

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|--------------|--------------|
| N.C. | B-4400 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 33680.1.1 | BRZ-1122(4) | PE | |
| 33680.2.1 | BRZ-1122(4) | RAW & UTIL | |
| 33680.3.FD1 | BRZ-1122(4) | CONSTRUCTION | |

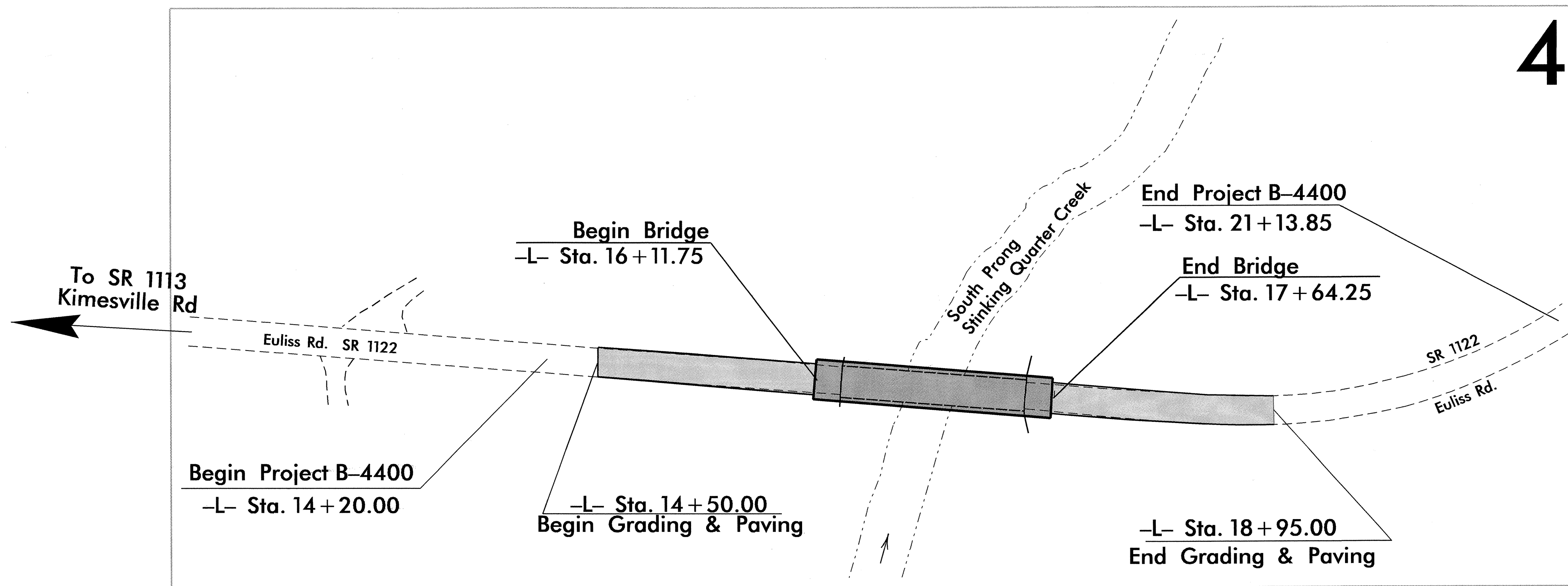
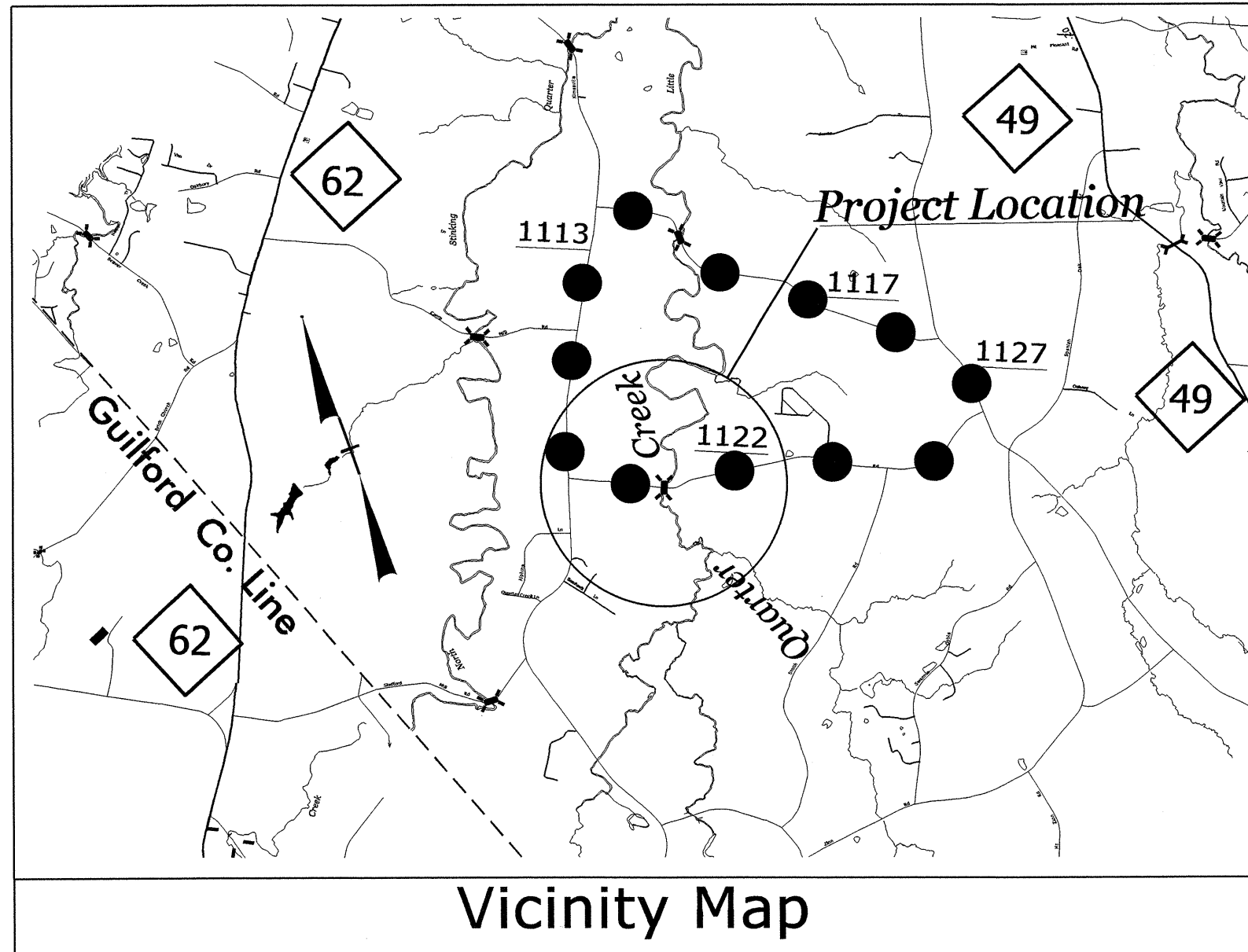
ALAMANCE COUNTY

LOCATION: Bridge #160 Over South Prong of Stinking Quarter Creek on SR 1122
(Euliss Road)

TYPE OF WORK: Grading, Drainage, Paving and Structure

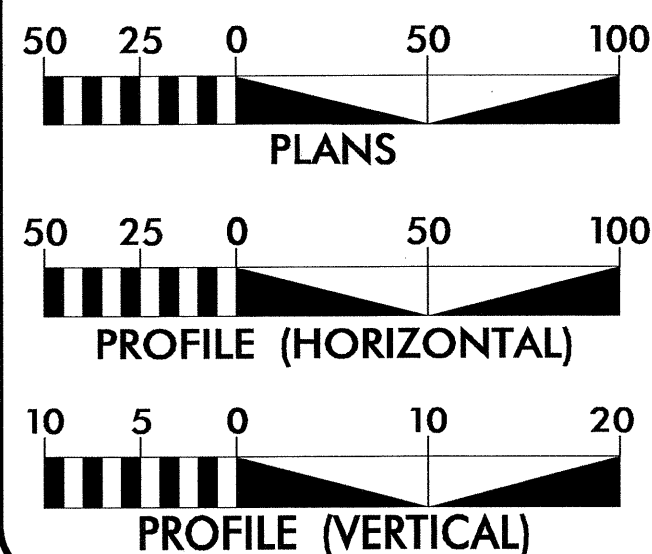
TIP PROJECT: B-4400

CONTRACT: C203292



*Design Exception Required for 35mph Design Speed

GRAPHIC SCALES



DESIGN DATA

ADT 2012 = 214 vpd
ADT 2035 = 400 vpd
DHV = 15 %
D = 55 %
T = 5 % *
*V = 35 MPH
* TTST 2% DUAL 3%
Sub Regional Tier

PROJECT LENGTH

Total Roadway TIP Project B-4400 = 0.102 Miles
Total Structure TIP Project B-4400 = 0.029 Miles
Total Length TIP Project B-4400 = 0.131 Miles

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
July 11, 2012

LETTING DATE:
January 21, 2014

James Speer, PE
PROJECT ENGINEER

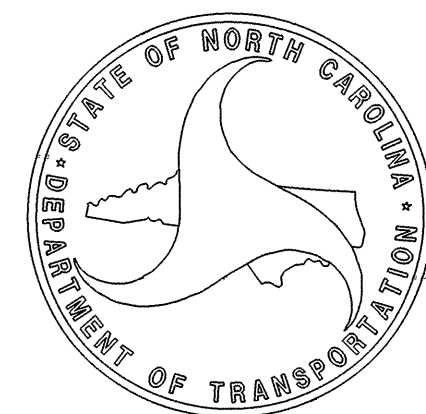
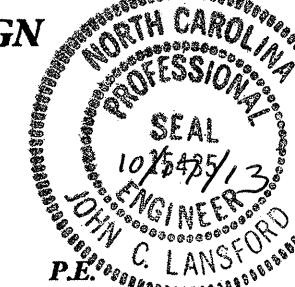
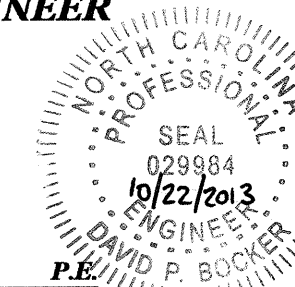
John Lansford, PE
PROJECT DESIGN ENGINEER

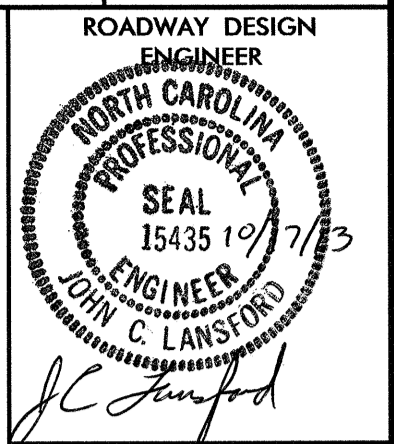
HYDRAULICS ENGINEER

David P. Beh
SIGNATURE:

ROADWAY DESIGN ENGINEER

J.C. Lansford
SIGNATURE:





8/17/09

| SHEET NUMBER | INDEX OF SHEETS SHEET |
|--------------------|---|
| 1 | TITLE SHEET |
| 1-A | INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS |
| 1-B | CONVENTIONAL SYMBOLS |
| 1-C | SURVEY CONTROL SHEET |
| 2 | PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS |
| 2-A | DETAIL OF STRUCTURE ANCHOR UNIT TYPE III |
| 3 | SUMMARY OF QUANTITIES |
| 3A | SUMMARY OF EARTHWORK, SHOULDER BERM SUMMARY, PAVEMENT REMOVAL SUMMARY, SUBREGIONAL AND REGIONAL LIST OF PIPES, ETC. (48" & UNDER) AND GUARDRAIL SUMMARY |
| 4 | PLAN SHEET |
| 5 | PROFILE SHEET |
| TMP-1 THRU TMP-2 | TRAFFIC MANAGEMENT PLANS |
| SIGN-1 THRU SIGN-2 | SIGNING PLANS |
| PMP-1 | PAVEMENT MARKING PLAN |
| EC-1 THRU EC-5 | HIGHWAY EROSION CONTROL PLANS |
| RF-1 | REFORESTATION DETAIL SHEET |
| SD-1 | WORK ZONE SIGNS |
| UD-1 THRU UD-2 | UTILITIES BY OTHERS PLANS |
| X-1 | CROSS-SECTION SHEET SUMMARY |
| X-2 THRU X-5 | CROSS-SECTIONS |
| S-1 THRU S-24 | 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 II.

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

SHOULDER CONSTRUCTION:
ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. 560.01

GUARDRAIL:
THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

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

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:
DUKE ENERGY & AT&T
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.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

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

| STD. NO. | TITLE |
|--|---|
| DIVISION 2 - EARTHWORK | |
| 200.02 | Method of Clearing - Method II |
| 225.02 | Guide for Grading Subgrade - Secondary and Local |
| 225.04 | Method of Obtaining Superlevation - Two Lane Pavement |
| DIVISION 3 - PIPE CULVERTS | |
| 300.01 | Method of Pipe Installation |
| DIVISION 4 - MAJOR STRUCTURES | |
| 422.11 | Reinforced Bridge Approach Fills - Sub Regional Tier |
| 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 |
| 840.66 | Drainage Structure Steps |
| 846.01 | Concrete Curb, Gutter and Curb & Gutter |
| 846.04 | Drop Inlet Installation in Shoulder Berm Gutter |
| 862.01 | Guardrail Placement |
| 862.02 | Guardrail Installation |
| 876.01 | Rip Rap in Channels |
| 876.02 | Guide for Rip Rap at Pipe Outlets |
| 876.04 | Drainage Ditches with Class 'B' Rip Rap |

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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 | ○ EP |
| Property Corner | ----- |
| Property Monument | □ ECM |
| Parcel/Sequence Number | ⑫ |
| 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 | ○ S |
| 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 | ○ MILEPOST 35 |
| Switch | □ SWITCH |
| RR Abandoned | ----- |
| RR Dismantled | ----- |

RIGHT OF WAY:

| | |
|--|-----------|
| Baseline Control Point | ◇ |
| Existing Right of Way Marker | △ |
| Existing Right of Way Line | ----- |
| Proposed Right of Way Line | ----- |
| Proposed Right of Way Line with Iron Pin and Cap Marker | ----- |
| Proposed Right of Way Line with Concrete or Granite R/W Marker | ----- |
| Proposed Control of Access Line with Concrete CA Marker | ----- |
| Existing Control of Access | ----- |
| Proposed Control of Access | ----- |
| Existing Easement Line | ----- |
| Proposed Temporary Construction Easement | ----- |
| 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 | ----- 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. |

12/01/2005

B-4400 SURVEY CONTROL SHEET

| | |
|-----------------------|-----------|
| PROJECT REFERENCE NO. | SHEET NO. |
| B-4400 | 1C |
| Location and Surveys | |

FINAL NEW R/W MONUMENTS

| ALIGN | STATION | OFFSET | NORTH | EAST |
|-------|----------|--------|-------------|--------------|
| L | 14+50.00 | -30.24 | 811341.5797 | 1848636.8218 |
| L | 14+50.00 | 29.65 | 811300.4507 | 1848593.2882 |
| L | 18+62.70 | -30.47 | 811041.7475 | 1848920.4096 |
| L | 18+62.70 | 29.53 | 811000.5420 | 1848876.7950 |
| L | 21+13.85 | -29.01 | 810934.8255 | 1849121.0234 |
| L | 21+13.85 | 30.99 | 810875.5255 | 1849111.8781 |

NEW PERMANENT AERIAL UTILITY EASEMENT

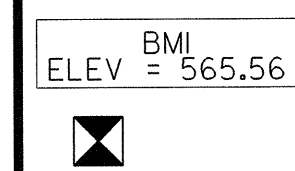
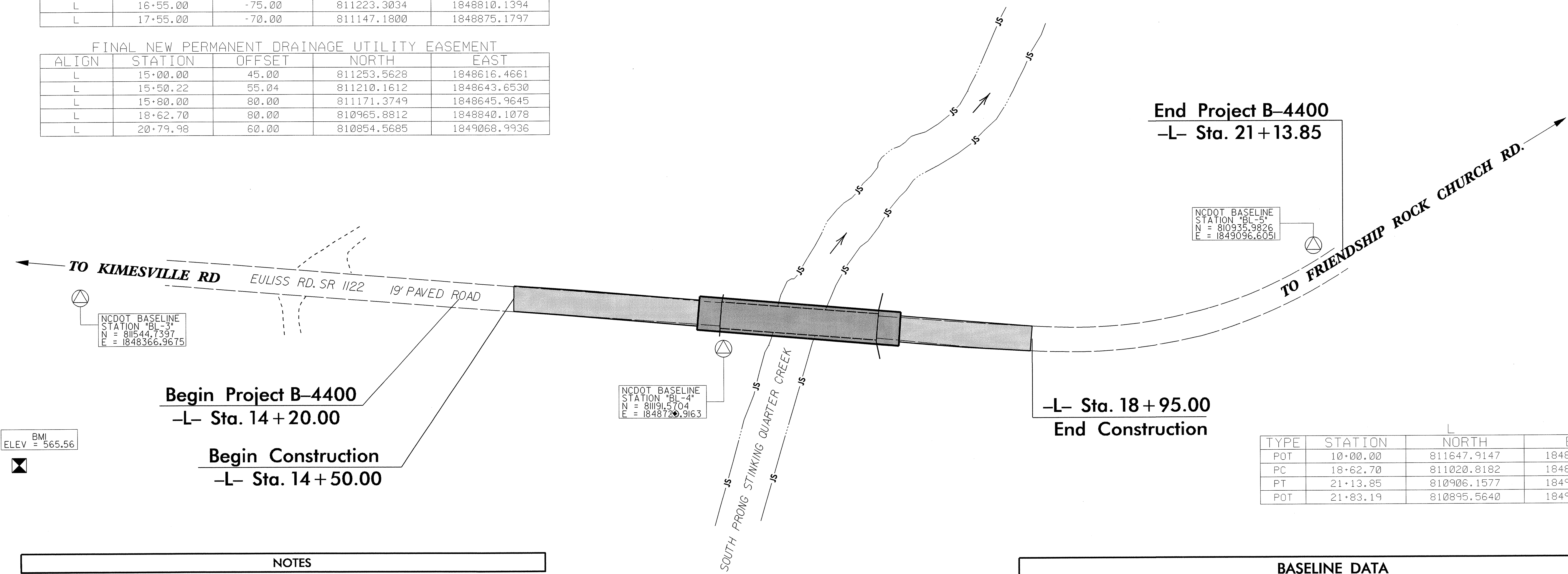
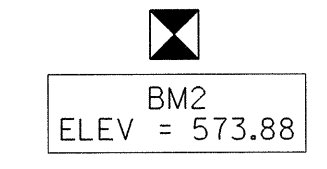
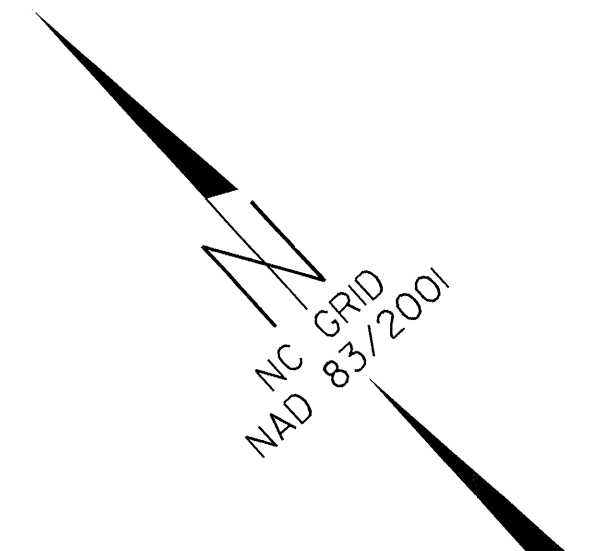
| ALIGN | STATION | OFFSET | NORTH | EAST |
|-------|----------|--------|-------------|--------------|
| L | 14+20.00 | -30.23 | 811363.3756 | 1848616.2077 |
| L | 14+20.00 | -83.23 | 811399.7731 | 1848654.7332 |
| L | 14+50.00 | -83.24 | 811377.9773 | 1848675.3473 |

FINAL NEW PERMANENT DRAINAGE EASEMENT

| ALIGN | STATION | OFFSET | NORTH | EAST |
|-------|----------|--------|-------------|--------------|
| L | 16+55.00 | -75.00 | 811223.3034 | 1848810.1394 |
| L | 17+55.00 | -70.00 | 811147.1800 | 1848875.1797 |

FINAL NEW PERMANENT DRAINAGE UTILITY EASEMENT

| ALIGN | STATION | OFFSET | NORTH | EAST |
|-------|----------|--------|-------------|--------------|
| L | 15+00.00 | 45.00 | 811253.5628 | 1848616.4661 |
| L | 15+50.22 | 55.04 | 811210.1612 | 1848643.6530 |
| L | 15+80.00 | 80.00 | 811171.3749 | 1848645.9645 |
| L | 18+62.70 | 80.00 | 810965.8812 | 1848840.1078 |
| L | 20+79.98 | 60.00 | 810854.5685 | 1849068.9936 |



| TYPE | STATION | NORTH | EAST |
|------|----------|-------------|--------------|
| POT | 10+00.00 | 811647.9147 | 1848305.8030 |
| PC | 18+62.70 | 811020.8182 | 1848898.2621 |
| PT | 21+13.85 | 810906.1577 | 1849116.5917 |
| POT | 21+83.19 | 810895.5640 | 1849185.1213 |

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:
B4400_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 FROM EXISTING NCGS MONUMENTATION.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4400-1" WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF NORTHING: 810,793.454(±) EASTING: 1,849,442.472(±) ELEVATION: 586.45'(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999292518

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4400-1" TO -L- 14+20.00 IS N 57° 04' 49" 1010.49'

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

BASELINE DATA

| BL | POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|----|-------|---------|-------------|--------------|-----------|-----------|------------------------|
| 3 | | BL-3 | 811544.7397 | 1848366.9675 | 563.81 | 11+17.00 | 26.39 RT |
| 4 | | BL-4 | 811191.5704 | 1848720.9163 | 541.98 | 16+16.79 | 11.65 RT |
| 5 | | BL-5 | 810935.9826 | 1849096.6051 | 559.60 | 20+87.77 | 25.59 LT |
| 1 | | B4400-1 | 810793.4540 | 1849442.4720 | 586.45 | | OUTSIDE PROJECT LIMITS |
| 2 | | B4400-2 | 810479.0540 | 1849997.8630 | 610.10 | | OUTSIDE PROJECT LIMITS |

BENCHMARK DATA

| | | | |
|-------------------------------------|--------------------|----------------------------------|--------------------|
| B1 | ELEVATION = 565.56 | B2 | ELEVATION = 573.88 |
| N 811460 | E 1848226 | N 811144 | E 1849384 |
| L STATION 10+82.04 187 RIGHT | | L STATION 21+83.00 | |
| R/R SPIKE IN BASE OF 28 INCH POPLAR | | N 38°36'25.72" E DIST 318.01 | |
| | | R/R SPIKE IN BASE OF 36 INCH OAK | |

NOTE: DRAWING NOT TO SCALE

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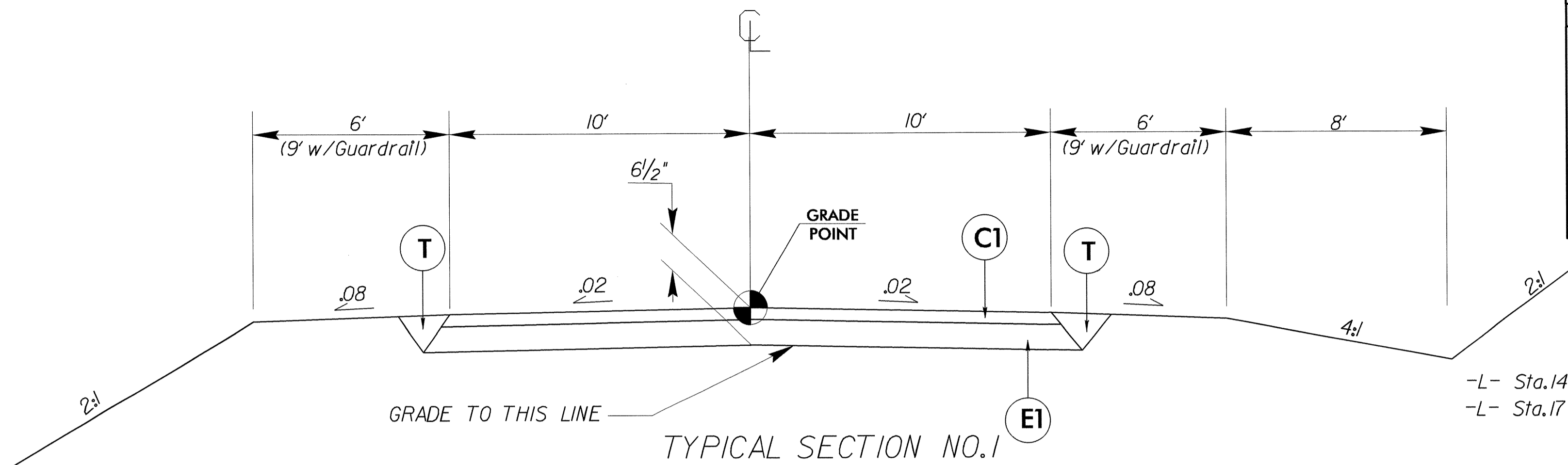
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| | |
|---------------------------------|-----------------------|
| PROJECT REFERENCE NO. B-4400 | SHEET NO. 2 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | PAVEMENT ENGINEER |

PAVEMENT SCHEDULE

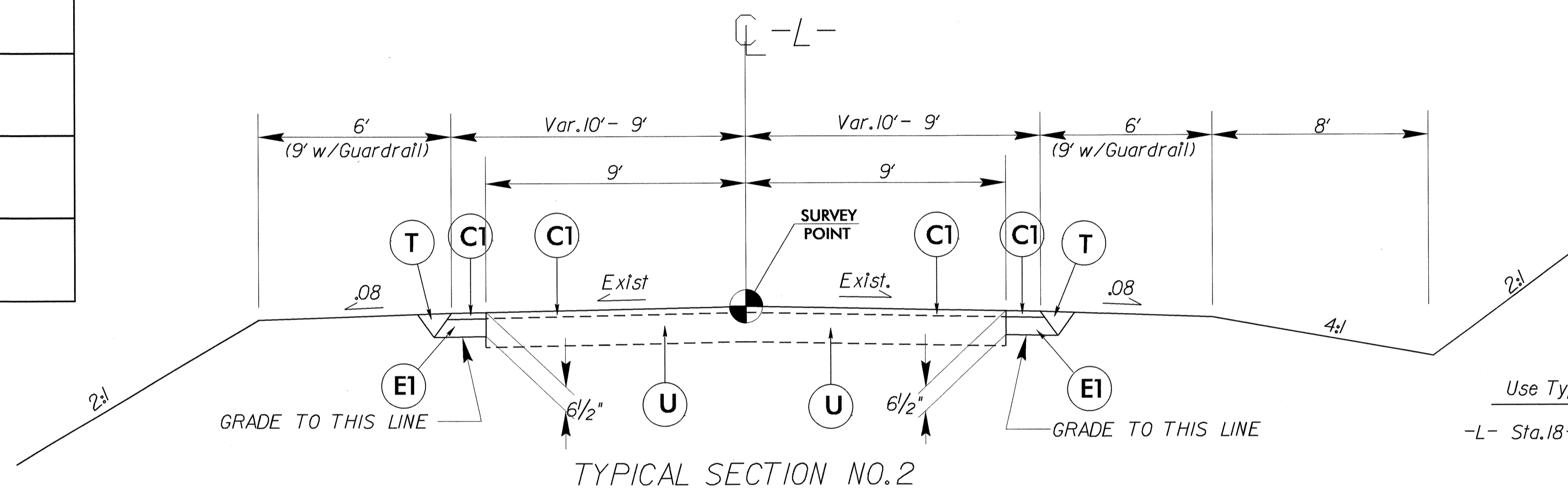
| | |
|----|---|
| C1 | PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS |
| C2 | PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH. |
| E1 | PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. |
| E2 | PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH. |
| R | SHOULDER BERM GUTTER |
| R1 | SHOULDER BERM CURB |
| T | EARTH MATERIAL |
| U | EXISTING PAVEMENT |
| W | ASPHALT WEDGING (SEE DETAIL) |

NOTE: All Slopes are 1:1 Unless Otherwise Shown



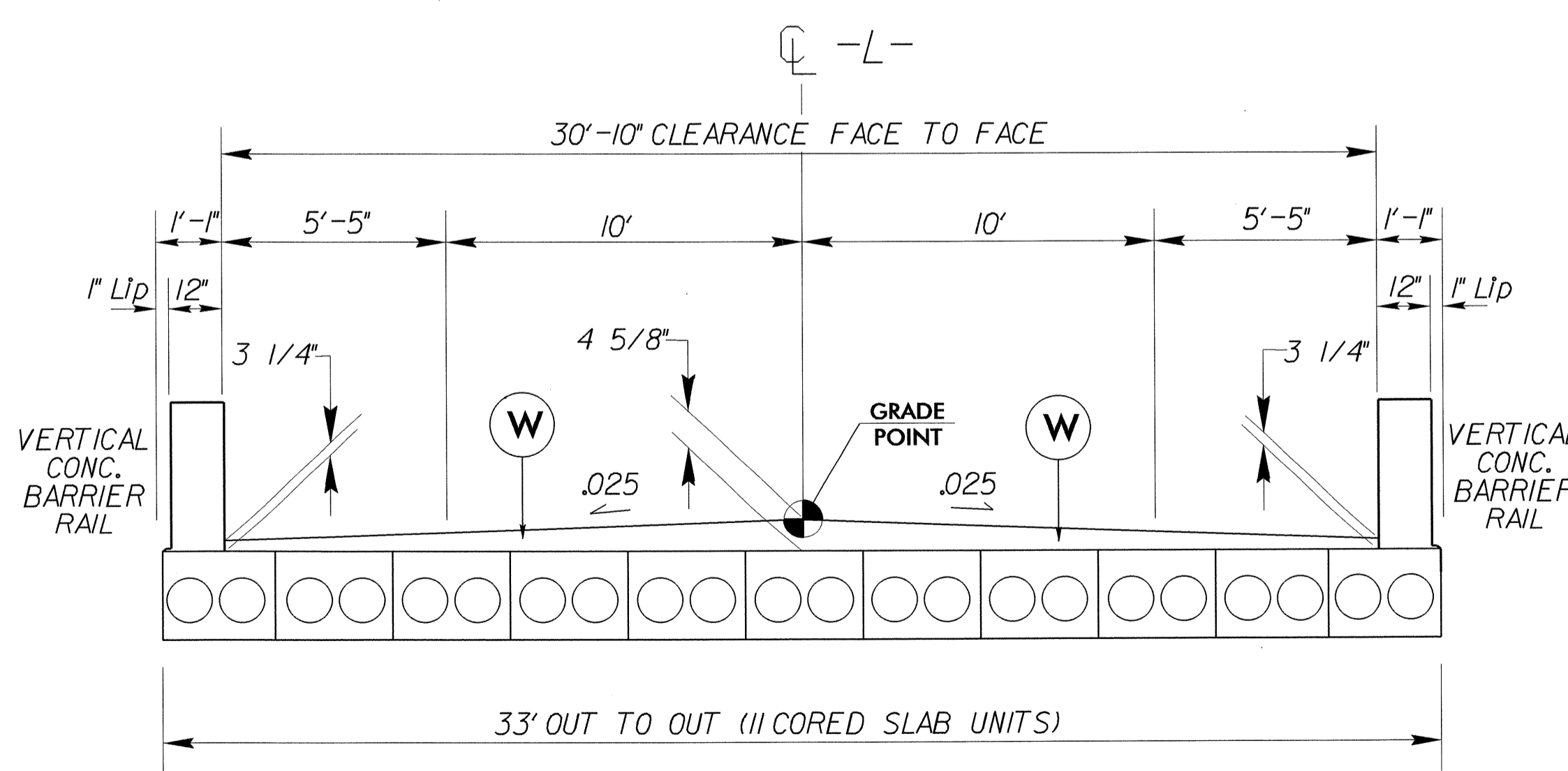
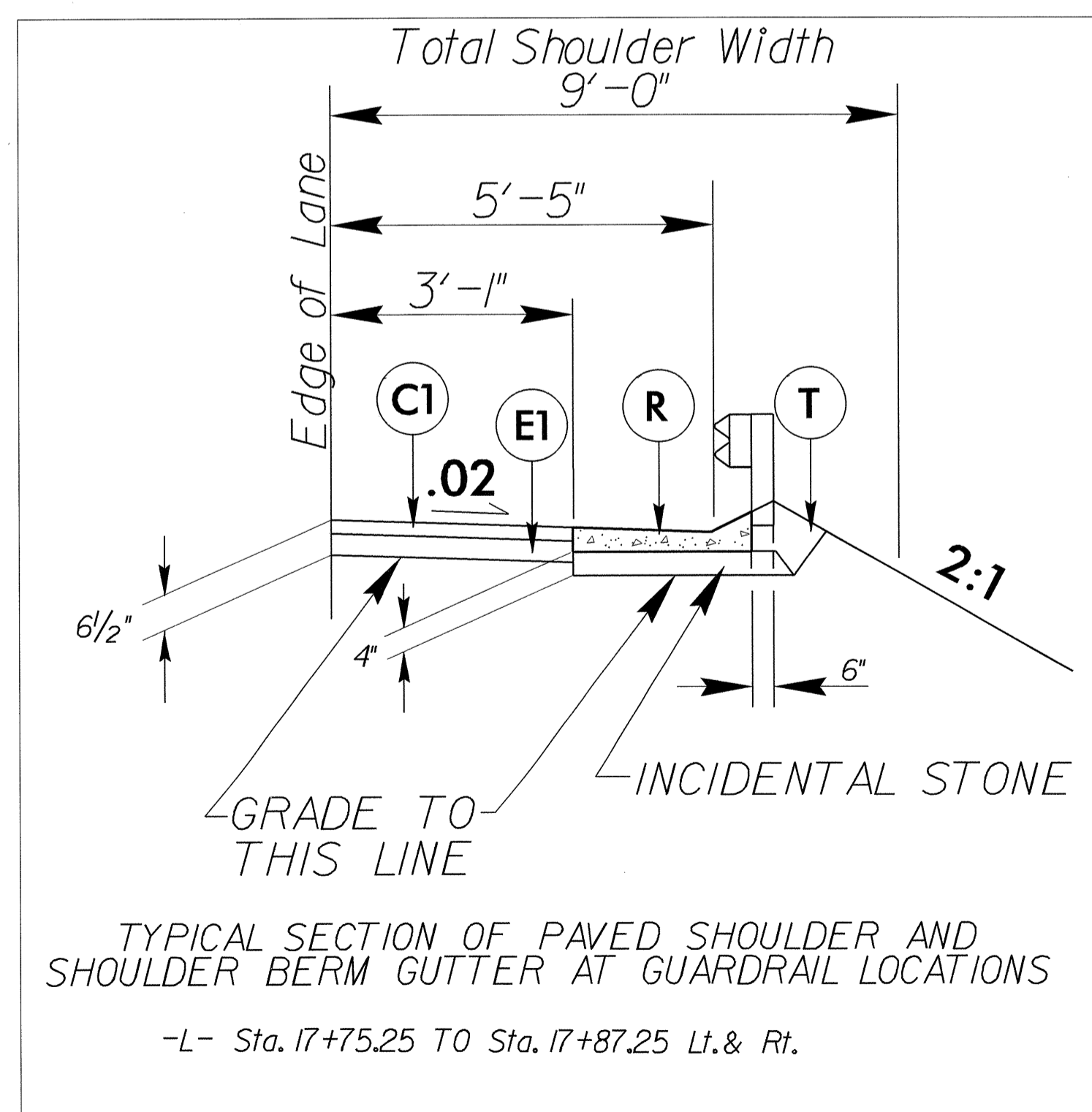
Use Typical Section No. 1

-L- Sta. 14+50.00 to 16+11.75 (Begin Bridge)
-L- Sta. 17+64.25 (End Bridge) to Sta. 18+10.00



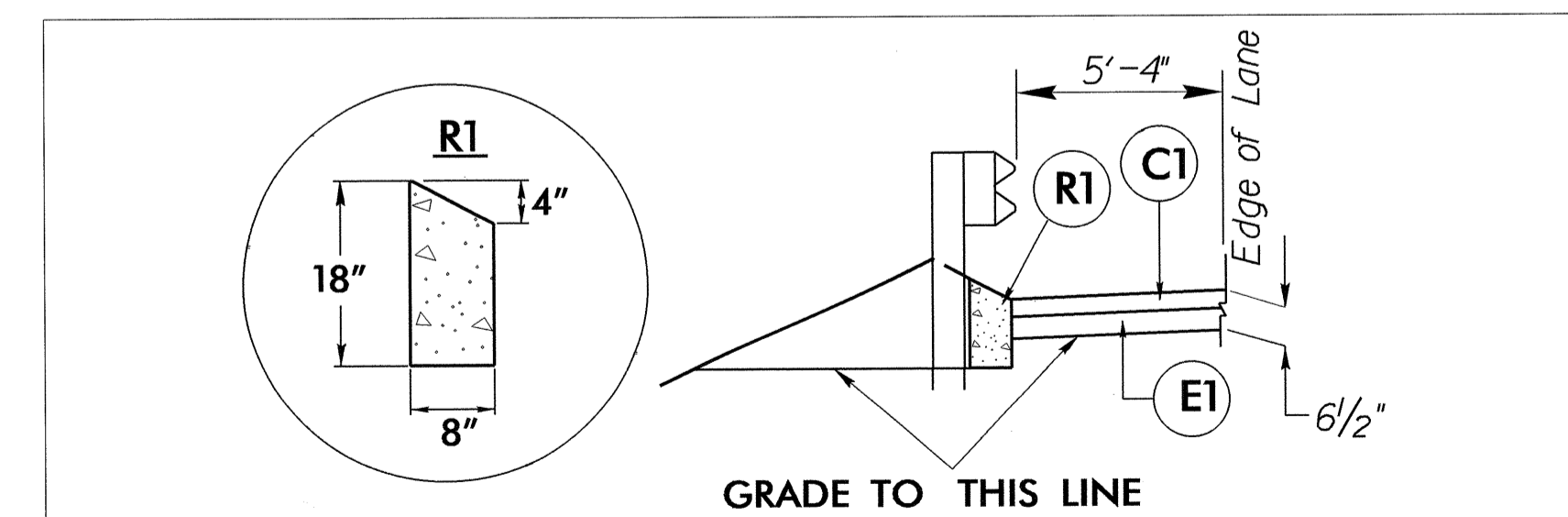
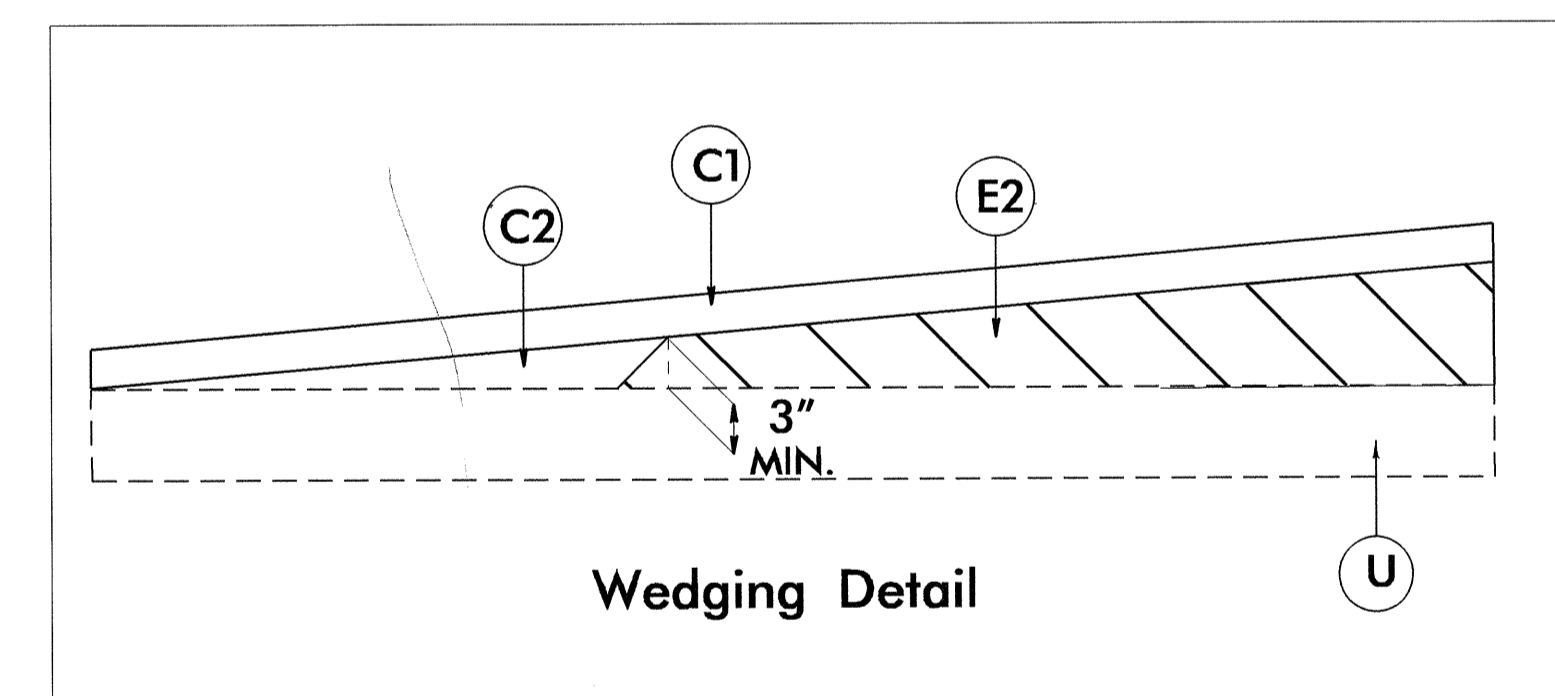
Use Typical Section No. 2

-L- Sta. 18+10.00 to 18+95.00



TYPICAL SECTION OF PROPOSED BRIDGE
(SEE STRUCTURE PLANS)

-L- Sta. 16+11.75 TO -L- Sta. 17+64.25

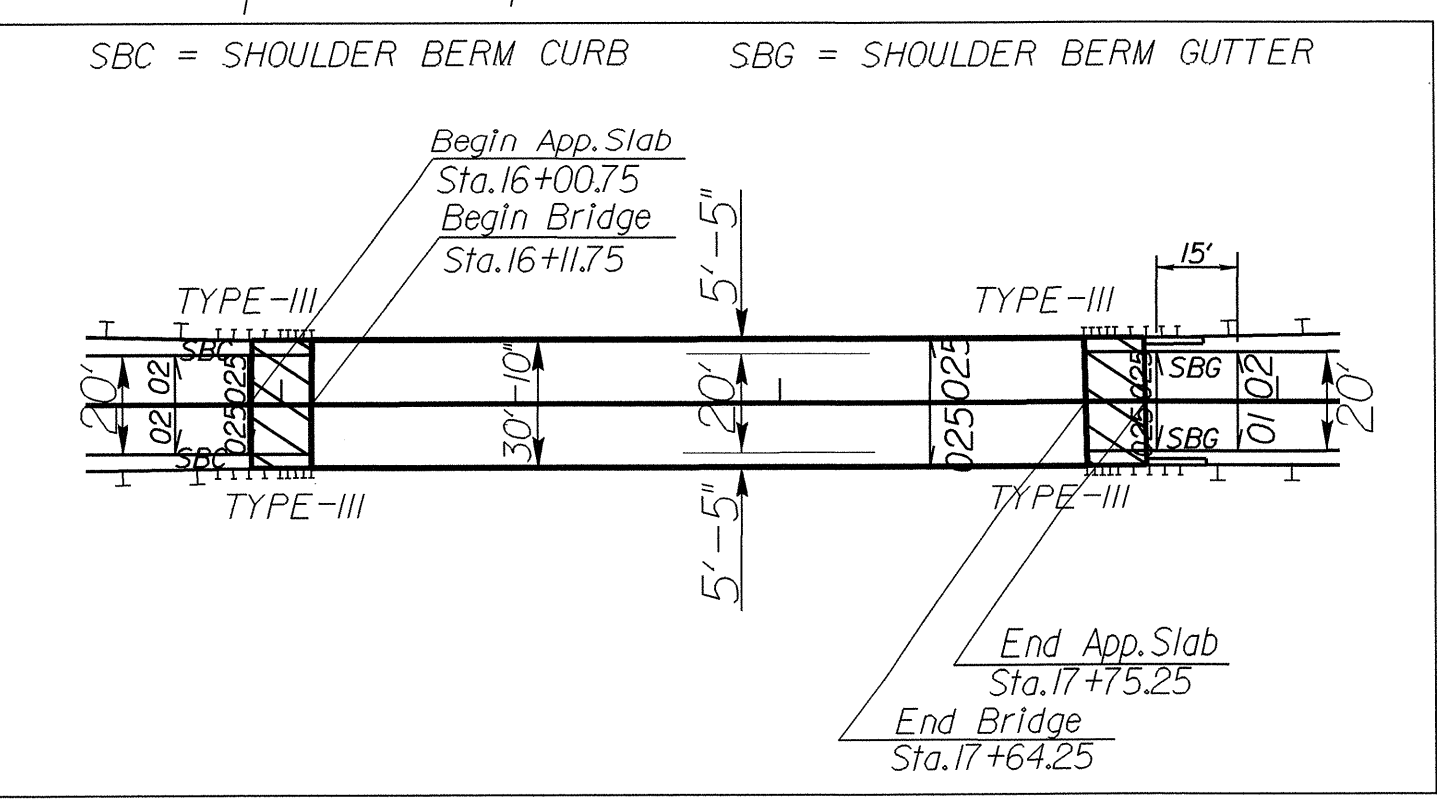
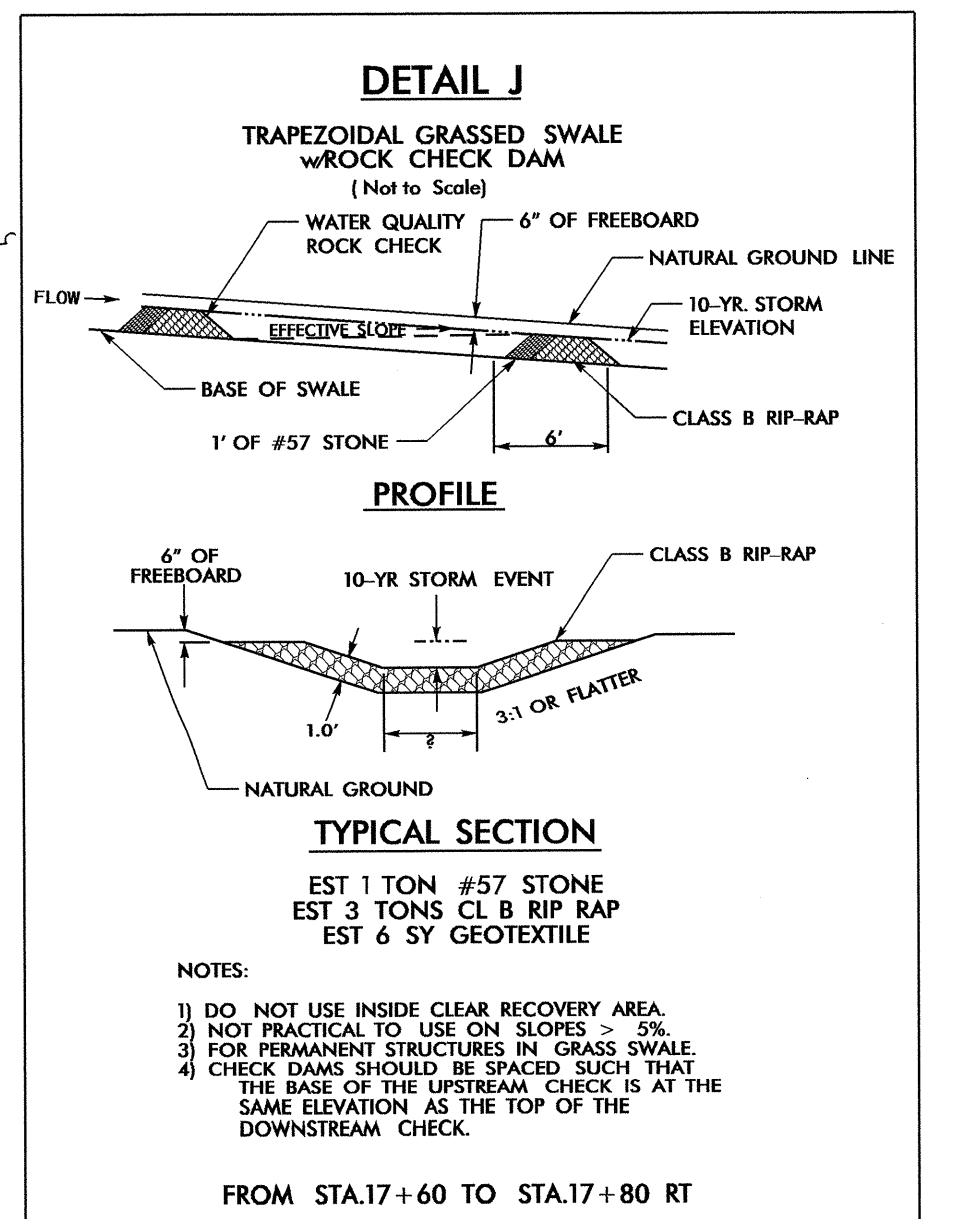
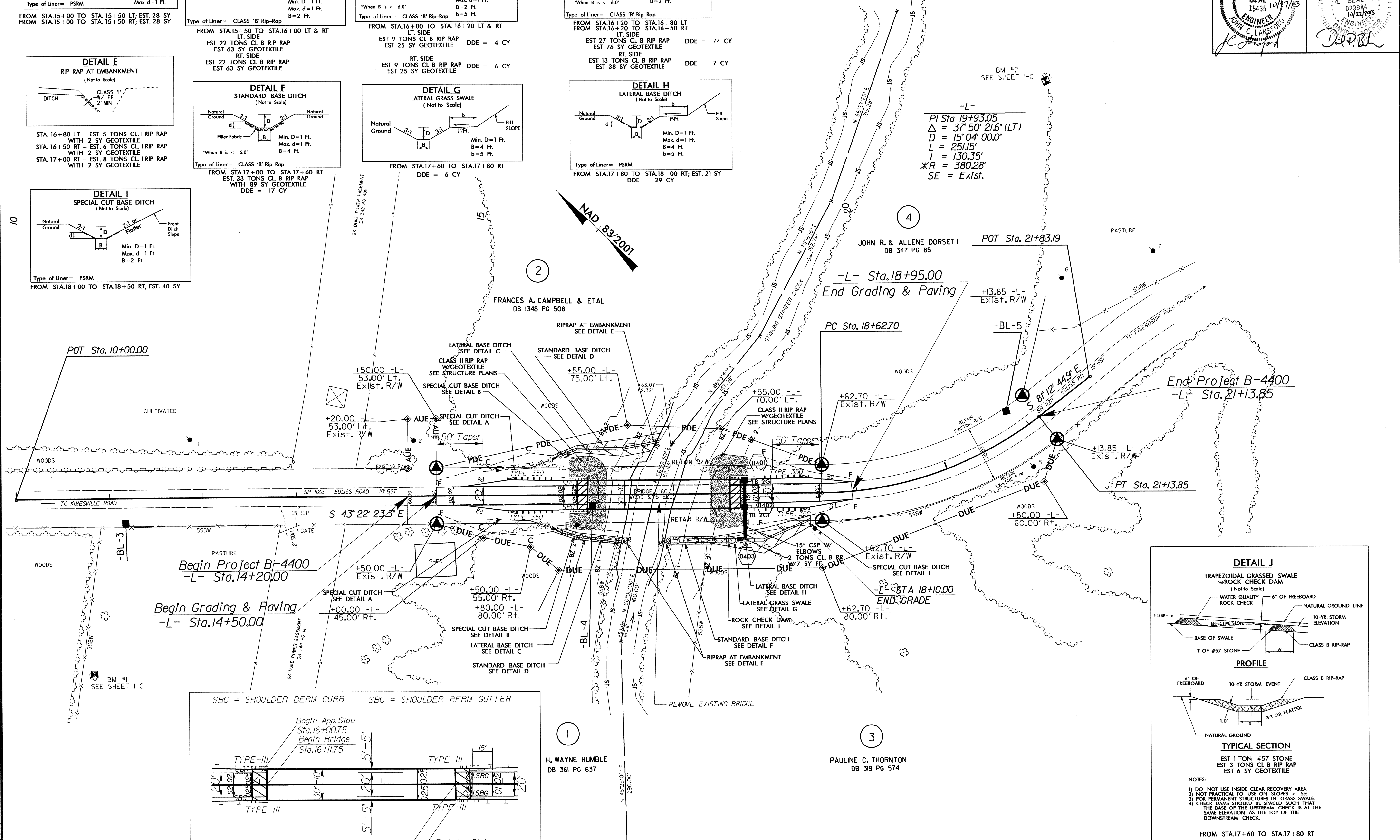
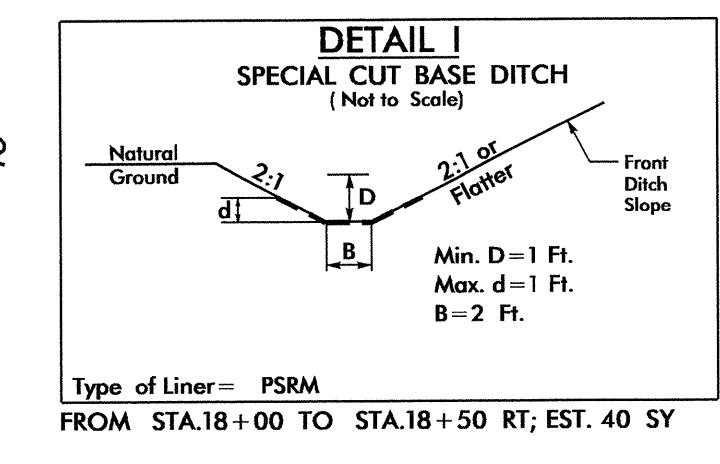
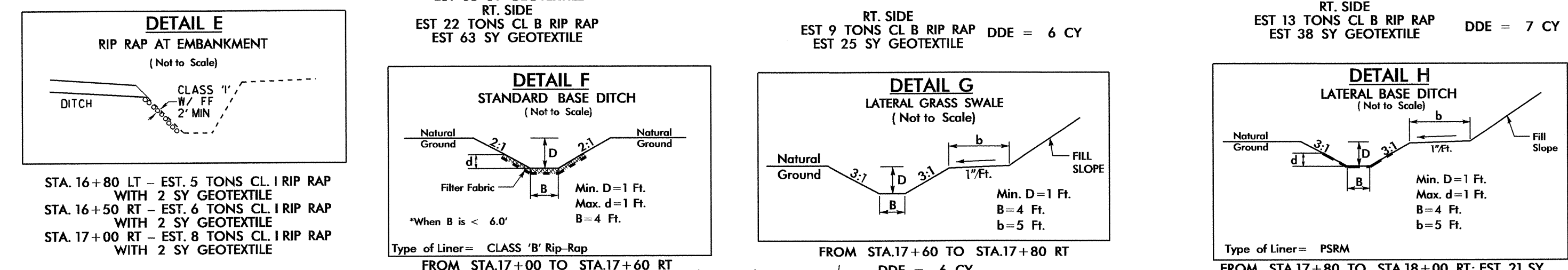
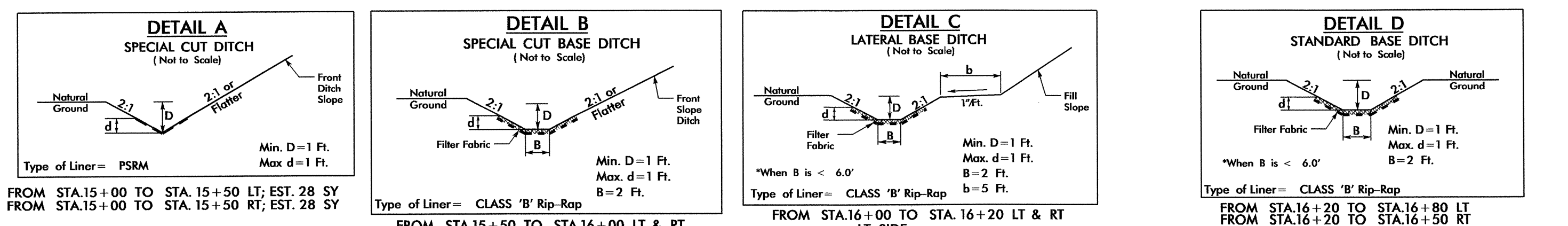


DETAIL SHOWING SPECIAL SHOULDER BERM CURB (SBC)
-L- STA. 15+92.75 TO STA. 16+00.75 (BEGIN APPROACH SLAB) (LT & RT)

10-OCT-2015 13:30
R:\V\05-15\B-4400_r.dwg_tup.dgn

RW SHEET NO. ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL 15435
 JOHN C. LANSDOWN
 NORTH CAROLINA PROFESSIONAL SEAL 029984
 10/22/2003
 DANIEL P. BLANK

*NOTE: DESIGN EXCEPTION REQUIRED FOR 35 MPH DESIGN SPEED



NOTES:
 1) DO NOT USE INSIDE CLEAR RECOVERY AREA.
 2) NOT PRACTICAL TO USE ON SLOPES > 3%
 3) FOR PERMANENT STRUCTURES IN GRASS SWALE
 4) CHECK DAMS SHOULD BE SPACED SUCH THAT THE BASE OF THE UPSTREAM CHECK IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM CHECK.
 FROM STA.17+60 TO STA.17+80 RT

11-OCT-2013 08:21 P:\Projects\B4400\rdw\psh4.dgn

5/14/99

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE = 5900 CFS
 DESIGN FREQUENCY = 25 YRS
 DESIGN HW ELEVATION = 538.7 FT
 BASE DISCHARGE = 7500 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 540.7 FT
 OVERTOPPING DISCHARGE = 11,000 CFS
 OVERTOPPING FREQUENCY = > 100 YRS
 OVERTOPPING ELEVATION = 543.4 FT

DATE OF SURVEY = 9-19-11
 W.S. ELEVATION AT DATE OF SURVEY = 522.4 FT

-L-

BM2 ELEVATION = 573.88'
 N 81144 E 1849384
 -L- STA. 21+83 (318' LT)
 R/R SPIKE IN BASE OF 36 INCH OAK

BMI ELEVATION = 565.56'
 N 811460 E 1848226
 -L- STATION 10+82.187 RT
 R/R SPIKE IN BASE OF 28 INCH POPLAR

DITCH LEGEND

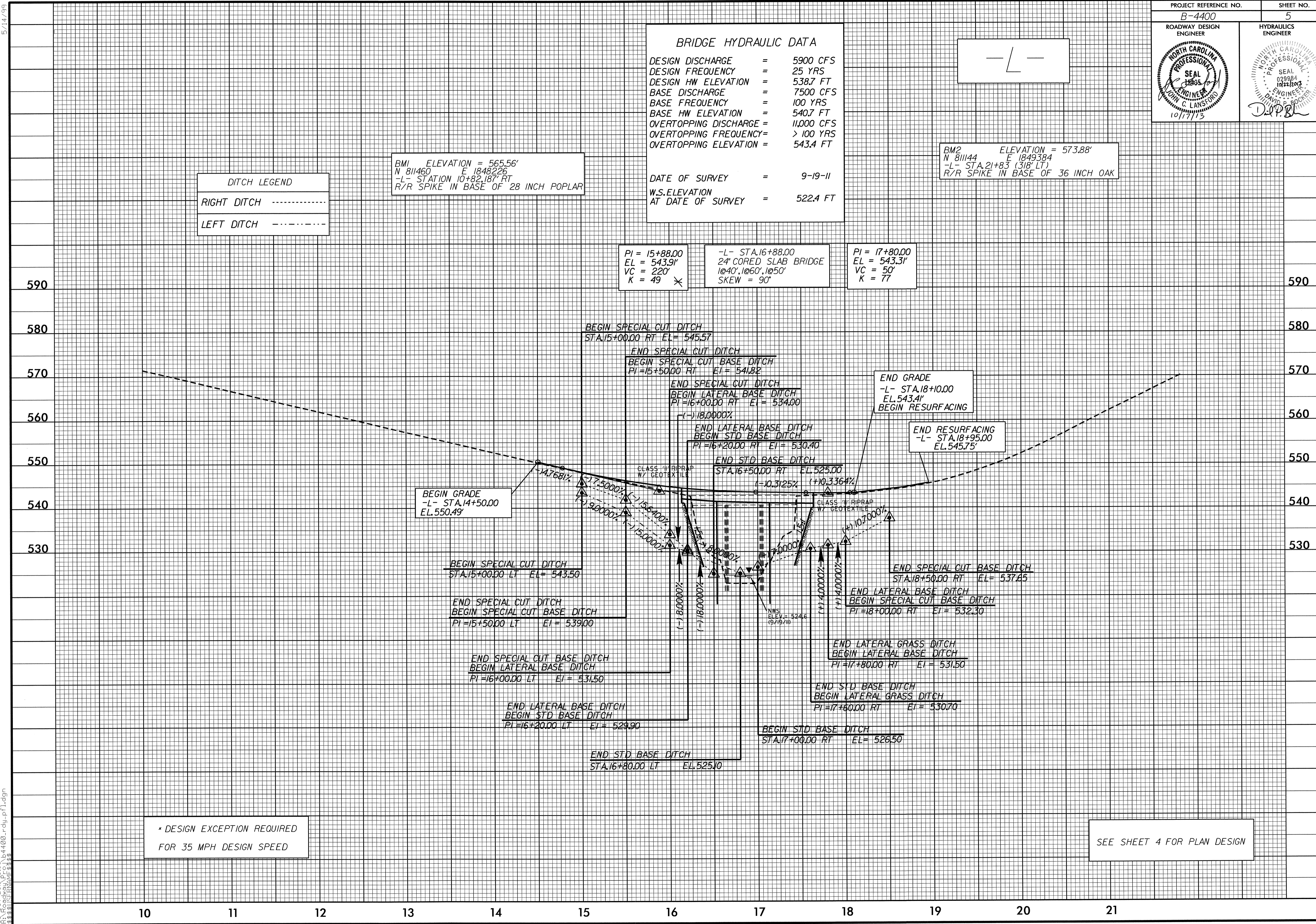
RIGHT DITCH - - - - -

LEFT DITCH - - - - -

PI = 15+88.00
 EL = 543.91'
 VC = 220'
 K = 49 ✕

-L- STA. 16+88.00
 24" CORED SLAB BRIDGE
 1@40', 1@60', 1@50'
 SKEW = 90°

PI = 17+80.00
 EL = 543.31'
 VC = 50'
 K = 77



BEGIN GRADE
 -L- STA. 14+50.00
 EL. 550.49'

END GRADE
 -L- STA. 18+10.00
 EL. 543.41'
 BEGIN RESURFACING

END RESURFACING
 -L- STA. 18+95.00
 EL. 545.75'

* DESIGN EXCEPTION REQUIRED
 FOR 35 MPH DESIGN SPEED

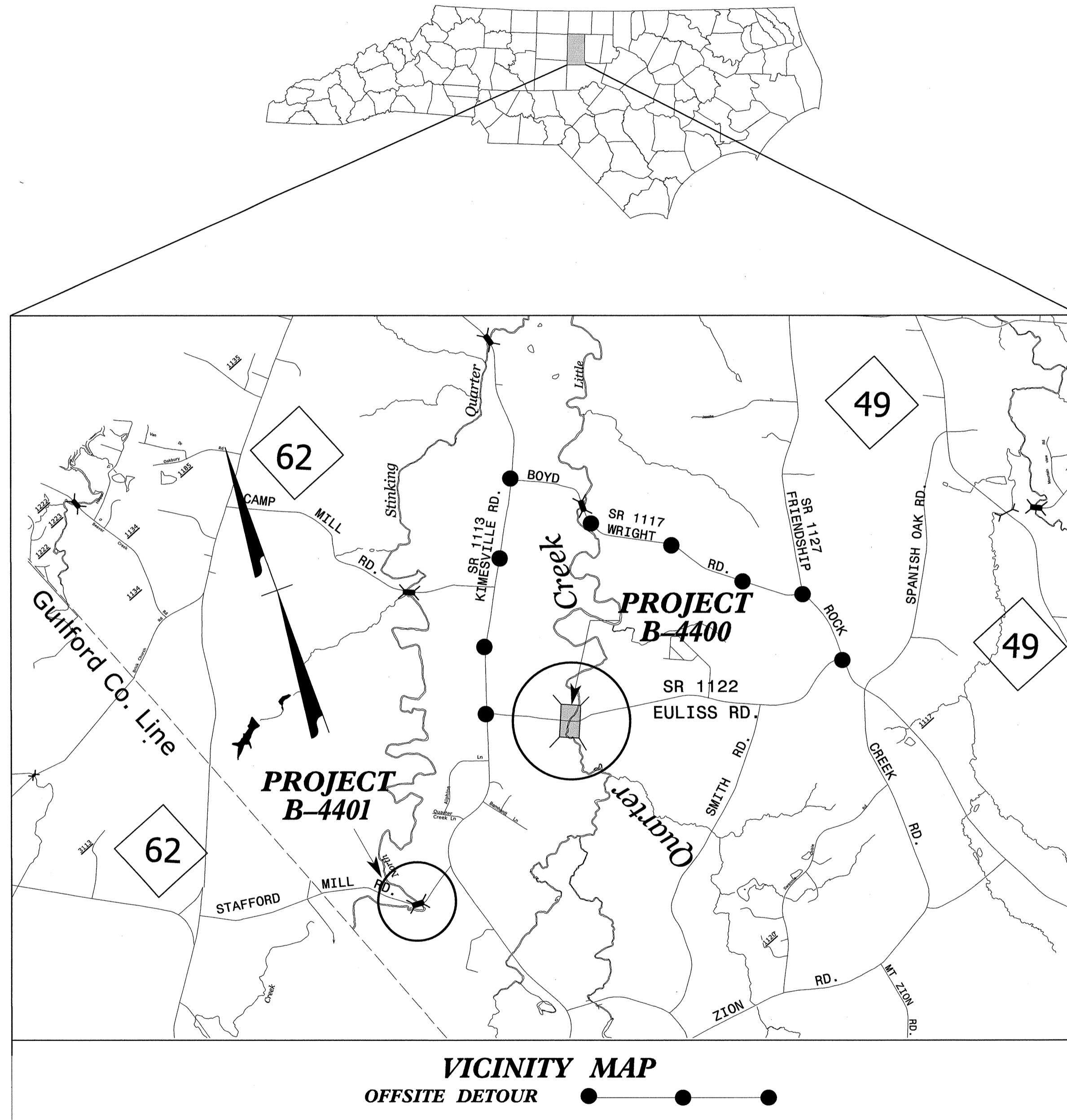
SEE SHEET 4 FOR PLAN DESIGN

03-001-2013_1555_b-4400_r.dwg.plt.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

ALAMANCE COUNTY



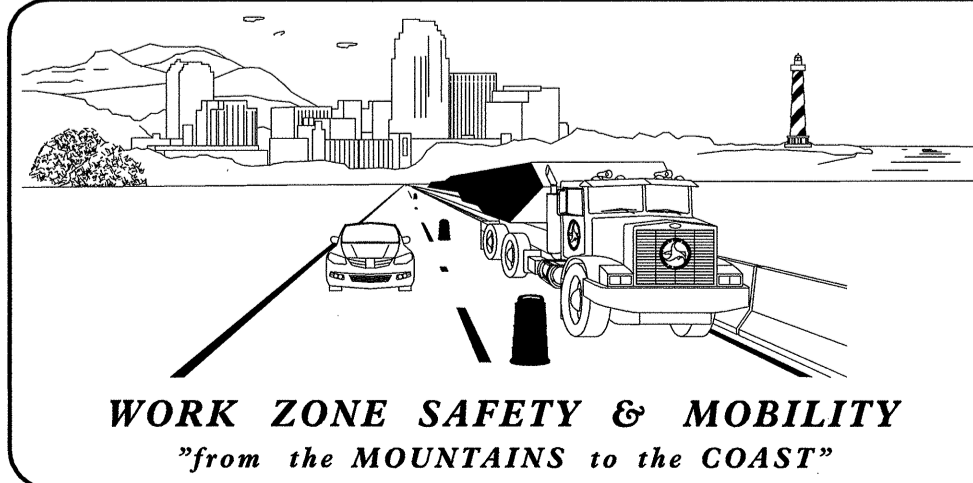
| SHEET NO. | TITLE |
|-----------|--|
| TMP-1 | TITLE SHEET, AND INDEX OF SHEETS |
| TMP-1A | LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND |
| TMP-1B | TRANSPORTATION OPERATIONS PLAN: MANAGEMENT STRATEGIES, GENERAL NOTES AND PHASING |
| TMP-2 | OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT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

SHEET NO.
TMP-1

B-4400

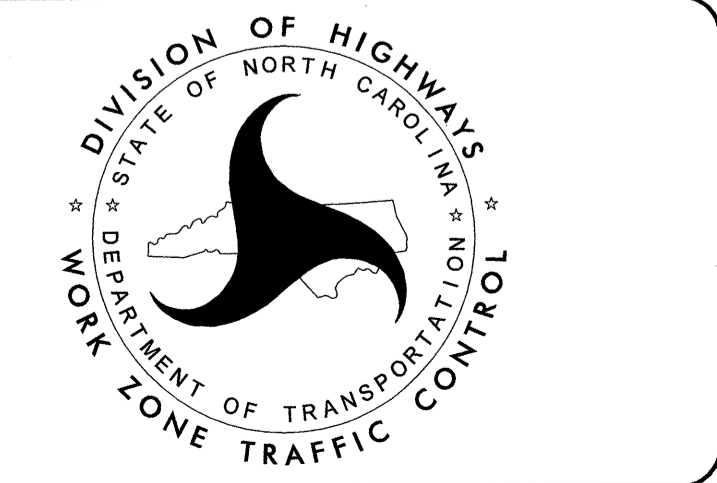
TIP PROJECT:

7/31/2013
P:\TipProjects\B-4400\TrafficControl\TCP\B-4400.TC.TMP.dgn
User:gmaze



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

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



APPROVED: *Ben Schoenbauer*
DATE: 7/31/13

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 |
|----------|-------------------------------|
| 1101.03 | TEMPORARY ROAD CLOSURES |
| 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.
- WORK AREA
- REMOVAL

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

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

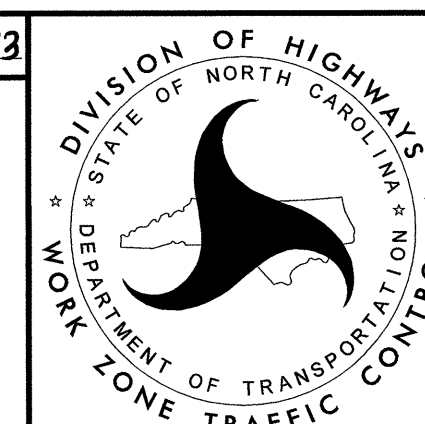
TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

APPROVED: *ben schubert* DATE: 7/31/13



ROADWAY STANDARD
DRAWINGS & LEGEND

MANAGEMENT STRATEGIES

- DURING CONSTRUCTION OF PROPOSED STRUCTURE # 160, SR 1122 (EULISS RD.) WILL BE CLOSED TO THROUGH TRAFFIC. EULISS RD. TRAFFIC WILL BE MAINTAINED ON THE FOLLOWING OFF-SITE DETOUR ROUTE: FROM SR 1122 TO SR 1127 (FRIENDSHIP ROCK CHURCH RD.) TO SR 1117 (BOYD WRIGHT RD.) TO SR 1113 (KIMESVILLE RD).
- ACCESS TO ALL RESIDENCES MUST BE MAINTAINED AT ALL TIMES WITHIN THE PROJECT LIMITS.

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 UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- B) PROVIDE 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) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

PHASING

CONTRACTOR SHALL COORDINATE WITH THE B-4401 RESIDENT ENGINEER AND CONTRACTOR PRIOR TO INSTALLATION OF DETOUR SIGNS AND CLOSURE OF EULISS RD

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 SD-1, INSTALL DETOUR SIGNS, PLACE TYPE III BARRICADES TO CLOSE SR 1122 (EULISS RD.) TO THROUGH TRAFFIC, AND DETOUR TRAFFIC OFF-SITE.

STEP 2:

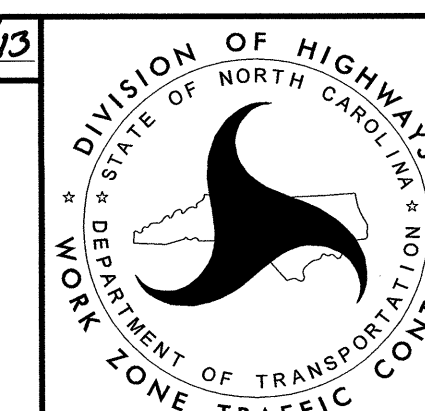
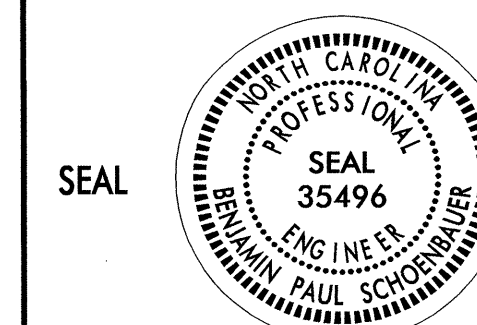
AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING:
(SEE ROADWAY AND STRUCTURE PLANS)

- 1) REMOVE EXISTING STRUCTURE No. 160 AND CONSTRUCT PROPOSED STRUCTURE FROM -L- STA.16+11.75 TO -L- STA.17+64.25.
- 2) CONSTRUCT PROPOSED ROADWAY UP TO AND INCLUDING FINAL LAYER OF SURFACE COURSE FROM -L- STA.14+50.00 TO -L- STA.16+11.75 AND FROM -L- STA.17+64.25 TO -L- STA.18+95.00.
- 3) USING FINAL PAVEMENT MARKING PLAN, PLACE FINAL PAVEMENT MARKINGS AND MARKERS FROM -L- STA.14+50.00 TO -L- STA.18+95.00 AND TIE INTO EXISTING PAVEMENT MARKINGS.

STEP 3:

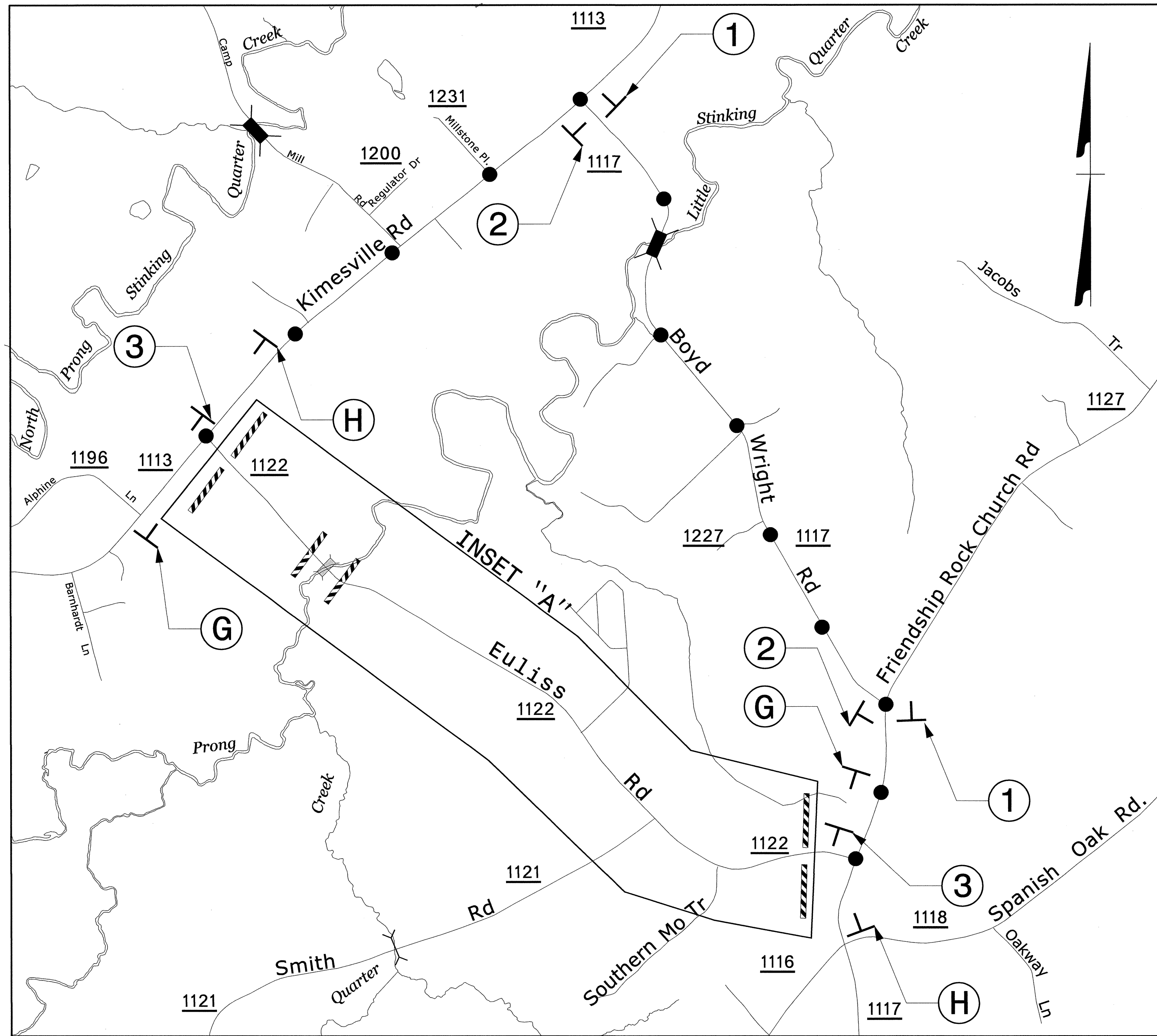
REMOVE ALL TRAFFIC CONTROL DEVICES AND DETOUR SIGNING AND OPEN SR1122 TO TRAFFIC IN TWO-LANE, TWO-WAY PATTERN.

APPROVED: *Ben Schenkman* DATE: 7/31/13



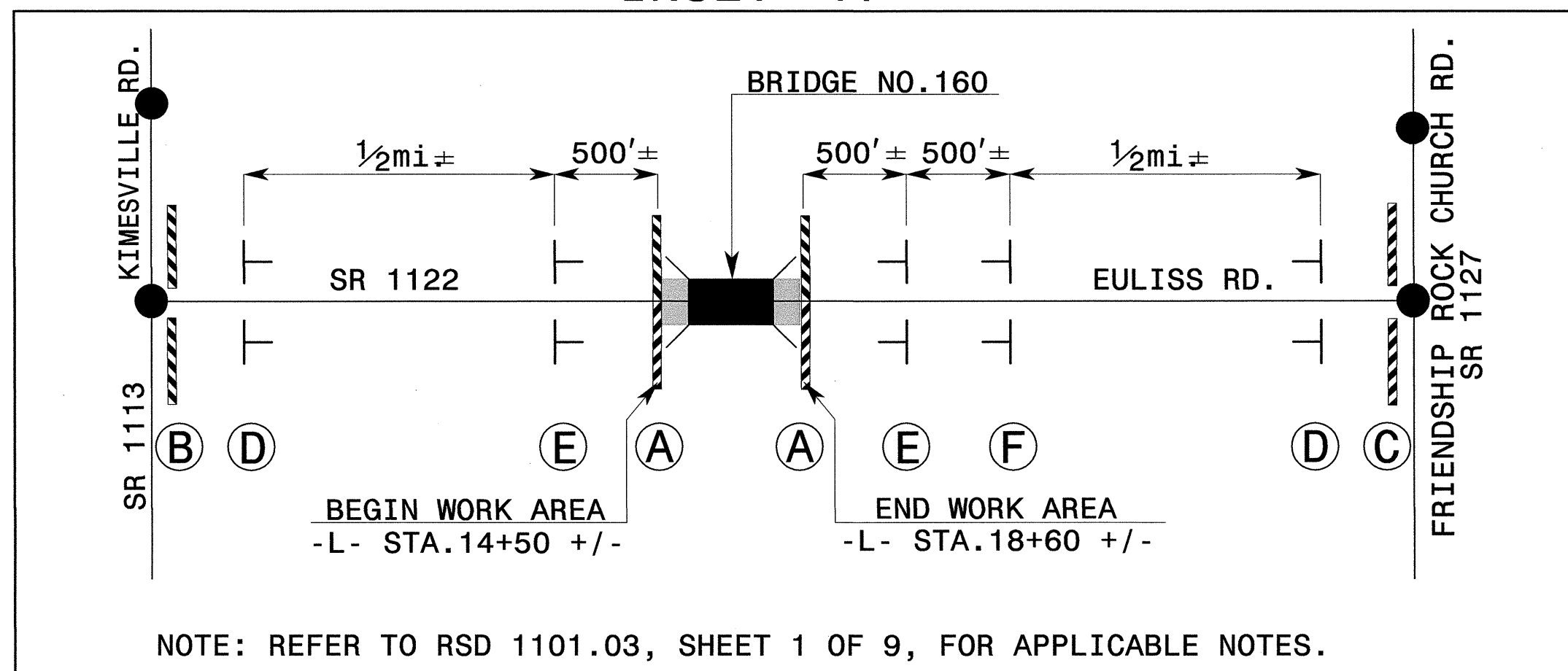
TRANSPORTATION
OPERATION PLAN

VICINITY MAP: ALAMANCE COUNTY

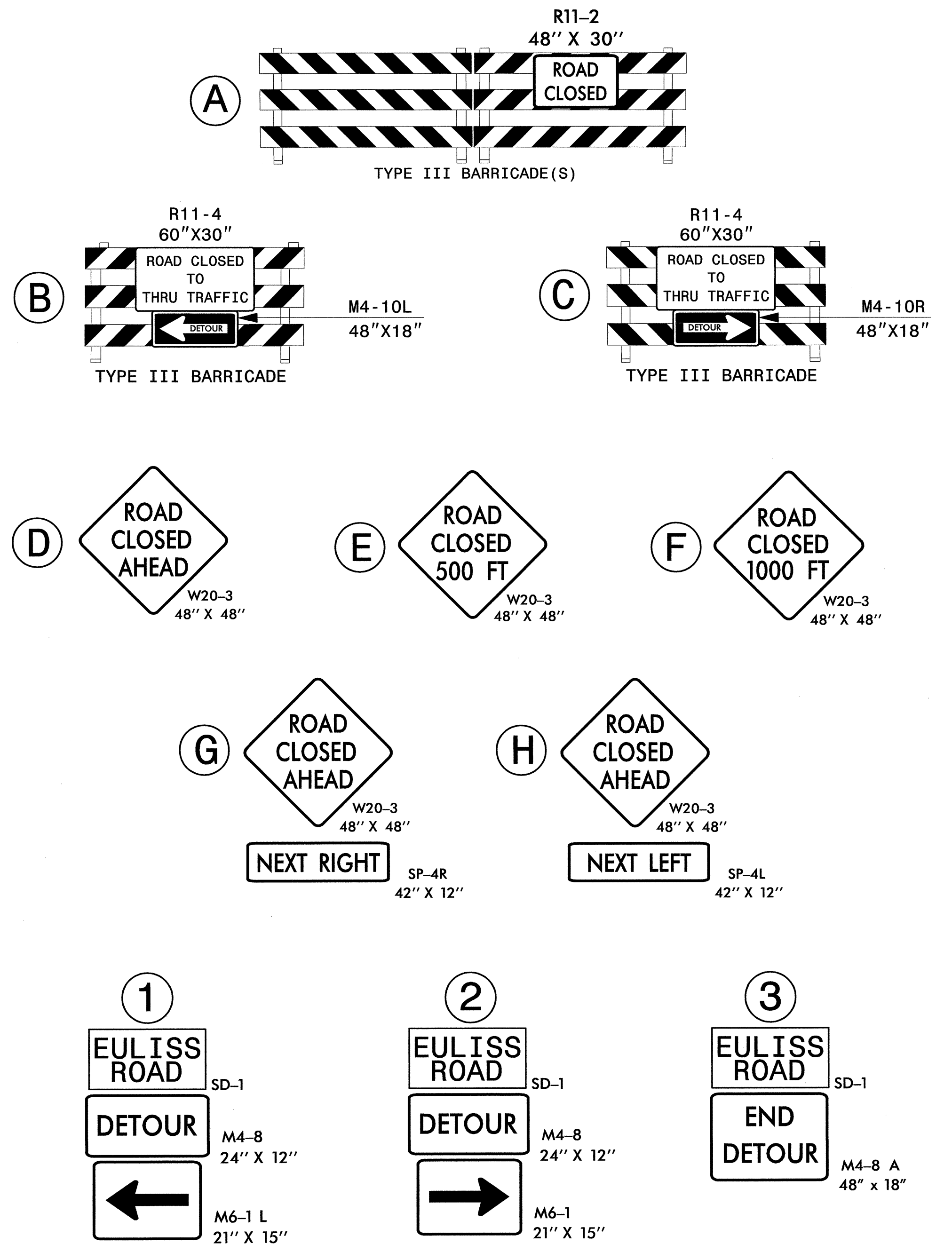


OFFSITE DETOUR: ●●●●●

INSET "A"



CONTRACTOR SHALL COORDINATE WITH THE B-4401 RESIDENT ENGINEER AND CONTRACTOR PRIOR TO INTSALLATION OF DETOUR SIGNS AND CLOSURE OR EULISS RD



NOTES:
1. SEE SHEET SD-1 FOR SPECIAL SIGN DESIGN.
2. ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE.

| | | |
|--|--|--|
| APPROVED: <i>Paul Schorbauer</i> DATE: 7/31/13 | | <p>OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT</p> |
| | | |

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**SIGNING PLAN
ALAMANCE COUNTY**

**LOCATION: BRIDGE #160 OVER STINKING QUARTER CREEK
ON SR 1122 (EULISS ROAD)**

| | |
|------------------------------|---------------------|
| TIP NO. B-4400 | SHEET NO. SIGN-1 |
| APPROVED: <i>[Signature]</i> | |
| DATE: 11/20/13 | |
| SEAL | |
| | |

T.I.P.: B-4400

CONTRACT: C203292

GENERAL NOTES

- . SIGNS FURNISHED BY STATE
- . ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- . WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
- . ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- . 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.

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 | 71 | L.F. |
| 4096000000 | 904 | SIGN ERECTION, TYPE D | 2 | EA. |
| 4155000000 | 907 | DISPOSAL OF SIGN SYSTEM, U-CHANNEL | 8 | EA. |

| | | | | |
|---|---|---|-------------------------------|--------------------|
| SIGN NUMBER: 301, 302 TYPE: D QUANTITY: 2 SIGN WIDTH: 5'-6" HEIGHT: 2'-0" TOTAL AREA: 11.0 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 0.75" RADII: 3" NO. Z BARS: LENGTH: | BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT MAT'L: 0.125" (3.2 mm) ALUMINUM | DESIGN BY: A. GRADY PROJECT ID: B-4400 | CHECKED BY: S. KUNZ DIV: 7 | DATE: Sep 25, 2013 |
|---|---|---|-------------------------------|--------------------|

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

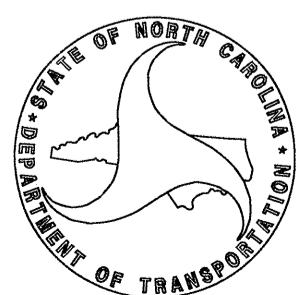
| Letter spacings are to start of next letter | | | | | | | | | | | | | | | Series/Size Text Length | | | |
|---|-----|-----|-----|-----|-----|------|-----|-----|---|-----|-----|-----|-----|-----|----------------------------|--------|-----|--------|
| S | t | i | n | k | i | n | g | q | u | a | r | t | e | r | | D 2000 | | |
| 4.4 | 4.4 | 2.9 | 1.9 | 4.5 | 4.4 | 1.9 | 4.3 | 3.6 | 4 | 5.2 | 4.3 | 4.3 | 2.4 | 2.7 | 4.2 | 2.3 | 4.4 | 57.3 |
| C | r | e | e | k | | | | | | | | | | | | | | D 2000 |
| 22.8 | 5.3 | 2.8 | 4.1 | 4.4 | 3.8 | 22.8 | | | | | | | | | | | | 20.4 |

FILENAME: B-4400_Sgn_SGN NORTH CAROLINA D.O.T. SIGN DETAIL

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

SUSAN B. KUNZ SIGNING & DELINEATION REGIONAL ENGINEER

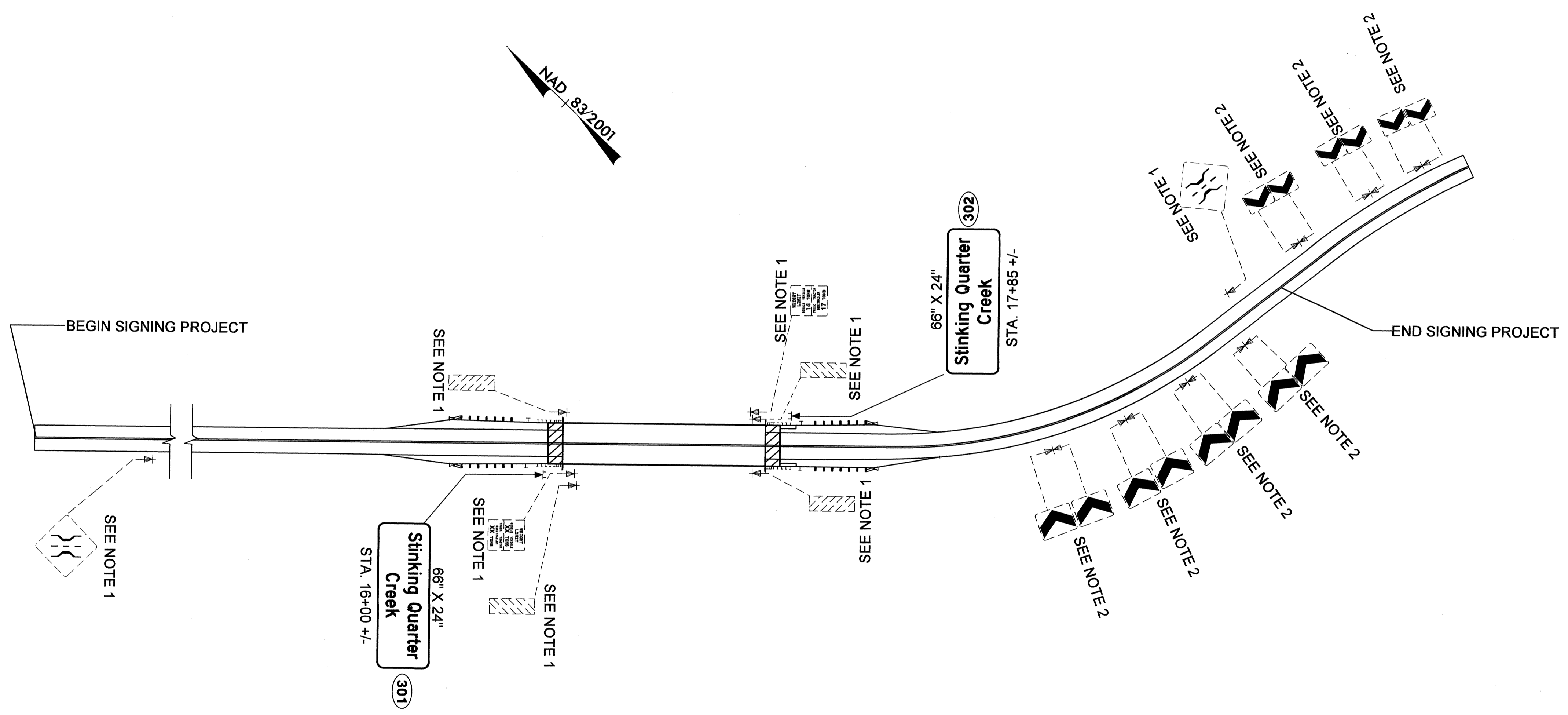
ADAM GRADY SIGNING & DELINEATION PROJECT DESIGN ENGINEER



INDEX

| SHEET NO. | DESCRIPTION |
|-----------|-------------------|
| SIGN-1 | TITLE SHEET |
| SIGN-2 | SIGN DETAIL SHEET |

| | |
|---------------------|---------------------|
| TIP NO. B-4400 | SHEET NO. SIGN-2 |
| APPROVED: <i>RW</i> | |
| DATE: 6/8/13 | |
| SEAL | |
| | |



PROJECT NOTES


- 1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
- 2 RETAIN SIGN, TYPE E

SIGN DETAIL SHEET

P:\CADD\2013_09\13\B-4400\Traffic\Signing\CADD\Signing_Layout_Plans\B-4400_Sgn_SGN_BRIDGE_SEED.dgn
 ahgrady 09/13/13 11:27:43

NAD 83/2011

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

| | |
|---|--------------------|
| TIP NO. B-4400 | SHEET NO. PMP-1 |
| APPROVED: <i>[Signature]</i> | |
| DATE: 10/8/13 | |
| SEAL | |
|  | |

PAVEMENT MARKING PLAN
ALAMANCE COUNTY
LOCATION: BRIDGE #160 OVER STINKING QUARTER CREEK
ON SR 1122 (EULISS RD)

T.I.P.: B-4400

CONTRACT: C203292

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 |
| 1261.01 | GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING |
| 1261.02 | GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING |
| 1262.01 | GUARDRAIL END DELINEATION |
| 1250.01 | PAVEMENT MARKER SPACING |
| 1251.01 | RAISED PAVEMENT MARKERS - TEMPORARY AND PERMANENT |

PAVEMENT MARKING SCHEDULE

| SYMBOL | DESCRIPTION |
|--------|--|
| TA | THERMO (4", 90 MIL) WHITE EDGELINE |
| TI | THERMO (4", 120 MIL) YELLOW DOUBLE CENTER |

PROJECT NOTE

- 1) INSTALL A TOTAL OF 22 SNOWPLOWABLE MARKERS AT 80' SPACING. INSTALLATION OF MARKERS SHALL BEGIN 600' DOWNSTATION FROM BRIDGE AND END 1000' +/- UPSTATION FROM BRIDGE.

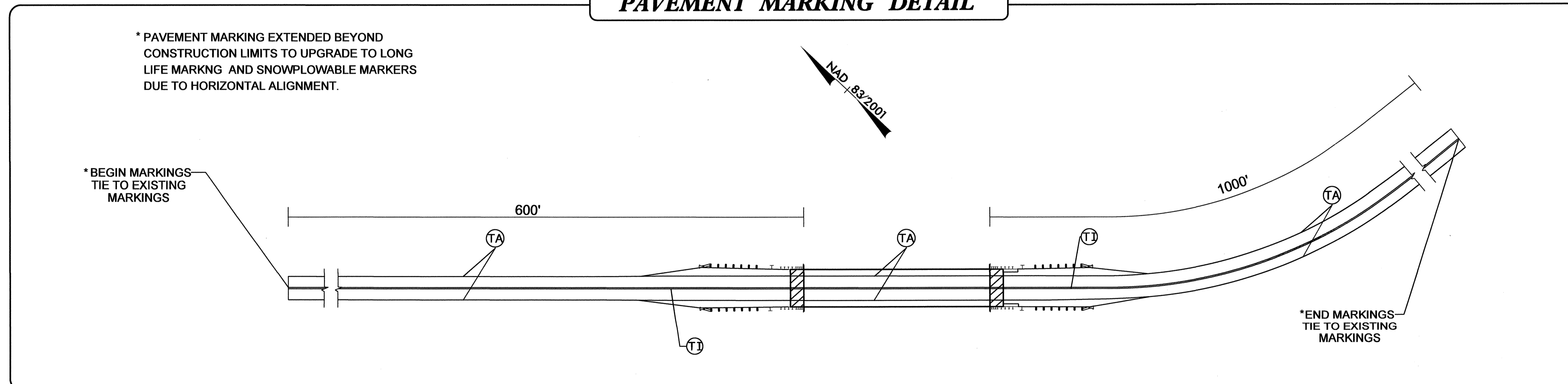
GENERAL NOTES

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.

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

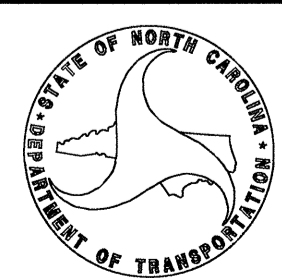
| ROAD NAME | MARKING | MARKER |
|-----------|---------------|--------------|
| SR 1122 | THERMOPLASTIC | SNOWPLOWABLE |
- TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- REMOVE ALL RESIDUE AND SURFACE LAITANCE BY ACCEPTABLE METHODS ON CONCRETE BRIDGE DECKS PRIOR TO PLACING THERMOPLASTIC PAVEMENT MARKINGS.

PAVEMENT MARKING DETAIL



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

SUSAN B. KUNZ SIGNING & DELINEATION REGIONAL ENGINEER
ADAM GRADY SIGNING & DELINEATION PROJECT DESIGN ENGINEER



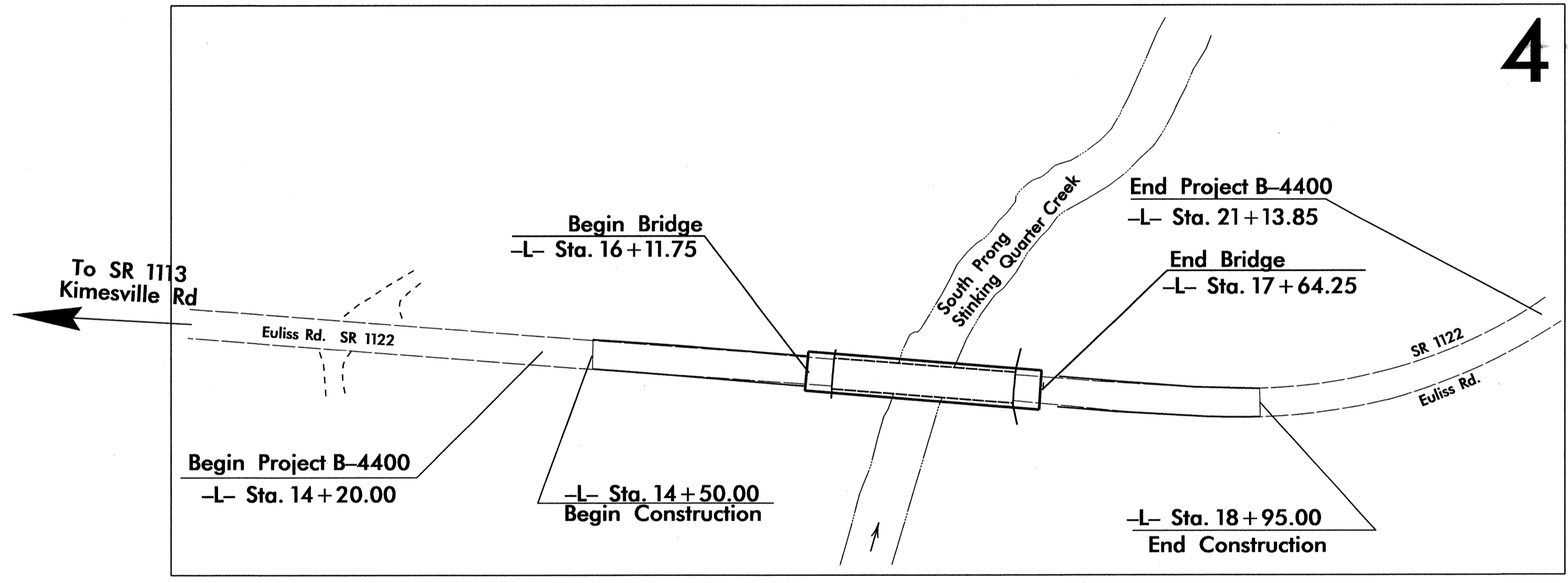
| | | | |
|-----------------|-----------------------------|-------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | B-4400 | EC-1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| | | | |
| | | | |
| | | | |

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

LOCATION: Bridge #160 Over South Prong of Stinking Quarter Creek on SR 1122
 (Euliss Road)
TYPE OF WORK: Grading, Drainage, Paving and Structure

EROSION AND SEDIMENT CONTROL MEASURES

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

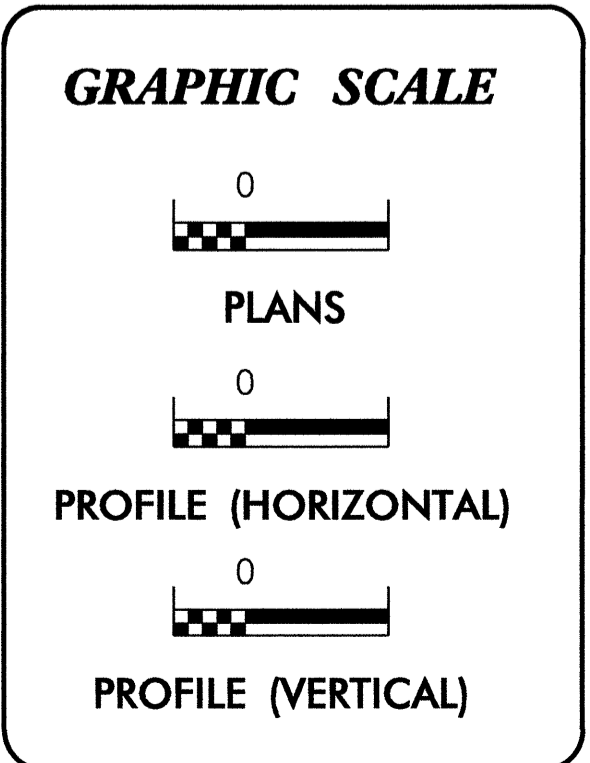


THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

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.

TIP PROJECT: B-4400



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

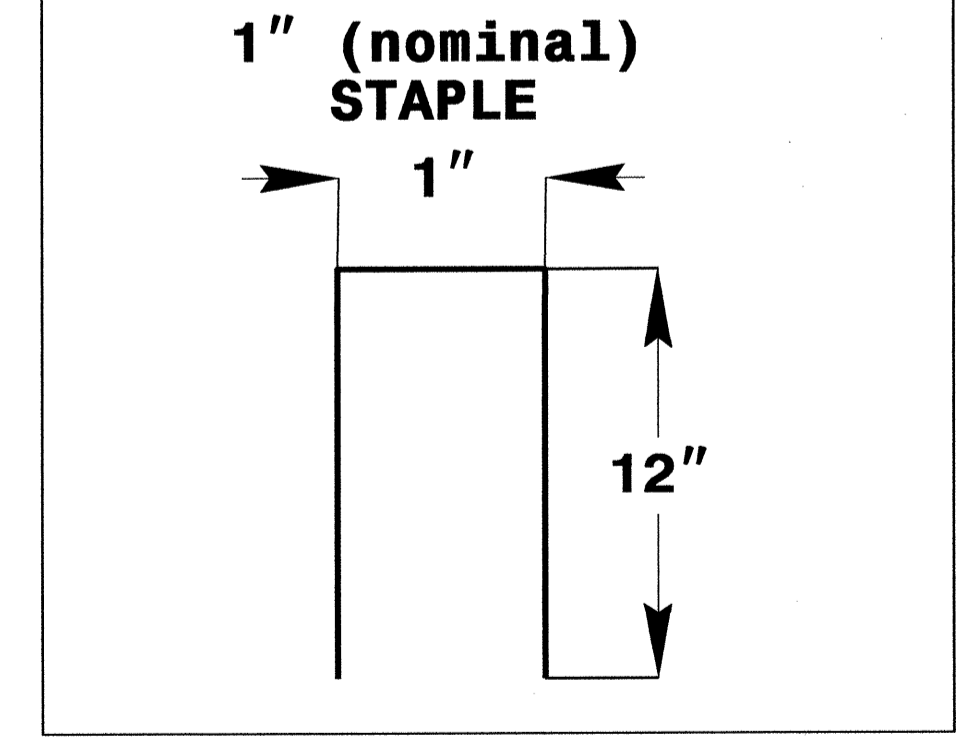
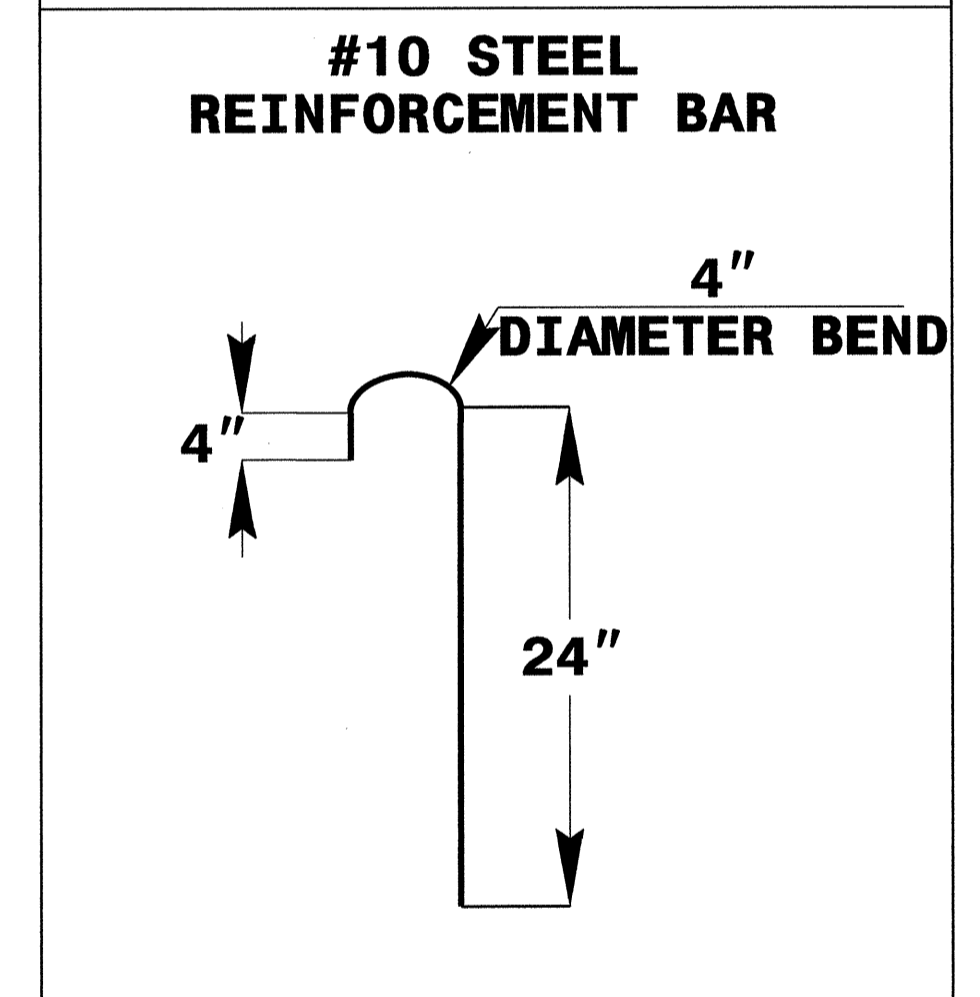
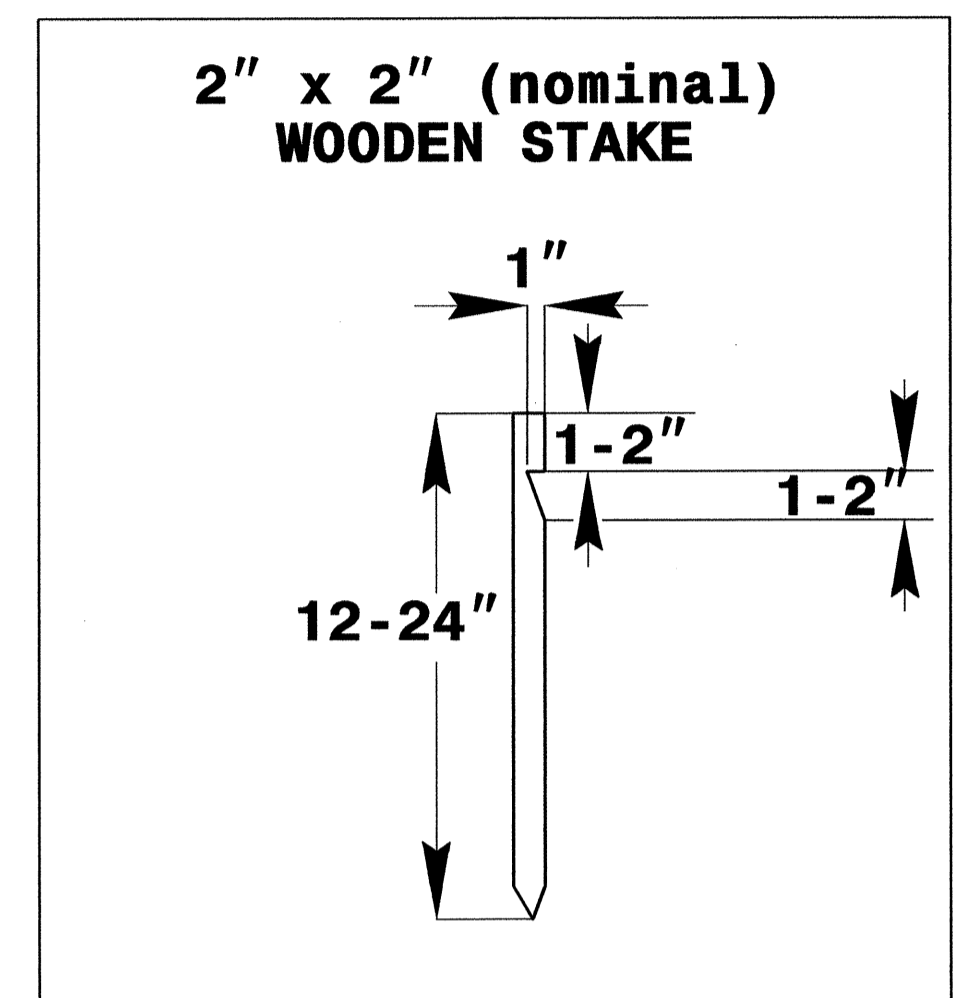
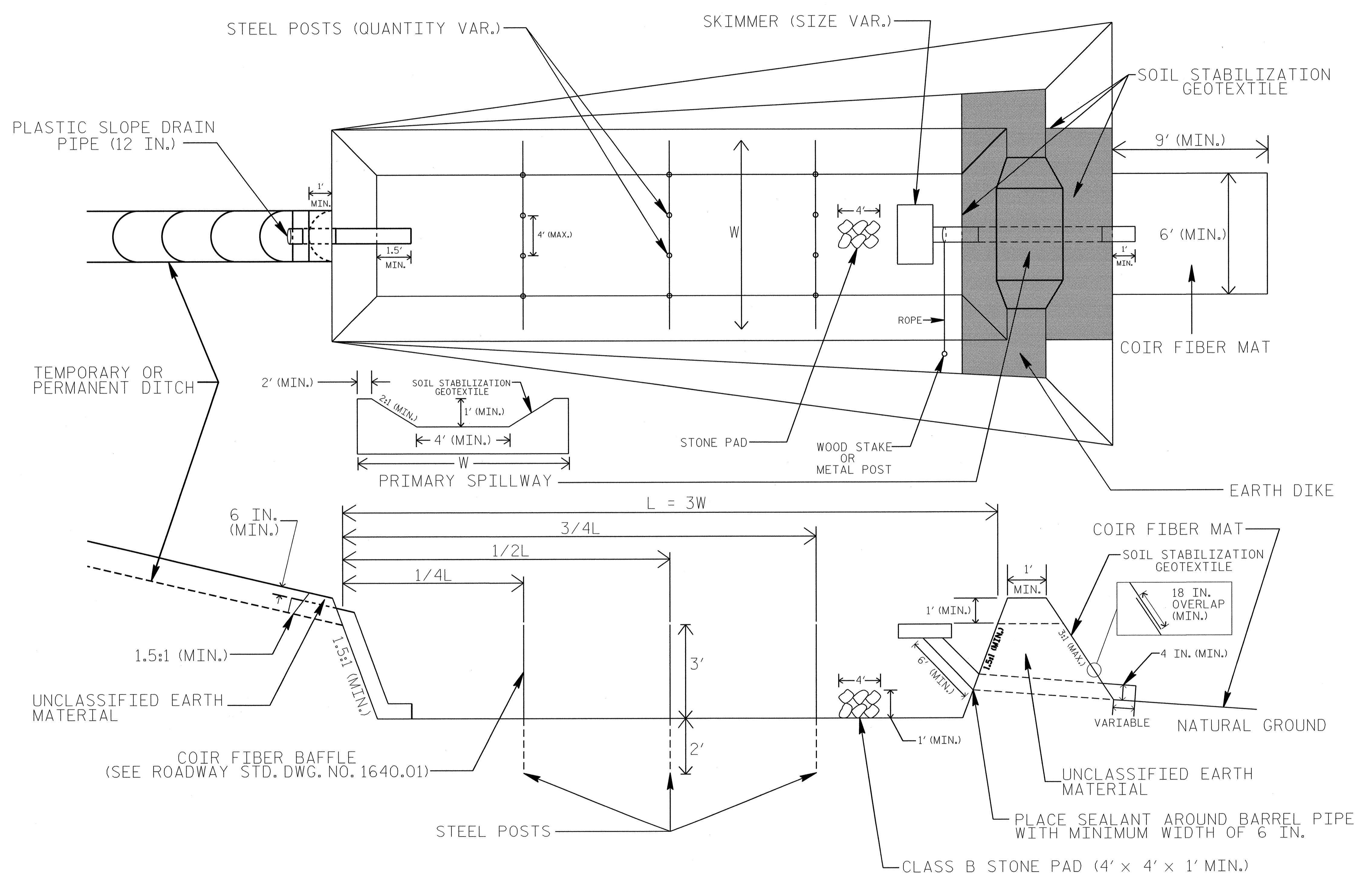
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

| | |
|--|--|
| 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 Wattle |
| 1630.06 Special Stilling Basin | 1645.01 Temporary Stream Crossing |
| 1631.01 Matting Installation | |

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| | |
|---------------------------------|---------------------|
| PROJECT REFERENCE NO. B-4400 | SHEET NO. EC-2 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

SKIMMER BASIN WITH BAFFLES DETAIL



COIR FIBER MAT ANCHOR OPTIONS

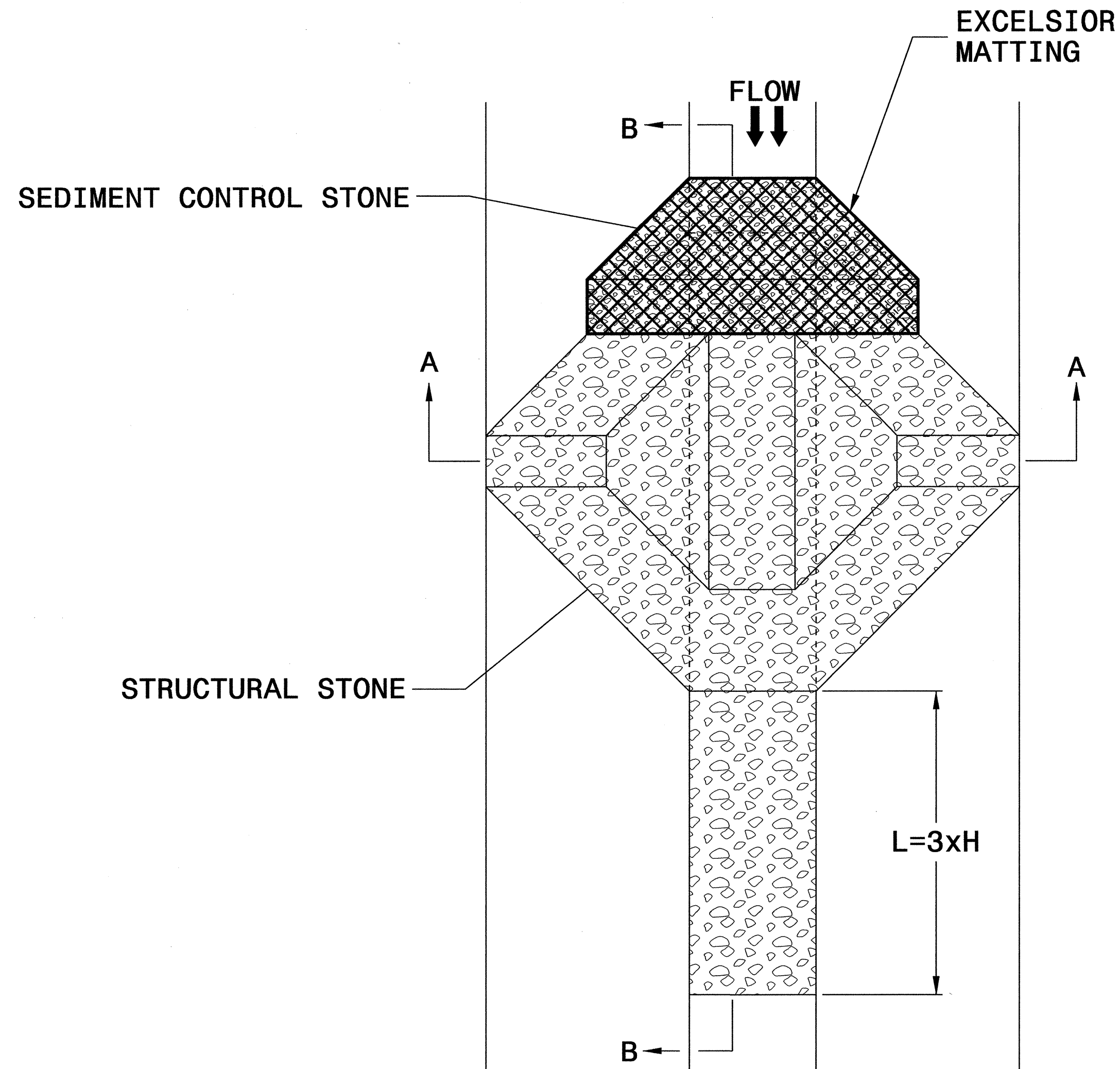
NOTES

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.).

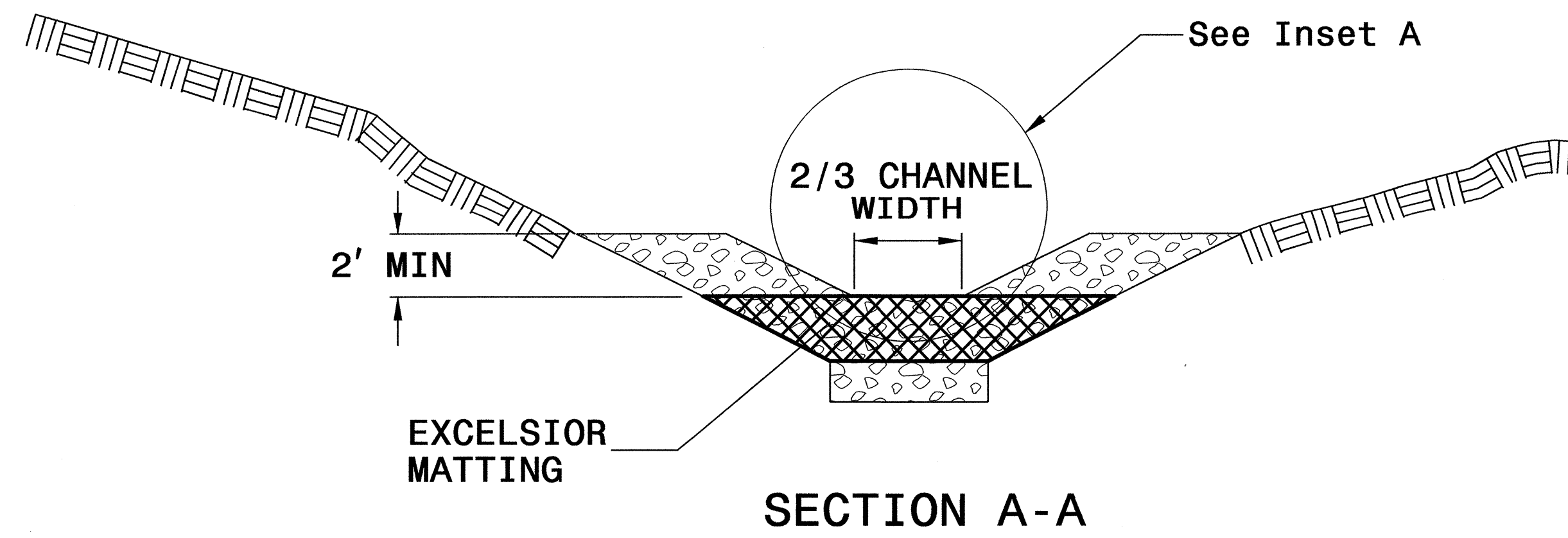
NOT TO SCALE

| | |
|---------------------------------|---------------------|
| PROJECT REFERENCE NO. B-4400 | SHEET NO. EC-2A |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

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



PLAN



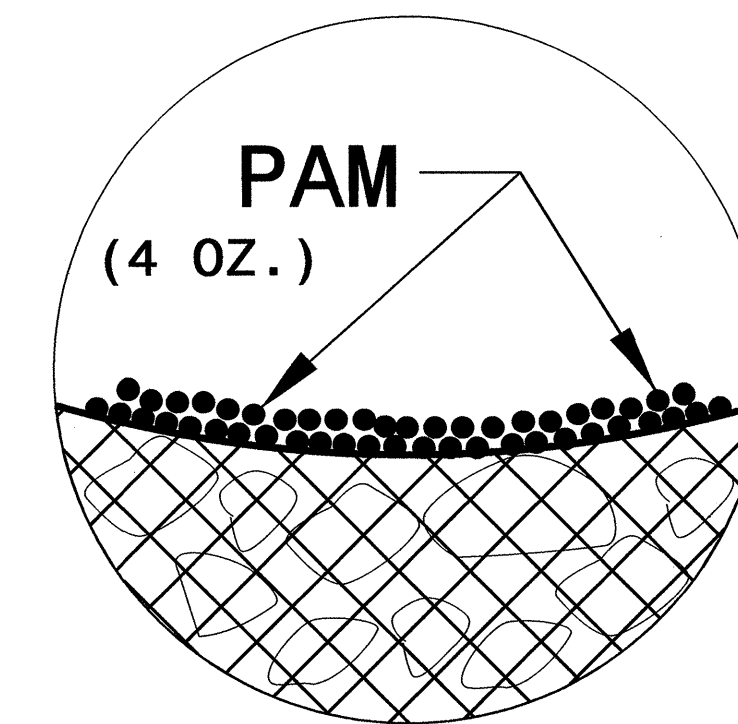
SECTION A-A

NOTES

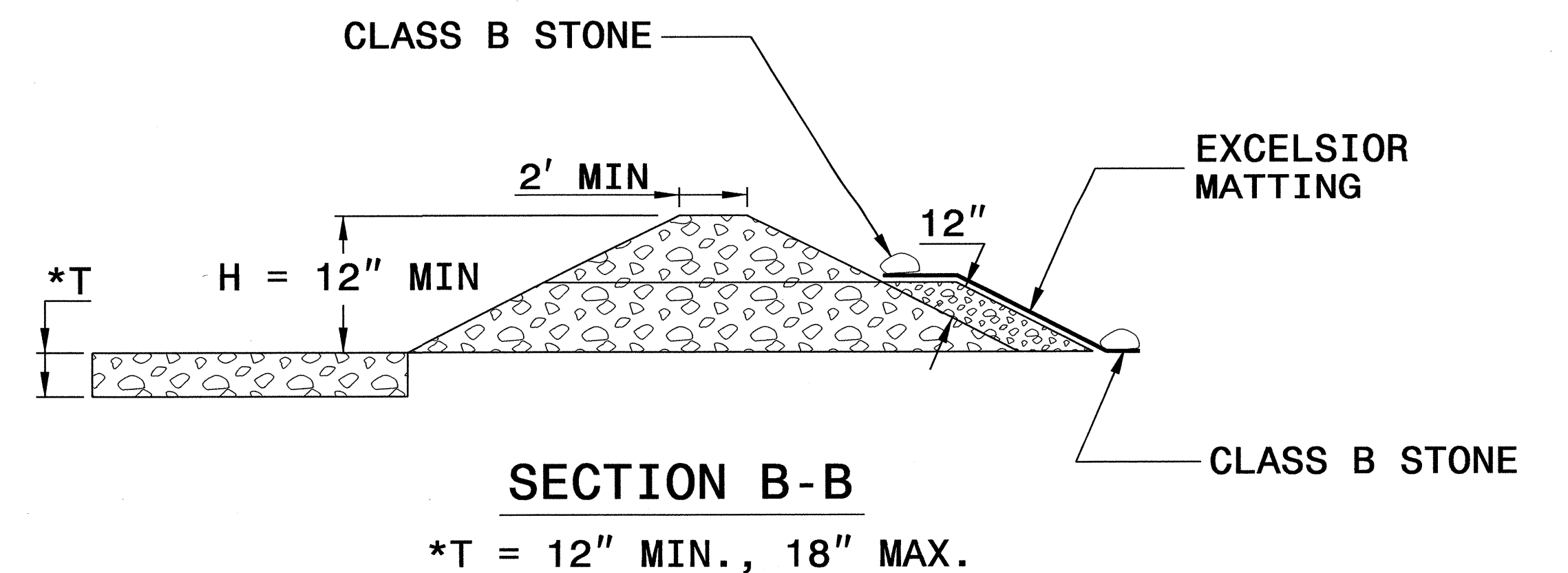
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.



INSET A



SECTION B-B

*T = 12" MIN., 18" MAX.

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

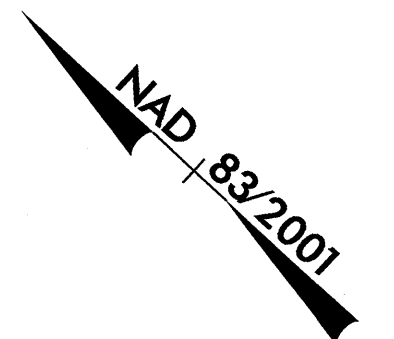
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|--|--------------------------|
| PROJECT REFERENCE NO. <i>B-4400</i> | SHEET NO. <i>EC-3</i> |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

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. |

| | |
|-------------------------|---------------------|
| PROJECT REFERENCE NO. | SHEET NO. |
| B-4400 | EC-4/CONST.4 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

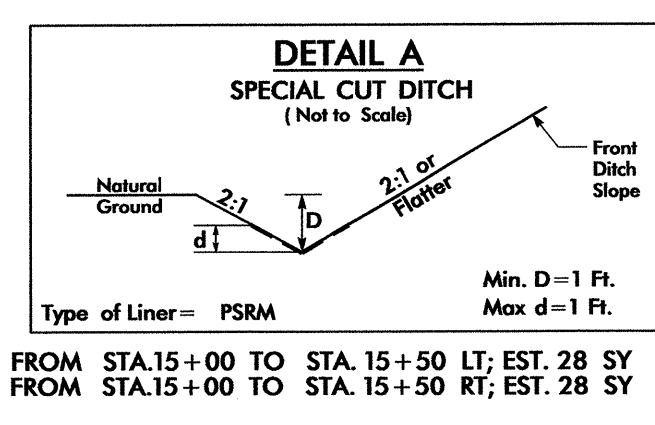
NOTE:
UTILIZE SKIMMER BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.



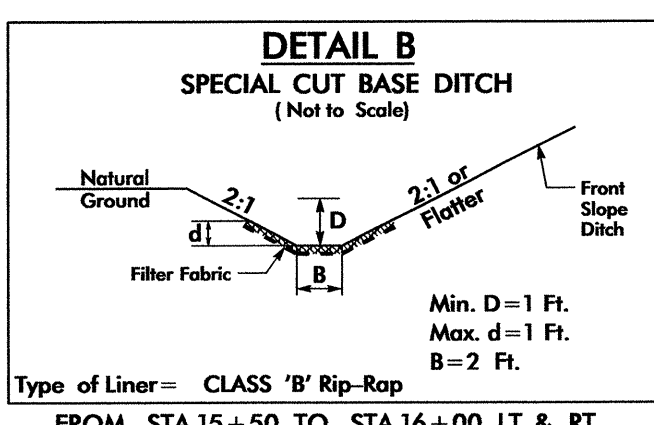
 ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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

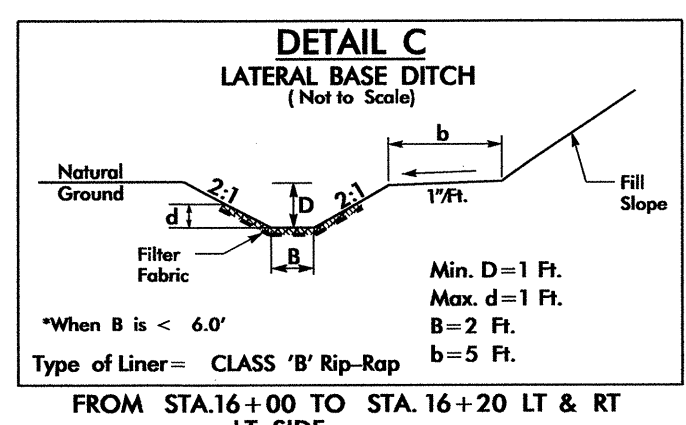
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4



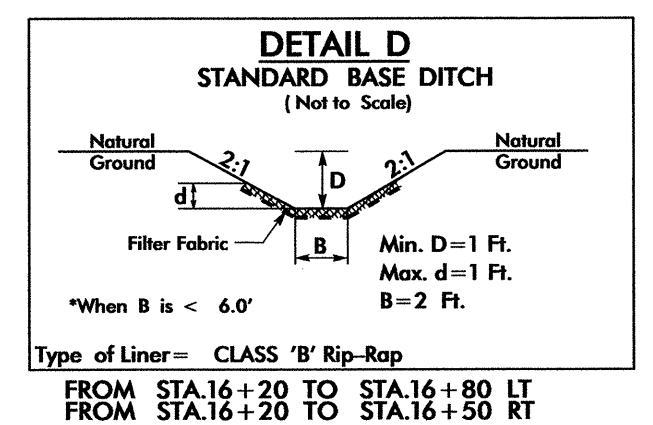
FROM STA.15+00 TO STA.15+50 LT; EST. 28 SY
FROM STA.15+00 TO STA.15+50 RT; EST. 28 SY



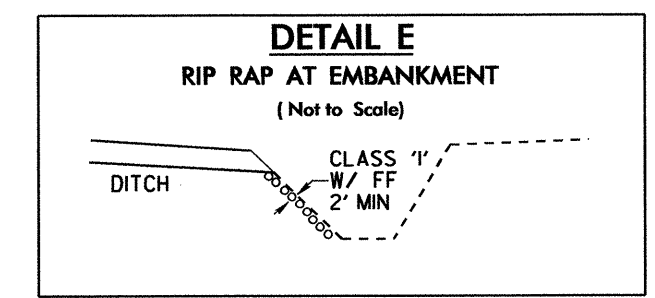
FROM STA.15+50 TO STA.16+00 LT & RT
LT. SIDE
EST 22 TONS CL B RIP RAP
EST 63 SY FILTER FABRIC
RT. SIDE
EST 22 TONS CL B RIP RAP
EST 63 SY FILTER FABRIC



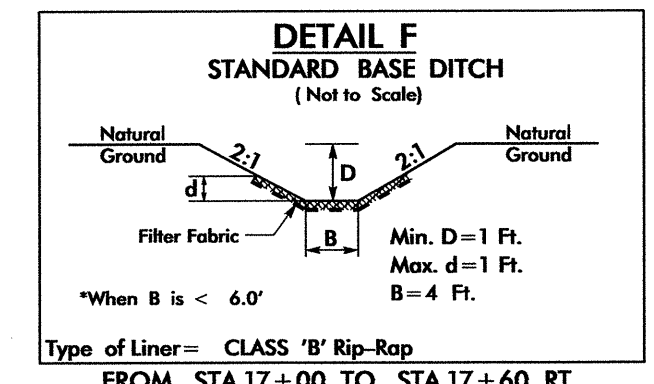
FROM STA.16+00 TO STA.16+20 LT & RT
LT. SIDE
EST 9 TONS CL B RIP RAP
EST 25 SY FILTER FABRIC DDE = 4 CY
RT. SIDE
EST 9 TONS CL B RIP RAP
EST 25 SY FILTER FABRIC DDE = 6 CY



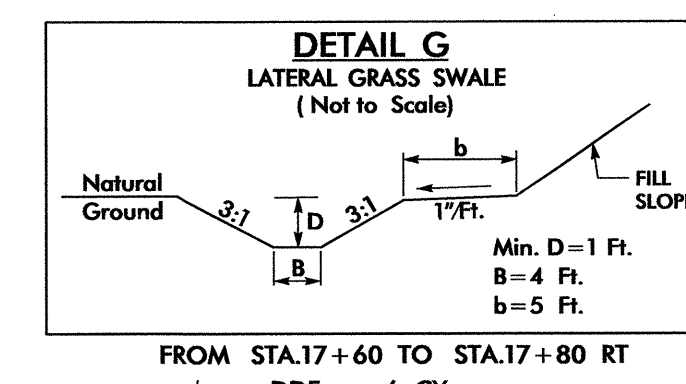
FROM STA.16+20 TO STA.16+80 LT
FROM STA.16+20 TO STA.16+80 RT
LT. SIDE
EST 27 TONS CL B RIP RAP
EST 76 SY FILTER FABRIC DDE = 74 CY
RT. SIDE
EST 13 TONS CL B RIP RAP
EST 38 SY FILTER FABRIC DDE = 7 CY



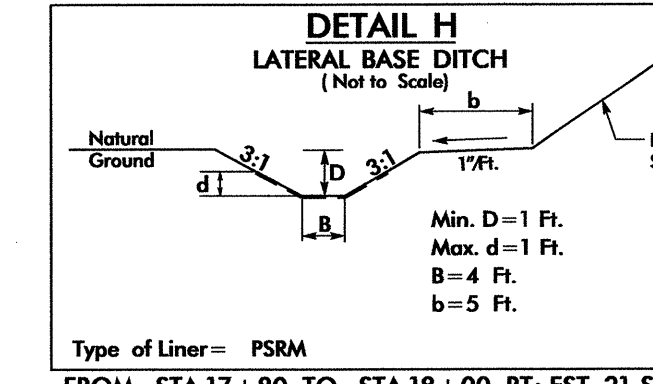
STA. 16+80 LT - EST. 5 TONS CL I RIP RAP WITH 2 SY FILTER FABRIC
STA. 16+50 RT - EST. 6 TONS CL I RIP RAP WITH 2 SY FILTER FABRIC
STA. 17+00 RT - EST. 8 TONS CL I RIP RAP WITH 2 SY FILTER FABRIC



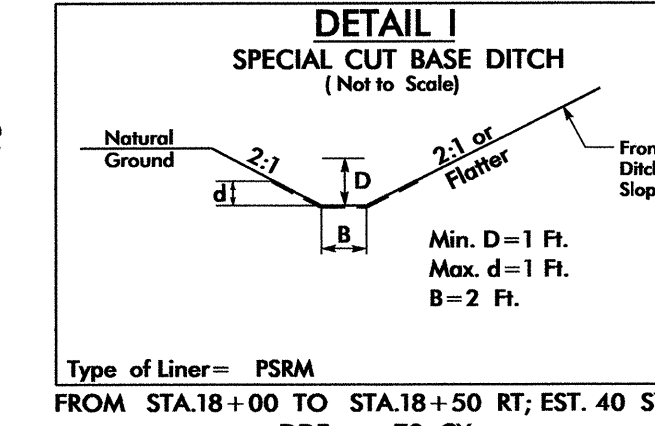
FROM STA.17+00 TO STA.17+60 RT
EST. 33 TONS CL B RIP RAP
WITH 89 SY FILTER FABRIC
DDE = 17 CY



FROM STA.17+60 TO STA.17+80 RT
DDE = 6 CY



FROM STA.17+80 TO STA.18+00 RT; EST. 21 SY
DDE = 29 CY



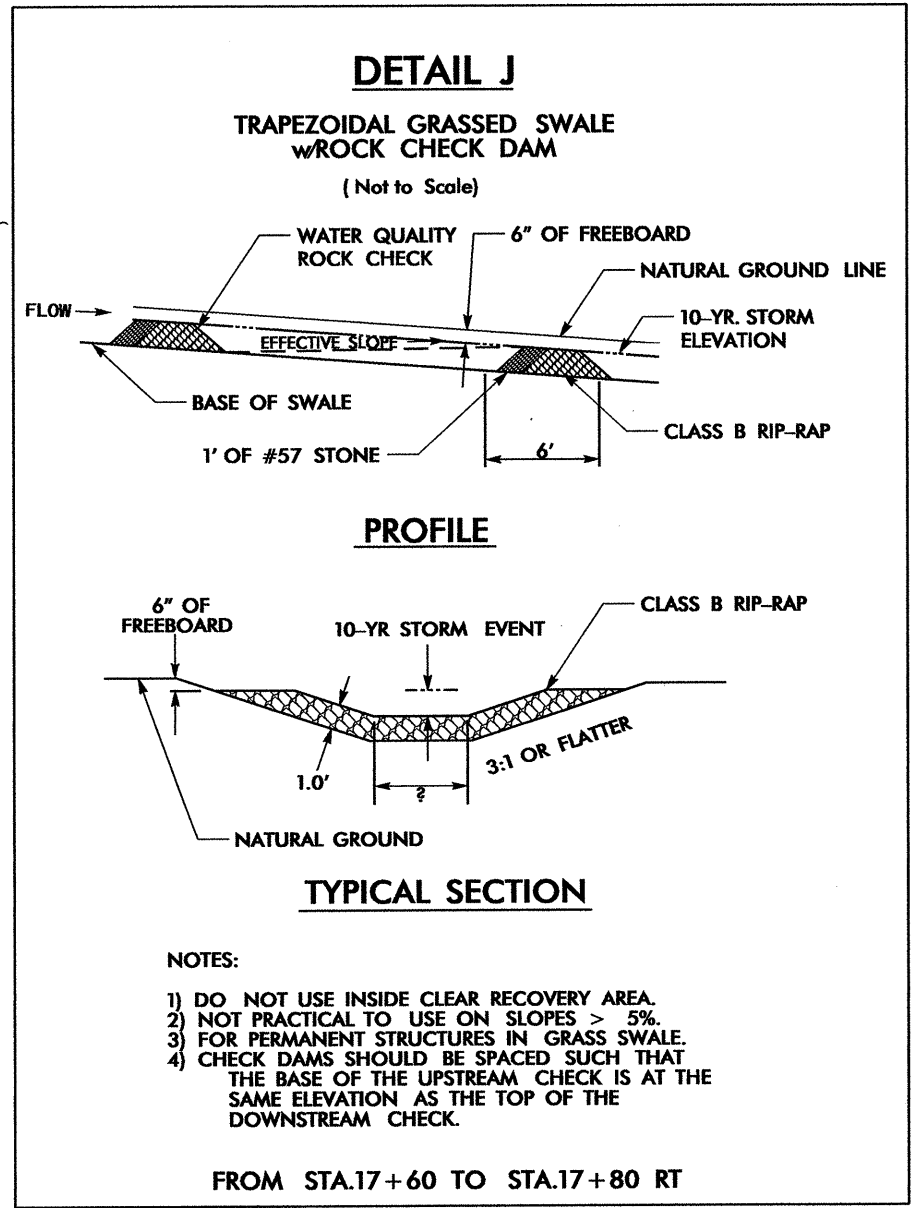
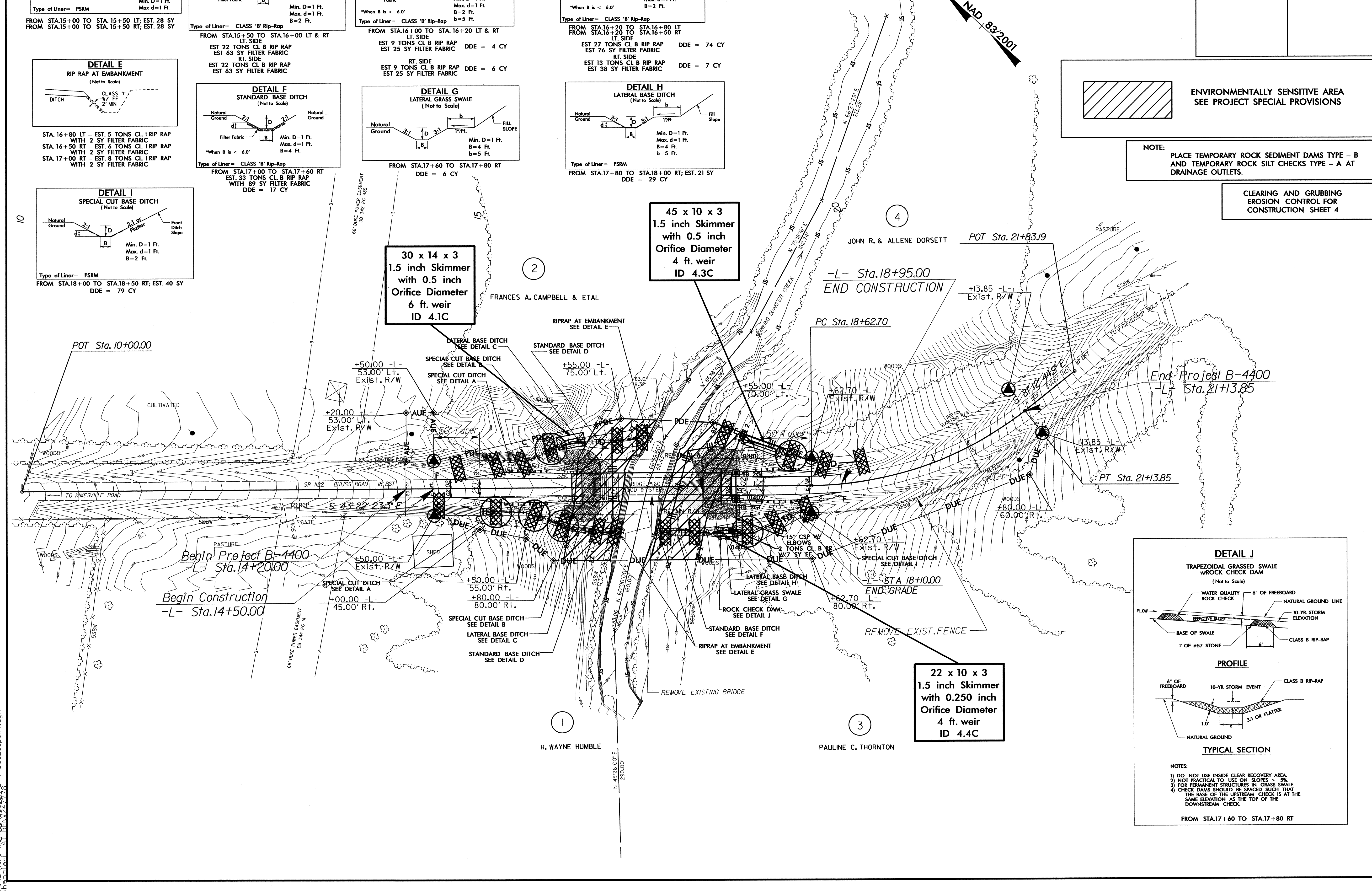
FROM STA.18+00 TO STA.18+50 RT; EST. 40 SY
DDE = 79 CY

30 x 14 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
6 ft. weir
ID 4.1C

45 x 10 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
4 ft. weir
ID 4.3C

22 x 10 x 3
1.5 inch Skimmer
with 0.250 inch
Orifice Diameter
4 ft. weir
ID 4.4C

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PAULINE C. THORNTON

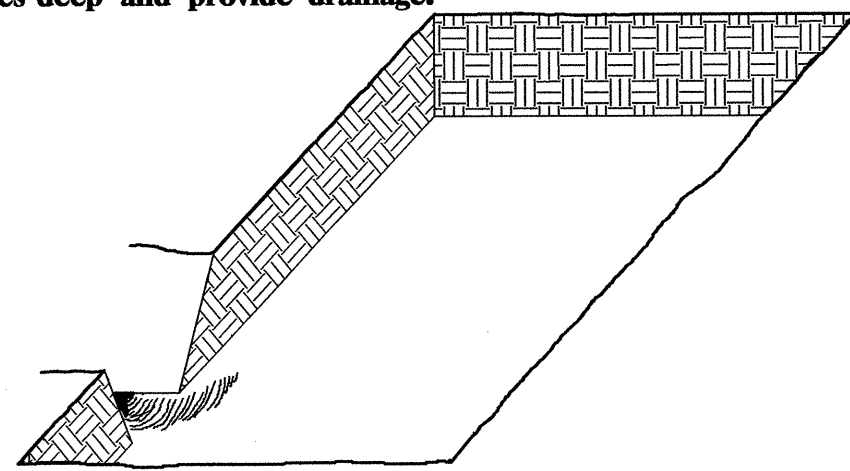


PLANTING DETAILS

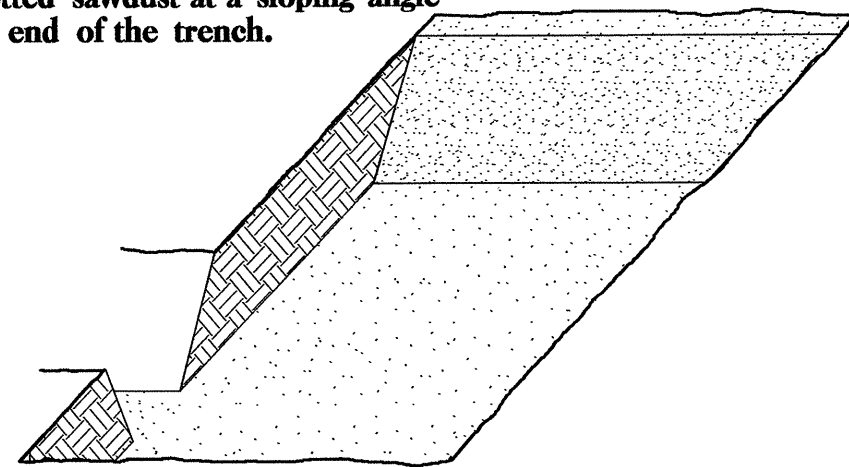
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

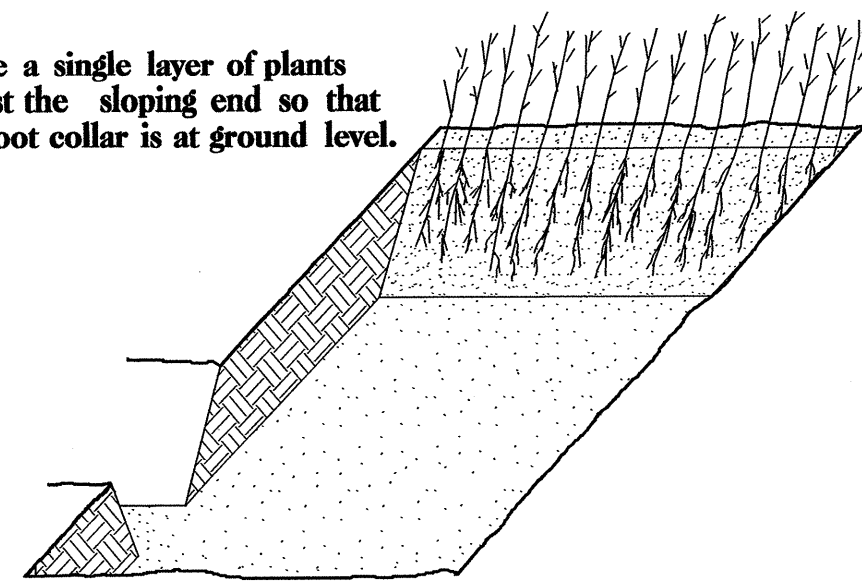
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



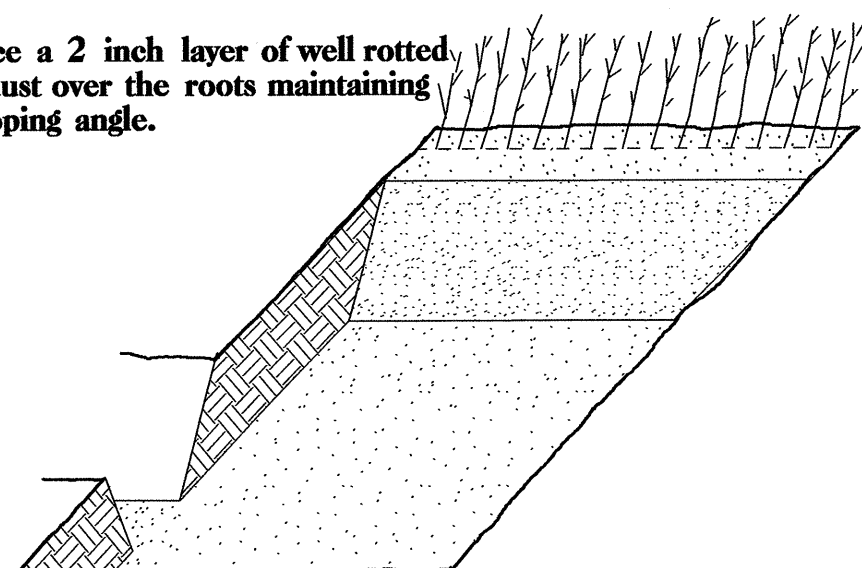
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

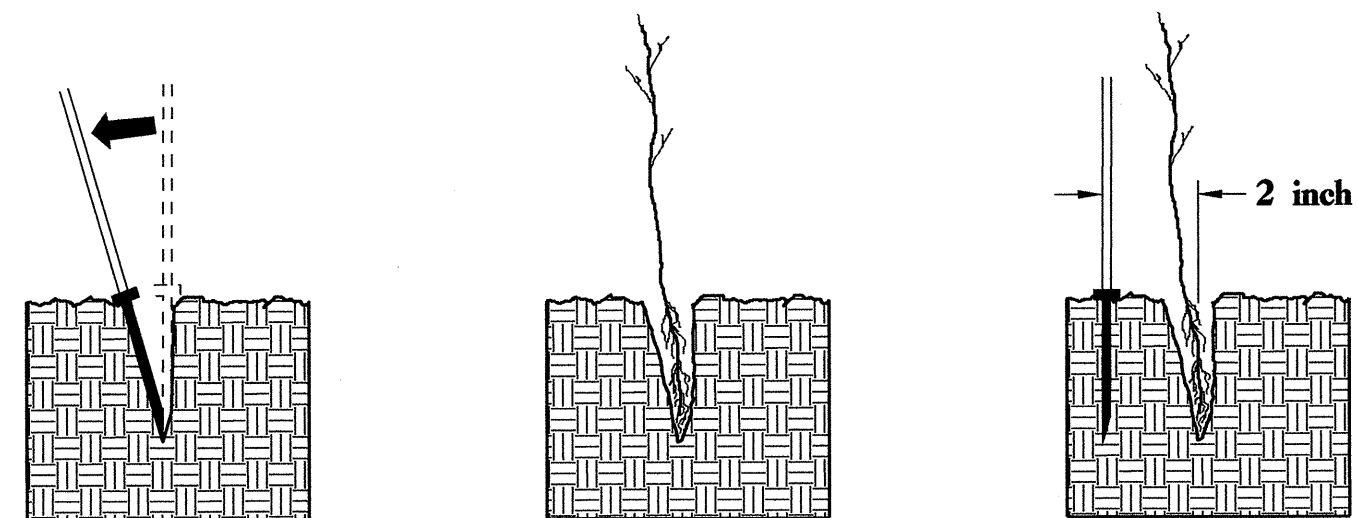


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

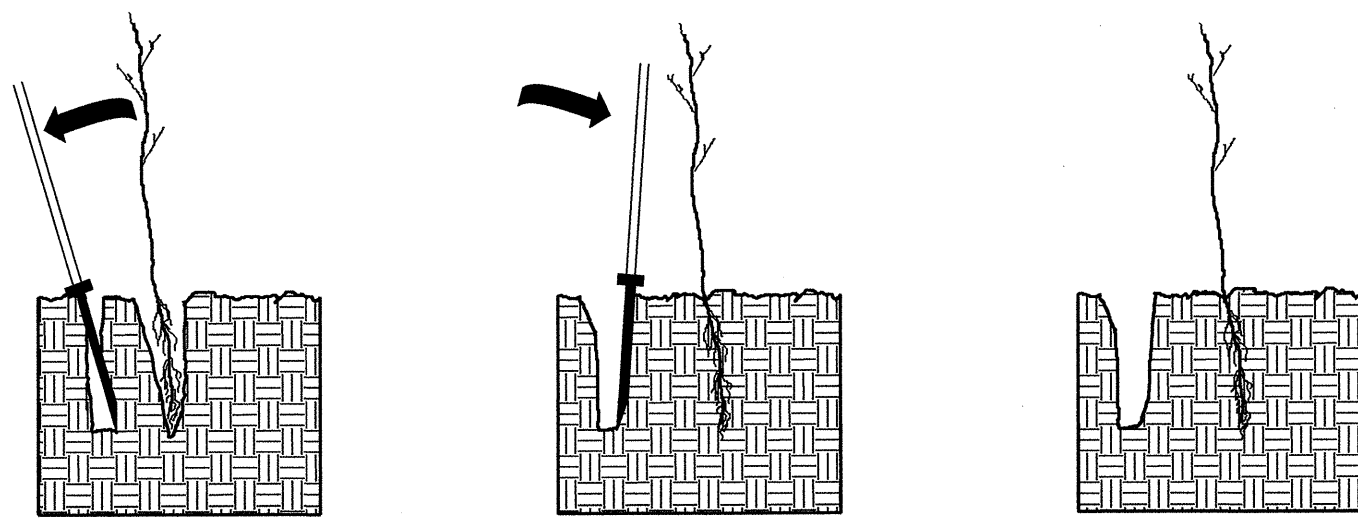


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



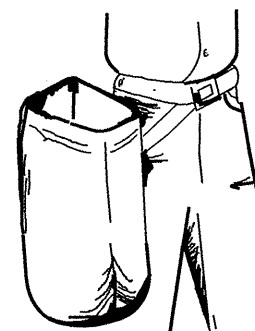
1. Insert planting bar as shown and pull handle toward planter.
2. Remove planting bar and place seedling at correct depth.
3. Insert planting bar 2 inches toward planter from seedling.



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

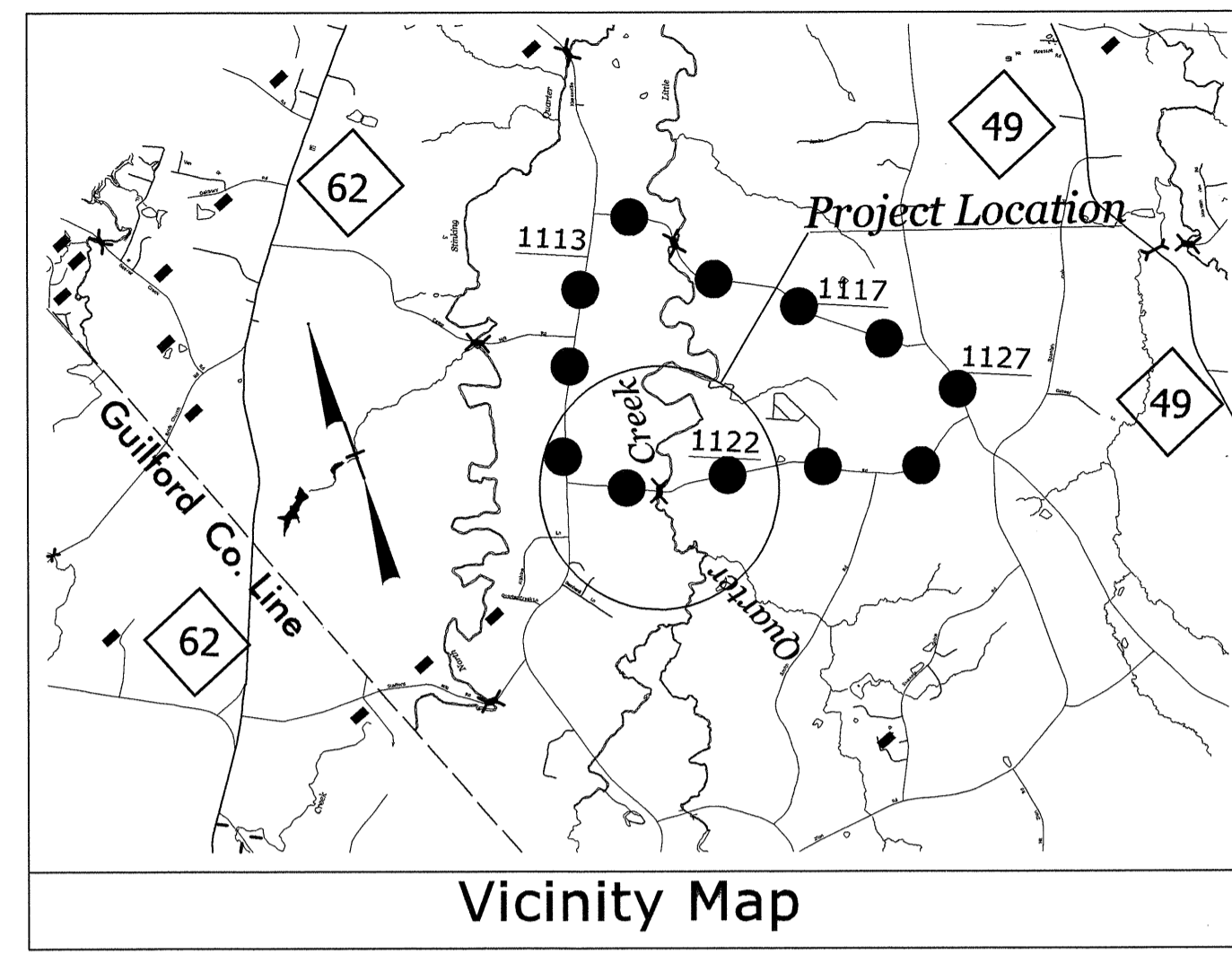
MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

| | | |
|-----------------------------|-------------------|------------------|
| 30% PLATANUS OCCIDENTALIS | AMERICAN SYCAMORE | 12 in - 18 in BR |
| 40% LIRIODENDRON TULIPIFERA | YELLOW POPLAR | 12 in - 18 in BR |
| 30% QUERCUS ALBA | WHITE OAK | 12 in - 18 in BR |

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

TIP PROJECT: B-4400



Vicinity Map

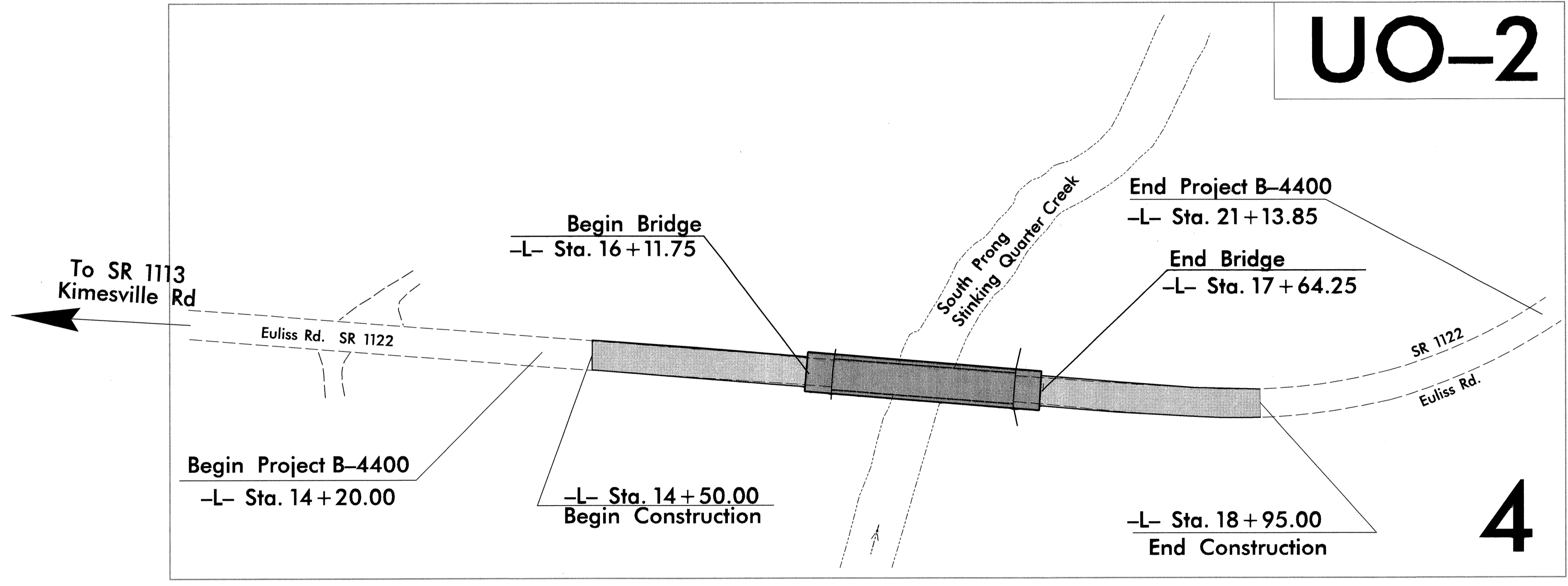
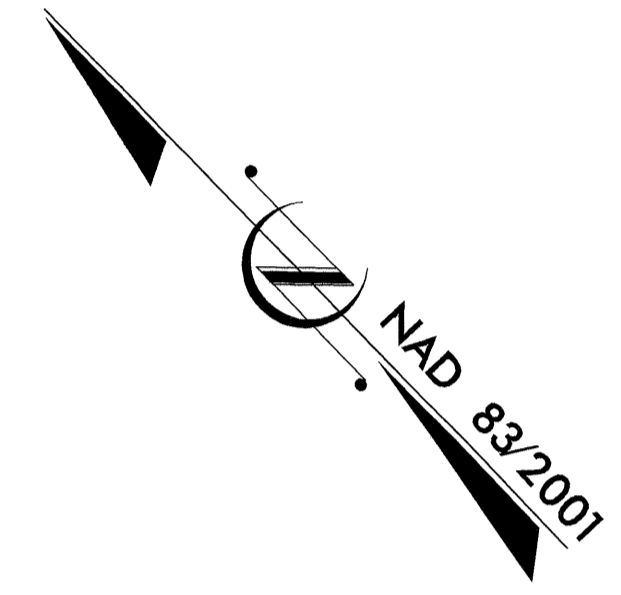
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
ALAMANCE COUNTY**

**LOCATION: BRIDGE #160 OVER SOUTH PRONG
OF STINKING QUARTER CREEK OVER S.R. 1122 EULISS RD**

TYPE OF WORK: UTILITY RELOCATIONS

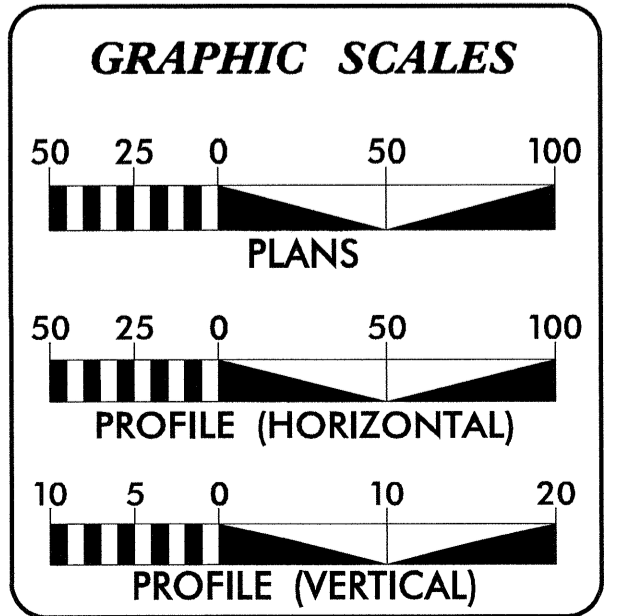
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|------------|-----------|
| T.I.P. NO. | SHEET NO. |
| B-4400 | UO-1 |



UO-2

4

UCC
UTILITY COORDINATION CONSULTANTS
P.O. BOX 450
MINERAL SPRINGS, N.C. 28108
(704) 844-9093



INDEX OF SHEETS

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

UTILITY OWNERS ON PROJECT

(1) DUKE ENERGY - POWER
(2) AT&T - TELEPHONE

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

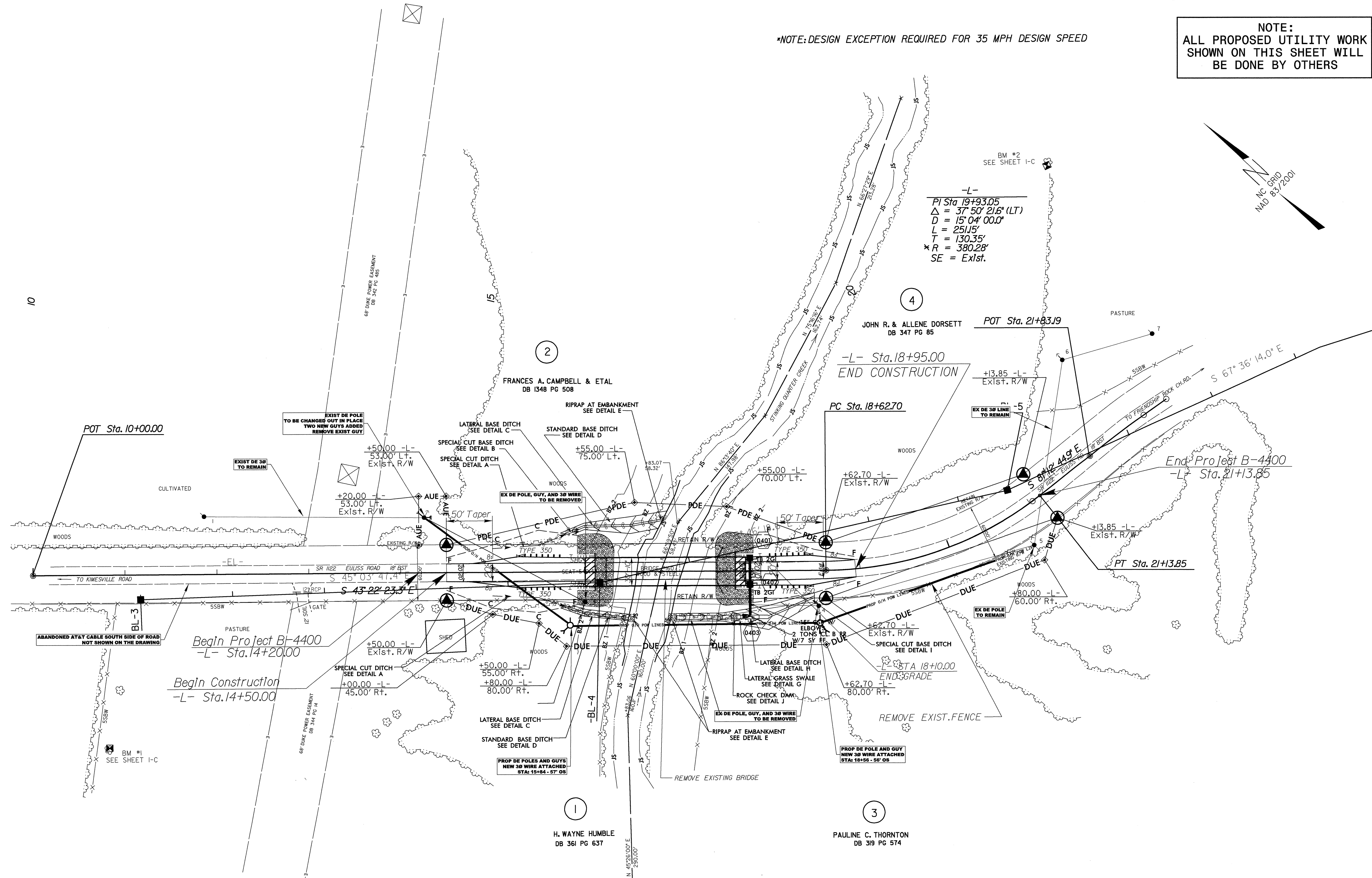
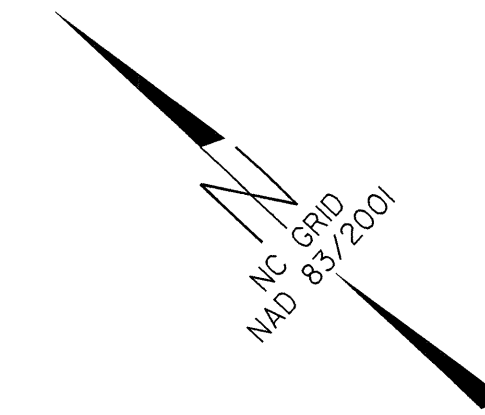
1555 MSC
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Steve Mckee, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Donald Proper UTILITIES PROJECT DESIGN ENGINEER

UTILITIES BY OTHERS

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

*NOTE: DESIGN EXCEPTION REQUIRED FOR 35 MPH DESIGN SPEED

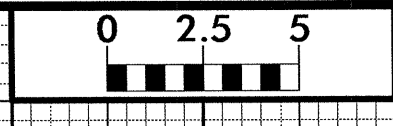


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D = 15' 04' 00.0"
L = 251.15'
T = 130.35'
* R = 380.28'
SE = Exist.

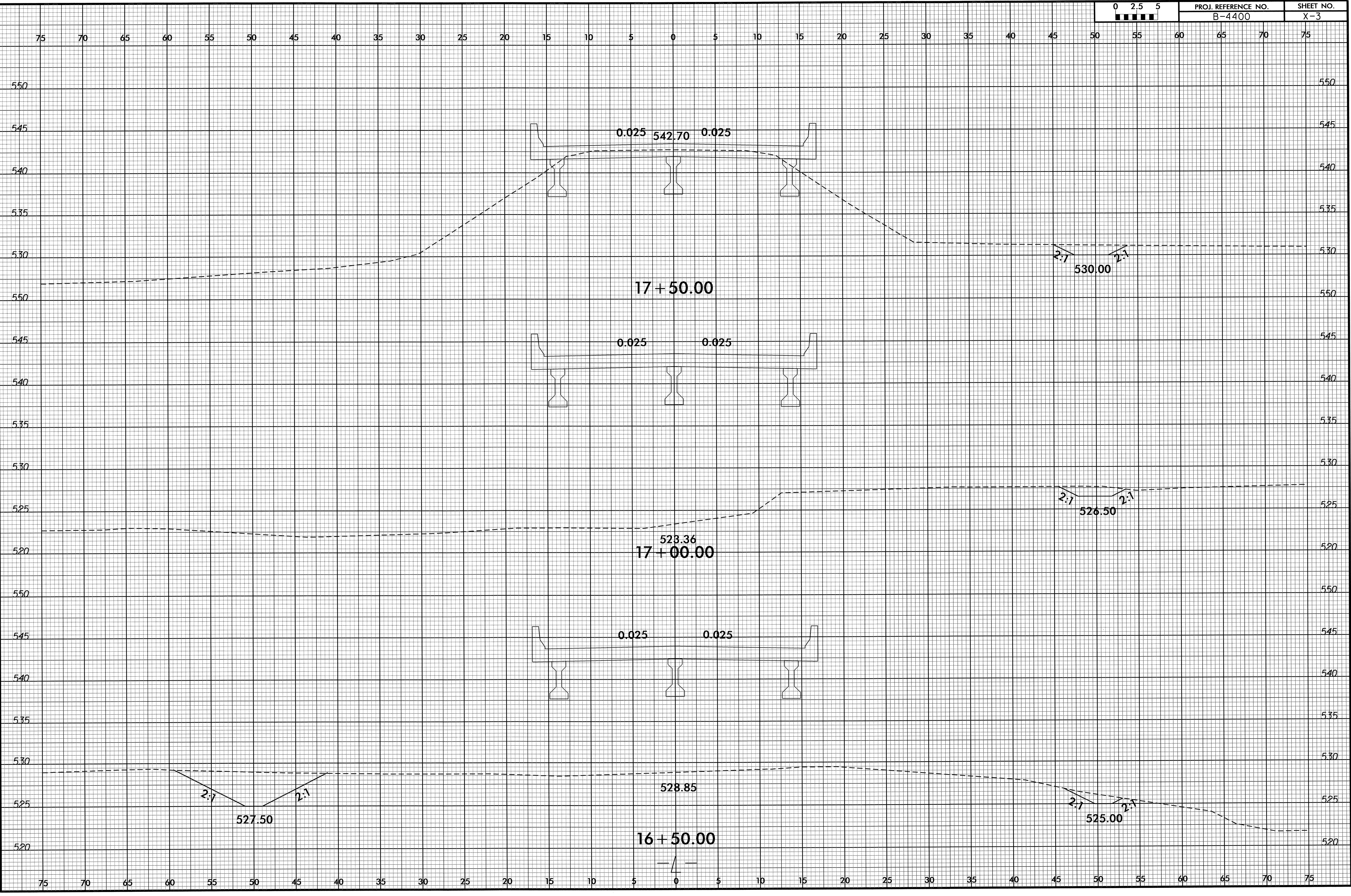
UCC

UTILITY COORDINATION CONSULTANTS
P.O. BOX 450
MINERAL SPRINGS, N.C. 28108
(704) 844-9093

8/23/99

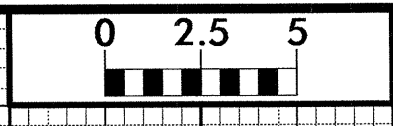


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| PROJ. REFERENCE NO. B-4400 | SHEET NO. X-3 |
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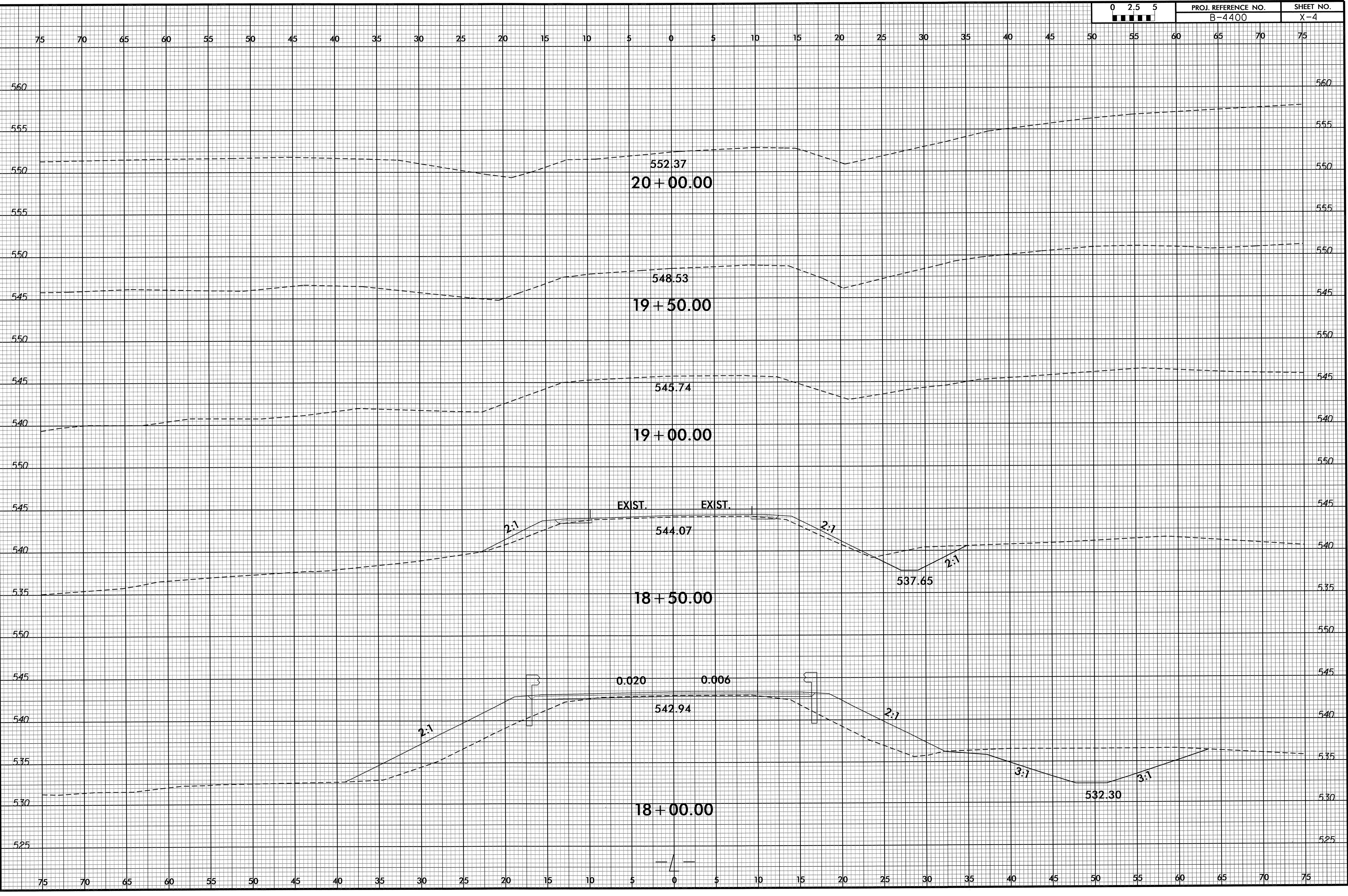


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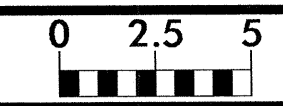
8/23/99



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| PROJ. REFERENCE NO. | SHEET NO. |
| B-4400 | X-4 |



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PROJ. REFERENCE NO.
B-4400

SHEET NO.
X-5

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