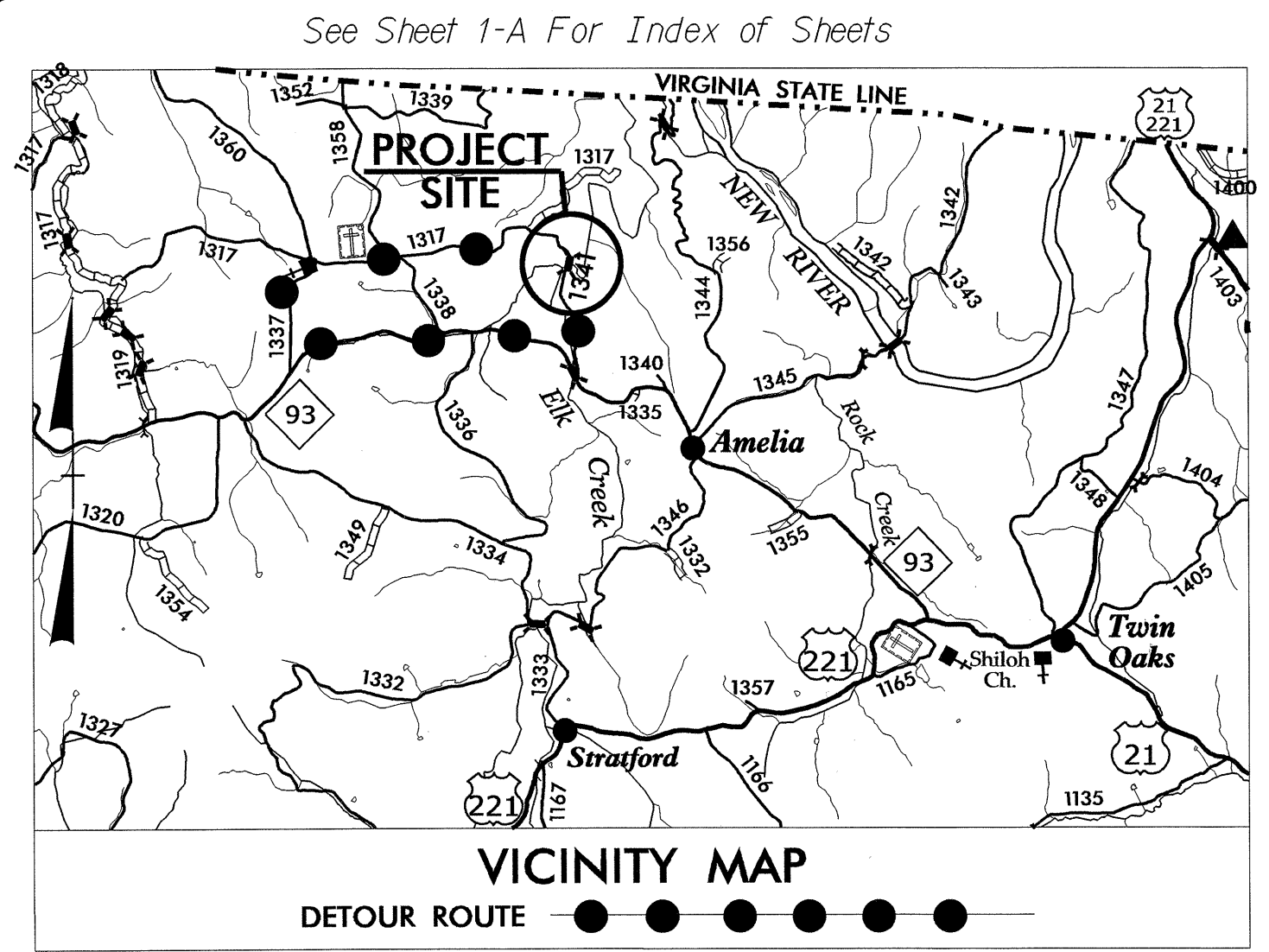


09/08/99

**TIP PROJECT: B-4701**

**CONTRACT: C203349**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

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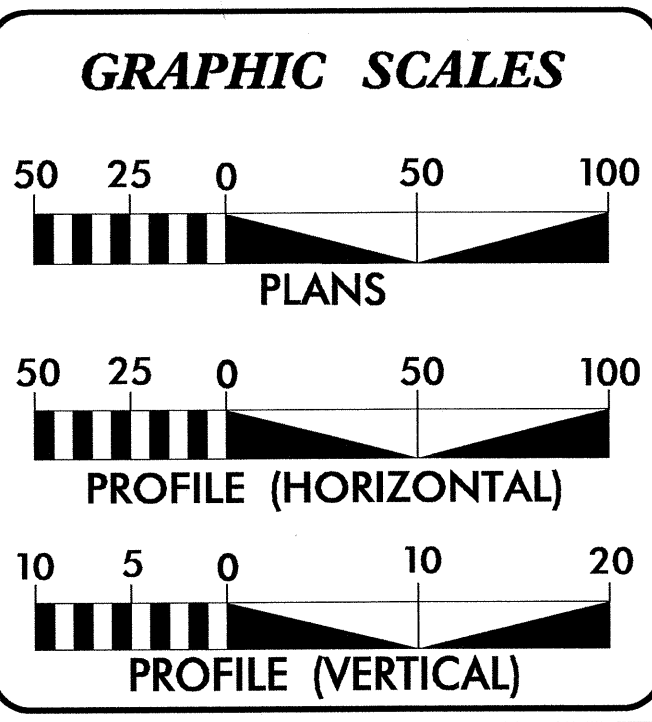
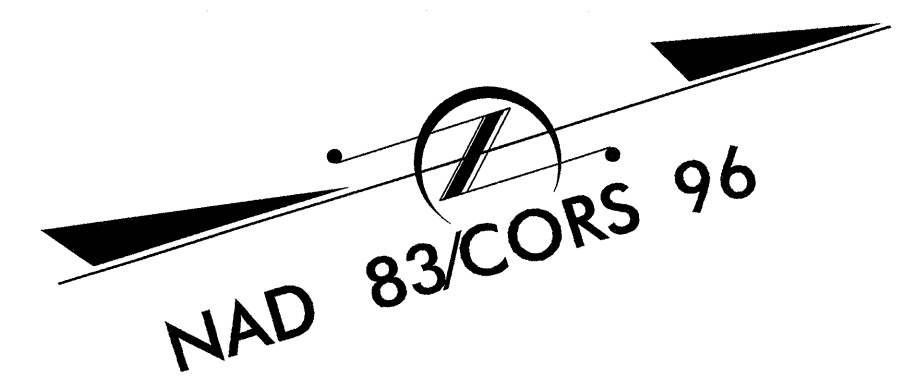
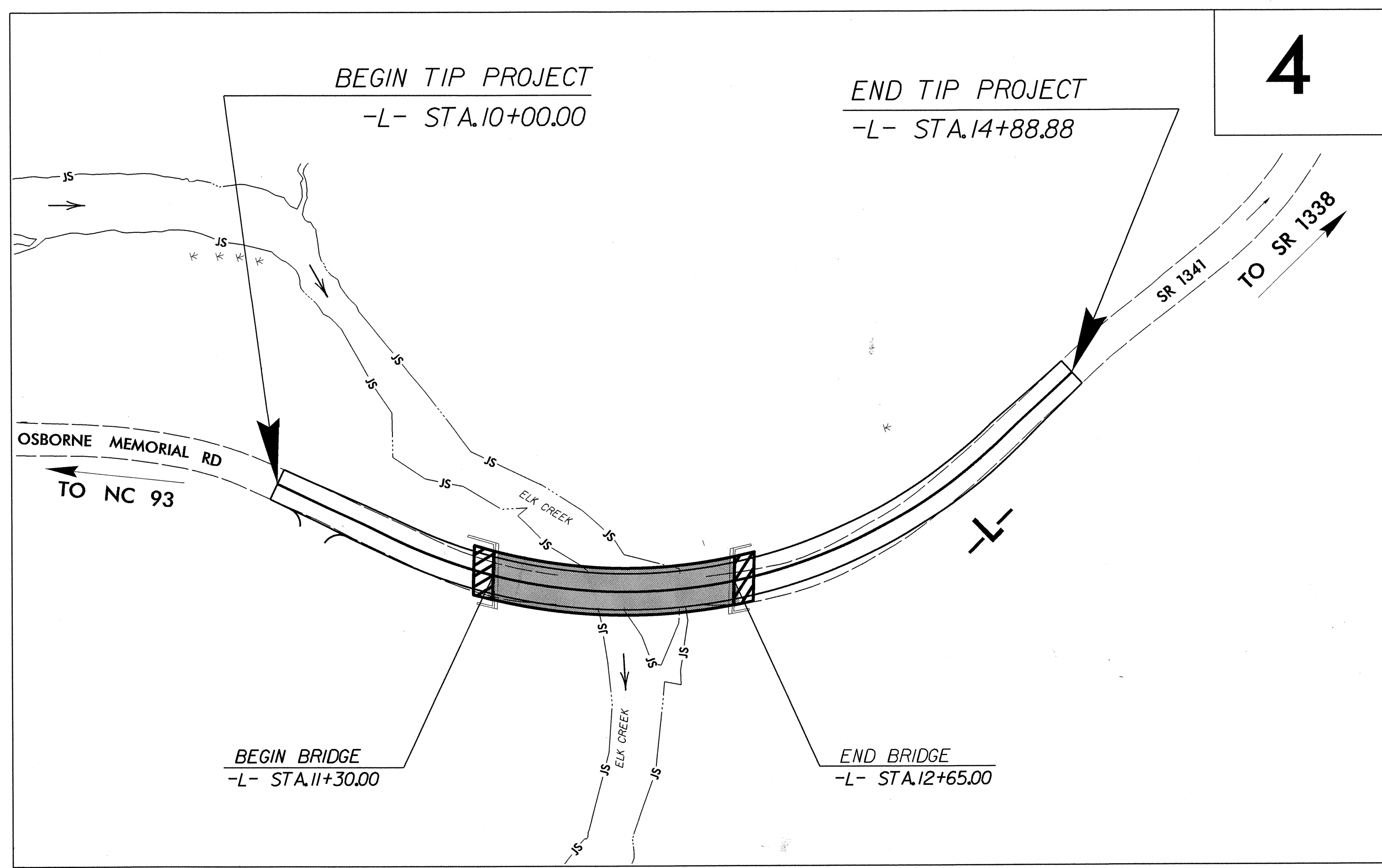
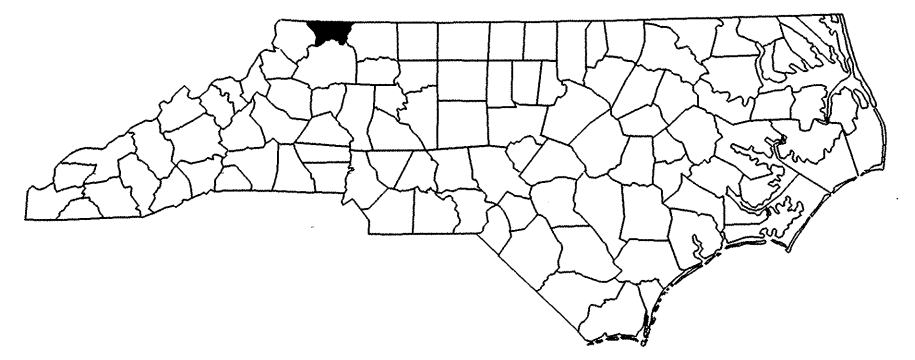
**ALLEGHANY COUNTY**

---

**LOCATION: BRIDGE 15 OVER ELK CREEK ON SR 1341  
(OSBORNE MEMORIAL ROAD)**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4701	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38476.1.1	BRZ-1341 (2)	PE	
38476.2.1	BRZ-1341 (2)	R/W, UTIL	
38476.3.FD1	BRZ-1341 (2)	CONST.	



**DESIGN DATA**

ADT 2011 =	270
ADT 2035 =	500
K =	10 %
D =	60 %
T =	5 % *
V =	35 MPH
* TTST = 2% DUAL 3%	
FUNC CLASS =	LOCAL
SUB-REGIONAL TIER	

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT B-4701 =	0.067 MILES
LENGTH OF STRUCTURE TIP PROJECT B-4701 =	0.026 MILES
LENGTH OF STATE PROJECT B-4701 =	0.093 MILES

Prepared in the Office of:

**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

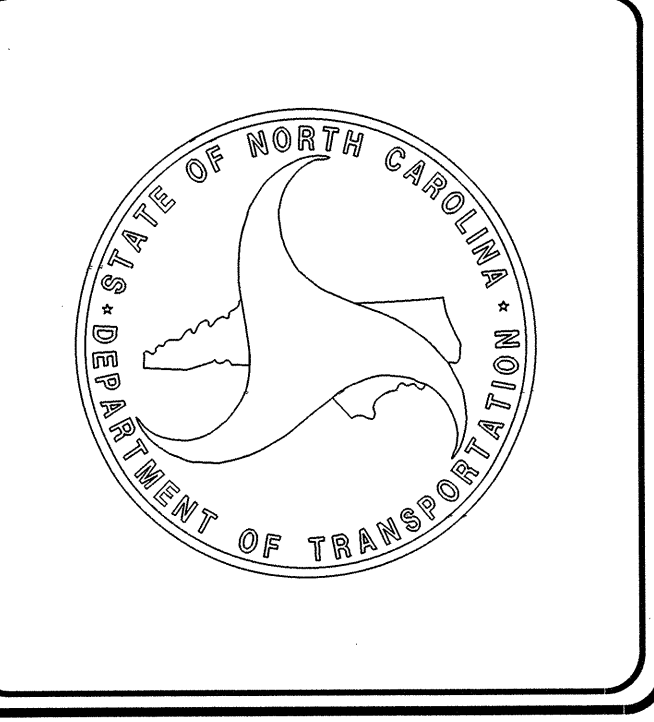
<b>RIGHT OF WAY DATE:</b> OCTOBER 19, 2012	<b>JASON MOORE, PE</b> PROJECT ENGINEER
<b>LETTING DATE:</b> FEBRUARY 18, 2014	<b>BRYAN KEY, PE</b> PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

Signature: \_\_\_\_\_


**ROADWAY DESIGN ENGINEER**

Signature: \_\_\_\_\_



01-NOV-2013 10:22  
R:\Roadwork\Proj\B-4701\_Rdy\_tsh.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. B-4701	SHEET NO. 1-A
ROADWAY DESIGN ENGINEER	
	
11-15-13	

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-D	SURVEY CONTROL SHEETS
2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2-A	DETAIL OF GUARDRAIL ANCHOR UNIT, TYPE B-77
<del>3</del>	<del>SUMMARY OF QUANTITIES</del>
3-A	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, ASPHALT PAVEMENT REMOVAL SUMMARY AND SHOULDER BERM GUTTER SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
X-0	CROSS-SECTION SUMMARY
X-1 THRU X-6	CROSS-SECTIONS

**GENERAL NOTES:**

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

**2012 ROADWAY ENGLISH STANDARD DRAWINGS**

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

**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.

**UNDERDRAINS:**

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

**GUARDRAIL:**

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

**TEMPORARY SHORING:**

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

**SUBSURFACE PLANS:**

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

**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.

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
<b>DIVISION 2 - EARTHWORK</b>	
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
<b>DIVISION 3 - PIPE CULVERTS</b>	
300.01	METHOD OF PIPE INSTALLATION
310.10	DRIVEWAY PIPE CONSTRUCTION
<b>DIVISION 4 - MAJOR STRUCTURES</b>	
422.11	REINFORCED BRIDGE APPROACH FILLS - SUB REGIONAL TIER
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE - METHOD I
<b>DIVISION 8 - INCIDENTALS</b>	
815.03	PIPE UNDERDRAIN AND BLIND DRAIN
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
846.01	DROP INLET INSTALLATION IN SHOULDER BERM GUTTER
862.01	GUARDRAIL PLACEMENT
862.02	GUARDRAIL INSTALLATION
862.04	ANCHORING END OF GUARDRAIL - B-77 AND B-83 ANCHOR UNITS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS

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	----- X
Property Monument	----- □ ECM
Parcel/Sequence Number	----- (23)
Existing Fence Line	----- X-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	----- X
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 Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----

**ROADS AND RELATED FEATURES:**

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	-----
Pavement Removal	-----

**VEGETATION:**

Single Tree	-----
Single Shrub	-----
Hedge	-----
Woods Line	-----

Orchard	-----
Vineyard	-----

**EXISTING STRUCTURES:**

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

**UTILITIES:**

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

**TELEPHONE:**

Existing Telephone Pole	-----
Proposed Telephone Pole	-----
Telephone Manhole	-----
Telephone Booth	-----
Telephone Pedestal	-----
Telephone Cell Tower	-----
U/G Telephone Cable Hand Hole	-----
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

**WATER:**

Water Manhole	-----
Water Meter	-----
Water Valve	-----
Water Hydrant	-----
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

**TV:**

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

**GAS:**

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

**SANITARY SEWER:**

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

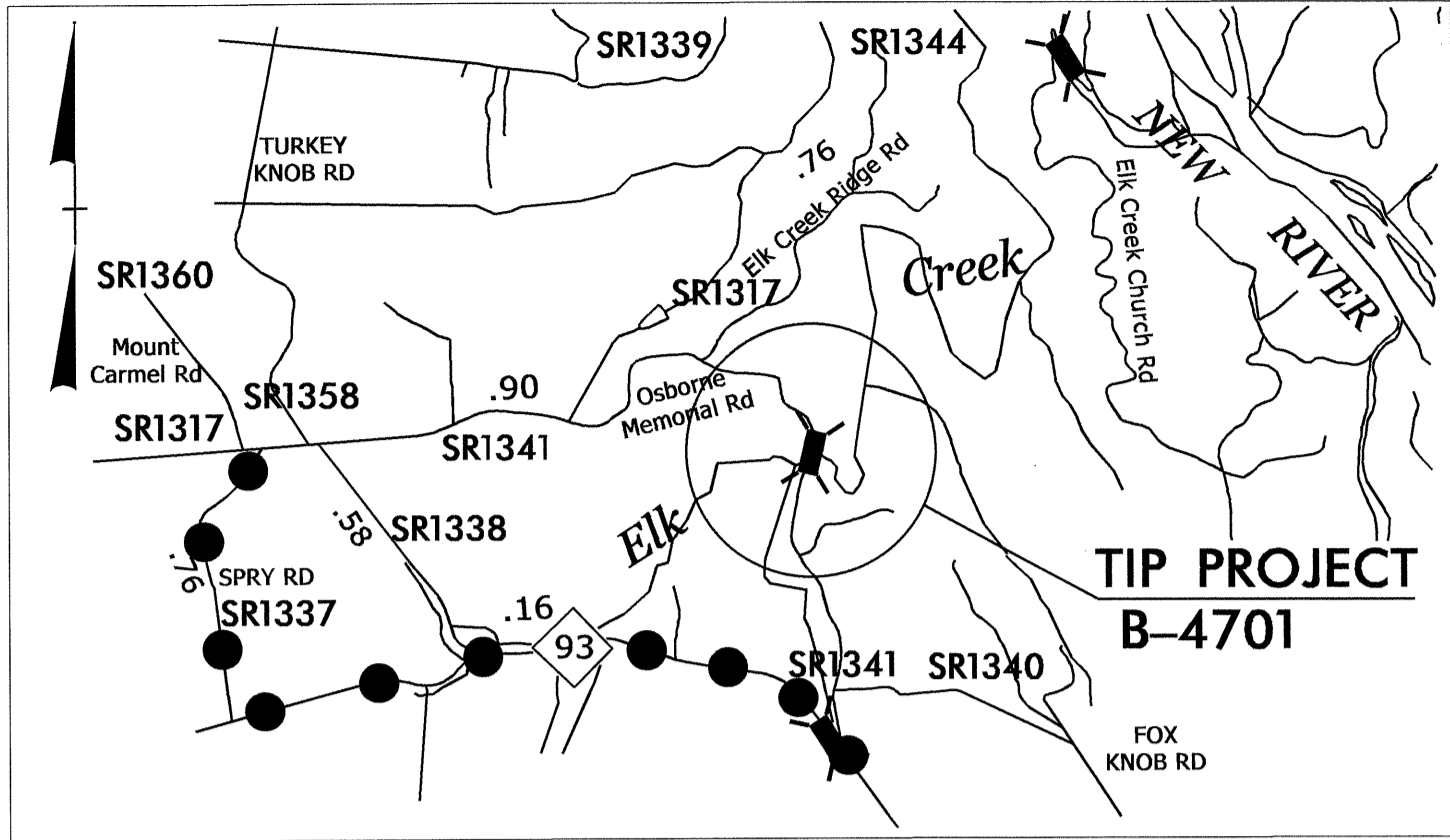
**MISCELLANEOUS:**

Utility Pole	-----
Utility Pole with Base	-----
Utility Located Object	-----
Utility Traffic Signal Box	-----
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	-----
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	-----
End of Information	-----

04/16/11



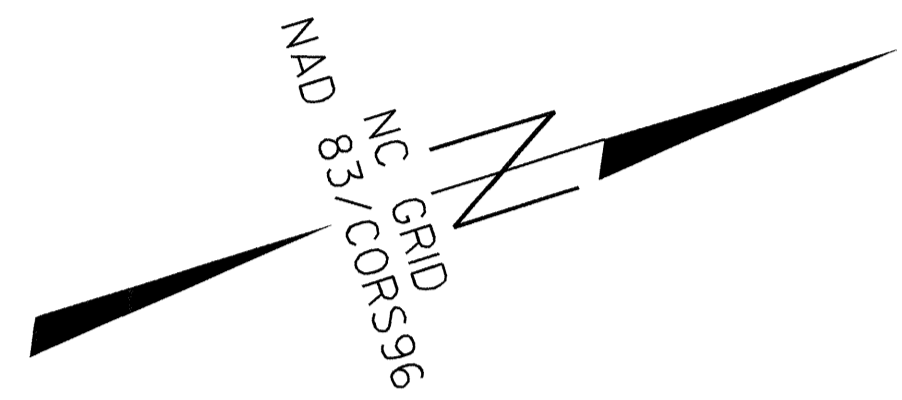
# SURVEY CONTROL SHEET B-4701



**VICINITY MAP**  
**DETOUR ROUTE** ●●●●●●●●

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
B47011		GPS 4701-1	1028170.1720	1348599.3470	2500.10		OUTSIDE PROJECT LIMITS
BL3		BL-3	1028470.6610	1348571.2290	2483.64		OUTSIDE PROJECT LIMITS
BL4		BL-4	1028923.4180	1348663.3270	2465.70		OUTSIDE PROJECT LIMITS
BL5		BL-5	1029286.9730	1348887.8830	2459.48	12+53.32	13.89 RT
B47012		GPS 4701-2	1029676.4872	1348721.2757	2489.40		OUTSIDE PROJECT LIMITS

\*\*\*\*\*  
 BM1 ELEVATION = 2469.29  
 N 1029273 E 1348966  
 L STATION 12+51.00 93 RIGHT  
 RR SPIKE IN 16" OAK  
 \*\*\*\*\*



### NC DOT GPS STATION B4701-2 LOCALIZED COORDINATES

**N = 1029676.4872**  
**E = 1348721.2757**

*BEGIN TIP PROJECT*  
 -L- STA. 10+00.00

*N = 1029074.2730*  
*E = 1348749.3682*

*END TIP PROJECT*  
 -L- STA. 14+88.88

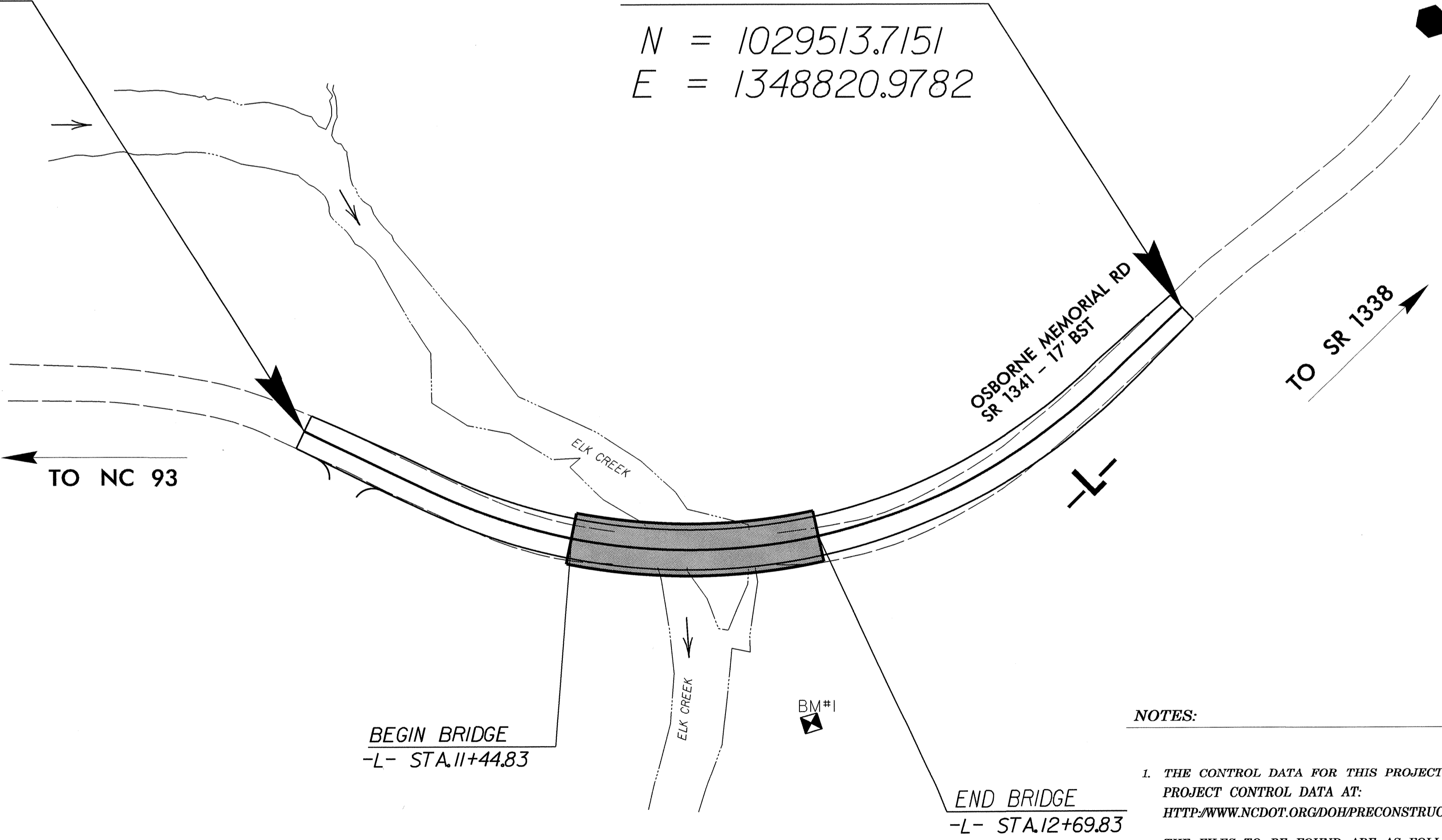
*N = 1029513.7151*  
*E = 1348820.9782*

### NC DOT GPS STATION B4701-1 LOCALIZED COORDINATES

**N = 1028170.1720**  
**E = 1348599.3470**

#### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4701-2"  
 WITH NAD 83/CORS96 STATE PLANE GRID COORDINATES OF  
 NORTHING: 1029676.4872(±) EASTING: 1348721.2757(±)  
 ELEVATION: (±)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0000181903  
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4701-2" TO -L- STATION 10+00 IS  
 S 2°40'15" E 602.87  
 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:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/B4701\\_LS\\_CONTROL.TXT](http://www.ncdot.org/doh/preconstruct/highway/location/project/B4701_LS_CONTROL.TXT)  
 THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4701\_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.

**NOTE: DRAWING NOT TO SCALE**

6/22/09 24-SEP-2013 16:27 B-4701-1s-1-r-c.dgn



# SURVEY CONTROL SHEET B-4701

		L	
TYPE	STATION	NORTH	EAST
POT	10+00.00	1029074.2730	1348749.3682
PC	10+72.08	1029127.3953	1348798.0838
PT	14+32.06	1029462.7454	1348846.0902
POT	14+88.88	1029513.7151	1348820.9782

ROW MARKER PERMANENT EASEMENT - E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	10+93.00	48.00	1029113.3978	1348849.2272
L	10+93.00	30.80	1029124.1087	1348835.7745
L	11+23.00	32.50	1029150.0574	1348856.4755
L	11+23.00	48.00	1029141.6602	1348869.5070

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4701-2"  
 WITH NAD 83/CORS96 STATE PLANE GRID COORDINATES OF  
 NORTHING: 1029676.4872(±) EASTING: 1348721.2757(±)  
 ELEVATION: 2489.40(±)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT  
 (GROUND TO GRID) IS: 1.0000181903  
 THE N.C. LAMBERT GRID BEARING AND  
 LOCALIZED HORIZONTAL GROUND DISTANCE FROM  
 "B4701-2" TO -L- STATION 10+00 IS  
 S 2°40'15" E 602.87  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NAVD 88

### NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCTHIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstructhighway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4701\_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.

### FINAL TABLES

NOTE: DRAWING NOT TO SCALE



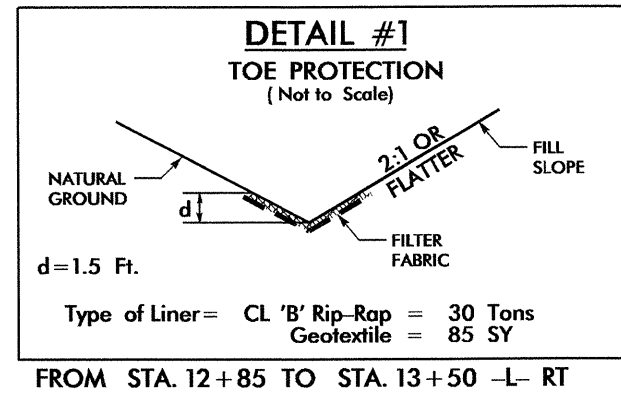






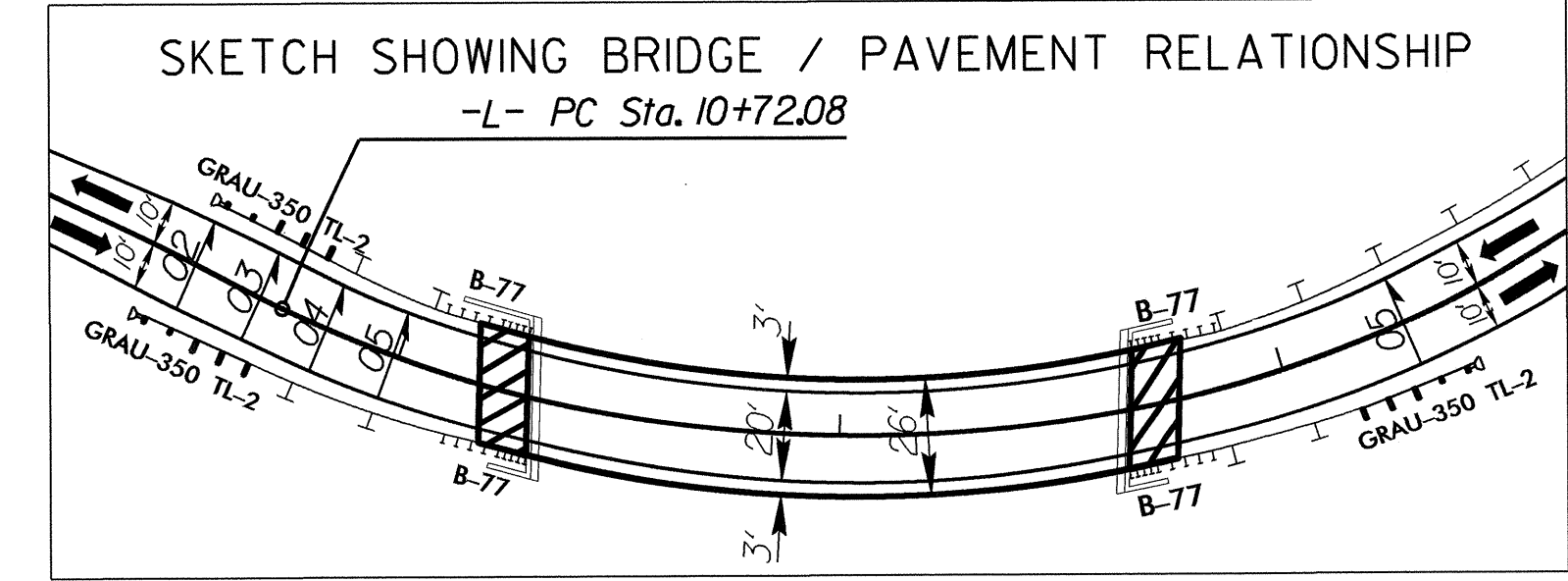
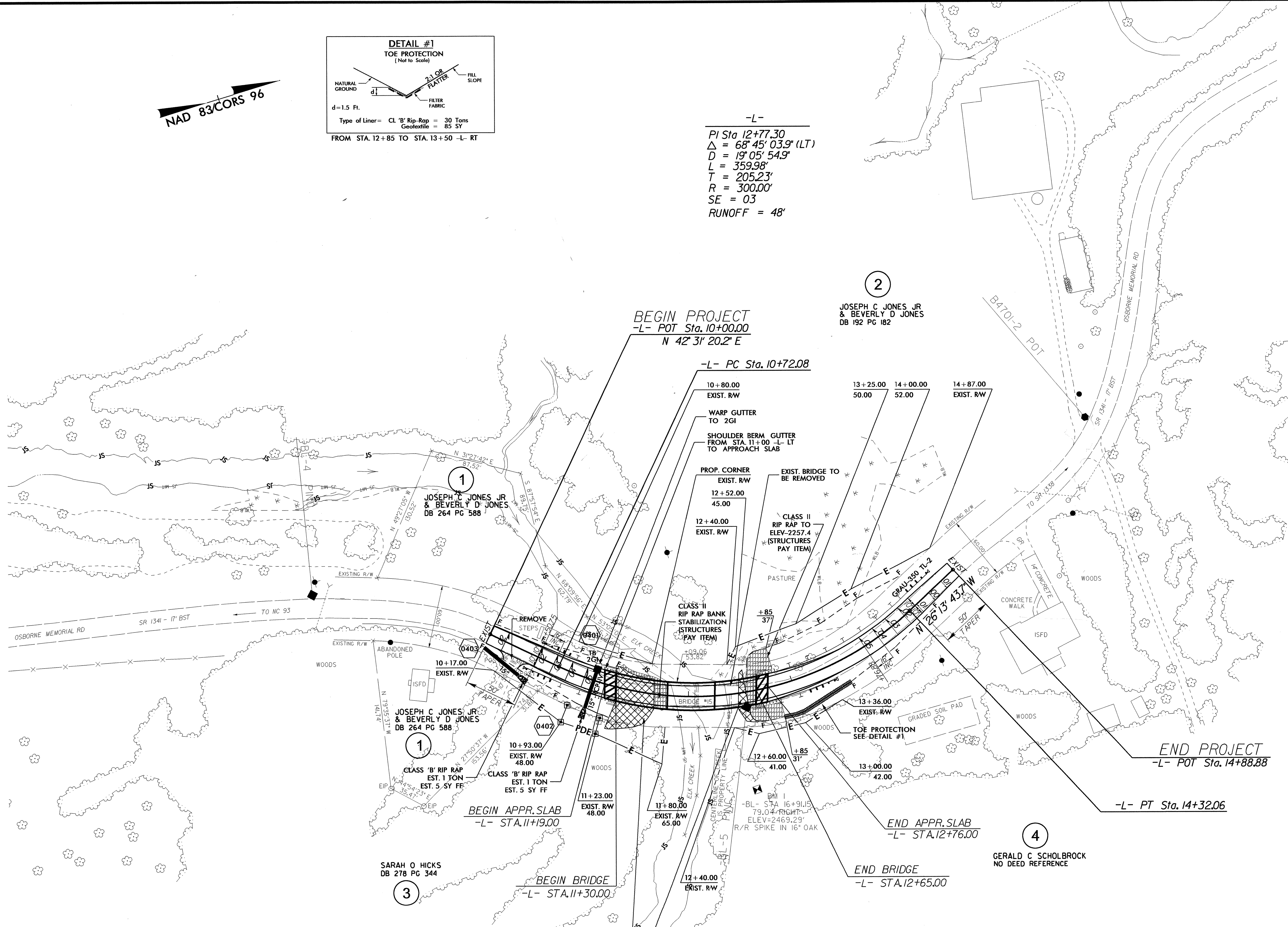
PROJECT REFERENCE NO. B-4701	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 26964 BRYAN C. KELLEY 11-4-13	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 9334 HENRY WELLS, JR. 11-0-13
SEE SHEET 5 FOR PROFILE	
FOR STRUCTURE PLANS SEE SHEET S-1 THRU S-35	

NAD 83/CORS 96



-L-  
 PI Sta 12+77.30  
 $\Delta = 68^{\circ} 45' 03.9''$  (LT)  
 $D = 19^{\circ} 05' 54.9''$   
 $L = 359.98'$   
 $T = 205.23'$   
 $R = 300.00'$   
 $SE = 03$   
 RUNOFF = 48'

REVISIONS



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 USER:RNF



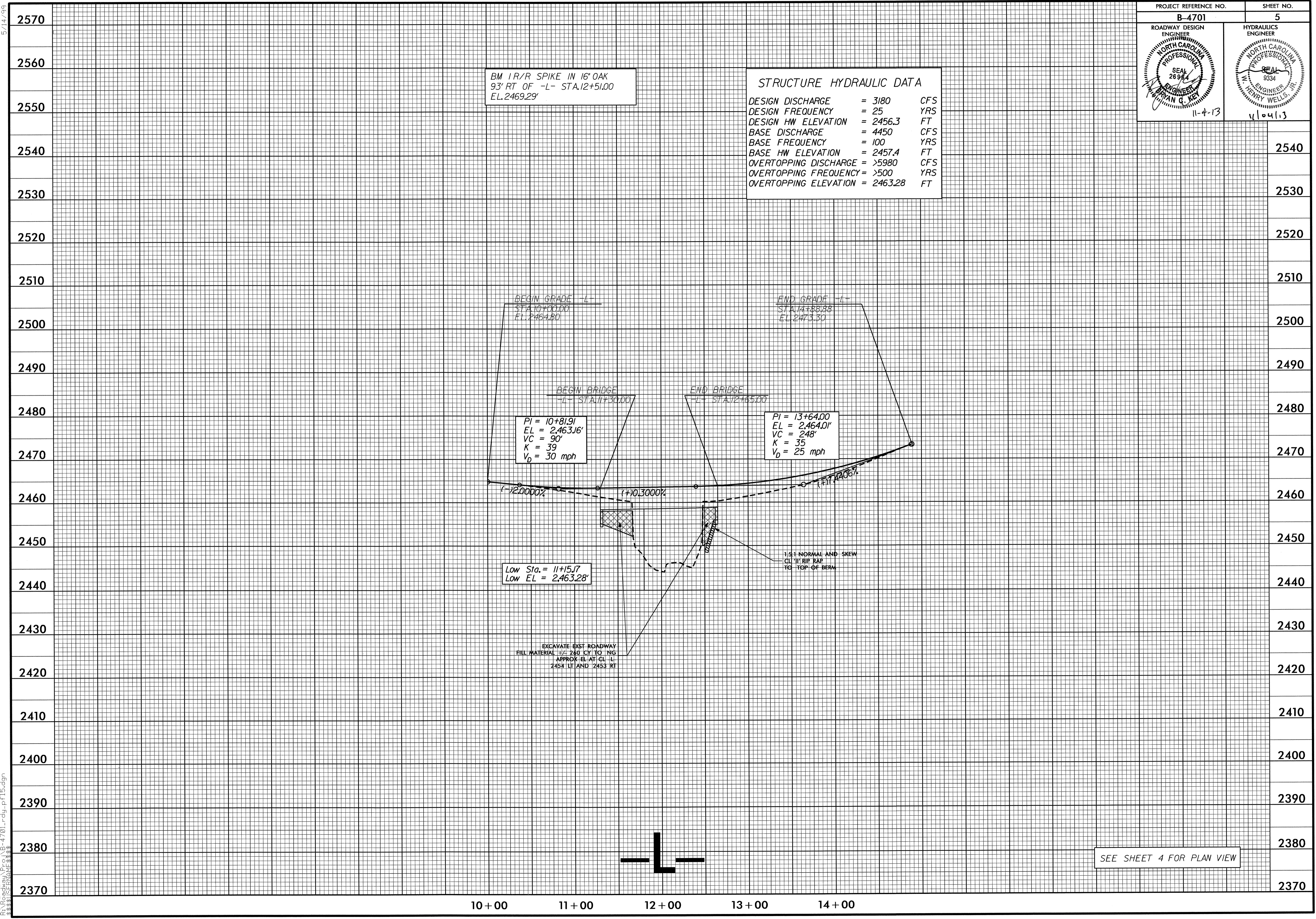
5/14/99

PROJECT REFERENCE NO. <b>B-4701</b>	SHEET NO. <b>5</b>
ROADWAY DESIGN ENGINEER <b>W. HENRY WELLS, JR.</b> SEAL 26964 11-4-13	HYDRAULICS ENGINEER <b>W. HENRY WELLS, JR.</b> SEAL 9334 11-4-13

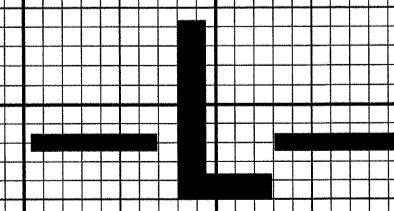
BM 1 R/R SPIKE IN 16" OAK  
93' RT OF -L- STA.12+51.00  
EL.2469.29'

**STRUCTURE HYDRAULIC DATA**

DESIGN DISCHARGE	= 3180	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2456.3	FT
BASE DISCHARGE	= 4450	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2457.4	FT
OVERTOPPING DISCHARGE	= >5980	CFS
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING ELEVATION	= 2463.28	FT



70-SEP-2013 15:02  
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SEE SHEET 4 FOR PLAN VIEW

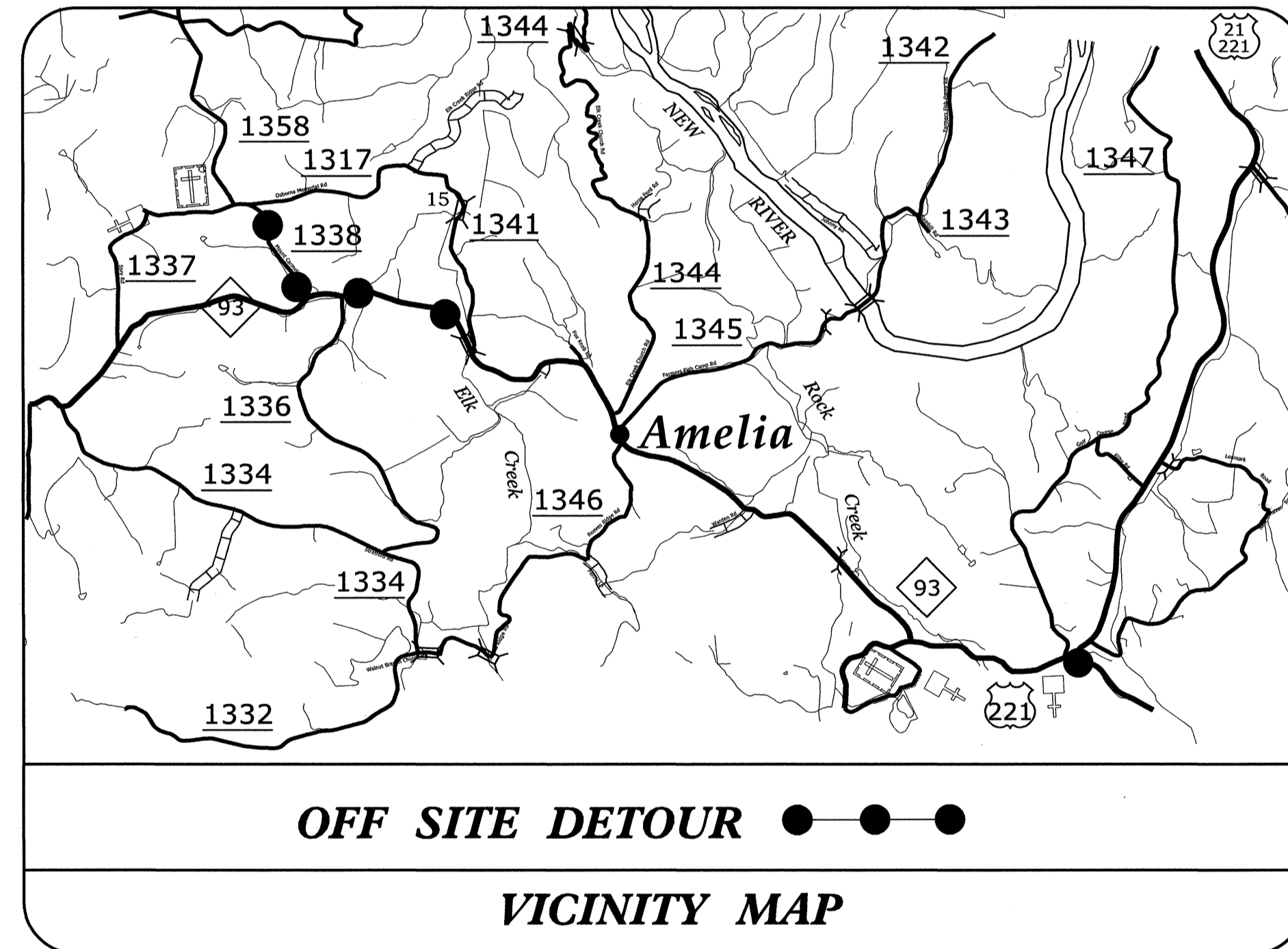
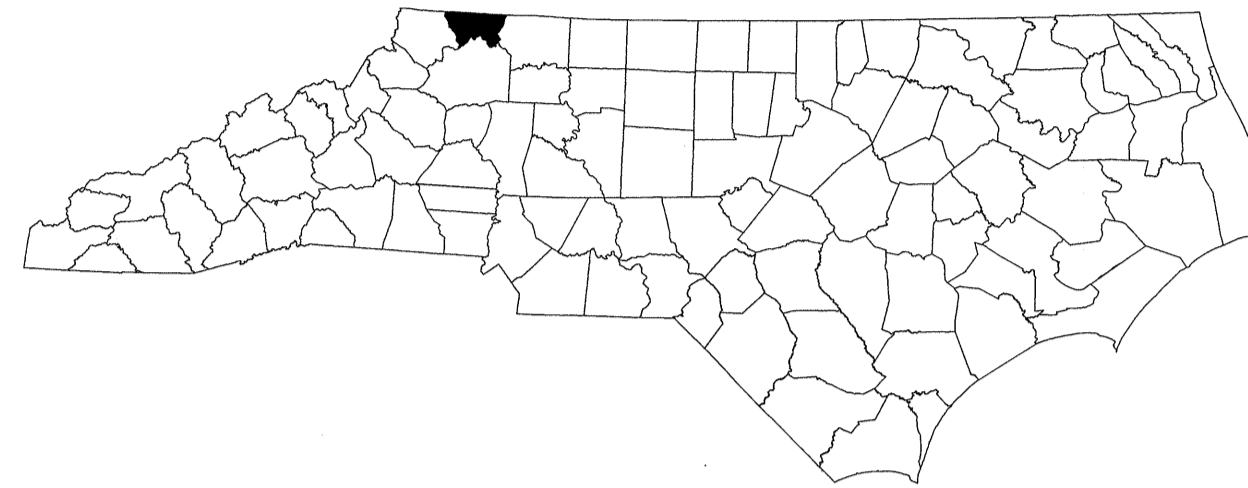
10+00      11+00      12+00      13+00      14+00



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**ALLEGHANY COUNTY**



REPLACE BRIDGE 15 OVER ELK CREEK ON  
SR 1341 (OSBORNE MEMORIAL ROAD)

**INDEX OF SHEETS**

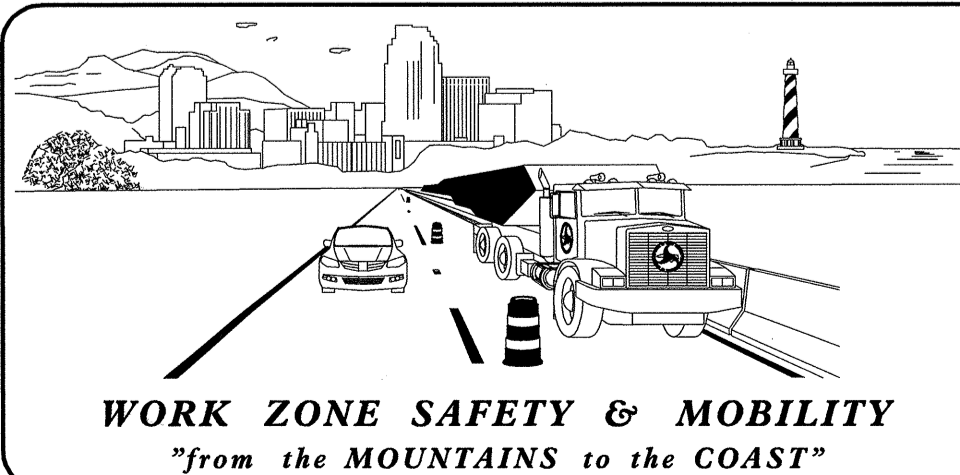
SHEET NO.	TITLE
TMP-1	TITLE SHEET; INDEX OF SHEETS; ROADWAY STANDARD DRAWINGS; AND LEGEND
TMP-1A	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, AND GENERAL NOTES)
TMP-2	SPECIAL SIGN DESIGN
TMP-3	TEMPORARY TRAFFIC CONTROL DETAIL AND PHASING

**ROADWAY STANDARD DRAWINGS**

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1180.01	SKINNY - DRUM
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

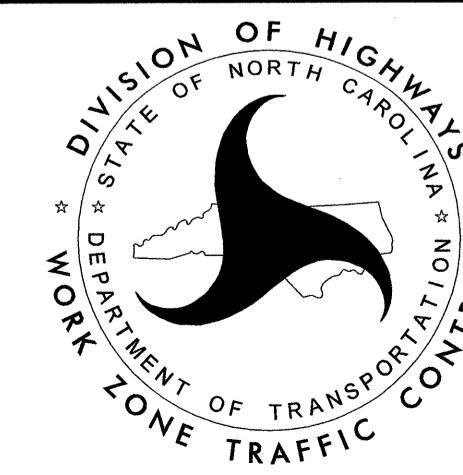
**LEGEND**

- GENERAL**  
 NORTH ARROW
- TRAFFIC CONTROL DEVICES**  
 BARRICADE (TYPE III)
- TEMPORARY SIGNING**  
 STATIONARY SIGN



**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  
 G. L. GETTIER, P.E. TRAFFIC CONTROL PROJECT ENGINEER  
 J. W. WOOLARD, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER  
 DENA KLEIN TRAFFIC CONTROL DESIGN ENGINEER



APPROVED: \_\_\_\_\_  
 DATE: 8/2/13

SEAL

**TIP PROJECT: B-4701**

8/1/2013 P:\TIPProjects-B\B4701\Traffic\TrafficControl\TCP\B4701\_TC\_TMP.dgn User:tdklein

## MANAGEMENT STRATEGIES

TRAFFIC WILL BE MAINTAINED OFFSITE DURING CONSTRUCTION. TRAFFIC WILL FOLLOW SR 1338 TO NC 93.

## GENERAL NOTES / LOCAL 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 UNDESIRE 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) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

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

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

- D) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

- E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

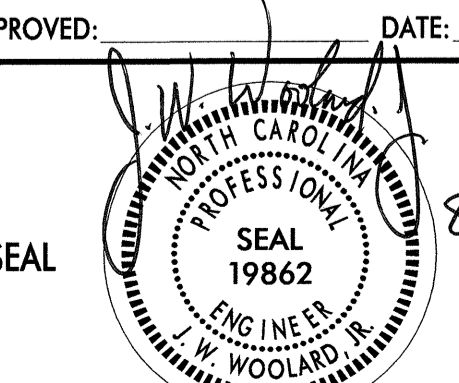

### TRAFFIC CONTROL DEVICES

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

### PAVEMENT MARKINGS AND MARKERS

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

8/1/2013 P:\TIP\Projects-B\B4701\Traffic\TrafficControl\TCP\B4701\_TC\_TMP - 01.dgn User:sdcklein

APPROVED: 	DATE: 8/2/13		<h1 style="margin: 0;">TRANSPORTATION OPERATIONS PLAN</h1>
---	--------------	---	--

SIGN NUMBER: SP13197      BACKG COLOR: Fluorescent Orange  
 TYPE: STATIONARY      COPY COLOR: Black  
 QUANTITY: SEE PLANS

SYMBOL	X	Y	WID	HT

SIGN WIDTH: 4'-0"  
 HEIGHT: 3'-6"  
 TOTAL AREA: 14.0 Sq.Ft.

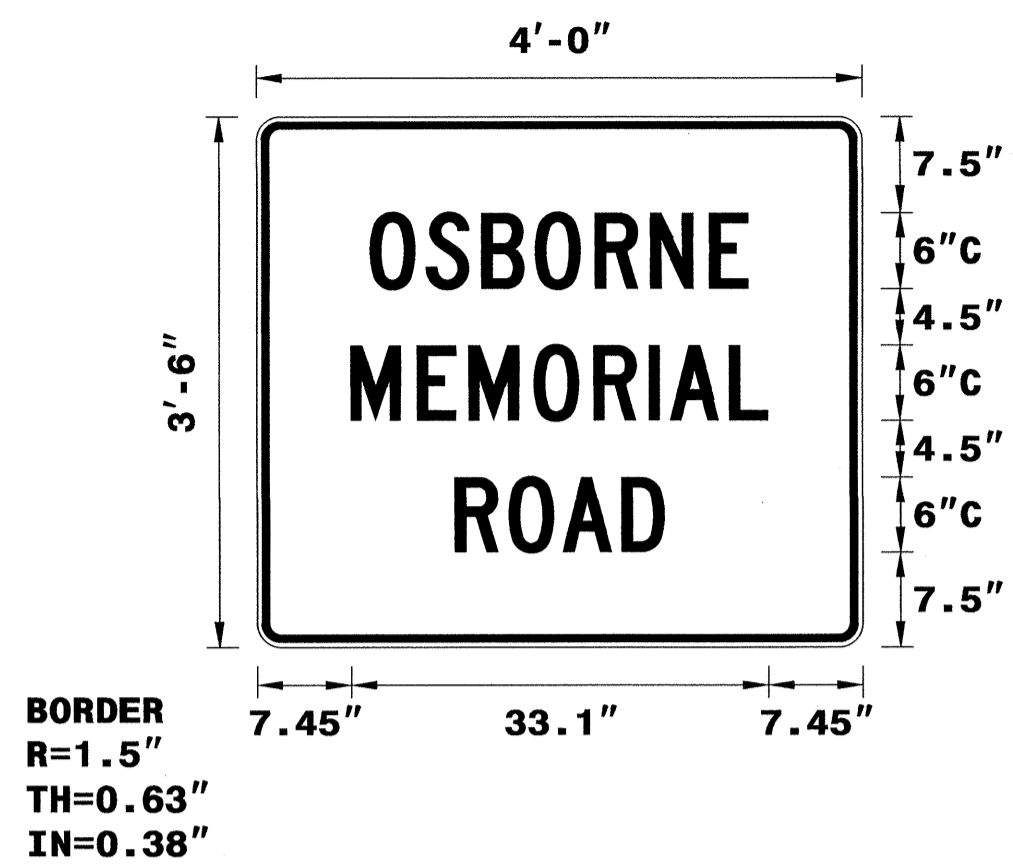
BORDER TYPE: INSET  
 RECESS: 0.38"  
 WIDTH: 0.63"  
 RADII: 1.5"

NO. Z BARS:  
 LENGTH:

MAT'L: 0.080" (2.0 mm) ALUMINUM

DESIGN BY: JGM      CHECKED BY: KLJ      DATE: Aug 01, 2013  
 PROJECT ID: B-4701      DIV: 11

PROJ. REFERENCE NO.	SHEET NO.
B-4701	TMP-2



Spacing Factor is 1 unless specified otherwise

- USE NOTES: 1,2
- Legend and border shall be direct applied black non-reflective sheeting.
  - Background shall be NC GRADE B fluorescent orange retroreflective sheeting.

LETTER POSITIONS

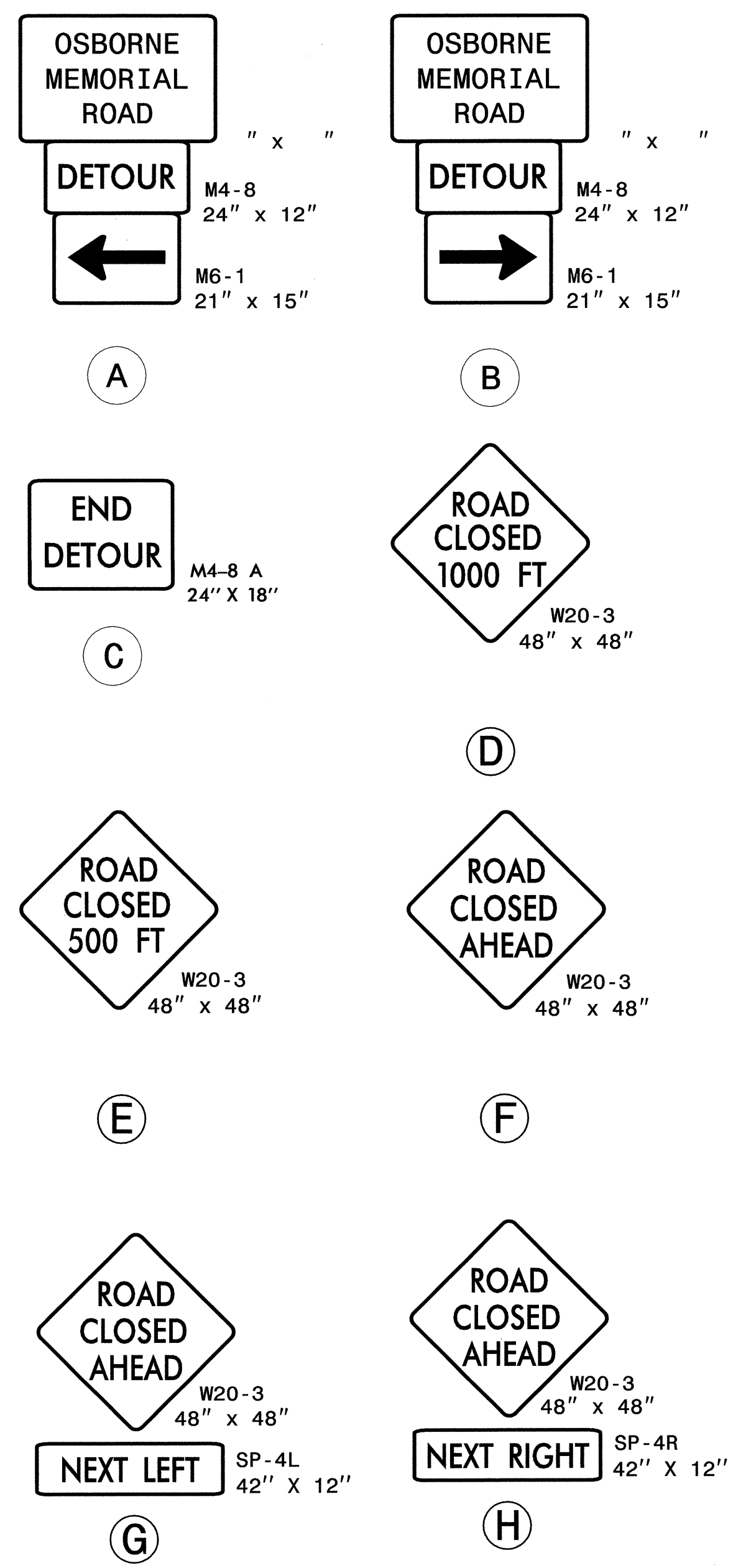
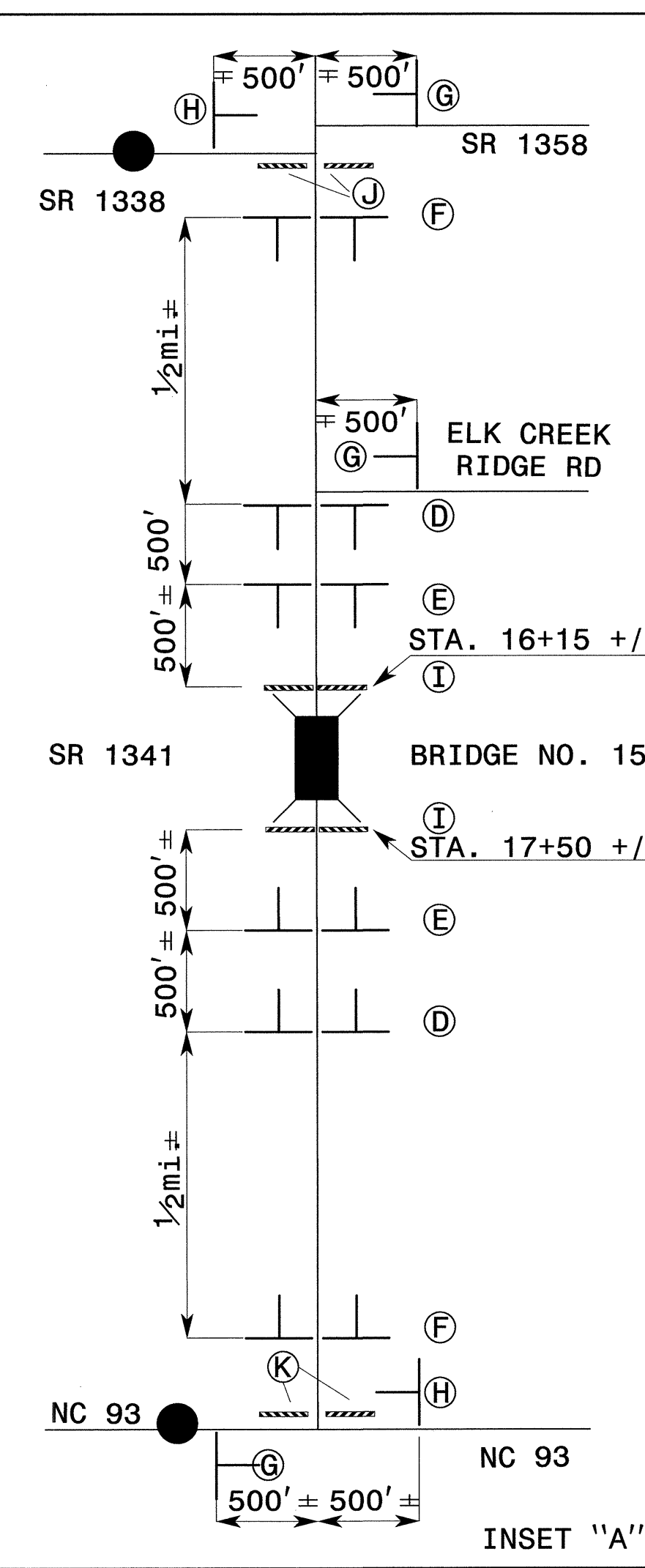
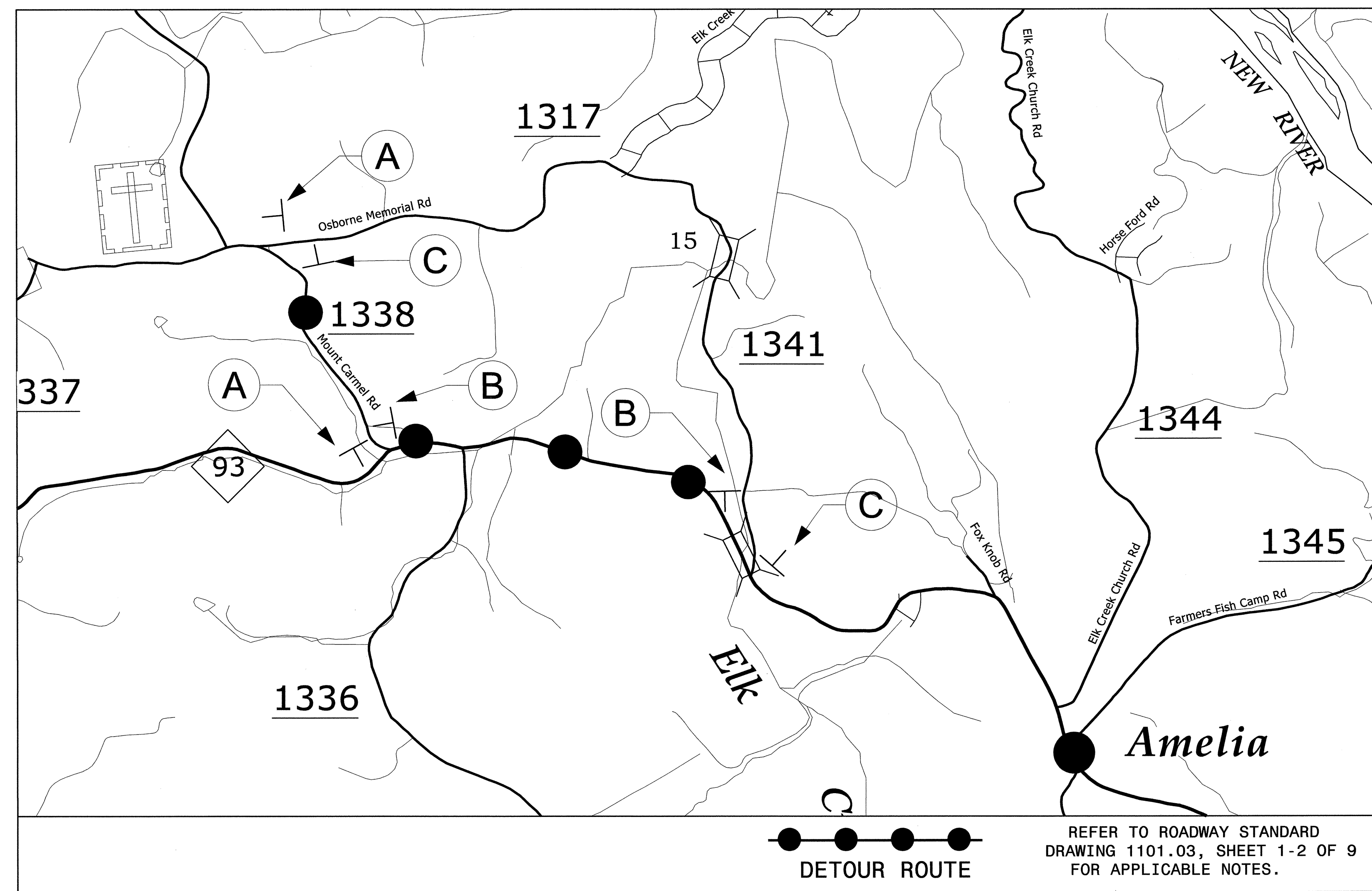
Letter spacings are to start of next letter										Series/Size
										Text Length
	O	S	B	O	R	N	E			C 2000
9	4.4	4.4	4.3	4.7	4.4	4.7	3.1	9		29.9
	M	E	M	O	R	I	A	L		C 2000
7.5	5.3	4.1	5.2	4.7	4.4	1.7	4.7	3.1	7.5	33.1
	R	O	A	D						C 2000
15.7	4.3	4.3	4.7	3.4	15.7					16.6

FILENAME: Sign Design

NORTH CAROLINA D.O.T. SIGN DETAIL

APPROVED: <i>[Signature]</i> DATE: 8/1/13	<b>SPECIAL SIGN DESIGN</b>	
	SCALE: NONE	
	DATE: 7/31/13	
	DWG. BY: JGM	
	DESIGN BY: JGM	
REVIEWED BY: KLJ	REVISIONS	



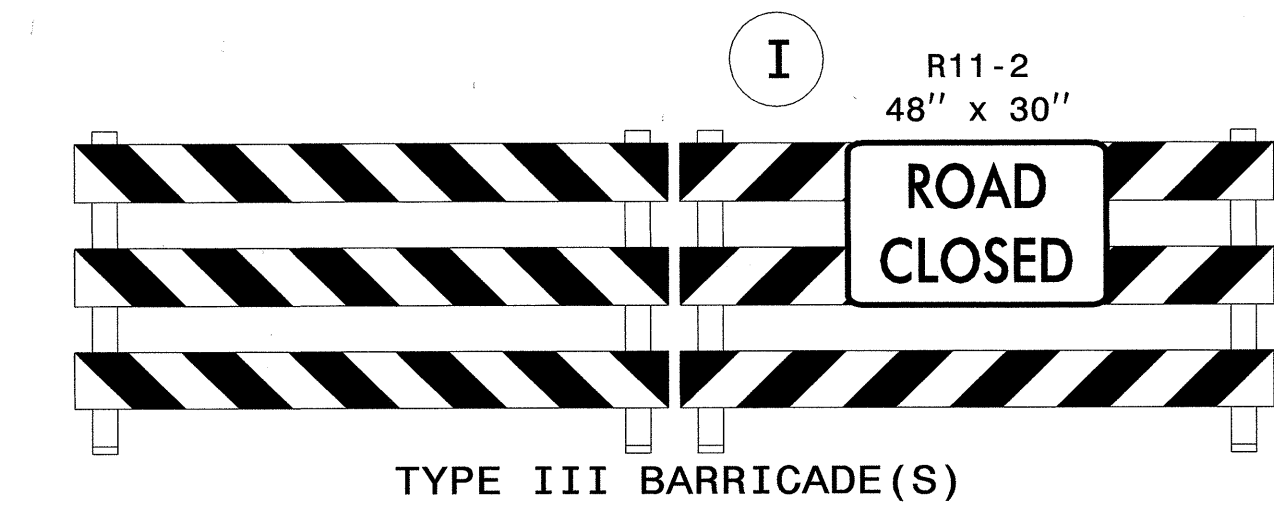
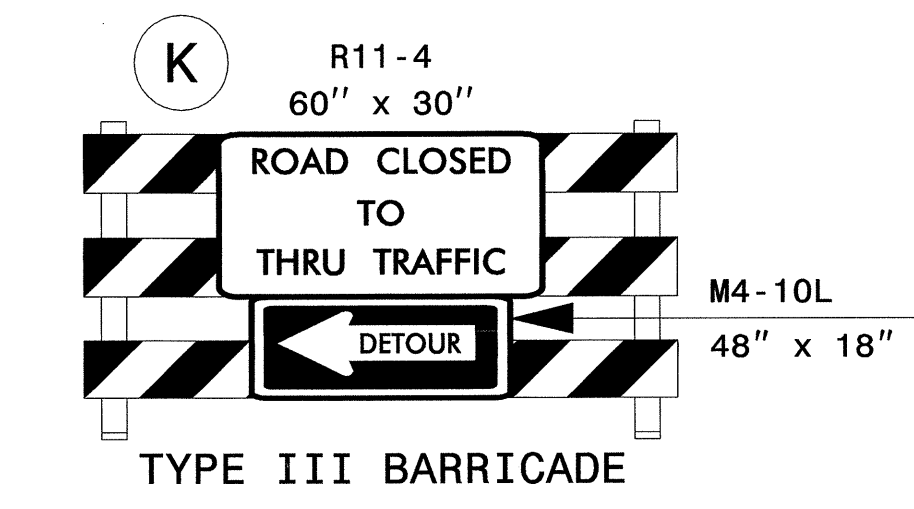
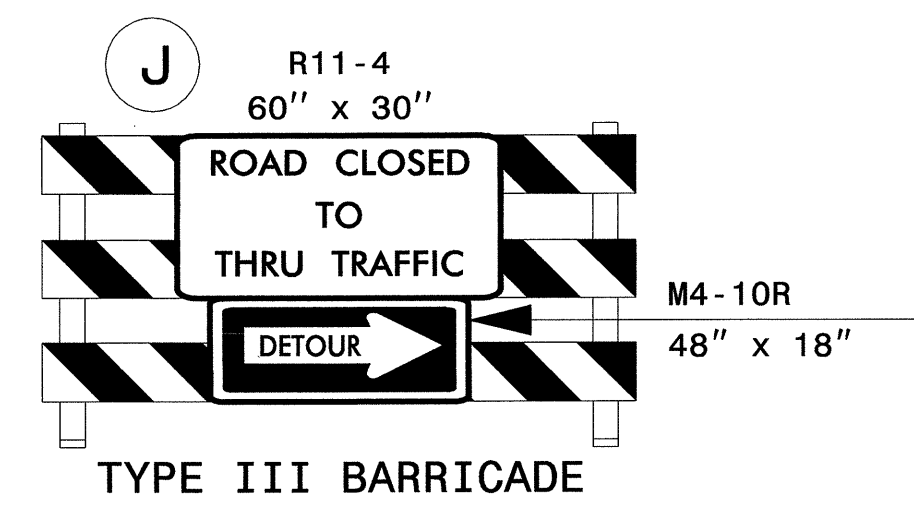


REFER TO ROADWAY STANDARD DRAWING 1101.03, SHEET 1-2 OF 9 FOR APPLICABLE NOTES.

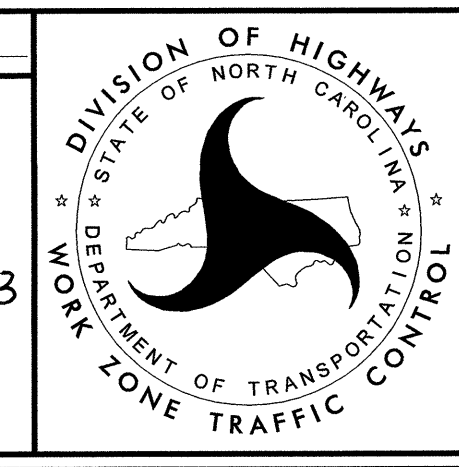
### PHASING

NOTE: MAINTAIN ACCESS TO ALL RESIDENCES AT ALL TIMES.

- STEP 1) INSTALL ALL OFFSITE DETOUR SIGNS AND ROAD CLOSURE SIGNING AS SHOWN ON (TMP-03) NO MORE THAN 3 DAYS PRIOR TO ROAD CLOSURE. IF ROAD IS NOT CLOSED WITHIN THE SAME WORKING PERIOD AS SIGN INSTALLATION, COVER ALL SIGNING.
- STEP 2) UNCOVER SIGNING IF NEEDED. THEN USING TMP-03 DETOUR TRAFFIC OFFSITE AND CLOSE -L- (SR 1341 OSBORNE MEMORIAL ROAD). BEHIND ROAD CLOSURE, CONSTRUCT -L- UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE.
- STEP 3) PLACE THE FINAL LIFT OF SURFACE COURSE ON -L- (SR 1341 OSBORNE MEMORIAL ROAD). PLACE FINAL PAVEMENT MARKINGS AND MARKERS (SEE PAVEMENT MARKING PLAN).
- STEP 4) REMOVE ALL TRAFFIC CONTROL DEVICES, ROAD CLOSURE SIGNING, AND OPEN -L- TO TRAFFIC. REMOVE ALL OFFSITE DETOUR SIGNING.



APPROVED: DATE: 8/2/13



OFFSITE DETOUR AND PHASING

8/1/2013 P:\TIP\Projects-B\B4701\TrafficControl\CPA\B4701\_TC\_TMP - 2.dgn User:sdaklein

**STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN  
ALLEGHANY COUNTY**

**LOCATION: BRIDGE No.15 OVER ELK CREEK ON SR 1341  
(OSBORNE MEMORIAL ROAD)**

TIP NO. B-4701	SHEET NO. PMP-1
APPROVED: <i>[Signature]</i>	
DATE: 10/24/13	
SEAL	

**T.I.P.: B-4701**

**CONTRACT: C203349**

**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

**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.

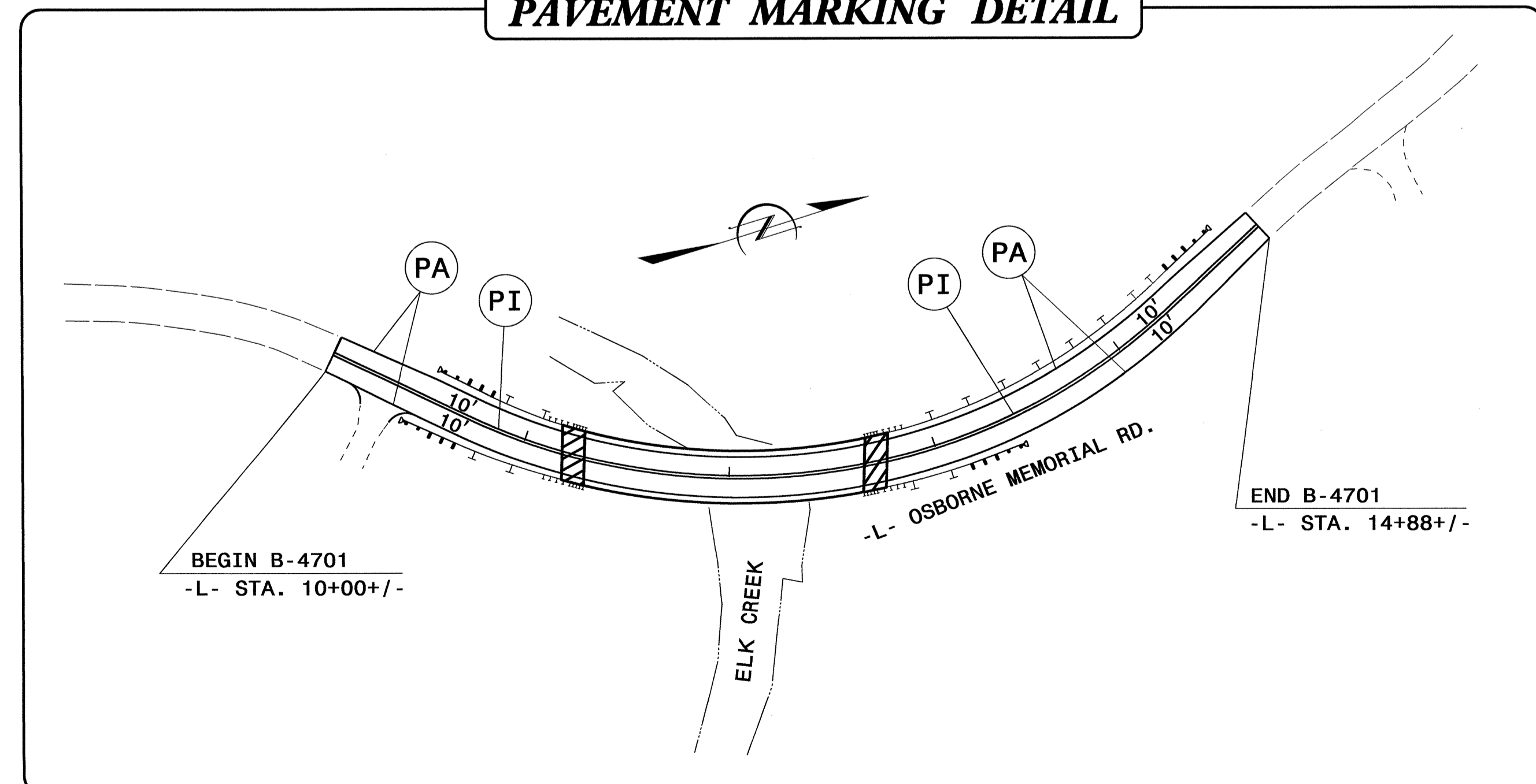
- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
OSBORNE MEMORIAL RD.	PAINT	NONE
- B) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.
- C) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- D) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- E) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- F) REMOVE ALL RESIDUE AND SURFACE LAITANCE BY ACCEPTABLE METHODS ON CONCRETE BRIDGE DECKS PRIOR TO PLACING PAINT PAVEMENT MARKING MATERIAL.

**PAVEMENT MARKING SCHEDULE**

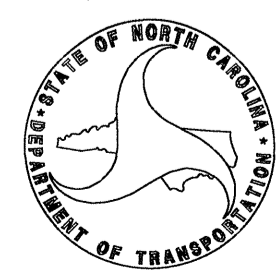
SYMB	DESCRIPTION
	FINAL PAVEMENT MARKINGS
	PAINT (4")
PA	WHITE EDGELINE
PI	YELLOW DOUBLE CENTER

**PAVEMENT MARKING DETAIL**



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

KELVIN JORDAN SIGNING & DELINEATION REGIONAL ENGINEER  
DERRICK BEARD SIGNING & DELINEATION PROJECT DESIGN ENGINEER

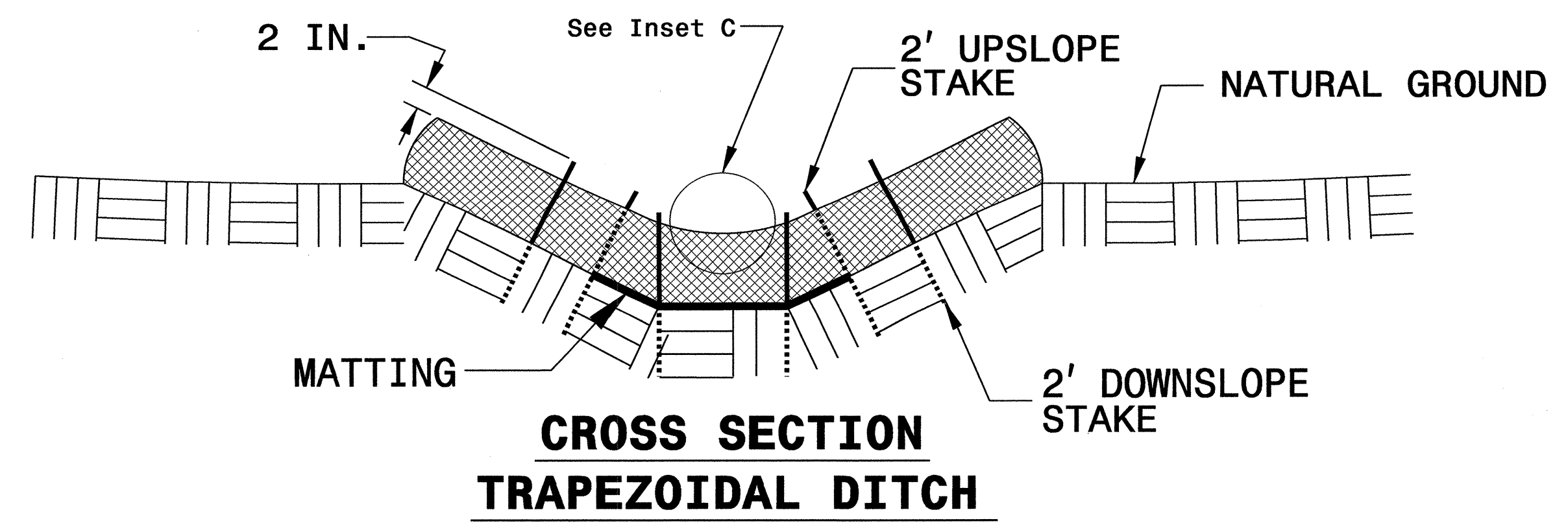
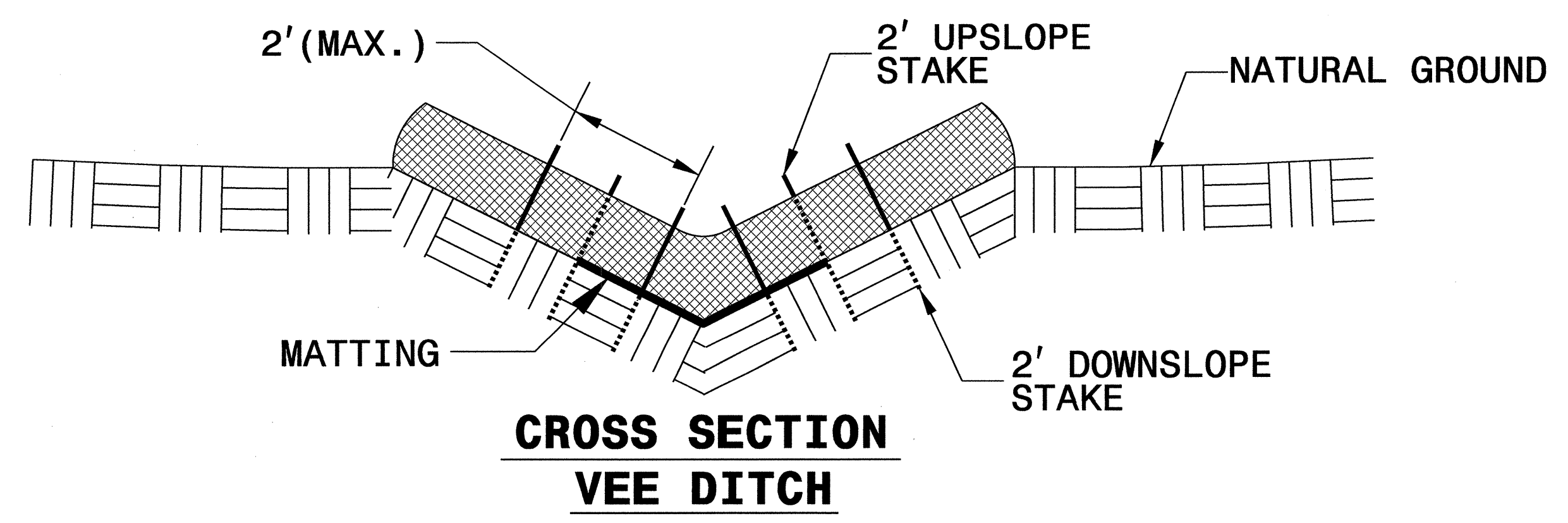
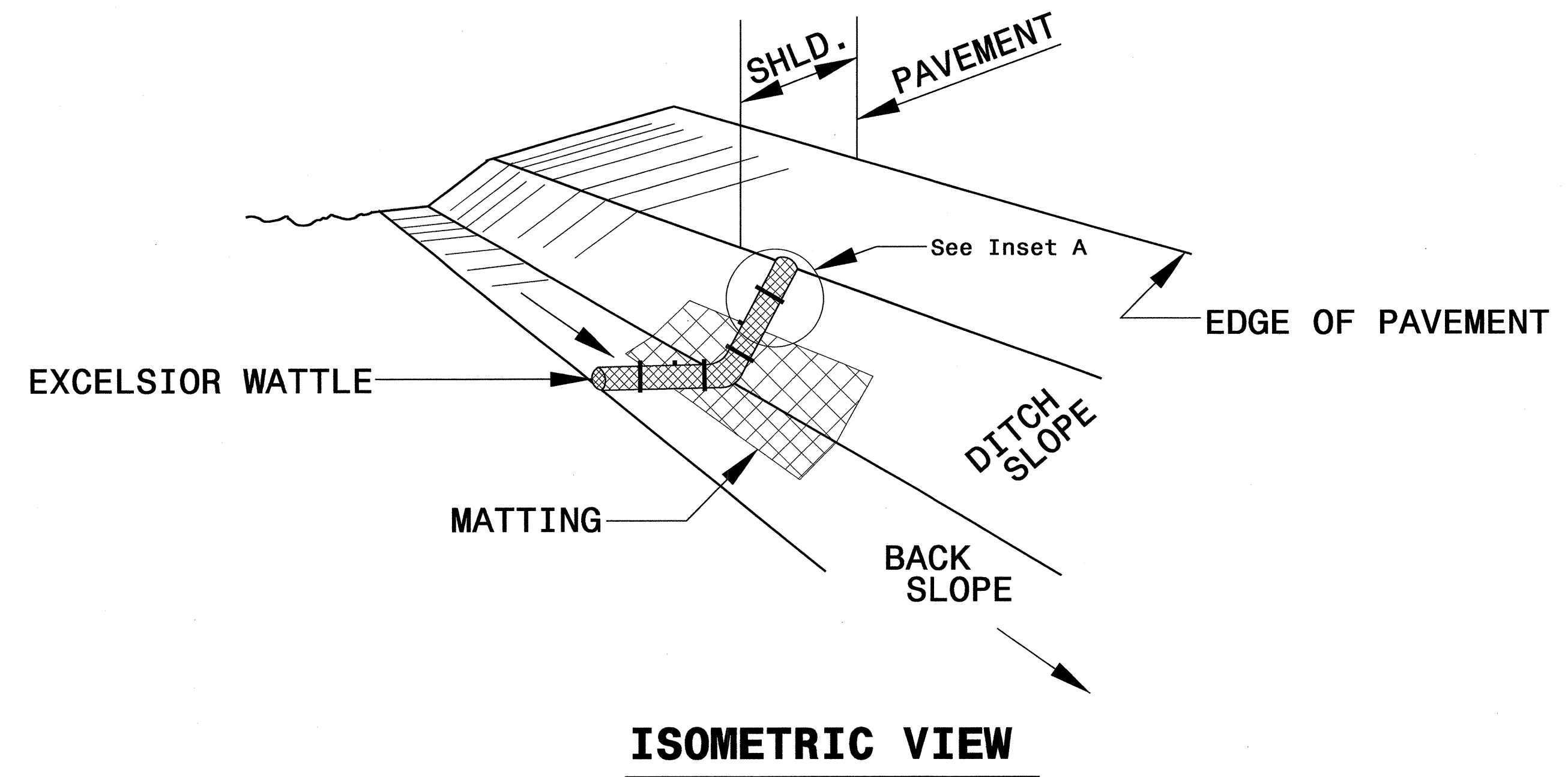






PROJECT REFERENCE NO. B-4701	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



**NOTES:**

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

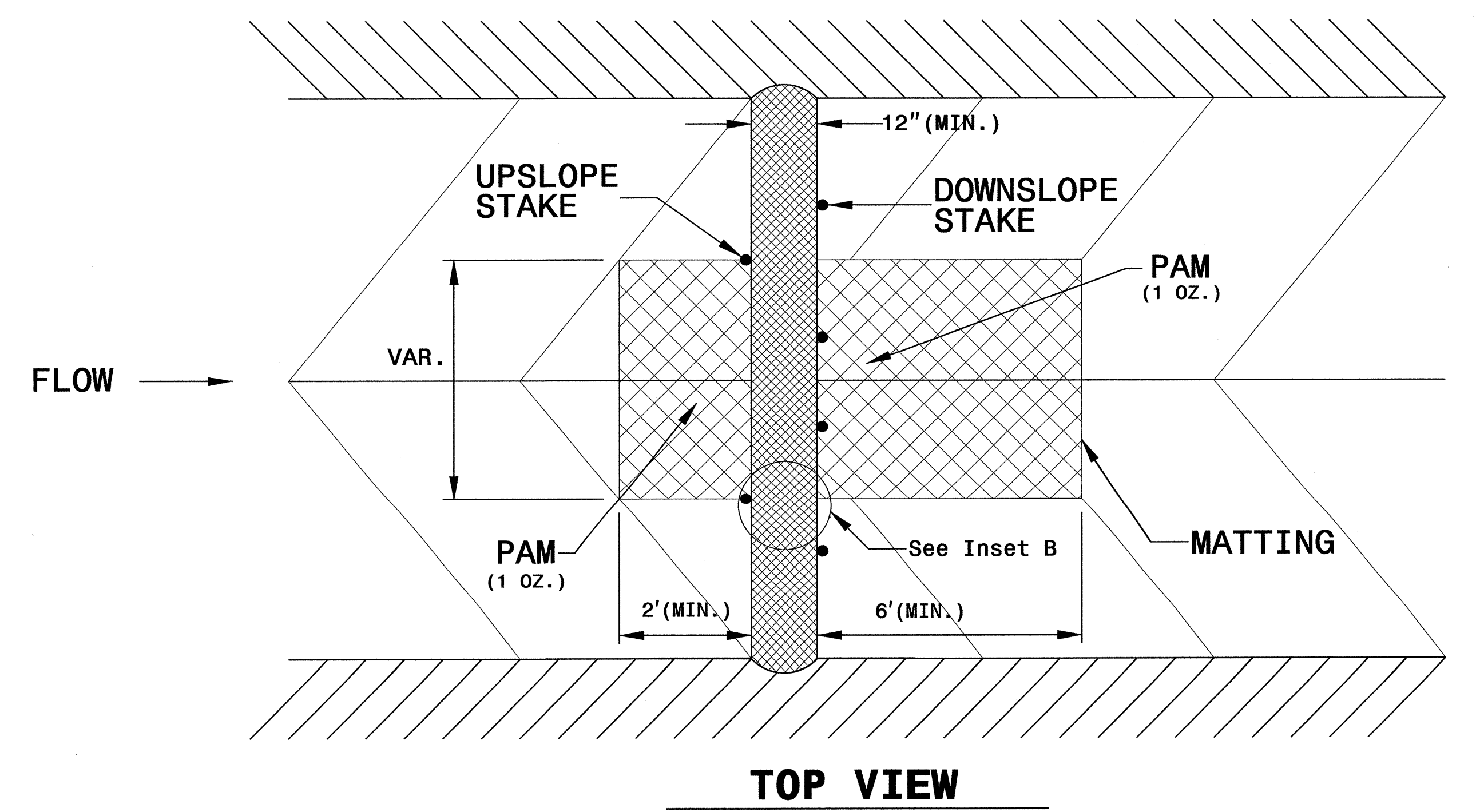
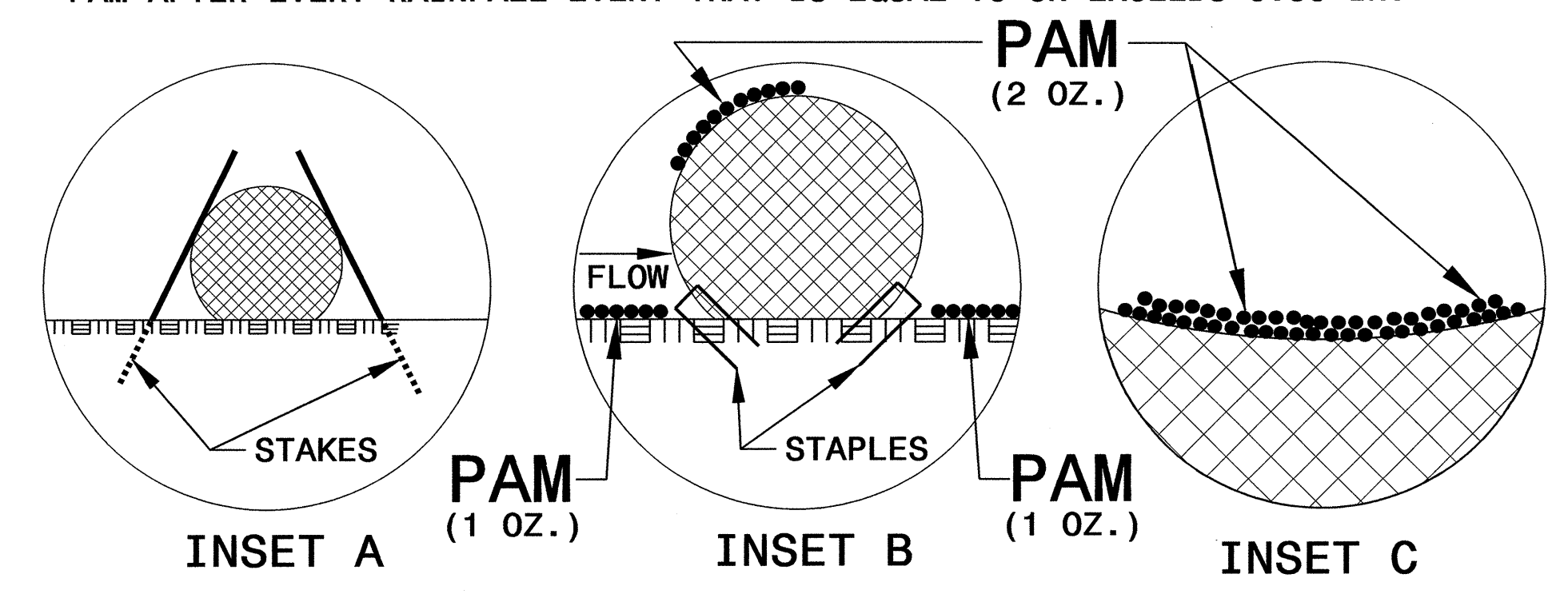
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

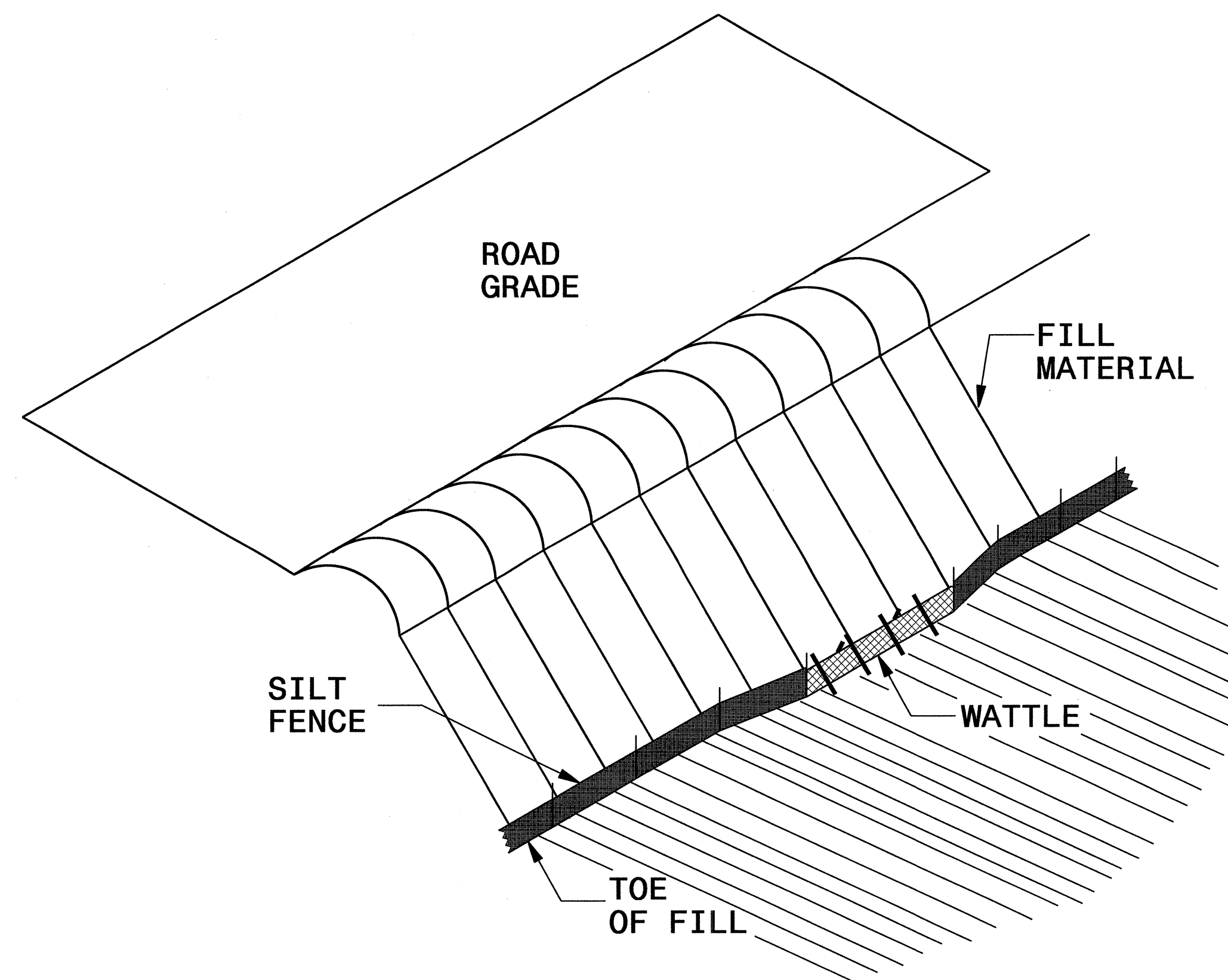
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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

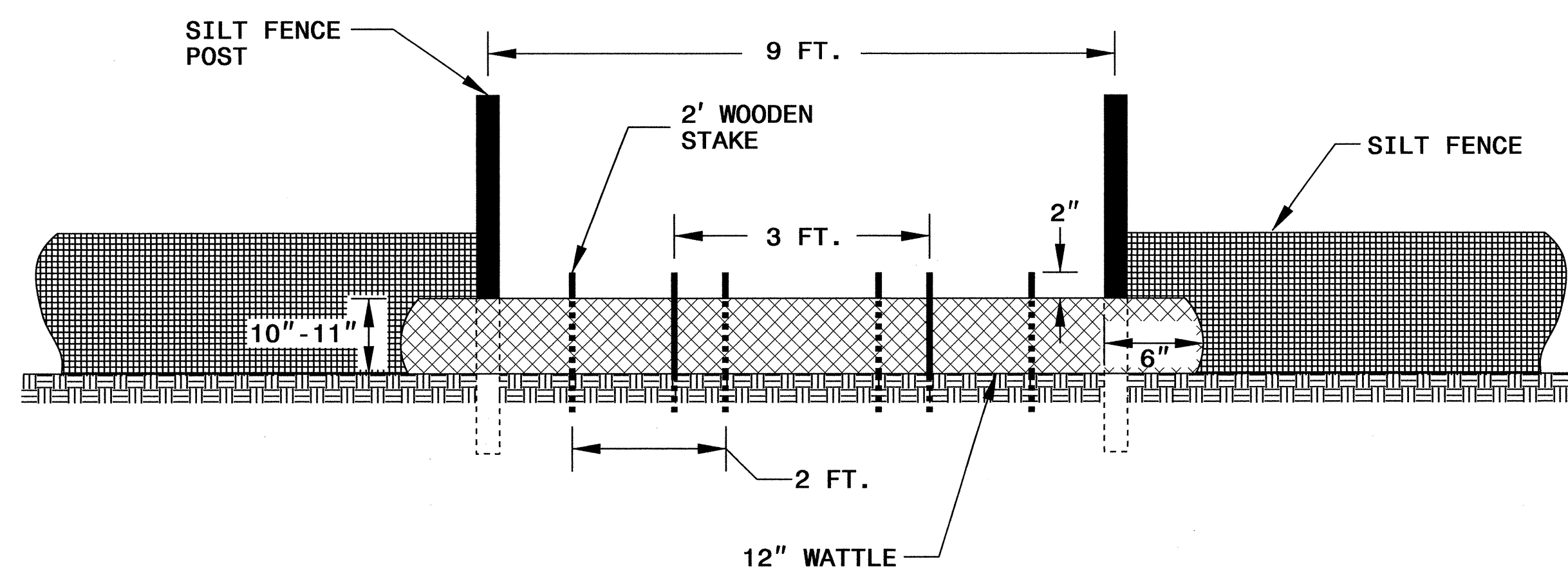


# SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO. B-4701	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ISOMETRIC VIEW

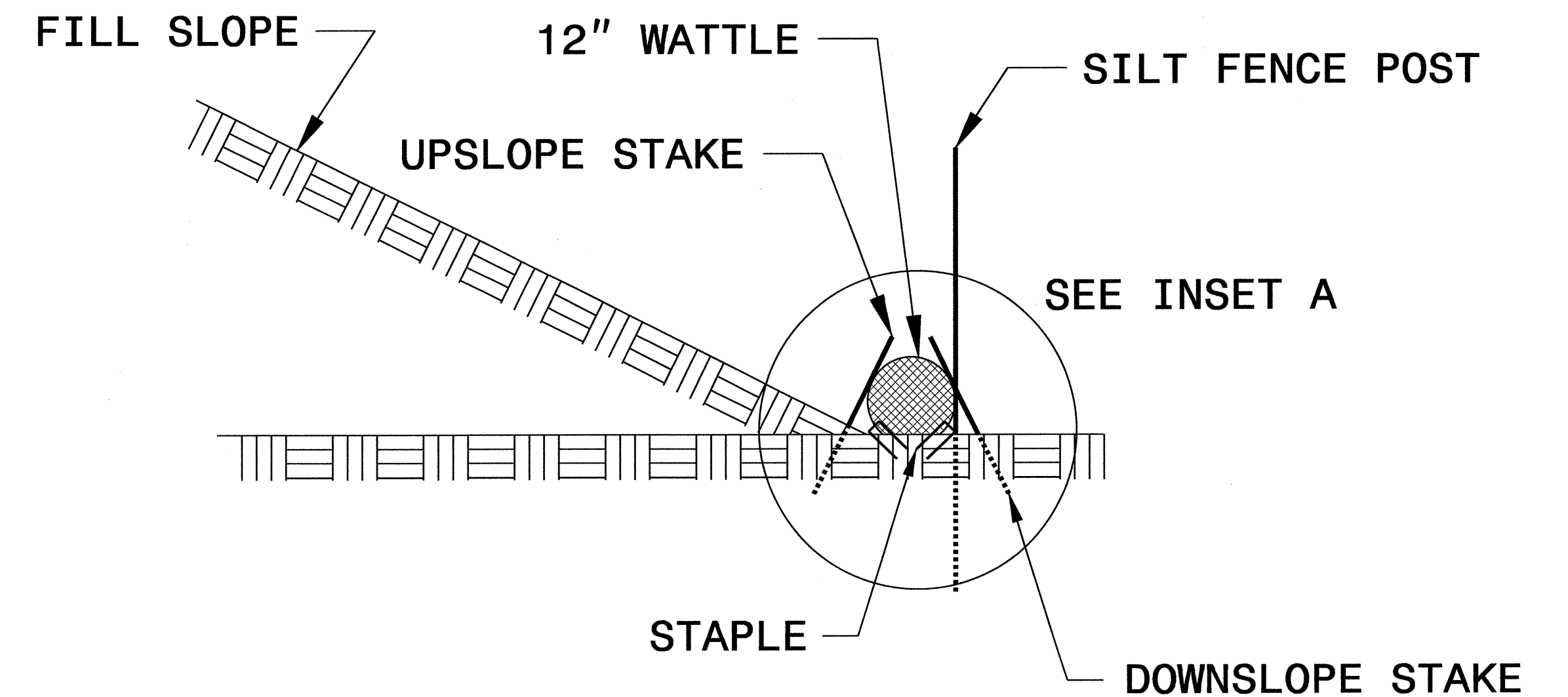
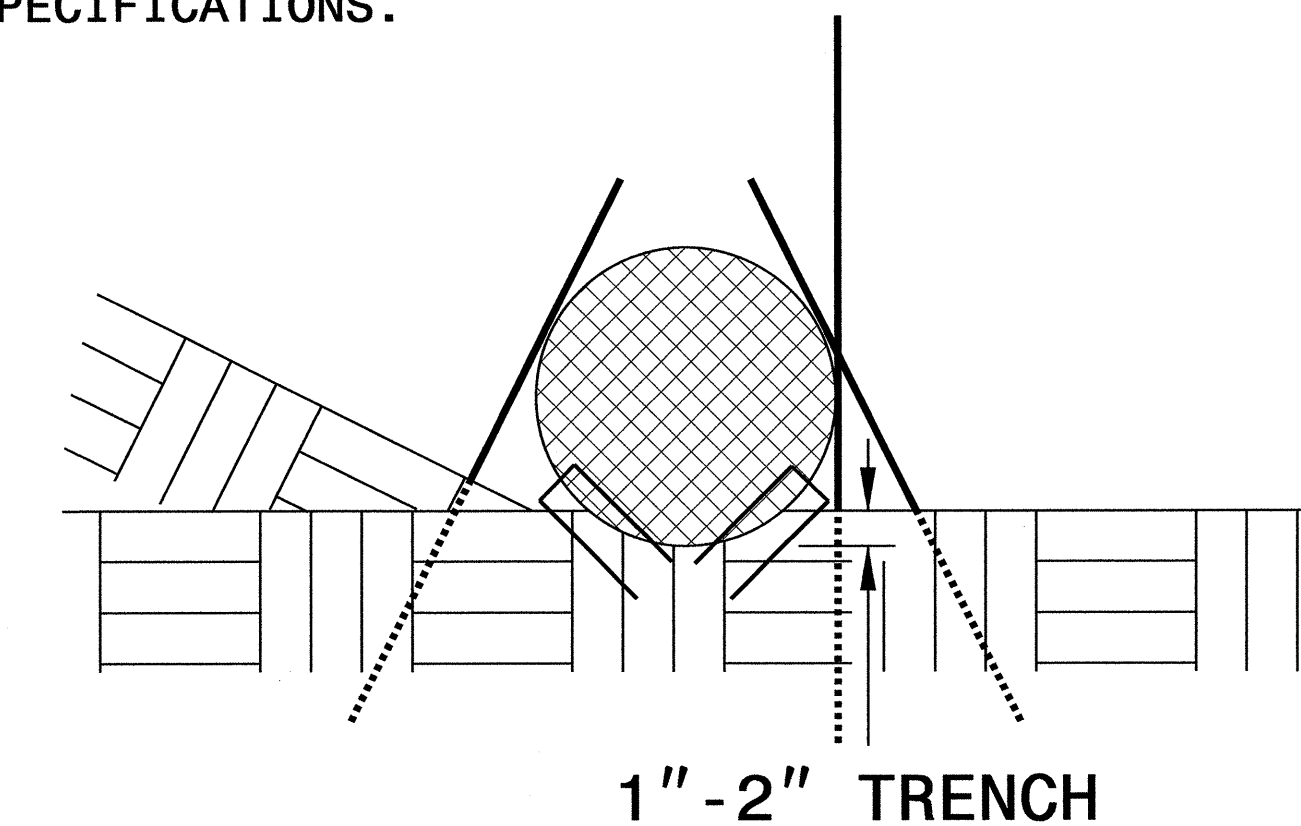


VIEW FROM SLOPE

NOTES:

- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
- 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.
- WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.
- INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A

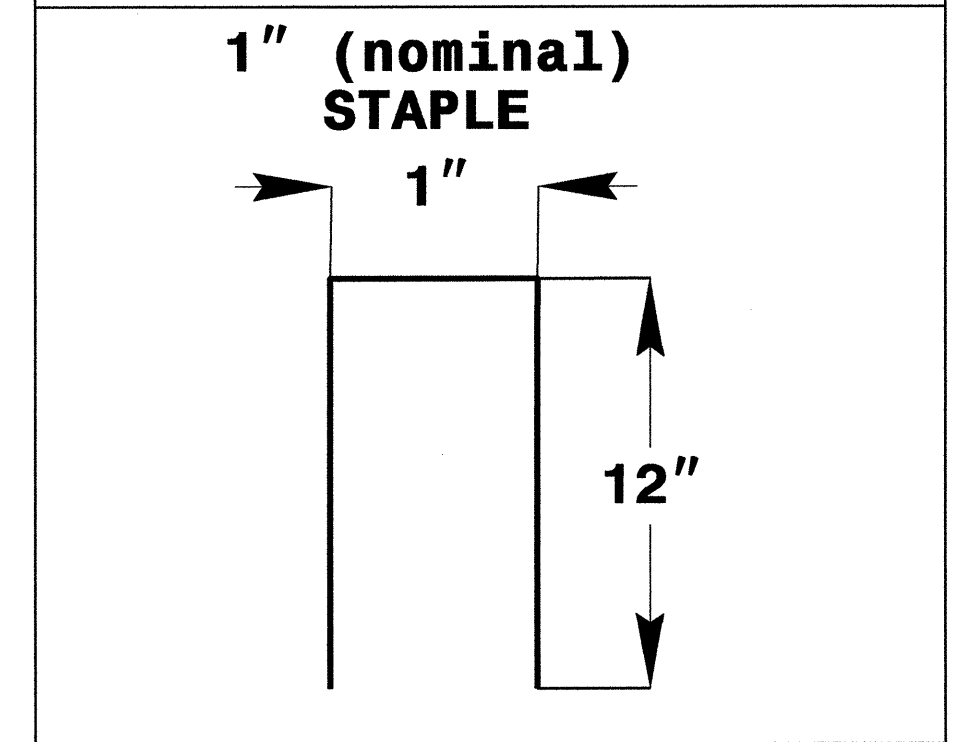
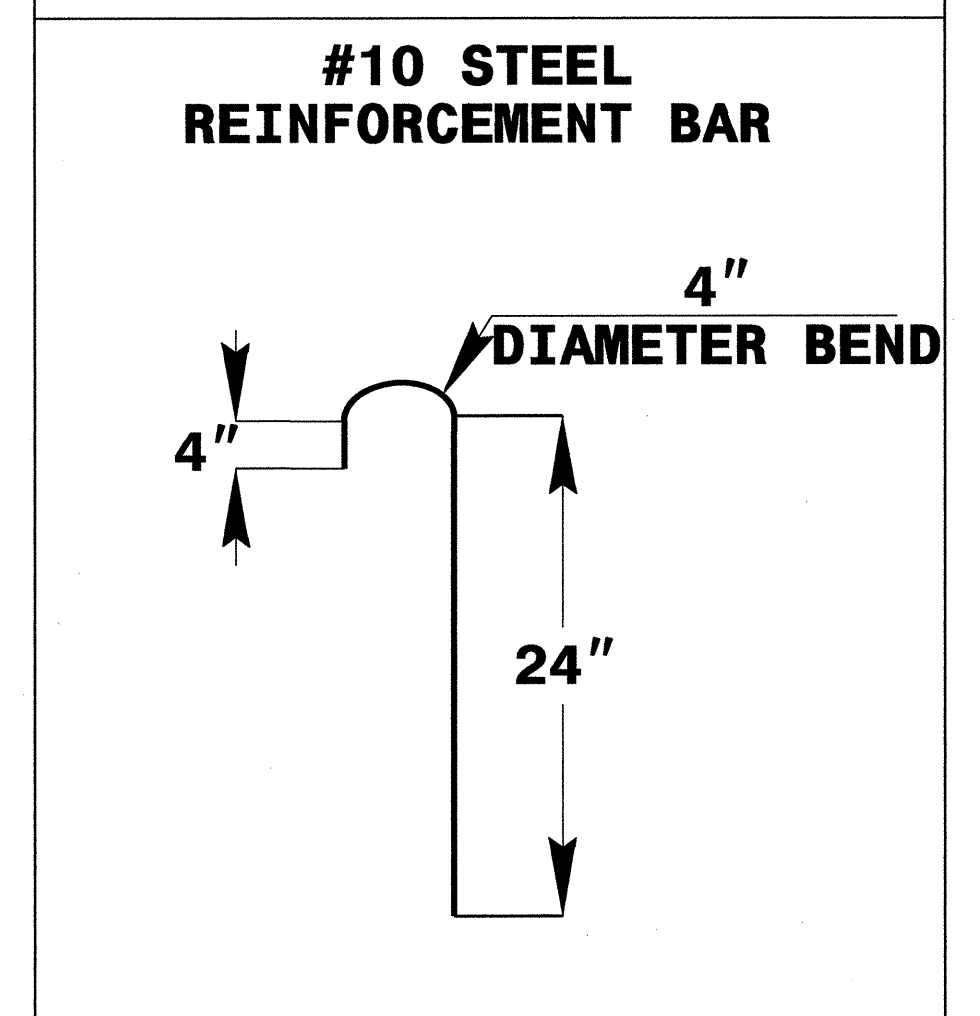
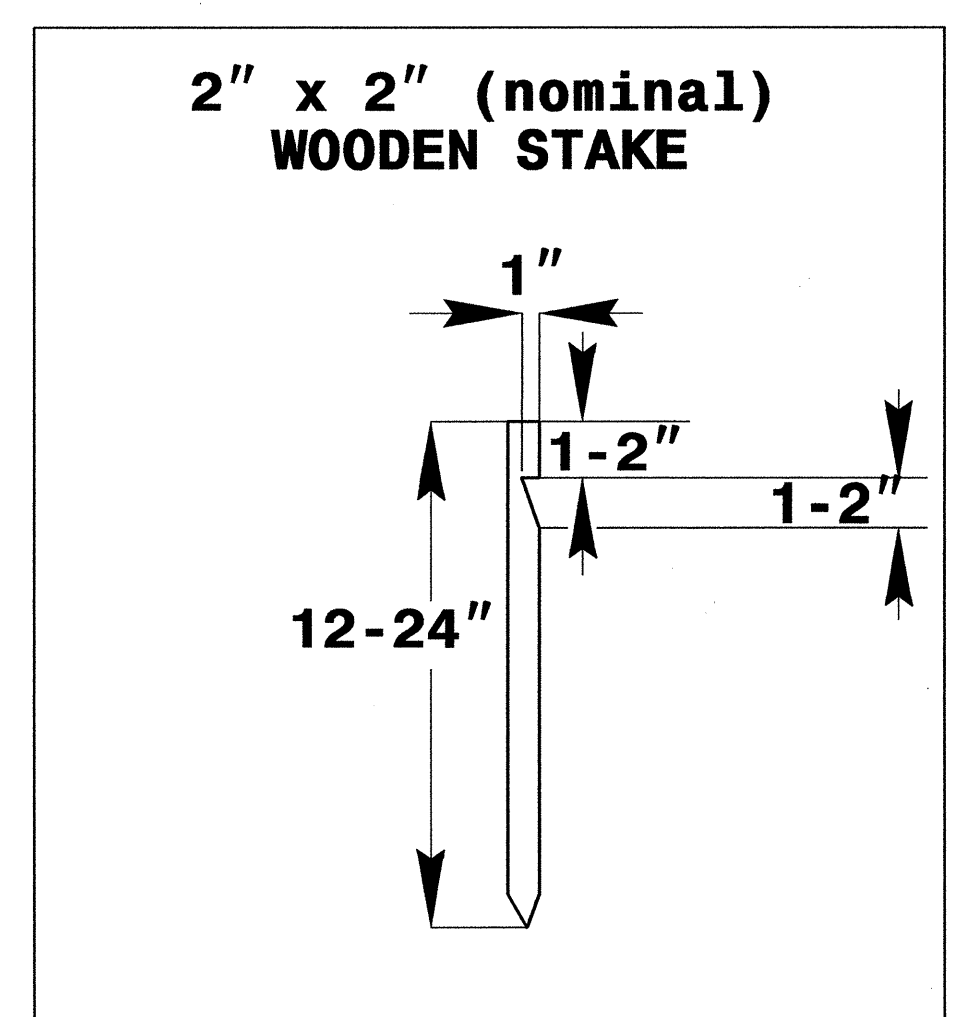
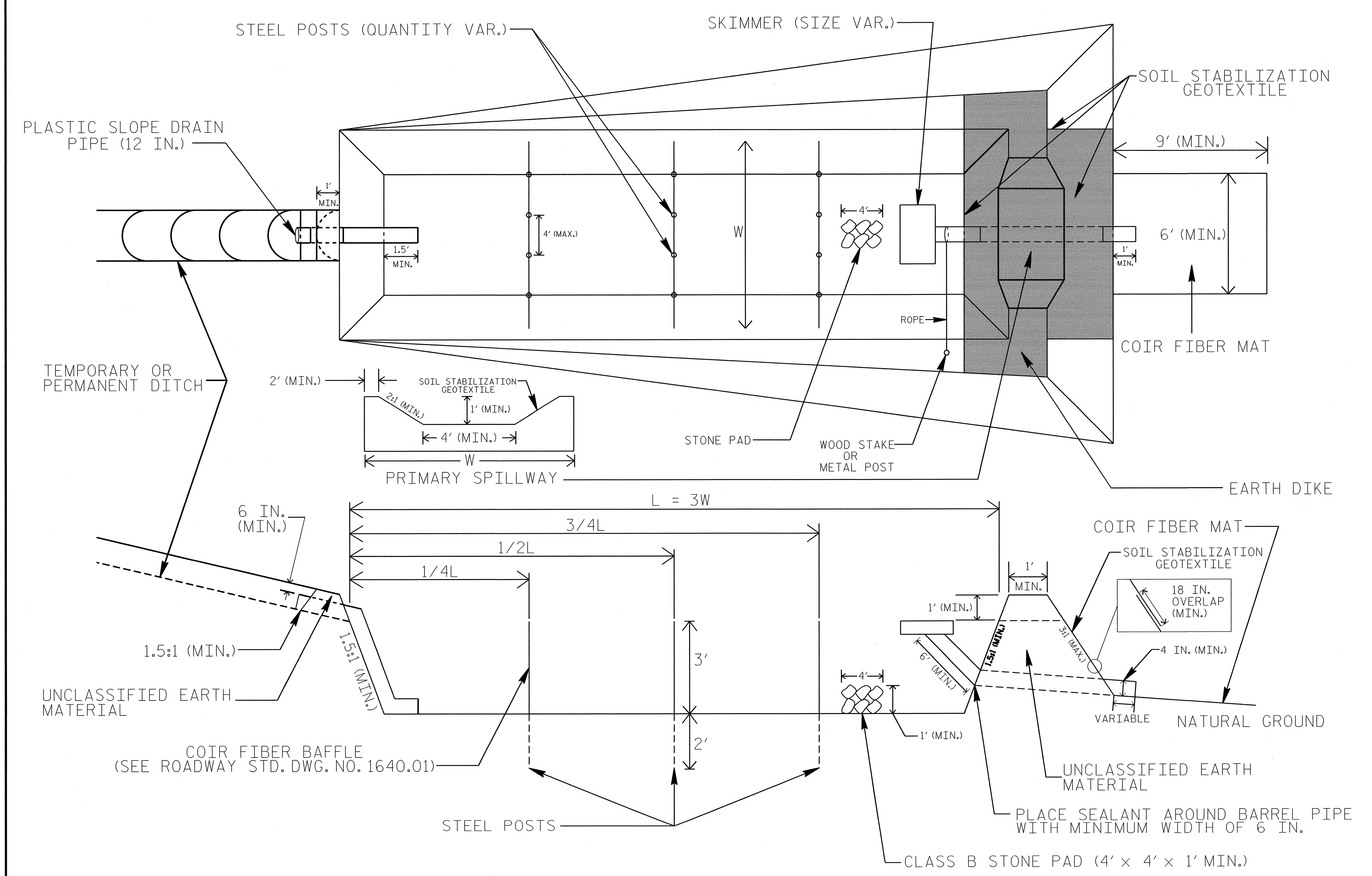


SIDE VIEW



PROJECT REFERENCE NO. B-4701	SHEET NO. EC-2B
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

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO. <i>B-4701</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

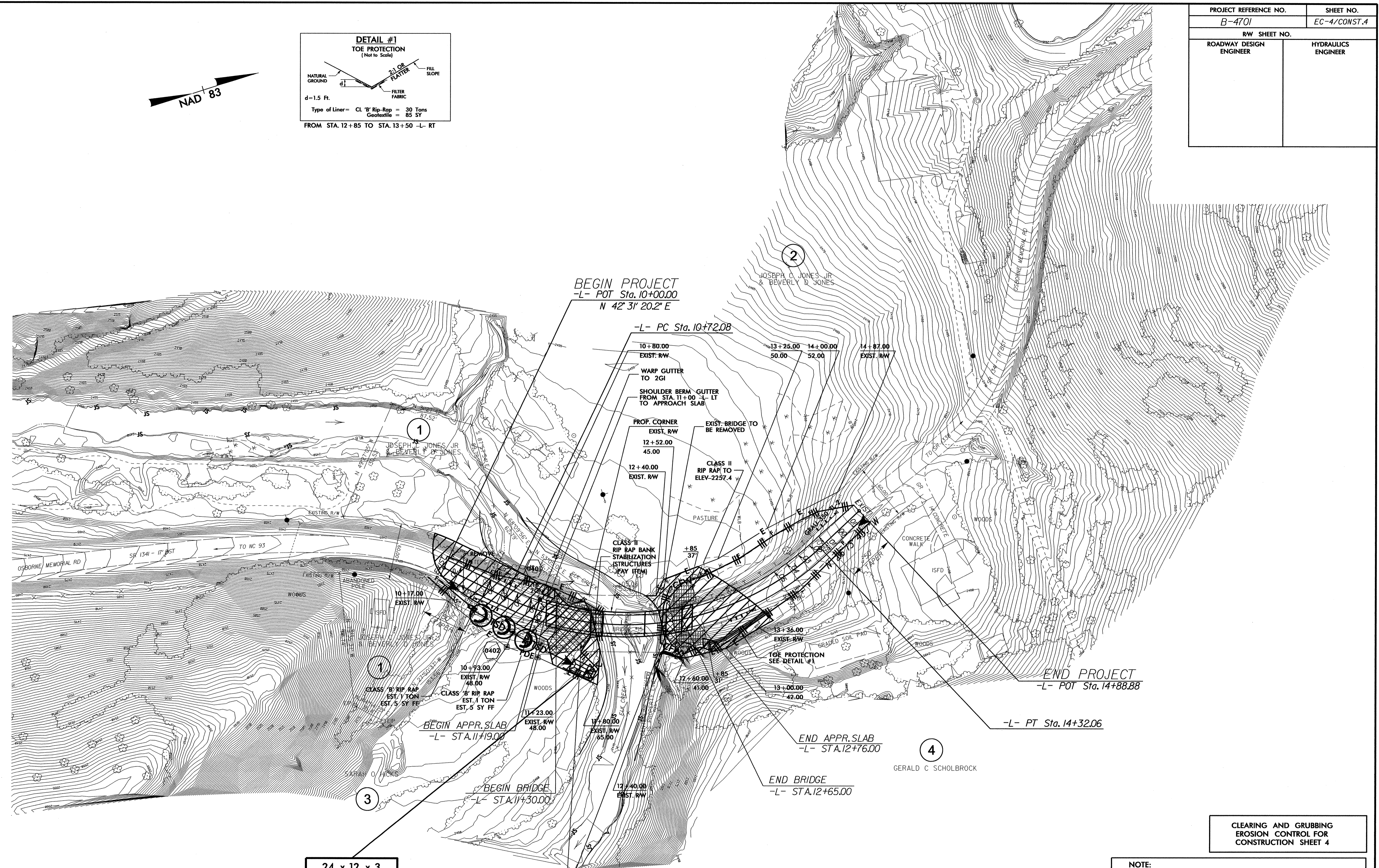
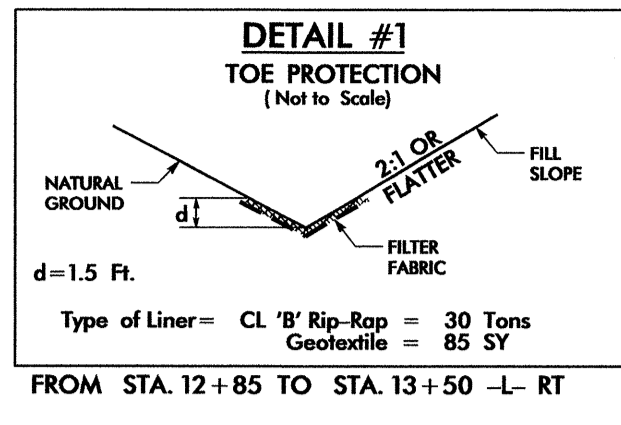
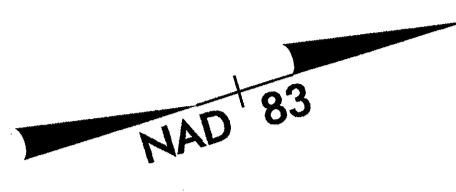
# ***SOIL STABILIZATION TIMEFRAMES***

<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.



8/17/99

PROJECT REFERENCE NO. B-4701	SHEET NO. EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



24 x 12 x 3  
1.5 inch Skimmer  
with 0.375 inch  
Orifice Diameter  
4 ft. weir  
ID 4.1C

EXCAVATE EXST ROADWAY  
FILL MATERIAL +/- 240 CY TO NG  
APPROX EL AT CL -L-  
2454 LT AND 2453 RT

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

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

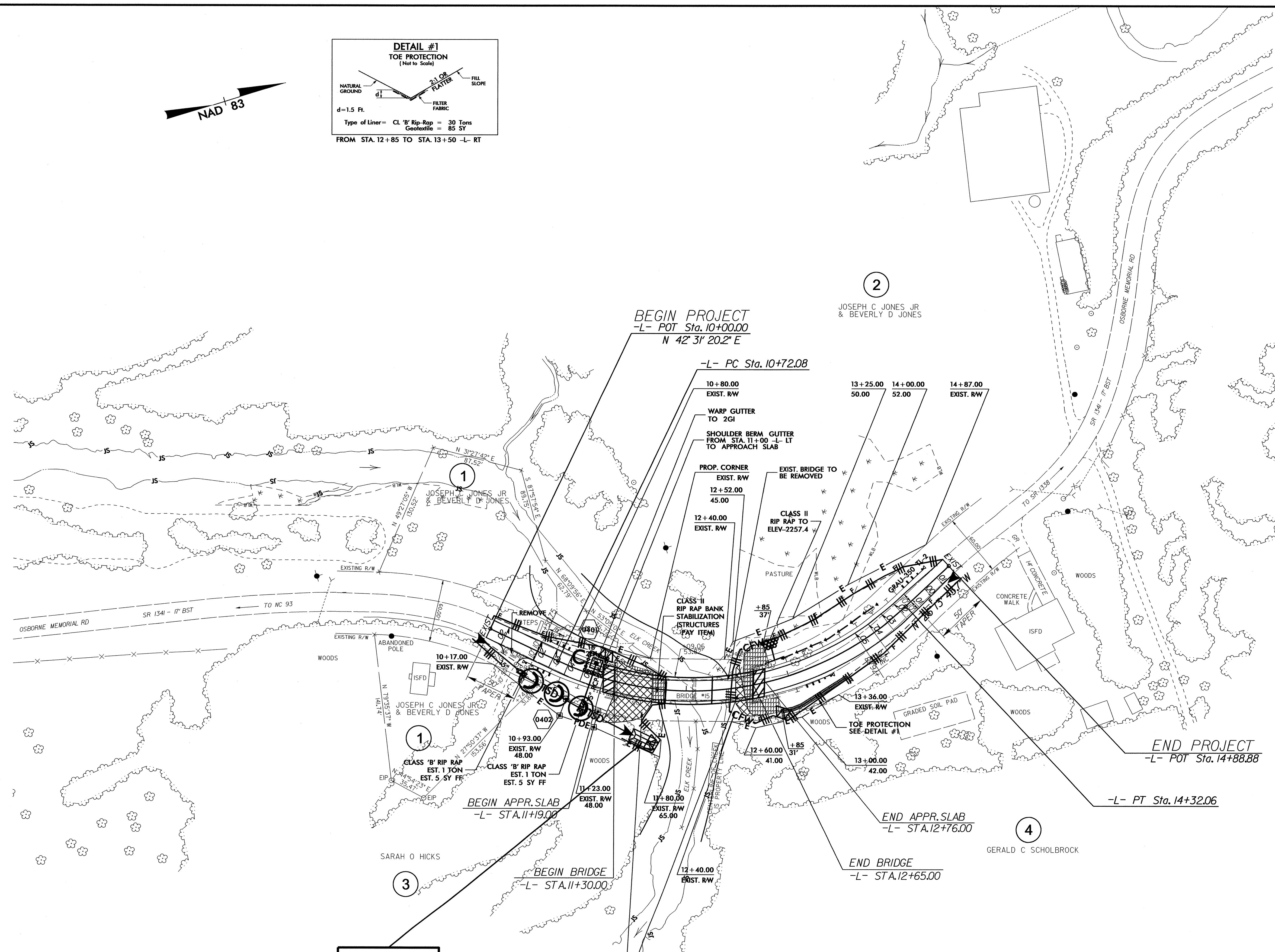
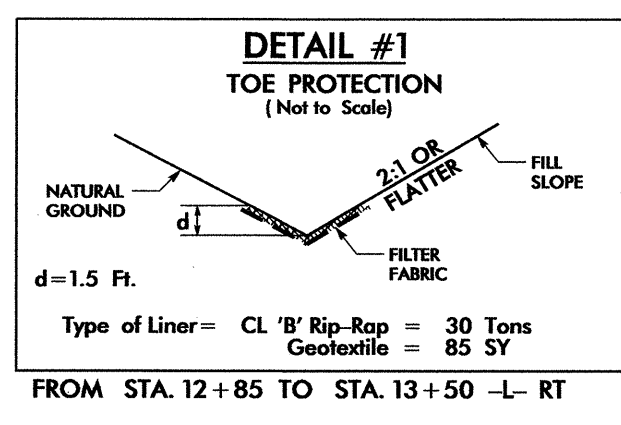
**ENVIRONMENTALLY SENSITIVE AREA**  
SEE PROJECT SPECIAL PROVISIONS

18-OCT-2013 10:39  
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micandlect AT BENV24778



8/17/99

PROJECT REFERENCE NO. B-4701	SHEET NO. EC-5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



24 x 12 x 3  
1.5 inch Skimmer  
with 0.375 inch  
Orifice Diameter  
4 ft. weir  
ID 4.1C

EXCAVATE EXST ROADWAY  
FILL MATERIAL +/- 240 CY TO NG  
APPROX EL AT CL -L-  
2454 LT AND 2453 RT

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

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

18-OCT-2013 10:40  
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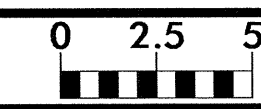






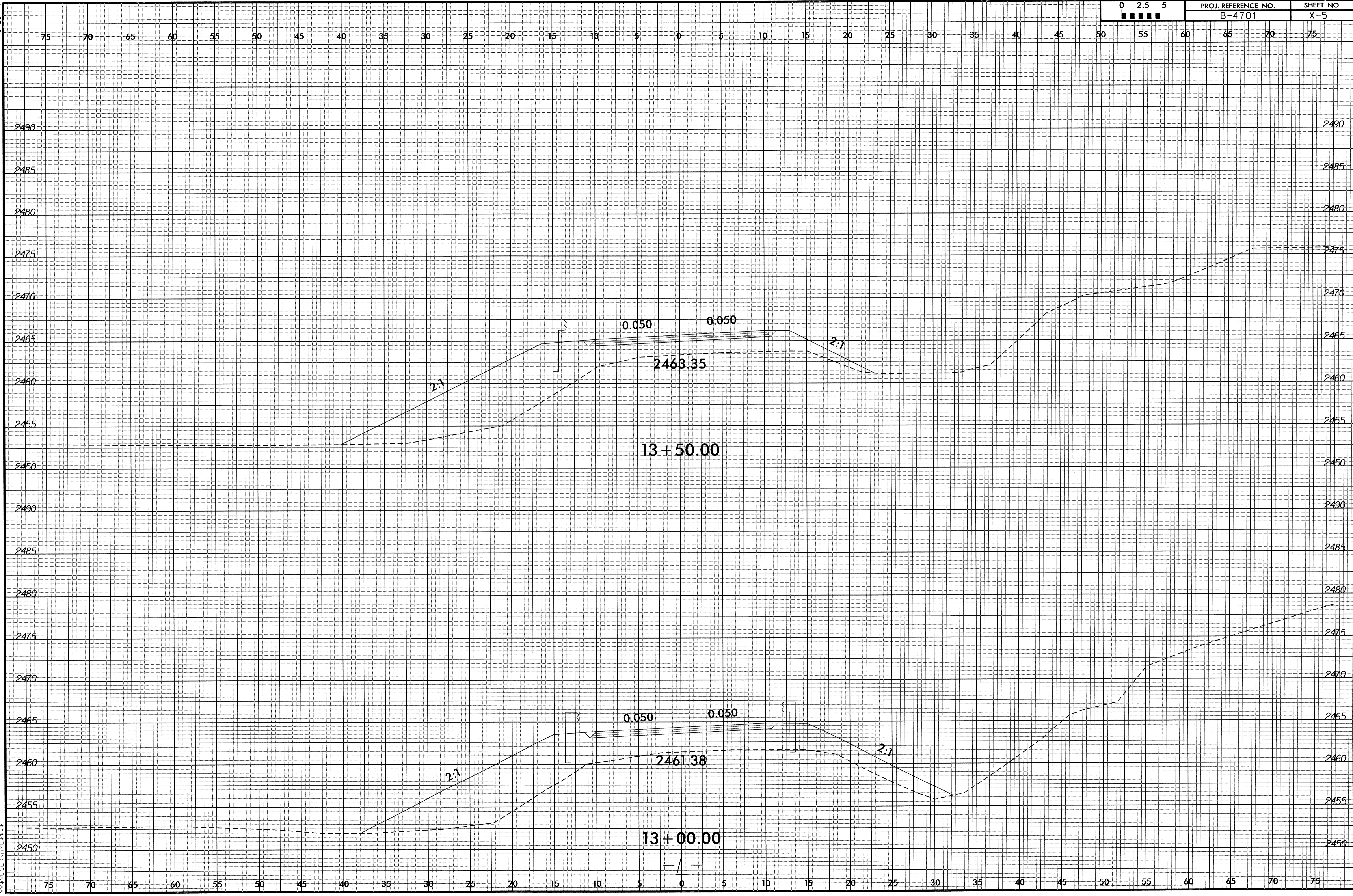


8/23/99



PROJ. REFERENCE NO.  
B-4701

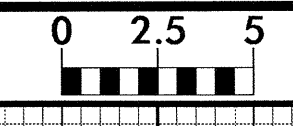
SHEET NO.  
X-5



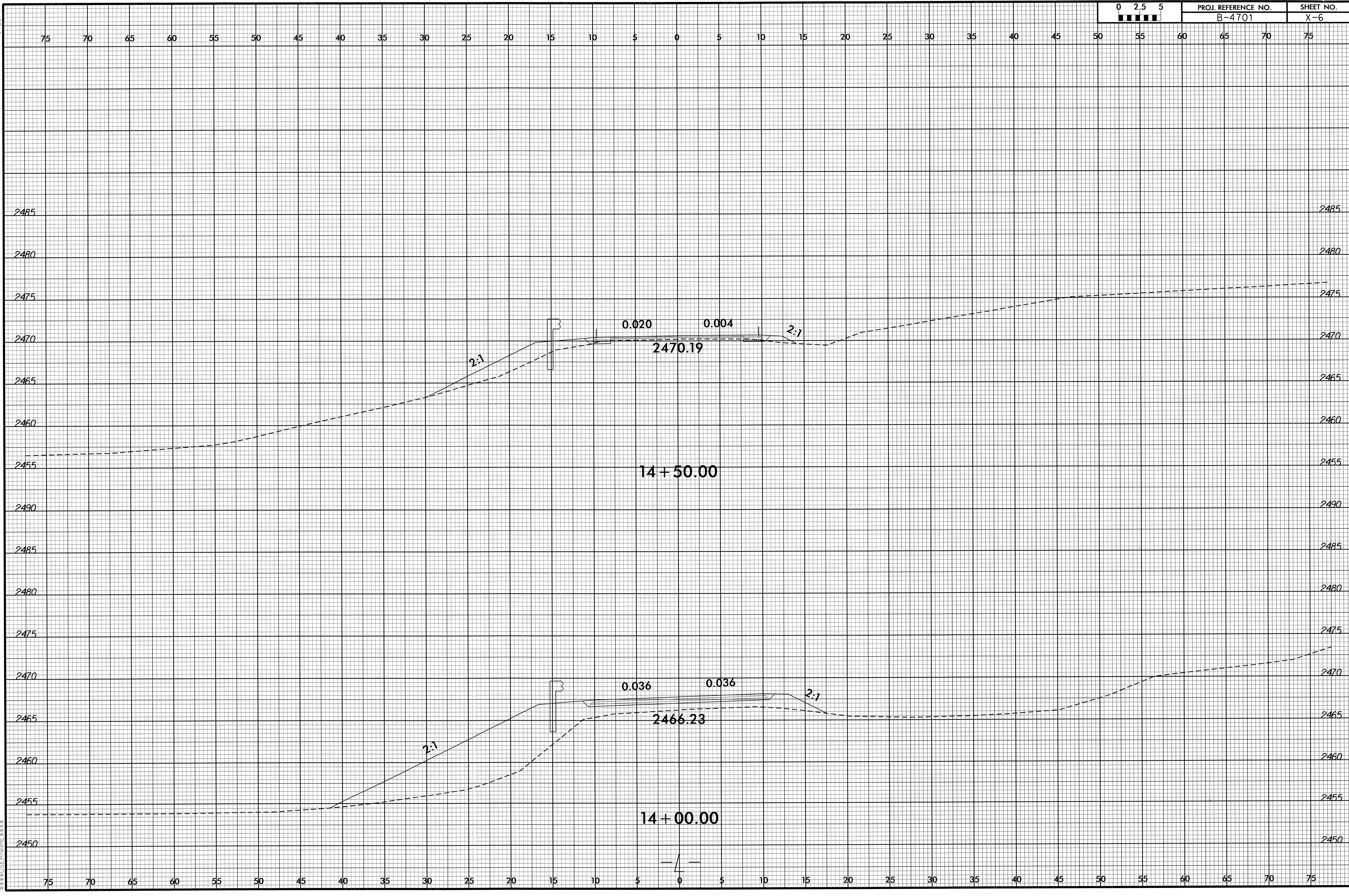
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