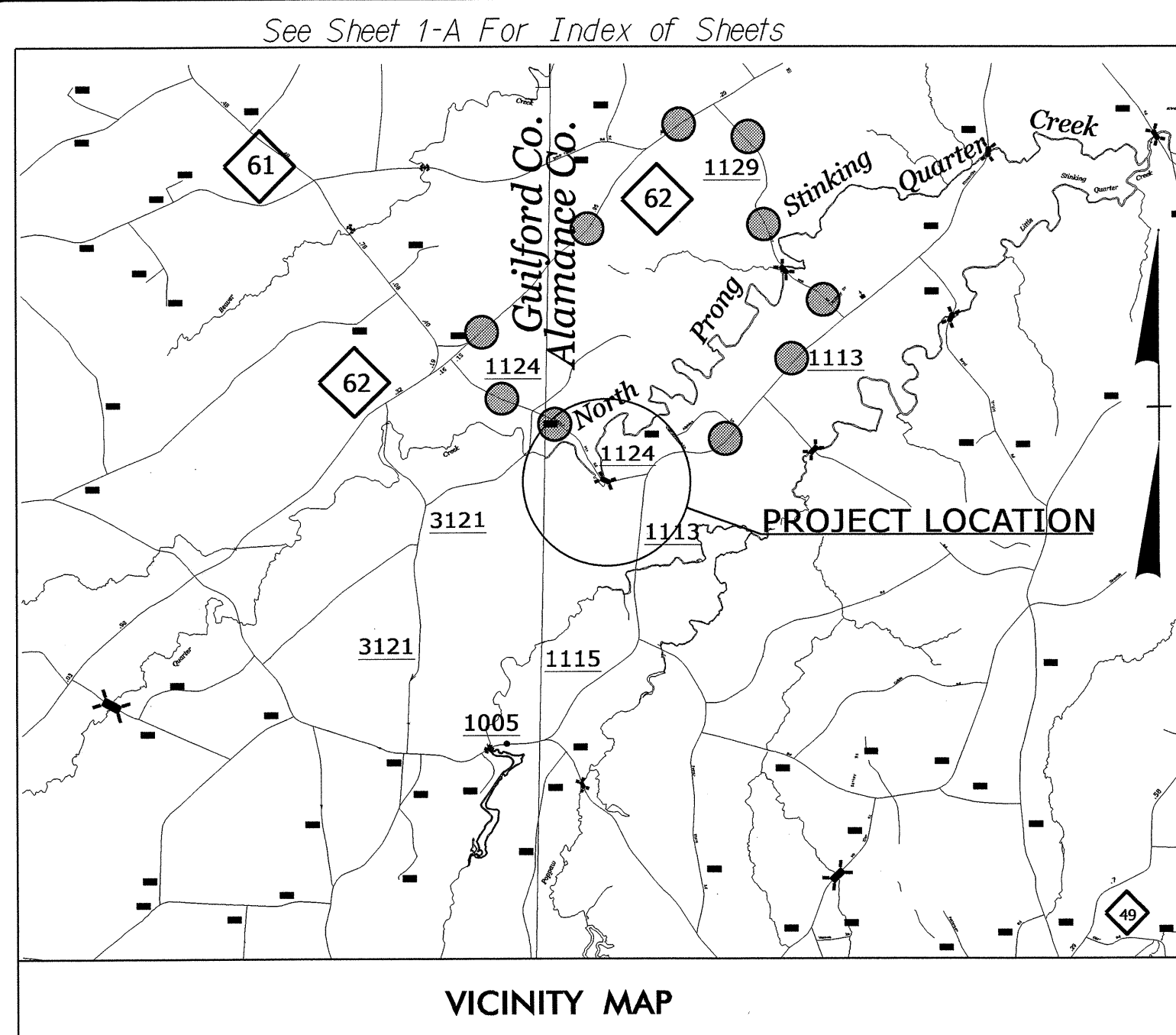


09/08/99

**TIP PROJECT: B-4401**

**CONTRACT: C203257**



●●●● Offsite Detour Route

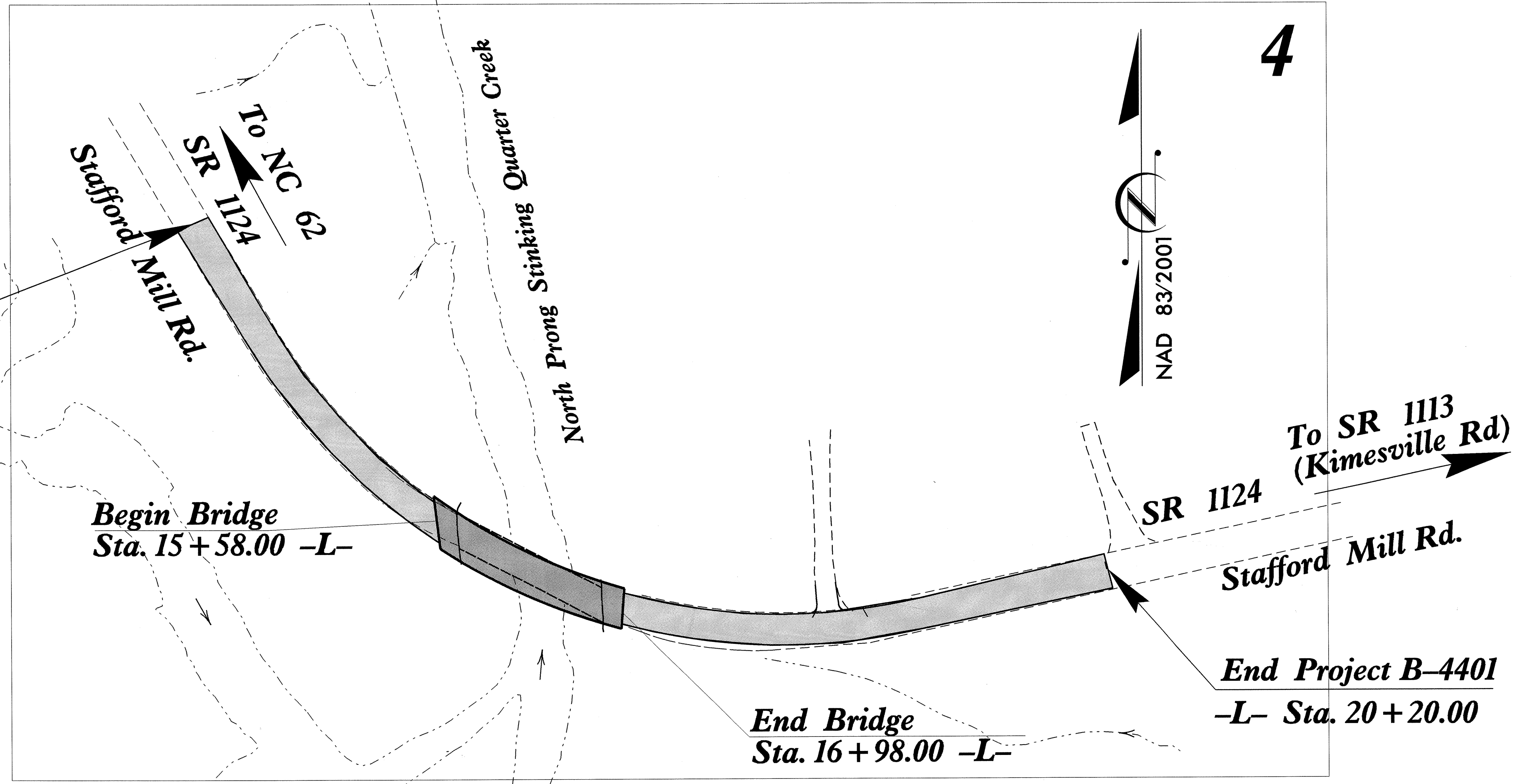
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**ALAMANCE COUNTY**

**LOCATION:** Bridge #161 Over North Prong  
Stinking Quarter Creek on SR 1124  
(Stafford Mill Road)

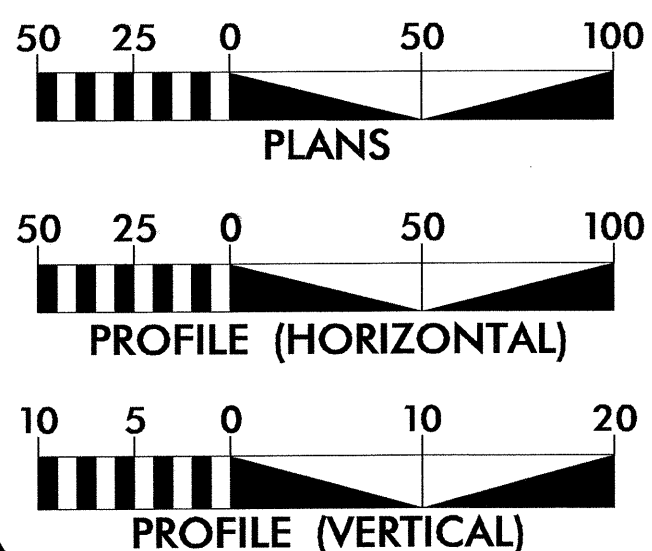
**TYPE OF WORK:** Grading, Drainage, Paving and Structure

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4401	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33681.1.1	BRZ-1124(5)	PE	
33681.2.1	BRZ-1124(5)	RW & UTILITIES	
33681.3.FD1	BRZ-1124(5)	CONSTRUCTION	



Design Exception Required for Horizontal SSD (25mph)

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2013 = 224 vpd  
ADT 2035 = 400 vpd  
DHV = 13 %  
D = 85 %  
T = 14 % \*  
V = 35 MPH  
\* TTST 4% DUAL 10%  
Functional Class- Rural Local  
Sub Regional Tier

**PROJECT LENGTH**

Length Roadway TIP Project B-4401 = 0.114 Miles  
Length Structure TIP Project B-4401 = 0.027 Miles  
Total Length TIP Project B-4401 = 0.141 Miles

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

2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
November 13, 2012

**LETTING DATE:**  
November 19, 2013

James Speer, PE  
PROJECT ENGINEER

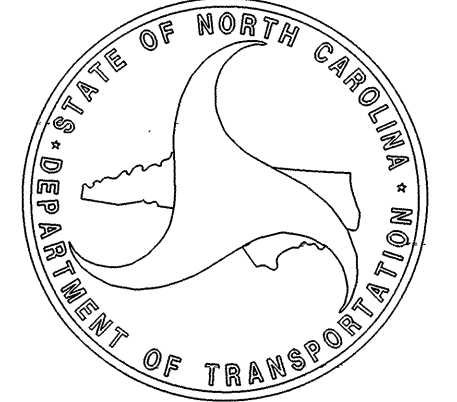
John Lansford, PE  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

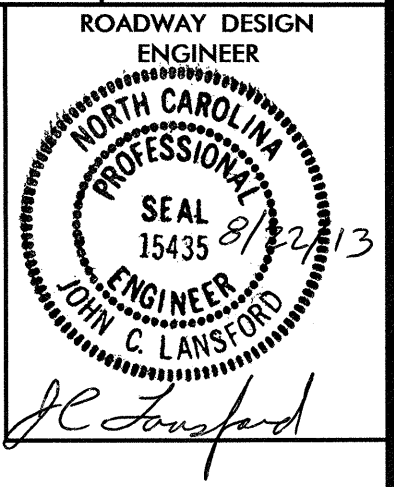
*David P. Booker*  
DAVID P. BOOKER  
ENGINEER  
SEAL 029984  
8/22/2013  
P.E.

**ROADWAY DESIGN ENGINEER**

*John G. Lansford*  
JOHN G. LANSFORD  
ENGINEER  
SEAL 15435  
1/13/13  
P.E.



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8/17/13

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAIL
2-A	DETAIL OF GUARDRAIL ANCHOR UNIT TYPE B-77 FOR F-SHAPE BARRIER
3	SUMMARY OF QUANTITIES
3A	SUB-REGIONAL LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER), SUMMARY OF EARTHWORK, REMOVAL OF EXISTING PAVEMENT, SHOULDER BERM GUTTER SUMMARY, SUMMARY OF SUB-SURFACE DRAINAGE, AND GUARDRAIL SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-2	TRANSPORTATION MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLAN
EC-1 THRU EC-5	PLAN FOR PROPOSED EROSION CONTROL
RF-1	REFORESTATION DETAIL SHEET
SIGN-1 THRU SIGN-2	SIGNING PLANS
SD-1	SPECIAL SIGN DESIGN
X-1	CROSS-SECTION SUMMARY
X-2 THRU X-9	CROSS-SECTIONS
S-1 THRU S-35	STRUCTURE PLANS

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

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

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

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

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

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

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

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

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

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

**UTILITIES:**  
UTILITY OWNERS ON THIS PROJECT ARE  
DUKE POWER S.B.T. & T.

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

2012 ROADWAY ENGLISH STANDARD DRAWINGS  
EFF. 01-17-2012  
REV. 10-30-2012

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

STD. NO.	TITLE
<b>DIVISION 2 - EARTHWORK</b>	
200.02	Method of Clearing - Method II
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 6 - ASPHALT BASES AND PAVEMENTS</b>	
654.01	Pavement Repairs
<b>DIVISION 8 - INCIDENTALS</b>	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
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
862.03	Structure Anchor Units (Details in Lieu of Standard Drawing as March 2013 Letting)
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.01	Rip Rap in Channels
876.04	Drainage Ditches with Class 'B' Rip Rap

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CONVENTIONAL PLAN SHEET SYMBOLS

*Note: Not to Scale*

\*S.U.E. = *Subsurface Utility Engineering*

04/16/11

### BOUNDARIES AND PROPERTY:

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

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□ +
Building	□
School	□ ↑
Church	□ +
Dam	▬

### HYDROLOGY:

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

### RAILROADS:

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

### RIGHT OF WAY:

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

### ROADS AND RELATED FEATURES:

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

### VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	~~~~~
Woods Line	~~~~~

Orchard	☼☼☼☼
Vineyard	□ Vineyard

### EXISTING STRUCTURES:

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

### UTILITIES:

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

### TELEPHONE:

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

### WATER:

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

### TV:

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

### GAS:

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

### SANITARY SEWER:

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

### MISCELLANEOUS:

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



# B-4401 SURVEY CONTROL SHEET

**Begin Project B-4401**  
**Sta. 12+75.00 -L-**

**End Project B-4401**  
**-L- Sta. 20+20.00**

TYPE	STATION	NORTH	EAST
POT	10+00.00	810628.9020	1841695.4877
PC	14+01.55	810288.1101	1841907.8674
PT	18+99.86	810110.4100	1842339.4158
POT	22+50.80	810191.1911	1842680.9325

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+75.00	30.00	810464.5150	1841762.5840
L	12+77.82	30.00	810377.2531	1841816.9652
L	14+01.55	30.00	810272.2432	1841882.4068
L	15+63.94	60.01	810121.9727	1841984.7445
L	17+19.35	68.47	810042.3853	1842145.5622
L	18+99.86	30.00	810081.2156	1842346.3213
L	20+20.00	30.00	810108.8705	1842463.2373
L	20+20.00	-30.00	810167.2594	1842449.4266
L	18+99.86	-30.00	810139.6044	1842332.5102
L	17+32.98	-50.73	810156.3567	1842183.1194
L	15+45.76	-58.63	810228.5237	1842039.9432
L	14+01.55	-30.00	810303.9770	1841933.3280
L	11+75.00	-30.00	810496.2488	1841813.5052
L	18+40.00	34.86	810066.2923	1842283.2304

ALIGN	STATION	OFFSET	NORTH	EAST
L	15+63.00	95.00	810093.9081	1841963.8224
L	16+00.00	94.00	810070.3237	1842003.0084
L	16+00.00	55.75	810103.5706	1842021.9286

### NOTES

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
  
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)  
  
 THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4401\_LS\_CONTROL.TXT  
  
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.  
  
 ⊕ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.  
  
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM FROM EXISTING NCGS MONUMENTATION.

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4401-1"  
 WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF  
 NORTHING: 810,243.934(ft) EASTING: 1,842,983.273(ft)  
 ELEVATION: 630.07'(ft)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999926810  
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4401-1" TO -L- STATION 11+75.00 IS  
 N 78° 48' 35" W 1,218.39'  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NAVD 88

### BASELINE DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3	BL-3		810587.4591	1841706.0535	586.73	10+40.76	12.95 RT
4	BL-4		810263.8998	1841891.7264	581.19	14+12.81	26.67 RT
5	BL-5		810099.5971	1842130.9606	580.77	16+93.72	16.66 RT
6	BL-6		810170.3873	1842648.6412	615.72	22+14.59	12.81 RT
1	B4401-1		810243.9340	1842983.2730	630.07		OUTSIDE PROJECT LIMITS
2	B4401-2		810302.8630	1843397.8140	631.04		OUTSIDE PROJECT LIMITS

### BENCHMARK DATA

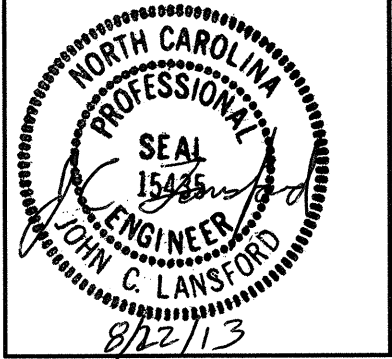
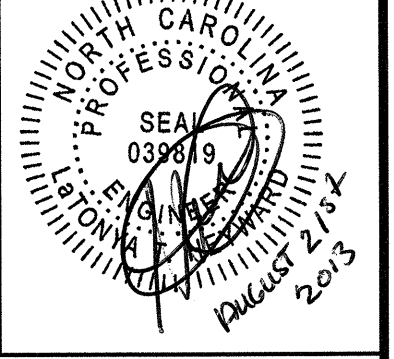
.....  
 BM1 ELEVATION = 591.61  
 N 810249 E 1842173  
 L STATION 16+92.00 139 LEFT  
 RR SPIKE IN ROOT BALL OF 28" OAK  
 .....  
 BM2 ELEVATION = 622.30  
 N 810154 E 1842712  
 L STATION 22+51.00  
 S 39°43'48.66" E DIST 48.46  
 RR SPIKE IN ROOT OF 26" OAK  
 .....

NOTE: DRAWING NOT TO SCALE

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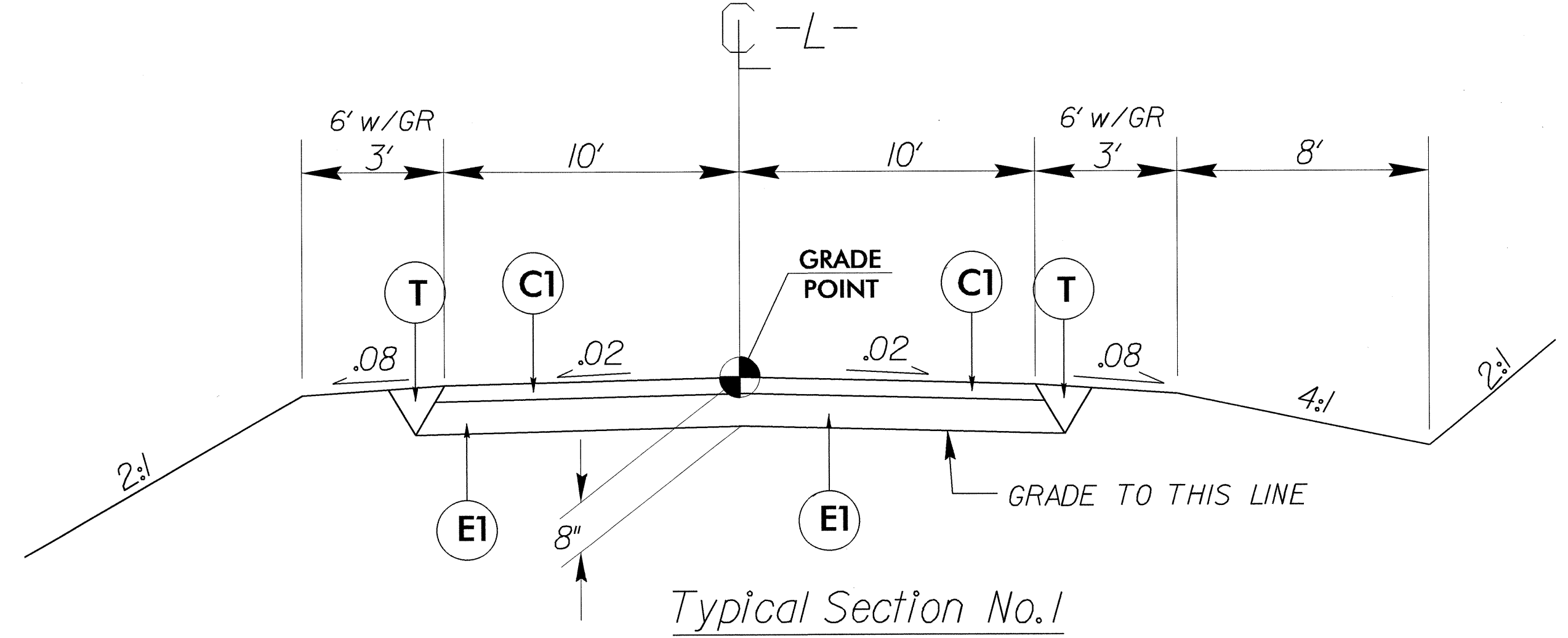


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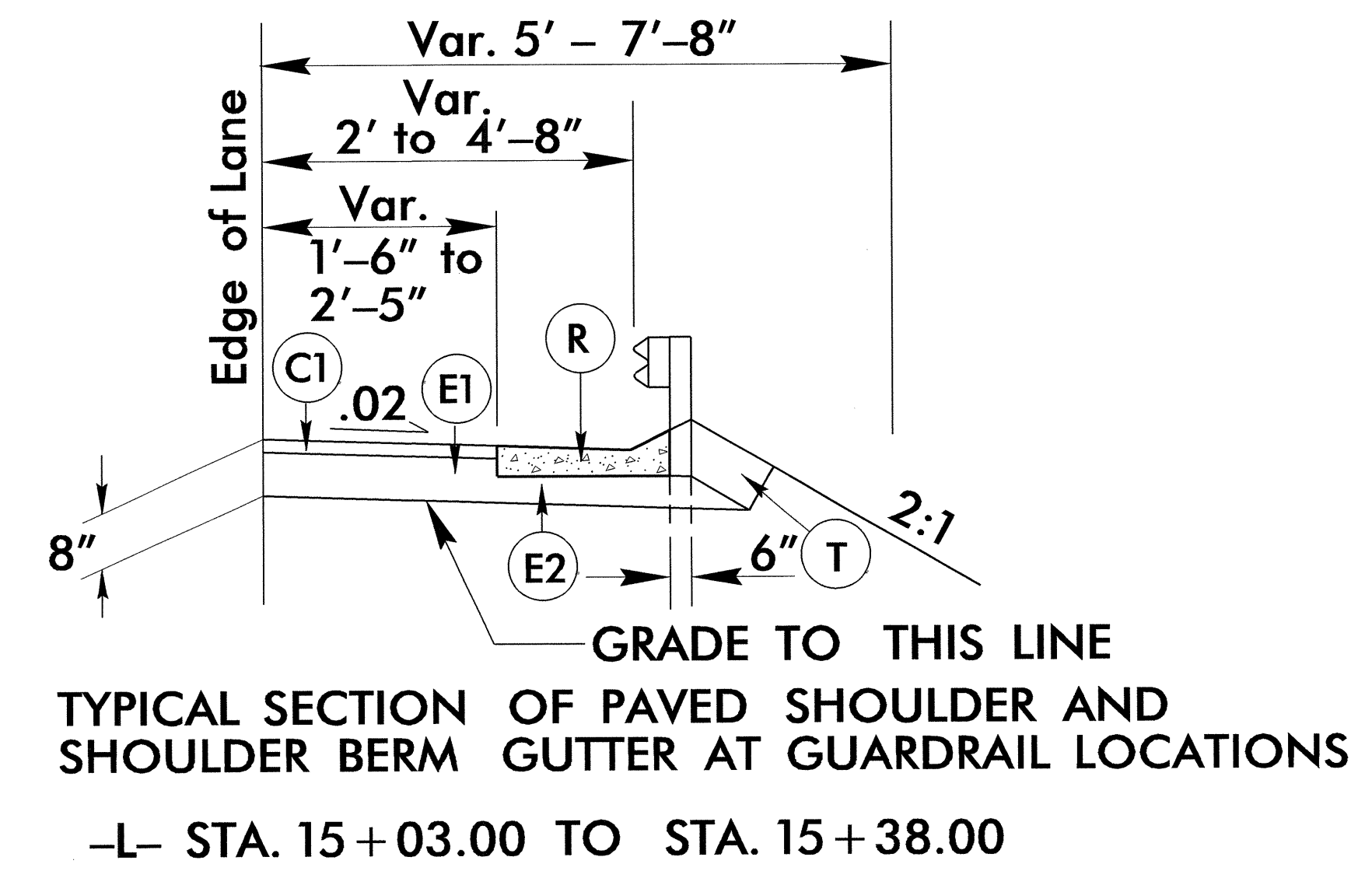
PROJECT REFERENCE NO. B-4401	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	PAVEMENT ENGINEER 

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 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 5½" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL

Note: All Slopes are 1:1 Unless Otherwise Shown



USE TYPICAL SECTION NO. 1:  
 -L- Sta. 12+75.00 to 15+58.00 (Begin Bridge)  
 -L- Sta. 16+98.00 (End Bridge) to 20+20.00



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 JOHN C. LANSFORD



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203257

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000900000-N	SP	Lump Sum		GENERIC MISCELLANEOUS ITEM REMOVE AND BACKFILL EXISTING RACEWAY
0030000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (16+28.00 -L-)
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0057000000-E	226	300	CY	UNDERCUT EXCAVATION
0134000000-E	240	230	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	300	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	400	SY	GEOTEXTILE FOR SOIL STABILIZATION
0318000000-E	300	18	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	55	SY	FOUNDATION CONDITIONING GEOTEXTILE
0335200000-E	305	84	LF	15" DRAINAGE PIPE
0344000000-E	310	28	LF	18" SIDE DRAIN PIPE
0582000000-E	310	52	LF	15" CS PIPE CULVERTS, 0.064" THICK
0995000000-E	340	25	LF	PIPE REMOVAL
1220000000-E	545	50	TON	INCIDENTAL STONE BASE
1489000000-E	610	475	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	205	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1575000000-E	620	35	TON	ASPHALT BINDER FOR PLANT MIX
1693000000-E	654	50	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2000000000-N	806	15	EA	RIGHT OF WAY MARKERS
2286000000-N	840	3	EA	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
2396000000-N	840	1	EA	FRAME WITH COVER, STD 840.54

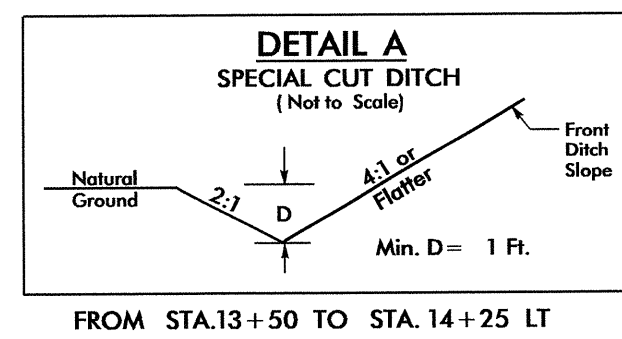
SUMMARY OF QUANTITIES - B-4401

ItemNumber	Sec #	Quantity	Unit	Description
2556000000-E	846	35	LF	SHOULDER BERM GUTTER
3030000000-E	862	75	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3628000000-E	876	10	TON	RIP RAP, CLASS I
3635000000-E	876	265	TON	RIP RAP, CLASS II
3649000000-E	876	96	TON	RIP RAP, CLASS B
3656000000-E	876	1,595	SY	GEOTEXTILE FOR DRAINAGE
3659000000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
4072000000-E	903	71	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4096000000-N	904	2	EA	SIGN ERECTION, TYPE D
4155000000-N	907	13	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4400000000-E	1110	309	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4445000000-E	1145	80	LF	BARRICADES (TYPE III)
4810000000-E	1205	4,720	LF	PAINT PAVEMENT MARKING LINES (4")
6000000000-E	1605	1,250	LF	TEMPORARY SILT FENCE
6006000000-E	1610	180	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	265	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	315	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	2.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	200	LF	TEMPORARY SLOPE DRAINS

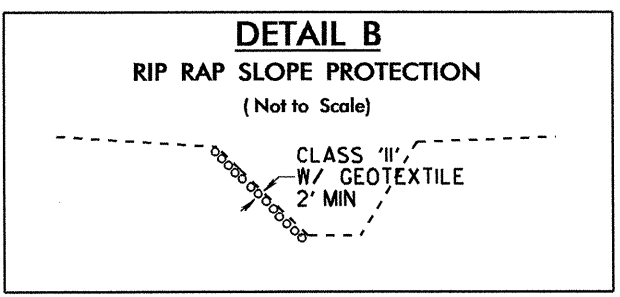
ItemNumber	Sec #	Quantity	Unit	Description
6029000000-E	SP	600	LF	SAFETY FENCE
6030000000-E	1630	580	CY	SILT EXCAVATION
6036000000-E	1631	5,000	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	250	SY	COIR FIBER MAT
6038000000-E	SP	160	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	275	LF	1/4" HARDWARE CLOTH
6070000000-N	1639	8	EA	SPECIAL STILLING BASINS
6071010000-E	SP	80	LF	WATTLE
6071020000-E	SP	50	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	215	LF	COIR FIBER BAFFLE
6071050000-E	SP	2	EA	*** SKIMMER (1-1/2")
6084000000-E	1660	2.5	ACR	SEEDING & MULCHING
6087000000-E	1660	1.3	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	75	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	1.75	TON	FERTILIZER TOPDRESSING
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	18	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.1	ACR	REFORESTATION



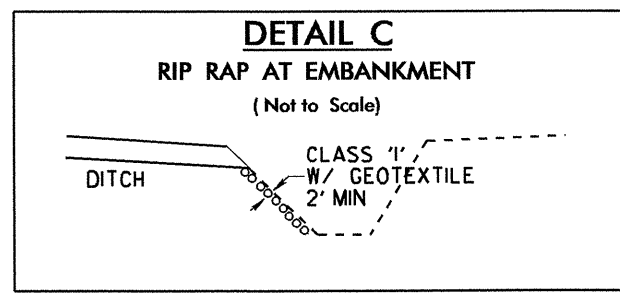




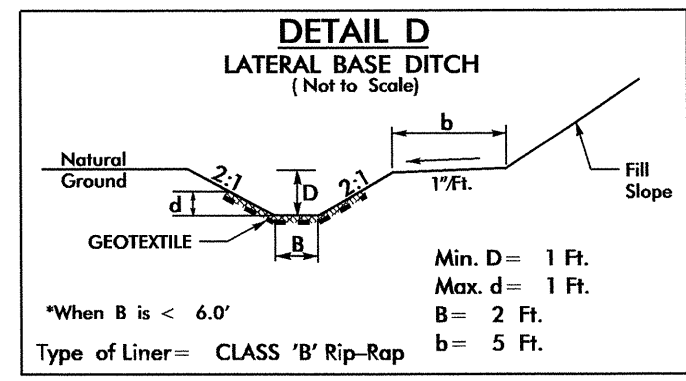
FROM STA.13+50 TO STA.14+25 LT



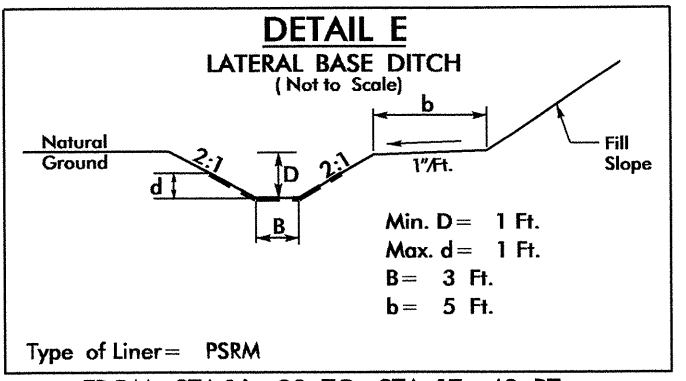
STA.16+15 - EST. 135 TONS CL. II RR W/145 SY GEOTEXTILE  
STA.16+65 - EST. 130 TONS CL. II RR W/140 SY GEOTEXTILE



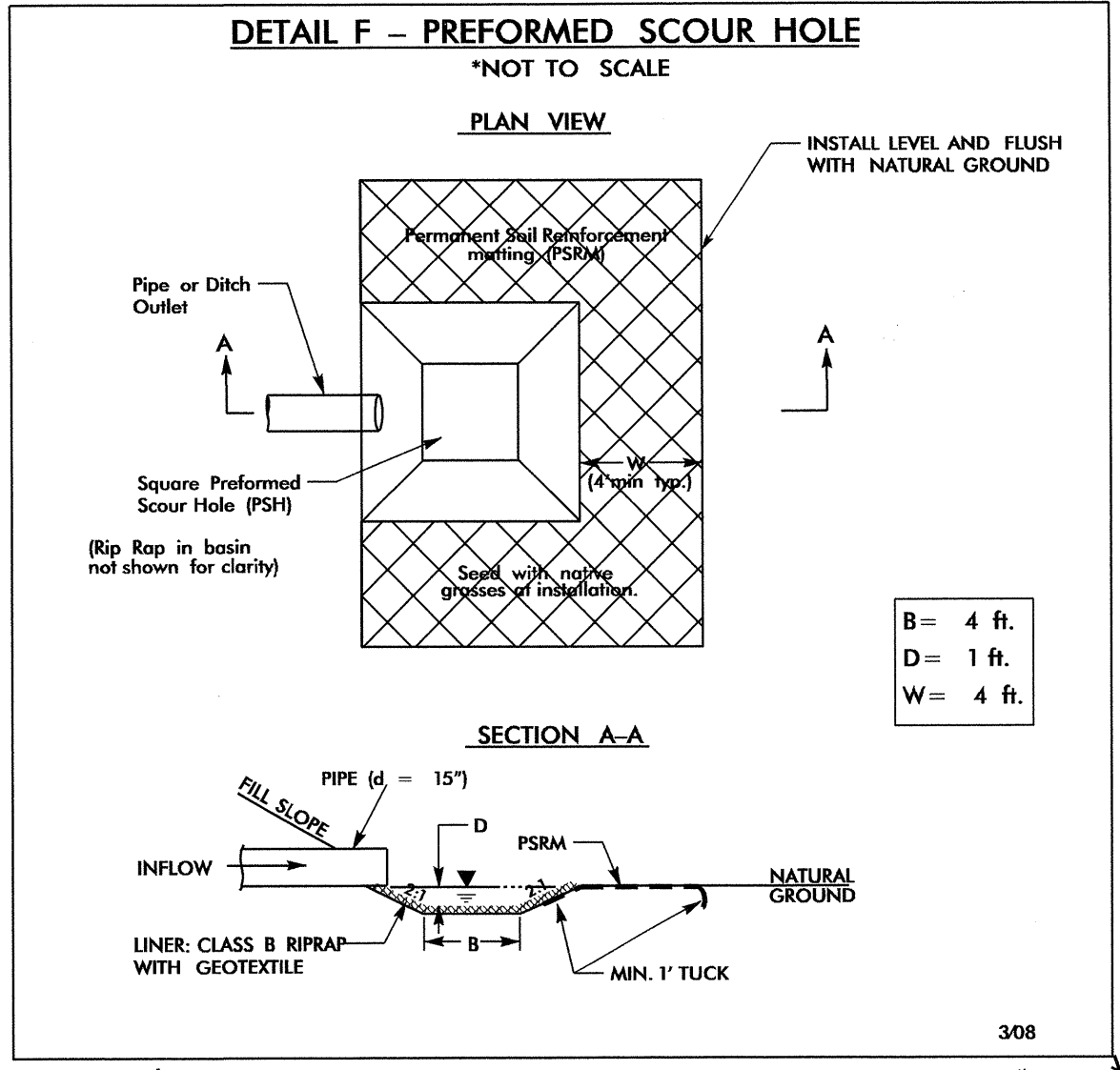
FROM STA.16+40 TO STA.18+50 LT  
EST. 94 TONS CL. B Riprap w/266 SY Geotextile



FROM STA.16+40 TO STA.18+50 LT  
EST. 94 TONS CL. B Riprap w/266 SY Geotextile

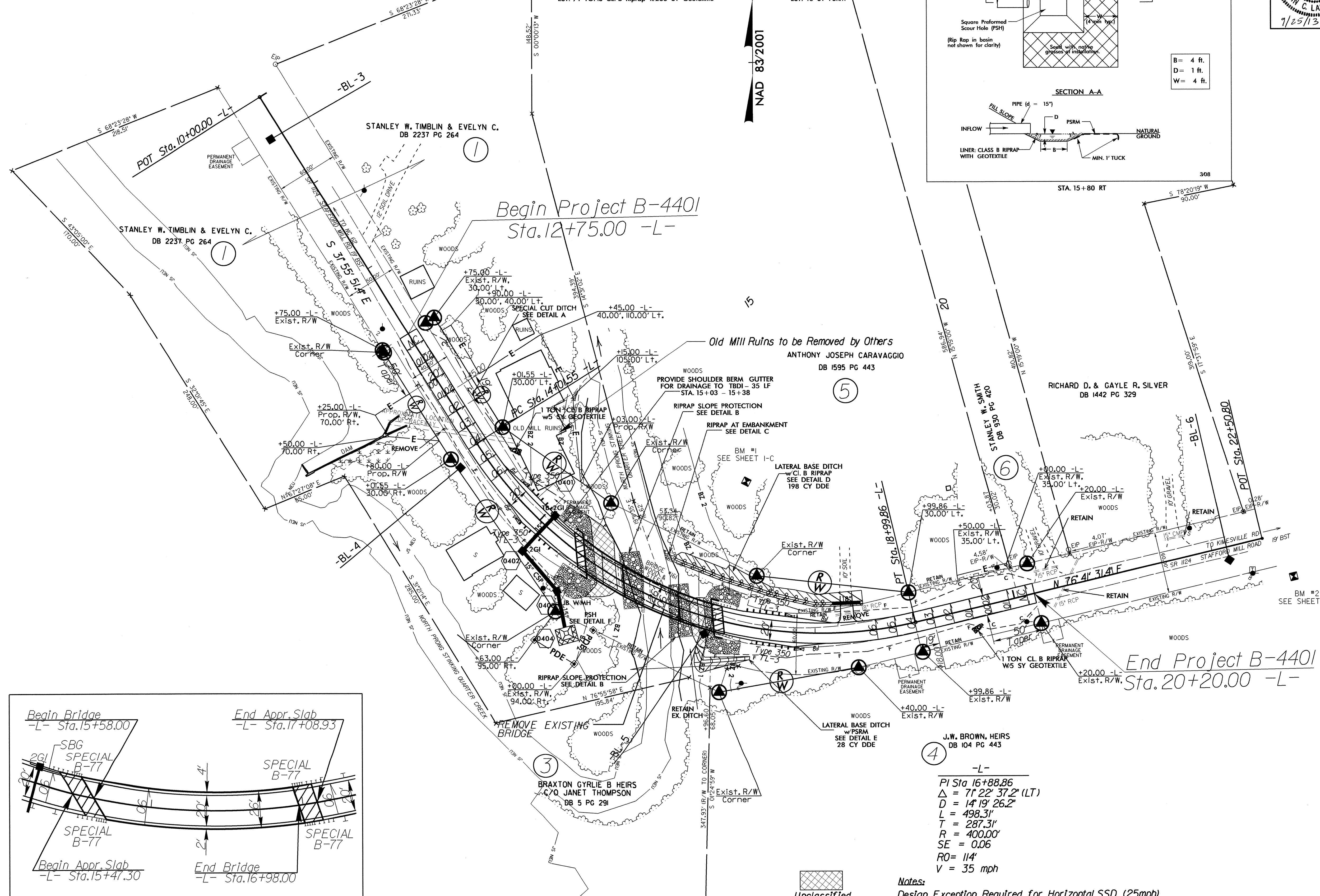


FROM STA.16+90 TO STA.17+40 RT  
EST. 40 SY PSRM



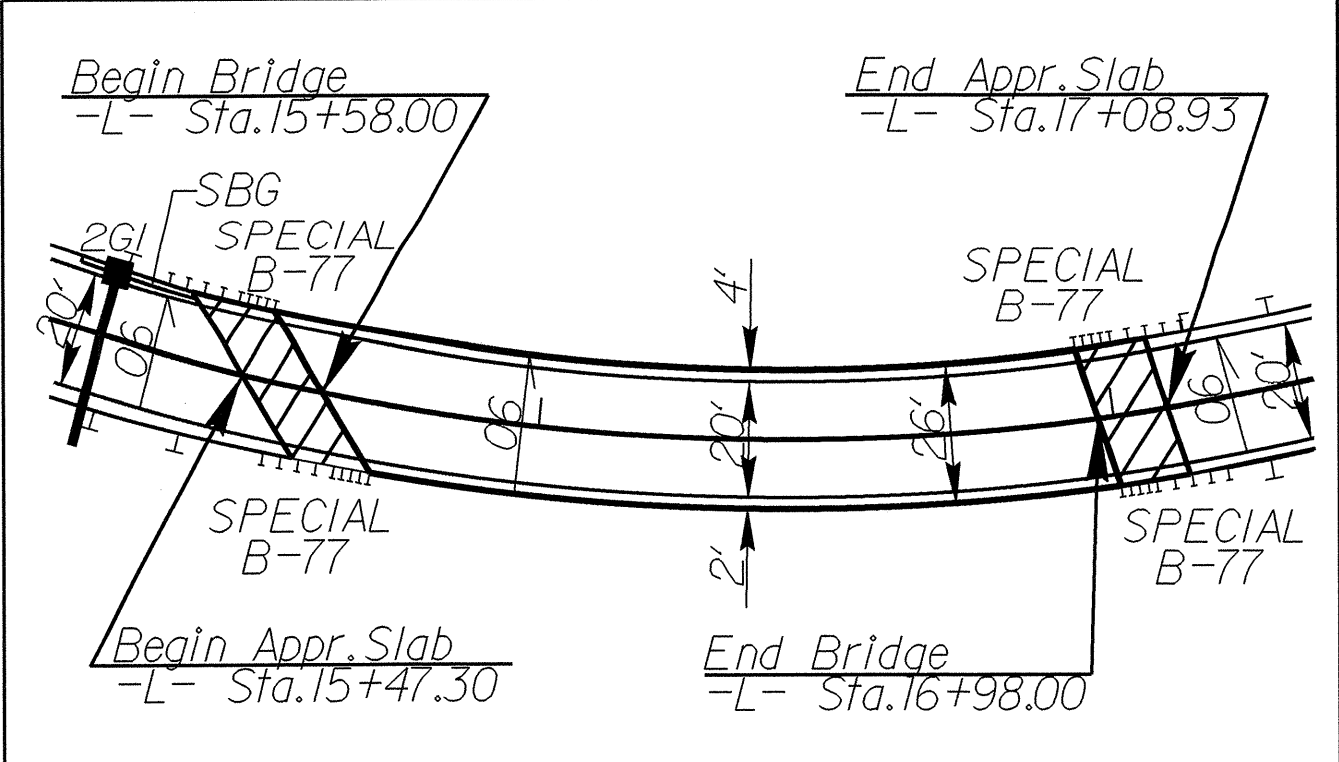
B = 4 ft.  
D = 1 ft.  
W = 4 ft.

5/14/13 25-SEP-2013 14:39 Nb4401\_r.dwg psh.dwg



Begin Project B-4401  
Sta.12+75.00 -L-

End Project B-4401  
Sta.20+20.00 -L-



DETAIL SHOWING BRIDGE/APPROACH RELATIONSHIP  
SBG = "Shoulder Berm Gutter"

4  
-L-  
PI Sta 16+88.86  
Δ = 7' 22' 37.2" (LT)  
D = 14' 19' 26.2"  
L = 498.3'  
T = 287.3'  
R = 400.00'  
SE = 0.06  
RO = 114'  
V = 35 mph

Notes:  
Design Exception Required for Horizontal SSD (25mph)  
See Sheet 5 for -L- Profile  
See Sheet S-1 Thru S-35 For Structure Plans  
See Sheet 3-A for Shoulder Berm Gutter Summary

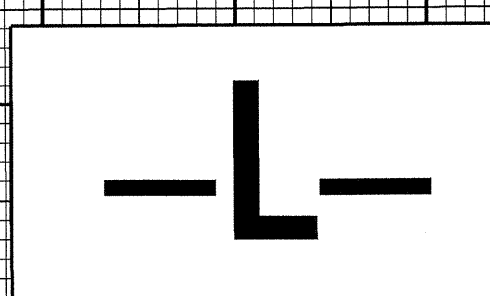
Unclassified  
Structure  
Excavation  
(See Structure Plans)



5/14/99

PROJECT REFERENCE NO. B-4401	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

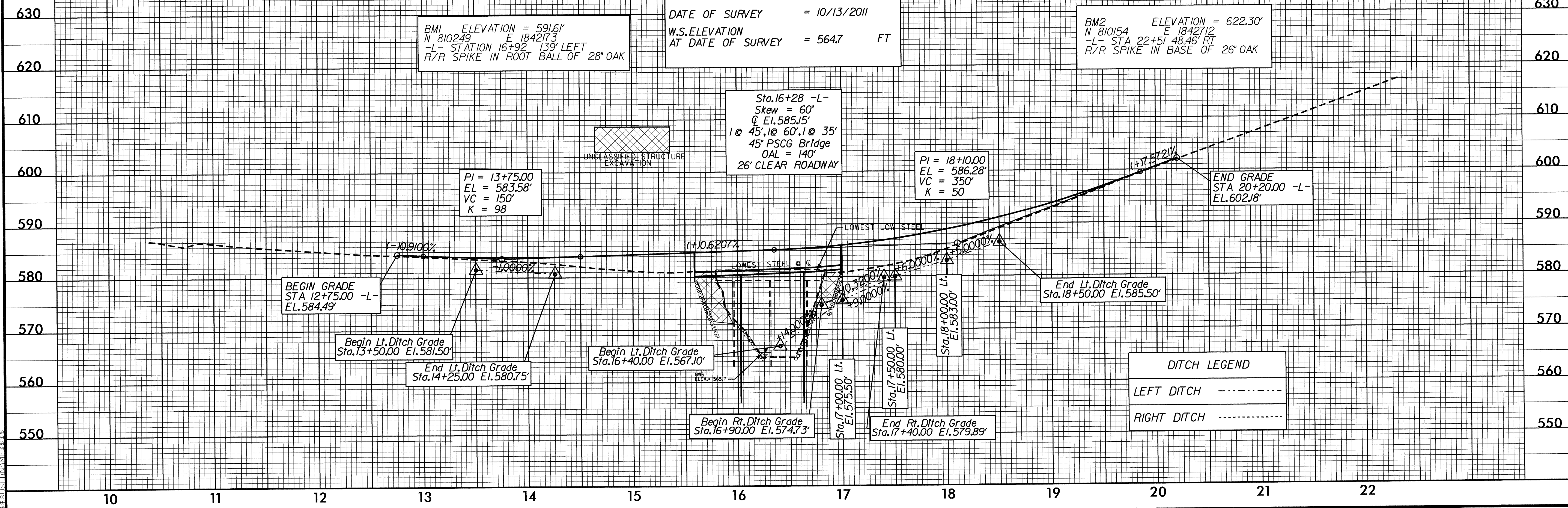
SEE SHEET 4 FOR PLAN VIEW



**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE = 4300 CFS  
 DESIGN FREQUENCY = 25 YRS  
 DESIGN HW ELEVATION = 576.4 FT  
 BASE DISCHARGE = 5500 CFS  
 BASE FREQUENCY = 100 YRS  
 BASE HW ELEVATION = 577.8 FT  
 OVERTOPPING DISCHARGE = 12850 CFS  
 OVERTOPPING FREQUENCY = 500+ YRS  
 OVERTOPPING ELEVATION = 584.1 FT

DATE OF SURVEY = 10/13/2011  
 W.S. ELEVATION AT DATE OF SURVEY = 564.7 FT



12-AUG-2013 16:06 b44401\_rdy\_p1.dgn





## ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.05	WORK ZONE VEHICLE ACCESS
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

## LEGEND

### GENERAL

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

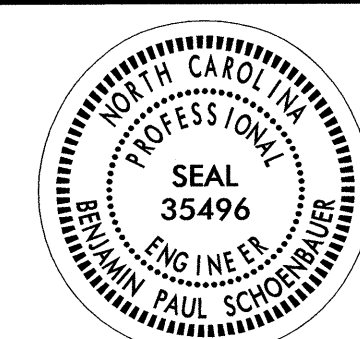
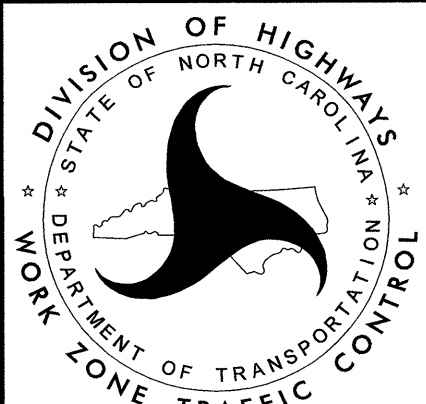
### TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM    SKINNY DRUM    TUBULAR MARKER
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

### TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

7/30/2013  
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User: dlyudmi

APPROVED: <i>ben schubert</i> DATE: 7/31/13			<b>ROADWAY STANDARD DRAWINGS &amp; LEGEND</b>
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## MANAGEMENT STRATEGIES

- DURING CONSTRUCTION OF PROPOSED STRUCTURE # 161, SR 1124 (STAFFORD MILL RD.) WILL BE CLOSED TO THROUGH TRAFFIC. STAFFORD MILL RD. TRAFFIC WILL BE MAINTAINED ON THE FOLLOWING OFF-SITE DETOUR ROUTE: FROM SR 1113 (KIMESVILLE RD.) TO SR 1129 (CLAPP MILL RD.) TO NC 62.
- ACCESS TO ALL RESIDENCES MUST BE MAINTAINED AT ALL TIMES WITHIN THE PROJECT LIMITS.

## PHASING

CONTRACTOR SHALL COORDINATE WITH THE B-4400 RESIDENT ENGINEER AND CONTRACTOR PRIOR TO INSTALLATION OF DETOUR SIGNS AND CLOSURE OF STAFFORD MILL RD.

- STEP 1:**  
 USING RSD 1101.03, SHEET 1 OF 9, SHEETS TMP-2 AND SD-1, INSTALL ROAD CLOSURE AND DETOUR SIGNS. PLACE TYPE III BARRICADES TO CLOSE SR 1124 (STAFFORD MILL RD.) TO THROUGH TRAFFIC, AND DETOUR TRAFFIC OFF-SITE.
- STEP 2:**  
 AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING:  
 (SEE ROADWAY AND STRUCTURE PLANS)
- 1) REMOVE EXISTING STRUCTURE No.161, AND CONSTRUCT THE PROPOSED STRUCTURE.
  - 2) CONSTRUCT PROPOSED ROADWAY UP TO AND INCLUDING FINAL LAYER OF SURFACE COURSE ON -L-.
  - 3) USING FINAL PAVEMENT MARKING PLAN, PLACE FINAL PAVEMENT MARKINGS AND MARKERS ON -L- AND TIE INTO EXISTING PAVEMENT MARKING.
- STEP 3:**  
 REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES, ALL ROAD CLOSURE AND DETOUR SIGNING. OPEN SR-1124 (STAFFORD MILL RD.) TO FINAL TRAFFIC PATTERN.

## GENERAL NOTES

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

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

**TRAFFIC PATTERN ALTERATIONS**

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

**SIGNING**

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

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

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

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

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


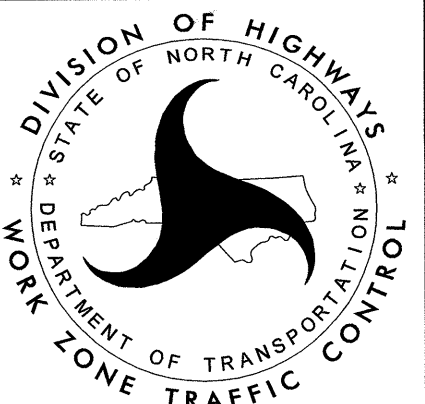
**TRAFFIC CONTROL DEVICES**

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

**PAVEMENT MARKINGS AND MARKERS**

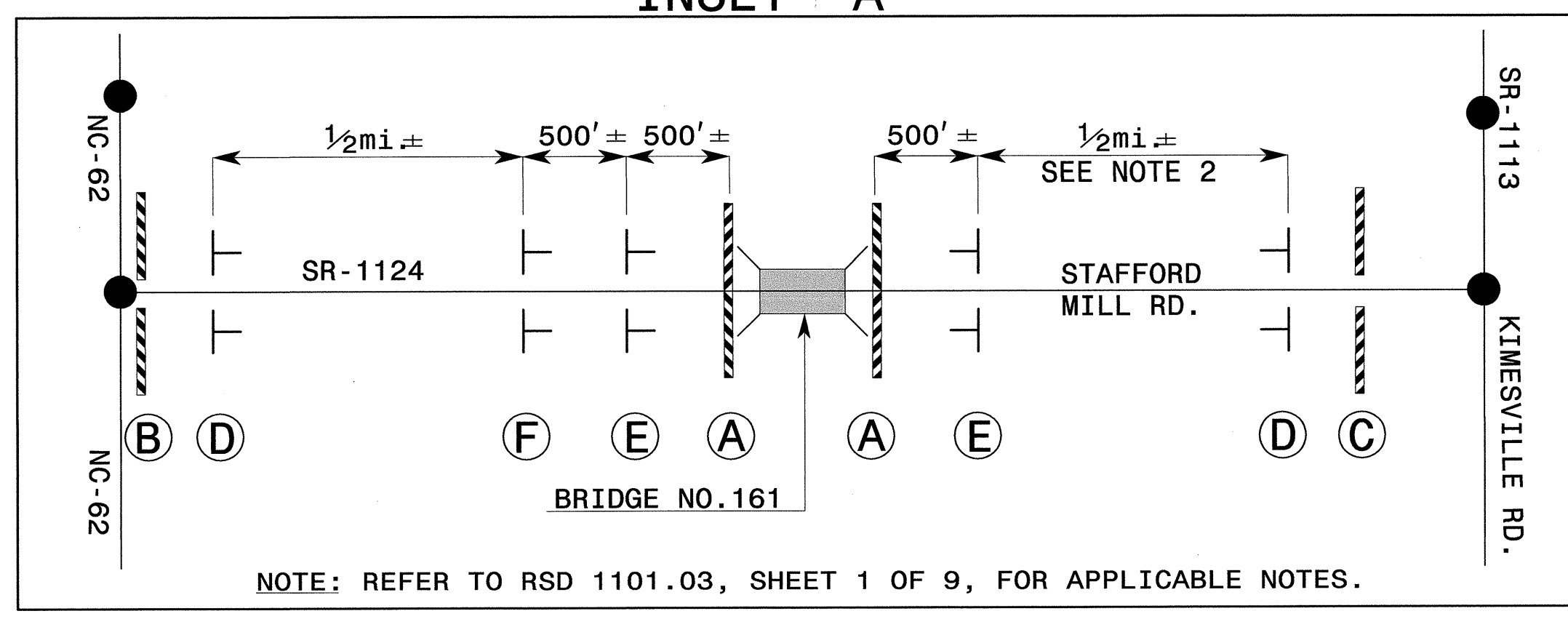
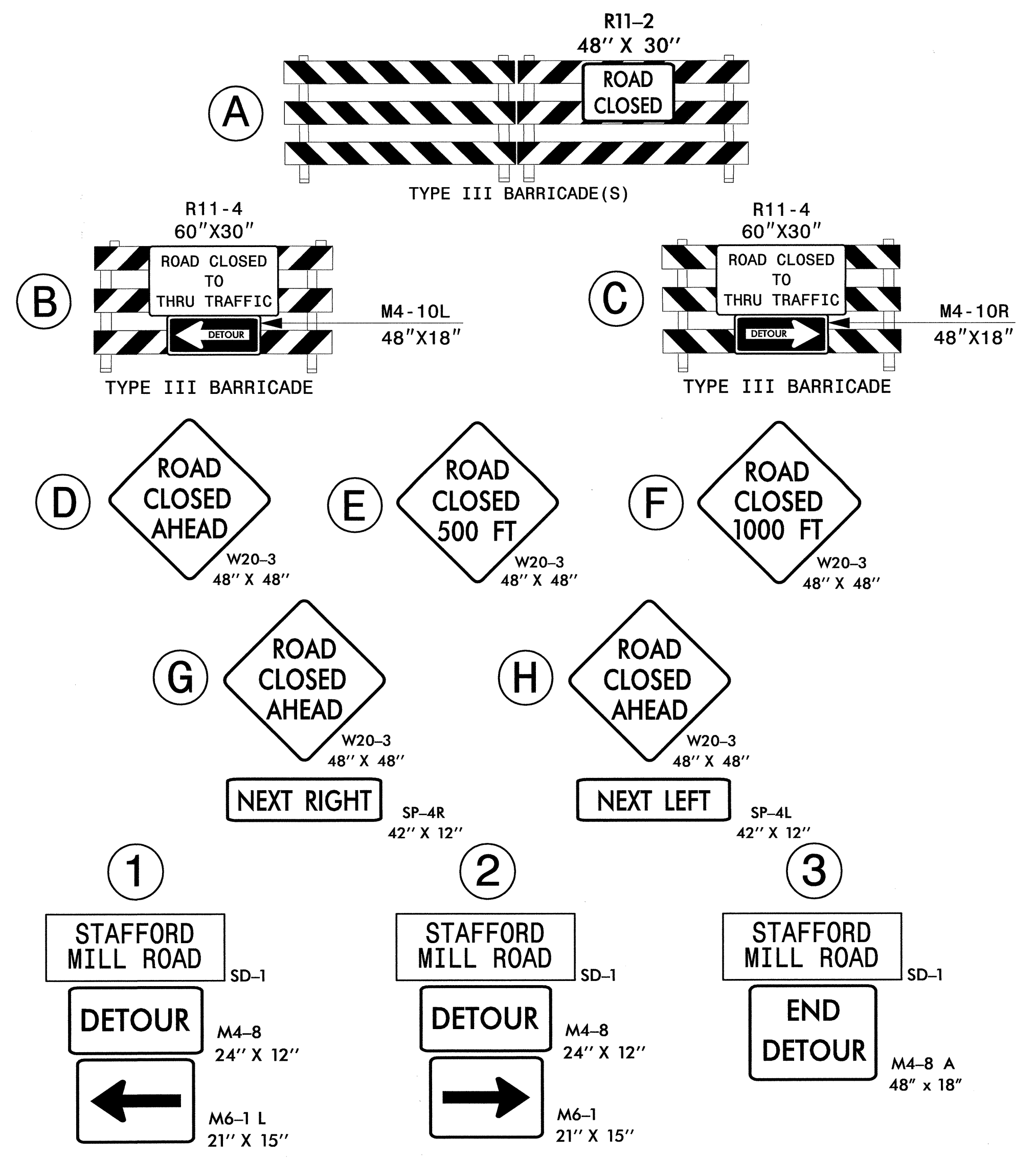
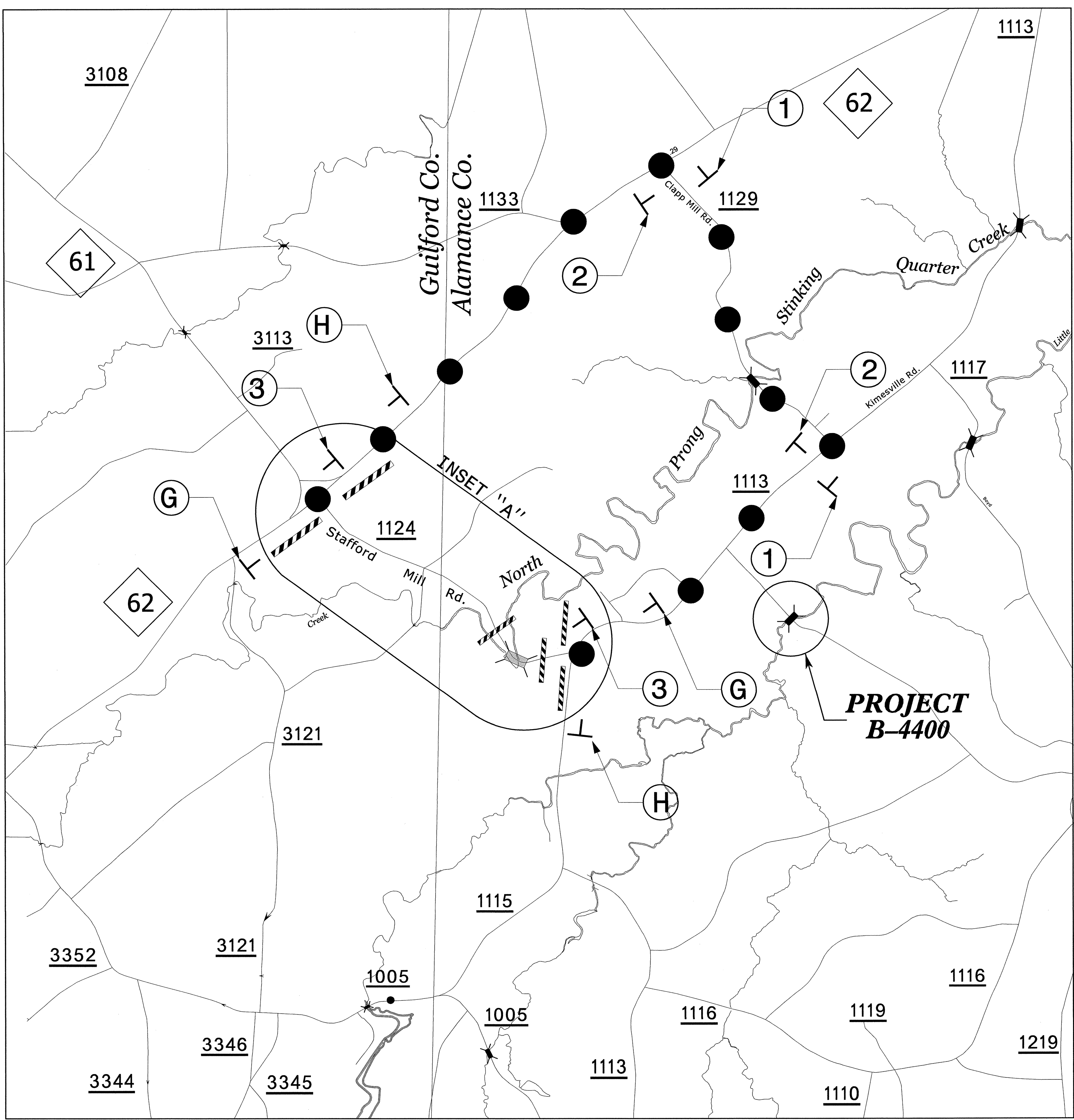
- F) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

7/30/2013  
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 User: xlyudml

APPROVED: <i>Ben Schmitt</i> DATE: 7/31/13 <div style="text-align: center;">             SEAL            SEAL            35496            ENGINEER            BEN SCHMITT         </div>	<div style="text-align: center;">             DIVISION OF HIGHWAYS            STATE OF NORTH CAROLINA            DEPARTMENT OF TRANSPORTATION            WORK ZONE TRAFFIC CONTROL         </div>	<h3 style="margin: 0;">TRANSPORTATION OPERATION PLAN</h3>
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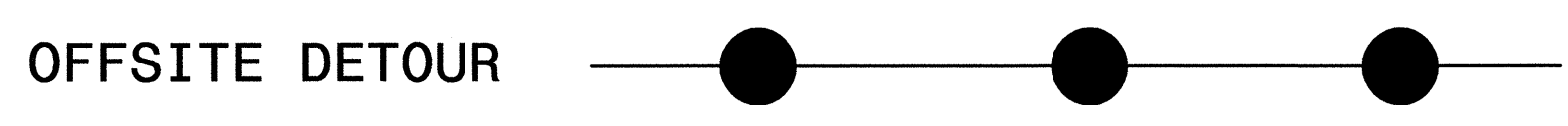


**VICINITY MAP: ALAMANCE COUNTY**



NOTE: REFER TO RSD 1101.03, SHEET 1 OF 9, FOR APPLICABLE NOTES.

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



APPROVED: *Tom Johnson* DATE: 7/31/13


SEAL



**OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT**

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

TIP NO. B-4401	SHEET NO. PMP-1
APPROVED: <i>[Signature]</i>	DATE: 7/25/13
SEAL	
	

PAVEMENT MARKING PLAN  
ALAMANCE COUNTY

LOCATION: BRIDGE NO. 161 OVER NORTH PRONG STINKING QUARTER CREEK ON SR 1124 (STAFFORD MILL RD)

T.I.P.: B-4401

CONTRACT: C203257

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

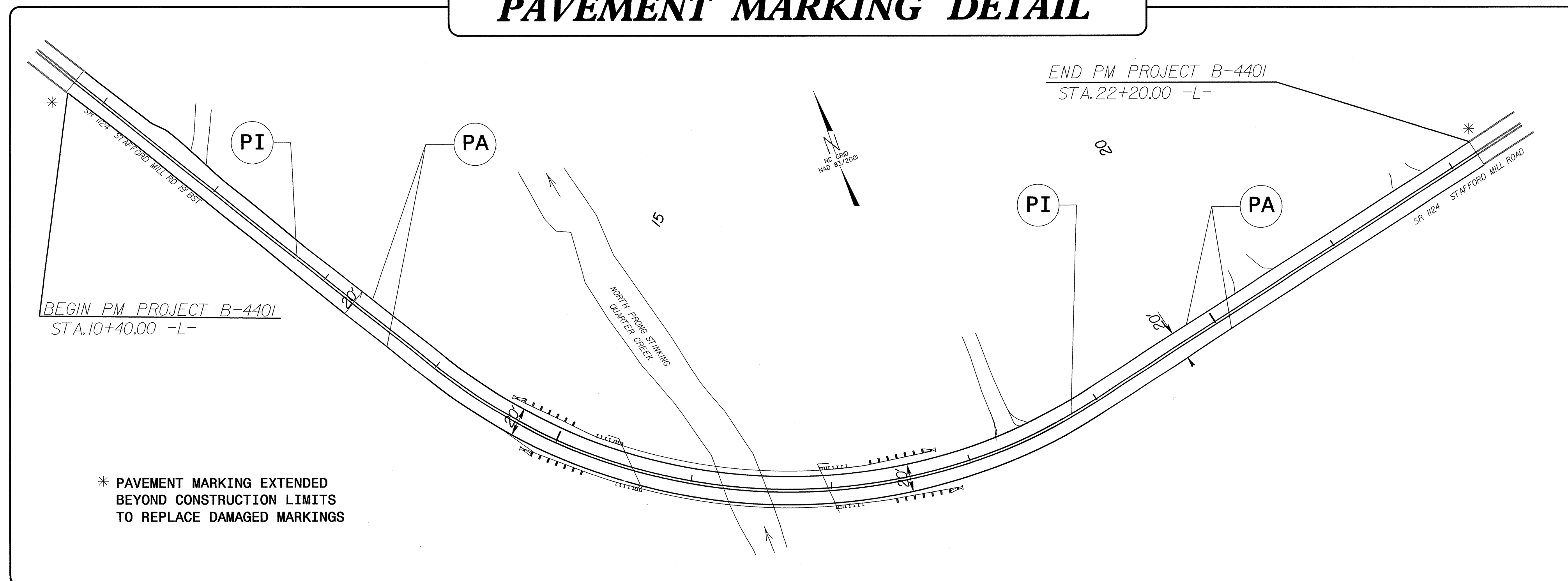
GENERAL NOTES

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:

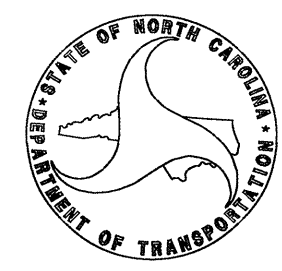
ROAD NAME	MARKING	MARKER
ALL	PAINT	NONE
- B) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.
- C) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- D) REMOVE/REPLACE 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



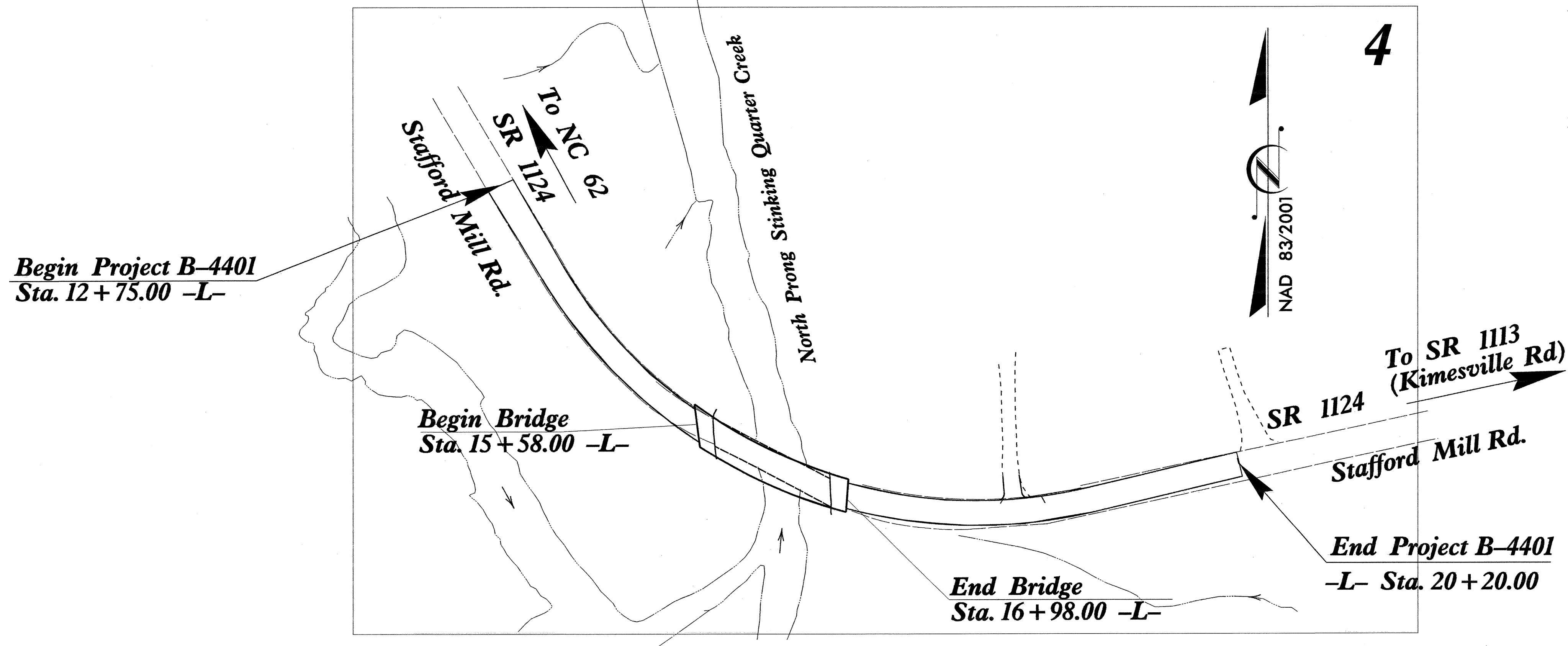


**TIP PROJECT: B-4401**

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

**LOCATION: Bridge #161 Over North Prong  
 Stinking Quarter Creek on SR 1124  
 (Stafford Mill Road)**

**TYPE OF WORK: Grading, Drainage, Paving and Structure**



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4401	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

**EROSION AND SEDIMENT CONTROL MEASURES**

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

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

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

**GRAPHIC SCALE**

0

PLANS

0

PROFILE (HORIZONTAL)

0

PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT  
 DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

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

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

Roadway Standard Drawings

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

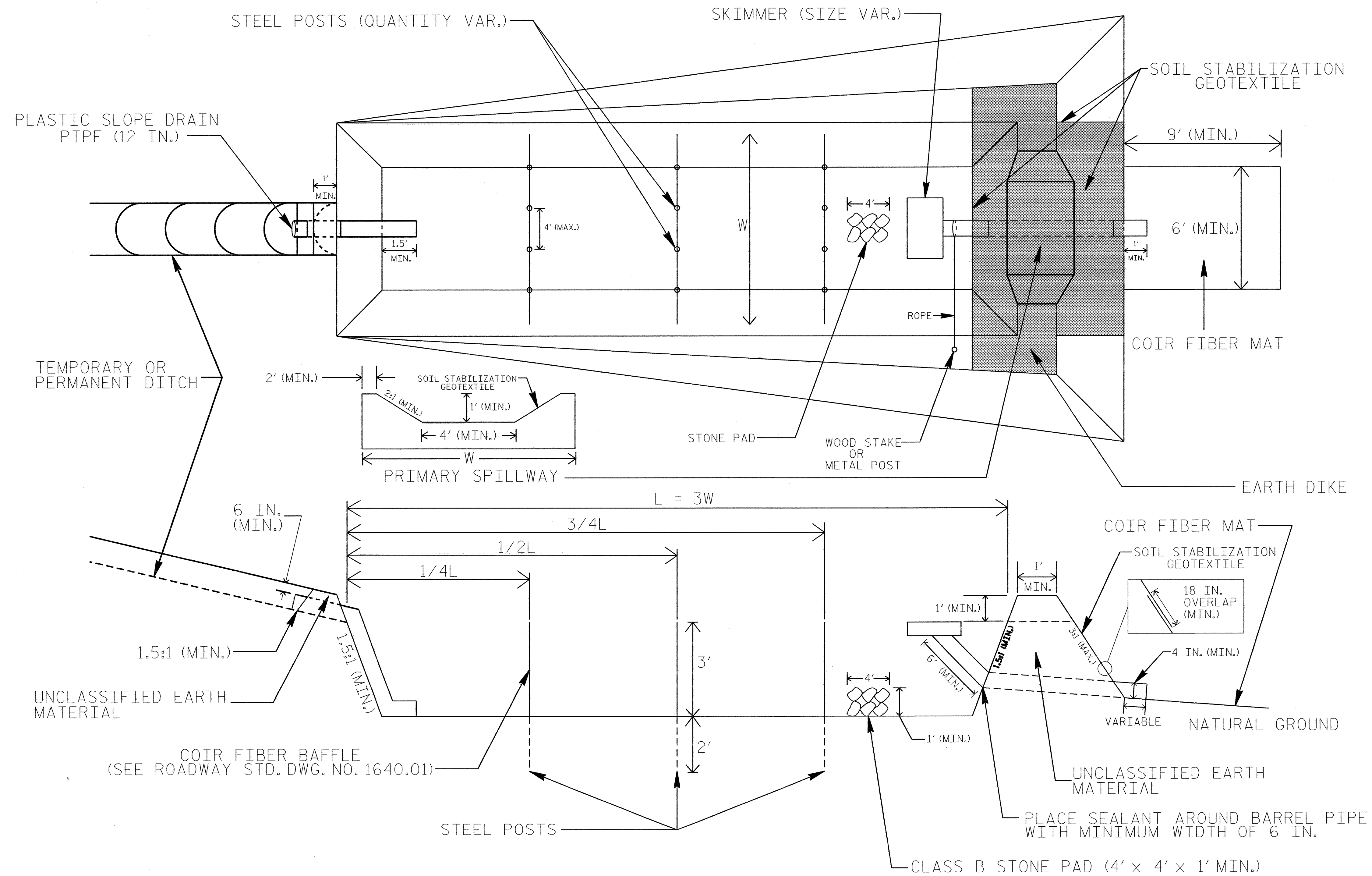
1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type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

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PROJECT REFERENCE NO. B-4401	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# SKIMMER BASIN WITH BAFFLES DETAIL



## NOTES

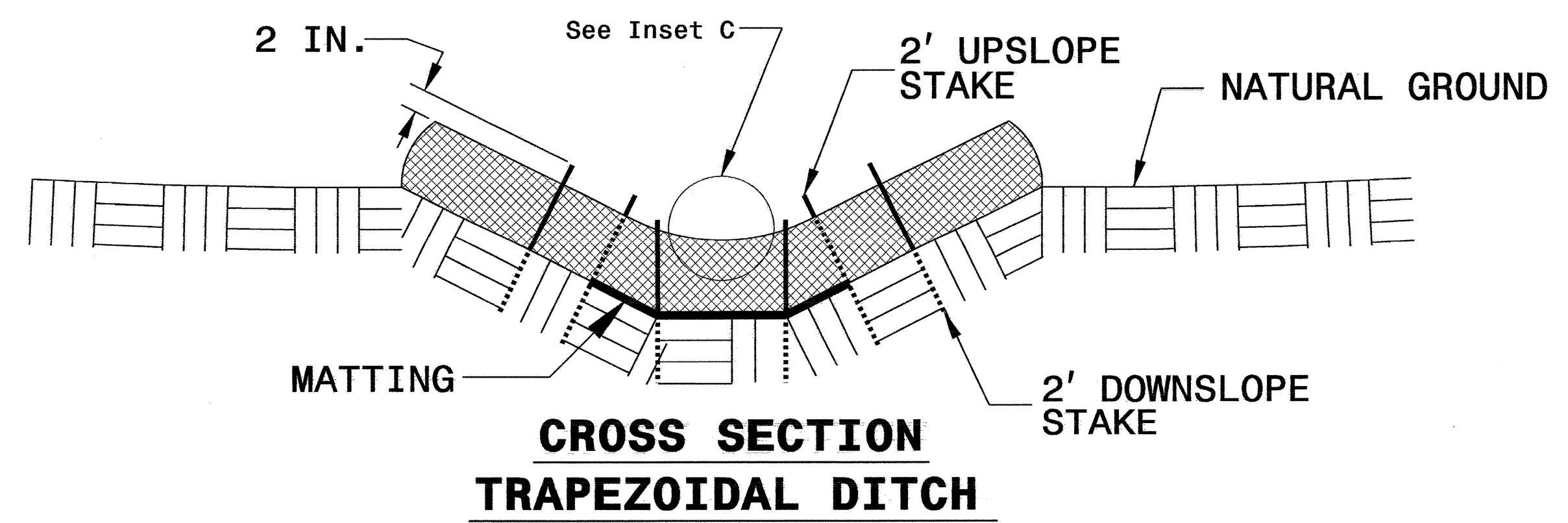
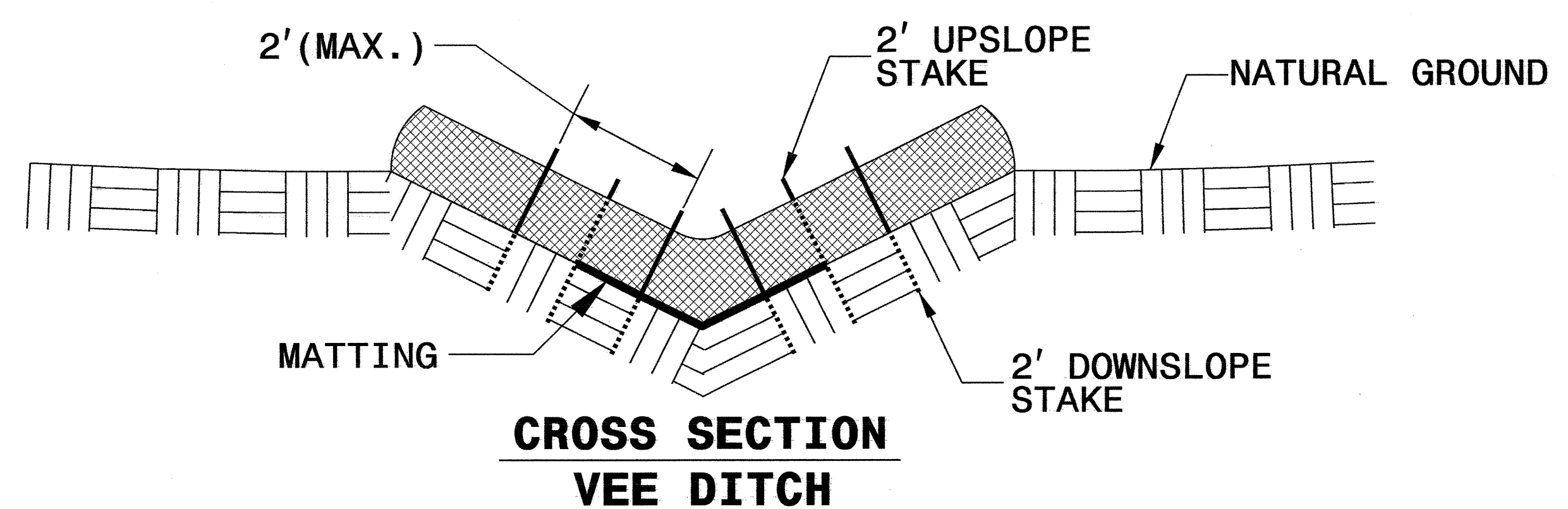
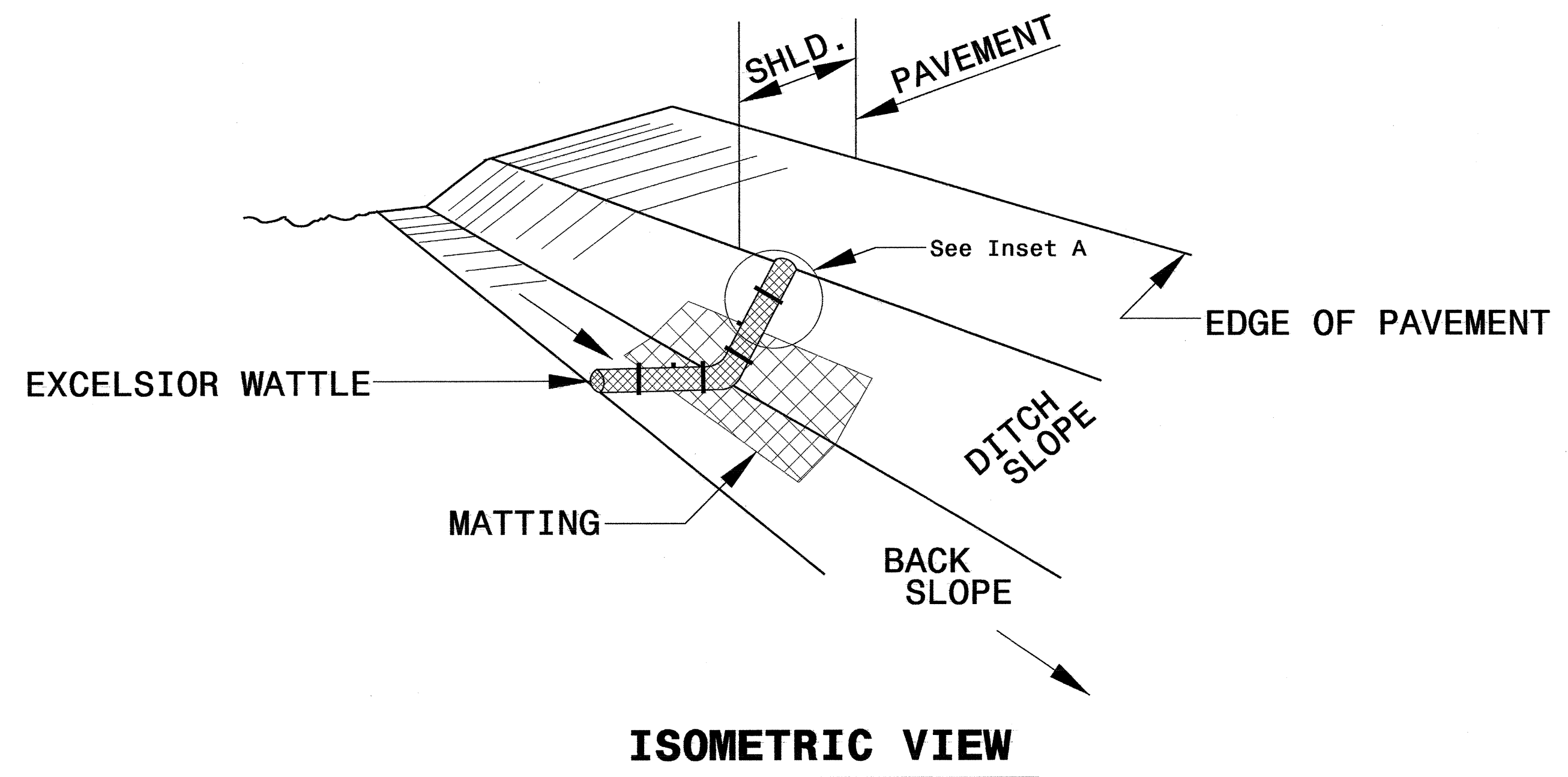
1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE PRIMARY SPILLWAY WEIR LENGTH (FT.) USING  $Q/0.4$ , WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC 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

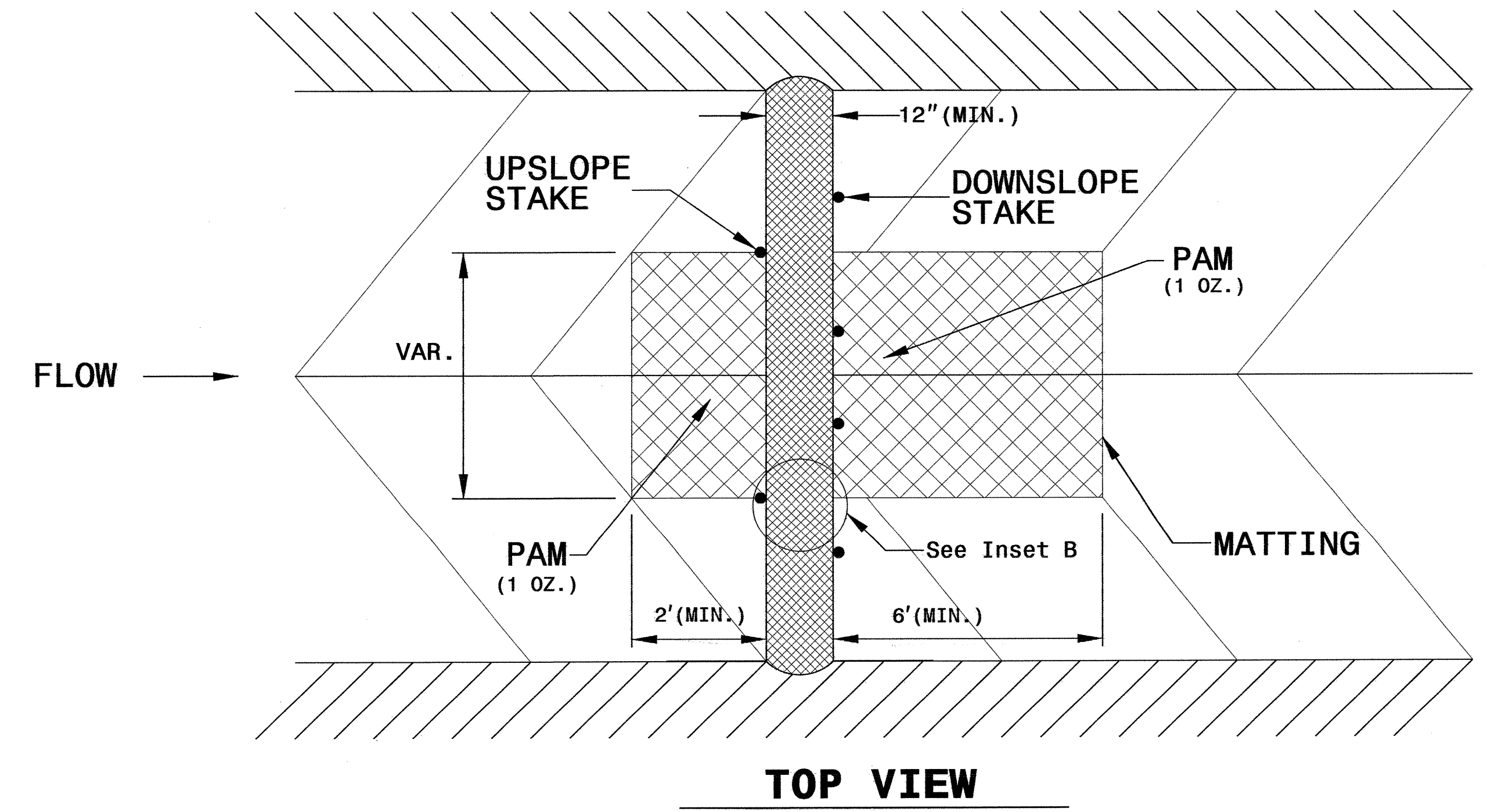
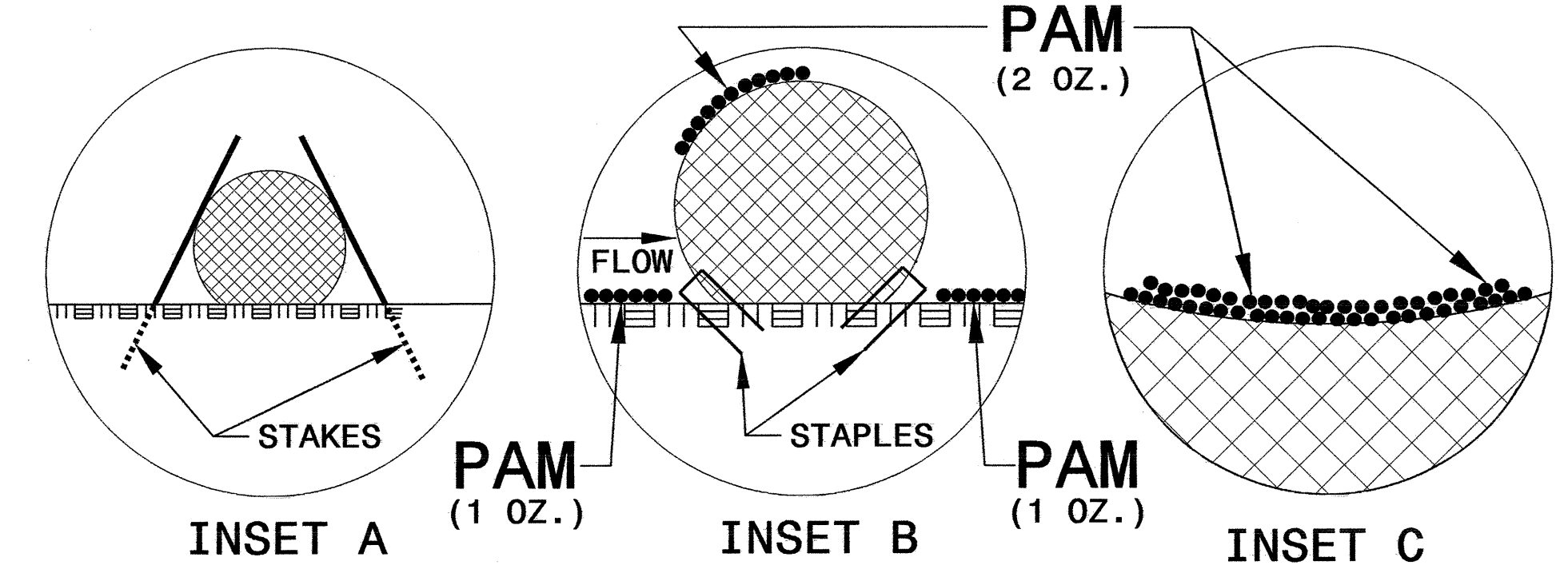
## COIR FIBER MAT ANCHOR OPTIONS

PROJECT REFERENCE NO. B-4401	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



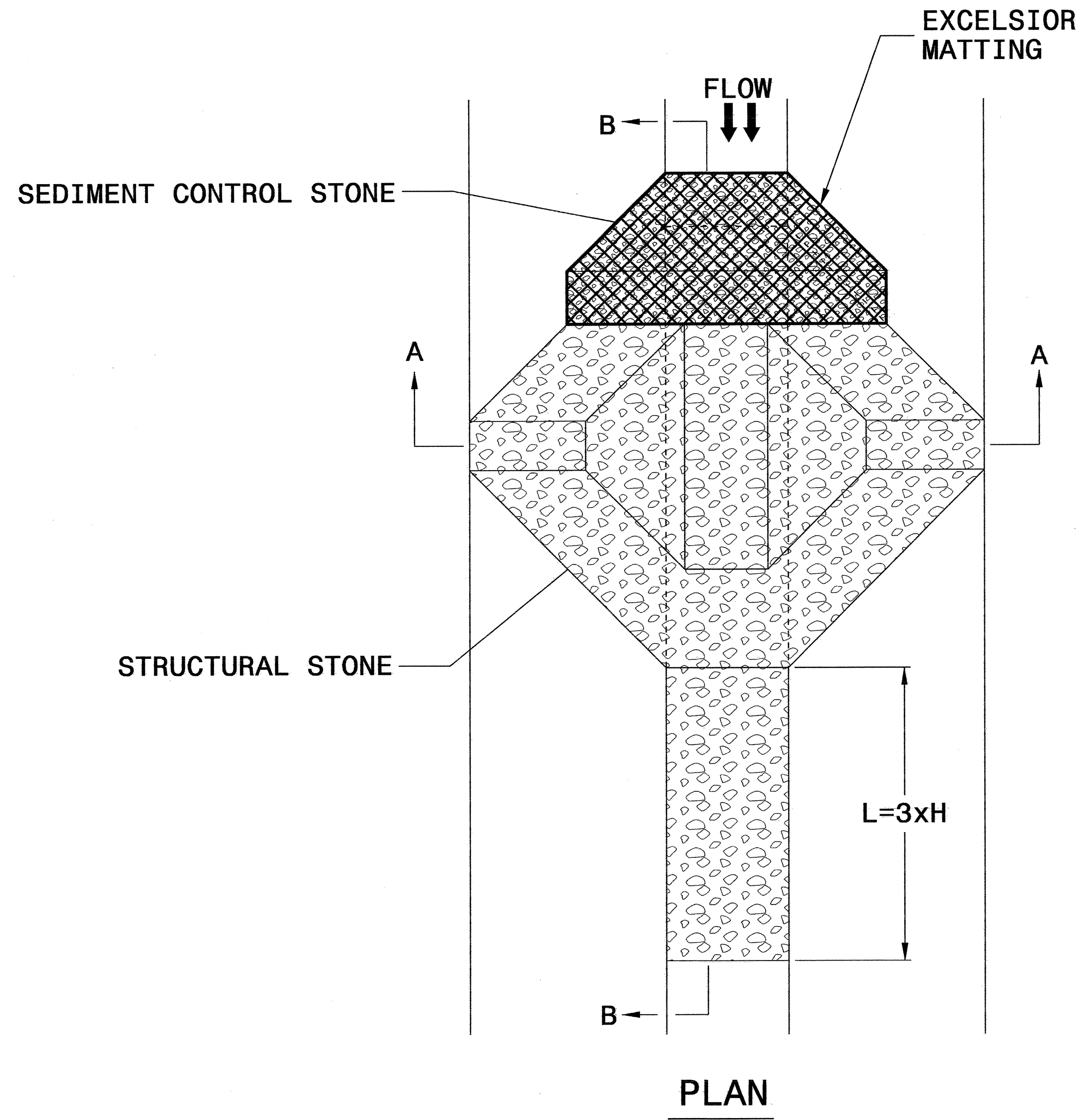
- NOTES:
- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
  - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
  - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
  - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 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-4401	SHEET NO. EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

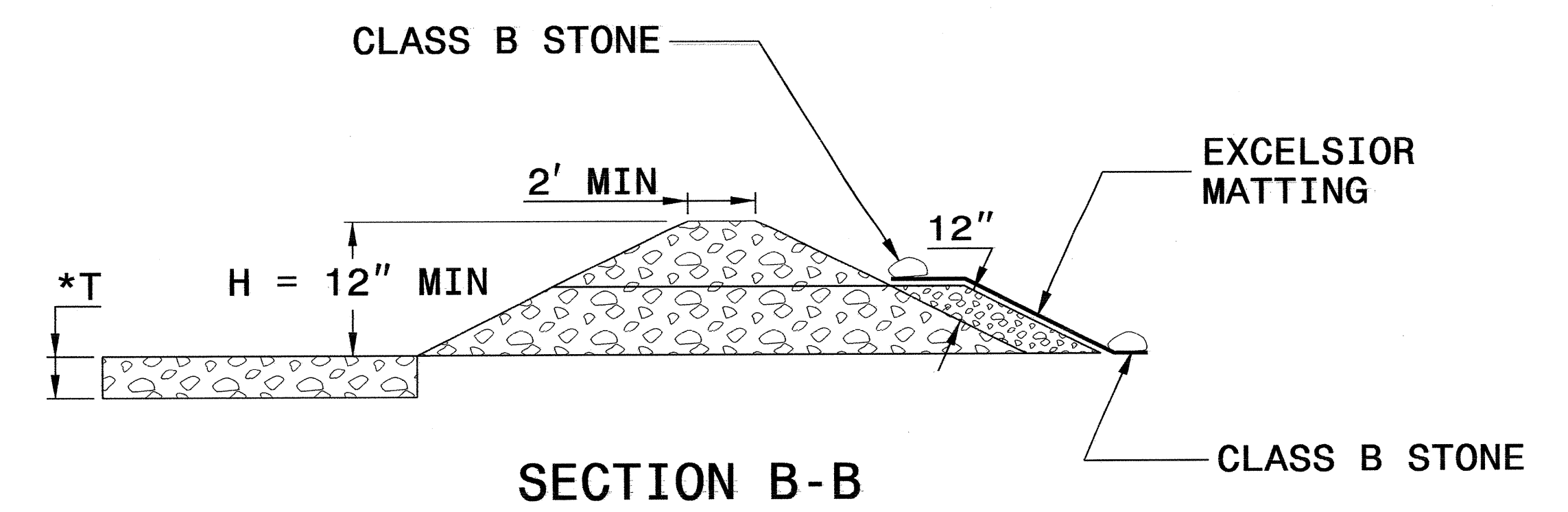
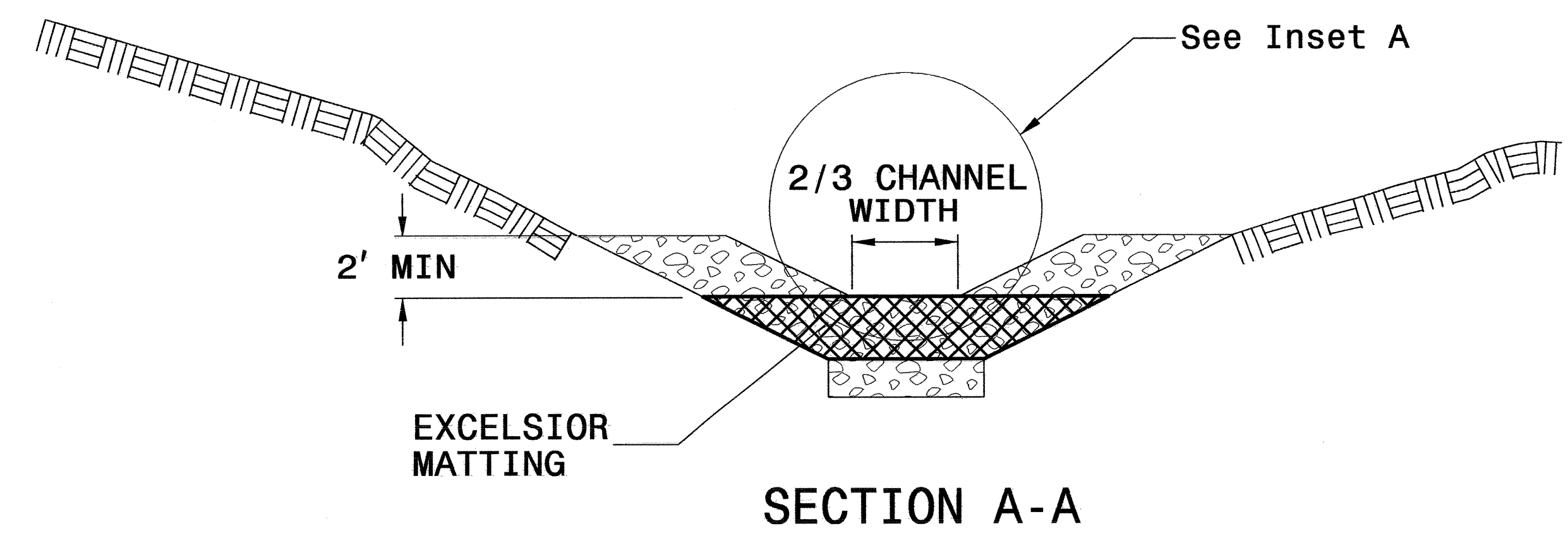
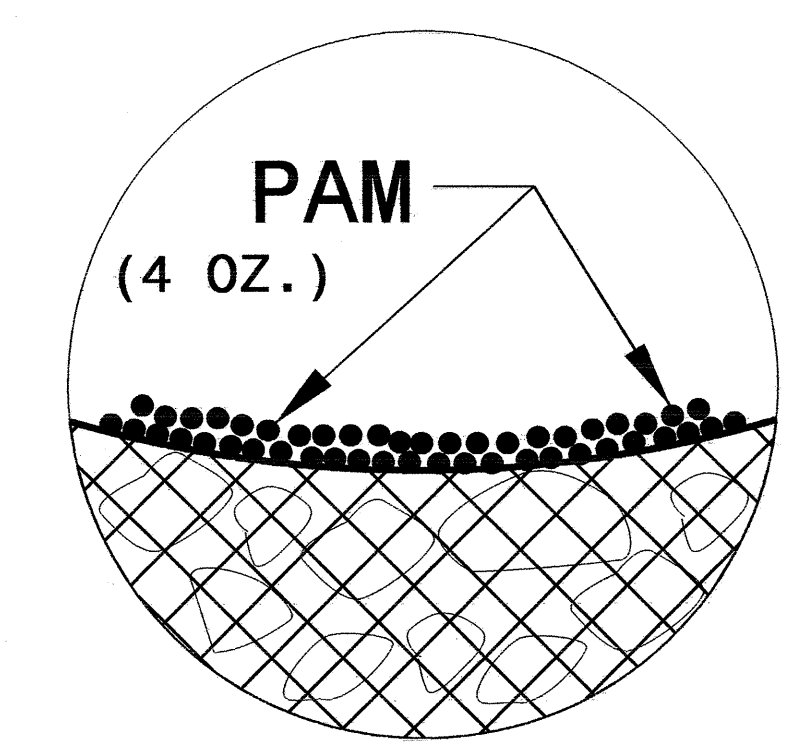


## NOTES

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.



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

NOT TO SCALE



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO. <i>B-4401</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# ***SOIL STABILIZATION TIMEFRAMES***

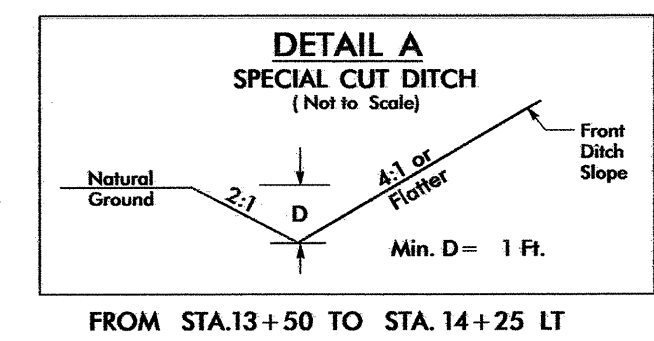
<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES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



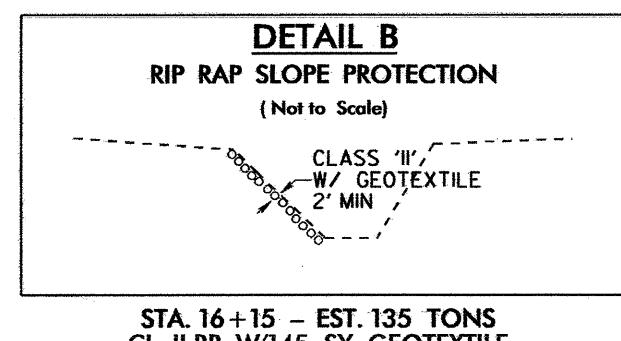


PROJECT REFERENCE NO. B-4401		SHEET NO. EC-4/CONST.4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

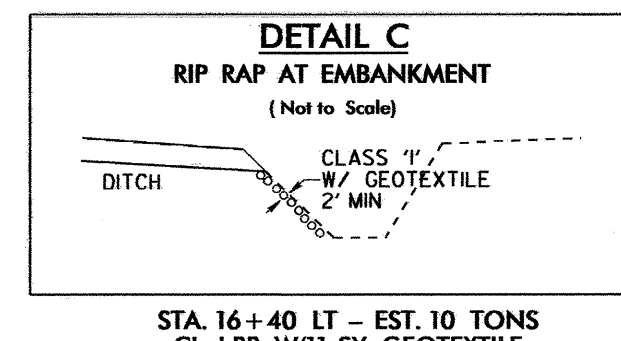
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 4



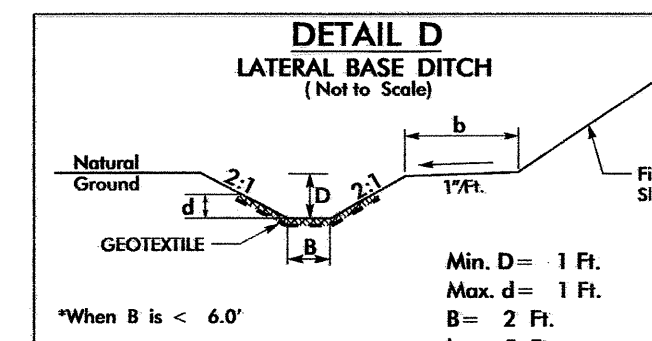
FROM STA.13+50 TO STA. 14+25 LT



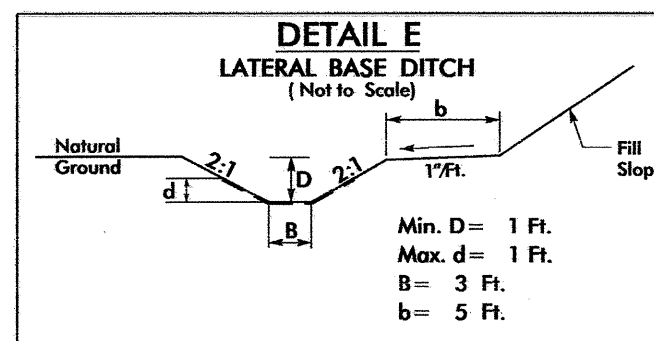
STA. 16+15 - EST. 135 TONS  
CL. II RR W/145 SY GEOTEXTILE  
STA. 16+65 - EST. 130 TONS  
CL. II RR W/140 SY GEOTEXTILE



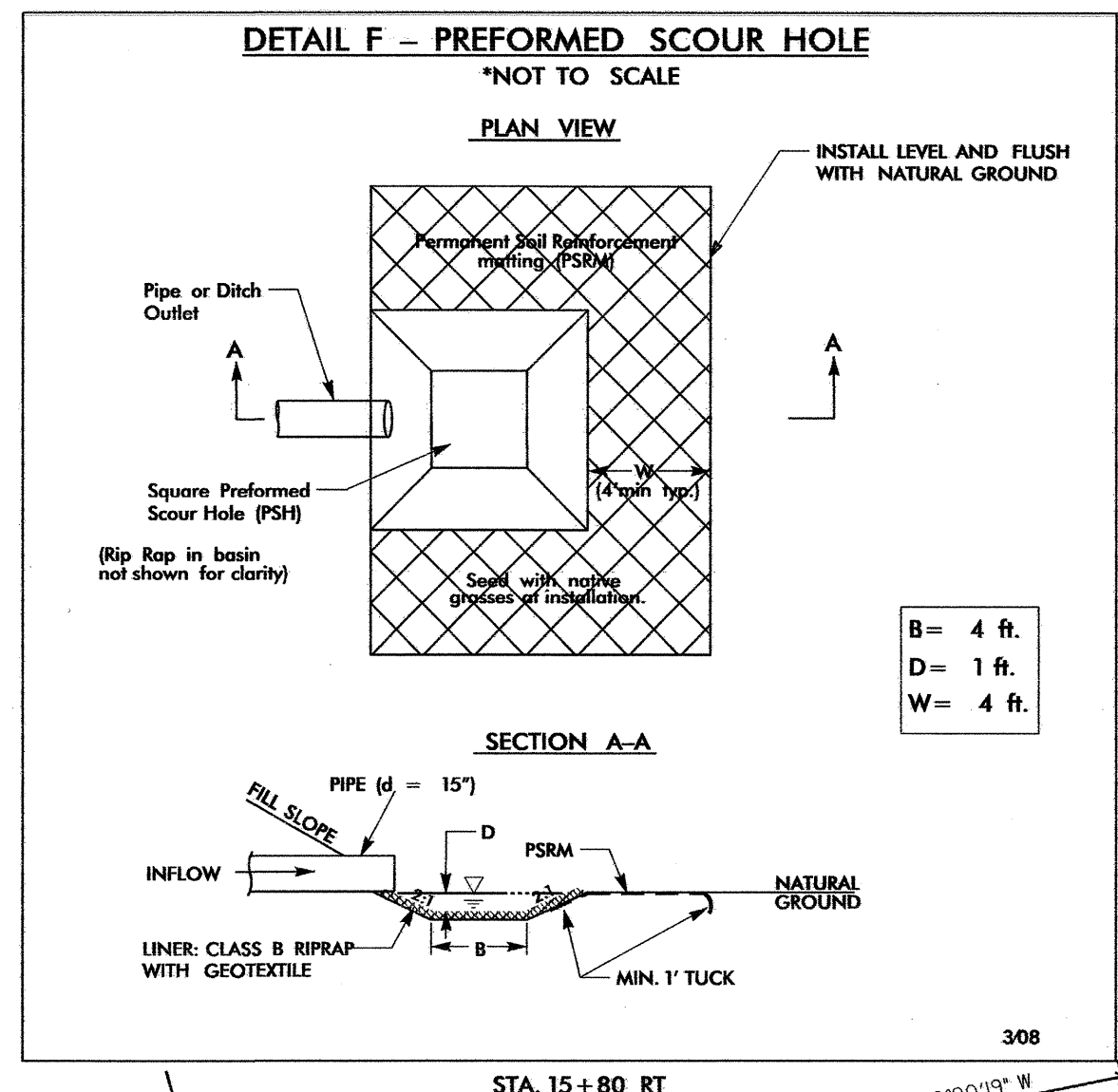
STA. 16+40 LT - EST. 10 TONS  
CL. I RR W/11 SY GEOTEXTILE



FROM STA.16+40 TO STA. 18+50 LT  
EST. 94 TONS CL. B Riprap w/266 SY Geotextile



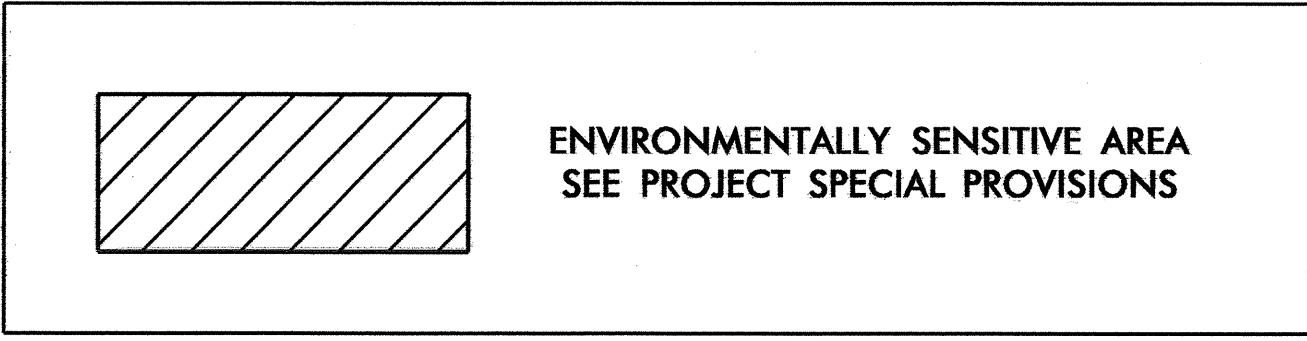
FROM STA.16+90 TO STA. 17+40 RT  
EST. 40 SY PSRM



B = 4 ft.  
D = 1 ft.  
W = 4 ft.

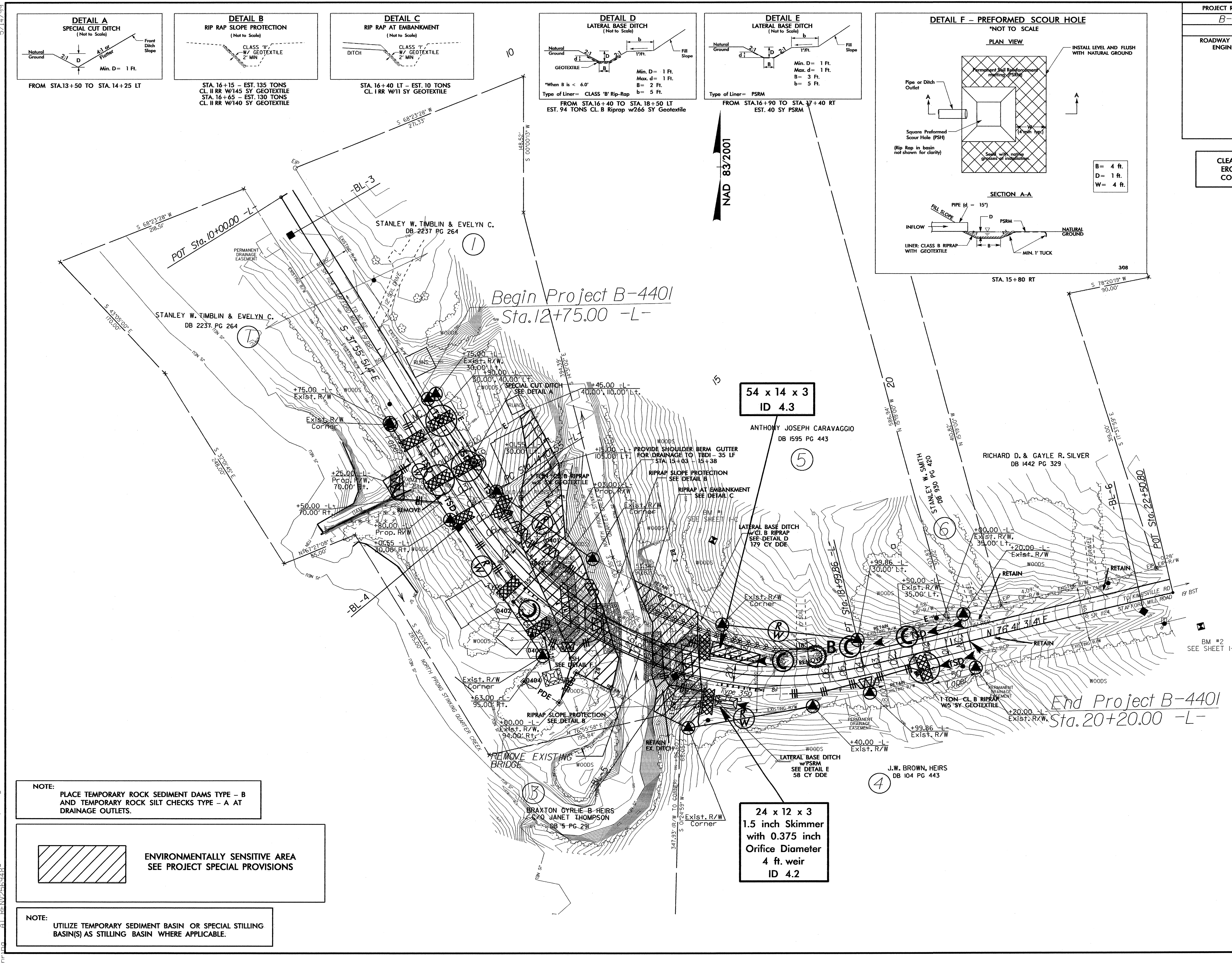
5/14/99

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



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

RA:\B-JUL-2013 15:54 Design\B4401-EC-esho.dgn  
M:\BRENDA\BRENDA



54 x 14 x 3  
ID 4.3

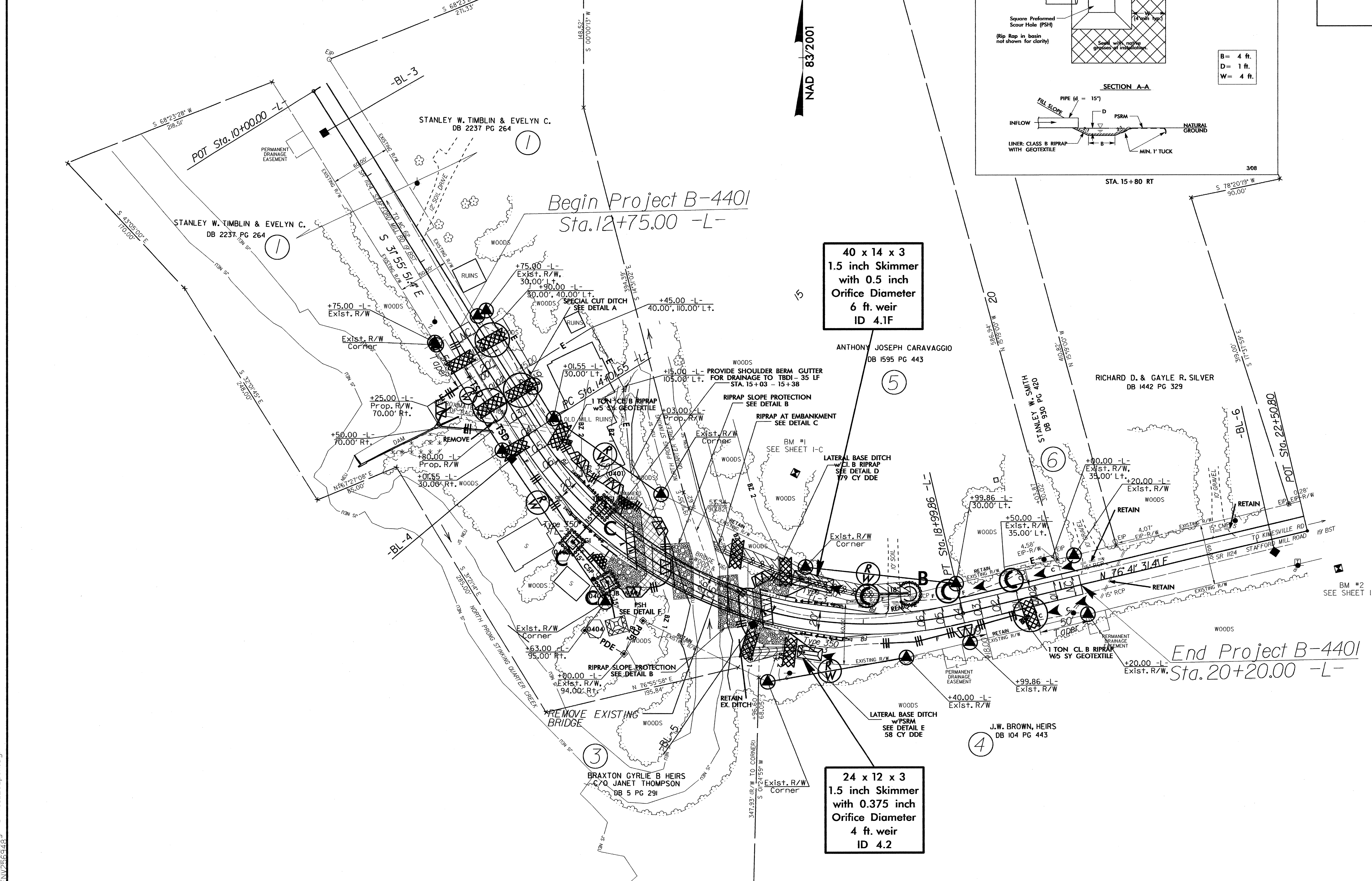
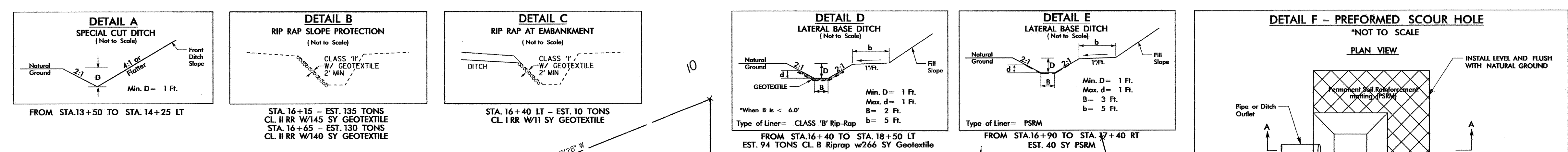
24 x 12 x 3  
1.5 inch Skimmer  
with 0.375 inch  
Orifice Diameter  
4 ft. weir  
ID 4.2

End Project B-4401  
Sta. 20+20.00 -L-

Begin Project B-4401  
Sta. 12+75.00 -L-



PROJECT REFERENCE NO.	SHEET NO.
B-4401	EC-5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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

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

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

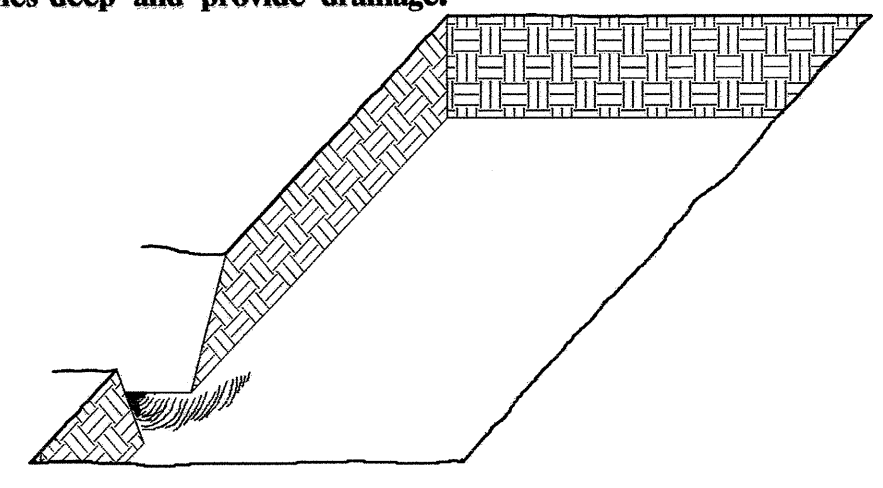
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## PLANTING DETAILS

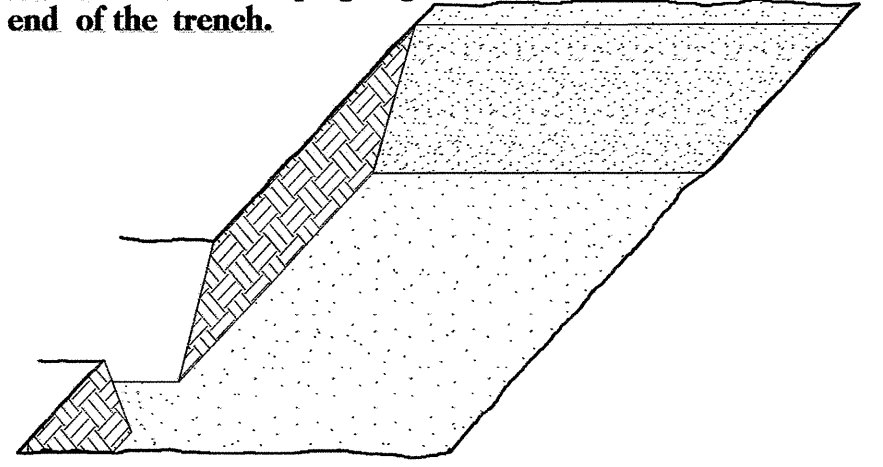
### SEEDLING / LINER BAREROOT PLANTING DETAIL

#### HEALING IN

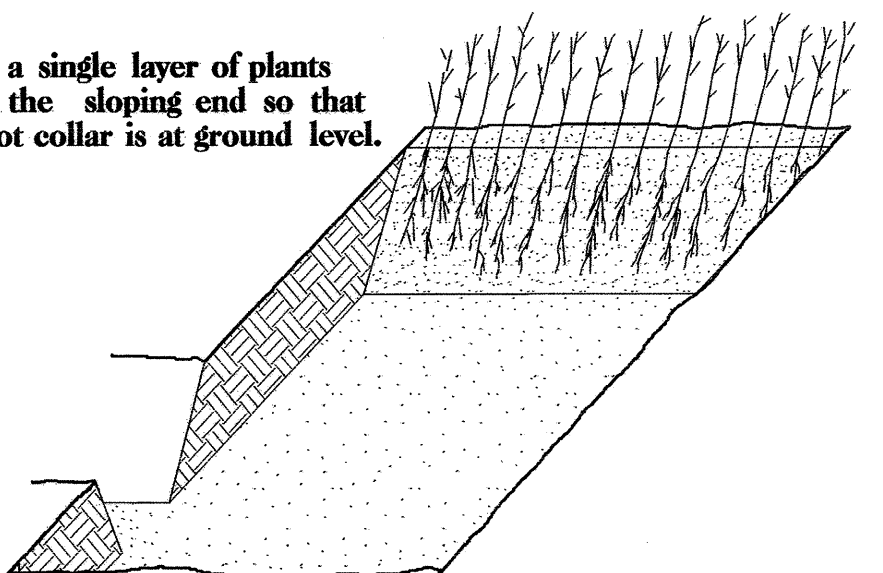
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



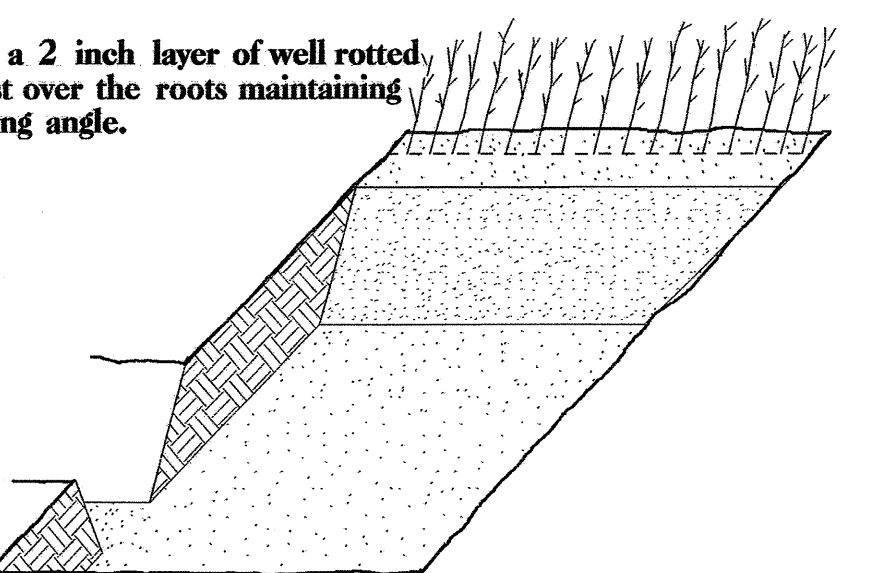
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

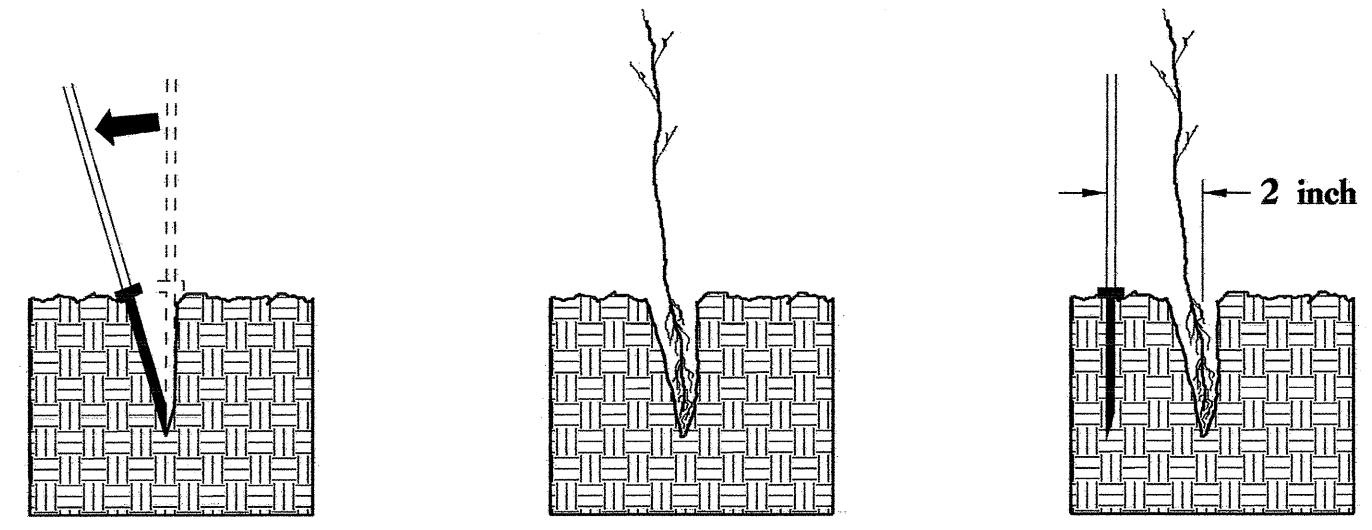


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

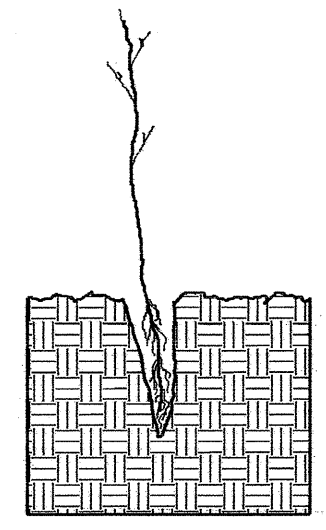


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

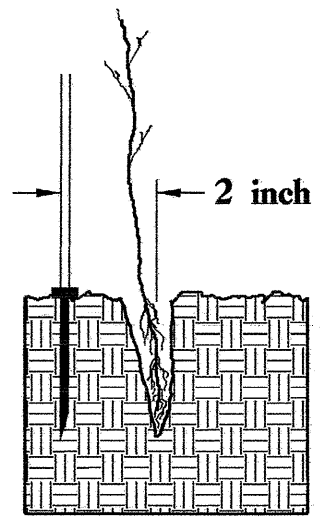
#### DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



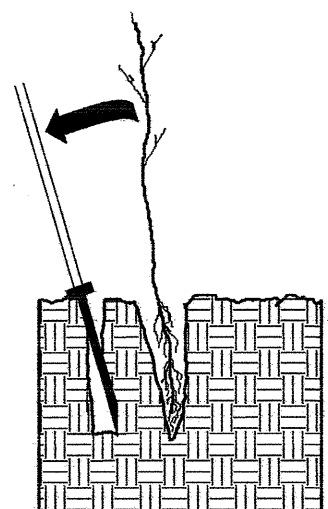
1. Insert planting bar as shown and pull handle toward planter.



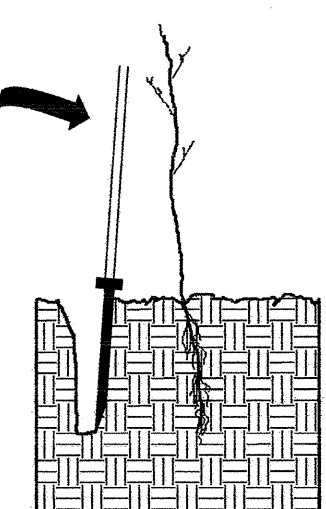
2. Remove planting bar and place seedling at correct depth.



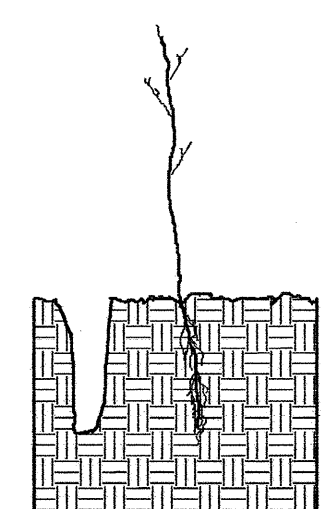
3. Insert planting bar 2 inches toward planter from seedling.



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



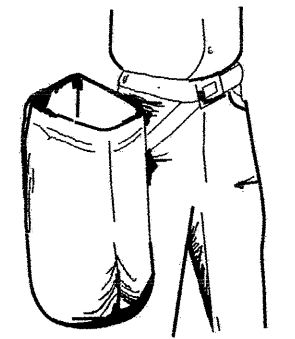
5. Push handle forward firming soil at top.



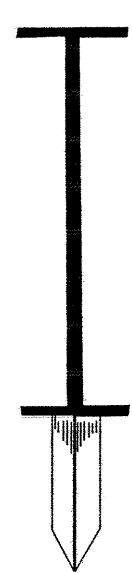
6. Leave compaction hole open. Water thoroughly.

#### 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

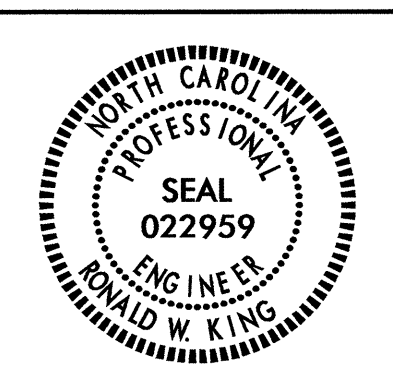
N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT



**STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION**

**SIGNING PLAN  
ALAMANCE COUNTY**

**LOCATION: BRIDGE NO. 161 OVER NORTH PRONG STINKING QUARTER  
CREEK ON SR 1124 (STAFFORD MILL RD)**

TIP NO. B-4401	SHEET NO. SIGN-1
APPROVED: <i>RWJ</i>	DATE: <i>7/25/13</i>
SEAL 	

**T.I.P.: B-4401**

**CONTRACT: C203257**

**SUMMARY OF QUANTITIES**

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL .....	71	L.F.
4096000000	904	SIGN ERECTION, TYPE D .....	2	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL .....	13	EA.

**ROADWAY STANDARD DRAWING**

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

STD. NO.	TITLE
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

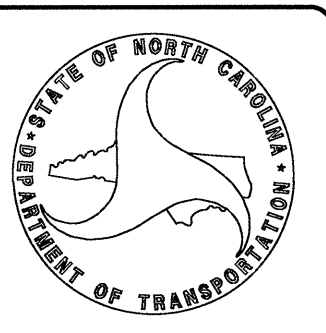
**GENERAL NOTES**

- . SIGNS FURNISHED BY STATE
- . ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- . SIGNING PLANS DO NOT INCLUDE TEMPORARY CONSTRUCTION SIGNING. SEE TRAFFIC CONTROL PLANS
- . WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
- . ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- . THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
- . SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

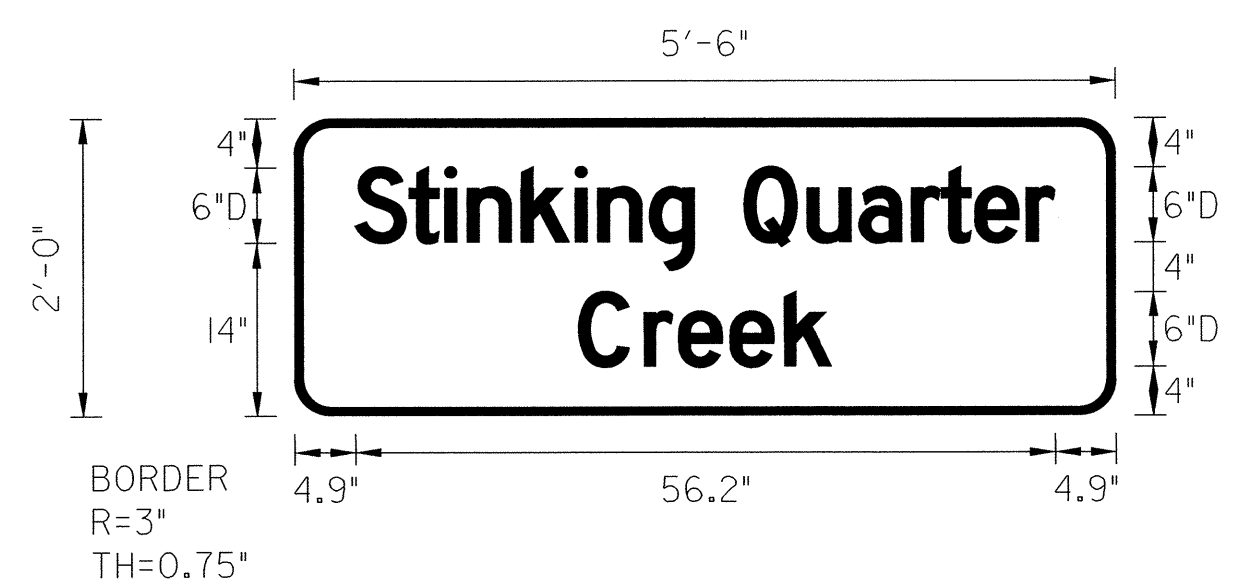
PLAN PREPARED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

SUSAN B. KUNZ SIGNING & DELINEATION REGIONAL ENGINEER

STACEY W. JOHNS SIGNING & DELINEATION DESIGN ENGINEER



SIGN NUMBER: 301,302 TYPE: D QUANTITY: 2 SIGN WIDTH: 5'-6" HEIGHT: 2'-0" TOTAL AREA: 11.0 Sq.Ft.	BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT MAT'L: 0.125" (3.2 mm) ALUMINUM	DESIGN BY: S. JOHNS PROJECT ID: B-4401	CHECKED BY: S. KUNZ DIV: 7	DATE: Jul 23, 2013
---	--	---	-------------------------------	--------------------



**USE NOTES: 1,2**

- Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
- Background shall be Grade C reflective sheeting.

**LETTER POSITIONS**

Letter spacings are to start of next letter

	S	t	i	n	k	i	n	g	q	u	a	r	t	e	r		Series/Size Text Length		
	4.9	4.3	2.9	1.8	4.3	4.3	1.8	4.2	3.6	4	5.1	4.2	4.2	2.4	2.7	4.1	2.3	4.9	D 2000 56.2
		C	r	e	e	k													D 2000 20.4
	22.8	5.3	2.8	4.1	4.4	3.8	22.8												

FILENAME: B-4955\_Sgn

NORTH CAROLINA D.O.T. SIGN DETAIL

**PROJECT NOTES**

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

**INDEX**

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET, SIGN DESIGN, & NOTES
SIGN-2	SIGN DETAIL SHEET

25-JUL-2013 12:38 P:\TIP\Projects\B-4401\Traffic\Signing\CADD\Signing\_Layout\_Plans\B4401\_Titlesheet.dgn sJohns AT 10/27/13

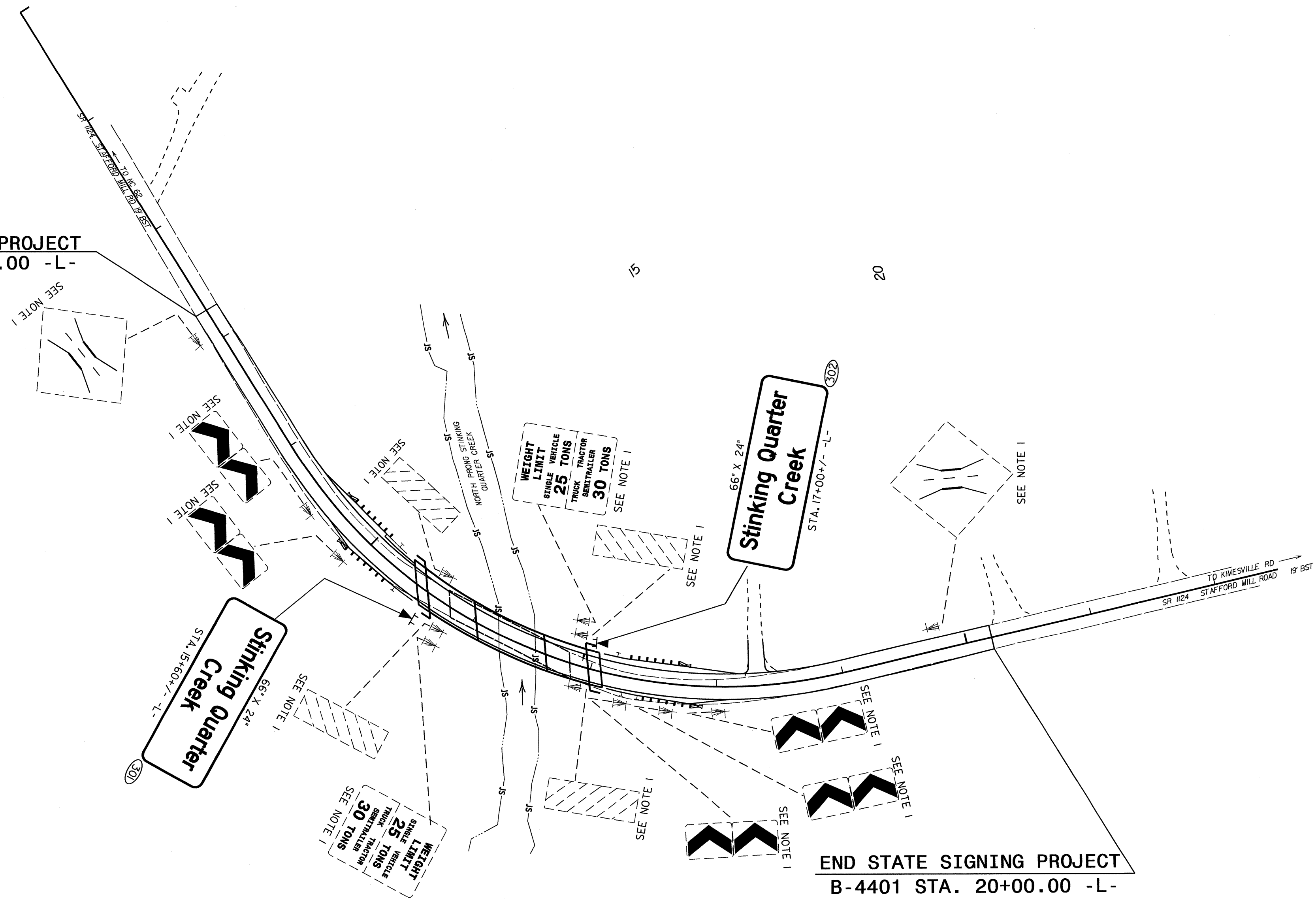


TIP NO. B-4401	SHEET NO. SIGN-2
APPROVED: <i>RW</i>	
DATE: 7/25/13	
SEAL	



BEGIN STATE SIGNING PROJECT  
B-4401 - STA. 12+75.00 -L-

END STATE SIGNING PROJECT  
B-4401 STA. 20+00.00 -L-



**PAY ITEM NOTES**

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

**SIGN DETAIL SHEET**

25 JUL 2013 10:40  
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 s.johns

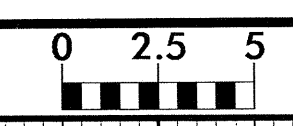




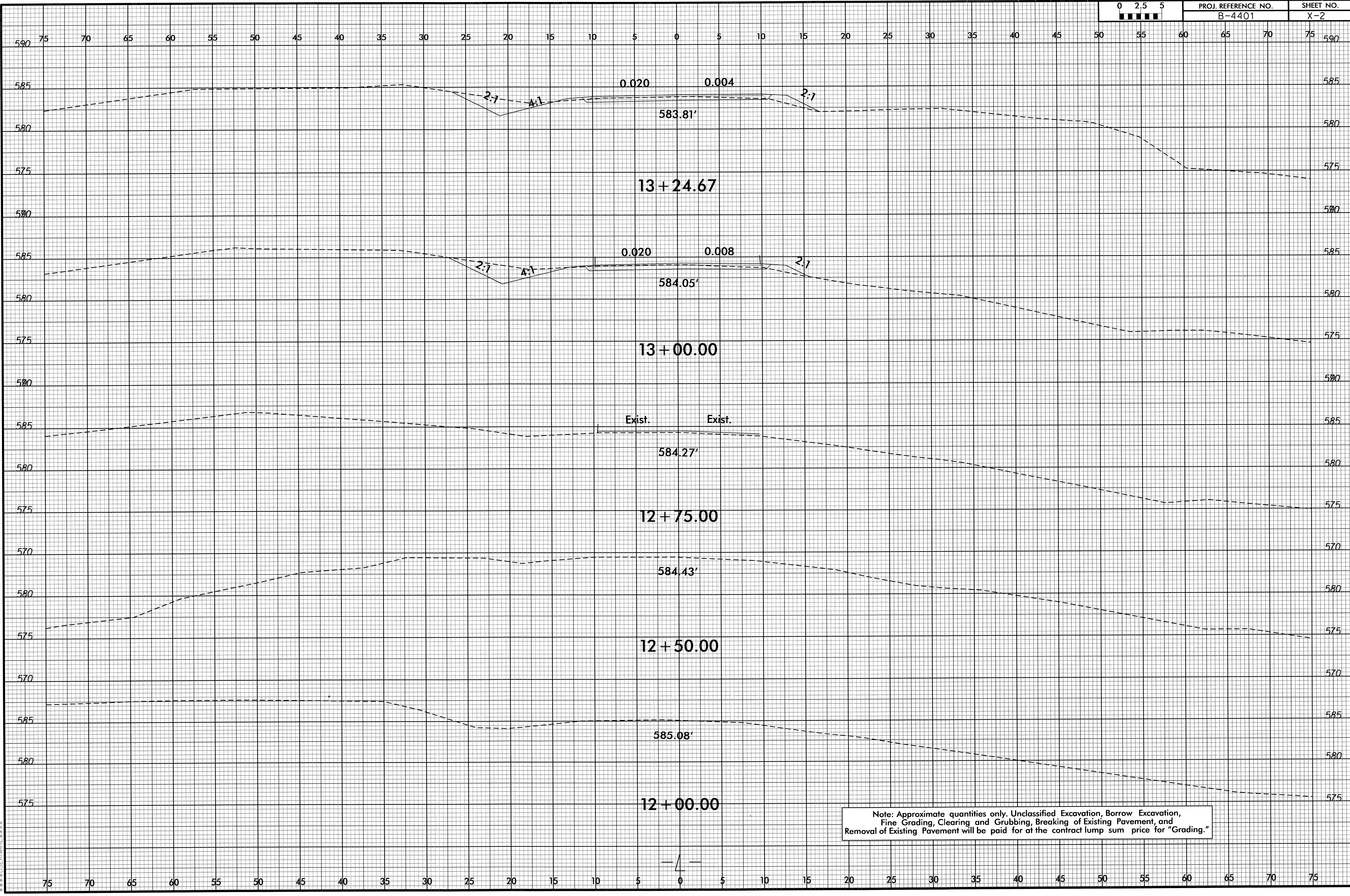




8/23/09



PROJ. REFERENCE NO. B-4401	SHEET NO. X-2
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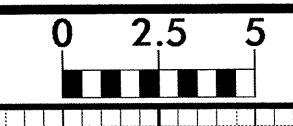


Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

9-AUG-2013 16:06  
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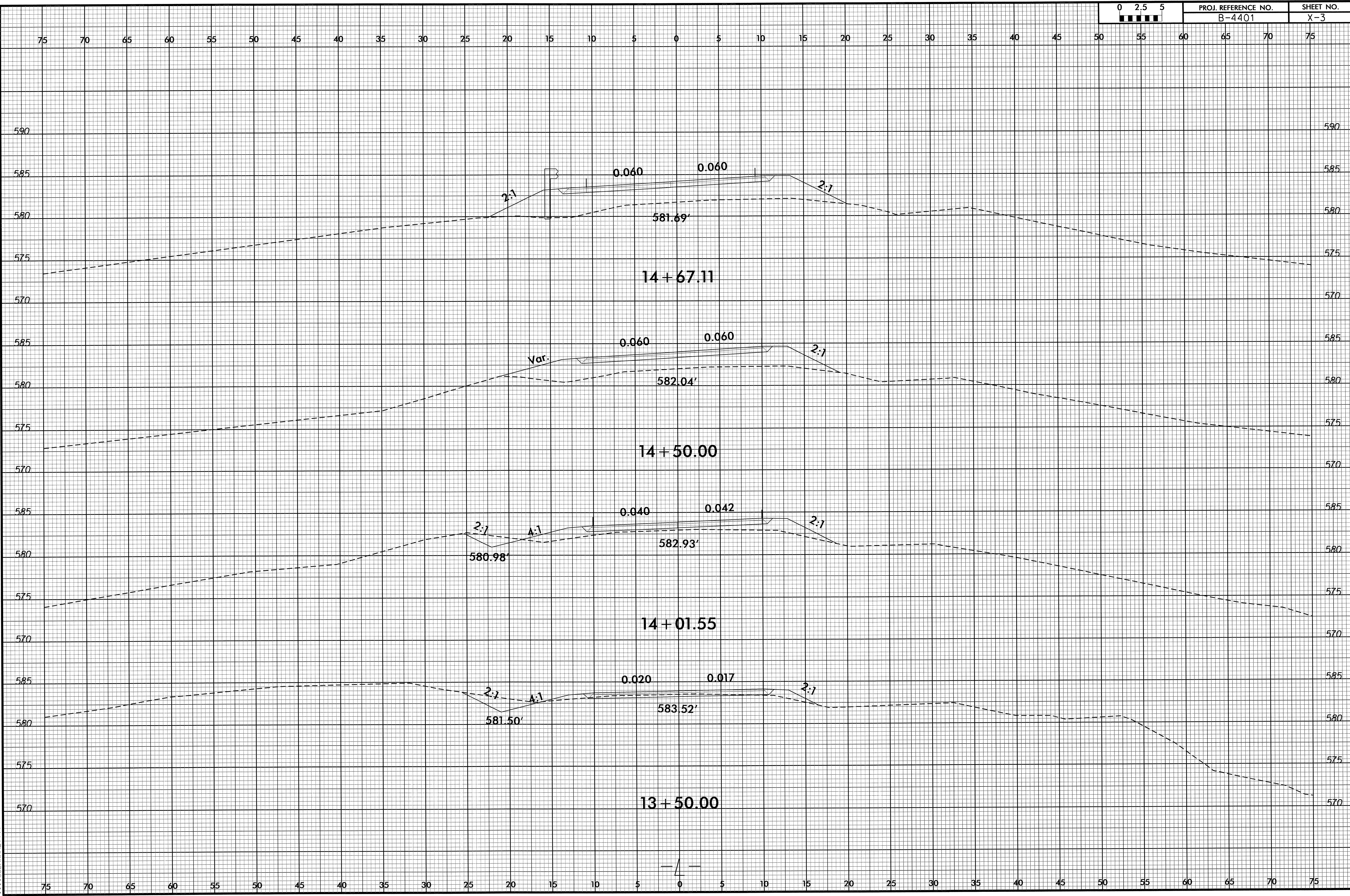


8/23/99



PROJ. REFERENCE NO.  
B-4401

SHEET NO.  
X-3



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\$\$\$\$\$USFRAN\$\$\$\$\$

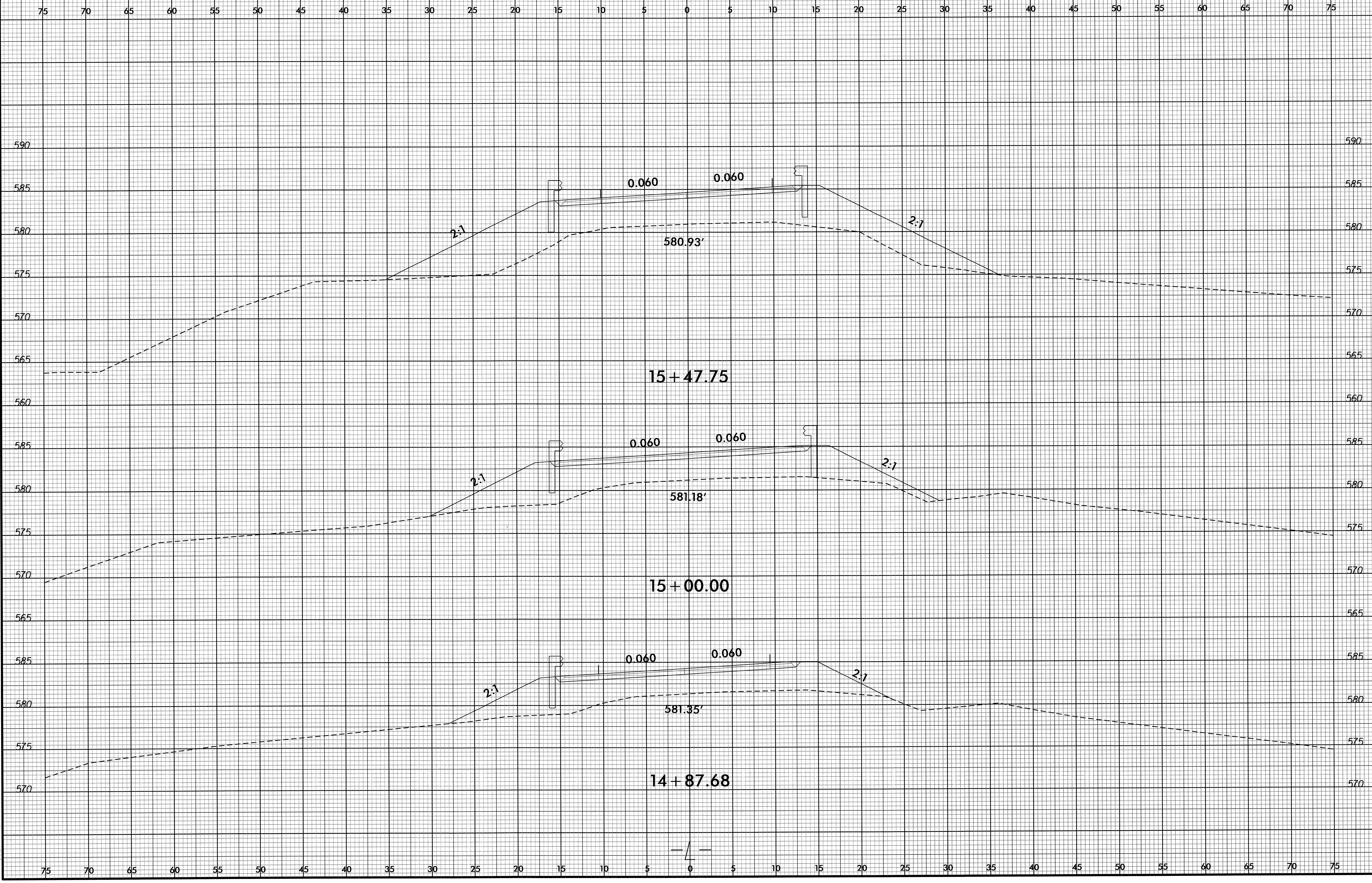


8/23/99



PROJ. REFERENCE NO.  
B-4401

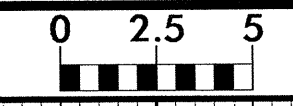
SHEET NO.  
X-4



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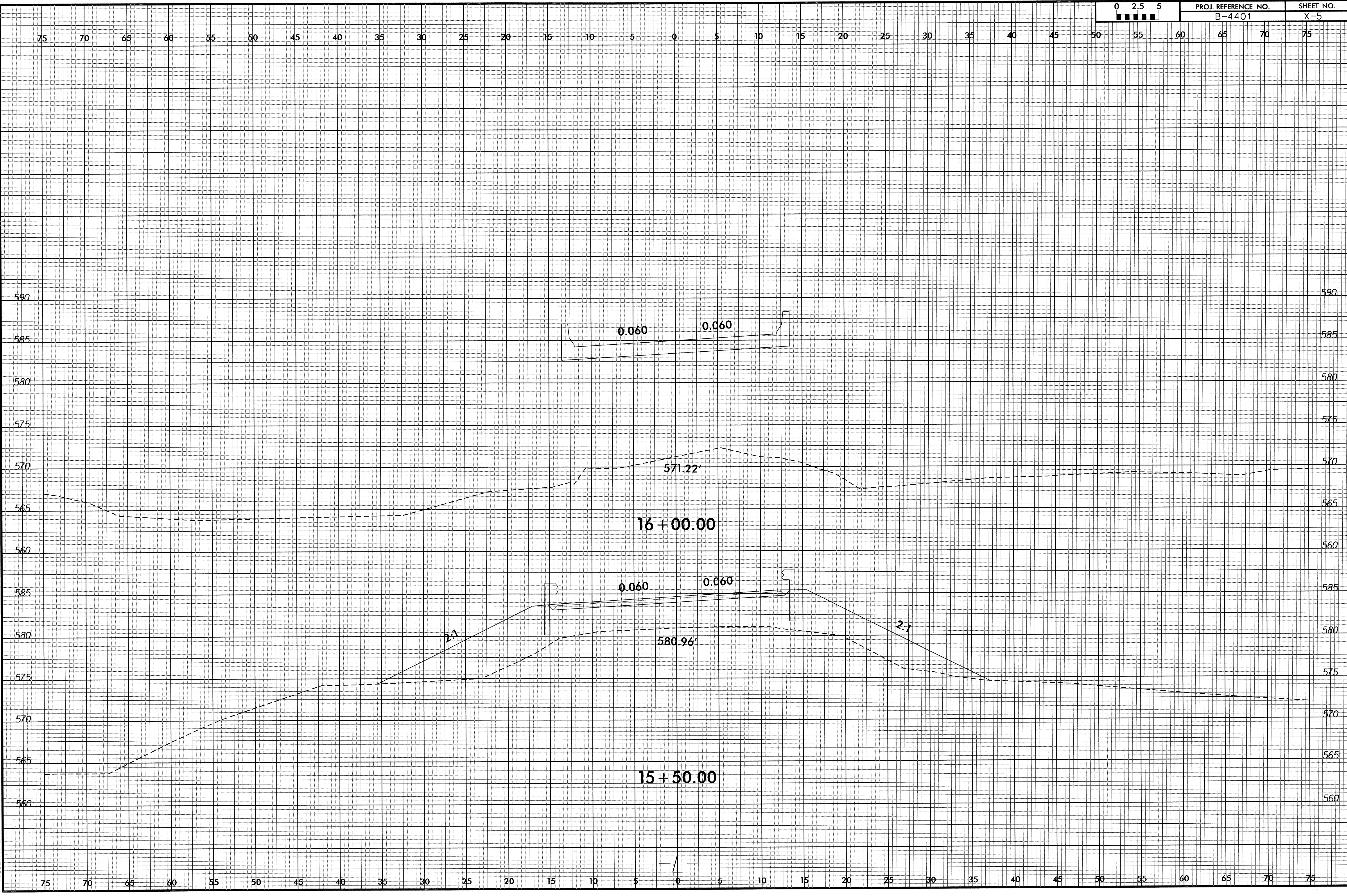


8/23/99



PROJ. REFERENCE NO.  
B-4401

SHEET NO.  
X-5



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575 575

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565 565

560 560

585 585

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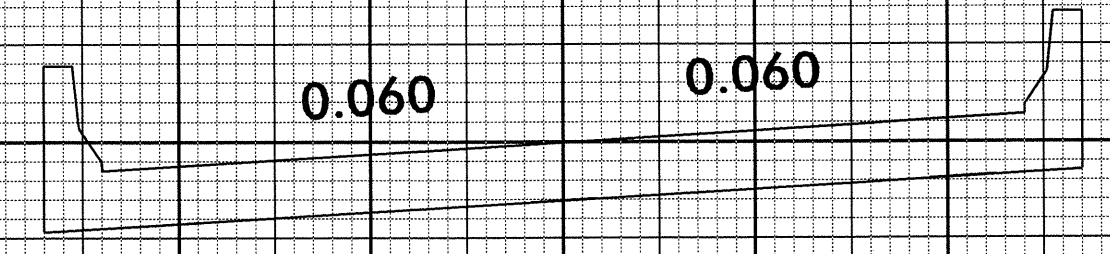
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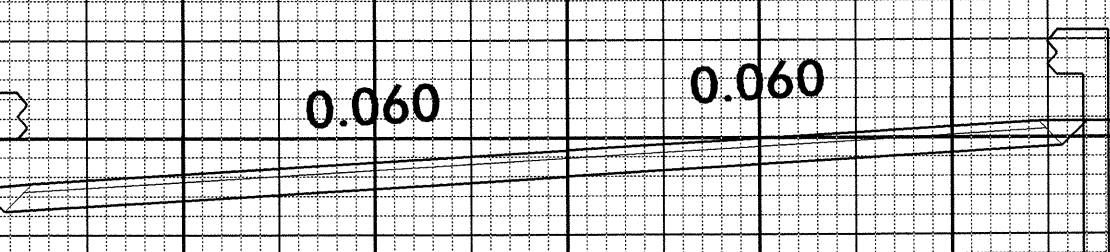
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16 + 00.00



15 + 50.00

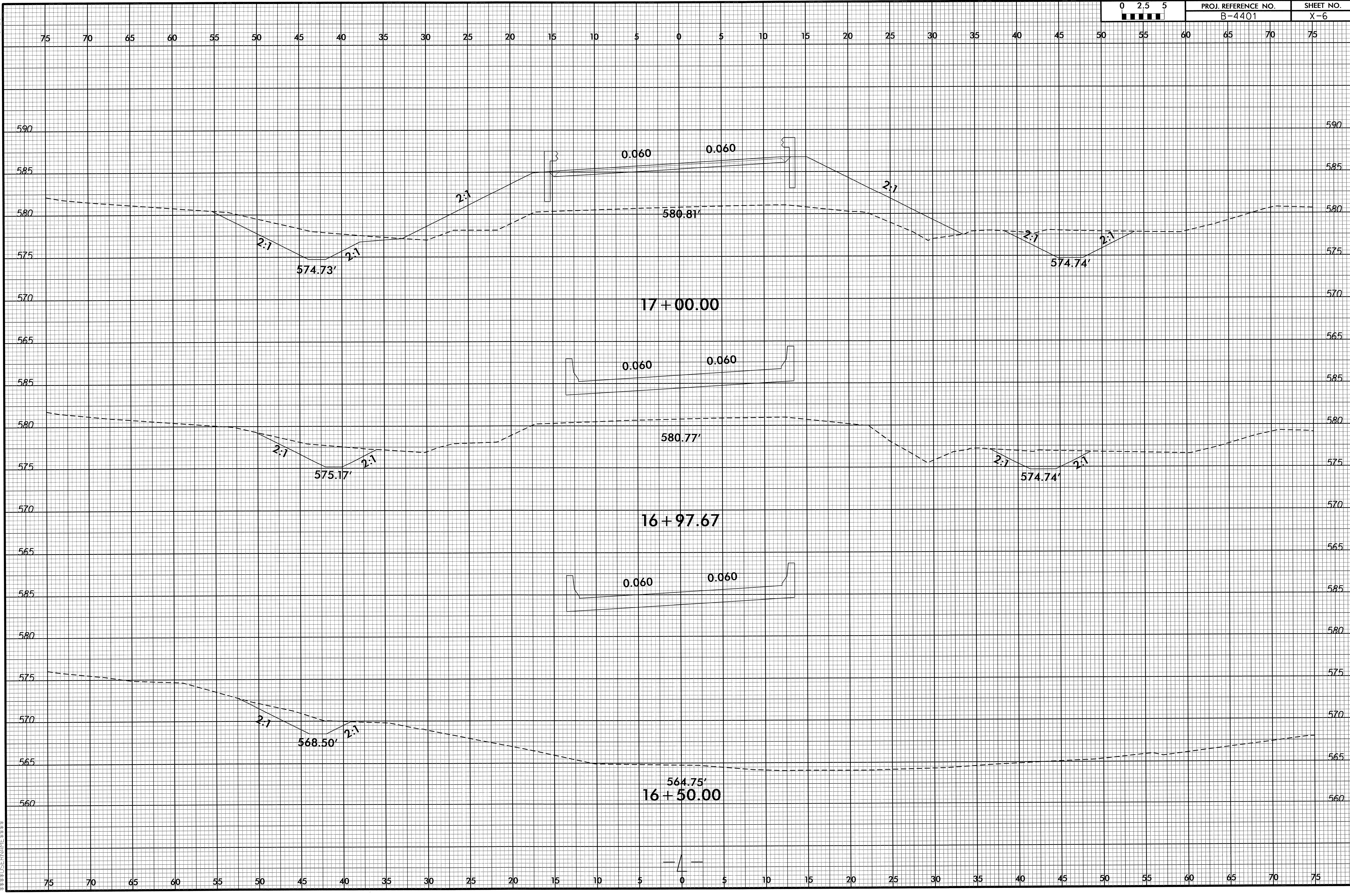
571.22'

580.96'

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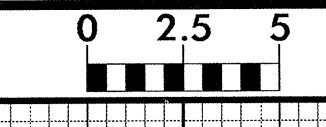
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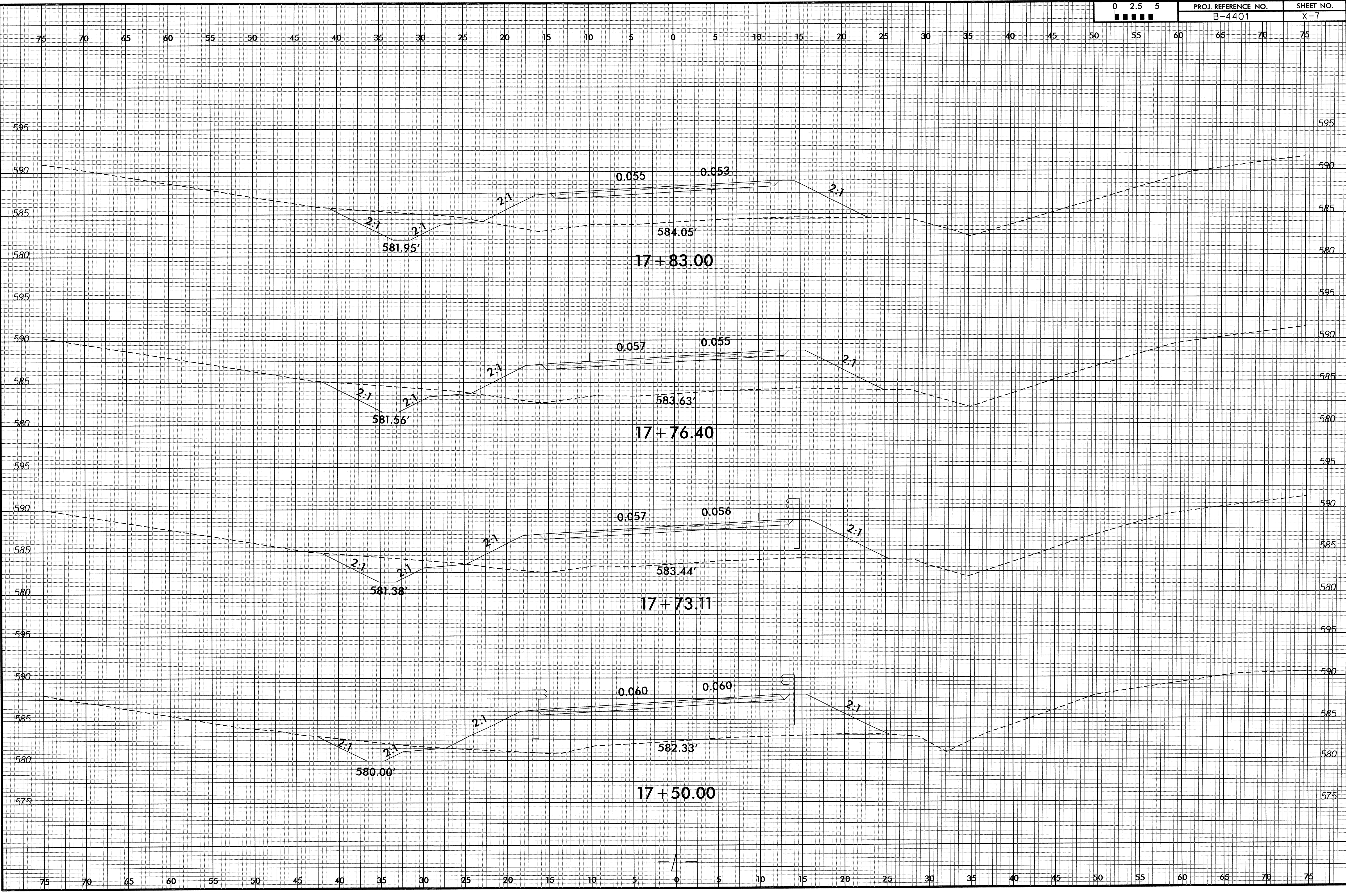
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8/23/99



PROJ. REFERENCE NO.	SHEET NO.
B-4401	X-7



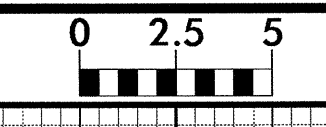
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\$\$\$\$\$USERNAME\$\$\$\$\$



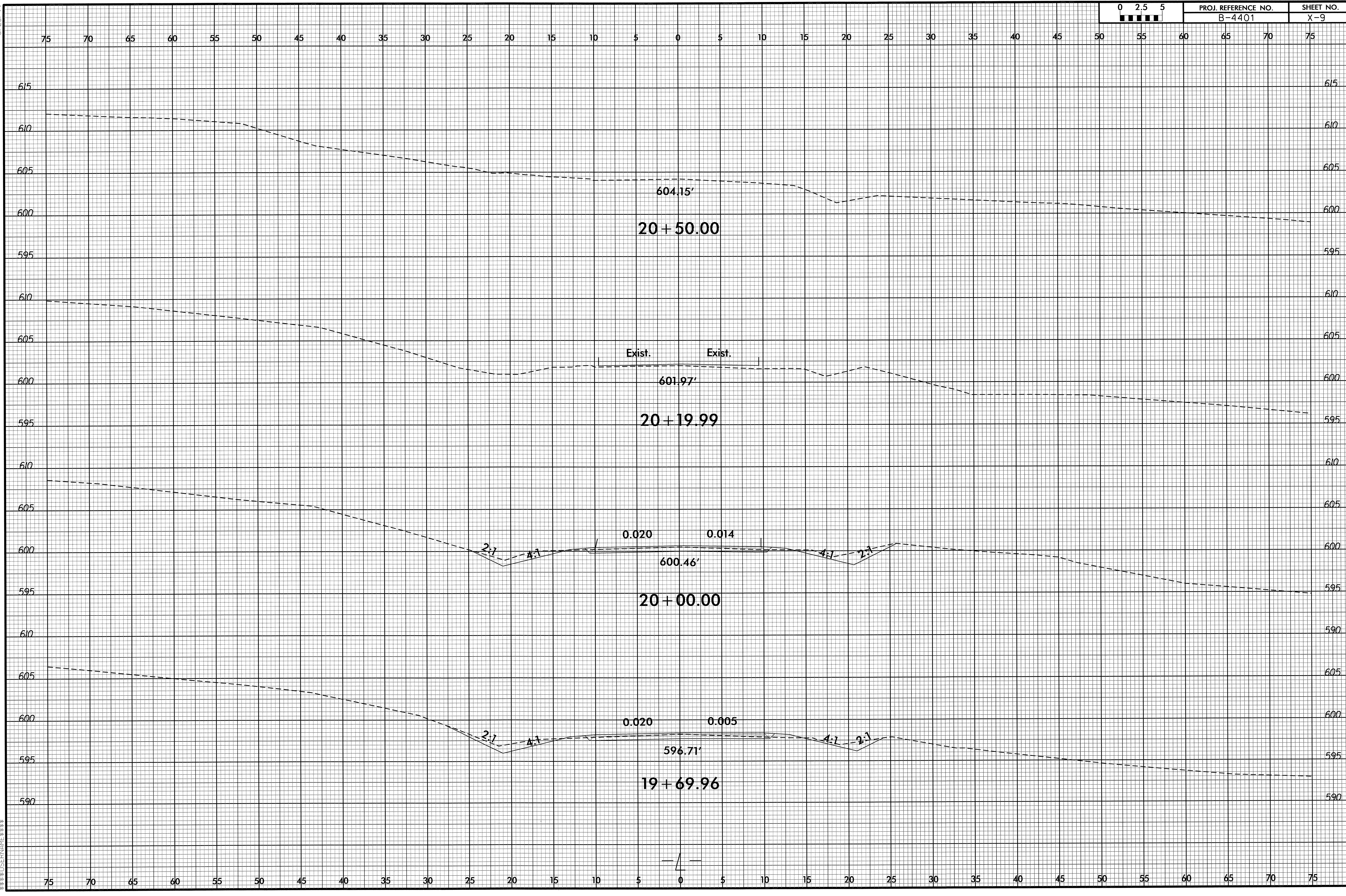




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B-4401	X-9



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