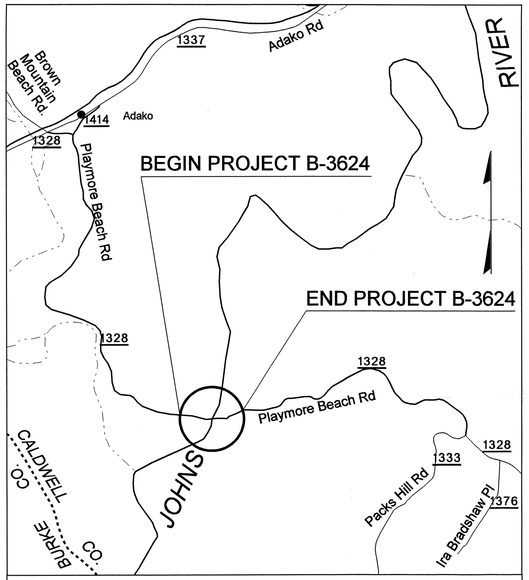
01/08/99

TIP PROJECT: B-3624

CONTRACT: C201920

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

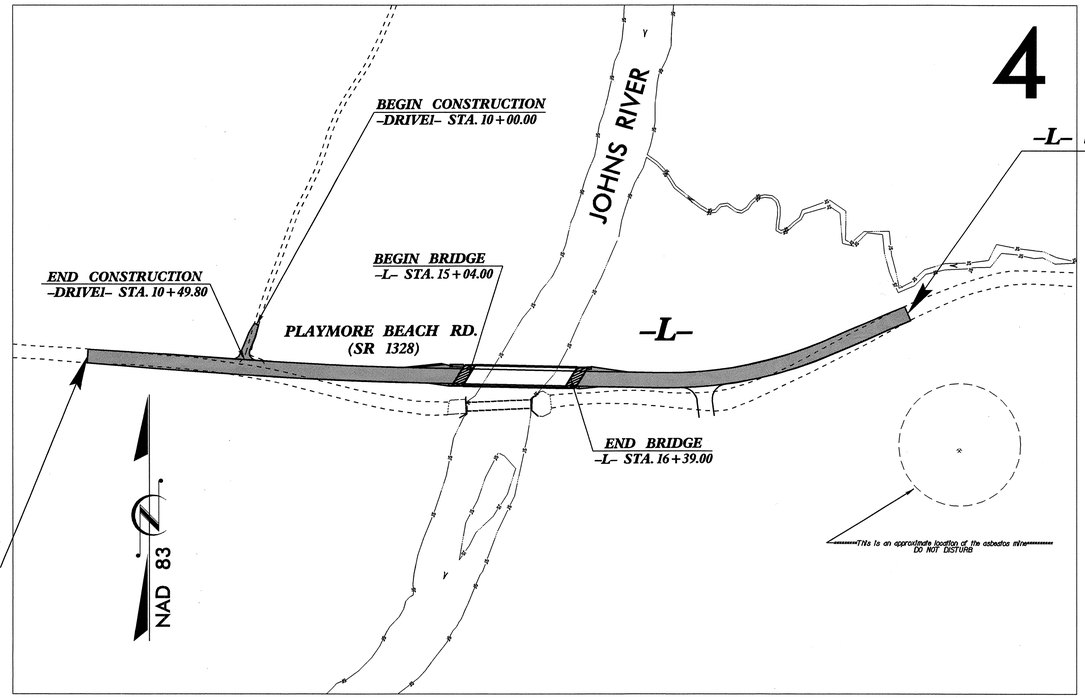
CALDWELL COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3624	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33172.1.1	BRZ-1328(4)	P.E.
33172.2.1	BRZ-1328(4)	R/W, UTIL
33172.3.1	BRZ-1328(4)	CONST.

LOCATION: BRIDGE No. 190 OVER JOHNS RIVER ON SR 1328

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



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2008 =	277
ADT 2028 =	662
DHV =	12 %
D =	60 %
T =	3 % *
V =	40 MPH
FUNC CLASS =	LOCAL
* TTST 1	DUAL 2

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-3624 = 0.182 MILES

LENGTH OF STRUCTURE TIP PROJECT B-3624 = 0.026 MILES

TOTAL LENGTH OF TIP PROJECT B-3624 = 0.208 MILES

Prepared In the Office of:

DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 21, 2007

LETTING DATE: December 16, 2008

TONY HOUSER, PE
PROJECT ENGINEER

JASON TALLEY, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21162 ENGINEER W. HERBERT TURNER, JR.

SIGNATURE W. Herbert Turner 6-24-08

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 029473 ENGINEER JASON M. TALLEY

SIGNATURE Jason Talley 6-20-08

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION *

STATE HIGHWAY DESIGN ENGINEER

16-JUN-2008 15:30
r:\roadway\proj\b3624_rdy_ltsh.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-3624	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 029473 ENGINEER JASON M. TALLEY

11-05-08

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, TYPICAL SECTIONS, AND DETAIL SHOWING RELATIONSHIP OF PAVED SHOULDER AND SHOULDER BERM GUTTER TO GUARDRAIL
2-A	DETAIL SHOWING ANCHORAGE FOR FRAMES
2-B	DETAIL SHOWING BRIDGE APPROACH FILLS
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE QUANTITIES GUARDRAIL SUMMARY, SUMMARY OF EARTHWORK, AND PARCEL INDEX
4	PLAN SHEET, DITCH DETAILS, AND BRIDGE TO PAVEMENT RELATIONSHIP SKETCH
5	PROFILE SHEET
TCP-1 THRU TCP-4	TRAFFIC CONTROL PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
X-0	CROSS SECTION SUMMARY
X-1 THRU X-15	CROSS SECTIONS
S-1 THRU S-28	STRUCTURE PLANS

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

2006 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
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
815.03	Pipe Underdrain and Blind Drain
816.04	Markers for Drainage Structure and Concrete Pad
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
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
866.04	Barbed Wire Fence with Wood Posts (2 - 7 Strands)

GENERAL NOTES:

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

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.

SIDE ROADS:

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

UNDERDRAINS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

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.

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.

3/15/06

PROJECT REFERENCE NO.	SHEET NO.
B-3624	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

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 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 — WCR
- Proposed Wheel Chair Ramp Curb Cut — WCC
- Curb Cut for Future Wheel Chair 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 — HH
- 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
- A/G Tank; Water, Gas, Oil
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-3624	1C
Location and Surveys	

SURVEY CONTROL SHEET B-3624

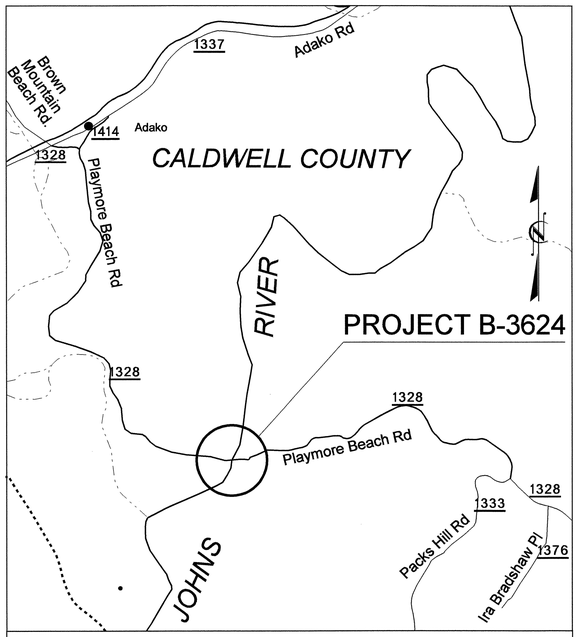
BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
GPS2	(GPS B3624-2)	787828.9510	1198017.9130	1059.92	OUTSIDE PROJECT LIMITS	
BL3	(BL-3)	787828.5583	1198316.6784	1078.89	OUTSIDE PROJECT LIMITS	
BL4	(BL-4)	787740.7188	1199031.4244	1041.88	14+75.02	33.45 RT
BL5	(BL-5)	787732.8316	1199423.1291	1049.50	18+59.24	43.52 RT
BL6	(BL-6)	787910.7798	1199767.1885	1051.87	OUTSIDE PROJECT LIMITS	
BL7	(BL-7)	787876.8190	1200070.5869	1056.77	OUTSIDE PROJECT LIMITS	
BL8	(BL-8)	787977.5786	1200415.2309	1068.75	OUTSIDE PROJECT LIMITS	

BM * 1 ELEVATION = 1105.42′
N 787887 E 1198254
OUTSIDE PROJECT LIMITS
8" SPIKE SET IN ROOT OF 30" SWEET GUM TREE.

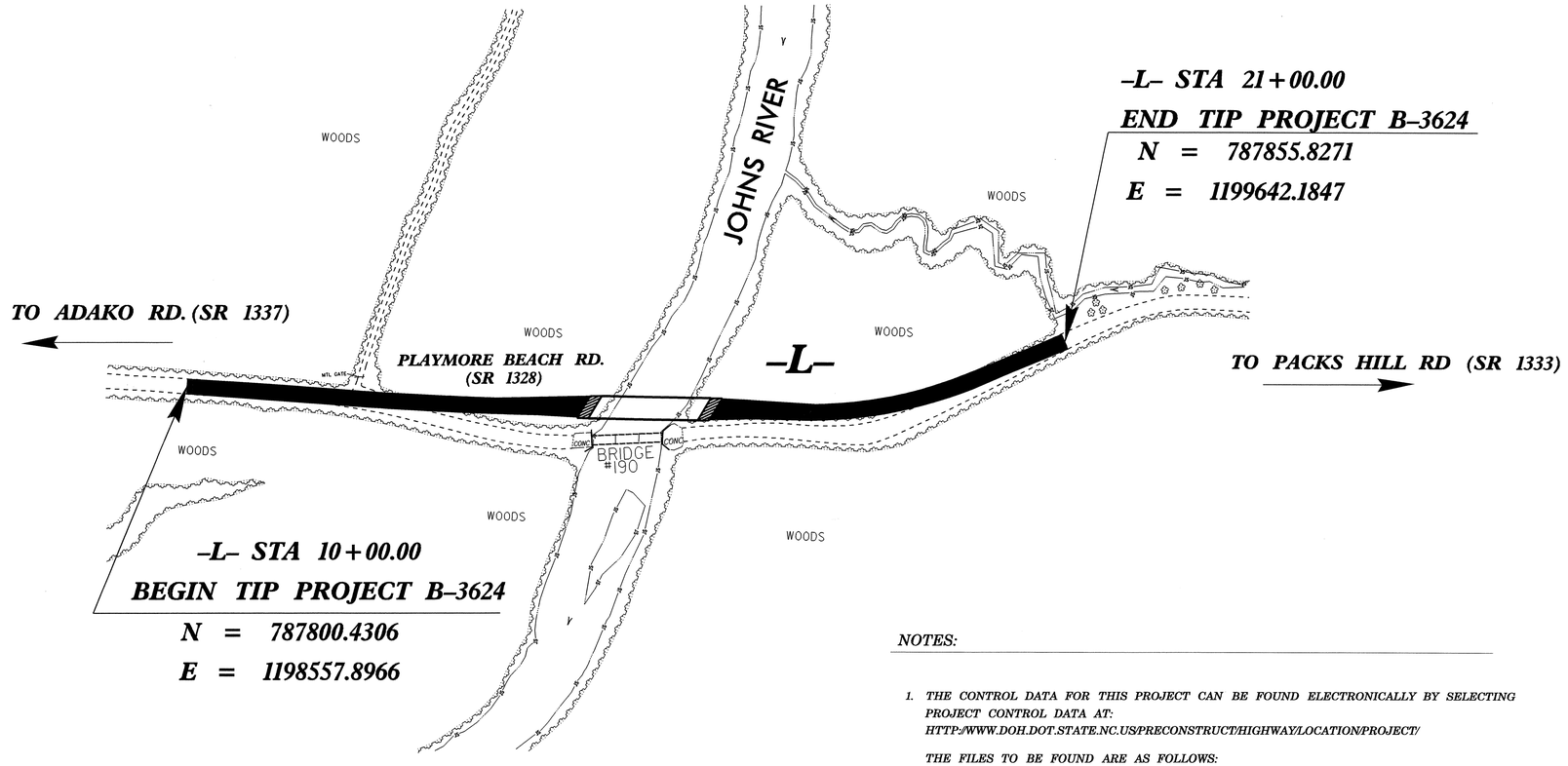
BM * 2 ELEVATION = 1050.54′
N 787654 E 1198985
L STATION 14+31 121′ RIGHT
8" SPIKE SET IN ROOT OF 10" ASH TREE.

BM * 3 ELEVATION = 1061.83′
N 787844 E 1200305
OUTSIDE PROJECT LIMITS
8" SPIKE SET IN ROOT OF 12" SWEET GUM TREE.

NAD 83



VICINITY MAP



-L- STA 21+00.00
END TIP PROJECT B-3624
N = 787855.8271
E = 1199642.1847

NCDOT GPS STATION B3624-2
N = 787828.951
E = 1198017.913

NCDOT GPS STATION B3624-1
N = 787563.090
E = 1197625.313

-L- STA 10+00.00
BEGIN TIP PROJECT B-3624
N = 787800.4306
E = 1198557.8966

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3624-2" WITH NAD 1983 STATE PLANE GRID COORDINATES OF NORTHING: 787828.951(ft) EASTING: 1198017.913(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988793 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3624-2" TO -L- STATION 10+00.00 IS S 86°58′36" E 540.74 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

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.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS: B3624_LS_CONTROL_060911.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)

02-JUN-2008 16:24
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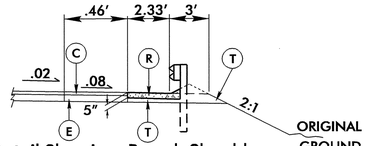
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-3624	2

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 029473 ENGINEER JASON M. TALLEY — 6-20-08

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON — 6/23/08

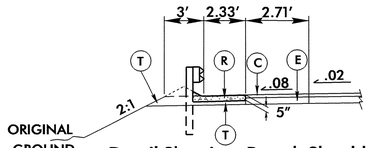
PAVEMENT SCHEDULE	
A	PROP. APPROX. 3" PORTLAND CEMENT CONCRETE PAVEMENT NOTE: STRUCTURE PAY ITEM
C	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
E	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
J1	PROP. 8" AGGREGATE BASE COURSE
J2	PROP. 10" AGGREGATE BASE COURSE
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL



Detail Showing Paved Shoulder in Relation to Guardrail

USE SHOULDER BERM GUTTER FOR THE FOLLOWING:

–L– STA. 14+77.89 TO –L– 14+84.14 RT
–L– STA. 16+44.14 TO –L– STA. 16+50.39 RT

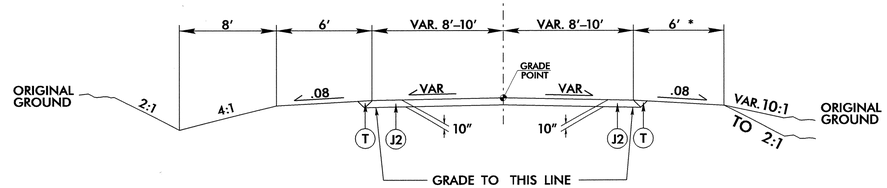


Detail Showing Paved Shoulder in Relation to Guardrail

USE SHOULDER BERM GUTTER FOR THE FOLLOWING:

–L– STA. 14+78.13 TO –L– STA. 15+00.16 LT
–L– STA. 16+60.16 TO –L– STA. 16+66.41 LT

℄–L– (SR 1328)



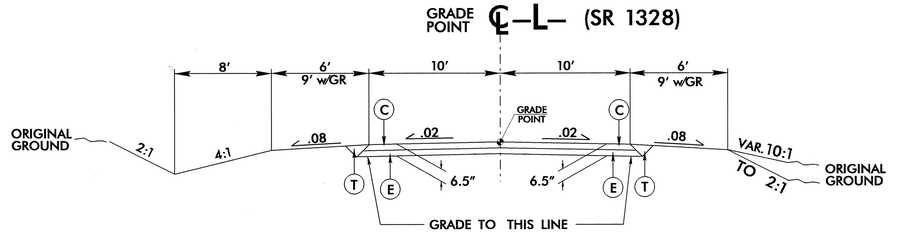
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 FOR THE FOLLOWING:

–L– STA. 10+00.00 TO –L– STA. 11+00.00
–L– STA. 20+00.00 TO –L– STA. 21+00.00

* NOTE: 4.5' SHOULDER AT –L– STA. 20+50.00

GRADE POINT ℄–L– (SR 1328)

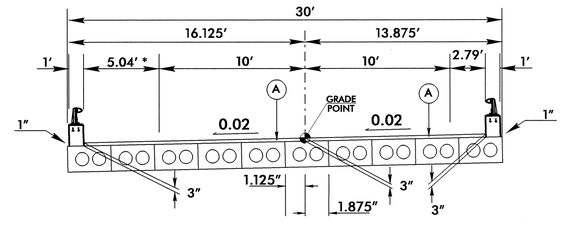


TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 FOR THE FOLLOWING:

–L– STA. 11+00.00 TO –L– STA. 15+04.00 (BEGIN BRIDGE)
–L– STA. 16+39.00 (END BRIDGE) TO –L– STA. 20+00.00

℄ –L– (SR 1328)



10 PRESTRESSED CONCRETE CORED SLAB UNITS = 30'

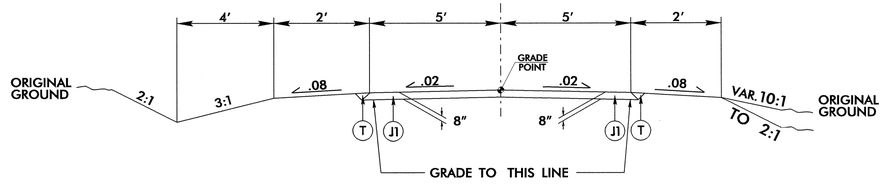
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 FOR THE FOLLOWING:

–L– STA. 15+04.00 TO –L– STA. 16+39.00
* REQUIRED 5' OFFSET ON LEFT DUE TO HYDRAULIC SPREAD

SEE STRUCTURE PLANS FOR DETAIL OF BRIDGE RAIL FOR LOW-WATER BRIDGE

℄–DRIVE1–



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 FOR THE FOLLOWING:

–DRIVE1– STA. 10+00.00 TO –DRIVE1– STA. 10+49.80

15-JUN-2008 11:24
c:\projects\b3624_rdy_1_typ.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-3624	2-A

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

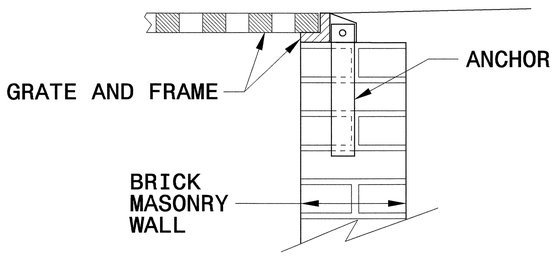
ENGLISH DETAIL DRAWING FOR

ANCHORAGE FOR FRAMES

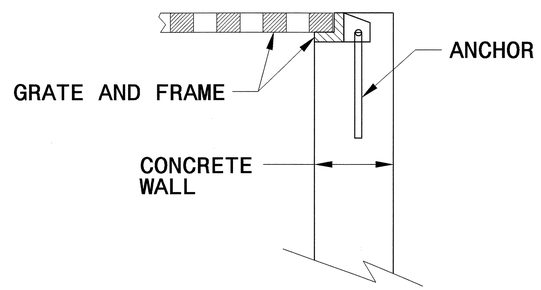
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1

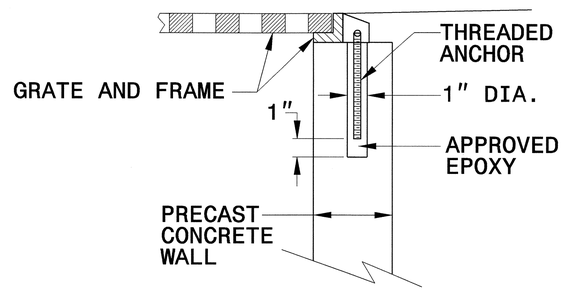
840D25



BRICK MASONRY CONSTRUCTION



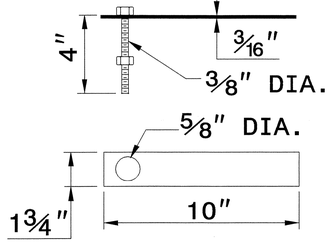
CONCRETE CONSTRUCTION



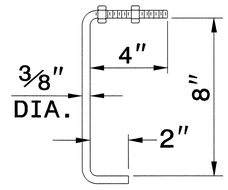
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

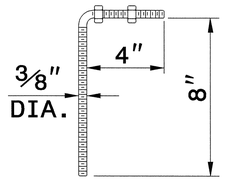
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



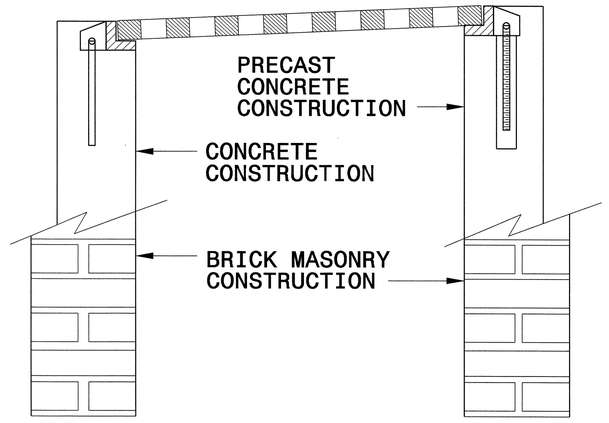
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR
3/8" DIA. BENT BAR



FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

ANCHORAGE FOR FRAMES

BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1

840D25

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S HOWERTON
6/24/08

PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: 2006 STD 840.25 DATE: 07/18/06
MODIFIED BY: E.E. WARD DATE: 9/25/06
CHECKED BY: DATE:
FILE SPEC.:

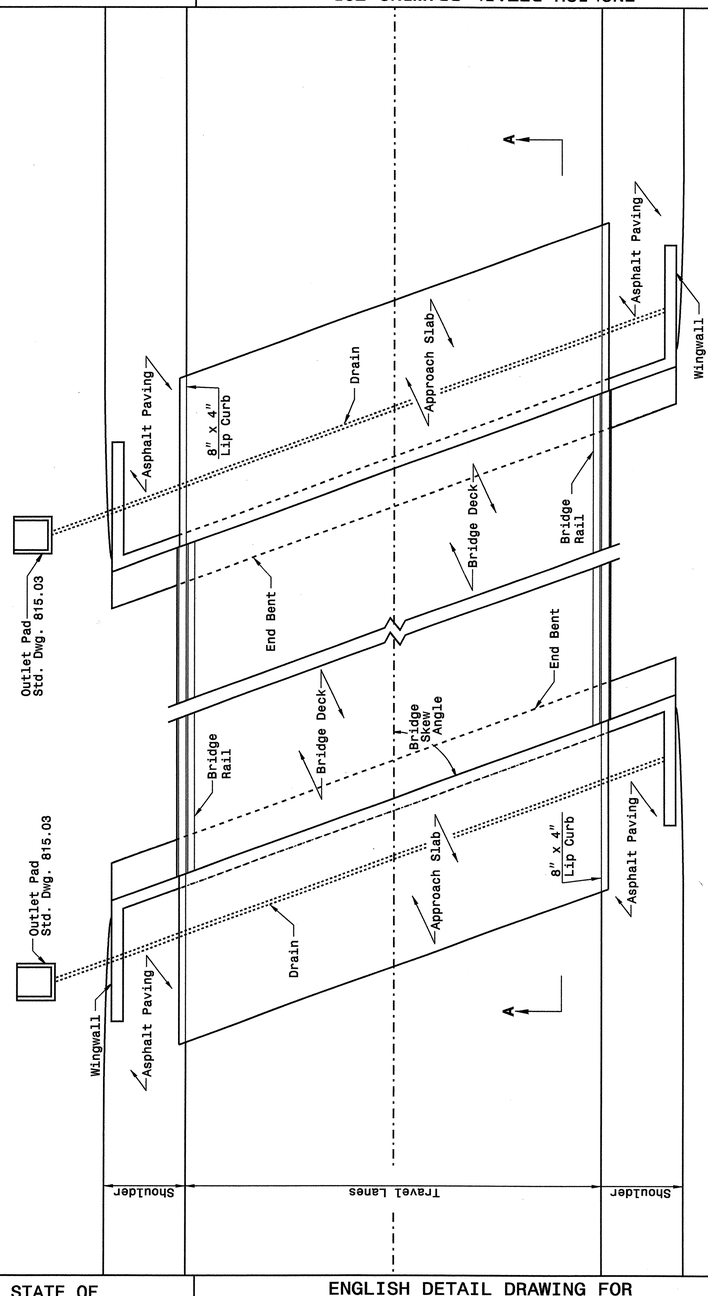
$$$$$$$SYSTIME$$$$$$$
$$$$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-3624	2-B

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 1 OF 2 — 422D11

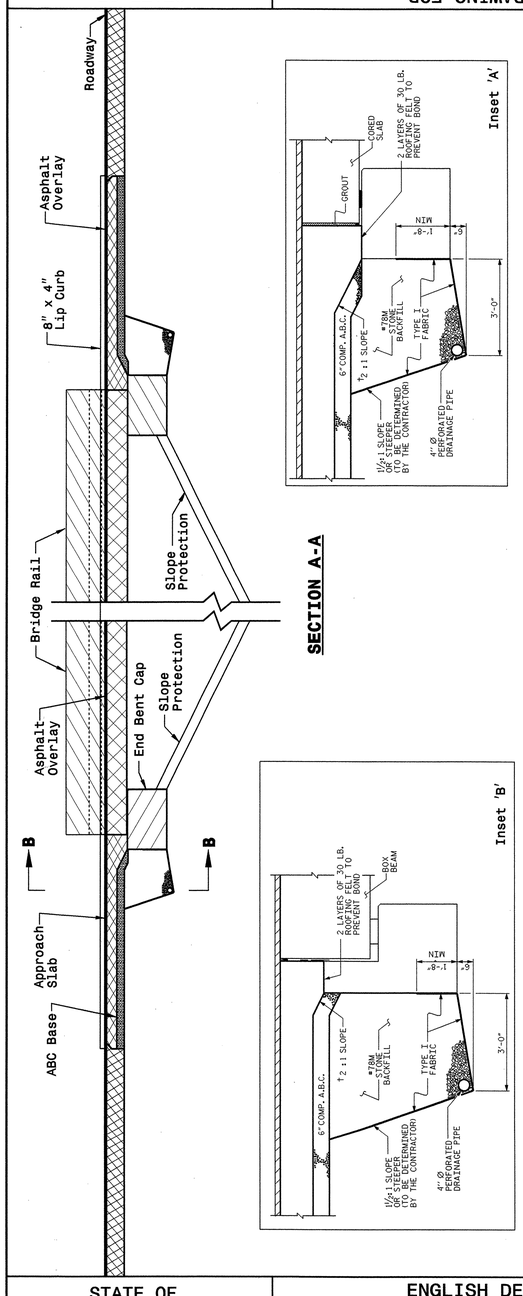


PLAN VIEW
12' APPROACH SLAB

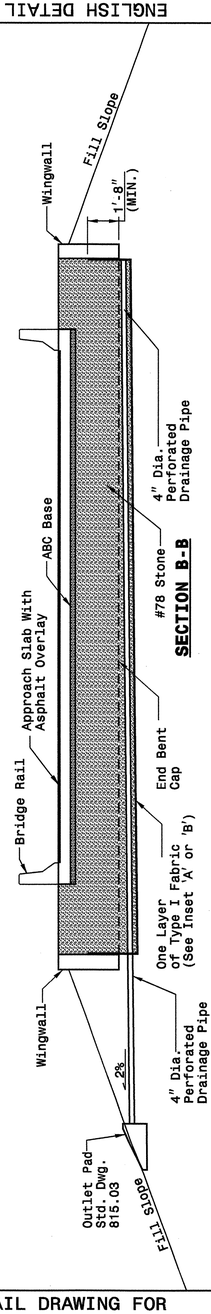
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 2 OF 2 — 422D11



SECTION A-A



SECTION B-B

12' APPROACH SLAB

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 1 OF 2 — 422D11

PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

ORIGINAL BY: K. A. Kempf DATE: 6-10-08
MODIFIED BY: DATE:
CHECKED BY: DATE: 6/27/08
FILE SPEC.: \kkempf\english\bridge approach fills.dgn

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-3624	3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201920

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0057000000-E	226	840	CY	UNDERCUT EXCAVATION
0080000000-E	SP	1,500	TON	CLASS IV SUBGRADE STABILIZATION
0134000000-E	240	5	CY	DRAINAGE DITCH EXCAVATION
0196000000-E	270	1,600	SY	FABRIC FOR SOIL STABILIZATION
0318000000-E	300	8	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
0344000000-E	310	56	LF	18" SIDE DRAIN PIPE
0366000000-E	310	16	LF	15" RC PIPE CULVERTS, CLASS III
1121000000-E	520	325	TON	AGGREGATE BASE COURSE
1220000000-E	545	100	TON	INCIDENTAL STONE BASE
1489000000-E	610	405	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	250	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1560000000-E	620	34	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
2000000000-N	806	14	EA	RIGHT OF WAY MARKERS
2022000000-E	815	117	CY	SUBDRAIN EXCAVATION
2033000000-E	815	88	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	520	LF	6" PERFORATED SUBDRAIN PIPE
2055000000-E	815	16	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
2066000000-N	815	2	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
2077000000-E	815	12	LF	6" OUTLET PIPE (SUBDRAINS)
2286000000-N	840	1	EA	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	45	LF	SHOULDER BERM GUTTER
3030000000-E	862	150	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3559000000-E	866	210	LF	** STRAND BARBED WIRE FENCE WITH POSTS (2)
3563000000-E	SP	200	LF	TEMP **" WOVEN WIRE FENCE, COMPLETE W/POSTS (48")
3564000000-E	866	1	EA	SINGLE GATES, **" HIGH, **' WIDE, **' OPENING (36", 20', 20')
3649000000-E	876	2	TON	RIP RAP, CLASS B
3656000000-E	876	710	SY	FILTER FABRIC FOR DRAINAGE
4400000000-E	1110	50	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	100	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	40	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	35	EA	DRUMS
4435000000-N	1135	35	EA	CONES
4445000000-E	1145	35	LF	BARRICADES (TYPE III)
4455000000-N	1150	180	MD	FLAGGER
4507000000-E	SP	220	LF	WATER FILLED BARRIER
4810000000-E	1205	11,000	LF	PAINT PAVEMENT MARKING LINES (4")
6000000000-E	1605	1,350	LF	TEMPORARY SILT FENCE
6006000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	415	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	365	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	2.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.5	TON	FERTILIZER FOR TEMPORARY SEEDING
6029000000-E	SP	300	LF	SAFETY FENCE
6030000000-E	1630	1,100	CY	SILT EXCAVATION
6036000000-E	1631	1,260	SY	MATTING FOR EROSION CONTROL
6038000000-E	SP	1,070	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	20	LF	1/4" HARDWARE CLOTH
6070000000-N	SP	12	EA	SPECIAL STILLING BASINS
6071030000-E	SP	350	LF	COIR FIBER BAFFLES
6084000000-E	1660	3	ACR	SEEDING & MULCHING
6087000000-E	1660	2	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	75	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	2.25	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

6/21/00

COMPUTED BY: AJF DATE: 5/2008
CHECKED BY: JMT DATE: 5/2008

PROJECT REFERENCE NO.	SHEET NO.
B-3624	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	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 12"	15"	18"	24"	30"	36"	42"	48"	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHRWISE) 12"	15"	18"	24"	30"	36"	42"	48"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	ENDWALLS STD. 838.01 OR STD. 838.11 (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") PER EACH (0' THRU 5.0')	LIN. FT. A (5.0' THRU 10.0')	LIN. FT. B (10.0' AND ABOVE)	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	M.D.I. TYPE "B" STD. 840.18 OR 840.27	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	CORR. STEEL ELBOWS NO. & SIZE	SET OF ROD AND LUG CONNECTORS FOR ELBOWS	PIPE REMOVAL	REMARKS
12+10	LT	1																							24																			
14+75	LT	2		1045.18																								1				1	1										
14+75	LT	2	OUT		1042.43	1042.12			16																																		
18+14	RT	3																							32																			
TOTAL									16																56			1				1	1										

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

GUARDRAIL SUMMARY

"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 TYPE III	ANCHORS AT-1	ANCHORS GRAU 350	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–	13+77.89	14+96.64 (BR)	RT	118.75				14+96.64 (BR)	6'	9'	100'		2		1		1							
–L–	14+31.41	15+12.66 (BR)	LT	81.25			15+12.66 (BR)		6'	9'		62.50'		1.25	1		1							
–L–	16+31.64 (BR)	17+12.89	RT	81.25			16+31.64 (BR)		6'	9'		62.50'		1.25	1		1							
–L–	16+47.66 (BR)	17+66.41	LT	118.75				15+14.50 (BR)	6'	9'	100'		2		1		1							
			SUB-TOTAL	400																				
			ANCHOR DEDUCTION	-275.00																				
			TOTAL	125																				
			SAY	150																				

ANCHOR DEDUCTION
TYPE III: 4 @ 18.75' = 75'
TYPE 350: 4 @ 50' = 200'
GRAND TOTAL = 275'

ADDITIONAL GUARDRAIL POSTS: 5

SUMMARY OF EARTHWORK

(IN CUBIC YARDS)

LOCATION	UNCL TOTAL EXCAVATION	UNDERCUT EXCAVATION TOTAL	EMB. +%	BORROW	WASTE
–L– STA 10+00.00 TO 15+04.00 (BEGIN BRIDGE)	3,618	380	74		3,924
–DRIVE1– STA 10+00.00 TO 10+49.80	112				112
–L– STA 16+39.00 (END BRIDGE) TO 21+00.00	1,318	396	248		1,466
TOTAL	5,048	776	322		5,502
LOSS DUE TO CLEAR AND GRUB	-300				-300
ADDITIONAL UNDERCUT		50	60	60	50
WASTE TO REPLACE BORROW				-60	-60
GRAND TOTAL	4,748	826	382	0	5,192
SAY	4,775	840			

ESTIMATE DDE = 5 CY
*NOTE: EMBANKMENT COLUMN DOES NOT INCLUDES BACKFILL FOR UNDERCUT PER GEOTECH RECOMMENDATIONS, CLASS IV SUBGRADE STABILIZATION IS TO BE USED AS BACKFILL FOR UNDERCUT

Approximate quantities only. Unclassified excavation, fine grading, and clearing and grubbing, will be paid for at the lump sum price for "Grading".

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.

PARCEL INDEX

PARCEL NO.	PROPERTY OWNERS NAME	PLAN SHEET
1	JOHNS-GAMEWELL, LLC; CONSERVATION EASEMENT	4
2	CRESCENT RESOURCES, LLC.	4
3	DUKE VENTURES, LLC.	4
4	CRESCENT RESOURCES, LLC.	4

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I. (N.S.)	MEDIAN 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 JUCTION BOX

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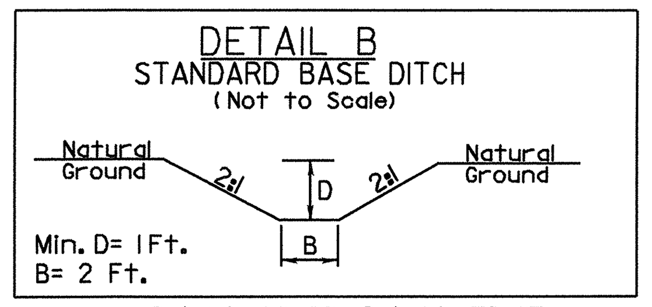
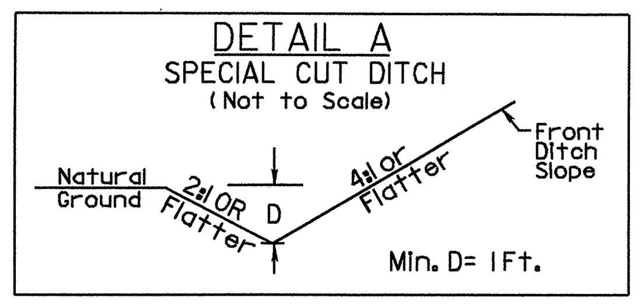
PROJECT REFERENCE NO.	SHEET NO.
B-3624	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SEAL 029473 — NORTH CAROLINA PROFESSIONAL ENGINEER — JASON M. TALLEY — Jason Talley 10/28/08

SEAL 21162 — NORTH CAROLINA PROFESSIONAL ENGINEER — HERBERT TURNER, JR. — 10/29/08



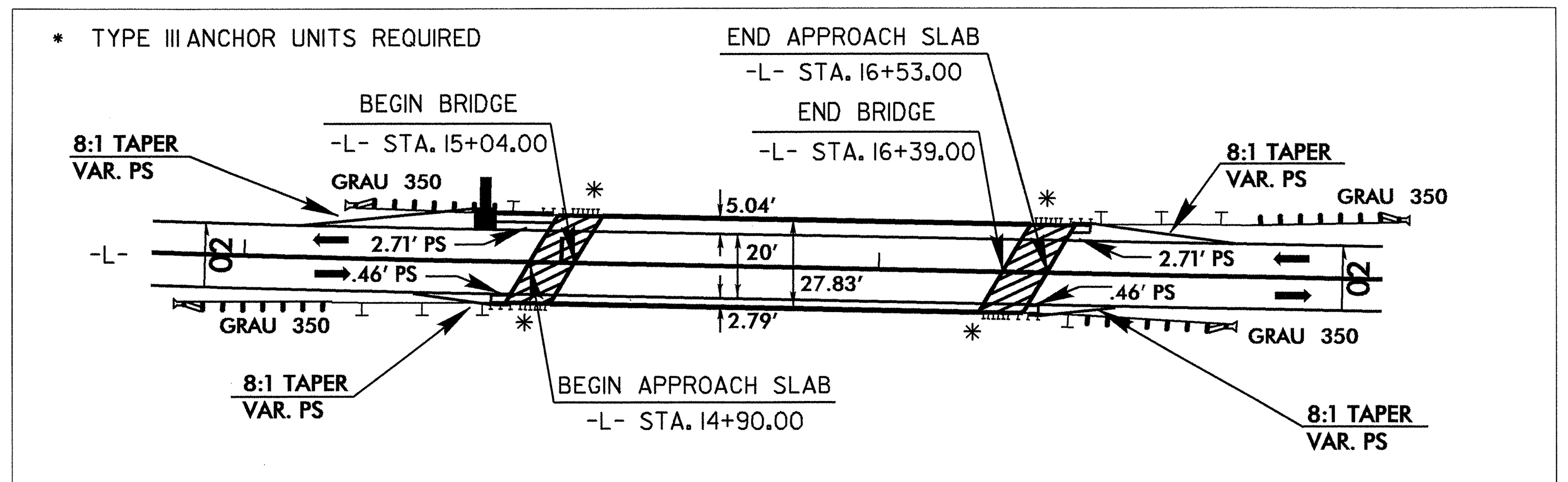
-L- STA. 14+50 TO STA. 14+72 RT.



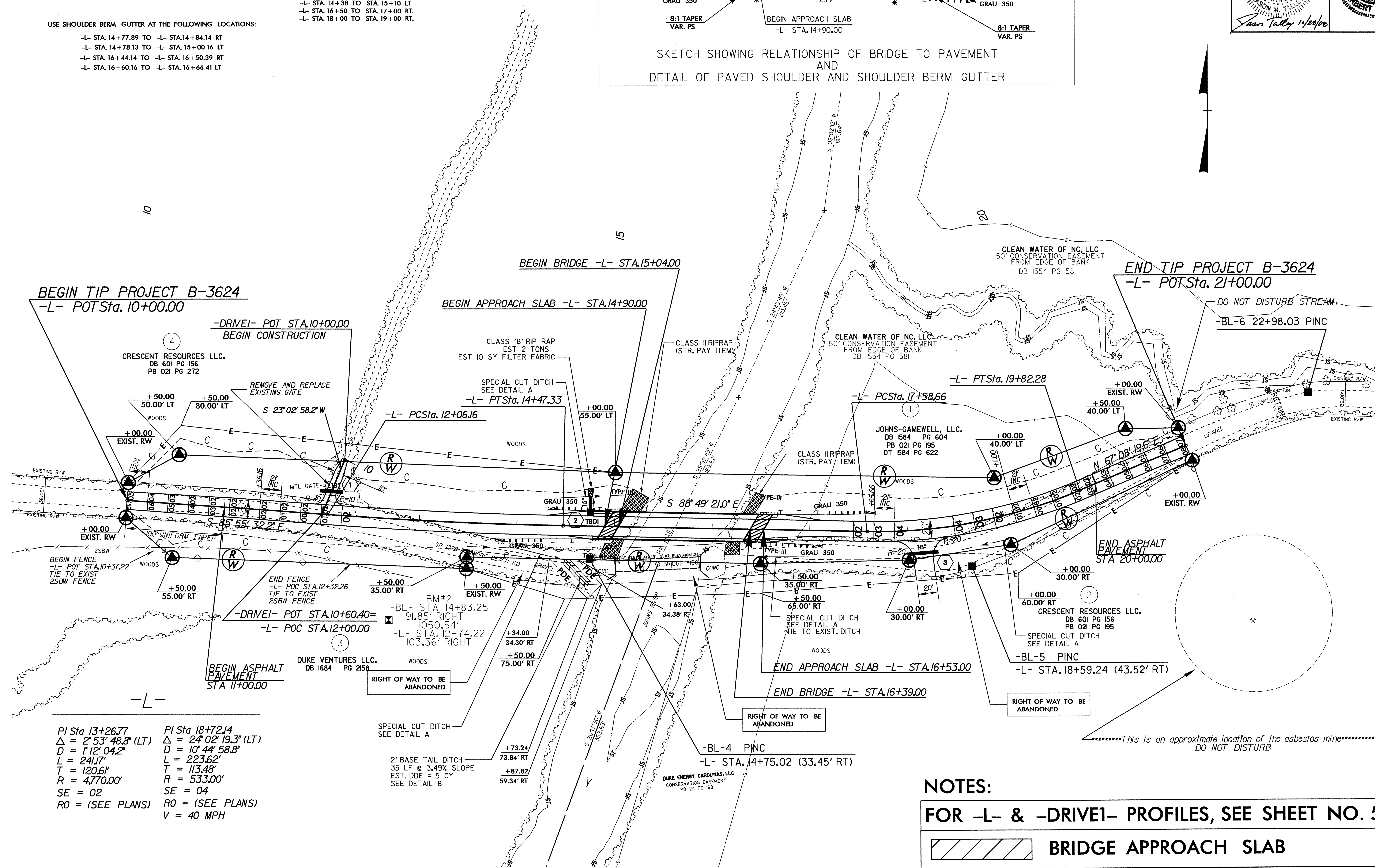
-L- STA. 13+50 TO STA. 14+50 RT.
-L- STA. 14+38 TO STA. 15+10 LT.
-L- STA. 16+50 TO STA. 17+00 RT.
-L- STA. 18+00 TO STA. 19+00 RT.

USE SHOULDER BERM GUTTER AT THE FOLLOWING LOCATIONS:

-L- STA. 14+77.89 TO -L- STA. 14+84.14 RT
-L- STA. 14+78.13 TO -L- STA. 15+00.16 LT
-L- STA. 16+44.14 TO -L- STA. 16+50.39 RT
-L- STA. 16+60.16 TO -L- STA. 16+66.41 LT



SKETCH SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT AND DETAIL OF PAVED SHOULDER AND SHOULDER BERM GUTTER



BEGIN TIP PROJECT B-3624
-L- POT Sta. 10+00.00
-DRIVE1- POT STA.10+00.00
BEGIN CONSTRUCTION
CRESCENT RESOURCES LLC.
DB 601 PG 156
PB 021 PG 272
REMOVE AND REPLACE EXISTING GATE
S 23°02'58.2" W
-L- PC Sta. 12+06.16
BEGIN BRIDGE -L- STA.15+04.00
BEGIN APPROACH SLAB -L- STA.14+90.00
CLASS 'B' RIP RAP
EST 2 TONS
EST 10 SY FILTER FABRIC
SPECIAL CUT DITCH
SEE DETAIL A
-L- PT Sta. 14+47.33
CLASS II RIPRAP (STR. PAY ITEM)
S 88°49'21.0" E
S 85°55'32.2" E
CLEAN WATER OF NC, LLC
50' CONSERVATION EASEMENT FROM EDGE OF BANK
DB 1554 PG 581
-L- PC Sta. 17+58.66
-L- PT Sta. 19+82.28
JOHNS-GAMEWELL, LLC.
DB 1584 PG 604
PB 021 PG 195
DT 1584 PG 622
END TIP PROJECT B-3624
-L- POT Sta. 21+00.00
DO NOT DISTURB STREAM
-BL-6 22+98.03 PINC
N 67°08'19.6" E
END ASPHALT PAVEMENT
STA 20+00.00
CRESCENT RESOURCES LLC.
DB 601 PG 156
PB 021 PG 195
-BL-5 PINC
-L- STA. 18+59.24 (43.52' RT)
RIGHT OF WAY TO BE ABANDONED
This is an approximate location of the asbestos mine
DO NOT DISTURB
BEGIN FENCE
-L- POT STA.10+37.22
TIE TO EXIST 2SBW FENCE
END FENCE
-L- POC STA.12+32.26
TIE TO EXIST 2SBW FENCE
-DRIVE1- POT STA.10+60.40=
-L- POC STA.12+00.00
BM#2
-BL- STA 14+83.25
91.85' RIGHT
1050.54'
-L- STA. 12+74.22
103.36' RIGHT
DUKE VENTURES LLC.
DB 1684 PG 2158
BEGIN ASPHALT PAVEMENT
STA 11+00.00
SPECIAL CUT DITCH
SEE DETAIL A
2' BASE TAIL DITCH
35 LF @ 3.49% SLOPE
EST. DDE = 5 CY
SEE DETAIL B
DUKE ENERGY CAROLINAS, LLC
CONSERVATION EASEMENT
PB 24 PG 168
-BL-4 PINC
-L- STA. 14+75.02 (33.45' RT)
END APPROACH SLAB -L- STA.16+53.00
END BRIDGE -L- STA.16+39.00
SPECIAL CUT DITCH
SEE DETAIL A
TIE TO EXIST. DITCH
WOODS

-L-

PI Sta 13+26.77	PI Sta 18+72.14
Δ = 2° 53' 48.8" (LT)	Δ = 24° 02' 19.3" (LT)
D = 1° 12' 04.2"	D = 10° 44' 58.8"
L = 241.17'	L = 223.62'
T = 120.61'	T = 113.48'
R = 4,770.00'	R = 533.00'
SE = 02	SE = 04
RO = (SEE PLANS)	RO = (SEE PLANS)
	V = 40 MPH

NOTES:

FOR -L- & -DRIVE1- PROFILES, SEE SHEET NO. 5

▨ BRIDGE APPROACH SLAB

FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-28

REVISIONS

8/17/99

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-3624	5

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029473 ENGINEER JASON M. TALLEY
Jason Talley 6-20-08

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21162 ENGINEER JOE HERBERT TURNER, JR.
6-24-08

BEGIN GRADE
–L– STA 10+00.00
EL = 1,067.84'

PI = 11+30.00
EL = 1,056.39'
VC = 165'
K = 50
V = 35 MPH

(–)8.8046%
(–)5.5082%
(–)5.5082%
(–)3.060%
(–) 0.694%

BEGIN BRIDGE
–L– STA 15+04.00

PI = 13+61.00
EL = 1,043.67'
VC = 275'
K = 39
V = 31 MPH

(+)1.5290%
(+) 4.3800%

END BRIDGE
–L– STA 16+39.00

END GRADE
–L– STA 21+00.00
EL = 1,053.14'

PI = 20+00.00
EL = 1,053.44'
VC = 190'
K = 104
V = 53 MPH

(+)1.5290%
(–)0.3000%
(+) 1.1000%

BM#2
–BL– STA 14+83.25
91.85' RIGHT
1050.54'
–L– STA. 12+74.22
103.36' RIGHT

DEPTH OF CLASS II RIPRAP 3.5' (TYP.)

EXCAVATION = 200 CY (+/–)

END
SPECIAL CUT DITCH
STA.19+00.00 RT
ELEV.1049.72

BEGIN
SPECIAL CUT DITCH
STA.18+00.00 RT
ELEV.1048.62

END
SPECIAL CUT DITCH
STA.17+00.00 RT
ELEV.1046.69

BEGIN
SPECIAL CUT DITCH
STA.16+50.00 RT
ELEV.1044.50

END
SPECIAL CUT DITCH
STA.15+10.00 LT
ELEV.1041.88

BEGIN
SPECIAL CUT DITCH
STA.13+50.00 RT
ELEV.1044.28

BEGIN
SPECIAL CUT DITCH
STA.14+38.00 LT
ELEV.1042.38

END
SPECIAL CUT DITCH
STA.14+50.00 RT
ELEV.1041.22

CL II RIP RAP AND EXCAVATION ARE STRUCTURE PAY ITEMS

DITCH LEGEND
LEFT DITCH
RIGHT DITCH
UNDERCUT

–DRIVE1–

BEGIN GRADE
–DRIVE1– STA 10+00.00
EL = 1,057.22'

PI = 10+39.00
EL = 1,052.40'
VC = 10'
K = 1

(–)12.3106%
(–)2.2722%

END GRADE
–DRIVE1– STA 10+49.80
EL = 1,052.15'

STRUCTURE HYDRAULIC DATA

DRAINAGE AREA	= 114	SQ MI
DESIGN DISCHARGE	= 3900	CFS
DESIGN FREQUENCY	= 2	YRS
DESIGN HW ELEVATION	= 1044.0	FT
BASE DISCHARGE	= 18000	CFS
BASE HW ELEVATION	= 1055.5	FT
OVERTOPPING DISCHARGE	= 6721	CFS
OVERTOPPING FREQUENCY	= 5+	YRS
OVERTOPPING ELEVATION	= 1046.0	FT

SEE SHEET 4 FOR –L– & –DRIVE1– ALIGNMENTS