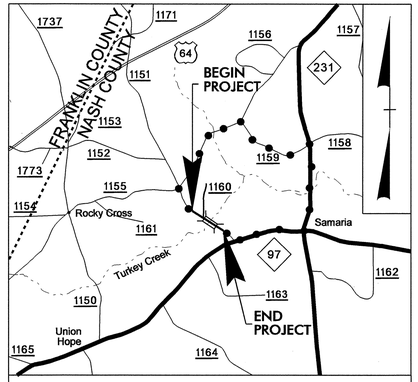
09/08/99

TIP PROJECT: B-4210

CONTRACT: C201854

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

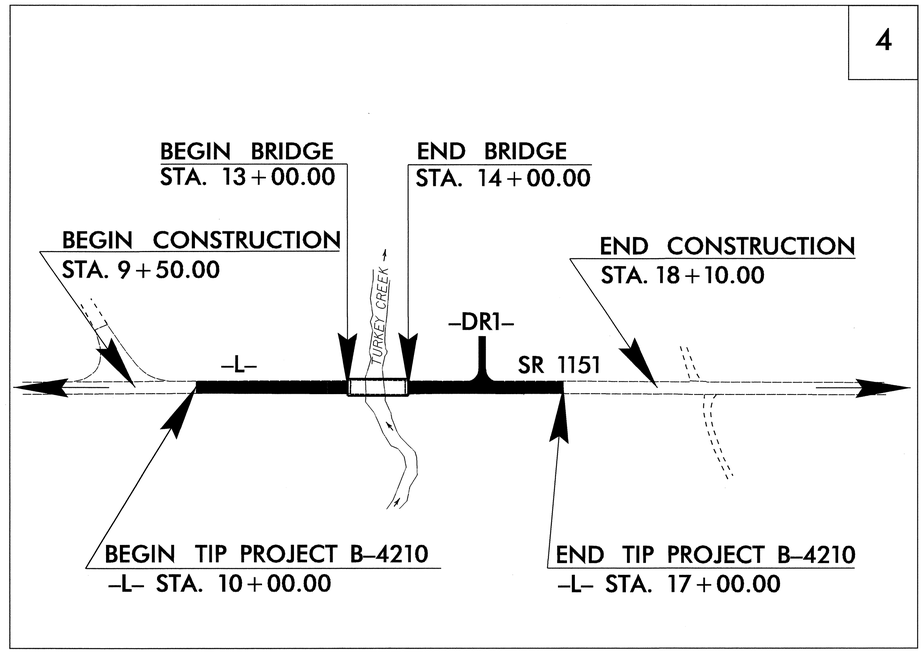
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4210	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33556.1.1	BRZ-1151(4)	P.E.
33556.3.1	BRZ-1151(4)	ROW, UTIL
33556.2.2	BRZ-1151(4)	CONST.

LOCATION: BRIDGE NO. 95 OVER TURKEY CREEK ON SR 1151

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

NAD 83/95



** DESIGN EXCEPTION REQUIRED FOR THE SAG VERTICAL CURVE K OF 104 AND THE VERTICAL SSD OF 425'.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 730
ADT 2028 = 1050
DHV = 10 %
D = 60 %
T = 3 % *
V = 60 MPH
* (TTST 1% + DUAL 2%)
FUNC CLASS = LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4210 = 0.114 MI
LENGTH STRUCTURES TIP PROJECT B-4210 = 0.019 MI
TOTAL LENGTH TIP PROJECT B-4210 = 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 MARC T. SHOWN P.E.
3-25-08
SIGNATURE:

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25477 ENGINEER THAD F. DUNCAN P.E.
3-25-08
SIGNATURE:

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

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4210	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25477 ENGINEER MAD F. DUNCAN

3-25-08

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 WEDGING DETAIL
2-A	ANCHORAGE FOR FRAMES
2-B	CONCRETE DRIVEWAY DETAIL
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 BREAKING/REMOVAL
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-4	TRAFFIC CONTROL PLANS
RF-1	REFORESTATION PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
SD-1	SPECIAL SIGN DESIGN
UO-1 THRU UO-2	UTILITIES BY OTHERS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-4	CROSS-SECTIONS
S-1 THRU S-18	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.

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.

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

Progress Energy, Embarq, Time Warner Cable

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'
310.10	Driveway Pipe Construction
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 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
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
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

PROJECT REFERENCE NO.	SHEET NO.
B-4210	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 High Quality Wetland Boundary — HQ 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
- River Basin Buffer — RBB
- 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
- 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.

SURVEY CONTROL SHEET B-4210

WBS REFERENCE NO.	SHEET NO.
B-4210	1C
Location and Surveys	

BENCHMARK DATA

****
BM #1 ELEVATION 228.02'
N 769820 E 2237754
OUT OF PROJECT LIMITS
RR SPIKE IN BASE OF 8" PINE

****
****
BM #2 ELEVATION 221.56'
N 769425 E 2238195
L STATION 13+09 46 RIGHT
RR SPIKE IN BASE OF 10" MAPLE

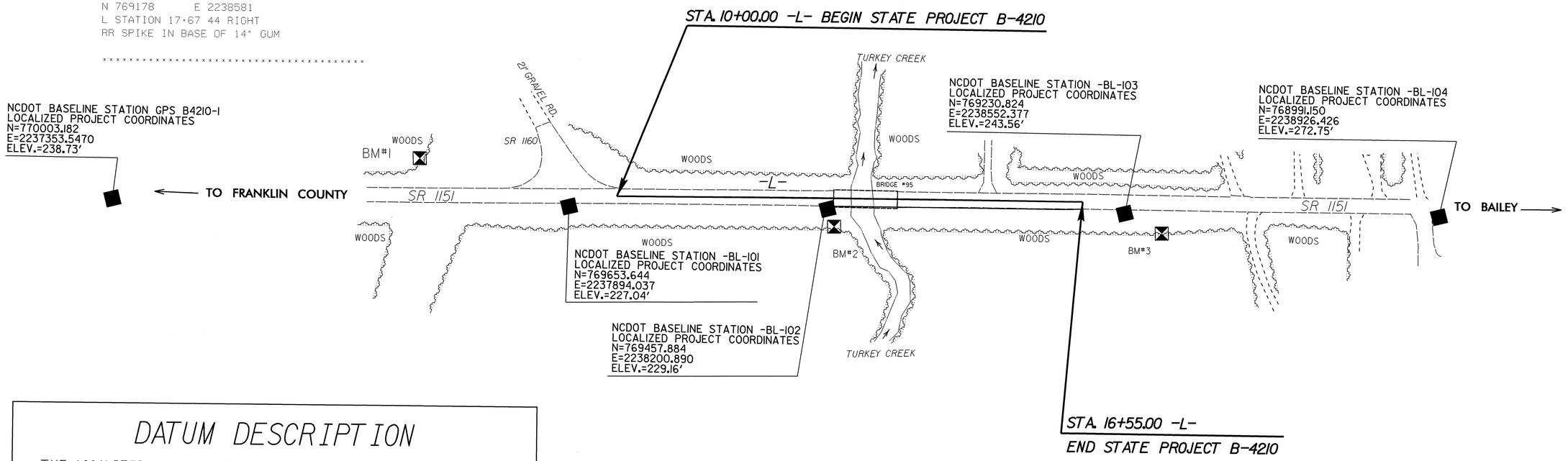
****
BM #3 ELEVATION 242.34'
N 769178 E 2238581
L STATION 17+67 44 RIGHT
RR SPIKE IN BASE OF 14" GUM

****

CONTROL DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	GPS B-4210-1	770003.1820	2237353.5470	238.73'	OUTSIDE PROJECT LIMITS	
101	-BL- 101	769653.6440	2237894.0370	227.04'	OUTSIDE PROJECT LIMITS	
102	-BL- 102	769457.8840	2238200.8900	229.16'	12+96.05	15.12 RT
103	-BL- 103	769230.8240	2238552.3770	243.56'	17+14.49	15.55 RT
104	-BL- 104	768991.1500	2238926.4260	272.75'	OUTSIDE PROJECT LIMITS	



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS B4210-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 770003.182(ft) EASTING: 2237353.547(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99992312
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS B4210-1" TO -L- STATION 10+00 IS S 58° 20' 17" E 711.74'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

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 : B4210_LS_CONTROL_070209.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.
CONTROL NETWORK FOR B4210 ESTABLISHED USING NGS ONLINE POSITIONING USER SERVICE (OPUS).

NOTE: DRAWING NOT TO SCALE

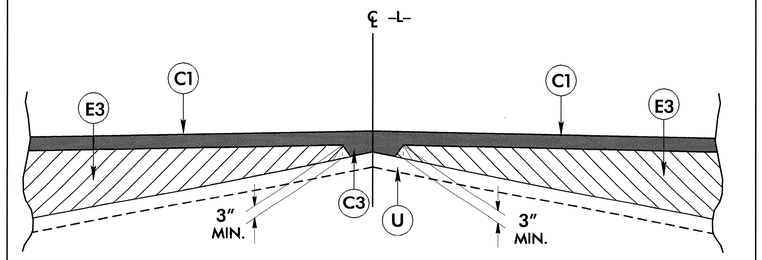
6/2/99

PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

A1	6" JOINTED CONCRETE REINFORCED WITH WIRE MESH.
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.
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. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 684 LBS. PER SQ. YD. PLACED IN ONE LIFT.
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.
J1	PROP. 4" AGGREGATE BASE COURSE.
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.



Detail Showing Method of Wedging

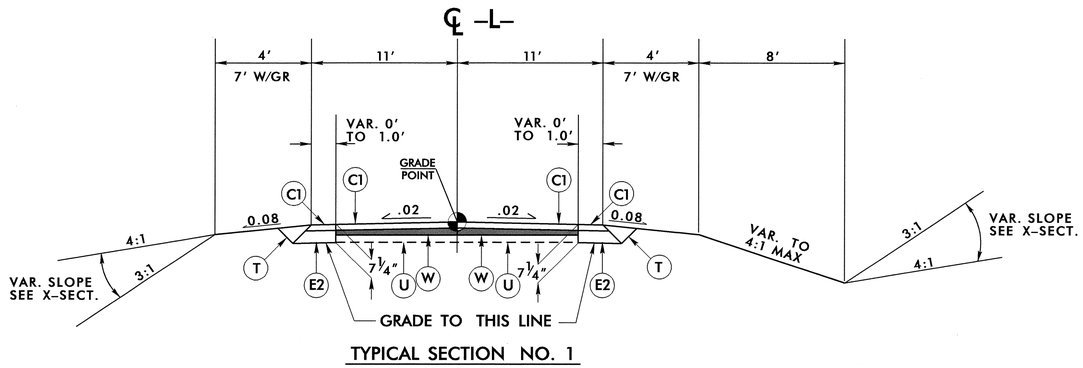
PROJECT REFERENCE NO.	SHEET NO.
B-4210	2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25477 ENGINEER THAD F. DUNCAN 3-25-08

PAVEMENT DESIGN ENGINEER

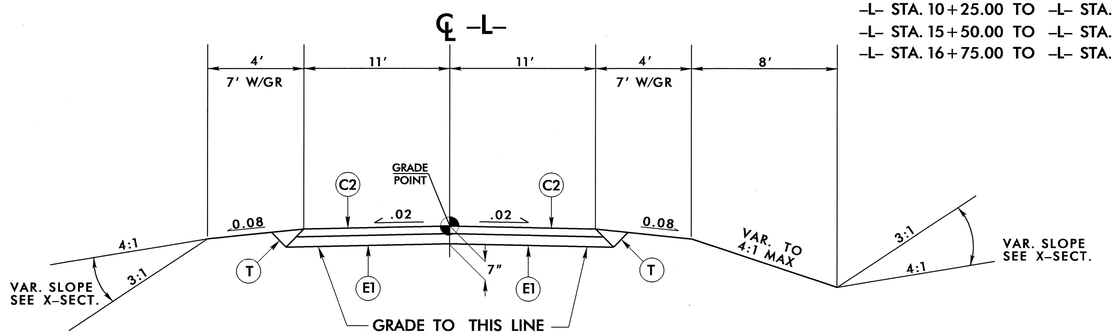
NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON 3/26/08



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

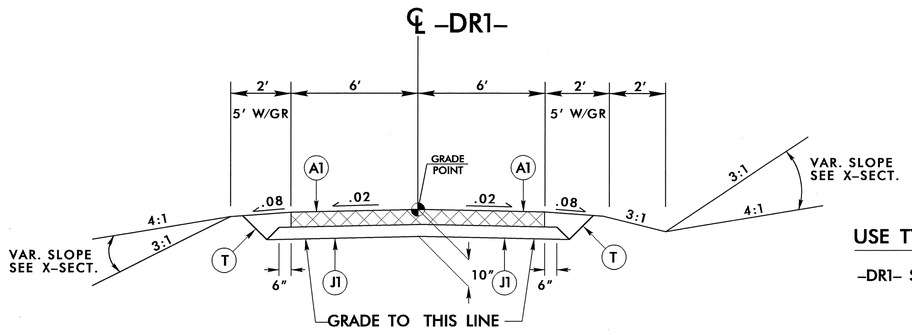
–L– STA. 10+00.00 TO –L– STA. 10+25.00 TAPER FROM EXIST.
–L– STA. 10+25.00 TO –L– STA. 12+50.00
–L– STA. 15+50.00 TO –L– STA. 16+75.00
–L– STA. 16+75.00 TO –L– STA. 17+00.00 TAPER TO EXIST.



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

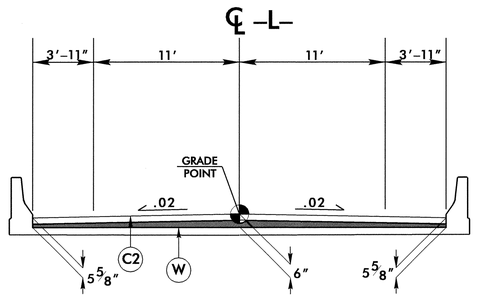
–L– STA. 12+50.00 TO –L– STA. 13+00.00 (BEG. BRIDGE)
–L– STA. 14+00.00 (END BRIDGE) TO –L– STA. 15+50.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

–DR1– STA. 10+00.00 TO –DR1– STA. 10+53.72

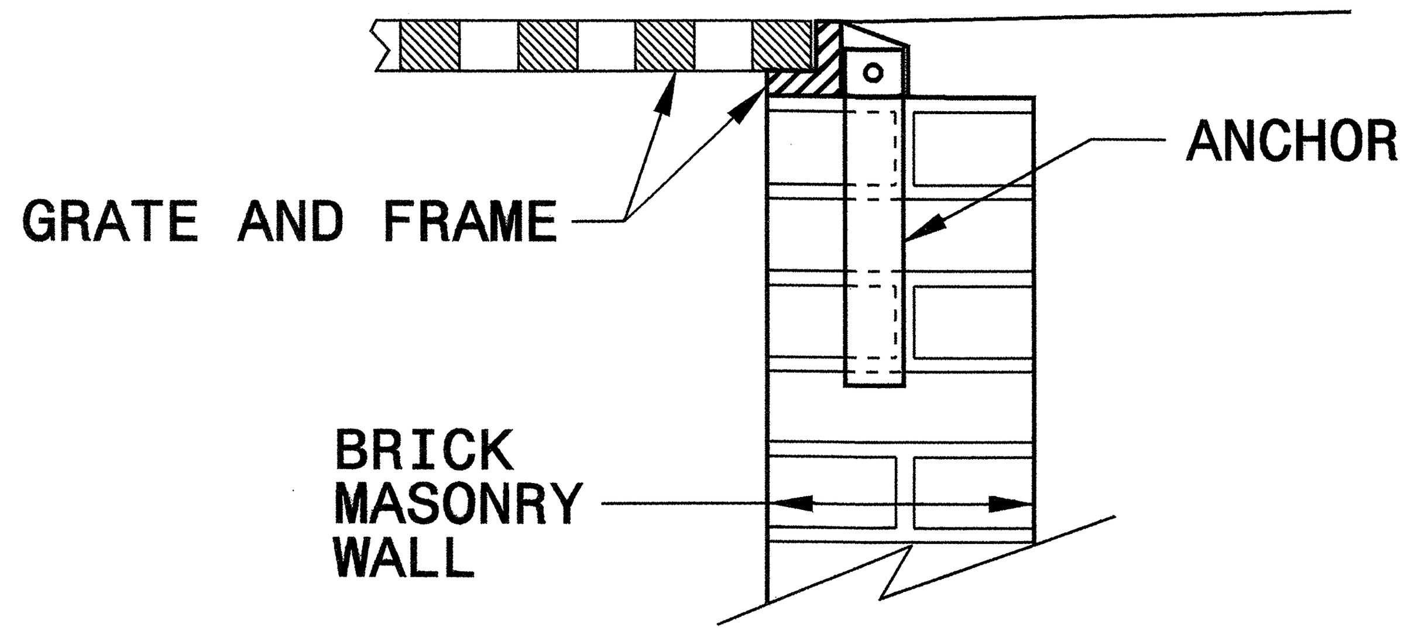


TYPICAL BRIDGE DETAIL NO. 1

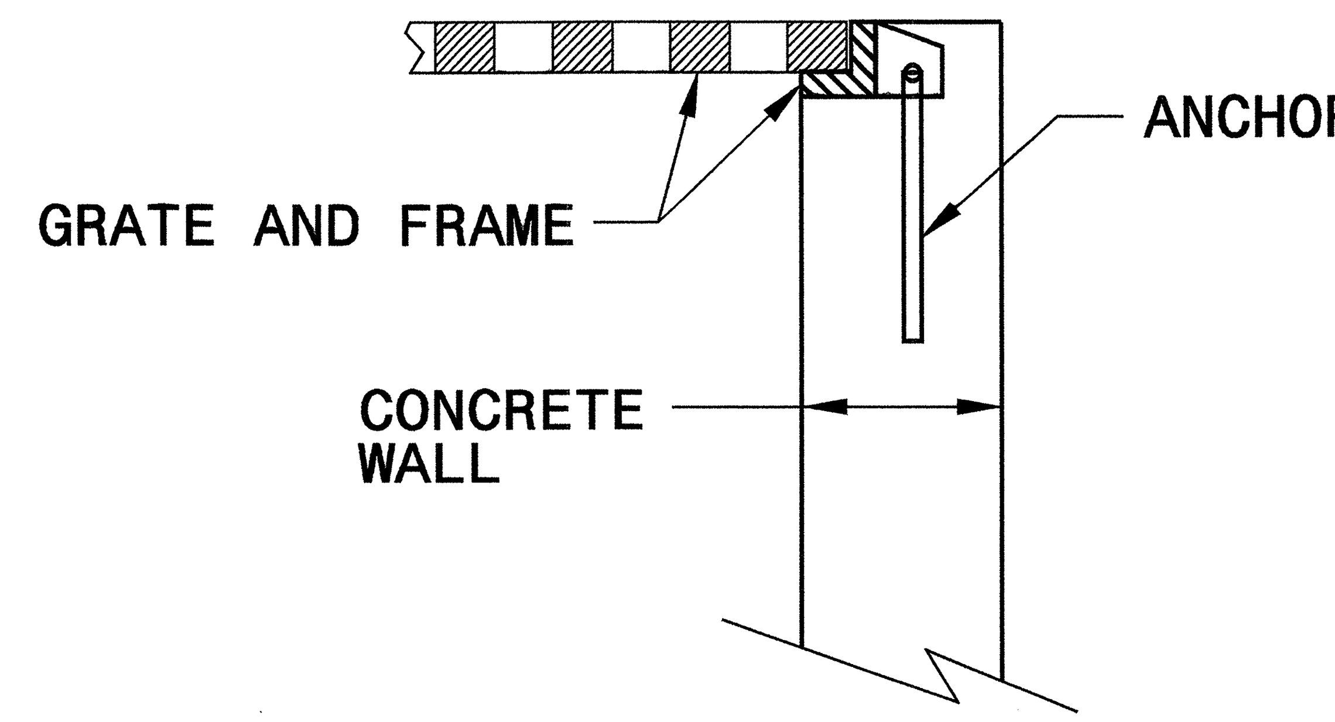
–L– STA. 13+00.00 TO STA. 14+00.00

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

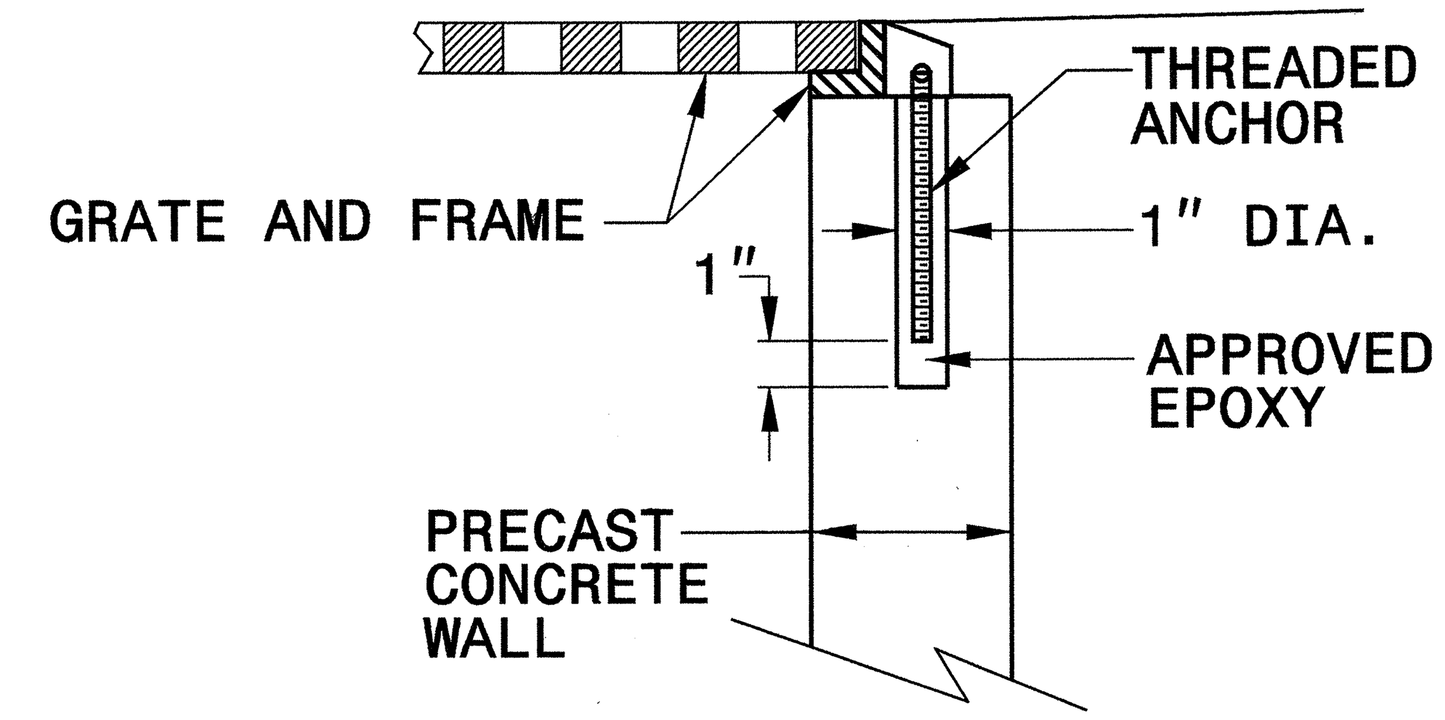
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE



BRICK MASONRY CONSTRUCTION



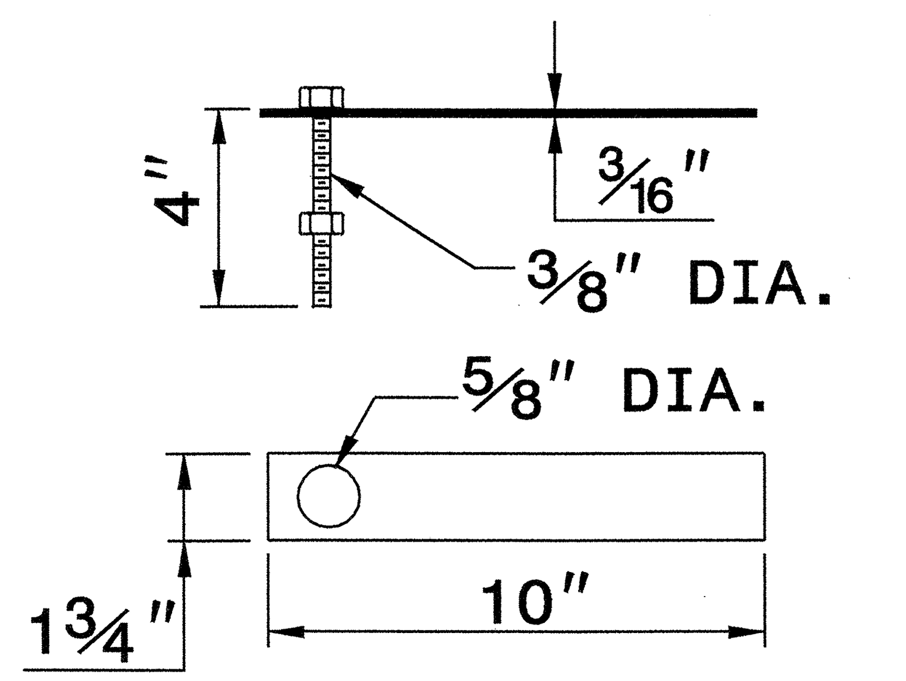
CONCRETE CONSTRUCTION



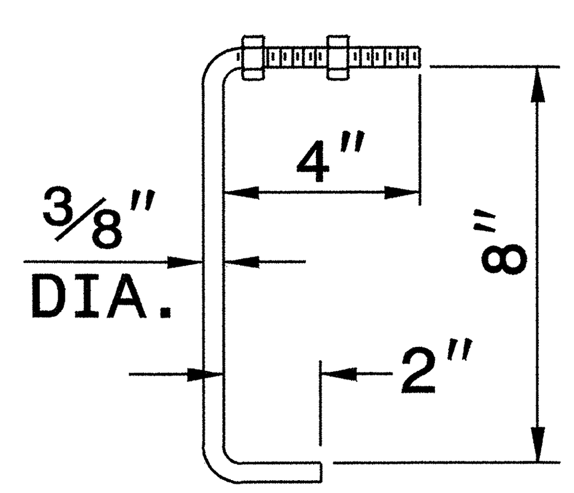
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

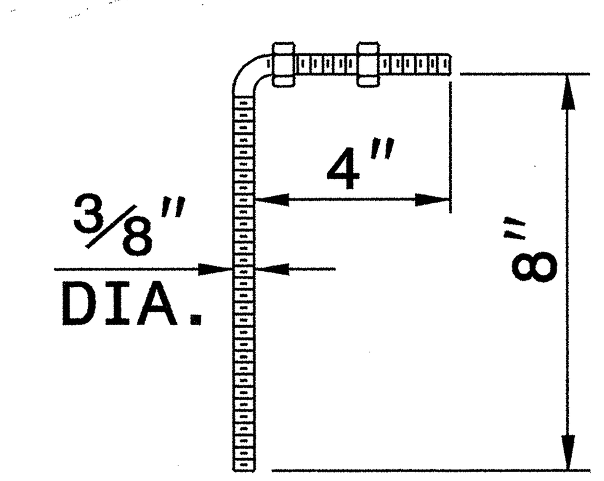
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



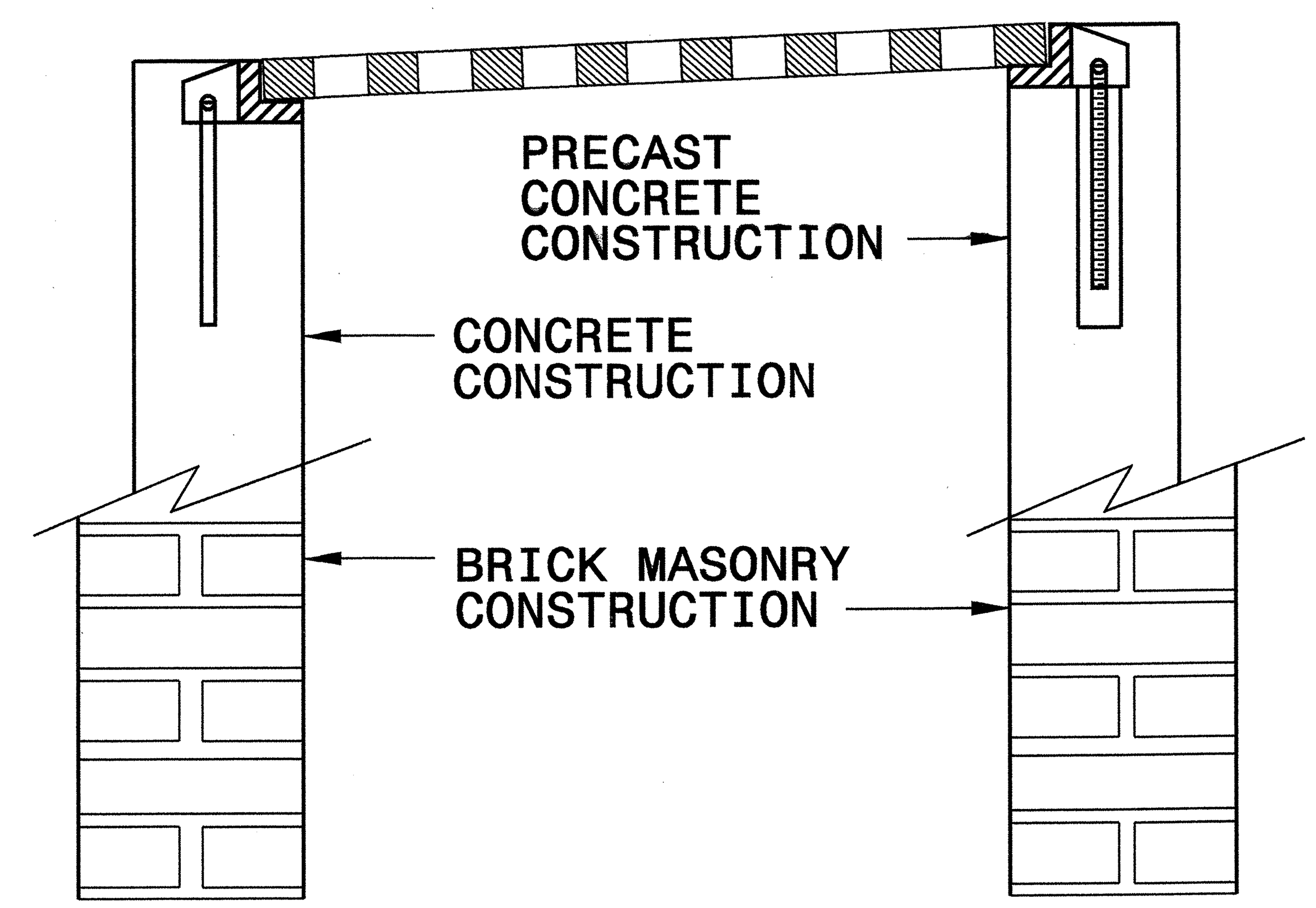
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



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

SHEET 1 OF 1
840D25

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 ENGINEER SEAL 022966 JOEL S. HOWERTON 3/28/08

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
s:\contracts\contracts\special details\erickward\stds\06 stds to special details\84025 anchorage for frames\0840d25.dgn
jhowerton AT PS212260

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4210	2-B

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

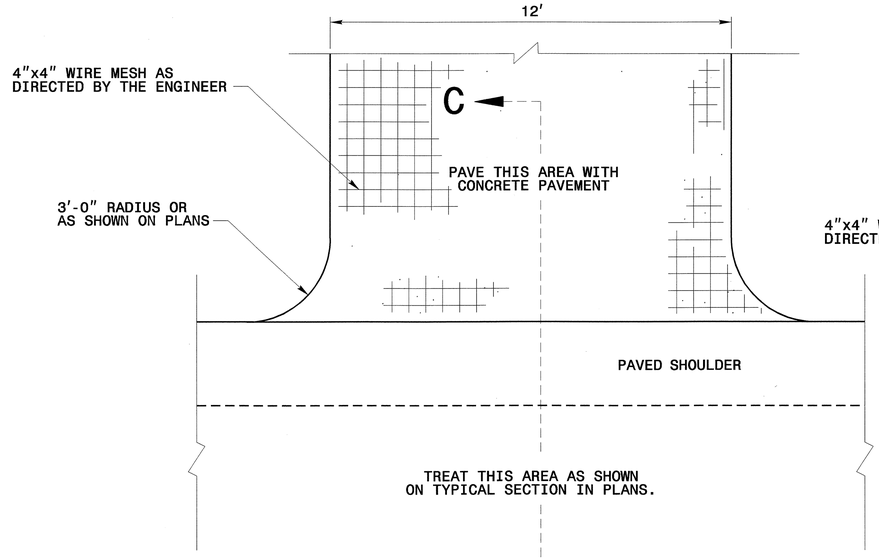
ENGLISH STANDARD DRAWING FOR

DRIVEWAY TURNOUT

RADIUS TYPE

SHEET 1 OF 1

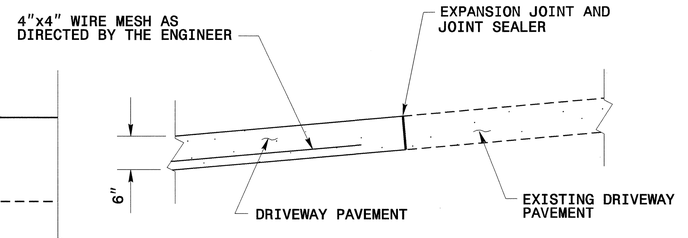
848D02



PARTIAL PLAN OF PAVED DRIVEWAY TURNOUT

NOTES:

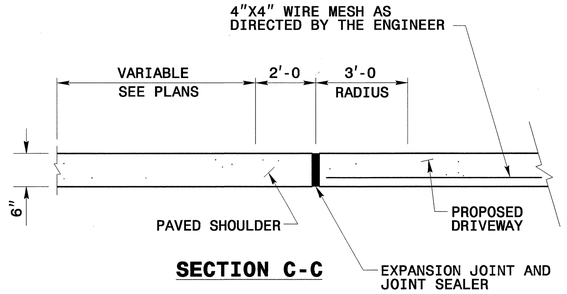
- CONSTRUCT STANDARD DRIVEWAY THE WIDTH OF EXISTING DRIVE. CONSTRUCT DRIVE 6" THICK UNLESS OTHERWISE NOTED ON PLANS.
- PLACE ½" EXPANSION JOINT BETWEEN DRIVEWAY AND ROADWAY AND AT LOCATIONS AS DIRECTED BY THE ENGINEER. SEAL JOINT WITH JOINT SEALER (SEE STD.SECTION 1028)
- PLACE WIRE MESH IN BOTTOM THIRD OF CONCRETE DRIVEWAY.
- SAW CUT OR FORM CONTRACTION JOINTS IN DRIVEWAY @ 10' INTERVALS. AT EVERY THIRD JOINT, PLACE EXPANSION MATERIAL AS SHOWN IN SECTION C-C.



METHOD OF TIE IN

WHEN EXISTING DRIVEWAY PAVEMENT IS CONCRETE, SAW CUT A 2" DEEP JOINT AT THE POINT OF TIE IN WITH EXISTING DRIVEWAY GRADE.

SAW JOINT PERPENDICULAR TO EDGE OF EXISTING DRIVEWAY PAVEMENT.



SECTION C-C

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

ENGLISH STANDARD DRAWING FOR

DRIVEWAY TURNOUT

RADIUS TYPE

SHEET 1 OF 1

848D02

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON 3/24/08

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

CONCRETE DRIVEWAY DETAIL

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 03-20-08
CHECKED BY: JSH DATE: 3/24/08
FILE SPEC.: details/english/misc/concdrive.dgn

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$$$$USERNAME$$$$
$$$$DGN$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4210	3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201854

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ************ (13+50.00)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	200	CY	UNDERCUT EXCAVATION
0063000000-N	SP	Lump Sum		GRADING
0106000000-E	230	4,650	CY	BORROW EXCAVATION
0134000000-E	240	62	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	200	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	200	SY	FABRIC FOR SOIL STABILIZATION
0318000000-E	300	50	TON	FOUNDATION CONDITIONING MATE-RIAL, MINOR STRS
0342000000-E	310	40	LF	**" SIDE DRAIN PIPE (30")
0708000000-E	310	52	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
0806000000-E	310	3	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK
0995000000-E	340	29	LF	PIPE REMOVAL
1121000000-E	520	32	TON	AGGREGATE BASE COURSE
1220000000-E	545	200	TON	INCIDENTAL STONE BASE
1489000000-E	610	270	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	330	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1560000000-E	620	34	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
1693000000-E	654	20	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2000000000-N	806	14	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

ItemNumber	Sec #	Quantity	Unit	Description
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	6	EA	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	5	EA	FRAME WITH TWO GRATES, STD 840.29
2396000000-N	840	1	EA	FRAME WITH COVER, STD 840.54
2556000000-E	846	300	LF	SHOULDER BERM GUTTER
2612000000-E	848	120	SY	6" CONCRETE DRIVEWAY
3030000000-E	862	612.5	LF	STEEL BM GUARDRAIL
3045000000-E	862	87.5	LF	STEEL BM GUARDRAIL, SHOP CURVED
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3195000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3649000000-E	876	9	TON	RIP RAP, CLASS B
3656000000-E	876	271	SY	FILTER FABRIC FOR DRAINAGE
3659000000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
4400000000-E	1110	310	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4445000000-E	1145	80	LF	BARRICADES (TYPE III)
4810000000-E	1205	5,600	LF	PAINT PAVEMENT MARKING LINES (4")
4900000000-N	1251	10	EA	PERMANENT RAISED PAVEMENT MARKERS
6000000000-E	1605	1,065	LF	TEMPORARY SILT FENCE
6006000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A

ItemNumber	Sec #	Quantity	Unit	Description
6009000000-E	1610	120	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	65	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	2	ACR	TEMPORARY MULCHING
6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEED-ING
6024000000-E	1622	220	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	6	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	240	LF	SAFETY FENCE
6030000000-E	1630	420	CY	SILT EXCAVATION
6036000000-E	1631	395	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	30	SY	COIR FIBER MAT
6038000000-E	SP	160	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	100	LF	1/4" HARDWARE CLOTH
6071030000-E	SP	175	LF	COIR FIBER BAFFLES
6071050000-E	SP	5	EA	**" SKIMMER (1-1/2")
6084000000-E	1660	2.5	ACR	SEEDING & MULCHING
6087000000-E	1660	1.5	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	1.5	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

ItemNumber	Sec #	Quantity	Unit	Description
******* BEGIN SCHEDULE AA ******* ******* (3 ALTERNATES) *******				
0366000000-E AA1	310	360	LF	15" RC PIPE CULVERTS, CLASS III
*** OR ***				
0366000000-E AA2	310	56	LF	15" RC PIPE CULVERTS, CLASS III
0536000000-E AA2	SP	304	LF	***" HDPE PIPE CULVERTS (15")
*** OR ***				
0366000000-E AA3	310	56	LF	15" RC PIPE CULVERTS, CLASS III
0540000000-E AA3	SP	304	LF	***" ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ****" THICK (15", 0.064")
******* END SCHEDULE AA *******				

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$$$$USERNAME$$$$

RD226355

COMPUTED BY: rwb DATE: 3/19/2007
CHECKED BY: TFD DATE: 3/4/2008

PROJECT NO.	SHEET NO.
B-4210	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.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)								BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)								CLASS III R.C. PIPE OR ALUMINIZED C.S.PIPE, TYPE IR OR HDPE, TYPE S OR D								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		QUANITIES FOR DRAINAGE STRUCTURES	"TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT.		C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE			T.B.G.D.I. STD. 840.35	FRAME AND N.S. FLAT GRATES STD. 840.29	T.B.J.B. STD. 840.34	PREFORMED SCOUR HOLE	M.H. FRAME AND COVER STD. 840.54	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
SIZE		FROM	TO					12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"				R.C.P.	C.S.P.	PER EACH (0' THRU 5.0')	A 5.0' THRU 10.0'	B 10.0' AND ABOVE		E	F	G										
THICKNESS OR GAUGE																.064	.064	.064	.064	.079	.079	.109	.109																														
10+22	LT	1																																													1						SEE DETAIL ON SHEET 4
10+22	LT	1	2		222.5'	224.0'											16'																																1@15"				
10+22	LT	2		227.6'																																	1									1		1					
10+22	LT	2	3		224.0'	226.5'																			256'																												
12+83	LT	3		229.7'																																	1							1	1								
12+83	CL	3	4		226.5'	226.6'			28'																																												
12+83	RT	4		229.7'																																	1							1	1								
14+18	RT	5		232.3'																																	1							1	1								
14+18	CL	5	6		229.2'	229.1'			28'																																												
14+18	LT	6		232.3'																																	1							1	1								
14+18	LT	6	7		229.1'	228.9'																			48'																												
14+66	LT	7		233.7'																																	1							1	1								
14+66	LT	7	8		228.9'	222.7'											36'																																2@15"				
15+22	LT	9																																40'																		29'	
PROJECT TOTALS									56'								52'								304'									40'			6							5	5	1	1	1	3@15"			29'	

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: 3/19/07
CHECKED BY: TFD	DATE: 3/4/08

PROJECT NO.	SHEET NO.
B-4210	3-B

RD226355

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L-					
10+00.00	13+00.00	16	1,039	1,023	
14+00.00	17+00.00	4	3,064	3,060	
-DR1-					
10+00.00	10+53.72		314	314	
SUBTOTAL:		20	4,417	4,397	
5% Uncl. Exc. is Unsuitable				1	1
TOTAL:		20	4,417	4,398	1
EST. 5% TO REPLACE BORROW PIT				220	
GRAND TOTALS:		20	4,417	4,618	1
SAY:		50 CY		4,650 CY	

ESTIMATED UNDERCUT: 200 CY TO BE INCLUDED AS A CONTINGENCY ITEM
DDE: 62 CY

SUMMARY OF EXISTING ASPHALT PAVEMENT BREAKING/REMOVAL

IN SQUARE YARDS

LINE	Station	Station	LOC LT/RT/CL	AREA SY
REMOVAL OF EXISTING ASPHALT PAVEMENT				
-L-	12+50.00	13+04.16	CL	126
-L-	13+94.43	14+50.00	CL	132
-L-	15+00.00	15+50.00	CL	114
			TOTAL:	372
			SAY:	375
BREAKING OF EXISTING ASPHALT PAVEMENT				
-L-	14+50.00	15+00.00	CL	114.00
			TOTAL:	114.00
			SAY:	115 SY
REMOVAL OF EXISTING CONCRETE PAVEMENT				
-DR1-	10+00.00	10+74.42	CL	95
			TOTAL:	95
			SAY:	100 SY

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

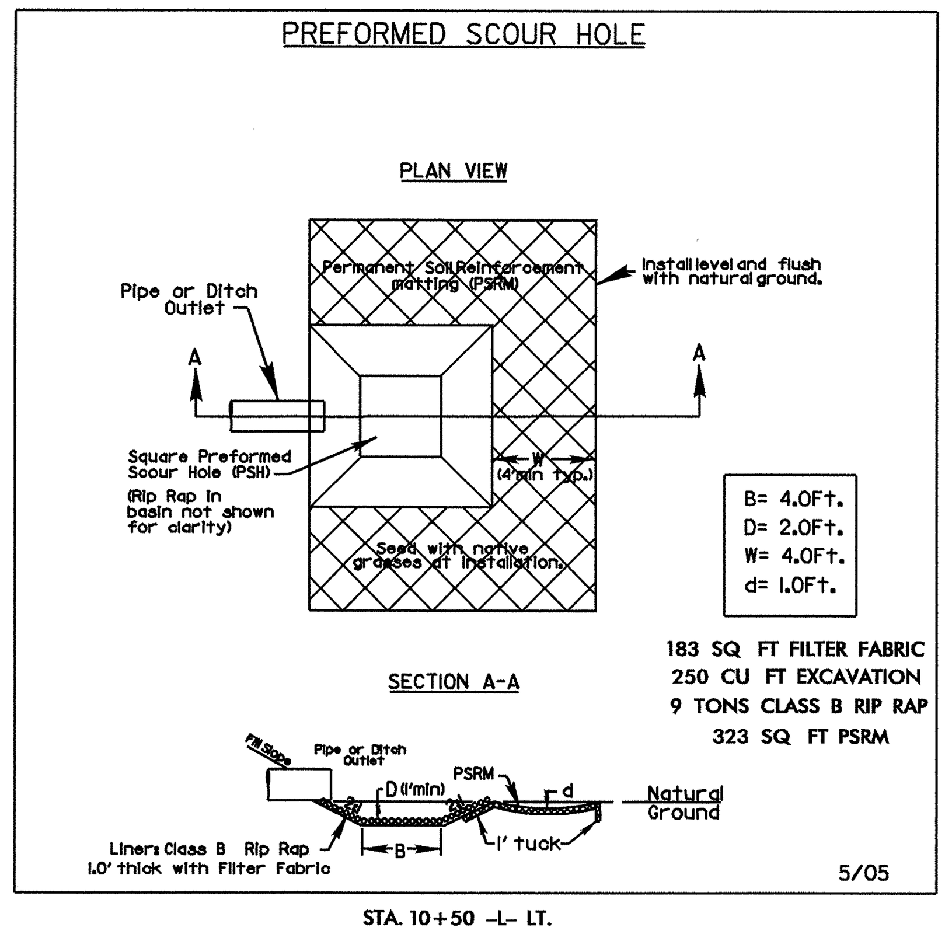
NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

"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

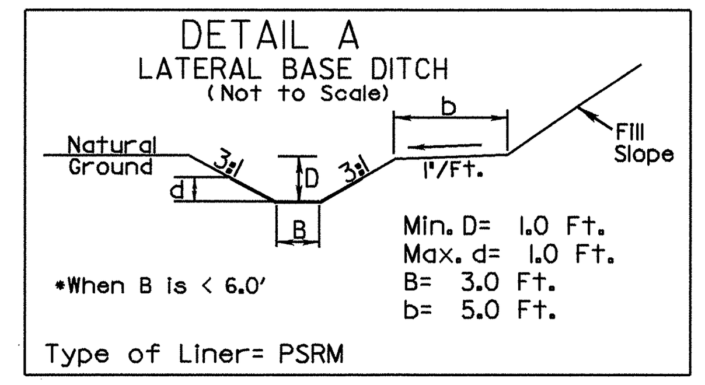
GUARDRAIL SUMMARY

LINE	BEG. STA.	END STA.	LOC.	LENGTH				WARRANT POINT		"N" DIST	TOTAL	FLARE LENGTH		W		ANCHORS							ADDITIONAL	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	AT-1	GRAU 350					GUARDRAIL POSTS	
-L-	11+62.50	13+00.00	LEFT	137.5				13+00.00		4	7		50		1	1		1						
-L-	10+12.50	13+00.00	RIGHT	287.5					13+00.00	4	7	50		1		1		1						
-L-	14+00.00	16+25.00	RIGHT	225.0				14+00.00		4	7		50		1	1		1						
-L-	14+00.00	14+89.93	LEFT	92.94					14+00.00	4	7					1								
-L-	15+51.98	16+89.48	LEFT	137.50						4	7	50		1				1						
-DR1-	10+32.66	10+69.75	RIGHT			50				2	5						1							
-DR1	10+32.66	10+69.75	LEFT			50				2	5						1							
SUBTOTAL:				880.44		100.00										4	2	4						
ADDITIONS:																							5	
LESS ANCHORS DEDUCTIONS:																								
GRAU-350	4@ 50 = 200			-200																				
TYPE B-77	4@ 18.75 = 75			-75.00																				
AT-1	2 @ 6.25 = 12.5					-12.5																		
ANCHOR TOTALS:				-275.00		-12.50																		
GRAND TOTAL:				605.44 LF		87.50 LF										4	2	4					5	
SAY:				612.50 LF		87.50 LF										4	2	4					5	

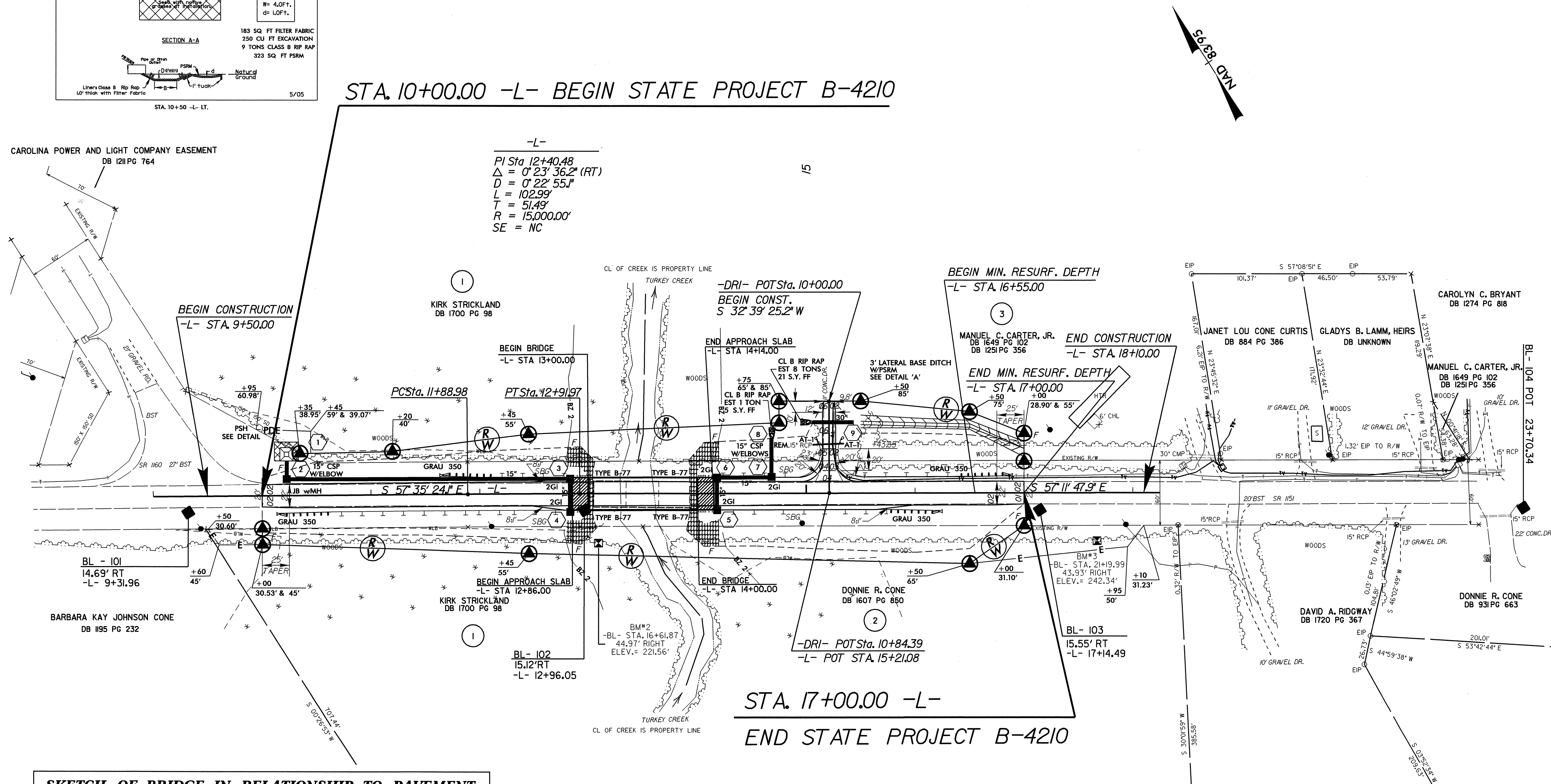
PROJECT REFERENCE NO.	SHEET NO.
B-4210	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25477 THAD F. DUNCAN 3-25-08	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20670 MARC T. SHOWN 3-25-08



PREFORMED SCOUR HOLE
PLAN VIEW
Pipe or Ditch Outlet
Permanent Soil Reinforcement Matting (PSRM)
Install level and flush with natural ground.
Square Preformed Scour Hole (PSH)
(Rip Rap in basin not shown for clarity)
B= 4.0Ft.
D= 2.0Ft.
W= 4.0Ft.
d= 1.0Ft.
SECTION A-A
183 SQ FT FILTER FABRIC
250 CU FT EXCAVATION
9 TONS CLASS B RIP RAP
323 SQ FT PSRM
Natural Ground
Liner: Class B Rip Rap 1.0' thick with Filter Fabric
5/05
STA. 10+50 -L- LT.

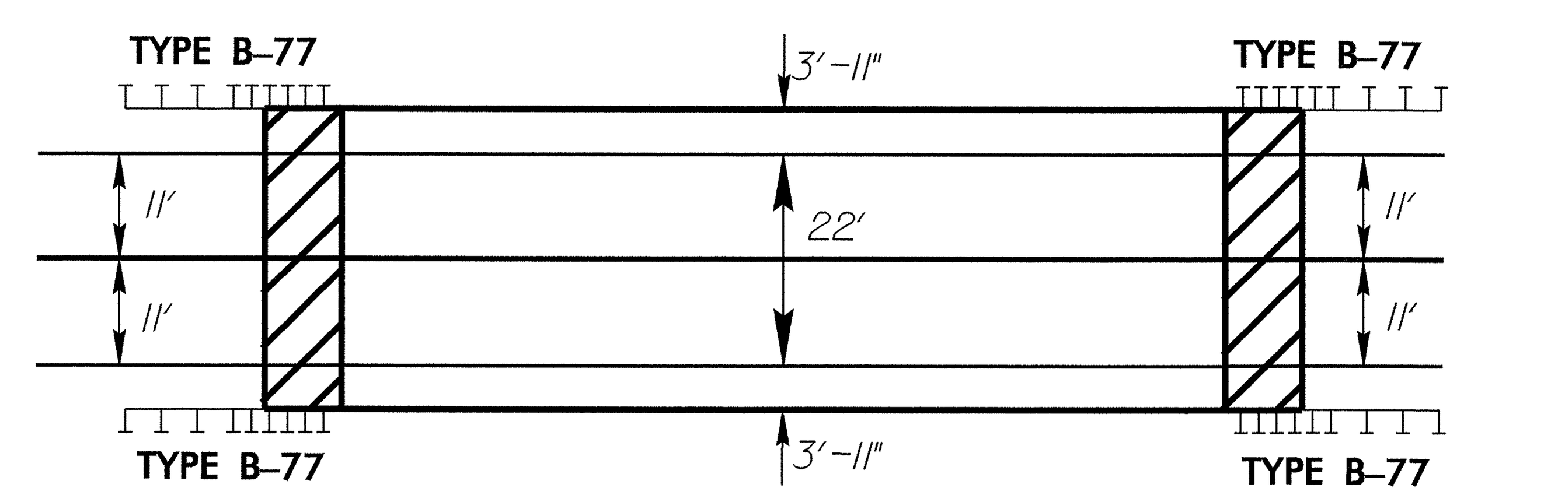


FROM STA. 15+50 -L- TO STA. 17+00 -L- LT. DDE = 62 CY



NAD 83/95
STA. 10+00.00 -L- BEGIN STATE PROJECT B-4210
CAROLINA POWER AND LIGHT COMPANY EASEMENT
DB 1211 PG 764
-L-
PI Sta 12+40.48
Δ = 0° 23' 36.2" (RT)
D = 0° 22' 55.1"
L = 102.99'
T = 51.49'
R = 15,000.00'
SE = NC
BEGIN CONSTRUCTION
-L- STA. 9+50.00
KIRK STRICKLAND
DB 1700 PG 98
BEGIN BRIDGE
-L- STA 13+00.00
PCSta. 11+88.98
PTSta. 12+91.97
CL OF CREEK IS PROPERTY LINE
TURKEY CREEK
-DRI- POTSta. 10+00.00
BEGIN CONST.
S 32° 39' 25.2" W
END APPROACH SLAB
-L- STA 14+14.00
CL B RIP RAP
EST 8 TONS
21 S.Y. FF
CL B RIP RAP
EST 1 TON
25 S.Y. FF
3' LATERAL BASE DITCH
W/PSRM
SEE DETAIL 'A'
BEGIN MIN. RESURF. DEPTH
-L- STA. 16+55.00
MANUEL C. CARTER, JR.
DB 1649 PG 102
DB 1251 PG 356
END CONSTRUCTION
-L- STA. 18+10.00
END MIN. RESURF. DEPTH
-L- STA. 17+00.00
JANET LOU CONE CURTIS
DB 884 PG 386
GLADYS B. LAMM, HEIRS
DB UNKNOWN
CAROLYN C. BRYANT
DB 1274 PG 818
BL - 104 POT 23+70.34
PSH
SEE DETAIL
S 57° 35' 24.1" E
S 57° 11' 47.9" E
GRAU 350
TYPE B-77
BL - 101
14.69' RT
-L- 9+31.96
BARBARA KAY JOHNSON CONE
DB 1195 PG 232
BEGIN APPROACH SLAB
-L- STA 12+86.00
KIRK STRICKLAND
DB 1700 PG 98
BM#2
-BL- STA. 16+61.87
44.97' RIGHT
ELEV.= 221.56'
BL- 102
15.12'RT
-L- 12+96.05
END BRIDGE
-L- STA 14+00.00
DONNIE R. CONE
DB 1607 PG 850
-DRI- POTSta. 10+84.39
-L- POT STA. 15+21.08
BM#3
-BL- STA. 21+19.99
43.93' RIGHT
ELEV.= 242.34'
BL- 103
15.55' RT
-L- 17+14.49
DAVID A. RIDGWAY
DB 1720 PG 367
DONNIE R. CONE
DB 931 PG 663
SR 1160 27' BST
20' BST SR 1151
STA. 17+00.00 -L-
END STATE PROJECT B-4210

SKETCH OF BRIDGE IN RELATIONSHIP TO PAVEMENT



SBG: SHOULDER BERM GUTTER
BEGIN SBG 12+83 TO BEGIN BRIDGE LT & RT.
BEGIN SBG END BRIDGE TO 15+00 LT.
BEGIN SBG END BRIDGE TO 15+65 RT.

FOR -L- PROFILE SEE SHEET 5
FOR -DR1- PROFILE SEE SHEET 5
FOR STRUCTURE SEE SHEETS S1-S18

REVISIONS

8/17/99

25-MAR-2008 07:58
r:\roadway\proj\b4210_rdy_psh.dgn

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4210	5

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25477 ENGINEER THAD R DUNCAN

3-27-08

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20870 ENGINEER MARC T SHOWN

3-27-08

-L-

BM * 2
RR SPIKE IN BASE OF 10" MAPLE
44.97' RIGHT OF -BL- STA.16+61.87 ELEV.221.56

** DESIGN EXCEPTION REQUIRED FOR THE SAG VERTICAL CURVE K OF 104 AND THE VERTICAL SSD OF 425'.

MIN. RESURF. DEPTH

END GRADE STA. 16+55.00
EL. = 241.57'
(INCLUDES 1.25 In. RESURFACING)

16+55.00

17+00.00

BEGIN GRADE STA. 10+00.00
EL. = 228.2189'
(INCLUDES 1.25 In. RESURFACING)

PI = 14+20.00
EL = 231.00'
** K = 104
VC = 400'
V=50 MPH

END BRIDGE STA. 14+00.00

BEGIN BRIDGE STA. 13+00.00

(+)0.66224%

(+)4.4979%

(+) 5.2000%

END DITCH GRADE LT
-L- STA. 16+50.00
EL. = 227.70

BEGIN DITCH GRADE LT
-L- STA. 15+50.00
EL. = 222.50

BM * 3
RR SPIKE IN BASE OF 14" GUM
43.93' RIGHT OF -BL- STA.21+19.99 ELEV.242.34

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 1900	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 224.9	FT
BASE DISCHARGE	= 2900	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 225.9	FT
OVERTOPPING DISCHARGE	= 4300	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 228.3	FT

260 250 240 230 220 210 200

10 11 12 13 14 15 16 17

-DR1-

PI = 10+58.00
EL = 235.35'
VC = 30'
K = 2

PI = 10+08.00
EL = 227.19'
VC = 16'
K = 2

(+)2.8754%

(+)6.3200%

(+)17.6250%

END GRADE STA. 10+73.65
EL = 235.80'

BEGIN GRADE STA. 10+00.00
EL = 226.58'

240 230 220 210 200

10 11