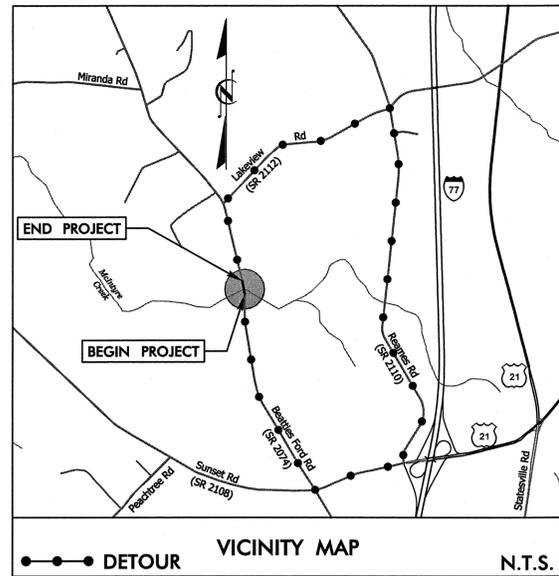


PROJECT: WBS 17BP.10.R.8

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Standard Symbology Sheet



FINAL PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

**LOCATION: CULVERT #107 OVER McINTYRE CREEK
ON SR 2074 (BEATTIES FORD ROAD)**

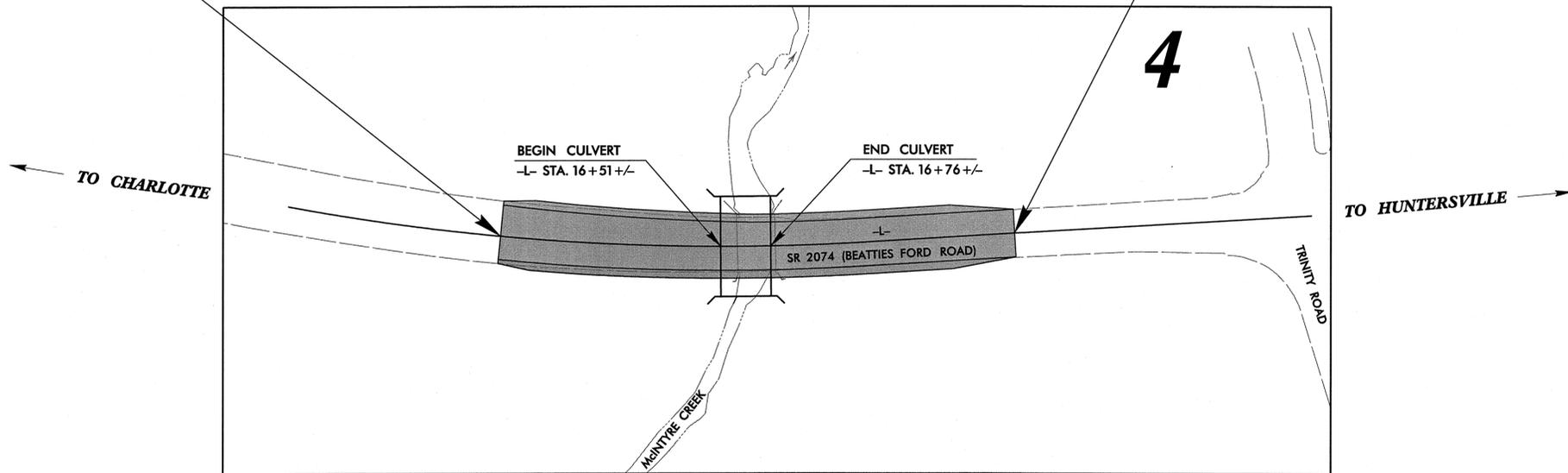
TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE



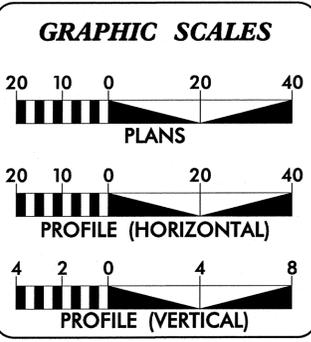
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.8	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.10.R.8		P.E.	
17BP.10.R.8		R /W & UTILITIES	
17BP.10.R.8		CONST.	

BEGIN PROJECT WBS 17BP.10.R.8
-L- STA. 15+40.00

END PROJECT WBS 17BP.10.R.8
-L- STA. 18+00.00



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.



DESIGN DATA

ADT 2013 =	11,800
ADT 2035 =	25,000
DHV =	N/A
D =	N/A
T =	6%
V =	45 MPH
FUNC. CLASSIFICATION:	MINOR ARTERIAL

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT WBS 17BP.10.R.8 =	0.044 MILES
LENGTH OF STRUCTURE PROJECT WBS 17BP.10.R.8 =	0.005 MILES
TOTAL LENGTH OF PROJECT WBS 17BP.10.R.8 =	0.049 MILES

NCDOT CONTACT: GARLAND HAYWOOD, PE
Division Construction Manager

PLANS PREPARED FOR THE NCDOT BY:
STV/RALPH WHITEHEAD ASSOCIATES, INC.
1000 West Morehead St., Ste. 200, Charlotte NC, 28208
NC License Number F-0991

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 16, 2012	NIKKI T. HONEYCUTT, PE PROJECT ENGINEER
LETTING DATE: JANUARY 16, 2013	ALLISON DRAKE, EI PROJECT DESIGNER

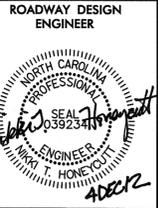
HYDRAULICS ENGINEER

SIGNATURE: Dan Morrison 12/11/12 P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: Nikki T. Honeycutt 4DEC12 P.E.





INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
3	SUMMARIES AND TYPICALS
4	PLAN AND PROFILE SHEET
UC-1 THRU UC-4	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
TCP-1 THRU TCP-2	TRAFFIC CONTROL PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
X-1 THRU X-2	CROSS-SECTIONS
C-1 THRU C-3	CULVERT PLANS

GENERAL NOTES

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012

GRADE LINE:
GRADING AND SURFACING:
THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUPERELEVATION:
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:
ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

GUARDRAIL:
THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

RIGHT-OF-WAY MARKERS:
ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

STANDARD DRAWINGS

2012 ROADWAY ENGLISH STANDARD DRAWINGS EFF. January, 2012

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1110.01	Stationary Work Zone Signs - Mounting Height & Lateral Clearance
1145.01	Barricades - Type III
DIVISION 16 - EROSION CONTROL AND ROADSIDE DEVELOPMENT	
1605.01	Temporary Silt Fence
1606.01	Special Sediment Control Fence
1607.01	Gravel Construction Entrance
1622.01	Guide for Temporary Berms and Slope Drains
1630.04	Stilling Basin for Pumped Effluent
1630.06	Special Stilling Basin
1633.01	Temporary Rock Silt Check Type A

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. 17BPJ0.R.8	SHEET NO. 1-B
-------------------------------------	------------------

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	○ _{EP}
Property Corner	_____
Property Monument	□ _{ECM}
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
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	_____
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	○ _{R/W}
Proposed Right of Way Line with Iron Pin and Cap Marker	○ _{R/W} ▲
Proposed Right of Way Line with Concrete or Granite Marker	○ _{R/W} ●
Existing Control of Access	○ _A
Proposed Control of Access	○ _S
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	□ _T
Telephone Pedestal	□ _T
Telephone Cell Tower	⊗ _T
U/G Telephone Cable Hand Hole	_____
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	○ _W
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	□ _T
TV Tower	⊗
U/G TV Cable Hand Hole	_____
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	○ _{SS}
Sanitary Sewer Cleanout	○ _{SS}
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	□ _T
Utility Unknown U/G Line	_____ _{UTIL}
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.

SURVEY CONTROL SHEET

NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
590107_LS_CONTROL.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM. POSITIONS ESTABLISHED USING NCGS REAL TIME KINEMATIC NETWORK (VRS) MONUMENTS USED OR SET FOR PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT:
 - ◆ INDICATES GEODETIC CONTROL MONUMENTS FOR HORIZONTAL CONTROL
 - INDICATES BASELINE MONUMENTS FOR HORIZONTAL PROJECT CONTROL
 - ⊠ INDICATES BENCHMARKS FOR VERTICAL PROJECT CONTROL

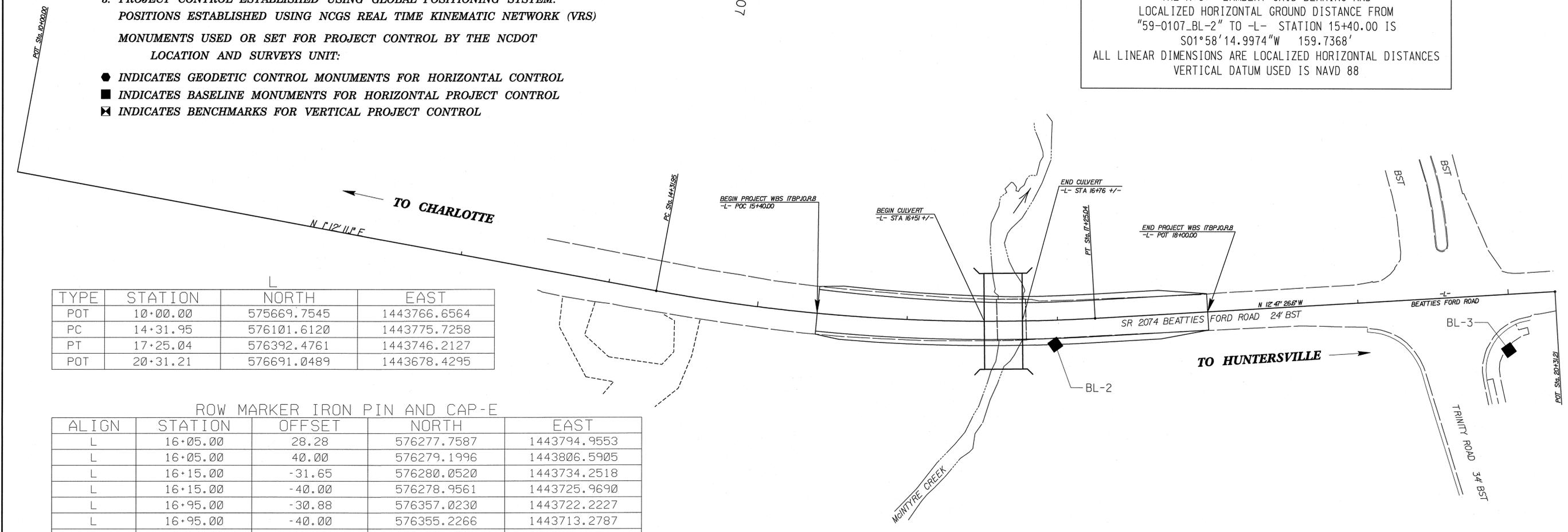
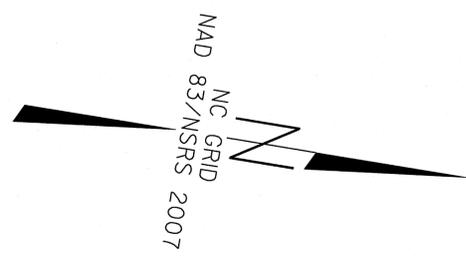
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "59-0107_BL-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 576369.234(±) EASTING: 1443767.638(±) ELEVATION: 731.56(±±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999842

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "59-0107_BL-2" TO -L- STATION 15+40.00 IS S01°58'14.9974"W 159.7368'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88



TYPE	STATION	NORTH	EAST
POT	10+00.00	575669.7545	1443766.6564
PC	14+31.95	576101.6120	1443775.7258
PT	17+25.04	576392.4761	1443746.2127
POT	20+31.21	576691.0489	1443678.4295

ROW MARKER IRON PIN AND CAP-E

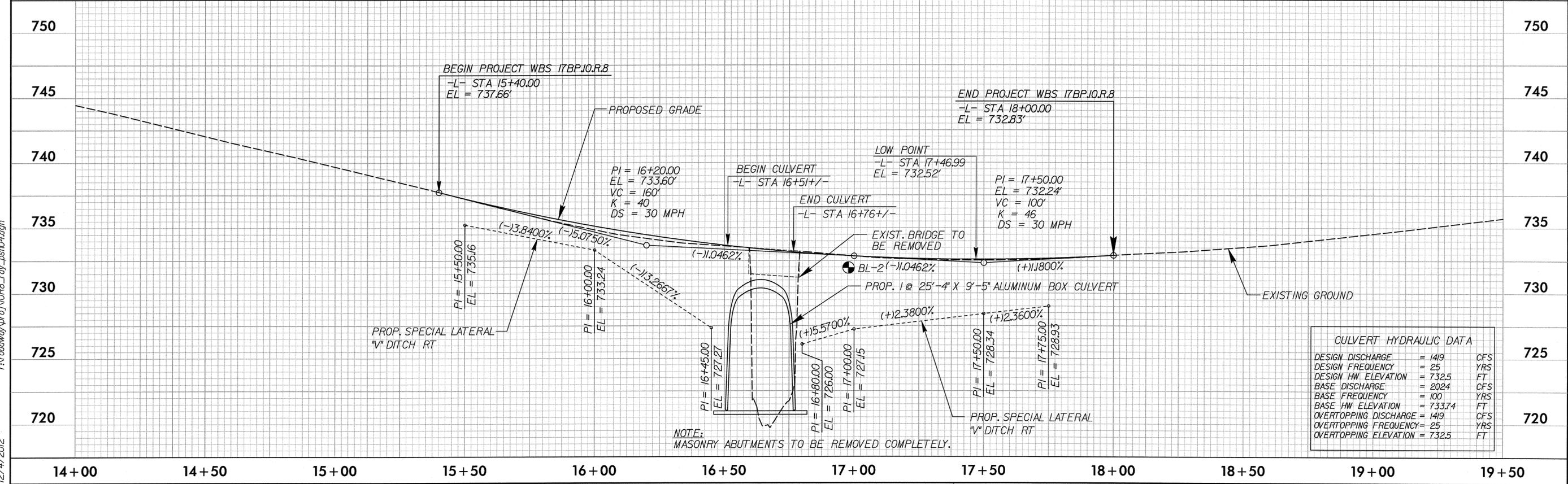
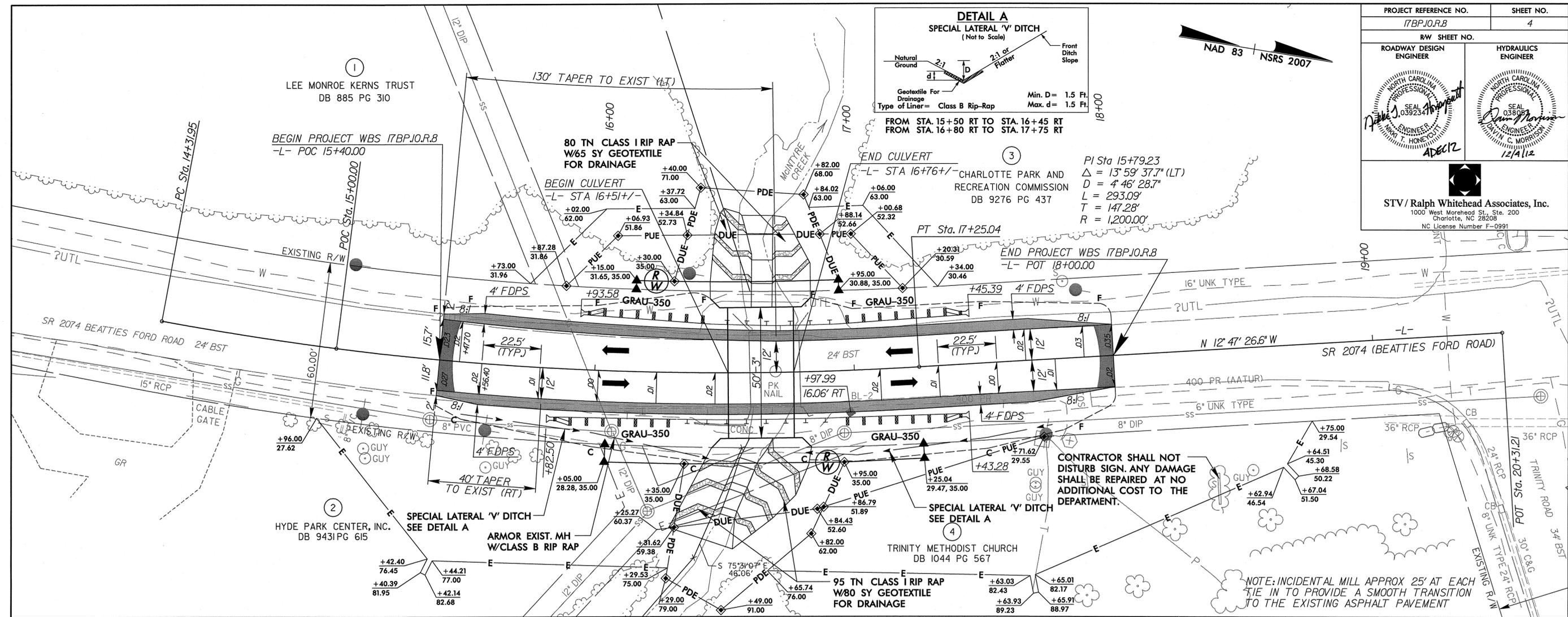
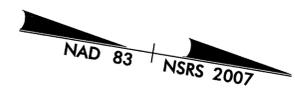
ALIGN	STATION	OFFSET	NORTH	EAST
L	16+05.00	28.28	576277.7587	1443794.9553
L	16+05.00	40.00	576279.1996	1443806.5905
L	16+15.00	-31.65	576280.0520	1443734.2518
L	16+15.00	-40.00	576278.9561	1443725.9690
L	16+95.00	-30.88	576357.0230	1443722.2227
L	16+95.00	-40.00	576355.2266	1443713.2787
L	17+30.00	40.00	576406.1704	1443784.1216
L	17+30.00	29.52	576403.8503	1443773.9017

PERMANENT EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
L	16+29.00	79.00	576309.3455	1443841.8975
L	16+30.00	-40.00	576293.3186	1443723.9773
L	16+35.00	40.00	576309.9137	1443802.3966
L	16+40.00	-71.00	576298.1739	1443691.9091
L	16+49.00	91.00	576332.3280	1443850.5265
L	16+56.00	-76.00	576312.2124	1443684.5936
L	16+82.00	-68.00	576337.6770	1443688.1765
L	16+82.00	62.00	576361.8934	1443815.9011
L	16+95.00	40.00	576370.9797	1443791.7124

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	575692.6180	1443788.8270	759.54	10+23.32	21.69 RT
2	BL-2	576369.2340	1443767.6380	731.56	16+97.99	16.06 RT
3	BL-3	576667.1050	1443721.3900	737.01	19+98.35	36.59 RT

NOTE: DRAWING NOT TO SCALE



CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 149 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 732.5 FT
BASE DISCHARGE	= 2024 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 733.74 FT
OVERTOPPING DISCHARGE	= 149 CFS
OVERTOPPING FREQUENCY	= 25 YRS
OVERTOPPING ELEVATION	= 732.5 FT

12/4/2012 r:\roadway\proj\10R8_rdy_psd04.dgn

PROJECT: WBS 17BP.10.R.8

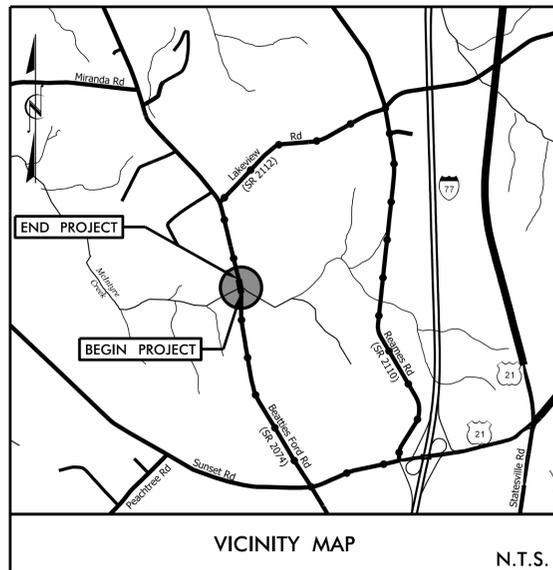
CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.10.R.8	UC-1

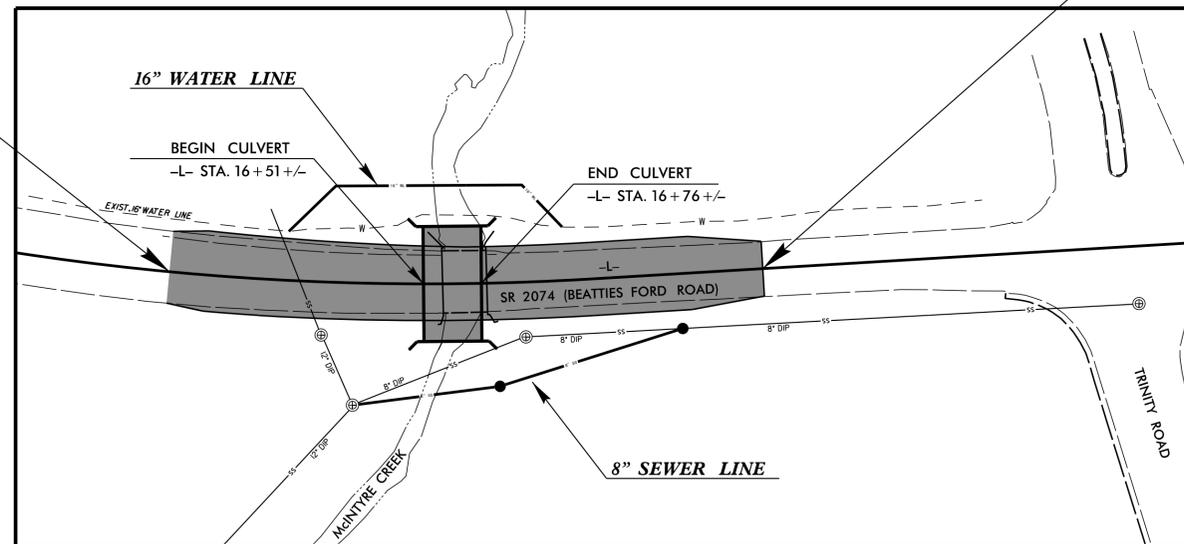
**UTILITY CONSTRUCTION PLANS
MECKLENBURG COUNTY**

LOCATION: BRIDGE #107 OVER McINTYRE CREEK
ON SR 2074 (BEATTIES FORD ROAD)



BEGIN PROJECT WBS 17BP.10.R.8
-L- STA. 15 + 40.00

END PROJECT WBS 17BP.10.R.8
-L- STA. 18 + 00.00



APPLICATION FOR PERMIT FOR WATER MAIN EXTENSION

PROJECT NAME: BRIDGE #107 OVER McINTYRE CREEK
ON SR 2074 (BEATTIES FORD ROAD)

CMU PROJECT NO.:

PROJECT DESCRIPTION: 135 LF 16" WATER MAIN & FITTINGS

DESIGNED BY: FIRM: VAUGHN & MELTON CONSULTING ENGINEERS, INC.

ENGINEER: REECE M. SCHULER, P.E. DESIGNED BY: REECE M. SCHULER, P.E.

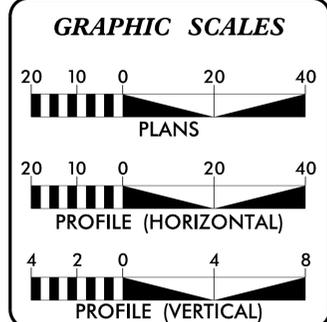
ADDRESS: 3809-L BEAM ROAD
CHARLOTTE, NC 28217

PHONE: 704-357-0488

THIS APPLICATION IS MADE UNDER AND IN FULL ACCORD WITH THE PROVISIONS OF CHAPTER 130A-317 OF THE NORTH CAROLINA GENERAL STATUTES, AND SUCH OTHER STATUTES AS RELATED TO PUBLIC WATER SYSTEMS. CMU HAS BEEN GRANTED AUTHORITY TO ISSUE PERMITS FOR EXTENSION OF WATER MAINS PURSUANT TO 15A NCAC 18C.1801. THE APPLICANT AGREES THAT NO SIGNIFICANT CHANGE OR DEVIATION FROM THE PLANS AND SPECIFICATIONS APPROVED BY CMU WILL BE MADE WITHOUT THE WRITTEN CONSENT AND APPROVAL OF CMU OR ITS AUTHORIZED REPRESENTATIVE. A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF NORTH CAROLINA SHALL SUBMIT A STATEMENT REFLECTING THAT ADEQUATE OBSERVATIONS DURING AND UPON COMPLETION OF CONSTRUCTION INDICATES THAT CONSTRUCTION WAS COMPLETED IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.

BARRY SHEARIN, P.E., CHIEF ENGINEER DATE _____

CHARLOTTE MECKLENBURG UTILITIES
CHARLOTTE, NORTH CAROLINA 28216



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	SYMBOLOLOGY SHEET
UC-3	UTILITY PLAN AND PROFILE SHEET
UC-4	DETAIL SHEET

WATER AND SEWER OWNERS ON PROJECT

(1) WATER & SEWER - CHARLOTTE MECKLENBURG UTILITIES

SEAL

V&M
Vaughn & Mellon
Consulting Engineers
3089-L Beam Road
Charlotte, NC 28217
704-357-0488

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES ENGINEERING SECTION

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

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ Degree Bend	
45 Degree Bend	
90 Degree Bend	
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	REM FH
Water Meter	
Relocate Water Meter	
Remove Water Meter	REM WM
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

NOTE
PAY ITEM

EXISTING UTILITIES SYMBOLS

Power Pole		*Underground Power Line	
Telephone Pole		*Underground Telephone Cable	
Joint Use Pole		*Underground Telephone Conduit	
Utility Pole		*Underground Fiber Optics Telephone Cable	
Utility Pole with Base		*Underground TV Cable	
H-Frame Pole		*Underground Fiber Optics TV Cable	
Power Transmission Line Tower		*Underground Gas Pipeline	
Water Manhole		Aboveground Gas Pipeline	
Power Manhole		*Underground Water Line	
Telephone Manhole		Aboveground Water Line	
Sanitary Sewer Manhole		*Underground Gravity Sanitary Sewer Line	
Hand Hole for Cable		Aboveground Gravity Sanitary Sewer Line	
Power Transformer		*Underground SS Forced Main Line	
Telephone Pedestal		Underground Unknown Utility Line	
CATV Pedestal		SUE Test Hole	
Gas Valve		Water Meter	
Gas Meter		Water Valve	
Located Miscellaneous Utility Object		Fire Hydrant	
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout	
End of Information	E.O.I.		

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

5/14/99
REV: 2/1/2012

GENERAL NOTES:
 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, the Standards Details as shown on plans, and the Project Special Provisions for utility construction.

Valves on water mains smaller than 16-inch in diameter shall be direct bury gate valves, unless otherwise noted on utility construction plans.

Valves on water mains larger than 16-inch in diameter shall be butterfly valves, unless otherwise noted on utility construction plans.

Ductile iron restrained joint pipe shall be used in lieu of thrust blocking on proposed water line relocations.

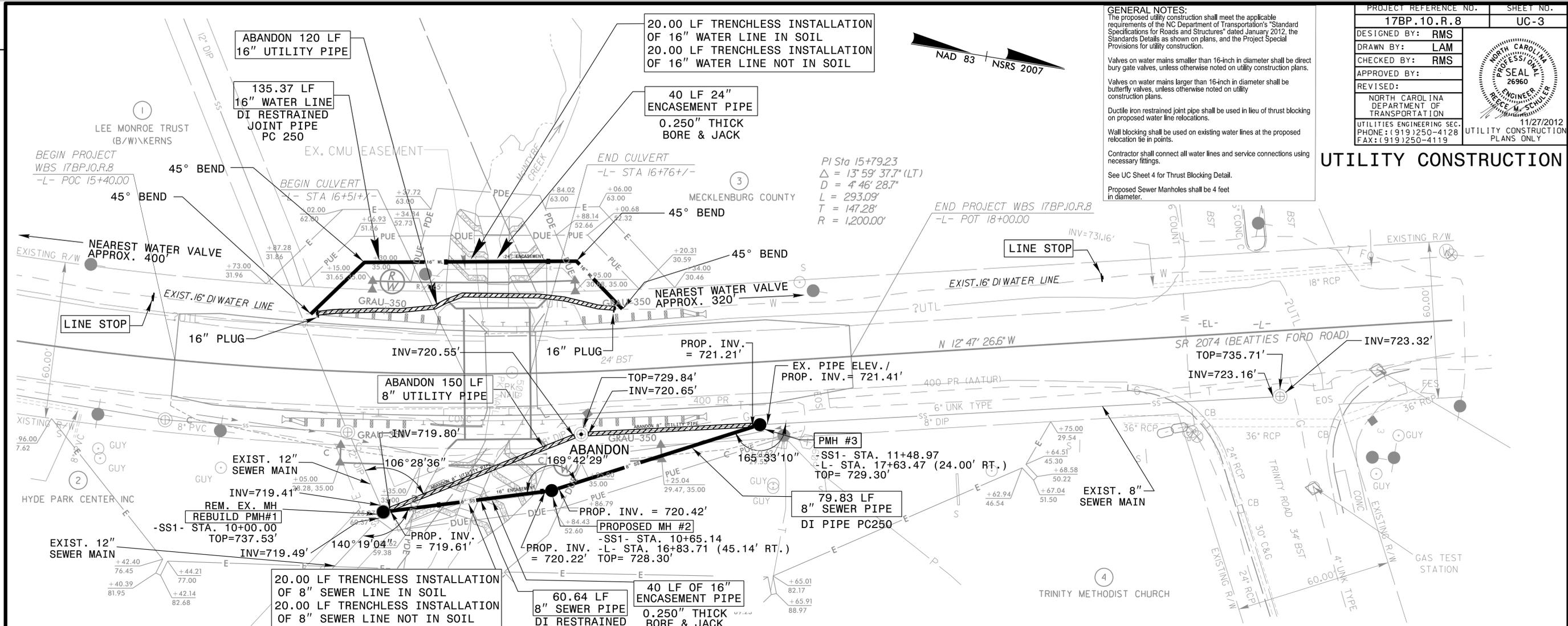
Wall blocking shall be used on existing water lines at the proposed relocation tie in points.

Contractor shall connect all water lines and service connections using necessary fittings.

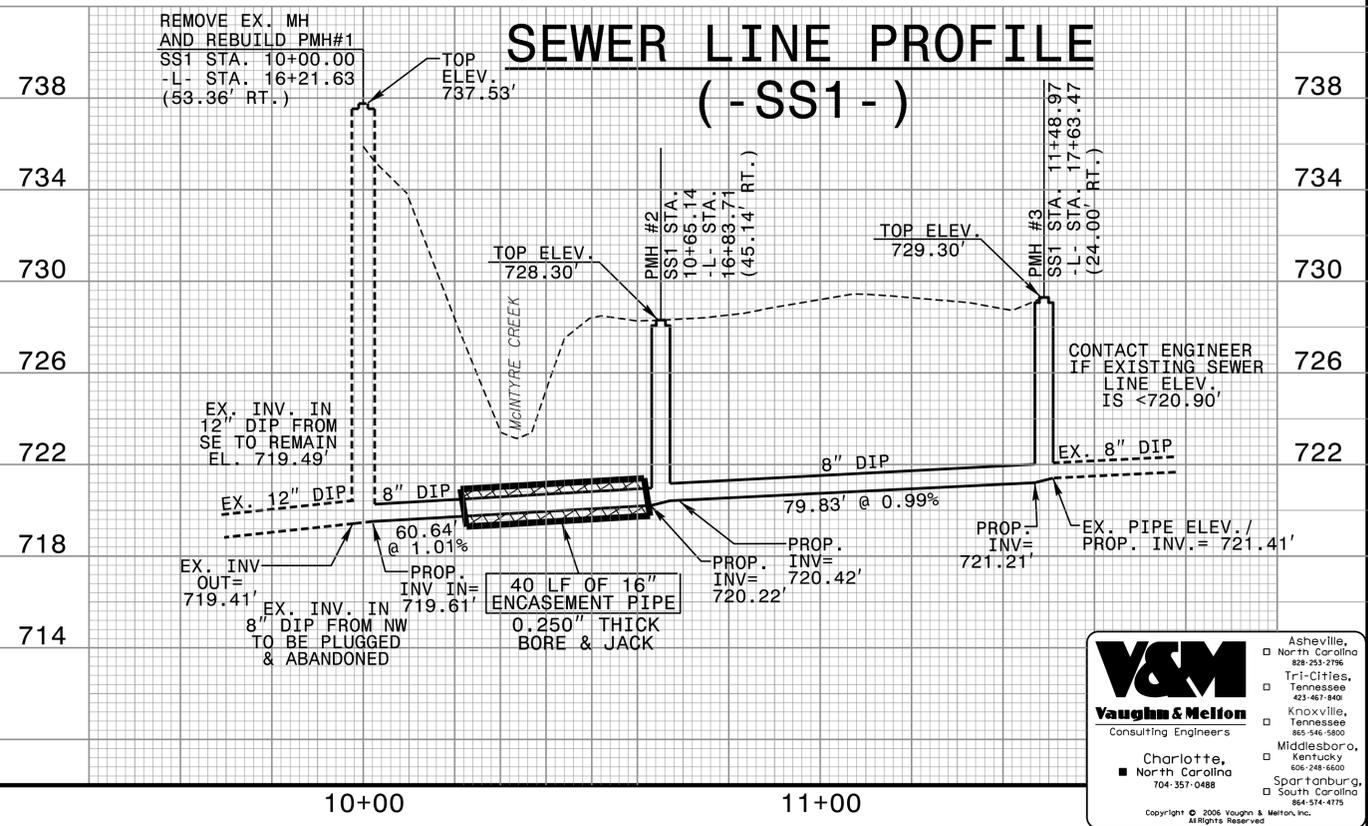
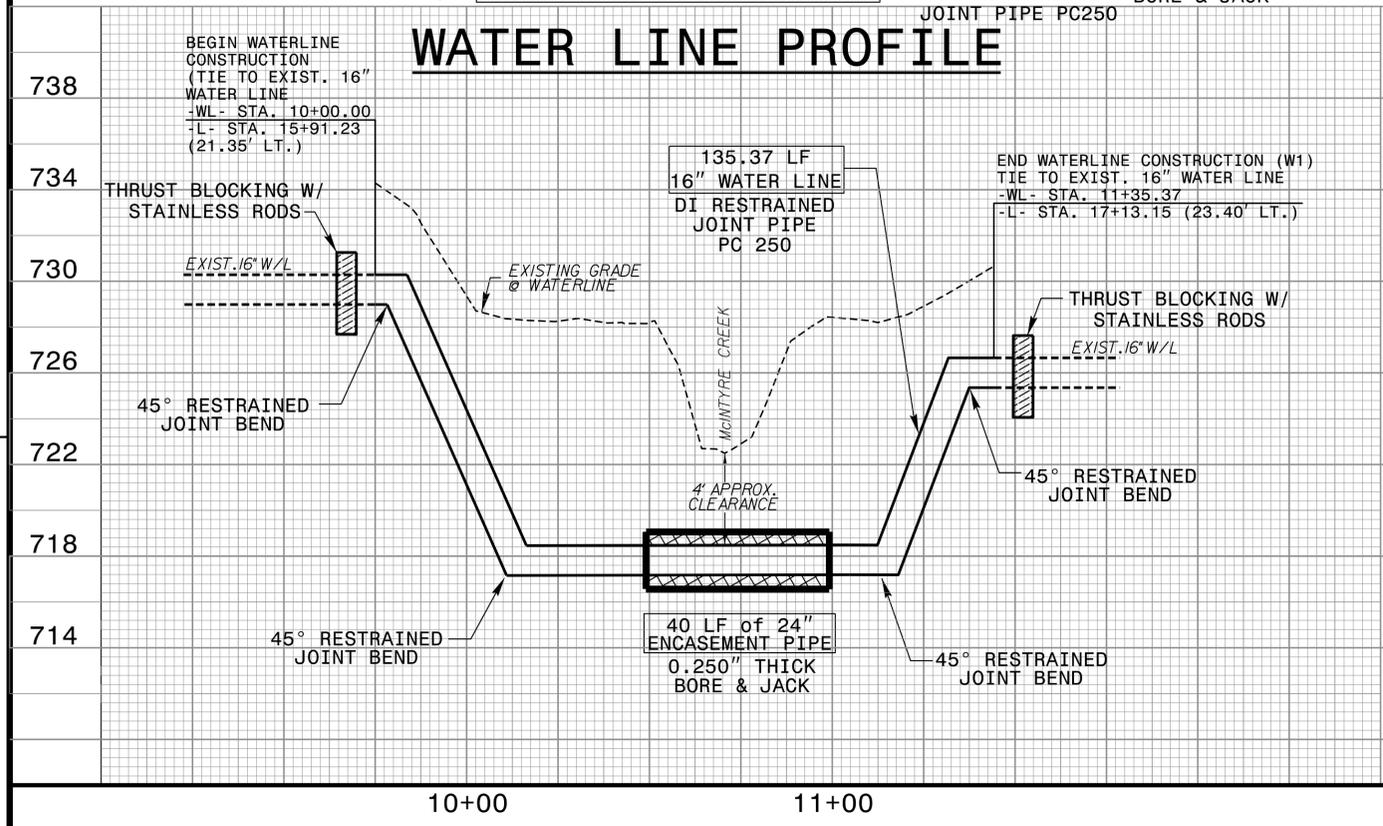
See UC Sheet 4 for Thrust Blocking Detail.

Proposed Sewer Manholes shall be 4 feet in diameter.

UTILITY CONSTRUCTION



REVISIONS



V&M
 Vaughn & Melton
 Consulting Engineers

Charlotte, North Carolina 704-357-0488

Asheville, North Carolina 828-253-2796
 Tri-Cities, Tennessee 423-661-8000
 Knoxville, Tennessee 865-545-5800
 Middlesboro, Kentucky 606-248-6500
 Spartanburg, South Carolina 864-574-4775

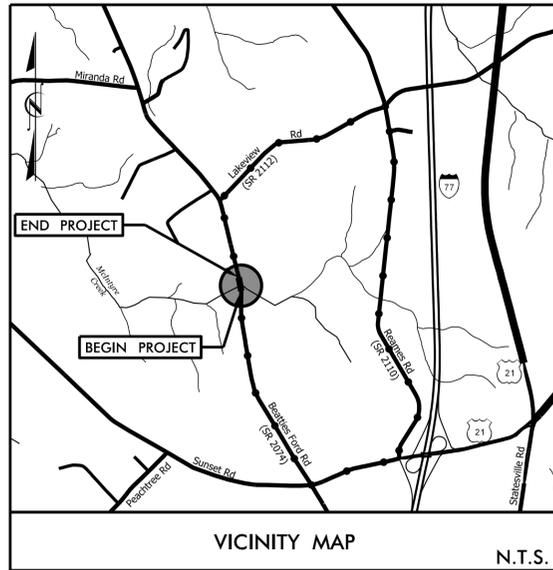
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.10.R.8	UO-1

UTILITIES BY OTHERS PLANS MECKLENBURG COUNTY

LOCATION: BRIDGE #107 OVER McINTYRE CREEK
ON SR 2074 (BEATTIES FORD ROAD)



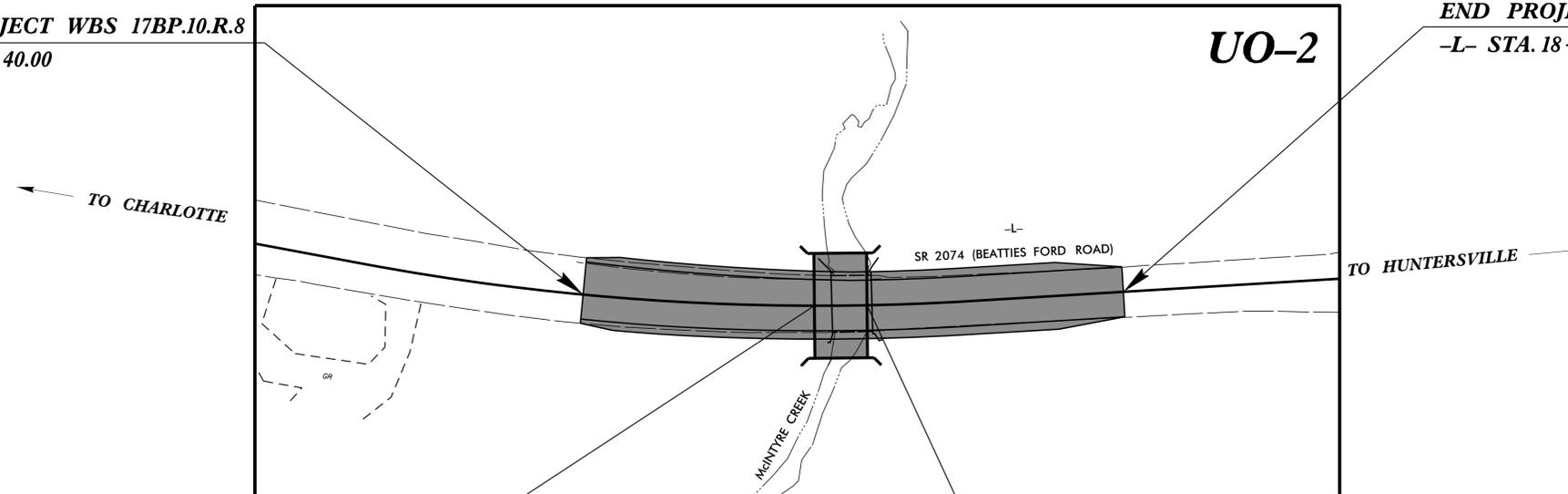
NSRS 2007 NAD 83

PROJECT: WBS 17BP.10.R.8

CONTRACT:

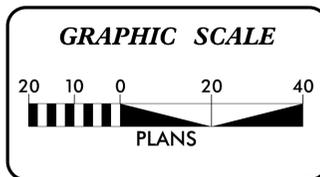
BEGIN PROJECT WBS 17BP.10.R.8
-L- STA. 15 + 40.00

END PROJECT WBS 17BP.10.R.8
-L- STA. 18 + 00.00



BEGIN CULVERT
-L- STA. 16 + 51 +/-

END CULVERT
-L- STA. 16 + 76 +/-



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UO-2	UTILITY BY OTHERS PLAN

UTILITY OWNERS ON PROJECT

- (1) POWER - DUKE ENERGY
- (2) CABLE - TIME WARNER CABLE
- (3) TELEPHONE - AT&T
- (4) NATURAL GAS - PIEDMONT NATURAL GAS

SEAL

V&M
Vaughn & Mellon
Consulting Engineers
3089-L Beam Road
Charlotte, NC 28217
704-357-0488

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES ENGINEERING SECTION

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

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

UTILITIES BY OTHERS

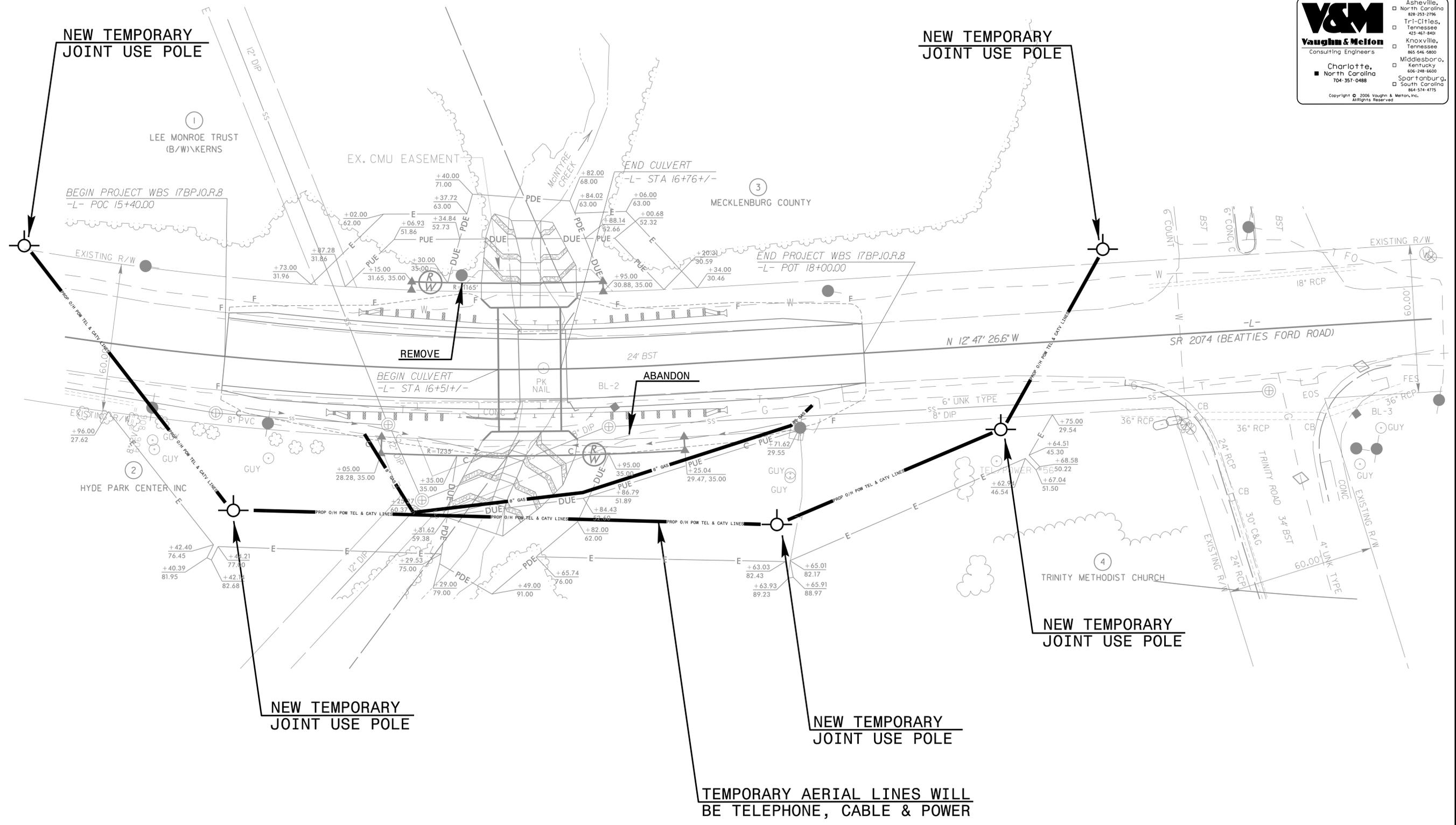
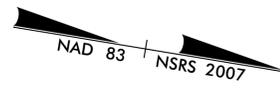
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

V&M
Vaughn & Melton
Consulting Engineers

Charlotte, North Carolina
704-357-0488

Asheville, North Carolina 828-253-2796
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 804-574-4775

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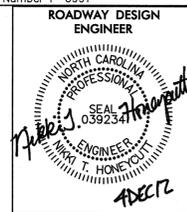


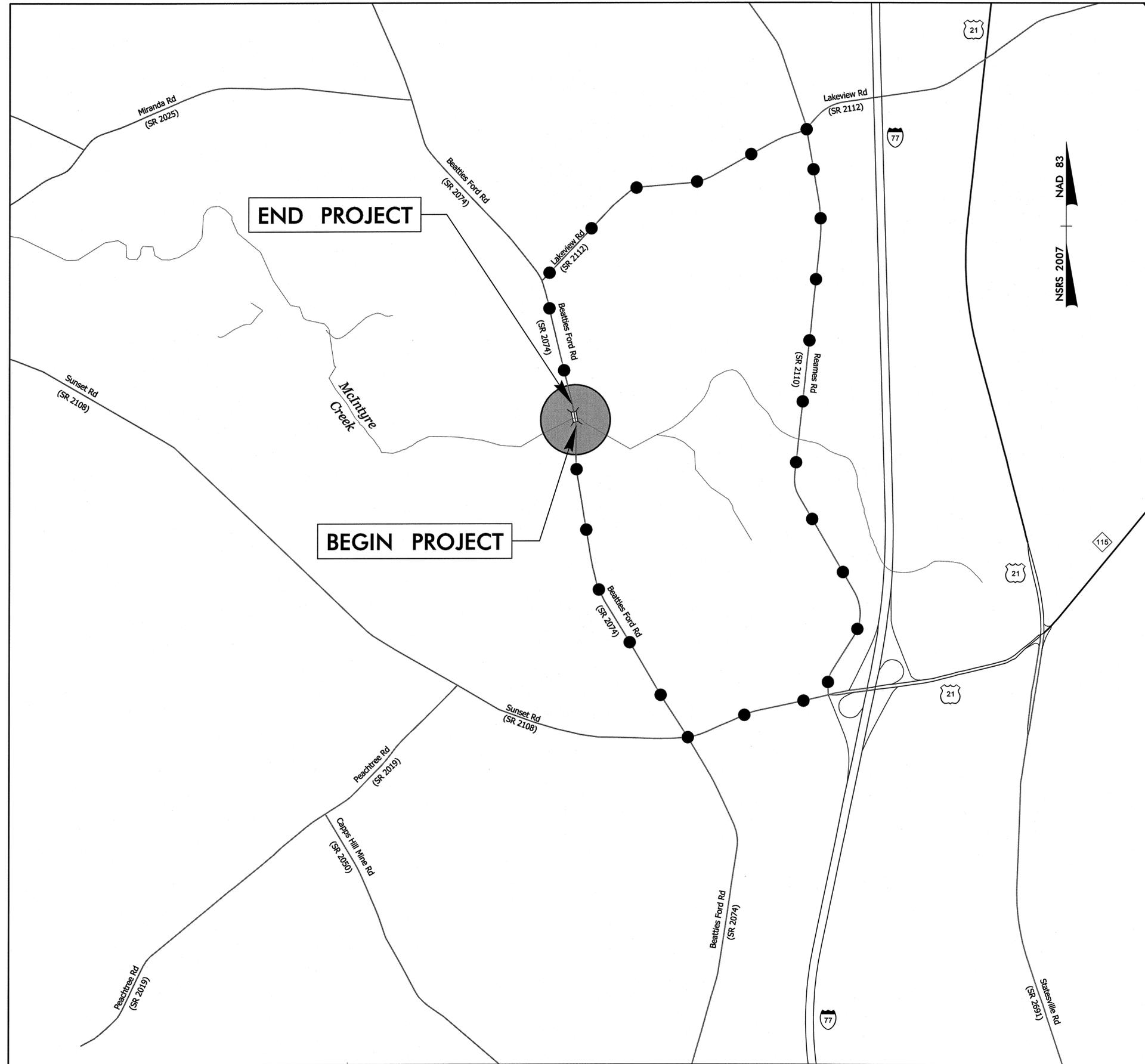
REVISIONS

TEMPORARY AERIAL LINES WILL BE TELEPHONE, CABLE & POWER

DETOUR ROUTE

PROJECT REFERENCE NO. ITBP10.R.B	SHEET NO. TCP-1
RW SHEET NO.	

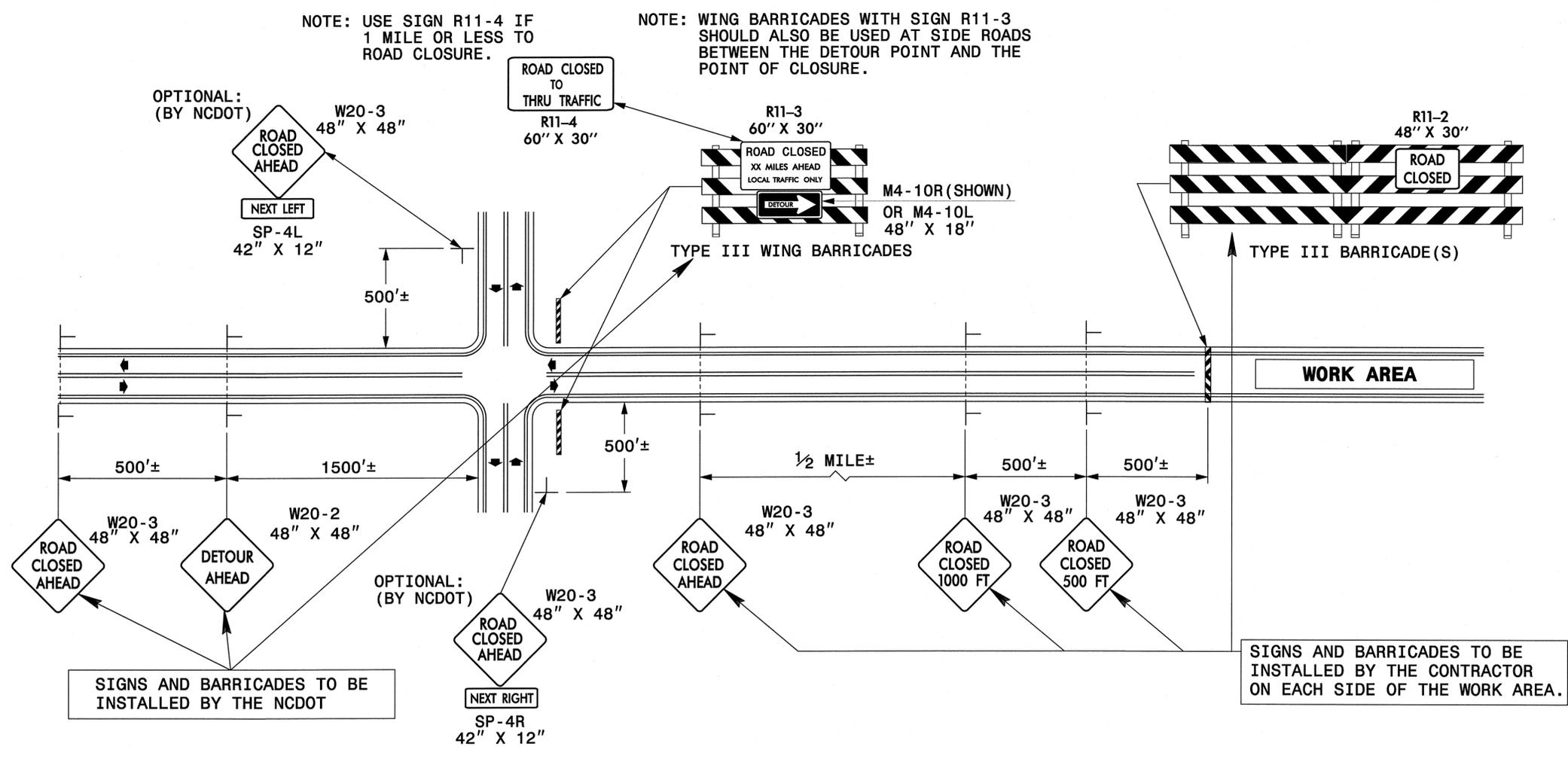

STV / Ralph Whitehead Associates, Inc.
 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License Number F-0991
ROADWAY DESIGN ENGINEER

 Mark T. Henscott
 12/27/12



r:\TrafficControl\TCP\098_rdy_top01.dgn

12/4/2012

TEMPORARY ROAD CLOSURE CLOSURE BEYOND DETOUR POINT



GENERAL NOTES

- 1-IF NECESSARY USE THIS STD. FOR TWO-LANE, TWO-WAY, AND MULTILANE DIVIDED AND UNDIVIDED ROADWAYS.
- 2-INSTALLATION OF DETOUR ROUTING PANELS, TEMPORARY ROUTE MARKERS, DESTINATION SIGNS, AND ANY NECESSARY MODIFICATIONS TO EXISTING OR PROPOSED REGULATORY OR WARNING SIGNS WILL BE MADE BY NCDOT FORCES UNLESS OTHERWISE DESIGNATED IN THE PLANS. PROVIDE A MINIMUM 21 CALENDAR DAY NOTICE TO STATE FORCES BEFORE A ROADWAY IS CLOSED TO TRAFFIC SUCH THAT THE NECESSARY PROVISIONS CAN BE MADE TO INSTALL DETOUR ROUTE SIGNS, INFORM LOCAL EMERGENCY AND LAW ENFORCEMENT PERSONNEL, SCHOOLS, OR ANY OTHER PARTIES AFFECTED BY THE ROAD CLOSURE.
- 3-INSTALL SIGNS BEFORE THE BARRICADES WHEN CLOSING THE ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING THE ROADWAY TO TRAFFIC. INSTALL/REMOVE SIGNS AND BARRICADES WITHIN THE SAME CALENDAR DAY.
- 4-USE ADDITIONAL TYPE III BARRICADES IN STAGGERED LOCATIONS SUPPLEMENTED WITH SIGN R11-4 "ROAD CLOSED TO THRU TRAFFIC" IN THE EVENT THAT TRAFFIC MUST BE MAINTAINED BEYOND THE DETOUR POINT.
- 5-DO NOT DISPLAY FRACTIONS OR DECIMALS ON SIGN R11-3 "ROAD CLOSED XX MILES AHEAD".
- 6-POSITION WING BARRICADES ON THE SHOULDERS AND SLOPE THE STRIPES DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING.
- 7-USE PORTABLE SIGNS IF ROAD CLOSURE IS TO BE IMPLEMENTED FOR LESS THAN ONE DAY OR FOR EMERGENCIES.

LEGEND

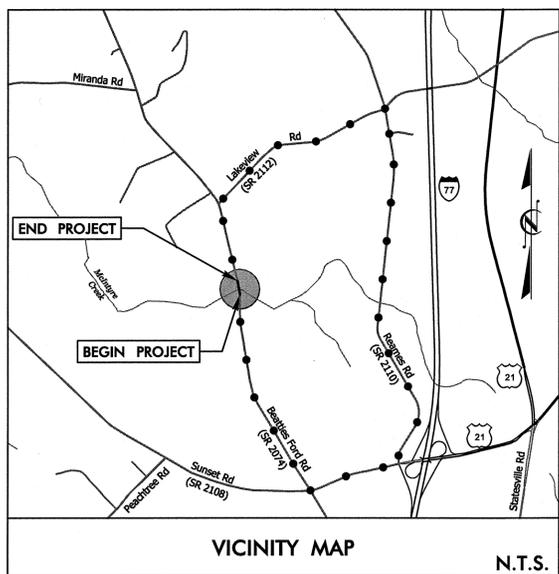
— STATIONARY SIGN

➔ DIRECTION OF TRAFFIC FLOW

r:\TrafficControl\TCP\088_rdy_top02.dgn 12/4/2012

CONTRACT:

PROJECT: WBS 17BP.10.R.8



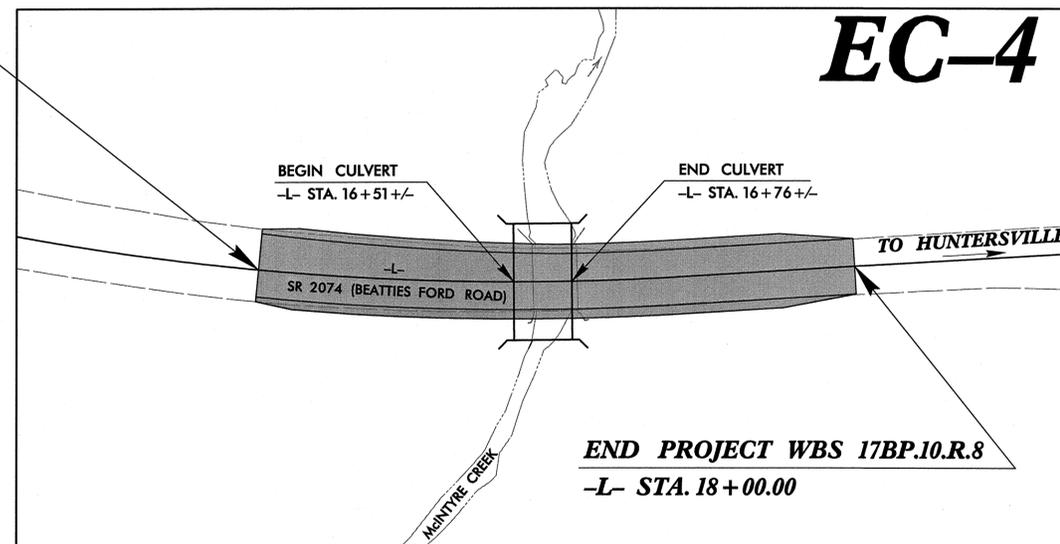
EROSION CONTROL PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
MECKLENBURG COUNTY

**LOCATION: CULVERT #107 OVER McINTYRE CREEK
ON SR 2074 (BEATTIES FORD ROAD)**

NSRS 2007- NAD 83

BEGIN PROJECT WBS 17BP.10.R.8
-L- STA. 15 + 40.00



These Erosion and Sediment Control Plans comply with the regulations set forth by the NCG010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

GRAPHIC SCALE



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Level III Designer
Davin Morrison, PE #3126



Prepared In the Office of:
ST/RALPH WHITEHEAD ASSOCIATES, INC.
1000 West Morehead St., Ste. 200, Charlotte NC, 28208
NC License Number F-0991
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2012 STANDARD SPECIFICATIONS

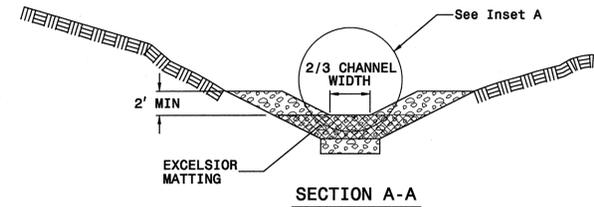
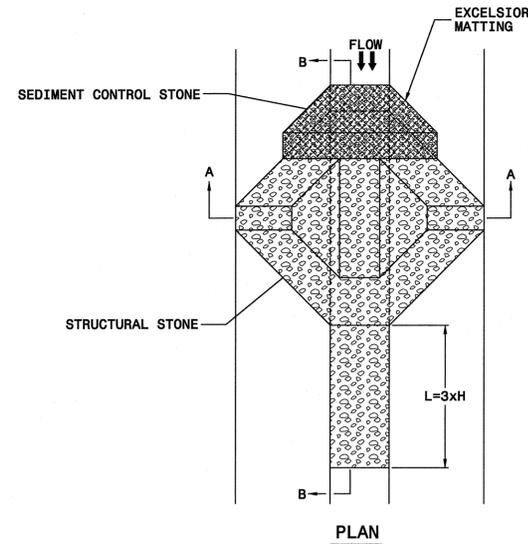
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.8	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.10.R.8		P.E.	
17BP.10.R.8		R/W & UTILITIES	
17BP.10.R.8		CONST.	

EROSION AND SEDIMENT CONTROL MEASURES

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N.C. Department of Transportation - Raleigh, N.C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	XXXXXXXXXX
1607.01	Gravel Construction Entrance	
1622.01	Temporary Berms and Slope Drains	← T →
1630.01	Riser Basin	⊕
1630.03	Temporary Silt Ditch	— TD —
1630.04	Stilling Basin	▭
1630.05	Temporary Diversion	→ TD ←
1630.06	Special Stilling Basin	⊕
1632.01	Rock Inlet Sediment Trap Type A	A
1632.02	Rock Inlet Sediment Trap Type B	B
1632.03	Rock Inlet Sediment Trap Type C	C
1633.01	Temporary Rock Silt Check Type-A	XXXX
1633.02	Temporary Rock Silt Check Type-B	▶
1634.01	Temporary Rock Sediment Dam Type-A	▭
1634.02	Temporary Rock Sediment Dam Type-B	⊕
1635.01	Rock Pipe Inlet Sediment Trap Type-A	⊕
1635.02	Rock Pipe Inlet Sediment Trap Type-B	⊕
SP	Silt Basin Type B	▭
SP	Skimmer Basin	▭
SP	Tiered Skimmer Basin	▭
SP	Infiltration Basin	▭
SP	Wattle	⊕
SP	Wattle w/ Polyacrylamide (PAM)	⊕
SP	Coir Fiber Matting	XXXX

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)

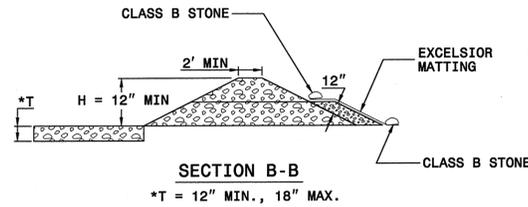
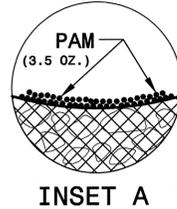


NOTES

USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



NOT TO SCALE

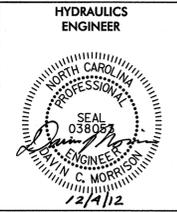
STABILIZATION REQUIREMENTS

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

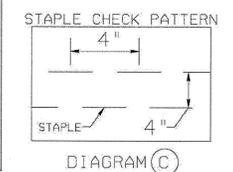
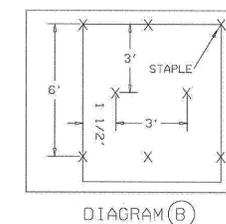
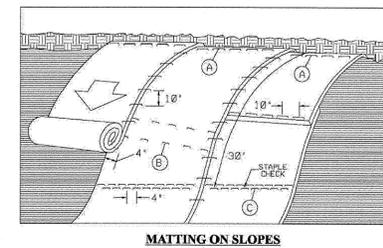
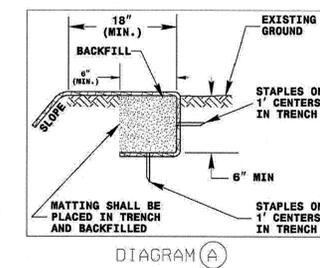
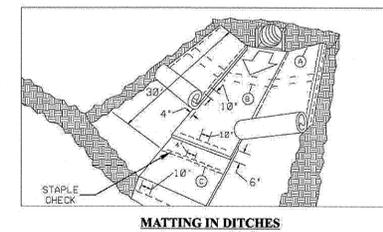
- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

PROJECT REFERENCE NO. 17BP10.R.B	SHEET NO. EC-2
RW SHEET NO.	
 STV / Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991	



MATTING INSTALLATION DETAIL



NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION. STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. 17BP10.R.B	SHEET NO. EC-3
RW SHEET NO.	
 STV/Ralph Whitehead Associates, Inc. <small>1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991</small>	

HYDRAULICS
ENGINEER



12/4/12

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL (FOR SLOPE STABILIZATION)

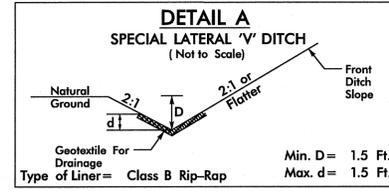
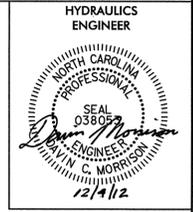
CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
			SUBTOTAL		430
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				45
				TOTAL	475
				SAY	475

CLASS B RIP RAP & GEOTEXTILE FOR DRAINAGE (FOR DITCH STABILIZATION)

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	CLASS B RIP RAP ESTIMATE (TN)
4	-L- V-DITCH	15+50	16+45	RT	20
4	-L- V-DITCH	16+80	17+75	RT	20
			SUBTOTAL		40
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				5
				TOTAL	45
				SAY	45

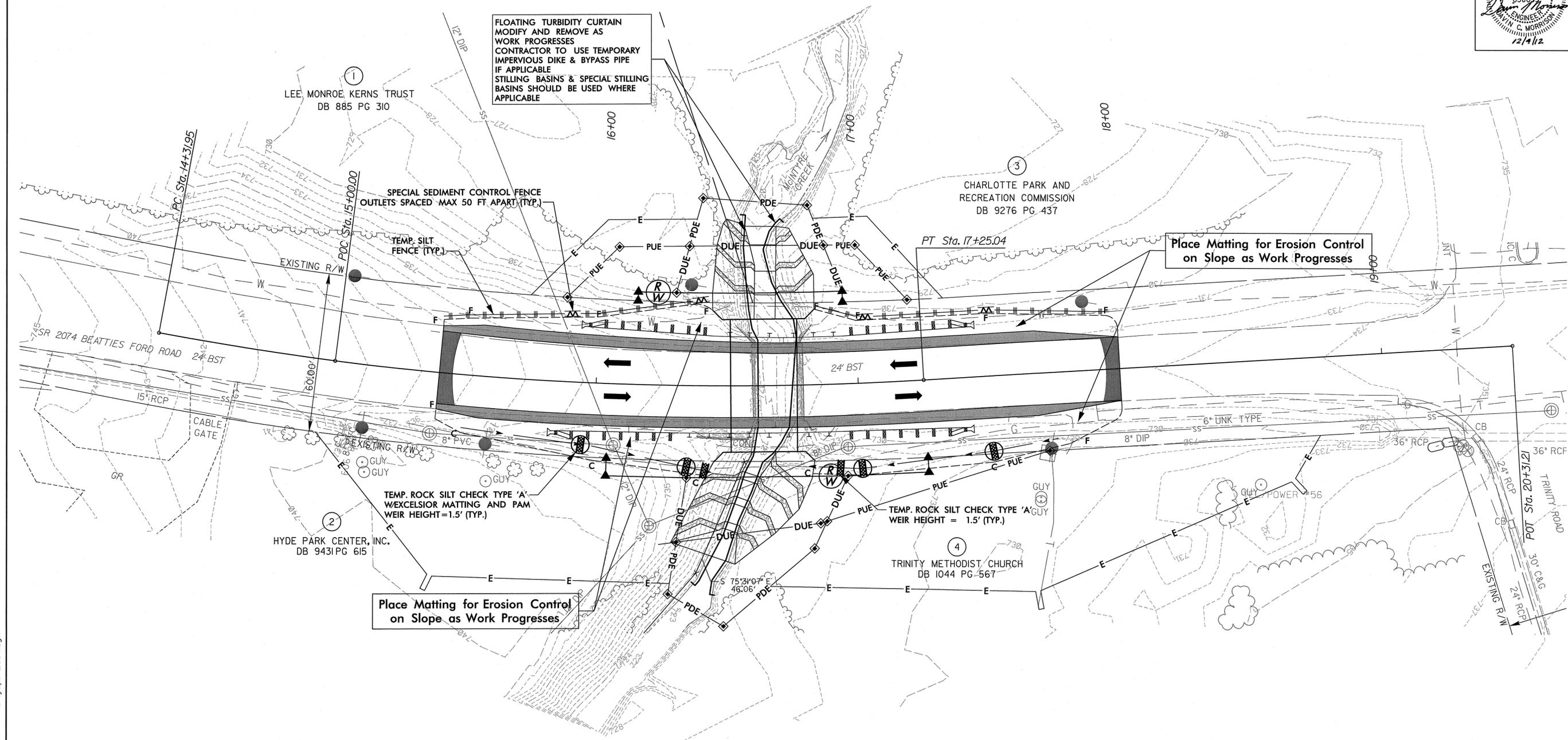
GEOTEXTILE FOR DRAINAGE (FOR DITCH STABILIZATION)

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	GEO FOR DRAINAGE ESTIMATE (SY)
4	-L- V-DITCH	15+50	16+45	RT	45
4	-L- V-DITCH	16+80	17+75	RT	45
			SUBTOTAL		90
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				10
				TOTAL	100
				SAY	100



FROM STA. 15+50 RT TO STA. 16+45 RT
FROM STA. 16+80 RT TO STA. 17+75 RT

NAD 83 | NSRS 2007



FLOATING TURBIDITY CURTAIN
MODIFY AND REMOVE AS
WORK PROGRESSES
CONTRACTOR TO USE TEMPORARY
IMPERVIOUS DIKE & BYPASS PIPE
IF APPLICABLE
STILLING BASINS & SPECIAL STILLING
BASINS SHOULD BE USED WHERE
APPLICABLE

Place Matting for Erosion Control
on Slope as Work Progresses

Place Matting for Erosion Control
on Slope as Work Progresses

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY
NEED TO BE INSTALLED AS DIRECTED BY THE
ENGINEER.

R:\Roadway\Pro\EC\10RB_rdy_ds\EC04.dgn

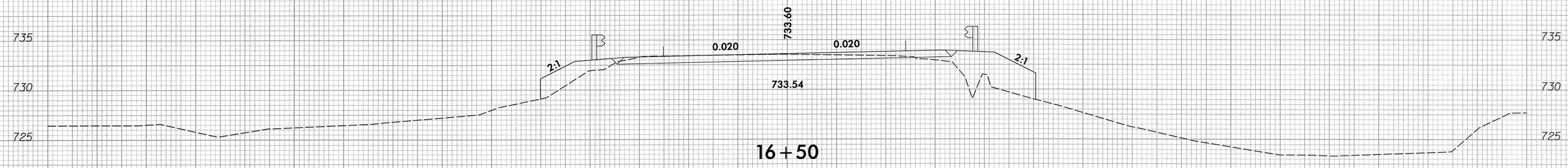
12/4/2012

8/23/99

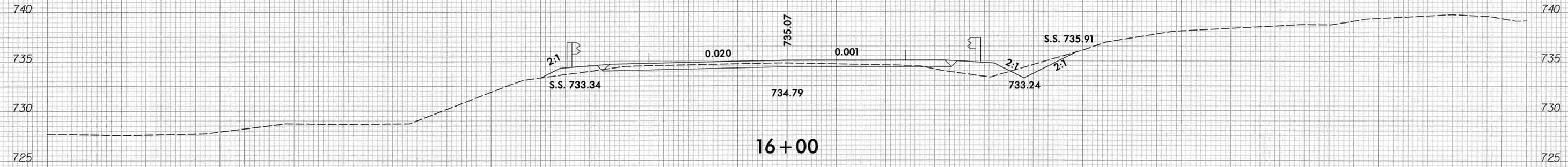
0 2.5 5	PROJ. REFERENCE NO. 17BP.10.R.8	SHEET NO. X-1
---------	------------------------------------	------------------

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

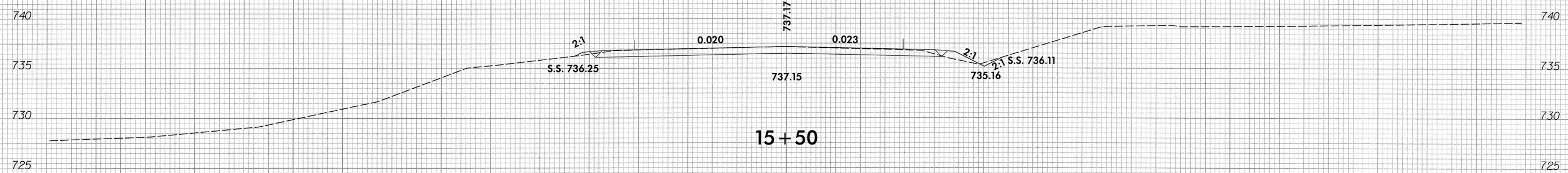
BEGIN CULVERT 16+51 +/-



16+50



16+00



15+50

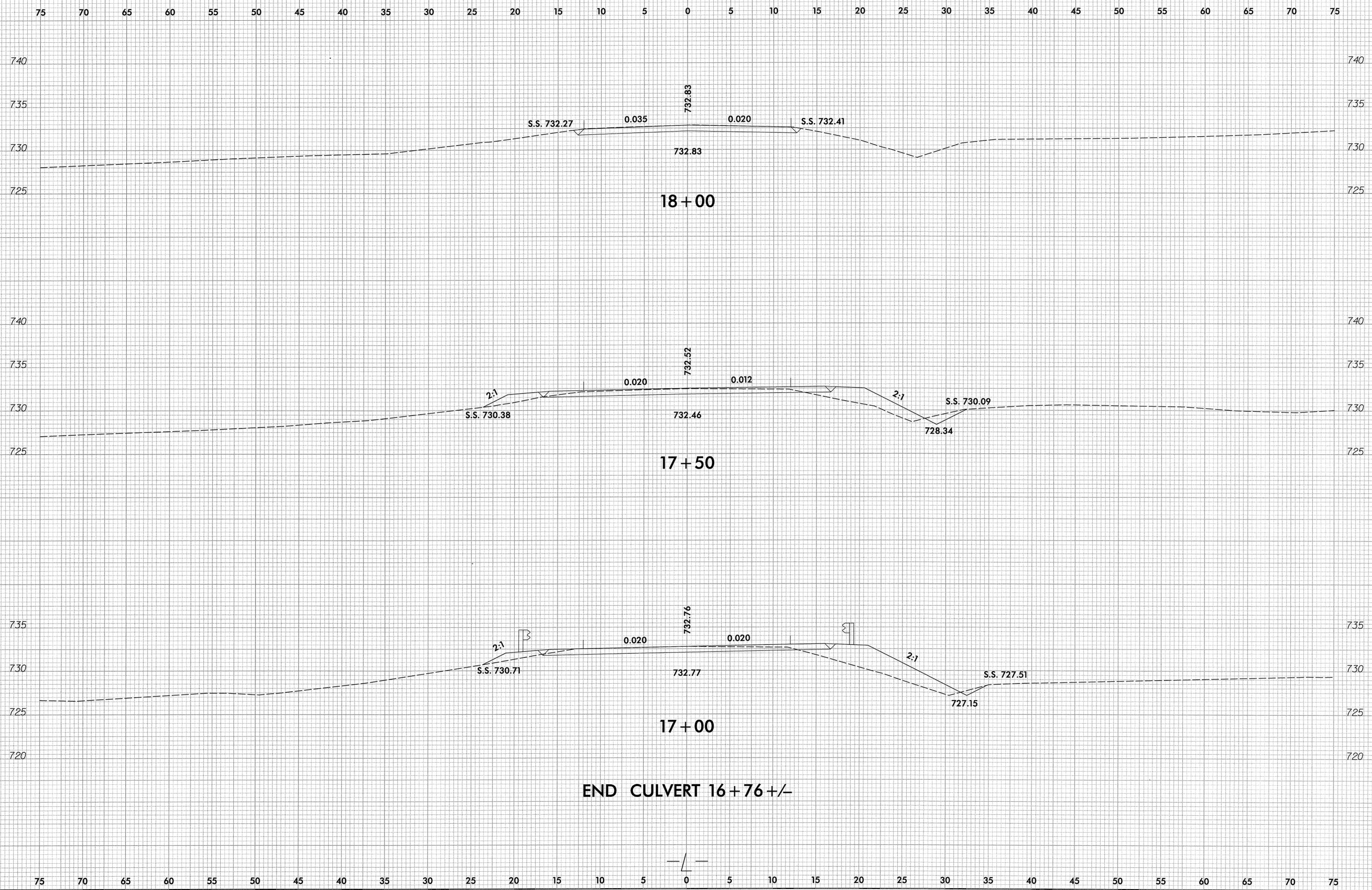
NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

12/4/2012
C:\p\proj\17BP.10.R.8\17BP.10.R.8.dwg

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

8/23/99

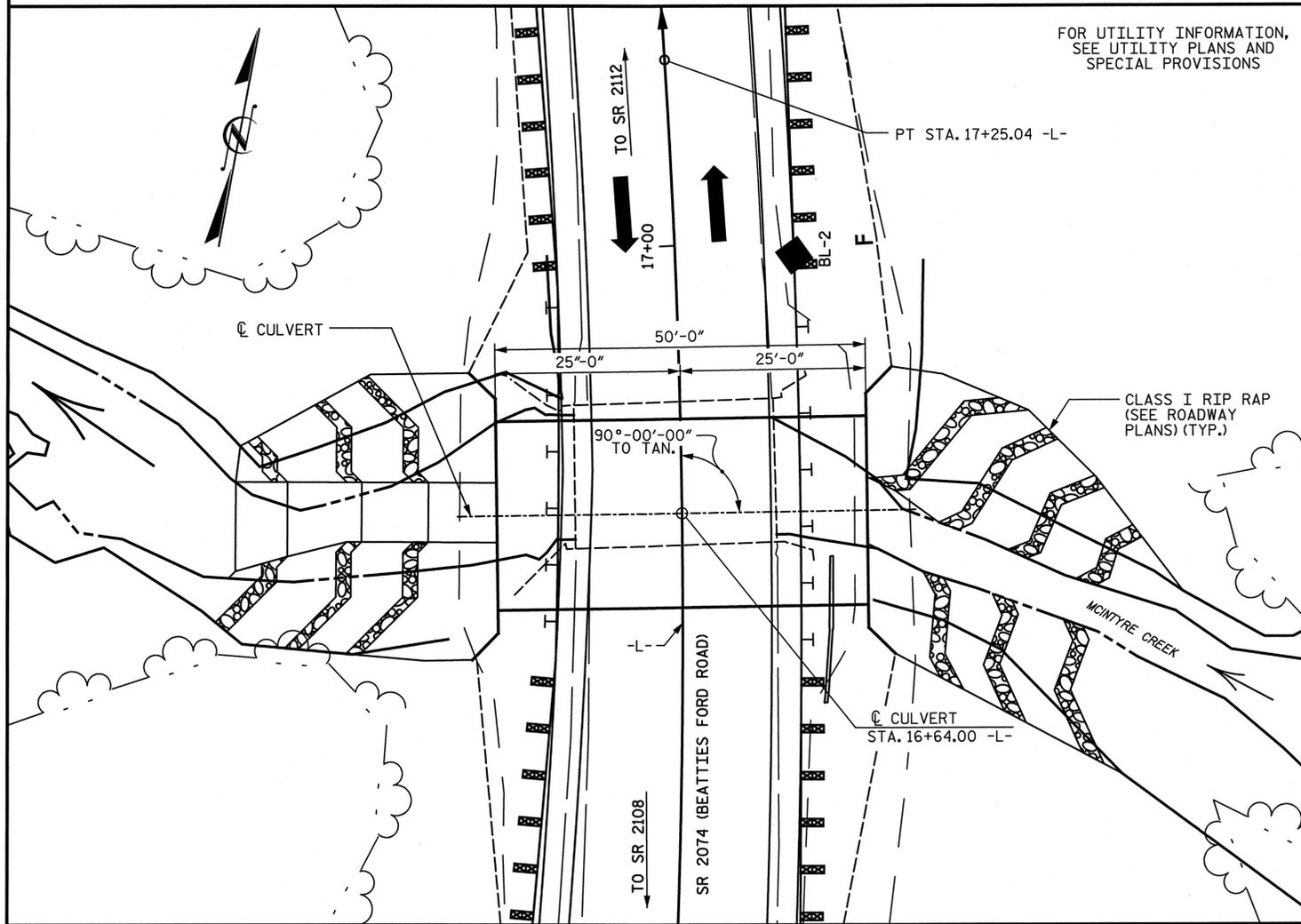
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	17BP.10.R.8	X-2



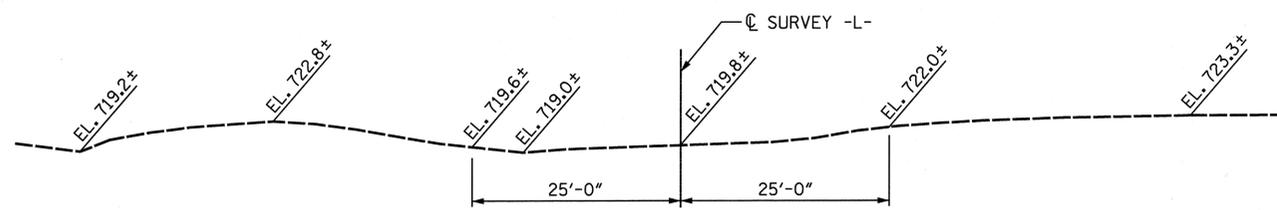
P:\4\202
r:\Projects\XSC\10R8_rdy_xpl.L.dgn
drakeac

BENCHMARK BL-2: 16.06' RT STA. 16+97.88 -L-, N 576369.234, E 1443767.638 ELEV. 731.56

FOR UTILITY INFORMATION,
SEE UTILITY PLANS AND
SPECIAL PROVISIONS



LOCATION SKETCH



PROFILE ALONG CULVERT

NOTES

ASSUMED LIVE LOAD -----HL-93 OR ALTERNATE LOADING.

DESIGN FILL----- MAX. 3.44', MIN. 2.46'

MATERIALS SHALL MEET THE REQUIREMENTS OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2012.

THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY. THE SUPPLIER SHALL PROVIDE DESIGNS AND DETAILS THAT MEET THE REQUIREMENTS OF AASHTO SECTION 12 AND ARE SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.

UNLESS OTHERWISE INDICATED, THE SUPPLIER SHALL DESIGN, DETAIL, AND FURNISH ALL STRUCTURAL ELEMENTS AND HARDWARE.

FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF THE CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

FOR ALUMINUM BOX CULVERT, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR FOUNDATION MATERIAL, SEE SPECIAL PROVISIONS.

FOR CULVERT BACKFILL, SEE SPECIAL PROVISIONS.

THE EXISTING STRUCTURE CONSISTING OF (1) 20'± STEEL PLANK DECK ON STEEL I-BEAM SPAN WITH A CLEAR ROADWAY WIDTH OF 27.6' AND SUPPORTED ON RUBBLE MASONRY WITH TIMBER SEATS AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATION.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STA. 16+64.00 -L-".

EXCAVATE 1 FOOT BELOW CULVERT AND REPLACE WITH FOUNDATION MATERIAL IN ACCORDANCE WITH ARTICLE 414 OF THE STANDARD SPECIFICATIONS AND THE "FOUNDATION MATERIAL" SPECIAL PROVISIONS.

NO WORK SHALL BE DONE ON THE CULVERT UNTIL THE AREA OF THE BOX CULVERT HAS BEEN UNDERCUT AND UNSUITABLE MATERIAL REPLACED WITH SUITABLE MATERIAL, PROPERLY COMPACTED TO THE ELEVATION OF THE BOTTOM OF THE CULVERT. THE LIMITS OF THE UNDERCUT EXCAVATION SHALL BE AT LEAST THE LIMITS OF THE BOX CULVERT INCLUDING THE WINGS. THE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "CULVERT EXCAVATION".

TOTAL STRUCTURE QUANTITIES

REMOVAL OF EXISTING STRUCTURE @ STA. 16+64.00 -L-	LUMP SUM
ALUMINUM BOX CULVERT @ STA. 16+64.00 -L-	LUMP SUM
CULVERT EXCAVATION	LUMP SUM
FOUNDATION MATERIAL	104 TONS
CULVERT BACKFILL	315 TONS
MOMENT SLAB	52.0 LIN. FT.

HYDRAULIC DATA

DESIGN DISCHARGE:-----1419 CFS
 FREQUENCY OF DESIGN FLOOD:----- 25 YRS.
 DESIGN HIGH WATER ELEVATION:----- 732.5
 DRAINAGE AREA:----- 2.0 SQ. MI.
 BASE DISCHARGE (Q100):----- 2024 CFS
 BASE HIGH WATER ELEVATION:----- 733.74

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE:-----1419 CFS
 FREQUENCY OF OVERTOPPING FLOOD:----- 25 YRS.
 OVERTOPPING FLOOD ELEVATION:----- 732.5

GRADE DATA

GRADE POINT ELEVATION @
 STA. 16+64.00 -L- ----- 733.30
 BED ELEVATION @
 STA. 16+64.00 -L- ----- 719.8
 ROADWAY FILL SLOPES -----2:1 (MAX.)

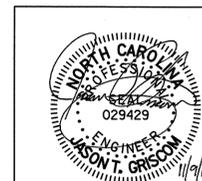
I HEREBY CERTIFY THAT THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. 17BP.10.R.8
MECKLENBURG COUNTY
 STATION: 16+64.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 107

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SINGLE
25'-4" X 9'-5"
ALUMINUM BOX CULVERT
 @ 90°



REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.

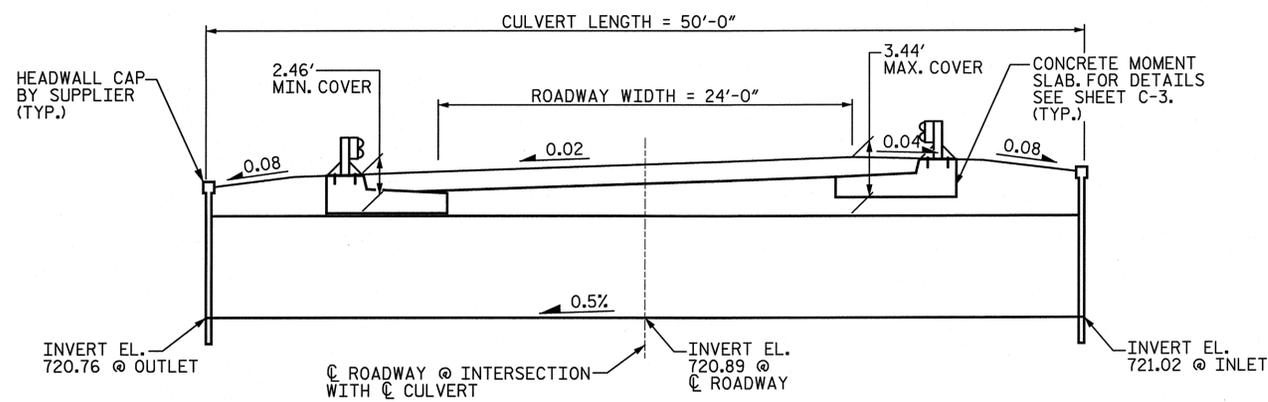
C-1
 TOTAL SHEETS
 3

STV / Ralph Whitehead Associates, Inc.
 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0991

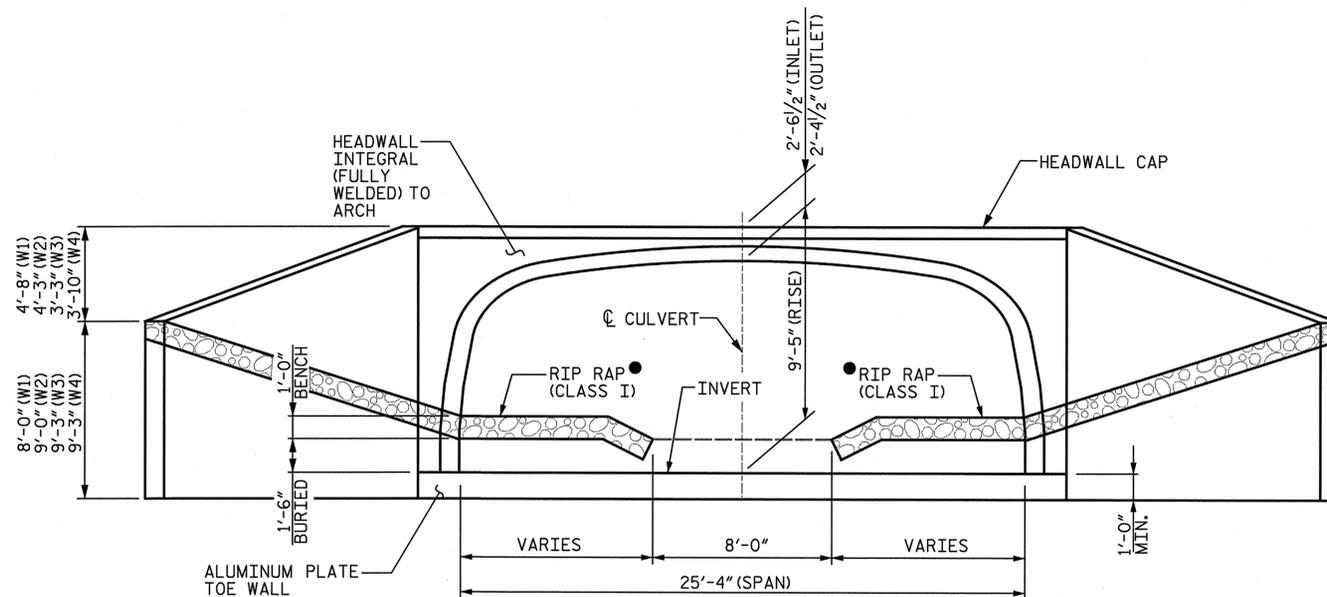
N:\PROJ\2514545\Low Impact Bridge Div 10\17BP.10.R.8\Structures\Finals\17BP.10.R.8 - (01) Location Sketch.dgn
 11/9/2012 12:34:28 PM Jgr1scom

DRAWN BY : JDE DATE : 10-12
 CHECKED BY : JTG DATE : 10-12

11/9/2012 12:19:29 PM N:\PROJ\2514545\Low Impact Bridge Div 10\17BP.10.R.8\Structures\Finals\17BP.10.R.8 - (02) Plan and Elevation.dgn



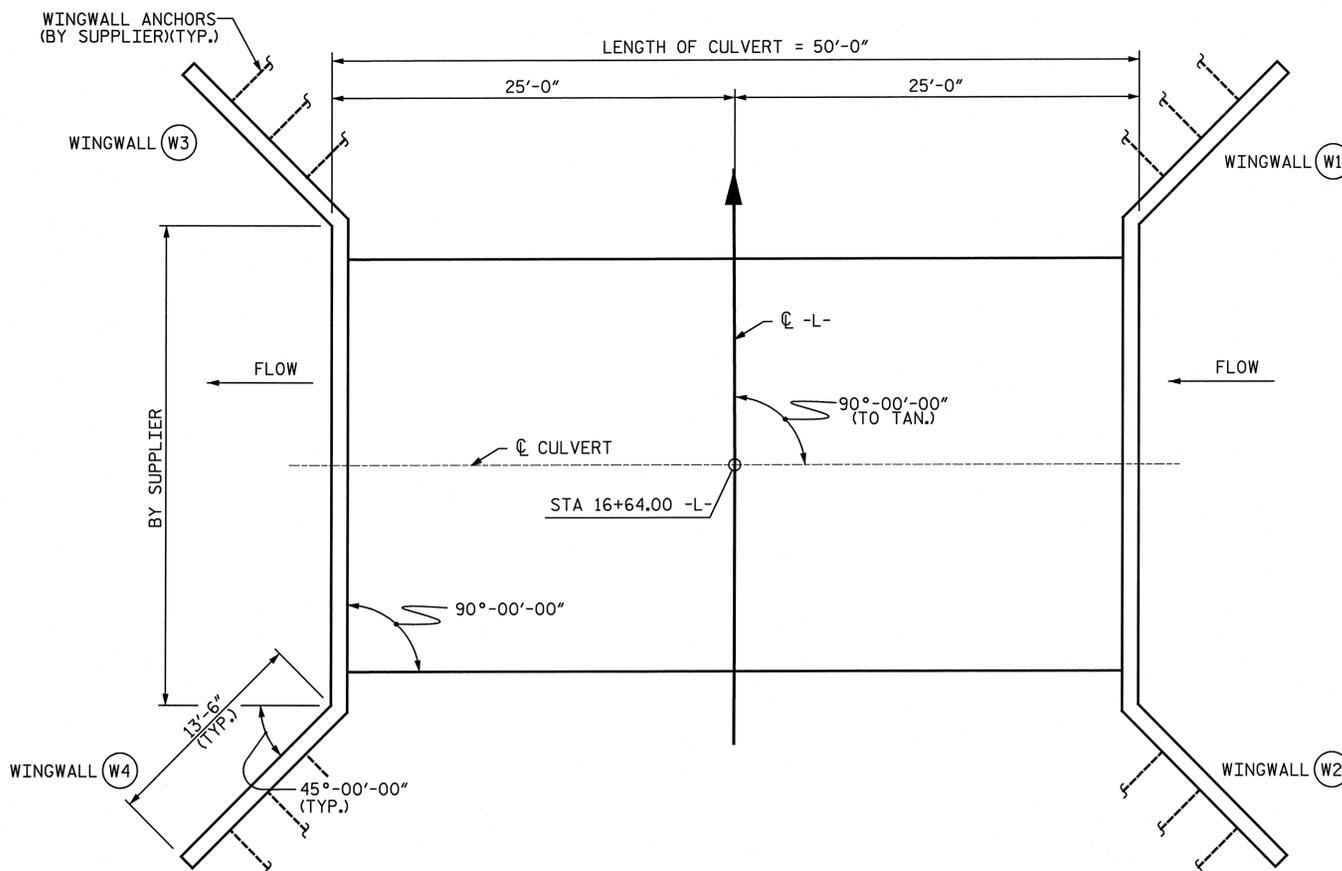
CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION NORMAL TO SKEW

INLET SHOWN, OUTLET SIMILAR

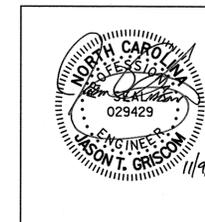
● ROADWAY PAY ITEM, SEE ROADWAY PLANS FOR DETAILS AND QUANTITIES



LENGTH FOR ALUMINUM BOX CULVERT

PROJECT NO. 17BP.10.R.8
MECKLENBURG COUNTY
 STATION: 16+64.00 -L-

SHEET 2 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

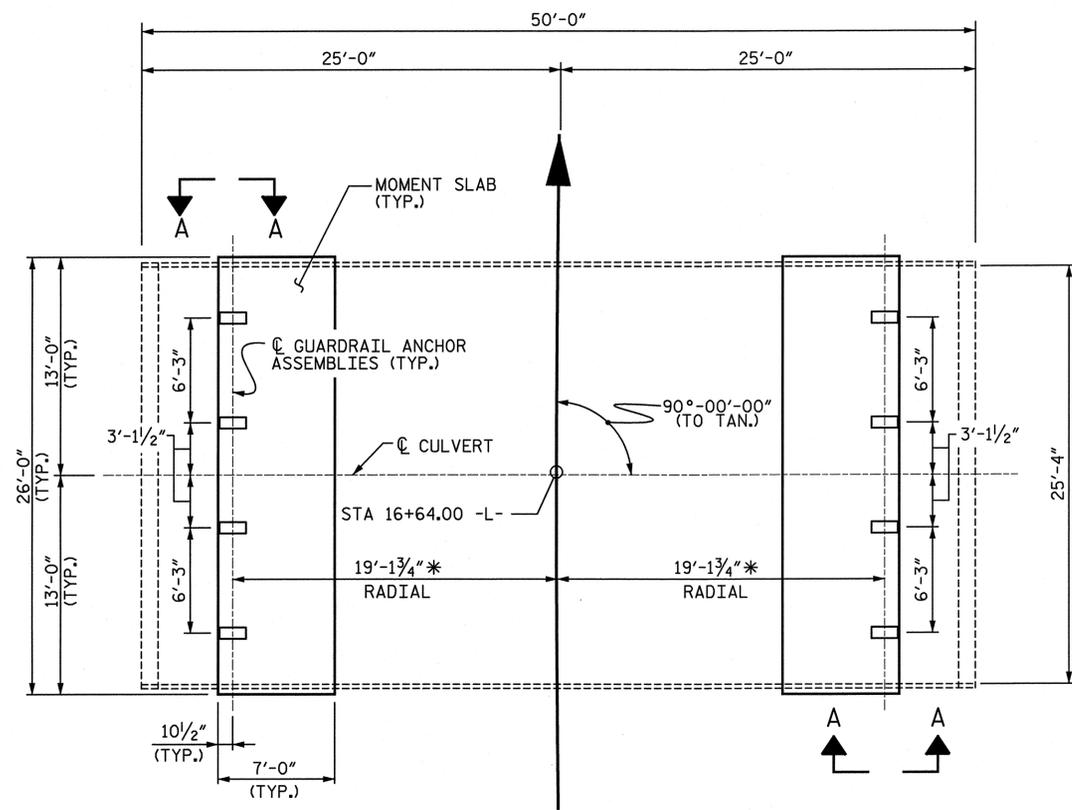
**SINGLE
 25'-4" X 9'-5"
 ALUMINUM BOX CULVERT
 @ 90°**

DRAWN BY : JDE DATE : 10-12
 CHECKED BY : JTG DATE : 10-12

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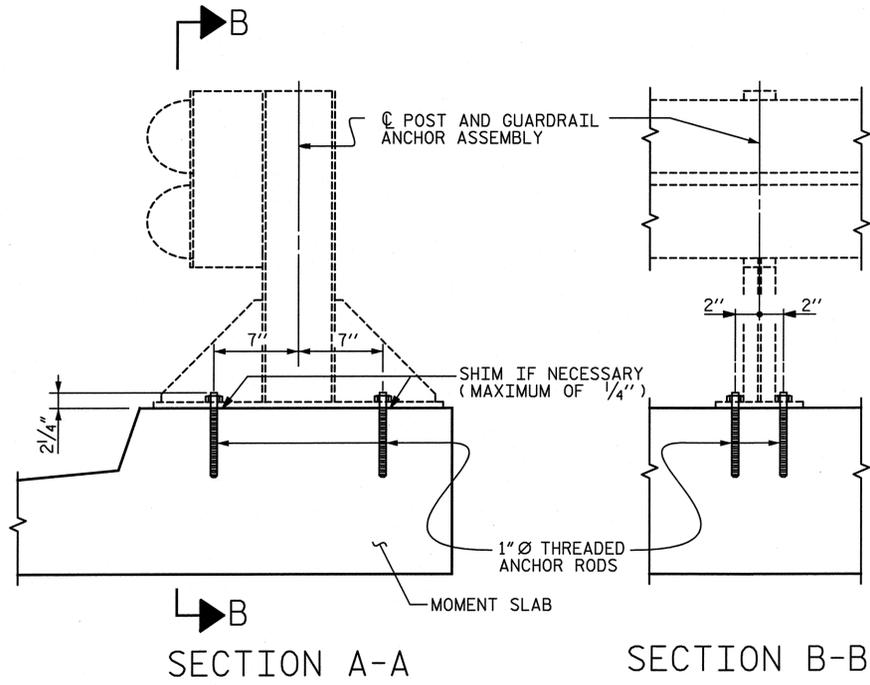
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-2
1			3			TOTAL SHEETS
2			4			3

11/9/2012 12:18:35 PM N:\PROJ\2514545\Low Impact Bridge DIV 10\17BP.10.R.8\Structures\Finals\R.8 - (03) Guardrail.dgn



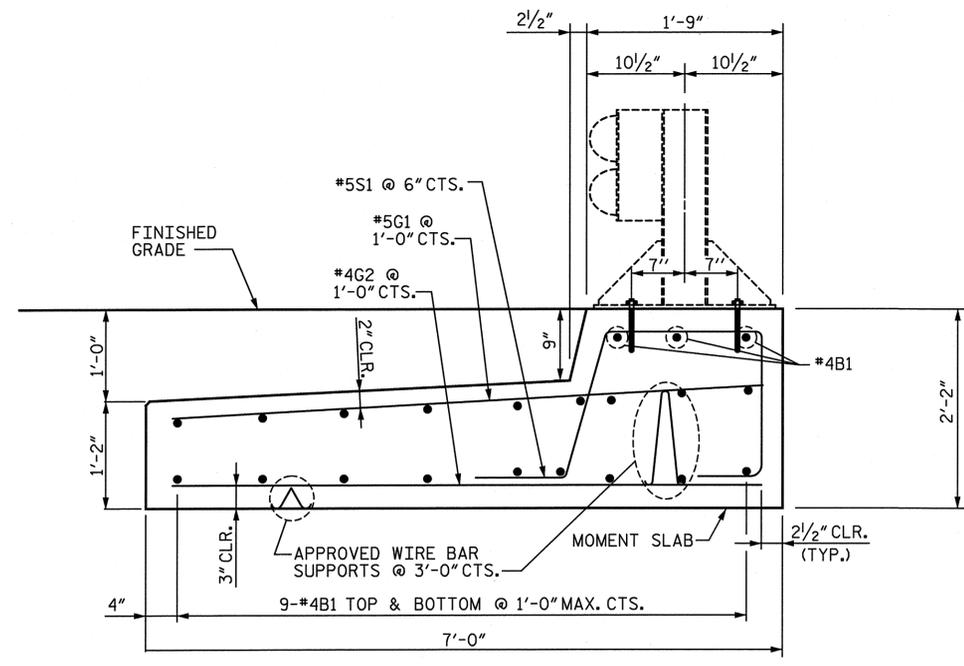
PLAN OF GUARDRAIL POST SPACING & MOMENT SLAB LAYOUT

*THIS DIMENSION TO BE CONFIRMED BY THE ENGINEER IN THE FIELD.



SECTION A-A

SECTION B-B



TYPICAL SECTION THROUGH MOMENT SLAB

NOTES

ALL GUARDRAIL ATTACHMENTS SHALL BE MADE USING ADHESIVELY ANCHORED ANCHOR BOLTS. LEVEL TWO FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 1" Ø BOLT IS 21.8 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS, SEE STANDARD SPECIFICATIONS.

ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE 1" Ø AND MEET THE REQUIREMENTS OF ASTM A325. BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

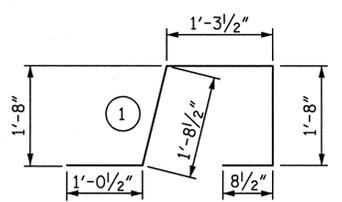
PAYMENT FOR GUARDRAIL, POSTS, ADHESIVELY ANCHORED ANCHOR BOLTS AND POST BASE PLATES IS INCLUDED IN ROADWAY PAY ITEMS.

THE GUARDRAIL POSTS SHALL NOT BE ATTACHED UNTIL THE MOMENT SLAB HAS ATTAINED AN AGE OF THREE CURING DAYS OR A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI. IN ADDITION, NO FILL MATERIAL, ASPHALT, OR CONSTRUCTION EQUIPMENT IS ALLOWED ON THE MOMENT SLAB PRIOR TO SATISFYING THE MINIMUM CONCRETE CURING AND STRENGTH REQUIREMENTS.

ALL REINFORCING STEEL IN THE MOMENT SLAB SHALL BE EPOXY COATED.

THE CONTRACT UNIT PRICE FOR "MOMENT SLAB, LIN. FT." WILL BE FULL COMPENSATION FOR SUBMITTALS, LABOR, TOOLS, EQUIPMENT, MOMENT SLAB MATERIALS, EXCAVATING, BACKFILLING, HAULING AND REMOVING EXCAVATED MATERIALS, AND SUPPLYING ANY INCIDENTALS NECESSARY TO CONSTRUCT THE CONCRETE MOMENT SLAB.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE MOMENT SLAB (2 REQ'D.)

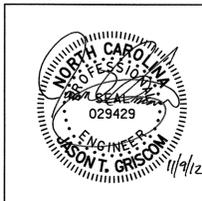
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	21	#4	STR	25'-8"	360
G1	26	#5	STR	6'-7"	179
G2	26	#4	STR	6'-7"	114
S1	52	#5	①	6'-5"	348

EPOXY COATED REINFORCING STEEL 1,001
CLASS AA CONCRETE MOMENT SLAB 10.3 CY

MOMENT SLAB	
PAY LENGTH =	52.0 LIN. FT.

PROJECT NO. 17BP.10.R.8
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SHEET 3 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SINGLE
25'-4" X 9'-5"
ALUMINUM BOX CULVERT
@ 90°

REVISIONS

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SHEET NO.	
C-3	TOTAL SHEETS 3

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