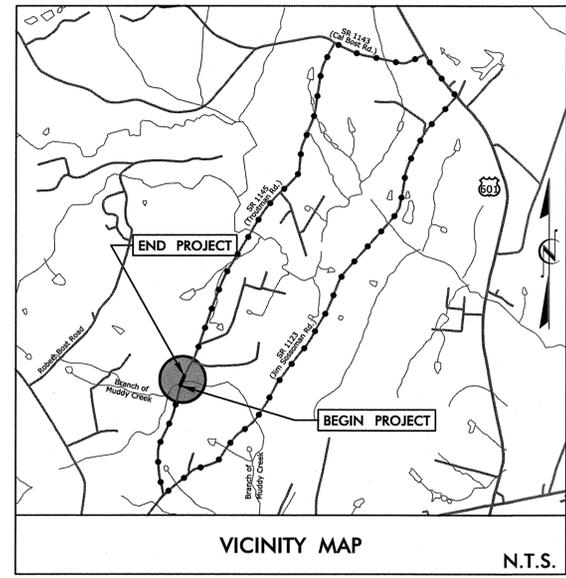


PROJECT: WBS 17BP.10.R.2

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
CABARRUS COUNTY

**LOCATION: CULVERT #244 OVER BRANCH OF MUDDY CREEK
ON SR 1145 (TROUTMAN ROAD)**

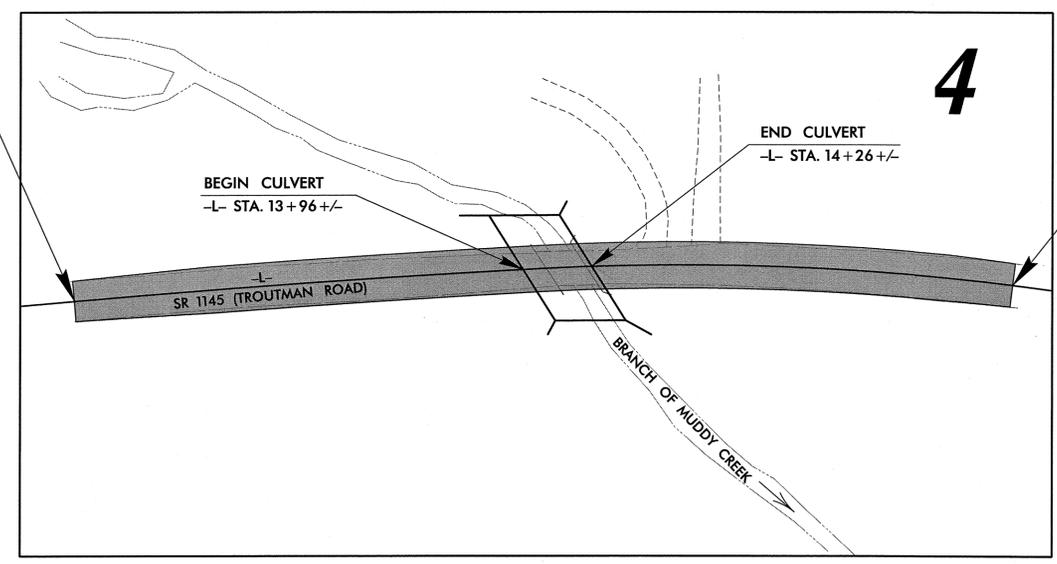
TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.2	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.10.R.2		P.E.	
17BP.10.R.2		RW & UTILITIES	
17BP.10.R.2		CONST.	

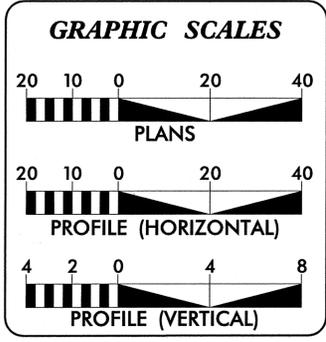


BEGIN PROJECT WBS 17BP.10.R.2
-L- STA. 12+00.00

END PROJECT WBS 17BP.10.R.2
-L- STA. 16+10.00



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



DESIGN DATA

ADT 2012 =	710
ADT 2035 =	1130
DHV =	N/A
D =	N/A
T =	6%
V =	45 MPH
FUNC. CLASSIFICATION:	LOCAL

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT WBS 17BP.10.R.2 = 0.072 MILES
LENGTH OF STRUCTURE PROJECT WBS 17BP.10.R.2 = 0.006 MILES
TOTAL LENGTH OF PROJECT WBS 17BP.10.R.2 = 0.078 MILES

NCDOT CONTACT: GARLAND HAYWOOD, PE
Division Bridge 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

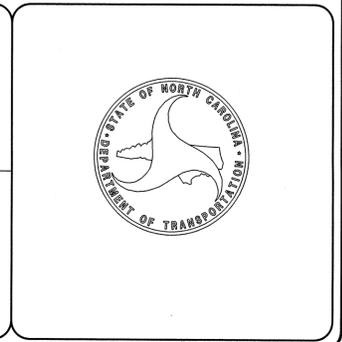
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: JUNE 19, 2012	NIKKI T. HONEYCUTT, PE PROJECT ENGINEER
LETTING DATE: DECEMBER 19, 2012	ALLISON DRAKE, EI PROJECT DESIGNER

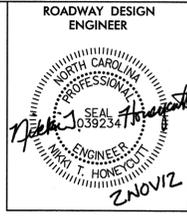
HYDRAULICS ENGINEER

SIGNATURE: *Devin C. Morrison* 11/14/12 P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: *Nikki T. Honeycutt* 2 NOV 12 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-4	CULVERT PLANS

GENERAL NOTES

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

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
876.02	Guide for Rip Rap at Pipe Outlets
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
1630.06	Special Stilling Basin
1633.01	Temporary Rock Silt Check Type A

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	⊙ EIP
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	⊙
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	→
False Sump	⊠

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	⊙ CSX TRANSPORTATION 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	Ⓜ
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 Easement	-DUE-
Proposed Permanent Utility Easement	-PUE-
Proposed Temporary Utility Easement	-TUE-
Proposed Aerial Utility Easement	-AUE-

ROADS AND RELATED FEATURES:

Proposed Permanent Easement with Iron Pin and Cap Marker	◆
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	⊠

Proposed Permanent Easement with Iron Pin and Cap Marker	◆
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	⊠

Proposed Permanent Easement with Iron Pin and Cap Marker	◆
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	⊠

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	⊙
Storm Sewer	-S-

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊙
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	⊙
Telephone Booth	⊠
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
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	⊙
Water Meter	⊙
Water Valve	⊙
Water Hydrant	⊙
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-A/G Water-

TV:

TV Satellite Dish	⊠
TV Pedestal	⊠
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	⊙
Sanitary Sewer Cleanout	⊙
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	⊠
Utility Unknown U/G Line	-2UTL-
U/G Tank; Water, Gas, Oil	⊠
Underground Storage Tank, Approx. Loc.	⊠
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

PROJECT REFERENCE NO. 17BP.10.R.2	SHEET NO. 1-C
Location and Surveys	

TYPE	STATION	NORTH	EAST
POT	10+00.00	552816.9166	1543327.7372
PC	12+02.42	553011.0987	1543384.8966
PCC	14+04.39	553203.8526	1543445.1788
PT	16+14.37	553396.4012	1543528.2785
POT	18+20.68	553577.9484	1543626.2645

DATUM DESCRIPTION

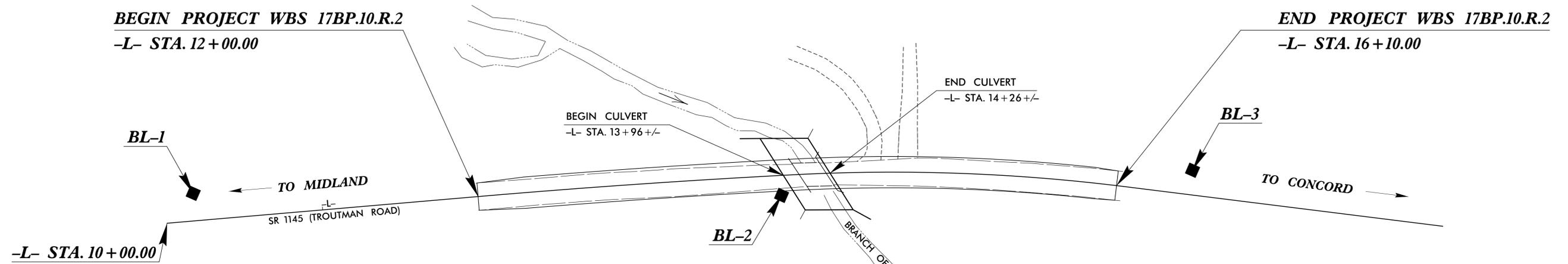
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BL-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 553190.242(±) EASTING: 1543454.090(±) ELEVATION: 565.71(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999850

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-2" TO -L- STATION 12+00.00 IS S 21° 03' 36.752" W 194.454 (±)

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

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	552839.3970	1543316.0220	575.43	10+18.26	17.59 LT
2	BL-2	553190.2419	1543454.0899	565.71	13+94.25	12.73 RT
3	BL-3	553441.4370	1543534.7080	575.22	16+57.06	15.73 LT

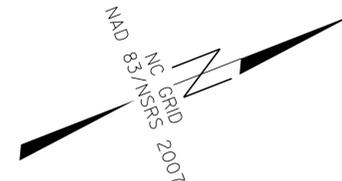


ROW MARKER IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
L	13+15.00	-29.91	553127.7751	1543389.1694
L	13+15.00	-40.00	553130.8055	1543379.5448
L	13+90.00	50.00	553174.5760	1543488.1698
L	13+90.00	30.58	553180.6382	1543469.7244
L	14+04.39	-40.00	553216.4329	1543407.2086
L	14+04.39	50.00	553188.1273	1543492.6416
L	14+65.00	50.00	553242.7797	1543512.2939
L	14+65.00	30.66	553249.7796	1543494.2704
L	15+00.00	-40.00	553308.8801	1543441.9821
L	15+00.00	-29.40	553304.7560	1543451.7469

TEMPORARY EASEMENT				
ALIGN	STATION	OFFSET	NORTH	EAST
L	12+75.00	29.96	553071.7921	1543434.4483
L	13+90.00	40.00	553177.6983	1543478.6697
L	14+27.00	-58.00	553244.5224	1543397.7882
L	14+65.00	40.00	553246.4000	1543502.9722
L	15+00.00	-47.00	553311.6035	1543435.5336
L	15+40.00	30.45	553317.1258	1543522.6426
L	15+50.00	-38.00	553355.1894	1543464.8776
L	15+85.00	-29.83	553383.9038	1543488.0597

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/120244_LS_CONTROL.TXT](http://www.ncdot.org/doh/preconstruct/highway/location/project/120244_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



NOTE: DRAWING NOT TO SCALE

R:\Roadway\Proj\10R2_rdy_psh01C.dgn 11/2/2012

PROJECT: WBS 17BP.10.R.2

CONTRACT:

August 28, 2012: Revision No. 1, Revised sheet UC-3 per redline markings received August 27, 2012.
August 14, 2012: Revision No. 1, Revised sheet per redline markings received August 3, 2012.

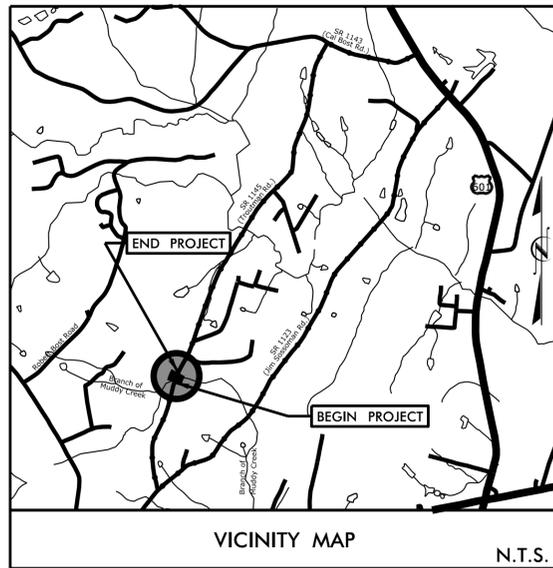
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
WBS 17BP.10.R.2	UC-1

CABARRUS COUNTY

**LOCATION: BRIDGE #244 OVER BRANCH OF MUDDY CREEK
ON SR 1145 (TROUTMAN ROAD)**

TYPE OF WORK: WATER CONSTRUCTION

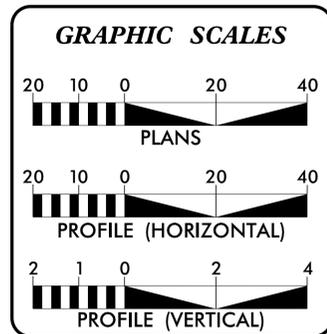
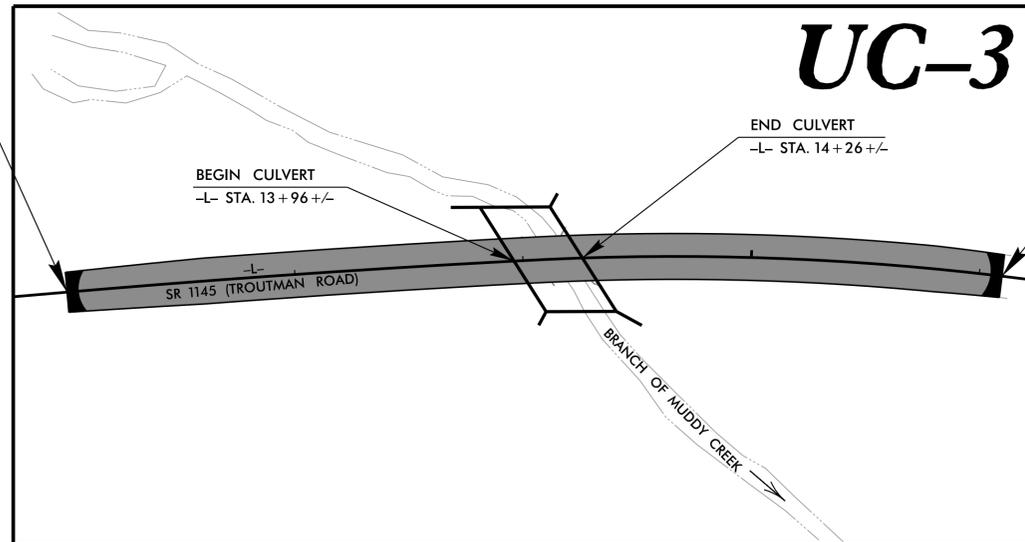


BEGIN PROJECT WBS 17BP.10.R.2
-L- STA. 12 + 00.00

END PROJECT WBS 17BP.10.R.2
-L- STA. 16 + 10.00

← TO MIDLAND

TO CONCORD →



INDEX OF SHEETS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
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 -CITY OF CONCORD

SEAL

11/02/2012

V&M
Vaughn & Melton
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
Xxxxx Xxxxx, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Reece Schuler, PE UTILITIES PROJECT DESIGNER

5/14/99

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

Asheville, North Carolina 828-253-2796
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-8800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 843-574-4775
Charlotte, North Carolina 704-357-0488

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PROJECT REFERENCE NO. 17BP.10.R.2	SHEET NO. UC-2
DESIGNED BY: RMS	
DRAWN BY: NVA	
CHECKED BY: RMS	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 250-4128 FAX: (919) 250-4119	
11/02/2012 UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

Water

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

Proposed RPZ Back Flow Preventor	
Relocate RPZ Back Flow Preventor	
45° Bend w/Thrust Block	
Water Plug	
Water Cross	
Water Plug	
Water Reducer	
Water Tee	
Water Pump Station	
Water Thrust Block	
Blow Off Valve	
Air Release Valve	
Water Line Stop	
Water Line Stop w Bypass	

Utility By Other Symbols

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

Sewer

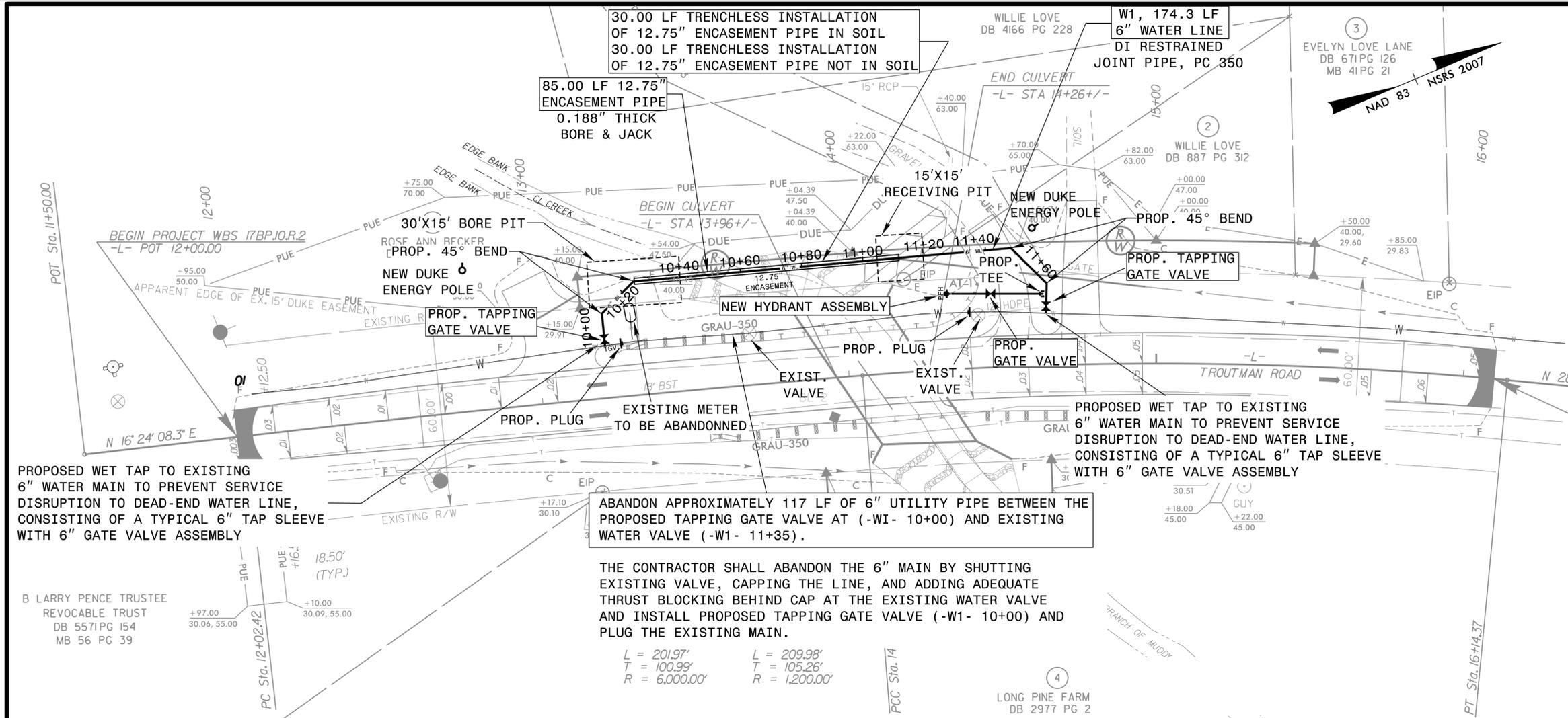
Existing Manhole	
Proposed UT Manhole	
Remove UT Manhole	
Abandon Utility Manhole	
Sewer Line Stop	
Sewer Line Stop w Bypass	
U/G Sanitary Sewer Line	

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

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

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PROPOSED WATER LINE IN ZONE X AREA AS NOTED IN FIRM NC MAP PANEL 5545



PROPOSED WET TAP TO EXISTING 6" WATER MAIN TO PREVENT SERVICE DISRUPTION TO DEAD-END WATER LINE, CONSISTING OF A TYPICAL 6" TAP SLEEVE WITH 6" GATE VALVE ASSEMBLY

ABANDON APPROXIMATELY 117 LF OF 6" UTILITY PIPE BETWEEN THE PROPOSED TAPPING GATE VALVE AT (-WI- 10+00) AND EXISTING WATER VALVE (-W1- 11+35).

THE CONTRACTOR SHALL ABANDON THE 6" MAIN BY SHUTTING EXISTING VALVE, CAPPING THE LINE, AND ADDING ADEQUATE THRUST BLOCKING BEHIND CAP AT THE EXISTING WATER VALVE AND INSTALL PROPOSED TAPPING GATE VALVE (-W1- 10+00) AND PLUG THE EXISTING MAIN.

$$L = 201.97' \quad L = 209.98'$$

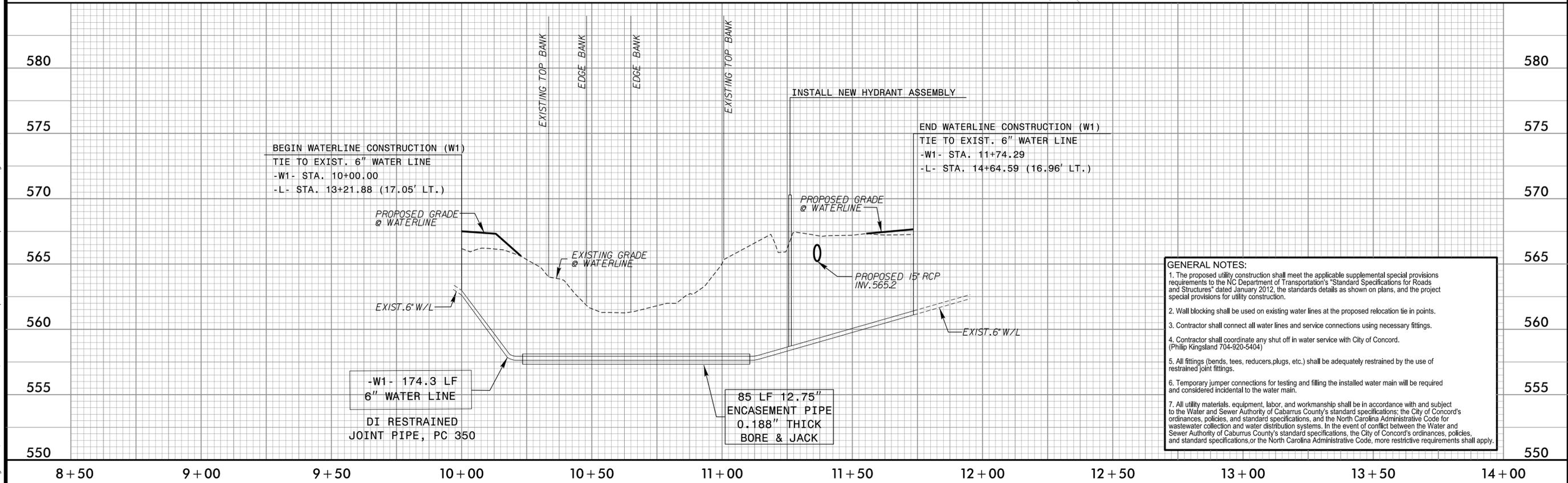
$$T = 100.99' \quad T = 105.26'$$

$$R = 6,000.00' \quad R = 1,200.00'$$

B LARRY PENCE TRUSTEE
REVOCABLE TRUST
DB 5571PG 154
MB 56 PG 39

DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY "NCDOT" FOR MONUMENT "BL-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 553190.242(ft) EASTING: 1543454.090(ft) ELEVATION: 565.71(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999850 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-2" TO -L- STATION 12+00.00 IS S 21° 03' 36.813" W 194.454 (ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

BL-1	N 552839.397	E 1543316.022	ELEV 575.43
BL-2	N 553190.242	E 1543454.090	ELEV 565.71
BL-3	N 553441.437	E 1543534.708	ELEV 575.22



GENERAL NOTES:

- The proposed utility construction shall meet the applicable supplemental special provisions requirements to 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.
- 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.
- Contractor shall coordinate any shut off in water service with City of Concord. (Philip Kingsland 704-820-5404)
- All fittings (bends, tees, reducers, plugs, etc.) shall be adequately restrained by the use of restrained joint fittings.
- Temporary jumper connections for testing and filling the installed water main will be required and considered incidental to the water main.
- All utility materials, equipment, labor, and workmanship shall be in accordance with and subject to the Water and Sewer Authority of Cabarrus County's standard specifications; the City of Concord's ordinances, policies, and standard specifications, and the North Carolina Administrative Code for wastewater collection and water distribution systems. In the event of conflict between the Water and Sewer Authority of Cabarrus County's standard specifications, the City of Concord's ordinances, policies, and standard specifications, or the North Carolina Administrative Code, more restrictive requirements shall apply.

August 28, 2012: Revision No. 1, Revised sheet per redline markups received August 27, 2012.
August 14, 2012: Revision No. 1, Revised sheet per redline markups received August 3, 2012.

August 28, 2012: Revision No. 1, Revised sheet UC-3 per redline markings received August 27, 2012.
 August 14, 2012: Revision No. 1, Revised sheet per redline markings received August 3, 2012.

V&M
Vaughn & Melton
 Consulting Engineers

Asheville, North Carolina 828-253-2796
 Tri-Cities, Tennessee 423-467-8400
 Knoxville, Tennessee 606-248-6600
 Middlesboro, Kentucky 606-248-6600
 South Carolina 844-514-4775
 Spartanburg, South Carolina 844-514-4775

Charlotte, North Carolina 704-837-7805

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PROJECT REFERENCE NO. **17.BP.10.R.2** SHEET NO. **UC-4**

DESIGNED BY: **RMS**
 DRAWN BY: **NVA**
 CHECKED BY: **RMS**
 APPROVED BY: _____
 REVISED: _____

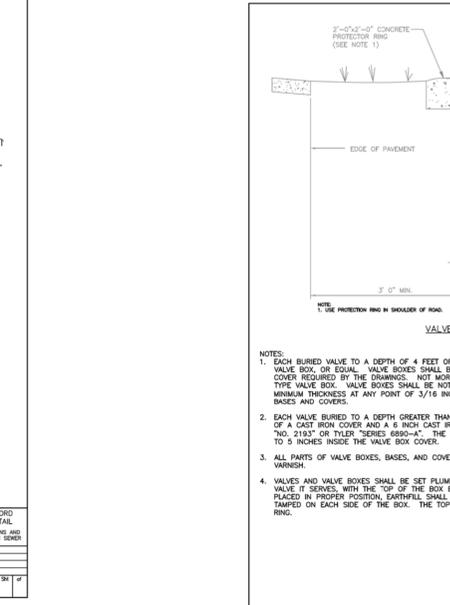
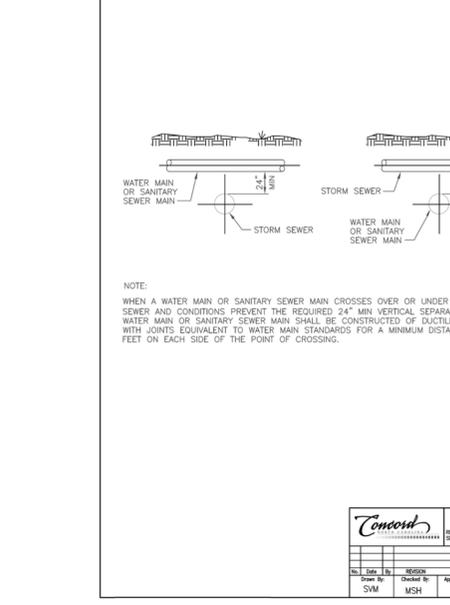
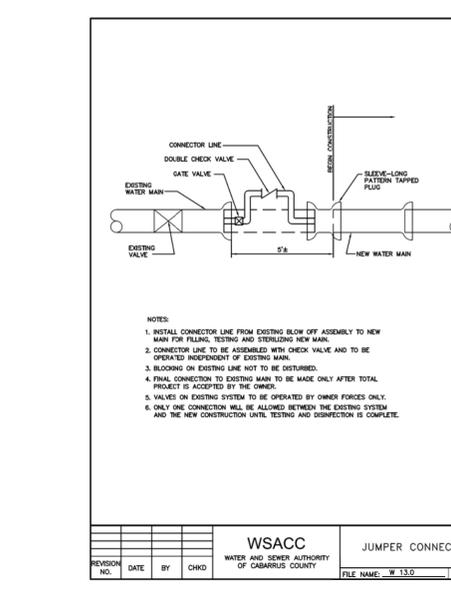
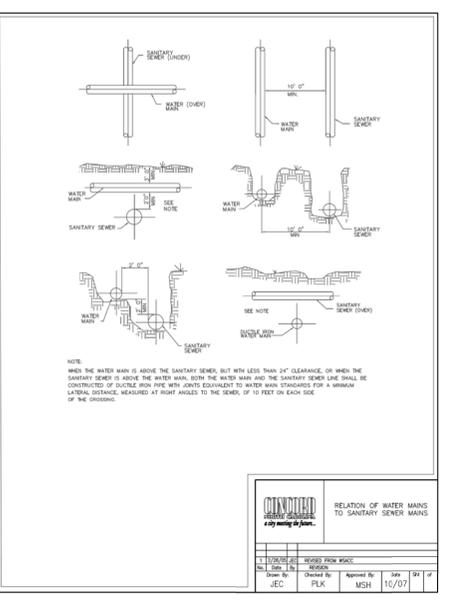
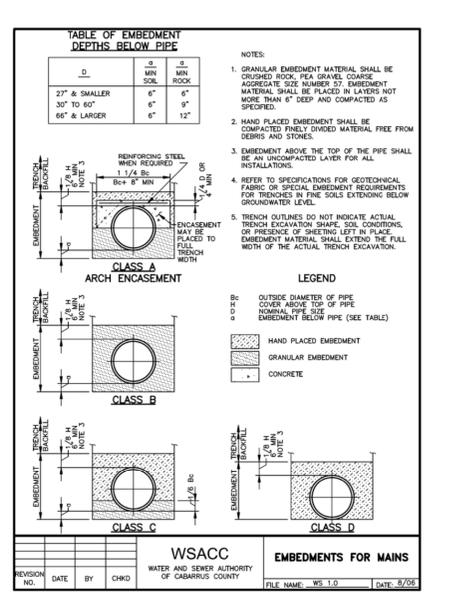
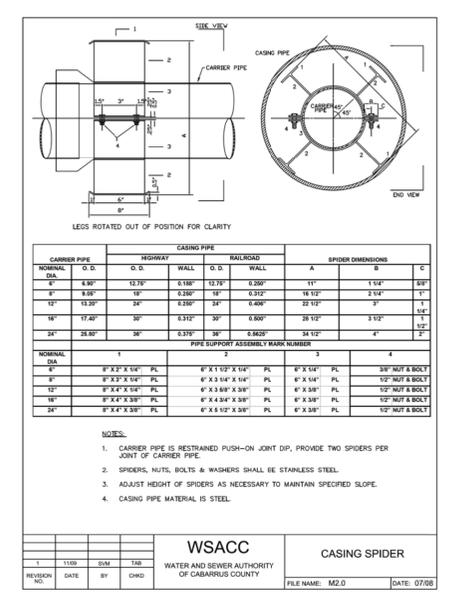
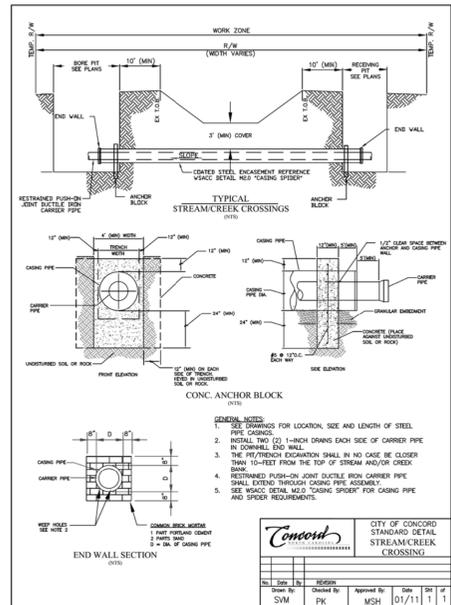
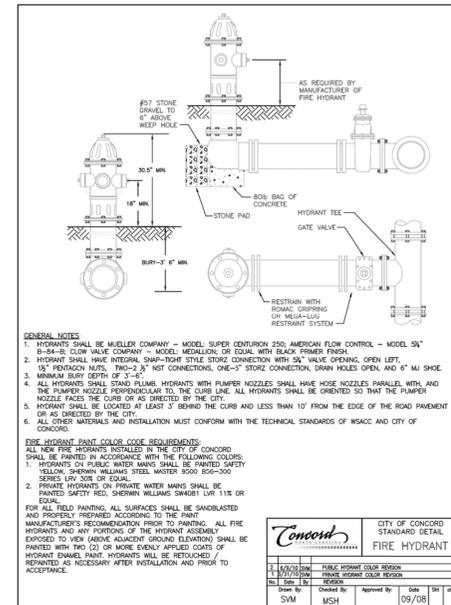
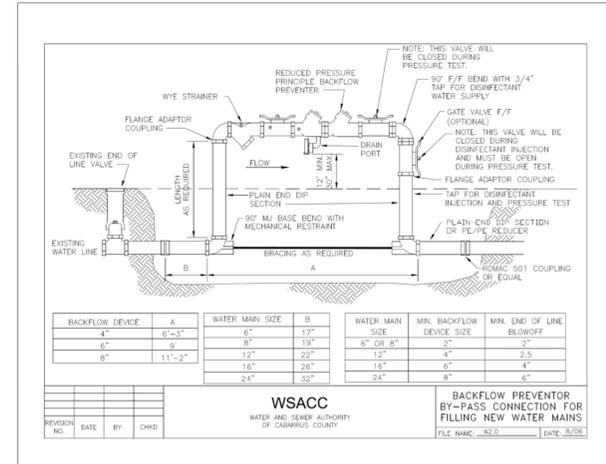
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC. PHONE: (919) 250-4128 FAX: (919) 250-4119

UTILITY CONSTRUCTION PLANS ONLY

11/02/2012

UTILITY CONSTRUCTION



- CONSTRUCTION NOTES:**
- The Contractor must contact the City of Concord Engineering Construction Manager, Phillip Kingsland, at 704-920-5425 at least 24-hours prior to initiating any construction activity.
 - The Contractor shall physically locate the existing water line prior to construction and notify the City of Concord Construction Manager, Phillip Kingsland, at 704-920-5425 and the NCDOT Design Engineer, or his/her designee, immediately if there are conflicts between the existing City of Concord public water main and the proposed bridge structural features and/or proposed permanent structural support materials that will warrant the relocation of the public water main. If the water main is in conflict with the proposed structures, guard rails, and any other structural supporting material, the NCDOT Engineer must submit to the City of Concord a water line relocation design for approval, and permitting prior to relocation; and the City of Concord permitted water main relocation drawings will be issued to NCDOT and the Contractor for construction.
 - The existing water main valve rims and stems are to be raised or lowered to final grade, as applicable, and at least 3-ft of ground cover is to be maintained over the existing public water main at all times.
 - The contractor shall connect all water lines, services connections and hydrants using necessary fittings.
 - All fittings (bends, tees, reducers, plugs, etc.) shall be adequately restrained by the use of restrained joint fittings.
 - Temporary jumper connections for testing and filling the installed water main will be required and considered incidental to the water main.
 - The Contractor shall make every effort to minimize the duration of any water supply disruption and/or loss to the existing City of Concord customers.
 - The Contractor must notify the assigned City of Concord Construction Inspector at least 48 hours in advance of any scheduled water service loss or disruption, and provide written notification on a City approved form to each City of Concord customers that specifies the day and duration of any scheduled water service loss or disruption and include the appropriate City contact numbers.
 - The Contractor shall be responsible for providing temporary potable water supplies to any customer upon request by the City and/or when the duration of the water service loss or disruption exceeds 4 hours.
 - All materials, equipment, labor, and workmanship shall be in accordance with and subject to the Water and Sewer Authority of Cabarrus County's standard specifications; the City of Concord's ordinances, policies, and the North Carolina Administrative Code for wastewater collection and water distribution systems. In the event of conflict between the Water and Sewer Authority of Cabarrus County's standard specifications; the City of Concord's ordinances, policies, and standard specifications, or the North Carolina Administrative Code, the more restrictive requirements shall apply.
 - Review and approval of the plans does not relieve the Owner, Contractor, or Developer from meeting the requirements of the City of Concord's or Cabarrus County ordinances, policies, and standard specifications, (as applicable), Concord Water & Sewer Policies and Technical Specifications, the "Standard Specification for Wastewater Collection & Waste Distribution for Cabarrus County (WSACC Manual) and any other Local, State, and Federal Regulations & Approvals.

PROJECT: WBS 17BP.10.R.2

CONTRACT:

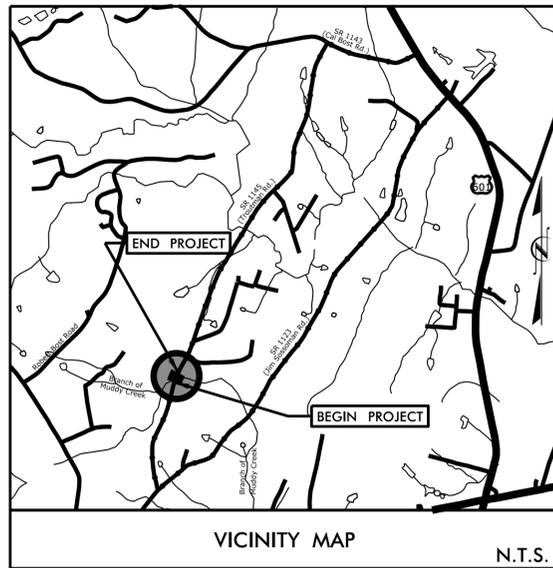
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P.NO.	SHEET NO.
WBS 17BP.10.R.2	UO-1

**UTILITIES BY OTHERS
CABARRUS COUNTY**

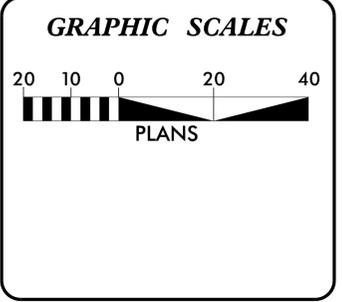
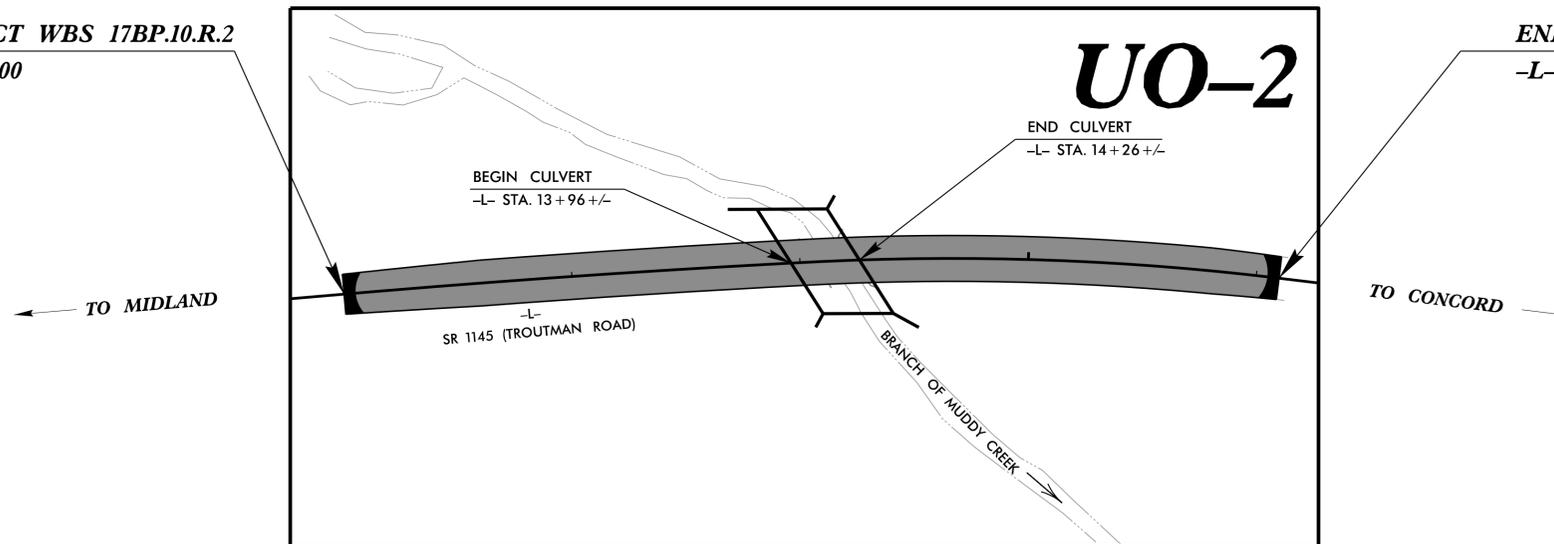
**LOCATION: BRIDGE #244 OVER BRANCH OF MUDDY CREEK
ON SR 1145 (TROUTMAN ROAD)**

TYPE OF WORK: TELECOMMUNICATIONS, POWER AND CABLE



BEGIN PROJECT WBS 17BP.10.R.2
-L- STA. 12+00.00

END PROJECT WBS 17BP.10.R.2
-L- STA. 16+10.00



INDEX OF SHEETS

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

- UTILITY OWNERS ON PROJECT**
- (1) TELECOMMUNICATIONS - AT&T
 - (2) POWER - DUKE ENERGY
 - (3) CABLE- TIME-WARNER CABLE

SEAL

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

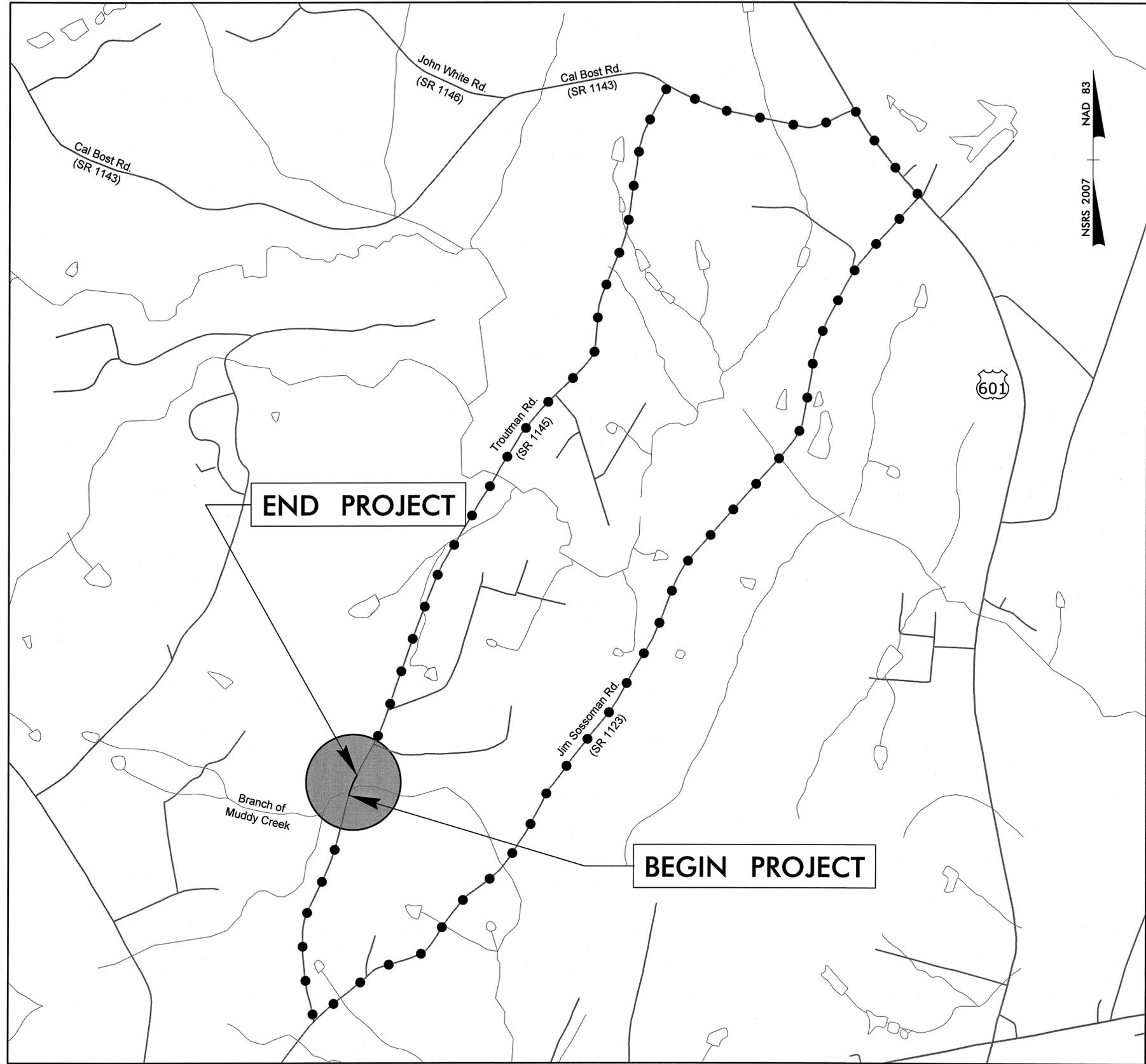
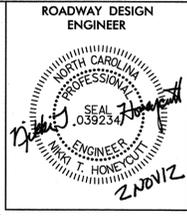
PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
UTILITIES ENGINEERING
SECTION**

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

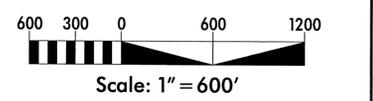
Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Xxxxx Xxxxx, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Reece Schuler, PE UTILITIES PROJECT DESIGNER

DETOUR ROUTE

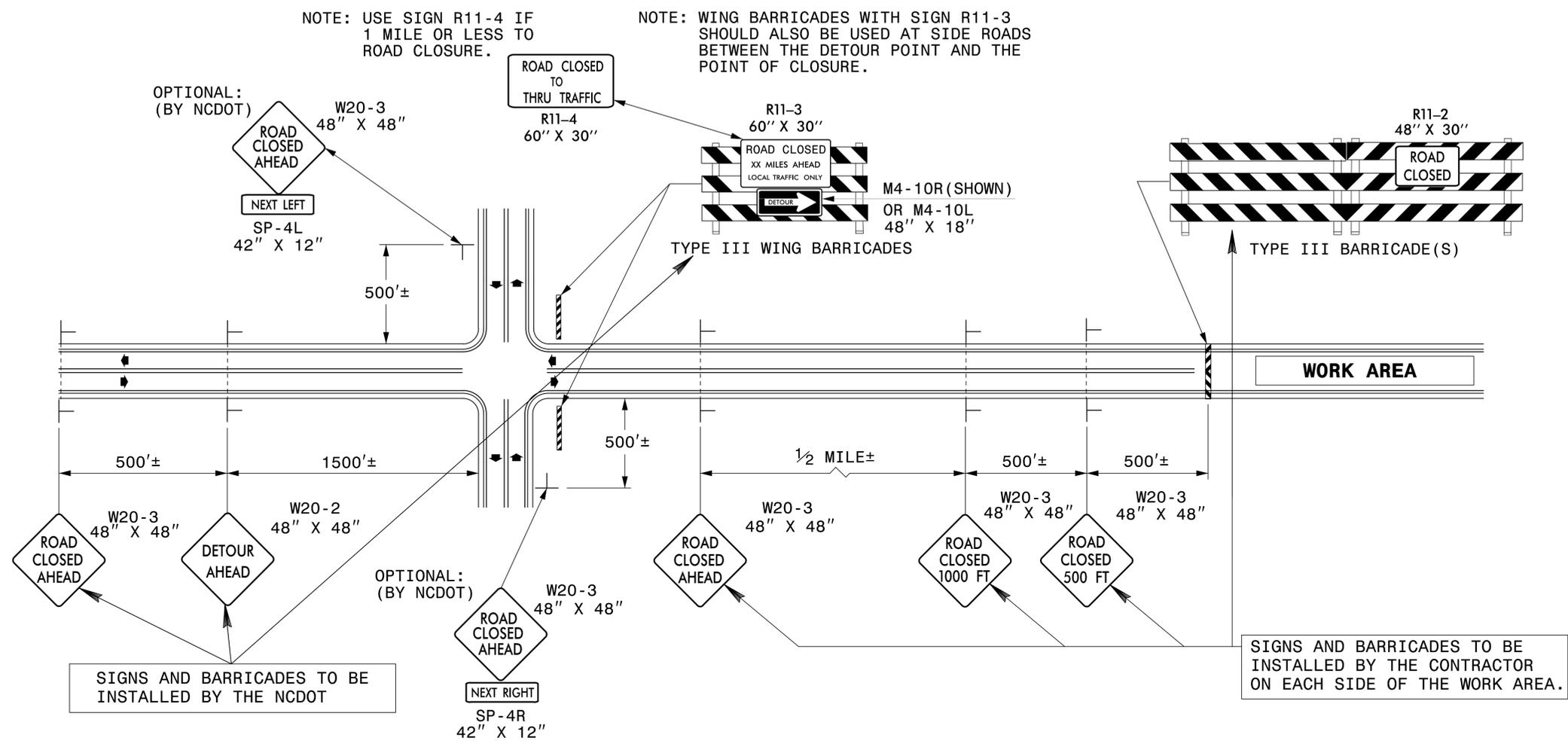
PROJECT REFERENCE NO.	SHEET NO.
17BP10.R.2	TCP-1
RW SHEET NO.	
 STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991	



NSRS 2007 NAD 83



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

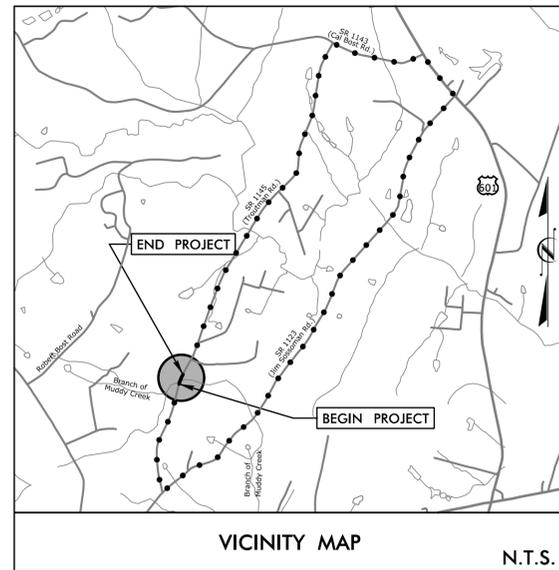
┆ STATIONARY SIGN

◄ DIRECTION OF TRAFFIC FLOW

r:\TrafficControl\TCPCOR2_rdy_tcp02.dgn 11/2/2012

CONTRACT:

PROJECT: WBS 17BP.10.R.2



EROSION CONTROL PLANS

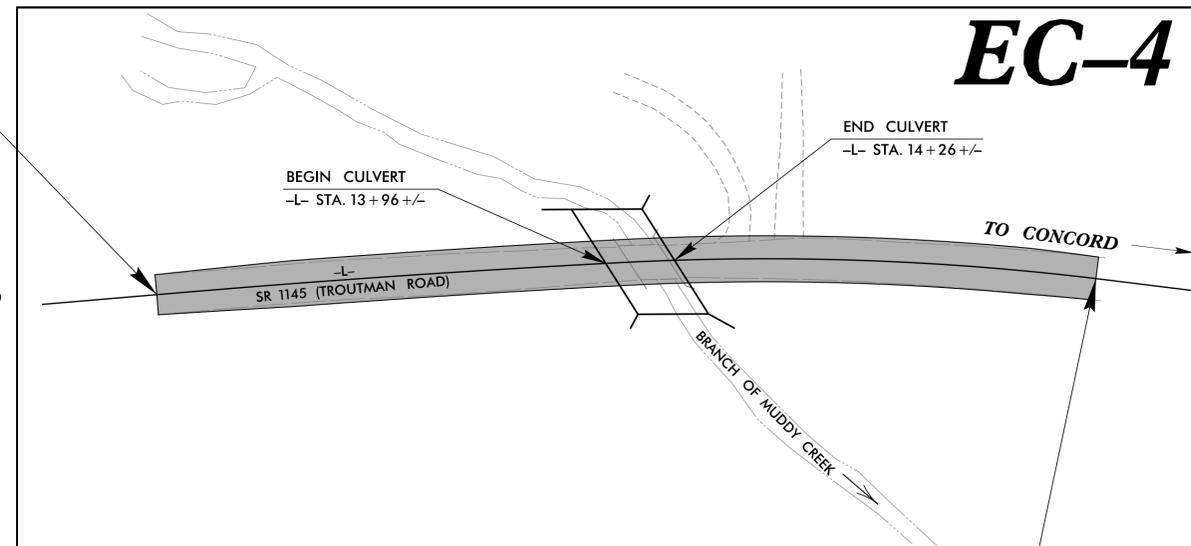
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
CABARRUS COUNTY

**LOCATION: BRIDGE #244 OVER BRANCH OF MUDDY CREEK
ON SR 1145 (TROUTMAN ROAD)**



BEGIN PROJECT WBS 17BP.10.R.2
-L- STA. 12+00.00

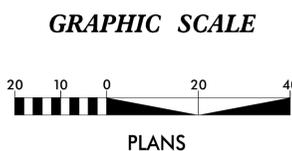
← TO MIDLAND



END PROJECT WBS 17BP.10.R.2
-L- STA. 16+10.00

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.



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Level III Designer
Davin Morrison, PE #3126



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

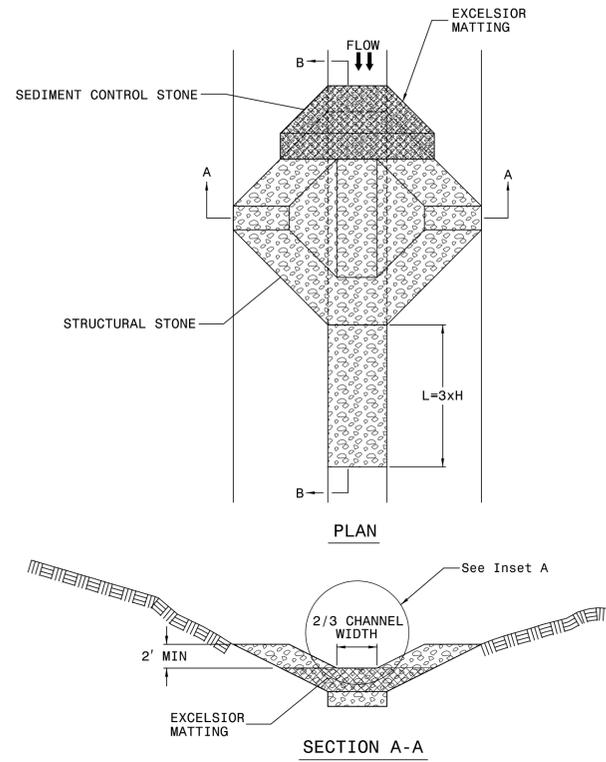
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.2	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.10.R.2		P.E.	
17BP.10.R.2		R/W & UTILITIES	
17BP.10.R.2		CONST.	

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	←
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	▨
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	▨

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

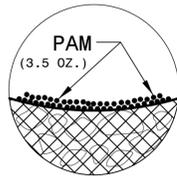


NOTES

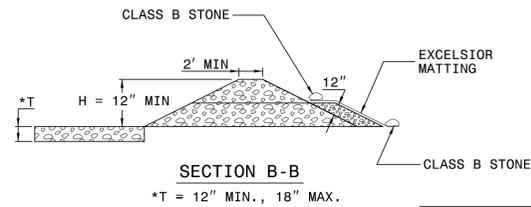
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.



INSET A



NOT TO SCALE

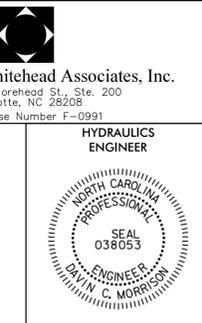
STABILIZATION REQUIREMENTS

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:

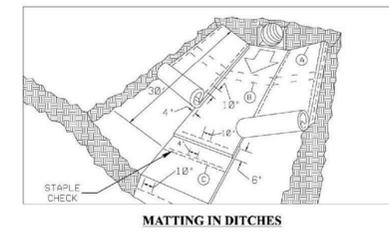
- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

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. 17BPJDR.2	SHEET NO. EC-2
RW SHEET NO.	



MATTING INSTALLATION DETAIL



MATTING IN DITCHES

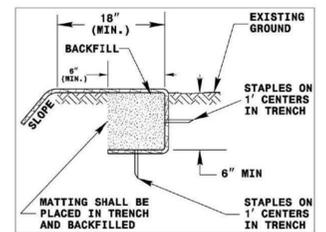
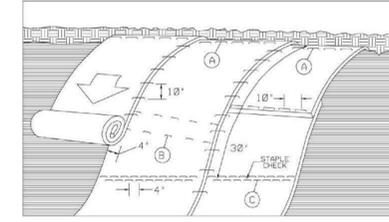


DIAGRAM (A)



MATTING ON SLOPES

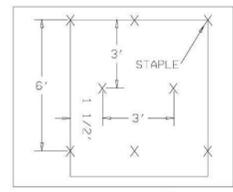


DIAGRAM (B)

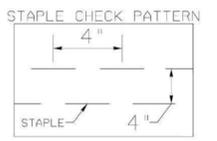


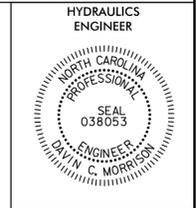
DIAGRAM (C)

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. <i>17BPJDR2</i>	SHEET NO. <i>EC-3</i>
RW SHEET NO.	
 STV / Ralph Whitehead Associates, Inc. <small>1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991</small>	



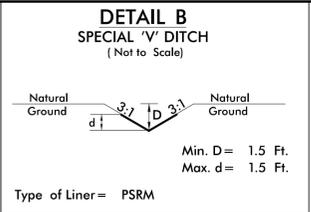
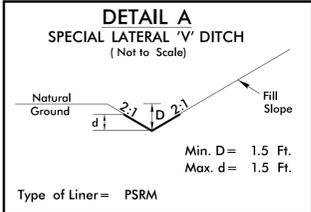
SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL (FOR SLOPE STABILIZATION)

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
			SUBTOTAL		900
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				100
				TOTAL	1000
				SAY	1000

PERMANENT SOIL REINFORCEMENT MATTING (FOR DITCH STABILIZATION)

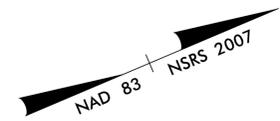
CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L- V-DITCH	14+01	14+35	LT	35
4	-L- V-DITCH	12+50	14+09	RT	100
4	-L- V-DITCH	14+96	16+00	LT	70
			SUBTOTAL		205
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				25
				TOTAL	230
				SAY	230



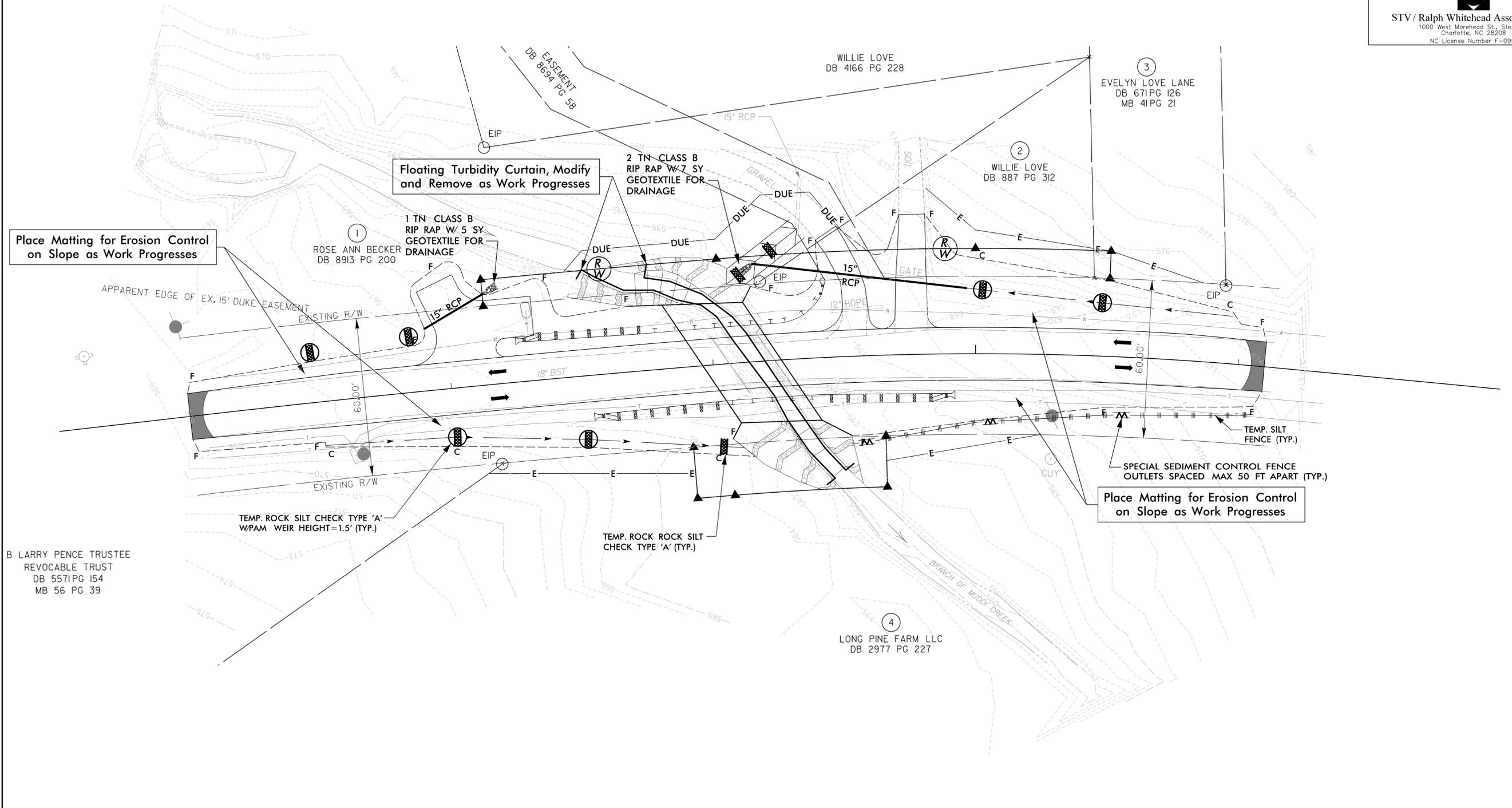
PROJECT REFERENCE NO. 17BPJDR.2	SHEET NO. EC-4
------------------------------------	-------------------

R/W SHEET NO.	HYDRAULICS ENGINEER D. MORRISON SEAL 038053
---------------	---

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



FROM STA. 12+50 TO STA. 14+09 RT. FROM STA. 14+01 TO STA. 14+35 LT.
FROM STA. 14+96 TO STA. 16+00 LT.



Place Matting for Erosion Control on Slope as Work Progresses

Floating Turbidity Curtain, Modify and Remove as Work Progresses

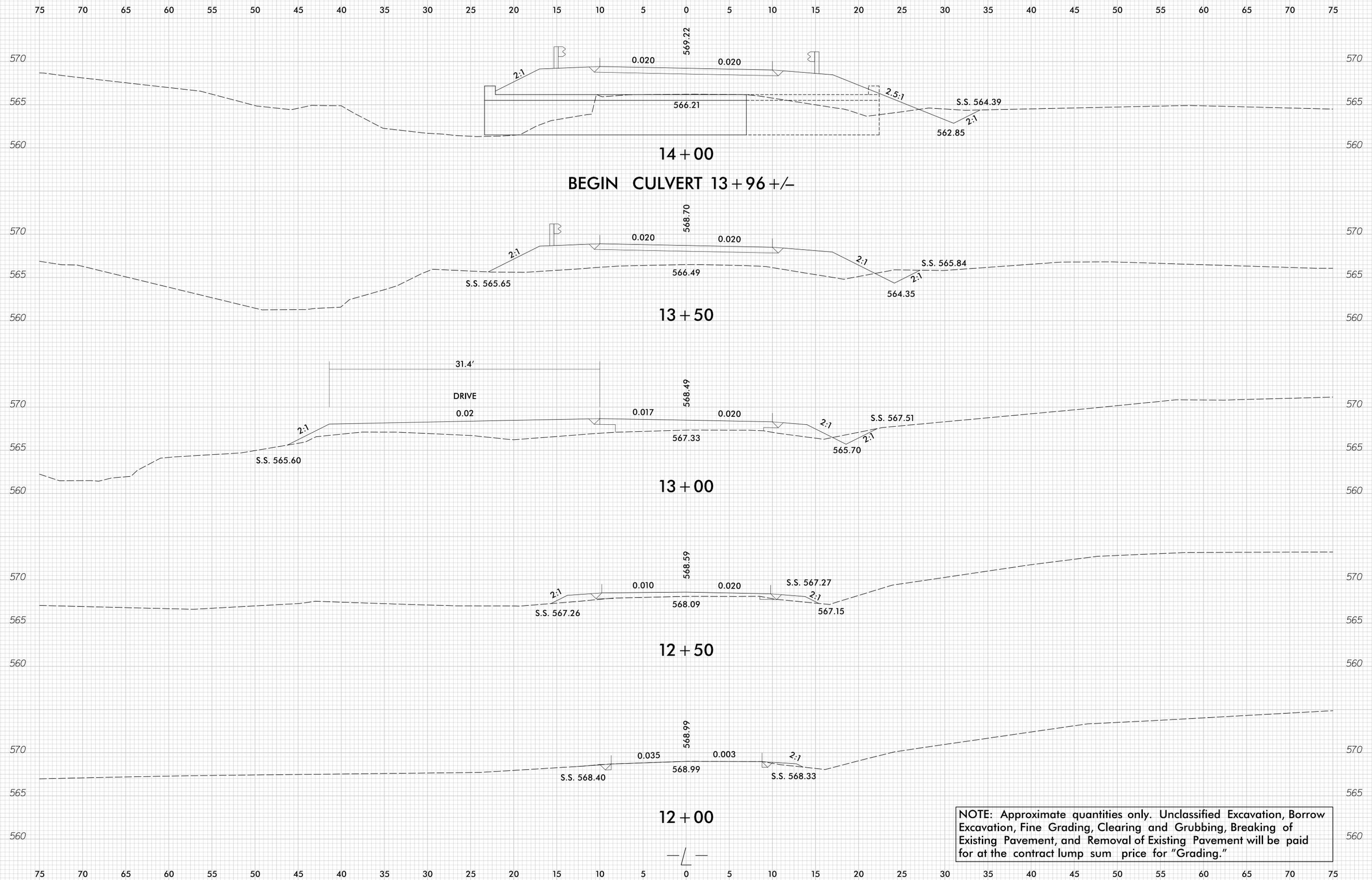
Place Matting for Erosion Control on Slope as Work Progresses

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.

F:\Roadway\pro\EC\NDR2_rdy_EC04.dgn

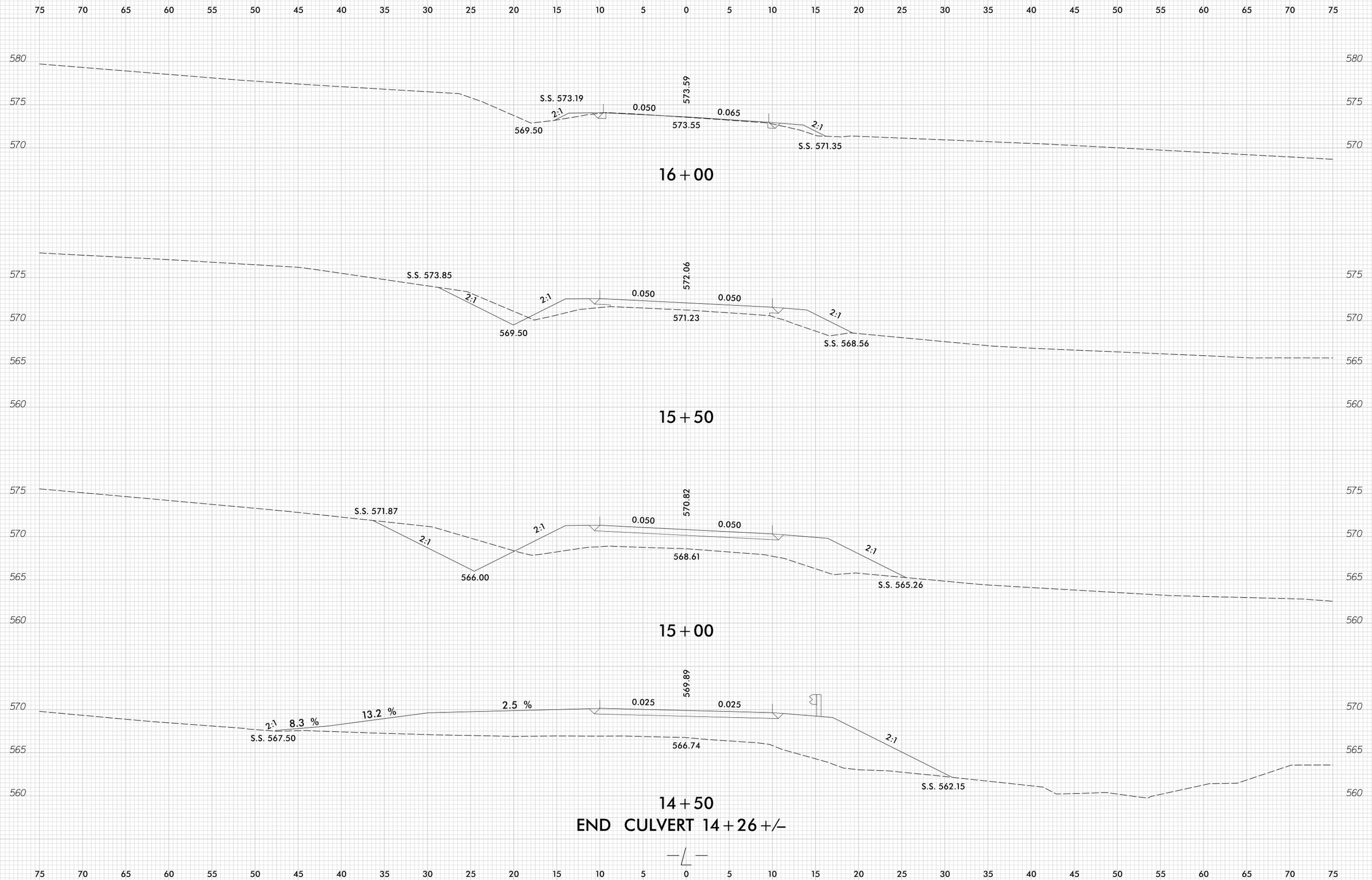
11/2/2012



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."

8/23/99

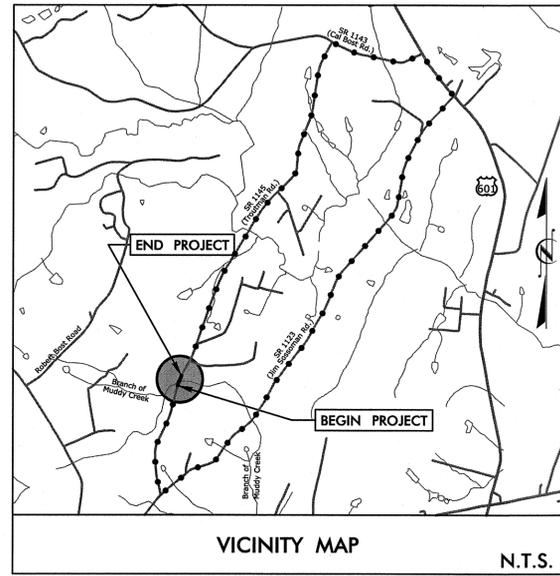
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.10.R.2	X-2



11/2/2012
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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.2	EC-1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
17BP.10.R.2		P.E.	
17BP.10.R.2		R / W & UTILITIES	
17BP.10.R.2		CONST.	

PROJECT: WBS 17BP.10.R.2



EROSION CONTROL PLANS

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

**LOCATION: BRIDGE #244 OVER BRANCH OF MUDDY CREEK
 ON SR 1145 (TROUTMAN ROAD)**

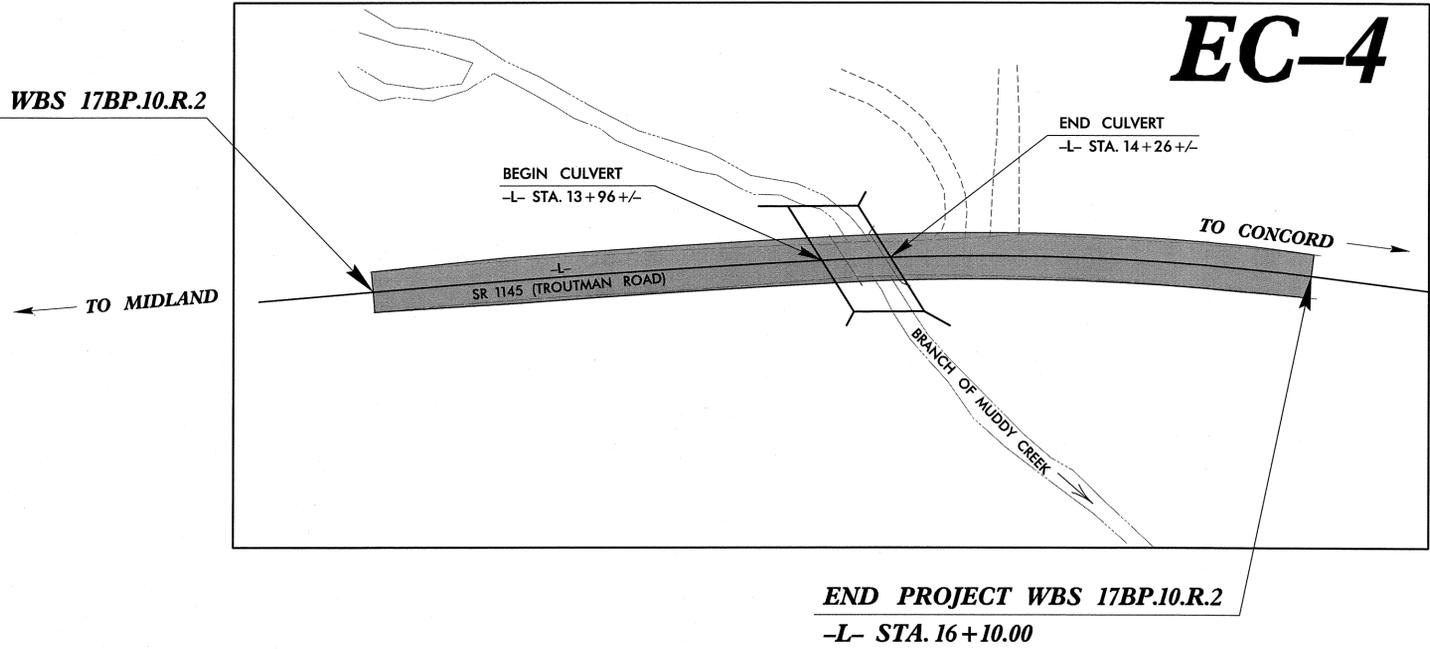


EROSION AND SEDIMENT CONTROL MEASURES

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	
1607.01	Gravel Construction Entrance	
1622.01	Temporary Berms and Slope Drains	— T —
1630.01	Riser Basin	⊙
1630.03	Temporary Silt Ditch	— TSD —
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	▨
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	▨

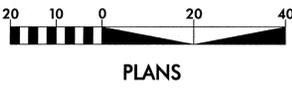
BEGIN PROJECT WBS 17BP.10.R.2
 -L- STA. 12+00.00



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

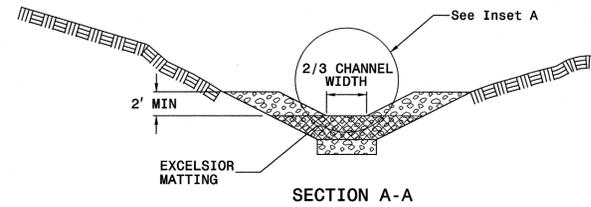
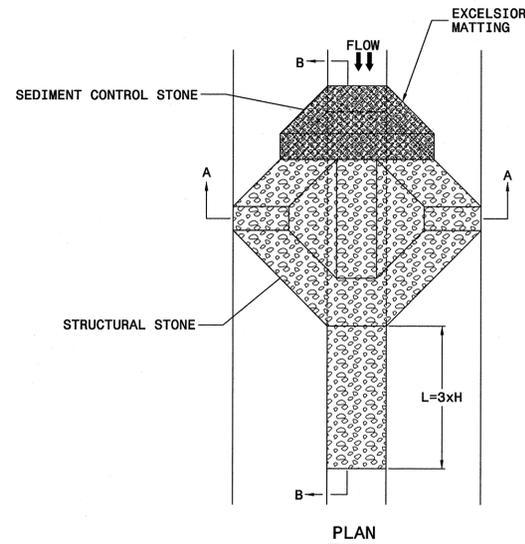
Level III Designer
 Davin Morrison, PE #3126



Prepared In the Office of:
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

CONTRACT:

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

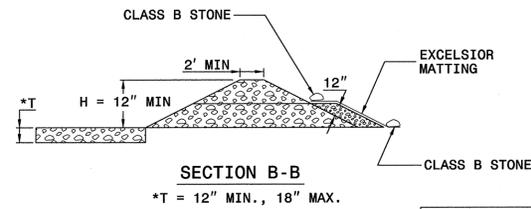
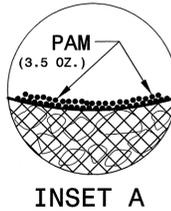


NOTES

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

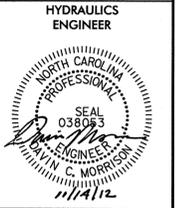
STABILIZATION REQUIREMENTS

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:

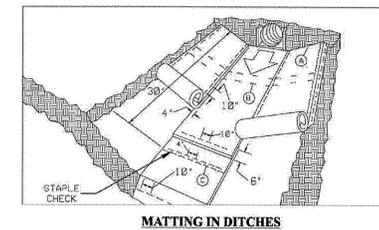
- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

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. 17BPJ.O.R.2	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



MATTING IN DITCHES

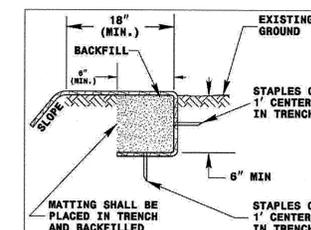
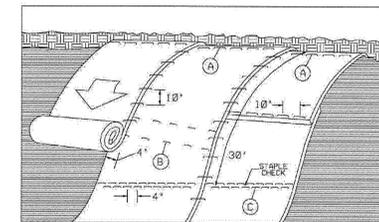


DIAGRAM (A)



MATTING ON SLOPES

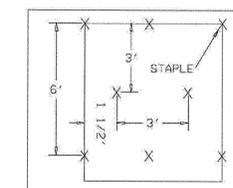


DIAGRAM (B)

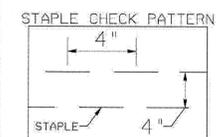


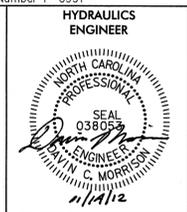
DIAGRAM (C)

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.
7BP10.R.2	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>	



SOIL STABILIZATION SUMMARY SHEET

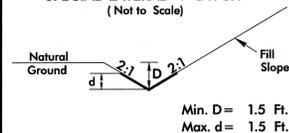
MATTING FOR EROSION CONTROL (FOR SLOPE STABILIZATION)

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
			SUBTOTAL		900
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				100
				TOTAL	1000
				SAY	1000

PERMANENT SOIL REINFORCEMENT MATTING (FOR DITCH STABILIZATION)

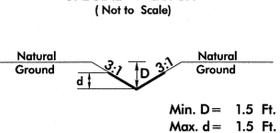
CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L- V-DITCH	14+01	14+35	LT	35
4	-L- V-DITCH	12+50	14+09	RT	100
4	-L- V-DITCH	14+96	16+00	LT	70
			SUBTOTAL		205
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				25
				TOTAL	230
				SAY	230

DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= PSRM

DETAIL B
SPECIAL 'V' DITCH
(Not to Scale)

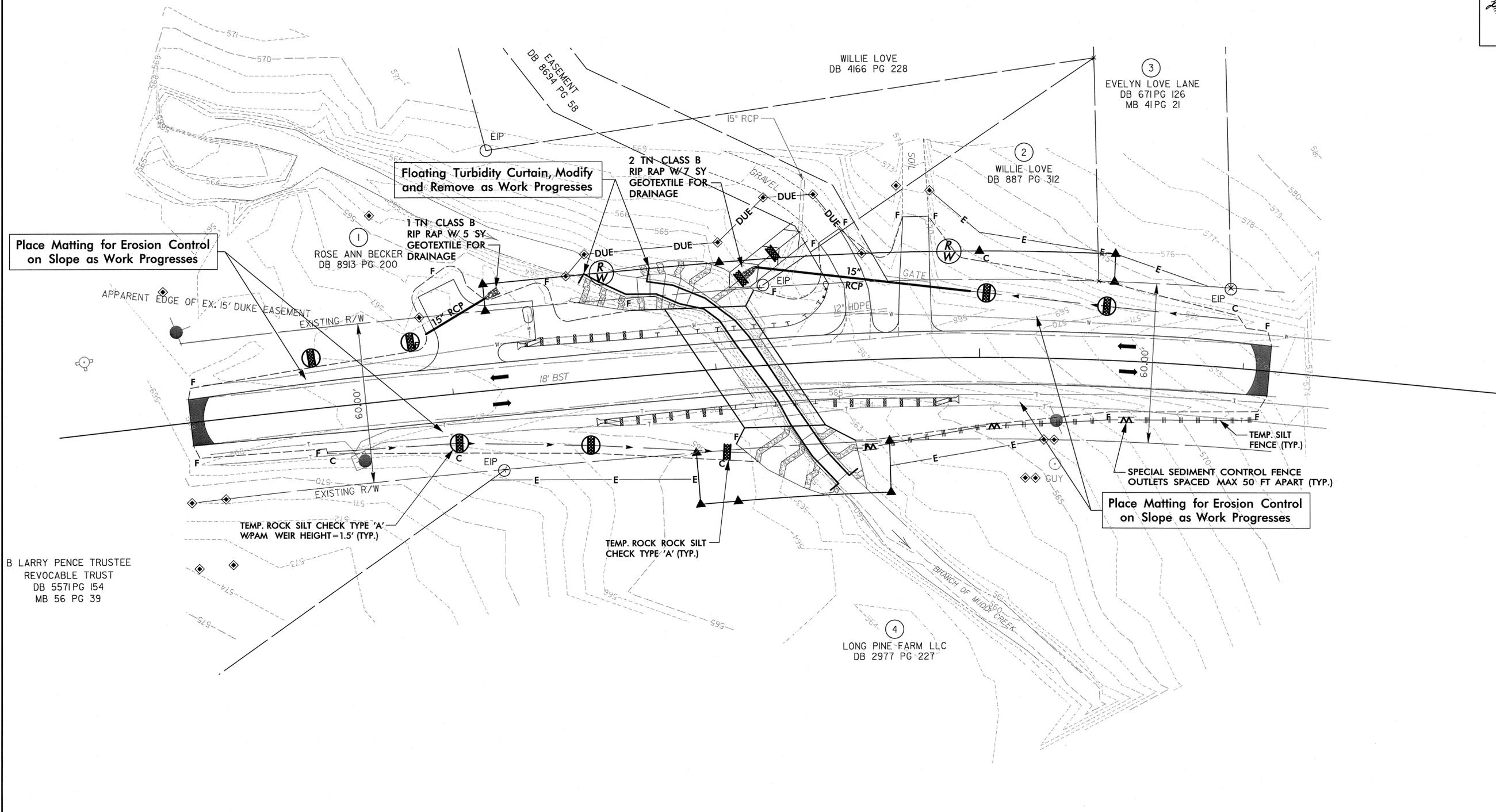


Type of Liner= PSRM

FROM STA. 12+50 TO STA. 14+09 RT. FROM STA. 14+01 TO STA. 14+35 LT.
FROM STA. 14+96 TO STA. 16+00 LT.

PROJECT REFERENCE NO. 17BPJ0R.2	SHEET NO. EC-4
RW SHEET NO.	
STV / Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991	

HYDRAULICS
ENGINEER



Place Matting for Erosion Control on Slope as Work Progresses

Floating Turbidity Curtain, Modify and Remove as Work Progresses

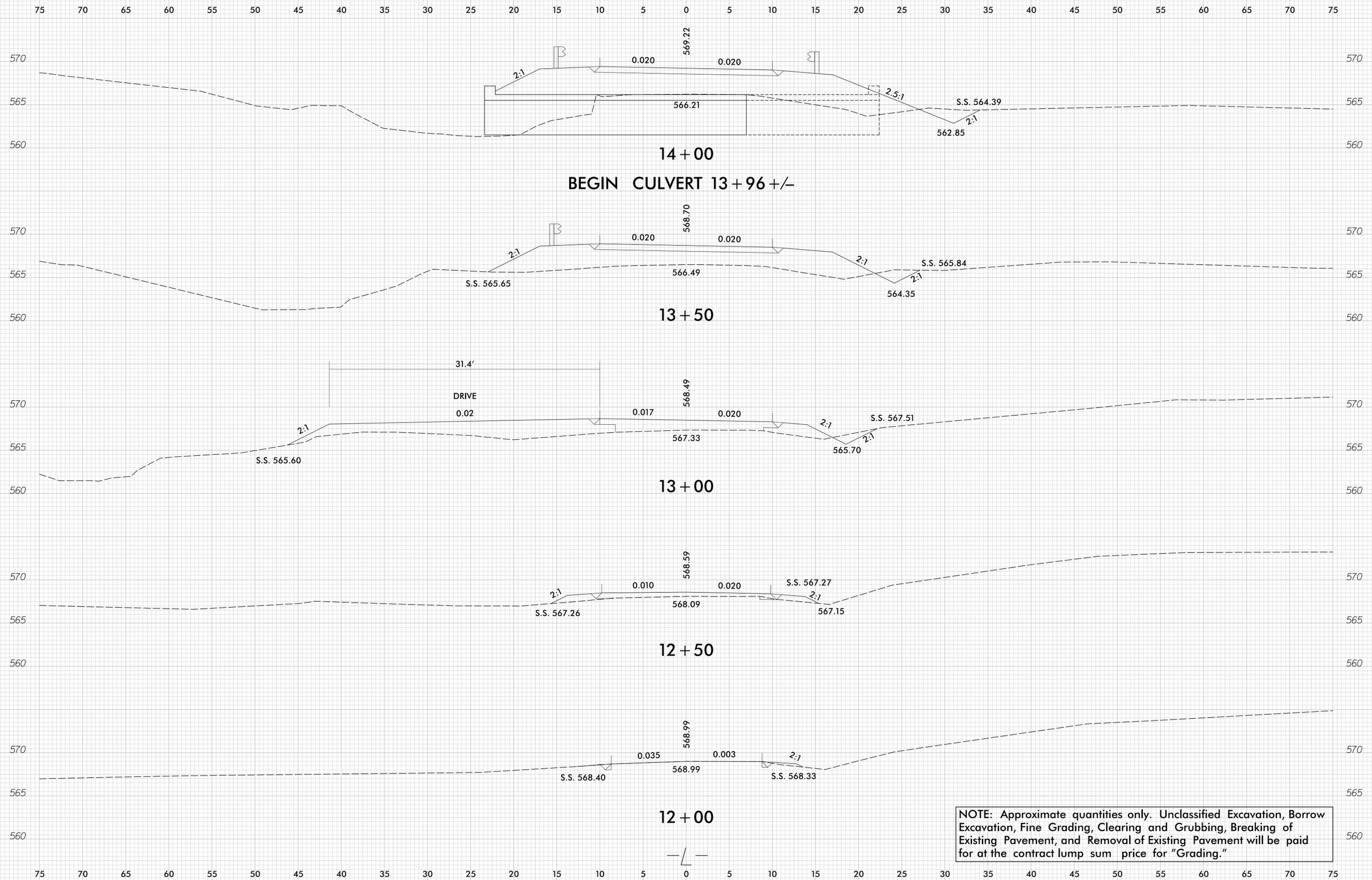
Place Matting for Erosion Control on Slope as Work Progresses

B LARRY PENCE TRUSTEE
REVOCABLE TRUST
DB 5571 PG 154
MB 56 PG 39

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.

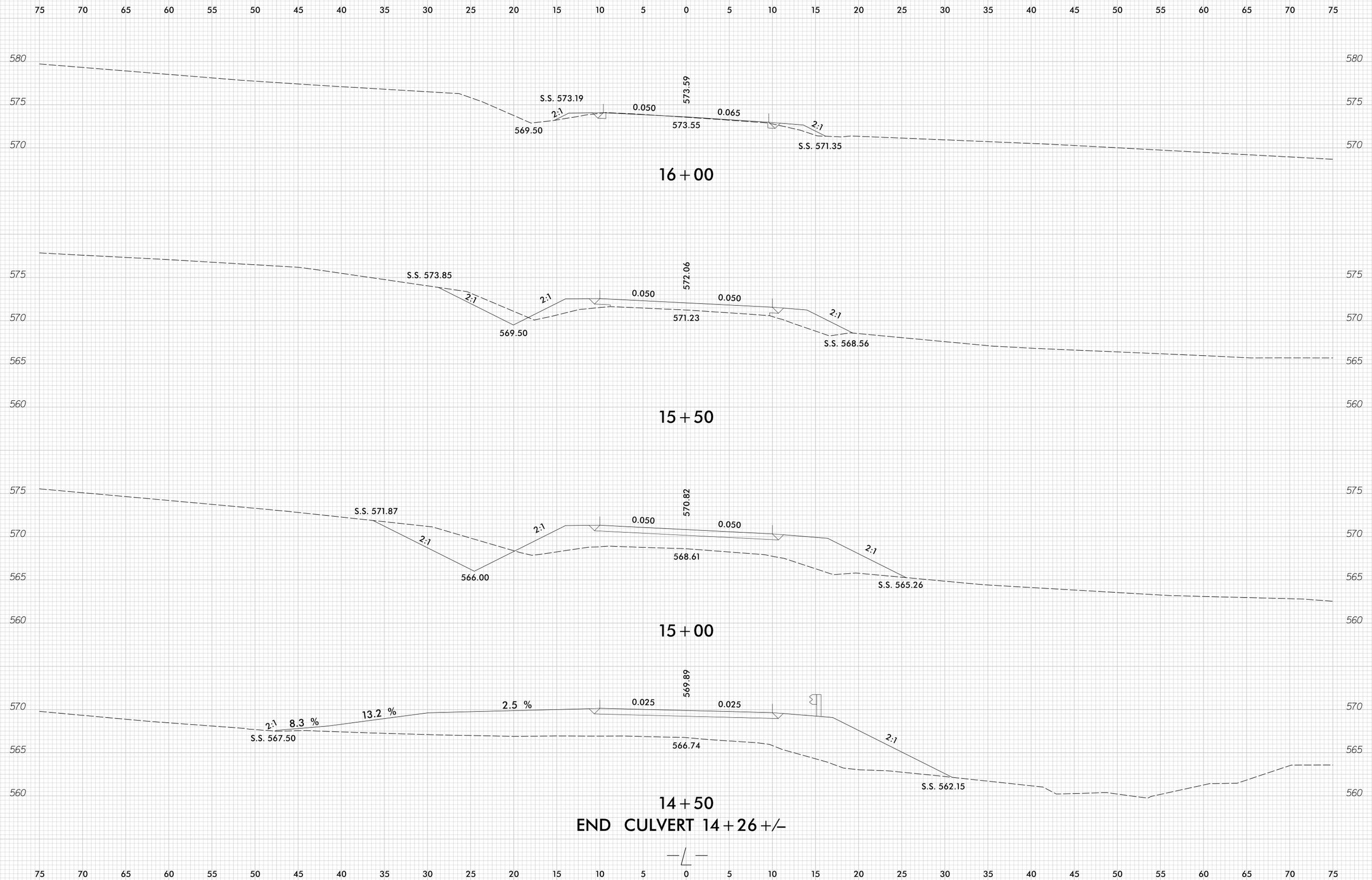
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 11/2/2012



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."

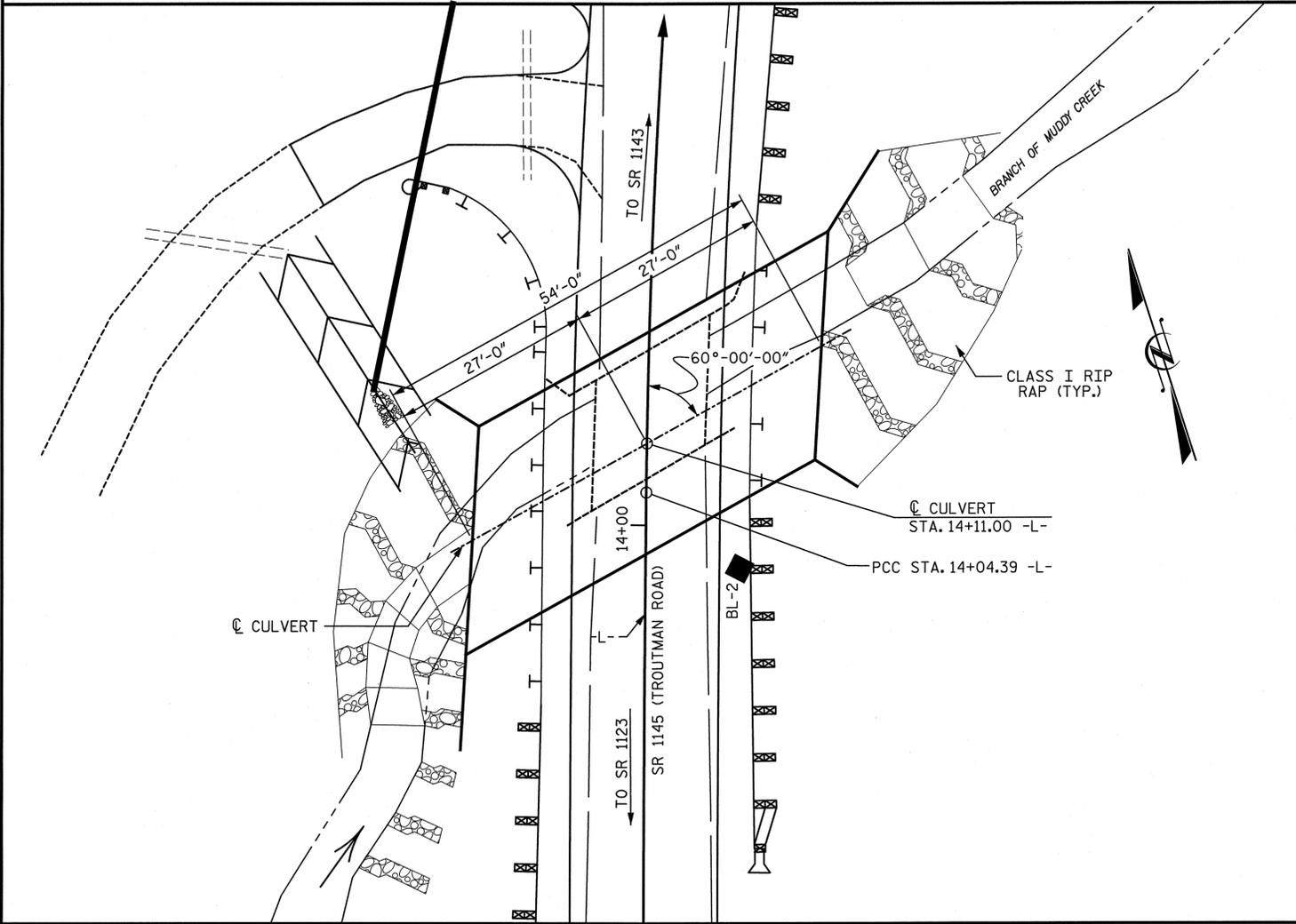
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	17BP.10.R.2	X-2

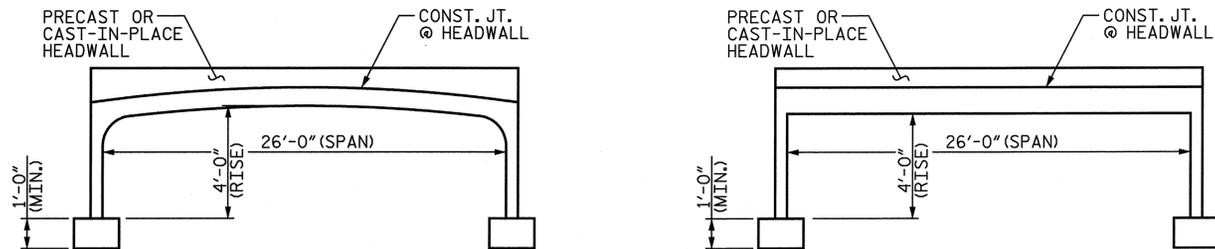


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stephase

BENCHMARK BL-2: 12.73' RT STA. 13+94.25 -L-, N 553190.2419, E 1543454.0899 ELEV. 565.71



LOCATION SKETCH



ARCH ALTERNATE

FLAT TOPPED ALTERNATE

RIGHT ANGLE SECTION OF PRECAST CONCRETE THREE-SIDED CULVERT

MIN. LOW CHORD EL. = 565.50 @ CULVERT

GENERAL NOTES

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

MAXIMUM DESIGN FILL----- 4.5'

MINIMUM DESIGN FILL----- 2.5'

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

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18 "EVALUATING SCOUR AT BRIDGES", MAY 2001

THE EXISTING STRUCTURE, CONSISTING OF (1) 19' TIMBER DECK ON TIMBER JOIST AND STEEL I-BEAM SPAN WITH A 15.4' CLEAR ROADWAY WIDTH AND SUPPORTED ON A SUBSTRUCTURE OF TIMBER CAPS AND POSTS AND LOCATED AT THE EXISTING STRUCTURE, SHALL BE REMOVED. THE EXISTING STRUCTURE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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.

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

FOR PRECAST REINFORCED CONCRETE THREE-SIDED CULVERT, SEE SPECIAL PROVISIONS.

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PRECAST CULVERT SECTIONS AND WINGS SHALL BE DESIGNED TO HANDLE FULL DEPTH HYDROSTATIC PRESSURE IF WEEP HOLES ARE NOT UTILIZED. IF PROVIDED, WEEP HOLES SHALL BE LOCATED A MINIMUM HEIGHT OF 6 INCHES ABOVE THE NORMAL FLOW LINE AND HAVE A MAXIMUM SPACING OF 10 FEET.

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 COST 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 THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR CAST-IN-PLACE HEADWALLS AND WINGS. PLANS AND DESIGN CALCULATIONS SHALL BE CHECKED AND SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER. SEE SPECIAL PROVISIONS.

FOR RIP RAP PLACEMENT, SEE CULVERT SURVEY REPORT.

HYDRAULIC DATA

DESIGN DISCHARGE:----- 380 CFS
 FREQUENCY OF DESIGN FLOOD:----- 25 YRS.
 DESIGN HIGH WATER ELEVATION:----- 565.5
 DRAINAGE AREA:----- 0.9 SQ. MI.
 BASIC DISCHARGE (Q100):----- 605 CFS
 BASIC HIGH WATER ELEVATION:----- 566.9

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE:----- 1,445 CFS
 FREQUENCY OF OVERTOPPING FLOOD:----- 500 YRS.
 OVERTOPPING FLOOD ELEVATION:----- 568.5

GRADE DATA

GRADE POINT ELEVATION @
 STA. 14+11.00 -L- ----- 569.34
 BED ELEVATION @
 STA. 14+11.00 -L- ----- 560.62
 ROADWAY FILL SLOPES ----- 2:1 (MAX.)

FOUNDATION NOTES

THE SCOUR CRITICAL ELEVATION IS THE BOTTOM OF FOOTING ELEVATION. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

THE SPREAD FOOTINGS ARE DESIGNED FOR A FACTORED RESISTANCE OF 4 TSF. CHECK FIELD CONDITIONS FOR THE REQUIRED RESISTANCE OF 8 TSF JUST BEFORE PLACING CONCRETE.

THE BOTTOM OF FOOTING ELEVATIONS MAY BE LOWERED IN ORDER TO SATISFY BEARING CAPACITY AND MINIMUM ROCK EMBEDMENT REQUIREMENTS.

TO PROVIDE PROTECTION FROM POSSIBLE SCOUR, DO NOT CONSTRUCT SPREAD FOOTINGS AT AN ELEVATION HIGHER THAN SHOWN ON THE PLANS.

KEY SPREAD FOOTINGS AT LEAST 6" INTO ROCK WITH MINIMUM THICKNESS AS SHOWN ON THE PLANS.

FOR BLASTING ADJACENT TO HIGHWAY STRUCTURES, SEE ARTICLE 410-9 OF THE STANDARD SPECIFICATIONS.

TOTAL STRUCTURE QUANTITIES

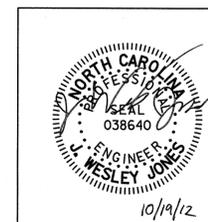
REMOVAL OF EXISTING STRUCTURE @ STA. 14+11.00 -L-	LUMP SUM
PRECAST REINFORCED CONCRETE THREE-SIDED CULVERT @ STA. 14+11.00 -L-	LUMP SUM
CULVERT EXCAVATION	LUMP SUM
CLASS A CONCRETE	27.2 CU. YDS.
RIP RAP (CLASS I)	120 TONS
FILTER FABRIC	140 SQ. YDS.

PROJECT NO. 17BP.10.R.2
 CABARRUS COUNTY
 STATION: 14+11.00 -L-

SHEET 1 OF 4 REPLACES BRIDGE NO. 244

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PRECAST REINFORCED CONCRETE THREE-SIDED CULVERT
 60° SKEW



REVISIONS

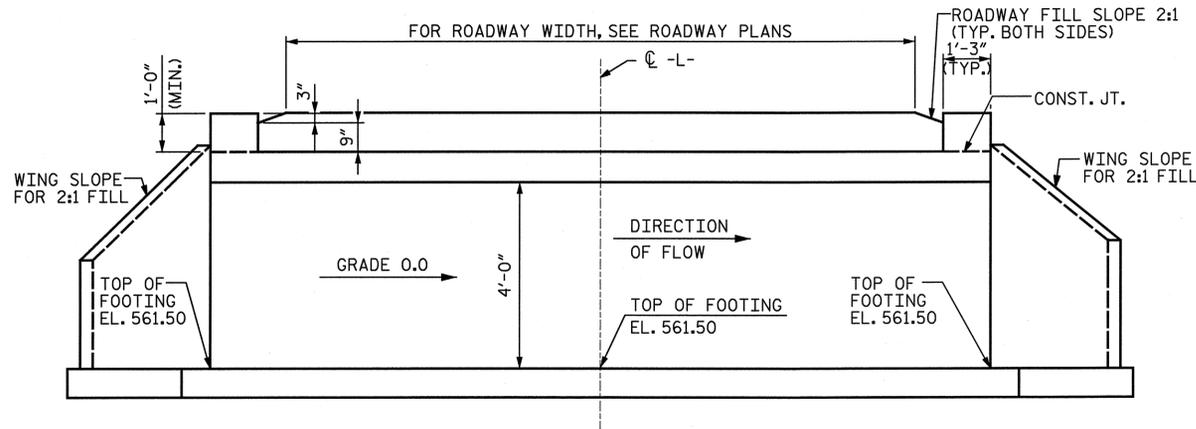
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SHEET NO.	C-1
TOTAL SHEETS	4

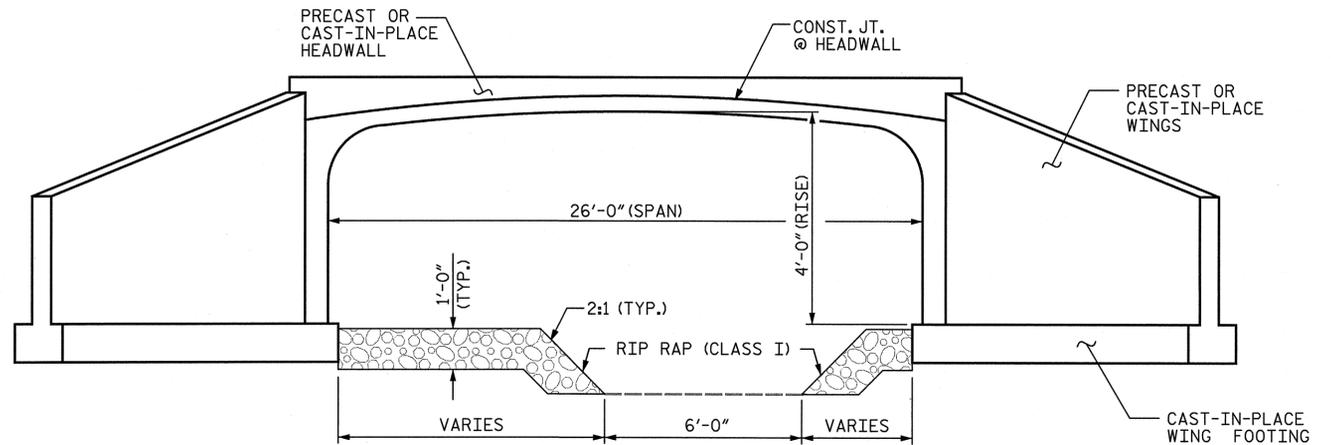
STV/ Ralph Whitehead Associates, Inc.
 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0991

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DRAWN BY : LEM DATE : 8-12
 CHECKED BY : JWJ DATE : 8-12



CULVERT SECTION NORMAL TO ROADWAY

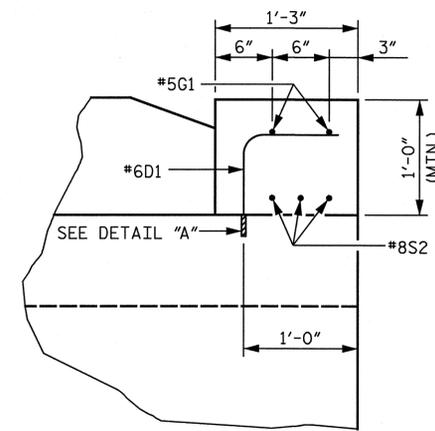
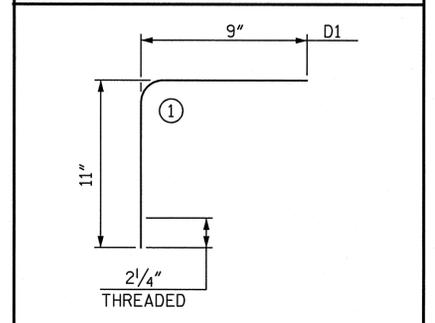


END ELEVATION NORMAL TO SKEW

(INLET CHANNEL SHOWN, OUTLET CHANNEL SIMILAR)

BAR SCHEDULE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
D1	64	#6	①	1'-8"	160
G1	4	#5	STR	31'-8"	132
S2	6	#8	STR	31'-8"	507
TOTAL				LBS	799

BAR TYPE

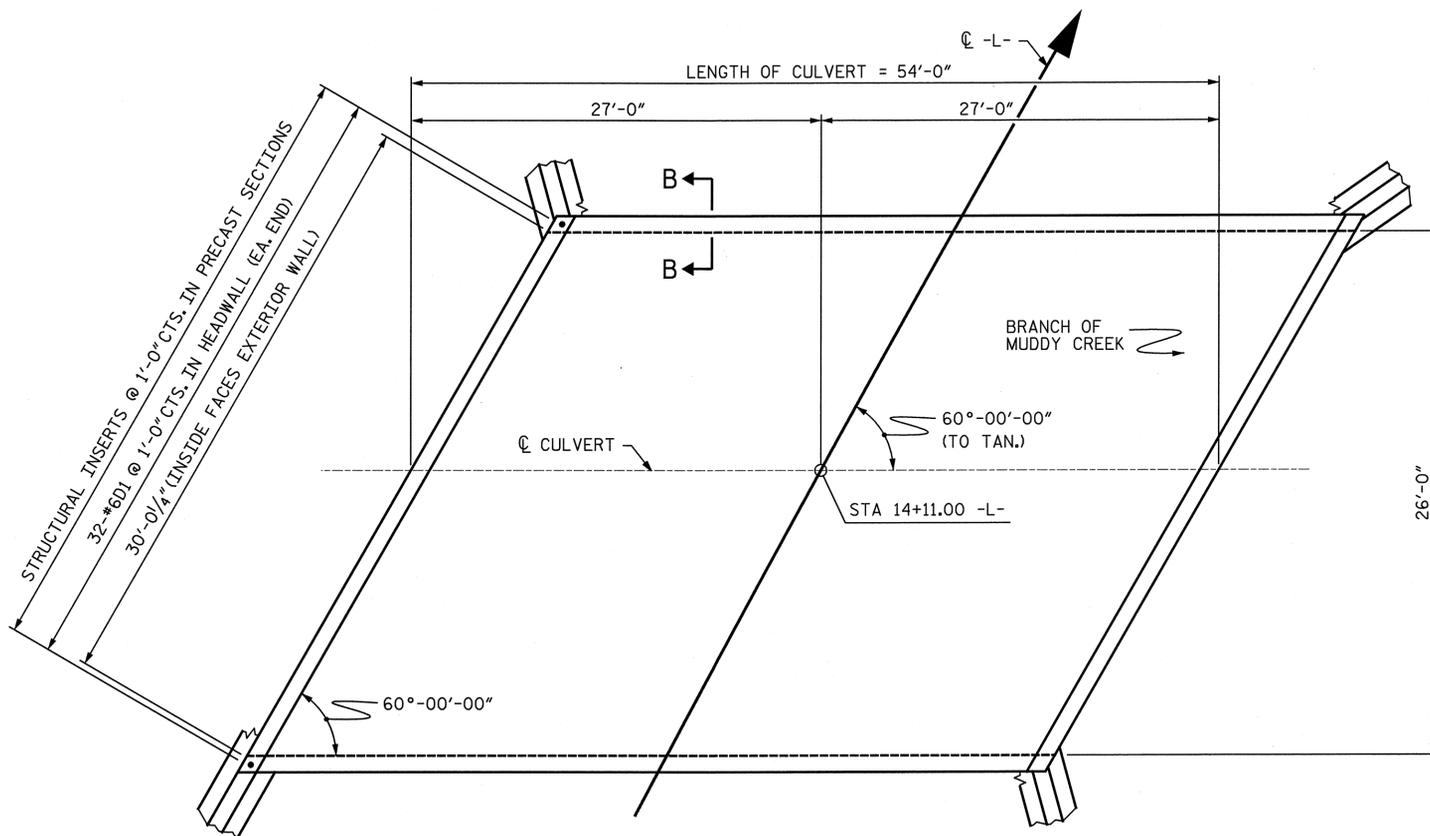


SECTION THRU HEADWALL



DETAIL "A"

* APPROVED GALVANIZED CONCRETE INSERTS HAVING A MINIMUM WORKING LOAD TENSION CAPACITY OF 2.5 KIPS. DIA. = 3/4", NO. REQUIRED 64

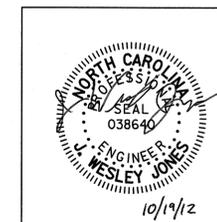


LENGTH FOR PRECAST THREE-SIDED CULVERT

(SEE SHEET 3 OF 4 FOR SECTION B-B)

PROJECT NO. 17BP.10.R.2
 CABARRUS COUNTY
 STATION: 14+11.00 -L-

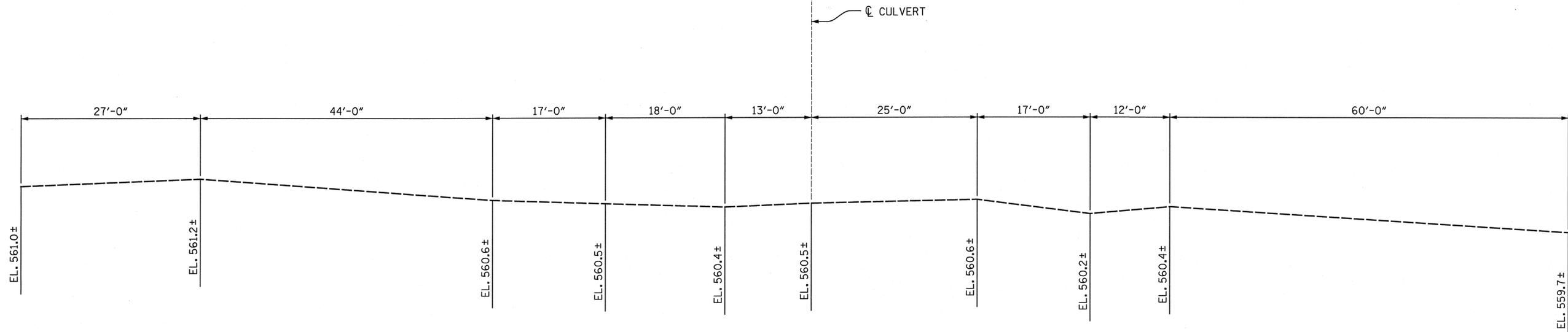
SHEET 2 OF 4



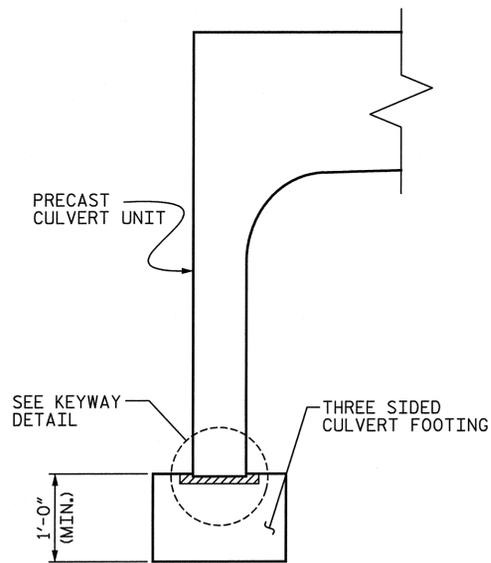
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRECAST REINFORCED
 CONCRETE THREE-SIDED
 CULVERT
 60° SKEW

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

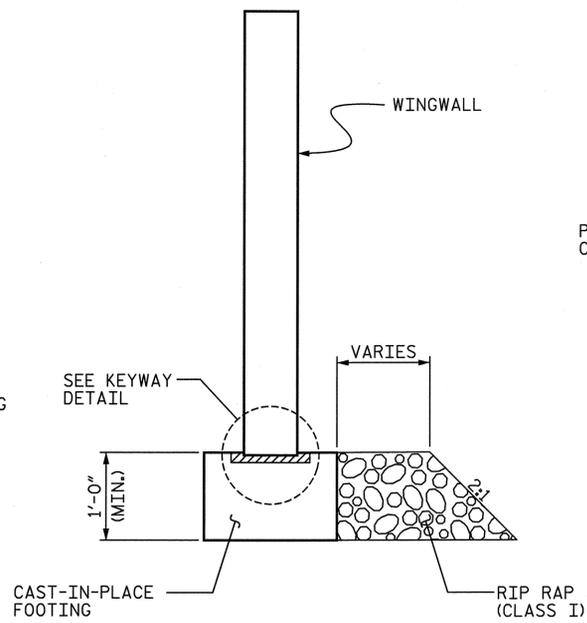
STV/ Ralph Whitehead Associates, Inc.
 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0991



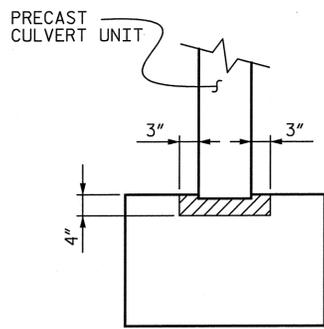
PROFILE ALONG CULVERT



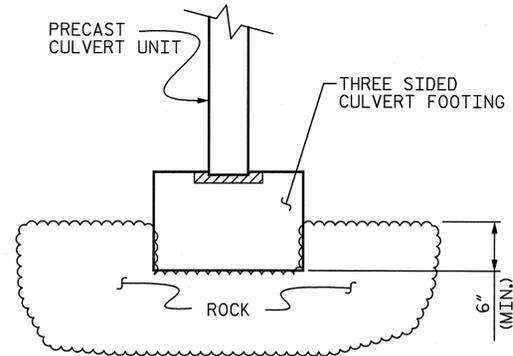
SECTION B-B



SECTION THRU WINGWALL



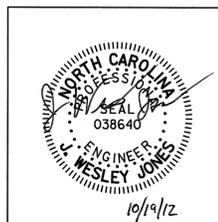
KEYWAY DETAIL



KEYED FOOTING DETAIL

SIDES OF FOOTING SHALL BE IN CONTACT WITH UNDISTURBED MATERIAL FOR MINIMUM DIMENSION SHOWN.

PROJECT NO. 17BP.10.R.2
 CABARRUS COUNTY
 STATION: 14+11.00 -L-
 SHEET 3 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRECAST REINFORCED
 CONCRETE THREE-SIDED
 CULVERT
 60° SKEW

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

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

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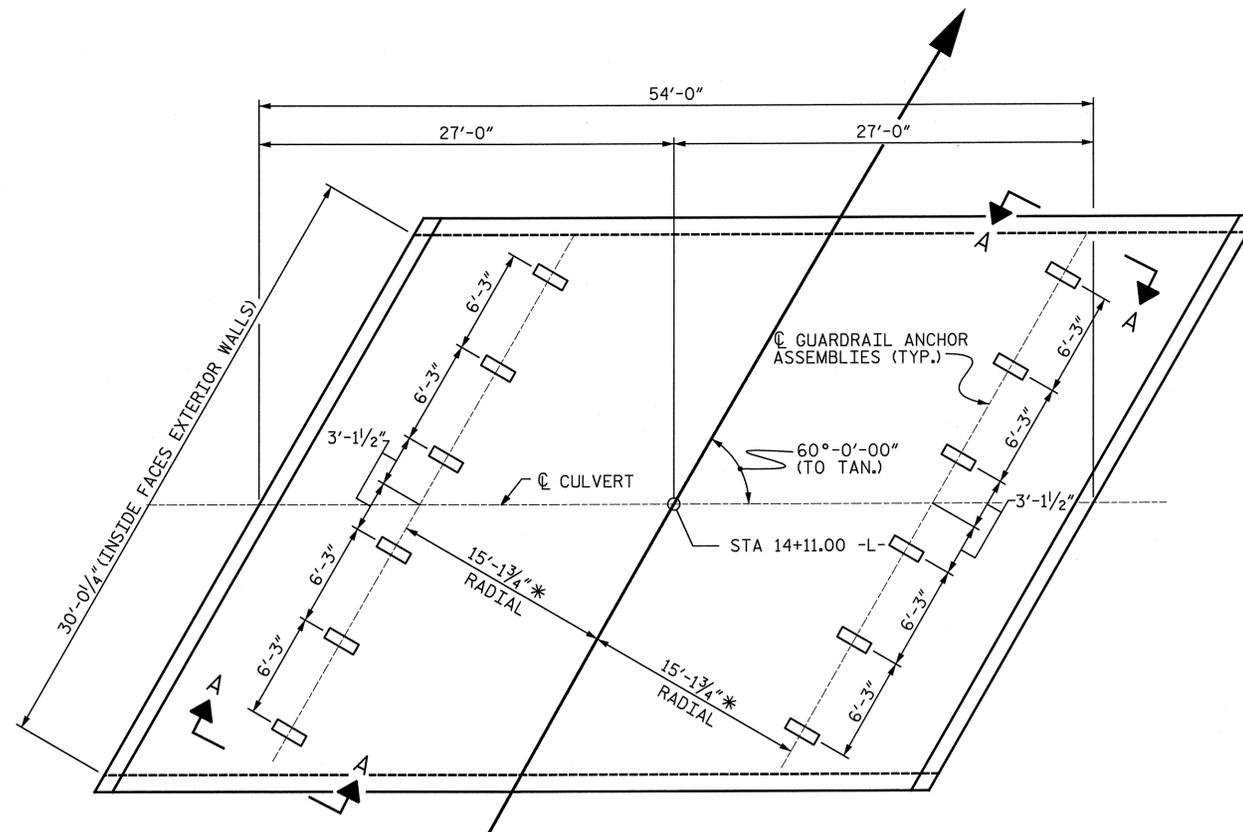
DRAWN BY: LEM DATE: 8-12
 CHECKED BY: JWJ DATE: 8-12

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 OR DOWELS, 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.

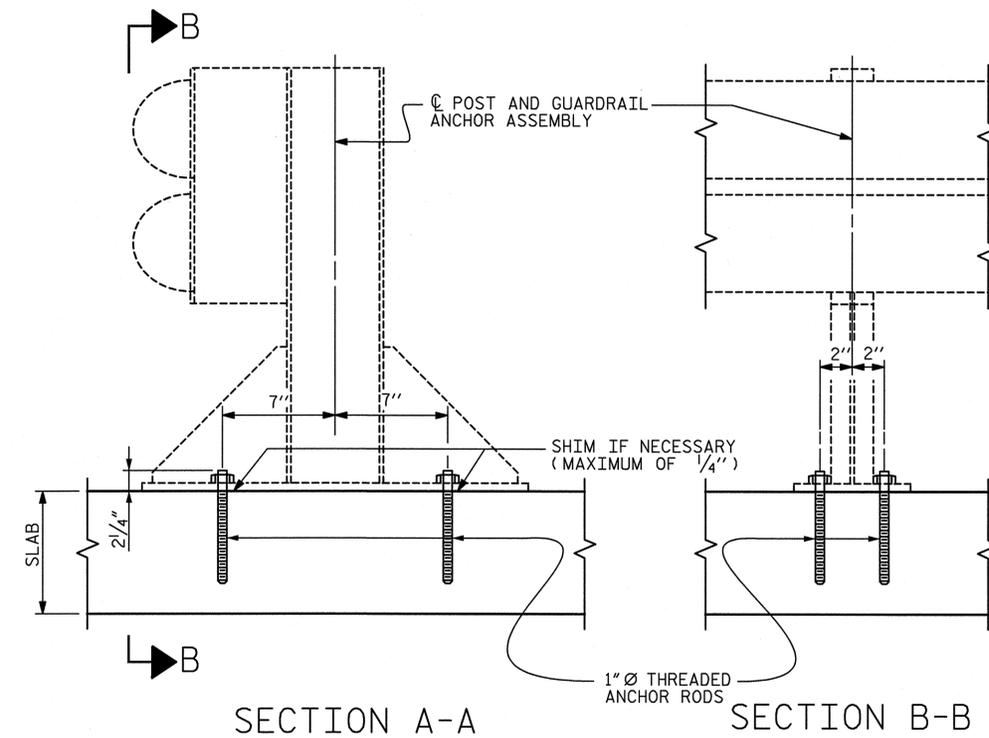
PAYMENT FOR GUARDRAIL, POSTS, AND POST BASE PLATES IS INCLUDED IN ROADWAY PAY ITEMS.



PLAN OF PRECAST CULVERT
GUARDRAIL POST SPACING

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

NOTE: GUARDRAIL POSTS PLACEMENT AS SHOWN. GUARDRAIL POSTS AND THREADED ANCHOR RODS MUST CLEAR ALL JOINTS OF PRECAST CULVERT UNITS.

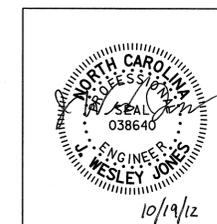


SECTION A-A

SECTION B-B

PROJECT NO. 17BP.10.R.2
CABARRUS COUNTY
STATION: 14+11.00 -L-

SHEET 4 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
ANCHORAGE DETAILS
FOR GUARDRAIL
ANCHOR ASSEMBLY FOR
CULVERTS

REVISIONS

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

SHEET NO.
C-4
TOTAL SHEETS
4

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

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DRAWN BY: LEM DATE: 8-12
CHECKED BY: JWJ DATE: 8-12

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE 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 SQ. 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.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
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.
		(MINIMUM)

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.

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. 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 3/4" 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 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 EQUAL 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.

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. FINISHES 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.

ENGLISH

JANUARY, 1990