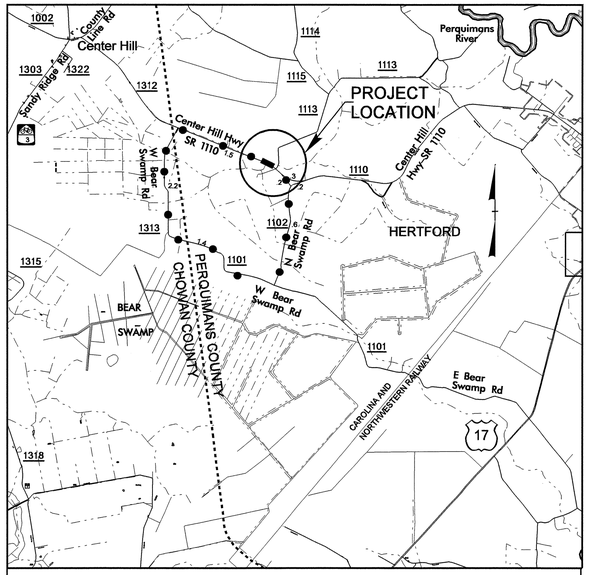
09/08/99

TIP PROJECT: B-4226

CONTRACT: C201808

See Sheet 1-A For Index of Sheets



VICINITY MAP

DETOUR ROUTE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4226	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33570.1.1	BRZ-1110(4)	PE
33570.2.1	BRZ-1110(4)	R/W,UTIL
33570.3.1	BRZ-1110(4)	CONST.

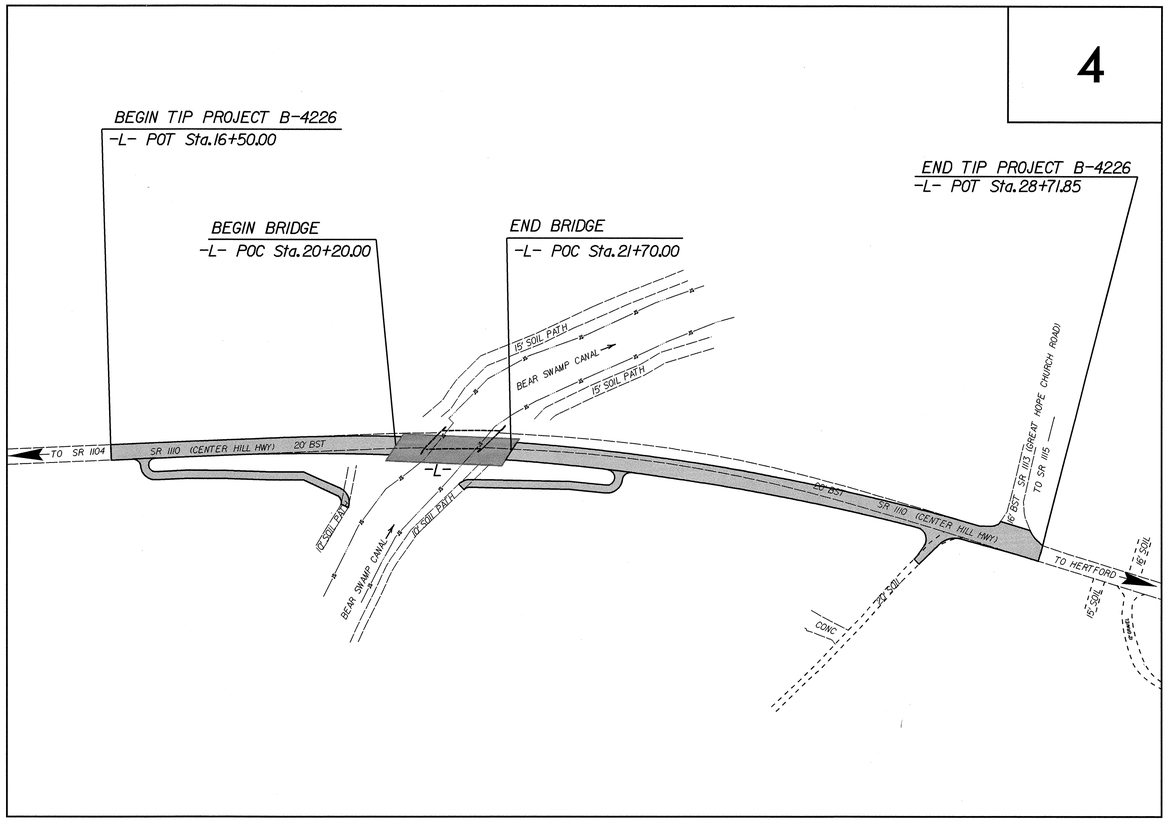
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PERQUIMANS COUNTY

LOCATION: BRIDGE 62 OVER BEAR SWAMP CANAL ON SR 1110

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

NAD 83/93



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 2002	=	1200
ADT 2025	=	2100
DHV	=	10 %
D	=	60 %
T	=	3 %*
V	=	60 MPH
FUNC. CLASS.	=	RUAL MINOR COLLECTOR
* TTST 1		DUAL 2

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4226 =	0.203 MILES
LENGTH STRUCTURE TIP PROJECT B-4226 =	0.028 MILES
TOTAL LENGTH TIP PROJECT B-4226 =	0.231 MILES

Prepared In the Office of:

DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 16, 2007

LETTING DATE: MARCH 18, 2008

JASON MOORE, P.E.
PROJECT ENGINEER

BRYAN KEY, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22100 ENGINEER STEPHEN A. MORDAN

SIGNATURE: P.E. 12-18-07

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER BRYAN C. KEY

SIGNATURE: P.E. 12-18-07

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

10-DEC-2007 12:07
r:\roadway\proj\b4226_rdy_tsh.dgn
$$$$USERNAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4226	1-A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER BRYAN C. KEY

12-19-07

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 THRU 2 -A	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-B	DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP- 3	TRAFFIC CONTROL PLANS
EC-1 THRU EC- 4	EROSION CONTROL PLANS
SIGN-1 THRU SIGN- 3	SIGNING PLANS
UC-1 THRU UC-4	UTILITIES PLANS
UO-1 THRU UO-2	UTILITIES PLANS BY OTHERS
X THRU X-6	CROSS-SECTIONS
S-1 THRU S-24	STRUCTURE PLANS

GENERAL NOTES:

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

GRADE LINE:
GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

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

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 Embarq, Piedmont Natural Gas,

Albemarle EMC, & Perquimans County Water System

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

RIGHT-OF-WAY MARKERS:

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

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'
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	
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.45	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
876.02	Guide for Rip Rap at Pipe Outlets

3/15/06

PROJECT REFERENCE NO.	SHEET NO.
B-4226	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
- Swamp Marsh
- 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.

PROJECT REFERENCE NO.	SHEET NO.
B-4226	1-C
LOCATION AND SURVEYS	

SURVEY CONTROL SHEET B-4226

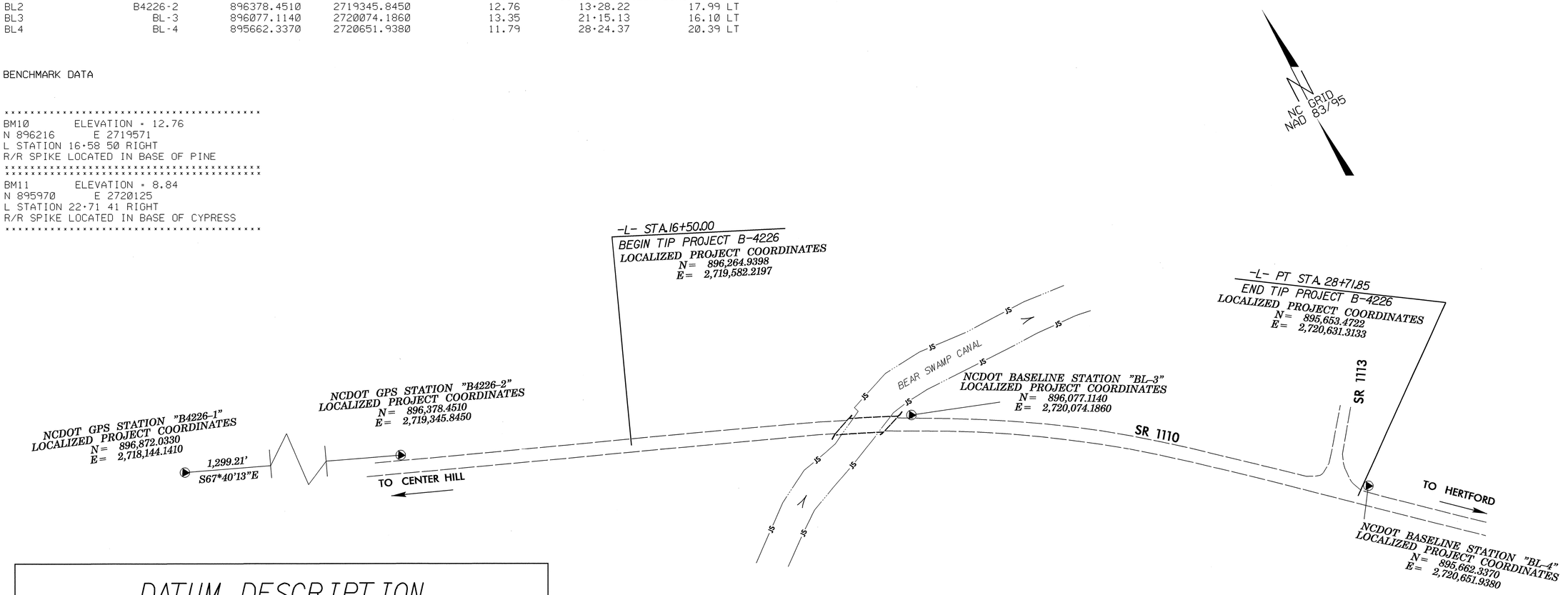
CONTROL DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL1	B4226-1	896872.0330	2718144.1410	13.55	OUTSIDE PROJECT LIMITS	
BL2	B4226-2	896378.4510	2719345.8450	12.76	13+28.22	17.99 LT
BL3	BL-3	896077.1140	2720074.1860	13.35	21+15.13	16.10 LT
BL4	BL-4	895662.3370	2720651.9380	11.79	28+24.37	20.39 LT

BENCHMARK DATA

****
BM10 ELEVATION = 12.76
N 896216 E 2719571
L STATION 16+58 50 RIGHT
R/R SPIKE LOCATED IN BASE OF PINE
****
****
BM11 ELEVATION = 8.84
N 895970 E 2720125
L STATION 22+71 41 RIGHT
R/R SPIKE LOCATED IN BASE OF CYPRESS
****



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4226-2" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 896378.451(ft) EASTING: 2719345.845(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00001095
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4226-2" TO -L- STATION 16+50.00 IS
S 64° 20' 56" E 262.217
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING HTTP:\WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT

FILE: b4226_ls_control_071130.txt

SITE CALIBRATION PARAMETERS HAVE NOT BEEN DETERMINED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

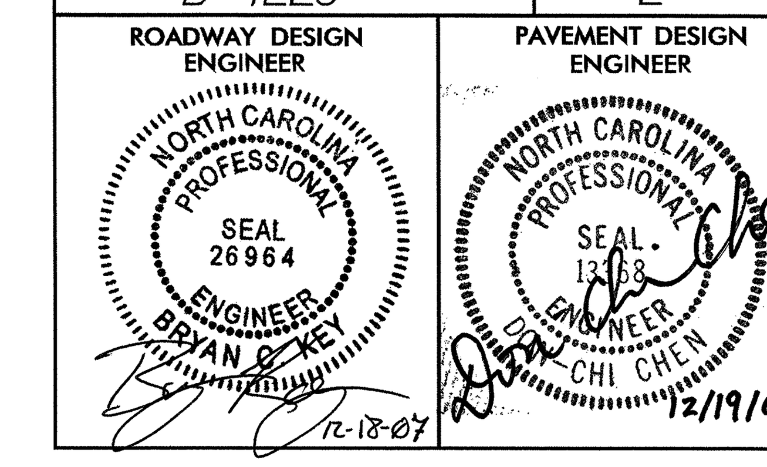
△ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*

PROJECT CONTROL ESTABLISHED UTILIZING GLOBAL POSITIONING SYSTEM.

NETWORK FOR GPS "B4226-2" ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

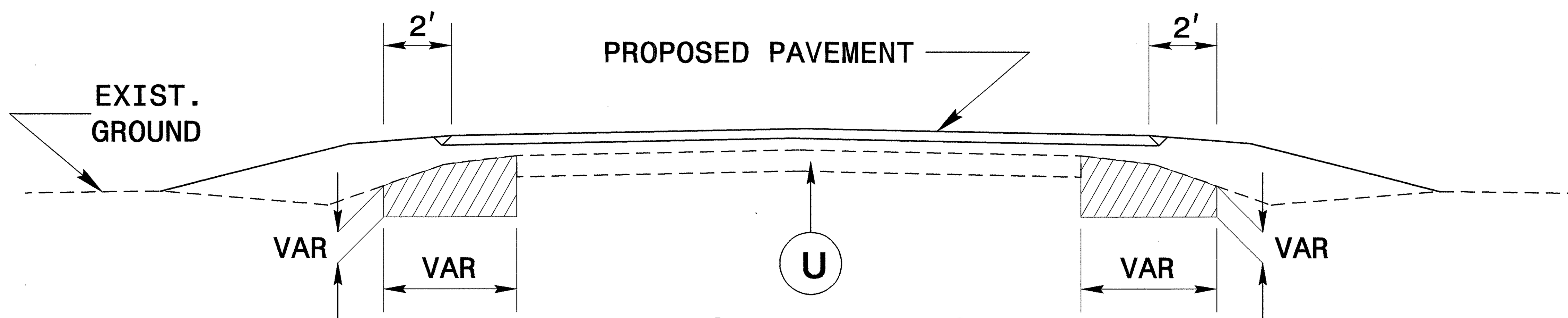
PROJECT REFERENCE NO.	SHEET NO.
B-4226	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



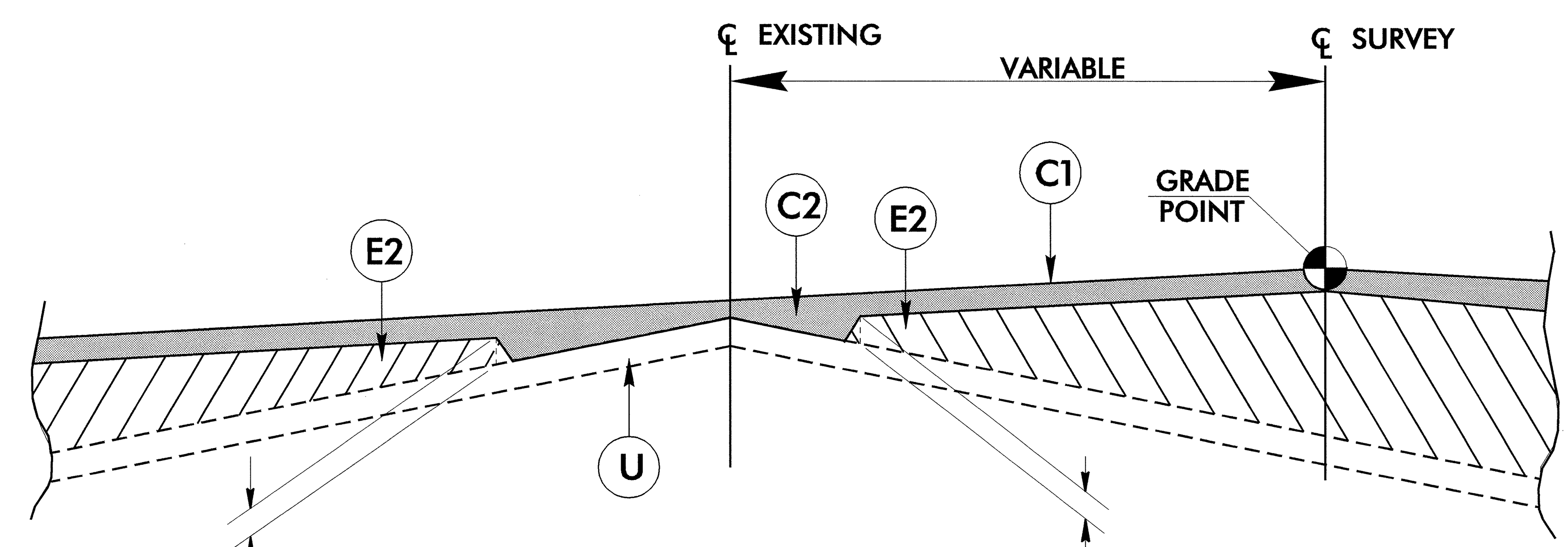
PAVEMENT SCHEDULE

C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R	SHOULDER BERM GUTTER
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 LESS THAN 1 " IN DEPTH OR GREATER THAN 1 1/2 " IN DEPTH.	T	EARTH MATERIAL.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
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.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET)

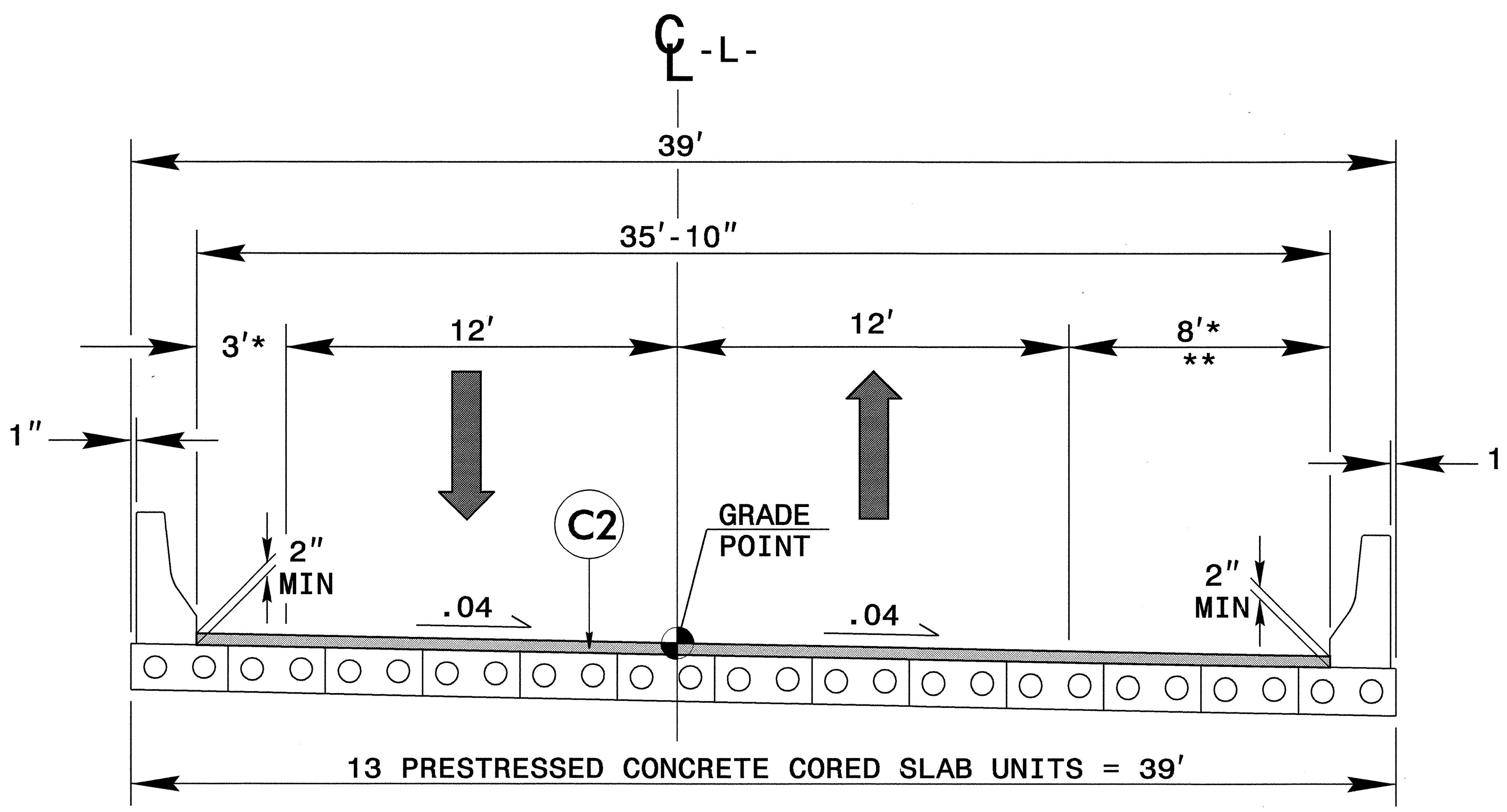
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



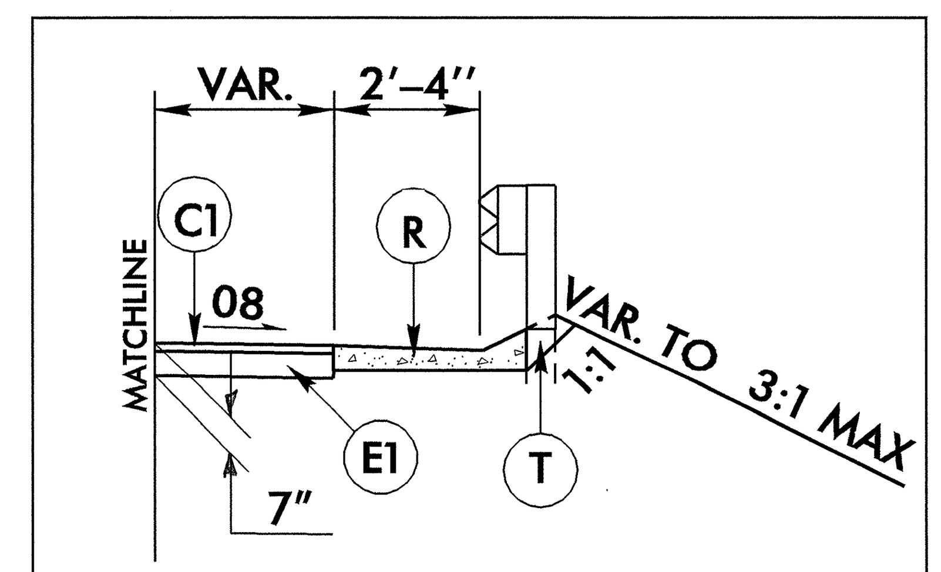
Undercut Detail



Detail Showing Method Of Wedging



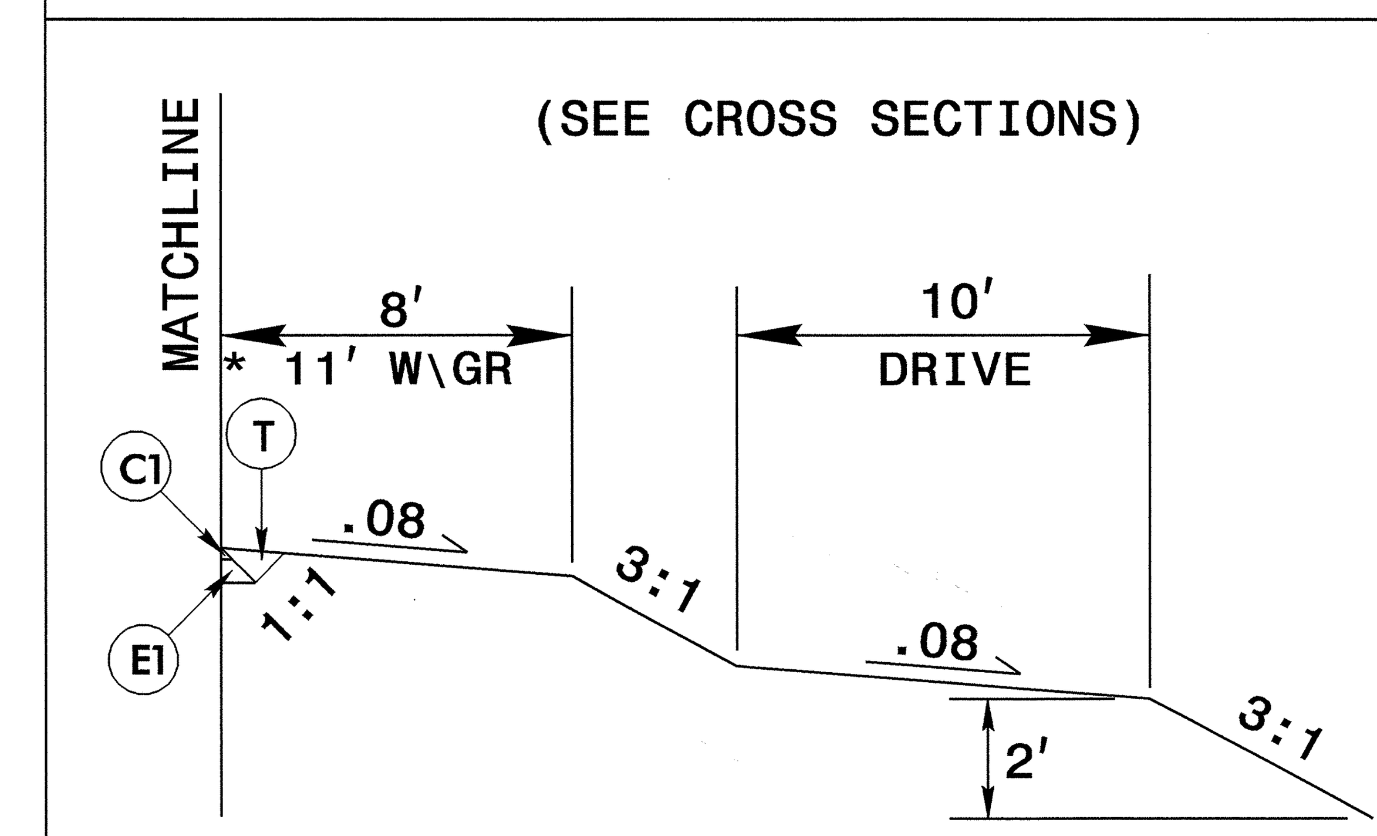
TYPICAL SECTION ON STRUCTURE



INSET 1A

ACCESS DRIVE INSET

(SEE CROSS SECTIONS)



USE TYPICAL SECTION ON STRUCTURE

-L- STA. 20+20.00 (BEGIN BRIDGE) TO STA. 21+70.00 (END BRIDGE)
* OFFSET VARIES DUE TO LANE CURVATURE
** WIDENED FOR STOPPING SIGHT DISTANCE

6/2/99
17-DEC-2007 14:50
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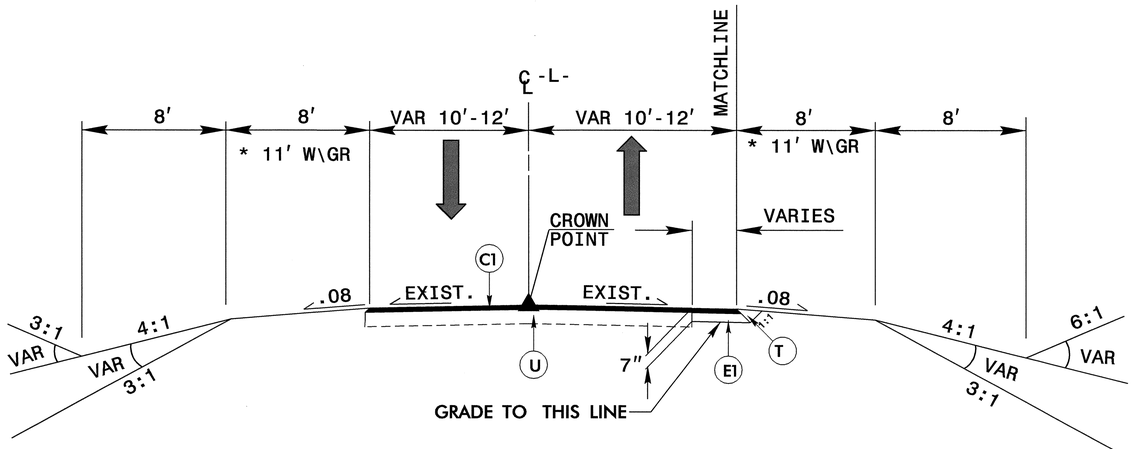
PROJECT REFERENCE NO.	SHEET NO.
B-4226	2-A

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER BRYAN C. KEY — 12-18-07

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 13268 ENGINEER CHIN-CHI CHEN — 12/19/07

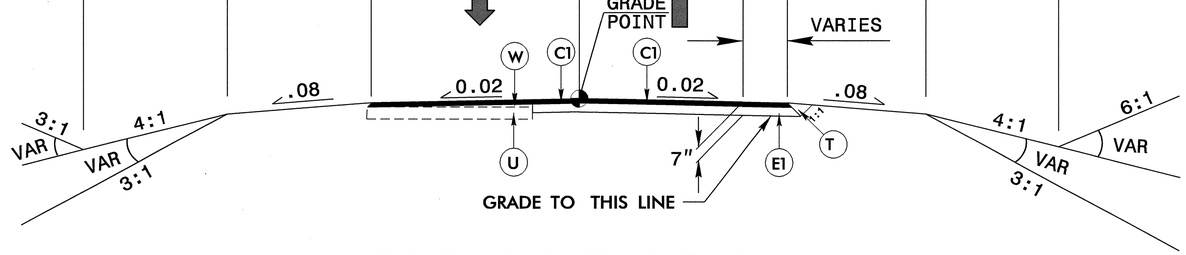
C1	2" TYPE SF9.5A
E1	5" TYPE B25.0B
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W	WEDGING



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

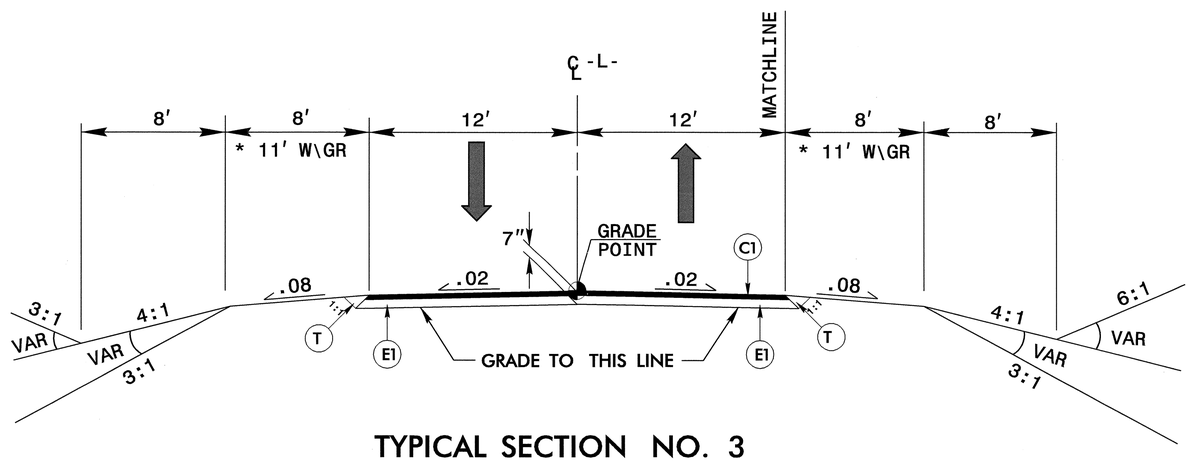
–L– STA. 16+50.00 TO STA. 18+24.52
–L– STA. 27+65.98 TO STA. 28+71.85
USE ACCESS DRIVE INSET (SEE SHEET 2)
–L– STA. 16+75.+/– TO STA. 18+24.52 RT.



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

–L– STA. 18+24.52 TO STA. 19+20.00
–L– STA. 22+70.00 TO STA. 27+65.98
USE ACCESS DRIVE INSET (SEE SHEET 2)
–L– STA. 18+24.52 TO STA. 19+20+/– RT.
–L– STA. 22+70.00 TO STA. 23+25+/– RT.
USE INSET 1A (SEE SHEET 2)
–L– STA. 18+40 TO 19+20 RT.



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

–L– STA. 19+20.00 TO STA. 20+20.00 (BEGIN BRIDGE)
–L– STA.21+70.00 (END BRIDGE) TO STA. 22+70.00
USE ACCESS DRIVE INSET (SEE SHEET 2)
–L– STA. 21+00.+/– TO STA. 22+70.00 RT.
USE INSET 1A (SEE SHEET 2)
–L– STA. 19+20 TO APPROACH SLAB RT.
–L– STA. FROM APPROACH SLAB TO 22+50 RT.

PROJECT REFERENCE NO.	SHEET NO.
B-4226	2-B

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

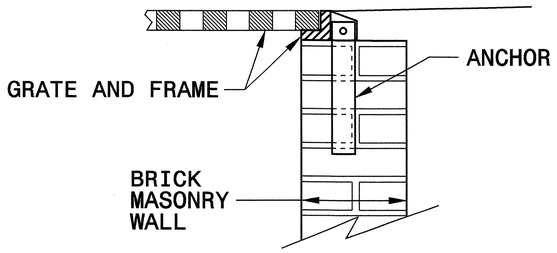
ENGLISH DETAIL DRAWING FOR

ANCHORAGE FOR FRAMES

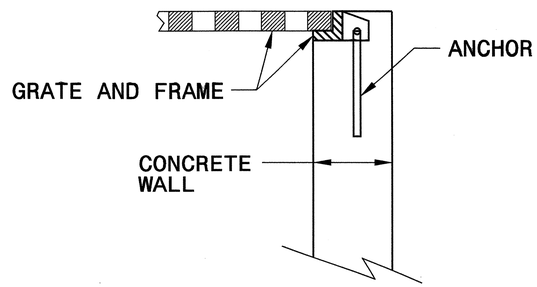
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1

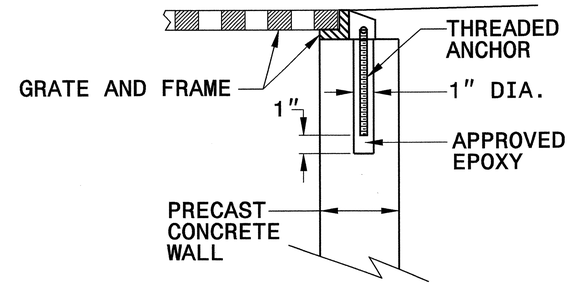
840D25



BRICK MASONRY CONSTRUCTION



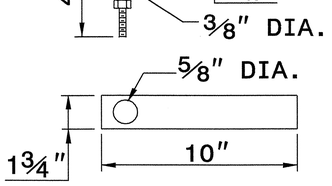
CONCRETE CONSTRUCTION



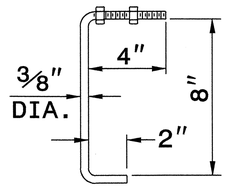
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

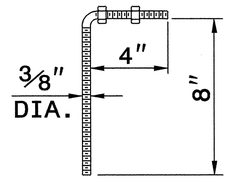
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



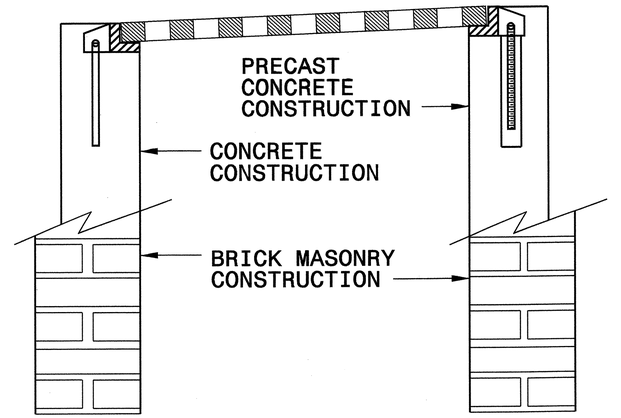
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



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 E. HOWERTON 12/19/07

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.:

01-MAR-2007 09:04
s:\contracts\contracts\special details\ericward\stds\06' stds to special details\84025 anchorage for frames\0840d25.dgn
jhowerton AT PSC12260

PROJECT REFERENCE NO.	SHEET NO.
B-4226	3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201808

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ************ (20+95.000 -L-)
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	200	CY	UNDERCUT EXCAVATION
0196000000-E	270	350	SY	FABRIC FOR SOIL STABILIZATION
0234000000-E	SP	350	CY	GENERIC GRADING ITEM SELECT GRANULAR MATERIAL
0318000000-E	300	30	TON	FOUNDATION CONDITIONING MATE-RIAL, MINOR STRS
0366000000-E	310	180	LF	15" RC PIPE CULVERTS, CLASS III
0660000000-E	310	28	LF	***"BIT COAT CS PIPE CULVERTS, TYPE A *****" THICK (18", 0.064")
0995000000-E	340	165	LF	PIPE REMOVAL
1220000000-E	545	3	TON	INCIDENTAL STONE BASE
1489000000-E	610	700	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	350	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1560000000-E	620	53	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
2286000000-N	840	3	EA	MASONRY DRAINAGE STRUCTURES
2355000000-N	840	3	EA	FRAME WITH GRATE, STD 840.29
2556000000-E	846	230	LF	SHOULDER BERM GUTTER
3030000000-E	862	625	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	5	TON	RIP RAP, CLASS B
3656000000-E	876	165	SY	FILTER FABRIC FOR DRAINAGE
4025000000-E	901	12.5	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (E)
4082000000-E	903	27	LF	SUPPORTS, WOOD
4102000000-N	904	2	EA	SIGN ERECTION, TYPE E
4155000000-N	907	4	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4158000000-N	907	2	EA	DISPOSAL OF SIGN SYSTEM, WOOD
4400000000-E	1110	308	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	69	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4445000000-E	1145	64	LF	BARRICADES (TYPE III)
4810000000-E	1205	9,760	LF	PAINT PAVEMENT MARKING LINES (4")
4900000000-N	1251	16	EA	PERMANENT RAISED PAVEMENT MARKERS
5325600000-E	1510	1,064	LF	6" WATER LINE
5540000000-E	1515	2	EA	6" VALVE
5871400000-E	1550	228	LF	TRENCHLESS INSTALLATION OF 6" IN SOIL
5871410000-E	1550	228	LF	TRENCHLESS INSTALLATION OF 6" NOT IN SOIL
6000000000-E	1605	1,800	LF	TEMPORARY SILT FENCE
6006000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	55	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	2	ACR	TEMPORARY MULCHING
6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEED-ING
6024000000-E	1622	125	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	2	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	250	LF	SAFETY FENCE
6030000000-E	1630	150	CY	SILT EXCAVATION
6036000000-E	1631	200	SY	MATTING FOR EROSION CONTROL
6042000000-E	1632	130	LF	1/4" HARDWARE CLOTH
6048000000-E	SP	120	SY	FLOATING TURBIDITY CURTAIN
6084000000-E	1660	2	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
6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	1.5	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL

6/21/00

COMPUTED BY: R. E. O'Dell	DATE: December 10, 2007
CHECKED BY: B. C. Key	DATE: December 10, 2007

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4226	3-A

SUMMARY OF EARTHWORK

IN CUIBIC YARDS

LOCATION	UNCLASSIFIED	UNDERCUT	EMBT+%	BORROW	WASTE
-L- STA. 16+50.00 TO 20+20.00	160	0	915	843	88
-L- STA. 21+70.00 TO 28+71.85	72	82	1681	1628	101
TOTAL	232	82	2596	2471	189
ADDITIONAL UNDERCUT		100			100
PROJECT TOTAL	232	182	2596	2471	289
EST. FOR REPLACE TOPSOIL ON BORROW PIT				124	
GRAND TOTAL	232	182		2595	289
SAY	250	200		2650	

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING AND REMOVAL OF EXIST. PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

REMOVAL OF EXISTING PAVEMENT

STATION	LOCATION	LENGTH OR AREA	WIDTH	SQUARE YARDS
-L- STA. 19+20.00 TO 20+69.00	CL	149.00'	20'	331
-L- STA. 21+43.00 TO 22+70.00	CL	127.00'	20'	282
-L- STA. 22+70.00 TO 27+27.00	LT	457.00'	6.5'	330
TOTAL:				943
SAY:				1000

NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING AND REMOVAL OF EXIST. PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

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

STATION / SIZE / THICKNESS OR GAUGE	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"
-L- 18+40	RT	1		13.2	10.4										
-L- 18+40	RT	1	2		10.4	9.3			112						
-L- 19+50	RT	2		13.3	9.3										
-L- 19+50	RT	2	3		9.3	6.0									
-L- 19+64	RT	4													
-L- 20+64	LT	5													
-L- 21+34	RT	6													
-L- 22+59	LT	7	8		8.0	10.6			64						
-L- 22+50	RT	8		13.4	10.6										
TOTALS									176						
SAY									180						

STATION	BITUMINOUS COATED C.S. PIPE TYPE A (UNLESS NOTED OTHRWISE) 12" .064	15" .064	18" .064	24" .064	24"	30" .079	30"	36" .079	36"	42" .109	42"	48" .109	48"	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.	C.S.P.
-L- 18+40																		
-L- 18+40																		
-L- 19+50																		
-L- 19+50			24															
-L- 19+64																		
-L- 20+64																		
-L- 21+34																		
-L- 22+59																		
-L- 22+50																		
TOTALS			24															
SAY			28															

STATION	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	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		D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	FRAME AND NARROW SLOT FLAT GRATE STD. 840.29
-L- 18+40	1											1							1
-L- 18+40																			
-L- 19+50	1											1							1
-L- 19+50																			
-L- 19+64																			
-L- 20+64																			
-L- 21+34																			
-L- 22+59																			
-L- 22+50	1											1							1
TOTALS	3											3							3
SAY	3											3							3

STATION								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
-L- 18+40												
-L- 18+40												
-L- 19+50												EXTRA DEPTH
-L- 19+50												
-L- 19+64											47.5	REMOVE 18" CMP
-L- 20+64											58.3	REMOVE 18" CMP
-L- 21+34											56.8	REMOVE 18" CMP
-L- 22+59												
-L- 22+50												
TOTALS											162.6	
SAY											165	

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

"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.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

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	X+1 APPROACH END	X+1 TRAILING END
-L-	17+07.75	20+07.75	RT	300			BRIDGE		8		281.25		9	
-L-	21+59.09	22+96.59	RT	137.5				BRIDGE	8			118.75		9
-L-	18+91.51	20+29.41	LT	137.5			BRIDGE		3		118.75		9	
-L-	21+78.94	24+78.94	LT	300				BRIDGE	3			281.25		9
SUBTOTALS				875										
LESS ANCHOR DEDUCTIONS		4@50		-200										
		4@18.75		-75										
GRAND TOTAL				600										
SAY				625										

SURVEY LINE	BEG. STA.	ANCHORS XI MOD	XI	GRAU 350	B-77	XIII	CAT-1	VI MOD	BIC	AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	17+07.75			1	1												
-L-	21+59.09			1	1												
-L-	18+91.51			1	1												
-L-	21+78.94			1	1												
SUBTOTALS				4	4												
LESS ANCHOR DEDUCTIONS																	
GRAND TOTAL				4	4												
SAY				4	4		5 ADDITIONAL GUARDRAIL POSTS										

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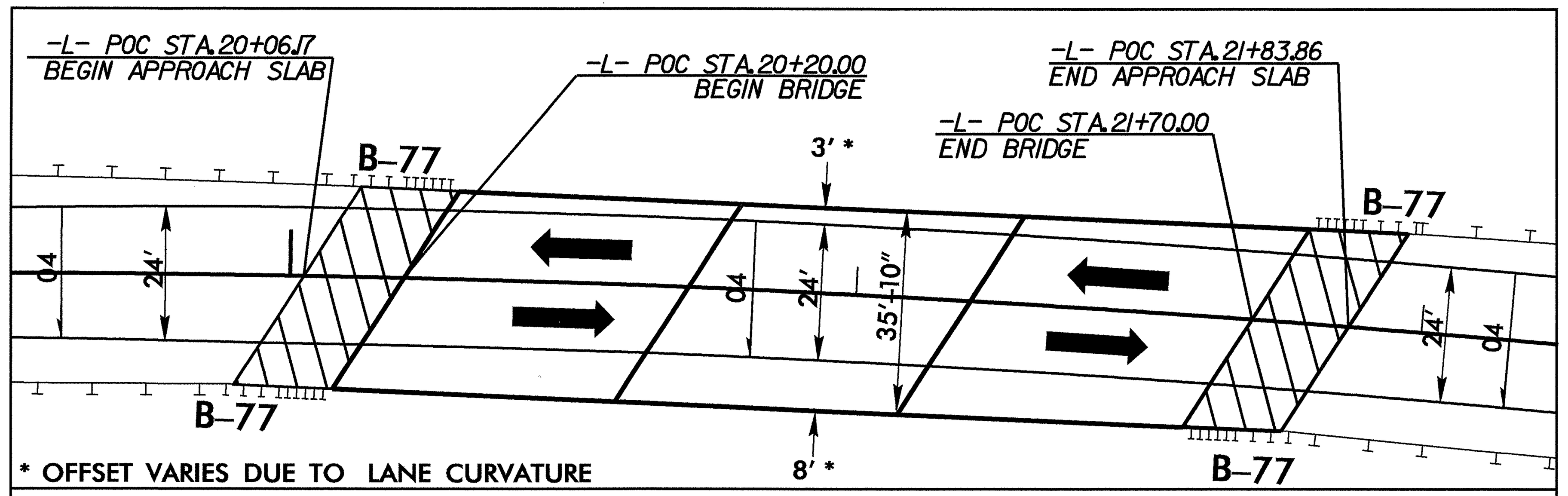
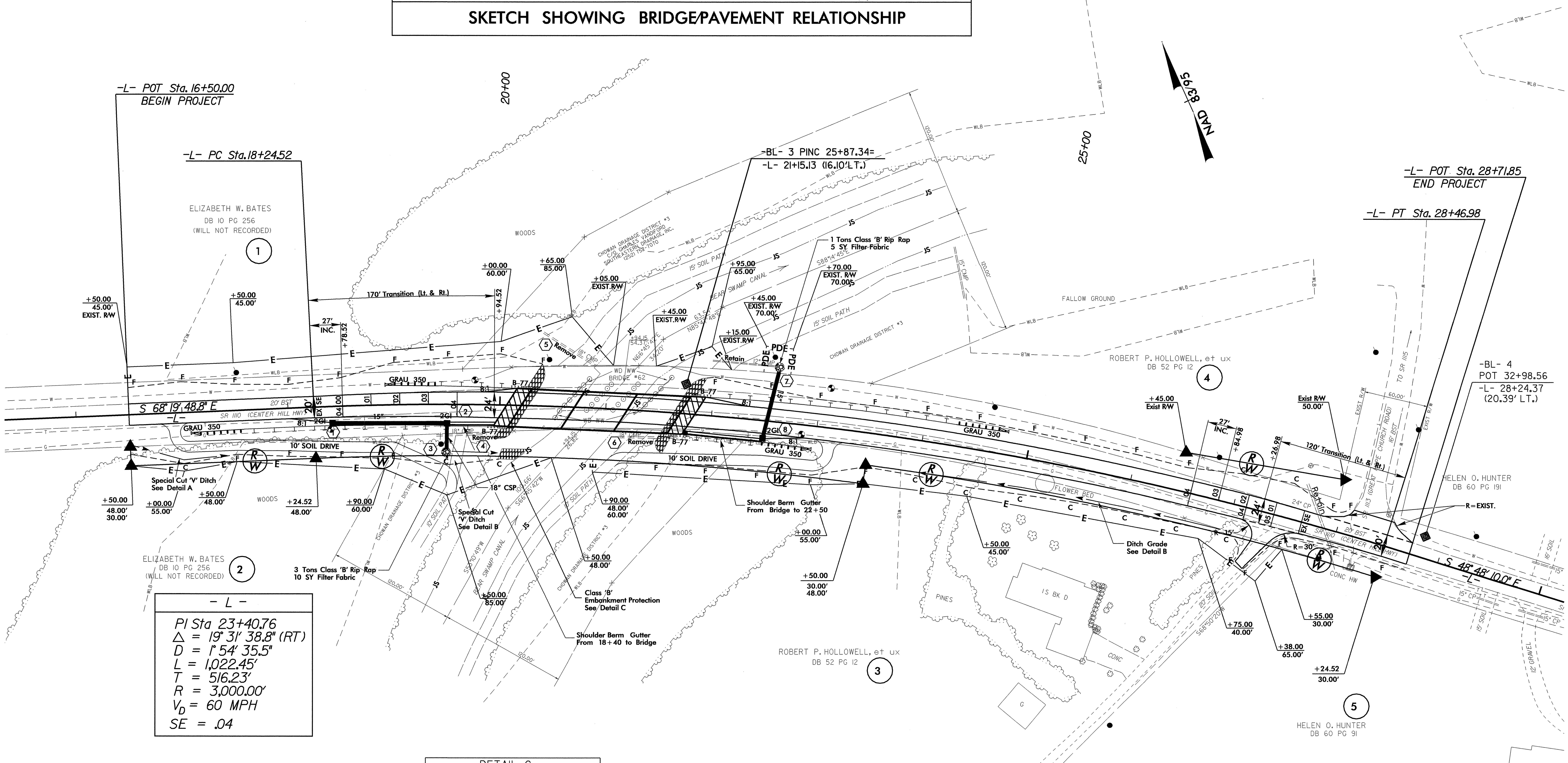
PROJECT REFERENCE NO.	SHEET NO.
B-4226	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER BRYAN C. KEY 12-18-07	NORTH CAROLINA PROFESSIONAL SEAL 22100 ENGINEER STEPHEN R. MORGAN 12-18-07

8/17/99

REVISIONS

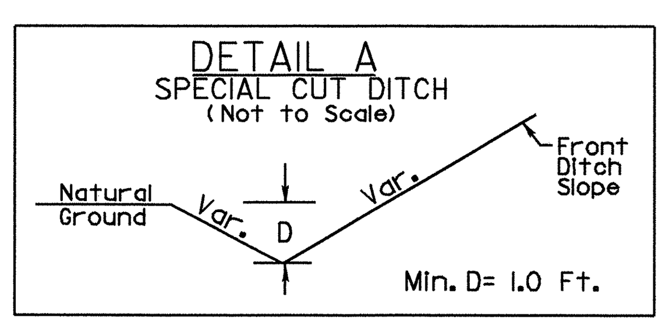


SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

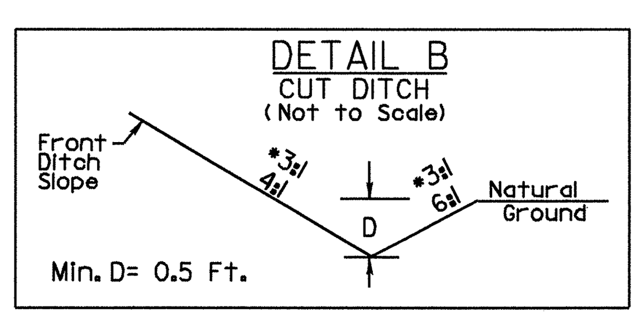


-L- POT Sta. 16+50.00
BEGIN PROJECT
-L- PC Sta.18+24.52
20+00
25+00
NAD 83/95
-BL- 3 PINC 25+87.34=
-L- 21+15.13 (16.10' LT.)
-L- POT Sta. 28+71.85
END PROJECT
-L- PT Sta. 28+46.98
-BL- 4
POT 32+98.56
-L- 28+24.37
(20.39' LT.)
ELIZABETH W. BATES
DB 10 PG 256
(WILL NOT RECORDED)
ROBERT P. HOLLOWELL, et ux
DB 52 PG 12
HELEN O. HUNTER
DB 60 PG 91
WOODS
FALLOW GROUND
PINES
170' Transition (Lt. & Rt.)
120' Transition (Lt. & Rt.)
S 68° 19' 48.8" E
S 48° 48' 10.0" E
SR 1110 (CENTER HILL HWY)
10' SOIL DRIVE
Special Cut 'V' Ditch See Detail A
Special Cut 'V' Ditch See Detail B
3 Tons Class 'B' Rip Rap 10 SY Filter Fabric
1 Tons Class 'B' Rip Rap 5 SY Filter Fabric
Class 'B' Embankment Protection See Detail C
Shoulder Berm Gutter From 18+40 to Bridge
Shoulder Berm Gutter From Bridge to 22+50
Ditch Grade See Detail B
BEAR SWAMP CANAL
CHOWAN DRAINAGE DISTRICT #3
R=EXIST.

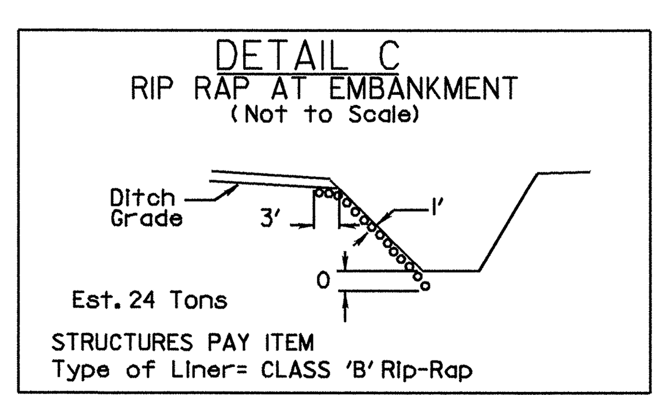
- L -
PI Sta 23+40.76
Δ = 19° 31' 38.8" (RT)
D = 1° 54' 35.5"
L = 1,022.45'
T = 516.23'
R = 3,000.00'
V_D = 60 MPH
SE = .04



FROM 16+50 TO 17+50 RT.



* FROM 19+50 TO 20+00 RT.
FROM 24+00 TO 26+00 RT.



20+50 RT.

-SEE SHEET 5 FOR -L- PROFILE.

-SEE SHEETS S-1 THRU S-24 FOR STRUCTURE PLAN.

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PROJECT REFERENCE NO.
B-4226
SHEET NO.
5
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER BRYAN C. KEY
12-18-07
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22100 ENGINEER STEPHEN R. MORGAN
12-18-07
-L- LINE
BM #10 ELEV. 12.76 RAILROAD SPIKE
IN BASE OF 16" PINE
-L- STA. 16+57, 50' RT.
BM #11 ELEV. 8.84' RAILROAD SPIKE
IN BASE OF 20" CYPRESS
-L- STA. 22+71, 41' RT.
BRIDGE HYDRAULIC DATA
DESIGN DISCHARGE = 1200 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 10.4 FT
BASE DISCHARGE = 1850 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 12.2 FT
OVERTOPPING DISCHARGE = 2300 CFS
OVERTOPPING FREQUENCY = 100 YRS
OVERTOPPING ELEVATION = 13 FT
BEGIN GRADE
-L- STA. 18+24.52
EL. = 14.20
BEGIN RESURFACING
-L- STA. 16+50.00
BEGIN BRIDGE
-L- STA. 20+20.00
END BRIDGE
-L- STA. 21+70.00
BEGIN APPROACH SLAB
-L- STA. 20+06.17
END APPROACH SLAB
-L- STA. 21+83.86
END GRADE
-L- STA. 27+65.98
EL. = 13.65
SR 1113 GREAT HOPE CHURCH ROAD
-L- STA. 28+25.68
END RESURFACING
-L- STA. 28+71.85
BEGIN DITCH GRADE
-L- STA. 16+50.00 LT
EL. = 10.00
END DITCH GRADE
-L- STA. 17+50.00 LT
EL. = 9.50
PI = 19+20.00
EL = 14.18'
VC = 180'
K = 342
V = 80+mph
PI = 21+00.00
EL = 15.09'
VC = 180'
K = 200
V = 65mph
PI = 25+50.56
EL = 13.32'
VC = 180'
K = 330
V = 80+mph
(-)0.0209%
(+)0.5056%
(-)0.3928%
(+)0.1532%
(-) 0.5000%
(-) 0.5000%
(+) 0.0000%
(+) 0.2000%
BEGIN DITCH GRADE
-L- STA. 16+50.00 RT
EL. = 9.25
END DITCH GRADE
-L- STA. 17+50.00 RT
EL. = 8.689
BEGIN DITCH GRADE
-L- STA. 19+50.00 RT
EL. = 6.00
END DITCH GRADE
-L- STA. 20+00.00 RT
EL. = 6.00
SEE STRUCTURE PLANS FOR UNCLASSIFIED STRUCTURE EXCAVATION
BEGIN DITCH GRADE
-L- STA. 24+00.00 RT
EL. = 10.30
END DITCH GRADE
-L- STA. 27+00.00 RT
EL. = 10.90
DITCH LEGEND
LEFT DITCH
RIGHT DITCH
SEE SHEET 4 FOR PLAN VIEW
20
10
0
-10
-20
-30
-40
-50
16
17
18
19
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21
22
23
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