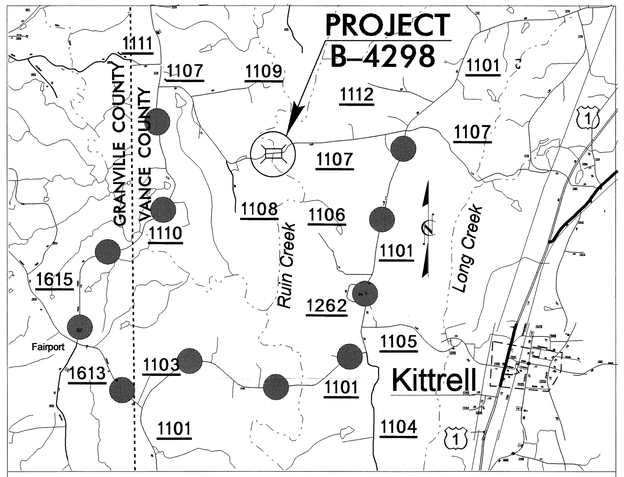
09/08/99

TIP PROJECT: B-4298

CONTRACT: C201599

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

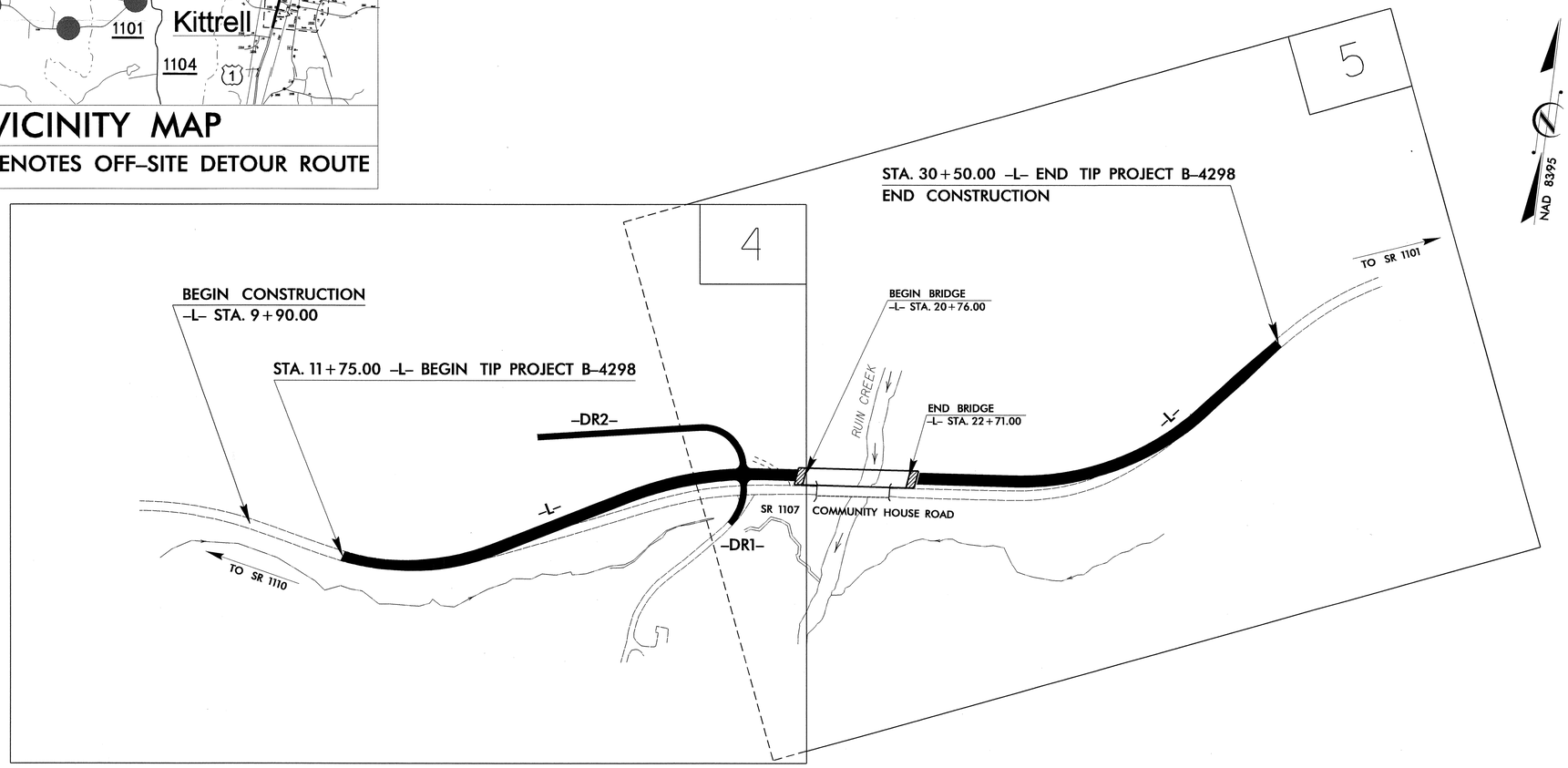
VANCE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4298	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33635.1.1	BRZ-1107(8)	PE
33635.2.1	BRZ-1107(8)	R/W & UTIL
33635.3.1	BRZ-1107(13)	CONSTR.

LOCATION: BRIDGE NO. 3 OVER RUIN CREEK AND APPROACHES ON SR 1107 (COMMUNITY HOUSE ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE



** DESIGN EXCEPTION FOR DESIGN SPEED REQUIRED

GRAPHIC SCALES

50 0 50 100
PLANS

50 0 50 100
PROFILE (HORIZONTAL)

10 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2007	=	750
ADT 2025	=	1200
DHV	=	13 %
D	=	55 %
T	=	3 % *
** V	=	40 MPH
* TTST 1%		DUAL 2%
FUNC CLASS	=	RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4298	=	0.318 MILES
LENGTH STRUCTURE TIP PROJECT B-4298	=	0.037 MILES
TOTAL LENGTH OF TIP PROJECT B-4298	=	0.355 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 30, 2006

LETTING DATE:
AUGUST 21, 2007

ROGER D. THOMAS, PE
PROJECT ENGINEER

SAMUEL L. ST. CLAIR
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24897 ENGINEER JOHN W. TWISDALE, JR
SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19849 ENGINEER ROGER D. THOMAS
5/21/07
SIGNATURE: *P.E.*

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-4298	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19849 ENGINEER ROGER D. THOMAS

5/21/07

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	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-A	TYPICAL SECTIONS, DETAIL OF PROPOSED UNDERCUT, AND DETAIL OF GRADE POINT UNDERCUT
2-B	DETAIL OF ROCK PLATING
2-C	DRAINAGE DITCH DETAILS AND DETAIL OF PREFORMED SCOUR HOLE
2-D	DETAIL FOR ANCHORAGE OF FRAMES
3	SUMMARY OF QUANTITIES
3-A	DRAINAGE SUMMARY SHEET
3-B	SUMMARIES OF GUARDRAIL, ASPHALT PAVEMENT REMOVAL, AND BREAKING OF ASPHALT PAVEMANT
3-Z	PARCEL SUMMAY SHEET
4 & 5	PLAN SHEETS
6 & 7	PROFILE SHEETS
TCP-1 THRU TCP-4	TRAFFIC CONTROL PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-A	**CROSS-SECTION SUMMARY**
X-1 THRU X-20	CROSS-SECTIONS
S-1 THRU S-29	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.

BERM DITCHES:

BERM DITCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 240.01 AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

UNDERDRAINS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

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

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE PROGRESS ENERGY (POWER) AND

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 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
240.01	Guide for Berm Ditch Construction
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 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.51	Brick Manhole - 12" thru 36" Pipe
840.52	Precast Manhole - 4', 5' and 6' Diameter
840.53	Precast Manhole with Masonry Base - 12" thru 42" Pipe
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
850.10	Guide for Berm Drainage Outlet - 15" and 18" Pipe
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-4298	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.

12/06/05

PROJECT REFERENCE NO.	SHEET NO.
B–4298	1–C
Location and Surveys	

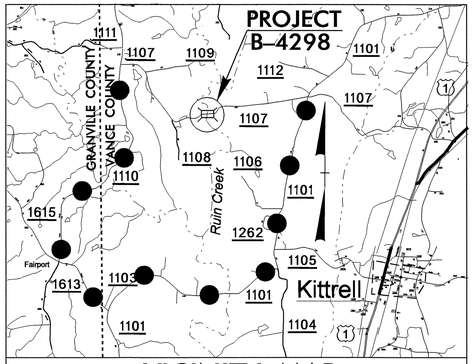
B–4298

SURVEY CONTROL SHEET B–4298

VANCE COUNTY

LOCATION: BRIDGE NO. 3 OVER RUIN CREEK AND APPROACHES ON SR 1107 (COMMUNITY HOUSE ROAD)

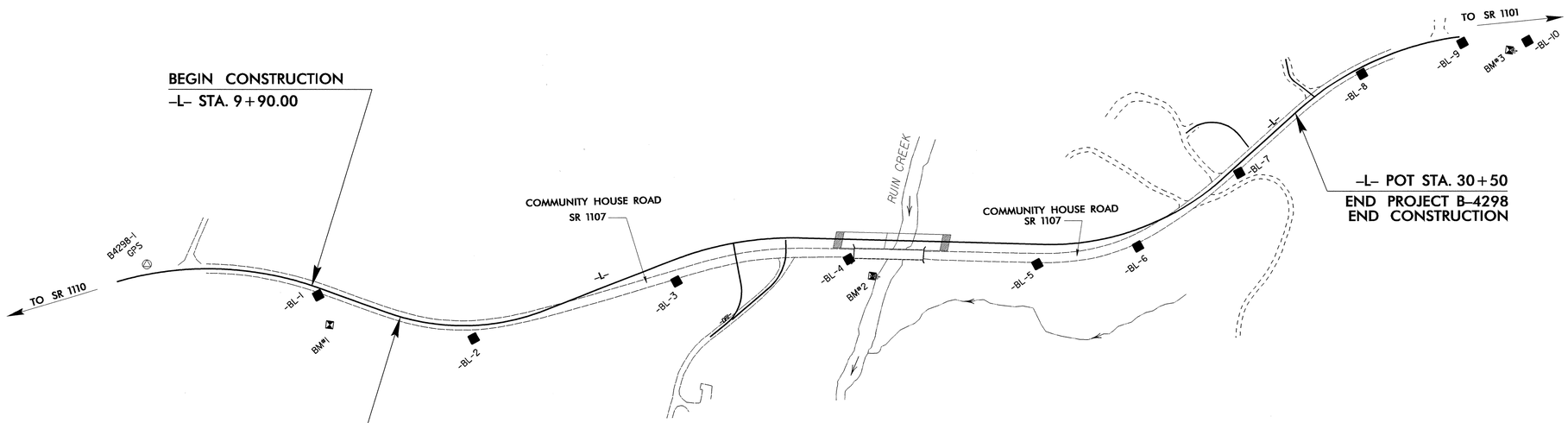
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES



VICINITY MAP

DENOTES OFF–SITE DETOUR ROUTE

NAD 83/95



BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	911024.3512	2150899.1609	354.33	10+08.23	14.03 RT
2	BL-2	910980.4563	2151213.7240	335.63	13+19.67	25.45 RT
3	BL-3	911142.4715	2151596.1156	310.55	17+27.29	41.83 RT
4	BL-4	911229.3643	2151927.2752	280.96	20+89.19	39.42 RT
5	BL-5	911267.0179	2152296.6316	295.10	24+60.46	39.26 RT
6	BL-6	911326.7660	2152489.8122	306.30	26+50.35	32.55 RT
7	BL-7	911496.6760	2152668.5522	318.79	28+89.02	13.58 RT
8	BL-8	911720.3212	2152883.4282	339.54	32+03.39	12.17 RT
9	BL-9	911805.8689	2153072.1256	353.13	OUTSIDE PROJECT LIMITS	
10	BL-10	911826.8650	2153198.5944	352.77	OUTSIDE PROJECT LIMITS	

BM1 ELEVATION = 347.93
N 910970 E 2150929
L STATION 10+49 61 RIGHT
BM-1
RR SPIKE SET IN 16" OAK

BM2 ELEVATION = 272.89
N 911202 E 2151977
L STATION 21+36 72 RIGHT
BM-2
RR SPIKE SET IN 24" POPLAR

BM3 ELEVATION = 359.30
N 911804 E 2153166
L STATION 34+12
S 82° 41' 37.4" E DIST 102.04
BM-3
RR SPIKE SET IN 16" PINE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS B4298-1" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 911041.8951(ft) EASTING: 2150556.5814(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00001121 THE NC LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS B4298-1" TO -L- STATION 11+75.00 IS S 85° 42' 46.4" E, 510.15 ft. 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 PROJECT CONTROL DATA AT:

HTTP:\WWW.DOH.DOT.STATE.NC.US\PRECONSTRUCT\HIGHWAY\LOCATION\PROJECT

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b4298_ls_control_051207.txt
b4298_ls_gpk_051207.gpk

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

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

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4298	2

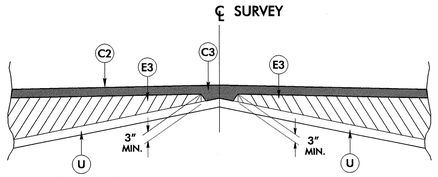
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 19879 ENGINEER ROBERT D. THOMAS — 5/21/07

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON — 5/24/07

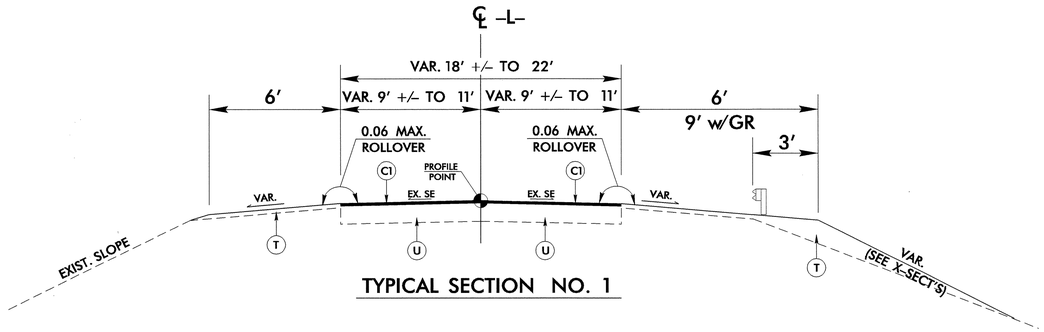
PAVEMENT SCHEDULE

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. 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.
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING (SEE DETAIL)

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



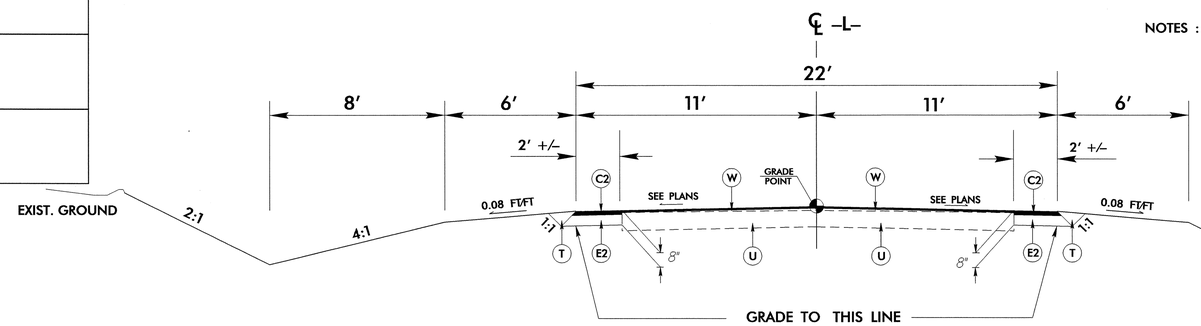
Detail Showing Method of Wedging



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:

–L– STA. 12+00.00 TO –L– STA. 13+00.00
–L– STA. 29+50.00 TO –L– STA. 30+50.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:

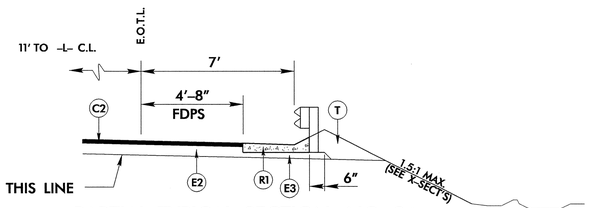
–L– STA. 13+00.00 TO –L– STA. 14+00.00
–L– STA. 28+00.00 TO –L– STA. 29+50.00

NOTES :

DEVELOP SHOULDER
FROM –L– STA. 11+75.00 RT. TO –L– STA. 12+00.00 RT.

TRANSITION FROM EXISTING WIDTH TO 22'
FROM –L– STA. 12+00.00 TO –L– STA. 13+00.00

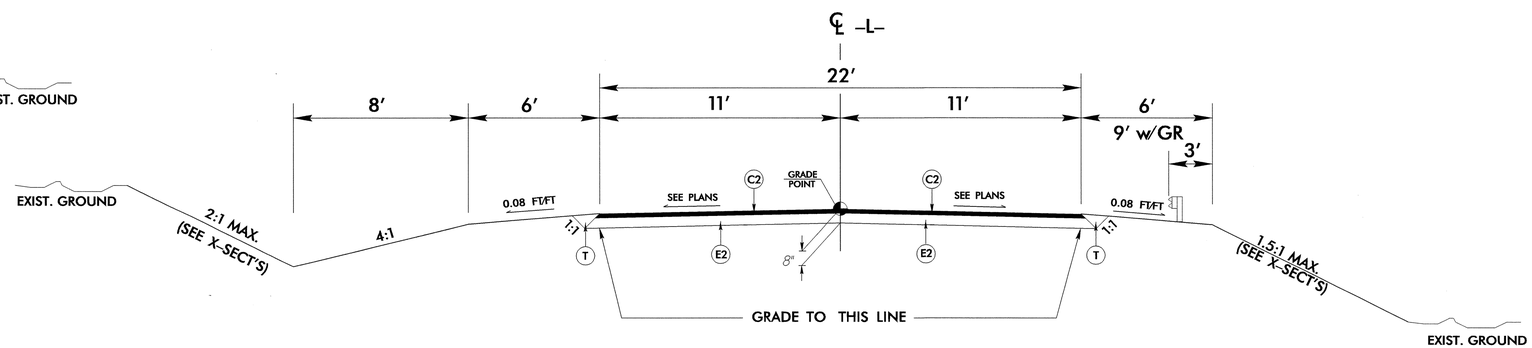
TRANSITION FROM 22' TO EXISTING WIDTH
FROM –L– STA. 29+50.00 TO –L– STA. 30+50.00



PARTIAL TYPICAL SECTION NO. 3A

USE PARTIAL TYPICAL SECTION NO. 3A
IN CONJUCTION WITH TYPICAL SECTION NO. 3
AS FOLLOWS:

–L– STA. 20+03 +/– RT. TO –L– STA. 20+59 +/– RT.
–L– STA. 22+82 +/– RT. TO –L– STA. 23+71 +/– RT.



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:

–L– STA. 14+00.00 TO –L– STA. 20+76.00 (BEGIN BRIDGE)
–L– STA. 22+71.00 (END BRIDGE) TO –L– STA. 28+00.00

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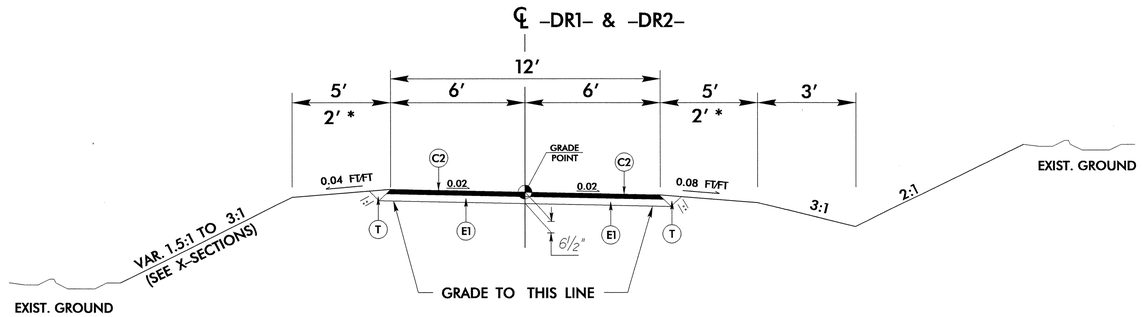
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4298	2-A

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18990 ENGINEER ROBERT D. THOMAS
5/24/07

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON
5/24/07

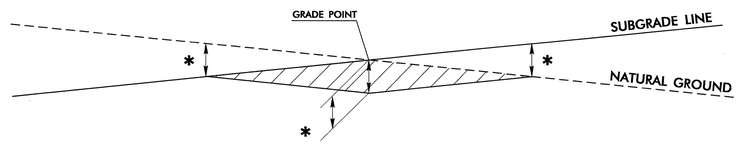
PAVEMENT SCHEDULE	
C2	2½" SF9.5A
E1	4" B25.0B
T	EARTH MATERIAL



TYPICAL SECTION NO. 4

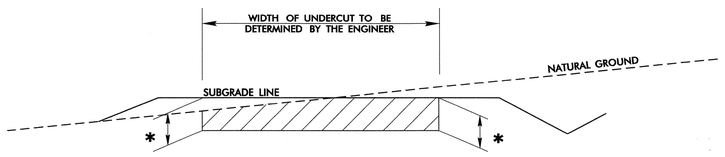
–DR1– STA. 10+11.00 TO –DR1– STA. 11+00.00
* –DR2– STA. 8+82.83 TO –DR2– STA. 13+15.25

NOTE : TRANSITION FROM 12′ TO EXISTING WIDTH
FROM –DR1– STA. 10+75.00 TO –DR1– STA. 11+00.00



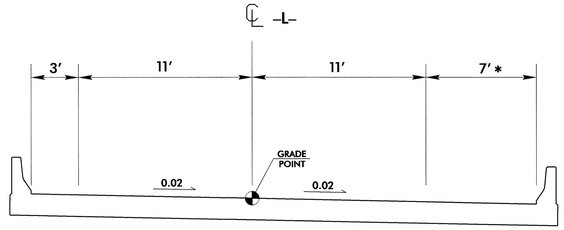
DETAIL OF GRADE POINT UNDERCUT – PROFILE VIEW

* DEPTH AND LOCATION TO BE DETERMINED BY THE ENGINEER



DETAIL OF GRADE POINT UNDERCUT – CROSS-SECTION VIEW

* DEPTH AND LOCATION TO BE DETERMINED BY THE ENGINEER



TYPICAL SECTION NO. 5

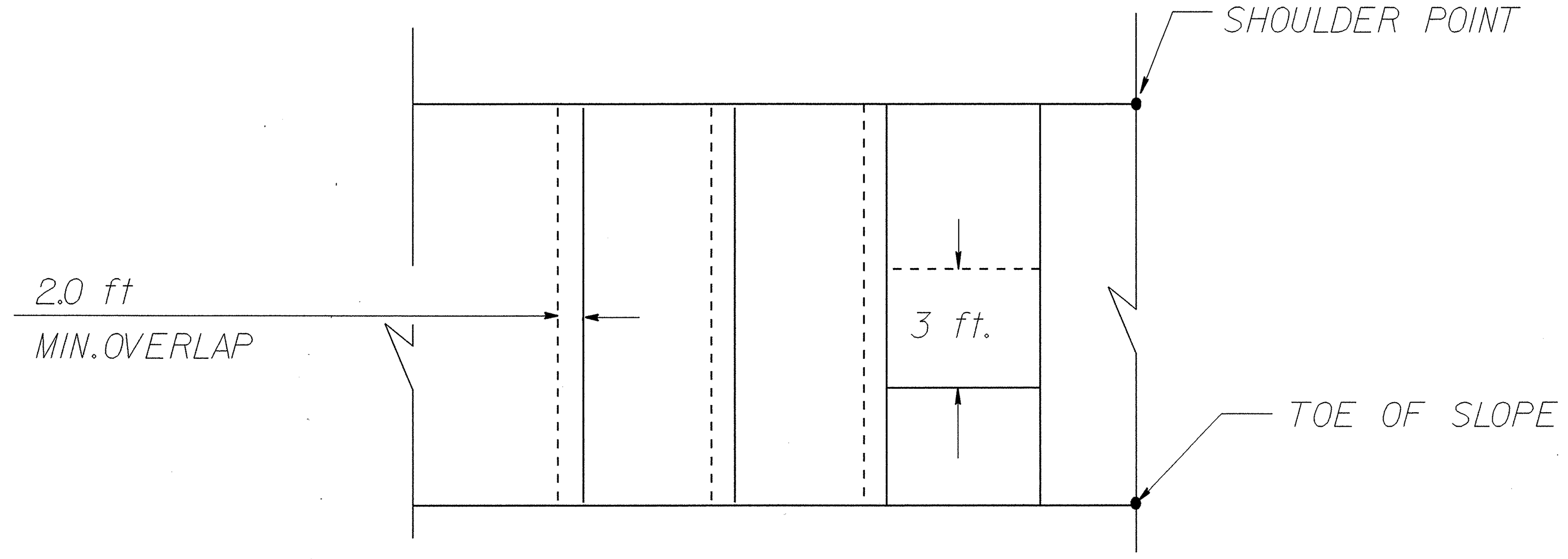
–L– STA. 20+76.00 (BEGIN BRIDGE) TO STA. 22+71.00 (END BRIDGE)
* ADDITIONAL WIDTH NEEDED FOR HYDRAULIC SPREAD

18-MAY-2007 10:09
c:\projects\b4298_rdy_typ.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-4298	2-B

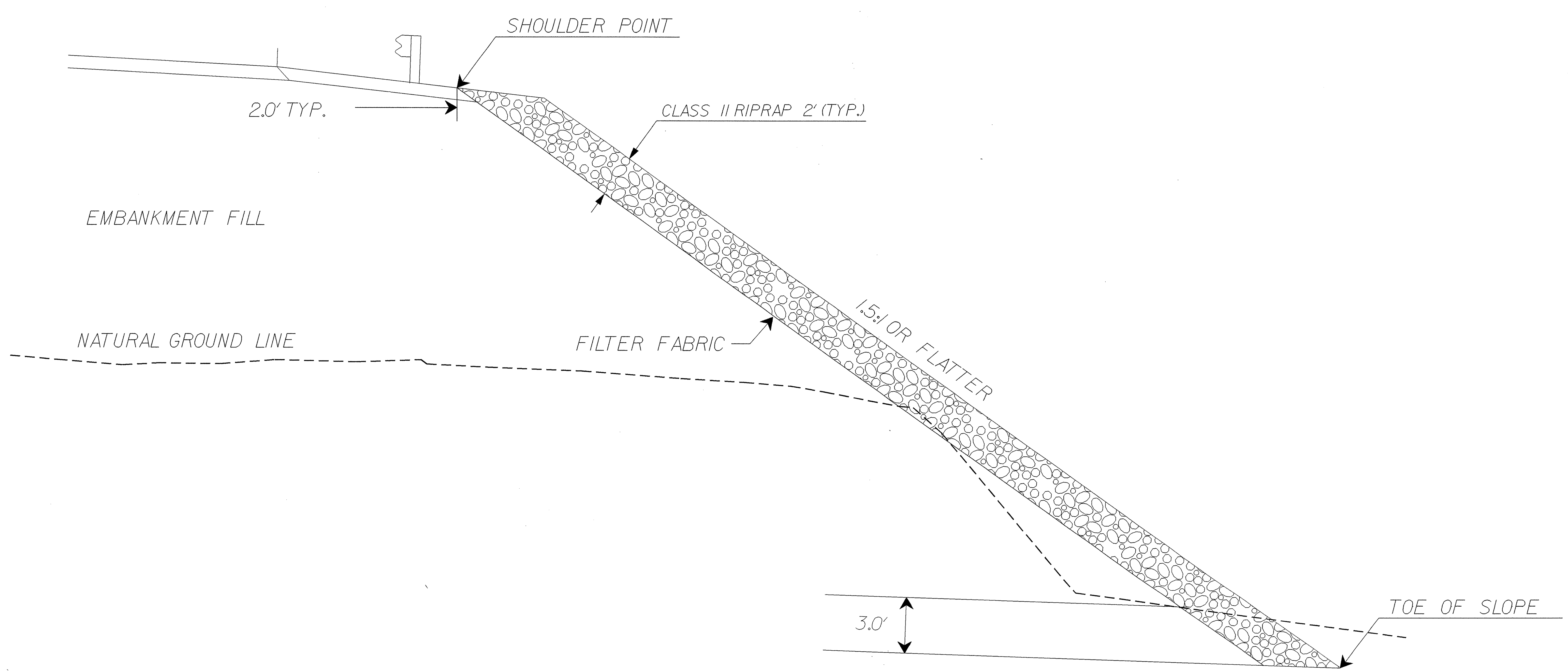
NOTES:

SEE THE SPECIAL PROVISION FOR ROCK PLATING FOR DETAILED REQUIREMENTS OF MATERIALS AND CONSTRUCTION.



FILTER FABRIC OVERLAP DETAIL

N.T.S.



TYPICAL SECTION

N.T.S.

ESTIMATED QUANTITIES:

PLAIN RIP RAP, CLASS II: 460 TONS
FILTER FABRIC FOR DRAINAGE: 540 SQ. YD.

PROJECT B-4298
VANCE COUNTY
STATION 10+75 -DR1- TO 20+65 -L-
(RIGHT SIDE)

DRAWN: WDF
DATE: 02/28/06

DESIGN: ENW
DATE: 02/28/06

CHECK: JRB
DATE: 02/28/06

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ROCK PLATING
DETAIL

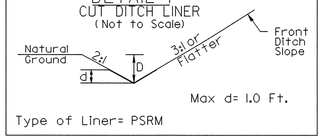
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4298	2-C
R/W SHEET NO.	

HYDRAULICS ENGINEER
NORTH CAROLINA
SEAL 24897
ENGINEER
JOHN W. TWISDALE, JR.
5/21/07

For PSRM Placement Only

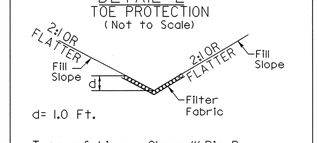
DETAIL 1
CUT DITCH LINER
(Not to Scale)



Type of Liner= PSRM

FROM STA. 12+00 TO STA. 19+44 –L– LT
EST. 496 S.Y. of PSRM
FROM STA. 9+00 TO STA. 12+50 –DR2– RT
EST. 238 S.Y. of PSRM
FROM STA. 27+00 TO STA. 29+50 –L– LT
EST. 165 S.Y. of PSRM

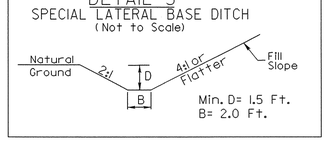
DETAIL 2
TOE PROTECTION
(Not to Scale)



Type of Liner= Class 'I' Rip-Rap

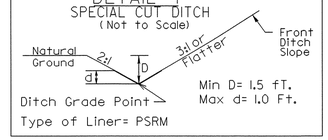
FROM STA. 20+00 TO STA. 20+67 –L– LT
EST. 43 TONS of Class 'I' Rip-Rap
EST. 89 S.Y. of Filter Fabric
FROM STA. 10+29 TO STA. 10+63 –DR1– RT
EST. 22 TONS of Class 'I' Rip-Rap
EST. 45 S.Y. of Filter Fabric

DETAIL 3
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 23+40 TO STA. 24+00 –L– LT

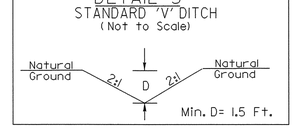
DETAIL 4
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner= PSRM

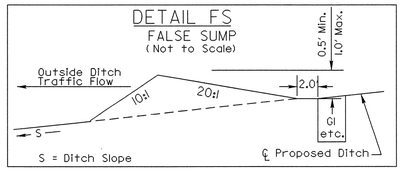
FROM STA. 29+50 TO STA. 30+50 –L– LT
EST. 68 S.Y. of PSRM
FROM STA. 12+50 TO STA. 13+00 –DR2– RT
EST. 34 S.Y. of PSRM

DETAIL 5
STANDARD 'V' DITCH
(Not to Scale)



@ STA. 26+00 –L– RT
EST. 61 C.Y. DDE

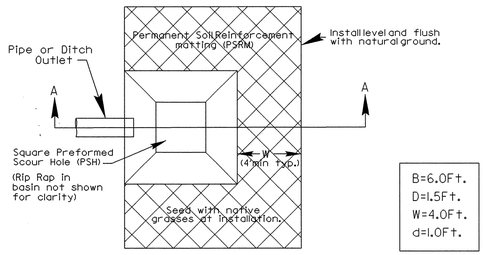
DETAIL FS
FALSE SUMP
(Not to Scale)



SEE PLANS FOR LOCATIONS

PREFORMED SCOUR HOLE

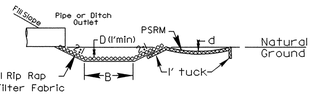
PLAN VIEW



B=6.0Ft.
D=1.5Ft.
W=4.0Ft.
d=1.0Ft.

EST 5 TONS EACH
6 S.Y. F.F. EACH
25 S.Y. PSRM EACH

SECTION A-A



5/05

@ STA. 23+39 –L– RT
@ STA. 21+17 –L– LT

PSRM = Permanent Soil Reinforcement Matting

PROJECT REFERENCE NO.	SHEET NO.
B-4298	2-D

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

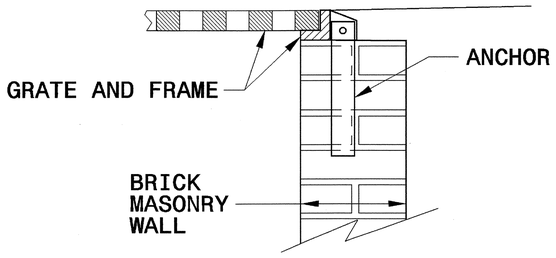
ENGLISH DETAIL DRAWING FOR

ANCHORAGE FOR FRAMES

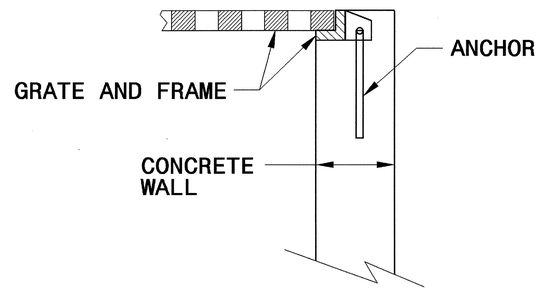
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1

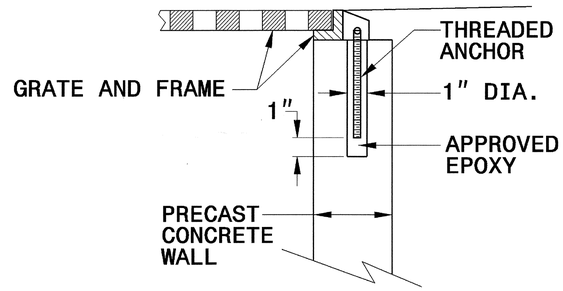
840D25



BRICK MASONRY CONSTRUCTION



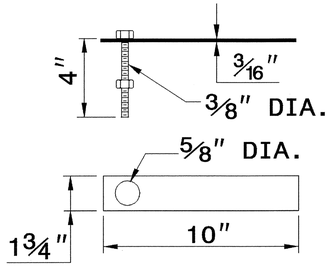
CONCRETE CONSTRUCTION



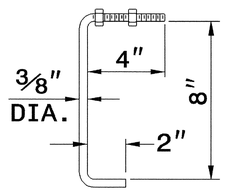
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

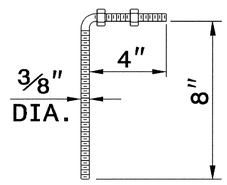
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



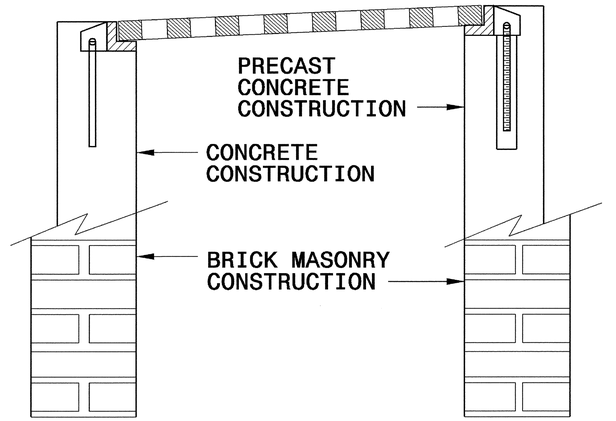
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



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
5/23/07

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.:

27-SEP-2006 08:59
S:\Contracts\Special Details\ericward\stds\06'Stds to Special Details\840d25 Anchorage for Frames\840d25.dgn
ericward AT PS222293

PROJECT REFERENCE NO.	SHEET NO.
B-4298	3
R/W SHEET NO.	

5/14/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201599

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0022000000-E	225	23,250	CY	UNCLASSIFIED EXCAVATION
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ************ (21+73.50)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	250	CY	UNDERCUT EXCAVATION
0063000000-N	SP	Lump Sum		GRADING
0080000000-E	SP	50	TON	CLASS IV SUBGRADE STABILIZA-TION
0134000000-E	240	65	CY	DRAINAGE DITCH EXCAVATION
0141000000-E	240	350	LF	BERM DITCH CONSTRUCTION
0195000000-E	265	200	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	200	SY	FABRIC FOR SOIL STABILIZATION
0318000000-E	300	90	TON	FOUNDATION CONDITIONING MATE-RIAL, MINOR STRS
0343000000-E	310	48	LF	15" SIDE DRAIN PIPE
0708000000-E	310	132	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
0714000000-E	310	88	LF	18" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
0806000000-E	310	4	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK
0807000000-E	310	2	EA	18" BIT COAT CS PIPE ELBOWS, T YPE B 0.064" THICK
0995000000-E	340	156	LF	PIPE REMOVAL
1220000000-E	545	100	TON	INCIDENTAL STONE BASE
1489000000-E	610	1,225	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	640	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1560000000-E	620	95	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
2000000000-N	806	23	EA	RIGHT OF WAY MARKERS
2022000000-E	815	23	CY	SUBDRAIN EXCAVATION
2033000000-E	815	17	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	9	EA	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	12	LF	MASONRY DRAINAGE STRUCTURES
2366000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.24
2367000000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.29
2396000000-N	840	4	EA	FRAME WITH COVER, STD 840.54
2556000000-E	846	150	LF	SHOULDER BERM GUTTER
2619000000-E	850	15	SY	4" CONCRETE PAVED DITCH
3030000000-E	862	550	LF	STEEL BM GUARDRAIL
3045000000-E	862	100	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
3628000000-E	876	70	TON	RIP RAP, CLASS I
3635000000-E	876	470	TON	RIP RAP, CLASS II
3649000000-E	876	6	TON	RIP RAP, CLASS B
3656000000-E	876	1,465	SY	FILTER FABRIC FOR DRAINAGE
3659000000-N	SP	2	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
4400000000-E	1110	375	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	57	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4445000000-E	1145	80	LF	BARRICADES (TYPE III)
4810000000-E	1205	15,000	LF	PAINT PAVEMENT MARKING LINES (4")
4900000000-N	1251	47	EA	PERMANENT RAISED PAVEMENT MARKERS
6000000000-E	1605	2,465	LF	TEMPORARY SILT FENCE
6006000000-E	1610	175	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	740	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	720	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	7.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	250	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1	TON	FERTILIZER FOR TEMPORARY SEED-ING
6024000000-E	1622	80	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	2	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	400	LF	SAFETY FENCE
6030000000-E	1630	2,720	CY	SILT EXCAVATION
6036000000-E	1631	1,535	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	10	SY	COIR FIBER MAT
6038000000-E	SP	1,005	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	875	LF	1/4" HARDWARE CLOTH
6070000000-N	SP	10	EA	SPECIAL STILLING BASINS
6071030000-E	SP	575	LF	COIR FIBER BAFFLES
6071050000-E	SP	1	EA	**" SKIMMER (2-1/2")
6084000000-E	1660	8	ACR	SEEDING & MULCHING
6087000000-E	1660	4.5	ACR	MOWING
6090000000-E	1661	100	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	175	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	5.75	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	18	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.1	ACR	REFORESTATION
******* BEGIN SCHEDULE AA ******* ******* (3 ALTERNATES) *******				
0366000000-E AA1	310	336	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E AA1	310	168	LF	18" RC PIPE CULVERTS, CLASS III
*** OR ***				
0366000000-E AA2	310	248	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E AA2	310	76	LF	18" RC PIPE CULVERTS, CLASS III
0540000000-E AA2	SP	88	LF	***" ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ****" THICK (15", 0.064")
0540000000-E AA2	SP	92	LF	***" ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ****" THICK (18", 0.064")
*** OR ***				
0366000000-E AA3	310	248	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E AA3	310	76	LF	18" RC PIPE CULVERTS, CLASS III
0536000000-E AA3	SP	88	LF	***" HDPE PIPE CULVERTS (15")
0536000000-E AA3	SP	92	LF	***" HDPE PIPE CULVERTS (18")
******* END SCHEDULE AA *******				

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$$$$USERNAME$$$$

4/04/06

COMPUTED BY: Brian Kanaan	DATE: 3/30/2007
CHECKED BY: Jerry Elliott	DATE: 4/5/2007

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4298	3-A

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 12"	15"	18"	24"	30"	36"	42"	48"	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHRWISE) 12" .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 PIPE, TYPE S OR D 12"	15"	18"	24"	30"	36"	42"	48"
SIZE / THICKNESS OR GAUGE																															
-L-																															
9+99	RT	1			352.6	344.3	X			8																					
9+99	RT	1		351.4	344.3																										
15+01	LT	1A	2		351.2	318.1											68														
15+01	LT	2		323.8	318.1																										
15+01	LT	2	3		318.1	309.5																			88						
15+90	LT	3		317.2	309.5																										
15+90	CL	3			309.5	309.2			88																						
19+45	LT	4	6		299.5	281.1																				92					
20+34	LT	6		290.8	281.1																										
20+34	LT	6			281.1													88													
20+34	RT	5		298.9	296.1																										
20+34	CL	5	6		296.1	281.1			52																						
22+90	RT	7		297.6	294.9																										
22+90	RT	7	9		294.9	291.1			52																						
23+40	RT	9		297.4	291.1																										
23+40	RT	9			291.1	274.6											64														
23+40	LT	8	9	294.0	291.1				56																						
23+40	LT	8		294.0	291.2																										
26+00	LT	10		300.2	297.2																										
26+00	CL	10			297.2	296.8				68																					
27+40	LT	11																													
28+33	LT	12																													
					Project Total				248	76							132	88							88	92					

STATION	LOCATION	STRUCTURE NO. FROM	TO	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.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	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, 840.27, OR 840.45	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, 840.32, OR 840.45	M.H. STD. 840.51, 840.52 OR 840.53	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35 OR 840.46	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	BERM DITCH OUTLET STD. 850.10		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-																																						
9+99	RT	1																																				
9+99	RT	1							1	2.1																	1		1									EXTRA DEPTH JB w/MHC
15+01	LT	1A	2																													1		2@15"				ROD & LUG W\ SLEEVE GASKETS
15+01	LT	2							1	0.7																	1		1									EXTRA DEPTH JB w/MHC
15+01	LT	2	3																																			
15+90	LT	3							1	2.7																	1		1									EXTRA DEPTH JB w/MHC
15+90	CL	3																																			67	
19+45	LT	4	6																																			
20+34	LT	6							1	4.7																		1	1									MH
20+34	LT	6																																2@18"				ROD & LUG W\ SLEEVE GASKETS
20+34	RT	5							1																					1	1							T.B.D.I.
20+34	CL	5	6																																			
22+90	RT	7							1																					1	1							T.B.D.I.
22+90	RT	7	9																																			
23+40	RT	9							1	1.4																				1	1							EXTRA DEPTH T.B.D.I.
23+40	RT	9																																2@15"				ROD & LUG W\ SLEEVE GASKETS
23+40	LT	8	9																																			
23+40	LT	8							1											1						1												G.D.I.
26+00	LT	10							1											1						1												G.D.I.
26+00	CL	10																																			47	
27+40	LT	11		24																																	21	
28+33	LT	12		24																																	21	
Project Total				48					9	11.6										2						2	3	1	4	3	3	1		4@15"			156	
																																		2@18"				
									say	12																												

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

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COMPUTED BY: Brian Kangan DATE: 4/18/2007
CHECKED BY: _____ DATE: _____

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4298	3-B

"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

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	AT-1	B-77	GRAU 350	M-350	XIII	CAT-1	VI MOD	BIC	XI MOD	EA	G	NG				
-L-	12+50	15+50	RT	300			13+25	14+75	6	9	50	50	1	1			2												
-L-	13+26 -DR1-	20+72.83	RT	68.75	50		-BRIDGE-		7	10					1	1													
-L-	12+80 -DR2-	20+78.47	LT	75	50		-BRIDGE-		3	9					1	1													
-L-	22+67.83	25+05.33	RT	237.50			-BRIDGE-	24+25	7	10		50		1		1	1												
-L-	22+73.47	24+42.22	LT	150			-BRIDGE-		3	9	131.25		2.63			1	1												
			SUBTOTAL	831.25	100										2	4	4												
			LESS ANCHORS:																										
			AT-1 2@6.25	12.50																									
			GRAU 350 4@50	200																									
			B-77 4@18.75	75																									
			TOTAL DEDUCTIONS	(-) 287.50																									
			TOTAL	543.75	100																								
			SAY	550			ADDITION GUARDRAIL POST = 5 EA.																							

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT(+%)	BORROW	WASTE
-L- STA. 11+75.00 TO STA. 20+76.00 (BEGIN BRIDGE)	19,305		4,598	0	14,707
-DR1- STA. 10+11.00 TO STA. 11+00.00	0		895	895	0
-DR2- STA. 8+82.83 TO STA. 13+15.25	958		233	0	725
SUBTOTAL	20,263		5,726	895	15,432
-L- STA. 22+71.00 (END BRIDGE) TO STA. 30+50.00	3,636		4,760	1,124	0
SUBTOTAL	3,773		4,760	1,124	0
TOTAL	23,899		10,486	2,019	15,432
LOSS DUE TO CLEARING & GRUBBING	- 800				- 800
WASTE TO REPLACE BORROW				-2,019	-2,019
GRAND TOTAL	23,099			0	12,613
SAY	23,250				

EST. UNDERCUT = 250 CY (PER GEOTECH)
EST. DDE = 65 CY

✱ Note: Approximate quantities only. Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading." (See Project Special Provisions)

SUMMARY OF ASPHALT PAVEMENT REMOVAL*

LINE	LOCATION	QUANTITY (SY)
-L-	14+00.00 TO 20+00.00	1,200
-L-	24+00.00 TO 28+00.00	800
	TOTAL	2,000
	SAY	2,025

SUMMARY OF BREAKING ASPHALT PAVEMENT*

LINE	LOCATION	QUANTITY (SY)
-L-	20+00.00 TO 20+70.00	140
-L-	22+66.00 TO 24+00.00	268
	TOTAL	408
	SAY	420

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.

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PROJ. REFERENCE NO.	SHEET NO.
B-4298	3-Z

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4,5	JOHNNY G. CLAYTON GOLDIE E. CLAYTON
2	4,5	RONNIE D. PERNELL
3	4	MYLES J. MacINNES DEBORAH MacINNES
4	4,5	MYLES J. MacINNES DEBORAH MacINNES
5	5	BENNY L. HARRIS JR. KATHIE W. HARRIS
6	5	BENNY L. HARRIS JR. KATHIE W. HARRIS

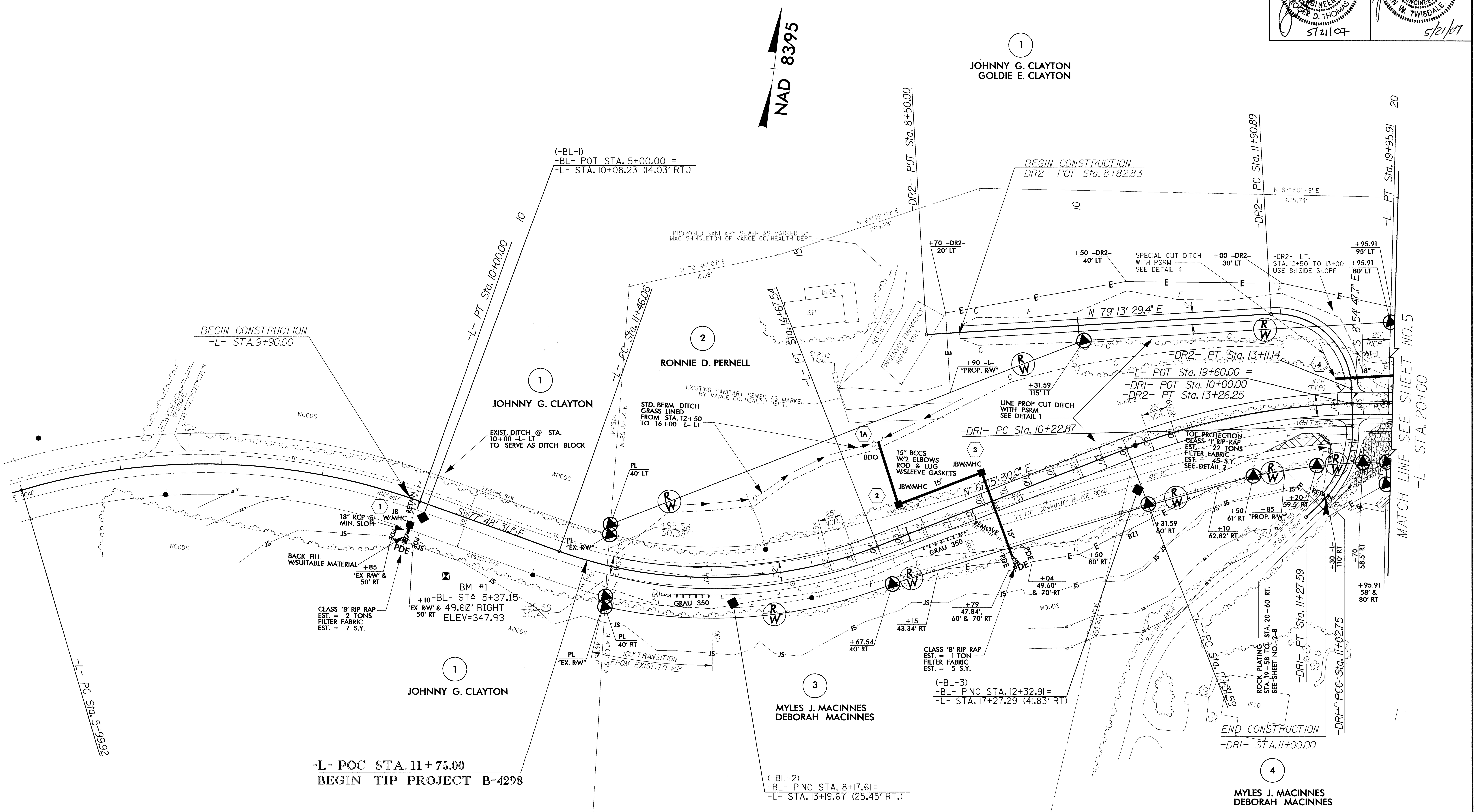
PARCEL No.	SHEET No.	PROPERTY OWNER NAME

DESIGN EXCEPTION FOR DESIGN SPEED REQUIRED

PROJECT REFERENCE NO.	SHEET NO.
B-4298	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19699 ROGER D. THOMAS 5/21/07	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24897 JOHN W. TWISDALE, JR. 5/21/07

REVISIONS



-L-		
PI Sta 8+06.79	PI Sta 13+14.00	PI Sta 18+65.55
Δ = 35° 57' 22.5" (RT)	Δ = 40° 55' 58.9" (LT)	Δ = 22° 56' 45.0" (RT)
D = 8° 59' 14.1"	D = 12° 43' 56.6"	D = 8° 40' 52.2"
L = 400.08'	L = 321.49'	L = 264.32'
T = 206.87'	T = 167.95'	T = 133.95'
R = 637.52'	R = 450.00'	R = 660.00'
	SE = .06	RO = SEE PLANS

-DRI-	
PI Sta 11+15.17	PI Sta 10+65.08
Δ = 2° 52' 44.7" (RT)	Δ = 45° 46' 03.1" (RT)
D = 11° 35' 20.2"	D = 57° 17' 44.8"
L = 24.84'	L = 79.88'
T = 12.42'	T = 42.21'
R = 494.40'	R = 100.00'

-DR2-
PI Sta 12+68.37
Δ = 91° 51' 42.9" (RT)
D = 76° 23' 39.7"
L = 120.25'
T = 77.48'
R = 75.00'

NOTES: (1) SEE SHEET 6 FOR -L- & -DRI- PROFILES, AND SHEET 7 FOR -DR2- PROFILE
(2) SEE SHEET 2-C FOR DITCH DETAILS

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DESIGN EXCEPTION FOR DESIGN SPEED REQUIRED

PROJECT REFERENCE NO.	SHEET NO.
B-4298	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

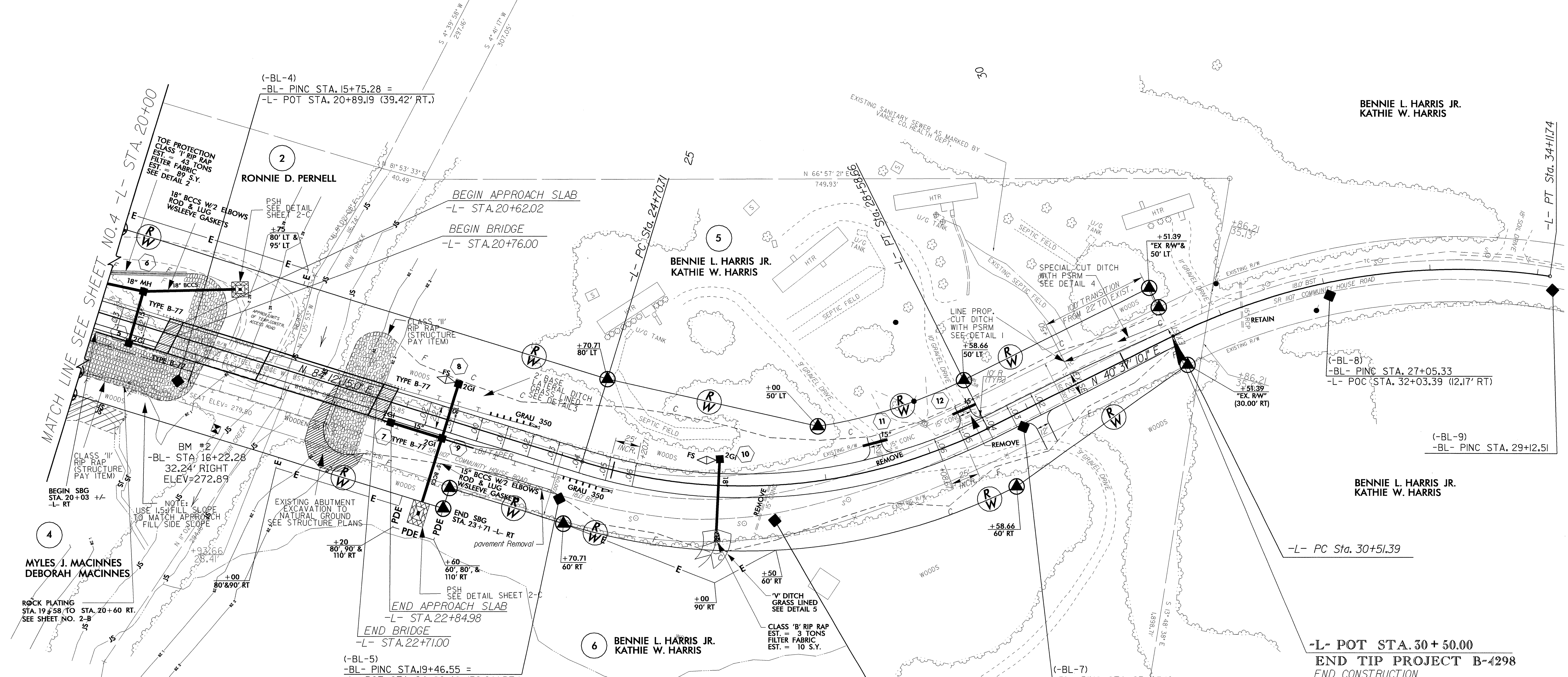
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19849 ROGER D. THOMAS 5/21/07

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24897 JOHN W. TWISDALE, JR. 5/21/07

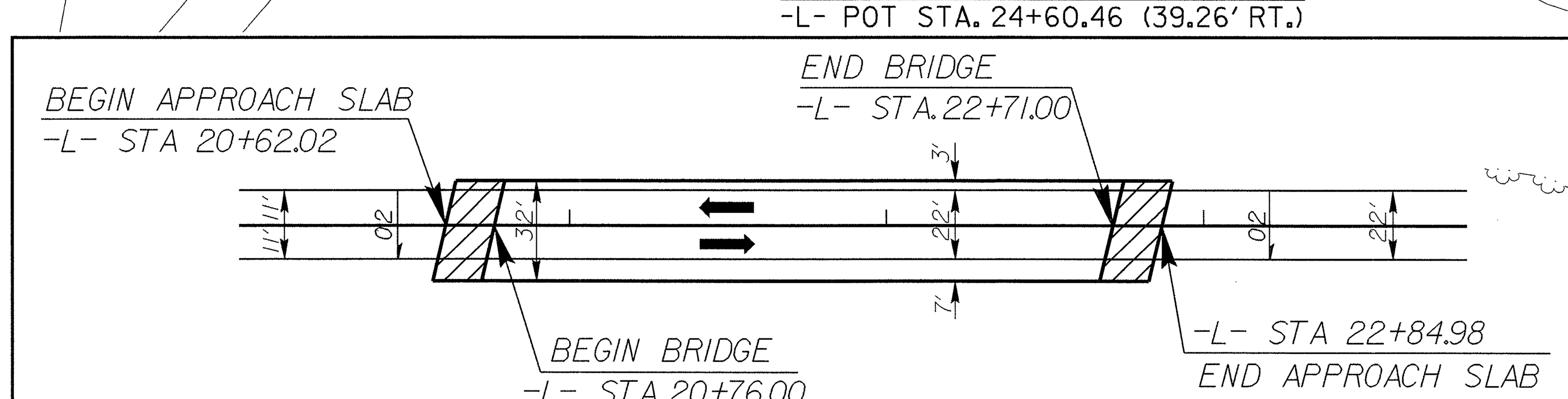
NAD 83/95

-L-

PI Sta 26+74.61	PI Sta 32+37.28
△ = 43° 35′ 04.9″ (LT)	△ = 34° 41′ 59.6″ (RT)
D = 11° 14′ 04.1″	D = 9° 37′ 46.4″
L = 387.96′	L = 360.35′
T = 203.91′	T = 185.89′
R = 510.00′	R = 595.00′
SE = .06	
RO = SEE PLANS	



1 JOHNNY G. CLAYTON
GOLDIE E. CLAYTON
2 RONNIE D. PERNELL
4 MYLES J. MACINNES
DEBORAH MACINNES
5 BENNIE L. HARRIS JR.
KATHIE W. HARRIS
6 BENNIE L. HARRIS JR.
KATHIE W. HARRIS
BENNIE L. HARRIS JR.
KATHIE W. HARRIS
MATCH LINE SEE SHEET NO. 4 -L- STA. 20+00
(-BL-4)
-BL- PINC STA. 15+75.28 =
-L- POT STA. 20+89.19 (39.42′ RT.)
BEGIN APPROACH SLAB
-L- STA. 20+62.02
BEGIN BRIDGE
-L- STA. 20+76.00
END APPROACH SLAB
-L- STA. 22+84.98
END BRIDGE
-L- STA. 22+71.00
(-BL-5)
-BL- PINC STA. 19+46.55 =
-L- POT STA. 24+60.46 (39.26′ RT.)
(-BL-6)
-BL- PINC STA. 21+47.99 =
-L- POC STA. 26+50.35 (32.55′ RT.)
(-BL-7)
-BL- PINC STA. 23+95.19 =
-L- POT STA. 28+89.02 (13.58′ RT.)
(-BL-8)
-BL- PINC STA. 27+05.33
-L- POC STA. 32+03.39 (12.17′ RT)
(-BL-9)
-BL- PINC STA. 29+12.51
-L- PC Sta. 24+70.71
-L- PT Sta. 28+58.66
-L- PC Sta. 30+51.39
-L- PT Sta. 34+11.74
-L- POT STA. 30+50.00
END TIP PROJECT B-4298
END CONSTRUCTION
TOE PROTECTION CLASS 'I' RIP RAP EST. = 43 TONS FILTER FABRIC EST. = 89 S.Y. SEE DETAIL 2
18" BCCS W/2 ELBOWS ROD & LUG W/SLEEVE GASKETS
PSH SEE DETAIL SHEET 2-C
BM #2
-BL- STA. 16+22.28
32.24′ RIGHT
ELEV=272.89
CLASS 'II' RIP RAP (STRUCTURE PAY ITEM)
BEGIN SBG STA. 20+03 +/- -L- RT
NOTE: USE 1.5:1 FILL SLOPE TO MATCH APPROACH FILL SIDE SLOPE
EXISTING ABUTMENT EXCAVATION TO NATURAL GROUND SEE STRUCTURE PLANS
ROCK PLATING STA. 19+58 TO STA. 20+60 RT. SEE SHEET NO. 2-B
15" BCCS W/2 ELBOWS ROD & LUG W/SLEEVE GASKETS
END SBG STA. 23+71 -L- RT
PSH SEE DETAIL SHEET 2-C
2' BASE LATERAL DITCH GRASS LINED SEE DETAIL 3
EXISTING SANITARY SEWER AS MARKED BY VANCE CO. HEALTH DEPT.
SPECIAL CUT DITCH WITH PSRM SEE DETAIL 4
LINE PROP. CUT DITCH WITH PSRM SEE DETAIL 1
'V' DITCH GRASS LINED SEE DETAIL 5
CLASS 'B' RIP RAP EST. = 3 TONS FILTER FABRIC EST. = 10 S.Y.
SR 1107 COMMUNITY HOUSE ROAD
N 84° 12′ 15.0″ E
N 40° 31′ 10.1″ E
REMOVE
RETAIN



SKETCH SHOWING BRIDGE IN RELATION TO PAVEMENT

NOT TO SCALE

NOTES: (1) SEE SHEET 7 FOR -L- PROFILE
(2) SEE SHEETS S-1 TO S-29 FOR STRUCTURE PLANS
(3) SEE SHEET 2-C FOR DITCH DETAILS

REVISIONS

8/17/99

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5/14/99

DESIGN EXCEPTION FOR DESIGN SPEED REQUIRED

PROJECT REFERENCE NO.	SHEET NO.
B-4298	6

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18949 ENGINEER CHARLES D. THOMAS
5/21/07

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24897 ENGINEER JOHN W. TWISDALE, JR.
5/21/07

-L-

BEGIN RESURFACING
-L- STA. 12+90 EL = 344.46'

BEGIN GRADE
-L- STA. 13+00 EL = 338.26'
INCLUDES 1.25" RESURFACING

PI = 18+50.00
EL = 300.63'
VC = 410'
K = 65

(-)6.8481%

(+)0.5424%

BM #1 ELEVATION = 347.93'
-BL- STATION 5+37.15 49.60' RIGHT
R/R SPIKE SET IN 16" OAK
-L- STATION 10+48.96 60.74' RIGHT
(COMPUTED BY ROADWAY DESIGN)

-DR1-

BEGIN GRADE
-DR1- STA. 10+11.00
EOP EL. 300.13'

(-)5.4400%

(-)9.6882%

END GRADE
-DR1- STA. 11+90.00
EL. 289.73'

(+)5.0406%

PI = 10+35.00
EL = 298.83'
VC = 28'

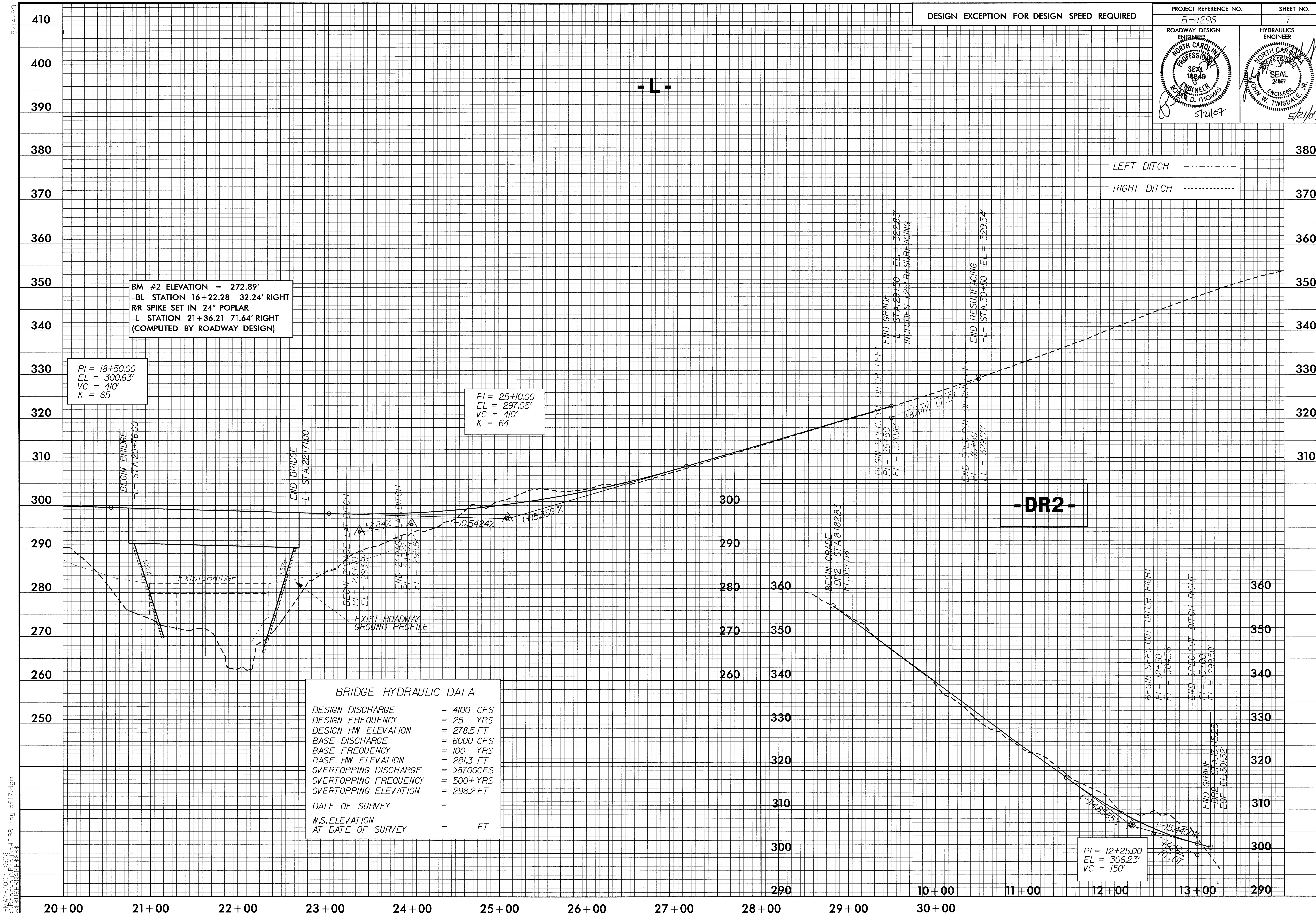
PI = 10+85.00
EL = 288.98'
VC = 30'

410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210

320 310 300 290 280

10+00 11+00 12+00

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00



DESIGN EXCEPTION FOR DESIGN SPEED REQUIRED
PROJECT REFERENCE NO.
B-4298
SHEET NO.
7
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19849 ENGINEER D. THOMAS
5/21/07
NORTH CAROLINA PROFESSIONAL SEAL 24897 ENGINEER JOHN W. TWISDALE, JR.
5/21/07
5/14/99
-L-
LEFT DITCH
RIGHT DITCH
BM #2 ELEVATION = 272.89'
-BL- STATION 16+22.28 32.24' RIGHT
R/R SPIKE SET IN 24" POPLAR
-L- STATION 21+36.21 71.64' RIGHT
(COMPUTED BY ROADWAY DESIGN)
PI = 18+50.00
EL = 300.63'
VC = 410'
K = 65
PI = 25+10.00
EL = 297.05'
VC = 410'
K = 64
BEGIN BRIDGE -L- STA.20+76.00
END BRIDGE -L- STA.22+71.00
EXIST. BRIDGE
EXIST. ROADWAY GROUND PROFILE
BEGIN 2' BASE LAT. DITCH PI = 23+40 EL = 293.91'
END 2' BASE LAT. DITCH PI = 24+00 EL = 295.61'
(+)2.84%
(-)0.5424%
(+)5.859%
END GRADE -L- STA.29+50 EL = 322.83' INCLUDES 1.25' RESURFACING
END RESURFACING -L- STA.30+50 EL = 329.34'
BEGIN SPEC.CUT DITCH LEFT PI = 29+50 EL = 320.16'
+8.84% LT. DT.
END SPEC.CUT DITCH LEFT PI = 30+50 EL = 329.00'
-DR2-
BEGIN GRADE -DR2- STA.8+82.83 EL.357.08'
BEGIN SPEC.CUT DITCH RIGHT PI = 12+50 EL = 304.38
END SPEC.CUT DITCH RIGHT PI = 13+00 EL = 299.50
END GRADE -DR2- STA.13+15.25 EOP EL.301.32
(-)14.8585%
(-)5.4400%
-19.76% RT. DT.
PI = 12+25.00
EL = 306.23'
VC = 150'
410
400
390
380
370
360
350
340
330
320
310
300
290
280
270
260
250
20+00
21+00
22+00
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BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	4100 CFS
DESIGN FREQUENCY	=	25 YRS
DESIGN HW ELEVATION	=	278.5 FT
BASE DISCHARGE	=	6000 CFS
BASE FREQUENCY	=	100 YRS
BASE HW ELEVATION	=	281.3 FT
OVERTOPPING DISCHARGE	=	>8700CFS
OVERTOPPING FREQUENCY	=	500+ YRS
OVERTOPPING ELEVATION	=	298.2 FT
DATE OF SURVEY	=	
W.S. ELEVATION AT DATE OF SURVEY	=	FT