

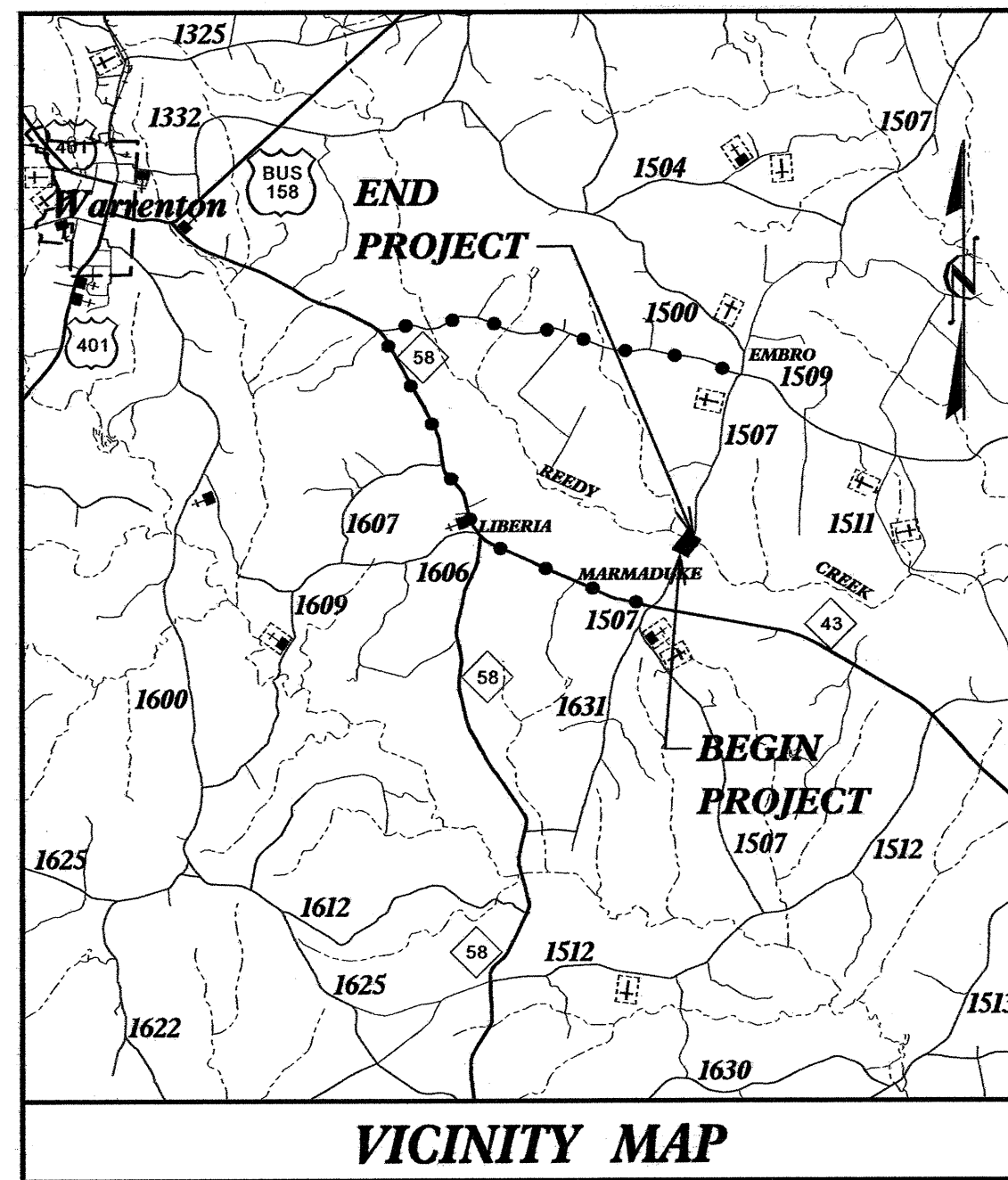
08/08/09

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3707	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33247.1.1	BRZ-1507(1)	P.E.	
33247.2.2	BRZ-1507(1)	RW & UTILITIES	
33247.3.1	BRZ-1507(4)	CONST.	

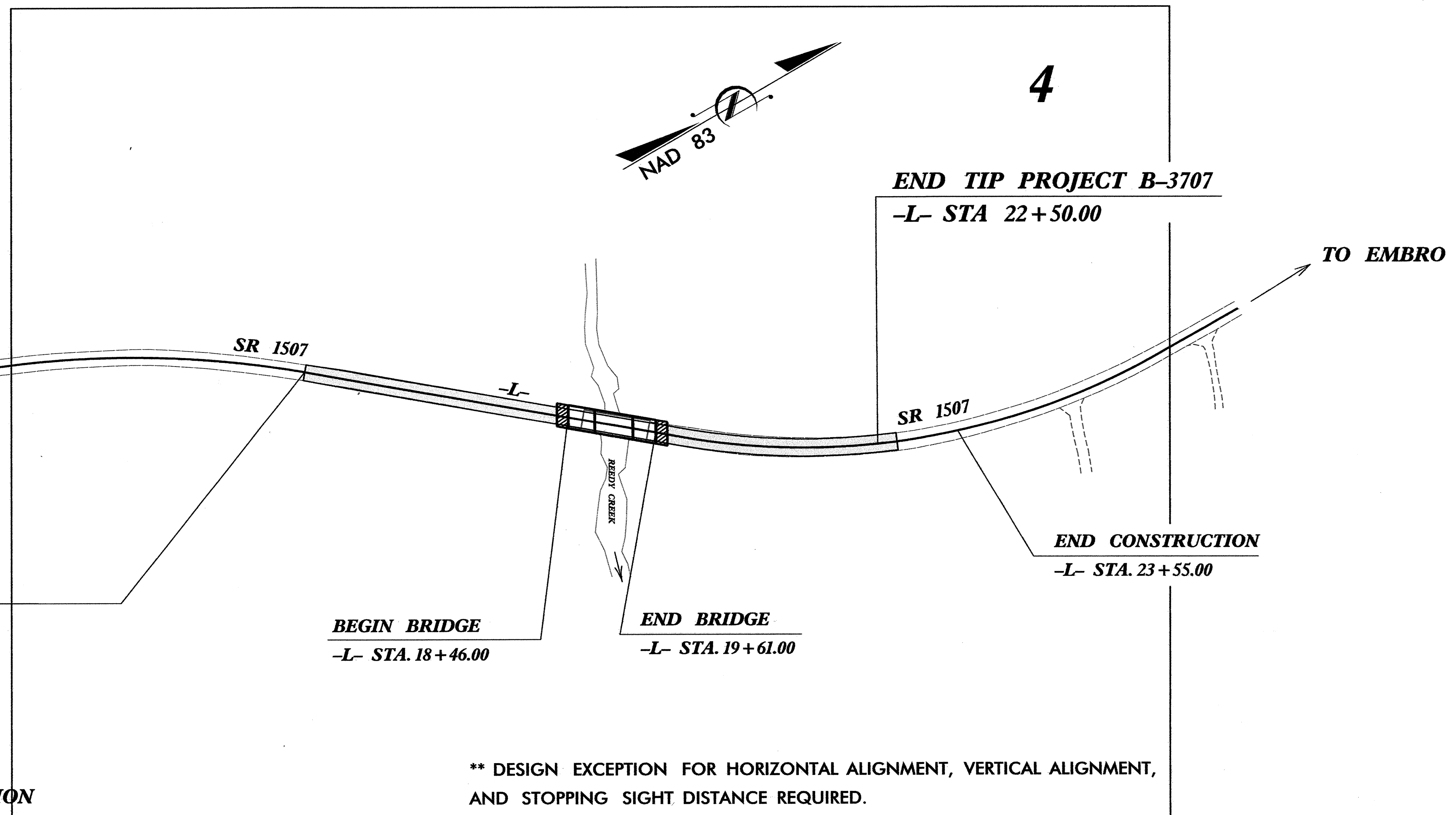
TIP PROJECT: B-3707



VICINITY MAP

LOCATION: Bridge No. 67 over Reedy Creek on SR 1507

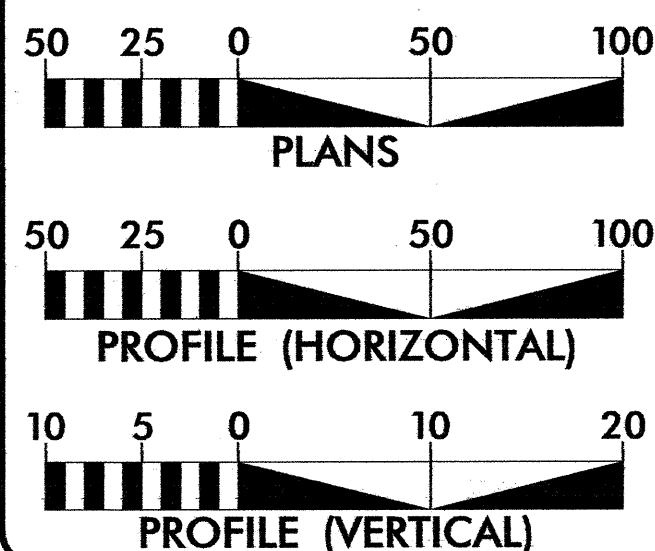
TYPE OF WORK: Grading, Drainage, Paving and Structure



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

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

GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 215
 ADT 2028 = 515
 DHV = 10 %
 D = 60 %
 T = 7 %
 TTST 3% DUAL 4%
 ** V = 60 MPH
 FUNC. CLASS. = RURAL LOCAL

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-3707 = 0.120 mi.
 LENGTH OF STRUCTURE TIP PROJECT B-3707 = 0.022 mi.
 TOTAL LENGTH OF TIP PROJECT B-3707 = 0.142 mi.

Prepared In the Office of:
KO & ASSOCIATES, P.C.
 Consulting Engineers
 5121 Kingston Way, Suite 100, Raleigh NC 27607
 (919) 851-6066

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
August 17, 2007

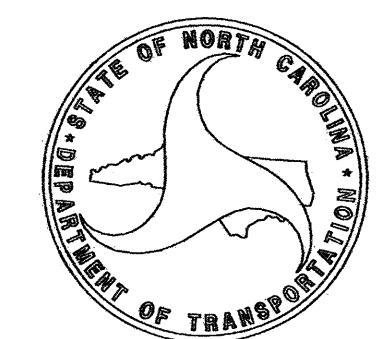
LETTING DATE:
July 15, 2008

Brian A. Wiles, P.E.
 PROJECT ENGINEER

HYDRAULICS ENGINEER

Professional Engineer Seal for W. Herbert Turner, No. 021162, State of North Carolina.
 Signature: W. Herbert Turner
 ROADWAY DESIGN ENGINEER
 Professional Engineer Seal for Brian Allen Wiles, No. 16689, State of North Carolina.
 Signature: Brian Allen Wiles

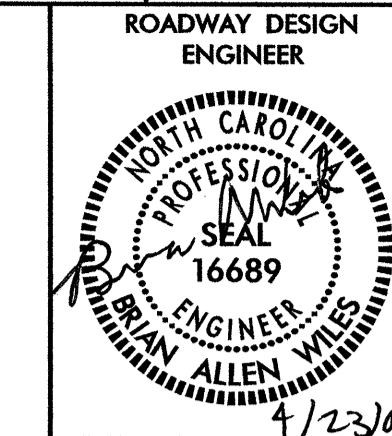
**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**



STATE HIGHWAY DESIGN ENGINEER

2/27/2008 8:55:06 AM Proj: Nc3707_rdy_tsh.dgn K&A Associates, P.C.

CONTRACT: C201890



INDEX OF SHEETS

SHEET NUMBER	DESCRIPTION
1	Title Sheet
1-A	Index of Sheets, General Notes and List of Standards
1-B	Conventional Symbols
1-C	Survey Control Sheet
2	Typical Sections, Wedging Detail and Pavement Schedule
2-A	Anchorage for Frames Detail
3	Summary of Quantities
3-A	List of Pipes, Endwalls, Etc. (for Pipes 48" and Under) and Summary of Guardrail
3-B	Summary of Earthwork and Summary of Pavement Removal
4	Plan Sheet
5	Profile Sheet
TCP-1 thru TCP-3	Traffic Control Plans
EC-1 thru EC-5	Erosion Control Plans
RF-1	Reforestation Plans
SD-1	Special Sign Design
X-1	Cross Section Summary Sheet
X-2 thru X-7	Cross Sections
S-1 thru S-20	Structure Plans

GENERAL NOTES:

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

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.

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 Halifax EMC.
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.

2006 ROADWAY STANDARD DRAWINGS

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

2006 ROADWAY 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 Superelevation - 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
876.04	Drainage Ditches with Class 'B' Rip Rap

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	-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-

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	▭
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	_____
Bridge Wing Wall, Head Wall and End Wall	_____
MINOR:	
Head and End Wall	_____
Pipe Culvert	_____
Footbridge	_____
Drainage Box: Catch Basin, DI or JB	_____
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	⊕
H-Frame Pole	⊕
Recorded U/G Power Line	_____
Designated U/G Power Line (S.U.E.*)	_____

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	_____
Designated U/G Telephone Cable (S.U.E.*)	_____
Recorded U/G Telephone Conduit	_____
Designated U/G Telephone Conduit (S.U.E.*)	_____
Recorded U/G Fiber Optics Cable	_____
Designated U/G Fiber Optics Cable (S.U.E.*)	_____

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	_____

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
U/G TV Cable Hand Hole	⊕
Recorded U/G TV Cable	_____
Designated U/G TV Cable (S.U.E.*)	_____
Recorded U/G Fiber Optic Cable	_____
Designated U/G Fiber Optic Cable (S.U.E.*)	_____

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

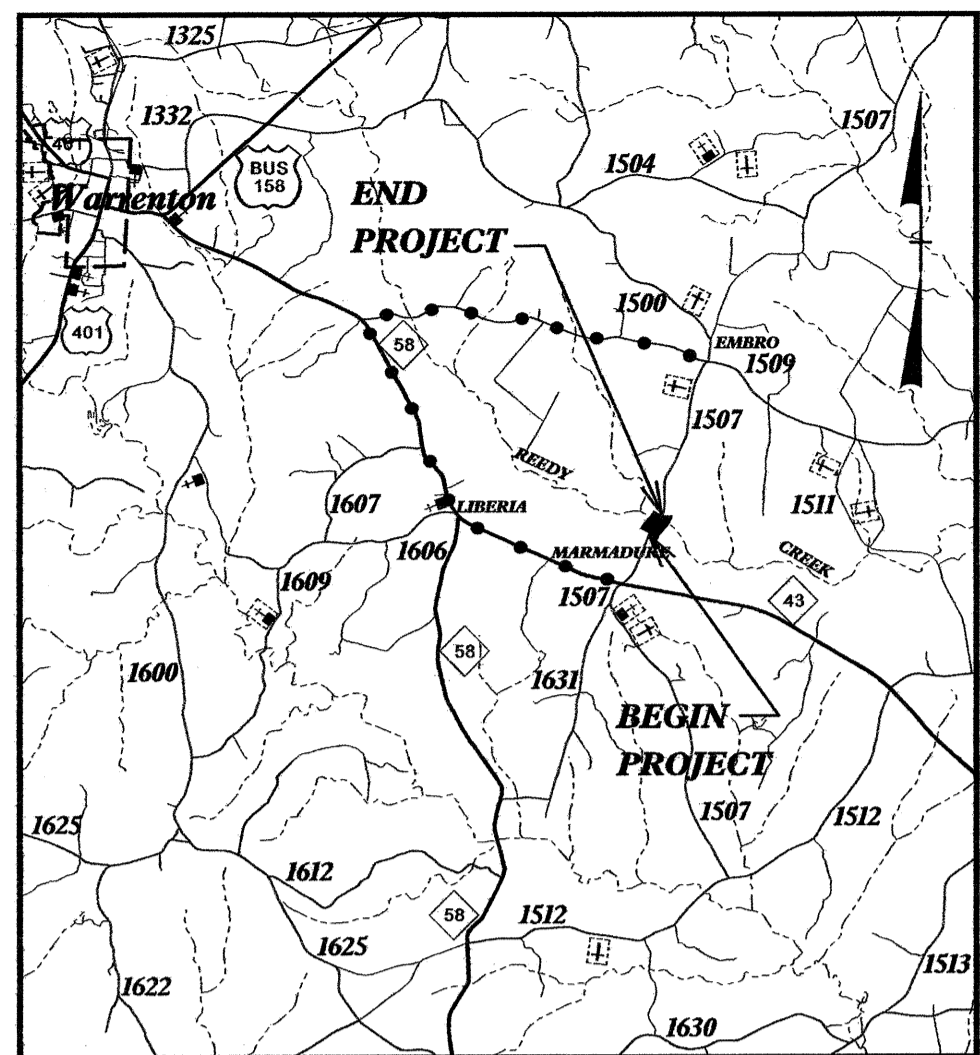
Utility Pole	⊕
Utility Pole with Base	⊕
Utility Located Object	⊕
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	_____
U/G Tank; Water, Gas, Oil	⊕
AG Tank; Water, Gas, Oil	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

6/07/2006

2/27/2008
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 J.C. & Associates, Inc.

PROJECT REFERENCE NO.	SHEET NO.
B-3707	1C
Location and Surveys	

B-3707



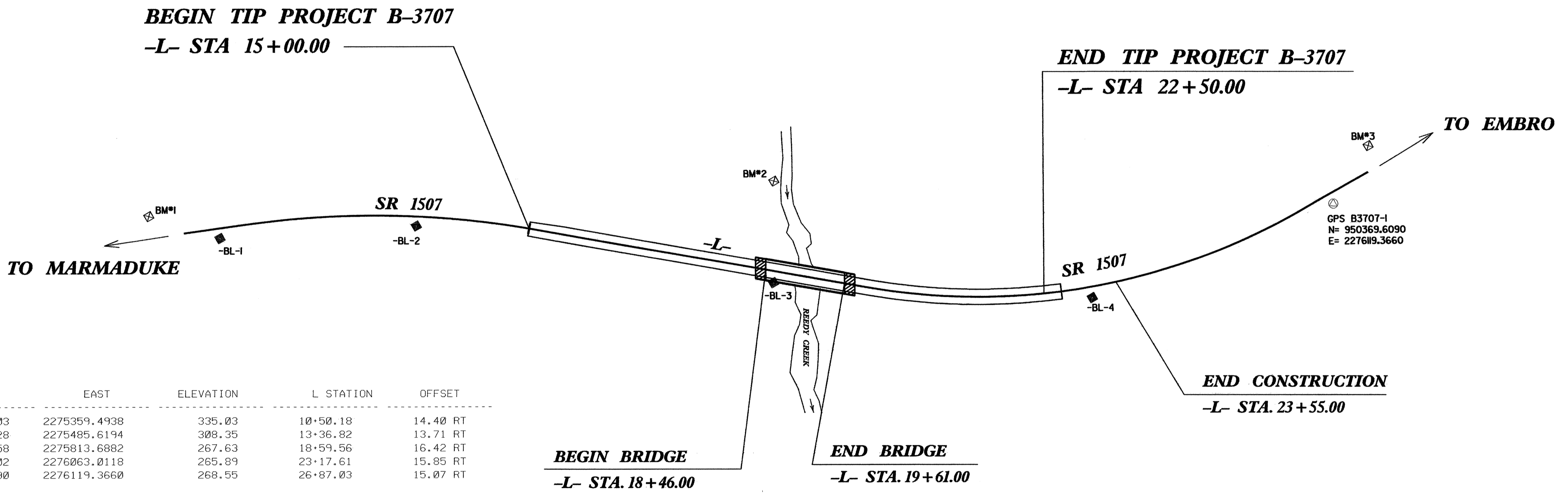
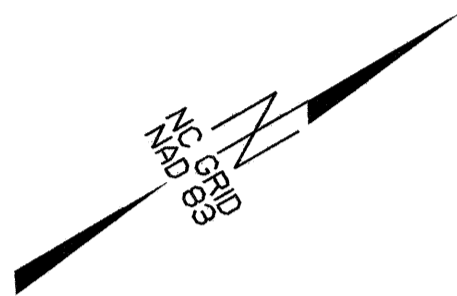
VICINITY MAP

OFFSITE DETOUR ROUTE

SURVEY CONTROL SHEET B-3707

WARREN COUNTY

LOCATION: Bridge No. 67 over Reedy Pond Creek on SR 1507



CONTROL DATA

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	948955.9303	2275359.4938	335.03	10+50.18	14.40 RT
2	BL-2	949209.8728	2275485.6194	308.35	13+36.82	13.71 RT
3	BL-3	949614.1458	2275813.6882	267.63	18+59.56	16.42 RT
4	BL-4	950011.3502	2276063.0118	265.89	23+17.61	15.85 RT
101	B3707-1	950369.6090	2276119.3660	268.55	26+87.03	15.07 RT

BENCHMARK DATA

.....
 BM1 ELEVATION = 348.78
 N 948883 E 2275280
 L STATION 10+00
 S 56° 04' 41.0" W DIST 57'
 RR SPIKE SET IN 13" PINE

.....
 BM3 ELEVATION = 273.03
 N 950455 E 2276072
 L STATION 27+53
 N 59° 11' 44.3" W DIST 38'
 RR SPIKE SET IN 11" PINE

.....
 BM2 ELEVATION = 262.62
 N 949689 E 2275688
 L STATION 18+36 128 LEFT
 RR SPIKE SET IN 16" BIRCH

BEGIN BRIDGE
 -L- STA. 18+46.00

END BRIDGE
 -L- STA. 19+61.00

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS B3707-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 950369.6090 EASTING: 2276119.3660 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00005085 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS B3707-1" TO L- STATION 15+00 IS S 28°15'52.4" W 1,159.02' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

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/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B3707_IS_CONTROL_060607.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)
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.


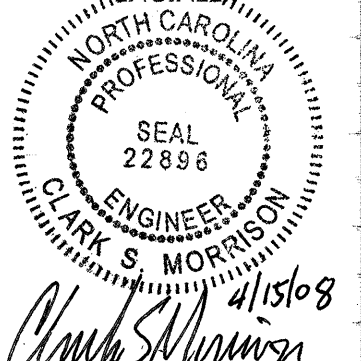
NOTE: DRAWING NOT TO SCALE

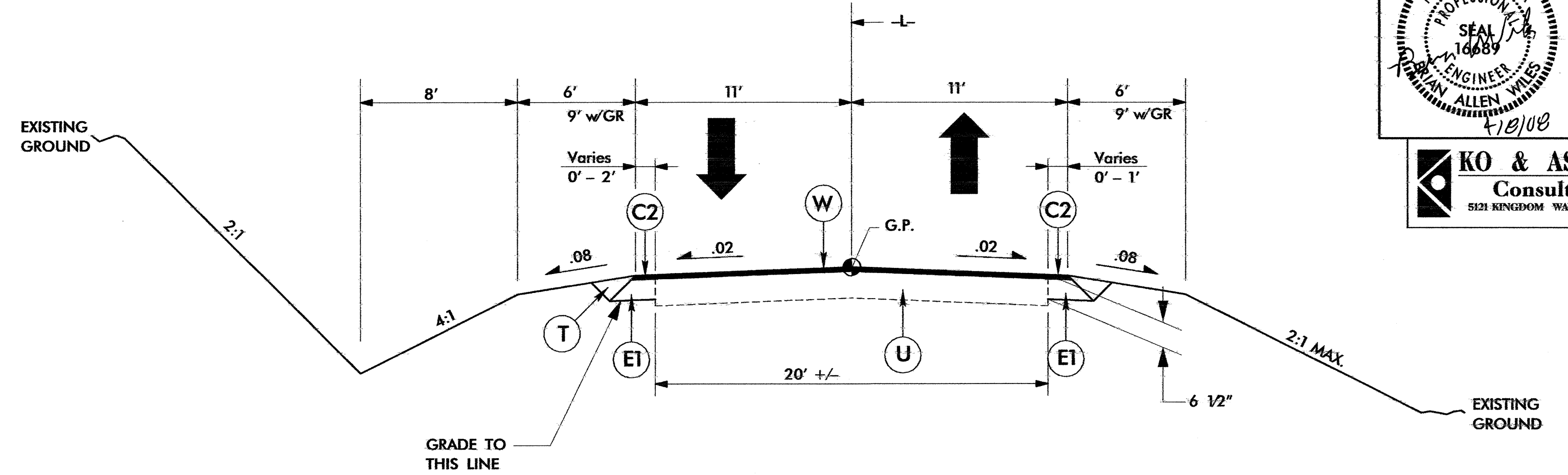
6/2/09

4/8/2008
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 K. S. Associates, P.C.

PAVEMENT SCHEDULE	
CODE	DESCRIPTION
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	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 1 1/2" 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. 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 5 1/2" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING ASPHALT PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

NOTE: ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS NOTED OTHERWISE.

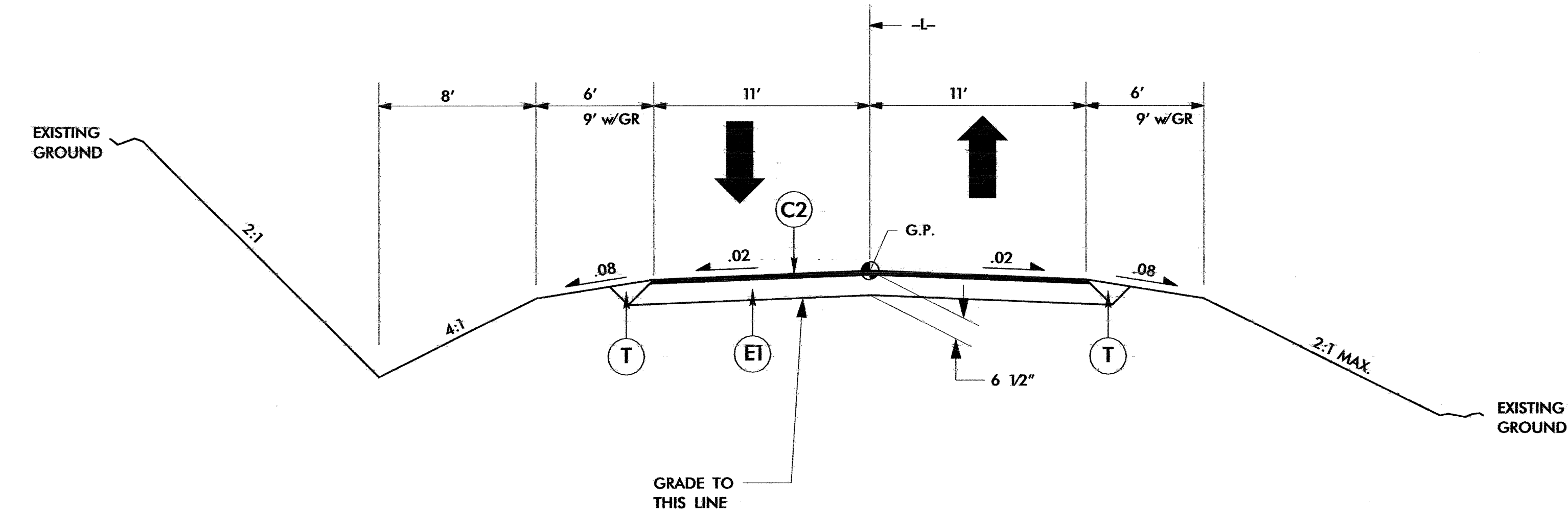
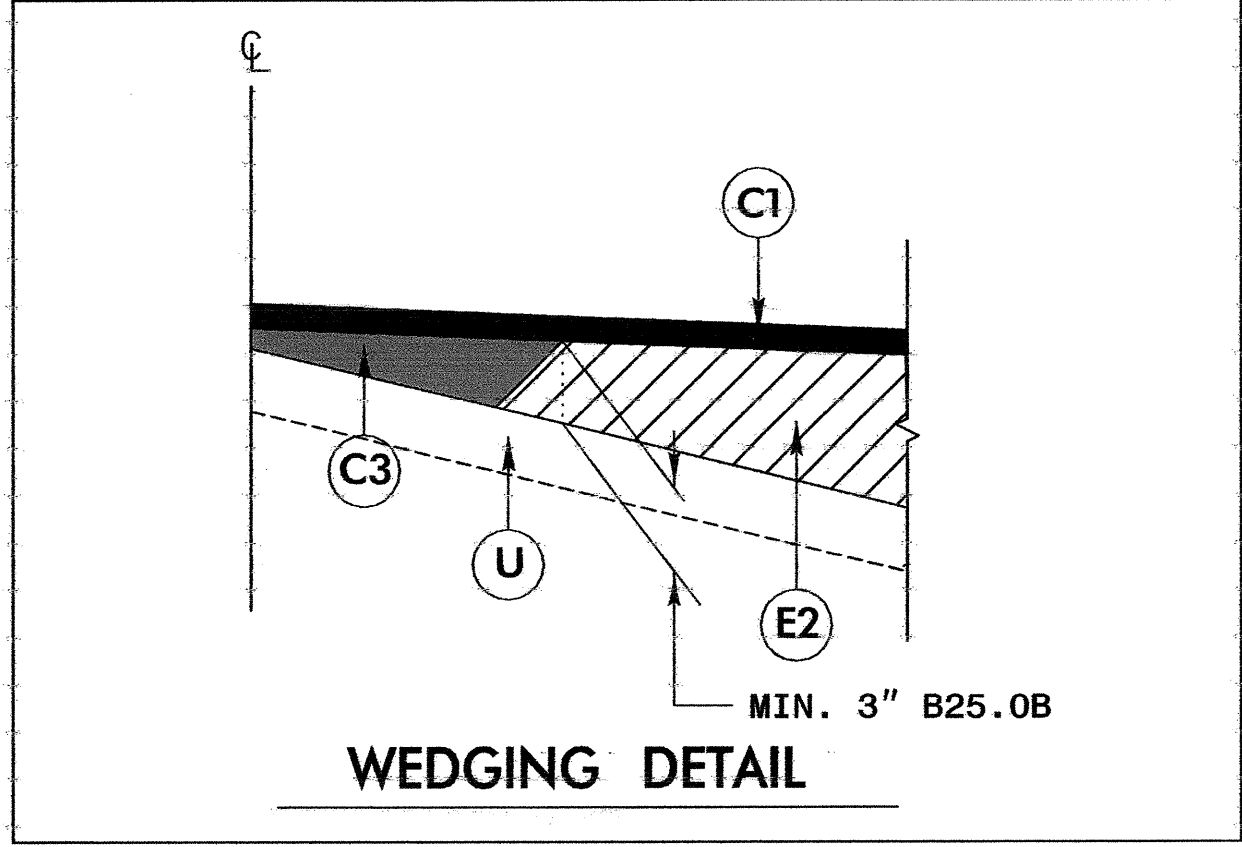
PROJECT REFERENCE NO. B-3707	SHEET NO. 2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
KO & ASSOCIATES, P.C. Consulting Engineers 521 KINGDOM WAY, SUITE 100, RALEIGH, N.C. 27607 (919) 851-6066	



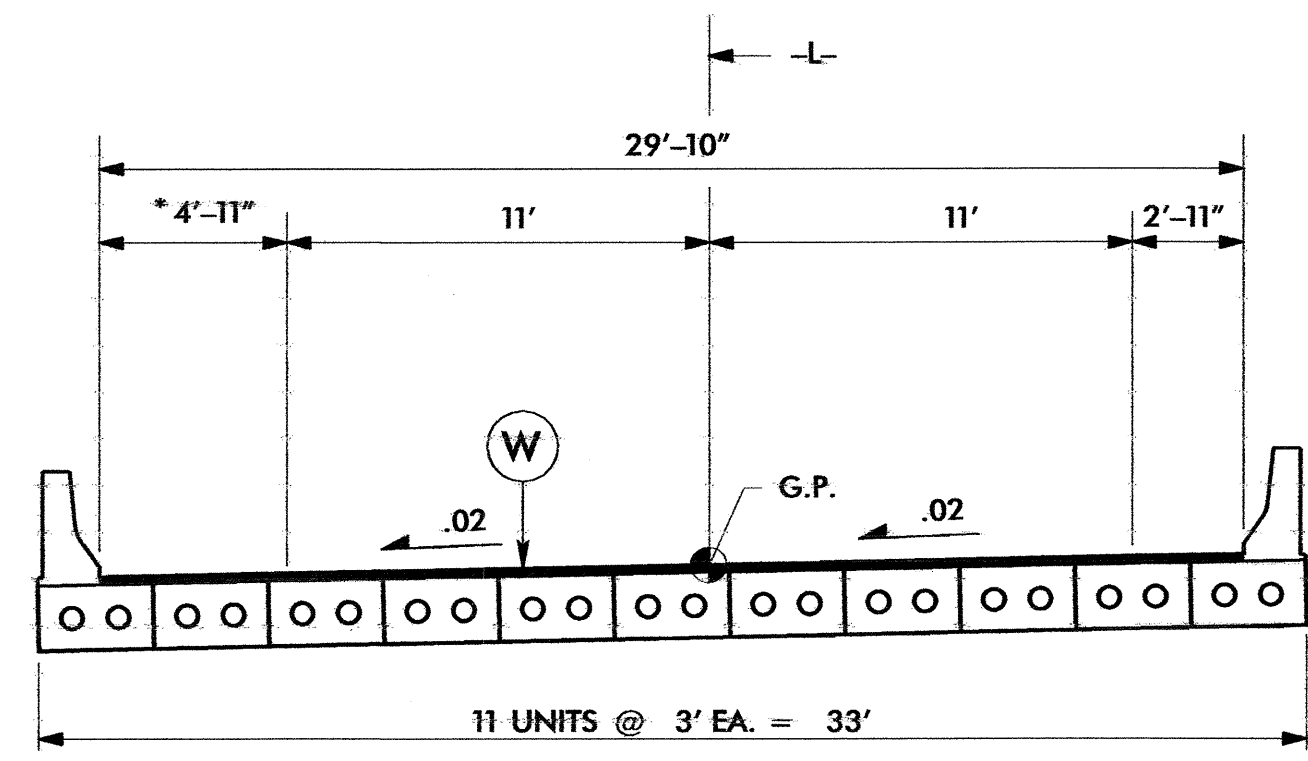
TYPICAL SECTION NO. 1
 -L- STA 15+25 TO -L- STA 18+00
 -L- STA 20+00 TO -L- STA 22+50

TRANSITION FROM EXISTING TO T.S. NO. 1
 -L- STA 15+00 TO -L- STA 15+25

TRANSITION FROM T.S. NO. 1 TO EXISTING
 -L- STA 22+50 TO -L- STA 22+75



TYPICAL SECTION NO. 2
 -L- STA 18+00 TO -L- STA 18+46.00 (BRIDGE)
 -L- STA 19+61.00 (BRIDGE) TO -L- STA 20+00



TYPICAL SECTION NO. 3
 -L- STA 18+46.00 TO -L- STA 19+61.00
 * Widened shoulder due to Hydraulic spread

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201890

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0022000000-E	225	2,400	CY	UNCLASSIFIED EXCAVATION
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (19+03.50)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0057000000-E	226	200	CY	UNDERCUT EXCAVATION
0063000000-N	SP	Lump Sum		GRADING
0195000000-E	265	200	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	200	SY	FABRIC FOR SOIL STABILIZATION
0318000000-E	300	5	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
0366000000-E	310	24	LF	15" RC PIPE CULVERTS, CLASS III
1220000000-E	545	50	TON	INCIDENTAL STONE BASE
1489000000-E	610	400	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	350	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1560000000-E	620	40	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
2000000000-N	806	10	EA	RIGHT OF WAY MARKERS
2286000000-N	840	1	EA	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	32	LF	SHOULDER BERM GUTTER
3030000000-E	862	562.5	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3649000000-E	876	30	TON	RIP RAP, CLASS B
3656000000-E	876	210	SY	FILTER FABRIC FOR DRAINAGE

ItemNumber	Sec #	Quantity	Unit	Description
3659000000-N	SP	1	EA	PERFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
4400000000-E	1110	414	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	20	EA	DRUMS
4445000000-E	1145	80	LF	BARRICADES (TYPE III)
4685000000-E	1205	1,900	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	1,900	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4900000000-N	1251	16	EA	PERMANENT RAISED PAVEMENT MARKERS
6000000000-E	1605	820	LF	TEMPORARY SILT FENCE
6006000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	235	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	65	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	1.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEEDING
6029000000-E	SP	200	LF	SAFETY FENCE
6030000000-E	1630	585	CY	SILT EXCAVATION
6036000000-E	1631	430	SY	MATTING FOR EROSION CONTROL
6038000000-E	SP	280	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	20	LF	1/4" HARDWARE CLOTH
6071030000-E	SP	180	LF	COIR FIBER BAFFLES
6084000000-E	1660	1.5	ACR	SEEDING & MULCHING
6087000000-E	1660	1	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING

ItemNumber	Sec #	Quantity	Unit	Description
6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	1.25	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.1	ACR	REFORESTATION

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DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK
 IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY NO. 1					
-L- 15+00 TO 18+46.00	2354		213		2141
TOTAL SUMMARY NO. 1	2354		213		2141
SUMMARY NO. 2					
-L- 19+61.00 TO 23+55	39		186	147	
TOTAL SUMMARY NO. 2	39		186	147	
SUB-TOTAL SUMMARY NOS. 1 & 2	2393		399	147	2141
PROJECT TOTAL	2393		399	147	2141
WASTE TO REPLACE BORROW				-147	-147
GRAND TOTALS	2393			0	1994
SAY	2400				

SUMMARY OF PAVEMENT REMOVAL

SURVEY LINE	STATION TO STATION	LOCATION	ASPHALT REMOVAL (SY)	ASPHALT BREAKING (SY)
-L-	18+00 TO 18+65	CL	159	
-L-	19+50 TO 20+00	CL	133	
	TOTAL		292	
	SAY		300	

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

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

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.

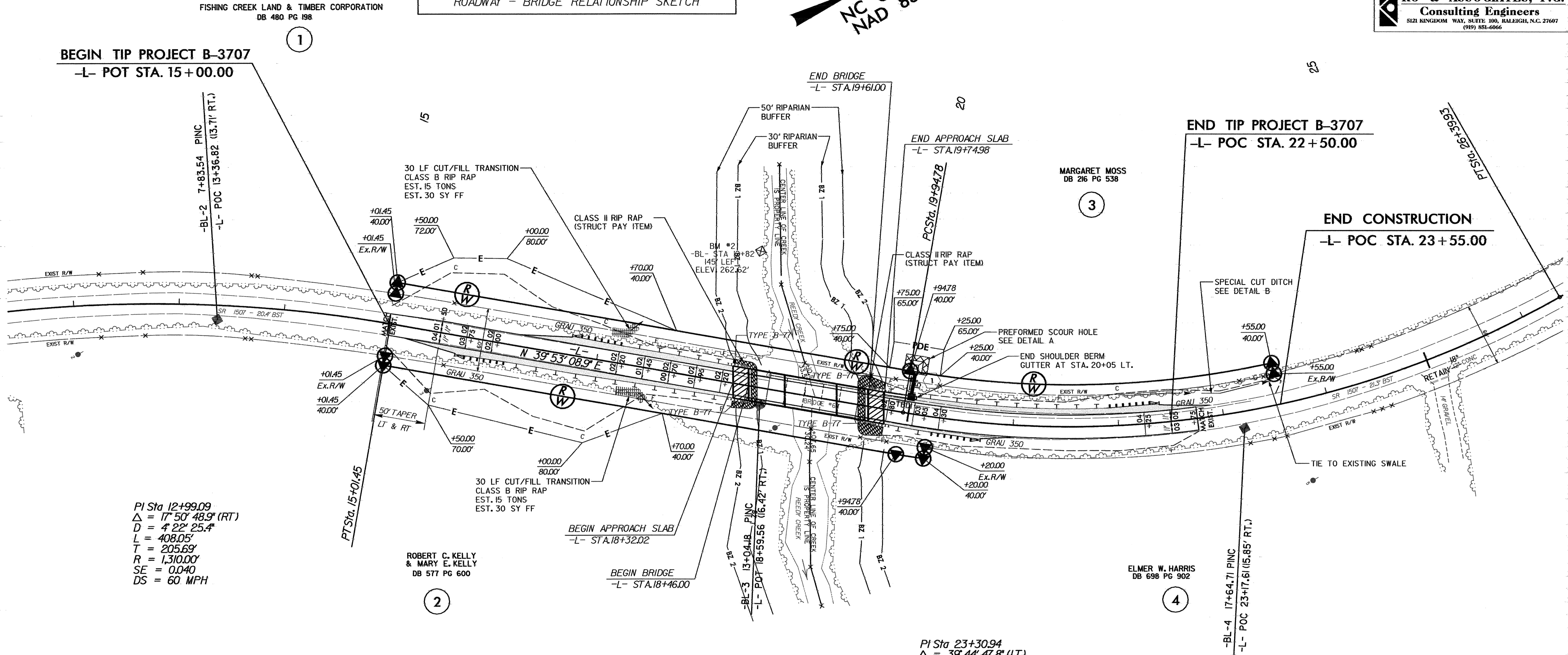
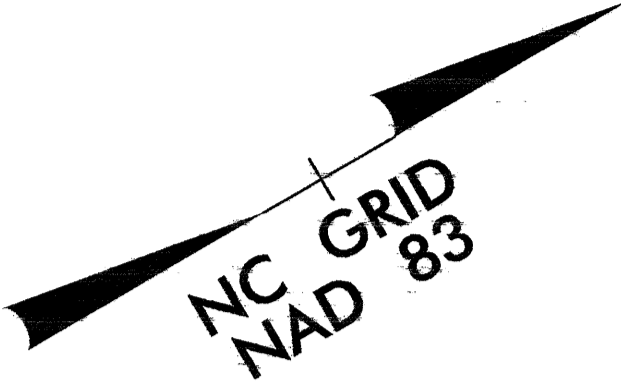
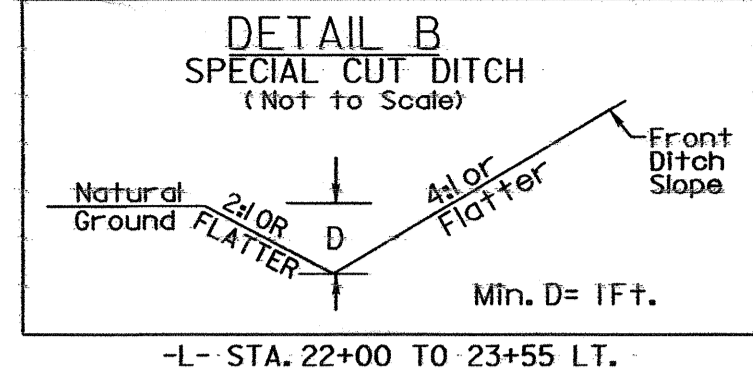
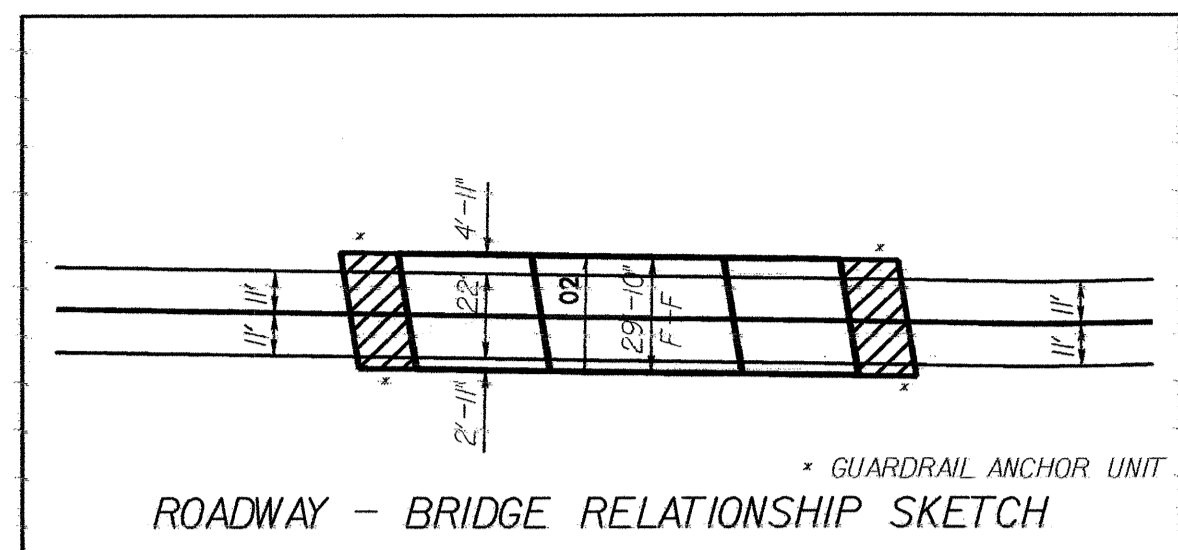
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PROJECT REFERENCE NO. B-3707		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

KO & ASSOCIATES, P.C.
 Consulting Engineers
 521 KINGDOM WAY, SUITE 100, RALEIGH, N.C. 27607
 (919) 851-6866

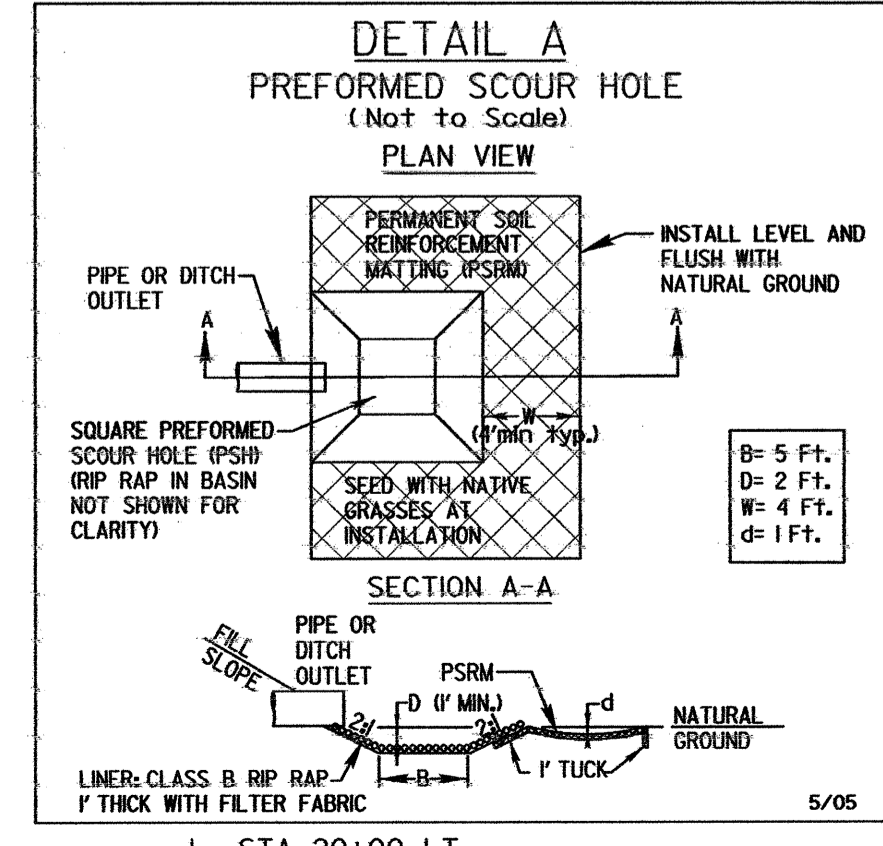


PI Sta 12+99.09
 $\Delta = 17^{\circ} 50' 48.9''$ (RT)
 $D = 4' 22.254''$
 $L = 408.05'$
 $T = 205.69'$
 $R = 1,310.00'$
 $SE = 0.040$
 $DS = 60$ MPH

ROBERT C. KELLY
 & MARY E. KELLY
 DB 577 PG 600

ELMER W. HARRIS
 DB 698 PG 902

PI Sta 23+30.94
 $\Delta = 39^{\circ} 44' 47.8''$ (LT)
 $D = 6' 09.390''$
 $L = 645.15'$
 $T = 336.17'$
 $R = 930.00'$
 $SE = 0.040$
 $DS = 50$ MPH
 * DESIGN EXCEPTION REQUIRED



LEGEND

	PAVED SHOULDER
	APPROACH SLAB

FOR STRUCTURES SEE SHEETS S-1 THRU S-4
 FOR -L- PROFILE, SEE SHEET NO. 5

B.M. #2 EL = 262.62'
 RR SPIKE SET IN 16" BIRCH TREE
 145' LT OF -BL- STA 12+82
 128' LT OF -L- STA 18+36

DITCH LEGEND
 LEFT DITCH

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 2700	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 267.1	FT
BASE DISCHARGE	= 4070	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 269.2	FT
OVERTOPPING DISCHARGE	= 2417+	CFS
OVERTOPPING FREQUENCY	= 10+	YRS
OVERTOPPING ELEVATION	= 266.0	FT
DATE OF SURVEY = 3/16/06		
W.S. ELEVATION AT DATE OF SURVEY = 258.6 FT		

PI = 16+90.00
 BL = 270.80'
 VC = 320'
 *K = 32
 DS = 27 mph
 * DESIGN EXCEPTION REQUIRED

BEGIN CONSTRUCTION
 STA 15+00.00
 PVC STA 15+30.00
 EL = 288.27

BEGIN GRADE
 STA 15+25.00
 EL = 288.75

PVT STA 18+50.00
 EL = 269.67

END GRADE
 STA 22+50.00
 EL = 266.63

END ROADWAY CONST.
 STA 22+75

BEGIN DITCH
 STA 22+00 - LT
 EL = 263.84

END DITCH
 STA 23+55 - LT
 EL = 263.16

(-10.8788%)
 (-10.8788%)
 (-10.1446%)

(-10.7446%)

SPEC. CUT - LT
 @ 0.44%

NWS = 258.6

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