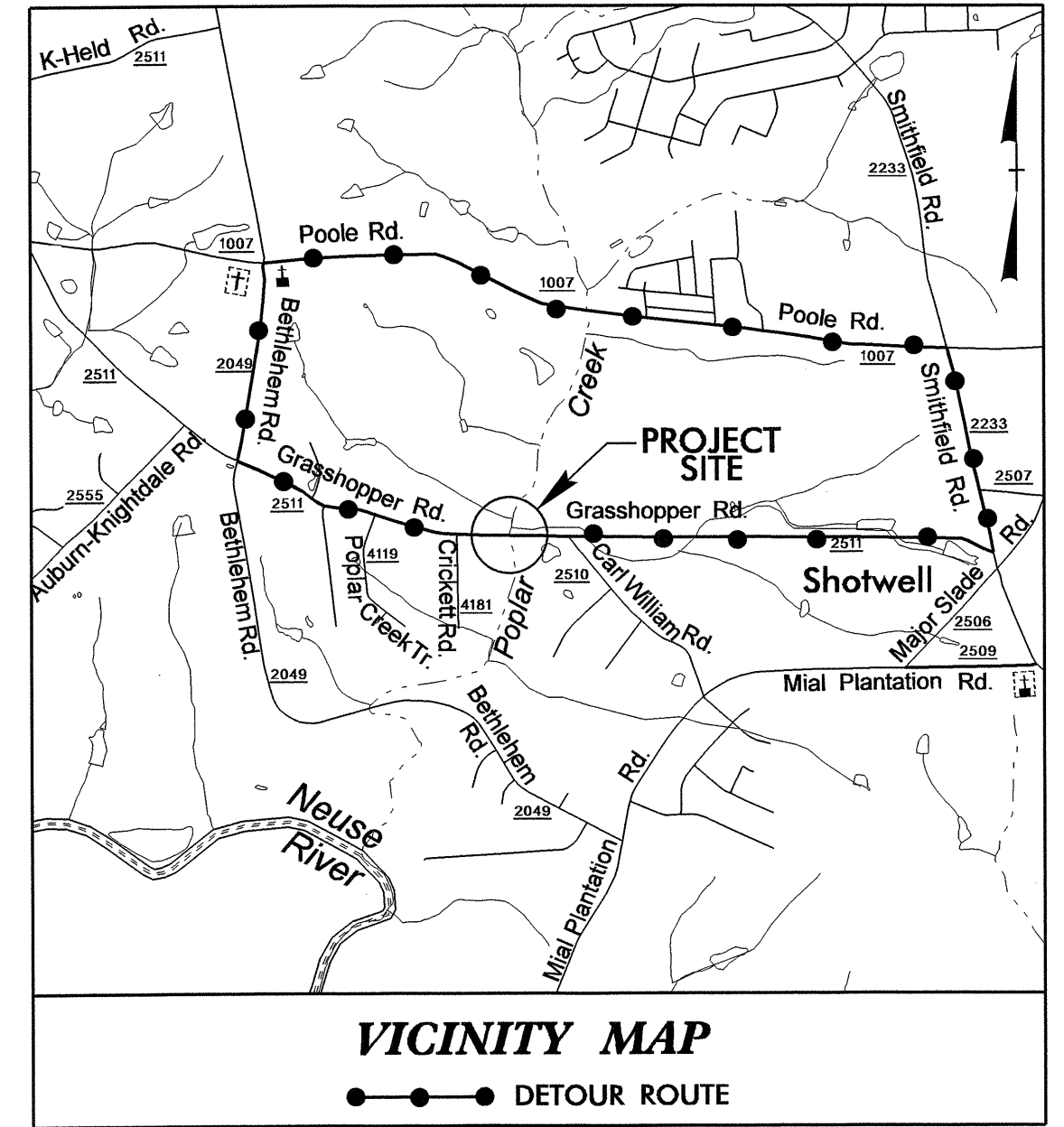


TIP PROJECT: B-4832
CONTRACT: C203023

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

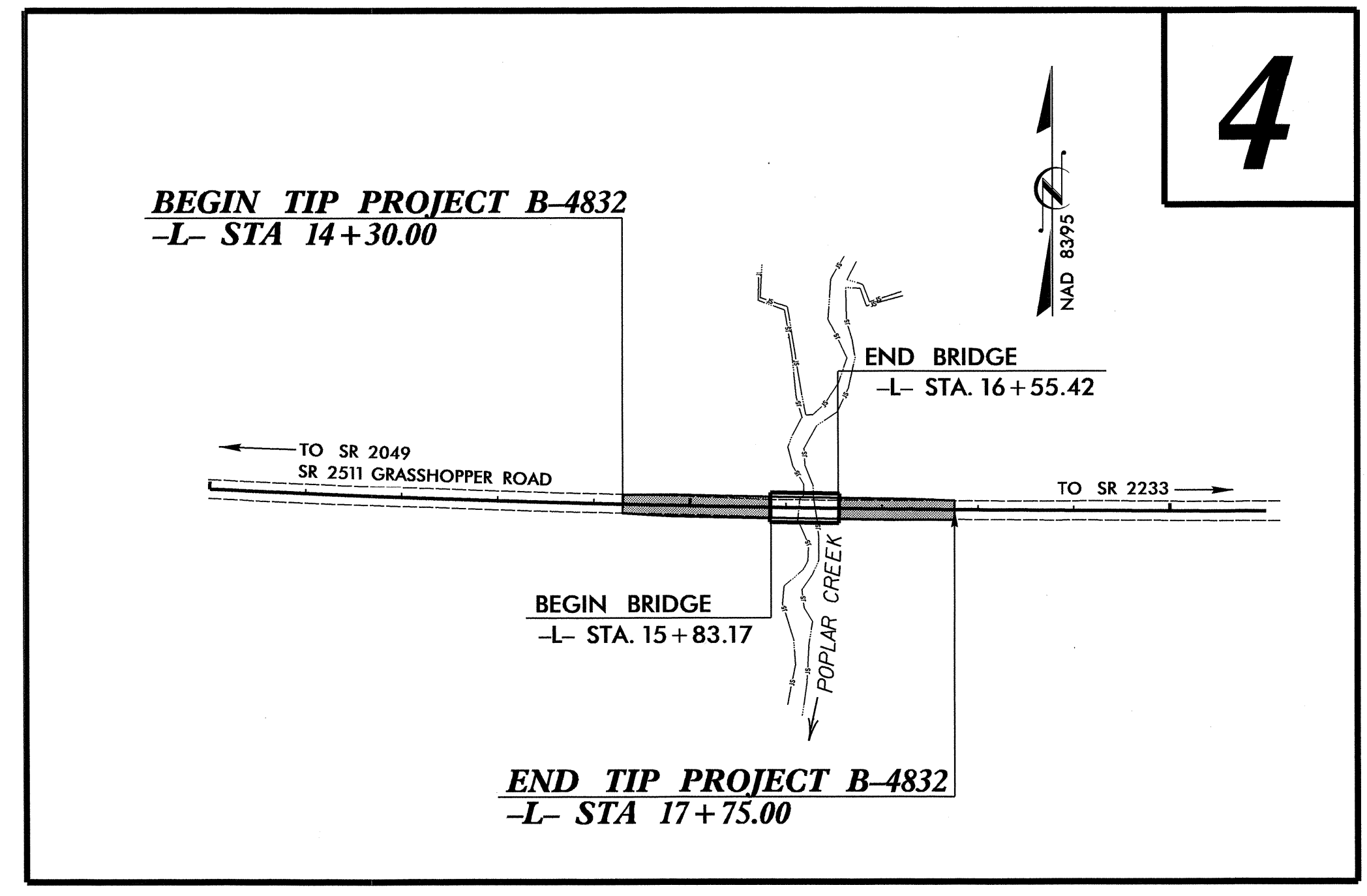


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
WAKE COUNTY

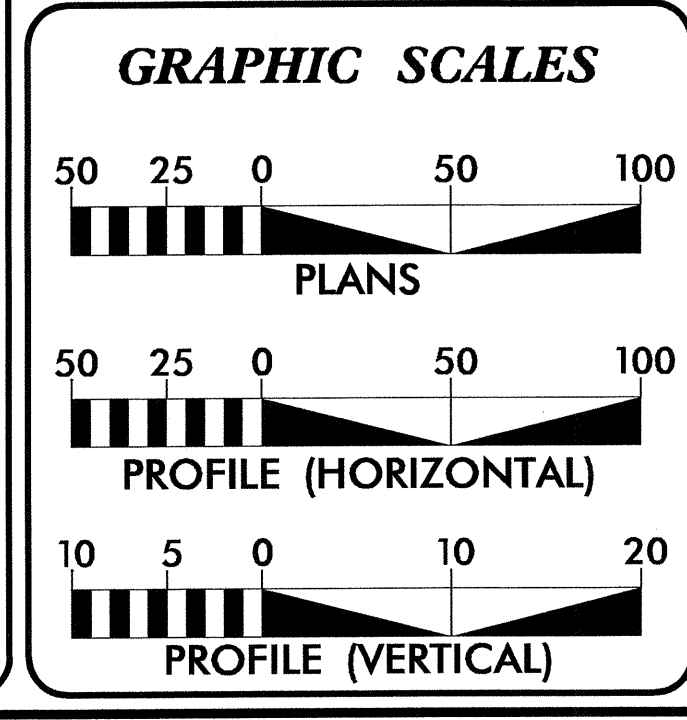
**LOCATION: BRIDGE NO. 230 OVER POPLAR CREEK ON
SR 2511 (GRASSHOPPER ROAD)**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4832	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
38602.1.1	BRZ-2511(1)	PE	
38602.2.1	BRZ-2511(1)	RW & UTILITIES	
38602.3.1	BRZ-2511(1)	CONST.	



THIS PROJECT WILL HAVE A DESIGN EXCEPTION FOR SAG VERTICAL CURVE (K=64) AND VERTICAL SSD (305').



DESIGN DATA

ADT 2012 =	3827
ADT 2032 =	9131
DHV =	13 %
D =	65 %
T =	6 % *
V =	60 MPH
* TTST =	1% DUAL 5%
FUNC CLASS =	RURAL LOCAL
SUB-REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4832	=	.051 MILES
LENGTH OF STRUCTURE TIP PROJECT B-4832	=	.014 MILES
TOTAL LENGTH OF TIP PROJECT B-4832	=	.065 MILES

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

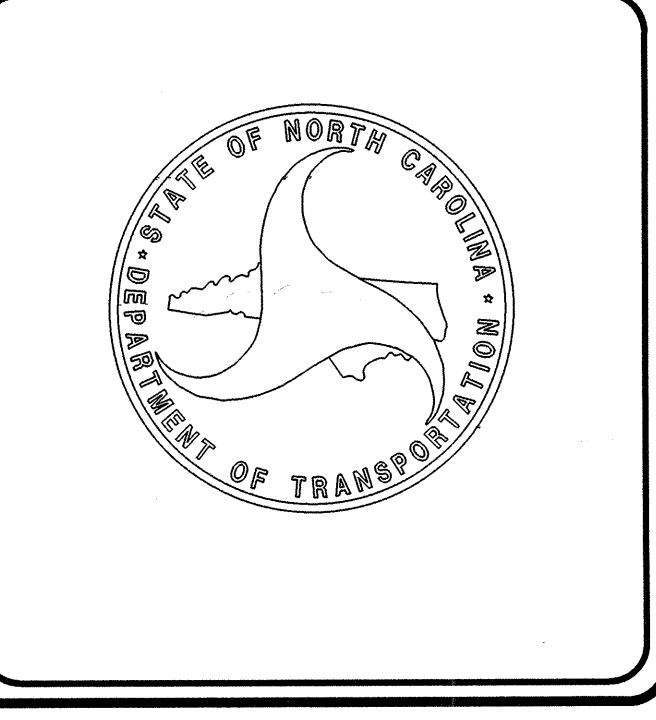
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	GARY LOVERING, PE PROJECT ENGINEER
DECEMBER 16, 2011	
LETTING DATE:	ANTHONY C. WEST PROJECT DESIGN ENGINEER
DECEMBER 18, 2012	

HYDRAULICS ENGINEER

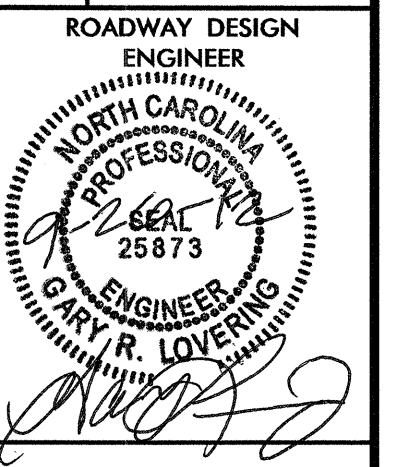
SIGNATURE: *Gary R. Lovering*

ROADWAY DESIGN ENGINEER

SIGNATURE: *Anthony C. West*



18-SEP-2012 16:04
 V:\PROJECTS\12\B-4832-Rdy_tsh.dgn
 \$\$\$SERVERNAME\$\$\$



INDEX OF SHEETS

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
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE QUANTITIES GUARDRAIL SUMMARY, SUMMARY OF EARTHWORK, SUMMARY OF REMOVAL EXISTING ASPHALT PAVEMENT, AND SHOULDER BERM CUTTER SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-2	TRAFFIC MANAGEMENT PLANS
SD-1	SPECIAL SIGN DESIGN
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN-2	SIGNING PLANS
UC-1 THRU UC-2	UTILITIES CONSTRUCTION PLANS
UD-1 THRU UD-2	UTILITIES BY OTHERS PLANS
S-1 THRU S-13	STRUCTURE PLANS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-2	CROSS-SECTIONS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 07/30/12

**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. 225.04 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.

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

- City of Raleigh (Sewer)
- Progress Energy (Power)

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
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
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
876.02	Guide for Rip Rap at Pipe Outlets

04/16/11

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

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	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ?

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ 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	○ R/W
Proposed Right of Way Line with Iron Pin and Cap Marker	○ R/W ▲
Proposed Right of Way Line with Concrete or Granite R/W Marker	○ R/W
Proposed Control of Access Line with Concrete CA Marker	○ CA
Existing Control of Access	○ CA
Proposed Control of Access	○ CA
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	-T-T-T-
Proposed Guardrail	-T-T-T-
Existing Cable Guiderail	-P-P-P-
Proposed Cable Guiderail	-P-P-P-
Equality Symbol	⊕
Pavement Removal	▭

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----

Orchard	○
Vineyard	▭ Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	-UTL-
U/G Tank; Water, Gas, Oil	▭
Underground Storage Tank, Approx. Loc.	▭ UST
AG 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.

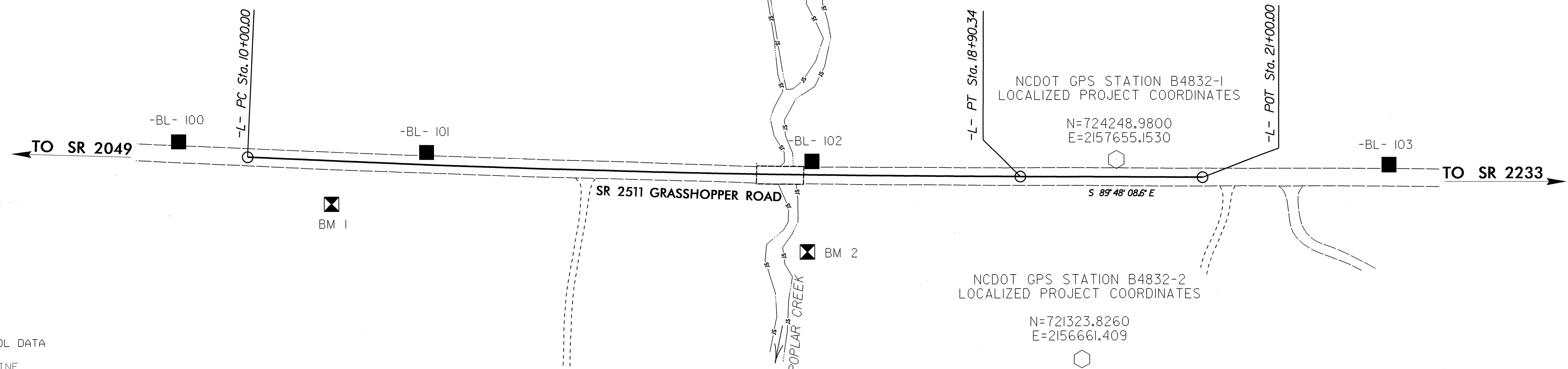
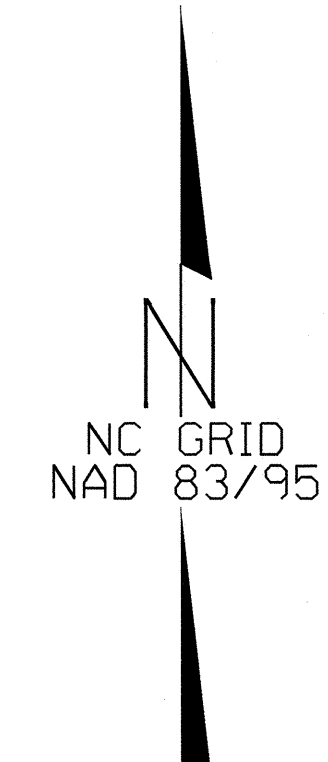
SURVEY CONTROL SHEET B-4832

WAKE COUNTY

**LOCATION: BRIDGE NO. 230 OVER POPLAR CREEK ON
SR 2511 (GRASSHOPPER RD)**

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+00.00	45.00	724203.2046	2156752.6970
L	11+00.00	29.99	724218.1974	2156753.3416
L	11+12.50	-55.00	724302.5808	2156769.4466
L	11+12.50	-29.94	724277.5405	2156768.3857
L	11+37.50	-55.00	724301.5411	2156794.3561
L	11+37.50	-29.99	724276.5555	2156793.3289
L	14+68.00	65.00	724170.7594	2157120.8183
L	16+80.00	29.82	724201.8417	2157333.9582
L	16+80.00	65.00	724166.6610	2157333.4668
L	17+20.00	65.00	724166.1418	2157373.5935
L	17+20.00	29.59	724201.5449	2157374.0171
L	18+15.00	29.39	724200.8404	2157469.1547
L	18+15.00	65.00	724165.2277	2157468.8977

TYPE	STATION	NORTH	EAST
PC	10+00.00	724252.7081	2156654.7333
PT	18+90.34	724229.8243	2157544.7022
POT	21+00.00	724229.1012	2157754.3644



CONTROL DATA

BASELINE POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
100	BL-100	724270.7594	2156575.1963	207.44	OUTSIDE PROJECT LIMITS	
101	BL-101	724258.0758	2156860.7573	187.92	12+05.68	14.18 LT
102	BL-102	724247.3143	2157304.5986	171.73	16+49.99	15.22 LT
1	B4832-1	724248.9800	2157655.1530	171.84	20+00.72	19.54 LT
103	BL-103	724243.0857	2157968.6300	181.86	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA

 BM1 ELEVATION = 199.66'
 N 724199 E 2156751
 L STATION 10+99 49' RIGHT
 BENCH TIE IN BASE OF 15' PINE

 BM2 ELEVATION = 172.16'
 N 724144 E 2157299
 L STATION 16+46 88' RIGHT
 BENCH TIE IN BASE OF 18" GUM

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4832-1" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 724248.9800(±) EASTING: 2157655.1530(±) ELEVATION: 171.84(±)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99990448
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4832-1" TO -L- STATION 10+00.00 IS
 S 89°47'11.3" W 1000.43'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

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/)

B4832_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.

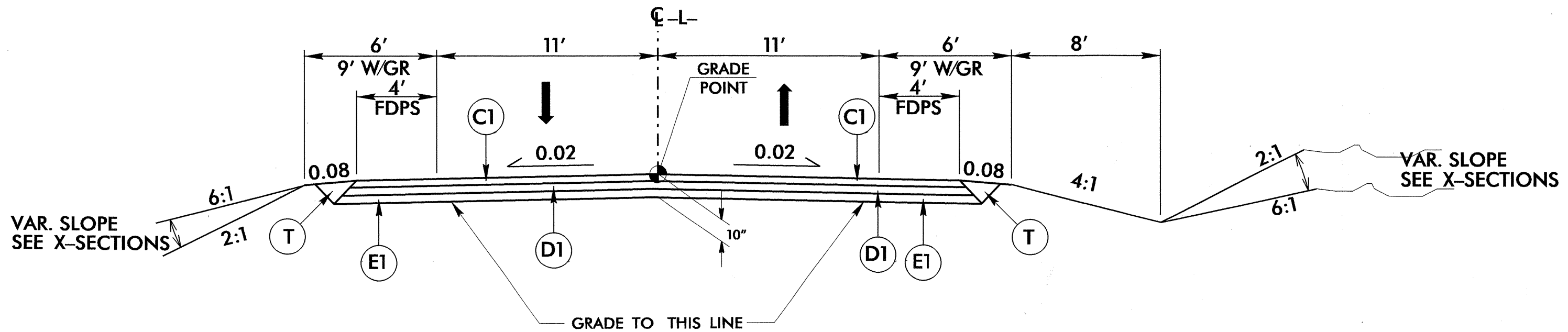
○ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

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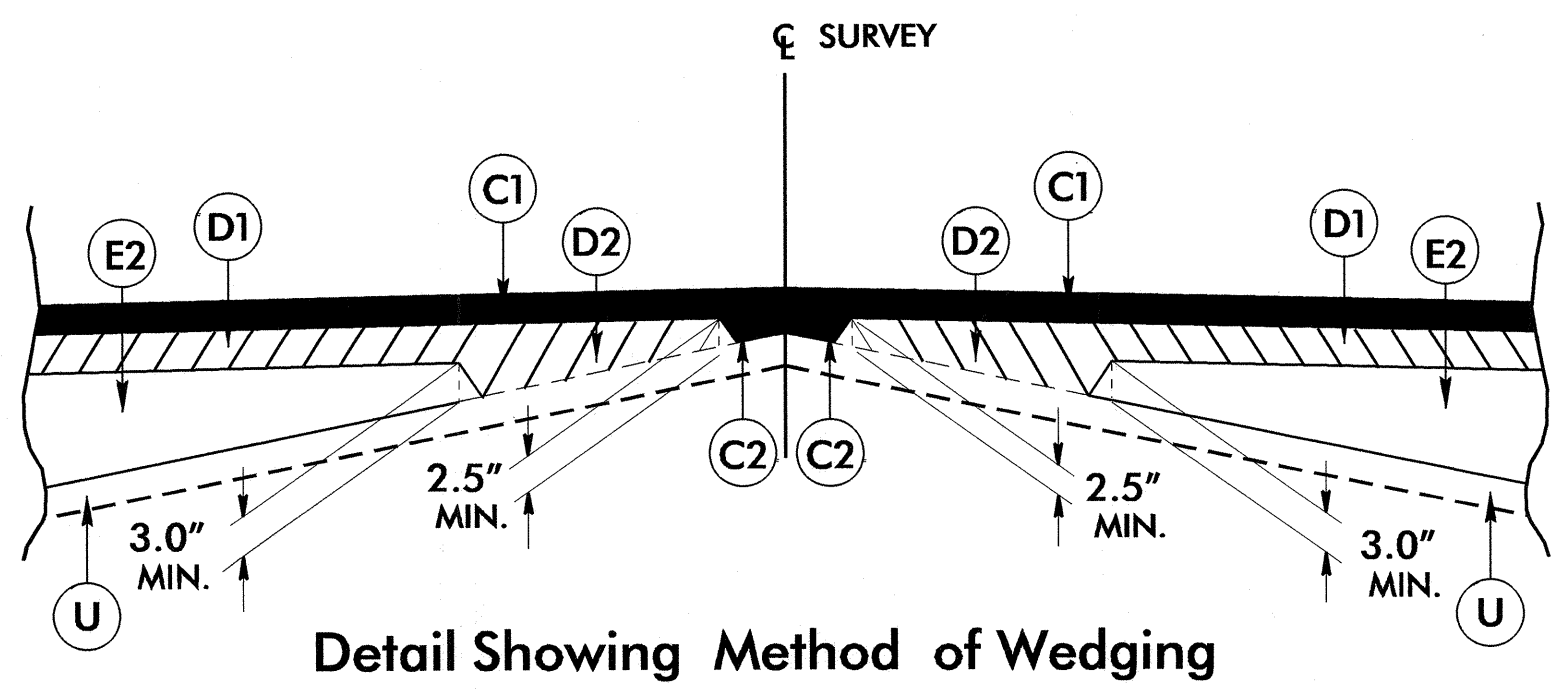
FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 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. 4½" 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.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING)

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

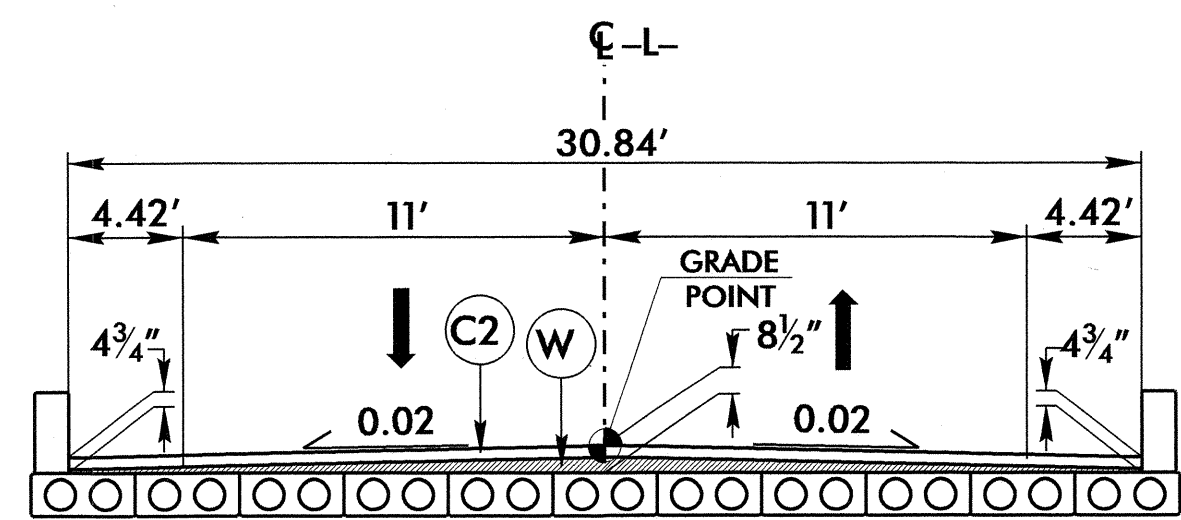


ROADWAY TYPICAL SECTION NO. 1

-L- STA. 14+30.00 TO STA. 15+83.17 (BEGIN BRIDGE)
 -L- STA. 16+55.42 (END BRIDGE) TO STA. 17+75.00



Detail Showing Method of Wedging



TYPICAL SECTION ON STRUCTURE

-L- STA. 15+83.17 (BEGIN BRIDGE) TO 16+55.42 (END BRIDGE)

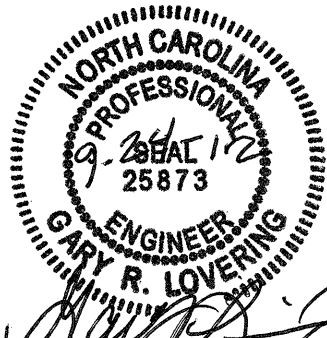
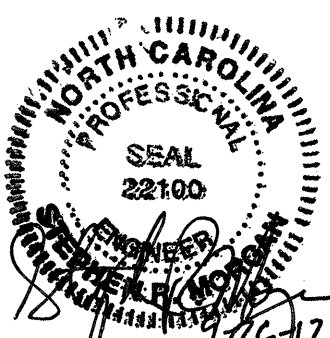
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

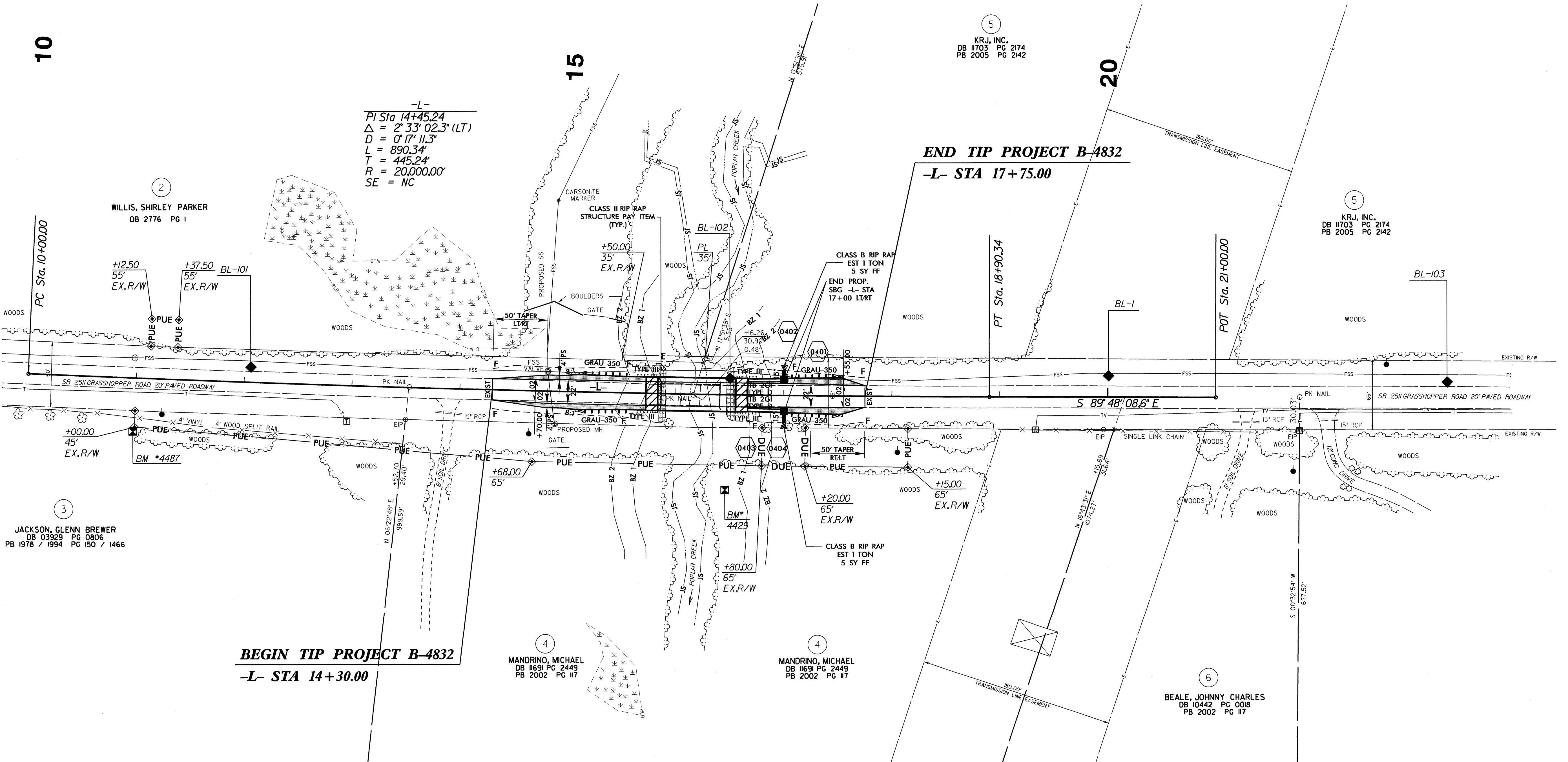
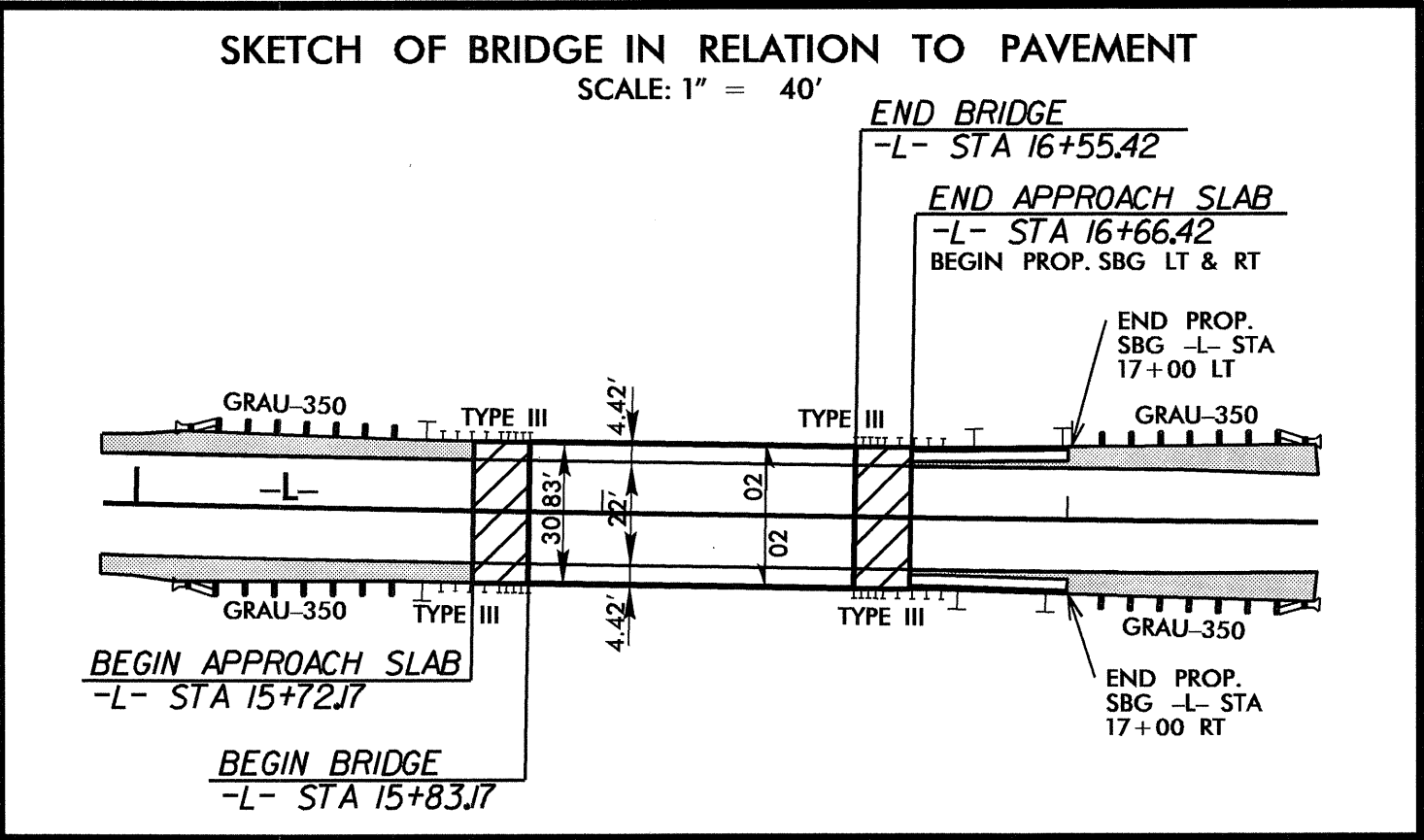
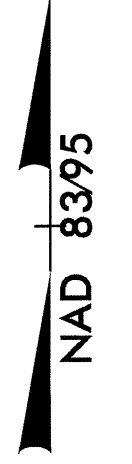
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203023

Item Number	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
003000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (16+19.00)
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
005700000-E	226	200	CY	UNDERCUT EXCAVATION
019500000-E	265	200	CY	SELECT GRANULAR MATERIAL
019600000-E	270	200	SY	GEOTEXTILE FOR SOIL STABILIZATION
031800000-E	300	10	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
032000000-E	300	10	SY	FOUNDATION CONDITIONING GEOTEXTILE
033520000-E	305	24	LF	15" DRAINAGE PIPE
122000000-E	545	50	TON	INCIDENTAL STONE BASE
148900000-E	610	260	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
149800000-E	610	150	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
151900000-E	610	270	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
157500000-E	620	35	TON	ASPHALT BINDER FOR PLANT MIX
169300000-E	654	40	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
202200000-E	815	22.4	CY	SUBDRAIN EXCAVATION
203300000-E	815	16.8	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE
207000000-N	815	1	EA	SUBDRAIN PIPE OUTLET
207700000-E	815	6	LF	6" OUTLET PIPE
228600000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES
236700000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
255600000-E	846	75	LF	SHOULDER BERM GUTTER
303000000-E	862	100	LF	STEEL BM GUARDRAIL

Item Number	Sec #	Quantity	Unit	Description
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
327000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
364900000-E	876	2	TON	RIP RAP, CLASS B
365600000-E	876	385	SY	GEOTEXTILE FOR DRAINAGE
407200000-E	903	61	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
409600000-N	904	2	EA	SIGN ERECTION, TYPE D
415500000-N	907	6	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
440000000-E	1110	506	SF	WORK ZONE SIGNS (STATIONARY)
441000000-E	1110	134	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
444500000-E	1145	112	LF	BARRICADES (TYPE III)
468500000-E	1205	690	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
468600000-E	1205	690	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
581000000-E	1530	318	LF	ABANDON 16" UTILITY PIPE
600000000-E	1605	800	LF	TEMPORARY SILT FENCE
600600000-E	1610	160	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	5	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	50	TON	SEDIMENT CONTROL STONE
601500000-E	1615	0.5	ACR	TEMPORARY MULCHING
601800000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEEDING
602400000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
602900000-E	SP	300	LF	SAFETY FENCE
603000000-E	1630	100	CY	SILT EXCAVATION
603600000-E	1631	2,000	SY	MATTING FOR EROSION CONTROL
603700000-E	SP	50	SY	COIR FIBER MAT
604200000-E	1632	250	LF	1/4" HARDWARE CLOTH
608400000-E	1660	0.5	ACR	SEEDING & MULCHING
608700000-E	1660	0.25	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	0.5	TON	FERTILIZER TOPDRESSING
611450000-N	1667	5	MHR	SPECIALIZED HAND MOWING
611700000-N	SP	13	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	0.1	ACR	REFORESTATION

5/28/99

PROJECT REFERENCE NO.		SHEET NO.	
B-4832		4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 GARY R. LOVERING		 SEAL	



10

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2
WILLIS, SHIRLEY PARKER
DB 2776 PG 1

3
JACKSON, GLENN BREWER
DB 03929 PG 0806
PB 1978 / 1994 PG 150 / 1466

4
MANDRINO, MICHAEL
DB 11691 PG 2449
PB 2002 PG 117

4
MANDRINO, MICHAEL
DB 11691 PG 2449
PB 2002 PG 117

5
KRJ, INC.
DB 11703 PG 2174
PB 2005 PG 2142

6
BEALE, JOHNNY CHARLES
DB 10442 PG 0018
PB 2002 PG 117

5
KRJ, INC.
DB 11703 PG 2174
PB 2005 PG 2142

FOR -L- PROFILE, SEE SHEET 5
FOR STRUCTURE PLANS, SEE SHEET S1-13

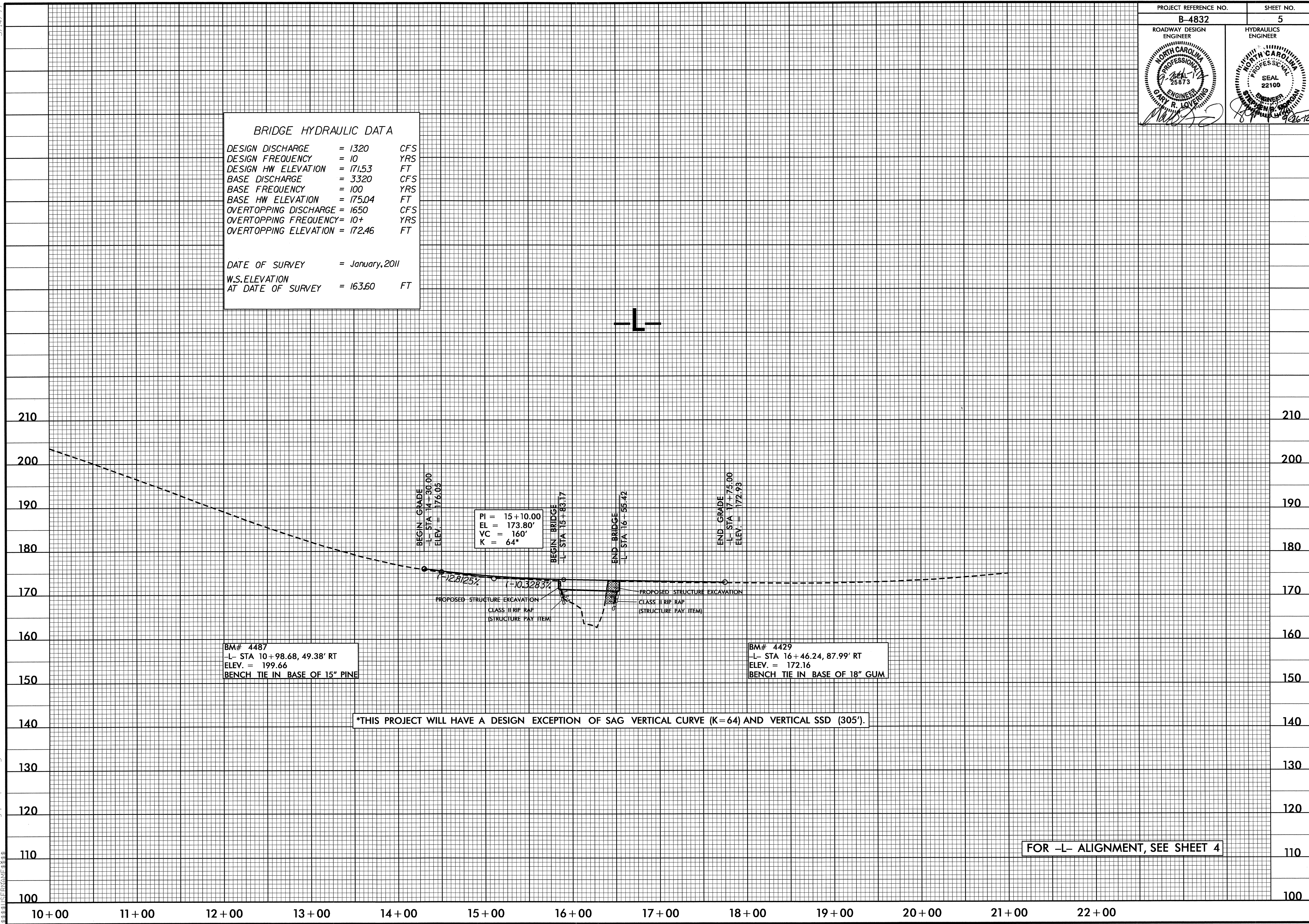
5/14/99

PROJECT REFERENCE NO. B-4832	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE = 1320 CFS
 DESIGN FREQUENCY = 10 YRS
 DESIGN HW ELEVATION = 171.53 FT
 BASE DISCHARGE = 3320 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 175.04 FT
 OVERTOPPING DISCHARGE = 1650 CFS
 OVERTOPPING FREQUENCY = 10+ YRS
 OVERTOPPING ELEVATION = 172.46 FT

DATE OF SURVEY = January, 2011
 W.S. ELEVATION AT DATE OF SURVEY = 163.60 FT



BM# 4487
 -L- STA 10+98.68, 49.38' RT
 ELEV. = 199.66
 BENCH TIE IN BASE OF 15" PINE

BM# 4429
 -L- STA 16+46.24, 87.99' RT
 ELEV. = 172.16
 BENCH TIE IN BASE OF 18" GUM

*THIS PROJECT WILL HAVE A DESIGN EXCEPTION OF SAG VERTICAL CURVE (K=64) AND VERTICAL SSD (305').

FOR -L- ALIGNMENT, SEE SHEET 4

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