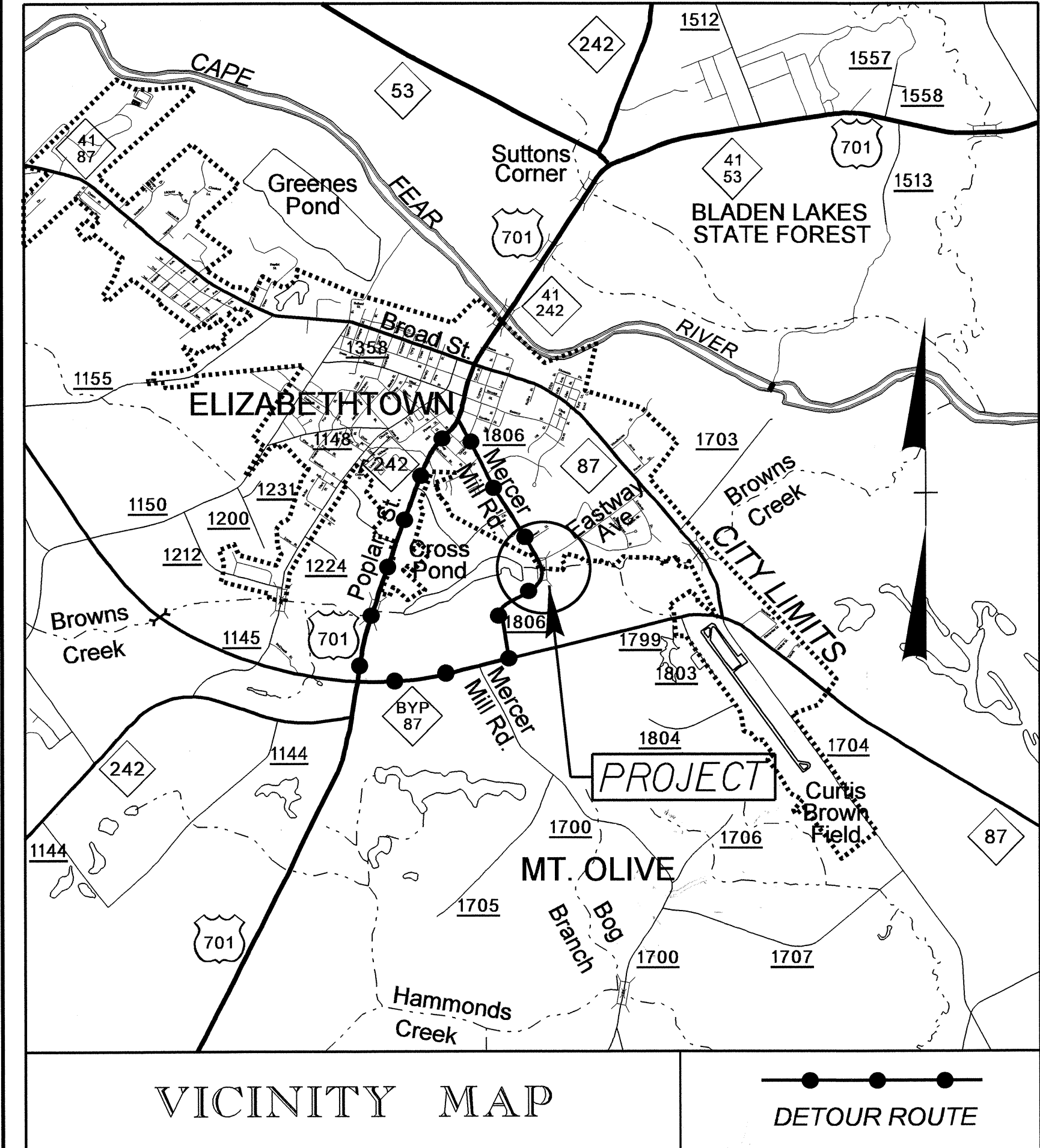


TIP PROJECT: B-4436

CONTRACT: C203246

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

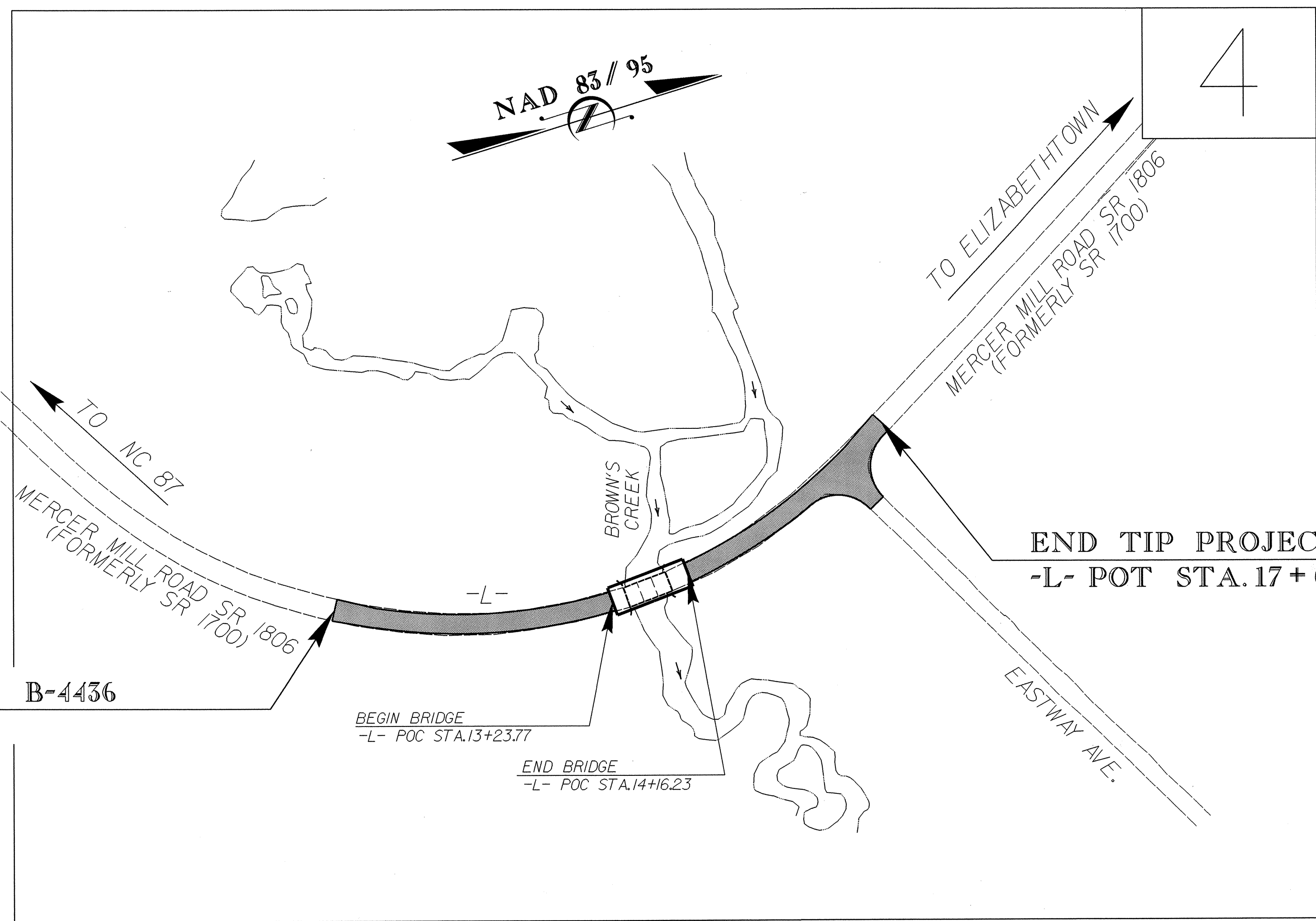


VICINITY MAP

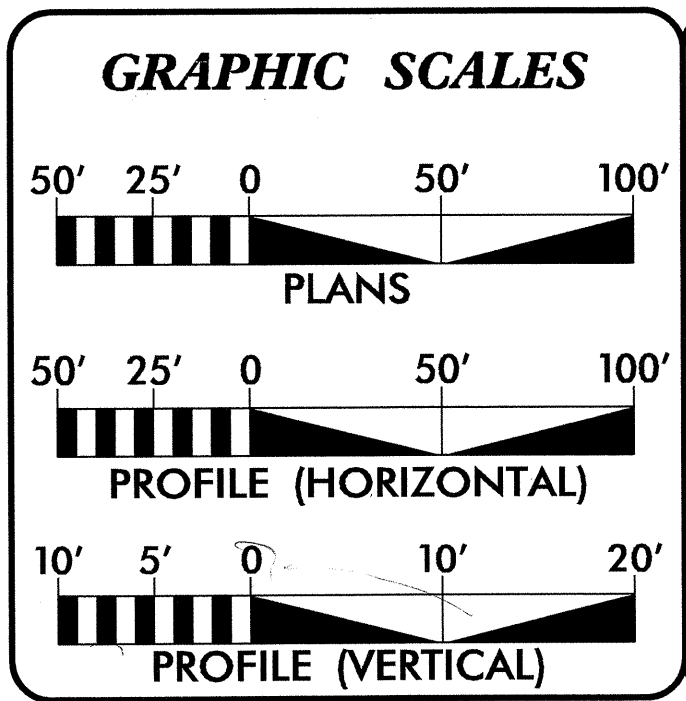
DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
BLADEN COUNTY

LOCATION: BRIDGE NO. 31 OVER BROWNS CREEK ON SR 1806 (FORMERLY SR 1700)
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



| | | | |
|-----------------|-----------------------------|-------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | B-4436 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 38363.1.1 | BRZ-1700(8) | PE | |
| 38363.2.1 | BRZ-1700(8) | RW & UTIL. | |
| 38363.3.FD1 | BRZ-1806(1) | CONST. | |



DESIGN DATA

ADT 2013 = 4,840
ADT 2033 = 6,910

DHV = 10 %
D = 60 %
T = 3 % *
V = 40 MPH

FUNC. CLASS. = COLLECTOR
* TTST 1% DUAL 2%

SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4436 = 0.115 MI.
LENGTH STRUCTURE TIP PROJECT B-4436 = 0.018 MI.
TOTAL LENGTH OF TIP PROJECT B-4436 = 0.133 MI.

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr.
Raleigh, NC 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 9, 2012

LETTING DATE:
OCTOBER 15, 2013

REKHA PATEL, P.E.
PROJECT ENGINEER

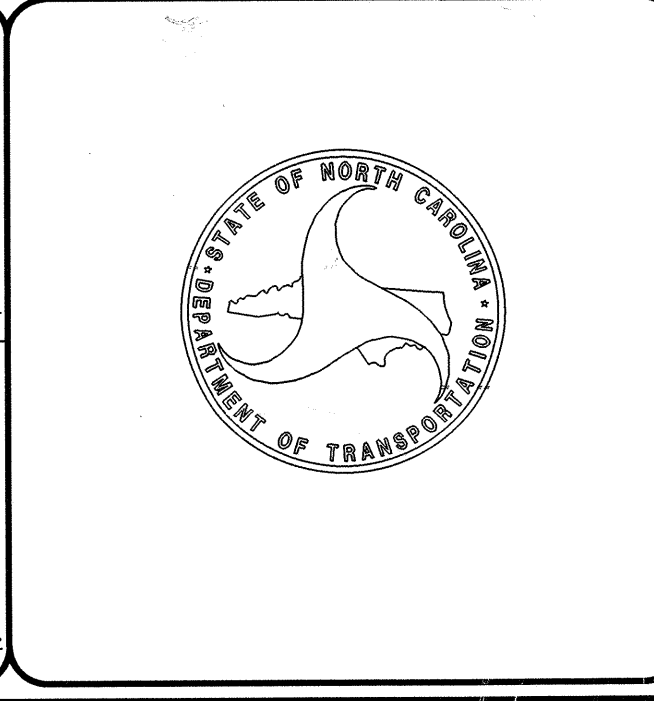
MICHAEL W. LITTLE, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

GALEN CHAI
SEAL 022000
SIGNATURE: Galen Chai 7/16/13 P.E.

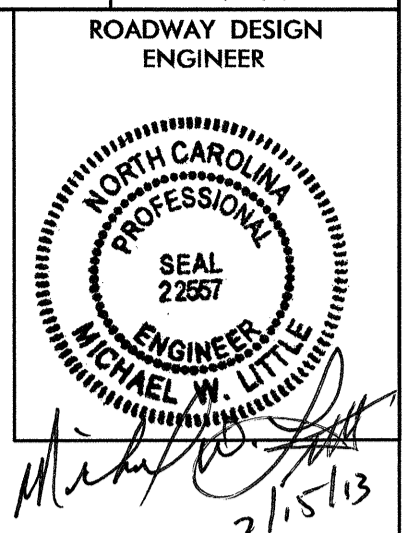
ROADWAY DESIGN ENGINEER

MICHAEL W. LITTLE
SEAL 22557
SIGNATURE: Michael W. Little 7/16/13 P.E.



03-JUL-2013 11:57
R:\Roadway\Proj\B4436-rdy-fsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



| 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 | TYPICAL SECTIONS |
| 2-A | ROCK PLATING AND GEOTEXTILE OVERLAP DETAIL |
| 2-B | STRUCTURE ANCHOR UNITS, GUARDRAIL ANCHOR UNIT TYPE III |
| 3 | SUMMARY OF QUANTITIES |
| 3-A | LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER) AND GUARDRAIL |
| 3-B | SUMMARIES OF PAVEMENT REMOVAL, SUBSURFACE DRAINAGE AND EARTHWORK |
| 4 | PLAN SHEET |
| 5 | PROFILE SHEET |
| TMP-1 THRU TMP-3 | TRANSPORTATION MANAGEMENT PLANS |
| PMP-1 THRU PMP-2 | PAVEMENT MARKING PLANS |
| EC-1 THRU EC-5 | EROSION CONTROL PLANS |
| SIGN-1 THRU SIGN-4 | SIGNING PLANS |
| UC-1 THRU UC-4 | UTILITY CONSTRUCTION PLANS |
| UD-1 THRU UD-2 | UTILITIES BY OTHERS PLANS |
| X-1A | CROSS-SECTION SUMMARY SHEET |
| X-1 THRU X-6 | CROSS-SECTIONS |
| S-1 THRU S-22 | STRUCTURE PLANS |

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. NO. 560.01

SIDE ROADS:
THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

SUBSURFACE DRAINS:
SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

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.

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE
FOUR COUNTY EMC - POWER
CENTURYLINK - TELEPHONE
TIME WARNER CABLE - TELEVISION
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

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 6 - ASPHALT BASES AND PAVEMENTS | |
| 654.01 | Pavement Repairs |
| DIVISION 8 - INCIDENTALS | |
| 815.02 | Subsurface Drain |
| 840.18 | Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe |
| 840.24 | Frames and Narrow Slot Sag Grates |
| 840.25 | Anchorage for Frames - Brick or Concrete or Precast |
| 840.27 | Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe |
| 840.29 | Frames and Narrow Slot Flat Grates |
| 840.35 | Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates |
| 840.45 | Precast Drainage Structure |
| 840.46 | Traffic Bearing Precast Drainage Structure |
| 840.66 | Drainage Structure Steps |
| 840.72 | Pipe Collar |
| 846.01 | Concrete Curb, Gutter and Curb & Gutter |
| 862.01 | Guardrail Placement |
| 862.02 | Guardrail Installation |
| 876.02 | Guide for Rip Rap at Pipe Outlets |

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

BOUNDARIES AND PROPERTY:

| | |
|--|---------|
| State Line | ----- |
| County Line | ----- |
| Township Line | ----- |
| City Line | ----- |
| Reservation Line | ----- |
| Property Line | ----- |
| Existing Iron Pin | ○ EP |
| Property Corner | ----- |
| Property Monument | □ ECM |
| Parcel/Sequence Number | ⑫③ |
| Existing Fence Line | -x-x-x- |
| Proposed Woven Wire Fence | ○ |
| Proposed Chain Link Fence | □ |
| Proposed Barbed Wire Fence | ◇ |
| Existing Wetland Boundary | --- WLB |
| Proposed Wetland Boundary | --- WLB |
| Existing Endangered Animal Boundary | --- EAB |
| Existing Endangered Plant Boundary | --- EPB |
| Known Soil Contamination: Area or Site | ☠ ☠ |
| Potential Soil Contamination: Area or Site | ☠ ☠ |

BUILDINGS AND OTHER CULTURE:

| | |
|-------------------------------|---|
| Gas Pump Vent or U/G Tank Cap | ○ |
| Sign | ○ |
| Well | ○ |
| Small Mine | ⚡ |
| Foundation | □ |
| Area Outline | □ |
| Cemetery | ⊕ |
| Building | □ |
| School | □ |
| Church | ⊕ |
| Dam | ▬ |

HYDROLOGY:

| | |
|------------------------------------|----------|
| Stream or Body of Water | ----- |
| Hydro, Pool or Reservoir | □ |
| Jurisdictional Stream | --- JS |
| Buffer Zone 1 | --- BZ 1 |
| Buffer Zone 2 | --- BZ 2 |
| Flow Arrow | ← |
| Disappearing Stream | → |
| Spring | ○ |
| Wetland | ⚡ |
| Proposed Lateral, Tail, Head Ditch | ▬ |
| False Sump | ▽ |

RAILROADS:

| | |
|--------------------|---------------|
| Standard Gauge | ----- |
| RR Signal Milepost | ○ 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 RW 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 | ▬ |
| Single Tree | ☼ |
| Single Shrub | ☼ |
| Hedge | ▬ |
| Woods Line | ▬ |

VEGETATION:

| | |
|----------|------------|
| Orchard | ☼ ☼ ☼ ☼ |
| Vineyard | □ Vineyard |

EXISTING STRUCTURES:

| | |
|--|-----------|
| MAJOR: | |
| Bridge, Tunnel or Box Culvert | ▬ CONC |
| Bridge Wing Wall, Head Wall and End Wall | ▬ CONC WW |
| MINOR: | |
| Head and End Wall | ▬ CONC HW |
| Pipe Culvert | ▬ |
| Footbridge | ▬ |
| Drainage Box: Catch Basin, DI or JB | □ CB |
| Paved Ditch Gutter | ▬ |
| Storm Sewer Manhole | ○ S |
| Storm Sewer | ▬ S |

UTILITIES:

| | |
|-------------------------------------|-------|
| POWER: | |
| Existing Power Pole | ● |
| Proposed Power Pole | ○ |
| Existing Joint Use Pole | ● |
| Proposed Joint Use Pole | ○ |
| Power Manhole | ⊕ |
| 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 | --- W |
| Designated U/G Water Line (S.U.E.*) | --- W |
| 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 | --- ?UTL |
| 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. |

6/2/99

| | |
|-----------------------|-----------|
| PROJECT REFERENCE NO. | SHEET NO. |
| B-4436 | 1-C |
| Location and Surveys | |

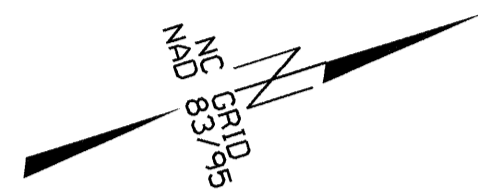
SURVEY CONTROL SHEET B-4436

| BL POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|----------|--------------|-------------|--------------|-----------|------------------------|----------|
| 1 | B4436 - BL-1 | 313678.9137 | 2120415.8795 | 58.55 | OUTSIDE PROJECT LIMITS | |
| 2 | B4436 - BL-2 | 314117.3262 | 2120529.9656 | 54.91 | 13+99.21 | 18.36 RT |
| 3 | B4436 - BL-3 | 314538.1687 | 2120350.0735 | 61.92 | 18+53.62 | 18.13 RT |

FINAL ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|-------|----------|--------|-------------|--------------|
| L | 16+03.48 | 50.00 | 314332.3080 | 2120502.4379 |
| L | 16+00.00 | -70.00 | 314278.9033 | 2120394.9227 |
| L | 15+00.00 | -50.00 | 314200.8977 | 2120444.5947 |
| L | 13+00.00 | 50.00 | 314013.7600 | 2120564.5342 |
| L | 13+00.00 | 30.00 | 314014.7647 | 2120544.5594 |
| L | 13+00.00 | -50.00 | 314018.7839 | 2120464.6604 |
| L | 11+50.00 | -40.00 | 313880.2434 | 2120450.9157 |
| L | 13+00.00 | -40.00 | 314018.2815 | 2120474.6478 |
| L | 16+57.96 | -40.00 | 314339.6061 | 2120397.3372 |
| L | 16+57.96 | -30.00 | 314344.5965 | 2120406.0031 |
| L | 11+50.00 | -30.04 | 313877.3933 | 2120460.4574 |

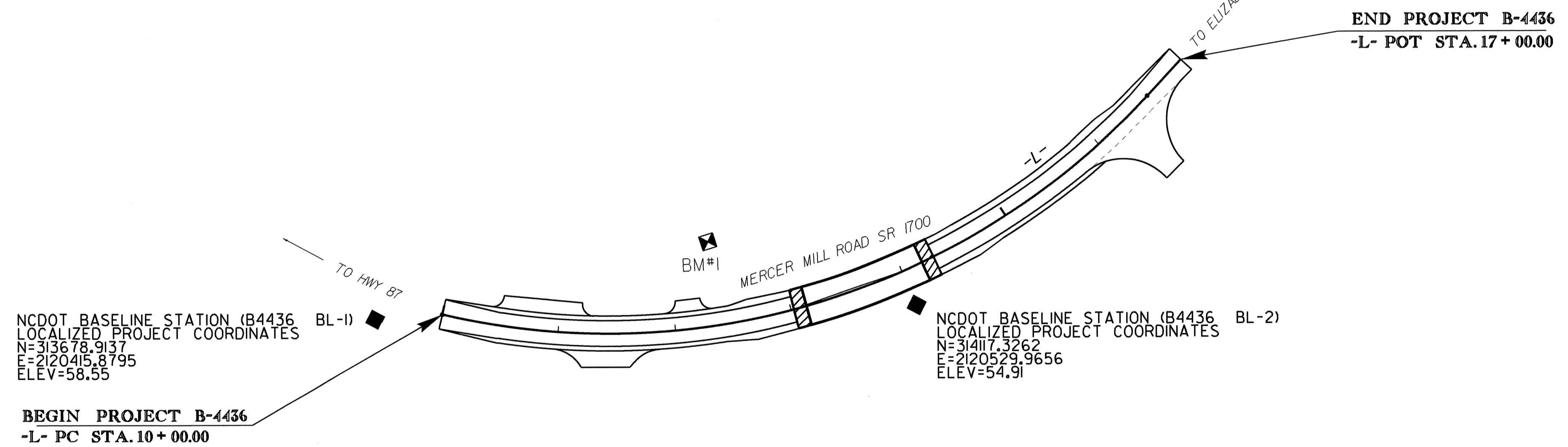
| TYPE | STATION | NORTH | EAST |
|------|----------|-------------|--------------|
| PC | 10+00.00 | 313731.5727 | 2120429.5588 |
| PT | 16+57.96 | 314359.5675 | 2120432.0005 |
| POT | 19+22.38 | 314588.7047 | 2120300.0486 |



NCDOT GPS STATION (B4436-1)
 LOCALIZED PROJECT COORDINATES
 N=314916.9850
 E=2120140.5140
 ELEV=80.67

 BM1 ELEVATION = 52.97
 N 313966 E 2120440
 L STATION 12+39.00 69 LEFT
 RR SPIKE IN 20" BIRCH

NCDOT BASELINE STATION (B4436 BL-3)
 LOCALIZED PROJECT COORDINATES
 N=314538.1687
 E=2120350.0735
 ELEV=61.92



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4436-1"
 WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
 NORTHING: 314916.9850(ft) EASTING: 2120140.5140(ft)
 ELEVATION: 80.67(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993498
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4436-1" TO -L- STATION 10+00.00 IS
 S 13° 42' 11.9" E 1220.1431'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING NCDOT PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/PAGES/DEFAULT.ASPX](https://connect.ncdot.gov/resources/location/pages/default.aspx)

THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4436_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.

© 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 EXISTING HARN MONUMENTATION
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

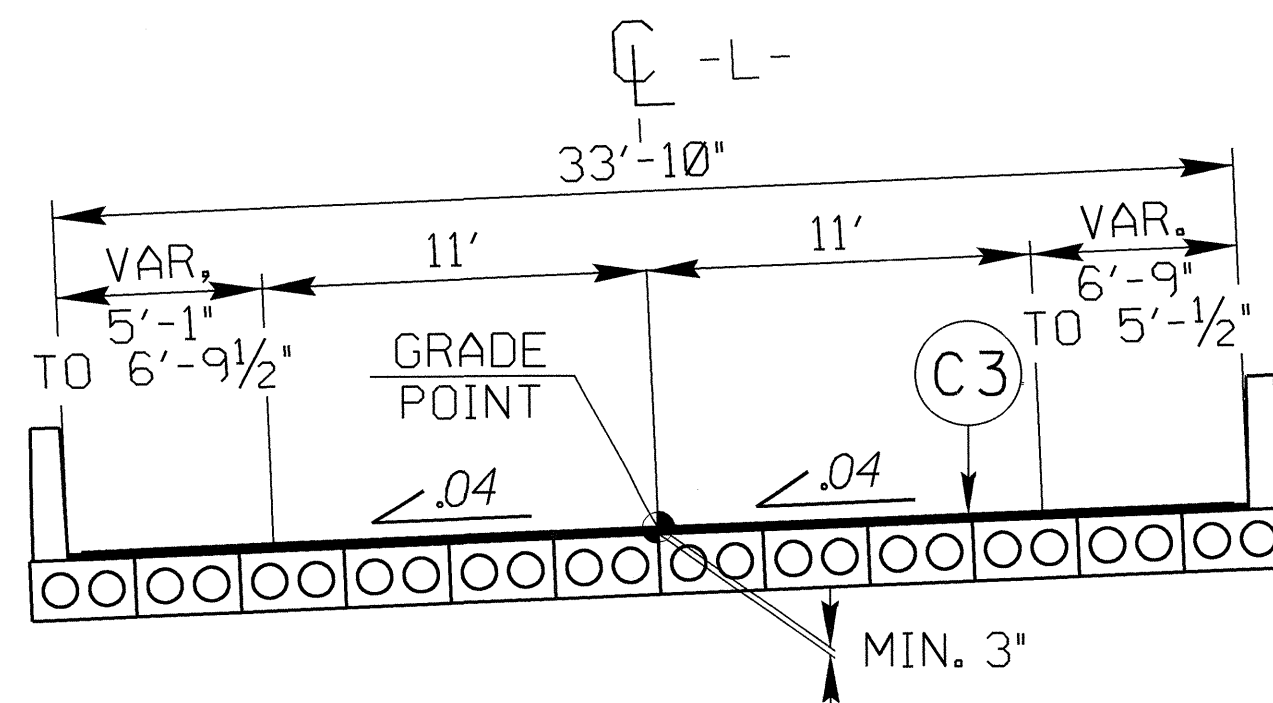
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6/2/99

PAVEMENT SCHEDULE

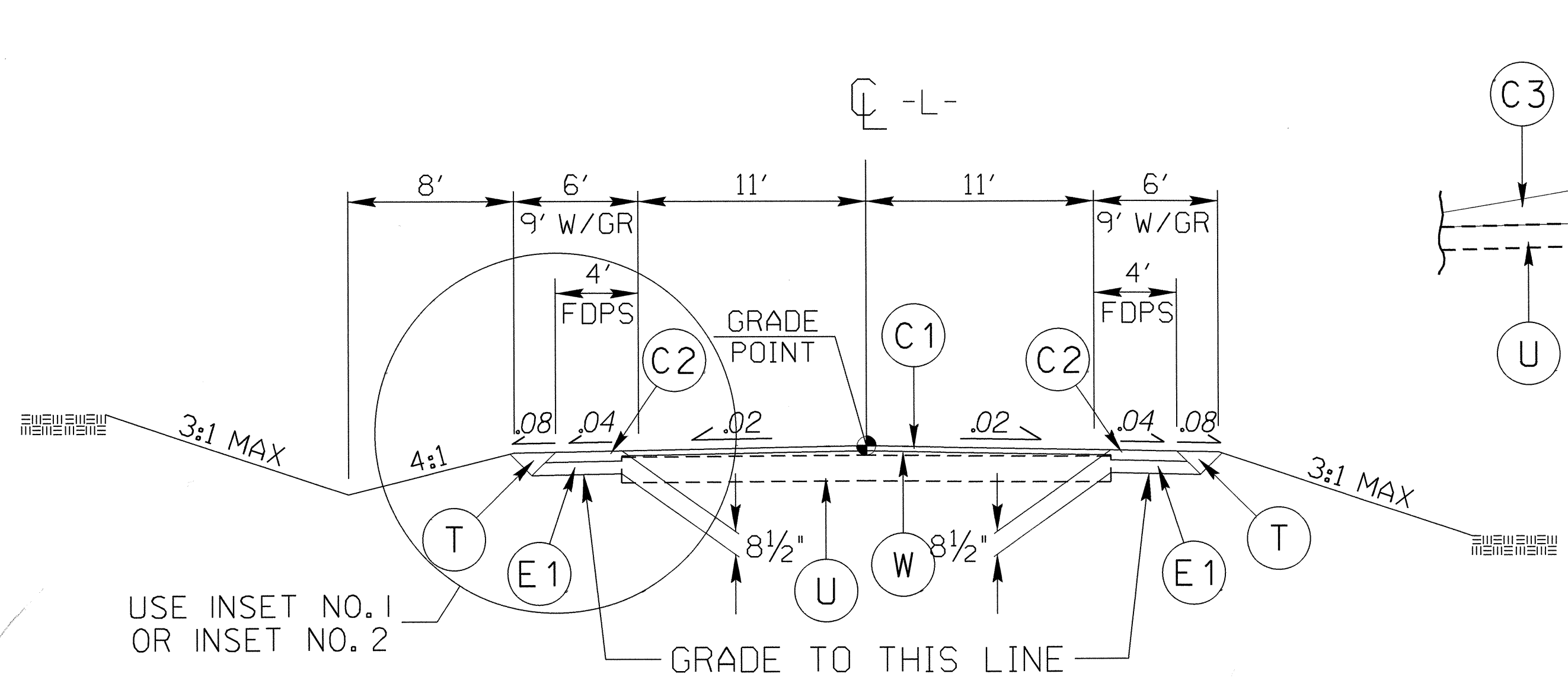
| | | | |
|----|--|----|--|
| C1 | PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. | R1 | SHOULDER BERM GUTTER |
| C2 | PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS. | R2 | SPECIAL SHOULDER BERM CURB |
| C3 | PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH. | T | EARTH MATERIAL |
| E1 | PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. | U | EXISTING PAVEMENT |
| E2 | PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH. | W | VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL) |

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

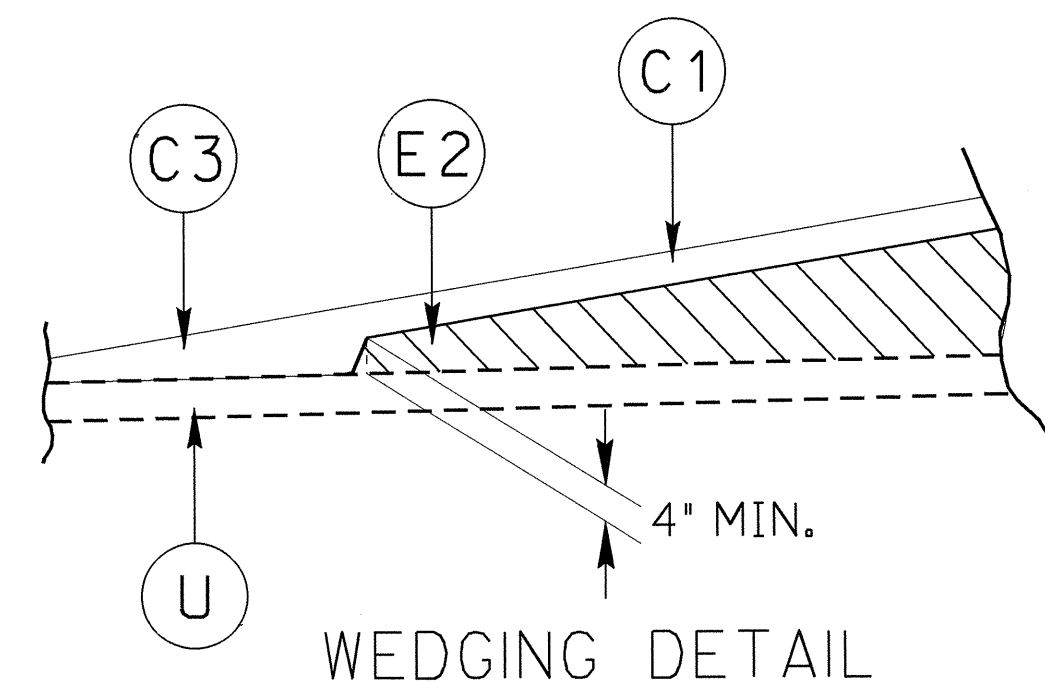


DETAIL SHOWING ASPHALT WEARING SURFACE ON CORED SLAB BRIDGE
-L- STA. 13+23.77 TO -L- STA. 14+16.23

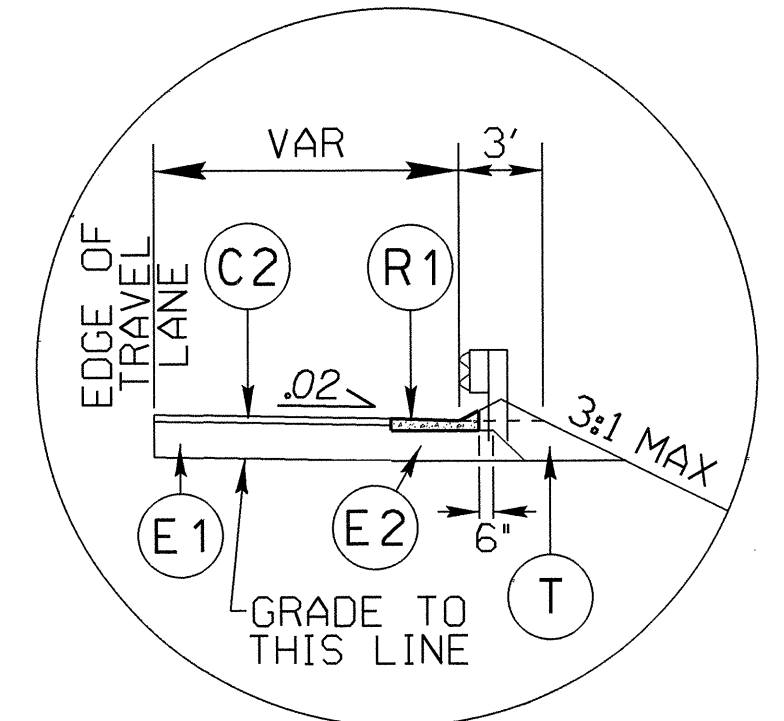
| | |
|--|--|
| PROJECT REFERENCE NO. B-4436 | SHEET NO. 2 |
| ROADWAY DESIGN NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22567 MICHAEL W. LITTLE 7/15/13 | PAVEMENT DESIGN NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 838619 JULY 15 2013 |



TYPICAL SECTION NO. 1

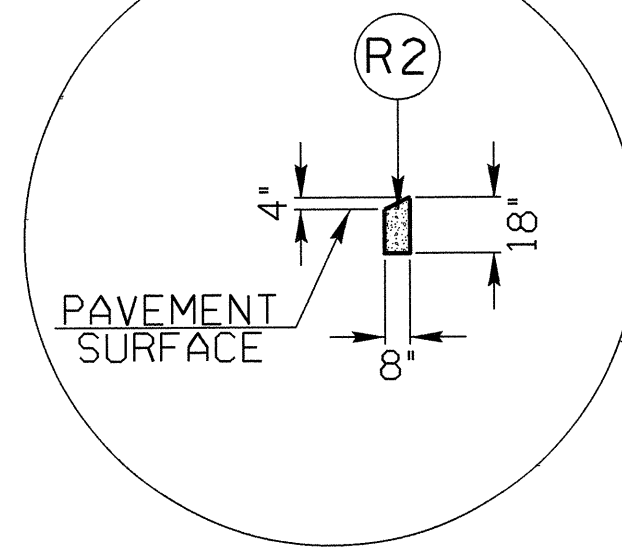


WEDGING DETAIL

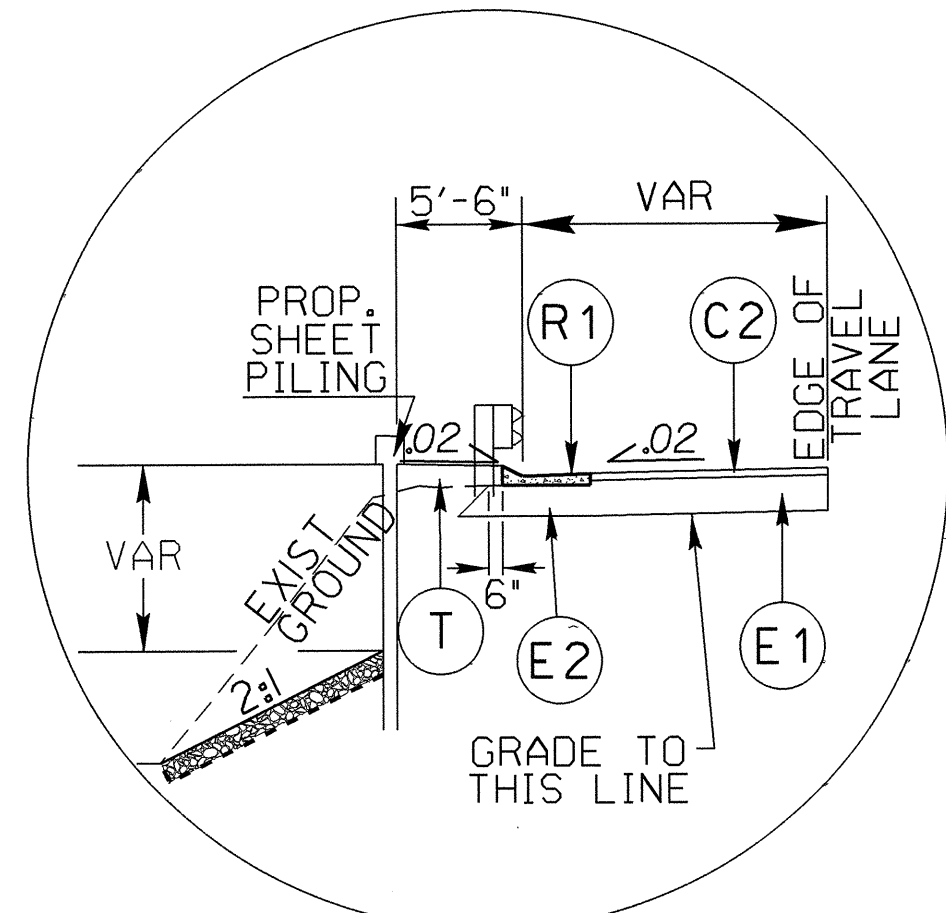


INSET NO. 1

USE WITH TYPICAL SECTION NO. 1
USE WITH TYPICAL SECTION NO. 2

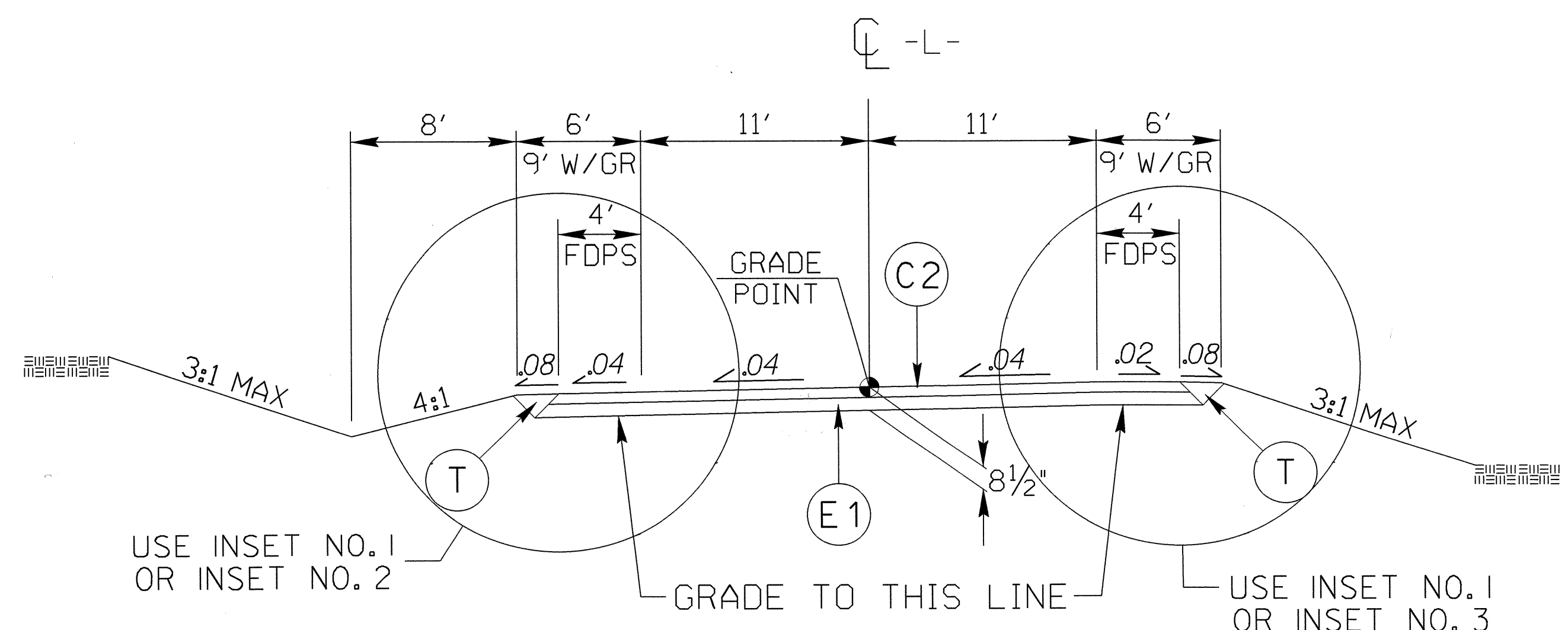


DIMENSIONS FOR SPECIAL SHOULDER BERM CURB



INSET NO. 2

USE WITH TYPICAL SECTION NO. 1
USE WITH TYPICAL SECTION NO. 2



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 1
-L- STA. 10+50.00 TO -L- STA. 12+75.00
-L- STA. 14+75.00 TO -L- STA. 16+50.00

USE INSET NO. 1 FOR:
-L- STA. 15+75.00 TO -L- STA. 15+80.00 (LT.) REVERSE

USE INSET NO. 2 FOR:
-L- STA. 14+75.00 TO -L- STA. 15+75.00 (LT.)

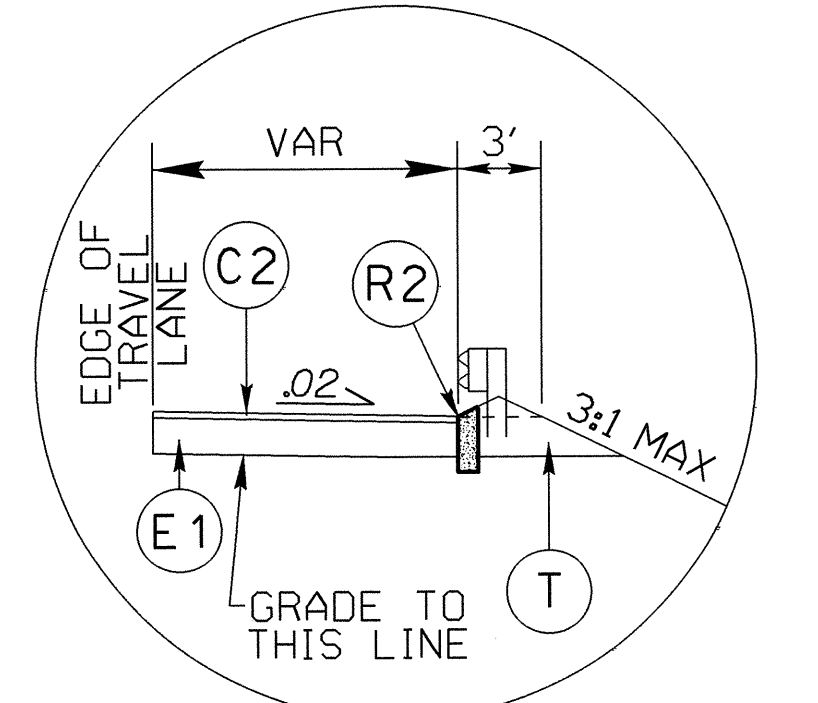
NOTES:
(1) TRANSITION FROM EXISTING TO T.S. NO. 1
-L- STA. 10+00.00 TO -L- STA. 10+50.00
(2) TRANSITION FROM T.S. NO. 1 TO EXISTING
-L- STA. 16+50.00 TO -L- STA. 17+00.00

USE TYPICAL SECTION NO. 2
-L- STA. 12+75.00 TO -L- STA. 13+23.77 (BEGIN BRIDGE)
-L- STA. 14+16.23 (END BRIDGE) TO -L- STA. 14+75.00

USE INSET NO. 1 FOR:
-L- STA. 13+03.74 TO -L- STA. 13+11.49 (LT.) REVERSE
-L- STA. 14+26.01 TO -L- STA. 14+42.00 (RT.)

USE INSET NO. 2 FOR:
-L- STA. 14+30.00 TO -L- STA. 14+75.00 (LT.)

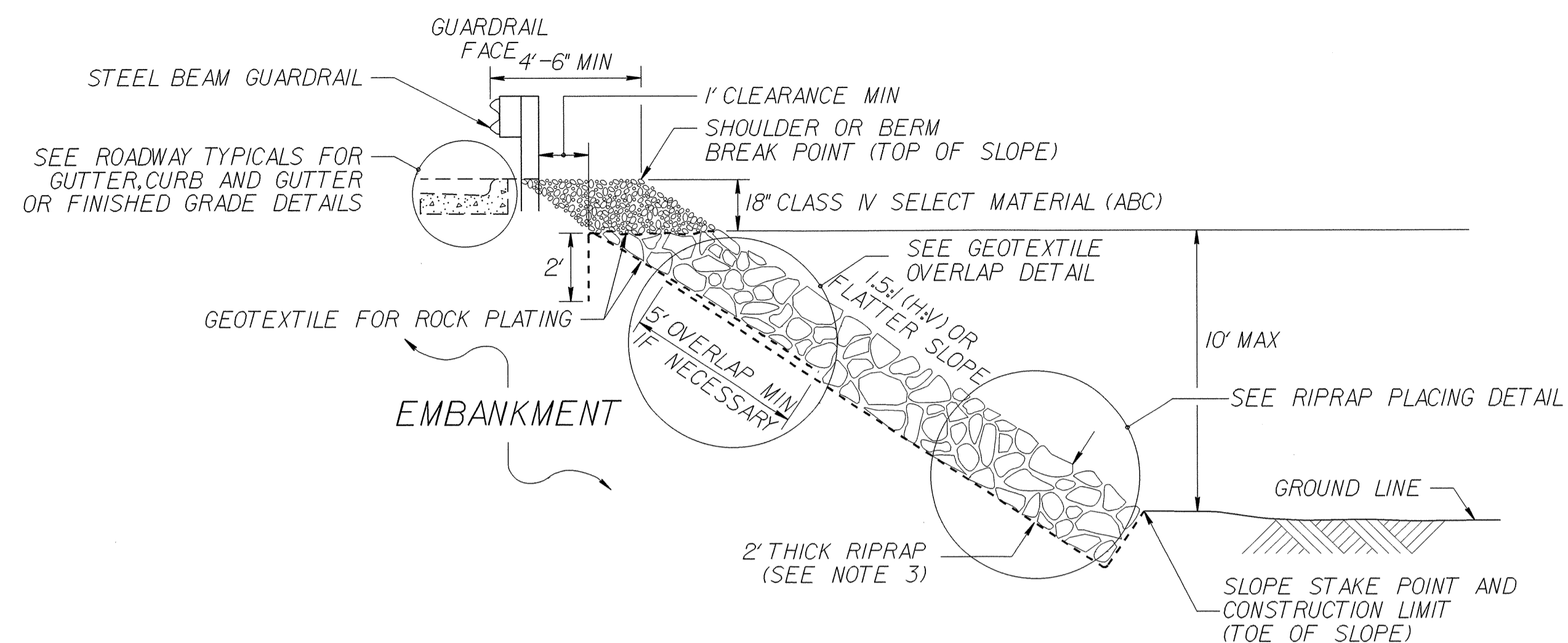
USE INSET NO. 3 FOR:
-L- STA. 13+06.24 TO -L- STA. 13+13.99 (RT.)



INSET NO. 3

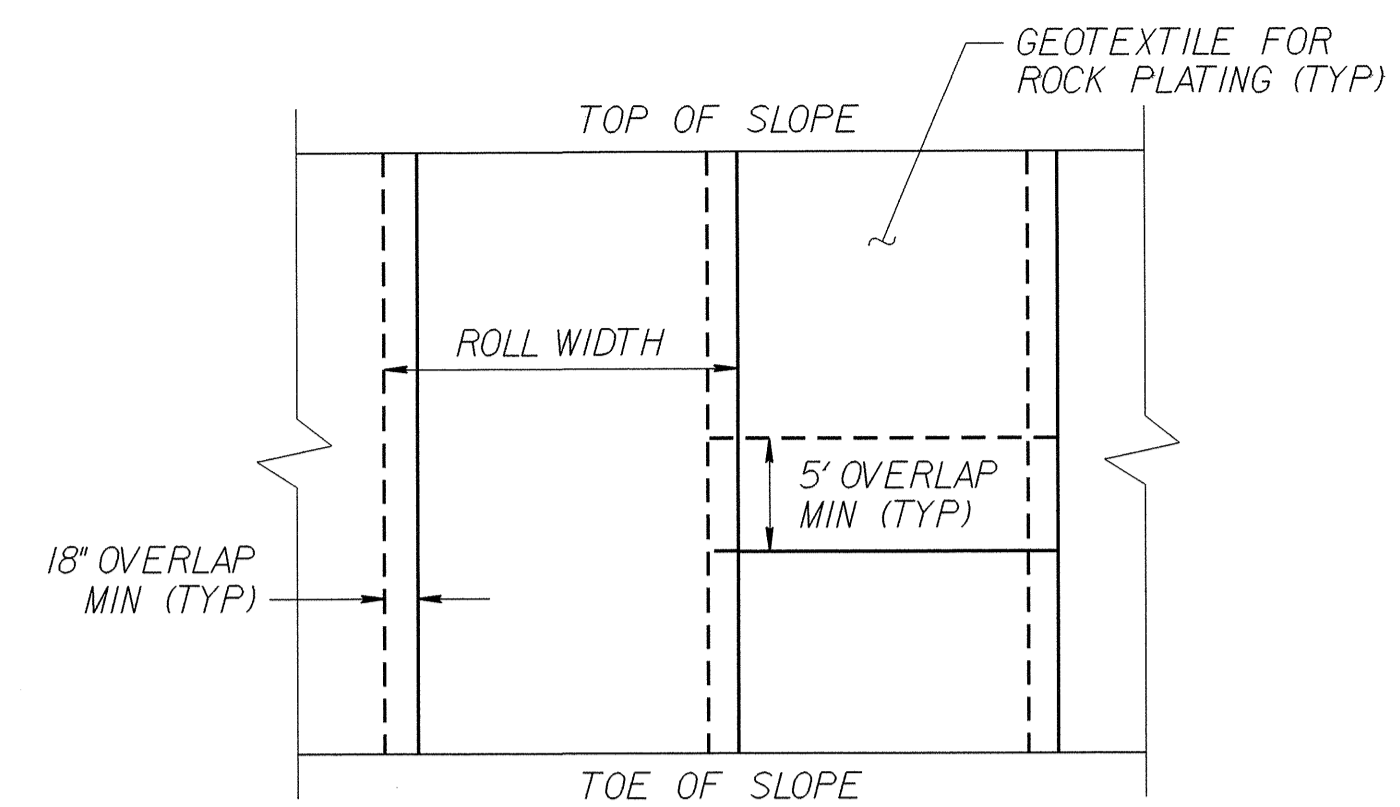
USE WITH TYPICAL SECTION NO. 2

09-JUL-2013 10:04
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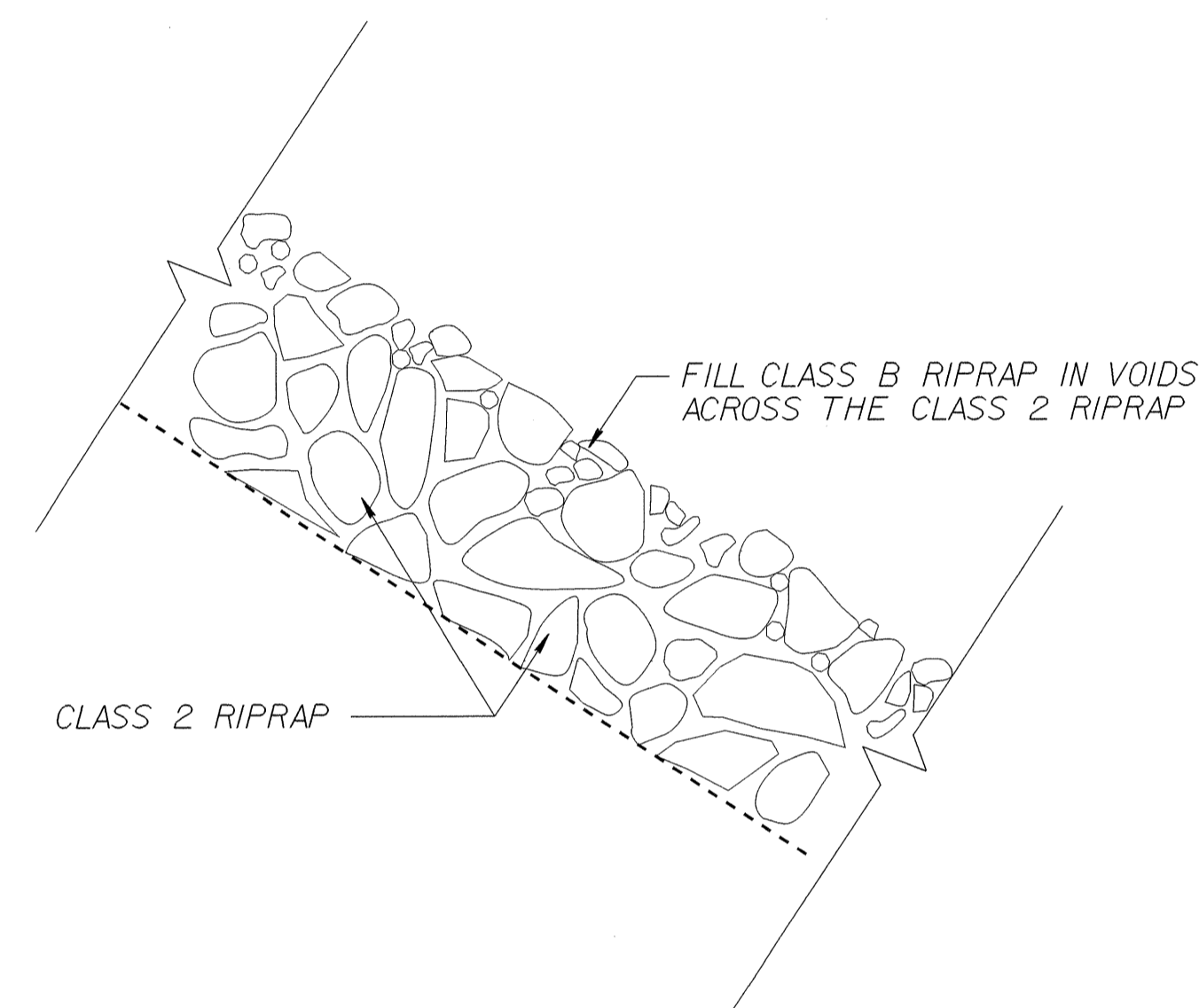


SPECIAL ROCK PLATING DETAIL - TYPICAL SECTION, N.T.S.

-L- STA 15+75 +/- TO -L- STA 16+15 +/- (LT.)
 -L- STA 14+30 +/- TO -L- STA 15+00 +/- (RT.)



GEOTEXTILE OVERLAP DETAIL (PLAN VIEW), N.T.S.

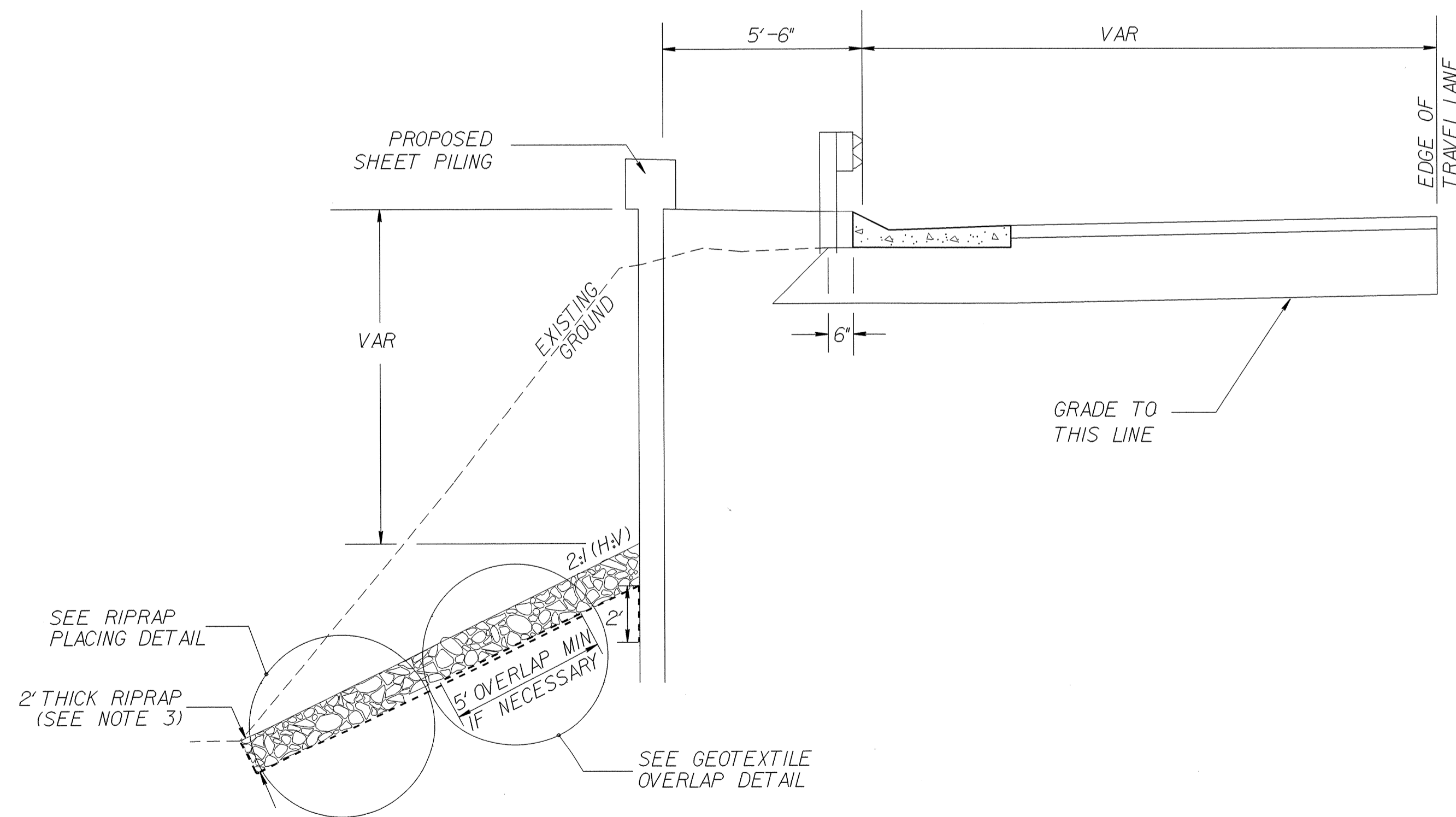


RIPRAP PLACING DETAIL N.T.S.

NOTES:

- SEE ROADWAY PLANS AND SUMMARY SHEETS FOR ROCK PLATING LOCATIONS.
- FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.
- USE CLASS 2 RIPRAP FOLLOWED BY FILLING VOIDS WITH CLASS B RIPRAP.

| ESTIMATED QUANTITIES | | |
|--|--------------|-----------------|
| -L- 14+30 +/- (LT.) TO -L- 15+75 +/- (LT.) | ROCK PLATING | 170 SQUARE YARD |
| -L- 15+75 +/- (LT.) TO -L- 16+15 +/- (LT.) | ROCK PLATING | 50 SQUARE YARD |
| -L- 14+30 +/- (RT.) TO -L- 15+00 +/- (RT.) | ROCK PLATING | 100 SQUARE YARD |
| TOTAL QUANTITIES = | | 320 SQUARE YARD |



SPECIAL ROCK PLATING DETAIL - TYPICAL SECTION, N.T.S.

-L- STA 14+30 +/- TO -L- STA 15+75 +/- (LT.)

| | |
|-----------------------|--------------|
| PREPARED BY: S. ZHANG | DATE: 6/2013 |
| REVIEWED BY: J. BATTS | DATE: 6/2013 |

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACT OFFICE

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

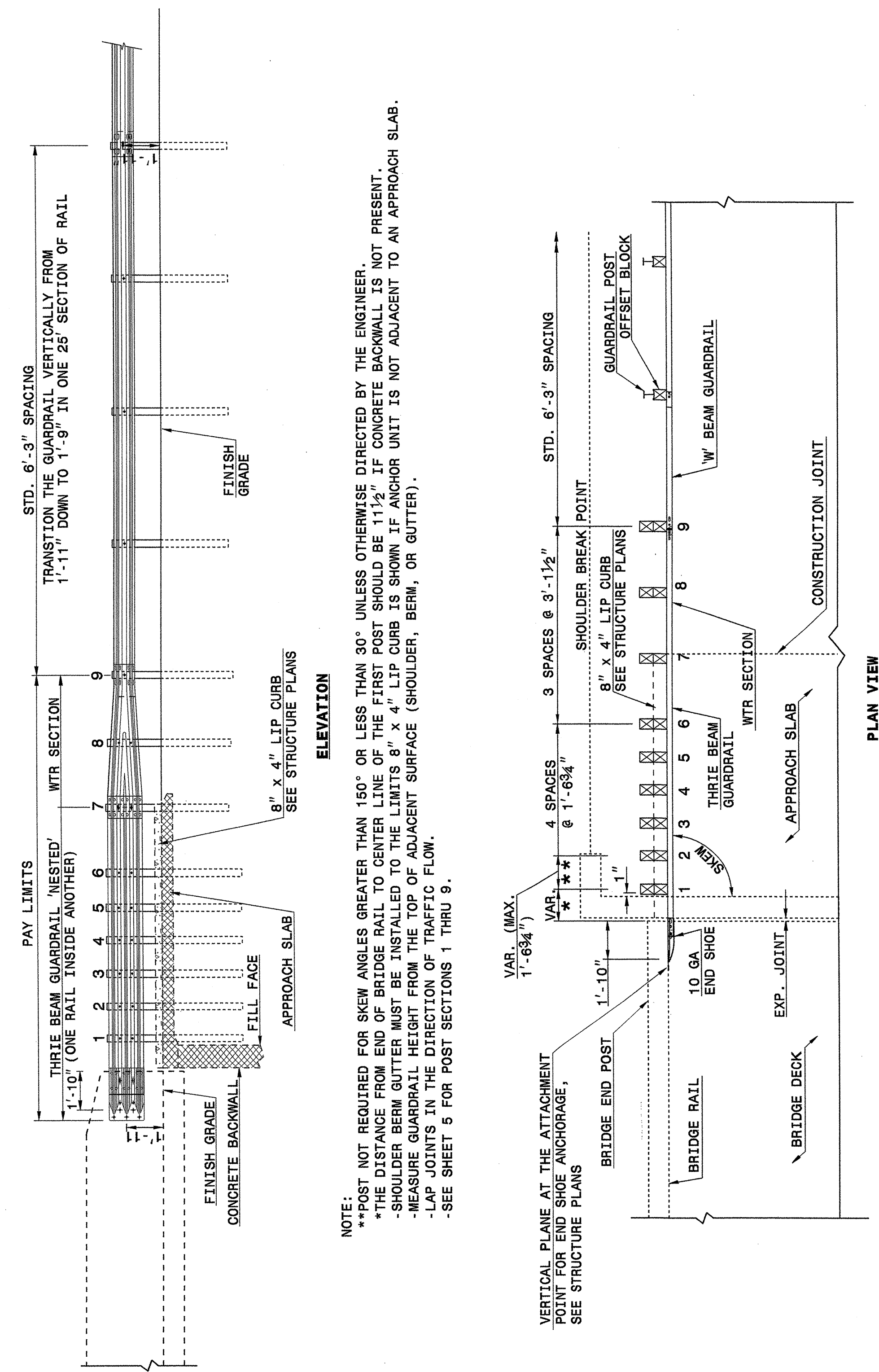
SPECIAL ROCK PLATING DETAIL

| REVISIONS | | | | | |
|-----------|----|------|-----|----|------|
| NO. | BY | DATE | NO. | BY | DATE |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

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



ELEVATION

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.

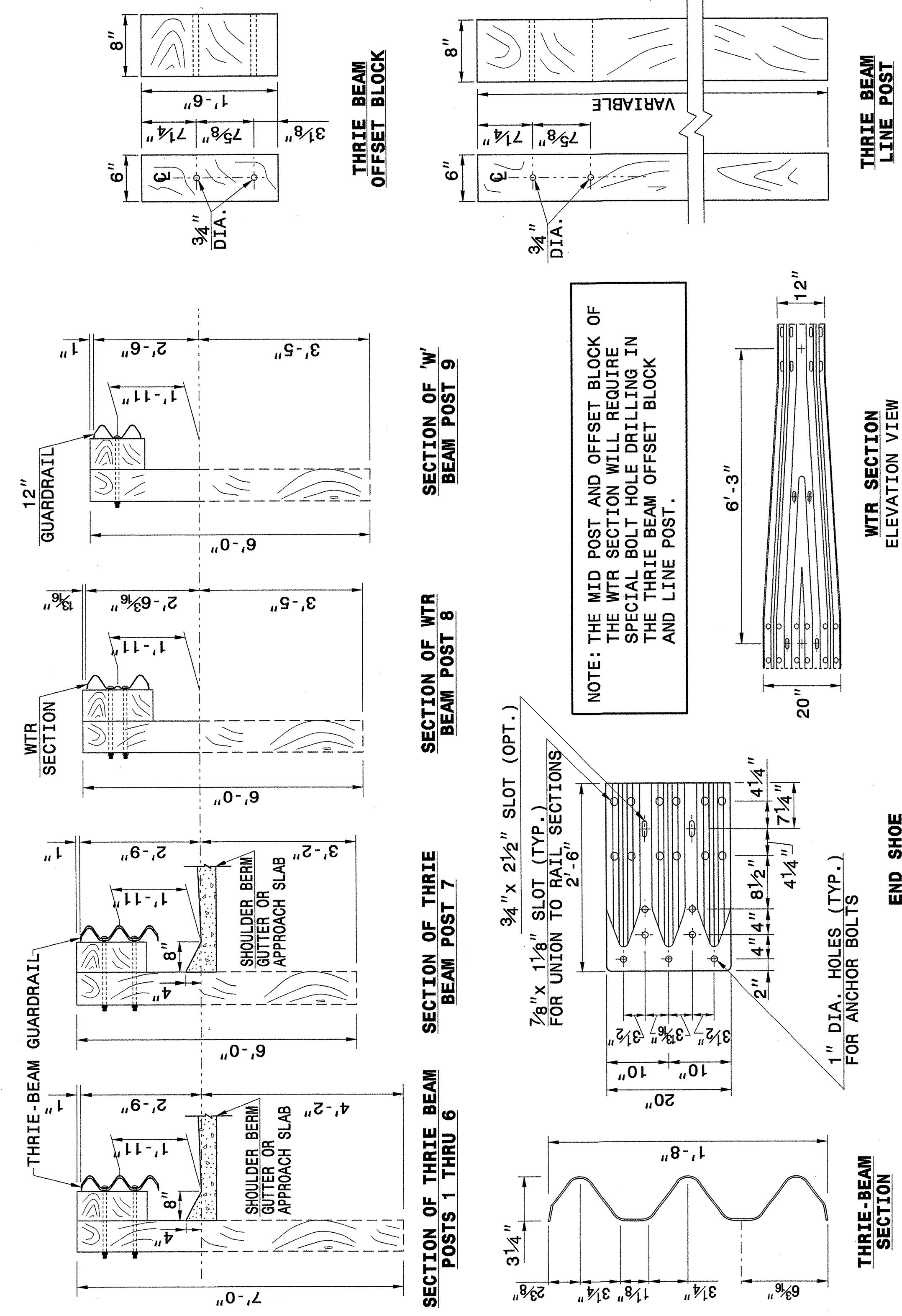
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

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
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03



NOTE: THE MID POST AND OFFSET BLOCK OF THE 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: *gust* DATE: *11/13/12*
 CHECKED BY: *gust* DATE: *11/13/12*
 FILE SPEC: ..



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

| STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203246 | | | | | | | | | | | | | | |
|---|-------|----------|------|--|--------------|-------|----------|------|--|--------------|-------|----------|------|---|
| ItemNumber | Sec # | Quantity | Unit | Description | ItemNumber | Sec # | Quantity | Unit | Description | ItemNumber | Sec # | Quantity | Unit | Description |
| 0000100000-N | 800 | Lump Sum | | MOBILIZATION | 2044000000-E | 815 | 100 | LF | 6" PERFORATED SUBDRAIN PIPE | 4686000000-E | 1205 | 1,427 | LF | THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS) |
| 0000400000-N | 801 | Lump Sum | | CONSTRUCTION SURVEYING | 2070000000-N | 815 | 1 | EA | SUBDRAIN PIPE OUTLET | 4900000000-N | 1251 | 19 | EA | PERMANENT RAISED PAVEMENT MARKERS |
| 0029000000-N | SP | Lump Sum | | REINFORCED BRIDGE APPROACH FILL, STATION ***** (13+70) | 2077000000-E | 815 | 6 | LF | 6" OUTLET PIPE | 5649000000-N | 1515 | 2 | EA | RECONNECT WATER METER |
| 0043000000-N | 226 | Lump Sum | | GRADING | 2253000000-E | 840 | 0.399 | CY | PIPE COLLARS | 5672000000-N | 1515 | 1 | EA | RELOCATE FIRE HYDRANT |
| 0050000000-E | 226 | 1 | ACR | SUPPLEMENTARY CLEARING & GRUB-BING | 2286000000-N | 840 | 5 | EA | MASONRY DRAINAGE STRUCTURES | 6000000000-E | 1605 | 800 | LF | TEMPORARY SILT FENCE |
| 0057000000-E | 226 | 400 | CY | UNDERCUT EXCAVATION | 2366000000-N | 840 | 1 | EA | FRAME WITH TWO GRATES, STD 840.24 | 6006000000-E | 1610 | 205 | TON | STONE FOR EROSION CONTROL, CLASS A |
| 0195000000-E | 265 | 400 | CY | SELECT GRANULAR MATERIAL | 2367000000-N | 840 | 4 | EA | FRAME WITH TWO GRATES, STD 840.29 | 6009000000-E | 1610 | 75 | TON | STONE FOR EROSION CONTROL, CLASS B |
| 0196000000-E | 270 | 500 | SY | GEOTEXTILE FOR SOIL STABILIZATION | 2556000000-E | 846 | 180 | LF | SHOULDER BERM GUTTER | 6012000000-E | 1610 | 80 | TON | SEDIMENT CONTROL STONE |
| 0223000000-E | 275 | 320 | SY | ROCK PLATING | 2752000000-E | SP | 10 | LF | GENERIC PAVING ITEM SPECIAL SHOULDER BERM CURB | 6015000000-E | 1615 | 1.5 | ACR | TEMPORARY MULCHING |
| 0318000000-E | 300 | 30 | TON | FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES | 3030000000-E | 862 | 275 | LF | STEEL BM GUARDRAIL | 6018000000-E | 1620 | 50 | LB | SEED FOR TEMPORARY SEEDING |
| 0320000000-E | 300 | 80 | SY | FOUNDATION CONDITIONING GEOTEXTILE | 3150000000-N | 862 | 5 | EA | ADDITIONAL GUARDRAIL POSTS | 6021000000-E | 1620 | 1.25 | TON | FERTILIZER FOR TEMPORARY SEEDING |
| 0335200000-E | 305 | 76 | LF | 15" DRAINAGE PIPE | 3165000000-N | SP | 4 | EA | GUARDRAIL ANCHOR UNITS, TYPE ***** (TL-2) | 6024000000-E | 1622 | 200 | LF | TEMPORARY SLOPE DRAINS |
| 0335850000-E | 305 | 4 | EA | *** DRAINAGE PIPE ELBOWS (15") | 3215000000-N | 862 | 4 | EA | GUARDRAIL ANCHOR UNITS, TYPE III | 6029000000-E | SP | 200 | LF | SAFETY FENCE |
| 0366000000-E | 310 | 164 | LF | 15" RC PIPE CULVERTS, CLASS III | 3628000000-E | 876 | 10 | TON | RIP RAP, CLASS I | 6030000000-E | 1630 | 170 | CY | SILT EXCAVATION |
| 0995000000-E | 340 | 36 | LF | PIPE REMOVAL | 3649000000-E | 876 | 10 | TON | RIP RAP, CLASS B | 6036000000-E | 1631 | 2,200 | SY | MATTING FOR EROSION CONTROL |
| 1220000000-E | 545 | 100 | TON | INCIDENTAL STONE BASE | 3656000000-E | 876 | 615 | SY | GEOTEXTILE FOR DRAINAGE | 6037000000-E | SP | 200 | SY | COIR FIBER MAT |
| 1330000000-E | 607 | 250 | SY | INCIDENTAL MILLING | 4072000000-E | 903 | 120.5 | LF | SUPPORTS, 3-LB STEEL U-CHANNEL | 6042000000-E | 1632 | 235 | LF | 1/4" HARDWARE CLOTH |
| 1489000000-E | 610 | 270 | TON | ASPHALT CONC BASE COURSE, TYPE B25.0B | 4096000000-N | 904 | 1 | EA | SIGN ERECTION, TYPE D | 6043000000-E | SP | 20 | SY | LOW PERMEABILITY GEOTEXTILE |
| 1519000000-E | 610 | 380 | TON | ASPHALT CONC SURFACE COURSE, TYPE S9.5B | 4102000000-N | 904 | 12 | EA | SIGN ERECTION, TYPE E | 6048000000-E | SP | 335 | SY | FLOATING TURBIDITY CURTAIN |
| 1575000000-E | 620 | 35 | TON | ASPHALT BINDER FOR PLANT MIX | 4155000000-N | 907 | 8 | EA | DISPOSAL OF SIGN SYSTEM, U-CHANNEL | 6071010000-E | SP | 180 | LF | WATTLE |
| 1693000000-E | 654 | 20 | TON | ASPHALT PLANT MIX, PAVEMENT REPAIR | 4158000000-N | 907 | 1 | EA | DISPOSAL OF SIGN SYSTEM, WOOD | 6071020000-E | SP | 55 | LB | POLYACRYLAMIDE (PAM) |
| 2022000000-E | 815 | 22.4 | CY | SUBDRAIN EXCAVATION | 4400000000-E | 1110 | 396 | SF | WORK ZONE SIGNS (STATIONARY) | 6071030000-E | 1640 | 50 | LF | COIR FIBER BAFFLE |
| 2026000000-E | 815 | 100 | SY | GEOTEXTILE FOR SUBSURFACE DRAINS | 4410000000-E | 1110 | 94 | SF | WORK ZONE SIGNS (BARRICADE MOUNTED) | 6071050000-E | SP | 1 | EA | *** SKIMMER (1-1/2") |
| 2036000000-E | 815 | 16.8 | CY | SUBDRAIN COARSE AGGREGATE | 4445000000-E | 1145 | 80 | LF | BARRICADES (TYPE III) | 6084000000-E | 1660 | 1.5 | ACR | SEEDING & MULCHING |
| | | | | | 4685000000-E | 1205 | 1,452 | LF | THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS) | 6087000000-E | 1660 | 0.7 | ACR | MOWING |
| | | | | | | | | | | 6090000000-E | 1661 | 50 | LB | SEED FOR REPAIR SEEDING |
| | | | | | | | | | | 6093000000-E | 1661 | 0.25 | TON | FERTILIZER FOR REPAIR SEEDING |
| | | | | | | | | | | 6096000000-E | 1662 | 50 | LB | SEED FOR SUPPLEMENTAL SEEDING |
| | | | | | | | | | | 6108000000-E | 1665 | 1 | TON | FERTILIZER TOPDRESSING |
| | | | | | | | | | | 6114500000-N | 1667 | 10 | MHR | SPECIALIZED HAND MOWING |
| | | | | | | | | | | 6117000000-N | SP | 18 | EA | RESPONSE FOR EROSION CONTROL |

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STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

**SUMMARY OF PAVEMENT REMOVAL
 IN SQUARE YARDS**

| BEGIN STATION | END STATION | LOCATION | ASPHALT REMOVAL |
|-------------------|-------------------|----------|-----------------|
| -L- STA. 12+75.00 | -L- STA. 13+40.00 | | 170.00 |
| -L- STA. 13+93.00 | -L- STA. 14+75.00 | | 219.00 |
| TOTAL | | | 389.00 |
| SAY | | | 400.00 |

**SUMMARY OF SUBSURFACE DRAINAGE
 IN FEET**

| BEGIN STATION | END STATION | LOCATION | DRAIN TYPE * UD / BD / SD | LENGTH |
|---------------|-------------|----------|------------------------------|--------|
| CONTINGENCY | | | SD | 100.00 |
| TOTAL | | | | 100.00 |

- * UD = UNDERDRAIN
- * BD = BLIND DRAIN
- * SD = SUBSURFACE DRAIN

**SUMMARY OF EARTHWORK
 IN CUBIC YARDS**

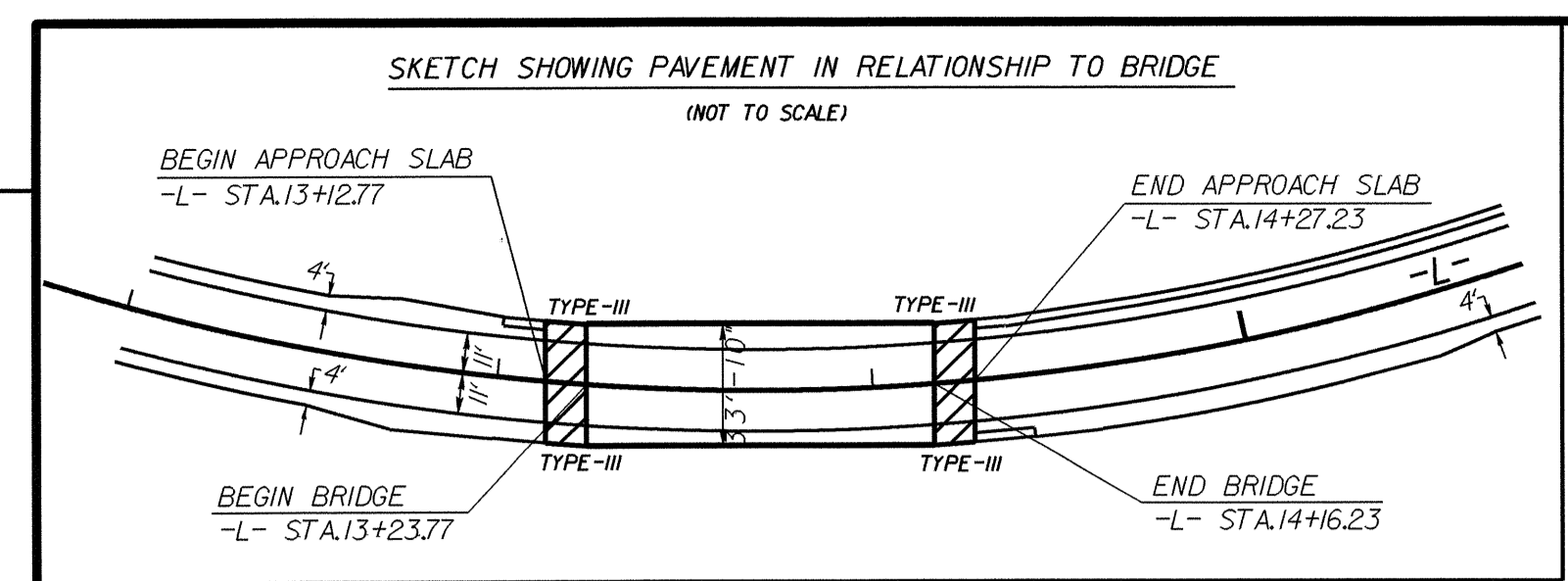
| LOCATION | UNCLASSIFIED EXCAVATION | UNDERCUT | EMBT + % | BORROW | WASTE |
|--|-------------------------|----------|----------|--------|-------|
| -L- STA. 10+00.00 TO -L- STA. 13+23.77 | 127 | | 191 | 64 | |
| SUBTOTAL 1 | 127 | | 191 | 64 | |
| -L- STA. 14+16.23 TO -L- STA. 17+00.00 | 95 | | 125 | 30 | |
| SUBTOTAL 2 | 95 | | 125 | 30 | |
| PROJECT SUBTOTAL | 222 | | 316 | 94 | |
| PROJECT TOTAL | 222 | | 316 | 94 | |
| EST. 5% TO REPLACE TOPSOIL ON BORROW PIT | | | | 5 | |
| GRAND TOTAL | 222 | | 316 | 99 | |
| SAY | 300 CY | | | 100 CY | |

PER GEOTECH RECOMMENDATION, ESTIMATED 400 CUBIC YARDS OF UNDERCUT TO BE USED AT THE DISCRETION OF THE RESIDENT ENGINEER

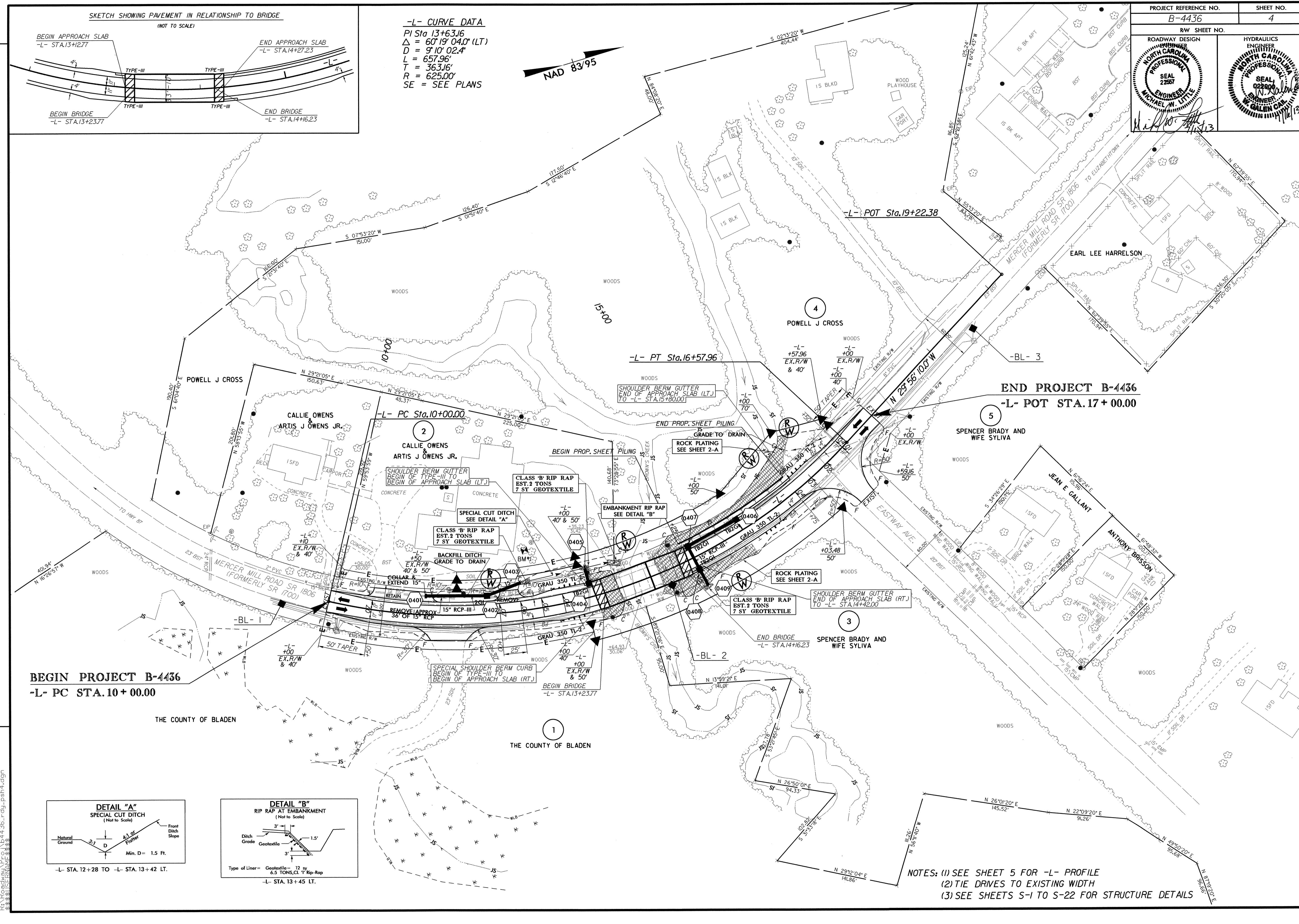
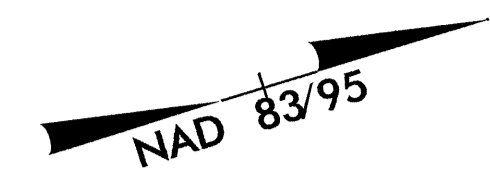
NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

NOTE: Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".

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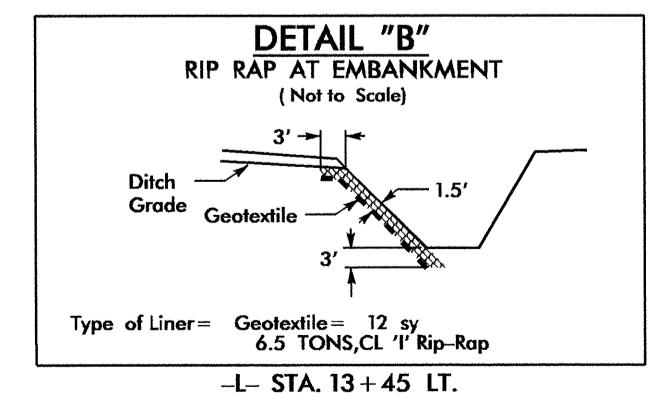
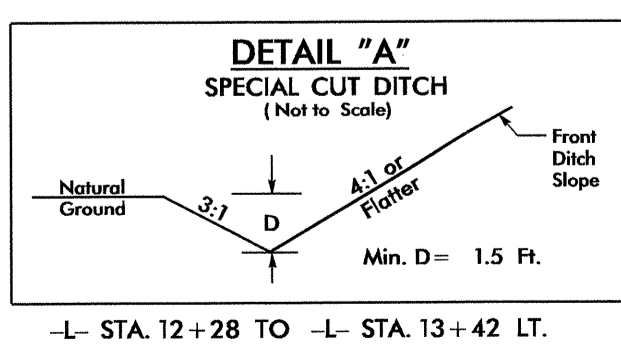


-L- CURVE DATA
 PI Sta 13+63.16
 $\Delta = 60^{\circ}19'04.0''$ (LT)
 $D = 9^{\circ}10'02.4''$
 $L = 657.96'$
 $T = 363.16'$
 $R = 625.00'$
 SE = SEE PLANS



BEGIN PROJECT B-4436
-L- PC STA. 10+00.00

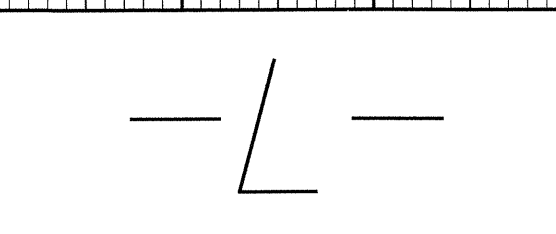
END PROJECT B-4436
-L- POT STA. 17+00.00



NOTES: (1) SEE SHEET 5 FOR -L- PROFILE
 (2) TIE DRIVES TO EXISTING WIDTH
 (3) SEE SHEETS S-1 TO S-22 FOR STRUCTURE DETAILS

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BM #1 EL = 52.97
RR SPIKE IN BASE OF 20" BIRCH
-BL- STA.7+84 (48' LT.)
-L- STA.12+38.98 (68.85' LT.)



STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE = 1900 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 52.8 FT
BASE DISCHARGE = 2380 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 53.04 FT
OVERTOPPING DISCHARGE = 4000 CFS
OVERTOPPING FREQUENCY = +100 YRS
OVERTOPPING ELEVATION = 55.3 FT

PI = 11+50.00
EL = 54.68'
VC = 200'
K = 107

PI = 13+50.00
EL = 55.37'
VC = 200'
K = 252

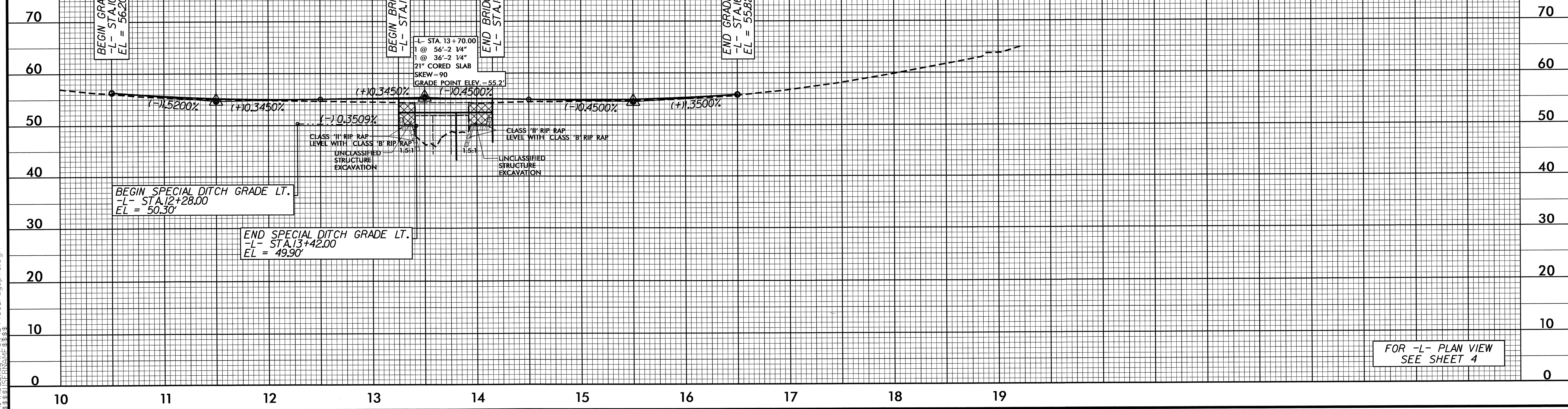
PI = 15+50.00
EL = 54.47'
VC = 200'
K = 111

BEGIN GRADE
-L- STA.10+50.00
EL = 56.20'

BEGIN BRIDGE
-L- STA.13+23.77

END BRIDGE
-L- STA.14+16.23

END GRADE
-L- STA.16+50.00
EL = 55.82'



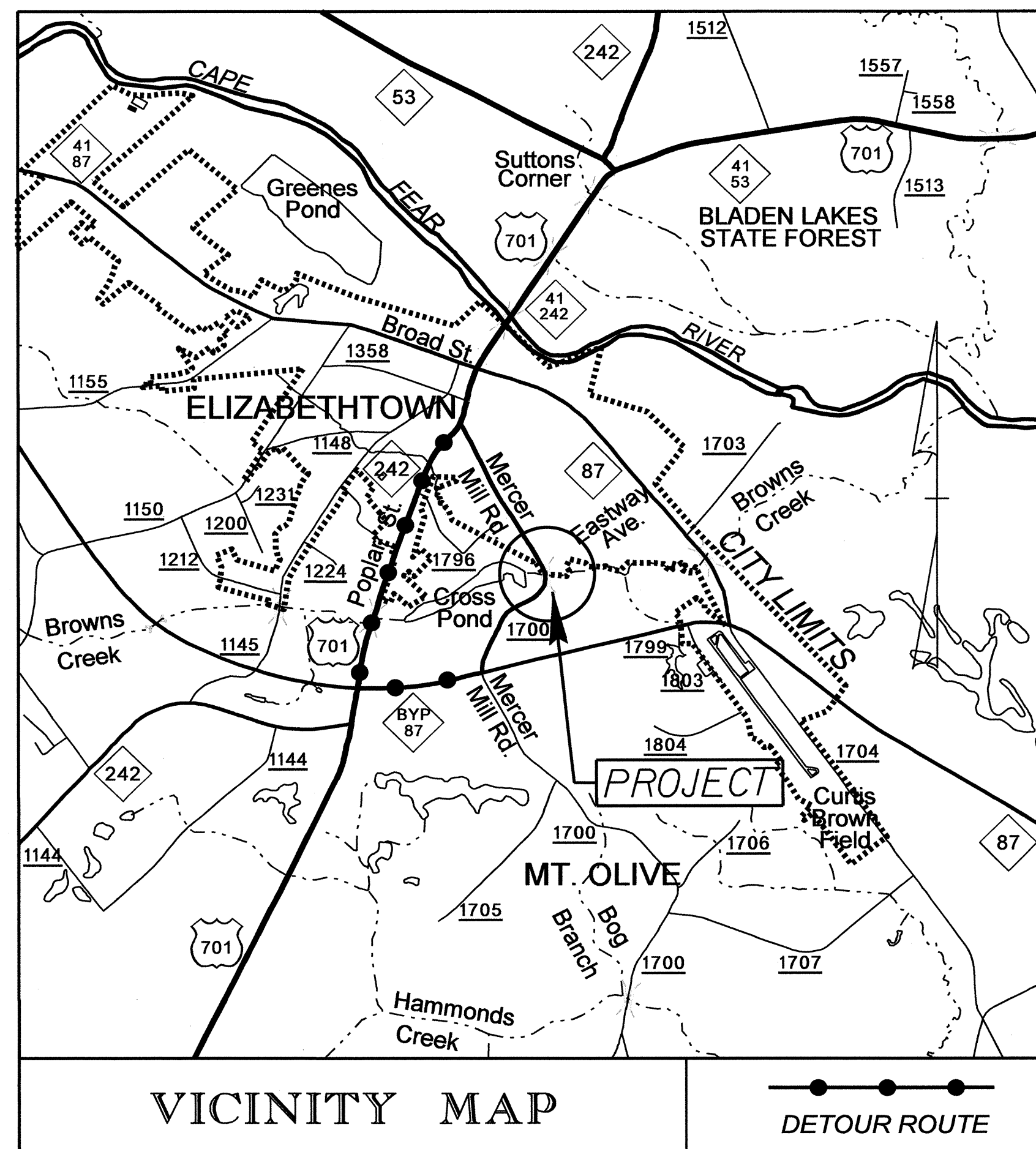
FOR -L- PLAN VIEW
SEE SHEET 4

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

BLADEN COUNTY



INDEX OF SHEETS

| SHEET NO. | TITLE |
|-----------|--|
| TMP-1 | TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS |
| TMP-1A | LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND |
| TMP-1B | TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND PHASING) |
| TMP-2 | SPECIAL SIGN DESIGN |
| TMP-3 | OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT |

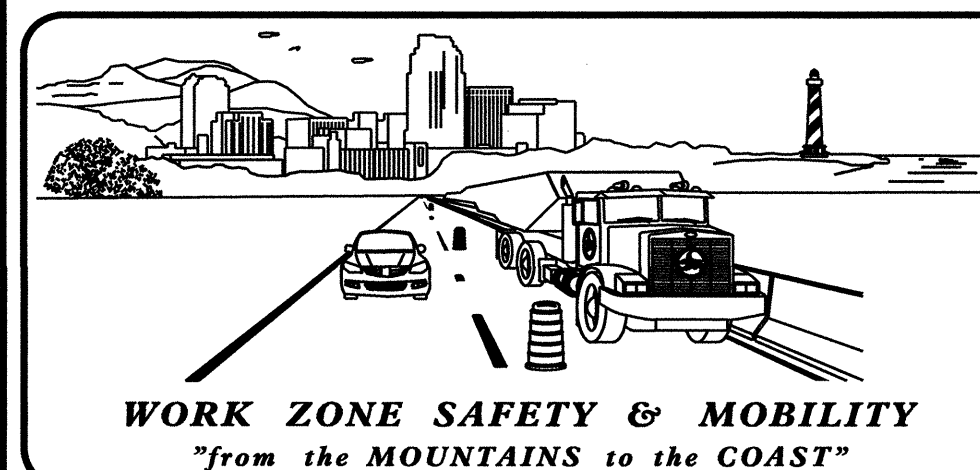
SHEET NO.

TMP-1

B-4436

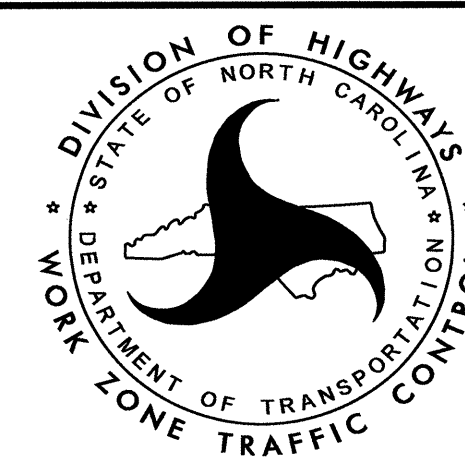
TIP PROJECT:

27-JUN-2013 11:01
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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. S. KITE, P.E. TRAFFIC CONTROL PROJECT ENGINEER
 DON PARKER TRAFFIC CONTROL PROJECT DESIGN ENGINEER
 S. B. JENNINGS TRAFFIC CONTROL DESIGN ENGINEER



APPROVED: *John S. Kite*
 DATE: June 27, 2013

SEAL

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

| STD. NO. | TITLE |
|----------|-------------------------------|
| 1101.01 | WORK ZONE WARNING SIGNS |
| 1101.11 | TRAFFIC CONTROL DESIGN TABLES |
| 1110.01 | STATIONARY WORK ZONE SIGNS |
| 1145.01 | BARRICADES |

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

USER DEFINED (IF NEEDED)

USER DEFINED (IF NEEDED)

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

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

PAVEMENT MARKERS

- CRYSTAL / CRYSTAL
- CRYSTAL / RED
- YELLOW / YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

N/A

27-JUN-2013 11:03 AM \\PROJ\N\TIPPR-objects-B\B4436\TrafficControl\TCPB-4436_TC_TMP_la.dgn
sa/lemings AT 1266588

| | | | |
|--------------------------|--|--|---|
| APPROVED: DATE: 6/27/13 | | | ROADWAY STANDARD DRAWINGS & LEGEND |
|--------------------------|--|--|---|

MANAGEMENT STRATEGIES

- DURING REPLACEMENT OF BRIDGE No.31 OVER BROWNS CREEK, SR 1700 (MERCER MILL ROAD) WILL BE CLOSED TO THROUGH TRAFFIC. SR 1700 TRAFFIC WILL BE DETOURED OFF-SITE VIA US 701 TO NC 87 BYP BACK TO SR 1700.

GENERAL NOTES

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

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

TRAFFIC PATTERN ALTERATIONS

- A) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- B) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- C) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.
- D) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- E) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

- F) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.
- G) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

PHASING

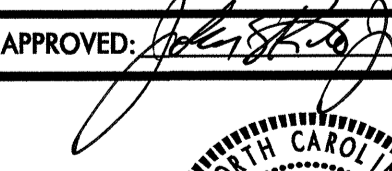

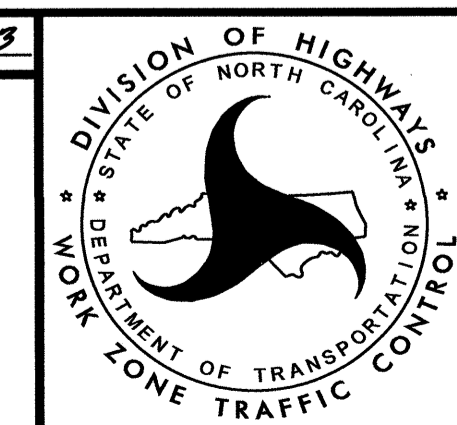
MAINTAIN ACCESS TO ALL RESIDENCES AT ALL TIMES WITHIN THE PROJECT LIMITS

- STEP 1: USING RSD 1101.03, SHEET 1 OF 9, SHEETS TMP-2 AND TMP-3, INSTALL DETOUR SIGNS, PLACE TYPE III BARRICADES TO CLOSE SR 1700 (MERCER MILL RD.) TO THROUGH TRAFFIC, AND DETOUR TRAFFIC OFF-SITE.

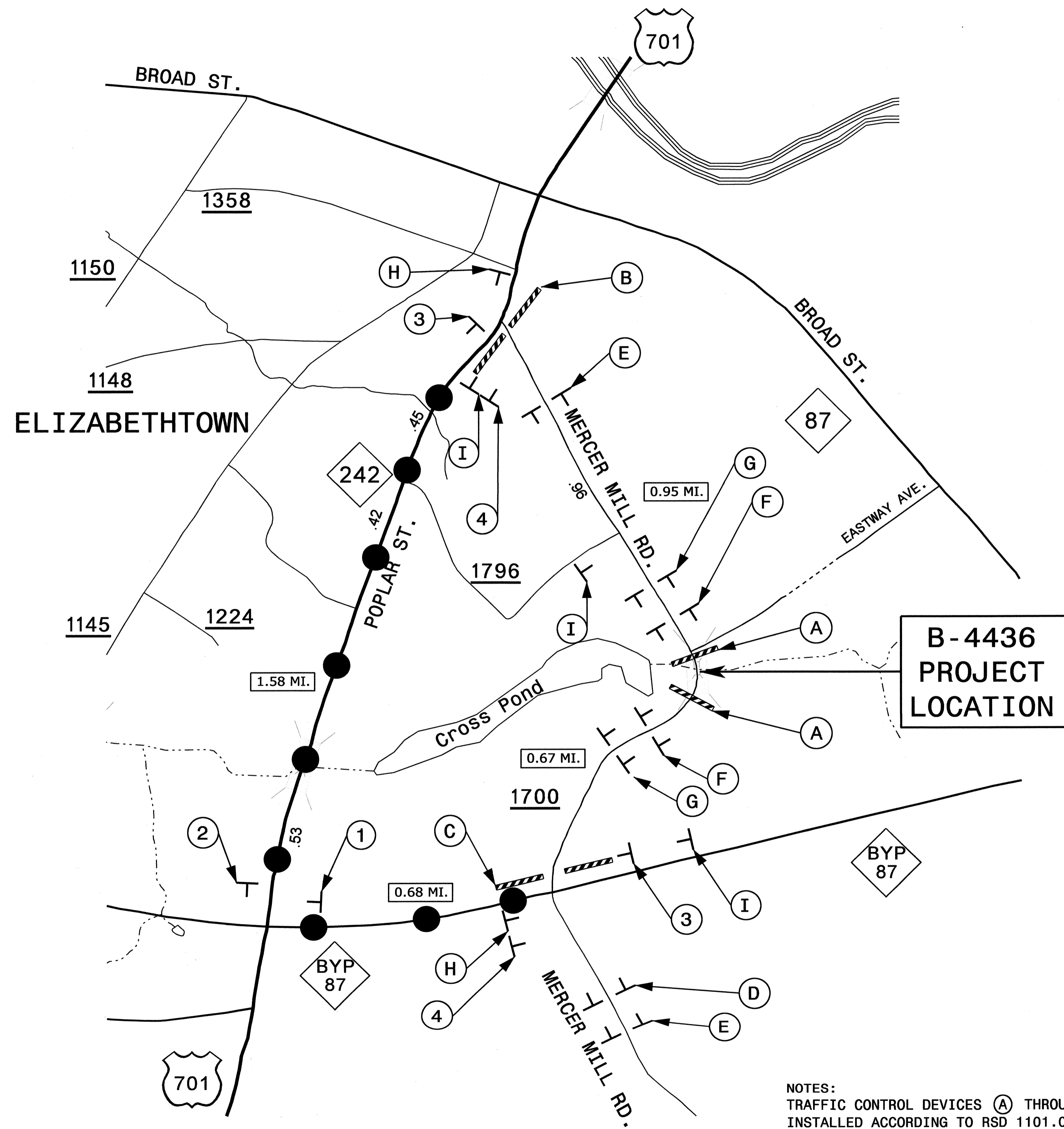
- STEP 2: AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING:
 - 1) REMOVE EXISTING STRUCTURE (NO. 31) AND CONSTRUCT PROPOSED STRUCTURE. (SEE ROADWAY AND STRUCTURE PLANS)
 - 2) CONSTRUCT PROPOSED ROADWAY UP TO AND INCLUDING FINAL LAYER OF SURFACE COURSE. (SEE ROADWAY PLANS)
 - 3) PLACE FINAL PAVEMENT MARKINGS AND TIE INTO EXISTING PAVEMENT MARKINGS. (SEE PAVEMENT MARKING PLANS)

- STEP 3: REMOVE ALL TRAFFIC CONTROL DEVICES, ALL DETOUR SIGNING AND OPEN SR 1700 (MERCER MILL RD.) TO PROPOSED TRAFFIC PATTERN.

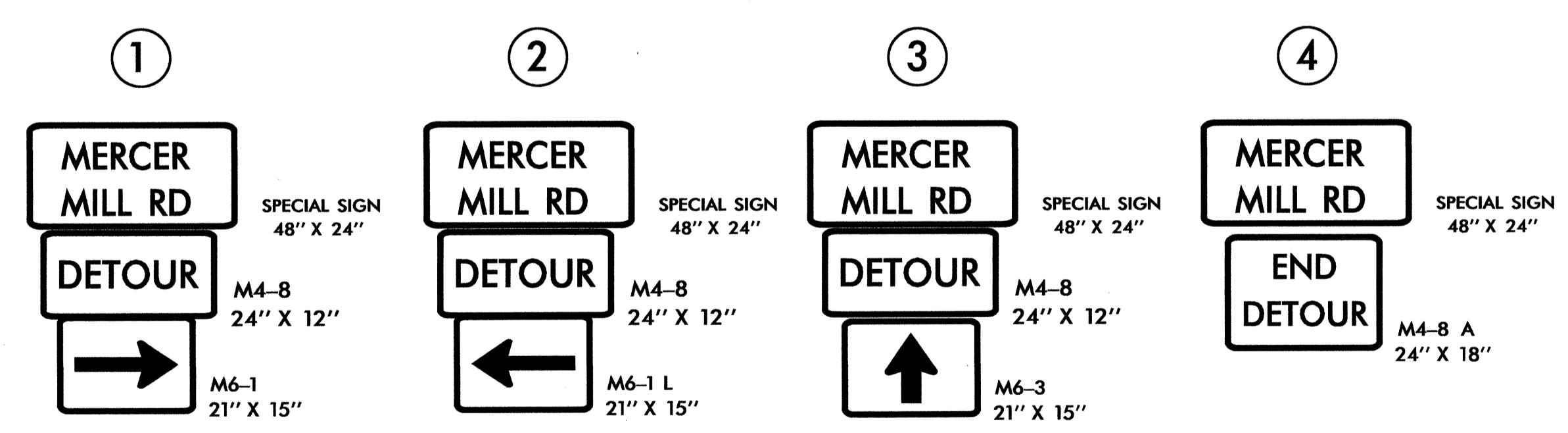
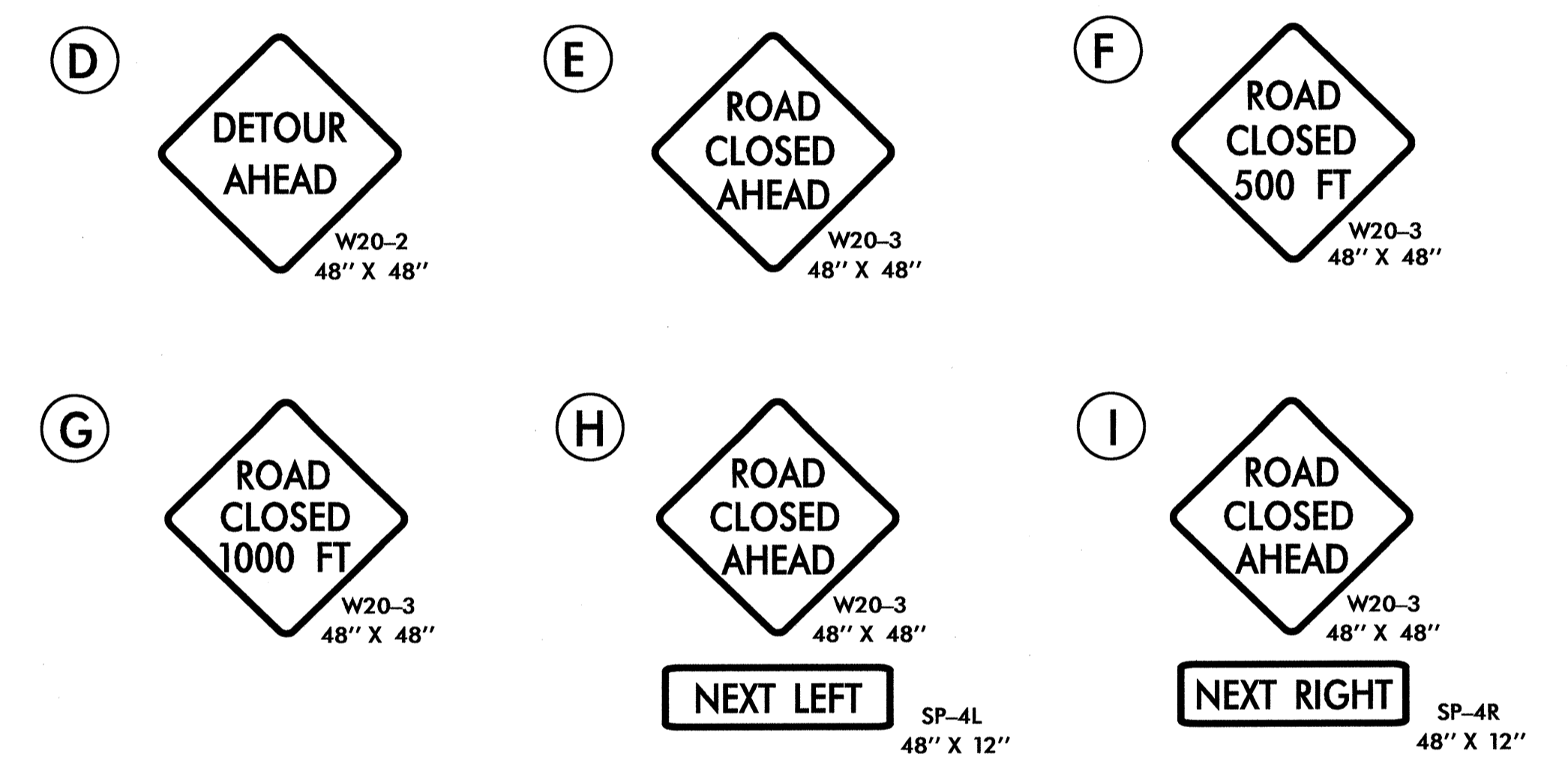
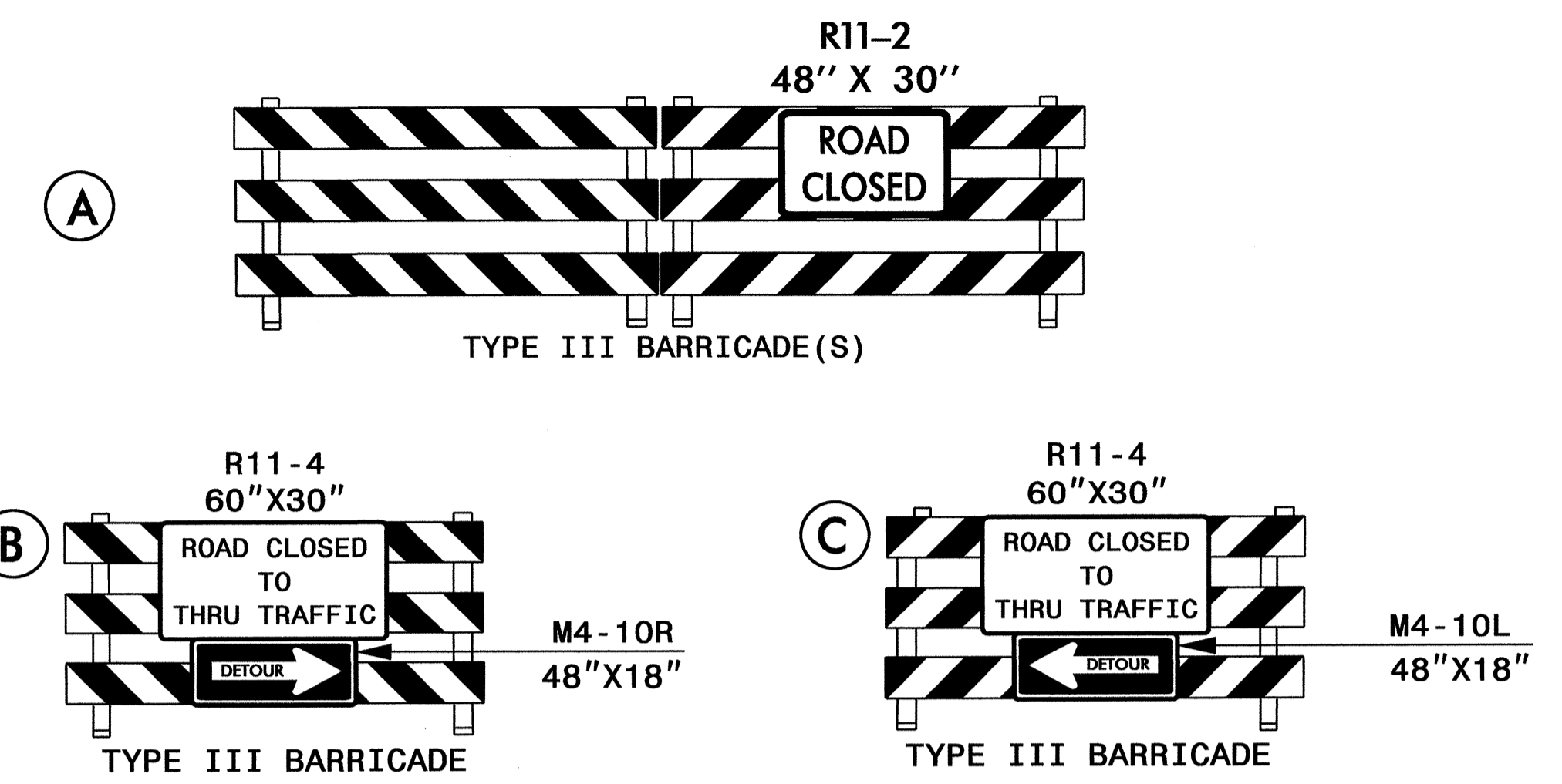
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| | | | |
|---|---|---|--|
| APPROVED:  DATE: 6/27/13 |  |  | <h1 style="margin: 0;">TRANSPORTATION OPERATIONS PLAN</h1> |
|---|---|---|--|

BLADEN COUNTY



**B-4436
PROJECT
LOCATION**



NOTES:
TRAFFIC CONTROL DEVICES (A) THROUGH (I) SHALL BE INSTALLED ACCORDING TO RSD 1101.03, SHEET 1 OF 9.
TRAFFIC CONTROL DEVICES (1) THROUGH (4) SHALL BE INSTALLED AS SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.

| | | | |
|--|--|--|---|
| APPROVED: <i>[Signature]</i> DATE: 6/27/13 | | | <p>OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT</p> |
|--|--|--|---|

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ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

| STD. NO. | TITLE |
|----------|-------------------------------|
| 1101.01 | WORK ZONE WARNING SIGNS |
| 1101.11 | TRAFFIC CONTROL DESIGN TABLES |
| 1110.01 | STATIONARY WORK ZONE SIGNS |
| 1145.01 | BARRICADES |

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

USER DEFINED (IF NEEDED)

USER DEFINED (IF NEEDED)

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

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

PAVEMENT MARKERS

- CRYSTAL / CRYSTAL
- CRYSTAL / RED
- YELLOW / YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

N/A

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| | | | |
|--------------------------|--|--|---|
| APPROVED: DATE: 6/27/13 | | | ROADWAY STANDARD DRAWINGS & LEGEND |
|--------------------------|--|--|---|

MANAGEMENT STRATEGIES

- DURING REPLACEMENT OF BRIDGE No.31 OVER BROWNS CREEK, SR 1700 (MERCER MILL ROAD) WILL BE CLOSED TO THROUGH TRAFFIC. SR 1700 TRAFFIC WILL BE DETOURED OFF-SITE VIA US 701 TO NC 87 BYP BACK TO SR 1700.

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- G) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

PHASING

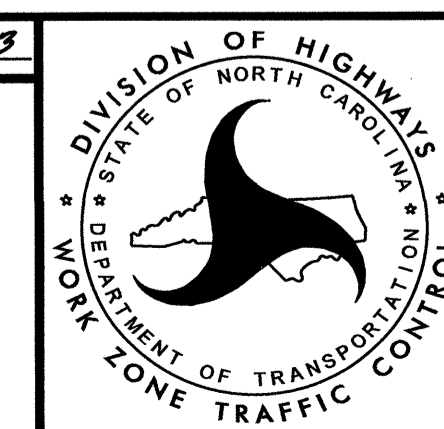
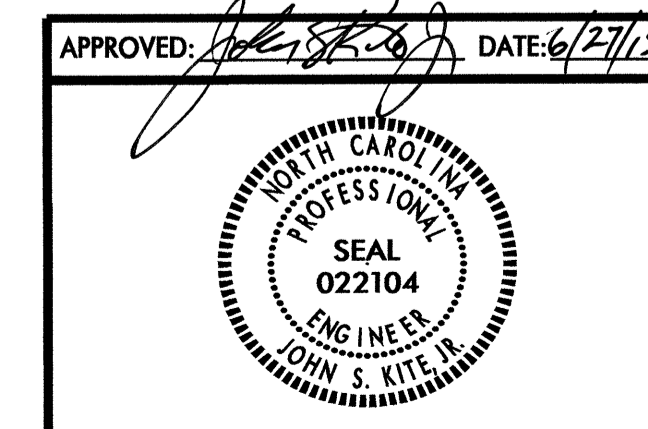
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- STEP 3: REMOVE ALL TRAFFIC CONTROL DEVICES, ALL DETOUR SIGNING AND OPEN SR 1700 (MERCER MILL RD.) TO PROPOSED TRAFFIC PATTERN.

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**TRANSPORTATION
OPERATIONS
PLAN**

| | | | | | | | | | |
|--|--|---------------------------------|--|----------------------|--|-------------|--|--------------------|--|
| SIGN NUMBER: SP13084 | | BACKG COLOR: Fluorescent Orange | | DESIGN BY: B. Nowlin | | CHECKED BY: | | DATE: Apr 03, 2013 | |
| TYPE: STATIONARY | | COPY COLOR: Black | | PROJECT ID: B-4436 | | DIV: 06 | | | |
| QUANTITY: SEE PLANS | | SYMBOL | | X | | Y | | WID HT | |
| SIGN WIDTH: 4'-0" | | | | | | | | | |
| HEIGHT: 2'-0" | | | | | | | | | |
| TOTAL AREA: 12887.3 Sq.Ft. | | | | | | | | | |
| BORDER TYPE: INSET | | | | | | | | | |
| RECESS: 0.38" | | | | | | | | | |
| WIDTH: 0.63" | | | | | | | | | |
| RADII: 1.5" | | | | | | | | | |
| NO. Z BARS: | | MAT'L: 0.080" (2.0 mm) ALUMINUM | | | | | | | |
| LENGTH: | | | | | | | | | |
| USE NOTES: 1,2 | | | | | | | | | |
| 1. Legend and border shall be NC GRADE B direct applied black non-reflective sheeting. | | | | | | | | | |
| 2. Background shall be NC GRADE B fluorescent orange retroreflective sheeting. | | | | | | | | | |

Spacing Factor is 1 unless specified otherwise

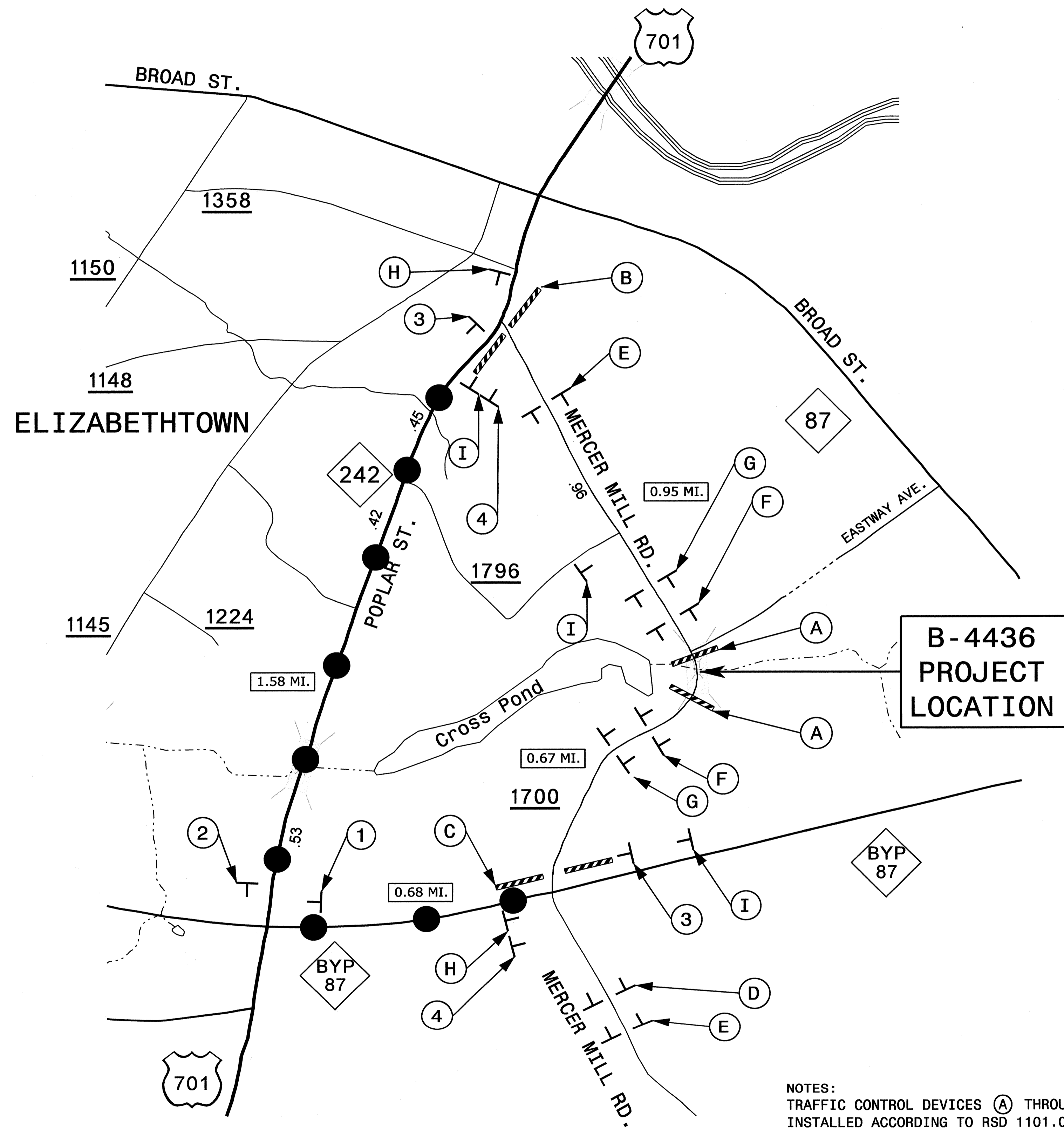
| LETTER POSITIONS | | | | | | | | | | |
|--|-------|-------|-----|-------|-------|-------|-------|-------|--|----------------------------|
| Letter locations are panel edge to lower left corner | | | | | | | | | | |
| | | | | | | | | | | Series/Size Text Length |
| M | E | R | C | E | R | | | | | D 2000 30.1 |
| 505.1 | 511.2 | 516 | 521 | 526.4 | 531.1 | | | | | |
| M | I | L | L | R | O | A | D | | | D 2000 43 |
| 499.8 | 505.9 | 508.3 | 513 | 516.7 | 522.7 | 527.7 | 532.7 | 538.7 | | |

NORTH CAROLINA D.O.T. SIGN DETAIL

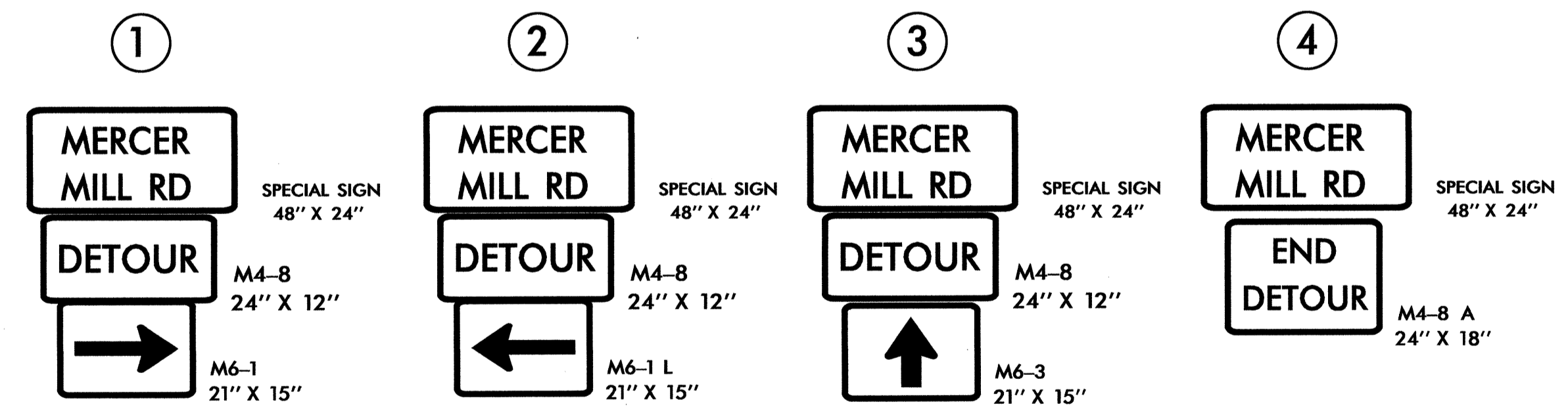
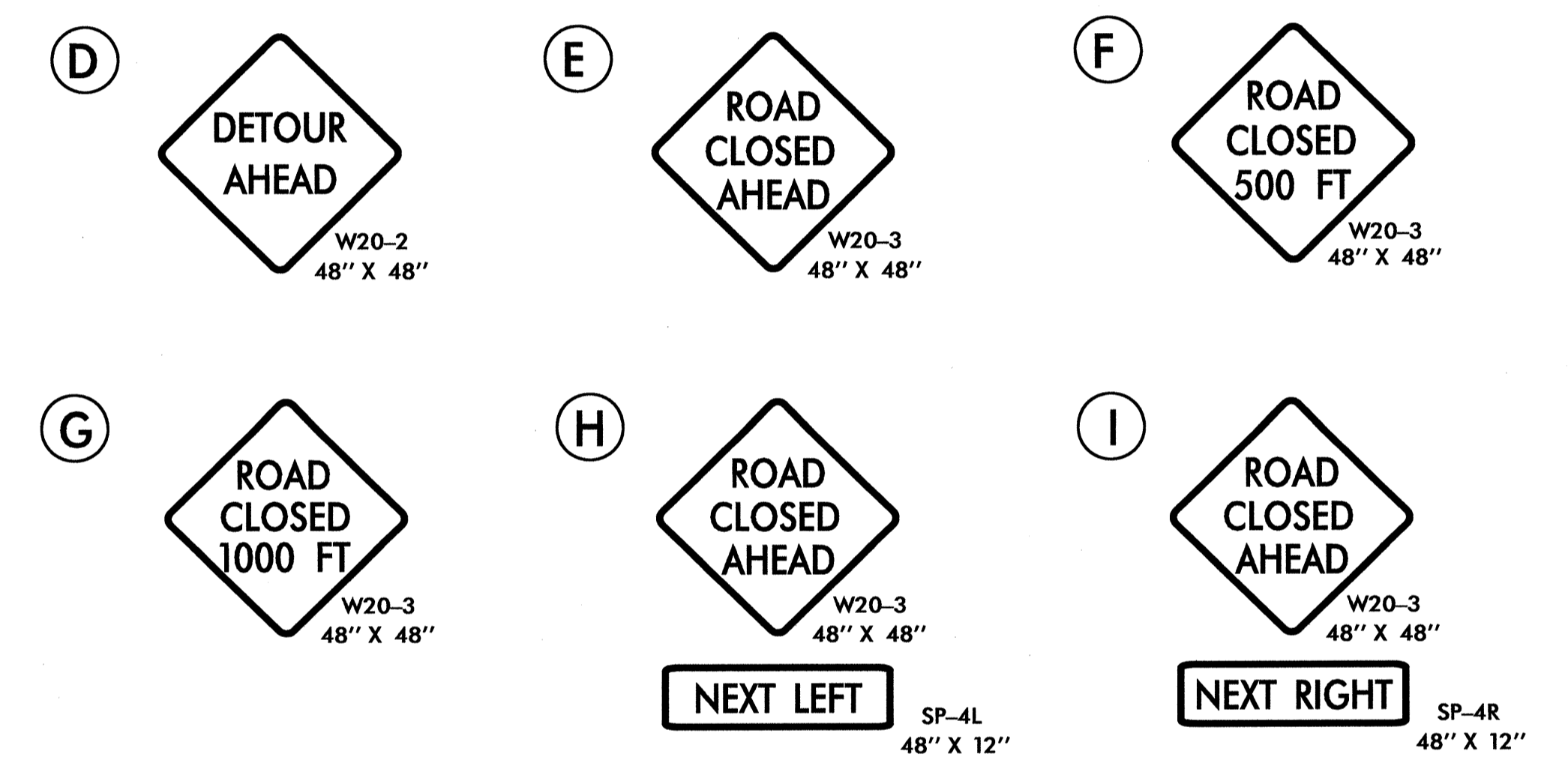
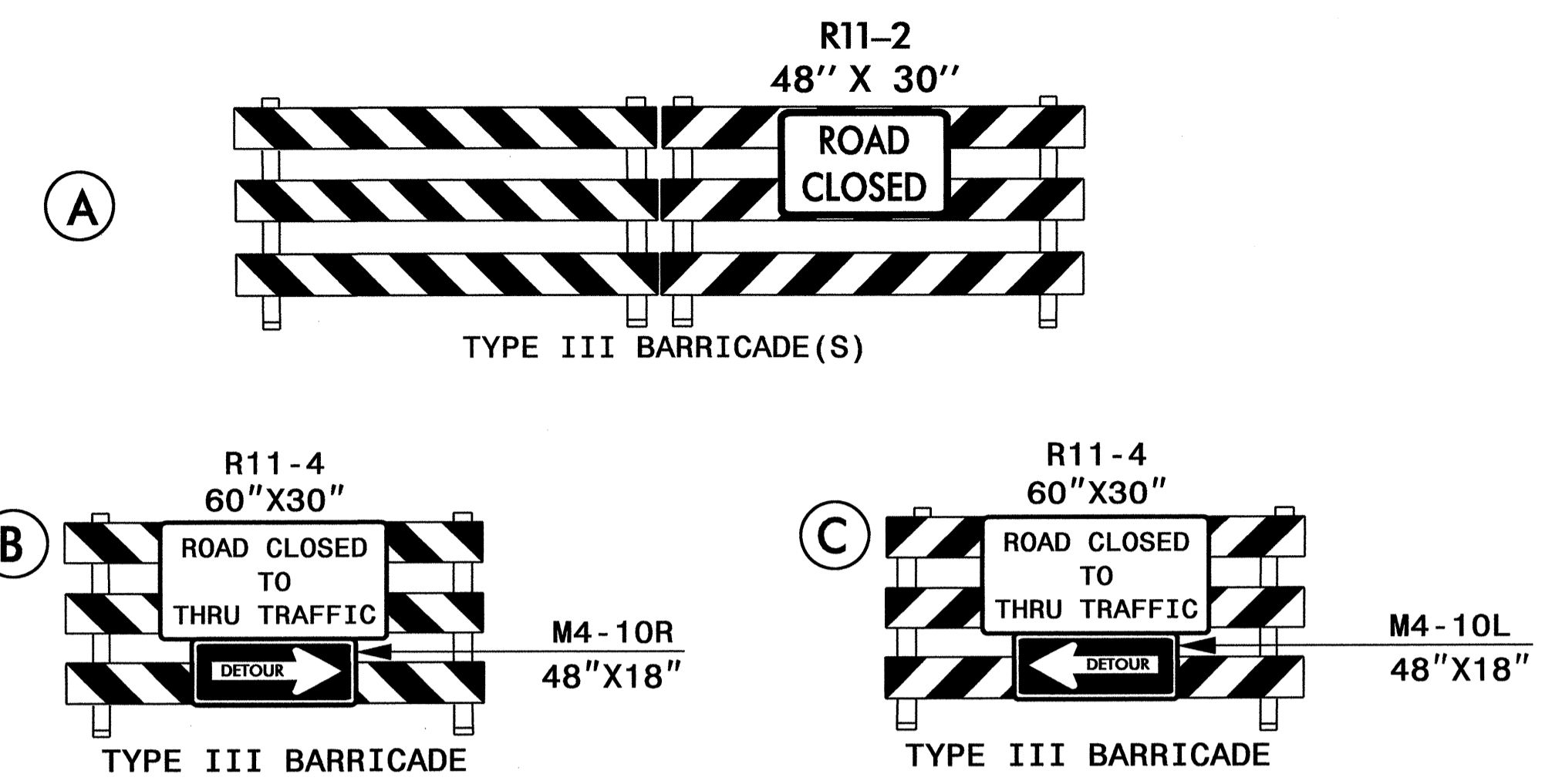
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| | | |
|---------------|-------------------|---|
| APPROVED: | DATE: 6/27/13 | <h2 style="margin: 0;">SPECIAL SIGN DESIGN</h2> |
|---------------|-------------------|---|

BLADEN COUNTY



**B-4436
PROJECT
LOCATION**



NOTES:
TRAFFIC CONTROL DEVICES (A) THROUGH (I) SHALL BE INSTALLED ACCORDING TO RSD 1101.03, SHEET 1 OF 9.
TRAFFIC CONTROL DEVICES (1) THROUGH (4) SHALL BE INSTALLED AS SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.

| | | | |
|--------------------------|--|--|--|
| APPROVED: DATE: 6/27/13 | | | OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT |
|--------------------------|--|--|--|

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T.I.P.: B-4436

CONTRACT: C203246

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
BLADEN COUNTY

LOCATION: BRIDGE NO. 31 OVER BROWNS CREEK ON SR 1806 (FORMERLY SR 1700)

| | |
|---|--------------------|
| TIP NO. B-4436 | SHEET NO. PMP-1 |
| APPROVED: <i>[Signature]</i> | |
| DATE: 6-5-13 | |
| SEAL | |
|  | |

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 - 2 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 DELINEATOR SPACING |
| 1261.02 | GUARDRAIL AND BARRIER DELINEATOR TYPES |
| 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:

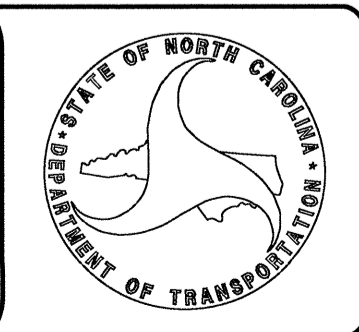
| ROAD NAME | MARKING | MARKER |
|--------------------|---------------|--------|
| SR 1806 AND BRIDGE | THERMOPLASTIC | RAISED |
- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

PAVEMENT MARKING SCHEDULE

| SYMBOL | DESCRIPTION |
|--------|--|
| TA | WHITE EDGELINE THERMOPLASTIC |
| TI | YELLOW DOUBLE CENTER THERMOPLASTIC |
| T8 | 2 FT. - 6 FT/SP WHITE MINISKIP THERMOPLASTIC |

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

| | |
|----------------------|---|
| Ayman Alqudwah, P.E. | SIGNING & DELINEATION REGIONAL ENGINEER |
| Eric E Ward | SIGNING & DELINEATION DESIGN ENGINEER |

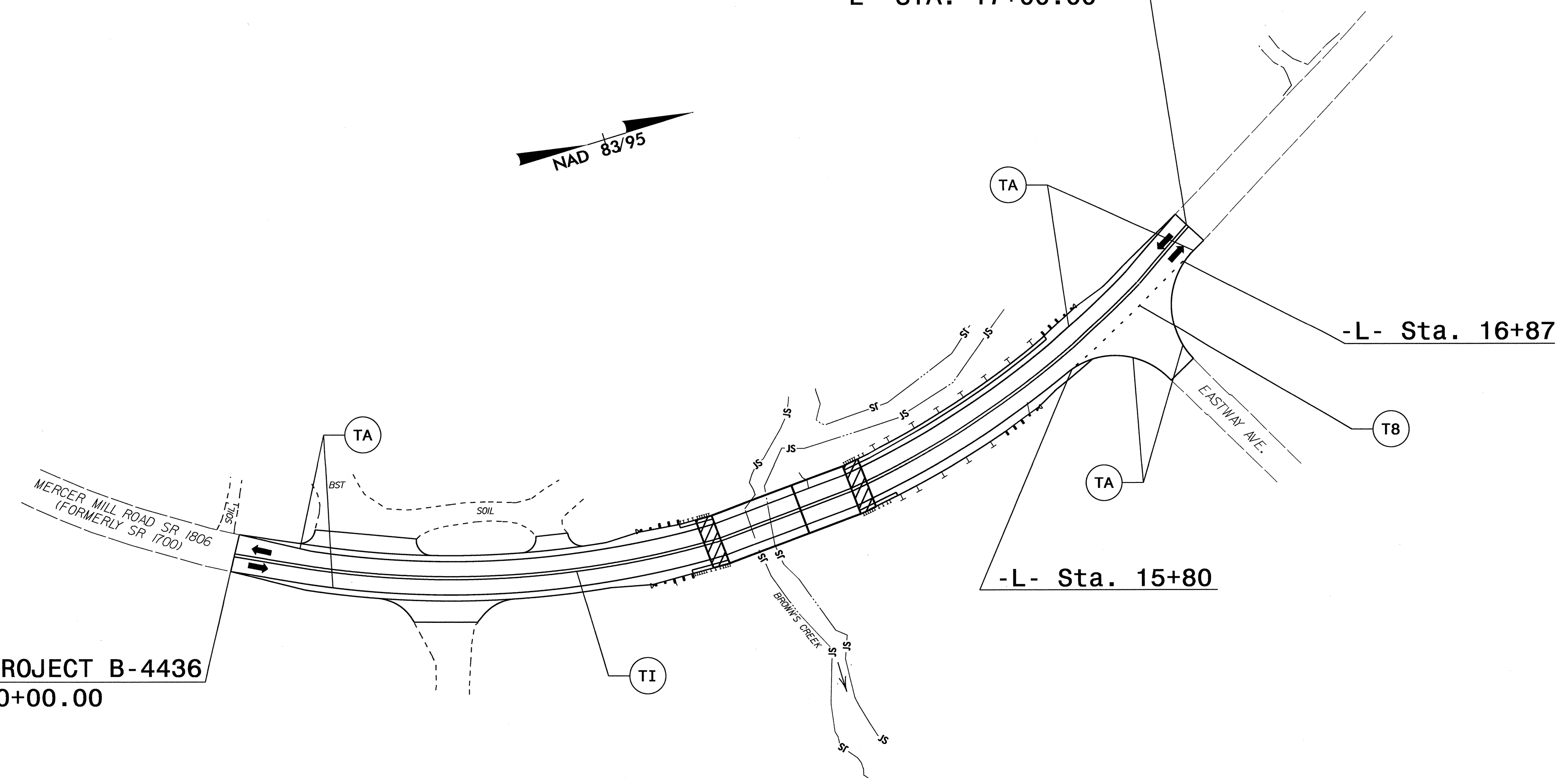
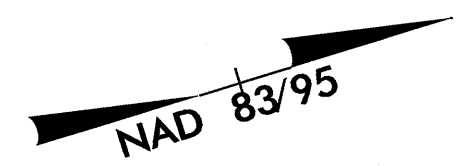


INDEX

| SHEET NO. | DESCRIPTION |
|-----------|---|
| PMP-1 | PAVEMENT MARKING PLAN COVER SHEET NOTES & SCHEDULE |
| PMP-2 | PAVEMENT MARKING DETAIL |

| | |
|------------------------------|--------------------|
| TIP NO. B-4436 | SHEET NO. PMP-2 |
| APPROVED: <i>[Signature]</i> | |
| DATE: 6-4-13 | |
| SEAL | |
| | |

END PM PROJECT B-4436
-L- STA. 17+00.00



BEGIN PM PROJECT B-4436
-L- STA. 10+00.00

PROJECT NOTES

- TA WHITE EDGELINE
- TI YELLOW DOUBLE CENTER
- T8 2 FT. - 6 FT/SP WHITE MINISKIP

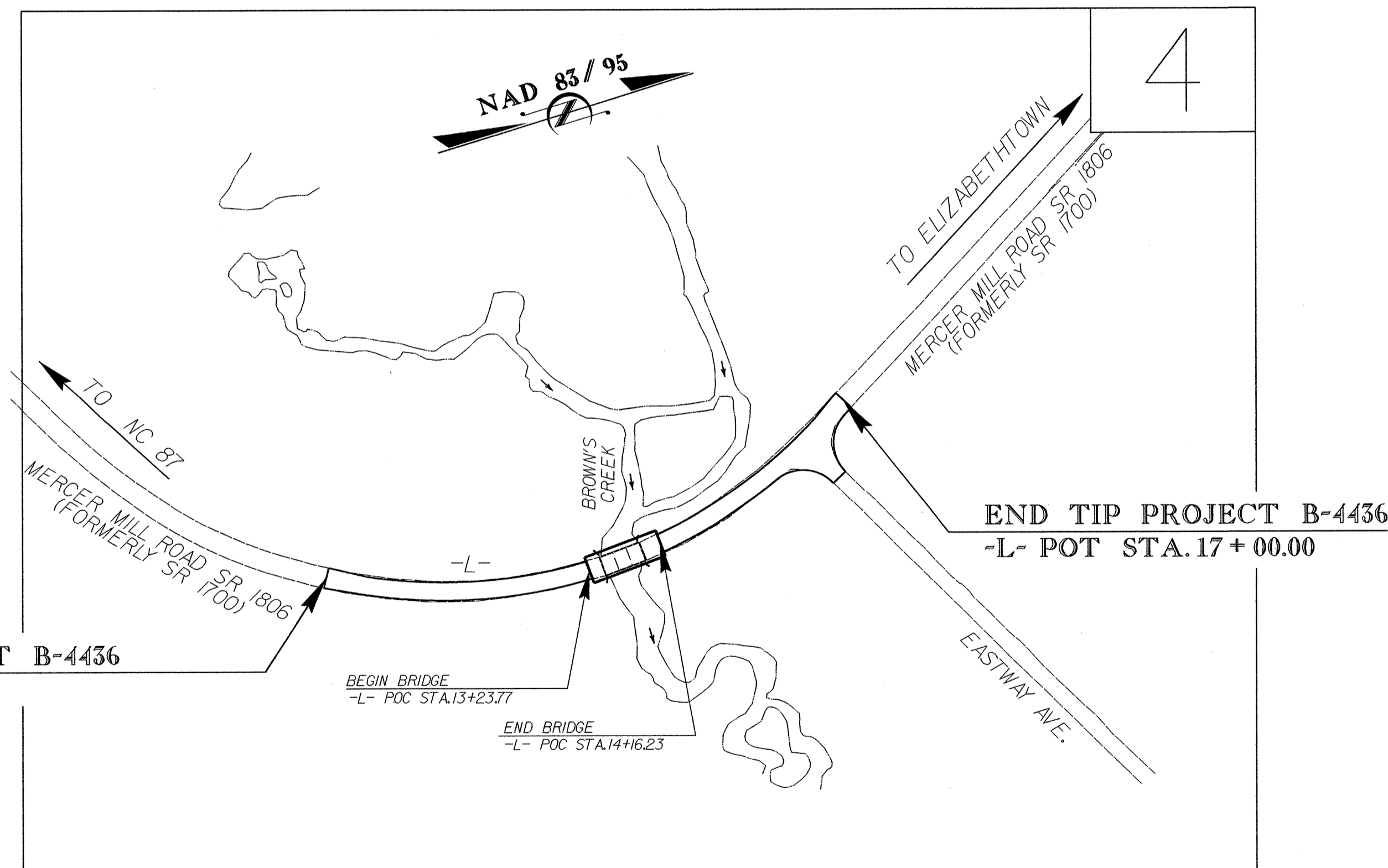
PAVEMENT MARKING DETAIL

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 ericward

TIP PROJECT: B-4436

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

LOCATION: BRIDGE NO. 31 OVER BROWNS CREEK ON SR 1806 (FORMERLY SR 1700)
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



BEGIN TIP PROJECT B-4436
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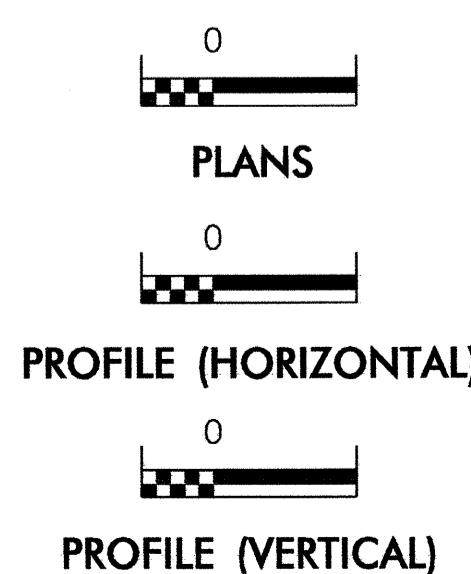
| | | | |
|-----------------|-----------------------------|-------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | B-4436 | EC-1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| | | | |
| | | | |
| | | | |

EROSION AND SEDIMENT CONTROL MEASURES

| Std. # | Description | Symbol |
|---------|--|-----------|
| 1630.03 | Temporary Silt Ditch | TS |
| 1630.05 | Temporary Diversion | TD |
| 1605.01 | Temporary Silt Fence | TSF |
| 1606.01 | Special Sediment Control Fence | SSCF |
| 1622.01 | Temporary Berms and Slope Drains | TBSD |
| 1630.02 | Silt Basin Type B | SB |
| 1633.01 | Temporary Rock Silt Check Type-A | TRSCA |
| | Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM) | TRSCA-PAM |
| 1633.02 | Temporary Rock Silt Check Type-B | TRSCB |
| | Wattle / Coir Fiber Wattle | WCFW |
| | Wattle / Coir Fiber Wattle with Polyacrylamide (PAM) | WCFW-PAM |
| 1634.01 | Temporary Rock Sediment Dam Type-A | TRSDA |
| 1634.02 | Temporary Rock Sediment Dam Type-B | TRSDB |
| 1635.01 | Rock Pipe Inlet Sediment Trap Type-A | RPISTRA |
| 1635.02 | Rock Pipe Inlet Sediment Trap Type-B | RPISTRB |
| 1630.04 | Stilling Basin | SBAS |
| 1630.06 | Special Stilling Basin | SSBAS |
| | Rock Inlet Sediment Trap: | |
| 1632.01 | Type A | A |
| 1632.02 | Type B | B |
| 1632.03 | Type C | C |
| | Skimmer Basin | SKBAS |
| | Tiered Skimmer Basin | TSKBAS |
| | Infiltration Basin | IBAS |

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

GRAPHIC SCALE



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

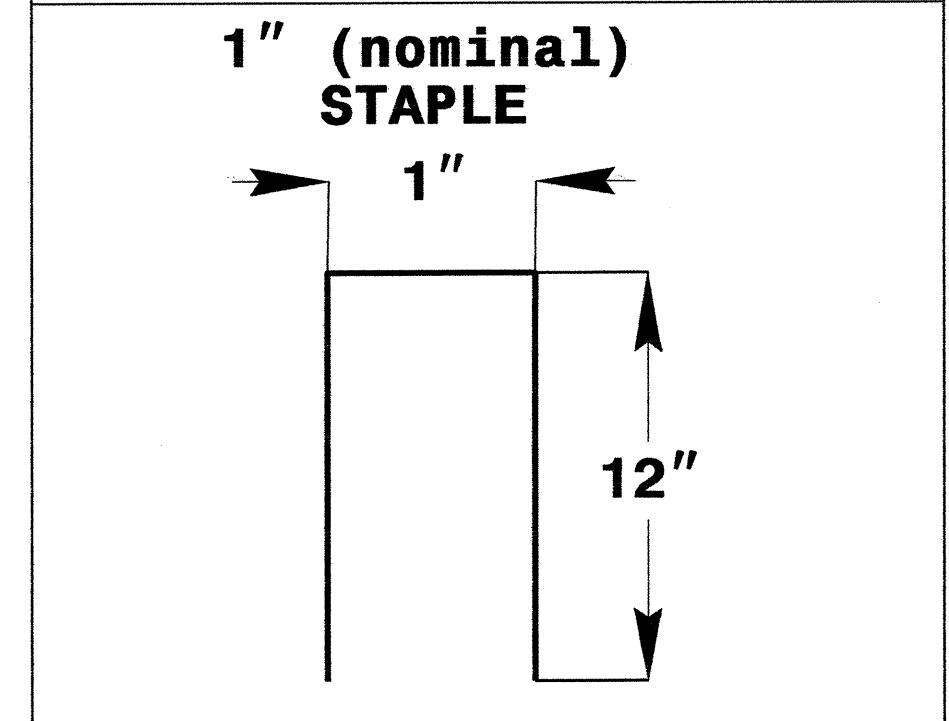
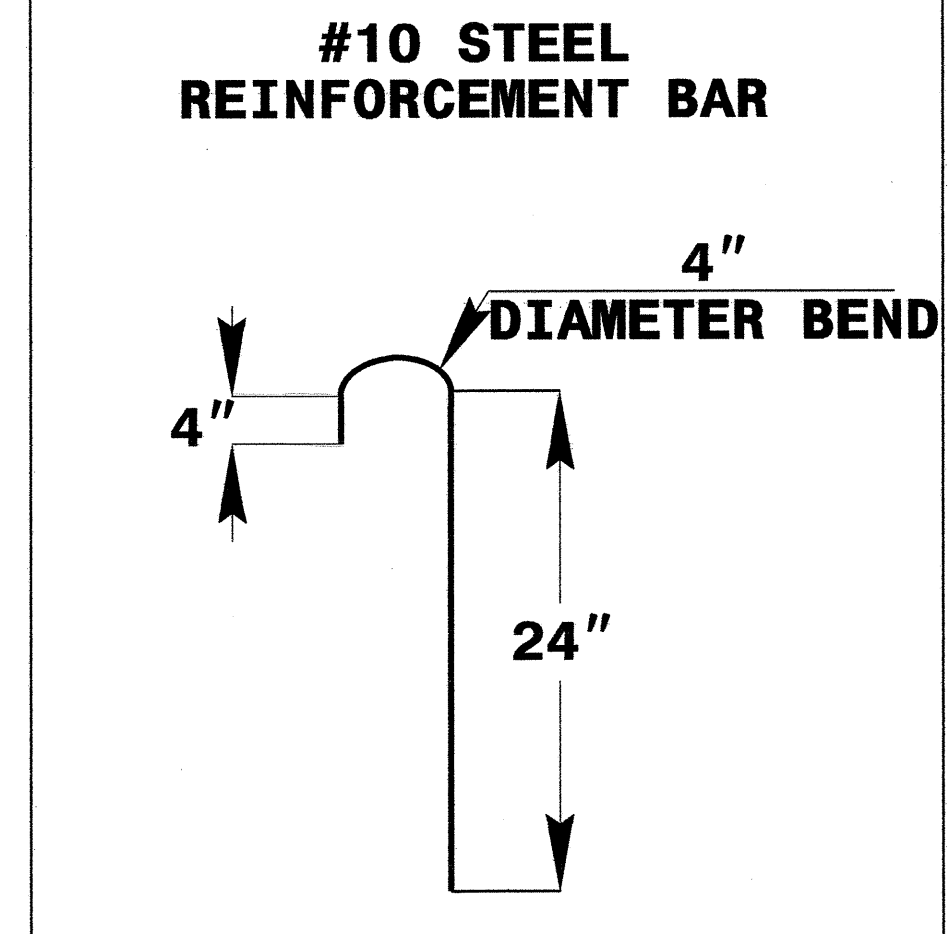
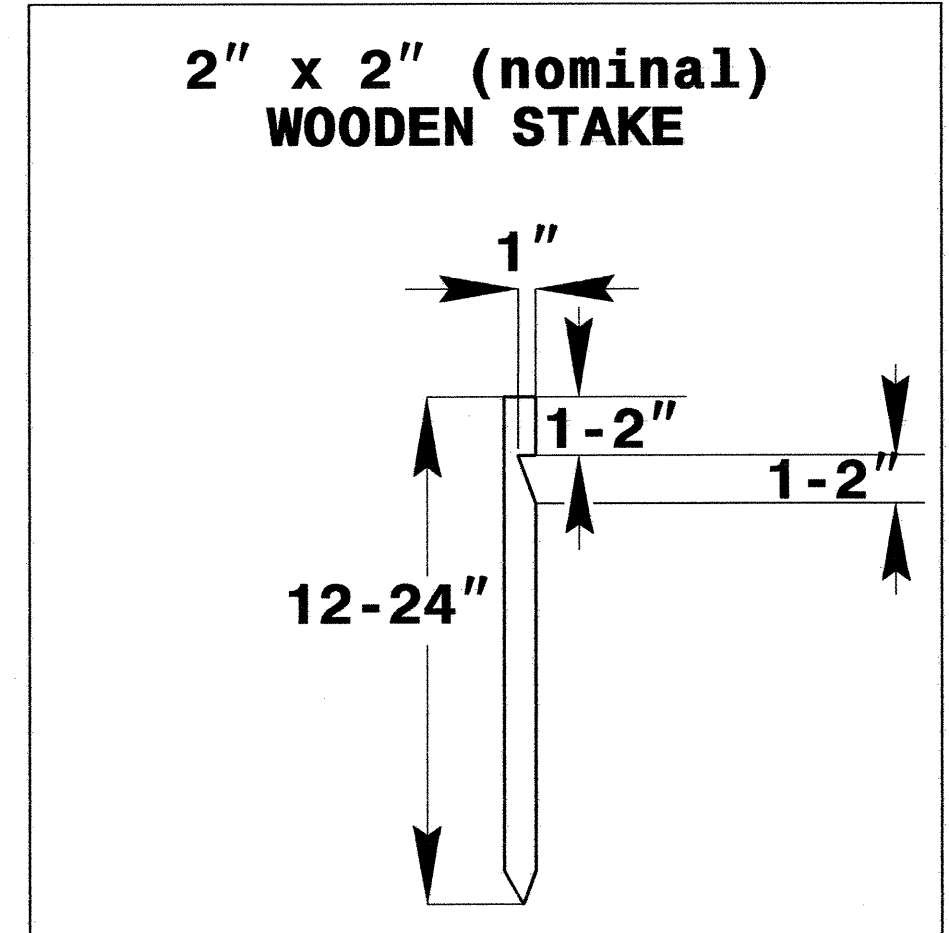
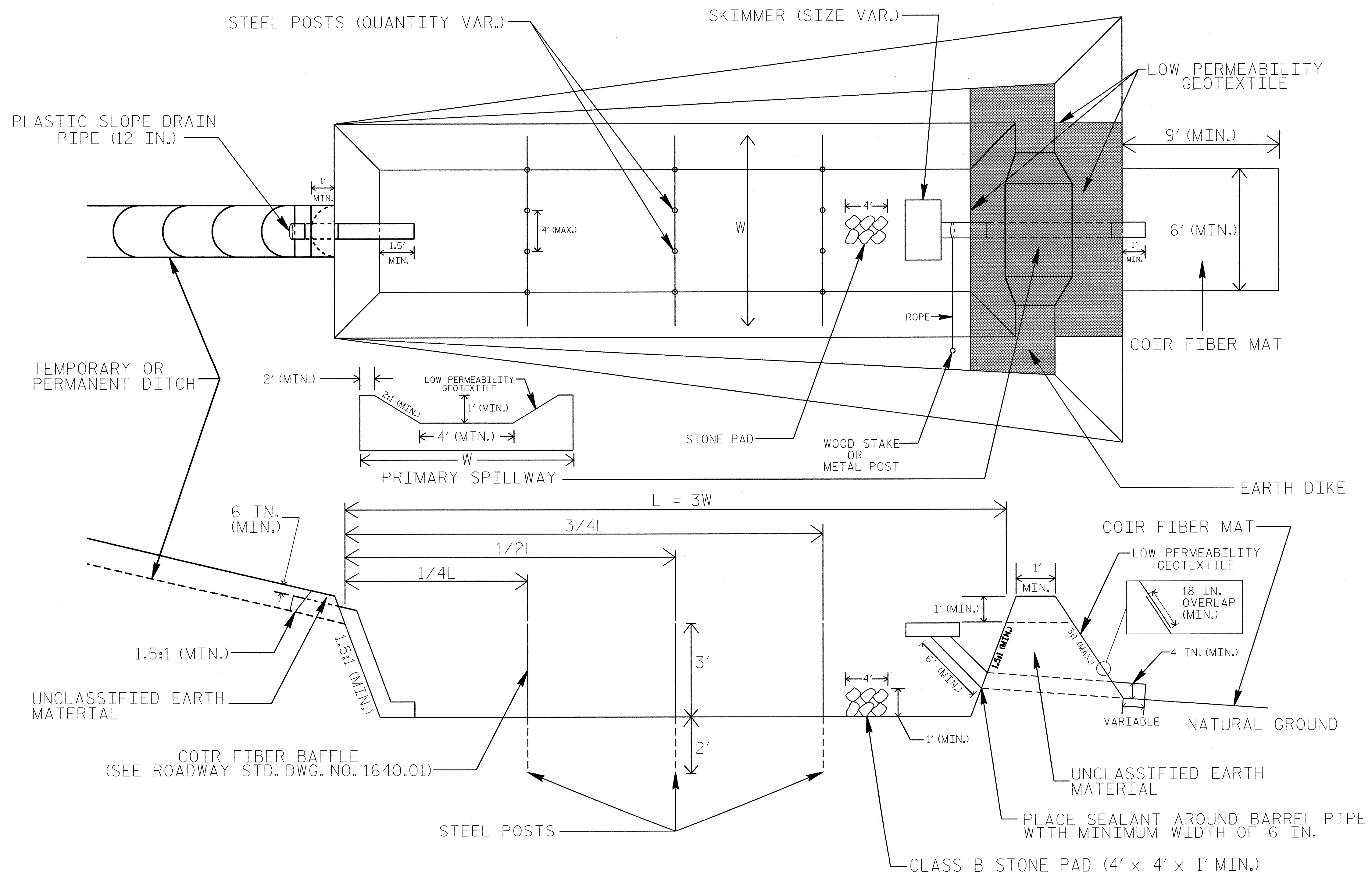
Roadway Standard Drawings

The following roadway 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 Riser 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. B-4436 | SHEET NO. EC-2 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

SKIMMER BASIN WITH BAFFLES DETAIL (EAST)



COIR FIBER MAT ANCHOR OPTIONS

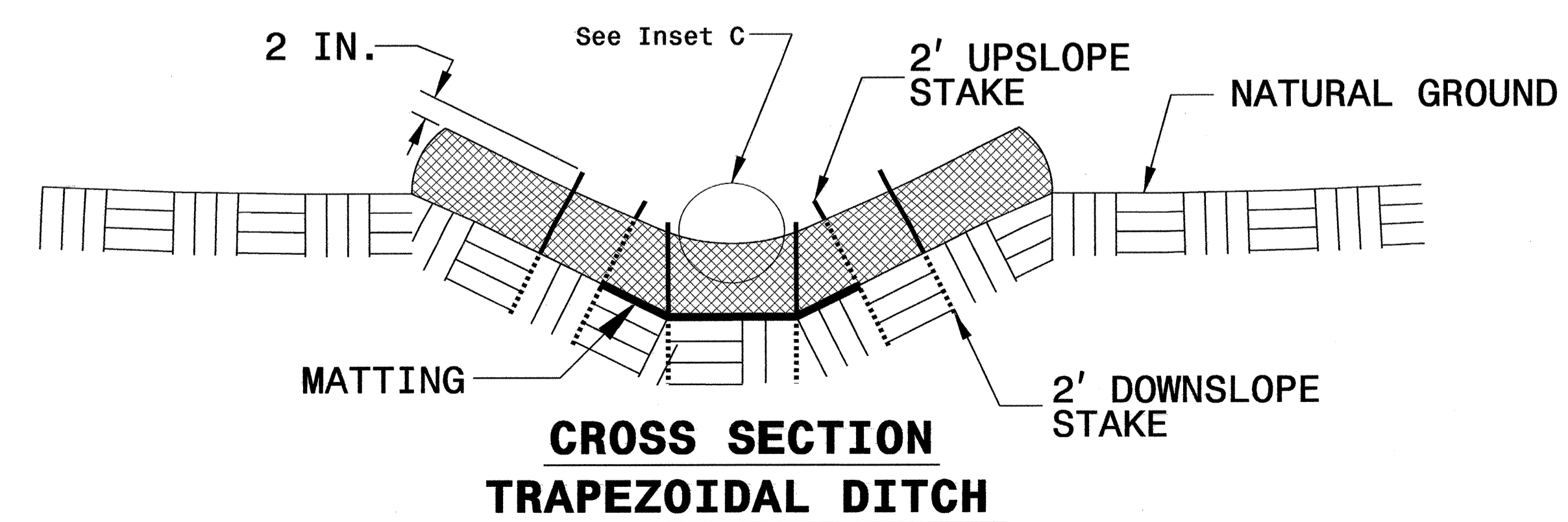
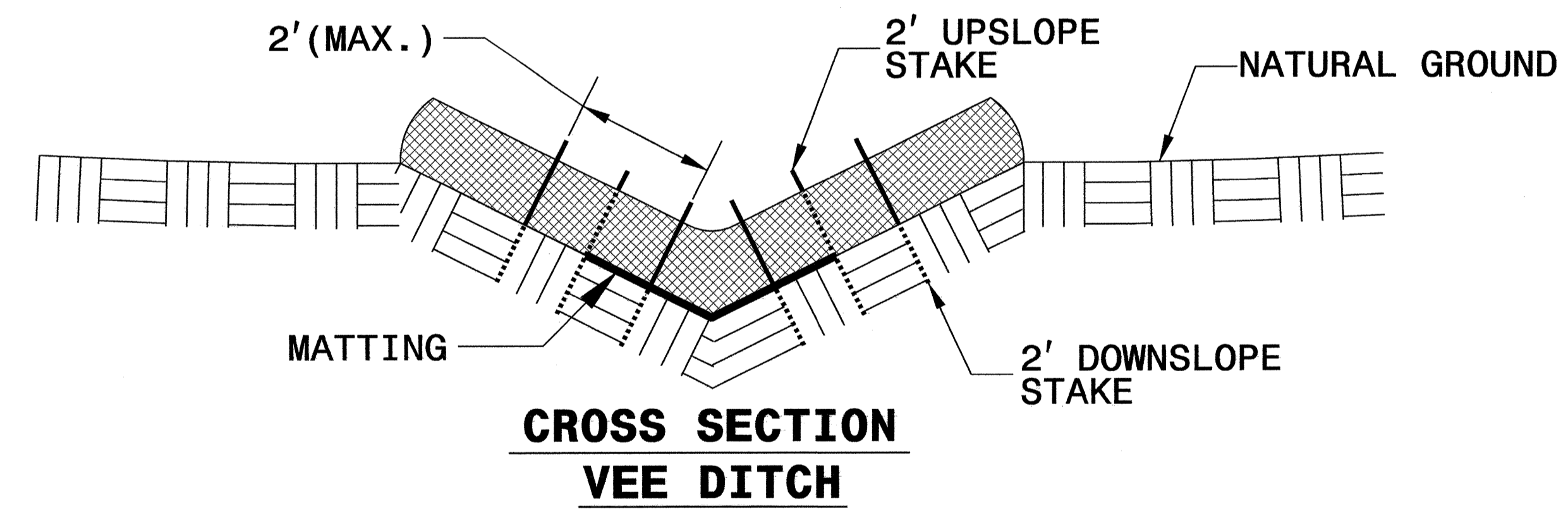
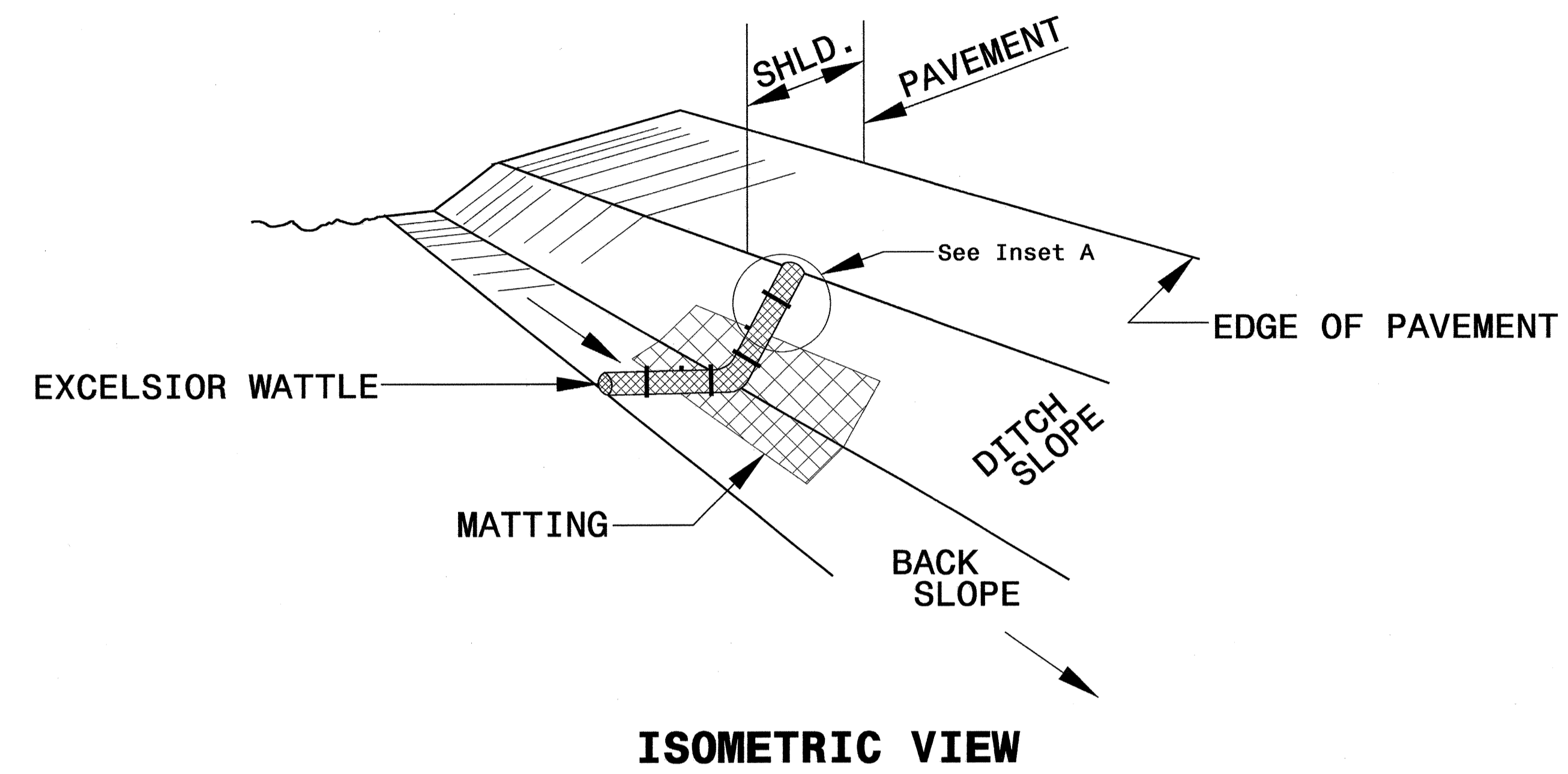
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE PRIMARY SPILLWAY WEIR LENGTH (FT.) USING $Q/0.4$, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. LOW PERMEABILITY GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

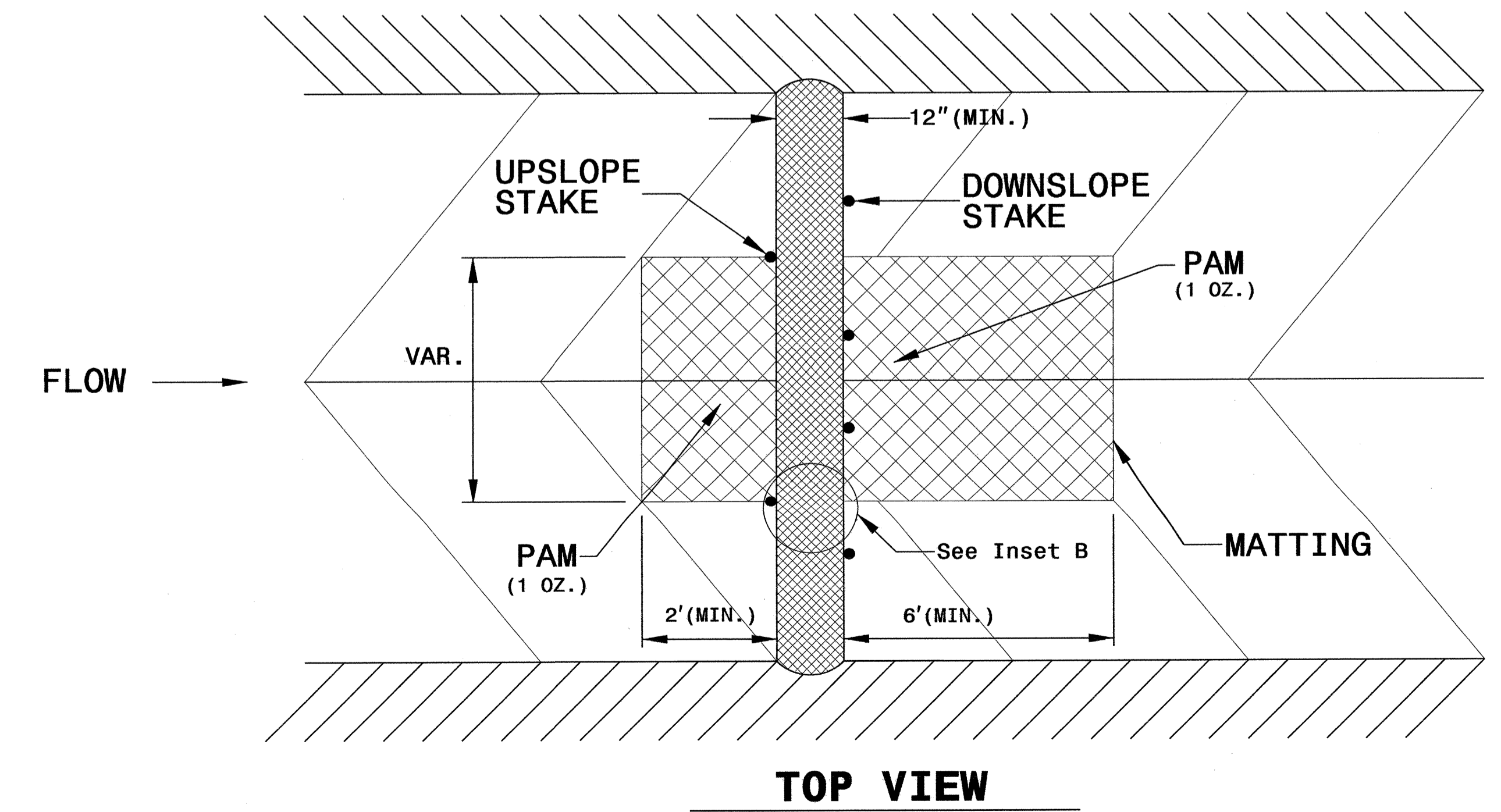
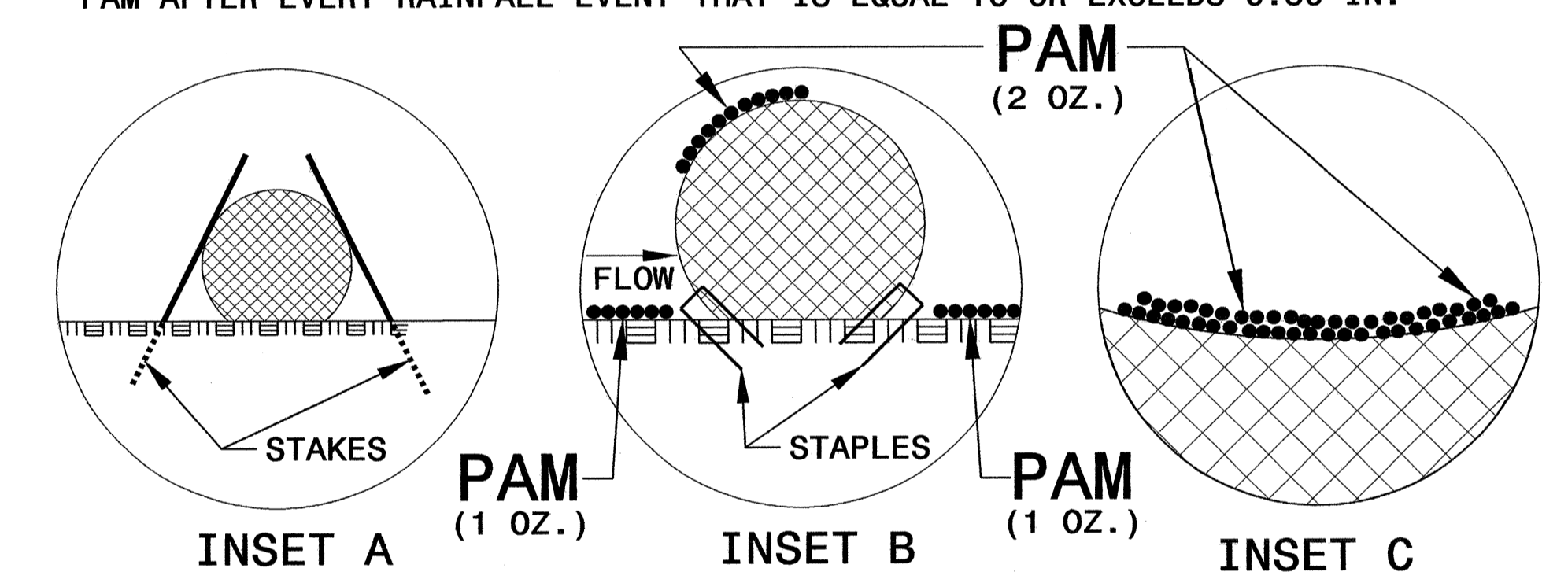
NOT TO SCALE

| | |
|---------------------------------|---------------------|
| PROJECT REFERENCE NO. B-4436 | SHEET NO. EC-2A |
| 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

| | |
|--|---------------------------|
| PROJECT REFERENCE NO. <i>B-4436</i> | SHEET NO. <i>EC-3A</i> |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

SOIL STABILIZATION TIMEFRAMES

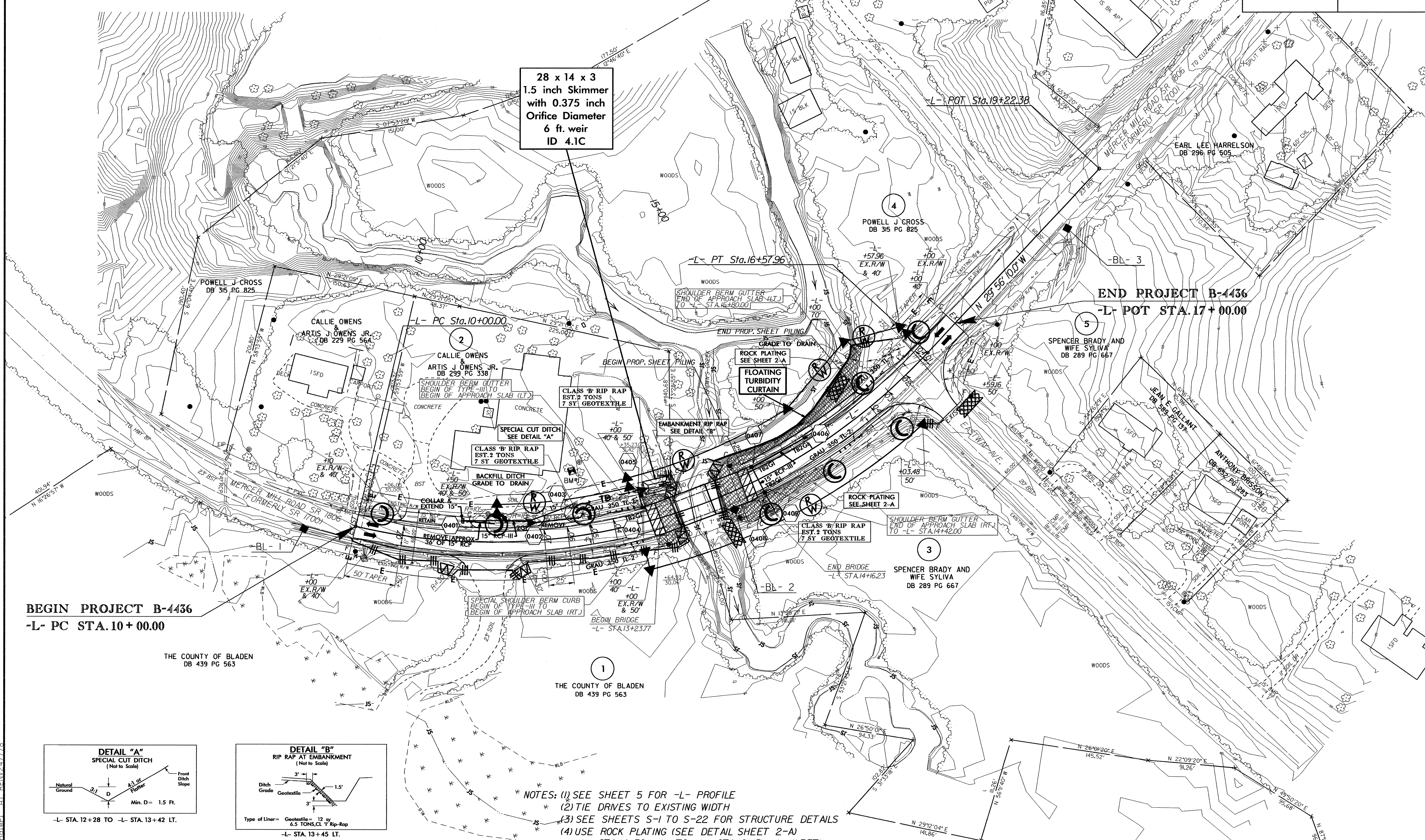
| <i>SITE DESCRIPTION</i> | <i>STABILIZATION TIME</i> | <i>TIMEFRAME EXCEPTIONS</i> |
|--|---------------------------|--|
| PERIMETER DIKES, SWALES, DITCHES AND SLOPES | 7 DAYS | NONE |
| HIGH QUALITY WATER (HQW) ZONES | 7 DAYS | NONE |
| SLOPES STEEPER THAN 3:1 | 7 DAYS | IF SLOPES ARE 10' OR LESS IN 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. |

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

NOTE: UTILIZE SKIMMER BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

| | | | |
|---------------------------------|--|---------------------------|--|
| PROJECT REFERENCE NO. B-4436 | | SHEET NO. EC-4/CONST.4 | |
| RW SHEET NO. | | | |
| ROADWAY DESIGN ENGINEER | | HYDRAULICS ENGINEER | |



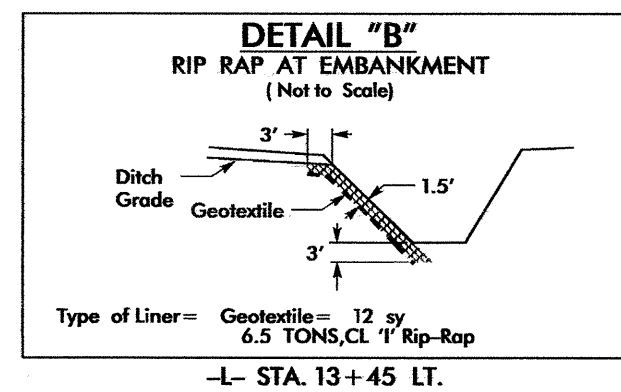
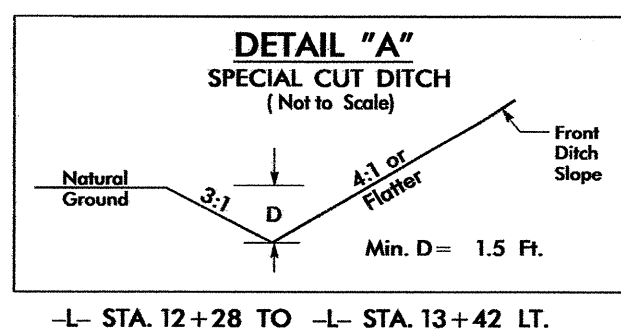
28 x 14 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
6 ft. weir
ID 4.1C

BEGIN PROJECT B-4436
-L- PC STA. 10+00.00

END PROJECT B-4436
-L- POT STA. 17+00.00

THE COUNTY OF BLADEN
DB 439 PG 563

THE COUNTY OF BLADEN
DB 439 PG 563



NOTES: (1) SEE SHEET 5 FOR -L- PROFILE
(2) TIE DRIVES TO EXISTING WIDTH
(3) SEE SHEETS S-1 TO S-22 FOR STRUCTURE DETAILS
(4) USE ROCK PLATING (SEE DETAIL SHEET 2-A)
-L- STA. 14+30 +/- TO -L- STA. 16+15 +/- (LEFT)
-L- STA. 14+30 +/- TO -L- STA. 15+00 +/- (RIGHT)

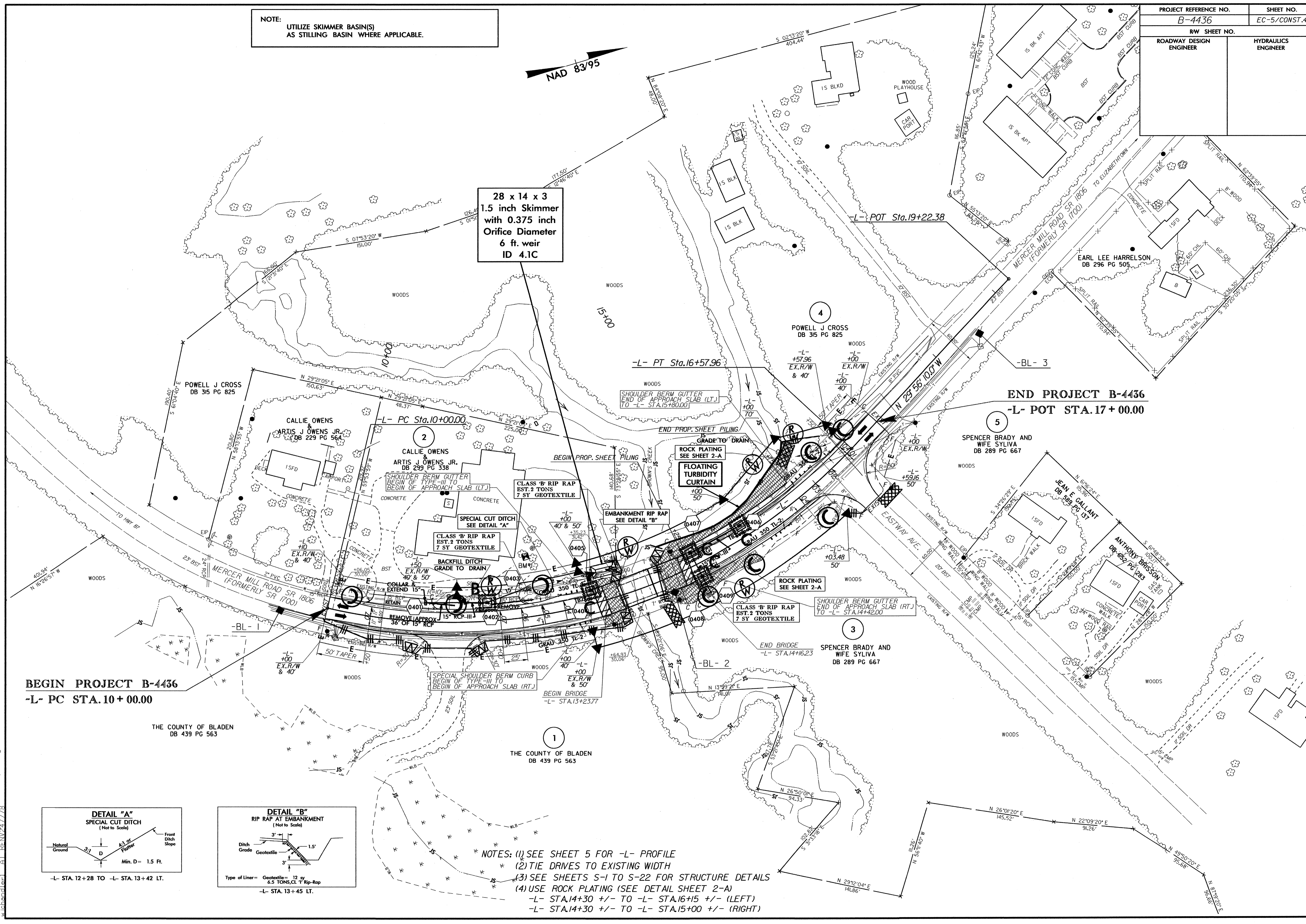
Q:\JUL-2013\13438
 R:\Environmental\Design\B-4436-EC-esh4.dgn
 schubert AT RENV24778

NOTE: UTILIZE SKIMMER BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

| | |
|---------------------------------|---------------------------|
| PROJECT REFERENCE NO. B-4436 | SHEET NO. EC-5/CONST.4 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

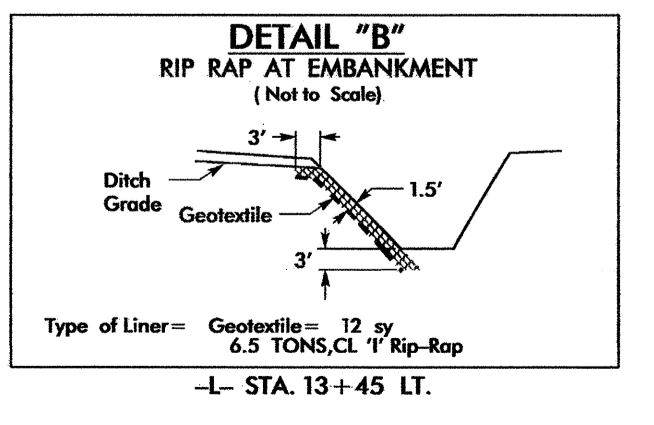
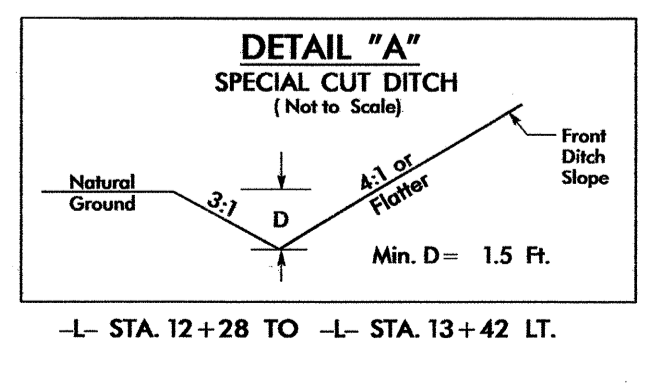


28 x 14 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
6 ft. weir
ID 4.1C



BEGIN PROJECT B-4436
-L- PC STA. 10+00.00

END PROJECT B-4436
-L- POT STA. 17+00.00



- NOTES: (1) SEE SHEET 5 FOR -L- PROFILE
(2) TIE DRIVES TO EXISTING WIDTH
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-L- STA. 14+30 +/- TO -L- STA. 16+15 +/- (LEFT)
-L- STA. 14+30 +/- TO -L- STA. 15+00 +/- (RIGHT)

01-Jul-2013 13:44
 C:\Users\jsh44\Documents\B-4436-EC-5/CONST.4.dgn
 jsh44

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

| | |
|---------------------------------|---------------------|
| TIP NO. B-4436 | SHEET NO. SIGN-1 |
| APPROVED: <i>Ayman Alqudwah</i> | |
| DATE: 6-4-13 | |
| SEAL | |



**SIGNING PLAN
BLADEN COUNTY**

LOCATION: BRIDGE NO. 31 OVER BROWNS CREEK ON SR 1806 (FORMERLY SR 1700)

T.I.P.: B-4436

CONTRACT: C203246

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 |

SUMMARY OF QUANTITIES

| ITEM NO. | | ITEM DESCRIPTION | QUANTITY | UNIT |
|------------|-----------|---|----------|------|
| DESC. NO. | SECT. NO. | | | |
| 4072000000 | 903 | SUPPORTS, 3 LB STEEL U-CHANNEL..... | 120.50 | L.F. |
| 4096000000 | 904 | SIGN ERECTION, TYPE D..... | 1 | EA. |
| 4102000000 | 904 | SIGN ERECTION, TYPE E..... | 12 | EA. |
| 4155000000 | 907 | DISPOSAL OF SIGN SYSTEM, U-CHANNEL..... | 8 | EA. |
| 4158000000 | 907 | DISPOSAL OF SIGN SYSTEM, WOOD..... | 1 | EA. |

GENERAL NOTES

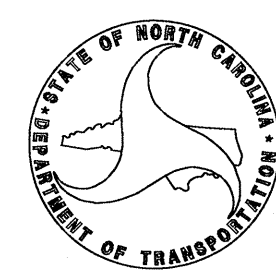
- . SIGNS FURNISHED BY STATE
- . ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- . IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- . 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.
- . WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- . THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
- . SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

INDEX

| SHEET NO. | DESCRIPTION |
|-----------|--|
| SIGN-1 | TITLE SHEET - SUMMARY OF QUANTITIES, ROADWAY STANDARD DRAWINGS, INDEX, & NOTES |
| SIGN-2 | TYPE "D" SIGN |
| SIGN-3 | TYPE "E" SIGN |
| SIGN-4 | SIGN DETAIL SHEET |

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

Ayman I Alqudwah, P.E. SIGNING & DELINEATION REGIONAL ENGINEER
Eric Ward SIGNING & DELINEATION DESIGN ENGINEER



| | |
|------------------------------|---------------------|
| TIP NO. B-4436 | SHEET NO. SIGN-2 |
| APPROVED: <i>[Signature]</i> | |
| DATE: 6-4-13 | |
| SEAL | |



| SIGN NUMBER: 301 TYPE: D QUANTITY: 1 SIGN WIDTH: 4'-6" HEIGHT: 1'-6" TOTAL AREA: 6.8 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 0.5" RADII: 1.5" NO. Z BARS: LENGTH: | BACKG COLOR: Green COPY COLOR: White <table border="1"> <thead> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table> MAT'L: 0.125" (3.2 mm) ALUMINUM | SYMBOL | X | Y | WID | HT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | DESIGN BY: J.Bond PROJECT ID: B-4436 CHECKED BY: E.Ward DIV: 6 DATE: May 01, 2013 |
|--|---|--------|-----|----|-----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| SYMBOL | X | Y | WID | HT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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BORDER
R=1.5"
TH=0.5"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

| | E | l | i | z | a | b | e | t | h | t | o | w | n | | Series/Size | |
|--|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-------------|----------------|
| | 4.5 | 4 | 2.4 | 2.1 | 3.6 | 4.2 | 3.5 | 3.5 | 3.4 | 3.8 | 3 | 3.5 | 5.2 | 2.6 | 4.5 | EM 2000 45 |
| | 15.9 | 2.3 | 2.5 | 3.1 | 2 | 3 | 2.3 | 1.2 | 3.1 | 0.9 | 1.9 | 15.9 | | | | D 2000 22.3 |
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FILENAME: B-4436_Sgn_SGN_1 NORTH CAROLINA D.O.T. SIGN DETAIL

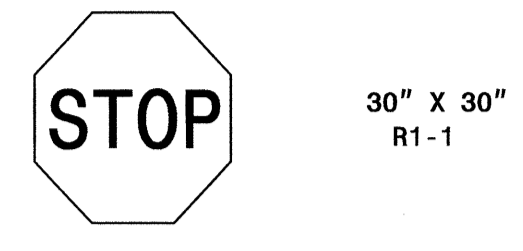
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 ericmrc

TYPE "D" SIGN

| | |
|------------------------------|---------------------|
| TIP NO. B-4436 | SHEET NO. SIGN-3 |
| APPROVED: <i>[Signature]</i> | |
| DATE: 6-4-13 | |

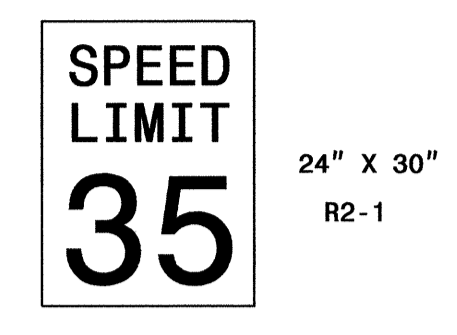


401 QUANTITY REQ'D . 2 _



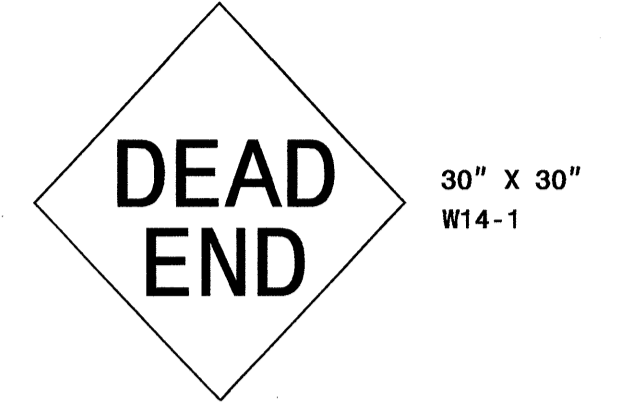
ONE "U" POST PER SIGN

402 QUANTITY REQ'D . 1 _



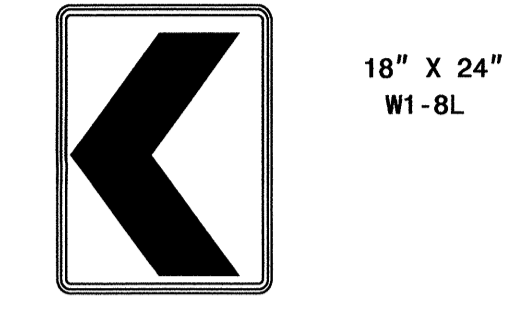
ONE "U" POST PER SIGN

403 QUANTITY REQ'D . 1 _



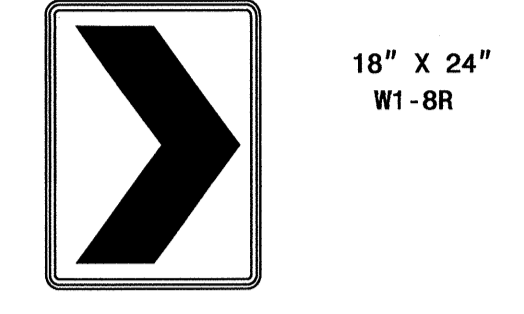
ONE "WOOD" POST PER SIGN

404 QUANTITY REQ'D . 4 _



ONE "U" POST PER SIGN
MOUNT BACK TO BACK WITH SIGN 405

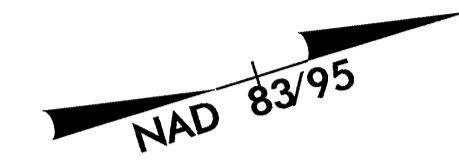
405 QUANTITY REQ'D . 4 _



ONE "U" POST PER SIGN

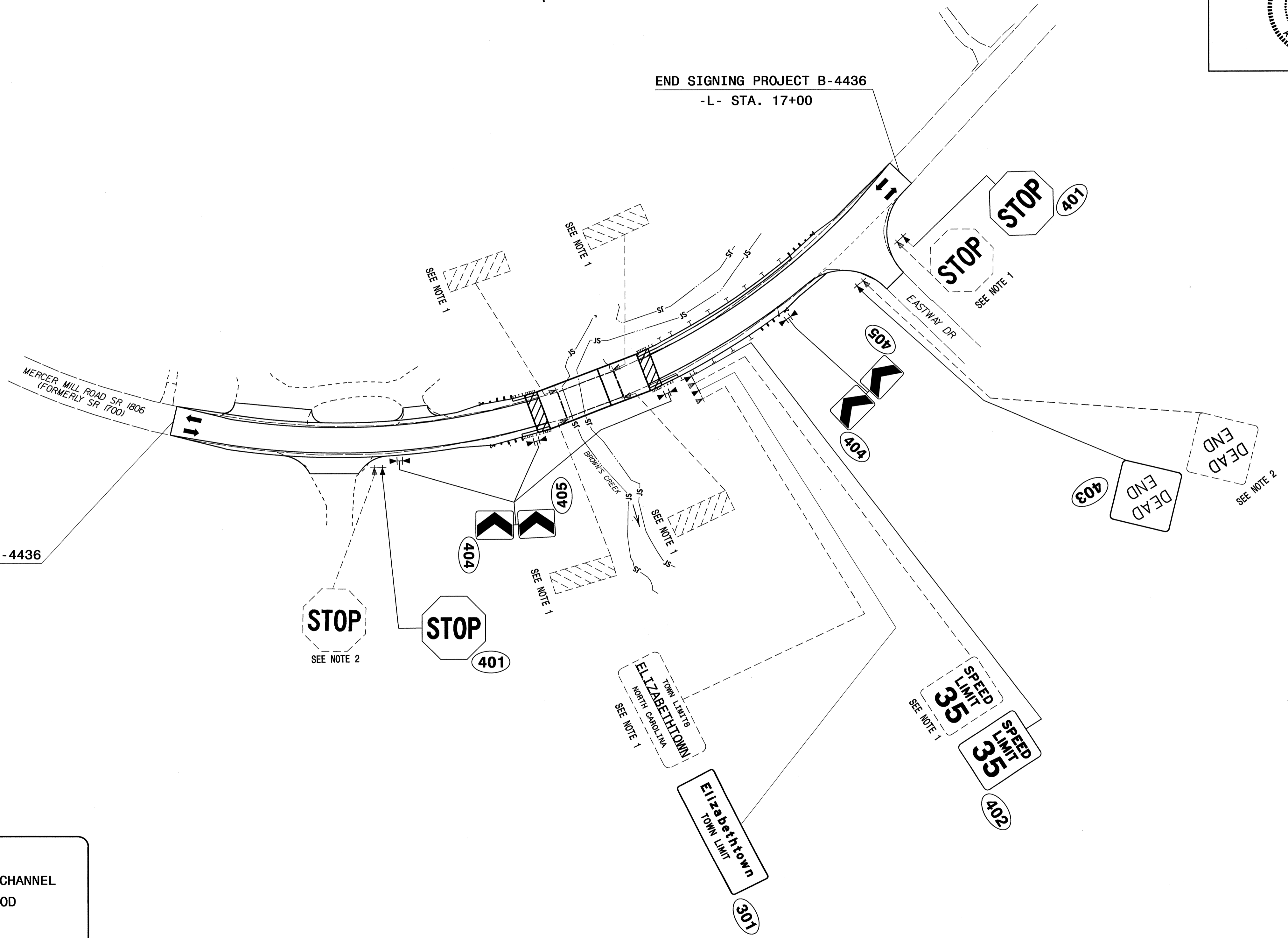
TYPE "E" SIGNS

| | |
|------------------------------|---------------------|
| TIP NO. B-4436 | SHEET NO. SIGN-4 |
| APPROVED: <i>[Signature]</i> | |
| DATE: 6-4-13 | |
| SEAL | |



END SIGNING PROJECT B-4436
-L- STA. 17+00

BEGIN SIGNING PROJECT B-4436
-L- PC STA. 10+00



PROJECT NOTES

- 1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
- 2 DISPOSAL OF SIGN SYSTEM, WOOD

SIGN DETAIL SHEET

28-MAY-2013 09:39
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 ericward AT TE247905

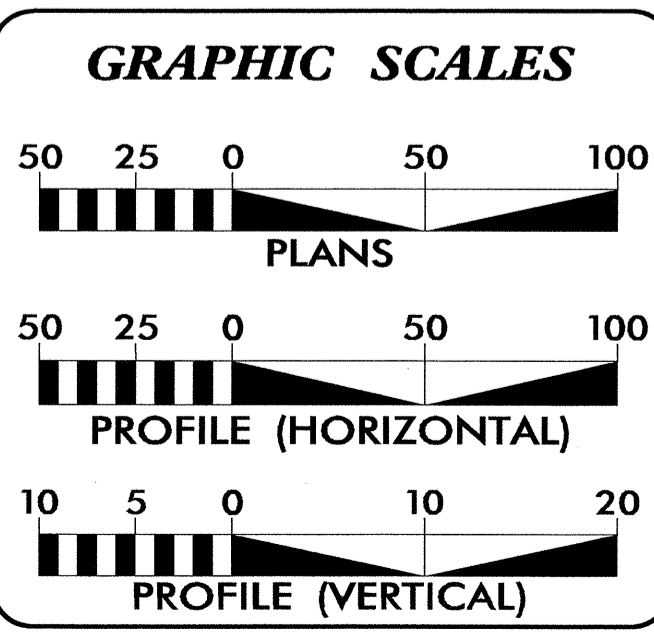
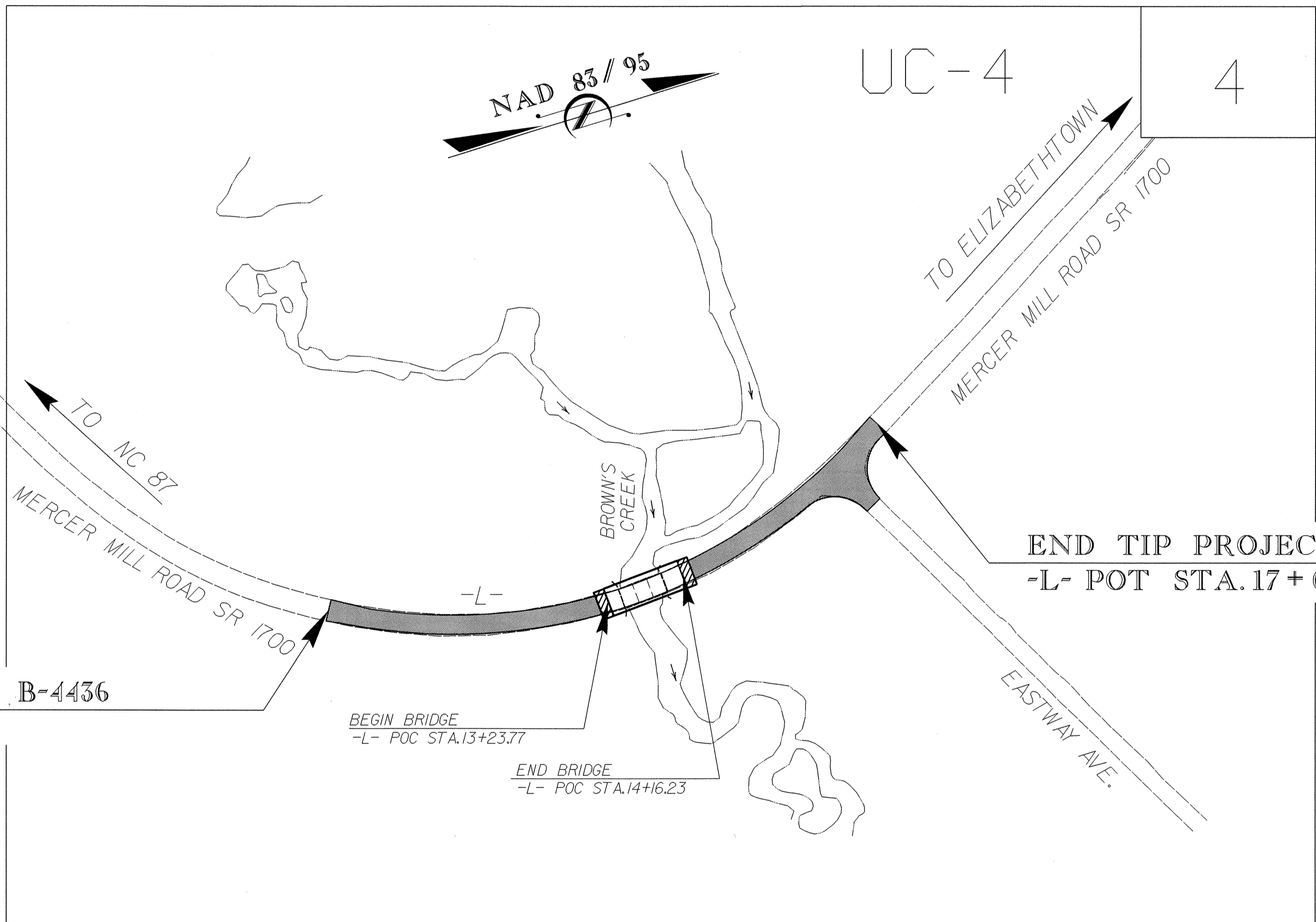
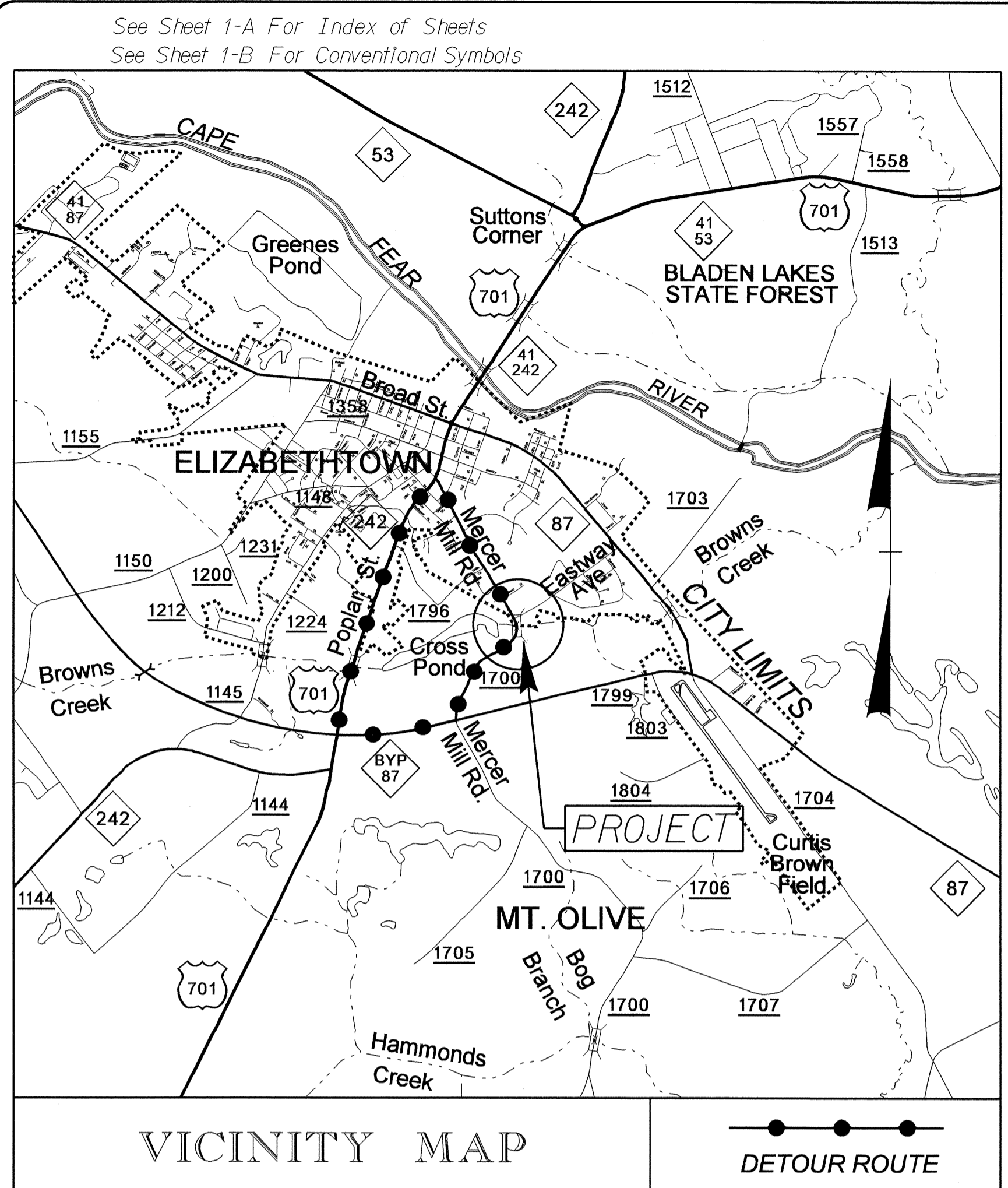
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS
BLADEN COUNTY**

LOCATION: BRIDGE NO.31 OVER BROWNS CREEK ON SR 1700

TYPE OF WORK: RELOCATE WATER METERS AND FIRE HYDRANT

TIP PROJECT:

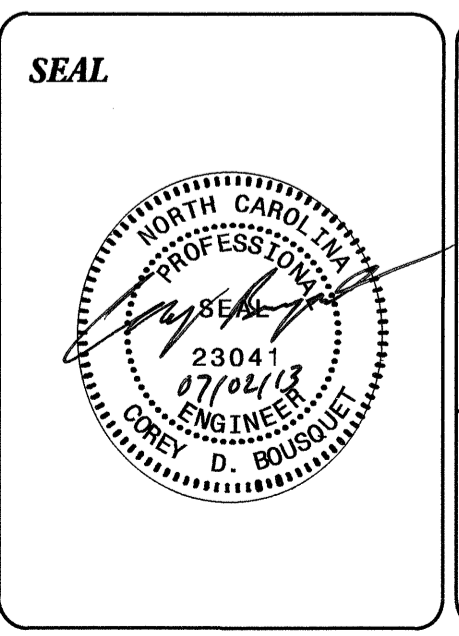


INDEX OF SHEETS

| SHEET NO. | DESCRIPTION |
|-----------|----------------------------|
| UC-1 | TITLE SHEET |
| UC-2 | UTILITY SYMBOLOGY |
| UC-3 | NOTES & DETAILS SHEET |
| UC-4 | UTILITY CONSTRUCTION SHEET |

WATER AND SEWER OWNERS ON PROJECT

(1) BLADEN COUNTY WATER (WATER)
(2) TOWN OF ELIZABETHTOWN (WATER)



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

1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Corey Bousquet, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Kifah Kamil UTILITIES PROJECT DESIGNER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

BOUNDARIES AND PROPERTY:

| | |
|--|---------|
| State Line | ----- |
| County Line | ----- |
| Township Line | ----- |
| City Line | ----- |
| Reservation Line | ----- |
| Property Line | ----- |
| Existing Iron Pin | ○ EP |
| Property Corner | ✕ |
| Property Monument | □ EDM |
| 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 | ▭ |
| False Sump | ▭ |

RAILROADS:

| | |
|--------------------|-----------------------------------|
| Standard Gauge | ----- |
| RR Signal Milepost | CSX TRANSPORTATION MILEPOST 35 |
| Switch | SWITCH |
| RR Abandoned | ----- |
| RR Dismantled | ----- |

RIGHT OF WAY:

| | |
|--|-----------|
| Baseline Control Point | ◆ |
| Existing Right of Way Marker | △ |
| Existing Right of Way Line | ----- |
| Proposed Right of Way Line | ----- RW |
| Proposed Right of Way Line with Iron Pin and Cap Marker | ----- RW |
| Proposed Right of Way Line with Concrete or Granite R/W Marker | ----- RW |
| Proposed Control of Access Line with Concrete C/A Marker | ----- C/A |
| Existing Control of Access | ----- C/A |
| Proposed Control of Access | ----- C/A |
| Existing Easement Line | ----- E |
| Proposed Temporary Construction Easement | ----- E |
| Proposed Temporary Drainage Easement | ----- TDE |
| Proposed Permanent Drainage Easement | ----- PDE |
| Proposed Permanent Drainage / Utility Easement | ----- DUE |
| Proposed Permanent Utility Easement | ----- PUE |
| Proposed Temporary Utility Easement | ----- TUE |
| Proposed Aerial Utility Easement | ----- AUE |

ROADS AND RELATED FEATURES:

| | |
|--|----------|
| Proposed Permanent Easement with Iron Pin and Cap Marker | ◆ |
| Existing Edge of Pavement | ----- |
| Existing Curb | ----- |
| Proposed Slope Stakes Cut | ----- C |
| Proposed Slope Stakes Fill | ----- F |
| Proposed Curb Ramp | ----- CR |
| Existing Metal Guardrail | ----- |
| Proposed Guardrail | ----- |
| Existing Cable Guiderail | ----- |
| Proposed Cable Guiderail | ----- |
| Equality Symbol | ⊕ |
| Pavement Removal | ▭ |

VEGETATION:

| | |
|--------------|-------|
| Single Tree | ○ |
| Single Shrub | ○ |
| Hedge | ----- |
| Woods Line | ----- |

| | |
|----------|-------|
| Orchard | ----- |
| Vineyard | ----- |

EXISTING STRUCTURES:

| | |
|--|---------------|
| MAJOR: | |
| Bridge, Tunnel or Box Culvert | ----- CONC |
| Bridge Wing Wall, Head Wall and End Wall | ----- CONC WW |
| MINOR: | |
| Head and End Wall | ----- CONC HW |
| Pipe Culvert | ----- |
| Footbridge | ----- |
| Drainage Box: Catch Basin, DI or JB | ----- CB |
| Paved Ditch Gutter | ----- |
| Storm Sewer Manhole | ----- S |
| Storm Sewer | ----- S |

UTILITIES:

| | |
|-------------------------------------|---------|
| POWER: | |
| Existing Power Pole | ● |
| Proposed Power Pole | ○ |
| Existing Joint Use Pole | ● |
| Proposed Joint Use Pole | ○ |
| Power Manhole | ⊕ |
| Power Line Tower | ⊗ |
| Power Transformer | ⊗ |
| U/G Power Cable Hand Hole | ● |
| H-Frame Pole | ● |
| Recorded U/G Power Line | ----- P |
| Designated U/G Power Line (S.U.E.*) | ----- P |

TELEPHONE:

| | |
|---|------------|
| Existing Telephone Pole | ● |
| Proposed Telephone Pole | ○ |
| Telephone Manhole | ⊕ |
| Telephone Booth | ⊕ |
| Telephone Pedestal | ⊕ |
| Telephone Cell Tower | ⊕ |
| U/G Telephone Cable Hand Hole | ● |
| Recorded U/G Telephone Cable | ----- T |
| Designated U/G Telephone Cable (S.U.E.*) | ----- T |
| Recorded U/G Telephone Conduit | ----- TC |
| Designated U/G Telephone Conduit (S.U.E.*) | ----- TC |
| Recorded U/G Fiber Optics Cable | ----- T FO |
| Designated U/G Fiber Optics Cable (S.U.E.*) | ----- T FO |

WATER:

| | |
|-------------------------------------|-----------------|
| Water Manhole | ⊕ |
| Water Meter | ○ |
| Water Valve | ⊗ |
| Water Hydrant | ⊕ |
| Recorded U/G Water Line | ----- W |
| Designated U/G Water Line (S.U.E.*) | ----- W |
| 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/UL |
| 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. |

5/14/99

UTILITY CONSTRUCTION

| | |
|---|--------------------------|
| PROJECT REFERENCE NO. B-4436 | SHEET NO. UC-3 |
| DESIGNED BY: KAK | |
| DRAWN BY: KAK | |
| CHECKED BY: CDB | |
| APPROVED BY: CDB | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | |
| UTILITY CONSTRUCTION PLANS ONLY | |

GENERAL NOTES:

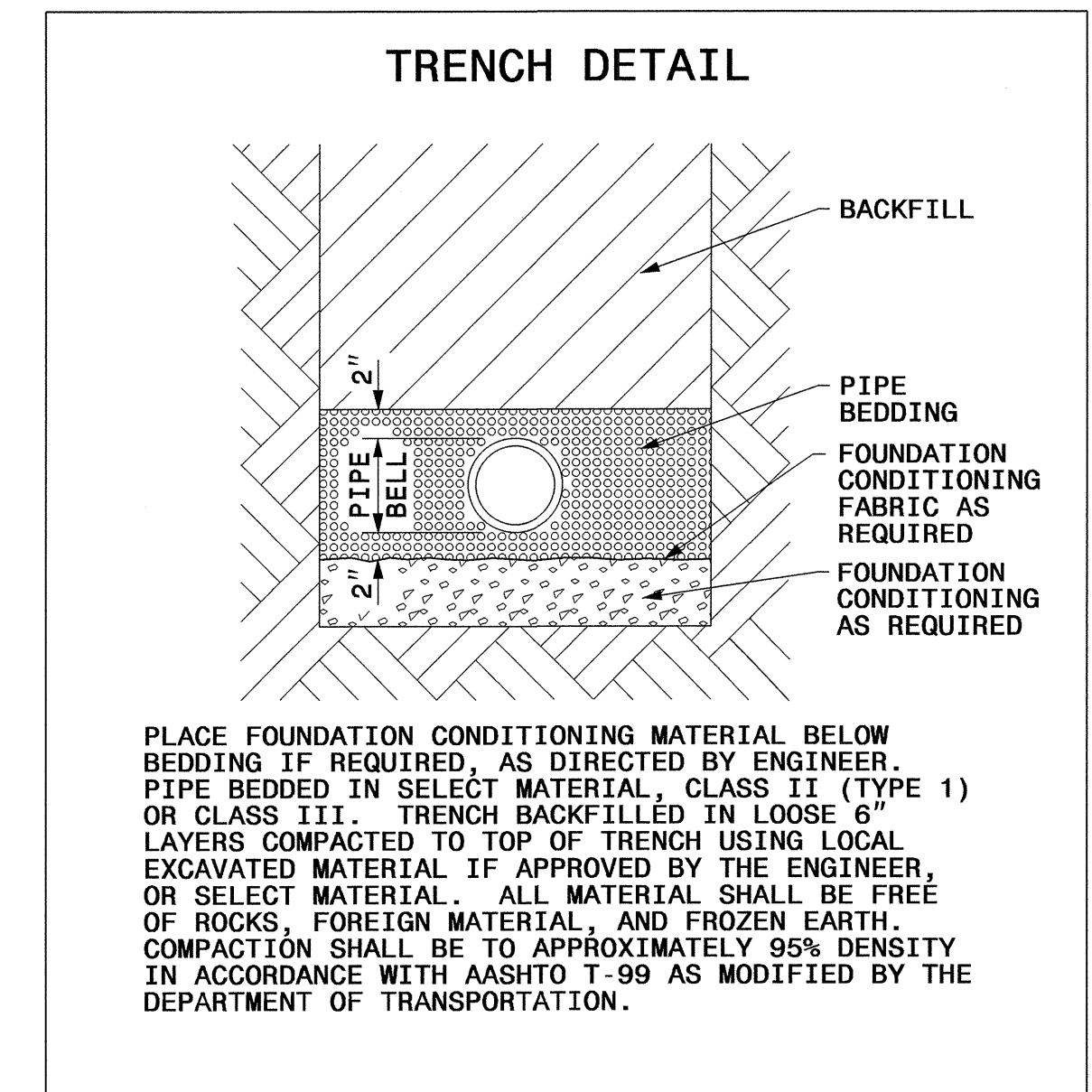
1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2012.
2. THE EXISTING UTILITIES BELONG TO BLADEN COUNTY WATER AND TOWN OF ELIZABETHTOWN WATER & SEWER .
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER QUALITY. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPROTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

LIST OF STANDARD DRAWINGS

- 1515.01 WATER METER
- 1515.02 FIRE HYDRANT

PROJECT TYPICAL DETAILS



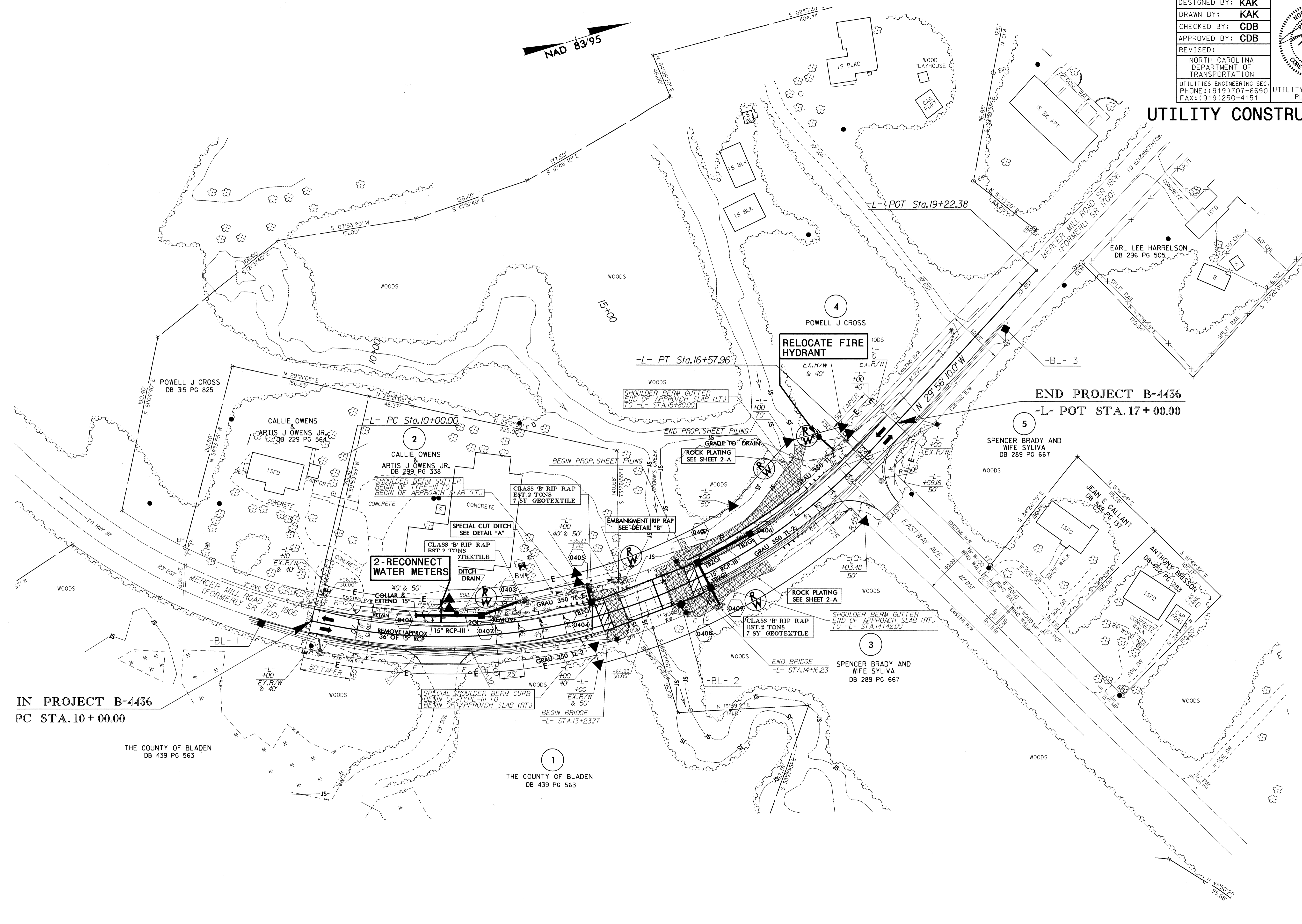
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|----------------------------|-----------------------|----------------------------|-----------------------|
| 4 | 28 | 20 | 44 |
| 6 | 30 | 24 | 48 |
| 8 | 32 | 30 | 54 |
| 10 | 34 | 36 | 60 |
| 12 | 36 | 42 | 66 |
| 14 | 38 | 48 | 72 |
| 16 | 40 | 54 | 78 |
| 18 | 42 | | |

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| | |
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| PROJECT REFERENCE NO. | SHEET NO. |
| B-4436 | UC-4 |
| DESIGNED BY: KAK | |
| DRAWN BY: KAK | |
| CHECKED BY: CDB | |
| APPROVED BY: CDB | |
| REVISED: | |
| NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 | |
| UTILITY CONSTRUCTION PLANS ONLY | |

UTILITY CONSTRUCTION

5/14/99
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IN PROJECT B-4436
PC STA. 10+00.00

THE COUNTY OF BLADEN
 DB 439 PG 563

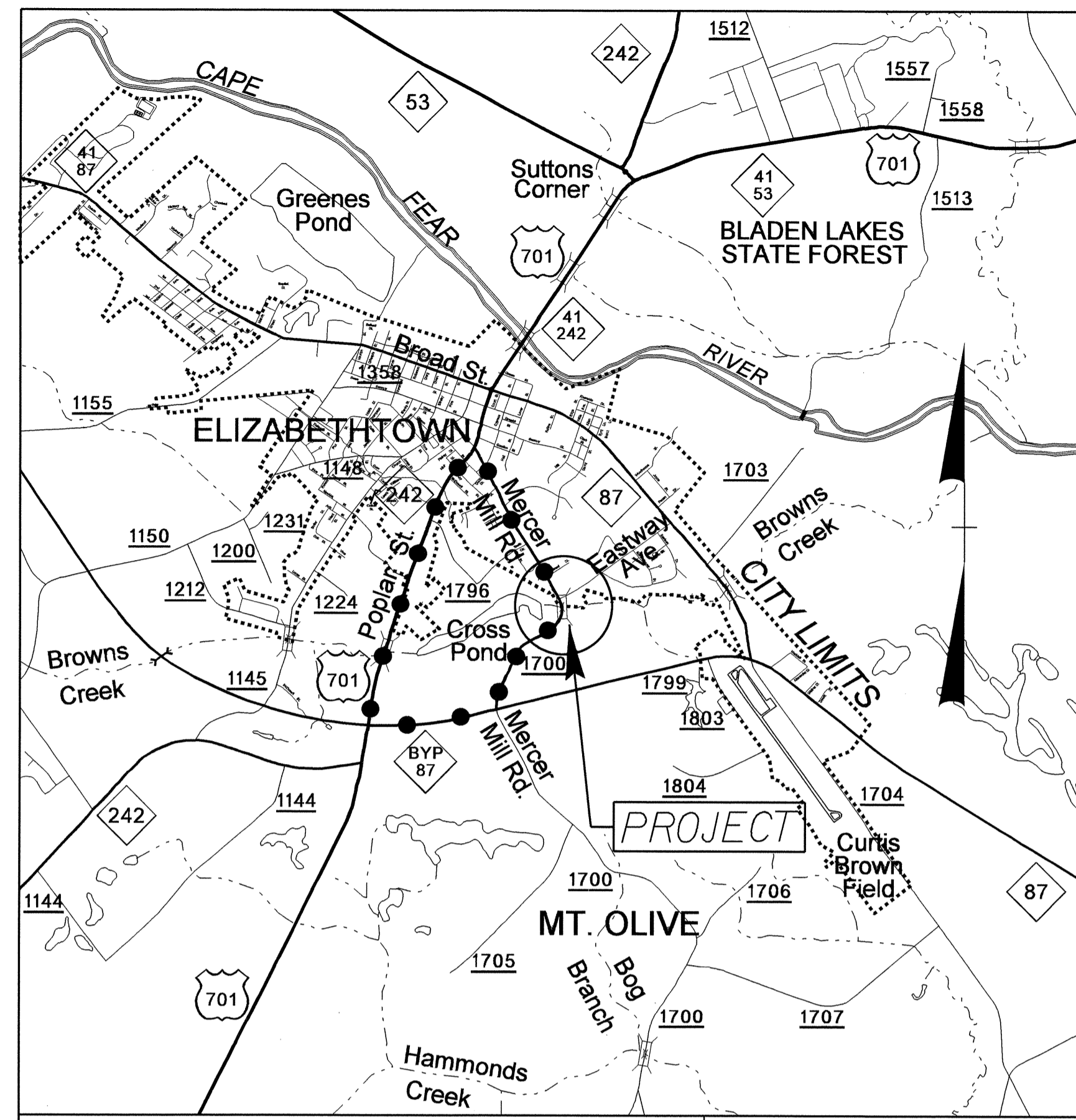
THE COUNTY OF BLADEN
 DB 439 PG 563

END PROJECT B-4436
-L- POT STA. 17+00.00

TIP PROJECT: B-4436

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

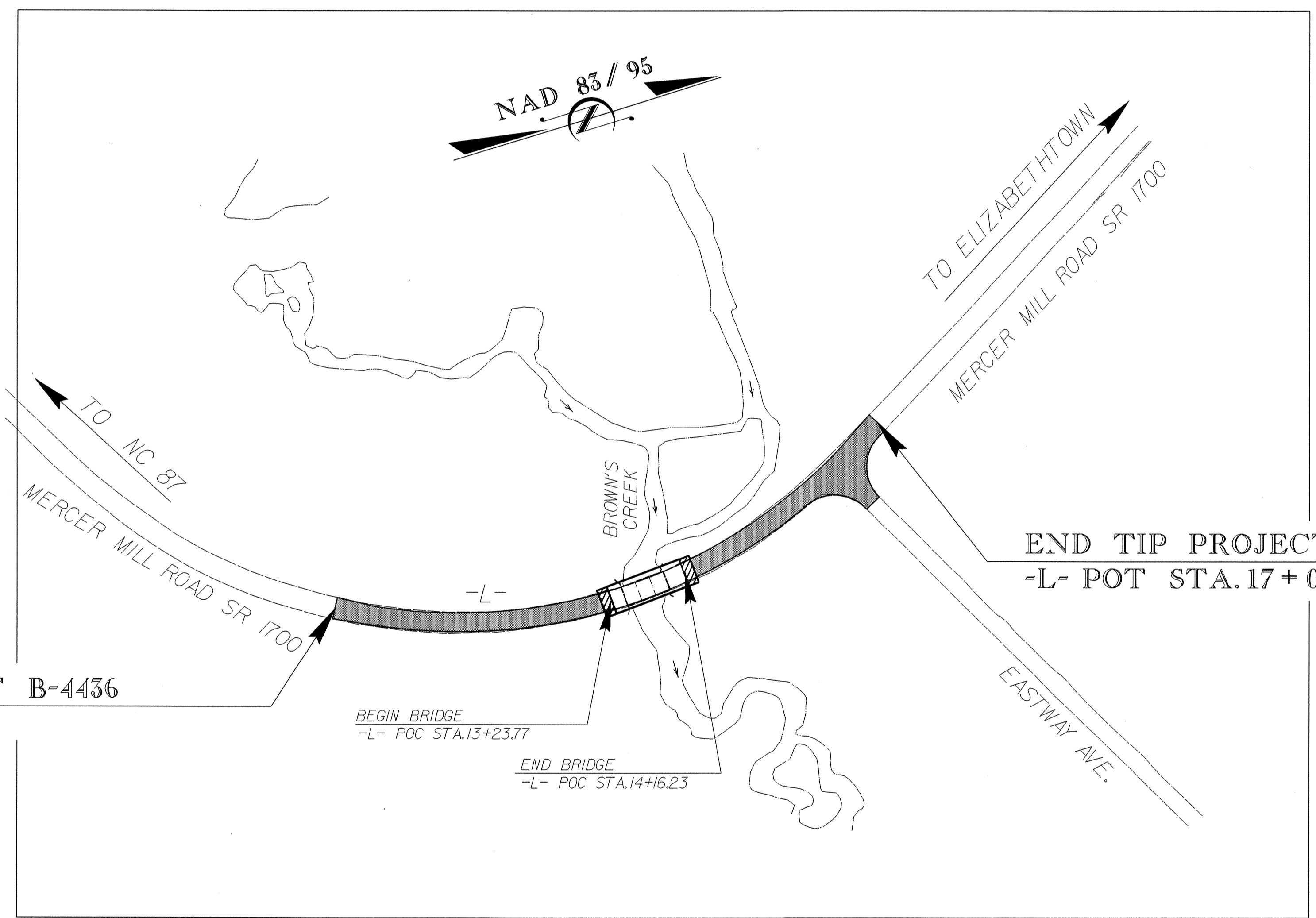
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|-----------------------------|--------------------------|
| T.I.P. NO. B-4436 | SHEET NO. UO-1 |
|-----------------------------|--------------------------|



VICINITY MAP
DETOUR ROUTE

UTILITIES BY OTHERS PLANS BLADEN COUNTY

**LOCATION: BRIDGE NO. 31 ON SR 1700
OVER BROWNS CREEK**
TYPE OF WORK: UTILITY BY OTHERS RELOCATION

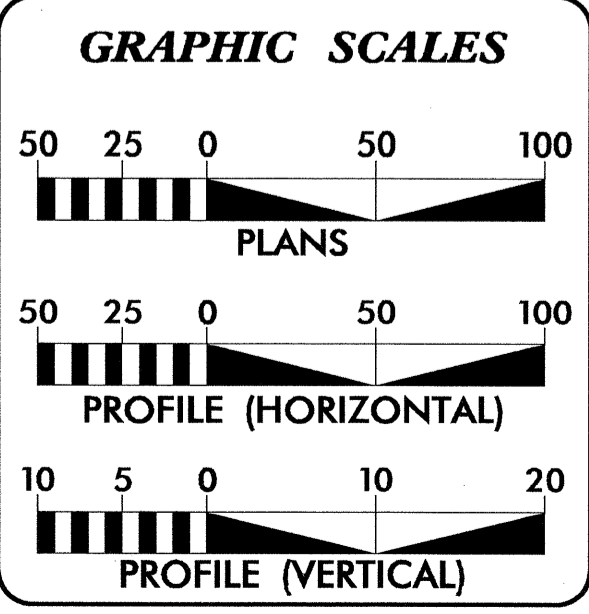


BEGIN TIP PROJECT B-4436
-L- PC STA. 10 + 00.00

END TIP PROJECT B-4436
-L- POT STA. 17 + 00.00

BEGIN BRIDGE
-L- POC STA. 13 + 23.77

END BRIDGE
-L- POC STA. 14 + 16.23



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

- ### UTILITY OWNERS ON PROJECT
- (1) POWER - FOUR COUNTY EMC
 - (2) TELEPHONE - CENTURYLINK
 - (3) TELEVISION - TIME WARNER CABLE

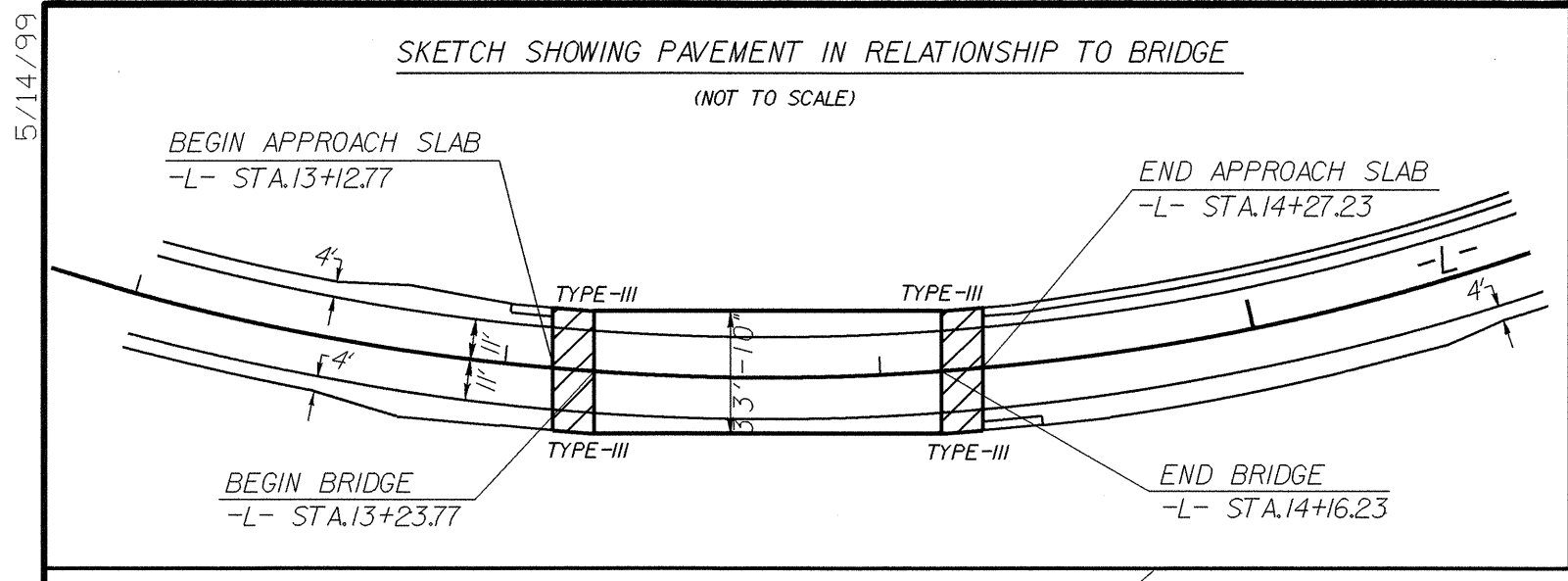
UTILITY DESIGN BY:
MA Engineering
CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919 297 0220 Fax: 919 297 0221

NCDOT PROJECT ENGINEER:
COREY BOUSQUET, P.E.
PREPARED FOR:
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
UTILITIES UNIT
RALEIGH, NC

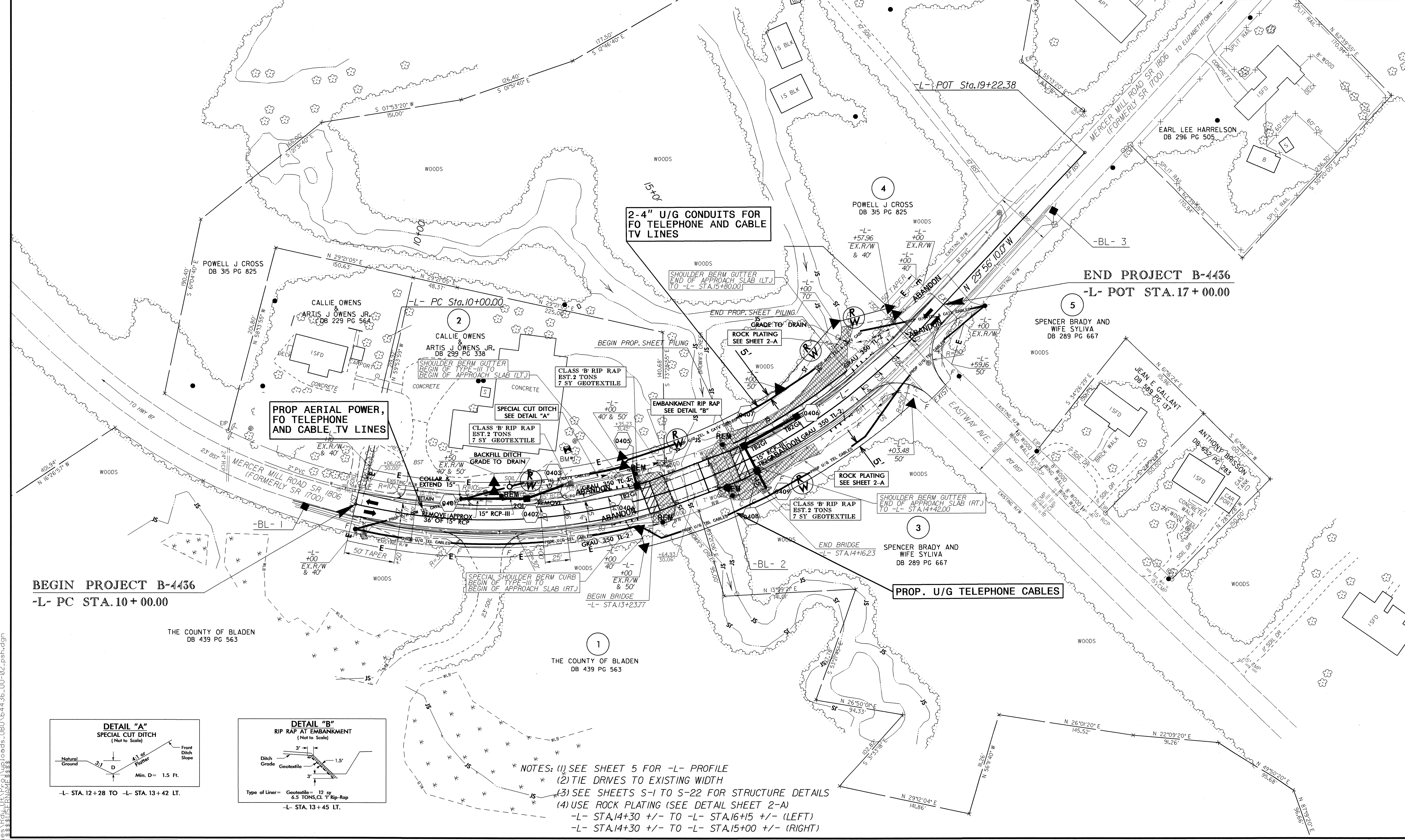
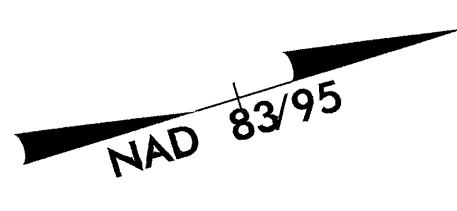
UTILITIES BY OTHERS

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

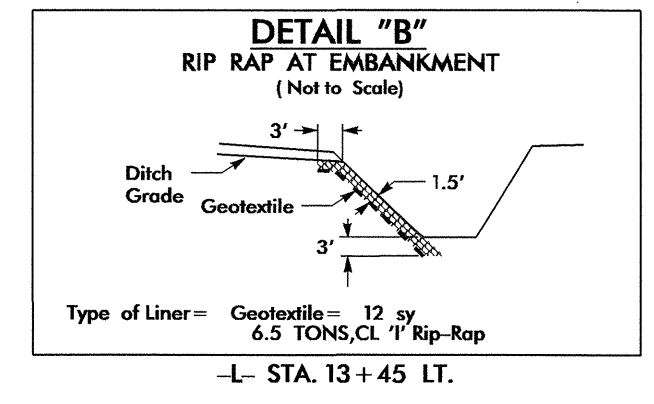
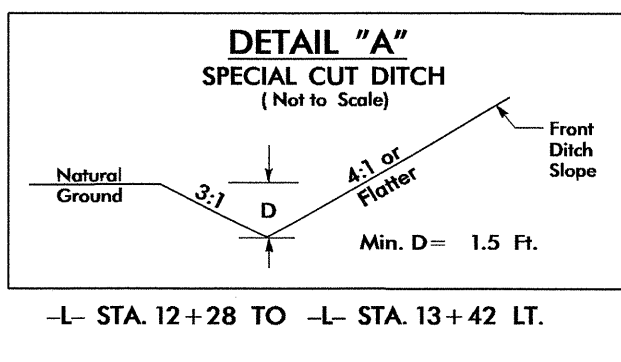


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 $D = 9^{\circ}10'02.4''$
 $L = 657.96'$
 $T = 363.16'$
 $R = 625.00'$
 SE = SEE PLANS



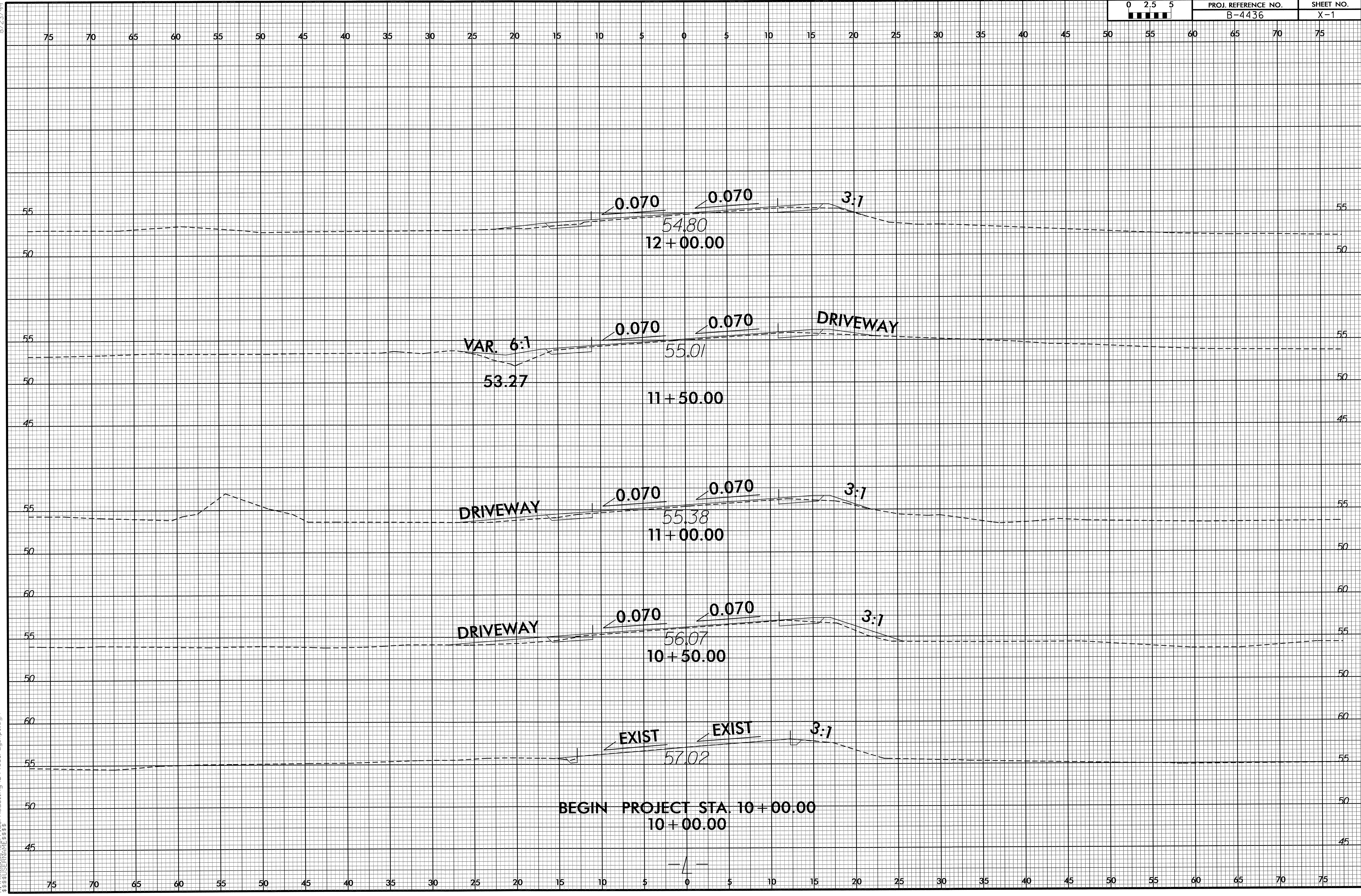
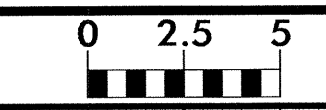
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END PROJECT B-4436
-L- POT STA.17+00.00



NOTES:
 (1) SEE SHEET 5 FOR -L- PROFILE
 (2) TIE DRIVES TO EXISTING WIDTH
 (3) SEE SHEETS S-1 TO S-22 FOR STRUCTURE DETAILS
 (4) USE ROCK PLATING (SEE DETAIL SHEET 2-A)
 -L- STA.14+30 +/- TO -L- STA.16+15 +/- (LEFT)
 -L- STA.14+30 +/- TO -L- STA.15+00 +/- (RIGHT)

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12 + 00.00

VAR. 6:1 0.070 0.070 DRIVEWAY
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11 + 50.00

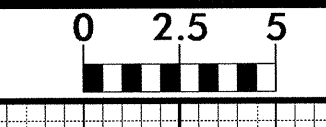
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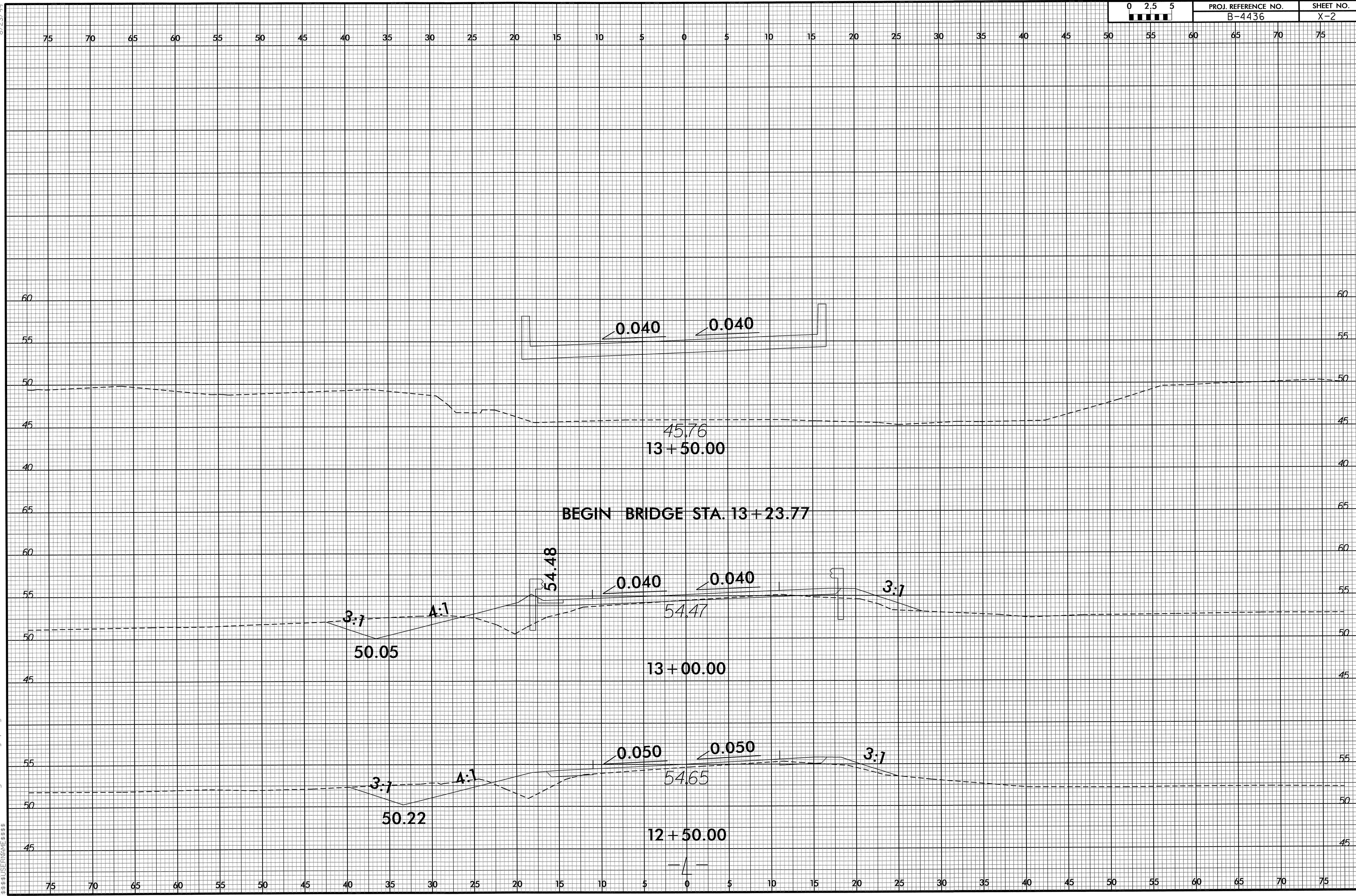
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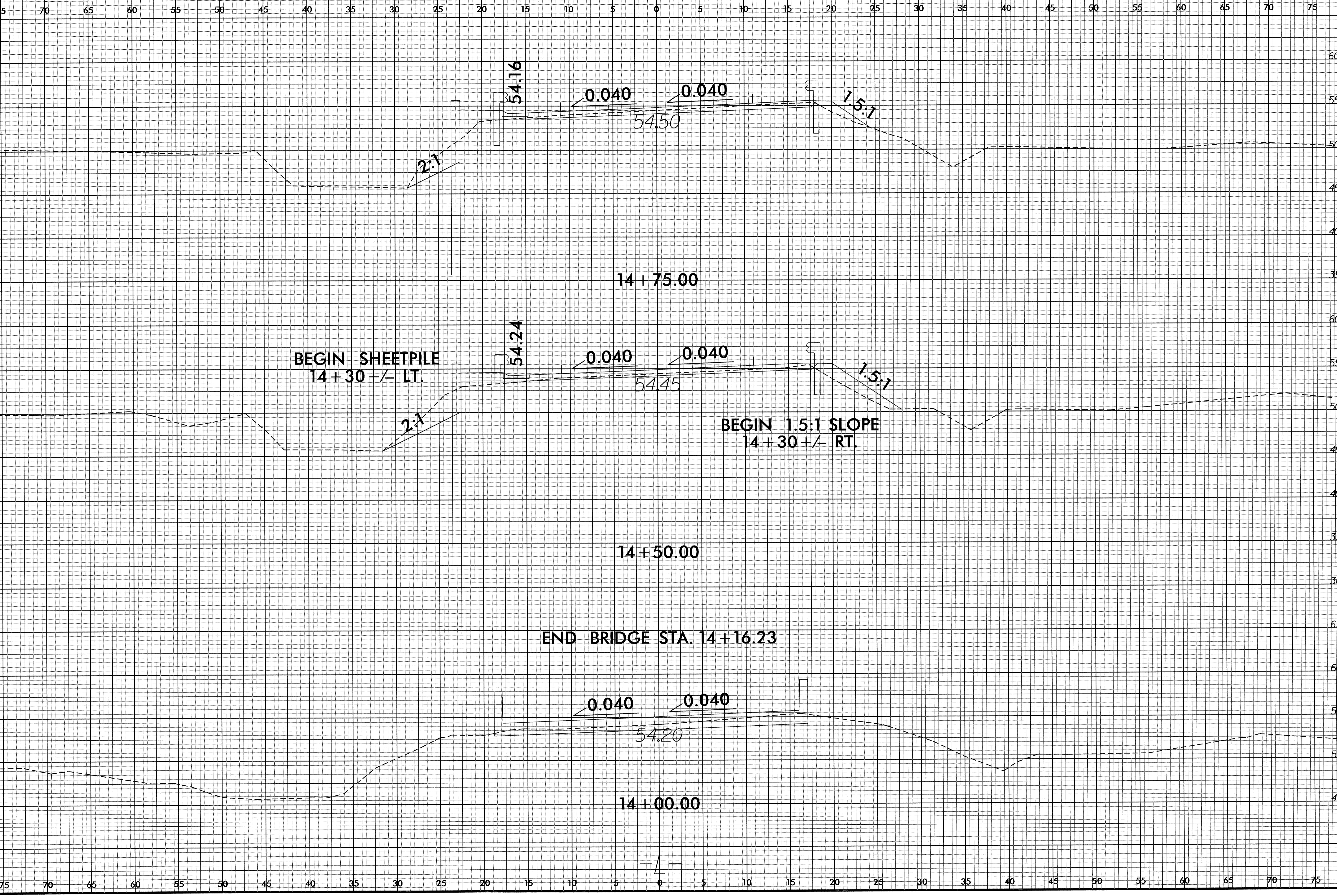
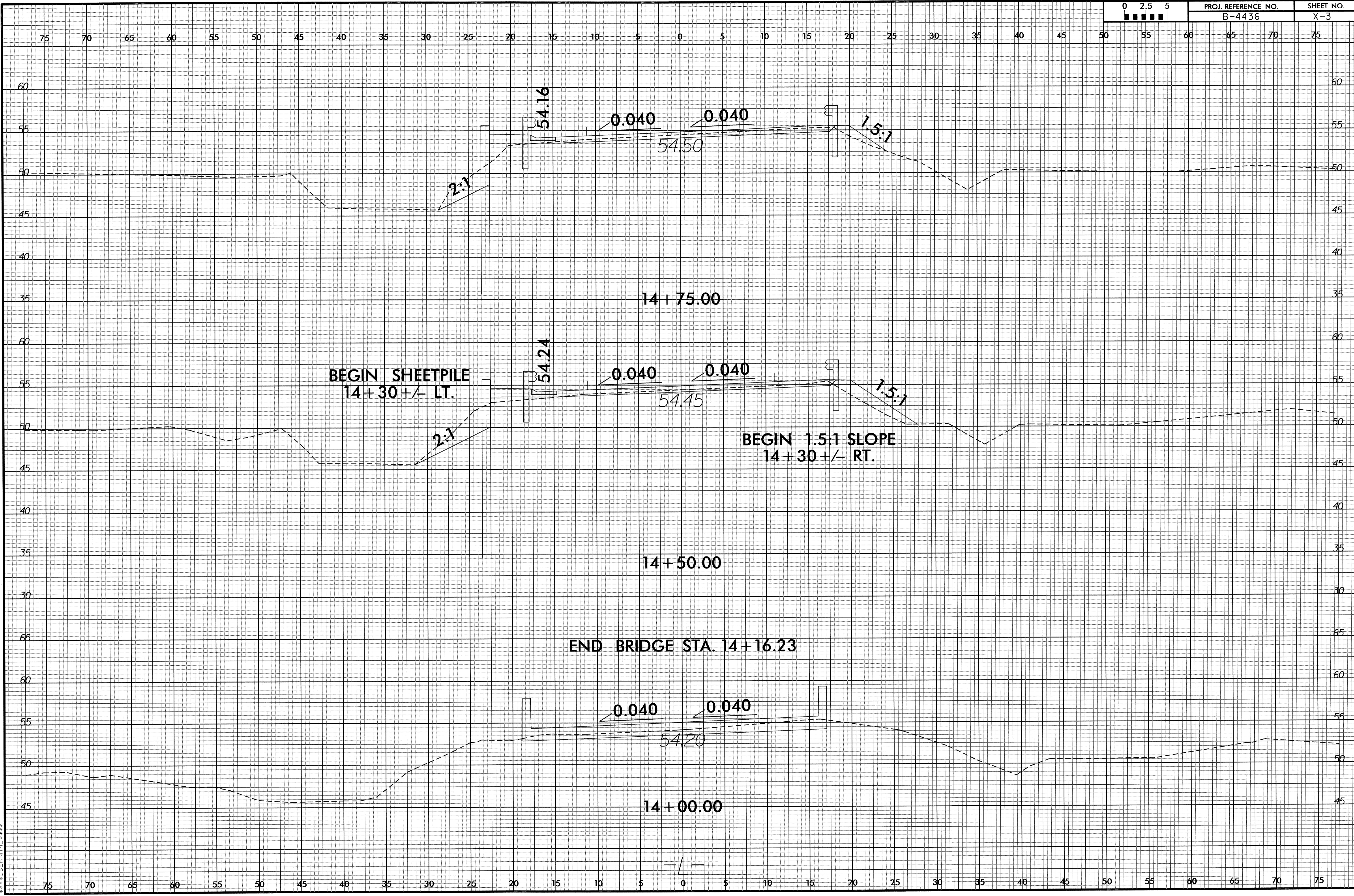
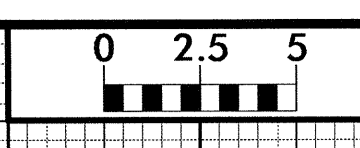


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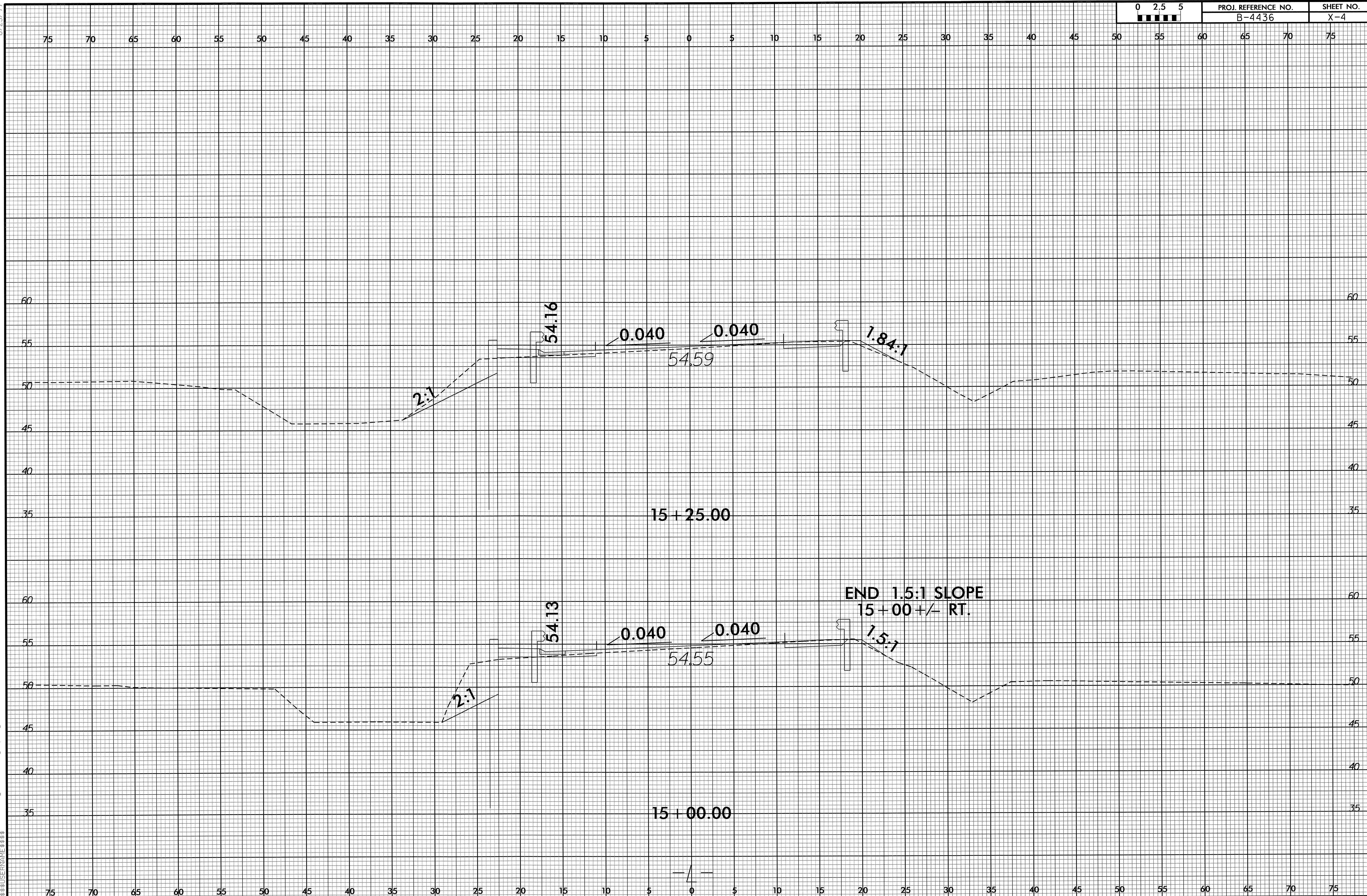


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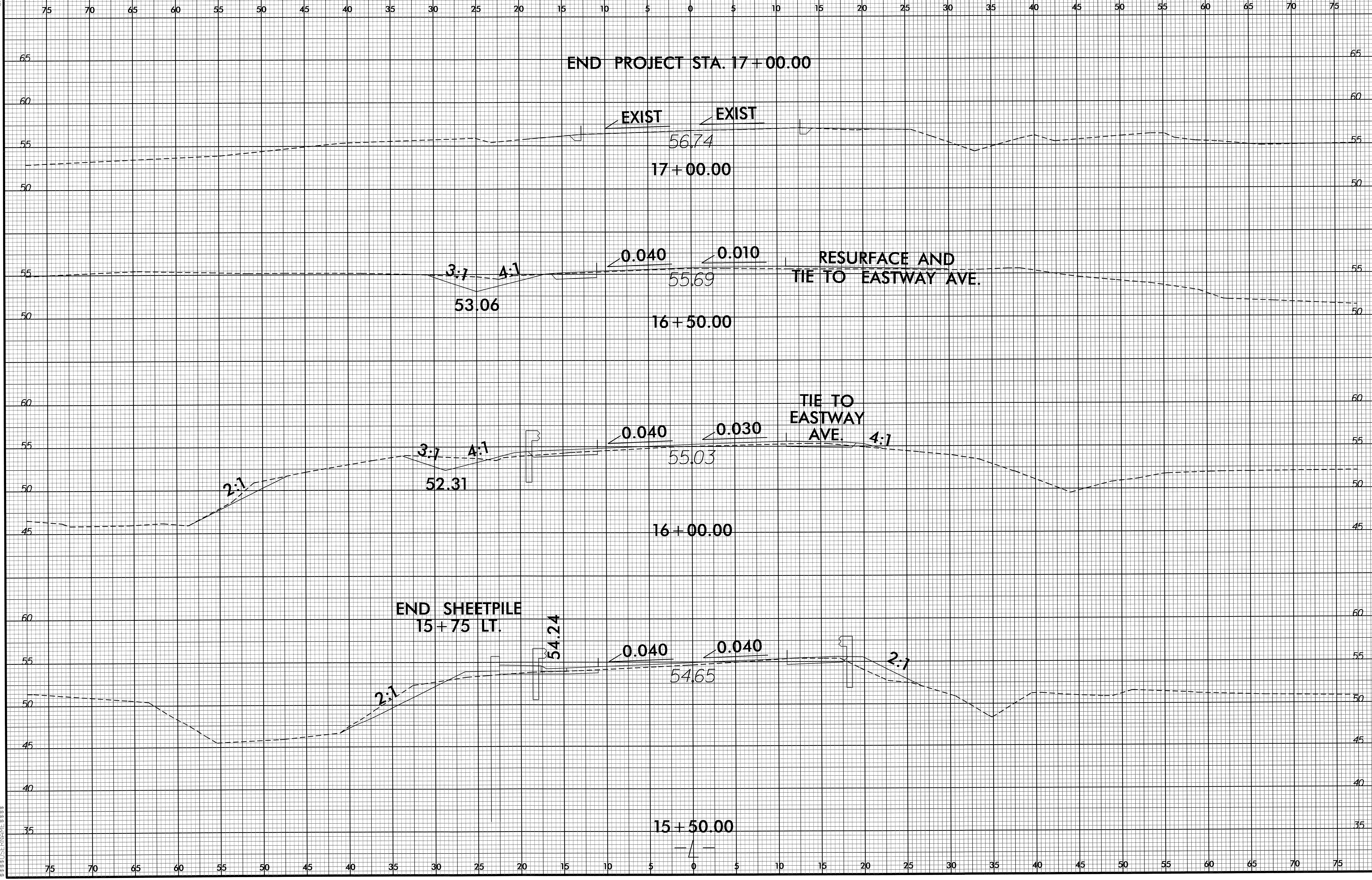
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8/23/99



PROJ. REFERENCE NO.
B-4436

SHEET NO.
X-5



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EXIST EXIST

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17+00.00

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53.06

0.040

0.010

RESURFACE AND
TIE TO EASTWAY AVE.

55.69

16+50.00

TIE TO
EASTWAY
AVE.

0.040

0.030

4:1

3:1 4:1

52.31

2:1

55.03

16+00.00

END SHEETPILE
15+75 LT.

54.24

0.040

0.040

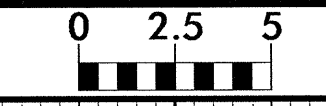
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