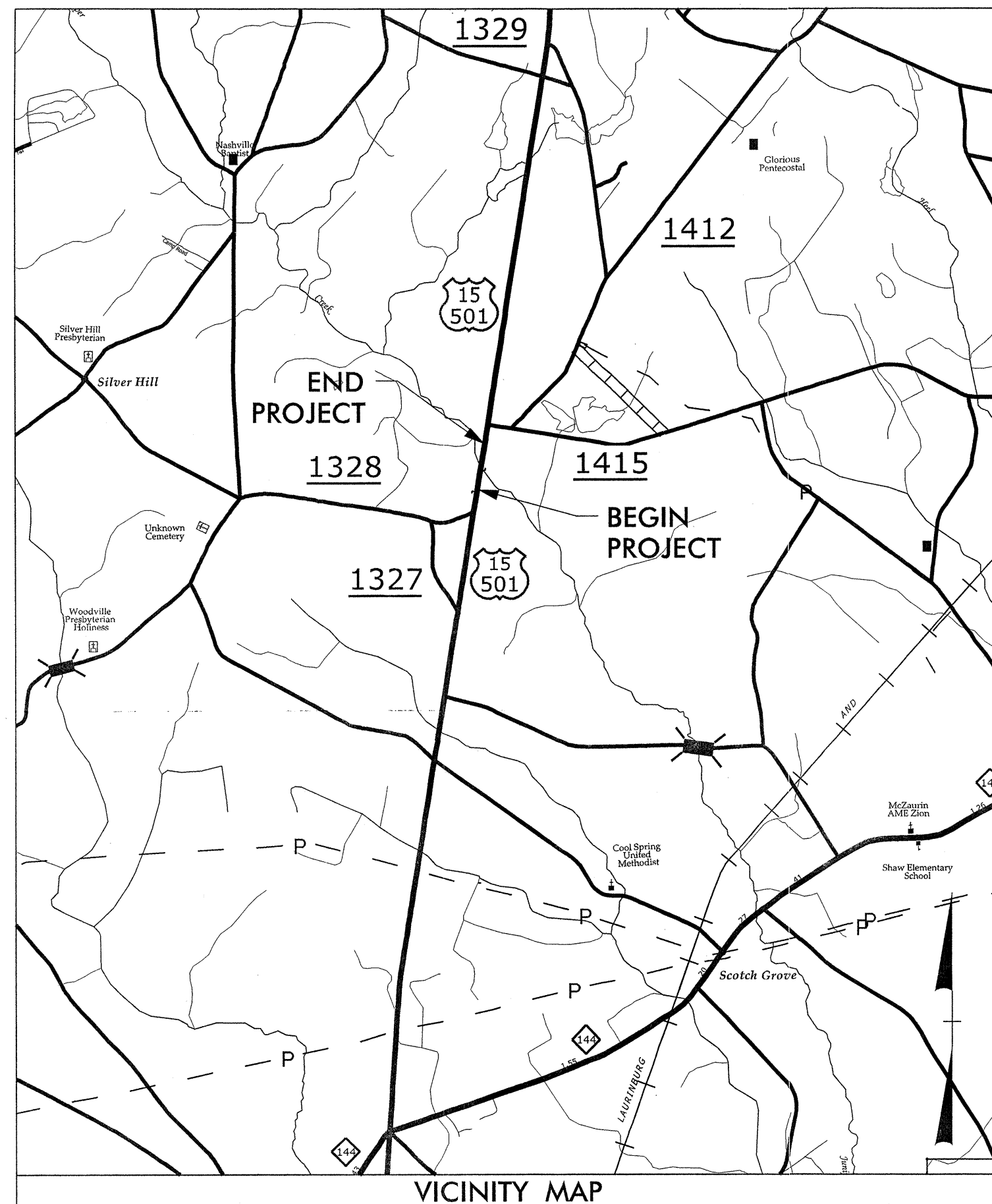


09/08/13

TIP PROJECT: B-4816

CONTRACT: C203285



See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# SCOTLAND COUNTY

LOCATION: BRIDGE NO. 65 OVER JUNIPER CREEK  
ON US 15-501

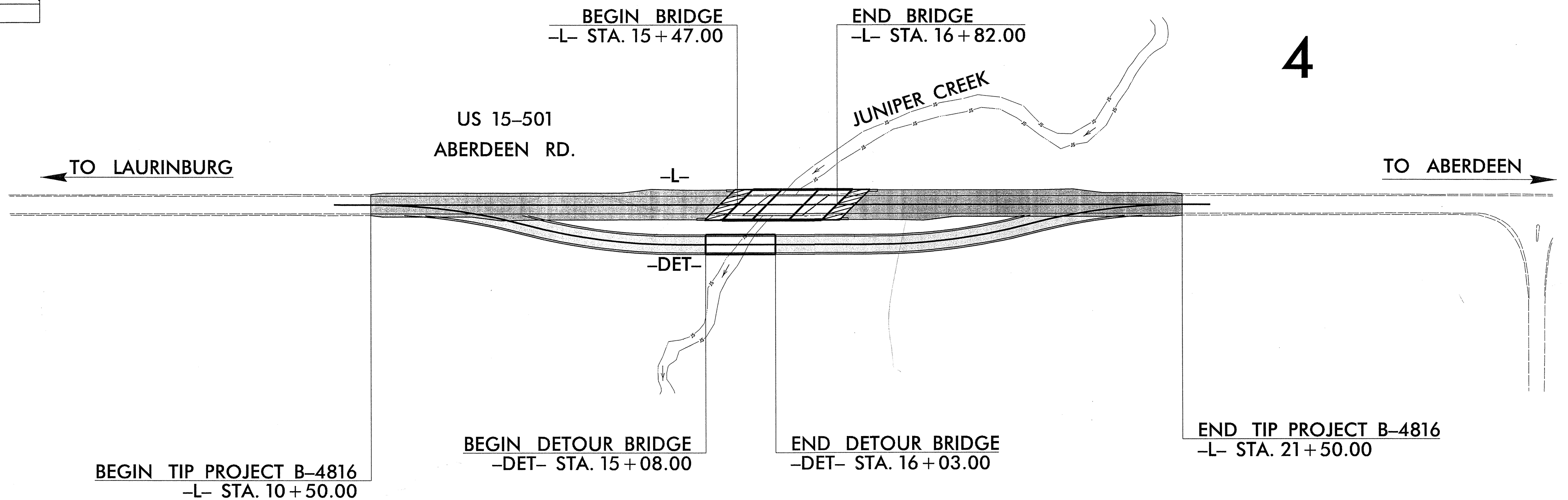
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE

| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.      | TOTAL SHEETS |
|-----------------|-----------------------------|----------------|--------------|
| N.C.            | B-4816                      | 1              |              |
| STATE PROJ. NO. | F. A. PROJ. NO.             | DESCRIPTION    |              |
| 38586.1.1       | BRSTP-0015(22)              | PE             |              |
| 38586.2.1       | BRSTP-0015(22)              | RW & UTILITIES |              |
| 38586.3.FD1     | BRSTP-0015(22)              | CONSTRUCTION   |              |

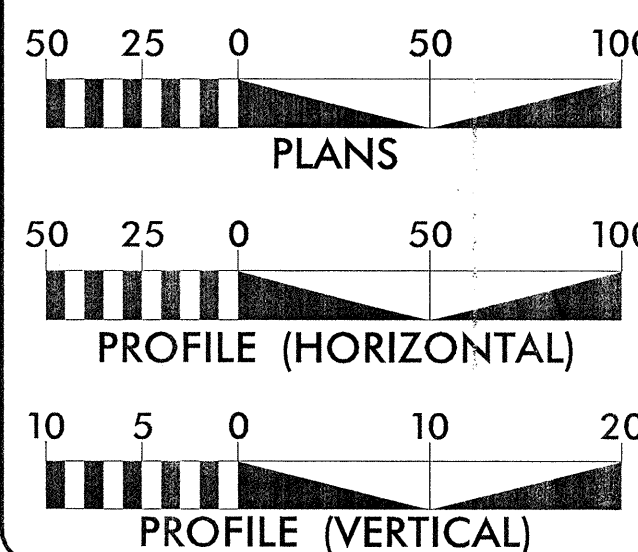
**STEWART**  
421 FAYETTEVILLE ST, STE 400  
RALEIGH, NC 27601  
T 919.386.8750

Firm License #: C-1051  
www.stewartinc.com  
PROJECT #1812001

NC FIRM LICENSE No: F-1148  
1151 SE Cary Parkway  
Suite 101  
Cary, NC 27518  
(919) 557-0929



### GRAPHIC SCALES



### DESIGN DATA

ADT 2013 = 6050  
ADT 2033 = 9280  
DHV = 10%  
D = 60%  
T = 25% \*  
\* (TTST 6% + DUAL 19%)  
V = 60 MPH  
CLASS = RURAL MINOR ARTERIAL  
REGIONAL TIER

### PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4816 = 0.182 mi.  
LENGTH STRUCTURE TIP PROJECT B-4816 = 0.026 mi.  
TOTAL LENGTH TIP PROJECT B-4816 = 0.208 mi.

Prepared in the Office of:  
**STEWART**

For  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
DECEMBER 20, 2012

**LETTING DATE:**  
DECEMBER 17, 2013

**BEN CRAWFORD, PE**  
PROJECT ENGINEER

**JONATHAN HEFNER, PE**  
PROJECT DESIGN ENGINEER

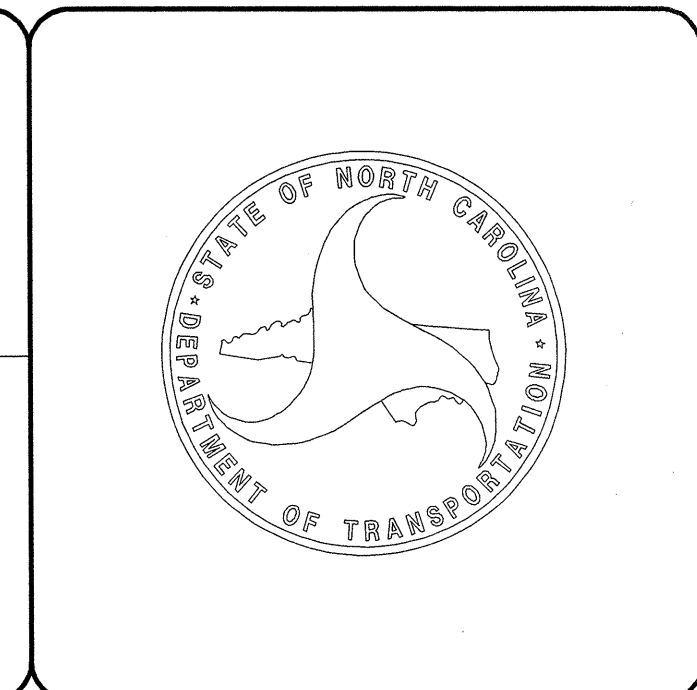
**BRENDA L. MOORE, PE**  
NGDOT CONTACT

**HYDRAULICS ENGINEER**


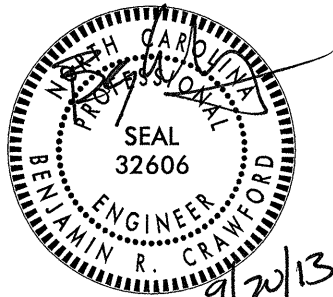
SIGNATURE: *Ben Crawford* 9/19/13 P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: *Brenda L. Moore* 9/17/13 P.E.



9/18/2013 9:15 Roadway\Proj\B4816\_rdy\_tsh.dgn  
User:mburns

|  |  |
|--|--|
| PROJECT REFERENCE NO.<br>B-4816  | SHEET NO.<br>1-A   |
| <br>STEWART<br><small>Firm License No. C-1051<br/>421 Fayetteville St.<br/>Suite 400<br/>Raleigh, NC 27601<br/>T 919.380.8750<br/>www.stewartco.com</small> | <br>ROADWAY DESIGN<br>ENGINEER<br><small>SEAL<br/>32606<br/>9/20/13</small> |

| 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, TYPICAL SECTIONS, AND WEDGING DETAILS                      |
| 2-A                | DETOUR PLAN AND PROFILE   |
| 2-B                | ROCK PLATING DETAIL   |
| 2-C                | RUMBLE STRIP DETAIL   |
| 2-D                | TYPE III SAU DETAIL   |
| 3                  | SUMMARY OF QUANTITIES   |
| 3A                 | SUMMARY OF DRAINAGE QUANTITIES  |
| 3B                 | SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY |
| 4                  | PLAN AND PROFILE SHEET  |
| TMP-1 THRU TMP-6   | TRAFFIC CONTROL PLANS   |
| PMP-1              | PAVEMENT MARKING PLANS  |
| EC-1 THRU EC-6     | EROSION CONTROL PLANS   |
| SIGN-1 THRU SIGN-2 | SIGNING PLANS   |
| UO-1 THRU UO-2     | UTILITIES BY OTHERS PLANS   |
| X-1A               | CROSS-SECTION SUMMARY SHEET   |
| X-1 THRU X-5       | CROSS-SECTIONS  |
| S-1 THRU S-33      | STRUCTURE PLANS   |

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, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

| STD. NO.                                   | TITLE  |
|--|--|
| DIVISION 2 - EARTHWORK                     |  |
| 200.03                                     | Method of Clearing - Method III  |
| 225.02                                     | Guide for Grading Subgrade - Secondary and Local                                   |
| 225.04                                     | Method of Obtaining Superelevation - Two Lane Pavement                             |
| DIVISION 3 - PIPE CULVERTS                 |  |
| 300.01                                     | Method of Pipe Installation  |
| DIVISION 4 - MAJOR STRUCTURES              |  |
| 422.10                                     | Reinforced Bridge Approach Fills   |
| DIVISION 5 - SUBGRADE, BASES AND SHOULDERS |  |
| 560.01                                     | Method of Shoulder Construction - High Side of Superelevated Curve - Method I      |
| DIVISION 8 - INCIDENTALS                   |  |
| 840.00                                     | Concrete Base Pad for Drainage Structures  |
| 840.25                                     | Anchorage for Frames - Brick or Concrete or Precast                                |
| 840.29                                     | Frames and Narrow Slot Flat Grates   |
| 840.35                                     | Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates          |
| 840.46                                     | Traffic Bearing Precast Drainage Structure   |
| 840.66                                     | Drainage Structure Steps   |
| 846.01                                     | Concrete Curb, Gutter and Curb & Gutter  |
| 846.04                                     | Drop Inlet Installation in Shoulder Berm Gutter                                    |
| 862.01                                     | Guardrail Placement  |
| 862.02                                     | Guardrail Installation   |
| 862.03                                     | Structure Anchor Units (Details in Lieu of Standard Drawing as March 2013 Letting) |
| 862.04                                     | Anchoring End of Guardrail - B-77 and B-83 Anchor Units                            |
| 876.02                                     | Guide for Rip Rap at Pipe Outlets  |

EFF. 01-17-2012  
REV. 10-30-2012

GENERAL NOTES:

2012 SPECIFICATIONS  
EFFECTIVE: 01-17-2012  
REVISED: 07-30-2012

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 III.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 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. 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.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

AT&T Copper Lines  
AT&T Overhead Fiber Optic  
Progress Energy Overhead Power

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

B-417/99

9/20/2013  
9:58:10 AM  
C:\Users\jrb\OneDrive\Documents\B-4816\_rdy\_psh\_1A.dgn  
USF:\jrb\ford

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                          | □ EGM   |
| 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: Area or Site     | ☠ ☠     |
| Potential Soil Contamination: Area 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 | ← FLOW |
| False Sump                         | ◁      |

## RAILROADS:

|                    |               |
|--------------------|---------------|
| Standard Gauge     | -----         |
| RR Signal Milepost | ○ MILEPOST 35 |
| Switch             | □ SWITCH      |
| RR Abandoned       | -----         |
| RR Dismantled      | -----         |

## RIGHT OF WAY:

|  |          |
|--|----------|
| Baseline Control Point   | ◆        |
| Existing Right of Way Marker                                   | △        |
| Existing Right of Way Line                                     | -----    |
| Proposed Right of Way Line                                     | -----    |
| Proposed Right of Way Line with Iron Pin and Cap Marker        | -----▲   |
| Proposed Right of Way Line with Concrete or Granite R/W Marker | -----▲   |
| Proposed Control of Access Line with Concrete C/A 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 |
| Proposed Permanent Easement with Iron Pin and Cap Marker       | -----◆   |

## ROADS AND RELATED FEATURES:

|                            |         |
|----------------------------|---------|
| Existing Edge of Pavement  | -----   |
| Existing Curb              | -----   |
| Proposed Slope Stakes Cut  | -----C  |
| Proposed Slope Stakes Fill | -----F  |
| Proposed Curb Ramp         | -----CR |
| 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      | □ CB  |
| 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             | -----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:

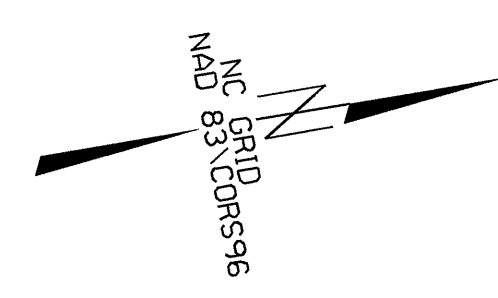
|  |                         |
|--|-------------------------|
| Sanitary Sewer Manhole                   | ⊕                       |
| Sanitary Sewer Cleanout                  | ⊕                       |
| U/G Sanitary Sewer Line                  | -----SS                 |
| Above Ground Sanitary Sewer              | -----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               | -----?U/L |
| 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 B-4816

| TYPE | STATION  | NORTH       | EAST         |
|------|----------|-------------|--------------|
| POT  | 10+00.00 | 412399.6860 | 1864361.9522 |
| POT  | 21+88.12 | 413572.9004 | 1864549.5922 |



| BL POINT | DESC.   | NORTH       | EAST         | ELEVATION | L STATION              | OFFSET   |
|----------|---------|-------------|--------------|-----------|------------------------|----------|
| 101      | BL-101  | 412381.8659 | 1864384.1951 | 230.31    | OUTSIDE PROJECT LIMITS |          |
| 102      | BL-102  | 412926.7270 | 1864465.6400 | 230.81    | 15+36.80               | 15.15 RT |
| 2        | B4816-2 | 413935.9340 | 1864634.4480 | 231.13    | OUTSIDE PROJECT LIMITS |          |

.....  
 BM1 ELEVATION = 230.87  
 N 412261 E 1864412  
 L STATION 21+88.00  
 S 05°59'11.91" W DIST 1318.66  
 BM1  
 .....  
 BM2 ELEVATION = 230.30  
 N 413054 E 1864299  
 L STATION 16+36.00 166 LEFT  
 BM2  
 .....

**LOCALIZED PROJECT COORDINATES**  
**-L- STA. 10+50.00 BEGIN TIP PROJECT B-4816**  
**N = 412449.0585**  
**E = 1864369.8487**

**NCDOT BASELINE STATION "BL-102"**  
**LOCALIZED PROJECT COORDINATES**  
**N = 412926.7270**  
**E = 1864465.6400**

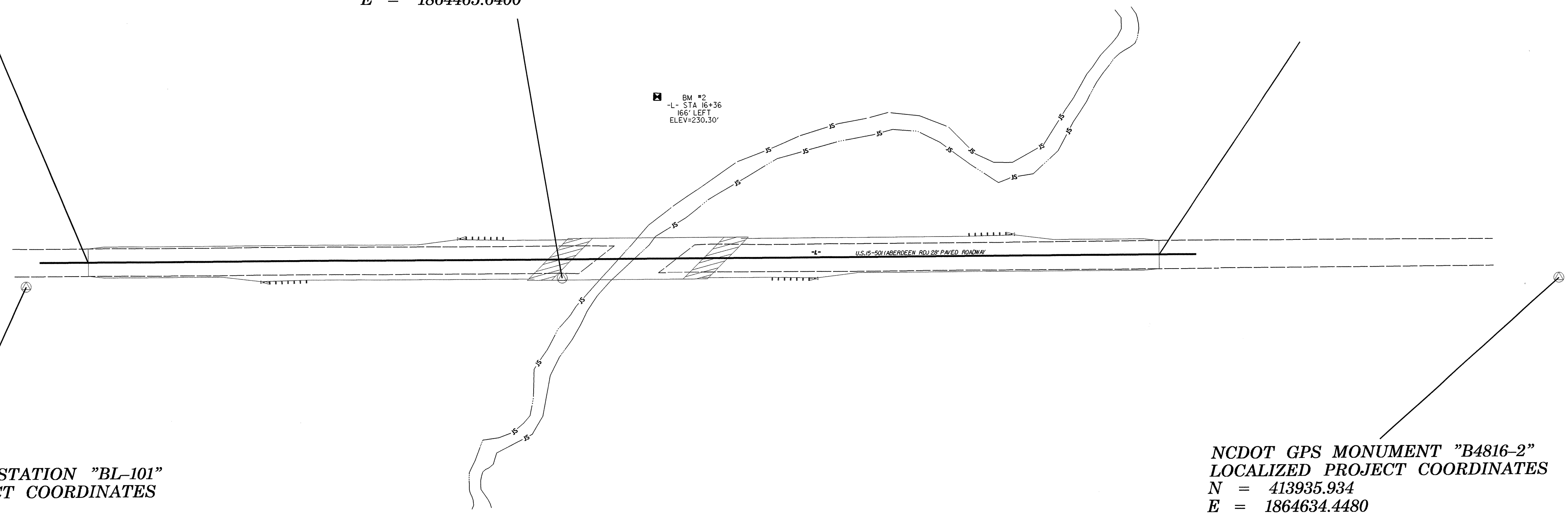
**LOCALIZED PROJECT COORDINATES**  
**-L- STA. 21+50.00 END TIP PROJECT B-4816**  
**N = 413535.2540**  
**E = 1864543.5712**

BM #1  
 -L- STA 21+88  
 S05°59'12" W 1318.66'  
 ELEV=230.87

**NCDOT BASELINE STATION "BL-101"**  
**LOCALIZED PROJECT COORDINATES**  
**N = 412381.8659**  
**E = 1864384.1951**

BM #2  
 -L- STA 16+36  
 166' LEFT  
 ELEV=230.30'

**NCDOT GPS MONUMENT "B4816-2"**  
**LOCALIZED PROJECT COORDINATES**  
**N = 413935.934**  
**E = 1864634.4480**



**NOTES:**

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCTION/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruction/highway/location/project/)  
 THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4816\_LS\_CONTROL.TXT  
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. 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)

**DATUM DESCRIPTION**  
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4816-1" WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF NORTHING: 411785.3050(±) EASTING: 1864241.6650(±) ELEVATION: 236.5450(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999886993 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4816-1" TO -L- STATION 10+50.00 IS N 10°55'49.3"E 676.02' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

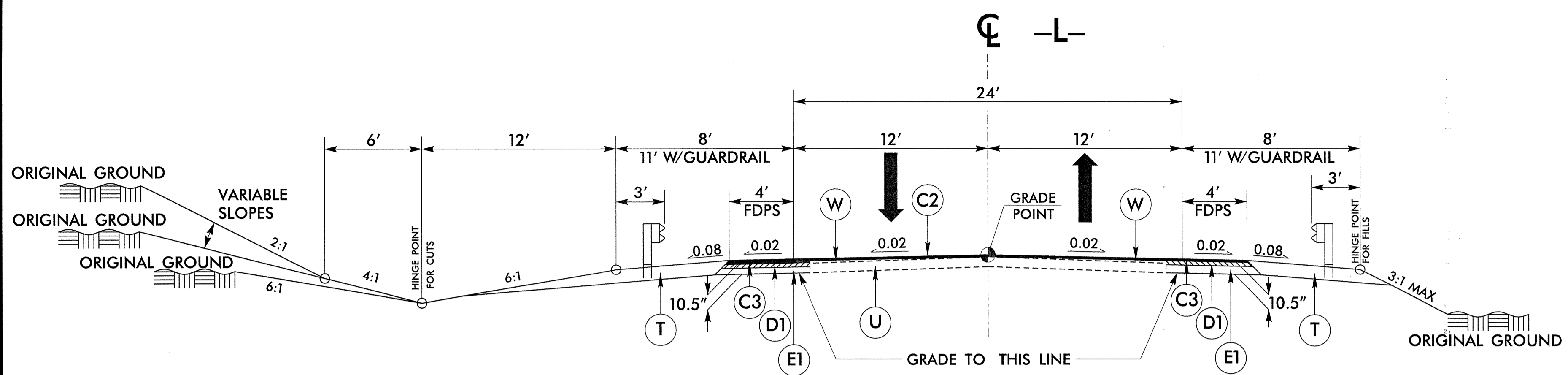
NOTE: DRAWING NOT TO SCALE

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6/2/09

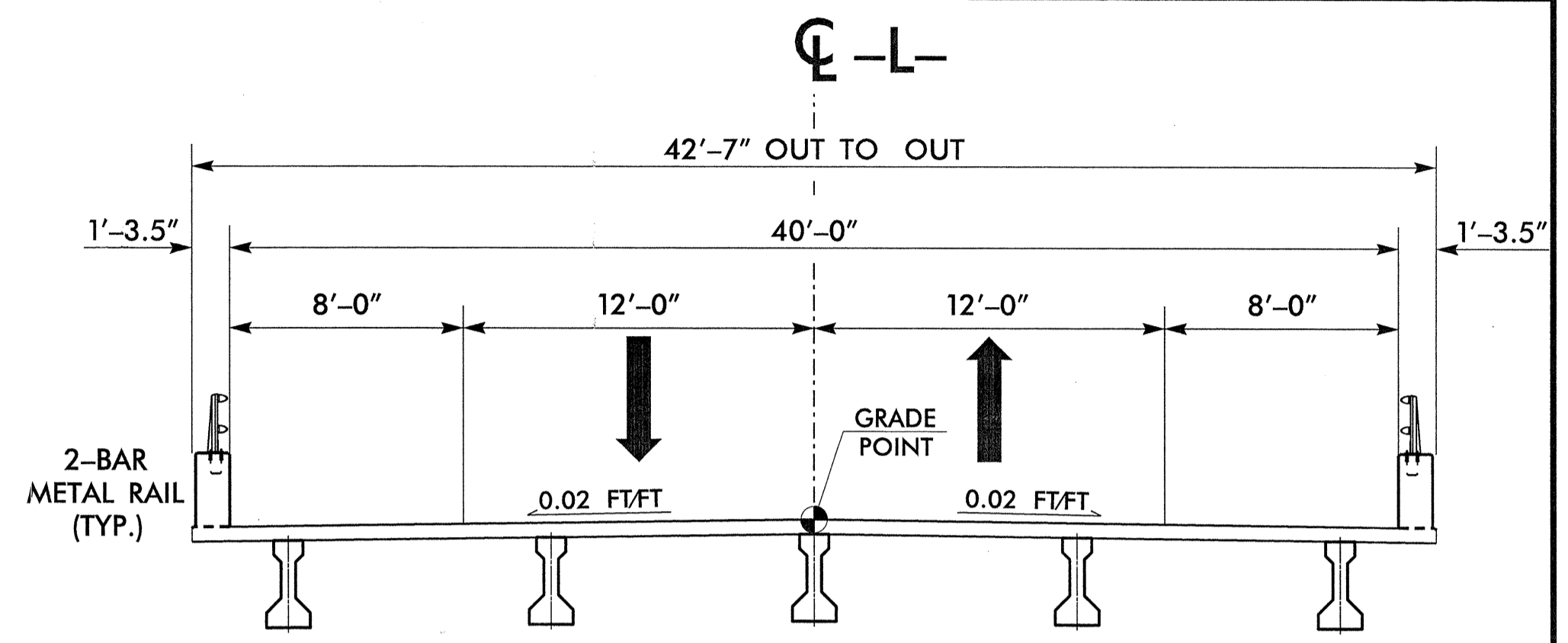


|                                 |                               |
|---------------------------------|-------------------------------|
| PROJECT REFERENCE NO.<br>B-4816 | SHEET NO.<br>2                |
| ROADWAY DESIGN ENGINEER         | PAVEMENT DESIGN ENGINEER      |
| <i>[Signature]</i><br>9/20/13   | <i>[Signature]</i><br>9/23/13 |



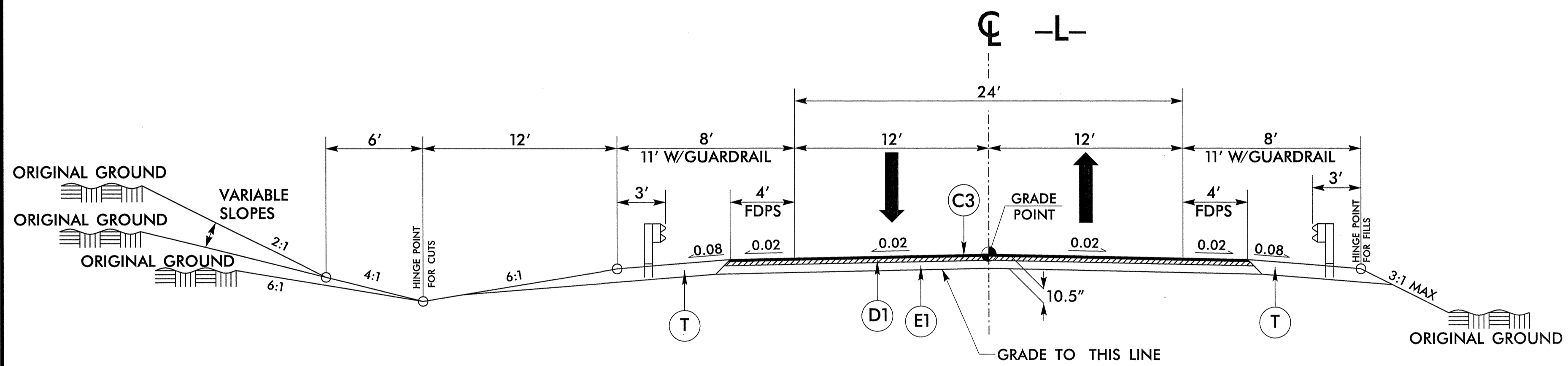
**ROADWAY TYPICAL SECTION NO. 1**

USE ROADWAY TYPICAL SECTION NO. 1  
 -L- STA. 10+50.00 TO -L- STA. 14+00.00  
 -L- STA. 18+50.00 TO -L- STA. 21+50.00



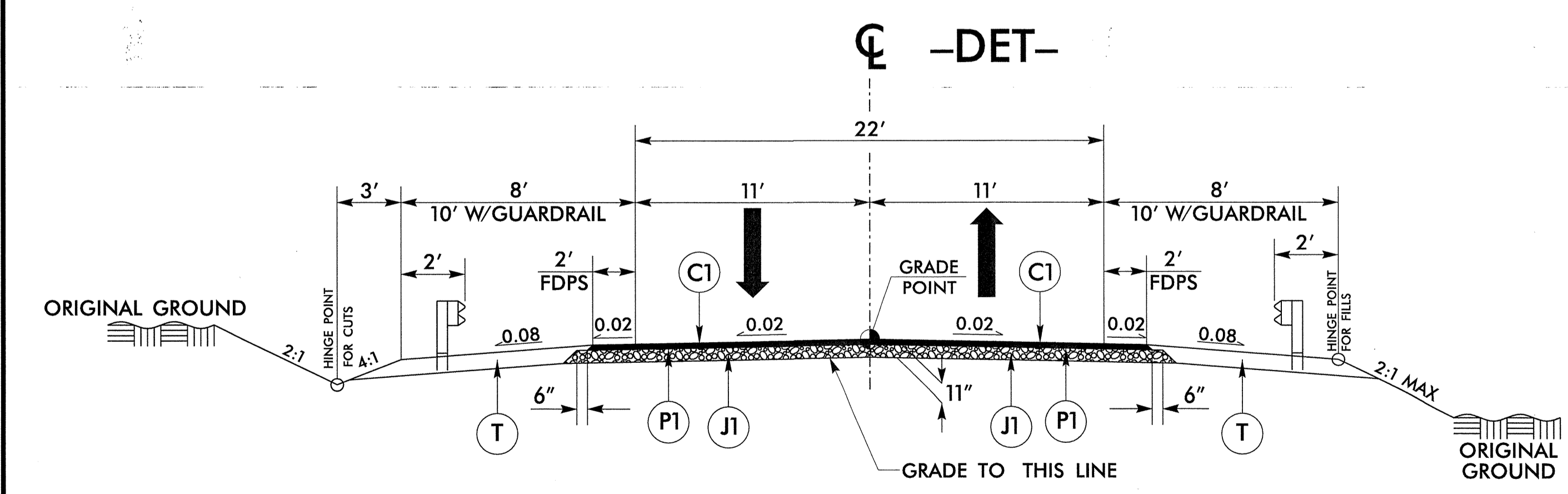
**BRIDGE TYPICAL SECTION**

USE BRIDGE TYPICAL SECTION  
 -L- STA. 15+47.00 TO -L- STA. 16+82.00  
 BRIDGE TYPE = 36" PRESTRESSED CONCRETE GIRDERS  
 NOTE: US 15-501 IS A DESIGNATED BICYCLE ROUTE, NC 1



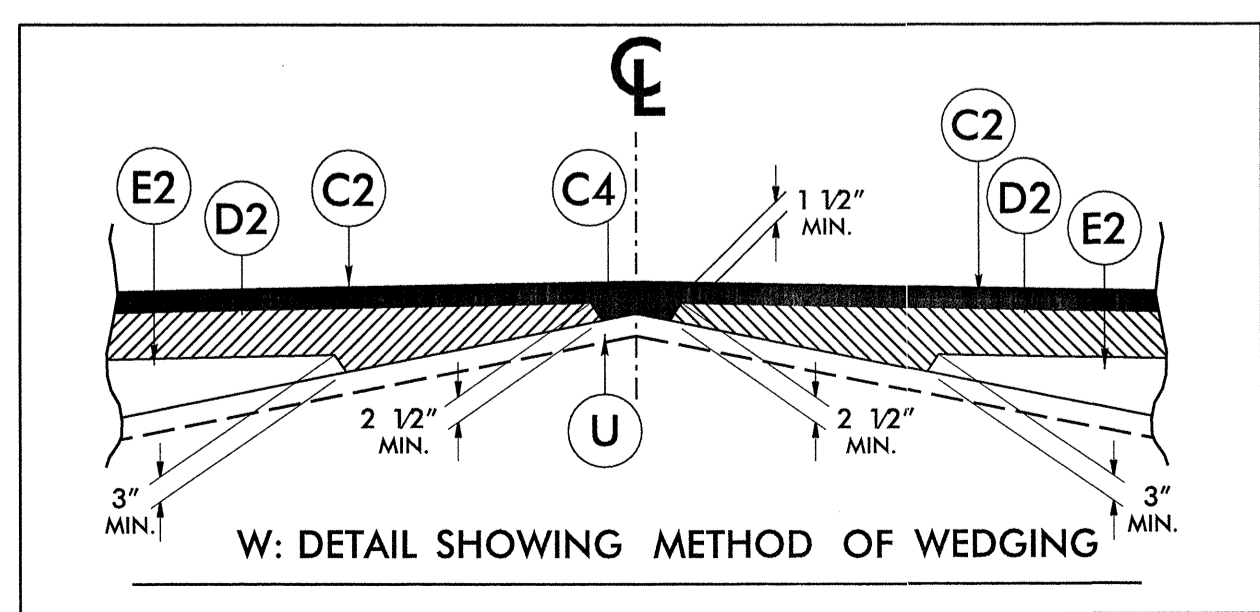
**ROADWAY TYPICAL SECTION NO. 2**

USE ROADWAY TYPICAL SECTION NO. 2  
 -L- STA. 14+00.00 TO -L- STA. 15+47.00 (BEGIN BRIDGE)  
 -L- STA. 16+82.00 (END BRIDGE) TO -L- STA. 18+50.00



**ROADWAY TYPICAL SECTION NO. 3**

USE ROADWAY TYPICAL SECTION NO. 3  
 -DET- STA. 11+91.33 TO -DET- STA. 15+08.00 (BEGIN BRIDGE)  
 -DET- STA. 16+03.00 (END BRIDGE) TO -DET- STA. 20+17.35  
 SEE ROCK PLATING DETAIL ON SHEET 2-B



| PAVEMENT SCHEDULE<br>(FINAL PAVEMENT DESIGN) |  |
|--|--|
| C1   | PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS   |
| C2   | PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.   |
| C3   | PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS   |
| C4   | PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.                                       |
| D1   | PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.   |
| D2   | PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH. |
| E1   | PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.   |
| E2   | PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.         |
| J1   | PROP. 8" AGGREGATE BASE COURSE.  |
| P1   | PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.   |
| T  | EARTH MATERIAL.  |
| U  | EXISTING PAVEMENT.   |
| W  | WEDGING (SEE STANDARD WEDGING DETAIL)  |

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

9/20/2013  
 \\roadway\p\proj\B4816-rdq\_tup.dgn  
 TSG\Bibb\road

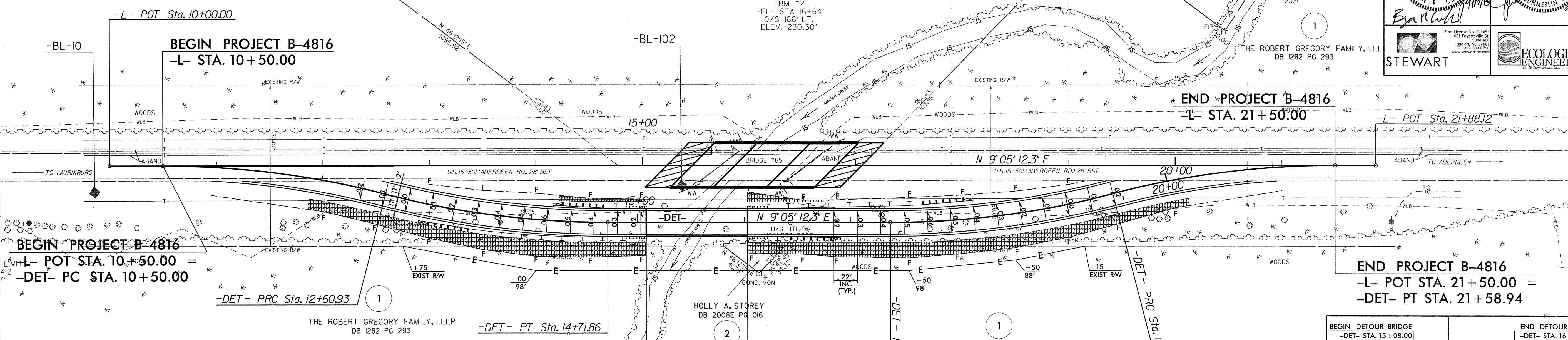
# DETOUR

|                                 |                        |
|---------------------------------|------------------------|
| PROJECT REFERENCE NO.<br>B-4816 | SHEET NO.<br>2-A       |
| RW SHEET NO.                    |                        |
| ROADWAY DESIGN ENGINEER         | HYDRAULICS ENGINEER    |
|                                 |                        |
| STEWART                         | ECOLOGICAL ENGINEERING |

1  
THE ROBERT GREGORY FAMILY, LLLP  
DB 1282 PG 293

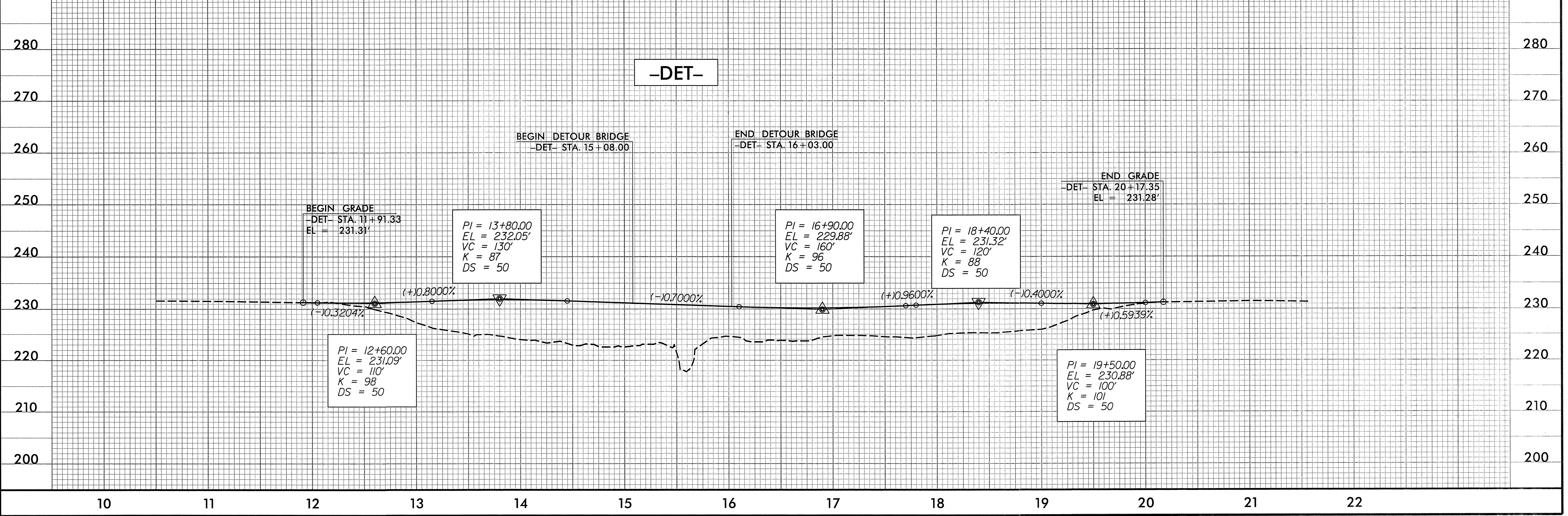
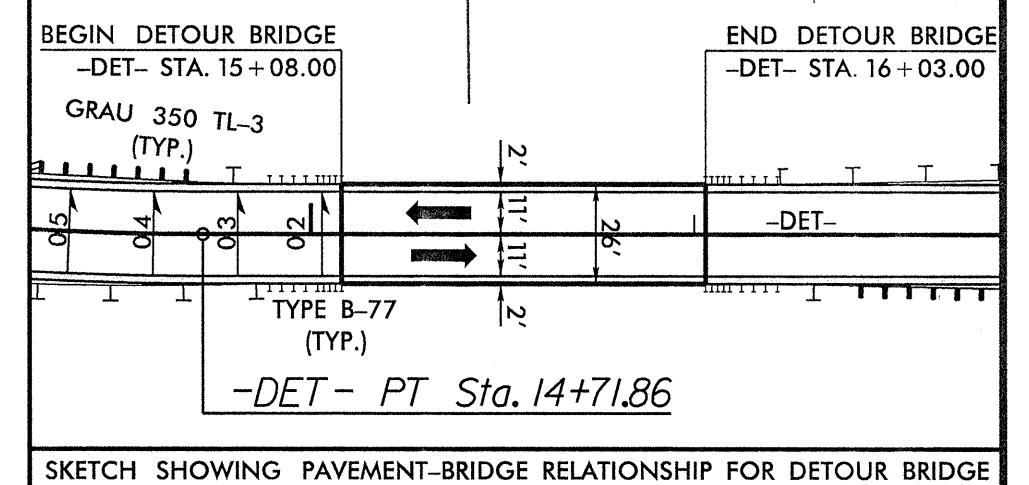
2  
HOLLY A. STOREY  
DB 2008E PG 016  
TBM #2  
-EL- STA 16+64  
O/S 166' LT.  
ELEV.=230.30'

1  
THE ROBERT GREGORY FAMILY, LLLP  
DB 1282 PG 293





|  |  |  |  |
|--|--|--|--|
| PI Sta 11+56.03<br>Δ = 14° 28' 24.5" (RT)<br>D = 6' 51' 42.4"<br>L = 210.93'<br>T = 106.03'<br>R = 835.00'<br>SE = .06<br>RUNOUT = 132.00' | PI Sta 13+66.96<br>Δ = 14° 28' 24.5" (LT)<br>D = 6' 51' 42.4"<br>L = 210.93'<br>T = 106.03'<br>R = 835.00'<br>SE = .06<br>RUNOUT = 132.00' | PI Sta 18+43.12<br>Δ = 14° 28' 24.5" (LT)<br>D = 6' 51' 42.4"<br>L = 210.93'<br>T = 106.03'<br>R = 835.00'<br>SE = .06<br>RUNOUT = 132.00' | PI Sta 20+54.04<br>Δ = 14° 28' 24.5" (RT)<br>D = 6' 51' 42.4"<br>L = 210.93'<br>T = 106.03'<br>R = 835.00'<br>SE = .06<br>RUNOUT = 132.00' |
|--|--|--|--|

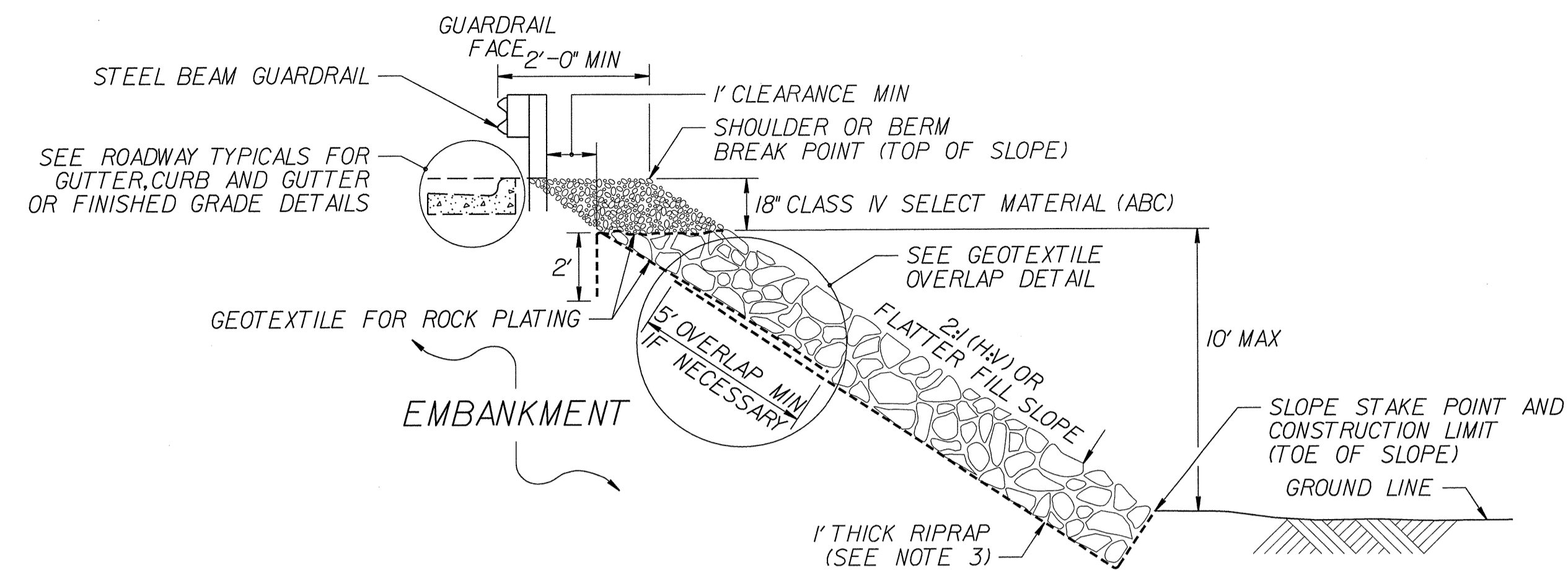
NOTE: SEE SHEET 2-B FOR ROCK PLATING DETAIL  
NOTE: STONE USED IN THE CONSTRUCTION OF THE DETOUR IS TO BE SALVAGED WHEN THE DETOUR IS REMOVED. CONTRACTOR IS TO COORDINATE WITH SCOTLAND COUNTY MAINTENANCE ENGINEER.



REVISIONS

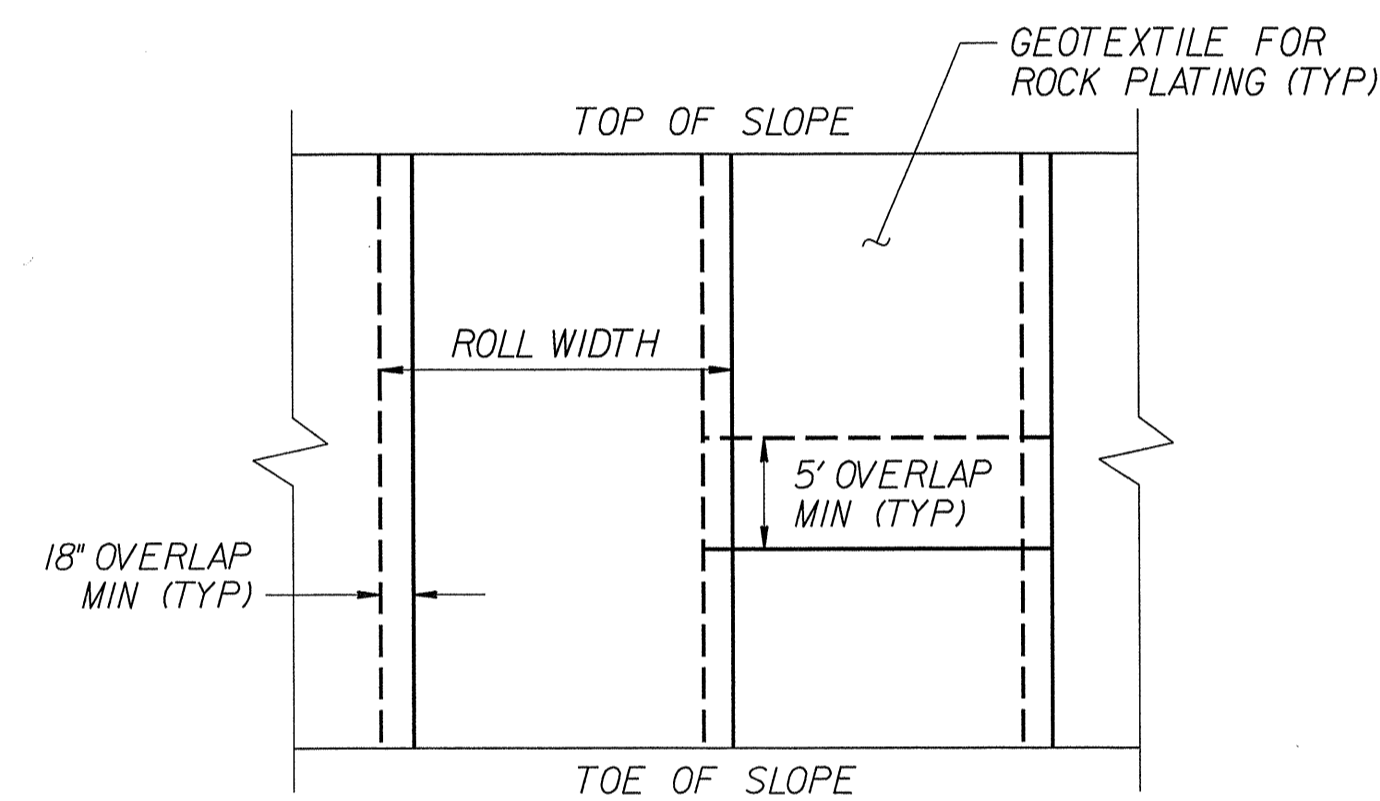
9/19/2013  
1:\p\p\B4816\_rdy\_psh\_det.dgn  
1:STEWART

|  |  |
|--|--|
| <b>PROJECT REFERENCE NO.</b><br>B-4816   | <b>SHEET</b><br>2-B  |
| GEOTECHNICAL ENGINEER<br> | <br><b>STEWART</b><br><small>Firm License No. C-1051<br/>421 Fayetteville St.<br/>Raleigh, NC 27601<br/>919.362.8700<br/>www.stewartinc.com</small> |
| SIGNATURE  | DATE   |



**ROCK PLATING DETAIL NO. 1 – TYPICAL SECTION**

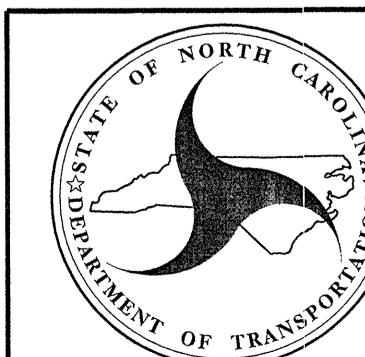
USE ON: -DET- STA. 11+91.33 TO -DET- STA. 15+08.00 (BEGIN BRIDGE)  
 -DET- STA. 16+03.00 (END BRIDGE) TO -DET- STA. 20+17.35



**GEOTEXTILE OVERLAP DETAIL  
(PLAN VIEW)**

**NOTES:**

1. SEE ROADWAY PLANS AND SUMMARY SHEETS FOR ROCK PLATING LOCATIONS.
2. FOR STANDARD ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.
3. USE CLASS I, 2 OR B RIPRAP UNLESS REQUIRED OTHERWISE IN THE ROADWAY SUMMARY SHEETS.

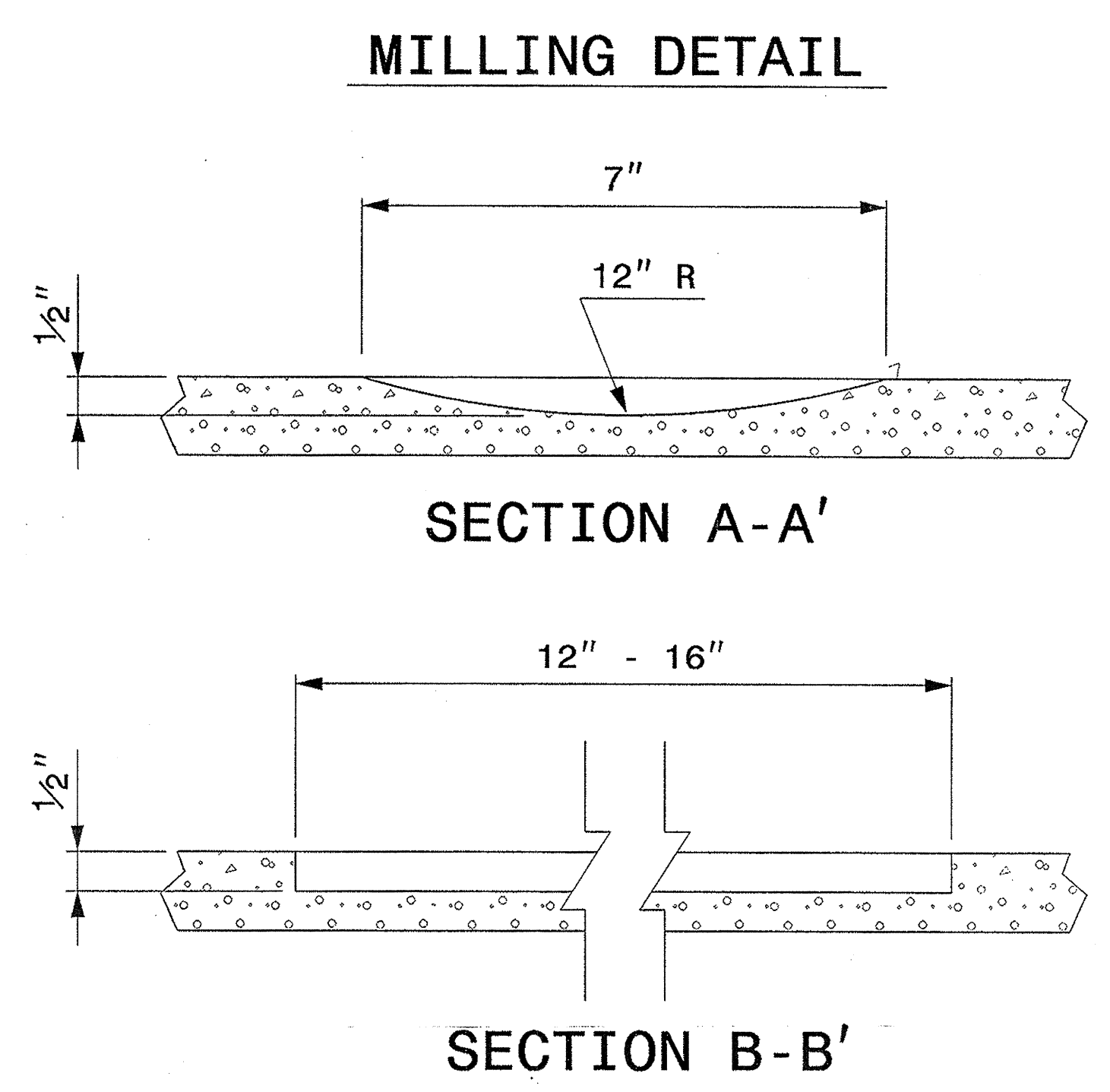
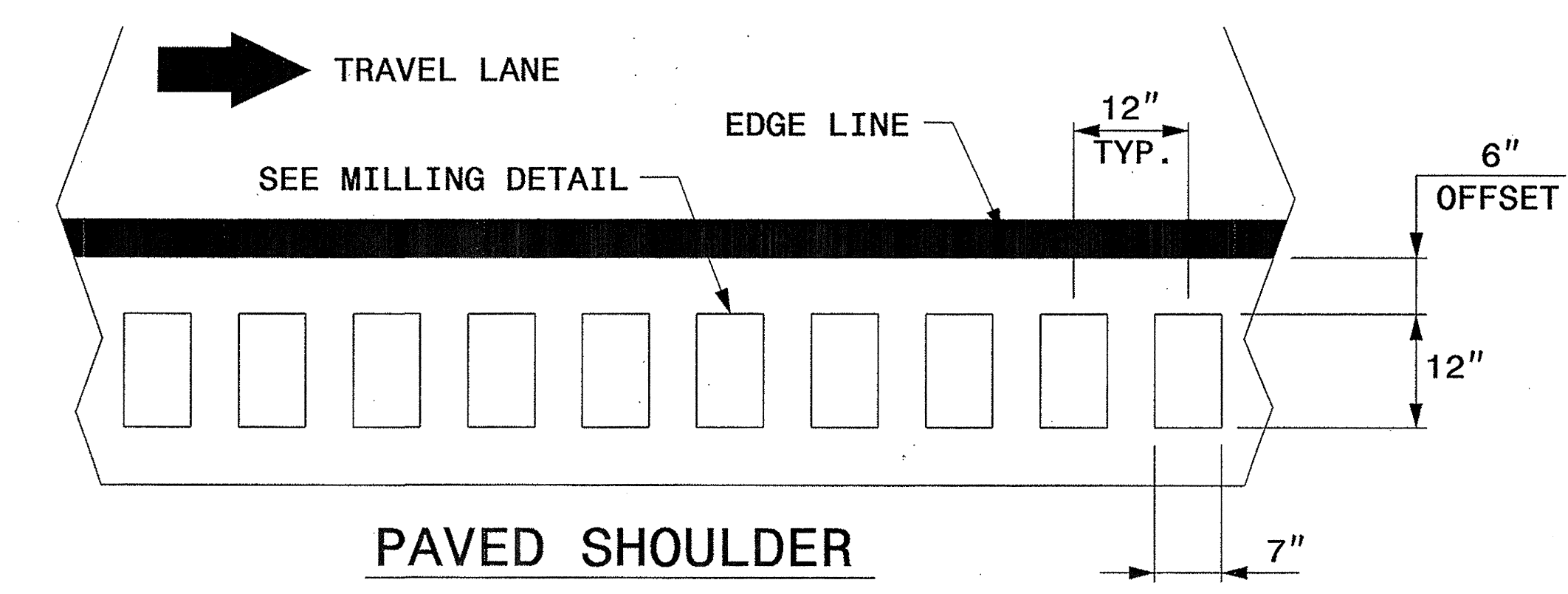
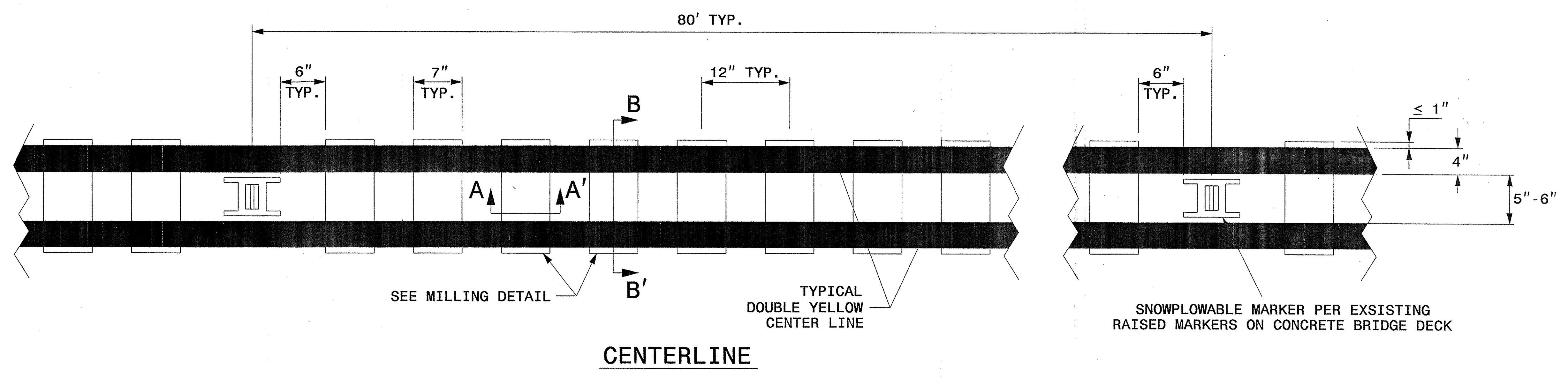


**GEOTECHNICAL  
ENGINEERING UNIT**  
  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STANDARD DRAWING NO. 1802.01

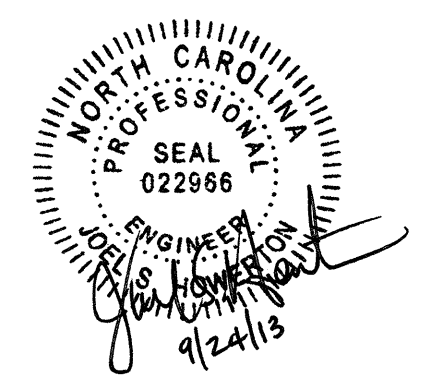
STANDARD  
ROCK PLATING

DATE: 2-19-13



**NOTES:**

- 1) THERE WILL BE NO CENTERLINE RUMBLE STRIPS OR RUMBLE STRIPES ON 3-LANE SECTIONS.
- 2) USING A VACUUM, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 3) INSTALL SNOWPLWABLE MARKERS AT THE APPROACHES PER EXISTING. USE RAISED MARKERS ON CONCRETE BRIDGE DECK.



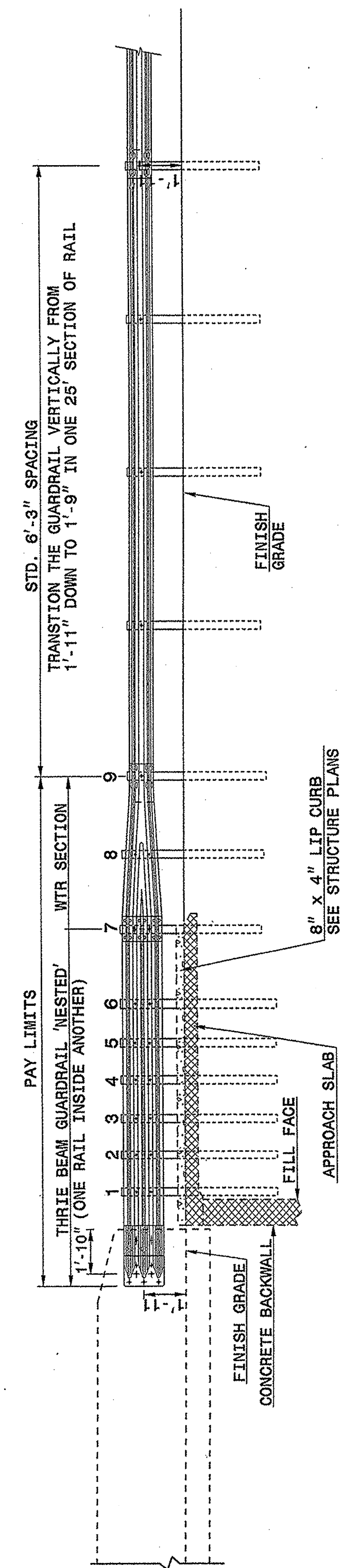
|   |               |
|---|---------------|
| <b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>    |               |
| Office 919-707-6950 FAX 919-250-4119              |               |
| <b>RUMBLE STRIPES</b>                             |               |
| ORIGINAL BY: _____                                | DATE: _____   |
| MODIFIED BY: <i>Quilley</i>                       | DATE: 8/15/13 |
| CHECKED BY: _____                                 | DATE: _____   |
| FILE SPEC.: 79:usr/details/stand/cbto_openthr.dgn |               |



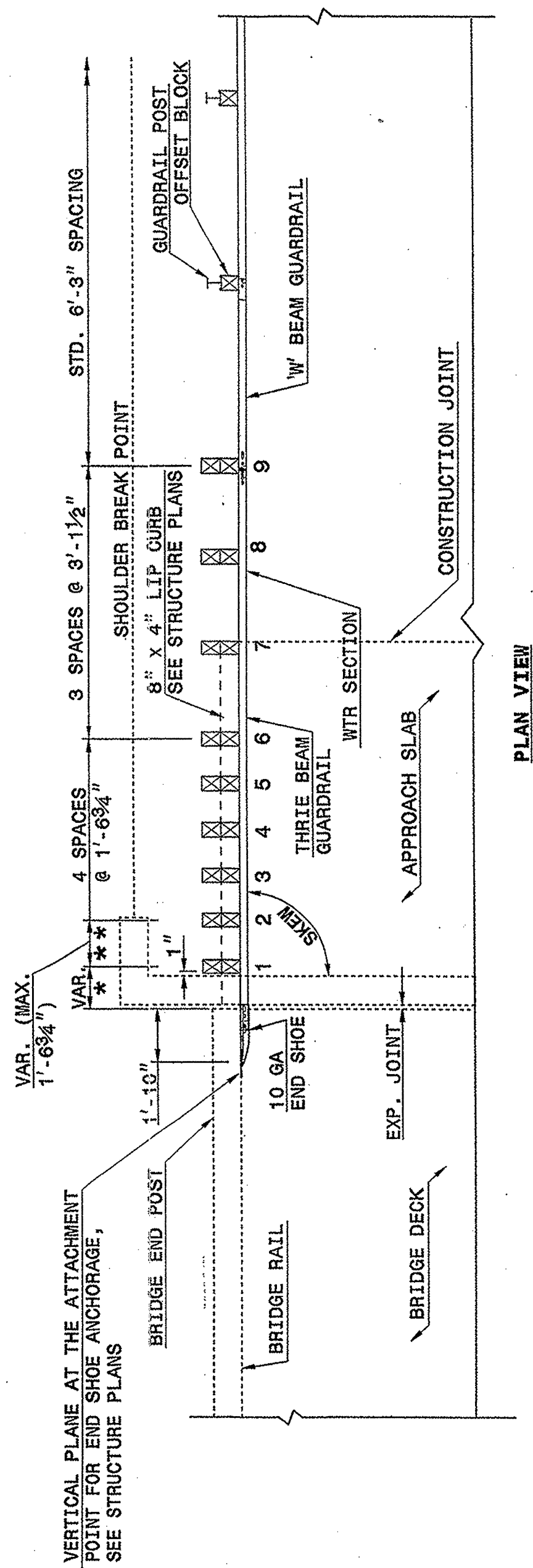
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7  
**862d03**



**NOTE:**  
 \*\*POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.  
 \*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.  
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" X 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.  
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).  
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.  
 -SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.



**GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER**

STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

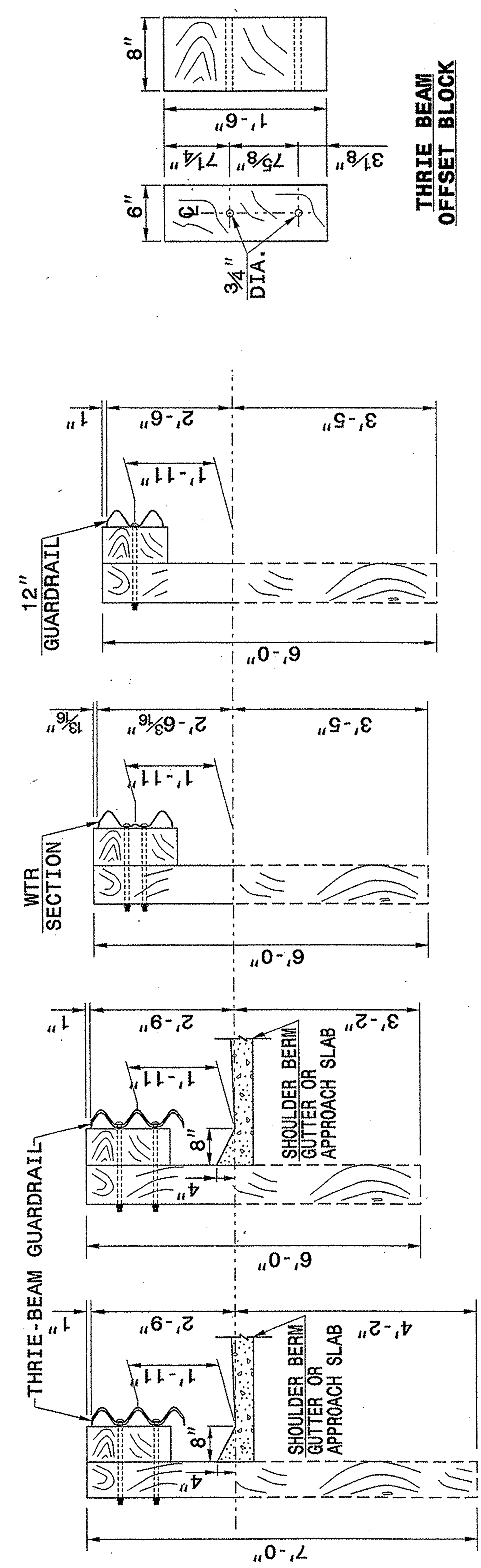
ENGLISH DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO  
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7  
**862d03**

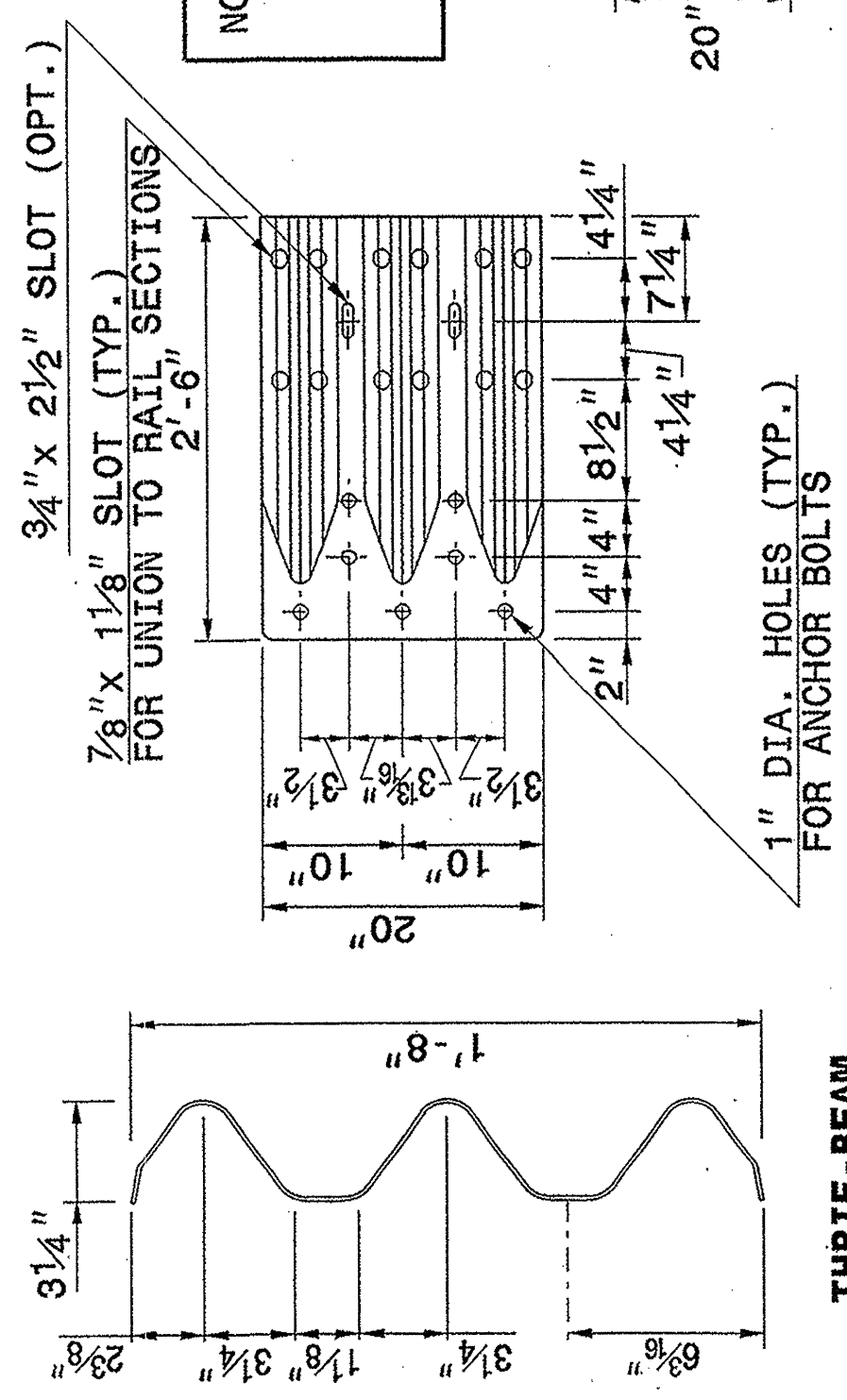
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 3 OF 7  
**862d03**



**NOTE:** THE MID POST AND OFFSET BLOCK OF WTR SECTION WILL REQUIRE SPECIAL BOLT HOLE DRILLING IN THE THRIE BEAM OFFSET BLOCK AND LINE POST.



STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

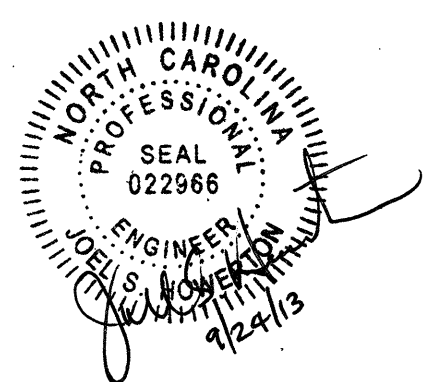
ENGLISH DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7  
**862d03**

**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**SEE TITLE BLOCK**

ORIGINAL BY: J HOWERTON DATE: 06-22-12  
 MODIFIED BY: DATE:   
 CHECKED BY: *[Signature]* DATE: 11/13/12  
 FILE SPEC.: *[Signature]*



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**SUMMARY OF QUANTITIES**

5/28/99

9/20/2013  
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203285

| ItemNumber  | Sec # | Quantity | Unit | Description   |
|-------------|-------|----------|------|---|
| 000100000-N | 800   | Lump Sum |      | MOBILIZATION  |
| 000400000-N | 801   | Lump Sum |      | CONSTRUCTION SURVEYING                                    |
| 002900000-N | SP    | Lump Sum |      | REINFORCED BRIDGE APPROACH FILL, STATION ***** (16+14.50) |
| 004300000-N | 226   | Lump Sum |      | GRADING   |
| 005000000-E | 226   | 1        | ACR  | SUPPLEMENTARY CLEARING & GRUBBING                         |
| 005700000-E | 226   | 300      | CY   | UNDERCUT EXCAVATION                                       |
| 019400000-E | SP    | 3,600    | CY   | SELECT GRANULAR MATERIAL, CLASS III                       |
| 019600000-E | 270   | 3,600    | SY   | GEOTEXTILE FOR SOIL STABILIZATION                         |
| 022300000-E | 275   | 1,050    | SY   | ROCK PLATING  |
| 031800000-E | 300   | 10       | TON  | FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES        |
| 032000000-E | 300   | 30       | SY   | FOUNDATION CONDITIONING GEOTEXTILE                        |
| 033520000-E | 305   | 80       | LF   | 15" DRAINAGE PIPE   |
| 112100000-E | 520   | 1,077    | TON  | AGGREGATE BASE COURSE                                     |
| 127500000-E | 600   | 779      | GAL  | PRIME COAT  |
| 133000000-E | 607   | 320      | SY   | INCIDENTAL MILLING  |
| 149100000-E | 610   | 540      | TON  | ASPHALT CONC BASE COURSE, TYPE B25.0C                     |
| 150300000-E | 610   | 310      | TON  | ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C             |
| 151900000-E | 610   | 360      | TON  | ASPHALT CONC SURFACE COURSE, TYPE S9.5B                   |
| 152300000-E | 610   | 530      | TON  | ASPHALT CONC SURFACE COURSE, TYPE S9.5C                   |
| 157500000-E | 620   | 95       | TON  | ASPHALT BINDER FOR PLANT MIX                              |
| 184000000-E | 665   | 2,900    | LF   | MILLED RUMBLE STRIPS (ASPHALT CONCRETE)                   |
| 228600000-N | 840   | 4        | EA   | MASONRY DRAINAGE STRUCTURES                               |
| 236700000-N | 840   | 4        | EA   | FRAME WITH TWO GRATES, STD 840.29                         |
| 255600000-E | 846   | 44       | LF   | SHOULDER BERM GUTTER                                      |

SUMMARY OF QUANTITIES - B-4816

| ItemNumber  | Sec # | Quantity | Unit | Description  |
|-------------|-------|----------|------|--|
| 303000000-E | 862   | 600      | LF   | STEEL BM GUARDRAIL   |
| 315000000-N | 862   | 5        | EA   | ADDITIONAL GUARDRAIL POSTS                                     |
| 321500000-N | 862   | 4        | EA   | GUARDRAIL ANCHOR UNITS, TYPE III                               |
| 327000000-N | SP    | 4        | EA   | GUARDRAIL ANCHOR UNITS, TYPE 350                               |
| 338000000-E | 862   | 325      | LF   | TEMPORARY STEEL BM GUARDRAIL                                   |
| 338700000-N | 862   | 4        | EA   | TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ***** (B-77)            |
| 338910000-N | SP    | 4        | EA   | TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE 350                     |
| 364900000-E | 876   | 4        | TON  | RIP RAP, CLASS B   |
| 365600000-E | 876   | 740      | SY   | GEOTEXTILE FOR DRAINAGE  |
| 407200000-E | 903   | 61       | LF   | SUPPORTS, 3-LB STEEL U-CHANNEL                                 |
| 409600000-N | 904   | 2        | EA   | SIGN ERECTION, TYPE D  |
| 415500000-N | 907   | 5        | EA   | DISPOSAL OF SIGN SYSTEM, U-CHANNEL                             |
| 440000000-E | 1110  | 194      | SF   | WORK ZONE SIGNS (STATIONARY)                                   |
| 440500000-E | 1110  | 96       | SF   | WORK ZONE SIGNS (PORTABLE)                                     |
| 441000000-E | 1110  | 36       | SF   | WORK ZONE SIGNS (BARRICADE MOUNTED)                            |
| 443000000-N | 1130  | 24       | EA   | DRUMS  |
| 443500000-N | 1135  | 30       | EA   | CONES  |
| 444500000-E | 1145  | 48       | LF   | BARRICADES (TYPE III)  |
| 445500000-N | 1150  | 180      | DAY  | FLAGGER  |
| 465000000-N | 1251  | 133      | EA   | TEMPORARY RAISED PAVEMENT MARKERS                              |
| 468500000-E | 1205  | 2,730    | LF   | THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)             |
| 468600000-E | 1205  | 2,730    | LF   | THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)            |
| 477000000-E | 1205  | 540      | LF   | COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (II) |

| ItemNumber   | Sec # | Quantity | Unit | Description  |
|--------------|-------|----------|------|--|
| 477000000-E  | 1205  | 406      | LF   | COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV) |
| 481000000-E  | 1205  | 18,170   | LF   | PAINT PAVEMENT MARKING LINES (4")                              |
| 485000000-E  | 1205  | 1,400    | LF   | REMOVAL OF PAVEMENT MARKING LINES (4")                         |
| 490000000-N  | 1251  | 17       | EA   | PERMANENT RAISED PAVEMENT MARKERS                              |
| 490500000-N  | 1253  | 2        | EA   | SNOWPLOWABLE PAVEMENT MARKERS                                  |
| 600000000-E  | 1605  | 4,700    | LF   | TEMPORARY SILT FENCE   |
| 600600000-E  | 1610  | 150      | TON  | STONE FOR EROSION CONTROL, CLASS A                             |
| 600900000-E  | 1610  | 195      | TON  | STONE FOR EROSION CONTROL, CLASS B                             |
| 601200000-E  | 1610  | 400      | TON  | SEDIMENT CONTROL STONE   |
| 601500000-E  | 1615  | 2        | ACR  | TEMPORARY MULCHING   |
| 601800000-E  | 1620  | 100      | LB   | SEED FOR TEMPORARY SEEDING                                     |
| 602100000-E  | 1620  | 0.25     | TON  | FERTILIZER FOR TEMPORARY SEEDING                               |
| 602400000-E  | 1622  | 200      | LF   | TEMPORARY SLOPE DRAINS   |
| 602900000-E  | SP    | 2,200    | LF   | SAFETY FENCE   |
| 603000000-E  | 1630  | 350      | CY   | SILT EXCAVATION  |
| 603600000-E  | 1631  | 3,000    | SY   | MATting FOR EROSION CONTROL                                    |
| 603700000-E  | SP    | 485      | SY   | COIR FIBER MAT   |
| 604200000-E  | 1632  | 1,200    | LF   | 1/4" HARDWARE CLOTH  |
| 604800000-E  | SP    | 150      | SY   | FLOATING TURBIDITY CURTAIN                                     |
| 607000000-N  | 1639  | 4        | EA   | SPECIAL STILLING BASINS  |
| 6071010000-E | SP    | 100      | LF   | WATTLE   |
| 6071020000-E | SP    | 35       | LB   | POLYACRYLAMIDE (PAM)   |
| 608400000-E  | 1660  | 2        | ACR  | SEEDING & MULCHING   |
| 608700000-E  | 1660  | 1        | ACR  | MOWING   |
| 609000000-E  | 1661  | 50       | LB   | SEED FOR REPAIR SEEDING  |
| 609300000-E  | 1661  | 0.25     | TON  | FERTILIZER FOR REPAIR SEEDING                                  |

| ItemNumber  | Sec # | Quantity | Unit | Description                   |
|-------------|-------|----------|------|-------------------------------|
| 609600000-E | 1662  | 75       | LB   | SEED FOR SUPPLEMENTAL SEEDING |
| 610800000-E | 1665  | 1.75     | TON  | FERTILIZER TOPDRESSING        |
| 611450000-N | 1667  | 10       | MHR  | SPECIALIZED HAND MOWING       |
| 611700000-N | SP    | 25       | EA   | RESPONSE FOR EROSION CONTROL  |



## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

★ APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

### ★ SUMMARY OF EARTHWORK IN CUBIC YARDS

| STATION                                  | STATION  | UNCLASSIFIED EXCAVATION | UNDERCUT | EMBT +% | BORROW | WASTE |
|--|----------|-------------------------|----------|---------|--------|-------|
| -DET-                                    |          |                         |          |         |        |       |
| 10+50.00                                 | 15+08.00 | 43                      | 0        | 2,885   | 2,842  | 0     |
| 16+03.00                                 | 21+00.00 | 19                      | 0        | 3,363   | 3,344  | 0     |
| SUBTOTAL                                 |          | 62                      | 0        | 6,248   | 6,186  | 0     |
| -L-                                      |          |                         |          |         |        |       |
| 10+50.00                                 | 15+47.00 | 64                      | 0        | 670     | 606    | 0     |
| 16+82.00                                 | 21+50.00 | 47                      | 0        | 703     | 656    | 0     |
| SUBTOTAL                                 |          | 111                     | 0        | 1,373   | 1,262  | 0     |
| SHOULDER MATERIAL                        |          | 0                       | 0        | 350     | 350    | 0     |
| SUBTOTAL                                 |          | 0                       | 0        | 350     | 350    | 0     |
| DETOUR REMOVAL                           |          |                         |          |         |        |       |
| 11+00.00                                 | 15+08.00 | 2,576                   | 0        | 0       | 0      | 2,576 |
| 16+03.00                                 | 21+00.00 | 3,073                   | 0        | 0       | 0      | 3,073 |
| SUBTOTAL                                 |          | 5,649                   | 0        | 0       | 0      | 5,649 |
| PROJECT TOTALS                           |          | 5,822                   | 0        | 7,970   | 7,797  | 5,649 |
| EST. 5% TO REPLACE TOPSOIL ON BORROW PIT |          |                         |          |         | 390    |       |
| GRAND TOTALS                             |          | 5,822                   |          | 7,970   | 8,187  | 5,649 |
| SAY                                      |          | 6,000                   |          |         | 8,300  |       |

### ★ ASPHALT PAVEMENT REMOVAL SUMMARY IN SQUARE YARDS

| LINE  | STATION TO STATION   | LOCATION | REMOVAL  |
|-------|----------------------|----------|----------|
| -L-   | 13+50.00 TO 15+90.64 | CL       | 694.80   |
| -L-   | 16+35.59 TO 18+50.00 | CL       | 613.77   |
| -DET- | 11+21.36 TO 15+08.00 | CL       | 827.94   |
| -DET- | 16+03.00 TO 20+87.58 | CL       | 1,147.68 |
| TOTAL |                      |          | 3,284.19 |
| SAY   |                      |          | 3,300    |

### SUMMARY OF SHOULDER BERM GUTTER

| LINE  | STATION TO STATION   | LOCATION | FT |
|-------|----------------------|----------|----|
| -L-   | 14+92.00 TO 15+03.00 | RT       | 11 |
| -L-   | 15+32.00 TO 15+43.00 | LT       | 11 |
| -L-   | 16+86.00 TO 16+97.00 | RT       | 11 |
| -L-   | 17+26.00 TO 17+37.00 | LT       | 11 |
| TOTAL |                      |          | 44 |
| SAY   |                      |          | 44 |

ESTIMATED UNDERCUT = 300 CY

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

"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.

## GUARDRAIL SUMMARY

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

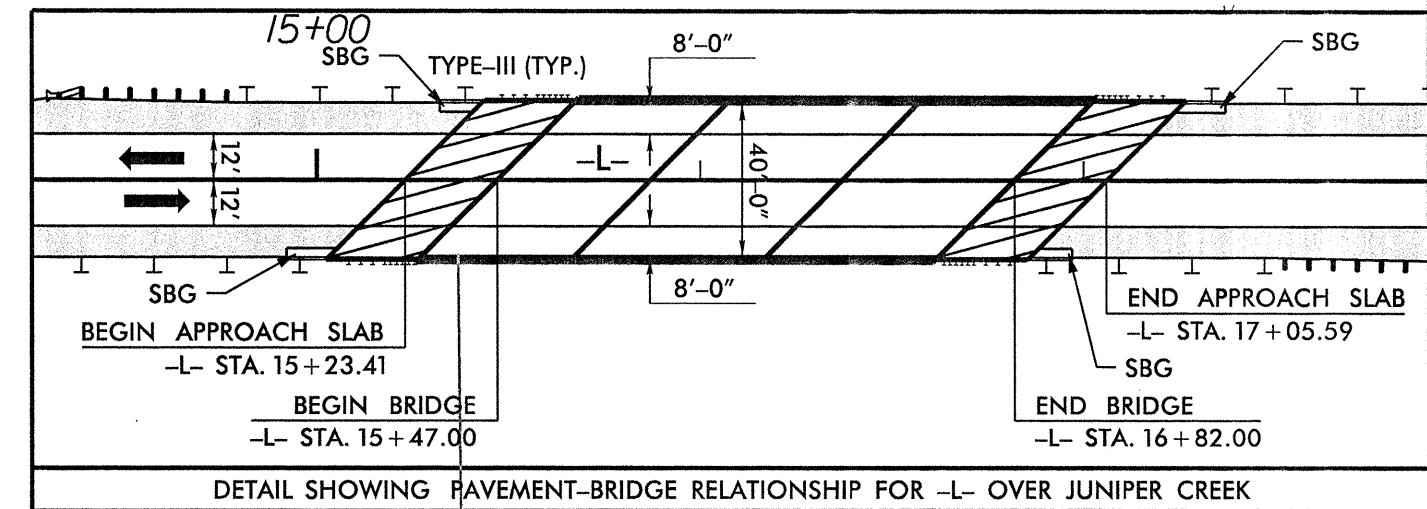
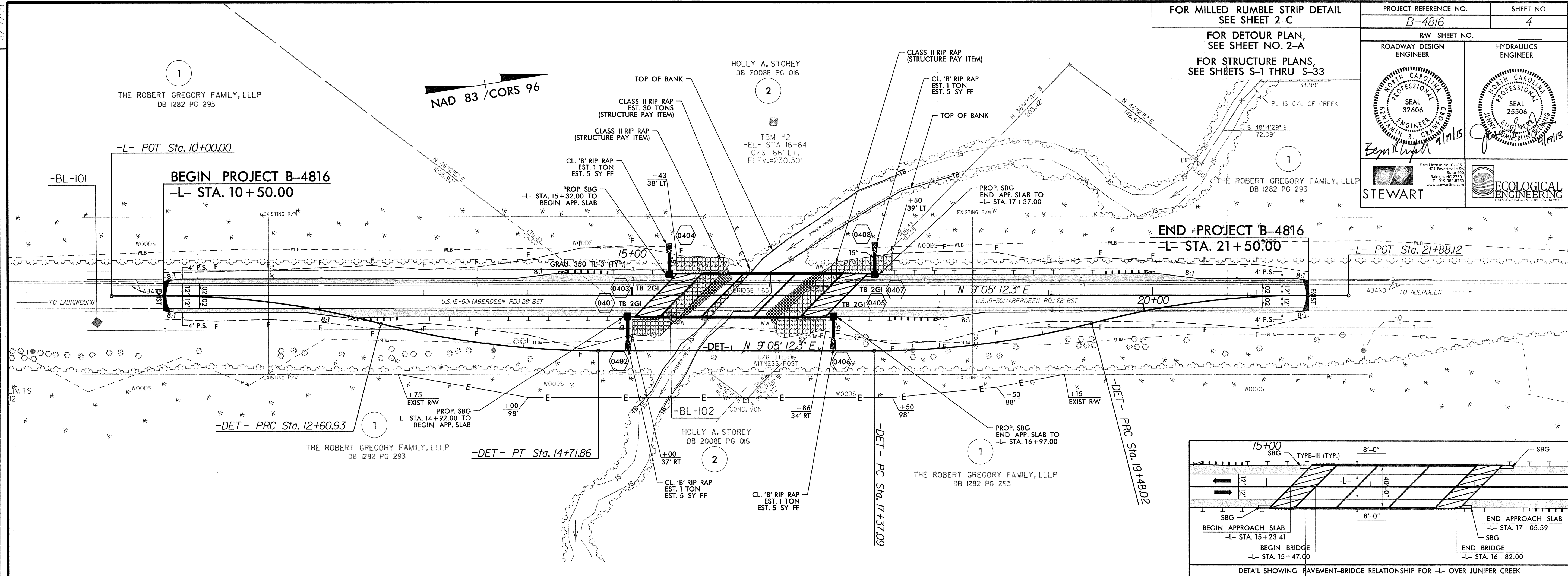
| SURVEY LINE                  | BEG. STA.       | END STA.        | LOCATION | LENGTH   |                    |             | WARRANT POINT                  |              | "N" DIST. FROM E.O.L. | TOTAL SHOUL. WIDTH | FLARE LENGTH |              | W            |              | ANCHORS |          |      |                |                    | REMARKS |  |  |  |  |
|------------------------------|-----------------|-----------------|----------|----------|--------------------|-------------|--------------------------------|--------------|-----------------------|--------------------|--------------|--------------|--------------|--------------|---------|----------|------|----------------|--------------------|---------|--|--|--|--|
|                              |                 |                 |          | STRAIGHT | TEMPORARY STRAIGHT | SHOP CURVED | APPROACH END                   | TRAILING END |                       |                    | APPROACH END | TRAILING END | APPROACH END | TRAILING END | III     | GRAU 350 | AT-1 | TEMPORARY B-77 | TEMPORARY GRAU 350 |         |  |  |  |  |
| -L-                          | 14+29.50        | BRIDGE 15+67.00 | LT.      | 137.50'  |                    |             |                                | 15+67.00     | 8'-0"                 | 11'                |              | 50'          |              | 1'           | 1       | 1        |      |                |                    |         |  |  |  |  |
| -L-                          | BRIDGE 17+02.00 | 20+02.00        | LT.      | 300.00'  |                    |             |                                | 17+02.00     | 8'-0"                 | 11'                | 50'          |              | 1'           | 1            | 1       |          |      |                |                    |         |  |  |  |  |
| -L-                          | 12+27.00        | BRIDGE 15+27.00 | RT.      | 300.00'  |                    |             |                                | 15+27.00     | 8'-0"                 | 11'                | 50'          |              | 1'           | 1            | 1       |          |      |                |                    |         |  | TEMP. GRAU-350 NEEDED DURING -DET- REMOVAL |  |  |
| -L-                          | BRIDGE 16+62.00 | 17+99.50        | RT.      | 137.50'  |                    |             |                                | 16+62.00     | 8'-0"                 | 11'                |              | 50'          |              | 1'           | 1       | 1        |      |                |                    |         |  |  |  |  |
| -DET-                        | 14+20.50        | BRIDGE 15+08.00 | LT.      |          | 87.50'             |             |                                | 15+08.00     | 2'                    | VARIES             |              | 68.75'       |              | 1.375'       |         |          |      | 1              | 1                  |         |  |  |  |  |
| -DET-                        | BRIDGE 16+03.00 | 18+15.50        | LT.      |          | 212.50'            |             |                                | 16+03.00     | 2'                    | VARIES             | 193.75'      |              | 3.875'       |              |         |          |      | 1              | 1                  |         |  |  |  |  |
| -DET-                        | 12+95.50        | BRIDGE 15+08.00 | RT.      |          | 212.50'            |             |                                | 15+08.00     | 2'                    | VARIES             | 193.75       |              | 3.875'       |              |         |          |      | 1              | 1                  |         |  |  |  |  |
| -DET-                        | BRIDGE 16+03.00 | 16+90.50        | RT.      |          | 87.50'             |             |                                | 16+03.00     | 2'                    | VARIES             |              | 68.75        |              | 1.375'       |         |          |      | 1              | 1                  |         |  |  |  |  |
| SUBTOTAL                     |                 |                 |          | 875.00'  | 600.00'            |             | DEDUCTION FOR ANCHOR UNITS :   |              |                       |                    |              |              |              |              |         |          |      |                |                    |         |  |  |  |  |
| LESS ANCHOR UNITS            |                 |                 |          | -275.00' | -275.00'           |             | PERMANENT:                     |              |                       |                    |              |              |              |              |         |          |      |                |                    |         |  |  |  |  |
| TOTAL                        |                 |                 |          | 600.00'  | 325.00'            |             | III: 4 @ 18.75' = 75.00'       |              |                       |                    |              |              |              |              |         |          |      |                |                    |         |  |  |  |  |
| SAY                          |                 |                 |          | 600.00'  | 325.00'            |             | GRAU-350: 4 @ 50.00' = 200.00' |              |                       |                    |              |              |              |              |         |          |      |                |                    |         |  |  |  |  |
| TOTAL                        |                 |                 |          |          |                    |             | TOTAL = 275.00'                |              |                       |                    |              |              |              |              |         |          |      |                |                    |         |  |  |  |  |
| SAY                          |                 |                 |          |          |                    |             | TEMPORARY:                     |              |                       |                    |              |              |              |              |         |          |      |                |                    |         |  |  |  |  |
| TOTAL                        |                 |                 |          |          |                    |             | B-77: 4 @ 18.75' = 75.00'      |              |                       |                    |              |              |              |              |         |          |      |                |                    |         |  |  |  |  |
| SAY                          |                 |                 |          |          |                    |             | GRAU-350: 4 @ 50.00' = 200.00' |              |                       |                    |              |              |              |              |         |          |      |                |                    |         |  |  |  |  |
| TOTAL                        |                 |                 |          |          |                    |             | TOTAL = 275.00'                |              |                       |                    |              |              |              |              |         |          |      |                |                    |         |  |  |  |  |
| 5 ADDITIONAL GUARDRAIL POSTS |                 |                 |          |          |                    |             |                                |              |                       |                    |              |              |              |              |         |          |      |                |                    |         |  |  |  |  |

6/21/00  
9/20/2013  
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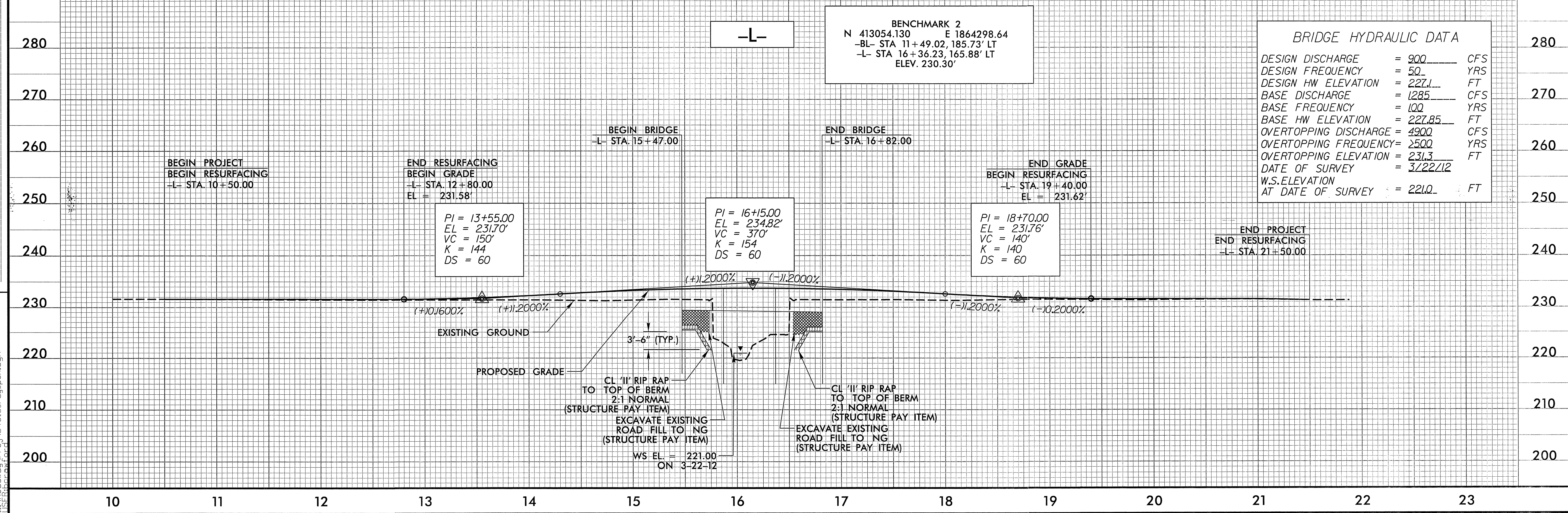
8/17/99

FOR MILLED RUMBLE STRIP DETAIL  
SEE SHEET 2-C  
FOR DETOUR PLAN,  
SEE SHEET NO. 2-A  
FOR STRUCTURE PLANS,  
SEE SHEETS S-1 THRU S-33

|                                 |  |                        |  |
|---------------------------------|--|------------------------|--|
| PROJECT REFERENCE NO.<br>B-4816 |  | SHEET NO.<br>4         |  |
| RW SHEET NO.                    |  | HYDRAULICS ENGINEER    |  |
| ROADWAY DESIGN ENGINEER         |  | ENGINEER               |  |
|                                 |  |                        |  |
| STEWART ENGINEERING, INC.       |  | ECOLOGICAL ENGINEERING |  |



REVISIONS



**BENCHMARK 2**  
 N 413054.130 E 1864298.64  
 -BL- STA 11+49.02, 185.73' LT  
 -L- STA 16+36.23, 165.88' LT  
 ELEV. 230.30'

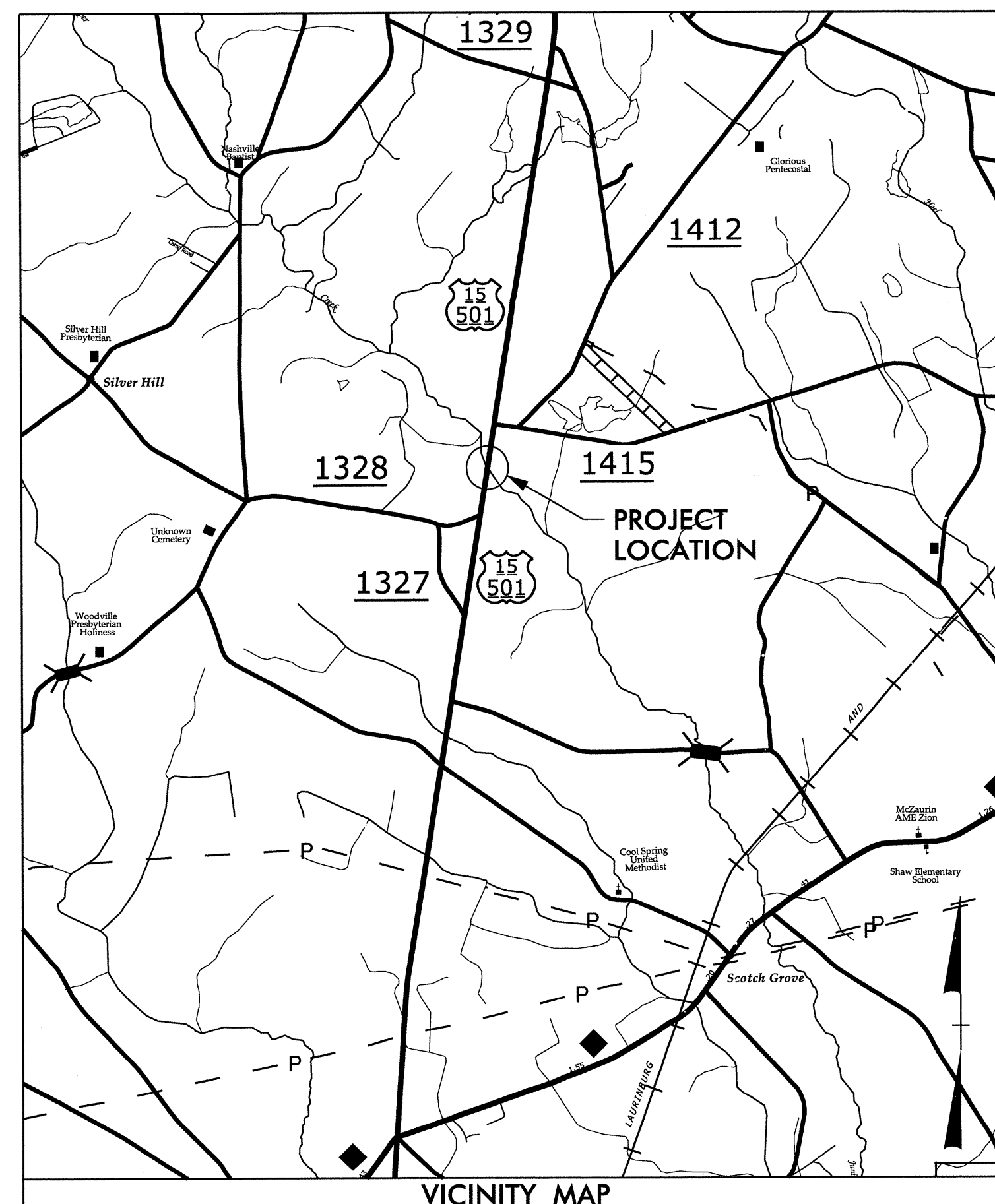
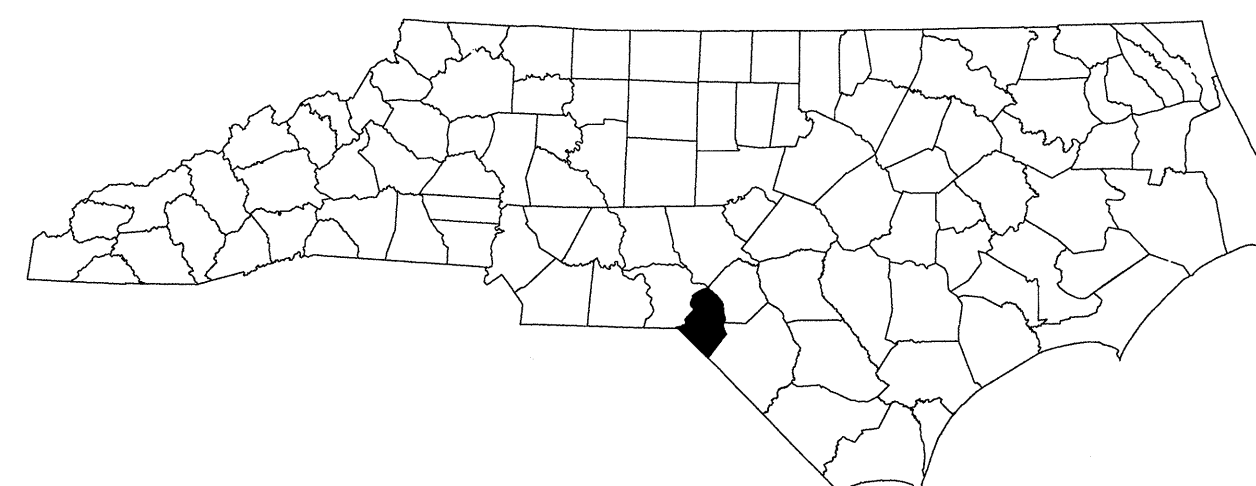
| BRIDGE HYDRAULIC DATA            |             |
|----------------------------------|-------------|
| DESIGN DISCHARGE                 | = 900 CFS   |
| DESIGN FREQUENCY                 | = 50 YRS    |
| DESIGN HW ELEVATION              | = 227.1 FT  |
| BASE DISCHARGE                   | = 1285 CFS  |
| BASE FREQUENCY                   | = 100 YRS   |
| BASE HW ELEVATION                | = 227.85 FT |
| OVERTOPPING DISCHARGE            | = 4900 CFS  |
| OVERTOPPING FREQUENCY            | = 2500 YRS  |
| OVERTOPPING ELEVATION            | = 231.3 FT  |
| DATE OF SURVEY                   | = 3/22/12   |
| W.S. ELEVATION AT DATE OF SURVEY | = 221.0 FT  |

9/19/2013  
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**SCOTLAND COUNTY**



**INDEX OF SHEETS**

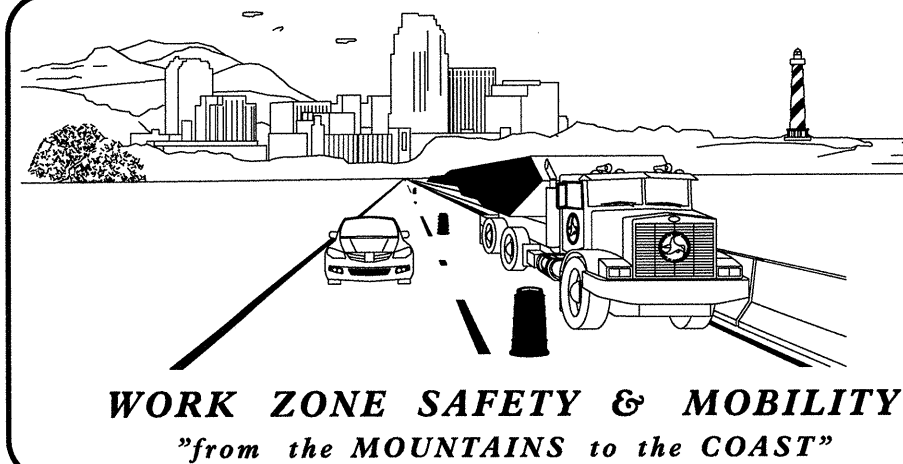
| SHEET NO. | TITLE  |
|-----------|--|
| TMP-1     | TITLE SHEET, AND INDEX OF SHEETS   |
| TMP-1A    | LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING |
| TMP-1B    | TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, AND GENERAL NOTES)           |
| TMP-2     | TEMPORARY TRAFFIC CONTROL PHASING  |
| TMP-3     | TEMPORARY TRAFFIC CONTROL PHASE I DETAIL   |
| TMP-4     | TEMPORARY TRAFFIC CONTROL PHASE II DETAIL  |
| TMP-5     | TEMPORARY TRAFFIC CONTROL PHASE III DETAIL   |
| TMP-6     | BICYCLE DETOUR DETAIL  |

SHEET NO.

TMP-1

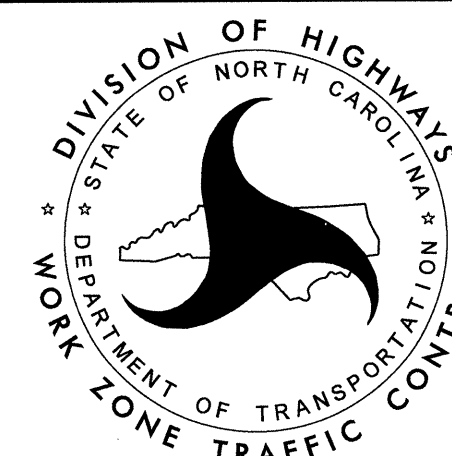
**B-4816**

**TIP PROJECT:**



**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561  
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)  
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER  
J. ISHAK, P.E. TRAFFIC CONTROL PROJECT ENGINEER  
B. SCHOENBAUER, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER  
TRAFFIC CONTROL DESIGN ENGINEER

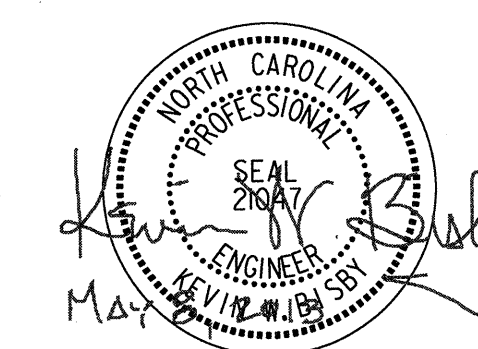


PLANS PREPARED BY :

**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_

SEAL



5/8/2013  
B4816-TIP - TSH.dgn  
KDISDY







## 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:

| <u>STD. NO.</u> | <u>TITLE</u>   |
|-----------------|--|
| 1101.01         | WORK ZONE WARNING SIGNS                                  |
| 1101.02         | TEMPORARY LANE CLOSURES                                  |
| 1101.03         | TEMPORARY ROAD CLOSURES                                  |
| 1101.04         | TEMPORARY SHOULDER CLOSURES                              |
| 1101.05         | WORK ZONE VEHICLE ACCESSES                               |
| 1101.11         | TRAFFIC CONTROL DESIGN TABLES                            |
| 1110.01         | STATIONARY WORK ZONE SIGNS                               |
| 1110.02         | PORTABLE WORK ZONE SIGNS                                 |
| 1130.01         | DRUMS  |
| 1135.01         | CONES  |
| 1145.01         | BARRICADES   |
| 1150.01         | FLAGGING DEVICES   |
| 1205.01         | PAVEMENT MARKINGS - LINE TYPES AND OFFSETS               |
| 1205.02         | PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS      |
| 1205.12         | PAVEMENT MARKINGS - BRIDGES                              |
| 1250.01         | RAISED PAVEMENT MARKERS - INSTALLATION SPACING           |
| 1251.01         | RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)      |
| 1261.01         | GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING |
| 1261.02         | GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING   |
| 1262.01         | GUARDRAIL END DELINEATION                                |
| 1264.01         | OBJECT MARKERS - TYPES                                   |
| 1264.02         | OBJECT MARKERS - INSTALLATION                            |

## LEGEND

### GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  TEMP. SHORING (LOCATION PURPOSES ONLY)

 WORK AREA

 REMOVAL












### TEMPORARY PAVEMENT MARKING

- PA PAINT (4" WHITE EDGELINE)
- PF PAINT (4" X 10' YELLOW SKIP LINE)
- PI PAINT (4" DOUBLE YELLOW CENTERLINE)
- MH TEMPORARY RAISED PAVEMENT MARKERS (YELLOW/YELLOW)




### COLD APPLIED PLASTIC TYPE 4- REMOVABLE TAPE

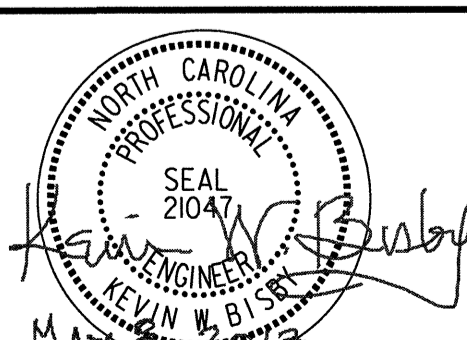
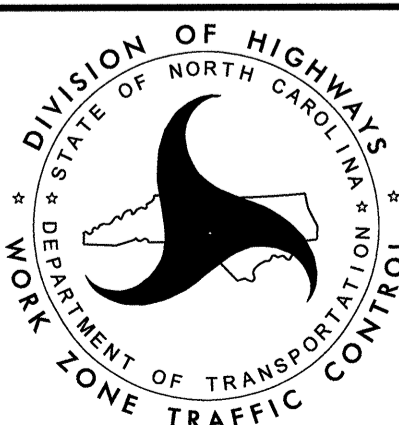
- CA WHITE EDGELINE, 4"
- CF YELLOW SKIP LINE, 4" X 10'

### TRAFFIC CONTROL DEVICES

-  BARRICADE (TYPE III)
-  CONE
-  DRUM     SKINNY DRUM     TUBULAR MARKER
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW BOARD
-  FLAGGER
-  LAW ENFORCEMENT
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  CHANGEABLE MESSAGE SIGN

### TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

|   |  |   |   |  |
|---|--|---|---|--|
| <p style="text-align: center;"><b>PLANS PREPARED BY :</b></p> <p style="text-align: center;"><b><i>RK&amp;K</i></b></p> <p style="text-align: center; font-size: small;">RUMMEL, KLEPPER &amp; KAHL, LLP<br/>900 RIDGEFIELD DRIVE SUITE 350<br/>RALEIGH, NORTH CAROLINA 27609-3960<br/>NC LICENSE NO. F-0112 • (919) 878-9560</p> | <p style="text-align: center;">APPROVED: _____ DATE: _____</p> | <p style="text-align: center;">SEAL</p>  |  | <p><b>ROADWAY STANDARD<br/>DRAWINGS &amp; LEGEND</b></p> |
|---|--|---|---|--|



## MANAGEMENT STRATEGIES

- CONSTRUCT THE DETOUR STRUCTURE AND APPROACHES USING LANE CLOSURES AS REQUIRED.
- PLACE PAVEMENT MARKINGS AND SHIFT US 15-501 TRAFFIC ONTO THE DETOUR.
- CONSTRUCT THE PROPOSED STRUCTURE AND APPROACHES AWAY FROM TRAFFIC.
- USING LANE CLOSURES TIE IN THE PROPOSED PAVEMENT, AND SHIFT US 15-501 TRAFFIC INTO THE FINAL PATTERN.
- REMOVE THE DETOUR STRUCTURE AND APPROACHES AWAY FROM TRAFFIC.
- PLACE THE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS.

## 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.

### TIME RESTRICTIONS

- A. DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

| ROAD NAME               | DAY AND TIME RESTRICTIONS   |
|-------------------------|---|
| US 15-501 (ABERDEEN RD) | MONDAY THROUGH FRIDAY<br>6:00 AM TO 9:00 AM<br>4:00 PM TO 7:00 PM |

- B. DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME  
US 15-501 (ABERDEEN RD)

HOLIDAY

- 1) FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- 2) FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31<sup>ST</sup> TO 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
- 3) FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 7:00 P.M. TUESDAY.
- 4) FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
- 5) FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.

7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
9. FOR THE US OPEN GOLF TOURNAMENTS, BETWEEN THE HOURS OF 6:00 A.M. JUNE 9, 2014 TO 7:00 P.M. JUNE 23, 2014.

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- C. REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- D. WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- E. WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- F. WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAFFIC OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- G. DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

### PAVEMENT EDGE DROP OFF REQUIREMENTS

- H. BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

- I. DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) (LENGTH) IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

### SIGNING

- J. INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

### TRAFFIC CONTROL DEVICES

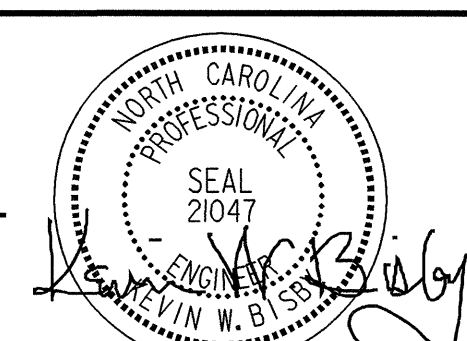
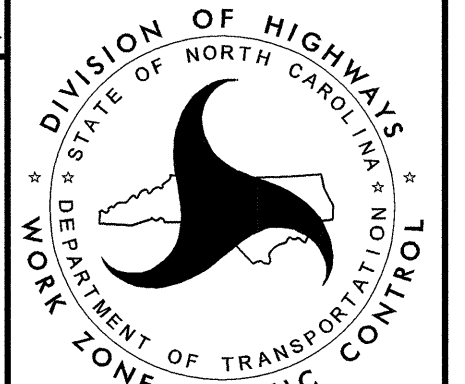
- K. SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADIUS, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- L. PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

### PAVEMENT MARKINGS AND MARKERS

- M. INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.
- N. INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

| ROAD NAME                             | MARKING                                      | MARKER |
|---------------------------------------|--|--------|
| US 15-501 (ABERDEEN RD)               | PAINT  | RAISED |
| PROPOSED STRUCTURE AND APPROACH SLABS | COLD APPLIED PLASTIC TYPE 4 - REMOVABLE TAPE | RAISED |

- O. INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE.
- P. PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- Q. TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- R. REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

|   |   |  |  |
|---|---|--|--|
| <p>PLANS PREPARED BY :</p> <p style="font-size: 2em; font-weight: bold; text-align: center;">RK&amp;K</p> <p style="font-size: 0.8em;">RUMMEL, KLEPPER &amp; KAHL, LLP<br/>900 RIDGEFIELD DRIVE SUITE 350<br/>RALEIGH, NORTH CAROLINA 27609-3960<br/>NC LICENSE NO. F-0112 • (919) 878-9560</p> | <p>APPROVED: _____ DATE: _____</p> <div style="text-align: center;">  <p>SEAL</p> </div> | <div style="text-align: center;">  </div> | <h2 style="margin: 0;">TRANSPORTATION<br/>OPERATIONS PLAN</h2> |
|---|---|--|--|

## TRAFFIC CONTROL PHASING

### PHASE I

STEP 1:  
ERECT ADVANCED WORK ZONE SIGNS ON US 15-501 IN ACCORDANCE WITH RDWY STD 1101.01 SHEET 3. ERECT BICYCLE DETOUR SIGNING AND IMPLEMENT. (SEE TMP-6)

STEP 2:  
USING RDWY STD 1101.02 SHEET 1, CONSTRUCT THE DETOUR STRUCTURE AND APPROACHES FROM, -DET- STA 10+97 TO STA 21+04 UP TO THE EDGE AND ELEVATION OF THE EXISTING PAVEMENT. (SEE TMP-3)

### PHASE II

NOTE:  
COMPLETE THE WORK REQUIRED IN PHASE II, STEP 1 IN A CONTINUOUS OPERATION.

STEP 1:  
USING RDWY STD 1101.02 SHEET 1 (ALTERNATING LANE CLOSURES), AND RDWY STD 1101.03 SHEET 3, PLACE PAVEMENT MARKINGS AND SHIFT US 15-501 TRAFFIC ONTO THE DETOUR. (SEE TMP-4)

STEP 2:  
CONSTRUCT THE PROPOSED STRUCTURE AND APPROACHES FROM -L- STA 10+50 TO STA 21+50 EXCLUDING THE FINAL LAYER OF SURFACE COURSE. (SEE TMP-4)

### PHASE III

NOTE:  
COMPLETE THE WORK REQUIRED IN PHASE III, STEP 1 IN A CONTINUOUS OPERATION.

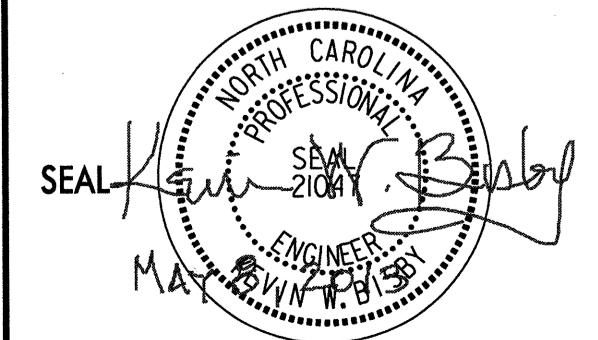
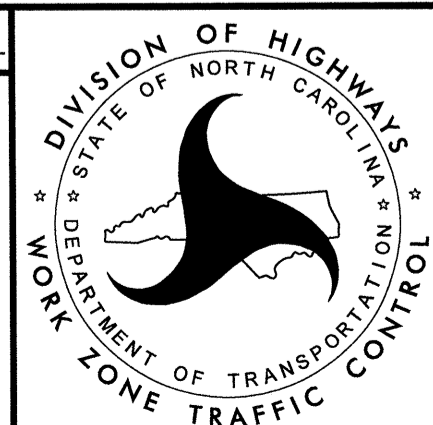
STEP 1:  
USING RDWY STD 1101.02 SHEET 1 (ALTERNATING LANE CLOSURES), PAVE US 15-501 EXCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -L- STA 10+50 TO STA 12+64 AND -L- STA 19+36 TO STA 21+50; PLACE PAVEMENT MARKINGS; AND SHIFT US 15-501 TRAFFIC INTO THE FINAL PATTERN. (SEE TMP-5)

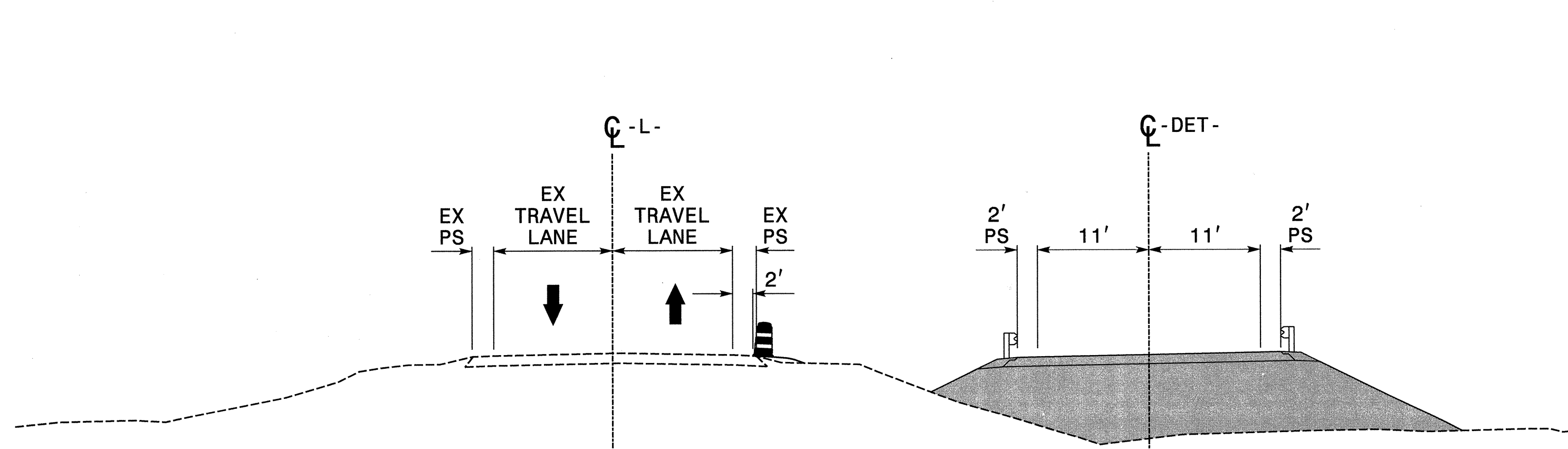
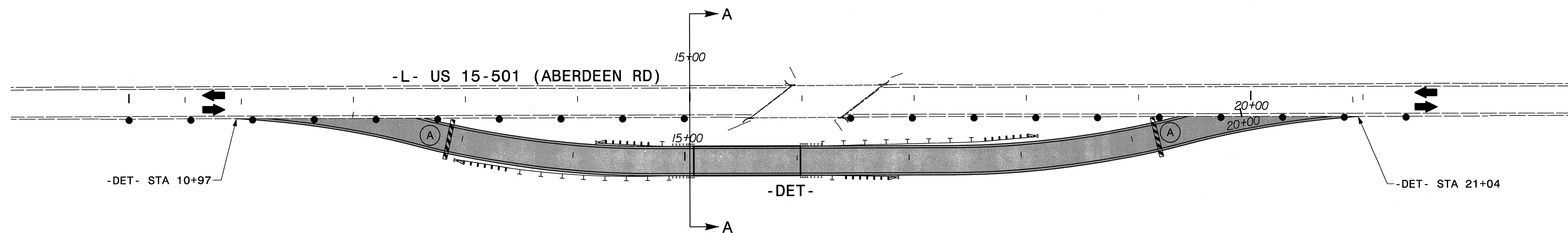
STEP 2:  
USING RDWY STD 1101.02 SHEET 1, REMOVE THE DETOUR STRUCTURE, APPROACHES, AND CONSTRUCT REMAINING SHOULDER. (SEE TMP-5)

STEP 3:  
USING RDWY STD 1101.02 SHEET 1 (ALTERNATING LANE CLOSURES), PLACE THE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS FROM -L- STA 10+50 TO STA 21+50. (SEE FINAL PAVEMENT MARKING PLAN)

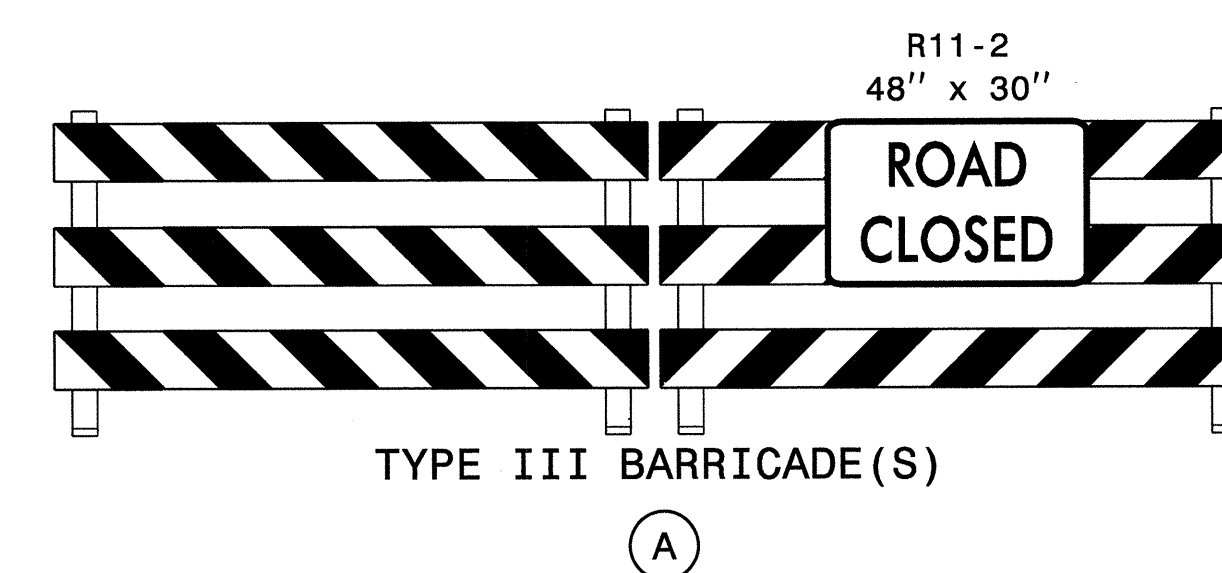
STEP 4:  
REMOVE THE BICYCLE DETOUR SIGNING, AND ALL OTHER REMAINING TRAFFIC CONTROL DEVICES.

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KPL/SDY

|   |  |   |   |
|---|--|---|---|
| <p>PLANS PREPARED BY :</p> <p style="font-size: 24pt; font-weight: bold; margin: 0;"><b>RK&amp;K</b></p> <p style="font-size: 8pt; margin: 0;">RUMMEL, KLEPPER &amp; KAHL, LLP<br/>900 RIDGEFIELD DRIVE SUITE 350<br/>RALEIGH, NORTH CAROLINA 27609-3960<br/>NC LICENSE NO. F-0112 • (919) 878-9560</p> | <p>APPROVED: _____ DATE: _____</p> <div style="text-align: center;">  <p>SEAL <i>Shawn P. Hines</i><br/>MAY 2014</p> </div> | <div style="text-align: center;">  <p>DIVISION OF HIGHWAYS<br/>STATE OF NORTH CAROLINA<br/>DEPARTMENT OF TRANSPORTATION<br/>WORK ZONE TRAFFIC CONTROL</p> </div> | <h2 style="margin: 0;">TRAFFIC CONTROL PHASING</h2> |
|---|--|---|---|

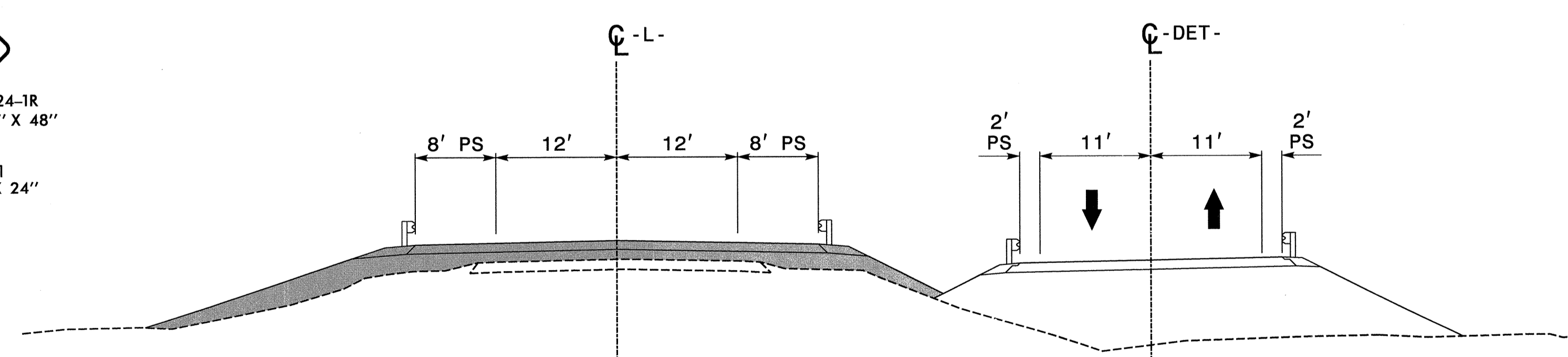
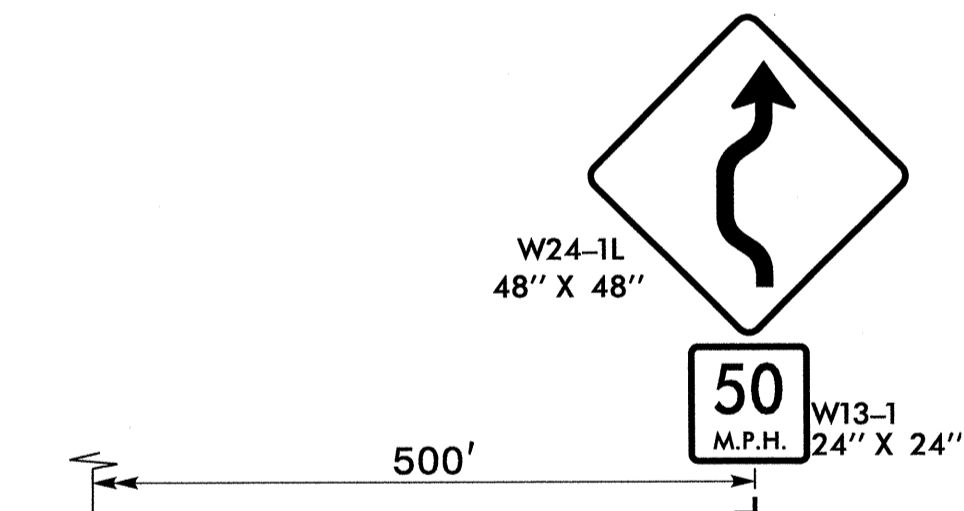
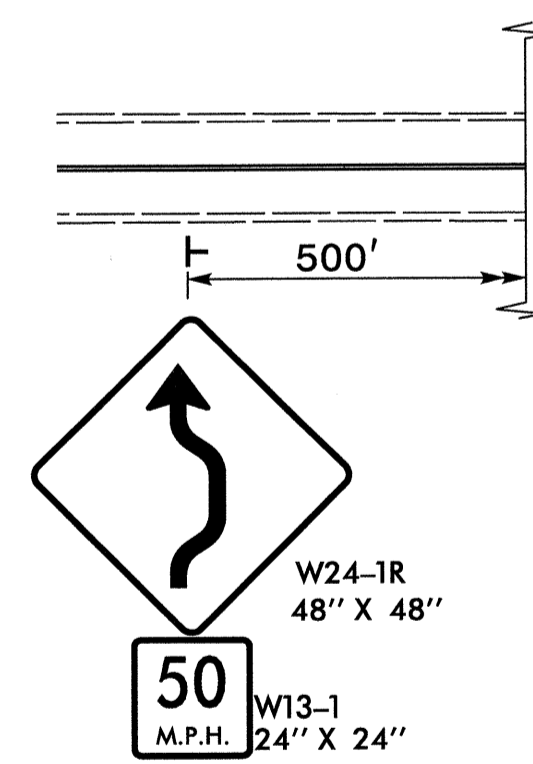
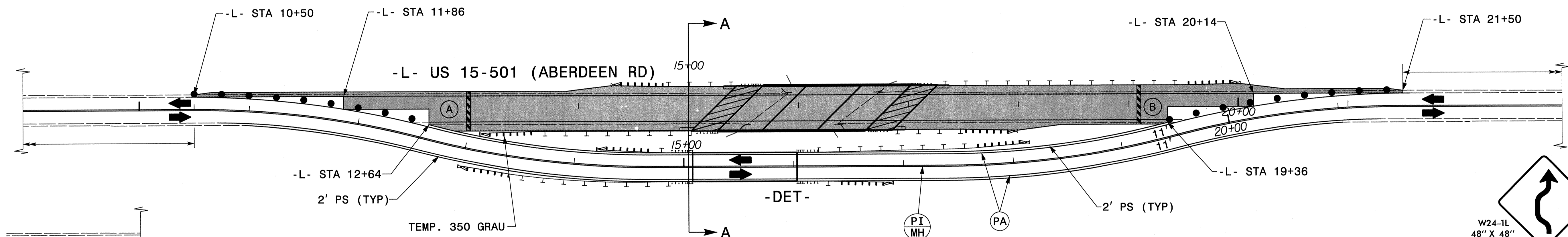
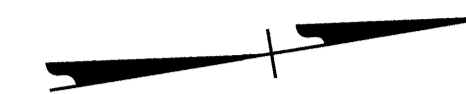
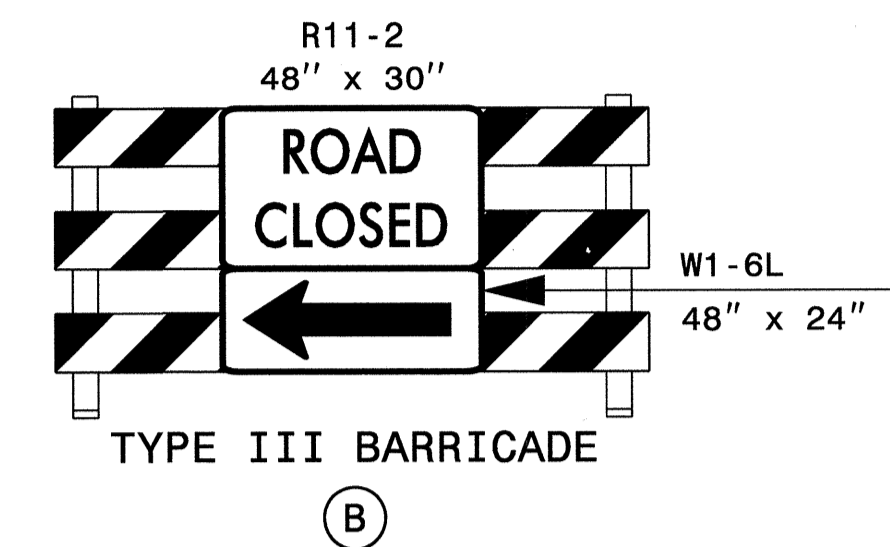
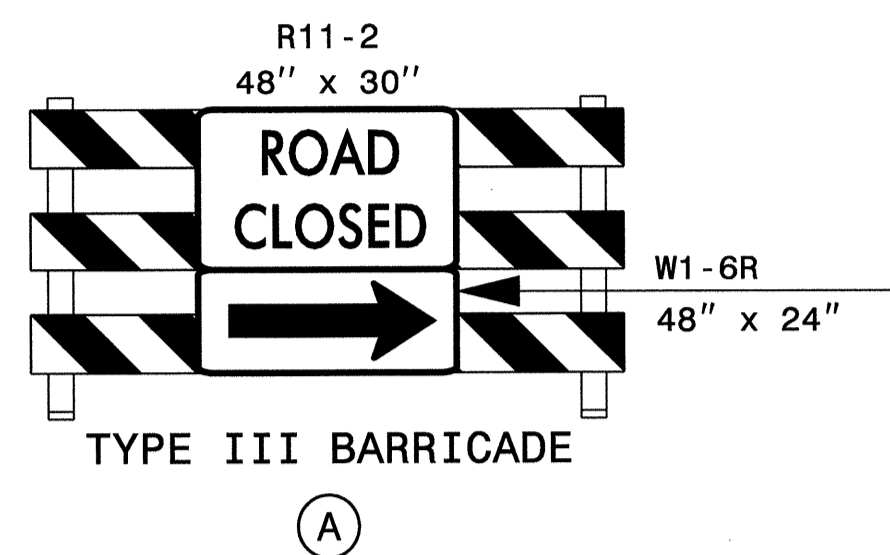


SECTION A-A



5/8/2013  
 B4816\_T03\_PL\_PSH.dgn  
 kbisby

|  |  |         |                               |
|--|--|---------|-------------------------------|
| <p>PLANS PREPARED BY :</p> <p><b>RK&amp;K</b></p> <p>RUMMEL, KLEPPER &amp; KAHL, LLP<br/>         900 RIDGEFIELD DRIVE SUITE 350<br/>         RALEIGH, NORTH CAROLINA 27609-3960<br/>         NC LICENSE NO. F-0112 • (919) 878-9560</p> | <p>APPROVED: _____ DATE: _____</p> <p>SEAL: </p> | <p></p> | <p>PHASE I DETAIL DRAWING</p> |
|--|--|---------|-------------------------------|

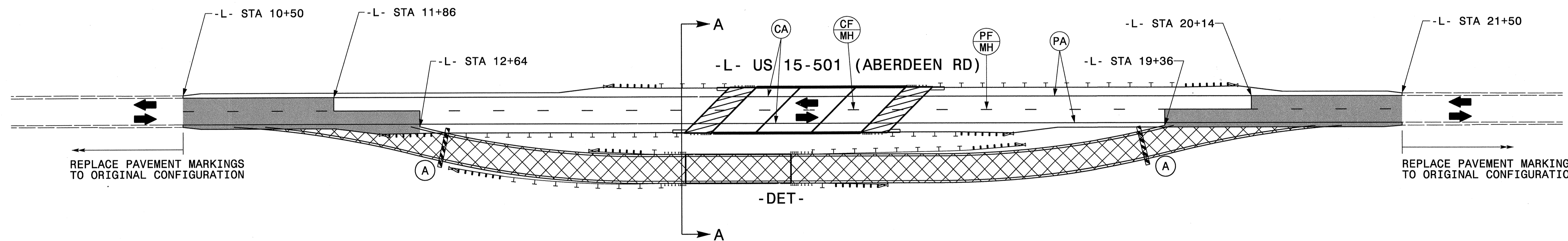


NOTE:  
REFER TO RDWY STD 1101.03 SHEET 3  
FOR ADDITIONAL SIGNING AND TRAFFIC  
CONTROL DEVICES.

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ARCH McLEAN RD

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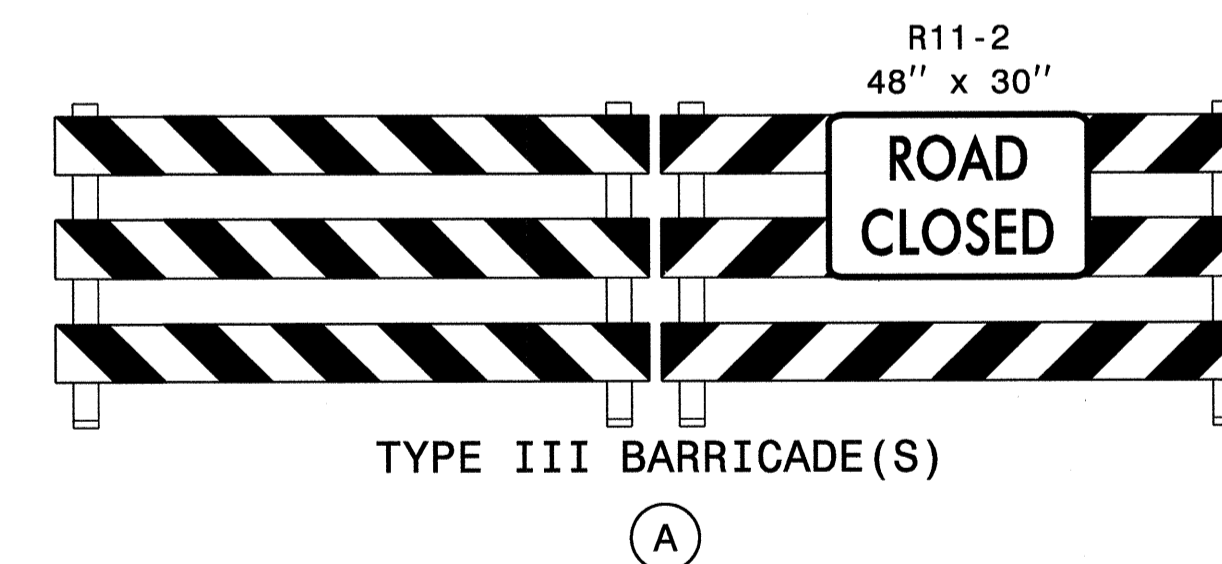
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| <b>PLANS PREPARED BY :</b><br><br><b>RUMMEL, KLEPPER &amp; KAHL, LLP</b><br>900 RIDGEFIELD DRIVE SUITE 350<br>RALEIGH, NORTH CAROLINA 27609-3960<br>NC LICENSE NO. F-0112 • (919) 878-9560 | APPROVED: _____ DATE: _____<br> |  | <b>PHASE II DETAIL DRAWING</b> |
|  | SEAL:                           |  |                                |



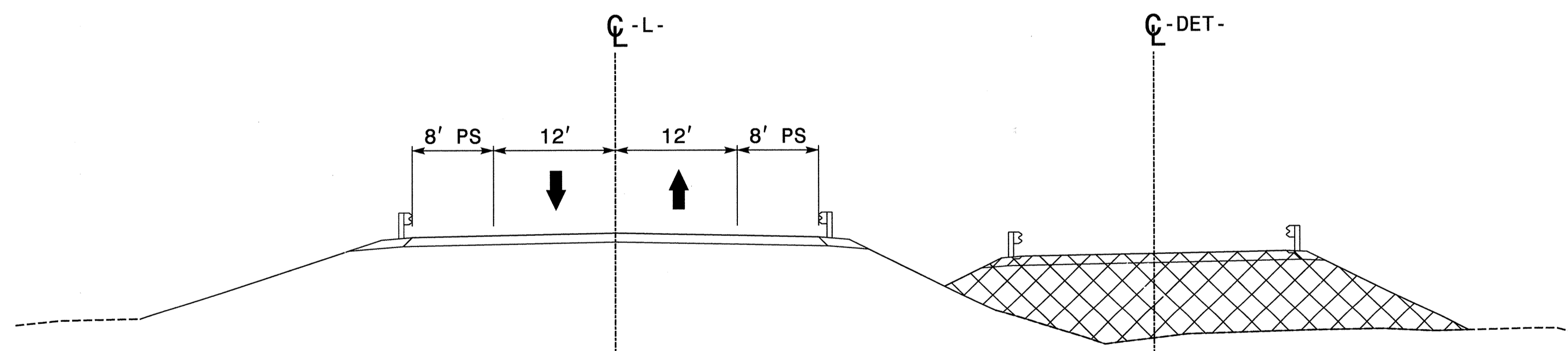
REPLACE PAVEMENT MARKINGS TO ORIGINAL CONFIGURATION

REPLACE PAVEMENT MARKINGS TO ORIGINAL CONFIGURATION

-DET-

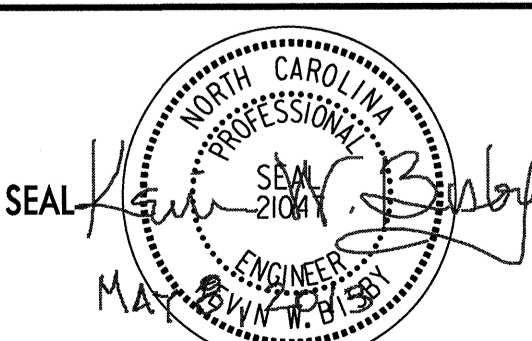
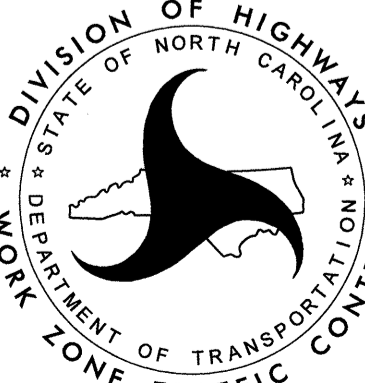


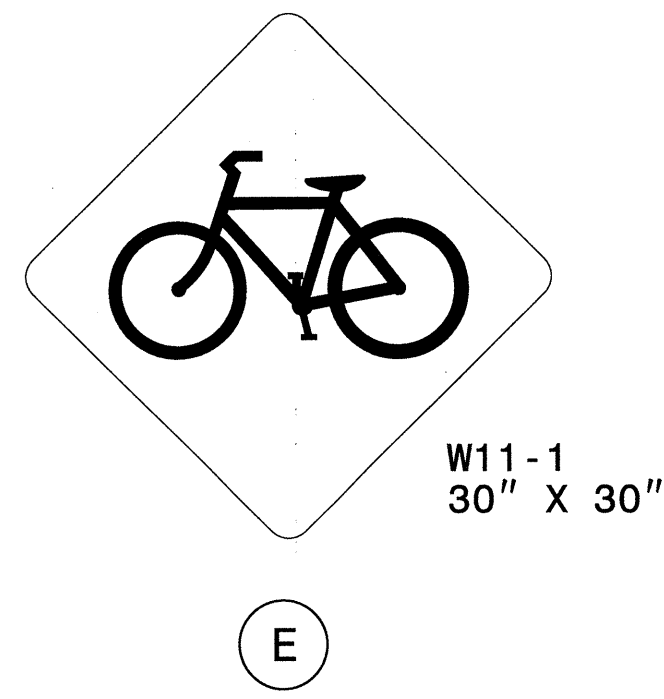
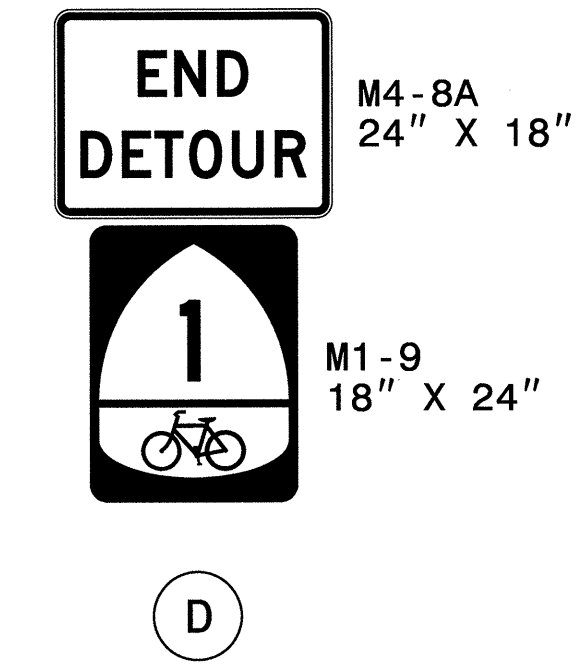
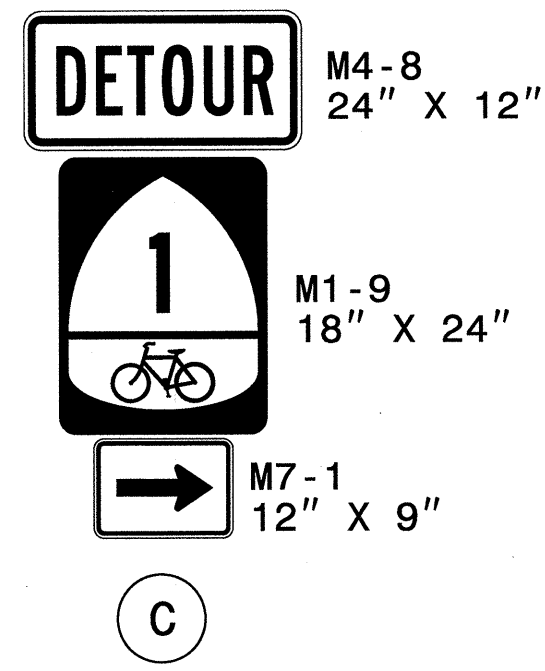
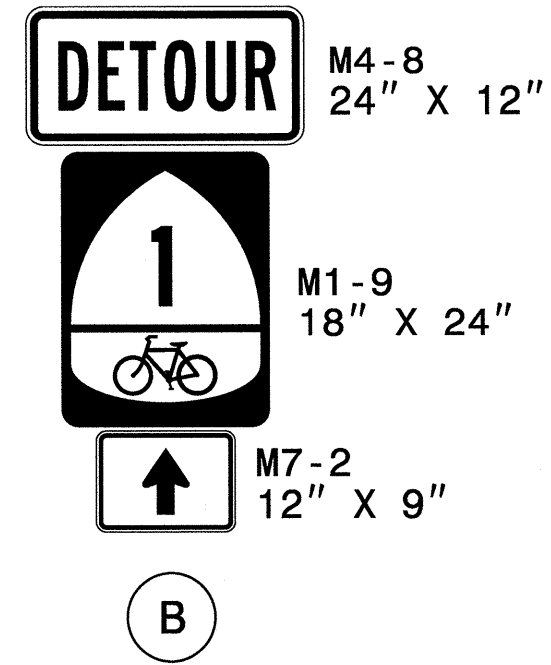
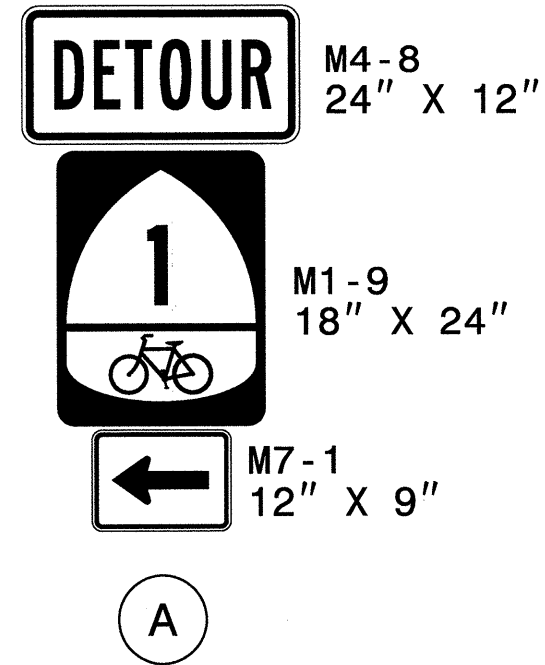
TYPE III BARRICADE(S)



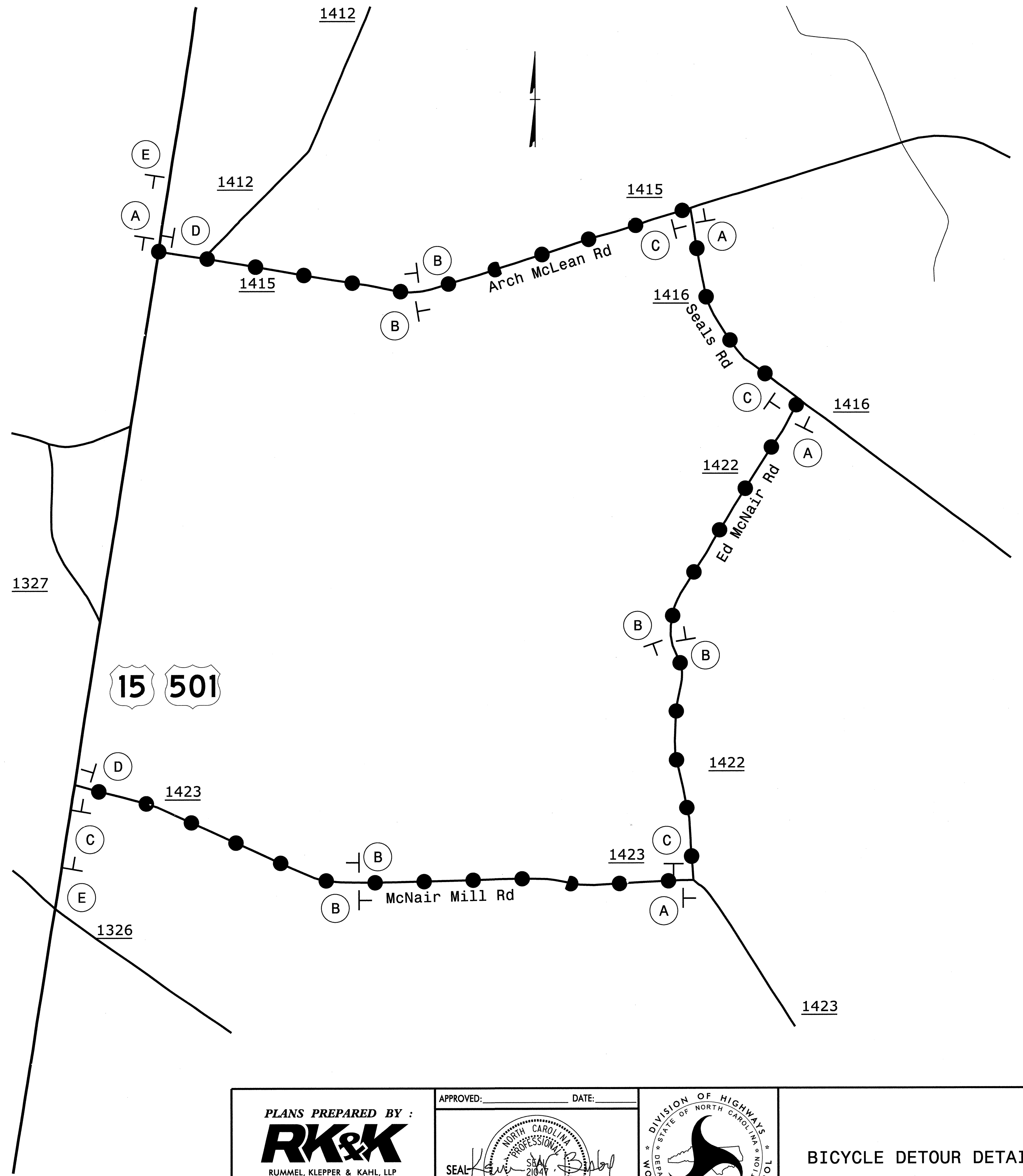
SECTION A-A

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|  |  |  |                                 |
|--|--|--|---------------------------------|
| <p>PLANS PREPARED BY :</p> <p><b>RK&amp;K</b></p> <p>RUMMEL, KLEPPER &amp; KAHL, LLP<br/>       900 RIDGEFIELD DRIVE SUITE 350<br/>       RALEIGH, NORTH CAROLINA 27609-3960<br/>       NC LICENSE NO. F-0112 • (919) 878-9560</p> | <p>APPROVED: _____ DATE: _____</p> <p>SEAL </p> | <p></p> | <p>PHASE III DETAIL DRAWING</p> |
|--|--|--|---------------------------------|




● ● ● ● DETOUR ROUTE



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|  |                                 |  |                              |
|--|---------------------------------|--|------------------------------|
| <b>PLANS PREPARED BY :</b><br><b>RK&amp;K</b><br><small>RUMMEL, KLEPPER &amp; KAHL, LLP<br/>         900 RIDGFIELD DRIVE SUITE 350<br/>         RALEIGH, NORTH CAROLINA 27609-3960<br/>         NC LICENSE NO. F-0112 • (919) 878-9560</small> | APPROVED: _____ DATE: _____<br> |  | <b>BICYCLE DETOUR DETAIL</b> |
|  |                                 |  |                              |

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

|           |   |
|-----------|---|
| TIP NO.   | SHEET NO.   |
| B-4816    | PMP-1   |
| APPROVED: | <i>[Signature]</i>  |
| DATE:     | 8/26/13   |
| SEAL      |  |

PAVEMENT MARKING PLAN  
SCOTLAND COUNTY

LOCATION: BRIDGE No. 65 OVER JUNIPER CREEK ON US 15-501

T.I.P.: B-4816

CONTRACT: C203285

PAVEMENT MARKING SCHEDULE

| SYMBOL | DESCRIPTION   |
|--------|---|
|        | COLD APPLIED PLASTIC (4")<br>Type2 - Permanent High Performance |
| CA     | WHITE EDGELINE  |
| CI     | YELLOW DOUBLE CENTER  |
|        | THERMOPLASTIC(4", 90 MILS)                                      |
| TA     | WHITE EDGELINE  |
|        | THERMOPLASTIC(4", 120 MILS)                                     |
| TI     | YELLOW DOUBLE CENTER  |
|        | MARKERS   |
|        | SNOWPLOWABLE  |
| MA     | YELLOW & YELLOW   |
|        | PERMANENT RAISED  |
| ME     | YELLOW & YELLOW   |

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR 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  |
|----------|--|
| 1205.01  | PAVEMENT MARKINGS - LINE TYPES AND OFFSETS               |
| 1205.02  | PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS      |
| 1205.12  | PAVEMENT MARKINGS - BRIDGES                              |
| 1250.01  | RAISED PAVEMENT MARKERS - INSTALLATION SPACING           |
| 1251.01  | RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY        |
| 1253.01  | RAISED PAVEMENT MARKERS - SNOWPLOWABLE                   |
| 1261.01  | GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING |
| 1261.02  | GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING   |
| 1262.01  | GUARDRAIL END DELINEATION                                |

GENERAL NOTES

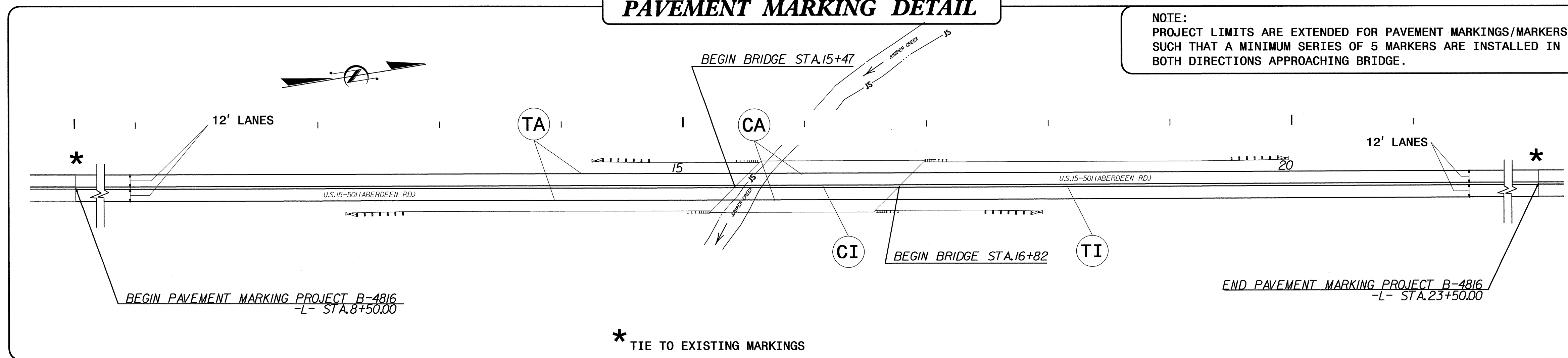
THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

| ROAD NAME                | MARKING  | MARKER                 |
|--------------------------|--|------------------------|
| US 15-501<br>BRIDGE DECK | THERMOPLASTIC<br>COLD APPLIED PLASTIC<br>(TYPE I OR TYPE II) | SNOWPLOWABLE<br>RAISED |

- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- E) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
- F) REMOVE ALL RESIDUE AND SURFACE LAITANCE BY ACCEPTABLE METHODS ON CONCRETE BRIDGE DECKS PRIOR TO PLACING (COLD APPLIED PLASTIC) PAVEMENT MARKING MATERIAL.
- G) TYPE III COLD APPLIED PLASTIC MAY BE USED IN LIEU OF TYPE II COLD APPLIED PLASTIC. IF TYPE III COLD APPLIED PLASTIC IS USED, IT SHALL BE PAID FOR USING THE TYPE II COLD APPLIED PLASTIC PAY ITEM.
- H) SEE ROADWAY PLAN FOR MILLING AND MARKING DETAIL TO TIE TO EXISTING.

PAVEMENT MARKING DETAIL

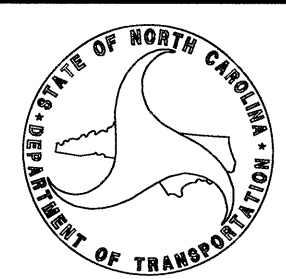


NOTE:  
PROJECT LIMITS ARE EXTENDED FOR PAVEMENT MARKINGS/MARKERS SUCH THAT A MINIMUM SERIES OF 5 MARKERS ARE INSTALLED IN BOTH DIRECTIONS APPROACHING BRIDGE.

\* TIE TO EXISTING MARKINGS

PLAN PREPARED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

SUSAN B. KUNZ SIGNING & DELINEATION REGIONAL ENGINEER  
STACEY W. JOHNS SIGNING & DELINEATION PROJECT DESIGN ENGINEER/TECHNICIAN



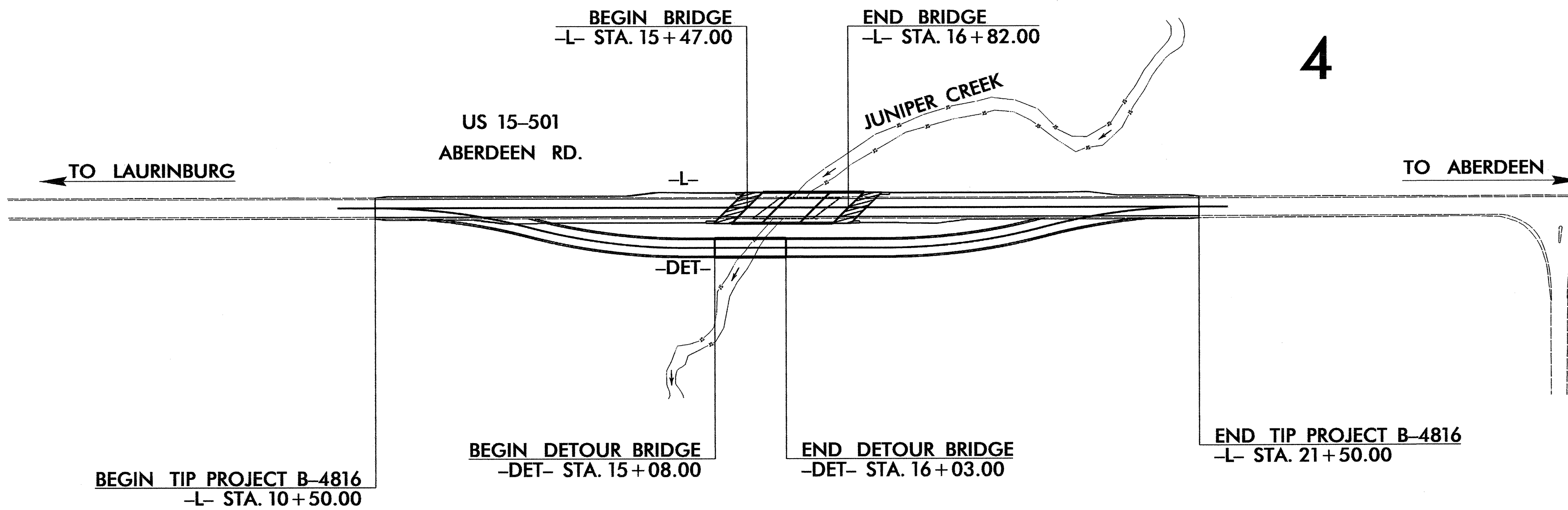
**TIP PROJECT: B-4816**

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



**LOCATION: BRIDGE NO. 65 OVER JUNIPER CREEK  
 ON US 15-501**

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



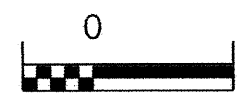
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| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
| N.C.            | B-4816                      | EC-1        |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
|                 |                             |             |              |
|                 |                             |             |              |
|                 |                             |             |              |

**EROSION AND SEDIMENT CONTROL MEASURES**

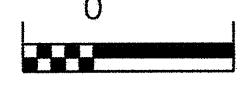
| Sid. #  | Description  | Symbol      |
|---------|--|-------------|
| 1630.05 | Temporary Silt Ditch   | TD          |
| 1630.05 | Temporary Diversion  | TD          |
| 1605.01 | Temporary Silt Fence   | III III III |
| 1606.01 | Special Sediment Control Fence   | ▲▲▲▲▲       |
| 1622.01 | Temporary Berms and Slope Drains                                       | —           |
| 1630.02 | Silt Basin Type B  | □           |
| 1633.01 | Temporary Rock Silt Check Type-A                                       | □           |
|         | Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM) | □           |
| 1633.02 | Temporary Rock Silt Check Type-B                                       | □           |
|         | Wattle / Coir Fiber Wattle   | —           |
|         | Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)                   | —           |
| 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                                   | □           |
| 1630.04 | Stilling Basin   | □           |
| 1630.06 | Special Stilling Basin   | □           |
|         | Rock Inlet Sediment Trap:  |             |
| 1632.01 | Type A   | A           |
| 1632.02 | Type B   | B           |
| 1632.03 | Type C   | C           |
|         | Skimmer Basin  | □           |
|         | Tiered Skimmer Basin   | □           |
|         | Infiltration Basin   | □           |

**THIS PROJECT CONTAINS  
 EROSION CONTROL PLANS  
 FOR CLEARING AND  
 GRUBBING PHASE OF  
 CONSTRUCTION.**

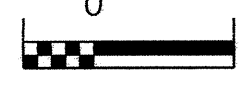
**GRAPHIC SCALE**



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT  
 DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

**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.**

Prepared in the Office of:  
**ROADSIDE ENVIRONMENTAL UNIT**  
 1 South Wilmington St.  
 Raleigh, NC 27611  
**2012 STANDARD SPECIFICATIONS**

**Roadway Standard Drawings**

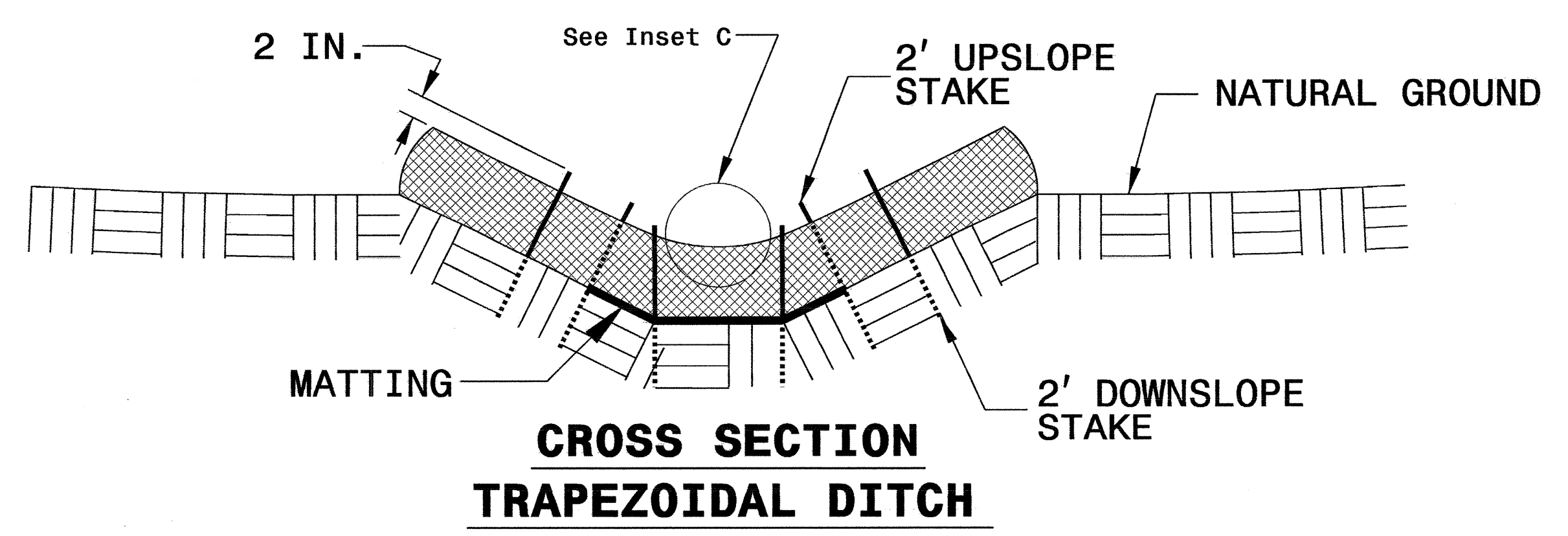
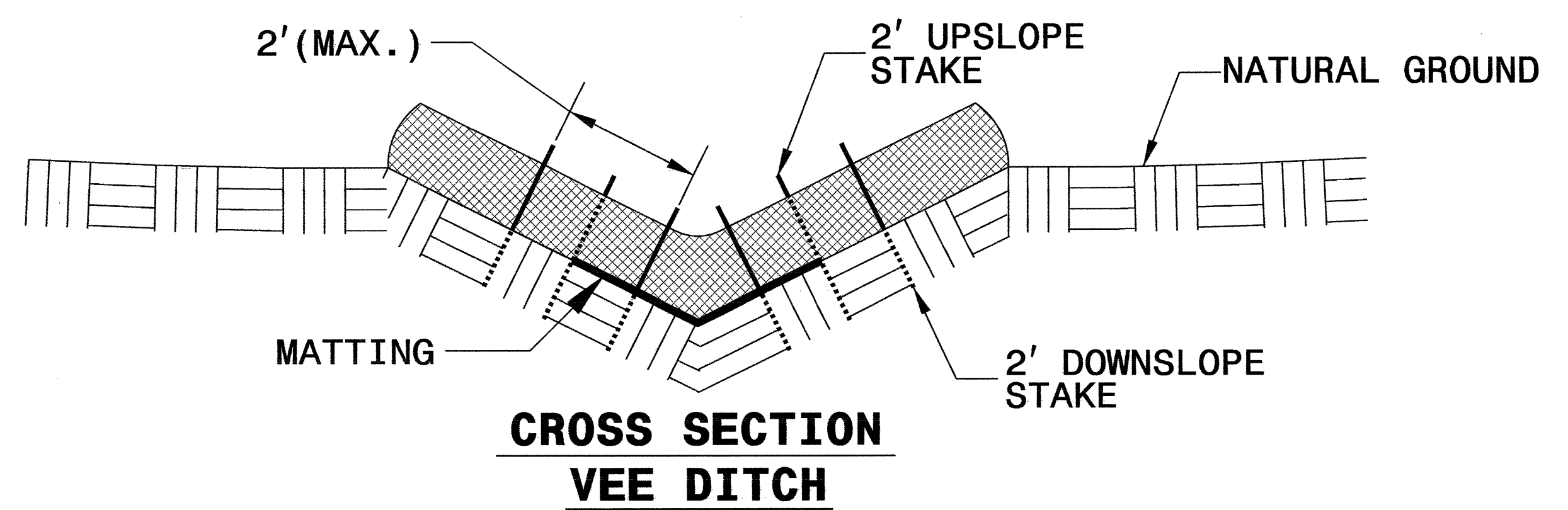
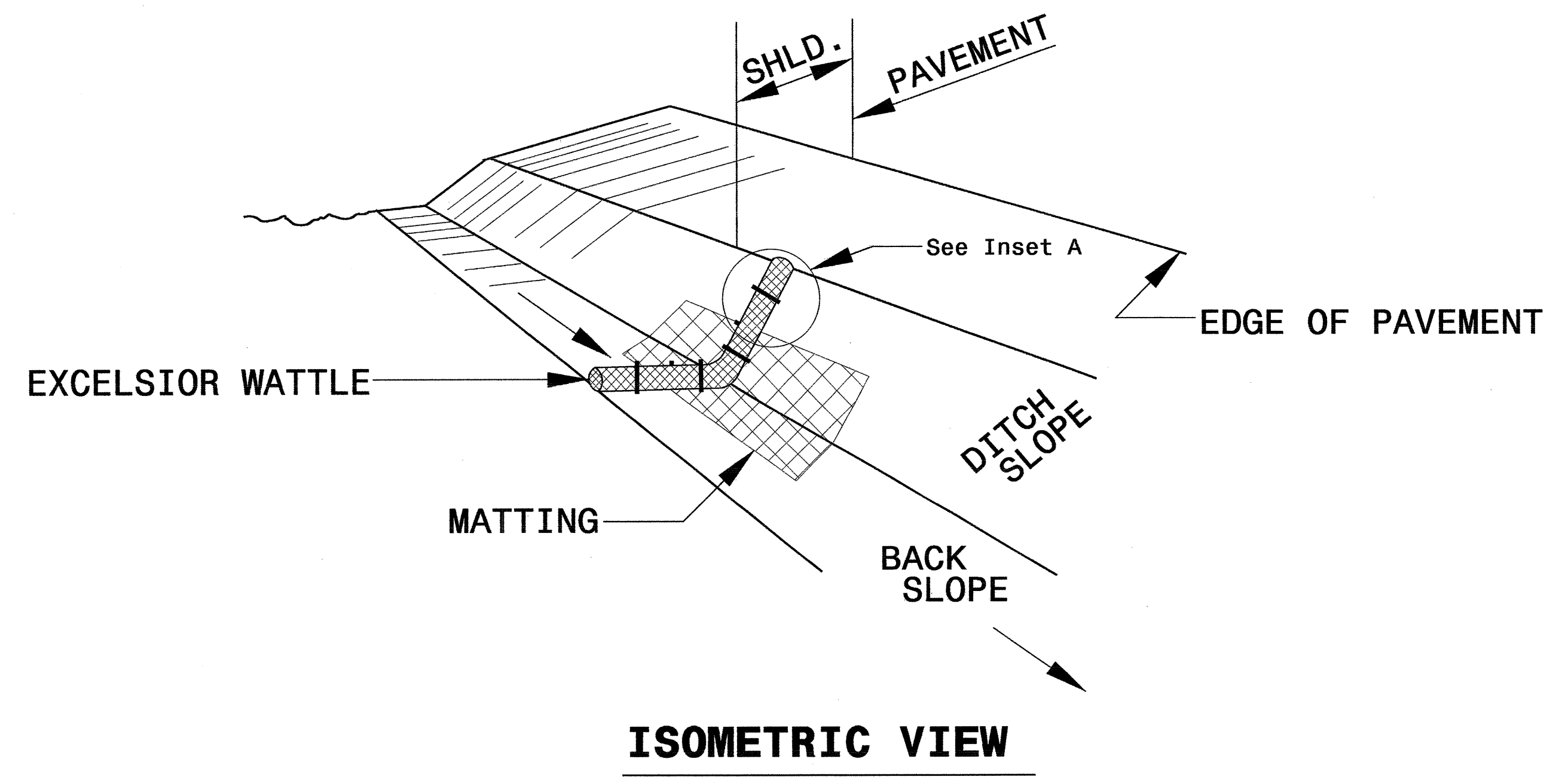
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

- |  |  |
|--|--|
| 1604.01 Railroad Erosion Control Detail  | 1632.01 Rock Inlet Sediment Trap Type A      |
| 1605.01 Temporary Silt Fence             | 1632.02 Rock Inlet Sediment Trap Type B      |
| 1606.01 Special Sediment Control Fence   | 1632.03 Rock Inlet Sediment Trap Type C      |
| 1607.01 Gravel Construction Entrance     | 1633.01 Temporary Rock Silt Check Type A     |
| 1622.01 Temporary Berms and Slope Drains | 1633.02 Temporary Rock Silt Check Type B     |
| 1630.01 Silt Basin                       | 1634.01 Temporary Rock Sediment Dam Type A   |
| 1630.02 Silt Basin Type B                | 1634.02 Temporary Rock Sediment Dam Type B   |
| 1630.03 Temporary Silt Ditch             | 1635.01 Rock Pipe Inlet Sediment Trap Type A |
| 1630.04 Stilling Basin                   | 1635.02 Rock Pipe Inlet Sediment Trap Type B |
| 1630.05 Temporary Diversion              | 1640.01 Coir Fiber Baffle                    |
| 1630.06 Special Stilling Basin           | 1645.01 Temporary Stream Crossing            |
| 1631.01 Matting Installation             |  |

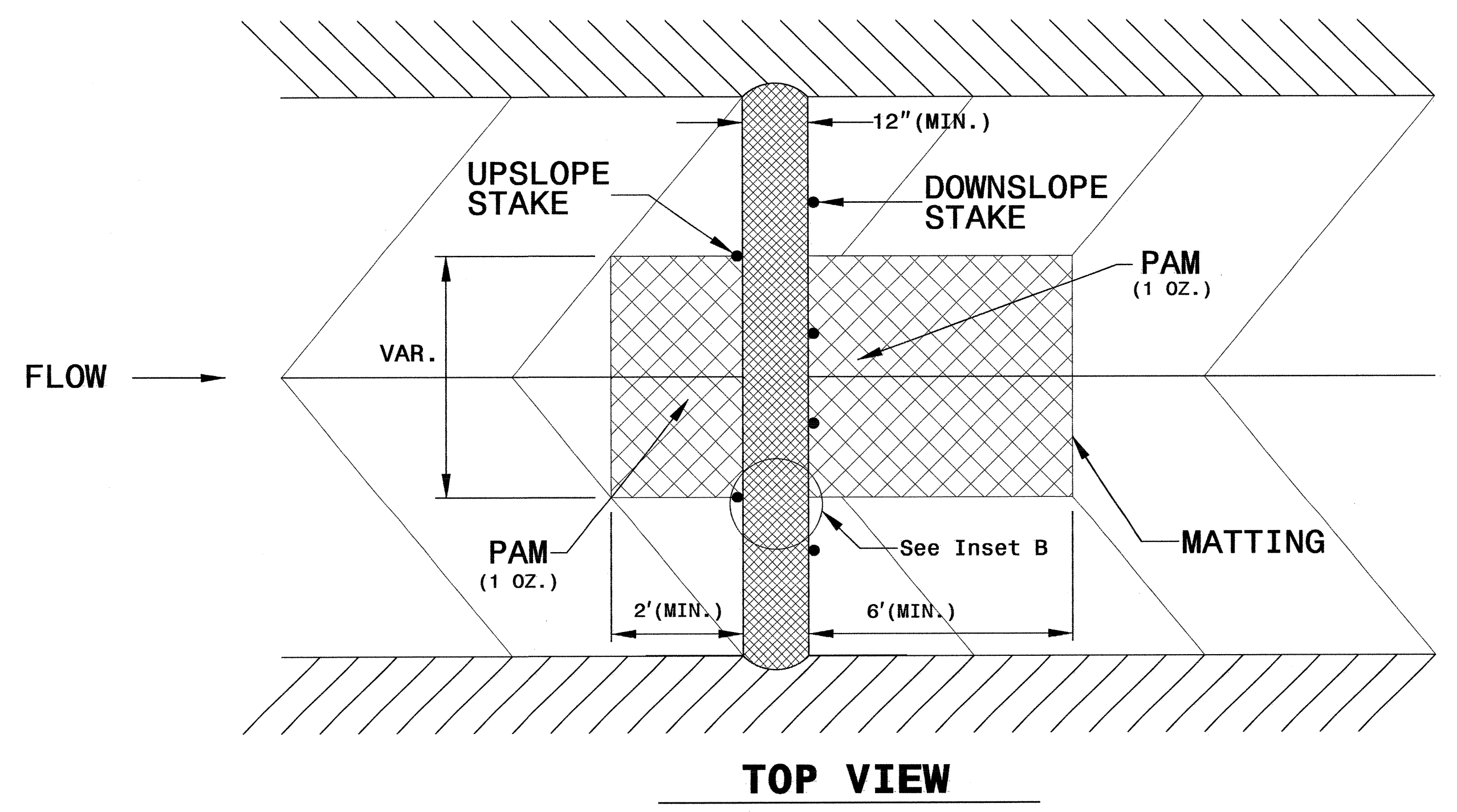
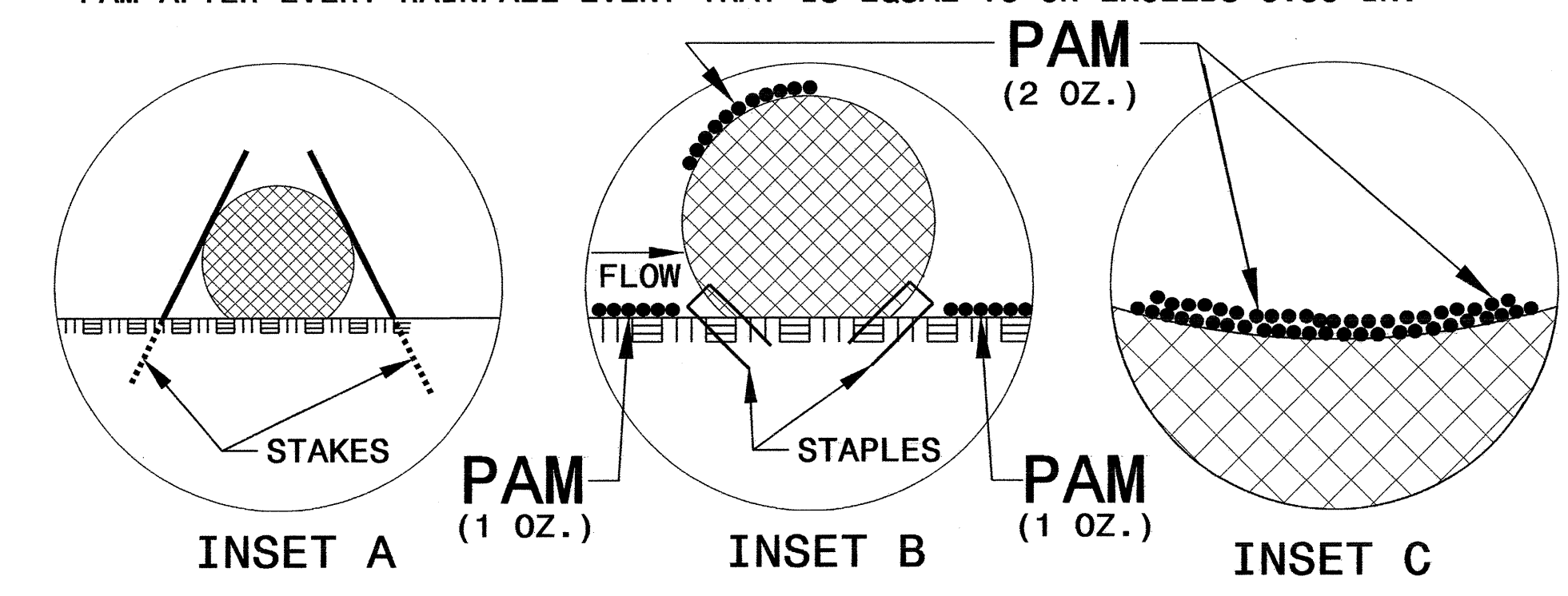


|                                 |                     |
|---------------------------------|---------------------|
| PROJECT REFERENCE NO.<br>B-4816 | SHEET NO.<br>EC-2   |
| RW SHEET NO.                    |                     |
| ROADWAY DESIGN ENGINEER         | HYDRAULICS ENGINEER |

# WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



- 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.
  - 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 WATTLE.
  - INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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|                            |                        |
|----------------------------|------------------------|
| PROJECT REFERENCE NO.      | SHEET NO.              |
| <i>B-4816</i>              | <i>EC-3</i>            |
| ROADWAY DESIGN<br>ENGINEER | HYDRAULICS<br>ENGINEER |

# ***SOIL STABILIZATION TIMEFRAMES***

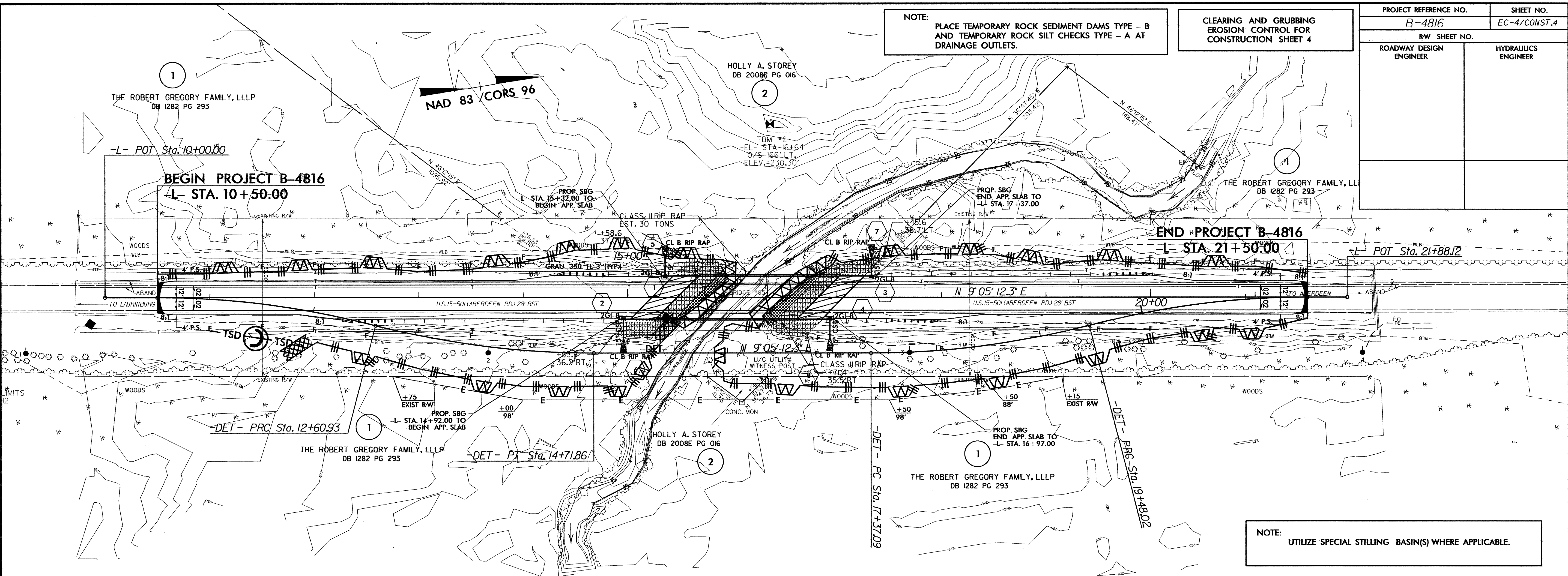
| <i>SITE DESCRIPTION</i>                      | <i>STABILIZATION TIME</i> | <i>TIMEFRAME EXCEPTIONS</i>  |
|--|---------------------------|--|
| PERIMETER DIKES, SWALES, DITCHES AND SLOPES  | 7 DAYS                    | NONE   |
| HIGH QUALITY WATER (HQW) ZONES               | 7 DAYS                    | 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.   |

8/17/99

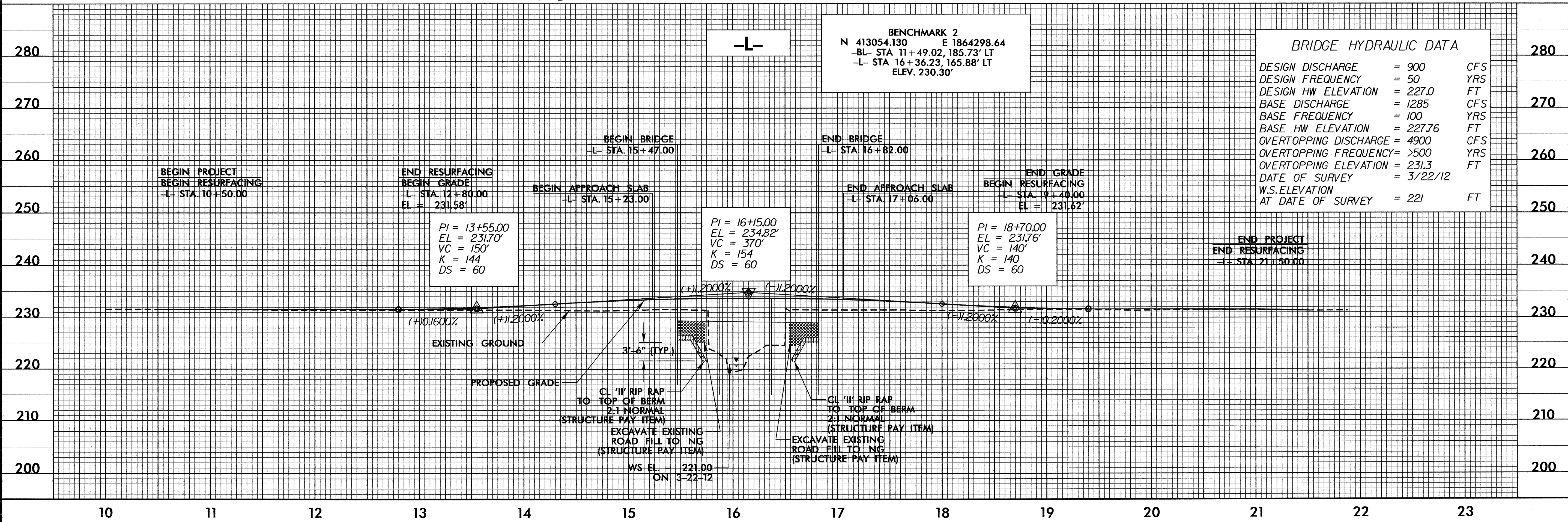
|                         |                     |
|-------------------------|---------------------|
| PROJECT REFERENCE NO.   | SHEET NO.           |
| B-4816                  | EC-4/CONST.4        |
| RW SHEET NO.            |                     |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4



NOTE: UTILIZE SPECIAL STILLING BASIN(S) WHERE APPLICABLE.

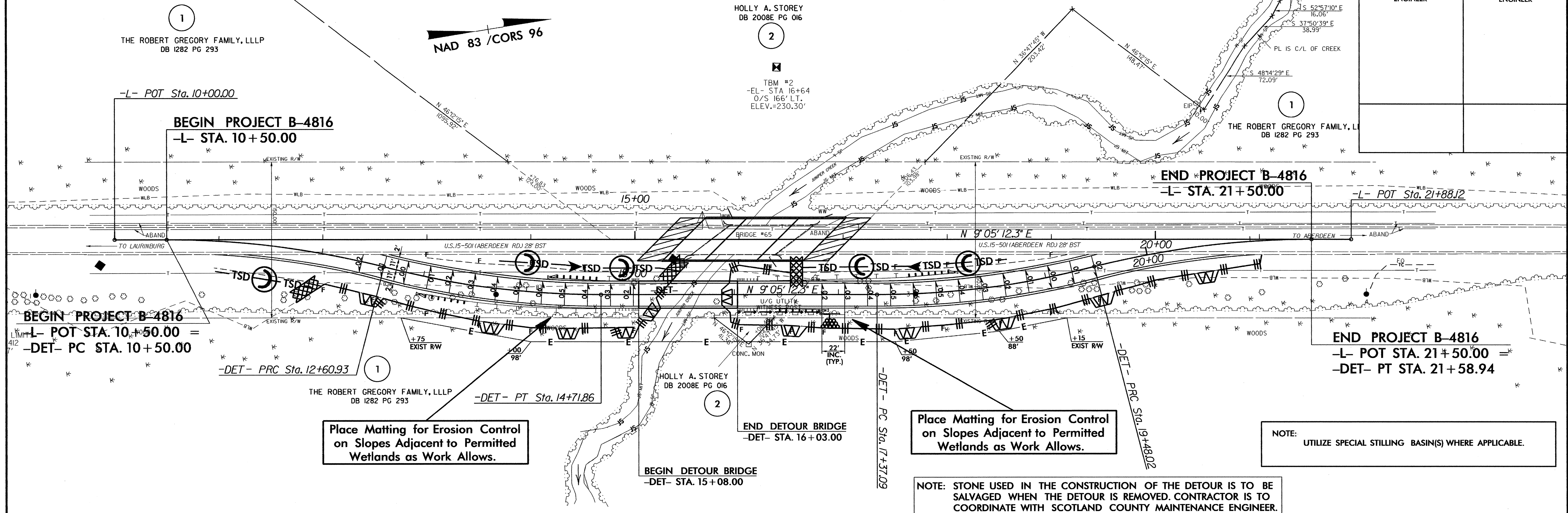


26-AUG-2013 14:52 D:\p\81301\B4816-EC-ph.dgn  
 At: Enviro\2012\261213\B4816-EC-ph.dgn

8/17/99

# DETOUR

|                                 |                             |
|---------------------------------|-----------------------------|
| PROJECT REFERENCE NO.<br>B-4816 | SHEET NO.<br>EC-5/CONST.2-A |
| RW SHEET NO.                    |                             |
| ROADWAY DESIGN ENGINEER         | HYDRAULICS ENGINEER         |

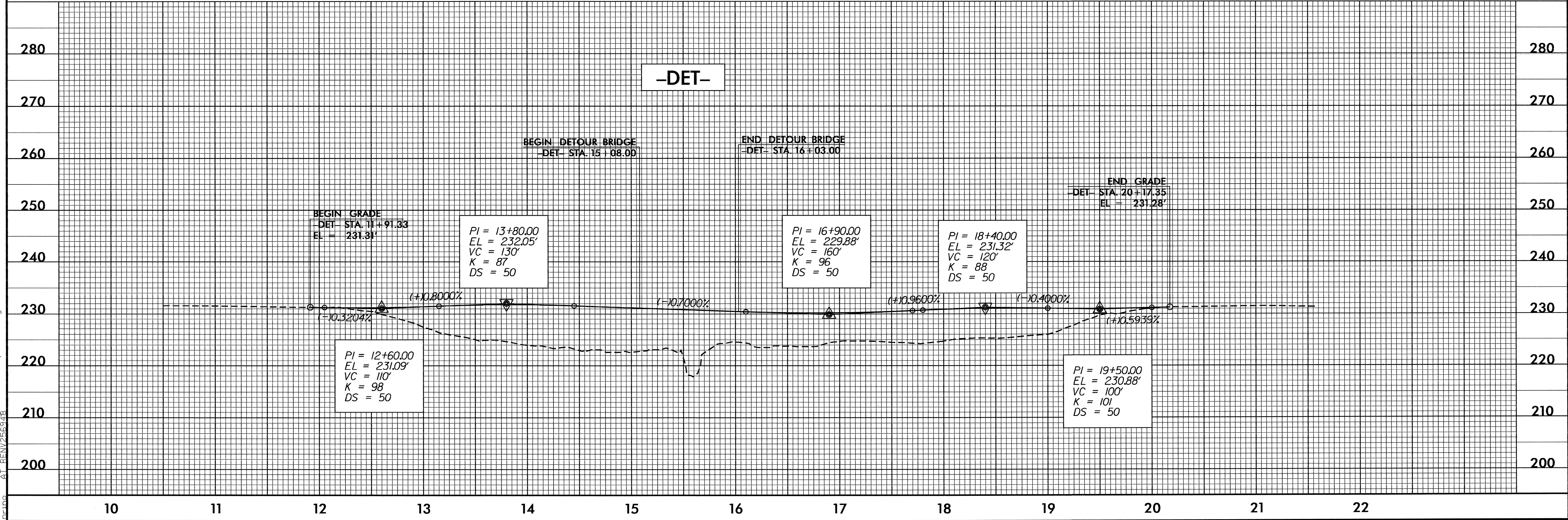


Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

NOTE: UTILIZE SPECIAL STILLING BASIN(S) WHERE APPLICABLE.

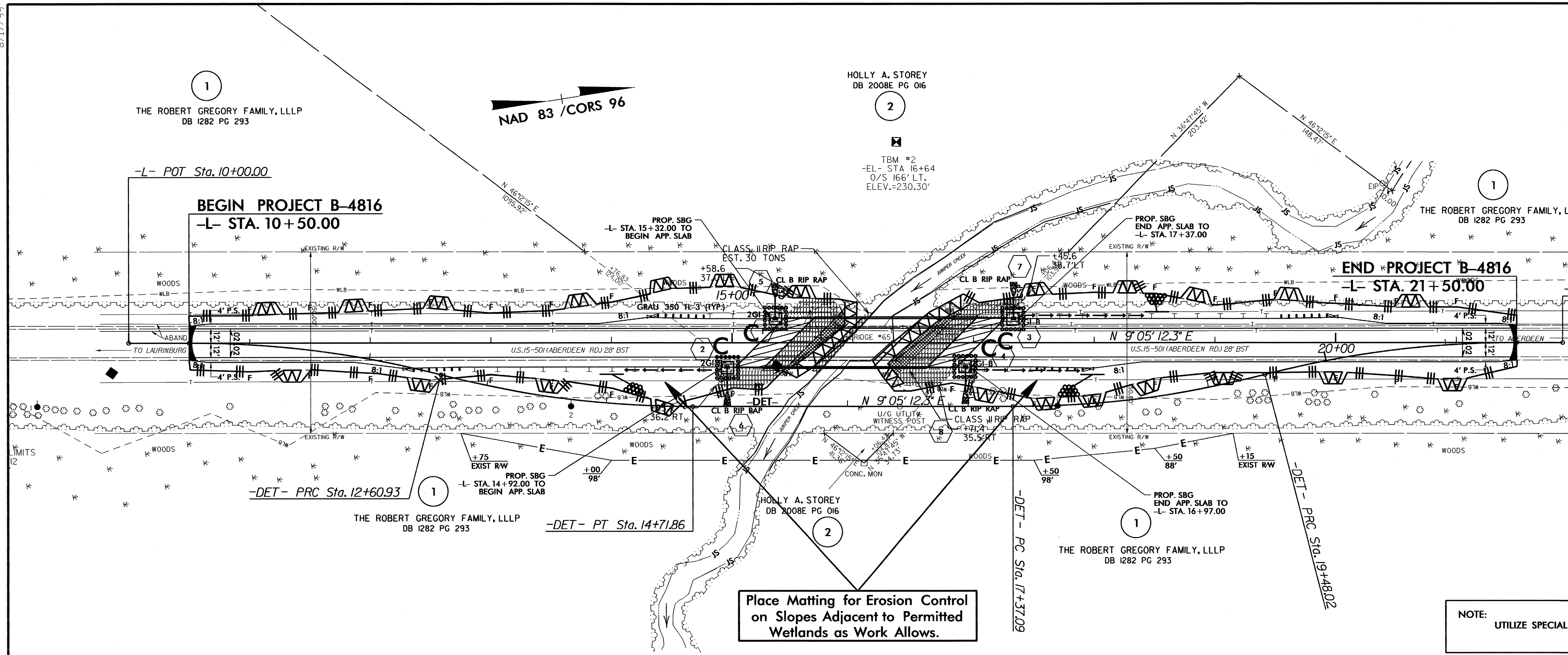
NOTE: STONE USED IN THE CONSTRUCTION OF THE DETOUR IS TO BE SALVAGED WHEN THE DETOUR IS REMOVED. CONTRACTOR IS TO COORDINATE WITH SCOTLAND COUNTY MAINTENANCE ENGINEER.



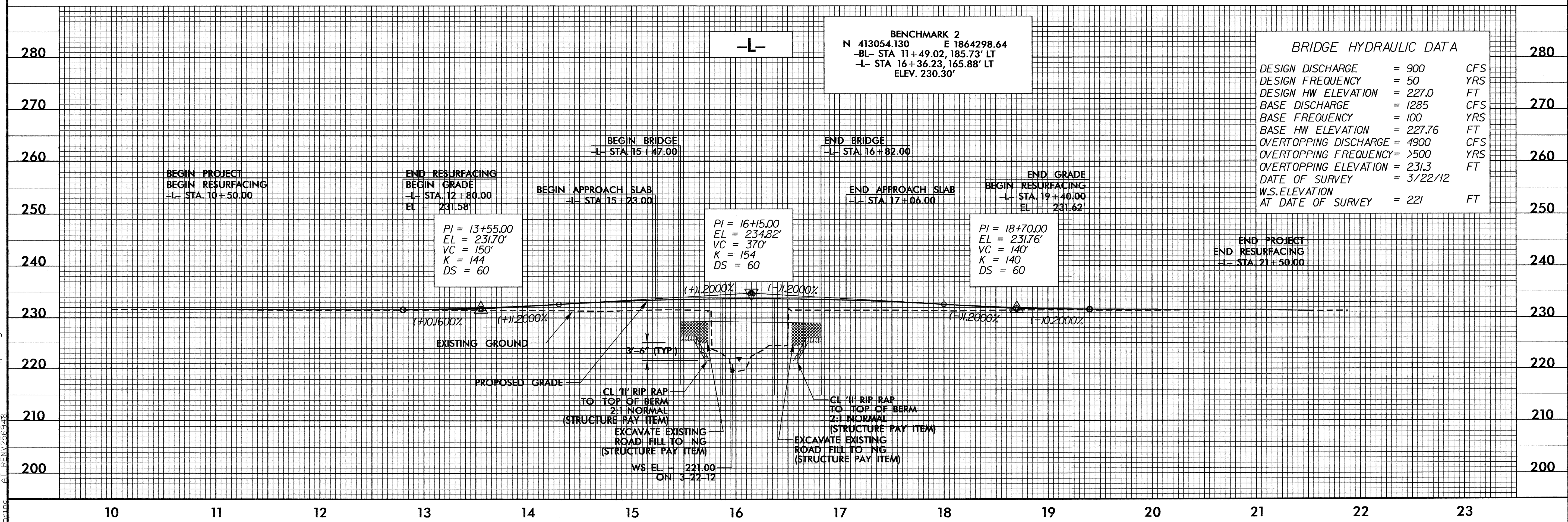
26-AUG-2013 15:20 R:\ENVI\COMMENTS\B4816\_EC\_psh\_det.dgn

|                         |                     |
|-------------------------|---------------------|
| PROJECT REFERENCE NO.   | SHEET NO.           |
| B-4816                  | EC-6/CONST.4        |
| R/W SHEET NO.           |                     |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

8.17/99



NOTE: UTILIZE SPECIAL STILLING BASIN(S) WHERE APPLICABLE.



26-AUG-2013 14:50 D:\envr\2013\B4816\_EC.psd.dgn

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN  
SCOTLAND COUNTY

LOCATION: BRIDGE No. 65 OVER JUNIPER CREEK ON US 15-501

|                         |                     |
|-------------------------|---------------------|
| TIP NO.<br>B-4816       | SHEET NO.<br>SIGN-1 |
| APPROVED: <i>R.W.J.</i> |                     |
| DATE: 8/26/13           |                     |
| SEAL                    |                     |
|                         |                     |

T.I.P.: B-4816

CONTRACT: C203285

SUMMARY OF QUANTITIES

| ITEM NO.   |           | ITEM DESCRIPTION                        | QUANTITY | UNIT |
|------------|-----------|---|----------|------|
| DESC. NO.  | SECT. NO. |   |          |      |
| 4072000000 | 903       | SUPPORTS, 3 LB STEEL U-CHANNEL.....     | 61       | L.F. |
| 4096000000 | 904       | SIGN ERECTION, TYPE D.....              | 2        | EA.  |
| 4155000000 | 907       | DISPOSAL OF SIGN SYSTEM, U-CHANNEL..... | 5        | EA.  |

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR 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  |
|----------|--|
| 904.10   | ORIENTATION OF GROUND MOUNTED SIGNS                          |
| 904.50   | MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS |

GENERAL NOTES

- SIGNS FURNISHED BY STATE
- ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- SIGNING PLANS DO NOT INCLUDE TEMPORARY CONSTRUCTION SIGNING. SEE TRAFFIC CONTROL PLANS.
- WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
- ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
- SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

|   |   |   |                               |                    |
|---|---|---|-------------------------------|--------------------|
| SIGN NUMBER: 301, 302<br>TYPE: D<br>QUANTITY: 2<br>SIGN WIDTH: 3'-0"<br>HEIGHT: 2'-0"<br>TOTAL AREA: 6.0 Sq.Ft.<br>BORDER TYPE: FLUSH<br>RECESS: 0"<br>WIDTH: 1"<br>RADII: 3"<br>NO. Z BARS:<br>LENGTH: | BACKG COLOR: Green<br>COPY COLOR: White<br>SYMBOL X Y WID HT<br>MAT'L: 0.125" (3.2 mm) ALUMINUM | DESIGN BY: S. JOHNS<br>PROJECT ID: B-4816 | CHECKED BY: S. KUNZ<br>DIV: 8 | DATE: Aug 07, 2013 |
|---|---|---|-------------------------------|--------------------|

USE NOTES: 1,2

- Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
- Background shall be Grade C reflective sheeting.

LETTER POSITIONS

| Letter spacings are to start of next letter |     |     |     |     |     |     |     |     |  | Series/Size |
|---|-----|-----|-----|-----|-----|-----|-----|-----|--|-------------|
|   |     |     |     |     |     |     |     |     |  | Text Length |
|   | J   | u   | n   | i   | p   | e   | r   |     |  | D 2000      |
| 4.2   | 5.1 | 4.7 | 4.7 | 2.2 | 4.3 | 4.4 | 2.3 | 4.2 |  | 27.7        |
|   | C   | r   | e   | e   | k   |     |     |     |  | D 2000      |
| 7.8   | 5.3 | 2.8 | 4.1 | 4.4 | 3.8 | 7.8 |     |     |  | 20.4        |

FILENAME: SignDesign

NORTH CAROLINA D.O.T. SIGN DETAIL

PROJECT NOTES

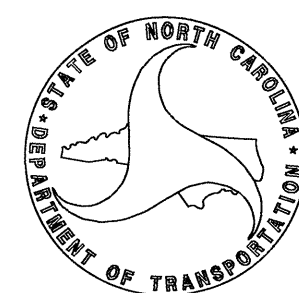
|   |                                    |
|---|------------------------------------|
| 1 | DISPOSAL OF SIGN SYSTEM, U-CHANNEL |
|---|------------------------------------|


INDEX

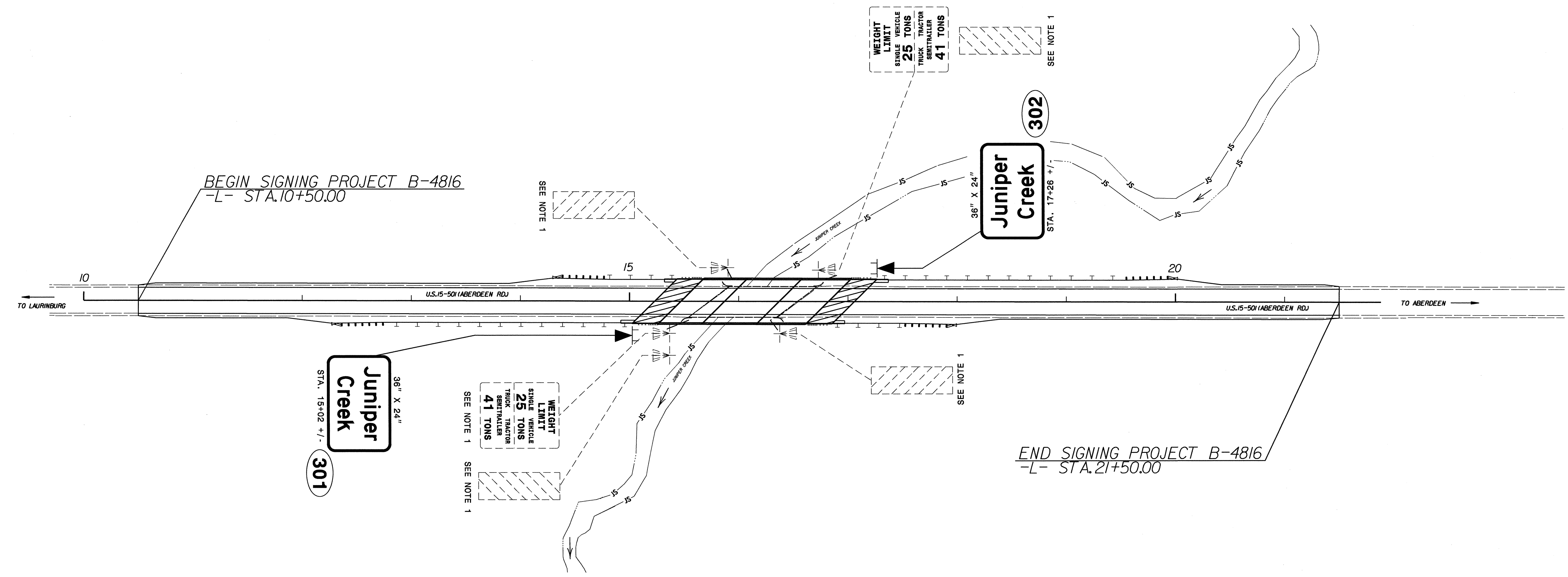
| SHEET NO. | DESCRIPTION                     |
|-----------|---------------------------------|
| SIGN-1    | TITLE SHEET, SIGN DESIGN, NOTES |
| SIGN-2    | SIGN DETAIL SHEET               |

PLAN PREPARED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

SUSAN B. KUNZ SIGNING & DELINEATION REGIONAL ENGINEER  
STACEY W. JOHNS SIGNING & DELINEATION DESIGN ENGINEER



|   |                     |
|---|---------------------|
| TIP NO.<br>B-4816   | SHEET NO.<br>SIGN-2 |
| APPROVED: <i>R.W.J.</i>   |                     |
| DATE: 8/22/13   |                     |
| SEAL  |                     |
|  |                     |



**PROJECT NOTES**

|   |                                    |
|---|------------------------------------|
| 1 | DISPOSAL OF SIGN SYSTEM, U-CHANNEL |
|---|------------------------------------|

**SIGN DETAIL SHEET**

26-AUG-2013 08:43 P:\ppp-co-13\B-4816-Traffic\Signing\CADD\Signing Layout Plans\Bridgesec.dgn  
 E:\johns At 12:27:41

TIP PROJECT: B-4816

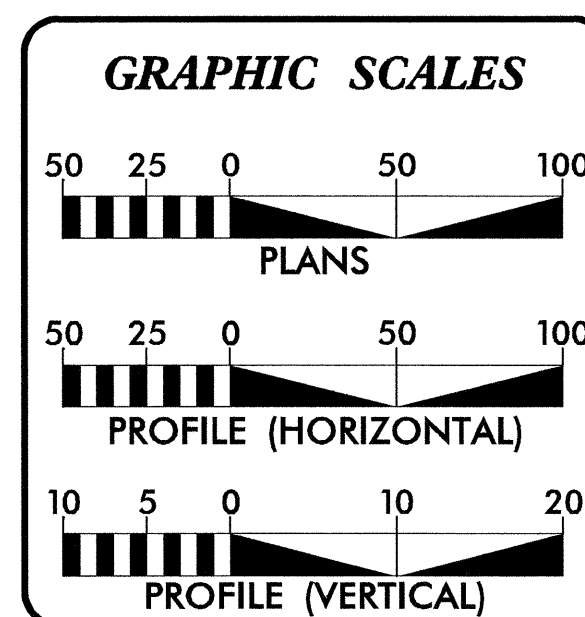
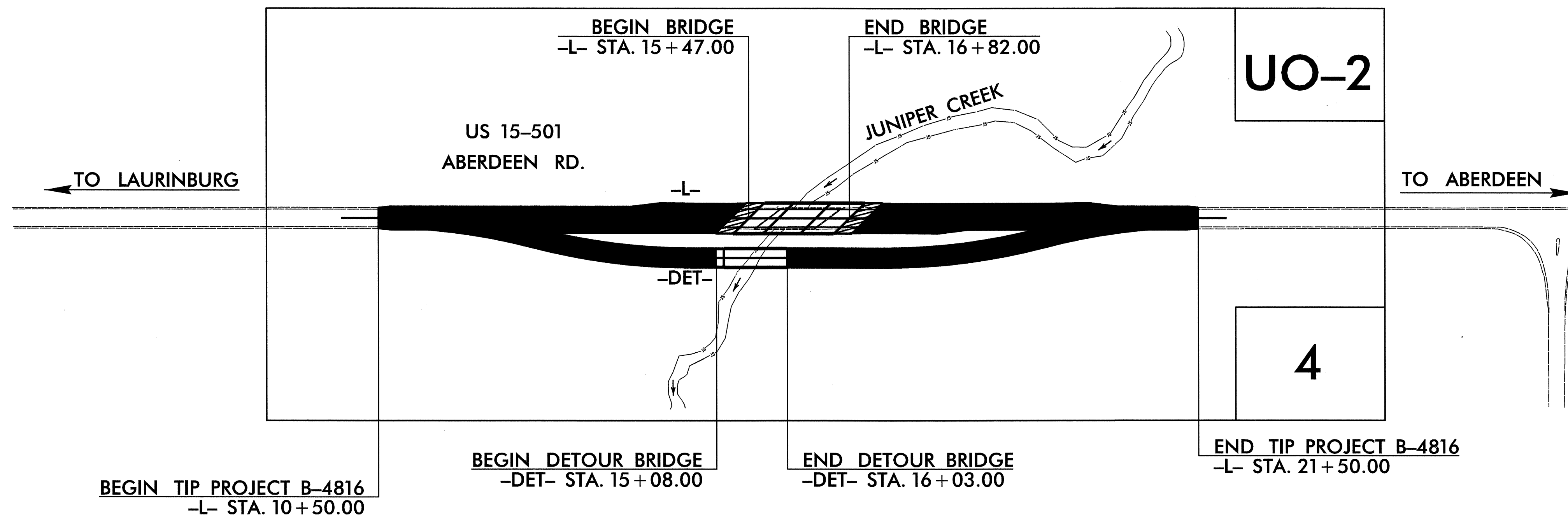
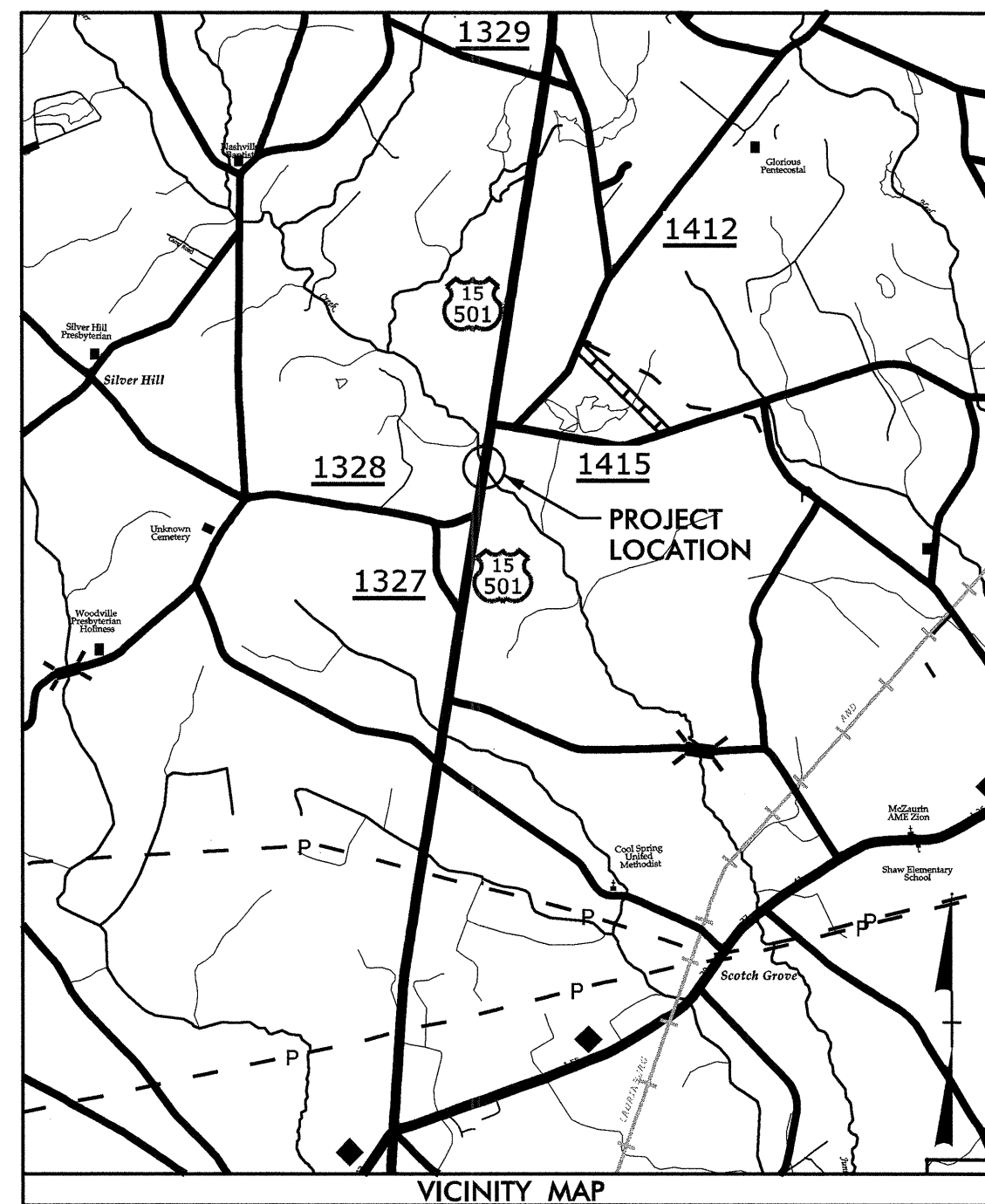
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

|            |           |
|------------|-----------|
| T.I.P. NO. | SHEET NO. |
| B-4816     | UO-1      |

**UTILITIES BY OTHERS PLANS  
SCOTLAND COUNTY**

**LOCATION: BRIDGE NO. 65 ON US 15-501  
OVER JUNIPER CREEK**

**TYPE OF WORK: UTILITY BY OTHERS RELOCATION**



**INDEX OF SHEETS**

| <u>SHEET NO.</u> | <u>DESCRIPTION</u> |
|------------------|--------------------|
| UO-1             | TITLE SHEET        |
| UO-2             | PLAN SHEET         |

**UTILITY OWNERS ON PROJECT**

|                             |
|-----------------------------|
| (1) POWER - PROGRESS ENERGY |
| (2) TELEPHONE - AT&T        |

UTILITY DESIGN BY:

**MA Engineering**  
CONSULTANTS, INC.  
598 East Chatham Street Suite 137 Cary, NC 27511  
Phone: 919 297 0220 Fax: 919 297 0221

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

1555 MAIL SERVICES CENTER  
RALEIGH NC 27699-1555  
PHONE (919) 707-6690  
FAX (919) 250-4151

Roger Worthington, P.E. UTILITIES SECTION ENGINEER  
Steve McKee, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER  
Jordan Chapman UTILITIES PROJECT DESIGNER

\$\$\$SYTIME\$\$\$\$\$  
 \$\$\$DGN\$\$\$\$\$  
 \$\$\$USERNAME\$\$\$\$\$

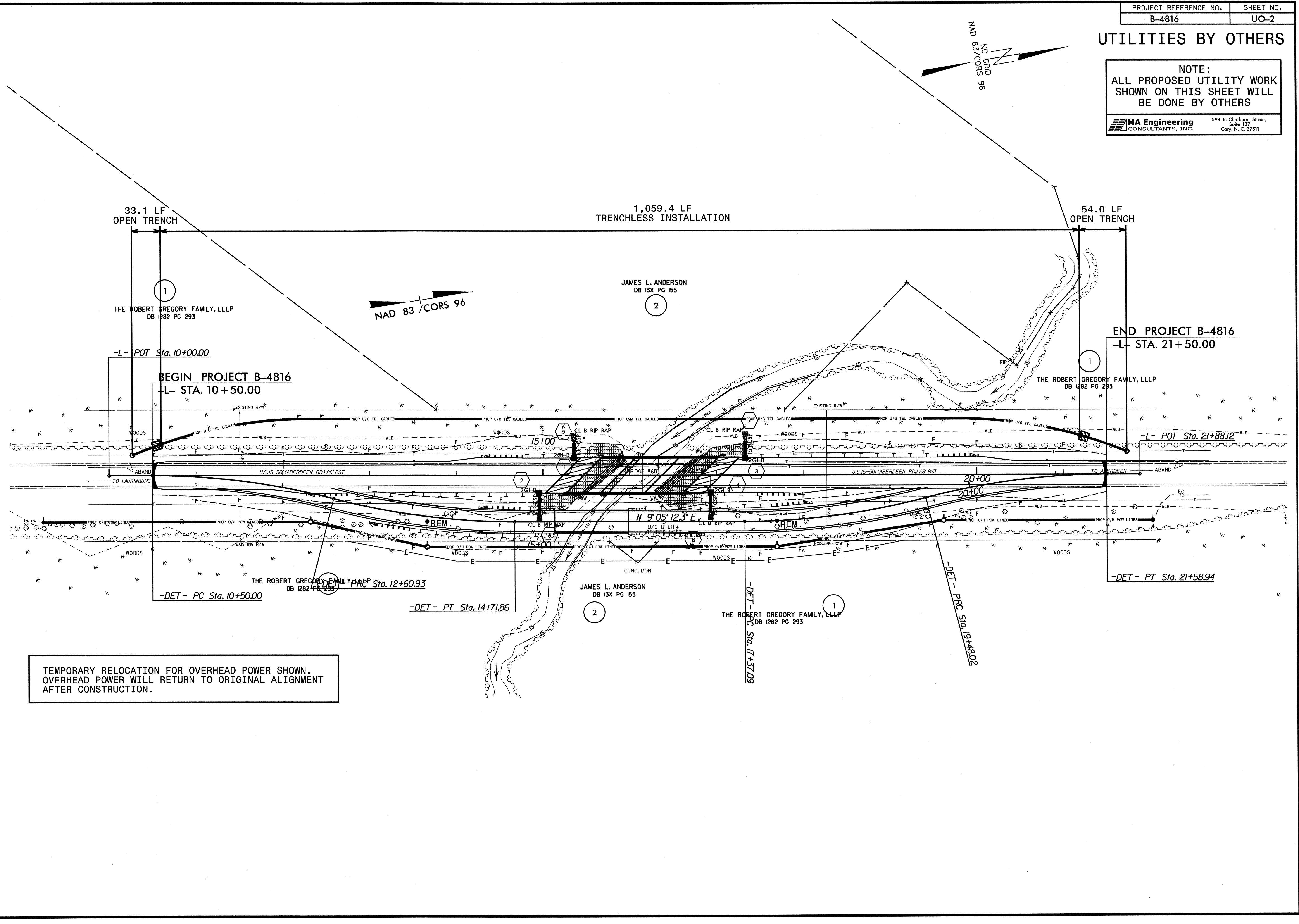


### UTILITIES BY OTHERS

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

**MA Engineering**  
CONSULTANTS, INC. 598 E. Chatham Street,  
Suite 137  
Cary, N. C. 27511

5/14/99



TEMPORARY RELOCATION FOR OVERHEAD POWER SHOWN.  
OVERHEAD POWER WILL RETURN TO ORIGINAL ALIGNMENT  
AFTER CONSTRUCTION.

# CROSS SECTION SUMMARY

## -L-

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

| STATION<br>L | UNCL. EXC.<br>(CU. YD.) | EMBT.<br>(CU. YD.) |
|--------------|-------------------------|--------------------|
| 10+50.00     | -                       | -                  |
| 11+00.00     | 7                       | 0                  |
| 11+50.00     | 13                      | 0                  |
| 12+00.00     | 11                      | 0                  |
| 12+50.00     | 11                      | 1                  |
| 13+00.00     | 12                      | 1                  |
| 13+50.00     | 8                       | 1                  |
| 14+00.00     | 2                       | 22                 |
| 14+50.00     | 0                       | 113                |
| 15+00.00     | 0                       | 198                |
| 15+47.00     | 0                       | 200                |
| 16+82.00     | -                       | -                  |
| 17+50.00     | 0                       | 247                |
| 18+00.00     | 0                       | 160                |
| 18+50.00     | 1                       | 93                 |
| 19+00.00     | 6                       | 26                 |
| 19+50.00     | 11                      | 8                  |
| 20+00.00     | 10                      | 11                 |
| 20+50.00     | 8                       | 7                  |
| 21+00.00     | 7                       | 6                  |
| 21+50.00     | 4                       | 4                  |

## -DET-

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

| STATION<br>L (DETOUR) | UNCL. EXC.<br>(CU. YD.) | EMBT.<br>(CU. YD.) |
|-----------------------|-------------------------|--------------------|
| 10+50.00              | -                       | -                  |
| 11+00.00              | 5                       | 0                  |
| 11+50.00              | 11                      | 0                  |
| 12+00.00              | 12                      | 16                 |
| 12+50.00              | 10                      | 84                 |
| 13+00.00              | 5                       | 215                |
| 13+50.00              | 0                       | 363                |
| 14+00.00              | 0                       | 487                |
| 14+50.00              | 0                       | 553                |
| 15+03.53              | 0                       | 590                |
| 15+98.53              | -                       | -                  |
| 16+50.00              | 0                       | 440                |
| 16+82.00              | 0                       | 258                |
| 17+50.00              | 0                       | 570                |
| 18+00.00              | 0                       | 435                |
| 18+50.00              | 0                       | 394                |
| 19+00.00              | 0                       | 317                |
| 19+50.00              | 4                       | 192                |
| 20+00.00              | 6                       | 70                 |
| 20+50.00              | 6                       | 13                 |
| 21+00.00              | 3                       | 1                  |

## -DET- REMOVAL

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

| STATION<br>L (DETOUR REMOVAL) | UNCL. EXC.<br>(CU. YD.) | EMBT.<br>(CU. YD.) |
|-------------------------------|-------------------------|--------------------|
| 11+00.00                      | -                       | -                  |
| 11+50.00                      | 1                       | 0                  |
| 12+00.00                      | 25                      | 0                  |
| 12+50.00                      | 109                     | 0                  |
| 13+00.00                      | 259                     | 0                  |
| 13+50.00                      | 421                     | 0                  |
| 14+00.00                      | 546                     | 0                  |
| 14+50.00                      | 590                     | 0                  |
| 15+03.53                      | 625                     | 0                  |
| 15+98.53                      | -                       | -                  |
| 16+50.00                      | 497                     | 0                  |
| 16+82.00                      | 295                     | 0                  |
| 17+50.00                      | 635                     | 0                  |
| 18+00.00                      | 467                     | 0                  |
| 18+50.00                      | 440                     | 0                  |
| 19+00.00                      | 376                     | 0                  |
| 19+50.00                      | 238                     | 0                  |
| 20+00.00                      | 98                      | 0                  |
| 20+50.00                      | 24                      | 0                  |
| 21+00.00                      | 3                       | 0                  |

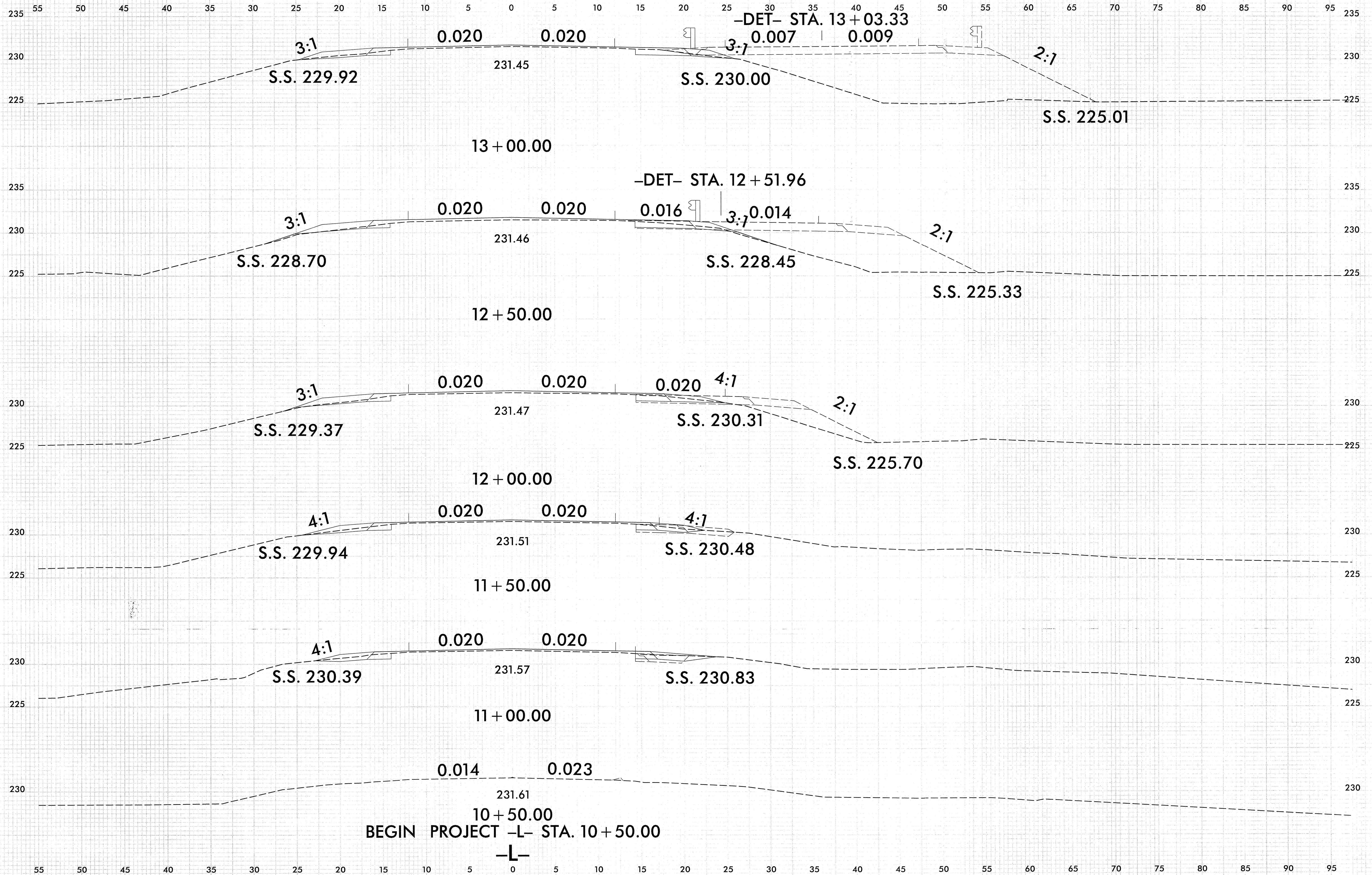
REVISIONS

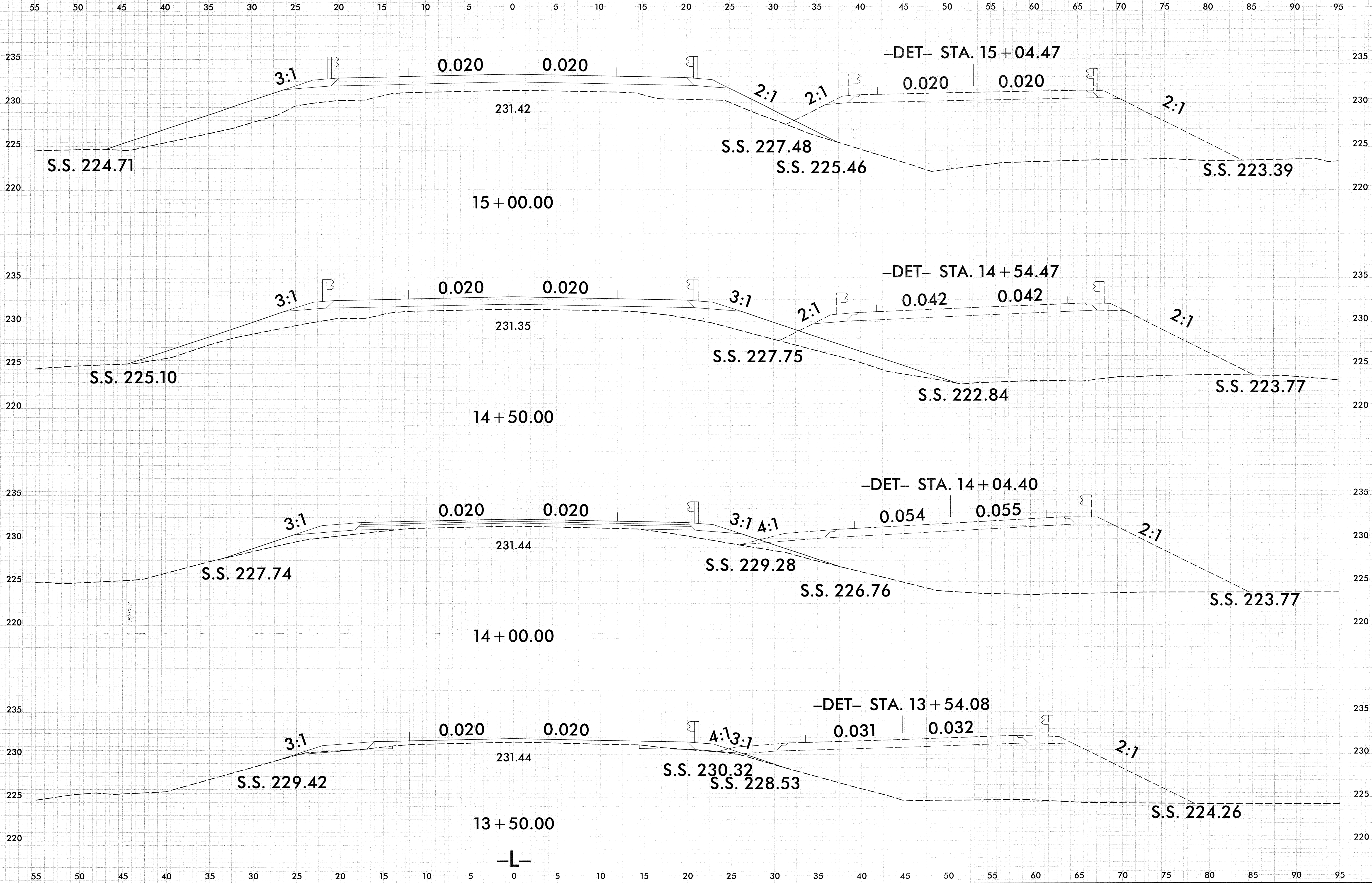
## CROSS SECTION INDEX

| SHEET | BEGIN STATION | END STATION |
|-------|---------------|-------------|
| X-2   | 10+50.00      | 13+00.00    |
| X-3   | 13+50.00      | 15+00.00    |
| X-4   | 15+47.00      | 16+82.00    |
| X-5   | 17+50.00      | 19+50.00    |
| X-6   | 20+00.00      | 21+50.00    |

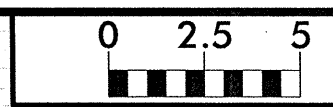
Note:  
Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

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

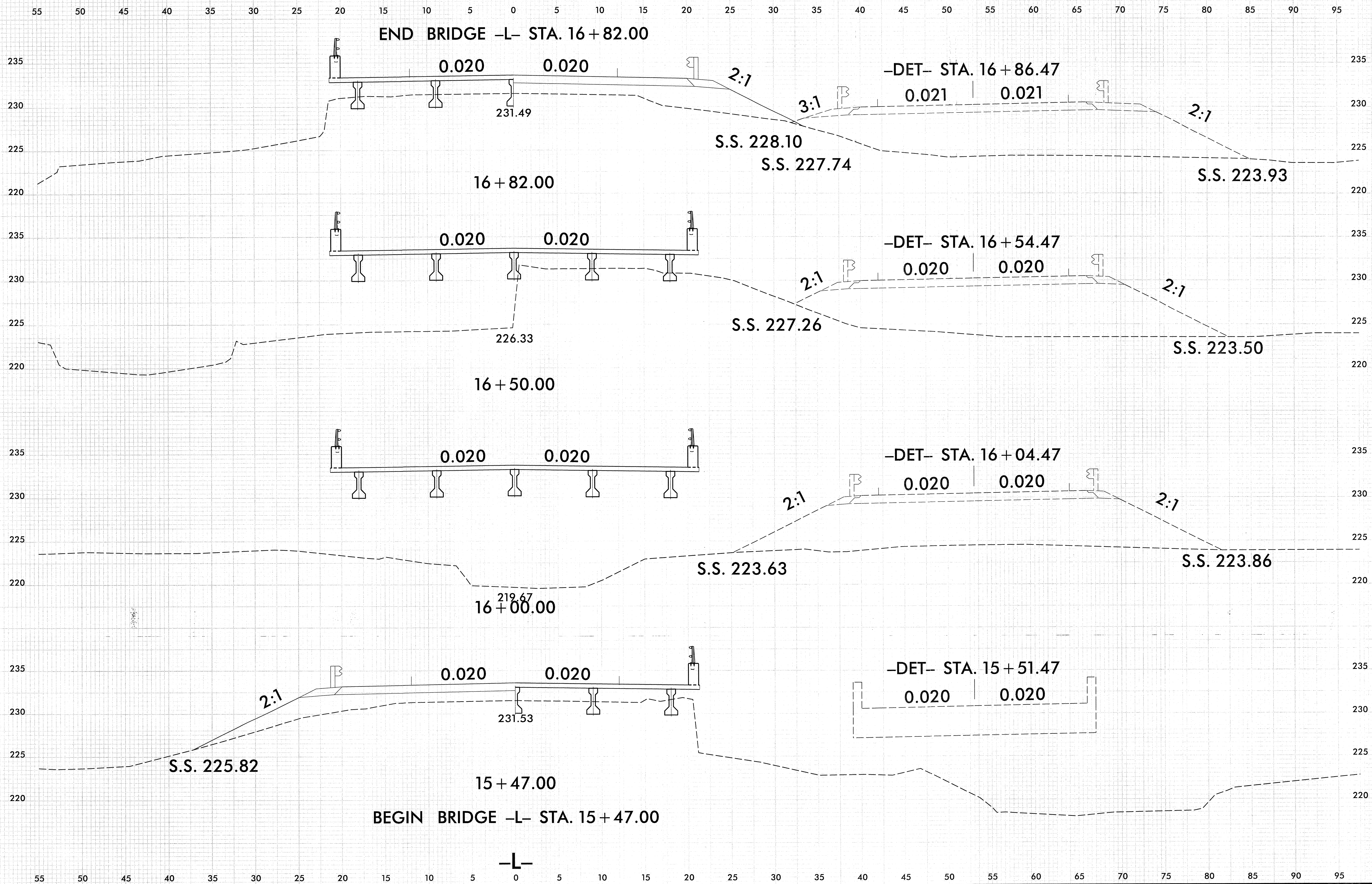




8/23/99

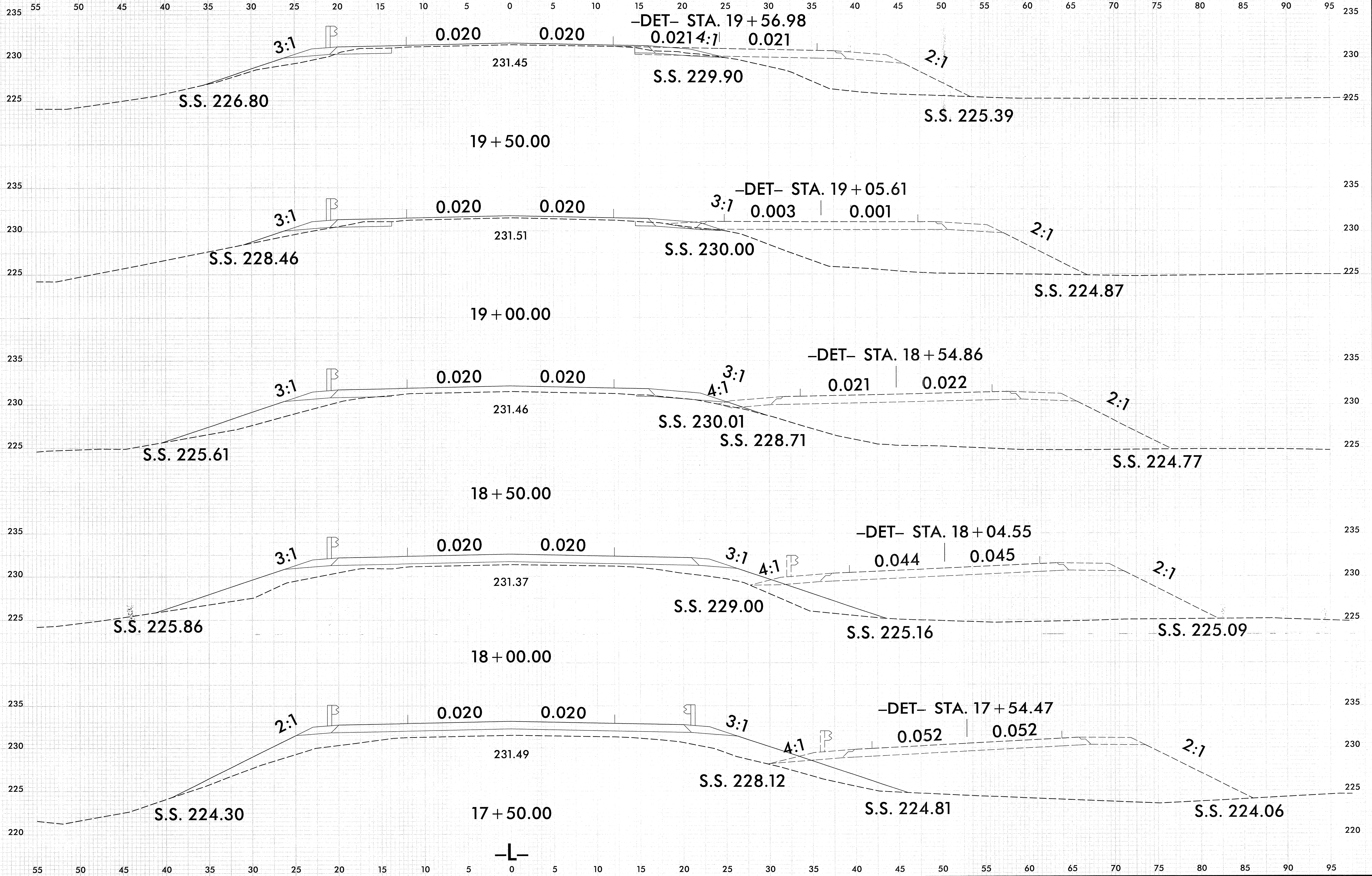


|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| B-4816              | X-3       |



9/20/2017 10:48:16 AM User: jrbawford

8/23/99



9/20/2013 11:56:48 AM B:\4816\rdy\p1.L.dgn User:rbawford

55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95

END PROJECT -L- STA. 21+50.00

