09/08/99

See Sheet 1-A For Index of Sheets

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3861	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33308.1.1	BRZ-1731 (6)	P.E.
33308.2.1	BRZ-1731 (6)	R/W & UTILITIES
33308.3.1	BRZ-1731 (6)	CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

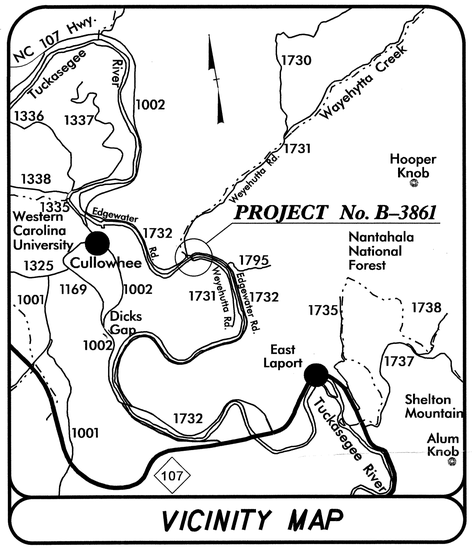
JACKSON COUNTY

LOCATION: BRIDGE 107 OVER TUCKASEGEE RIVER ON SR 1731

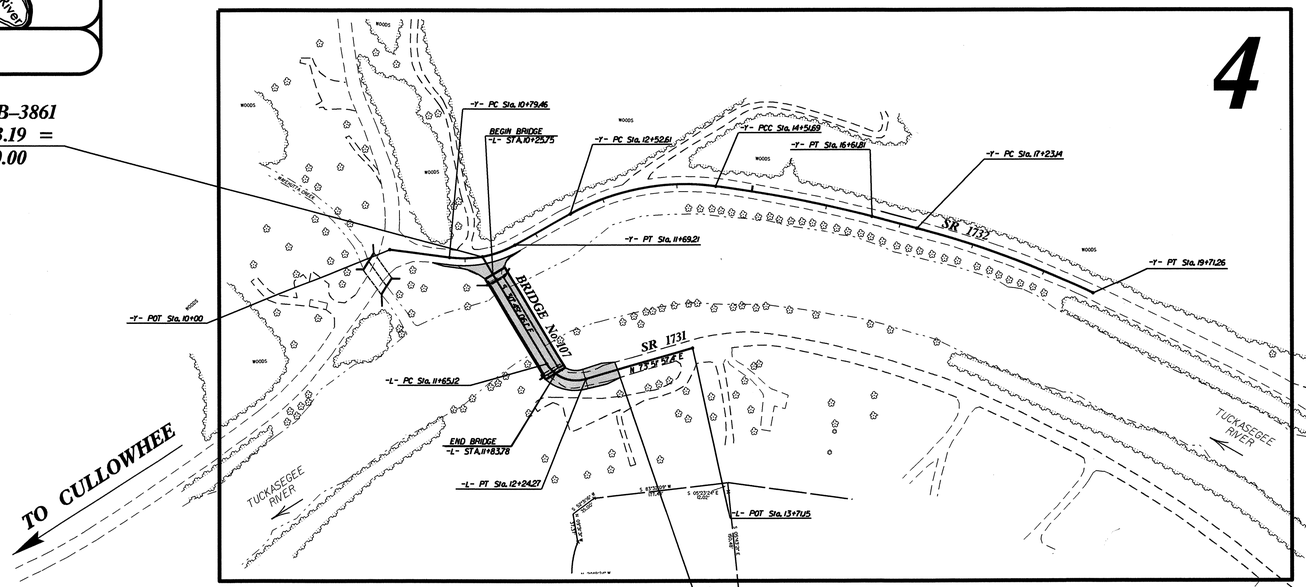
TYPE OF WORK: PAVING, DRAINAGE, GRADING, STRUCTURE.

TIP PROJECT: B-3861

CONTRACT: C202840



BEGIN PROJECT B-3861
-Y- POC Sta. 11+23.19 =
-L- POT Sta. 10+00.00



END PROJECT B-3861
-L- STA. 12+67.99

NAD 83

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2012 = 344
ADT 2030 = 560
DHV = 10 %
D = 60 %
T = 4 % *
V = 15 MPH
*TTST = 2% DUAL = 2%

FUNC. CLASS. = LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT No. B-3861 = 0.021 Miles.
LENGTH STRUCTURE TIP PROJECT No B-3861 = 0.030 Miles.

TOTAL LENGTH TIP PROJECT No. B-3861 = 0.051 Miles.

THIS PROJECT DESIGNED USING SUB REGIONAL TIER GUIDELINES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: June 15, 2011

LETTING DATE: JULY 17, 2012

J. S. GOODNIGHT, PE
PROJECT ENGINEER

S. D. KENDALL, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19660 ENGINEER PAUL ATKINSON
SIGNATURE:

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33296 ENGINEER STEVEN D. KENDALL
Steven D Kendall P.E.
SIGNATURE: 5-22-12

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

22-MAY-2012 10:46
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-3861	1-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33296 ENGINEER STEVEN D KENDALL
Steve D. Kendall 5-31-12

2012 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 1-17-12

N. C. Department of Transportation – Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered part of these plans. The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch –

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.02	Method of Clearing – Method II
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 Superelevation – METHOD I.
654.01	Pavement Repair
DIVISION 8 – INCIDENTALS	
815.03	Pipe Underdrains 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

GENERAL NOTES

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 11-01-11

GRADE LINE:

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

CLEARING:
CLEARING ON THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

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 REVLOVED 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 NESSARY WORK TO PROVIDE SUITABLE CONNECTION WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PROCE FOR THE PARTICULAR ITEMS INVOLVED.

UNDERDRAINS:
UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. No. 815.03 AT LOCATIONS DIRECTED BY 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:
WCU POWER
FRONTIER TELEPHONE

UTILITIES CONTINUED:
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 OTHERS.

INDEX OF SHEETS

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RD261650 5/31/2012 b3861_rdy_tsh fatuck RD-Oce860-34

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
B-3861	1-B

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 — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- 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
- 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 — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- 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 — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite Marker — RW
- 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
- Curb Cut Future Ramp — CCFR
- 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 — 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 — P
- 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 — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- 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 — W
- 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 — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- 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 — S
- Utility Unknown U/G Line — ?UTL
- 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.

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
33308.1.1	1C
Location and Surveys	

SURVEY CONTROL SHEET B-3861

FINAL ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+45.00	-50.00	594623.5273	757765.8592
L	12+65.00	-68.00	594637.0982	757804.5847
L	12+65.00	-22.50	594593.3903	757817.2485
L	13+71.15	-22.50	594622.8875	757919.2167
L	13+71.15	22.50	594579.6600	757931.7217
L	12+24.27	22.50	594538.8452	757790.6304
L	12+04.00	30.00	594524.7541	757759.2645
L	11+73.00	50.00	594541.5473	757720.8142
L	11+70.00	95.00	594519.3709	757660.1106
L	11+52.00	95.00	594543.2296	757644.9200
L	11+50.00	50.00	594568.0015	757682.5412
L	10+38.91	-50.00	594714.6384	757711.5065

FINAL ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y	10+21.26	32.00	594697.2058	757543.2202
Y	10+79.46	32.00	594689.6098	757600.9185
Y	10+87.37	32.00	594688.6137	757610.5895

FINAL L

TYPE	STATION	NORTH	EAST
POT	10+00.00	594722.4368	757648.6333
PC	11+65.12	594580.6323	757733.2273
PT	12+24.27	594568.4590	757784.3780
POT	13+71.15	594601.2738	757925.4692

BEGIN PROJECT B-3861
-Y- POC Sta. 11+23.19 =
-L- POT Sta. 10+00.00

FINAL Y

TYPE	STATION	NORTH	EAST
POT	10+00.00	594731.7072	757526.3172
PC	10+79.46	594721.3360	757605.8953
PT	11+65.21	594737.9647	757691.7326
PC	12+52.61	594778.6925	757764.5178
PCC	14+51.69	594815.4664	757956.7120
PT	16+61.81	594774.9502	758162.7510
PC	17+23.14	594759.4043	758222.8773
PT	19+71.26	594673.1815	758454.2944
PC	21+99.38	594572.9799	758659.2255
PT	24+29.69	594443.0915	758848.4110

BM#3=2,076.08 FT.

NC GRID NAD 83

NCDOT BASELINE STATION B-3861 BY-6
LOCALIZED PROJECT COORDINATES
N=595,059.3170
E=757,451.7090
ELEV.=2,081.16'

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	594333.2750	757128.7920	2073.70	10+67.89	645.81 RT
2	BL-2	594649.2920	757504.1980	2072.04	OUTSIDE PROJECT LIMITS	
3	BL-3	594549.4640	757740.4220	2081.05	11+87.95	17.68 RT
4	BL-4	594604.7130	758143.2040	2076.19	OUTSIDE PROJECT LIMITS	
5	BL-5	594212.0160	758743.0230	2077.92	OUTSIDE PROJECT LIMITS	

BY

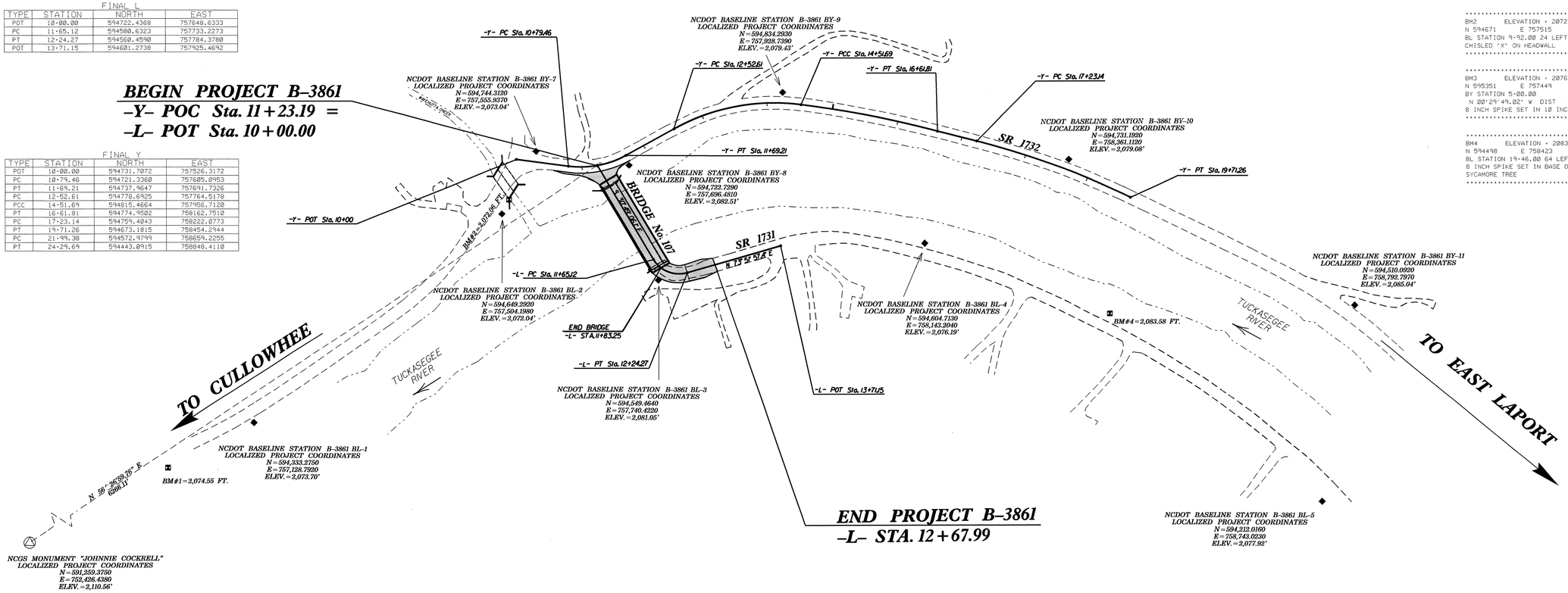
POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
6	BY-6	595059.3170	757451.7090	2081.16	OUTSIDE PROJECT LIMITS	
7	BY-7	594744.3120	757555.9370	2073.04	10+27.72	16.36 LT
8	BY-8	594722.7290	757696.4810	2082.51	11+66.24	15.65 RT
9	BY-9	594834.2930	757928.7390	2075.43	14+22.96	16.38 LT
10	BY-10	594731.1920	758361.1120	2079.08	18+63.30	15.90 LT
11	BY-11	594510.0920	758792.7970	2085.04	23+44.89	15.92 LT

BM1 ELEVATION = 2074.55
N 594265 E 756999
BL STATION 5+00.00
S 62°17'13.77" W DIST 147
8 INCH SPIKE IN STUMP OF 12" LOCUST TREE

BM2 ELEVATION = 2072.06
N 594671 E 757515
BL STATION 9+92.00 24 LEFT
CHISLED 'X' ON HEADWALL

BM3 ELEVATION = 2076.08
N 595351 E 757449
BY STATION 5+00.00
N 00°29'49.82" W DIST 292
8 INCH SPIKE SET IN 10 INCH DOUBLE OAK

BM4 ELEVATION = 2083.58
N 594498 E 758423
BL STATION 19+46.00 64 LEFT
8 INCH SPIKE SET IN BASE OF 10 INCH SYCAMORE TREE



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "JOHNNIE COCKRELL" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 591,259.3750(ft) EASTING: 752,426.4380(ft) ELEVATION: 2,110.56(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99977263
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "JOHNNIE COCKREL" TO -L- STATION 10+00.00 IS N 56°26'59.76" E 6,266.11'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 1988

NOTE: DRAWING NOT TO SCALE

NOTES:

1. *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/*

   THE FILES TO BE FOUND ARE AS FOLLOWS: B-3861_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.*

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PROJ. REFERENCE NO.	SHEET NO.
B-3861	1-D

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CENTERLINE COORDINATE LIST

Point #	Chain	Station	Northing (Y)	Easting (X)
1	L	10+00.00	594722.4368	757648.6333
2	L	10+50.00	594679.4970	757674.2492
3	L	11+00.00	594636.5572	757699.8651
4	L	11+50.00	594593.6174	757725.4810
5	L	12+00.00	594560.1738	757760.3999
6	L	12+50.00	594567.6082	757809.0918
7	L	13+00.00	594581.5024	757857.1225
8	L	13+50.00	594595.3967	757905.1532
9	L	13+71.15	594601.2738	757925.4693
10	Y	10+00.00	594731.7073	757526.3173
11	Y	10+50.00	594725.1810	757575.8895
12	Y	11+00.00	594720.1558	757625.5851
13	Y	11+50.00	594729.7636	757674.3830
14	Y	12+00.00	594753.0021	757718.6061
15	Y	12+50.00	594777.4177	757762.2396
16	Y	13+00.00	594798.5885	757807.4774
17	Y	13+50.00	594812.2301	757855.5242
18	Y	14+00.00	594817.9786	757905.1381
19	Y	14+50.00	594815.6849	757955.0312
20	Y	15+00.00	594808.4232	758004.4992
21	Y	15+50.00	594799.6989	758053.7303
22	Y	16+00.00	594789.5232	758102.6821
23	Y	16+50.00	594777.9052	758151.3117
24	Y	17+00.00	594765.2710	758199.6890
25	Y	17+50.00	594752.3183	758247.9809
26	Y	18+00.00	594737.6501	758295.7775
27	Y	18+50.00	594721.0823	758342.9492
28	Y	19+00.00	594702.6414	758389.4207
29	Y	19+50.00	594682.3569	758435.1176
30	Y	20+00.00	594660.5569	758480.1142
31	Y	20+50.00	594638.5941	758525.0323
32	Y	21+00.00	594616.6312	758569.9503
33	Y	21+50.00	594594.6684	758614.8684
34	Y	22+00.00	594572.7053	758659.7864
35	Y	22+50.00	594549.2903	758703.9553
36	Y	23+00.00	594523.1080	758746.5421
37	Y	23+50.00	594494.2646	758787.3736
38	Y	24+00.00	594462.8776	758826.2839
39	Y	24+29.69	594443.0915	758848.4110

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-3861	2

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33296 ENGINEER STEVEN D. KENDALL
5-22-12

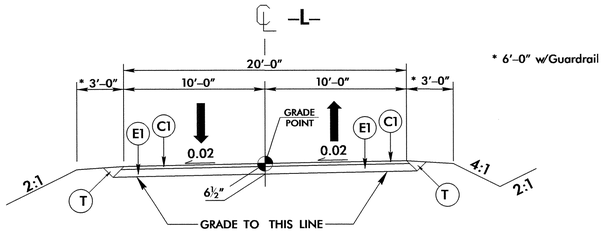
PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON
5/22/12

PAVEMENT SCHEDULE

FINAL PAVEMENT DESIGN

C1	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.	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.	U	EXISTING PAVEMENT.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.	J	PROP. 6" AGGREGATE BASE COURSE.	T	EARTH MATERIAL.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.		

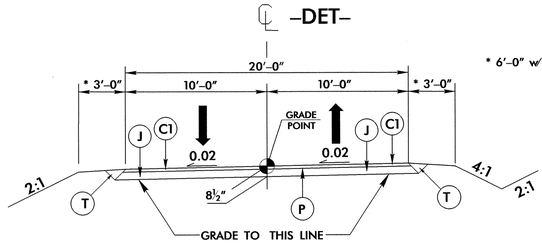
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



* 6'–0" w/Guardrail

TYPICAL SECTION NO. 1

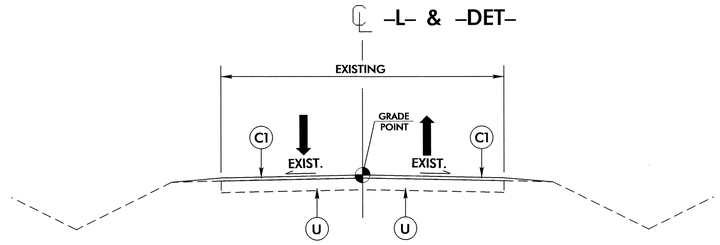
–L– Sta. 10+10.36 to Sta. 10+25.75 BEGIN BRIDGE
–L– Sta. 11+83.78 END BRIDGE to Sta. 12+50.00



* 6'–0" w/Guardrail

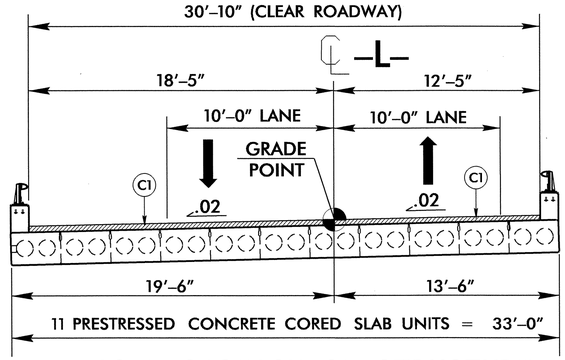
TYPICAL SECTION NO. 2

–DET– Sta. 10+12.15 to Sta. 10+60.00 BEGIN BRIDGE
–DET– Sta. 11+95.04 +/– END BRIDGE to Sta. 12+83.05



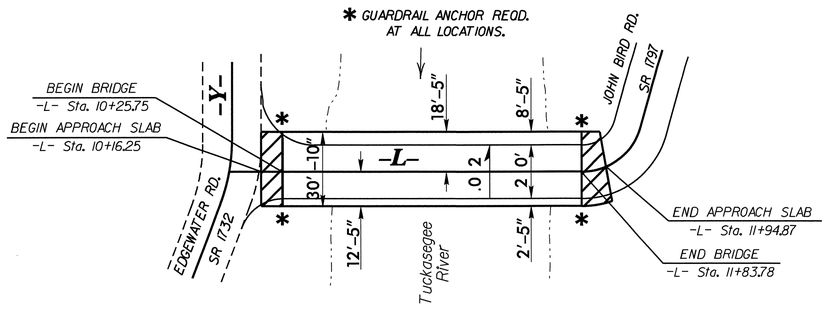
TYPICAL SECTION NO. 3

–L– Sta. 12+50.00 to Sta. 12+67.99
–DET– Sta. 12+83.05 to Sta. 13+26.60

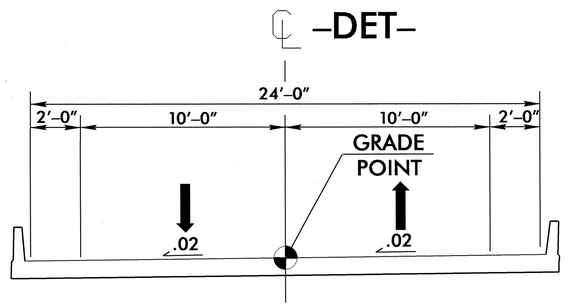


TYPICAL SECTION ON STRUCTURE

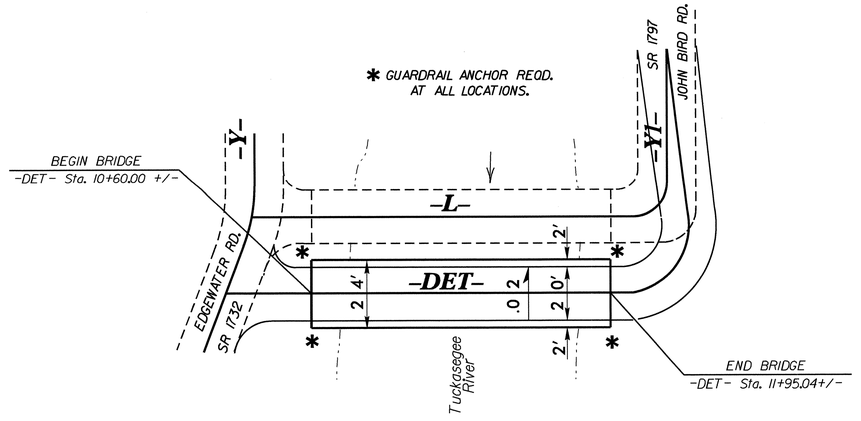
DESIGN DATA	
ADT 2011	= 332
ADT 2030	= 560
DHV	= 10 %
D	= 60 %
T	= 4 % *
V	= 15 MPH
* TTST 2%	DUAL 2%
FUNC. CLASS.	= LOCAL
SUB REG.TIER DESIGN	



SKETCH SHOWING PAVEMENT/BRIDGE RELATIONSHIP



TYPICAL SECTION ON DETOUR STRUCTURE



SKETCH SHOWING PAVEMENT/BRIDGE RELATIONSHIP

PROJECT REFERENCE NO.	SHEET NO.
B-3861	2-A

5/14/99

STATE OF
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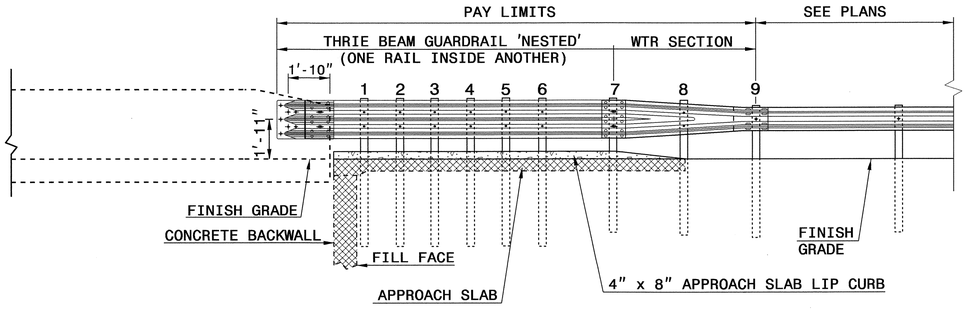
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

TYPE III - SHOP CURVED STRUCTURE ANCHOR UNIT

SHEET 1 OF 1

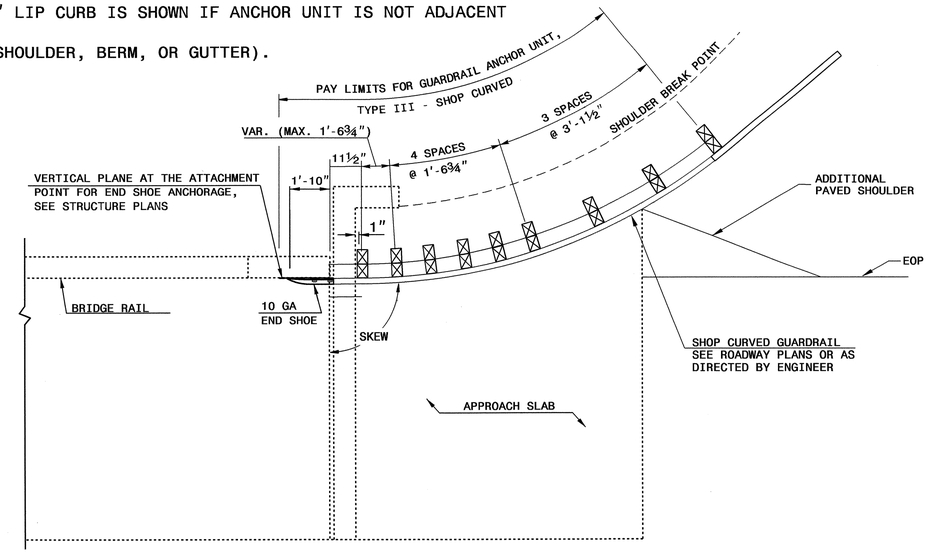
TYPE III SC



ELEVATION

SEE ROADWAY PLANS FOR END TREATMENT

NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III - SHOP CURVED FOR ATTACHMENT TO RAIL ON BRIDGE

STATE OF
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

TYPE III - SHOP CURVED STRUCTURE ANCHOR UNIT

SHEET 1 OF 1

TYPE III SC

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER
JOHN S. HOWARD
4/24/12

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: E.E.Ward DATE: 4-4-02
MODIFIED BY: T.S.Spell DATE: 5-29-09
CHECKED BY: [signature] DATE: 3/27/12
FILE SPEC.: ward:\usr\details\stand\862stds\typeiiisc.dgn

27-MAR-2012 11:02
S:\Contracts\Special Details\ericward\usr\details\stand\862stds\type_iii_sc.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET
B-3861	2-B

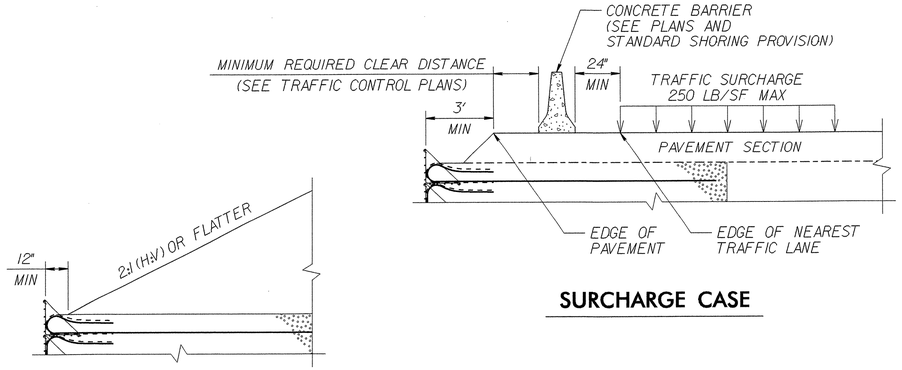
GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

Scott A. Hidden 11/8/11
SIGNATURE DATE

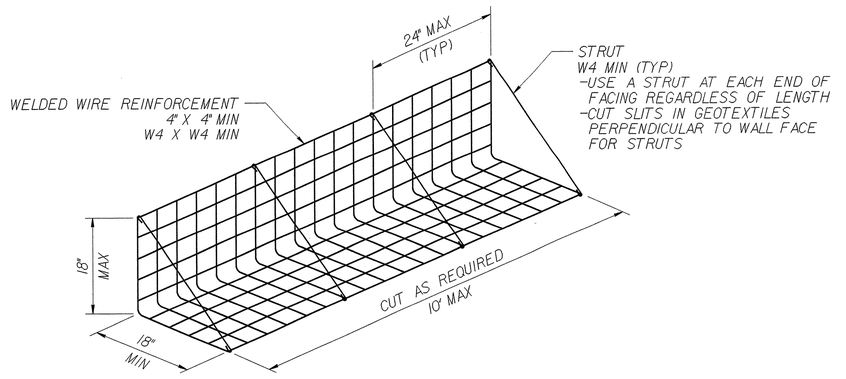
ENGINEER

SIGNATURE DATE

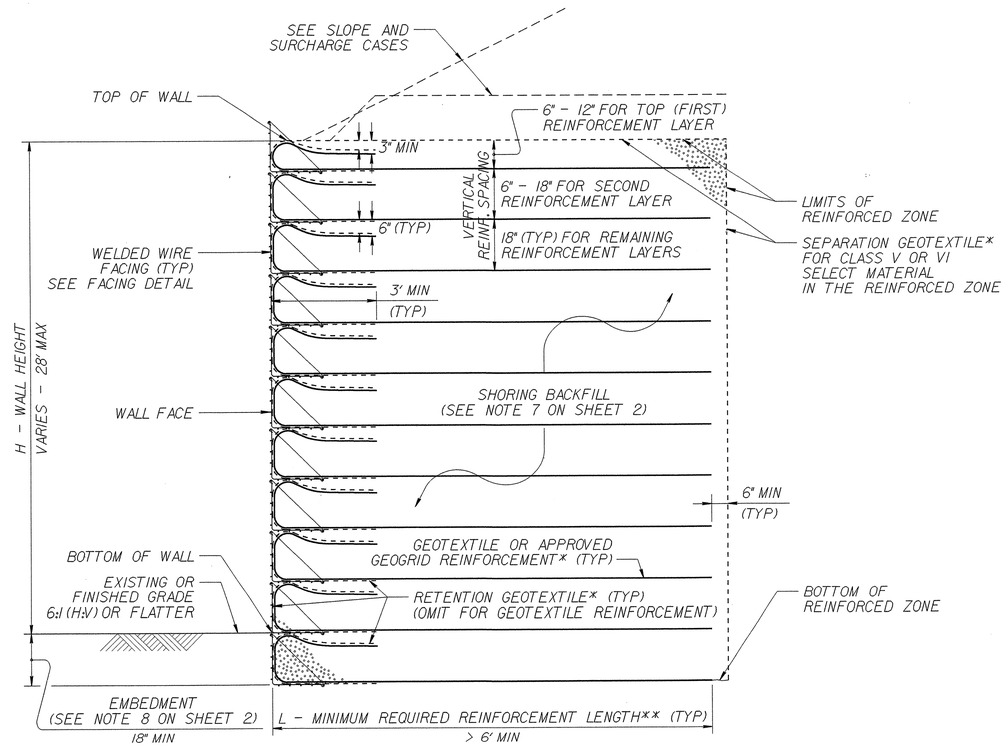


SURCHARGE CASE

SLOPE CASE

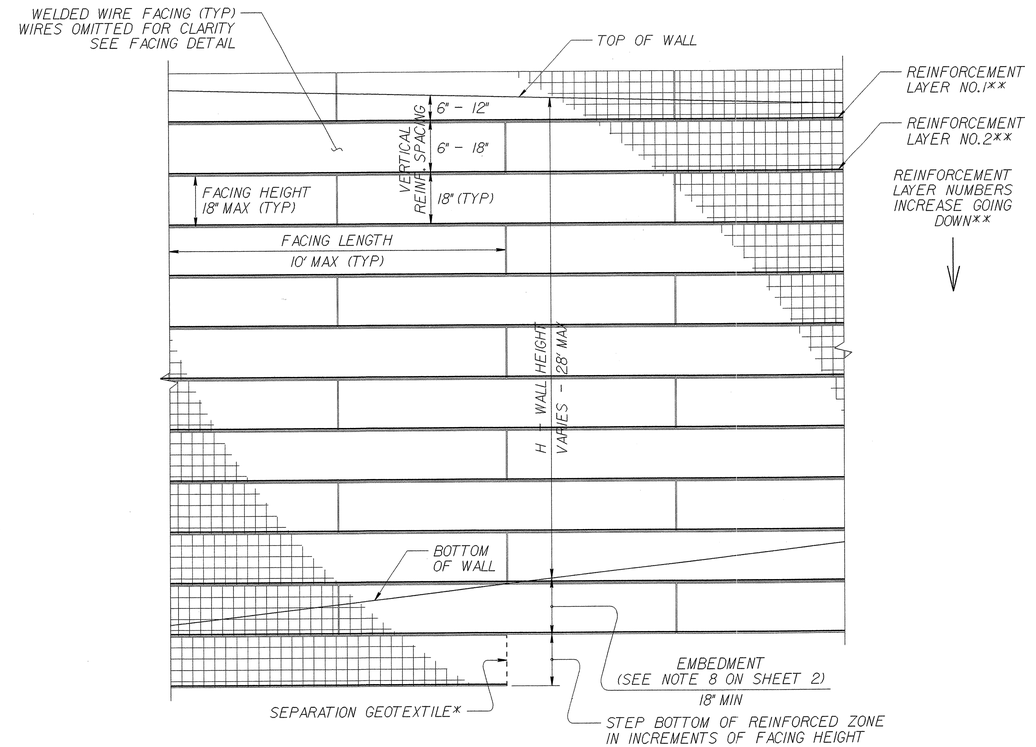


FACING DETAIL



STANDARD TEMPORARY WALL

(FOR STANDARD TEMPORARY WALLS ON STRUCTURES, SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)
***SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.**
****SEE REINFORCEMENT TABLES ON SHEET 3.**



STANDARD TEMPORARY WALL – PARTIAL ELEVATION

***SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.**
****SEE REINFORCEMENT TABLES ON SHEET 3.**

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

STANDARD
TEMPORARY WALL
Sheet 1 of 3

DATE: 1-17-12

PROJECT REFERENCE NO.	SHEET
I3-3861	2-C

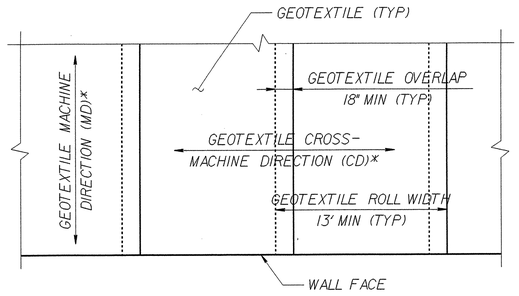
GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

Scott A. Hidden 11/18/11
SIGNATURE DATE

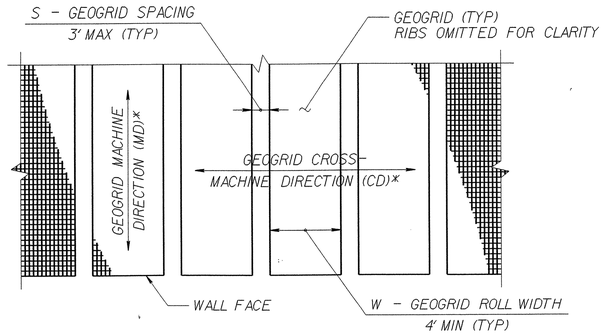
ENGINEER

SIGNATURE DATE



GEOTEXTILE PLACEMENT

(100% COVERAGE MIN FOR GEOTEXTILE REINFORCEMENT)

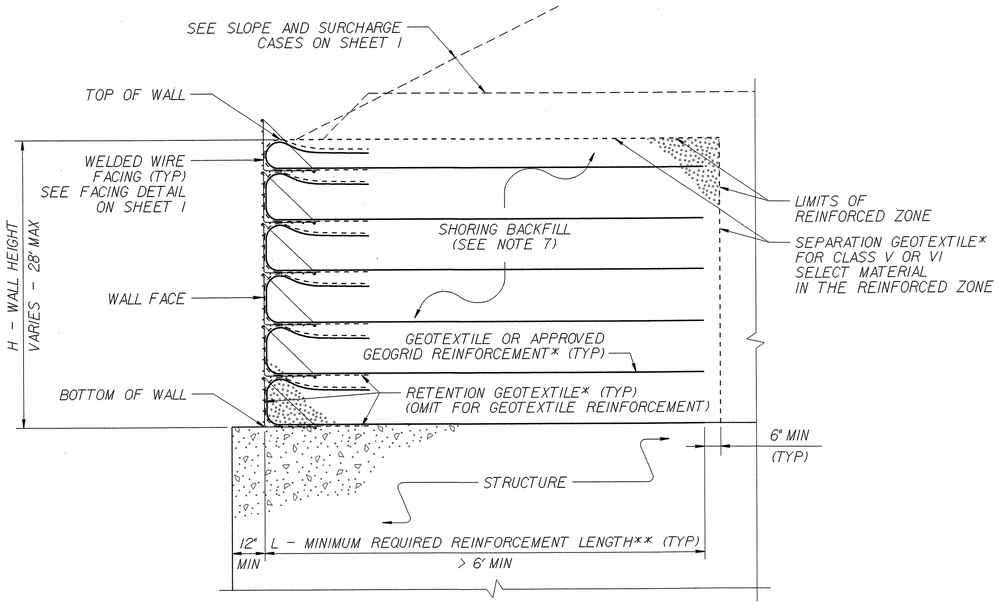


GEOGRID PLACEMENT

(80% COVERAGE MIN FOR GEOGRID REINFORCEMENT – $\frac{W}{W+S}$ x 100 $\geq$ 80%, SEE NOTE 11)

GEOSYNTHETIC PLACEMENT DETAILS

(PLAN VIEW)
***SEE NOTE 12.**



TEMPORARY WALL ON STRUCTURE DETAIL

***SEE GEOSYNTHETIC PLACEMENT DETAILS.**
****SEE REINFORCEMENT TABLES ON SHEET 3.**

NOTES:

1. AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY WALLS AS NOTED IN THE PLANS.
2. FOR STANDARD TEMPORARY WALLS, SEE STANDARD SHORING PROVISION.
3. STANDARD TEMPORARY WALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
   UNIT WEIGHT, γ = 120 LB/CF
   FRICTION ANGLE, ϕ = 30 DEGREES
   COHESION, c = 0 LB/SF
4. DO NOT USE STANDARD TEMPORARY WALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE STANDARD TEMPORARY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW TEMPORARY WALLS.
6. USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, ASSUME GROUNDWATER DEPTH IS LESS THAN 7' BELOW BOTTOM OF REINFORCED ZONE. DO NOT USE STANDARD TEMPORARY WALLS IF GROUNDWATER IS ABOVE BOTTOM OF REINFORCED ZONE.
7. DO NOT USE A-2-4 SOIL FOR STANDARD TEMPORARY WALLS AROUND CULVERTS OR IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS FOR SLOPE CASES. DO NOT USE CLASS VI SELECT MATERIAL IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS WITH GEOTEXTILE REINFORCEMENT.
8. EMBEDMENT IS NOT REQUIRED FOR STANDARD TEMPORARY WALLS ON STRUCTURES OR ROCK AS DETERMINED BY THE ENGINEER.
9. DO NOT USE MORE THAN 4 DIFFERENT REINFORCEMENT STRENGTHS FOR EACH STANDARD TEMPORARY WALL.
10. GEOGRIDS ARE APPROVED FOR SHORT-TERM DESIGN STRENGTHS FOR A 3-YEAR DESIGN LIFE IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) BASED ON MATERIAL TYPE. FOR DETAILS OF APPROVED GEOGRIDS AND SHORT-TERM DESIGN STRENGTHS, SEE www.ncdot.org/doh/operations/materials/soils/gep.html
    DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SHORING BACKFILL AS FOLLOWS:

MATERIAL TYPE	SHORING BACKFILL
BORROW	A-2-4 SOIL
FINE AGGREGATE	CLASS II, TYPE I OR CLASS III SELECT MATERIAL
COARSE AGGREGATE	CLASS V OR VI SELECT MATERIAL

11. FOR GEOGRID REINFORCEMENT WITH LESS THAN 100% COVERAGE, STAGGER REINFORCEMENT SO GEOGRIDS ARE CENTERED OVER GAPS IN THE REINFORCEMENT LAYER BELOW.
12. AT THE CONTRACTOR'S OPTION, REINFORCEMENT MAY BE INSTALLED WITH THE MD PARALLEL TO THE WALL FACE IF BOTH THE FOLLOWING CONDITIONS OCCUR:
    - W (REINFORCEMENT ROLL WIDTH) $\geq$ L (MINIMUM REQUIRED REINFORCEMENT LENGTH) + 4.5' AND
    - REINFORCEMENT STRENGTH IN CD $\geq$ MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD.
13. SUBMIT A "STANDARD TEMPORARY WALL SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY WALL CONSTRUCTION.
14. DO NOT PLACE SHORING BACKFILL OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
15. FOR STANDARD TEMPORARY WALLS WITH PILE FOUNDATIONS IN THE REINFORCED ZONE, DRIVE PILES THROUGH REINFORCEMENT AFTER CONSTRUCTING TEMPORARY WALLS.
16. DO NOT SPLICE OR OVERLAP REINFORCEMENT SO SEAMS ARE PARALLEL TO THE WALL FACE.
17. CONTACT THE ENGINEER WHEN EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT.
18. FOR STANDARD TEMPORARY WALLS WITH INTERIOR ANGLES LESS THAN 90 DEGREES, WRAP GEOSYNTHETICS AT ACUTE CORNERS AS DIRECTED BY THE ENGINEER.
19. FOR STANDARD TEMPORARY WALLS WITH TOP OF WALL WITHIN 5' OF FINISHED GRADE, REMOVE TOP FACING AND INCORPORATE TOP REINFORCEMENT LAYER INTO FILL WHEN PLACING FILL IN FRONT OF WALL.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

STANDARD
TEMPORARY WALL
Sheet 2 of 3

DATE: 1-17-12

PROJECT REFERENCE NO.	SHEET
13-3861	2-D

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

scott a. hidden 11/18/11
SIGNATURE DATE

ENGINEER

SIGNATURE DATE

SLOPE OR SURCHARGE CASE	GROUNDWATER DEPTH BELOW BOTTOM OF REINFORCED ZONE (SEE NOTE 6 ON SHEET 2) (FT)	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)	H - WALL HEIGHT (FT)																								
			< 4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
SLOPE CASE	> 0	CLASS II,TYPE I, CLASS III,CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	8	9	11	12	13	13	14	15	16	17	18	19	20	21	22	23	24	24	25	26	27	27
SURCHARGE CASE	> 0 TO 7 FOR H < 20' > 0 TO 10 FOR H ≥ 20'	ALL SHORING BACKFILL TYPES	6	7	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21
	> 7 FOR H < 20' > 10 FOR H ≥ 20'	A-2-4 SOIL	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	15	16	16	17	17	18	19	19	20
		CLASS II,TYPE I OR CLASS III SELECT MATERIAL	6	6	7	7	8	8	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18	19
		CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	15	16	16	17	18	18

L - MINIMUM REQUIRED REINFORCEMENT LENGTH (FT)
(FOR ALL REINFORCEMENT TYPES)

WALL HEIGHT (H) + EMBEDMENT (FT)	NUMBER OF REINFORCEMENT LAYERS*
2.5 - 4	3
4 - 5.5	4
5.5 - 7	5
7 - 8.5	6
8.5 - 10	7
10 - 11.5	8
11.5 - 13	9
13 - 14.5	10
14.5 - 16	11
16 - 17.5	12
17.5 - 19	13
19 - 20.5	14
20.5 - 22	15
22 - 23.5	16
23.5 - 25	17
25 - 26.5	18
26.5 - 28	19
28 - 29.5	20

*BASED ON VERTICAL REINFORCEMENT SPACING SHOWN ON SHEET 1.

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL	A-2-4 SOIL	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL
1	2400	2400	2400	2400	2400
2	2400	2400	2400	2400	2400
3	2400	2400	2400	2400	2400
4	2400	2400	2500	2400	2400
5	2500	2400	3000	2400	2400
6	3000	2400	3500	2800	2400
7	3500	2700	4000	3200	2600
8	4000	3100	4500	3600	2900
9	4500	3500	5000	4000	3200
10	5000	3900	5500	4400	3500
11	5500	4300	6000	4800	3800
12	6000	4700	6500	5200	4100
13	6500	5100	7000	5600	4400
14	7000	5400	7500	6000	4700
15	7500	5800	8000	6400	5000
16	8000	6200	8500	6800	5300
17	8500	6600	9000	7200	5600
18	9000	7000	9500	7600	5900
19	9500	7400	10000	8000	6200
20	10000	7800	10500	8400	6500

GEOTEXTILE REINFORCEMENT
ULTIMATE TENSILE STRENGTH (LB/FT)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL	A-2-4 SOIL	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL
1	240	200	340	290	240
2	380	310	520	430	350
3	530	420	700	570	460
4	690	550	870	720	570
5	860	690	1050	860	680
6	1030	830	1220	1000	790
7	1200	970	1400	1150	900
8	1370	1110	1580	1290	1010
9	1550	1240	1750	1430	1120
10	1720	1380	1930	1580	1230
11	1890	1520	2100	1720	1340
12	2060	1660	2280	1860	1450
13	2240	1800	2450	2010	1560
14	2410	1940	2630	2150	1670
15	2580	2080	2800	2290	1780
16	2750	2220	2980	2440	1890
17	2930	2360	3160	2580	2000
18	3100	2500	3330	2720	2110
19	3270	2640	3510	2860	2220
20	3440	2780	3690	3000	2330

GEOGRID REINFORCEMENT
SHORT-TERM DESIGN STRENGTH (LB/FT)
(SEE NOTE 10 ON SHEET 2.)

MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD
(SEE NOTE 9 ON SHEET 2.)
*SEE PARTIAL ELEVATION ON SHEET 1 FOR REINFORCEMENT LAYER NUMBERING.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

STANDARD
TEMPORARY WALL
Sheet 3 of 3

DATE: 1-17-12

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202840

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0030000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ******* (11+04.50-L-)
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0195000000-E	265	20	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	20	SY	GEOTEXTILE FOR SOIL STABILIZATION
0199000000-E	SP	464	SF	TEMPORARY SHORING
0318000000-E	300	3	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	7	SY	FOUNDATION CONDITIONING GEOTEXTILE
0366000000-E	310	20	LF	15" RC PIPE CULVERTS, CLASS III
1099500000-E	505	20	CY	SHALLOW UNDERCUT
1099700000-E	505	20	TON	CLASS IV SUBGRADE STABILIZATION
1121000000-E	520	170	TON	AGGREGATE BASE COURSE
1220000000-E	545	100	TON	INCIDENTAL STONE BASE
1275000000-E	600	120	GAL	PRIME COAT
1489000000-E	610	70	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	220	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1575000000-E	620	17	TON	ASPHALT BINDER FOR PLANT MIX
1693000000-E	654	20	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2022000000-E	815	11.2	CY	SUBDRAIN EXCAVATION
2033000000-E	815	8.4	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	50	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE

SUMMARY OF QUANTITIES - B-3861

ItemNumber	Sec #	Quantity	Unit	Description
2286000000-N	840	1	EA	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	46	LF	SHOULDER BERM GUTTER
3030000000-E	862	12.5	LF	STEEL BM GUARDRAIL
3045000000-E	862	75	LF	STEEL BM GUARDRAIL, SHOP CURVED
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3165000000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE ********** (350 TL-2)
3180000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ********** (III SHOP CURVED)
3380000000-E	862	37.5	LF	TEMPORARY STEEL BM GUARDRAIL
3382000000-E	862	175	LF	TEMPORARY STEEL BM GUARDRAIL (SHOP CURVED)
3387000000-N	862	4	EA	TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ********** (III SHOP CURVED)
3389000000-N	SP	3	EA	TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ********** (350 TL-2)
3656000000-E	876	1,300	SY	GEOTEXTILE FOR DRAINAGE
4072000000-E	903	130	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4102000000-N	904	7	EA	SIGN ERECTION, TYPE E
4155000000-N	907	4	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4400000000-E	1110	72	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	128	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	32	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	20	EA	DRUMS
4445000000-E	1145	32	LF	BARRICADES (TYPE III)
4450000000-N	1150	1,000	HR	FLAGGER
4465000000-N	1160	2	EA	TEMPORARY CRASH CUSHIONS

ItemNumber	Sec #	Quantity	Unit	Description
4485000000-E	1170	47	LF	PORTABLE CONCRETE BARRIER
4810000000-E	1205	4,458	LF	PAINT PAVEMENT MARKING LINES (4")
4835000000-E	1205	30	LF	PAINT PAVEMENT MARKING LINES (24")
4900000000-N	1251	5	EA	PERMANENT RAISED PAVEMENT MARKERS
6000000000-E	1605	1,600	LF	TEMPORARY SILT FENCE
6006000000-E	1610	230	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	5	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	400	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	0.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	700	LF	SAFETY FENCE
6030000000-E	1630	50	CY	SILT EXCAVATION
6036000000-E	1631	1,500	SY	MATTING FOR EROSION CONTROL
6042000000-E	1632	600	LF	1/4" HARDWARE CLOTH
6070000000-N	1639	12	EA	SPECIAL STILLING BASINS
6084000000-E	1660	0.25	ACR	SEEDING & MULCHING
6087000000-E	1660	0.15	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	0.25	TON	FERTILIZER TOPDRESSING
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	25	EA	RESPONSE FOR EROSION CONTROL

ItemNumber	Sec #	Quantity	Unit	Description
6123000000-E	1670	0.1	ACR	REFORESTATION

12/06/07

COMPUTED BY: F. A. TUCK DATE: MARCH 7, 2012
CHECKED BY: S. D. KENDALL, P.E. DATE: APRIL 10, 2012

PROJECT REFERENCE NO.	SHEET NO.
B-3861	3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE	DRAINAGE PIPE THICKNESS OR GAUGE	C.S. PIPE (UNLESS NOTED OTHRWISE) SIZE	C.S. PIPE THICKNESS OR GAUGE	CLASS III R.C. PIPE (UNLESS OTHERWISE NOTED) SIZE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL. B') LIN. *FT. A	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL. B') LIN. *FT. B	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
12+14.00	LT.	0401		2079.81																		1	1					
12+14.00	LT.	0402			2077.06	2076.70						20'																
					GRAND TOTAL							20'										1	1					

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
–L–	10+11.00	10+33.76	CL	98.41
–L–(DET)	10+13.54	10+50.00	CL	107.33
–L–(DET)	10+50.00	11+90.00	LT. & RT.	311.11
–L–(DET)	11+90.00	13+26.60	LT. & RT.	303.02
			TOTAL:	819.87
			SAY:	820

SUMMARY OF EARTHWORK *IN CUBIC YARDS*

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
–DET– 10+10.38	–DET– 10+60.00	1	567	566	
–DET– 11+95.04	–DET– 13+26.30	6	634	628	
	SUBTOTAL:	7	1,201	1,194	
–L– 10+10.38	–L– 10+25.75	3	3	0	
–L– 11+83.78	–L– 12+67.99	65	5		60
	SUBTOTAL:	68	8	0	60
DETOUR REMOVAL					
–DET– 10+10.38	–DET– 10+60.00	445			445
–DET– 11+95.04	–DET– 13+08.54	497			497
	SUBTOTAL:	942			942
	TOTAL:	1,017	1,209	1,194	1,002

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
LOSS DUE TO CLEARING & GRUBBING		–20		20	
	PROJECT TOTALS:	997	1,209	1,214	1,002
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				61	
	GRAND TOTALS:	997	1,209	1,275	1,002
	SAY:	1,025		1,300	

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.

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

PARCEL INDEX

PARCEL NUMBER	SHEET NUMBER	PROPERTY OWNERS NAME
1	4	JULIA DELLINGER, DAVID DELLINGER
2	4	HAROLD HERMANN
3	4	FRANK J. BRYSON, JR.
4	4	RIVERSIDE COVE INC.
5	4	RUSSELL A. BRYSON

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.

GUARDRAIL SUMMARY

"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.

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS	GRAU 350 TYPE TL–2	TYPE III SHOP CURVE	IMPACT ATTENUATOR TYPE 350 EA	IMPACT ATTENUATOR TYPE 350 G	IMPACT ATTENUATOR TYPE 350 NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
–L–	–Y– 10+70.61	10+25.69	RT.	50'	31.50		10+25.69		3'	6'	25'	25'	1				1							
–L–	11+91.24	12+54.12	RT.		68.5'			11+91.24	3'	6'	25'	25'		1		1	1							
–L–	–Y– 12+01.59	10+25.83	LT.	12.5'	18.75'			10+25.83	3'	6'	25'	25'	1			1	1							
–L–	11+83.78	12+54.12	LT.	12.5'	18.75'		11+83.78		3'	6'	25'	25'		1		1	1							
			SUBTOTAL	75'	137.5'																			
		LESS DEDUCTIONS ANCHORS													TOTAL	3	4							5 ADDITIONAL GUARDRAIL POSTS
		3 – TL–2 GRAU 350 @ 25'		–75'																				
		4 – TYPE III SHOP CURVE @ 18.75'			–75'																			
			PROJECT TOTAL	0'	62.5'																			
			SAY	12.5'	75'																			
	DETOUR TEMPORARY GUARDRAIL														DETOUR TEMPORARY ANCHOR UNITS									
–DET–	–Y– 11+52.24	10+60.00	LT.		68.75'			10+60.00	3'	6'	25'	25'				1	1							
–DET–	11+97.93	12+70.84	LT.		56.25'		11+97.93		3'	6'	25'	25'				1	1							
–DET–	–Y– 10+17.78	10+60.00	RT.	100'	18.75'		10+60.00		3'	6'	25'	25'				1	1							
–DET–	11+28.77	12+75.64	RT.		93.75'			11+28.77	3'	6'	25'	25'					1							
			SUB–TOTAL	100'	237.5'																			
		LESS ANCHOR DEDUCTIONS													TOTAL	3	4							
		3 – TL–2 GRAU 350 @ 25'		–75'																				
		4 – TYPE III SHOP CURVE @ 18.75'			–75'																			
			DETOUR TOTAL	25'	162.5'																			
			SAY	37.5'	175'																			

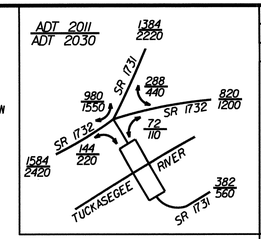
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-3861	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33296 ENGINEER STEVEN D. KENDALL
Steve D. Kendall 5-22-12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER PAUL A. THOMAS
5/22/12

ADT 2011
ADT 2030



NOTE: SEE SHEET No. 2-A FOR SKETCH SHOWING BRIDGE TO PAVEMENT RELATIONSHIP, BEGIN/END BRIDGE STATIONS.

SEE SHEET S-1 THRU S-34 FOR STRUCTURE PLANS

NAD 83

-Y- POT Sta. 10+00

-BL- 8+31.80 PINC

HAROLD HERMANN
KATHRYN HERMANN
D.B.686 PG.218

-BY- 9 12+31.66 PINC

JULIA DELLINGER
DAVID DELLINGER ET AL
D.B.1062 PG.73

15+00

-Y- PC Sta. 10+79.46

BEGIN PROJECT
-Y- POC Sta. 11+23.19 =
-L- POT Sta. 10+00.00

-BY-8 9+73.99 PINC

-Y- PC Sta. 12+52.61

-Y- PCC Sta. 14+51.69

-Y- PT Sta. 16+61.81

-Y- PC Sta. 17+23.14

-BY- 10 16+76.15 PINC

-Y- PT Sta. 11+69.21

-Y- PT Sta. 19+71.26

-BY- 11 21+61.16 POT

-BL- 4 16+53.72 PINC

END PROJECT
-L- STA. 12+67.99

-BL-2 9+90.71 PINC

-BL-3 12+47.16 PINC

PC Sta. 11+65.12

PT Sta. 12+24.27

POT Sta. 13+71.15

-BL- 5 23+70.65 POT

ROBERT E. RAINS
JUDITH M. RAINS
D.B.474 PG.793

CLARA C. WASKOW
D.B.954 PG.219

JAMES L. MACE
SHIRLEY MACE
D.B.908 PG.511

JULIA DELLINGER
DAVID DELLINGER ET AL
D.B.1062 PG.73

FRED DILLS
THELMA DILLS
D.B.1060 PG.807

WALTER W. FULLER
ROSEMARY S. FULLER
D.B.1016 PG.360
D.B.1090 PG.379

STEVEN P. YURKOVICH
VALERIE YURKOVICH
D.B.1080 PG.774

JERRY L WEST
CAROLYN WEST
D.B.1769 PG.755

WATER WILLIS FULLER
ROSEMARY SWEENY FULLER
D.B.1090 PG.379
D.B.1016 PG.360

TUCKASEGEE RIVER

SR 1732 EDGEWATER ROAD

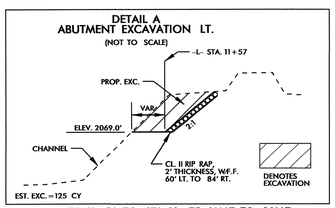
SR 1731 WAYEHUTTA RD.

BM #2
-BL- STA 9+92.42
24.17 LEFT
ELEV. 2072.06

BM #3
-BL- STA 13+46.21
63.69 LEFT
ELEV. 2083.58

PROPERTY OWNERS	
1	JULIA DELLINGER, DAVID DELLINGER, ET AL DB 1062 PG. 73
2	HAROLD HERMANN DB 686 PG. 218
3	FRANK J. BRYSON, Jr. (LIFE ESTATE) MARCIA B. DAVIES & HUSBAND DAVID A. DAVIES DB 1160 PG. 89
4	RIVERSIDE COVE INC. DB 1700 PG. 609
5	RUSSELL A. BRYSON DB 796 PG. 286

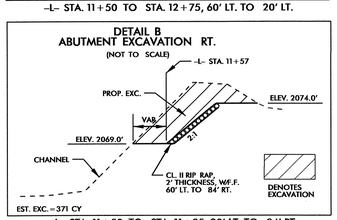
DETAIL A
ABUTMENT EXCAVATION LT.
(NOT TO SCALE)



EST. EXC. = 125 CY

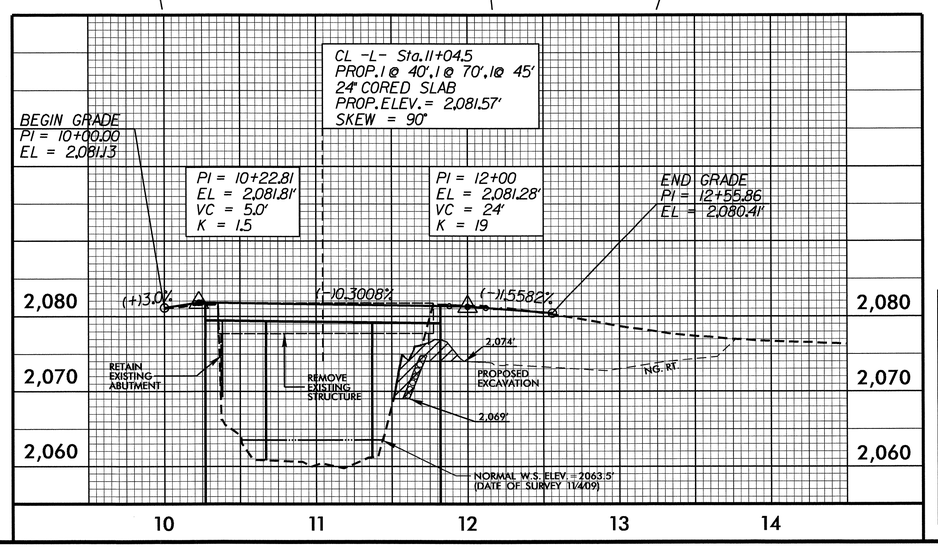
-L- STA. 11+50 TO STA. 12+75, 60' LT. TO 20' LT.

DETAIL B
ABUTMENT EXCAVATION RT.
(NOT TO SCALE)



EST. EXC. = 371 CY

-L- STA. 11+50 TO STA. 11+95, 20' LT. TO 84' RT.



-Y-

PI Sta 11+25.93	PI Sta 13+55.72	PI Sta 15+56.89	PI Sta 18+47.61
Δ = 36° 43' 46.9" (LT)	Δ = 36° 47' 44.8" (RT)	Δ = 7° 07' 03.7" (RT)	Δ = 11° 22' 21.9" (RT)
D = 40° 55' 32.0"	D = 18° 28' 57.0"	D = 3° 23' 14.8"	D = 4° 35' 01.2"
L = 89.75'	L = 199.08'	L = 210.12'	L = 248.11'
T = 46.48'	T = 103.11'	T = 105.20'	T = 124.47'
R = 140.00'	R = 310.00'	R = 1,691.42'	R = 1,250.00'

-L-

PI Sta 11+99.85
Δ = 75° 18' 56.5" (LT)
D = 127° 19' 26.2"
L = 59.15'
T = 34.73'
R = 45.00'

BRIDGE HYDRAULIC DATA
Bridge No. 107

DESIGN DISCHARGE	= 22,620	CFS
DESIGN FREQUENCY	= 50	YR
DESIGN HW ELEVATION	= 2,081.27	FT
BASE DISCHARGE	= 28,985	CFS
BASE FREQUENCY	= 100	YR
BASE HW ELEVATION	= 2,082.17	FT
OVERTOPPING DISCHARGE	= 20,000	CFS
OVERTOPPING FREQUENCY	= 25 +	YR
OVERTOPPING ELEVATION	= 2,078.0	FT

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-3861	4A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33296 ENGINEER STEVEN D. KENDALL
Steven Kendall 5-17-12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER PAUL ATKINSON
5/17/12

NOTE: SEE SHEET No. 2-A FOR SKETCH SHOWING BRIDGE TO PAVEMENT RELATIONSHIP, BEGIN/END BRIDGE STATIONS.

NAD 83

-Y- POT Sta. 10+00
HAROLD HERMANN
KATHRYN HERMANN
D.B.686 PG.218

BEGIN CONSTRUCTION
-Y- PC Sta. 10+79.46 =
-DET- POT Sta. 10+00.00

JULIA DELLINGER
DAVID DELLINGER ET AL
D.B.1062 PG.73

-Y- PCC Sta. 14+51.69

-Y- PT Sta. 16+61.81

CLARA C. WASKOW
D.B.954 PG.219

-Y- PC Sta. 12+52.61

-Y- PC Sta. 17+23.14

-Y- PT Sta. 19+71.26

-Y- PT Sta. 11+69.21

END CONSTRUCTION
-DET- POT Sta. 13+26.60

-DET- PC Sta. 11+87.60

-DET- PT Sta. 12+44.12

-Y- PC Sta. 21+99.38

JULIA DELLINGER
DAVID DELLINGER ET AL
D.B.1062 PG.73
CLARA C. WASKOW
D.B.954 PG.219

FRED DILLS
THELMA DILLS
D.B.1060 PG.807

WALTER W. FULLER
ROSEMARY S. FULLER
D.B.1016 PG.360
D.B.1090 PG.379

ROBERT E. RAINS
JUDITH M. RAINS
D.B.474 PG.793

JAMES L. MACE
SHIRLEY MACE
D.B.908 PG.511

JAMES L. MACE
SHIRLEY MACE
D.B.908 PG.511

TIE TO EXIST. GUARDRAIL

SR 1732 EDGEWATER ROAD

TUCKASEGEE RIVER

STEVEN P. YURKOVICH
VALERIE YURKOVICH
D.B.1080 PG.774

WATER WILLIS FULLER
ROSEMARY SWEENY FULLER
D.B.1090 PG.379
D.B.1016 PG.360

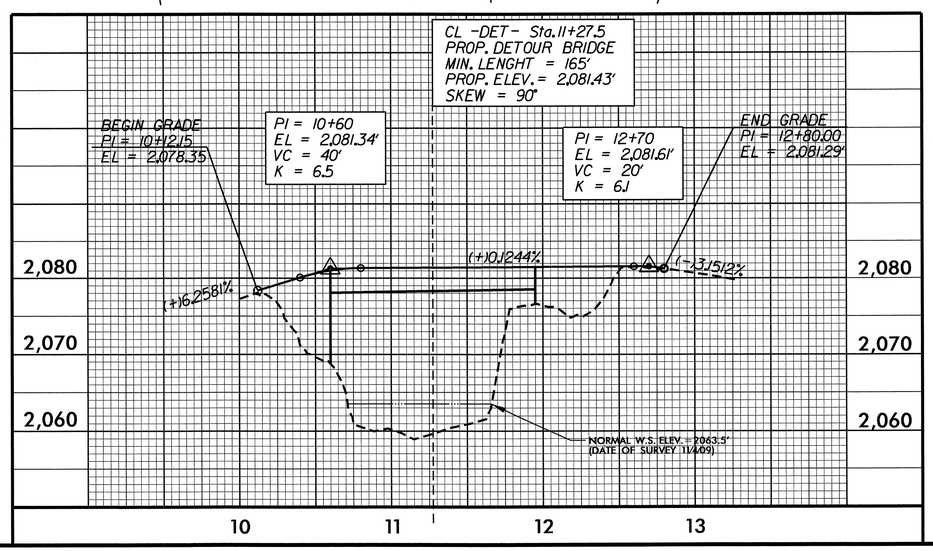
JERRY L WEST
CAROLYN WEST
D.B.1769 PG.755

JERRY L WEST
D.B.1112 PG.147

STEVEN P. YURKOVICH
VALERIE YURKOVICH
D.B.1080 PG.774

PROPERTY OWNERS

(1)	JULIA DELLINGER, DAVID DELLINGER, ET AL DB 1062 PG. 73
(2)	HAROLD HERMANN DB 686 PG. 218
(3)	FRANK J. BRYSON, Jr. (LIFE ESTATE) MARCIA B. DAVIES & HUSBAND DAVID A. DAVIES DB 1160 PG. 89
(4)	RIVERSIDE COVE INC. DB 1700 PG. 609
(5)	RUSSELL A. BRYSON DB 796 PG. 286



BRIDGE HYDRAULIC DATA
TEMPORARY DETOUR BRIDGE

DESIGN DISCHARGE	=	10,400 CFS
DESIGN FREQUENCY	=	5 YRS
DESIGN HW ELEVATION	=	2,073.7 FT

NOTE: USE PLAN SHEET No. 4A FOR DETOUR CONSTRUCTION.

-DET-
PI Sta 12+21.74
Δ = 80° 57' 33.52" (LT)
D = 143° 14' 22.02"
L = 56.52'
T = 34.14'
R = 40.00'

-Y-

PI Sta 11+25.93	PI Sta 13+55.72	PI Sta 15+56.89	PI Sta 18+47.61
Δ = 36° 43' 46.9" (LT)	Δ = 36° 47' 44.8" (RT)	Δ = 7° 07' 03.7" (RT)	Δ = 11° 22' 21.9" (RT)
D = 40° 55' 32.0"	D = 18° 28' 57.0"	D = 3° 23' 14.8"	D = 4° 35' 01.2"
L = 89.75'	L = 199.08'	L = 210.12'	L = 248.11'
T = 46.48'	T = 103.11'	T = 105.20'	T = 124.47'
R = 140.00'	R = 310.00'	R = 1,691.42'	R = 1,250.00'

17-MAY-2012 14:58
R:\Roadway\Proj\B3861_rdy_psh_04A.dgn
$$$$USERNAME$$$$