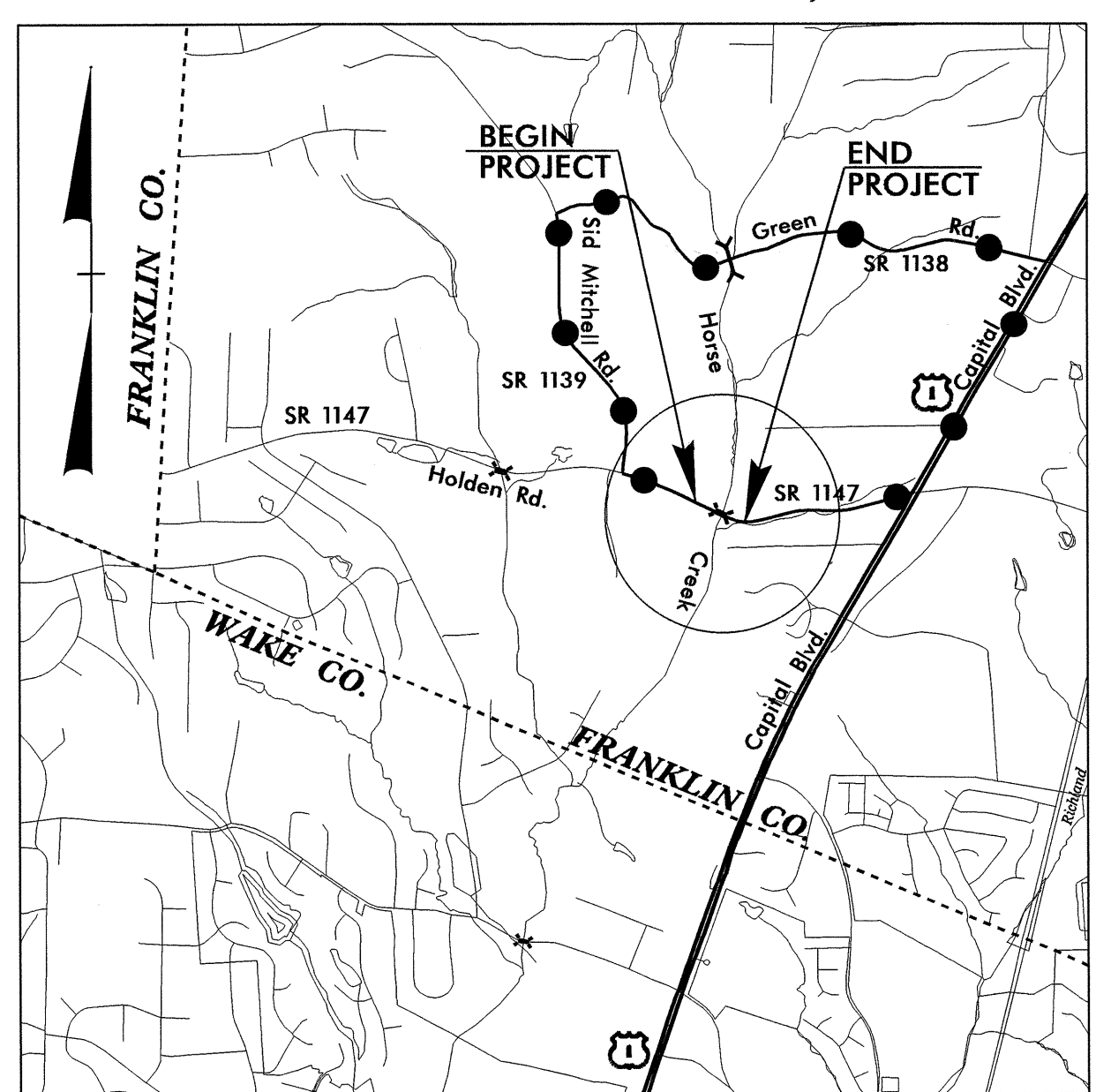


09/08/99

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



VICINITY MAP SHOWING LOCATION OF PROJECT B-4748  
●●●●●●●●●● OFFSITE DETOUR ROUTE

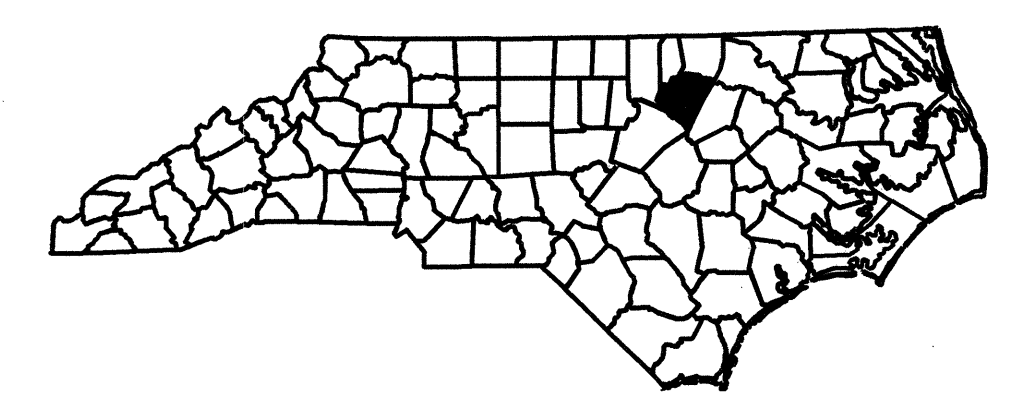
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**FRANKLIN COUNTY**

LOCATION: BRIDGE NO. 2 OVER HORSE CREEK  
ON SR 1147 (HOLDEN ROAD)

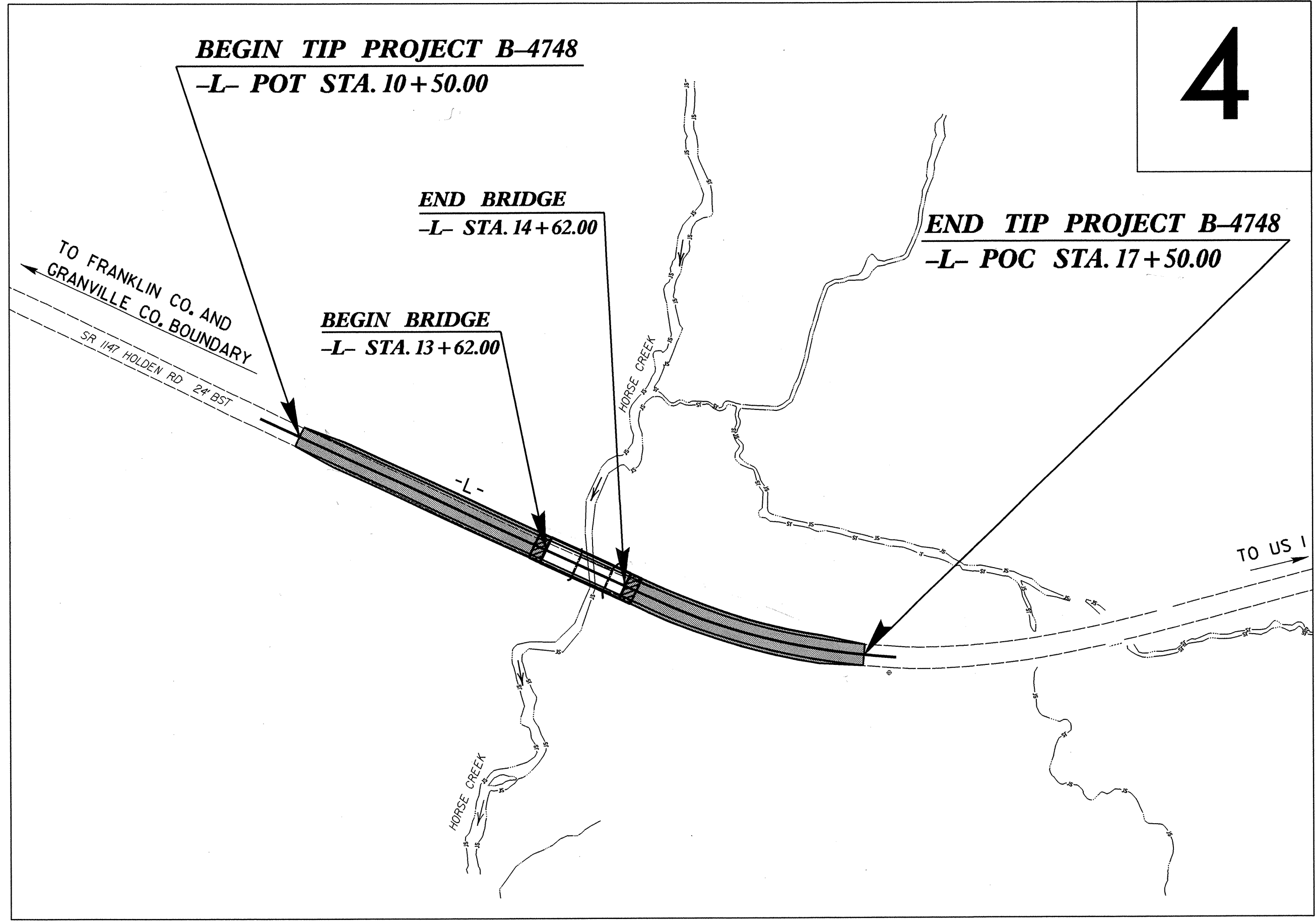
TYPE OF WORK: GRADING, DRAINAGE, PAVING,  
AND STRUCTURE

| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C.            | B-4748                      | 1           |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
| 38520.1.1       | BRZ-1147 (10)               | PE          |              |
| 38520.2.1       | BRZ-1147 (10)               | ROW & UTIL  |              |
| 38520.3.FD1     | BRZ-1147 (10)               | CONSTRUCT   |              |

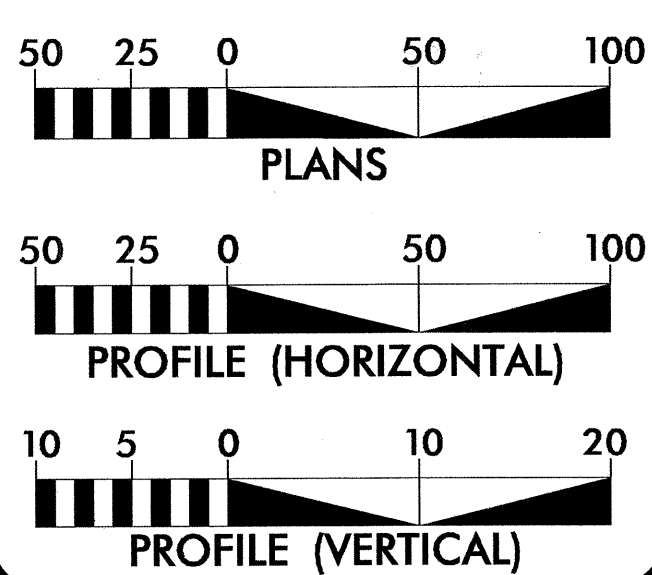


TIP PROJECT: B-4748

CONTRACT: C203390



GRAPHIC SCALES



DESIGN DATA

ADT 2014 = 5,316  
ADT 2034 = 9,777  
DHV = 13 %  
D = 60 %  
T = 5 % \*  
V = 50 MPH  
\* TTST 3% DUAL 2%  
FUNC CLASS=RURAL LOCAL  
SUB REGIONAL TIER

PROJECT LENGTH

Length Roadway Tip Project B-4748 = .114 MILES  
Length Structure Tip Project B-4748 = .019 MILES  
Total Length of Tip Project B-4748 = .133 MILES

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

2012 STANDARD SPECIFICATIONS  
RIGHT OF WAY DATE:  
APRIL 30, 2013

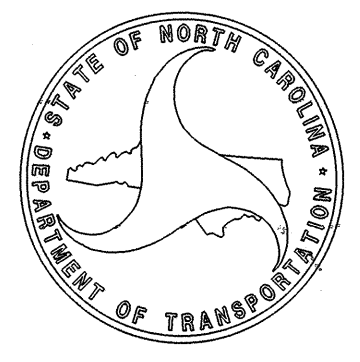
TONY HOUSER, PE  
PROJECT ENGINEER

LETTING DATE:  
APRIL 15, 2014

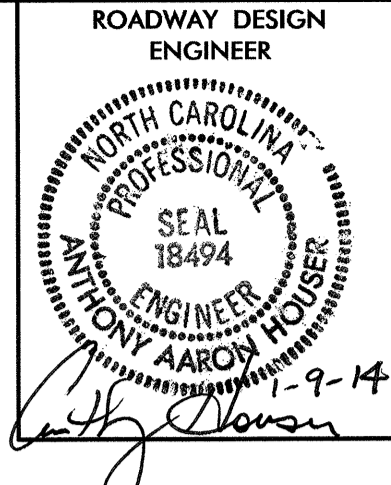
LEE ANN MOORE  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER  
NORTH CAROLINA PROFESSIONAL SEAL 33246  
LINDA M. JOHNS  
SIGNATURE: [Signature]  
P.E. 1-13-14

ROADWAY DESIGN ENGINEER  
NORTH CAROLINA PROFESSIONAL SEAL 18494  
[Signature]  
SIGNATURE: [Signature]  
P.E. 1-9-2014



12-DEC-2013 11:11 P:\Roadway\Proj\B4748.Rdy\_tsh\_01.dgn



INDEX OF SHEETS

| SHEET NUMBER           | SHEET  |
|------------------------|--|
| 1                      | TITLE SHEET  |
| 1-A                    | INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS  |
| 1-B                    | CONVENTIONAL SYMBOLS   |
| 1C                     | SURVEY CONTROL SHEETS  |
| 2                      | PAVEMENT SCHEDULE, TYPICAL SECTIONS, SHOULDER BERM GUTTER DETAIL   |
| 2-A                    | STRUCTURE ANCHOR UNITS DETAIL  |
| 3-A                    | SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL<br>SUMMARY OF BREAKING EXISTING ASPHALT PAVEMENT<br>SUMMARY OF GUARDRAIL<br>SUMMARY OF EARTHWORK<br>SUMMARY OF SHOULDER BERM GUTTER |
| 3-B                    | SUMMARY OF DRAINAGE  |
| 4                      | PLAN SHEET   |
| 5                      | PROFILE SHEET  |
| TMP-1 THRU TMP-3       | TRANSPORTATION MANAGEMENT PLANS  |
| PMP-1                  | PAVEMENT MARKING PLANS   |
| EC-1 THRU EC-5/CONST.4 | EROSION CONTROL PLANS  |
| RF-1                   | REFORESTATION PLANS  |
| UO-1 THRU UO-2         | UTILITIES BY OTHER PLANS   |
| X-A THRU X-4           | CROSS-SECTIONS   |
| S-1 THRU S-27          | STRUCTURE PLANS  |

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

| STD.NO.                                    | TITLE   |
|--|---|
| DIVISION 2 - EARTHWORK                     |   |
| 200.03                                     | Method of Clearing - Method III   |
| 225.02                                     | Guide for Grading Subgrade - Secondary and Local                              |
| 225.04                                     | Method of Obtaining Superelevation - Two Lane Pavement                        |
| DIVISION 3 - PIPE CULVERTS                 |   |
| 300.01                                     | Method of Pipe Installation   |
| DIVISION 4 - MAJOR STRUCTURES              |   |
| 422.10                                     | Reinforced Bridge Approach Fills  |
| DIVISION 5 - SUBGRADE, BASES AND SHOULDERS |   |
| 560.01                                     | Method of Shoulder Construction - High Side of Superelevated Curve - Method I |
| DIVISION 8 - INCIDENTALS                   |   |
| 806.01                                     | Concrete Right-of-Way Marker  |
| 806.02                                     | Granite Right-of-Way Marker   |
| 840.00                                     | Concrete Base Pad for Drainage Structures                                     |
| 840.25                                     | Anchorage for Frames - Brick or Concrete or Precast                           |
| 840.29                                     | Frames and Narrow Slot Flat Grates  |
| 840.35                                     | Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates     |
| 840.46                                     | Traffic Bearing Precast Drainage Structure                                    |
| 846.01                                     | Concrete Curb, Gutter and Curb & Gutter                                       |
| 846.04                                     | Drop Inlet Installation in Shoulder Berm Gutter                               |
| 862.01                                     | Guardrail Placement   |
| 862.02                                     | Guardrail Installation  |
| 876.01                                     | Rip Rap in Channels   |
| 876.02                                     | Guide for Rip Rap at Pipe Outlets   |
| 876.04                                     | Drainage Ditches with Class 'B' Rip Rap                                       |

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

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

GRADE LINE:  
GRADING AND SURFACING:  
THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

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

SUPERELEVATION:  
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:  
ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

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.

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.

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

UTILITIES:  
UTILITY OWNERS ON THIS PROJECT ARE  
CENTURY LINK - TELEPHONE & FIBER OPTIC  
FRANKLIN COUNTY PUBLIC WORKS - WATER  
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

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08-JAN-2014 12:49  
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\$\$\$\$\$

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                          | ○ EIP     |
| Property Corner                            | -----     |
| Property Monument                          | □ ECM     |
| Parcel/Sequence Number                     | ⑫③        |
| Existing Fence Line                        | -----     |
| 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 | ○     |
| 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 CA Marker       | -----     |
| Existing Control of Access                                    | -----     |
| Proposed Control of Access                                    | -----     |
| Existing Easement Line  | ----- E   |
| Proposed Temporary Construction Easement                      | ----- E   |
| Proposed Temporary Drainage Easement                          | ----- TDE |
| Proposed Permanent Drainage Easement                          | ----- PDE |
| Proposed Permanent Drainage / Utility Easement                | ----- DUE |
| Proposed Permanent Utility Easement                           | ----- PUE |
| Proposed Temporary Utility Easement                           | ----- TUE |
| Proposed Aerial Utility Easement                              | ----- AUE |
| Proposed Permanent Easement with Iron Pin and Cap Marker      | -----     |

ROADS AND RELATED FEATURES:

|                            |          |
|----------------------------|----------|
| Existing Edge of Pavement  | -----    |
| Existing Curb              | -----    |
| Proposed Slope Stakes Cut  | ----- C  |
| Proposed Slope Stakes Fill | ----- F  |
| Proposed Curb Ramp         | ----- CR |
| Existing Metal Guardrail   | -----    |
| Proposed Guardrail         | -----    |
| Existing Cable Guiderail   | -----    |
| Proposed Cable Guiderail   | -----    |
| Equality Symbol            | ⊕        |
| Pavement Removal           | -----    |

VEGETATION:

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

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

EXISTING STRUCTURES:

|  |               |
|--|---------------|
| MAJOR:                                   | -----         |
| Bridge, Tunnel or Box Culvert            | ----- 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             | -----           |
| Designated U/G Water Line (S.U.E.*) | -----           |
| Above Ground Water Line             | ----- A/G Water |

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

|  |            |
|--|------------|
| Utility Pole                           | ●          |
| Utility Pole with Base                 | □          |
| Utility Located Object                 | ○          |
| Utility Traffic Signal Box             | ⊕          |
| Utility Unknown U/G Line               | ----- ZUTL |
| U/G Tank; Water, Gas, Oil              | -----      |
| Underground Storage Tank, Approx. Loc. | ⊕          |
| A/G Tank; Water, Gas, Oil              | -----      |
| Geoenvironmental Boring                | ⊕          |
| U/G Test Hole (S.U.E.*)                | ⊕          |
| Abandoned According to Utility Records | AATUR      |
| End of Information                     | E.O.I.     |

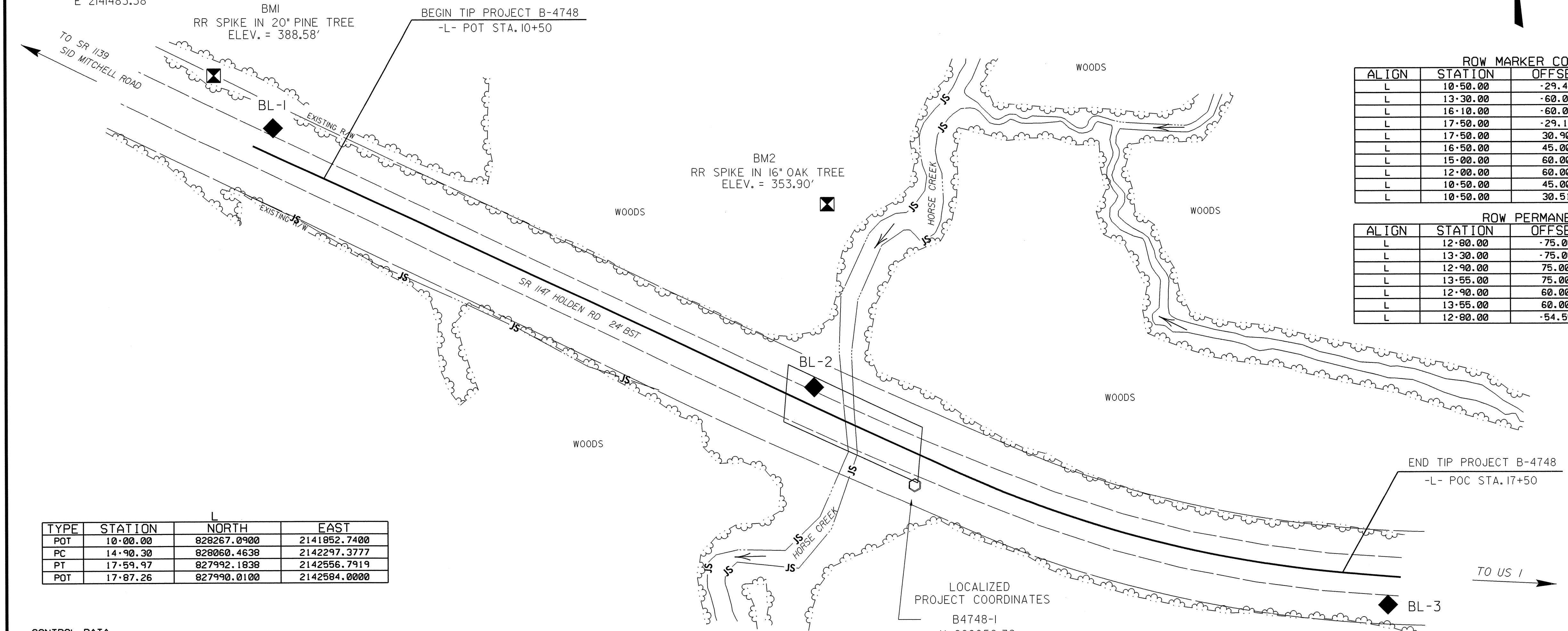
# SURVEY CONTROL SHEET B-4748

## FRANKLIN COUNTY

### BRIDGE No. 2 OVER HORSE CREEK ON SR 1147 (HOLDEN ROAD)



LOCALIZED PROJECT COORDINATES  
 B4748-2  
 N 828464.46  
 E 2141483.38



ROW MARKER CONCRETE OR GRANITE

| ALIGN | STATION  | OFFSET | NORTH       | EAST         |
|-------|----------|--------|-------------|--------------|
| L     | 10+50.00 | -29.49 | 828272.7640 | 2141910.5119 |
| L     | 13+30.00 | -60.00 | 828182.4314 | 2142177.2903 |
| L     | 16+10.00 | -60.00 | 828076.4785 | 2142425.8727 |
| L     | 17+50.00 | -29.10 | 828022.0221 | 2142549.5590 |
| L     | 17+50.00 | 30.90  | 827962.2796 | 2142543.9953 |
| L     | 16+50.00 | 45.00  | 827964.9689 | 2142438.1661 |
| L     | 15+00.00 | 60.00  | 828001.7032 | 2142281.6091 |
| L     | 12+00.00 | 60.00  | 828128.3931 | 2142008.8271 |
| L     | 10+50.00 | 45.00  | 828205.2099 | 2141879.1190 |
| L     | 10+50.00 | 30.51  | 828218.3494 | 2141885.2251 |

ROW PERMANENT EASEMENT -E

| ALIGN | STATION  | OFFSET | NORTH       | EAST         |
|-------|----------|--------|-------------|--------------|
| L     | 12+00.00 | -75.00 | 828217.1056 | 2142138.2686 |
| L     | 13+30.00 | -75.00 | 828196.0343 | 2142183.6117 |
| L     | 12+90.00 | 75.00  | 828076.8619 | 2142084.1234 |
| L     | 13+55.00 | 75.00  | 828049.4692 | 2142143.0695 |
| L     | 12+90.00 | 60.00  | 828090.4648 | 2142090.4448 |
| L     | 13+55.00 | 60.00  | 828063.0839 | 2142149.3963 |
| L     | 12+80.00 | -54.55 | 828198.5622 | 2142129.6513 |

| TYPE | STATION  | NORTH       | EAST         |
|------|----------|-------------|--------------|
| POT  | 10+00.00 | 828267.0900 | 2141852.7400 |
| PC   | 14+90.30 | 828060.4638 | 2142297.3777 |
| PT   | 17+59.97 | 827992.1838 | 2142556.7919 |
| POT  | 17+87.26 | 827990.0100 | 2142584.0000 |

**CONTROL DATA**

| BL | POINT | DESC. | NORTH       | EAST         | ELEVATION | L STATION | OFFSET   |
|----|-------|-------|-------------|--------------|-----------|-----------|----------|
| 1  | BL-1  |       | 828278.1970 | 2141866.3290 | 382.94    | 10+07.64  | 15.80 LT |
| 2  | BL-2  |       | 828113.1490 | 2142210.2850 | 358.80    | 13+89.12  | 11.08 LT |
| 3  | BL-3  |       | 827972.6530 | 2142575.7580 | 360.12    | 17+80.43  | 17.96 RT |

**BENCHMARKS**

.....  
 BM1 ELEVATION = 388.58  
 N 828312 E 2141828  
 L STATION 10+00.00  
 N 28°50'58.09" W DIST 51' LEFT  
 RR SPIKE IN 20' PINE TREE  
 .....

.....  
 BM2 ELEVATION = 353.90  
 N 828229 E 2142219  
 L STATION 13+48 120' LEFT  
 RR SPIKE IN 16' OAK TREE  
 .....

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4748-1" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 828050.39(±) EASTING: 2142274.15(±±) ELEVATION: 357.45(±±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99995039

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4748-1" TO -L- STA 10+50 IS N 62°31'00" W 423.91'

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

**NOTES:**

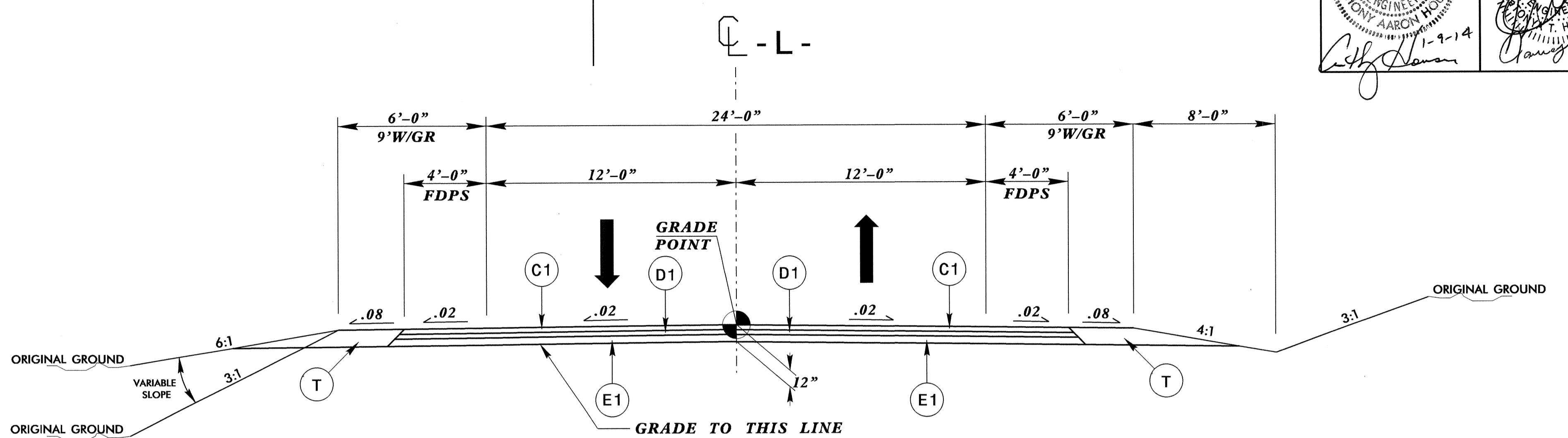
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/PAGES/DEFAULT.ASPX](https://connect.ncdot.gov/resources/location/pages/default.aspx)  
 THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4748\_LS\_CONTROL.TXT
- 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

2/9/12  
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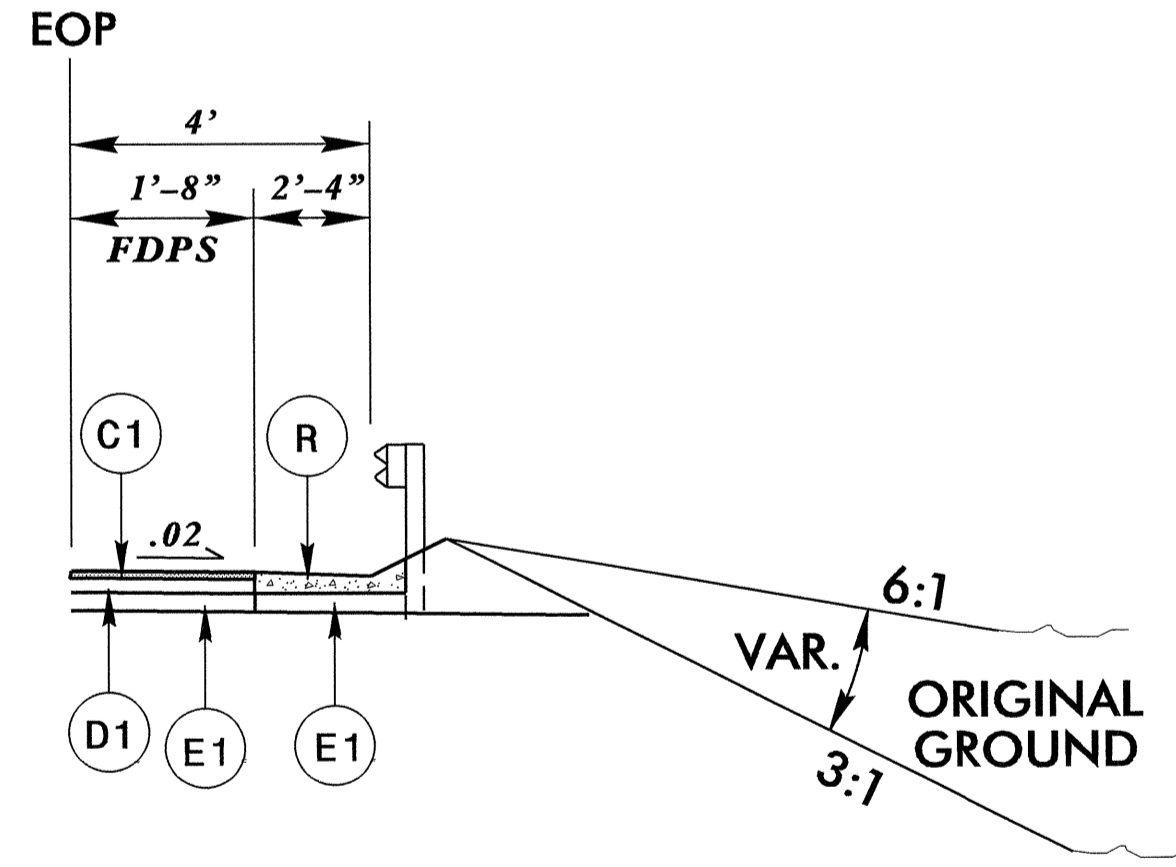
| PAVEMENT SCHEDULE |   |
|-------------------|---|
| C1                | PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.                    |
| D1                | PROP. APPROX. 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.              |
| E1                | PROP. APPROX. 7" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS. |
| R                 | SHOULDER BERM GUTTER.   |
| T                 | EARTH MATERIAL.   |
| U                 | EXISTING PAVEMENT.  |

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



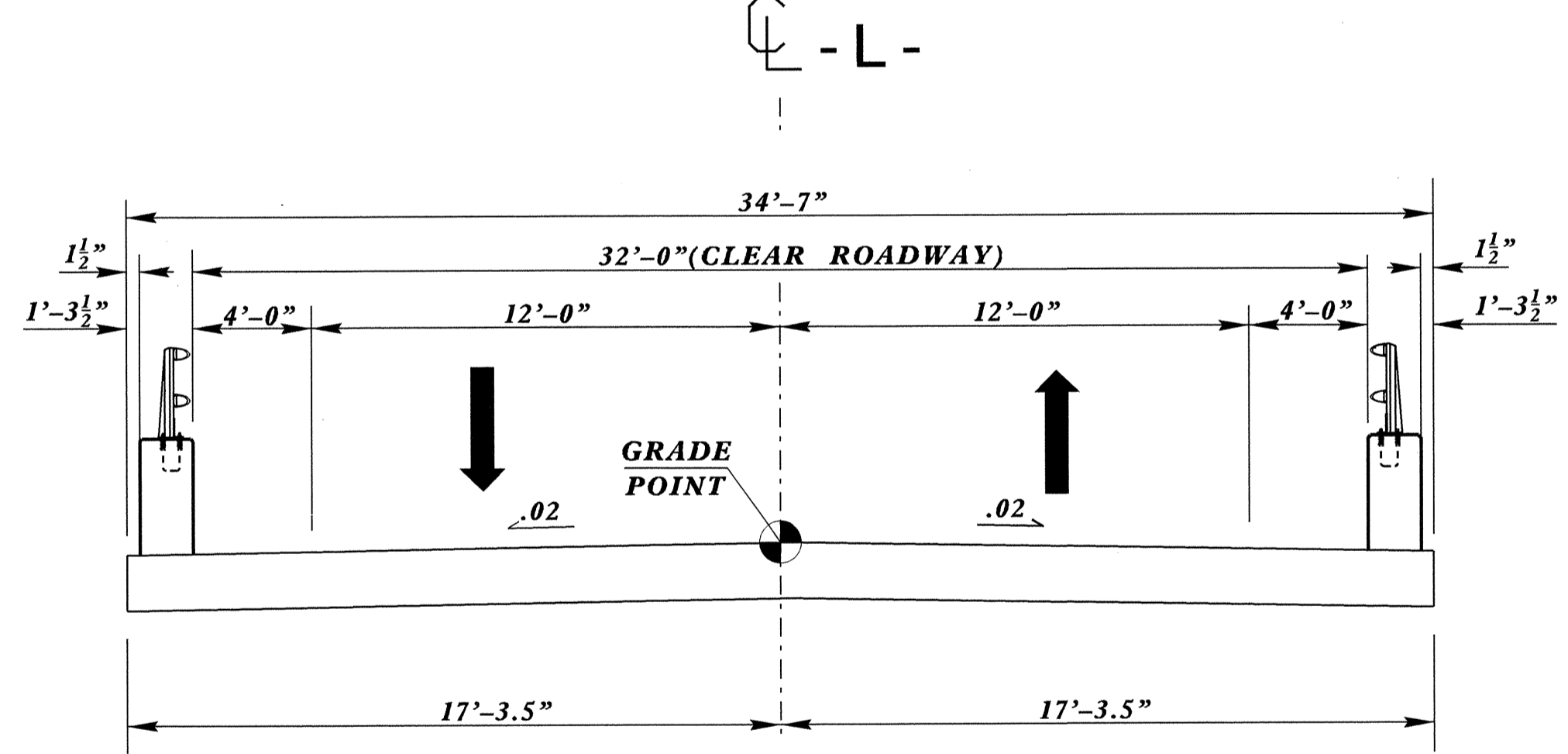
**TYPICAL SECTION NO. 1**

USE TYPICAL SECTION NO. 1:  
 -L- STA. 10+50.00 TO 13+62.00 (BEG. BRIDGE)  
 -L- STA. 14+62.00 (END BRIDGE) TO 17+50.00



**SHOULDER BERM GUTTER DETAIL**

-L- STA. 13+34.00 TO 13+47.83 (BEGIN APPROACH SLAB) RT. & LT.  
 -L- STA. 14+76.17 (END APPROACH SLAB) TO 14+89.00 RT. & LT.



**TYPICAL SECTION ON BRIDGE**

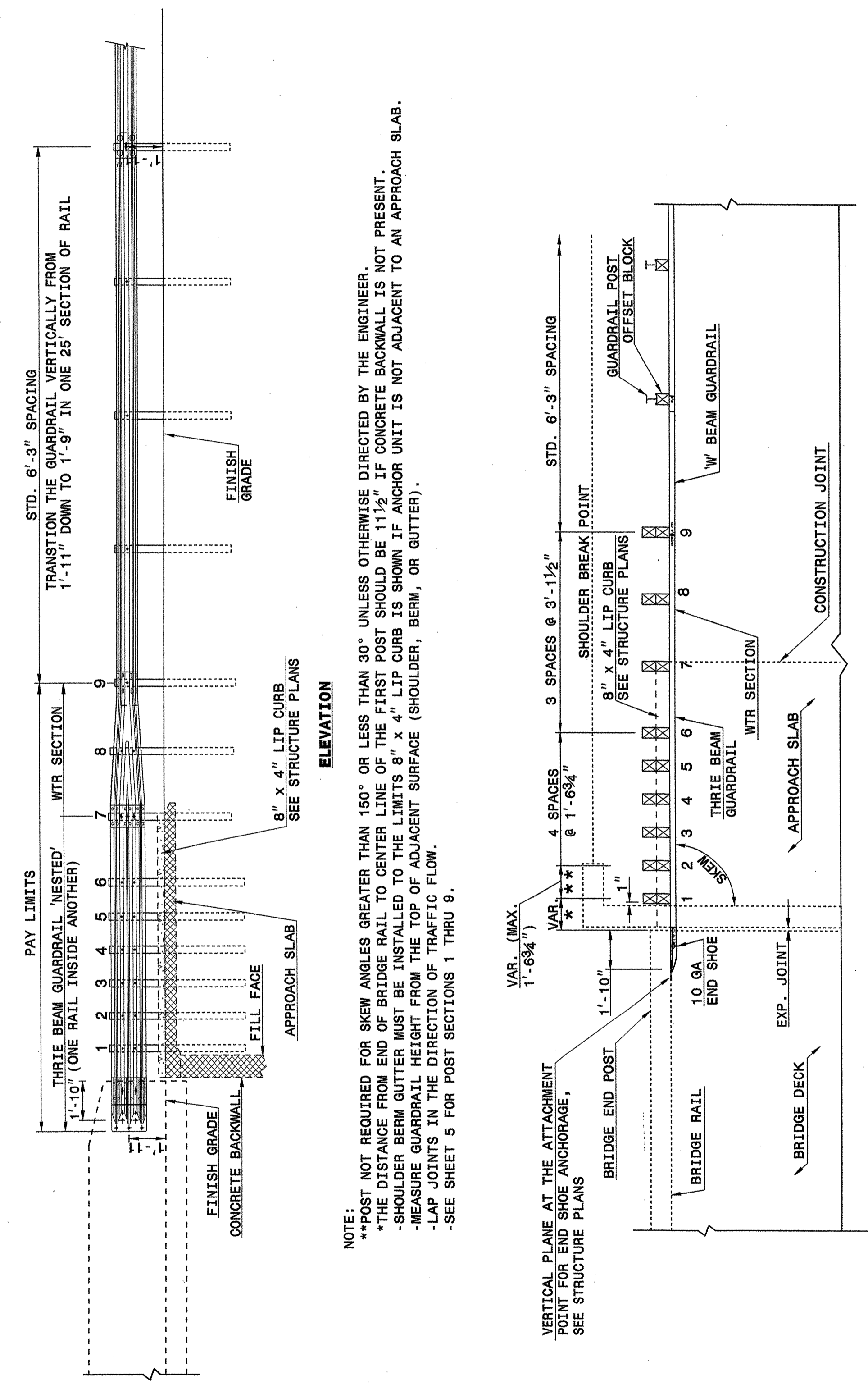
USE BRIDGE TYPICAL:  
 -L- STA. 13+62 (BEG. BRIDGE) TO -L- STA. 14+62.00 (END BRIDGE)

6/2/99  
 08-JAN-2014 10:01  
 R:\Roadway\Projects\B4748\_rdy\_tup.dgn  
 USER:RND

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



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 11 1/2" 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.

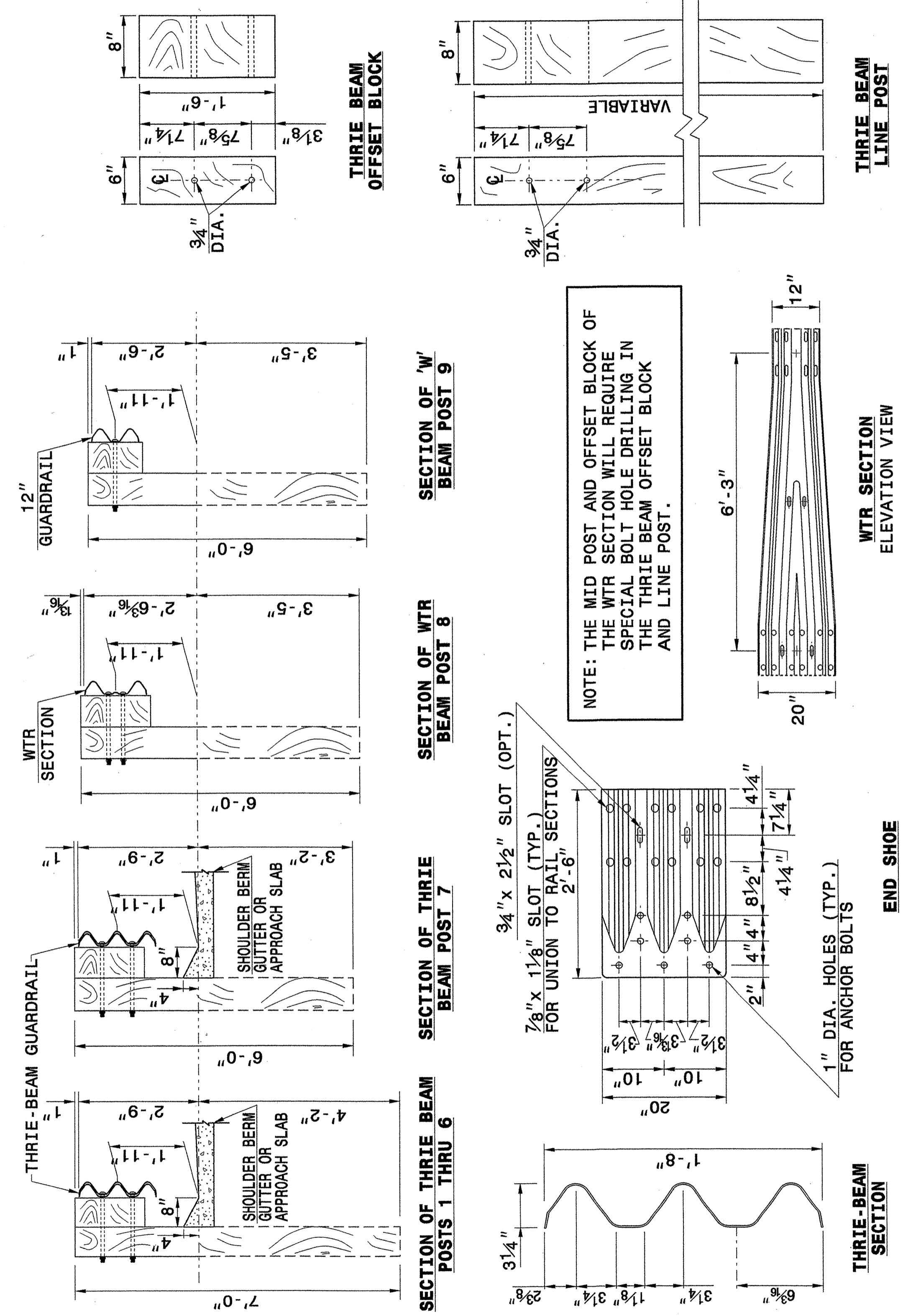
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

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.

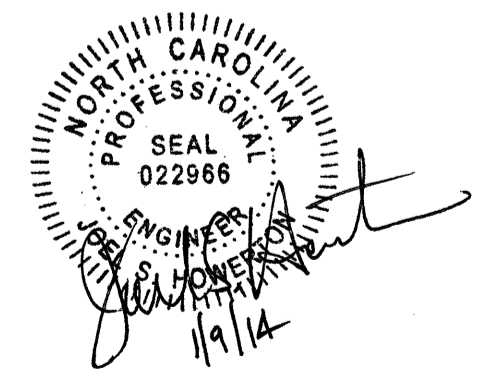
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III

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: *[Signature]* DATE: *[Blank]*  
 CHECKED BY: *[Signature]* DATE: 11/13/12  
 FILE SPEC: *[Blank]*











STRUCTURE HYDRAULIC DATA

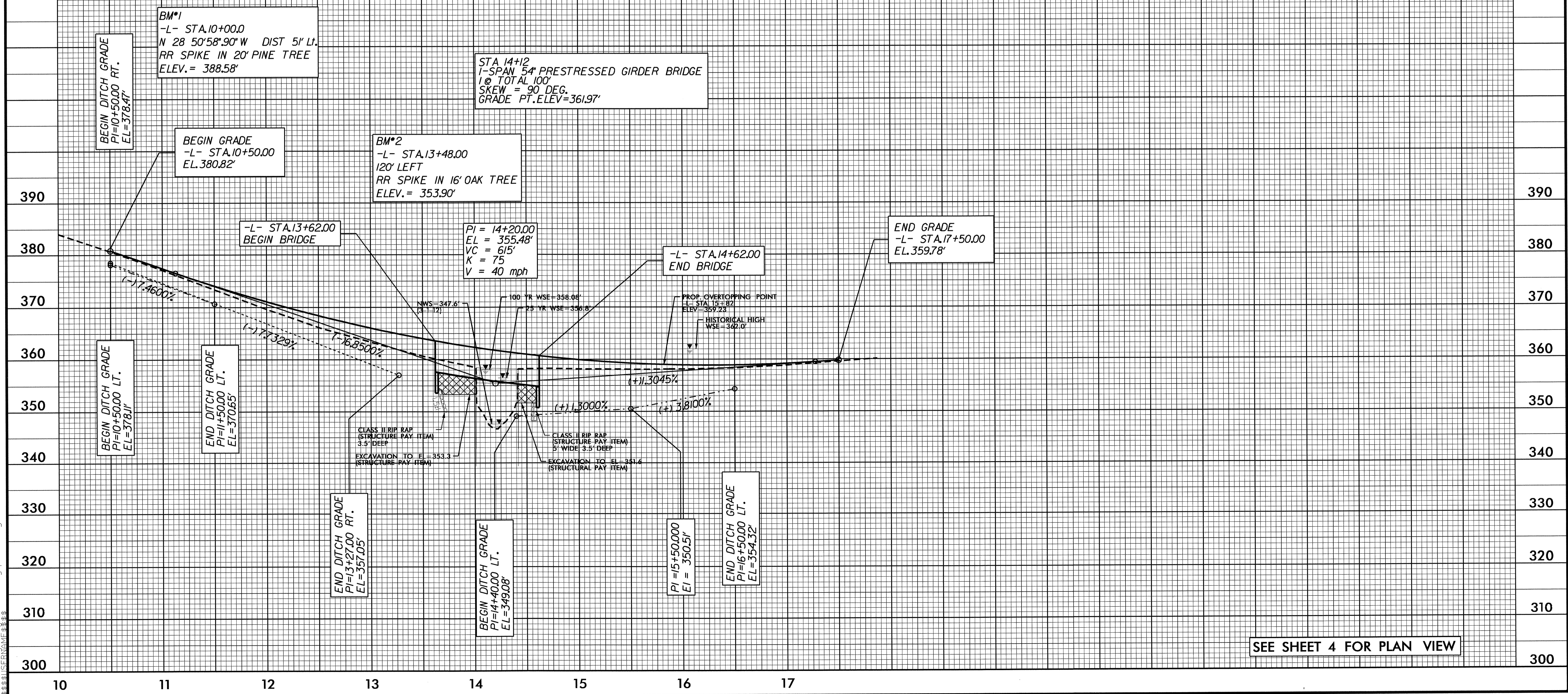
|                       |           |     |
|-----------------------|-----------|-----|
| DESIGN DISCHARGE      | = 1,900   | CFS |
| DESIGN FREQUENCY      | = 25      | YRS |
| DESIGN HW ELEVATION   | = 356.7   | FT  |
| BASE DISCHARGE        | = 2,495   | CFS |
| BASE FREQUENCY        | = 100     | YRS |
| BASE HW ELEVATION     | = 357.89  | FT  |
| OVERTOPPING DISCHARGE | = 3,600   | CFS |
| OVERTOPPING FREQUENCY | = 500 +/- | YRS |
| OVERTOPPING ELEVATION | = 359.23* | FT  |

\* OT OCCURS @ SAG LOCATION -L- STA.15+82.  
OT ELEV. REPRESENTS HIGH SIDE OF PROPOSED ROADWAY.

DITCH LEGEND

|             |       |
|-------------|-------|
| LEFT DITCH  | ----- |
| RIGHT DITCH | ----- |

-L-



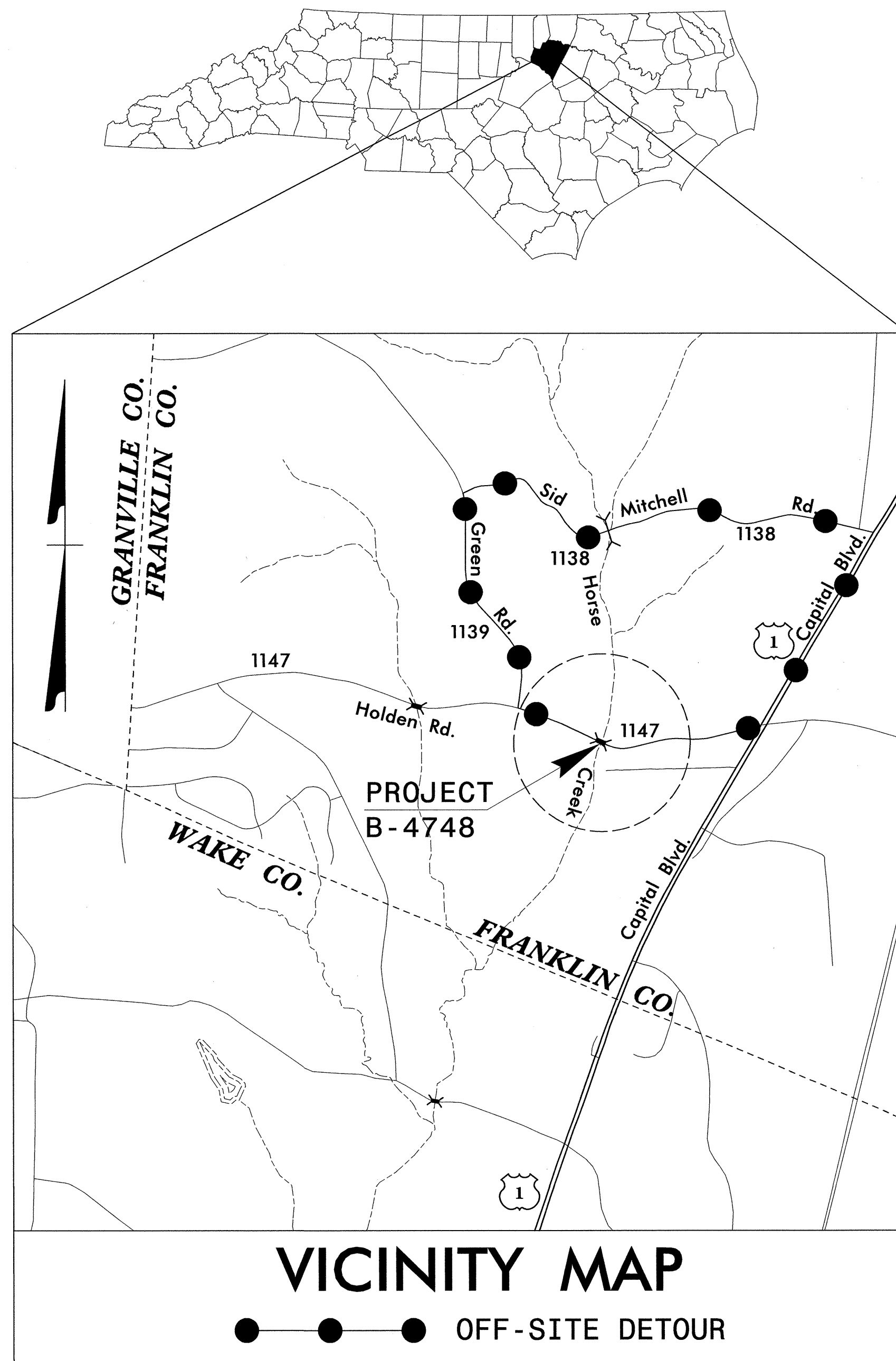
SEE SHEET 4 FOR PLAN VIEW

5/14/99  
E:\JAN-2014\18-17\B-4748.Rdy-p1\_05.dgn  
3:33:30 PM 5/14/99

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**FRANKLIN COUNTY**



SHEET NO.  
TMP-1

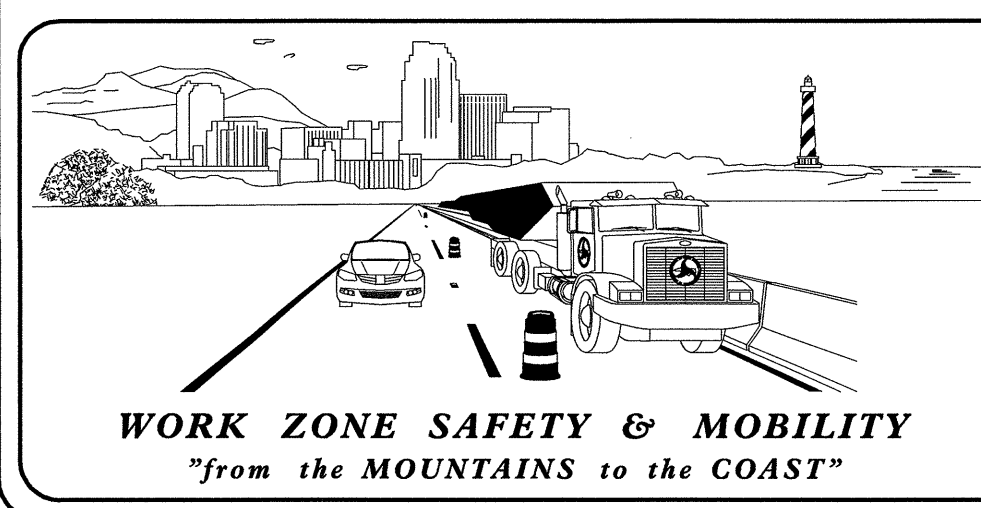
**INDEX OF SHEETS**

| 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     | OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT                                      |
| TMP-3     | SPECIAL SIGN DESIGN  |

**B-4748**

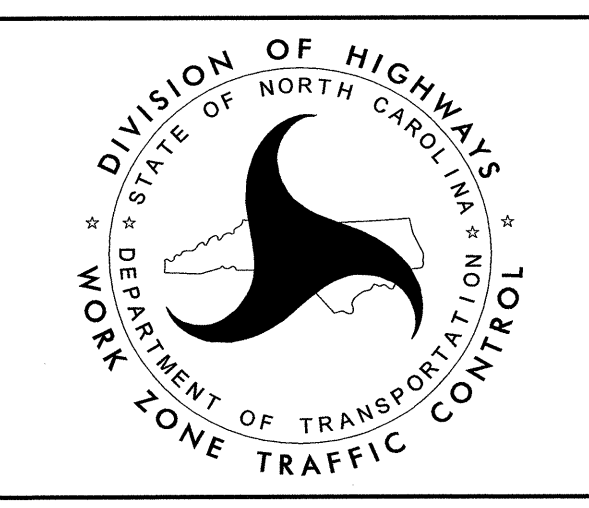
**TIP PROJECT:**

I:\20\2013\R\TIP\Projects-B\B-4748\_TrafficControl\TCP\B-4748\_TC\_TMP\_01.dgn  
User: dar.kennedy



**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  
JOSEPH ISHAK, P.E. TRAFFIC CONTROL PROJECT ENGINEER  
MICHAEL STEELMAN TRAFFIC CONTROL PROJECT DESIGN ENGINEER  
DURWOOD KENNEDY, P.E. TRAFFIC CONTROL DESIGN ENGINEER



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

SEAL

11/25/2013

## 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                                  |
| 1101.02  | TEMPORARY LANE CLOSURES                                  |
| 1101.03  | TEMPORARY ROAD CLOSURES                                  |
| 1101.04  | TEMPORARY SHOULDER CLOSURES                              |
| 1101.05  | WORK ZONE VEHICLE ACCESSES                               |
| 1101.06  | WARNING SIGNS FOR BLASTING ZONES                         |
| 1101.11  | TRAFFIC CONTROL DESIGN TABLES                            |
| 1110.01  | STATIONARY WORK ZONE SIGNS                               |
| 1110.02  | PORTABLE WORK ZONE SIGNS                                 |
| 1115.01  | FLASHING ARROW BOARDS                                    |
| 1130.01  | DRUMS  |
| 1135.01  | CONES  |
| 1145.01  | BARRICADES   |
| 1150.01  | FLAGGING DEVICES   |
| 1160.01  | TEMPORARY CRASH CUSHION                                  |
| 1165.01  | WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION        |
| 1170.01  | PORTABLE CONCRETE BARRIER                                |
| 1180.01  | SKINNY - DRUM  |
| 1205.01  | PAVEMENT MARKINGS - LINE TYPES AND OFFSETS               |
| 1205.02  | PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS      |
| 1205.03  | PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS             |
| 1205.04  | PAVEMENT MARKINGS - INTERSECTIONS                        |
| 1205.05  | PAVEMENT MARKINGS - TURN LANES                           |
| 1205.06  | PAVEMENT MARKINGS - LANE DROPS                           |
| 1205.07  | PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS                |
| 1205.08  | PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES            |
| 1205.09  | PAVEMENT MARKINGS - PAINTED ISLANDS                      |
| 1205.10  | PAVEMENT MARKINGS - SCHOOL AREAS                         |
| 1205.11  | PAVEMENT MARKINGS - RAILROAD CROSSINGS                   |
| 1205.12  | PAVEMENT MARKINGS - BRIDGES                              |
| 1205.13  | PAVEMENT MARKINGS - LANE REDUCTIONS                      |
| 1250.01  | RAISED PAVEMENT MARKERS - INSTALLATION SPACING           |
| 1251.01  | RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)      |
| 1261.01  | GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING |
| 1261.02  | GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING   |
| 1262.01  | GUARDRAIL END DELINEATION                                |
| 1264.01  | OBJECT MARKERS - TYPES                                   |
| 1264.02  | OBJECT MARKERS - INSTALLATION                            |

## LEGEND

### GENERAL

- DIRECTION OF TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA

### TRAFFIC CONTROL DEVICES

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

### TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

I:\2010\2013\Projects\B-4748\Traffic\TrafficControl\TCP\B-4748-TC-TMP\_01.dgn  
User: rjennedy

|               |                  |  |   |
|---------------|------------------|--|---|
| APPROVED:<br> | DATE: 11-25-2013 |  | <h3>ROADWAY STANDARD DRAWINGS &amp; LEGEND</h3> |
|---------------|------------------|--|---|

## MANAGEMENT STRATEGIES

DURING REPLACEMENT OF THE EXISTING BRIDGE No.2 OVER HORSE CREEK, SR-1147 (HOLDEN ROAD) WILL BE CLOSED TO THROUGH TRAFFIC. THE HOLDEN ROAD TRAFFIC WILL BE DETOURED OFF-SITE.

## PHASING

### STEP 1:

PROVIDE AND MAINTAIN CHANGEABLE MESSAGE SIGNS AT EACH END OF SR-1147 (HOLDEN ROAD) OR AS DIRECTED BY THE ENGINEER FOR FOURTEEN (14) CALENDAR DAYS PRIOR TO ROAD CLOSURE, AS SHOWN ON SHEET TMP-2.

USING ROADWAY STANDARD DRAWING (RSD) 1101.03, SHEET 1 OF 9, SHEETS TMP-2 AND TMP-3, MAY BEGIN INSTALLATION OF ROAD CLOSURE AND DETOUR SIGNS. COVER SIGNS UNTIL READY TO CLOSE THE ROAD.

### STEP 2:

USING RSD 1101.03, SHEET 1 OF 9, SHEETS TMP-2 AND TMP-3, INSTALL / UNCOVER ROAD CLOSURE AND DETOUR SIGNS. PLACE TYPE III BARRICADES TO CLOSE SR-1147 (HOLDEN ROAD) TO THROUGH TRAFFIC, AND DETOUR TRAFFIC OFF-SITE. CHANGEABLE MESSAGE SIGNS MAY BE REMOVED.

ACCESS TO ALL DRIVEWAYS MUST BE PROVIDED AT ALL TIMES WITHIN THE PROJECT LIMITS.

### STEP 3:

AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING:

SEE ROADWAY AND STRUCTURE PLANS.

- REMOVE EXISTING STRUCTURE NO.2, AND CONSTRUCT THE PROPOSED STRUCTURE.
- CONSTRUCT PROPOSED ROADWAY UP THROUGH THE FINAL LAYER OF SURFACE COURSE FROM -L- STA.10+50 +/- TO -L- STA.17+50 +/- . USING FINAL PAVEMENT MARKING PLAN, PLACE FINAL PAVEMENT MARKINGS AND MARKERS FROM -L- STA.10+50 +/- TO -L- STA.17+50 +/- , AND TIE INTO EXISTING PAVEMENT MARKINGS.

### STEP 4:

REMOVE ALL ROAD CLOSURE SIGNING / DEVICES AND DETOUR SIGNS. OPEN SR-1147 (HOLDEN ROAD) TO PROPOSED TRAFFIC PATTERN.

## 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.

THE NCDOT RESIDENT ENGINEER WILL NOTIFY THE FRANKLIN COUNTY SCHOOLS TRANSPORTATION DIRECTOR AT (919) 496-3859 AND THE DIRECTOR OF THE FRANKLIN COUNTY EMERGENCY MANAGEMENT SERVICES (EMS) AT (919) 496-2511 OF THE BRIDGE REMOVAL THIRTY (30) CALENDAR DAYS PRIOR TO THE ROAD CLOSURE.

### SIGNING

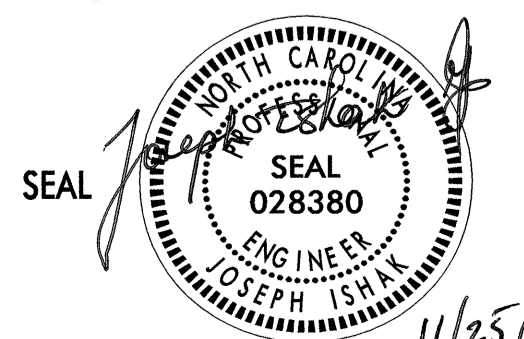

- B) PROVIDE PERMANENT SIGNING.
- C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRANSPORTATION MANAGEMENT PLAN.
- PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRANSPORTATION MANAGEMENT PLAN.
- D) COVER OR REMOVE ALL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

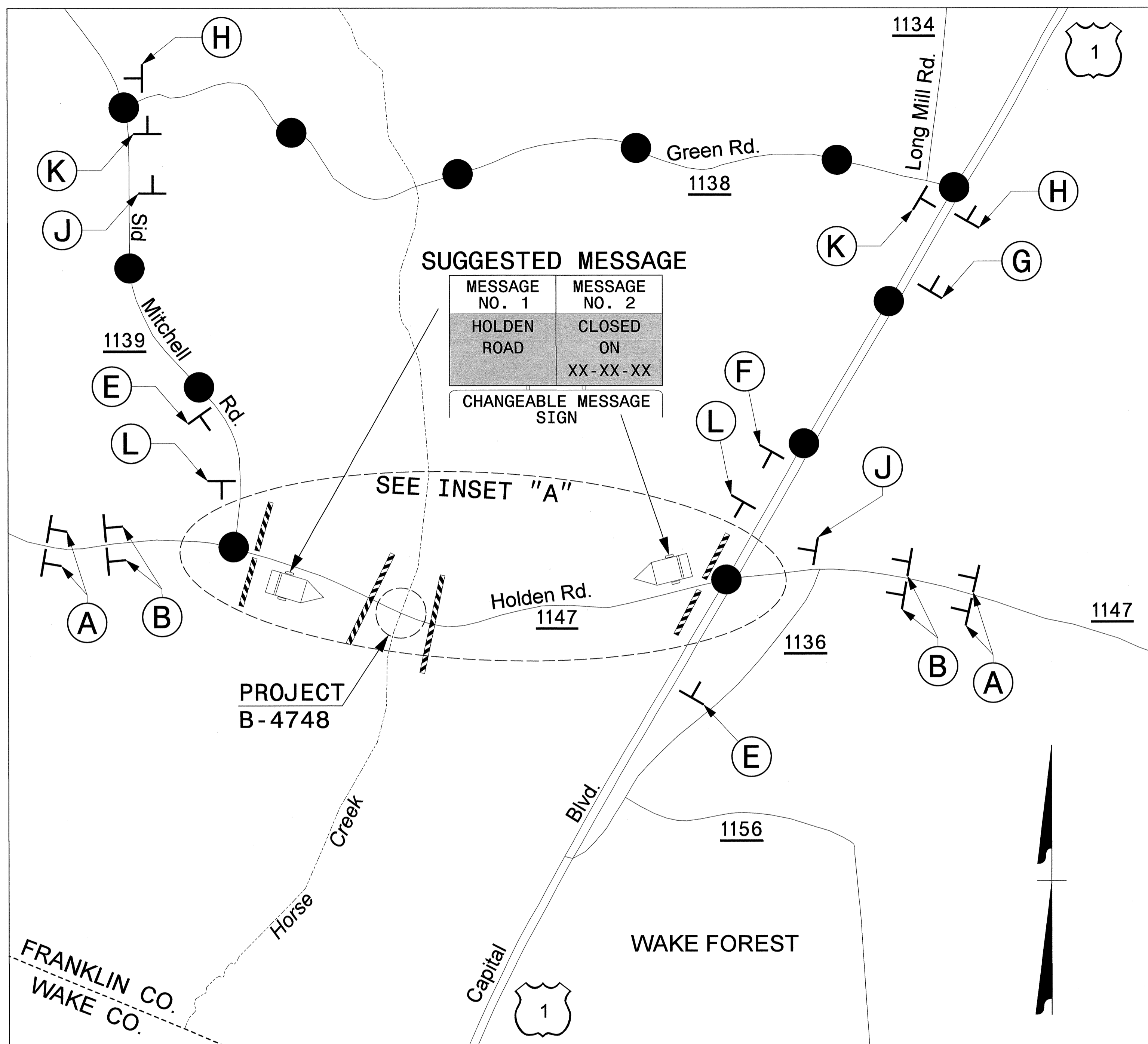
### TRAFFIC CONTROL DEVICES

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

### PAVEMENT MARKINGS AND MARKERS

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

|                             |   |   |  |
|-----------------------------|---|---|--|
| APPROVED: _____ DATE: _____ |  |  | <b>TRANSPORTATION<br/>OPERATIONS PLANS</b> |
|-----------------------------|---|---|--|



**SUGGESTED MESSAGE**

|                              |  |
|------------------------------|--|
| MESSAGE NO. 1<br>HOLDEN ROAD | MESSAGE NO. 2<br>CLOSED ON<br>XX-XX-XX |
|------------------------------|--|

CHANGEABLE MESSAGE SIGN

SEE INSET "A"

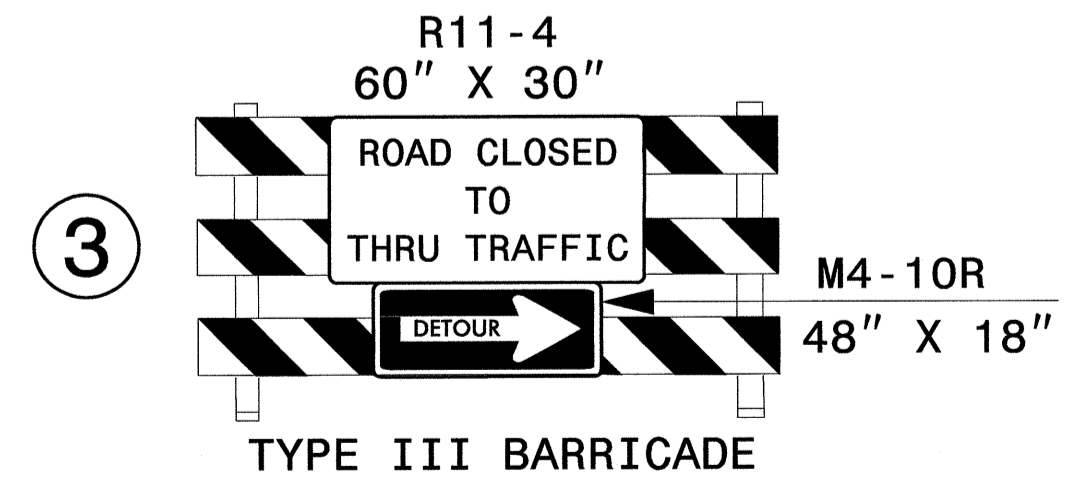
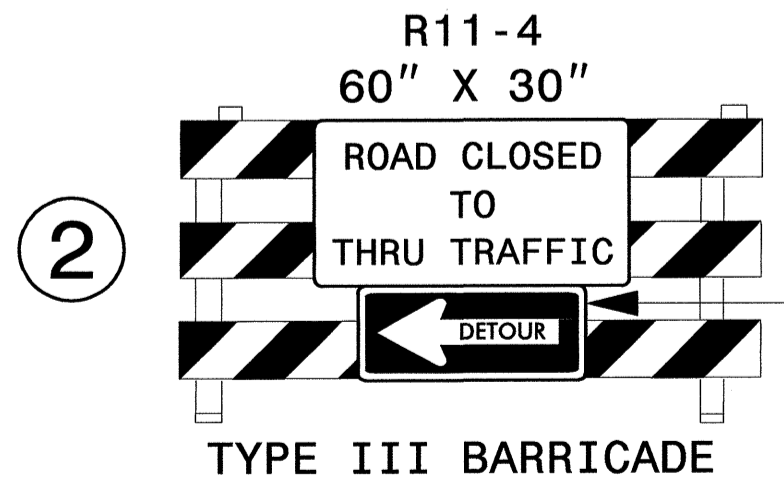
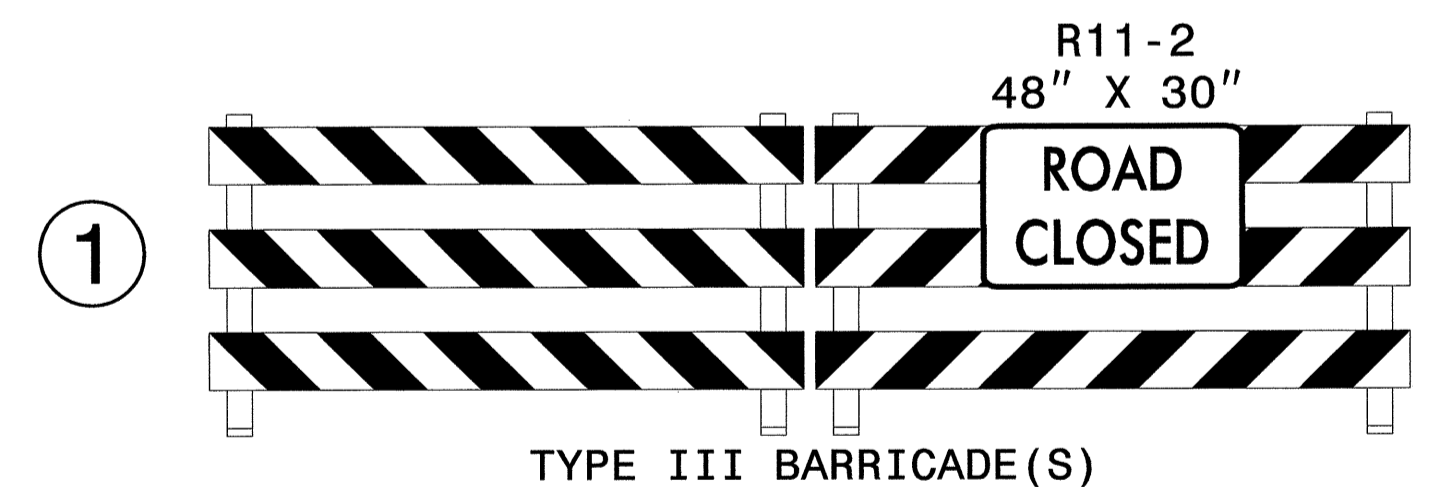
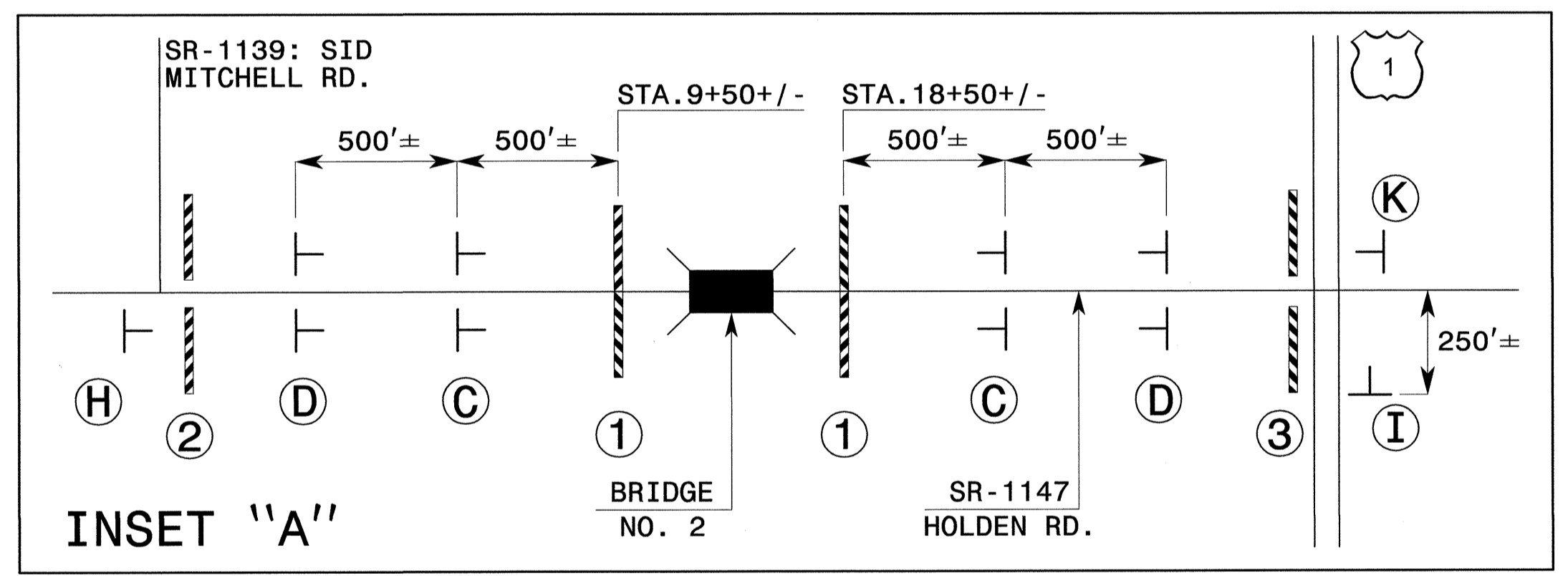
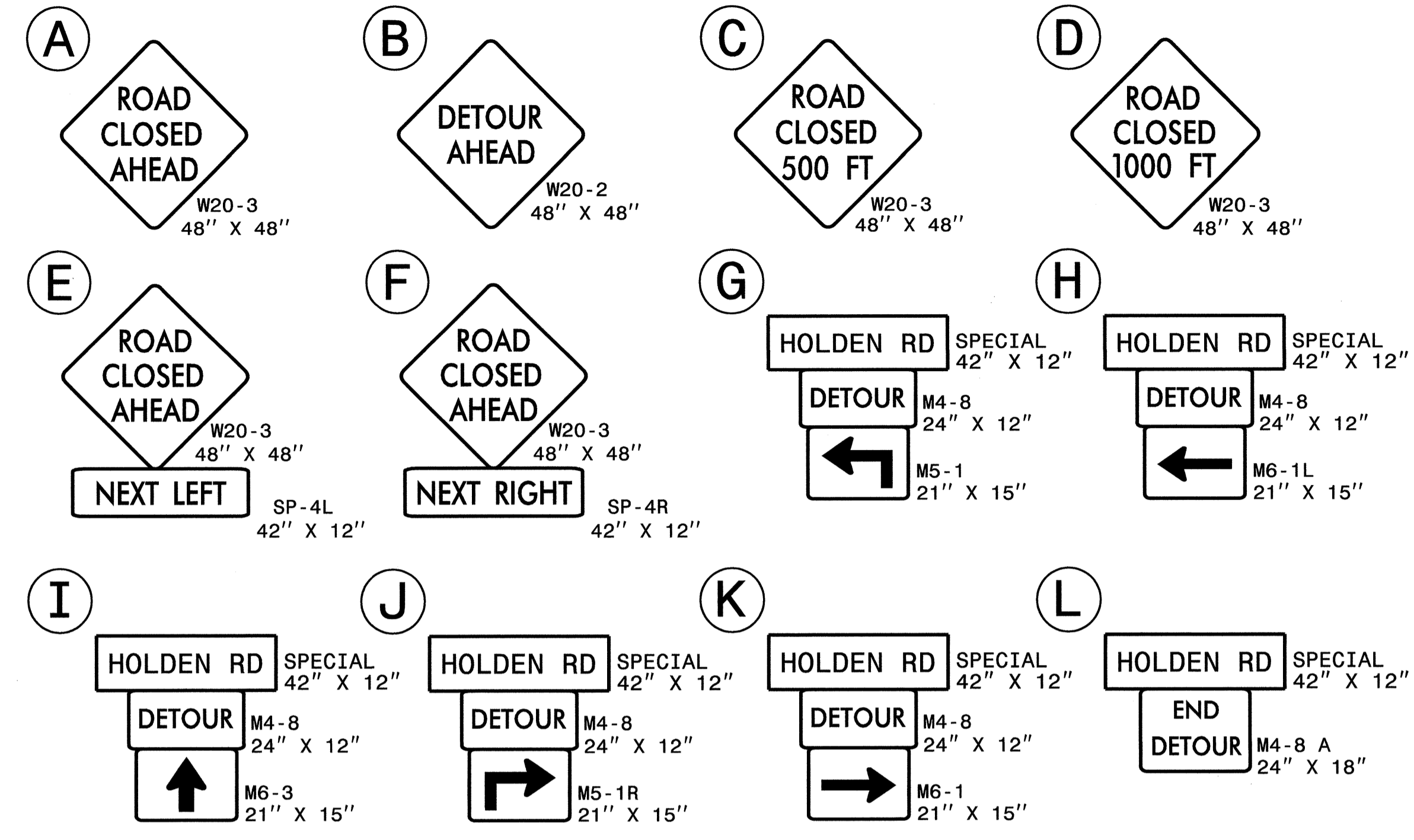
PROJECT B-4748

**NOTES:**

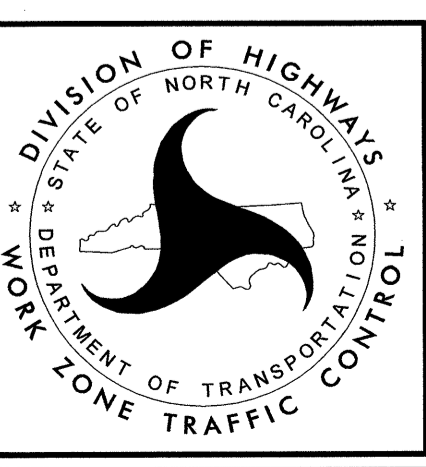
- REFER TO SHEET TMP-3 FOR SIGN DESIGN.
- REFER TO ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9, FOR ROAD CLOSURE SIGN DISTANCES AND APPLICABLE NOTES.
- DETOUR SIGN LOCATIONS ARE APPROX.; PLACE PER ENGINEER'S DIRECTION.
- LOCATE AND INSTALL CMS(s) TO BE LEVEL AS DIRECTED BY THE ENGINEER.
- CMS(s) SHALL BE USED TO PROVIDE FOURTEEN (14) CALENDAR DAYS OF ADVANCE WARNING OF ROAD CLOSURE. CMS(s) SHOULD BE REMOVED AFTER ROAD IS CLOSED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

OFF-SITE DETOUR ROUTE = ●—●—●

OFF-SITE DETOUR ROUTE:  
FROM SR-1147 TO SR-1139 TO SR-1138 TO US-1 BACK TO SR-1147



APPROVED: [Signature]  
DATE: 11-25-2013  
SEAL: JOSEPH ISHMAN, ENGINEER, NO. 028380



**OFF-SITE DETOUR AND BARRICADE PLACEMENT**

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN  
FRANKLIN COUNTY

LOCATION: BRIDGE No. 2 OVER HORSE CREEK ON SR 1147 (HOLDEN ROAD)

|                              |                    |
|------------------------------|--------------------|
| TIP NO.<br>B-4748            | SHEET NO.<br>PMP-1 |
| APPROVED: <i>[Signature]</i> |                    |
| DATE: 12/18/13               |                    |
| SEAL                         |                    |
|                              |                    |

T.I.P.: B-4748

CONTRACT: C203390

ROADWAY STANDARD DRAWING

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

| STD. NO. | TITLE  |
|----------|--|
| 1205.01  | PAVEMENT MARKINGS - LINE TYPES AND OFFSETS               |
| 1205.02  | PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS      |
| 1205.12  | PAVEMENT MARKINGS - BRIDGES                              |
| 1250.01  | RAISED PAVEMENT MARKERS - INSTALLATION SPACING           |
| 1251.01  | RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY        |
| 1261.01  | GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING |
| 1261.02  | GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING   |
| 1262.01  | GUARDRAIL END DELINEATION                                |

PAVEMENT MARKING SCHEDULE

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

GENERAL NOTES

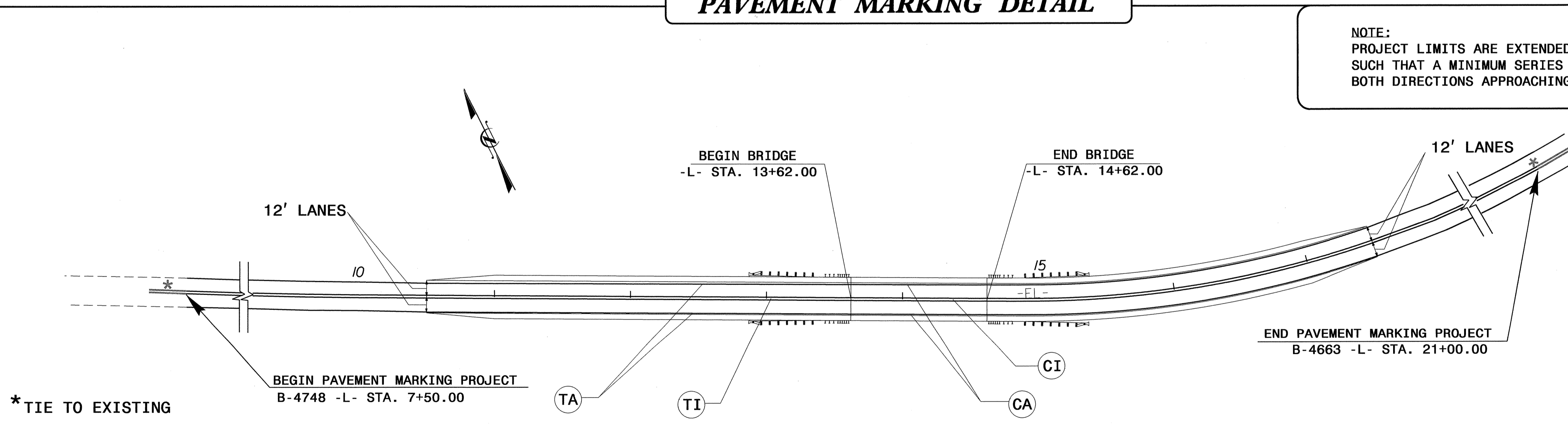
THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

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

| ROAD NAME   | MARKING                                | MARKER |
|-------------|--|--------|
| SR 1147     | THERMOPLASTIC                          | RAISED |
| BRIDGE DECK | COLD APPLIED PLASTIC (TYPES II OR III) | RAISED |

- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- E) TYPE III COLD APPLIED PLASTIC MAY BE USED IN LIEU OF TYPE II COLD APPLIED PLASTIC. IF TYPE III COLD APPLIED PLASTIC IS USED, IT SHALL BE PAID FOR USING THE TYPE II COLD APPLIED PLASTIC PAY ITEM.
- F) MARKERS ARE TO BE PLACED ACCORDING TO THE ROADWAY STANDARD DRAWINGS.

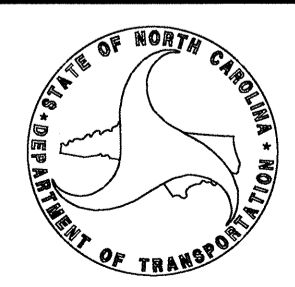
PAVEMENT MARKING DETAIL



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

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

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



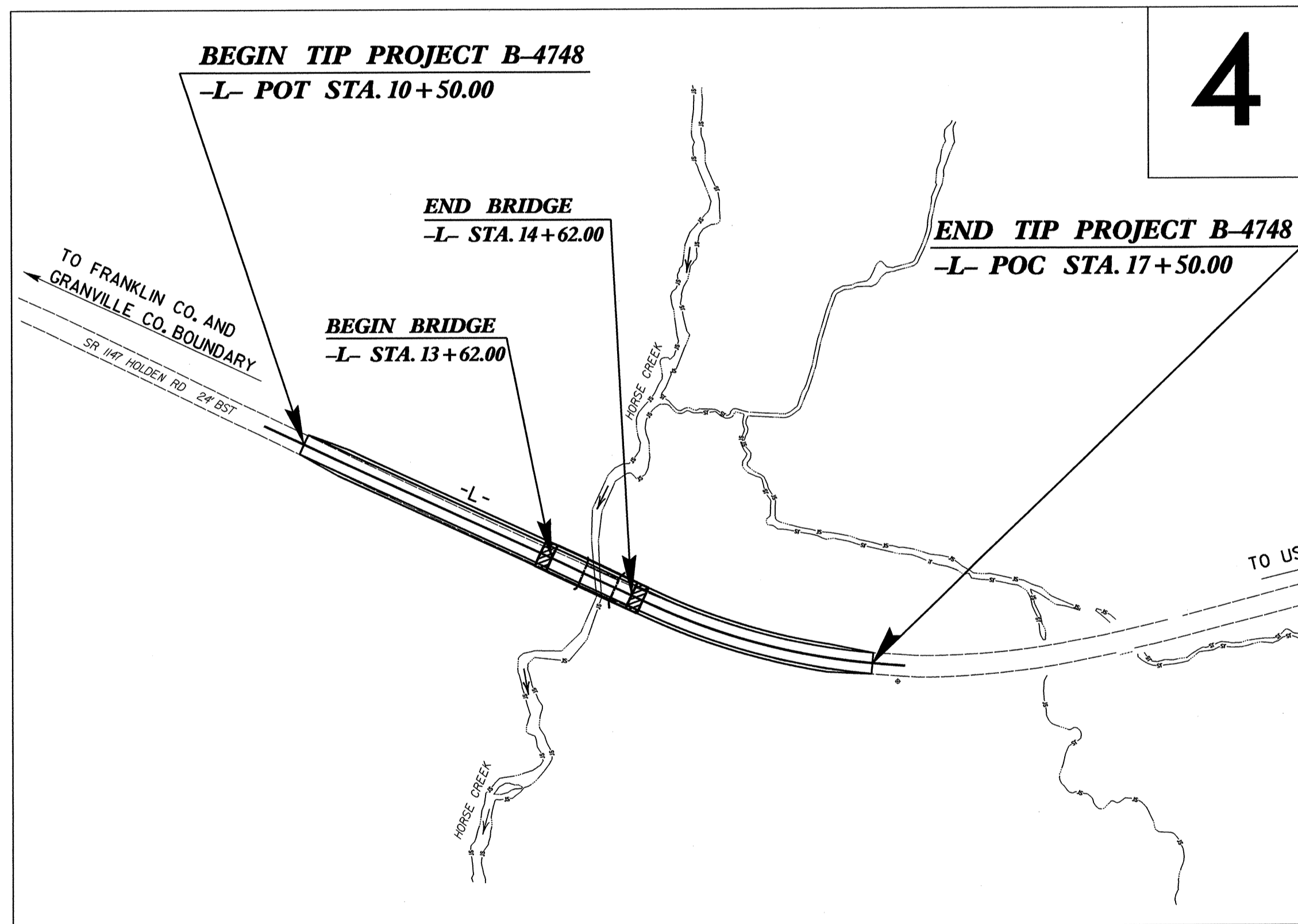


**TIP PROJECT: B-4748**



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

**LOCATION: BRIDGE NO. 2 OVER HORSE CREEK  
 ON SR 1147 (HOLDEN ROAD)  
 TYPE OF WORK: GRADING, DRAINAGE, PAVING,  
 AND STRUCTURE**



4

|                 |                             |             |              |
|-----------------|-----------------------------|-------------|--------------|
| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
| N.C.            | B-4748                      | EC-1        |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
|                 |                             |             |              |
|                 |                             |             |              |

**EROSION AND SEDIMENT CONTROL MEASURES**

| Std. #  | Description  | Symbol                          |
|---------|--|---------------------------------|
| 1630.03 | Temporary Silt Ditch   | TD                              |
| 1630.05 | Temporary Diversion  | TD                              |
| 1605.01 | Temporary Silt Fence   | III III III                     |
| 1606.01 | Special Sediment Control Fence   | XXX XXX XXX                     |
| 1622.01 | Temporary Berms and Slope Drains                                       | TBD                             |
| 1630.02 | Silt Basin Type B  | Silt Basin Symbol               |
| 1633.01 | Temporary Rock Silt Check Type-A                                       | Rock Silt Check Symbol          |
|         | Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM) | Rock Silt Check Symbol          |
| 1633.02 | Temporary Rock Silt Check Type-B                                       | Rock Silt Check Symbol          |
|         | Wattle/Coir Fiber Wattle   | Wattle Symbol                   |
|         | Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)                     | Wattle Symbol                   |
| 1634.01 | Temporary Rock Sediment Dam Type-A                                     | Rock Sediment Dam Symbol        |
| 1634.02 | Temporary Rock Sediment Dam Type-B                                     | Rock Sediment Dam Symbol        |
| 1635.01 | Rock Pipe Inlet Sediment Trap Type-A                                   | Rock Inlet Sediment Trap Symbol |
| 1635.02 | Rock Pipe Inlet Sediment Trap Type-B                                   | Rock Inlet Sediment Trap Symbol |
| 1630.04 | Stilling Basin   | Stilling Basin Symbol           |
| 1630.06 | Special Stilling Basin   | Special Stilling Basin Symbol   |
|         | Rock Inlet Sediment Trap:  |                                 |
| 1632.01 | Type A   | A                               |
| 1632.02 | Type B   | B                               |
| 1632.03 | Type C   | C                               |
|         | Skimmer Basin  | Skimmer Basin Symbol            |
|         | Tiered Skimmer Basin   | Tiered Skimmer Basin Symbol     |
|         | Infiltration Basin   | Infiltration Basin Symbol       |

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

**THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.**

**ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT**  
*Refer To E. C. Special Provisions for Special Considerations.*

**GRAPHIC SCALE**

0 [Scale Bar]

PLANS

0 [Scale Bar]

PROFILE (HORIZONTAL)

0 [Scale Bar]

PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT  
 DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

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

Roadway Standard Drawings

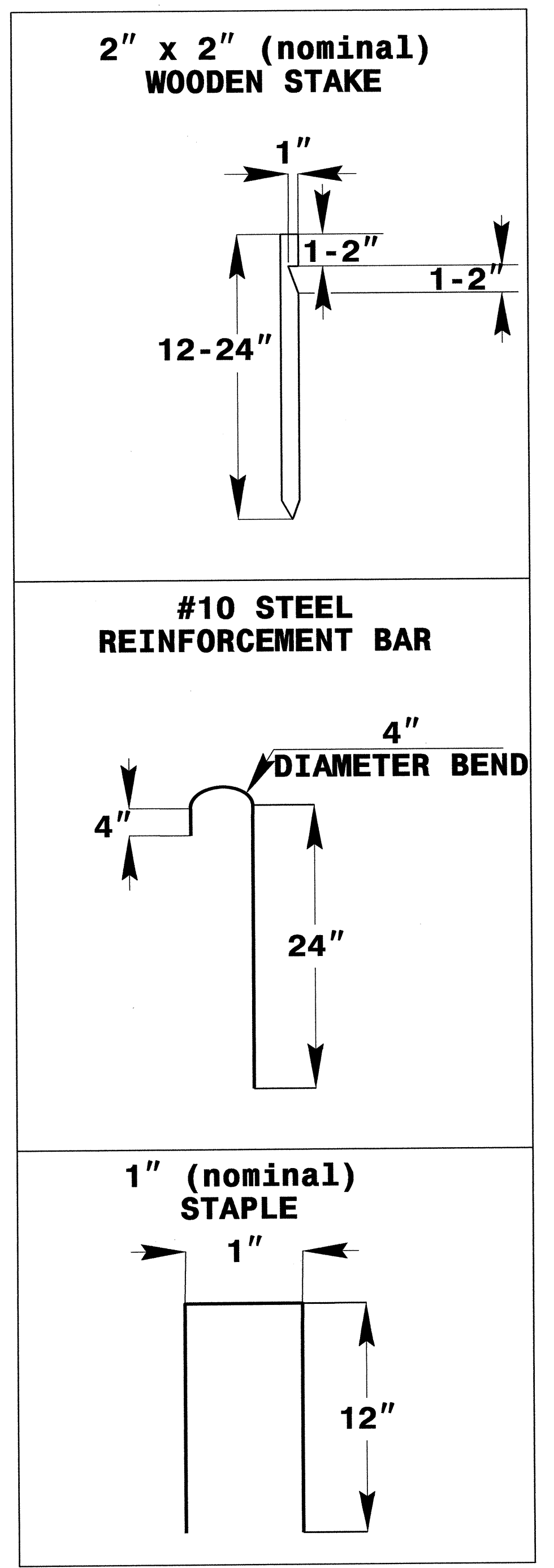
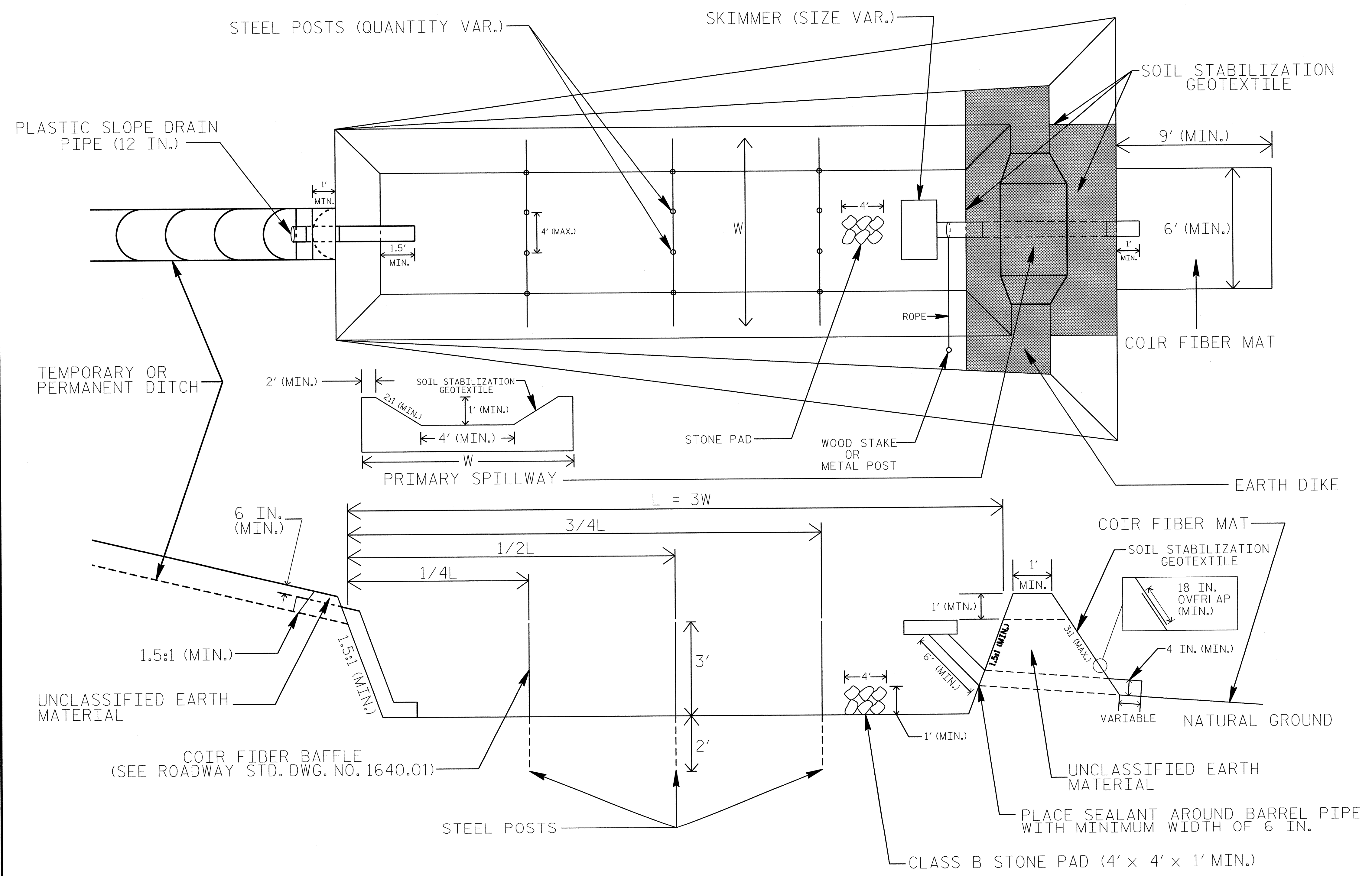
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

|  |  |
|--|--|
| 1604.01 Railroad Erosion Control Detail  | 1632.01 Rock Inlet Sediment Trap Type A      |
| 1605.01 Temporary Silt Fence             | 1632.02 Rock Inlet Sediment Trap Type B      |
| 1606.01 Special Sediment Control Fence   | 1632.03 Rock Inlet Sediment Trap Type C      |
| 1607.01 Gravel Construction Entrance     | 1633.01 Temporary Rock Silt Check Type A     |
| 1622.01 Temporary Berms and Slope Drains | 1633.02 Temporary Rock Silt Check Type B     |
| 1630.01 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             |  |

20-REC-2013 10-07  
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 awtanner AT 10/25/2013 10:07

|                                 |                     |
|---------------------------------|---------------------|
| PROJECT REFERENCE NO.<br>B-4748 | SHEET NO.<br>EC-2   |
| R/W SHEET NO.                   |                     |
| ROADWAY DESIGN ENGINEER         | HYDRAULICS ENGINEER |

# SKIMMER BASIN WITH BAFFLES DETAIL



## COIR FIBER MAT ANCHOR OPTIONS

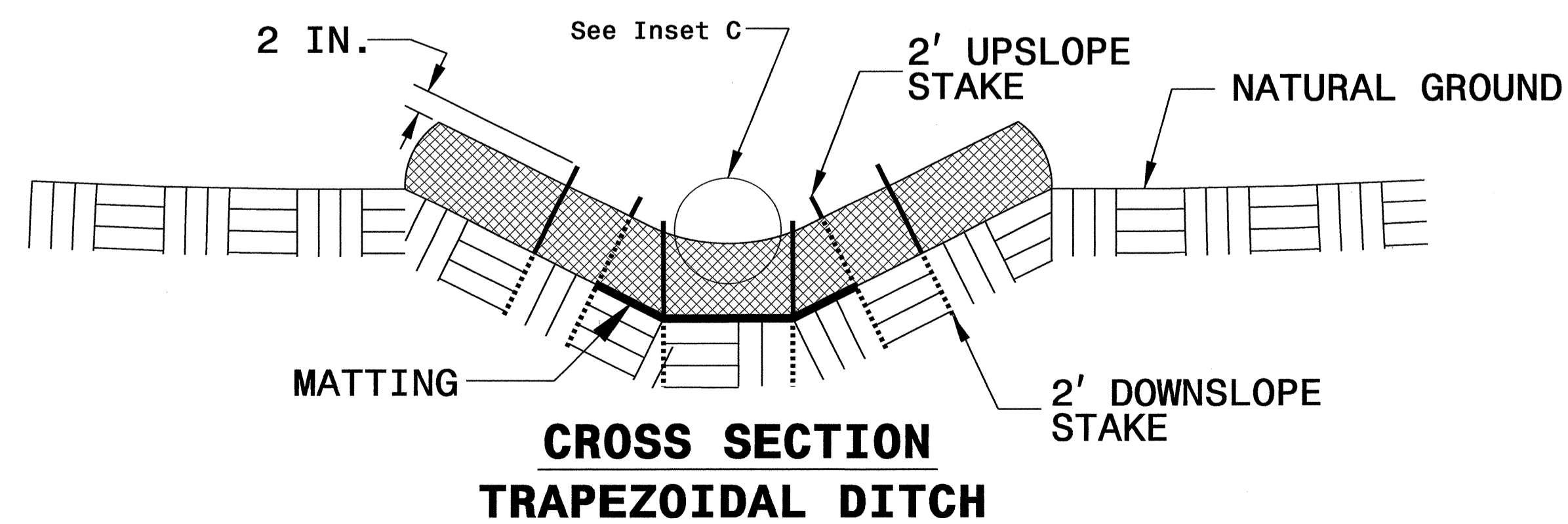
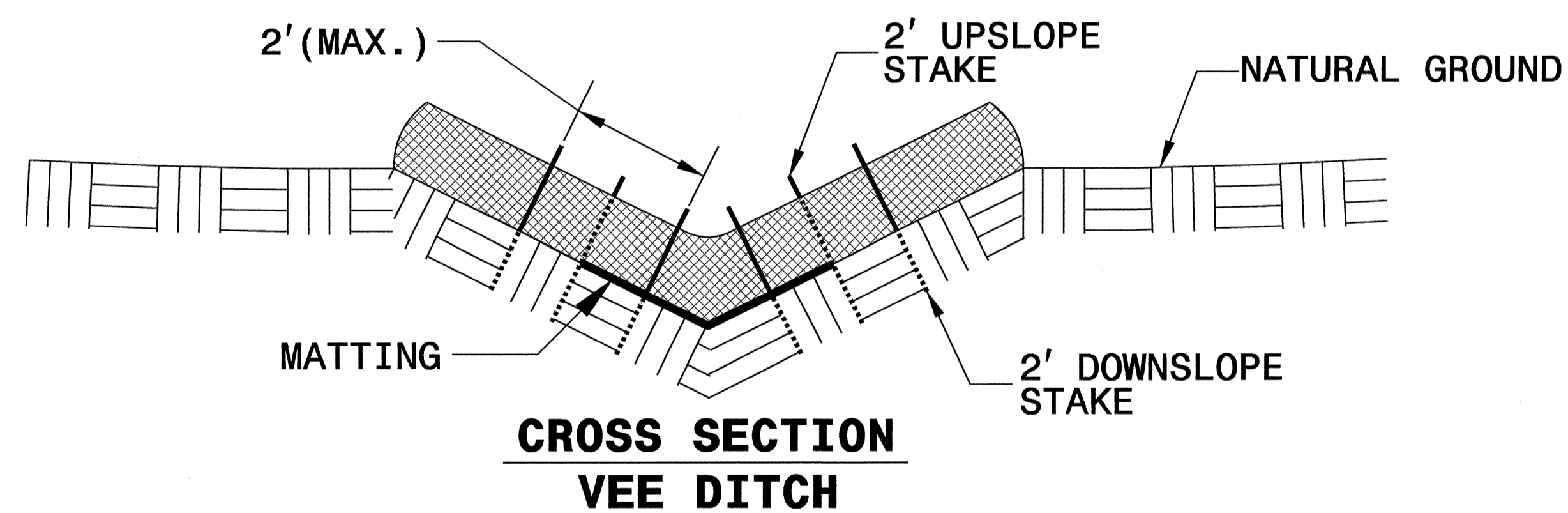
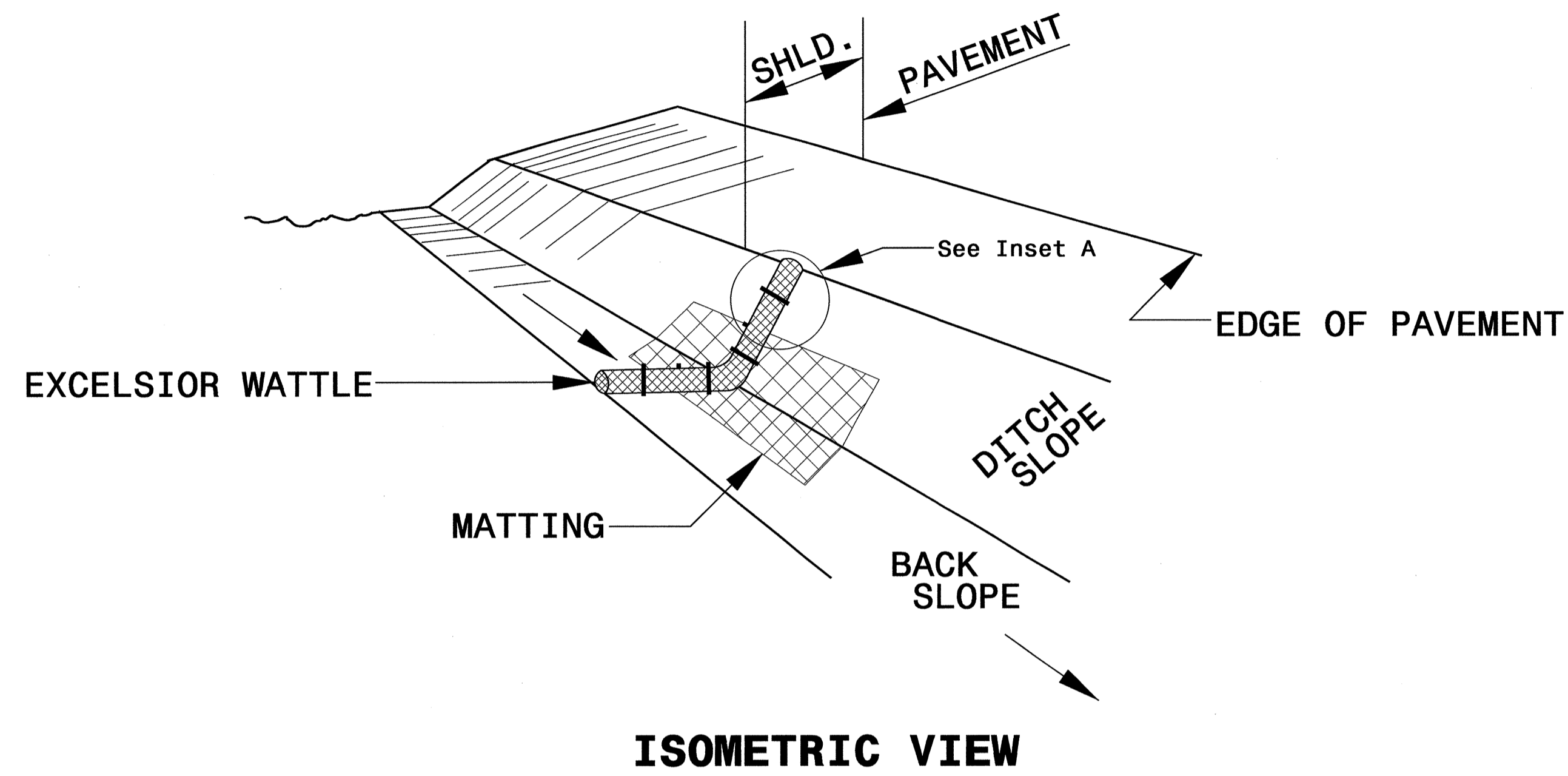
### NOTES

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. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

|                                 |                     |
|---------------------------------|---------------------|
| PROJECT REFERENCE NO.<br>B-4748 | SHEET NO.<br>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.

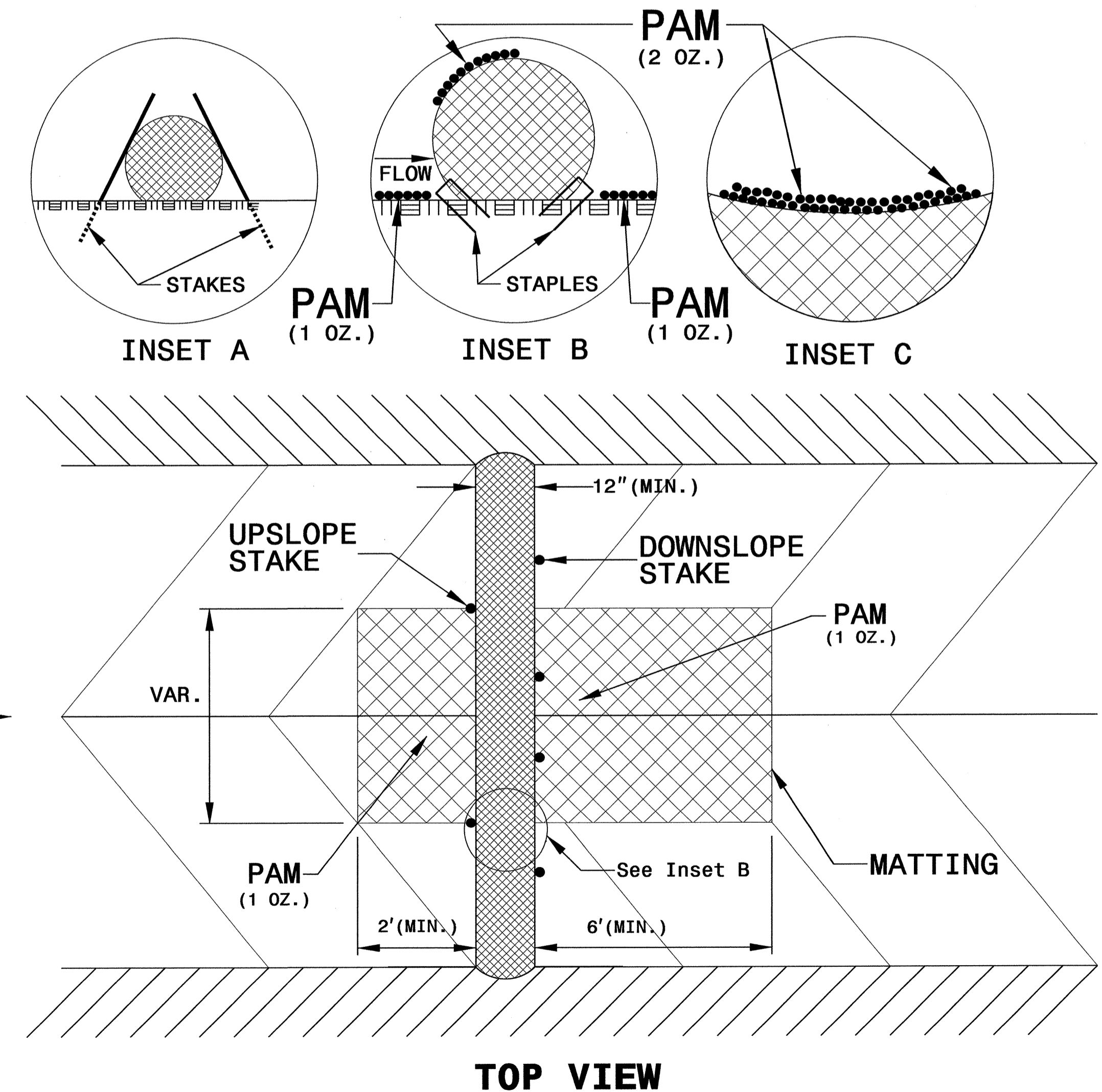
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

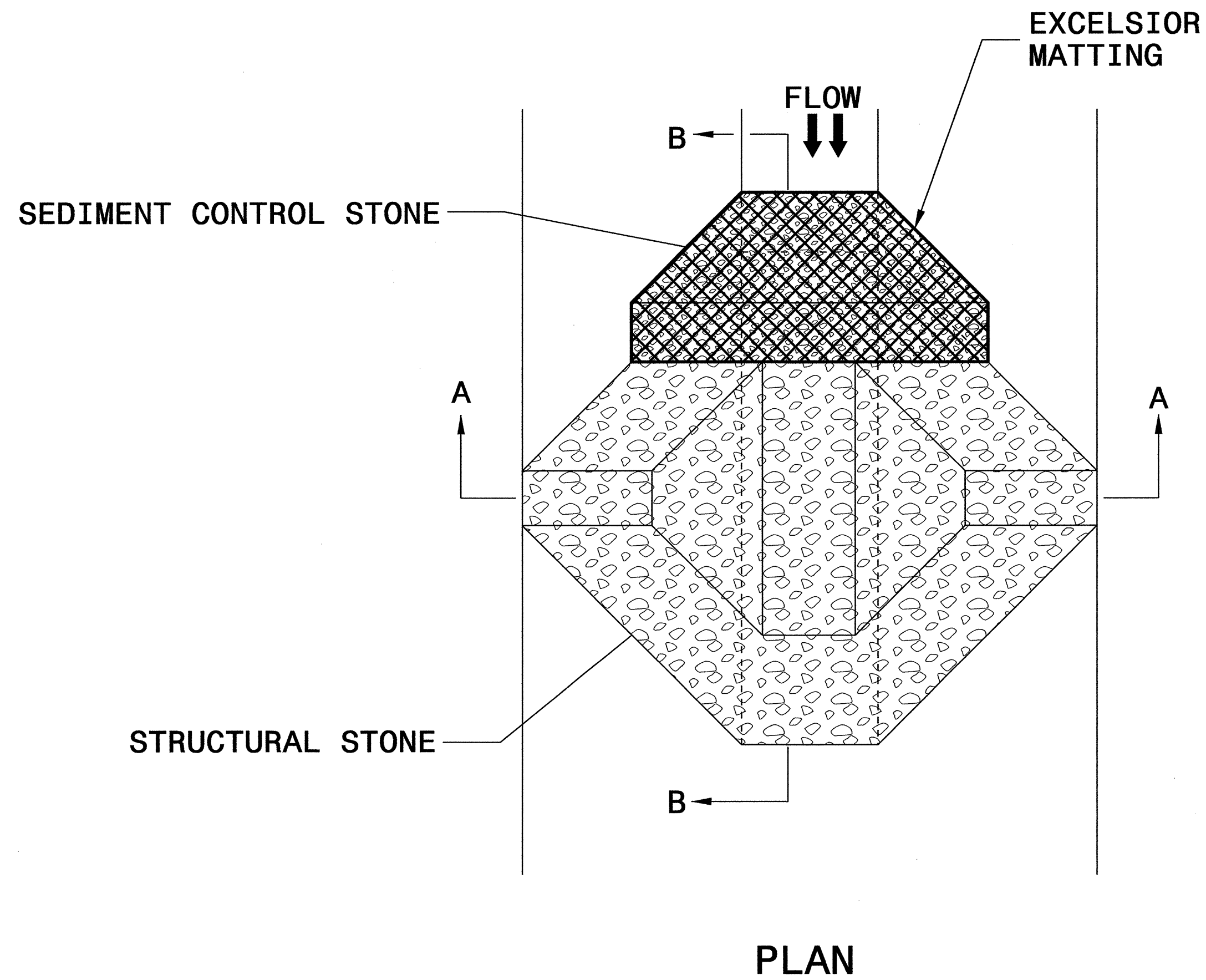
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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.



|                                 |                     |
|---------------------------------|---------------------|
| PROJECT REFERENCE NO.<br>B-4748 | SHEET NO.<br>EC-2B  |
| RW SHEET NO.                    |                     |
| ROADWAY DESIGN ENGINEER         | HYDRAULICS ENGINEER |

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

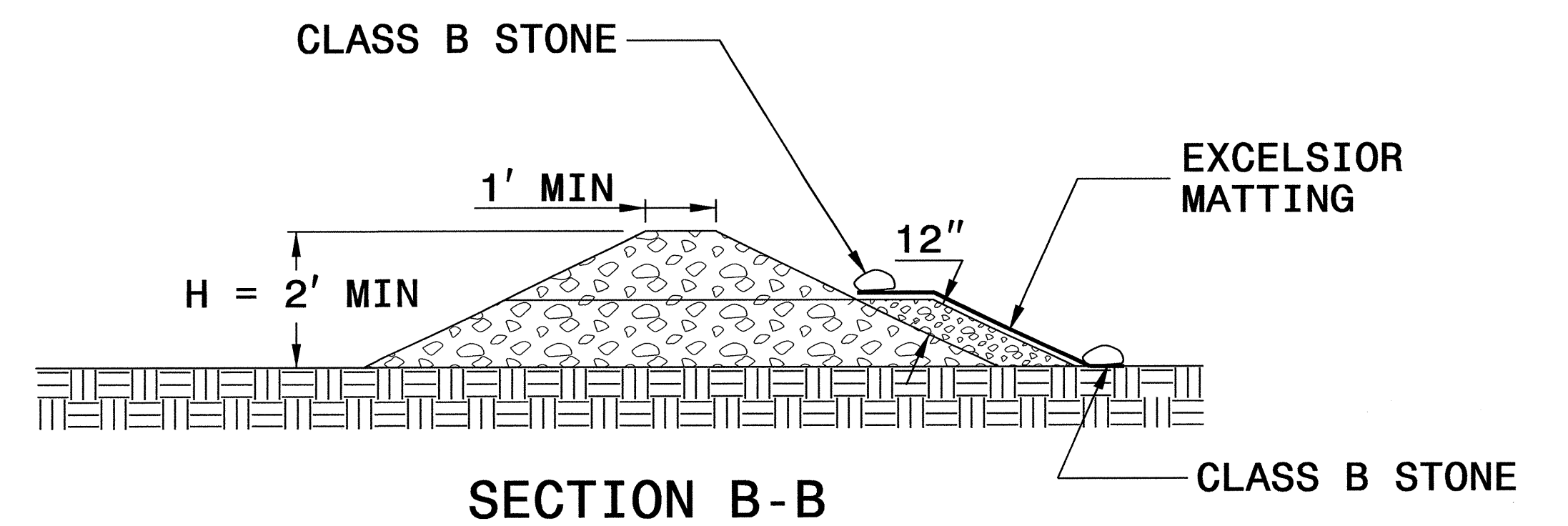
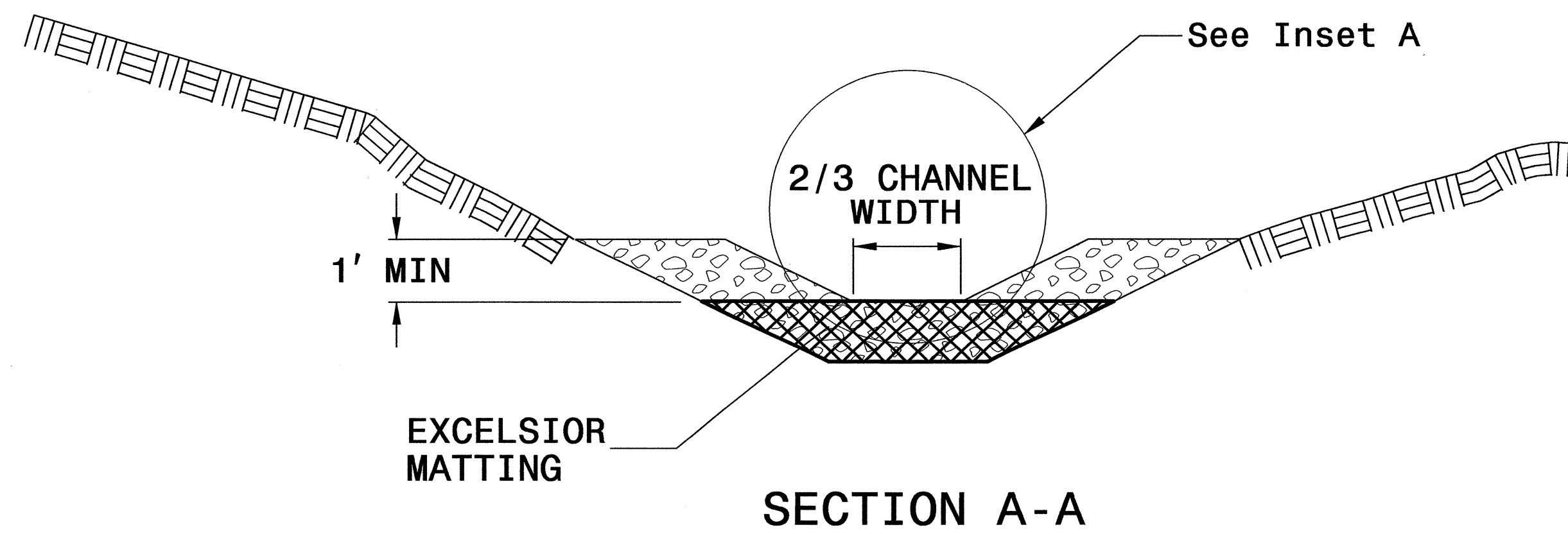
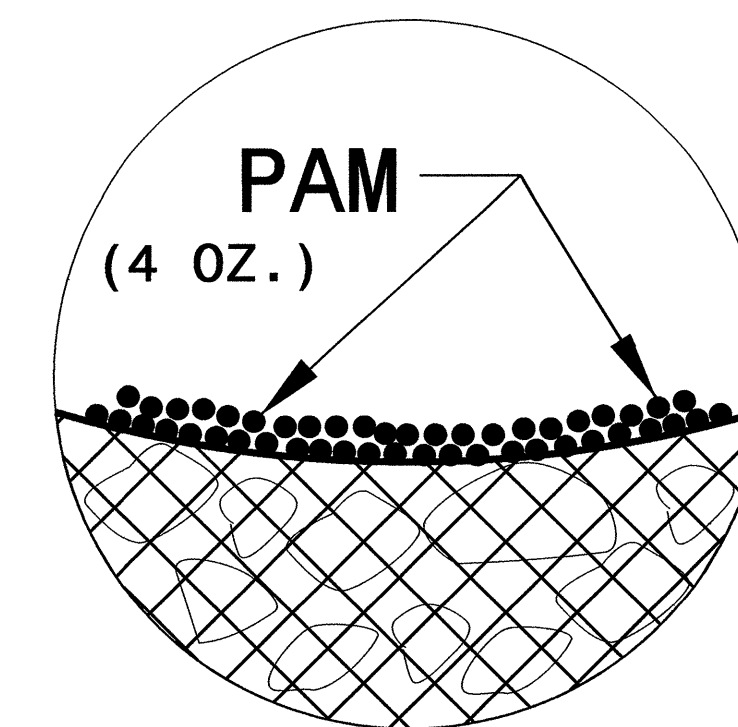


## NOTES

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

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



NOT TO SCALE

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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|  |                          |
|--|--------------------------|
| PROJECT REFERENCE NO.<br><i>B-4748</i> | SHEET NO.<br><i>EC-3</i> |
| ROADWAY DESIGN<br>ENGINEER             | HYDRAULICS<br>ENGINEER   |

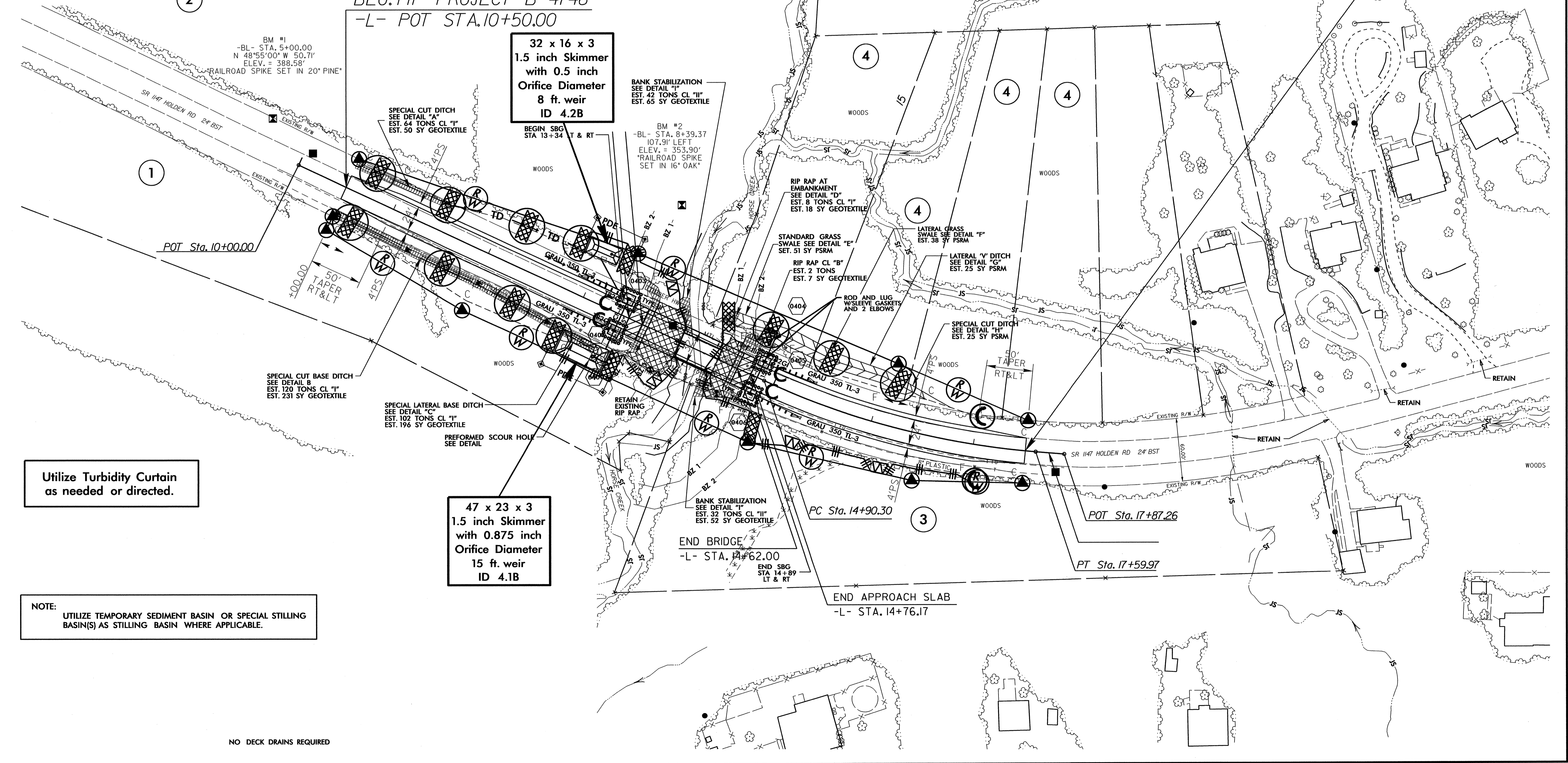
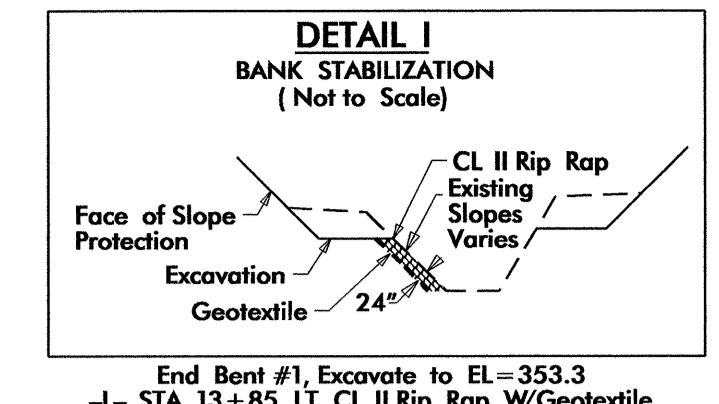
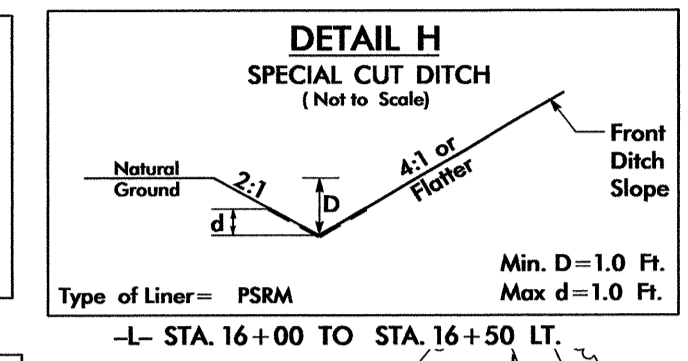
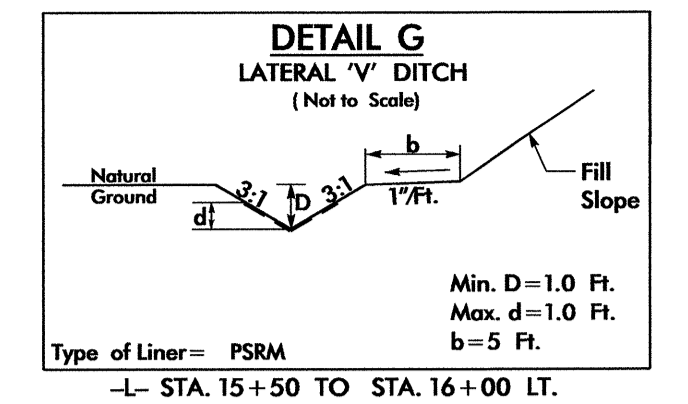
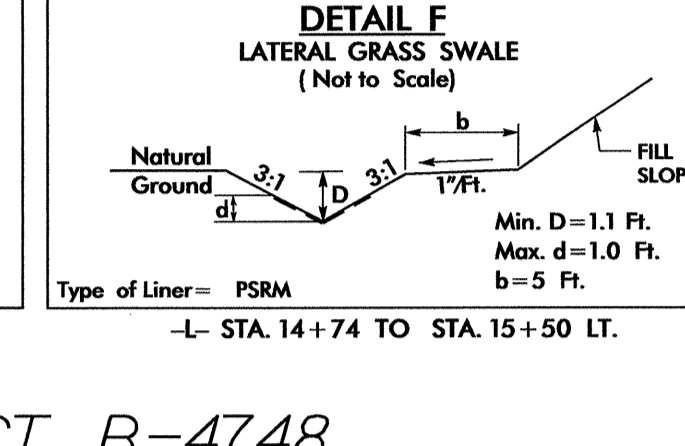
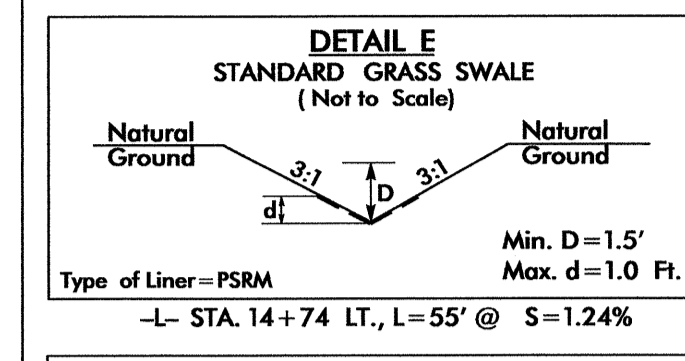
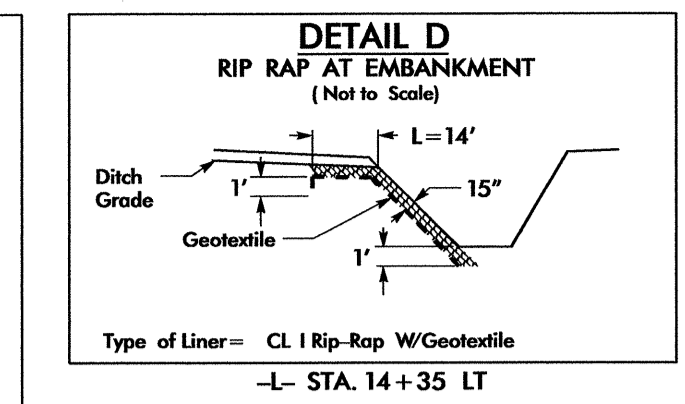
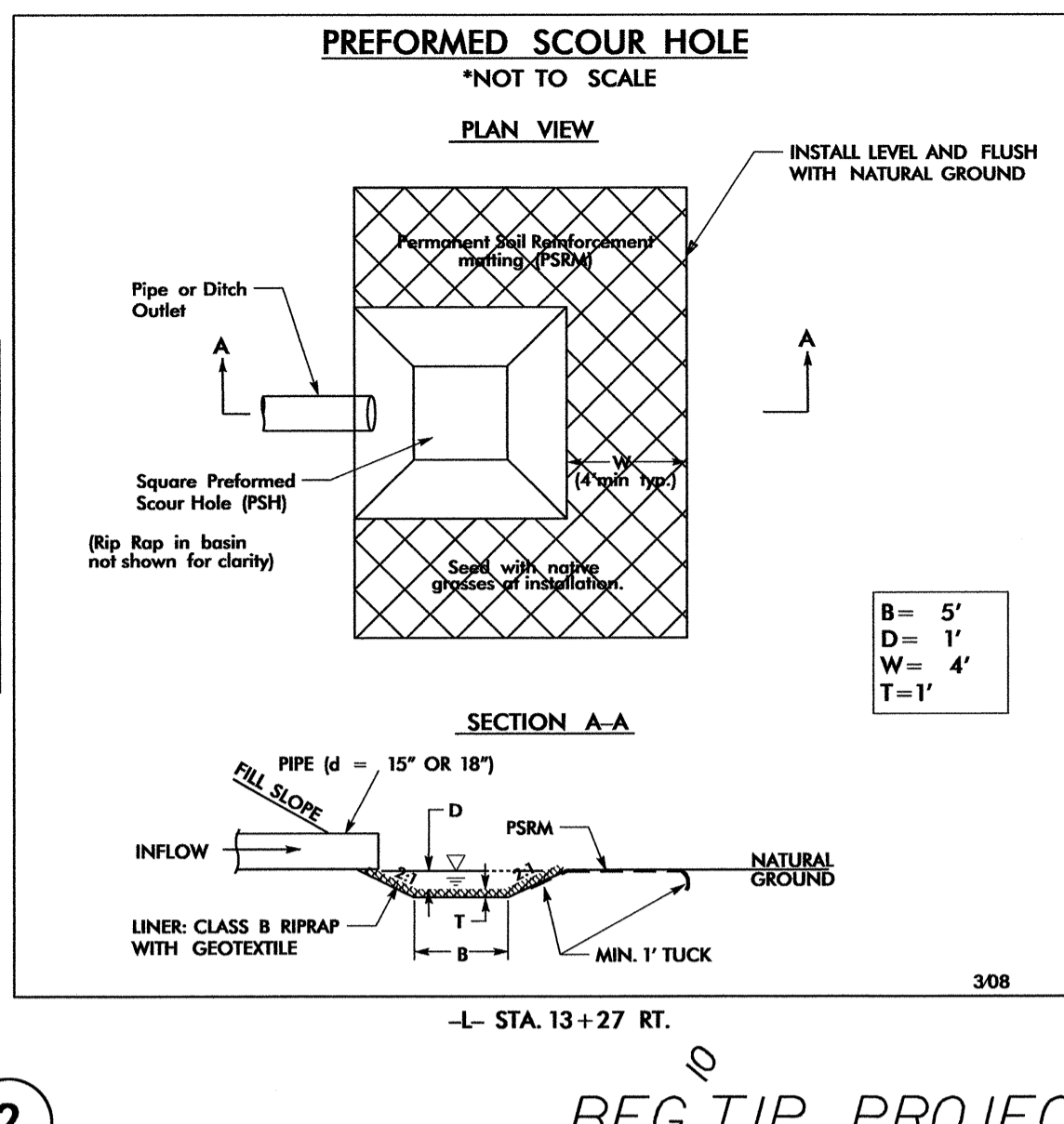
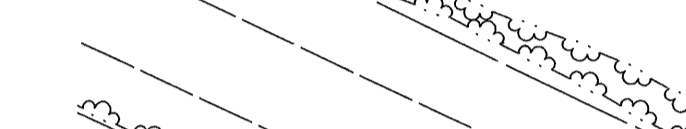
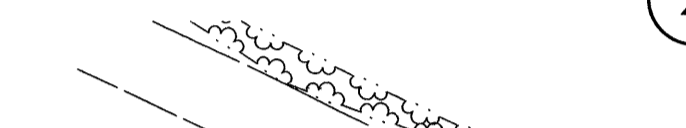
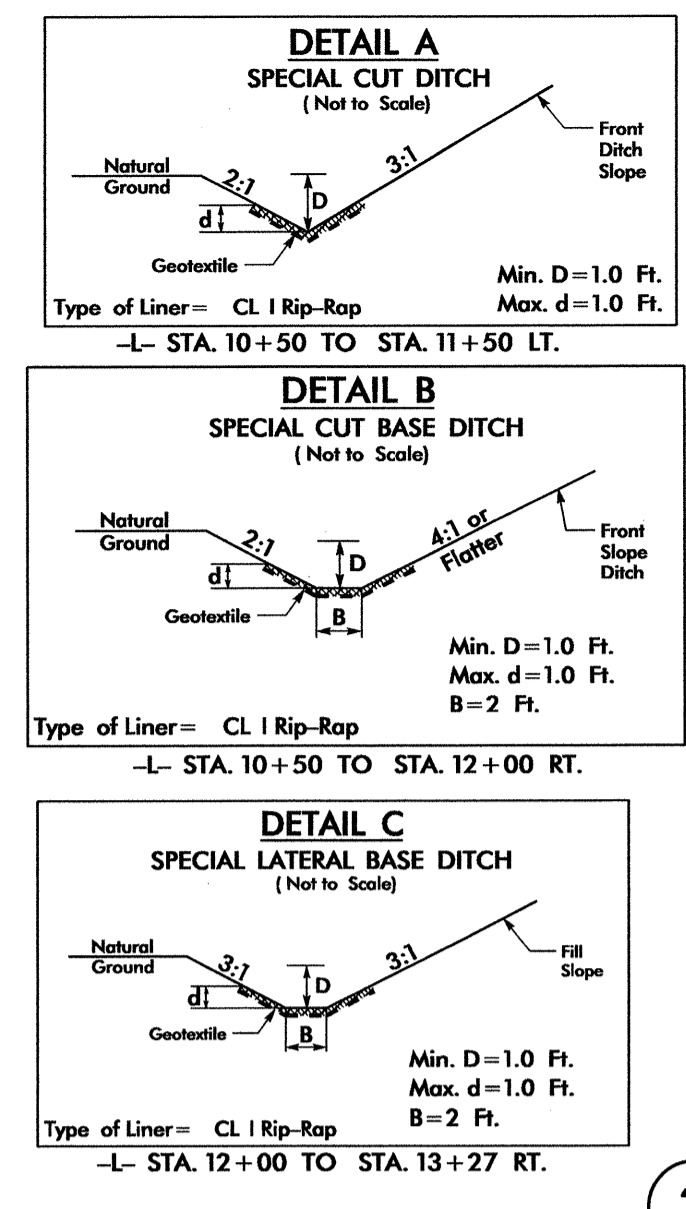
# ***SOIL STABILIZATION TIMEFRAMES***

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



|                                 |  |                            |  |
|---------------------------------|--|----------------------------|--|
| PROJECT REFERENCE NO.<br>B-4748 |  | SHEET NO.<br>EC-5/CONST. 4 |  |
| RW SHEET NO.                    |  |                            |  |
| ROADWAY DESIGN ENGINEER         |  | HYDRAULICS ENGINEER        |  |

NAD 83/95



**32 x 16 x 3  
1.5 inch Skimmer  
with 0.5 inch  
Orifice Diameter  
8 ft. weir  
ID 4.2B**

**47 x 23 x 3  
1.5 inch Skimmer  
with 0.875 inch  
Orifice Diameter  
15 ft. weir  
ID 4.1B**

Utilize Turbidity Curtain as needed or directed.

NOTE: UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

NO DECK DRAINS REQUIRED

REVISIONS

8/17/99

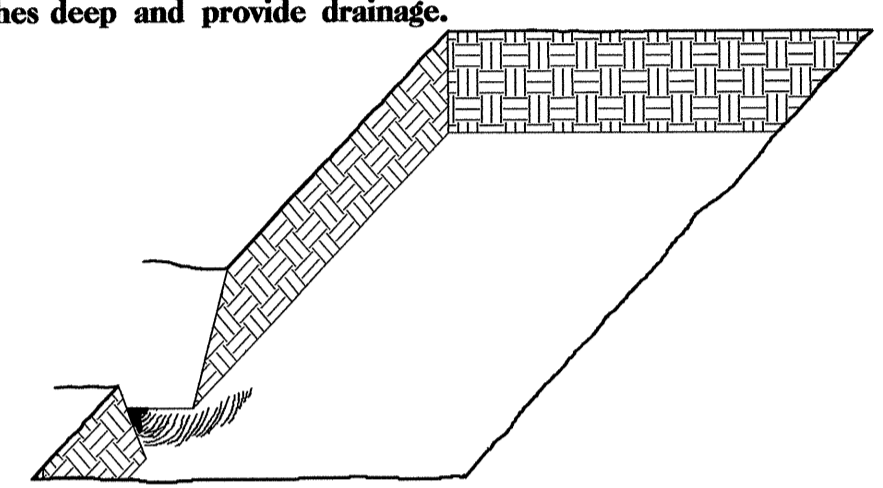
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Customer

## PLANTING DETAILS

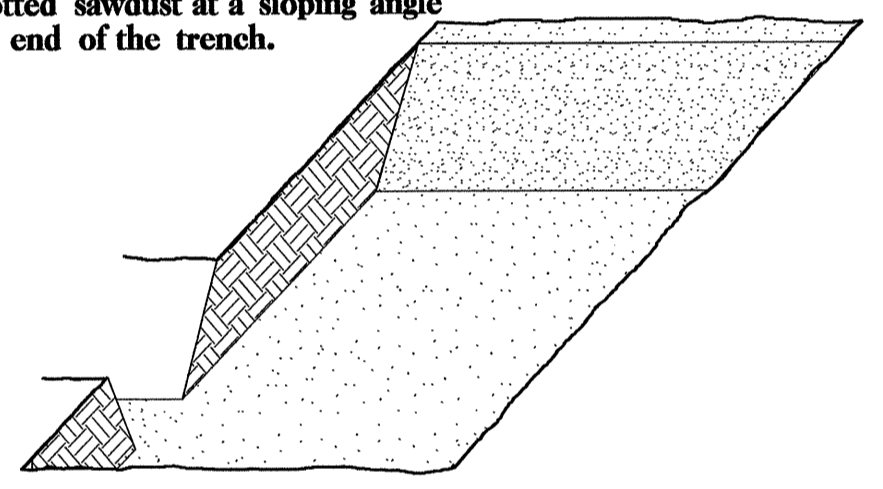
### SEEDLING / LINER BAREROOT PLANTING DETAIL

#### HEALING IN

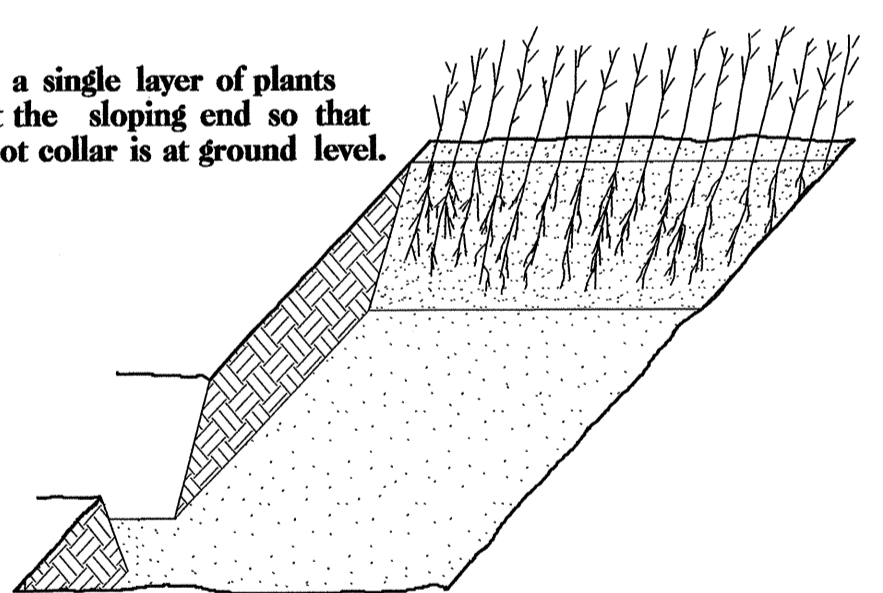
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



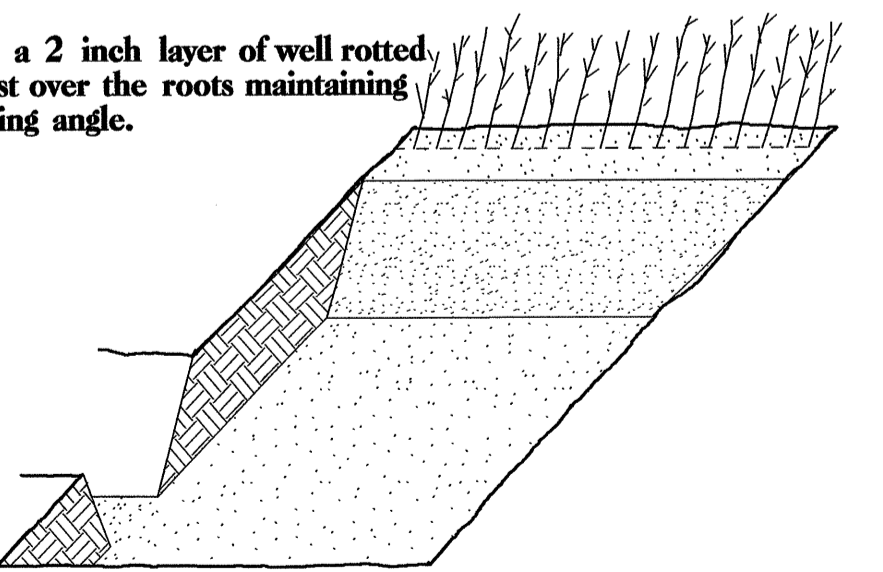
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

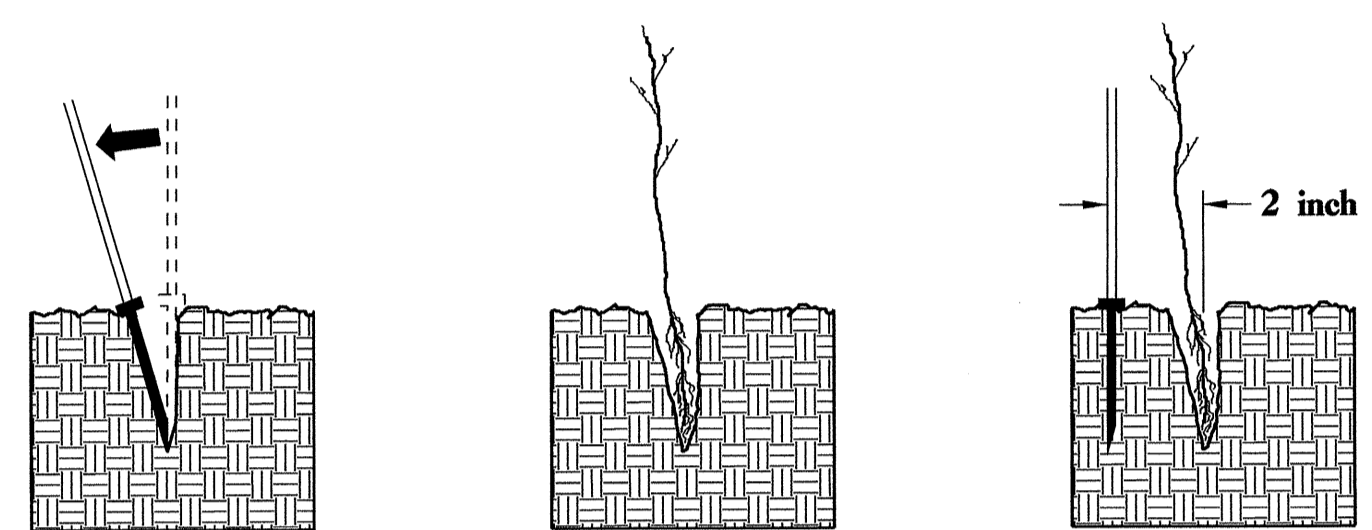


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

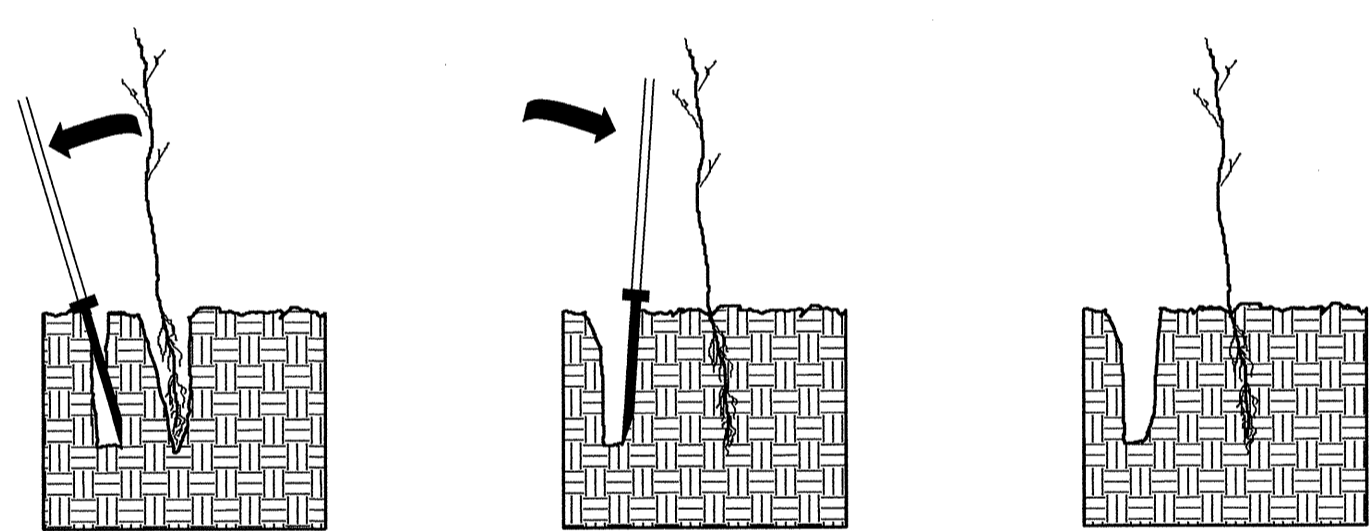


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

#### DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



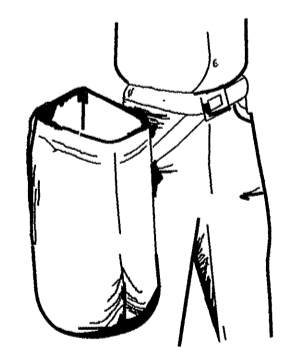
1. Insert planting bar as shown and pull handle toward planter.
2. Remove planting bar and place seedling at correct depth.
3. Insert planting bar 2 inches toward planter from seedling.



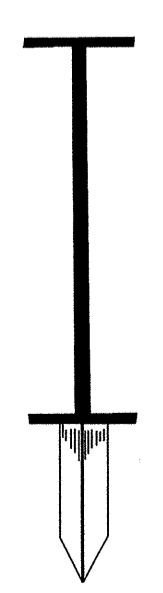
4. Pull handle of bar toward planter, firming soil at bottom.
5. Push handle forward firming soil at top.
6. Leave compaction hole open. Water thoroughly.

#### PLANTING NOTES:

**PLANTING BAG**  
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



**KBC PLANTING BAR**  
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



**ROOT PRUNING**  
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

## REFORESTATION

- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

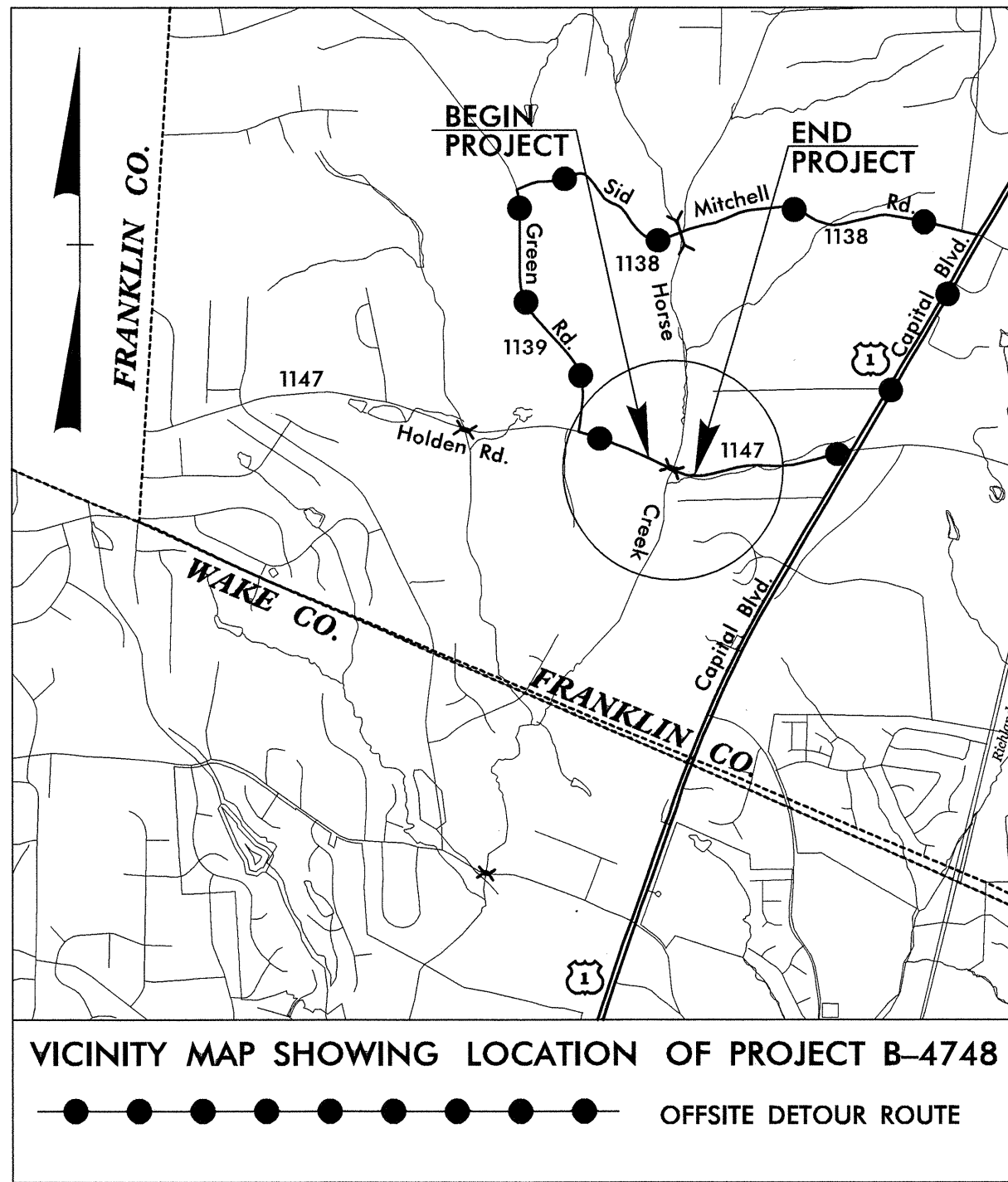
#### REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

|                             |              |                  |
|-----------------------------|--------------|------------------|
| 33% QUERCUS PHELLOS         | WILLOW OAK   | 12 in - 18 in BR |
| 33% LIRIODENDRON TULIPIFERA | TULIP POPLAR | 12 in - 18 in BR |
| 34% NYSSA SYLVATICA         | BLACKGUM     | 12 in - 18 in BR |



TIP PROJECT: B-4748



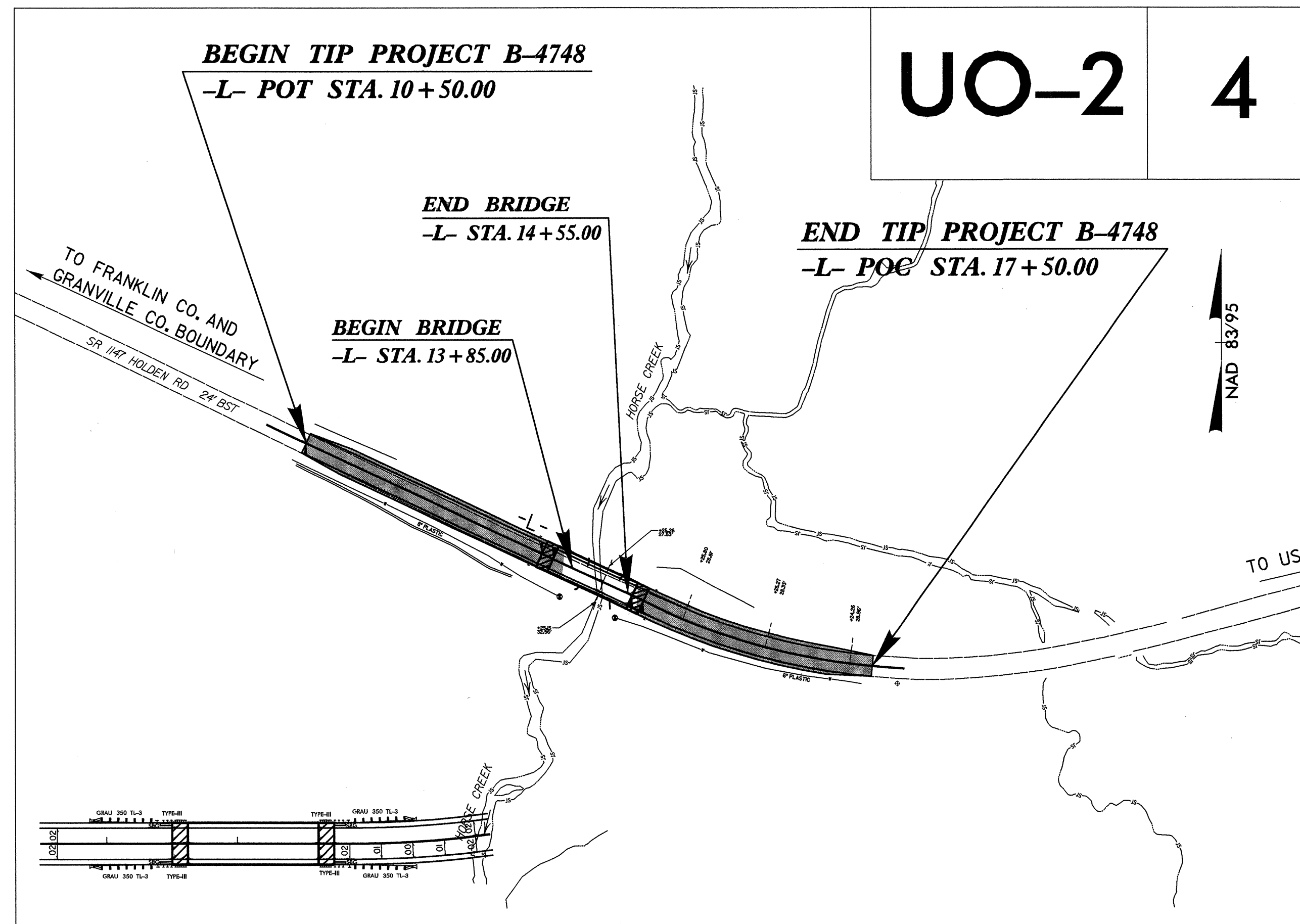
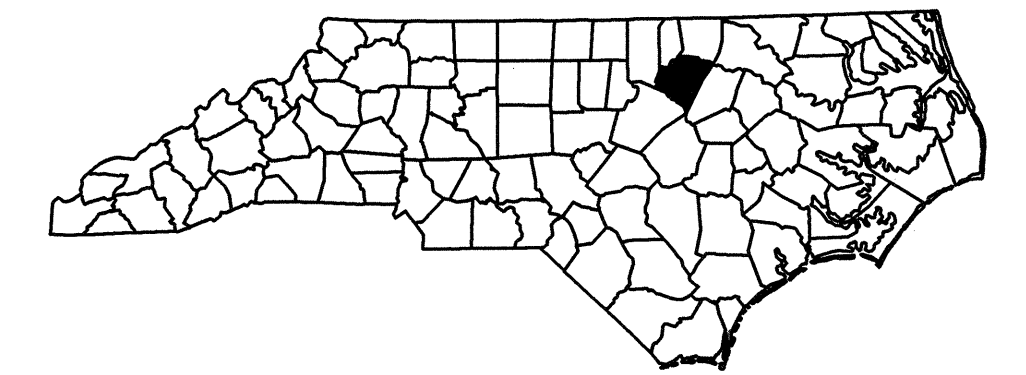
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS  
FRANKLIN COUNTY**

**LOCATION: BRIDGE #2 OVER HORSE CREEK SR 1147 (HOLDEN ROAD)**

**TYPE OF WORK: UNDERGROUND TELEPHONE, FIBER OPTIC, & WATER**

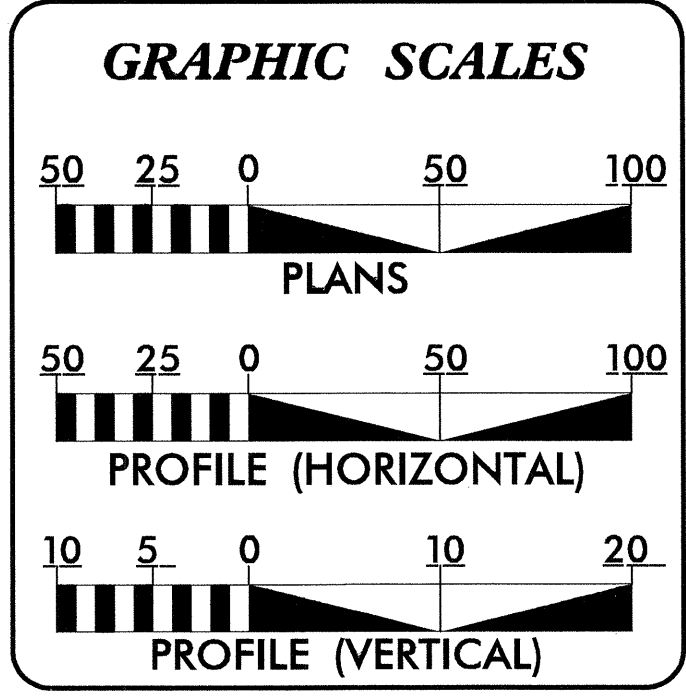
|            |           |
|------------|-----------|
| T.I.P. NO. | SHEET NO. |
| B-4748     | UO-1      |



PLANS PREPARED BY:

**RK&K**

RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE, SUITE 350  
RALEIGH, NORTH CAROLINA 27609  
NC LICENSE NO. F-0112  
1-888-521-4455 OR 919-878-9560



**INDEX OF SHEETS**

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

**UTILITY OWNERS ON PROJECT**

- CENTURYLINK - TELEPHONE AND FIBER OPTIC
- FRANKLIN COUNTY PUBLIC WORKS - WATER

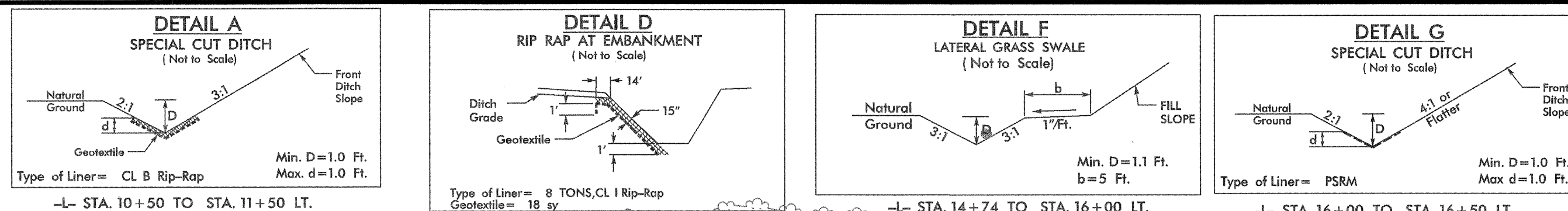
PREPARED IN THE OFFICE OF:  
DIVISION OF HIGHWAYS  
UTILITIES UNIT  
UTILITIES ENGINEERING

1555 MAIL SERVICES CENTER  
RALEIGH, NC 27699-1555  
PHONE (919) 107-6690  
FAX (919) 250-4151

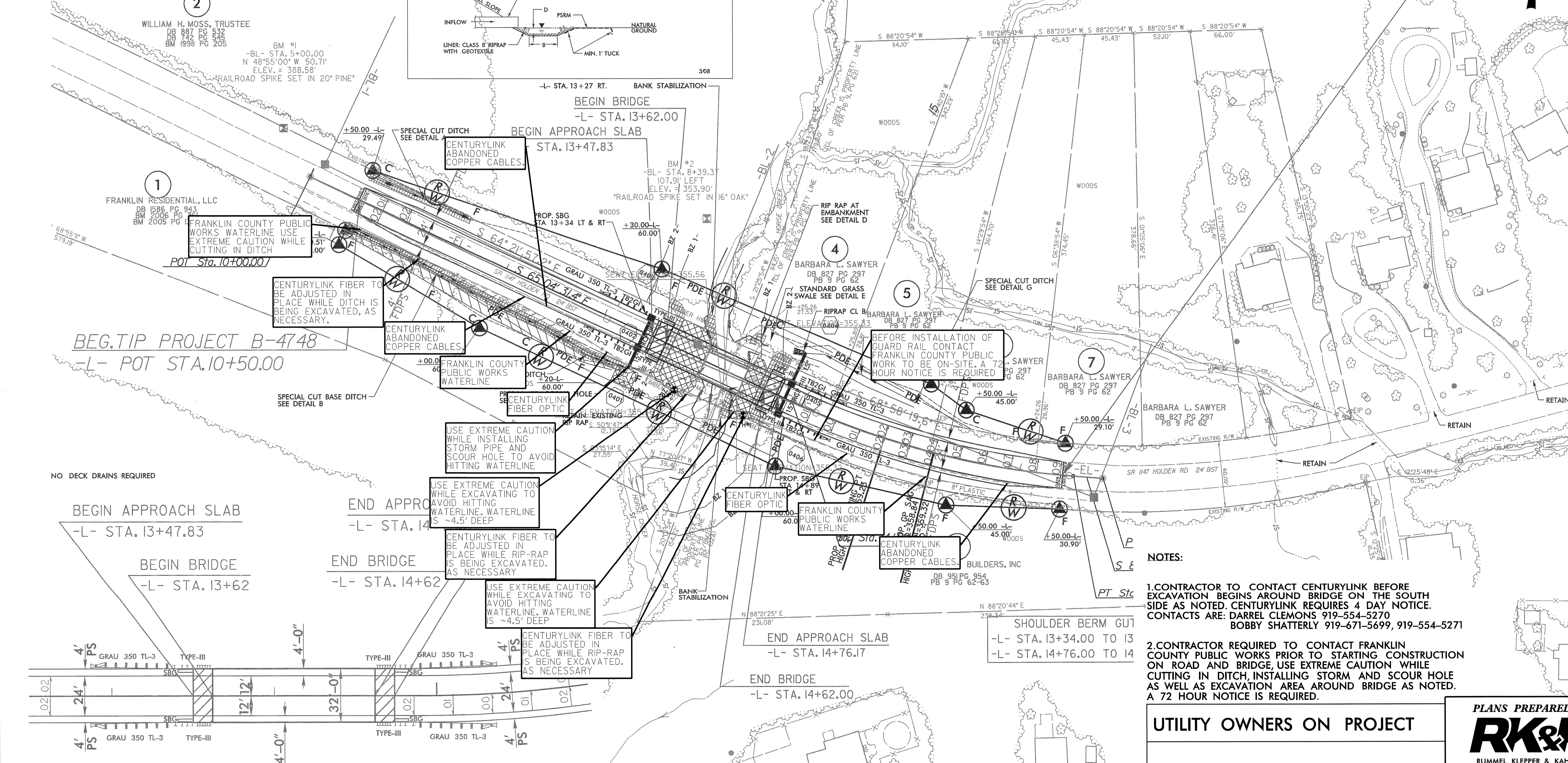
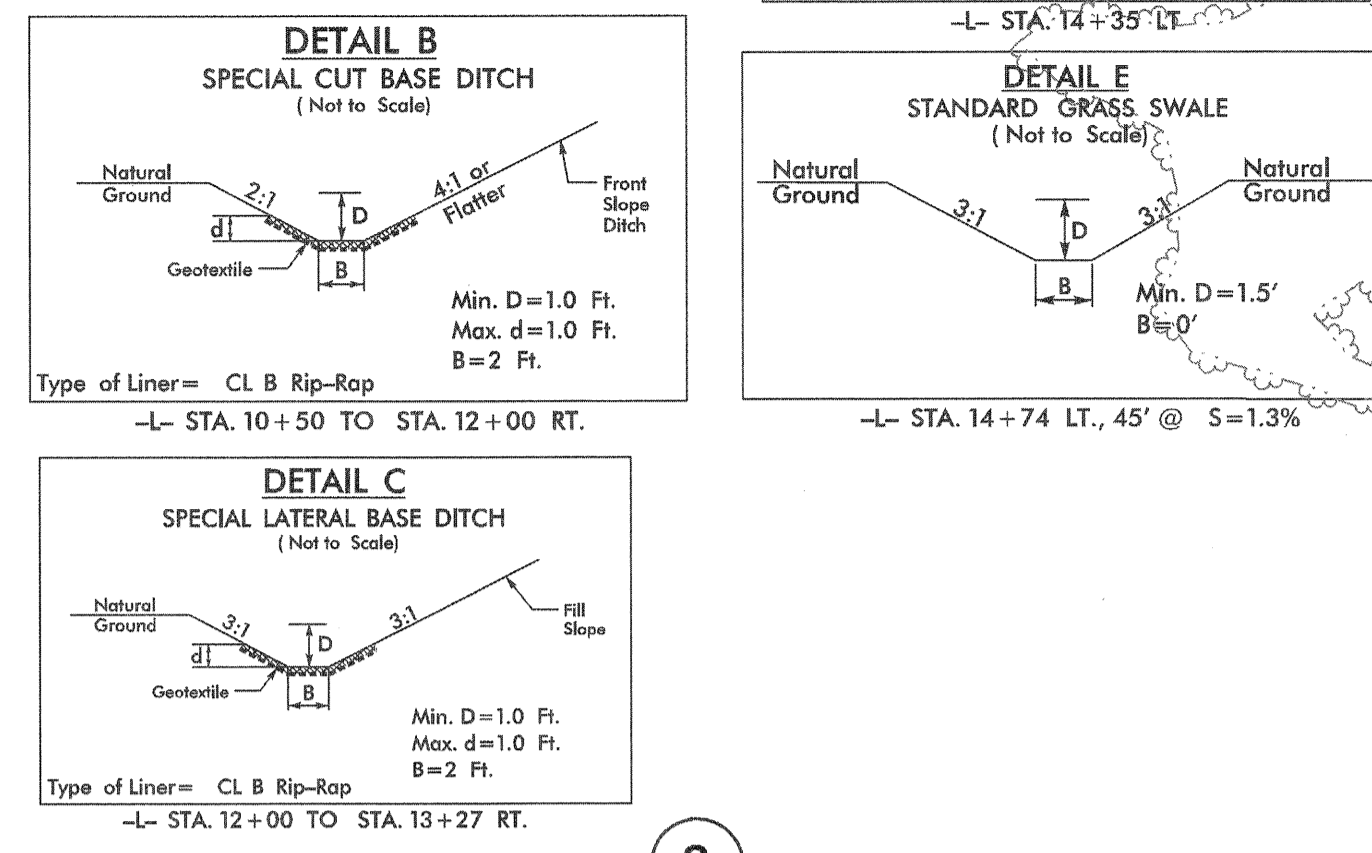
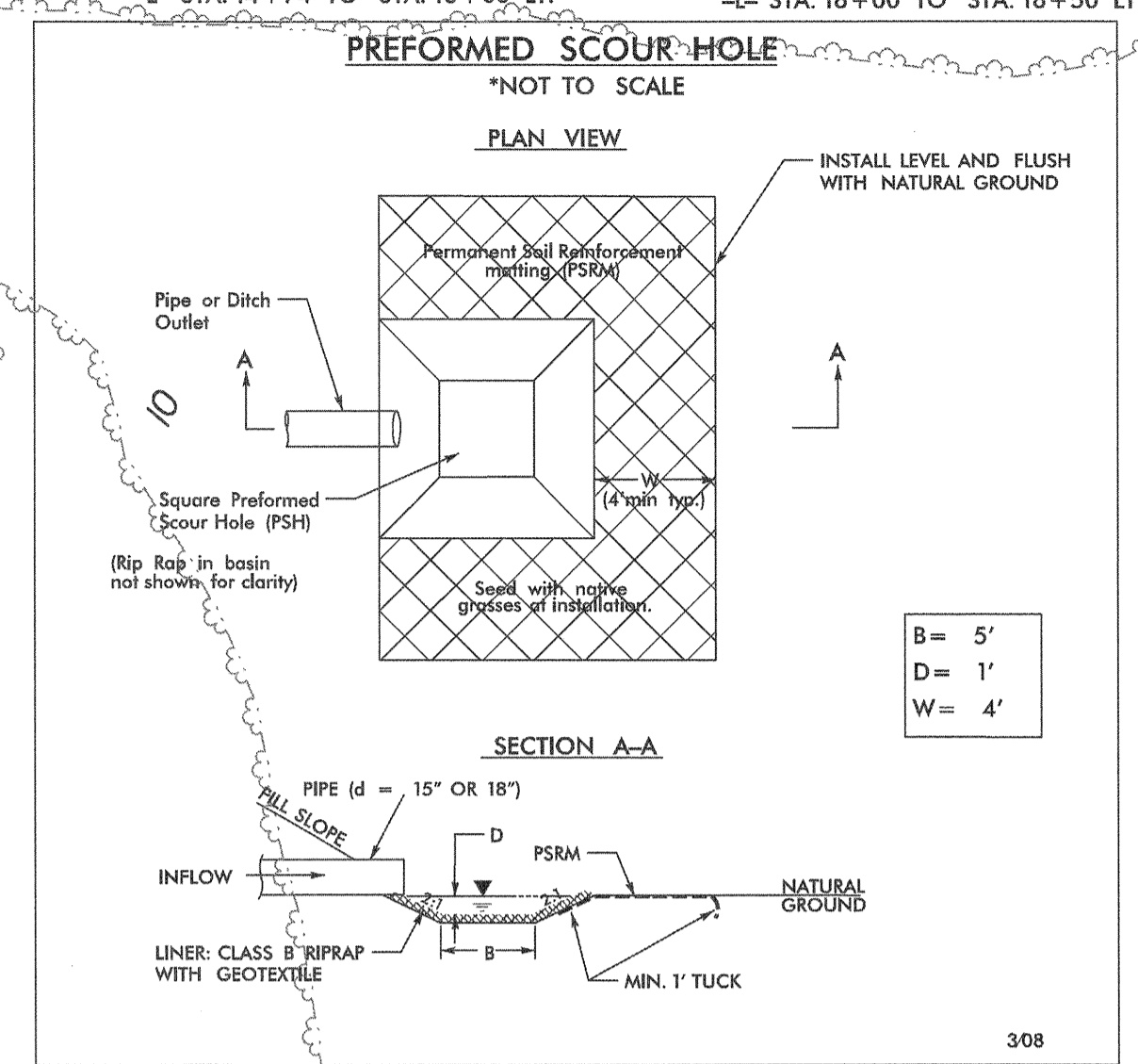
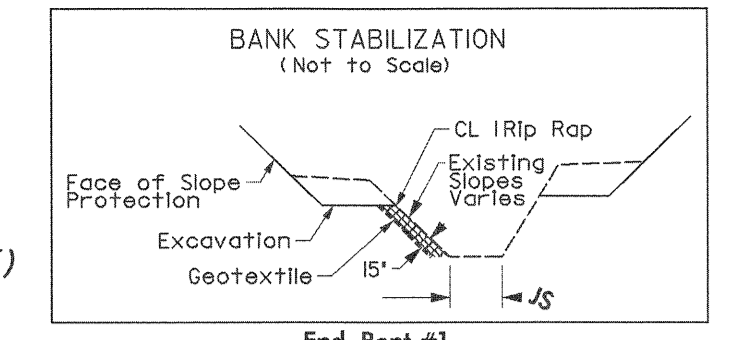
Roger Worthington, P.E. UTILITIES SECTION ENGINEER  
Steve McKee, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER  
Jamshid Hafshejani UTILITIES PROJECT DESIGNER

**UTILITIES BY OTHERS**

**NOTE:**  
 ALL INFORMATION SHOWN ON THIS SHEET IS FOR THE BENEFIT OF THE CONTRACTOR. ANY WORK REQUIRED ON THIS SHEET WILL BE INCIDENTAL TO THE VARIOUS OTHER PAY ITEMS IN THE CONTRACT.



-L-  
 $PI Sta 16+26.57$   
 $\Delta = 20' 21" 24.0" (LT)$   
 $D = 7' 32" 55.9"$   
 $L = 269.67'$   
 $T = 136.27'$   
 $R = 759.00'$   
 SE = SEE PLANS



**BEG. TIP PROJECT B-4748**  
 -L- POT STA. 10+50.00

**BEGIN APPROACH SLAB**  
 -L- STA. 13+47.83

**BEGIN BRIDGE**  
 -L- STA. 13+62

**END APPROACH SLAB**  
 -L- STA. 14+76.00

**END BRIDGE**  
 -L- STA. 14+62.00

NO DECK DRAINS REQUIRED

USE EXTREME CAUTION WHILE EXCAVATING TO AVOID HITTING WATERLINE

USE EXTREME CAUTION WHILE EXCAVATING TO AVOID HITTING WATERLINE. WATERLINE IS ~4.5' DEEP

CENTURYLINK FIBER TO BE ADJUSTED IN PLACE WHILE RIP-RAP IS BEING EXCAVATED, AS NECESSARY

USE EXTREME CAUTION WHILE EXCAVATING TO AVOID HITTING WATERLINE. WATERLINE IS ~4.5' DEEP

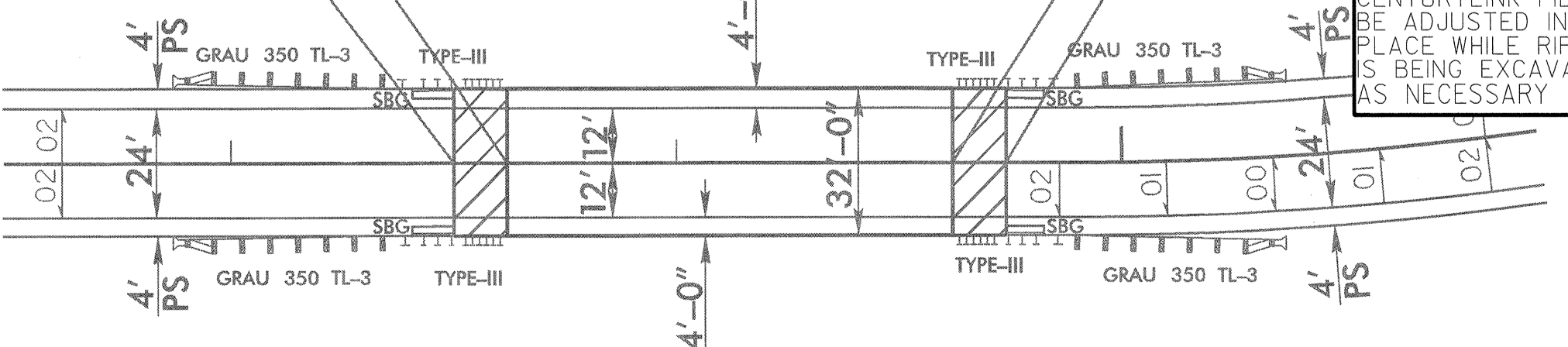
CENTURYLINK FIBER TO BE ADJUSTED IN PLACE WHILE RIP-RAP IS BEING EXCAVATED, AS NECESSARY

BEFORE INSTALLATION OF GUARD RAIL CONTACT FRANKLIN COUNTY PUBLIC WORKS TO BE ON-SITE. A 72 HOUR NOTICE IS REQUIRED

**NOTES:**

1. CONTRACTOR TO CONTACT CENTURYLINK BEFORE EXCAVATION BEGINS AROUND BRIDGE ON THE SOUTH SIDE AS NOTED. CENTURYLINK REQUIRES 4 DAY NOTICE. CONTACTS ARE: DARREL CLEMONS 919-554-5270 BOBBY SHATTERLY 919-671-5699, 919-554-5271

2. CONTRACTOR REQUIRED TO CONTACT FRANKLIN COUNTY PUBLIC WORKS PRIOR TO STARTING CONSTRUCTION ON ROAD AND BRIDGE. USE EXTREME CAUTION WHILE CUTTING IN DITCH, INSTALLING STORM AND SCOUR HOLE AS WELL AS EXCAVATION AREA AROUND BRIDGE AS NOTED. A 72 HOUR NOTICE IS REQUIRED.



**SKETCH SHOWING BRIDGE PAVEMENT RELATIONSHIP**

**UTILITY OWNERS ON PROJECT**

CENTURYLINK - TELEPHONE AND FIBER OPTIC  
 FRANKLIN COUNTY PUBLIC WORKS - WATERLINE

**PLANS PREPARED BY :**



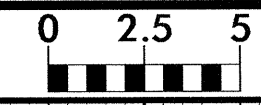
RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

# ***CROSS SECTION INDEX***

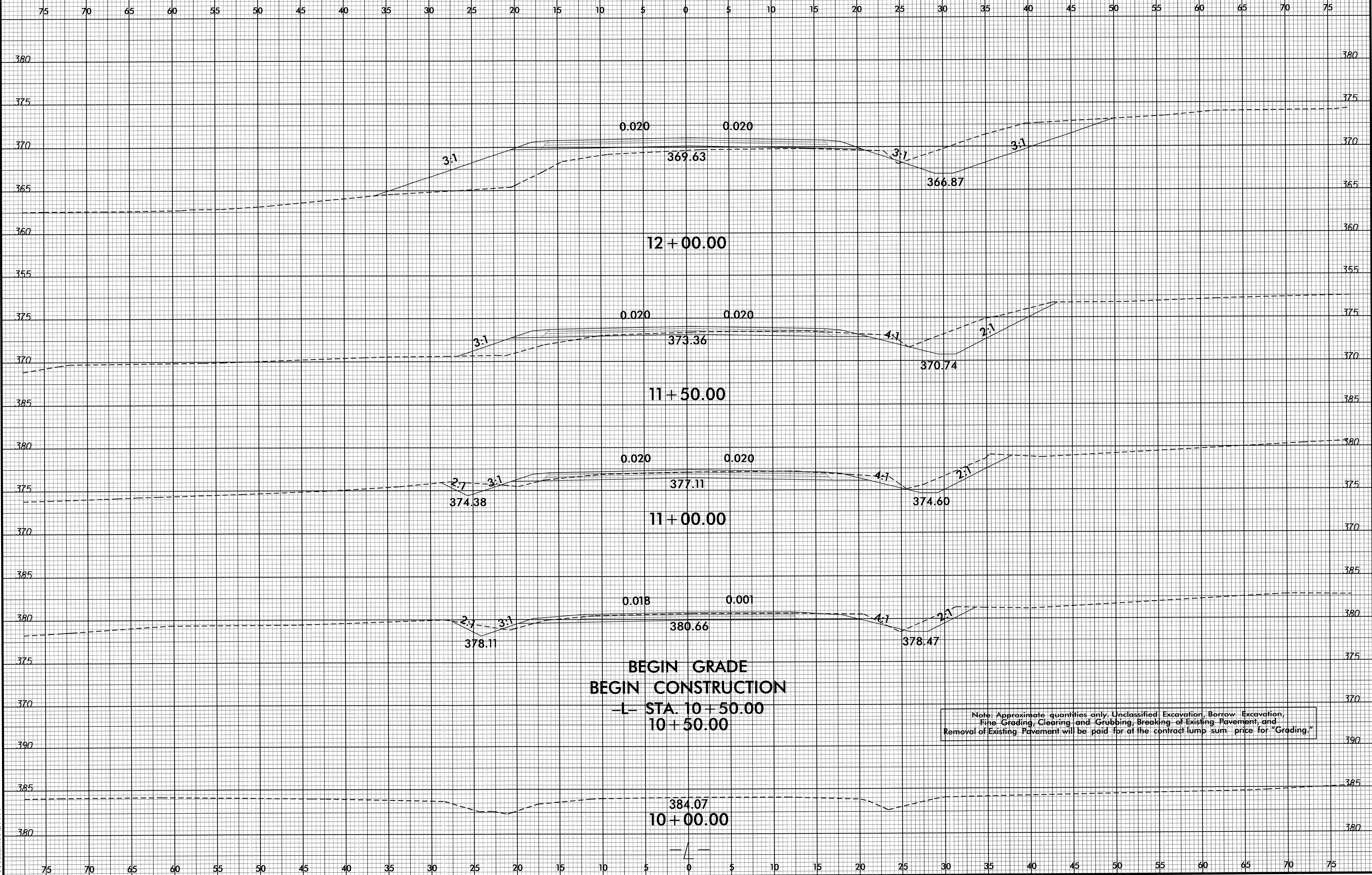
|                   | <b><i>X-SECTION EARTHWORK SUMMARY</i></b> | <b><i>X-B</i></b>       |
|-------------------|---|-------------------------|
| <b><i>-L-</i></b> | <b><i>10+00.00 TO 17+50.00</i></b>        | <b><i>X-1 - X-4</i></b> |



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|                     |           |
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| PROJ. REFERENCE NO. | SHEET NO. |
| B-4748              | X-1       |

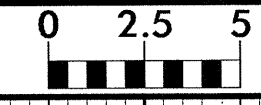


**BEGIN GRADE**  
**BEGIN CONSTRUCTION**  
 -L- STA. 10+50.00  
 10+50.00

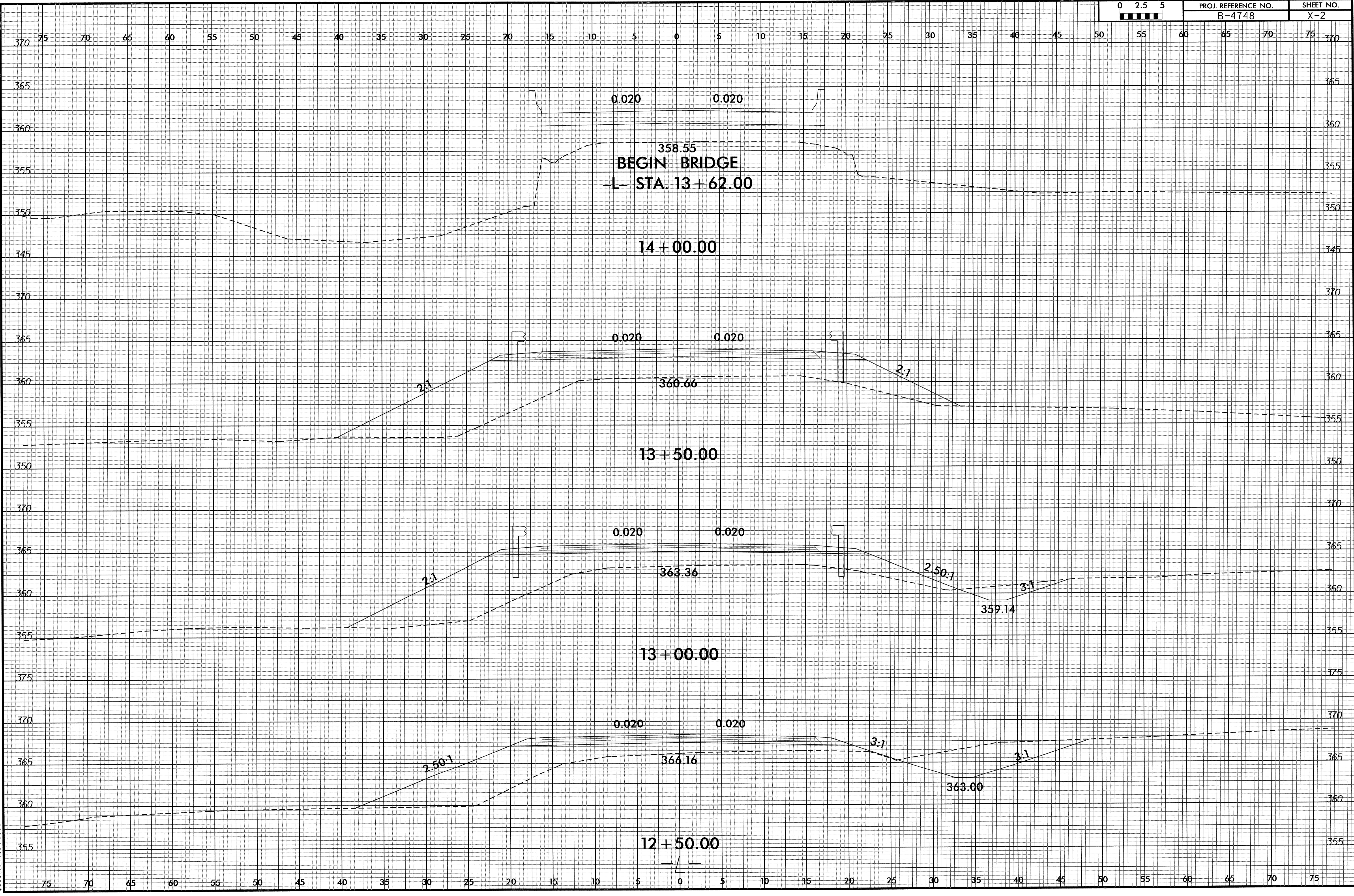
Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

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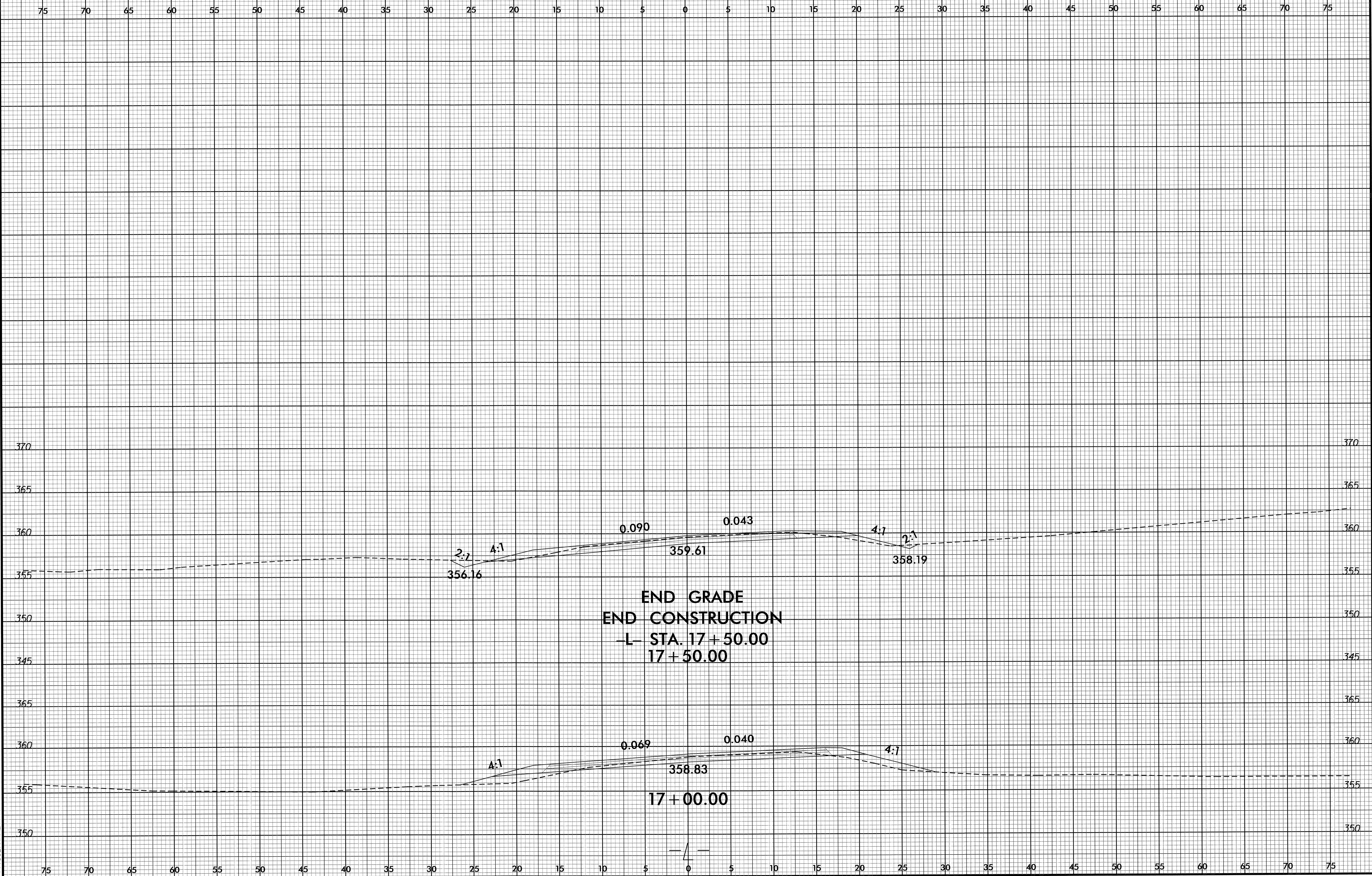
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| PROJ. REFERENCE NO. | SHEET NO. |
| B-4748              | X-2       |



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