

09/08/99

See Sheet 1-A For Index of Sheets
See Sheet 1-B for Symbology Sheet
See Sheet 1-C for Control Sheet

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

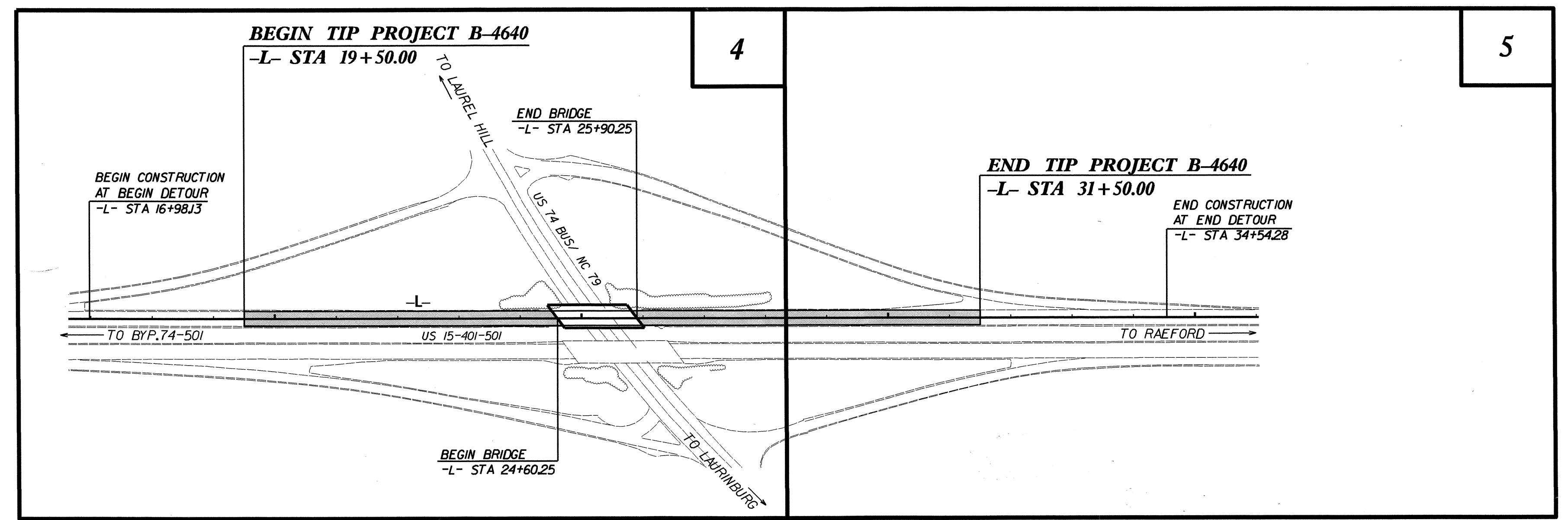
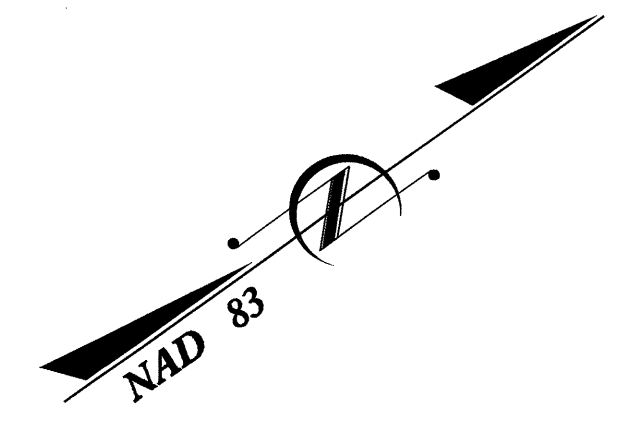
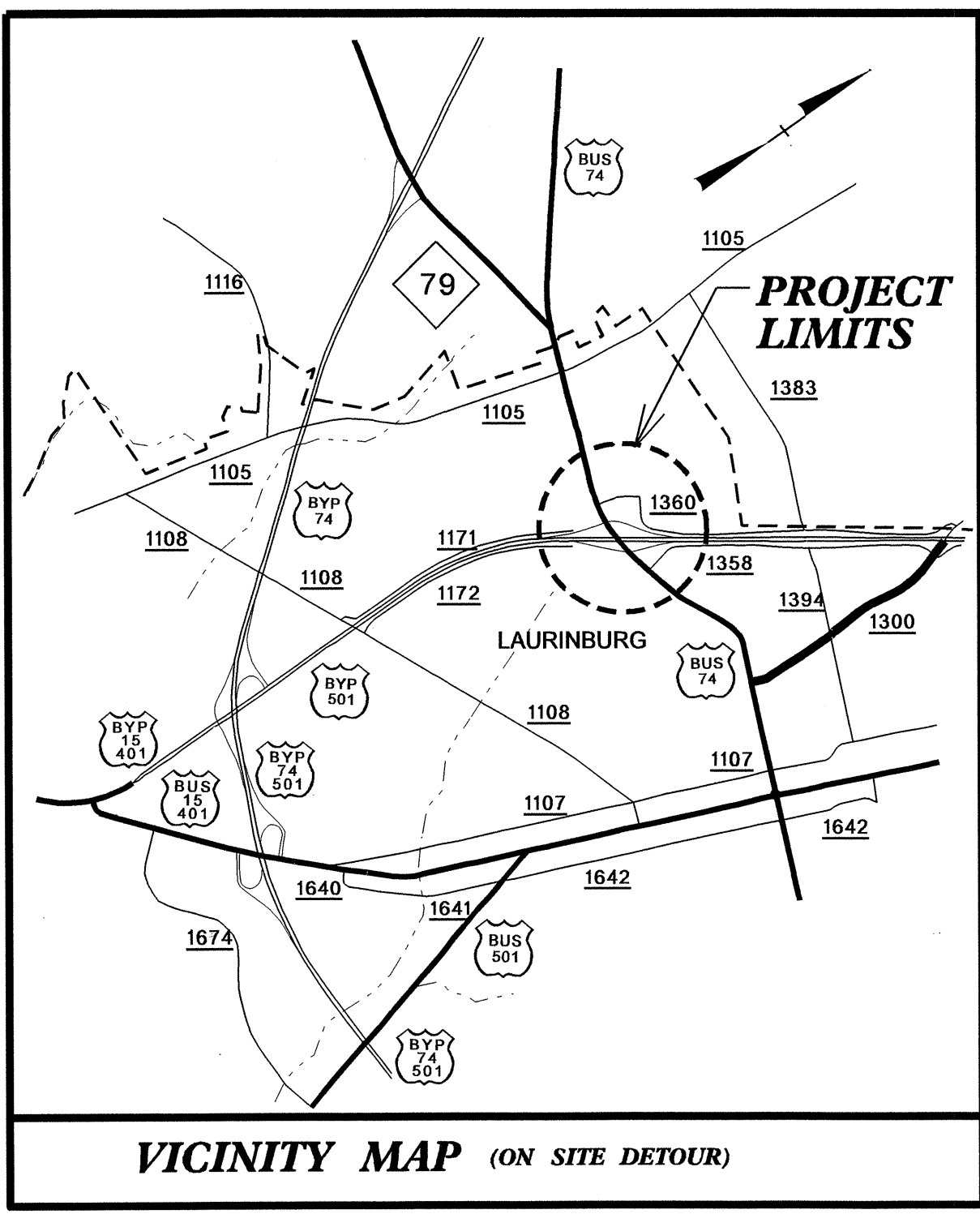
SCOTLAND COUNTY

**LOCATION: BRIDGE NO. 39 OVER US 74 BUS.
AND NC 79 ON US 15-401-501**

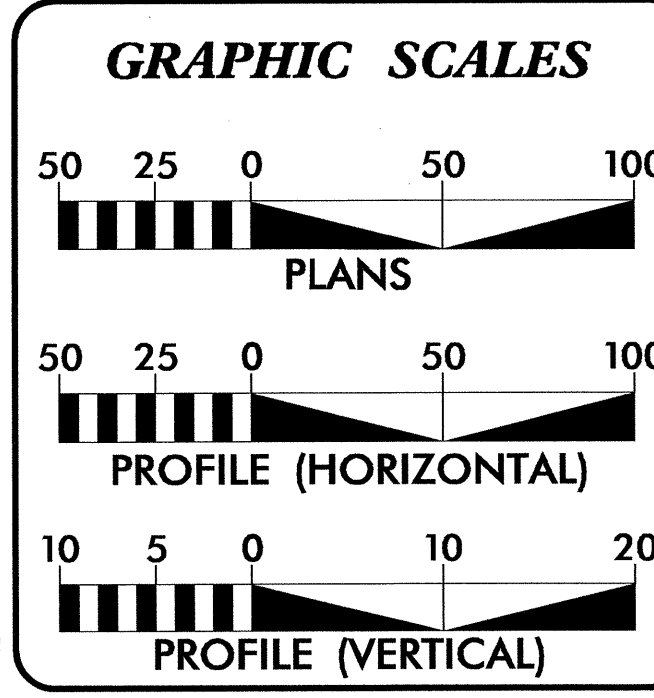
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4640	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38450.1.1	BRNHS-15(19)	PE	
38450.2.1	BRNHS-15(19)	RW	
38450.3.1	BRNHS-15(19)	CONSTR.	

TIP PROJECT: B-4640



CONTRACT: C202780



DESIGN DATA

ADT 2012 = 8044
ADT 2032 = 13884
DHV = 10 %
D = 100 %
T = 9 % *
V = 60 MPH
CLASSIFICATION = ARTERIAL
* TTST 6% DUAL 3%
REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4640 = 0.202 MILES
LENGTH OF STRUCTURE TIP PROJECT B-4640 = 0.025 MILES
TOTAL LENGTH OF TIP PROJECT B-4640 = 0.227 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 16, 2011

LETTING DATE:
FEBRUARY 21, 2012

GARY LOVERING, PE
PROJECT ENGINEER

ANTHONY C. WEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

Ray D. Lovings
SIGNATURE: P.E. 21 NOV 2011

ROADWAY DESIGN ENGINEER

Anthony C. West
SIGNATURE: P.E. 25873

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

17-NOV-2011 11:28
R:\Roadway\Proj\11b4640_rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS, GENERAL NOTES AND 2012 ROADWAY ENGLISH STANDARD DRAWINGS

INDEX OF SHEETS

Sheet Number	Sheet
1	Title Sheet
1-A	Index of Sheets, General Notes and List of Standards
1-B	Conventional Symbols
1-C	Survey Control Sheet
2, 2-A	Typical Sections, Pavement Schedule and Wedging Detail
2-B, 2-C	-L Detour- plan sheets
2-D	Detail of Temporary Shoring
3	Summary of Quantities
3-A	Summary of Drainage Quantities
3-B	Summary of Pavement removal, Summary of Earthwork Summary of Shoulder Berm Gutter, Summary of Expressway Gutter and Guardrail Summary
4 to 5	Plan Sheets
6 to 7	Profile Sheets
TMP-1 to TMP-18 PMP-1 EC-1 to EC-9	Traffic Control Plans Pavement Marking Plans Erosion Control Plans
X-0	Cross Section Summary Sheet
X-1 to X-6	-L- Cross Sections
X-6 to X-16	-L Detour- Cross Sections
S-1 to S-25	Structure Plans

GENERAL NOTES: 2012 SPECIFICATIONS

EFFECTIVE: 01-17-12
REVISED: 08/31/11

**GRADE LINE:
GRADING AND SURFACING:**

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

UNDERDRAINS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

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 - Progress Energy,
Gas - Piedmont Natural Gas, Telephone - AT&T, Water and Sewer - City of Laurinburg and
Cable - Time Warner Cable
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.05	Method of Obtaining Superelevation - Divided Highways
225.09	Guide for Shoulder and Ditch Transition at Grade Separations
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.04	Parallel Pipe End Section - Prefabricated Steel Section for 15" to 24" Pipe
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.02	Drop Inlet Installation in Expressway Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.01	Concrete Sidewalk
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

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	-o-o-o-
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	⊙ MILEPOST 35
Switch	⊠ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite 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	----- CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊠

VEGETATION:

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

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

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW
MINOR:	
Head and End Wall	----- CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	----- CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊙
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	-----
Designated U/G Water Line (S.U.E.*)	-----
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	-----
Designated U/G Gas Line (S.U.E.*)	-----
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	----- 2UTL
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.

SURVEY CONTROL SHEET B4640

PROJECT REFERENCE NO.	SHEET NO.
B4640	1C
Location and Surveys	

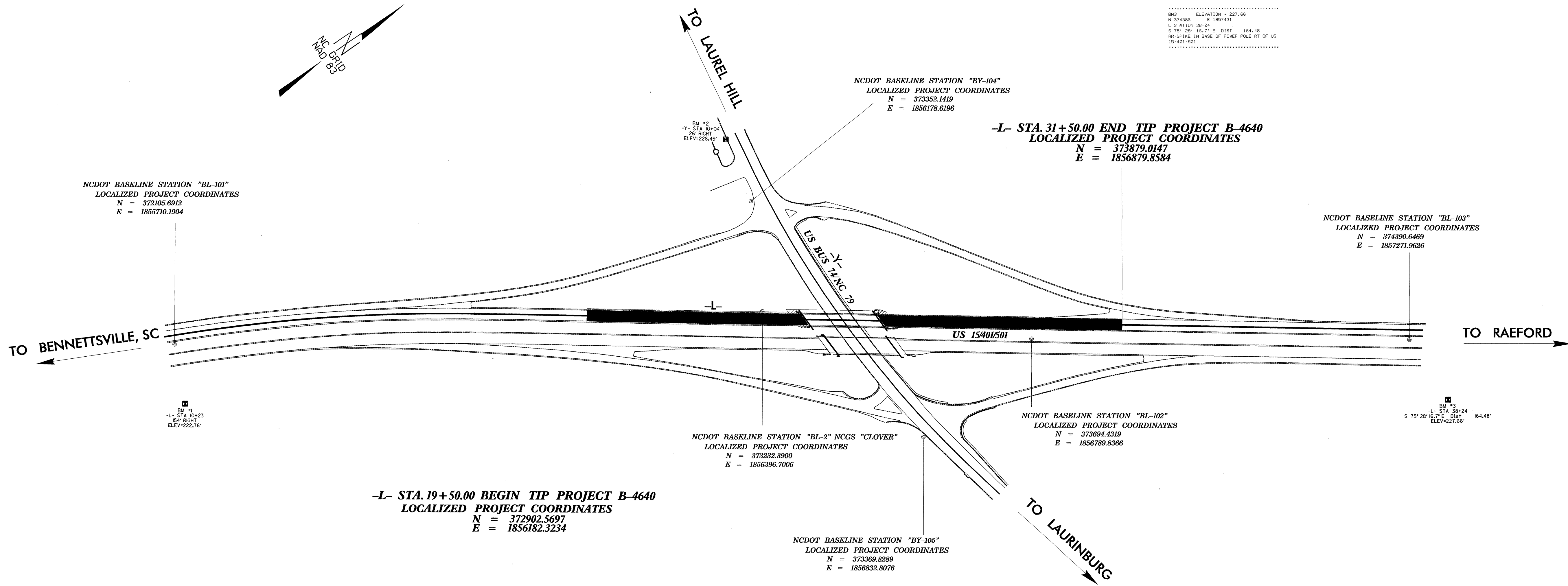
BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
101	BL-101	372105.6912	1855710.1904	224.94	10+20.20	19.84 RT
102	CLOVER	373232.3900	1856396.7006	245.37	23+42.99	17.28 LT
103	BL-103	373694.4319	1856789.8366	242.12	29+47.48	34.84 RT
105	BL-105	373369.8289	1856832.8076	228.10	37+94.24	21.66 RT

BY POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
104	BY-104	373352.1419	1856178.6196	208.59	11+52.10	34.61 RT
2	CLOVER	373232.3900	1856396.7006	245.37	13+70.67	137.44 RT
105	BY-105	373369.8289	1856832.8076	227.76	17+99.05	27.62 RT

BM1 ELEVATION = 222.76
 N 372000 E 1855832
 L STATION 10+23 104 RIGHT
 RR-SPIKE IN BASE OF POWER POLE (CPAL)
 24.952' RT OF US 15+401.581

.....
 BMS ELEVATION = 228.45
 N 373393 E 1856033
 Y STATION 10+04 26 RIGHT
 RR-SPIKE IN BASE OF POWER POLE RT OF US
 74 BUS (WCE 089)

.....
 BMS ELEVATION = 227.66
 N 374386 E 1857431
 L STATION 38+24
 S 75° 28' 16.7" E DIST 164.48
 RR-SPIKE IN BASE OF POWER POLE RT OF US
 15+401.581



NCDOT BASELINE STATION "BL-101"
 LOCALIZED PROJECT COORDINATES
 N = 372105.6912
 E = 1855710.1904

NCDOT BASELINE STATION "BY-104"
 LOCALIZED PROJECT COORDINATES
 N = 373352.1419
 E = 1856178.6196

-L- STA. 31+50.00 END TIP PROJECT B-4640
 LOCALIZED PROJECT COORDINATES
 N = 373879.0147
 E = 1856879.8384

NCDOT BASELINE STATION "BL-103"
 LOCALIZED PROJECT COORDINATES
 N = 373694.4319
 E = 1856789.8366

NCDOT BASELINE STATION "BL-2" NCGS "CLOVER"
 LOCALIZED PROJECT COORDINATES
 N = 373232.3900
 E = 1856396.7006

NCDOT BASELINE STATION "BL-102"
 LOCALIZED PROJECT COORDINATES
 N = 373694.4319
 E = 1856789.8366

-L- STA. 19+50.00 BEGIN TIP PROJECT B-4640
 LOCALIZED PROJECT COORDINATES
 N = 372902.5697
 E = 1856182.3234

NCDOT BASELINE STATION "BY-105"
 LOCALIZED PROJECT COORDINATES
 N = 373369.8289
 E = 1856832.8076

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "CLOVER"
 WITH NAD 83 STATE PLANE GRID COORDINATES OF
 NORTHING: 373232.3900(±) EASTING: 1856396.7006(±)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999901629
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "CLOVER" TO -L- STATION 19+50.00 IS
 S 33 01 23.3 W 393.3688'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NGVD29

- NOTES:
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOI.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:
 B4640_IS_CONTROL_090206.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 EXISTING NAD83 MONUMENTATION

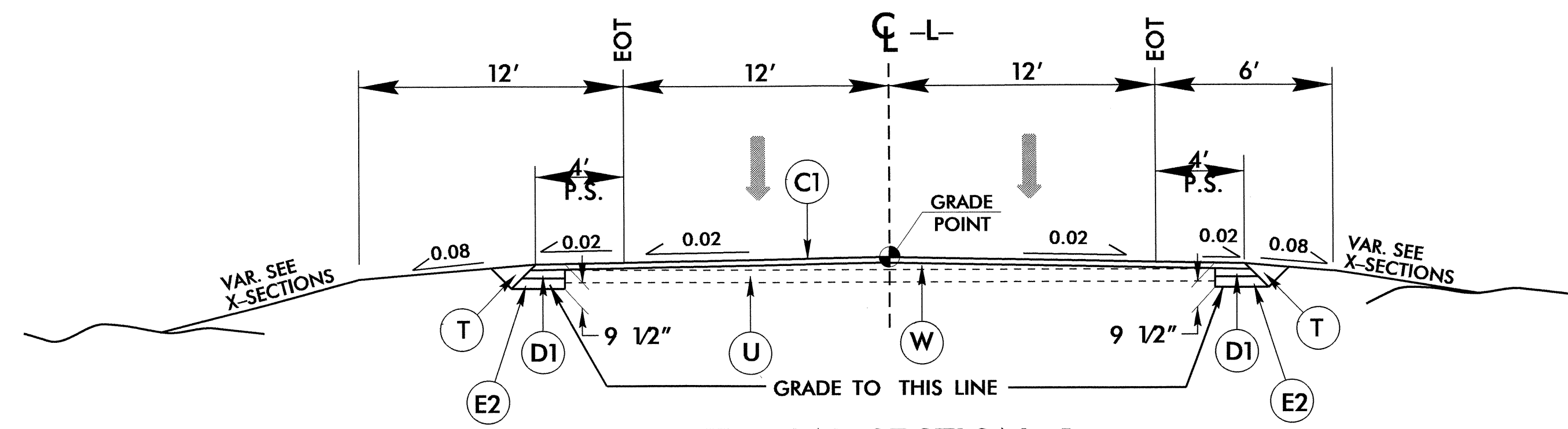
NOTE: DRAWING NOT TO SCALE

6/2/99

PROJECT REFERENCE NO. B-4640	SHEET NO. 2
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>
SEAL 25873 NORTH CAROLINA PROFESSIONAL ENGINEER	SEAL 22896 NORTH CAROLINA PROFESSIONAL ENGINEER

PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 3½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E3	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.
R1	EXPRESSWAY GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

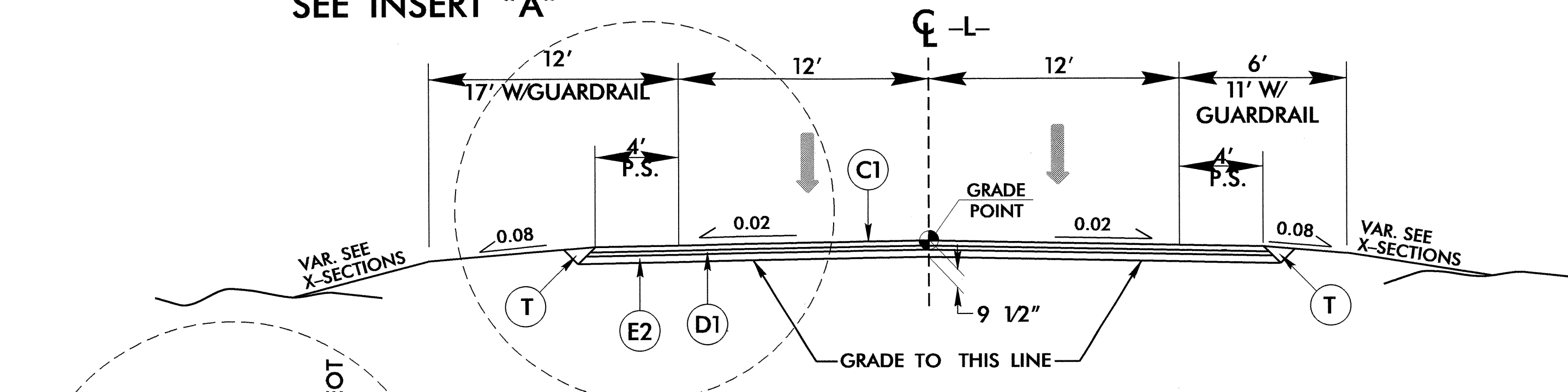
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION 1

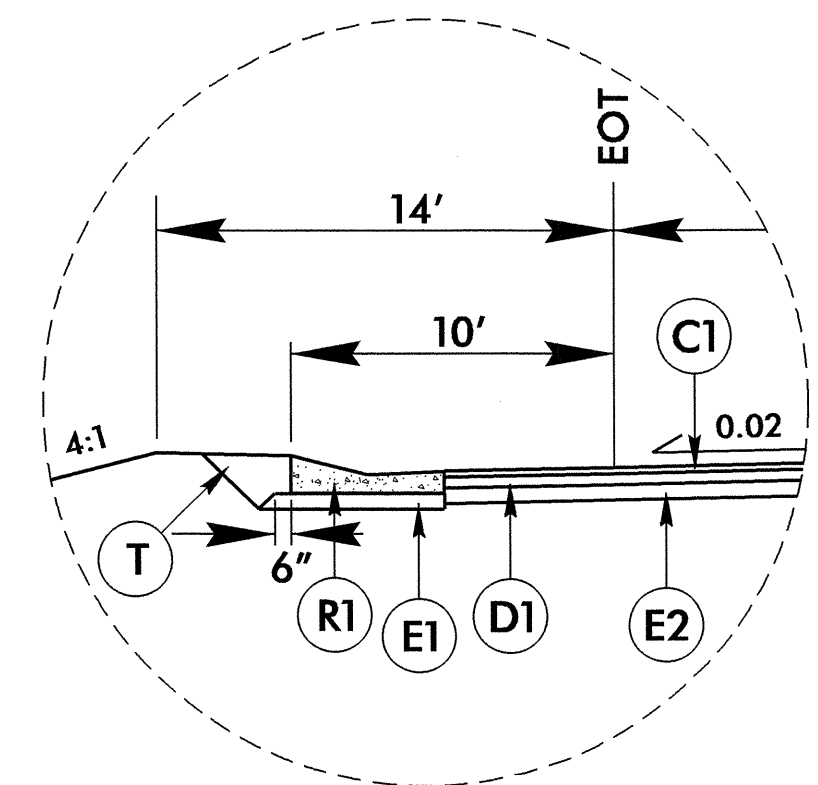
-L- STA 19+50.00 TO STA 21+00.00
-L- STA 30+50.00 TO STA 31+50.00

SEE INSERT "A"



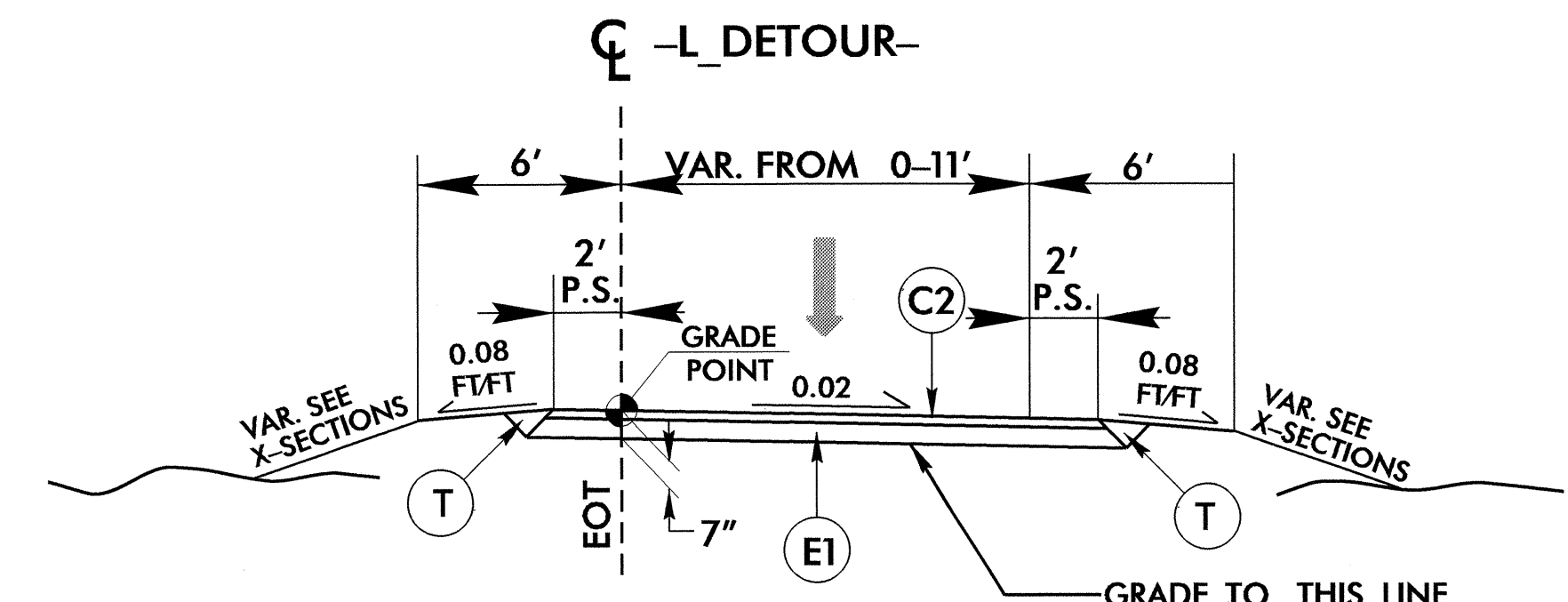
TYPICAL SECTION 2

-L- STA 21+00.00 TO STA 24+60.25 (BEGIN BRIDGE)
-L- STA 25+90.25 (END BRIDGE) TO STA 30+50.00



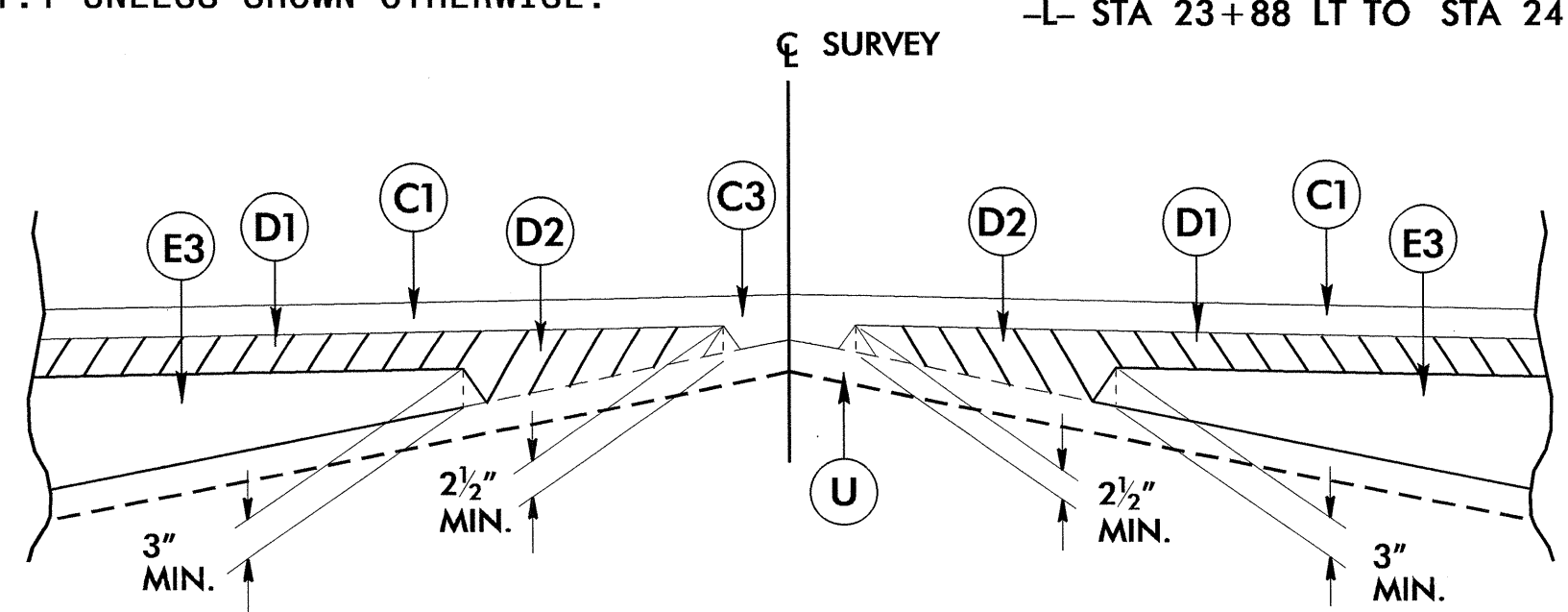
INSERT "A"

-L- STA 23+88 LT TO STA 24+20.10 LT

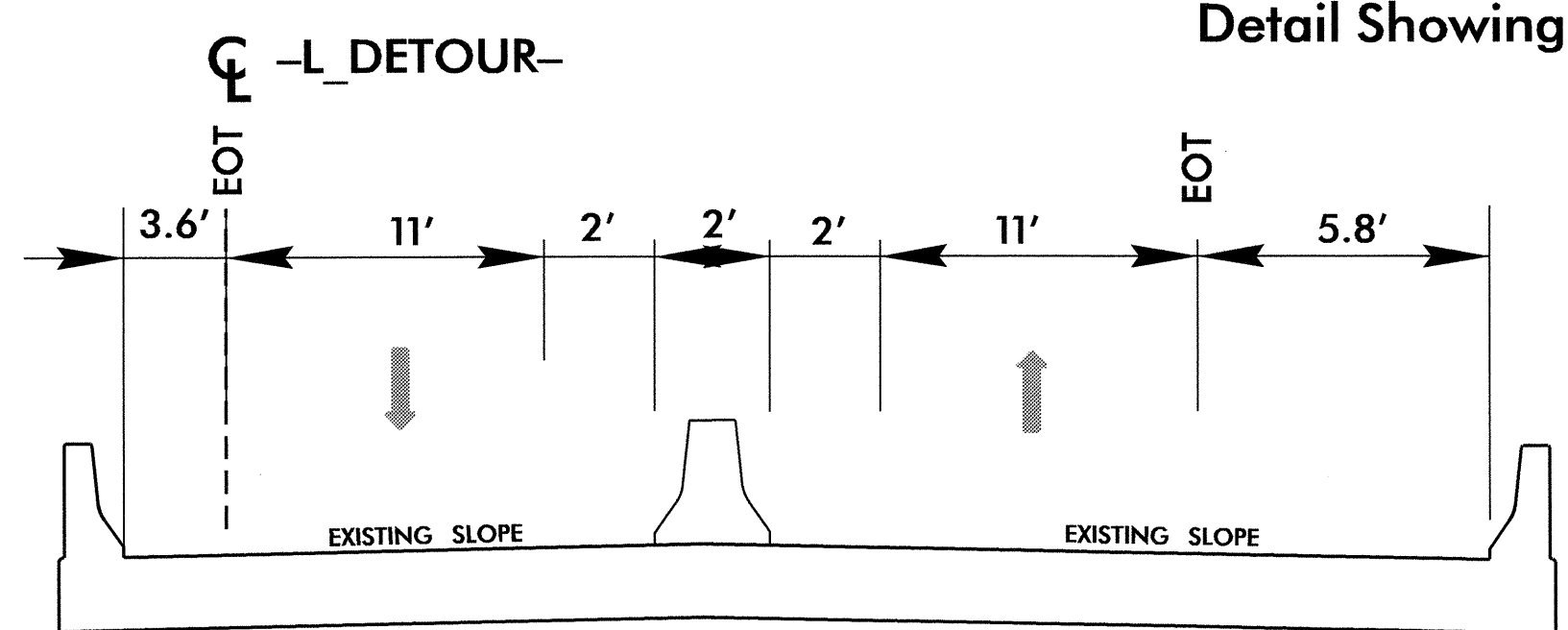


TYPICAL SECTION 3

-L DETOUR- STA 12+06.02 TO STA 14+50.00
-L DETOUR- STA 22+98.71 TO STA 25+77.85

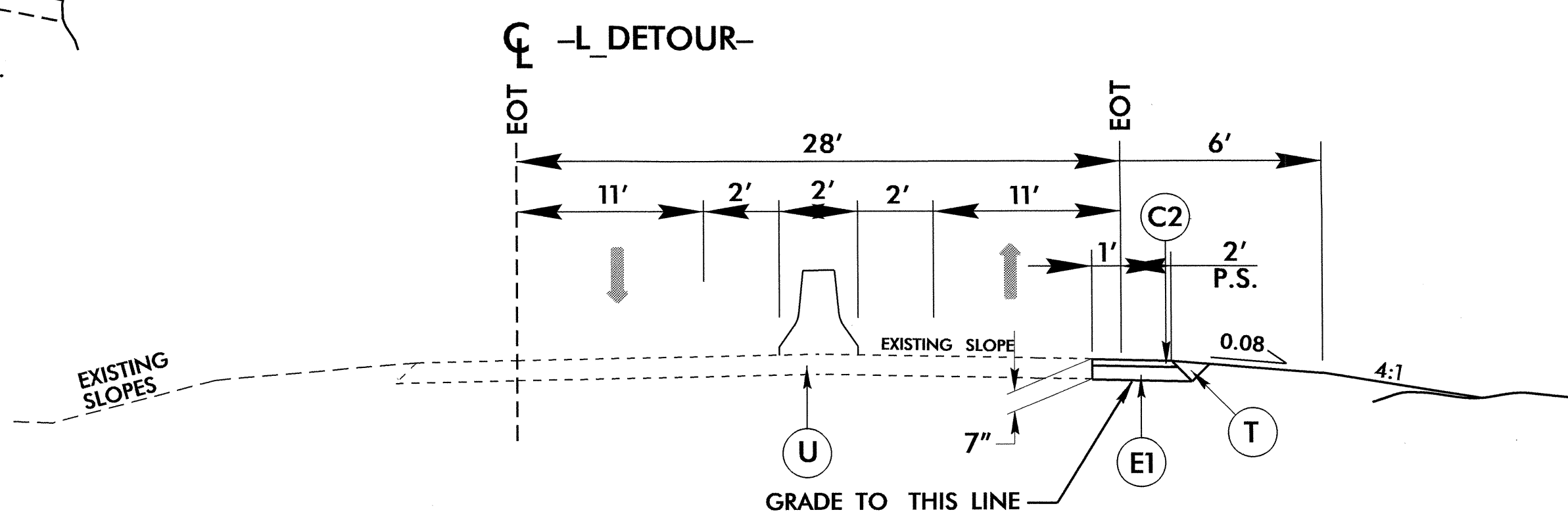


Detail Showing Method of Wedging



DETOUR BRIDGE TYPICAL SECTION

EXISTING NORTHBOUND BRIDGE





TYPICAL SECTION 4

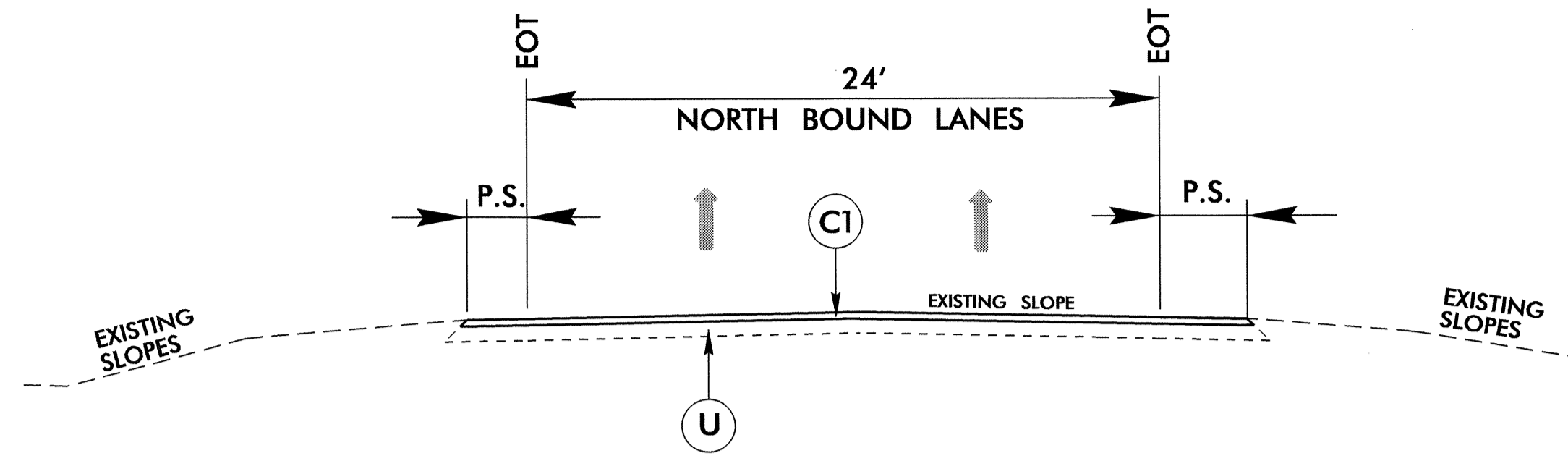
-L DETOUR- STA 14+33.27 TO STA 17+55.77
-L DETOUR- STA 20+12.68 TO STA 24+86.35

20-OCT-2011 14:24 R:\Roadway\Projects\B4640-r.dwg typ.dgn

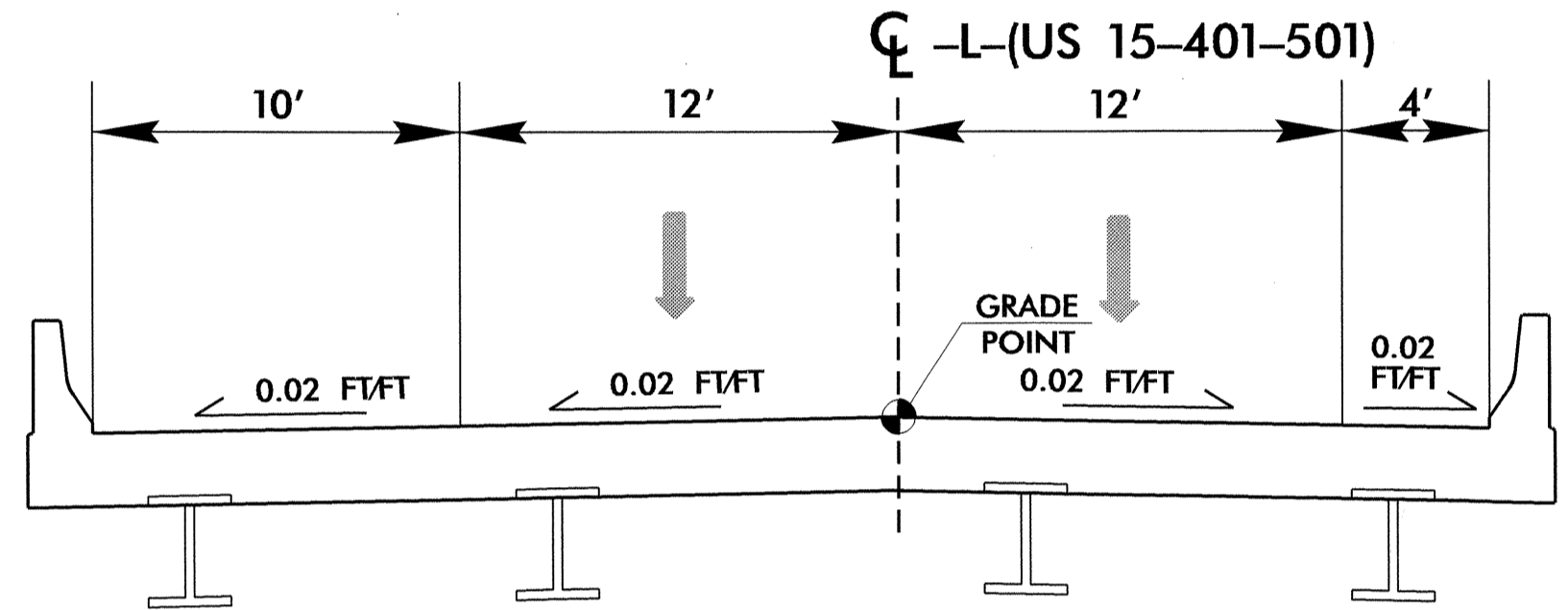
6/2/99

PROJECT REFERENCE NO. B-4640	SHEET NO. 2A
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 

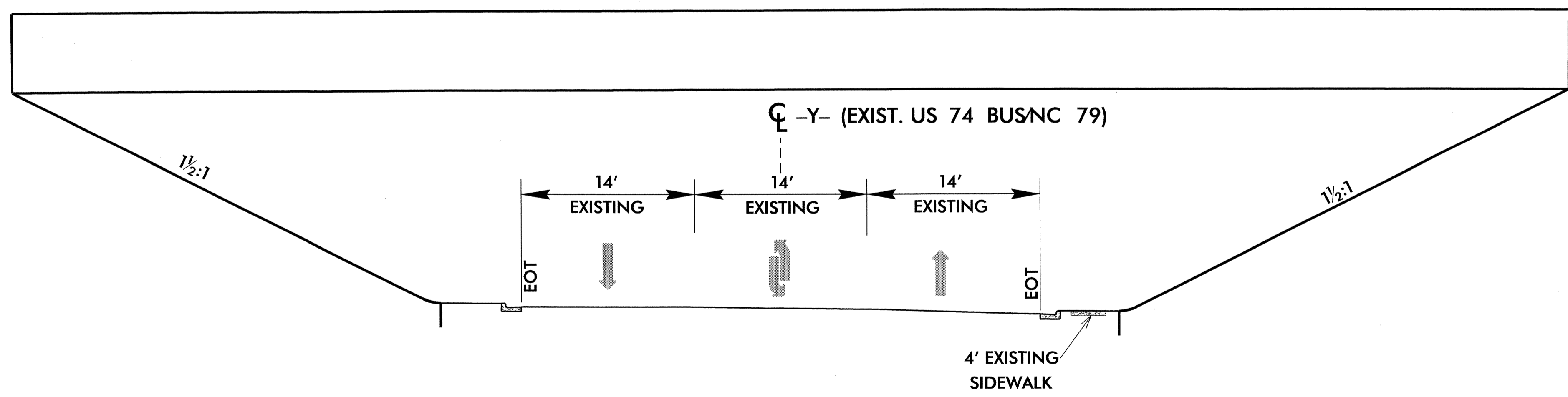
PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT.



TYPICAL SECTION 5
RESURFACING OF NORTH BOUND LANES
-L- STA 19+55 TO STA 24+72(BEGIN BRIDGE)
-L- STA 26+42(END BRIDGE) TO STA 33+46



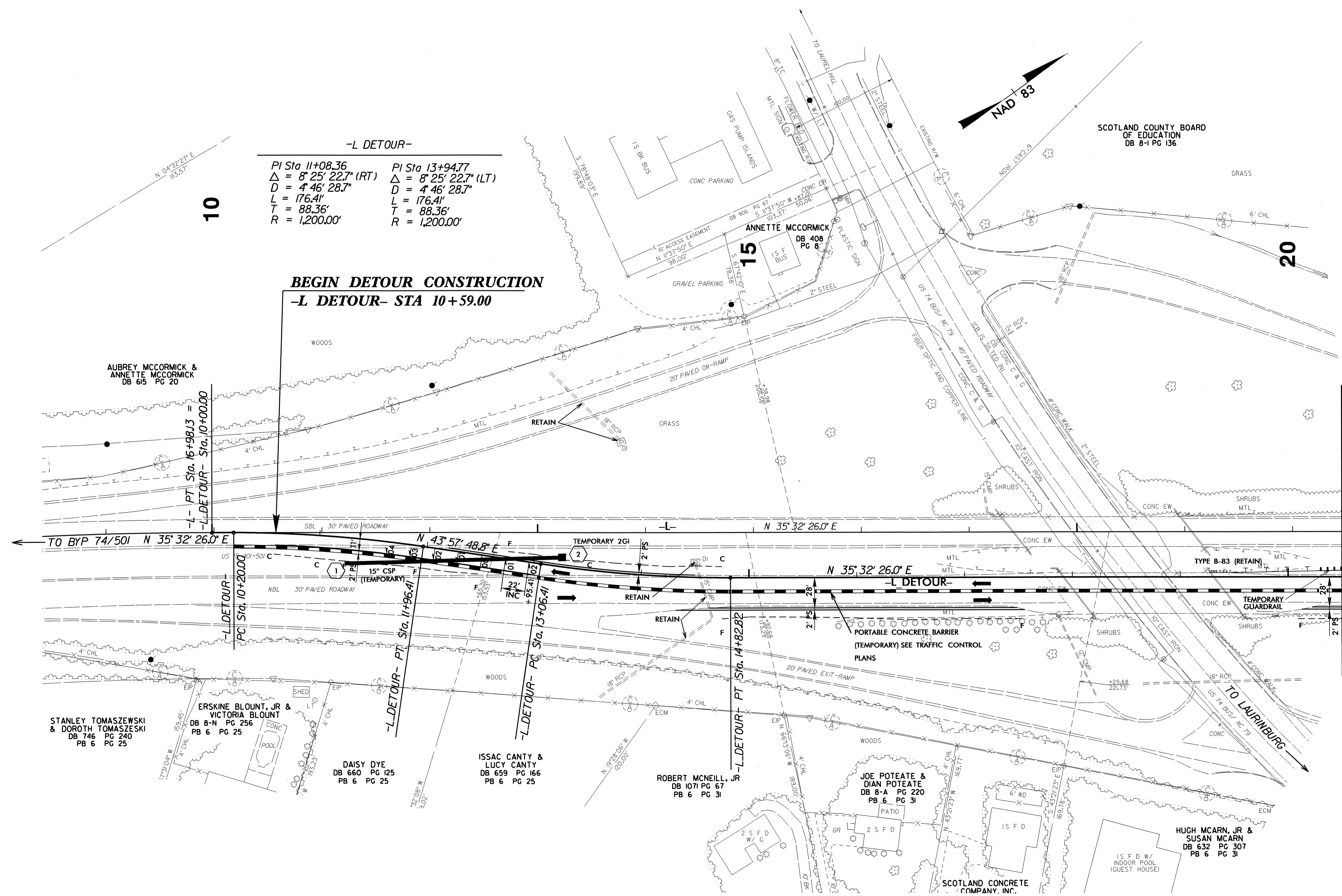
TYPICAL SECTION ON STRUCTURE
-L- STA 24+60.25 (BEGIN BRIDGE) TO STA 25+90.25 (END BRIDGE)



TYPICAL SECTION UNDER STRUCTURE
MINIMUM VERTICAL CLEARANCE OVER ROAD = 15'6"

20-OCT-2011 14:25
R:\Roadway\Proj\B4640-rdy-tp.dgn
331151717

-L DETOUR- PLAN SHEET



-L DETOUR-

PI Sta 11+08.36	PI Sta 13+94.77
$\Delta = 8' 25' 22.7''$ (RT)	$\Delta = 8' 25' 22.7''$ (LT)
$D = 4' 46' 28.7''$	$D = 4' 46' 28.7''$
$L = 176.41'$	$L = 176.41'$
$T = 88.36'$	$T = 88.36'$
$R = 1,200.00'$	$R = 1,200.00'$

BEGIN DETOUR CONSTRUCTION
-L DETOUR- STA 10+59.00

MATCH LINE -L DETOUR- STA 20+50.00
SEE SHEET 2C

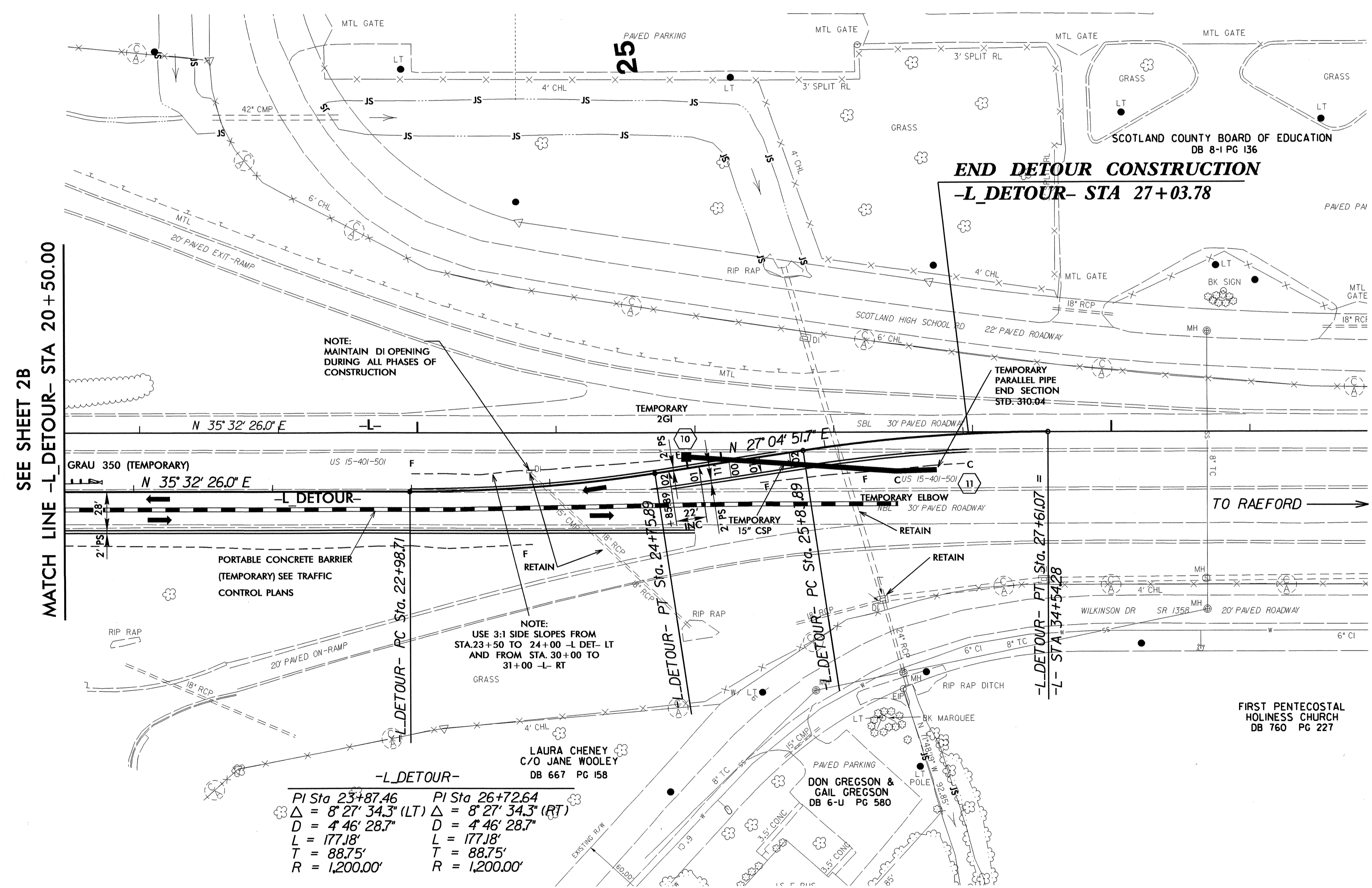
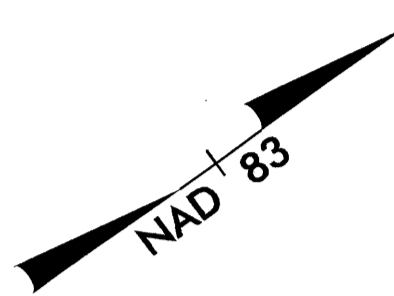
FOR -L DETOUR- PROFILE, SEE SHEET 6

17-NOV-2011 2:04 PM R:\Roadway\B4640-rdy_psh_2b.dgn

5/14/99

PROJECT REFERENCE NO. B-4640	SHEET NO. 2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	21 NOV 2011

-L DETOUR- PLAN SHEET



SEE SHEET 2B
MATCH LINE -L DETOUR- STA 20+50.00

-L DETOUR-

PI Sta 23+87.46	PI Sta 26+72.64
$\Delta = 8' 27' 34.3''$ (LT)	$\Delta = 8' 27' 34.3''$ (RT)
D = 4' 46' 28.7"	D = 4' 46' 28.7"
L = 177.18'	L = 177.18'
T = 88.75'	T = 88.75'
R = 1,200.00'	R = 1,200.00'

FOR -L DETOUR- PROFILE, SEE SHEET 7

17_OCT_2011_13:25
I:\PROJECTS\B4640\rdy_pah_2e.dgn

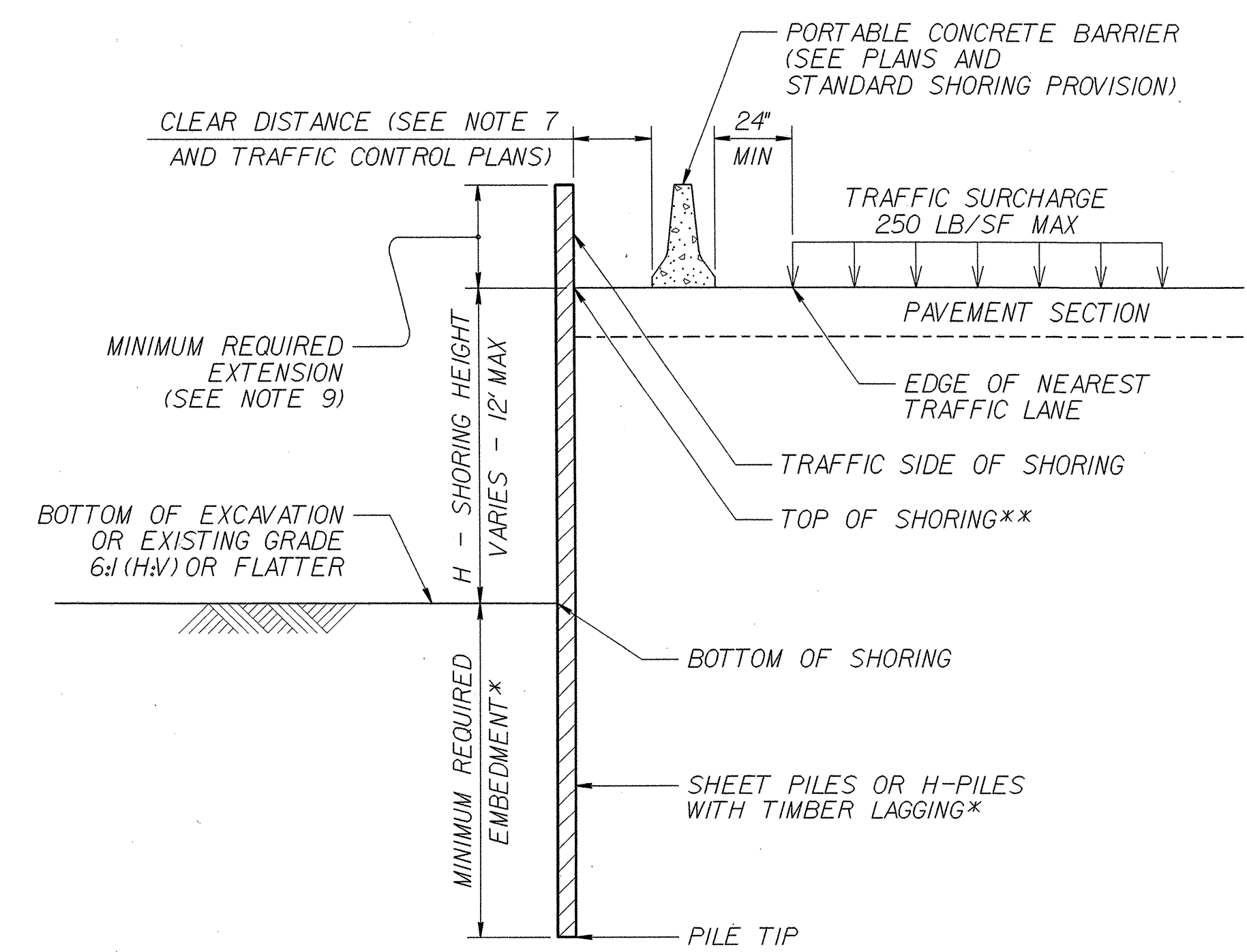
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)		
		HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73		
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
	12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
	12	15.0	21.5	--	--	16.0	25.5	--	--	15.5	

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

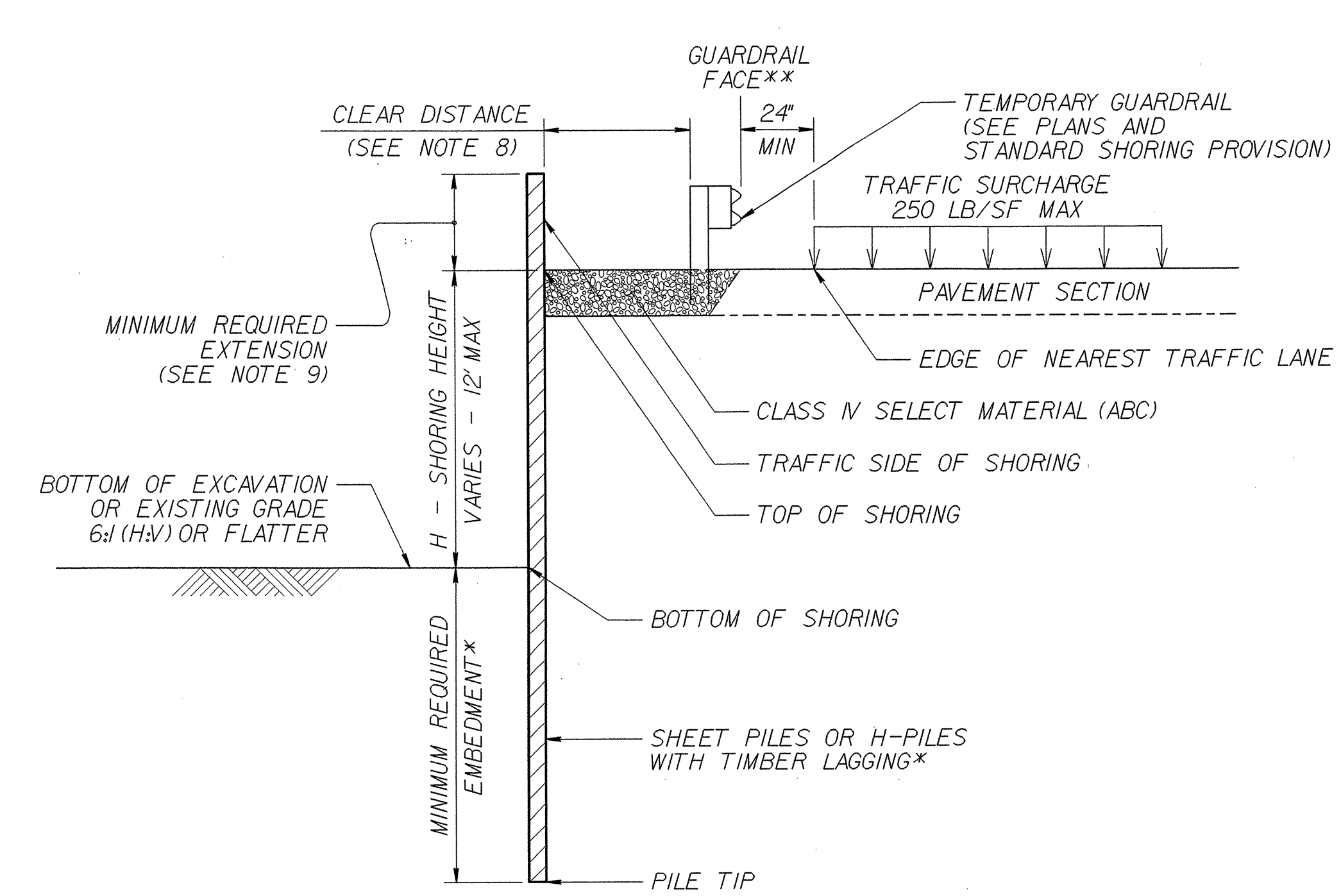
***DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".**

NOTES:

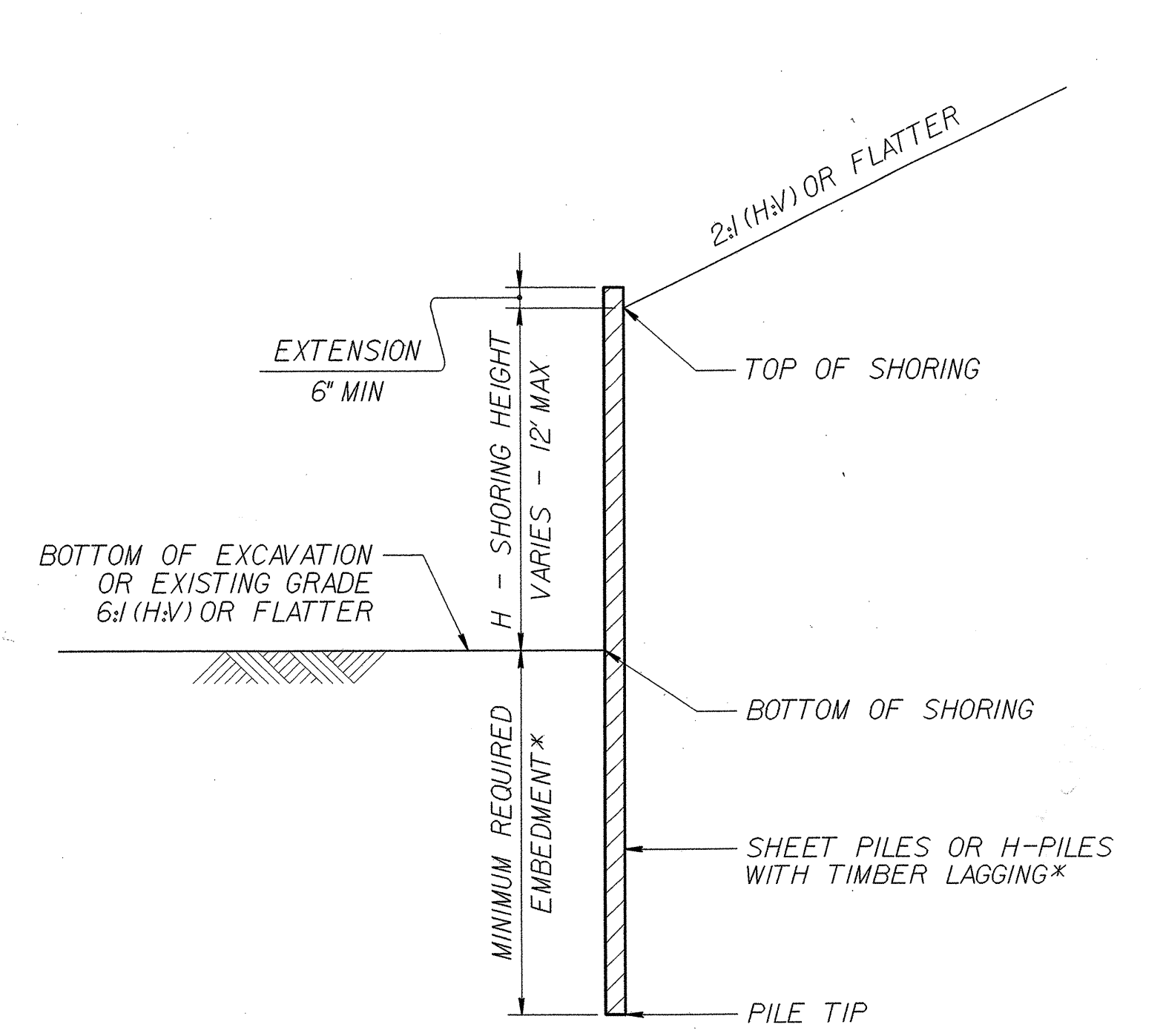
1. AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
2. FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
3. STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ LB/CF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ LB/SF
4. DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
6. USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
7. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR PORTABLE CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
8. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
9. MINIMUM REQUIRED EXTENSION IS 6" FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
10. MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
11. SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM.
12. CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.



PORTABLE CONCRETE BARRIER
**TOP OF SHORING =
EDGE OF PAVEMENT



TEMPORARY GUARDRAIL
**GUARDRAIL FACE =
EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING (SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING (SURCHARGE CASE)
*SEE TABLE ABOVE.

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 1-17-12

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202780

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (25+23.50)
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0057000000-E	226	2,400	CY	UNDERCUT EXCAVATION
0195000000-E	265	2,000	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	1,000	SY	GEOTEXTILE FOR SOIL STABILIZATION
0199000000-E	SP	380	SF	TEMPORARY SHORING
0318000000-E	300	80	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	250	SY	FOUNDATION CONDITIONING GEOTEXTILE
0366000000-E	310	152	LF	15" RC PIPE CULVERTS, CLASS III
0453000000-E	310	1	EA	*** PIPE END SECTION (15")
0582000000-E	310	580	LF	15" CS PIPE CULVERTS, 0.064" THICK
0636000000-E	310	5	EA	*** CS PIPE ELBOWS, ***** THICK (15", 0.064")
0995000000-E	340	430	LF	PIPE REMOVAL
1297000000-E	607	610	SY	MILLING ASPHALT PAVEMENT, **** DEPTH (1-1/2")
1489000000-E	610	1,120	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1498000000-E	610	780	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
1519000000-E	610	1,120	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1575000000-E	620	155	TON	ASPHALT BINDER FOR PLANT MIX
2022000000-E	815	134.4	CY	SUBDRAIN EXCAVATION
2033000000-E	815	100.8	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	600	LF	6" PERFORATED SUBDRAIN PIPE

ItemNumber	Sec #	Quantity	Unit	Description
2070000000-N	815	2	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	12	LF	6" OUTLET PIPE
2286000000-N	840	7	EA	MASONRY DRAINAGE STRUCTURES
2364200000-N	840	4	EA	FRAME WITH TWO GRATES, STD 840.20
2365000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.22
2407000000-N	840	1	EA	STEEL FRAME WITH TWO GRATES, STD 840.37
2556000000-E	846	360	LF	SHOULDER BERM GUTTER
2577000000-E	846	35	LF	CONCRETE EXPRESSWAY GUTTER
3030000000-E	862	550	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3270000000-N	SP	1	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3285000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE M-350
3317000000-N	862	3	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3319000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE B-83
3360000000-E	863	450	LF	REMOVE EXISTING GUARDRAIL
3380000000-E	862	87.5	LF	TEMPORARY STEEL BM GUARDRAIL
3389100000-N	SP	1	EA	TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE 350
3595000000-E	869	25	LF	RELAPPING GUARDRAIL
3649000000-E	876	3	TON	RIP RAP, CLASS B
3656000000-E	876	572	SY	GEOTEXTILE FOR DRAINAGE
4400000000-E	1110	1,051	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	126	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	200	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4415000000-N	1115	2	EA	FLASHING ARROW BOARD
4420000000-N	1120	2	EA	PORTABLE CHANGEABLE MESSAGE SIGN

ItemNumber	Sec #	Quantity	Unit	Description
4430000000-N	1130	300	EA	DRUMS
4435000000-N	1135	40	EA	CONES
4445000000-E	1145	128	LF	BARRICADES (TYPE III)
4455000000-N	1150	960	DAY	FLAGGER
4480000000-N	1165	4	EA	TMA
4485000000-E	1170	1,740	LF	PORTABLE CONCRETE BARRIER
4650000000-N	1251	236	EA	TEMPORARY RAISED PAVEMENT MARKERS
4685000000-E	1205	13,515	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	1,023	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4695000000-E	1205	3,709	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
4770000000-E	1205	585	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (II)
4770000000-E	1205	2,049	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV)
4810000000-E	1205	2,808	LF	PAINT PAVEMENT MARKING LINES (4")
4820000000-E	1205	203	LF	PAINT PAVEMENT MARKING LINES (8")
4850000000-E	1205	12,415	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
4860000000-E	1205	750	LF	REMOVAL OF PAVEMENT MARKING LINES (8")
4900000000-N	1251	211	EA	PERMANENT RAISED PAVEMENT MARKERS
6000000000-E	1605	2,055	LF	TEMPORARY SILT FENCE
6006000000-E	1610	460	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	235	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	375	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	4.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.5	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	285	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	100	LF	SAFETY FENCE
6030000000-E	1630	510	CY	SILT EXCAVATION
6036000000-E	1631	4,000	SY	MATTING FOR EROSION CONTROL
6042000000-E	1632	1,150	LF	1/4" HARDWARE CLOTH
6071010000-E	SP	170	LF	WATTLE
6071020000-E	SP	85	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	85	LF	COIR FIBER BAFFLE
6084000000-E	1660	4.5	ACR	SEEDING & MULCHING
6087000000-E	1660	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	100	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	2.75	TON	FERTILIZER TOPDRESSING
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	25	EA	RESPONSE FOR EROSION CONTROL

5/28/99

05-OCT-2010 07:23
C:\projects\B-4640\B-4640-r.dwg
r.dwg

12/06/07

COMPUTED BY: MJD DATE: 03/02/09
CHECKED BY: ACW DATE: 03/13/09

PROJECT REFERENCE NO. SHEET NO.
B-4640 3-B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAVEMENT REMOVAL SUMMARY

Table with 5 columns: SURVEY LINE, STATION, STATION, LOCATION LT/RT/CL, SY. Rows include stations 21+00 to 30+50 and 10+59 to 25+78, with a total of 3180 SY.

SUMMARY OF EARTHWORK (CUBIC YARDS)

Table with 6 columns: STATION, STATION, UNCL. EXCAV., EMBANK. +%, BORROW, WASTE. Rows include stations 19+50.00 to 27+03.78, with a total of 2400 cubic yards.

SHOULDER BERM GUTTER SUMMARY

Table with 4 columns: SURVEY LINE, STATION, STATION, LENGTH (FT). Rows include stations 23+88 to 27+93, with a total length of 352.19'.

EXPRESSWAY GUTTER SUMMARY

Table with 4 columns: SURVEY LINE, STATION, STATION, LENGTH (FT). Rows include stations 23+88 to 24+20.10, with a total length of 32.10'.

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.

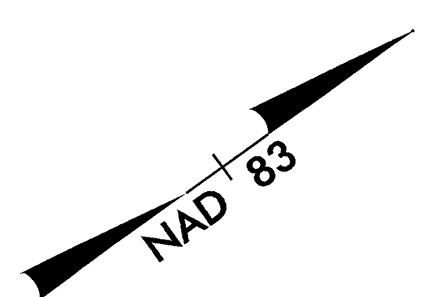
Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

"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

Large table with columns for 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, and REMARKS. Includes rows for stations 23+21.50 to 27+39.68 and 19+27.00 to 20+77.00.

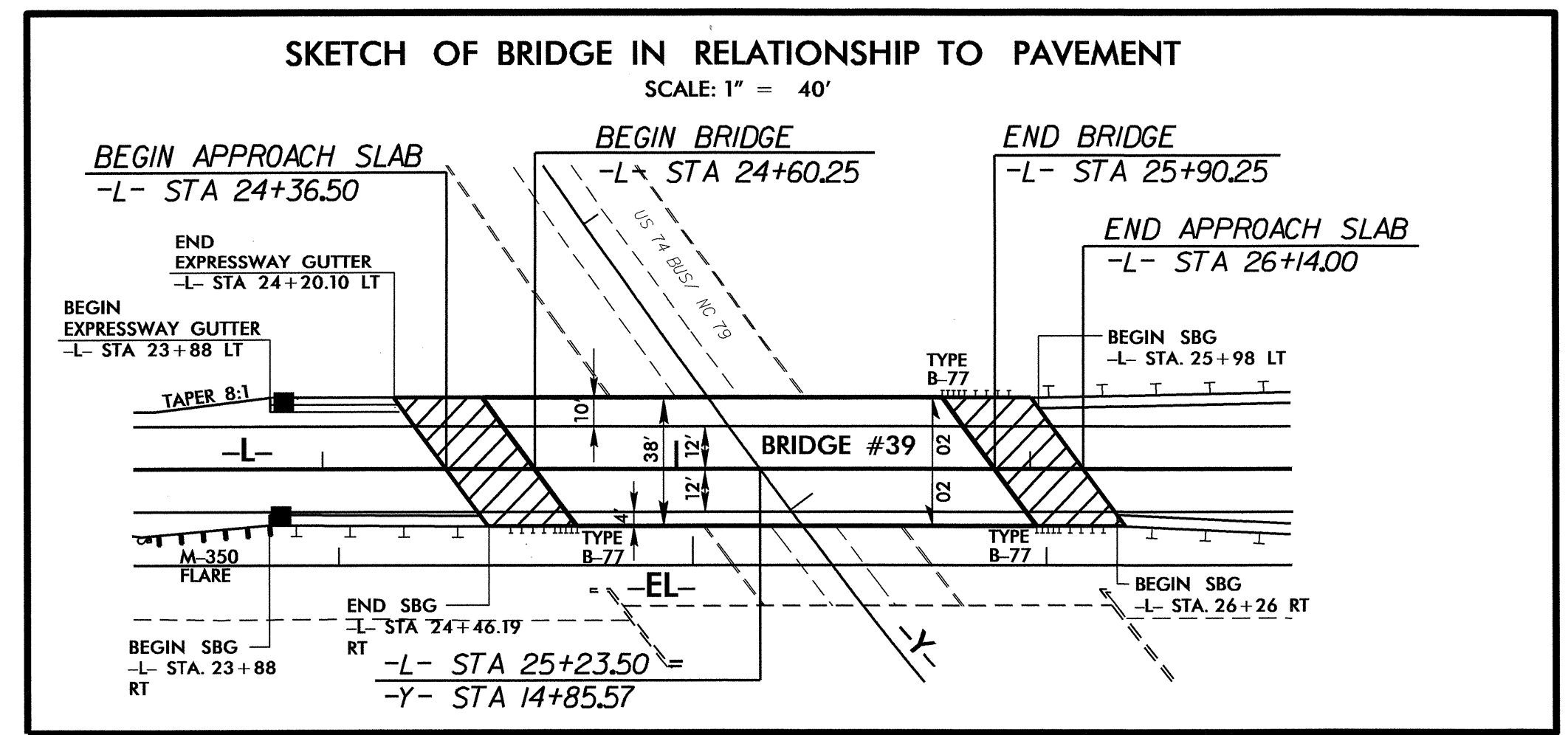
17-NOV-2011 12:43:13
R:\Roadway\Proj\B4640-rdy-sum.dgn



BEGIN TIP PROJECT B-4640
-L- STA 19+50.00

-L-
 PI Sta 13+73.06
 $\Delta = 9' 42" 25.9" (RT)$
 $D = 1' 29" 22.1"$
 $L = 651.72'$
 $T = 326.64'$
 $R = 3,846.72'$

-Y-
 PI Sta 15+02.24
 $\Delta = 20' 34" 53.1" (LT)$
 $D = 2' 30" 00.0"$
 $L = 823.26'$
 $T = 416.1'$
 $R = 2,291.83'$

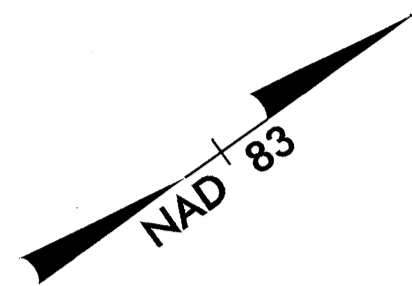


FOR -L- PROFILE, SEE SHEET 6
 FOR DETOUR, SEE SHEETS 2B AND 2C
 FOR STRUCTURE PLANS, SEE SHEET S-1 TO S-25

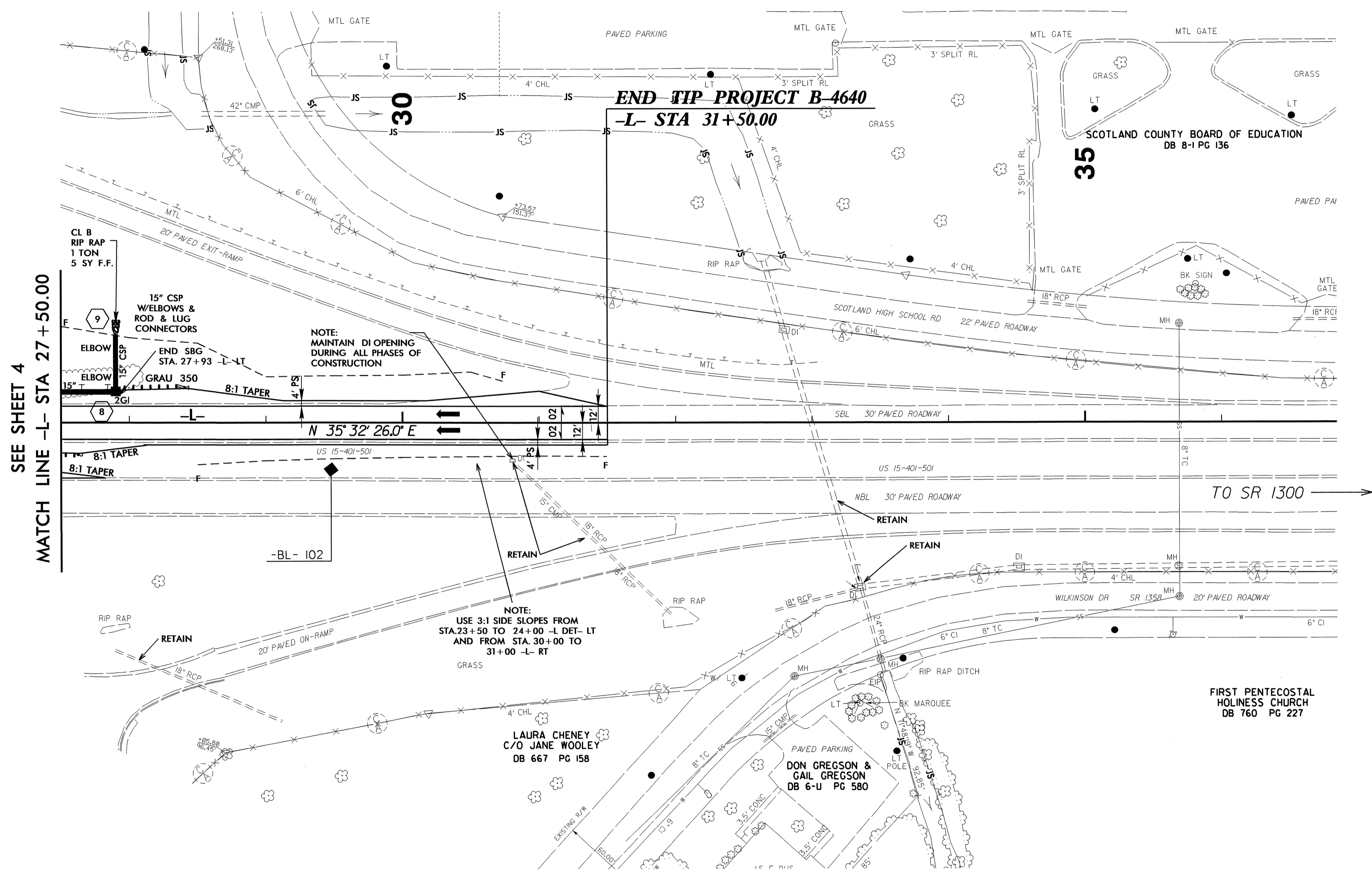
MATCH LINE -L- STA 27+50.00
SEE SHEET 5

17-OCT-2011 13:25 N:\b4640\l-r-dj-ps-h_4.dgn

5/14/99



PROJECT REFERENCE NO.		SHEET NO.	
B-4640		5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
		21 NOV 2011	



SEE SHEET 4
MATCH LINE -L- STA 27+50.00

NOTE: MAINTAIN DI OPENING DURING ALL PHASES OF CONSTRUCTION

NOTE: USE 3:1 SIDE SLOPES FROM STA. 23+50 TO 24+00 -L DET- LT AND FROM STA. 30+00 TO 31+00 -L- RT

FIRST PENTECOSTAL HOLINESS CHURCH DB 760 PG 227

LAURA CHENEY C/O JANE WOOLEY DB 667 PG 158

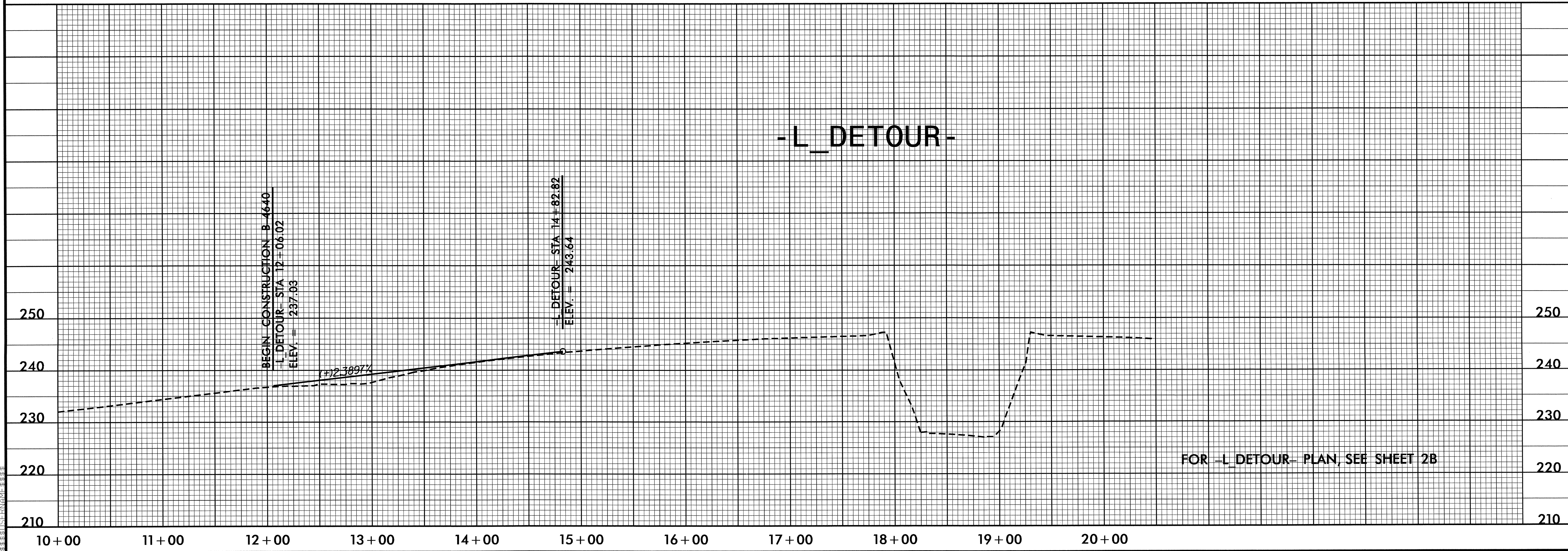
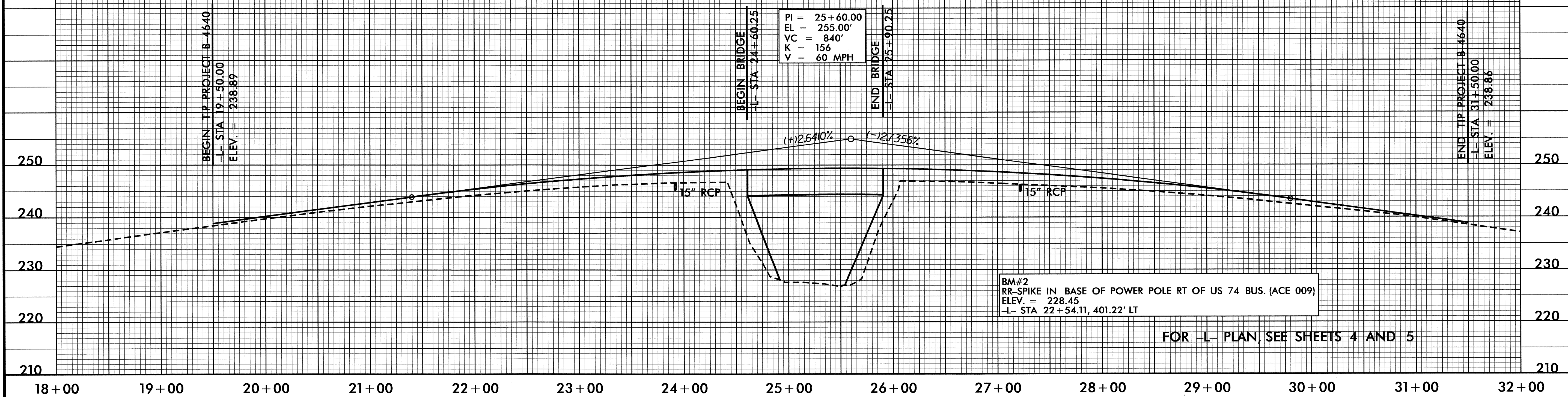
DON GREGSON & GAIL GREGSON DB 6-U PG 580

FOR -L- PROFILE, SEE SHEET 6
FOR DETOUR, SEE SHEETS 2B AND 2C

17-OCT-2011 13:25
C:\Users\jgordon\Documents\B-4640_r-dy_psh_5.dgn

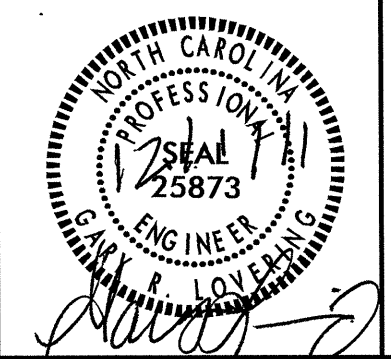
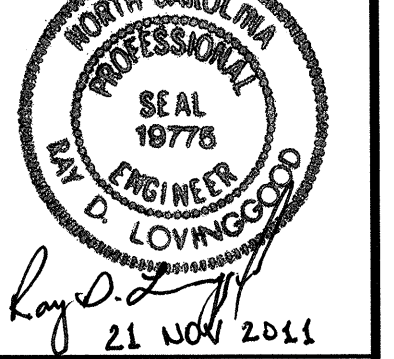
5/28/99

PROJECT REFERENCE NO. B-4640	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<i>[Signature]</i>	<i>[Signature]</i>
	21 NOV 2011

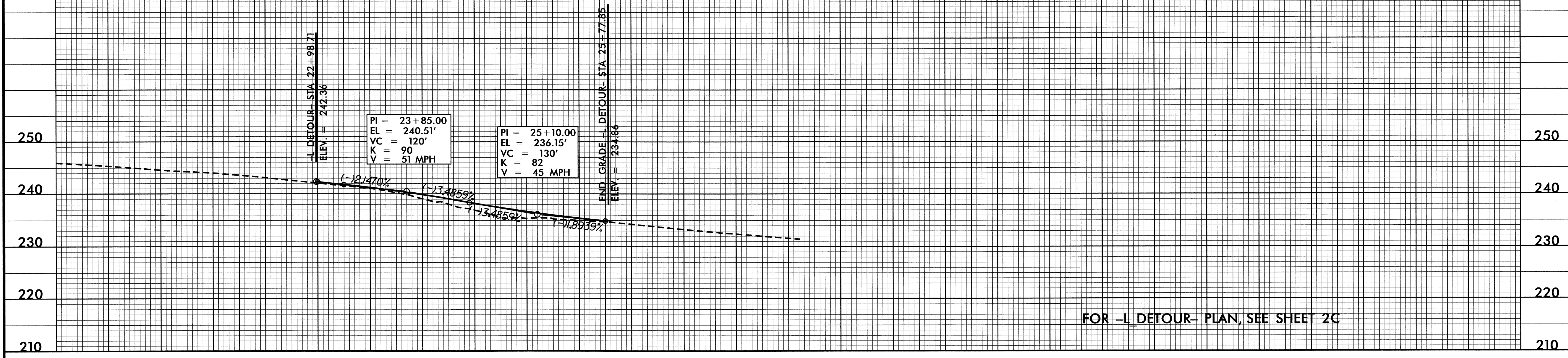


I:\OCT_2011\B25...Nb4640_r.dwg

5/28/99

PROJECT REFERENCE NO. B-4640	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
<i>[Signature]</i>	<i>[Signature]</i> 21 NOV 2011

- L_DETOUR -



FOR -L_DETOUR- PLAN, SEE SHEET 2C

I:\OCT_2011\325
1\OCT_2011\325\B4640\rdy.pfl_7.dgn