

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

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

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

INDEX OF SHEETS

1	Title Sheet
1-A	Index of Sheets, General Notes, and List of Standards
1-B	Conventional Symbols
1-C & 1-D	Survey Control Sheets
2	Typical Sections and Pavement Schedule
2-A	Guardrail Anchor Unit, Type III Detail
3	Summary of Quantities
3-A	Summary of Earthwork, Drainage, Guardrail, Pavement Removal, Breaking of Pavement, Shoulder Berm Gutter and Special Shoulder Berm Curb
4	Plan Sheets
5	Profile Sheets
TMP-1 thru TMP-3	Traffic Management Plans
PMP-1	Pavement Marking Plans
EC-1 thru EC-5	Erosion Control Plans
RF-1	Reforestation Plans
SIGN-1 thru SIGN-2	Signing Plans
U0-1 thru U0-2	Utility By Others Plans
X-1A	Cross-Section Summary Sheet
X-1 thru X-3	Cross-Sections
S-1 thru S-16	Structure Plans

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.11	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
840.29	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

GRADE LINE:  
GRADING AND SURFACING OR RESURFACING AND WIDENING:  
THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

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

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

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

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

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

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

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

UTILITIES:  
UTILITY OWNERS ON THIS PROJECT ARE  
CENTURY LINK  
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

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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	○
Property Corner	×
Property Monument	□
Parcel/Sequence Number	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ☠

### BUILDINGS AND OTHER CULTURE:

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

### HYDROLOGY:

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

### RAILROADS:

Standard Gauge	_____
RR Signal Milepost	○
Switch	□
RR Abandoned	_____
RR Dismantled	_____

### RIGHT OF WAY:

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

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Curb Ramp	○
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	_____









6/2/09

PLANS PREPARED BY:  
**PARSONS**  
 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

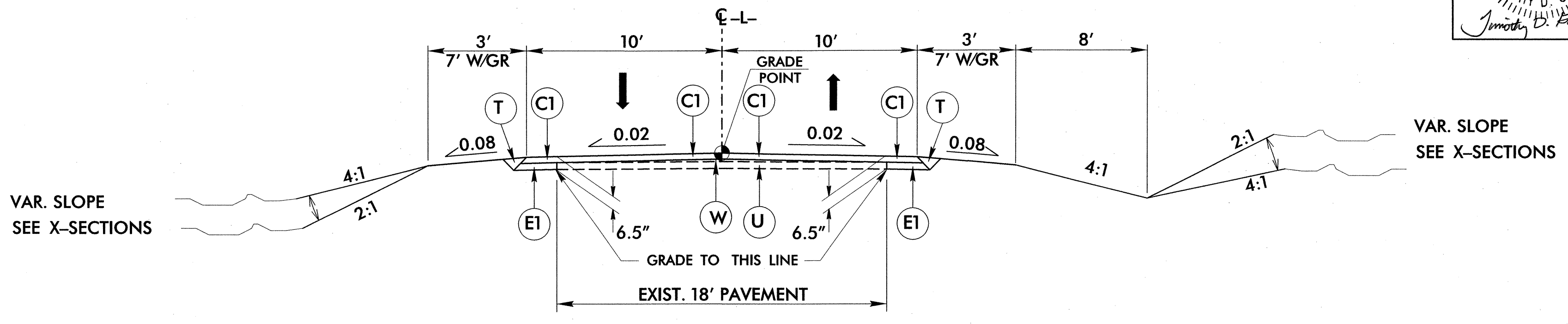
PROJECT REFERENCE NO. **B-4730** SHEET NO. **2**

ROADWAY DESIGN ENGINEER  
 JIMOTHY D. BOHNS  
 SEAL 037874  
 AUGUST 2, 2013

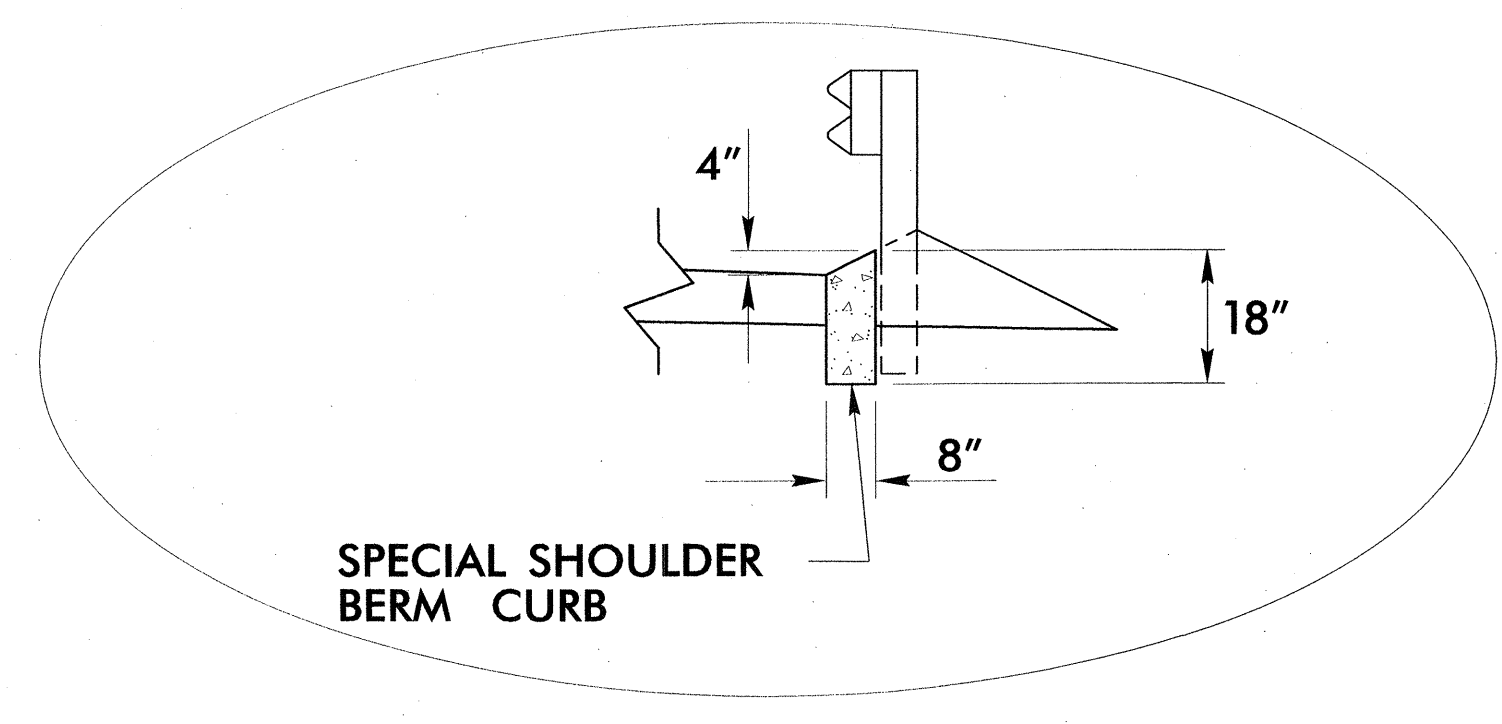
PAVEMENT DESIGN ENGINEER  
 SEAL 039847  
 AUGUST 2, 2013

PAVEMENT SCHEDULE FINAL DESIGN	
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 B25.0B, 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.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET.)

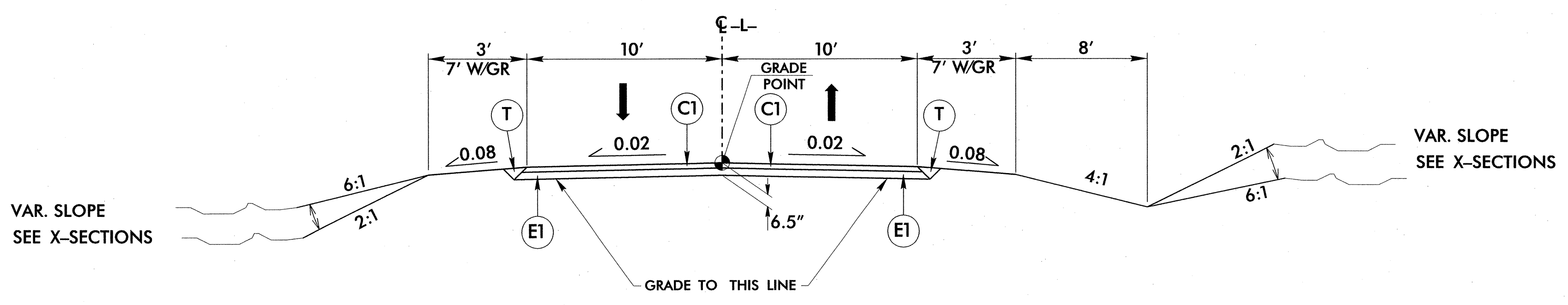
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



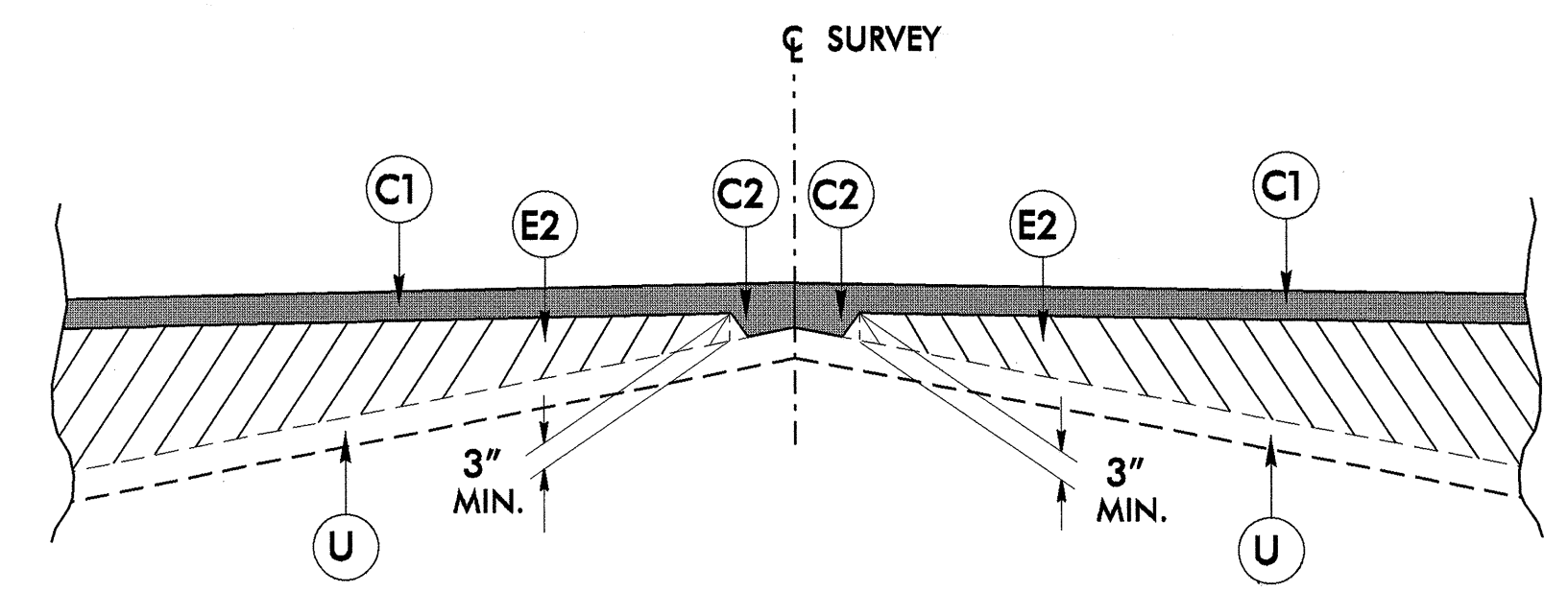
**ROADWAY TYPICAL SECTION NO. 1**  
 -L- STA. 10+80.00 TO STA. 12+00.00  
 -L- STA. 16+00.00 TO STA. 16+85.00  
 NOTE - PAVE TO THE FACE OF GUARDRAIL



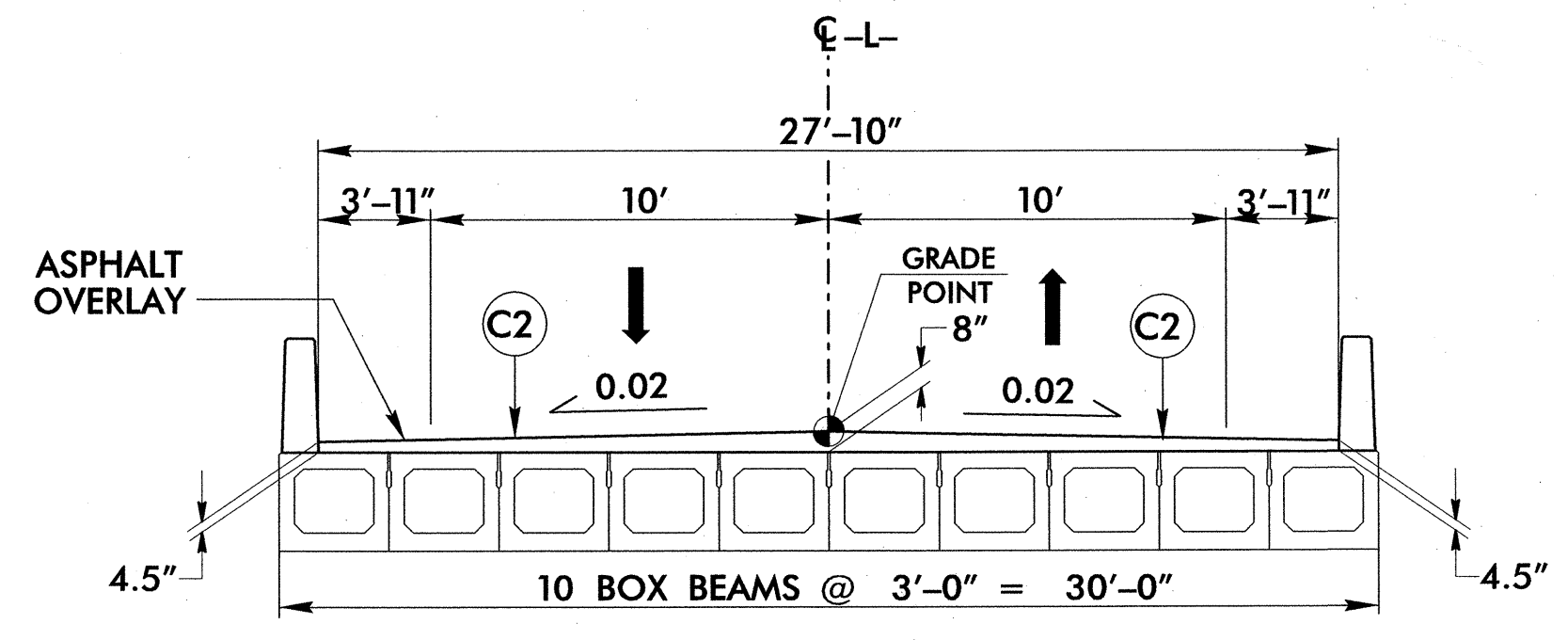
**DETAIL 'A'**  
 USE DETAIL 'A' IN CONJUNCTION WITH T.S. NO. 2  
 -L- STA. 14+45.75 (END APPROACH SLAB) TO STA. 14+53.41 LT  
 -L- STA. 14+38.79 (END APPROACH SLAB) TO STA. 14+46.43 RT



**ROADWAY TYPICAL SECTION NO. 2**  
 -L- STA. 12+00.00 TO STA. 13+33.84 (BEGIN BRIDGE)  
 -L- STA. 14+31.17 (END BRIDGE) TO STA. 16+00.00  
 NOTE - PAVE TO THE FACE OF GUARDRAIL



**Detail Showing Method of Wedging**



**TYPICAL SECTION ON STRUCTURE**  
 -L- STA. 13+33.84 (BEGIN BRIDGE) TO 14+31.17 (END BRIDGE)

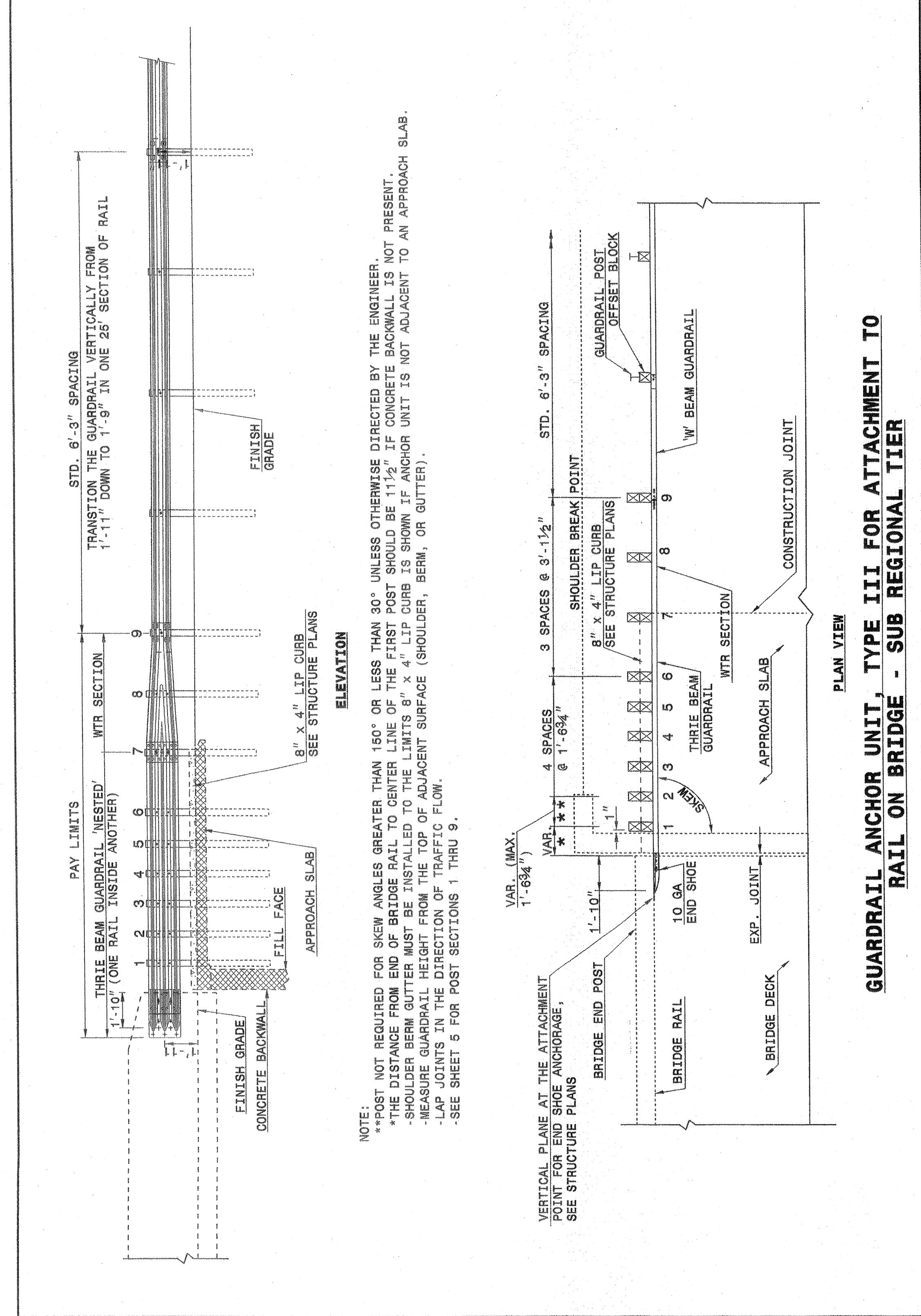
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STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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

SHEET 2 OF 7  
862d03



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

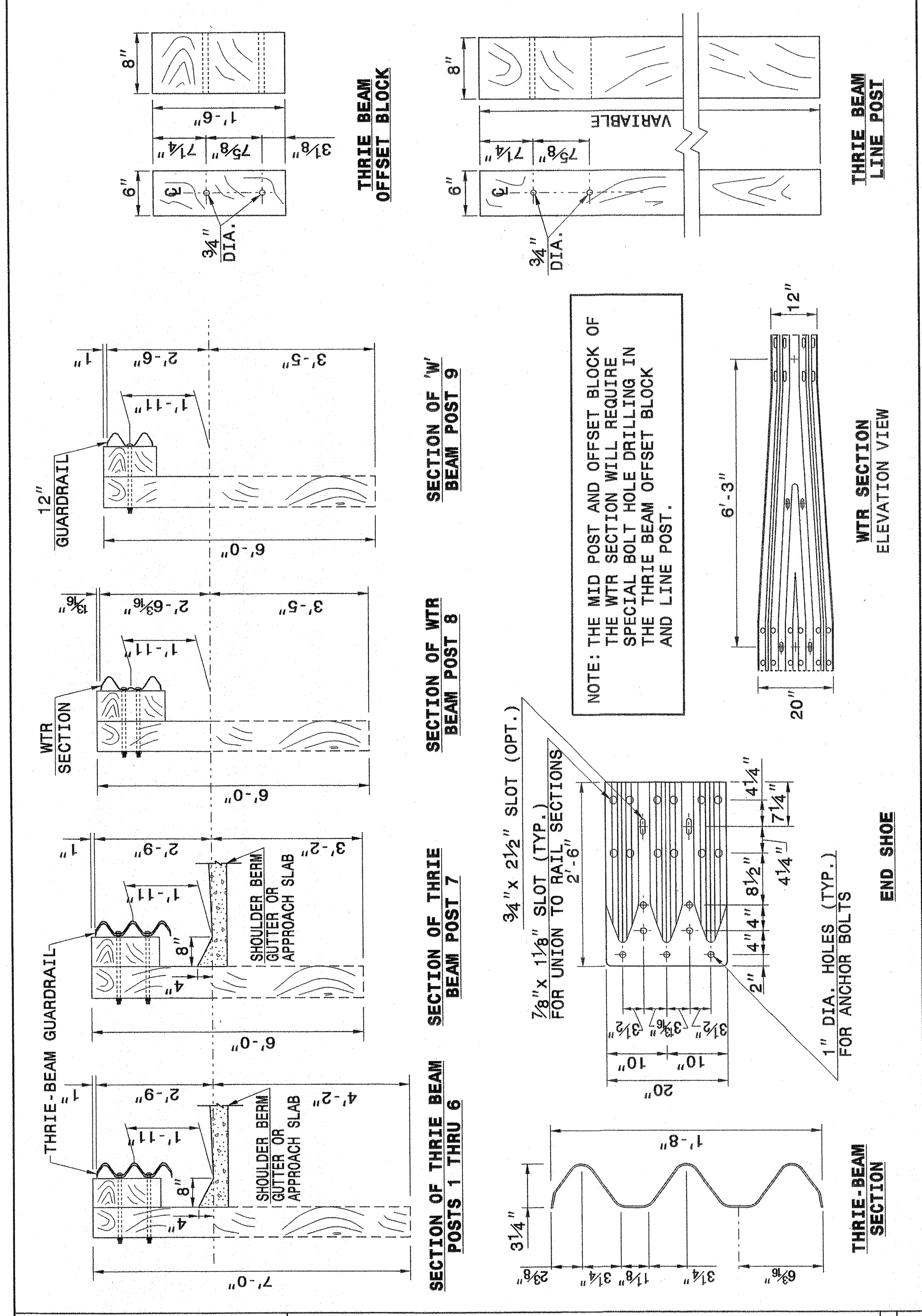
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STRUCTURE ANCHOR UNITS  
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO  
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7  
862d03

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

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

SHEET 3 OF 7  
862d03



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

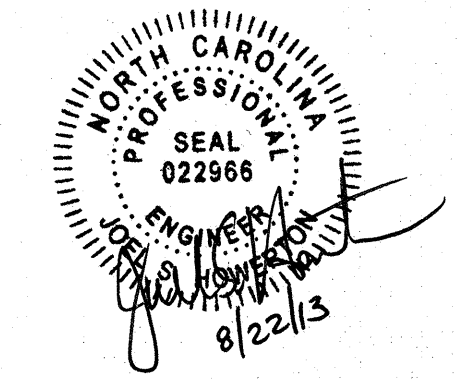
ENGLISH DETAIL DRAWING FOR  
STRUCTURE ANCHOR UNITS  
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7  
862d03

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

SEE TITLE BLOCK

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





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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203258

Item Number	Sec #	Quantity	Unit	Description	Item Number	Sec #	Quantity	Unit	Description	Item Number	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	2752000000-E	SP	20	LF	GENERIC PAVING ITEM SPECIAL SHOULDER BERM CURB	6036000000-E	1631	1,200	SY	MATTING FOR EROSION CONTROL
0030000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (13+82.50)	3030000000-E	862	75	LF	STEEL BM GUARDRAIL	6037000000-E	SP	200	SY	COIR FIBER MAT
0043000000-N	226	Lump Sum		GRADING	3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	6038000000-E	SP	120	SY	PERMANENT SOIL REINFORCEMENT MAT
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING	3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III	6042000000-E	1632	300	LF	1/4" HARDWARE CLOTH
0057000000-E	226	200	CY	UNDERCUT EXCAVATION	3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	6070000000-N	1639	2	EA	SPECIAL STILLING BASINS
0134000000-E	240	170	CY	DRAINAGE DITCH EXCAVATION	3628000000-E	876	175	TON	RIP RAP, CLASS I	6071010000-E	SP	150	LF	WATTLE
0195000000-E	265	200	CY	SELECT GRANULAR MATERIAL	3649000000-E	876	19	TON	RIP RAP, CLASS B	6071020000-E	SP	65	LB	POLYACRYLAMIDE (PAM)
0196000000-E	270	600	SY	GEOTEXTILE FOR SOIL STABILIZA- TION	3656000000-E	876	1,000	SY	GEOTEXTILE FOR DRAINAGE	6071030000-E	1640	200	LF	COIR FIBER BAFFLE
0318000000-E	300	10	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRUCTURES	4072000000-E	903	61	LF	SUPPORTS, 3-LB STEEL U-CHANNEL	6071050000-E	SP	4	EA	*** SKIMMER (1-1/2")
0320000000-E	300	20	SY	FOUNDATION CONDITIONING GEO- TEXTILE	4096000000-N	904	2	EA	SIGN ERECTION, TYPE D	6084000000-E	1660	0.5	ACR	SEEDING & MULCHING
0335200000-E	305	24	LF	15" DRAINAGE PIPE	4155000000-N	907	4	EA	DISPOSAL OF SIGN SYSTEM, U- CHANNEL	6087000000-E	1660	0.25	ACR	MOWING
0335850000-E	305	1	EA	*** DRAINAGE PIPE ELBOWS (15")	4400000000-E	1110	429	SF	WORK ZONE SIGNS (STATIONARY)	6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
0448200000-E	310	28	LF	15" RC PIPE CULVERTS, CLASS IV	4410000000-E	1110	131	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
1099500000-E	505	100	CY	SHALLOW UNDERCUT	4445000000-E	1145	80	LF	BARRICADES (TYPE III)	6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
1099700000-E	505	200	TON	CLASS IV SUBGRADE STABILIZA- TION	4810000000-E	1205	4,020	LF	PAINT PAVEMENT MARKING LINES (4")	6108000000-E	1665	0.5	TON	FERTILIZER TOPDRESSING
1220000000-E	545	20	TON	INCIDENTAL STONE BASE	6000000000-E	1605	1,050	LF	TEMPORARY SILT FENCE	6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
1330000000-E	607	80	SY	INCIDENTAL MILLING	6006000000-E	1610	150	TON	STONE FOR EROSION CONTROL, CLASS A	6117000000-N	SP	18	EA	RESPONSE FOR EROSION CONTROL
1489000000-E	610	250	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	6009000000-E	1610	170	TON	STONE FOR EROSION CONTROL, CLASS B	6123000000-E	1670	0.1	ACR	REFORESTATION
1525000000-E	610	310	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	6012000000-E	1610	140	TON	SEDIMENT CONTROL STONE					
1575000000-E	620	35	TON	ASPHALT BINDER FOR PLANT MIX	6015000000-E	1615	0.5	ACR	TEMPORARY MULCHING					
2000000000-N	806	8	EA	RIGHT OF WAY MARKERS	6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING					
2286000000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES	6021000000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEED- ING					
2367000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29	6024000000-E	1622	200	LF	TEMPORARY SLOPE DRAINS					
2556000000-E	846	40	LF	SHOULDER BERM GUTTER	6029000000-E	SP	300	LF	SAFETY FENCE					
					6030000000-E	1630	300	CY	SILT EXCAVATION					

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S 49°34'13" E  
201.50'

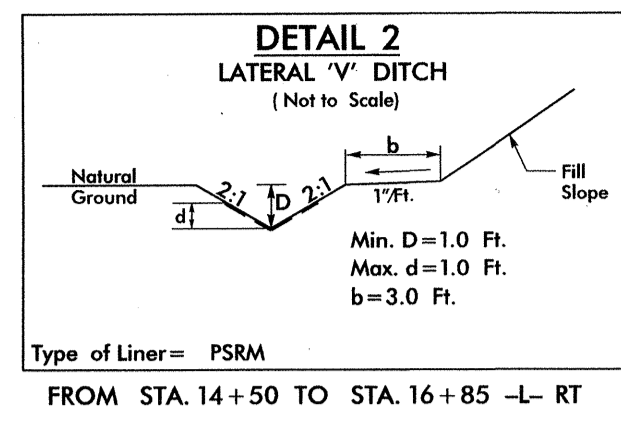
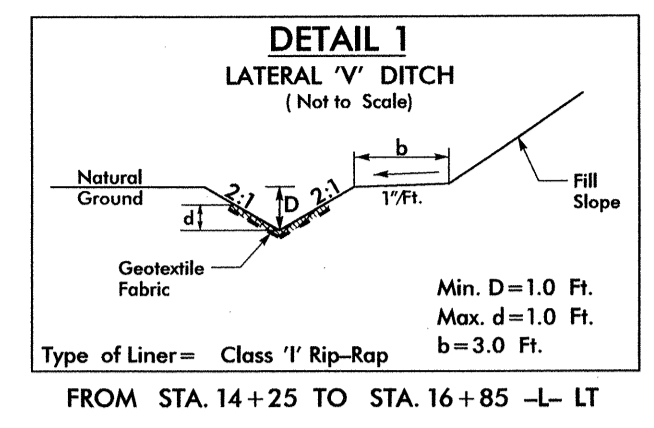
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PLANS PREPARED BY:  
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 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

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 815 JONES FRANKLIN ROAD  
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 TEL (919) 859-2243 FAX (919) 859-2258  
 ENG FIRM LICENSE NO. C-990

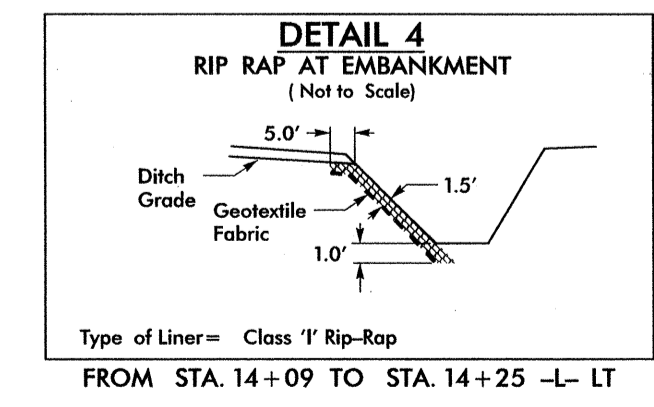
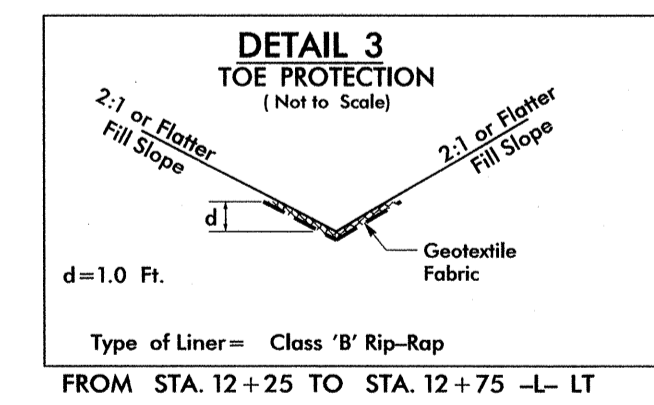
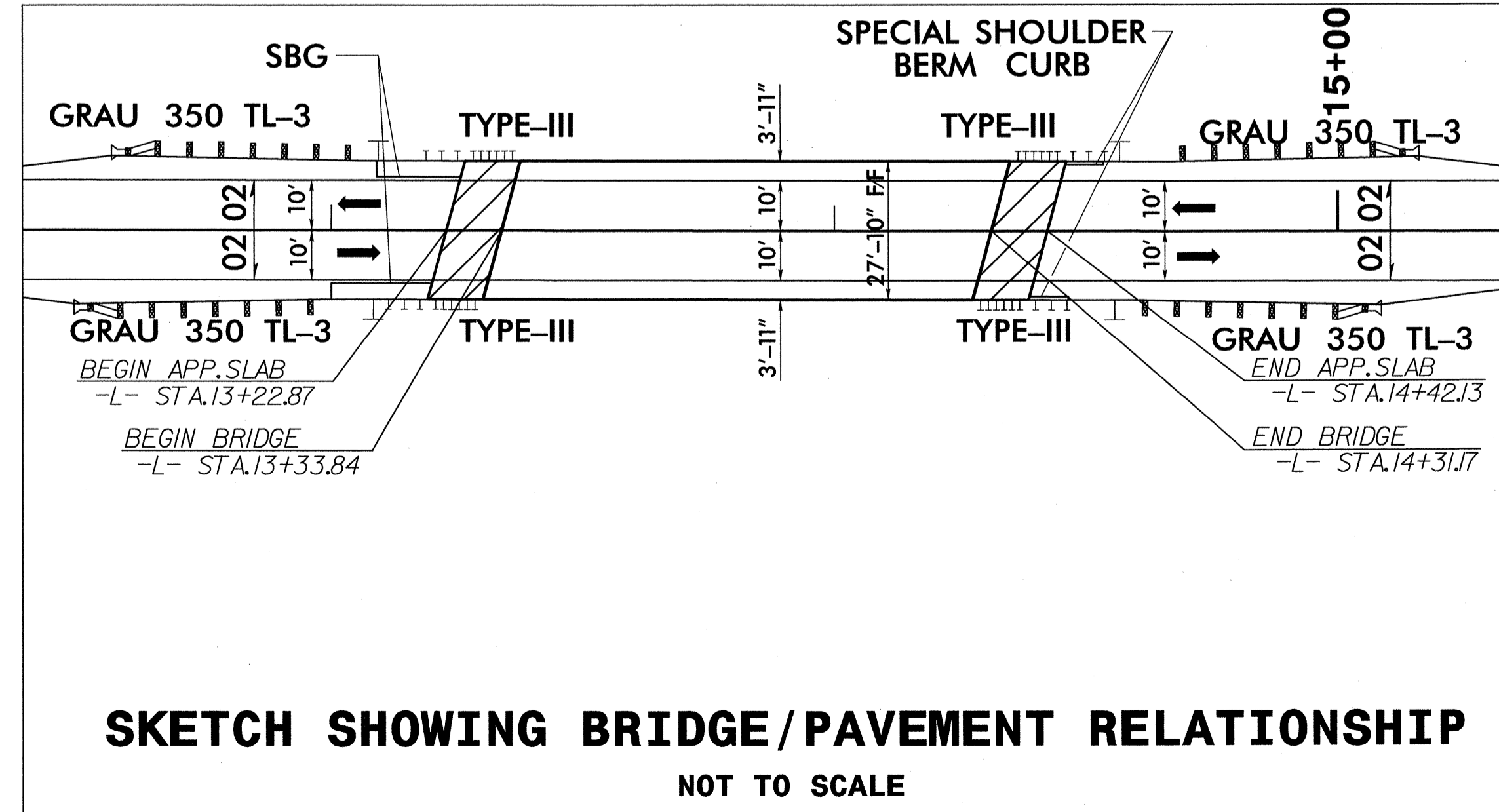
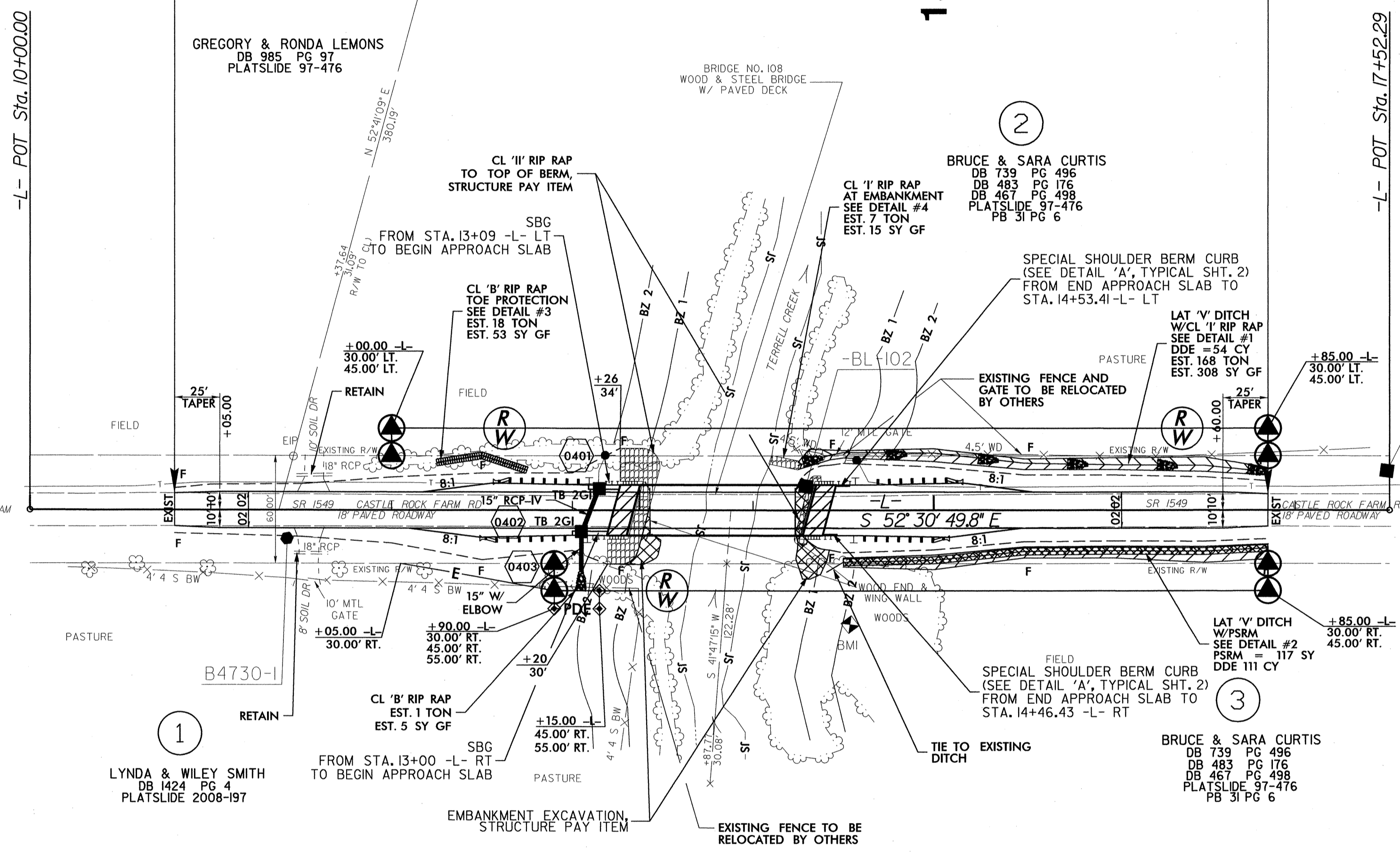
PROJECT REFERENCE NO. B-4730	SHEET NO. 4
ROADWAY DESIGN ENGINEER TIMOTHY D. GOINGS 037874	HYDRAULICS ENGINEER HENRY WELLS, JR. 9334

8/19/13 2/24/13



**BEGIN TIP PROJECT B-4730**  
**-L- POT STA 10+80.00**

**END TIP PROJECT B-4730**  
**-L- POT STA 16+85.00**



FOR -L- PROFILE, SEE SHEET 5  
FOR STRUCTURE PLANS, SEE SHEETS S-1 THROUGH S-16

16-AUG-2013 11:29  
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\$\$\$\$\$USERSRNAME\$\$\$\$\$



5/14/99

16-AUG-2017 14:29  
C:\Users\jg\Documents\Projects\B-4730\_Rd\psh\_05.dgn  
\$\$\$\$\$SYTIME\$\$\$\$\$

PROPOSED SINGLE SPAN BOX BEAM  
1 @ 97'-3 1/8"  
CL STA. 13+82.50  
DEPTH = 39"  
SKEW = 105°

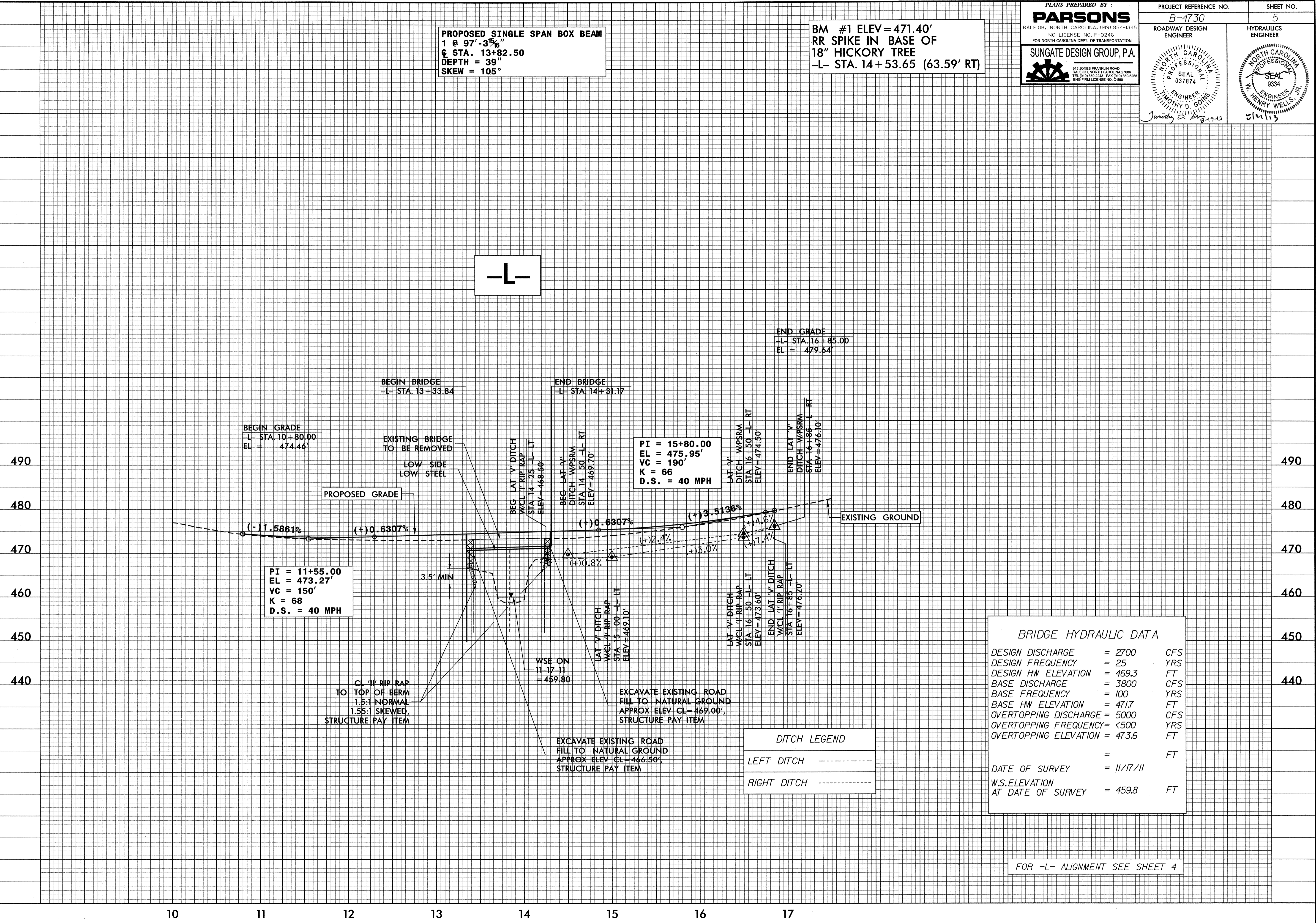
BM #1 ELEV = 471.40'  
RR SPIKE IN BASE OF  
18" HICKORY TREE  
-L- STA. 14 + 53.65 (63.59' RT)

PLANS PREPARED BY:

**PARSONS**  
RALEIGH, NORTH CAROLINA, (919) 854-1345  
NC LICENSE NO. F-0246  
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

SUNGATE DESIGN GROUP, P.A.  
916 JONES FRANKLIN ROAD  
RALEIGH, NORTH CAROLINA 27608  
TEL. (919) 859-2243 FAX (919) 859-4258  
ENG. PERM. LICENSE NO. C-899

PROJECT REFERENCE NO. B-4730	SHEET NO. 5
ROADWAY DESIGN ENGINEER TIMOTHY D. GOING 9/19/13	HYDRAULICS ENGINEER HENRY WELLS 5/14/15



PI = 15+80.00  
EL = 475.95'  
VC = 190'  
K = 66  
D.S. = 40 MPH

PI = 11+55.00  
EL = 473.27'  
VC = 150'  
K = 68  
D.S. = 40 MPH

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 2700	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 469.3	FT
BASE DISCHARGE	= 3800	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 471.7	FT
OVERTOPPING DISCHARGE	= 5000	CFS
OVERTOPPING FREQUENCY	= <500	YRS
OVERTOPPING ELEVATION	= 473.6	FT
	=	FT
DATE OF SURVEY	= 11/17/11	
W.S. ELEVATION AT DATE OF SURVEY	= 459.8	FT

DITCH LEGEND

LEFT DITCH - - - - -

RIGHT DITCH - - - - -

FOR -L- ALIGNMENT SEE SHEET 4





## ROADWAY STANDARD DRAWINGS

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

<u>STD. NO.</u>	<u>TITLE</u>
1101.03	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
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

### 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

### PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

### PAVEMENT MARKERS

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

### PAVEMENT MARKING SYMBOLS

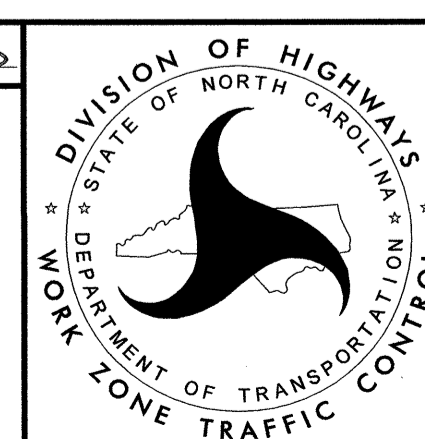
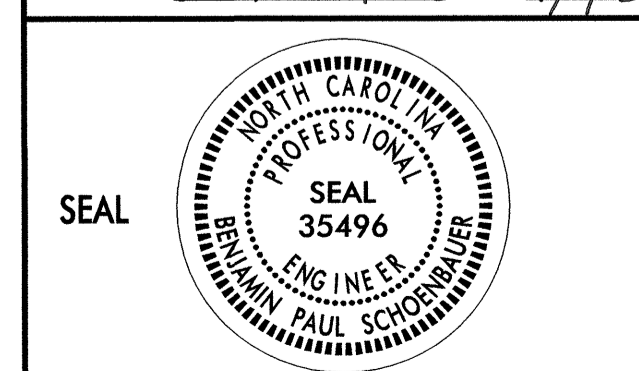
- PAVEMENT MARKING SYMBOLS

### TEMPORARY PAVEMENT MARKING

N/A

7/3/2013 P:\TIP\Projects-B\B4730\TrafficControl\TCP\B-4730\_TC\_TMP\_01.dgn User:sthasan

APPROVED: *Ben Schmitzer* DATE: 7/9/13



**ROADWAY STANDARD  
DRAWINGS & LEGEND**



## MANAGEMENT STRATEGIES

THE FOLLOWING LISTED STRATEGIES DERIVE FROM DETAILED DESIGN LEVEL ASSESSMENTS OF THE WORK ZONE IMPACTS CONDUCTED DURING THE DEVELOPMENTAL STAGES OF THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

RECOMMENDED MANAGEMENT STRATEGIES RELATIVE TO THIS TMP ARE AS FOLLOWS:

**-FULL ROAD CLOSURE**

TRAFFIC TO BE MAINTAINED ON THE FOLLOWING OFF-SITE DETOUR ROUTE THROUGHOUT THE DURATION OF THIS PROJECT:

SR 1506 (WHITE SMITH RD) AND SR 1556 (HENDERSON TANYARD RD)

## PHASING

STEP 1: USING ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9; AND SHEETS TMP-2 AND TMP-3.

- A) INSTALL DETOUR AND WARNING SIGNS.
- B) PLACE TYPE III BARRICADES TO CLOSE SR 1549 (CASTLE ROCK RD) TO THROUGH TRAFFIC, AND PLACE TRAFFIC ONTO PROPOSED DETOUR.

STEP 2: AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING:

- A) REMOVE EXISTING STRUCTURE NO. 108 AND CONSTRUCT PROPOSED STRUCTURE. SEE ROADWAY AND STRUCTURE PLANS.
- B) CONSTRUCT PROPOSED ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -L- STA. 10+80 +/- TO -L- STA. 16+85 +/- . SEE ROADWAY PLANS.
- C) PLACE FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

STEP 3: A) OPEN SR 1549 (CASTLE ROCK RD) TO FINAL TRAFFIC PATTERN.

- B) REMOVE ALL REMAINING WORK ZONE TRAFFIC CONTROL DEVICES.

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

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

**TRAFFIC PATTERN ALTERATIONS**

- A) NOTIFY THE ENGINEER 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**

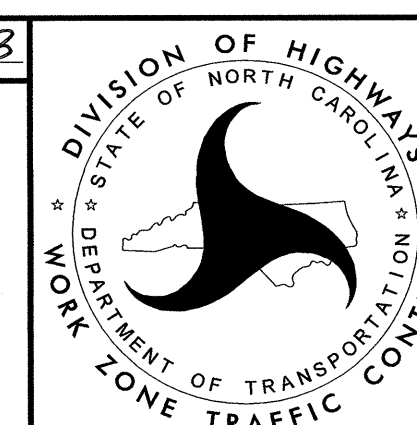
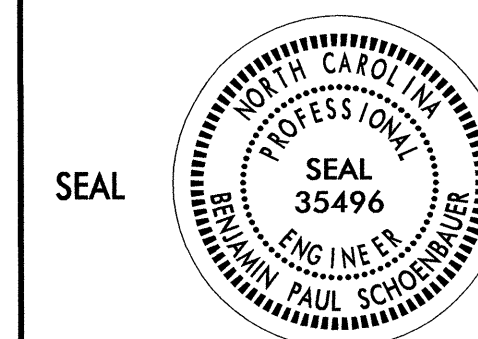
- E) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

**PAVEMENT MARKINGS AND MARKERS**

- G) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.

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

APPROVED: *Ben Schuman* DATE: 7/9/13



**TRANSPORTATION  
OPERATIONS  
PLAN**

SIGN NUMBER: TC TYPE: STATIONARY QUANTITY: SEE PLANS SIGN WIDTH: 3'-6" HEIGHT: 1'-6" TOTAL AREA: 5.3 Sq.Ft. BORDER TYPE: INSET RECESS: 0.38" WIDTH: 0.5" RADII: 1.5" NO. Z BARS: LENGTH:	BACKG COLOR: Fluorescent Orange COPY COLOR: Black SYMBOL X Y WID HT MAT'L: 0.080" (2.0 mm) ALUMINUM	DESIGN BY: S.JOHNS PROJECT ID: B-4730	CHECKED BY: S.KUNZ DIV: 8	DATE: Apr 03, 2013
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Spacing Factor is 0.7 unless specified otherwise

**LETTER POSITIONS**

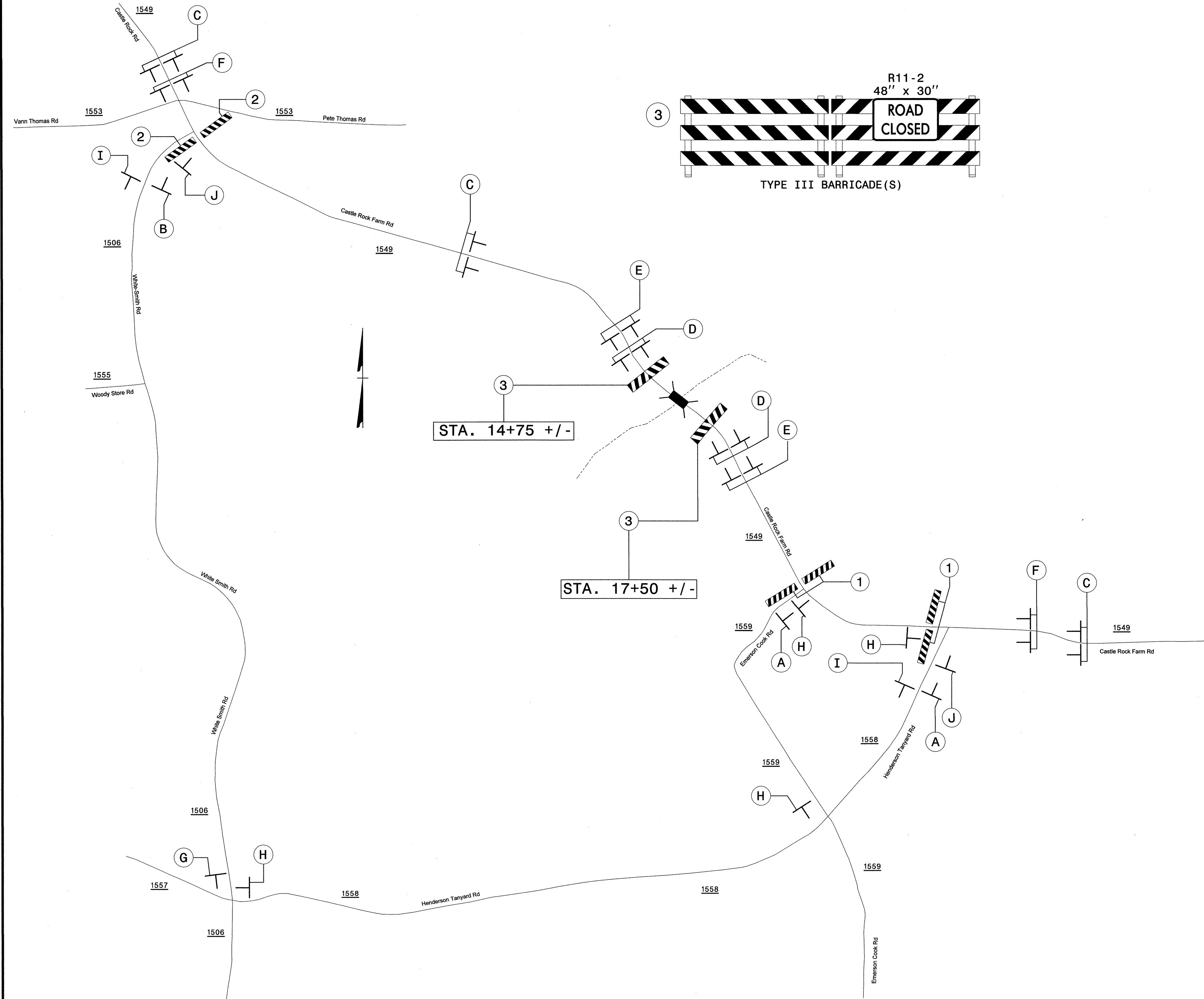
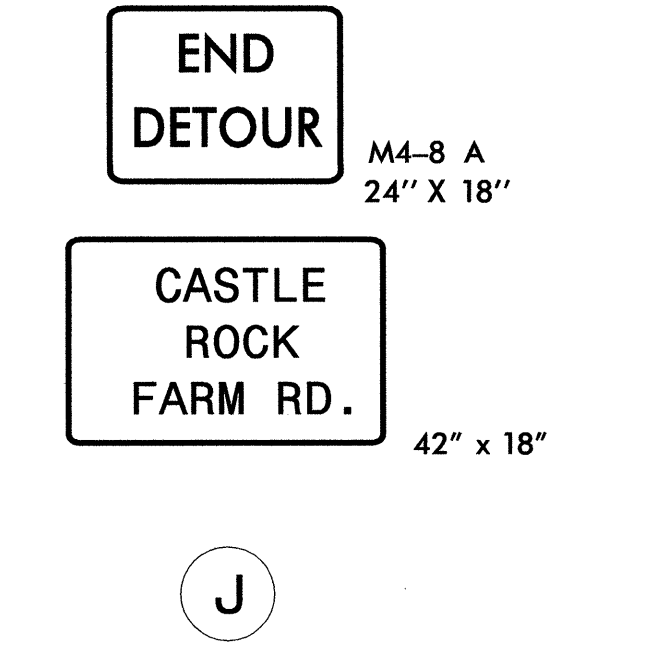
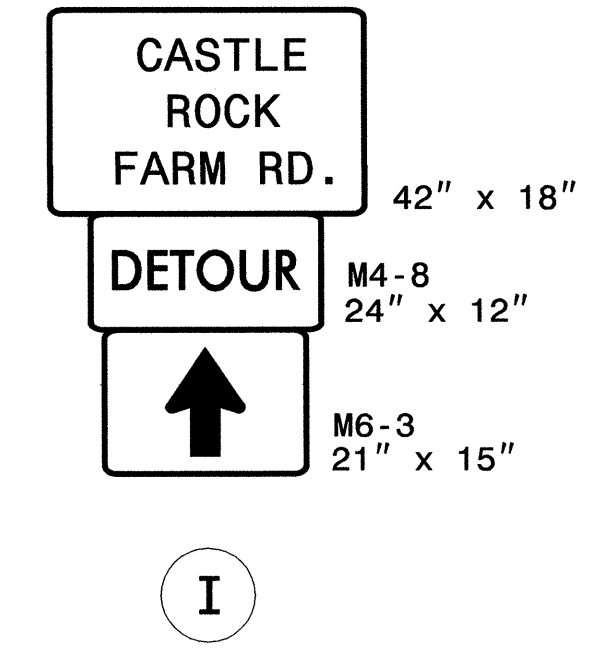
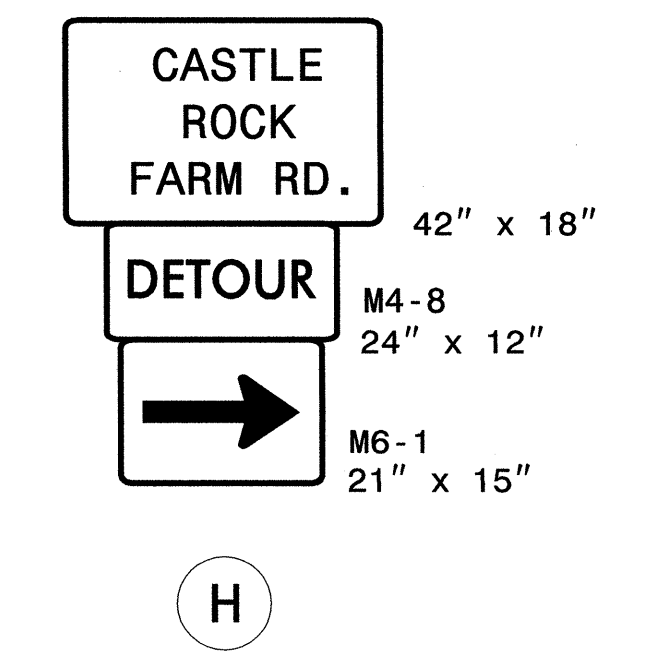
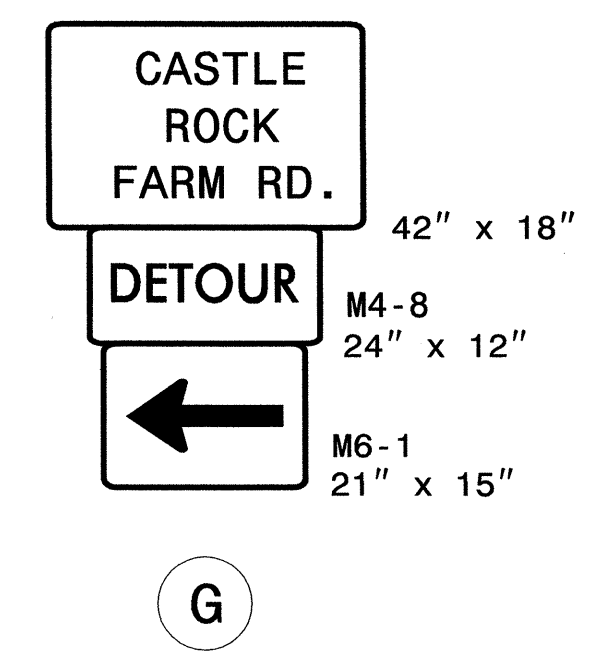
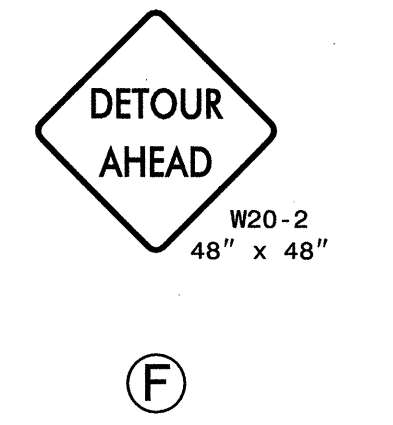
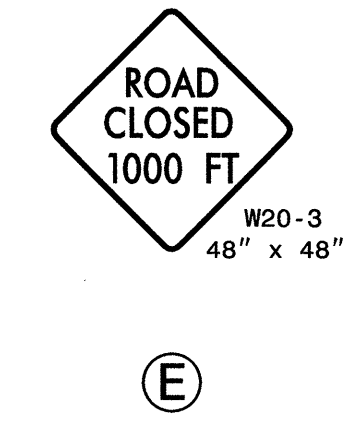
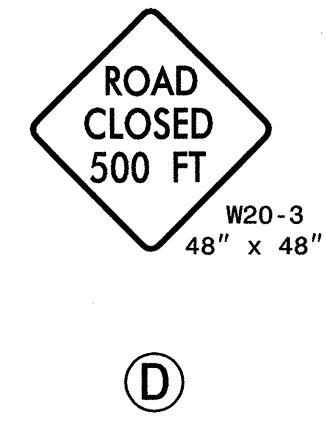
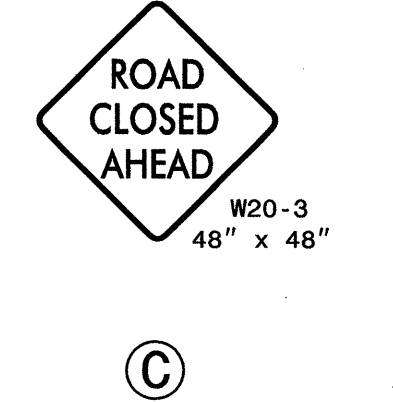
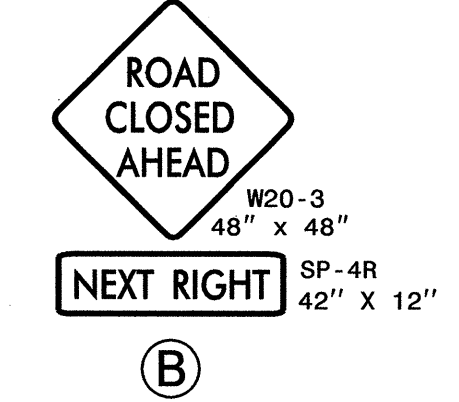
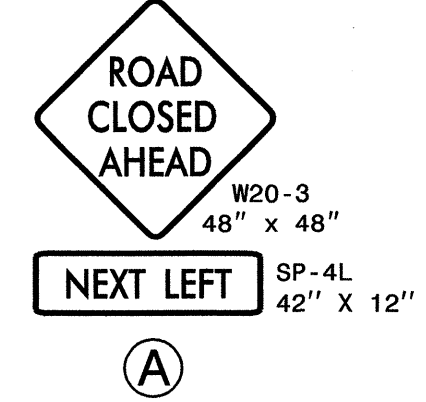
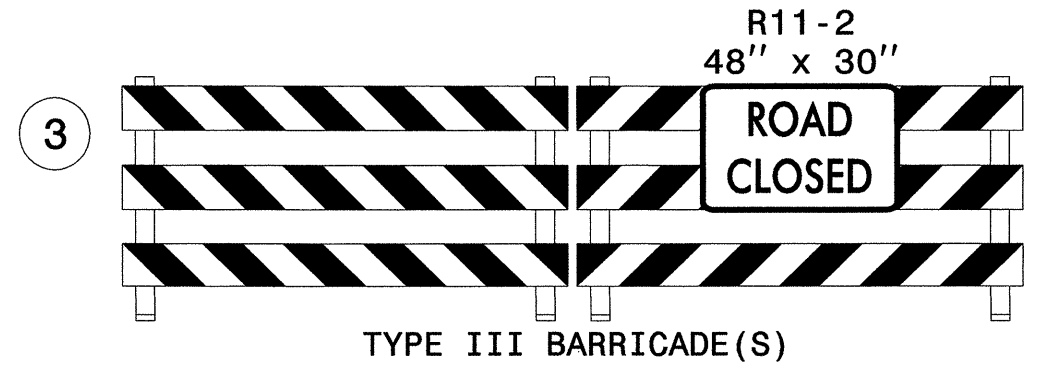
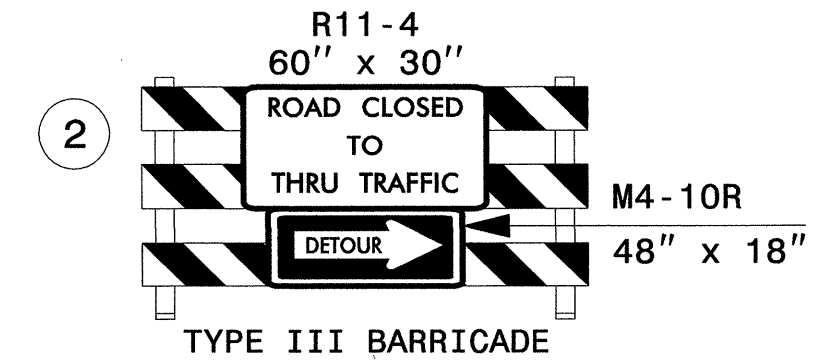
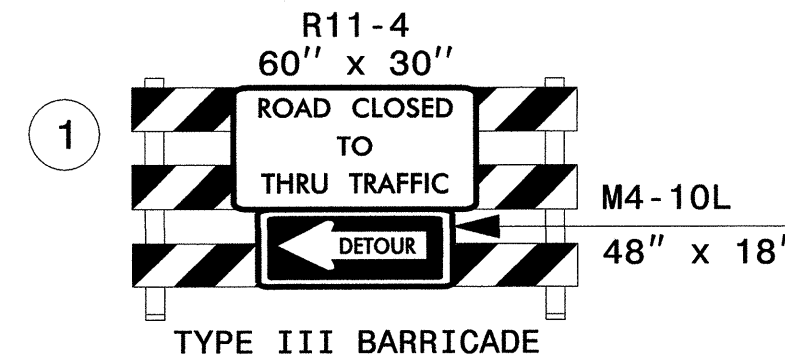
**Letter spacings are to start of next letter**

	C	A	S	T	L	E	R	O	C	K	Series/Size			
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														34.2
														C 2000
	10.1	2.8	3.7	3.4	3.3	2.5	3.4	2.8	10.1					21.8

FILENAME: B-4730\_workzoneSign NORTH CAROLINA D.O.T. SIGN DETAIL

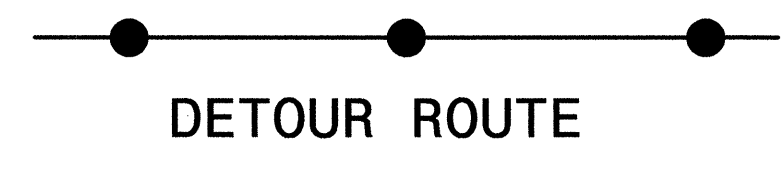
7/3/2013  
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 User:shanson

APPROVED: <i>[Signature]</i> DATE: 7/2/13			<b>SPECIAL SIGN DESIGN</b>
SEAL			



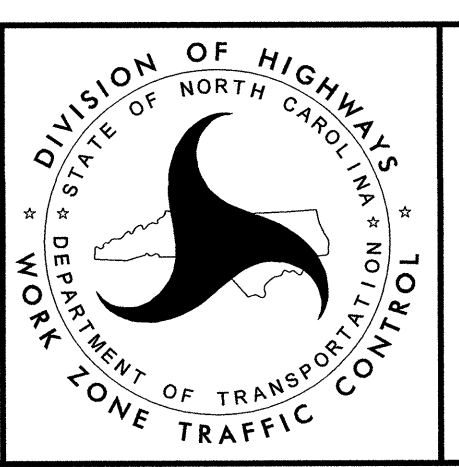
**NOTES:**

- SEE SHEET TMP-2 FOR SIGN DESIGN.
- REFER TO 1101.03, SHEET 1 OF 9 FOR SIGN DISTANCES.
- INSTALL DETOUR SIGNS AS DIRECTED BY THE ENGINEER.



APPROVED: *Ben Schenker* DATE: 7/9/13

SEAL



OFF-SITE DETOUR AND BARRICADE PLACEMENT

7/3/2013  
 P:\Projects-B\B4730\TrafficControl\CP\B-4730\_TC\_TMP\_03.dgn  
 User: jensson



22-Jul-2013 16:00 F:\PPP-2013\B-4730\Traffic\Signing\CADD\PM\B-4730\_Sgn\_PMP.dgn  
 S:\Johns - AT - 12274911

**CONTRACT: C203258**

**T.I.P.: B-4730**

**STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN  
CHATHAM COUNTY**

**LOCATION: Bridge NO. 108 OVER TERRELL CREEK ON SR 1549**

TIP NO. B-4730	SHEET NO. PMP-1
APPROVED:	
DATE: 7/25/13	
SEAL	

**ROADWAY STANDARD DRAWING**

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

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - 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

**PAVEMENT MARKING SCHEDULE**

SYMBOL	DESCRIPTION
	PAINT (4")
PI	YELLOW DOUBLE CENTER
PA	WHITE EDGELINE

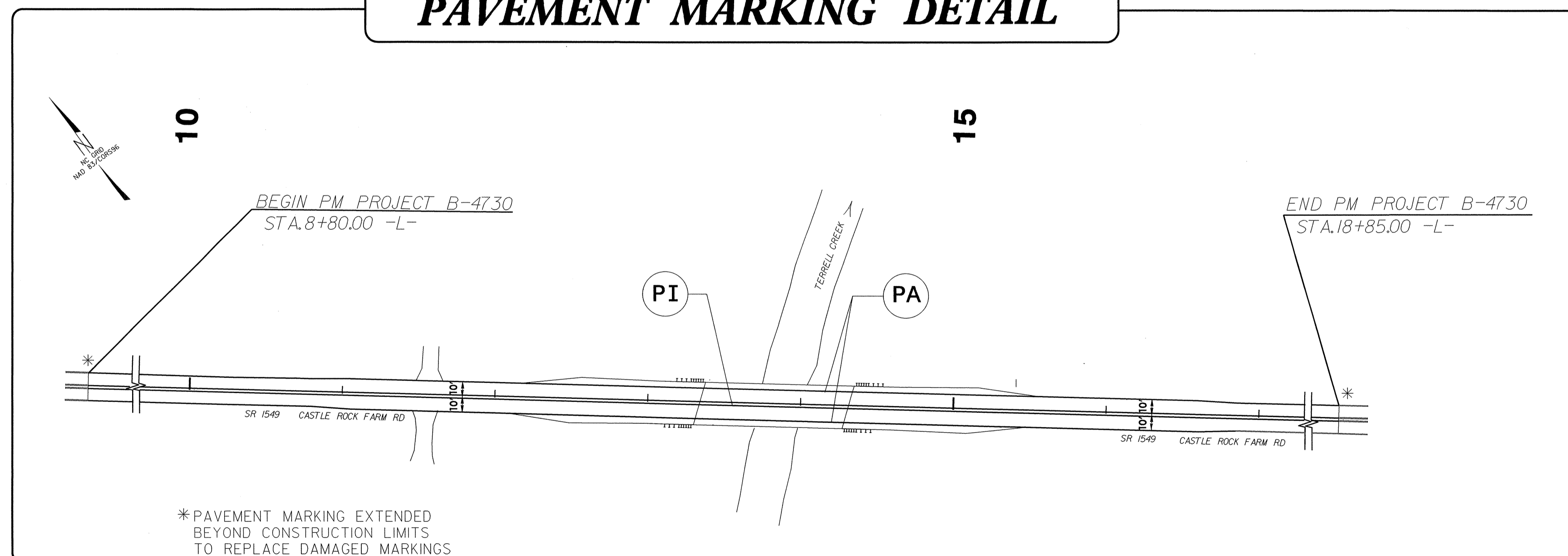
**GENERAL NOTES**

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:
 

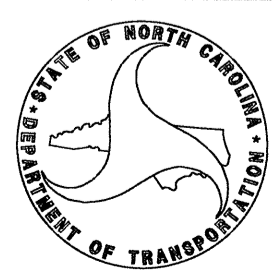
ROAD NAME	MARKING	MARKER
ALL	PAINT	NONE
- B) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.
- C) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- D) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- E) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- F) MARKERS ARE TO BE PLACED ACCORDING TO THE ROADWAY STANDARD DRAWINGS.

**PAVEMENT MARKING DETAIL**



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

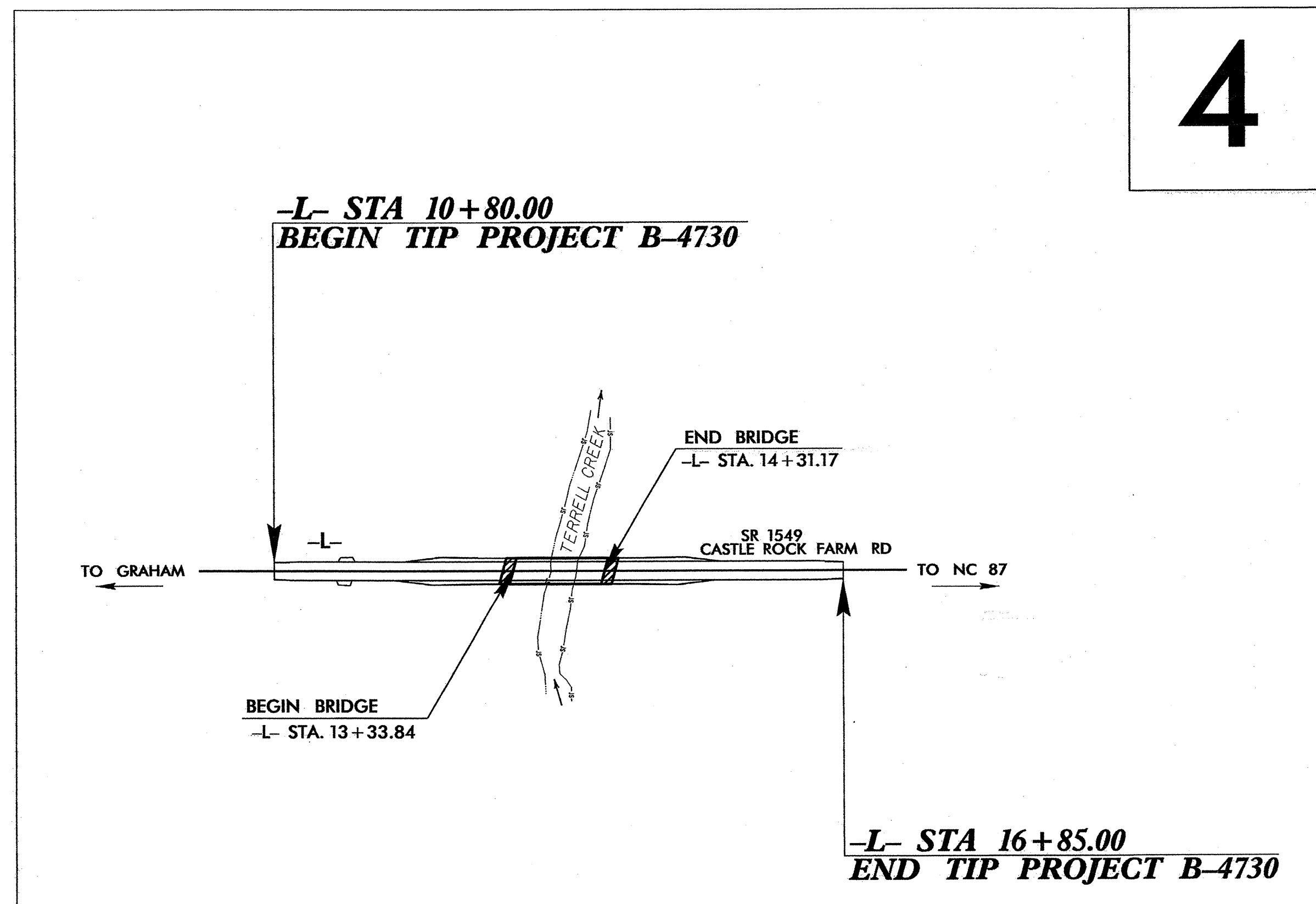
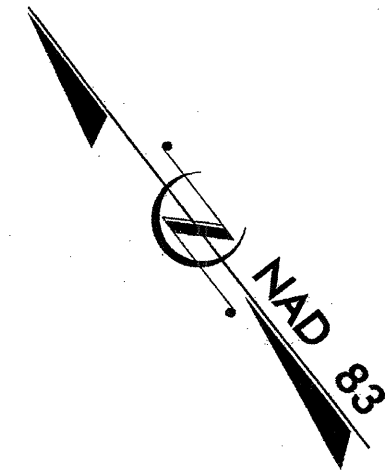
SUSAN B. KUNZ SIGNING & DELINEATION REGIONAL ENGINEER  
 STACEY W. JOHNS SIGNING & DELINEATION DESIGN ENGINEER



**TIP PROJECT: B-4730**

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

**LOCATION: BRIDGE NO. 108 OVER TERRELL CREEK ON SR 1549**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE**



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4730	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

**EROSION AND SEDIMENT CONTROL MEASURES**

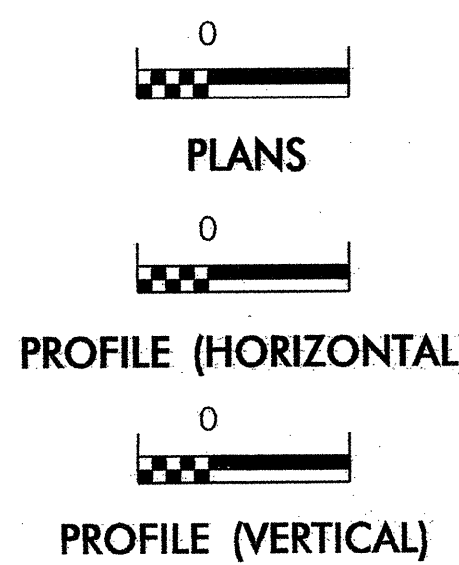
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III
1606.01	Special Sediment Control Fence	III
1622.01	Temporary Berms and Slope Drains	TD
1630.02	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	RS
	Temporary Rock Silt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

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

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

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

**GRAPHIC SCALE**



ROADSIDE ENVIRONMENTAL UNIT  
 DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

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

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

**Roadway Standard Drawings**

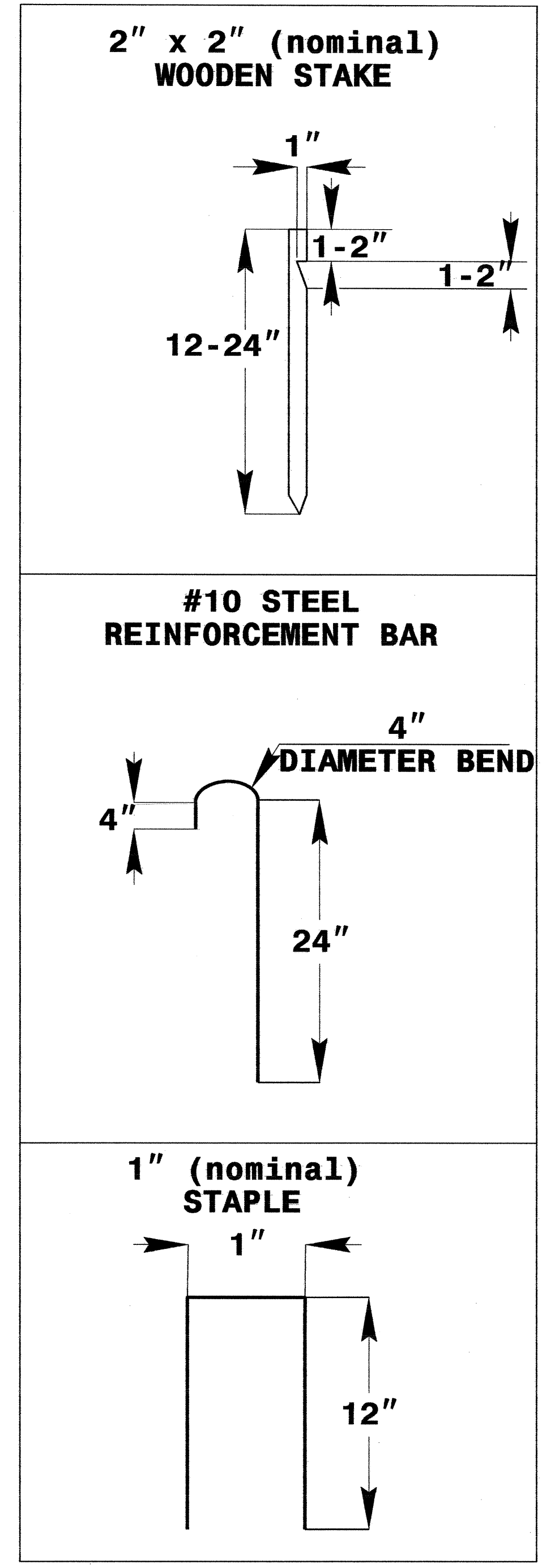
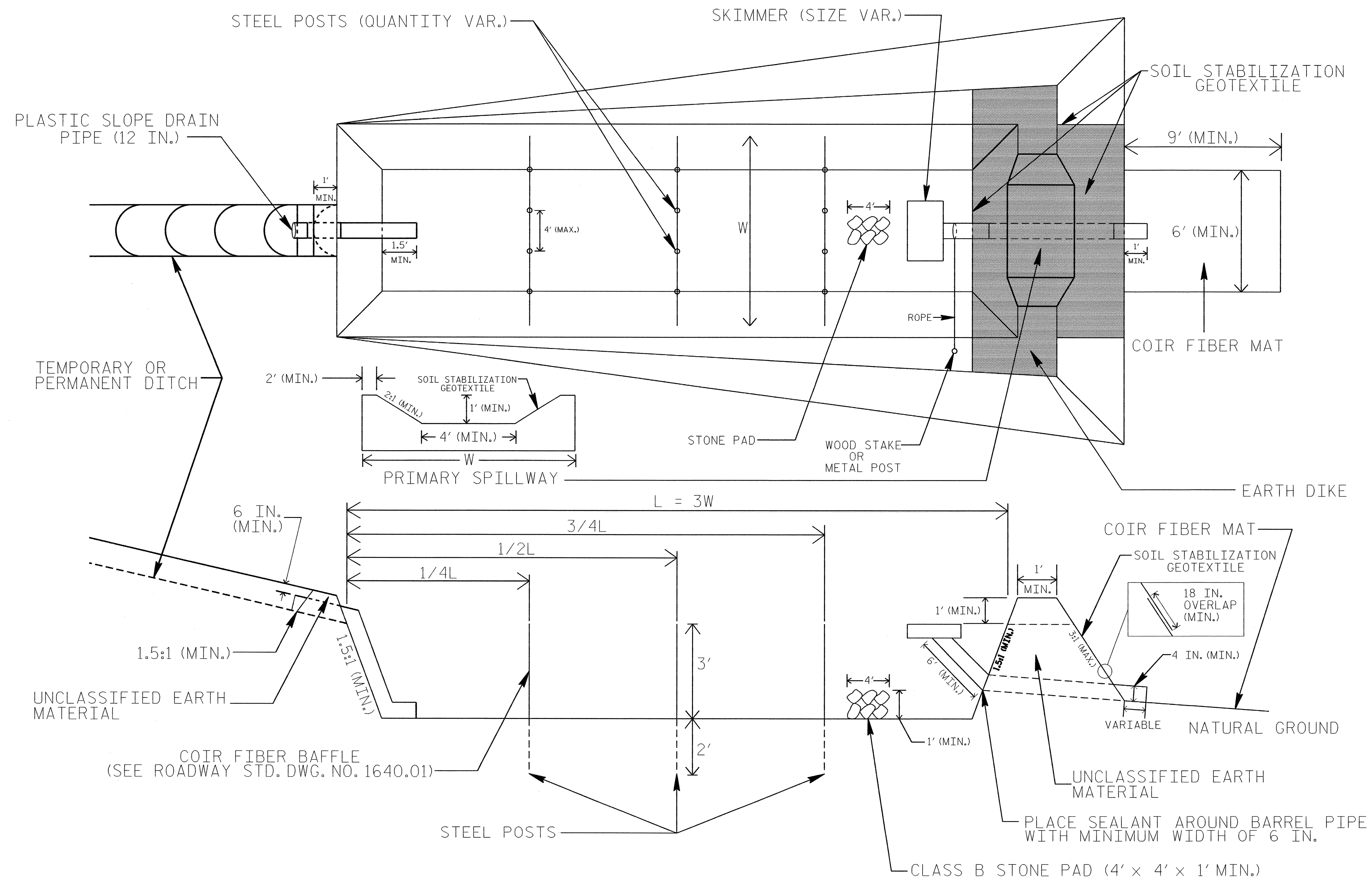
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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



PROJECT REFERENCE NO. B-4730	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# SKIMMER BASIN WITH BAFFLES DETAIL



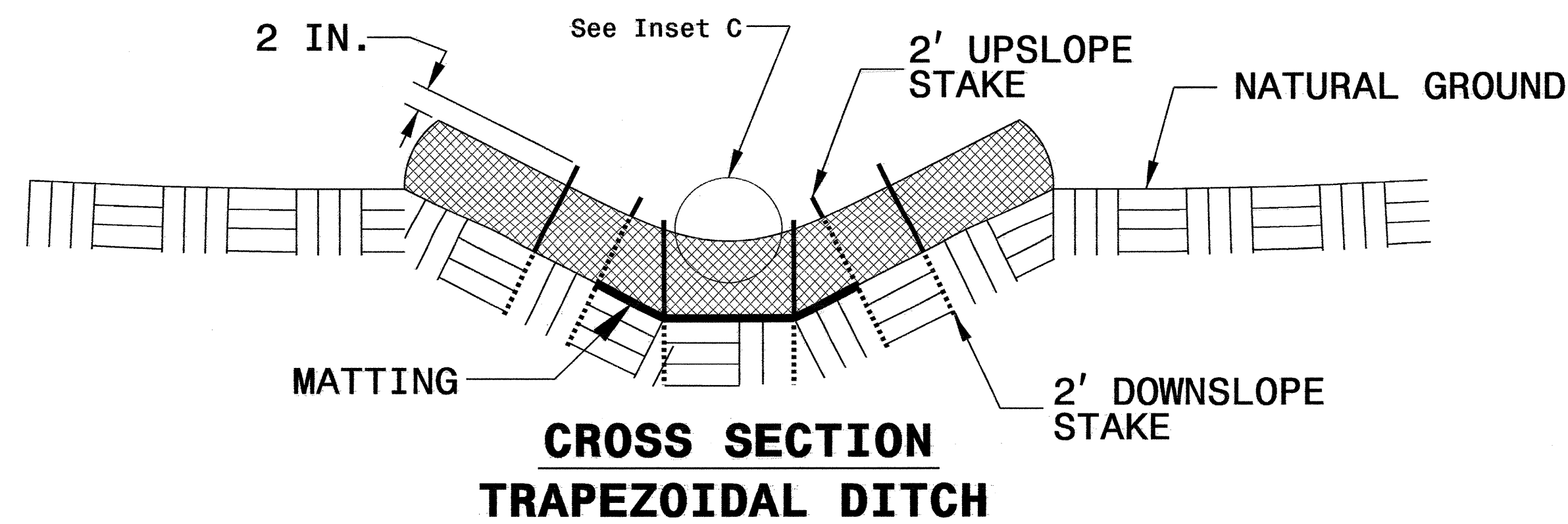
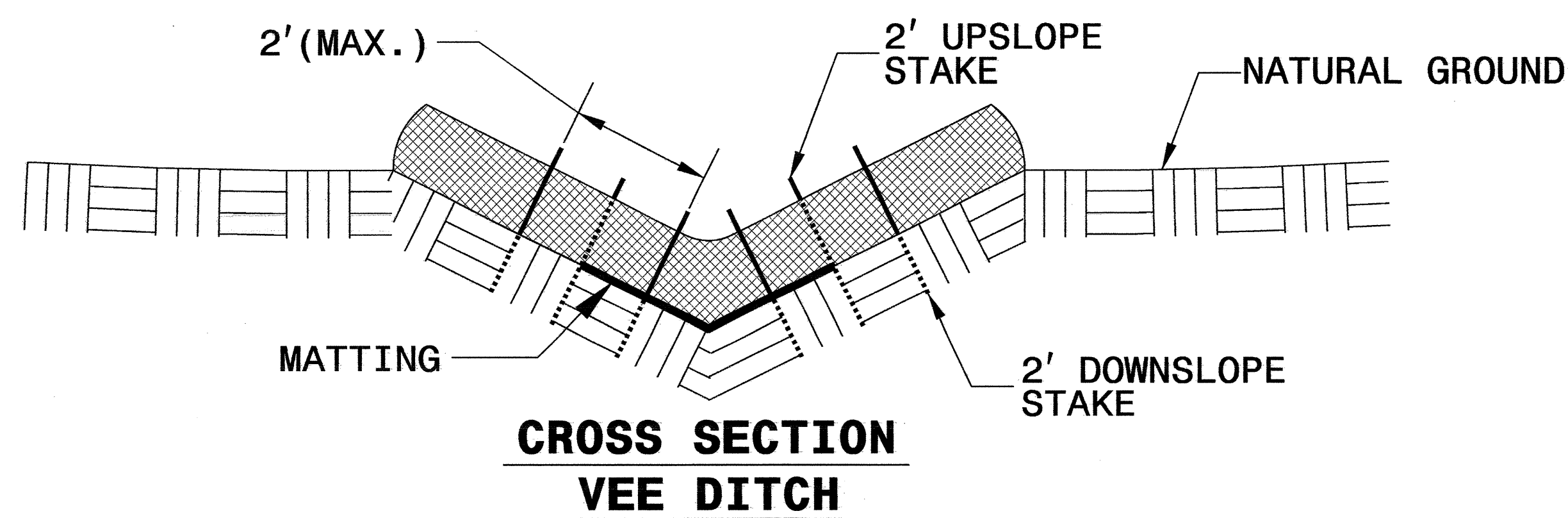
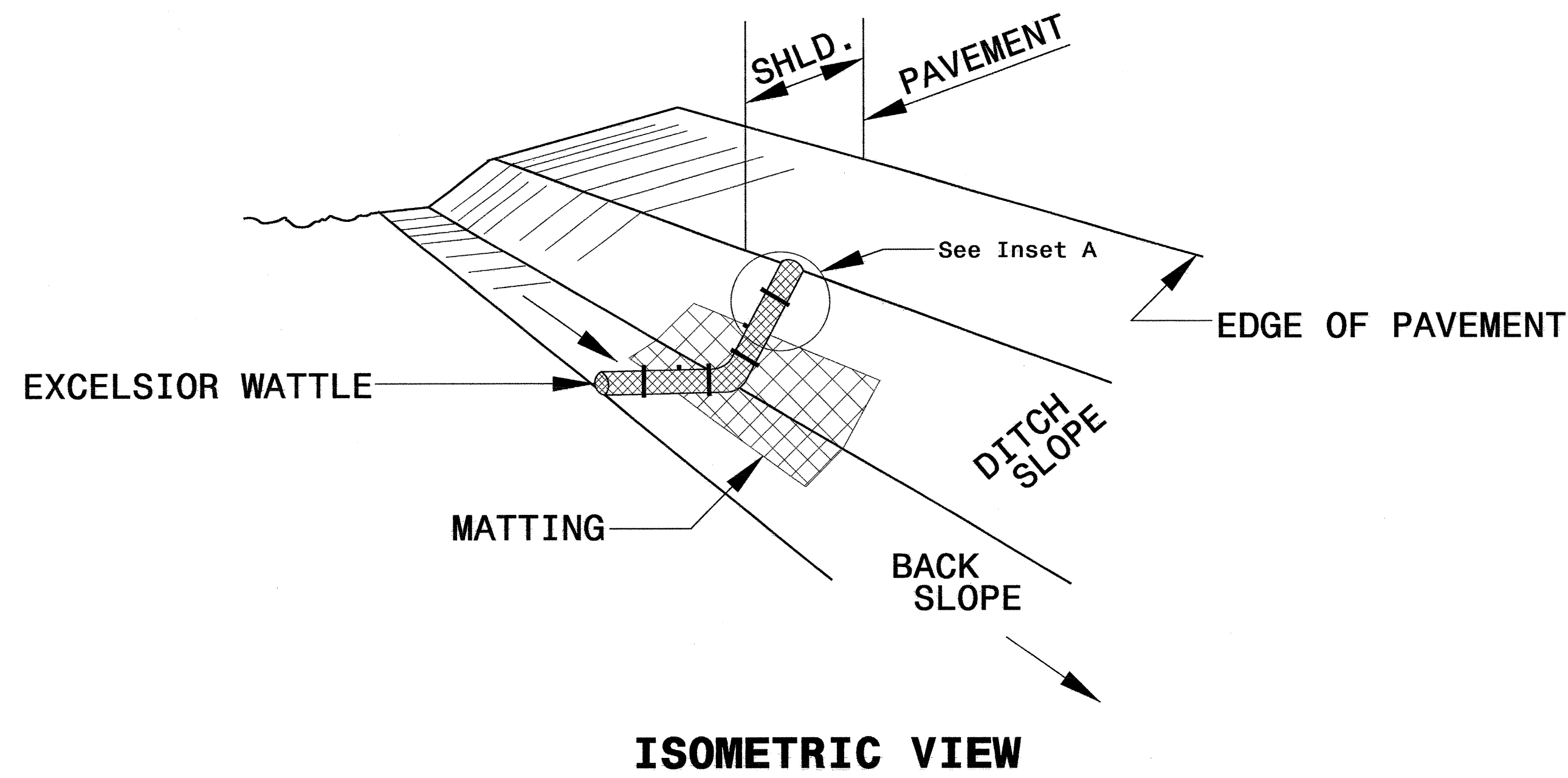
## NOTES

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

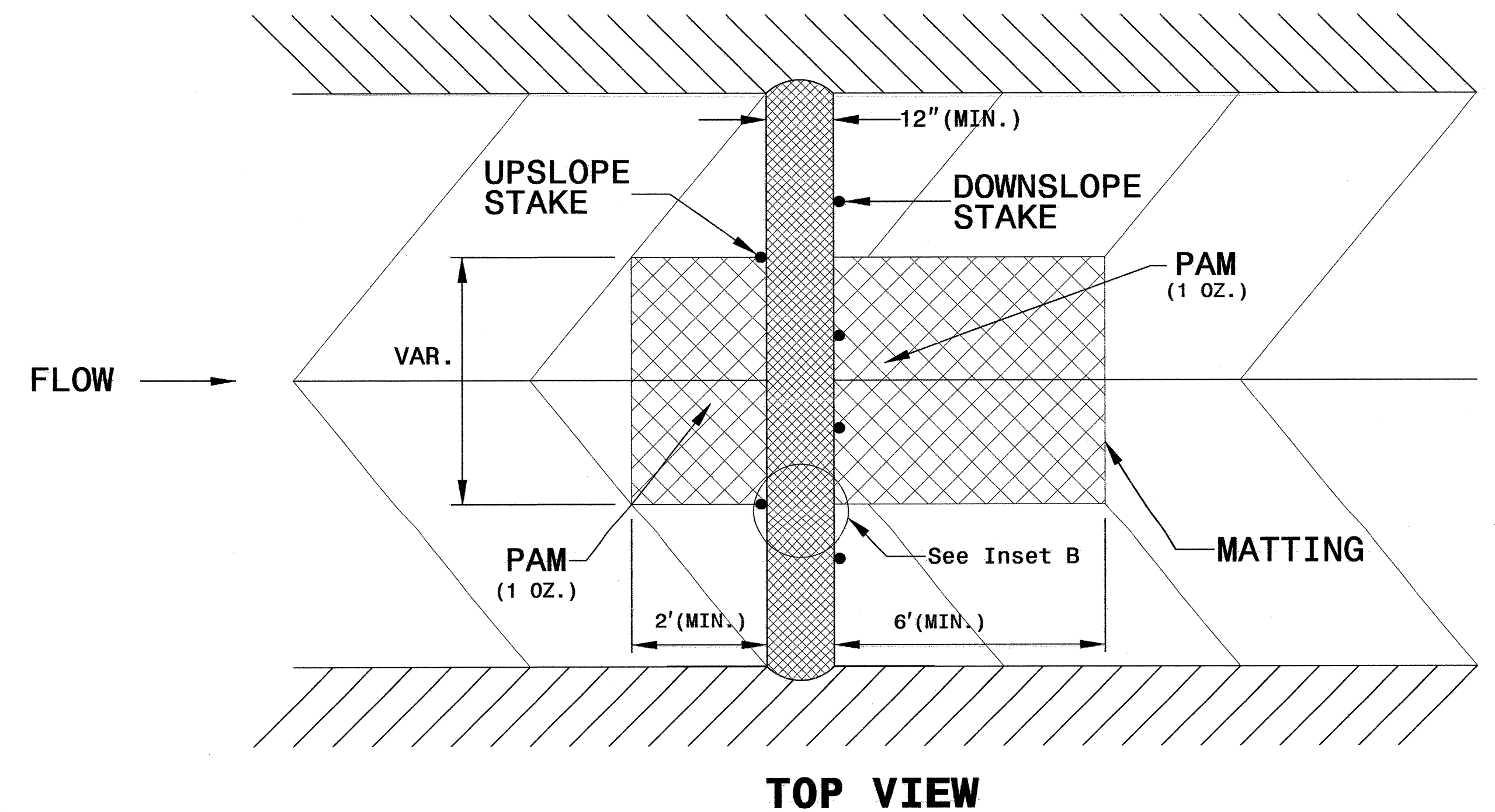
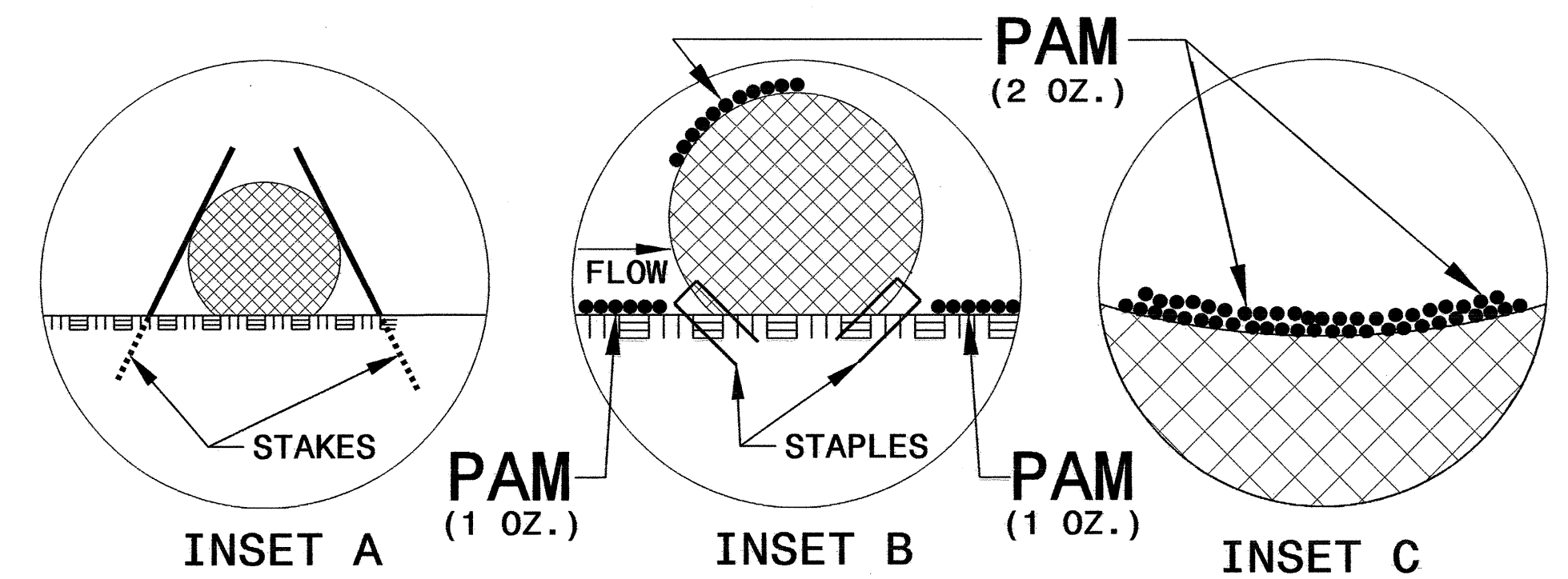
PROJECT REFERENCE NO. B-4730	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



**NOTES:**

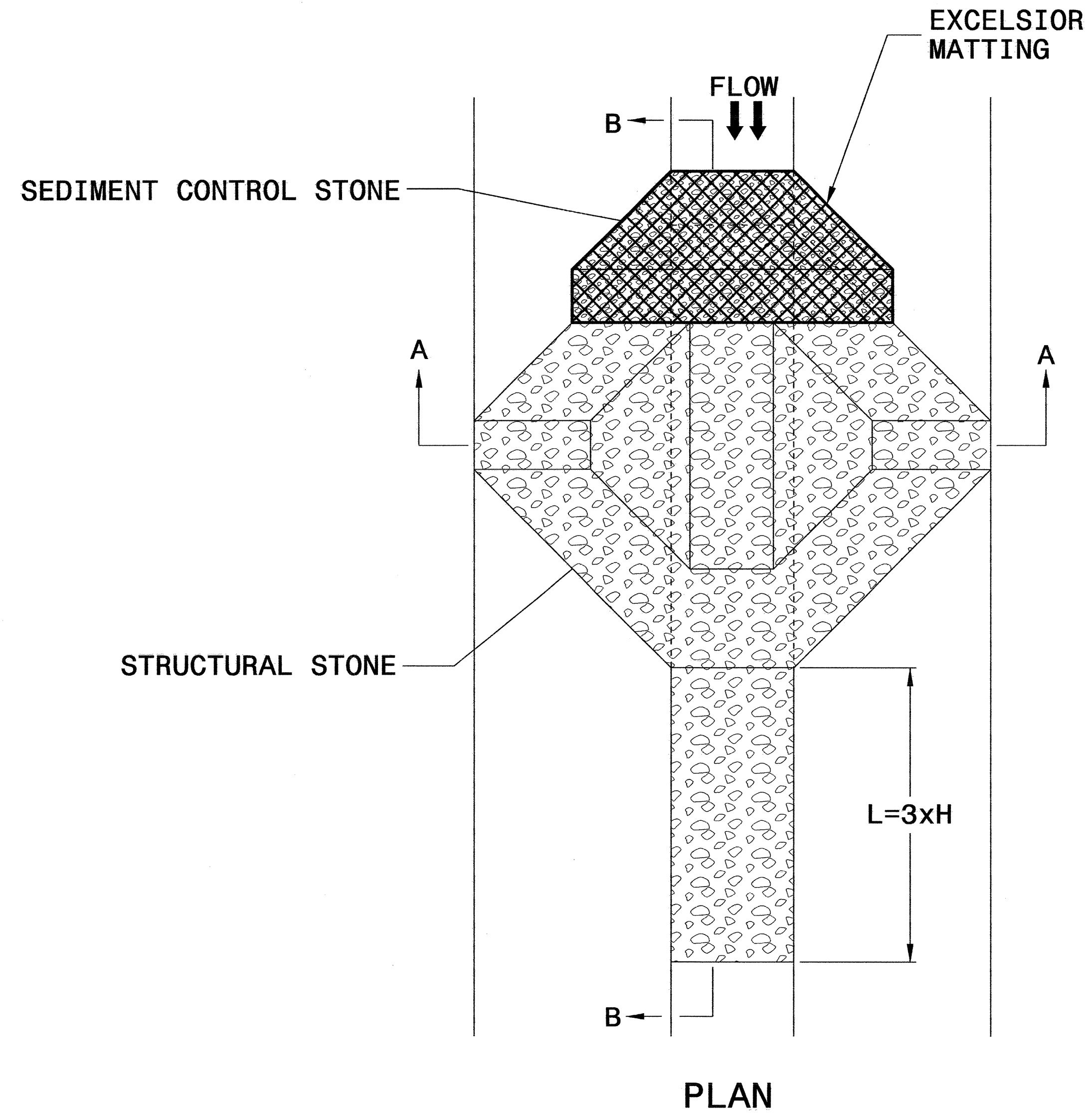
- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
- PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.
- INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.





PROJECT REFERENCE NO. B-4730	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

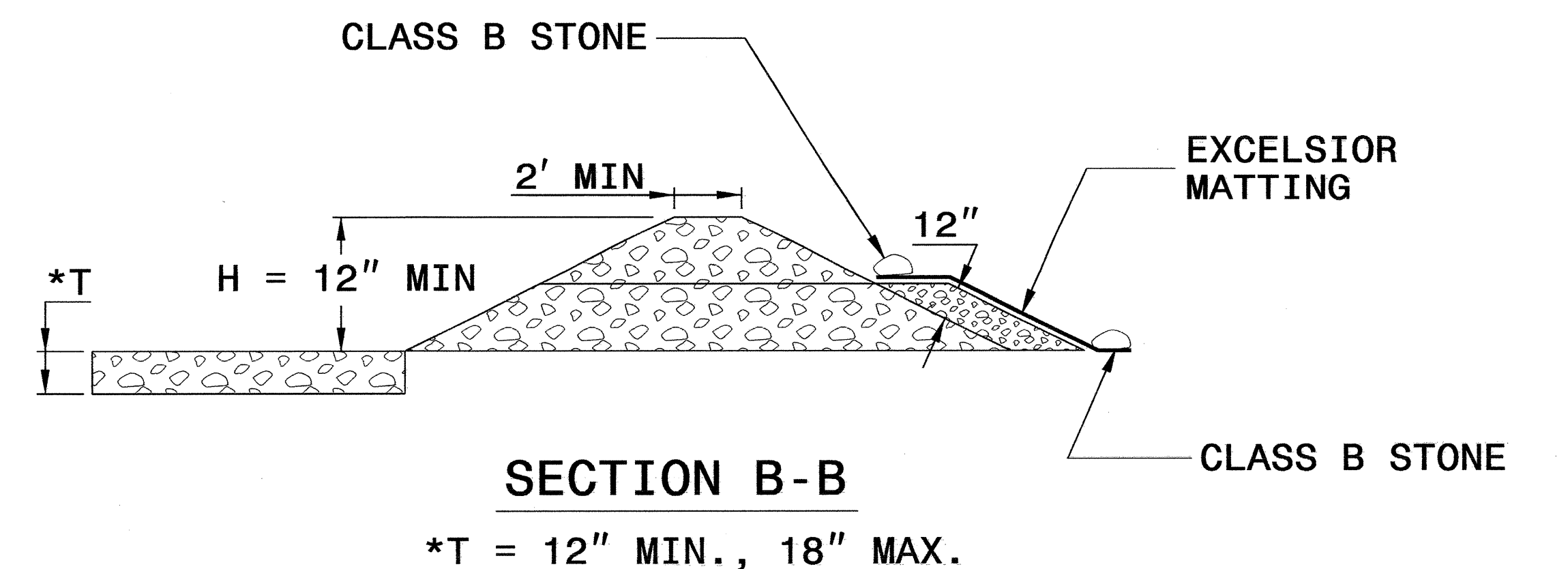
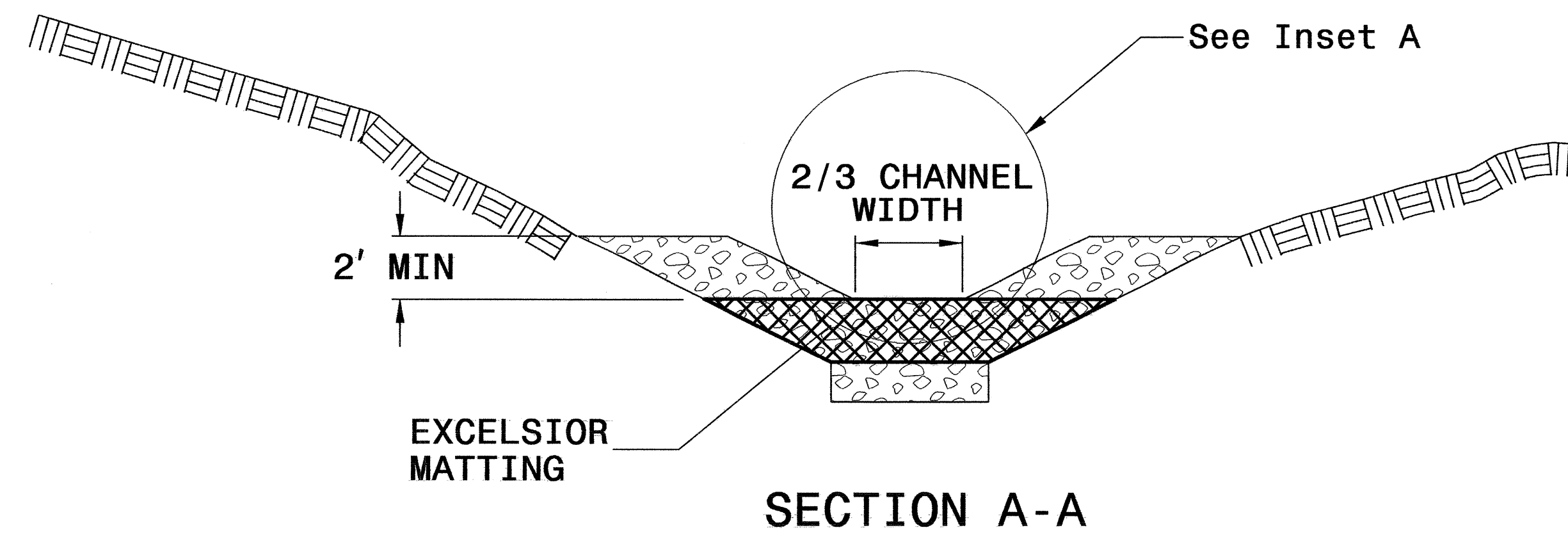
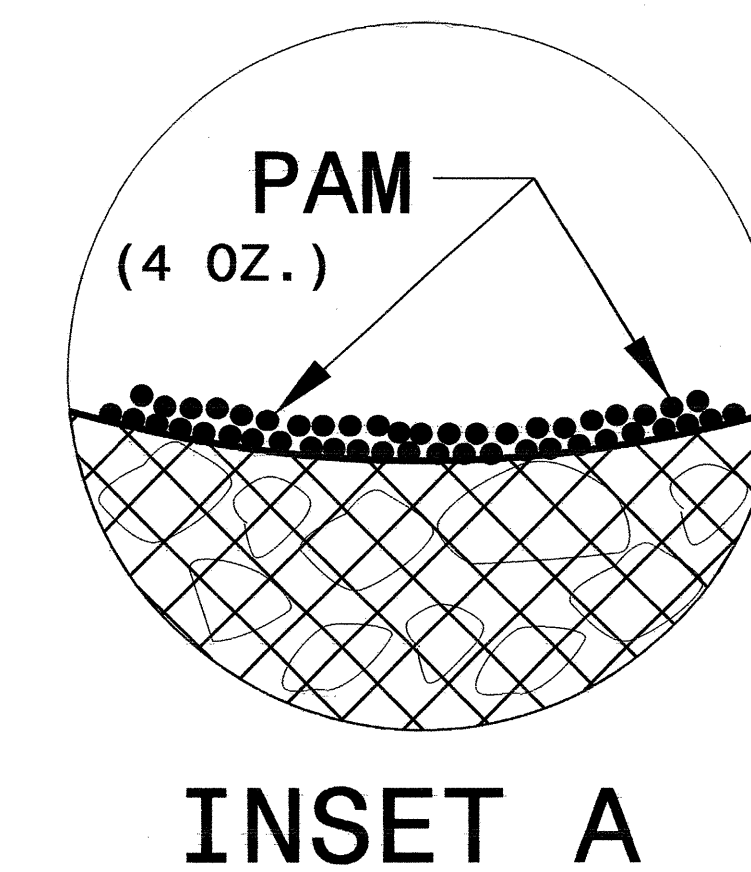


## NOTES

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

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

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



NOT TO SCALE

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO. <i>B-4730</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

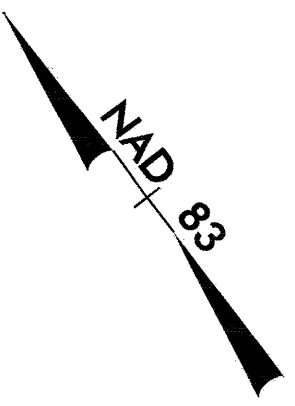
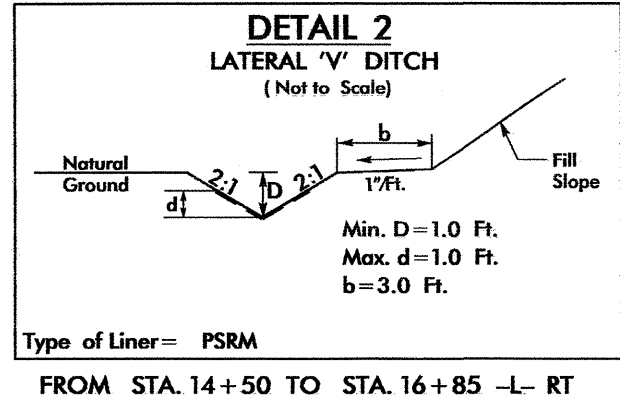
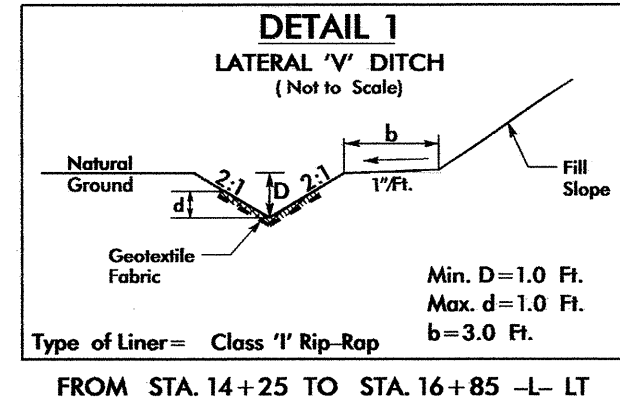
## ***SOIL STABILIZATION TIMEFRAMES***

<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>B-4730</b>	SHEET NO. <b>EC-4/CONST.4</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

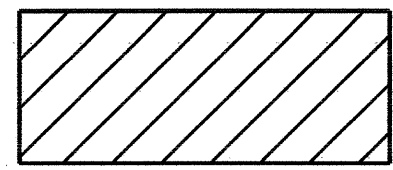


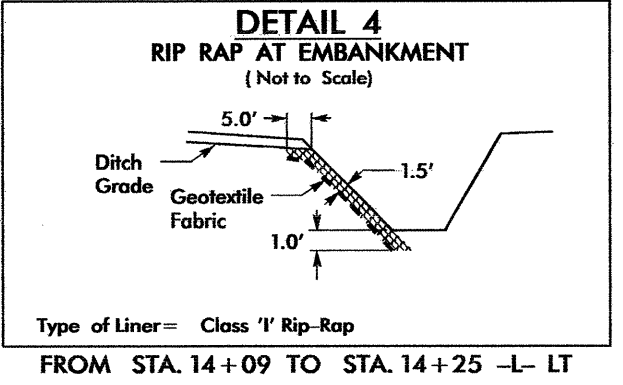
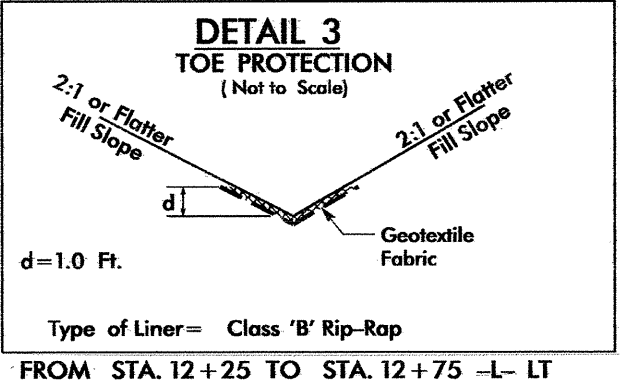
**BEGIN TIP PROJECT B-4730**  
**-L- POT STA 10+80.00**

**END TIP PROJECT B-4730**  
**-L- POT STA 16+85.00**

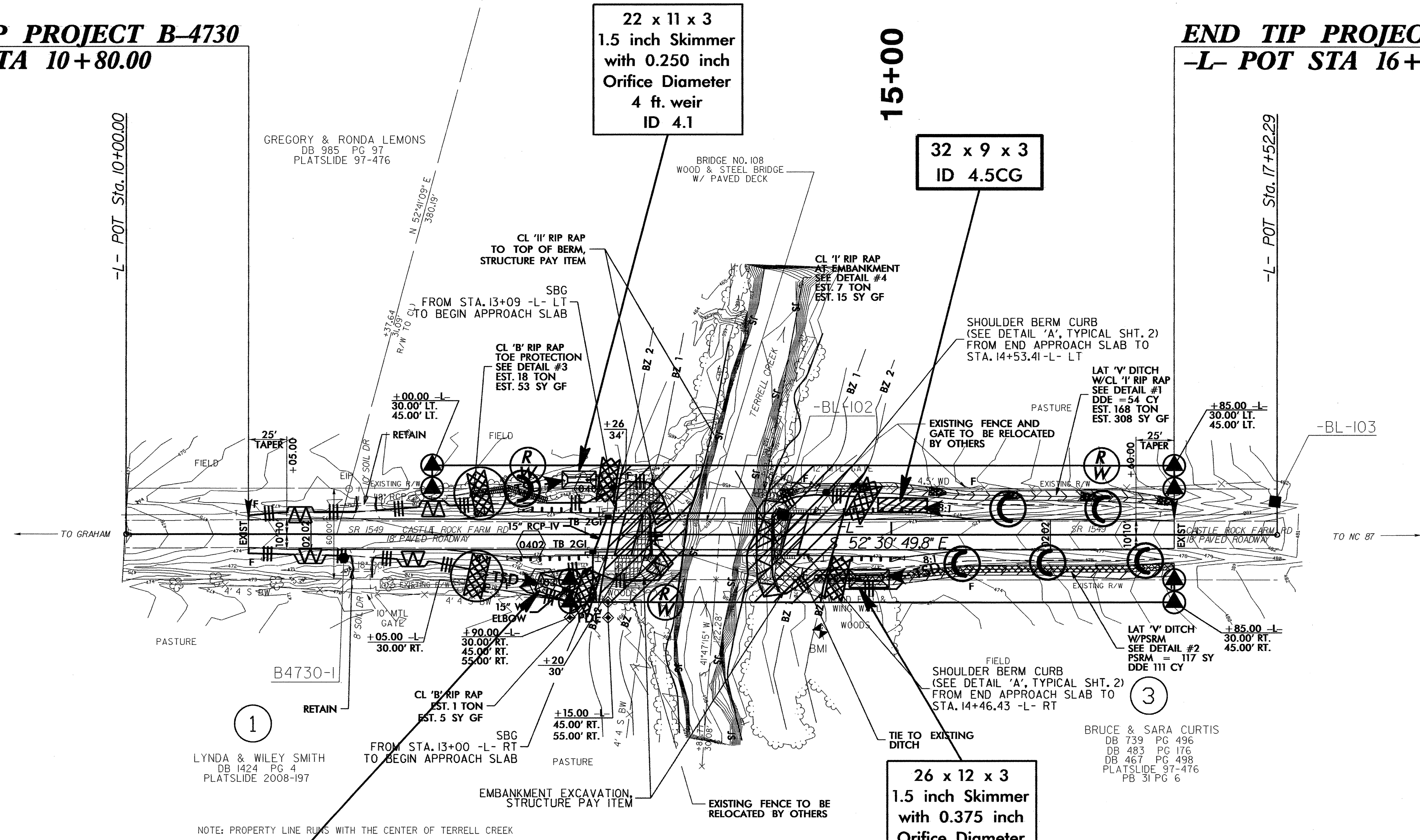
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 4

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

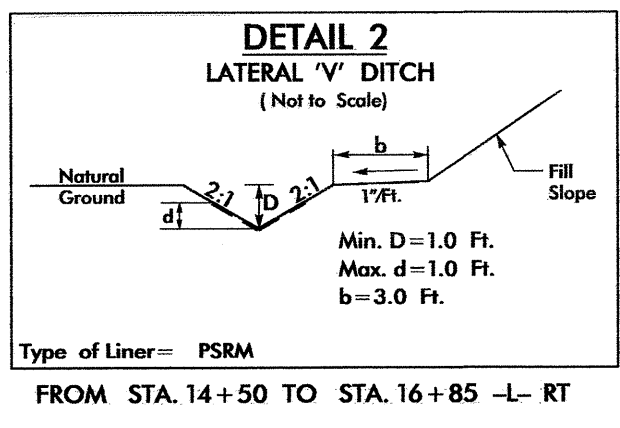
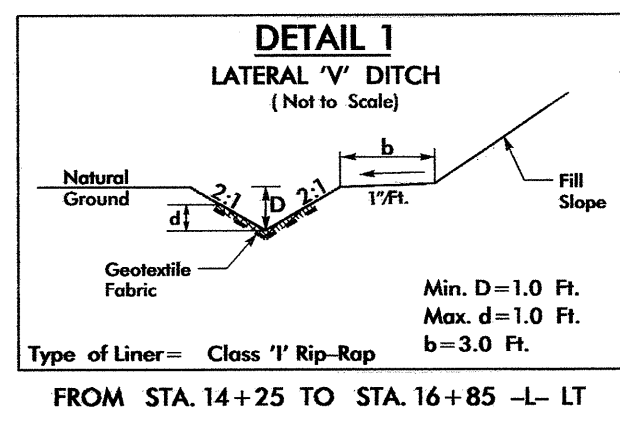
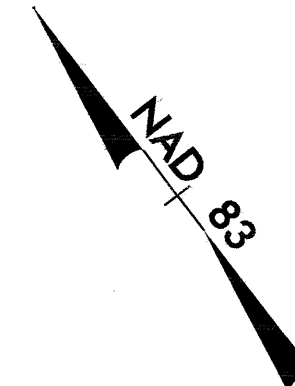


NOTE:  
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING  
BASIN(S) AS STILLING BASIN WHERE APPLICABLE.



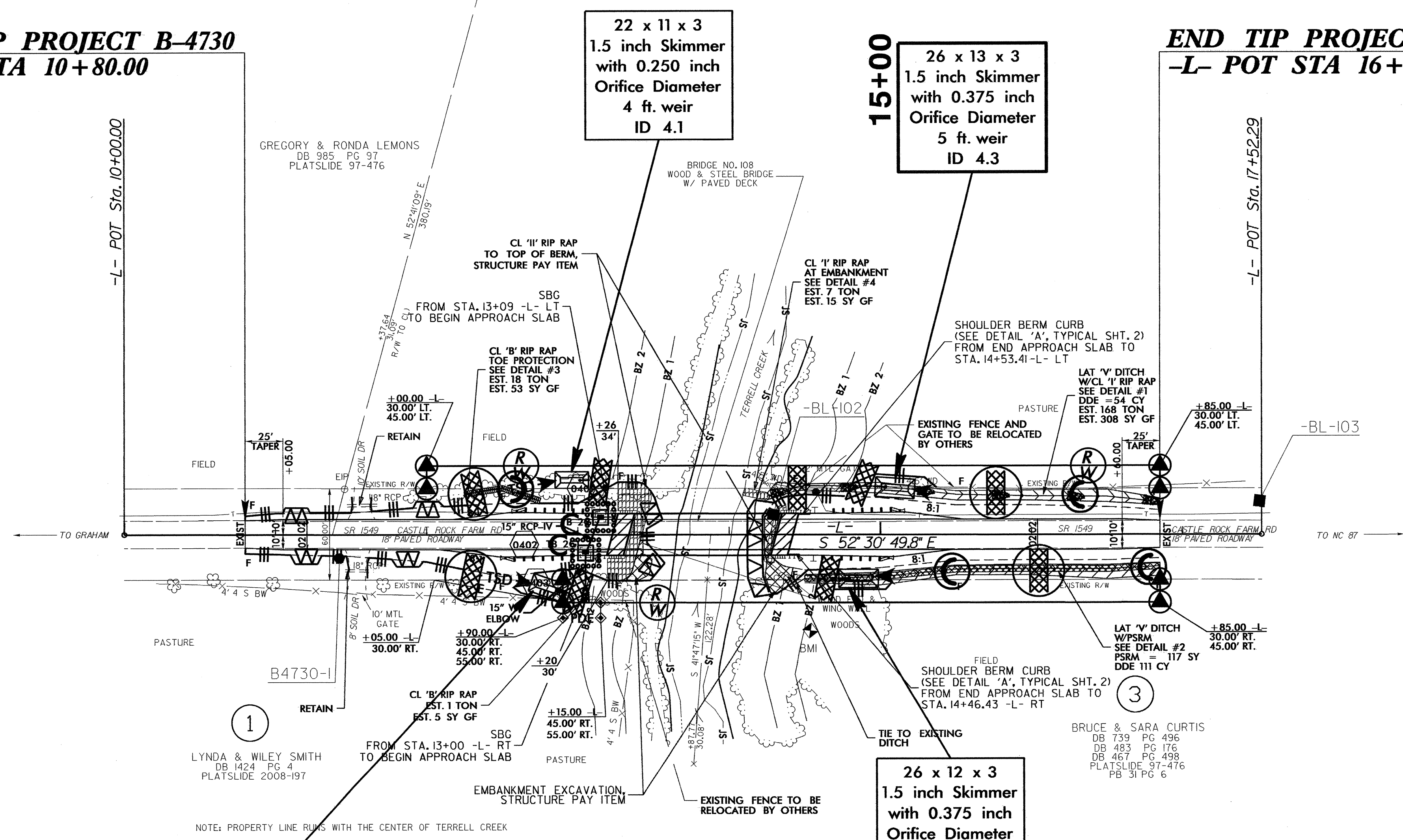
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PROJECT REFERENCE NO.	SHEET NO.
B-4730	EC-5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**BEGIN TIP PROJECT B-4730**  
**-L- POT STA 10+80.00**

**END TIP PROJECT B-4730**  
**-L- POT STA 16+85.00**

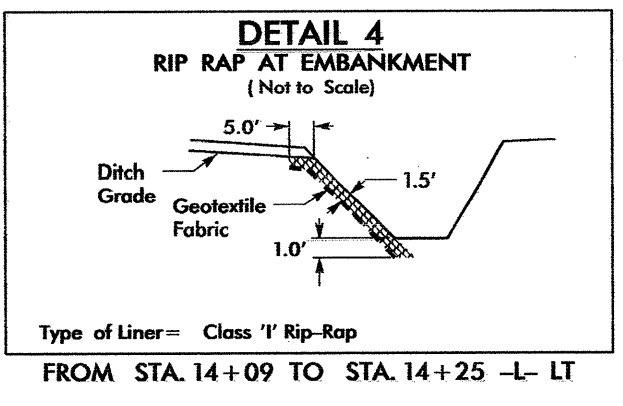
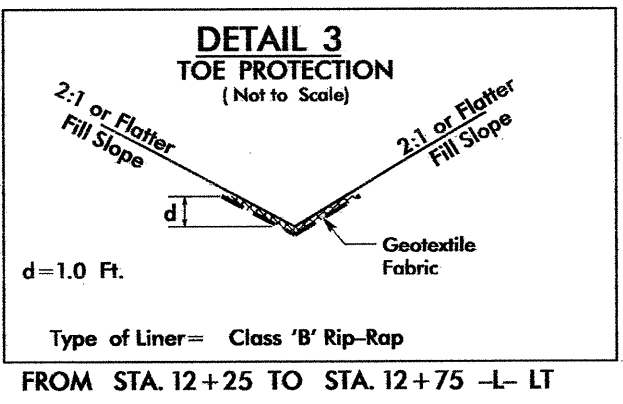


**24 x 12 x 3**  
1.5 inch Skimmer  
with 0.375 inch  
Orifice Diameter  
4 ft. weir  
ID 4.2

**22 x 11 x 3**  
1.5 inch Skimmer  
with 0.250 inch  
Orifice Diameter  
4 ft. weir  
ID 4.1

**15+00**  
**26 x 13 x 3**  
1.5 inch Skimmer  
with 0.375 inch  
Orifice Diameter  
5 ft. weir  
ID 4.3

**26 x 12 x 3**  
1.5 inch Skimmer  
with 0.375 inch  
Orifice Diameter  
4 ft. weir  
ID 4.4



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

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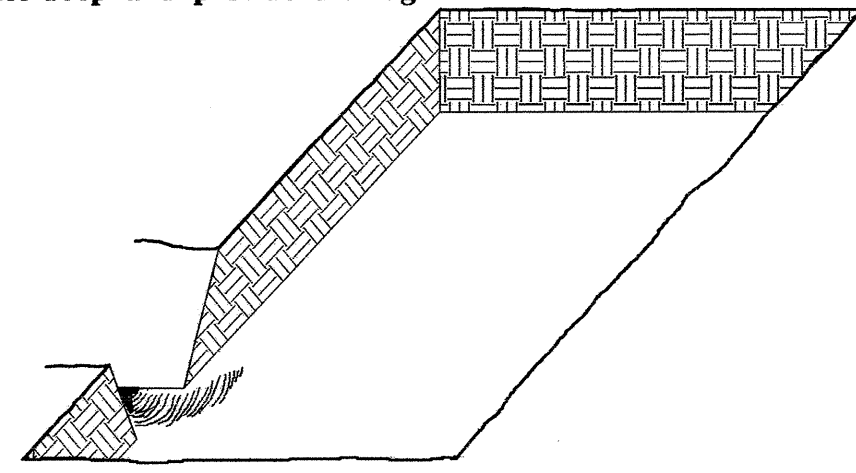


## PLANTING DETAILS

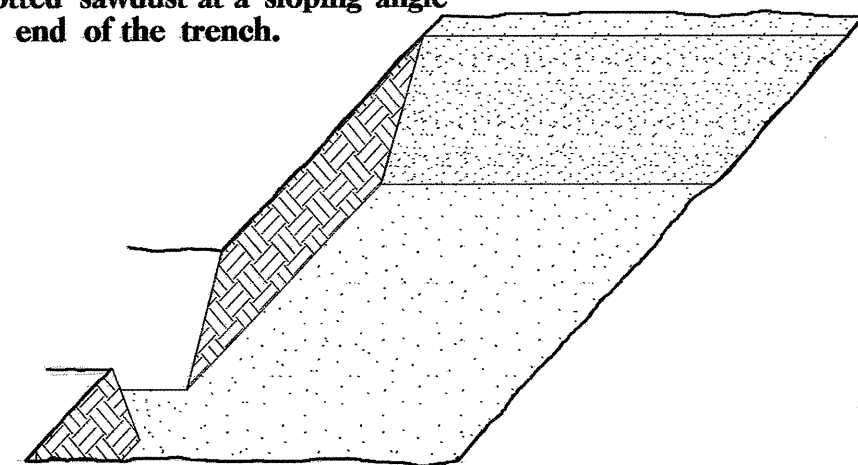
### SEEDLING / LINER BAREROOT PLANTING DETAIL

#### HEALING IN

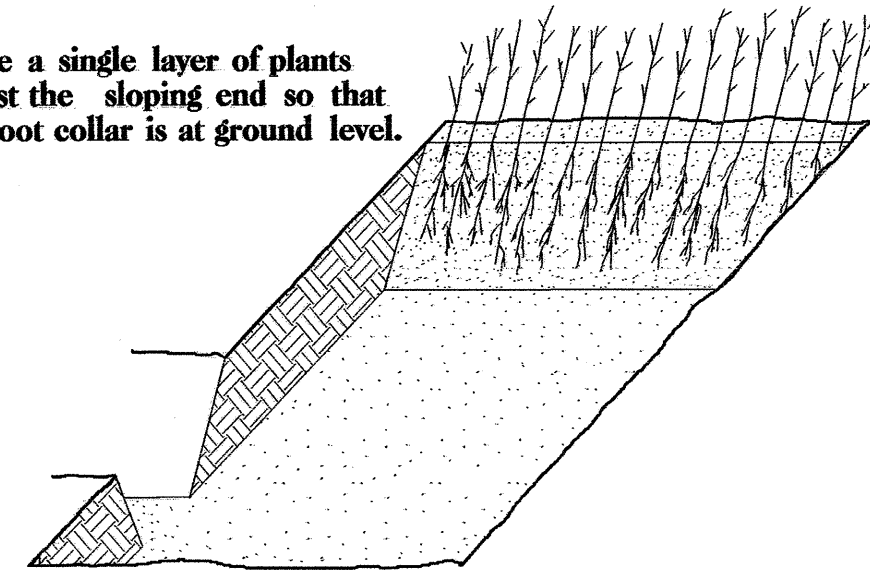
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



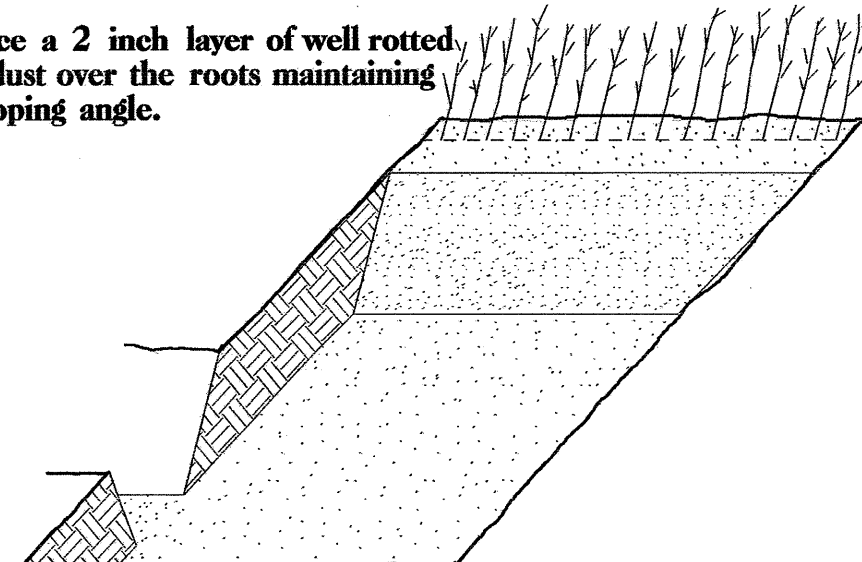
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

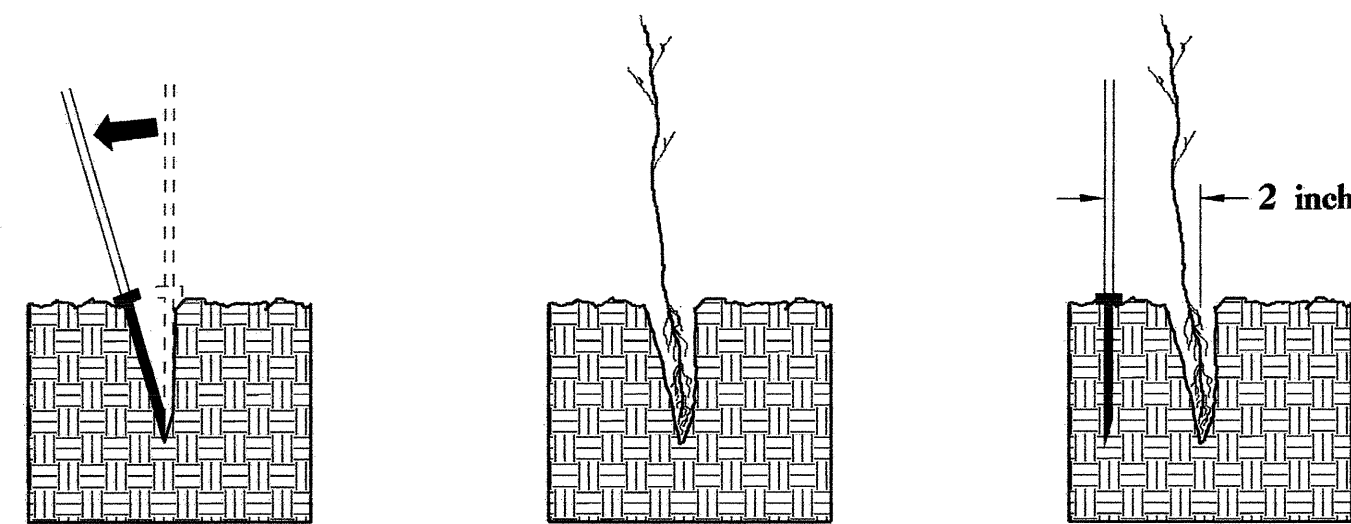


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.



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

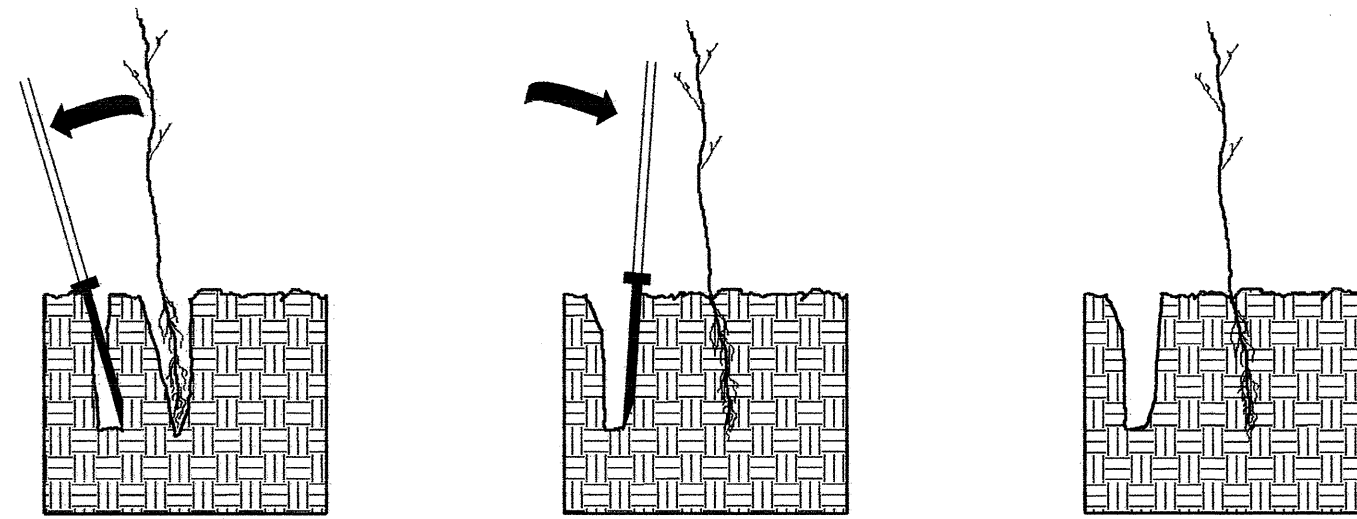
#### DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.

2. Remove planting bar and place seedling at correct depth.

3. Insert planting bar 2 inches toward planter from seedling.



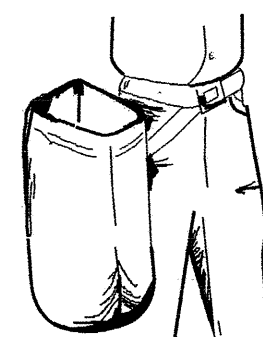
4. Pull handle of bar toward planter, firming soil at bottom.

5. Push handle forward firming soil at top.

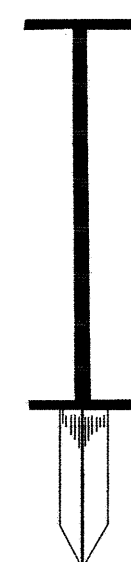
6. Leave compaction hole open. Water thoroughly.

#### PLANTING NOTES:

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



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



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

## REFORESTATION

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

#### REFORESTATION

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

33% QUERCUS FALCATA VAR. FALCATA	SOUTHERN RED OAK	12 in - 18 in BR
33% QUERCUS RUBRA	NORTHERN RED OAK	12 in - 18 in BR
34% LIRIODENDRON TULIPIFERA	YELLOW POPLAR	12 in - 18 in BR

## REFORESTATION DETAIL SHEET

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





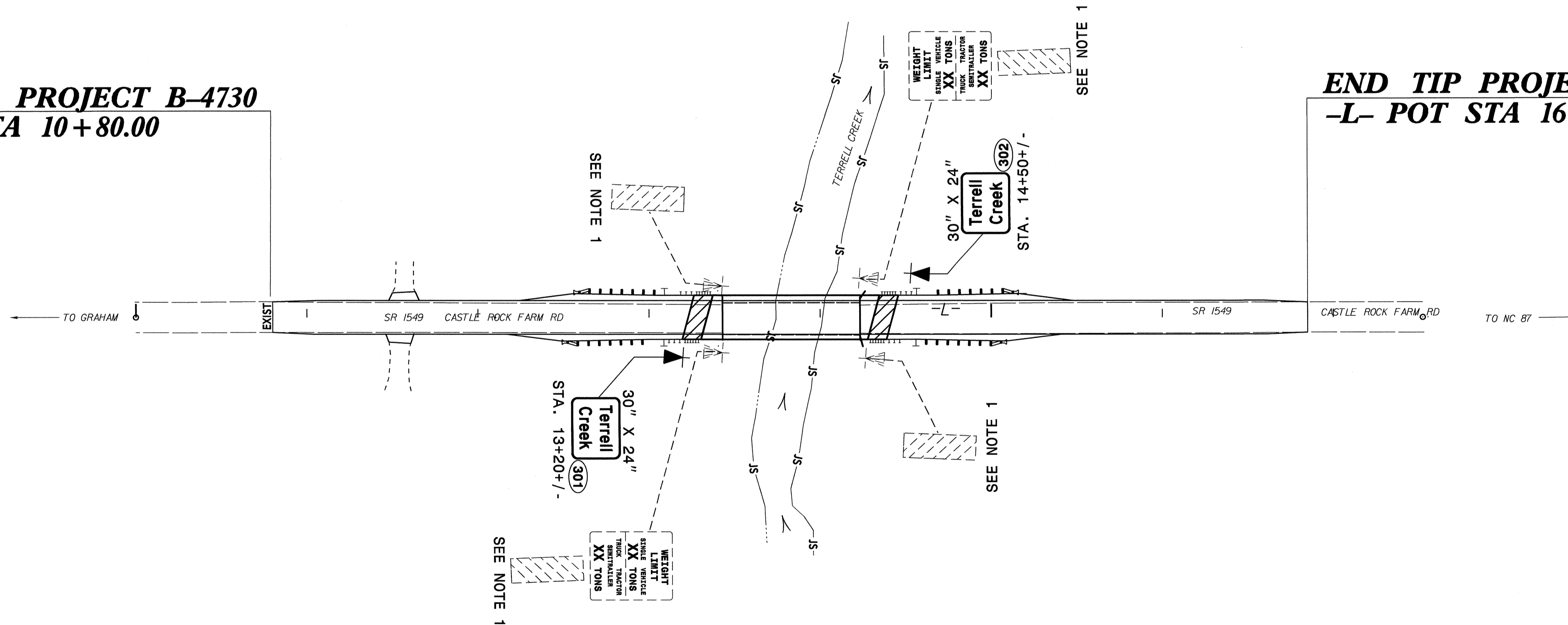
TIP NO. B-4730	SHEET NO. SIGN-2
APPROVED: <i>RW King</i>	
DATE: 7/25/13	
SEAL	

10

15

**BEGIN TIP PROJECT B-4730**  
**-L- POT STA 10+80.00**

**END TIP PROJECT B-4730**  
**-L- POT STA 16+85.00**



**PROJECT NOTES**

- 1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL

**SIGN DETAIL SHEET**

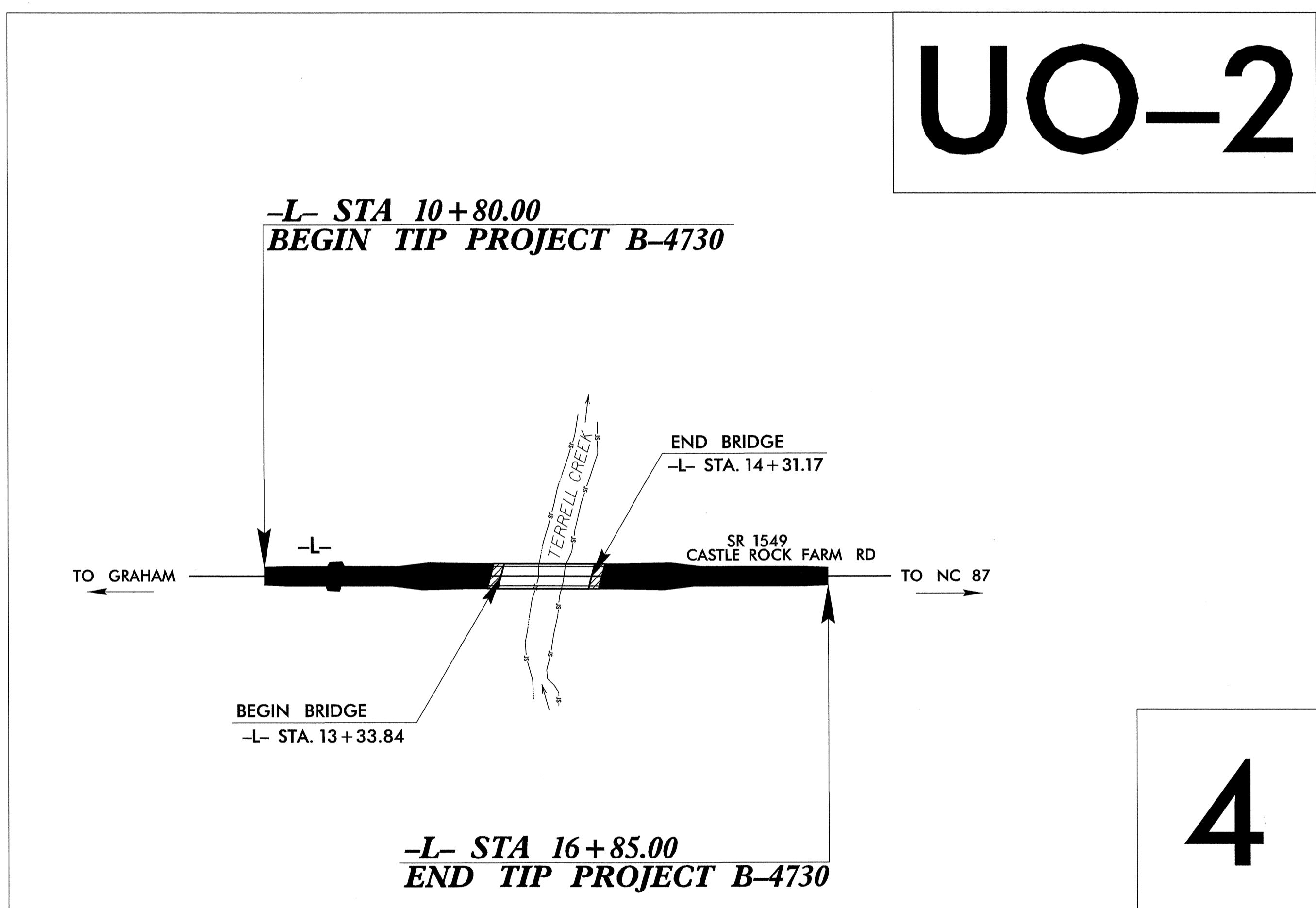
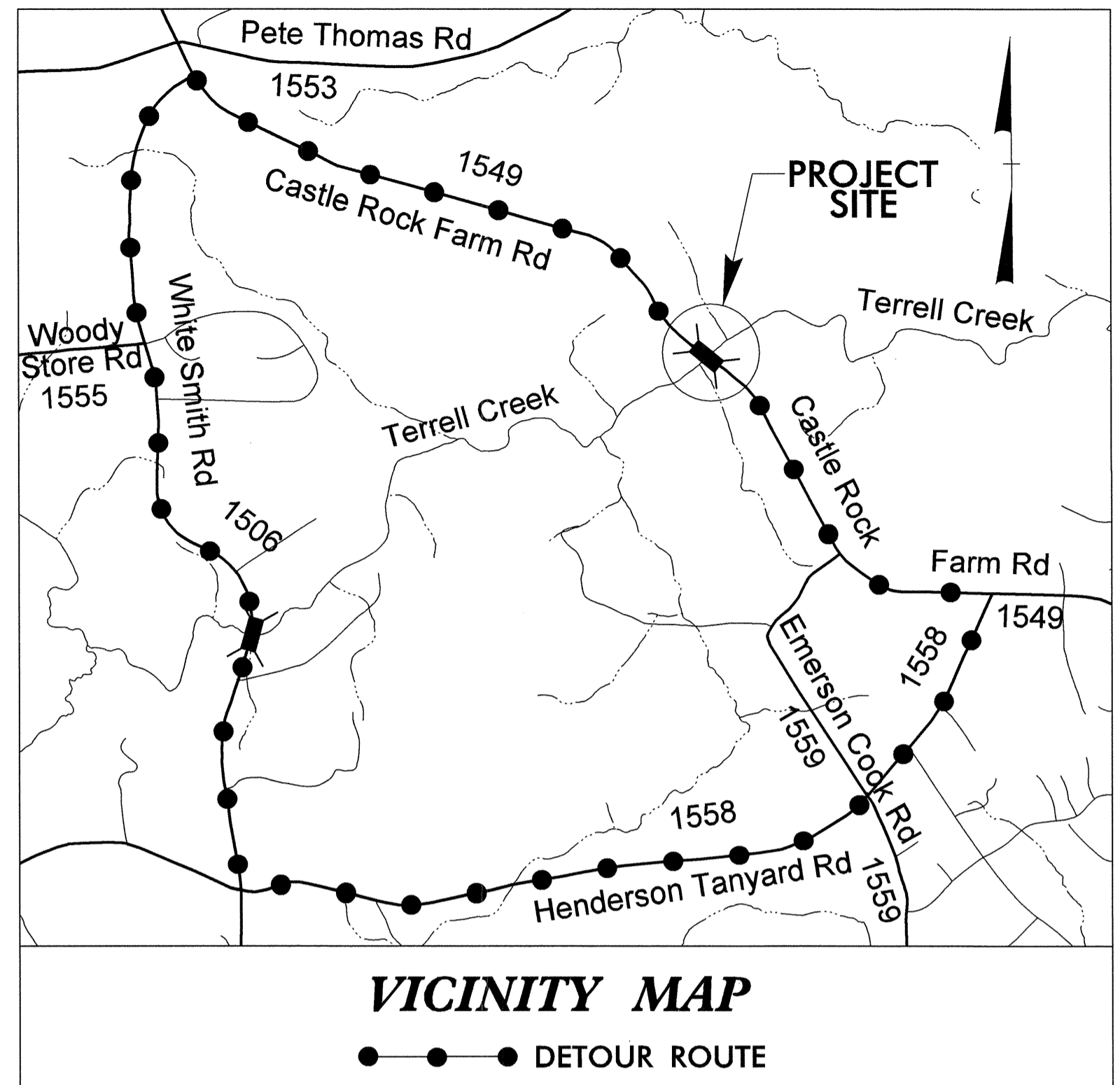
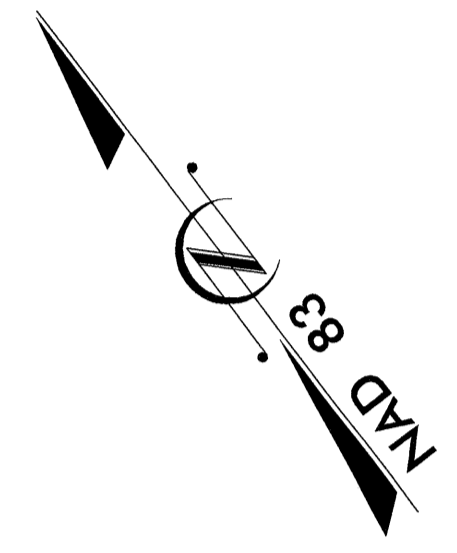
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS  
CHATHAM COUNTY**

LOCATION: BRIDGE NO. 108 OVER TERRELL CREEK ON SR 1549

TYPE OF WORK: UTILITIES BY OTHERS

**UO-2**

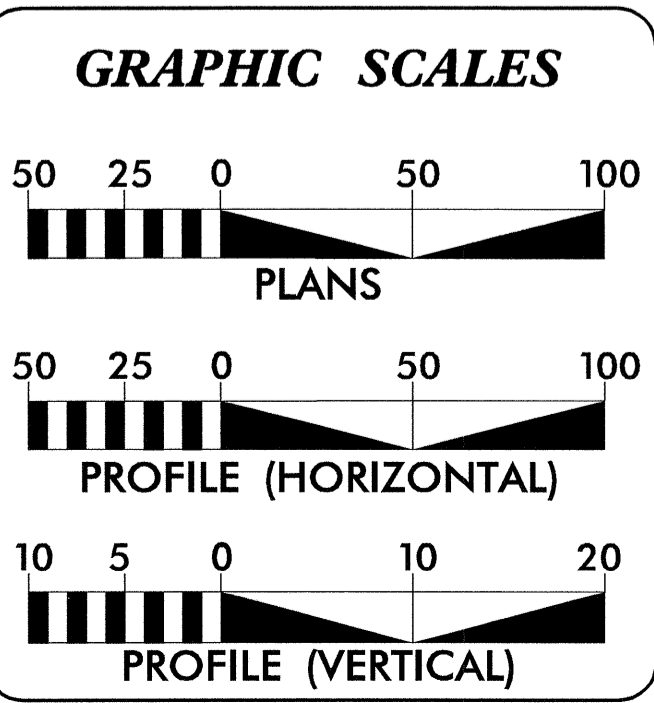


**4**

NOTE:  
1. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.  
2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

TIP PROJECT: B-4730

CONTRACT:



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

**UTILITY OWNERS ON PROJECT**

(A) CENTURYLINK (TELEPHONE)

Prepared by:

559 JONES FRANKLIN ROAD  
SUITE 164  
Raleigh, N.C. 27606  
License No. E-0377  
Bus: 919 851 8077  
Fax: 919 851 8107

**JOHN D. SCHRINER, PLS**  
UTILITY COORDINATOR

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

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

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

09/08/99  
\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$DGN\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$



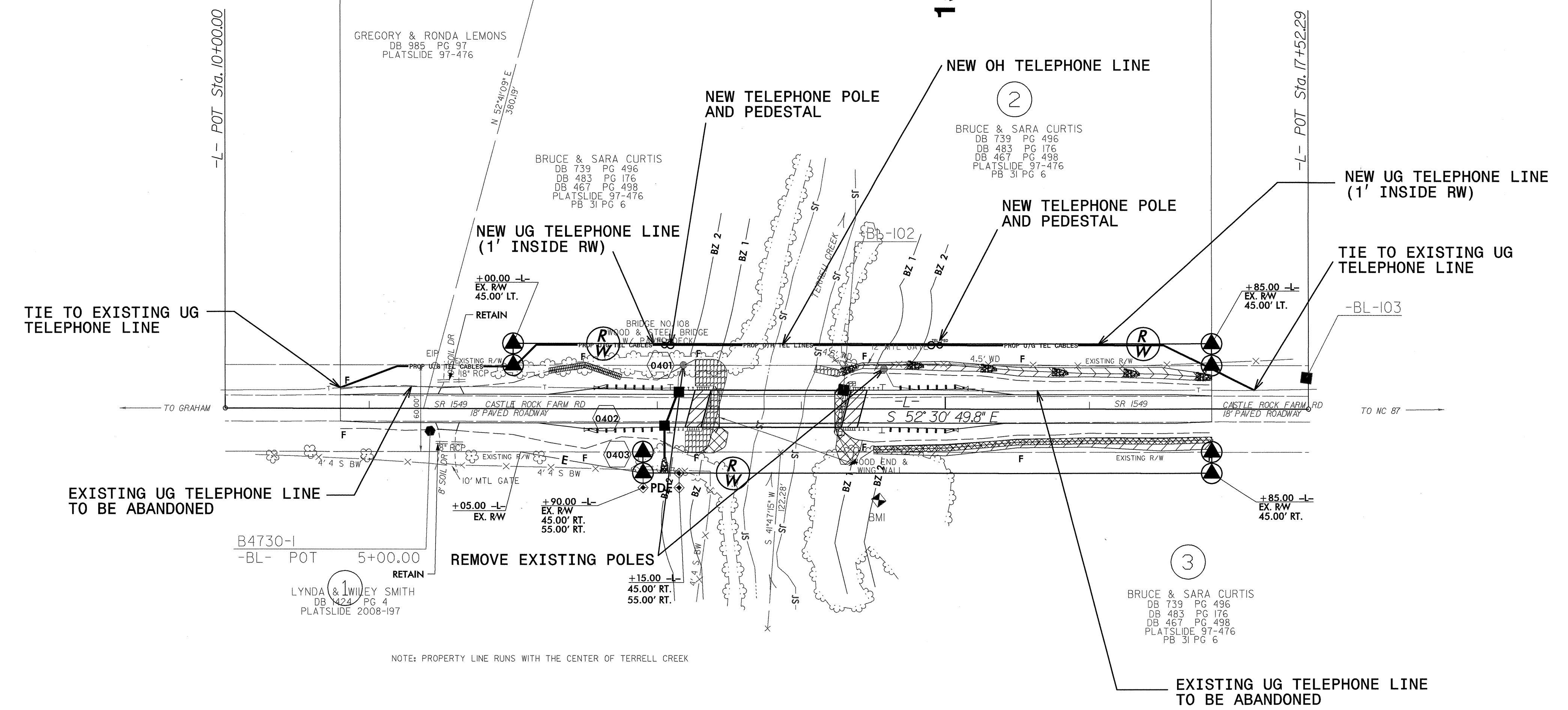
**UTILITIES BY OTHERS**

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

5/14/99  
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 7/31/2013

**BEGIN TIP PROJECT B-4730**  
**-L- POT STA 10+80.00**

**END TIP PROJECT B-4730**  
**-L- POT STA 16+85.00**



NOTE: PROPERTY LINE RUNS WITH THE CENTER OF TERRELL CREEK

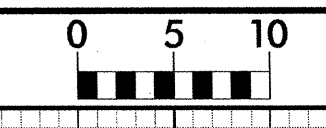




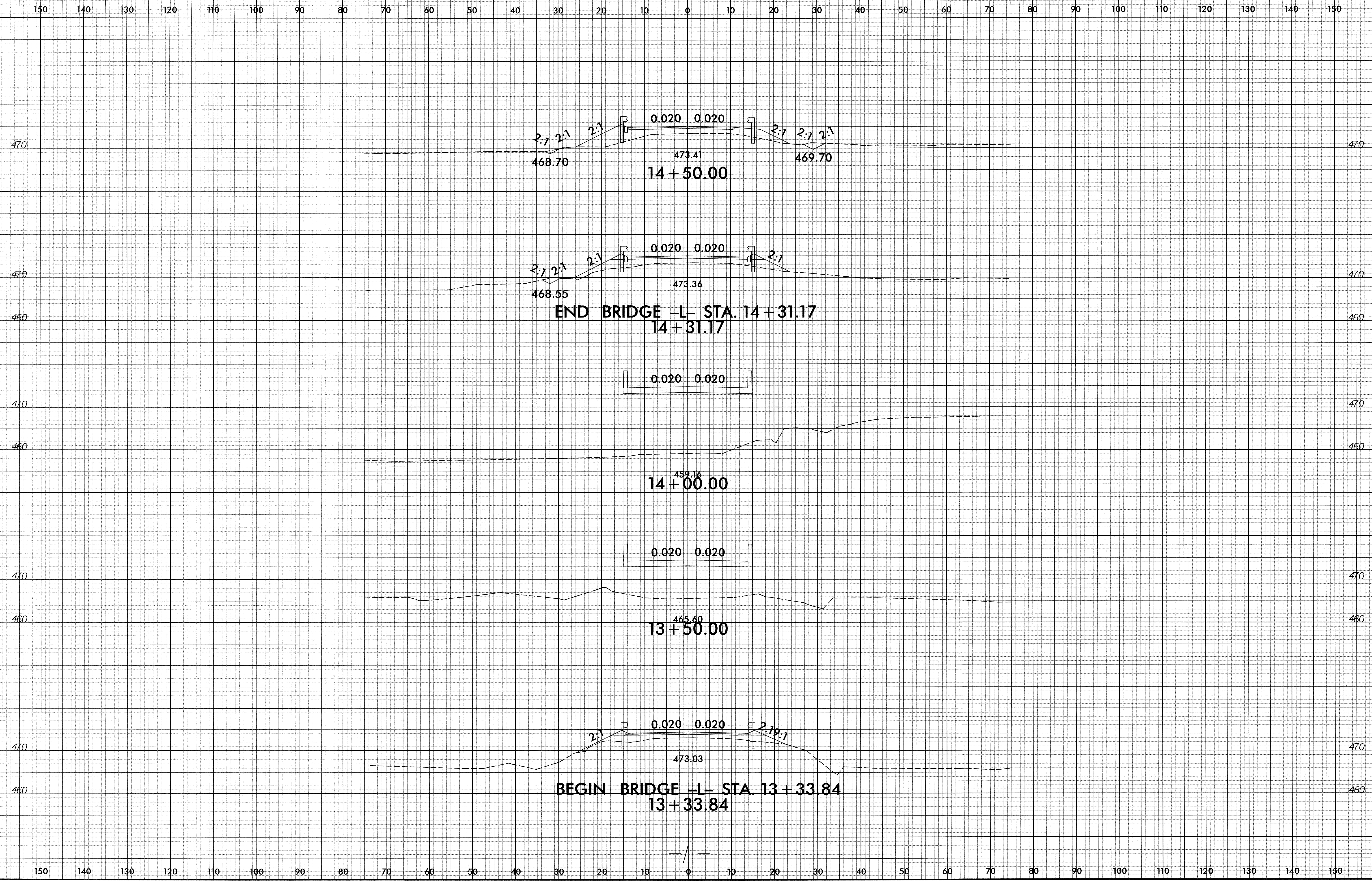




8/23/99



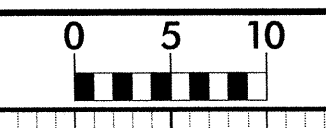
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SHEET NO. X-2



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8/23/99



PROJ. REFERENCE NO.  
B-4730

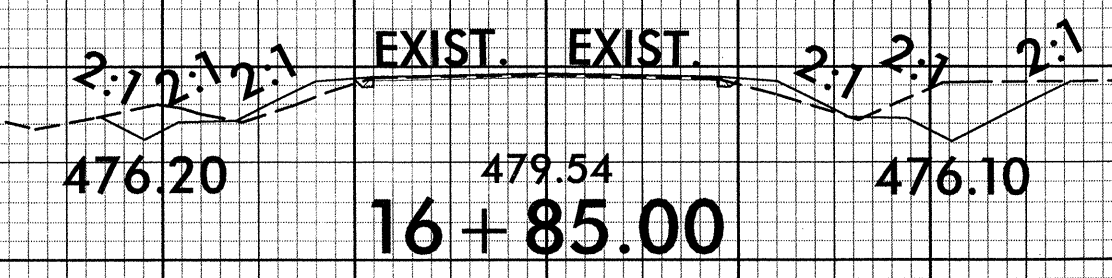
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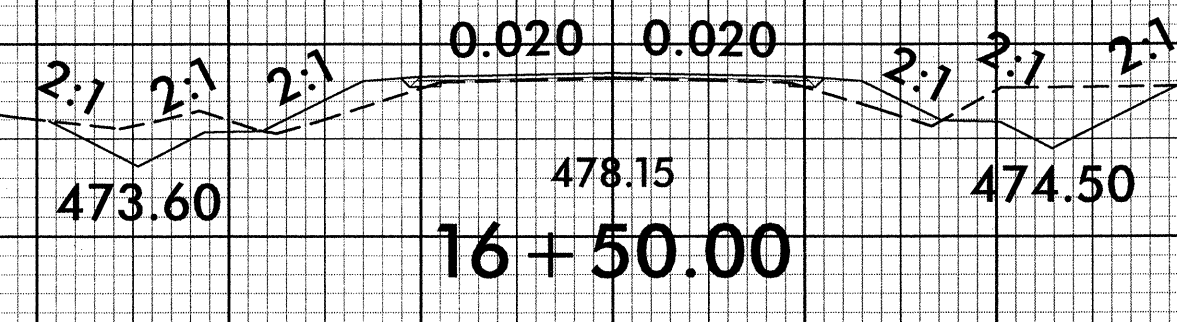
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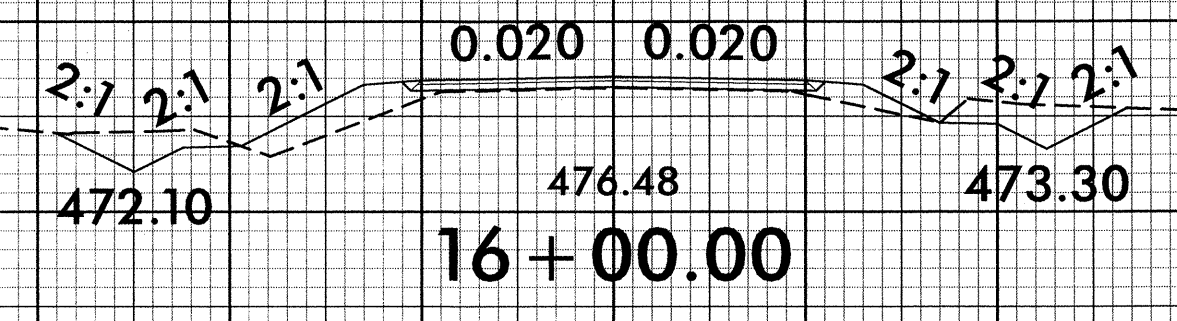
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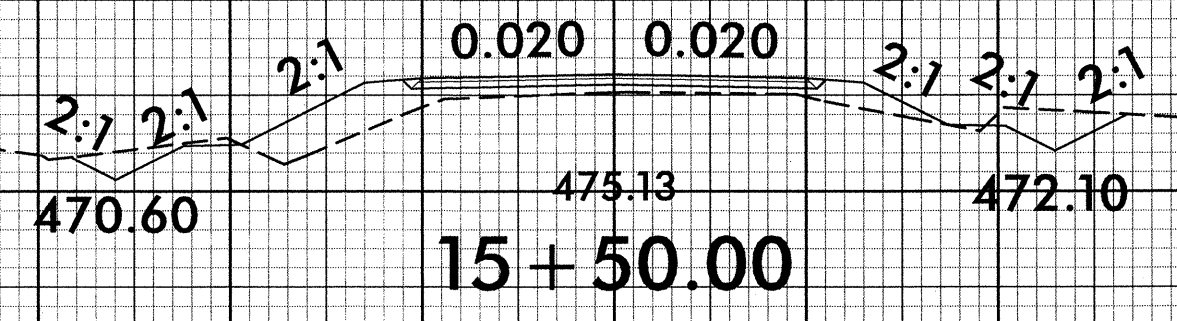
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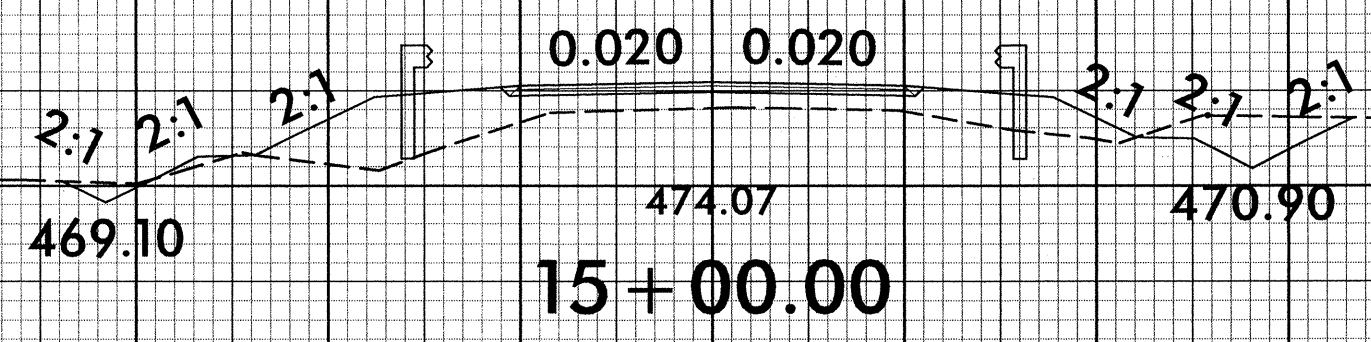


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470 470



470 470



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