09/08/99

TIP PROJECT: U-5132

CONTRACT: C202816

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

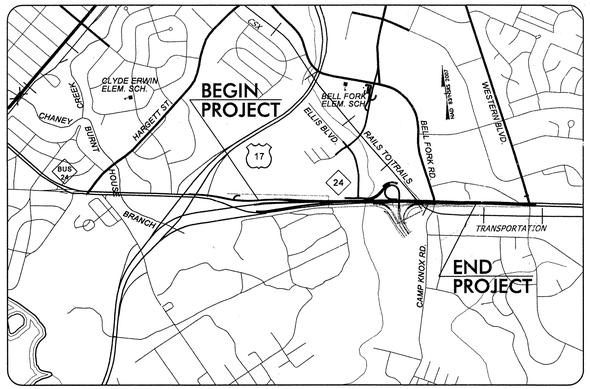
ONSLOW COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5132	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
45155.1.1	DOD-0024(39)	P.E.
45155.2.1	DOD-0024(44)	UTILITIES
45155.2.1	DOD-0024(44)	R /W
45155.3.1	DOD-0024(44)	CONST.

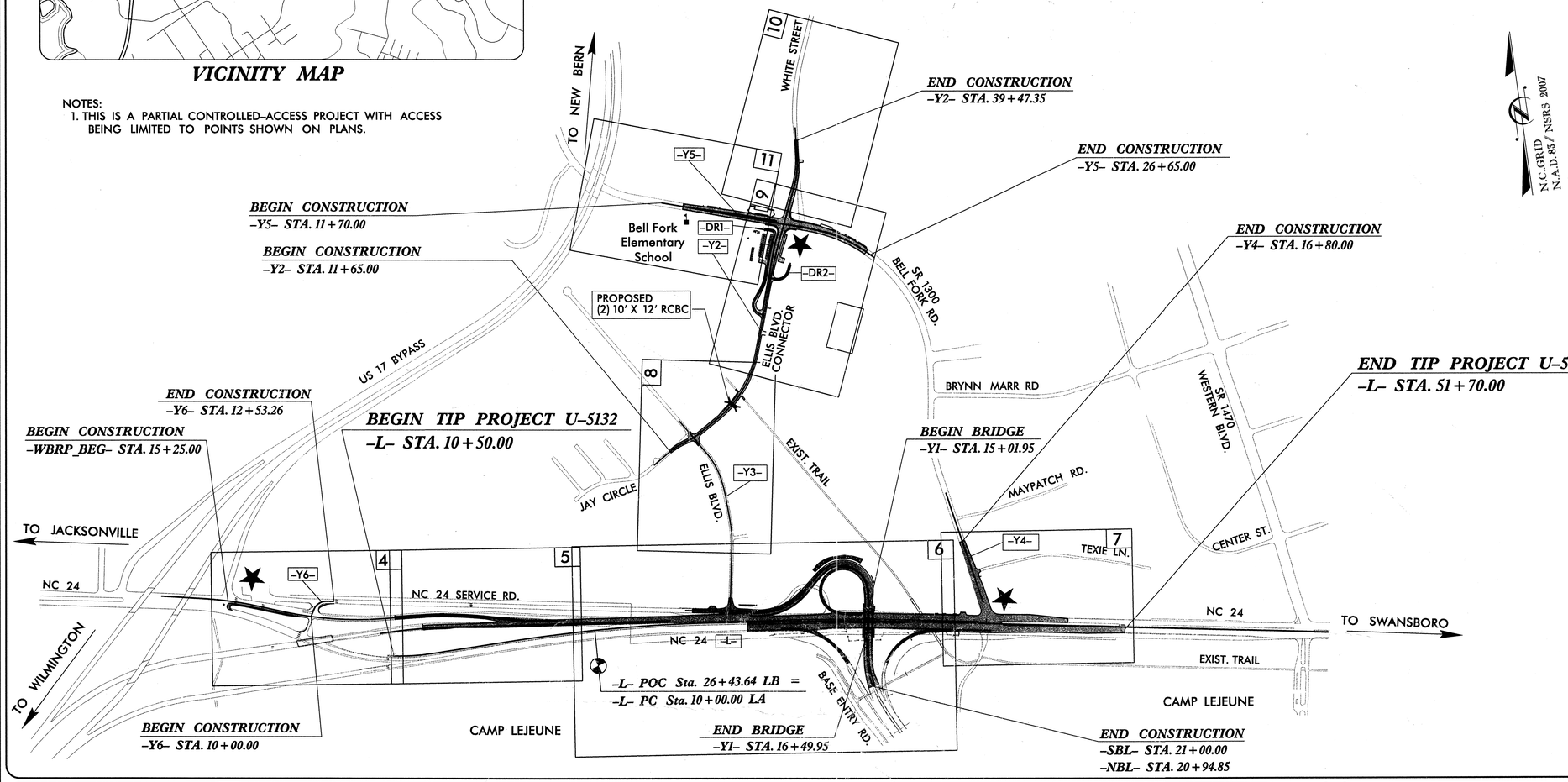
LOCATION: NEW NC 24 ACCESS AND NEW BASE ENTRY ROAD FOR CAMP LEJEUNE MARINE CORPS BASE

TYPE OF WORK: GRADING, PAVING, WIDENING, RESURFACING, GUARDRAIL, DRAINAGE, STRUCTURES, EROSION CONTROL, SIGNALS, & LIGHTING



VICINITY MAP

NOTES:
1. THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS SHOWN ON PLANS.



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 2012 = 70,950
ADT 2035 = 83,650
DHV = 8.7 %
D = 60 %
*T = 8 %
V = 50 MPH
*TTST = 5% DUAL 3%
FUNC CLASS = URBAN ARTERIAL
STATEWIDE

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5132.....	0.780 mi
LENGTH STRUCTURE TIP PROJECT U-5132.....	0.000 mi
TOTAL LENGTH TIP PROJECT U-5132.....	0.780 mi

NCDOT CONTACT

CHRIS HAIRE, PE
PROJECT ENGINEER - ROADWAY DESIGN

PLANS PREPARED BY :

RKK
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F-0112

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 31, 2011

LETTING DATE:
APRIL 17, 2012

J. T. Peacock, Jr., P.E.
PROJECT ENGINEER

Michael T. Merritt, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE

SIGNATURE: Audrey B. Burnette P.E. 2/8/2012

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

SIGNATURE: Michael T. Merritt P.E. 2/8/2012

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2/8/2012
R:\Roadway\Proj\u5132_rdy_tsh.dgn
default

PROJECT REFERENCE NO.	SHEET NO.
U-5132	1-A

ROADWAY DESIGN

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

2/17/2012

8/17/99

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
1-D	COORDINATE CENTERLINE
2-2F	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2G	ROCK PLATING DETAIL
2H	SHEER POINT DETAIL
2I-2K	INTERSECTION DETAILS
2L	DITCH DETAILS
2M	REMOVABLE BOLLARD DETAIL
2N	CONVERT DROP INLET OR CATCH BASIN TO JUNCTION BOX DETAIL
2-O	TEMPORARY SHORING DETAIL
3 (2 SHEETS)	SUMMARY OF QUANTITIES
3A-3F	SUMMARY OF DRAINAGE QUANTITIES
3G-3H	SUMMARY OF GUARDRAIL, PAVEMENT REMOVAL SUMMARY, SHOULDER BERM GUTTER SUMMARY, WOVEN WIRE FENCE SUMMARY AND CHAIN LINK FENCE SUMMARY
3I	EARTHWORK SUMMARY
3J	PARCEL INDEX
4 THRU 11	PLAN SHEETS
12 THRU 22	PROFILE SHEETS
TCP-1 THRU TCP-31A	TRAFFIC CONTROL PLANS
PM-1 THRU PM-13	PAVEMENT MARKING PLANS
E-1 THRU E-7	LIGHTING/ELECTRICIAL PLANS
EC-1 THRU EC-19	EROSION CONTROL PLANS
RF-1	REFORESTATION PLAN
SIGN-1 THRU SIGN-36	SIGNING PLANS
SIG. -1 THRU SIG.-24	SIGNAL PLANS
UC-1 THRU UC-17	UTILITIES PLANS
UO- 1 THRU UO-9	UTILITIES BY OTHERS
S-1 THRU S-33	STRUCTURE PLANS
X0	CROSS-SECTION INDEX
X1A-X1B	CROSS-SECTION SUMMARY SHEETS
X-1 THRU X-61	CROSS-SECTIONS

2012 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 January, 2012 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
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.03	Deceleration and Acceleration Lanes
225.05	Method of Obtaining Superelevation - Divided Highways
225.06	Method of Grading Sight Distance at Intersections
225.09	Guide for Shoulder and Ditch Transition at Grade Separations
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.02	Parallel Pipe End Section - Precast Concrete Section for 15"" to 24"" Pipe"
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	
610.01	Guide for Paving Shoulders Under Bridges - Method I
654.01	Pavement Repairs
DIVISION 7 - CONCRETE PAVEMENTS AND SHOULDERS	
700.05	Tying Proposed Pavement to Existing
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
806.03	Concrete Contol of Access Marker
815.03	Pipe Underdrain and Blind Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15"" thru 48"" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15"" thru 48"" Pipe 90 Skew
840.01	Brick Catch Basin - 12"" thru 54"" Pipe
840.02	Concrete Catch Basin - 12"" thru 54"" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12"" thru 30"" Pipe
840.15	Brick Drop Inlet - 12"" thru 30"" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' - 12"" thru 72"" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12"" thru 36"" Pipe
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.24	Frames and Narrow Slot Sag Grates
840.26	Brick Grated Drop Inlet Type 'A' - 12"" thru 72"" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12"" thru 36"" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.32	Brick Junction Box - 12"" thru 66"" Pipe
840.31	Concrete Junction Box - 12" thru 36" pipe
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
840.45	Precast Drainage Structure
840.54	Manhole Frame and Cover
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.05	Curb Ramp - Proposed Curb & Gutter
852.01	Concrete Islands
854.01	Double Faced Concrete Barrier - Types I, II, III and IV
854.04	Concrete Median Barrier - Precast Permanent
857.01	Precast Reinforced Concrete Barrier - 41"" Single Faced
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
866.01	Chain Link Fence - 4', 5' and 6' High Fence
866.02	Woven Wire Fence - with Wood Post
866.05	Glare Screen - Chain Link Fabric/Guardrail Mounted
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.03	Drainage Ditches with Class 'A' Rip Rap
876.04	Drainage Ditches with Class 'B' Rip Rap

GENERAL NOTES: 2012 SPECIFICATIONS TIP: U-5132
EFFECTIVE: 01-17-12
REVISED: 08/31/11

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.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

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 NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR ""TEMPORARY SHORING""."

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE "Jones - Onslow EMC, Progress Energy,"
"Time Warner Cable, Piedmont Gas, Centurylink, City of Jacksonville"

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

RIGHT-OF-WAY MARKERS:

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

Curb Ramps:

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 and 848.06.

2/17/2012
R:\Roadway\Proj\U-5132_Rdy_1A_psh.dgn
default

01/20/11

PROJECT REFERENCE NO.	SHEET NO.
U-5132	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 Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Wheel Chair Ramp — CR
- 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
- 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.
- Contaminated Soil

09/08/99

TIP PROJECT: U-5132

CONTRACT:

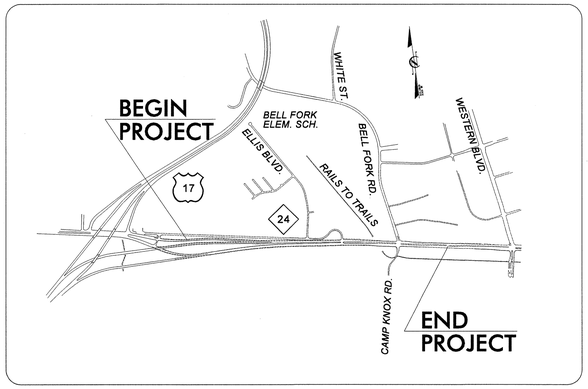
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ONSLOW COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5132	1C	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45155.1.1	DOD-0024(39)	P.E.

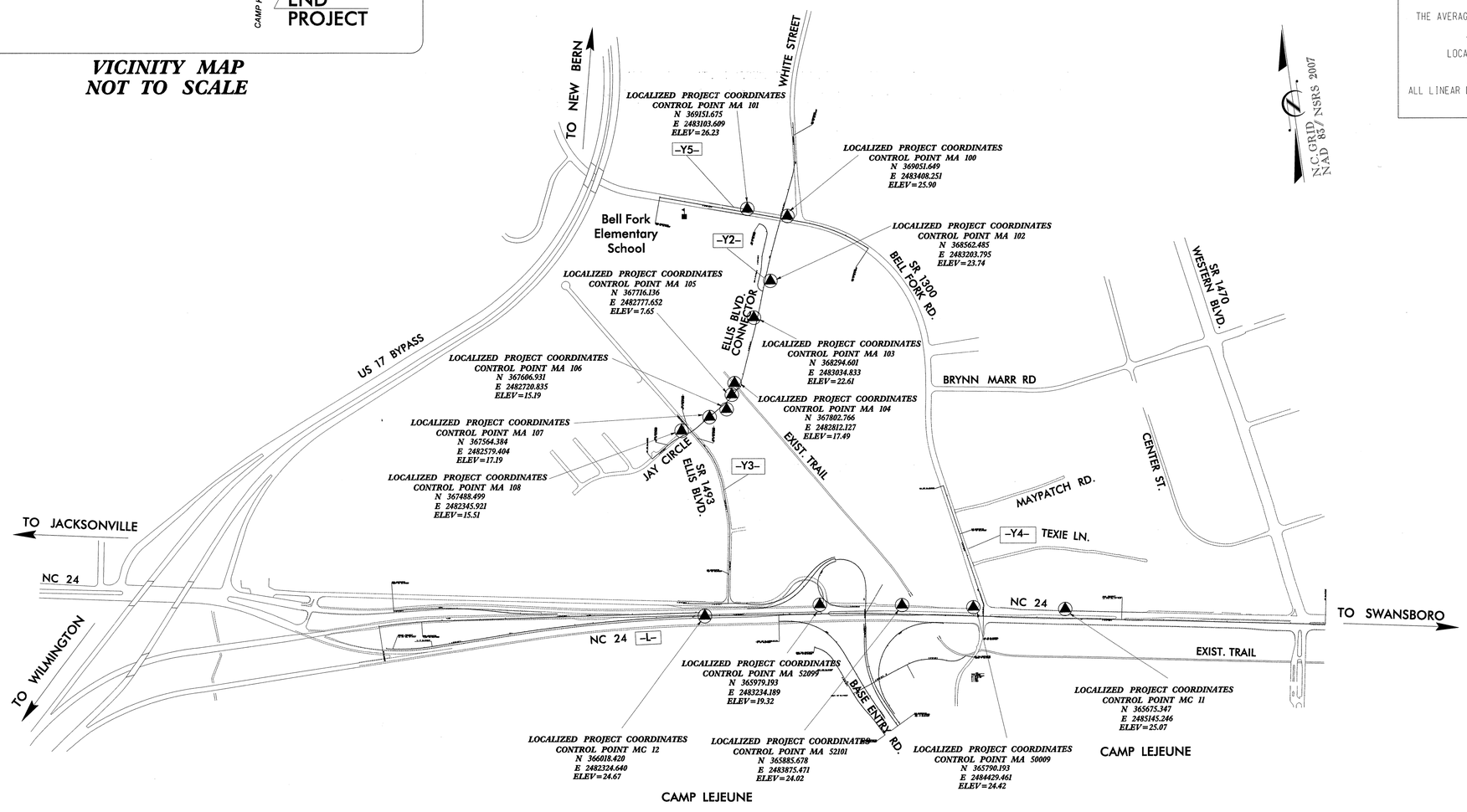
LOCATION: NEW NC 24 ACCESS AND NEW BASE ENTRY ROAD FOR CAMP LEJEUNE MARINE CORPS BASE



VICINITY MAP
NOT TO SCALE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "MC12"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 366,018.42(ft) EASTING: 2,482,324.64(ft)
ELEVATION: 24.67(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991615
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "MC12" TO -WBRP- STATION 10+00 IS
N 81°02'20" W 2,451.51 FEET
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88



▲ INDICATES CONTROL MONUMENTS SET WITH REBAR AND CAP FOR HORIZONTAL AND VERTICAL PROJECT CONTROL

NOTE: DRAWING NOT TO SCALE

PROJ. REFERENCE NO.	SHEET NO.
U-5132	1-D

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CENTERLINE COORDINATE LIST

Point #	Chain	Station	Northing (Y)	Easting (X)
1	L	10+00.00	366084.6662	2481444.6538
2	L	11+00.00	366080.2855	2481544.5575
3	L	12+00.00	366075.0762	2481644.4215
4	L	13+00.00	366069.0388	2481744.2388
5	L	14+00.00	366062.1735	2481844.0025
6	L	15+00.00	366054.4810	2481943.7059
7	L	16+00.00	366045.9616	2482043.3421
8	L	17+00.00	366036.6160	2482142.9042
9	L	18+00.00	366026.4448	2482242.3853
10	L	19+00.00	366015.4488	2482341.7786
11	L	20+00.00	366003.6289	2482441.0773
12	L	21+00.00	365991.4172	2482540.3288
13	L	22+00.00	365979.2055	2482639.5804
14	L	23+00.00	365966.9938	2482738.8320
15	L	24+00.00	365954.7821	2482838.0836
16	L	25+00.00	365942.5704	2482937.3351
17	L	26+00.00	365930.3587	2483036.5867
18	L	27+00.00	365918.1470	2483135.8383
19	L	28+00.00	365905.9353	2483235.0898
20	L	29+00.00	365893.6261	2483334.3291
21	L	30+00.00	365880.5733	2483433.4734
22	L	31+00.00	365866.6588	2483532.5003
23	L	32+00.00	365851.8838	2483631.4025
24	L	33+00.00	365836.2493	2483730.1724
25	L	34+00.00	365819.9234	2483828.8307
26	L	35+00.00	365803.5367	2483927.4789
27	L	36+00.00	365787.1500	2484026.1271
28	L	37+00.00	365770.7633	2484124.7754
29	L	38+00.00	365754.3766	2484223.4236
30	L	39+00.00	365737.9899	2484322.0719
31	L	40+00.00	365721.6032	2484420.7201
32	L	41+00.00	365705.2165	2484519.3684
33	L	42+00.00	365688.8298	2484618.0166
34	L	43+00.00	365672.4431	2484716.6649
35	L	44+00.00	365656.0564	2484815.3131
36	L	45+00.00	365639.6697	2484913.9613
37	L	46+00.00	365623.2830	2485012.6096
38	L	47+00.00	365606.8963	2485111.2578
39	L	48+00.00	365590.5096	2485209.9061
40	L	49+00.00	365574.1229	2485308.5543
41	L	50+00.00	365557.7362	2485407.2026
42	L	51+00.00	365541.3495	2485505.8508
43	L	52+00.00	365524.9628	2485604.4991
44	L	53+00.00	365508.5761	2485703.1473
45	L	54+00.00	365492.1894	2485801.7955
46	L	55+00.00	365475.8027	2485900.4438
47	L	56+00.00	365459.4160	2485999.0920
48	L	57+00.00	365443.0293	2486097.7403
49	L	58+00.00	365426.6426	2486196.3885
50	L	59+00.00	365410.2559	2486295.0368
51	L	60+00.00	365393.8692	2486393.6850
52	L	61+00.00	365377.4825	2486492.3333
53	L	62+00.00	365361.0958	2486590.9815
54	L	63+00.00	365344.7091	2486689.6297
55	L	64+00.00	365328.3224	2486788.2780
56	L	65+00.00	365311.9357	2486886.9262
57	L	66+00.00	365295.5490	2486985.5745
58	L	67+00.00	365279.1623	2487084.2227
59	L	67+75.67	365266.7625	2487158.8697
60	BRP_BE	10+00.00	366820.8029	2478105.3979
61	BRP_BE	11+00.00	366801.4863	2478203.5145
62	BRP_BE	12+00.00	366782.1697	2478301.6311
63	BRP_BE	13+00.00	366762.8527	2478399.7476
64	BRP_BE	14+00.00	366741.8388	2478497.5100
65	BRP_BE	15+00.00	366717.5513	2478594.5109
66	BRP_BE	16+00.00	366690.0176	2478690.6407
67	BRP_BE	17+00.00	366659.2687	2478785.7910
68	BRP_BE	18+00.00	366625.6103	2478879.9541
69	BRP_BE	19+00.00	366591.4090	2478973.9236
70	BRP_BE	20+00.00	366557.2195	2479067.8974
71	BRP_BE	21+00.00	366525.0899	2479162.5890
72	BRP_BE	22+00.00	366496.5555	2479258.4253
73	BRP_BE	23+00.00	366471.6571	2479355.2700
74	BRP_BE	24+00.00	366450.4300	2479452.9850
75	BRP_BE	25+00.00	366432.9046	2479551.4313
76	BRP_BE	26+00.00	366419.1057	2479650.4687
77	BRP_BE	27+00.00	366409.0530	2479749.9561
78	BRP_BE	28+00.00	366402.2290	2479849.7214
79	BRP_BE	28+53.04	366398.8286	2479902.6569
80	L_WB	10+00.00	366293.8092	2479770.2528

Point #	Chain	Station	Northing (Y)	Easting (X)
81	L_WB	11+00.00	366293.9445	2479870.2503
82	L_WB	12+00.00	366291.6645	2479970.2218
83	L_WB	13+00.00	366286.9706	2480070.1092
84	L_WB	14+00.00	366279.8656	2480169.8540
85	L_WB	15+00.00	366270.3536	2480269.3982
86	L_WB	16+00.00	366259.4452	2480368.8014
87	L_WB	17+00.00	366248.5282	2480468.2037
88	L_WB	18+00.00	366237.6111	2480567.6060
89	L_WB	19+00.00	366226.6941	2480667.0083
90	L_WB	20+00.00	366215.7770	2480766.4106
91	L_WB	21+00.00	366204.8600	2480865.8129
92	L_WB	22+00.00	366193.9429	2480965.2152
93	L_WB	23+00.00	366183.0259	2481064.6175
94	L_WB	24+00.00	366172.1088	2481164.0198
95	L_WB	25+00.00	366161.1918	2481263.4221
96	L_WB	26+00.00	366150.2748	2481362.8244
97	L_WB	27+00.00	366139.3577	2481462.2267
98	L_WB	28+00.00	366128.4407	2481561.6291
99	L_WB	29+00.00	366117.5236	2481661.0314
100	L_WB	30+00.00	366106.6066	2481760.4337
101	L_WB	31+00.00	366095.6895	2481859.8360
102	L_WB	32+00.00	366084.7725	2481959.2383
103	L_WB	32+87.25	366075.2472	2482045.9686
104	RPB	10+00.00	366027.6346	2482663.6017
105	RPB	11+00.00	366017.2642	2482763.0487
106	RPB	12+00.00	366017.9836	2482862.9296
107	RPB	13+00.00	366038.8756	2482960.5125
108	RPB	14+00.00	366080.7609	2483051.0914
109	RPB	15+00.00	366140.0314	2483131.4940
110	RPB	16+00.00	366207.6903	2483205.1134
111	RPB	17+00.00	366273.2346	2483280.5380
112	RPB	18+00.00	366317.4531	2483369.5618
113	RPB	18+34.47	366323.1420	2483403.5201
114	RPC	10+00.00	365896.2262	2482896.3691
115	RPC	11+00.00	365882.1807	2482995.3639
116	RPC	12+00.00	365857.2709	2483092.0914
117	RPC	13+00.00	365813.3473	2483181.6997
118	RPC	14+00.00	365750.7543	2483259.4237
119	RPC	15+00.00	365672.5780	2483321.4532
120	RPC	16+00.00	365583.9571	2483367.5912
121	RPC	17+00.00	365491.4979	2483405.6721
122	RPC	18+00.00	365398.8246	2483443.2432
123	RPC	19+00.00	365306.8086	2483482.3912
124	RPC	20+00.00	365215.8980	2483524.0396
125	RPC	21+00.00	365126.1489	2483568.1381
126	RPC	22+00.00	365036.6920	2483612.8310
127	RPC	22+12.92	365025.1346	2483618.6051
128	RPD	10+00.00	365702.9546	2484185.1415
129	RPD	11+00.00	365717.2595	2484086.1878
130	RPD	12+00.00	365718.9877	2483986.3533
131	RPD	13+00.00	365697.7897	2483888.8976
132	RPD	14+00.00	365652.9146	2483799.8291
133	RPD	15+00.00	365587.2090	2483724.7974
134	RPD	16+00.00	365504.8407	2483668.5619
135	RPD	17+00.00	365411.0343	2483634.6897
136	RPD	18+00.00	365311.7400	2483625.3293
137	RPD	19+00.00	365213.2441	2483641.0301
138	RPD	20+00.00	365120.0119	2483676.9155
139	RPD	20+72.03	365055.3355	2483708.6199
140	LPB	10+00.00	365917.1314	2483539.8162
141	LPB	11+00.00	365931.6916	2483440.8823
142	LPB	12+00.00	365958.0830	2483344.7815
143	LPB	13+00.00	366022.3110	2483269.7874
144	LPB	14+00.00	366116.3893	2483239.8760
145	LPB	15+00.00	366212.0947	2483264.0815
146	LPB	16+00.00	366280.6405	2483335.1231
147	LPB	16+73.64	366301.2135	2483405.2926
148	Y1	10+00.00	366313.1745	2483404.3258
149	Y1	11+00.00	366295.4964	2483501.6061
150	Y1	12+00.00	366231.7553	2483577.1908
151	Y1	13+00.00	366138.9660	2483611.6467
152	Y1	14+00.00	366039.2697	2483609.2221
153	Y1	15+00.00	365940.4670	2483593.8136
154	Y1	16+00.00	365841.7350	2483577.9397
155	Y1	17+00.00	365743.0029	2483562.0657
156	Y1	18+00.00	365644.1971	2483546.6673
157	Y1	19+00.00	365544.7867	2483536.0736

Point #	Chain	Station	Northing (Y)	Easting (X)
158	Y1	20+00.00	365444.8511	2483536.0577
159	Y1	21+00.00	365345.6924	2483548.4892
160	Y1	22+00.00	365248.8572	2483573.1861
161	Y1	23+00.00	365155.4917	2483608.8912
162	Y1	24+00.00	365064.9625	2483651.3456
163	Y1	25+00.00	364976.1893	2483697.3759
164	Y1	25+25.00	364954.1846	2483709.2314
165	Y2	10+00.00	367302.8589	2482086.8172
166	Y2	11+00.00	367356.7884	2482171.0289
167	Y2	12+00.00	367409.6440	2482255.8912
168	Y2	13+00.00	367447.0097	2482348.4261
169	Y2	14+00.00	367480.7912	2482442.3467
170	Y2	15+00.00	367531.3465	2482528.5732
171	Y2	16+00.00	367583.7326	2482613.7536
172	Y2	17+00.00	367638.3637	2482697.4707
173	Y2	18+00.00	367701.8202	2482774.6856
174	Y2	19+00.00	367773.7598	2482844.0654
175	Y2	20+00.00	367853.2222	2482904.6839
176	Y2	21+00.00	367939.1464	2482955.7319
177	Y2	22+00.00	368030.3855	2482996.5277
178	Y2	23+00.00	368124.9556	2483029.0132
179	Y2	24+00.00	368219.7328	2483060.9080
180	Y2	25+00.00	368314.5100	2483092.8028
181	Y2	26+00.00	368409.2872	2483124.6977
182	Y2	27+00.00	368504.0644	2483156.5925
183	Y2	28+00.00	368598.8416	2483188.4873
184	Y2	29+00.00	368693.5493	2483220.5862
185	Y2	30+00.00	368787.4237	2483255.0360
186	Y2	31+00.00	368880.1832	2483292.3841
187	Y2	32+00.00	368972.0423	2483331.9041
188	Y2	33+00.00	369063.8453	2483371.5553
189	Y2	34+00.00	369155.6482	2483411.2064
190	Y2	35+00.00	369247.4512	2483450.8576
191	Y2	36+00.00	369339.4716	2483489.9866
192	Y2	37+00.00	369434.9348	2483519.5019
193	Y2	38+00.00	369533.5342	2483535.7045
194	Y2	39+00.00	369633.2393	2483543.3697
195	Y2	40+00.00	369732.9550	2483550.9041
196	Y2	40+46.58	369779.4014	2483554.4136
197	Y3	10+00.00	366091.1739	2482519.7746
198	Y3	11+00.00	366189.8064	2482536.2558
199	Y3	12+00.00	366288.4389	2482552.7369
200	Y3	13+00.00	366387.0714	2482569.2181
201	Y3	14+00.00	366485.7039	2482585.6992
202	Y3	15+00.00	366584.3364	2482602.1803
203	Y3	16+00.00	366683.4126	2482615.4594
204	Y3	17+00.00	366783.3251	2482618.2477
205	Y3	18+00.00	366883.2201	2482613.6966
206	Y3	19+00.00	366983.1063	2482608.9267
207	Y3	20+00.00	367082.6107	2482599.3357
208	Y3	21+00.00	367180.5690	2482579.6193
209	Y3	22+00.00	367274.1291	2482544.6426
210	Y3	23+00.00	367360.8100	2482494.9621
211	Y3	24+00.00	367444.9299	2482440.8895
212	Y3	25+00.00	367529.0499	2482386.8170
213	Y3	26+00.00	367613.1698	2482332.7445
214	Y3	26+08.53	367620.3448	2482328.1324
215	Y4	10+00.00	365708.6926	2484498.4421
216	Y4	11+00.00	365807.5566	2484511.5781
217	Y4	12+00.00	365905.8104	2484492.9844
218	Y4	13+00.00	366004.0431	2484474.2673
219	Y4	14+00.00	366102.2758	2484455.5502
220	Y4	15+00.00	366200.5085	2484436.8331
221	Y4	16+00.00	366298.7413	2484418.1159
222	Y4	17+00.00	366396.9740	2484399.3988
223	Y4	18+00.00	366495.2067	2484380.6817
224	Y4	19+00.00	366593.4395	2484361.9646
225	Y4	20+00.00	366691.6722	2484343.2474
226	Y4	20+80.52	366770.7644	2484328.1773
227	Y5	10+00.00	369338.2754	2482432.7419
228	Y5	11+00.00	369307.5569	2482527.9069
229	Y5	12+00.00	369276.8384	2482623.0719
230	Y5	13+00.00	369246.1200	2482718.2369
231	Y5	14+00.00	369215.4015	2482813.4019
232	Y5	15+00.00	369184.6831	2482908.5669
233	Y5	16+00.00	369153.9646	2483003.7319
234	Y5	17+00.00	369123.2461	2483098.8969
235	Y5	18+00.00	369092.5277	2483194.0619

Point #	Chain	Station	Northing (Y)	Easting (X)
236	Y5	19+00.00	369061.8092	2483289.2269
237	Y5	20+00.00	369031.0908	2483384.3919
238	Y5	21+00.00	369000.3723	2483479.5569
239	Y5	22+00.00	368969.2335	2483574.5819
240	Y5	23+00.00	368931.9443	2483667.3369
241	Y5	24+00.00	368886.9054	2483756.5863
242	Y5	25+00.00	368834.4431	2483841.6843
243	Y5	26+00.00	368774.9370	2483922.0148
244	Y5	27+00.00	368708.8179	2483996.9964
245	Y5	27+45.28	368676.8311	2484029.0412
246	Y6	10+00.00	366499.0650	2479249.4374
247	Y6	11+00.00	366581.2654	2479305.3365
248	Y6	12+00.00	366599.1583	2479400.0652
249	Y6	12+46.53	366591.6378	2479445.9792
250	SBL	16+85.00	365758.7576	2483558.5216
251	SBL	17+85.00	365659.9498	2483543.1362
252	SBL	18+85.00	365560.5625	2483532.2950
253	SBL	19+85.00	365460.6280	2483531.4774
254	SBL	20+85.00	365361.3675	2483543.0673
255	SBL	21+85.00	365264.3263	2483566.9421
256	SBL	22+85.00	365170.8146	2483602.2420
257	SBL	23+85.00	365080.3117	2483644.7522
258	SBL	24+85.00	364991.0531	2483689.8363
259	SBL	25+26.66	364954.1846	2483709.2314
260	Y3SR	10+00.00	366140.5132	2482169.4229
261	Y3SR	11+00.00	366123.9612	2482268.0427
262	Y3SR	12+00.00	366109.9734	2482367.0555
263	Y3SR	13+00.00	366097.7525	2482466.3060
264	Y3SR	14+00.00	366084.8575	2482565.4665
265	Y3SR	15+00.00	366066.4948	2482663.7483
266	Y3SR	16+00.00	366047.5969	2482761.8417
267	Y3SR	17+00.00	366049.4463	2482861.6094
268	Y3SR	18+00.00	366073.7280	2482958.3949
269	Y3SR	19+00.00	366119.1563	2483047.2439
270	Y3SR	20+00.00	366180.0478	2483126.4847
271	Y3SR	21+00.00	366245.3769	2483202.1924
272	Y3SR	22+00.00	366303.4742	2483283.4337
273	Y3SR	23+00.00	366339.5258	2483376.2213
274	Y3SR	23+25.59	366343.0479	2483401.5529
275	DR1	10+00.00	368352.4209	2483105.5608
276	DR1	11+00.00	368416.7717	2483037.0565
277	DR1	12+00.00	368505.5820	2483074.3048
278	DR1	13+00.00	368586.4643	2483133.0067
279	DR1	14+00.00	368679.0816	2483169.9197
280	DR1	15+00.00	368774.6542	2483199.3455
281	DR1	16+00.00	368869.4391	2483231.1468
282	DR1	17+00.00	368961.6958	2483269.7030
283	DR1	18+00.00	369015.7845	2483205.0938
284	DR1	18+75.87	369038.5279	2483132.7157
285	DR2	10+00.00	368630.3466	2483199.0895
286	DR2	11+00.00	368621.4371	2483295.8181
287	DR2	12+00.00	368697.2373	2483355.9757
288	DR2	12+35.00	368729.3683	2483369.8536

Point #	Chain	Station	Northing (Y)	Easting (X)

PROJECT REFERENCE NO.	SHEET NO.
U-5132	2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. WORRITT

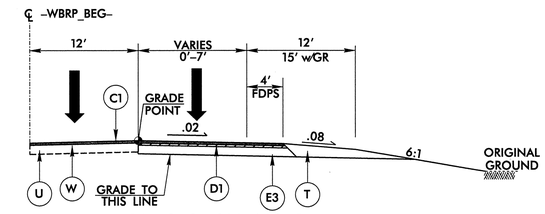
PAVEMENT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22886 ENGINEER CLARK S. MORRISON

PAVEMENT SCHEDULE

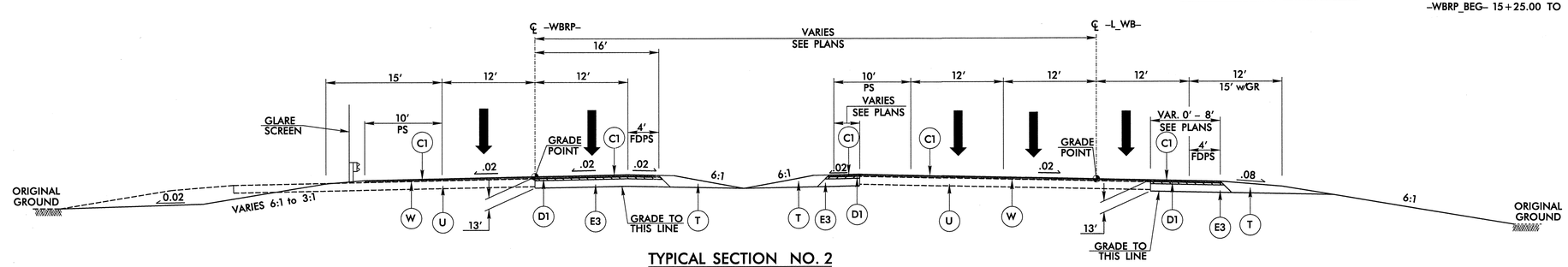
C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	E1	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.	R3	5" MONOLITHIC CONCRETE ISLAND
C2	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B25.0C, 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.	T	EARTH MATERIAL
C3	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	E3	PROP. APPROX. 7" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	W	WEDGING
D1	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	J1	8" AGGREGATE BASE COURSE	U	EXISTING PAVEMENT
D2	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	J2	VAR. AGGREGATE BASE COURSE	Y1	3" MILLING
D3	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	J3	6" AGGREGATE BASE COURSE		
D4	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I9.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YARD		
D5	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R1	2'-6" CURB AND GUTTER		
D6	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R2	2'-9" CURB AND GUTTER		

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



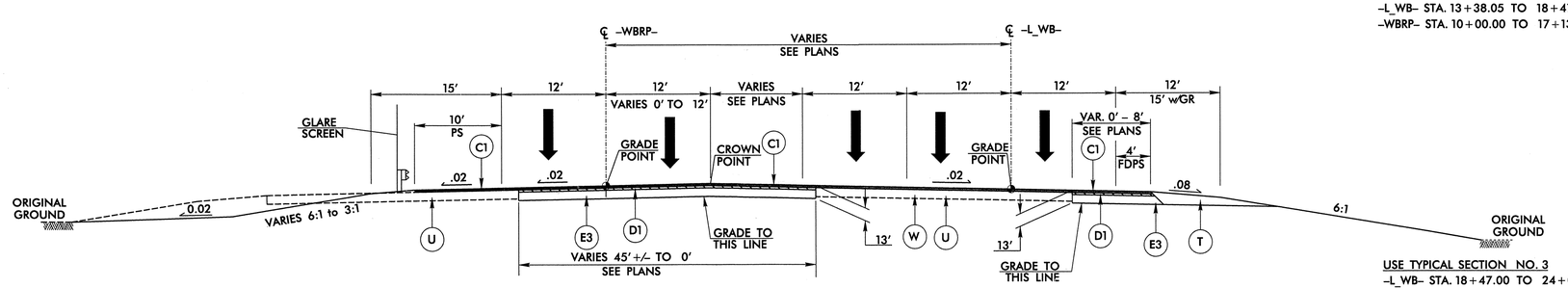
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
-WBRP_BEG- 15+25.00 TO 21+50.00



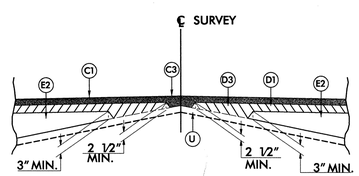
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L_WB- STA. 13+38.05 TO 18+47.00
-WBRP- STA. 10+00.00 TO 17+13.00

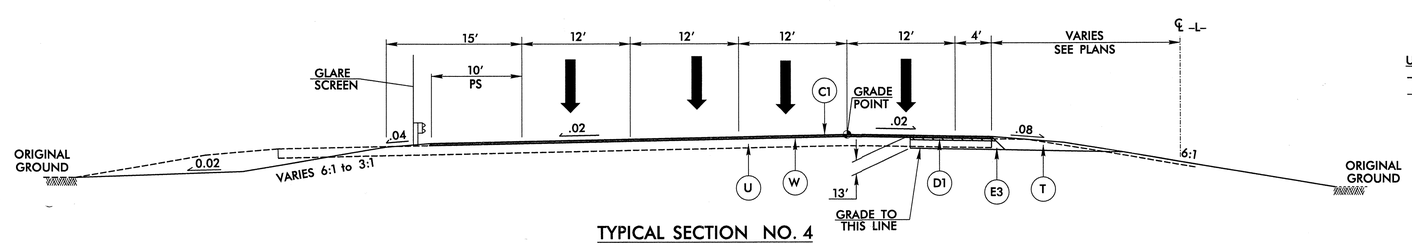


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-L_WB- STA. 18+47.00 TO 24+07.91
-WBRP- STA. 17+13.00 TO 22+90.31



Detail Showing Method of Wedging No. 1 for -L- and -L_WB-



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
-L_WB- STA. 24+07.91 TO 32+87.25
-L- STA. 16+00.00 TO 22+00.00

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99

3/30/2012
R:\Roadway\Proj\u5132_rdy_typ.dgn
mwright

PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

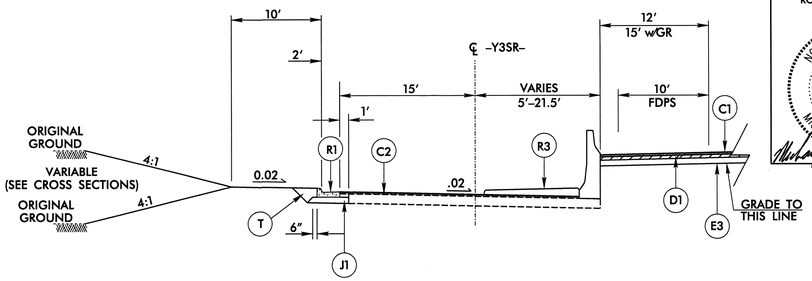
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. MERRITT 4/10/2012

NORTH CAROLINA PROFESSIONAL SEAL 22883 ENGINEER CLARK S. MORRISON 4/11/12

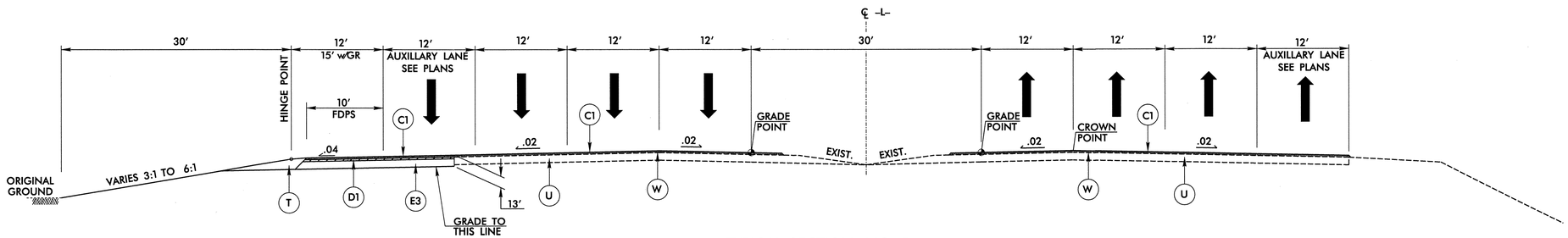
PAVEMENT SCHEDULE

C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	R1	2'-6" CURB AND GUTTER
C2	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	R3	5" MONOLITHIC CONCRETE ISLAND
D1	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	T	EARTH MATERIAL
E3	PROP. APPROX. 7.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	W	WEDGING
J1	8" AGGREGATE BASE COURSE	U	EXISTING PAVEMENT
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ YARD		

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

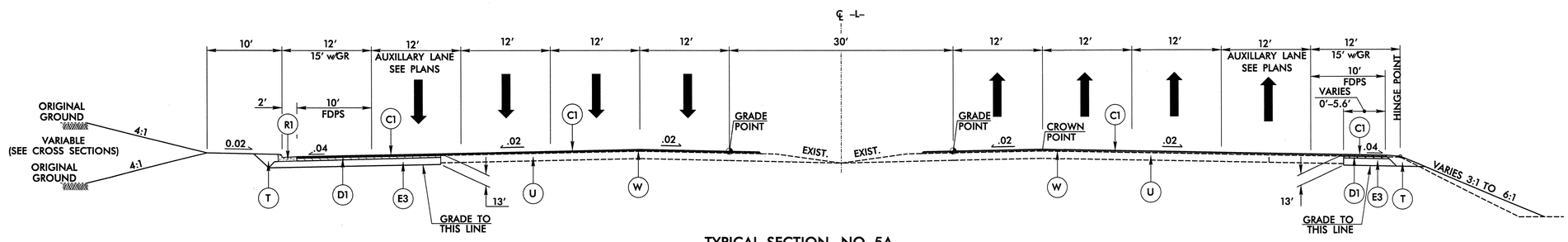


USE IN CONJUNCTION TYPICAL SECTION NO. 4
-L- STA. 17+70 TO 22+00 LT



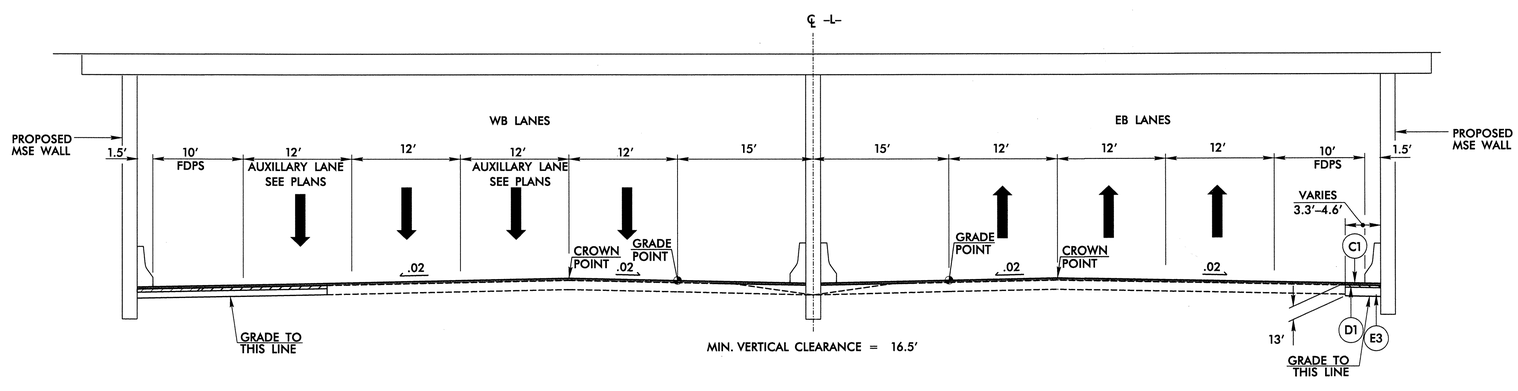
TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
-L- STA. 22+00.00 TO 29+00.00



TYPICAL SECTION NO. 5A

USE TYPICAL SECTION NO. 5A
-L- STA. 29+00.00 TO 35+40.00



TYPICAL SECTION NO. 5B
TYPICAL SECTION UNDER STRUCTURE

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99

4/10/2012
R:\Roadway\Proj\u5132_rdy_typ.dgn
lmorrison

PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-B
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

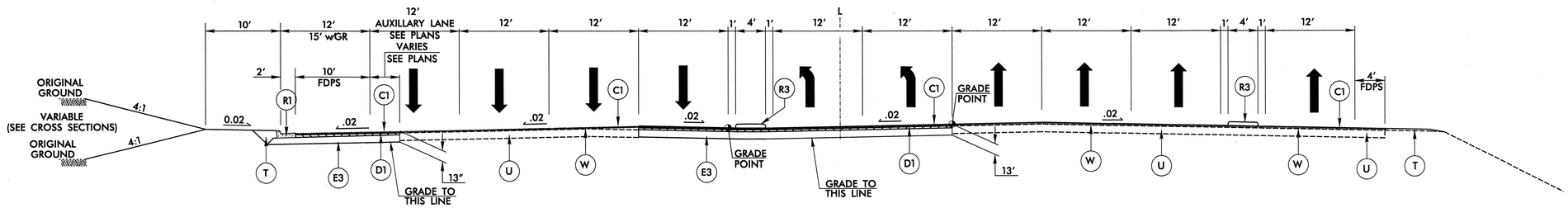
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL A. WEBB 4/10/12

PAVEMENT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22866 ENGINEER CLARK S. MORRISON 4/11/12

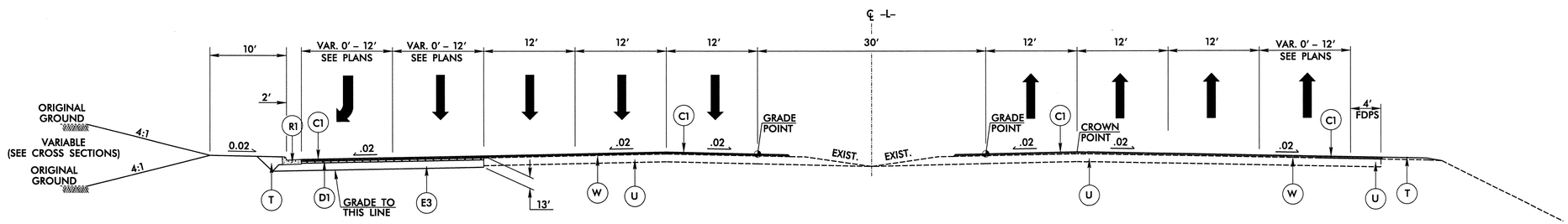
PAVEMENT SCHEDULE			
C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	T	EARTH MATERIAL
D1	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	W	WEDGING
D5	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
E3	PROP. APPROX. 7.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS		
R1	2'-6" CURB AND GUTTER		
R3	5" MONOLITHIC CONCRETE ISLAND		

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



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
-L- STA. 35+40.00 TO 41+21.36



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7
-L- STA. 41+21.36 TO 51+70.00 (RT)
-L- STA. 41+21.36 TO 47+20.47 (LT)

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

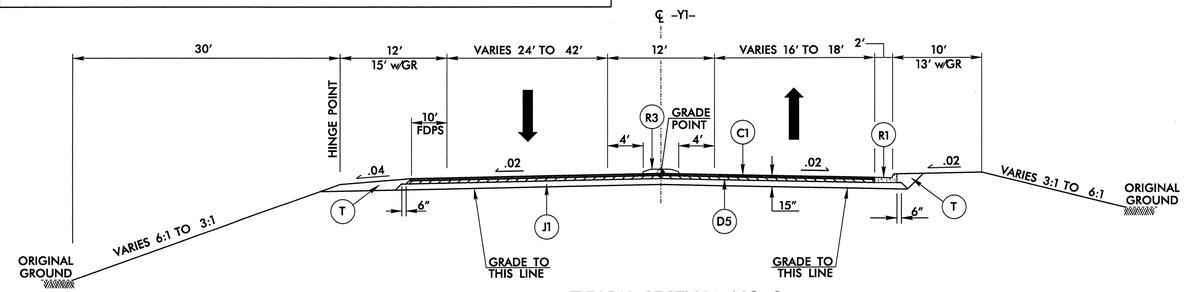
8/17/99
4/10/2012
R:\Roadway\Proj\u5132_rdy_typ.dgn
Imorrison

PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-C
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MORRITT — 2/21/2012

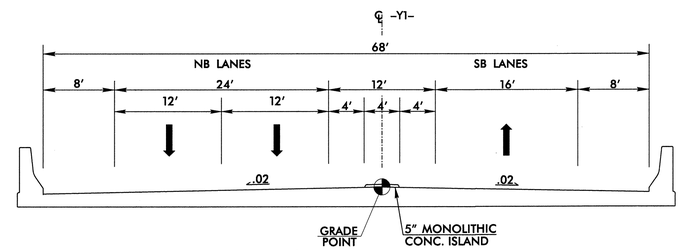
PAVEMENT ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON — 2/21/12

PAVEMENT SCHEDULE			
C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	R3	5" MONOLITHIC CONCRETE ISLAND
D5	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL
J1	8" AGGREGATE BASE COURSE		
R1	2'-6" CURB AND GUTTER		
R2	2'-9" CURB AND GUTTER		



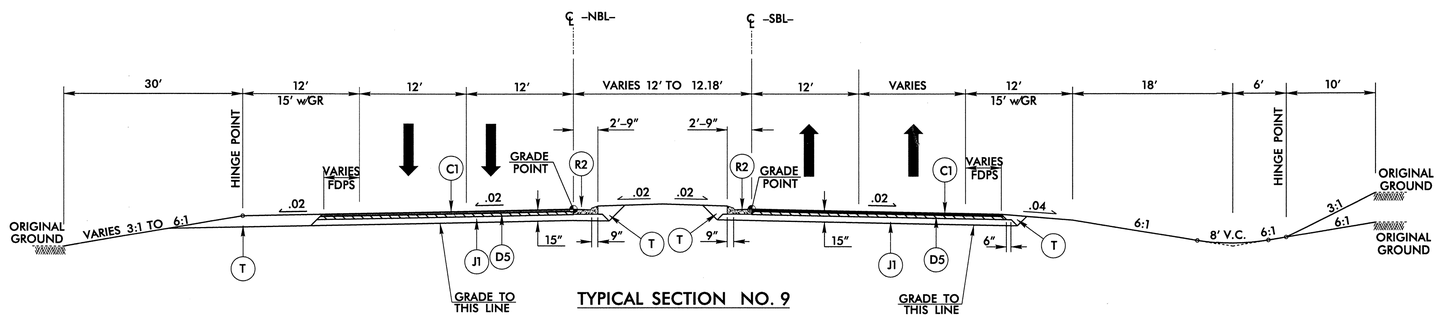
TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8
-Y1- STA. 10+00.00 TO 15+07.44 (BRIDGE)
-Y1- STA. 16+44.49 (BRIDGE) TO 16+85.00



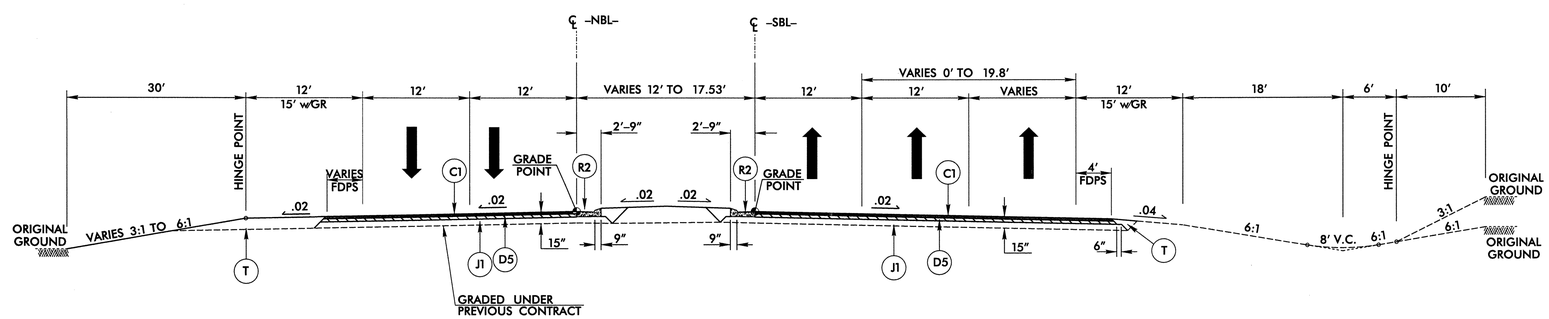
TYPICAL SECTION NO. 8A
TYPICAL SECTION ON STRUCTURE

USE TYPICAL SECTION NO. 8A
FOR STRUCTURE DETAIL SEE
STRUCTURE PLANS S-1 THRU S-31



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9
-SBL- STA. 16+85.00 TO 17+75.00
-NBL- STA. 16+85.00 TO 17+74.91



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10
-SBL- STA. 17+75.00 TO 21+00.00
-NBL- STA. 17+74.91 TO 20+94.85

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99
2/21/2012
K:\Projects\2009\09012_CampLejeune\U5132_NC24\Roadway\Proj\u5132_rdy_typ.dgn

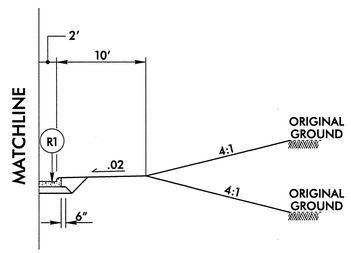
PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-D
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT 2/21/2012

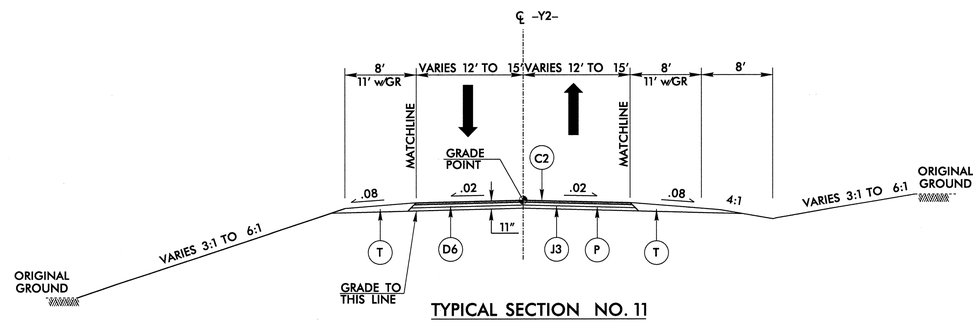
PAVEMENT ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON 2/21/12

PAVEMENT SCHEDULE

C2	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	J3	6" AGGREGATE BASE COURSE	T	EARTH MATERIAL
C3	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YARD	U	EXISTING PAVEMENT
D6	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R1	2'-6" CURB AND GUTTER		
J1	8" AGGREGATE BASE COURSE	R3	5" MONOLITHIC CONCRETE ISLAND		
J2	VAR. AGGREGATE BASE COURSE				

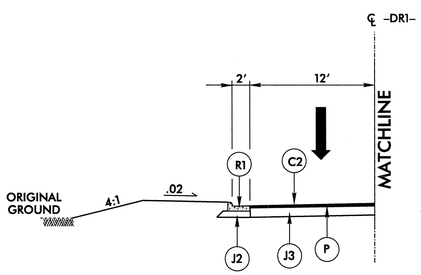


USE IN CONJUNCTION TYPICAL SECTION NO. 11
-Y2- STA. 11+65.00 TO 16+39.00 LT & RT
-Y2- STA. 26+00.00 TO 28+40.00 LT
-Y2- STA. 28+63.00 TO 28+74.00 RT

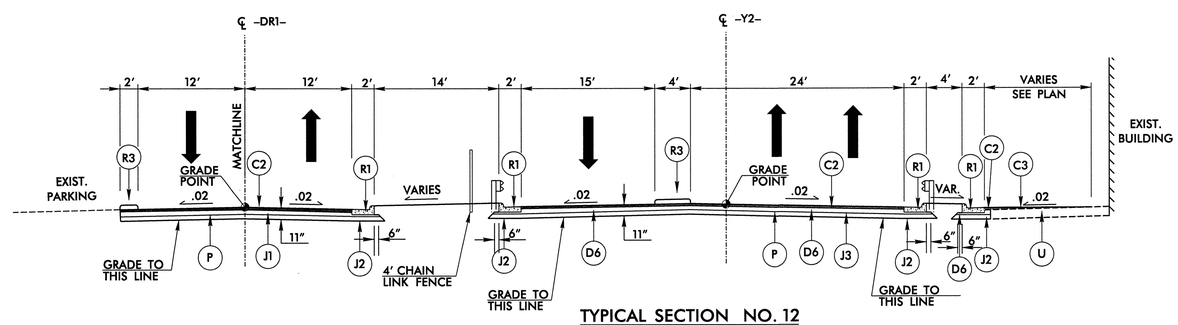


TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11
-Y2- STA. 11+65.00 TO 28+74.00
-Y2- STA. 33+10.82 TO 35+99.19

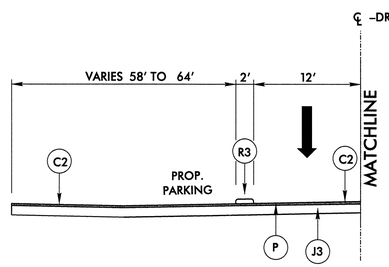


USE IN CONJUNCTION TYPICAL SECTION NO. 12
-Y2- STA. 28+40.00 TO 29+60.00 LT

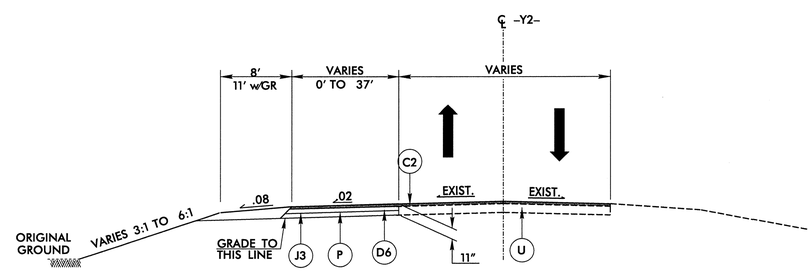


TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12
-Y2- STA. 30+85.00 TO 32+41.00 LT
-Y2- STA. 28+74.00 TO 32+41.00 RT



USE IN CONJUNCTION TYPICAL SECTION NO. 12
-Y2- STA. 29+60.00 TO 30+85.00 LT



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13
-Y2- STA. 35+99.19 TO 39+47.00

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99
2/21/2012
R:\Projects\2009\09012_CampLejeune\U5132_NC24\Roadway\Proj\U5132_rdy_typ.dgn

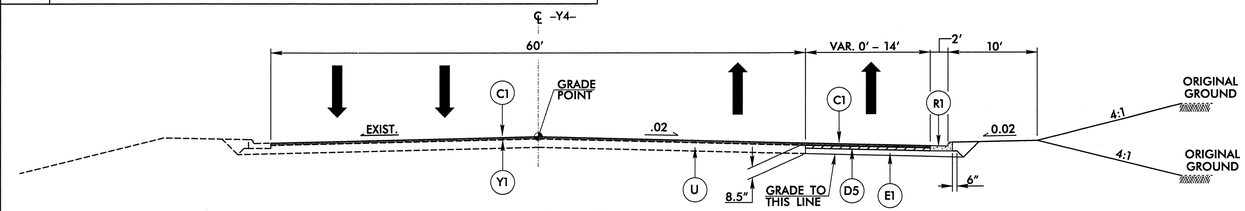
PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL D. MERRILL 2/24/2012

NORTH CAROLINA PROFESSIONAL SEAL 22898 ENGINEER CARL S. MORRISON 2/24/12

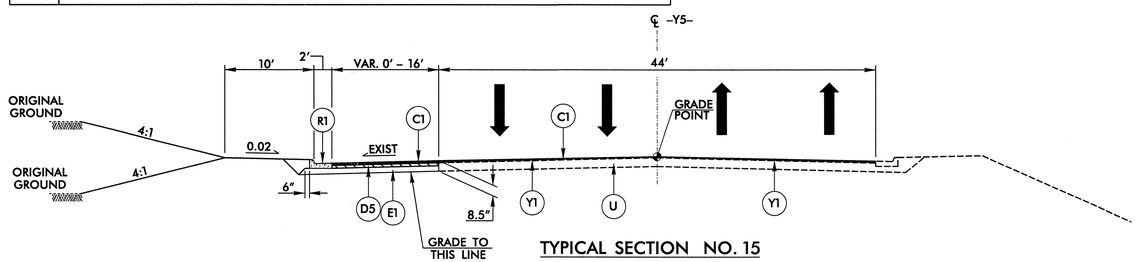
PAVEMENT SCHEDULE

C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	T	EARTH MATERIAL
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	Y1	3" MILLING
D2	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
D5	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.		
E1	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.		
E2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B25.0C, 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	8" AGGREGATE BASE COURSE		
J2	VAR. AGGREGATE BASE COURSE		
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YARD		
R1	2'-6" CURB AND GUTTER		

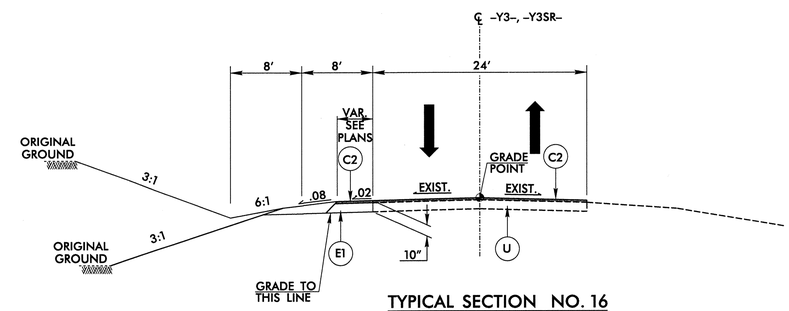


TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14
-Y4- STA. 10+63.00 TO 16+80.00

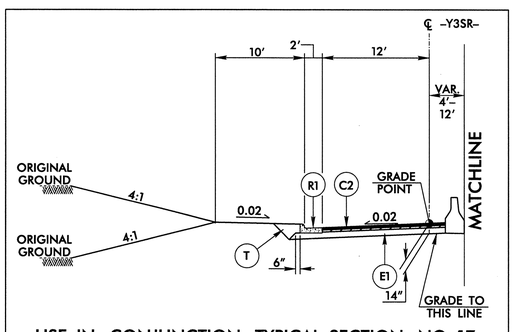


TYPICAL SECTION NO. 15
-Y5- STA. 11+70.00 TO 26+65.00

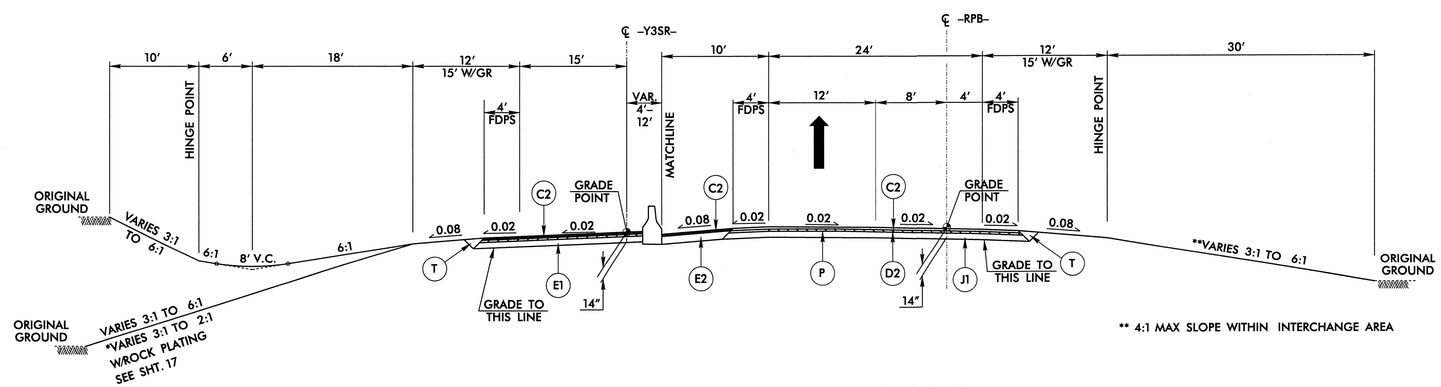


TYPICAL SECTION NO. 16

USE TYPICAL SECTION NO. 16
-Y3- STA. 23+62.00 TO 24+88.00
-Y3SR- STA. 10+57.38 TO 12+59.08



USE IN CONJUNCTION TYPICAL SECTION NO. 17
-RPB- STA. 10+00 TO 13+27



** 4:1 MAX SLOPE WITHIN INTERCHANGE AREA

TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17
-RPB- STA. 13+27.00 TO 18+34.47
*-RPB- STA. 16+72 TO 18+34.47

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99

2/21/2012
K:\Projects\2009\09012_Camp_Lejeune\U5132_NC24\Roadway\Proj\u5132_rdy_typ.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-F
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER

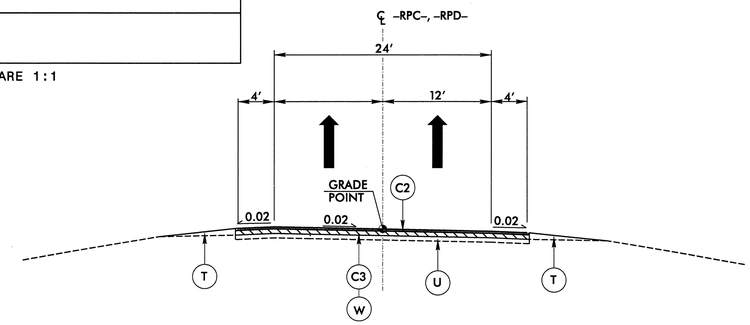
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. UBERTI 4/3/2012

NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON 4/5/12

PAVEMENT SCHEDULE	
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C3	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D2	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D3	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D4	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I9.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
J1	8" AGGREGATE BASE COURSE
J2	VAR. AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YARD
R1	2'-6" CURB AND GUTTER

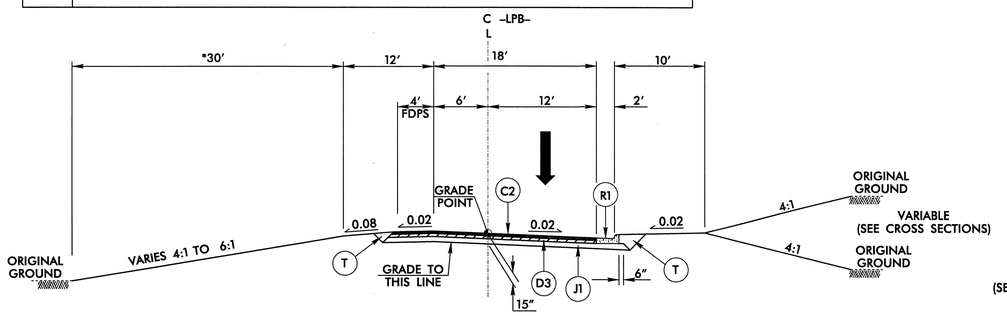
PAVEMENT SCHEDULE	
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

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

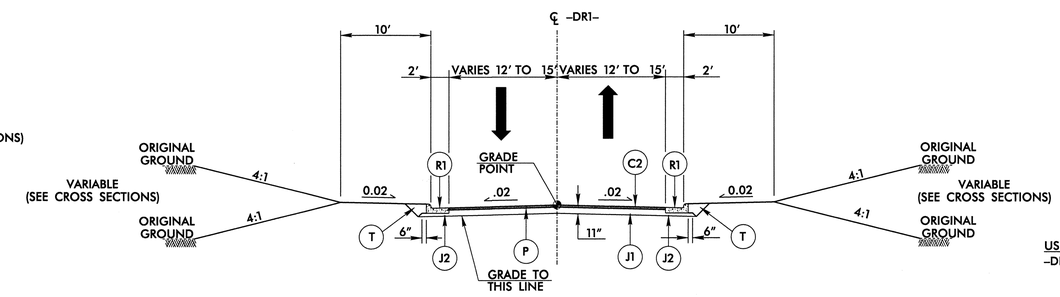


TYPICAL SECTION NO. 18

USE TYPICAL SECTION NO. 18
-RPC- STA. 10+00.00 TO 14+30.00
-RPD- STA. 10+00.00 TO 14+50.00

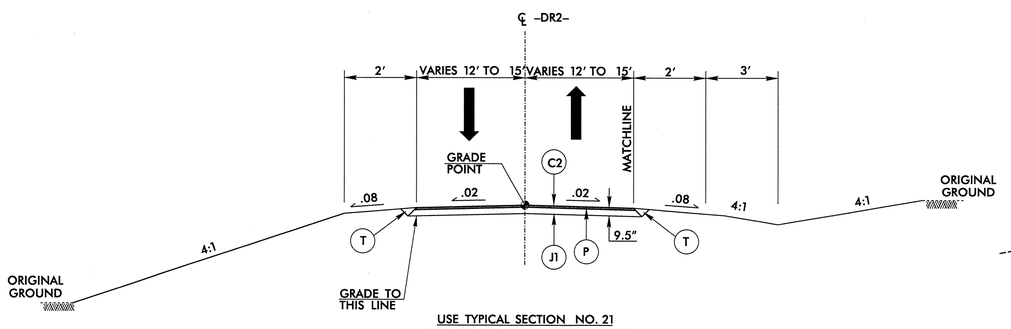


TYPICAL SECTION NO. 19
-LPB- STA. 11+60.00 TO 16+73.64

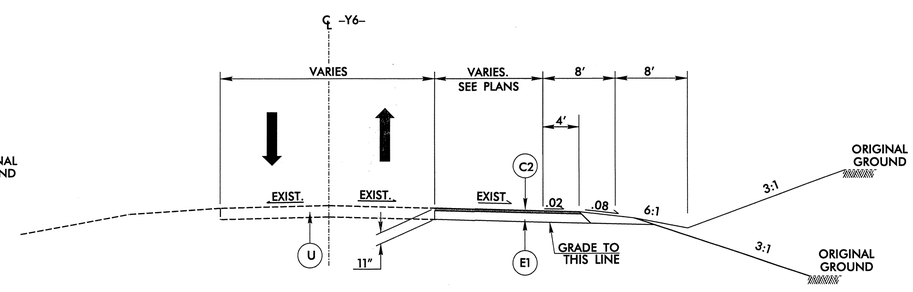


TYPICAL SECTION NO. 20

USE TYPICAL SECTION NO. 20
-DR1- STA. 10+12.00 TO 13+70.00



USE TYPICAL SECTION NO. 21
-DR2- STA. 10+12.00 TO 12+20.78



TYPICAL SECTION NO. 22

USE TYPICAL SECTION NO. 22
-Y6- STA. 10+00.00 TO 12+53.26

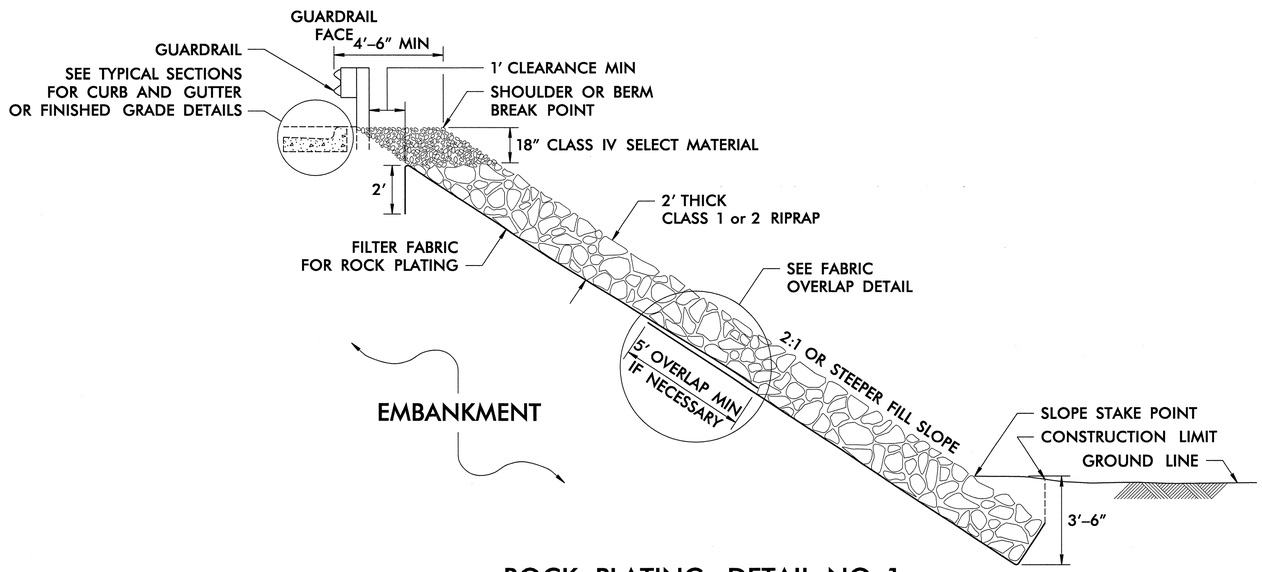
NOTE: IN AREAS OF NARROW WIDENING USE E2 IN LIEU OF J1 AS DIRECTED BY THE ENGINEER.

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99
4/3/2012
R:\Roadway\Proj\u5132_rdy_typ.dgn
jmorrison

PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-G
R/W SHEET NO.	

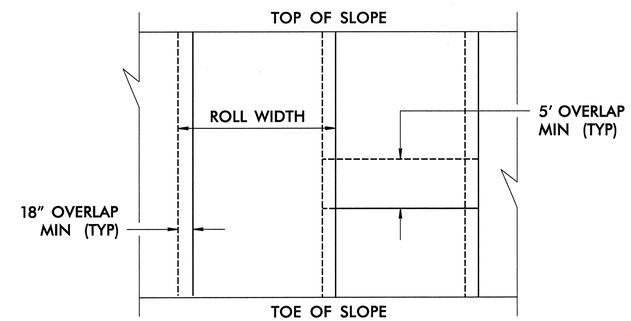
ROCK PLATING DETAILS



ROCK PLATING DETAIL NO. 1

USE ROCK PLATING DETAIL NO. 1
AT THE FOLLOWING LOCATIONS:

-RPB- STA 16+72.00 TO -RPB- STA 18+34.47 LT.
-Y1- STA 10+00.00 TO -Y1- STA 11+50.00 LT.



FABRIC OVERLAP DETAIL

(PLAN VIEW)

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1802.01

ROCK PLATING DETAILS

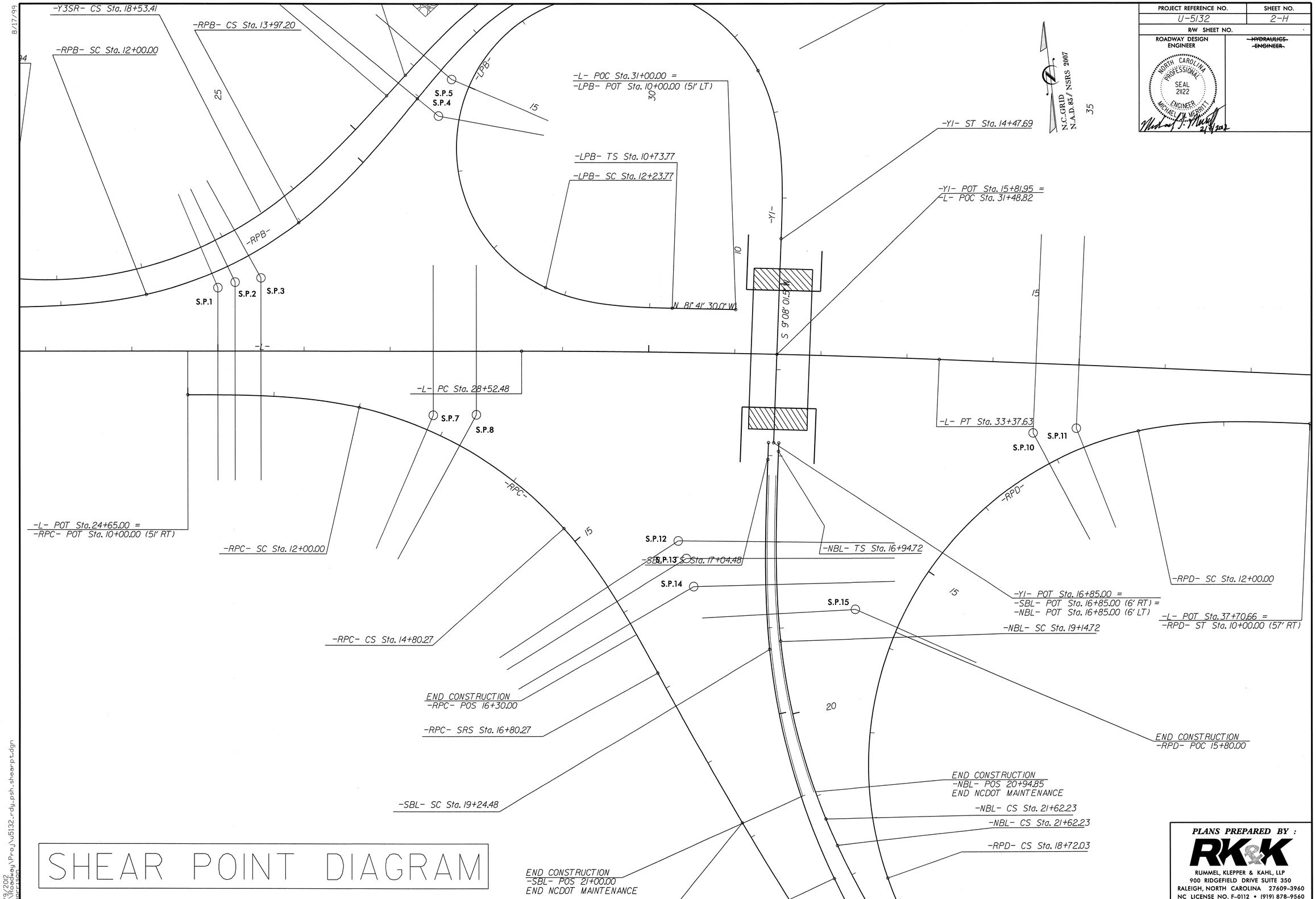
8/17/99

2/8/2012
R:\Roadway\Proj\u5132_rdg_typ.dgn
default

PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-H
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	~~HYDRAULICS ENGINEER~~

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. MERRITT

2/5/2012



SHEAR POINT DIAGRAM

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

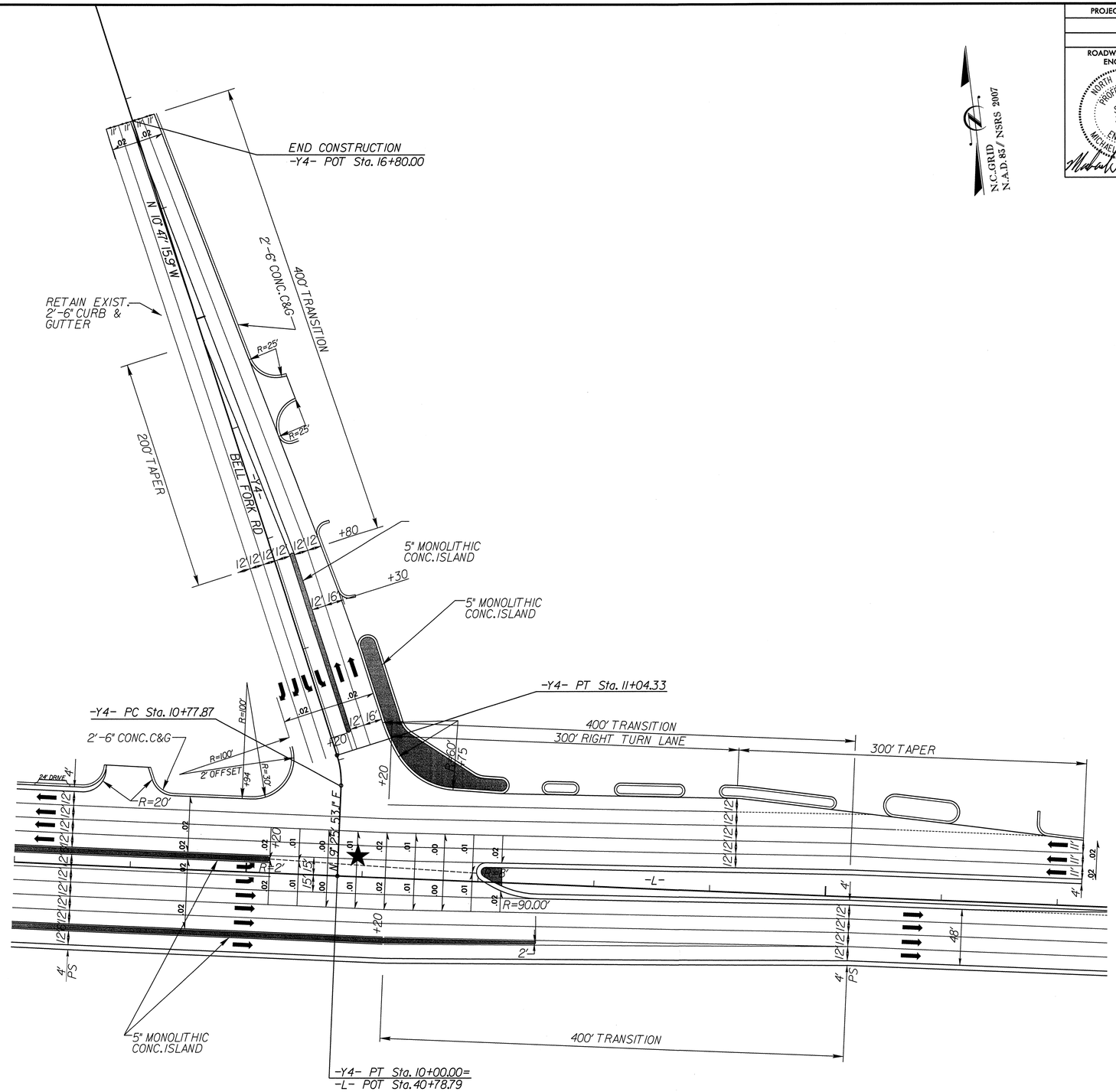
8/17/99

2/9/2012
R:\Roadway\Proj\u5132_rdy_psh_shearpt.dgn
jmorrison

PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	~~HYDRAULICS ENGINEER~~

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. MERRITT
2/9/2012

N.C. GRID
N.A.D. 83 / NSRS 2007



DETAIL OF -L- & -Y4- INTERSECTION

25 0 25 50
SCALE IN FEET

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99

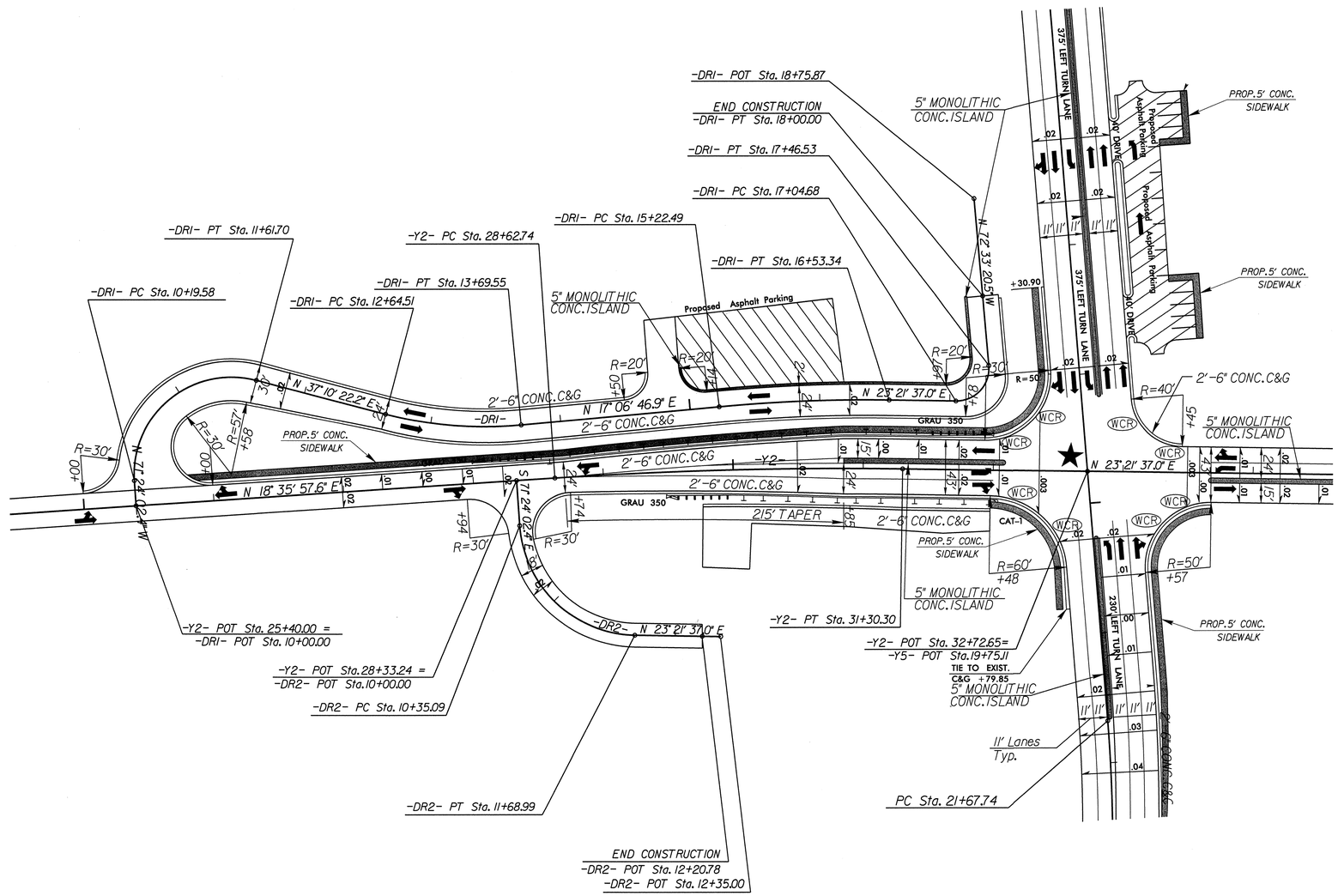
2/9/2012
R:\Roadway\Proj\u-5132_rdy_dtl_21.dgn
mjerrison

PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-J
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	~~HYDRAULICS ENGINEER~~

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. MERRITT

Michael J. Merritt 2/13/2012

N.C. GRID N.A.D. 83/ NSRS 2007



NOTE: DO NOT DISTURB AIR CONDITIONER UNIT, SATELLITE DISH, AND CONCRETE PAD ALONG Y2 STA. 30+85 RT. BEHIND BUILDING AND INSIDE TCE ON PARCEL 25.

DETAIL OF -Y2- & -Y5- INTERSECTION

25 0 25 50
SCALE IN FEET

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

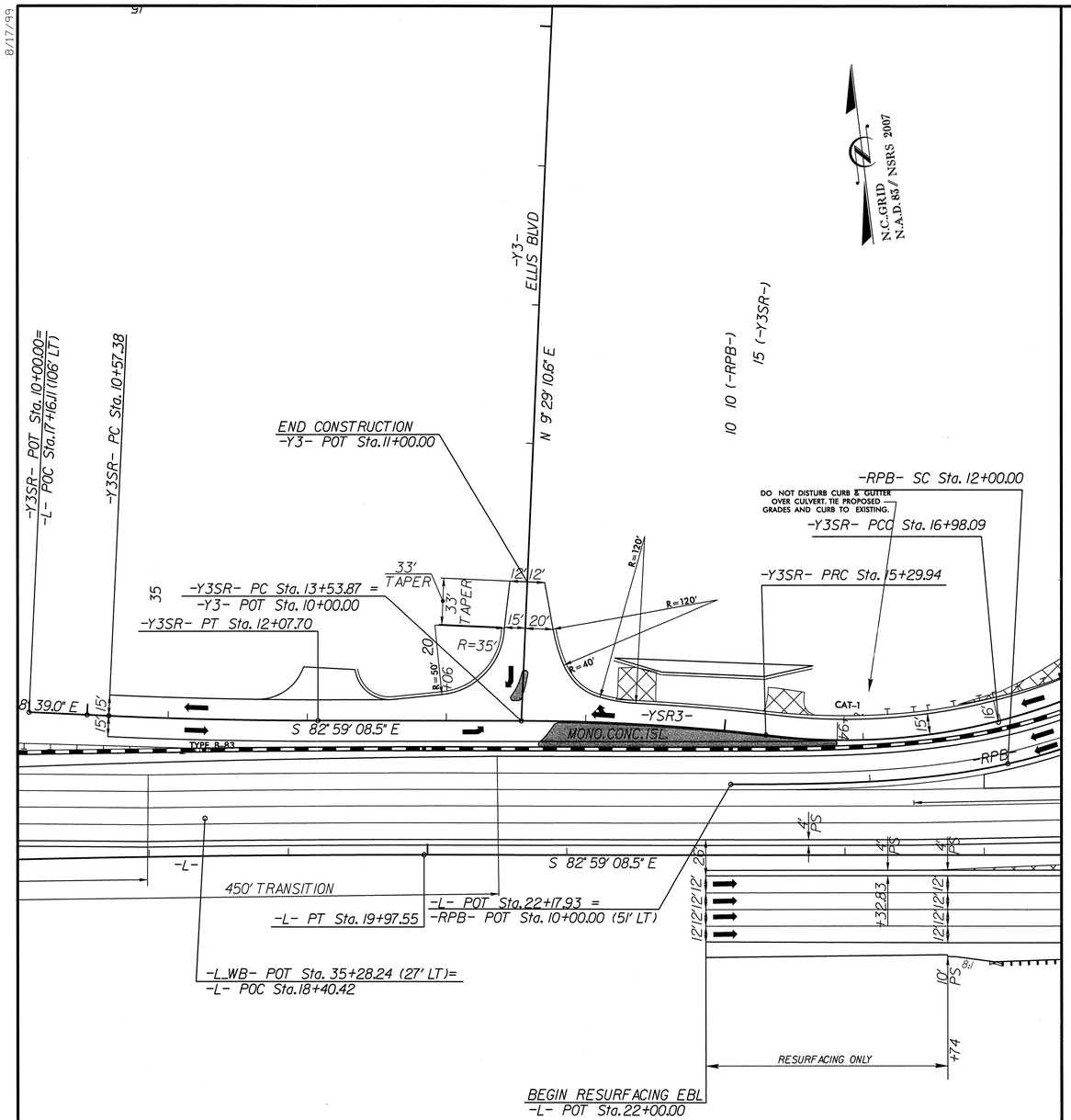
8/17/99

2/13/2012
R:\Roadway\Proj\u-5132_rdy_dtl_2J.dgn
jmorrison

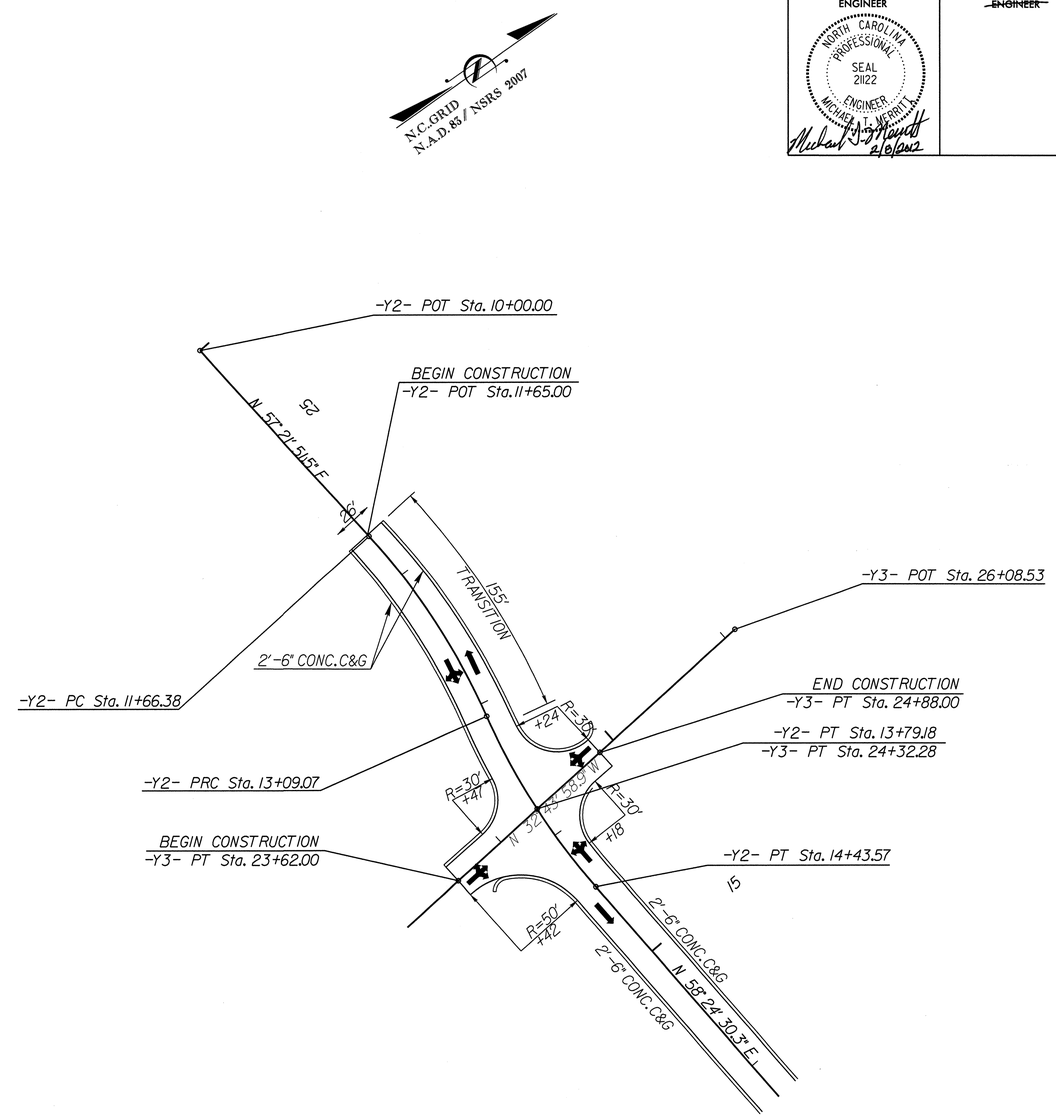
PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-K
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	~~HYDRAULICS ENGINEER~~

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. PERRITT

2/6/2012



DETAIL OF -Y3- & -Y3SR- INTERSECTION



DETAIL OF -Y2- & -Y3- INTERSECTION

PLANS PREPARED BY :
RKK
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99

2/3/2012
R:\Roadway\Proj\u-5132_rdy_dtl_2K.dgn
mcarrasco

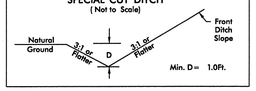
PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-L
R/W SHEET NO.	

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 23090 ENGINEER AUDREY B. BURNETTE

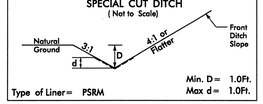
2/8/2012

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



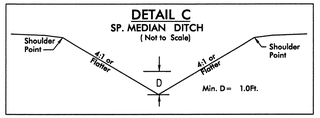
-L- STA. 24+13 TO STA. 27+17 RT
-L- STA. 25+70 TO STA. 28+00 LT
-L_WB- STA. 22+50 TO STA. 23+95 LT
-LPB- STA. 12+94 TO STA. 13+50 LT
-RPB- STA. 13+50 TO STA. 13+97 RT
-WBRP_BEG- STA. 16+00 TO STA. 17+80 RT
-Y2- STA. 22+33 TO STA. 28+10 RT
-Y2- STA. 33+60 TO STA. 36+00 LT
-Y3- STA. 10+67 TO STA. 11+00 LT
-DR2- STA. 10+35 TO STA. 11+00 LT/RT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



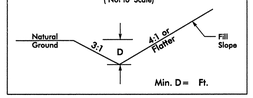
-Y2- STA. 22+00 TO STA. 22+50 RT

DETAIL C
SP. MEDIAN DITCH
(Not to Scale)



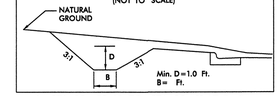
-L- STA. 23+50 TO STA. 24+50 MED
-L- STA. 31+50 TO STA. 34+75 MED
-L- STA. 42+25 TO STA. 47+20 MED
-L_WB STA. 16+50 TO STA. 18+25 MED

DETAIL D
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



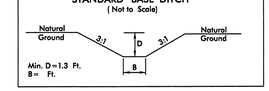
-Y2- STA. 38+00 TO STA. 39+46.72 LT

DETAIL E
SPECIAL BACK OF CURB DITCH
(NOT TO SCALE)



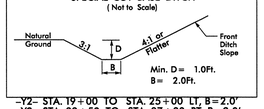
-L- STA. 28+52.48 TO STA. 30+11 LT B=2'
-LPB- STA. 12+81 TO STA. 15+70 RT B=2'
-Y2- STA. 14+00 TO STA. 14+43.57 LT B=0'
-Y5- STA. 20+33 TO STA. 20+59 LT, B=2.0'
-Y5- STA. 20+59 TO STA. 22+55 LT B=0'

DETAIL F
STANDARD BASE DITCH
(Not to Scale)



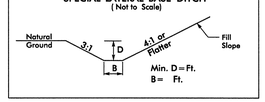
-Y3- STA. 21+86 TO STA. 23+84 LT S=0.38% B=1'
-Y3- STA. 20+90 TO STA. 22+24 RT S=0.52% B=1'

DETAIL I
SPECIAL CUT BASE DITCH
(Not to Scale)



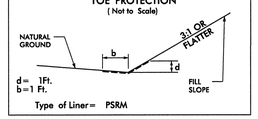
-Y2- STA. 19+00 TO STA. 25+00 LT, B=2.0'
-Y2- STA. 33+50 TO STA. 37+00 RT, B=2.0'

DETAIL J
SPECIAL LATERAL BASE DITCH
(Not to Scale)



-Y2- STA. 37+00 TO STA. 38+00 RT B=2'
-Y2- STA. 38+13.84 TO STA. 39+46.72 RT B=2'

DETAIL K
TOE PROTECTION
(Not to Scale)



-L_WB- STA. 30+75 TO STA. 31+25 LT
-L- STA. 14+40 TO STA. 15+75 LT

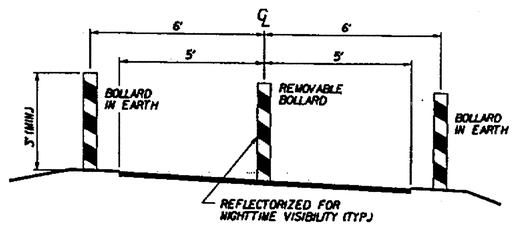
PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99
2/8/2012
R:\Hydraulics\CADD\PSH\Redlines\u5132_hyd_det.dgn
aprldgn

PROJECT REFERENCE NO.	SHEET NO.
U-5132	2-M
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	~~HYDRAULICS ENGINEER~~

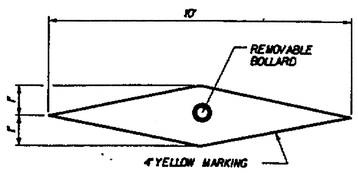
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. WORLEY

2/8/2012



TYPICAL METAL BOLLARD PLACEMENT

FOR INTERSECTIONS WITH STREETS AND DRIVEWAYS
NO SCALE



BOLLARD MARKING DETAIL

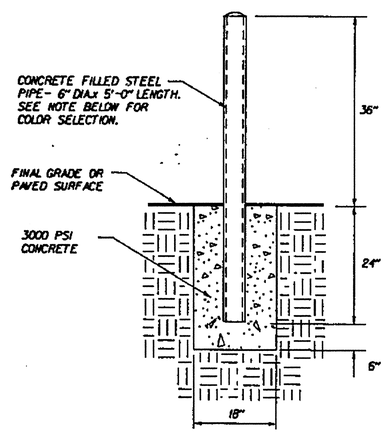
BOLLARD NOTES

1. BOLLARD POST AT INTERSECTIONS TO BE REFLECTORIZED.
2. BOLLARD PLACEMENT OFFSET FROM INTERSECTIONS IS A MINIMUM OF 5' BUT SHALL NOT BE PLACED WITHIN LIMITS OF EXISTING OR PROPOSED SIDEWALK.
3. ALL METAL TO BE HOT DIPPED GALVANIZED STEEL.

METAL BOLLARD DETAILS

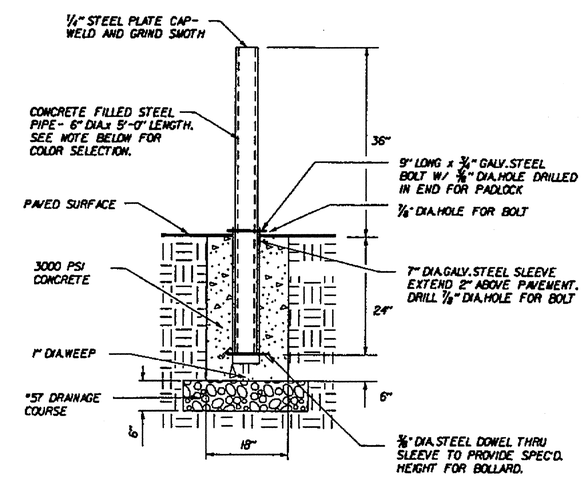
APPROXIMATE LOCATIONS

-Y2- STA. 18+89.81 LT
-Y2- STA. 18+ 76.10 RT



NOTE: PIPE TO BE HOT-DIPPED GALVANIZED, AND DELIVERED TO SITE SHOP PRIMED. PAINT ALL EXPOSED METAL SURFACES WITH EXTERIOR LATEX ENAMEL (2 COATS) PER SPECIFICATIONS. COLOR: SAFETY YELLOW

BOLLARD IN EARTH

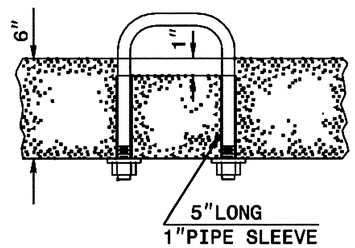


NOTE: PIPE AND SLEEVE TO BE HOT-DIPPED GALVANIZED, AND DELIVERED TO SITE SHOP PRIMED. PAINT ALL EXPOSED METAL SURFACES WITH EXTERIOR LATEX ENAMEL (2 COATS) PER SPECIFICATIONS. COLOR: SAFETY YELLOW

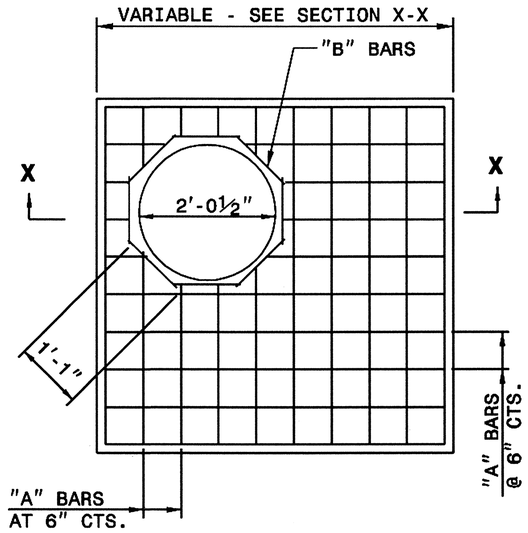
REMOVABLE BOLLARD DETAILS

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

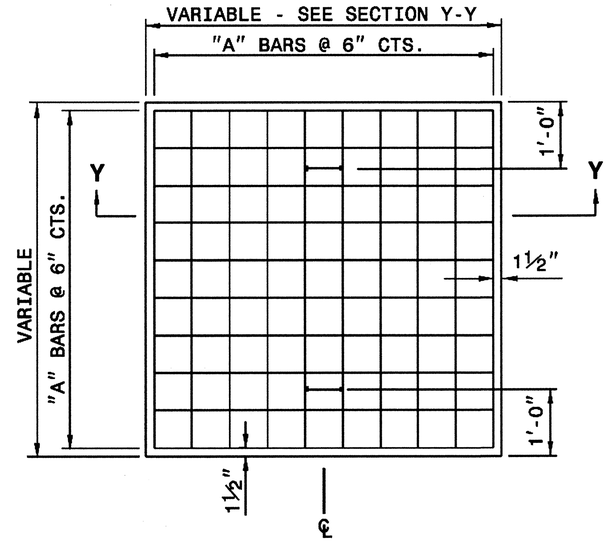
8/17/99
02/08/12 08:49:57
R:\Roadway\Proj\U-5132_Rdy_dtl_2M.dgn
lkitchens



PARTIAL SECTION



PLAN



PLAN

GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

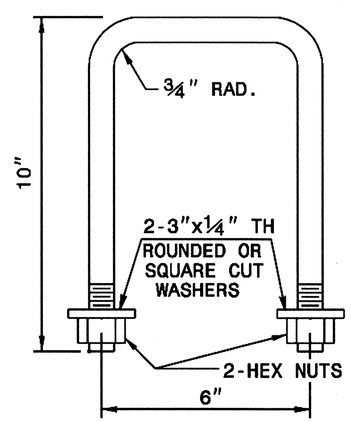
THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

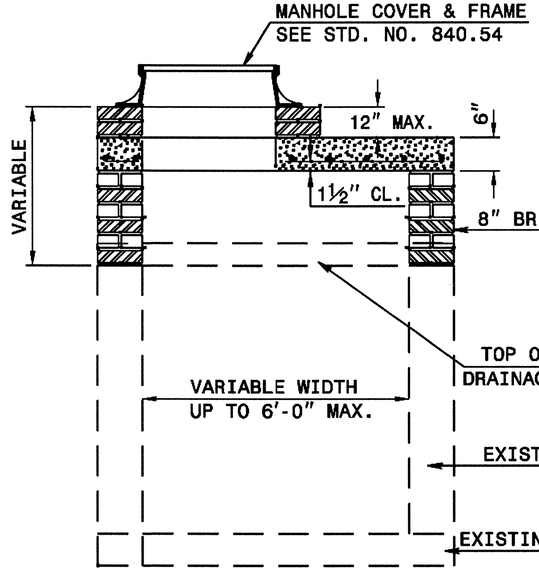
BILL OF MATERIALS

REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.4326 *
BRICK MASONRY PER FT HT (MIN)				.4111

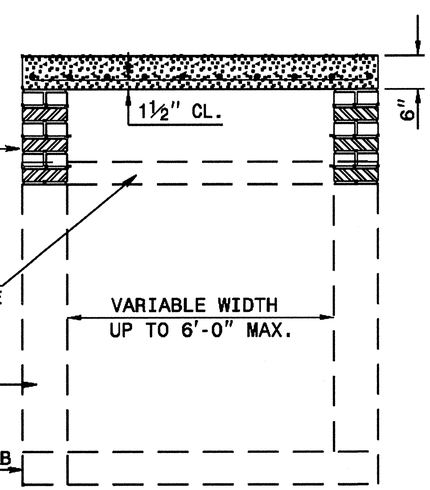
★ NOTE:
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.



DETAIL OF HANDLE



SECTION X-X



SECTION Y-Y

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER
2/29/12

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

DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY:	T.S.S.	DATE:	NOV.1997
MODIFIED BY:	T.S.S.	DATE:	FEB.2000
CHECKED BY:		DATE:	
FILE SPEC.:	ds174:/usr/details/stand/boxtoibe.dgn		

5/14/99
$$$$$$$$SYSTIME$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$
$$$$$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET
U-5132	2-0

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18880 ENGINEER GARY R. TAYLOR

SIGNATURE 3/7/12 DATE

ENGINEER

SIGNATURE DATE

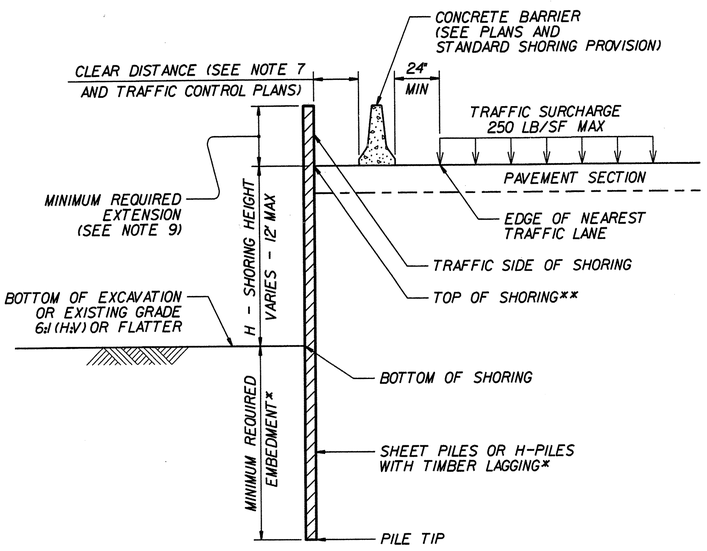
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN^3/FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN^3/FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)		
				HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73
GROUNDWATER ELEVATION BENTEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
	12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
	12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".

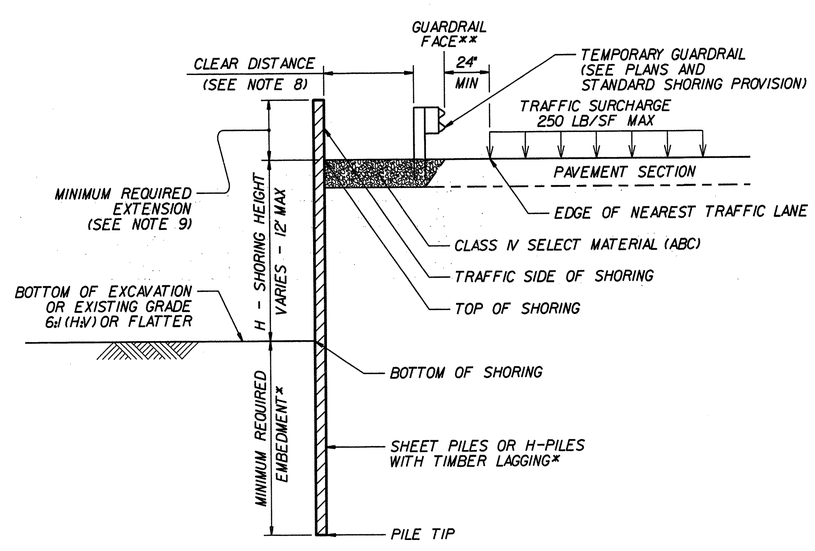
NOTES:

1. AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
2. FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
3. STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
   UNIT WEIGHT, γ = 120 LB/CF
   FRICTION ANGLE, ϕ = 30 DEGREES
   COHESION, c = 0 LB/SF
4. DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
6. USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
7. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
8. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
9. MINIMUM REQUIRED EXTENSION IS 6' FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32' FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
10. MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
11. SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM.
12. CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.



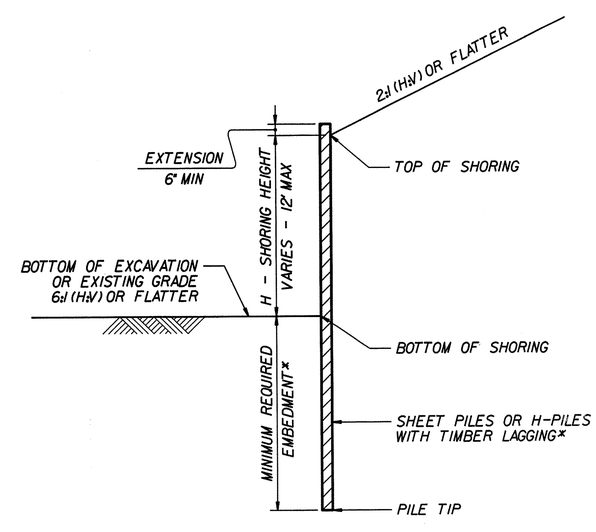
CONCRETE BARRIER

**TOP OF SHORING = EDGE OF PAVEMENT



TEMPORARY GUARDRAIL

**GUARDRAIL FACE = EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING

(SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING

(SURCHARGE CASE)
*SEE TABLE ABOVE.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 1-17-12

PROJECT REFERENCE NO.	SHEET NO.
U-5132	3 (1 of 2)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202816

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0001020000-N	SP	6	EA	GENERIC MISCELLANEOUS ITEM REMOVABLE BOLLARDS
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ********** (14+82.85)
0036000000-E	225	3,500	CY	UNDERCUT EXCAVATION
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0063000000-N	SP	Lump Sum		GRADING
0106000000-E	230	81,900	CY	BORROW EXCAVATION
0134000000-E	240	190	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	150	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	2,400	SY	GEOTEXTILE FOR SOIL STABILIZATION
0199000000-E	SP	1,700	SF	TEMPORARY SHORING
0223000000-E	275	1,360	SY	ROCK PLATING
0255000000-E	SP	100	TON	GENERIC GRADING ITEM EXCAVATION, HAULING, AND DISPOSAL OF CONTAMINATED SOIL
0318000000-E	300	1,073	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	3,380	SY	FOUNDATION CONDITIONING GEOTEXTILE
0342000000-E	310	308	LF	**" SIDE DRAIN PIPE (30")
0342000000-E	310	28	LF	**" SIDE DRAIN PIPE (36")
0343000000-E	310	1,600	LF	15" SIDE DRAIN PIPE
0344000000-E	310	352	LF	18" SIDE DRAIN PIPE
0345000000-E	310	160	LF	24" SIDE DRAIN PIPE
0348000000-E	310	16	EA	**" SIDE DRAIN PIPE ELBOWS (15")
0366000000-E	310	28	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E	310	112	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E	310	92	LF	24" RC PIPE CULVERTS, CLASS III
0448200000-E	310	2,084	LF	15" RC PIPE CULVERTS, CLASS IV
0448300000-E	310	588	LF	18" RC PIPE CULVERTS, CLASS IV
0448400000-E	310	448	LF	24" RC PIPE CULVERTS, CLASS IV
0448500000-E	310	1,004	LF	30" RC PIPE CULVERTS, CLASS IV
0453000000-E	310	1	EA	**" PIPE END SECTION (15")
0453000000-E	310	2	EA	**" PIPE END SECTION (18")
0453000000-E	310	1	EA	**" PIPE END SECTION (24")
0995000000-E	340	3,538	LF	PIPE REMOVAL
0996000000-N	350	10	EA	PIPE CLEAN-OUT
1099500000-E	505	300	CY	SHALLOW UNDERCUT
1099700000-E	505	600	TON	CLASS IV SUBGRADE STABILIZATION
1121000000-E	520	12,911	TON	AGGREGATE BASE COURSE
1220000000-E	545	500	TON	INCIDENTAL STONE BASE
1275000000-E	600	1,971	GAL	PRIME COAT
1297000000-E	607	6,960	SY	MILLING ASPHALT PAVEMENT, ***" DEPTH (3")
1330000000-E	607	15,360	SY	INCIDENTAL MILLING
1491000000-E	610	13,440	TON	ASPHALT CONC BASE COURSE, TYPE B25.0C
1498000000-E	610	3,650	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
1503000000-E	610	8,860	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C
1519000000-E	610	4,420	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1523000000-E	610	14,230	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5C
1575000000-E	620	2,300	TON	ASPHALT BINDER FOR PLANT MIX

ItemNumber	Sec #	Quantity	Unit	Description
1693000000-E	654	500	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2022000000-E	815	112	CY	SUBDRAIN EXCAVATION
2033000000-E	815	84	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	500	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE
2209000000-E	838	1.5	CY	ENDWALLS
2253000000-E	840	0.8	CY	PIPE COLLARS
2264000000-E	840	1	CY	PIPE PLUGS
2275000000-E	SP	30	CY	FLOWABLE FILL
2286000000-N	840	95	EA	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	39.27	LF	MASONRY DRAINAGE STRUCTURES
2364000000-N	840	15	EA	FRAME WITH TWO GRATES, STD 840.16
2364200000-N	840	9	EA	FRAME WITH TWO GRATES, STD 840.20
2365000000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.22
2366000000-N	840	4	EA	FRAME WITH TWO GRATES, STD 840.24
2367000000-N	840	6	EA	FRAME WITH TWO GRATES, STD 840.29
2374000000-N	840	12	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
2374000000-N	840	20	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
2374000000-N	840	20	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
2396000000-N	840	5	EA	FRAME WITH COVER, STD 840.54
2451000000-N	852	22	EA	CONCRETE TRANSITIONAL SECTION FOR DROP INLET
2538000000-E	846	760	LF	**',**" CONCRETE CURB & GUTTER (2'-9")
2549000000-E	846	9,080	LF	2'-6" CONCRETE CURB & GUTTER
2556000000-E	846	354	LF	SHOULDER BERM GUTTER
2591000000-E	848	720	SY	4" CONCRETE SIDEWALK
2605000000-N	848	8	EA	CONCRETE CURB RAMP
2655000000-E	852	2,060	SY	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)
2703000000-E	854	1,148	LF	CONCRETE BARRIER, TYPE ******* (T2)
2724000000-E	857	463	LF	PRECAST REINFORCED CONCRETE BARRIER, SINGLE FACED
2815000000-N	858	16	EA	ADJUSTMENT OF DROP INLETS
2830000000-N	858	2	EA	ADJUSTMENT OF MANHOLES
2893000000-N	859	1	EA	CONVERT EXISTING CATCH BASIN TO JUNCTION BOX WITH MANHOLE
2905000000-N	859	1	EA	CONVERT EXISTING DROP INLET TO JUNCTION BOX
2920000000-N	859	3	EA	CONVERT EXISTING DROP INLET TO CATCH BASIN
3000000000-N	SP	3	EA	IMPACT ATTENUATOR UNIT, TYPE 350
3030000000-E	862	5,537.5	LF	STEEL BM GUARDRAIL
3045000000-E	862	25	LF	STEEL BM GUARDRAIL, SHOP CURVED
3150000000-N	862	27	EA	ADDITIONAL GUARDRAIL POSTS
3195000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
3210000000-N	862	12	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1
3270000000-N	SP	21	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	14	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3319000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE B-83
3360000000-E	863	3,096	LF	REMOVE EXISTING GUARDRAIL
3503000000-E	866	1,840	LF	WOVEN WIRE FENCE, 47" FABRIC

ItemNumber	Sec #	Quantity	Unit	Description
3506000000-E	866	110	EA	4" TIMBER FENCE POSTS, ***** LONG (5')
3512000000-E	866	50	EA	5" TIMBER FENCE POSTS, ***** LONG (5')
3536000000-E	866	1,200	LF	CHAIN LINK FENCE, 48" FABRIC
3542000000-E	866	101	EA	METAL LINE POSTS FOR 48" CHAIN LINK FENCE
3548000000-E	866	9	EA	METAL TERMINAL POSTS FOR 48" CHAIN LINK FENCE
3564000000-E	866	1	EA	SINGLE GATES, **" HIGH, **" WIDE, **' OPENING (48", 12', 12')
3628000000-E	876	13	TON	RIP RAP, CLASS I
3649000000-E	876	60	TON	RIP RAP, CLASS B
3656000000-E	876	850	SY	GEOTEXTILE FOR DRAINAGE
4025000000-E	901	2,933.7	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (A)
4025000000-E	901	622.8	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (E)
4025000000-E	901	27	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (F)
4048000000-E	902	6	CY	REINFORCED CONCRETE SIGN FOUNDATIONS
4057000000-E	SP	93	CY	OVERHEAD FOOTING
4060000000-E	903	1,417	LB	SUPPORTS, BREAKAWAY STEEL BEAM
4066000000-E	903	2,056	LB	SUPPORTS, SIMPLE STEEL BEAM
4072000000-E	903	1,434.7	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4080000000-N	903	1	EA	SUPPORTS, BARRIER (LARGE)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUCTURE AT STA ****** (11+04 -NBL-)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUCTURE AT STA ****** (15+00 -L-)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUCTURE AT STA ****** (15+00 -RPB-)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUCTURE AT STA ****** (21+00 -LWB-)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUCTURE AT STA ****** (24+24 -NBL-)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUCTURE AT STA ****** (32+15 -L-)
4102000000-N	904	103	EA	SIGN ERECTION, TYPE E
4108000000-N	904	1	EA	SIGN ERECTION, TYPE F
4110000000-N	904	6	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A)
4116100000-N	904	1	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (A)
4116100000-N	904	4	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (E)
4138000000-N	907	2	EA	DISPOSAL OF SUPPORT, STEEL BEAM
4149000000-N	907	1	EA	DISPOSAL OF SIGN SYSTEM, OVERHEAD
4152000000-N	907	2	EA	DISPOSAL OF SIGN SYSTEM, STEEL BEAM
4155000000-N	907	51	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4158000000-N	907	1	EA	DISPOSAL OF SIGN SYSTEM, WOOD
4192000000-N	907	4	EA	DISPOSAL OF SUPPORT, U-CHANNEL
4400000000-E	1110	872	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	192	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	193	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4415000000-N	1115	2	EA	FLASHING ARROW BOARD
4420000000-N	1120	2	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4430000000-N	1130	200	EA	DRUMS

STATE OF NORTH CAROLINA
SUMMARY OF QUANTITIES

PROJECT REFERENCE No.	SHEET No.
U-5132	3
	(2 of 2)

ItemNumber	Sec #	Quantity	Unit	Description
4435000000-N	1135	85	EA	CONES
4445000000-E	1145	64	LF	BARRICADES (TYPE III)
4455000000-N	1150	320	DAY	FLAGGER
4465000000-N	1160	4	EA	TEMPORARY CRASH CUSHIONS
4480000000-N	1165	2	EA	TMA
4485000000-E	1170	1,590	LF	PORTABLE CONCRETE BARRIER
4510000000-N	SP	80	HR	LAW ENFORCEMENT
4650000000-N	1251	658	EA	TEMPORARY RAISED PAVEMENT MARKERS
4685000000-E	1205	24,660	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	22,241	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4695000000-E	1205	2,222	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
4697000000-E	1205	140	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 120 MILS)
4710000000-E	1205	436	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
4721000000-E	1205	74	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)
4725000000-E	1205	106	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
4810000000-E	1205	182,816	LF	PAINT PAVEMENT MARKING LINES (4")
4820000000-E	1205	9,448	LF	PAINT PAVEMENT MARKING LINES (8")
4835000000-E	1205	1,744	LF	PAINT PAVEMENT MARKING LINES (24")
4840000000-N	1205	128	EA	PAINT PAVEMENT MARKING CHARACTER
4845000000-N	1205	316	EA	PAINT PAVEMENT MARKING SYMBOL
4847000000-E	1205	795	LF	POLYUREA PAVEMENT MARKING LINES (4", **********) (HIGHLY REFLECTIVE ELEMENTS)
4850000000-E	1205	2,100	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
4900000000-N	1251	207	EA	PERMANENT RAISED PAVEMENT MARKERS
4905000000-N	1253	597	EA	SNOWPLOWABLE PAVEMENT MARKERS
5005000000-E	1401	3	EA	80' HIGH MOUNT STANDARD
5010000000-E	1401	1	EA	100' HIGH MOUNT STANDARD
5020000000-N	1401	1	EA	PORTABLE DRIVE UNIT
5025000000-E	SP	24	CY	HIGH MOUNT FOUNDATIONS
5030000000-N	1403	24	EA	HIGH MOUNT LUMINAIRES ******** (400W HPS)
5030000000-N	1403	6	EA	HIGH MOUNT LUMINAIRES ******** (750W HPS)
5070000000-N	1405	10	EA	STANDARD FOUNDATION ********* (TYPE R2)
5120000000-N	1407	1	EA	ELECTRIC SERVICE POLE **** ******** (30' CLASS 4)
5125000000-E	1407	100	LF	ELECTRIC SERVICE LATERAL ********** (3 #1/0 USE)
5145000000-N	1408	1	EA	LIGHT CONTROL EQUIPMENT, TYPE RW ********** (480/240 VOLT)
5155000000-E	1409	360	LF	ELECTRICAL DUCT, TYPE BD, SIZE ***** (2")
5155000000-E	1409	120	LF	ELECTRICAL DUCT, TYPE BD, SIZE ***** (3")
5155000000-E	1409	45	LF	ELECTRICAL DUCT, TYPE BD, SIZE ***** (4")
5160000000-E	1409	160	LF	ELECTRICAL DUCT, TYPE JA, SIZE ***** (4")
5170000000-E	1410	1,150	LF	** #8 W/G FEEDER CIRCUIT (2)
5205000000-E	1410	1,600	LF	** #8 W/G FEEDER CIRCUIT IN *****" CONDUIT (2, 1.5" C)
5240000000-N	1411	8	EA	ELECTRICAL JUNCTION BOXES ********** (PC18)
5240000000-N	1411	1	EA	ELECTRICAL JUNCTION BOXES ********** (PC30)

ItemNumber	Sec #	Quantity	Unit	Description
5262000000-E	SP	9	CY	GENERIC LIGHTING ITEM CONCRETE DUCTBANK
5265000000-E	SP	200	LF	GENERIC LIGHTING ITEM DUCTBANK CONDUIT
5265000000-E	SP	3,500	LF	GENERIC LIGHTING ITEM SINGLE ARM FEEDER CIRCUIT CONDUIT SYSTEM
5270000000-N	SP	10	EA	GENERIC LIGHTING ITEM LED LUMINAIRE
5270000000-N	SP	10	EA	GENERIC LIGHTING ITEM ROADWAY LIGHT STANDARD
5325600000-E	1510	126	LF	6" WATER LINE
5325800000-E	1510	823	LF	8" WATER LINE
5326200000-E	1510	2,289	LF	12" WATER LINE
5540000000-E	1515	4	EA	6" VALVE
5572200000-E	1515	15	EA	12" TAPPING VALVE
5648000000-N	1515	3	EA	RELOCATE WATER METER
5649000000-N	1515	2	EA	RECONNECT WATER METER
5672000000-N	1515	6	EA	RELOCATE FIRE HYDRANT
5801000000-E	1530	766	LF	ABANDON 8" UTILITY PIPE
5804000000-E	1530	1,797	LF	ABANDON 12" UTILITY PIPE
5815000000-N	1530	3	EA	REMOVE WATER METER
6000000000-E	1605	20,000	LF	TEMPORARY SILT FENCE
6006000000-E	1610	850	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	1,520	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	2,310	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	28	ACR	TEMPORARY MULCHING
6018000000-E	1620	800	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	3.25	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	1,000	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	800	LF	SAFETY FENCE
6030000000-E	1630	1,610	CY	SILT EXCAVATION
6036000000-E	1631	5,850	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	50	SY	COIR FIBER MAT
6038000000-E	SP	165	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	7,700	LF	1/4" HARDWARE CLOTH
6048000000-E	SP	15	SY	FLOATING TURBIDITY CURTAIN
6069000000-E	1638	240	CY	STILLING BASINS
6070000000-N	1639	1	EA	SPECIAL STILLING BASINS
6071012000-E	SP	4,500	LF	COIR FIBER WATTLE
6071020000-E	SP	1,900	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	1,280	LF	COIR FIBER BAFFLE
6071050000-E	SP	4	EA	**" SKIMMER (1-1/2")
6084000000-E	1660	27	ACR	SEEDING & MULCHING
6087000000-E	1660	15	ACR	MOWING
6090000000-E	1661	350	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	1.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	675	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	20	TON	FERTILIZER TOPDRESSING
6111000000-E	SP	75	LF	IMPERVIOUS DIKE
6114500000-N	1667	25	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	100	EA	RESPONSE FOR EROSION CONTROL
6120000000-E	SP	340	CY	CULVERT DIVERSION CHANNEL
6123000000-E	1670	4	ACR	REFORESTATION
7048500000-E	1705	4	EA	PEDESTRIAN SIGNAL HEAD (16", 1 SECTION W/COUNTDOWN)
7060000000-E	1705	3,210	LF	SIGNAL CABLE
7120000000-E	1705	27	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7132000000-E	1705	1	EA	VEHICLE SIGNAL HEAD (12", 4 SECTION)

ItemNumber	Sec #	Quantity	Unit	Description
7144000000-E	1705	1	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
7264000000-E	1710	690	LF	MESSENGER CABLE (3/8")
7288000000-E	1715	400	LF	PAVED TRENCHING (**********) (1, 2")
7300000000-E	1715	1,125	LF	UNPAVED TRENCHING (**********) (1, 2")
7301000000-E	1715	570	LF	DIRECTIONAL DRILL (**********) (1, 2")
7324000000-N	1716	14	EA	JUNCTION BOX (STANDARD SIZE)
7348000000-N	1716	5	EA	JUNCTION BOX (OVER-SIZED, HEAVY DUTY)
7408000000-E	1722	3	EA	1" RISER WITH WEATHERHEAD
7444000000-E	1725	3,035	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	9,050	LF	LEAD-IN CABLE (**********) (14-2)
7481000000-N	SP	1	EA	SITE SURVEY
7481200000-N	SP	5	EA	LUMINAIRE ARM FOR VIDEO SYSTEM
7481240000-N	SP	5	EA	CAMERA WITHOUT INTERNAL LOOP EMULATOR PROCESSING UNIT
7481260000-N	SP	5	EA	EXTERNAL LOOP EMULATOR PROCESSING UNIT
7481280000-N	SP	2	EA	RELOCATE CAMERA SENSOR UNIT
7576000000-N	SP	4	EA	METAL STRAIN SIGNAL POLE
7588000000-N	SP	1	EA	METAL POLE WITH SINGLE MAST ARM
7590000000-N	SP	2	EA	METAL POLE WITH DUAL MAST ARM
7613000000-N	SP	7	EA	SOIL TEST
7614100000-E	SP	54	CY	DRILLED PIER FOUNDATION
7615100000-N	SP	3	EA	FOUNDATION WITH WING WALLS (TYPE 1)
7631000000-N	SP	3	EA	MAST ARM WITH METAL POLE DESIGN
7642100000-N	1743	4	EA	TYPE I POST WITH FOUNDATION
7642200000-N	1743	2	EA	TYPE II PEDESTAL WITH FOUNDATION
7684000000-N	1750	1	EA	SIGNAL CABINET FOUNDATION
7756000000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
7780000000-N	1751	13	EA	DETECTOR CARD (TYPE 2070L)
7901000000-N	1753	1	EA	CABINET BASE EXTENDER
7960000000-N	SP	1	EA	METAL POLE FOUNDATION REMOVAL
7972000000-N	SP	1	EA	METAL POLE REMOVAL

COMPUTED BY: CBH DATE: July 20, 2011

CHECKED BY: ASH DATE: August 2, 2011

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5132	3-A

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & 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	SIDE DRAIN PIPE (RCP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	C.S. PIPE 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
																				.064	.064	.064	.064	.079	.079	.109	.109																
SHEET 4																																											
-WRBP- 17+85	RT	400																																									
SHEET 5																																											
- L_WB- 15+92.00	LT	501		33.7																																							
- L_WB- 17+50.00	LT	502		31.3																																							
- WBRP- 20+55.00	LT	503		25.8																																							
SHEET 6																																											
- Y3SR- 13+87.27	LT	655																																										
- Y1- 17+17.99	RT	601		48.1																																							
- Y1- 17+17.99	RT	601	603		39.3	21.5			92								X	X		X																								
- Y1- 17+67.00	LT	602		48.0																																							
- Y1- 17+67.00	LT	602	604		37.9	25.8			68								X	X		X																								
- L_WB- 32+88.00	LT	611		27.8																																							
- L_WB- 32+88.00	LT	611	610		18.6	17.3																															16						
- L- 19+62.50	LT	612		17.8																																							
- Y3SR- 11+50.00	RT	614		21.5																																							
- Y3SR- 11+50.00	RT	614	622	21.5	15.0	13.9																															8						
- L- 18+65.00	LT	622		26.1																																							
- Y3SR- 12+15.00	LT	621		18.7																																							
- Y3SR- 13+37.00	RT	616		18.2																																							
- Y3SR- 13+37.00	RT	616	615	18.2	15.1	15.1																															8						
- L- 20+50.00	LT	615		21.7																																							
- L- 20+50.00	LT	615	676	21.7	15.1	14.5																															164						
- L- 22+12.00	LT	676		17.5																																							
- L- 22+12.00	LT	676	697	17.5	12.3	9.0																															204						
- Y3SR- 15+00.00	RT	677		16.1																																							
- Y3SR- 15+00.00	RT	677	676	16.1	12.3	12.3																															16						
- RPB- 13+50.00	RT	673	674	16.5	14.1	8.8																																		56			
- RPB- 13+30.00	LT	674		14.0																																							
- RPB- 13+30.00	LT	674	675	14.0	8.8	8.0																																		72			
- RPB- 12+57.00	LT	675		13.8																																							
- RPB- 12+57.00	LT	675	697	13.8	8.0	7.7																																		56			
- Y3SR- 17+00.00	LT	679		13.3																																							
- Y3SR- 17+00.00	LT	679	678		7.5	7.4							28				X	X																										
- LPB- 11+85.00	RT	651		21.4																																							
- LPB- 11+85.00	RT	651	650		18.3	15.5			32								X	X		X																								
- L- 29+76.50	RT	625		22.7																																							
- L- 36+05.00	RT	640		24.5																																							
- Y3- 10+67.00	LT	652	654		14.9	13.8												X	X								20																
- Y3- 10+50.00	LT	654		18.9																																							
- Y3- 10+67.00	RT	653	696	16.3	14.8	14.2			8								X	X		X																								
- Y3SR- 14+35.50	LT	657		14.4																																							
SHEET TOTALS								0	0	200	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	416	0	0	184

STATION	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	CU. YARDS R.C.P.	CU. YARDS C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME WITH TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO GRATE STD. 840.20 (Flat)	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. FRAME WITH TWO GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29 (Flat)	J.B. STD. 840.31 OR 840.32	TB.JB STD. 840.34	TB 2GI STD. 840.35	CONV DI TO CB	M.H. FRAME AND COVER STD. 840.54	ADJUST DI	CONV DI TO JB W/MH	ADJUST 2GI	ADJ TBDI	ADJ MH	SIDE DRAIN PIPE ELBOWS NO. & SIZE	FLOWABLE FILL, C.Y.	CONV CB TO JB W/MH	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PARALLEL PIPE END SECTION, EA. STD. 310.02	CONC. COLLAR, C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
SHEET 4																																										
-WRBP- 17+85																											1															
SHEET 5																																										
- L_WB- 15+92.00																												1														
- L_WB- 17+50.00				1	1.9	0.2									1			1																							
- WBRP- 20+55.00				1	5.0	0.3																1			1																Remove DI
SHEET 6																																										
- Y3SR- 13+87.27																									1																	
- Y1- 17+17.99				1	3.8										1			1																2 @ 15"								
- Y1- 17+17.99																																										
- Y1- 17+67.00				1	5.0	0.1									1			1																2 @ 15"								
- Y1- 17+67.00																																										
- L_WB- 32+88.00				1	4.3										1			1																								
- L- 19+62.50																												1														
- Y3SR- 11+50.00				1	1.5										1					1																						
- Y3SR- 11+50.00																																										
- L- 18+65.00				1	5.0	2.1									1			1																								
- Y3SR- 12+15.00																											1															
- Y3SR- 13+37.00				1									1	1																												
- Y3SR- 13+37.00																																										USE S=0.3% MIN.
- L- 20+50.00				1	1.6										1			1																								
- L- 20+50.00																																									269	
- L- 22+12.00				1	0.2										1			1																								
- L- 22+12.00																																										
- Y3SR- 15+00.00				1							1		1	1																												
- Y3SR- 15+00.00																																										
- RPB- 13+50.00																																										OEP
- RPB- 13+30.00				1											1			1																								
- RPB- 13+30.00																																									141	REMOVE (3)-DI's
- RPB- 12+57.00				1	0.8										1			1																								
- RPB- 12+57.00																																										
- Y3SR- 17+00.00				1	0.8		1	1																																		
- Y3SR- 17+00.00																																										
- LPB- 11+85.00				1			1		1																																	
- LPB- 11+85.00																																		2 @ 15"								
- L- 29+76.50																																	1			.116						
- L- 36+05.00																															1											
- Y3- 10+67.00																																					1@15"					OEP W/PPES
- Y3- 10+50.00				1	0.7																	1			1																	
- Y3- 10+67.00																																					1@18"	0.4				PPES
- Y3SR- 14+35.50																									1																	
SHEET TOTALS	0	0	0	16	30.6	2.7	2	1	1	0	1	0	2	2	2	8	0	8	1	0	1	1	1	0	2	2	2	1	2	0	1	6 @ 15"	0	.116	1@15" 1@18"	0.4	0	410	

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.)	(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

COMPUTED BY:	CBH	DATE:	July 20, 2011
CHECKED BY:	ASH	DATE:	August 2, 2011

MEADORJ

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5132	3-B

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

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

STATION	LOCATION (LT, RT, OR CL)'	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
- L- 37+14.00	RT	694		24.4															
- Y1- 14+52.00	LT	661		46.7															
- Y1- 14+52.00	LT	661	660		44.0	42.6													
- Y1- 14+44.99	RT	660		45.8															
- Y1- 14+44.99	RT	660	662		42.6	42.0													
- Y1- 13+99.99	RT	662		44.7															
- Y1- 13+99.99	RT	662	663		42.0	21.8			96							X	X		X
- Y1- 10+50.00	LT	664		33.8															
- Y1- 10+50.00	LT	664	665		30.6	28.1													
- Y1- 10+50.00	RT	665		31.3															
- Y1- 10+50.00	RT	665	666		28.0	23.9			48							X	X		X
- RPB- 17+20.00	RT	667		27.4															
- RPB- 17+20.00	RT	667	668		22.3	22.1													
- LPB- 15+70.00	RT	668		25.1															
- LPB- 15+70.00	RT	668	669		22.1	21.5			24							X	X		X
- LPB- 13+32.00	RT	681	670		16.8	15.4													
- LPB- 13+32.00	RT	670		18.6															
- LPB- 13+32.00	RT	670	671		14.9	14.5													
- L- 23+00.00	CL	690		15.2															
- L- 23+00.00	CL	690	626		8.3	7.8			116								X	X	
- L- 24+14.00	CL	626		14.8															
- L- 35+00.00	LT	691		25.3															
- L- 35+00.00	LT	691	641		20.5	19.7			108								X	X	
- L- 29+88.50	LT	624		24.2															
- L- 37+70.00	RT	646		24.4															
- L- 37+70.00	RT	682		24.0															
SHEET 6 & 7																			
- L- 40+16.00	LT	707		24.9															
- L- 40+16.00	LT	707	705		21.7	21.5													
- L- 39+35.00	LT	705		24.6															
- L- 39+35.00	LT	705	703		21.5	21.3													
- L- 38+70.00	LT	703		24.4															
- L- 38+70.00	LT	703	708		21.3	21.2													
- L- 38+60.00	LT	708		24.9															
- L- 38+60.00	LT	708	647		21.2	21.1													
- L- 38+00.00	LT	647		24.2															
- L- 38+00.00	LT	647	648		21.1	20.8													
- L- 37+24.00	LT	648		24.6															
- L- 37+24.00	LT	648	644		20.8	20.8													
- L- 37+14.00	LT	644		24.1															
- L- 37+14.00	LT	644	695		20.8	20.7													
- L- 36+94.00	LT	695		24.1															
- L- 36+94.00	LT	695	642		20.7	20.5													
- L- 36+25.00	LT	642		24.7															
- L- 36+25.00	LT	642	641		20.5	20.5													
- L- 36+05.00	LT	641		24.5															
SHEET TOTALS							0	0	392	0	0	0	0	0	0	0	0	0	0

STATION	C.S. PIPE 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"		***" RC PIPE CULVERTS, CONTRACTOR DESIGN	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE
THICKNESS OR GAUGE	.064	.064	.064	.064	.079	.079	.109	.109																					
- L- 37+14.00																													
- Y1- 14+52.00																													
- Y1- 14+52.00																		72											
- Y1- 14+44.99																													
- Y1- 14+44.99																		48											
- Y1- 13+99.99																													
- Y1- 13+99.99																													
- Y1- 10+50.00																													
- Y1- 10+50.00																		28											
- Y1- 10+50.00																													
- Y1- 10+50.00																													
- RPB- 17+20.00																													
- RPB- 17+20.00																		32											
- LPB- 15+70.00																													
- LPB- 15+70.00																													
- LPB- 13+32.00												24																	
- LPB- 13+32.00																													
- LPB- 13+32.00																					112								
- L- 23+00.00																													
- L- 23+00.00																													
- L- 24+14.00																													
- L- 35+00.00																													
- L- 35+00.00																													
- L- 29+88.50																													
- L- 37+70.00																													
- L- 37+70.00																													
- L- 40+16.00																													
- L- 40+16.00																		84											
- L- 39+35.00																													
- L- 39+35.00																		68											
- L- 38+70.00																													
- L- 38+70.00																		12											
- L- 38+60.00																													
- L- 38+60.00																		60											
- L- 38+00.00																													
- L- 38+00.00																		76											
- L- 37+24.00																													
- L- 37+24.00																		12											
- L- 37+14.00																													
- L- 37+14.00																		20											
- L- 36+94.00																													
- L- 36+94.00																		72											
- L- 36+25.00																													
- L- 36+25.00																		24											
- L- 36+05.00																													
SHEET TOTALS	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	608	0	0	112	0	0	0	0	0	0	0	0

STATION	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME WITH TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO GRATE STD. 840.20 (Flat)	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29 (Flat)	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	TB 2GI STD. 840.35	CONV DI TO CB	M.H. FRAME AND COVER STD. 840.54	ADJUST DI	CONV DI TO JB W/MH	ADJUST 2GI	ADJ TBDI	ADJ MH	SIDE DRAIN PIPE NO. & SIZE ELBOWS	FLOWABLE FILL, C.Y.	CONV CB TO JB W/MH	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PARALLEL PIPE END SECTION, EA. STD. 310.02	CONC. COLLAR, C.Y. STD. 840.72		PIPE REMOVAL LIN. FT.	REMARKS
- L- 37+14.00										1																			1										
- Y1- 14+52.00			1												1					1																			
- Y1- 14+52.00																																							
- Y1- 14+44.99			1			1			1																														
- Y1- 14+44.99																																							
- Y1- 13+99.99			1			1			1																														
- Y1- 13+99.99																															2 @ 15"								
- Y1- 10+50.00			1							1		1	1																										
- Y1- 10+50.00																																							
- Y1- 10+50.00			1			1		1																															
- Y1- 10+50.00																															2 @ 15"								
- RPB- 17+20.00			1	0.2						1		1	1																										
- RPB- 17+20.00																																							
- LPB- 15+70.00			1			1		1																															
- LPB- 15+70.00																															2 @ 15"								
- LPB- 13+32.00																																							OEP
- LPB- 13+32.00			1			1	1																																
- LPB- 13+32.00																																							
- L- 23+00.00			1	1.9											1			1																					
- L- 23+00.00																															2 @ 15"								
- L- 24+14.00																												2				4						80	
- L- 35+00.00			1												1			1																					
- L- 35+00.00																																							USE S=0.3% MIN.
- L- 29+88.50																												1											
- L- 37+70.00										1																			1										
- L- 37+70.00																														1									
- L- 40+16.00			1							1		1	1																										
- L- 40+16.00																																							
- L- 39+35.00			1							1		1	1																										
- L- 39+35.00																																							
- L- 38+70.00			1							1		1	1																										
- L- 38+70.00																																							
- L- 38+60.00			1							1		1	1																										
- L- 38+60.00																																							
- L- 38+00.00			1							1		1	1																										
- L- 38+00.00																																						140	REM DI
- L- 37+24.00			1							1		1	1																										
- L- 37+24.00																																3						61	USE S=0.3% MIN.
- L- 37+14.00			1							1		1	1																										
- L- 37+14.00																																							
- L- 36+94.00			1							1		1	1																										
- L- 36+94.00																																							
- L- 36+25.00			1							1		1	1																										
- L- 36+25.00																																							USE S=0.3% MIN.
- L- 36+05.00																												1											
SHEET TOTALS	0	0	19	2.1	0.0	5	1	2	2	13	0	11	11	0	3	0	0	2	0	1	0	0	0	0	0	0	0	4	2	1	8 @ 15"	7		0			0	281	

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.)	(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

MEADORJ

COMPUTED BY:	CBH	DATE:	July 20, 2011
CHECKED BY:	ASH	DATE:	August 2, 2011

PROJECT NO.	SHEET NO.
U-5132	3-C

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

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

STATION	LOCATION (LT, RT, OR CL)'	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
- L- 38+56.00	LT	704		24.1															
- L- 38+56.00	LT	704	645		21.1	20.7													
- L- 37+14.00	LT	645		23.8															
- L- 37+14.00	LT	645	684		20.7	20.6			40								X	X	
- L- 36+78.00	LT	684		24.4															
- L- 36+78.00	LT	684	649		20.6	20.2			116								X	X	
- L- 35+64.00	LT	649		23.8															
- L- 35+64.00	LT	649	627		20.2	20.0			68								X	X	
- L- 35+00.00	LT	627		24.5															
- L- 35+00.00	LT	627	628		20.0	19.8				60							X	X	
- RPB- 12+02.00	LT	697		13.9															
- RPB- 12+02.00	LT	697	679		7.7	7.5											X	X	
SHEET 7																			
- L- 40+50.00	RT	700		25.1															
- L- 38+66.00	RT	702		24.7															
- L- 39+50.00	RT	706		24.9															
- L- 41+40.00	RT	709		25.4															
- L- 43+41.00	CL	710		24.5															
- L- 43+41.00	CL	710	711		22.4	21.7			216								X	X	
- L- 45+55.00	LT	711		24.3															
- L- 46+82.12	LT	715		24.9															
- L- 46+82.12	LT	715	717		21.7	21.0													
- L- 46+00.00	LT	716		25.6															
- L- 46+00.00	LT	716	717		22.0	21.0			12								X	X	
- L- 46+00.00	LT	717		25.6															
- L- 46+00.00	LT	717	734		21.0	20.6													
- L- 44+85.00	LT	734		25.7															
- L- 44+85.00	LT	734	733		20.6	20.6				8							X	X	
- L- 44+85.00	LT	733		24.7															
- L- 44+85.00	LT	733	735		20.6	20.2													
- L- 43+69.00	LT	735		24.2															
- L- 43+69.00	LT	735	736		20.2	20.1													
- L- 43+25.00	LT	736		24.1															
- L- 43+25.00	LT	736	719		20.1	19.9													
- L- 42+60.00	LT	719		24.5															
- L- 42+60.00	LT	719	718		19.9	19.9				8							X	X	
- L- 42+60.00	LT	718		25.2															
- L- 42+60.00	LT	718	720		19.9	19.6													
- L- 41+76.00	LT	720		25.0															
- L- 41+76.00	LT	720	721		19.6	19.4													
- Y4- 11+20.00	RT	721		23.2															
- Y4- 11+20.00	RT	721	722		19.4	18.8													
- Y4- 11+85.00	RT	723		23.7															
- Y4- 11+85.00	RT	723	722		20.1	18.8			12								X	X	
- Y4- 11+85.00	RT	722		22.5															
- Y4- 11+85.00	RT	722	724		18.8	18.7													
- Y4- 12+37.25	RT	724		22.4															
- Y4- 12+37.25	RT	724	725		18.7	18.6													
- Y4- 12+55.00	RT	725		22.4															
SHEET TOTALS							0	0	464	76	0	0	0	0	0	0	0	0	0

STATION	LOC.	FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
- L- 38+56.00	LT	704																									
- L- 38+56.00	LT	704	645																		144						
- L- 37+14.00	LT	645																									
- L- 37+14.00	LT	645	684																								
- L- 36+78.00	LT	684																									
- L- 36+78.00	LT	684	649																								
- L- 35+64.00	LT	649																									
- L- 35+64.00	LT	649	627																								
- L- 35+00.00	LT	627																									
- L- 35+00.00	LT	627	628																								
- RPB- 12+02.00	LT	697																									
- RPB- 12+02.00	LT	697	679																					28			
SHEET 7																											
- L- 40+50.00	RT	700																									
- L- 38+66.00	RT	702																									
- L- 39+50.00	RT	706																									
- L- 41+40.00	RT	709																									
- L- 43+41.00	CL	710																									
- L- 43+41.00	CL	710	711																								
- L- 45+55.00	LT	711																									
- L- 46+82.12	LT	715																									
- L- 46+82.12	LT	715	717																		84						
- L- 46+00.00	LT	716																									
- L- 46+00.00	LT	716	717																								
- L- 46+00.00	LT	717																									
- L- 46+00.00	LT	717	734																			116					
- L- 44+85.00	LT	734																									
- L- 44+85.00	LT	734	733																								
- L- 44+85.00	LT	733																									
- L- 44+85.00	LT	733	735																			120					
- L- 43+69.00	LT	735																									
- L- 43+69.00	LT	735	736																			48					
- L- 43+25.00	LT	736																									
- L- 43+25.00	LT	736	719																			68					
- L- 42+60.00	LT	719																									
- L- 42+60.00	LT	719	718																								
- L- 42+60.00	LT	718																									
- L- 42+60.00	LT	718	720																				84				
- L- 41+76.00	LT	720																									
- L- 41+76.00	LT	720	721																				84				
- Y4- 11+20.00	RT	721																									
- Y4- 11+20.00	RT	721	722																				68				
- Y4- 11+85.00	RT	723																									
- Y4- 11+85.00	RT	723	722																								
- Y4- 11+85.00	RT	722																									
- Y4- 11+85.00	RT	722	724																				56				
- Y4- 12+37.25	RT	724																									
- Y4- 12+37.25	RT	724	725																				20				
- Y4- 12+55.00	RT	725																									
SHEET TOTALS				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	228	352	312	28	0	0	0

STATION	LOC.	FROM	TO		***" RC PIPE CULVERTS, CONTRACTOR DESIGN	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN
- L- 38+56.00	LT	704									1			1		1			
- L- 38+56.00	LT	704	645																
- L- 37+14.00	LT	645									1			1	1				
- L- 37+14.00	LT	645	684																
- L- 36+78.00	LT	684									1								
- L- 36+78.00	LT	684	649																
- L- 35+64.00	LT	649									1								
- L- 35+64.00	LT	649	627																
- L- 35+00.00	LT	627									1			1			1		
- L- 35+00.00	LT	627	628																
- RPB- 12+02.00	LT	697									1	1.2							
- RPB- 12+02.00	LT	697	679																
SHEET 7																			
- L- 40+50.00	RT	700																1	
- L- 38+66.00	RT	702																1	
- L- 39+50.00	RT	706																1	
- L- 41+40.00	RT	709																1	
- L- 43+41.00	CL	710																	
- L- 43+41.00	CL	710	711																
- L- 45+55.00	LT	711																	
- L- 46+82.12	LT	715									1			1			1		
- L- 46+82.12	LT	715	717																
- L- 46+00.00	LT	716									1			1	1				
- L- 46+00.00	LT	716	717																
- L- 46+00.00	LT	717									1								
- L- 46+00.00	LT	717	734																
- L- 44+85.00	LT	734									1	0.1		1			1		
- L- 44+85.00	LT	734	733																
- L- 44+85.00	LT	733									1			1	1				
- L- 44+85.00	LT	733	735																
- L- 43+69.00	LT	735									1			1	1				
- L- 43+69.00	LT	735	736																
- L- 43+25.00	LT	736									1			1	1				
- L- 43+25.00	LT	736	719																
- L- 42+60.00	LT	719									1			1	1				
- L- 42+60.00	LT	719	718																
- L- 42+60.00	LT	718									1	0.3		1		1			
- L- 42+60.00	LT	718	720																
- L- 41+76.00	LT	720									1	0.4		1		1			
- L- 41+76.00	LT	720	721																
- Y4- 11+20.00	RT	721									1			1		1			
- Y4- 11+20.00	RT	721	722																
- Y4- 11+85.00	RT	723									1			1			1		
- Y4- 11+85.00	RT	723	722																
- Y4- 11+85.00	RT	722									1			1		1			
- Y4- 11+85.00	RT	722	724																
- Y4- 12+37.25	RT	724									1			1		1			
- Y4- 12+37.25	RT	724	725																
- Y4- 12+55.00	RT	725									1			1	1				
SHEET TOTALS				0	0	0	0	0	0	0	21	1.9	0.0	17	7	6	4	4	0

STATION	LOC.	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME WITH TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO GRATE STD. 840.20 (Flat)	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29 (Flat)	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	TB 2GI STD. 840.35	CONV DI TO CB	M.H. FRAME AND COVER STD. 840.54	ADJUST DI	CONV DI TO JB W/MH	ADJUST 2GI	ADJ TBDI	ADJ MH
- L- 38+56.00	LT	704																				
- L- 38+56.00	LT	704	645																			
- L- 37+14.00	LT	645																				
- L- 37+14.00	LT	645	684																			
- L- 36+78.00	LT	684											1									
- L- 36+78.00	LT	684	649																			
- L- 35+64.00	LT	649		1	1																	
- L- 35+64.00	LT	649	627																			
- L- 35+00.00	LT	627																				
- L- 35+00.00	LT	627	628																			
- RPB- 12+02.00	LT	697				1			1													
- RPB- 12+02.00	LT	697	679																			
SHEET 7																						
- L- 40+50.00	RT	700																			1	
- L- 38+66.00	RT	702																			1	
- L- 39+50.00	RT	706																			1	
- L- 41+40.00	RT	709																			1	
- L- 43+41.00	CL	710																			1	
- L- 43+41.00	CL	710	711																			
- L- 45+55.00	LT	711																			1	
- L- 46+82.12	LT	715																				
- L- 46+82.12	LT	715	717																			
- L- 46+00.00	LT	716																				
- L- 46+00.00	LT	716	717																			
- L- 46+00.00	LT	717											1				1					
- L- 46+00.00	LT	717	734																			
- L- 44+85.00	LT	734																				
- L- 44+85.00	LT	734	733																			
- L- 44+85.00	LT	733																				
- L- 44+85.00	LT	733	735																			
- L- 43+69.00	LT	735																				
- L- 43+69.00	LT	735	736																			
- L- 43+25.00	LT	736																				
- L- 43+25.00	LT	736	719																			
- L- 42+60.00	LT	719																				
- L- 42+60.00	LT	719	718																			
- L- 42+60.00	LT	718																				
- L- 42+60.00	LT	718	720																			
- L- 41+76.00	LT	720																				
- L- 41+76.00	LT	720	721																			
- Y4- 11+20.00	RT	721																				
- Y4- 11+20.00	RT	721	722																			
- Y4- 11+85.00	RT	723																				
- Y4- 11+85.00	RT	723	722																			
- Y4- 11+85.00	RT	722																				
- Y4- 11+85.00	RT	722	724																			
- Y4- 12+37.25	RT	724																				
- Y4- 12+37.25	RT	724	725																			
- Y4- 12+55.00	RT	725																				
SHEET TOTALS				1	1	1	0	0	1	0	0	0	2	0	0	0	1	0	0	0	6	0

STATION	LOC.	FROM	TO	SIDE DRAIN PIPE NO. & SIZE ELBOWS	FLOWABLE FILL, C.Y.	CONV CB TO JB W/MH	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PARALLEL PIPE END SECTION, EA. STD. 310.02	CONC. COLLAR, C.Y. STD. 840.72		PIPE REMOVAL LIN. FT.	REMARKS
- L- 38+56.00	LT	704										
- L- 38+56.00	LT	704	645								78	
- L- 37+14.00	LT	645										
- L- 37+14.00	LT	645	684									
- L- 36+78.00	LT	684										
- L- 36+78.00	LT	684	649									
- L- 35+64.00	LT	649										
- L- 35+64.00	LT	649	627									
- L- 35+00.00	LT	627										
- L- 35+00.00	LT	627	628									
- RPB- 12+02.00	LT	697										
- RPB- 12+02.00	LT	697	679									
SHEET 7												
- L- 40+50.00	RT	700										
- L- 38+66.00	RT	702										
- L- 39+50.00	RT	706										
- L- 41+40.00	RT	709										
- L- 43+41.00	CL	710										
- L- 43+41.00	CL	710	711									
- L- 45+55.00	LT	711										
- L- 46+82.12	LT	715										
- L- 46+82.12	LT	715	717								88	
- L- 46+00.00	LT	716										
- L- 46+00.00	LT	716	717									
- L- 46+00.00	LT	717										
- L- 46+00.00	LT	717	734								48	
- L- 44+85.00	LT	734										
- L- 44+85.00	LT	734	733								52	USE S=0.3% MIN.
- L- 44+85.00	LT	733										
- L- 44+85.00	LT	733	735								54	
- L- 43+69.00	LT	735										
- L- 43+69.00	LT	735	736								52	
- L- 43+25.00	LT	736										
- L- 43+25.00	LT	736	719								50	
- L- 42+60.00	LT	719										
- L- 42+60.00	LT	719	718									USE S=0.3% MIN.
- L- 42+60.00	LT	718										
- L- 42+60.00	LT	718	720								115	REM (4)-DI'S
- L- 41+76.00	LT	720										
- L- 41+76.00	LT	720	721								72	
- Y4- 11+20.00	RT	721										
- Y4- 11+20.00	RT	721	722									
- Y4- 11+85.00	RT	723										
- Y4- 11+85.00	RT	723	722									
- Y4- 11+85.00	RT	722										
- Y4- 11+85.00	RT	722	724									
- Y4- 12+37.25	RT	724			4						60	
- Y4- 12+37.25	RT	724	725								132	REM (4)-CB's
- Y4- 12+55.00	RT	725										
SHEET TOTALS				0	4		0	0		0	801	

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.)	(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

COMPUTED BY: CBH DATE: July 20, 2011

CHECKED BY: ASH DATE: August 2, 2011

PROJECT NO.	SHEET NO.
U-5132	3-D

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & 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	SIDE DRAIN PIPE (RCP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
- Y4- 12+55.00	RT	725	737		18.6	17.5													
- Y4- 16+00.00	RT	737		22.3															
- Y4- 16+00.00	RT	737	738		17.5	17.1													
- Y4- 16+86.00	RT	738		21.9															
- Y4- 16+86.00	RT	738	739		17.1	16.6													
- Y4- 16+85.50	LT	739		21.9															
- Y4- 16+85.50	LT	739	730		16.6	15.8													
SHEET 8																			
- Y2- 13+10.00	LT	802		15.1															
- Y2- 13+10.00	LT	802	803		11.8	11.4			40								X	X	
- Y2- 13+50.00	LT	803		15.2															
- Y2- 13+50.00	LT	803	804		10.3	10.2													
- Y2- 13+57.50	RT	804		14.5															
- Y2- 13+57.50	RT	804	805		10.2	10.1											X	X	
- Y2- 13+35.37	LT	809	803		11.9	10.3													
- Y2- 13+10.00	RT	801		15.0															
- Y2- 13+10.00	RT	801	802		12.0	11.8													
- Y2- 15+00.00	RT	808		16.2															
- Y2- 15+00.00	RT	808	806		13.0	11.9			100										
- Y2- 13+98.00	LT	811	806		12.9	11.6													
- Y2- 14+06.00	RT	806		14.7															
- Y2- 14+06.00	RT	806	812		11.6	11.0				168							X	X	
- Y2- 13+98.00	LT	813									52								
- Y2- 19+25.00	LT	817	818		13.6	8.7													
-Y3- 22+15	LT	815		17.5															
- Y2- 18+60.00	LT	815	819		13.8	8.9			32							X	X		
- Y2- 19+06.00	RT	820								44									
- Y2- 19+06.00	RT	821									36								
-Y3- 22+15	LT	818		12.6															
- Y2- 19+06.00	RT	818	816		8.7	8.0				64						X	X		
- Y2- 15+00.00	LT	807		16.2															
- Y2- 15+00.00	LT	807	808		13.1	13.0													
- DR1- 11+62.00	LT	901		21.5															
- DR1- 11+62.00	LT	901	900		18.5	18.4													
- DR1- 11+58.00	RT	900		21.4															
- DR1- 11+58.00	RT	900	902		18.4	17.9			68								X	X	
- Y2- 26+00.00	LT	902		20.9															
- Y2- 26+00.00	LT	902	907		17.9	17.6			48										
- DR1- 10+35.00	LT	907		21.0															
- DR1- 10+35.00	LT	907	905		17.6	17.5			32								X	X	
- Y5- 21+60.00	LT	918		25.4															
- Y5- 21+60.00	LT	918	924		22.3	21.1													
- Y5- 21+60.00	LT	924		23.8															
- Y5- 21+60.00	LT	924	929		21.1	19.4			104								X	X	
SHEET TOTALS								0	0	424	276	88	0	0	0	0	0	0	0

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"		***" RC PIPE CULVERTS, CONTRACTOR DESIGN	***" RC PIPE CULVERTS, CONTRACTOR DESIGN		
- Y4- 12+55.00	725	737																					348								
- Y4- 16+00.00	737																														
- Y4- 16+00.00	737	738																					88								
- Y4- 16+86.00	738																														
- Y4- 16+86.00	738	739																					52								
- Y4- 16+85.50	739																														
- Y4- 16+85.50	739	730																					12								
SHEET 8																															
- Y2- 13+10.00	802																														
- Y2- 13+10.00	802	803																													
- Y2- 13+50.00	803																														
- Y2- 13+50.00	803	804																				40									
- Y2- 13+57.50	804																														
- Y2- 13+57.50	804	805																				36									
- Y2- 13+35.37	809	803																				60									
- Y2- 13+10.00	801																														
- Y2- 13+10.00	801	802																		36											
- Y2- 15+00.00	808																														
- Y2- 15+00.00	808	806																													
- Y2- 13+98.00	811	806																			76										
- Y2- 14+06.00	806																														
- Y2- 14+06.00	806	812																													
- Y2- 13+98.00	813																														
- Y2- 19+25.00	817	818																			88										
-Y3- 22+15	815																														
- Y2- 18+60.00	815	819																													
- Y2- 19+06.00	820																														
- Y2- 19+06.00	821												64																		
-Y3- 22+15	818																														
- Y2- 19+06.00	818	816																													
- Y2- 15+00.00	807																														
- Y2- 15+00.00	807	808																		36											
- DR1- 11+62.00	901																														
- DR1- 11+62.00	901	900																		36											
- DR1- 11+58.00	900																														
- DR1- 11+58.00	900	902																													
- Y2- 26+00.00	902																														
- Y2- 26+00.00	902	907																		76											
- DR1- 10+35.00	907																														
- DR1- 10+35.00	907	905																													
- Y5- 21+60.00	918																														
- Y5- 21+60.00	918	924																		56											
- Y5- 21+60.00	924																														
- Y5- 21+60.00	924	929																													
SHEET TOTALS			0	0	0	0	0	0	0	0	0	0	64	0	0	0	0	0	0	240	164	136	500	0	0	0	0	0	0	0	0

STATION	FROM	TO	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN
- Y4- 12+55.00	725	737											
- Y4- 16+00.00	737				1			1		1			
- Y4- 16+00.00	737	738											
- Y4- 16+86.00	738				1			1		1			
- Y4- 16+86.00	738	739											
- Y4- 16+85.50	739				1	0.3		1			1		
- Y4- 16+85.50	739	730											
SHEET 8													
- Y2- 13+10.00	802				1			1			1		
- Y2- 13+10.00	802	803											
- Y2- 13+50.00	803				1								
- Y2- 13+50.00	803	804											
- Y2- 13+57.50	804				1			1	1				
- Y2- 13+57.50	804	805											
- Y2- 13+35.37	809	803											
- Y2- 13+10.00	801				1			1		1			
- Y2- 13+10.00	801	802											
- Y2- 15+00.00	808				1			1			1		
- Y2- 15+00.00	808	806											
- Y2- 13+98.00	811	806	1.5										
- Y2- 14+06.00	806				1			1		1			
- Y2- 14+06.00	806	812											
- Y2- 13+98.00	813												
- Y2- 19+25.00	817	818											
-Y3- 22+15	815				1			1			1		
- Y2- 18+60.00	815	819											
- Y2- 19+06.00	820				1								
- Y2- 19+06.00	821												
-Y3- 22+15	818				1								
- Y2- 19+06.00	818	816											
- Y2- 15+00.00	807				1			1		1			
- Y2- 15+00.00	807	808											
- DR1- 11+62.00	901				1			1		1			
- DR1- 11+62.00	901	900											
- DR1- 11+58.00	900				1			1			1		
- DR1- 11+58.00	900	902											
- Y2- 26+00.00	902				1			1		1			
- Y2- 26+00.00	902	907											
- DR1- 10+35.00	907				1			1		1			
- DR1- 10+35.00	907	905											
- Y5- 21+60.00	918				1							1	
- Y5- 21+60.00	918	924											
- Y5- 21+60.00	924				1								
- Y5- 21+60.00	924	929											
SHEET TOTALS			1.5	0	19	0.3	0.0	14	1	8	5	1	0

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME WITH TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO GRATE STD. 840.20 (Flat)	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29 (Flat)	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	TB 2GI STD. 840.35	CONV DI TO CB	M.H. FRAME AND COVER STD. 840.54	ADJUST DI	CONV DI TO JB W/MH	ADJUST 2GI	ADJ TBDI	ADJ MH
- Y2- 13+50.00	803												1			1					
- Y2- 19+06.00	820				1						1										
-Y3- 22+15	818											1				1					
- Y5- 21+60.00	918		1	1																	
- Y5- 21+60.00	924					1				1											
SHEET TOTALS			1	1	1	1	0	0	0	1	1	1	1	0	0	2	0	0	0	0	0

STATION	FROM	TO	SIDE DRAIN PIPE ELBOWS NO. & SIZE	FLOWABLE FILL, C.Y.	CONV CB TO JB W/MH	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PARALLEL PIPE END SECTION, EA. STD. 310.02	CONC. COLLAR, C.Y. STD. 840.72		PIPE REMOVAL LIN. FT.	REMARKS
- Y4- 16+00.00	737	738								12	
- Y4- 16+86.00	738										PRE-CAST BOX ONLY
- Y4- 16+86.00	738	739								44	
- Y4- 16+85.50	739										PRE-CAST BOX ONLY
- Y2- 13+35.37	809	803					1@24"				PPES
- Y2- 13+10.00	801	802								90	
- Y2- 13+98.00	811	806					1@18"				PPES
- Y2- 19+25.00	817	818								212	
-Y3- 22+15	815									52	
- Y2- 18+60.00	815	819	2 @ 15								
-Y3- 22+15	818									52	
- Y5- 21+60.00	918										PRE-CAST BOX ONLY
- Y5- 21+60.00	918	924								317	
- Y5- 21+60.00	924									30	
SHEET TOTALS			2 @ 15"	0		0	1@24" 1@18"	0	0	809	

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.)	(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

MEADORJ

MEADORJ

COMPUTED BY:	CBH	DATE:	July 20, 2011
CHECKED BY:	ASH	DATE:	August 2, 2011

PROJECT NO.	SHEET NO.
U-5132	3-E

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & 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	SIDE DRAIN PIPE (RCP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
- Y2- 33+40.00	LT	919		24.6															
- Y5- 19+20.00	LT	920		24.3															
- Y5- 19+20.00	LT	920	919		21.3	19.7			52								X	X	
- Y2- 33+60.00	LT	921		22.8															
- Y2- 33+60.00	LT	921	919		19.8	19.7													
- Y5- 20+59.00	LT	917	929		21.5	20.0					24						X	X	
- Y5- 20+35.00	LT	916		24.3															
- Y5- 20+35.00	LT	916	929		19.1	19.0													
- Y5- 20+59.00	LT	929		26.3															
- Y5- 20+59.00	LT	929	927		18.6	18.3													
- Y5- 20+45.00	RT	927		25.5															
- Y5- 20+45.00	RT	927	915		18.3	18.0					32						X	X	
- Y5- 20+33.00	RT	928		24.9															
- Y5- 20+33.00	RT	928	927		19.6	18.3					16						X	X	
- Y5- 20+41.00	RT	915		22.8															
- Y5- 20+41.00	RT	915	910		18.1	17.8						80					X	X	
- Y2- 31+58.00	RT	910		22.9															
- Y2- 31+58.00	RT	910	909		17.8	17.8						8					X	X	
- Y2- 31+58.00	LT	914		24.1															
- Y2- 31+58.00	LT	914	909		20.9	17.8													
- Y2- 31+58.00	RT	909		23.0															
- Y2- 31+58.00	RT	909	908		17.8	17.2													
- Y2- 28+74.00	RT	906		22.4															
- Y2- 28+74.00	RT	906	908		19.2	17.2													
- DR1- 16+20.00	LT	931		23.5															
- DR1- 16+20.00	LT	931	904		20.7	19.8													
- DR1- 15+34.00	LT	930		22.6															
- DR1- 15+34.00	LT	930	904		19.9	19.8													
- DR1- 15+15.00	LT	904		23.0															
- DR1- 15+15.00	LT	904	903		19.8	19.5													
- DR1- 15+10.00	RT	903		22.7															
- DR1- 15+10.00	RT	903	908		19.5	17.2													
- Y2- 29+80.00	RT	908		23.0															
- Y2- 29+80.00	RT	908	912		17.2	17.1						44					X	X	
- DR2- 12+04.69	LT	912		22.7															
- DR2- 12+04.69	LT	912	925		17.1	16.2						176					X	X	
-Y2- 22+00	RT	933	934		20.7	19.8													
-Y2- 26+00	RT	1103							20										
-Y2- 28+35	RT	1104							36										
-Y2- 22+00	RT	919	916		19.7	19.3													
SHEET 10																			
-Y2- 37+80	RT																		
SHEET 11																			
- Y5- 14+18.00	LT	1105		25.1															
- Y5- 14+18.00	LT	1105	1106		22.1	22.0			12								X	X	
- Y5- 14+07.00	LT	1106		25.6															
SHEET TOTALS							0	0	120	0	72	308	0	0	0	0	0	0	0

STATION	STRUCTURE NO. FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"		***" RC PIPE CULVERTS, CONTRACTOR DESIGN	***" RC PIPE CULVERTS, CONTRACTOR DESIGN			ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
- Y2- 33+40.00	919																																
- Y5- 19+20.00	920																																
- Y5- 19+20.00	920	919																															
- Y2- 33+60.00	921																																
- Y2- 33+60.00	921	919										28																					
- Y5- 20+59.00	917	929																															
- Y5- 20+35.00	916																																
- Y5- 20+35.00	916	929											28																				
- Y5- 20+59.00	929																																
- Y5- 20+59.00	929	927												68																			
- Y5- 20+45.00	927																																
- Y5- 20+45.00	927	915																															
- Y5- 20+33.00	928																																
- Y5- 20+33.00	928	927																															
- Y5- 20+41.00	915																																
- Y5- 20+41.00	915	910																															
- Y2- 31+58.00	910																																
- Y2- 31+58.00	910	909																															
- Y2- 31+58.00	914																																
- Y2- 31+58.00	914	909																		48													
- Y2- 31+58.00	909																																
- Y2- 31+58.00	909	908																					180										
- Y2- 28+74.00	906																																
- Y2- 28+74.00	906	908																		108													
- DR1- 16+20.00	931																																
- DR1- 16+20.00	931	904																		108													
- DR1- 15+34.00	930																																
- DR1- 15+34.00	930	904																		32													
- DR1- 15+15.00	904																																
- DR1- 15+15.00	904	903																		28													
- DR1- 15+10.00	903																																
- DR1- 15+10.00	903	908																		56													
- Y2- 29+80.00	908																																
- Y2- 29+80.00	908	912																															
- DR2- 12+04.69	912																																
- DR2- 12+04.69	912	925																															
-Y2- 22+00	933	934																			72												
-Y2- 26+00	1103																																
-Y2- 28+35	1104																																
-Y2- 22+00	919	916																		80													
SHEET 10																																	
-Y2- 37+80																																	
SHEET 11																																	
- Y5- 14+18.00	1105																																
- Y5- 14+18.00	1105	1106																															
- Y5- 14+07.00	1106																																
SHEET TOTALS			0	0	0	0	0	0	0	0	0	28	28	68	0	0	0	0	0	460	72	0	180	0	0	0	0	0	0	0	0	0	0

STATION	STRUCTURE NO. FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME WITH TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO GRATE STD. 840.20 (Flat)	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29 (Flat)	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	TB 2GI STD. 840.35	CONV DI TO CB	M.H. FRAME AND COVER STD. 840.54	ADJUST DI	CONV DI TO JB W/MH	ADJUST 2GI	ADJ TBDI	ADJ MH	SIDE DRAIN PIPE NO. & SIZE ELBOWS	FLOWABLE FILL, C.Y.	CONV CB TO JB W/MH	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PARALLEL PIPE END SECTION, EA. STD. 310.02	CONC. COLLAR, C.Y. STD. 840.72		PIPE REMOVAL LIN. FT.	REMARKS
- Y2- 33+40.00	919		1			1	1																																
- Y5- 19+20.00	920		1			1			1																														
- Y5- 19+20.00	920	919																																					
- Y2- 33+60.00	921		1												1				1																				
- Y2- 33+60.00	921	919																																					
- Y5- 20+59.00	917	929																																				133	
- Y5- 20+35.00	916		1	0.2		1	1																																
- Y5- 20+35.00	916	929																																					
- Y5- 20+59.00	929																							1															
- Y5- 20+59.00	929	927																																				360	
- Y5- 20+45.00	927		1	2.3		1		1																								4							PRE-CAST BOX ONLY
- Y5- 20+45.00	927	915																																					
- Y5- 20+33.00	928			0.3																													1	.065					PRE-CAST BOX ONLY
- Y5- 20+33.00	928	927																																					
- Y5- 20+41.00	915		1												1				1																				
- Y5- 20+41.00	915	910																																					
- Y2- 31+58.00	910		1	0.1		1			1																							14							
- Y2- 31+58.00	910	909																																.116					USE S=0.3% MIN.
- Y2- 31+58.00	914		1			1		1																															
- Y2- 31+58.00	914	909																																					
- Y2- 31+58.00	909		1	0.2		1			1																														
- Y2- 31+58.00	909	908																																					
- Y2- 28+74.00	906		1			1			1																														
- Y2- 28+74.00	906	908																																					
- DR1- 16+20.00	931		1							1										1			1																
- DR1- 16+20.00	931	904																																					
- DR1- 15+34.00	930		1							1										1			1																
- DR1- 15+34.00	930	904																																					
- DR1- 15+15.00	904		1							1										1			1																
- DR1- 15+15.00	904	903																																					
- DR1- 15+10.00	903		1			1			1																														
- DR1- 15+10.00	903	908																																					
- Y2- 29+80.00	908		1	0.7		1			1																														
- Y2- 29+80.00	908	912																																					
- DR2- 12+04.69	912		1	0.6										1					1																				
- DR2- 12+04.69	912	925																																				176	
-Y2- 22+00	933	934																																					
-Y2- 26+00	1103																																						
-Y2- 28+35	1104																																						
-Y2- 22+00	919	916																																					
SHEET 10																																							
-Y2- 37+80																																						318	
SHEET 11																																							
- Y5- 14+18.00	1105		1			1		1																															
- Y5- 14+18.00	1105	1106																																					
- Y5- 14+07.00	1106		1			1			1																														
SHEET TOTALS			18	4.4	0.0	12	2	3	7	3	0	0	0	1	2	0	0	0	3	3	0	0	3	1	0	0	0	0	0	0	0	18	1	.181		0	0	987	

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.)	(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

COMPUTED BY:	CBH	DATE:	July 20, 2011
CHECKED BY:	ASH	DATE:	August 2, 2011

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5132	3-F

MEADORJ

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CAAP, HDPE, or PVC) SIZE												C.S. PIPE SIZE								R.C. PIPE CLASS III SIZE								R.C. PIPE CLASS IV SIZE							
SIDE DRAIN PIPE THICKNESS OR GAUGE																DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	.064	.064	.064	.064	.079	.079	.109	.109																
								12"	15"	18"	24"	30"	36"	42"	48"					12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"
- Y5- 15+55.00	LT	1109		25.5																																					
- Y5- 15+55.00	LT	1109	1101		22.4	21.7																															116				
- Y5- 16+70.00	LT	1101		25.2																																					
- Y5- 16+70.00	LT	1101	1102		21.7	21.6																															16				
- Y5- 16+71.00	LT	1102																																							
SHEET TOTALS								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	132	0	0	0	0
PROJECT TOTALS								0	0	1600	352	160	308	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	112	92	0	0	0	0	0	2084	588	448	1004	0

STATION	****RC PIPE CULVERTS, CONTRACTOR DESIGN	****RC PIPE CULVERTS, CONTRACTOR DESIGN			ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	ENDWALLS CU. YARDS C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY (QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	TYPE OF GRATE F	TYPE OF GRATE G	CONCRETE TRANSITIONAL SECTION DROP INLET	CONCRETE TRANSITIONAL SECTION CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME WITH TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO GRATE STD. 840.20 (Flat)	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29 (Flat)	J.B. STD. 840.31 OR 840.32	TB.JB STD. 840.34	TB 2GI STD. 840.35	CONV DI TO CB	M.H. FRAME AND COVER STD. 840.54	ADJUST DI	CONV DI TO JB W/MH	ADJUST 2GI	ADJ TBDI	ADJ MH	SIDE DRAIN PIPE: ELBOWS NO. & SIZE	FLOWABLE FILL, C.Y.	CONV CB TO JB W/MH	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PARALLEL PIPE END SECTION, EA. STD. 310.02	CONC. COLLAR, C.Y. STD. 840.72		PIPE REMOVAL LIN. FT.	REMARKS
- Y5- 15+55.00							1			1			1																												
- Y5- 15+55.00																																									
- Y5- 16+70.00							1			1			1																												
- Y5- 16+70.00																																								250	
- Y5- 16+71.00																																					0.4				
SHEET TOTALS	0	0	0	0	0	0	2	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250	
PROJECT TOTALS	1.5	0	95	39.27	2.71	52	12	20	20	22	0	15	15	5	14	0	9	3	4	6	4	2	3	3	5	2	1	6	8	2	16 @ 15"	30	1	1	1@15" 2@18" 1@24"	0.8	0	3538		

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.)	(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

COMPUTED BY:	SMS	DATE:	1/27/11
CHECKED BY:	CBH	DATE:	7/21/11

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
U-5132	3-G

RD24454

GUARDRAIL SUMMARY

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL
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

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT		SINGLE FACED CONCRETE BARRIER	DOUBLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GRAU 350	M-350	XIII	CAT-1	B-77	B-83	AT-1	G	NG					
-WBRP-	11+09.06	22+90.31	LT	1181.25			11+50.00		12'	15'										1								1135.00		
-L_WB-	24+07.91	32+87.25	LT	881.25					12'	15'											1							877.00		
-L-	16+65.00	18+52.50	LT	187.50					6.5'	9'												1						785.00		
-Y3SR-	15+94.00	18+00.25	LT	206.25			16+00.00	16+20.00	2'	10'	50'		1'				1			1								228.00		
-RPB-	16+90.72	18+34.47	LT	143.75				17+50.00	12'	15'										1										
-Y1-	10+00.00	15+01.95	LT	618.75			15+07.08		12'	15'											1									
-Y1-	13+26.56	15+01.95	RT	181.25				15+07.08	8'	11'	50'		1'				1				1									
-Y1-/-SBL-	16+49.95	17+30.00	RT	87.50			16+49.95		8'	11'										1	1									
-Y1-/-NBL-	16+49.95	18+20.43	LT	181.25				16+49.95	6'	9'	50'						1				1									
-L-	29+74.21	31+17.96	RT	143.75				31+08.97	10'	12'	50'		1'				1				1									
-L-	31+98.50	35+36.00	LT	337.50				31+97.35	10'	12'	50'		1'								2									
-L-	35+71.50	36+15.50	LT		25			35+71.47	4'	6'											1		1					71.00		
-RPD-	11+17.16	12+23.41	LT	106.25				11+17.29	4'	6'	50'		1'				1				1									
-Y2-	16+94.00	18+81.50	LT	187.50			17+93.00		8'	11'	50'	50'	1'	1'			2													
-Y2-	16+69.00	18+69.00	RT	200.00			17+73.00		8'	11'	50'	50'	1'	1'			2													
-Y2-	28+00.00	32+00.00	LT	400.00					2'	7'	50'	50'	1'	1'			2													
-Y2-	29+47.75	32+04.00	RT	256.25					2'	4'	50'						1			1										
-L-	16+00.00	22+17.93	LT						5.25'	5.25'																620.00				
-RPB-	10+00.00	15+50.00	LT						5.25'	5.25'															1	528.00				
-L-	31+14.65	32+26.97	LT						10'	10'																	225			
-L-	30+54.80	32+42.88	MED	137.50					10'	10'											4				2		86			
-L-	31+09.91	31+96.37	RT						10'	10'																	86			
-L-	35+35.73	35+71.47	LT						7.5'	7.5'																	36			
-RPD-	10+86.37	11+17.02	LT						Var.	12'																	31			
SIGN PROTECTION (ONSITE)																														
-L_WB-	20+93.75	22+12.50	RT	118.75			21+00.00		12'	12'	50'		1'				1			1										
-WBRP_BEG-	19+43.13	20+99.38	LT	156.25			19+49.38		12'	12'	50'		1'				1			1										
-L-	11+78.01	12+65.51	RT	87.50			1299.29		14'	14'	50'		1'				1													
-L-	31+82.00	32+94.58	RT	118.75			25+41.38		12'	12'	50'		1'				1			1										
-RPB-	14+93.75	15+87.50	RT	93.75			15+00.00		12'	12'	50'		1'				1			1										
-L_WB-	30+74.00	31+92.75	RT	118.75													1			1										
SIGN PROTECTION (OFFSITE)																														
-NBL-	22+22.55	25+10.05	LT	287.50			24+24.45		12'	12'	50'		1'				1													
-NBL-	22+93.45	25+62.20	RT	268.75			24+24.45		5'	C & G	50'		1'				1			1										
-SBL-	22+97.08	25+65.83	LT	268.75			24+34.97		5	C & G	50'		1'				1			1										
SUBTOTALS (1)				6956.25	25.00												21			12	14	1	1		3	463	1148.00	3096.00		
ANCHOR UNIT DEDUCTIONS																														
GRAU-350 @ 50.00'				1050.00																										
CAT-1 @ 6.25'				75.00	0.00																									
B-77 @ 18.75'				262.50																										
B-83 @ 25.00'				25.00																										
AT-1 @ 6.25				6.25																										
SUBTOTALS (2)				5537.50	25.00																									
Additional Gurardrail Posts				27.00																										
TOTALS				5537.50	25.00												21			12	14	1			3	463	1148	3096		

COMPUTED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____

PROJECT REFERENCE NO.	SHEET NO.
U-5132	3-H

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

QUANTITIES

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LENGTH OR AREA	YD²
-Y3SR-	14+22	14+49	623.95	69.33
-Y3SR-	15+27	15+64	473.80	52.64
-Y3SR-	16+72	20+38	6151.88	683.54
-L-	23+85	28+69	4072.42	452.49
-L-	27+21	27+67	1025.86	113.98
-L-	28+08	28+45	706.31	78.48
-L-	28+85	31+12	1958.91	217.66
-L-	40+00	41+32	3862.03	429.11
-LPB-	12+77	14+45	2834.03	314.89
-Y2-	33+23	35+98	9352.70	1039.19
-Y5-	18+35	18+96	1045.11	116.12
			TOTAL:	3,567.44
			SAY:	3,570

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-Y1-	14+47.57	14+82.03	34.5
-Y2-	17+00.00	18+73.90	169.7
-SBL-	16+85.00	17+18.05	48.2
-SBL-	16+85.00	17+59.95	100.8
		TOTAL:	353.2
		SAY:	354

CHAIN LINK FENCE

LINE	STATION TO STATION	LEFT OR RIGHT	A FABRIC L.F.	B END BRACE	C CORNER BRACE	D LINE BRACE	E LINE POST	F TERMINAL POST
-Y2-	Sta. 22+66.56 TO 28+39.04	LT	600.78	2	3		50.23	5
-Y2-	Sta. 26+00.00 TO 31+90.00	LT	597.87	2	1	1	49.82	4
	TOTAL:		1198.65	4	4	1	100.05	9
	SAY:		1200.00	4	4	1	101.00	9.00

WOVEN WIRE FENCE

LINE	STATION TO STATION	LEFT OR RIGHT	A FABRIC L.F.	B END BRACE	C CORNER BRACE	D LINE BRACE	E LINE POST	F TERMINAL POST
-L-	21+13.35 TO 23+06.65	LT	200.00	2	1		11	7
-L-	33+29.00 TO 35+15.00	LT	220.00	1	3	2	6	17
-RPB-	11+16.39 TO 18+34.47	LT	724.00	1	4	1	42	17
-Y1-	10+00.00 TO 14+37.73	LT	695.00		2		46	6
	TOTAL:		1,839.00	4	10	3	106	47
	SAY:		1840	4	10	3	110	50

5/28/99

2/8/2012
R:\Roadway\Proj\U5132_Rdy_psh_SUM_03H_.dgn
default

COMPUTED BY: SKM	DATE: 10/28/2010
CHECKED BY: ABP	DATE: 02/07/2012
REVISED BY: ---	DATE: ---

PROJECT REFERENCE NO.	SHEET NO.
U-5132	3-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

U-5132 Earthwork Summary

PROJECT: U-5132 ONSLOW

LINE	STATION	STATION	EXCAVATION TOTAL UNCLASS.	EXCAVATION UNDERCUT	EMBANKMENT	BORROW	WASTE TOTAL
	SUMMARY 1						
-Y2-	11+65.00	32+50.55	10,395	3,400	13,084	2,689	3,400
-Y2-	33+10.82	39+47.00	1,529		428		1,102
-Y5-	11+70.00	26+65.00	560		604	44	
-DR2-	10+12.00	12+20.78	348		18		331
	SUMMARY 1 SUBTOTALS:		12,832	3,400	14,133	2,733	4,832
	SUMMARY 2						
-Y1-	10+00.00	15+01.95			57,144	57,144	
-Y1-	16+49.95	16+85.00			2,639	2,639	
-SBL-	16+85.00	17+75.00			10,758	10,758	
	SUMMARY 2 SUBTOTALS:				70,540	70,540	
	SUMMARY 3						
-WBRP_BEG-	15+25.00	21+50.00	273		154		119
-L_WB-	11+30.00	31+87.00	2,873		2,665		208
-L- (LEFT)	15+00.00	47+20.00	1,952		3,078	1,126	
-L- (RIGHT)	22+74.00	51+70.00	1,148		888		261
-RPB-	12+80.00	18+34.47	1,145		7,588	6,443	
-LPB-	13+00.00	15+00.00	743		149		594
-Y3-	10+15.00	11+00.00	12		158	146	
-Y4-	10+63.00	16+80.00	847				847
-Y6-	10+63.33	12+46.53	197				197
	SUMMARY 3 SUBTOTALS:		9,190		14,678	7,714	2,226
		PROJECT SUBTOTALS:	**22,022**	3,400	**99,350**	**80,986**	**7,058**
		EARTH WASTE IN LIEU OF BORROW				-3,658	-3,658
		UNDERCUT AT GRADE POINT		100	125	125	100
		PROJECT TOTALS:	**22,022**	3,500	**99,475**	77,453	**3,500**
		5% TO REPLACE TOPSOIL ON BORROW PITS				3,873	
		GRAND TOTALS:	**22,022**	**3,500**		**81,326**	**3,500**
		SAY:	**22,200**			**81,900**	
		EST. SHALLOW UNDERCUT:	300 CY				
		PAVEMENT STRUCTURE VOLUME:	8,765 CY				

Note: Earthwork quantities are calculated by the Roadway Design unit. These quantities are based in part on Subsurface data provided by The Geotechnical Engineering Unit.

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

5/28/99
2/15/2012
R:\Roadway\Proj\u5132_rdy_psh_EW_031.dgn

PROJ. REFERENCE NO.	SHEET NO.
U-5132	3-J

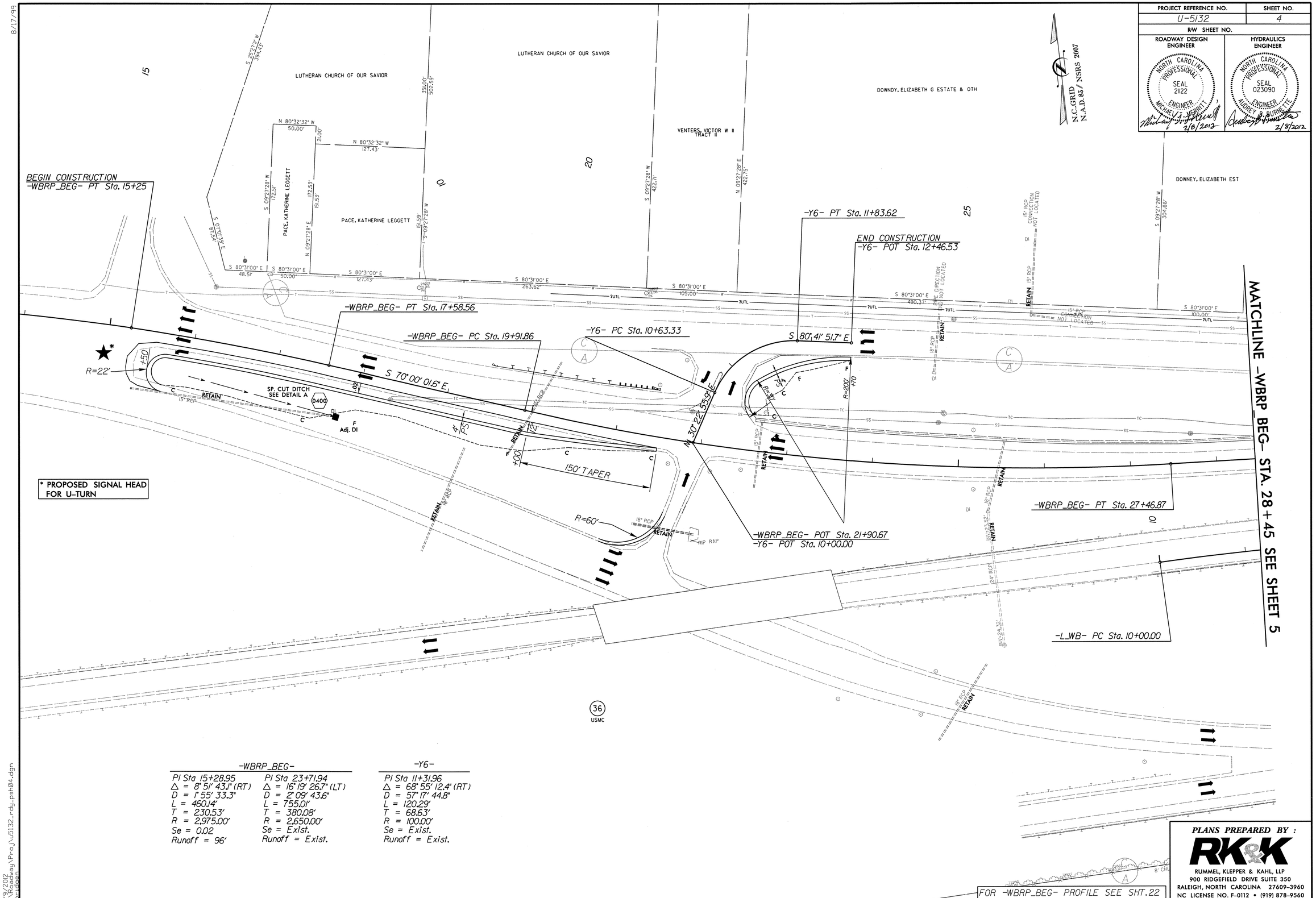
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	6	FREDINAND P. DAMIANO
2	6	HUAN QIU ZHANG
2A	6	MCDONALDS REAL EST CO OF COLUM
3	6	HUAN QIU ZHANG
6	6,8	CITY OF JACKSONVILLE
10	7	RONNIE L. HENDERSON
12	7	PATRICIA BROWN ET VR TRUSTEES
13	7	LEROY BROWN, ET AL
14	7	LEROY PROWN HEIRS
15	7	DANA J. PICKETT, ET AL
16	7	SANDERS PROPERTY MGMT PRTNRSHP
17	8	RFW [PROPERTES LLC
18	8	MARIE ELLIS, ET AT
19	8	VALDON INCORPORATED
20	8	RANDY E. SMITH
22	8	OUT ISLAND LLC
23	8	WHITEYS ENTERPRISES INC
24	9,11	ONSLOW COUNTY
23	9	WHITEYS ENTERPR!SES INC
25	9	ELIZABETH EARLY
26	9,10,11	THE SALVATION ARMY
27	9	MAJOR APPLIANCE & FURNITURE CO.
28	10	ONSLOW COUNTY
29	10	STANADYNE AUTOMOTIVE CORP
30	11	POPKIN BROS ENT INC
31	11	S & E INTERNATIOAL ADVENTURE INC.
32	9	JULIE FAULKNER HENDERSON
33	9	SAMS USA INC
34	9	JULIE FAULKNER HENDERSON
36	6,7	USMC
905	6	LOUISE CRUMBLEY,ET AL
906	6	TRACK 1 RONNIE HENDERSON

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

PROJECT REFERENCE NO.	SHEET NO.
U-5132	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. MCGRATH 2/8/2012	NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE 2/8/2012



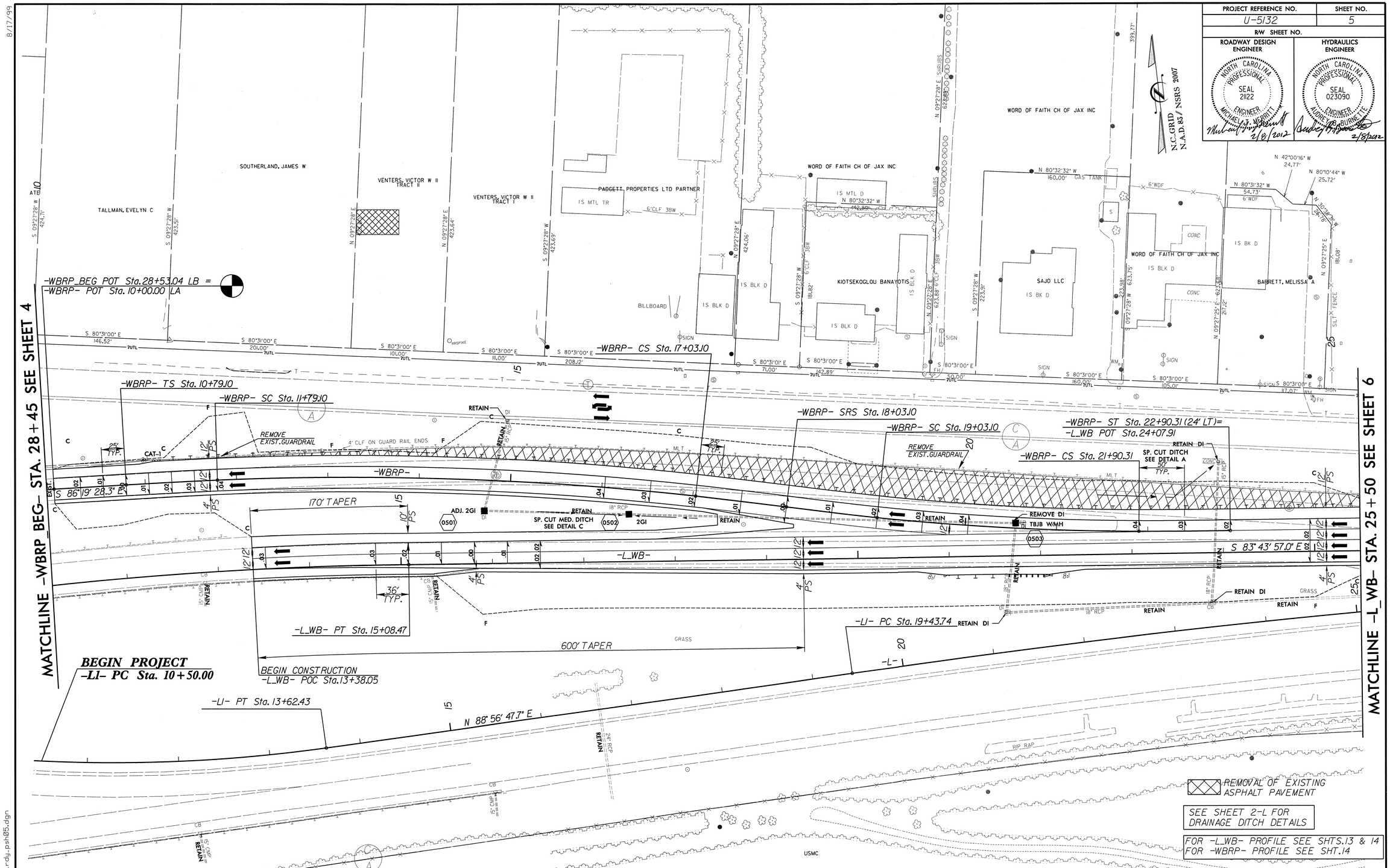
-WBRP_BEG-	
PI Sta 15+28.95	PI Sta 23+71.94
Δ = 8° 51' 43.1" (RT)	Δ = 16° 19' 26.7" (LT)
D = 1° 55' 33.3"	D = 2° 09' 43.6"
L = 460.14'	L = 755.01'
T = 230.53'	T = 380.08'
R = 2,975.00'	R = 2,650.00'
Se = 0.02	Se = Exist.
Runoff = 96'	Runoff = Exist.

-Y6-
PI Sta 11+31.96
Δ = 68° 55' 12.4" (RT)
D = 57° 17' 44.8"
L = 120.29'
T = 68.63'
R = 100.00'
Se = Exist.
Runoff = Exist.

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99
2/9/2012
R:\Roadway\Proj\u5132_rdy_psh04.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-5132	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. WERRITT 2/8/2012	NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE 2/8/2012



SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS

FOR -L_WB- PROFILE SEE SHTS.13 & 14
FOR -WBRP- PROFILE SEE SHT.14

-L-

PI Sta 11+81.93
Δ = 12° 26' 04.0" (LT)
D = 3° 25' 51.2"
L = 362.43'
T = 181.93'
R = 1,670.00'
SE = EXIST.
Runoff = EXIST.

PI Sta 22+93.79
Δ = 3° 19' 35.4" (RT)
D = 0° 28' 31.0"
L = 699.90'
T = 350.05'
R = 12,055.00'
SE = EXIST.
Runoff = EXIST.

-L_WB-

PI Sta 12+54.55
Δ = 7° 02' 13.0" (RT)
D = 1° 23' 02.2"
L = 508.47'
T = 254.55'
R = 4,140.00'
SE = 0.03
Runoff = 108'

-WBRP-

PIs Sta 11+45.77
θs = 0° 50' 33.3"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

PI Sta 14+41.62
Δ = 8° 49' 49.1" (RT)
D = 1° 41' 06.6"
L = 524.00'
T = 262.52'
R = 3,400.00'
Se = 0.04
Runoff = 96'

PIs Sta 17+36.43
θs = 0° 50' 33.3"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

PIs Sta 18+69.77
θs = 1° 01' 23.3"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

PI Sta 20+46.83
Δ = 5° 52' 37.8" (LT)
D = 2° 02' 46.6"
L = 287.21'
T = 143.73'
R = 2,800.00'
Se = 0.04
Runoff = 96'

PIs Sta 22+23.65
θs = 1° 01' 23.3"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

-WBRP_BEG-

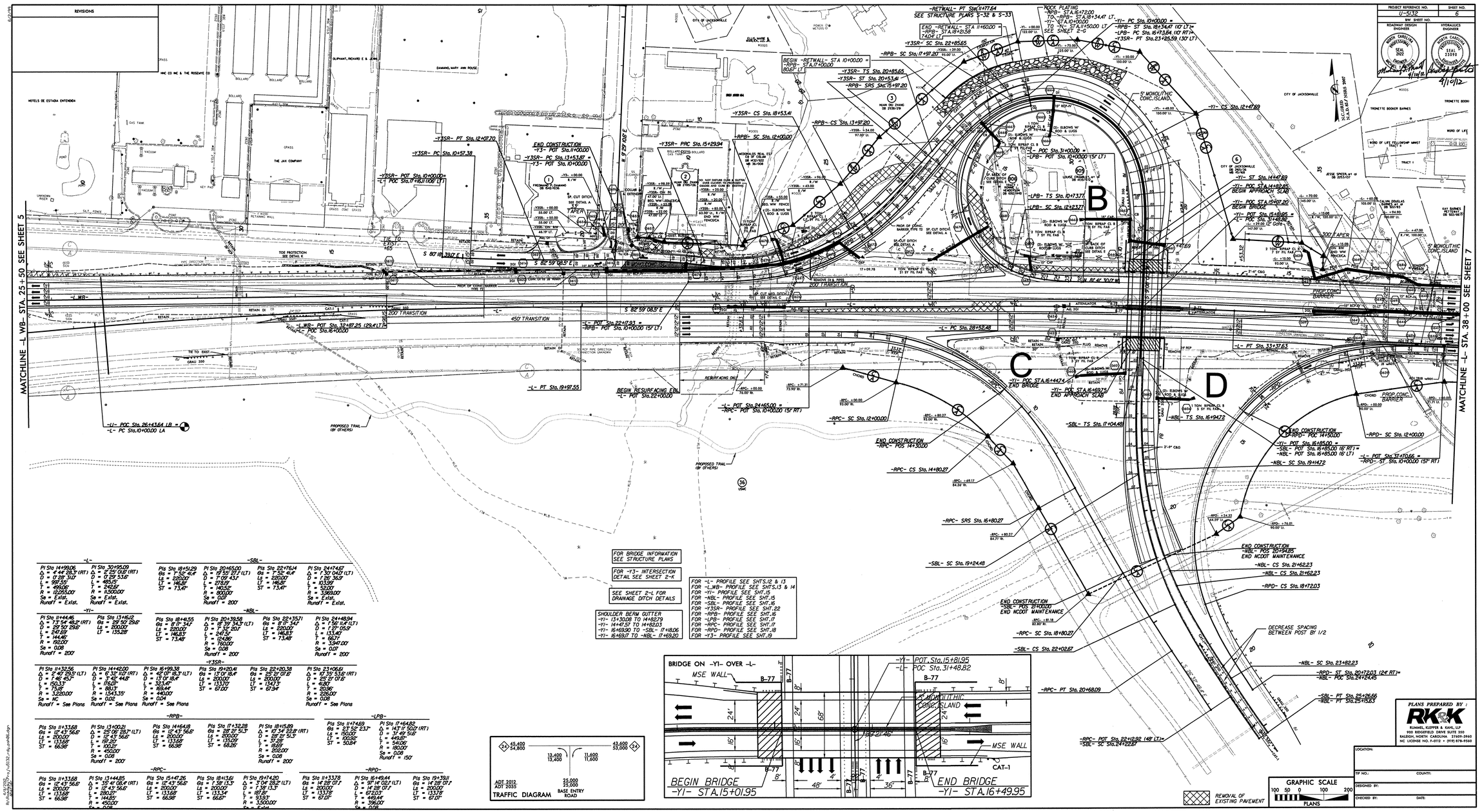
PI Sta 23+71.94
Δ = 16° 19' 26.7" (LT)
D = 2° 09' 43.6"
L = 755.01'
T = 380.08'
R = 2,650.00'
Se = Exist.
Runoff = Exist.

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99
2/9/2012
R:\Roadway\Proj\u5132_rdy_psh05.dgn
aprridgen

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-5132	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022 ENGINEER Michael D. Kennedy 4/10/12	NORTH CAROLINA PROFESSIONAL SEAL 23590 ENGINEER Wesley Gentry 4/10/12



TRAFFIC DIAGRAM

4/4/2012
R:\u5132_r3\u5132_rdy_sheet06.dgn
8/24/2011

PROJECT REFERENCE NO.	SHEET NO.
U-5132	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT
4/10/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 23090 ENGINEER AUDREY B. BURNETTE
4/10/12

REVISIONS

8/17/99

END CONSTRUCTION
-Y4- POT Sta. 17+34.81

-Y4- PT Sta. 11+04.33

-Y4- PC Sta. 10+77.87

-Y4- PT Sta. 10+00.00=
-L- POT Sta. 40+78.79

MATCHLINE -L- STA. 38+00 SEE SHEET 6

END PROJECT
-L- POT Sta. 51+70.00

N.C. GRID NAD 83/NSRS 2007

BELL FORK RD.
16,500 / 20,300
8,250 / 10,300 — 8,250 / 10,000
65,700 / 79,800 NC 24 — 65,700 / 79,500
ADT 2012 / ADT 2035
TRAFFIC DIAGRAM

FOR INTERSECTION DETAIL SEE SHEET 2-1

FOR -L- PROFILE SEE SHT.13
FOR -Y4- PROFILE SEE SHT.20

TREES TO BE RELOCATED BY OTHERS
-L- STA. 43+59.11 TO -L- STA. 50+57.29

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

R:\U\U5132\Design\Proj\U5132_rdy_psh07.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-5132	8
RW SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT 2/8/2012

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE 2/8/2012

REVISIONS

8/17/99

N.C. GRID N.A.D. 83 / NSRS 2007

TRAFFIC DIAGRAM JAY CIRCLE

ELLIS BLVD. 1400/2500 — 400/600 — 100/150 — 25/200 — 1275/2100 — 50/550 — 100/1000 — 1600/2900 ELLIS BLVD. CONNECTOR

ADT 2012 / ADT 2035

-Y2- POT Sta. 10+00.00

BEGIN CONSTRUCTION -Y2- POT Sta. 11+65.00

-Y2- PC Sta. 11+66.38

-Y2- PRC Sta. 13+09.07

BEGIN CONSTRUCTION -Y3- PT Sta. 23+62.00

-Y3- PT Sta. 22+78.13

-Y3- PCC Sta. 20+44.60

-Y3- PC Sta. 18+96.74

-Y3- PT Sta. 17+19.90

-Y3- PC Sta. 15+22.66

-Y3- POT Sta. 26+08.53

END CONSTRUCTION -Y3- PT Sta. 24+88.00

-Y2- POC Sta. 13+79.18

-Y3- PT Sta. 24+32.28

-Y2- PT Sta. 14+43.57

-Y2- PC Sta. 16+31.91

MATCHLINE -Y2- STA. 21+35 SEE SHEET 9

-Y2- +65.00 R/W

-Y2- +00.00 48.00' Lt.

-Y2- +66.00 R/W

2'-6" CONC. C&G

-Y2- +10.00 30.00' Rt.

-Y2- R/W 55.00' Rt.

-Y2- R/W 75.00' LT

GRADE TO DRAIN

5 TONS RIP RAP CL B W/14SY FIL FAB

STD. BASE DITCH SEE DETAIL F

3 TONS RIP RAP CL B W/10SY FIL FAB

STD. BASE DITCH SEE DETAIL F

-Y2- EXISTING R/W PROPERTY CORNER

SP. BACK OF CURB DITCH SEE DETAIL E

-Y2- +25.00 80.00' Lt.

-Y2- +00.00 EXIST PROPERTY LINE

-Y2- +60.00 125.00' Lt.

Shoulder Berm Gutter -Y2- Sta 17+00 to 18+65

-Y2- +00.00 125.00' Lt.

-Y2- +00.00 85.00' Lt.

-Y2- +50.00 70.00' Lt.

REFLECTIVE REMOVABLE BOLLARDS See Detail Sheet 2-M

2 TONS RIP RAP CL B W/7 SY FIL FAB

(2)-ELBOWS W/ ROD & LUGS

-Y2- +20.00 70.00' Lt.

-Y2- +98.00 P/L

-Y2- +31.00 115.00' Lt.

SP. CUT BASE DITCH SEE DETAIL I

-Y2- +45.00 140.00' Rt.

-Y2- +70.00 140.00' Rt.

-Y2- +75.00 100.00' Rt.

2 TONS RIP RAP CL B W/7 SY FIL FAB

-Y2- +45.00 65.00' Rt.

100' TAPER

-Y2- +40.00 40.00' Rt.

RAILS TO TRAILS

BAILEY & ASSOCIATES INC

RFW PROPERTIES LLC DB 3471/366

MARIE ELLIS, et al

LUMBER CANOPY WITH TIN ROOF

PBRE2 CORPORATION

IS BK PRO BUILD

IS MTL STORAGE

IS BK D

IS F D

2 S F D W/IS MTL D

VALDON INCORPORATED LLC DB 3281/931

CITY OF JACKSONVILLE DB 2165/36 MB 45/168

EDGE, SEAVY EARL, & LIDA ELSETH

RANDY E. SMITH DB 2884/760

MCCAULEY STANLEY L & LINDA G

WARLICK & HORNE UNDERGROUND INC

T & R PROPERTIES

HARDISON, MAXINE P

OUT ISLAND LLC DB 2345/422

WHITEYS ENTERPRISES INC DB 2596/779

CITY OF JACKSONVILLE

IS BLK POWER PLANT

-Y3-			-Y2-		
PI Sta 16+21.66	PI Sta 19+70.78	PI Sta 21+62.86	PI Sta 12+38.33	PI Sta 13+76.83	PI Sta 19+45.11
Δ = 12° 13' 02.9" (LT)	Δ = 7° 42' 07.3" (LT)	Δ = 22° 17' 59.2" (LT)	Δ = 18° 10' 06.1" (RT)	Δ = 17° 07' 27.4" (LT)	Δ = 39° 48' 32.7" (LT)
D = 6° 11' 38.9"	D = 5° 12' 31.3"	D = 9° 32' 57.5"	D = 12° 43' 56.6"	D = 12° 43' 56.6"	D = 6° 37' 25.6"
L = 197.24'	L = 147.87'	L = 233.52'	L = 142.69'	L = 134.49'	L = 601.00'
T = 99.00'	T = 74.05'	T = 118.26'	T = 71.95'	T = 67.75'	T = 313.20'
R = 925.00'	R = 1,100.00'	R = 600.00'	R = 450.00'	R = 450.00'	R = 865.00'
Se = Exist.	Se = Exist.	Se = Exist.	Se = 0.02	Se = 0.02	Se = 0.36
Runoff = Exist.	Runoff = Exist.	Runoff = Exist.	Runoff = See Plans	Runoff = 120'	Runoff = See Plans

FOR INTERSECTION DETAIL SEE SHEET 2-K

FOR -Y2- PROFILE SEE SHT. 18
FOR -Y3- PROFILE SEE SHT. 19

PLANS PREPARED BY : RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

2/9/2012
R:\Roadway\Proj\U5132_rdy_psh08.dgn
aprridgen

PROJECT REFERENCE NO.	SHEET NO.
U-5132	9
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT — 3/9/2012

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER ANDREY B. BURNETTE — 3/9/12

DO NOT DISTURB BUILDING

MATCHLINE -Y5- STA. 17+50 SEE SHEET 11

MATCHLINE -Y2- STA. 21+35 SEE SHEET 8

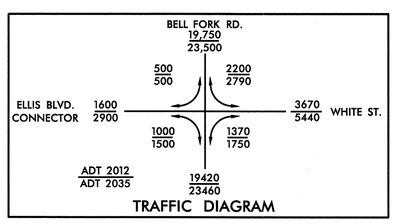
MATCHLINE -Y2- STA. 34+55 SEE SHEET 10

N.C.GRID N.A.D.83/NSRS 2007

-DRI- POT Sta.18+75.87
END CONSTRUCTION
-DRI- PT Sta.18+00.00
-DRI- PT Sta.17+46.53
-DRI- PC Sta.17+04.68
-DRI- PT Sta.16+53.34
-DRI- PC Sta.15+22.49
-Y2- PC Sta.28+62.74
-DRI- PT Sta.13+69.55
-DRI- PC Sta.12+64.51
-DRI- PT Sta.11+61.70
-DRI- PC Sta.10+18.58
-Y2- PT Sta.31+30.30
-Y2- POT Sta.32+72.65= -Y5- POT Sta.19+75.11
-Y2- POT Sta.28+33.24 = -DR2- POT Sta.10+00.00
-DR2- PC Sta.10+35.09
-Y2- POT Sta.25+40.00 = -DRI- POT Sta.10+00.00
-Y2- PT Sta.22+32.91
-DR2- PT Sta.11+68.99
PC Sta.21+67.74
END CONSTRUCTION
-DR2- POT Sta.12+20.78
-DR2- POT Sta.12+35.00
END CONSTRUCTION
-Y5- PT Sta.26+65.00

NOTE: DO NOT DISTURB AIR CONDITIONER UNIT, SATELLITE DISH, AND CONCRETE PAD ALONG Y2 STA. 30+85 RT. BEHIND BUILDING AND INSIDE TCE ON PARCEL 25.

-DRI-		
PI Sta 13+17.57	PI Sta 15+87.98	PI Sta 17+32.41
Δ = 20° 03' 35.3" (LT)	Δ = 6° 14' 50.0" (RT)	Δ = 95° 54' 57.5" (LT)
D = 19° 05' 54.9"	D = 4° 46' 28.7"	D = 229° 10' 59.2"
L = 105.03'	L = 130.84'	L = 41.85'
T = 53.06'	T = 65.49'	T = 27.72'
R = 300.00'	R = 1,200.00'	R = 25.00'
Se = NC	Se = NC	Se = NC
Runoff = See Plans	Runoff = See Plans	Runoff = See Plans
-Y5-	**-DR2-**	**-Y2-**
PI Sta 24+62.47	PI Sta 11+17.91	PI Sta 29+96.60
Δ = 28° 09' 44.9" (RT)	Δ = 85° 14' 20.6" (LT)	Δ = 4° 45' 39.4" (RT)
D = 4° 52' 34.5"	D = 6.3° 39' 43.1"	D = 1° 46' 45.7"
L = 577.54'	L = 133.89'	L = 267.56'
T = 294.73'	T = 82.82'	T = 133.86'
R = 1,175.00'	R = 90.00'	R = 3,220.00'
Se = 0.04	Se = 0.02	Se = 0.02



TRAFFIC DIAGRAM

REMOVAL OF EXISTING PAVEMENT

SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS

FOR INTERSECTION DETAIL SEE SHEET 2-J

FOR -Y2- PROFILE SEE SHTS.18 & 19
FOR -Y5- PROFILE SEE SHT.20
FOR -DRI- PROFILE SEE SHT.21
FOR -DR2- PROFILE SEE SHT.21

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

REVISIONS

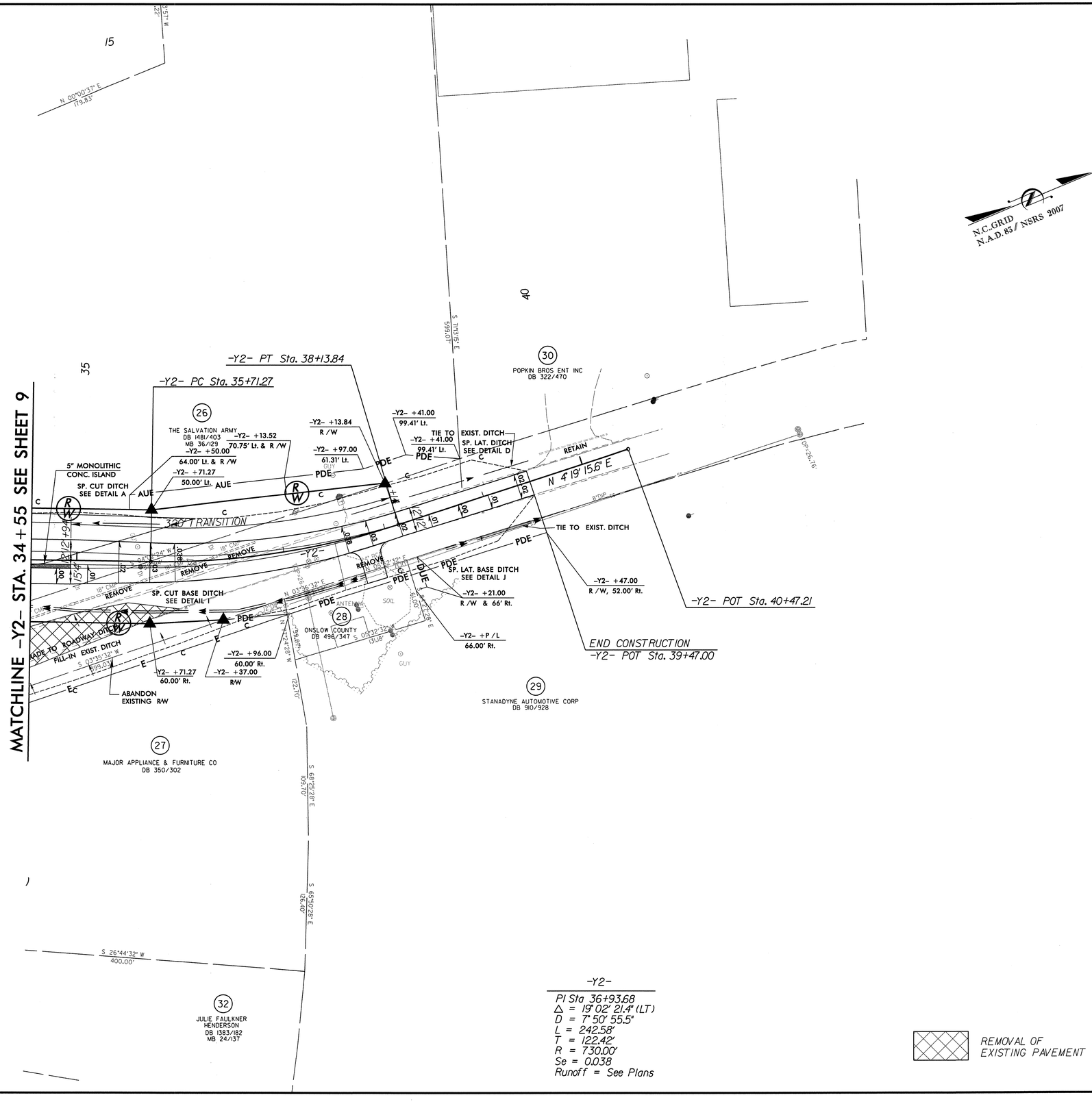
8/17/99

3/9/2012
R:\Roadway\Proj\u5132_rdy_psh09.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-5132	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT 2/3/2012

NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE 2/3/2012



PLANS PREPARED BY :

RK&K

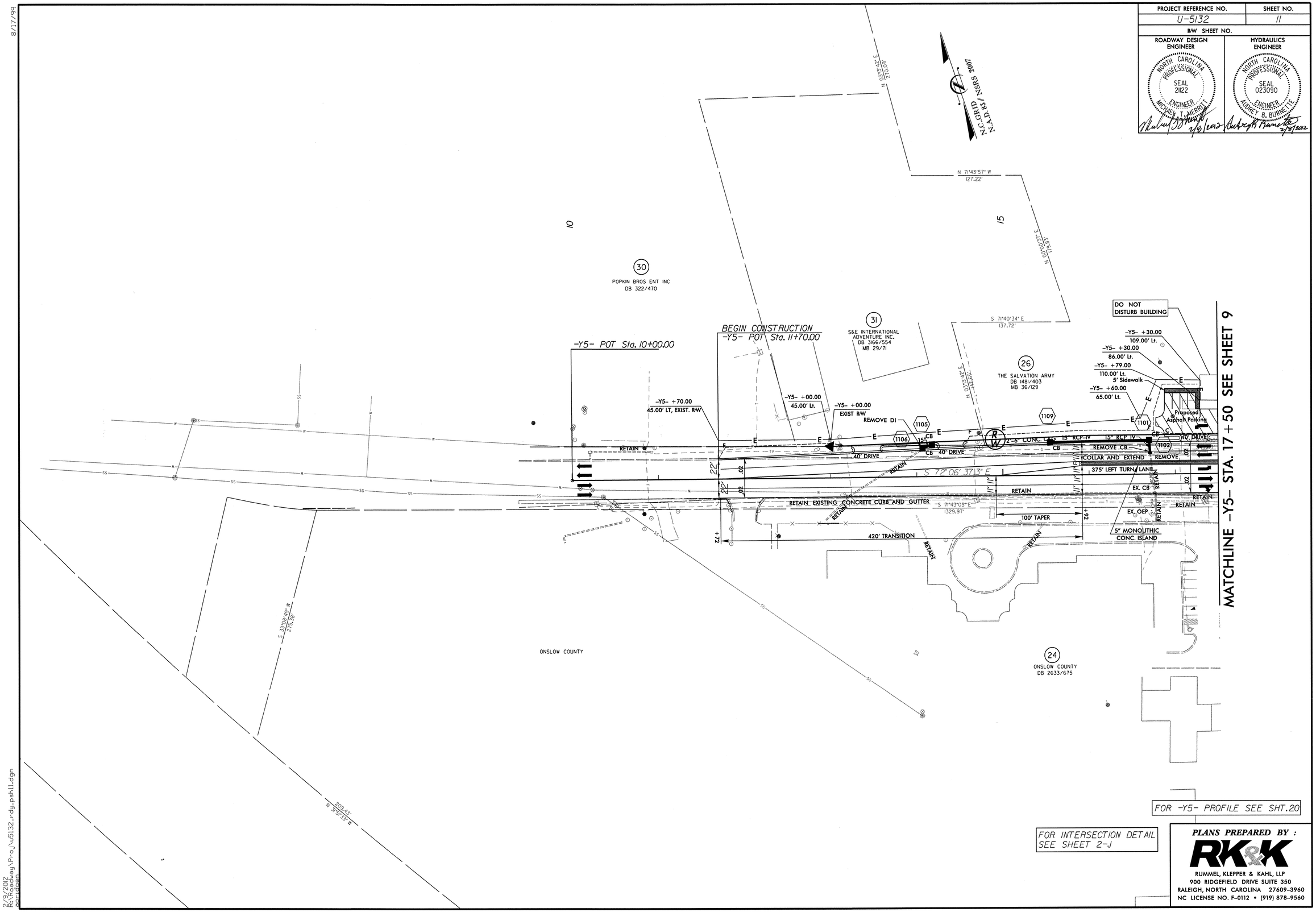
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99

REVISIONS

2/3/2012
R:\Roadway\Proj\u5132_rdy_psh10.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-5132	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. MERRITT 2/8/2012	NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE 2/8/2012



PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99

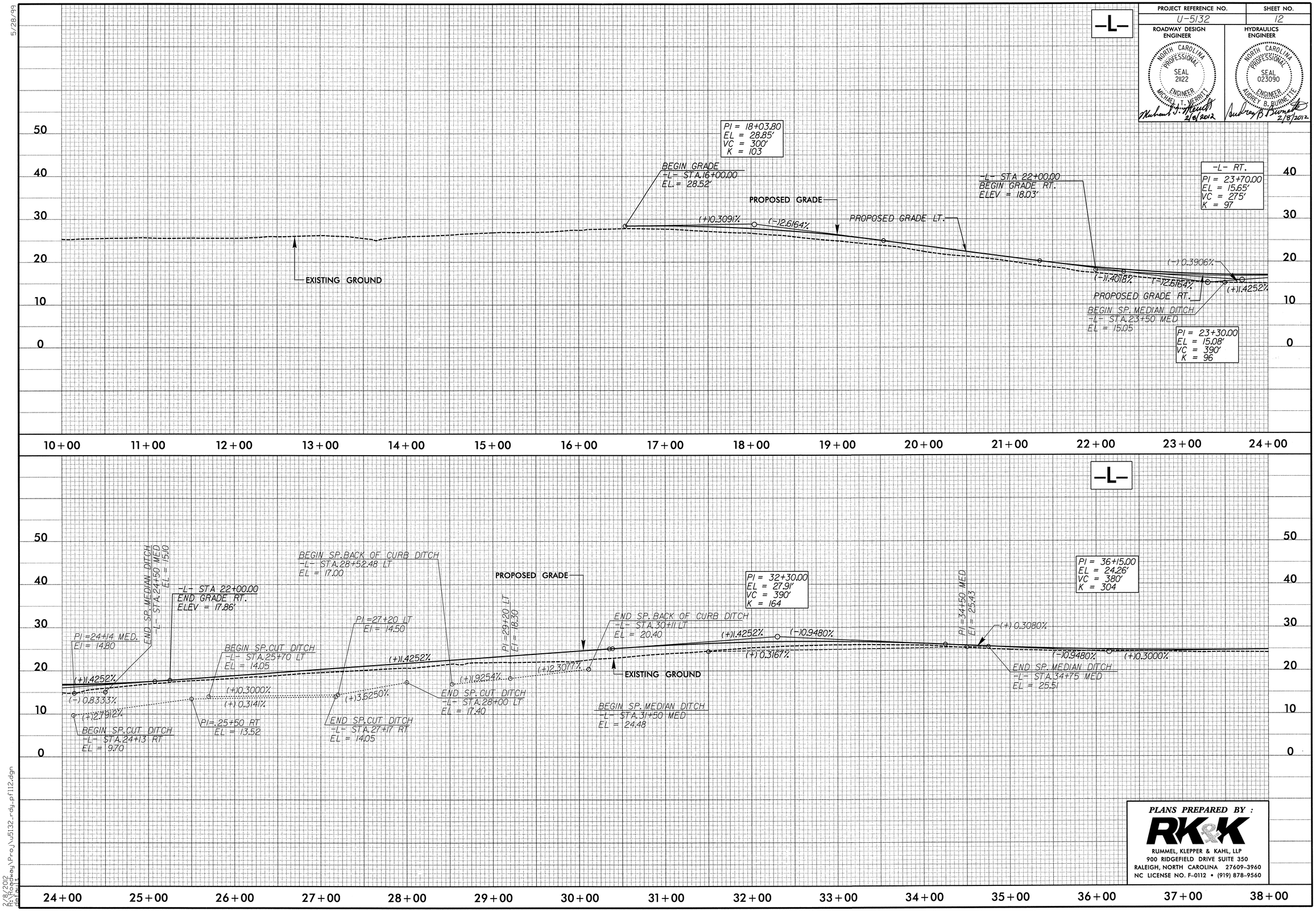
2/9/2012
R:\Roadway\Proj\u5132_rdy_psh11.dgn
pcrider

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-5132	12

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT
2/8/2012

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE, P.E.
2/8/2012



PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

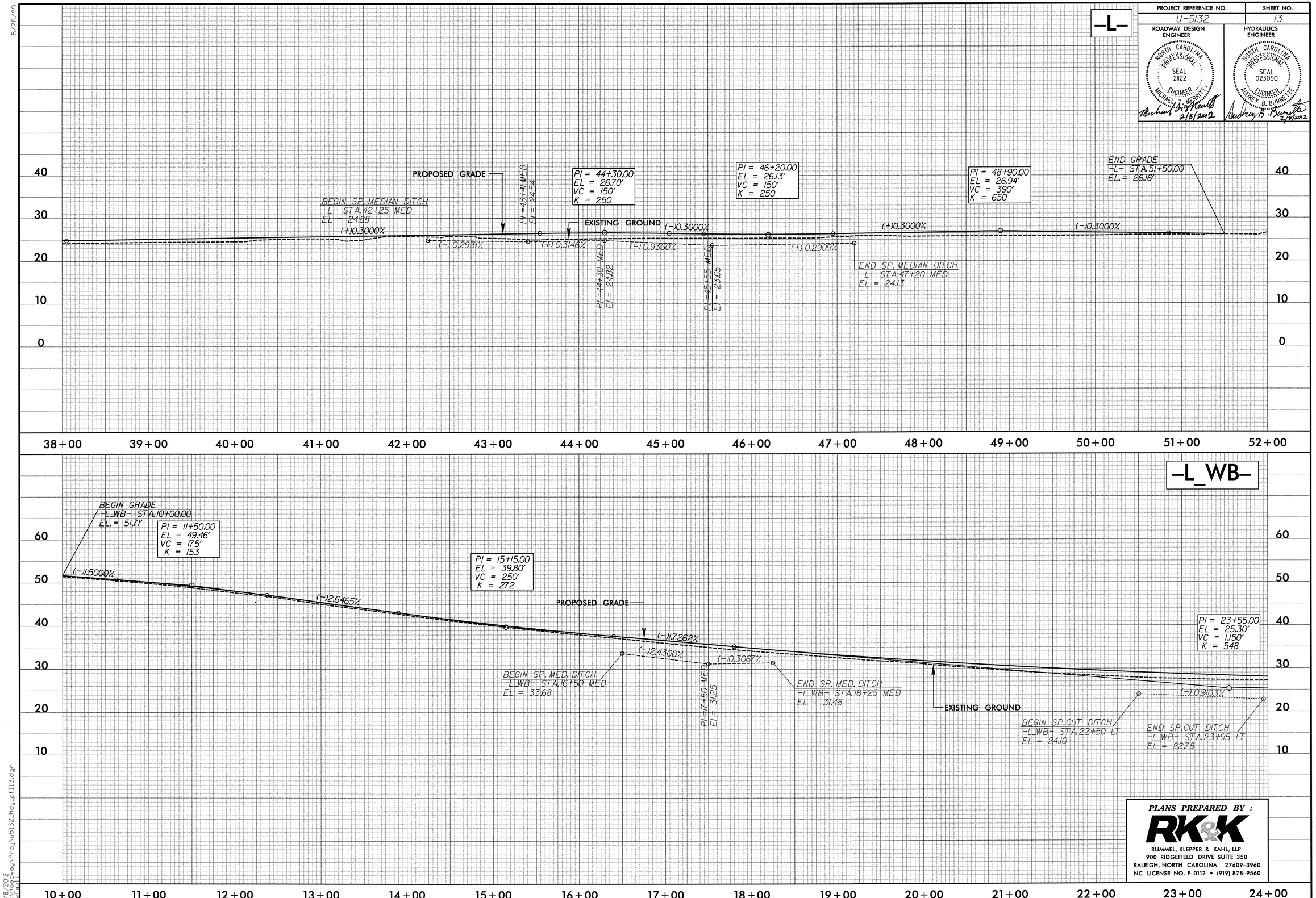
2/8/2012
R:\Roadway\Proj\u5132_rdy_pfl12.dgn
dgnplt

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-5132	13

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. MERRITT
Michael J. Merritt 2/8/2012

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE
Audrey B. Burnette 2/8/2012



PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

2/8/2012
R:\Roadway\Proj\U5132_Rdy_pf113.dgn
jbrown

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-5132	14

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

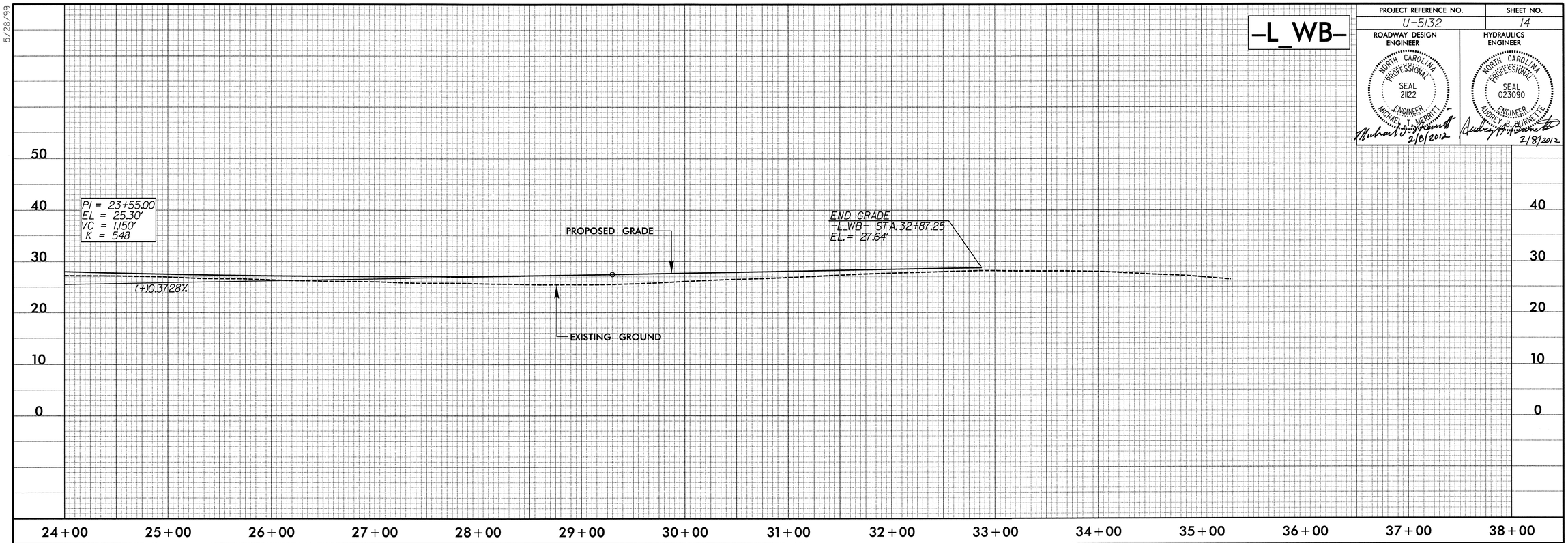
2/8/2012

HYDRAULICS ENGINEER

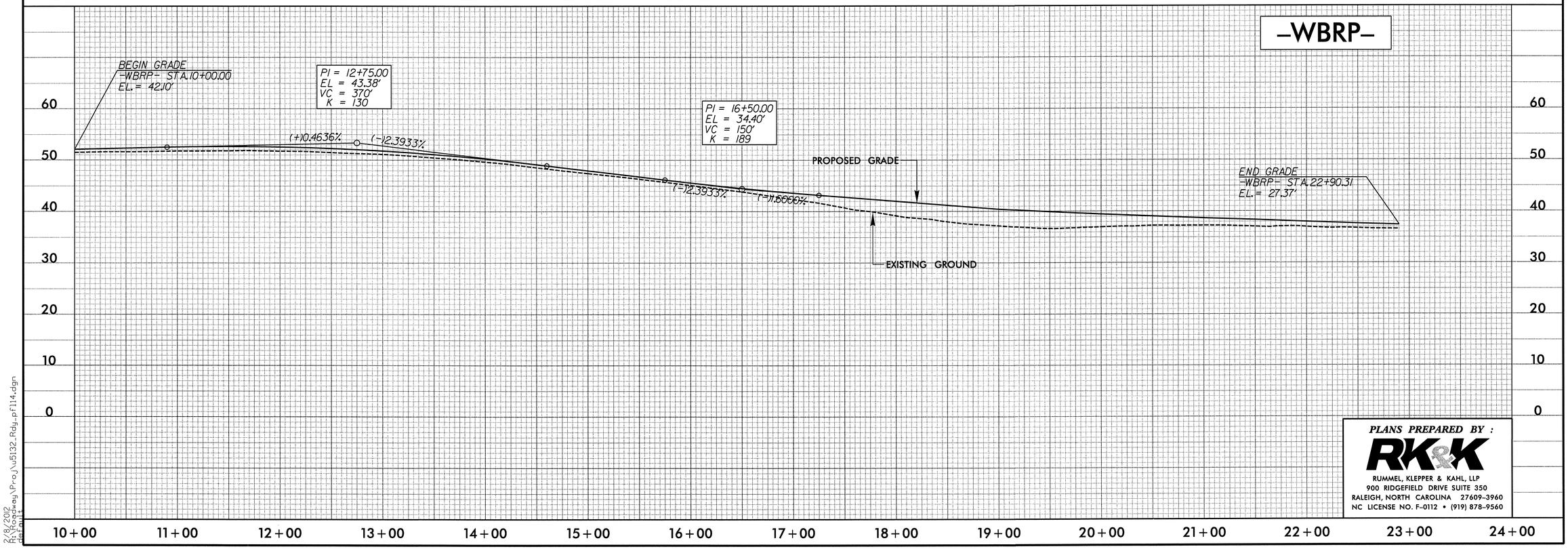
NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUBREY P. BURNETTE

2/8/2012

-L_WB-



-WBRP-



PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

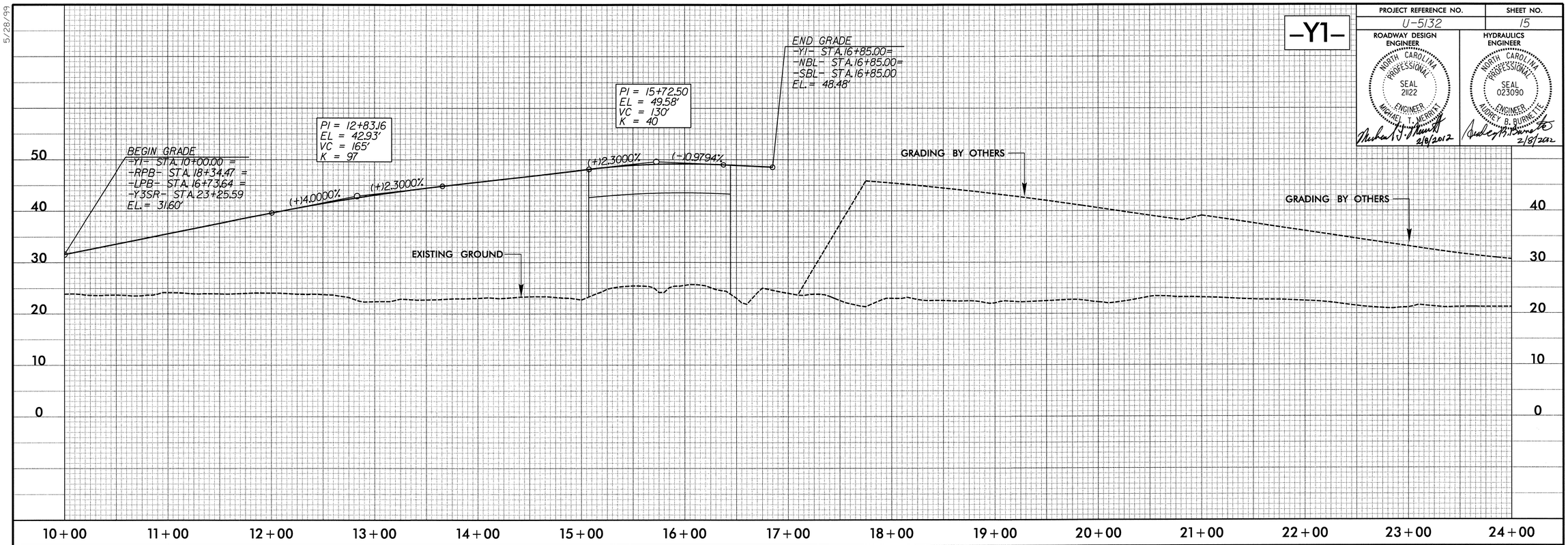
2/8/2012
R:\Roadway\Proj\u5132_Rdy_pfl14.dgn
jsrouth

PROJECT REFERENCE NO.	SHEET NO.
U-5132	15

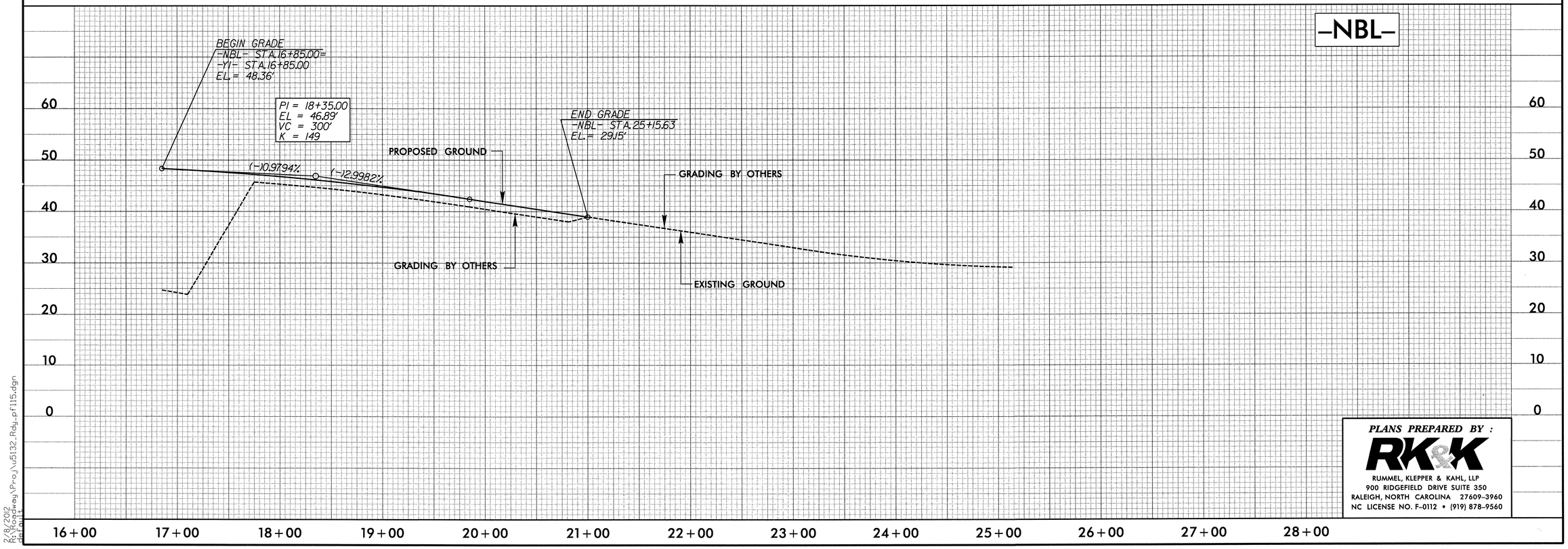
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT
2/8/2012

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE
2/8/2012

-Y1-



-NBL-



PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

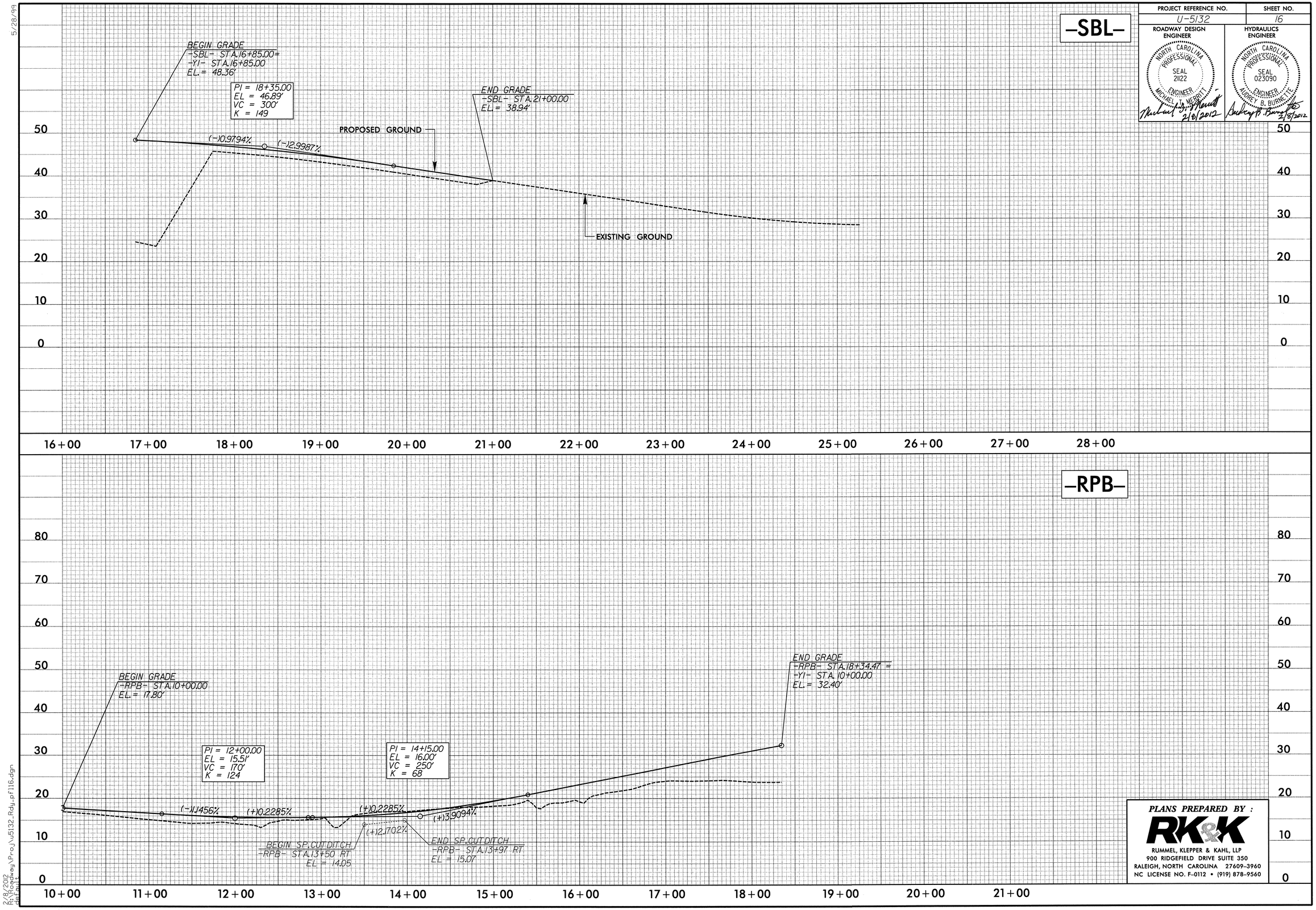
5/28/99

2/8/2012
R:\Roadway\Proj\u5132_Rdy_pf115.dgn
jsteelle

PROJECT REFERENCE NO.	SHEET NO.
U-5132	16

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL A. MERRITT 2/8/2012

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE 2/8/2012



PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

5/28/99

2/8/2012
R:\Roadway\Proj\U5132_Rdy_pf116.dgn
jsrouit

PROJECT REFERENCE NO.	SHEET NO.
U-5132	17

ROADWAY DESIGN ENGINEER

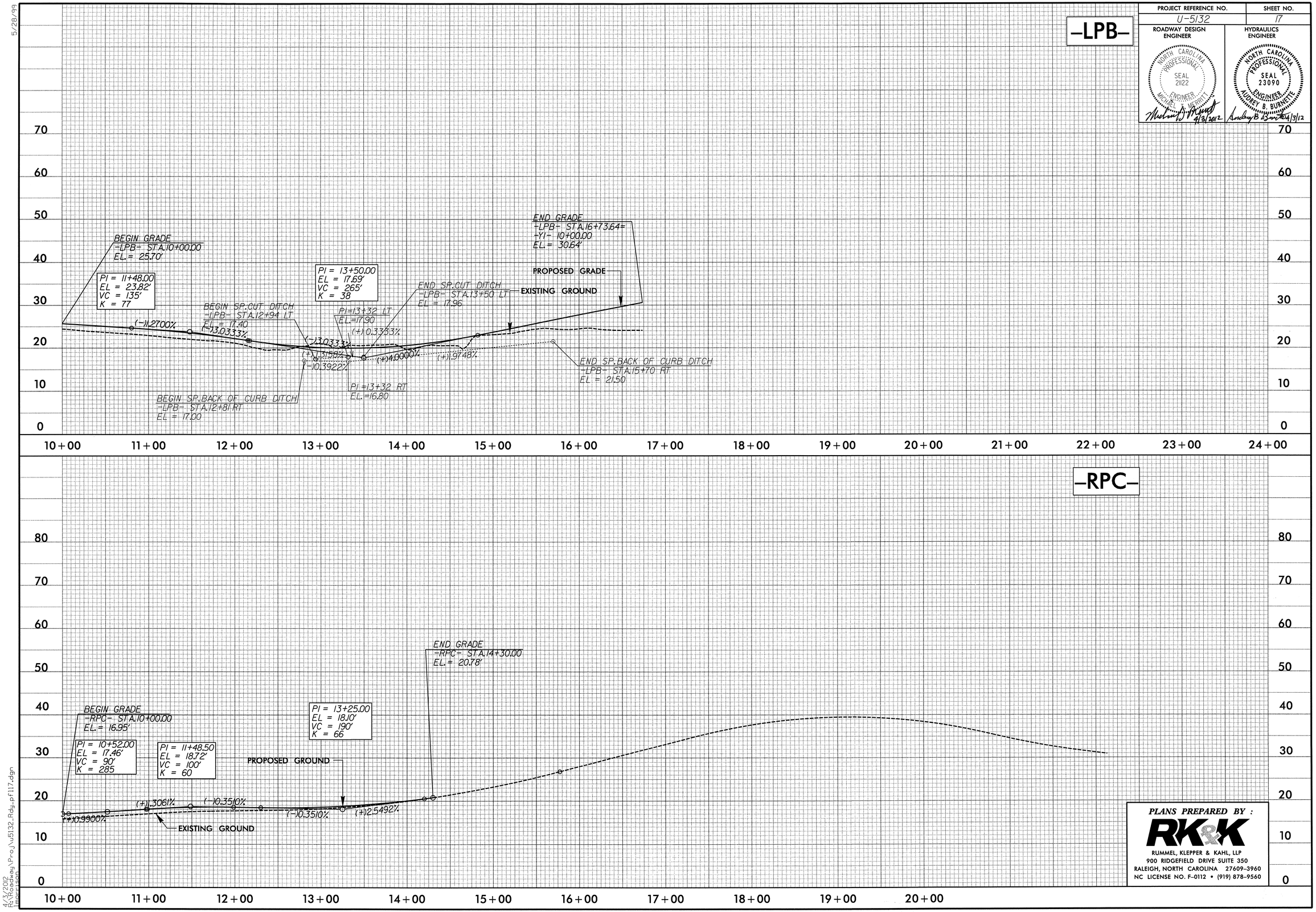
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL S. MERRITT

4/3/2012

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 23090 ENGINEER ANDREW B. BURNETTE

4/3/12



PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

5/28/99

4/3/2012
H:\Roadway\Proj\U5132_Rdy_pf17.dgn
mmcadams

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-5132	18

ROADWAY DESIGN ENGINEER

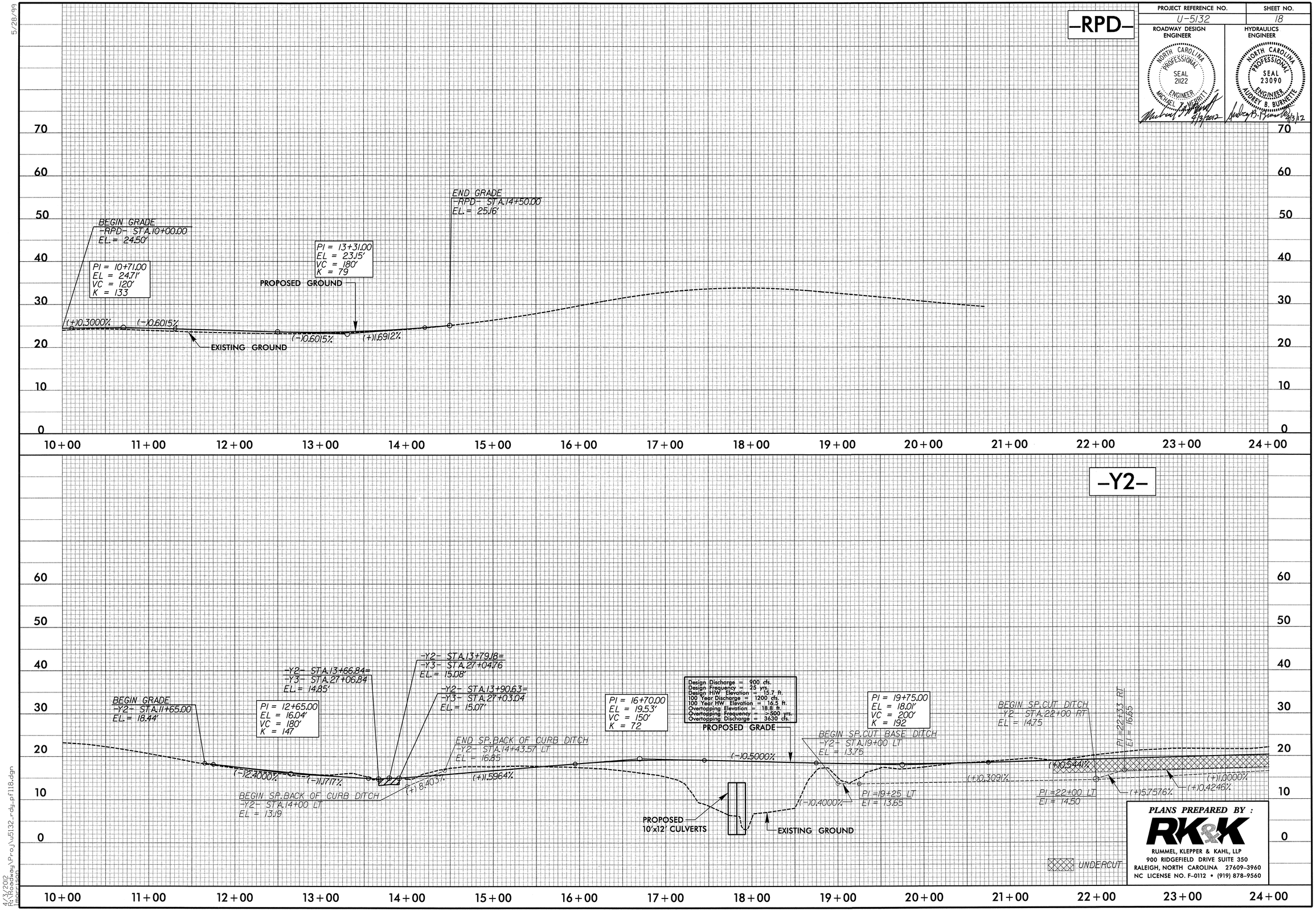
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. PERRITT

4/3/2012

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 23090 ENGINEER AUDREY B. BURNETTE

4/3/12

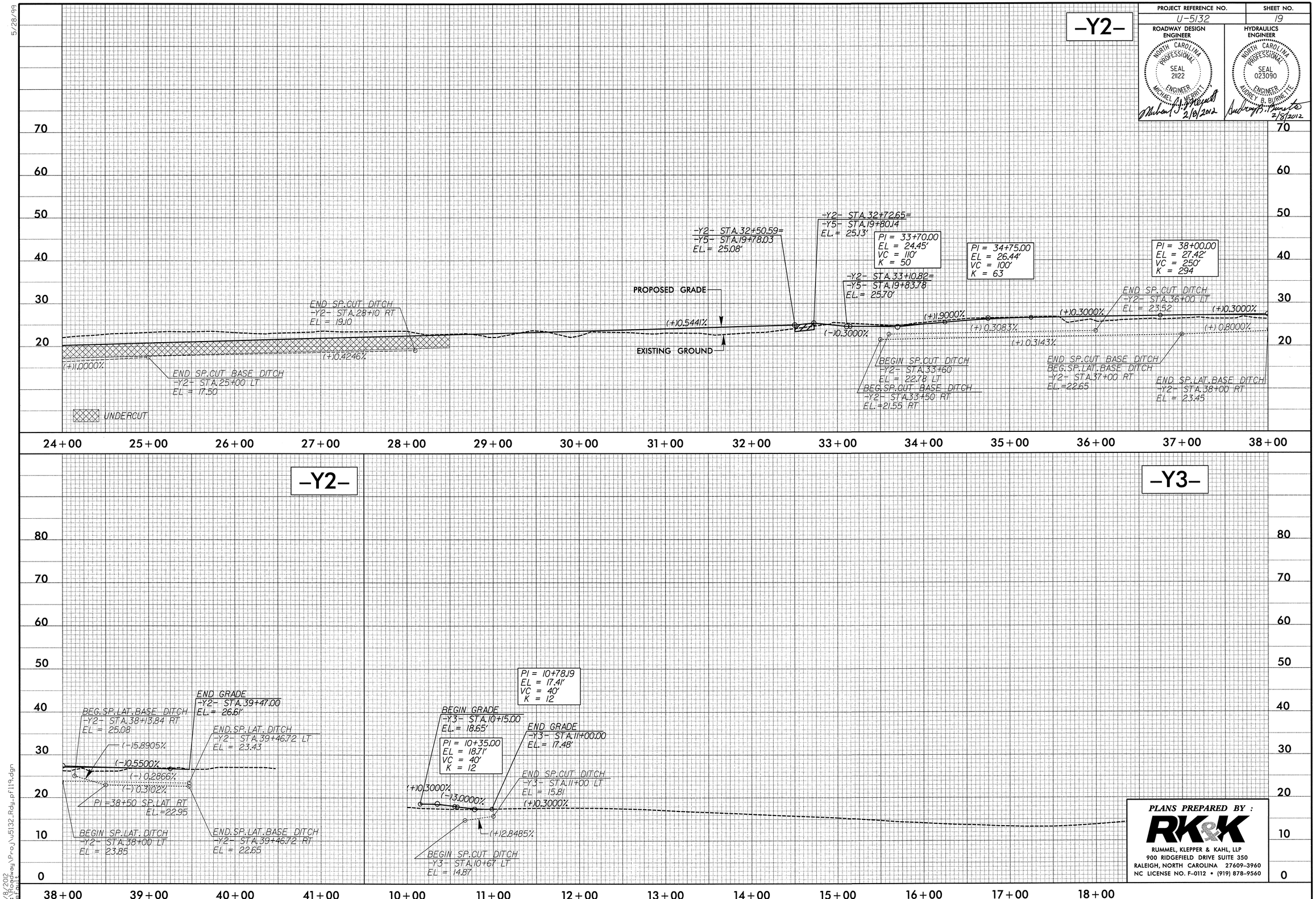


4/3/2012
H:\Roadway\Proj\U5132_rdy_pf118.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-5132	19

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. MERRITT
2/8/2012

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE
2/8/2012



PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

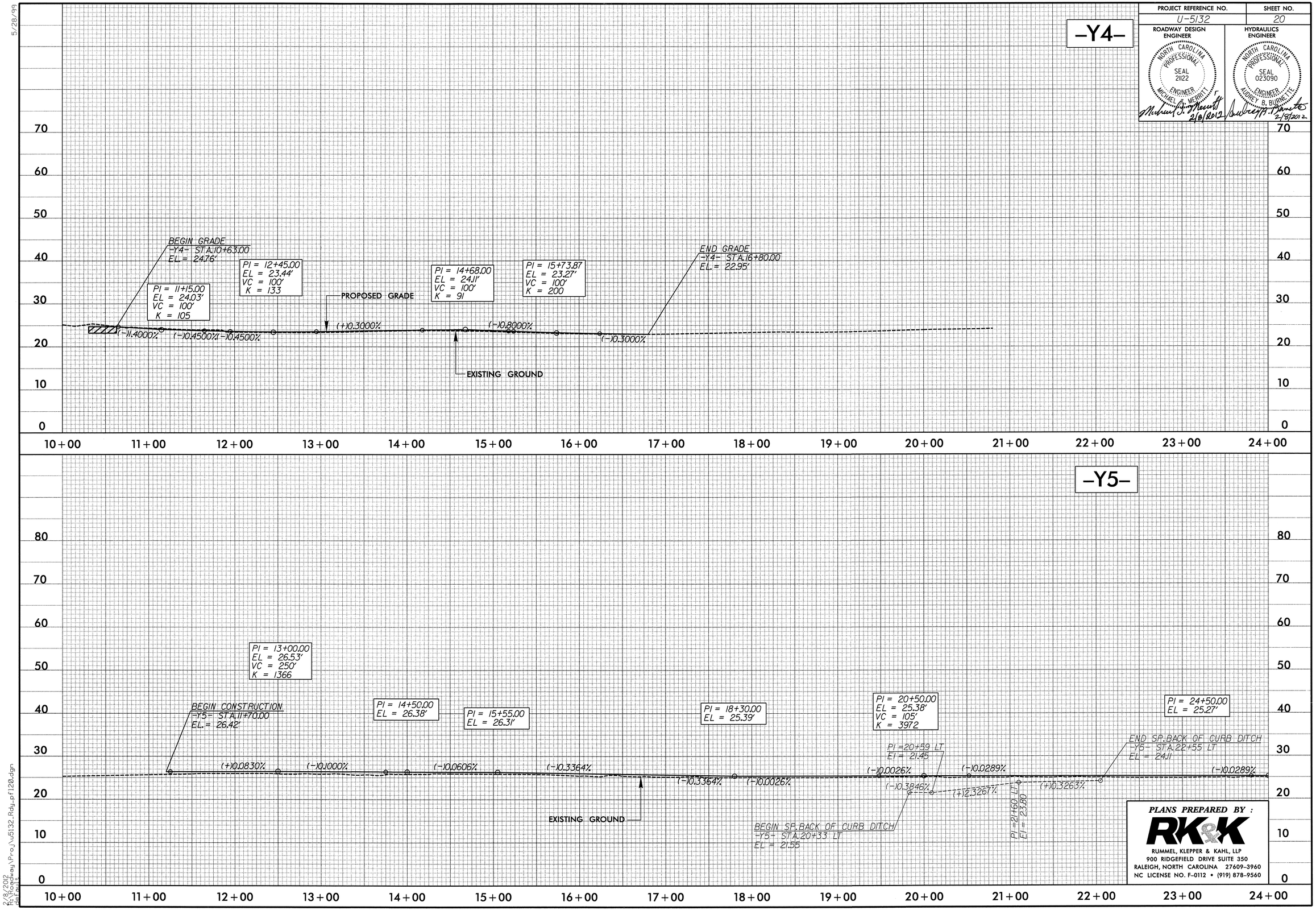
5/28/99

2/8/2012
R:\Roadway\Proj\U5132_Rdy_pfl19.dgn
jsrouth

PROJECT REFERENCE NO.	SHEET NO.
U-5132	20

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. MERRITT
Michael J. Merritt 2/8/2012

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE
Audrey B. Burnette 2/8/2012



PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

5/28/99

2/8/2012
R:\Roadway\Proj\u5132_Rdy_pf120.dgn
jstaut

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-5132	21

ROADWAY DESIGN ENGINEER

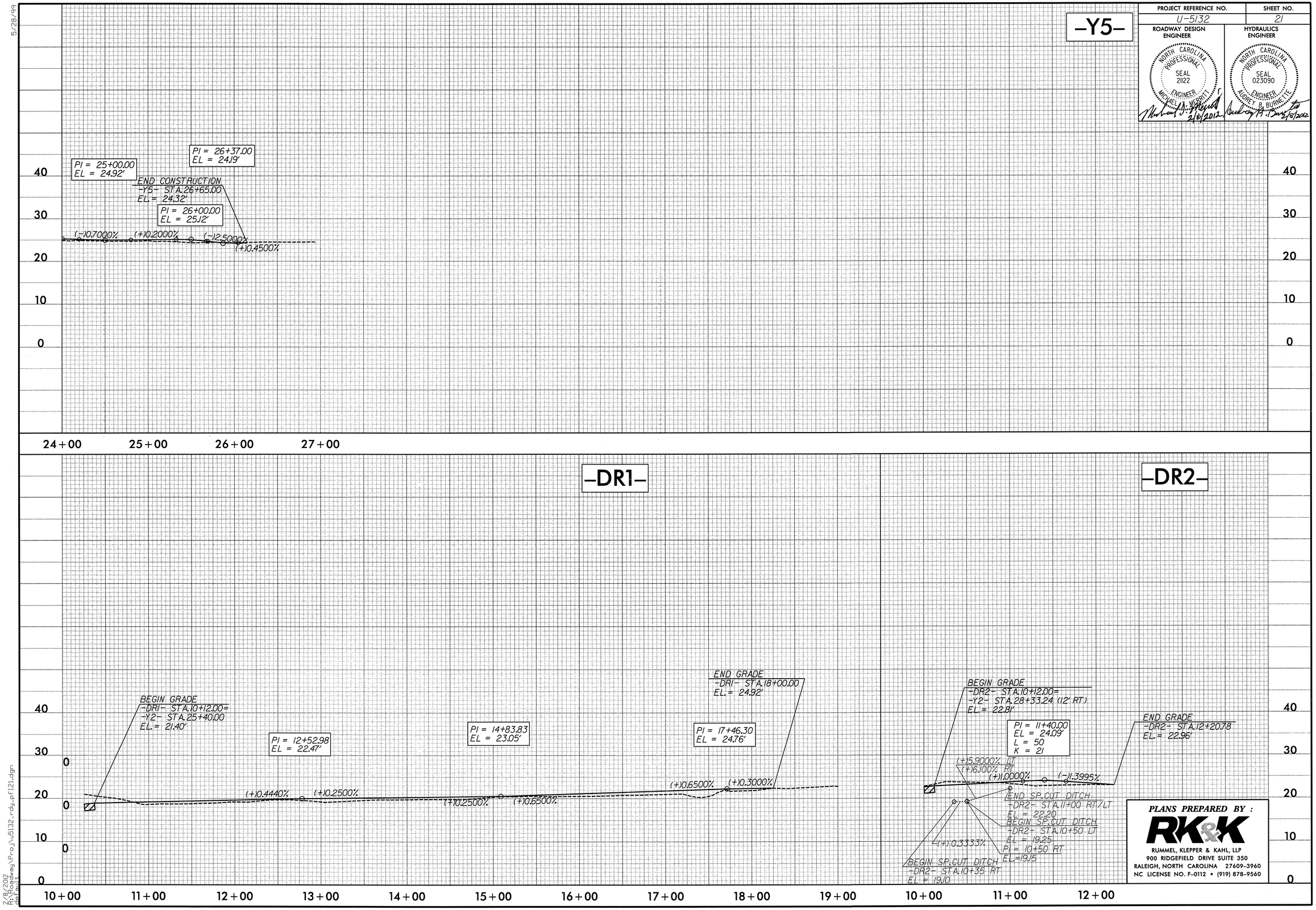
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. NERRITT

2/8/2012

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE

2/8/2012



PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

2/8/2012
R:\Roadway\Proj\u5132_rdy_pf121.dgn
dsmith

PROJECT REFERENCE NO.	SHEET NO.
U-5132	22

ROADWAY DESIGN ENGINEER

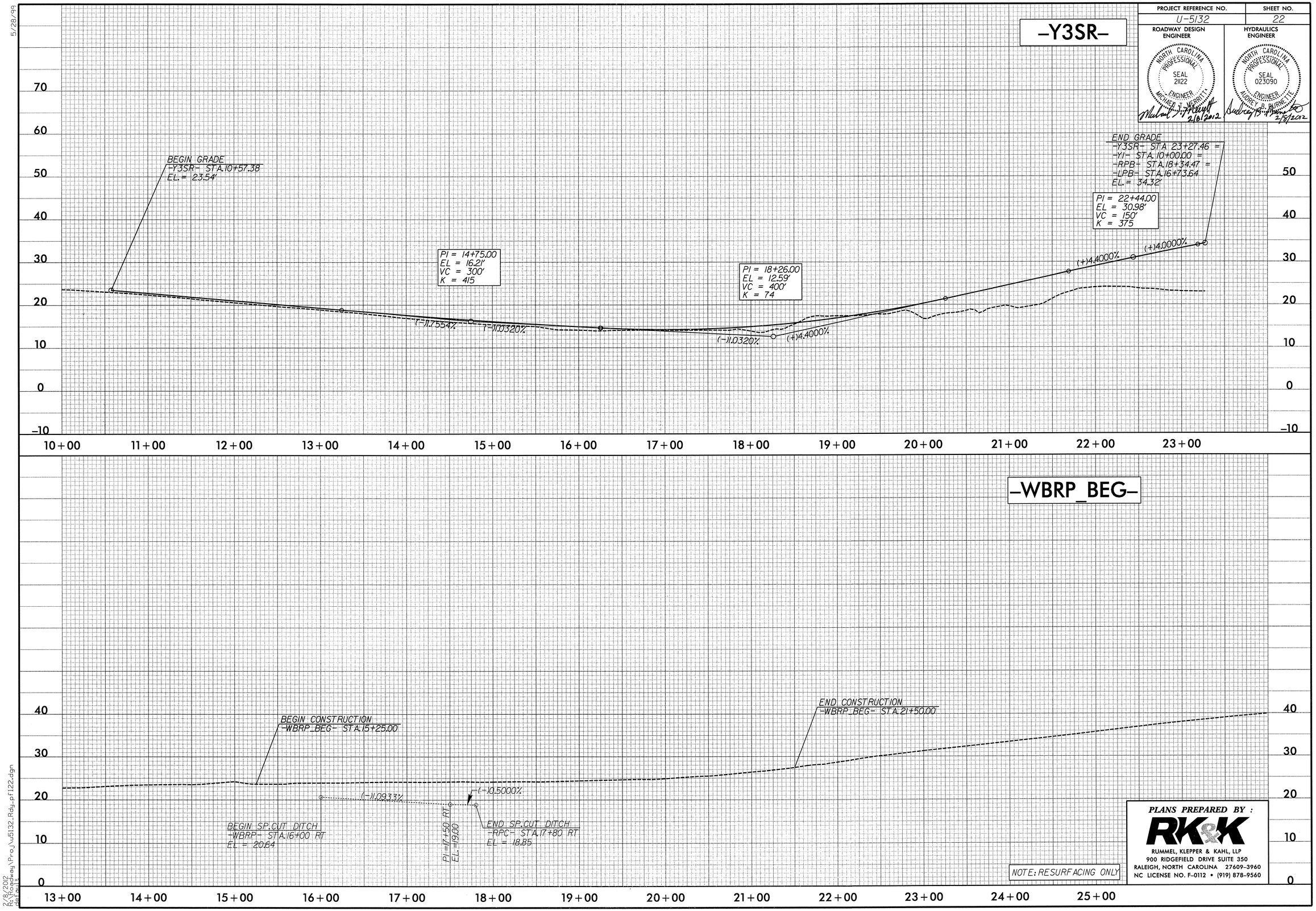
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL J. MERRITT

2/8/2012

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 023090 ENGINEER AUDREY B. BURNETTE

2/8/2012



PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

5/28/99

2/8/2012
R:\Roadway\Proj\u5132_Rdy_pf122.dgn
dsmith