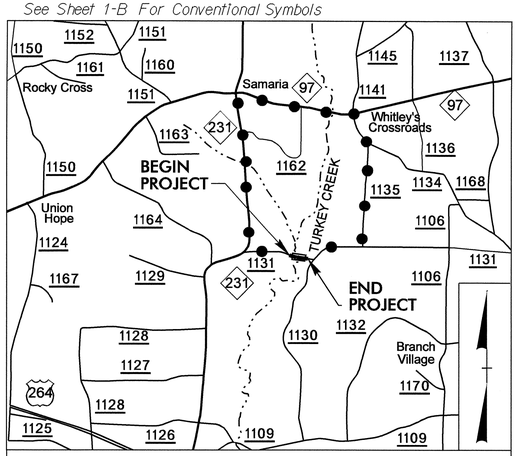
09/08/99

TIP PROJECT: B-4209

CONTRACT: C201853

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



VICINITY MAP

OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

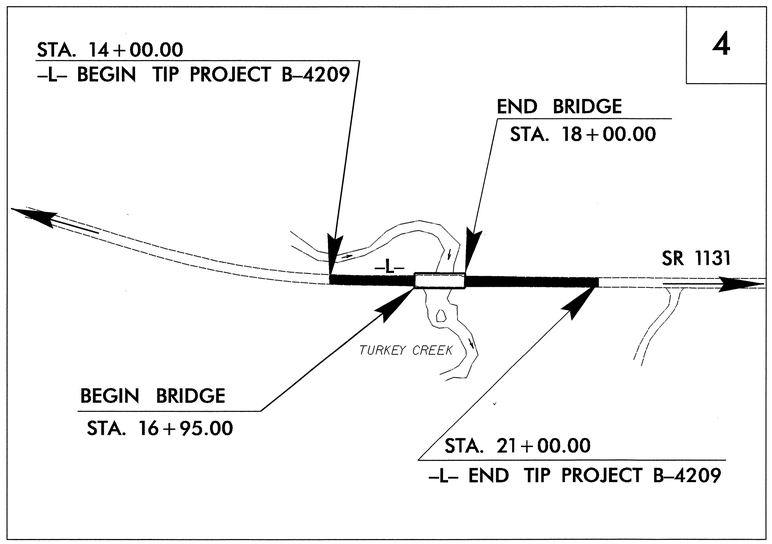
NASH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4209	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33555.1.1	BRZ-1131(6)	P.E.
33555.2.1	BRZ-1131(6)	ROW, UTIL
33555.3.1	BRZ-1131(6)	CONST.

LOCATION: BRIDGE NO. 17 OVER TURKEY CREEK ON SR 1131

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



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 = 430
ADT 2028 = 750
DHV = 10 %
D = 60 %
T = 3 % *
V = 60 MPH
* (TTST 1% + DUAL 2%)
FUNC CLASS = LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4209	=	0.113 MI
LENGTH STRUCTURE TIP PROJECT B-4209	=	0.020 MI
TOTAL LENGTH TIP PROJECT B-4209	=	0.133 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 15, 2007

LETTING DATE: JUNE 17, 2008

BRENDA MOORE, P.E.
PROJECT ENGINEER

THAD F. DUNCAN, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20870 ENGINEER MARK T. SHOWN
SIGNATURE: P.E. 3-17-09

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25477 ENGINEER THAD F. DUNCAN
3-17-08
SIGNATURE:

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •
P.E.
STATE HIGHWAY DESIGN ENGINEER

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4209	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25477 ENGINEER THAD F. DUNCAN

3-17-08

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. WEDGING DETAIL. AND DETAIL SHOWING EXTRA LENGTH GUARDRAIL POST
2A	ANCHORAGE FOR FRAMES
3	SUMMARY OF QUANTITIES
3A	LIST OF PIPES. ENDWALLS. ETC. (FOR PIPES 48" & UNDER)
3B	GUARDRAIL SUMMARY. SUMMARY OF EARTHWORK. AND SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-2	TRAFFIC CONTROL PLANS
RF-1	REFORESTATION PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-4	SIGNING PLANS
SD-1	SPECIAL SIGN DESIGN
UO-1 THRU UO-2	UTILITIES BY OTHERS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-3	CROSS-SECTIONS
S-1 THRU S-19	STRUCTURE PLANS

GENERAL NOTES:

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

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

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.

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 Embarq (Telephone)

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.

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 5 - SUBGRADE. BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
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
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

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3/15/06

PROJECT REFERENCE NO.	SHEET NO.
B-4209	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

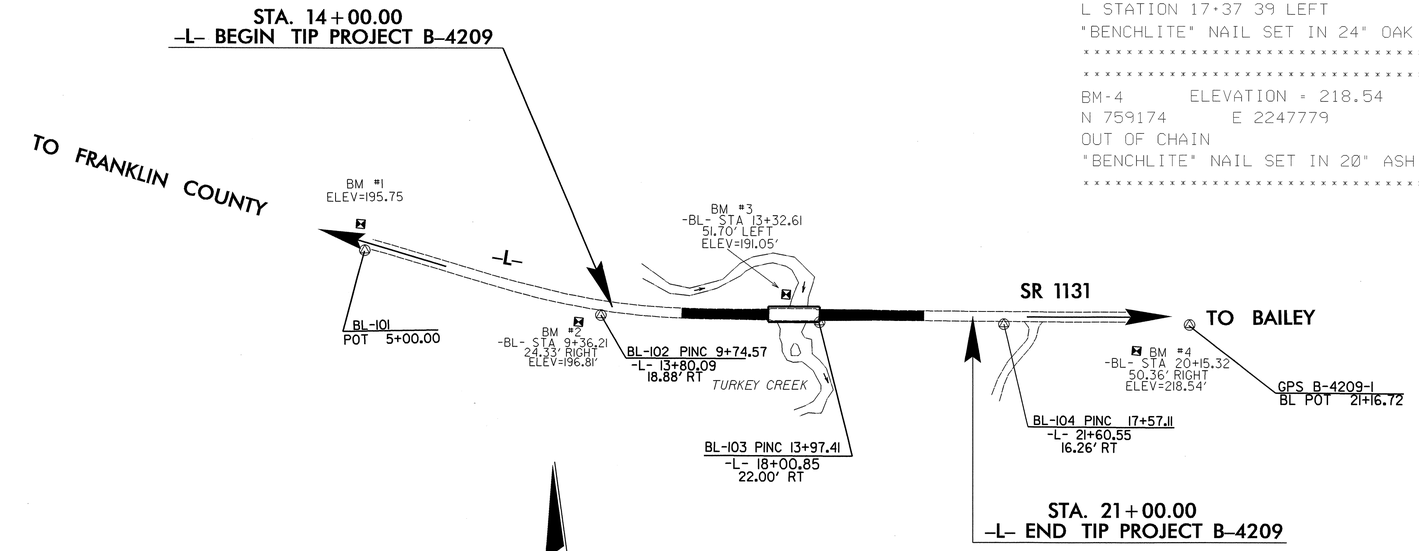
PROJECT REFERENCE NO.	SHEET NO.
B-4209	1-C
Location and Surveys	

SURVEY CONTROL SHEET B-4209

CONTROL DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
101	BL-101	759569.3310	2246321.2550	194.11	OUTSIDE PROJECT LIMITS	
102	BL-102	759384.1170	2246758.1870	195.73	13+80.09	18.89 RT
103	BL-103	759312.7080	2247174.9570	194.80	18+00.85	14.13 RT
104	BL-104	759260.1890	2247530.8050	203.66	21+60.55	14.63 RT
1	GPS B4209-1	759208.9940	2247886.7510	224.54	OUTSIDE PROJECT LIMITS	




```
**********************************************
BM-1      ELEVATION = 195.75
N 759622      E 2246321
OUT OF CHAIN
"BENCHLITE" NAIL SET IN 24" POPLAR
**********************************************
**********************************************
BM-2      ELEVATION = 196.81
N 759377      E 2246713
L STATION 13+40 39 RIGHT
"BENCHLITE" NAIL SET IN 15" POPLAR
**********************************************
**********************************************
BM-3      ELEVATION = 191.05
N 759375      E 2247120
L STATION 17+37 39 LEFT
"BENCHLITE" NAIL SET IN 24" OAK
**********************************************
**********************************************
BM-4      ELEVATION = 218.54
N 759174      E 2247779
OUT OF CHAIN
"BENCHLITE" NAIL SET IN 20" ASH
**********************************************
```

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B-4209-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 759,208.994(ft) EASTING: 2,247,886.751(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991806 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B-4209-1" TO -L- STATION 14+00.00 IS N80°20'58"W 1,119.94(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
HTTP:\WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT
FILE : B4209_LS_CONTROL_070508.TXT
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
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 USER POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
B-4209	2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25477 ENGINEER THAD F. DUNCAN

3-19-08

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON

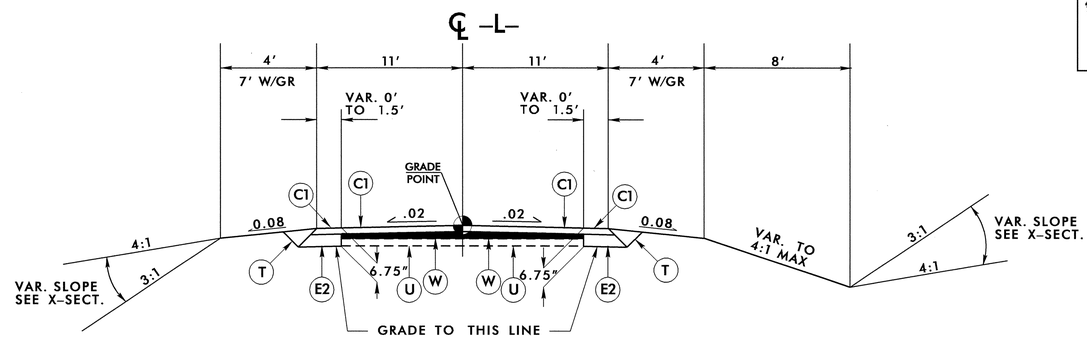
3/19/08

PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	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.
C2A	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E3	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.
T	EARTH MATERIAL.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET.)

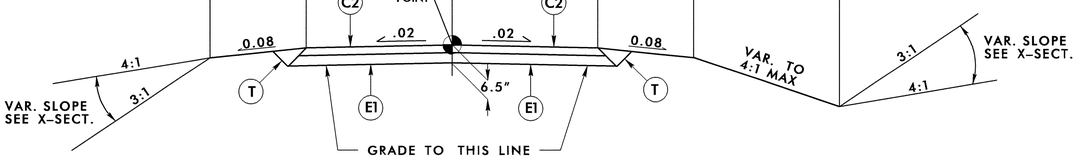
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

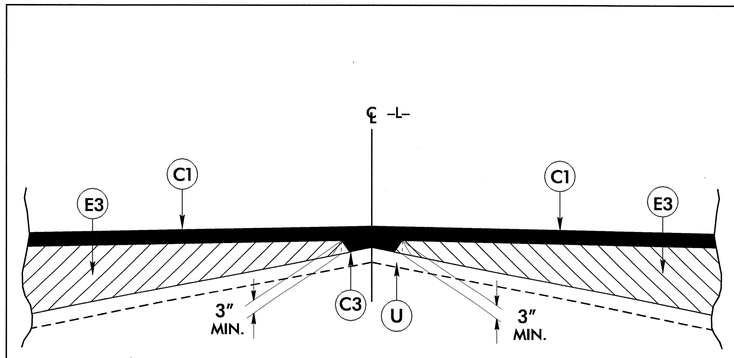
–L– STA. 14+00.00 TO –L– STA. 14+50.00 TAPER FROM EXIST.
–L– STA. 14+50.00 TO –L– STA. 16+50.00
–L– STA. 18+50.00 TO –L– STA. 20+50.00
–L– STA. 20+50.00 TO –L– STA. 21+00.00 TAPER TO EXIST.



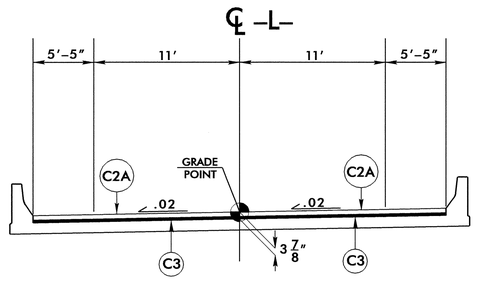
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

–L– STA. 16+50.00 TO –L– STA. 16+95.00 (BEG. BRIDGE)
–L– STA. 18+00.00 (END BRIDGE) TO –L– STA. 18+50.00

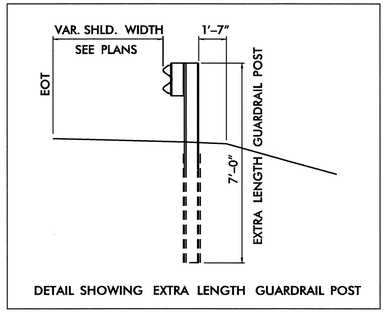


Detail Showing Method of Wedging



TYPICAL BRIDGE DETAIL NO. 1

–L– STA. 16+95.00 TO STA. 18+00.00



DETAIL SHOWING EXTRA LENGTH GUARDRAIL POST

–L– STA. 15+57.50 TO 16+95.00 LT
–L– STA. 14+07.50 TO 16+95.00 RT
–L– STA. 18+00.00 TO 19+37.50 RT
–L– STA. 18+00.00 TO 20+87.50 LT

6/2/99

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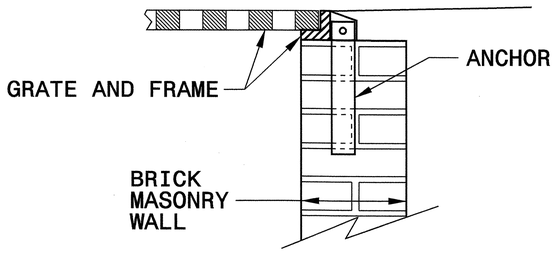
PROJECT REFERENCE NO.	SHEET NO.
B-4209	2-A

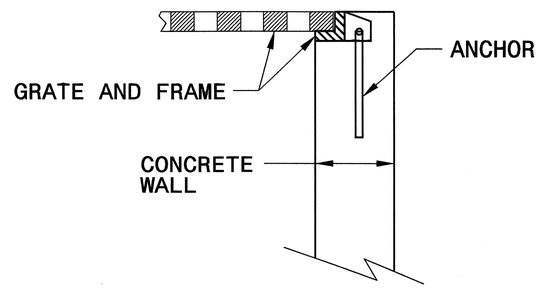
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

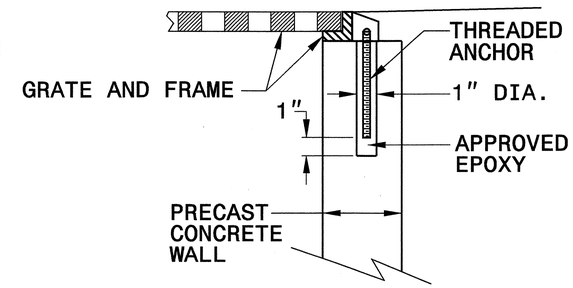
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



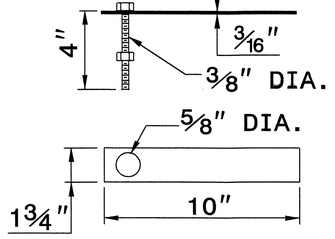
CONCRETE CONSTRUCTION



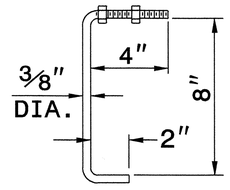
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

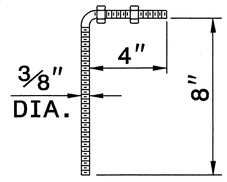
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



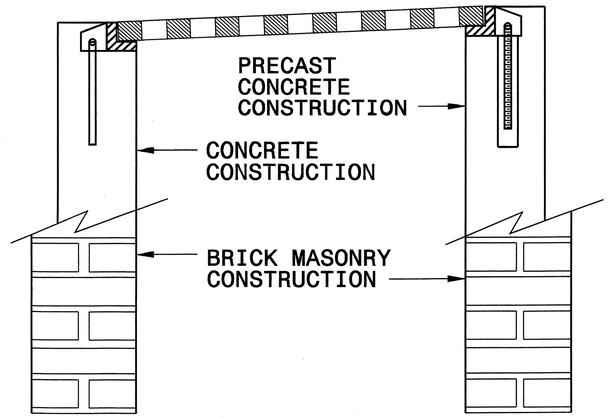
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



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
3/19/08

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.:

01-MAR-2007 09:04
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jhowerton
AT PS21260

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4209	3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201853

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	300	CY	UNDERCUT EXCAVATION
0195000000-E	265	200	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	200	SY	FABRIC FOR SOIL STABILIZATION
0318000000-E	300	13	TON	FOUNDATION CONDITIONING MATE-RIAL, MINOR STRS
1220000000-E	545	50	TON	INCIDENTAL STONE BASE
1489000000-E	610	275	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	345	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1560000000-E	620	35	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
1693000000-E	654	20	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2000000000-N	806	8	EA	RIGHT OF WAY MARKERS
2022000000-E	815	22.4	CY	SUBDRAIN EXCAVATION
2033000000-E	815	16.8	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE
2055000000-E	815	3	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
2066000000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
2286000000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	105	LF	SHOULDER BERM GUTTER
3030000000-E	862	575	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	1	TON	RIP RAP, CLASS B
3656000000-E	876	180	SY	FILTER FABRIC FOR DRAINAGE
4072000000-E	903	45	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4096000000-N	904	2	EA	SIGN ERECTION, TYPE D
4102000000-N	904	2	EA	SIGN ERECTION, TYPE E
4155000000-N	907	7	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4400000000-E	1110	282	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4445000000-E	1145	64	LF	BARRICADES (TYPE III)
4810000000-E	1205	5,600	LF	PAINT PAVEMENT MARKING LINES (4")
4900000000-N	1251	9	EA	PERMANENT RAISED PAVEMENT MARKERS
6000000000-E	1605	375	LF	TEMPORARY SILT FENCE
6006000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	100	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	60	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	1	ACR	TEMPORARY MULCHING
6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEED-ING
6024000000-E	1622	50	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	2	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	180	LF	SAFETY FENCE
6030000000-E	1630	350	CY	SILT EXCAVATION
6036000000-E	1631	675	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	20	SY	COIR FIBER MAT
6042000000-E	1632	150	LF	1/4" HARDWARE CLOTH
6071030000-E	SP	125	LF	COIR FIBER BAFFLES
6071050000-E	SP	3	EA	** SKIMMER (1-1/2")
6084000000-E	1660	1.5	ACR	SEEDING & MULCHING
6087000000-E	1660	0.5	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	0.75	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
				******* BEGIN SCHEDULE AA *******
				******* (3 ALTERNATES) *******
0366000000-E AA1	310	112	LF	15" RC PIPE CULVERTS, CLASS III
				*** OR ***
0366000000-E AA2	310	72	LF	15" RC PIPE CULVERTS, CLASS III
0536000000-E AA2	SP	40	LF	***" HDPE PIPE CULVERTS (15")
				*** OR ***
0366000000-E AA3	310	72	LF	15" RC PIPE CULVERTS, CLASS III
0540000000-E AA3	SP	40	LF	***" ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ***** THICK (15", 0.064")
				******* END SCHEDULE AA *******

RD226355

COMPUTED BY: rwb DATE: 3/21/2007

CHECKED BY: TFD DATE: 3/3/2008

PROJECT NO.	SHEET NO.
B-4209	3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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"	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE) 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	CLASS III R.C. PIPE OR ALUMINIZED C.S.PIPE, TYPE IR OR HDPE, TYPE S OR D 12"	15"	18"	24"	30"	36"	42"	48"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	30" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANITIES 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	T.B.G.D.I. STD. 840.35	FRAME & N.S. FLAT 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
18+26	LT	1		194.9'																																		1							1	1					
18+26	LT	1	2		191.7'	191.5'			72'																																									
19+00	LT	2		195.3'																																		1							1	1					
19+00	LT	2	3		191.5'	191.0'																				40'																								
PROJECT TOTALS									72'																	40'												2							2	2					

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.G.D.I.	TRAFFIC BEARING GRATED DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

COMPUTED BY: rwb DATE: 3/21/07
CHECKED BY: TFD DATE: 2-29-08

PROJECT NO.	SHEET NO.
B-4209	3-B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L-					
14+00.00	16+95.00	2	276	274	
18+00.00	21+00.00	56	91	35	
TOTAL		58	367	309	
5% UNCL. EXC. IS UNSUITABLE				3	3
TOTALS:		58	367	312	3
EST. 5% TO REPL. BORROW PIT				16	
GRAND TOTALS:		58	367	328	3
SAY:		75 CY		350 CY	

ADDITIONAL UNDERCUT: 300 CY TO BE INCLUDED AS A CONTINGENCY ITEM

SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL

IN SQUARE YARDS

LINE	Station	Station	LOC LT/RT/CL	AREA SY
REMOVAL OF EXISTING ASPHALT PAVEMENT				
-L-	16+50.00	17+09.27	CL	133
-L-	17+95.50	18+50.00	CL	120
			TOTAL:	253
			SAY:	255 SY

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

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

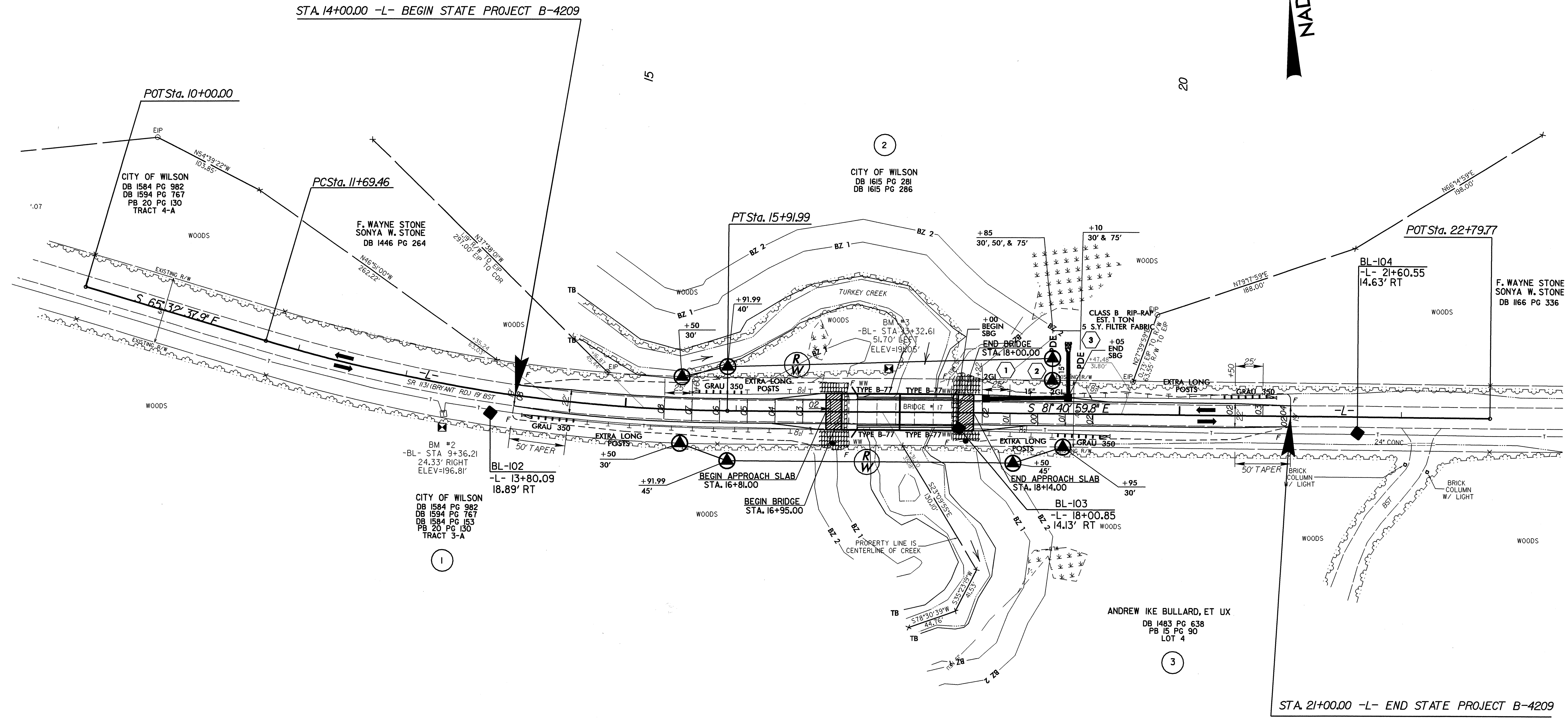
"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

LINE	BEG. STA.	END STA.	LOC.	LENGTH				WARRANT POINT		"N" DIST.	TOTAL	FLARE LENGTH		W		ANCHORS							ADDITIONAL GUARDRAIL POSTS	REMARKS
				STRAIGHT	TEMP STRAIGHT	SHOP CURVED	TEMP SHOP CURVED	APPR. END	TRAIL. END	FROM E.O.L.	SHLDR WIDTH	APPR. END	TRAIL. END	APPR. END	TRAIL. END	TYPE B-77		GRAU 350						
-L-	15+57.50	16+95.00	LEFT	137.5				16+95.00		5'-5"	7		50		1	1		1						EXTRA LONG POSTS
-L-	14+07.50	16+95.00	RIGHT	287.5					16+95.00	5'-5"	7	50		1		1		1						EXTRA LONG POSTS
-L-	18+00.00	19+37.50	RIGHT	137.5				18+00.00		5'-5"	7		50		1	1		1						EXTRA LONG POSTS
-L-	18+00.00	20+87.50	LEFT	287.5					18+00.00	5'-5"	7	50		1		1		1						EXTRA LONG POSTS
SUBTOTAL:				850.00												4		4						
ADDITIONS:																							5	
LESS ANCHORS DEDUCTIONS:																								
GRAU-350	4@ 50 = 200			-200																				
TYPE B-77	4@ 18.75 = 75			-75.00																				
ANCHOR TOTALS:				-275.00																				
GRAND TOTAL:				575.00 LF												4		4					5	
SAY:				**575 LF**												**4**		**4**					**5**	

PROJECT REFERENCE NO.	SHEET NO.
B-4209	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25477 ENGINEER THAD F. DUNCAN 3-17-08	NORTH CAROLINA PROFESSIONAL SEAL ENGINEER MARC T. SHOWN 3-17-08

REVISIONS

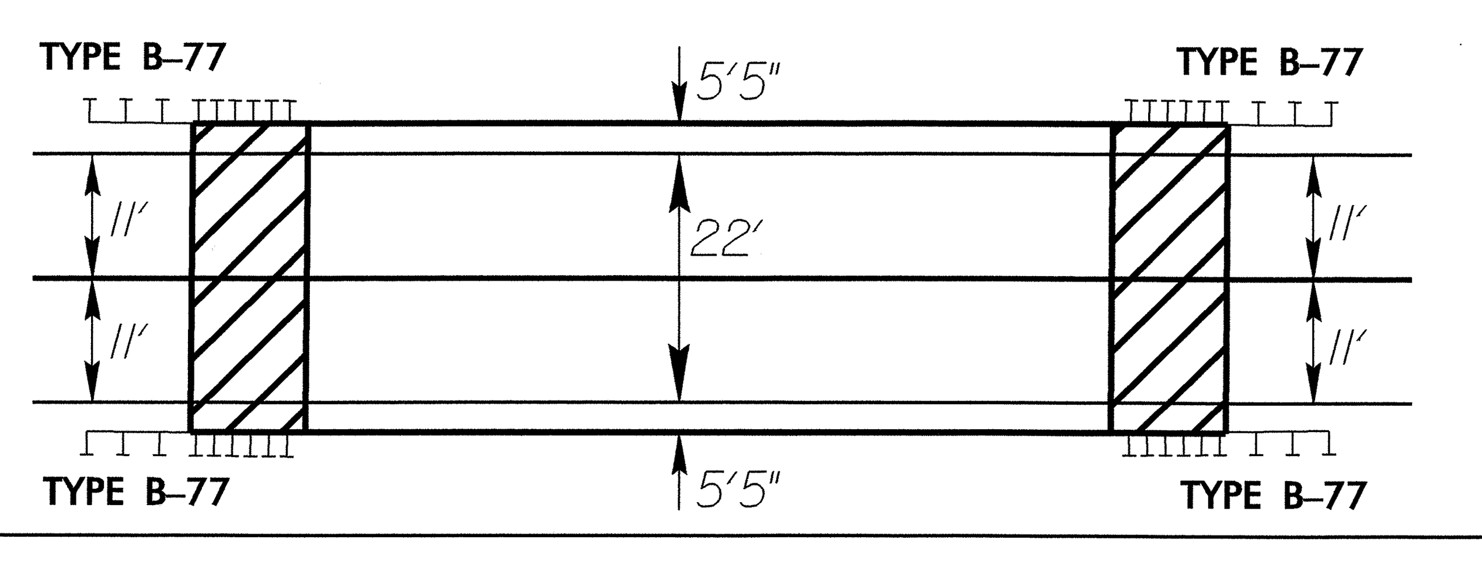


NAD 83/95
STA. 14+00.00 -L- BEGIN STATE PROJECT B-4209
POT Sta. 10+00.00
PC Sta. 11+69.46
PT Sta. 15+91.99
POT Sta. 22+79.77
CITY OF WILSON
DB 1584 PG 982
DB 1594 PG 767
PB 20 PG 130
TRACT 4-A
F. WAYNE STONE
SONYA W. STONE
DB 1446 PG 264
CITY OF WILSON
DB 1615 PG 281
DB 1615 PG 286
TURKEY CREEK
S 65° 32' 37.9" E
SR 1131 (BRYANT RD) (BST)
EXISTING R/W
WOODS
BM #2
-BL- STA 9+36.21
24.33' RIGHT
ELEV=196.81'
BL-102
-L- 13+80.09
18.89' RT
CITY OF WILSON
DB 1584 PG 982
DB 1594 PG 767
DB 1584 PG 153
PB 20 PG 130
TRACT 3-A
GRAU 350
50' TAPER
EXTRA LONG POSTS
BM #3
-BL- STA 13+32.61
51.70' LEFT
ELEV=191.05'
TYPE B-77
BRIDGE # 17
S 81° 40' 59.8" E
BEGIN APPROACH SLAB
STA. 16+81.00
BEGIN BRIDGE
STA. 16+95.00
END BRIDGE
STA. 18+00.00
END APPROACH SLAB
STA. 18+14.00
BEGIN SBG
END SBG
BL-103
-L- 18+00.85
14.13' RT
CLASS B RIP-RAP
EST. 1 TON
5 S.Y. FILTER FABRIC
PROPERTY LINE IS CENTERLINE OF CREEK
ANDREW IKE BULLARD, ET UX
DB 1483 PG 638
PB 15 PG 90
LOT 4
BL-104
-L- 21+60.55
14.63' RT
F. WAYNE STONE
SONYA W. STONE
DB 1166 PG 336
BRICK COLUMN W/ LIGHT
24" CONC
STA. 21+00.00 -L- END STATE PROJECT B-4209

-L-

PI Sta 13+82.13
Δ = 16° 08' 21.9" (LT)
D = 3° 49' 11.0"
L = 422.53'
T = 212.67'
R = 1,500.00'
RO = 200'
SE = .08

SKETCH OF BRIDGE IN RELATIONSHIP TO PAVEMENT



SBG: SHOULDER BERM GUTTER
FOR -L- PROFILE SEE SHEET 5
FOR STRUCTURE SEE SHEETS S1-S19

8/17/99
12-MAR-2008 11:42
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PROJECT REFERENCE NO.	SHEET NO.
B-4209	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25477 ENGINEER THAD F. DUNCAN 3-17-08	NORTH CAROLINA PROFESSIONAL SEAL ENGINEER MARC T. SHOWN 3-17-08

5/14/99

-L-

STRUCTURE HYDRAULIC DATA		
DESIGN DISCHARGE	= 4200	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 194.0	FT
BASE DISCHARGE	= 6200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 195.2	FT
OVERTOPPING DISCHARGE	= 6200	CFS
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING ELEVATION	= 195.5	FT

BM #3
NAIL SET IN 24" OAK
51.70' LEFT OF -BL- STA. 13+32.61 ELEV. 191.05