

09/08/99

See Sheet 1-A For Index of Sheets

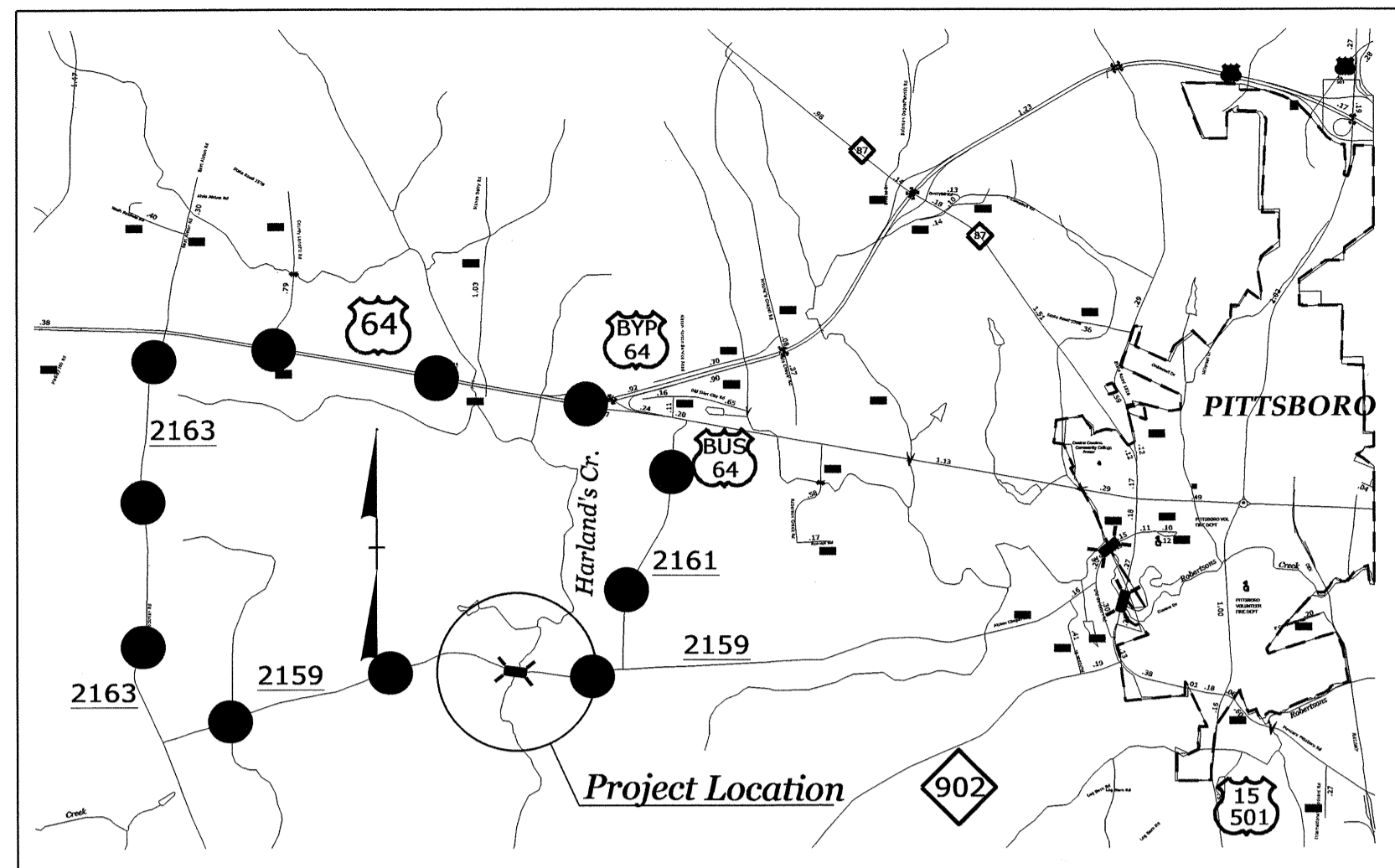
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4731	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38504.1.1	BRZ-2159(1)	PE	
38504.2.1	BRZ-2159(1)	R/W, UTL.	
38504.3.FD1	BRZ-2159(1)	CONSTRUCTION	

Chatham County

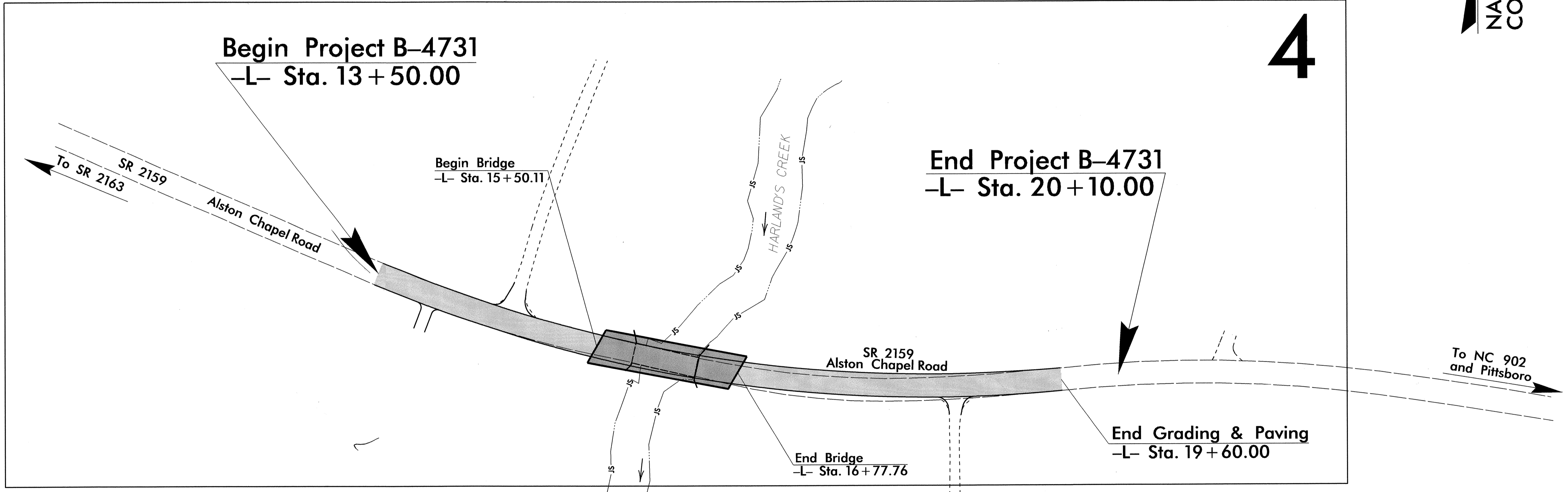
LOCATION: Bridge #129 over Harland's Creek on SR 2159 (Alston Chapel Road)

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



Vicinity Map

●●●●● Offsite Detour Route

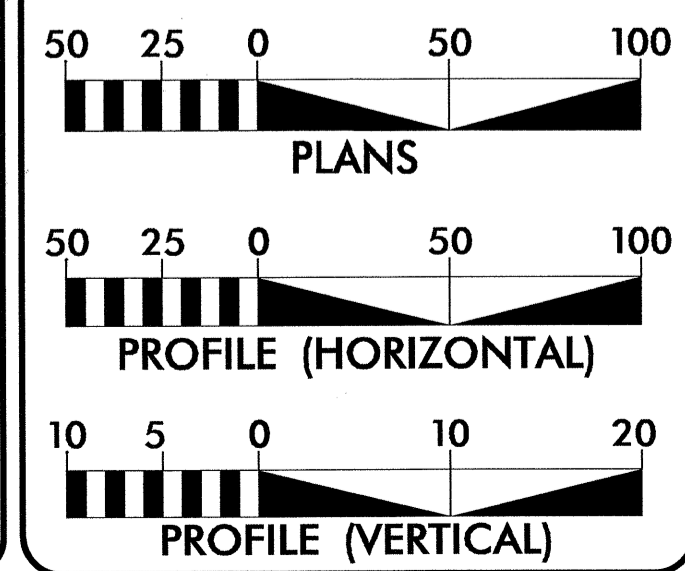


4

NAD 83/
CORS96

Design Exception for Design Speed of 30mph Required

GRAPHIC SCALES



DESIGN DATA

ADT 2014 = 280 vpd
ADT 2035 = 400 vpd
DHV = 10 %
D = 60 %
T = 5 % *
V = 30 MPH
* TTST 2% DUAL 3%
Sub Regional Tier

PROJECT LENGTH

Length Roadway TIP Project B-4731 = 0.101 Miles
Length Structure TIP Project B-4731 = 0.024 Miles
Total Length TIP Project B-4731 = 0.125 Miles

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
July 18, 2012

LETTING DATE:
January 21, 2014

James Speer, PE
PROJECT ENGINEER

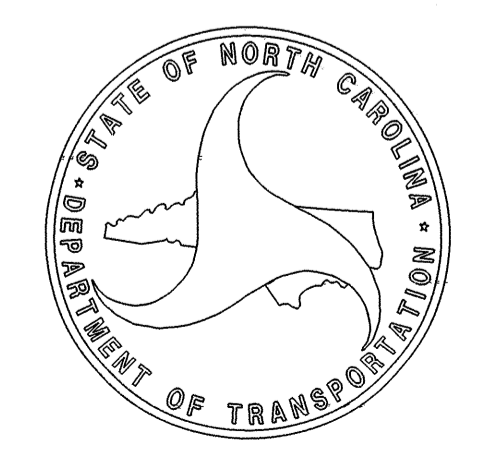
John Lansford, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

James M. Sneed
SIGNATURE: 10-14-13
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18257 JERRY M. SNEED

ROADWAY DESIGN ENGINEER

John C. Lansford
SIGNATURE: 10/14/13
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 15435 JOHN C. LANSFORD



TIP PROJECT: B-4731

CONTRACT: C203297

08-OCT-2013 11:22 R:\Roadway\Projects\B4731\rdy_tsh.dgn \$\$\$USERNAME\$\$\$



SHEET NUMBER	SHEET	INDEX OF SHEETS
1	TITLE SHEET	
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS	
1-B	CONVENTIONAL SYMBOLS	
1-C THRU 1-D	SURVEY CONTROL SHEETS	
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS	
3	SUMMARY OF QUANTITIES	
3A	LIST OF PIPES, ENDWALLS, ETC (FOR PIPES 48" & UNDER) GUARDRAIL SUMMARY, SUMMARY OF EARTHWORK, SHOULDER BERM SUMMARY, AND PAVEMENT REMOVAL SUMMARY	
4	PLAN SHEET	
5	PROFILE SHEET	
TMP-1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS	
PMP-1	PAVEMENT MARKING PLANS	
EC-1 THRU EC-5	EROSION CONTROL PLANS	
SIGN-1 THRU SIGN-2	SIGNING PLANS	
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS	
X-1	CROSS-SECTION SUMMARY SHEET	
X-2 THRU X-8	CROSS-SECTIONS	
S-1 THRU S-28	STRUCTURE PLANS	

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

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

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

SUPERELEVATION:
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 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 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

POWER - CENTRAL EMC

TELEPHONE - CENTURYLINK

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

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

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

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Super-elevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
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 Super-elevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units (Details in Lieu of Standard Drawing as March 2013 Letting)
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

04/16/11

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	----->
Property Monument	□ ECM
Parcel/Sequence Number	(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	○ 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	○
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	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-

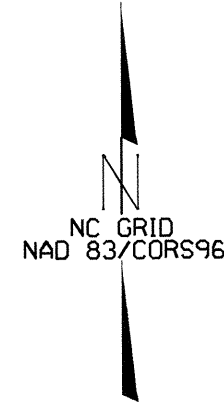
MISCELLANEOUS:

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.	□
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.

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4731	1C
Location and Surveys	

SURVEY CONTROL SHEET B-4731



LOCALIZED PROJECT COORDINATES
 -L- STA. 13+50.00 BEGIN TIP PROJECT B-4731
 N = 712690.6675
 E = 1927453.2846

LOCALIZED PROJECT COORDINATES
 -L- STA. 20+10.00 END TIP PROJECT B-4731
 N = 712601.9899
 E = 1928099.9209

NCDOT BASELINE STATION "BL-101"
 LOCALIZED PROJECT COORDINATES
 N = 712816.8340
 E = 1927125.9450

NCDOT BASELINE STATION "BL-104"
 LOCALIZED PROJECT COORDINATES
 N = 712617.5240
 E = 1928244.8660

NCDOT GPS STATION "B4731-2"
 LOCALIZED PROJECT COORDINATES
 N = 712555.7573
 E = 1928662.4501

NCDOT GPS STATION "B4731-1"
 LOCALIZED PROJECT COORDINATES
 N = 712640.8160
 E = 1927543.0380

NCDOT BASELINE STATION "BL-103"
 LOCALIZED PROJECT COORDINATES
 N = 712592.2570
 E = 1927747.1990

BM2 ELEVATION = 431.0
 N 712530 E 1928541
 BL STATION 19+66.00 43' RIGHT
 RR SPIKE IN BASE OF POWER POLE

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4731-1" WITH NAD 83/CORS96 STATE PLANE GRID COORDINATES OF NORTHING: 712640.816(±) EASTING: 1927543.038(±) ELEVATION: 408.871(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988948 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4731-1" TO -L- STATION 13+50.00 IS N 60° 57' 03.7" W 102.669' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRCONSTRCT/HGHWAY/LOCATION/PROJECT](http://www.ncdot.org/doh/prconstrct/hghway/location/project)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4731_LS_CONTROL.TXT
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL-101		712816.8340	1927125.9450	430.32		OUTSIDE PROJECT LIMITS
GPS1	B4731-1	712640.8160	1927543.0380	408.89	18+98.76	15.19 RT
BL-103		712592.2570	1927747.1990	404.75	18+50.53	14.96 RT
BL-104		712617.5240	1928244.8660	425.22	21+04.14	15.56 LT
GPS2	B4731-2	712555.7573	1928662.4501	431.29		OUTSIDE PROJECT LIMITS

BM1 ELEVATION = 402.09
 N 710862 E 1927786
 L STATION 16+68.00 59' LEFT
 RR SPIKE IN BASE OF 15 INCH ELW

BM2 ELEVATION = 431.10
 N 712530 E 1928541
 L STATION 18+08.00
 S 77° 07' 5.62" E DIST 1448.22
 RR SPIKE IN BASE OF POWER POLE

NOTE: DRAWING NOT TO SCALE

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SURVEY CONTROL SHEET B-4731

FINAL

TYPE	STATION	NORTH	EAST
POT	10+00.00	712630.6304	1927132.4812
PC	12+28.64	712738.1689	1927341.6161
PT	13+70.14	712691.0982	1927471.9446
PC	13+80.74	712670.1240	1927481.7778
PT	19+42.89	712596.9904	1928033.0030
PC	19+80.66	712595.9939	1928070.6523
PT	22+09.52	712587.1563	1928378.4846
POT	24+34.00	712563.5645	1928521.6428

ROW MARKER CONCRETE OR GRANITE - E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	13+50.00	-30.00	712718.4367	1927464.6367
L	13+50.00	30.00	712662.8982	1927441.9325
L	13+70.14	-30.00	712710.9123	1927483.1685
L	13+70.14	30.00	712695.2681	1927468.7238
L	13+80.74	30.00	712661.3019	1927470.5560
L	13+80.74	-30.00	712706.9462	1927492.9997
L	14+25.00	-50.00	712710.7774	1927535.8921
L	14+25.00	-25.84	712691.7784	1927533.1757
L	14+50.00	50.00	712688.0731	1927531.1885
L	14+50.00	30.00	712626.9845	1927537.4415
L	15+00.00	-50.00	712674.3743	1927604.1389
L	15+50.00	65.00	712644.1596	1927738.8220
L	17+25.00	-50.00	712648.6146	1927828.2298
L	17+75.00	50.00	712645.1869	1927862.4300
L	18+50.00	40.00	712653.0849	1927940.3916
L	18+50.00	33.01	712660.0729	1927940.3685
L	18+75.00	-26.18	712621.0219	1927964.5141
L	18+75.00	-50.00	712643.4338	1927963.9751
L	19+42.89	-30.00	712626.8951	1928030.6152
L	19+42.89	30.00	712667.0854	1928035.3888
L	19+80.66	30.00	712670.0930	1928171.0300
L	19+80.66	-30.00	712629.8989	1928088.2665
L	20+18.00	30.00	712572.0378	1928181.6178
L	20+18.00	-30.00	712631.9415	1928098.2248

ROW MARKER PERMANENT EASEMENT - E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	15+96.53	37.62	712661.4150	1927676.9146
L	15+96.82	63.26	712655.8325	1927676.0871
L	17+25.00	70.00	712529.1758	1927808.6373
L	20+18.00	45.00	712557.0618	1928182.4651

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4731-1"

WITH NAD 83/CORS96 STATE PLANE GRID COORDINATES OF NORTHING: 712640.816(fft) EASTING: 1927543.038(fft) ELEVATION: 408.877(fft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988948

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4731-1" TO -L- STATION 13+50.00 IS N 60° 51' 03.7" W 102.669'

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

NOTES:

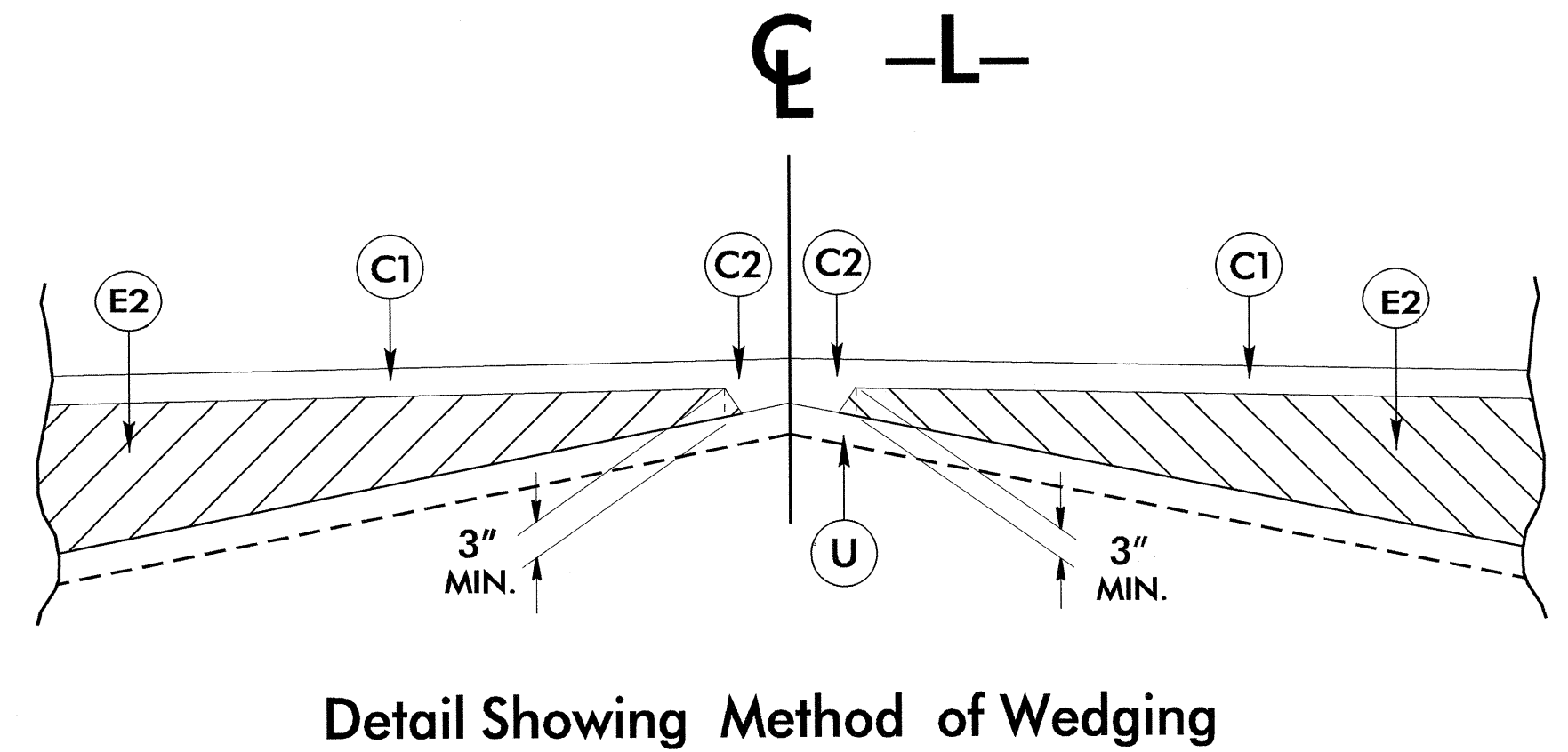
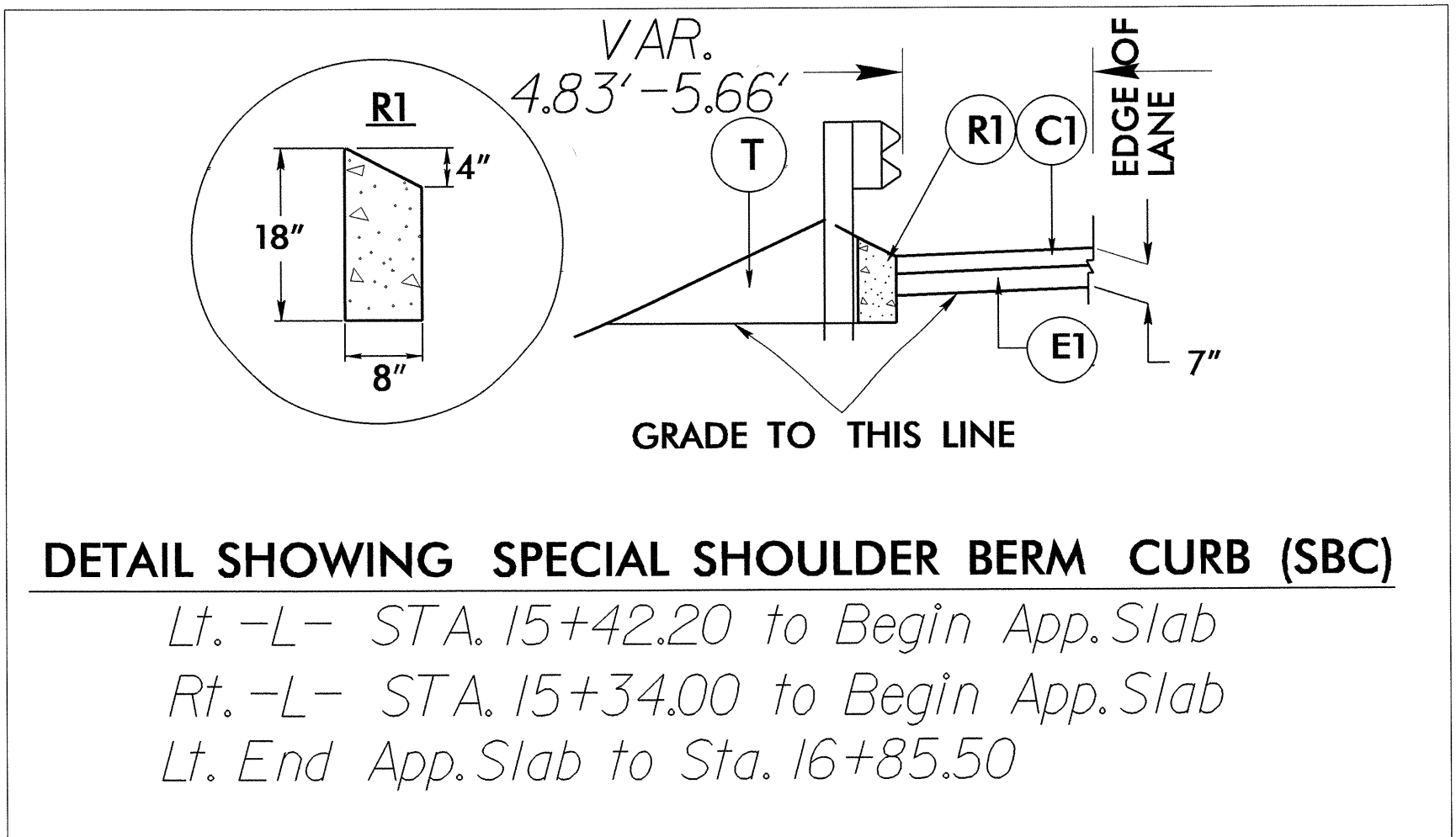
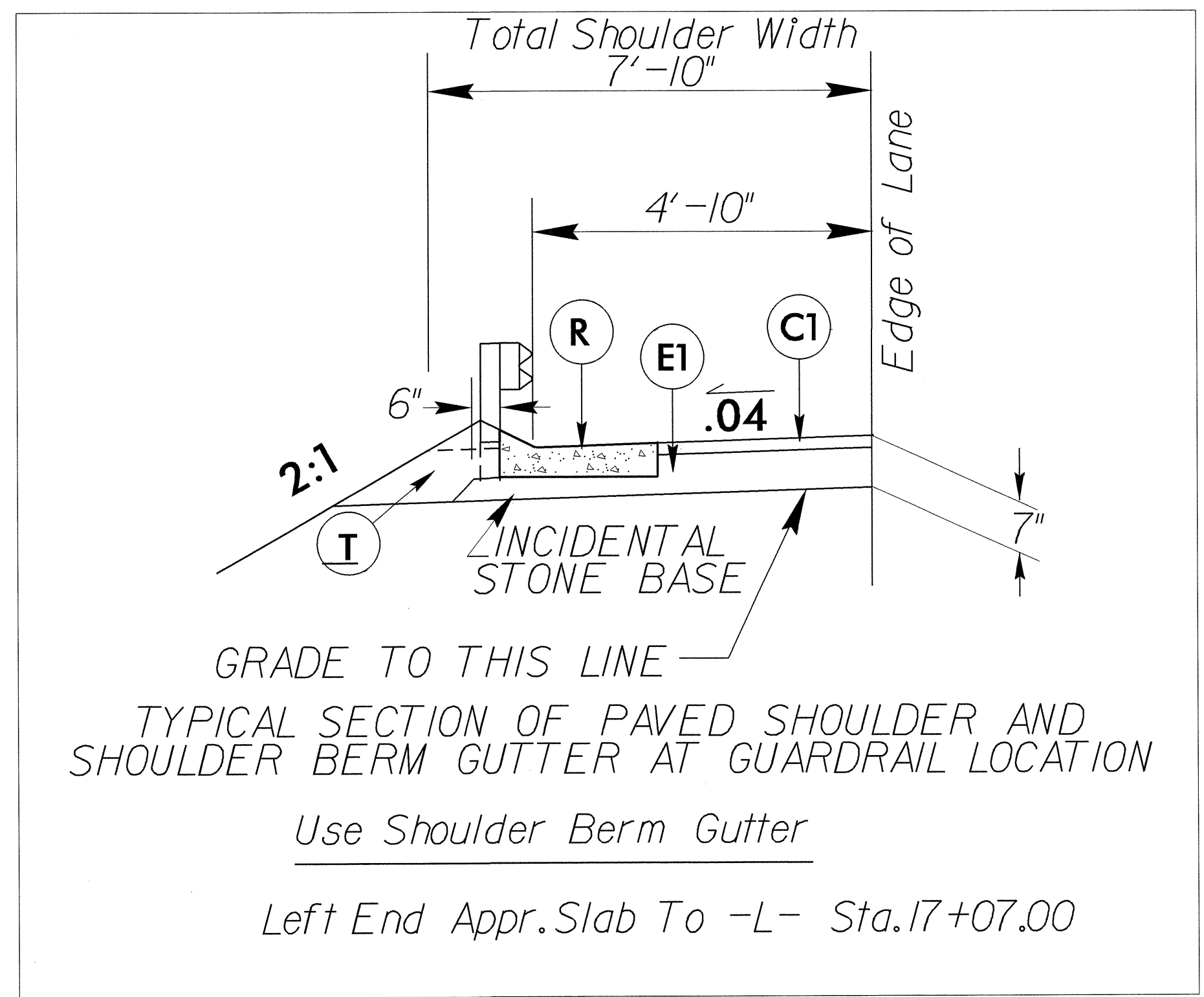
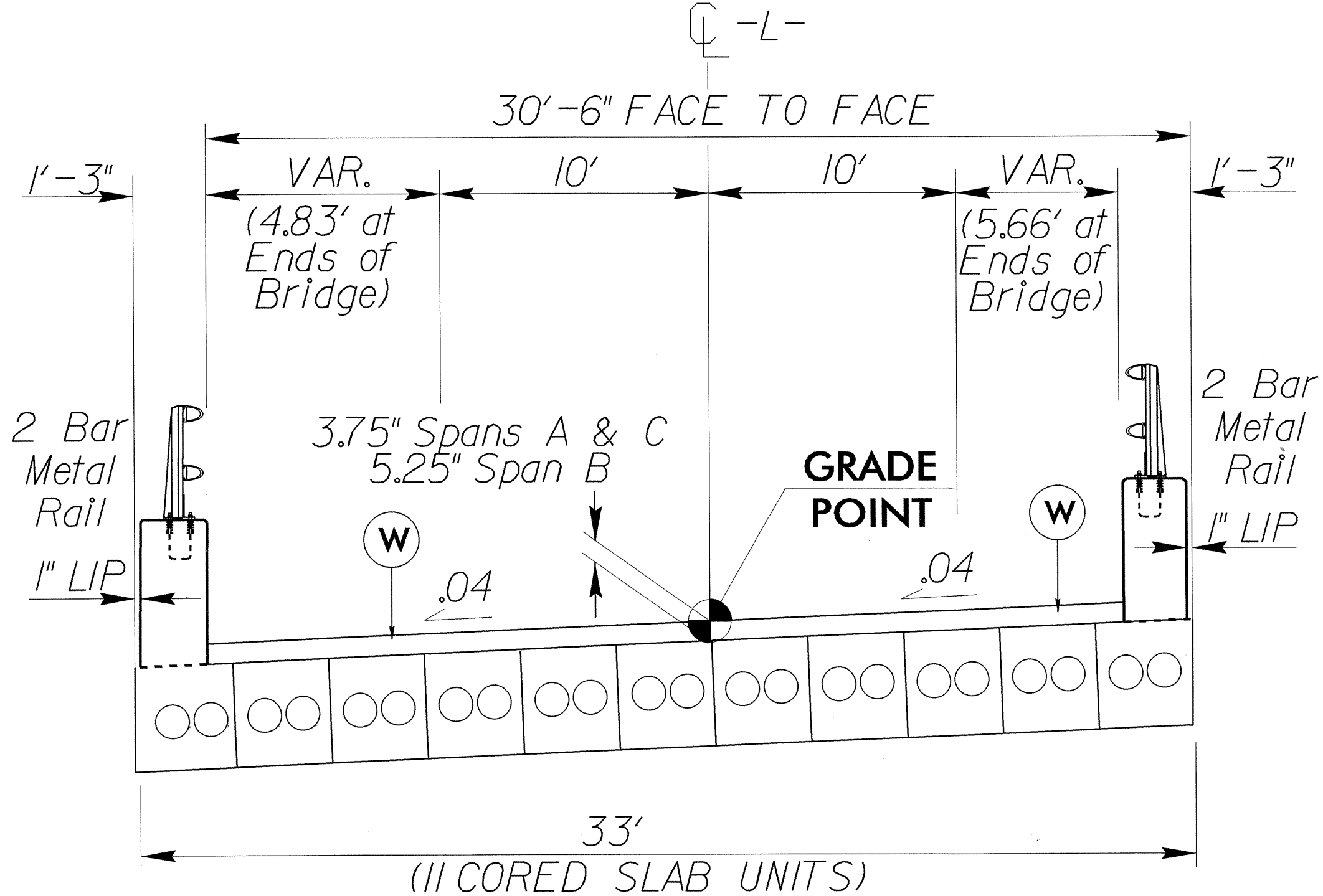
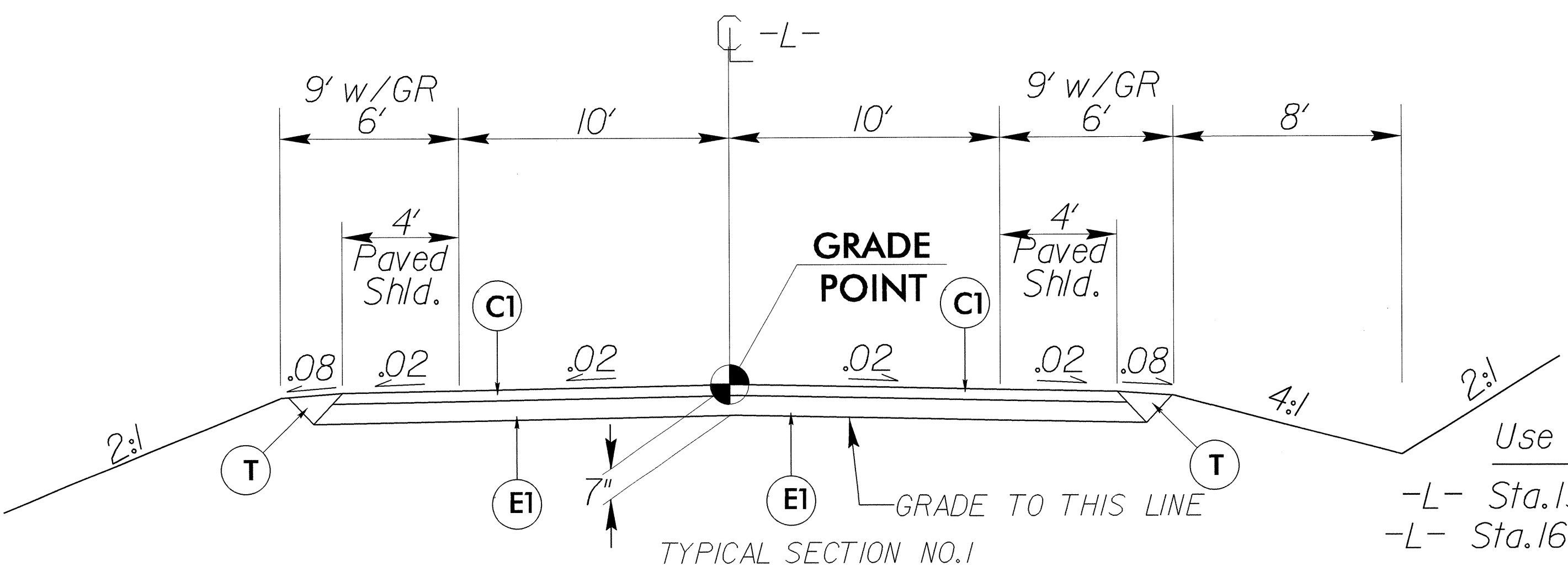
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[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCTION/HIGHWAY/LOCATION/PROJECT/B4731_LS_CONTROL.TXT](http://www.ncdot.org/doh/preconstruction/highway/location/project/b4731_ls_control.txt)
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B4731_LS_CONTROL.TXT
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- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

6/12/09
RD261647 10/28/2013 b4731 ls 1f jlsnsford RD-Oce860-34

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2.5" 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 1½" IN DEPTH.
E1	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 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.
R1	SPECIAL SHOULDER BERM CURB
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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



5/14/99
10 OCT 2013 14:21 \\b4731_rdy_typ.dgn

12/06/07

COMPUTED BY: AEV DATE: 1/19/2012
 CHECKED BY: JAW DATE: 10/12/2013

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. B-4731
 SHEET NO. 3-A

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

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."

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK + %	BORROW CY	WASTE CY
13 + 50.00	15 + 50.11 (BRG)	168	593	425	
SUBTOTAL:		168	593	425	
16 + 77.76 (BRG)	19 + 60.00	111	638	527	
SUBTOTAL:		111	638	527	
TOTALS:		279	1231	952	
PROJECT TOTALS:		279	1231	952	
EST. 5% TO REPLACE TOPSOIL ON BORROW PITS				48	
GRAND TOTALS:		279	1231	1000	
SAY:		300		1050	

CONTINGENCY UNDERCUT = 200 CY
 DDE = 415 CY

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKING
-L-	13 + 50.00	14 + 75.00	CL	276	
-L-	15 + 39.00	15 + 83.77	CL	85	
-L-	16 + 40.22	16 + 88.00	CL	87	
-L-	18 + 00.00	19 + 60.00	CL	348	
-L-	14 + 75.00	15 + 39.00	CL		136
-L-	16 + 88.00	18 + 00.00	CL		243
TOTAL:				796	379
SAY:				800	400

SHOULDER BERM SUMMARY

SURVEY LINE	STATION	STATION	SHLD. BERM GUTTER FT	SHLD. BERM CURB FT
-L- LT	15 + 37.50	APP. SLAB		5'
-L- RT	15 + 29.00	APP. SLAB		5'
-L- LT	16 + 93.00	17 + 07.00	14'	
-L- RT	APP. SLAB	16 + 88.00		5'
TOTAL:			14'	15'
SAY:			15'	15'

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specification For Roads and Structures, Section 300-5".

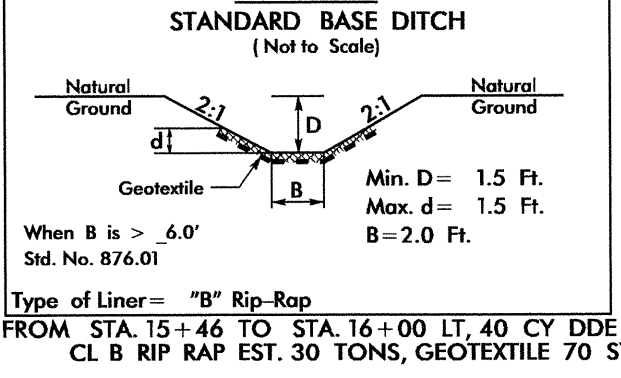
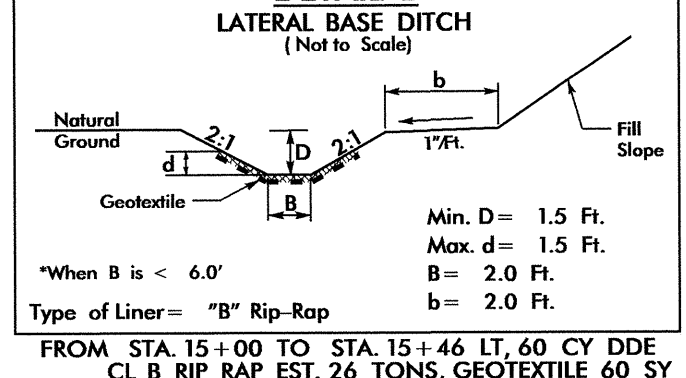
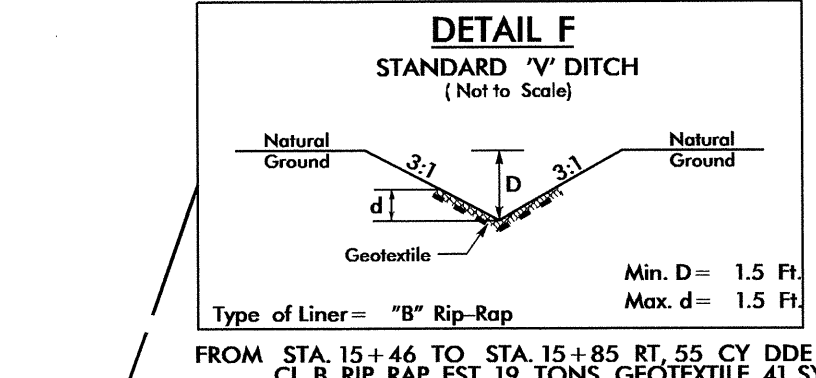
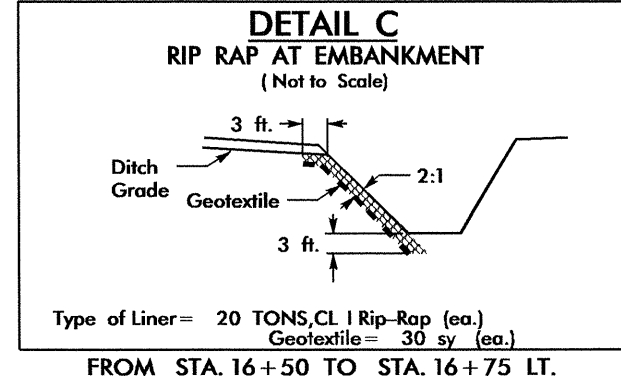
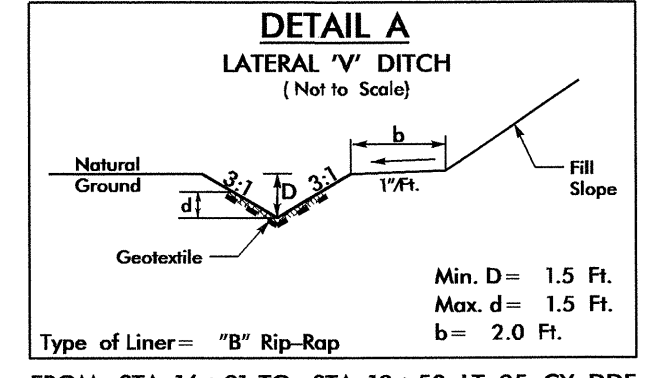
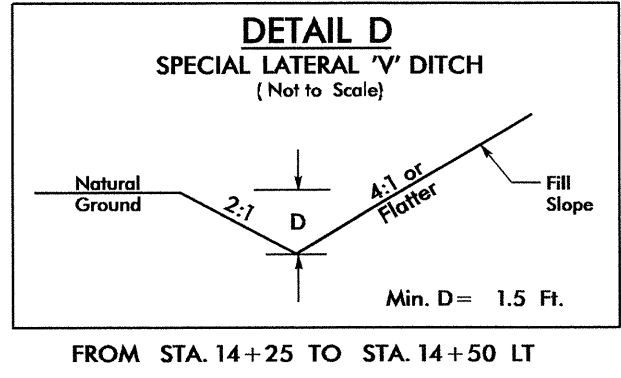
STATION	SIZE	THICKNESS OR GAUGE	LOCATION (LT, RT, OR CL)	STRUCTURE NO.	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)				C.S. PIPE				R.C. PIPE CLASS III				ENDWALLS	FRAME, GRATES AND HOOD STANDARD 840.03	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUS C.Y. STD. 840.71	PIPE REMOVAL LIN. FT.	ABBREVIATIONS	REMARKS							
									12"	15"	18"	24"	12"	15"	18"	24"	30"	36"	42"	48"									12"	15"	18"	24"	30"	36"	42"
-L- 17+05	LT		0401		407.1	404.1																													
	LT		0401	0402		404.1	402.8																												
-L- 14+75	LT		0403			407.2	404.7																												
-L- 18+65	RT		0404			410.0	409.0																												
-L- 14+00	RT		0405																																
TOTAL										16'																									

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

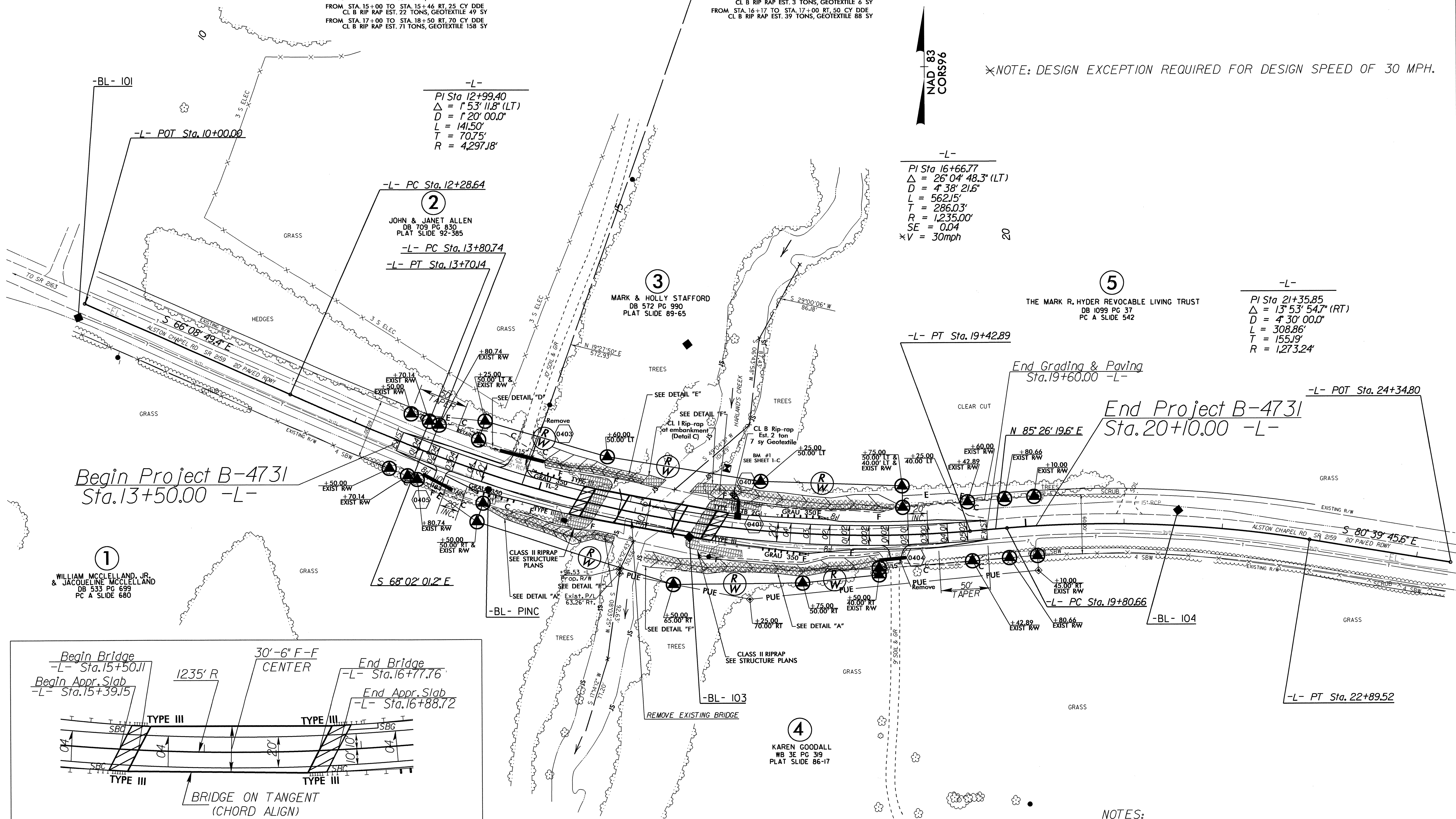
SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS								
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	XI MOD	TYPE III	GRAU 350 TL-3	GRAU 350 TL-2	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG													
-L-	13 + 34	15 + 46 (BRIDGE)	RT	112.5'					9'	93.75'		1.88'																									
-L-	14 + 84	15 + 56 (BRIDGE)	LT						9'		50'																										
-L-	16 + 70 (BRIDGE)	17 + 82	RT	112.5'					9'	93.75'		1.88'																									
-L-	16 + 82 (BRIDGE)	17 + 94	LT	112.5'					9'	93.75'		1.88'																									
TOTAL				405.75'																																	
3 350 TL-3 @ 50'				-150'																																	
4 TYPE III @ 18.75'				-75'																																	
1 350 TL-2 @ 25'				-25'																																	
PROJECT TOTAL				155.75'																																	
SAY				175'																																	
ADDITIONAL GUARDRAIL POSTS: 5 EACH																																					

10-OCT-2013 15:27 b-4731-rdy-sum.dgn



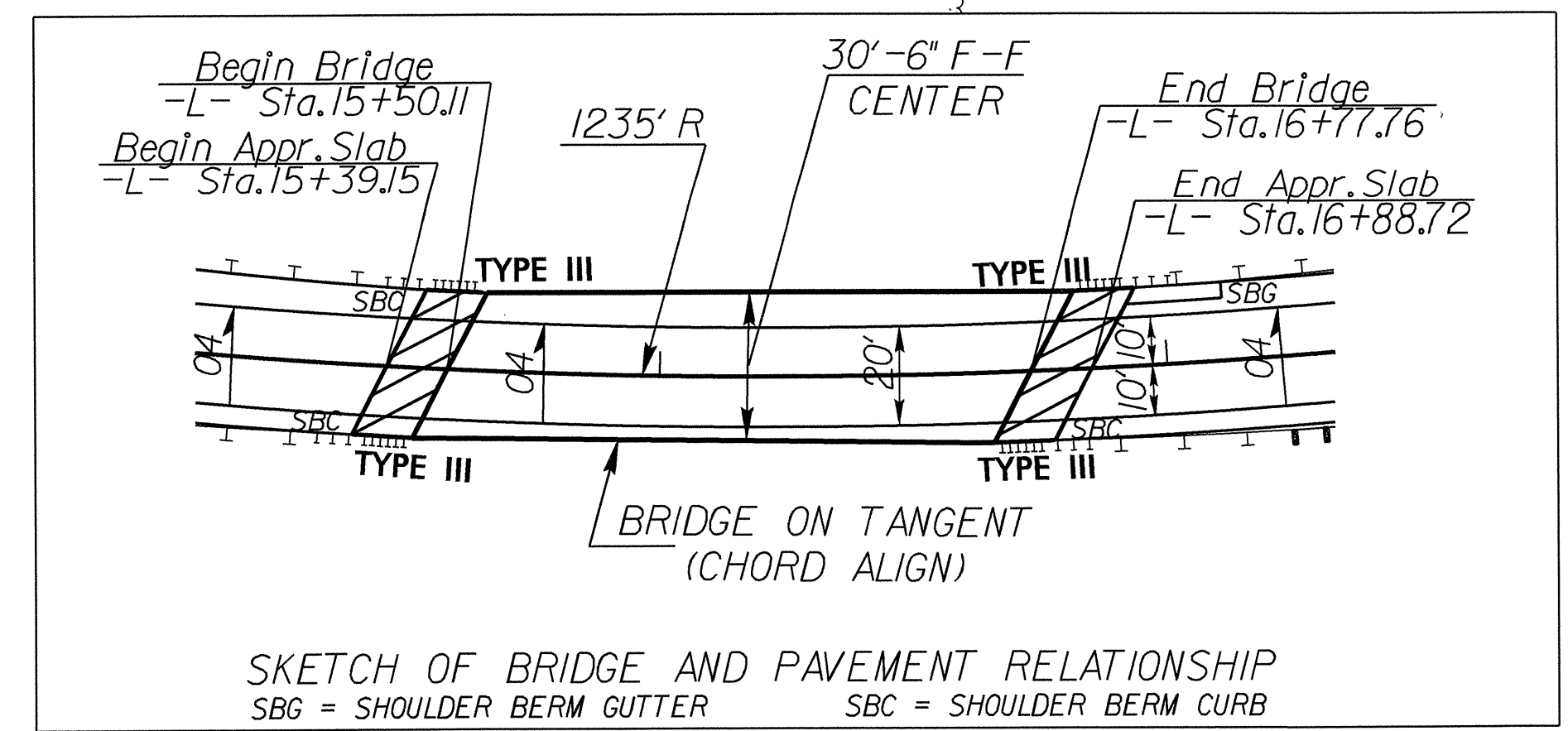
NAD 83
CORS96

*NOTE: DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED OF 30 MPH.



Begin Project B-4731
Sta. 13+50.00 -L-

End Project B-4731
Sta. 20+10.00 -L-



NOTES:
SEE SHEET 5 FOR -L- PROFILE
SEE SHEETS S-1 THRU S-28 FOR STRUCTURE PLANS
SEE SHEET 3-A FOR SHOULDER BERM SUMMARY

REVISIONS

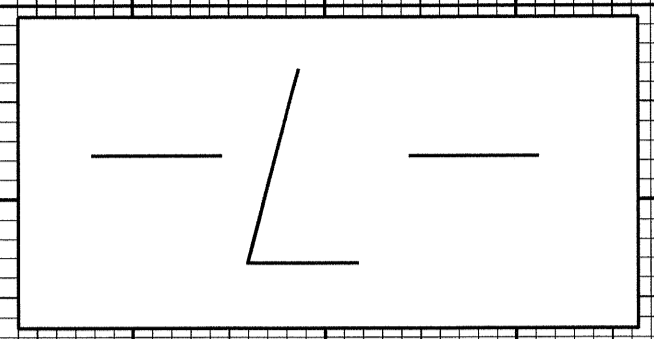
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08-OCT-2013 14:23
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5/14/99

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE = 2400 CFS
 DESIGN FREQUENCY = 25 YRS
 DESIGN HW ELEVATION = 403.3 FT
 BASE DISCHARGE = 3424 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 404.6 FT
 OVERTOPPING DISCHARGE = 8900 CFS
 OVERTOPPING FREQUENCY = 500 YRS
 OVERTOPPING ELEVATION = 409.6 FT

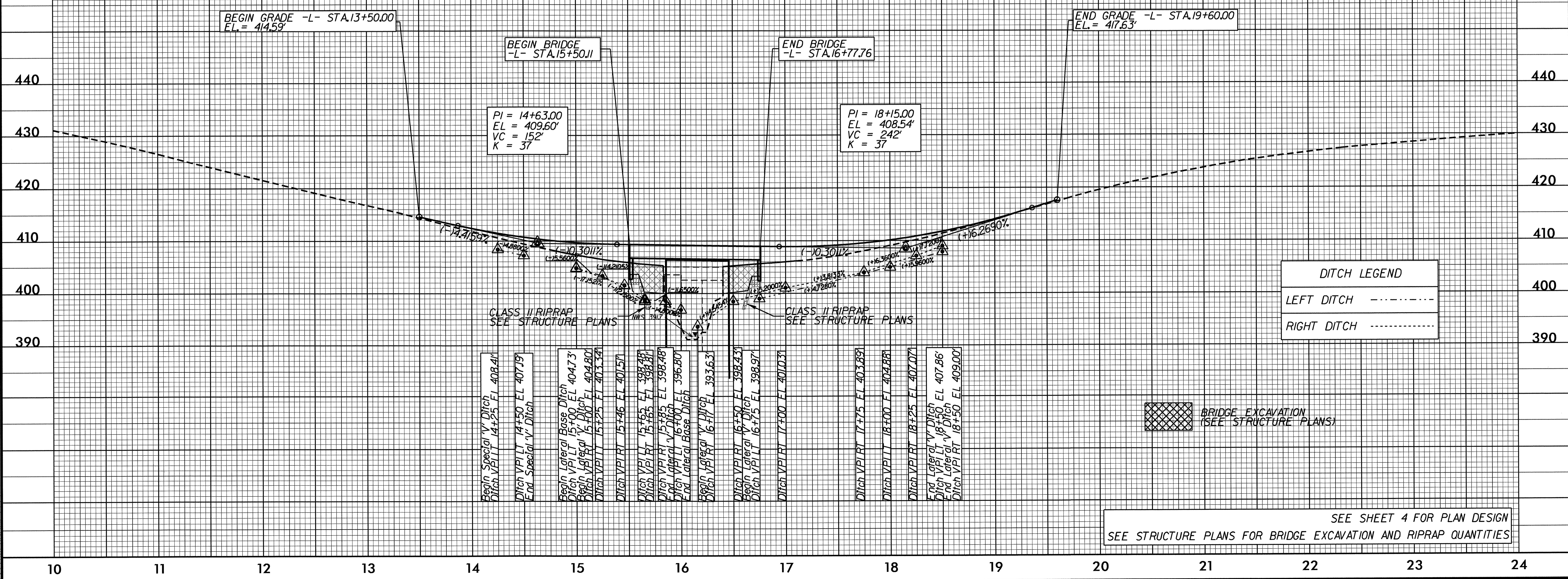
DATE OF SURVEY = 5/31/2012
 W.S. ELEVATION AT DATE OF SURVEY = 391.7 FT



NOTE: DESIGN EXCEPTION REQUIRED FOR A DESIGN SPEED OF 30MPH.

BMI ELEVATION = 402.09'
 N 712662 E 1927786
 -L- STATION 16+88.59 LT
 RR SPIKE IN BASE OF 15' ELM

± 16+13.50 -L-
 1036'-2 3/4" (2" depth), 1060'-1 1/2" (24" depth), 1031'-2 3/4" (2" depth) - CORED SLAB
 SKEW = 105°



BEGIN BRIDGE
-L- STA. 15+50.11

END BRIDGE
-L- STA. 16+77.76

BEGIN GRADE -L- STA. 13+50.00
EL = 414.59'

END GRADE -L- STA. 19+60.00
EL = 417.63'

PI = 14+63.00
EL = 409.60'
VC = 152'
K = 37

PI = 18+15.00
EL = 408.54'
VC = 242'
K = 37

DITCH LEGEND

LEFT DITCH - - - - -

RIGHT DITCH - - - - -

- Begin Special V Ditch
Ditch VPI LT 14+25 EL 408.41'
- Ditch VPI LT 14+50 EL 407.19'
- End Special V Ditch
- Begin Lateral Base Ditch
Ditch VPI LT 15+00 EL 404.73'
- Begin Lateral V Ditch
Ditch VPI LT 15+00 EL 404.80'
- Ditch VPI LT 15+25 EL 403.32'
- Ditch VPI RT 15+46 EL 401.57'
- Ditch VPI RT 15+65 EL 398.78'
- Ditch VPI RT 15+65 EL 398.81'
- Ditch VPI RT 15+85 EL 398.48'
- End Lateral V Ditch
Ditch VPI LT 16+00 EL 396.80'
- Begin Lateral Base Ditch
Ditch VPI RT 16+17 EL 393.63'
- Ditch VPI RT 16+30 EL 398.43'
- Ditch VPI LT 16+75 EL 398.97'
- Ditch VPI RT 17+00 EL 401.03'
- Ditch VPI RT 17+15 EL 403.89'
- Ditch VPI LT 18+00 EL 404.88'
- Ditch VPI RT 18+25 EL 407.07'
- End Lateral V Ditch
Ditch VPI LT 18+50 EL 407.86'
- End Lateral V Ditch
Ditch VPI RT 18+50 EL 409.00'

BRIDGE EXCAVATION
(SEE STRUCTURE PLANS)

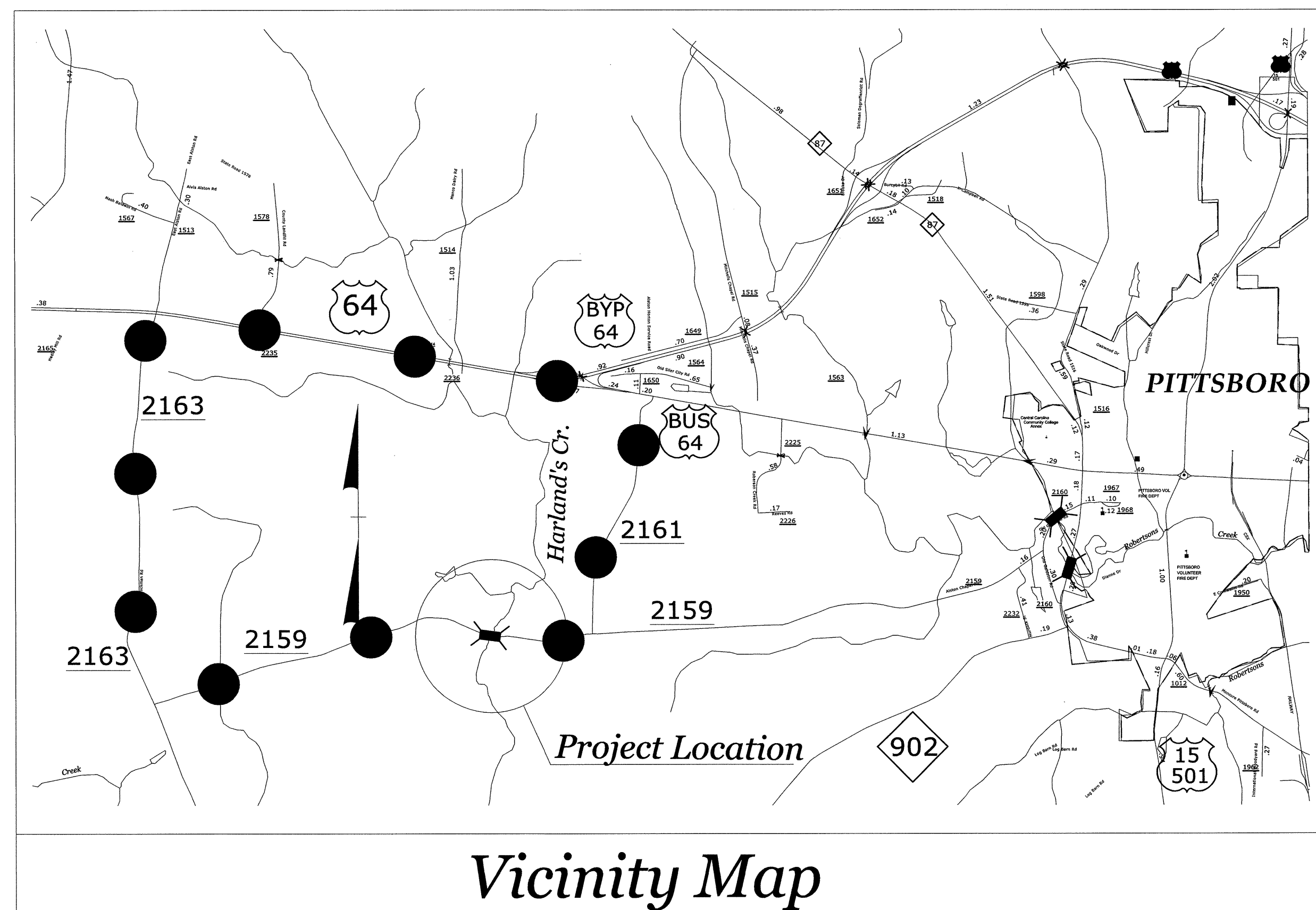
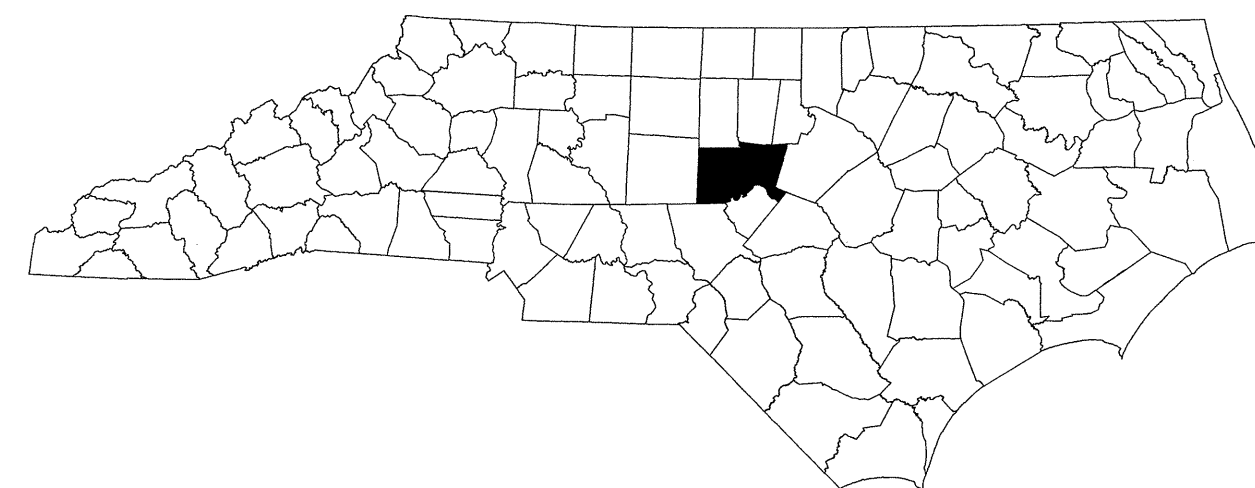
SEE SHEET 4 FOR PLAN DESIGN
SEE STRUCTURE PLANS FOR BRIDGE EXCAVATION AND RIPRAP QUANTITIES

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 83410811.dwg

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CHATHAM COUNTY



Vicinity Map

● ● ● ● ● Offsite Detour Route

INDEX OF SHEETS

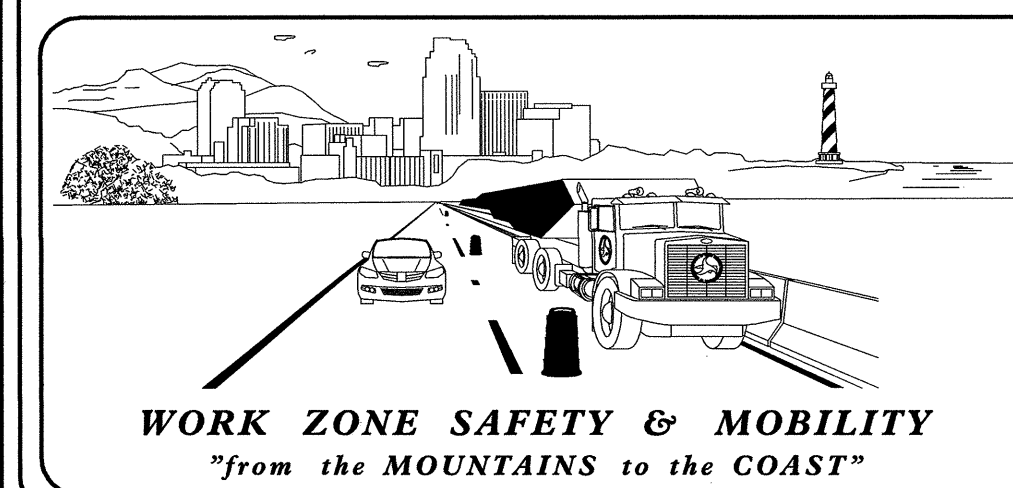
SHEET NO.	TITLE
TMP-1	TITLE SHEET, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND LOCAL NOTES)
TMP-2	SPECIAL SIGN DESIGN
TMP-3	OFF-SITE DETOUR AND BARRICADE PLACEMENT
TMP-4	BICYCLE OFF-SITE DETOUR

SHEET NO.
TMP-1

B-4731

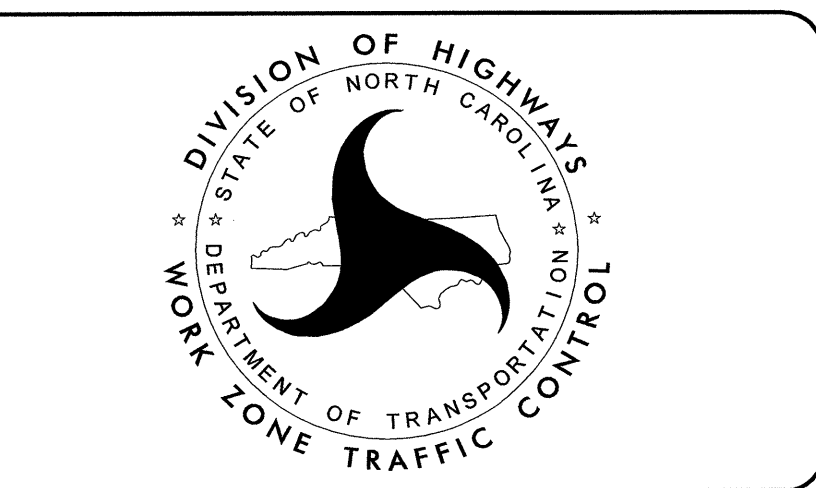
TIP PROJECT:

9/3/2013 P:\TIP\Projects-B\B4731\TrafficControl\TCP\B-4731.TC.TMP_01.dgn User:shassan



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

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



APPROVED: *Paul Schoenbauer*
DATE: *September 3, 2013*

SEAL

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
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.
- TEMP. SHORING (LOCATION PURPOSES ONLY)



WORK AREA



REMOVAL



USER DEFINED (IF NEEDED)



USER DEFINED (IF NEEDED)

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

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

PAVEMENT MARKERS

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

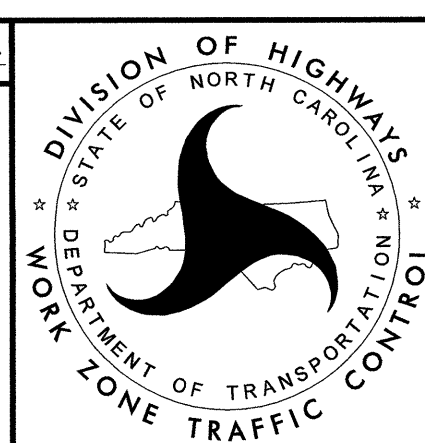
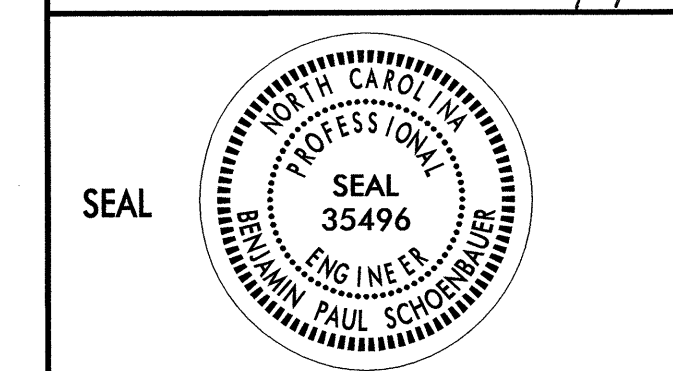
PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

N/A

APPROVED: *Ben Schmitt* DATE: 9/3/13



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 DURING THE PROJECT DURATION:

SR 2163 (ALEX COCKMAN RD), US 64, US 64 BUS, AND SR 2161 (ADOLPH TAYLOR RD)

BICYCLE TRAFFIC TO BE MAINTAINED ON THE FOLLOWING OFF-SITE DETOUR ROUTE DURING THE PROJECT DURATION:

SR 2160 (OLD GOLDSTON RD), NC 87/902, AND NC 902.

PHASING

STEP 1) USING ROADWAY AND STANDARD DRAWING 1101.03, SHEET 1 OF 9, AND SHEETS TMP-2, TMP-3, AND TMP-4, COMPLETE THE FOLLOWING:

- A) INSTALL DETOUR AND WARNING SIGNS.
- B) PLACE TYPE III BARRICADES TO CLOSE SR 2159 (ALSTON CHAPEL RD) AND PLACE TRAFFIC ON THE OFFSITE DETOUR. MAINTAIN ACCESS TO DRIVEWAYS AT -L- STA. 14+75± AND -L- STA. 19+65±.

STEP 2: AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING:

- A) REMOVE EXISTING STRUCTURE NO. 129 AND CONSTRUCT PROPOSED STRUCTURE. SEE ROADWAY AND STRUCTURE PLANS.
- B) CONSTRUCT PROPOSED ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE. SEE ROADWAY PLANS.
- C) PLACE FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

STEP 3: A) OPEN SR 2159 (ALSTON CHAPEL RD) TO PROPOSED 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 UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

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

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

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

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

TRAFFIC CONTROL DEVICES

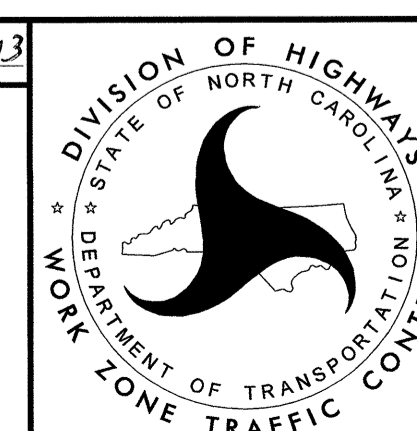
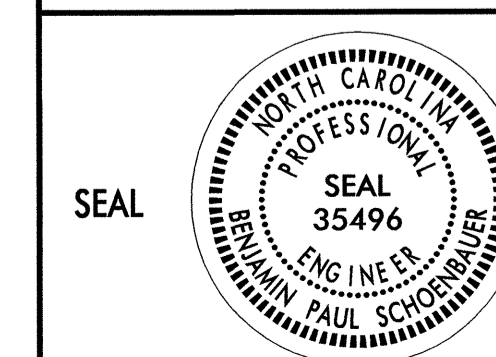
- E) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

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

9/3/2013 9:47:31 AM \\projects\B\B4731\Traffic\TrafficControl\CP\B-4731.TC.TMP_01.dgn User:shanson

APPROVED: *Ben Schuman* DATE: 9/3/13



**TRANSPORTATION
OPERATIONS
PLAN**

SIGN NUMBER: WorkZone
 TYPE: STATIONARY
 QUANTITY: SEE PLANS

SIGN WIDTH: 3'-6"
 HEIGHT: 2'-0"
 TOTAL AREA: 7.0 Sq.Ft.

BORDER TYPE: INSET
 RECESS: 0.38"
 WIDTH: 0.5"
 RADII: 3"

NO. Z BARS:
 LENGTH:

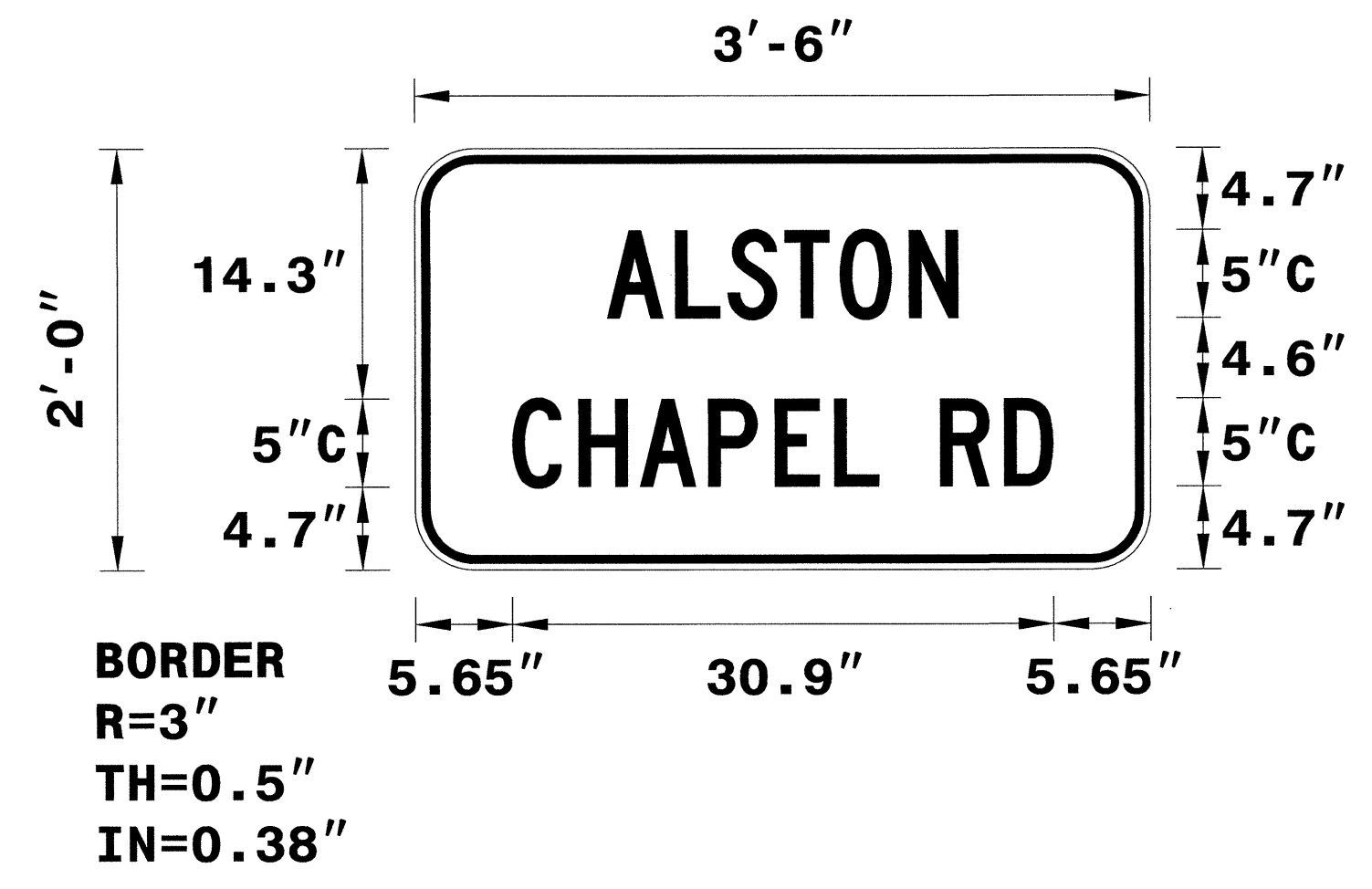
SYMBOL	X	Y	WID	HT

MAT'L: 0.080" (2.0 mm) ALUMINUM

DESIGN BY: SJOHNS
 PROJECT ID: B-4731

CHECKED BY: SKUNZ
 DIV: 8

DATE: Jan 02, 2013



USE NOTES: 1,2

- Legend and border shall be direct applied black non-reflective sheeting.
- Background shall be NC GRADE B fluoresent orange retroreflective sheeting.

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

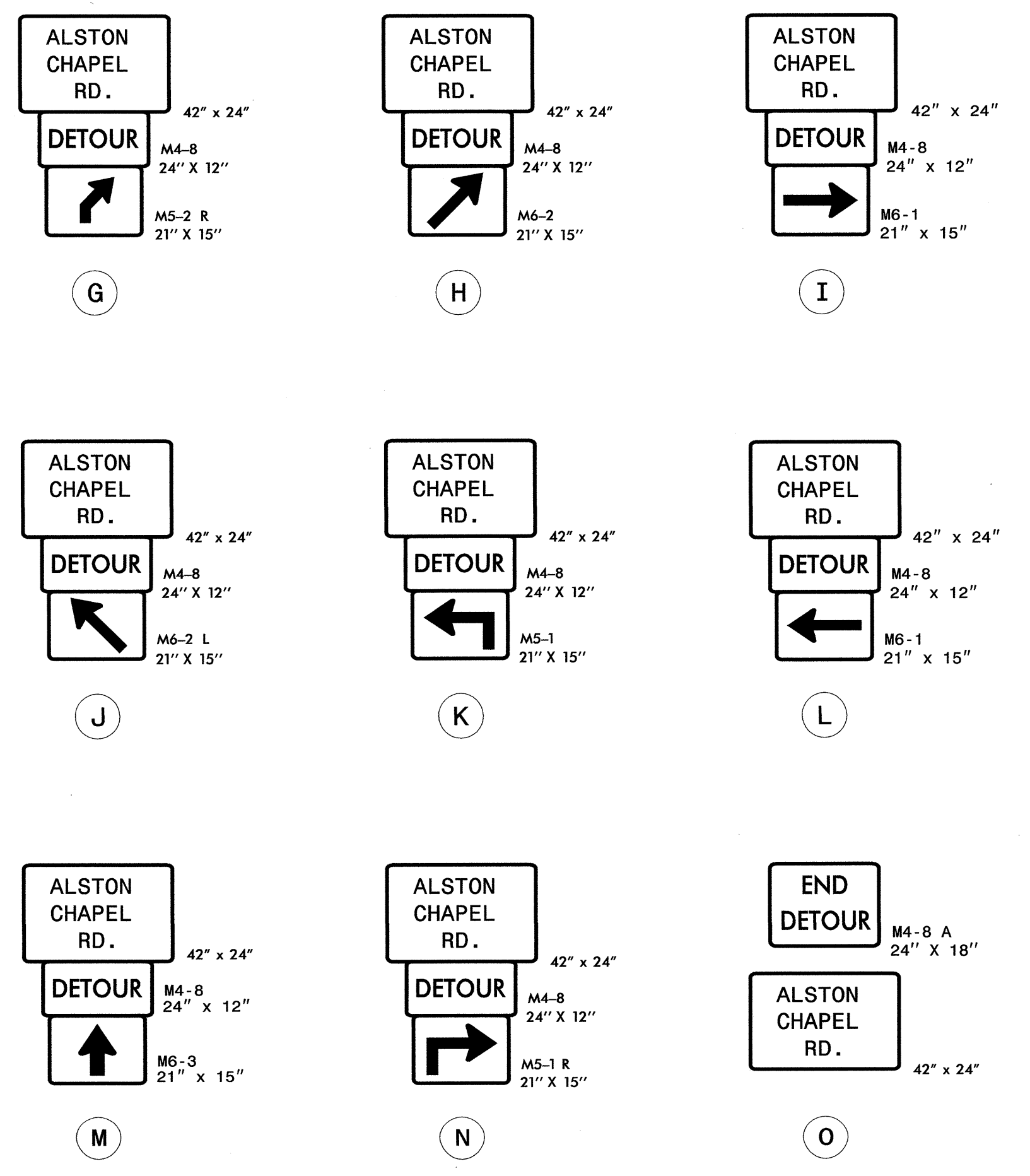
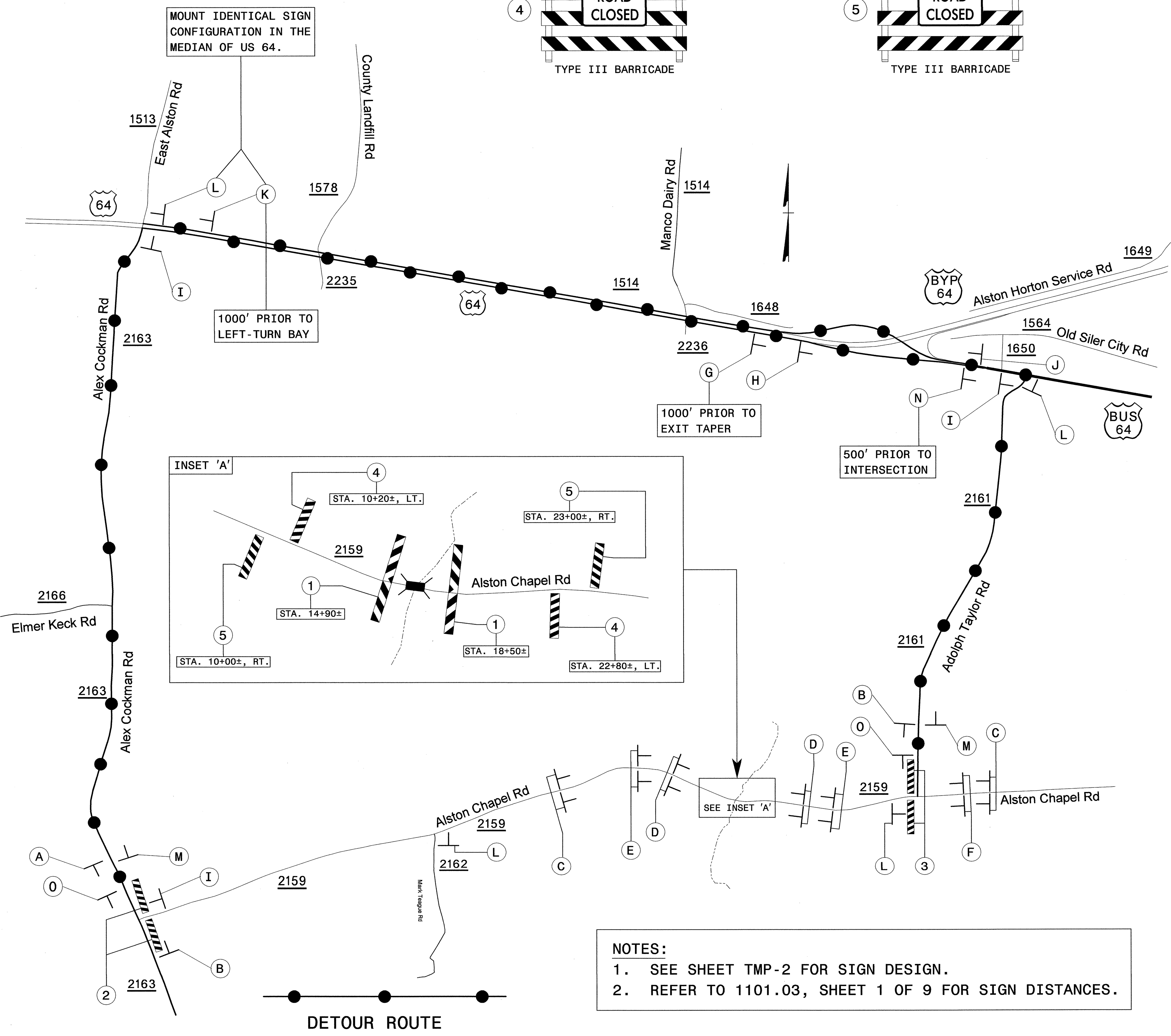
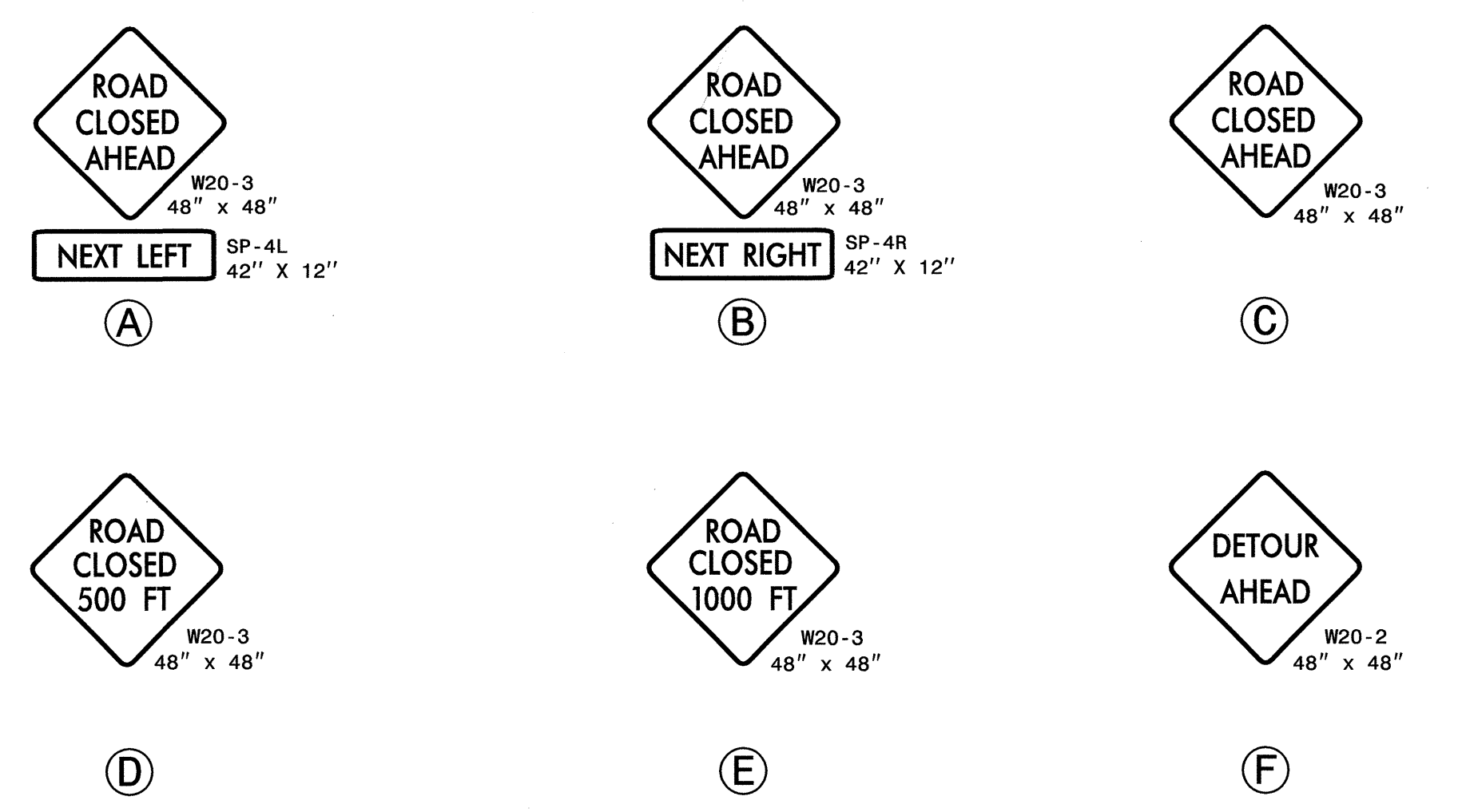
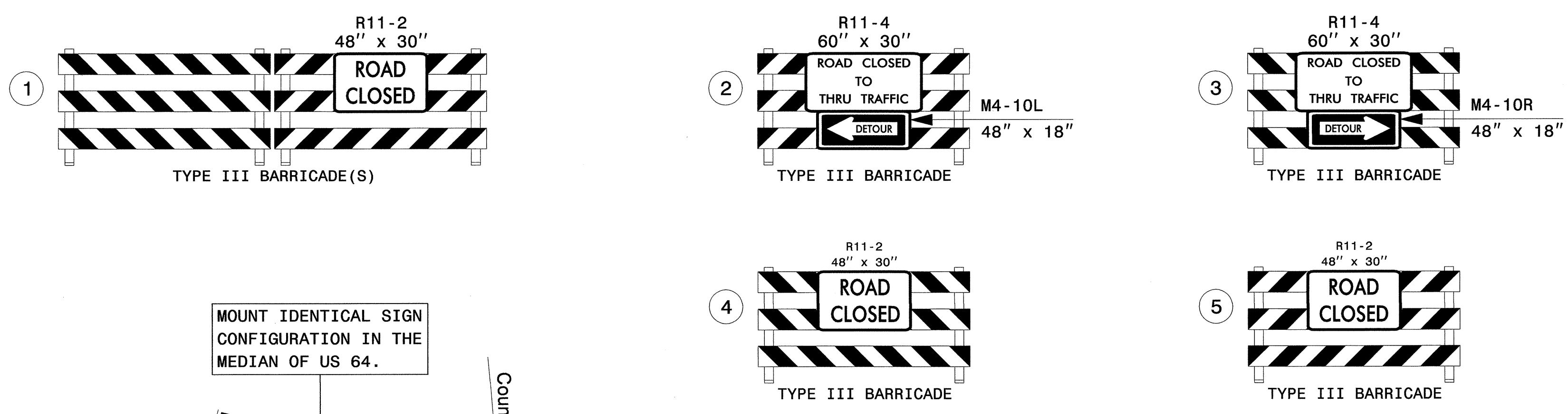
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11	3.9	3	3.3	3.1	3.9	2.8	11															C 2000 20.1
	C	H	A	P	E	L	R	D														C 2000 30.9
	5.6	3.8	3.5	3.9	3.8	3.4	2.6	3.5	3.7	2.8	5.5											

FILENAME: B-4731_WZSgn Design

NORTH CAROLINA D.O.T. SIGN DETAIL

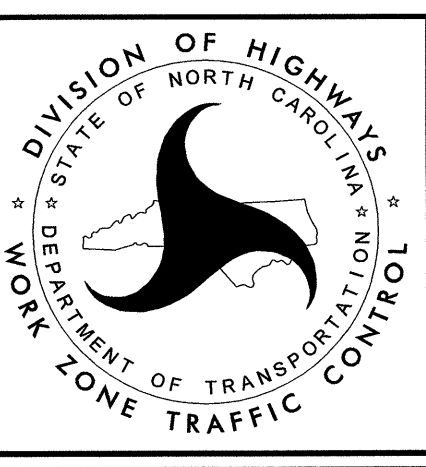
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 User: snassan

APPROVED: <i>RWF</i> DATE: 7/1/13 		ROADWAY STANDARD DRAWINGS & LEGEND
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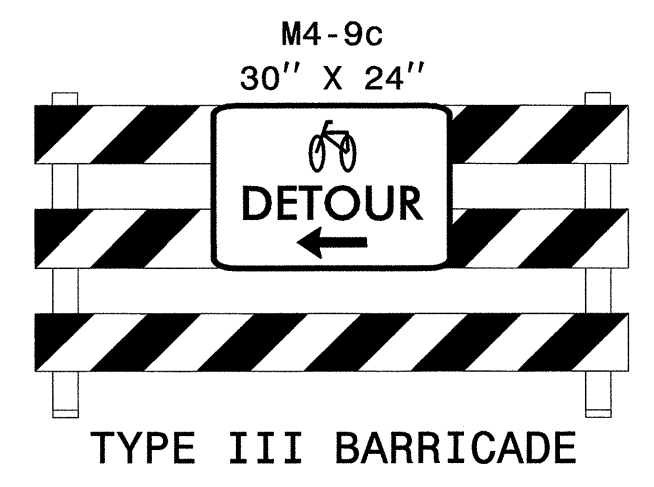
NOTES:
 1. SEE SHEET TMP-2 FOR SIGN DESIGN.
 2. REFER TO 1101.03, SHEET 1 OF 9 FOR SIGN DISTANCES.

APPROVED: *Bruce Schmitt* DATE: 11/25/13
 SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 35496
 PAUL SCHMITT

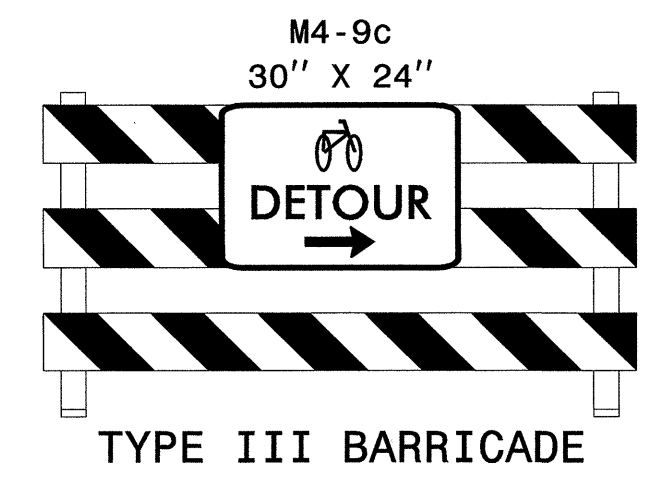


OFF-SITE DETOUR AND BARRICADE PLACEMENT

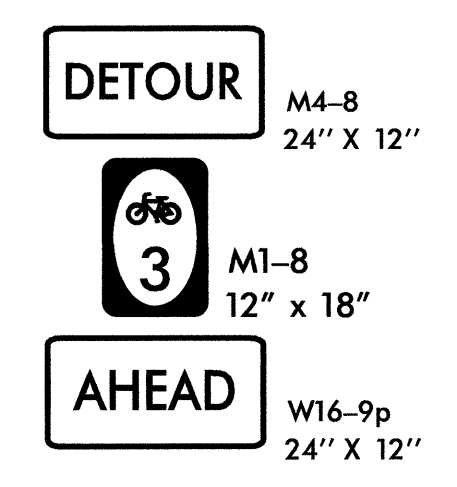
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 User:shassan



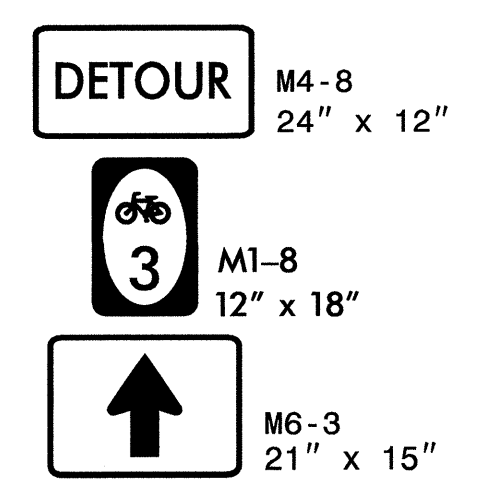
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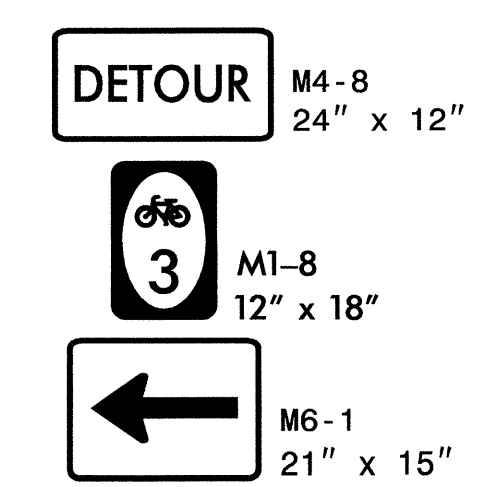
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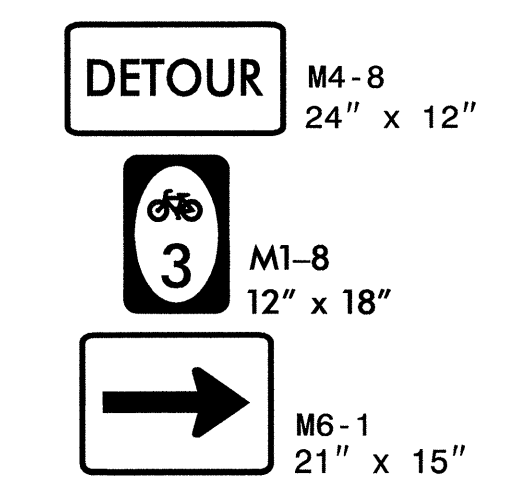
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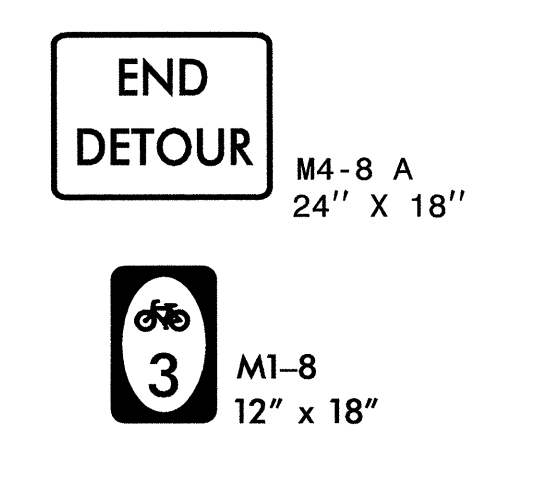
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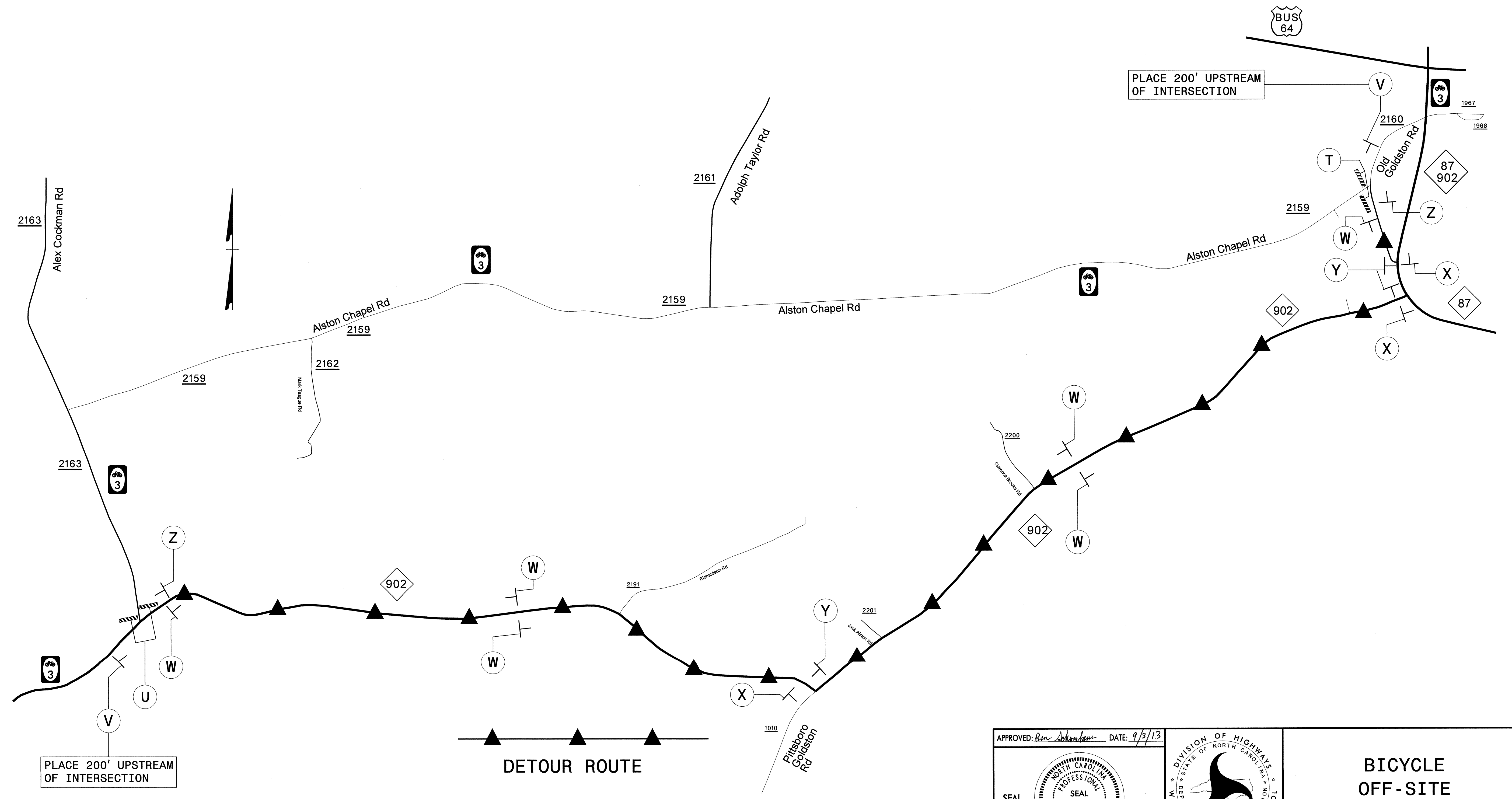
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Z



9/3/2013
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APPROVED: *Ben Schenker* DATE: 9/3/13

SEAL

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

**BICYCLE
OFF-SITE
DETOUR**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
CHATHAM COUNTY

LOCATION: BRIDGE #129 OVER HARLAND'S CREEK ON SR 2159 (ALSTON CHAPEL ROAD)

TIP NO. SHEET NO.

B-4731 PMP-1

APPROVED: *Ronda B. Early*

DATE: 10-1-13

SEAL



T.I.P.: B-4731

CONTRACT:

ROADWAY STANDARD DRAWINGS

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 - 2 LANE AND MULTI LANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT & TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES & MOUNTING
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES

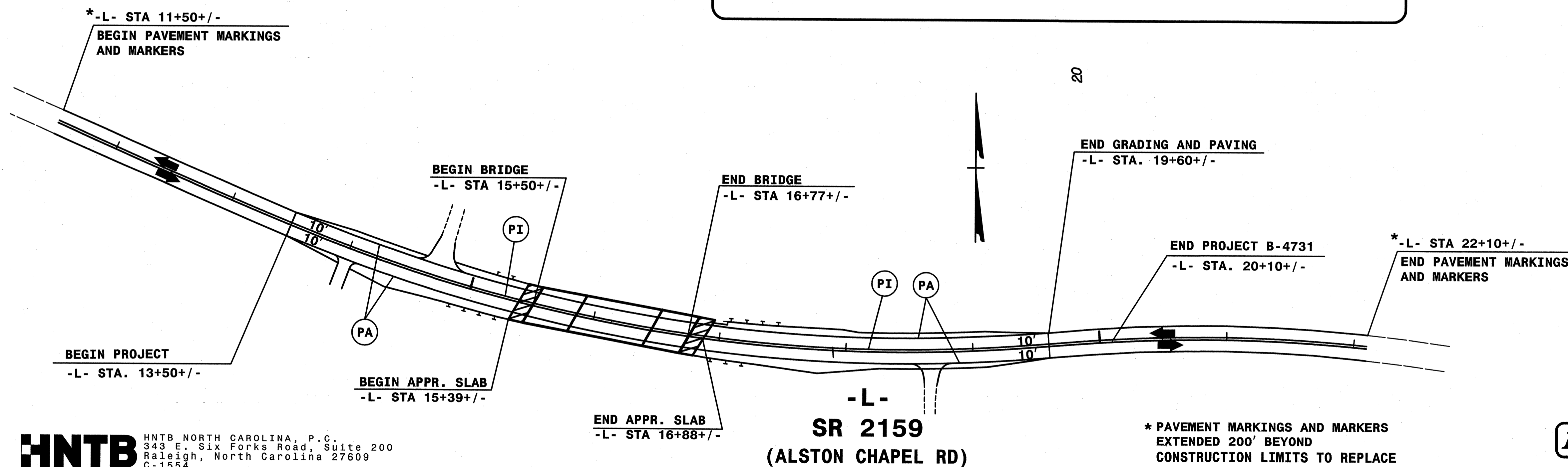
THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

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

ROAD NAME	MARKING	MARKER
SR 2159 (-L-) (ALL)	PAINT	RAISED
- TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.
- PASSING ZONE(S) WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- PLACE TWO APPLICATIONS OF PAINT ON FINAL SURFACE COURSE.

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	PAINT
PA	WHITE EDGELINE
PI	DOUBLE YELLOW CENTERLINE
	MARKERS
	PERMANENT RAISED PAVEMENT MARKERS
MA	YELLOW AND YELLOW



HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
C-1554

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

Susan Kunz SIGNING & DELINEATION REGIONAL ENGINEER
Stacey W. Johns SIGNING & DELINEATION PROJECT DESIGN ENGINEER

PLAN PREPARED BY: HNTB NORTH CAROLINA

R. B. Early, PE PROJECT ENGINEER
J. A. Phillips PROJECT DESIGNER

LEGEND

- GENERAL
- DIRECTION OF TRAFFIC FLOW
 - NORTH ARROW
 - PROPOSED PVMT.
 - EXIST. PVMT.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4731	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

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

Chatham County

LOCATION: Bridge #129 over Harland's Creek on
SR 2159 (Alston Chapel Road)

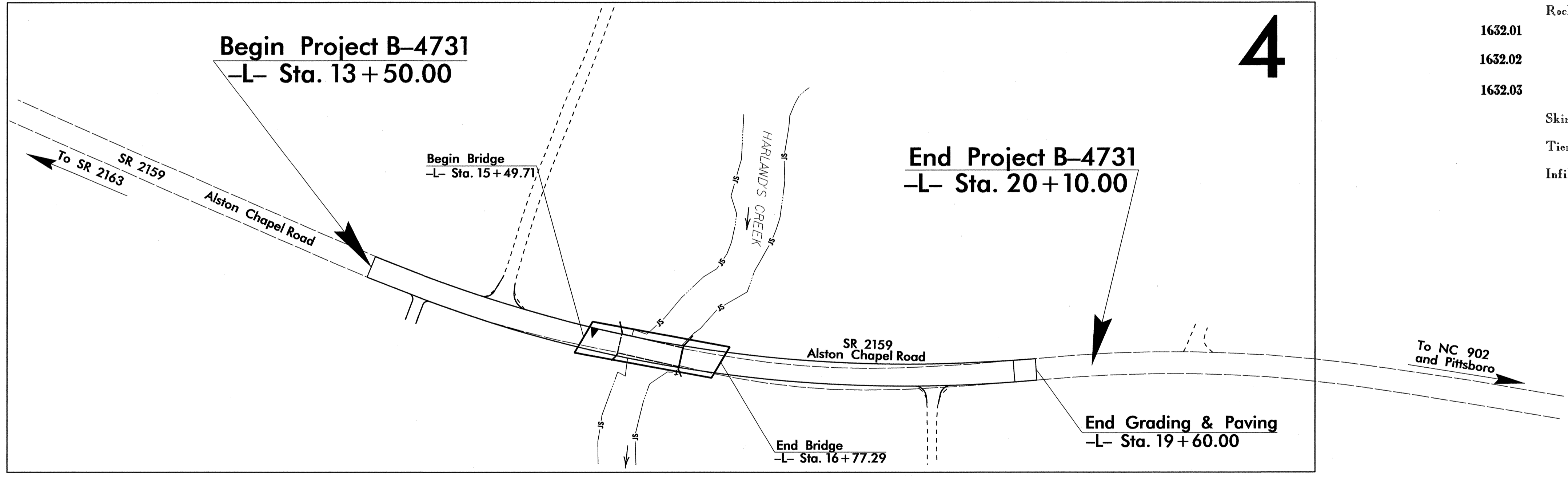
TYPE OF WORK: Grading, Drainage, Paving, and Structure



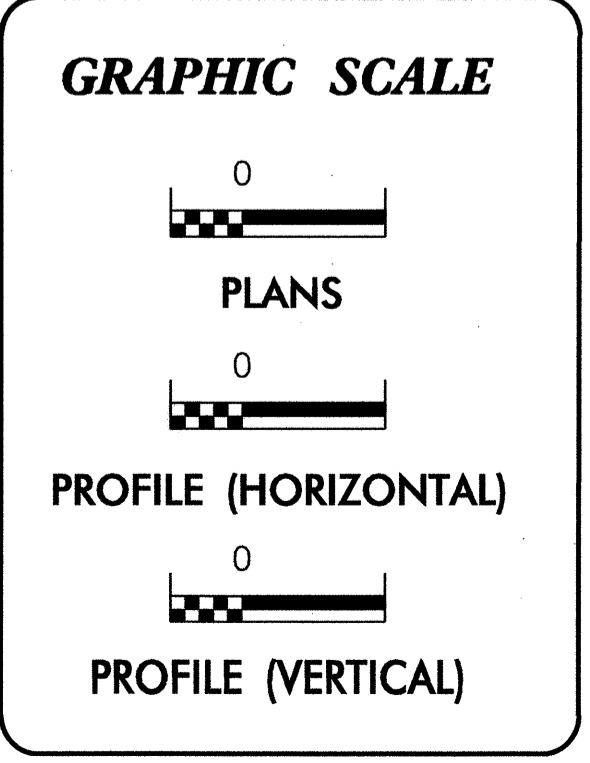
EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	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	W
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	W
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	U
1635.02	Rock Pipe Inlet Sediment Trap Type-B	U
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.**



TIP PROJECT: B-4731



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

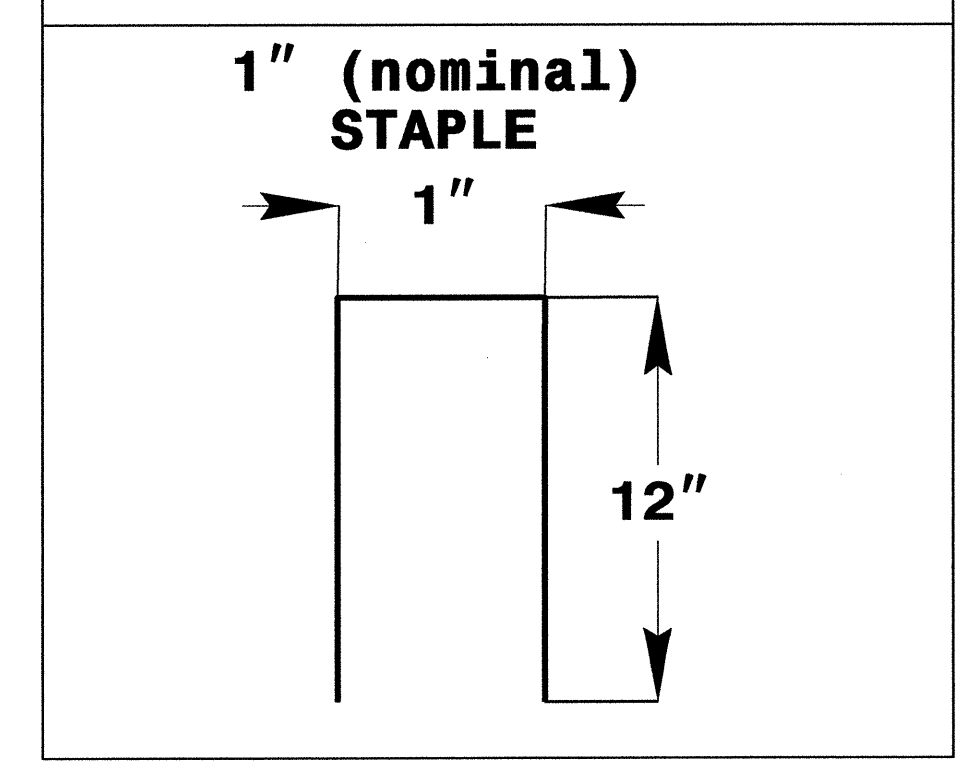
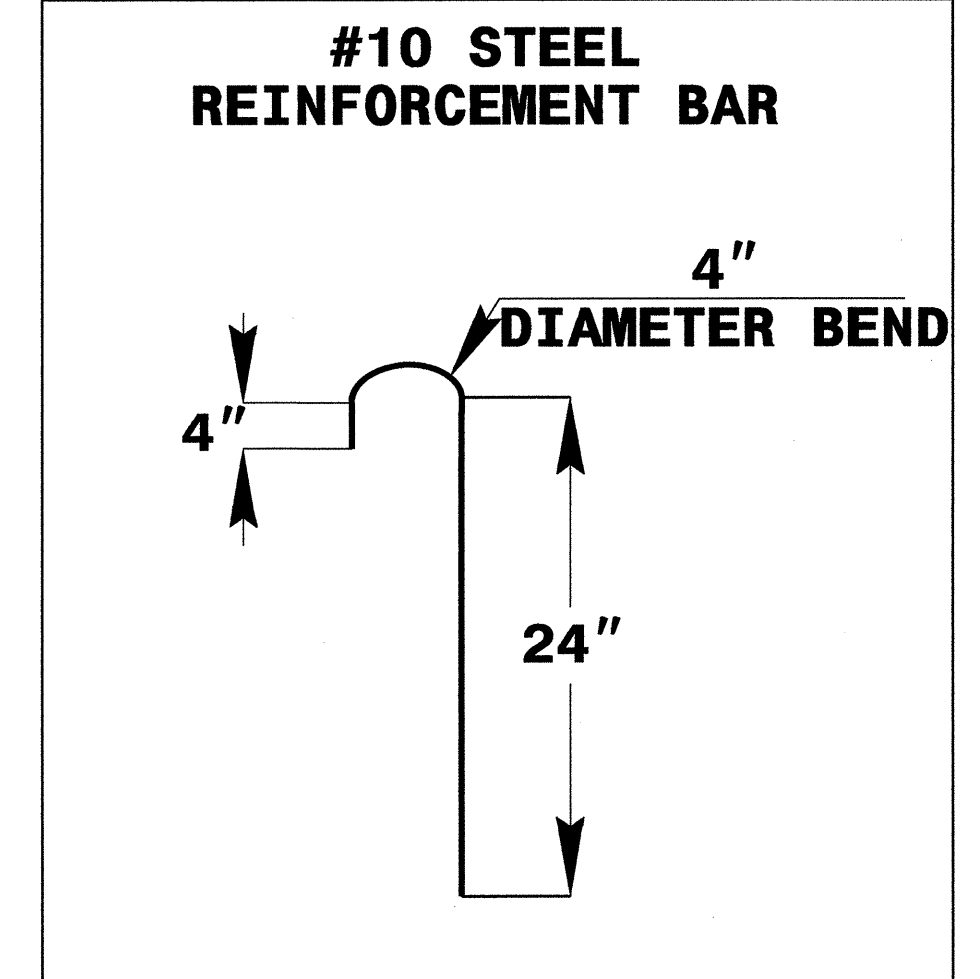
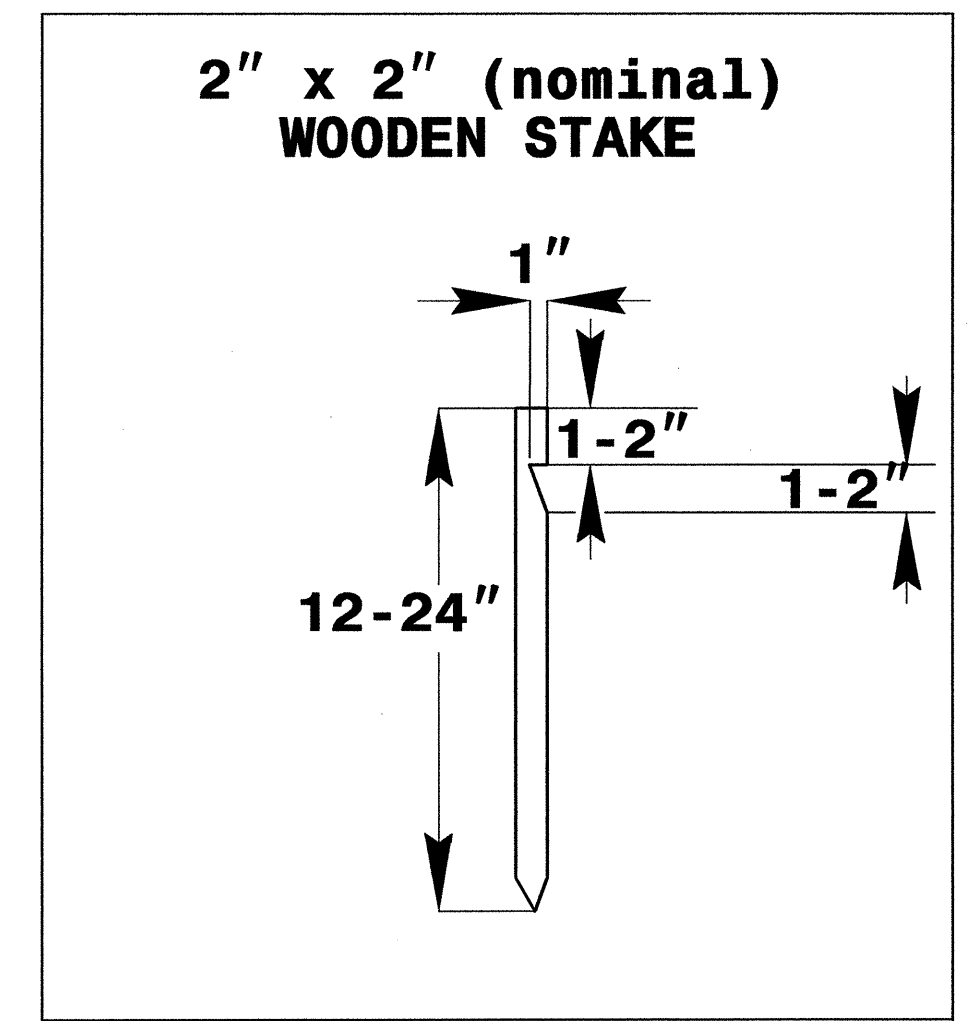
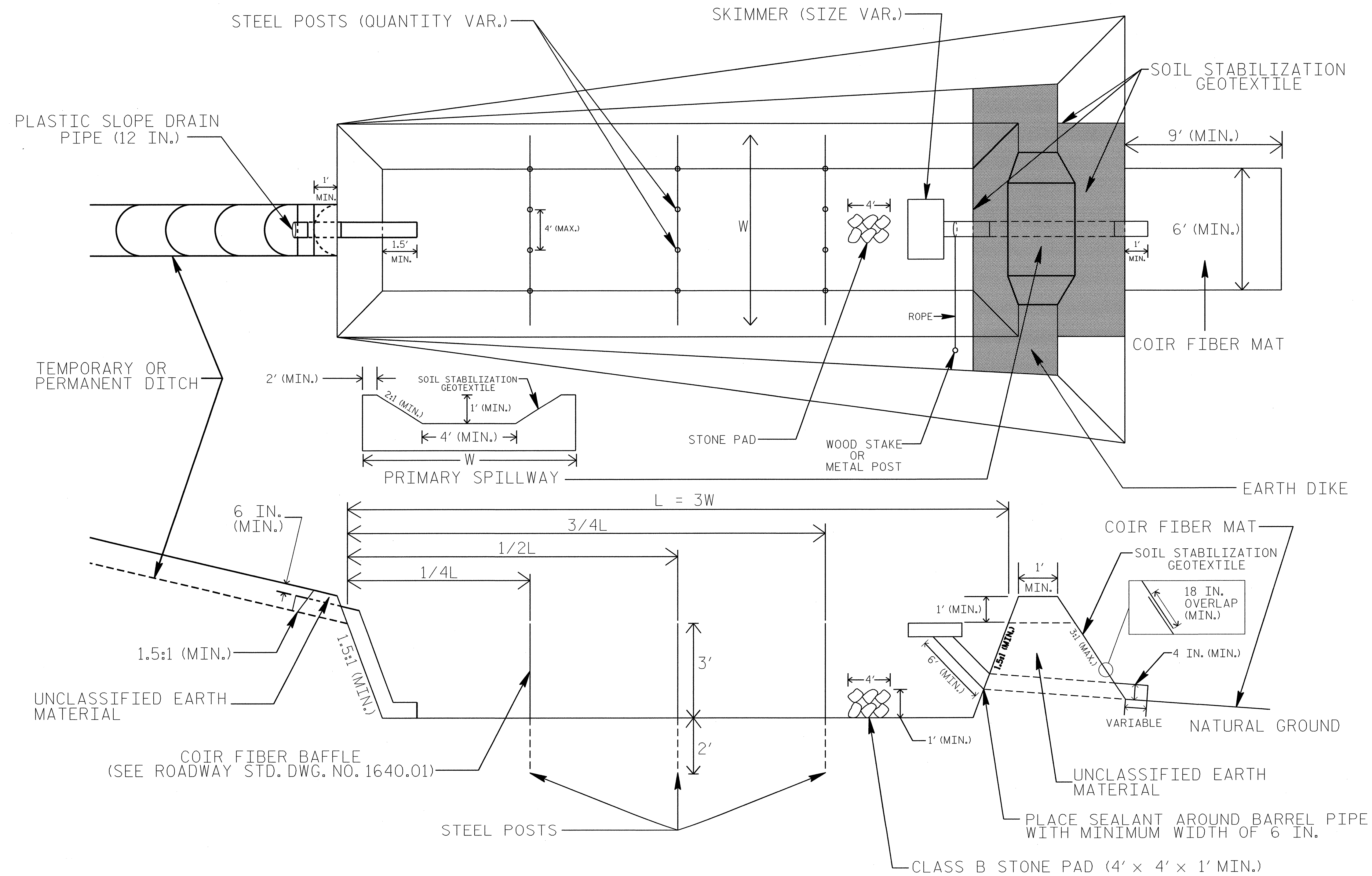
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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	1640.01 Temporary Stream Crossing
1631.01 Matting Installation	

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PROJECT REFERENCE NO. B-4731	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL



COIR FIBER MAT ANCHOR OPTIONS

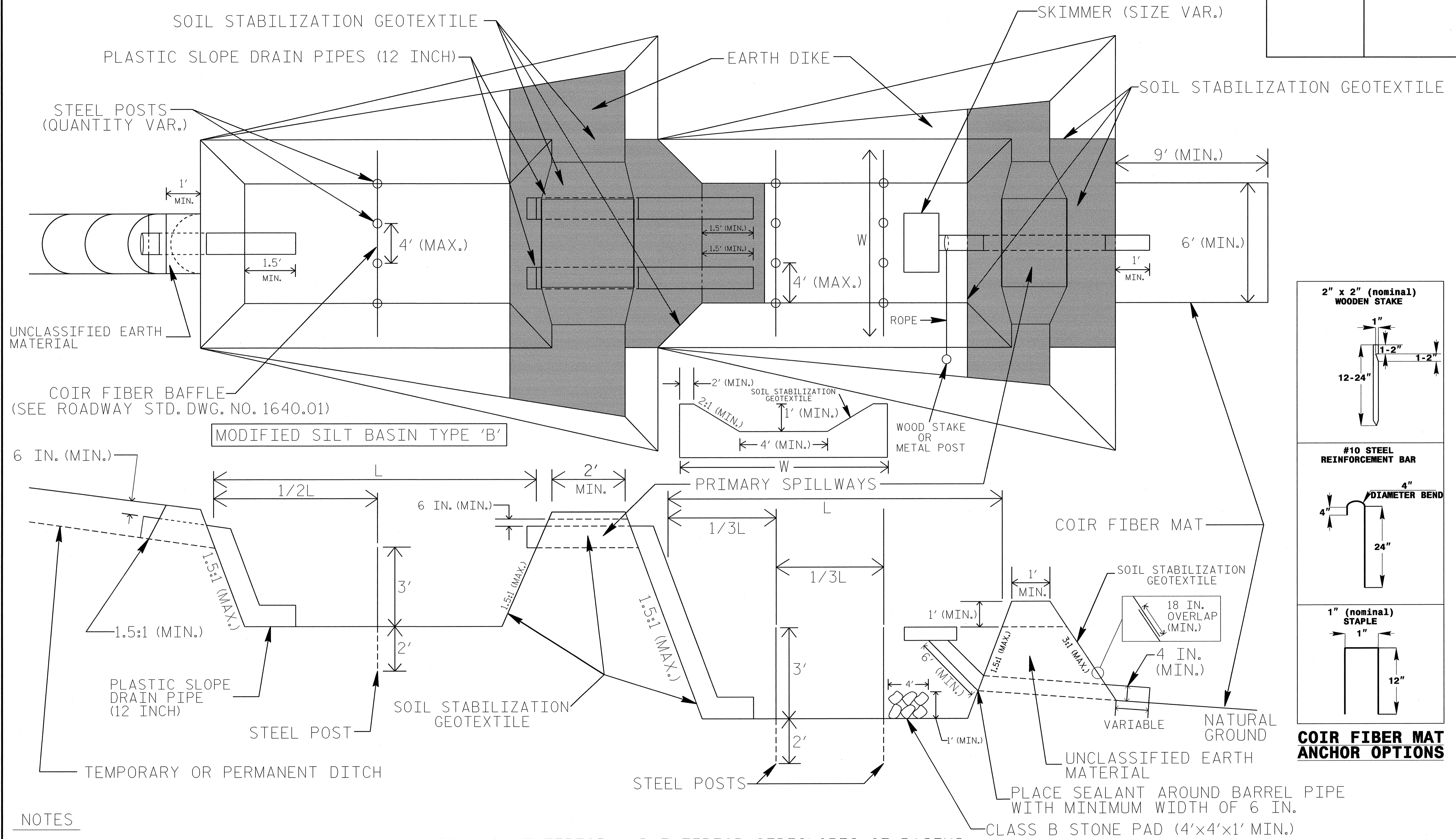
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE PRIMARY SPILLWAY WEIR LENGTH (FT.) USING $Q/0.4$, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

TIERED SKIMMER BASIN DETAIL

PROJECT REFERENCE NO. B-4731	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



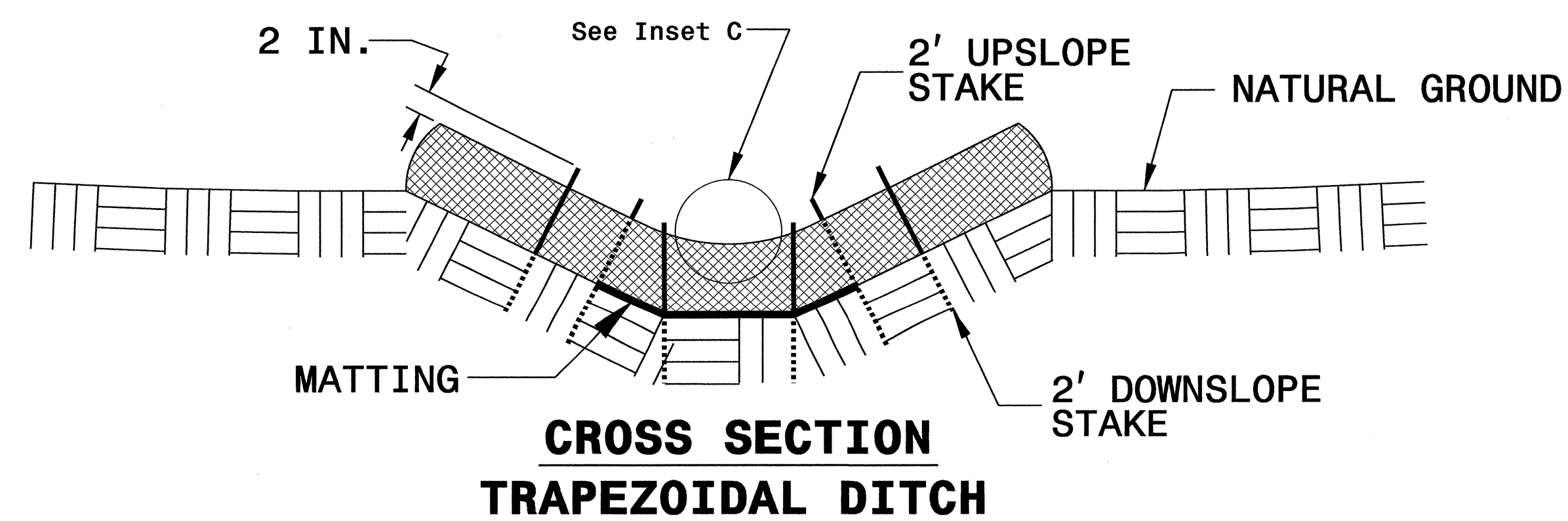
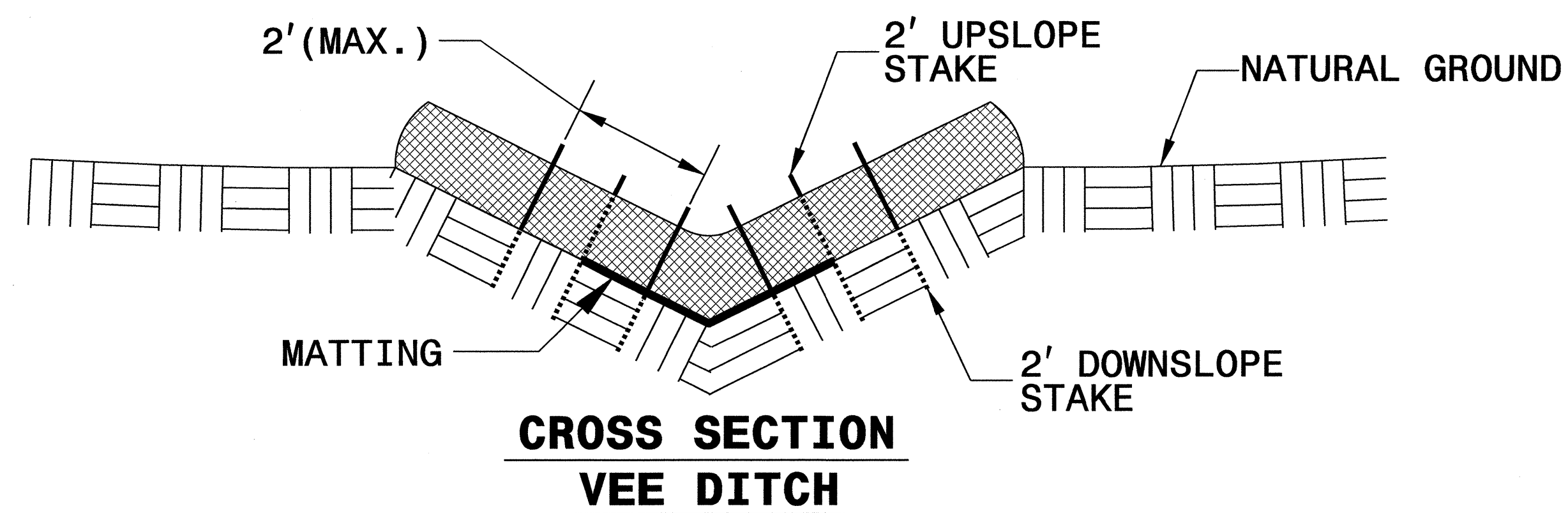
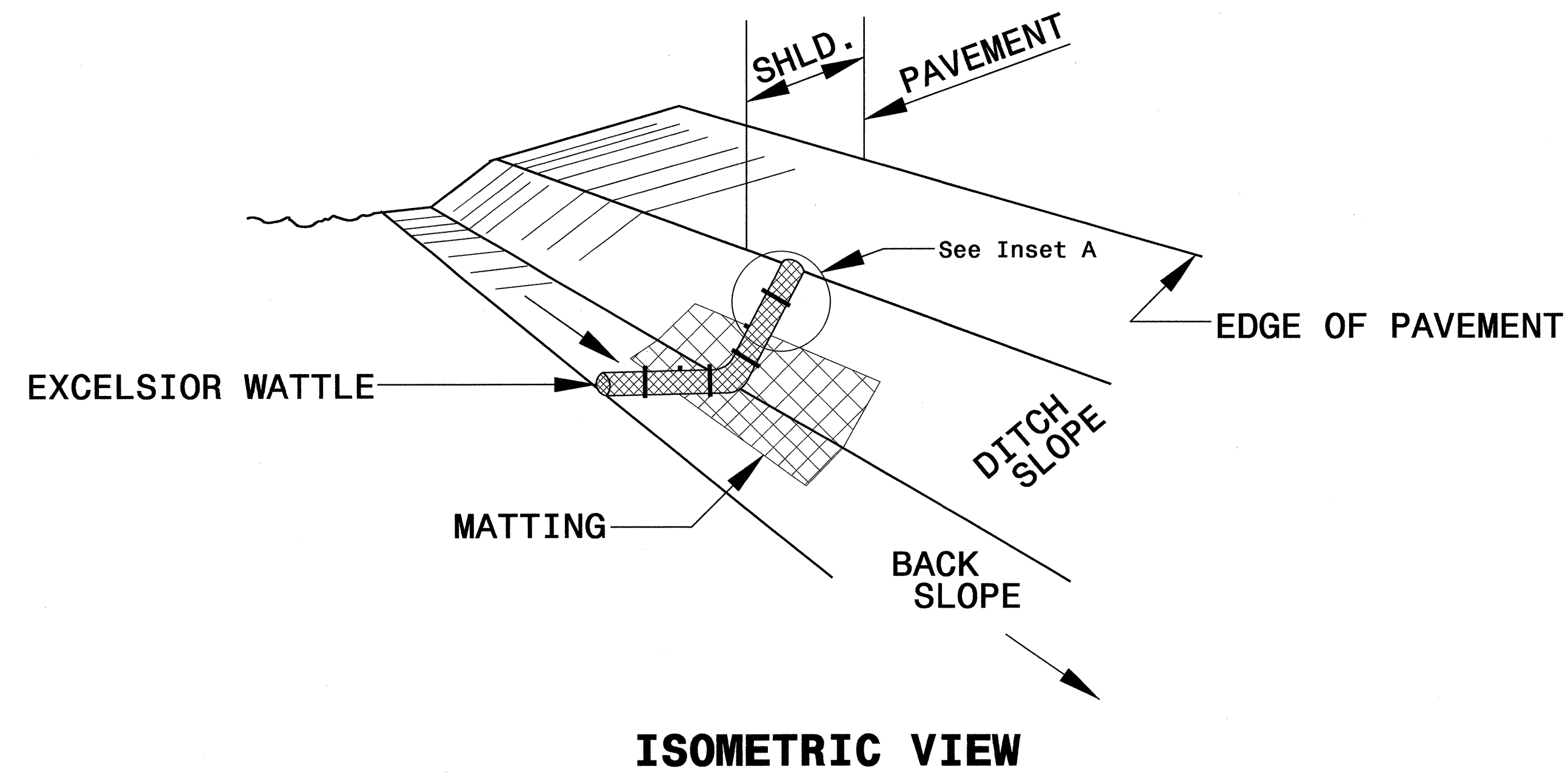
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES OF BASINS.
2. LIMIT HEIGHT OF EARTH DIKES TO 5 FT.
3. ADDITIONAL MODIFIED SILT BASINS TYPE 'B' MAY BE NEEDED DEPENDING ON SLOPE.
4. FOR BASIN DEPTHS OF 3FT., THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
5. DETERMINE PRIMARY SPILLWAY LENGTHS (FT.) USING $Q/0.4$, WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

PROJECT REFERENCE NO. B-4731	SHEET NO. EC-2B
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.

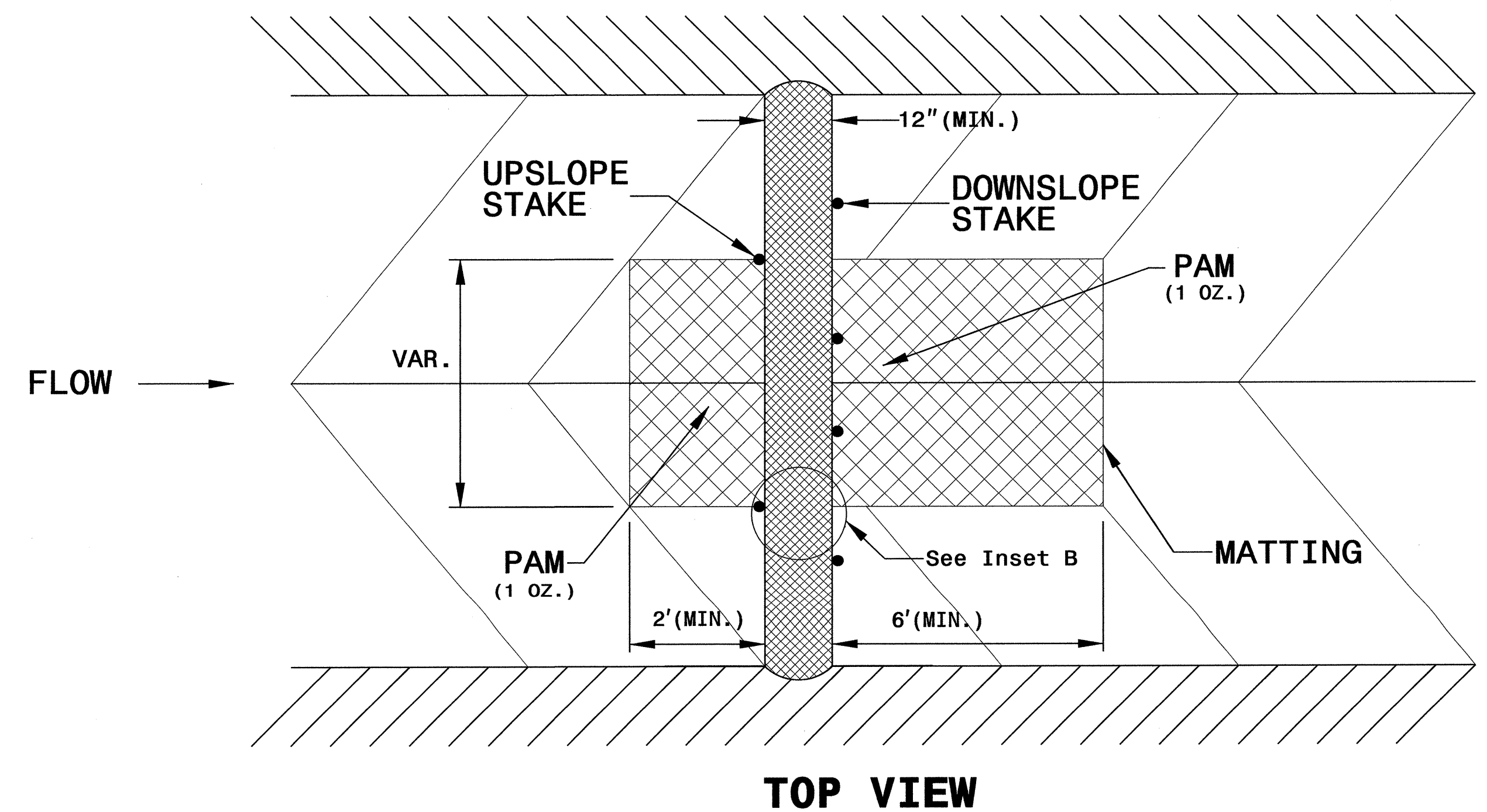
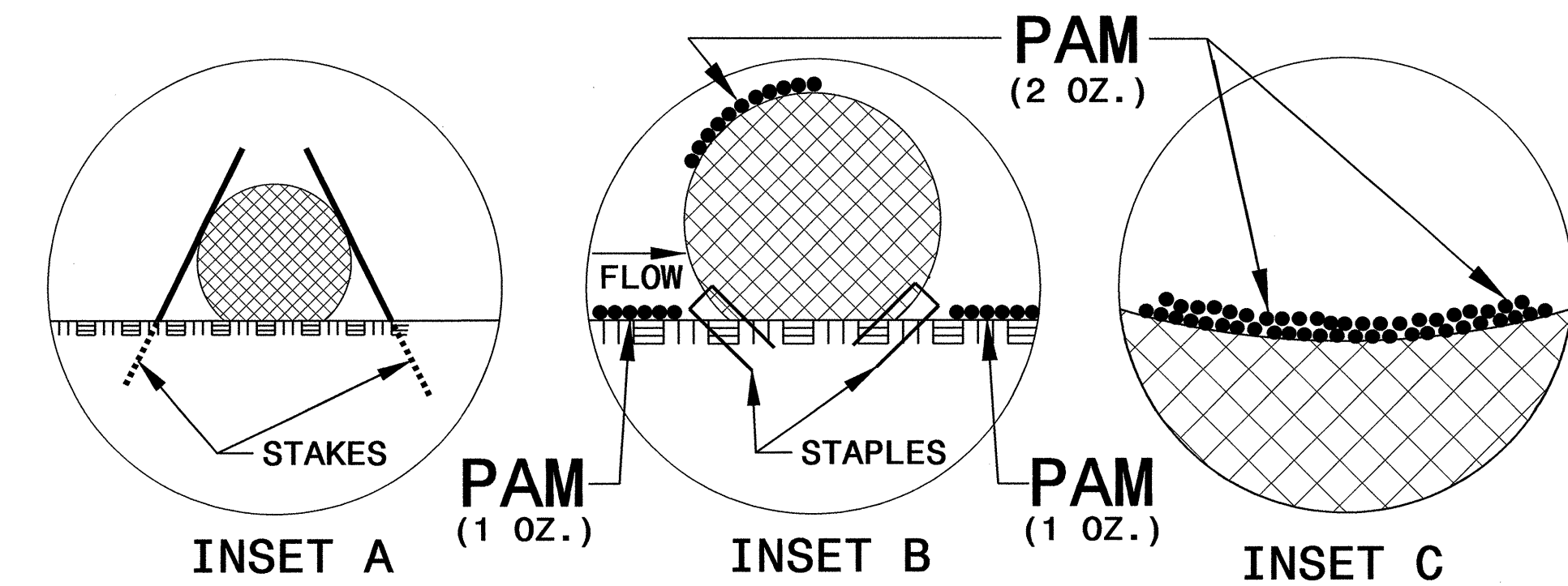
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

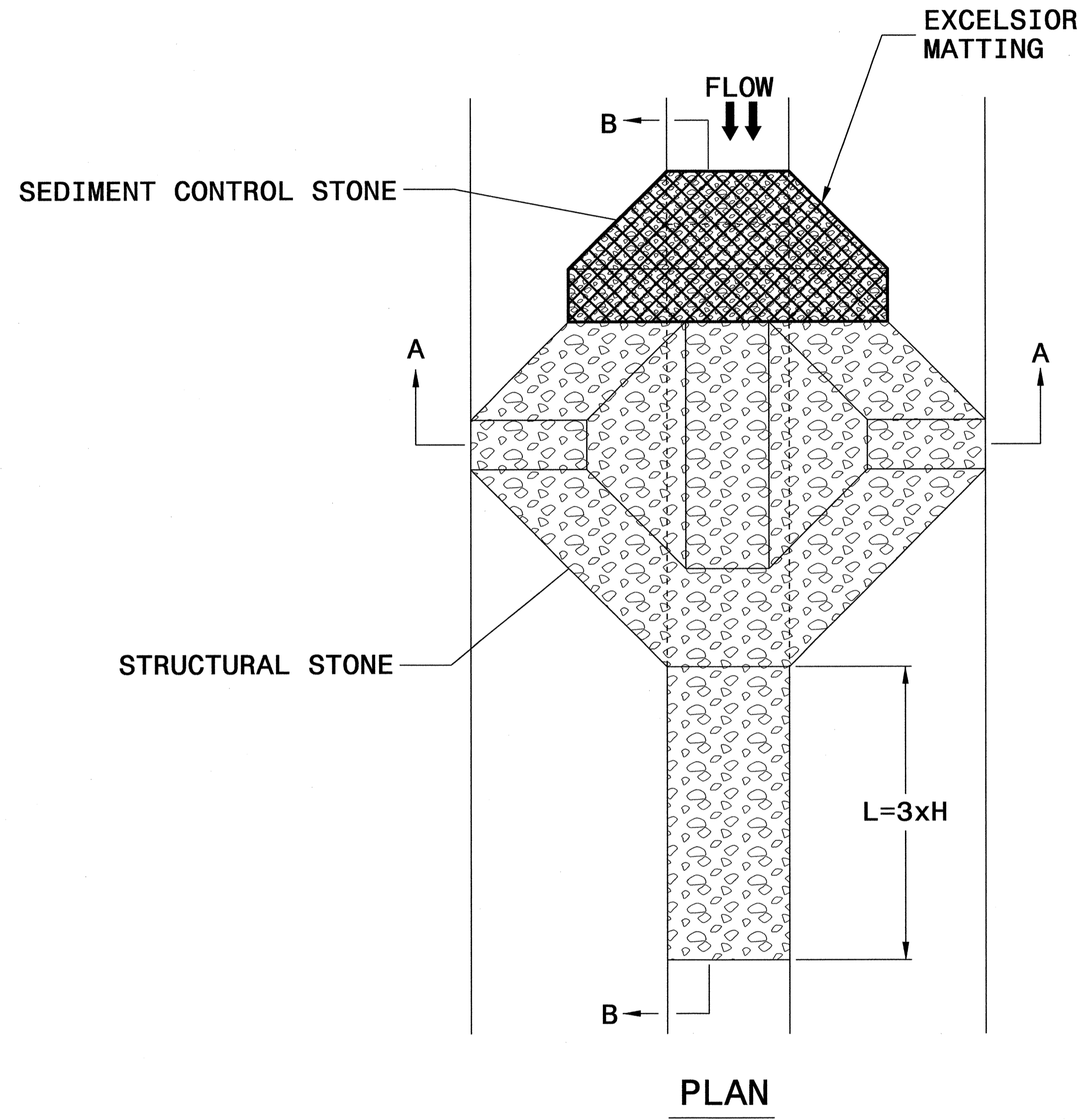
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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-4731	SHEET NO. EC-2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

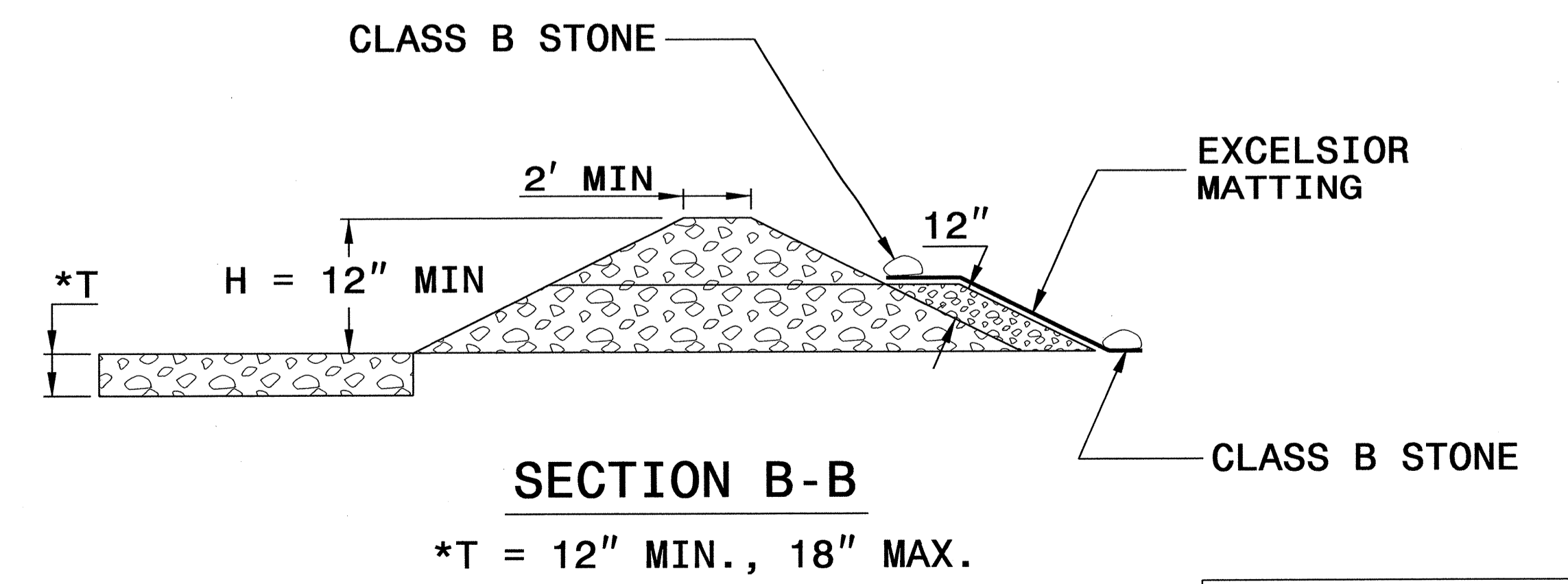
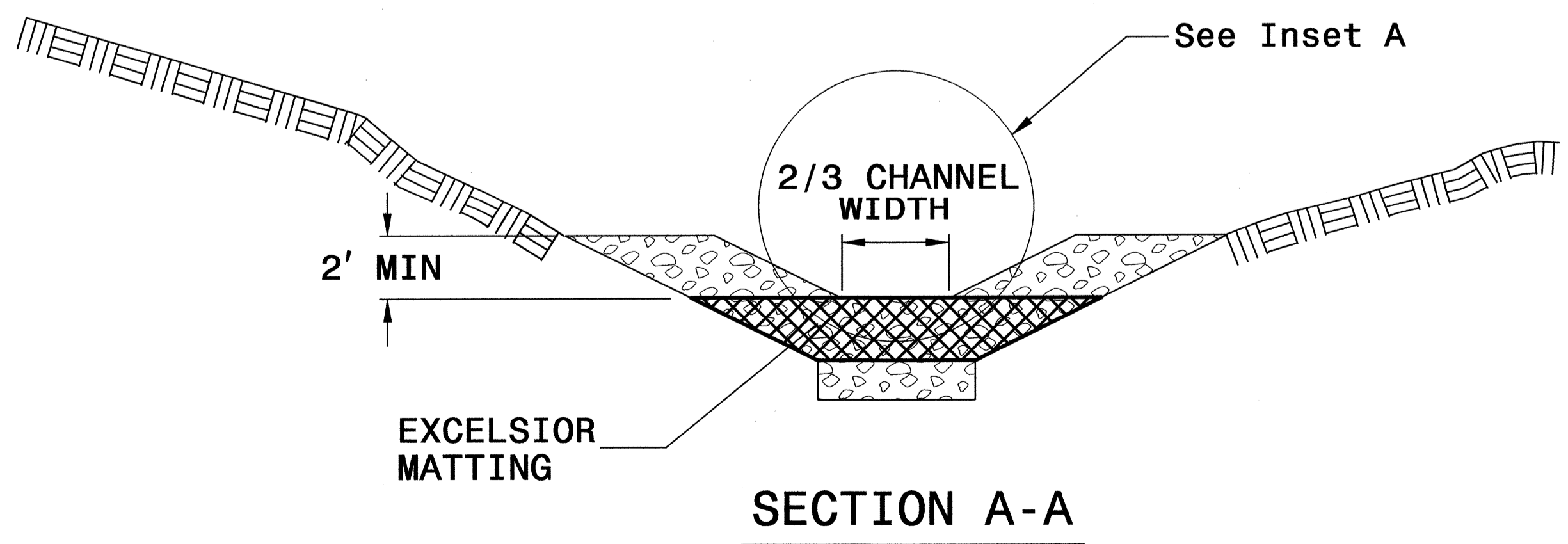
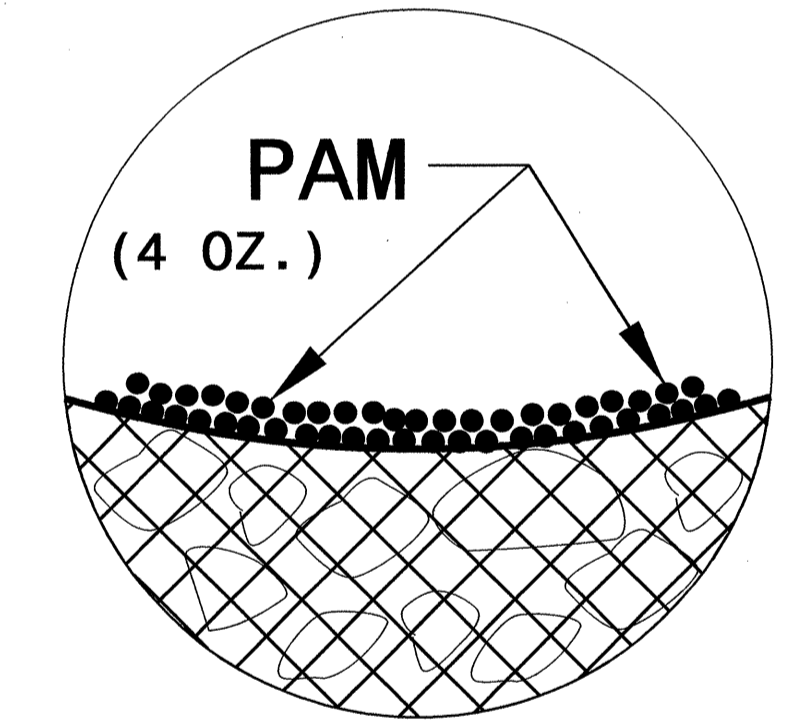


NOTES

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

PROJECT REFERENCE NO. <i>B-4731</i>	SHEET NO. <i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

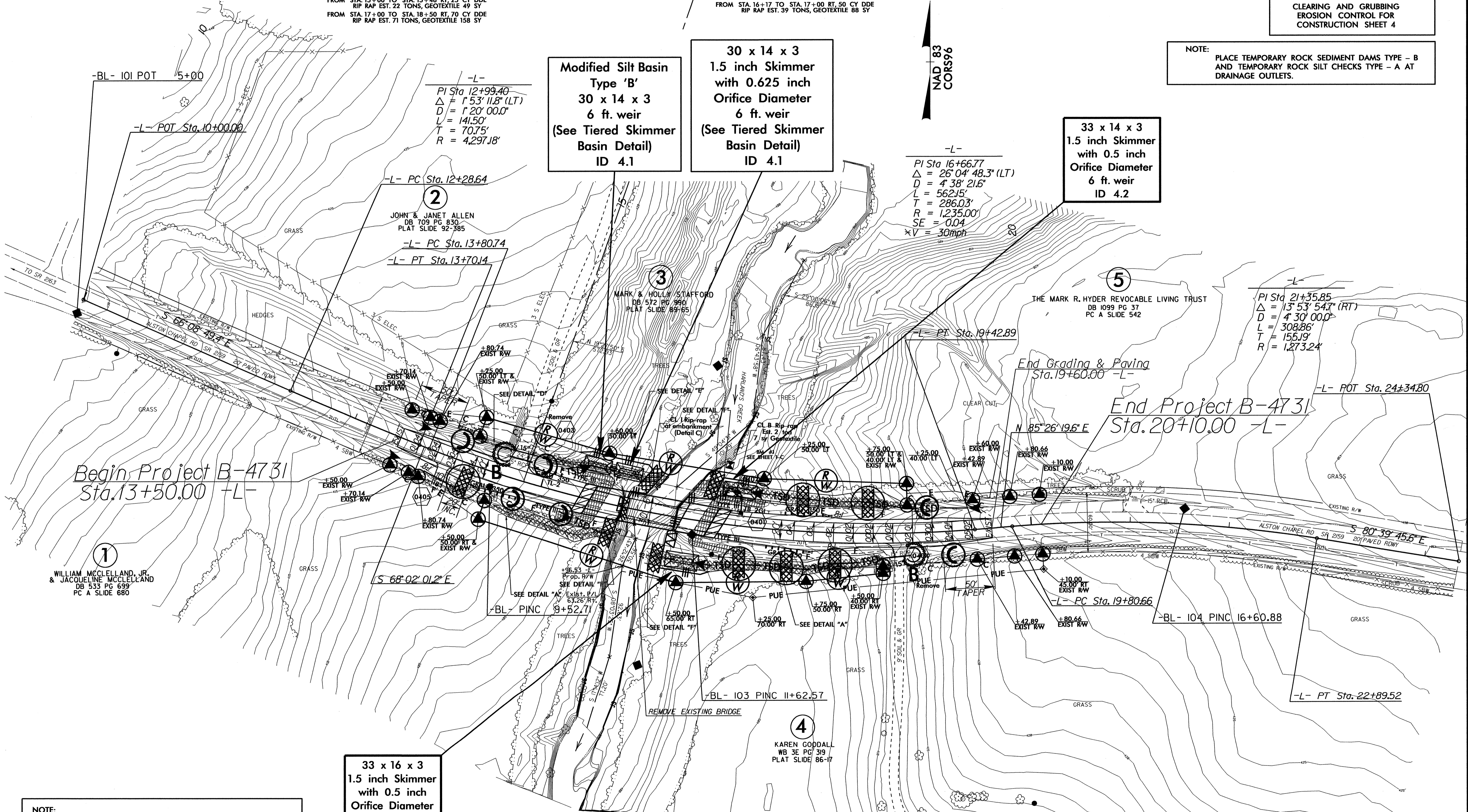
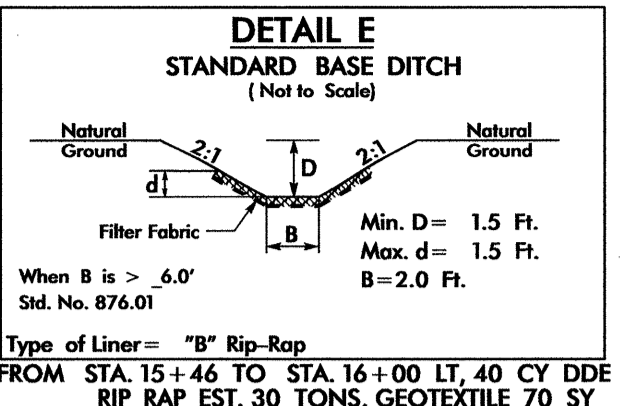
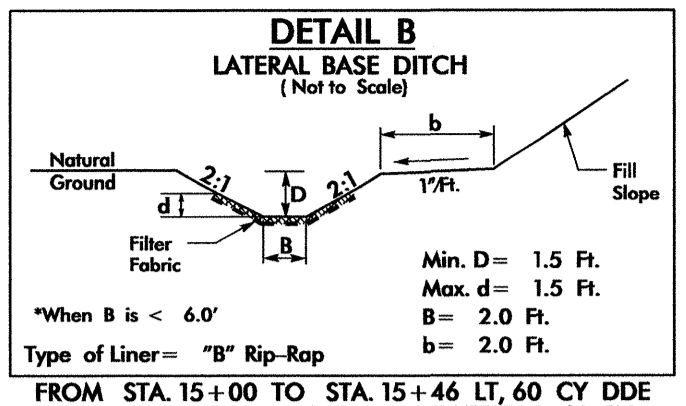
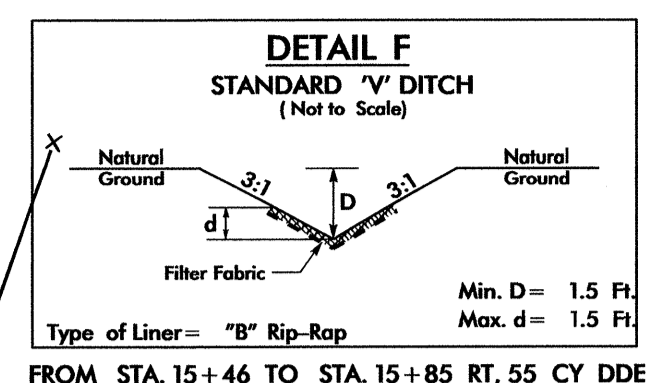
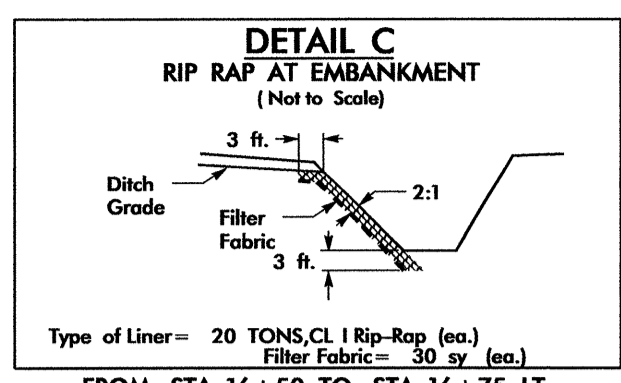
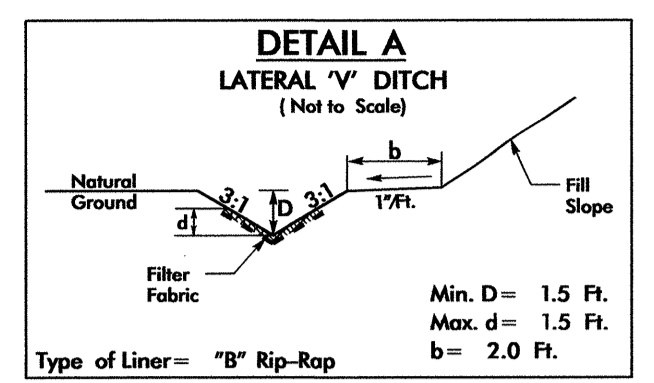
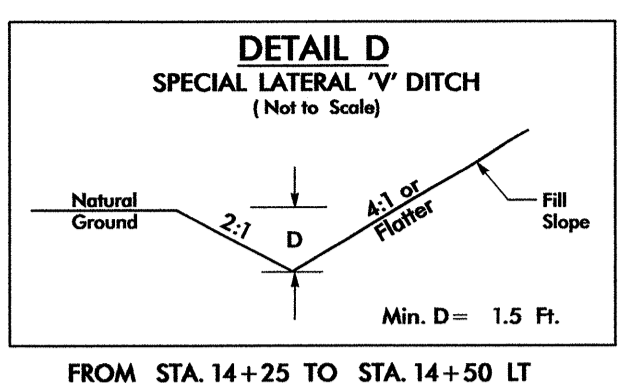
SOIL STABILIZATION TIMEFRAMES

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

PROJECT REFERENCE NO.	SHEET NO.
B-4731	EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.



Modified Silt Basin
Type 'B'
30 x 14 x 3
6 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 4.1

30 x 14 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
6 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 4.1

33 x 14 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
6 ft. weir
ID 4.2

33 x 16 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
8 ft. weir
ID 4.3

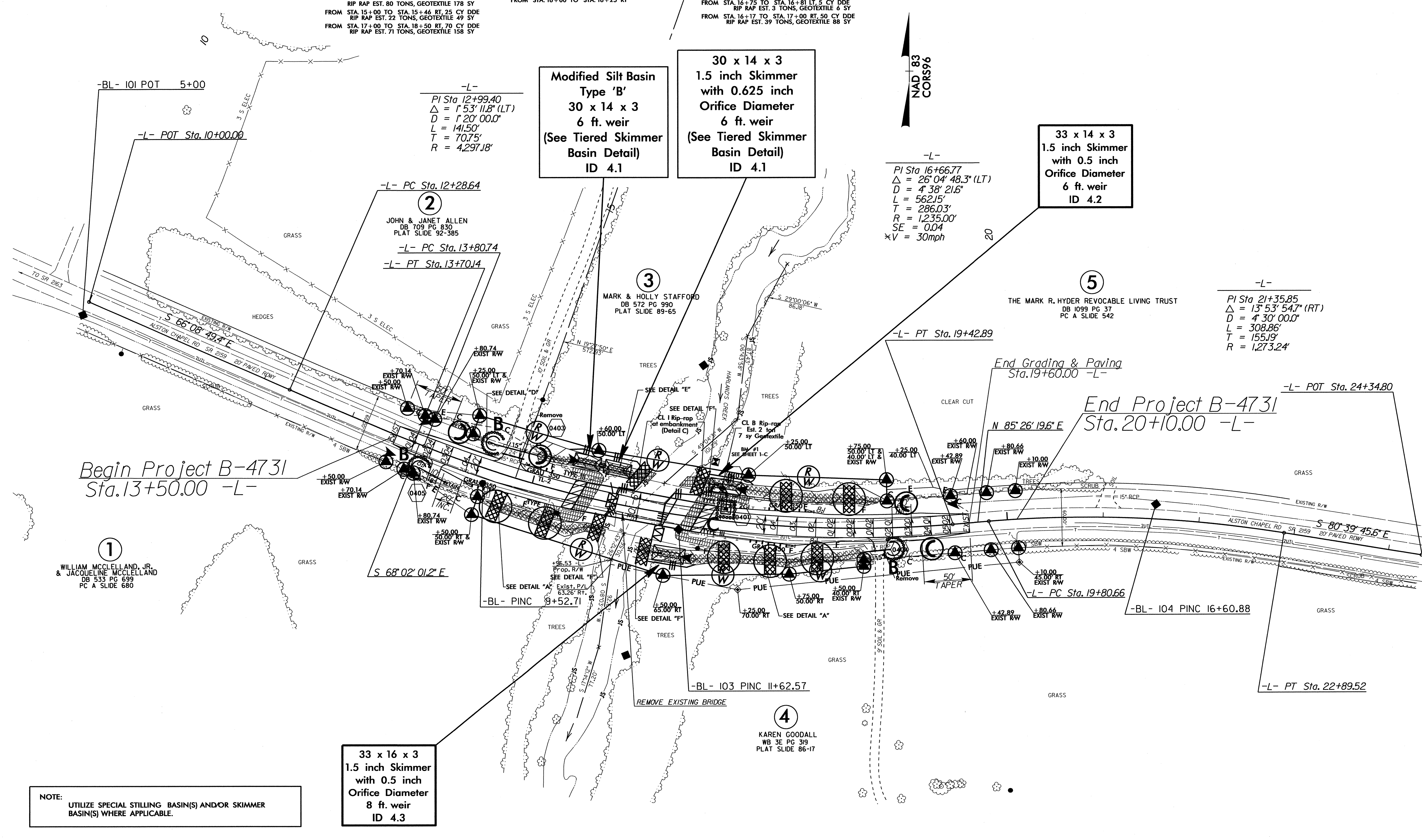
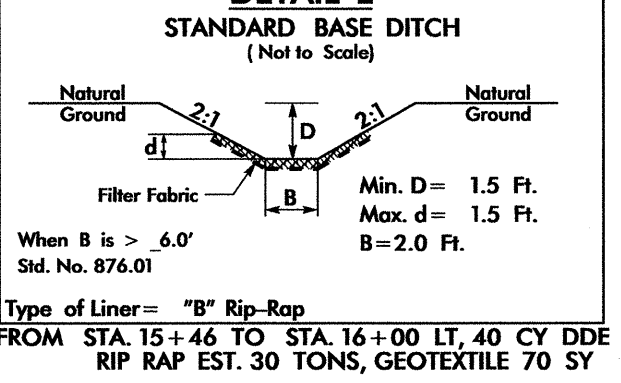
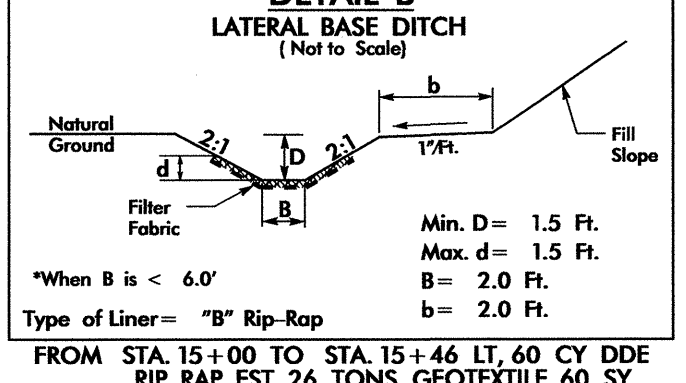
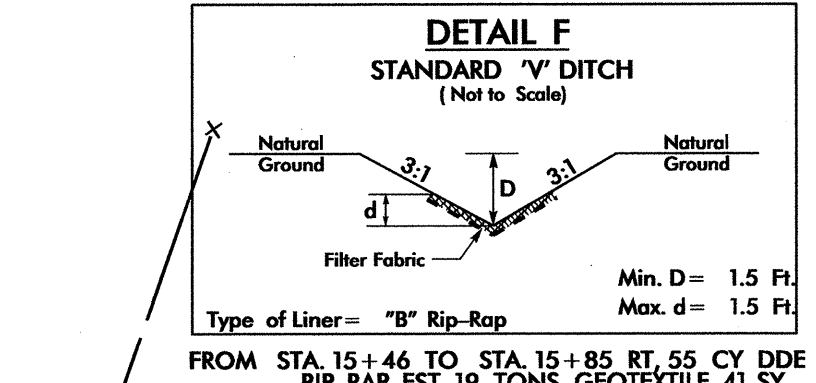
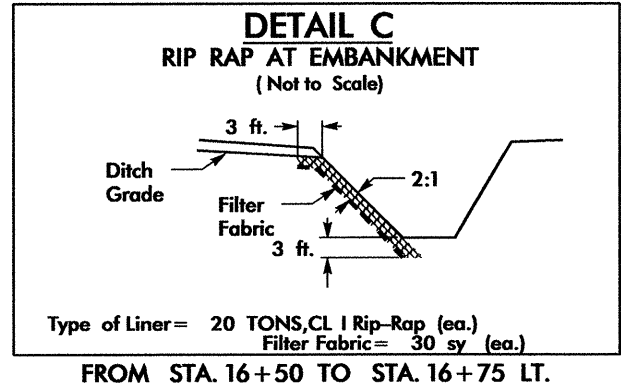
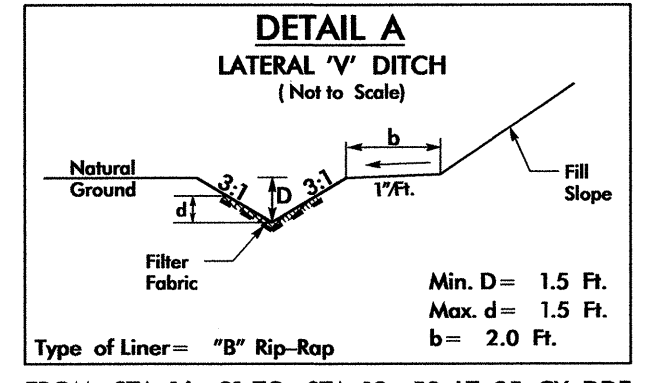
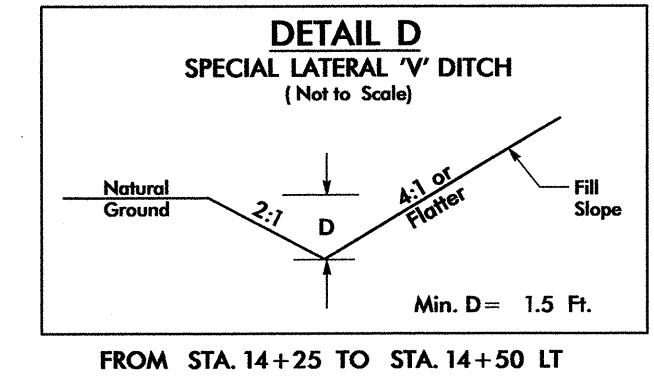
NOTE:
UTILIZE SPECIAL STILLING BASIN(S) AND/OR SKIMMER
BASIN(S) WHERE APPLICABLE.

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
B-4731	EC-5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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

33 x 16 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
8 ft. weir
ID 4.3

30 x 14 x 3
Modified Silt Basin
Type 'B'
30 x 14 x 3
6 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 4.1

30 x 14 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
6 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 4.1

33 x 14 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
6 ft. weir
ID 4.2

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 5/14/99

T.I.P.: B-4731

CONTRACT: C203297

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**SIGNING PLAN
CHATHAM COUNTY**

**LOCATION: BRIDGE NO. 129 OVER HARLANDS CREEK
ON SR 2159 (ALSTON CHAPEL RD)**

TIP NO. B-4731	SHEET NO. SIGN-1
APPROVED:	
DATE: 10-01-2013	

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

PAY ITEM NOTES

- 1 SIGN ERECTION, TYPE D, E, AND F
- 2 DISPOSAL OF SIGN SYSTEM, U-CHANNEL

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	121	L.F.
4096000000	904	SIGN ERECTION, TYPE D	2	EA.
4102000000	904	SIGN ERECTION, TYPE E	14	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	20	EA.

SIGN NUMBER: 301,302 TYPE: D QUANTITY: 2 SIGN WIDTH: 3'-6" HEIGHT: 2'-0" TOTAL AREA: 7.0 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 0.75" RADII: 3" NO. Z BARS: LENGTH:	BACKG COLOR: Green COPY COLOR: White SYMBO L X Y WID HT <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> MAT'L: 0.125" ALUMINUM																										DESIGN BY: TRT PROJECT ID: B-4731 CHECKED BY: ADK/CAJ DIV: 08 DATE: September 2013	<p style="text-align: center;">BORDER R=3" TH=0.75"</p> <p style="text-align: right; font-size: small;">Spacing Factor is 1 unless specified otherwise</p>													
NOTES: 1. Legend and border shall be direct applied Grade C reflective sheeting. 2. Background shall be Grade C reflective sheeting.																																									
LETTER POSITIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="11" style="text-align: center;">Letter spacings are to start of next letter</th> <th style="text-align: right;">Series/Size Text Length</th> </tr> </thead> <tbody> <tr> <td>5.6</td><td>5.1</td><td>4.6</td><td>3</td><td>1.9</td><td>4.6</td><td>4.4</td><td>4.4</td><td>2.8</td><td>5.6</td><td></td><td></td><td style="text-align: right;">D 2000 30.8</td> </tr> <tr> <td>10.8</td><td>5.3</td><td>2.8</td><td>4.1</td><td>4.4</td><td>3.8</td><td>10.8</td><td></td><td></td><td></td><td></td><td></td><td style="text-align: right;">D 2000 20.4</td> </tr> </tbody> </table>				Letter spacings are to start of next letter											Series/Size Text Length	5.6	5.1	4.6	3	1.9	4.6	4.4	4.4	2.8	5.6			D 2000 30.8	10.8	5.3	2.8	4.1	4.4	3.8	10.8						D 2000 20.4
Letter spacings are to start of next letter											Series/Size Text Length																														
5.6	5.1	4.6	3	1.9	4.6	4.4	4.4	2.8	5.6			D 2000 30.8																													
10.8	5.3	2.8	4.1	4.4	3.8	10.8						D 2000 20.4																													

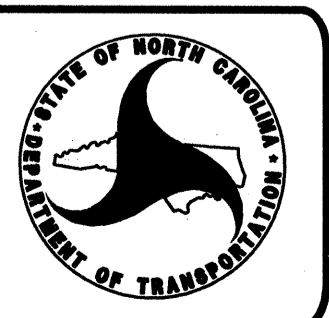
TYPE "E" SIGNS

(401) QUANTITY REQ'D 2 <p style="font-size: x-small;">ONE "U" POST PER SIGN</p>	(402) QUANTITY REQ'D 2 <p style="font-size: x-small;">MOUNT BELOW SIGN 401 IN 2 INSTALLATIONS</p>	(403) QUANTITY REQ'D 5 <p style="font-size: x-small;">ONE "U" POST PER SIGN</p>	(404) QUANTITY REQ'D 5 <p style="font-size: x-small;">MOUNT BACK OF SIGN 403 IN 5 INSTALLATIONS</p>
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CONTACTS: N.C.D.O.T. SIGNING AND DELINEATION UNIT

SUSAN B. KUNZ _____ SIGNING & DELINEATION REGIONAL ENGINEER

STACEY W. JOHNS _____ SIGNING & DELINEATION PROJECT DESIGN ENGINEER



PLAN PREPARED BY :

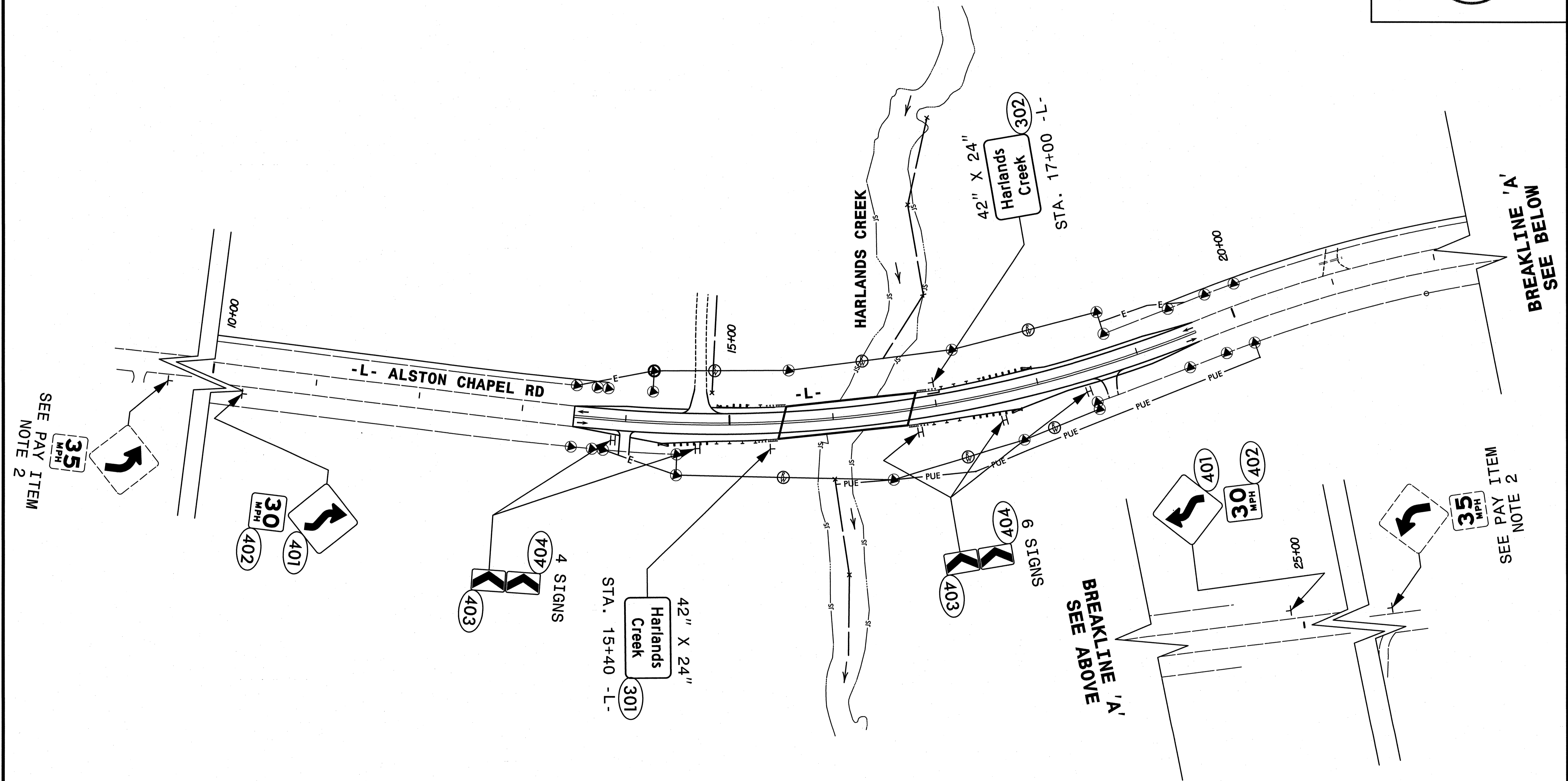
HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

C.A. JOHNSON, III, PE SIGNING PROJECT ENGINEER
A.D. KLINSIEK, PE SIGNING DESIGN ENGINEER
T.R. TERRELL SIGNING DESIGN TECHNICIAN

INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET, SIGN DESIGN, TYPE "E" SIGNS
SIGN-2	SIGN DETAIL SHEET

NAD 83/CORS96



SEE PAY ITEM
NOTE 2

SEE PAY ITEM
NOTE 2

NOTES:
REMOVE AND DISPOSE OF EXISTING SIGNS WITHIN PROJECT LIMITS UNLESS OTHERWISE NOTED.
ALL PROPOSED SIGNS SEE PAY ITEM NOTE 1 UNLESS OTHERWISE NOTED.

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Raleigh, North Carolina 27609
NC License No. C-1554

**EXISTING AND PROPOSED SIGNS
STA. 10+00 TO 25+00**

09/05/99

TIP PROJECT: B-4731

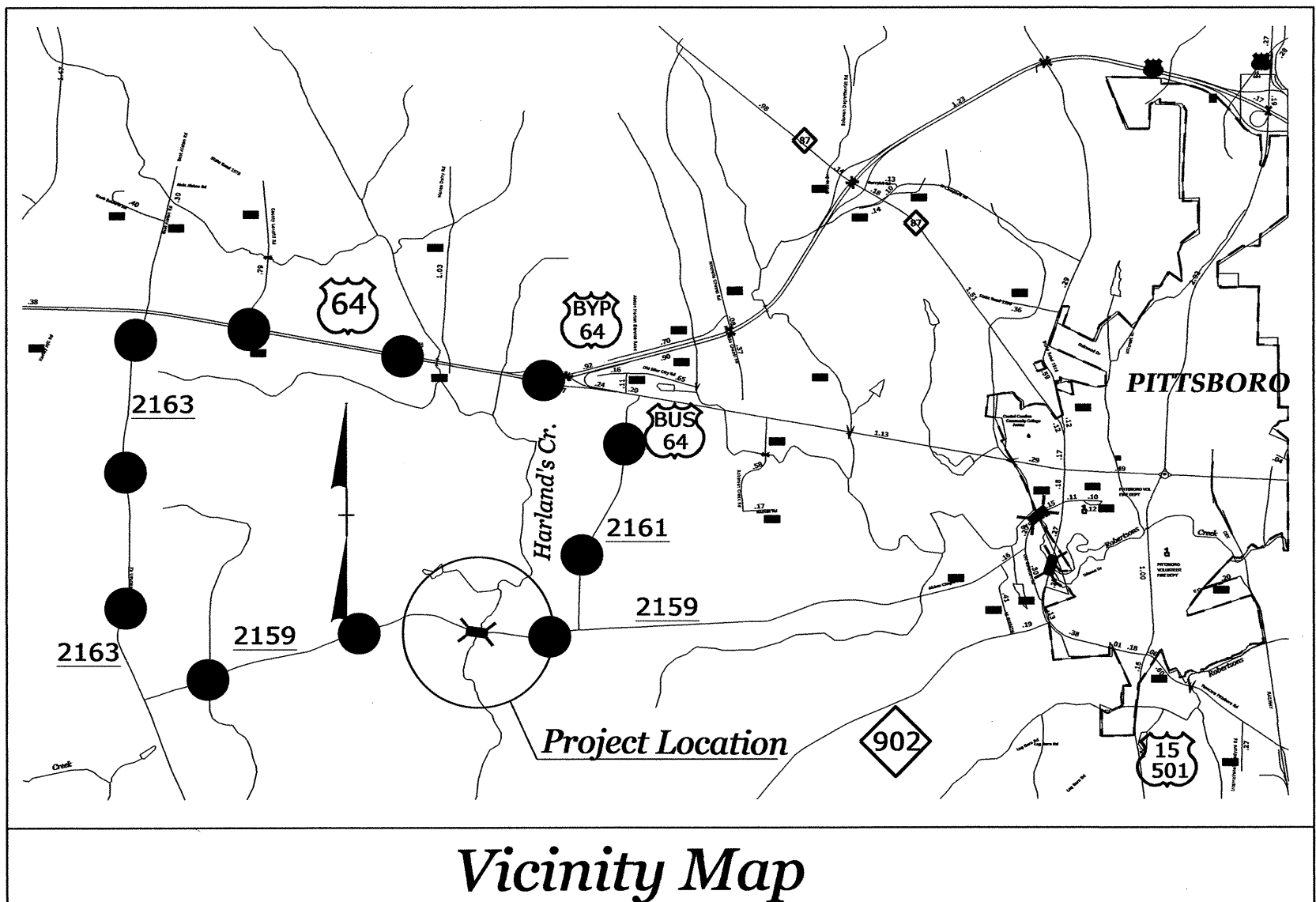
T.I.P. NO.	SHEET NO.
B-4731	UO-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
CHATHAM COUNTY**

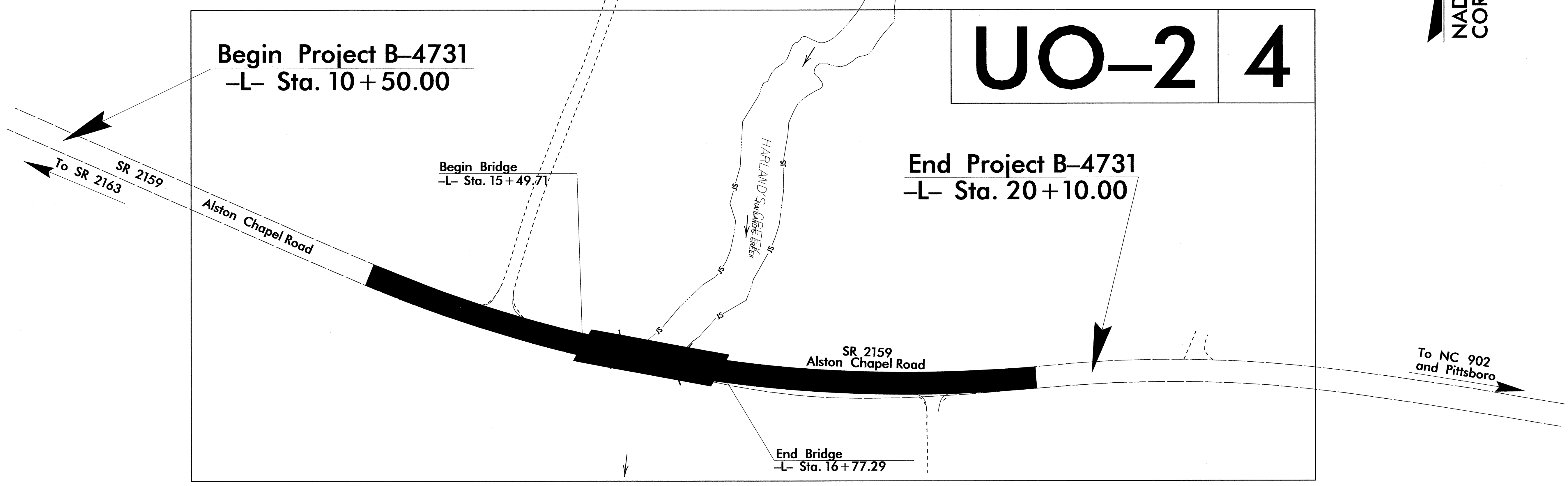
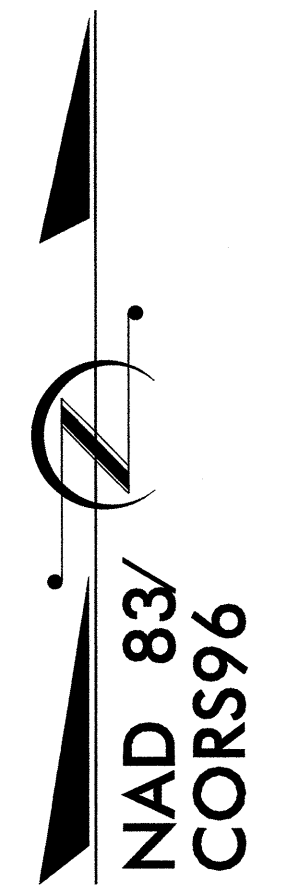
LOCATION: BRIDGE #129 OVER HARLAND'S CREEK ON
SR 2159 (ALSTON CHAPEL ROAD)

TYPE OF WORK: RELOCATION OF POWER AND TELEPHONE



Vicinity Map

●●●●● Offsite Detour Route



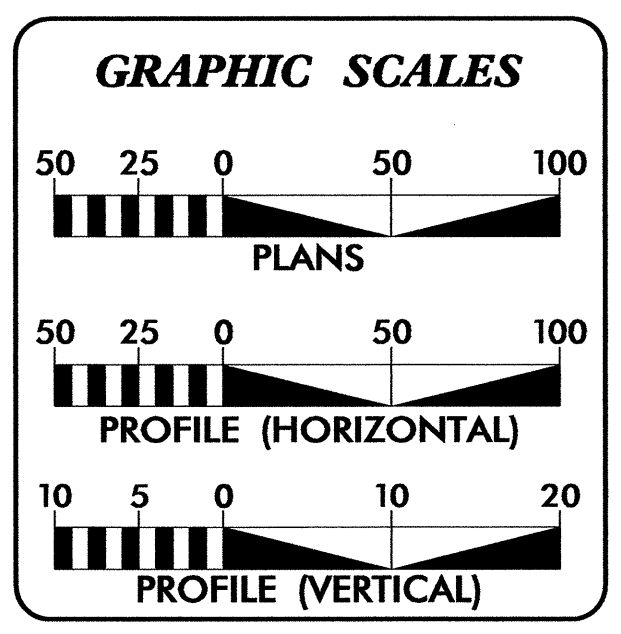
UO-2 4

Begin Project B-4731
-L- Sta. 10+50.00

End Project B-4731
-L- Sta. 20+10.00

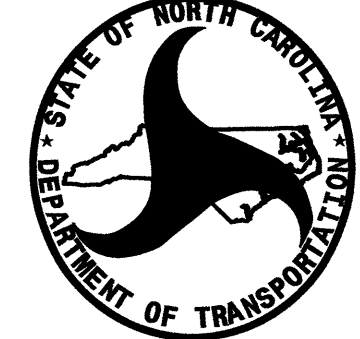
Begin Bridge
-L- Sta. 15+49.71

End Bridge
-L- Sta. 16+77.29



INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITY BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT	
(A)	POWER - CENTRAL EMC
(B)	TELEPHONE - CENTURYLINK

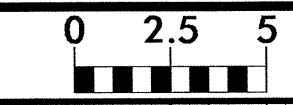


PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
ENGINEERING SECTION

1591 MAIL SERVICES CENTER
RALEIGH, NC 27699-1591
PHONE (919) 707-6690
FAX (919) 250-4151

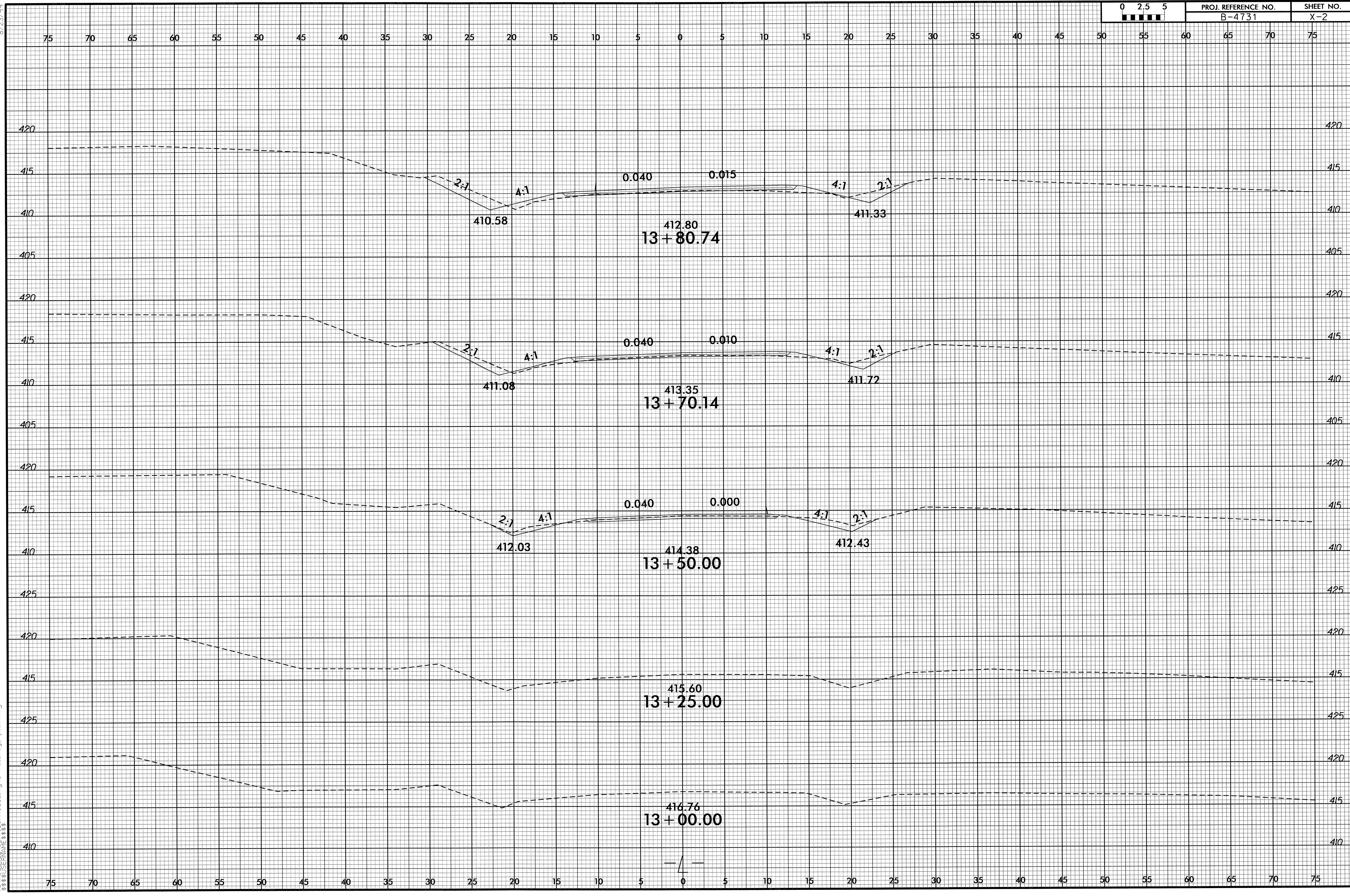
Roger Worthington, P.E.	UTILITIES SECTION ENGINEER
Steve McKee, P.E.	UTILITIES SQUAD LEADER PROJECT ENGINEER
John Nigro, P.E.	UTILITIES PROJECT DESIGNER

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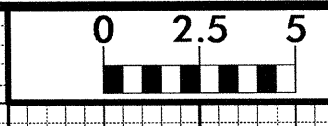
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B-4731

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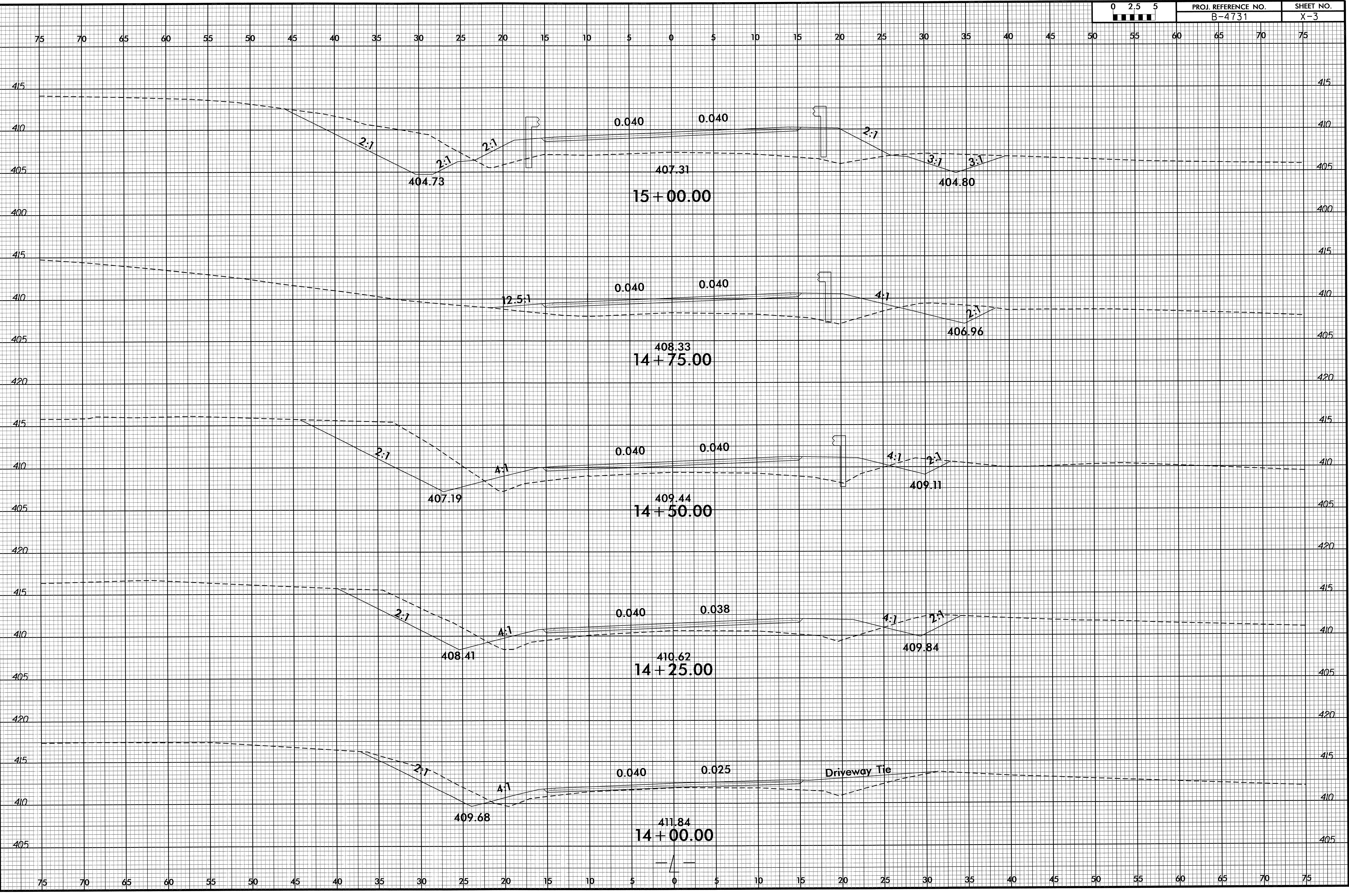
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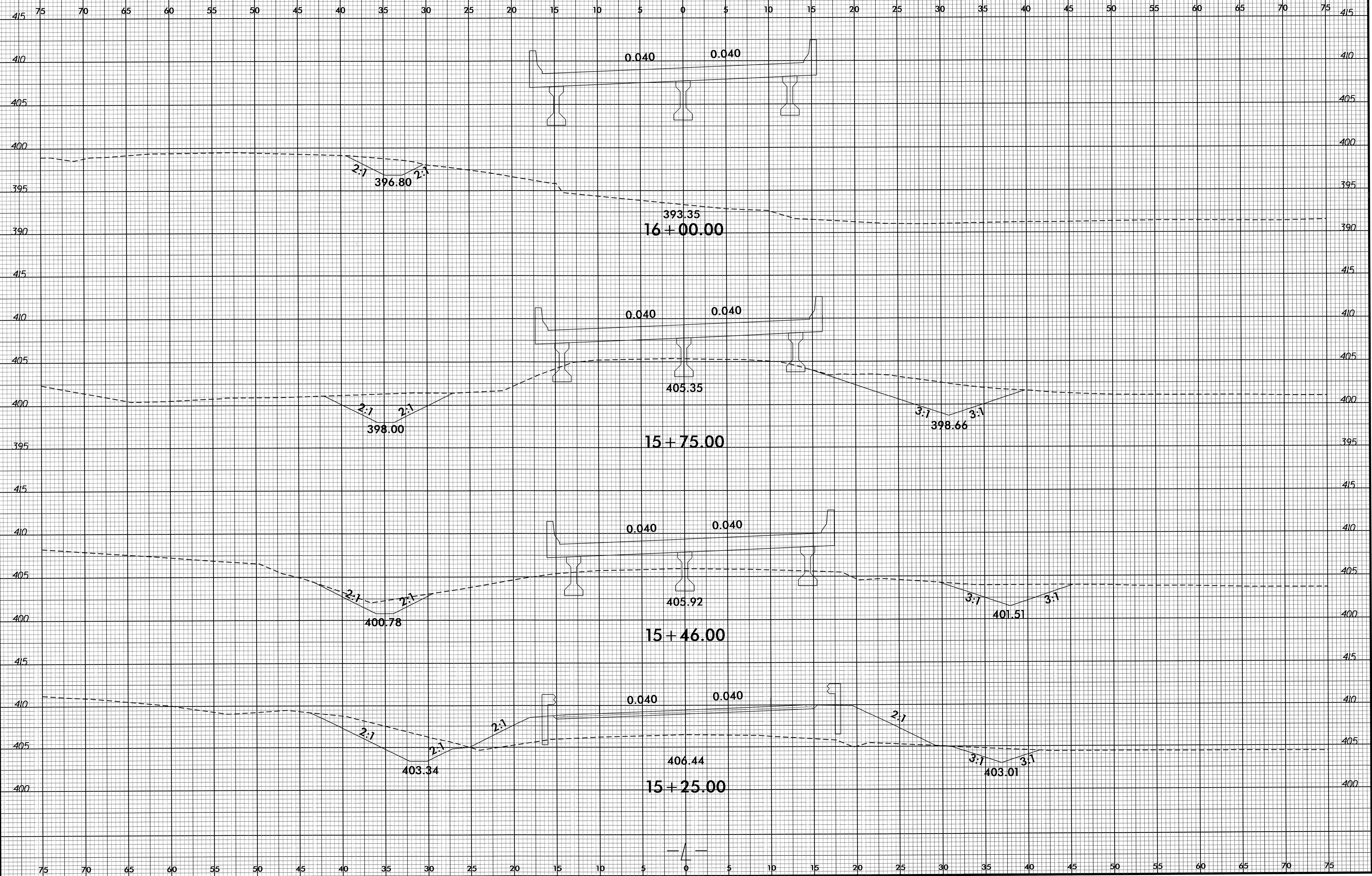


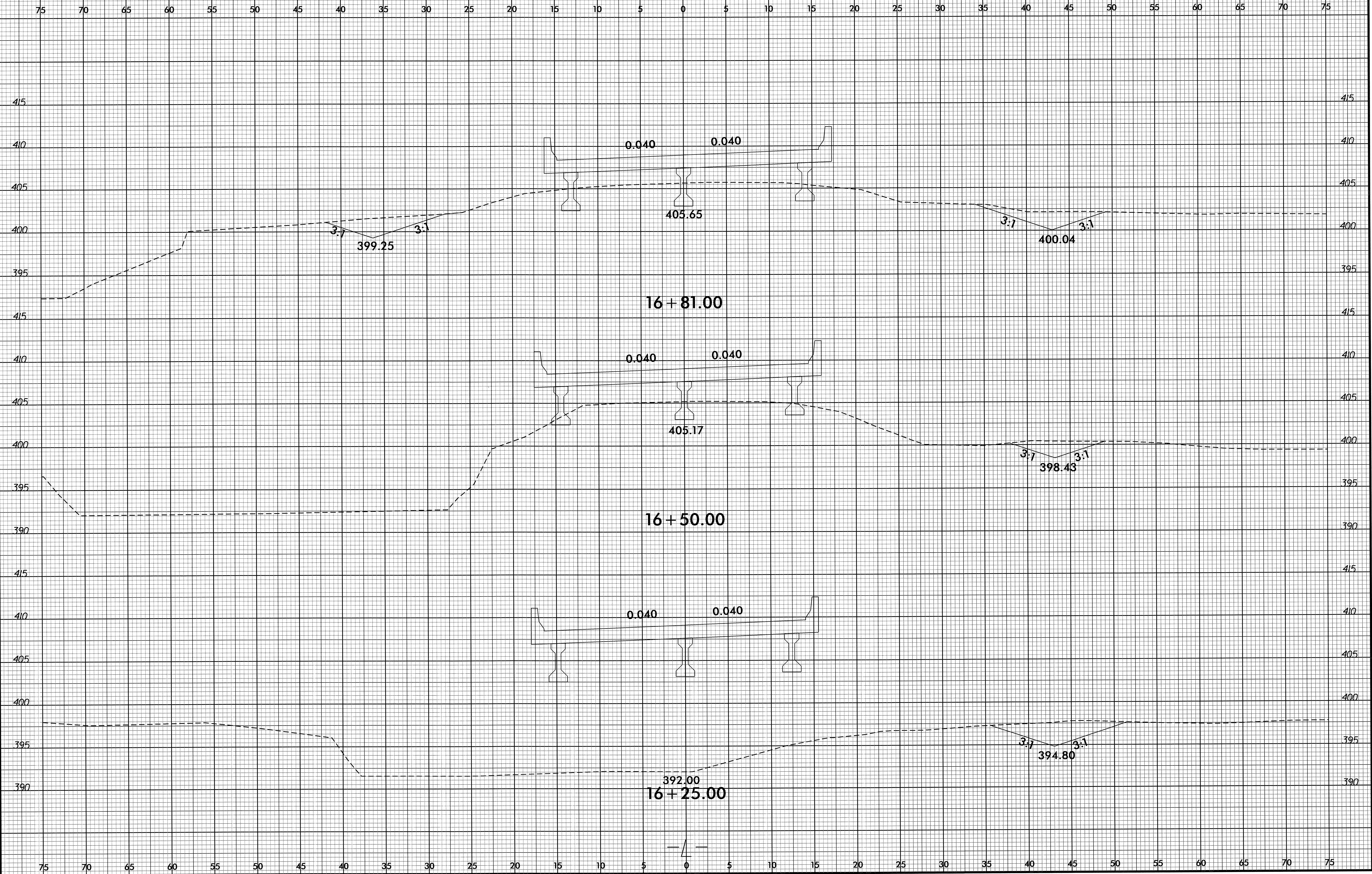
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B-4731

SHEET NO.
X-3

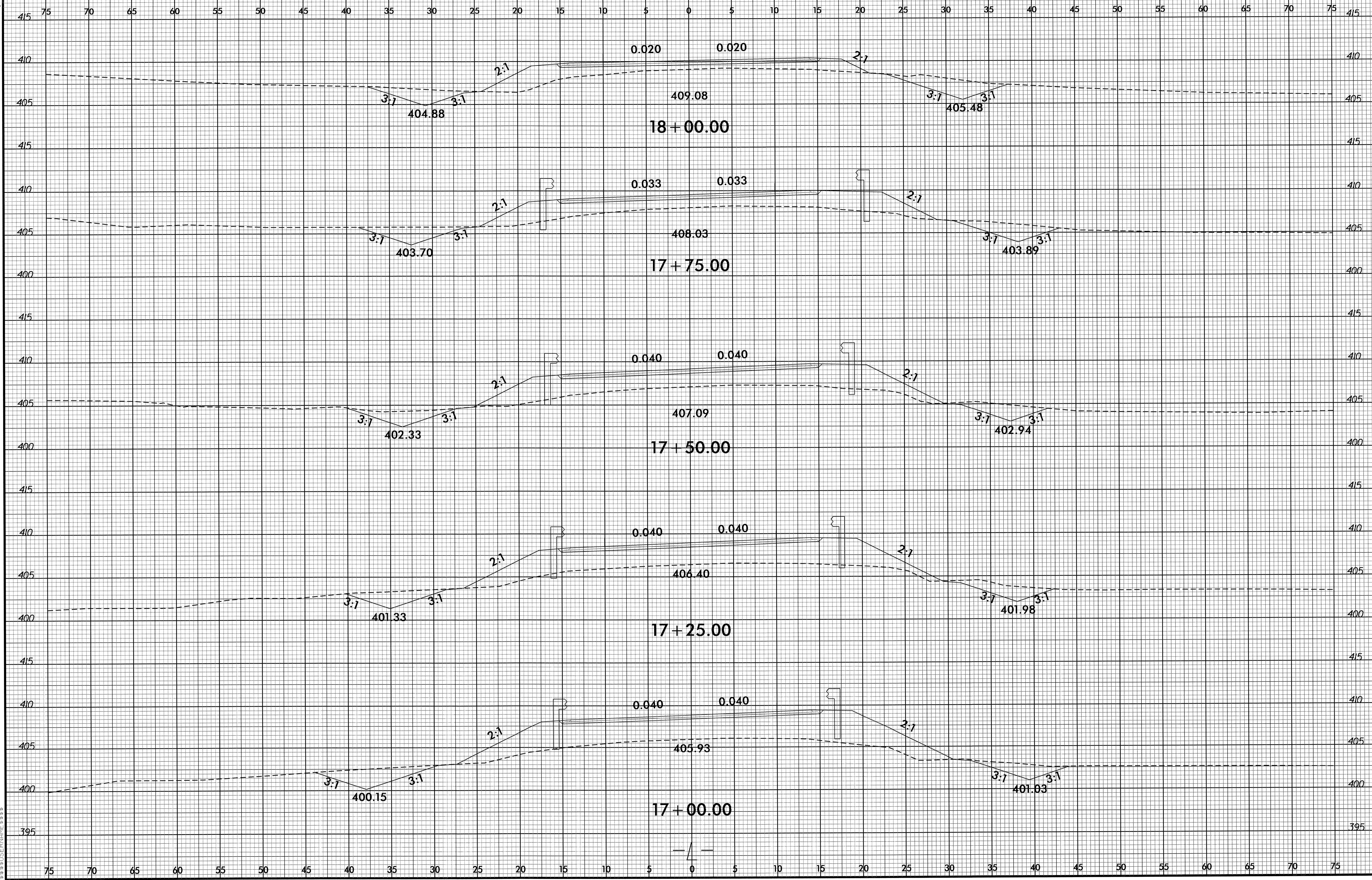


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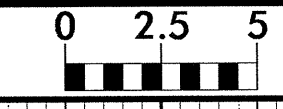


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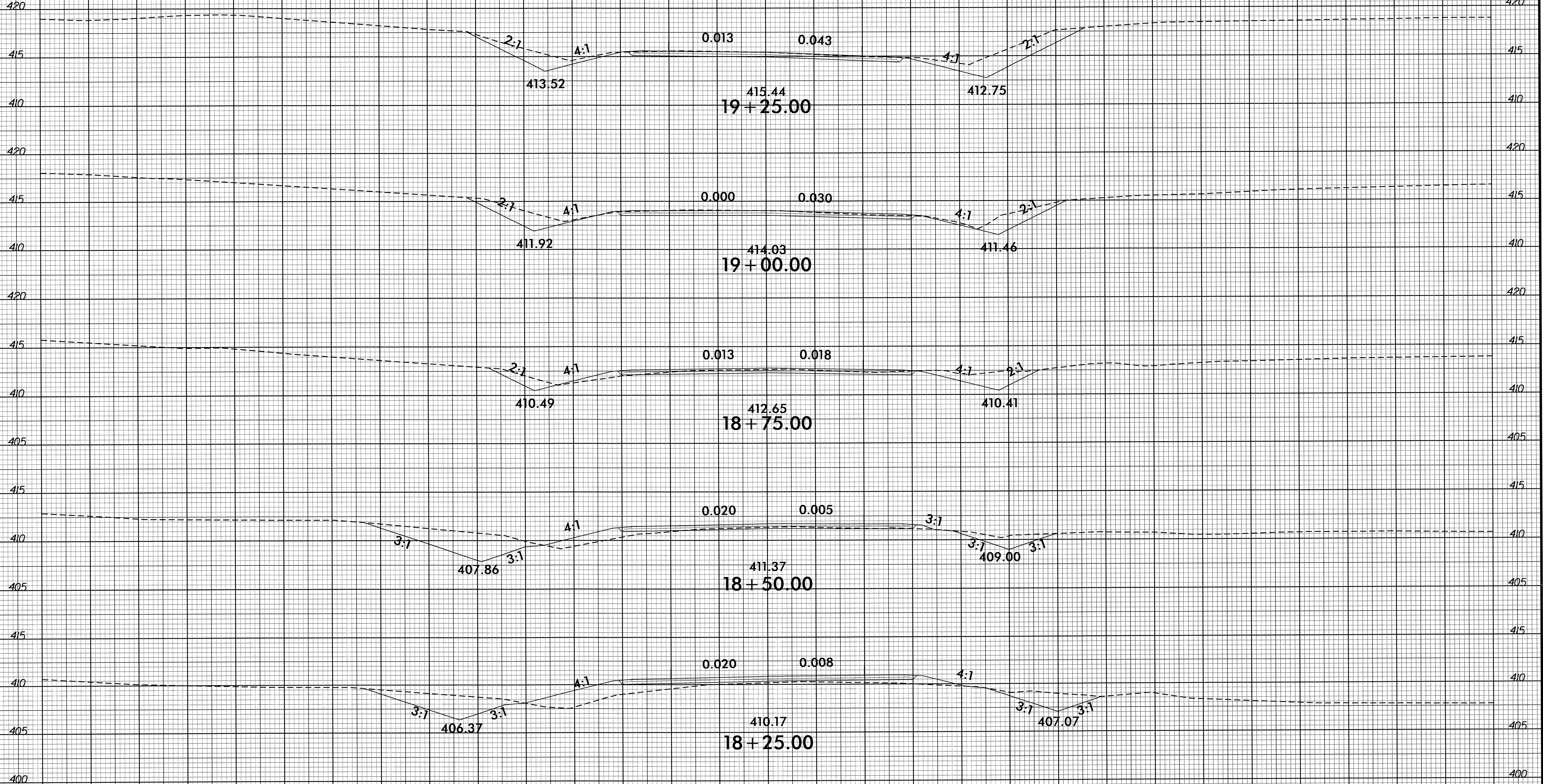
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PROJ. REFERENCE NO.
B-4731

SHEET NO.
X-7

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414.03
19+00.00

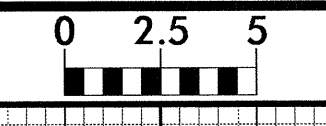
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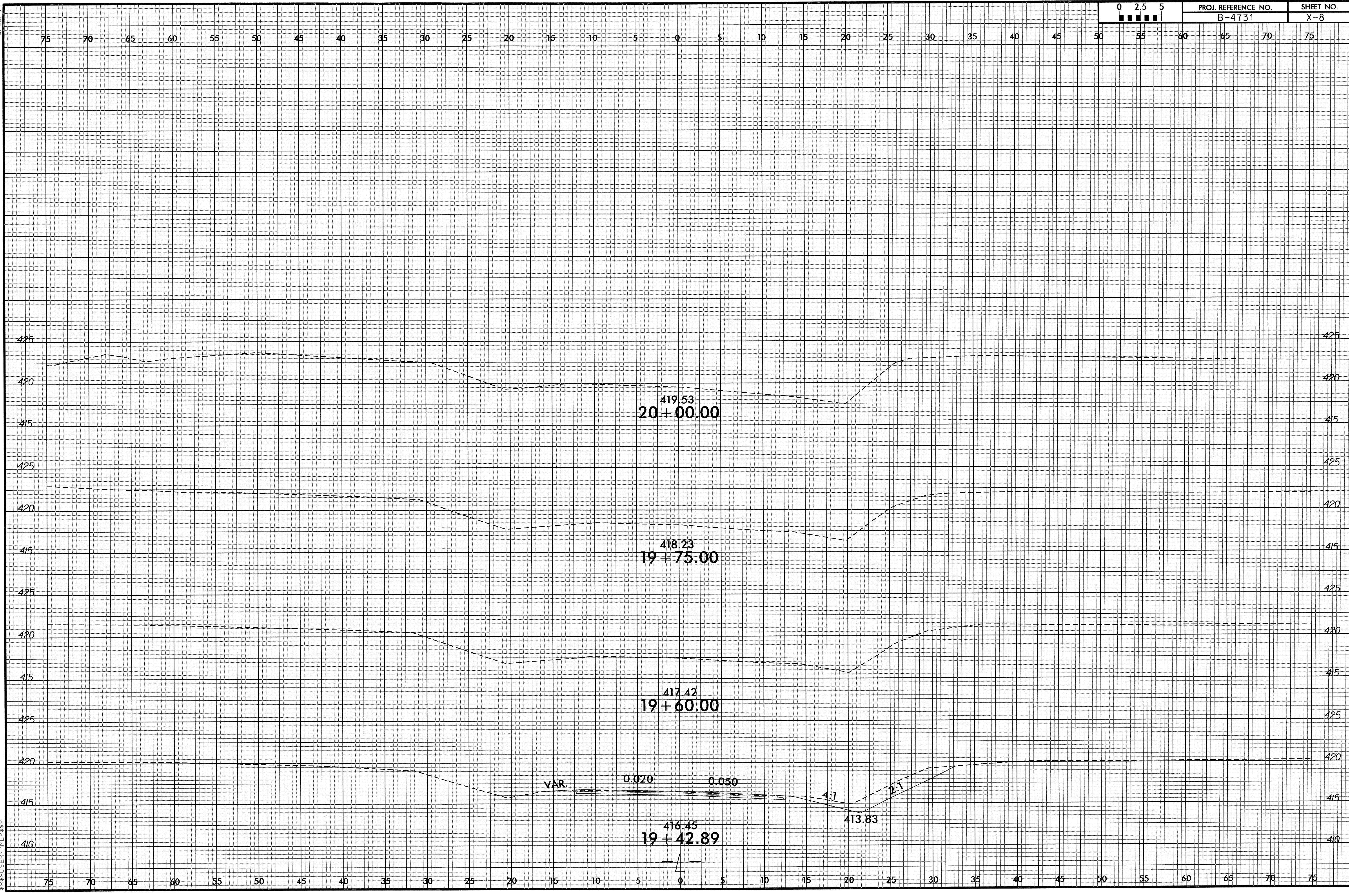
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PROJ. REFERENCE NO.	SHEET NO.
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