

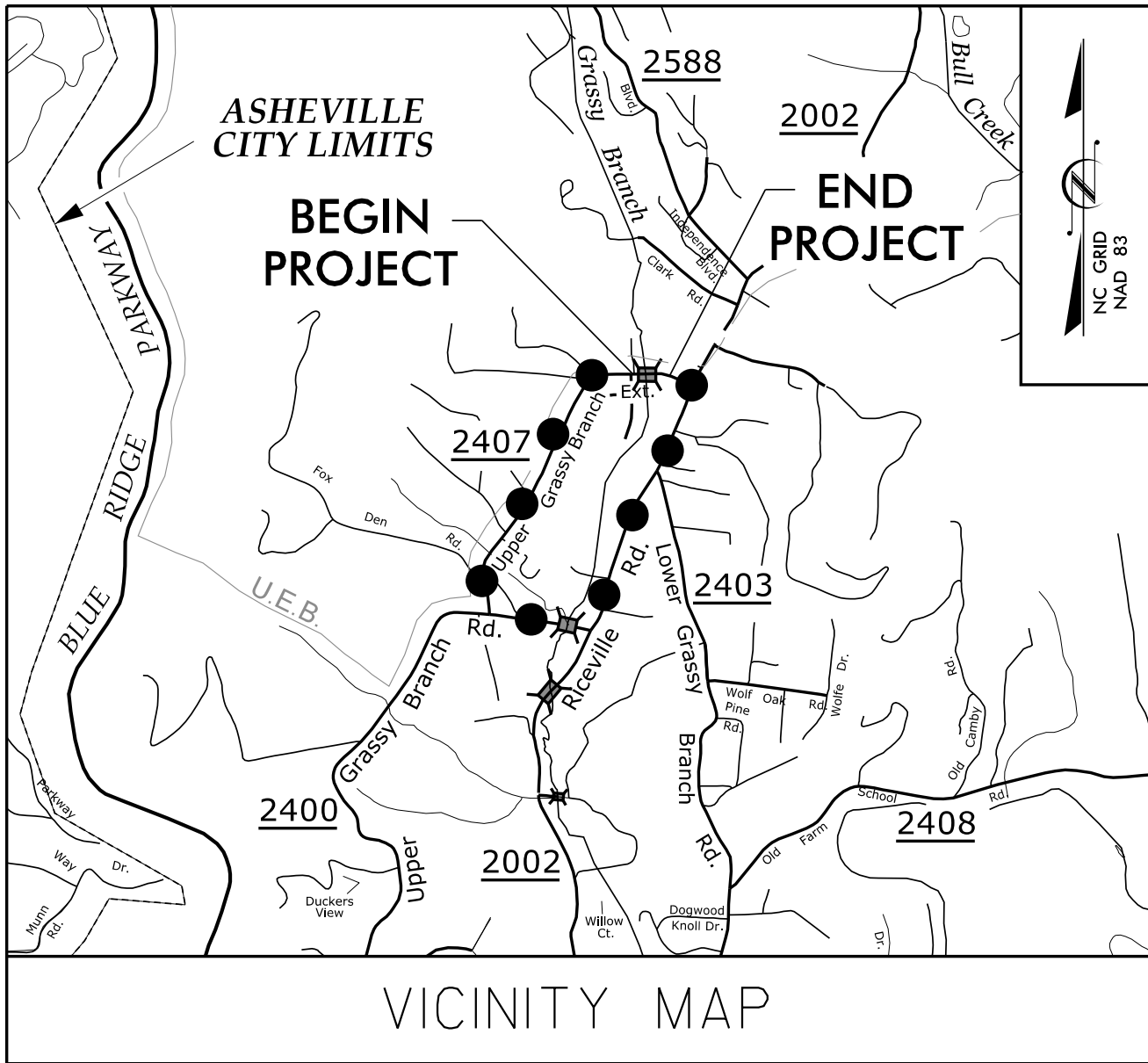
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.13.R.39	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.13.R.39	N/A	P.E.	
17BP.13.R.39	N/A	RW	
17BP.13.R.39	N/A	CONST.	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BUNCOMBE COUNTY

LOCATION: BRIDGE NO. 686 OVER GRASSY BRANCH
ON SR 2407 (UPPER GRASSY BRANCH EXT.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



VICINITY MAP

● — ● — ● — DETOUR ROUTE

V&M
Vaughn & Melton
Consulting Engineers

Charlotte, North Carolina
704-357-0488

Tri-Cities, Tennessee
423-467-8401

Knoxville, Tennessee
865-546-5800

Middlesboro, Kentucky
606-248-6600

Spartanburg, South Carolina
864-574-4775

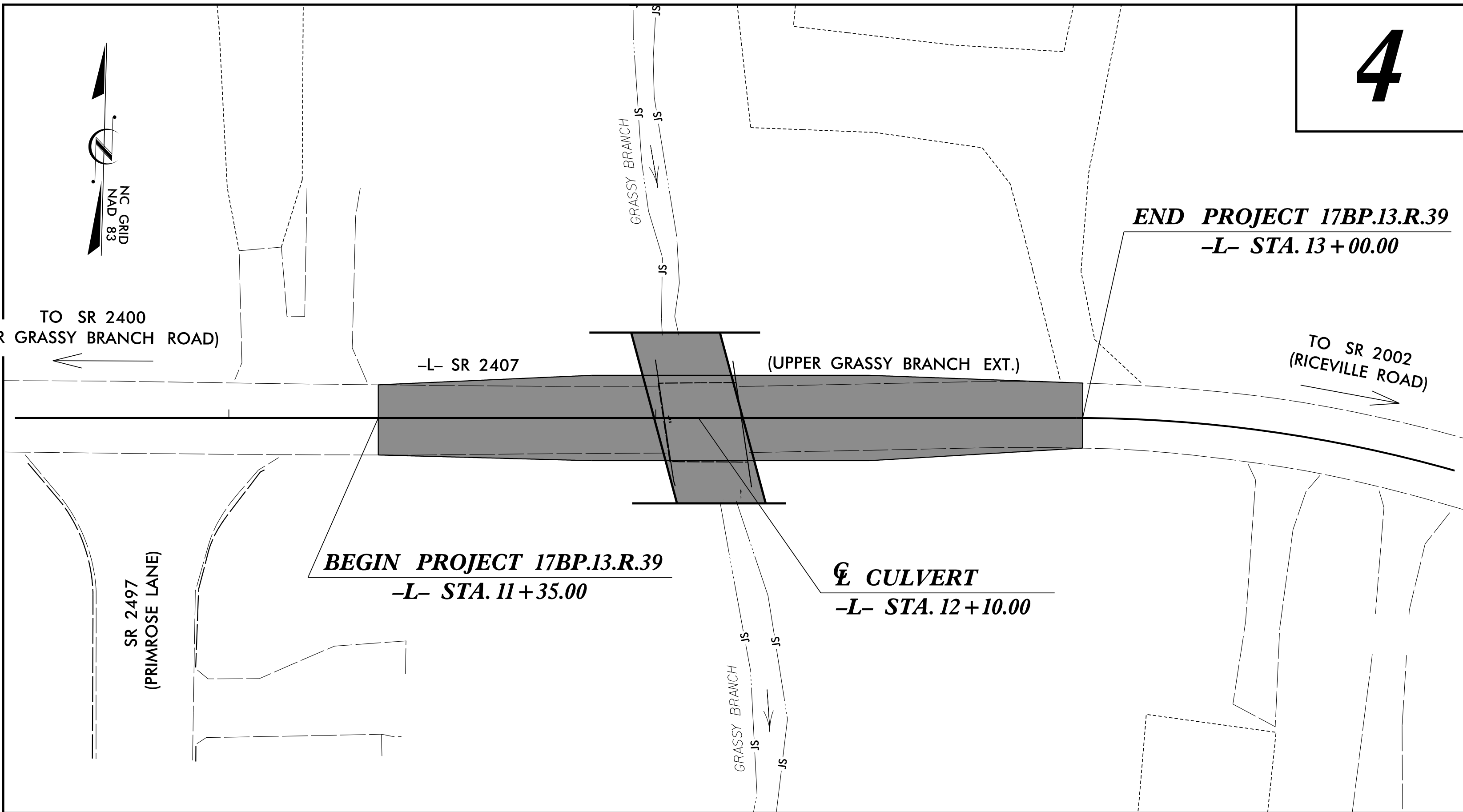
Asheville, North Carolina
828-253-2796

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FOR

SEPI
ENGINEERING & CONSTRUCTION

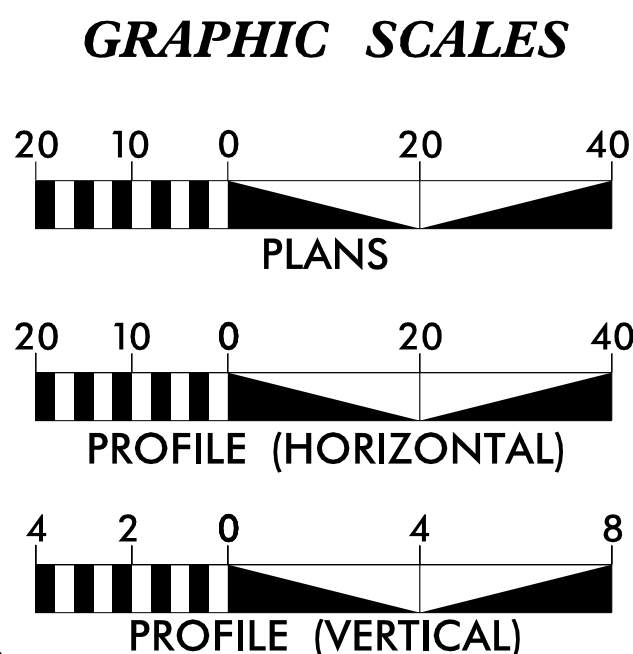
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197



4

PROJECT: 17BP.13.R.39

CONTRACT:



DESIGN DATA

ADT 2010 = 400
ADT 2025 = 600

* T = 6 %
V = 35 MPH
* TTST = 3 DUAL = 3

FUNC CLASS = LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 17BP.13.R.39 = 0.027 MI.
LENGTH STRUCTURE TIP PROJECT 17BP.13.R.39 = 0.004 MI.
TOTAL LENGTH OF TIP PROJECT 17BP.13.R.39 = 0.031 MI.

Prepared in the Office of:
VAUGHN & MELTON
1318-F PATTON AVE.
ASHEVILLE NC, 28806
FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 26, 2013

LETTING DATE:
JULY 15, 2014

REECE SCHULER, PE
PROJECT ENGINEER

DENNIS BOUTON, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT:
PAUL SPROUSE, PE
PROJECT ENGINEER - ROADWAY DESIGN

HYDRAULICS ENGINEER

7-10-2014

Bradley S. Ridmore
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

7-10-2014

Dennis Bouton
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SEAL
033023
ENGINEER
BRADLEY S. RIDMORE

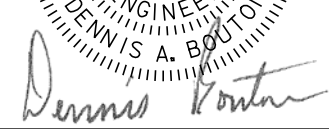
SEAL
038361
ENGINEER
DENNIS A. BOUTON

PROJECT REFERENCE NO.
17BPJ3R.39

SHEET NO.
1-A

ROADWAY DESIGN
ENGINEER

NORTH CAROLINA
PROFESSIONAL
SEAL
038361
ENGINEER
DENNIS A. BRIDGES



7-10-2014

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
2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
3A	SUMMARY OF GUARDRAIL AND ASPHALT PAVEMENT REMOVAL SUMMARY
3B	EARTHWORK SUMMARY
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-2	TRAFFIC MANAGEMENT PLANS
SD-1	SPECIAL SIGN DESIGN
EC-1 THRU EC-3	EROSION CONTROL PLANS
X-0	CROSS-SECTION SUMMARY
X-1 THRU X-3	CROSS-SECTIONS
S-1 THRU S-3	STRUCTURE PLANS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January 17, 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
866.01	Chain Link Fence
876.01	Rip Rap in Channels

GRADE LINE:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED 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.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE:

TELEPHONE - AT&T
POWER - PROGRESS ENERGY
WATER - CITY OF ASHEVILLE
SANITARY SEWER - METROPOLITAN SEWAGE DISTRICT

-RIGHT-OF-WAY MARKERS:

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

17BPJ3R.39

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BPJ3.R.39	1-B

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin	
Property Corner	
Property Monument	
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	

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	
Sign	
Well	
Small Mine	
Foundation	
Area Outline	
Cemetery	
Building	
School	
Church	
Dam	

HYDROLOGY:

Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	
Buffer Zone 1	
Buffer Zone 2	
Flow Arrow	
Disappearing Stream	
Spring	
Swamp Marsh	
Proposed Lateral, Tail, Head Ditch	
False Sump	

RAILROADS:

Standard Gauge	
RR Signal Milepost	
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	
Proposed Temporary Construction Easement	
Proposed Temporary Drainage Easement	
Proposed Permanent Drainage Easement	
Proposed Permanent Utility Easement	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Wheel Chair Ramp	
Proposed Wheel Chair Ramp Curb Cut	
Curb Cut for Future Wheel Chair Ramp	
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	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

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	
Designated U/G Power Line (S.U.E.*)	

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	
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	
Designated U/G Fiber Optics Cable (S.U.E.*)	

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	

TV:

TV Satellite Dish	
TV Pedestal	
TV Tower	
U/G TV Cable Hand Hole	
Recorded U/G TV Cable	
Designated U/G TV Cable (S.U.E.*)	
Recorded U/G Fiber Optic Cable	
Designated U/G Fiber Optic Cable (S.U.E.*)	

GAS:

Gas Valve	
Gas Meter	
Recorded U/G Gas Line	
Designated U/G Gas Line (S.U.E.*)	
Above Ground Gas Line	

SANITARY SEWER:

Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
Recorded SS Forced Main Line	
Designated SS Forced Main Line (S.U.E.*)	

MISCELLANEOUS:

Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line	
U/G Tank; Water, Gas, Oil	
A/G Tank; Water, Gas, Oil	
U/G Test Hole (S.U.E.*)	
Abandoned According to Utility Records	
End of Information	

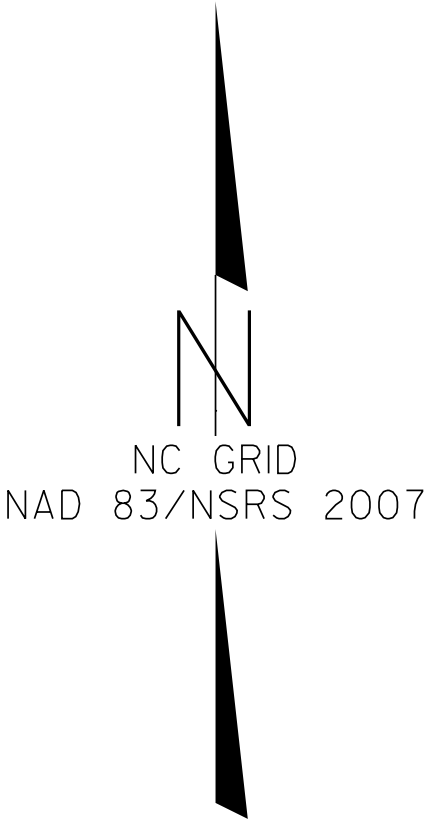
6/2/99

SURVEY CONTROL SHEET 10-0686

PROJECT REFERENCE NO.	SHEET NO.
17BP.13.R.39	1-C
Location and Surveys	

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		BL-1	697588.8090	966405.5710	2245.29	OUTSIDE PROJECT LIMITS	
2		BL-2	697593.2760	966650.4040	2232.36	12+27.30	9.97 LT
3		BL-3	697567.1008	966872.5535	2247.48	OUTSIDE PROJECT LIMITS	

BM1 ELEVATION = 2228.98
N 697555 E 966653
BL STATION 7+52.00 38 RIGHT
R/R SPIKE SET IN BASE OF 16" WALNUT



PERMANENT EASEMENTS				
ALIGN	STATION	OFFSET	NORTH	EAST
L	11+80.00	-30.00	697612.0850	966602.6052
L	11+80.00	-45.00	697627.0801	966602.2213
L	11+92.00	30.00	697552.4118	966616.1370
L	11+92.00	45.00	697537.4168	966616.5210
L	12+30.00	-30.00	697613.3648	966652.5889
L	12+30.00	-45.00	697628.3599	966652.2049
L	12+45.00	30.00	697553.7684	966669.1197
L	12+45.00	45.00	697538.7733	966669.5036

FINAL -L-			
TYPE	STATION	NORTH	EAST
POT	10+00.00	697577.4877	966423.4321
PC	12+98.51	697585.1282	966721.8431
PT	14+14.60	697567.5282	966835.9713
POT	14+43.99	697557.9595	966863.7608

NCDOT BASELINE MONUMENT 10-686 BL-1
LOCALIZED PROJECT COORDINATES
N=697,588.8090
E=966,405.5710
ELEV.=2,245.29'

NCDOT BASELINE MONUMENT 10-686 BL-2
LOCALIZED PROJECT COORDINATES
N=697,593.2760
E=966,650.4040
ELEV.=2,232.36'

END PROJECT 17BP.13.R.39
- L- STA. 13+00.00

NCDOT BASELINE MONUMENT 10-686 BL-3
LOCALIZED PROJECT COORDINATES
N=697,567.1008
E=966,872.5535
ELEV.=2,247.48'

SR 2407
UPPERT GRASSY BRANCH EXT.

-L-

BM1 = 2,228.98'

SR 2497
PRIMROSE LANE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "10-0686 BL-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 697593.2760(++) EASTING: 966650.4040(++) ELEVATION: 2232.36(++) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999481357 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "10-0686 BL-2" TO -L- STATION 10+00.00 IS S 86°01'15" W 227.52' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

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/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)

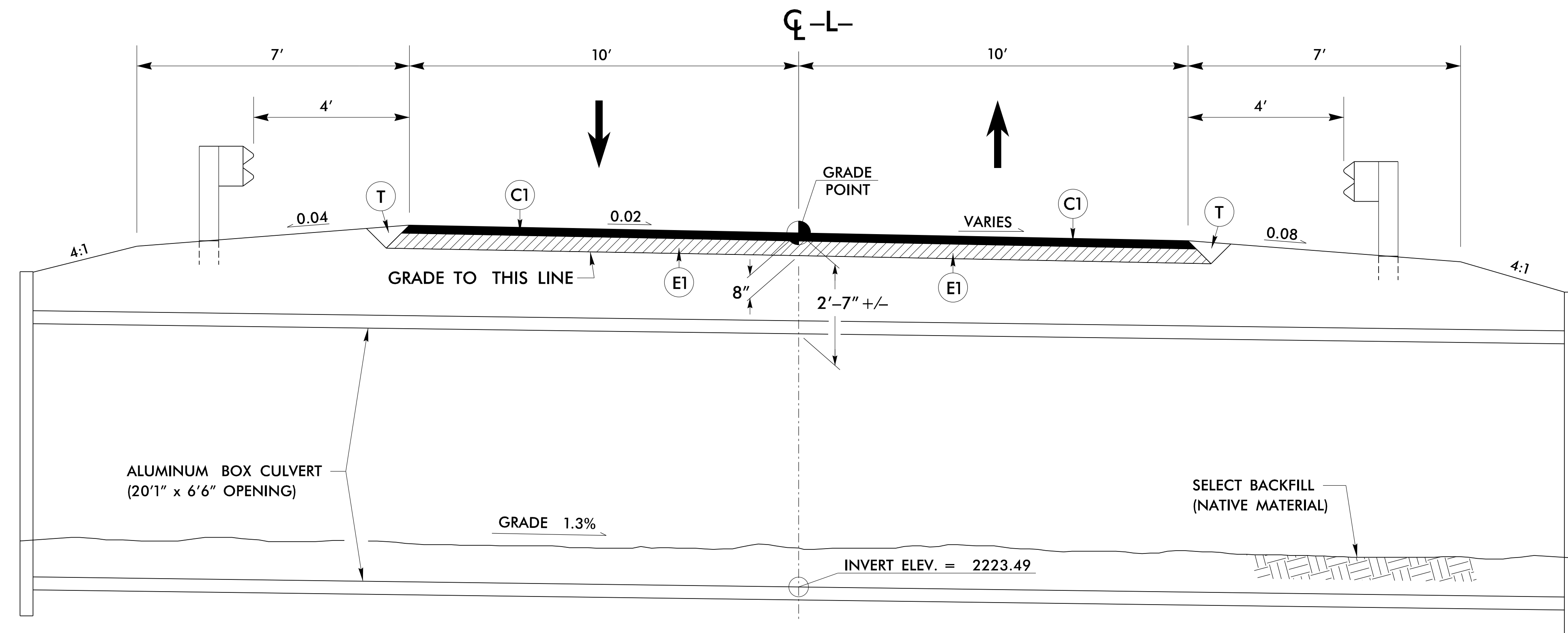
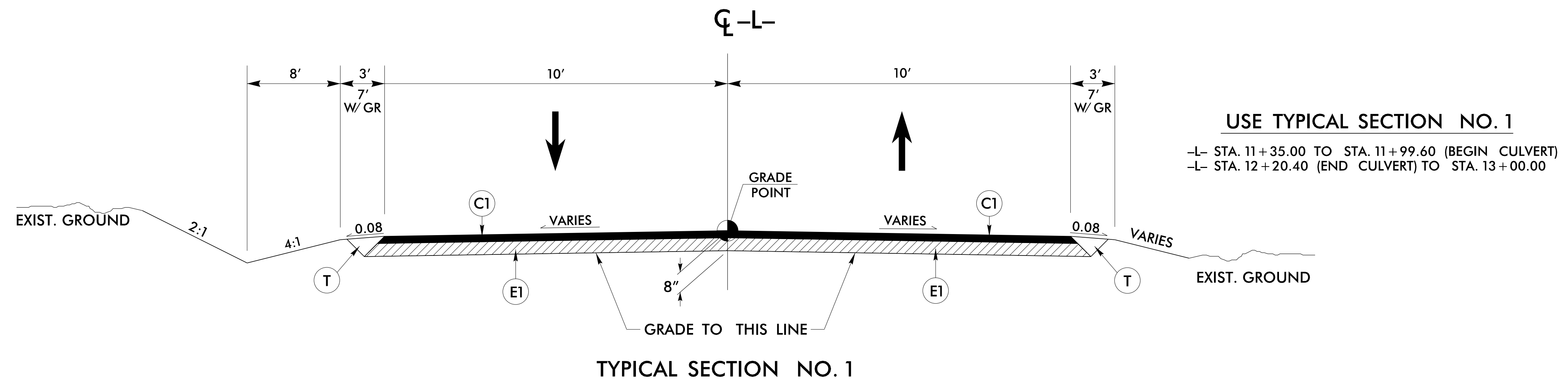
THE FILES TO BE FOUND ARE AS FOLLOWS:
100686_LS_CONTROL_130920.TXT

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

INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

6/2/99



TYPICAL SECTION NO. 2

	PAVEMENT SCHEDULE
C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 5.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
T	EARTH MATERIAL

NOTES: 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

2. SEE STD. DWG. 862.01 (SHEET 10 OF 12) FOR GUARDRAIL PLACEMENT OVER CULVERT.

3. SEE CROSS SECTIONS FOR POSSIBLE VARIATIONS TO TYPICAL SECTIONS.

Approximate quantities only. Pavement removal, unclassified excavation, borrow excavation, fine grading, and clearing and grubbing will be paid for at the contract lump sum price for "grading".

IN SQUARE YARDS					
LINE	LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP	CONCRETE REMOVAL	CONCRETE REMOVAL
-L-	11+35 TO 12+01.79	120			
-L-	12+20.05 TO 13+00	140			
	TOTAL	260			

"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.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

[illegible]

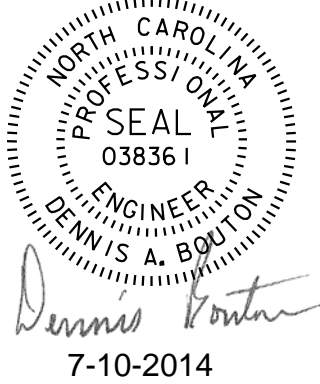
\$\$\$\$SYTIME\$\$\$\$\$
 \$\$\$\$CNMFLCNCN\$\$\$\$\$

DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS



LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY NO.1					
-L- STA. 11+35 TO STA. 11+99.60 (BEGIN CULVERT)	3		21	18	
SUBTOTAL SUMMARY NO.1	3		21	18	
SUMMARY NO.2					
-L- STA. 11+99.60 (BEGIN CULVERT)					
TO STA. 12+20.40 (END CULVERT)	0		31	31	
SUBTOTAL SUMMARY NO.2	0		31	31	
SUMMARY NO.3					
-L- STA. 12+20.40 (END CULVERT) TO STA. 13+00	0		92	92	
SUBTOTAL SUMMARY NO.3	0		92	92	
PROJECT SUBTOTAL	3		144	141	
EST. 5% FOR REPLACING TOP SOIL ON BORROW PITS				7	
GRAND TOTAL	3		144	134	
SAY	10			140	

CONTINGENCY ITEMS:

INCIDENTAL STONE = 20 TONS

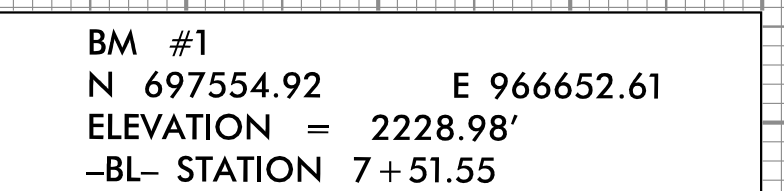
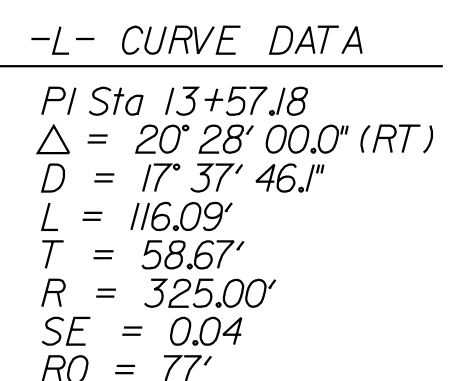
UNDERCUT EXCAVATION = 20 CY

SELECT GRANULAR MATERIAL = 20 CY

CLASS IV SUBGRADE STABILIZATION = 25 TONS

GEOTEXTILE FOR SOIL STABILIZATION = 25 SY

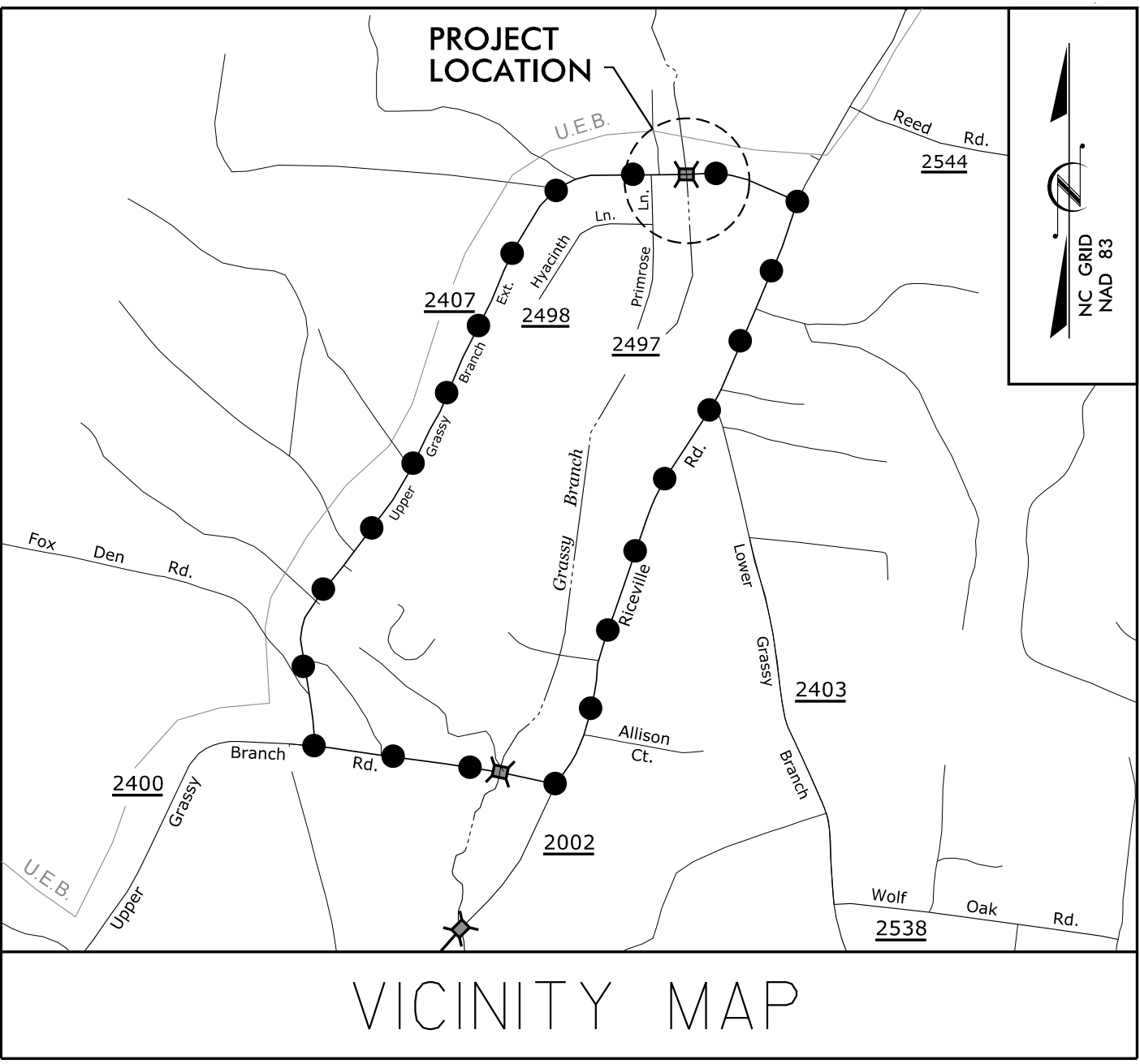
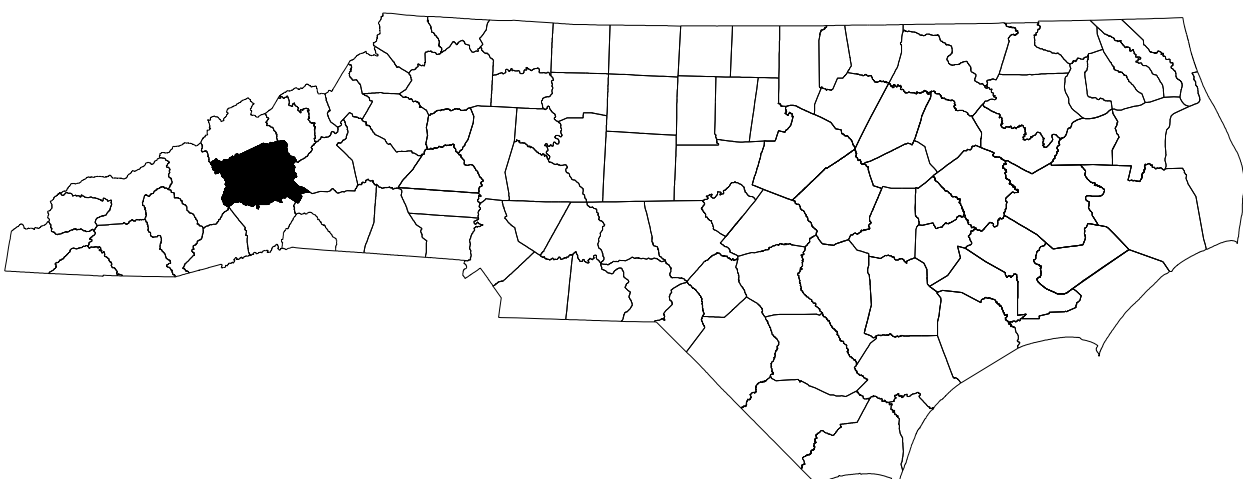
Approximate quantities only. Pavement removal, unclassified excavation, borrow excavation, fine grading, and clearing and grubbing will be paid for at the contract lump sum price for "grading".

 DENOTES CLASS I RIP RAP
(STRUCTURAL ITEM)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

BUNCOMBE COUNTY
DIVISION 13



VICINITY MAP

OFF-SITE DETOUR ROUTE

LOCATION: BRIDGE NO. 686 OVER GRASSY BRANCH ON SR 2407 (UPPER GRASSY BRANCH EXT.)

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, LEGEND, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, GENERAL NOTES AND TRANSPORTATION OPERATIONS
TMP-2	TEMPORARY TRAFFIC CONTROL DETAIL, PHASING NOTES OFFSITE DETOUR SIGNING AND ROAD CLOSURE
SD-1	SPECIAL SIGN DESIGN

LEGEND

GENERAL

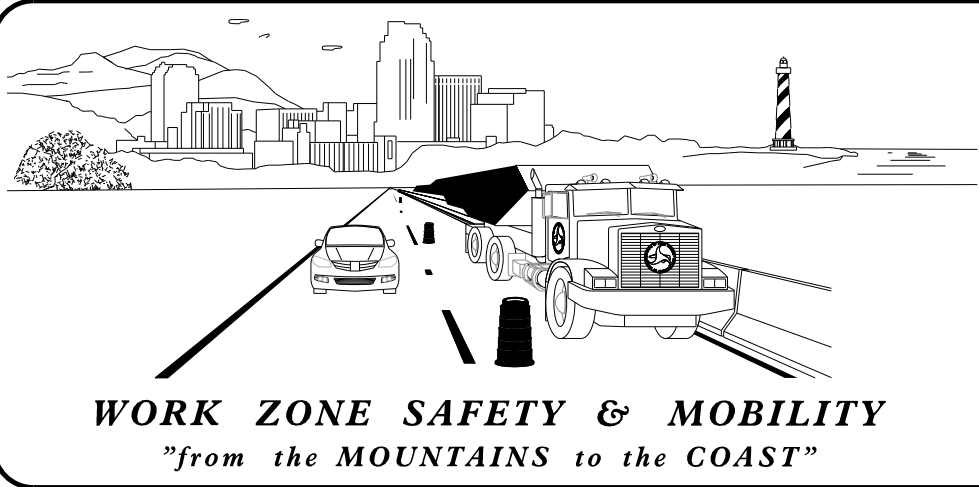
NORTH ARROW

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

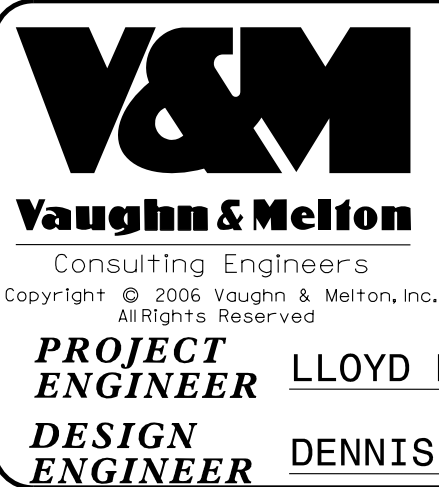
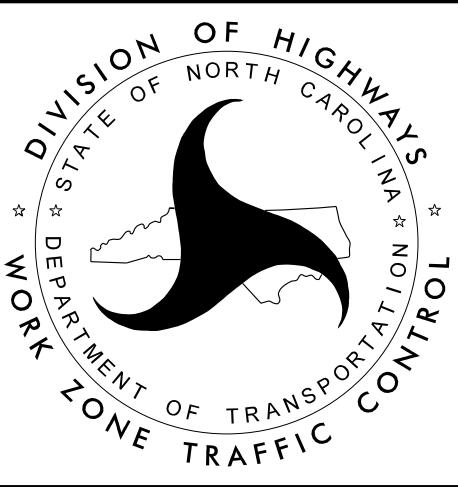
TEMPORARY SIGNING

STATIONARY SIGN



N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1580 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1580
1020 BIRCH RIDGE DRIVE, RALEIGH, NC 27610 (DELIVERY)
PHONE: (919) 250-4094 FAX: (919) 250-4098

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER
LLOYD D. BROWN, P.E. TRAFFIC CONTROL PROJECT ENGINEER
DENNIS BOUTON, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER
DENNIS BOUTON, P.E. TRAFFIC CONTROL DESIGN ENGINEER



Asheville, North Carolina 828-253-2796
Charlotte, North Carolina 704-357-0488

PROJECT ENGINEER LLOYD D. BROWN, P.E.
DESIGN ENGINEER DENNIS BOUTON, P.E.

APPROVED: [Signature]
DATE: 7-10-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20119
ENGINEER LLOYD D. BROWN

PROJECT: 17BP.13.R.39

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1101.03	TEMPORARY ROAD CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1130.01	DRUMS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.12	PAVEMENT MARKINGS - BRIDGES

TRANSPORTATION OPERATIONS

CONSTRUCTION

REMOVE AND REPLACE EXISTING STRUCTURE AND APPROACHES ALONG THE EXISTING ROADWAY ALIGNMENT AS SHOWN IN THE CONSTRUCTION PLANS.

TMP DESIGN PARAMETERS

TRAFFIC WILL BE DETOURED OFF-SITE DURING THE CONSTRUCTION PERIOD.

THE OFF-SITE DETOUR WILL INCLUDE SR 2407 (UPPER GRASSY BRANCH EXT.), SR 2400 (UPPER GRASSY BRANCH ROAD) AND SR 2002 (RICEVILLE ROAD) (SEE SHEET TMP-2).

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

- A) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- B) PROVIDE PERMANENT SIGNING.
- C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.
- PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- D) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.
- COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.
- E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

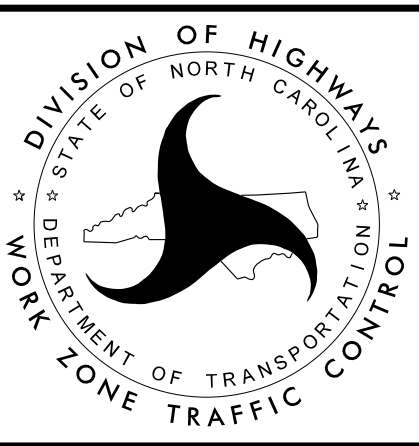
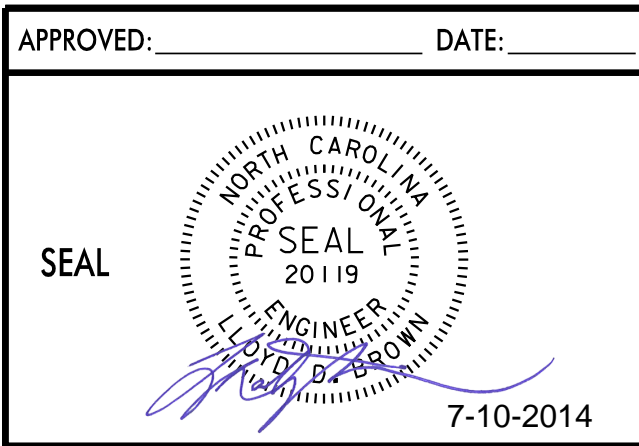
- F) PLACE TYPE III BARRICADES WITH "ROAD CLOSED" SIGN R-11-2 ATTACHED OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

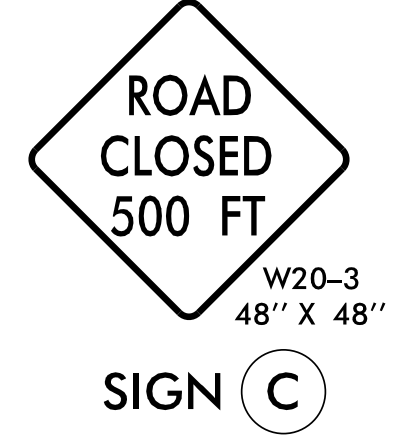
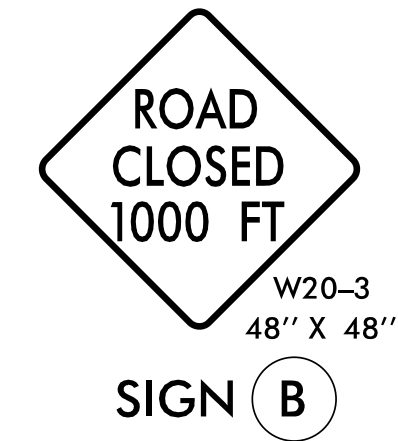
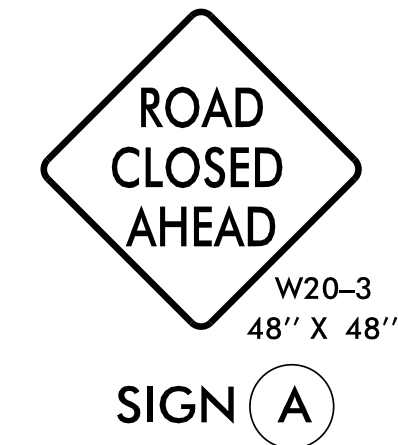
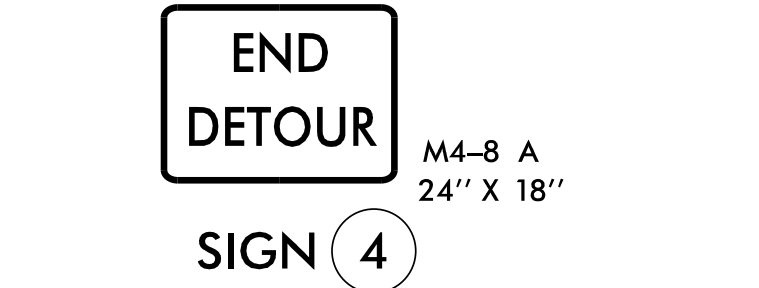
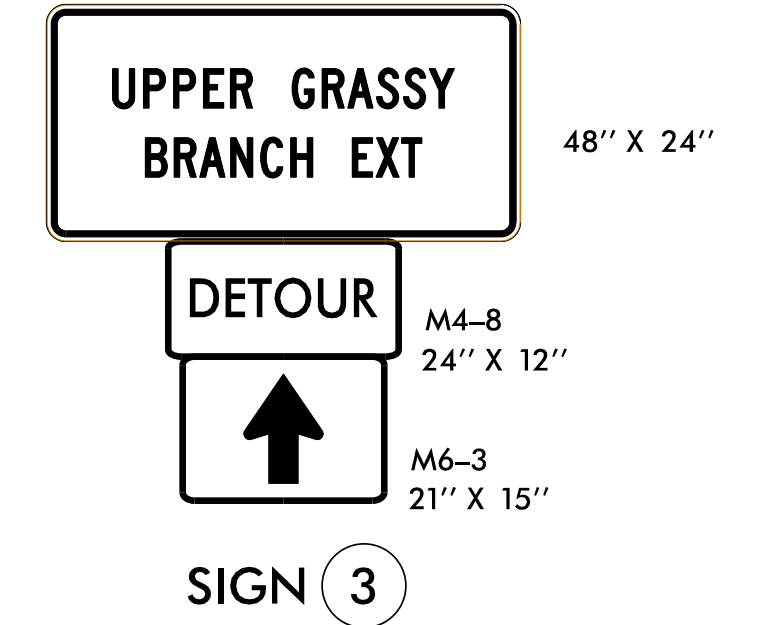
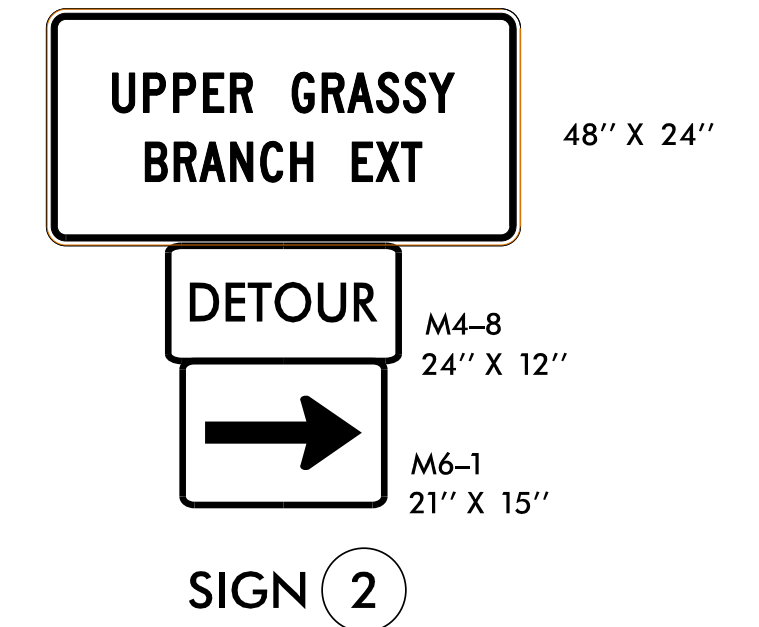
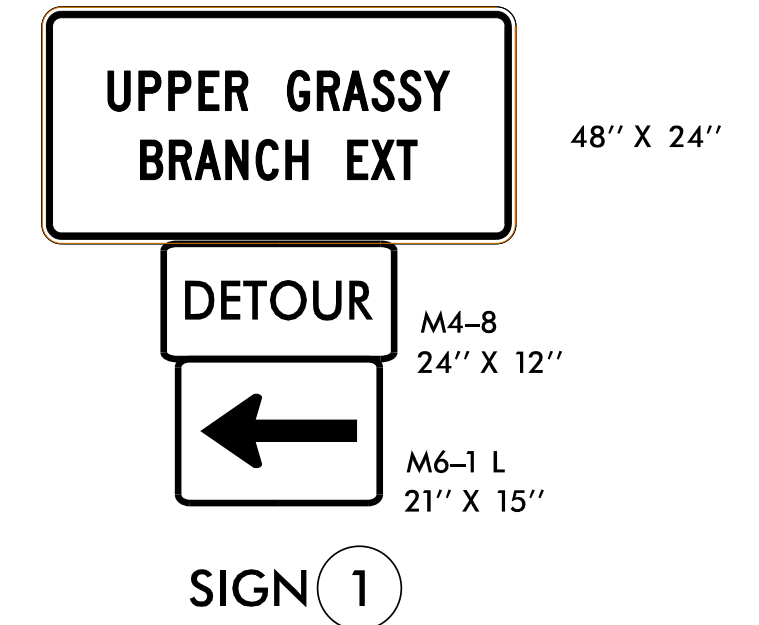
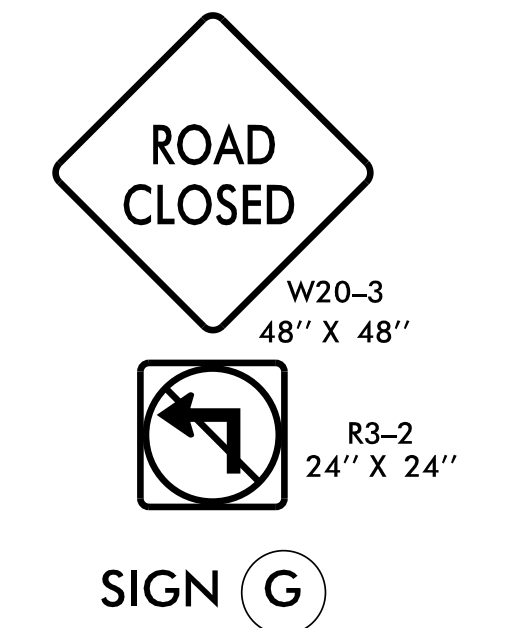
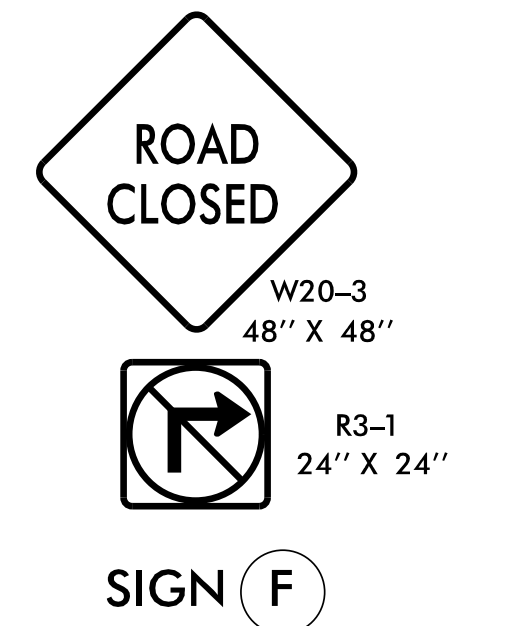
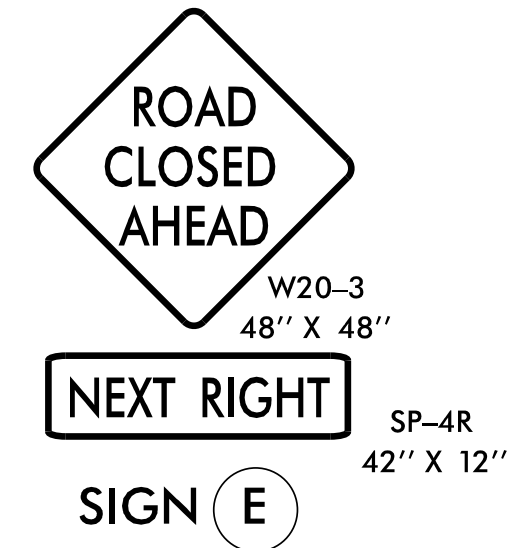
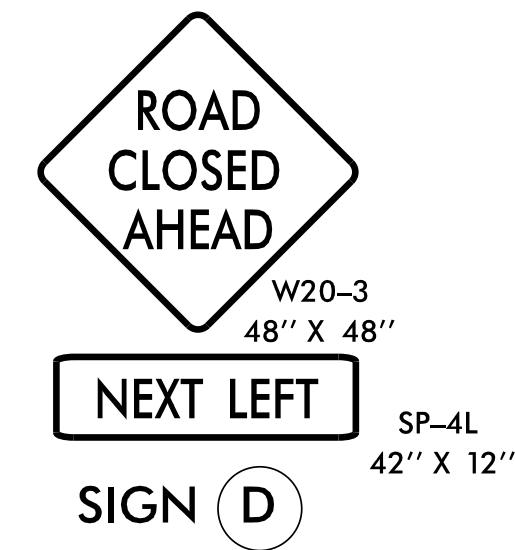
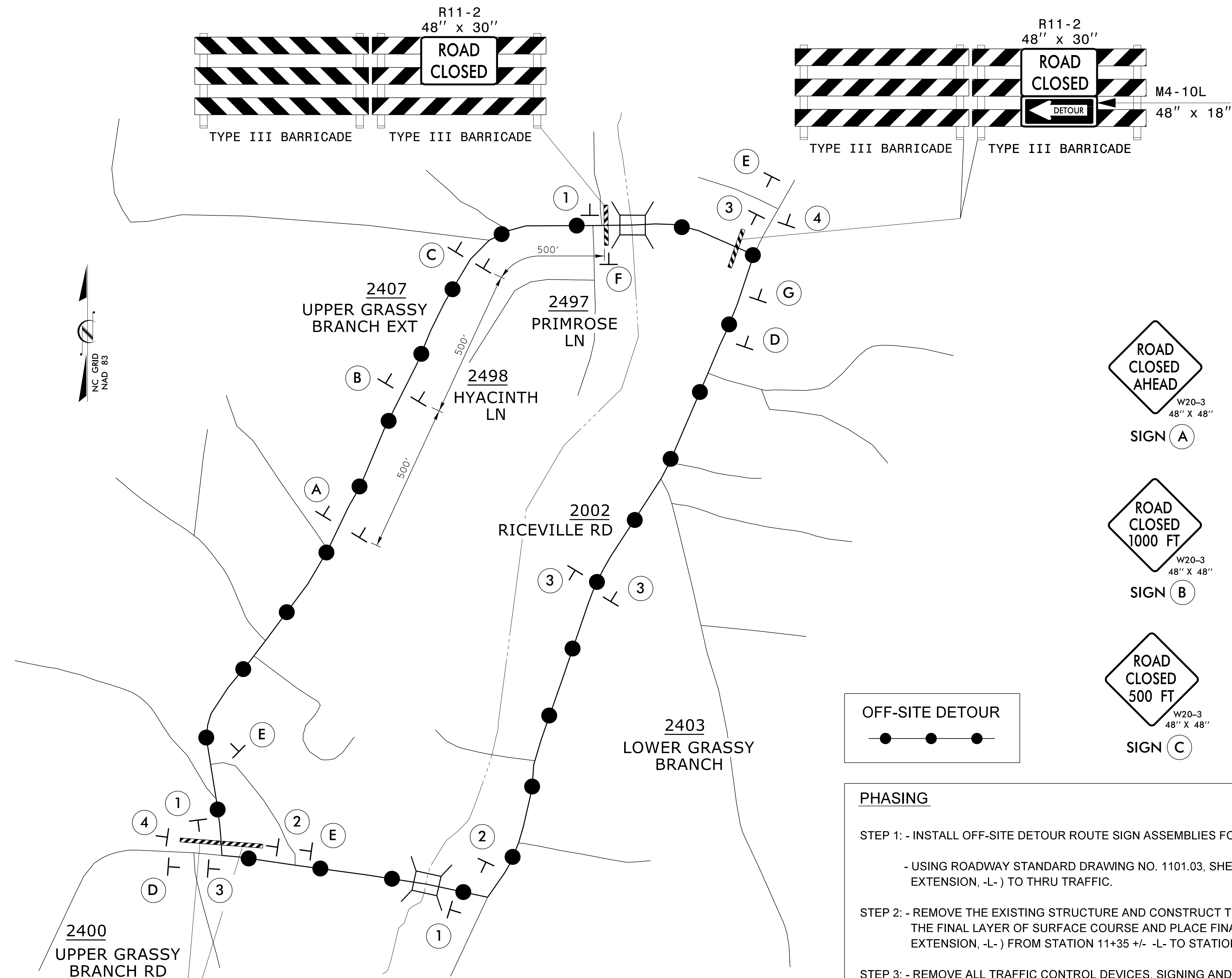
- G) INSTALL PAVEMENT MARKINGS (PAINT) ON THE FINAL SURFACE OF THE ENTIRE PROJECT.
- H) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

LOCAL NOTES

1. NOTIFY BUNCOMBE COUNTY EMERGENCY SERVICES AND PUBLIC SCHOOLS AT LEAST ONE MONTH PRIOR TO ROAD CLOSURE.



ROADWAY STANDARD DRAWINGS,
GENERAL NOTES &
TRANSPORTATION OPERATIONS

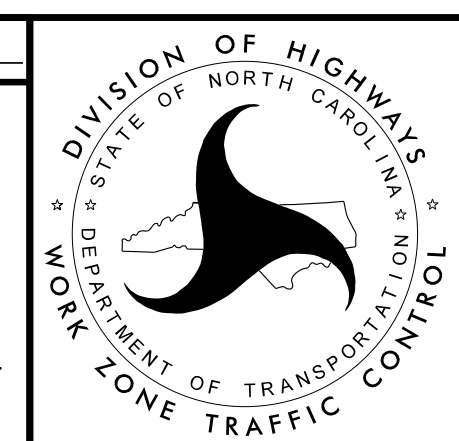
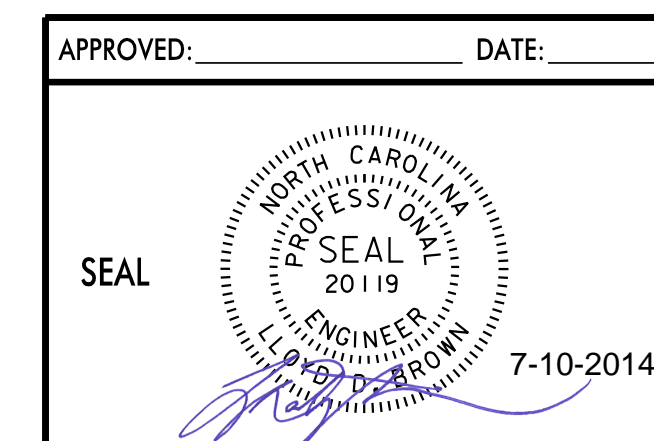
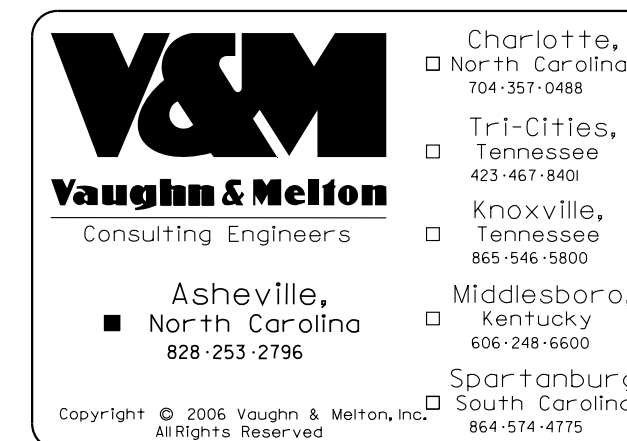


OFF-SITE DETOUR

PHASING

- STEP 1: - INSTALL OFF-SITE DETOUR ROUTE SIGN ASSEMBLIES FOR THE CLOSING OF SR 2407 (UPPER GRASSY BRANCH EXTENSION, -L-).
- USING ROADWAY STANDARD DRAWING NO. 1101.03, SHEETS 1 OF 9 AND 2 OF 9, CLOSE SR 2407 (UPPER GRASSY BRANCH EXTENSION, -L-) TO THRU TRAFFIC.
- STEP 2: - REMOVE THE EXISTING STRUCTURE AND CONSTRUCT THE PROPOSED STRUCTURE AND ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE AND PLACE FINAL PAVEMENT MARKINGS ON SR 2407 (UPPER GRASSY BRANCH EXTENSION, -L-) FROM STATION 11+35 +/- -L- TO STATION 13+00 +/- -L-. (SEE CONSTRUCTION PLANS).
- STEP 3: - REMOVE ALL TRAFFIC CONTROL DEVICES, SIGNING AND DETOUR ROUTE SIGNING.
- OPEN TO FINAL TRAFFIC PATTERN.

- NOTES:
- ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE.
 - ALL DETOUR SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE NOTED.
 - TRAFFIC CONTROL DEVICES (A) THROUGH (F) SHALL BE INSTALLED ACCORDING TO ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9.
 - TRAFFIC CONTROL DEVICES (1) THROUGH (4) SHALL BE INSTALLED AS PER ENGINEER'S INSTRUCTIONS, AND AS SHOWN HEREON.
 - SEE ROADWAY STANDARD DRAWING NO. 1101.03, SHEET 1 OF 9 AND 2 OF 9, FOR ADDITIONAL WORK ZONE SIGNS.



TEMPORARY TRAFFIC CONTROL DETAIL, PHASING NOTES, OFFSITE DETOUR SIGNING AND ROAD CLOSURE

SIGN NUMR: UPPER GRASSY BRANCH EXT	BACKG. COLOR: Orange
TYPE: D Ground	COPY COLOR: Black
QUANTITY: 6	

DESIGN BY: ACC
PROJECT ID: 17BP.13.R.39

CHK BY: DAB
DIV: 13

STD #: STD
DATE: May 1, 2013

SIGN WIDTH: 4'-0"
HEIGHT: 2'-0"
TOTAL AREA: 8.0 Sq.Ft.

MAT'L: 0.063 in. (1.6 mm) ALUMINUM

BORDER TYPE: FLUSH

RECESS: 0.47"

WIDTH: 0.63"

RADII: 1.5"

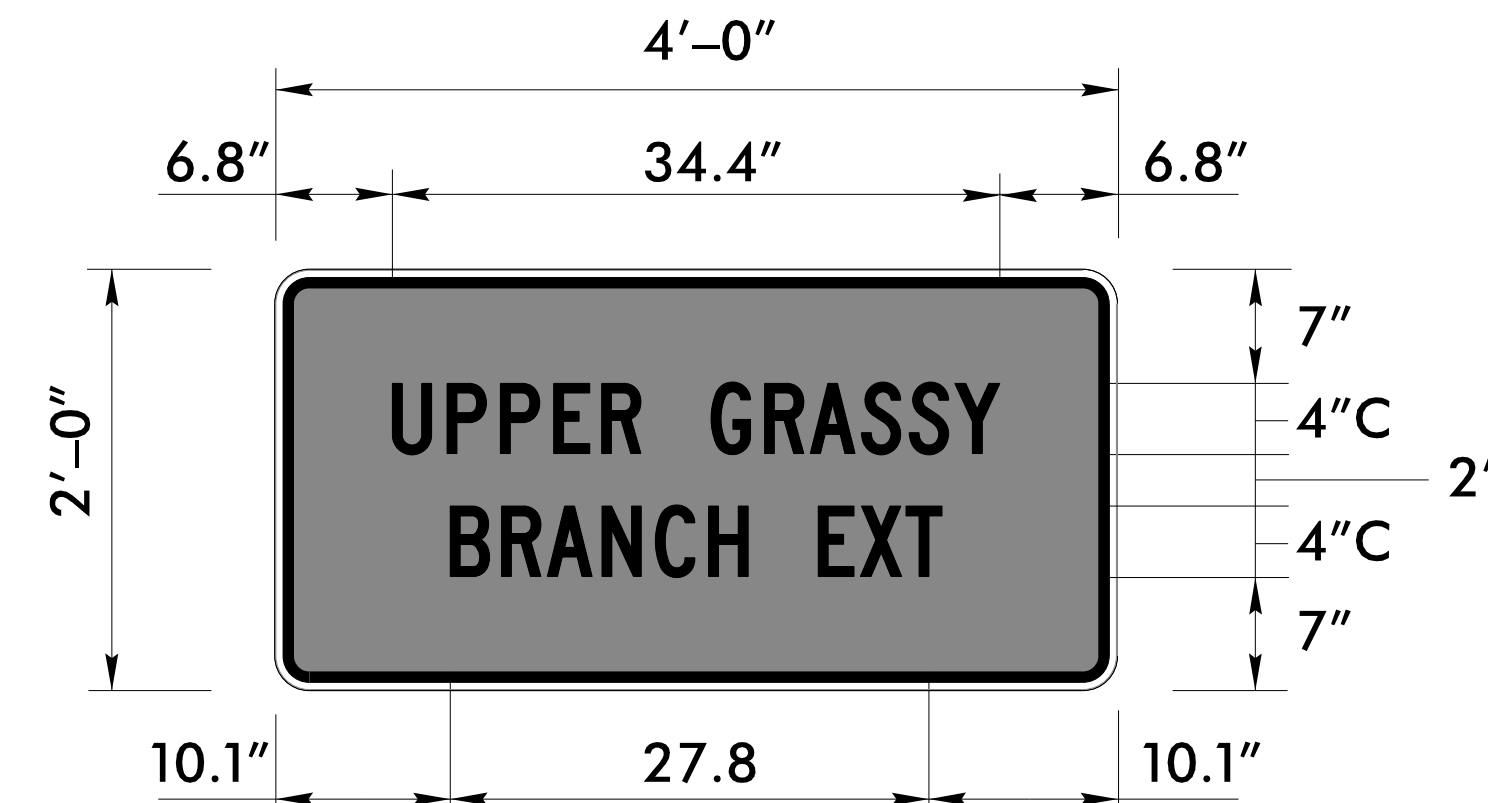
NO. Z BARS:

LENGTH: in.

[illegible]

USE NOTES: 1,3,4,6

1. Legend and border shall be direct applied encapsulated lens reflective sheeting.
2. Legend and border shall be direct applied enclosed lens reflective sheeting.
3. Shields shall be encapsulated lens reflective sheeting on 0.8mm aluminum and demountable.
4. Background shall be encapsulated lens reflective sheeting.
5. Background shall be enclosed lens reflective sheeting.
6. Center arrows vertically on sign.



BORDER

 $R = 1.5''$
$$TH = 0.63''$$
 $IN = 0.47''$

Panel Style: construction_guide.ssi

M.U.T.C.D.: 2009 Edition

[illegible]

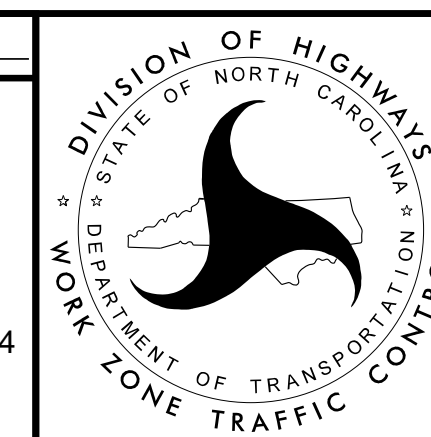
Spacing Factor is 1 unless specified otherwise

FILENAME: GS40_ENGL

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA
PROFESSIONAL
SEAL
20119
ENGINEER
NOTED BY: BROWN
7-10-2014



SPECIAL SIGN DESIGN

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

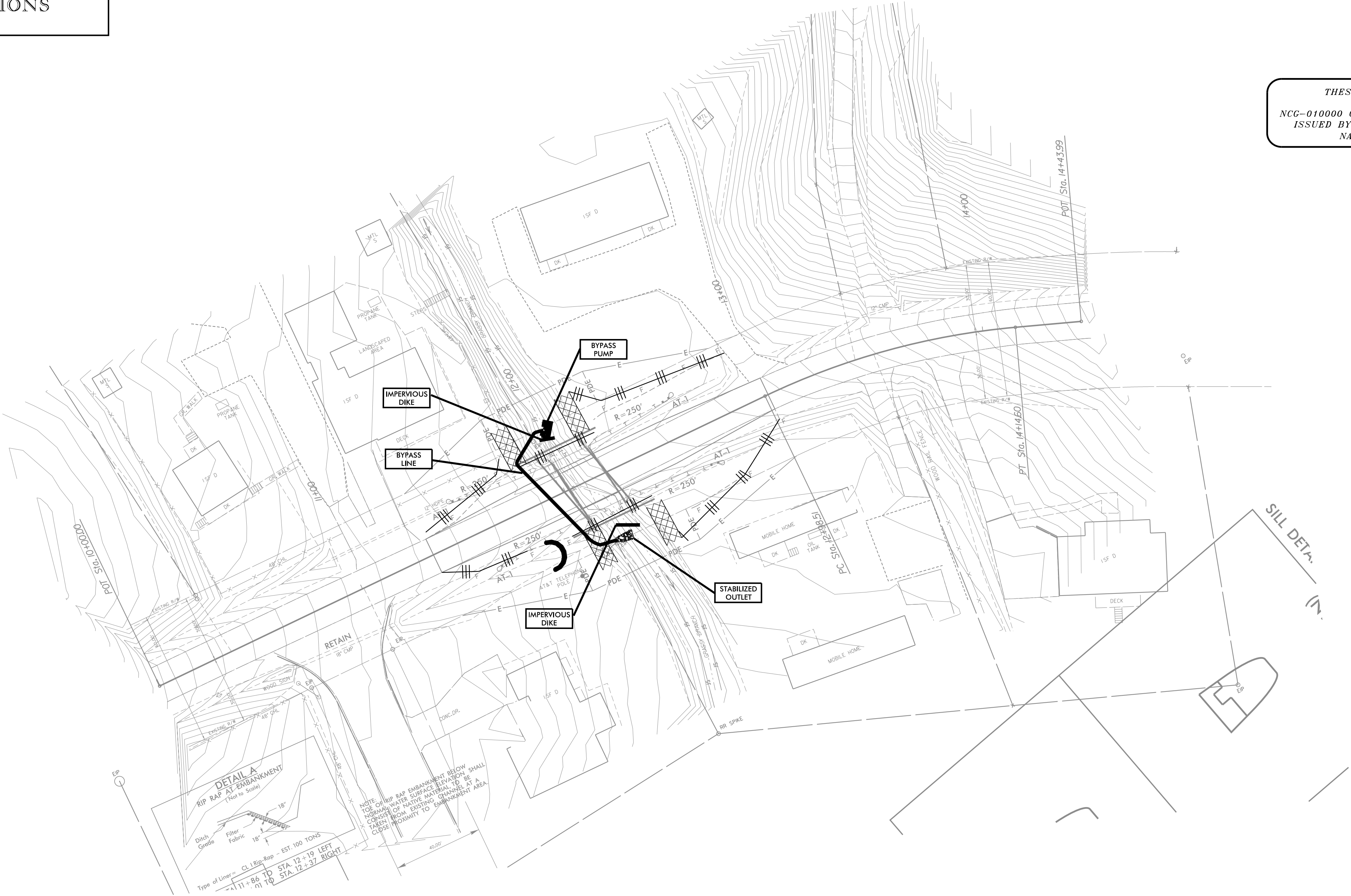
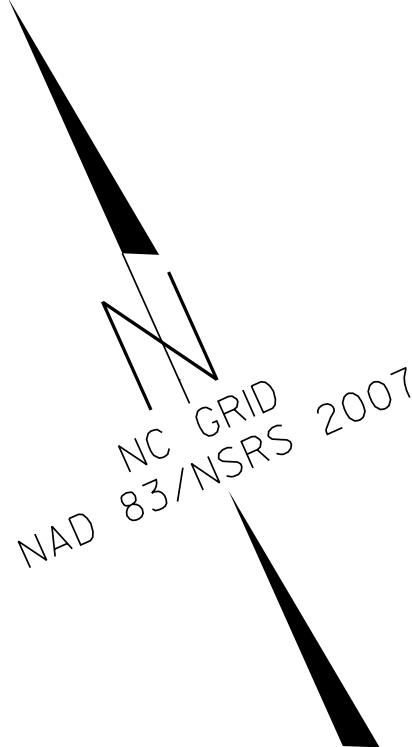
2012 STANDARD SPECIFICATIONS

EROSION CONTROL PLAN

PROJECT REFERENCE NO.	SHEET NO.
17BP.13.R.39	EC-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH 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.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET _



Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1633.01	Temporary Rock Silt Check Type-A	XXXX
1633.02	Wattle / Coir Fiber Wattle	EW

Level III: Designer of Erosion and Sediment Control Plans

MICHAEL CLARK
Date Issued: June 5, 2013
Date Expires: December 31, 2016
Certification Number: 3376

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.

PROJECT NO. 17BP.13.R.39
COUNTY BUNCOMBE
STATION: 12+10 -L-
REPLACES BRIDGE NO. 686

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE #686 ON SR 2407
OVER UPPER GRASSY BRANCH

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	EC-1
1			3			TOTAL SHEETS 5
2			4			

PROJECT REFERENCE NO.	SHEET NO.
17BPJ3.R.39	EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

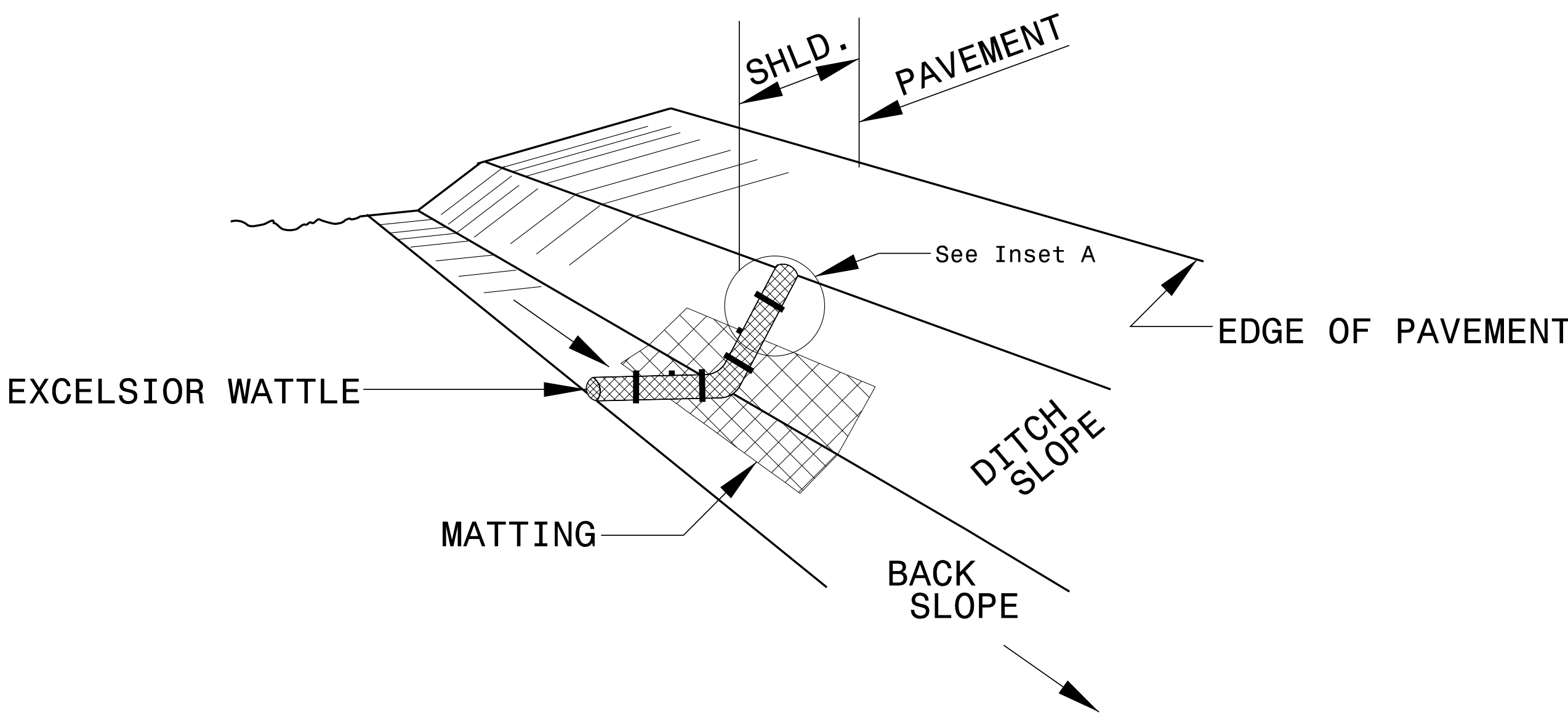
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SOIL STABILIZATION TIMEFRAMES

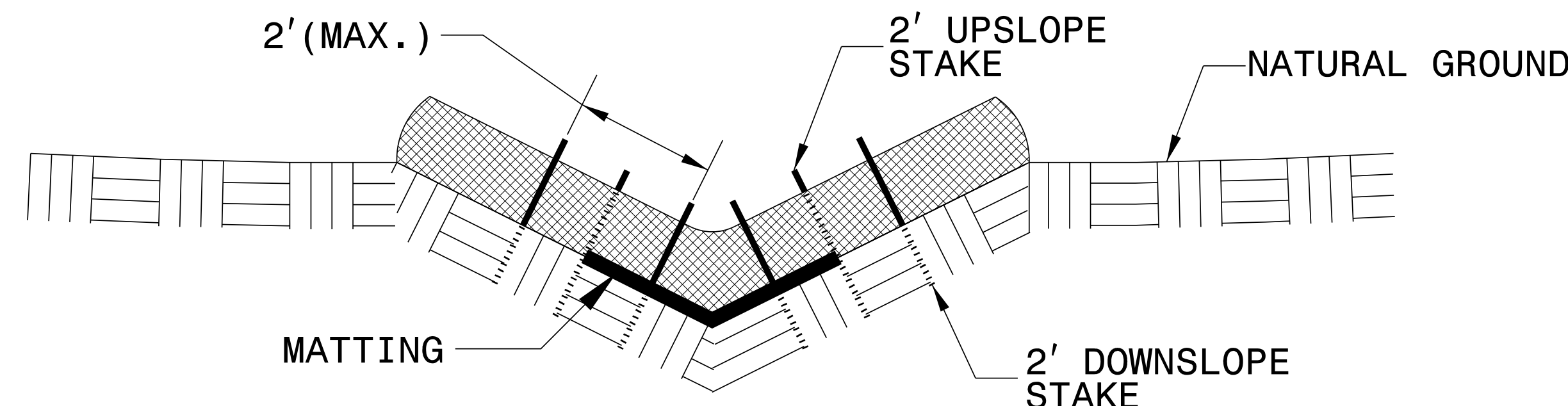
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES, AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10’ OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50’ IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO.	SHEET NO.
17BPJ3.R.39	EC-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

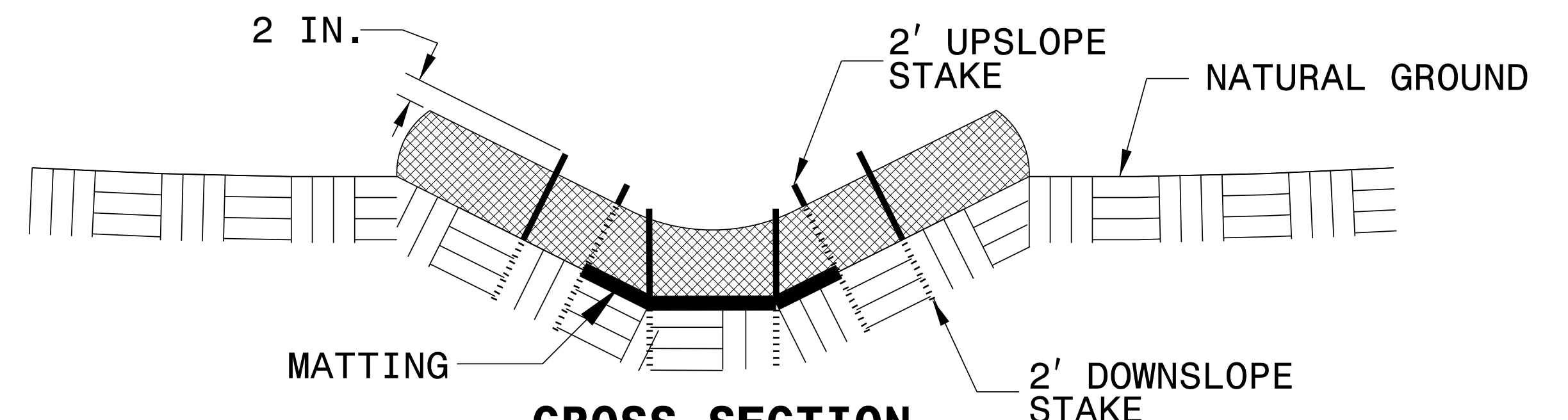
WATTLE DETAIL



ISOMETRIC VIEW



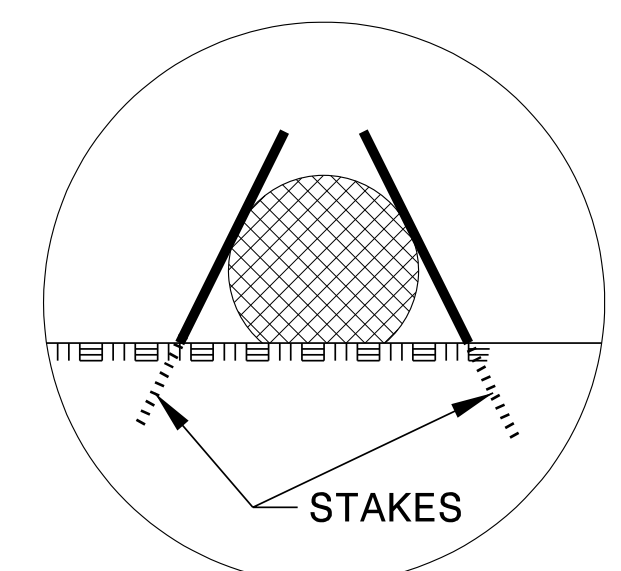
**CROSS SECTION
VEE DITCH**



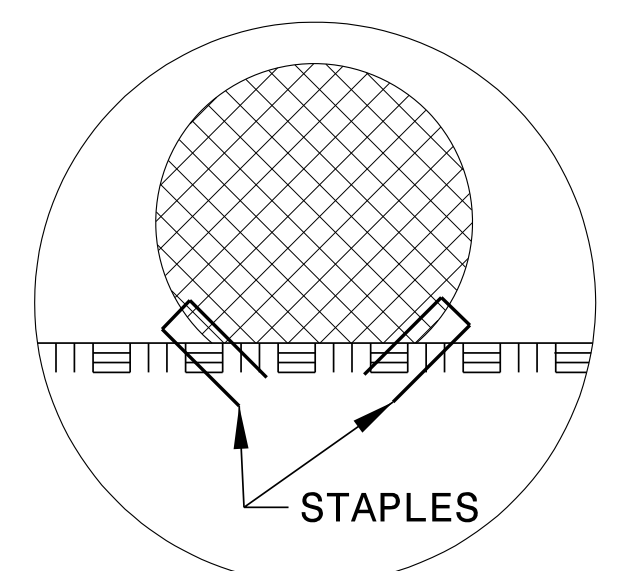
**CROSS SECTION
TRAPEZOIDAL DITCH**

NOTES:

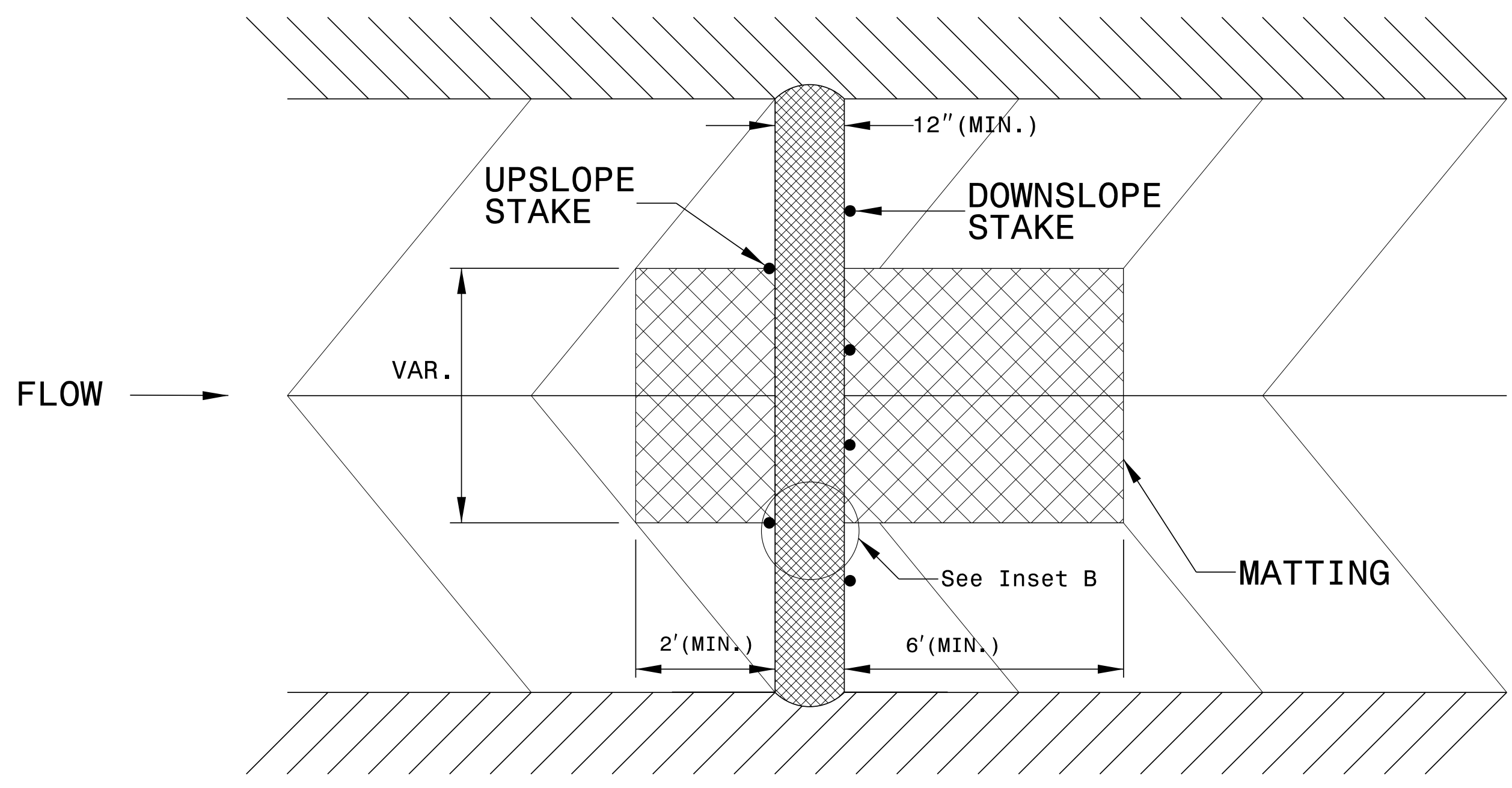
- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



INSET B



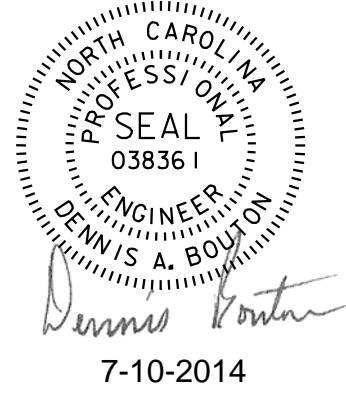
TOP VIEW

DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA

CROSS SECTION SUMMARY

IN CUBIC YARDS

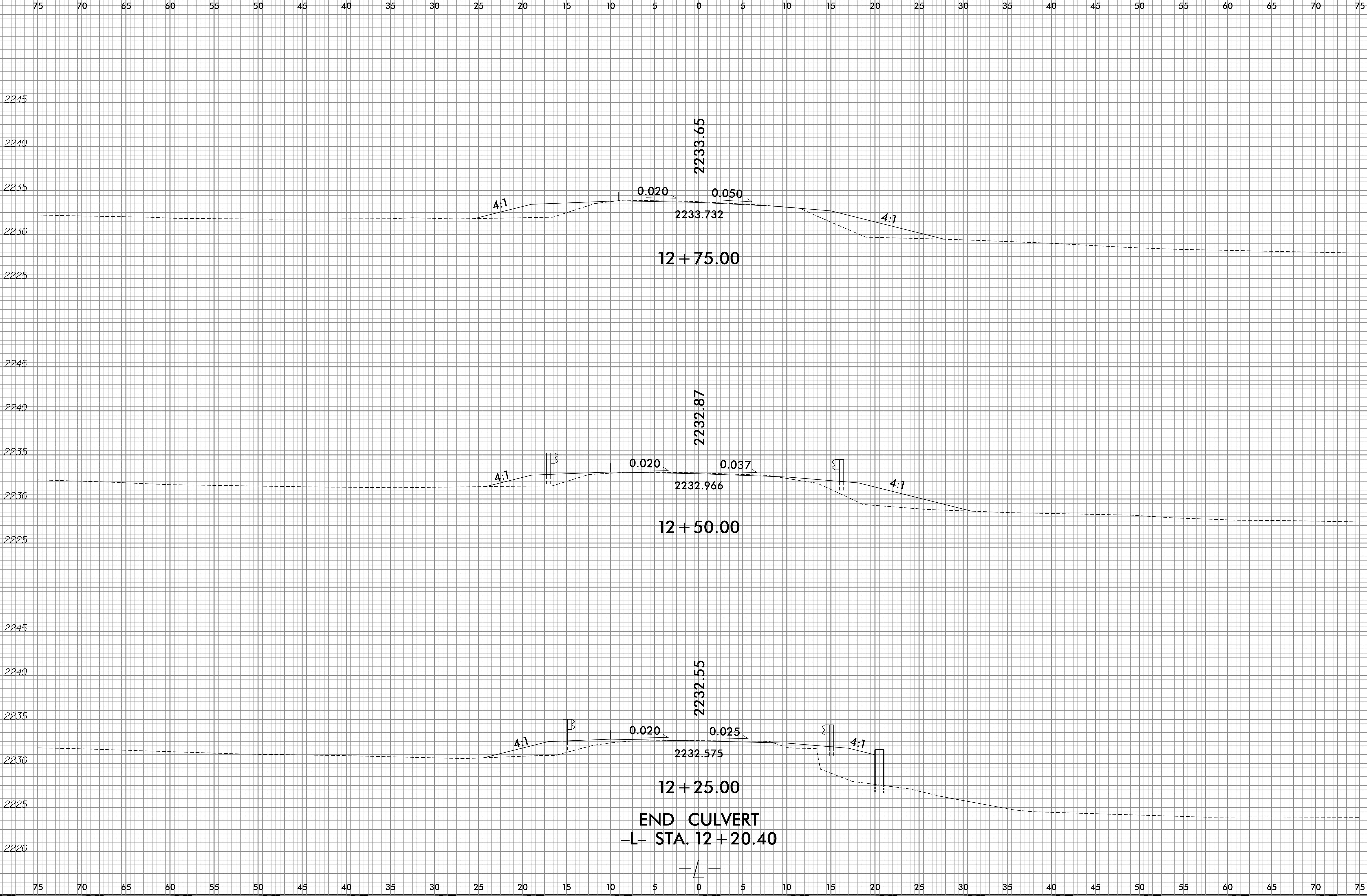


-L- LOCATION	UNCLASSIFIED EXCAVATION	EMBT
11 + 35	0	0
11 + 50	1	0
11 + 75	1	1
11 + 99.60 BEGIN CULVERT	1	20
12 + 20.40 END CULVERT	0	31
12 + 25	0	8
12 + 50	0	36
12 + 75	0	34
13 + 00	0	14

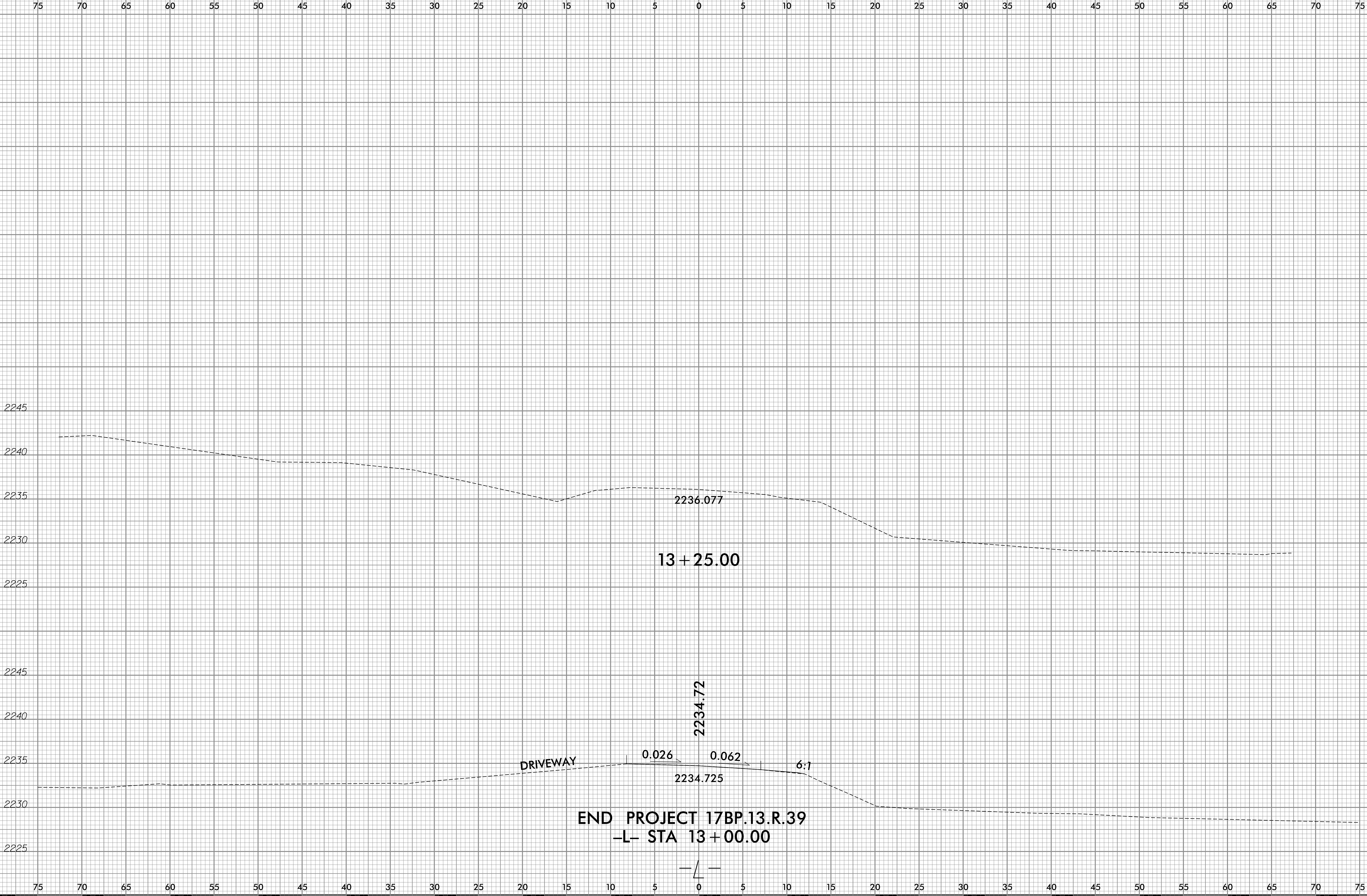
NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

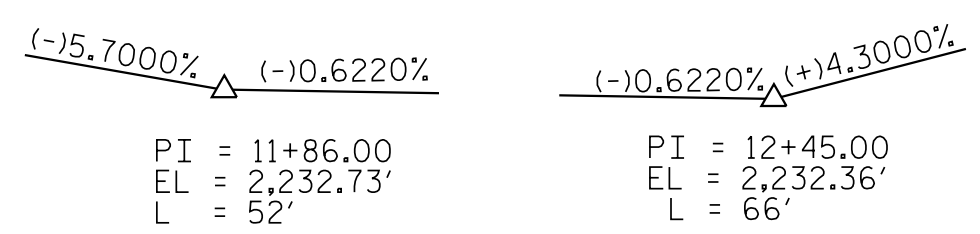
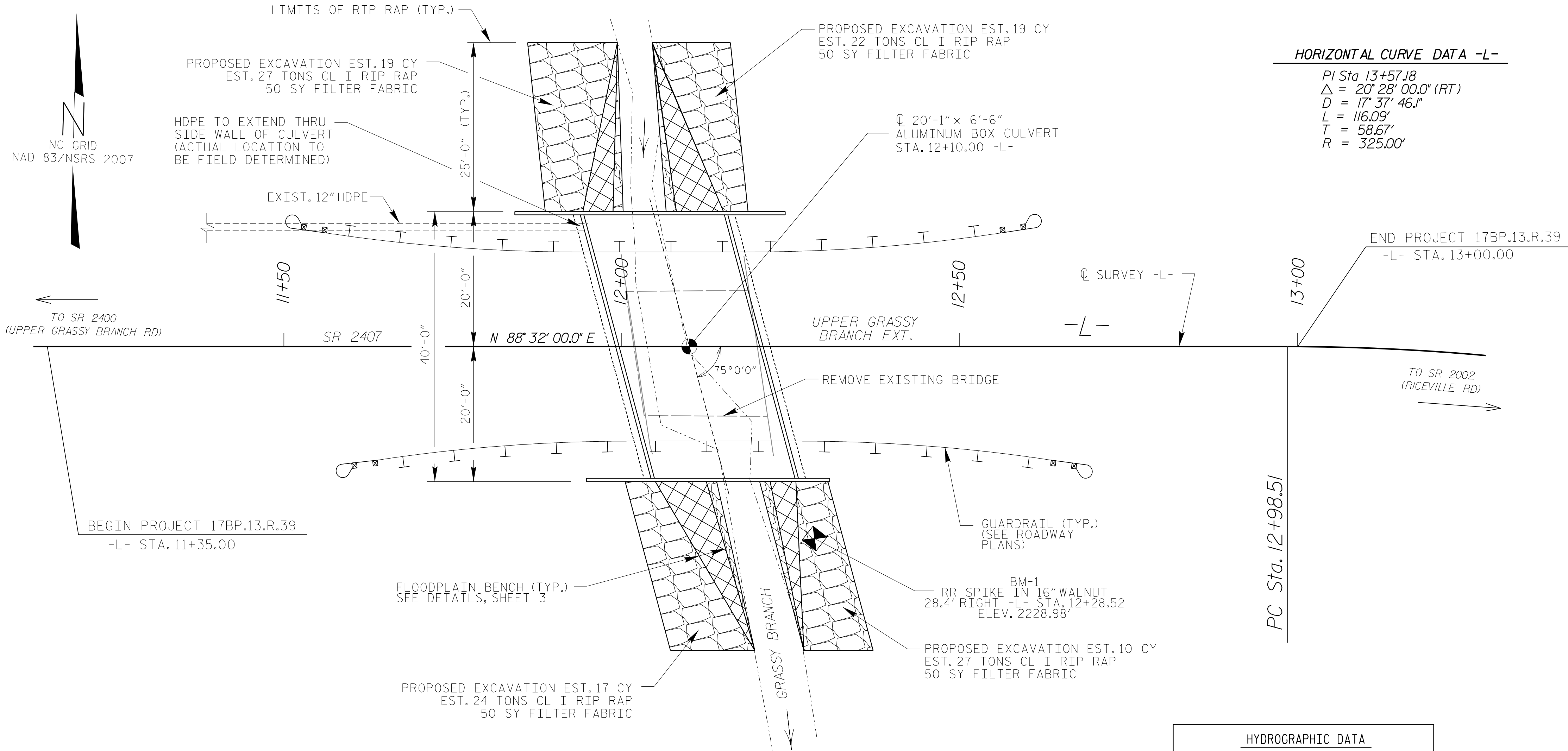
Approximate quantities only. Pavement removal, unclassified excavation, borrow excavation, fine grading, and clearing and grubbing will be paid for at the contract lump sum price for "grading".

8/23/99



8/23/99





GRADE DATA -L-

HYDROGRAPHIC DATA	
DESIGN DISCHARGE	= 500 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2229.6 FT
DRAINAGE AREA	= 0.92 SQ.MI.
BASE DISCHARGE (Q100)	= 800 CFS
BASE HW ELEVATION	= 2232.47 FT

OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE	= 800 CFS
OVERTOPPING FREQUENCY	= 100% YRS
OVERTOPPING ELEVATION	= 2233.6 FT

DESCRIPTION OF EXISTING BRIDGE
1 SPAN @ 18'-3" 1/2" ASPHALT WEARING SURFACE ON 4"x8" TIMBER FLOOR ON 6"x12" TIMBER JOISTS; END BENTS: TIMBER CAPS/TIMBER POST & SILLS; 19'-10" CLEAR ROADWAY

NOTES

THE QUANTITY OF RIP RAP TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF TONS OF EACH CLASS RIP RAP WHICH HAS BEEN INCORPORATED INTO THE COMPLETED AND ACCEPTED WORK. THE RIP RAP WILL BE MEASURED BY BEING WEIGHED ON TRUCKS ON CERTIFIED PLATFORM SCALES OR OTHER CERTIFIED WEIGHING DEVICES. THE QUANTITY OF RIP RAP WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON. PLAIN RIP RAP CLASS I (1'-6" THICK).

EXISTING BRIDGE SHALL BE REMOVED BY SAVING AND/OR NON-SHATTERING METHODS SUCH THAT DEBRIS WILL NOT FALL INTO THE WATER.

MINIMUM DESIGN FILL IS 1.8'
MAXIMUM DESIGN FILL < 4.0'

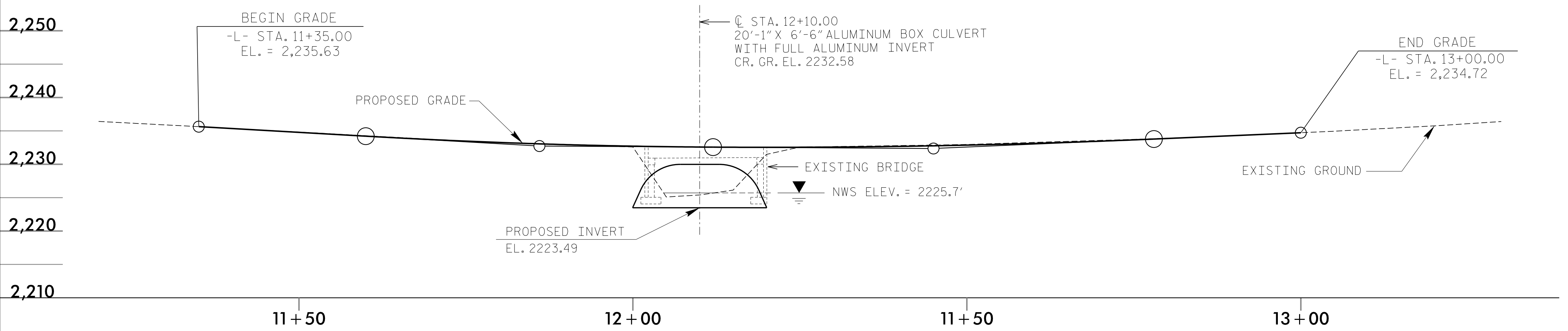
ASSUMED LIVE LOAD - HL-93 OR ALTERNATE.

ALUMINUM BOX CULVERT TO BE DESIGNED BY A NORTH CAROLINA REGISTERED ENGINEER IN ACCORDANCE WITH APPLICABLE PORTIONS OF STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES ADOPTED BY AASHTO. CONSTRUCTION SHALL MEET THE APPLICABLE SECTIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

NATIVE MATERIAL REMOVED FROM THE CHANNEL TO ALLOW FOR THE INSTALLATION OF THE CULVERT SHALL BE USED FOR BACKFILLING INSIDE THE CULVERT. SELECT BACKFILL AND COIR FIBER MATTING SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR "EXCAVATION AND EMBANKMENT."

ADT = 600 VPD FOR YEAR 2025.

TOTAL STRUCTURE QUANTITIES	
ALUMINUM BOX CULVERT	LUMP SUM
REMOVAL OF EXISTING STRUCTURE, STA. 12+10	LUMP SUM
CULVERT EXCAVATION, STA. 12+10	LUMP SUM
FOUNDATION CONDITIONING MATERIAL, BOX CULVERT	30 TONS
CHANNEL EXCAVATION	65 CY
RIP RAP, CLASS I (1'-6" THK.)	100 TONS
GEOTEXTILE FOR DRAINAGE	200 SY
COIR FIBER MAT	30 SY



PROFILE ALONG C SURVEY -L-

V&M
Vaughn & Mellon
Consulting Engineers

Asheville, North Carolina
828-253-2796

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Charlotte, North Carolina 704-387-0488
Tri-Cities, Tennessee 423-467-8409
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

7-10-2014

NORTH CAROLINA
PROFESSIONAL
SEAL
038361

ENGINEER
DENNIS A. BOBOLIN

Dennis Bobolin

PROJECT NO. 17BP.13.R.39

BUNCOMBE COUNTY

STATION: 12+10.00 -L-

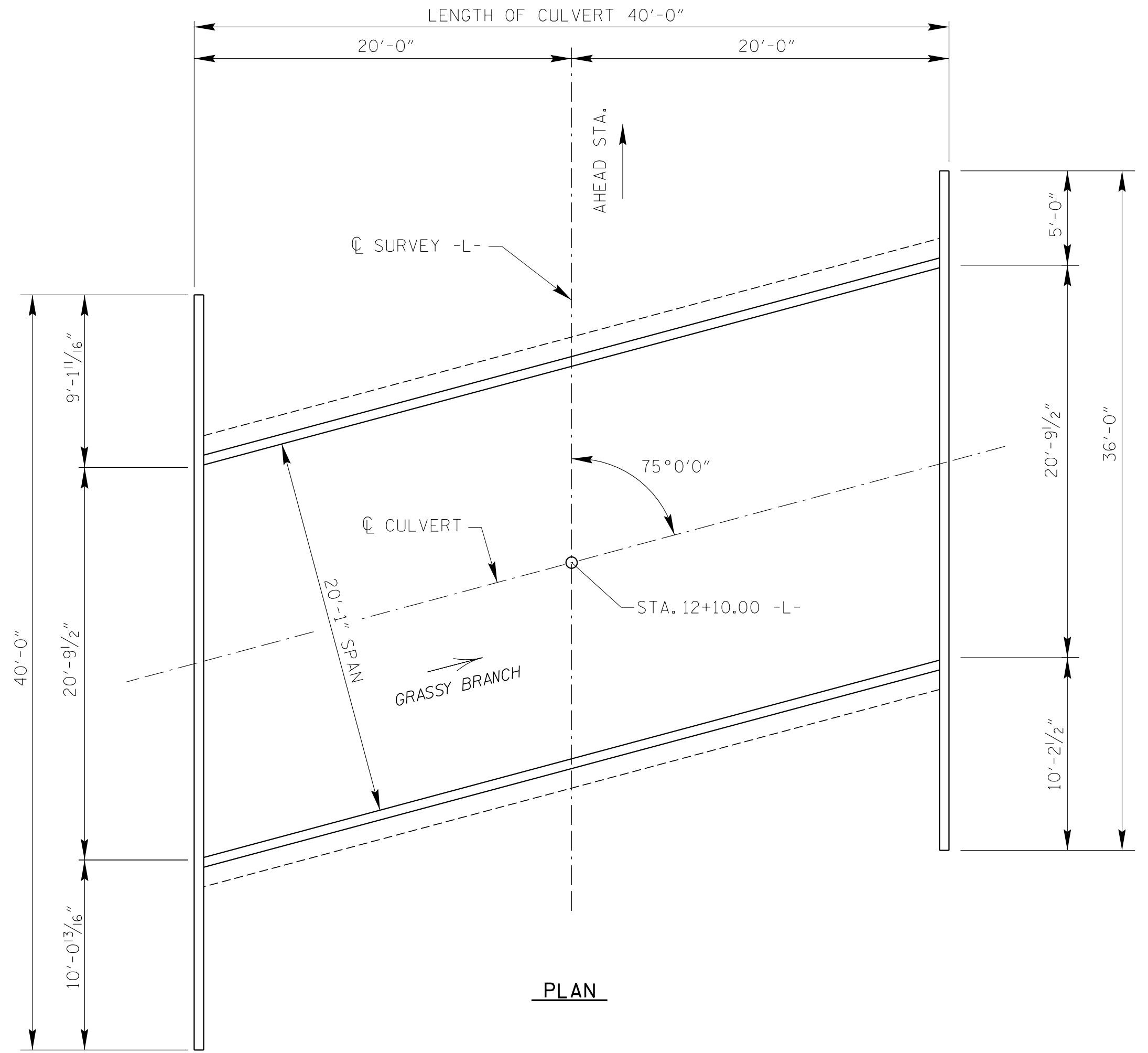
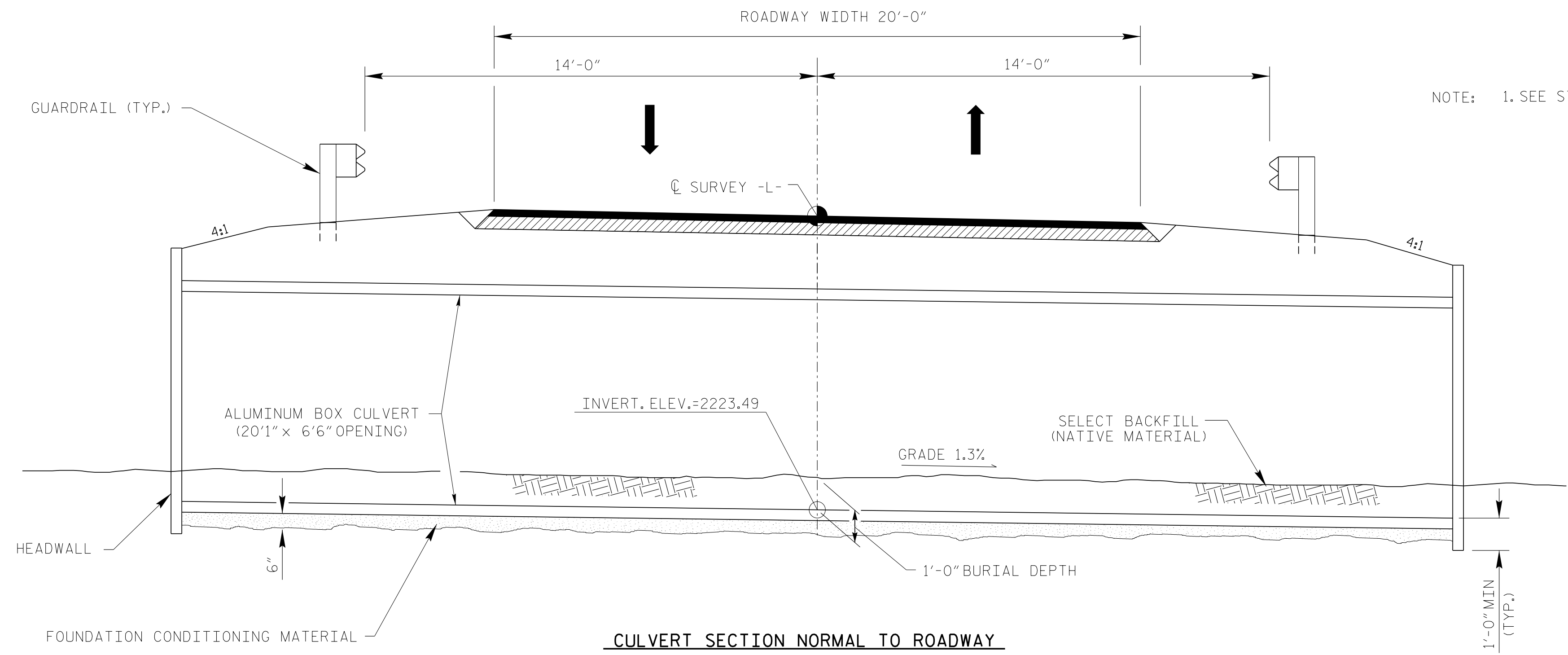
REPLACES BRIDGE NO. 686

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE NO. 686 ON SR 2407
OVER GRASSY BRANCH

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

DWN. BY: DAB	DATE: 7/13
CHKD. BY: HLW	DATE: 11/13
DES. EGR. OF RECORD: DAB	DATE: 11/13



NOTE: 1. SEE STD. DWG. 862.01 (SHEET 10 OF 12) FOR GUARDRAIL PLACEMENT OVER CULVERT.

V&M
Vaughn & Melton
Consulting Engineers

Asheville, North Carolina 828-253-2796

Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8409
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6200
Spartanburg, South Carolina 864-574-4775

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7-10-2014

NORTH CAROLINA
PROFESSIONAL
ENGINEER
038361
DENNIS A. BOUDON

PROJECT NO. 17BP.13.R.39
BUNCOMBE COUNTY
STATION: 12+10.00 -L-
REPLACES BRIDGE NO. 686

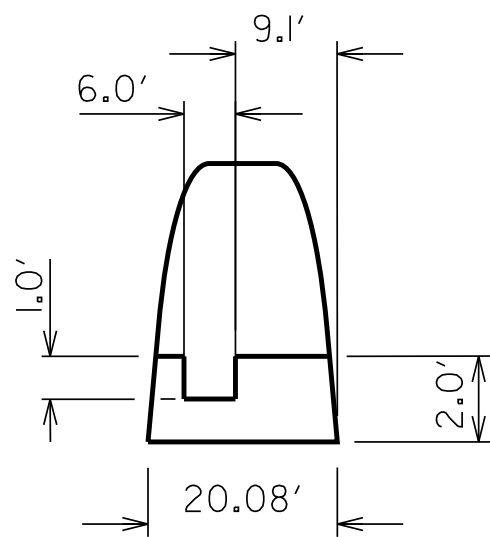
REVISIONS						SHEET NO. S-2
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 3
2			4			

DWN. BY: DAB
CHKD. BY: HLW
DES. EGR. OF RECORD: DAB

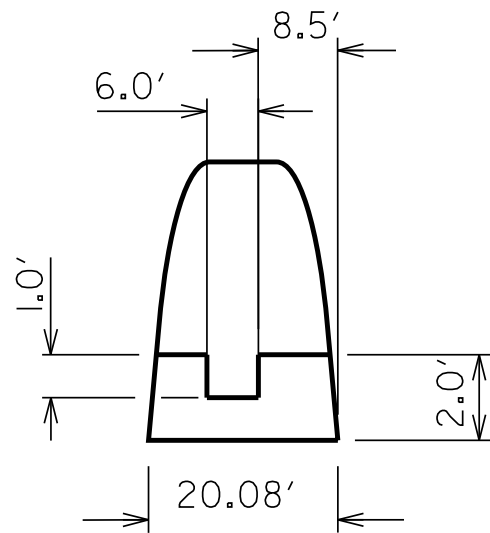
DATE: 7/13
DATE: 11/13
DATE: 11/13

DETAIL C:
SILL DETAILS @ INLET & OUTLET

(NTS)



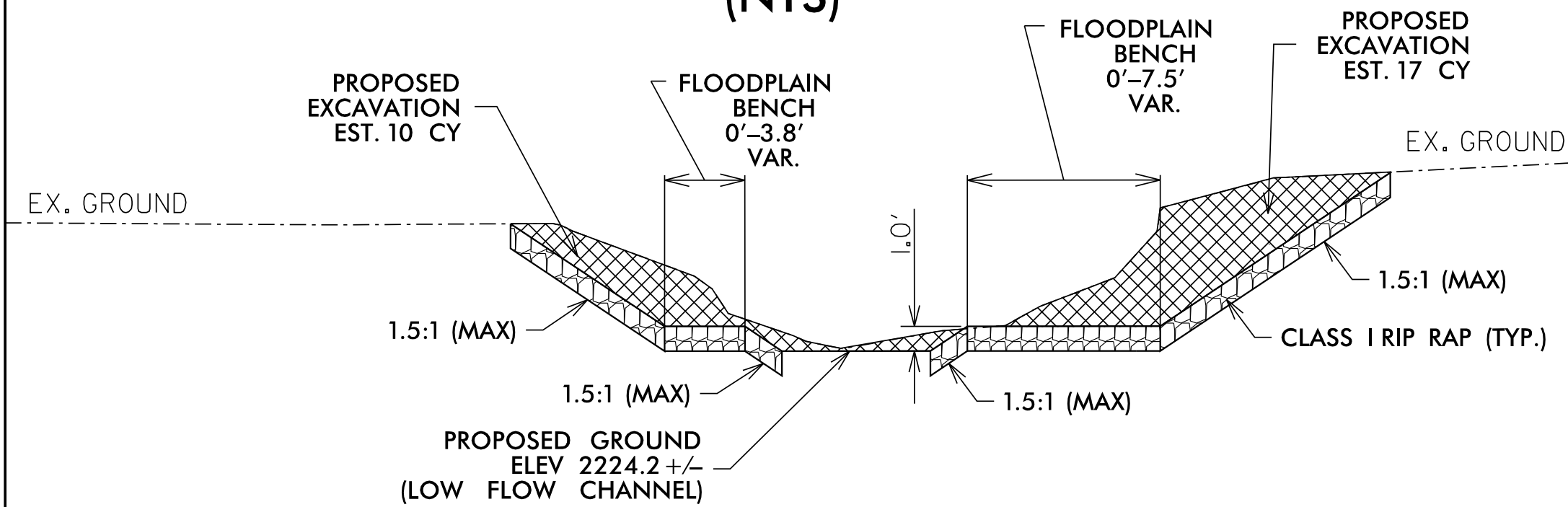
OUTLET SILL
(LOOKING DOWNSTREAM)



INLET SILL
(LOOKING UPSTREAM)

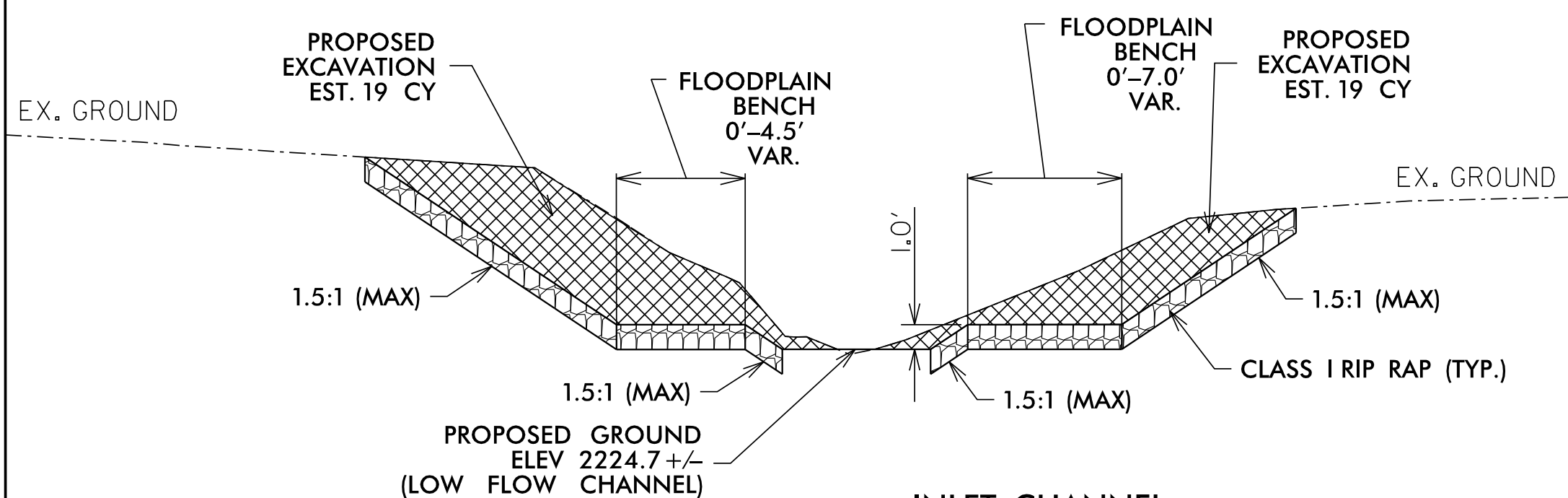
DETAIL A: U/S & D/S FLOODPLAIN BENCH PROFILE

(NTS)



EST. 51 TONS CLASS I RIP RAP
EST. 100 SY FILTER FABRIC

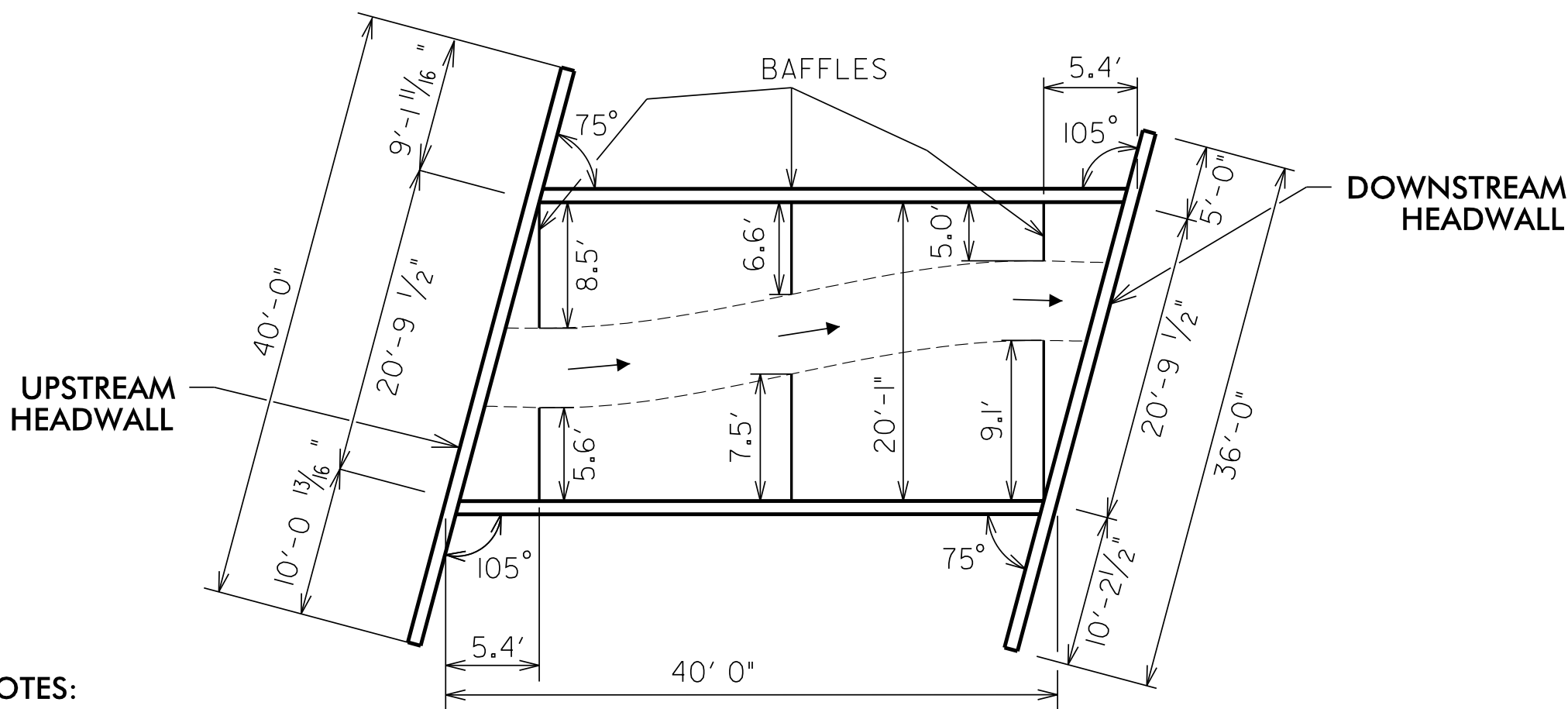
OUTLET CHANNEL
& FLOODPLAIN BENCH PROFILE
(LOOKING DOWNSTREAM)



EST. 49 TONS CLASS I RIP RAP
EST. 100 SY FILTER FABRIC

INLET CHANNEL
& FLOODPLAIN BENCH PROFILE
(LOOKING UPSTREAM)

DETAIL B: WINGWALL & BAFFLE LAYOUT

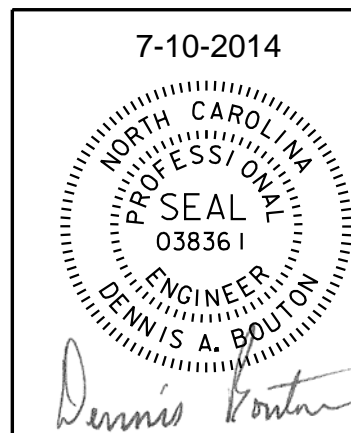
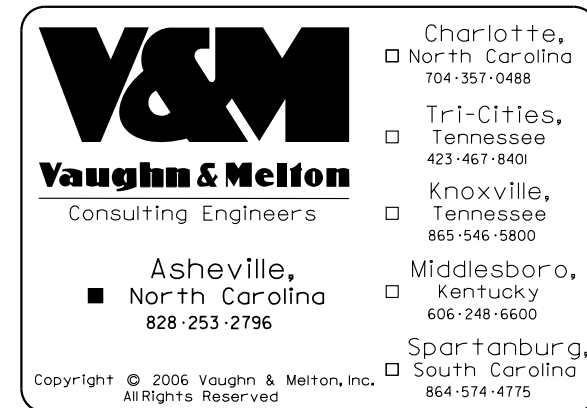


NOTES:

- 1.) ALL CULVERT TO HEADWALL CONNECTIONS OCCUR AT 75 OR 105 DEGREE ANGLES.
- 2.) PLACE SILLS AT INLET, OUTLET OF THE CULVERT. ADD SILLS PER DETAIL C. BACKFILL CULVERT WITH NATURAL BED MATERIAL SIMILAR IN SIZE TO CLASS B RIP RAP. SUBSIDIZE W/CLASS B RIP RAP AS NEEDED.

NOTES:

- 1.) FILTER FABRIC TO BE USED BENEATH CLASS I RIP RAP IN ALL AREAS.
- 2.) COIR FIBER MATTING TO BE USED THROUGH CULVERT INTERNAL CHANNEL.



PROJECT NO. 17BP.13.R.39

BUNCOMBE COUNTY

STATION: 12+10.00 -L-

REPLACES BRIDGE NO. 686

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SILL & BAFFLE DETAILS

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

DWN. BY: DAB
CHKD. BY: HLW
DES. EGR. OF RECORD: DAB

DATE: 7/13
DATE: 11/13
DATE: 11/13

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 2006 "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. FINIS 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

STD. NO. SN