

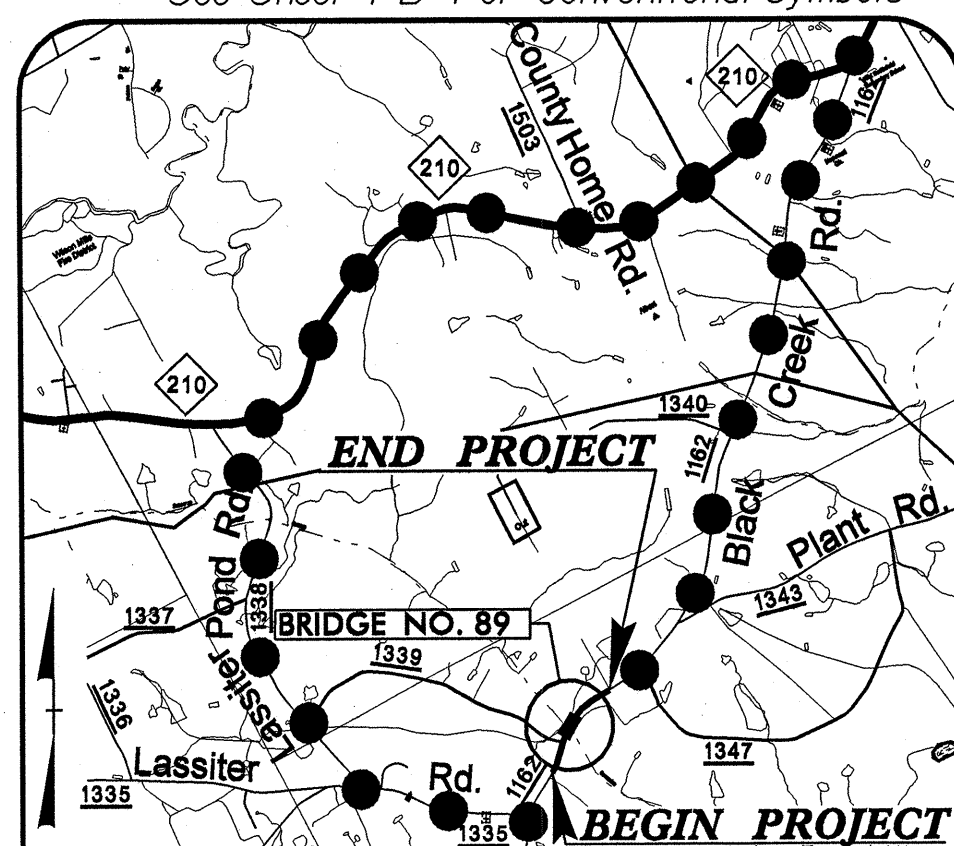
09/08/09

15-AUG-2008 15:24 Y:\Projects\NCDOT\Bridges Group 46 FinalDesign\B4165\Roadway\Proj\B4165_rdy_tsh.dgn jcole AT LPA20625

TIP PROJECT: B-4165

CONTRACT: C201971

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

●●● OFFSITE DETOUR

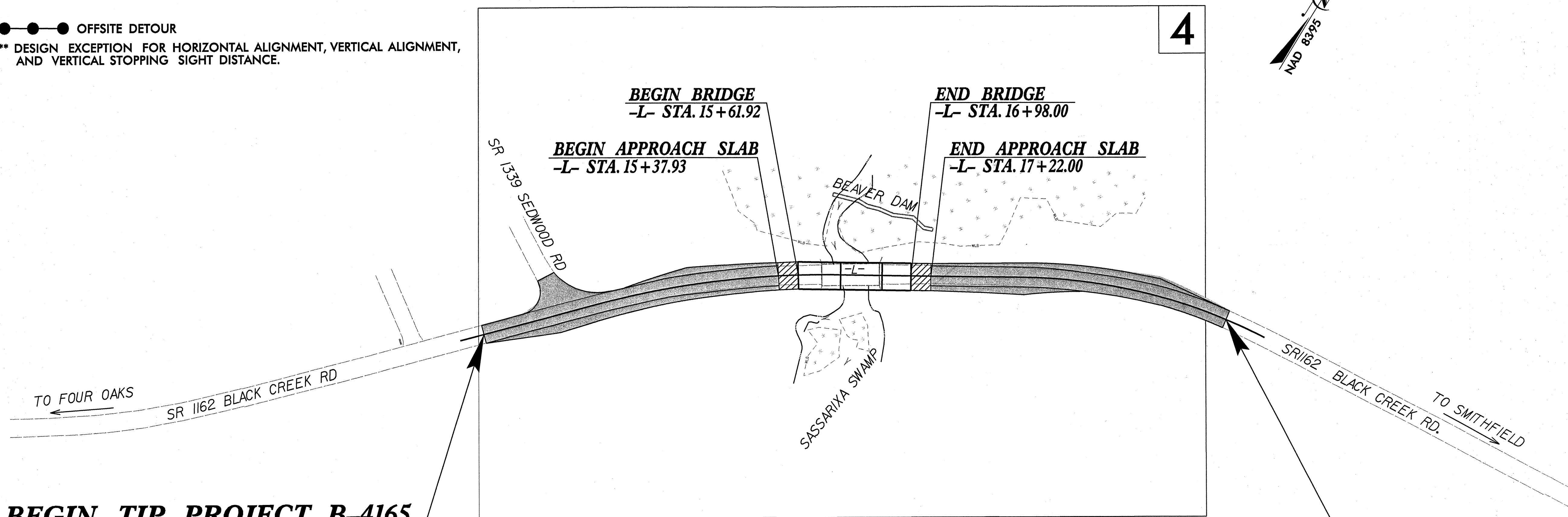
** DESIGN EXCEPTION FOR HORIZONTAL ALIGNMENT, VERTICAL ALIGNMENT, AND VERTICAL STOPPING SIGHT DISTANCE.

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS JOHNSTON COUNTY

LOCATION: BRIDGE NO. 89 OVER SASSARIYA SWAMP ON SR 1162 (BLACK CREEK RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

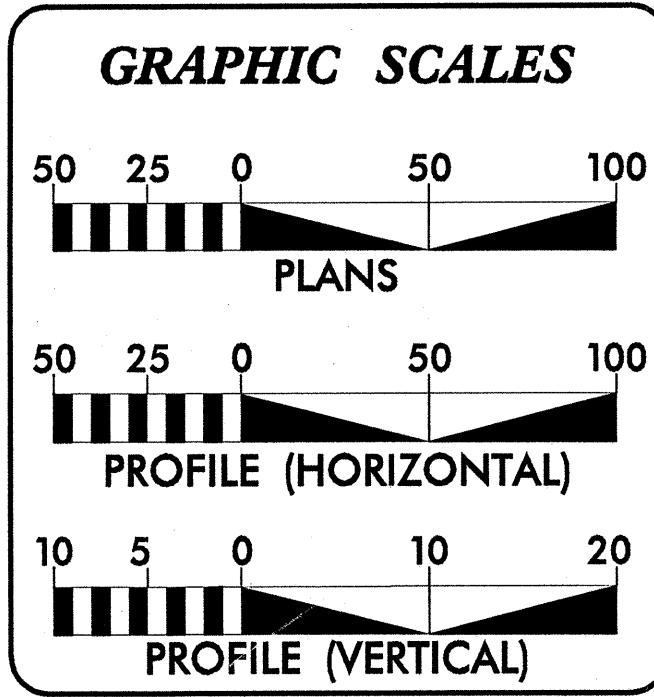
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4165	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33513.1.1	BRZ-1162 (5)	PE	
33513.2.1	BRZ-1162 (5)	RW & UTIL.	
33513.3.1	BRZ-1162 (5)	CONST.	



BEGIN TIP PROJECT B-4165
-L- STA. 11+75.00

END TIP PROJECT B-4165
-L- STA. 20+85.00

NCDOT CONTACT : CATHY HOUSER, P.E.
ROADWAY DESIGN-ENGINEERING COORDINATION



DESIGN DATA

ADT 2008 = 3,191
ADT 2028 = 6,496

DHV = 10 %
D = 60 %
T = 3 % *
**V = 60 MPH

FUNC. CLASS. = RURAL MINOR COLLECTOR

* TTST 1% DUAL 2%

PROJECT LENGTH

Length Structure TIP Project B-4165 = 0.026 Miles
Length Roadway TIP Project B-4165 = 0.146 Miles
Total Length TIP Project B-4165 = 0.172 Miles

Prepared in the Office of:
THE LPA GROUP
TRANSPORTATION CONSULTANTS
2006 STANDARD SPECIFICATIONS

THE LPA GROUP of North Carolina, p.a.
5000 Falls of Neuse Rd., Suite 304
Raleigh, North Carolina 27609

RIGHT OF WAY DATE: NOVEMBER 16, 2007
LETTING DATE: NOVEMBER 18, 2008

JEANNE K. RICHTER P.E.
PROJECT ENGINEER

JODY L. COLE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

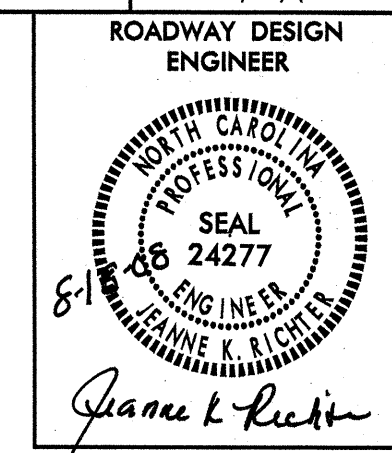
ROADWAY DESIGN ENGINEER

SEAL 9334
ENGINEER
HENRY WELLS
8/20/08
P.E.

SEAL 24277
ENGINEER
JODY L. COLE
8-18-08
P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

at miller
STATE HIGHWAY DESIGN ENGINEER



EFF. 07-18-06
REV. 01-02-07

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, AND TYPICAL SECTIONS
2A	ANCHORAGE FOR FRAMES (DETAIL)
3	SUMMARY OF QUANTITIES
3A	EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
3B	SUMMARY OF DRAINAGE QUANTITIES, AND SUMMARY OF GUARDRAIL
4	PLAN AND PROFILE
TCP-1 THRU TCP-3	TRAFFIC CONTROL PLANS
SD-1	SPECIAL SIGN DESIGN
EC-1 THRU EC-4	EROSION CONTROL PLANS
RF-1	REFORESTATION PLAN
SIGN-1 THRU SIGN-3	SIGNING PLANS
UC-1 THRU UC-2	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-2	UTILITY BY OTHERS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-5	CROSS-SECTIONS
S-1 THRU S-21	STRUCTURE PLANS

2006 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 July 18, 2006 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 Superlevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
840.00	Concrete Base Pad for Drainage Structures
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
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units

GENERAL NOTES: 2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 07-30-08

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

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

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

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

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

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 PROGRESS ENERGY, EMBARO, AND JOHNSTON COUNTY
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

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3/15/06

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	○
Property Corner	✕
Property Monument	□
Parcel/Sequence Number	(23)
Existing Fence Line	✕-✕-✕-✕
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---

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	---C---
Proposed Slope Stakes Fill	---F---
Proposed Wheel Chair Ramp	○
Proposed Wheel Chair Ramp Curb Cut	○
Curb Cut for Future Wheel Chair 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	-----

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	PH
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	PH
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	PH
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	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET B-4165

CONTROL DATA

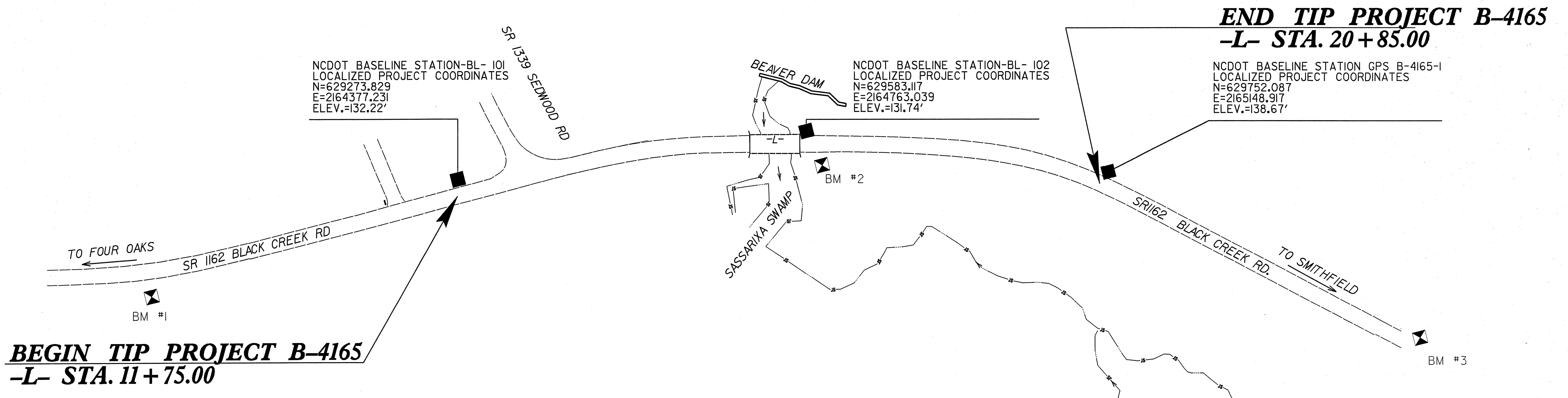
BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
101	BL-101		629273.8290	2164377.2310	132.22	OUTSIDE PROJECT LIMITS	
102	BL-102		629583.1170	2164763.0390	131.74	16+71.23	20.56 LT
1	GPS B-4165-1		629752.0870	2165148.9170	138.67	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA

 BM #1 ELEVATION = 161.21'
 N 628917 E 2164097
 OUT OF PROJECT LIMITS
 RR SPIKE IN BASE OF 24" PINE

 BM #2 ELEVATION = 129.40'
 N 629552 E 2164805
 L STATION 16+92 27 RIGHT
 RR SPIKE IN BASE OF 20" GUM

 BM #3 ELEVATION = 157.75'
 N 629776 E 2165645
 OUT OF PROJECT LIMITS
 RR SPIKE IN BASE OF 30" PINE



NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT](http://www.ncdot.org/doh/preconstruct/highway/location/project)
 FILE : B4165_LS_CONTROL_060920.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.
 CONTROL NETWORK FOR B4165 ESTABLISHED FROM
 NGS ONLINE POSITIONING USER SERVICE (OPUS)

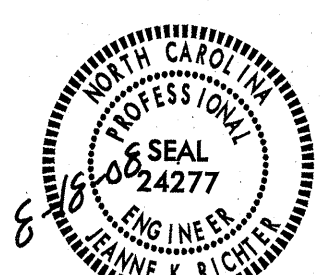

NOTE: DRAWING NOT TO SCALE

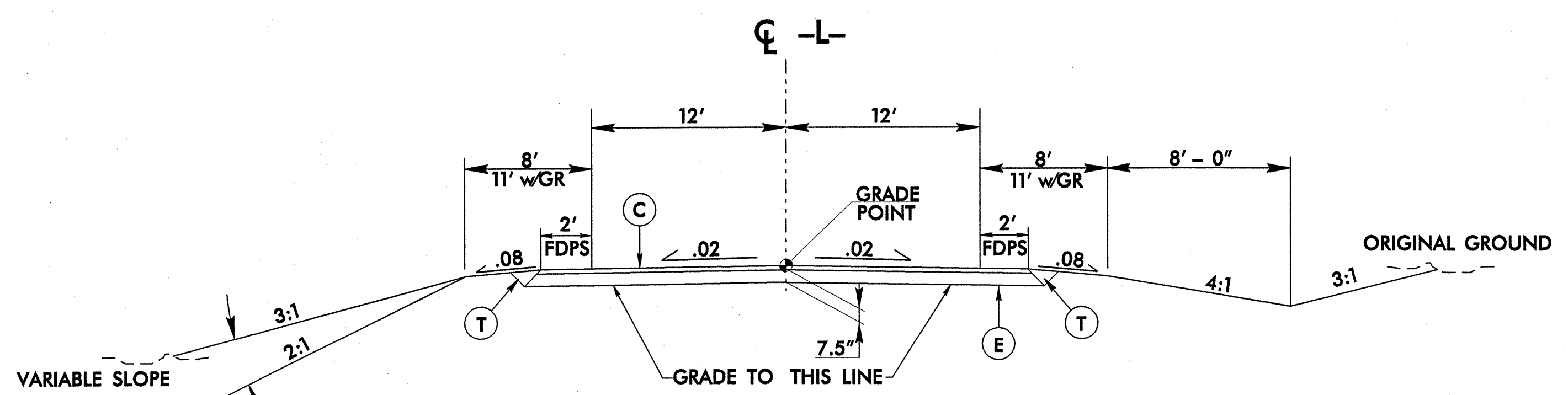
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B4165-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 629752.0870(±) EASTING: 2165148.9170(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: .99987761 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4165-1" TO -L- STATION POT STA 11+75.00 IS S 56° 36' 31.6" W 907.22'

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

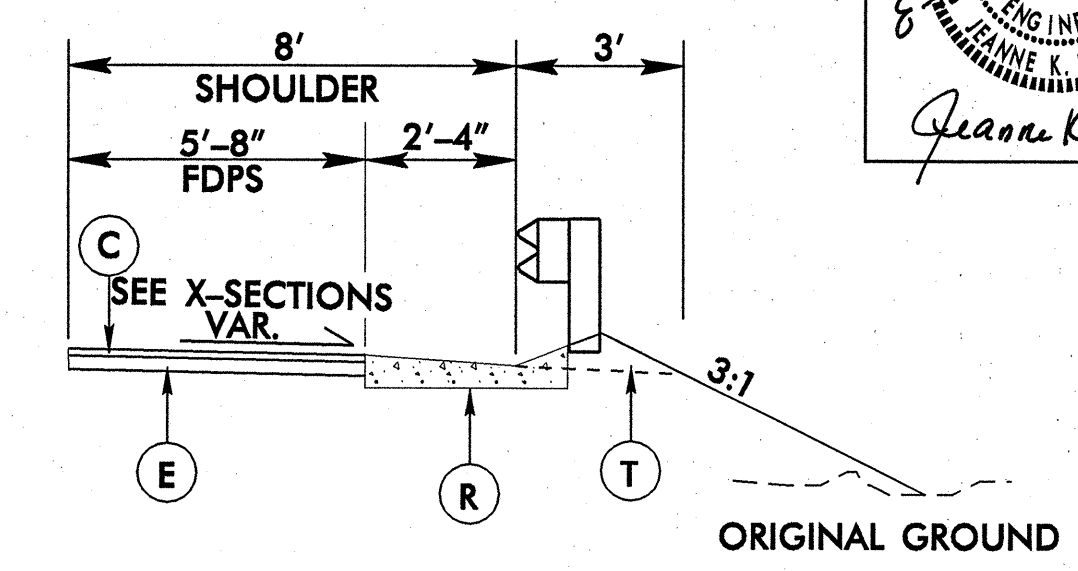
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PROJECT REFERENCE NO. B-4165	SHEET NO. 2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
Jeane K. Reith Charles S. Morrison	

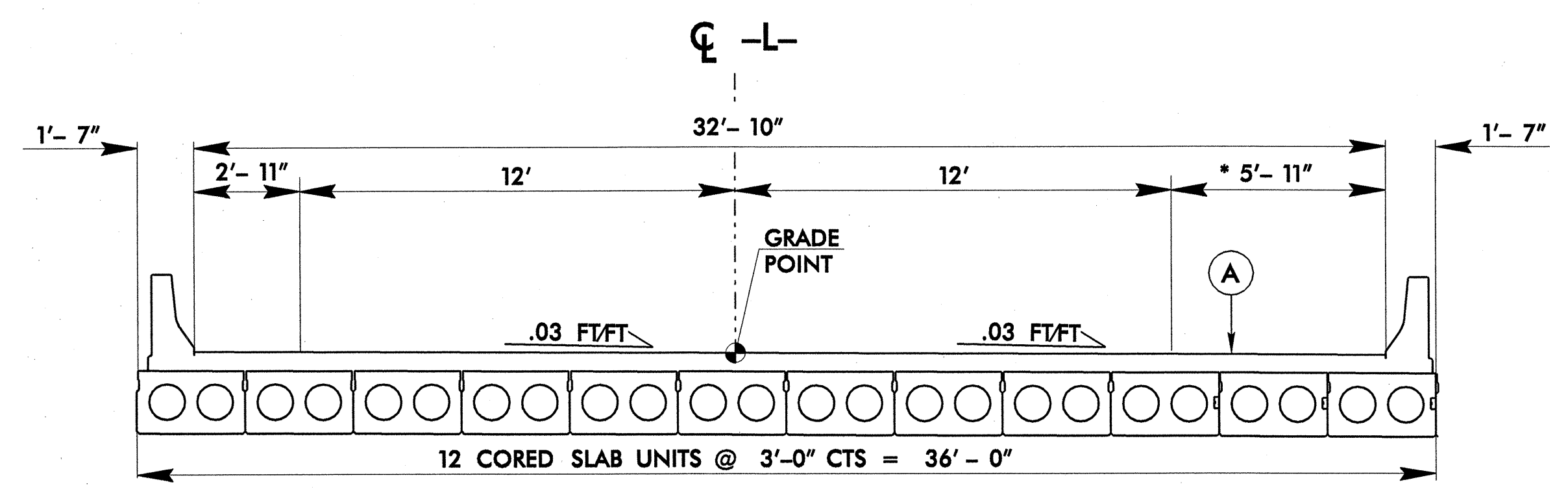


TYPICAL SECTION NO. 1

-L- STA. 14+00.00 TO STA. 15+61.92 (BEGIN BRIDGE)
 -L- STA. 16+98.00 (END BRIDGE) TO STA. 19+00.00

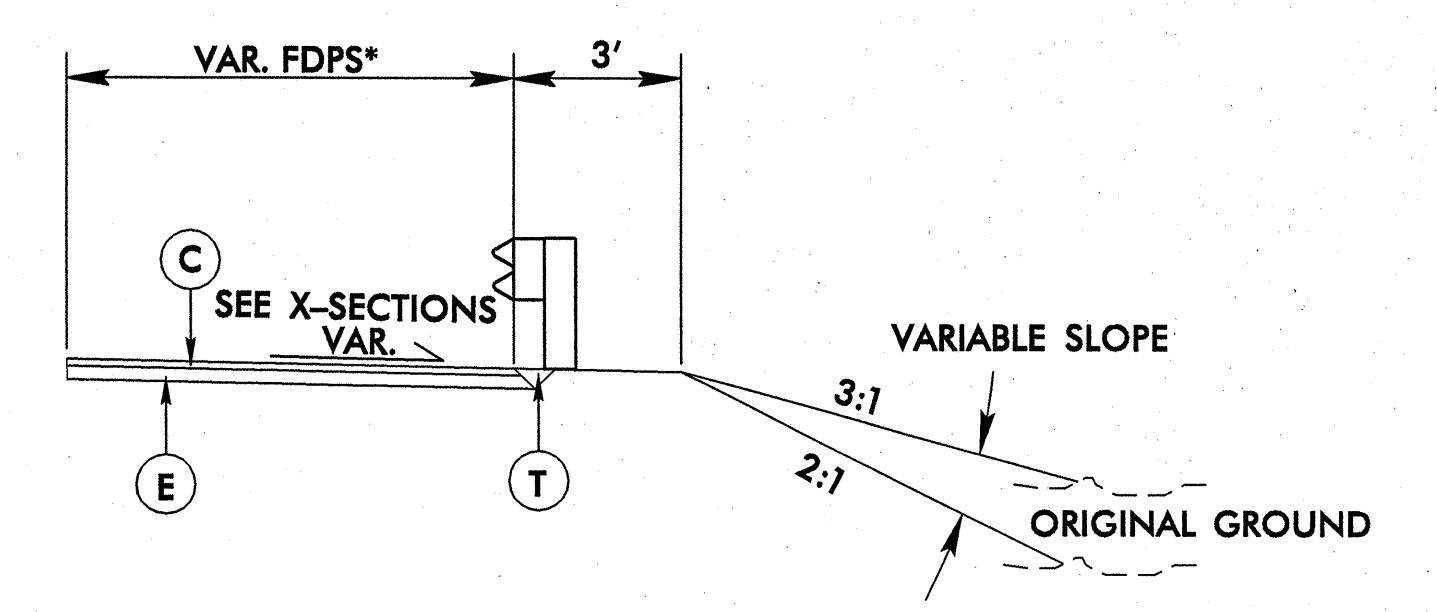


USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1
 (SEE PLAN FOR LOCATIONS)



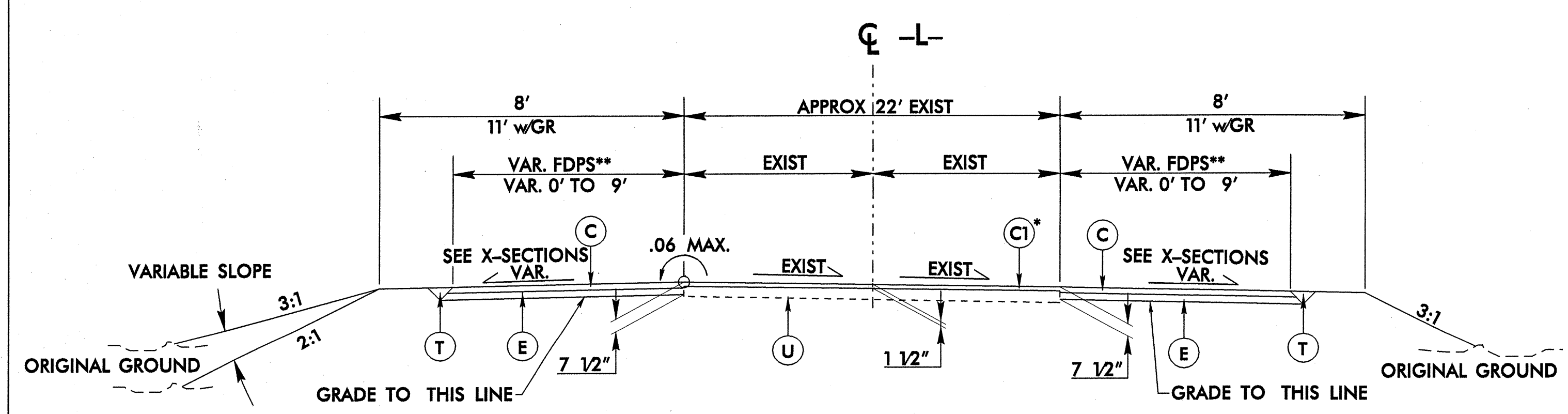
TYPICAL BRIDGE SECTION NO. 2

-L- STA. 15+61.92 (BEGIN BRIDGE) TO STA. 16+98.00 (END BRIDGE)
 * WIDENED SHOULDER DUE TO HYDRAULIC SPREAD



USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1 & 3
 (SEE PLAN FOR LOCATIONS)
 *SEE PLAN FOR LIMITS OF FDPS

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TYPICAL SECTION NO. 3

-L- STA. 11+75.00 TO STA. 14+00.00
 -L- STA. 19+00.00 TO STA. 20+85.00
 * OVERLAY EXISTING PAVEMENT WITH (C) ONLY
 **SEE PLAN FOR LIMITS OF VARIABLE FDPS

PAVEMENT SCHEDULE	
A	5" PORTLAND CEMENT CONCRETE PAVEMENT.
C	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.
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
E	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201971

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
00010000-N	800	Lump Sum		MOBILIZATION	365600000-E	876	4,665	SY	FILTER FABRIC FOR DRAINAGE	604200000-E	1632	130	LF	1/4" HARDWARE CLOTH
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (16+29.96)	365900000-N	SP	2	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON	607000000-N	SP	8	EA	SPECIAL STILLING BASINS
004300000-N	226	Lump Sum		GRADING	407200000-E	903	95	LF	SUPPORTS, 3-LB STEEL U-CHANNEL	607103000-E	SP	40	LF	COIR FIBER BAFFLES
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING	410200000-N	904	15	EA	SIGN ERECTION, TYPE E	608400000-E	1660	2.5	ACR	SEEDING & MULCHING
005700000-E	226	200	CY	UNDERCUT EXCAVATION	415500000-N	907	13	EA	DISPOSAL OF SIGN SYSTEM, U- CHANNEL	608700000-E	1660	1	ACR	MOWING
019500000-E	265	200	CY	SELECT GRANULAR MATERIAL	440000000-E	1110	425	SF	WORK ZONE SIGNS (STATIONARY)	609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
019600000-E	270	200	SY	FABRIC FOR SOIL STABILIZATION	441000000-E	1110	114	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
031400000-E	300	20	TON	SELECT MATERIAL, CLASS ***** (IV)	445000000-E	1145	48	LF	BARRICADES (TYPE III)	609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
031800000-E	300	5	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRS	481000000-E	1205	7,500	LF	PAINT PAVEMENT MARKING LINES (4")	610800000-E	1665	0.75	TON	FERTILIZER TOPDRESSING
036600000-E	310	36	LF	15" RC PIPE CULVERTS, CLASS III	490000000-N	1251	12	EA	PERMANENT RAISED PAVEMENT MARKERS	611400000-N	SP	5	HR	SPECIALIZED HAND MOWING
122000000-E	545	50	TON	INCIDENTAL STONE BASE	532560000-E	1510	300	LF	6" WATER LINE	611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
148900000-E	610	440	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	554000000-E	1515	2	EA	6" VALVE	612300000-E	1670	0.1	ACR	REFORESTATION
151900000-E	610	380	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	566600000-E	1515	2	EA	FIRE HYDRANT					
156000000-E	620	42	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	600000000-E	1605	3,200	LF	TEMPORARY SILT FENCE					
169300000-E	654	50	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR	600600000-E	1610	450	TON	STONE FOR EROSION CONTROL, CLASS A					
200000000-N	806	8	EA	RIGHT OF WAY MARKERS	600900000-E	1610	105	TON	STONE FOR EROSION CONTROL, CLASS B					
228600000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES	601200000-E	1610	250	TON	SEDIMENT CONTROL STONE					
236700000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29	601500000-E	1615	1.5	ACR	TEMPORARY MULCHING					
255600000-E	846	113	LF	SHOULDER BERM GUTTER	601800000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING					
303000000-E	862	600	LF	STEEL BM GUARDRAIL	602100000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEED- ING					
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	602400000-E	1622	50	LF	TEMPORARY SLOPE DRAINS					
327000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	602700000-N	1622	2	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS					
331700000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77	602900000-E	SP	525	LF	SAFETY FENCE					
364900000-E	876	3	TON	RIP RAP, CLASS B	603000000-E	1630	185	CY	SILT EXCAVATION					
					603600000-E	1631	2,200	SY	MATTING FOR EROSION CONTROL					

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DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK
 IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- 11+75.00 TO 15+61.92 (BEGIN BRIDGE)	101		330	229	
-L- 16+98.00 (END BRIDGE) TO 20+85.00	98		340	242	
PROJECT TOTALS	199		670	471	
UNCLASSIFIED STRUCTURE EXCAVATION IN LIEU OF BORROW				-471	
GRAND TOTALS	199			0	
SAY	225			0	

EST. SELECT GRANULAR MATERIAL = 200 C.Y.
 EST. UNDERCUT EXCAVATION = 200 C.Y.

**PAVEMENT
 REMOVAL SUMMARY**

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD'
-L-	14+00.00	15+90.00	CL	488.72
-L-	16+60.00	19+00.00	CL	618.67
TOTAL:				1,107.39
SAY:				1,110

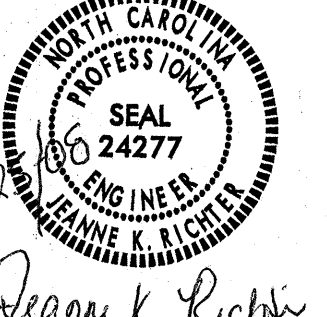
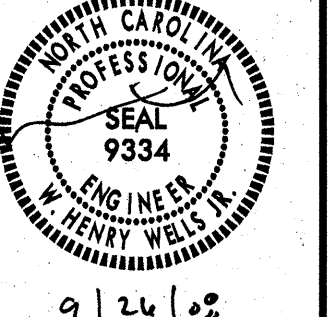
NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

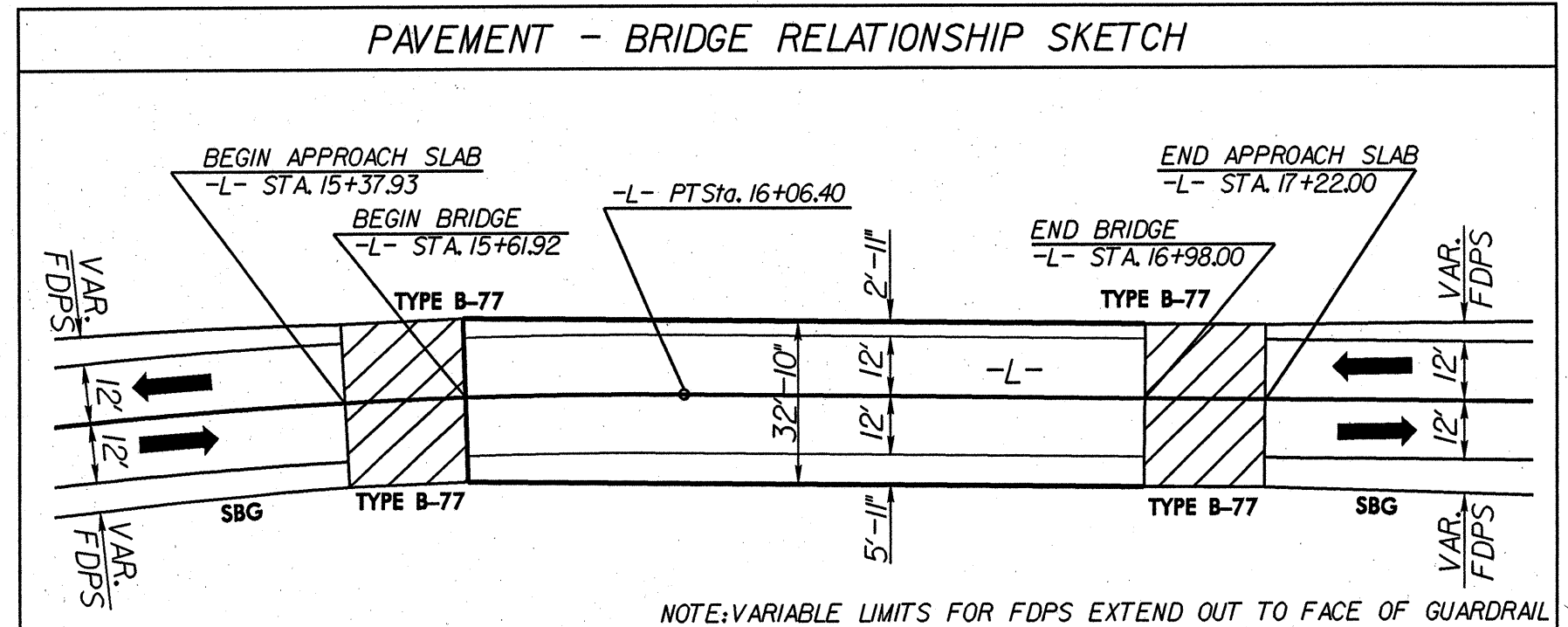
NOTE: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

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Scale: 1"=20'

PROJECT REFERENCE NO. B-4165		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 		HYDRAULICS ENGINEER 	



-L-
 PI Sta 14+64.33
 $\Delta = 15' 36'' 06.4''$ (RT)
 $D = 5' 27'' 24.3''$
 $L = 285.92'$
 $T = 143.85'$
 $R = 1,050.00'$
 $Ds = 50$ MPH
 $e_{MAX} = 0.04$

PI Sta 19+88.55
 $\Delta = 26' 46'' 45.0''$ (RT)
 $D = 8' 44'' 50.8''$
 $L = 306.14'$
 $T = 155.92'$
 $R = 655.00'$
 $Ds = 40$ MPH
 $e_{MAX} = 0.04$
 AHEAD = N 86° 33' 23.53" E

