ROJECT: WBS 17BP.10.R.8

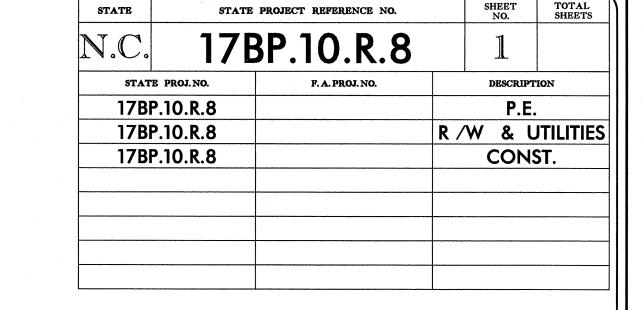
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

ON SR 2074 (BEATTIES FORD ROAD)

LOCATION: CULVERT #107 OVER McINTYRE CREEK

TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE





BEGIN PROJECT WBS 17BP.10.R.8

N.T.S.

-L- STA. 15 + 40.00

VICINITY MAP

See Sheet 1-A For Index of Sheets

END PROJECT

BEGIN PROJECT

● ● DETOUR

See Sheet 1-B For Standard Symbology Sheet

TO CHARLOTTE

DEGIN CULVERT
|-L- STA. 16+51+/|-L- STA. 16+76+/|-L- STA. 16+76+/|-L- STA. 16+76+/|-L- STA. 18+00.00

TO HUNTERSVILLE

END PROJECT WBS 17BP.10.R.8

TRACT:

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

PROFILE (HORIZONTAL) PROFILE (VERTICAL)

DESIGN DATA

ADT 2013 = 11,800 ADT 2035 = 25,000 DHV = N/A

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:

LETTING DATE:

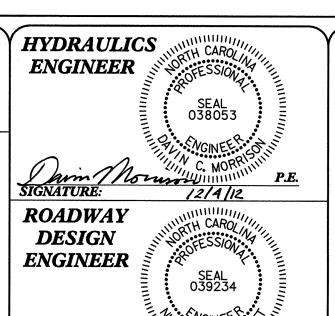
JANUARY 16, 2013

JULY 16, 2012

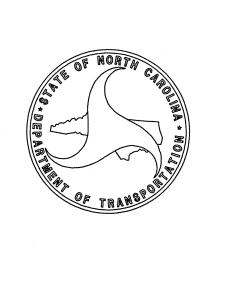
NIKKI T. HONEYCUTT, PE

PROJECT ENGINEER

ALLISON DRAKE, EI
PROJECT DESIGNER



1 Jikki J. J. Snaycus HONE P.E. SIGNATURE: 4DEC12



PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.8	/-A
RW SHEET NO.	

 $\langle \hat{\downarrow} \rangle$

STV/Ralph Whitehead Associates, Inc.

1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

ROADWAY DESIGN ENGINEER

SEAL THAT HONE

INDEX OF SHEETS

SHEET
TITLE SHEET
INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
CONVENTIONAL SYMBOLS
SURVEY CONTROL SHEET
SUMMARIES AND TYPICALS
PLAN AND PROFILE SHEET
UTILITY CONSTRUCTION PLANS
UTILITIES BY OTHERS PLANS
TRAFFIC CONTROL PLANS
EROSION CONTROL PLANS
CROSS-SECTIONS
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

25.04 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

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PROJECT	REFERENCE	NO.	
171	3PJ0.R.8		

I-B

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:	
State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line —	
Existing Iron Pin	O
Property Corner	×
Property Monument	ECM
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	-
Proposed Chain Link Fence	——————————————————————————————————————
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Known Soil Contamination: Boundary or Site	
Potential Soil Contamination: Boundary or Site	
BUILDINGS AND OTHER CULT	000
Gas Pump Vent or U/G Tank Cap	
Sign —	_
Well —	_
Small Mine	•
Foundation —	_
Area Outline	
Cemetery	
Building	_
School ———————————————————————————————————	
Church	
Dam	
, - 4111	
HYDROLOGY:	
Stream or Body of Water —————	
Hydro, Pool or Reservoir ————————————————————————————————————	
Jurisdictional Stream	
Buffer Zone 1	——————————————————————————————————————
Buffer Zone 1 ———————————————————————————————————	——————————————————————————————————————
Buffer Zone 1	——————————————————————————————————————
Buffer Zone 1 Buffer Zone 2 Flow Arrow Disappearing Stream	——————————————————————————————————————
Buffer Zone 1 ———————————————————————————————————	——————————————————————————————————————
Buffer Zone 1 Buffer Zone 2 Flow Arrow Disappearing Stream	— BZ 1 — BZ 2 — S
Buffer Zone 1 Buffer Zone 2 Flow Arrow Disappearing Stream Spring	— JS — BZ 1 — BZ 2 —

RAILROADS:	
Standard Gauge	CSX TRANSPORTATION
RR Signal Milepost	⊙ MILEPOST 35
Switch —	SWITCH
RR Abandoned	
RR Dismantled	
RIGHT OF WAY:	
Baseline Control Point	•
Existing Right of Way Marker	
Existing Right of Way Line	
Proposed Right of Way Line	$\frac{\widehat{R}}{\widehat{W}}$
Proposed Right of Way Line with Iron Pin and Cap Marker	
Proposed Right of Way Line with	
Concrete or Granite Marker	
Existing Control of Access	· · · · · · · · · · · · · · · · · · ·
Proposed Control of Access ————	
Existing Easement Line ————————————————————————————————————	——— E ———
Proposed Temporary Construction Easement –	E
Proposed Temporary Drainage Easement ——	TDE
Proposed Permanent Drainage Easement ——	PDE
Proposed Permanent Drainage / Utility Easemen	t
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 FEATURE	ES:
Existing Edge of Pavement	
Existing Curb ————	· · · · · · · · · · · · · · · · · · ·
Proposed Slope Stakes Cut	<u>C</u>
Proposed Slope Stakes Fill ————	
Proposed Curb Ramp	ls.
Curb Cut Future Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	XXXXX
VEGETATION:	2
Single Tree	슌
Single Shrub	\$
Hedge ———————————————————————————————————	· · · · · · · · · · · · · · · · · · ·

Orchard	용 중 중 중
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	СВ
Paved Ditch Gutter	
Storm Sewer Manhole ————	(S)
Storm Sewer	S
UTILITIES:	
POWER:	
Existing Power Pole ————	•
Proposed Power Pole	6
Existing Joint Use Pole	
Proposed Joint Use Pole	
Power Manhole ————	P
Power Line Tower	\boxtimes
Power Transformer	\square
U/G Power Cable Hand Hole	
H_Frame Pole	•
Recorded U/G Power Line	P
Designated U/G Power Line (S.U.E.*)	
TELEPHONE:	
Existing Telephone Pole	
Proposed Telephone Pole	-0-
Telephone Manhole	\bigcirc
Telephone Booth	3
Telephone Pedestal —————	
Telephone Cell Tower	,
U/G Telephone Cable Hand Hole	HH
Recorded U/G Telephone Cable ————	T
Designated U/G Telephone Cable (S.U.E.*)—	
Recorded U/G Telephone Conduit	
Designated U/G Telephone Conduit (S.U.E.*)	
Recorded U/G Fiber Optics Cable ————	T F0

/ATER:	
Water Manhole ————————————————————————————————————	W
Water Meter	0
Water Valve	$_{i}$ \otimes
Water Hydrant ————————————————————————————————————	❖
Recorded U/G Water Line	
Designated U/G Water Line (S.U.E.*)	
Above Ground Water Line	A/G Water
V:	
TV Satellite Dish	
TV Pedestal	C
TV Tower ————————————————————————————————————	\otimes
U/G TV Cable Hand Hole	H_{H}
Recorded U/G TV Cable ————————————————————————————————————	TV
Designated U/G TV Cable (S.U.E.*)	
Recorded U/G Fiber Optic Cable ————	TV FO
Designated U/G Fiber Optic Cable (S.U.E.*)—	TV FO—
AS:	
Gas Valve	\Diamond
Gas Meter ———————————————————————————————————	\Diamond
Recorded U/G Gas Line	
Designated U/G Gas Line (S.U.E.*)	
Above Ground Gas Line ————————————————————————————————————	A/G Gas
ANITARY SEWER:	
Sanitary Sewer Manhole	
Sanitary Sewer Cleanout ————————————————————————————————————	•
U/G Sanitary Sewer Line ————————————————————————————————————	
Above Ground Sanitary Sewer ———————————————————————————————————	
Designated SS Forced Main Line (S.U.E.*) —	
besignated 33 forced Main Line (3.0.L.) —	
AISCELLANEOUS:	
Utility Pole ————————————————————————————————————	
Utility Pole with Base ————————————————————————————————————	
Utility Located Object ————————————————————————————————————	□⊙
Utility Traffic Signal Box —	S
Utility Unknown U/G Line —————	
U/G Tank; Water, Gas, Oil —————	
Underground Storage Tank, Approx. Loc. ——	(
4/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:

1. 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/

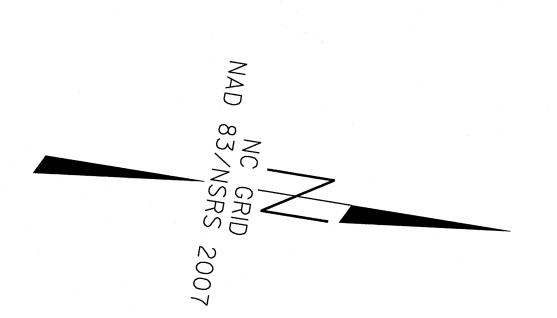
THE FILES TO BE FOUND ARE AS FOLLOWS: 590107_LS_CONTROL.TXT

- 2. SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- 3. 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

16+95.00

17+30.00

17+30.00



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(ft) EASTING: 1443767.638(ft) ELEVATION: 731.56(ft)

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

TO HUNTERSVILLE

SR 2074 BEATTIES FORD ROAD 24' BST

	N 1º12' 11.	TO CHARLOTTE		PC Sia 14+31.95
TYPE STATION	NORTH	EAST		
POT 10+00.00	575669.7545	1443766.6564		
PC 14+31.95	576101.6120	1443775.7258		
PT 17+25.Ø4	576392.4761	1443746.2127		
POT 20+31.21	576691.0489	1443678.4295	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	////
	ROW MARKER IRON			
ALIGN STAT	ION OFFSET	NORTH	EAST	
L 16+05	5.00 28.28	576277.7587	1443794.9553	
L 16+Ø5	5.00 40.00	576279.1996	14438Ø6.59Ø5	
L 16+15	5.00 -31.65	576280.0520	1443734.2518	
L 16+15	5.00 -40.00	576278.9561	1443725.9690	
L 16+95	5.00 -30.88	576357.0230	1443722.2227	

576355.2266

576406.1704

576403.8503

1443713.2787

1443784.1216

1443773.9017

	F	PERMANENT EA	ASEMENTS	
ALIGN	STATION	OFFSET	NORTH	EAST
L	16+29.00	79.00	576309.3455	1443841.8975
	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
	16+56.00	-76.00	576312.2124	1443684.5936
L	16+82.00	-68.00	576337.6770	1443688.1765
	16+82.00	62.00	576361.8934	1443815.9011
L	16+95.00	40.00	576370.9797	1443791.7124

-40.00

40.00

29.52

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.Ø6 RT
3	BL - 3	576667.1050	1443721.3900	737.01	19+98.35	36.59 RT

BL-2

NOTE: DRAWING NOT TO SCALE

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

EARTHWORK SUMMARY (IN CUBIC YARDS)

CHAIN	FROM STATION	TO STATION	SIDE	UNCL. EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L-	15+40.00	16+64.00	LT & RT	78		94	16	
	SUBTOTAL S	SUMMARY NO. 1		78		94	16	
-L-	16+64.00	19+00.00	LT & RT	135	·	186	51	
	SUBTOTAL S	SUMMARY NO. 2		135		186	51	
SUBTOTAL	. SUMMARY 1–2			213		280	67	
	TO CLEARING			-119			119	
PROJECT	LIEU OF BORRO	DW .		94		280	186	
· · · · · · · · · · · · · · · · · · ·		L ON BORROW	PITS				9	
GRAND T	OTAL	·		94		280	195	
SAY				95			200	

NOTE: Earthwork quantities are calculated by the Roadway Design Unit.

These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

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."

	PAVEMENT SCHEDULE
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2.0" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE 119.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3.0" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
Т	EARTH MATERIAL
U	EXISTING PAVEMENT
W	PAVEMENT WEDGING

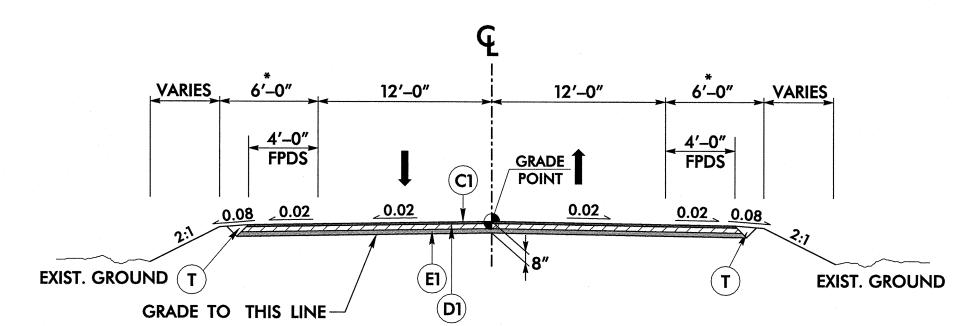
	· · ·					
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER					
SEAL A MANUEL STATE OF THE STAT	. PAVEMENT DESIGN PROVIDED BY NCDOT					
STV/Ralph Whitehead Associates, Inc.						
1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F—0991						
Charlotte,						

SHEET NO.

PROJECT REFERENCE NO.

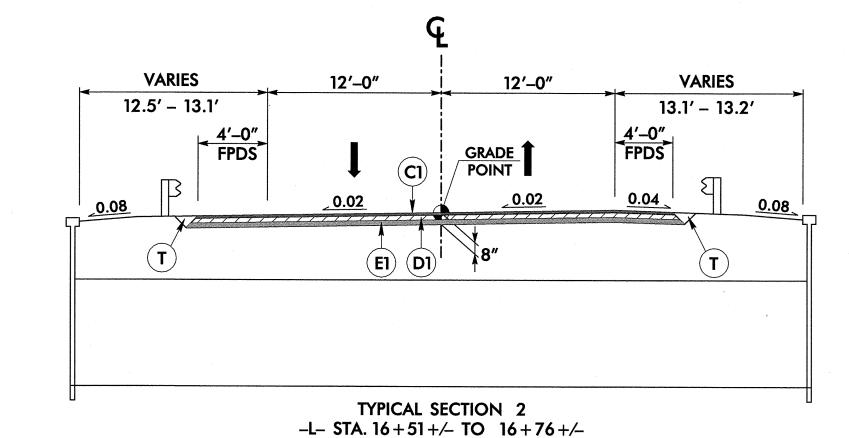
17BP.10.R.8

RW SHEET NO.



TYPICAL SECTION 1 -L- STA. 15+40.00 TO 16+51+/--L- STA. 16+76+/- TO 18+00.00

* 9'-0" WITH GUARDRAIL ** ALL PAVEMENT SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

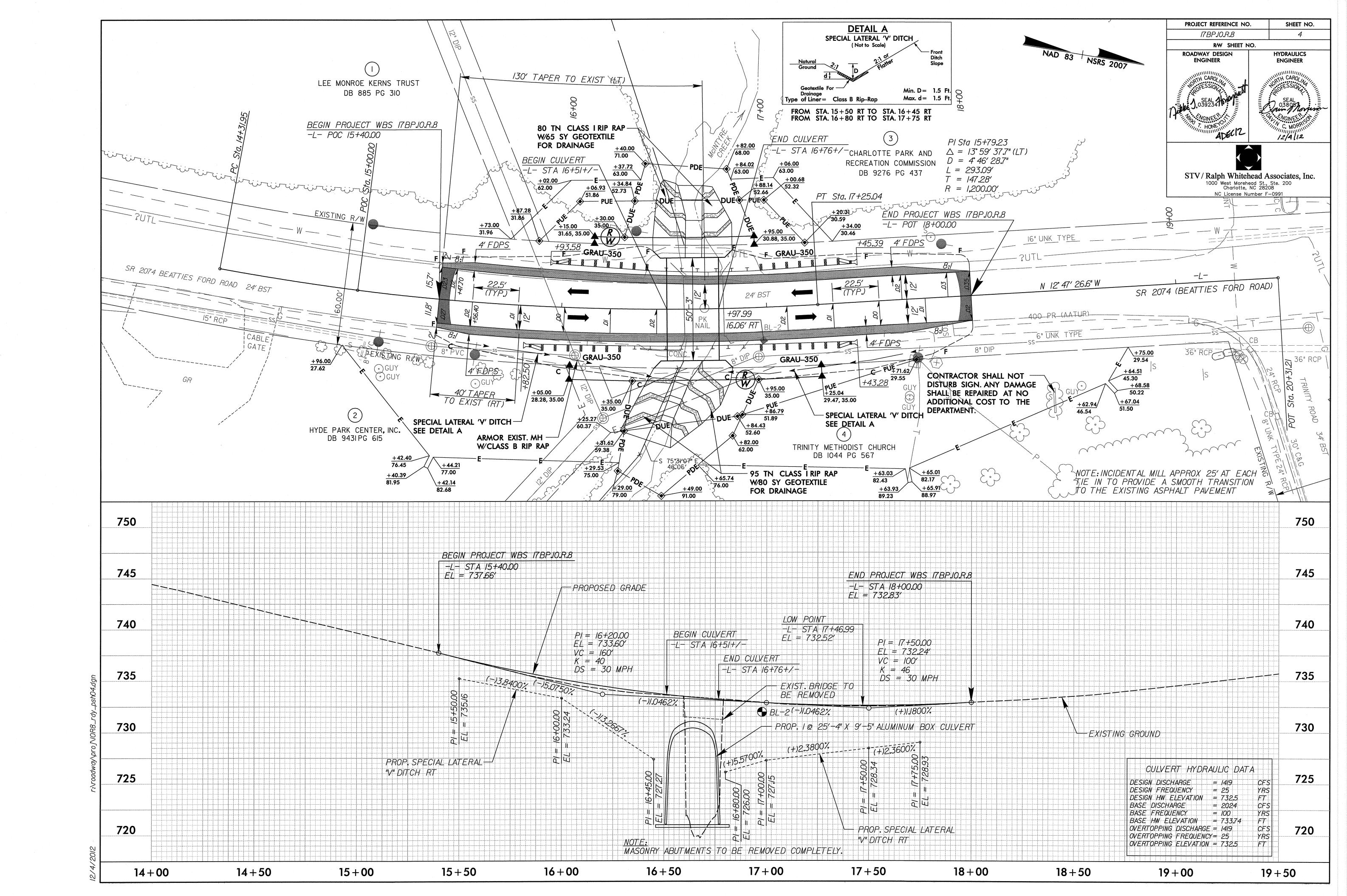


* W MEASURED FROM "N" AT THE BEGINNING OF THE ANCHOR TO "N" AT THE END OF THE ANCHOR. "N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL. TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT. FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.

OTIADDD ATT OTILITADTI

G = GA	TAL WIDTH OF FLARE ING IMPACT ATTENUA ON-GATING IMPACT A	TOR TYPE 350		F GUARDRAIL.							GUA	RDR	AIL S	UMM	ARY										·																																					
SURVEY			LOCATION		LENGTH		WARRANT	POINT	"N" DIST.	TOTAL	FLARE	LENGTH	,	*		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS		ANCHORS				IMPACT ATTENUATOR TYPE 350	SINGLE	REMOVE	REMOVE AND			
LINE	BEG. STA.	END STA.	LOCATION	STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END	FROM E.O.L.	SHOUL. WIDTH	APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	B-77 GR 35	AU M-350	TYPE III	CAT-1	VI BIG	IC AT-	1	GUARDRAIL	REMOVE EXISTING GUARDRAIL	STOCKPILE EXISTING GUARDRAIL	RE	EMARKS																																			
L_	15+82.50	17+43.28	RT	162.50			16+45.16	16+82.83	6.00	9.00	50.0′	50.0′	1.0′	1.0′		2										,																																				
-L-	15+93.58	17+45.39	LT	150.00			16+83.75	16+44.24	6.00	9.00	50.0′	50.0′	1.0'	1.0′		2		· · · · · · · · · · · · · · · · · · ·																																												

																							•																																							
																	***************************************	······································																																												
<u></u>											`\																	***************************************																																		
			TOTAL:	312.50												4	·																																													
		TOTAL ANC	HOR LENGTH:	200.0			,																																																							
		TOTAL GUARD	RAIL LENGTH:	112.50												-																																														
		,	SAY:	112.50																																																										



4 **7B** WB

END PROJECT

BEGIN PROJECT

VICINITY MAP

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

> CHARLOTTE MECKLENBURG UTILITIES CHARLOTTE, NORTH CAROLINA 28216

00

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

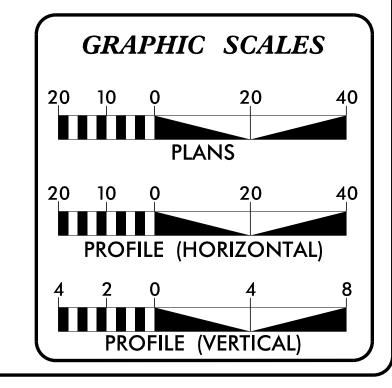
T.I.P. NO. SHEET NO 17BP.10.R.8 UC-1

UTILITY CONSTRUCTION PLANS MECKLENBURG COUNTY

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



END PROJECT WBS 17BP.10.R.8 -L-STA.18+00.00BEGIN PROJECT WBS 17BP.10.R.8 -L-STA.15+40.0016" WATER LINE BEGIN CULVERT -L- STA. 16+51+/-END CULVERT -L- STA. 16 + 76 + /-TO HUNTERSVILLE ----TO CHARLOTTE SR 2074 (BEATTIES FORD ROAD) 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 8" SEWER LINE VAUGHN & MELTON CONSULTING ENGINEERS, INC. DESIGNED BY: FIRM: ENGINEER: REECE M. SCHULER, P.E. DESIGNED BY: REECE M. SCHULER, P.E. 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



INDEX OF SHEETS

N.T.S.

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

WATER AND SEWER OWNERS ON PROJECT

(1) WATER & SEWER - CHARLOTTE MECKLENBURG UTILITIES





PREPARED IN THE OFFICE OF:

DIVISION OF HIGHWAYS UTILITIES ENGINEERING

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

Roger Worthington, P.E. UTILITIES SECTION ENGINEER

UTILITIES PROJECT DESIGNER

Xxxxx Xxxxx, P.E. Reece Schuler, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER

STATE OF NORTH CAROLINA

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown) 111∕₄ Degree Bend ······ Plug ····· Cross + ++ Reducer ······ Butterfly Valve Line Stop ······ Î Line Stop with Bypass ····· Blow Off ····· Relocate Fire Hydrant ····· 🞳 Water Meter Relocate Water Meter Water Pump Station ····· PS(W) RPZ Backflow Preventer RPZ 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) (Sized per Note)

Sewer Pump Station · · · · · · PS(SS)

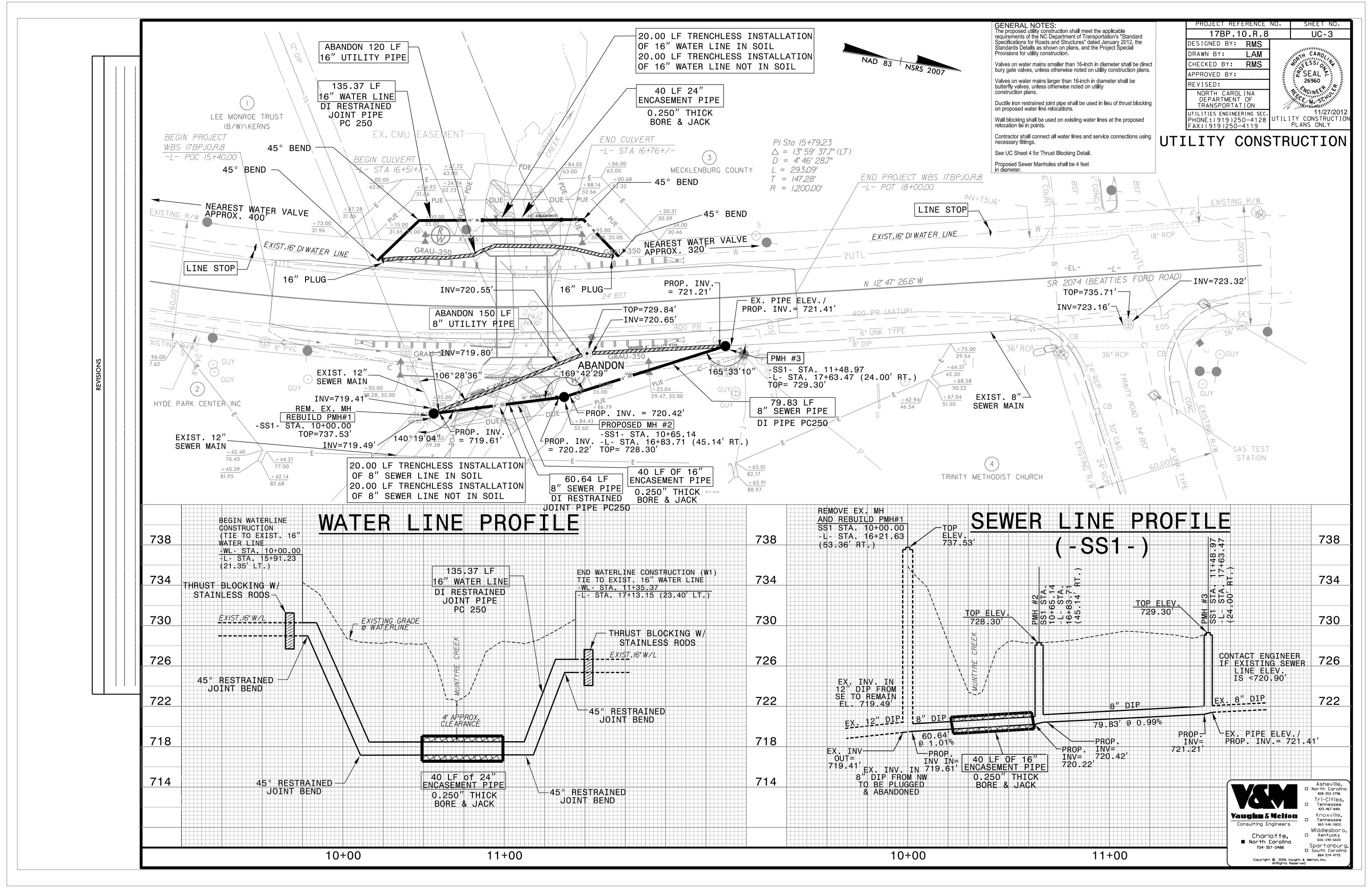
PROPOSED MISCELLANOUS UTILITIES SYMBOLS

Power Pole ·····	- 6	Thrust Block ······	<u>I</u>
Telephone Pole ·····	· -	Air Release Valve ······	AR •
Joint Use Pole ·····	· -	Utility Vault	UV
Telephone Pedestal ·····	- TEL PED	Concrete Pier·····	CP.
Utility Line by Others (Type as Shown)	<u> </u>	Steel Pier ···· [<u>SP</u>
Trenchless Installation ·····	12" TL INSTALL	Plan Note ·····	
Encasement by Open Cut	- 24" ENCAS BY OC	Pay Item Note ·····	NOTE PAY ITEM
Encasement ·····	- 24" ENCASEMENT		PAY ITEM

EXISTING UTILITIES SYMBOLS

		*	
Power Pole · · · · · · · · · · · · · · · · · · ·	•	*Underground Power Line	P ————————————————————————————————————
Telephone Pole · · · · · · · · · · · · · · · · · · ·	◆	*Underground Telephone Cable ····-	т
Joint Use Pole ·····	-	*Underground Telephone Conduit ····-	тс
Utility Pole ·····	•	*Underground Fiber Optics Telephone Cable –	Т F0-
Utility Pole with Base		*Underground TV Cable····	т v —
H-Frame Pole ······	•—•	*Underground Fiber Optics TV Cable ····-	TV F0
Power Transmission Line Tower		*Underground Gas Pipeline ····	C
Water Manhole	Θ	Aboveground Gas Pipeline	A/G Gas
Power Manhole ·····	P	*Underground Water Line····-	w —
Telephone Manhole ·····		Aboveground Water Line	A/G Water
Sanitary Sewer Manhole	(b)	*Underground Gravity Sanitary Sewer Line -	
Hand Hole for Cable ·····	H _H	Aboveground Gravity Sanitary Sewer Line -	A/G Sanitary Sewer
Power Transformer ······		*Underground SS Forced Main Line	FSS——
Telephone Pedestal ······	T	Underground Unknown Utility Line ····-	?UTL
CATV Pedestal ······		SUE Test Hole·····	•
Gas Valve ·····	♦	Water Meter	\odot
Gas Meter ·····	♦	Water Valve	⊗
Located Miscellaneous Utility Object ·····	\odot	Fire Hydrant ······	♦
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout ·····	\oplus
End of Information ·····	E.O.I.		

For Existing Utili	ties	
Utility Line Drawn (Type as Shown)	from Record	
Designated Utility (Type as Shown)	Line	· <u>—</u>



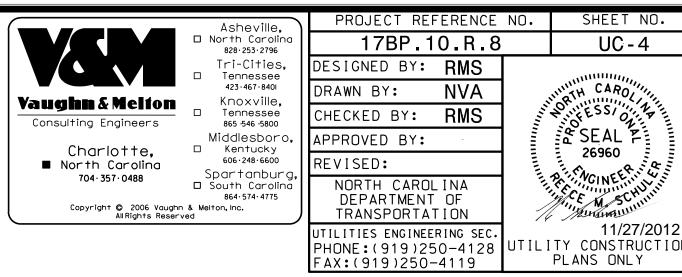
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITIES NOTES AND DETAILS SHEET

CONCRETE THRUST BLOCK -

WITH ANCHOR RING,

STAINLESS STEEL RODS



→|4"| →|4"|

UTILITY CONSTRUCTION

<u>DETAIL</u> "A"

RFBARS- GRADE 60 PFR

ASTM A615-SEE REBAR

SCHEDULES AND DETAIL,

CUT WHEN REQUIRED

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 MECKLENBURG UTILITIES.
- 3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPT 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

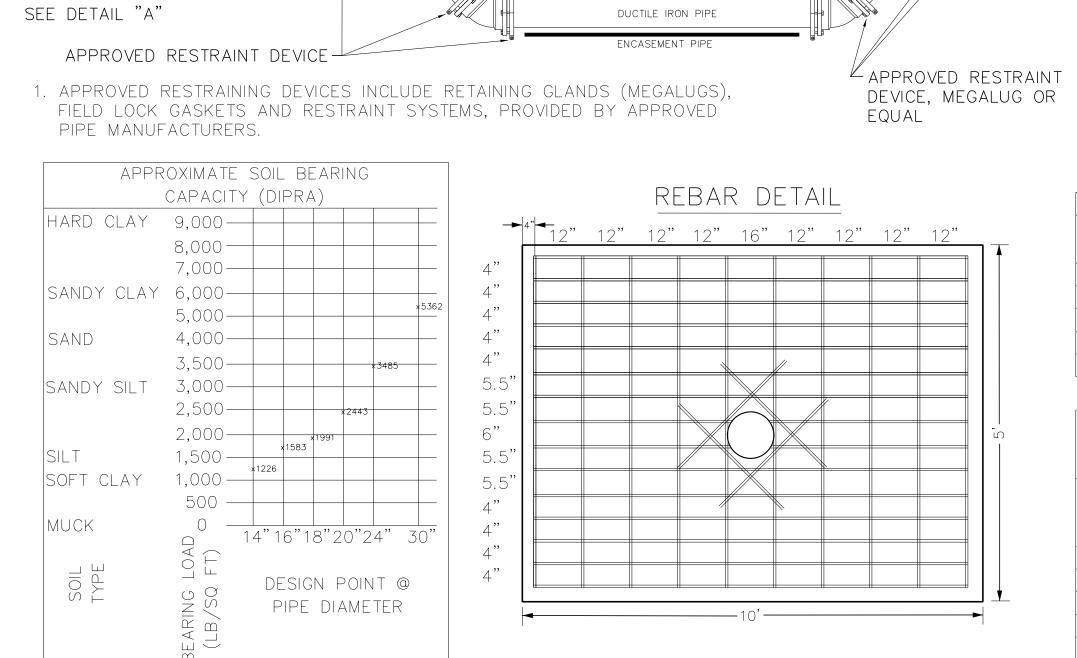
COST TO THE DEPARTMENT.

7. 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.

- 8. 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.
- 9. 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 USING 2 LINE STOPS AND /OR ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY. 10. 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. PROPOSED WATER LINE FROM W1 STATION 10+00 TO W1 STATION 11+35.37 SHALL BE D.I.R.J. (DUCTILE IRON RESTRAINED JOINT) PIPE.
- 2. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE PATH DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.



REBAR SCHEDULE							
	LENGTH	NUMBER					
TYPE	(INCHES)	REQUIRED					
VERTICAL	52	6					
VERTICAL	20	4					
HORIZONTAL	112	10					
HORIZONTAL	48	4					
DIAGONAL	48	4					

1"THICK X 3"WIDE

FACTORY WELDED

TO PIPE

STEEL THRUST RING-

PLYWOOD FORM

THRUST

CONCRETE WALL BLOCK -

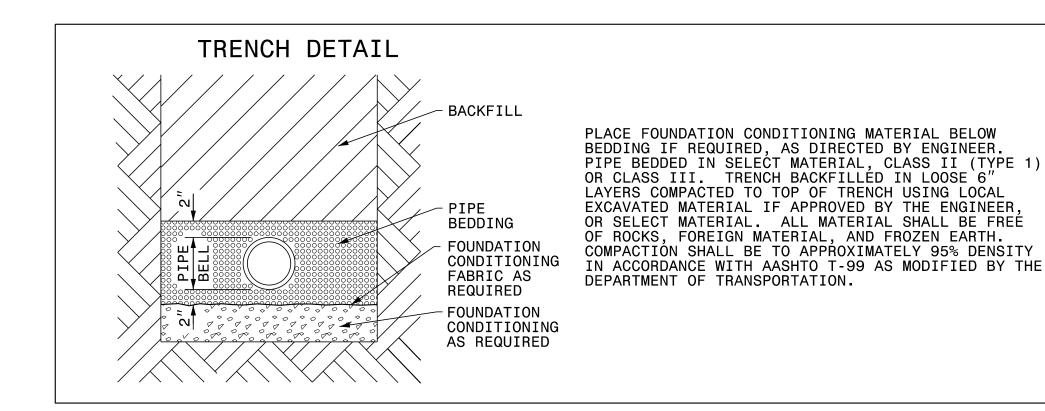
10 FT X 5 FT X WIDTH (W)

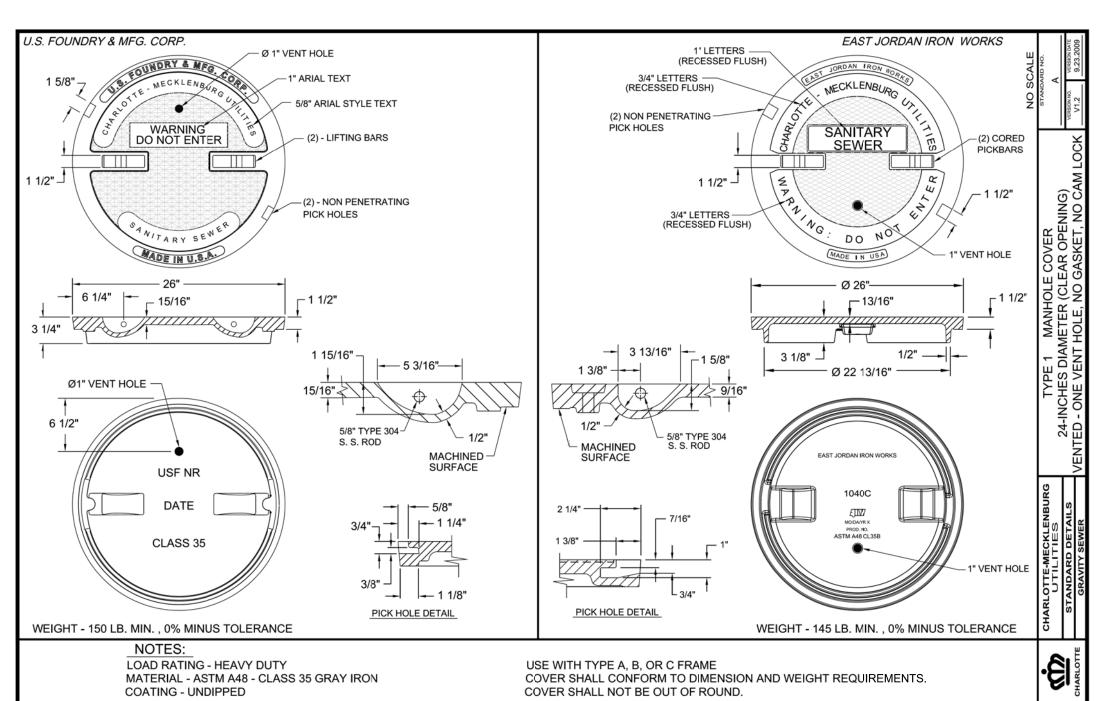
(F'c=3600PSIMIN)

16" DIP

REBAR DIAMETER SCHEDULE								
PIPE	BAR	TOTAL REBAR	TOTAL REBAR					
DIAMETER	SIZE	LENGTH (FT)	WEIGHT (LB)					
14"	#9	158	537					
16"	#10	158	680					
18"	#10	158	680					
20"	#10	158	680					
24"	#10	158	680					
30"	#11	158	839					

APPROX. DEAD	END THRUST	UNDISTURBED	APPROX.	W	CONC	RETE
(DIPRA) A	T 200 PSI	SOIL	SOIL	(WIDTH)	VOL	UME
WATER P	RESSURE	BEARING AREA	PRESSURE	MINIMUM	(APPRO	XIMATE)
PIPE	TOTAL		BEARING			
DIAMETER	THRUST	SQUARE	LOAD			
(INCHES)	(POUNDS)	FEET	(LB/SQ FT)	INCHES	FT³	CY
14	36,770	30	1,226	14	28	1.04
16	47,558	30	1,585	16	32	1.19
18	59,730	30	1,991	16	32	1.19
20	73,288	30	2,443	18	36	1.33
24	104,558	30	3,485	18	36	1.33
30	160,850	30	5,362	20	40	1.48





2 WB E

END PROJECT

BEGIN PROJECT

VICINITY MAP

 ∞

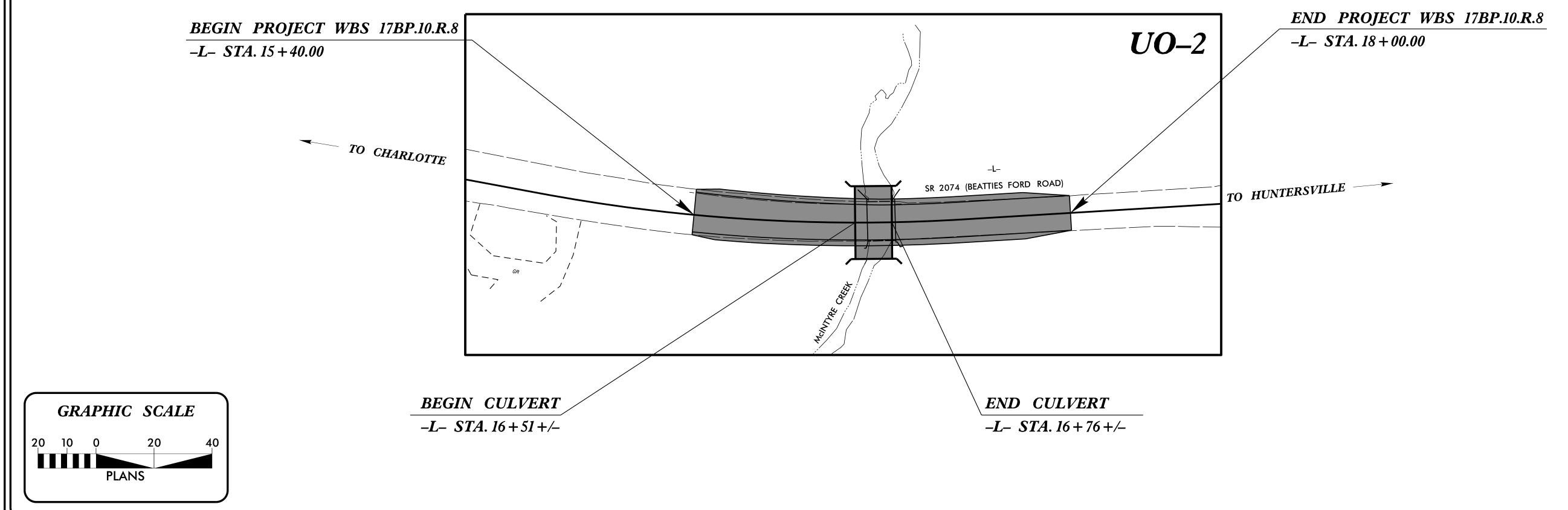
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

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)





INDEX OF SHEETS

N.T.S.

SHEET NO.

UC–1 **UO**–2 **DESCRIPTION**

TITLE SHEET 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





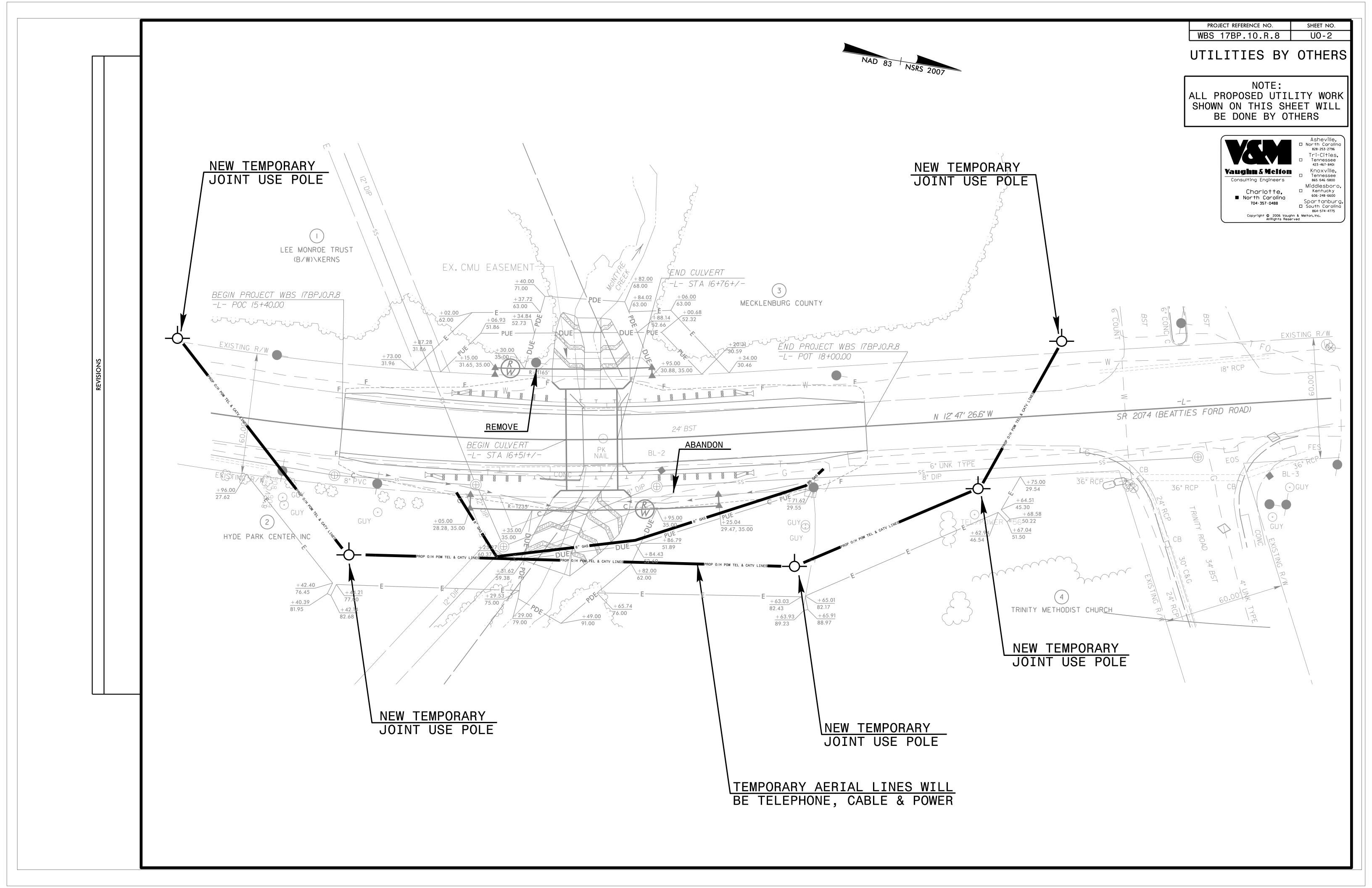
PREPARED IN THE OFFICE OF:

DIVISION OF HIGHWAYS UTILITIES ENGINEERING **SECTION**

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

Reece Schuler, P.E.

UTILITIES SQUAD LEADER PROJECT ENGINEER UTILITIES PROJECT DESIGNER



DETOUR ROUTE END PROJECT BEGIN PROJECT 21

PROJECT REFERENCE NO. SHEET NO.

17BP.JO.R.8 TCP-I

R/W SHEET NO.

STV/Ralph Whitehead Associates, Inc.

1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

ROADWAY DESIGN
ENGINEER

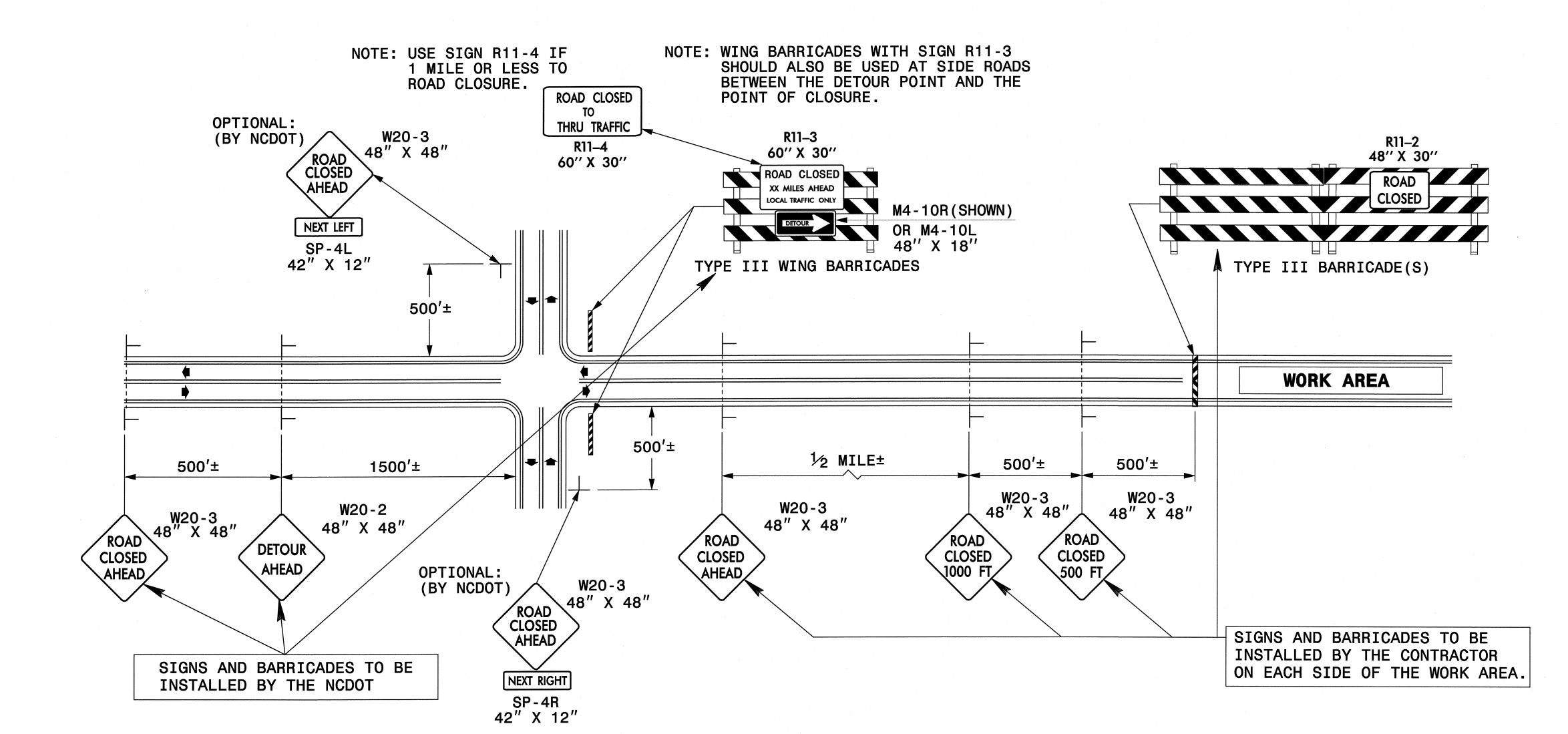
ROADWAY DESIGN
ENGINEER

CAROL

SEAL
O39234

Scale: 1"=900'

2/4/2012



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.

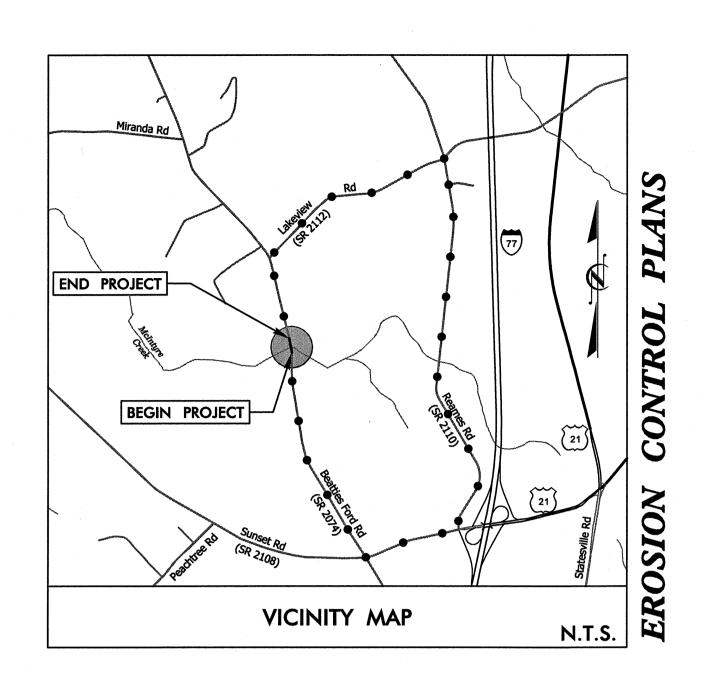
LEGEND

— STATIONARY SIGN

♦ DIRECTION OF TRAFFIC FLOW

r:\Traffic\TrafficContro\\TCP\\OR8_rdy_tcpO;

00 **7B** WB IE



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

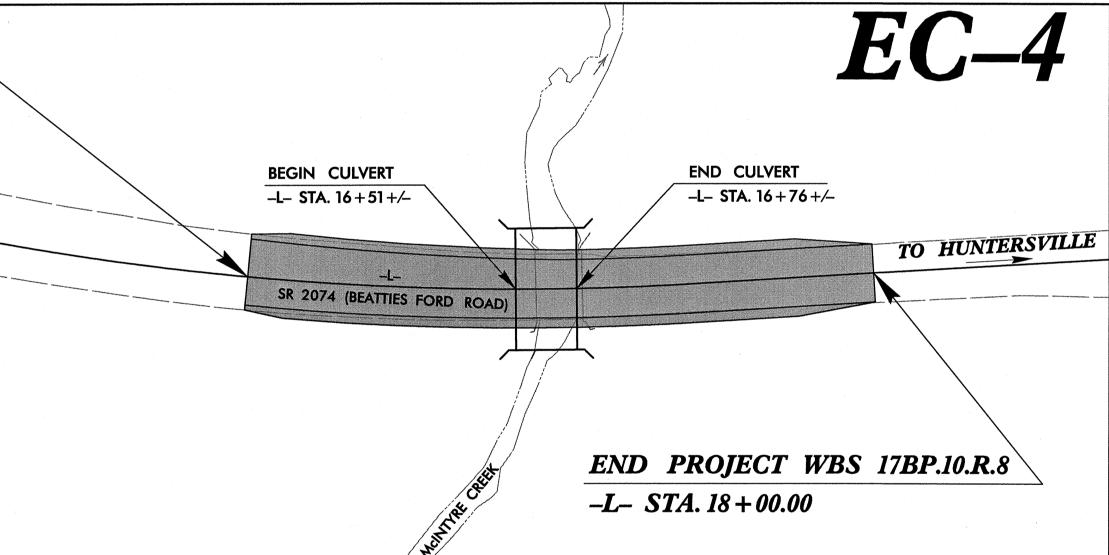
PLAN FOR PROPOSED HIGHWAY EROSION CONTROL

MECKLENBURG COUNTY

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

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

TO CHARLOTTE



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

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

	GR	<i>APH</i>	IC SCAL	E
20	10	O O	20	40
		P	LANS	

Natural resources Division of Water Quality.

RC	DADSIDE ENVIRONMENTAL DIVISION OF HIGHWAYS	
	STATE OF NORTH CAROLI	NA
	Level III Designer	
	Davin Morrison, PE #3126	
	SEAL 038053	

Prepared in the Office of:

STV/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

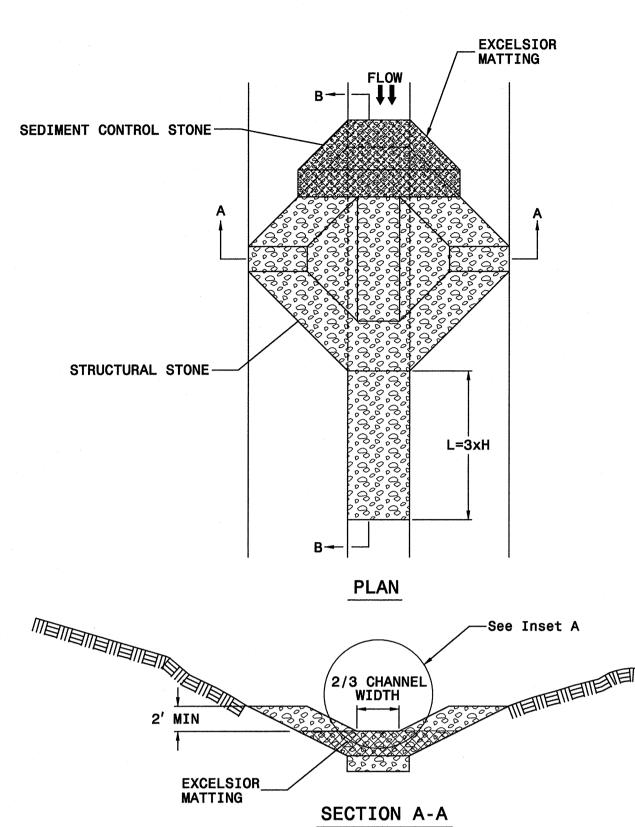
STATE	STATE	PROJECT REFERENCE NO.		SHEET NO.	TOTAL SHEETS
N.C.	17E	3P.10.R.8		EC-1	
STAT	STATE PROJ. NO. F. A. PROJ. NO.				ION
17B	17BP.10.R.8				
17B	P.10.R.8		R/	W & L	JTILITIES
17B	P.10.R.8			CONS	ST.

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 revison 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	/////////////////////////////////////
1607.01	Gravel Construction Entrance	
1622.01	Temporary Berms and Slope Drains	
1630.01	Riser Basin	()
1630.03	Temporary Silt Ditch	
1630.04	Stilling Basin	
1630.05	Temporary Diversion	
1630.06	Special Stilling Basin	
1632.01	Rock Inlet Sediment Trap Type A.	A 🔲
1632.02	Rock Inlet Sediment Trap Type B	ВШ
1632.03	Rock Inlet Sediment Trap Type C.	C 🔲
1633.01	Temporary Rock Silt Check Type A	<i>A</i>
1633.02	Temporary Rock Silt Check Type-F	Amateus Alexandress
1634.01	Temporary Rock Sediment Dam Typ	
1634.02	Temporary Rock Sediment Dam Typ	pe=B
1635.01	Rock Pipe Inlet Sediment Trap Typ	e~A
1635.02	Rock Pipe Inlet Sediment Trap Typ	e=B8
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	

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

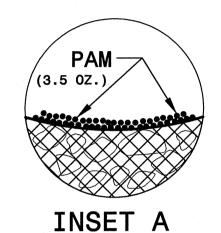


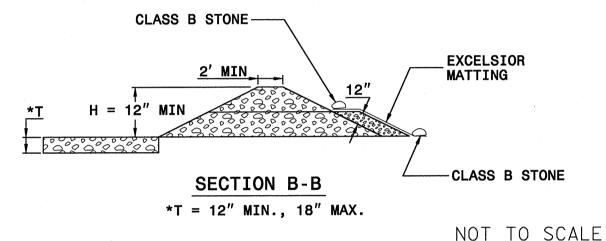
NOTES

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.





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. SHEET NO. EC-2 17BP.10.R.8 RW SHEET NO.

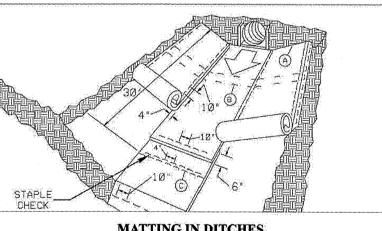


STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991

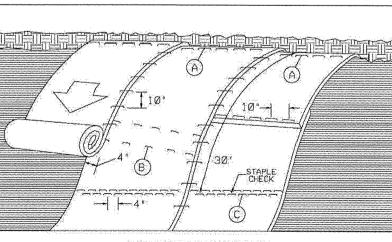
ENGINEER



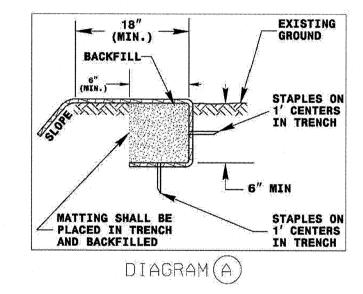
MATTING INSTALLATION DETAIL

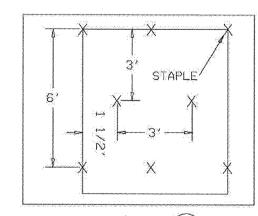


MATTING IN DITCHES

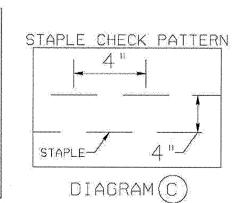


MATTING ON SLOPES





DIAGRAM(B)



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. SHEET NO.

17BP.10.R.8 EC-3

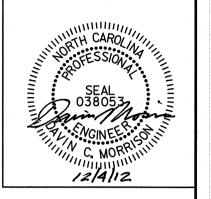
RW SHEET NO.

STV/Ralph Whitehead Associates, In

1000 West Morehead St., Ste. 200
Charlotte, NC 28208

NC License Number F-0991

HYDRAULICS



SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL (FOR SLOPE STABILIZATION)

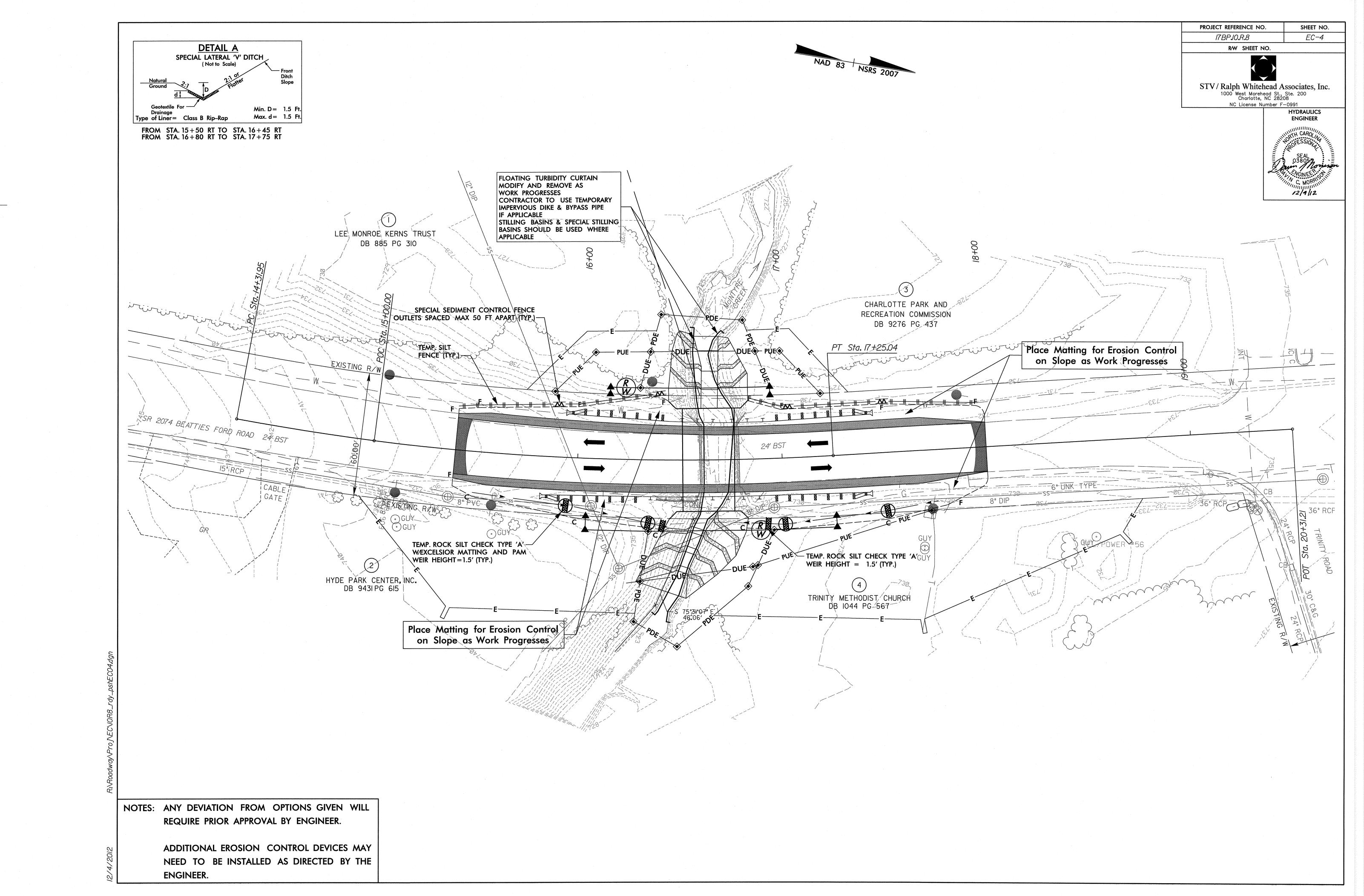
CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
			SUE	STOTAL	430
MISCELLANE	OUS MATTING TO BE INSTAI	LED AS DIRE	CTED BY THE	ENGINEER	45
				TOTAL	475
				SAY	475

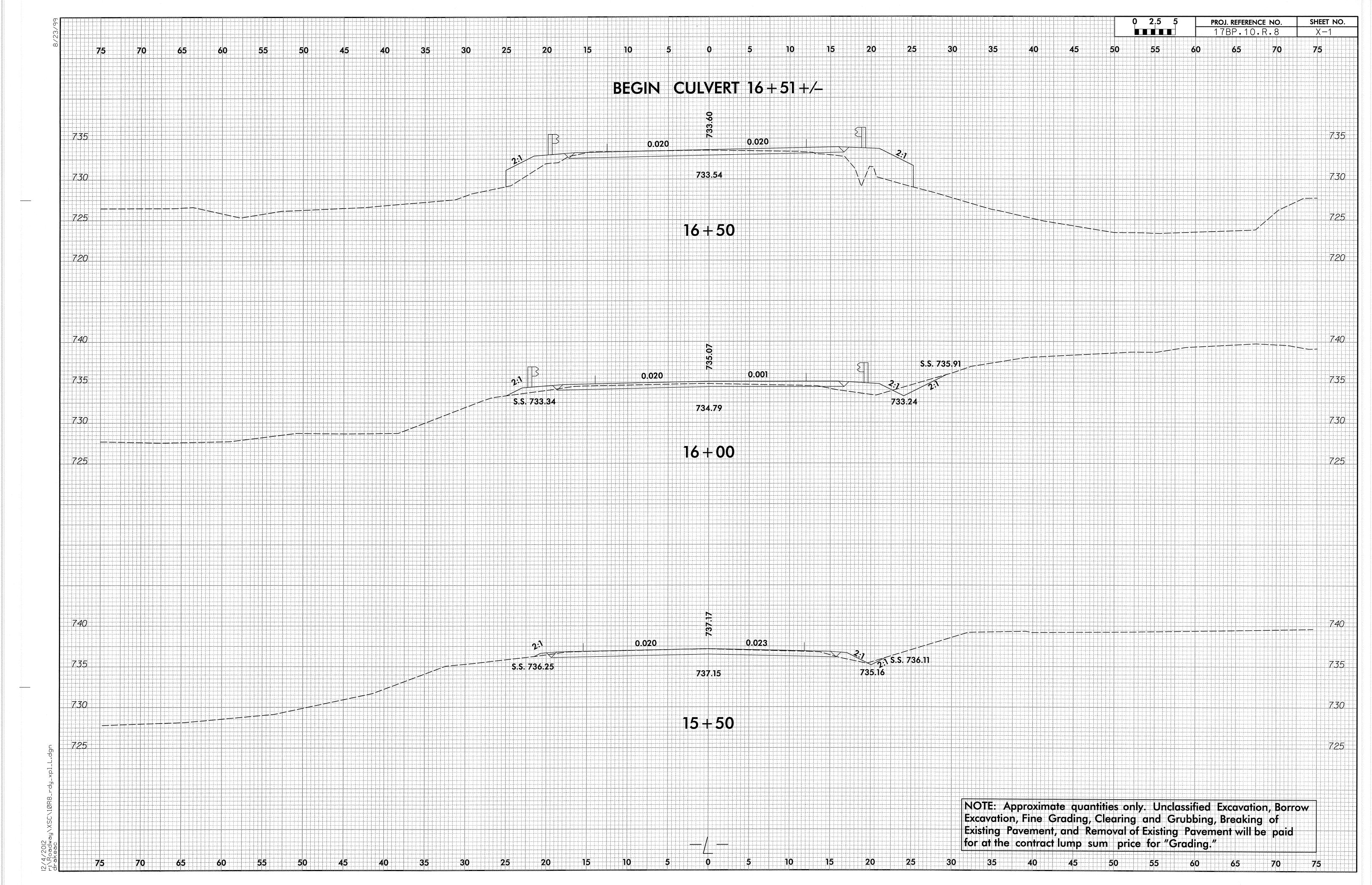
CLASS B RIP RAP & GEOTEXTILE FOR DRAINAGE (FOR DITCH STABILIZATION)

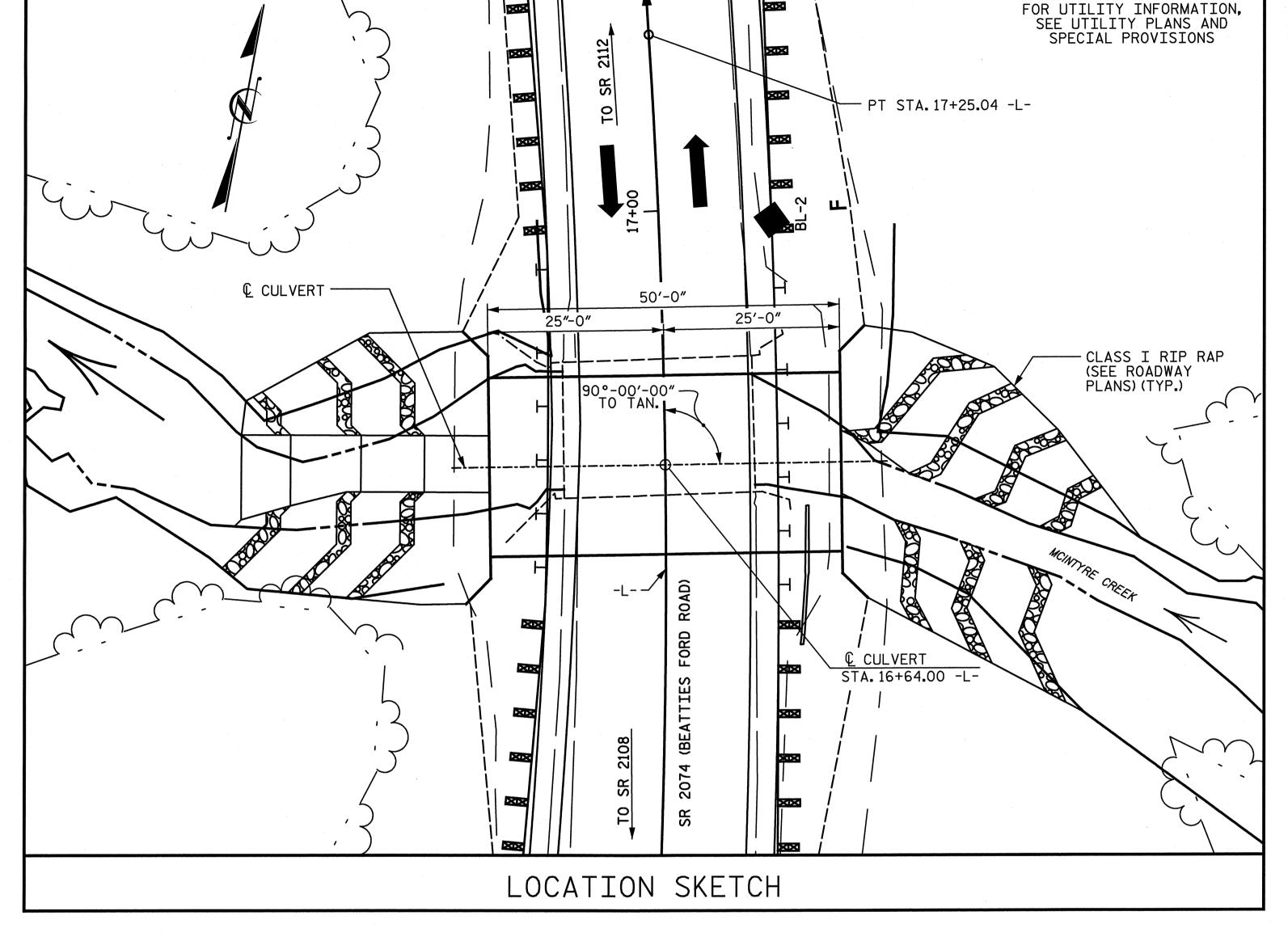
CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	CLASS B RIP RAP ESTIMATE (TN)
4	-L- V-DITCH	15+50	16+45	RT	20
4	-L- V-DITCH	16+80	17+75	RT	20
			·		
			SUE	TOTAL	40
MISCELLANE	OUS MATTING TO BE INSTAI	LED AS DIRE	CTED BY THE	ENGINEER	5
				TOTAL	45
				SAY	45

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
			SUE	TOTAL	90
MISCELLANE	OUS MATTING TO BE INSTAI	LED AS DIRE	CTED BY THE	ENGINEER	10
				TOTAL	100
				SAY	100







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

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, 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".

SURVEY -L-

25'-0"

25'-0"

PROFILE ALONG & CULVERT

TOTAL STRUCTURE	QUANTITIES
REMOVAL OF EXISTING STRUCTUR @ STA.16+64.00 -L-	E 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:	
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:	141	9 CFS
FREQUENCY OF	OVERTOPPING	FL00D: 25	YRS.
OVERTOPPING	FLOOD ELEVAT	ION: 732	2.5

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 16+64.00 -L-STATION:_

SHEET 1 OF 3

REPLACES BRIDGE NO. 107

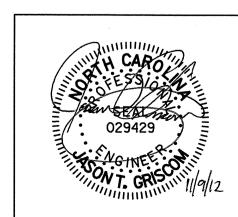
C-1

TOTAL SHEETS

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

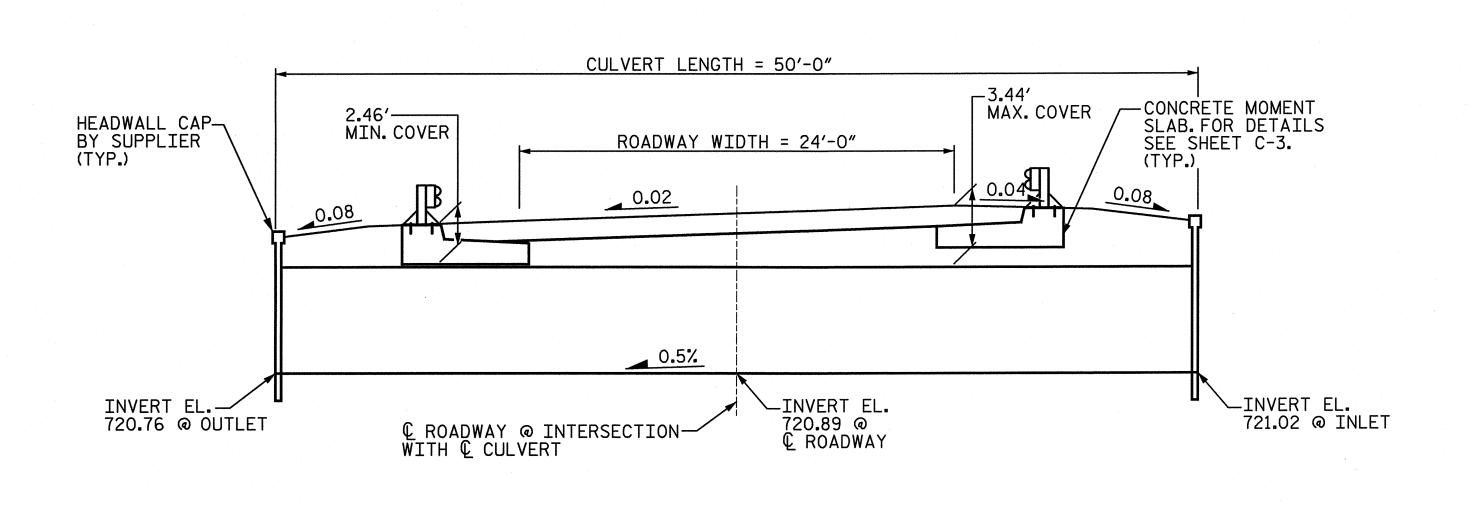
SINGLE 25'-4" X 9'-5" ALUMINUM BOX CULVERT @ 90°

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



REVISIONS SHEET NO. NO. BY: DATE:

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



CULVERT SECTION NORMAL TO ROADWAY

HEADWALL——INTEGRAL HEADWALL CAP (FULLY WELDED) TO ARCH 4'-8" (W1) 4'-3" (W2) 3'-3" (W3) 3'-10" (W4) € CULVERT— —RIP RAP [●] (CLASS I) •RIP RAP——(CLASS I) 8'-0" (W1) 9'-0" (W2) 9'-3" (W3) 9'-3" (W4) _INVERT 1'-0" MIN. VARIES 8'-0" VARIES ALUMINUM PLATE-----TOE WALL 25'-4" (SPAN)

END ELEVATION NORMAL TO SKEW

INLET SHOWN, OUTLET SIMILAR

ROADWAY PAY ITEM, SEE ROADWAY PLANS FOR DETAILS AND QUANTITIES

WINGWALL ANCHORS— (BY SUPPLIER)(TYP.) LENGTH OF CULVERT = 50'-0" 25'-0" 25'-0" WINGWALL W3 WINGWALL W1 FLOW FLOW CULVERT STA 16+64.00 -L-90°-00′-00″ WINGWALL W4 WINGWALL W2

LENGTH FOR ALUMINUM BOX CULVERT

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

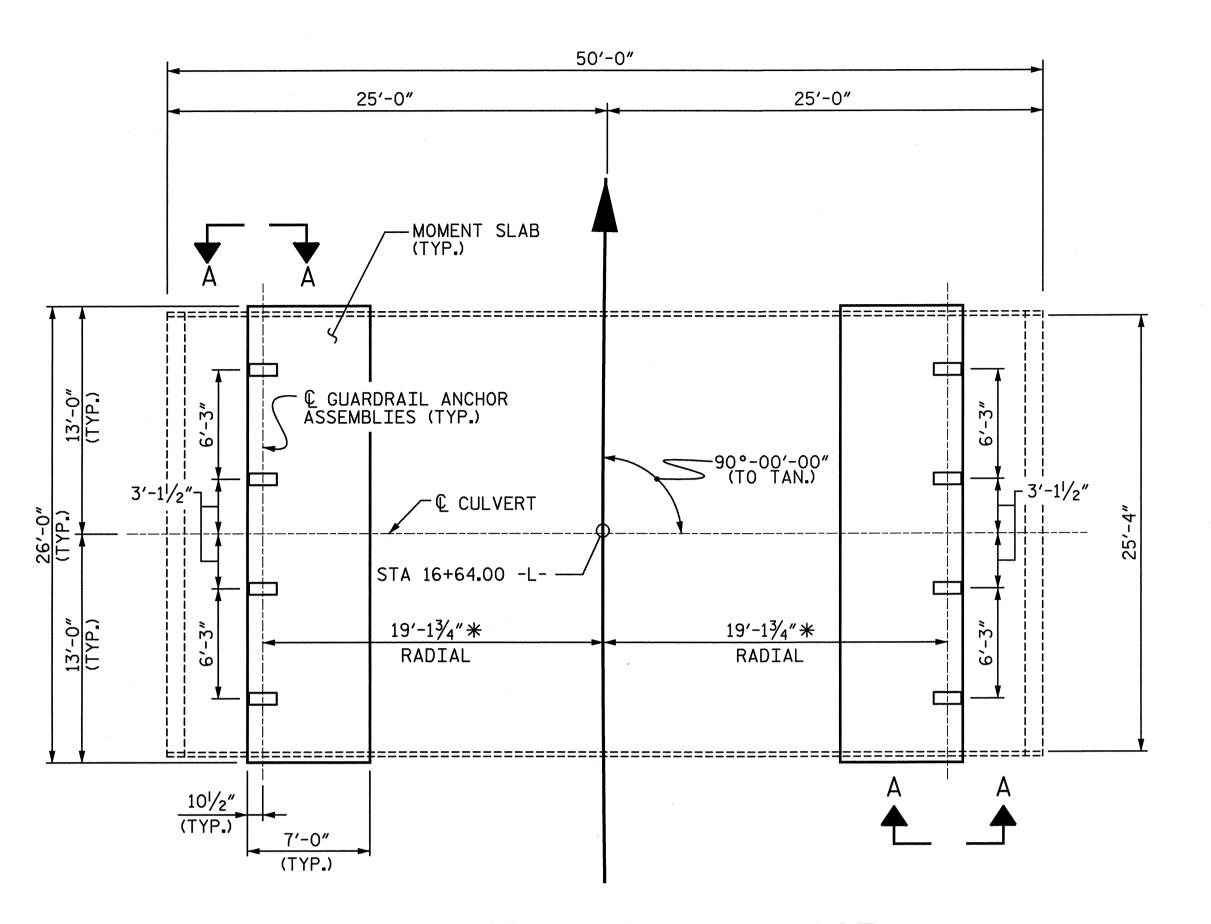
SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
RALEIGH

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

REVISIONS SHEET NO. STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License No. F-0991 C-2 DATE: TOTAL SHEETS

DRAWN BY : JDE
CHECKED BY : JTG



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.

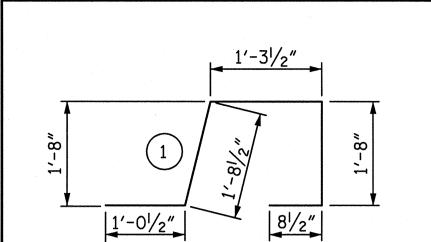
ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE 1"Ø AND MEET THE REQUIREMENTS OF ASTM A325. BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

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.)

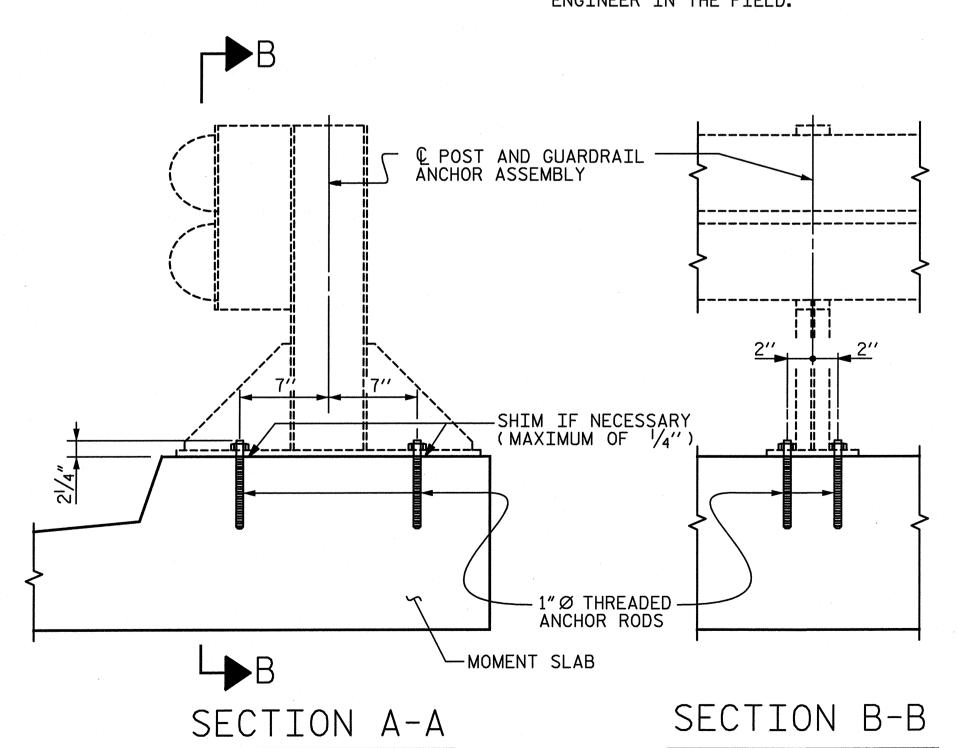
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	21	#4	STR	25′-8″	360
G1	26	#5	STR	6′-7″	179
G2	26	#4	STR	6′-7″	114
S1	52	#5	1	6′-5″	348
POYY ()			

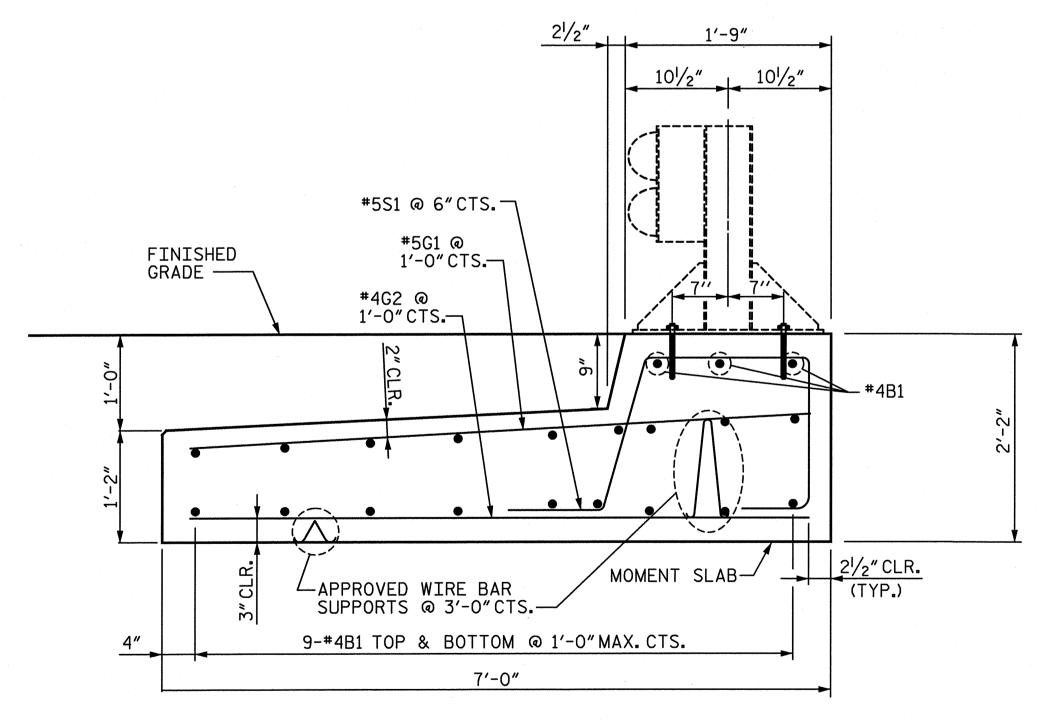
EPOXY COATED
REINFORCING STEEL 1,001
CLASS AA CONCRETE
MOMENT SLAB 10.3 CY

	M	OMENT	SLAB	
PAY	LENGTH	=	52.0	LIN.FT.

PLAN OF GUARDRAIL POST SPACING & MOMENT SLAB LAYOUT

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





TYPICAL SECTION THROUGH MOMENT SLAB

PROJECT NO. 17BP.10.R.8

MECKLENBURG COUNTY

STATION: 16+64.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALETCH

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

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

STV/Ralph Whitehead Associates, Inc.

1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License No. F-0991

029429

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS ---- A.A.S.H.T.O. (CURRENT) LIVE LOAD ---- SFE PLANS IMPACT ALLOWANCE ---- SEE A.A.S.H.T.O. STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36 - 20,000 LBS. PER SO. IN. - AASHTO M270 GRADE 50W - 27,000 LBS. PER SQ. IN. - AASHTO M270 GRADE 50 - 27,000 LBS. PER SQ. IN. REINFORCING STEEL IN TENSION GRADE 60 - - 24,000 LBS. PER SQ. IN. ----- 1,200 LBS. PER SQ. IN. CONCRETE IN COMPRESSION ---- SEE A.A.S.H.T.O. CONCRETE IN SHEAR STRUCTURAL TIMBER - TREATED OR UNTREATED - EXTREME FIBER STRESS - - - - - 1,800 LBS. PER SQ. IN. COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER ----375 LBS. PER SQ. IN. EQUIVALENT FLUID PRESSURE OF EARTH - - - - -30 LBS. PER CU. FT.

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

(MINIMUM)

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12"INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS.
SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.
ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD
DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED
ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE
GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS
FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING
UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED
BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE
ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH
BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED
TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND
ACTUAL BEAM CAMBER.

TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT

TO OUT AS INDICATED ON PLANS.
WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE

4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT
THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES
SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS
ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS
STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST
BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER
PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION,
SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE
EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND
DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2"OR A THICKNESS EDUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM
TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE".
ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER
SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY
ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR
EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING,
OR METALLIZING.

OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.