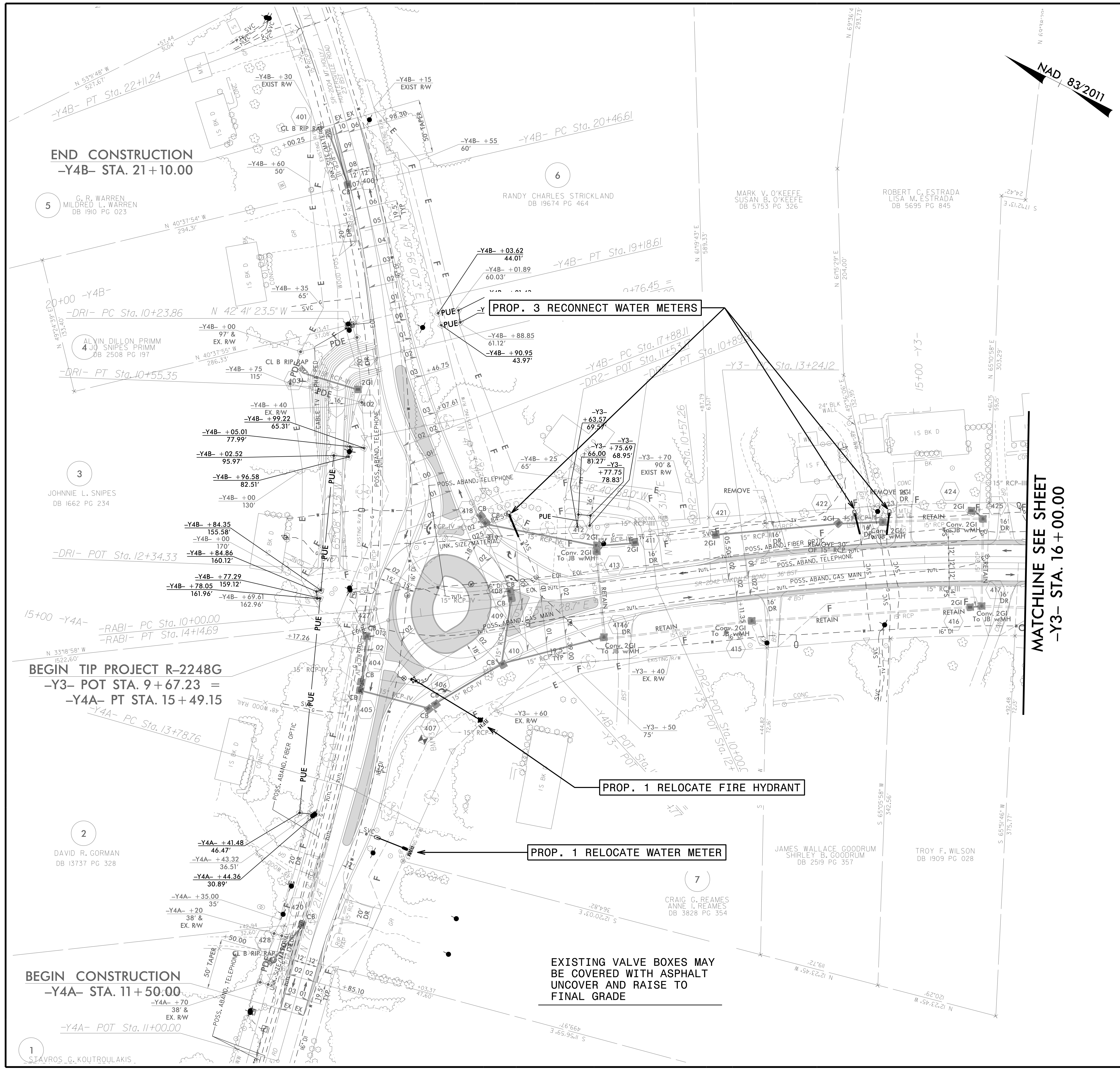
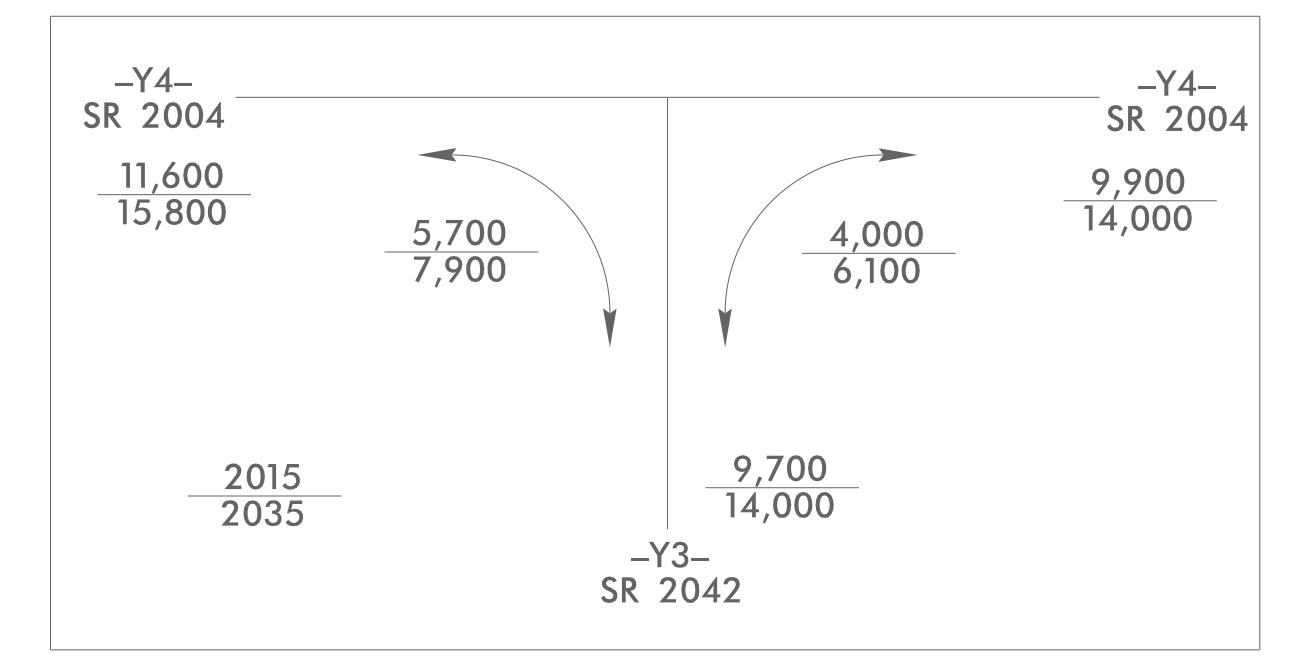
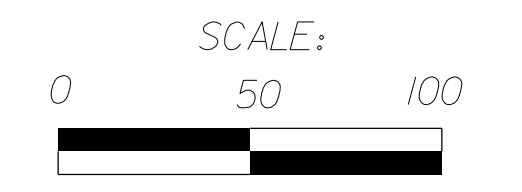
MAXIMUM TRENCH WIDTH AT TOP OF PIPE

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		



NO SCALE
 CHARLOTTE-MECKLENBURG UTILITIES STANDARD DETAILS WATER
 1.18.2011

UTILITY CONSTRUCTION



EXISTING VALVE BOXES MAY BE COVERED WITH ASPHALT UNCOVER AND RAISE TO FINAL GRADE

MATCHLINE SEE SHEET -Y3- STA. 16+00.00

NAD 83/2011