09/08/99

TIP PROJECT: U-3326A/B

CONTRACT: C202652

21-JUL-2011 13:41
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See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols
See Sheet 1-C Thru 1-E For Survey Control Sheet

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3326A/B	1	

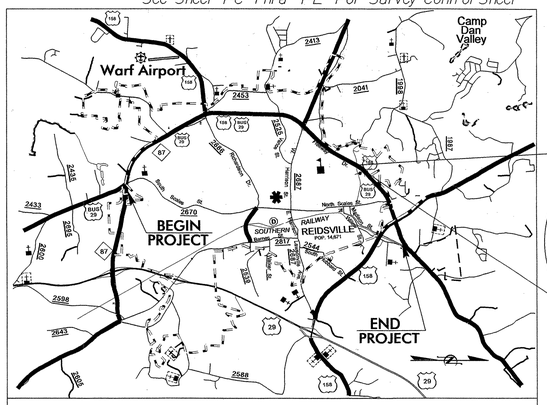
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34924.1.1	STP-29B(1)	P.E.
(A) 34924.2.4	HPPSTP-029B(2)	R/W & UTILITIES
(B) 34924.2.3	HPPSTP-029B(3)	R/W & UTILITIES
(A) 34924.3.1	STP-29B(2)	CONST.
(B) 34924.3.2	STP-29B(3)	CONST.

ROCKINGHAM COUNTY

LOCATION: US 29 BUSINESS (FREEWAY DRIVE) FROM SR 2670 (SOUTH SCALES STREET) TO NC 14 IN REIDSVILLE

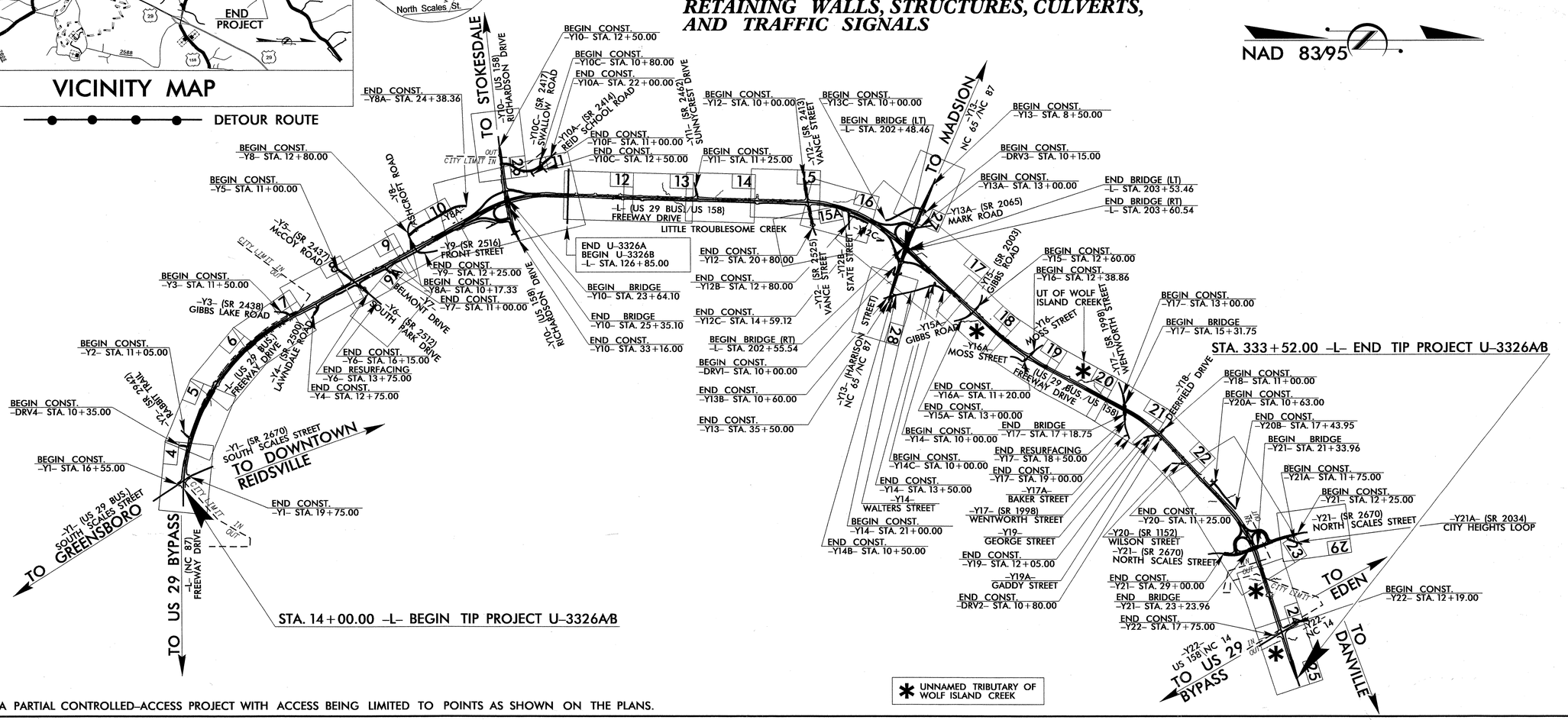
TYPE OF WORK: GRADING, DRAINAGE, PAVING, CURB AND GUTTER, RETAINING WALLS, STRUCTURES, CULVERTS, AND TRAFFIC SIGNALS

NAD 83/95



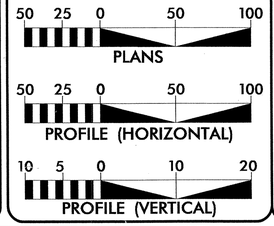
VICINITY MAP

DETOUR ROUTE



THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

GRAPHIC SCALES



DESIGN DATA

ADT 2011 = 21090
ADT 2035 = 41000
DHV = 10 %
D = 55 %
T = 11 % *
V = 50 MPH
* TTST 5% DUAL 6%
FUNC. CLASS = URBAN ARTERIAL "STATEWIDE TIER"

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3326A/B = 6.032 MI
LENGTH STRUCTURE TIP PROJECT U-3326A/B = 0.020 MI
TOTAL LENGTH OF TIP PROJECT U-3326A/B = 6.052 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCTOBER 17, 2008

LETTING DATE: January 17, 2012

JAMES A. SPEER, PE
PROJECT ENGINEER

DANIEL W. GARDNER, JR., PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN E. GUPTON
SIGNATURE: Karen E. Gupton P.E. 10/4/2011

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR.
SIGNATURE: Daniel W. Gardner Jr. P.E. 10/7/11

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

art mcmillan P.E.
STATE HIGHWAY DESIGN ENGINEER

TIP PROJECT: U-3326A/B

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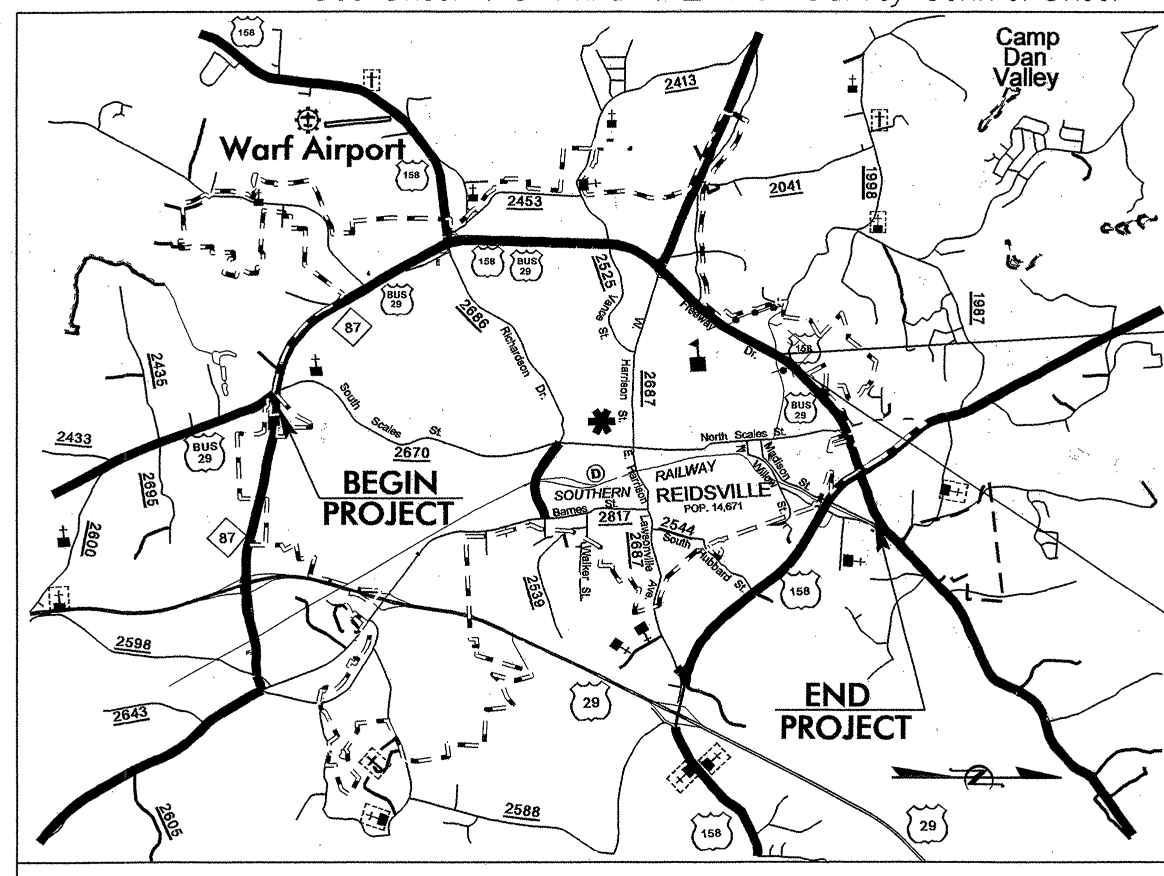

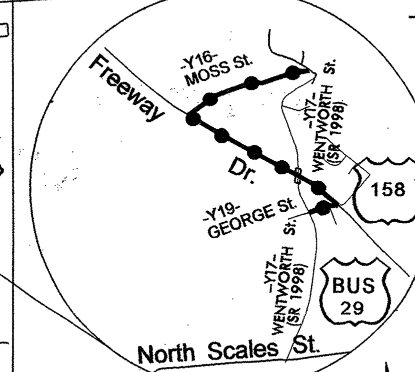

VICINITY MAP

DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
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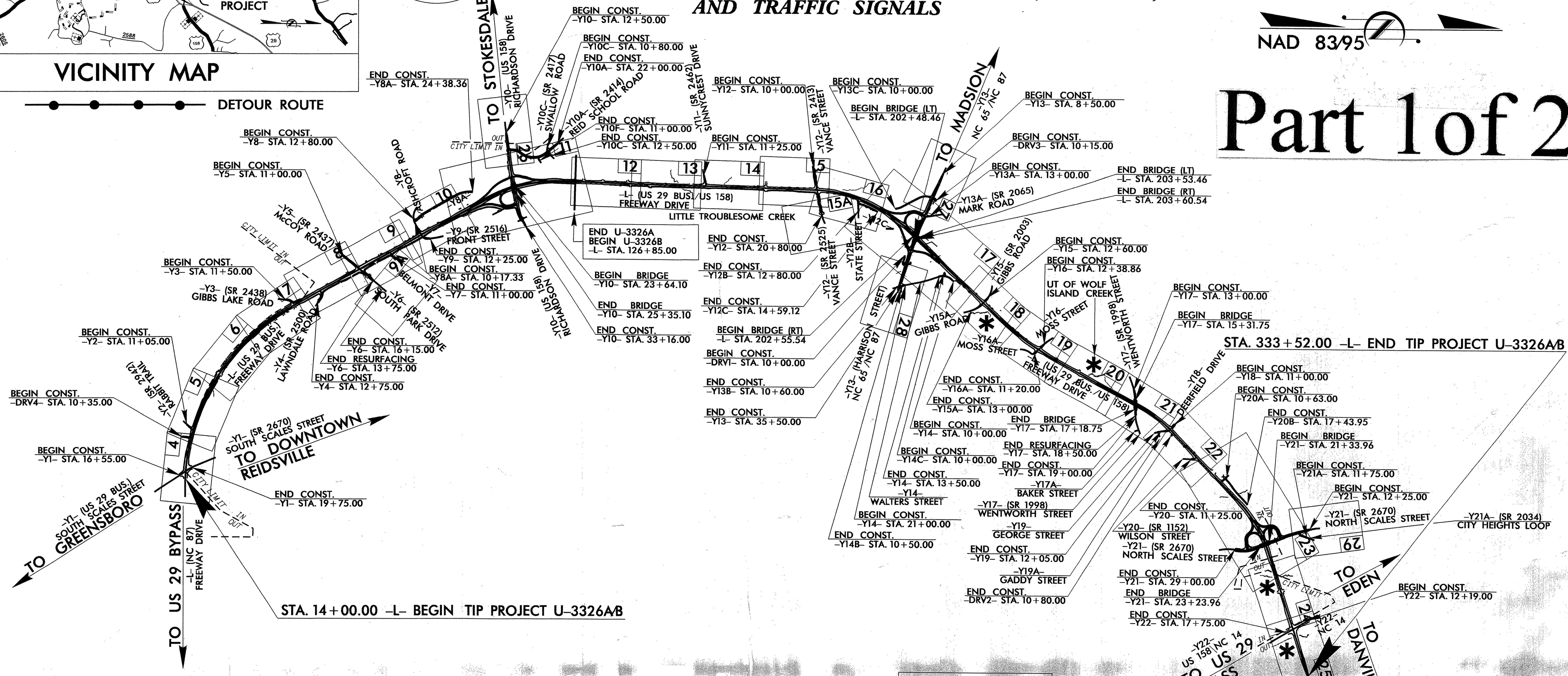
NAD 83/95

Part 1of 2



✱ UNNAMED TRIBUTARY OF WOLF ISLAND CREEK

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE 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 2011 = 21090
ADT 2035 = 41000
DHV = 10 %
D = 55 %
T = 11 % *
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NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN M. GULLEDGE
Karen M. Gulledge P.E. 10/4/2011
SIGNATURE:

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER, JR.
Daniel W. Gardner Jr. P.E. 10/7/11
SIGNATURE:

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

21-JUL-2011 13:41
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	1-A

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL M. GARDNER
11-16-11

EFF. 07-18-06
REV. 01-02-07

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-E	SURVEY CONTROL SHEETS
2 THRU 2-O	PAVEMENT SCHEDULE, WEDGING DETAIL, AND TYPICAL SECTIONS
2-P	ROCK ENERGY DISSIPATOR BASIN DETAIL
2-Q THRU 2-R	PREFORMED SCOUR HOLE DETAIL AND RIP-RAPPED ENERGY DISSIPATOR BASIN DETAIL
2-S	CONCRETE CATCH BASIN WITH MANHOLE (3 OR 4 SIDE OPEN THROAT) DETAIL
2-T	MINIMUM DEPTH CONCRETE CATCH BASIN DETAIL
2-U	EMERGENCY VEHICLE ACCESS DETAIL
2-V THRU 2-W	METHOD OF PIPE INSTALLATION DETAIL
2-X	ANCHORAGE FOR FRAMES DETAIL
2-Y	REINFORCED SOIL SLOPE DETAIL
2-Z	TEMPORARY STEEL PLATE COVER DETAIL
2-AA	DETAIL TO CONVERT EXISTING DI OR CB TO JB
2-AB	CONVERSION OF DI OR JB TO CB DETAIL
2-AC	STANDARD TEMPORARY SHORING DETAIL
2-AD THRU 2-AN	STANDARD TEMPORARY MSE WALL OPTIONS DETAILS
2-AO	WELDED STEEL PIPE LINER INSIDE REINFORCED CONCRETE PIPE DETAIL
2-AP THRU 2-AQ	CURB RAMPS DETAIL (PROPOSED CURB AND GUTTER)
2-AR	CURB RAMPS DETAIL (EXPRESSWAY GUTTER)
3	SUMMARY OF QUANTITIES
3-A THRU 3-AF	DRAINAGE SUMMARY
3-AG	GUARDRAIL SUMMARY
3-AH	PAVEMENT REMOVAL SUMMARY, BREAKING OF EXISTING PAVEMENT, WOVEN WIRE FENCE SUMMARY, SHOULDER BERM GUTTER SUMMARY, PRECAST CONCRETE BARRIER SUMMARY, AND CABLE GUIDERAIL SUMMARY
3-AI THRU 3-AJ	EARTHWORK SUMMARY
3-AK THRU 3-AL	PARCEL INDEX SHEET
4 THRU 29	PLAN SHEETS
30 THRU 61	PROFILE SHEETS
TMP-1 THRU TMP-116	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-26	PAVEMENT MARKING PLANS
EC-1 THRU EC-65	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN-40	SIGNING PLANS
SIG-1 THRU SIG-113	SIGNAL PLANS
UC-1 THRU UC-40	UTILITIES CONSTRUCTION PLANS
UO-1 THRU UO-26	UTILITIES BY OTHERS
X-1 THRU X-1H	CROSS-SECTION SUMMARY
X-2 THRU X-307	CROSS-SECTIONS
C-1 THRU C-32	CULVERT PLANS
S-1 THRU S-159	STRUCTURE PLANS
W-1 THRU W-8	WALL PLANS

GENERAL NOTES:

2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 07/19/11

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 II.

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

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

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

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

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

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".

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE WATER AND SEWER - CITY OF REIDSVILLE, DUKE ENERGY, AT&T-TELEPHONE, TIME WARNER, PIEDMONT NATURAL GAS
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 CONTRACT.

Curb Ramps:
CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. THE CONSTRUCTION OF ALL CURB RAMPS SHALL BE IN ACCORDANCE WITH THE DETAILS IN THE PLANS.

2006 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.03	Deceleration and Acceleration Lanes
225.05	Method of Obtaining Superelevation - Divided Highways
225.06	Method of Grading Sight Distance at Intersections
225.07	Grading for False Cut at Grade Separations
225.09	Guide for Shoulder and Ditch Transition at Grade Separations
240.01	Guide for Berm Ditch Construction
DIVISION 3 - PIPE CULVERTS	
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	
610.03	Guide for Paving Shoulders Under Bridges - Method III
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.02	Concrete Endwall and Sluice Gate - 15" thru 36" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.21	Reinforced Concrete Endwall - for Single 54" Pipe 90 Skew
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
838.33	Reinforced Concrete Endwall - for Single 66" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.51	Reinforced Brick Endwall - for Single 54" Pipe 90 Skew
838.57	Reinforced Brick Endwall - for Single 60" Pipe 90 Skew
838.63	Reinforced Brick Endwall - for Single 66" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
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
840.04	Concrete Open Throat Catch Basin - 12" thru 48" Pipe
840.05	Brick Open Throat Catch Basin - 12" thru 48" Pipe
840.13	Concrete Bridge Approach Drop Inlet - 12" thru 24" Pipe
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
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
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
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.02	Drop Inlet Installation in Expressway Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
850.01	Concrete Paved Ditches
850.10	Guide for Berm Drainage Outlet - 15" and 18" Pipe
850.11	Guide for Berm Drainage Outlet - 24" and 30" Pipe
852.01	Concrete Islands
852.05	Median Curb for Catch Basin - for Use with 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
852.10	Median Construction - with Curb and Gutter
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
865.01	Cable Guiderail
866.02	Woven Wire Fence - with Wood Post
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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04/16/11

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	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
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

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 Curb 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

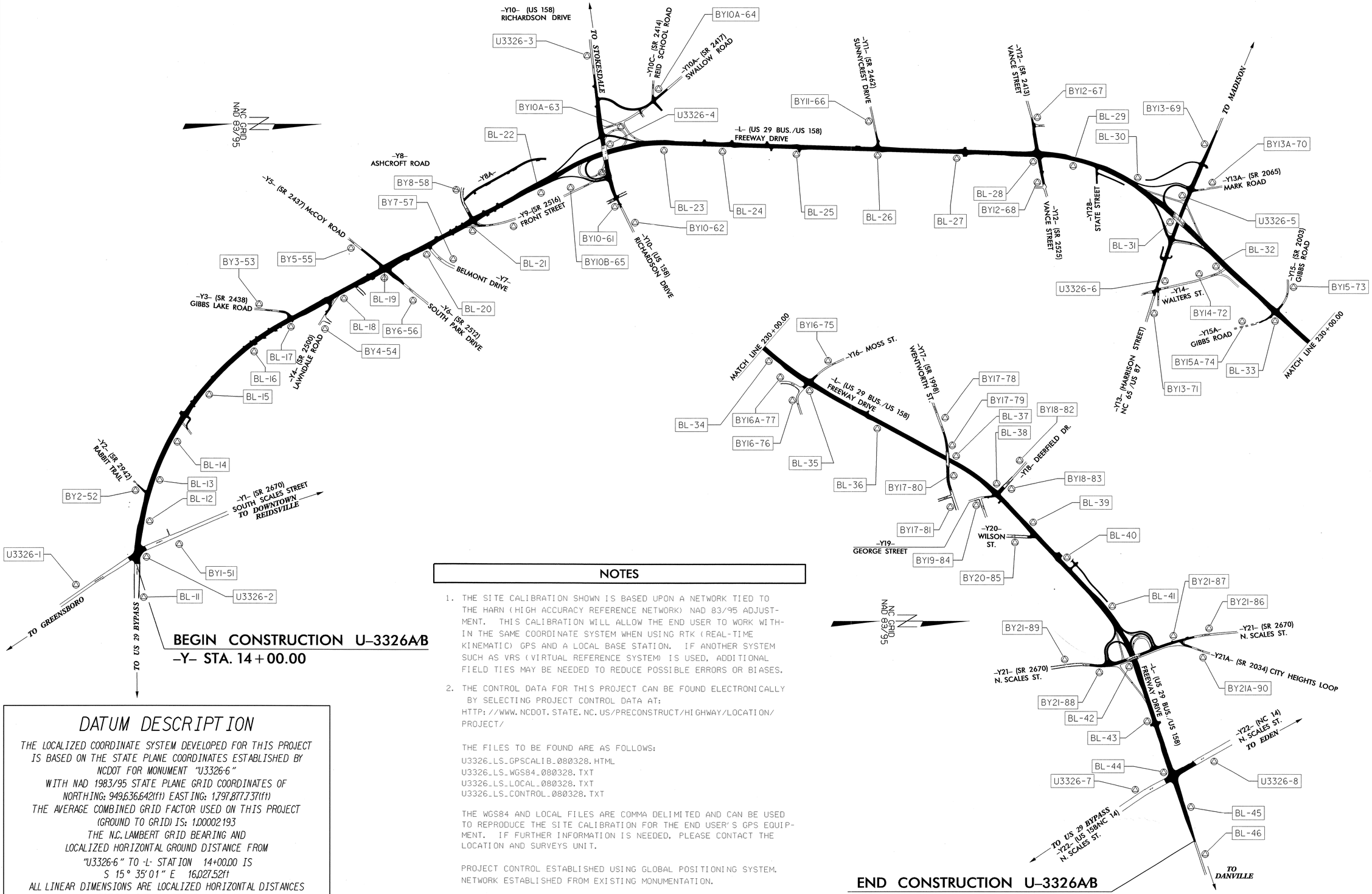
MISCELLANEOUS:

- 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
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

12/01/2005

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	1-C
Location and Surveys	

U-3326A/B SURVEY CONTROL SHEET



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U3326-6" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 949,636.642(ft) EASTING: 1,797,877.737(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00002193 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U3326-6" TO -L- STATION 14+00.00 IS S 15° 35' 01" E 16,027.52ft ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/95 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL-TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE SYSTEM) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS OR BIASES.
2. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT: HTTP://WWW.NCDOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   U3326_LS_GPSCALIB_080328.HTML
   U3326_LS_WGS84_080328.TXT
   U3326_LS_LOCAL_080328.TXT
   U3326_LS_CONTROL_080328.TXT

   THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

   PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM. NETWORK ESTABLISHED FROM EXISTING MONUMENTATION.

NOTE: DRAWING NOT TO SCALE

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$$$$USERNAME$$$$

12/01/2005

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	1-D
Location and Surveys	

U-3326A/B SURVEY CONTROL SHEET

GPS Calibration Report

Project : U3326SiteCalibration

TIP Number U-3326
User name khudson Date & Time 11:02:16 AM 3/25/2008
Coordinate System US State Plane 1983(at ground) Zone North Carolina 3200
Horizontal Datum NAD 1983 (Conus)
Vertical Datum NAVD88 Geoid Model GEOID03 (Conus)
Coordinate Units US survey feet
Distance Units US survey feet
Height Units US survey feet

LOCAL SITE INFORMATION
Localized around U3326-6
Latitude 36*21'25.92651"N
Longitude 79*41'10.87168"W
Site Scale Factor 0.9999780600
Height 685.185sft

The North Carolina Department of Transportation uses a Localized Coordinate System which is very similar to North Carolina Zone 3200 from which it is derived. Please take care in utilizing these coordinates to eliminate confusion of the two systems. This file is to aid in the use of Real Time Kinematic (RTK) GPS during construction layout.

Datum Transformation Parameters

Datum Transformation computation not requested

Updated Default Projection (Transverse Mercator) Definition

Updated default projection not requested

Horizontal Adjustment Parameters

Northing coordinate of rotation center 935807.776sft
Easting coordinate of rotation center 1797152.859sft
Rotation about the center point 0*00'00"
Translation north -0.011sft
Translation east -0.012sft
Scale factor 1.00000016

Vertical Adjustment Parameters

Northing coordinate of origin point 933308.603sft
Easting coordinate of origin point 1802566.161sft
Vertical separation at origin 0.073sft
Slope north 0.820ppm
Slope east -1.188ppm

Geoid Model Definition

GEOID03 (Conus)

Residual Differences Between GPS (WGS84) And Local Coordinates

Summary

Maximum error Root Mean Square error Point
Horizontal 0.016sft 0.002 WYRICK_GPS
Vertical 0.083sft 0.012 SADLER_GPS
Three-dimensional 0.084sft 0.013 SADLER_GPS

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Point Residuals

WGS84 Coordinates Calculated point
FOR DISPLAY ONLY Local Coordinates
Point u3326-1_GPS
Latitude 36*18'44.79166"N
Longitude 79*40'12.21044"W
Height 714.503sft
Northing 933308.603sft
Easting 1802566.161sft
Elevation 818.527sft
Horz error 0.006sft
Vert error 0.037sft
3D error 0.037sft
Point u3326-1
Northing 933308.599sft

Easting 1802566.157sft

Elevation 818.490sft

Utilized Horz and Vert

Quality Adjusted quality

Point u3326-2_GPS
Latitude 36*18'54.47453"N
Longitude 79*40'18.90837"W
Height 718.422sft
Northing 934291.507sft
Easting 1802024.600sft
Elevation 822.508sft
Horz error 0.005sft
Vert error 0.031sft
3D error 0.031sft
Point u3326-2
Northing 934291.506sft

Easting 1802024.595sft

Elevation 822.477sft

Utilized Horz and Vert

Quality Adjusted quality

Point u3326-3_GPS
Latitude 36*20'00.72492"N
Longitude 79*41'51.59621"W
Height 729.277sft
Northing 941043.559sft
Easting 1794485.947sft
Elevation 833.919sft
Horz error 0.004sft
Vert error 0.031sft
3D error 0.031sft
Point u3326-3
Northing 941043.555sft

Easting 1794485.947sft

Elevation 833.950sft

Utilized Horz and Vert

Quality Adjusted quality

Point u3326-4_GPS
Latitude 36*20'02.99461"N
Longitude 79*41'34.61732"W
Height 744.926sft
Northing 941263.357sft
Easting 1795876.813sft
Elevation 849.527sft
Horz error 0.003sft
Vert error 0.024sft
3D error 0.024sft
Point u3326-4
Northing 941263.356sft

Easting 1795876.810sft

Elevation 849.551sft

Utilized Horz and Vert

Quality Adjusted quality

Point u3326-5_GPS
Latitude 36*21'29.71574"N
Longitude 79*41'26.13560"W
Height 678.407sft
Northing 950028.494sft
Easting 1796631.818sft
Elevation 783.337sft
Horz error 0.002sft
Vert error 0.046sft
3D error 0.046sft
Point u3326-5
Northing 950028.494sft

Easting 1796631.820sft

Elevation 783.383sft

Utilized Horz and Vert

Quality Adjusted quality

Point u3326-6_GPS
Latitude 36*21'25.92658"N
Longitude 79*41'10.87153"W
Height 685.056sft
Northing 949636.640sft
Easting 1797877.737sft
Elevation 789.928sft
Horz error 0.001sft
Vert error 0.038sft
3D error 0.038sft
Point u3326-6
Northing 949636.642sft

Easting 1797877.737sft

Elevation 789.966sft

Utilized Horz and Vert

Quality Adjusted quality

Point u3326-8_GPS
Latitude 36*22'55.33780"N
Longitude 79*39'44.52638"W
Height 611.078sft
Northing 958630.801sft
Easting 1805001.017sft
Elevation 716.075sft
Horz error 0.005sft
Vert error 0.025sft
3D error 0.025sft
Point u3326-8
Northing 958630.804sft

Easting 1805001.022sft

Elevation 716.100sft

Utilized Horz and Vert

Quality Adjusted quality

Point u3326-7_GPS
Latitude 36*22'44.57548"N
Longitude 79*39'37.72532"W
Height 626.106sft
Northing 957538.698sft
Easting 1805549.923sft
Elevation 731.042sft
Horz error 0.005sft
Vert error 0.018sft
3D error 0.019sft
Point u3326-7
Northing 957538.702sft

Easting 1805549.927sft

Elevation 731.061sft

Utilized Horz and Vert

Quality Adjusted quality

Point WYRICK_GPS
Latitude 36*10'59.62328"N
Longitude 79*46'26.92349"W
Height 697.827sft
Northing 886492.471sft
Easting 1771531.194sft
Elevation 800.866sft
Horz error 0.016sft
Vert error 0.041sft
3D error 0.044sft
Point WYRICK
Northing 886492.455sft
Easting 1771531.192sft
Elevation 800.907sft
Utilized Horz and Vert
Quality Control quality

Point LITTLE_GPS
Latitude 36*14'47.18905"N
Longitude 79*55'14.26323"W
Height 817.331sft
Northing 909872.972sft
Easting 1728515.874sft
Elevation 923.235sft
Horz error 0.008sft
Vert error 0.054sft
3D error 0.055sft
Point LITTLE
Northing 909872.976sft

Easting 1728515.881sft

Elevation 923.181sft

Utilized Horz and Vert

Quality Control quality

Point SADLER_GPS
Latitude 36*24'20.54256"N
Longitude 79*37'14.13133"W
Height 693.865sft
Northing 967168.202sft
Easting 1817353.271sft
Elevation 798.805sft
Horz error 0.010sft
Vert error 0.083sft
3D error 0.084sft
Point SADLER
Northing 967168.208sft
Easting 1817353.280sft
Elevation 798.722sft
Utilized Horz and Vert
Quality Control quality

Point WADE_GPS
Latitude 36*13'22.25937"N
Longitude 79*30'49.89789"W
Height 657.028sft
Northing 900417.873sft
Easting 1848419.803sft
Elevation 757.824sft
Horz error 0.013sft
Vert error 0.018sft
3D error 0.022sft
Point WADE
Northing 900417.881sft

Easting 1848419.793sft

Elevation 757.807sft

Utilized Horz and Vert

Quality Control quality

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U-3326A/B SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	1-E
Location and Surveys	

BASELINE DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
11	BL-11	934235.7880	1802682.5760	813.24	OUTSIDE PROJECT LIMITS	
2	U3326-2	934291.5060	1802024.5950	822.48	15+65.60	83.80 RT
12	BL-12	934322.1850	1801521.4590	821.16	20+76.13	46.28 RT
13	BL-13	934473.9260	1800895.1320	807.49	27+26.30	27.02 RT
14	BL-14	934730.1530	1800286.9120	788.23	33+89.97	14.83 RT
15	BL-15	935223.2020	1799555.1220	796.27	42+76.79	14.09 RT
16	BL-16	935937.6010	1798875.7910	810.72	52+68.22	16.97 RT
17	BL-17	936507.4220	1798508.6010	816.81	59+49.34	17.18 RT
18	BL-18	937275.9720	1798101.9260	816.32	68+18.78	28.76 RT
19	BL-19	937935.1110	1797764.0480	818.12	75+59.21	48.27 RT
20	BL-20	938569.4380	1797389.6870	815.46	82+95.36	23.86 RT
21	BL-21	939234.6120	1797058.6180	820.02	90+37.83	52.23 RT
22	BL-22	940247.8210	1796472.3120	824.34	102+08.10	23.48 RT
4	U3326-4	941263.3560	1795876.8100	849.55	113+75.61	66.46 LT
23	BL-23	942151.6860	1795822.1890	834.52	122+57.94	21.55 RT
24	BL-24	943031.0590	1795851.0190	833.32	131+38.65	26.30 RT
25	BL-25	944138.5240	1795888.3400	815.54	142+46.74	30.52 RT
26	BL-26	945376.4030	1795916.8760	790.20	154+84.92	22.07 RT
27	BL-27	946564.5420	1795955.1010	801.93	166+73.67	24.78 RT
28	BL-28	947756.2070	1795998.7320	829.67	178+66.17	32.79 RT
29	BL-29	948348.2550	1796064.0810	827.77	184+67.89	17.30 RT
30	BL-30	949262.9640	1796398.1620	822.45	194+40.93	39.58 LT
31	BL-31	949835.8430	1796953.3550	806.89	202+35.68	44.48 RT
32	BL-32	950582.6300	1797661.3170	771.73	212+65.58	33.64 RT
33	BL-33	951390.9290	1798405.8100	736.56	223+63.94	28.26 RT
34	BL-34	952005.0840	1798956.6640	731.49	231+87.40	26.73 RT
35	BL-35	952563.1660	1799376.8550	727.54	238+82.60	38.27 RT
36	BL-36	953630.9470	1799962.5450	717.87	250+98.09	23.45 RT
37	BL-37	954751.1960	1800521.9230	739.26	263+49.36	23.30 LT
38	BL-38	955397.2940	1800981.9060	771.91	271+38.06	28.81 LT
39	BL-39	955888.9900	1801508.7010	789.05	278+57.26	21.18 LT
40	BL-40	956351.4780	1801998.4310	775.52	285+30.86	21.47 LT
41	BL-41	957066.6280	1802772.0760	750.35	295+82.62	22.98 LT
42	BL-42	957420.2260	1803564.0600	766.40	304+54.86	60.76 RT
43	BL-43	957749.6240	1804465.1820	736.59	314+16.75	33.42 RT
44	BL-44	957994.7920	1805243.1440	726.40	322+32.36	44.25 RT
45	BL-45	958244.3770	1805791.0400	733.79	328+30.86	21.17 LT
46	BL-46	958481.7230	1806496.6100	760.98	59+27.65	23408.38 RT

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
1	U3326-1	933308.5990	1802566.1570	818.49	OUTSIDE PROJECT LIMITS	
101	U3326-2	934291.5060	1802024.5950	822.48	18+77.08	42.45 RT
51	BY1-51	934801.1940	1801783.9590	819.97	24+49.28	35.15 RT

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
52	BY2-52	934222.0420	1801025.0860	811.78	11+15.58	18.54 RT
102	BL-12	934322.1850	1801521.4590	821.16	OUTSIDE PROJECT LIMITS	

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
53	BY3-53	936038.6260	1798318.8660	807.51	OUTSIDE PROJECT LIMITS	
103	BL-17	936507.4220	1798508.6010	816.81	OUTSIDE PROJECT LIMITS	

BY4

POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
104	BL-18	937275.9720	1798101.9260	816.32	10+28.84	197.64 LT
54	BY4-54	936986.7780	1798534.6730	819.60	OUTSIDE PROJECT LIMITS	

BY5

POINT	DESC.	NORTH	EAST	ELEVATION	Y5 STATION	OFFSET
55	BY5-55	937464.6520	1797355.3950	817.45	OUTSIDE PROJECT LIMITS	
105	BL-19	937935.1110	1797764.0480	818.12	OUTSIDE PROJECT LIMITS	

BY6

POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
106	BL-19	937935.1110	1797764.0480	818.12	10+32.85	48.52 RT
56	BY6-56	938423.8330	1798133.6770	800.78	OUTSIDE PROJECT LIMITS	

BY7

POINT	DESC.	NORTH	EAST	ELEVATION	Y7 STATION	OFFSET
107	BL-20	938569.4380	1797389.6870	815.46	10+22.36	42.77 RT
57	BY7-57	938942.5010	1797643.4730	817.73	OUTSIDE PROJECT LIMITS	

BY8

POINT	DESC.	NORTH	EAST	ELEVATION	Y8 STATION	OFFSET
58	BY8-58	939056.1600	1796527.5890	807.35	11+75.72	48.21 RT
108	BL-21	939234.6120	1797058.6180	820.02	OUTSIDE PROJECT LIMITS	

BY9

POINT	DESC.	NORTH	EAST	ELEVATION	Y9 STATION	OFFSET
109	BL-21	939234.6120	1797058.6180	820.02	10+35.45	71.66 RT
59	BY9-59	939830.2180	1797004.8050	821.17	OUTSIDE PROJECT LIMITS	

BY10

POINT	DESC.	NORTH	EAST	ELEVATION	Y10 STATION	OFFSET
3	U3326-3	941043.5550	1794485.9470	833.95	OUTSIDE PROJECT LIMITS	
110	U3326-4	941263.3560	1795876.8100	849.55	23+72.86	18.05 LT
60	BY10-60	941267.1450	1796264.4500	845.95	27+54.52	41.99 RT
61	BY10-61	941421.7850	1796675.4590	850.87	31+85.30	29.90 RT
62	BY10-62	941655.5140	1797032.6030	854.93	OUTSIDE PROJECT LIMITS	

BY10A

POINT	DESC.	NORTH	EAST	ELEVATION	Y10A STATION	OFFSET
64	BY10A-64	942018.0780	1795090.7340	854.67	19+93.56	38.62 LT
63	BY10A-63	941512.5830	1795550.5170	848.80	14+76.26	275.07 RT
111	U3326-4	941263.3560	1795876.8100	849.55	14+12.16	664.01 RT

BY10B

POINT	DESC.	NORTH	EAST	ELEVATION	Y10B STATION	OFFSET
112	BY10-60	941267.1450	1796264.4500	845.95	OUTSIDE PROJECT LIMITS	
65	BY10B-65	940768.2740	1796520.5910	834.11	OUTSIDE PROJECT LIMITS	

BY11

POINT	DESC.	NORTH	EAST	ELEVATION	Y11 STATION	OFFSET
66	BY11-66	945293.2710	1795462.9260	806.52	OUTSIDE PROJECT LIMITS	
113	BL-26	945376.4030	1795916.8760	790.20	OUTSIDE PROJECT LIMITS	

BY12

POINT	DESC.	NORTH	EAST	ELEVATION	Y12 STATION	OFFSET
67	BY12-67	947719.7580	1795439.2640	837.30	OUTSIDE PROJECT LIMITS	
114	BL-28	947756.2070	1795998.7320	829.67	15+56.55	40.83 RT
68	BY12-68	947860.0280	1796434.6360	840.35	20+02.51	22.95 RT

BY13

POINT	DESC.	NORTH	EAST	ELEVATION	Y13 STATION	OFFSET
69	BY13-69	950366.3380	1795858.3470	759.05	11+49.36	17.22 RT
5	U3326-5	950028.4940	1796631.8200	783.38	19+93.30	21.50 RT
115	BL-31	949835.8430	1796953.3550	806.89	23+61.43	80.31 RT
6	U3326-6	949636.6420	1797877.7370	789.97	32+98.80	19.60 LT
71	BY13-71	949490.1930	1798344.1150	784.67	OUTSIDE PROJECT LIMITS	

BY13A

POINT	DESC.	NORTH	EAST	ELEVATION	Y13A STATION	OFFSET
70	BY13A-70	950429.2690	1796462.8280	783.22	10+74.21	17.18 RT
116	U3326-5	950028.4940	1796631.8200	783.38	OUTSIDE PROJECT LIMITS	

BY14

POINT	DESC.	NORTH	EAST	ELEVATION	Y14 STATION	OFFSET
117	BL-32	950582.6300	1797661.3170	771.73	13+26.22	132.86 RT
72	BY14-72	950225.7680	1797844.7150	780.55	16+64.41	22.50 RT

BY15

POINT	DESC.	NORTH	EAST	ELEVATION	Y15 STATION	OFFSET
73	BY15-73	951579.2310	1798000.5670	748.73	10+09.27	16.62 LT
118	BL-33	951390.9290	1798405.8100	736.56	OUTSIDE PROJECT LIMITS	
74	BY15-74	950891.2040	1798562.8150	719.72	OUTSIDE PROJECT LIMITS	

BY15

POINT	DESC.	NORTH	EAST	ELEVATION	Y15A STATION	OFFSET
73	BY15-73	951579.2310	1798000.5670	748.73	OUTSIDE PROJECT LIMITS	
118	BL-33	951390.9290	1798405.8100	736.56	10+26.34	50.33 LT
74	BY15-74	950891.2040	1798562.8150	719.72	OUTSIDE PROJECT LIMITS	

BY16

POINT	DESC.	NORTH	EAST	ELEVATION	Y16 STATION	OFFSET
75	BY16-75	952883.7410	1799062.3330	729.05	OUTSIDE PROJECT LIMITS	
119	BL-35	952563.1660	1799376.8550	727.54	OUTSIDE PROJECT LIMITS	
76	BY16A-76	952369.8700	1799608.0850	737.00	OUTSIDE PROJECT LIMITS	

BY16A

POINT	DESC.	NORTH	EAST	ELEVATION	Y16A STATION	OFFSET
120	BL-35	952563.1660	1799376.8550	727.54	10+32.18	31.18 LT
77	BY16A-77	952135.9240	1799317.1820	759.10	OUTSIDE PROJECT LIMITS	

BY17

POINT	DESC.	NORTH	EAST	ELEVATION	Y17 STATION	OFFSET
78	BY17-78	954545.9670	1799896.1670	716.22	10+10.36	20.19 LT
79	BY17-79	954660.5510	1800308.4480	744.20	14+35.43	16.81 LT
121	BL-37	954751.1960	1800521.9230	739.26	16+49.46	96.31 LT
80	BY17-80	954683.5450	1800741.3370	758.49	18+67.24	23.57 LT
81	BY17-81	954755.3680	1801192.2490	778.97	OUTSIDE PROJECT LIMITS	

BY18

POINT	DESC.	NORTH	EAST	ELEVATION	Y18 STATION	OFFSET
82	BY18-82	955800.2350	1800565.7250	765.53	OUTSIDE PROJECT LIMITS	
83	BY18-83	955553.5030	1800899.3330	770.93	10+50.33	23.06 LT
122	BL-38	955397.2940	1800981.9060	771.91	12+17.41	34.41 RT

BY19

POINT	DESC.	NORTH	EAST	ELEVATION	Y19 STATION	OFFSET
123	BL-38	955397.2940	1800981.9060	771.91	OUTSIDE PROJECT LIMITS	
84	BY19-84	955123.3640	1801106.8700	787.16	12+98.23	20.19 LT

BY20

POINT	DESC.	NORTH	EAST	ELEVATION	Y20 STATION	OFFSET
124	BL-39	955888.9900	1801508.7010	789.05	11+02.11	161.40 RT
85	BY20-85	955677.3290	1801680.9090	790.69	13+05.66	20.33 LT

BY21

POINT	DESC.	NORTH	EAST	ELEVATION	Y21 STATION	OFFSET
86	BY21-86	958610.6120	1803118.4110	754.86	10+08.74	21.76 RT
87	BY21-87	958084.7440	1803244.0340	758.11	15+46.95	9.70 RT
125	BL-42	957420.2260	1803564.0600	766.40	22+82.18	60.59 LT
88	BY21-88	956942.3530	1803641.2690	781.56	27+54.13	24.92 LT
89	BY21-89	956428.7670	1803593.7280	781.53	OUTSIDE PROJECT LIMITS	

BY21A

POINT	DESC.	NORTH	EAST	ELEVATION	Y21A STATION	OFFSET
90	BY21A-90	958530.9030	1803416.6190	761.18	OUTSIDE PROJECT LIMITS	
126	BY21-87	958084.7440	1803244.0340	758.11	OUTSIDE PROJECT LIMITS	

BY22

POINT	DESC.	NORTH	EAST	ELEVATION	Y22 STATION	OFFSET
8	U3326-8	958630.8040	1805001.0220	716.10	OUTSIDE PROJECT LIMITS	
127	BL-44	957994.7920	1805243.1440	726.40	16+40.65	76.65 RT
7	U3326-7	957538.7020	1805549.9270	731.06	21+87.01	50.15 RT

BENCHMARK DATA

BM1 ELEVATION = 800.58
N 934290 E 1802927
L STATION 10+00
N 74° 48′ 57.7" E DIST 355.82
R/R SPIKE IN BASE OF 22" WHITE OAK

BM2 ELEVATION = 809.21
N 934120 E 1801240
L STATION 23+03 213 LEFT
R/R SPIKE IN BASE OF 10" TWIN PEAR

BM3 ELEVATION = 811.82
N 935304 E 1799675
L STATION 42+35 153 RIGHT
R/R SPIKE IN BASE OF 15" POPLAR

BM4 ELEVATION = 823.77
N 936715 E 1798515
L STATION 61+29 122 RIGHT
R/R SPIKE IN BASE OF 16" RED OAK

BM5 ELEVATION = 810.73
N 938426 E 1797584
L STATION 80+76 125 RIGHT
R/R SPIKE IN BASE OF 14" TWIN WHITE OAK

BM6 ELEVATION = 819.84
N 940314 E 1796527
L STATION 102+40 103 RIGHT
R/R SPIKE IN BASE OF 12" POPLAR

BM7 ELEVATION = 847.64
N 941700 E 1795608
L STATION 118+40 229 LEFT
R/R SPIKE IN BASE OF 6" WILLOW OAK

BM8 ELEVATION = 809.51
N 944251 E 1796068
L STATION 143+65 207 RIGHT
"X" IN BACK OF CONCRETE CURB

BM9 ELEVATION = 786.08
N 944886 E 1796034
L STATION 149+98 154 RIGHT
R/R SPIKE IN BASE OF 24" POPLAR

BM10 ELEVATION = 800.93
N 946459 E 1796157
L STATION 165+74 230 RIGHT
R/R SPIKE IN BASE OF 16" ASH

BM11 ELEVATION = 815.01
N 948377 E 1796209
L STATION 185+33 150 RIGHT
R/R SPIKE IN BASE OF 14" POPLAR

BM12 ELEVATION = 758.56
N 937949 E 1797723
L STATION 75+91 19 RIGHT
R/R SPIKE IN BASE OF 14" POPLAR

BM13 ELEVATION = 710.41
N 951368 E 1798543
L STATION 224+40 144 RIGHT
R/R SPIKE IN BASE OF 24" POPLAR

BM14 ELEVATION = 737.97
N 952388 E 1799737
L STATION 239+27 436 RIGHT
R/R SPIKE IN BASE OF 15" PINE

BM15 ELEVATION = 724.27
N 953008 E 1799081
L STATION 241+12 447 LEFT
R/R SPIKE IN BASE OF 14" RED OAK

BM16 ELEVATION = 712.03
N 953704 E 1799780
L STATION 250+74 172 LEFT
R/R SPIKE IN BASE OF 24" RED OAK

BM17 ELEVATION = 711.22
N 954539 E 1799793
Y17 STATION 10+00
N 81° 16′ 12.8" W DIST 101.06
R/R SPIKE IN BASE OF 24" POPLAR

BM18 ELEVATION = 754.02
N 954544 E 1800732
Y17 STATION 18+55 116 RIGHT
R/R SPIKE IN BASE OF 40" TWIN POPLAR

BM19 ELEVATION = 790.15
N 955711 E 1801504
L STATION 277+32 105 RIGHT
R/R SPIKE IN BASE OF 28" POPLAR

BM20 ELEVATION = 750.19
N 956899 E 1802756
L STATION 294+62 97 RIGHT
R/R SPIKE IN BASE OF 16" PINE

BM21 ELEVATION = 784.11
N 956309 E 1803679
Y21 STATION 32+38
S 23° 46′ 26.7" E DIST 167.33
"X" IN CORNER OF CONCRETE WALK

BM22 ELEVATION = 740.73
N 958933 E 1803062
Y21 STATION 10+00
N 13° 58′ 47.2" W DIST 320.90
R/R SPIKE IN BASE OF 42" POPLAR

BM23 ELEVATION = 748.73
N 957410 E 1805830
Y22 STATION 21+99
S 57° 45′ 10.2" E DIST 273.85
R/R SPIKE IN BASE OF 14" WHITE OAK

BM24 ELEVATION = 731.80
N 958701 E 1805030
Y22 STATION 10+00
N 22° 35′ 42.1" E DIST 126.56
R/R SPIKE IN BASE OF 9" RED OAK

BM25 ELEVATION = 727.23
N 958334 E 1805725
L STATION 327+96 127 LEFT
R/R SPIKE IN BASE OF 15" PINE

BM26 ELEVATION = 773.23
N 958616 E 1806701
L STATION 59+28 23605 LEFT
R/R SPIKE IN BASE OF 20" SWEET GUM

BM27 ELEVATION = 762.46
N 950267 E 1795890
Y13 STATION 12+18 96 RIGHT
R/R SPIKE IN BASE OF 10" ELM

BM28 ELEVATION = 792.22
N 949344 E 1798290
Y13 STATION 36+03
S 34° 27′ 08.7" E DIST 223.81
R/R SPIKE IN BASE OF 24" MAPLE

BM29 ELEVATION = 840.89
N 947829 E 1796505
Y12 STATION 20+10
S 50° 39′ 29.3" E DIST 86.91
R/R SPIKE IN BASE OF 20" RED OAK

BM30 ELEVATION = 833.98
N 947613 E 1795258
Y12 STATION 10+00
S 64° 32′ 13.7" W DIST 206.19
R/R SPIKE IN BASE OF 16" WHITE PINE

BM31 ELEVATION = 821.52
N 941004 E 1794835
Y10 STATION 13+06 99 RIGHT
R/R SPIKE IN BASE OF 12" ASH

BM32 ELEVATION = 813.84
N 935492 E 1801406
Y1 STATION 25+13
N 26° 24′ 56.1" W DIST 720.78
R/R SPIKE IN BASE OF 32" RED OAK

BM33 ELEVATION = 821.47
N 933134 E 1802723
Y1 STATION 10+00
S 31° 37′ 16.7" E DIST 473.23
R/R SPIKE IN BASE OF 34" MAPLE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U3326-6"
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
NORTHING: 949,636.642(ft) EASTING: 1,797,877.737(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00002193
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U3326-6" TO -L- STATION 14+00.00 IS
S 15° 35′ 01″ E 16,027.52
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

Daniel W. Gardner 10/7/11

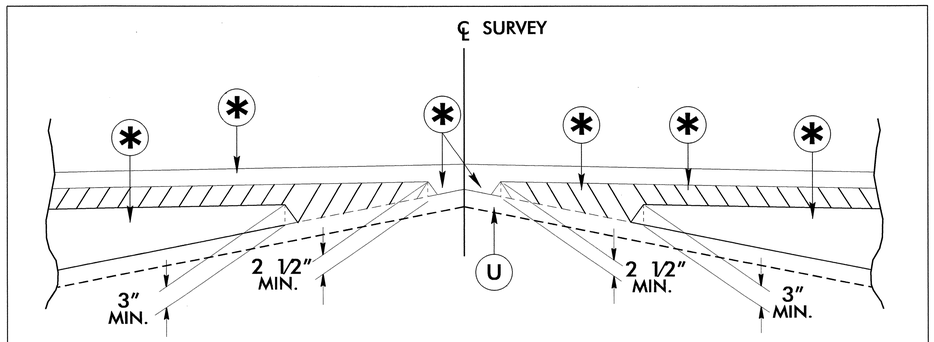
PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DONG-CHI CHEN

10/9/11

FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5½" IN DEPTH.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E5	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.	E6	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.
C4	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.	E7	PROP. VAR. DEPTH ASPHALT CONCRETE BASE 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" OR GREATER THAN 5½" IN DEPTH.
C5	PROP. VAR. DEPTH ASPHALT CONCRETE 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.	J	PROP. 8" AGGREGATE BASE COURSE
C6	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YARD.
C7	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R1	1'-6" CONCRETE CURB AND GUTTER
C8	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	R2	2'-6" CONCRETE CURB AND GUTTER
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R4	4'-0" EXPRESSWAY GUTTER
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2½" OR GREATER THAN 4" IN DEPTH.	S	4" CONCRETE SIDEWALK
D4	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	T	EARTH MATERIAL
D5	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
D6	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2½" OR GREATER THAN 4" IN DEPTH.	V1	MILLING EXISTING ASPHALT PAVEMENT, 0" TO 1½" DEPTH
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	V2	MILLING EXISTING ASPHALT PAVEMENT, 0" TO 3" DEPTH
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	W	VAR. DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).
E3	PROP. APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.		



Detail Showing Method of Wedging

✱NOTE: FOR PAVEMENT TYPES AND DEPTHS SEE RELEVANT TYPICAL SECTION

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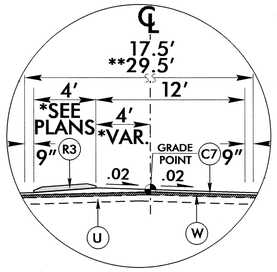
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-A

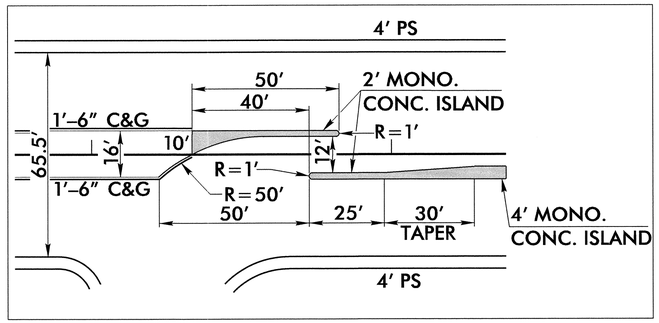
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 13369 ENGINEER CHI CHEN
10/7/11

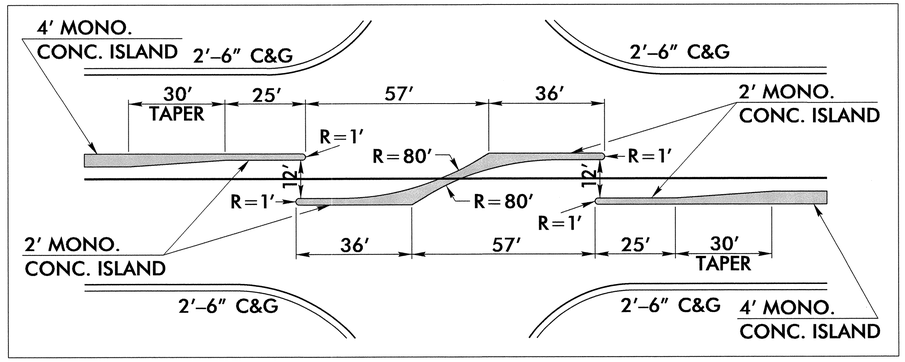


USE WITH TYPICAL SECTION NO. 2 AND 6
MEDIAN DETAIL REVERSE FOR SOUTHBOUND TURN LANE

–L– STA. 16+71.00 TO STA. 23+80.00	*–L– STA. 138+77.00 TO STA. 139+27.00	*–L– STA. 234+12.00 TO STA. 234+62.00
*–L– STA. 33+78.00 TO STA. 34+28.00	–L– STA. 139+27.00 TO STA. 142+57.00	–L– STA. 234+62.00 TO STA. 237+92.00
–L– STA. 34+28.00 TO STA. 37+58.00	–L– STA. 143+47.00 TO STA. 146+77.00	–L– STA. 239+31.00 TO STA. 242+61.00
–L– STA. 38+51.00 TO STA. 41+81.00	*–L– STA. 146+77.00 TO STA. 147+27.00	*–L– STA. 242+61.00 TO STA. 244+78.00
*–L– STA. 41+81.00 TO STA. 42+31.00	*–L– STA. 150+53.00 TO STA. 151+03.00	–L– STA. 244+78.00 TO STA. 248+08.00
*–L– STA. 55+75.00 TO STA. 56+25.00	–L– STA. 151+03.00 TO STA. 154+33.00	–L– STA. 248+98.00 TO STA. 252+28.00
–L– STA. 56+25.00 TO STA. 59+00.00	–L– STA. 155+52.00 TO STA. 158+82.00	*–L– STA. 252+28.00 TO STA. 252+78.00
*–L– STA. 61+96.00 TO STA. 62+46.00	*–L– STA. 158+82.00 TO STA. 159+32.00	*–L– STA. 267+30.00 TO STA. 267+80.00
–L– STA. 62+46.00 TO STA. 65+76.00	*–L– STA. 163+75.00 TO STA. 164+25.00	–L– STA. 267+80.00 TO STA. 271+10.00
*–L– STA. 66+66.00 TO STA. 70+46.00	–L– STA. 164+25.00 TO STA. 167+55.00	–L– STA. 272+32.00 TO STA. 275+62.00
**–L– STA. 76+53.00 TO STA. 79+05.00	–L– STA. 168+45.00 TO STA. 171+75.00	*–L– STA. 275+62.00 TO STA. 276+12.00
*–L– STA. 79+05.00 TO STA. 80+33.57	*–L– STA. 171+75.00 TO STA. 172+25.00	*–L– STA. 280+22.00 TO STA. 280+72.00
–L– STA. 84+27.00 TO STA. 90+54.00	*–L– STA. 174+52.00 TO STA. 175+02.00	–L– STA. 280+72.00 TO STA. 284+02.00
–L– STA. 91+47.00 TO STA. 94+77.00	–L– STA. 175+02.00 TO STA. 178+32.00	–L– STA. 285+12.00 TO STA. 288+42.00
*–L– STA. 94+77.00 TO STA. 95+27.00	–L– STA. 179+84.00 TO STA. 183+14.00	*–L– STA. 288+42.00 TO STA. 288+92.00
*–L– STA. 128+56.00 TO STA. 129+06.00	*–L– STA. 183+14.00 TO STA. 183+64.00	*–L– STA. 311+31.00 TO STA. 311+81.00
–L– STA. 129+06.00 TO STA. 132+36.00	*–L– STA. 218+97.00 TO STA. 219+47.00	–L– STA. 311+81.00 TO STA. 313+51.00
–L– STA. 133+26.00 TO STA. 136+56.00	–L– STA. 219+47.00 TO STA. 222+22.00	–L– STA. 315+51.00 TO STA. 322+01.00
*–L– STA. 136+56.00 TO STA. 137+06.00	–L– STA. 224+08.00 TO STA. 226+83.00	–L– STA. 324+08.00 TO STA. 327+38.00
	*–L– STA. 226+83.00 TO STA. 227+33.00	*–L– STA. 327+38.00 TO STA. 327+88.00



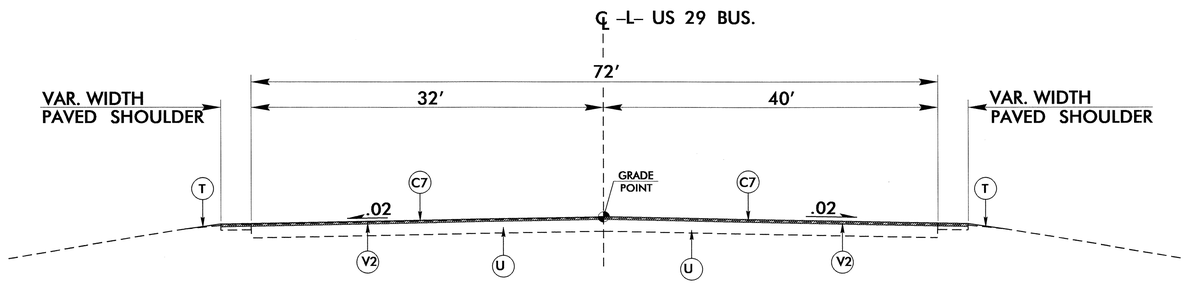
USE WITH TYPICAL SECTION NO. 2
–L– STA. 24+50.00 MEDIAN
–L– STA. 59+50.00 MEDIAN
–L– STA. 84+00.00 MEDIAN



USE WITH TYPICAL SECTION NO. 6
–L– STA. 223+15.00 MEDIAN
–L– STA. 314+50.00 MEDIAN

PAVEMENT SCHEDULE	
C1	1½″ SF9.5A
C2	3″ SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3″ S9.5B
C5	VAR. DEPTH S9.5B
C6	1½″ S9.5C
C7	3″ S9.5C
C8	VAR. DEPTH S9.5C
D1	2½″ I19.0B
D2	4″ I19.0B
D3	VAR. DEPTH I19.0B
D4	2½″ I19.0C
D5	4″ I19.0C
D6	VAR. DEPTH I19.0C
E1	4″ B25.0B
E2	5″ B25.0B
E3	8″ B25.0B
E4	VAR. DEPTH B25.0B
E5	5½″ B25.0C
E6	7″ B25.0C
E7	VAR. DEPTH B25.0C
J	8″ ABC
P	PRIME COAT
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MONO. ISLAND (KEYED IN)
R4	4′-0″ EXPRESSWAY GUTTER
S	4″ CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0″ TO 1½″ DEPTH
V2	MILLING 0″ TO 3″ DEPTH
W	VAR. DEPTH WEDGING

DETAIL AND LOCATIONS FOR CONCRETE MEDIAN ISLANDS (R3)



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS
–L– STA. 14+00.00 TO STA. 15+93.19

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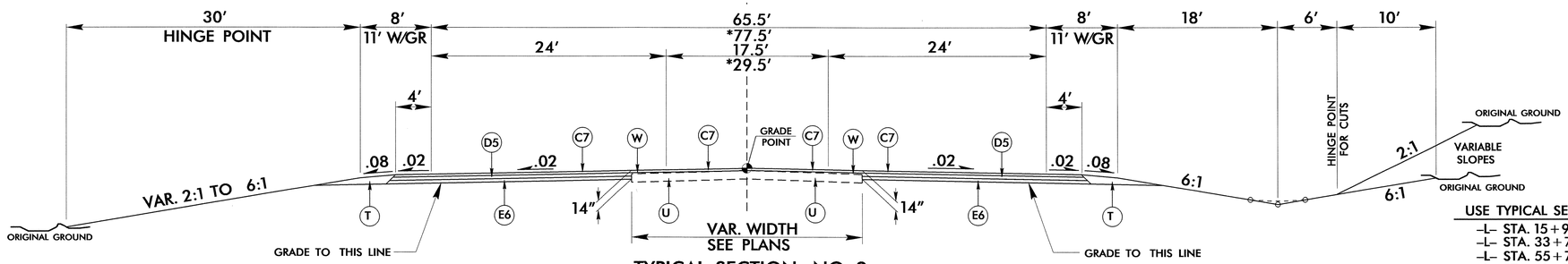
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-B

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER, III
10/7/11

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DAVID CHI CHEN
10/7/11

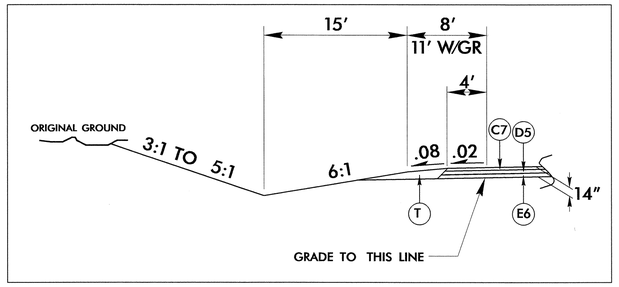
℄ –L– US 29 BUS.



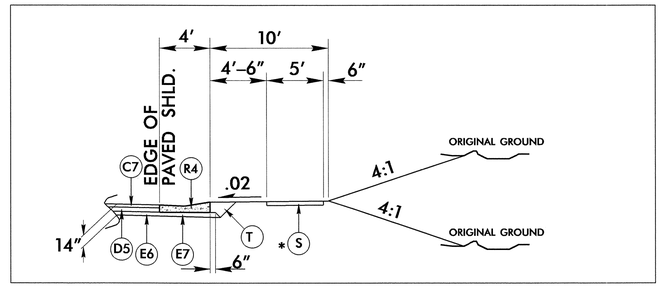
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS
–L– STA. 15+93.19 TO STA. 24+77.75
–L– STA. 33+78.00 TO STA. 42+31.00
–L– STA. 55+75.00 TO STA. 59+97.79
–L– STA. 61+96.00 TO STA. 66+65.00
*–L– STA. 75+03.00 TO STA. 79+05.00
–L– STA. 85+05.00 TO STA. 95+27.00

NOTE: TRANSITION FROM TYPICAL SECTION NO. 2 TO TYPICAL NO. 3
–L– STA. 66+65.00 TO STA. 72+65.00
NOTE: TRANSITION FROM 77.5′ WIDTH TO 65.5′ WIDTH
–L– STA. 79+05.00 TO STA. 85+05.00
NOTE: USE DETAIL ON SHEET 2–A INCONJUNCTION WITH TYPICAL SECTION NO. 2 FOR (R3) LOCATIONS



USE INSET A WITH TYPICAL SECTION NO. 2
–L– STA. 83+00.00 TO STA. 90+50.00 LT

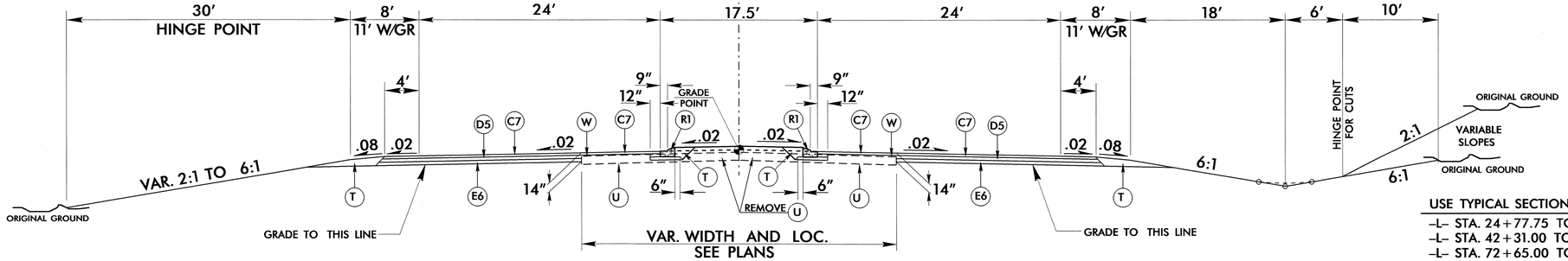


USE INSET B WITH TYPICAL SECTION NO. 2 AND 3
–L– STA. 38+50.00 TO STA. 41+00.00 RT
*–L– STA. 66+25.14 TO STA. 100+50.00 RT

NOTE: TRANSITION FROM INSET B TO INSET C
–L– STA. 100+50.00 TO STA 101+00.00

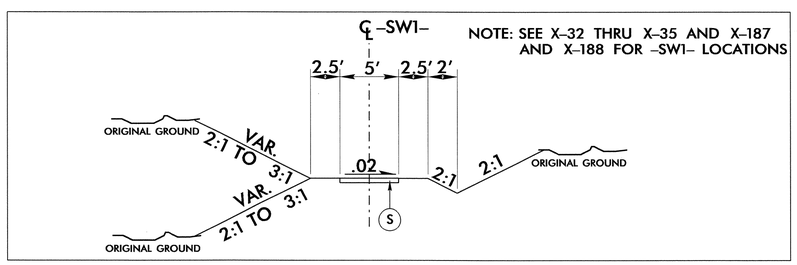
PAVEMENT SCHEDULE	
C1	1½″ SF9.5A
C2	3″ SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3″ S9.5B
C5	VAR. DEPTH S9.5B
C6	1½″ S9.5C
C7	3″ S9.5C
C8	VAR. DEPTH S9.5C
D1	2½″ I19.0B
D2	4″ I19.0B
D3	VAR. DEPTH I19.0B
D4	2½″ I19.0C
D5	4″ I19.0C
D6	VAR. DEPTH I19.0C
E1	4″ B25.0B
E2	5″ B25.0B
E3	8″ B25.0B
E4	VAR. DEPTH B25.0B
E5	5½″ B25.0C
E6	7″ B25.0C
E7	VAR. DEPTH B25.0C
J	8″ ABC
P	PRIME COAT
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MONO. ISLAND (KEYED IN)
R4	4′-0″ EXPRESSWAY GUTTER
S	4″ CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0″ TO 1½″ DEPTH
V2	MILLING 0″ TO 3″ DEPTH
W	VAR. DEPTH WEDGING

℄ –L– US 29 BUS.



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS
–L– STA. 24+77.75 TO STA. 28+00.00
–L– STA. 42+31.00 TO STA. 52+00.00
–L– STA. 72+65.00 TO STA. 75+03.00
–L– STA. 95+27.00 TO STA. 111+00.00
–L– STA. 122+00.00 TO STA. 126+85.00
–L– STA. 208+00.00 TO STA. 210+65.95 RT.



USE INSET C WITH TYPICAL SECTION NO. 3 AND 38
–L– STA. 101+00.00 TO STA. 102+16.00 RT.
–Y10RPC– STA. 10+00.00 TO STA. 18+00.00 RT.

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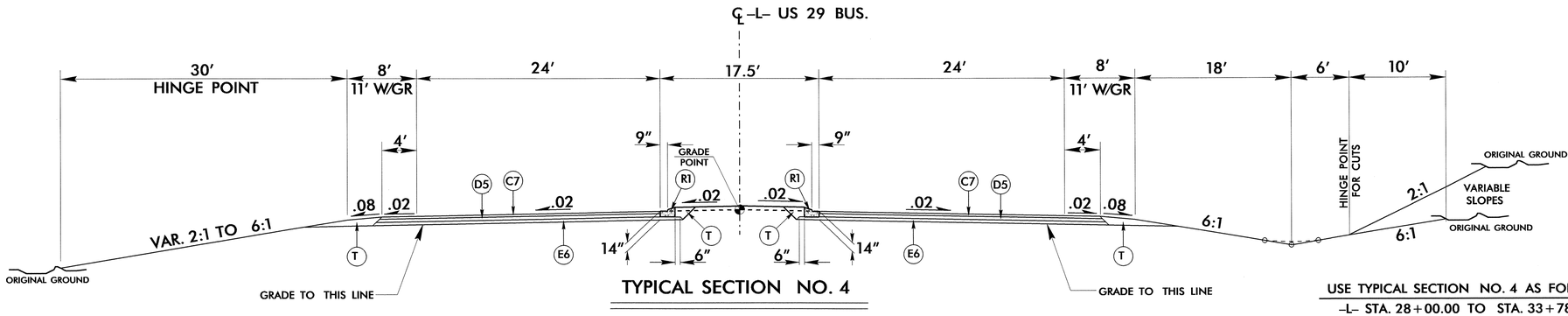
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-C

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

PAVEMENT DESIGN ENGINEER

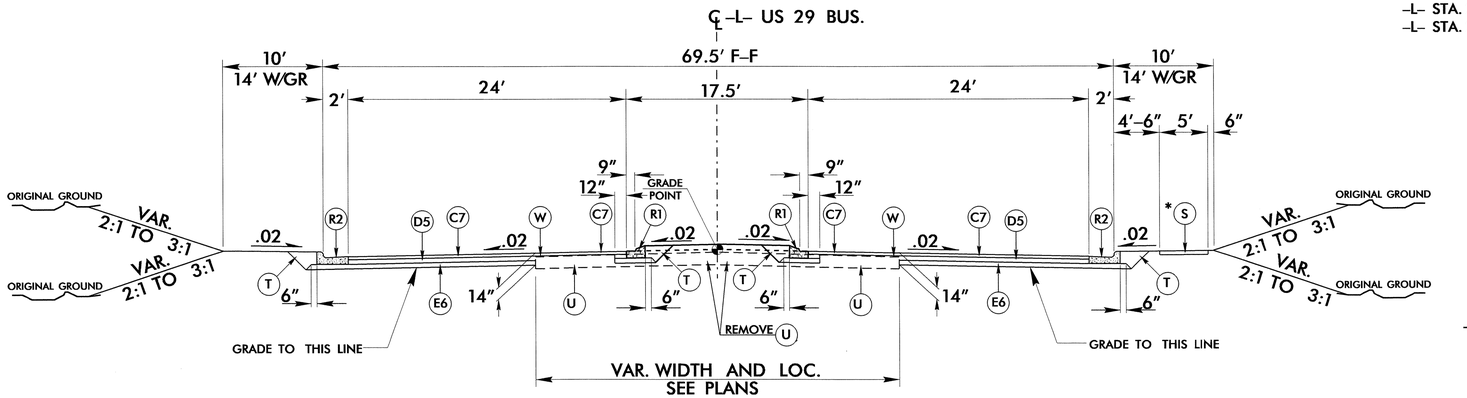
NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER CHI CHEN
10/7/11



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AS FOLLOWS

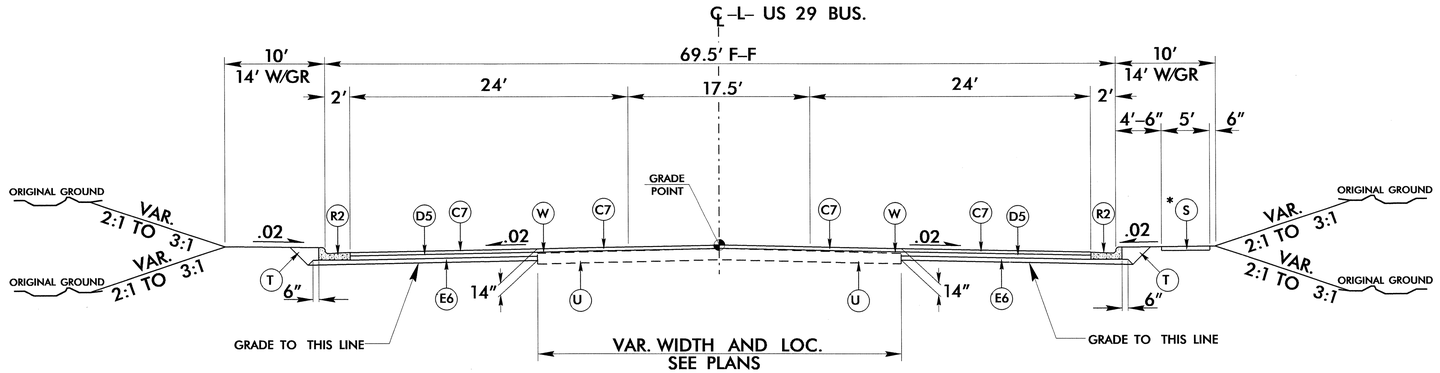
–L– STA. 28+00.00 TO STA. 33+78.00
–L– STA. 52+00.00 TO STA. 55+75.00
–L– STA. 59+97.79 TO STA. 61+96.00
–L– STA. 111+00.00 TO STA. 122+00.00
–L– STA. 193+15.99 TO STA. 201+18.27 LT.
–L– STA. 196+08.00 TO STA. 202+55.54 (BEGIN BRIDGE) RT.
–L– STA. 203+60.54 (END BRIDGE) TO STA. 208+00.00 RT.
–L– STA. 297+36.07 TO STA. 302+82.82 RT.
–L– STA. 298+41.41 TO STA. 303+18.69 LT.



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5 AS FOLLOWS

–L– STA. 126+85.00 TO STA. 128+56.00
*–L– STA. 137+06.00 TO STA. 138+77.00
*–L– STA. 147+27.00 TO STA. 150+53.00
*–L– STA. 172+25.00 TO STA. 174+52.00
–L– STA. 208+00.00 TO STA. 210+65.95 LT.
–L– STA. 210+65.95 TO STA. 218+97.00
–L– STA. 227+33.00 TO STA. 230+50.00
–L– STA. 233+00.00 TO STA. 234+12.00



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6 AS FOLLOWS

–L– STA. 128+56.00 TO STA. 134+18.00
*–L– STA. 134+18.00 TO STA. 137+06.00
*–L– STA. 138+77.00 TO STA. 147+27.00
*–L– STA. 150+53.00 TO STA. 159+32.00
*–L– STA. 163+75.00 TO STA. 172+25.00
*–L– STA. 174+52.00 TO STA. 178+98.83
–L– STA. 178+98.83 TO STA. 183+64.00
–L– STA. 218+97.00 TO STA. 227+33.00
–L– STA. 234+12.00 TO STA. 252+78.00
–L– STA. 267+30.00 TO STA. 276+12.00
–L– STA. 280+22.00 TO STA. 288+92.00
–L– STA. 311+31.00 TO STA. 327+88.00

NOTE: USE DETAIL ON SHEET 2–A INCONJUNCTION WITH TYPICAL SECTION NO. 6 FOR (R3) LOCATIONS

PAVEMENT SCHEDULE

C1	1½″ SF9.5A
C2	3″ SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3″ S9.5B
C5	VAR. DEPTH S9.5B
C6	1½″ S9.5C
C7	3″ S9.5C
C8	VAR. DEPTH S9.5C
D1	2½″ I19.0B
D2	4″ I19.0B
D3	VAR. DEPTH I19.0B
D4	2½″ I19.0C
D5	4″ I19.0C
D6	VAR. DEPTH I19.0C
E1	4″ B25.0B
E2	5″ B25.0B
E3	8″ B25.0B
E4	VAR. DEPTH B25.0B
E5	5½″ B25.0C
E6	7″ B25.0C
E7	VAR. DEPTH B25.0C
J	8″ ABC
P	PRIME COAT
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MONO. ISLAND (KEYED IN)
R4	4′-0″ EXPRESSWAY GUTTER
S	4″ CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0″ TO 1½″ DEPTH
V2	MILLING 0″ TO 3″ DEPTH
W	VAR. DEPTH WEDGING

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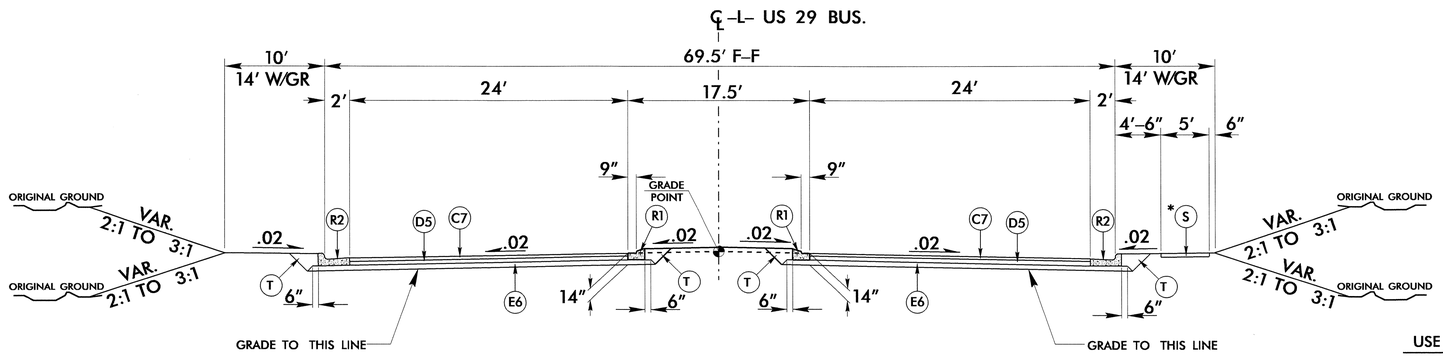
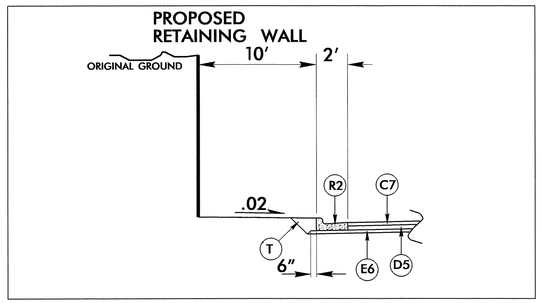
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-D

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR.
10/7/11

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DONG-CHI CHEN
10/9/11



TYPICAL SECTION NO. 7

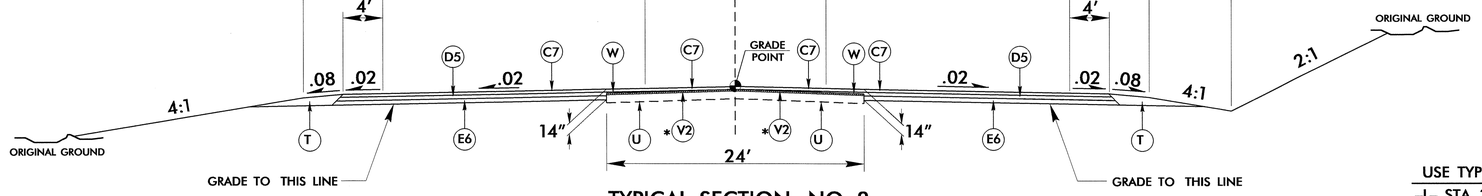


USE INSET D WITH TYPICAL SECTION NO. 7
–L– STA. 304+60.00 TO STA. 308+40.00 LT.

USE TYPICAL SECTION NO. 7 AS FOLLOWS

*–L– STA. 159+32.00 TO STA. 163+75.00
–L– STA. 183+64.00 TO STA. 193+15.99 LT.
–L– STA. 183+64.00 TO STA. 196+08.00 RT.
–L– STA. 201+18.27 TO STA. 202+48.46 (BEGIN BRIDGE) LT.
–L– STA. 203+53.46 (END BRIDGE) TO STA. 208+00.00 LT.
–L– STA. 230+50.00 TO STA. 233+00.00
–L– STA. 252+78.00 TO STA. 267+30.00
–L– STA. 276+12.00 TO STA. 280+22.00
–L– STA. 288+92.00 TO STA. 298+41.41 LT.
–L– STA. 288+92.00 TO STA. 297+36.07 RT.
–L– STA. 303+18.69 TO STA. 311+31.00 LT.
–L– STA. 302+82.82 TO STA. 311+31.00 RT.
–L– STA. 327+88.00 TO STA. 329+52.00

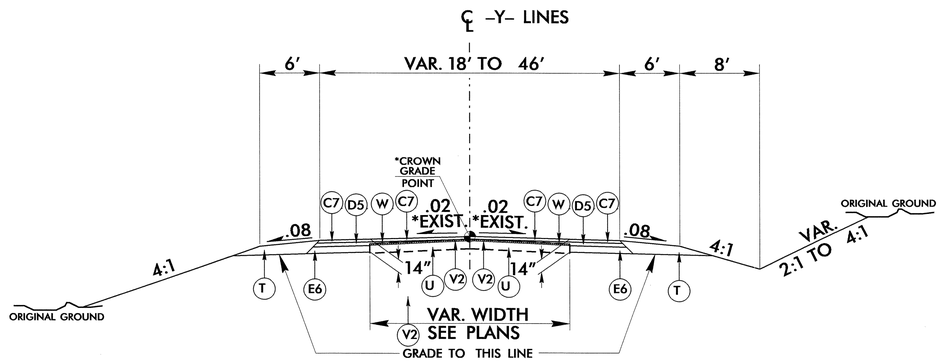
PAVEMENT SCHEDULE	
C1	1½″ SF9.5A
C2	3″ SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3″ S9.5B
C5	VAR. DEPTH S9.5B
C6	1½″ S9.5C
C7	3″ S9.5C
C8	VAR. DEPTH S9.5C
D1	2½″ I19.0B
D2	4″ I19.0B
D3	VAR. DEPTH I19.0B
D4	2½″ I19.0C
D5	4″ I19.0C
D6	VAR. DEPTH I19.0C
E1	4″ B25.0B
E2	5″ B25.0B
E3	8″ B25.0B
E4	VAR. DEPTH B25.0B
E5	5½″ B25.0C
E6	7″ B25.0C
E7	VAR. DEPTH B25.0C
J	8″ ABC
P	PRIME COAT
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MONO. ISLAND (KEYED IN)
R4	4′-0″ EXPRESSWAY GUTTER
S	4″ CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0″ TO 1½″ DEPTH
V2	MILLING 0″ TO 3″ DEPTH
W	VAR. DEPTH WEDGING



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8 AS FOLLOWS

–L– STA. 329+52.00 TO STA. 333+52.00
*–L– STA. 332+02.00 TO STA. 333+52.00



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9 AS FOLLOWS

*–Y2– STA. 11+05.00 TO STA. 11+75.00
–Y2– STA. 11+75.00 TO STA. 12+05.47
*–Y16– STA. 12+38.86 TO STA. 13+00.00
–Y16– STA. 13+00.00 TO STA. 13+10.73
–Y16A– STA. 11+06.94 TO STA. 11+20.00

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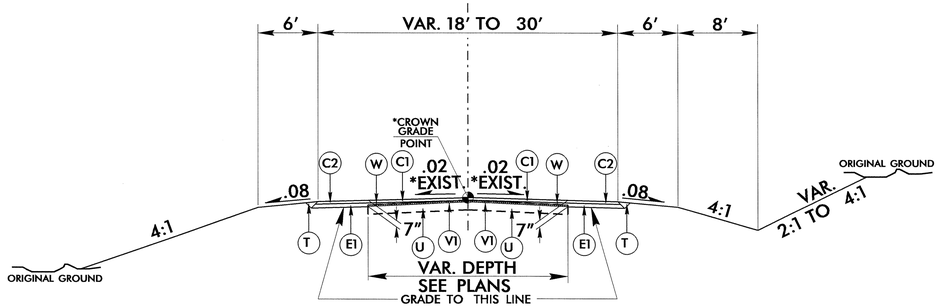
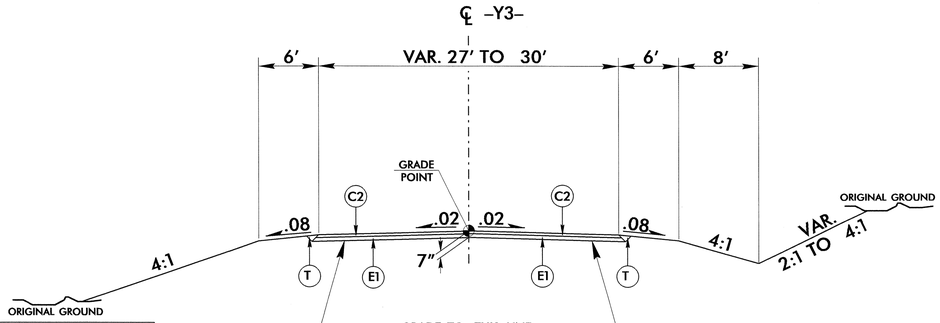
℄ –Y– LINES



TYPICAL SECTION NO. 10

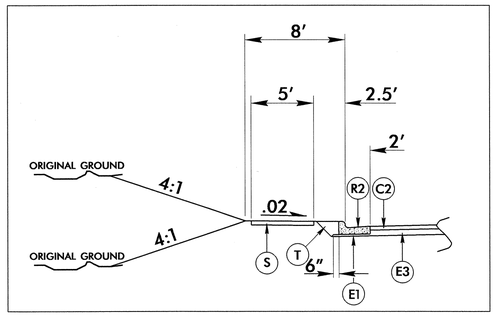
USE TYPICAL SECTION NO. 10 AS FOLLOWS
–Y3– STA. 11+50.00 TO STA. 12+25.00
*–Y11– STA. 11+25.00 TO STA. 12+00.00
–Y11– STA. 12+00.00 TO STA. 12+41.95
*–Y15– STA. 12+60.00 TO STA. 13+34.48
–Y19– STA. 11+04.17 TO STA. 12+05.00

℄ –Y3–



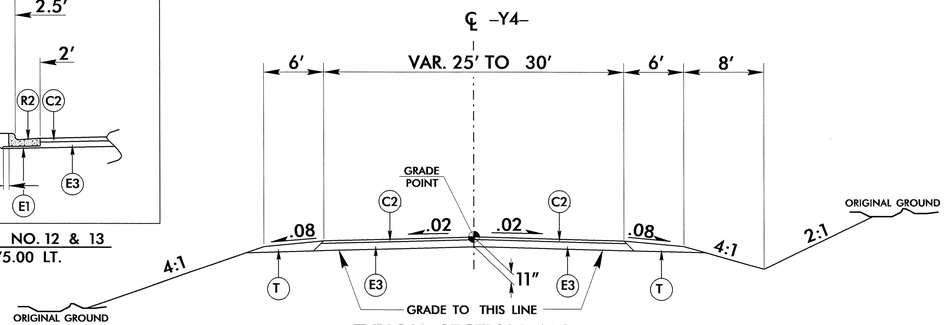
TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11 AS FOLLOWS
–Y3– STA. 12+25.00 TO STA. 12+72.87



USE INSET E WITH TYPICAL SECTION NO. 12 & 13
–Y4– STA. 11+51.48 TO STA. 12+75.00 LT.

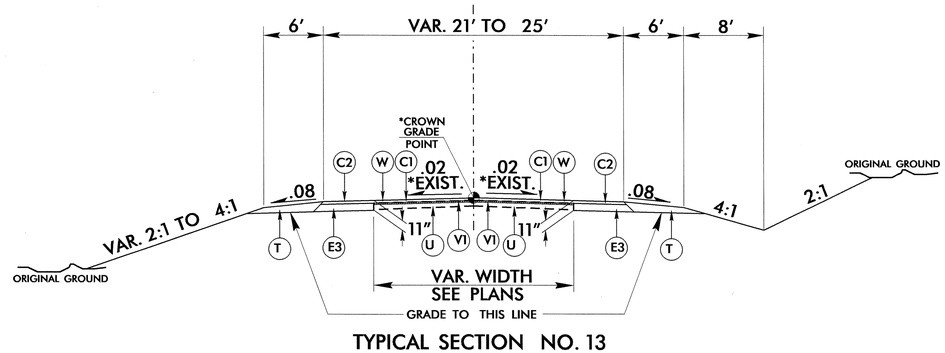
℄ –Y4–



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12 AS FOLLOWS
–Y4– STA. 11+51.48 TO STA. 12+25.00

℄ –Y4–



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13 AS FOLLOWS
–Y4– STA. 12+25.00 TO STA. 12+50.00
*–Y4– STA. 12+50.00 TO STA. 12+75.00

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-E

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DONG-CHI CHEN
10/9/11

PAVEMENT SCHEDULE

C1	1½″ SF9.5A
C2	3″ SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3″ S9.5B
C5	VAR. DEPTH S9.5B
C6	1½″ S9.5C
C7	3″ S9.5C
C8	VAR. DEPTH S9.5C
D1	2½″ I19.0B
D2	4″ I19.0B
D3	VAR. DEPTH I19.0B
D4	2½″ I19.0C
D5	4″ I19.0C
D6	VAR. DEPTH I19.0C
E1	4″ B25.0B
E2	5″ B25.0B
E3	8″ B25.0B
E4	VAR. DEPTH B25.0B
E5	5½″ B25.0C
E6	7″ B25.0C
E7	VAR. DEPTH B25.0C
J	8″ ABC
P	PRIME COAT
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MONO. ISLAND (KEYED IN)
R4	4′-0″ EXPRESSWAY GUTTER
S	4″ CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0″ TO 1½″ DEPTH
V2	MILLING 0″ TO 3″ DEPTH
W	VAR. DEPTH WEDGING

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-F

ROADWAY DESIGN ENGINEER

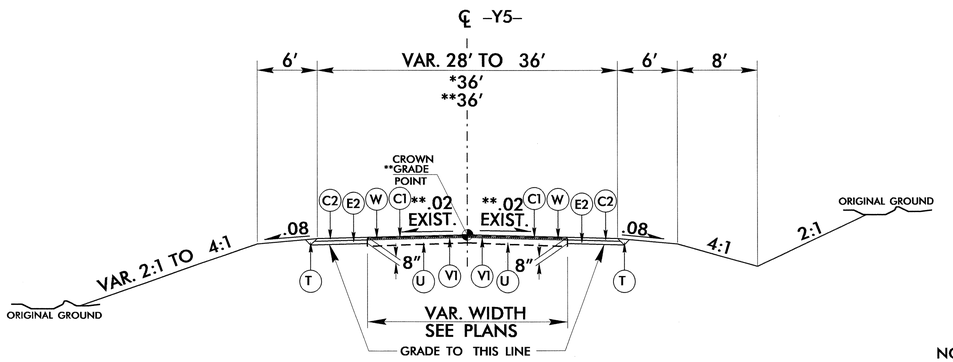
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

10/7/11

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER MONG-CHI CHEN

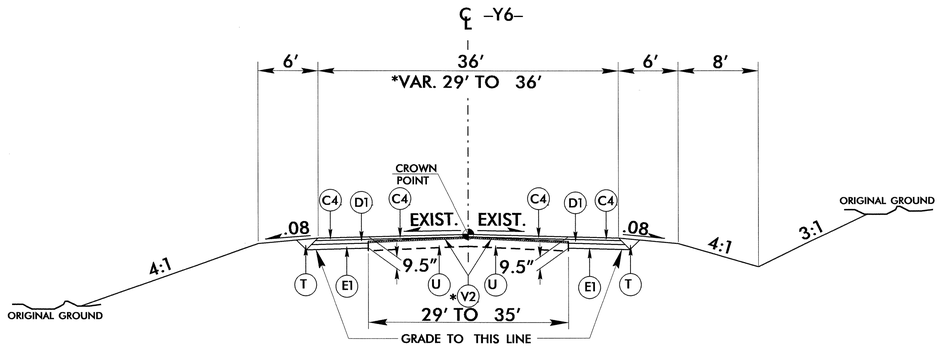
10/7/11



TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14 AS FOLLOWS
–Y5– STA. 11+00.00 TO STA. 13+10.00
*–Y5– STA. 13+10.00 TO STA. 14+00.00
**–Y5– STA. 14+00.00 TO STA. 14+47.64

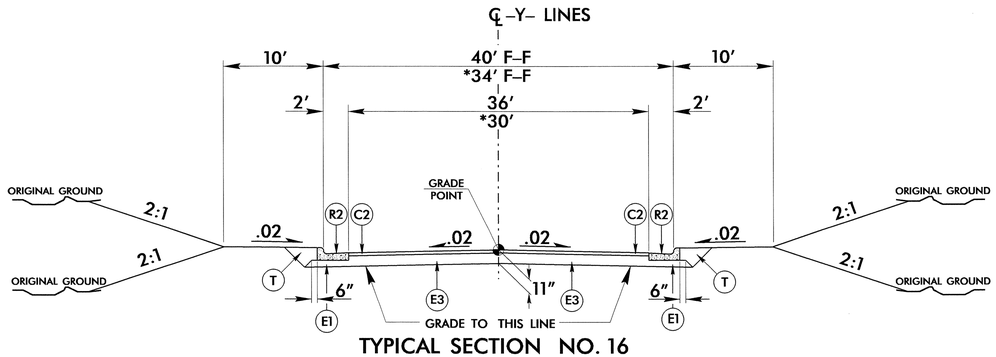
NOTE: MILL EXISTING PAVEMENT –Y5– STA. 11+00.00 TO STA. 11+75.00



TYPICAL SECTION NO. 15

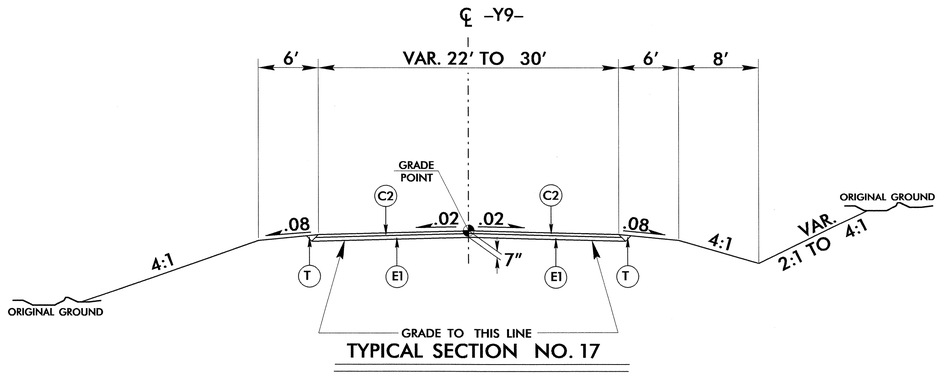
USE TYPICAL SECTION NO. 15 AS FOLLOWS
–Y6– STA. 11+22.67 TO STA. 12+25.00
*–Y6– STA. 12+25.00 TO STA. 13+75.00

PAVEMENT SCHEDULE	
C1	1½″ SF9.5A
C2	3″ SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3″ S9.5B
C5	VAR. DEPTH S9.5B
C6	1½″ S9.5C
C7	3″ S9.5C
C8	VAR. DEPTH S9.5C
D1	2½″ I19.0B
D2	4″ I19.0B
D3	VAR. DEPTH I19.0B
D4	2½″ I19.0C
D5	4″ I19.0C
D6	VAR. DEPTH I19.0C
E1	4″ B25.0B
E2	5″ B25.0B
E3	8″ B25.0B
E4	VAR. DEPTH B25.0B
E5	5½″ B25.0C
E6	7″ B25.0C
E7	VAR. DEPTH B25.0C
J	8″ ABC
P	PRIME COAT
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MONO. ISLAND (KEYED IN)
R4	4′-0″ EXPRESSWAY GUTTER
S	4″ CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0″ TO 1½″ DEPTH
V2	MILLING 0″ TO 3″ DEPTH
W	VAR. DEPTH WEDGING



TYPICAL SECTION NO. 16

USE TYPICAL SECTION NO. 16 AS FOLLOWS
–Y8– STA. 15+20.00 TO STA. 15+76.73
*–Y8A– STA. 10+52.63 TO STA. 24+38.36



TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17 AS FOLLOWS
–Y9– STA. 10+99.01 TO STA. 12+25.00

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-G

ROADWAY DESIGN ENGINEER

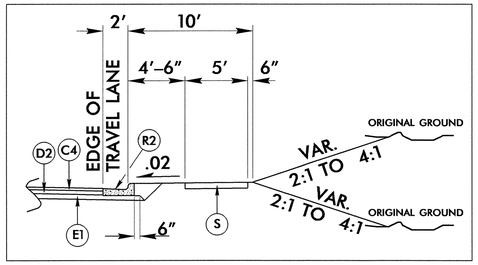
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

10/7/11

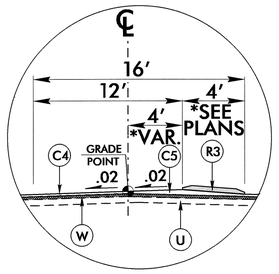
PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DONG CHI CHEN

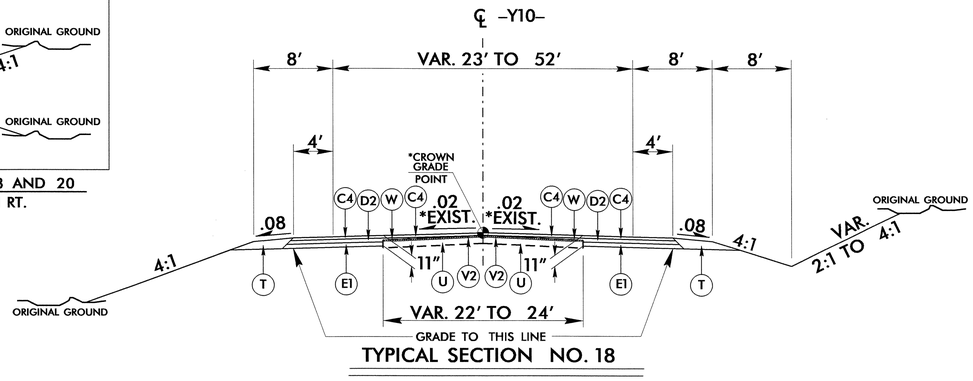
10/7/11



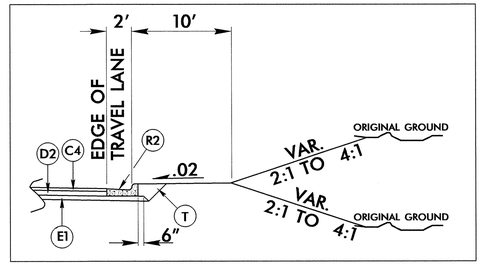
USE INSET F WITH TYPICAL SECTION NO. 18 AND 20
–Y10– STA. 28+56.03 TO STA. 31+44.61 RT.



USE INSET H WITH TYPICAL SECTION NO. 18 AND 20
MEDIAN DETAIL REVERSE FOR EASTBOUND TURN LANE
–Y10– STA. 22+60.00 TO STA. 23+64.10 (BEGIN BRIDGE)
–Y10– STA. 25+35.10 (END BRIDGE) TO STA. 25+97.81
*–Y10– STA. 25+97.81 TO STA. 27+85.00
*–Y10– STA. 28+68.00 TO STA. 32+18.00



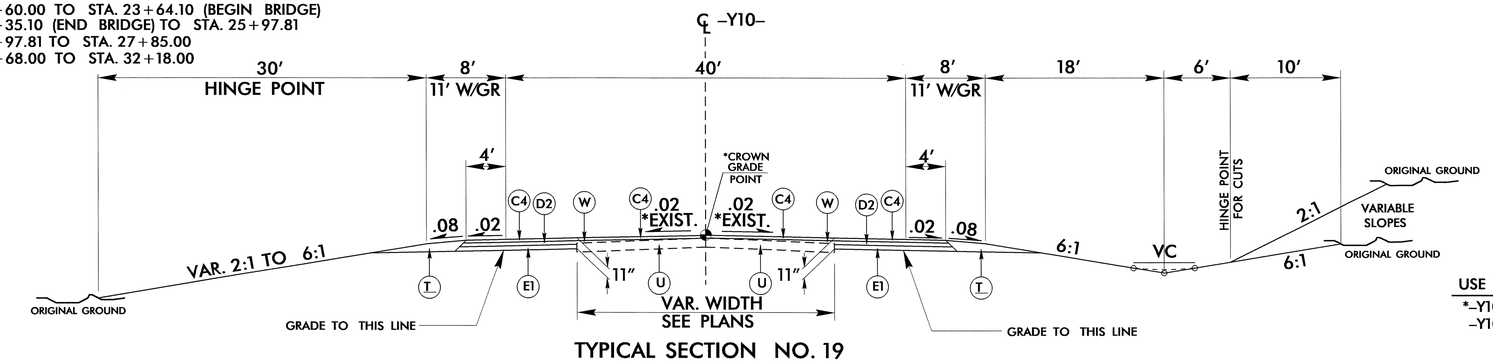
TYPICAL SECTION NO. 18



USE INSET G WITH TYPICAL SECTION NO. 18, 19, AND 20
–Y10– STA. 14+39.39 TO STA. 21+56.04 RT.

USE TYPICAL SECTION NO. 18 AS FOLLOWS
*–Y10– STA. 12+50.00 TO STA. 15+15.00
–Y10– STA. 29+16.00 TO STA. 32+00.00
*–Y10– STA. 32+00.00 TO STA. 33+16.00

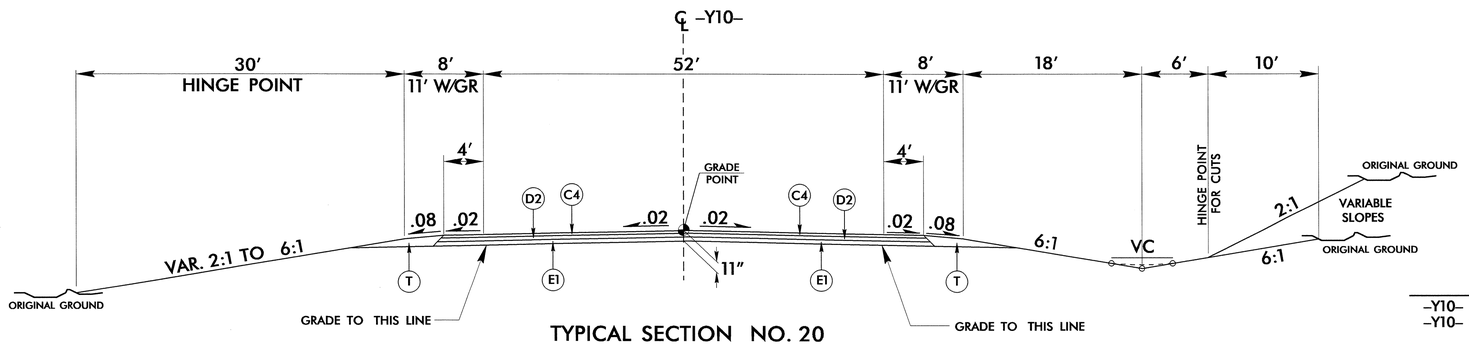
NOTE: MILL EXISTING PAVEMENT –Y10– STA. 12+50.00 TO STA. 14+00.00
AND –Y10– STA. 31+66.00 TO STA. 33+16.00



TYPICAL SECTION NO. 19

USE TYPICAL SECTION NO. 19 AS FOLLOWS
*–Y10– STA. 15+15.00 TO STA. 15+50.00
–Y10– STA. 15+50.00 TO STA. 17+11.04

NOTE: TRANSITION FROM 40' WIDTH TO 52' WIDTH
–Y10– STA. 17+11.04 TO STA. 19+56.04



TYPICAL SECTION NO. 20

USE TYPICAL SECTION NO. 20 AS FOLLOWS
–Y10– STA. 19+56.04 TO STA. 23+64.10 (BEGIN BRIDGE)
–Y10– STA. 25+35.10 (END BRIDGE) TO STA. 29+16.00

PAVEMENT SCHEDULE

C1	1½" SF9.5A
C2	3" SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3" S9.5B
C5	VAR. DEPTH S9.5B
C6	1½" S9.5C
C7	3" S9.5C
C8	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	4" B25.0B
E2	5" B25.0B
E3	8" B25.0B
E4	VAR. DEPTH B25.0B
E5	5½" B25.0C
E6	7" B25.0C
E7	VAR. DEPTH B25.0C
J	8" ABC
P	PRIME COAT
R1	1'-6" C & G
R2	2'-6" C & G
R3	5" MONO. ISLAND (KEYED IN)
R4	4'-0" EXPRESSWAY GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0" TO 1½" DEPTH
V2	MILLING 0" TO 3" DEPTH
W	VAR. DEPTH WEDGING

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-H

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

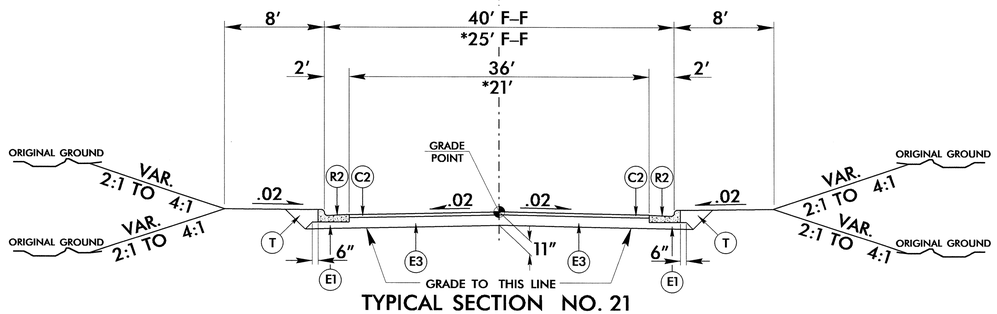
10/7/11

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DON-CHI CHEN

10/7/11

℄ –Y– LINES

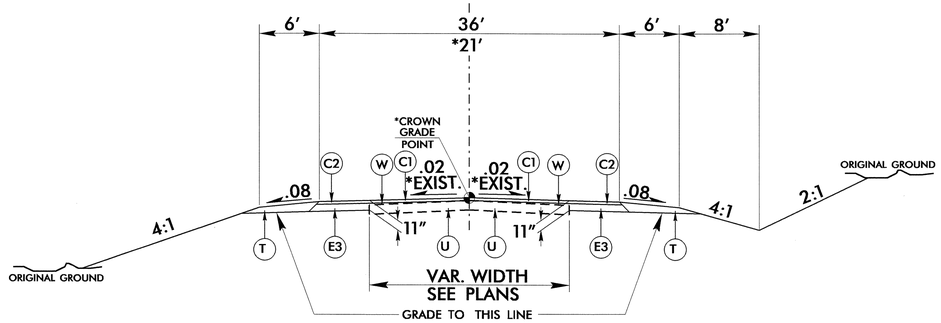


TYPICAL SECTION NO. 21

USE TYPICAL SECTION NO. 21 AS FOLLOWS

–Y10A– STA. 10+66.77 TO STA. 17+50.00
*–Y10F– STA. 10+49.23 TO STA. 10+88.00

℄ –Y– LINES



TYPICAL SECTION NO. 22

USE TYPICAL SECTION NO. 22 AS FOLLOWS

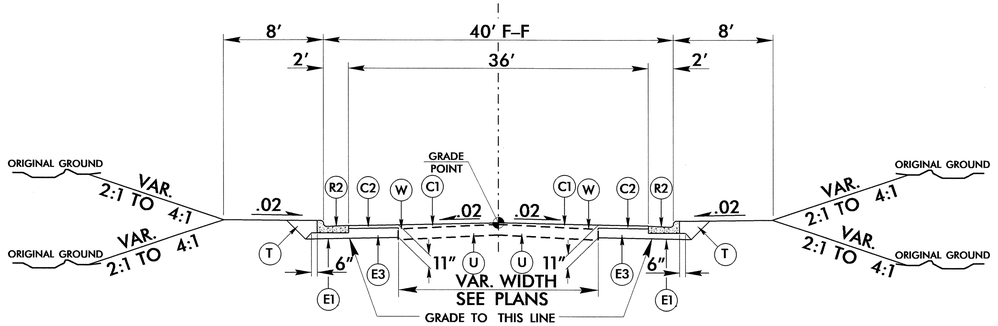
–Y10A– STA. 19+18.37 TO STA. 20+50.00
*–Y10C– STA. 10+80.00 TO STA. 10+85.02

NOTE: TRANSITION FROM TYPICAL SECTION NO. 22 TO EXISTING
–Y10A– STA. 20+50.00 TO STA. 22+00.00

(V1) NOTE: MILL EXISTING PAVEMENT –Y10C– STA. 10+80.00 TO STA. 11+30.00

PAVEMENT SCHEDULE	
C1	1½" SF9.5A
C2	3" SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3" S9.5B
C5	VAR. DEPTH S9.5B
C6	1½" S9.5C
C7	3" S9.5C
C8	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	4" B25.0B
E2	5" B25.0B
E3	8" B25.0B
E4	VAR. DEPTH B25.0B
E5	5½" B25.0C
E6	7" B25.0C
E7	VAR. DEPTH B25.0C
J	8" ABC
P	PRIME COAT
R1	1′-6" C & G
R2	2′-6" C & G
R3	5" MONO. ISLAND (KEYED IN)
R4	4′-0" EXPRESSWAY GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0" TO 1½" DEPTH
V2	MILLING 0" TO 3" DEPTH
W	VAR. DEPTH WEDGING

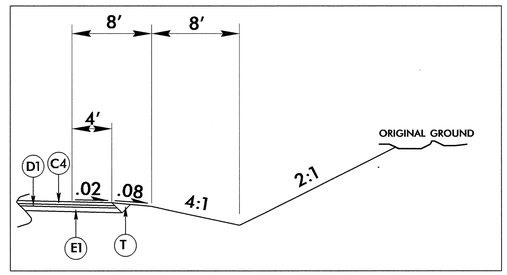
℄ –Y10A–



TYPICAL SECTION NO. 23

USE TYPICAL SECTION NO. 23 AS FOLLOWS

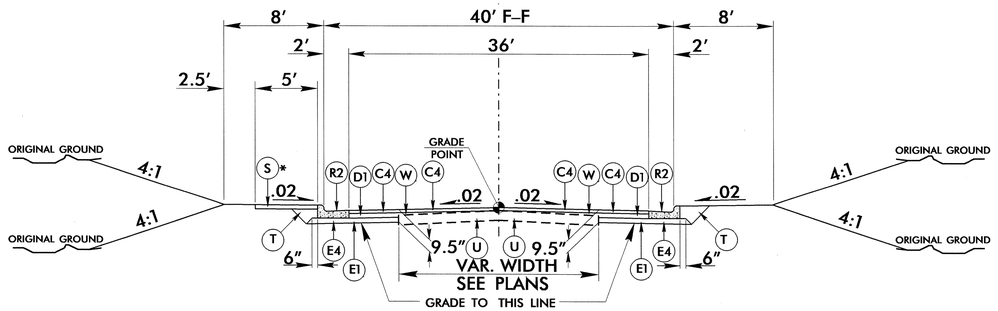
–Y10A– STA. 17+50.00 TO STA. 19+18.37



USE INSET 1 WITH TYPICAL SECTION NO. 24

–Y12– STA. 10+00.00 TO STA. 12+46.00 RT.

℄ –Y12–



TYPICAL SECTION NO. 24

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 24
–Y12– STA. 10+00.00 TO STA. 11+40.00

USE TYPICAL SECTION NO. 24 AS FOLLOWS

–Y12– STA. 11+40.00 TO STA. 14+21.34
–Y12– STA. 16+45.96 TO STA. 20+25.00
*–Y12– STA. 19+49.18 TO STA. 20+26.60 LT.

NOTE: TRANSITION FROM TYPICAL SECTION NO. 24 TO EXISTING
–Y12– STA. 20+25.00 TO STA. 20+80.00

(V2) NOTE: MILL EXISTING PAVEMENT –Y12– STA. 10+00.00 TO STA. 11+50.00 AND –Y12– STA. 19+30.00 TO STA. 20+80.00

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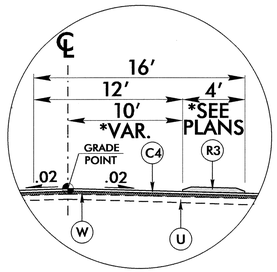
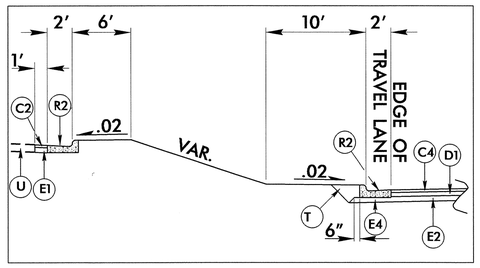
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-1

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

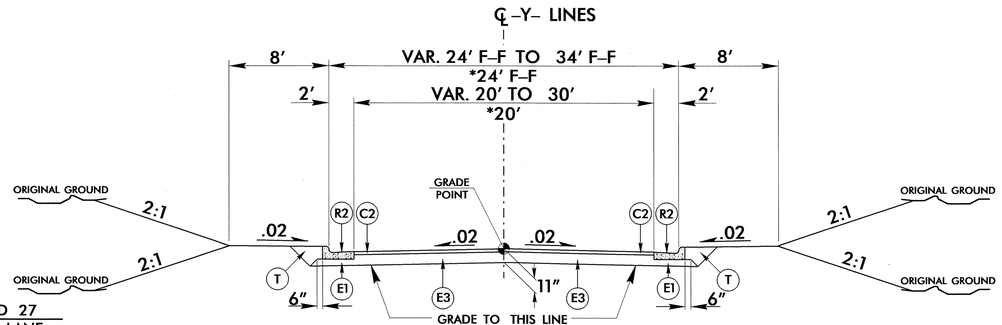
PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DOUG-CHI CHEN
10/7/11



USE INSET J WITH TYPICAL SECTION NO. 26 AND 27
MEDIAN DETAIL REVERSE FOR EASTBOUND TURN LANE
–Y13– STA. 14+73.00 TO STA. 16+00.00
*–Y13– STA. 16+00.00 TO STA. 17+85.00
–Y13– STA. 18+97.00 TO STA. 21+80.00
*–Y13– STA. 21+80.00 TO STA. 25+90.00
*–Y13– STA. 26+64.00 TO STA. 29+28.00



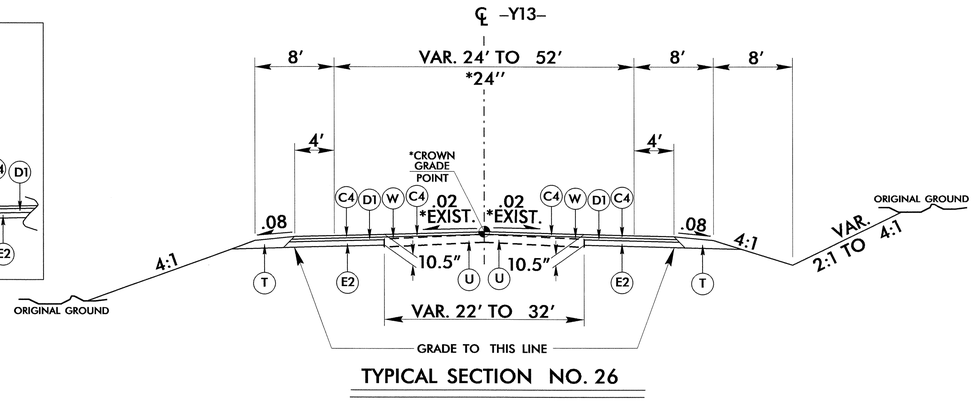
USE INSET K WITH TYPICAL SECTION NO. 27
–Y13– STA. 14+73.26 TO STA. 15+50.00 LT.



TYPICAL SECTION NO. 25

USE TYPICAL SECTION NO. 25 AS FOLLOWS
–Y12B– STA. 10+78.99 TO STA. 12+80.00
*–Y12C– STA. 10+51.23 TO STA. 14+59.12
*–Y14– STA. 10+00.00 TO STA. 13+00.00
–Y14C– STA. 10+00.00 TO STA. 10+55.88

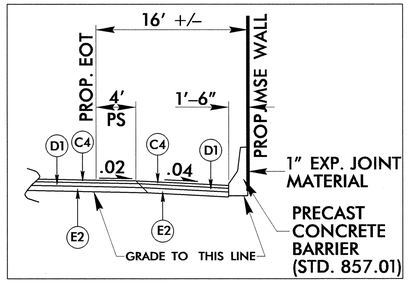
NOTE: TRANSITION FROM TYPICAL SECTION NO. 25 TO EXISTING
–Y14– STA. 13+00.00 TO STA. 13+50.00



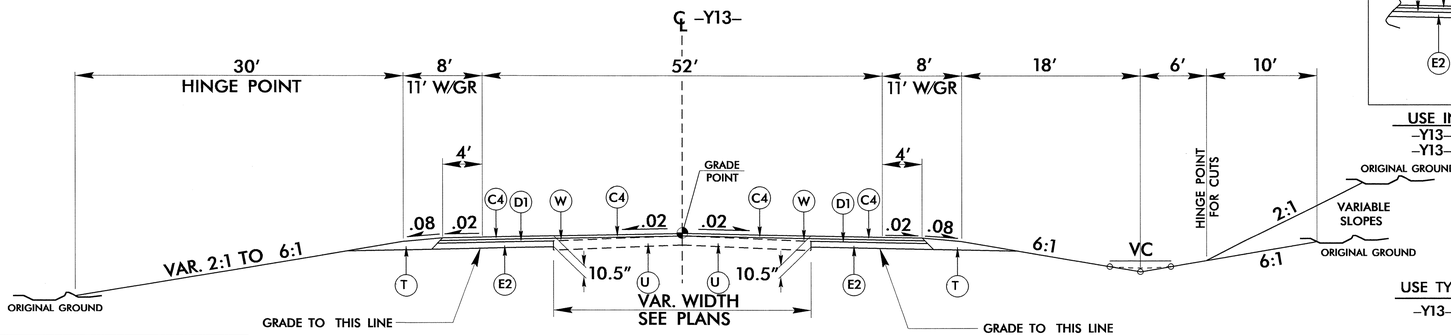
TYPICAL SECTION NO. 26

(V2) NOTE: MILL EXISTING PAVEMENT –Y13– STA. 8+50.00 TO STA. 10+00.00 AND –Y13– STA. 34+00.00 TO STA. 35+50.00

USE TYPICAL SECTION NO. 26 AS FOLLOWS
*–Y13– STA. 8+50.00 TO STA. 8+70.00
–Y13– STA. 8+70.00 TO STA. 14+70.00
–Y13– STA. 29+30.00 TO STA. 35+50.00

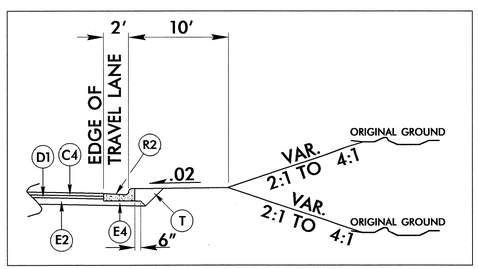


USE INSET L WITH TYPICAL SECTION NO. 27
–Y13– STA. 22+32.00 TO STA. 24+14.00 RT.
–Y13– STA. 22+74.00 TO STA. 24+44.00 LT.

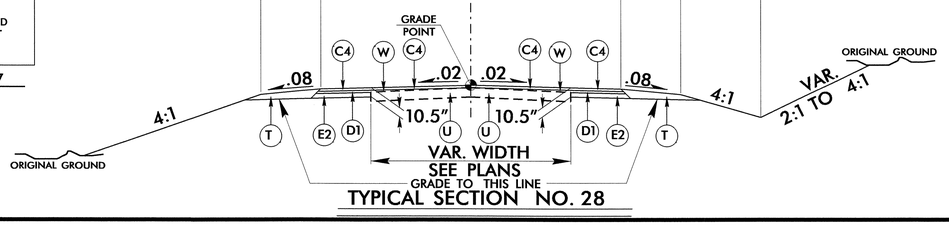


TYPICAL SECTION NO. 27

USE TYPICAL SECTION NO. 27 AS FOLLOWS
–Y13– STA. 14+70.00 TO STA. 29+30.00



USE INSET M WITH TYPICAL SECTION NO. 26 AND 27
–Y13– STA. 14+51.84 TO STA. 18+11.76 LT.



TYPICAL SECTION NO. 28

USE TYPICAL SECTION NO. 28 AS FOLLOWS
–Y13A– STA. 13+00.00 TO STA. 13+31.45

PAVEMENT SCHEDULE

C1	1½″ SF9.5A
C2	3″ SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3″ S9.5B
C5	VAR. DEPTH S9.5B
C6	1½″ S9.5C
C7	3″ S9.5C
C8	VAR. DEPTH S9.5C
D1	2½″ I19.0B
D2	4″ I19.0B
D3	VAR. DEPTH I19.0B
D4	2½″ I19.0C
D5	4″ I19.0C
D6	VAR. DEPTH I19.0C
E1	4″ B25.0B
E2	5″ B25.0B
E3	8″ B25.0B
E4	VAR. DEPTH B25.0B
E5	5½″ B25.0C
E6	7″ B25.0C
E7	VAR. DEPTH B25.0C
J	8″ ABC
P	PRIME COAT
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MONO. ISLAND (KEYED IN)
R4	4′-0″ EXPRESSWAY GUTTER
S	4″ CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0″ TO 1½″ DEPTH
V2	MILLING 0″ TO 3″ DEPTH
W	VAR. DEPTH WEDGING

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-J

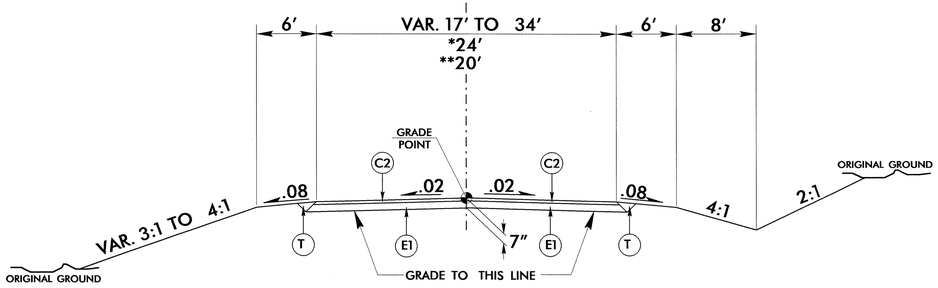
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER 10/7/11

PAVEMENT DESIGN ENGINEER

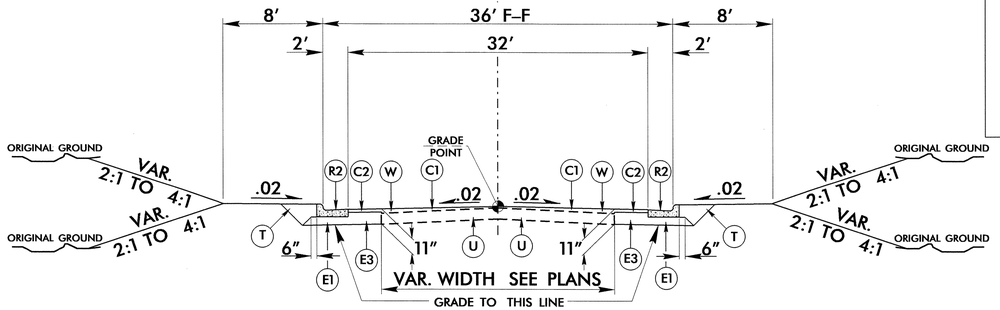
NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DAVID CHI CHEN 10/7/11

℄ –Y– LINES

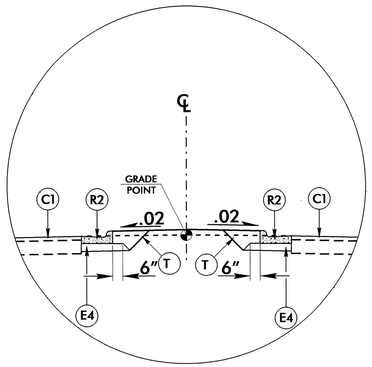


TYPICAL SECTION NO. 29

℄ –Y17–

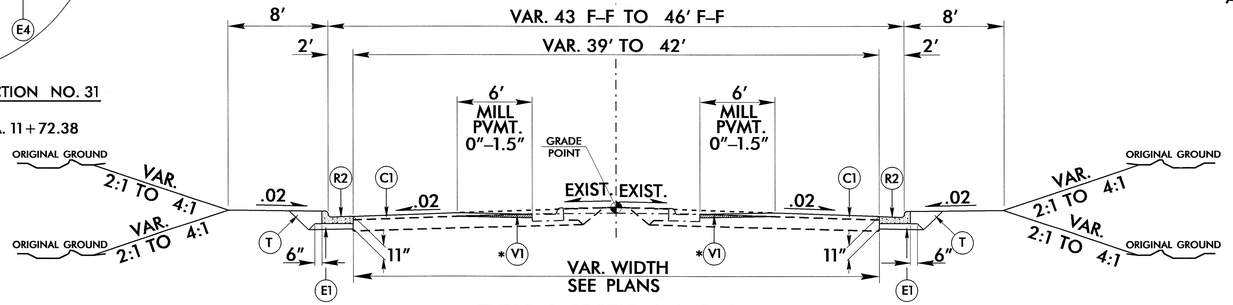


TYPICAL SECTION NO. 30



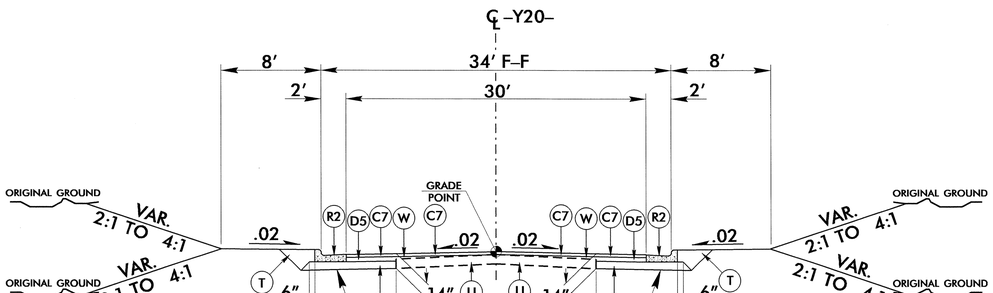
USE INSET O WITH TYPICAL SECTION NO. 31
MEDIAN DETAIL
–Y18– STA. 11+50.00 TO STA. 11+72.38

℄ –Y18–



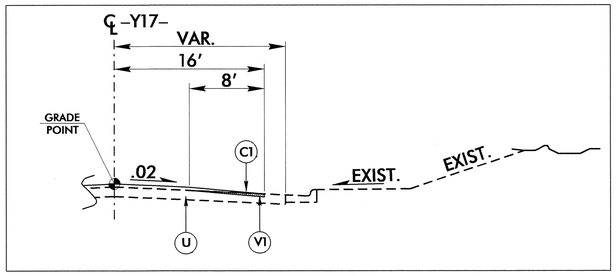
TYPICAL SECTION NO. 31

℄ –Y20–



TYPICAL SECTION NO. 32

USE TYPICAL SECTION NO. 29 AS FOLLOWS
**–Y13C– STA. 10+00.00 TO STA. 17+87.26
–Y15A– STA. 10+92.59 TO STA. 13+00.00
*–Y20A– STA. 10+63.00 TO STA. 11+71.10
**–Y20B– STA. 10+42.07 TO STA. 17+43.95



USE INSET N WITH TYPICAL SECTION NO. 30
–Y17– STA. 17+18.75 (END BRIDGE) TO STA. 17+75.00 RT.

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 30
–Y17– STA. 13+00.00 TO STA. 14+65.00

USE TYPICAL SECTION NO. 30 AS FOLLOWS
–Y17– STA. 14+65.00 TO STA. 15+31.75 (BEGIN BRIDGE)
–Y17– STA. 17+18.75 (END BRIDGE) TO STA. 17+75.00

NOTE: TRANSITION FROM TYPICAL SECTION NO. 30 TO EXISTING
–Y17– STA. 17+75.00 TO STA. 18+50.00

(V1) NOTE: MILL EXISTING PAVEMENT –Y17– STA. 13+00.00 TO STA. 13+75.00 AND –Y17– STA. 17+75.00 TO STA. 18+50.00

USE TYPICAL SECTION NO. 31 AS FOLLOWS
–Y18– STA. 11+00.00 TO STA. 11+72.38
*–Y18– STA. 11+15.00 TO STA. 11+50.00

(V1) NOTE: MILL EXISTING PAVEMENT –Y18– STA. 11+00.00 TO STA. 11+18.00 FOR GRADE TIE–IN

USE TYPICAL SECTION NO. 32 AS FOLLOWS
–Y20– STA. 11+07.29 TO STA. 11+25.00

(V2) NOTE: MILL EXISTING PAVEMENT –Y20– STA. 11+00.00 TO STA. 11+25.00 FOR GRADE TIE–IN

PAVEMENT SCHEDULE

C1	1½" SF9.5A
C2	3" SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3" S9.5B
C5	VAR. DEPTH S9.5B
C6	1½" S9.5C
C7	3" S9.5C
C8	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	4" B25.0B
E2	5" B25.0B
E3	8" B25.0B
E4	VAR. DEPTH B25.0B
E5	5½" B25.0C
E6	7" B25.0C
E7	VAR. DEPTH B25.0C
J	8" ABC
P	PRIME COAT
R1	1′-6" C & G
R2	2′-6" C & G
R3	5" MONO. ISLAND (KEYED IN)
R4	4′-0" EXPRESSWAY GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0" TO 1½" DEPTH
V2	MILLING 0" TO 3" DEPTH
W	VAR. DEPTH WEDGING

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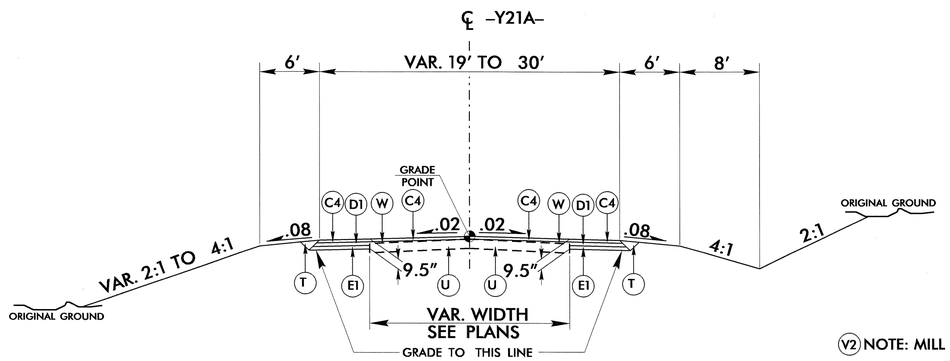
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-K

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR. — Daniel W. Gardner 10/7/11

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DONG-CHI CHEN — 10/9/11

PAVEMENT SCHEDULE

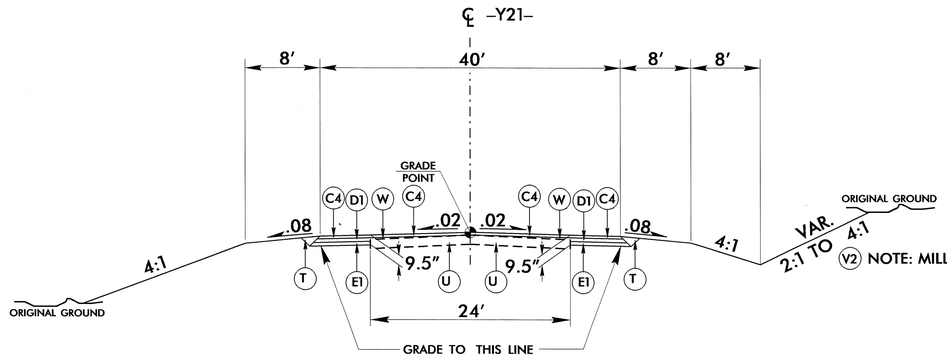
C1	1½" SF9.5A
C2	3" SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3" S9.5B
C5	VAR. DEPTH S9.5B
C6	1½" S9.5C
C7	3" S9.5C
C8	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	4" B25.0B
E2	5" B25.0B
E3	8" B25.0B
E4	VAR. DEPTH B25.0B
E5	5½" B25.0C
E6	7" B25.0C
E7	VAR. DEPTH B25.0C
J	8" ABC
P	PRIME COAT
R1	1'-6" C & G
R2	2'-6" C & G
R3	5" MONO. ISLAND (KEYED IN)
R4	4'-0" EXPRESSWAY GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0" TO 1½" DEPTH
V2	MILLING 0" TO 3" DEPTH
W	VAR. DEPTH WEDGING



TYPICAL SECTION NO. 33

USE TYPICAL SECTION NO. 33 AS FOLLOWS
–Y21A– STA. 11+75.00 TO STA. 13+14.07

(V2) NOTE: MILL EXISTING PAVEMENT –Y21A– STA. 11+75.00 TO STA. 13+25.00 FOR GRADE TIE–IN

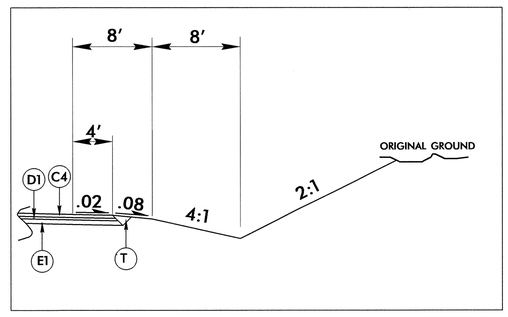


TYPICAL SECTION NO. 34

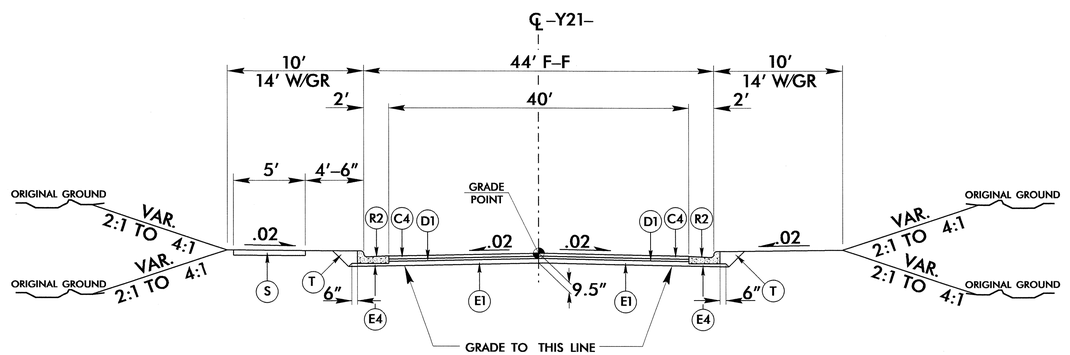
(V2) NOTE: MILL EXISTING PAVEMENT –Y21– STA. 12+25.00 TO STA. 12+50.00 FOR GRADE TIE–IN

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 34
–Y21– STA. 12+25.00 TO STA. 16+50.00

USE TYPICAL SECTION NO. 34 AS FOLLOWS
–Y21– STA. 16+50.00 TO STA. 17+83.55



USE INSET P WITH TYPICAL SECTION NO. 35
–Y21– STA. 17+83.55 TO STA. 19+00.23 RT



TYPICAL SECTION NO. 35

USE TYPICAL SECTION NO. 35 AS FOLLOWS
–Y21– STA. 17+83.55 TO STA. 21+33.96 (BEGIN BRIDGE)
–Y21– STA. 23+23.96 (END BRIDGE) TO STA. 28+00.00

NOTE: TRANSITION FROM TYPICAL SECTION NO. 35 TO EXISTING
–Y21– STA. 28+00.00 TO STA. 29+00.00

(V2) NOTE: MILL EXISTING PAVEMENT –Y21– STA. 28+00.00 TO STA. 29+00.00 FOR GRADE TIE–IN

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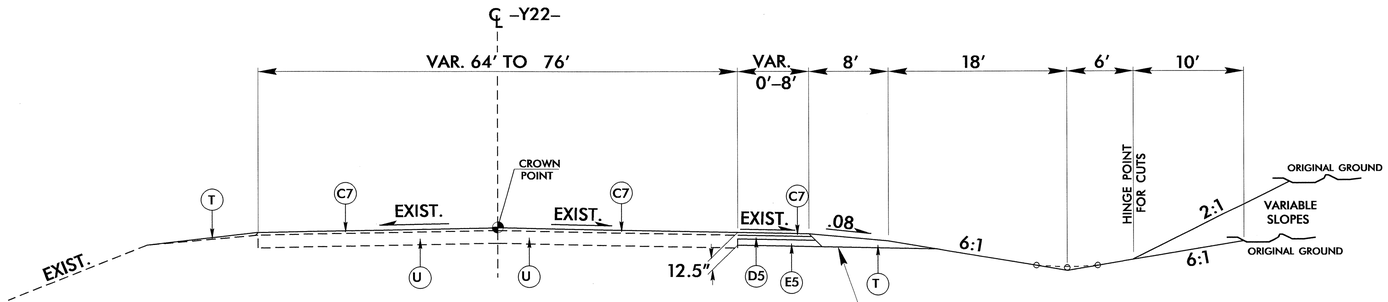
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-L

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER — 10/7/11

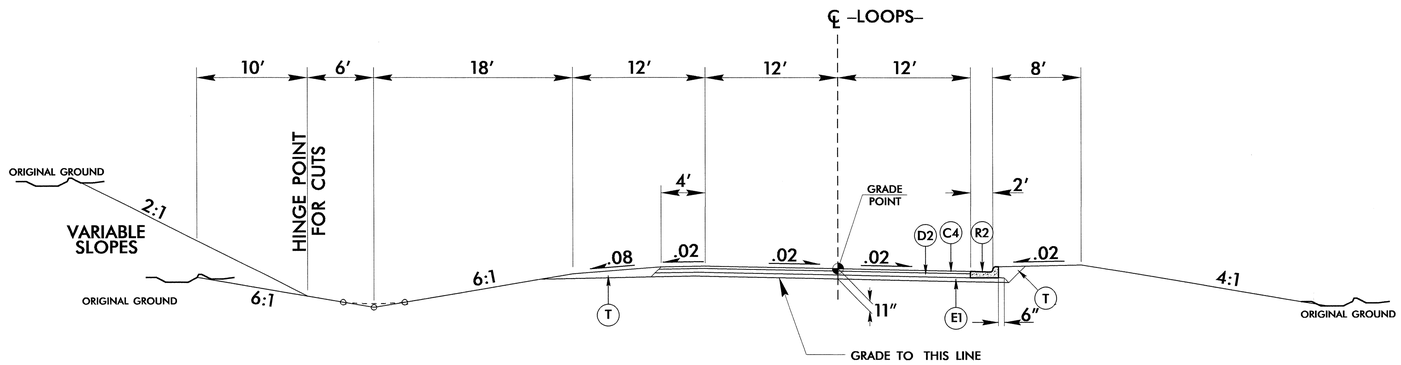
PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DOUGLAS CHI CHEN — 10/9/11



TYPICAL SECTION NO. 36

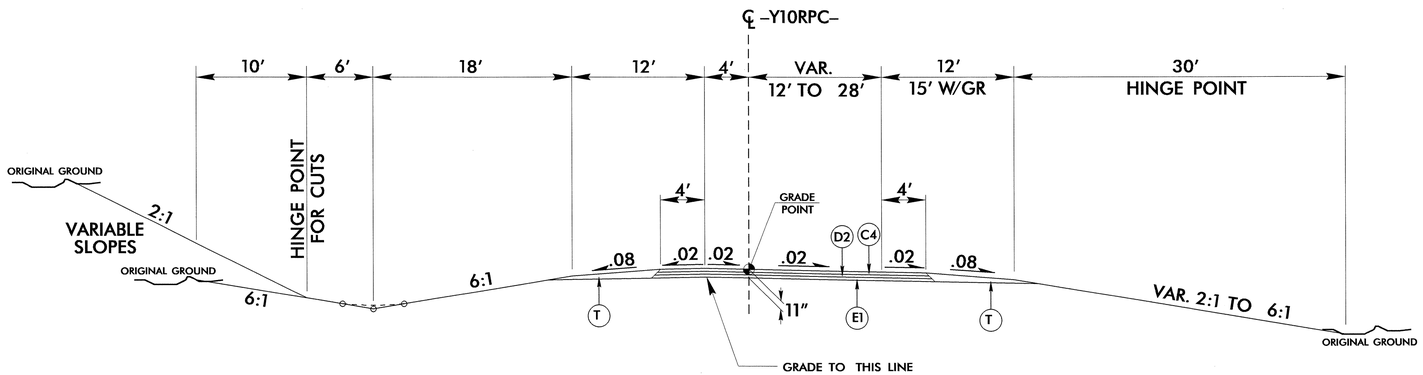
USE TYPICAL SECTION NO. 36 AS FOLLOWS
–Y22– STA. 12+19.00 TO STA. 14+67.37

(V2) NOTE: MILL EXISTING PAVEMENT FOR GRADE TIE-IN
–Y22– STA. 12+19.00 TO STA. 13+69.00
–Y22– STA. 17+00.00 TO STA. 17+58.93



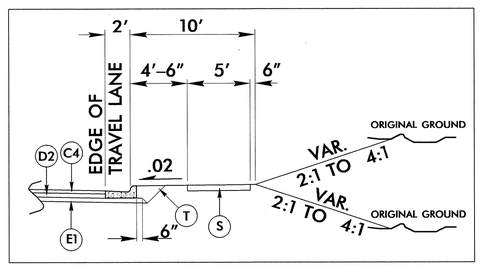
TYPICAL SECTION NO. 37

USE TYPICAL SECTION NO. 37 AS FOLLOWS
–Y10LPC– STA. 10+00.00 TO STA. 15+96.20
–Y13LPB– STA. 10+00.00 TO STA. 16+63.40
–Y21LPB– STA. 10+00.00 TO STA. 16+05.15
–Y21LPC– STA. 10+00.00 TO STA. 15+45.74



TYPICAL SECTION NO. 38

USE TYPICAL SECTION NO. 38 AS FOLLOWS
–Y10RPC– STA. 10+00.00 TO STA. 20+25.84



USE INSET Q WITH TYPICAL SECTION NO. 38
–Y10RPC– STA. 18+50.00 TO STA. 20+25.84 RT.

NOTE: TRANSITION FROM INSET C TO INSET Q
–Y10RPC– STA. 18+00.00 TO STA 18+50.00

PAVEMENT SCHEDULE

C1	1½" SF9.5A
C2	3" SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3" S9.5B
C5	VAR. DEPTH S9.5B
C6	1½" S9.5C
C7	3" S9.5C
C8	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	4" B25.0B
E2	5" B25.0B
E3	8" B25.0B
E4	VAR. DEPTH B25.0B
E5	5½" B25.0C
E6	7" B25.0C
E7	VAR. DEPTH B25.0C
J	8" ABC
P	PRIME COAT
R1	1′-6" C & G
R2	2′-6" C & G
R3	5" MONO. ISLAND (KEYED IN)
R4	4′-0" EXPRESSWAY GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0" TO 1½" DEPTH
V2	MILLING 0" TO 3" DEPTH
W	VAR. DEPTH WEDGING

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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-M

ROADWAY DESIGN ENGINEER

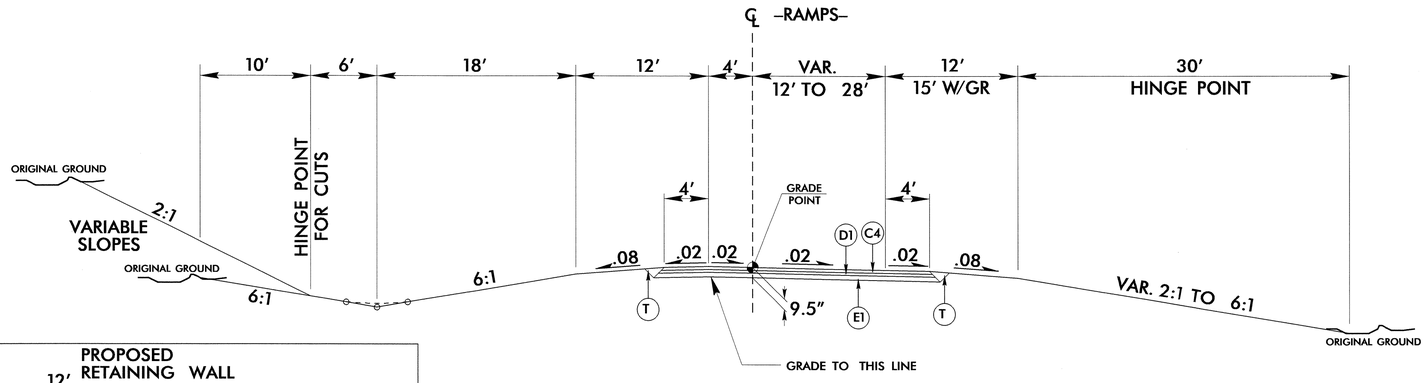
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR.

Daniel W. Gardner Jr. 10/7/11

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DON-CHI CHEN

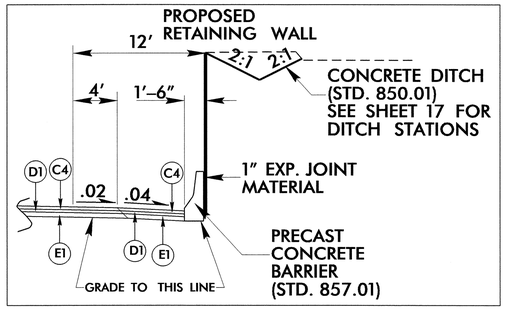
Don-Chi Chen 10/7/11



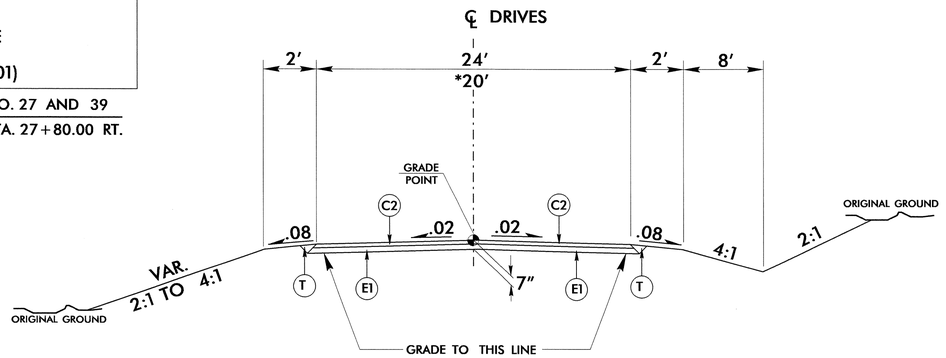
TYPICAL SECTION NO. 39

USE TYPICAL SECTION NO. 39 AS FOLLOWS

–Y10RPA– STA. 10+00.00 TO STA. 16+84.39
–Y10RPB– STA. 10+00.00 TO STA. 20+10.63
–Y13RPB– STA. 10+00.00 TO STA. 19+13.34
–Y13RPC– STA. 10+00.00 TO STA. 17+68.32
–Y13RPD– STA. 10+00.00 TO STA. 15+90.18
–Y21RPB– STA. 10+00.00 TO STA. 16+69.79
–Y21RPC– STA. 10+00.00 TO STA. 16+56.89



USE INSET R WITH TYPICAL SECTION NO. 27 AND 39
–Y13RPC– STA. 16+00.00 RT. TO –Y13– STA. 27+80.00 RT.



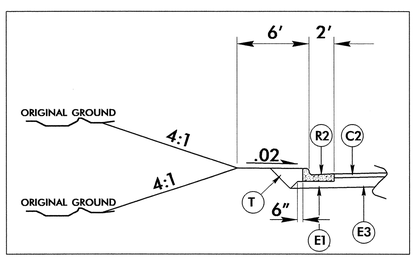
TYPICAL SECTION NO. 40

USE TYPICAL SECTION NO. 40 AS FOLLOWS

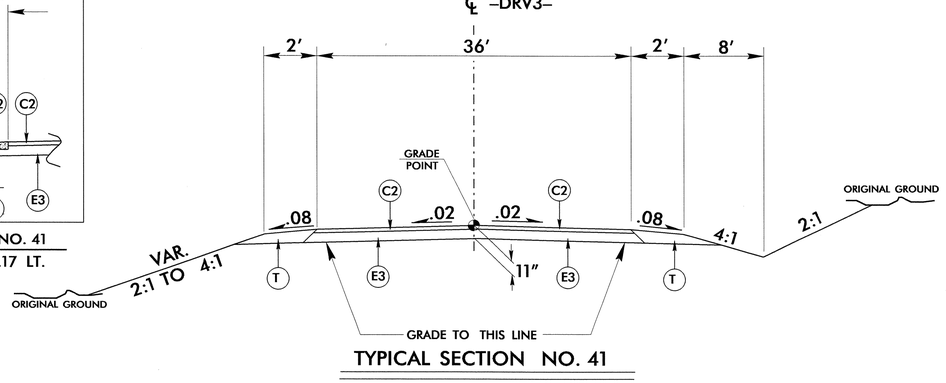
*–DRV1– STA. 10+00.00 TO STA. 12+03.39
–DRV2– STA. 10+53.44 TO STA. 10+80.00
–DRV4– STA. 10+35.00 TO STA. 11+68.30

C1	1½″ SF9.5A
C2	3″ SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3″ S9.5B
C5	VAR. DEPTH S9.5B
C6	1½″ S9.5C
C7	3″ S9.5C
C8	VAR. DEPTH S9.5C
D1	2½″ I19.0B
D2	4″ I19.0B
D3	VAR. DEPTH I19.0B
D4	2½″ I19.0C
D5	4″ I19.0C
D6	VAR. DEPTH I19.0C
E1	4″ B25.0B
E2	5″ B25.0B
E3	8″ B25.0B
E4	VAR. DEPTH B25.0B
E5	5½″ B25.0C
E6	7″ B25.0C
E7	VAR. DEPTH B25.0C
J	8″ ABC
P	PRIME COAT
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MONO. ISLAND (KEYED IN)
R4	4′-0″ EXPRESSWAY GUTTER
S	4″ CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 0″ TO 1½″ DEPTH
V2	MILLING 0″ TO 3″ DEPTH
W	VAR. DEPTH WEDGING

PAVEMENT SCHEDULE



USE INSET S WITH TYPICAL SECTION NO. 41
–DRV3– STA. 10+15.00 TO STA. 10+78.17 LT.



TYPICAL SECTION NO. 41

USE TYPICAL SECTION NO. 41 AS FOLLOWS

–DRV3– STA. 10+15.00 TO STA. 10+78.17

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-N

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

10/7/11

Daniel W. Gardner

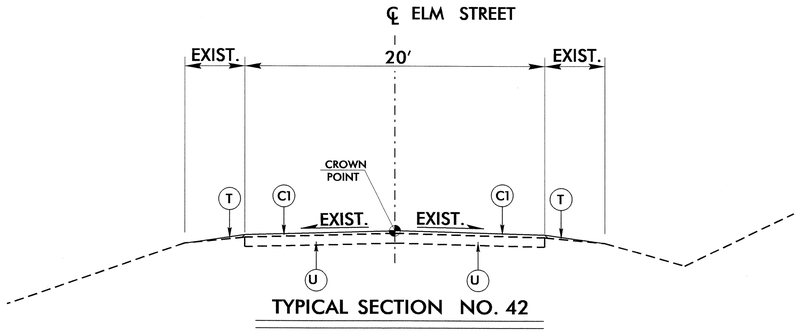
PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER PO-CHI CHEN

10/7/11

PAVEMENT SCHEDULE

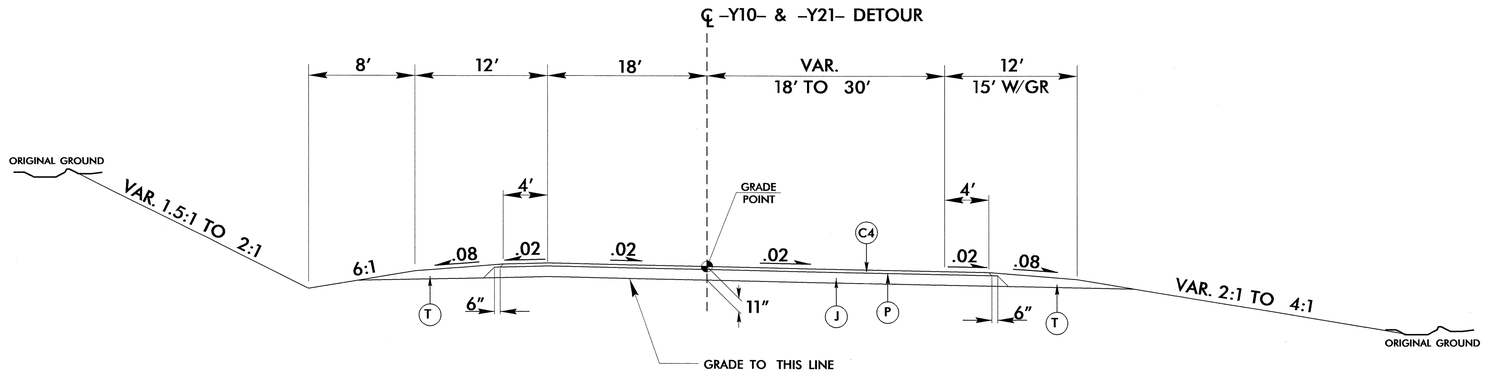
C1	1½" SF9.5A
C2	3" SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3" S9.5B
C5	VAR. DEPTH S9.5B
C6	1½" S9.5C
C7	3" S9.5C
C8	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	4" B25.0B
E2	5" B25.0B
E3	8" B25.0B
E4	VAR. DEPTH B25.0B
E5	5½" B25.0C
E6	7" B25.0C
E7	VAR. DEPTH B25.0C
J	8" ABC
P	PRIME COAT
R1	1'-6" C & G
R2	2'-6" C & G
R3	5" MONO. ISLAND (KEYED IN)
R4	4'-0" EXPRESSWAY GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING 0" TO 1½" DEPTH
W	VAR. DEPTH WEDGING



TYPICAL SECTION NO. 42

USE TYPICAL SECTION NO. 42 AS FOLLOWS

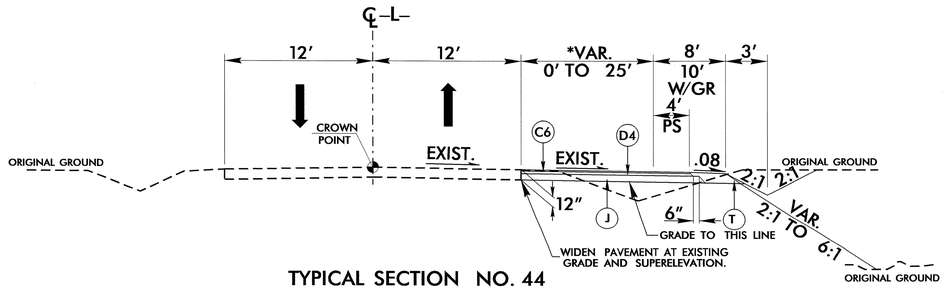
0.03 MILES ELM STREET



TYPICAL SECTION NO. 43

USE TYPICAL SECTION NO. 43 AS FOLLOWS

-Y10DETB- STA. 12+00.61 TO STA. 15+03.52
-Y10DETC- STA. 11+25.77 TO STA. 15+07.79
-Y21DETB- STA. 11+50.33 TO STA. 15+53.36
-Y21DETC- STA. 11+22.08 TO STA. 15+21.31



TYPICAL SECTION NO. 44

*SEE TRANSPORTATION MANAGEMENT PLANS FOR TEMPORARY PAVEMENT WIDENING LOCATIONS AND OFFSETS

USE TYPICAL SECTION NO. 44 AS FOLLOWS

-L- STA. 111+00.00+/- TO STA. 122+00.00+/- RT.
-L- STA. 181+74.00+/- TO STA. 199+00.00+/- RT.
-L- STA. 198+50.00+/- TO STA. 202+00.00+/- LT. (4')
-L- STA. 204+00.00+/- TO STA. 207+90.00+/- LT. (4')
-L- STA. 252+78.00+/- TO STA. 258+93.88+/- RT.
-L- STA. 266+74.70+/- TO STA. 270+74.00+/- RT.
-L- STA. 288+92.00+/- TO STA. 311+31.00+/- RT.

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-0

ROADWAY DESIGN ENGINEER

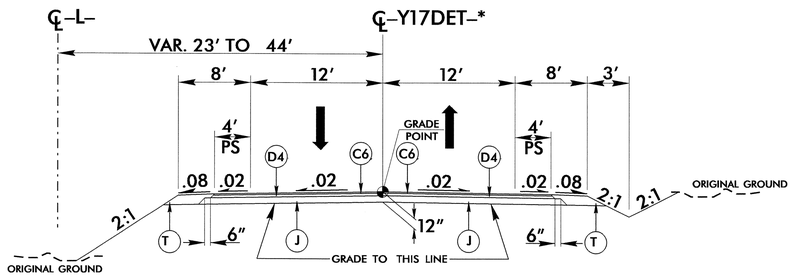
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

Daniel W. Gardner 10/7/11

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER JOSEPH CHI CHEN

Joseph Chi Chen 10/7/11

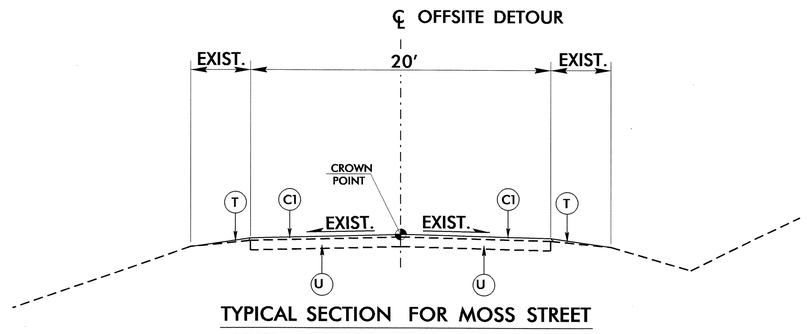


TYPICAL SECTION NO. 45

*SEE PLAN SHEET 21A FOR TEMPORARY ONSITE DETOUR ALONG –L– STA. 258+93.88 TO STA. 266+74.70

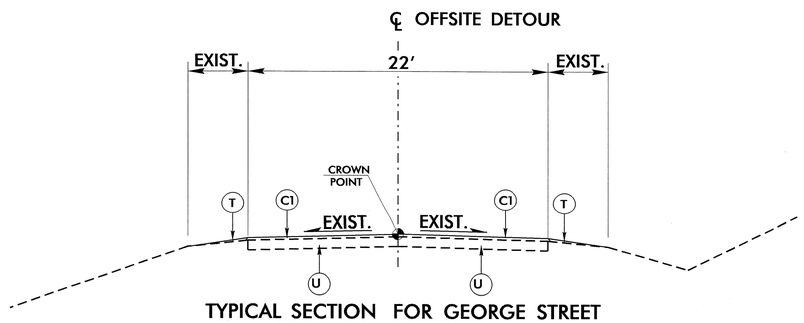
USE TYPICAL SECTION NO. 45 AS FOLLOWS
–Y17DET– STA. 16+16.11 TO STA. 23+94.72

PAVEMENT SCHEDULE	
C1	1½″ SF9.5A
C2	3″ SF9.5A
C3	VAR. DEPTH SF9.5A
C4	3″ S9.5B
C5	VAR. DEPTH S9.5B
C6	1½″ S9.5C
C7	3″ S9.5C
C8	VAR. DEPTH S9.5C
D1	2½″ I19.0B
D2	4″ I19.0B
D3	VAR. DEPTH I19.0B
D4	2½″ I19.0C
D5	4″ I19.0C
D6	VAR. DEPTH I19.0C
E1	4″ B25.0B
E2	5″ B25.0B
E3	8″ B25.0B
E4	VAR. DEPTH B25.0B
E5	5½″ B25.0C
E6	7″ B25.0C
E7	VAR. DEPTH B25.0C
J	8″ ABC
P	PRIME COAT
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MONO. ISLAND (KEYED IN)
R4	4′-0″ EXPRESSWAY GUTTER
S	4″ CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING 0″ TO 1½″ DEPTH
W	VAR. DEPTH WEDGING



TYPICAL SECTION FOR MOSS STREET

TYPICAL FOR DETOUR IMPROVEMENTS
0.50 MILES MOSS STREET



TYPICAL SECTION FOR GEORGE STREET

TYPICAL FOR DETOUR IMPROVEMENTS
0.13 MILES GEORGE STREET

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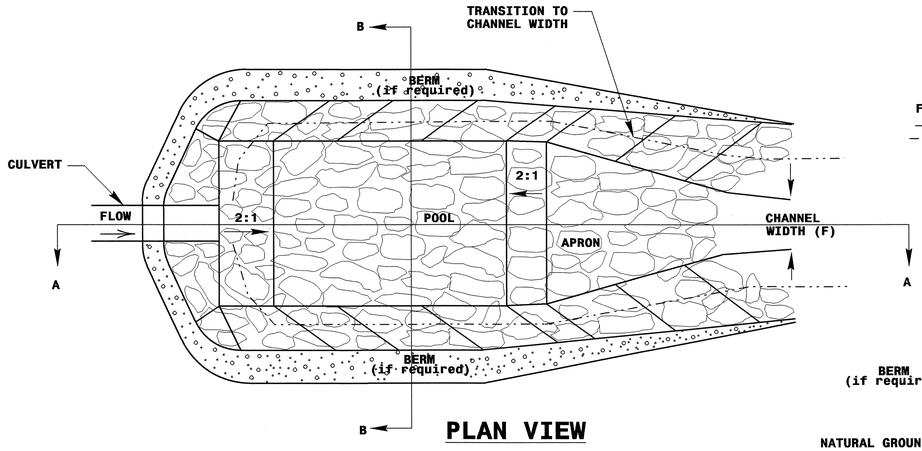
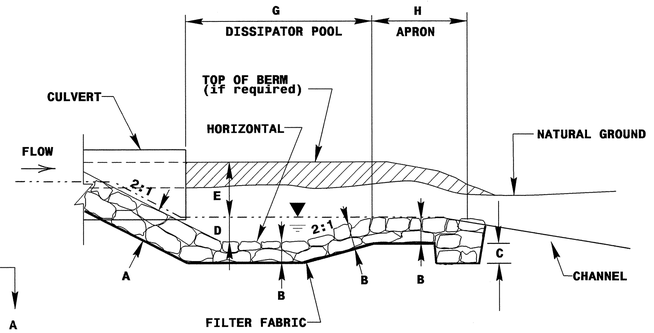
DETAIL A7
ROCK ENERGY DISSIPATOR BASIN DETAIL

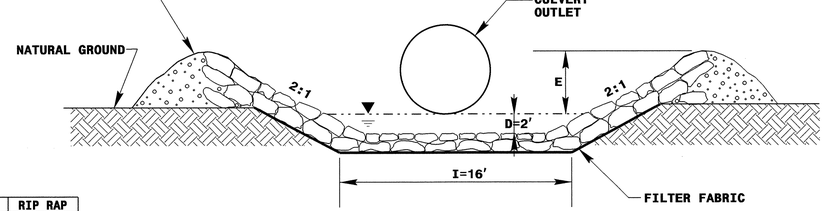
NOT TO SCALE



PLAN VIEW



SECTION A-A



SECTION B-B

	RIP RAP BASIN NUMBER							
DIM.	1	2	3	4	5	6	7	8
A	2.0							
B	2.0							
C	1.0							
D	2.0							
E	2.0							
F	5.0							
G	30.0							
H	22.0							
I	16.0							

ALL DIMENSIONS APPROXIMATE IN FEET

BASIN #	LOCATION (AT OUTLET)	RIP RAP
1	-L- STA. 292+35 Lt	CLASS II
2		
3		
4		
5		
6		
7		
8		

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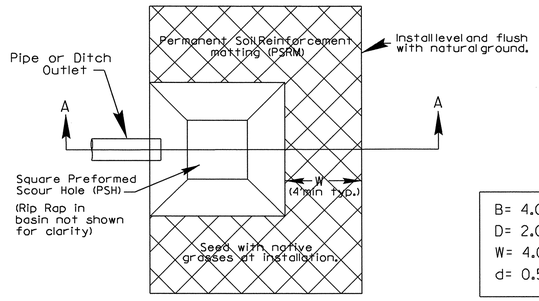
6/2/99

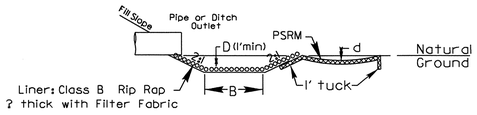
PREFORMED SCOUR HOLE
DETAIL M

PLAN VIEW



B= 4.0 Ft.
D= 2.0 Ft.
W= 4.0 Ft.
d= 0.50 Ft.

SECTION A-A

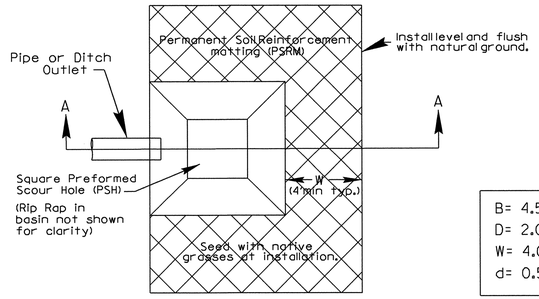


5/05

FROM –Y10– STA. 28+00 Lt.
FROM –L– STA. 157+00 Rt.
FROM –L– STA. 158+64 Rt.

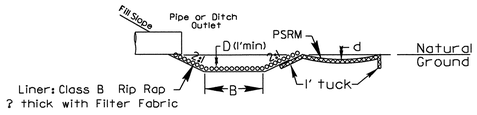
PREFORMED SCOUR HOLE
DETAIL N

PLAN VIEW



B= 4.5 Ft.
D= 2.0 Ft.
W= 4.0 Ft.
d= 0.50 Ft.

SECTION A-A

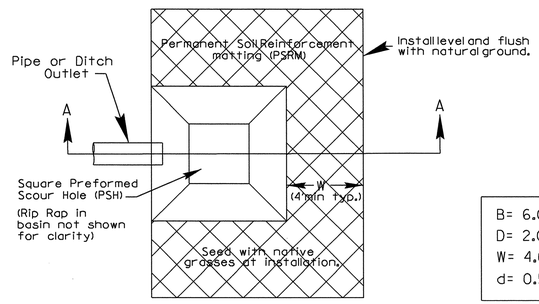


5/05

FROM –L– STA. 118+50 Rt.
FROM –L– STA. 124+50 Rt.
FROM –L– STA. 147+90 Lt.

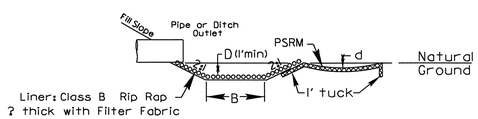
PREFORMED SCOUR HOLE
DETAIL O

PLAN VIEW



B= 6.0 Ft.
D= 2.0 Ft.
W= 4.0 Ft.
d= 0.50 Ft.

SECTION A-A

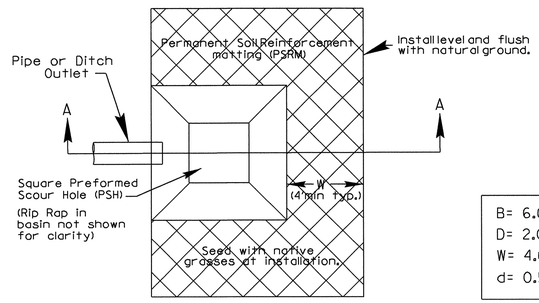


5/05

FROM –L– STA. 119+50 Rt.

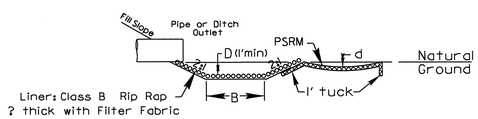
PREFORMED SCOUR HOLE
DETAIL P

PLAN VIEW



B= 6.0 Ft.
D= 2.0 Ft.
W= 4.0 Ft.
d= 0.50 Ft.

SECTION A-A



5/05

FROM –L– STA. 128+50 Rt.

10-OCT-2001 12:23
U:\pdfgen\3326_rdy_typ.dgn
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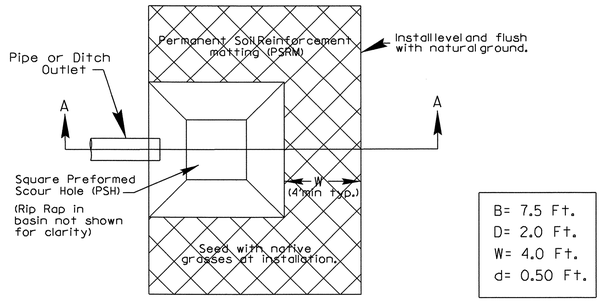
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-R

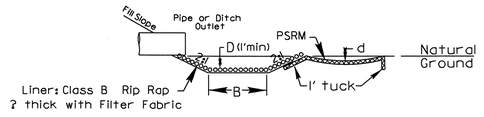
PREFORMED SCOUR HOLE
DETAIL A21

PLAN VIEW



B= 7.5 Ft.
D= 2.0 Ft.
W= 4.0 Ft.
d= 0.50 Ft.

SECTION A-A

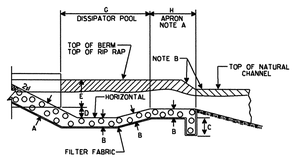


5/05

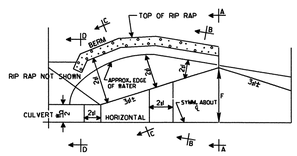
FROM –L– STA. 265+50 Lt.

DETAIL A20
RIP-RAPPED ENERGY DISSIPATOR BASIN

℄ SECTION



HALF PLAN



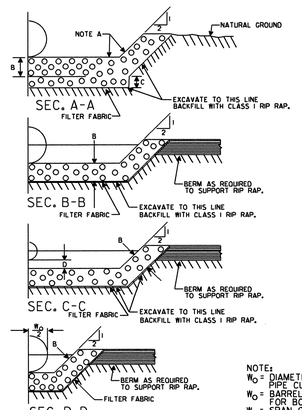
NOTE A IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A-A SUCH THAT Q des /(CROSS SECTION AREA AT SEC. A-A) = SPECIFIED EXIT VELOCITY.

NOTE B WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIPRAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A-A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.

DIM.	RIP RAP BASIN *							
	1	2	3	4	5	6	7	8
A	2.0							
B	2.0							
C	1.0							
D	2.0							
E	2.0							
F	3.0							
G	20.0							
H	10.0							

*ALL DIMENSIONS APPROXIMATE IN FT.

BASIN *	LOCATION (AT OUTLET)
1	–Y8A– 12+24 Lt.
2	
3	
4	
5	
6	
7	
8	



NOTE:
W_O = DIAMETER FOR PIPE CULVERT
W_O = BARREL WIDTH FOR BOX CULVERT
W_O = SPAN OF PIPE-ARCH CULVERT

5/05

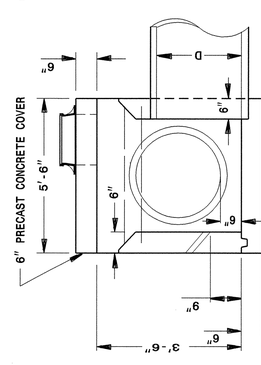
FROM –Y8A– STA. 12+24 Lt.

07-OCT-2011 9:23
R:\Roadway\U3326\rdy_typ.dgn
$$$$USERNAME$$$$

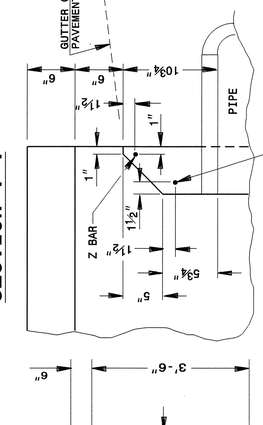
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-S

5/14/99

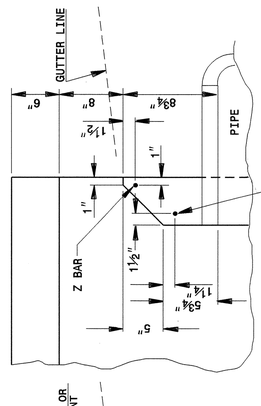
GENERAL NOTES:
ALL CATCH BASINS OVER 3'-6" IN DEPTH TO BE PROVIDED WITH STEPS 12" ON CENTERS. STEPS SHALL BE IN ACCORDANCE WITH STD. 840.66.
ALL EXPOSED CORNERS TO BE CHAMFERED 25mm.
CLASS "B" CONCRETE TO BE USED THROUGHOUT.
2" PIPE WEEPHOLES TO BE PLACED AS DIRECTED BY ENGINEER.
THE 6" OPENING SHOWN MAY BE INCREASED TO 8" MAXIMUM IF DEEMED TO BE NECESSARY BY THE ENGINEER.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #5 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
FORMS ARE TO BE USED FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STD. DWG. 840.00.
A STONE DRAIN CONSISTING OF 1 CUBIC FOOT OF NO. 78M STONE CONTAINED IN A BAG OF POROUS FABRIC SHALL BE PLACED AT EACH WEEP HOLE.
FOR 8' IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8' IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. QUANTITIES TO BE ADJUSTED ACCORDINGLY.



SECTION Y-Y



SECTION X-X



PART SECTION Y-Y
SHOWING METHOD OF CONSTRUCTION FOR 6" OPENING

PART SECTION Y-Y
SHOWING METHOD OF CONSTRUCTION IF INCREASED OPENING IS USED

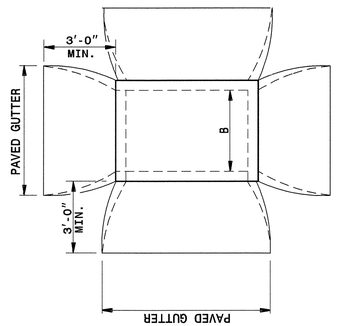
BILL OF MATERIALS

REINFORCING STEEL				MASONRY	
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.	CONCRETE CLASS "B" FT³
X	#4	13	5'-2"	44.87	
Y	#4	9	6'-8"	40.08	TOTAL 2.66
Z1	#4	4	6'-8"	17.81	NO DEDUCTIONS HAVE BEEN MADE FOR PIPES OR MANHOLES
Z2	#4	4	5'-2"	13.81	
			TOTAL	116.57	

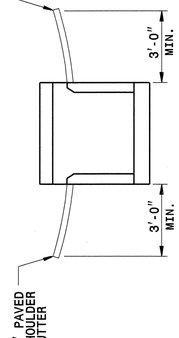
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
CONCRETE CATCH BASIN WITH MANHOLE (3 OR 4 SIDE OPEN THROAT)

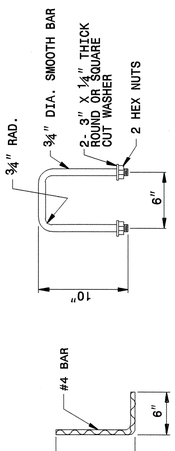
SHEET 1 OF 2 **840D04**



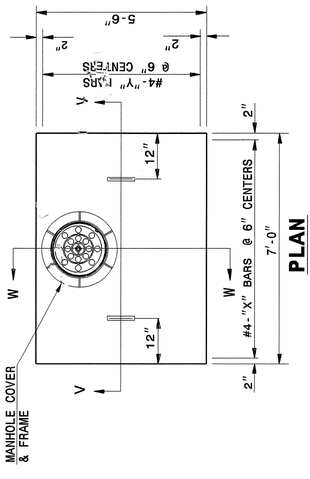
PLAN OF CATCH BASIN IN MEDIAN STRIP



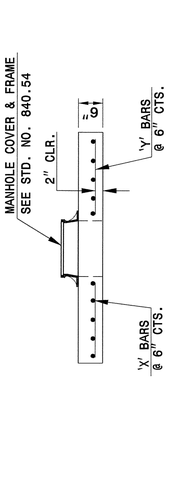
SECTION OF CATCH BASIN MEDIAN STRIP
DETAIL SHOWING METHOD OF PLACING CATCH BASIN AND PAVED SHOULDER GUTTER



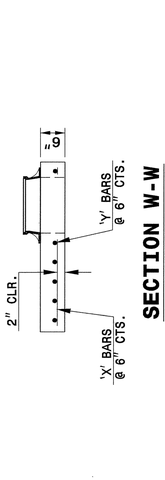
DOWEL DETAIL OF HANDLE



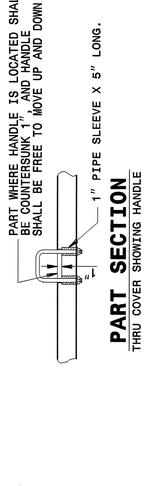
PLAN
PLAN OF PRECAST COVER



SECTION V-V



SECTION W-W



PART SECTION
THRU COVER SHOWING HANDLE

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

ENGLISH DETAIL DRAWING FOR
CONCRETE CATCH BASIN WITH MANHOLE (3 OR 4 SIDE OPEN THROAT)

SHEET 2 OF 2 **840D04**

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

SEE PLATE FOR TITLE

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: E.E.WARD DATE: 8-21-03
CHECKED BY: _____ DATE: 10/09
FILE SPEC.: w:\eward\detail\metric\stand\840d04.dgn

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PLOT SCALE = 1.0000 '/ IN
PLOT DATE = 10/11/2011

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-T

5/14/99

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN

DIMENSIONS OF BOX AND PIPE				CU. YDS. CONC. IN BOX			DEDUCTIONS ONE PIPE	
PIPE D	SPAN A	WIDTH B	MIN. HEIGHT H	BOTTOM SLAB	CONCRETE IN WALLS	TOTAL CONC.	C.M.	R.C.
12"	3'-0"	2'-2"	2'-0"	0.235	0.343	0.578	0.015	0.026
15"	3'-0"	2'-2"	2'-3"	0.235	0.400	0.635	0.023	0.036
18"	3'-0"	2'-2"	2'-6"	0.235	0.457	0.692	0.033	0.049
24"	3'-0"	2'-2"	3'-1"	0.235	0.590	0.825	0.059	0.085

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

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH CONCRETE CATCH BASIN
12" THRU 24" PIPE

SHEET 1 OF 1
840D02

GENERAL NOTES:
MORTAR JOINTS ½" TO ⅛" THICK.
USE CLASS "B" CONCRETE THROUGHOUT.
USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB.
DEDUCT FOR PIPE(S) FROM TOTAL CU. YDS. OF BRICK MASONRY.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

MINIMUM DIMENSIONS AND QUANTITIES FOR BRICK CATCH BASIN

DIMENSIONS OF BOX AND PIPE				CU. YDS. CONC. IN BOX			BRICK MASONRY		DEDUCTIONS ONE PIPE	
PIPE D	SPAN A	WIDTH B	MIN. HEIGHT H	BOTTOM SLAB	TOTAL CONC.	BRICK MASONRY IN WALLS	TOTAL BRICK AND CONCRETE	C.M.	R.C.
12"	3'-0"	2'-2"	2'-0"	0.281	0.281	0.481	0.762	0.020	0.042
15"	3'-0"	2'-2"	2'-3"	0.281	0.281	0.562	0.843	0.031	0.047
18"	3'-0"	2'-2"	2'-6"	0.281	0.281	0.642	0.923	0.044	0.065
24"	3'-0"	2'-2"	3'-1"	0.281	0.281	0.828	1.109	0.078	0.121

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

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH BRICK CATCH BASIN
12" THRU 24" PIPE

SHEET 1 OF 1
840D01

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C. 27611

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH CONCRETE CATCH BASIN
12" THRU 24" PIPE

SHEET 1 OF 1
840D02

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER

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

SEE PLATE FOR TITLE

ORIGINAL BY: 2002 Std.840.01 DATE:
MODIFIED BY: E.F. WARD DATE: 3-1-02
CHECKED BY: DATE: 10/7/08
FILE SPEC.: wjdetails/stand/840d01.dgn

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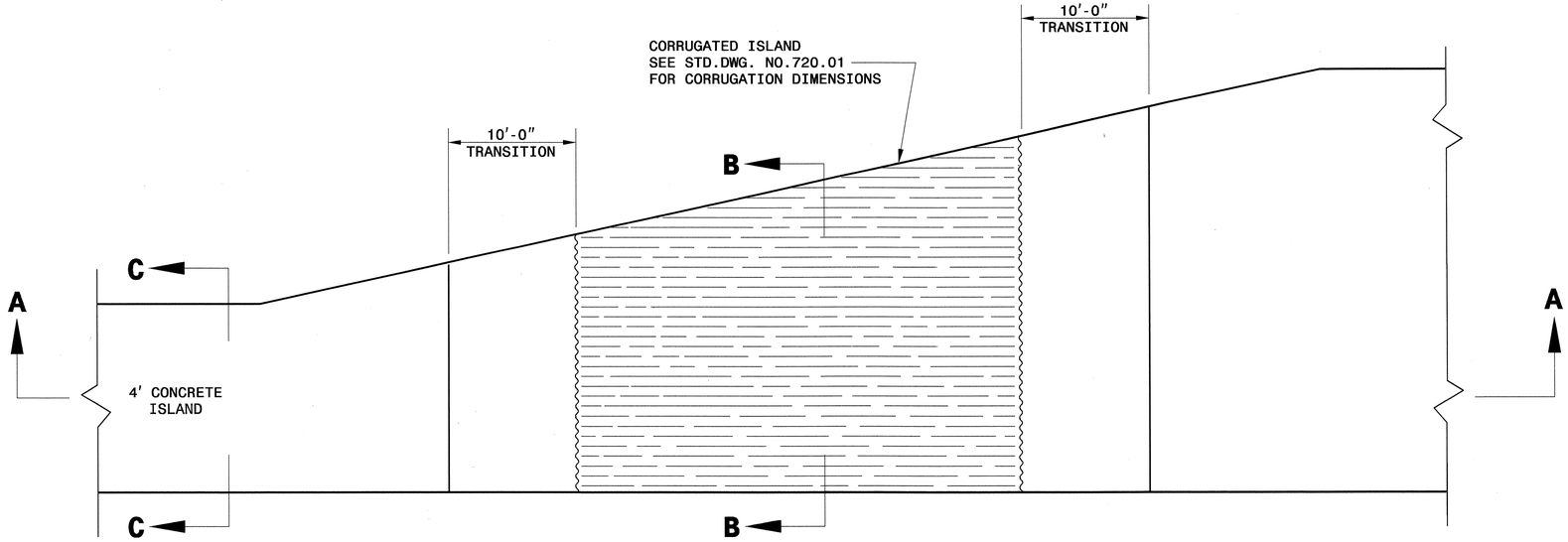
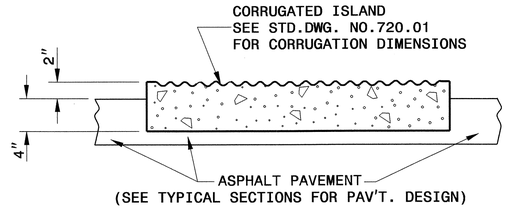
$$$$DATE$$$$ $$$$TIME$$$$
$$$$DESIGN$$$$

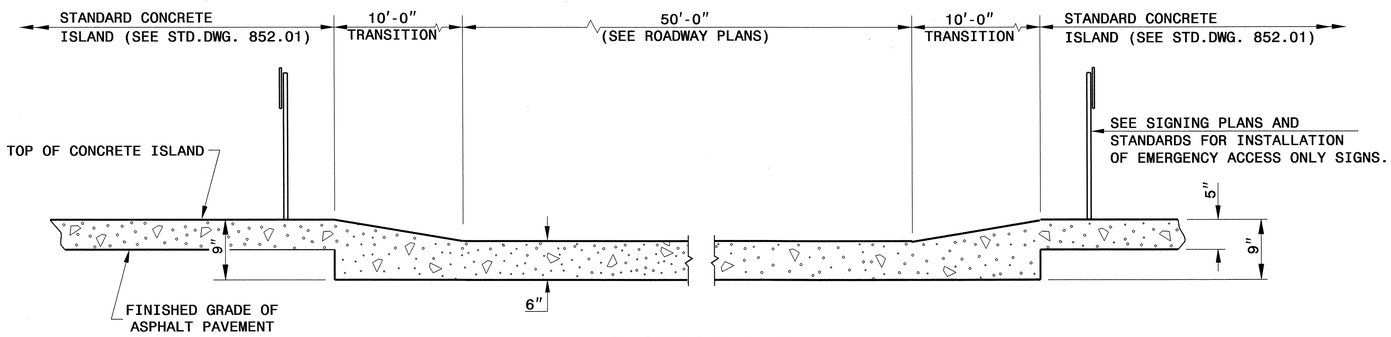
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-U



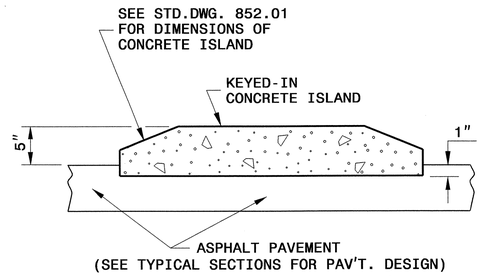
TOP VIEW



SECTION B-B



SECTION A-A



SECTION C-C

DETAIL OF EMERGENCY VEHICLE ACCESS

NOTES:

REFER TO SECTION 852 OF STANDARD SPECIFICATIONS FOR CONCRETE ISLANDS.

REFER TO STANDARD DRAWING 852.01 FOR CONTRACTION/EXPANSION JOINTS.

PLACE W6xW6 REINFORCING WIRE MESH IN THE BOTTOM 3RD OF THE EMERGENCY VEHICLE ACCESS PORTION OF THE CONCRETE ISLAND THAT MEETS SECTION 1070 OF THE STANDARD SPECIFICATIONS.

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOHN C. BOWDEN 10/1/10

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-250-4128 FAX 919-250-4119

EMERGENCY VEHICLE ACCESS FOR CONCRETE ISLAND

ORIGINAL BY: nrbritt DATE:
MODIFIED BY: tsspell DATE: 08-23-10
CHECKED BY: DATE: 9/24/10
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30-JUL-2009 08:48
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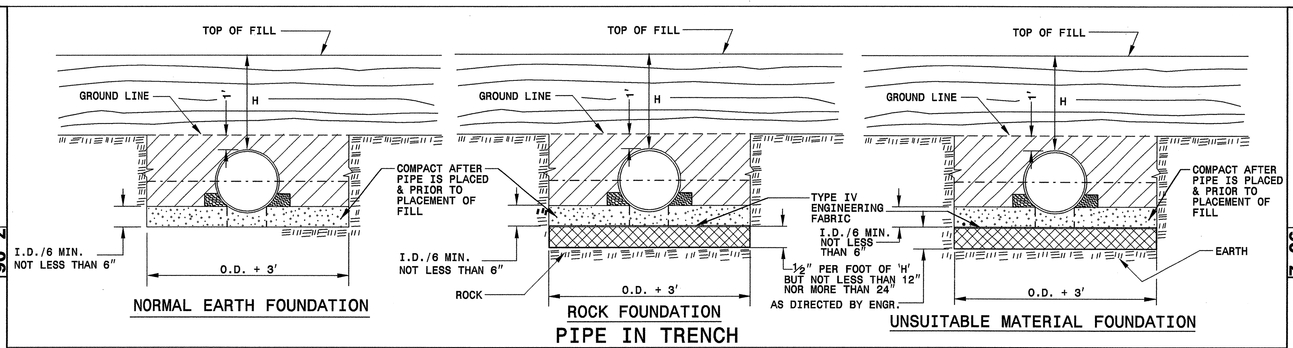
jhowerton AT PS237501

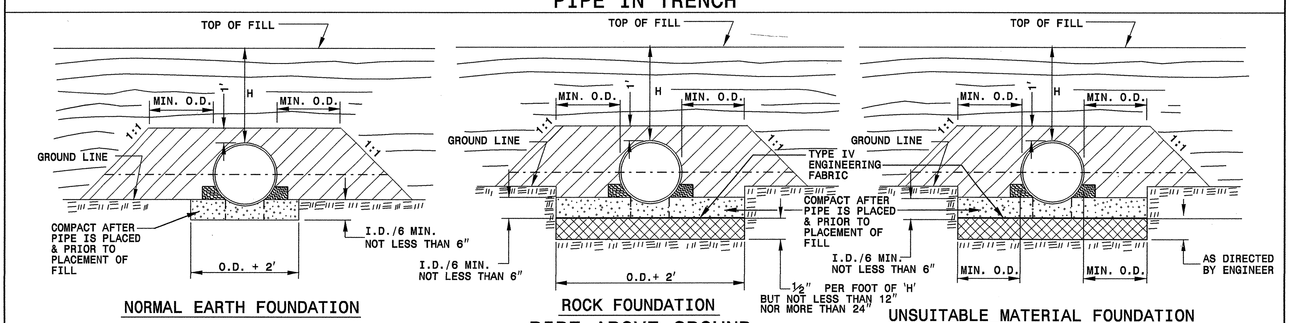
5/14/99

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

7-06

ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
FLEXIBLE PIPE





GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.

APPROVED SUITABLE LOCAL MATERIAL.

UNDISTURBED EARTH MATERIAL

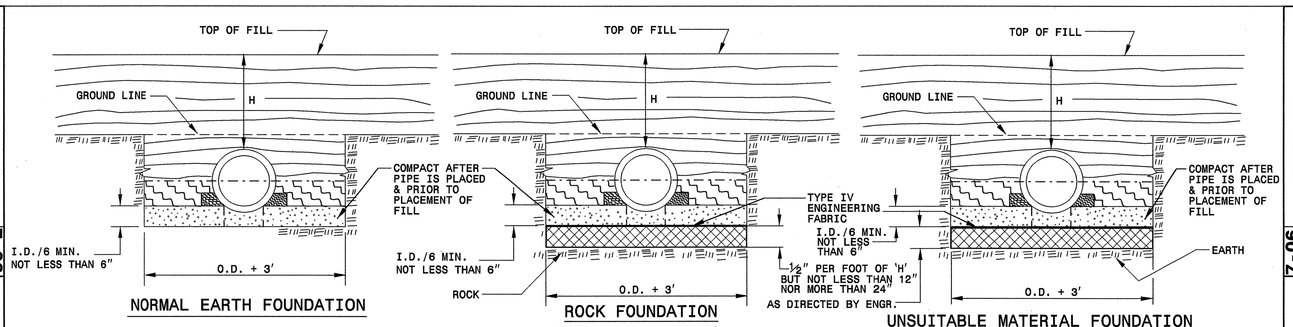
SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH ENGINEERING FABRIC AS DIRECTED BY THE ENGINEER.

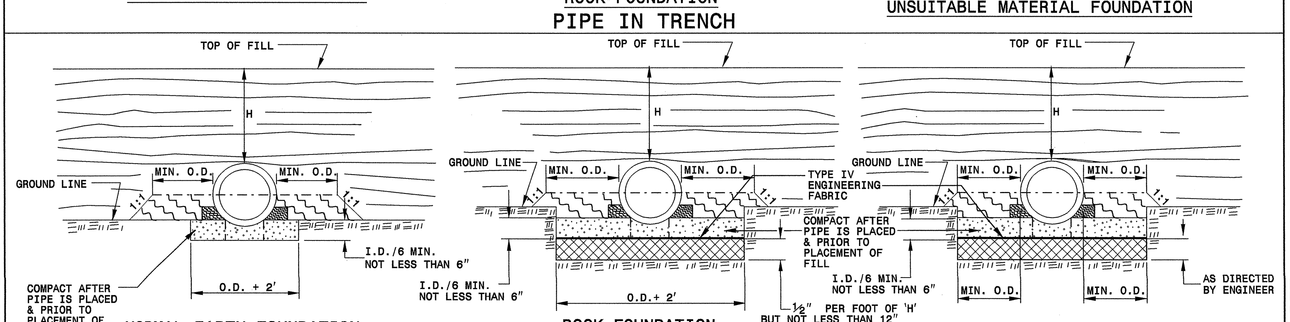
SHEET 1 OF 3
300D01

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

7-06

ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE





GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.

APPROVED SUITABLE LOCAL MATERIAL ABOVE SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH ENGINEERING FABRIC AS DIRECTED BY THE ENGINEER.

SHEET 2 OF 3
300D01

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

SEE PLATE FOR TITLE

ORIGINAL BY: KKempf DATE: 5-15-09
MODIFIED BY: DATE:
CHECKED BY: DATE: 7/21/09
FILE SPEC: r:\scripts\prod\stds\stdstodetails\30001\0300d01.dgn

PROJECT REFERENCE NO. U-3326A/B
SHEET NO. 2-V

30-JUL-2009 08:49
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jhowerton AT PS237501

5/14/99

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

7-06

ENGLISH DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

FILL HEIGHT TABLES

SHEET 3 OF 3

300D01

FLEXIBLE PIPE

Round Corrugated Steel Pipe
2 2/3 x ½ corrugation **

Diameter (inches)	Minimum cover (inches)	Maximum Height of Cover (feet) (Ga) 16	14	12	10	8
12	12	204	256			
15	12	162	204			
18	12	135	169	239		
21	12	115	145	204		
24	12	100	126	178		
30	12	79	100	142		
36	12	65	83	117	152	
42	12	55	70	100	130	160
48	12	48	61	87	113	139
54	12		54	77	100	123
60	12			69	90	111
66	12				81	100
72	12				74	91
78	12					81
84	12					69

Round Corrugated Aluminum Pipe
2 2/3 x ½ corrugation **

Diameter (inches)	Minimum cover (inches)	Maximum Height of Cover (feet) (Ga) 16	14	12	10	8
12	12	123	155	218	281	344
15	12	98	123	174	224	275
18	12	81	102	144	187	228
21	12	69	87	123	160	195
24	12	60	76	108	139	171
27	12		67	95	123	151
30	12		60	85	111	136
36	12		50	71	92	113
42	12			60	78	96
48	12			52	68	84
54	12			46	50	74
60	12				50	62
66	12					51
72	12					41

** FOR DIFFERENT CORRUGATIONS AND ARCH PIPES REFER TO ROADWAY DESIGN MANUAL OR MANUFACTURERS SPECIFICATION.

HDPE - * (Minimum fill) 2′ for pipe diameters ≥ 12″ and ≤ 60″
* (Maximum fill) 20′ for pipe diameters ≤ 24″
17′ for pipe diameters ≥ 30″ and ≤ 60″

PVC - * (Minimum fill) 2′ for pipe diameters ≥ 12″ and ≤ 36″
* (Maximum fill) 30′ for pipe diameters ≥ 12″ and ≤ 36″

* FILL HEIGHT IS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE PAVEMENT STRUCTURE

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS

CSP - AASHTO M36
CAAP - AASHTO M196
HDPE - AASHTO M294
PVC - ASTM F949 or AASHTO M304

NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

1′ MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

RIGID PIPE

RCP - * (Minimum fill) 1′ for Class IV & CLASS V
2′ for Class III & Class II

* (Maximum fill) 10′ - Class II pipe
20′ - Class III pipe
30′ - Class IV pipe
40′ - Class V pipe

(For fills > 40′ & < 80′ use LRFD Direct Design Method)

* FILL HEIGHT IS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE PAVEMENT STRUCTURE

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS

RCP - AASHTO M170

NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

1′ MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

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

7-06

ENGLISH DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

FILL HEIGHT TABLES

SHEET 3 OF 3

300D01

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

SEE PLATE FOR TITLE

ORIGINAL BY: KKempf DATE: 5-15-09
MODIFIED BY: DATE:
CHECKED BY: DATE: 7/9/09
FILE SPEC: c:\projects\dotd\rtd\stds\rtdstdetails8/30000/0300001.dgn

NORTH CAROLINA PROFESSIONAL SEAL 022988 ENGINEER JOHN S. HOUSTON

PROJECT REFERENCE NO. U-3326A/B

SHEET NO. 2-W

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-X

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

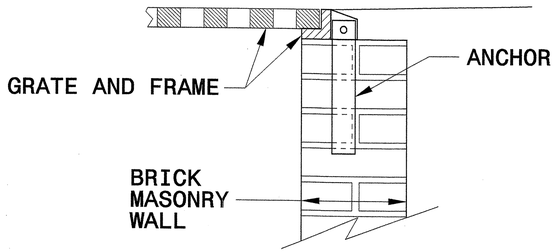
ENGLISH DETAIL DRAWING FOR

ANCHORAGE FOR FRAMES

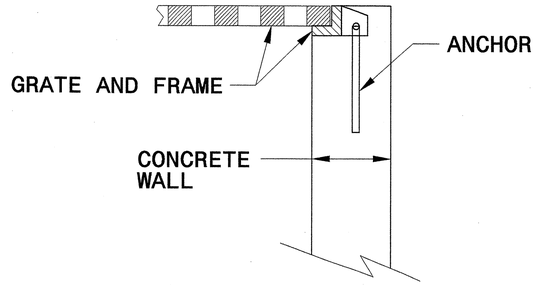
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1

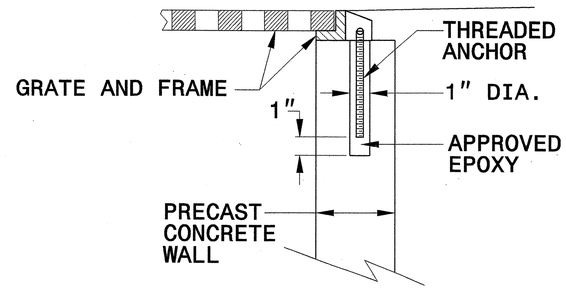
840D25



BRICK MASONRY CONSTRUCTION



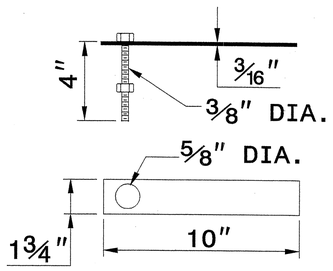
CONCRETE CONSTRUCTION



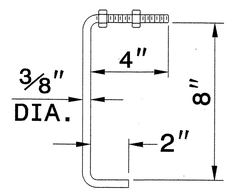
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

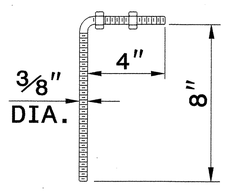
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR
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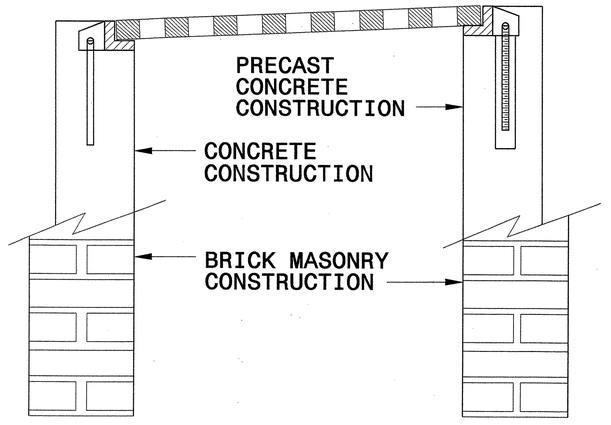


FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

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

ENGLISH DETAIL DRAWING FOR

ANCHORAGE FOR FRAMES

BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1

840D25

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOHN S. MONTGOMERY
10/1/11

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

SEE PLATE FOR TITLE

ORIGINAL BY:	2006 STD 840.25	DATE: 07/18/06
MODIFIED BY:	E.E. WARD	DATE: 9/25/06
CHECKED BY:		DATE: 11/3/06
FILE SPEC.:		

$$$$SYSTIME$$$$
$$$$DESIGNATE$$$$
$$$$SEALNAME$$$$

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-Y

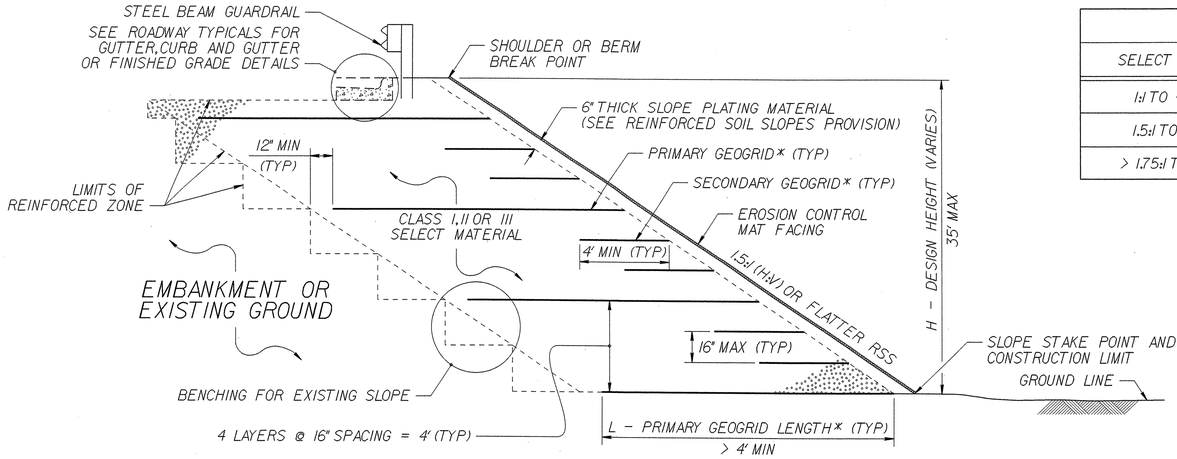
GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

scott a. hidden 3/4/11
SIGNATURE DATE

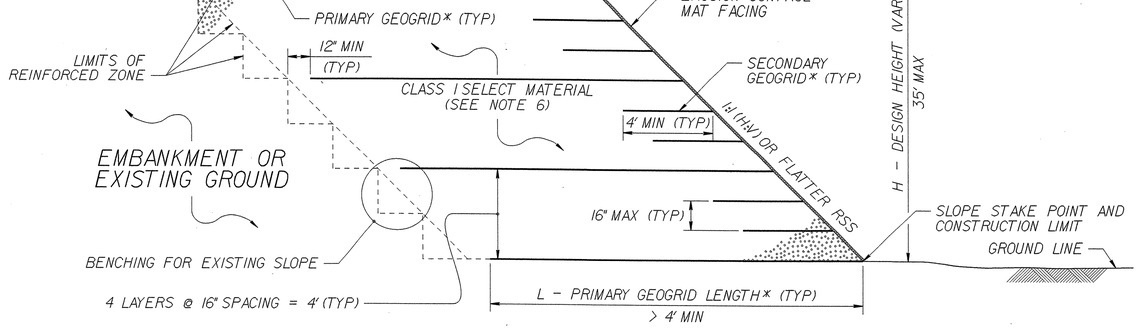
ENGINEER

SIGNATURE DATE



STANDARD RSS WITH SELECT MATERIAL THAT DOES NOT MEET ARTICLE 560-2 OF THE STANDARD SPECIFICATIONS

***SEE TABLES AND GEOGRID LAYOUT DETAILS.**



STANDARD RSS WITH SELECT MATERIAL THAT MEETS ARTICLE 560-2 OF THE STANDARD SPECIFICATIONS

***SEE TABLES AND GEOGRID LAYOUT DETAILS.**

H (FT)	0 - < 10		10 - 20		> 20 - 35	
SELECT MATERIAL CLASS	I	II OR III	I	II OR III	I	II OR III
1:1 TO < 1.5:1 (H:V) RSS	1.20	SEE NOTE 6	1.10	SEE NOTE 6	1.00	SEE NOTE 6
1.5:1 TO 1.75:1 (H:V) RSS	1.15	1.00	1.05	0.95	0.95	0.90
> 1.75:1 TO < 2:1 (H:V) RSS	1.10	0.75	1.00	0.70	0.90	0.65

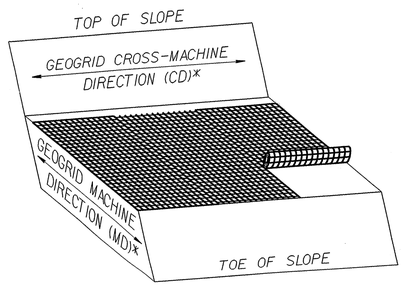
L/H RATIO (L > 4' MIN)

IF L ≤ 4', USE SECONDARY GEOGRID INSTEAD OF PRIMARY GEOGRID.

H (FT)		0 - < 10		10 - 20		> 20 - 35	
SELECT MATERIAL CLASS		I	II OR III	I	II OR III	I	II OR III
PRIMARY GEOGRID (SUBSTITUTE SECONDARY GEOGRID FOR PRIMARY GEOGRID FOR ≥ 2:1 (H:V) RSS)	1:1 TO < 1.5:1 (H:V) RSS	2XT SG150 SF20 UX1100HS	SEE NOTE 6	3XT SG200 SF35 UX1400HS	SEE NOTE 6	5XT SG350 SF55 UX1500HS	SEE NOTE 6
	1.5:1 TO 1.75:1 (H:V) RSS	2XT SG150 SF20 UX1100HS	2XT SG150 SF20 UX1100HS	3XT SG200 SF35 UX1400HS	2XT SG150 SF20 UX1100HS	3XT SG200 SF35 UX1400HS	2XT SG150 SF20 UX1100HS
	> 1.75:1 TO < 2:1 (H:V) RSS	2XT SG150 SF20 UX1100HS	2XT SG150 SF20 UX1100HS	2XT SG150 SF20 UX1100HS	2XT SG150 SF20 UX1100HS	2XT SG150 SF20 UX1100HS	2XT SG150 SF20 UX1100HS
SECONDARY GEOGRID	1:1 (H:V) OR FLATTER RSS	2XT SG150 SF11 BX1100					

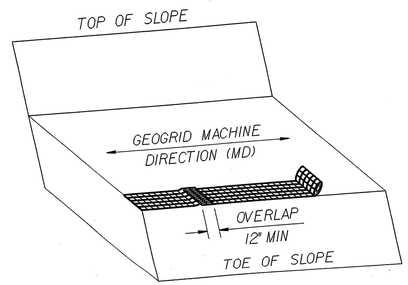
PRIMARY AND SECONDARY GEOGRIDS

#XT REFERS TO MIRAFI SERIES GEOGRID.
SG### REFERS TO STRATAGRID SERIES GEOGRID.
SF## REFERS TO SYNTEEN SERIES GEOGRID.
UX####HS AND BX#### REFER TO TENSAR SERIES GEOGRID.



PRIMARY GEOGRID LAYOUT

***SEE NOTES 7 AND 8.**



SECONDARY GEOGRID LAYOUT

GEOGRID LAYOUT DETAILS

NOTES:

1. SEE ROADWAY PLANS FOR REINFORCED SOIL SLOPE (RSS) LOCATIONS.
2. FOR STANDARD REINFORCED SOIL SLOPES, SEE REINFORCED SOIL SLOPES PROVISION. FOR EROSION CONTROL MAT FACING, SEE PERMANENT SOIL REINFORCEMENT MAT PROVISION.
3. STANDARD RSS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
   UNIT WEIGHT, γ = 120 PCF
   FRICTION ANGLE, ϕ = 30 DEGREES
   COHESION, c = 0 PSF
4. DO NOT USE STANDARD RSS IF THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE EXISTING GROUND OR TOE OF SLOPE.
5. DO NOT USE STANDARD RSS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW RSS.
6. FOR 1:1 TO < 1.5:1 (H:V) RSS, USE CLASS I SELECT MATERIAL IN THE REINFORCED ZONE THAT MEETS ARTICLE 560-2 OF THE STANDARD SPECIFICATIONS EXCEPT FOR SELECT MATERIAL THAT MEETS AASHTO M 145 FOR SOIL CLASSIFICATIONS A-4 AND A-5. DO NOT USE A-4 OR A-5 SOIL OR CLASS II OR III SELECT MATERIAL FOR 1:1 TO < 1.5:1 (H:V) RSS.
7. EXCEPT FOR TENSAR UX GEOGRIDS, DO NOT SPLICE OR OVERLAP PRIMARY GEOGRIDS IN THE MACHINE DIRECTION (MD) SO THAT SPLICES OR OVERLAPS ARE PARALLEL TO THE TOE OF SLOPE. TENSAR UX GEOGRIDS MAY BE SPLICED ONCE PER PRIMARY GEOGRID LENGTH IN ACCORDANCE WITH TENSAR'S RECOMMENDED CONNECTION DETAIL. A LENGTH OF AT LEAST 4' IS REQUIRED FOR EACH TENSAR UX GEOGRID PIECE.
8. EXCEPT FOR TENSAR UX GEOGRIDS, PLACE PRIMARY GEOGRIDS SO THAT GEOGRIDS ARE ADJACENT TO EACH OTHER IN THE CROSS-MACHINE DIRECTION (CD). TENSAR UX GEOGRIDS MAY BE PLACED WITH A MAXIMUM SPACING BETWEEN GEOGRIDS OF 1.64' IN THE CD. STAGGER TENSAR UX GEOGRIDS SO THAT GEOGRIDS ARE CENTERED OVER GAPS IN THE PRIMARY GEOGRID LAYER BELOW.
9. DO NOT PLACE FIRST PRIMARY GEOGRID LAYER UNTIL EXCAVATION DIMENSIONS AND IN-SITU MATERIAL ARE APPROVED.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

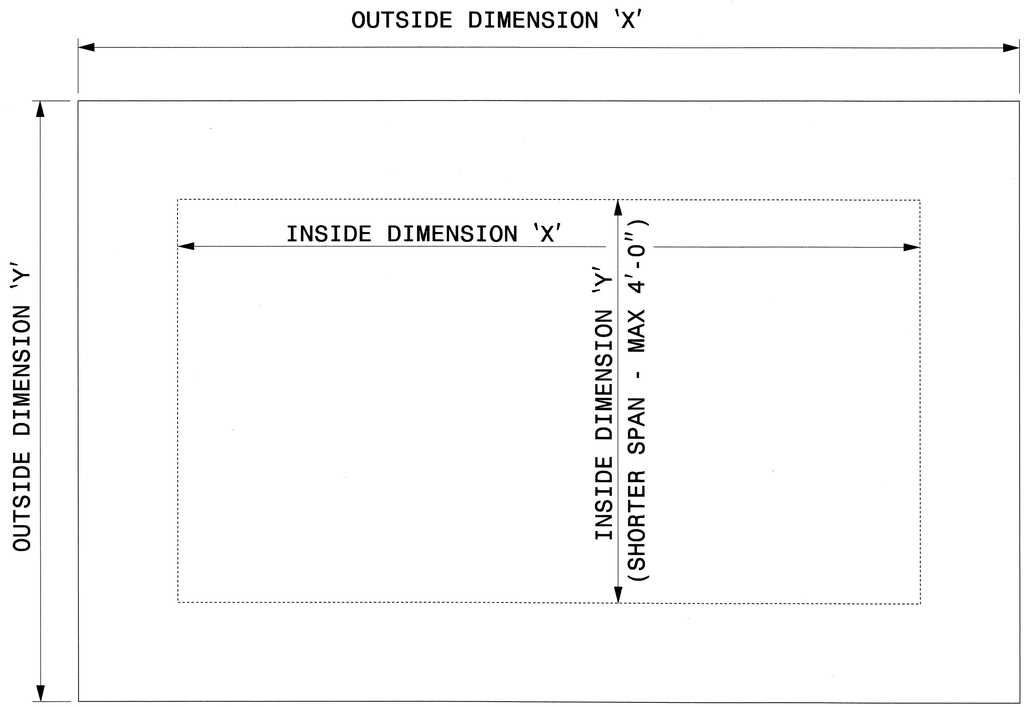
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1803.01

STANDARD REINFORCED SOIL SLOPE (RSS)

DATE: 6-21-11

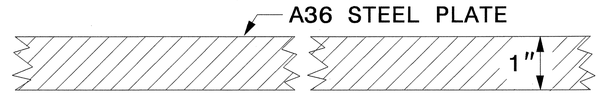
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-Z



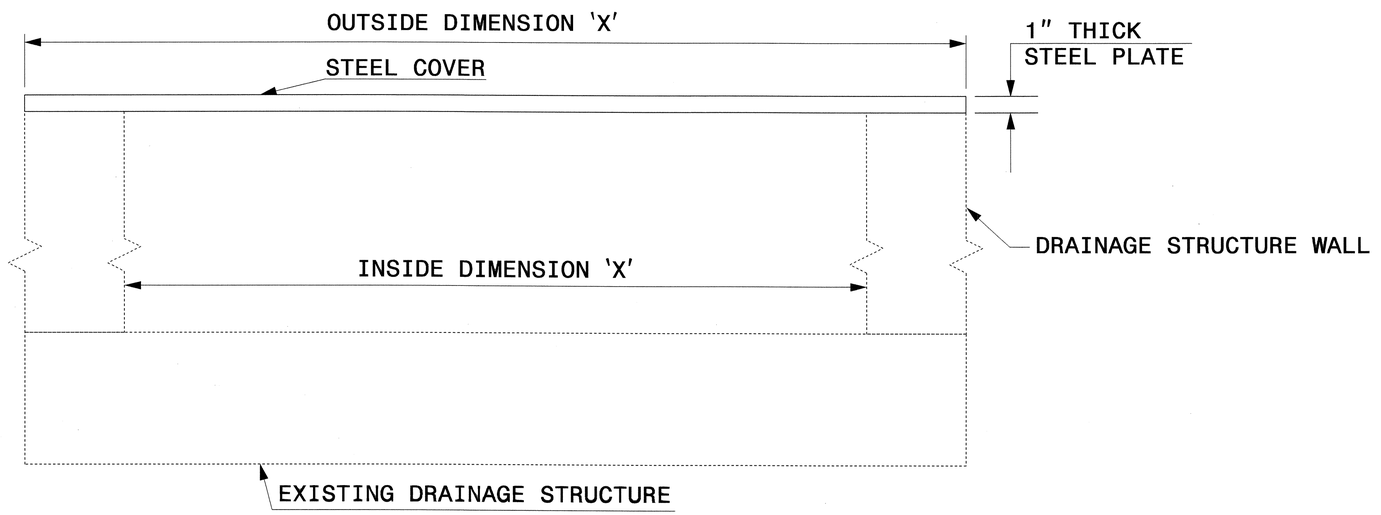
PLAN VIEWS

GENERAL NOTES:

-USE GRADE A36 STEEL
-STEEL COVERS ARE FOR TEMPORARY USE DURING PHASE CONSTRUCTION.
-FILL SHALL BE PLACED DIRECTLY OVER THE STEEL PLATES.
-SEE ROADWAY PLANS AND PROVISIONS FOR LOCATIONS
-QUANTITES TO BE PAID FOR AT THE UNIT PRICE BID PER EACH.



SECTION VIEW OF STEEL TOP PLATE



ELEVATION VIEWS

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-250-4128 FAX 919-250-4119

DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE

ORIGINAL BY: E.E. WARD DATE: 2-2-98
MODIFIED BY: DATE:
CHECKED BY: DATE: 4/4/11
FILE SPEC.: c:/usr/details/metric/stand/stlcvr2.dgn

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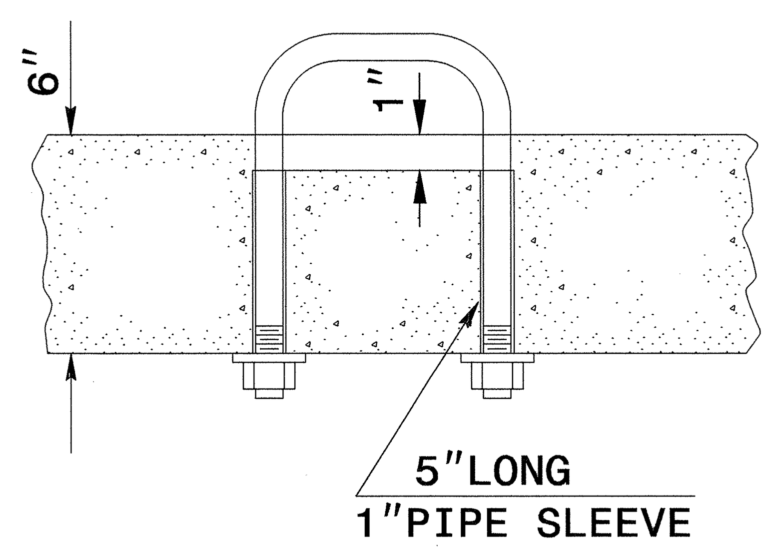
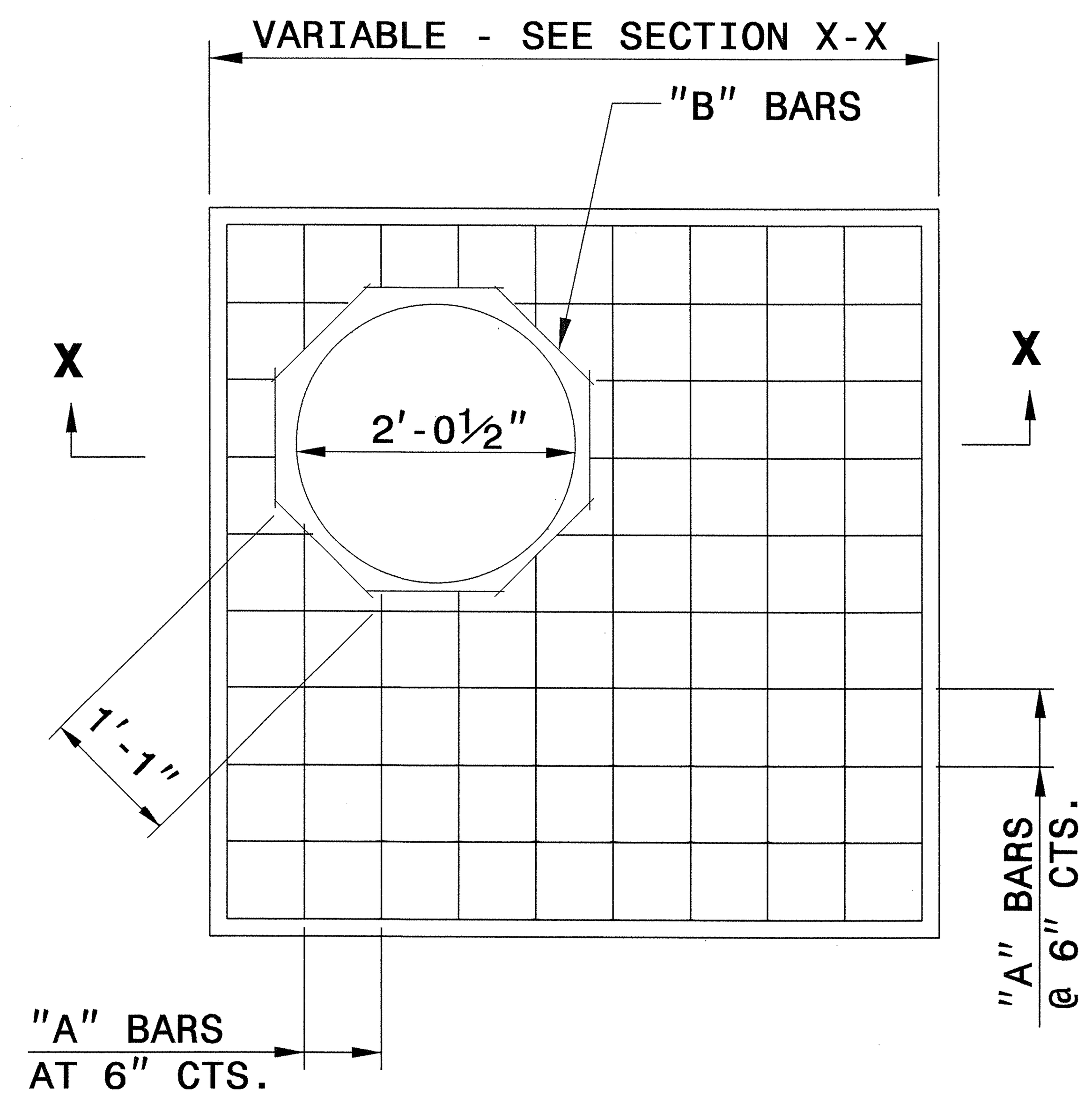
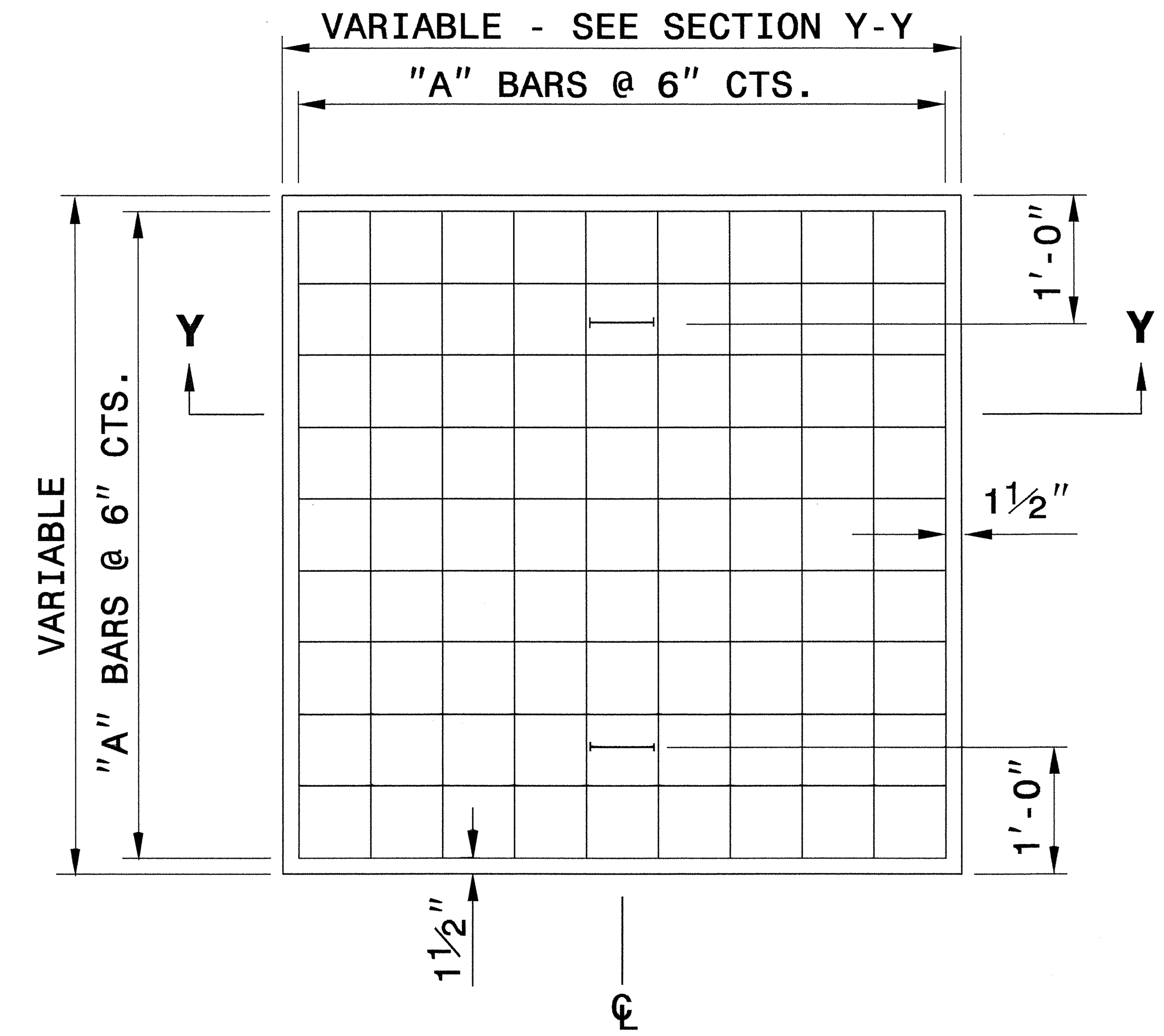
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-AA



PARTIAL SECTION



PLAN



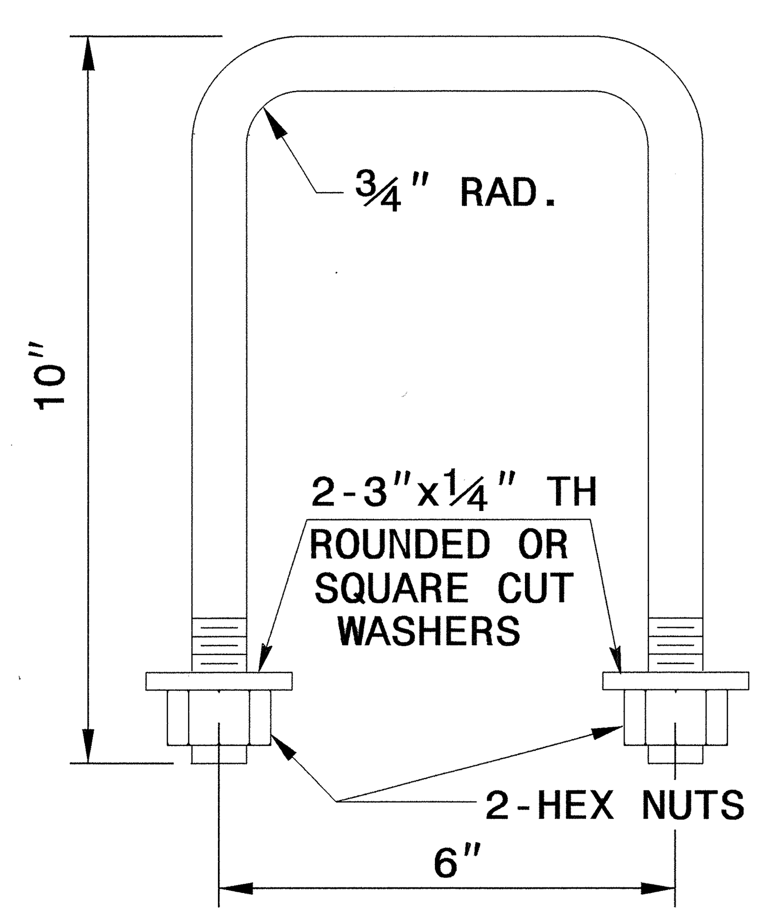
PLAN

GENERAL NOTES:

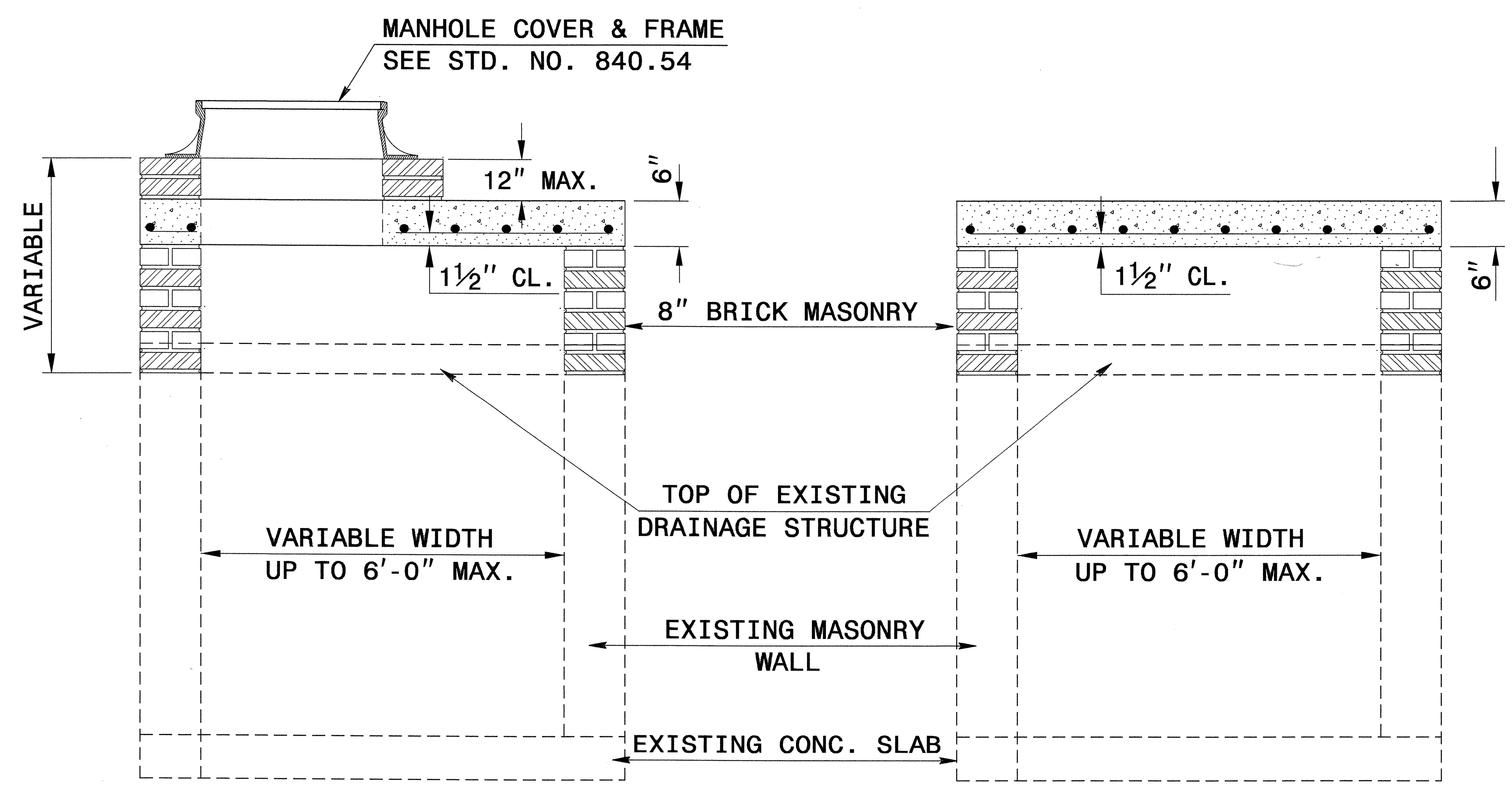
CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

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

DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.



DETAIL OF HANDLE



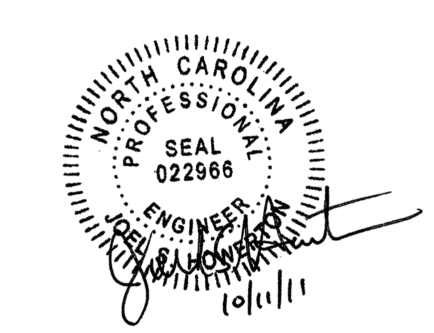
SECTION X-X **SECTION Y-Y**

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.



CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-250-4128 FAX 919-250-4119

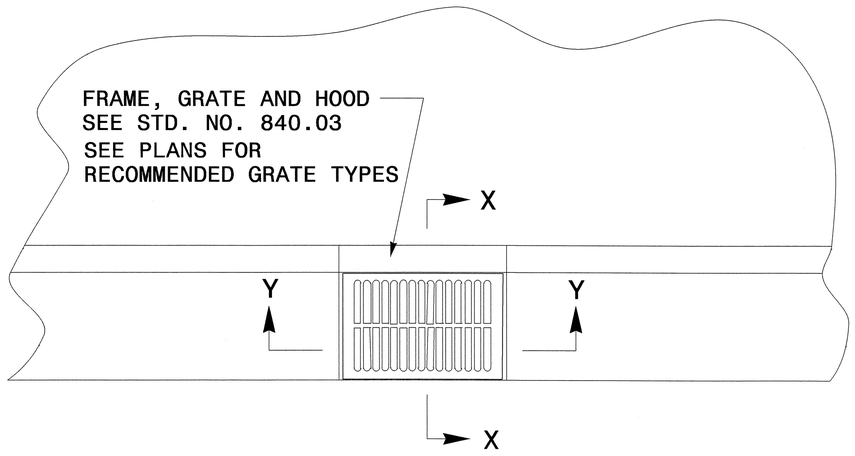
DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S. DATE: NOV.1997
MODIFIED BY: T.S.S. DATE: FEB.2000
CHECKED BY: [signature] DATE: 4/4/11
FILE SPEC.: ds174:/usr/details/stand/boxtojbe.dgn

$$$$$SYSTIME$$$$$ $$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$ $$$$$USERNAME$$$$

5/14/99

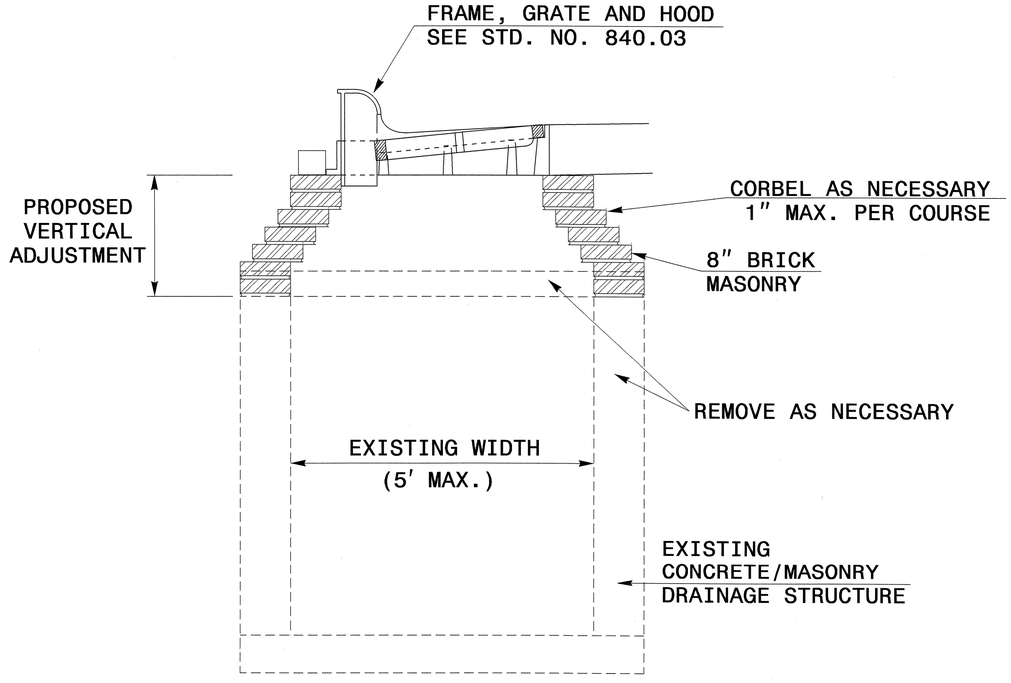
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	2-AB



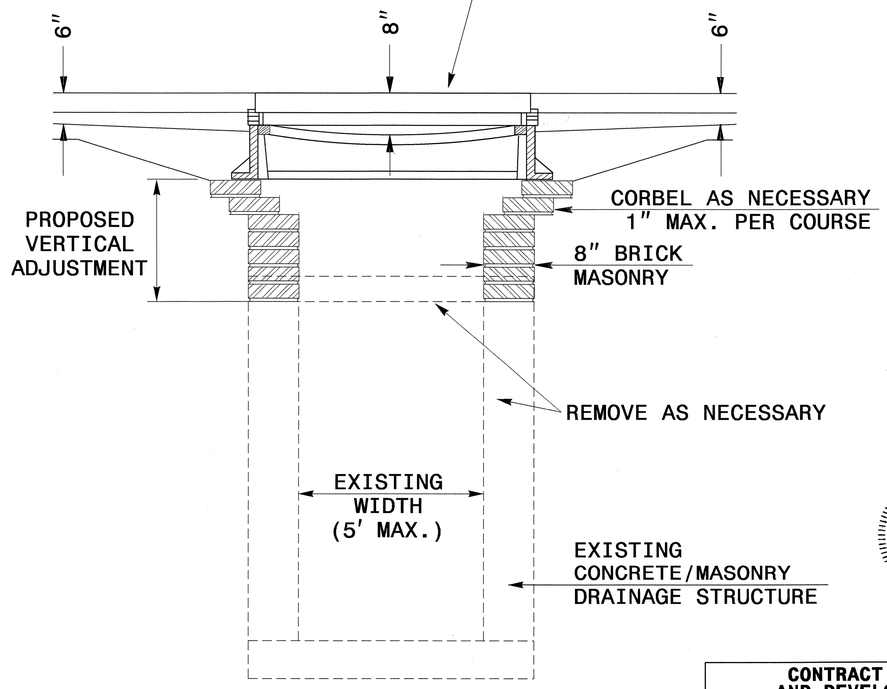
PLAN

GENERAL NOTES:

- THE ROADWAY PLANS INDICATE STRUCTURES TO BE CONVERTED.
- AFTER REMOVAL, STORE GRATES AND FRAMES AS DIRECTED BY THE ENGINEER.
- 4" SOLID CLAY BRICK, JUMBO BRICK, CONCRETE, OR 4" SOLID CONCRETE BLOCK MAY BE USED FOR VERTICAL ADJUSTMENT OF THE STRUCTURE.
- CONVERT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.



SECTION X-X



SECTION Y-Y

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOSEPH E. HONBARRIER
10/11/11

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-250-4128 FAX 919-250-4119

CONVERSION OF DROP INLET OR JUNCTION BOX TO CATCH BASIN

ORIGINAL BY: E.E. WARD DATE: 11-97
MODIFIED BY: DATE:
CHECKED BY: DATE: 5/17/11
FILE SPEC.: 0837:usr\details\stand\jbtocb.dgn

$$$$SYSTIME$$$$
$$$$JUN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-AC

GEOTECHNICAL ENGINEER

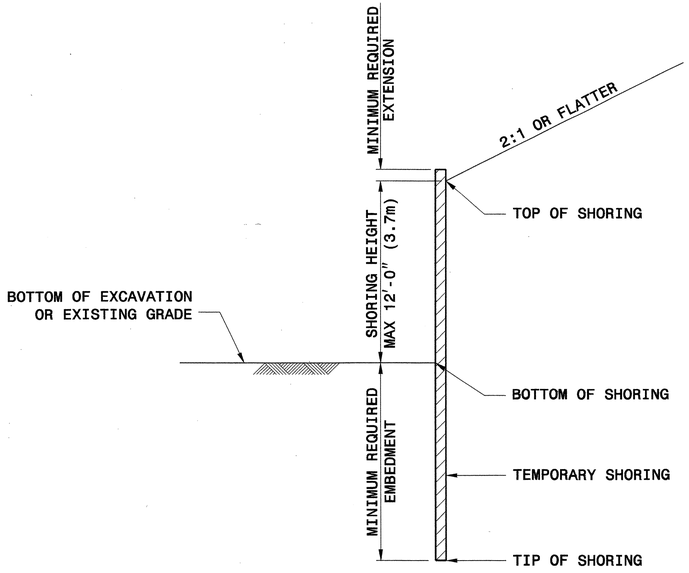
NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A HIDDEN

Scott A. Hidden 3/29/07

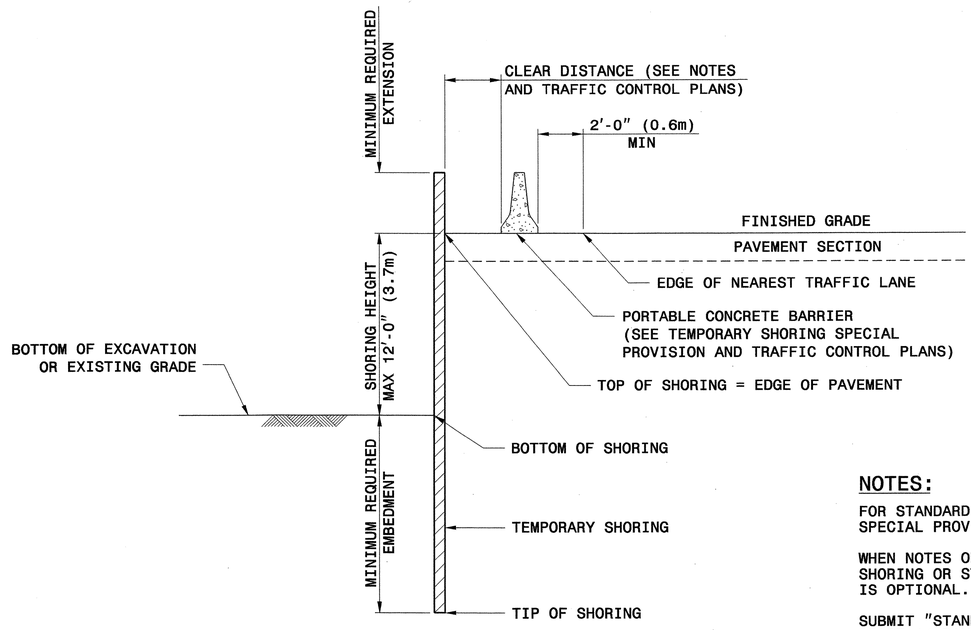
SIGNATURE DATE

ENGINEER

SIGNATURE DATE



SLOPE CASE



SURCHARGE CASE

GROUNDWATER CONDITION	SHORING HEIGHT FT (m)	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 (m)	MINIMUM REQUIRED SECTION MODULUS IN^3/FT (cm^3/m)	MINIMUM REQUIRED EMBEDMENT FT (m)			MINIMUM REQUIRED EMBEDMENT FT (m)	MINIMUM REQUIRED SECTION MODULUS IN^3/FT (cm^3/m)	MINIMUM REQUIRED EMBEDMENT FT (m)		
				HP 10x42 (HP 250x62)	HP 12x53 (HP 310x79)	HP 14x73 (HP 360x108)			HP 10x42 (HP 250x62)	HP 12x53 (HP 310x79)	HP 14x73 (HP 360x108)
GROUNDWATER ELEVATION BELOW TIP OF SHORING	< 6 (1.8)	7.5 (2.3)	3.0 (161)	8.0 (2.4)	8.0 (2.4)	8.0 (2.4)	11.0 (3.4)	10.0 (538)	9.5 (2.9)	9.5 (2.9)	9.5 (2.9)
	7 (2.1)	8.5 (2.6)	4.5 (242)	9.5 (2.9)	9.5 (2.9)	9.5 (2.9)	12.0 (3.7)	12.0 (645)	10.5 (3.2)	10.5 (3.2)	10.5 (3.2)
	8 (2.4)	10.0 (3.0)	6.5 (349)	10.5 (3.2)	10.5 (3.2)	10.5 (3.2)	12.5 (3.8)	14.0 (753)	11.5 (3.5)	11.5 (3.5)	11.5 (3.5)
	9 (2.7)	11.0 (3.4)	9.5 (511)	--	12.0 (3.7)	12.0 (3.7)	13.5 (4.1)	16.5 (887)	--	12.5 (3.8)	12.5 (3.8)
	10 (3.0)	12.5 (3.8)	13.0 (699)	--	--	13.5 (4.1)	14.0 (4.3)	19.5 (1048)	--	13.5 (4.1)	13.5 (4.1)
	11 (3.4)	13.5 (4.1)	17.0 (914)	--	--	14.5 (4.4)	15.0 (4.6)	22.5 (1210)	--	--	14.5 (4.4)
	12 (3.7)	15.0 (4.6)	21.5 (1156)	--	--	16.0 (4.9)	16.0 (4.9)	25.5 (1371)	--	--	15.5 (4.7)
GROUNDWATER ELEVATION BEWTEEN BOTTOM OF SHORING AND TIP OF SHORING	< 6 (1.8)	11.5 (3.5)	4.5 (242)	11.5 (3.5)	11.5 (3.5)	11.5 (3.5)	16.0 (4.9)	12.0 (645)	13.0 (4.0)	13.0 (4.0)	13.0 (4.0)
	7 (2.1)	13.0 (4.0)	7.0 (376)	13.0 (4.0)	13.0 (4.0)	13.0 (4.0)	17.0 (5.2)	14.5 (780)	14.5 (4.4)	14.5 (4.4)	14.5 (4.4)
	8 (2.4)	15.0 (4.6)	10.0 (538)	--	15.0 (4.6)	15.0 (4.6)	18.0 (5.5)	17.0 (914)	--	15.5 (4.7)	15.5 (4.7)
	9 (2.7)	17.0 (5.2)	14.0 (753)	--	17.0 (5.2)	17.0 (5.2)	19.0 (5.8)	20.0 (1075)	--	17.0 (5.2)	17.0 (5.2)
	10 (3.0)	18.5 (5.6)	19.5 (1048)	--	--	18.5 (5.6)	20.0 (6.1)	23.5 (1263)	--	--	18.5 (5.6)
	11 (3.4)	20.5 (6.3)	26.0 (1398)	--	--	--	21.0 (6.4)	28.0 (1505)	--	--	20.0 (6.1)
	12 (3.7)	22.5 (6.9)	33.0 (1774)	--	--	--	22.0 (6.7)	33.0 (1774)	--	--	21.5 (6.6)

NOTE: MINIMUM REQUIRED EXTENSION IS 6" (150mm) FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" (800 mm) FOR "SURCHARGE CASE WITH TRAFFFIC IMPACT".

NOTES:

FOR STANDARD TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

WHEN NOTES ON PLANS DO NOT PROHIBIT STANDARD TEMPORARY SHORING OR STANDARD SHORING, STANDARD TEMPORARY SHORING IS OPTIONAL.

SUBMIT "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 14 DAYS BEFORE BEGINNING SHORING CONSTRUCTION. UP TO THREE LOCATIONS MAY BE INCLUDED ON EACH SELECTION FORM.

STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING CONDITIONS:
1) MAXIMUM SHORING HEIGHT IS 12'-0" (3.7m).
2) TRAFFIC SURCHARGE IS 240 PSF (11.5 KPA) MAXIMUM OR BACKSLOPE IS 2:1 (H:V) OR FLATTER.
3) BOTTOM OF EXCAVATION OR EXISTING GRADE IN FRONT OF SHORING IS 6:1 (H:V) SLOPE OR FLATTER.
4) H PILE SPACING IS 6'-0" (1.8m).
5) H PILE EMBEDMENT DEPTHS ARE FOR DRIVEN PILES.
6) TIMBER LAGGING IS A MINIMUM OF 3" (75mm) THICK.

STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
TOTAL UNIT WEIGHT = 120 PCF (18.8 KN/M^3)
FRICTION ANGLE = 30 DEGREES
COHESION = 0 PSF (0 KPA)
GROUNDWATER IS ASSUMED TO BE BELOW BOTTOM OF SHORING.

DO NOT USE STANDARD TEMPORARY SHORING WHEN THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE THE BOTTOM OF SHORING.

DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS PRESENT WITHIN THE EMBEDMENT DEPTH.

VERIFY GROUNDWATER ELEVATION BEFORE BEGINNING SHORING CONSTRUCTION.

IF THE CLEAR DISTANCE AVAILABLE IS LESS THAN THE MINIMUM REQUIRED IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS, SET THE BARRIER AGAINST THE TRAFFIC SIDE OF THE SHORING AND USE THE "SURCHARGE CASE WITH TRAFFIC IMPACT".

AT THE CONTRACTOR'S OPTION, H PILE EMBEDMENT DEPTHS FOR PILES SET IN DRILLED HOLES MAY BE REDUCED BY 25%. FOR PILE EXCAVATION, SEE TEMPORARY SHORING SPECIAL PROVISION.

CONTROL DRAINAGE DURING CONSTRUCTION IN THE VICINITY OF THE SHORING. COLLECT AND DIRECT RUNOFF AWAY FROM SHORING.

CONTACT THE ENGINEER IF MINIMUM REQUIRED EMBEDMENT IS NOT ACHIEVED.

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: 2-20-07

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-AD

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

scott a. hidden 11/14/11
SIGNATURE DATE

ENGINEER

SIGNATURE DATE

STANDARD TEMPORARY MSE WALL OPTIONS

TEMPORARY MSE WALL OPTION	VENDOR	CONTACT INFORMATION	REINFORCEMENT TYPE	SHEETS
TEMPORARY FABRIC WALL	N/A	N/A	POLYESTER OR POLYPROPYLENE FABRIC	3
HILFIKER TEMPORARY WALL	HILFIKER RETAINING WALLS	1902 HILFIKER LANE, EUREKA, CA 95503-5711 707-443-5093 WWW.HILFIKER.COM	WELDED WIRE MAT	4
SIERRASCAPE TEMPORARY WALL	TENSAR EARTH TECHNOLOGIES, INC	5883 GLENRIDGE DRIVE, SUITE 200 ATLANTA, GA 30328-5363 404-250-1290 WWW.TENSARCORP.COM	GEOGRID	5
RETAINED EARTH TEMPORARY WALL	THE REINFORCED EARTH COMPANY	8614 WESTWOOD CENTER DRIVE, SUITE 1100 VIENNA, VA 22182-2233 703-749-4325 WWW.REINFORCEDEARTH.COM	WELDED WIRE MESH	6-8
TERRATREL TEMPORARY WALL	THE REINFORCED EARTH COMPANY	8614 WESTWOOD CENTER DRIVE, SUITE 1100 VIENNA, VA 22182-2233 703-749-4325 WWW.REINFORCEDEARTH.COM	RIBBED STEEL STRIPS	9-11

FOR STANDARD TEMPORARY MSE WALLS, SEE TEMPORARY SHORING SPECIAL PROVISION.

WHEN NOTES ON PLANS DO NOT PROHIBIT TEMPORARY MSE WALLS OR STANDARD SHORING, STANDARD TEMPORARY MSE WALLS ARE OPTIONAL.

WHEN NOTES ON PLANS REQUIRE TEMPORARY MSE WALLS, USE STANDARD TEMPORARY MSE WALLS OR CONTRACTOR DESIGNED TEMPORARY MSE WALLS.

WHEN THE ALIGNMENT OF STANDARD TEMPORARY MSE WALLS RESULTS IN AN INTERIOR ANGLE LESS THAN 90 DEGREES, SUBMIT AN ACUTE CORNER DETAIL FOR THE SPECIFIC SITUATION IN ACCORDANCE WITH THE WALL VENDOR RECOMMENDATIONS. ALSO, SUBMIT A "STANDARD TEMPORARY MSE WALL SELECTION FORM" FOR EACH TEMPORARY MSE WALL LOCATION. SUBMIT THESE ITEMS AT LEAST 14 DAYS BEFORE BEGINNING WALL CONSTRUCTION.

STANDARD TEMPORARY MSE WALLS ARE BASED ON THE FOLLOWING CONDITIONS:
1) MAXIMUM WALL HEIGHT IS 28'-0" (8.5m).
2) TRAFFIC SURCHARGE IS 240 PSF (11.5 KPA) MAXIMUM OR BACKSLOPE IS 2:1 (H:V) OR FLATTER.
3) EXISTING OR FINISHED GRADE IN FRONT OF WALL IS 6:1 (H:V) SLOPE OR FLATTER.
4) THE GRADE OF THE TOP OF WALL IS LESS THAN 4% FOR RETAINED EARTH AND TERRATREL TEMPORARY WALLS.
5) DESIGN SERVICE LIFE IS 3 YEARS.
6) MATERIAL IN REINFORCED ZONE IS SHORING BACKFILL.
7) MAXIMUM APPLIED BEARING PRESSURE IS 1 TSF (100 KPA) FOR WALL HEIGHTS UP TO 8'-0" (2.4m), 2 TSF (195 KPA) FOR WALL HEIGHTS BETWEEN 8'-0" AND 18'-0" (2.4m AND 5.5m) AND 3 TSF (290 KPA) FOR WALL HEIGHTS OVER 18'-0" (5.5m).

STANDARD TEMPORARY MSE WALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMMED SOIL PARAMETERS:
TOTAL UNIT WEIGHT = 120 PCF (18.8 KN/M^3)
FRICTION ANGLE = 30 DEGREES
COHESION = 0 PSF (0 KPA)
GROUNDWATER IS ASSUMED TO BE BELOW BOTTOM OF REINFORCED ZONE.

DO NOT USE STANDARD TEMPORARY MSE WALLS WHEN THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR VERY LOOSE OR SOFT SOIL OR MUCK IS PRESENT BELOW THE BOTTOM OF REINFORCED ZONE.

CONTROL DRAINAGE DURING CONSTRUCTION IN THE VICINITY OF STANDARD TEMPORARY MSE WALLS. COLLECT AND DIRECT RUNOFF AWAY FROM WALLS AND SHORING BACKFILL.

EXCAVATE AS NECESSARY FOR STANDARD TEMPORARY MSE WALLS IN ACCORDANCE WITH THE FOLLOWING FOR THE WALL OPTION CHOSEN:
1) MINIMUM EMBEDMENT OF 18" (450mm) UNLESS WALL BEARS ON ROCK, CONCRETE OR PAVEMENT AS DETERMINED BY THE ENGINEER
2) VERTICAL STEPS IN INCREMENTS EQUAL TO THE VERTICAL REINFORCEMENT SPACING
3) WITH THE EXCEPTION OF EITHER THE FIRST OR LAST SECTION OF WALL, HORIZONTAL SECTION LENGTHS IN INCREMENTS EQUAL TO THE FOLLOWING:

STANDARD TEMPORARY MSE WALL OPTION	INCREMENT
TEMPORARY FABRIC WALL	9'-0" (2.7m) MIN (VARIES)
HILFIKER TEMPORARY WALL	10'-0" (3.0m) MIN (VARIES)
SIERRASCAPE TEMPORARY WALL	18'-7¼" (5.7m)
RETAINED EARTH TEMPORARY WALL	24'-0" (7.3m)
TERRATREL TEMPORARY WALL	19'-8" (6.0m)

DO NOT PLACE SHORING BACKFILL OR FIRST REINFORCEMENT LAYER UNTIL OBTAINING APPROVAL OF THE EXCAVATION DEPTH AND FOUNDATION MATERIAL.

IF APPLICABLE, INSTALL FOUNDATIONS LOCATED WITHIN THE REINFORCED ZONE BEFORE BEGINNING WALL CONSTRUCTION UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

ERECT AND MAINTAIN FACINGS AND FORMS AS SHOWN ON THE STANDARD TEMPORARY MSE WALL DETAILS. STAGGER VERTICAL JOINTS OF FACINGS AND FORMS TO CREATE A RUNNING BOND WHEN POSSIBLE UNLESS SHOWN OTHERWISE ON THESE DETAILS.

PLACE FACINGS AND FORMS AS NEAR TO VERTICAL AS POSSIBLE WITH NO NEGATIVE BATTER. CONSTRUCT STANDARD TEMPORARY MSE WALLS WITH A VERTICAL AND HORIZONTAL TOLERANCE OF 3" (75mm) WHEN MEASURED WITH A 10'-0" (3m) STRAIGHT EDGE AND AN OVERALL VERTICAL PLUMBNESS (BATTER) AND HORIZONTAL ALIGNMENT OF LESS THAN 6" (150mm).

PLACE REINFORCEMENT AT LOCATIONS AND ELEVATIONS SHOWN ON THE STANDARD TEMPORARY MSE WALL DETAILS AND IN SLIGHT TENSION FREE OF KINKS, FOLDS, WRINKLES OR CREASES.

DO NOT SPLICE REINFORCEMENT IN THE REINFORCEMENT DIRECTION (RD), i.e., PARALLEL TO THE WALL FACE. SEAMS ARE ALLOWED IN THE CROSS-REINFORCEMENT DIRECTION (CRD).

CONTACT THE ENGINEER WHEN EXISTING OR FUTURE STRUCTURES SUCH AS FOUNDATIONS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT. TO AVOID STRUCTURES, DELFECT, SKEW AND MODIFY REINFORCEMENT.

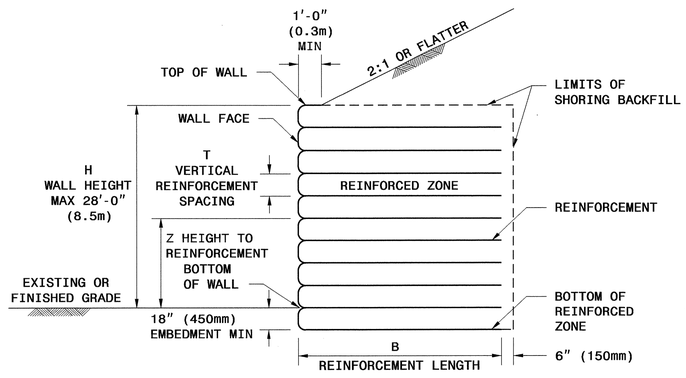
PLACE SHORING BACKFILL IN 8" TO 10" (200mm to 250mm) THICK LIFTS AND COMPACT IN ACCORDANCE WITH SUBARTICLE 235-4(C) OF THE STANDARD SPECIFICATIONS. USE ONLY HAND OPERATED COMPACTION EQUIPMENT WITHIN 3'-0" (1m) OF THE WALL FACE.

DO NOT DAMAGE REINFORCEMENT WHEN PLACING AND COMPACTING SHORING BACKFILL. DO NOT OPERATE HEAVY EQUIPMENT ON REINFORCEMENT UNTIL IT IS COVERED WITH AT LEAST 10" (250mm) OF SHORING BACKFILL. DO NOT USE SHEEPSFOOT, GRID ROLLERS OR OTHER TYPES OF COMPACTION EQUIPMENT WITH FEET.

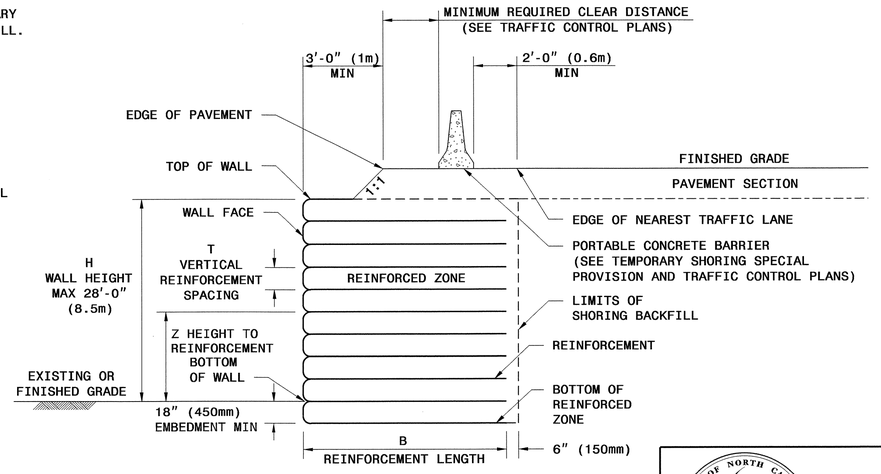
COVER REINFORCING AND RETENTION FABRIC WITH AT LEAST 3" (75mm) OF SHORING BACKFILL. PLACE TOP REINFORCEMENT LAYER BETWEEN 4" AND 24" (100mm and 600mm) BELOW TOP OF WALL DEPENDING ON WALL OPTION.

BENCH STANDARD TEMPORARY MSE WALLS INTO THE SIDES OF EXCAVATIONS WHERE APPLICABLE.

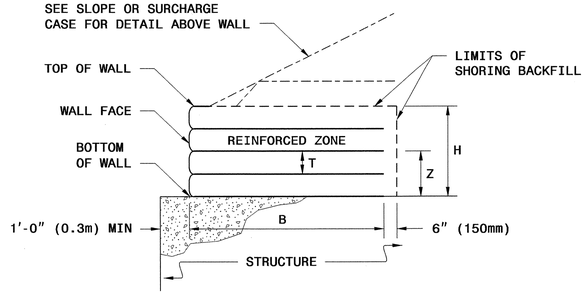
IF THE TOP OF WALL IS WITHIN 5'-0" (1.5m) OF FINISHED GRADE, REMOVE TOP FORM OR FACING AND INCORPORATE THE TOP REINFORCEMENT LAYER INTO THE FILL WHEN PLACING FILL IN FRONT OF THE WALL. STANDARD TEMPORARY MSE WALLS REMAIN IN PLACE PERMANENTLY UNLESS REQUIRED OTHERWISE.



SLOPE CASE



SURCHARGE CASE



TEMPORARY MSE WALL ON STRUCTURE

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

STANDARD TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS

SHEET 1 OF 11 DATE: 2-20-07

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-AE

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

Scott A. Hidden 11/14/11

SIGNATURE DATE

ENGINEER

SIGNATURE DATE

HOW TO USE THIS SHEET:

- FOR ALL WALL OPTIONS, DETERMINE MINIMUM REQUIRED REINFORCEMENT LENGTH (B) FROM TABLE AT RIGHT BASED ON WALL HEIGHT (H) AND SLOPE OR SURCHARGE CASE
- FOR STANDARD TEMPORARY FABRIC WALL, SEE SHEET 3 FOR FABRIC STRENGTH REQUIREMENTS BASED ON WALL HEIGHT (H)
- FOR ALL OTHER WALL OPTIONS, DETERMINE REINFORCEMENT TYPE FROM TABLES BELOW FOR EACH HEIGHT TO REINFORCEMENT (Z) BASED ON WALL HEIGHT (H) AND SLOPE OR SURCHARGE CASE

MINIMUM REQUIRED REINFORCEMENT LENGTH B (FT)

(FOR ALL WALL OPTIONS)

WALL HEIGHT H (FT)	<8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28
SLOPE CASE	8	11	13	14	16	18	20	22	24	25	27
SURCHARGE CASE	8	9	11	12	14	15	16	18	19	21	22

TERRATREL TEMPORARY WALL (STRIPS PER LEVEL PER PANEL)

H (FT) <4	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28	Z (FT-INCHES)
												3	27 - 8
											3	3	26 -10
											3	3	25 - 2
										3	3	3	23 - 6
									3	3	3	3	21 -10
								3	3	3	3	3	20 - 2
							3	3	3	3	3	3	18 - 6
						3	3	3	3	3	3	3	16 -10
						3	3	3	3	3	3	3	15 - 2
					4	3	3	3	3	3	3	3	13 - 6
				4	4	3	3	3	3	3	3	3	11 -10
			5	4	4	3	3	3	3	3	3	3	10 - 2
		5	5	4	4	3	3	3	3	3	3	3	8 - 6
	5	5	5	4	4	3	3	3	3	3	3	3	6 -10
	5	5	5	4	4	3	3	3	3	3	3	3	5 - 2
5	5	5	5	4	4	3	3	3	3	3	3	3	3 - 6
5	5	5	5	4	4	3	3	3	3	3	3	3	1 -10
5	5	5	5	4	4	3	3	3	3	3	3	3	0 - 2
5	5	5	5	4	4	3	3	3	3	3	3	3	-0 - 8

SLOPE AND SURCHARGE CASES

SIERRASCAPE TEMPORARY WALL (GEOGRID TYPE)

11 = UX1100MSE
14 = UX1400MSE
15 = UX1500MSE
16 = UX1600MSE
17 = UX1700MSE

H (FT) <4	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28	Z (FT)
												11	26.5
											11	11	25.5
											11	11	24
										11	11	11	22.5
									11	11	11	15	21
								11	11	11	14	15	19.5
								11	11	11	14	15	18
							11	11	11	14	15	15	16.5
						11	11	11	11	14	15	15	15
						11	11	11	11	15	15	15	13.5
						11	11	11	15	15	15	15	12
					11	11	11	11	15	15	15	16	10.5
				11	11	11	11	15	15	15	15	16	9
			11	11	11	11	14	15	15	15	15	16	7.5
			11	11	11	11	14	15	15	16	16	16	6
		11	11	11	11	15	15	15	15	15	16	16	4.5
	11	11	11	11	14	15	15	15	15	16	16	16	3
	11	11	11	11	14	15	15	15	16	16	16	17	1.5
	11	11	11	11	14	15	15	16	16	16	17	17	0
	11	11	11	14	15	15	15	15	16	16	17	17	-1.5

SLOPE CASE

H (FT) <4	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28	Z (FT)
												11	26.5
												11	25.5
											11	11	24
											11	11	22.5
										11	11	11	21
									11	11	11	11	19.5
									11	11	11	15	18
								11	11	11	15	15	16.5
							11	11	11	11	15	15	15
							11	11	11	11	15	15	13.5
							11	11	11	15	15	15	12
						11	11	11	11	15	15	15	10.5
					11	11	11	11	15	15	15	15	9
				11	11	11	11	15	15	15	15	15	7.5
			11	11	11	11	15	15	15	15	15	16	6
		11	11	11	11	14	15	15	15	15	15	16	4.5
	11	11	11	11	11	14	15	15	15	15	16	16	3
	11	11	11	11	11	14	15	15	15	15	16	16	1.5
	11	11	11	11	11	14	15	15	15	15	16	16	0
	11	11	11	11	11	14	15	15	15	15	16	16	-1.5

SURCHARGE CASE

HILFIKER TEMPORARY WALL (WELDED WIRE MAT TYPE)

4.5 = W4.5 x W3.5
7.0 = W7.0 x W3.5
9.5 = W9.5 x W4.0

H (FT) <4	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28	Z (FT)
												4.5	26
											4.5	7.0	24
										4.5	7.0	7.0	22
									4.5	7.0	7.0	7.0	20
								4.5	7.0	7.0	7.0	7.0	18
							4.5	7.0	7.0	7.0	7.0	7.0	16
						4.5	7.0	7.0	7.0	7.0	7.0	9.5	14
					4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	12
				4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	10
			4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	8
		4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	6
	4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	9.5	4
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3
4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	9.5	7.0	2
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.0	7.0	1
7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	9.5	7.0	7.0	0
7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	-1.5

SLOPE CASE

H (FT) <4	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28	Z (FT)
												4.5	26
											4.5	7.0	24
										4.5	7.0	7.0	22
									4.5	7.0	7.0	7.0	20
								4.5	7.0	7.0	7.0	7.0	18
							4.5	7.0	7.0	7.0	7.0	7.0	16
						4.5	7.0	7.0	7.0	7.0	7.0	9.5	14
					4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	12
				4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	10
			4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	8
		4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	6
	4.5	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	9.5	4
4.5	7.0	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	9.5	2
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
7.0	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	9.5	9.5	0
7.0	7.0	7.0	7.0	7.0	7.0	9.5	9.5	9.5	9.5	9.5	9.5	9.5	-1.5

SURCHARGE CASE

RETAINED EARTH TEMPORARY WALL (WELDED WIRE MESH TYPE)

3X1 = 3W8 x W8 x 1.0'
3X2 = 3W8 x W8 x 2.0'

H (FT) <4	4 TO 6	6 TO 8	8 TO 10	10 TO 12	12 TO 14	14 TO 16	16 TO 18	18 TO 20	20 TO 22	22 TO 24	24 TO 26	26 TO 28	Z (FT-INCHES)
												3X1	27 - 6
												3X1	26 -10
											3X1	3X2	25 - 2
										3X1	3X1	3X2	23 - 6
									3X1	3X1	3X2	3X2	21 -10
								3X1	3X1	3X2	3X2	3X2	20 - 2
							3X1	3X1	3X2	3X2	3X2	3X2	18 - 6
							3X1	3X2	3X2	3X2	3X2	3X2	16 -10
						3X1	3X2	3X2	3X2	3X2	3X2	3X2	15 - 2
					3X1	3X1	3X2	3X2	3X2	3X2	3X2	3X2	13 - 6
				3X1	3X1	3X2	3X2	3X2	3X2	3X2	3X2	3X2	11 -10
			3X1	3X1	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	10 - 2
		3X1	3X1	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	8 - 6
		3X1	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	6 -10
	3X1	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	5 - 2
3X1	3X1	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3 - 6
3X1	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	1 -10
3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	0 - 2
3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	3X2	-1 - 6

SLOPE AND SURCHARGE CASES

NOTES FOR HILFIKER TEMPORARY WALL

1) CAP MAT AT TOP OF WALL IS NOT INCLUDED IN TABLES.
2) REINFORCEMENT IS NOT REQUIRED AT 1' LEVEL FOR SLOPE CASE UNTIL WALL HEIGHT (H) IS GREATER THAN 24'.
3) REINFORCEMENT IS NOT REQUIRED AT 3' LEVEL FOR SLOPE CASE UNTIL WALL HEIGHT (H) IS GREATER THAN 26'.
4) REINFORCEMENT IS NOT REQUIRED AT 1' LEVEL FOR SURCHARGE CASE UNTIL WALL HEIGHT (H) IS GREATER THAN 26'.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

STANDARD TEMPORARY MSE WALL REINFORCEMENT TABLES - ENGLISH UNITS

SHEET 2 OF 11 DATE: 2-20-07

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-AF

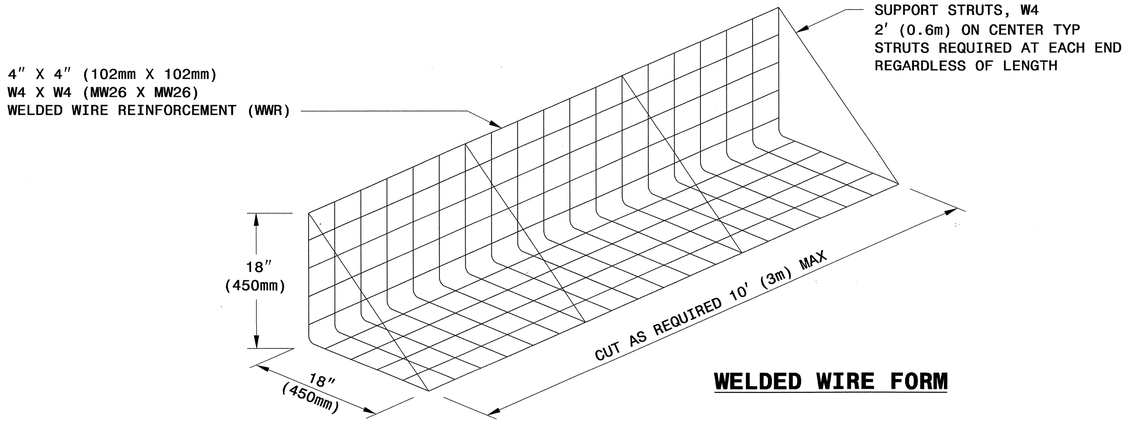
GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

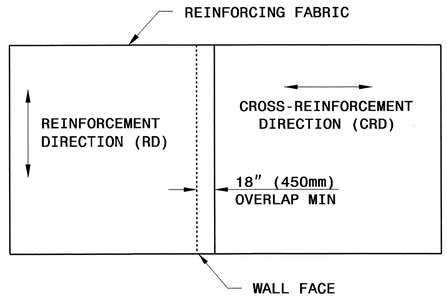
Scott A. Hidden 11/14/11
SIGNATURE DATE

ENGINEER

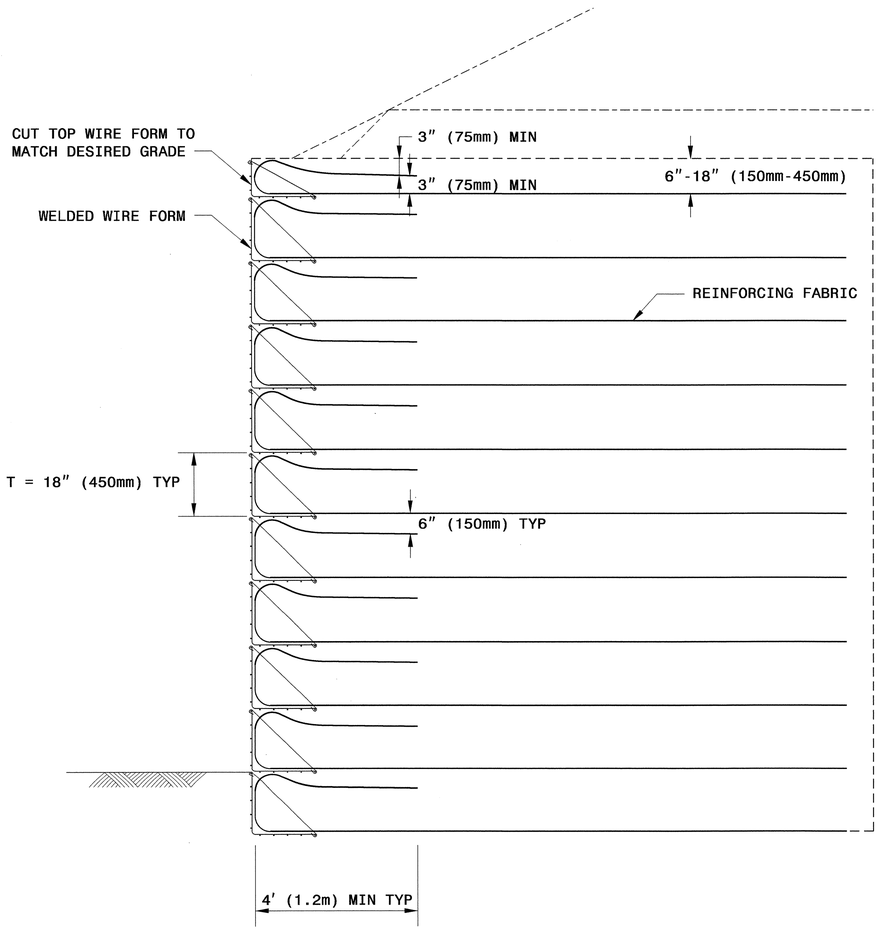
SIGNATURE DATE



WELDED WIRE FORM



PLAN VIEW OF FABRIC OVERLAP



TYPICAL SECTION

MINIMUM REQUIRED REINFORCING FABRIC STRENGTH FOR RD*
(SLOPE AND SURCHARGE CASES)

WALL HEIGHT H FEET (M)	POLYESTER WIDE WIDTH TENSILE STRENGTH @ ULTIMATE LB/INCH (KN/M)	POLYPROPYLENE WIDE WIDTH TENSILE STRENGTH @ ULTIMATE LB/INCH (KN/M)
4 (1.2)	200 (35)	200 (35)
6 (1.8)	200 (35)	200 (35)
8 (2.4)	200 (35)	200 (35)
10 (3.0)	200 (35)	230 (40)
12 (3.7)	220 (39)	264 (46)
14 (4.3)	248 (43)	297 (52)
16 (4.9)	276 (48)	330 (58)
18 (5.5)	304 (53)	364 (64)
20 (6.1)	332 (58)	397 (70)
22 (6.7)	359 (63)	431 (76)
24 (7.3)	387 (68)	464 (81)
26 (7.9)	415 (73)	497 (87)
28 (8.5)	443 (78)	531 (93)

*RD = REINFORCEMENT DIRECTION

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

TEMPORARY
FABRIC WALL

SHEET 3 OF 11 DATE: 12-19-06

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-AG

GEOTECHNICAL ENGINEER

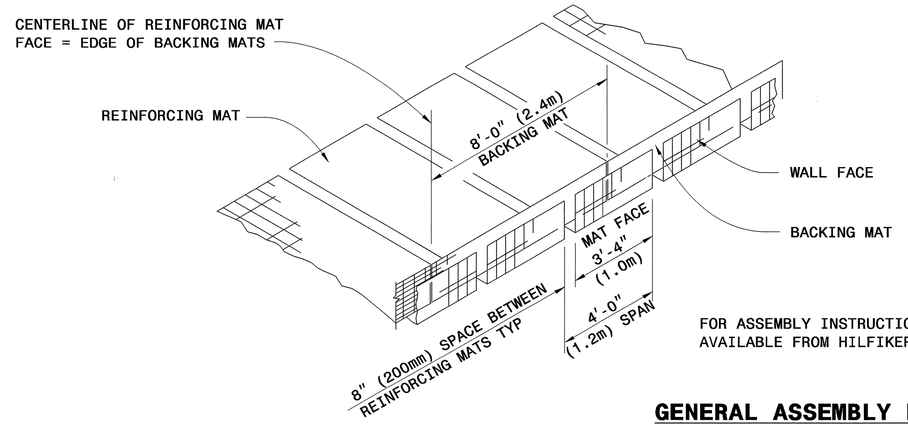
NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. MIDDLE

scott a. middle 11/14/11

SIGNATURE DATE

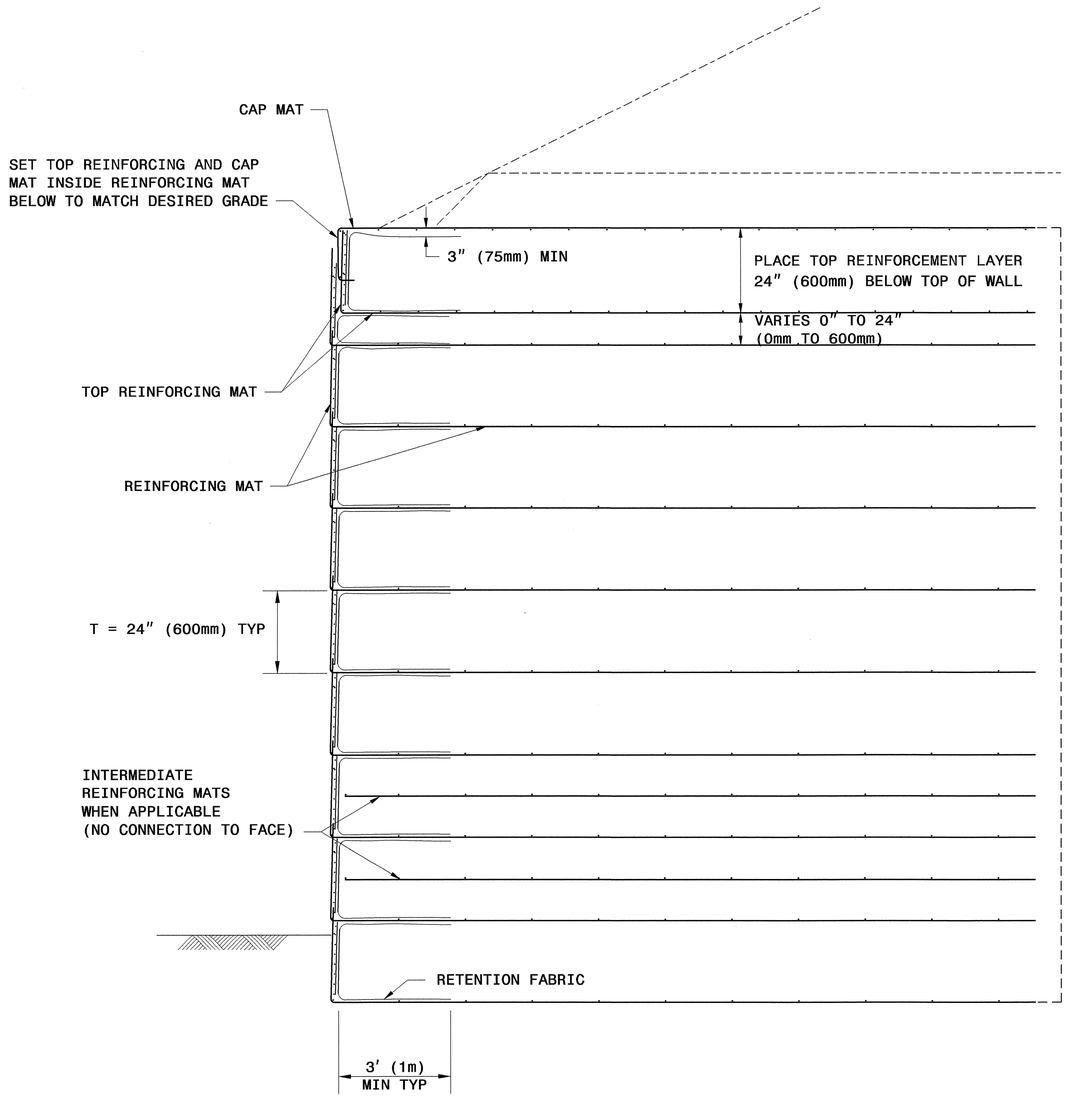
ENGINEER

SIGNATURE DATE

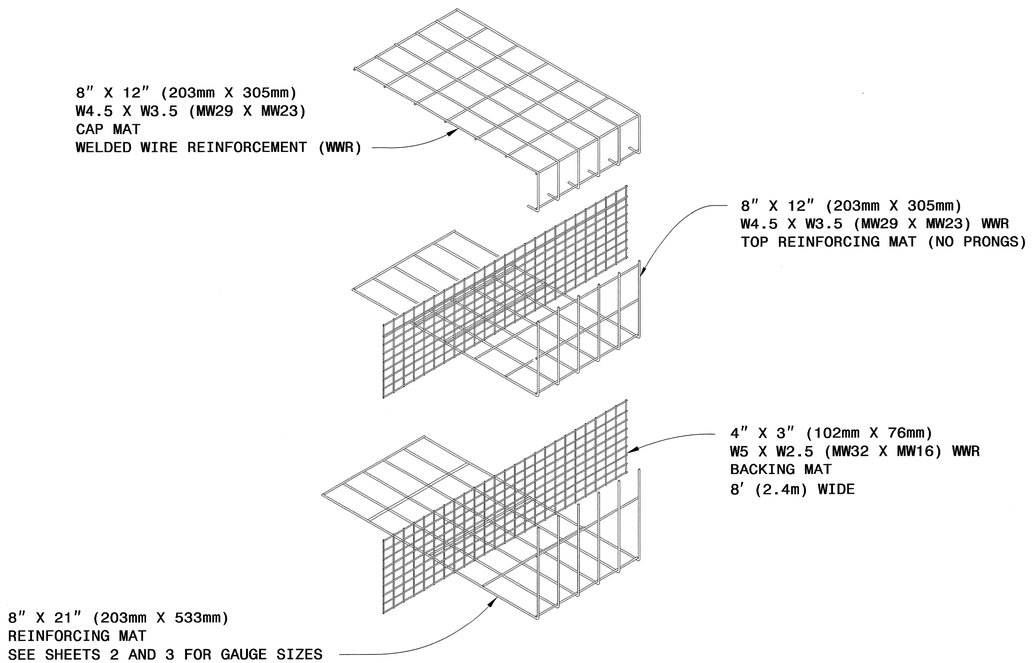


FOR ASSEMBLY INSTRUCTIONS, SEE WELDED WIRE WALL CONSTRUCTION GUIDE AVAILABLE FROM HILFIKER WEBSITE AT WWW.HILFIKER.COM/WWW

GENERAL ASSEMBLY DETAIL



TYPICAL SECTION



WALL COMPONENTS

HILFIKER RETAINING WALLS

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

HILFIKER TEMPORARY WALL

SHEET 4 OF 11 DATE: 12-19-06

ENG240027 11/14/2011 Std Dwg No 1801.02 06.12.19 Hilfiker Temporary Wall.dgn untitled CEC Ops 860.24bmk

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-AH

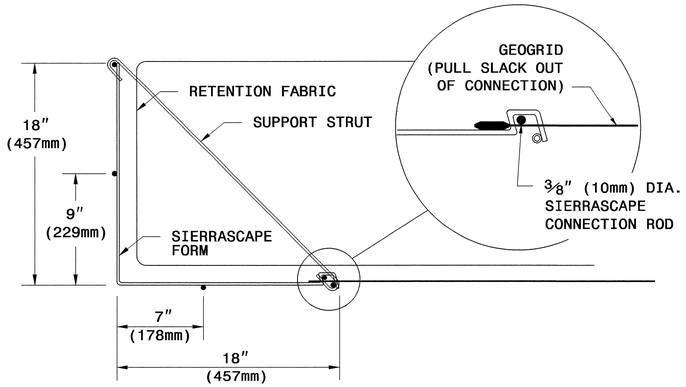
GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

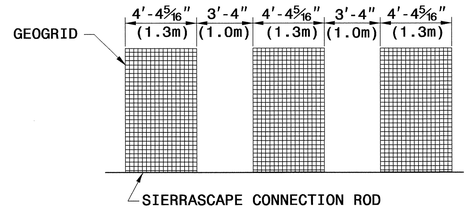
SIGNATURE 11/14/11 DATE

ENGINEER

SIGNATURE DATE

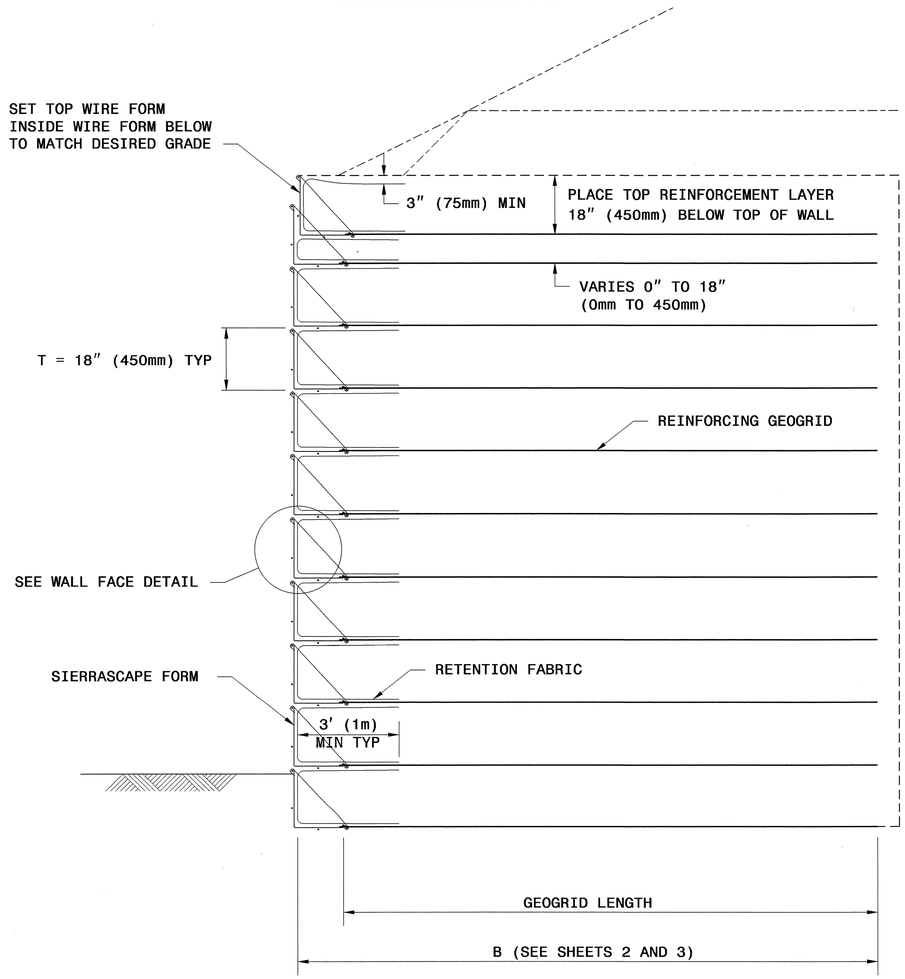


WALL FACE DETAIL

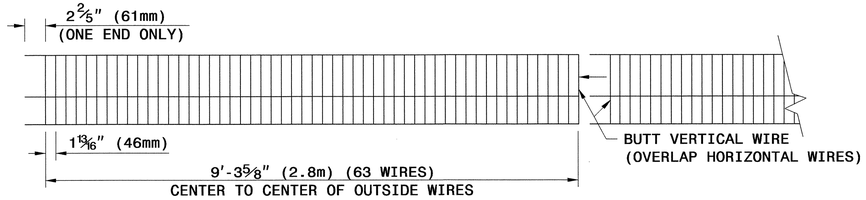


PLACE ALTERNATE LAYERS OF GEOGRID IN STAGGERED PATTERN
SUCH THAT THE LAYER ABOVE IS CENTERED OVER SPACE BELOW

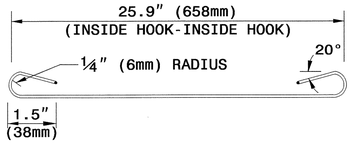
TYPICAL GEOGRID COVERAGE



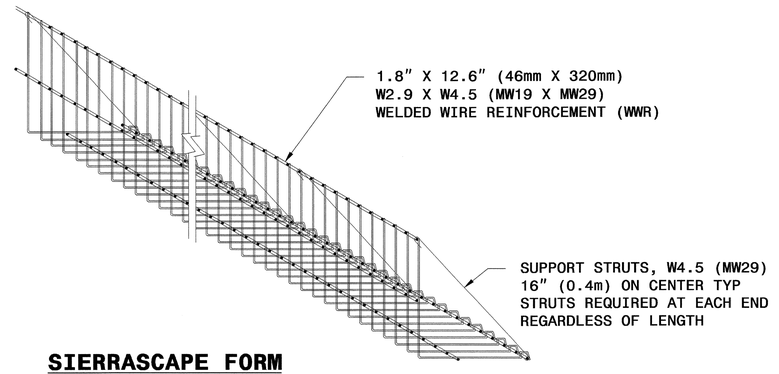
TYPICAL SECTION



ELEVATION VIEW



SUPPORT STRUT



SIERRASCAPE FORM

WALL COMPONENTS

Tensar®
Tensar Earth Technologies, Inc.

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

SIERRASCAPE
TEMPORARY WALL

SHEET 5 OF 11 DATE: 12-19-06

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-AI

GEOTECHNICAL ENGINEER

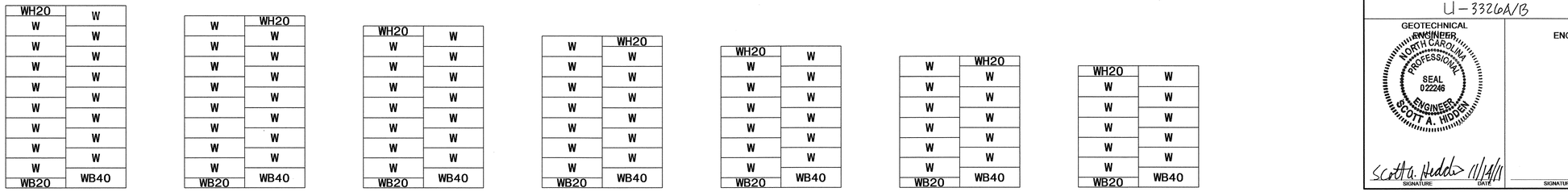
NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

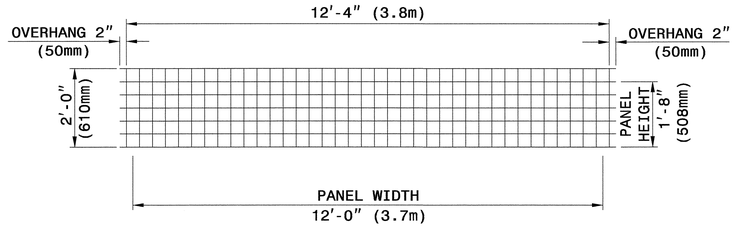
Scott A. Hidden 11/14/11
SIGNATURE DATE

ENGINEER

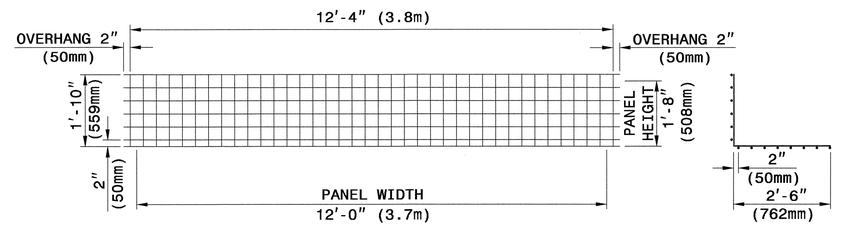
SIGNATURE DATE

PANEL LAYOUTS

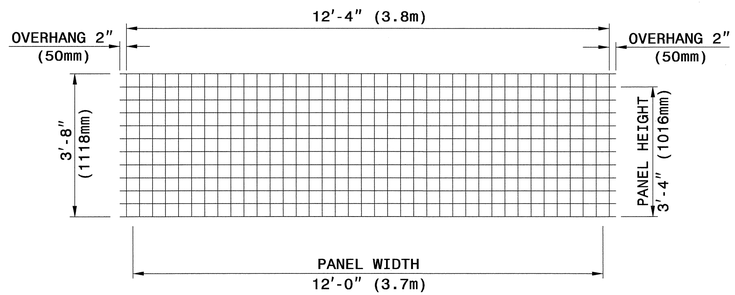




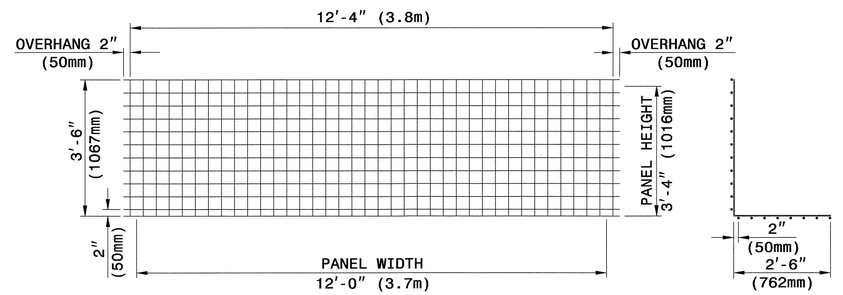
TYPE WH20



TYPE WB20 **SECTION**



TYPE W



TYPE WB40 **SECTION**

WELDED WIRE FACINGS

WELDED WIRE FORMS

PANEL TYPES (WELDED WIRE FACINGS AND FORMS)

4" X 4" (100mm X 100mm), W8 X W8 (MW52 X MW52) WELDED WIRE REINFORCEMENT (WWR)

The Reinforced Earth Company

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

RETAINED EARTH TEMPORARY WALL

SHEET 6 OF 11 DATE: 12-19-06

PROJECT REFERENCE NO.	SHEET
U-3320A/B	2-A J

GEOTECHNICAL ENGINEER

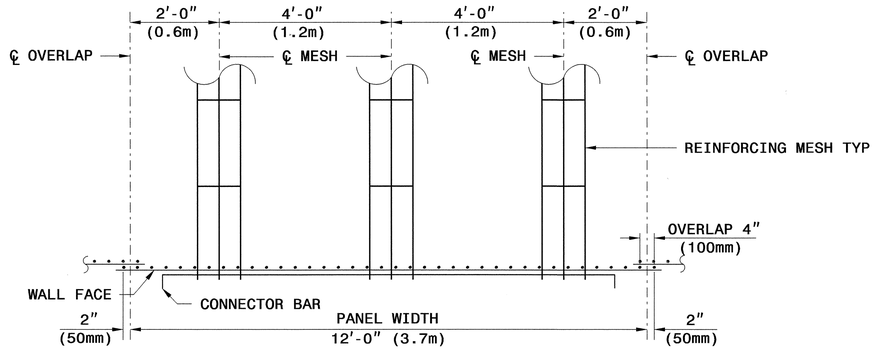
NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

Scott A. Hidden 11/14/11

SIGNATURE DATE

ENGINEER

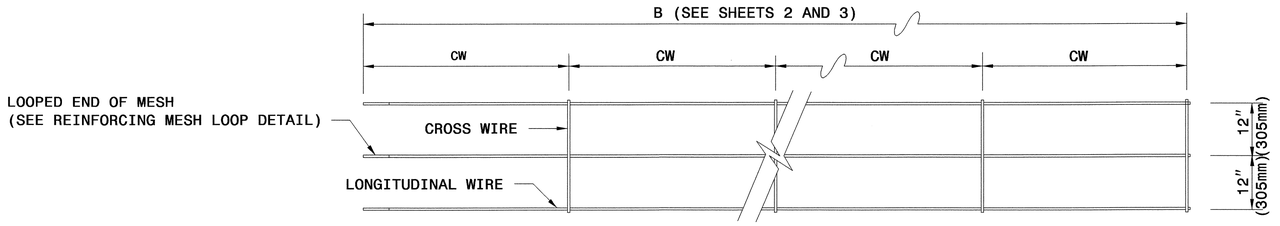
SIGNATURE DATE



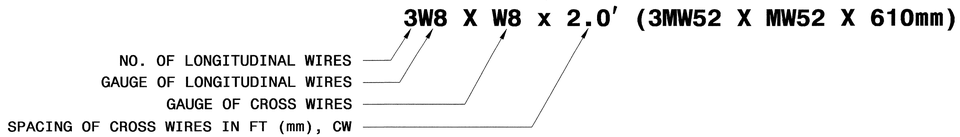
REINFORCING MESH PLACEMENT DETAIL (PLAN VIEW)

½" (13mm) DIA. BAR

CONNECTOR BAR

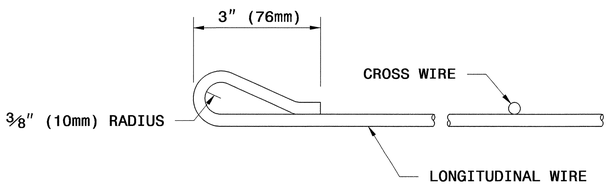


IF REINFORCEMENT LENGTH IS NOT AN INCREMENT OF 2'-0" (610mm) MAKE CW EQUAL TO 12" (305mm) AT THE END OF THE REINFORCING MESH OPPOSITE THE LOOPED END

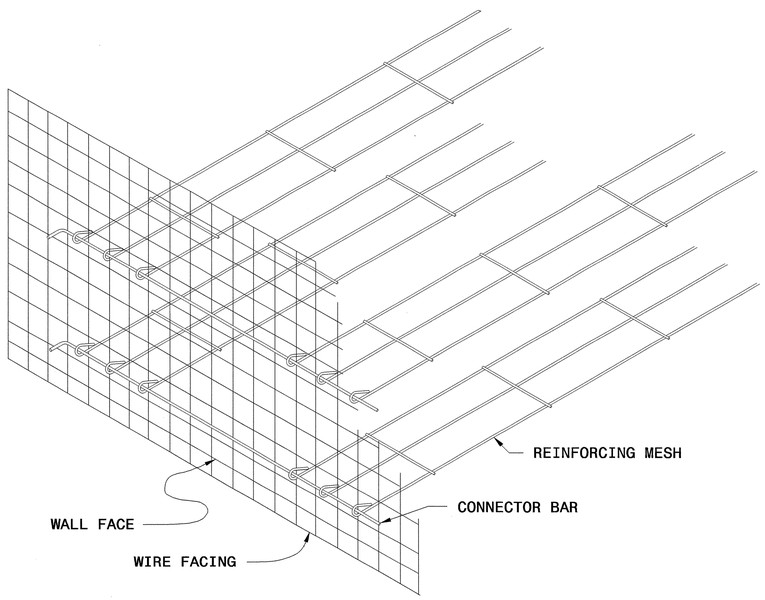


REINFORCING MESH DESIGNATION

REINFORCING MESH



REINFORCING MESH LOOP DETAIL



GENERAL ASSEMBLY DETAIL

The Reinforced Earth Company

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

RETAINED EARTH TEMPORARY WALL

 DATE: 12-19-06

GEC240337 11/14/2011 Std Dwg No 1801.02 06-12-19 Retained Earth Temporary Wall eng & met ghbox GEC-Oce860-34bond

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-AK

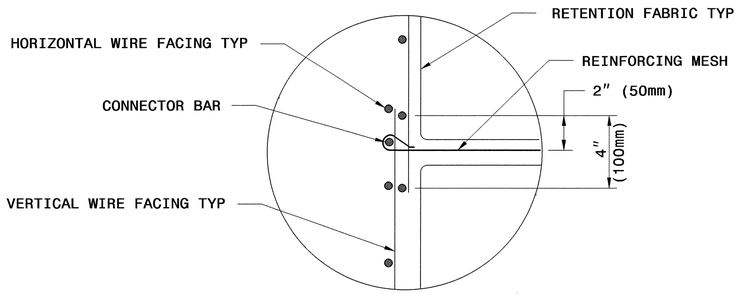
GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

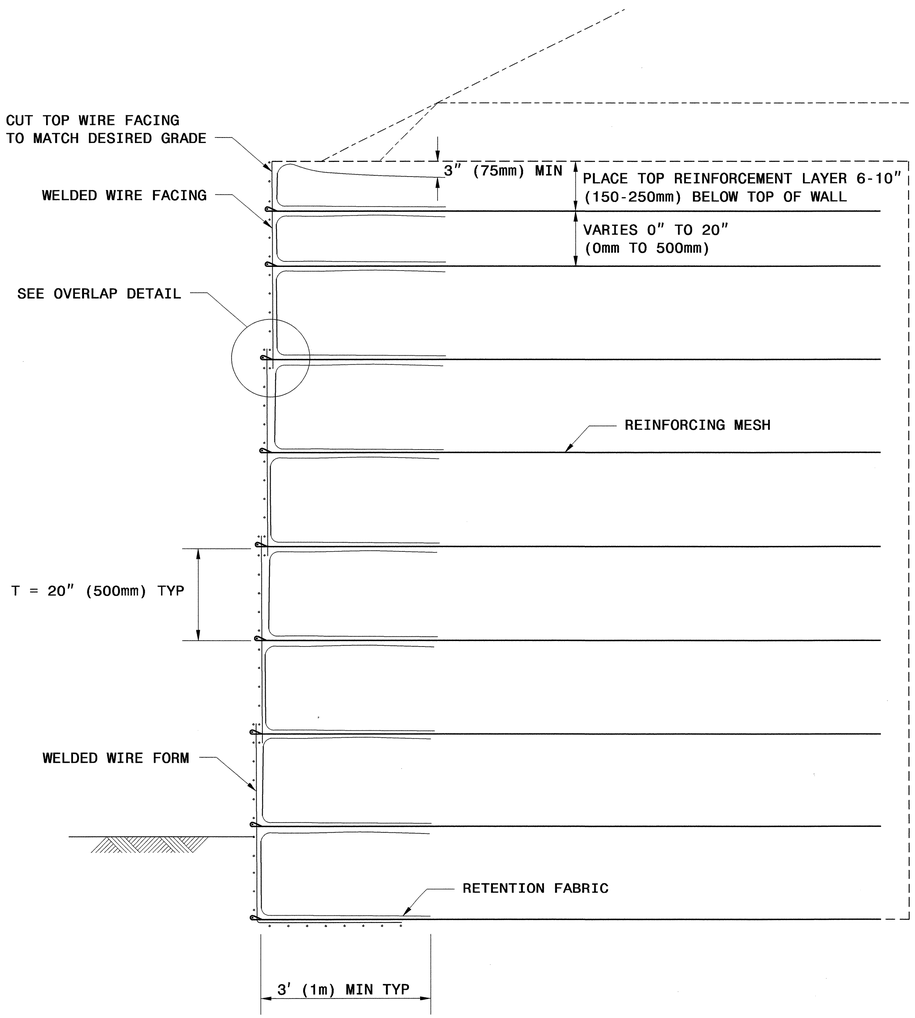
Scott A. Hidden 11/14/11
SIGNATURE DATE

ENGINEER

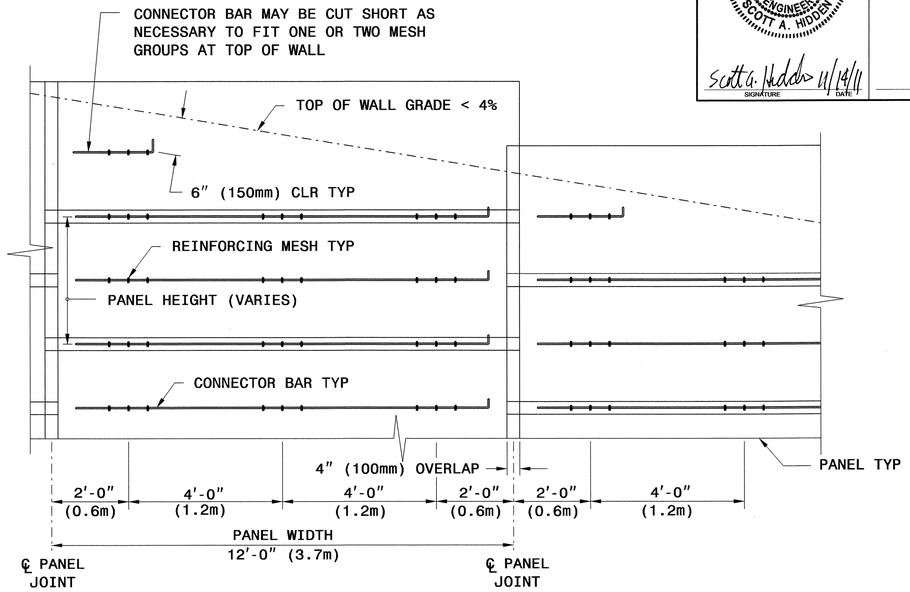
SIGNATURE DATE



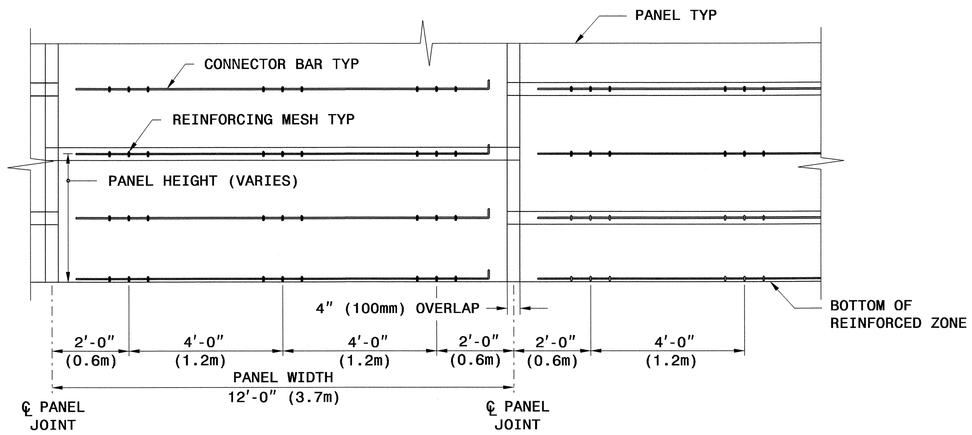
OVERLAP DETAIL



TYPICAL SECTION



TYPICAL ELEVATION @ TOP OF WALL
(WIRES NOT SHOWN FOR CLARITY)



TYPICAL ELEVATION @ BOTTOM OF WALL
(WIRES NOT SHOWN FOR CLARITY)

The Reinforced Earth Company

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

RETAINED EARTH TEMPORARY WALL

SHEET 8 OF 11 DATE: 12-19-06

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-AL

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

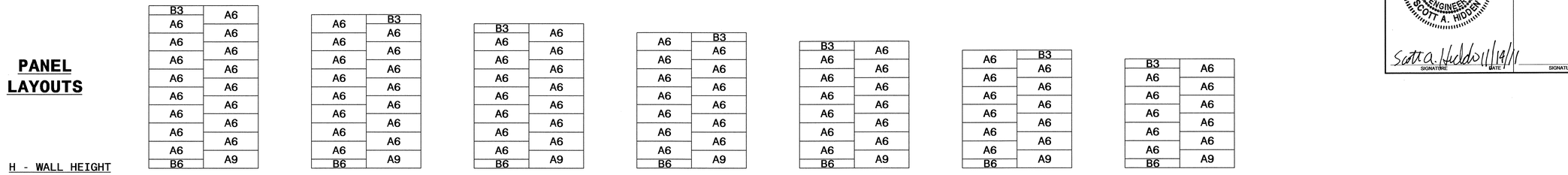
Scott A. Hidden 11/14/11

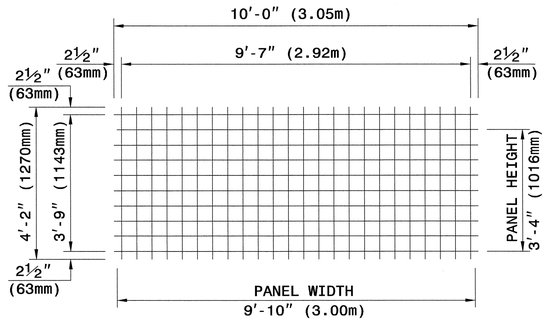
SIGNATURE DATE

ENGINEER

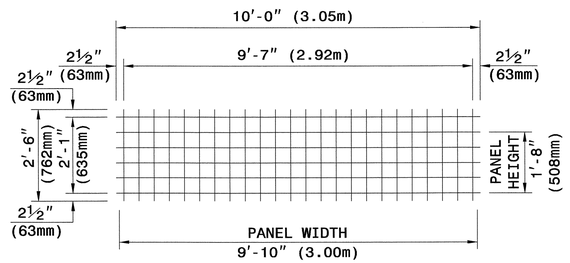
SIGNATURE DATE

PANEL LAYOUTS

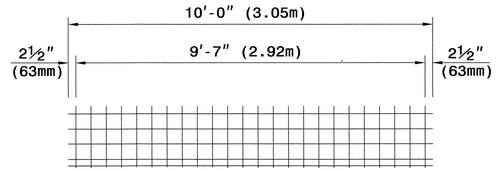




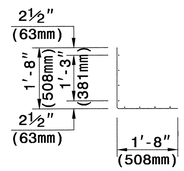
TYPE A



TYPE B



WELDED WIRE FORM



SECTION

WELDED WIRE FACINGS

PANEL TYPES (WELDED WIRE FACINGS AND FORM

5″ X 5″ (125mm X 125mm), W5 X W5 (MW32 X MW32) WELDED WIRE REINFORCEMENT (WWR)

The Reinforced Earth Company

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

TERRATREL TEMPORARY WALL

SHEET 9 OF 11 DATE: 12-19-06

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-AM

GEOTECHNICAL ENGINEER

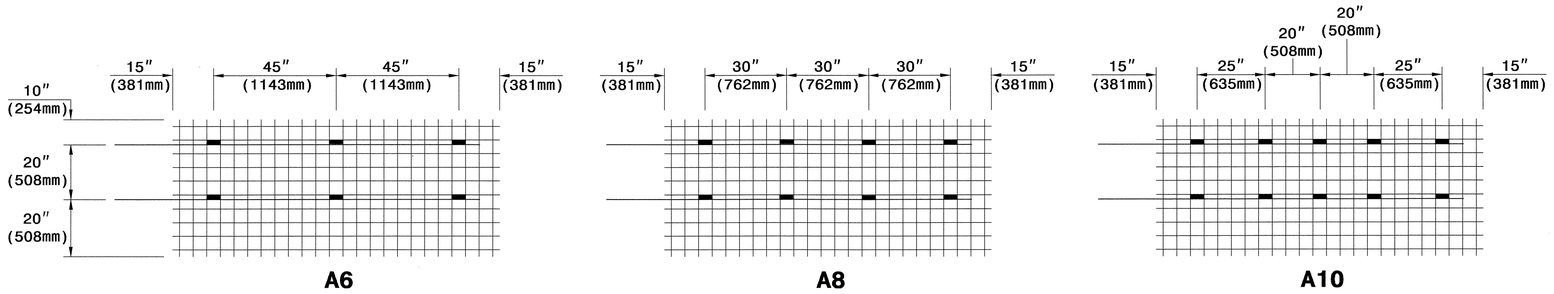
NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

Scott A. Hidden 11/14/11

SIGNATURE DATE

ENGINEER

SIGNATURE DATE

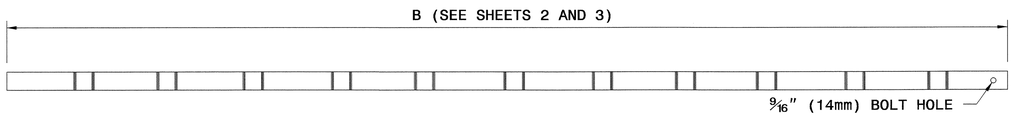


KEY: A8

NUMBER OF REINFORCING STRIPS

PANEL TYPE

CONNECTOR ROD AND REINFORCING STRIP PLACEMENT DIAGRAMS



REINFORCING STRIP - 2" X 5/32" (50mm X 4mm)

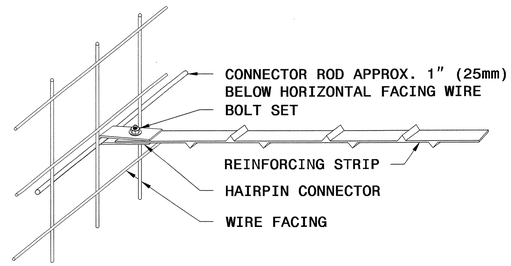
1/2" (13mm) DIA. ROD

CONNECTOR ROD

1/2" (13mm) BOLT WITH NUT AND WASHER

BOLT SET

HAIRPIN CONNECTOR



STRIP TO FACING CONNECTION

WALL COMPONENTS

The Reinforced Earth Company

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

TERRATREL
TEMPORARY WALL

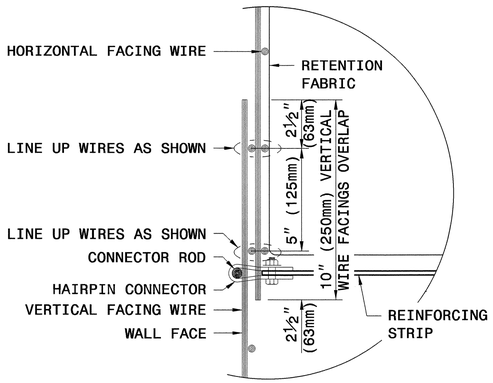
SHEET 10 OF 11 DATE: 12-19-06

PROJECT REFERENCE NO.	SHEET
U-3326A/B	2-AN

GEOTECHNICAL ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

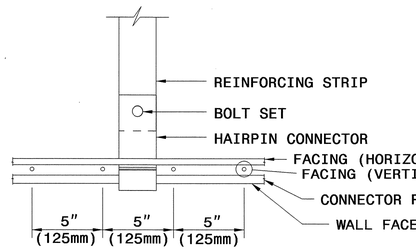
Scott A Hidden 11/14/11

SIGNATURE DATE — ENGINEER — SIGNATURE DATE

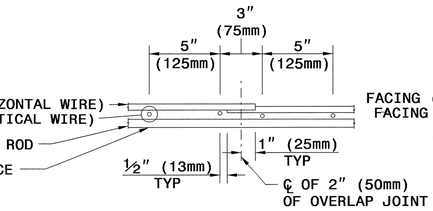


OVERLAP FACINGS VERTICALLY ONE FULL 5" (125mm) WIRE SQUARE DISREGARDING HALF SQUARES AT EDGES

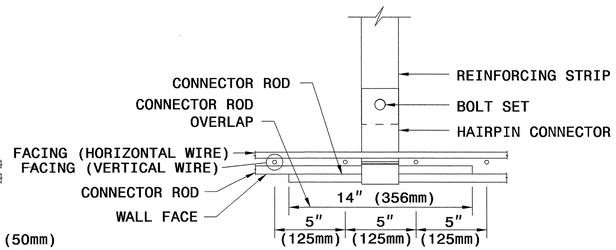
VERTICAL OVERLAP DETAIL



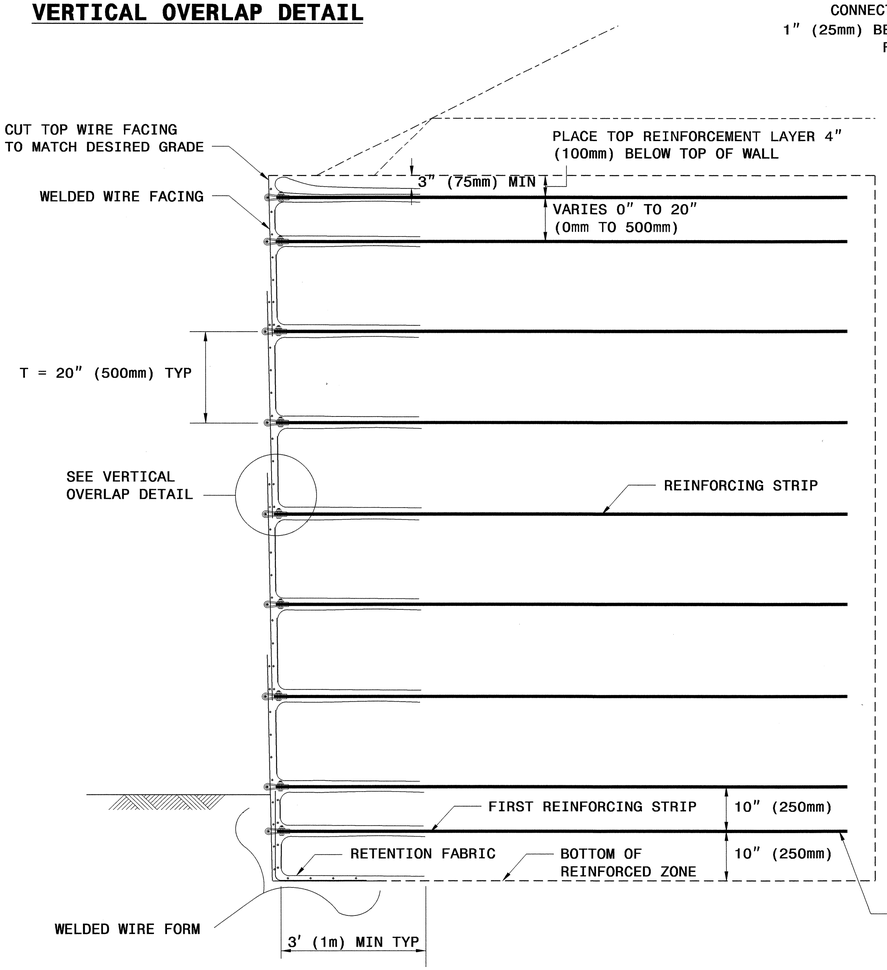
PLAN DETAIL 'A'
STRIP CONNECTION



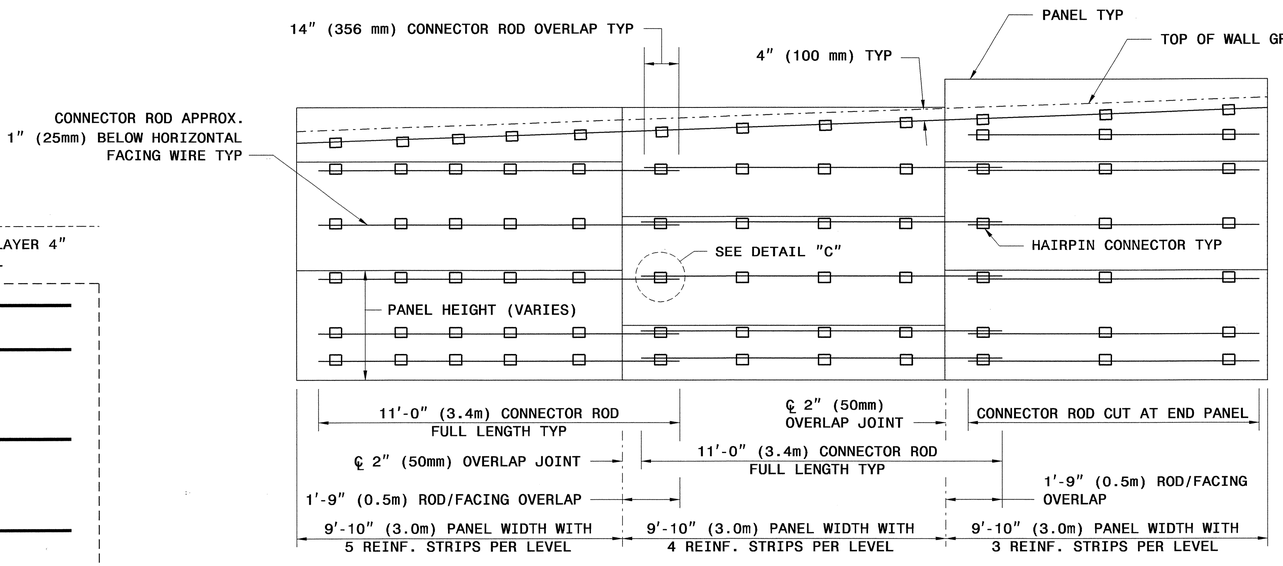
PLAN DETAIL 'B'
HORIZONTAL OVERLAP DETAIL



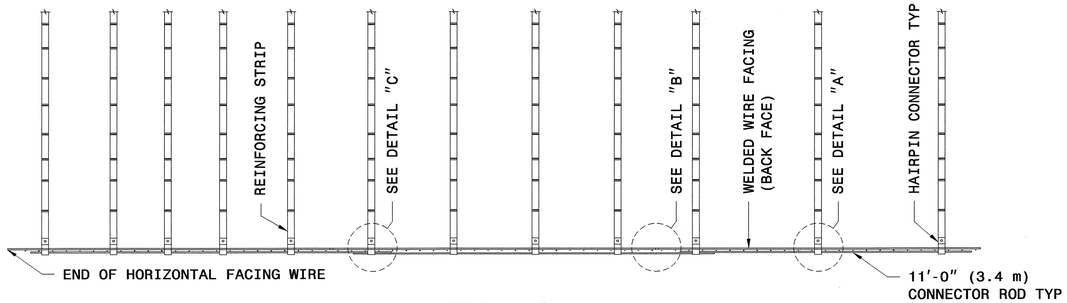
PLAN DETAIL 'C'
STRIP CONNECTION WITH HORIZONTAL OVERLAP DETAIL



TYPICAL SECTION



TYPICAL ELEVATION
(WIRES NOT SHOWN FOR CLARITY)



TYPICAL PLAN

The Reinforced Earth Company

GEOTECHNICAL ENGINEERING UNIT

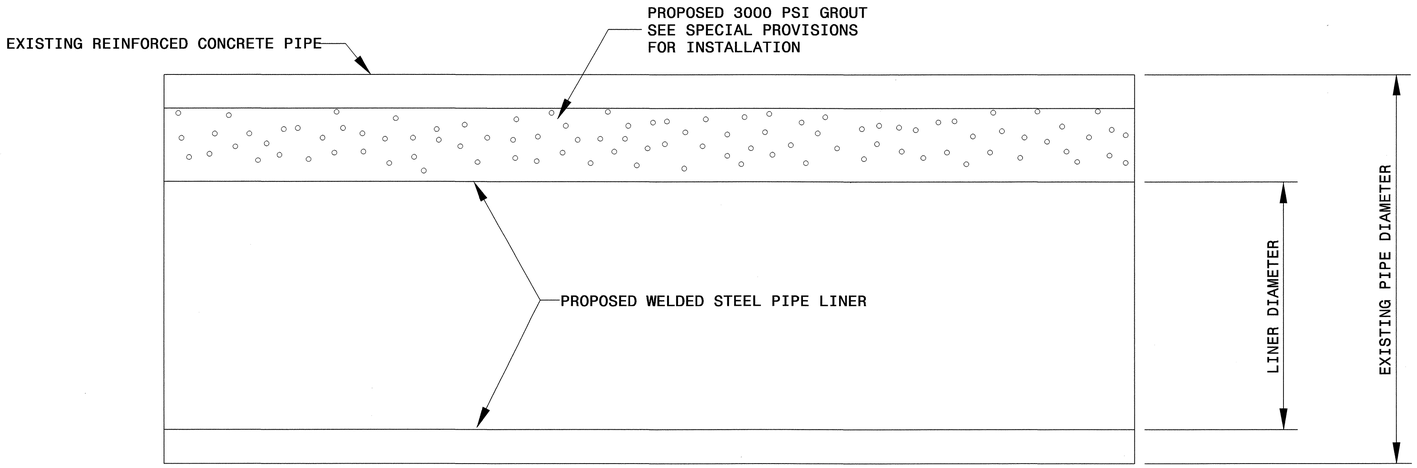
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

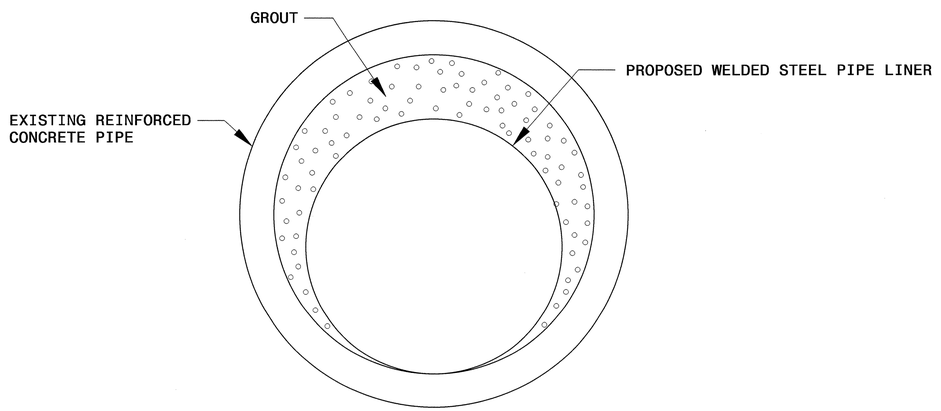
TERRATREL TEMPORARY WALL

SHEET 11 OF 11 DATE: 12-19-06

PROJ. REFERENCE NO.	SHEET NO.
U-3326AB	2-AO



ELEVATION



END ELEVATION

GROUT QUANTITIES PER FOOT

EXISTING RCP SIZE (IN.)	W. STEEL LINER SIZE (IN.)	GROUT ($YDS.^3$ /FT.)
48	42	0.11
60	54	0.14
66	60	0.15
72	66	0.17
78	72	0.18
96	84	0.44

NOTE: SEE PLANS FOR PIPE LENGTHS AND LOCATIONS.

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOHN S. HOWERTON

CONTRACT STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

WELDED STEEL PIPE LINER INSIDE REINFORCED CONCRETE PIPE

ORIGINAL BY: T.Spell DATE: May 19,1999
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: jhowerton/liner.dgn

$$$$SYSTIME$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

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

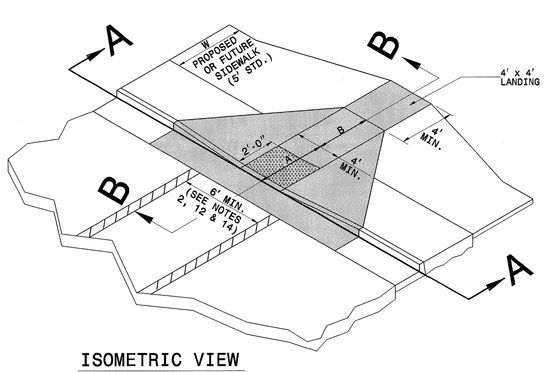
ENGLISH DETAIL DRAWING FOR

CURB RAMP

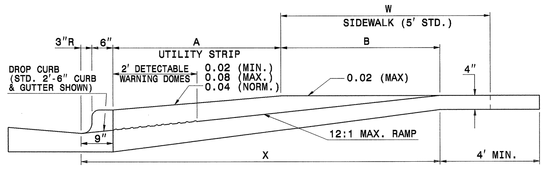
PROPOSED CURB AND GUTTER

SHEET 1 OF 3

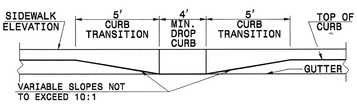
848D05



ISOMETRIC VIEW



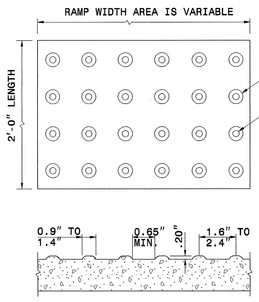
SECTION B-B



SECTION A-A

PAY LIMITS FOR CURB RAMP

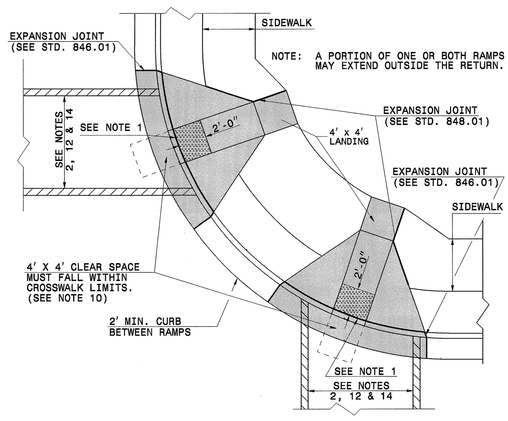
NOTES:
1. DETECTABLE WARNING DOMES WILL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
2. DETECTABLE WARNING DOMES WILL CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING DOMES

W	A	W+A+9"	X	B
5'	0.0'	5.8'	5.8'	5.0'*
6'	0.0'	6.8'	6.8'	6.0'**
7'	0.0'	7.8'	7.3'	6.5'**
8'	0.0'	8.8'	7.3'	6.5'**
5'	2.0'	7.8'	7.8'	5.0'
5'	2.5'	8.3'	8.1'	4.8'
5'	3.0'	8.8'	8.3'	4.4'
5'	3.5'	9.3'	8.4'	4.1'
5'	4.0'	9.8'	8.6'	3.8'
5'	4.5'	10.3'	8.7'	3.4'
5'	5.0'	10.8'	8.9'	3.1'

B = X-(A+9")
B = DISTANCE FROM FRONT EDGE OF SIDEWALK TO BACK POINT OF 12:1 (8.33%) SLOPE.
* BACK OF SIDEWALK DROP REQUIRED FOR ALL SIDEWALK SLOPES.
** BACK OF SIDEWALK DROP REQUIRED FOR SIDEWALK SLOPES 0.04.



PLAN VIEW

DUAL RAMPS
ANY RADII
(4' MIN. FLOOR WIDTH)

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

ENGLISH DETAIL DRAWING FOR

CURB RAMP

PROPOSED CURB AND GUTTER

SHEET 1 OF 3

848D05

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

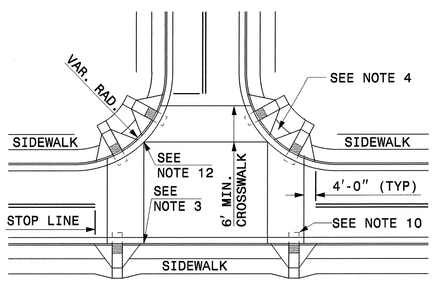
ENGLISH DETAIL DRAWING FOR

CURB RAMP

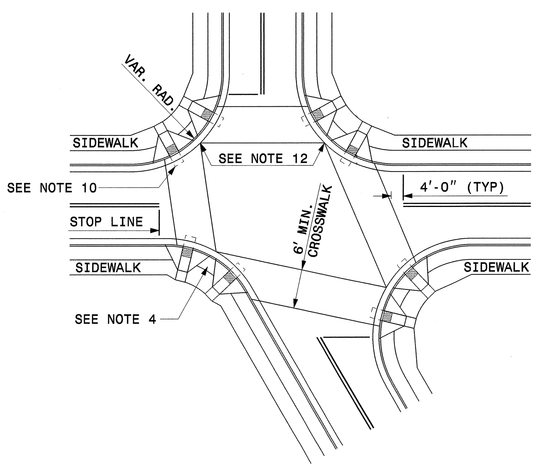
PROPOSED CURB AND GUTTER

SHEET 2 OF 3

848D05



DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES FOR TEE INTERSECTIONS



DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES

ROADWAY PLAN SYMBOL
CR
FOR PROPOSED CURB RAMP

PROPOSED CURB RAMP W/ LANDING
PROPOSED OR FUTURE SIDEWALK

ALLOWABLE LOCATIONS

DUAL RAMP RADII.....ANY

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

ENGLISH DETAIL DRAWING FOR

CURB RAMP

PROPOSED CURB AND GUTTER

SHEET 2 OF 3

848D05

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: STD.NO.848.05 DATE: 4-22-10
MODIFIED BY: DATE:
CHECKED BY: DATE: 5/3/11
FILE SPEC.: C:\Projects\10dot\5\1\5\ECP\c06m1m\STDS\848d05.dgn

PROJECT REFERENCE NO. U-3316AB
SHEET NO. 7-AP

$$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

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

ENGLISH DETAILS DRAWING FOR

CURB RAMPS

NOTES

SHEET 3 OF 3

848D05

NOTES:

1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM, AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT THE SIGNING AND DELINEATION UNIT OR LOCATE AS DIRECTED BY THE ENGINEER.
3. COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A 4′x4′ CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
4. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4′ MINIMUM.
5. REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, CONTACT THE SIGNAL DESIGN SECTION FOR THE STOP BAR LOCATIONS OR LOCATE AS DIRECTED BY THE ENGINEER.
6. TERMINATE PARKING A MINIMUM OF 20′ BACK OF A PEDESTRIAN CROSSWALK.
7. CONSTRUCT CURB RAMPS A MINIMUM OF 4′ WIDE.
8. CONSTRUCT THE RUNNING SLOPE OF THE RAMP 8.33% MAXIMUM.
9. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
10. CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
11. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
12. CONSTRUCT LANDINGS FOR SIDEWALK A MINIMUM OF 4′x4′ WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT LANDINGS FOR MEDIAN ISLANDS A MINIMUM OF 5′x5′ WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
13. TO USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA, MEDIAN ISLANDS WILL BE A MINIMUM OF 6′ WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGHT THE ISLAND.
14. SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5′X5′ LANDING AT THE TOP OF A RAMPS, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
15. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
16. PLACE A ½″ EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AS SHOWN IN ROADWAY STANDARD DRAWING 848.01
17. PLACE ALL PEDESTRIAN PUSH BUTTON ACTUATORS AND CROSSING SIGNALS AS SHOWN IN THE PLANS OR AS SHOWN IN THE MUTCD.
18. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR THE DETAILS OR FOR A SPECIAL DESIGN.

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

ENGLISH DETAIL DRAWING FOR

CURB RAMPS

NOTES

SHEET 3 OF 3

848D05

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-250-4128 FAX 919-250-4119

NORTH CAROLINA PROFESSIONAL SEAL 022568 ENGINEER
10/11/11

ORIGINAL BY: STD.NO.848.05 DATE: 4-22-11
MODIFIED BY: DATE:
CHECKED BY: DATE: 5/31/11
FILE SPEC.: 848s1a10ptn11s/Ert-Comm0/ST05/848005.dgn

SEE PLATE FOR TITLE

PROJECT REFERENCE NO. U-5526A/B/C
SHEET NO. X-AQ

PROJECT REFERENCE NO.	SHEET NO.
U-3326 A/B	2-AR

U-2302 B

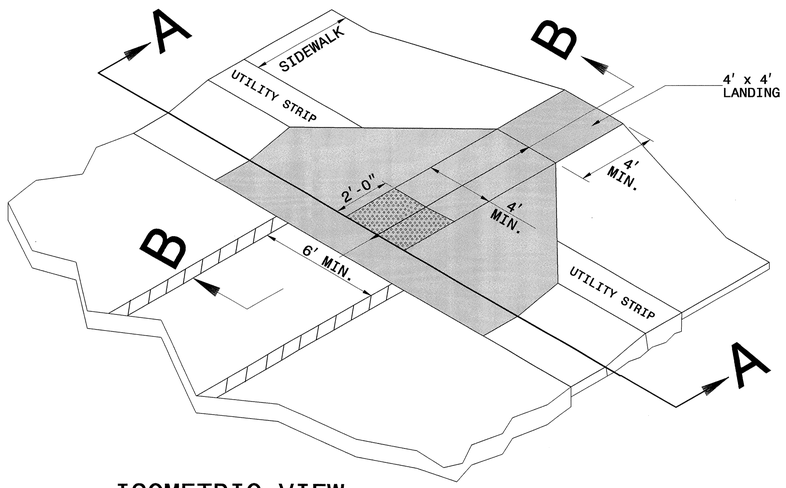
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

CURB RAMP

EXPRESSWAY GUTTER

848D05



ISOMETRIC VIEW

PAY LIMITS FOR CURB RAMP

NOTES:
1. DETECTABLE WARNING DOMES WILL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
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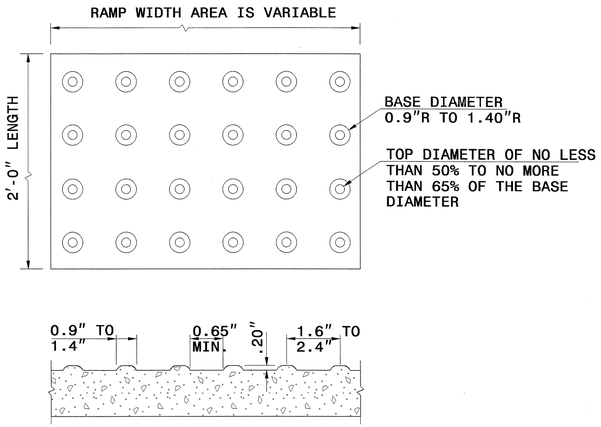
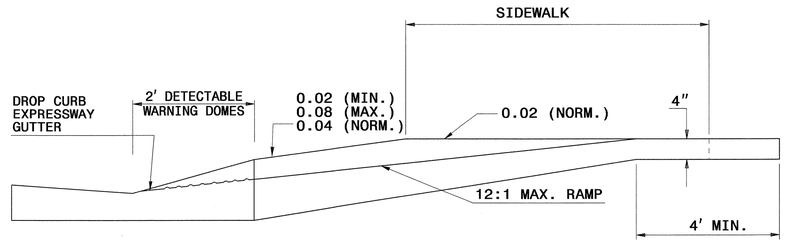
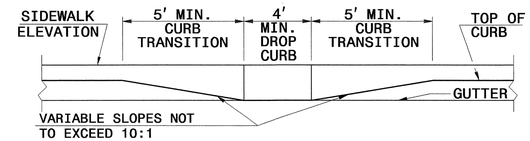


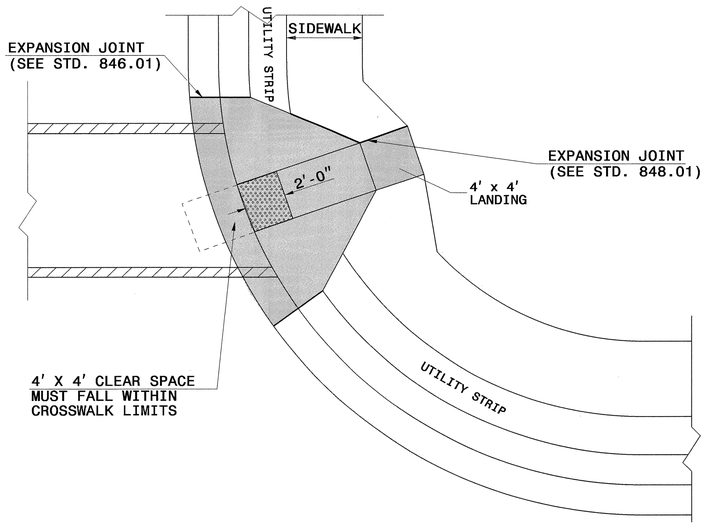
DETECTABLE WARNING DOMES



SECTION B-B



SECTION A-A



PLAN VIEW

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

ENGLISH DETAIL DRAWING FOR

CURB RAMP

EXPRESSWAY GUTTER

848D05

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOHN S. HOVEY

10/11/11

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: John S. Hovey DATE: 5/27/11
FILE SPEC.: _____

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	31 of 2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202652

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0001000000-E	200	Lump Sum		CLEARING & GRUBBING .. ACRE(S)
0008000000-E	200	2	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0022000000-E	225	347,300	CY	UNCLASSIFIED EXCAVATION
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ********** (16+25.25 -Y17-)
[redacted]				
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ********** (22+28.96 -Y21-)
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ********** (24+49.6 -Y10-)
0036000000-E	225	5,905	CY	UNDERCUT EXCAVATION
0038000000-E	SP	1,970	CY	SHALLOW UNDERCUT
0080000000-E	SP	3,750	TON	CLASS IV SUBGRADE STABILIZATION
0106000000-E	230	~~256,000~~ 287,000	CY	BORROW EXCAVATION
0134000000-E	240	3,124	CY	DRAINAGE DITCH EXCAVATION
0141000000-E	240	1,145	LF	BERM DITCH CONSTRUCTION
0156000000-E	250	98,900	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT
0177000000-E	250	6,200	SY	BREAKING OF EXISTING ASPHALT PAVEMENT
0195000000-E	SP	5,000	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	10,000	SY	FABRIC FOR SOIL STABILIZATION
0199000000-E	SP	13,165	SF	TEMPORARY SHORING
0262000000-N	SP	1	EA	GENERIC GRADING ITEM HAZARDOUS SPILL BASIN
0318000000-E	SP	7,390	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
0320000000-E	SP	18,460	SY	FOUNDATION CONDITIONING FABRIC
0342000000-E	SP	12	LF	"" SIDE DRAIN PIPE (12")
0342000000-E	SP	936	LF	"" SIDE DRAIN PIPE (30")
0342000000-E	SP	628	LF	"" SIDE DRAIN PIPE (36")
0342000000-E	SP	120	LF	"" SIDE DRAIN PIPE (42")
0342000000-E	SP	28	LF	"" SIDE DRAIN PIPE (48")
0343000000-E	SP	5,036	LF	15" SIDE DRAIN PIPE
0344000000-E	SP	2,404	LF	18" SIDE DRAIN PIPE
0345000000-E	SP	1,616	LF	24" SIDE DRAIN PIPE
0366000000-E	SP	2,668	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E	SP	4,084	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E	SP	2,292	LF	24" RC PIPE CULVERTS, CLASS III
0384000000-E	SP	1,524	LF	30" RC PIPE CULVERTS, CLASS III
0390000000-E	SP	92	LF	36" RC PIPE CULVERTS, CLASS III
0396000000-E	SP	80	LF	42" RC PIPE CULVERTS, CLASS III
0408000000-E	SP	144	LF	54" RC PIPE CULVERTS, CLASS III
0420000000-E	SP	164	LF	66" RC PIPE CULVERTS, CLASS III
0448200000-E	SP	26,172	LF	15" RC PIPE CULVERTS, CLASS IV
0448300000-E	SP	1,632	LF	18" RC PIPE CULVERTS, CLASS IV
0448400000-E	SP	2,616	LF	24" RC PIPE CULVERTS, CLASS IV
0448500000-E	SP	1,104	LF	30" RC PIPE CULVERTS, CLASS IV
0582000000-E	SP	912	LF	15" CS PIPE CULVERTS, 0.064" THICK
0594000000-E	SP	100	LF	24" CS PIPE CULVERTS, 0.064" THICK
0636000000-E	SP	29	EA	"" CS PIPE ELBOWS, ***** THICK (15")
0636000000-E	SP	15	EA	"" CS PIPE ELBOWS, ***** THICK (18")
0636000000-E	SP	6	EA	"" CS PIPE ELBOWS, ***** THICK (24")
0973100000-E	SP	138	LF	"" WELDED STEEL PIPE, **** THICK, GRADE ** IN SOIL 36" WSP, 0.5" THICK, GRADE B
0973100000-E	SP	88	LF	"" WELDED STEEL PIPE, **** THICK, GRADE ** IN SOIL 42" WSP, 0.625" THICK, GRADE B
0973100000-E	SP	82	LF	"" WELDED STEEL PIPE, **** THICK, GRADE ** IN SOIL 48" WSP, 0.625" THICK, GRADE B
0973300000-E	SP	30	LF	"" WELDED STEEL PIPE, **** THICK, GRADE ** NOT IN SOIL 36" WSP, 0.5" THICK, GRADE B
0973300000-E	SP	20	LF	"" WELDED STEEL PIPE, **** THICK, GRADE ** NOT IN SOIL 42" WSP, 0.625" THICK, GRADE B
0973300000-E	SP	18	LF	"" WELDED STEEL PIPE, **** THICK, GRADE ** NOT IN SOIL 48" WSP, 0.625" THICK, GRADE B
0986000000-E	SP	116	LF	GENERIC PIPE ITEM 36" RC PIPE CULVERTS, CLASS V
0986000000-E	SP	408	LF	GENERIC PIPE ITEM 54" WELDED STEEL PIPE LINER
0986000000-E	SP	372	LF	GENERIC PIPE ITEM 60" RC PIPE CULVERTS, CLASS V
0986000000-E	SP	168	LF	GENERIC PIPE ITEM 60" WELDED STEEL PIPE LINER
0986000000-E	SP	128	LF	GENERIC PIPE ITEM 66" RC PIPE CULVERTS, CLASS V
0995000000-E	340	8,376	LF	PIPE REMOVAL
1011000000-N	500	Lump Sum		FINE GRADING
1110000000-E	510	1,000	TON	STABILIZER AGGREGATE
1121000000-E	520	15,900	TON	AGGREGATE BASE COURSE
1220000000-E	545	5,000	TON	INCIDENTAL STONE BASE
1275000000-E	600	5,750	GAL	PRIME COAT
1308000000-E	607	2,000	SY	MILLING ASPHALT PAVEMENT, *** TO ****** DEPTH (0" TO 1-1/2")
1308000000-E	607	7,700	SY	MILLING ASPHALT PAVEMENT, *** TO ****** DEPTH (0" TO 3")
1330000000-E	607	700	SY	INCIDENTAL MILLING
1489000000-E	610	20,200	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1491000000-E	610	80,750	TON	ASPHALT CONC BASE COURSE, TYPE B25.0C
1498000000-E	610	10,650	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
1503000000-E	610	52,700	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C
1519000000-E	610	14,600	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1523000000-E	610	47,100	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5C
1525000000-E	610	4,200	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1575000000-E	SP	11,420	TON	ASPHALT BINDER FOR PLANT MIX
1693000000-E	654	1,775	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2000000000-N	806	330	EA	RIGHT OF WAY MARKERS
2022000000-E	SP	896	CY	SUBDRAIN EXCAVATION
2033000000-E	SP	672	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	SP	4,000	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	SP	8	EA	SUBDRAIN PIPE OUTLETS
2077000000-E	SP	48	LF	6" OUTLET PIPE (SUBDRAINS)
2190000000-N	828	75	EA	TEMPORARY STEEL PLATE COVERS FOR MASONRY DRAINAGE STRUCTURE
2209000000-E	838	16	CY	ENDWALLS
2220000000-E	838	42	CY	REINFORCED ENDWALLS
2253000000-E	840	30	CY	PIPE COLLARS
2264000000-E	840	1	CY	PIPE PLUGS
2275000000-E	SP	40	CY	FLOWABLE FILL
2286000000-N	840	586	EA	MASONRY DRAINAGE STRUCTURES
2297000000-E	840	46	CY	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	213	LF	MASONRY DRAINAGE STRUCTURES
2354200000-N	840	2	EA	FRAME WITH GRATE, STD 840.24
2364000000-N	840	71	EA	FRAME WITH TWO GRATES, STD 840.16
2365000000-N	840	10	EA	FRAME WITH TWO GRATES, STD 840.22
2366000000-N	840	83	EA	FRAME WITH TWO GRATES, STD 840.24
2367000000-N	840	40	EA	FRAME WITH TWO GRATES, STD 840.29
2374000000-N	840	31	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
2374000000-N	840	149	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
2374000000-N	840	146	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
2396000000-N	840	30	EA	FRAME WITH COVER, STD 840.54
2407000000-N	840	9	EA	STEEL FRAME WITH TWO GRATES, STD 840.37
2440000000-N	852	56	EA	CONCRETE TRANSITIONAL SECTION FOR CATCH BASIN
2451000000-N	852	35	EA	CONCRETE TRANSITIONAL SECTION FOR DROP INLETS
2462000000-E	SP	1	EA	"" SLUICE GATE (24")
2542000000-E	846	32,100	LF	1'-6" CONCRETE CURB & GUTTER
2549000000-E	846	51,300	LF	2'-6" CONCRETE CURB & GUTTER
2556000000-E	846	1,300	LF	SHOULDER BERM GUTTER
2577000000-E	846	3,160	LF	CONCRETE EXPRESSWAY GUTTER
2591000000-E	848	5,400	SY	4" CONCRETE SIDEWALK
2612000000-E	848	1,800	SY	6" CONCRETE DRIVEWAY
2619000000-E	850	240	SY	4" CONCRETE PAVED DITCH
2655000000-E	852	8,800	SY	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)
2724000000-E	857	700	LF	PRECAST REINFORCED CONCRETE BARRIER, SINGLE FACED
2759000000-N	SP	24	EA	GENERIC PAVING ITEM CONCRETE CURB RAMP
2830000000-N	858	27	EA	ADJUSTMENT OF MANHOLES
2845000000-N	858	21	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES
2860000000-N	859	1	EA	CONVERT EXISTING CATCH BASIN TO JUNCTION BOX
2905000000-N	859	1	EA	CONVERT EXISTING DROP INLET TO JUNCTION BOX
2920000000-N	SP	2	EA	CONVERT EXISTING DROP INLET TO CATCH BASIN
3000000000-N	SP	2	EA	IMPACT ATTENUATOR UNIT, TYPE 350
3030000000-E	862	13,875	LF	STEEL BM GUARDRAIL
3045000000-E	862	225	LF	STEEL BM GUARDRAIL, SHOP CURVED
3105000000-N	862	2	EA	STEEL BM GUARDRAIL TERMINAL SECTIONS
3150000000-N	862	40	EA	ADDITIONAL GUARDRAIL POSTS
3210000000-N	862	30	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1
3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	42	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3285000000-N	SP	8	EA	GUARDRAIL ANCHOR UNITS, TYPE M-350
3317000000-N	862	12	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3360000000-E	863	4,900	LF	REMOVE EXISTING GUARDRAIL
3380000000-E	862	750	LF	TEMPORARY STEEL BM GUARDRAIL
3387000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE ********** TEMPORARY (CAT-1)
3389100000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 TEMPORARY
3389600000-N	865	4	EA	CABLE GUIDERAIL ANCHOR UNITS
3420000000-E	SP	975	LF	GENERIC GUARDRAIL ITEM REMOVE CABLE GUIDERAIL
3503000000-E	866	21,140	LF	WOVEN WIRE FENCE, 47" FABRIC
3509000000-E	866	1,270	EA	4" TIMBER FENCE POSTS, 7'-6" LONG
3515000000-E	866	470	EA	5" TIMBER FENCE POSTS, 8'-0" LONG
3628000000-E	876	919	TON	RIP RAP, CLASS I
3635000000-E	876	231	TON	RIP RAP, CLASS II
3649000000-E	876	1,501	TON	RIP RAP, CLASS B
3656000000-E	876	19,192	SY	FILTER FABRIC FOR DRAINAGE
3659000000-N	SP	9	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
3677000000-E	SP	1,900	SY	GENERIC EROSION CONTROL ITEM REINFORCED SOIL SLOPES
4048000000-E	902	12	CY	REINFORCED CONCRETE SIGN FOUNDATIONS
4054000000-E	902	3	CY	PLAIN CONCRETE SIGN FOUNDATIONS
4057000000-E	SP	48	CY	OVERHEAD FOOTING
4060000000-E	903	2,874	LB	SUPPORTS, BREAKAWAY STEEL BEAM
4066000000-E	903	7,577	LB	SUPPORTS, SIMPLE STEEL BEAM
4072000000-E	903	7,875	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUCTURE AT STA ****** (A ON US-29 NBL)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUCTURE AT STA ****** (B ON US-29 SBL)
4096000000-N	904	33	EA	SIGN ERECTION, TYPE D
4102000000-N	904	143	EA	SIGN ERECTION, TYPE E
4108000000-N	904	89	EA	SIGN ERECTION, TYPE F
4110000000-N	904	21	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A)
4116100000-N	904	2	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (D)
4116100000-N	904	3	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (E)
4152000000-N	907	1	EA	DISPOSAL OF SIGN SYSTEM, STEEL BEAM
4155000000-N	907	287	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4158000000-N	907	5	EA	DISPOSAL OF SIGN SYSTEM, WOOD
4192000000-N	907	12	EA	DISPOSAL OF SUPPORT, U-CHANNEL
4236000000-N	907	7	EA	DISPOSAL OF SIGN, A OR B (GROUND MOUNTED)
4238000000-N	907	10	EA	DISPOSAL OF SIGN, D, E OR F
4400000000-E	1110	2,982	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	1,895	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	811	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4415000000-N	1115	4	EA	FLASHING ARROW PANELS, TYPE C
4420000000-N	1120	4	EA	CHANGEABLE MESSAGE SIGN
4430000000-N	1130	1,644	EA	DRUMS
4435000000-N	1135	200	EA	CONES
4445000000-E	1145	568	LF	BARRICADES (TYPE III)
4450000000-N	1150	16,000	HR	FLAGGER
4465000000-N	1160	10	EA	TEMPORARY CRASH CUSHIONS
4470000000-N	1160	6	EA	RESET TEMPORARY CRASH CUSHIONS
4480000000-N	1165	4	EA	TMA
4485000000-E	1170	2,060	LF	PORTABLE CONCRETE BARRIER
4500000000-E	1170	810	LF	RESET PORTABLE CONCRETE BARRIER

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STATE OF NORTH CAROLINA
SUMMARY OF QUANTITIES

PROJECT REFERENCE No.	SHEET No.
U-3326A/B	3(2 of 2)

ItemNumber	Sec #	Quantity	Unit	Description
4507000000-E	SP	10,000	LF	WATER FILLED BARRIER
4508000000-E	SP	9,925	LF	RESET WATER FILLED BARRIER
4516000000-N	1180	340	EA	SKINNY DRUM
4650000000-N	1251	3,400	EA	TEMPORARY RAISED PAVEMENT MARKERS
4685000000-E	1205	108,440	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	58,209	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4695000000-E	1205	1,300	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
4697000000-E	1205	254	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 120 MILS)
4700000000-E	1205	5,400	LF	THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS)
4710000000-E	1205	500	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
4721000000-E	1205	5	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)
4725000000-E	1205	437	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
4770000000-E	1205	1,185	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (II)
4770000000-E	1205	2,217	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV)
4780000000-E	1205	200	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (8") (II)
4780000000-E	1205	200	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (8") (IV)
4805000000-N	1205	4	EA	COLD APPLIED PLASTIC PAVEMENT MARKING SYMBOL, TYPE ** (IV)
4810000000-E	1205	760,532	LF	PAINT PAVEMENT MARKING LINES (4")
4820000000-E	1205	17,658	LF	PAINT PAVEMENT MARKING LINES (8")
4835000000-E	1205	5,864	LF	PAINT PAVEMENT MARKING LINES (24")
4840000000-N	1205	72	EA	PAINT PAVEMENT MARKING CHARACTER
4845000000-N	1205	1,352	EA	PAINT PAVEMENT MARKING SYMBOL
4850000000-E	1205	63,510	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
4860000000-E	1205	1,464	LF	REMOVAL OF PAVEMENT MARKING LINES (8")
4870000000-E	1205	1,343	LF	REMOVAL OF PAVEMENT MARKING LINES (24")
4875000000-N	1205	36	EA	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS
4900000000-N	1251	9	EA	PERMANENT RAISED PAVEMENT MARKERS
4905000000-N	1253	977	EA	SNOWPLOWABLE PAVEMENT MARKERS
5255000000-N	1413	Lump Sum		PORTABLE LIGHTING
5325000000-E	1510	225	LF	**" WATER LINE (1")
5325600000-E	1510	1,745	LF	6" WATER LINE
5325800000-E	1510	2,113	LF	8" WATER LINE
5326200000-E	1510	9,466	LF	12" WATER LINE
5326600000-E	1510	632	LF	16" WATER LINE
5540000000-E	1515	3	EA	6" VALVE
5546000000-E	1515	9	EA	8" VALVE
5558000000-E	1515	10	EA	12" VALVE
5558600000-E	1515	1	EA	16" VALVE
5572200000-E	1515	1	EA	12" TAPPING VALVE
5589200000-E	1515	2	EA	2" AIR RELEASE VALVE
5589400000-E	1515	4	EA	4" AIR RELEASE VALVE
5648000000-N	1515	50	EA	RELOCATE WATER METER
5649000000-N	1515	16	EA	RECONNECT WATER METER
5672000000-N	1515	26	EA	RELOCATE FIRE HYDRANT
5691100000-E	1520	97	LF	4" SANITARY GRAVITY SEWER
5691200000-E	1520	40	LF	6" SANITARY GRAVITY SEWER
5691300000-E	1520	2,405	LF	8" SANITARY GRAVITY SEWER
5691600000-E	1520	288	LF	16" SANITARY GRAVITY SEWER
5691900000-E	1520	2,224	LF	24" SANITARY GRAVITY SEWER
5709000000-E	1520	6,455	LF	**" FORCE MAIN SEWER (18")
5709000000-E	1520	1,055	LF	**" FORCE MAIN SEWER (2-1/2")
5709100000-E	1520	20	LF	2" FORCE MAIN SEWER
5709200000-E	1520	70	LF	4" FORCE MAIN SEWER
5709400000-E	1520	2,074	LF	8" FORCE MAIN SEWER
5768000000-N	1520	3	EA	SANITARY SEWER CLEAN-OUT
5775000000-E	1525	18	EA	4' DIA UTILITY MANHOLE
5776000000-E	1525	10	EA	5' DIA UTILITY MANHOLE
5777000000-E	1525	2	EA	6' DIA UTILITY MANHOLE
5781000000-E	1525	80	LF	UTILITY MANHOLE WALL, 4' DIA
5782000000-E	1525	56	LF	UTILITY MANHOLE WALL, 5' DIA
5783000000-E	1525	17	LF	UTILITY MANHOLE WALL, 6' DIA
5801000000-E	1530	362	LF	ABANDON 8" UTILITY PIPE
5810000000-E	1530	283	LF	ABANDON 16" UTILITY PIPE
5811000000-E	1530	8,473	LF	ABANDON 18" UTILITY PIPE
5815000000-N	1530	5	EA	REMOVE WATER METER
5816000000-N	1530	26	EA	ABANDON UTILITY MANHOLE
5828000000-N	1530	4	EA	REMOVE UTILITY MANHOLE
5835000000-E	1540	60	LF	**" ENCASEMENT PIPE (42")
5836200000-E	1540	180	LF	30" ENCASEMENT PIPE
5871000000-E	1550	30	LF	TRENCHLESS INSTALLATION OF **" IN SOIL (42")
5871010000-E	1550	30	LF	TRENCHLESS INSTALLATION OF **" NOT IN SOIL (42")
5872300000-E	1550	90	LF	TRENCHLESS INSTALLATION OF 30" IN SOIL
5872310000-E	1550	90	LF	TRENCHLESS INSTALLATION OF 30" NOT IN SOIL
5877000000-N	SP	Lump Sum		SANITARY SEWER PUMP STATION
5882000000-N	SP	1	EA	GENERIC UTILITY ITEM ABANDON EXISTING SANITARY SEWER PUMP STATION
6000000000-E	1605	20,000	LF	TEMPORARY SILT FENCE
6006000000-E	1610	14,800	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	12,700	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	12,000	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	150	ACR	TEMPORARY MULCHING
6018000000-E	1620	4,850	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	21	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	10,000	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	150	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	100	LF	SAFETY FENCE
6030000000-E	1630	30,600	CY	SILT EXCAVATION
6036000000-E	1631	130,000	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	380	SY	COIR FIBER MAT
6038000000-E	SP	19,251	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	20,000	LF	1/4" HARDWARE CLOTH
6045000000-E	SP	450	LF	**" TEMPORARY PIPE (15")
6069000000-E	1638	185	CY	STILLING BASINS
6071012000-E	SP	6,000	LF	COIR FIBER WATTLE
6071020000-E	SP	6,800	LB	POLYACRYLAMIDE (PAM)
6071030000-E	SP	7,000	LF	COIR FIBER BAFFLE
6071050000-E	SP	27	EA	**" SKIMMER (1-1/2")
6071050000-E	SP	1	EA	**" SKIMMER (2")
6084000000-E	1660	150	ACR	SEEDING & MULCHING
6087000000-E	1660	150	ACR	MOWING
6090000000-E	1661	2,200	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	6.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	3,450	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	103.5	TON	FERTILIZER TOPDRESSING
6111000000-E	SP	500	LF	IMPERVIOUS DIKE
6114500000-N	SP	100	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	125	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	10	ACR	REFORESTATION
7000000000-E	1705	2	EA	PEDESTRIAN SIGNAL HEAD (**", ** SECTION) (16", 1 SECTION W/ COUNTDOWN)
7060000000-E	1705	18,270	LF	SIGNAL CABLE
7108000000-E	1705	4	EA	VEHICLE SIGNAL HEAD (12", 1 SECTION)
7120000000-E	1705	132	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7132000000-E	1705	32	EA	VEHICLE SIGNAL HEAD (12", 4 SECTION)
7144000000-E	1705	23	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
7228000000-N	SP	4	EA	RELOCATE EXISTING VEHICLE SIGNAL HEAD
7252000000-E	1710	600	LF	MESSENGER CABLE (1/4")
7264000000-E	1710	9,800	LF	MESSENGER CABLE (3/8")
7288000000-E	1715	500	LF	PAVED TRENCHING (**********) (1, 2")
7300000000-E	1715	7,400	LF	UNPAVED TRENCHING (**********) (1, 2")
7324000000-N	1716	131	EA	JUNCTION BOX (STANDARD SIZE)
7360000000-N	1720	25	EA	WOOD POLE
7372000000-N	1721	54	EA	GUY ASSEMBLY
7408000000-E	1722	6	EA	1" RISER WITH WEATHERHEAD
7420000000-E	1722	31	EA	2" RISER WITH WEATHERHEAD
7430000000-N	1722	1	EA	HEAT SHRINK TUBING RETROFIT KIT
7432000000-E	1722	6	EA	2" RISER WITH HEAT SHRINK TUBING
7444000000-E	1725	16,090	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	38,370	LF	LEAD-IN CABLE (**********) (14-2)
7481000000-N	SP	15	EA	SITE SURVEY
7481200000-N	SP	12	EA	LUMINAIRE ARM FOR VIDEO SYSTEM
7481240000-N	SP	36	EA	CAMERA WITHOUT INTERNAL LOOP EMULATOR PROCESSING UNIT
7481260000-N	SP	6	EA	EXTERNAL LOOP EMULATOR PROCESSING UNIT
7481280000-N	SP	34	EA	RELOCATE CAMERA SENSOR UNIT
7575142000-N	SP	6	EA	900MHZ WIRELESS RADIO SYSTEM
7576000000-N	SP	52	EA	METAL STRAIN SIGNAL POLE
7613000000-N	SP	52	EA	SOIL TEST
7614100000-E	SP	364	CY	DRILLED PIER FOUNDATION
7624000000-N	1743	1	EA	SIGNAL PEDESTAL WITH FOUNDATION
7636000000-N	1745	20	EA	SIGN FOR SIGNALS
7648000000-N	SP	3	EA	RELOCATE EXISTING SIGN
7684000000-N	1750	12	EA	SIGNAL CABINET FOUNDATION
7756000000-N	1751	12	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
7768000000-N	1751	2	EA	CONTROLLER WITH CABINET (TYPE 2070L, POLE MOUNTED)
7780000000-N	1751	85	EA	DETECTOR CARD (TYPE 2070L)
7901000000-N	1753	12	EA	CABINET BASE EXTENDER
7912000000-N	1755	1	EA	BEACON CONTROLLER ASSEMBLY & CABINET (********) (F1)
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM FURNISH WIRELESS LIGHTNING ARRESTORS
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM FURNISH WIRELESS RADIO MODEMS

4/04/06

COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. U-3326A/B — SHEET NO. 3-A

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109
-L- STA. 17+70	RT.	1		824.85																						
	RT.	1	2		821.65	819.00																				
-L- STA. 18+80	RT.	2		824.40																						
	RT.	2	3		819.00	820.68																				
	RT.	2	OUT		819.00	807.00															96					
-L- STA. 20+00	RT.	3		823.88																						
-L- STA. 23+50	LT.	4		819.66																						
	LT.	4	5		816.46	813.33																				
-L- STA. 24+80	LT.	5		816.33																						
	LT.	5	6		813.33	809.70																				
-L- STA. 24+80	RT.	6		812.50																						
	RT.	6	7		809.70	796.24																				
-L- STA. 29+00	RT.	7		799.04																						
	RT.	7	8		796.24	800.05																				
	RT.	7	9		796.24	787.63																				
-L- STA. 29+00	LT.	8		803.05																						
-L- STA. 31+50	RT.	9		790.63																						
	RT.	9	10		787.63	787.00																				
-L- STA. 31+50	LT.	10		794.64																						
	LT.	10	11		787.00	784.33																				
-L- STA. 33+50	LT.	11		790.00																						
	LT.	11	12		784.33	774.00																				
	LT.	11	14		784.33	784.93																				
-L- STA. 33+30	LT.	12		785.50																						
	LT.	12	13		773.11	774.11																				
	LT.	12	OUT		773.80	770.40																				
-L- STA. 32+50	LT.	13		776.86																						
-L- STA. 34+70	LT.	14		788.63																						
	LT.	14	15		784.93	785.30																				
-L- STA. 35+45	LT.	15		788.60																						
	LT.	15	16		785.30	785.40																				
-L- STA. 35+55	LT.	16		788.60																						
	LT.	16	17		785.40	786.00																				
-L- STA. 35+55	RT.	17		789.00																						
	RT.	17	18		786.00	786.25																				
-L- STA. 35+45	RT.	18			789.00																					
-L- STA. 34+45	RT.	19																								
	RT.	IN	19																							
-L- STA. 35+11	LT.	20																								
SHEET TOTAL																					96					

STATION	LOCATION	FROM	TO	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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
-L- STA. 17+70	RT.	1																								1		
	RT.	1	2									112																
-L- STA. 18+80	RT.	2																								1	.40	
	RT.	2	3									120																
	RT.	2	OUT																									
-L- STA. 20+00	RT.	3																								1		
-L- STA. 23+50	LT.	4																								1		
	LT.	4	5									132																
-L- STA. 24+80	LT.	5																								1		
	LT.	5	6	64																								
-L- STA. 24+80	RT.	6																								1		
	RT.	6	7	416																								
-L- STA. 29+00	RT.	7																								1		
	RT.	7	8									68																
	RT.	7	9		248																							
-L- STA. 29+00	LT.	8																								1		
-L- STA. 31+50	RT.	9																								1		
	RT.	9	10										68															
-L- STA. 31+50	LT.	10																								1	2.64	
	LT.	10	11										200															
-L- STA. 33+50	LT.	11																								1	.67	
	LT.	11	12			80																						
	LT.	11	14									120																
-L- STA. 33+30	LT.	12																								1	.39	
	LT.	12	13		84																							
	LT.	12	OUT			36																						
-L- STA. 32+50	LT.	13																								1		
-L- STA. 34+70	LT.	14																								1		
	LT.	14	15									76																
-L- STA. 35+45	LT.	15																								1		
	LT.	15	16									12																
-L- STA. 35+55	LT.	16																								1		
	LT.	16	17									48																
-L- STA. 35+55	RT.	17																								1		
	RT.	17	18									12																
-L- STA. 35+45	RT.	18																								1		
-L- STA. 34+45	RT.	19																								1		
	RT.	IN	19					48																3.4				
-L- STA. 35+11	LT.	20						32																				
SHEET TOTAL				480	332	116		80				700	268											3.4		19	4.1	

STATION	LOCATION	FROM	TO	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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 17+70	RT.	1								1	1	1																		
	RT.	1	2																											
-L- STA. 18+80	RT.	2								1	1	1																		
	RT.	2	3																											
	RT.	2	OUT																							1@15"				
-L- STA. 20+00	RT.	3								1	1	1																		
-L- STA. 23+50	LT.	4								1	1	1																		
	LT.	4	5																											
-L- STA. 24+80	LT.	5		1		1			1																					
	LT.	5	6																											
-L- STA. 24+80	RT.	6												1				1												
	RT.	6	7																											
-L- STA. 29+00	RT.	7												1				1												
	RT.	7	8																											
	RT.	7	9																											
-L- STA. 29+00	LT.	8		1		1			1																					
-L- STA. 31+50	RT.	9												1				1												
	RT.	9	10																											
-L- STA. 31+50	LT.	10		1		1			1																					
	LT.	10	11																											
-L- STA. 33+50	LT.	11		1		1			1																					
	LT.	11	12																											
	LT.	11	14																											
-L- STA. 33+30	LT.	12																				1	1								
	LT.	12	13																											
	LT.	12	OUT																											
-L- STA. 32+50	LT.	13												1				1												
-L- STA. 34+70	LT.	14								1	1	1																		
	LT.	14	15																											
-L- STA. 35+45	LT.	15								1	1	1																		
	LT.	15	16																											
-L- STA. 35+55	LT.	16								1	1	1																		
	LT.	16	17																											
-L- STA. 35+55	RT.	17												1										1						
	RT.	17	18																											
-L- STA. 35+45	RT.	18												1										1						
-L- STA. 34+45	RT.	19																				1								SLAB LID
	RT.	IN	19																											
-L- STA. 35+11	LT.	20																									.7640			
SHEET TOTAL				4		4			4	7	7	7		6				4			2	1		2		1@15"				
																											.7640			

ABBREVIATIONS

- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT)
- J.B. JUNCTION BOX
- M.H. MANHOLE
- T.B.D.I. TRAFFIC BEARING DROP INLET
- T.B.J.B. TRAFFIC BEARING JUNCTION BOX

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4/04/06

COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-B

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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- STA. 34+80	LT./RT.	21																	
-L- STA. 34+45	RT.	21A																	
	RT.	IN	21A																
	LT.	21	OUT																
-L- STA. 34+55	LT.	22									12						X	X	X
-L- STA. 38+55	RT.	23		791.38															
	RT.	23	24		788.21	786.00			60								X	X	X
-L- STA. 39+14	RT.	24		792.30															
	RT.	24	25		786.00	785.20													
	RT.	24	26		786.00	788.00													
	RT.	24	27		786.00	791.78				184							X	X	X
-L- STA. 39+05	LT.	25		789.53															
-L- STA. 39+15	RT.	26		791.30															
	RT.	26	26A		788.00	788.54													
-L- STA. 38+89	RT.	26A		790.47															
-L- STA. 41+00	RT.	27		794.98															
	LT./RT.	27	28		791.78	794.60													
	RT.	27	29		788.60	789.60													
-L- STA. 42+82	LT.	28		797.66															
-L- STA. 41+50	RT.	29		791.77															
-L- STA. 40+20	LT.	30							40										
-L- STA. 41+11	LT.	31							56										
-L- STA. 44+91	LT.	32							68										
-L- STA. 45+50	LT.	33		801.60															
	LT.	33	34		798.00	800.00													
	LT.	33	OUT		798.00	794.90													
-L- STA. 47+00	LT.	34		803.78															
-L- STA. 45+98	RT.	35			793.00														
-L- STA. 46+39	LT.	36		801.66															
	LT.	36	37		789.37	797.49													
-L- STA. 46+60	LT.	37		800.49															
-L- STA. 48+50	LT.	38		805.96															
	LT.	38	39		802.96	802.19													
	LT.	38	40		802.96	807.31													
-L- STA. 48+50	RT.	39		804.94															
	RT.	39	OUT		802.19	799.22													
-L- STA. 51+50	LT.	40		810.31															
	LT.	40	41		807.31	810.94													
-L- STA. 54+00	LT.	41		813.94															
SHEET TOTAL									224		12								
										184									

STATION	LOC.	FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.
-L- STA. 34+80	LT./RT.	21																								108						
-L- STA. 34+45	RT.	21A														12																
	RT.	IN	21A													36															4.5	
	LT.	21	OUT													32																
-L- STA. 34+55	LT.	22																										1			2.1	
-L- STA. 38+55	RT.	23																														
	RT.	23	24																													
-L- STA. 39+14	RT.	24																														
	RT.	24	25									68																				
	RT.	24	26																32													
	RT.	24	27																													
-L- STA. 39+05	LT.	25																														
-L- STA. 39+15	RT.	26																														
	RT.	26	26A																36													
-L- STA. 38+89	RT.	26A																														
-L- STA. 41+00	RT.	27																														
	LT./RT.	27	28																184													
	RT.	27	29									72																				
-L- STA. 42+82	LT.	28																														
-L- STA. 41+50	RT.	29																														
-L- STA. 40+20	LT.	30																														
-L- STA. 41+11	LT.	31																														
-L- STA. 44+91	LT.	32																														
-L- STA. 45+50	LT.	33																														
	LT.	33	34																152													
	LT.	33	OUT																72													
-L- STA. 47+00	LT.	34																														
-L- STA. 45+98	RT.	35											44																			
-L- STA. 46+39	LT.	36																														
	LT.	36	37								24																					
-L- STA. 46+60	LT.	37																														
-L- STA. 48+50	LT.	38																														
	LT.	38	39																48													
	LT.	38	40																300													
-L- STA. 48+50	RT.	39																														
	RT.	39	OUT								32																					
-L- STA. 51+50	LT.	40																														
	LT.	40	41																252													
-L- STA. 54+00	LT.	41																														
SHEET TOTAL											56	140	44			80			1076							108		1			6.6	

STATION	LOC.	FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 34+80	LT./RT.	21																												1.77	12		
-L- STA. 34+45	RT.	21A		1																				1									SLAB LID
	RT.	IN	21A																														
	LT.	21	OUT																														
-L- STA. 34+55	LT.	22																															SEE STD. 838.02
-L- STA. 38+55	RT.	23		1									1	1	1																		
	RT.	23	24																														
-L- STA. 39+14	RT.	24		1	1.3								1	1	1																	84	REMOVE EXIST. 18" RCP
	RT.	24	25																														
	RT.	24	26																														
	RT.	24	27																													28	REMOVE EXIST. 15" RCP
-L- STA. 39+05	LT.	25		1													1				1												
-L- STA. 39+15	RT.	26		1													1										1						
	RT.	26	26A																														
-L- STA. 38+89	RT.	26A		1														1			1												
-L- STA. 41+00	RT.	27		1									1	1	1																		
	LT./RT.	27	28																														
	RT.	27	29																														
-L- STA. 42+82	LT.	28		1			1			1		1																					
-L- STA. 41+50	RT.	29		1														1			1												
-L- STA. 40+20	LT.	30																														44	REMOVE EXIST. 15" RCP
-L- STA. 41+11	LT.	31																															
-L- STA. 44+91	LT.	32																															
-L- STA. 45+50	LT.	33		1			1			1		1																					
	LT.	33	34																														
	LT.	33	OUT																														
-L- STA. 47+00	LT.	34		1			1			1		1																					
-L- STA. 45+98	RT.	35																												.55	26		
-L- STA. 46+39	LT.	36																															CONVERT EXIST DI TO JB, SLAB LID
	LT.	36	37																														
-L- STA. 46+60	LT.	37		1													1				1												
-L- STA. 48+50	LT.	38		1			1			1		1																					
	LT.	38	39																														
	LT.	38	40																														
-L- STA. 48+50	RT.	39		1													1										1						
	RT.	39	OUT																														
-L- STA. 51+50	LT.	40		1			1			1		1																					
	LT.	40	41																														
-L- STA. 54+00	LT.	41		1			1			1		1																					
SHEET TOTAL				16	1.3		6			6		6	3	3	3		4	2			4			1			2			2.32	38	156	

* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B')

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

PROJECT REFERENCE NO. U-3326A/B SHEET NO. 3-C

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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- STA. 50+33	RT.	42			791.00														
-L- STA. 51+50	RT.	43		806.30															
	RT.	43	44		802.80	806.40													
	RT.	43	OUT		802.80	801.03													
-L- STA. 53+95	RT.	44		809.90															
-L- STA. 54+86	RT.	44	45		806.40	808.28													
-L- STA. 54+15	RT.	45		812.20															
-L- STA. 51+51	LT.	46							28										
-L- STA. 52+80	LT.	47							40										
-L- STA. 53+85	LT.	48							36										
-L- STA. 54+86	RT.	49							48										
-L- STA. 56+10	LT.	50							32										
-L- STA. 56+25	LT.	51		817.17															
	LT.	51	52		813.50	809.00													
-L- STA. 58+15	LT.	52		818.42															
	LT.	52	53		809.00	810.00													
-L- STA. 58+15	RT.	53		814.20															
	RT.	53	54		810.10	811.00													
-L- STA. 57+50	RT.	54		813.98															
-L- STA. 56+92	RT.	55							48										
-L- STA. 58+21	LT.	56			806.88														
-L- STA. 65+50	RT.	57		811.74															
	RT.	57	58		809.84	812.50													
	RT.	57	OUT		809.84	809.77													
-L- STA. 66+31	RT.	58		814.40															
	RT.	58	59		812.50	813.00													
-L- STA. 66+50	RT.	59		814.90															
-L- STA. 67+50	RT.	60		815.98															
	RT.	60	61		813.23	813.51													
	RT.	60	62		813.23	813.00													
-L- STA. 67+50	RT.	61		815.81															
-L- STA. 68+71	RT.	62		816.87															
	RT.	62	63		813.00	815.50													
	RT.	62	64		813.00	814.80													
	RT.	62	OUT		813.00														
-L- STA. 68+71	RT.	63		817.80															
-L- STA. 71+15	RT.	64		818.40															
	RT.	64	65		814.80	815.00													
	RT.	64	66		814.80	816.00													
SHEET TOTAL									232										

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
-L- STA. 50+33	42											48												
-L- STA. 51+50	43																							
	43	44										244												
	43	OUT										36												
-L- STA. 53+95	44																							
-L- STA. 54+86	44	45										28												
-L- STA. 54+15	45																							
-L- STA. 51+51	46																							
-L- STA. 52+80	47																							
-L- STA. 53+85	48																							
-L- STA. 54+86	49																							
-L- STA. 56+10	50																							
-L- STA. 56+25	51																							
	51	52																	188						
-L- STA. 58+15	52																							
	52	53									68													
-L- STA. 58+15	53																							
	53	54								68														
-L- STA. 57+50	54																							
-L- STA. 56+92	55																							
-L- STA. 58+21	56										36													
-L- STA. 65+50	57																							
	57	58								84														
	57	OUT									156													
-L- STA. 66+31	58																							
	58	59																	28						
-L- STA. 66+50	59																							
-L- STA. 67+50	60																							
	60	61																	24						
	60	62																	120						
-L- STA. 67+50	61																							
-L- STA. 68+71	62																							
	62	63																	20						
	62	64																	244						
	62	OUT																		8					
-L- STA. 68+71	63																							
-L- STA. 71+15	64																							
	64	65																	24						
	64	66																	84						
SHEET TOTAL										152	260	356						732	8					

STATION	FROM	TO	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET
-L- STA. 50+33	42																		
-L- STA. 51+50	43									1									
	43	44																	
	43	OUT																	
-L- STA. 53+95	44									1									
-L- STA. 54+86	44	45																	
-L- STA. 54+15	45									1									
-L- STA. 51+51	46																		
-L- STA. 52+80	47																		
-L- STA. 53+85	48																		
-L- STA. 54+86	49																		
-L- STA. 56+10	50																		
-L- STA. 56+25	51									1									1
	51	52																	
-L- STA. 58+15	52									1	4.42								1
	52	53																	
-L- STA. 58+15	53									1									
	53	54																	
-L- STA. 57+50	54									1									
-L- STA. 56+92	55																		
-L- STA. 58+21	56																		
-L- STA. 65+50	57									1									
	57	58																	
	57	OUT																	
-L- STA. 66+31	58									1									
	58	59																	
-L- STA. 66+50	59									1									
-L- STA. 67+50	60									1									
	60	61																	
	60	62																	
-L- STA. 67+50	61									1									
-L- STA. 68+71	62									1									
	62	63																	
	62	64																	
	62	OUT																	
-L- STA. 68+71	63									1									
-L- STA. 71+15	64									1									
	64	65																	
	64	66																	
SHEET TOTAL										15	4.42								2

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 50+33	42																		.5526			
-L- STA. 51+50	43					1				1												
	43	44																			64	REMOVE EXIST. 15" CMP
	43	OUT																				
-L- STA. 53+95	44					1				1												
-L- STA. 54+86	44	45																			70	REMOVE EXIST. 12" RCP
-L- STA. 54+15	45		1	1																		
-L- STA. 51+51	46																				32	REMOVE EXIST. 15" RCP
-L- STA. 52+80	47																				28	REMOVE EXIST. 15" RCP
-L- STA. 53+85	48																				24	REMOVE EXIST. 12" RCP
-L- STA. 54+86	49																				44	REMOVE EXIST. 15" RCP
-L- STA. 56+10	50																					
-L- STA. 56+25	51		1	1																		
	51	52																				
-L- STA. 58+15	52		1	1																	40	REMOVE EXIST. 18" RCP & EXIST. DI
	52	53																				
-L- STA. 58+15	53					1				1												
	53	54																			44	REMOVE EXIST. 15" RCP
-L- STA. 57+50	54					1				1												
-L- STA. 56+92	55																					
-L- STA. 58+21	56																		.4465			
-L- STA. 65+50	57						1			1												
	57	58																				
	57	OUT																			60	REMOVE EXIST. 12" RCP
-L- STA. 66+31	58						1									1						
	58	59																				
-L- STA. 66+50	59						1									1						
-L- STA. 67+50	60					1										1						
	60	61																				
	60	62																				
-L- STA. 67+50	61		1	1																		
-L- STA. 68+71	62					1										1						
	62	63																				
	62	64																				
	62	OUT																	.4465			
-L- STA. 68+71	63		1	1																		
-L- STA. 71+15	64					1										1						
	64	65																				
	64	66																				
SHEET TOTAL			5	5		7	3			5						5			1.4456		406	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-D

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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- STA. 71+10	RT.	65		817.30															
-L- STA. 72+00	RT.	66		818.75															
-L- STA. 68+19	LT.	67							44										
-L- STA. 68+71	LT.	68		813.70	809.90														
-L- STA. 73+17	LT.	69							36										
-L- STA. 75+00	RT.	70		818.95															
	RT.	70	71		816.20														
-L- STA. 75+93	RT.	71																	
	RT.	71	OUT																
-L- STA. 76+69	RT.	72																	
	RT.	72	73		807.40	808.00													
	RT.	72	527		807.40	806.68													
-L- STA. 77+00	RT.	73		817.67															
	RT.	73	74		808.00	808.40													
-L- STA. 78+00	RT.	74		817.20															
	RT.	74	75		814.45	814.74													
	RT.	74	76		808.40	809.00													
-L- STA. 78+00	RT.	75		817.94															
-L- STA. 79+20	RT.	76		816.42															
	RT.	76	77		809.00	809.50													
-L- STA. 80+28	RT.	77		815.82															
	RT.	77	78		813.07	813.46													
	RT.	77	79		809.50	809.64													
-L- STA. 80+28	RT.	78		816.60															
-L- STA. 80+70	RT.	79		815.62															
	RT.	79	80		809.64	810.07													
-L- STA. 81+60	RT.	80		815.33															
	RT.	80	81		810.07	810.17													
-L- STA. 81+70	RT.	81		815.33															
	RT.	81	82		810.17	810.37													
-L- STA. 82+34	RT.	82		815.22															
	RT.	82	83		810.37	810.47													
-L- STA. 82+41	RT.	83		815.22															
	RT.	83	84		810.47	811.78													
-L- STA. 83+21	RT.	84		815.18															
	RT.	84	85		811.78	812.18													
-L- STA. 83+62	RT.	85		815.16															
	RT.	85	86		812.18	813.00													
-L- STA. 84+00	RT.	86		815.54															
SHEET TOTAL									80										

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
-L- STA. 71+10	65																							
-L- STA. 72+00	66																							
-L- STA. 68+19	67																							
-L- STA. 68+71	68																							
-L- STA. 73+17	69																							
-L- STA. 75+00	70																							
	70	71																100						
-L- STA. 75+93	71																							
	71	OUT																20						
-L- STA. 76+69	72																							
	72	73																		56				
	72	527										104												
-L- STA. 77+00	73																							
	73	74																		96				
-L- STA. 78+00	74																							
	74	75																32						
	74	76																		120				
-L- STA. 78+00	75																							
-L- STA. 79+20	76																							
	76	77																		104				
-L- STA. 80+28	77																							
	77	78																40						
	77	79																		40				
-L- STA. 80+28	78																							
-L- STA. 80+70	79																							
	79	80																		88				
-L- STA. 81+60	80																							
	80	81																		8				
-L- STA. 81+70	81																							
	81	82																		64				
-L- STA. 82+34	82																							
	82	83																		4				
-L- STA. 82+41	83																							
	83	84																		84				
-L- STA. 83+21	84																							
	84	85																	40					
-L- STA. 83+62	85																							
	85	86																	48					
-L- STA. 84+00	86																							
SHEET TOTAL												104						192	88	664				

STATION	FROM	TO	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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
-L- STA. 71+10	65									1			
-L- STA. 72+00	66									1			
-L- STA. 68+19	67												
-L- STA. 68+71	68									1			
-L- STA. 73+17	69												
-L- STA. 75+00	70									1			
	70	71											
-L- STA. 75+93	71									1			
	71	OUT											
-L- STA. 76+69	72									1			
	72	73											
	72	527											
-L- STA. 77+00	73									1	4.67		
	73	74											
-L- STA. 78+00	74									1	3.8		
	74	75											
	74	76											
-L- STA. 78+00	75									1			
-L- STA. 79+20	76									1	2.42		
	76	77											
-L- STA. 80+28	77									1	1.32		
	77	78											
	77	79											
-L- STA. 80+28	78									1			
-L- STA. 80+70	79									1	.98		
	79	80											
-L- STA. 81+60	80									1	.26		
	80	81											
-L- STA. 81+70	81									1	.16		
	81	82											
-L- STA. 82+34	82									1			
	82	83											
-L- STA. 82+41	83									1			
	83	84											
-L- STA. 83+21	84									1			
	84	85											
-L- STA. 83+62	85									1			
	85	86											
-L- STA. 84+00	86									1			
SHEET TOTAL										20	13.61		

STATION	FROM	TO	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 71+10	65							1	1																		
-L- STA. 72+00	66										1										1						
-L- STA. 68+19	67																										
-L- STA. 68+71	68										1				1												
-L- STA. 73+17	69																									32	REMOVE EXIST. 15" RCP
-L- STA. 75+00	70										1										1						
	70	71																									
-L- STA. 75+93	71										1										1						
	71	OUT																									
-L- STA. 76+69	72										1										1						
	72	73																									
	72	527																									
-L- STA. 77+00	73										1										1						
	73	74																									
-L- STA. 78+00	74										1										1						
	74	75																									
	74	76																									
-L- STA. 78+00	75						1	1	1																		
-L- STA. 79+20	76										1										1						
	76	77																									
-L- STA. 80+28	77										1										1						
	77	78																									
	77	79																									
-L- STA. 80+28	78						1	1	1																		
-L- STA. 80+70	79										1										1						
	79	80																									
-L- STA. 81+60	80										1										1						
	80	81																									
-L- STA. 81+70	81										1										1					28	REMOVE EXIST. 18" RCP
	81	82																									
-L- STA. 82+34	82										1										1						
	82	83																									
-L- STA. 82+41	83										1										1						
	83	84																									
-L- STA. 83+21	84										1										1					68	REMOVE EXIST. 15" RCP
	84	85																									
-L- STA. 83+62	85										1										1						
	85	86																									
-L- STA. 84+00	86										1										1						
SHEET TOTAL							2	3	3		17				1						16					128	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-E

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
	RT.	86	87		813.10	813.60	
-L- STA. 85+73	RT.	87		816.57			
	RT.	87	88		813.60	814.20	
-L- STA. 87+56	RT.	88		817.20			
	RT.	88	89		814.20	815.22	
-L- STA. 89+50	RT.	89		818.22			
	RT.	89	90		815.22	815.45	
-L- STA. 89+50	RT.	90		817.75			
-L- STA. 77+89	LT.	91					
-L- STA. 81+29	LT.	92					
-L- STA. 84+93	LT.	93					
-L- STA. 87+34	LT.	94					
-L- STA. 88+39	LT.	95					
-L- STA. 89+39	LT.	96					
-L- STA. 91+50	RT.	97		817.70			
	RT.	97	98		815.40	815.00	
	RT.	IN	97		817.97	815.40	
-L- STA. 91+52	RT.	98		819.15			
	RT.	98	99		815.00	815.75	
	RT.	98	532		814.90	812.90	
-L- STA. 92+50	RT.	99		819.93			
	RT.	99	100		815.75	817.00	
-L- STA. 94+00	RT.	100		820.72			
	RT.	100	101		817.00	817.35	
-L- STA. 94+25	RT.	101		819.65			
-L- STA. 93+10	LT.	102					
-L- STA. 95+50	RT.	103		821.50			
	RT.	103	104		818.75	814.80	
-L- STA. 95+50	RT.	104		817.17			
	RT.	104	105		814.80	813.45	
-L- STA. 97+72	RT.	105		816.20			
	RT.	105	106		813.45	819.70	
	RT.	105	OUT		813.20	812.50	
-L- STA. 97+49	RT.	106		822.50			
-L- STA. 95+46	LT.	107					
-L- STA. 97+97	LT.	108		821.40			
	LT.	108	109		810.14	814.33	
-L- STA. 98+25	LT.	109		819.58			
	LT.	109	110		814.33	815.50	
SHEET TOTAL							

SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) and C.S. PIPE (SIZE / THICKNESS OR GAUGE)

STATION	FROM	TO	SD 12"	SD 15"	SD 18"	SD 24"	SD 30"	SD 36"	SD 42"	SD 48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	C.S. 12" .064	C.S. 15" .064	C.S. 18" .064	C.S. 24" .064	C.S. 30" .079	C.S. 36" .079	C.S. 42" .109
	86	87																			
-L- STA. 85+73	87																				
	87	88																			
-L- STA. 87+56	88																				
	88	89																			
-L- STA. 89+50	89																				
	89	90																			
-L- STA. 89+50	90																				
-L- STA. 77+89	91				28																
-L- STA. 81+29	92				96																
-L- STA. 84+93	93				60																
-L- STA. 87+34	94				36																
-L- STA. 88+39	95				36																
-L- STA. 89+39	96				36																
-L- STA. 91+50	97																				
	97	98																			
	IN	97																			
-L- STA. 91+52	98																				
	98	99																			
	98	532																			
-L- STA. 92+50	99																				
	99	100																			
-L- STA. 94+00	100																				
	100	101																			
-L- STA. 94+25	101																				
-L- STA. 93+10	102			40																	
-L- STA. 95+50	103																				
	103	104																			
-L- STA. 95+50	104																				
	104	105																			
-L- STA. 97+72	105																				
	105	106		40								X	X	X							
	105	OUT																			
-L- STA. 97+49	106																				
-L- STA. 95+46	107			44								X	X	X							
-L- STA. 97+97	108																				
	108	109																			
-L- STA. 98+25	109																				
	109	110																			
SHEET TOTAL				124																	
					292																

R.C. PIPE (CLASS III) and R.C. PIPE (CLASS IV)

STATION	FROM	TO	III 15"	III 18"	III 24"	III 30"	III 36"	III 42"	III 48"	IV 12"	IV 15"	IV 18"	IV 24"	IV 30"	IV 36"	IV 42"	IV 48"
	86	87									172						
-L- STA. 85+73	87																
	87	88									180						
-L- STA. 87+56	88																
	88	89									192						
-L- STA. 89+50	89																
	89	90									20						
-L- STA. 89+50	90																
-L- STA. 77+89	91																
-L- STA. 81+29	92																
-L- STA. 84+93	93																
-L- STA. 87+34	94																
-L- STA. 88+39	95																
-L- STA. 89+39	96																
-L- STA. 91+50	97																
	97	98									16						
	IN	97	64														
-L- STA. 91+52	98																
	98	99									96						
	98	532		140													
-L- STA. 92+50	99																
	99	100									148						
-L- STA. 94+00	100																
	100	101									32						
-L- STA. 94+25	101																
-L- STA. 93+10	102																
-L- STA. 95+50	103																
	103	104									32						
-L- STA. 95+50	104																
	104	105	220														
-L- STA. 97+72	105																
	105	106															
	105	OUT		80													
-L- STA. 97+49	106																
-L- STA. 95+46	107																
-L- STA. 97+97	108																
	108	109				32											
-L- STA. 98+25	109																
	109	110				252											
SHEET TOTAL			284	220		284					888						

ENDWALLS: STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) — CU. YDS. QUANTITIES FOR DRAINAGE STRUCTURES: * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B'). FRAME, GRATES AND HOOD STANDARD 840.03 — TYPE OF GRATE. CONCRETE TRANSITIONAL SECTION.

STATION	FROM	TO	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS R.C.P.	ENDWALLS C.S.P.	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	E	F	G		CATCH BASIN	DROP INLET
	86	87																	
-L- STA. 85+73	87									1									
	87	88																	
-L- STA. 87+56	88									1									
	88	89																	
-L- STA. 89+50	89									1									
	89	90																	
-L- STA. 89+50	90									1									
-L- STA. 77+89	91																		
-L- STA. 81+29	92																		
-L- STA. 84+93	93																		
-L- STA. 87+34	94																		
-L- STA. 88+39	95																		
-L- STA. 89+39	96																		
-L- STA. 91+50	97									1									
	97	98																	
	IN	97																	
-L- STA. 91+52	98									1									
	98	99																	
	98	532																	
-L- STA. 92+50	99									1									
	99	100																	
-L- STA. 94+00	100									1									
	100	101																	
-L- STA. 94+25	101									1									
-L- STA. 93+10	102																		
-L- STA. 95+50	103									1									
	103	104																	
-L- STA. 95+50	104									1									
	104	105																	
-L- STA. 97+72	105									1									
	105	106																	
	105	OUT																	
-L- STA. 97+49	106									1									
-L- STA. 95+46	107																		
-L- STA. 97+97	108									1	5.0	1.36							
	108	109																	
-L- STA. 98+25	109									1	.25								
	109	110																	
SHEET TOTAL										15	5.25	1.36							

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
	86	87																				
-L- STA. 85+73	87					1										1						
	87	88																				
-L- STA. 87+56	88					1										1					44	REMOVE EXIST. 18" CMP
	88	89																				
-L- STA. 89+50	89					1										1						
	89	90																				
-L- STA. 89+50	90		1	1																		
-L- STA. 77+89	91																				36	REMOVE EXIST. 18" RCP
-L- STA. 81+29	92																				132	REMOVE EXIST. 18" RCP
-L- STA. 84+93	93																				64	REMOVE EXIST. 15" RCP
-L- STA. 87+34	94																				28	REMOVE EXIST. 15" RCP
-L- STA. 88+39	95																				32	REMOVE EXIST. 15" RCP
-L- STA. 89+39	96																				36	REMOVE EXIST. 15" RCP
-L- STA. 91+50	97		1	1																		
	97	98																				
	IN	97																			100	REMOVE EXIST. 15" RCP
-L- STA. 91+52	98					1										1						
	98	99																				
	98	532																				
-L- STA. 92+50	99					1										1						
	99	100																			100	REMOVE EXIST. 15" CMP
-L- STA. 94+00	100					1										1						
	100	101																				
-L- STA. 94+25	101		1	1																	64	REMOVE EXIST. 15" RCP
-L- STA. 93+10	102																					
-L- STA. 95+50	103					1										1						
	103	104																				
-L- STA. 95+50	104		1	1																	300	REMOVE EXIST. 15" RCP & EXIST. 2 DI'S
	104	105																				
-L- STA. 97+72	105					1				1												
	105	106																				
	105	OUT																				
-L- STA. 97+49	106					1										1						
-L- STA. 95+46	107																					
-L- STA. 97+97	108												1	1								
	108	109																				
-L- STA. 98+25	109					1				1												
	109	110																			212	REMOVE EXIST. 24" RCP & EXIST. 2 DI'S
SHEET TOTAL			4	4		10				2			1	1		8					1148	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: PJS	DATE: 02/17/10
CHECKED BY: JBG	DATE: 05/05/11

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-F

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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- STA. 100+75	LT.	110		820.75															
	LT.	110	111		815.50	815.85													
-L- STA. 101+55	LT.	111		821.05															
	LT.	111	112		818.25	821.60													
	LT.	111	113		815.85	816.35													
-L- STA. 101+55	LT.	112		824.80															
-L- STA. 102+80	LT.	113		821.60															
	LT.	113	114		819.68	822.80													
	LT.	113	115		816.35	817.52													
-L- STA. 102+79	LT.	114		826.00															
-L- STA. 104+30	LT.	115		822.82															
	LT.	115	116		820.90	824.50			16							X		X	X
	LT.	115	117		818.00	818.82													
-L- STA. 104+27	LT.	116																	
-L- STA. 106+00	LT.	117		823.57															
	LT.	117	118		821.37	823.00													
-L- STA. 106+50	LT.	118		826.30															
	LT.	118	119		823.00	822.60													
-L- STA. 107+80	LT.	119		825.60															
	LT.	119	120		822.60	825.53													
-L- STA. 107+80	LT.	120		828.53															
	LT.	120	121		825.53	826.13													
-L- STA. 109+00	LT.	121		829.13															
	LT.	121	122		826.13	827.64													
-L- STA. 112+00	LT.	122		830.64															
	LT.	122	123		827.64	829.15													
-L- STA. 115+00	LT.	123		832.15															
-L- STA. 98+65	RT.	124			812.00														
-L- STA. 99+35	RT.	125		819.80															
	RT.	125	126		814.50	815.50													
	RT.	125	OUT		814.50	812.50													
-L- STA. 101+80	RT.	126		821.50															
	RT.	126	127		815.50	817.50													
-L- STA. 104+50	RT.	127		822.83															
	RT.	127	128		817.50	818.16													
-L- STA. 105+53	RT.	128		822.41															
	RT.	128	129		819.60	822.52													
	RT.	128	130		818.16	818.95													
-L- STA. 105+95	RT.	129		825.27															
SHEET TOTAL									16										

STATION	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
(LT. 110–111)											80											
(LT. 111–112)																28						
(LT. 111–113)											128											
(LT. 113–114)																28						
(LT. 113–115)											148											
(LT. 115–117)										168												
(LT. 117–118)									68													
(LT. 118–119)									132													
(LT. 119–120)									56													
(LT. 120–121)																124						
(LT. 121–122)																300						
(LT. 122–123)																300						
-L- STA. 98+65											28											
(RT. 125–126)										248												
(RT. 125–OUT)										36												
(RT. 126–127)										272												
(RT. 127–128)										104												
(RT. 128–129)								60														
(RT. 128–130)										120												
SHEET TOTAL								60		948						780						
									260		348											

STATION	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET
-L- STA. 100+75								1	.25								
-L- STA. 101+55 (111)								1	.20								
-L- STA. 101+55 (112)								1									
-L- STA. 102+80								1	.25								
-L- STA. 102+79								1									
-L- STA. 104+30								1	.30								
-L- STA. 106+00								1									
-L- STA. 106+50								1									
-L- STA. 107+80 (119)								1									
-L- STA. 107+80 (120)								1			1			1		1	
-L- STA. 109+00								1			1			1		1	
-L- STA. 112+00								1			1			1		1	
-L- STA. 115+00								1			1			1		1	
-L- STA. 98+65						2.3											
-L- STA. 99+35								1	.30								
-L- STA. 101+80								1	1.0								
-L- STA. 104+50								1									
-L- STA. 105+53								1									
-L- STA. 105+95								1									
SHEET TOTAL						2.3		18	2.3		4			4		4	

STATION	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 100+75				1				1											32	REMOVE EXIST. 12" HDPE
-L- STA. 101+55 (111)				1				1												
-L- STA. 101+55 (112)	1	1																		REMOVE EXIST. DI
-L- STA. 102+80				1				1											64	REMOVE EXIST. 15" RCP
-L- STA. 102+79	1	1																		
-L- STA. 104+30				1				1												
-L- STA. 104+27																				BERM DITCH OUTLET
-L- STA. 106+00				1				1												
-L- STA. 106+50			1				1	1												3GI
-L- STA. 107+80 (119)				1				1												
-L- STA. 98+65																	.6560			REMOVE EXIST. HW
-L- STA. 99+35											1	1								
-L- STA. 101+80											1	1								
(RT. 126–127)																			24	REMOVE EXIST. 24" CMP
-L- STA. 104+50				1				1											32	REMOVE EXIST. 18" CMP
-L- STA. 105+53				1				1												
-L- STA. 105+95				1				1												
SHEET TOTAL	2	2	1	9			1	10			2	2					.6560		152	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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CHECKED BY: JBG DATE: 05/05/11

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

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-G

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC)												C.S. PIPE							R.C. PIPE (CLASS III)							R.C. PIPE (CLASS IV)								42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS.		QUANTITIES FOR DRAINAGE STRUCTURES	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT.		C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE				CONCRETE TRANSITIONAL SECTION		D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
SIZE		FROM	TO					12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	12"	15"	18"	24"	30"	36"	42"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"						R.C.P.	C.S.P.	PER EACH (0' THRU 5.0')	A 5.0' THRU 10.0'	B 10.0' AND ABOVE		E	F	G		CATCH BASIN	DROP INLET																			
THICKNESS OR GAUGE																				.064	.064	.064	.064	.079	.079	.109																																																				
-L- STA. 106+70	RT.	130		823.20																																													1													1				1												
	RT.	130	131		818.95	819.54																							72																																																	
-L- STA. 107+00	RT.	131		823.04																																													1													1			1	1											3GI
	RT.	131	132		820.04	822.00																						284																																																	64	REMOVE EXIST. 15" RCP & HW
-L- STA. 109+90	RT.	132		825.20																																													1													1				1												
	RT.	132	133		822.00	823.30																													48																																										
	RT.	132	134		822.00	822.81																						208																																																		
-L- STA. 110+16	RT.	133		826.20																																													1			1	1																									
	RT.	133	136		823.20	823.30																													4																																										
-L- STA. 112+00	RT.	134		825.81																																													1													1				1												
	RT.	134	135		822.81	853.00			104							X		X	X																																																											
-L- STA. 112+92	RT.	135		855.92																																													1																		1	1										
-L- STA. 110+12	RT.	136		826.30																																													1			1	1																									
	RT.	136	137		823.30	824.80																													84																																										
-L- STA. 109+79	RT.	137		827.80																																													1			1		1																								
	RT.	137	138		824.80	832.85																													112																																										
	RT.	IN	137		824.80	835.50			44							X		X	X																																																											BERM DITCH OUTLET
-L- STA. 110+20	RT.	138		835.85																																													1			1		1																								
	RT.	138	139		832.85	834.00																													36																																										
-L- STA. 109+97	RT.	139		840.10																																													1	1.1		1			1		1																				40	REMOVE EXIST. 18" CMP
-L- STA. 117+41	LT.	140		835.90																																													1													1				1										36	REMOVE EXIST. 18" RCP & HW
	LT.	140	141		833.05	828.80																					88																																																		
-L- STA. 117+00	LT.	141		830.70																																													1													1				1												
	LT.	141	142		828.80	828.00																					52																																																		
-L- STA. 117+00	LT.	142		833.15																																													1	.15		1			1		1																					
	LT.	142	143		828.00	825.33																						72																																																	
-L- STA. 117+00	RT.	143		828.33																																													1													1				1												
	RT.	143	144		825.33	827.15																						132																																																	
-L- STA. 118+37	RT.	144		829.32																																													1													1				1												
	RT.	144	OUT		827.15	825.05																						44																																																	PREFORMED SCOUR HOLE
-L- STA. 118+01	LT.	145																																																																									.13		PLUG/FILL W/FLOWABLE MATERIAL 18" RCP
-L- STA. 118+50	LT.	146		832.00																																													1													1				1												
	LT.	146	147		830.00	827.60																					100																																																		
	LT.	IN	146		830.00	838.00			20							X		X	X																																																											BERM DITCH OUTLET
-L- STA. 119+50	LT.	147		829.50																																													1													1				1												
	LT.	147	148		827.30	826.50																					64																																																		
-L- STA. 119+50	LT.	148		834.90																																													1	3.5		1			1		1																					
	LT.	148	149		832.00	832.92																													248																																								.13		PLUG/FILL W/FLOWABLE MATERIAL 18" RCP
	LT.	148	OUT		826.40	825.50																							68																																																PREFORMED SCOUR HOLE
SHEET TOTAL									168																	304		140						532													18	4.75		7	2	2	3		3					10			1	10	1	1								.26	140	
																												740																																																		

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COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

4/04/06

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-H

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

ABBREVIATIONS

- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT)
- J.B. JUNCTION BOX
- M.H. MANHOLE
- T.B.D.I. TRAFFIC BEARING DROP INLET
- T.B.J.B. TRAFFIC BEARING JUNCTION BOX

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
-L- STA. 122+00	LT.	149		835.92			
-L- STA. 120+00	RT.	150		830.20			
	RT.	150	OUT		827.45	825.50	
-L- STA. 123+05	RT.	151		835.10			
	RT.	151	152		833.20	832.20	
-L- STA. 124+50	RT.	152		835.80			
	RT.	152	OUT		832.20	810.20	
-L- STA. 124+65	RT.	153				810.20	
-L- STA. 128+44	RT.	154					
-L- STA. 128+45	LT.	155		835.78			
	LT.	155	156		833.45	833.30	
-L- STA. 128+83	LT.	156		835.35			
-L- STA. 130+00	LT.	157		835.52			
	LT.	157	158		832.00	832.52	
	LT.	157	159		832.00	831.53	
-L- STA. 130+00	RT.	158		835.52			
-L- STA. 131+00	LT.	159		834.53			
	LT.	159	160		831.53	830.45	
-L- STA. 132+00	LT.	160		832.75			
	LT.	160	161		830.45	829.21	
-L- STA. 132+55	LT.	161		832.21			
	LT.	161	162		829.21	828.43	
-L- STA. 133+05	LT.	162		831.68			
	LT.	162	163		828.43	827.80	
-L- STA. 134+00	LT.	163		830.30			
	LT.	163	164		827.80	826.30	
-L- STA. 135+10	LT.	164		828.80			
	LT.	164	165		826.30	814.65	
-L- STA. 137+65	LT.	165		818.57			
	LT.	165	166		814.65	820.72	
	LT.	165	OUT		814.65	812.50	
-L- STA. 137+65	LT.	166		823.72			
-L- STA. 136+00	RT.	167		826.79			
	RT.	167	168		823.79	821.34	
-L- STA. 137+50	RT.	168		824.34			
	RT.	168	169		821.34	819.71	
-L- STA. 138+50	RT.	169		822.71			
	RT.	169	170		819.71	818.00	
-L- STA. 138+50	LT.	170		822.71			
SHEET TOTAL							

SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) and C.S. PIPE (SIZE / THICKNESS OR GAUGE)

FROM	TO	SD 12"	SD 15"	SD 18"	SD 24"	SD 30"	SD 36"	SD 42"	SD 48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	C.S. 12" .064	C.S. 15" .064	C.S. 18" .064	C.S. 24" .064	C.S. 30" .079	C.S. 36" .079	C.S. 42" .109
152	OUT														60					
165	166														32					
SHEET TOTAL															92					

R.C. PIPE (CLASS III), R.C. PIPE (CLASS IV), SPECIAL PIPE, ENDWALLS

FROM	TO	RC III 15"	RC III 18"	RC III 24"	RC III 30"	RC III 36"	RC III 42"	RC III 48"	RC IV 12"	RC IV 15"	RC IV 18"	RC IV 24"	RC IV 30"	RC IV 36"	RC IV 42"	RC IV 48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	ENDWALLS CU. YDS. C.S.P.
149																							
150																							
150	OUT	40																					
151																							
151	152									144													
152																							
152	OUT																						
153			32																				
154				48																			
155																							
155	156									40													
156																							
157																							
157	158									72													
157	159									100													
158																							
159																							
159	160	104																					
160																							
160	161	56																					
161																							
161	162									52													
162																							
162	163		96																				
163																							
163	164		112																				
164																							
164	165		256																				
165																							
165	166																						
165	OUT			104																			
166																							
167																							
167	168									152													
168																							
168	169									100													
169																							
169	170									88													
170																							
SHEET TOTAL		200	496	152						748													

QUANTITIES FOR DRAINAGE STRUCTURES (* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B')), FRAME, GRATES AND HOOD STANDARD 840.03, CONCRETE TRANSITIONAL SECTION

FROM	TO	PER EACH (0' THRU 5.0')	A: 5.0' THRU 10.0' (LIN. *FT.)	B: 10.0' AND ABOVE (LIN. *FT.)	C.B. STD. 840.01 OR STD. 840.02	TYPE OF GRATE E	TYPE OF GRATE F	TYPE OF GRATE G		CATCH BASIN	DROP INLET
149		1			1			1		1	
150		1									
150	OUT										
151		1									
151	152										
152		1									
152	OUT										
153											
154											
155		1			1			1			
155	156										
156		1			1		1				
157		1			1			1			
157	158										
157	159										
158		1			1		1				
159		1			1			1			
159	160										
160		1									
160	161										
161		1			1			1			
161	162										
162		1			1			1			
162	163										
163		1									
163	164										
164		1									
164	165										
165		1									
165	166										
165	OUT										
166		1			1			1			
167		1			1		1				
167	168										
168		1			1		1				
168	169										
169		1			1		1				
169	170										
170		1			1			1			
SHEET TOTAL		20			13		5	8		1	

STRUCTURES, PIPE REMOVAL AND REMARKS

FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
149																					
150					1				1												
150	OUT																				
151					1										1						
151	152																				
152					1										1						
152	OUT																				PREFORMED SCOUR HOLE
153																		.4465			
154																		.5526			PREFORMED SCOUR HOLE
155																					C.B. SPECIAL DETAIL SEE SHEET 2-T
155	156																				
156																					REMOVE EXIST. CB
157																					
157	158																				
157	159																				
158																					
159																					
159	160																				
160		1	1																		
160	161																				
161																				220	REMOVE EXIST. 15" HDPE & 2 CB'S
161	162																				
162																					
162	163																				
163		1	1																		
163	164																				
164		1	1																	13	REMOVE EXIST. 15" CMP
164	165																			28	REMOVE EXIST. 15" RCP
165		1	1																		
165	166																				
165	OUT																			92	REMOVE EXIST. 18" RCP
166																					
167																					
167	168																				
168																					
168	169																				
169																					
169	170																				
170																					
SHEET TOTAL		4	4		3				1						2			.9991		353	

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See "Standard Specifications For Roads and Structures, Section 300–5".

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-1

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
	LT.	170	OUT		818.00	812.50															44																				
-L- STA. 141+50	RT.	172		817.81																																					
	RT.	172	173		812.08	813.08																													100						
	RT.	172	174		812.08	811.40																													68						
-L- STA. 142+50	RT.	173		816.08																																					
-L- STA. 141+50	LT.	174		817.81																																					
	LT.	174	175		811.40	810.00																													168						
-L- STA. 143+19	LT.	175		814.81																																					
	LT.	175	176		810.00	807.20																													180						
-L- STA. 145+00	LT.	176		810.91																																					
	LT.	176	177		807.20	807.91																													68						
	LT.	176	178		807.20	801.98																													288						
-L- STA. 145+00	RT.	177		810.91																																					
-L- STA. 147+90	LT.	178		804.98																																					
	LT.	178	179		790.69	792.76																													212						
	LT.	178	OUT		790.50	776.50															68																				
-L- STA. 150+00	LT.	179		800.40																																					
	LT.	179	180		792.76	794.24																						148													
-L- STA. 151+50	LT.	180		797.24																																					
-L- STA. 146+15	LT.	181								36																															
-L- STA. 146+50	RT.	182																																							
-L- STA. 147+57	RT.	183																																							
-L- STA. 148+00	RT.	184		804.60																																					
	RT.	184	185		801.60	799.50																													100						
-L- STA. 148+84	LT.	186A																																							
	LT./RT.	186A	187A																																						
-L- STA. 150+32	RT.	187A																																							
		187A	187			769.65																										12									
		IN	187A																																						
-L- STA. 149+00	RT.	185		802.50																																					
	RT.	185	OUT		799.50	784.90																													56						
-L- STA. 150+00	LT.	188		787.45																																					
	LT.	188	189		784.95	786.00																							152												
	LT.	188	OUT		784.95																								116												
-L- STA. 151+52	LT.	189		796.43																																					
	LT.	189	190		786.00	786.88																							88												
-L- STA. 152+41	LT.	190		789.88																																					
-L- STA. 152+00	RT.	191		796.19																																					
	RT.	191	192		793.19	788.00																													200						
-L- STA. 154+00	RT.	192		792.00																																					
	RT.	192	193		788.00	789.00																													68						
	RT.	192	OUT		788.00	787.50																													28						
-L- STA. 154+00	LT.	193		792.00																																					
-L- STA. 155+50	LT.	194		788.60																																					
SHEET TOTAL										36											112						148	356			12				1536						

STATION	LOCATION	FROM	TO	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
	LT.	170	OUT																																				
-L- STA. 141+50	RT.	172									1	.73		1		1																							
	RT.	172	173																																				
	RT.	172	174																																				
-L- STA. 142+50	RT.	173									1			1		1																							
-L- STA. 141+50	LT.	174									1	1.41		1			1																						
	LT.	174	175																																				
-L- STA. 143+19	LT.	175									1			1			1																						
	LT.	175	176																																				
-L- STA. 145+00	LT.	176									1			1			1																						
	LT.	176	177																																				
	LT.	176	178																																				
-L- STA. 145+00	RT.	177									1			1		1																						60	REMOVE EXIST. 18" RCP
-L- STA. 147+90	LT.	178									1	5.0	4.48	1			1																						
	LT.	178	179																																				
	LT.	178	OUT																																2@18"				PREFORMED SCOUR HOLE
-L- STA. 150+00	LT.	179									1	2.64		1			1																						
	LT.	179	180																																				
-L- STA. 151+50	LT.	180									1			1			1																						
-L- STA. 146+15	LT.	181																																				32	REMOVE EXIST. 18" RCP
-L- STA. 146+50	RT.	182																																				48	REMOVE EXIST. 15" RCP
-L- STA. 147+57	RT.	183																																				48	REMOVE EXIST. 15" RCP
-L- STA. 148+00	RT.	184									1			1		1																							
	RT.	184	185																																				
-L- STA. 148+84	LT.	186A						44	3.4																											.7640			
	LT./RT.	186A	187A				168																																
-L- STA. 150+32	RT.	187A									1																				1	1							
		187A	187																																				
		IN	187A					72																												.7640			
-L- STA. 149+00	RT.	185									1			1		1																							
	RT.	185	OUT																																				
-L- STA. 150+00	LT.	188									1												1				1												
	LT.	188	189																																			148	REMOVE EXIST. 18" RCP & DI
	LT.	188	OUT																																			60	REMOVE EXIST. 18" RCP
-L- STA. 151+52	LT.	189									1	5.0	.43							1	1																		
	LT.	189	190																																			86	REMOVE EXIST. 18" RCP & DI
-L- STA. 152+41	LT.	190									1												1				1												
-L- STA. 152+00	RT.	191									1			1		1																							
	RT.	191	192																																				
-L- STA. 154+00	RT.	192									1			1		1																							
	RT.	192	193																																				
	RT.	192	OUT																																				
-L- STA. 154+00	LT.	193									1			1			1																					68	REMOVE EXIST. 15" RCP
-L- STA. 155+50	LT.	194									1			1			1																						
SHEET TOTAL							168	116	3.4		19		4.91	15		7	8			1	1		2				2			1	1				2@18"			550	
												14.78																								1.528			

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')

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COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. U-3326A/B SHEET NO. 3-J

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
	LT.	194	195		785.60	783.00																													148																																											
-L- STA. 157+00	LT.	195		786.00																																													1			1			1																							
	LT./RT.	195	196		783.00	782.00																													72																																											
-L- STA. 157+00	RT.	196		786.11																																													1			1		1																								
	RT.	196	196A		782.00	784.70																													100																																											
	RT.	196	OUT		782.00	781.69																													28																																											PREFORMED SCOUR HOLE
-L- STA. 156+00	RT.	196A		787.70																																													1			1		1																								
-L- STA. 155+43	LT.	197		790.93																																													1																				1	1								
	LT.	197	198		787.28	???.??																						356																																																				
	LT.	197	570		787.28	791.45																						96																																																			
-L- STA. 159+08	LT.	199		779.00																																													1																				1									SLAB LID
	LT./RT.	199	200		772.00	769.50																																					100																																			
	LT.	199	IN		772.00	772.50											28		X	X	X																																																										
	LT.	IN	199		773.50	784.55																									156																																															
-L- STA. 159+09	RT.	200		777.00																																													1	2.5																				1									SLAB LID
	RT.	200	OUT		769.50	768.89																							40																																																		
-L- STA. 158+00	LT.	201		785.21																																													1			1			1																							
	LT.	201	201A		783.21	783.00																													64																																											
-L- STA. 158+65	LT.	201A		785.09																																													1			1	1																									
	LT.	201A	202		783.00	781.90																													4																																											
-L- STA. 158+70	LT.	202		785.10																																													1			1	1																									
	LT.	202	203		781.90	782.34																													76																																											
	LT./RT.	202	204		781.90	781.60																													68																																											
-L- STA. 159+50	LT.	203		785.34																																													1			1		1																								
	LT.	203	203A		782.34	783.40																													100																																											
-L- STA. 160+50	LT.	203A		786.40																																													1			1		1																								
-L- STA. 158+70	RT.	204		785.10																																													1			1	1																									
	RT.	204	205		781.60	781.50																													4																																											
	RT.	204	206		781.60	782.34																													80																																											
-L- STA. 158+65	RT.	205		785.09																																													1			1	1																									
	RT.	205	205A		781.50	782.22																													64																																											
	RT.	205	OUT		781.50	773.36														40																																																												PREFORMED SCOUR HOLE
-L- STA. 158+00	RT.	205A		785.22																																													1			1		1																								
-L- STA. 159+50	RT.	206		785.34																																													1			1			1																							
-L- STA. 160+50	RT.	208		786.40																																													1			1			1																							
	RT.	208	OUT		783.00	782.50																													24																																											
-L- STA. 162+00	LT.	209		789.44																																													1			1		1																								
	LT.	209	OUT		789.44	786.40																													24																																											
-L- STA. 163+50	RT.	210		793.53																																													1			1			1																							
	RT.	210	OUT		790.53	790.20																													28																																											
-L- STA. 163+50	LT.	211		793.53																																													1			1		1																								
SHEET TOTAL															28						40						452	40		156					884								100						19	2.5		16	4	7	5														3	1								

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COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-K

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109
	LT.	211	212		789.78	796.62																				
	LT.	211	OUT		789.78	789.60																				
-L- STA. 166+00	LT.	212		800.37																						
	LT.	212	213		796.62	800.00																				
-L- STA. 167+50	LT.	213		804.27																						
	LT.	213	214		800.00	801.50																				
-L- STA. 168+43	LT.	214		807.00																						
	LT.	214	215		801.50	806.37																				
	LT.	214	216		801.50	802.00																				
	LT.	214	218		801.50	811.50																				
-L- STA. 168+80	LT.	215		809.57																						
-L- STA. 168+50	RT.	216		806.98																						
	RT.	216	217		802.00	802.18																				
-L- STA. 168+52	RT.	217		805.38																						
-L- STA. 171+20	LT.	218		814.57																						
	LT.	218	219		811.50	813.09																				
	LT.	218	220		811.50	811.87																				
-L- STA. 171+60	LT.	219		816.29																						
-L- STA. 171+25	RT.	220		814.87																						
-L- STA. 173+28	LT.	221		816.26																						
	LT.	221	222		813.06	813.00																				
-L- STA. 173+28	LT.	222		819.18																						
	LT.	222	223		815.90	816.77																				
-L- STA. 173+28	LT.	223		819.77																						
	LT.	223	224		816.77																					
	LT.	223	225		816.77	822.02																				
-L- STA. 173+42	LT.	224		820.14																						
-L- STA. 175+05	LT.	225		825.02																						
	LT.	225	226		822.02	825.30																				
-L- STA. 176+55	LT.	226		828.30																						
-L- STA. 174+20	RT.	227		822.18																						
	RT.	227	228			823.36																				
-L- STA. 175+90	RT.	228		826.61																						
-L- STA. 177+55	RT.	229																								
-L- STA. 179+07	RT.	230		831.47																						
	RT.	230	231		828.47	828.00																				
-L- STA. 179+60	RT.	231		832.36																						
	RT.	231	232		828.00	826.50																				
-L- STA. 180+95	RT.	232		831.28																						
	RT.	232	233		826.50	828.77																				
	RT.	232	234		826.40	825.90																				
-L- STA. 180+95	RT.	233		831.02																						
SHEET TOTAL																										

STATION	LOCATION	FROM	TO	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.
	LT.	211	212											252											
	LT.	211	OUT			40																			
-L- STA. 166+00	LT.	212																							
	LT.	212	213										152												
-L- STA. 167+50	LT.	213																							
	LT.	213	214										96												
-L- STA. 168+43	LT.	214																							
	LT.	214	215	40																					
	LT.	214	216									84													
	LT.	214	218									280													
-L- STA. 168+80	LT.	215																							
-L- STA. 168+50	RT.	216																							
	RT.	216	217									28													
-L- STA. 168+52	RT.	217																							
-L- STA. 171+20	LT.	218																							
	LT.	218	219									44													
	LT.	218	220									72													
-L- STA. 171+60	LT.	219																							
-L- STA. 171+25	RT.	220																							
-L- STA. 173+28	LT.	221																							
	LT.	221	222									8													
-L- STA. 173+28	LT.	222																							
	LT.	222	223									20													
-L- STA. 173+28	LT.	223																							
	LT.	223	224									72													
	LT.	223	225									180													
-L- STA. 173+42	LT.	224																							
-L- STA. 175+05	LT.	225																							
	LT.	225	226									152													
-L- STA. 176+55	LT.	226																							
-L- STA. 174+20	RT.	227																							
	RT.	227	228										172												
-L- STA. 175+90	RT.	228																							
-L- STA. 177+55	RT.	229																							
-L- STA. 179+07	RT.	230																							
	RT.	230	231									52													
-L- STA. 179+60	RT.	231																							
	RT.	231	232									152													
-L- STA. 180+95	RT.	232																							
	RT.	232	233	16																					
	RT.	232	234										104												
-L- STA. 180+95	RT.	233																							
SHEET TOTAL				56		40						1144	524	252											

STATION	LOCATION	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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
	LT.	211	212																													42	REMOVE EXIST. 18" RCP
	LT.	211	OUT																														
-L- STA. 166+00	LT.	212		1			1		1																							36	REMOVE EXIST. 15" RCP
	LT.	212	213																														
-L- STA. 167+50	LT.	213		1			1		1																							284	REMOVE EXIST. 18" RCP
	LT.	213	214																														
-L- STA. 168+43	LT.	214		1	.50		1		1																								
	LT.	214	215																														
	LT.	214	216																														
	LT.	214	218																														
-L- STA. 168+80	LT.	215		1										1	1																		
-L- STA. 168+50	RT.	216		1			1			1																							
	RT.	216	217																														
-L- STA. 168+52	RT.	217		1										1	1																	76	REMOVE EXIST. 18" RCP
-L- STA. 171+20	LT.	218		1			1		1																							56	REMOVE EXIST. 15" RCP
	LT.	218	219																														
	LT.	218	220																														
-L- STA. 171+60	LT.	219		1										1	1																		
-L- STA. 171+25	RT.	220		1			1			1																						32	REMOVE EXIST. 18" RCP
-L- STA. 173+28	LT.	221		1										1	1																		
	LT.	221	222																														
-L- STA. 173+28	LT.	222		1	5.0	3.8																		1	1								
	LT.	222	223																														
-L- STA. 173+28	LT.	223		1			1		1																								
	LT.	223	224																													90	REMOVE EXIST. 18" RCP
	LT.	223	225																														
-L- STA. 173+42	LT.	224																															CONV. EXIST. D.I. TO C.B.
-L- STA. 175+05	LT.	225		1			1		1																								
	LT.	225	226																														
-L- STA. 176+55	LT.	226		1			1		1																								
-L- STA. 174+20	RT.	227																															CONV. EXIST. D.I. TO C.B.
	RT.	227	228																													204	REMOVE EXIST. 18" RCP & DI
-L- STA. 175+90	RT.	228		1			1			1																							
-L- STA. 177+55	RT.	229																														40	REMOVE EXIST. 15" RCP & DI
-L- STA. 179+07	RT.	230		1			1			1																							
	RT.	230	231																														
-L- STA. 179+60	RT.	231		1			1		1																								
	RT.	231	232																														
-L- STA. 180+95	RT.	232		1			1		1																								
	RT.	232	233																														
	RT.	232	234																														
-L- STA. 180+95	RT.	233		1										1	1																	72	REMOVE EXIST. 15" RCP
SHEET TOTAL				19	5.5	3.8	13		9	4				5	5									1	1							932	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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$$$$USERNAME$$$$

COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-L

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

ABBREVIATIONS

- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT)
- J.B. JUNCTION BOX
- M.H. MANHOLE
- T.B.D.I. TRAFFIC BEARING DROP INLET
- T.B.J.B. TRAFFIC BEARING JUNCTION BOX

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, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 182 + 00	RT.	234		830.81																																													1			1		1																							
	RT.	234	235		827.81	828.98																													28																																										
	RT.	234	236		825.90	825.00																														148																																									100	REMOVE EXIST. 18" RCP
-L- STA. 182 + 00	RT.	235		832.15																																											1									1	1	1																			
-L- STA. 183 + 50	RT.	236		830.02																																											1	.02		1		1																							
	RT.	236	237		825.00	827.95																														32																																									
-L- STA. 183 + 51	RT.	237		831.20																																											1									1	1	1																			
	RT.	237	238		827.95																															60																																									
-L- STA. 184 + 02	LT.	238																																													1			1			1																						
	LT.	238	241			802.10			64							X		X	X																																																											
-L- STA. 182 + 41	LT.	239																																													1																					1	1								
	LT.	239	240		820.90	814.30																					140																																																						
	LT.	IN	239		821.00	820.90																					8																																																						
-L- STA. 183 + 80	LT.	240		818.00																																											1																					1	1								
	LT.	240	241		814.30	802.10			40							X		X	X																																																													
-L- STA. 184 + 18	LT.	241		806.00																																											1																					1	1								
	LT.	241	242		802.10	801.10				16						X		X	X																																																												
	LT.	IN	241		806.50	802.10															24																																																											
-L- STA. 184 + 34	LT.	242		805.00																																											1	.70																				1	1								REMOVE EXIST. FES
	LT.	242	243		799.30	791.00						172				X		X	X																																																											
	LT.	IN	242		799.50																							20																																												.4465			
-L- STA. 185 + 98	LT.	243		795.00																																											1																					1	1								
	LT.	243	OUT		791.00	790.50																							20																																															
-L- STA. 184 + 82	RT.	IN	244			812.62																						36																																												.4465			REMOVE EXIST. FES
-L- STA. 185 + 50	LT.	245		829.38																																											1			1		1			1																						
	LT.	245	246		826.38	825.04																													40																																											
-L- STA. 185 + 50	RT.	246		828.04																																											1			1		1																							
	RT.	246	OUT		825.04	813.45															48																																																					2@15"				
-L- STA. 186 + 50	LT.	247		828.58																																											1			1		1			1																						
	LT.	247	248		825.58	824.25											X	X	X																40																																											
-L- STA. 186 + 50	RT.	248		827.25																																											1			1		1																							
	RT.	248	249		824.25	823.50																													136																																									36	REMOVE EXIST. 15" RCP
	RT.	248	OUT		824.25	822.80																					28																																																						
-L- STA. 187 + 89	RT.	249		826.50																																											1			1		1																							
-L- STA. 188 + 65	RT.	250		825.48																																											1			1		1																							
	RT.	250	251		822.00	821.00																													32																																											
	RT.	250	580		822.00	822.50																													44																																											
-L- STA. 189 + 00	RT.	251		825.27																																											1			1		1																							
	RT.	251	252		821.00	820.50																													40																																									72	REMOVE EXIST. 15" RCP
	RT.	251	254		821.00	821.48																													96																																											
-L- STA. 189 + 00	LT.	252		826.60																																											1	1.1		1		1			1																						
	LT.	252	253		820.50	820.00																													44																																											
SHEET TOTAL									104			172									72						176	56	20						500	240													18	1.82		11		10	1		3	2	2	2									5	5				2@15"			208	
										16																																																															.893			

COMPUTED BY: PJS	DATE: 02/17/10
CHECKED BY: JBG	DATE: 05/05/11

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-M

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See "Standard Specifications For Roads and Structures, Section 300-5".

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
-L- STA. 189+00	LT.	253		828.80																																					
	LT.	253	253A		820.00	775.30															216																				
-L- STA. 189+29	LT.	253A		779.00																																					
		253A	OUT		773.00	772.40																						12													
-L- STA. 190+00	RT.	254		824.48																																					
	RT.	254	255		821.48	822.81																						44													
-L- STA. 190+00	LT.	255		825.81																																					
-L- STA. 191+00	LT.	256																																							
	LT.	256	257			820.69																														40						
-L- STA. 191+00	RT.	257		823.69																																					
	RT.	257	258		820.69	821.25																														16						
	RT.	257	261		820.69	819.50																														160						
-L- STA. 191+00	RT.	258		823.55																																					
	RT.	258	259		821.25	821.81																														36						
-L- STA. 191+00	RT.	259		826.20																																					
	RT.	259	260		821.81	822.10																														20						
-L- STA. 191+16	RT.	260		824.40																																					
-L- STA. 192+63	RT.	261		822.50																																					
	RT.	261	262		819.50	826.00																														28						
	RT.	261	264		819.50	816.25																														80						
-L- STA. 192+65	RT.	262		829.47																																					
	RT.	262	263		826.00	826.47																														24						
-L- STA. 192+66	RT.	263		829.47																																					
-L- STA. 193+46	RT.	264		821.92																																					
	RT.	264	265		816.25	818.44																														52						
-L- STA. 194+00	RT.	265		820.44																																					
-L- STA. 192+50	LT.	266		823.63																																					
	LT.	266	267		820.63	819.64																														148						
-L- STA. 194+00	LT.	267		822.64																																					
	LT.	267	268		819.64	818.38																														148						
-L- STA. 195+50	LT.	268		821.38																																					
	LT.	268	269		818.38	817.19																														148						
-L- STA. 197+00	LT.	269		820.19																																					
	LT.	269	270		817.19	816.00																														148						
-L- STA. 198+50	LT.	270		819.00																																					
	LT.	270	271		816.00	814.81																														148						
-L- STA. 200+00	LT.	271		817.81																																					
	LT.	271	272		814.81	814.33																														48						
-L- STA. 200+50	LT.	272		817.33																																					
	LT.	272	273		814.33	814.00																														40						
-L- STA. 200+47	LT.	273		817.50																																					
	LT.	273	274		814.00	783.75															184																				
SHEET TOTAL																					400							56								1284						

STATION	STRUCTURE NO. (FROM-TO)	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET
-L- STA. 189+00	253								1	3.8							
-L- STA. 189+29	253A								1								
-L- STA. 190+00	254								1			1		1			
-L- STA. 190+00	255								1			1		1		1	
-L- STA. 191+00	256								1			1		1		1	
-L- STA. 191+00	257								1			1		1			
-L- STA. 191+00	258								1								
-L- STA. 191+00	259								1			1		1			
-L- STA. 191+16	260								1								
-L- STA. 192+63	261								1			1		1			
-L- STA. 192+65	262								1			1	1				
-L- STA. 192+66	263								1			1	1				
-L- STA. 193+46	264								1	.67		1		1			
-L- STA. 194+00	265								1								
-L- STA. 192+50	266								1			1		1		1	
-L- STA. 194+00	267								1			1		1		1	
-L- STA. 195+50	268								1			1		1		1	
-L- STA. 197+00	269								1			1		1		1	
-L- STA. 198+50	270								1			1		1		1	
-L- STA. 200+00	271								1			1		1		1	
-L- STA. 200+50	272								1			1		1		1	
-L- STA. 200+47	273								1			1			1		
SHEET TOTAL									22	4.47		17	2	14	1	9	

STATION	STRUCTURE NO. (FROM-TO)	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 189+00	253											1	1								
	253-253A																2@15"				
-L- STA. 189+29	253A											1	1								
	257-261																			36	REMOVE EXIST. 18" RCP
-L- STA. 191+00	258	1	1																		
-L- STA. 191+16	260	1	1																		
	261-264																			44	REMOVE EXIST. 18" CMP
-L- STA. 193+46	264																				REMOVE EXIST. FES
-L- STA. 194+00	265	1	1																		
	273-274																2@15"				
SHEET TOTAL		3	3									2	2				4@15"			80	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-N

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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- STA. 200+68	LT.	274		786.50															
	LT.	274	275		781.75	779.20													
	LT.	274	276		781.75	792.67													
-L- STA. 201+29	LT.	275		782.70															
	LT.	275	606		779.20	778.00					16						X	X	X
-L- STA. 199+85	LT.	276		796.42															
	LT.	276	277		798.42	802.93													
	LT.	276	OUT		792.67														
-L- STA. 198+41	LT.	277		805.68															
-L- STA. 196+05	RT.	278		819.85															
	RT.	278	OUT		816.85	816.50													
-L- STA. 198+03	RT.	279		813.00															
	RT.	279	OUT		806.00						16						X	X	X
-L- STA. 201+97	RT.	280		815.00															
	RT.	280	OUT		812.00	803.60													
-L- STA. 204+00	LT.	281		809.67															
	LT.	281	282		806.67	797.13													
-L- STA. 206+00	LT.	282		800.13															
	LT.	282	283		797.13	784.02													
-L- STA. 208+50	LT.	283		787.02															
	LT.	283	284		784.02	776.71													
-L- STA. 210+40	LT.	284		779.71															
	LT.	284	285		776.71	750.23													
-L- STA. 210+39	LT.	285		753.25															
	LT.	285	286		749.97	743.74				60									
-L- STA. 209+70	RT.	289		781.71															
	RT.	289	OUT		778.90	769.77													
-L- STA. 211+37	RT.	290		775.07															
	RT.	290	OUT		759.14					20							X	X	X
-L- STA. 212+90	RT.	291		771.39															
	RT.	291	291A		768.19	771.75													
	RT.	291	292		768.19	767.32													
-L- STA. 212+81	RT.	291A		774.00															
-L- STA. 213+00	RT.	292		770.32															
	RT.	292	293		766.57	760.68													
-L- STA. 214+78	RT.	293		764.43															
	RT.	293	293A		761.43	761.96													
	RT.	293	294		760.68	754.50													
-L- STA. 214+78	RT.	293A		764.96															
-L- STA. 216+50	RT.	294		758.25															
	RT.	294	295		754.50	750.99													
-L- STA. 217+50	RT.	295		754.74															
SHEET TOTAL											32								
										80									

STATION	LOCATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
-L- STA. 200+68	LT.	274																							
	LT.	274	275										76												
	LT.	274	276				100																		
-L- STA. 201+29	LT.	275																							
	LT.	275	606																						
-L- STA. 199+85	LT.	276																							
	LT.	276	277								164														
	LT.	276	OUT										172												
-L- STA. 198+41	LT.	277																							
-L- STA. 196+05	RT.	278																							
	RT.	278	OUT								52														
-L- STA. 198+03	RT.	279																							
	RT.	279	OUT																						
-L- STA. 201+97	RT.	280																							
	RT.	280	OUT		28																				
-L- STA. 204+00	LT.	281																							
	LT.	281	282																200						
-L- STA. 206+00	LT.	282																							
	LT.	282	283																248						
-L- STA. 208+50	LT.	283																							
	LT.	283	284																188						
-L- STA. 210+40	LT.	284																							
	LT.	284	285		28																				
-L- STA. 210+39	LT.	285																							
	LT.	285	286																						
-L- STA. 209+70	RT.	289																							
	RT.	289	OUT		44																				
-L- STA. 211+37	RT.	290																							
	RT.	290	OUT																						
-L- STA. 212+90	RT.	291																							
	RT.	291	291A																80						
	RT.	291	292																20						
-L- STA. 212+81	RT.	291A																							
-L- STA. 213+00	RT.	292																							
	RT.	292	293																		176				
-L- STA. 214+78	RT.	293																							
	RT.	293	293A																68						
	RT.	293	294																		168				
-L- STA. 214+78	RT.	293A																							
-L- STA. 216+50	RT.	294																							
	RT.	294	295																		96				
-L- STA. 217+50	RT.	295																							
SHEET TOTAL					100		100				216		248						804		440				

STATION	LOCATION	FROM	TO	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET
-L- STA. 200+68	LT.	274									1									
	LT.	274	275																	
	LT.	274	276																	
-L- STA. 201+29	LT.	275									1									
	LT.	275	606																	
-L- STA. 199+85	LT.	276									1									
	LT.	276	277																	
	LT.	276	OUT																	
-L- STA. 198+41	LT.	277									1									
-L- STA. 196+05	RT.	278									1			1		1				
	RT.	278	OUT																	
-L- STA. 198+03	RT.	279									1	2.0								
	RT.	279	OUT																	
-L- STA. 201+97	RT.	280									1									
	RT.	280	OUT																	
-L- STA. 204+00	LT.	281									1			1			1			
	LT.	281	282																	
-L- STA. 206+00	LT.	282									1			1			1			
	LT.	282	283																	
-L- STA. 208+50	LT.	283									1			1			1			
	LT.	283	284																	
-L- STA. 210+40	LT.	284									1			1			1			
	LT.	284	285																	
-L- STA. 210+39	LT.	285									1									
	LT.	285	286																	
-L- STA. 209+70	RT.	289									1									
	RT.	289	OUT																	
-L- STA. 211+37	RT.	290									1	5.0	5.93							
	RT.	290	OUT																	
-L- STA. 212+90	RT.	291									1									
	RT.	291	291A																	
	RT.	291	292																	
-L- STA. 212+81	RT.	291A									1									
-L- STA. 213+00	RT.	292									1			1		1				
	RT.	292	293																	
-L- STA. 214+78	RT.	293									1			1		1				
	RT.	293	293A																	
	RT.	293	294																	
-L- STA. 214+78	RT.	293A									1			1		1				
-L- STA. 216+50	RT.	294									1			1		1				
	RT.	294	295																	
-L- STA. 217+50	RT.	295									1			1		1				
SHEET TOTAL											21	7.0	5.93	10		6	4			

STATION	LOCATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 200+68	LT.	274					1				1												
	LT.	274	275																				
	LT.	274	276																				
-L- STA. 201+29	LT.	275					1				1												
	LT.	275	606																				
-L- STA. 199+85	LT.	276														1							3 THROAT OPENING
	LT.	276	277																				
	LT.	276	OUT																	.5526		60	REMOVE EXIST. 24" RCP, EXIST. HW & FES
-L- STA. 198+41	LT.	277					1				1												
-L- STA. 196+05	RT.	278																				28	REMOVE EXIST. 18" RCP
	RT.	278	OUT																				
-L- STA. 198+03	RT.	279					1				1												
	RT.	279	OUT																	.5526			REMOVE EXIST. H.W.
-L- STA. 201+97	RT.	280					1										1						
	RT.	280	OUT																				
-L- STA. 204+00	LT.	281																					
	LT.	281	282																				
-L- STA. 206+00	LT.	282																					
	LT.	282	283																				
-L- STA. 208+50	LT.	283																					
	LT.	283	284																				
-L- STA. 210+40	LT.	284																					
	LT.	284	285																				
-L- STA. 210+39	LT.	285												1									SLAB LID
	LT.	285	286																1@18"				
-L- STA. 209+70	RT.	289					1										1						
	RT.	289	OUT																2@15"				
-L- STA. 211+37	RT.	290					1				1												REMOVE EXIST. DI
	RT.	290	OUT																	.4465			
-L- STA. 212+90	RT.	291		1	1																		
	RT.	291	291A																				
	RT.	291	292																				
-L- STA. 212+81	RT.	291A		1	1																		
-L- STA. 213+00	RT.	292																					
	RT.	292	293																				
-L- STA. 214+78	RT.	293																					
	RT.	293	293A																				
	RT.	293	294																				
-L- STA. 214+78	RT.	293A																					
-L- STA. 216+50	RT.	294																					
	RT.	294	295																				
-L- STA. 217+50	RT.	295																					
SHEET TOTAL				2	2		7				5			1		1	2		1@18" 2@15"			88	
																				1.5517			

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

4/04/06

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COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

4/04/06

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

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-0

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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
	RT.	295	296		750.99	745.66													
-L- STA. 219+00	RT.	296		749.46															
	RT.	296	297		745.66	740.57													
-L- STA. 220+50	RT.	297		744.37															
	RT.	297	298		740.57	735.30													
-L- STA. 222+50	RT.	298		739.10															
	RT.	298	299		735.30	714.50													
-L- STA. 222+50	RT.	299		718.30															
	RT.	299	OUT		713.50								16				X	X	X
-L- STA. 213+00	LT.	300		770.56															
	LT.	300	301		767.56	760.53													
-L- STA. 215+00	LT.	301		763.53															
	LT.	301	302		760.53	755.25													
-L- STA. 216+50	LT.	302		758.25															
	LT.	302	303		755.25	751.73													
-L- STA. 217+50	LT.	303		754.73															
	LT.	303	304		751.73	746.46													
-L- STA. 219+00	LT.	304		749.46															
	LT.	304	305		746.46	741.42													
-L- STA. 220+50	LT.	305		744.42															
	LT.	305	306		741.42	737.05													
-L- STA. 222+00	LT.	306		740.35															
	LT.	306	307		737.05	735.26													
-L- STA. 222+77	LT.	307		738.56															
	LT.	307	308		735.26	733.55													
-L- STA. 222+80	LT.	308		736.55															
	LT.	308	309		733.05	731.63					80						X	X	X
-L- STA. 223+58	LT.	309		735.13															
	LT.	309	OUT		731.63	730.00					184						X	X	X
-L- STA. 224+30	LT.	310		736.15															
	LT.	310	311		733.15	732.22													
-L- STA. 225+20	LT.	311		735.22															
	LT.	311	312		732.22	731.34													
-L- STA. 226+50	LT.	312		734.34															
	LT.	312	313		731.34	731.06													
-L- STA. 227+10	LT.	313		734.06															
	LT.	313	314		731.06	700.50			72							X		X	X
-L- STA. 227+28	LT.	314		704.30															
	LT.	314	315		700.50	???.??			60							X		X	X
	LT.	314	OUT		700.50	700.47			8							X	X	X	X
-L- STA. 227+63	LT.	315		731.63															
-L- STA. 225+00	RT.	316		735.58															
SHEET TOTAL									140		264		16						

FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
295	296																		148				
296																							
296	297																		148				
297																							
297	298																		200				
298																							
298	299																		116				
299																							
299	OUT																						
300																							
300	301																200						
301																							
301	302																148						
302																							
302	303																100						
303																							
303	304																148						
304																							
304	305																148						
305																							
305	306																148						
306																							
306	307																	76					
307																							
307	308																	28					
308																							
308	309																						
309																							
309	OUT																						
310																							
310	311																88						
311																							
311	312																128						
312																							
312	313																60						
313																							
313	314																						
314																							
314	315																						
314	OUT																						
315																							
316																							
SHEET TOTAL										1168	104	612											

FROM	TO	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET
295	296																
296									1			1		1			
296	297																
297									1			1		1			
297	298																
298									1			1		1			
298	299																
299									1								
299	OUT																
300									1			1			1		
300	301																
301									1			1			1		
301	302																
302									1			1			1		
302	303																
303									1			1			1		
303	304																
304									1			1			1		
304	305																
305									1			1			1		
305	306																
306									1			1			1		
306	307																
307									1			1			1		
307	308																
308									1								
308	309																
309									1								
309	OUT																
310									1			1			1		
310	311																
311									1			1			1		
311	312																
312									1			1			1		
312	313																
313									1			1			1		
313	314																
314									1								
314	315																
314	OUT																
315									1								
316									1			1		1			
SHEET TOTAL									21			16		4	12		

FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
295	296																				
296																					
296	297																				
297																					
297	298																				
298																					
298	299																				
299				1					1												
299	OUT																	.7640			REMOVE EXIST. FES
300																					
300	301																				
301																					
301	302																				
302																					
302	303																				
303																					
303	304																				
304																					
304	305																				
305																				44	REMOVE EXIST. 15" RCP
305	306																				
306																					
306	307																				
307																					
307	308																				
308					1				1											64	REMOVE EXIST. 18" RCP
308	309																				
309					1				1												REMOVE EXIST. DI
309	OUT																			180	REMOVE EXIST. 18" RCP
310																					
310	311																				
311																					
311	312																				
312																					
312	313																				
313																					
313	314																2@15"				
314												1									SLAB LID
314	315																2@15"				
314	OUT																				
315												1									SLAB LID
316																					
SHEET TOTAL				1	2				3			2					4@15"			288	
																		.7640			

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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$$$$USERNAME$$$$

COMPUTED BY: PJS	DATE: 02/17/10
CHECKED BY: JBG	DATE: 05/05/11

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

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-P

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
	RT.	316	317		732.58	731.38																													172																																											
-L- STA. 226+75	RT.	317		734.38																																													1			1		1																									
	RT.	317	318		731.38	731.07																													36																																											
-L- STA. 227+12	RT.	318		734.07																																													1			1		1																									
	RT.	318	OUT		731.07	730.10																													28																																											
-L- STA. 226+05	RT.	319		714.80																																													1																					1									SLAB LID
	RT.	319	OUT		711.75	707.30				56							X	X	X																																																												
	RT.	IN	319		710.00	712.00				16							X	X	X																																																											
-L- STA. 228+28	RT.	320			736.56				28								X	X	X																																																							.3990			BERM DITCH OUTLET
-L- STA. 229+00	LT.	321		733.18																																													1			1			1																								
	LT.	321	322		730.18	728.90																													148																																											
-L- STA. 230+50	LT.	322		732.50																																													1			1			1																								
	LT.	322	323		728.90	729.15																													72																																											
	LT.	322	OUT		728.90	724.32			40							X		X	X																																																											
-L- STA. 231+25	LT.	323		732.15																																													1			1			1																							52	REMOVE EXIST. 15" RCP
-L- STA. 229+00	RT.	324		734.09																																													1			1			1		1																					
	RT.	324	325		731.09	730.40																													148																																											
-L- STA. 230+50	RT.	325		733.40																																													1			1			1		1																					
	RT.	325	326		730.40	729.93																													100																																											
-L- STA. 231+50	RT.	326		732.93																																													1			1			1		1																					
	RT.	326	327		729.93	729.68																													48																																											
-L- STA. 232+00	RT.	327		732.68																																													1			1			1		1																					
	RT.	327	OUT		729.68	729.48																													56																																											
-L- STA. 231+63	RT.	328			724.95						28						X	X	X																																																							.5526			
-L- STA. 232+75	LT.	329		730.70																																													1										1	1																		
	LT.	329	330		727.40	727.36																													16																																											
-L- STA. 232+75	LT.	330		731.38																																													1			1			1																							56	REMOVE EXIST. 15" RCP
	LT.	330	331		727.36	726.70																													224																																											
-L- STA. 235+00	LT.	331		730.07																																													1			1			1																							36	REMOVE EXIST. 15" RCP
	LT.	331	332		726.70	725.78																													196																																											
-L- STA. 237+00	LT.	332		728.78																																													1			1			1																								
	LT.	332	333		725.78	725.03																													88																																											
-L- STA. 237+88	LT.	333		728.03																																													1			1			1																								
	LT.	333	334		725.03	724.52																													40																																											
	LT.	333	344		725.03	725.74																													36																																											
-L- STA. 238+30	LT.	334		727.52																																													1			1	1																										
	LT.	334	335		724.52	724.40																													8																																											
-L- STA. 238+38	LT.	335		727.84																																													1			1	1																									80	REMOVE EXIST. 15" RCP
	LT.	335	336		724.40	723.60																														68																																										
	LT.	335	OUT		724.40	725.88			60								X	X	X																																																											
-L- STA. 239+07	LT.	336		727.20																																													1			1	1																										
	LT.	336	337		723.60	721.50																														148																																										
SHEET TOTAL									128		28																								1416	216														18			16	3	2	11		4		1	1									1						.9516		224	
										72																																																																						

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-Q

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109
-L- STA. 240+57	LT.	337		726.14																						
	LT.	337	351		713.80	714.15							48				X	X	X							
	LT.	337	OUT		713.80	706.30							48			X		X	X							
-L- STA. 233+00	RT.	338		732.14																						
	RT.	338	339		729.14	728.33																				
-L- STA. 234+10	RT.	339		731.33																						
	RT.	339	340		728.33	727.59																				
-L- STA. 235+00	LT.	340		730.89																						
	LT.	340	341		727.59																					
-L- STA. 235+70	LT.	341																								
	LT.	341	342			726.63																				
-L- STA. 236+50	LT.	342		729.93																						
	LT.	342	343		726.63	726.31																				
-L- STA. 237+00	LT.	343		729.61																						
	LT.	343	344		726.31	725.74																				
-L- STA. 237+88	LT.	344		729.04																						
-L- STA. 237+75	RT.	345		729.85																						
	RT.	345	346		726.85	727.93																				
	RT.	345	OUT		726.85																					
-L- STA. 237+96	RT.	346		729.85																						
-L- STA. 238+65	RT.	347		729.09																						
	RT.	347	348		725.27	715.41			136								X	X	X							
-L- STA. 240+00	RT.	348		722.81																						
	RT.	348	349		715.41	714.41					20						X	X	X							
-L- STA. 240+18	RT.	349		722.22																						
	RT.	349	351		714.41	714.15							56				X	X	X							
	RT.	IN	349		714.41			12								X		X	X							
-L- STA. 239+35	RT.	350		728.22																						
	RT.	350	351		724.92	714.15																				
-L- STA. 240+39	RT.	351		727.46																						
-L- STA. 241+50	RT.	352		726.65																						
	LT.	352	353		722.95	722.55																				
-L- STA. 241+50	LT.	353		725.55																						
	LT.	353	354		722.55	721.71																				
-L- STA. 242+70	LT.	354		724.71																						
	LT.	354	356		721.71	722.47																				
	LT.	354	357		721.71	721.12			80								X	X	X							
-L- STA. 242+50	RT.	355		725.92																						
	RT.	355	356		722.62	722.47																				
-L- STA. 242+70	RT.	356		725.77																						
-L- STA. 243+50	LT.	357		724.12																						
	LT.	357	359		721.12																					
SHEET TOTAL								12			20		152													
									216																	

STATION	FROM	TO	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/ SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.
-L- STA. 240+57	337																							
	337	351																						
	337	OUT																						
-L- STA. 233+00	338																							
	338	339									108													
-L- STA. 234+10	339																							
	339	340									88													
-L- STA. 235+00	340																							
	340	341									68													
-L- STA. 235+70	341																							
	341	342									76													
-L- STA. 236+50	342																							
	342	343									48													
-L- STA. 237+00	343																							
	343	344									84													
-L- STA. 237+88	344																							
-L- STA. 237+75	345																							
	345	346									36													
	345	OUT									36													
-L- STA. 237+96	346																							
-L- STA. 238+65	347																							
	347	348																						
-L- STA. 240+00	348																							
	348	349																						
-L- STA. 240+18	349																							
	349	351																						
	IN	349																						
-L- STA. 239+35	350																							
	350	351									104													
-L- STA. 240+39	351																							
-L- STA. 241+50	352																							
	352	353									40													
-L- STA. 241+50	353																							
	353	354									116													
-L- STA. 242+70	354																							
	354	356									40													
	354	357																						
-L- STA. 242+50	355																							
	355	356									20													
-L- STA. 242+70	356																							
-L- STA. 243+50	357																							
	357	359									40													
SHEET TOTAL											904													

STATION	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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 240+57	337		1	5.0	2.34	1			1																						152	REMOVE EXIST. 24" RCP
	337	351																														
	337	OUT																														
-L- STA. 233+00	338		1			1			1		1																					
	338	339																														
-L- STA. 234+10	339		1			1			1		1																					
	339	340																														
-L- STA. 235+00	340		1									1	1	1																		
	340	341																														
-L- STA. 235+70	341		1									1	1	1																		
	341	342																														
-L- STA. 236+50	342		1									1	1	1																		
	342	343																														
-L- STA. 237+00	343		1									1	1	1																		
	343	344																														
-L- STA. 237+88	344		1									1	1	1																		
-L- STA. 237+75	345		1			1		1																								
	345	346																														
	345	OUT																											.3990			
-L- STA. 237+96	346		1														1			1												
-L- STA. 238+65	347		1			1		1																							18	REMOVE EXIST. 15" RCP
	347	348																														
-L- STA. 240+00	348		1	2.4																					1							4 THROAT OPENING
	348	349																													17	REMOVE EXIST. 24" RCP
-L- STA. 240+18	349																															CONV. EXIST. C.B. TO J.B.
	349	351																														
	IN	349																														BAND /EXTEND
-L- STA. 239+35	350		1									1	1	1																		
	350	351																														
-L- STA. 240+39	351		1	5.0	3.31							1	1	1																		
-L- STA. 241+50	352		1									1	1	1																		
	352	353																														
-L- STA. 241+50	353		1			1			1																							
	353	354																														
-L- STA. 242+70	354		1			1			1																							
	354	356																														
	354	357																														
-L- STA. 242+50	355		1									1	1	1																		
	355	356																														
-L- STA. 242+70	356		1									1	1	1																		
-L- STA. 243+50	357		1			1			1																							
	357	359																														
SHEET TOTAL			20	12.4	5.65	8		2	6		2	10	10	10			1			1					1				.3990		187	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-R

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
	LT.	357	360		721.12	720.03																													148						
-L- STA. 243+30	RT.	358																																							
	RT.	358	359																																20						
-L- STA. 243+50	RT.	359																																							
-L- STA. 245+00	LT.	360		723.03																																					
	LT.	360	361		720.03	719.29																													100						
-L- STA. 246+00	LT.	361		722.29																																					
	LT.	361	362		719.29	720.00			12								X	X	X																						
	LT.	361	363		719.29	718.56																													100						
-L- STA. 246+00	LT.	362		722.72																																					
-L- STA. 247+00	LT.	363		721.56																																					
	LT.	363	364		718.56	717.36																													124						
-L- STA. 248+25	LT.	364		720.38																																					
	LT.	364	365		717.38	717.00																													76						
-L- STA. 249+00	LT.	365		720.10																																					
	LT.	365	366		717.00	716.10																													100						
-L- STA. 250+00	LT.	366		719.37																																					
	LT.	366	367		716.10	714.60																													148						
-L- STA. 251+50	LT.	367		718.27																																					
	LT.	367	368		714.60	712.95																													100						
-L- STA. 252+50	LT.	368		717.55																																					
	LT.	368	369		712.95	711.30																													100						
-L- STA. 253+50	LT.	369		716.93																																					
	LT.	369	370		711.30	712.68																													100						
	LT.	369	OUT		711.30	712.50					60						X	X	X																						
-L- STA. 254+50	LT.	370		716.45																																					
	LT.	370	371		712.50	712.50																													48						
-L- STA. 255+00	LT.	371		716.33																																					
	LT.	371	372		712.50	712.95																													28						
-L- STA. 255+28	LT.	372		716.30																																					
	LT.	372	373		712.95	713.00																													4						
-L- STA. 255+35	LT.	373		716.30																																					
	LT.	373	374		713.00	713.10																													12						
-L- STA. 255+50	LT.	374		716.35																																					
	LT.	374	375		713.10	713.50																													48						
-L- STA. 256+00	LT.	375		716.50																																					
	LT.	375	376		713.50	714.46																													108						
-L- STA. 257+10	LT.	376		717.46																																					
	LT.	376	377		714.46	718.32																													140						
-L- STA. 258+52	LT.	377		721.32																																					
-L- STA. 245+00	RT.	378		723.03																																					
	RT.	378	379		720.03	719.29																													100						
SHEET TOTAL									12		60																								1604						

STATION	LOCATION	FROM	TO	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
	LT.	357	360																																					
-L- STA. 243+30	RT.	358									1									1	1	1																		
	RT.	358	359																																					
-L- STA. 243+50	RT.	359									1									1	1	1																		
-L- STA. 245+00	LT.	360									1			1			1																							
	LT.	360	361																																					
-L- STA. 246+00	LT.	361									1			1			1																							
	LT.	361	362																																					
	LT.	361	363																																					
-L- STA. 246+00	LT.	362									1										1	1																		
-L- STA. 247+00	LT.	363									1			1			1																							
	LT.	363	364																																					
-L- STA. 248+25	LT.	364									1			1			1																						52	REMOVE EXIST. 18" RCP
	LT.	364	365																																					
-L- STA. 249+00	LT.	365									1			1			1																							
	LT.	365	366																																					
-L- STA. 250+00	LT.	366									1			1			1																							
	LT.	366	367																																					
-L- STA. 251+50	LT.	367									1			1			1																							
	LT.	367	368																																					
-L- STA. 252+50	LT.	368									1			1			1																							
	LT.	368	369																																					
-L- STA. 253+50	LT.	369									1	.63		1			1																							
	LT.	369	370																																					
	LT.	369	OUT																																					
-L- STA. 254+50	LT.	370									1			1			1																							
	LT.	370	371																																					
-L- STA. 255+00	LT.	371									1			1			1																							
	LT.	371	372																																					
-L- STA. 255+28	LT.	372									1			1	1																									
	LT.	372	373																																					
-L- STA. 255+35	LT.	373									1			1	1																									
	LT.	373	374																																					
-L- STA. 255+50	LT.	374									1			1		1																								
	LT.	374	375																																					
-L- STA. 256+00	LT.	375									1			1		1																								
	LT.	375	376																																					
-L- STA. 257+10	LT.	376									1			1		1																								
	LT.	376	377																																					
-L- STA. 258+52	LT.	377									1			1		1																								
-L- STA. 245+00	RT.	378									1			1		1																								
	RT.	378	379																																					
SHEET TOTAL											21	.63		18	2	5	11			2	3	3																	52	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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4/04/06

COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-S

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE: 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 THICKNESS OR GAUGE: 12"	15"	18"	24"	30"	36"	42"		.064	.064	.064	.079	.079	.109
								R.C. PIPE (CLASS III)																	
								R.C. PIPE (CLASS IV)																	
-L- STA. 246+00	RT.	379		722.29															
	RT.	379	380		719.29	717.83													
-L- STA. 248+00	RT.	380		720.83															
	RT.	380	381		717.83	716.92													
-L- STA. 249+00	RT.	381		719.92															
	RT.	381	OUT		716.92	693.20			72							X		X	X
-L- STA. 250+23	RT.	382			690.00	692.20													
-L- STA. 251+50	RT.	383		718.27															
	RT.	383	384		715.27	714.55													
-L- STA. 252+50	RT.	384		717.55															
	RT.	384	385		714.55	713.93													
-L- STA. 253+50	RT.	385		716.93															
	RT.	385	386		709.65	711.00													
	RT.	385	OUT		709.65	707.89													
-L- STA. 255+00	RT.	386		716.33															
	RT.	386	387		711.00	711.95													
-L- STA. 255+28	RT.	387		716.30															
	RT.	387	388		711.95	712.00													
-L- STA. 255+35	RT.	388		716.30															
	RT.	388	389		712.00	712.10													
-L- STA. 255+50	RT.	389		716.35															
	RT.	389	390		712.10	712.25													
-L- STA. 256+00	RT.	390		716.50															
	RT.	390	391		712.25	712.86													
-L- STA. 257+00	RT.	391		717.21															
	RT.	391	393		712.86	718.29													
-L- STA. 257+91	RT.	392		712.88															
	RT.	IN	392		713.00	709.11				68							X	X	X
-L- STA. 260+00	RT.	393		722.54															
	RT.	393	394		719.00	719.54													
	RT.	393	395		718.79	724.20											X	X	X
-L- STA. 260+00	LT.	394		722.54															
-L- STA. 262+00	RT.	395		727.95															
-L- STA. 256+65	LT.	395	398		724.20	730.35													
-L- STA. 263+52	LT.	396		734.15															
	LT.	396	397		731.15	730.80													
-L- STA. 263+92	LT.	397		736.19															
	LT./RT.	397	398		730.80	730.35													
-L- STA. 263+99	RT.	398		735.52															
	RT.	IN	398		731.87	738.37					24					X		X	X
-L- STA. 256+65	RT.	399				702.91						72					X	X	X
SHEET TOTAL									72	72	92								

STATION	ENDWALLS: 42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/ SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	CU. YDS. 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'	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: CATCH BASIN	DROP INLET	REMARKS
-L- STA. 246+00								1			1		1					
-L- STA. 248+00								1			1		1					
-L- STA. 249+00								1			1		1					
																		2@15"
-L- STA. 250+23																		
-L- STA. 251+50								1			1		1					
-L- STA. 252+50								1			1		1					
-L- STA. 253+50								1	2.28		1		1					
-L- STA. 255+00								1	.33		1		1					
-L- STA. 255+28								1			1	1						
-L- STA. 255+35								1			1	1						
-L- STA. 255+50								1			1			1				
-L- STA. 256+00								1			1			1				
-L- STA. 257+00								1			1			1				
-L- STA. 257+91								1							1			SLAB LID, REMOVE EXIST. HW
-L- STA. 260+00								1			1			1				
-L- STA. 260+00								1			1		1					
-L- STA. 262+00								1			1			1				
-L- STA. 256+65																		
-L- STA. 263+52								1			1			1		1		
-L- STA. 263+92								1	.39		1			1		1		
																		72 REMOVE EXIST. 18" RCP
-L- STA. 263+99								1			1			1				REMOVE EXIST. HW
																		BERM DITCH OUTLET
-L- STA. 256+65																		.5526
SHEET TOTAL								19	3.0		18	2	8	8		2	1	2@15" 72 .5526

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: PJS	DATE: 02/17/10
CHECKED BY: JBG	DATE: 05/05/11

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-T

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 263+85	LT.	400																																																																										.065		REMOVE EXIST. D.I.
-L- STA. 265+79	LT.	402		746.78																																													1	3.78		1			1		1																						
	LT.	402	OUT		738.00	733.80																																	80																																								96	REMOVE EXIST. 18" RCP/PREF. SCOUR HOLE
	LT.	402	403		743.78	744.50																													20																																													
	LT.	402	406		742.00	742.40																																44																																										
-L- STA. 266+00	LT.	403		747.50																																													1			1			1		1																						
	LT.	403	404		744.50	751.80																													128																																													
-L- STA. 267+30	LT.	404		755.22																																													1									1	1	1																			
	LT.	404	405		751.80	759.90																													168																																													
-L- STA. 269+00	LT.	405		762.20																																													1									1	1	1																			
-L- STA. 266+00	RT.	406		746.65																																													1			1			1																								
	RT.	406	407		742.90	754.97																															248																																												
-L- STA. 268+51	RT.	407		758.72																																													1			1			1																								
	RT.	407	408		754.97	764.39																															244																																												
-L- STA. 271+00	RT.	408		768.14																																													1			1			1																							76	REMOVE EXIST. 15" RCP
	RT.	408	409		764.39	767.45																															84																																												
-L- STA. 271+84	RT.	409		771.20																																													1			1	1																										
	RT.	409	410		768.20	768.50																													4																																													
	RT.	409	629		767.95	771.00				12						X		X	X																																																													
-L- STA. 271+91	RT.	410		771.50																																													1			1	1																										
	RT.	410	411		768.50	770.56																													40																																													
-L- STA. 272+34	RT.	411		773.56																																													1			1			1																								
	RT.	411	412		770.56	772.02																													36																																													
	RT.	411	413		770.56	774.23																													80																																													
-L- STA. 272+36	RT.	412		775.22																																													1									1	1	1																			
-L- STA. 273+15	RT.	413		777.23																																													1			1			1																							40	REMOVE EXIST. 18" RCP
	RT.	413	414		774.23	775.75			16							X		X	X																																																														
-L- STA. 273+14	RT.	414		778.50																																													1												1				1												
-L- STA. 273+90	LT.	415		780.30																																													1			1		1																									
	LT.	415	OUT		777.30	777.00			24								X	X	X																																																														
-L- STA. 276+14	LT.	416		786.15	780.65																																												1	.50		1		1																									REMOVE EXIST. DI/REPLACE W/CB
-L- STA. 276+15	RT.	417		786.15																																													1	.15		1			1																								REMOVE EXIST. HW
	RT.	417	418		781.00	784.90				12							X	X	X																																																													
	RT.	417	OUT		781.00					4							X	X	X																																																									.4465			
-L- STA. 276+15	RT.	418		786.80																																													1												1				1											28	REMOVE EXIST. 15" RCP
	RT.	IN	418		784.00	787.00			36								X	X	X																																																													
-L- STA. 280+50	RT.	419		788.12																																													1			1		1																									
	RT.	419	420		785.12	777.29																													348																																													
	RT.	419	632		785.12	786.01																													100																																													
-L- STA. 284+00	RT.	420		780.29																																													1			1		1																									
	RT.	420	421		777.29	771.26																													148																																													
-L- STA. 285+50	RT.	421		774.26																																													1			1		1																									
SHEET TOTAL									76																										1072		576	124											20	4.43		15	2	5	8		2	3	3	3		2				2									.4465		240	
										28																																																															.065		

ABBREVIATIONS

- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT)
- J.B. JUNCTION BOX
- M.H. MANHOLE
- T.B.D.I. TRAFFIC BEARING DROP INLET
- T.B.J.B. TRAFFIC BEARING JUNCTION BOX

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-U

COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
	RT.	421	422		771.26	762.17																													188						
-L- STA. 287+40	RT.	422		765.17																																					
	RT.	422	423		762.17	756.22																													160						
-L- STA. 289+00	RT.	423		759.27																																					
	RT.	423	424		755.97	751.61																													148						
-L- STA. 290+50	RT.	424		754.91																																					
	RT.	424	425		751.61	749.23																													120						
-L- STA. 291+70	RT.	425		752.53																																					
	RT.	425	OUT		749.23	716.17				92						X		X	X																						
-L- STA. 283+99	LT.	426		780.10																																					
	LT.	426	427		777.10	771.37																													148						
-L- STA. 285+50	LT.	427		774.37																																					
	LT.	427	428		771.37	764.46																													148						
-L- STA. 287+00	LT.	428		767.46																																					
	LT.	428	429		764.46	763.50																													20						
-L- STA. 287+19	LT.	429		766.50																																					
	LT.	429	430		763.50	756.27																													180						
-L- STA. 289+00	LT.	430		759.27																																					
	LT.	430	431		756.27	750.80																													200						
-L- STA. 291+00	LT.	431		753.80																																					
	LT.	431	432		750.80	749.32																													108						
-L- STA. 292+10	LT.	432		752.32																																					
	LT.	432	433		749.32	748.84																													32						
-L- STA. 292+43	LT.	433		752.26																																					
	LT.	433	636		748.84	743.75			36							X		X	X																						
-L- STA. 293+85	LT.	436		751.95																																					
	LT.	436	437		748.95	747.26																													52						
-L- STA. 293+85	RT.	437		750.26																																					
	RT.	437	438		740.55	728.15			52							X		X	X																						
	RT.	437	441		747.26	742.42																													112						
-L- STA. 293+84	RT.	438		731.85																																					
	RT.	438	439		728.15	710.73			76							X		X	X																						
-L- STA. 293+10	RT.	439		715.19																																					
	RT.	439	OUT		710.73	710.69				16							X	X	X																						
-L- STA. 295+00	LT.	440		751.00																																					
	LT.	440	441		743.31	742.42																													52						
-L- STA. 295+00	RT.	441		749.31																																					
	RT.	441	443		742.42	744.87																													144						
-L- STA. 296+50	LT.	442		750.49																																					
	LT.	442	443		745.74	744.87																													52						
-L- STA. 296+50	RT.	443		748.80																																					
	RT.	443	445		744.87	745.11																													80						
SHEET TOTAL									164																										1944						
										108																															

STATION	LOCATION	FROM	TO	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
	RT.	421	422																																					
-L- STA. 287+40	RT.	422									1			1		1																								REMOVE EXIST. FES
	RT.	422	423																																		.065		PLUG/FILL W/FLOWABLE MATERIAL 18" RCP
-L- STA. 289+00	RT.	423									1			1		1																								
	RT.	423	424																																					
-L- STA. 290+50	RT.	424									1			1		1																								
	RT.	424	425																																					
-L- STA. 291+70	RT.	425									1			1		1																								
	RT.	425	OUT																																2@18"				
-L- STA. 283+99	LT.	426									1			1			1																							
	LT.	426	427																																					
-L- STA. 285+50	LT.	427									1			1			1																							
	LT.	427	428																																					
-L- STA. 287+00	LT.	428									1			1			1																							
	LT.	428	429																																					
-L- STA. 287+19	LT.	429									1			1			1																					.065		PLUG 18" RCP, REMOVE EXIST. HW
	LT.	429	430																																					
-L- STA. 289+00	LT.	430									1			1			1																							
	LT.	430	431																																					
-L- STA. 291+00	LT.	431									1			1			1																							
	LT.	431	432																																					
-L- STA. 292+10	LT.	432									1			1			1																							
	LT.	432	433																																					
-L- STA. 292+43	LT.	433									1			1			1																							
	LT.	433	636																																					
-L- STA. 293+85	LT.	436									1			1		1			1																					
	LT.	436	437																																					
-L- STA. 293+85	RT.	437									1	1.71		1		1																								
	RT.	437	438																																2@15"				
	RT.	437	441																																					
-L- STA. 293+84	RT.	438									1																				1	1								
	RT.	438	439																																2@15"				
-L- STA. 293+10	RT.	439									1																				1	1								
	RT.	439	OUT																																					
-L- STA. 295+00	LT.	440									1	2.69		1		1			1																					
	LT.	440	441																																					
-L- STA. 295+00	RT.	441									1	1.89		1		1																								
	RT.	441	443																																					
-L- STA. 296+50	LT.	442									1			1		1			1																					
	LT.	442	443																																					
-L- STA. 296+50	RT.	443									1			1		1																								
	RT.	443	445																																					
SHEET TOTAL											20	6.29		18		10	8		3												2	2				2@18" 4@15"		.065		

ABBREVIATIONS

- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT)
- J.B. JUNCTION BOX
- M.H. MANHOLE
- T.B.D.I. TRAFFIC BEARING DROP INLET
- T.B.J.B. TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-V

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE / THICKNESS OR GAUGE: 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- STA. 297+33	LT.	444		749.80															
	LT.	444	445		745.98	745.11													
-L- STA. 297+35	RT.	445		748.11															
-L- STA. 298+50	LT.	446		749.22															
	LT.	446	447		746.22	745.45													
-L- STA. 300+00	LT.	447		748.45															
	LT.	447	448		745.45	744.68													
-L- STA. 301+50	LT.	448		747.68															
	LT.	448	449		744.68	742.94													
-L- STA. 303+12	LT.	449		746.86															
-L- STA. 299+02	RT.	450		742.84															
	RT.	450	451		740.04	738.90				152							X	X	X
-L- STA. 300+50	RT.	451		743.73															
	RT.	451	453		739.15	740.80													
	RT.	451	OUT		738.90					16							X	X	X
-L- STA. 301+18	RT.	452		743.85															
	RT.	452	453		740.85	740.80													
-L- STA. 301+11	RT.	453		743.85															
	RT.	453	454		740.80	742.44													
	RT.	453	456		740.80	752.80				36							X		X
-L- STA. 300+70	RT.	454		745.44															
	RT.	454	455		742.44	747.66													
-L- STA. 300+39	RT.	455		750.66															
-L- STA. 301+25	RT.	456		755.60															
-L- STA. 301+10	LT.	457		745.70															
	LT.	457	458		742.70	742.45													
-L- STA. 302+00	LT.	458		747.95															
	LT.	458	459		742.45	742.39													
-L- STA. 302+16	LT.	459		747.99															
	LT.	459	460		742.39	742.00													
-L- STA. 303+09	LT.	460		747.88															
	LT.	460	OUT		739.78	739.66					32						X	X	X
-L- STA. 303+16	RT.	461		754.40															
	RT.	461	462		751.40	760.07				32							X		X
	RT.	461	OUT		747.92						60						X	X	X
-L- STA. 303+53	RT.	462		763.07															
	RT.	462	645		760.07	770.40				24							X		X
-L- STA. 304+25	RT.	463																	
-L- STA. 305+00	LT.	464		745.90															
	LT.	464	465		742.90	742.33													
-L- STA. 305+94	LT.	465		745.33															
	LT.	465	466		742.33	742.13													
SHEET TOTAL										92		92							
										168									

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	C.S. PIPE SIZE / THICKNESS OR GAUGE: 12"	15"	18"	24"	30"	36"	42"	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"
-L- STA. 297+33	LT.	444		749.80																
	LT.	444	445		745.98	745.11														
-L- STA. 297+35	RT.	445		748.11																
-L- STA. 298+50	LT.	446		749.22																
	LT.	446	447		746.22	745.45														
-L- STA. 300+00	LT.	447		748.45																
	LT.	447	448		745.45	744.68														
-L- STA. 301+50	LT.	448		747.68																
	LT.	448	449		744.68	742.94														
-L- STA. 303+12	LT.	449		746.86																
-L- STA. 299+02	RT.	450		742.84																
	RT.	450	451		740.04	738.90														
-L- STA. 300+50	RT.	451		743.73																
	RT.	451	453		739.15	740.80														
	RT.	451	OUT		738.90															
-L- STA. 301+18	RT.	452		743.85																
	RT.	452	453		740.85	740.80														
-L- STA. 301+11	RT.	453		743.85																
	RT.	453	454		740.80	742.44														
	RT.	453	456		740.80	752.80														
-L- STA. 300+70	RT.	454		745.44																
	RT.	454	455		742.44	747.66														
-L- STA. 300+39	RT.	455		750.66																
-L- STA. 301+25	RT.	456		755.60																
-L- STA. 301+10	LT.	457		745.70																
	LT.	457	458		742.70	742.45														
-L- STA. 302+00	LT.	458		747.95																
	LT.	458	459		742.45	742.39														
-L- STA. 302+16	LT.	459		747.99																
	LT.	459	460		742.39	742.00														
-L- STA. 303+09	LT.	460		747.88																
	LT.	460	OUT		739.78	739.66														
-L- STA. 303+16	RT.	461		754.40																
	RT.	461	462		751.40	760.07														
	RT.	461	OUT		747.92															
-L- STA. 303+53	RT.	462		763.07																
	RT.	462	645		760.07	770.40														
-L- STA. 304+25	RT.	463																		
-L- STA. 305+00	LT.	464		745.90																
	LT.	464	465		742.90	742.33														
-L- STA. 305+94	LT.	465		745.33																
	LT.	465	466		742.33	742.13														
SHEET TOTAL																				

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	R.C. PIPE (CLASS IV) SIZE / THICKNESS OR GAUGE: 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)
-L- STA. 297+33	LT.	444		749.80																
	LT.	444	445		745.98	745.11			52											
-L- STA. 297+35	RT.	445		748.11																
-L- STA. 298+50	LT.	446		749.22																
	LT.	446	447		746.22	745.45			148											
-L- STA. 300+00	LT.	447		748.45																
	LT.	447	448		745.45	744.68			148											
-L- STA. 301+50	LT.	448		747.68																
	LT.	448	449		744.68	742.94			160											
-L- STA. 303+12	LT.	449		746.86																
-L- STA. 299+02	RT.	450		742.84																
	RT.	450	451		740.04	738.90														
-L- STA. 300+50	RT.	451		743.73																
	RT.	451	453		739.15	740.80			68											
	RT.	451	OUT		738.90															
-L- STA. 301+18	RT.	452		743.85																
	RT.	452	453		740.85	740.80			8											
-L- STA. 301+11	RT.	453		743.85																
	RT.	453	454		740.80	742.44			76											
	RT.	453	456		740.80	752.80														
-L- STA. 300+70	RT.	454		745.44																
	RT.	454	455		742.44	747.66			92											
-L- STA. 300+39	RT.	455		750.66																
-L- STA. 301+25	RT.	456		755.60																
-L- STA. 301+10	LT.	457		745.70																
	LT.	457	458		742.70	742.45			88											
-L- STA. 302+00	LT.	458		747.95																
	LT.	458	459		742.45	742.39			16											
-L- STA. 302+16	LT.	459		747.99																
	LT.	459	460		742.39	742.00			96											
-L- STA. 303+09	LT.	460		747.88																
	LT.	460	OUT		739.78	739.66														
-L- STA. 303+16	RT.	461		754.40																
	RT.	461	462		751.40	760.07														
	RT.	461	OUT		747.92															
-L- STA. 303+53	RT.	462		763.07																
	RT.	462	645		760.07	770.40														
-L- STA. 304+25	RT.	463																		
-L- STA. 305+00	LT.	464		745.90																
	LT.	464	465		742.90	742.33			92											
-L- STA. 305+94	LT.	465		745.33																
	LT.	465	466		742.33	742.13			32											
SHEET TOTAL									1076											

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL. "B") LIN. FT. A	B	PER EACH (0' THRU 5.0')	5.0' THRU 10.0'	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 CATCH BASIN	DROP INLET
-L- STA. 297+33	LT.	444		749.80								1			1		1			1	
	LT.	444	445		745.98	745.11															
-L- STA. 297+35	RT.	445		748.11								1			1		1				
-L- STA. 298+50	LT.	446		749.22								1			1		1			1	
	LT.	446	447		746.22	745.45															
-L- STA. 300+00	LT.	447		748.45								1			1		1			1	
	LT.	447	448		745.45	744.68															
-L- STA. 301+50	LT.	448		747.68								1			1		1			1	
	LT.	448	449		744.68	742.94															
-L- STA. 303+12	LT.	449		746.86								1			1		1			1	
-L- STA. 299+02	RT.	450		742.84								1									
	RT.	450	451		740.04	738.90															
-L- STA. 300+50	RT.	451		743.73								1									
	RT.	451	453		739.15	740.80															
	RT.	451	OUT		738.90																
-L- STA. 301+18	RT.	452		743.85								1			1						
	RT.	452	453		740.85	740.80															
-L- STA. 301+11	RT.	453		743.85								1			1						
	RT.	453	454		740.80	742.44															
	RT.	453	456		740.80	752.80															
-L- STA. 300+70	RT.	454		745.44								1			1		1				
	RT.	454	455		742.44	747.66															
-L- STA. 300+39	RT.	455		750.66								1			1		1			1	
-L- STA. 301+25	RT.	456		755.60								1									
-L- STA. 301+10	LT.	457		745.70								1									
	LT.	457	458		742.70	742.45															
-L- STA. 302+00	LT.	458		747.95								1			1			1			
	LT.	458	459		742.45	742.39															
-L- STA. 302+16	LT.	459		747.99								1			1			1			
	LT.	459	460		742.39	742.00															
-L- STA. 303+09	LT.	460		747.88								1	3.1		1			1			
	LT.	460	OUT		739.78	739.66															
-L- STA. 303+16	RT.	461		754.40								1	1.48								
	RT.	461	462		751.40	760.07															
	RT.	461	OUT		747.92																
-L- STA. 303+53	RT.	462		763.07								1									
	RT.	462	645		760.07	770.40															
-L- STA. 304+25	RT.	463																			
-L- STA. 305+00	LT.	464		745.90								1			1		1			1	
	LT.	464	465		742.90	742.33															
-L- STA. 305+94	LT.	465		745.33								1			1		1			1	
	LT.	465	466		742.33	742.13															
SHEET TOTAL												21	4.58		15	2	10	3		8	

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	D.I. STD. 840.15	D.I. STD. 840.14 OR STD. 840.16	D.I. FRAME & GRATE STD. 840.17 OR 840.26	G.D.I. TYPE "A" STD. 840.17 OR 840.27	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 297+33	LT.	444		749.80																							
	LT.	444	445		745.98	745.11																					
-L- STA. 297+35	RT.	445		748.11																							
-L- STA. 298+50	LT.	446		749.22																					.13		PLUG/FILL W/FLOWABLE MATERIAL 18" RCP
	LT.	446	447		746.22	745.45																					
-L- STA. 300+00	LT.	447		748.45																							
	LT.	447	448		745.45	744.68																					
-L- STA. 301+50	LT.	448		747.68																							
	LT.	448	449		744.68	742.94																					
-L- STA. 303+12	LT.	449		746.86																							
-L- STA. 299+02	RT.	450		742.84								1				1											
	RT.	450	451		740.04	738.90																					
-L- STA. 300+50	RT.	451		743.73								1				1										72	REMOVE EXIST. 18" RCP & FES
	RT.	451	453		739.15	740.80																					
	RT.	451	OUT		738.90																				.4465		REMOVE FES
-L- STA. 301+18	RT.	452		743.85																							
	RT.	452	453		740.85	740.80																					
-L- STA. 301+11	RT.	453		743.85																							
	RT.	453	454		740.80	742.44																					
	RT.	453	456		740.80	752.80																			2@15"		
-L- STA. 300+70	RT.	454		745.44																							
	RT.	454	455		742.44	747.66																					
-L- STA. 300+39	RT.	455		750.66																							
-L- STA. 301+25	RT.	456		755.60								1				1											
-L- STA. 301+10	LT.	457		745.70								1				1											
	LT.	457	458		742.70	742.45																					
-L- STA. 302+00	LT.	458		747.95																							
	LT.	458	459		742.45	742.39																					
-L- STA. 302+16	LT.	459		747.99																						42	REMOVE EXIST. 18" RCP & FES
	LT.	459	460		742.39	742.00																					
-L- STA. 303+09	LT.	460		747.88																							
	LT.	460	OUT		739.78	739.66																					
-L- STA. 303+16	RT.	461		754.40								1				1											REMOVE EXIST. HW
	RT.	461	462		751.40	760.07																			2@15"	.09	PLUG/FILL W/FLOWABLE MATERIAL 15" RCP
	RT.	461	OUT		747.92																				.5526		
-L- STA. 303+53	RT.	462		763.07																		1					SLAB LID
	RT.	462	645		760.07	770.40																			2@15"		
-L- STA. 304+25	RT.	463																								68	REMOVE EXIST. 18" RCP & HW
-L- STA. 305+00	LT.	464		745.90																							
	LT.	464	465		742.90	742.33																					
-L- STA. 305+94	LT.	465		745.33																							
	LT.	465	466		742.33	742.13																					
SHEET TOTAL												5				5					1			6@15"	.22		
																									.9991	182	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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4/04/06

COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-W

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 306+30	LT.	466		745.13																																													1			1		1			1																					
	LT.	466	467		742.13	741.19																													184																																											
-L- STA. 308+15	LT.	467		744.19																																													1			1		1			1																					
	LT.	467	468		741.19	741.10																													28																																											
-L- STA. 308+15	LT.	468		774.61																																													1			1			1																							
	LT.	468	469		741.10	737.70																													148																																											
-L- STA. 309+65	LT.	469		742.26																																													1			1			1																							
	LT.	469	470		737.45	724.30				64						X		X	X																																																									2@18"				
	LT.	469	476		737.70	738.56																													68																																											
-L- STA. 310+05	LT.	470		727.60																																													1																				1	1								
	LT.	470	471		724.30	699.85				124						X		X	X																																																										2@18"				
-L- STA. 311+21	LT.	471		704.00																																													1																				1	1								
	LT.	471	OUT		699.35	699.33					8						X	X	X																																																													
-L- STA. 305+00	RT.	472		744.20																																													1			1		1																								
	RT.	472	473		741.20	740.91																													96																																											
-L- STA. 306+00	RT.	473		744.16																																													1			1		1																								
	RT.	473	474		740.91	740.76																													48																																											
-L- STA. 306+50	RT.	474		743.91																																													1			1		1																								
	RT.	474	475		740.76	739.88																													148																																											
-L- STA. 308+00	RT.	475		743.22																																													1			1		1																								
	RT.	475	476		739.88	738.56																													160																																											
-L- STA. 309+60	RT.	476		742.26																																													1			1		1																							68	REMOVE EXIST. 15" CMP
	RT.	476	477		738.56	738.62			20								X	X	X																																																													
-L- STA. 309+50	RT.	477		742.47																																													1													1				1												
-L- STA. 311+00	LT.	478		741.14																																													1			1			1																							
	LT.	478	479		738.14	733.81																													148																																											
-L- STA. 312+50	LT.	479		739.83																																													1	1.02		1			1																							
	LT.	479	480		733.81	734.25																													148																																											
	LT.	479	482		733.81	730.81																													36																																											
	LT.	479	485		733.81	736.83																													68																																											
-L- STA. 314+00	LT.	480		737.83																																													1			1			1																							
	LT.	480	481		734.25	734.30			20								X	X	X																																																													
-L- STA. 313+99	LT.	481		736.60																																													1										1	1																		
-L- STA. 312+50	LT.	482		734.51																																													1																				1	1								
	LT.	482	483		730.81	707.20			60							X		X	X																																																												
-L- STA. 312+11	LT.	483		713.39																																													1	1.44																				1	1								
	LT.	483	OUT		706.95	706.92				8							X	X	X																																																												
-L- STA. 311+00	RT.	484		741.14																																													1			1		1																								
	RT.	484	485		738.14	736.83																													148																																											
-L- STA. 312+50	RT.	485		739.83																																													1			1		1																								
-L- STA. 313+99	RT.	486		736.50																																													1										1	1																		
	RT.	486	487		734.20	734.15			20							X		X	X																																																											2@15"				
SHEET TOTAL									120		8																								1428														21	2.46		14		9	5		2		2	2		1				1				4	4				4@18" 2@15"			68	
										196																																																																						

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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$$$$USERNAME$$$$

COMPUTED BY: PJS	DATE: 02/17/10
CHECKED BY: JBG	DATE: 05/05/11

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-X

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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- STA. 313+99	RT.	487		737.83															
	RT.	487	488		734.15	733.41													
-L- STA. 315+00	RT.	488		736.41															
	RT.	488	489		733.41	731.02													
-L- STA. 316+70	RT.	489		734.02															
	RT.	489	490		731.02	729.34			16								X	X	X
-L- STA. 316+70	RT.	490		732.14															
	RT.	490	491		729.34	728.73				76							X	X	X
-L- STA. 317+50	RT.	491		732.13															
	RT.	491	492		728.73	727.40				124							X	X	X
-L- STA. 318+74	RT.	492		730.95															
	RT.	492	493		727.40	724.56													
-L- STA. 320+50	RT.	493		728.43															
	RT.	493	494		724.56	723.53													
-L- STA. 322+00	RT.	494		727.09															
	RT.	494	495		723.53	721.76													
-L- STA. 324+00	RT.	495		727.43															
	RT.	495	496		721.76	721.42													
-L- STA. 325+50	RT.	496		728.85															
	RT.	496	497		720.67	692.31					88					X		X	X
	RT.	496	498		721.42	727.43													
-L- STA. 325+50	RT.	497		697.00															
	RT.	497	OUT		692.31	691.76					12						X	X	X
-L- STA. 326+50	RT.	498		730.43															
	RT.	498	499		727.43	730.79													
-L- STA. 328+00	RT.	499		733.79															
	RT.	499	500		730.79	735.30													
-L- STA. 329+50	RT.	500		738.30															
	RT.	IN	500		735.30	738.00			36								X	X	X
-L- STA. 324+51	RT.	501								20						X		X	X
-L- STA. 315+00	LT.	502		736.41															
	LT.	502	503		733.41	731.29													
-L- STA. 316+50	LT.	503		734.29															
	LT.	503	504		731.29	729.17													
-L- STA. 318+00	LT.	504		732.17															
	LT.	504	505		729.17	727.06													
-L- STA. 319+50	LT.	505		730.06															
	LT.	505	506		727.06	725.67													
-L- STA. 320+50	LT.	506		728.67															
	LT.	506	507		725.67	724.36													
-L- STA. 322+00	LT.	507		727.36															
	LT.	507	508		724.36	721.86													
-L- STA. 322+27	LT.	508		724.86															
SHEET TOTAL									52		100								
										220									

STATION	LOC.	FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/ SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.
-L- STA. 313+99	RT.	487																														
	RT.	487	488																100													
-L- STA. 315+00	RT.	488																														
	RT.	488	489																168													
-L- STA. 316+70	RT.	489																														
	RT.	489	490																													
-L- STA. 316+70	RT.	490																														
	RT.	490	491																													
-L- STA. 317+50	RT.	491																														
	RT.	491	492																													
-L- STA. 318+74	RT.	492																														
	RT.	492	493																	176												
-L- STA. 320+50	RT.	493																														
	RT.	493	494																	148												
-L- STA. 322+00	RT.	494																														
	RT.	494	495																	200												
-L- STA. 324+00	RT.	495																														
	RT.	495	496																	148												
-L- STA. 325+50	RT.	496																														
	RT.	496	497																													
	RT.	496	498																	100												
-L- STA. 325+50	RT.	497																														
	RT.	497	OUT																													
-L- STA. 326+50	RT.	498																														
	RT.	498	499																148													
-L- STA. 328+00	RT.	499																														
	RT.	499	500																148													
-L- STA. 329+50	RT.	500																														
	RT.	IN	500																													
-L- STA. 324+51	RT.	501																														
-L- STA. 315+00	LT.	502																														
	LT.	502	503																148													
-L- STA. 316+50	LT.	503																														
	LT.	503	504																148													
-L- STA. 318+00	LT.	504																														
	LT.	504	505																148													
-L- STA. 319+50	LT.	505																														
	LT.	505	506																100													
-L- STA. 320+50	LT.	506																														
	LT.	506	507																148													
-L- STA. 322+00	LT.	507																														
	LT.	507	508																36													
-L- STA. 322+27	LT.	508																														
SHEET TOTAL																			1292													

STATION	LOC.	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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 313+99	RT.	487		1			1		1																								
	RT.	487	488																														
-L- STA. 315+00	RT.	488		1			1		1																								
	RT.	488	489																														
-L- STA. 316+70	RT.	489		1			1		1																								
	RT.	489	490																														
-L- STA. 316+70	RT.	490		1													1				1											88	REMOVE EXIST. 18" RCP
	RT.	490	491																														
-L- STA. 317+50	RT.	491		1													1				1												
	RT.	491	492																														
-L- STA. 318+74	RT.	492		1			1		1																								
	RT.	492	493																														
-L- STA. 320+50	RT.	493		1			1		1																								
	RT.	493	494																														
-L- STA. 322+00	RT.	494		1			1		1																								
	RT.	494	495																														
-L- STA. 324+00	RT.	495		1	1.17		1			1																							
	RT.	495	496																														
-L- STA. 325+50	RT.	496		1	3.18		1			1																							
	RT.	496	497																										2@24"				
	RT.	496	498																														
-L- STA. 325+50	RT.	497		1	.24																			1	1								
	RT.	497	OUT																														
-L- STA. 326+50	RT.	498		1			1			1																							
	RT.	498	499																														
-L- STA. 328+00	RT.	499		1			1			1																							
	RT.	499	500																														
-L- STA. 329+50	RT.	500		1			1			1																							
	RT.	IN	500																														
-L- STA. 324+51	RT.	501																															BAND AND EXTEND
-L- STA. 315+00	LT.	502		1			1			1																							
	LT.	502	503																														
-L- STA. 316+50	LT.	503		1			1			1																							
	LT.	503	504																														
-L- STA. 318+00	LT.	504		1			1			1																							
	LT.	504	505																														
-L- STA. 319+50	LT.	505		1			1			1																							
	LT.	505	506																														
-L- STA. 320+50	LT.	506		1			1			1																							
	LT.	506	507																														
-L- STA. 322+00	LT.	507		1			1			1																							
	LT.	507	508																														
-L- STA. 322+27	LT.	508		1			1			1																							
SHEET TOTAL				21	4.59		18		6	12							2				2			1	1				2@24"			88	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

4/04/06

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$$$$USERNAME$$$$

COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

PROJECT REFERENCE NO. U-3326A/B SHEET NO. 3-Y

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
	LT.	508	509		721.86	719.41																													60																																											
-L- STA. 322+26	LT.	509		724.96																																													1	.80		1		1																									
	LT.	509	510		719.16	719.50				24							X	X	X																																																											
	LT.	509	511		719.16	719.62																														80																																									
																																																																											.13		PLUG/FILL W/FLOWABLE MATERIAL 18" RCP
-L- STA. 322+02	LT.	510		722.30																																													1													1				1											16	REMOVE EXIST. 15" CMP, REMOVE EXIST. DI
-L- STA. 323+04	LT.	511		724.98																																													1	.36		1			1																								
	LT.	511	512		719.62	717.97																														96																																									
-L- STA. 323+53	LT.	512		726.58																																													1	3.61		1			1																								
	LT.	512	513		717.97	717.52																														56																																									
-L- STA. 324+09	LT.	513		727.14																																													1	4.62		1		1																									
	LT.	513	514		717.52	695.06				72						X		X	X																																																							2@18"				
-L- STA. 323+97	LT.	514		700.92																																													1	1.36																			1	1								
	LT.	514	OUT		694.56	694.51					16						X	X	X																																																											
-L- STA. 325+00	LT.	515		728.07																																													1			1		1																									
	LT.	515	516		725.07	724.63																													148																																											
-L- STA. 326+50	LT.	516		730.40																																													1	.77		1		1																									
	LT.	516	517		724.63	696.92				76						X		X	X																																																						2@18"				
	LT.	516	518		724.63	732.16																													200																																											
-L- STA. 326+51	LT.	517		700.87																																													1																						1	1								
	LT.	517	OUT		696.92	696.82				16							X	X	X																																																											
-L- STA. 328+50	LT.	518		735.16																																													1			1		1																									
	LT.	518	519		732.16	735.30																													100																																											
-L- STA. 329+51	LT.	519		738.30																																													1			1		1																									
	LT.	IN	519		735.30	738.00			52								X	X	X																																																											
-L- STA. 331+85	LT.	520							20								X	X	X																																																											
-L- STA. 332+66	RT.	521							40								X	X	X																																																											42	REMOVE EXIST. 15" RCP
-Y2- STA. 12+32	LT./RT.	522			814.70	812.30			72								X	X	X																																																										40	REMOVE EXIST. 15" CMP
-L- STA. 38+00	RT.	523							64								X	X	X																																																											44	REMOVE EXIST. 15" HDPE
-Y4- STA. 12+21	RT.	524								28							X	X	X																																																											32	REMOVE EXIST. 18" RCP
-Y5- STA. 14+73	LT./RT.	525							84								X	X	X																																																												116	REMOVE EXIST. 15" RCP & JB
-Y6- STA. 12+40	RT.	526							72								X	X	X																																																											68	REMOVE EXIST. 15" CMP
-Y6- STA. 12+26	LT.	527		811.43																																													1													1				1											72	REMOVE EXIST. 12" RCP
	LT.	527	528		806.68	802.46					124						X	X	X																																																											
-Y6- STA. 13+50	LT.	528		807.21																																													1													1				1												
	LT.	528	529		802.46	800.05					68						X	X	X																																																										
-Y6- STA. 14+18	LT.	529		804.80																																													1													1				1												
	LT.	529	530		800.05	797.55					92						X	X	X																																																											
-Y6- STA. 15+14	LT.	530		802.30																																													1	.25											1				1												
	LT.	530	531		797.05	795.06					96						X	X	X																																																											
-Y6- STA. 16+11	LT.	531		800.90																																													1	.84																					1									SLAB LID
	LT.	531	OUT		795.06	797.00							12				X	X	X																																																											
SHEET TOTAL									404		396		12																						508	232													16			8		6	2							5				5			3	2				4@18"			430	
										216																																						12.61																											.13		

COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-Z

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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
-Y8- STA. 15+75	LT.	532		817.05															
	LT.	532	533		813.00	813.20													
	LT.	532	534		812.80	807.75													
-Y8- STA. 15+90	LT.	533		815.95															
-Y8- STA. 13+60	LT.	534		811.50															
	LT.	534	535		807.75	806.95													
-Y8A-STA. 10+67	LT.	535		810.70															
	LT.	535	536		806.45	806.34													
-Y8A-STA. 11+50	LT.	536		810.59															
	LT.	536	OUT		806.34	804.00													
-Y8A-STA. 11+84	RT.	537		810.00															
	RT.	537	538		807.00														
-Y8A-STA. 12+38	RT.	538																	
	RT.	538	539			807.40					16						X	X	X
	RT.	538	OUT											96			X	X	X
-Y8A-STA. 12+57	RT.	539		810.40															
	RT.	539	540		807.40	806.45					100						X	X	X
-Y8A-STA. 13+61	RT.	540		810.20															
-Y8A-STA. 13+95	LT.	541		817.70															
	LT./RT.	541	542		814.00	814.60													
	LT.	541	OUT		814.00	812.30			28								X	X	X
-Y8A-STA. 13+95	RT.	542		817.60															
	RT.	542	543		814.60	817.64													
-Y8A-STA. 15+15	RT.	543		820.64															
	RT.	543	544		817.64	819.85													
-Y8A-STA. 16+00	RT.	544		823.15															
	RT.	544	545		819.85	820.15													
	RT.	544	546		819.85	824.17													
-Y8A-STA. 16+00	LT.	545		823.15															
-Y8A-STA. 19+70	RT.	546		827.17															
-Y10-STA. 14+72	RT.	547		830.94															
	RT.	547	548		826.25	826.60													
	RT.	547	OUT		826.25														
-Y10-STA. 15+55	RT.	548		831.80															
-Y10-STA. 16+22	RT.	549																	
-Y10A-STA.10+50	LT.	550		835.26															
	LT.	550	551		831.75	832.00													
	LT.	550	OUT		831.65	836.00			32								X	X	X
	LT.	IN	550		831.75	836.00											X	X	X
-Y10A-STA.10+89	LT.	551		835.13															
	LT.	551	552		832.00	832.23											X	X	X
-Y10A-STA.10+93	LT.	552		835.23															
	LT.	552	553		832.23	832.33											X	X	X
-Y10A-STA.10+93	RT.	553		835.53															
	RT.	553	554		832.33	832.63											X	X	X
SHEET TOTAL									60		116			96					

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
-Y8- STA. 15+75	532																							
	532	533								28														
	532	534																		212				
-Y8- STA. 15+90	533																							
-Y8- STA. 13+60	534																							
	534	535																		76				
-Y8A-STA. 10+67	535																							
	535	536																			48			
-Y8A-STA. 11+50	536																							
	536	OUT																			28			
-Y8A-STA. 11+84	537																							
	537	538																	56					
-Y8A-STA. 12+38	538																							
	538	539																						
	538	OUT																						
-Y8A-STA. 12+57	539																							
	539	540																						
-Y8A-STA. 13+61	540																							
-Y8A-STA. 13+95	541																							
	541	542																32						
	541	OUT																						
-Y8A-STA. 13+95	542																							
	542	543																120						
-Y8A-STA. 15+15	543																							
	543	544																84						
-Y8A-STA. 16+00	544																							
	544	545																32						
	544	546																368						
-Y8A-STA. 16+00	545																							
-Y8A-STA. 19+70	546																							
-Y10-STA. 14+72	547																							
	547	548																84						
	547	OUT																16						
-Y10-STA. 15+55	548																							
-Y10-STA. 16+22	549																							
-Y10A-STA.10+50	550																							
	550	551																40						
	550	OUT																						
	IN	550																56						
-Y10A-STA.10+89	551																							
	551	552																4						
-Y10A-STA.10+93	552																							
	552	553																40						
-Y10A-STA.10+93	553																							
	553	554																36						
SHEET TOTAL										28								912	56	288	76			

STATION	FROM	TO	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/ SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET
-Y8- STA. 15+75	532									1			1		1			
	532	533																
	532	534																
-Y8- STA. 15+90	533									1								
-Y8- STA. 13+60	534									1			1		1			
	534	535																
-Y8A-STA. 10+67	535									1			1	1				
	535	536																
-Y8A-STA. 11+50	536									1			1		1			
	536	OUT																
-Y8A-STA. 11+84	537									1			1		1			
	537	538																
-Y8A-STA. 12+38	538									1								
	538	539																
	538	OUT																
-Y8A-STA. 12+57	539									1								
	539	540																
-Y8A-STA. 13+61	540									1								
-Y8A-STA. 13+95	541									1			1		1			
	541	542																
	541	OUT																
-Y8A-STA. 13+95	542									1			1			1		
	542	543																
-Y8A-STA. 15+15	543									1			1			1		
	543	544																
-Y8A-STA. 16+00	544									1			1			1		
	544	545																
	544	546																
-Y8A-STA. 16+00	545									1			1		1			
-Y8A-STA. 19+70	546									1			1			1		
-Y10-STA. 14+72	547									1			1			1		
	547	548																
	547	OUT																
-Y10-STA. 15+55	548									1	.20							
-Y10-STA. 16+22	549																	
-Y10A-STA.10+50	550									1			1			1		
	550	551																
	550	OUT																
	IN	550																
-Y10A-STA.10+89	551									1			1	1				
	551	552																
-Y10A-STA.10+93	552									1			1	1				
	552	553																
-Y10A-STA.10+93	553									1			1	1				
	553	554																
SHEET TOTAL										21	.20		16	4	6	6		

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-Y8- STA. 15+75	532																					
	532	533																				
	532	534																				
-Y8- STA. 15+90	533					1				1												
-Y8- STA. 13+60	534																					
	534	535																				
-Y8A-STA. 10+67	535																					
	535	536																				
-Y8A-STA. 11+50	536																					
	536	OUT																				
-Y8A-STA. 11+84	537																					
	537	538																				
-Y8A-STA. 12+38	538												1	1							90	REMOVE EXIST. 48" RCP
	538	539																				
	538	OUT																				
-Y8A-STA. 12+57	539		1	1																		
	539	540																				
-Y8A-STA. 13+61	540														1							3 THROAT OPENING
-Y8A-STA. 13+95	541																					
	541	542																				
	541	OUT																				
-Y8A-STA. 13+95	542																					
	542	543																				
-Y8A-STA. 15+15	543																					
	543	544																				
-Y8A-STA. 16+00	544																					
	544	545																				
	544	546																				
-Y8A-STA. 16+00	545																					
-Y8A-STA. 19+70	546																					
-Y10-STA. 14+72	547																					
	547	548																				
	547	OUT																	.3990			
-Y10-STA. 15+55	548		1	1																		
-Y10-STA. 16+22	549																				36	REMOVE EXIST. 15" RCP
-Y10A-STA.10+50	550																					
	550	551																				
	550	OUT																				
	IN	550																				
-Y10A-STA.10+89	551																					
	551	552																				
-Y10A-STA.10+93	552																					
	552	553																				
-Y10A-STA.10+93	553																					
	553	554																				
SHEET TOTAL			2	2		1				1			1	1	1				.3990		126	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

4/04/06
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$$$$USERNAME$$$$

COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-AA

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, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-Y10A-STA.11+35	RT.	554		835.63																																													1			1			1																						
-Y10A-STA.13+02	LT.	555		842.14																																													1			1		1																							
	LT.	555	556		839.14	840.41																													48																																											
	LT.	555	OUT		839.14	839.00																													20																																											
-Y10A-STA.13+53	LT.	556		843.41																																													1			1		1																							
-Y10A-STA.14+78	LT./RT.	557								96							X	X	X																																																											
-Y10-																																																																															
STA. 18+10	RT.	558																																																																													208	REMOVE EXIST. 15" RCP
STA. 25+64	LT.	559		855.80																																													1																		1	1											
	LT.	559	560		853.00	849.80																													112																																											
STA. 26+78	LT.	560		852.80																																													1																		1	1											
	LT.	560	OUT		849.80	833.50			48							X		X	X																																																													
STA. 29+65	RT.	561		848.95																																													1									1	1	1																				
	RT.	561	562		845.65	845.75																													8																																											
	RT.	561	563		845.65	843.65																													32																																											
STA. 29+74	RT.	562		848.95																																													1									1	1	1																		20	REMOVE EXIST. 12" RCP
STA. 29+69	LT.	563		846.85																																													1			1	1																										
	LT.	563	564		843.65	843.75																													8																																											
	LT.	563	OUT		843.65	839.08			44								X	X	X																																																													
STA. 29+77	LT.	564		846.85																																													1			1	1																										
	LT.	564	565		843.75	846.00			220								X	X	X																																																													
STA. 32+04	LT.	565		848.30																																													1										1	1																				
	LT.	565	566		846.00	846.70			56								X	X	X																																																													
STA. 32+06	RT.	566		849.00																																													1										1	1																				
STA. 31+56	RT.	567																																																																													52	REMOVE EXIST. 15" RCP & DI
STA. 32+70	LT.	568																																																																													32	REMOVE EXIST. 12" RCP
STA. 32+57	RT.	569																																																																													16	REMOVE EXIST. 12" RCP
-Y11-																																																																															
STA. 12+25	LT.	570		794.55																																													1													1				1													
	LT.	570	571		791.45	792.55			56								X	X	X																																																												
STA. 12+25	RT.	571		794.45																																													1														1			1													
-Y12-																																																																																
STA. 11+52	RT.	572		833.98																																													1										1	1																				
	RT.	572	573		831.68	830.11																													200																																											
STA. 13+52	RT.	573		833.11																																													1			1	1																										
	RT.	573	574		830.11	830.35																													52																																											
	RT.	573	575		830.11	828.00																													72																																											
STA. 13+52	LT.	574		833.35																																													1			1	1																										
STA. 14+27	RT.	575		833.13																																													1			1			1																							
STA. 14+18	LT.	576			831.35					16							X	X	X																																																									.4465			
-Y12B-																																																																																
STA. 10+55	RT.	577		826.00																																													1			1	1																										
	RT.	577	578		823.00	822.90																													4																																											
STA. 10+60	RT.	578		826.00																																													1			1	1																										
SHEET TOTAL									424																										556															19			10	6	2	2			2	5	5		1	1			2	2	2							.4465		328	
										112																																																																						

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: PJS	DATE: 02/17/10
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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-AB

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
STATEWIDE
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

ABBREVIATIONS

- C.B. — CATCH BASIN
- N.D.I. — NARROW DROP INLET
- D.I. — DROP INLET
- G.D.I. — GRATED DROP INLET
- G.D.I. (N.S.) — GRATED DROP INLET (NARROW SLOT)
- J.B. — JUNCTION BOX
- M.H. — MANHOLE
- T.B.D.I. — TRAFFIC BEARING DROP INLET
- T.B.J.B. — TRAFFIC BEARING JUNCTION BOX

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, CSP, 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" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
	RT.	578	579		822.90	822.70																													36																																											
STA. 10+98	RT.	579		826.70																																													1			1			1																							
	RT.	579	580		822.70	822.50																													40																																											
STA. 10+97	LT.	580		827.09																																													1			1	1																									
	LT.	580	581		823.24	823.44																													4																																											
STA. 11+01	LT.	581		826.44																																													1			1	1																									
	LT.	581	582		823.44	826.90																													48																																											
STA. 11+50	LT.	582		829.90																																													1			1		1																								
-L- STA. 193+32	LT.	583		822.30																																													1										1	1																				
		583	584		820.00				28								X	X	X																																																													
-L- STA. 193+18	LT.	584																																																																												ADJUST JB
-Y13-																																																																															
STA. 8+59	LT.	585																																															1														1					1												48	REMOVE EXIST. 18" RCP
	LT.	585	586		745.22	745.40			40								X	X	X																																																											
	LT.	585	OUT		745.22					48							X	X	X																																																											
STA. 9+00	LT.	586		748.17																																													1														1					1													
	LT.	586	587		745.40	754.70			248								X	X	X																																																											
STA. 11+50	LT.	587		757.44																																													1														1					1													
	LT.	587	588		754.70	763.67			248								X	X	X																																																											
STA. 14+00	LT.	588		766.42																																													1														1					1													
	LT.	588	589		763.67	768.10																													72																																											
STA. 14+73	LT.	589		771.10																																													1			1		1																								
	LT.	589	590		768.10	773.50			32							X		X	X																																																											
STA. 14+75	LT.	590		776.50																																													1										1	1																				
STA. 9+55	RT.	591							28								X	X	X																																																										20	REMOVE EXIST. 15" CMP
STA. 15+17	LT.	592		777.50																																													1	3.6		1		1																								
	LT.	592	593		773.00				84								X	X	X																																																											
STA. 16+00	LT.	593																																															1			1		1																								
	LT.	593	594		774.54																														100																																										52	REMOVE EXIST. 15" RCP
STA. 16+96	LT.	594		777.54																																													1			1		1																								
	LT.	594	595		774.54																														88																																											
STA. 17+86	LT.	595																																															1			1		1																							80	REMOVE EXIST. 15" RCP
	LT.	595	596			777.04			96								X	X	X																																																											
	LT.	IN	595						28								X	X	X																																																											
STA. 18+84	LT.	596		778.90																																													1														1					1													
STA. 15+18	RT.	597																																															1																	1							1								
	RT.	597	598		768.24	765.55				40							X	X	X																																																											
STA. 15+00	RT.	598		768.55																																													1	.75													1											1					
	RT.	598	599		762.80	759.00							48				X	X	X																																																												
	RT.	598	600		763.30	770.22						248					X	X	X																																																											
STA. 14+87	RT.	599		764.75																																													1	.75													1											1					
	RT.	599	OUT		759.00	758.50							88				X	X	X																																																											
STA. 17+50	RT.	600		775.47																																													1	.25													1											1					
	RT.	600	601		770.22	773.48						120					X	X	X																																																												
SHEET TOTAL									832			368																							388														20	5.35		9	2	6	1				2	2		8		1		5				1			3				200	
										88			136																																																																				

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COMPUTED BY: PJS	DATE: 02/17/10
CHECKED BY: JBG	DATE: 05/05/11

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-AC

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATEWIDE

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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
-Y13-																			
STA. 18+73	RT.	601		782.40															
	RT.	601	602		778.20	779.50													
	RT.	601	603		778.20	780.80													
	RT.	601	605		773.48							76					X	X	X
STA. 19+02	RT.	602		782.70															
STA. 18+73	RT.	603		783.30															
	RT.	603	604		780.80	781.30													
STA. 18+41	RT.	604		784.50															
STA. 19+50	RT.	605																	
	RT.	605	606			776.27						72					X	X	X
STA. 20+25	RT.	606		781.52															
	RT.	606	607		779.60	781.10			40								X	X	X
	RT.	606	608		778.52	780.35				72							X	X	X
STA. 20+26	RT.	607		784.30															
STA. 21+00	RT.	608		783.35															
	RT.	608	608A		780.60	782.25			136								X	X	X
STA. 22+35	RT.	608A		785.00															
	RT.	608A	608B		782.25	783.85			176								X	X	X
STA. 24+12	RT.	608B		786.60															
	RT.	608B	609		783.65	784.40			144								X	X	X
STA. 25+58	RT.	609		787.21															
	RT.	609	610		784.40	796.40			168								X	X	X
STA. 24+54	RT.	610		798.90															
STA. 26+47	LT.	611							100								X	X	X
STA. 21+96	LT.	611A		783.40	780.30														
STA. 25+04	RT.	612		798.30															
	RT.	612	613		795.10	794.80						28					X	X	X
STA. 24+86	RT.	613		801.00															
	RT.	613	614		794.80	784.80						220					X	X	X
STA. 26+53	RT.	614		770.00															
	RT.	614	615		784.80	782.25													
STA. 26+98	RT.	615		787.50															
	RT.	615	616		782.25	782.00													
STA. 27+30	RT.	616		788.50															
	RT.	616	617		782.00	781.80													
STA. 28+00	RT.	617		790.10															
	RT.	617	618		783.00	783.70					24						X	X	X
	RT.	617	620		781.70	781.00							140				X	X	X
STA. 28+00	RT.	618		786.40															
	RT.	618	619		784.20	787.20				24						X		X	X
STA. 27+78	RT.	619		790.20															
STA. 29+40	RT.	620		788.40															
	RT.	620	621		781.00	780.40							64				X	X	X
STA. 30+06	RT.	621		788.50															
	RT.	621	622		780.40	760.87							108			X		X	X
SHEET TOTAL									764		24		312						
										96		396							

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
STA. 18+73	601																							
	601	602																52						
	601	603																52						
	601	605																						
STA. 19+02	602																							
STA. 18+73	603																							
	603	604																32						
STA. 18+41	604																							
STA. 19+50	605																							
	605	606																						
STA. 20+25	606																							
	606	607																						
	606	608																						
STA. 20+26	607																							
STA. 21+00	608																							
	608	608A																						
STA. 22+35	608A																							
	608A	608B																						
STA. 24+12	608B																							
	608B	609																						
STA. 25+58	609																							
	609	610																						
STA. 24+54	610																							
STA. 26+47	611																							
STA. 21+96	611A																							
STA. 25+04	612																							
	612	613																						
STA. 24+86	613																							
	613	614																						
STA. 26+53	614																							
	614	615																			52			
STA. 26+98	615																							
	615	616																			32			
STA. 27+30	616																							
	616	617																			68			
STA. 28+00	617																							
	617	618																						
	617	620																						
STA. 28+00	618																							
	618	619																						
STA. 27+78	619																							
STA. 29+40	620																							
	620	621																						
STA. 30+06	621																							
	621	622																						
SHEET TOTAL																		156			152			

STATION	FROM	TO	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET
STA. 18+73	601									1	3.92							
	601	602																
	601	603																
	601	605																
STA. 19+02	602									1								1
STA. 18+73	603									1			1			1		
	603	604																
STA. 18+41	604									1			1			1	1	
STA. 19+50	605									1								
	605	606																
STA. 20+25	606									1	.25							
	606	607																
	606	608																
STA. 20+26	607									1								1
STA. 21+00	608									1								
	608	608A																
STA. 22+35	608A									1								
	608A	608B																
STA. 24+12	608B									1								
	608B	609																
STA. 25+58	609									1								
	609	610																
STA. 24+54	610									1								
STA. 26+47	611																	
STA. 21+96	611A									1								
STA. 25+04	612									1								
	612	613																
STA. 24+86	613									1	1.2							
	613	614																
STA. 26+53	614									1								
	614	615																
STA. 26+98	615									1	.25							
	615	616																
STA. 27+30	616									1	1.5							
	616	617																
STA. 28+00	617									1	3.4							
	617	618																
	617	620																
STA. 28+00	618									1								
	618	619																
STA. 27+78	619									1								
STA. 29+40	620									1	2.4							
	620	621																
STA. 30+06	621									1	3.1							
	621	622																
SHEET TOTAL										23			2			2	1	2
											16.02							

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
STA. 18+73	601							1						1							172	REMOVE EXIST. 30" RCP & HW
	601	602																				
	601	603																				
	601	605																				
STA. 19+02	602		1	1																		
STA. 18+73	603																					
	603	604																				
STA. 18+41	604																					
STA. 19+50	605					1											1					
	605	606																				
STA. 20+25	606					1											1				72	REMOVE EXIST. 15" RCP & FES
	606	607																				
	606	608																				
STA. 20+26	607		1	1																	56	REMOVE EXIST. 12" RCP
STA. 21+00	608					1											1					
	608	608A																				
STA. 22+35	608A										1	1										
	608A	608B																				
STA. 24+12	608B										1	1										
	608B	609																				
STA. 25+58	609					1											1					
	609	610																				
STA. 24+54	610					1											1					
STA. 26+47	611																				88	REMOVE EXIST. 15" RCP
STA. 21+96	611A					1											1				12	REMOVE EXIST. 18" RCP & HW
STA. 25+04	612					1				1												
	612	613																				
STA. 24+86	613										1	1										
	613	614																				
STA. 26+53	614										1	1										
	614	615																				
STA. 26+98	615										1	1										
	615	616																				
STA. 27+30	616							1						1							52	REMOVE EXIST. 18" CMP
	616	617																				
STA. 28+00	617										1	1										
	617	618																			116	REMOVE EXIST. 24" RCP & DI
	617	620																				
STA. 28+00	618					1				1												
	618	619																				
STA. 27+78	619					1											1					
STA. 29+40	620					1				1											144	REMOVE EXIST. 24" RCP & DI
	620	621																				
STA. 30+06	621					1				1												
	621	622																				
SHEET TOTAL			2	2		11		2		3	6	6		2			8				712	

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-AD

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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
-Y13-																			
	RT.	621	623		785.00	785.50			88								X	X	X
STA. 30+95	RT.	623		788.30															
STA. 31+37	RT.	624		776.50															
	RT.	624	OUT		764.45	764.65								24			X	X	X
STA. 34+48	RT.	625								16							X	X	X
-Y13RPB-																			
STA. 16+50	RT.	626																	
	RT.	626	OUT						48								X	X	X
-L- STA. 207+46	RT.	627																	
-Y18-																			
STA. 11+81	LT.	628		772.23															
		628	OUT		768.73	762.67					104						X	X	X
-Y19-																			
STA. 10+51	LT.	629		775.20															
	LT.	629	630		771.00	771.80				76							X	X	X
STA. 11+25	LT.	630		774.80															
-Y20-																			
STA. 11+07	RT.	631		789.16															
	RT.	631	632		786.16	786.01			32								X	X	X
STA. 11+06	LT.	632		789.01															
-Y20A-																			
STA. 11+13	RT.	633							52								X	X	X
-Y20B-																			
STA. 14+97	RT.	636		746.50															
	LT.	636	637		743.50	742.89				44							X	X	X
STA. 14+99	LT.	637		749.75															
		637	638		742.39	742.20					48						X	X	X
STA. 15+50	LT.	638		749.30															
	LT.	638	639		742.20	705.80					88					X		X	X
STA. 15+49	LT.	639		710.20															
	LT.	639	OUT		705.80	695.40					64					X		X	X
-Y21-																			
STA. 13+88	LT.	640																	
	LT.	640	641						72								X	X	X
STA. 14+08	LT.	641																	
STA. 18+00	LT.	642		762.04															
	LT.	642	OUT		759.04	758.63			52								X	X	X
STA. 20+00	LT.	643		767.50															
	LT./RT.	643	644		764.50	764.38			44								X	X	X
SHEET TOTAL									260		304			24					
										136									

STATION	STRUCTURE NO. FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)
-Y13-																													
	621	623																											
STA. 30+95	623																												
STA. 31+37	624																												
	624	OUT																											
STA. 34+48	625																												
-Y13RPB-																													
STA. 16+50	626																												
	626	OUT																											
-L- STA. 207+46	627																												
-Y18-																													
STA. 11+81	628																												
	628	OUT																											
-Y19-																													
STA. 10+51	629																												
	629	630																											
STA. 11+25	630																												
-Y20-																													
STA. 11+07	631																												
	631	632																											
STA. 11+06	632																												
-Y20A-																													
STA. 11+13	633																												
-Y20B-																													
STA. 14+97	636																												
	636	637																											
STA. 14+99	637																												
	637	638																											
STA. 15+50	638																												
	638	639																											
STA. 15+49	639																												
	639	OUT																											
-Y21-																													
STA. 13+88	640																												
	640	641																											
STA. 14+08	641																												
STA. 18+00	642																												
	642	OUT																											
STA. 20+00	643																												
	643	644																											
SHEET TOTAL																		128											

STATION	STRUCTURE NO. FROM	TO	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-Y13-																																		
	621	623																																
STA. 30+95	623				1													1				1											76	REMOVE EXIST. 24" RCP
STA. 31+37	624				1	5.0	2.05																		1									SLAB LID
	624	OUT	4.5																															
STA. 34+48	625																														.4465			
-Y13RPB-																																		
STA. 16+50	626				1													1				1												
	626	OUT																																
-L- STA. 207+46	627																																44	REMOVE EXIST. 15" RCP
-Y18-																																		
STA. 11+81	628				1													1				1												
	628	OUT																															132	REMOVE EXIST. 24" RCP
-Y19-																																		
STA. 10+51	629				1													1				1												
	629	630																																
STA. 11+25	630				1													1				1												
-Y20-																																		
STA. 11+07	631				1			1			1																							
	631	632																																
STA. 11+06	632				1			1		1																								
-Y20A-																																		
STA. 11+13	633																																	
-Y20B-																																		
STA. 14+97	636				1													1				1												
	636	637																																
STA. 14+99	637				1	2.36																	1					1						
	637	638																																
STA. 15+50	638				1	2.1																	1					1						
	638	639																												2@24"				
STA. 15+49	639				1																				1	1								
	639	OUT																												2@24"				
-Y21-																																		
STA. 13+88	640				1													1				1												
	640	641																															80	REMOVE EXIST. 18" RCP & HW
STA. 14+08	641				1																						1							4 THROAT OPENING
STA. 18+00	642				1			1		1																								
	642	OUT																																
STA. 20+00	643				1			1		1																								
	643	644																																
SHEET TOTAL					16		2.05	4		3	1							7				7	2		2	1	1	2		4@24"			200	
						9.46																									.4465			

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

4/04/06

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4/04/06

COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-AE

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, 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
STA. 20+00	RT.	644		767.72															
	RT.	644	OUT		764.38	751.64			84							X		X	X
STA. 23+33	RT.	645		775.84															
	RT.	645	646		770.40	771.00													
STA. 25+30	RT.	646		778.15															
	RT.	646	647		771.00	771.40													
STA. 26+71	RT.	647		774.40															
STA. 25+50	LT.	648																	
STA. 19+17	RT.	649																	
–Y21LPB–																			
STA. 13+84	LT.	650		757.66															
	LT.	650	651		754.66	753.34													
	LT.	650	OUT		730.00	723.24													
STA. 13+36	LT.	651		756.34															
–Y21RPB–																			
STA. 11+59	LT.	652			726.29						44					X		X	X
–Y22–																			
STA. 12+33	RT.	653																	
	RT.	653	OUT						20								X	X	X
SHEET TOTAL									104		44								
PROJECT TOTAL									4868		1592		628		28				
								12		2120		936		120					
TEMPORARY DRAINAGE (SEE SHEET 23A AND TMP PLANS FOR TEMPORARY PIPE LOCATIONS)																			
–L– STA. 187+00	RT.								48										
–L– STA. 189+15	RT.								24										
–L– STA. 190+40	RT.								40										
–L– STA. 191+45	RT.									48									
–L– STA. 193+15	RT.									44									
–L– STA. 193+50	RT.									12									
–L– STA. 258+00	RT.										24								
–L– STA. 261+60	RT.								56										
–Y21DETC–																			
STA. 10+48	RT.	655																	
		655	656							108						X	X	X	
STA. 10+49	LT.	656																	
		656	OUT																
		656	657							72						X	X	X	
STA. 11+24		657																	
TOTAL									168	284	24								
GRAND TOTAL									5036		1616		628		28				
								12		2404		936		120					
SAY																			

STATION	FROM	TO	C.S. PIPE 12"	15"	18"	24"	30"	36"	42"	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
THICKNESS OR GAUGE			.064	.064	.064	.064	.079	.079	.109															
STA. 20+00	644																							
	644	OUT																						
STA. 23+33	645																							
	645	646																192						
STA. 25+30	646																							
	646	647																136						
STA. 26+71	647																							
STA. 25+50	648																							
STA. 19+17	649																							
–Y21LPB–																								
STA. 13+84	650																							
	650	651																52						
	650	OUT																			112			
STA. 13+36	651																							
–Y21RPB–																								
STA. 11+59	652																							
–Y22–																								
STA. 12+33	653																							
	653	OUT																						
SHEET TOTAL																		380			112			
PROJECT TOTAL				912		100					4068		1524		80			26172		2616				
										2668		2292		92					1632		1104			
TEMPORARY DRAINAGE																								
–L– STA. 187+00																								
–L– STA. 189+15																								
–L– STA. 190+40																								
–L– STA. 191+45																								
–L– STA. 193+15																								
–L– STA. 193+50																								
–L– STA. 258+00																								
–L– STA. 261+60																								
–Y21DETC–																								
STA. 10+48	655																							
	655	656																						
STA. 10+49	656																							
	656	OUT									16													
	656	657																						
STA. 11+24	657																							
TOTAL											16													
GRAND TOTAL				912		100					4084		1524		80			26172		2616				
										2668		2292		92					1632		1104			
SAY																								

STATION	FROM	TO	42" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	48" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	HAZARDOUS SPILL BASIN W/SLUICE GATE	36" WELDED STEEL PIPE (TRENCHLESS INSTALLATION)	36" R.C. PIPE (CLASS V)	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* 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 CATCH BASIN	DROP INLET
STA. 20+00	644									1			1			1		
	644	OUT																
STA. 23+33	645									1	.44							
	645	646																
STA. 25+30	646									1	2.15		1			1	1	
	646	647																
STA. 26+71	647									1			1			1		
STA. 25+50	648																	
STA. 19+17	649																	
–Y21LPB–																		
STA. 13+84	650									1	5.0	17.66						
	650	651																
	650	OUT																
STA. 13+36	651									1			1			1	1	
–Y21RPB–																		
STA. 11+59	652																	
–Y22–																		
STA. 12+33	653									1			1		1			
	653	OUT																
SHEET TOTAL										7	7.59		5		1	4	2	
												17.66						
PROJECT TOTAL			108		1	168	116	15.7		583		41.36		31	149	146	56	35
				100							161.41		326					
TEMPORARY DRAINAGE																		
–L– STA. 187+00																		
–L– STA. 189+15																		
–L– STA. 190+40																		
–L– STA. 191+45																		
–L– STA. 193+15																		
–L– STA. 193+50																		
–L– STA. 258+00																		
–L– STA. 261+60																		
–Y21DETC–																		
STA. 10+48	655									1								
	655	656																
STA. 10+49	656									1								
	656	OUT																
	656	657																
STA. 11+24	657									1								
TOTAL										3								
GRAND TOTAL			108		1	168	116	15.7		586		41.36		31	149	146	56	35
				100							161.41		326					
SAY								16				213						

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	T.B.J.B. STD. 840.34	G.D.I. (N.S.) FRAME WITH ONE GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	OTCB STD. 840.04 OR 840.05	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
STA. 20+00	644																					
	644	OUT																2@15"				
STA. 23+33	645															1						USE STD. 840.13 CONCRETE BRIDGE DROP INLET
	645	646																				
STA. 25+30	646																				24	REMOVE EXIST. 15" RCP
	646	647																			20	REMOVE EXIST. 15" RCP
STA. 26+71	647																					
STA. 25+50	648																				20	REMOVE EXIST. 12" RCP
STA. 19+17	649																				36	REMOVE EXIST. 18" RCP
–Y21LPB–																						
STA. 13+84	650							1						1								
	650	651																				
	650	OUT																				
STA. 13+36	651																					
–Y21RPB–																						
STA. 11+59	652																	2@18"	.4465			REMOVE EXIST. FES
–Y22–																						
STA. 12+33	653																				48	REMOVE EXIST. 15" HDPE & CB
	653	OUT																				
SHEET TOTAL								1						1		1		2@15" 2@18"			148	
																			.4465			
PROJECT TOTAL			71	71	2		7	4	2	81	11	9	37	29	4	40	10		16		7886	(12) SLAB LID (1) ADJUST J.B.
						120												29@15"		.74		(2) CONVERT D.I. TO C.B.
																		15@18"				(1) CONVERT D.I. TO J.B.
																		6@24"				(1) CONVERT C.B. TO J.B.
TEMPORARY DRAINAGE																						
–L– STA. 187+00																					48	TEMPORARY 15" PIPE
–L– STA. 189+15																			.3990		24	TEMPORARY 15" PIPE
–L– STA. 190+40																					40	TEMPORARY 15" PIPE
–L– STA. 191+45																					48	TEMPORARY 18" PIPE
–L– STA. 193+15																					44	TEMPORARY 18" PIPE
–L– STA. 193+50																			.4465		12	TEMPORARY 18" PIPE
–L– STA. 258+00																			.5526		24	TEMPORARY 24" PIPE
–L– STA. 261+60																					56	TEMPORARY 15" PIPE
–Y21DETC–																						
STA. 10+48	655					1				1												TEMPORARY DRAINAGE
	655	656																			106	TEMPORARY 18" PIPE
STA. 10+49	656												1									TEMPORARY DRAINAGE SLAB LID
	656	OUT																	.4465		16	TEMPORARY 18" PIPE
	656	657																			72	TEMPORARY 18" PIPE
STA. 11+24	657					1				1												TEMPORARY DRAINAGE
TOTAL						2				2			1						1.8446		490	
GRAND TOTAL			71	71	2		7	4	2	83	11	9	38	29	4	40	10		17.8446		8376	(13) SLAB LID (1) ADJUST J.B.
						122												29@15"		.74		(2) CONVERT D.I. TO C.B.
																		15@18"				(1) CONVERT D.I. TO J.B.
																		6@24"				(1) CONVERT C.B. TO J.B.
SAY																			18	1.0		

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

6/21/00

COMPUTED BY: PJS DATE: 02/17/10
CHECKED BY: JBG DATE: 05/05/11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-AF

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 54"	60"	66"	72"	78"	84"	BITUMINOUS COATED C.S. PIPE TYPE B 54" .109	54" .138	54" .168	54" SHOP ELON-GATED .138	54" SHOP ELON-GATED .168	60" .138	60" .168	66" .138	66" .168	72" .138	72" .168	STRUCTURAL PLATE PIPE 60" 12	60" 10	66" 12	66" 10	60" CLASS V R. C. PIPE	66" CLASS V R. C. PIPE	54" WELDED STEEL PIPE LINER	60" WELDED STEEL PIPE LINER	REINFORCED ENDWALLS WITH R.C. – C.Y.	REINFORCED ENDWALLS WITH C.S. – C.Y.	MASONARY DRAINAGE STRUCTURES CUBIC YARDS	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 CATCH BASIN	DROP INLET	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN.FT.	REMARKS
–L– STA. 140+42	LT.	171								36																				6.3											3.1307		
–L– STA. 148+89	LT.	186			770.54																							44				6.3									3.1307		REMOVE EXIST. HW
	LT./RT.	186	187																											168													
–L– STA. 150+43	RT.	187		777.00																													7.911						1	1				
	RT.	187	OUT		769.65					80																															3.1307		
–L– STA. 158+98	LT.	198		777.00																													3.481						1				SLAB LID
	LT.	198	OUT		770.25	772.50		28																								5.0										
–L– STA. 158+94	RT.	207		777.00																													4.391						1				SLAB LID
	RT.	207	OUT		769.03	768.89		16																																		
–L– STA. 210+02	LT.	286		747.04																													3.448						1				SLAB LID
	LT.	286	287		740.74	741.65		52																																		
	LT.	286	OUT		740.47	738.18		8																																		
–L– STA. 209+56	LT.	287		748.00																													3.481						1				SLAB LID
–L– STA. 209+05	RT.	288			748.35			16																								5.0									2.5793		
–L– STA. 290+90	RT.	434		711.10																												5.6		4.10				1				REMOVE EXIST. HW, SLAB LID
	RT.	IN	434		704.25	705.60																								72												CLASS V R.C. PIPE
	LT./RT.	434	634																												208												
–L– STA. 292+63	RT.	435		711.20																													6.15						1				REMOVE EXIST. HW, SLAB LID
	RT.	IN	435		704.37	708.90																								48				5.6										CLASS V R.C. PIPE
	LT./RT.	435	635																												200												
–Y13– STA. 30+10	LT.	622		767.15																													3.908						1				SLAB LID
	LT.	622	OUT		760.87	760.00		24																																		
–Y20B–																																												
STA. 14+20	LT.	634		706.60																													4.10						1				SLAB LID
	LT.	634	OUT		699.81	695.40																								136				7.9										
STA. 14+66	LT.	635		704.10																													4.10						1				SLAB LID
	LT.	635	OUT		697.32	695.40																								116												
SHEET TOTAL								144		164																				372	128	408	168	41.7		45.07				10	1		11.9714		
PROJECT TOTAL								144		164																				372	128	408	168	41.7		45.07				10	1		11.97		
SAY																																	42		46							12		

ABBREVIATIONS	
C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: PJS DATE: 07/12/10
CHECKED BY: DWG DATE: 01/14/11

"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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-AG

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			REMOVE EXISTING GUARDRAIL			REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	TYPE 350	TYPE B-77	CAT-1	TYPE III	TERMINAL SECTIONS	TEMP. TYPE 350	TEMP. CAT-1	TYPE M-350		NO.	PERMITTED G	PERMITTED NG			
-L-	17+50.00	22+50.00	LT.	500			22+00.00	17+50.00	8	11	50		1		1		1									640			
-L-	32+00.00	36+50.00	RT.	450			33+00.00	36+50.00	8	11	50		1		1		1												
-L-	32+00.00	37+00.00	LT.	500			36+00.00	32+00.00	8	11	50		1		1		1												
-L-	48+00.00	50+50.00	RT.	250			49+00.00	50+50.00	8	11	50		1		1		1												
-L-	97+50.00	99+00.00	RT.	150			98+50.00	99+00.00	8	11	50		1		1		1												
-L-	122+50.00	130+50.00	RT.	800			123+50.00	130+50.00	8/14	11/14	50		1		1		1												
-L-	123+00.00	125+50.00	LT.	250			124+50.00	123+00.00	8	11	50		1		1		1												
-L-	139+00.00	141+50.00	LT.	250			140+50.00	139+00.00	14	14	50		1		1		1												
-L-	147+50.00	151+37.50	LT.	387.5			151+37.50	147+50.00	14	14	50		1		1		1									380			
-L-	148+00.00	153+00.00	RT.	500			149+00.00	153+00.00	14	14	50		1		1		1									603			
-L-	157+50.00	159+00.00	RT.	150			158+50.00	159+00.00	14	14	50		1		1		1												
-L-	159+00.00	161+00.00	LT.	200			159+00.00	160+00.00	14	14	50		1		1		1												
-L-	182+50.00	190+50.00	LT.	800			189+50.00	182+50.00	14	14	50		1		1		1												
-L-	183+12.50	185+50.00	RT.	237.5			183+12.50	185+50.00	14	14	50		1		1		1												
-L-	201+18.48	202+68.48	RT.	150			201+18.48	202+68.48	8	11	50		1		1	1										102			
-L-	201+48.02	202+49.27	LT. MED.	100												1							1		X				
-L-	201+48.02	202+54.73	RT. MED.	112.5												1										103			
-L-	203+54.27	204+60.98	LT. MED.	112.5												1													
-L-	203+59.73	204+60.98	RT. MED.	100												1							1		X	102			
-L-	203+38.09	212+00.59	LT.	862.5			211+00.59	203+38.09	14	14	50		1		1	1													
-L-	203+73.48	204+73.48	RT.	100			203+73.48	204+73.48	8	11						1	1									102			
-L-	223+50.00	226+50.00	RT.	300			223+50.00	226+50.00	14	14	50		1		1		1												
-L-	226+00.00	229+00.00	LT.	300			228+00.00	226+00.00	14	14	50		1		1		1												
-L-	240+00.00	242+00.00	LT.	200			241+00.00	240+00.00	14	14	50		1		1		1												
-L-	247+50.00	253+00.00	RT.	550			248+50.00	253+00.00	14	14	50		1		1		1												
-L-	250+00.00	257+50.00	LT.	750			256+50.00	250+00.00	14	14	50		1		1		1												
-L-	265+50.00	271+37.50	LT.	587.5			271+37.50	265+50.00	14	14	50		1		1		1												
-L-	283+50.00	294+00.00	RT.	1050			284+50.00	294+00.00	14	14	50		1		1		1									1268			
-L-	310+00.00	313+00.00	LT.	300			312+00.00	310+00.00	14	14	50		1		1		1									340			
-L-	310+50.00	312+00.00	RT.	150			311+50.00	312+00.00	14	14	50		1		1		1												
-L-	323+15.50	329+00.00	LT.	587.5	50		328+00.00	323+15.50	14	14	50		1		1		1									515			
-L-	323+84.10	326+50.00	RT.	250	150			326+50.00	14	14					1		1									440			
-Y10-	22+44.91	23+69.91	RT.	125			22+44.91	23+69.91	8	11	50		1		1	1													
-Y10-	25+28.69	27+41.19	LT.	212.5			27+41.19	25+28.69	8	11	50		1		1	1													
-Y10B-	11+97.00		CL	37.5															2									BARRICADE
-Y13-	21+57.00	22+32.00	RT.	75			22+32.00				50		1		1	1													
-Y13-	24+44.00	25+19.00	LT.	75			24+44.00				50		1		1	1													
-Y13-	30+00.00	33+00.00	LT.	300			32+00.00	30+00.00	8	11	50		1		1		1												
-Y13-	30+12.50	32+50.00	RT.	237.5			30+12.50	32+50.00	8	11	50		1		1		1												
-Y13RPC-	15+25.00	16+00.00	RT.	75			16+00.00				50		1		1	1													
-Y13RPD-	10+66.75	12+79.25	LT.	212.5			13+79.25	10+66.75	12	15	50		1		1		1												
-Y17-	13+67.19	15+17.19	RT.	150			13+67.19	15+17.19	14	14	50		1					1											
-Y17-	17+32.34	18+82.34	LT.	150			18+82.34	17+32.34	14	14	50		1					1											
-Y20B-	12+25.00	16+75.00	LT.	450			16+00.00	13+00.00	6	9	50	50	1	1	2														
-Y21-	19+71.36	21+33.86	RT.	162.5			19+71.36	21+33.86	14	14	143.75		3.5		1			1								103			
-Y21-	23+24.06	25+49.06	LT.	225			25+49.06	23+24.06	14	14	206.25		4		1			1								127			
-Y21RPB-	10+08.50	15+21.00	LT.	512.5			15+21.00	10+08.50	12	15	50		1		1		1												
US 29 NBL	OVERHEAD ASSEMBLY "A" EXIT 149			987.5											1							4				50			REMOVE EXISTING GRAU-350
US 29 SBL	OVERHEAD ASSEMBLY "B" EXIT 153			725																		4							
			SUBTOTALS	16700	200										42	12	30	4	2			8		2		4875			
DEDUCTIONS FOR ANCHORS			42 GRAU-350 @ 50'	-2100																									
			30 CAT-1 @ 6.25'	-187.5																									
			12 TYPE B-77 @ 18.75'	-225																									
			4 TYPE III @ 18.75'	-75																									
			8 TYPE M-350 @ 37.50'	-300																									
			PROJECT TOTALS	13812.5	200										42	12	30	4	2			8		2		4875			
ADDITIONAL GUARDRAIL POSTS = 40 EA.			SAY	13875	225																					4900			
TEMPORARY GUARDRAIL																													
-L-	288+00.00	294+00.00	RT.	600																1	1								
-Y21DETB-	10+55.50	13+43.00	LT.	287.50																2									
			SUBTOTALS	887.50																3	1								
DEDUCTIONS FOR TEMP. ANCHORS			3 GRAU-350 @ 50'	-150																									
			1 CAT-1 @ 6.25'	-6.25																									
			PROJECT TOTALS	731.25																3	1								
			SAY	750																									

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-AH

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WOVEN WIRE FENCE, 47" FABRIC

STATION TO STATION	LOCATION LT/RT/CL	47" FABRIC LF	4" POSTS	5" POSTS
-L- 96+20 TO 103+16	LT	696.00	44	11
-Y10RPB- 10+00	LT	8.00		3
-Y10RPB- 10+00 TO 20+10	LT	1010.00	64	15
-Y10RPB- 20+10 TO 20+85	LT	78.18	4	3
-Y10- 20+50 TO 21+50	RT	100.46	6	2
-L- 96+20 TO 100+50	RT	430.00	26	8
-L- 100+50 TO 102+12.26	RT	112.28	6	3
-Y10RPC- 10+00 TO 17+77	RT	722.40	45	12
-Y10RPC- 17+77 TO 18+07	RT	47.46	2	3
-Y10RPC- 18+07 TO 18+78	RT	107.02	6	3
-Y10RPC- 18+78 TO 20+20	RT	158.56	10	3
-Y10RPC- 20+20 TO 20+52	RT	54.56	2	3
-Y10- 29+18 TO 31+30	RT	219.95	13	5
-Y10- 16+80 TO 20+96	LT	413.55	25	8
-Y10- 20+96 TO 21+60	LT	74.19	4	3
-Y10RPA- 11+39 TO 16+80	RT	542.77	34	9
-Y10RPA- 11+23 TO 11+39	RT	20.21	0	3
-L- 119+72 TO 128+00	LT	838.54	54	11
-Y10- 25+09 TO 31+20	LT	594.76	36	11
-L- 113+97.66 TO 130+70	RT	1647.49	105	23
-L- 185+00 TO 193+16	LT	874.87	50	23
-L- 193+16	LT	8.00	0	3
-Y13RPB- 10+00 TO 19+00	LT	900.14	56	15
-Y13RPB- 19+00 TO 19+25	LT	35.80	1	3
-Y13- 14+95 TO 17+50	RT	255.33	17	2
-L- 189+00 TO 195+31	RT	618.90	37	14
-L- 195+31	RT	25.90	0	3
-L- 195+31 TO -Y13RPC- 16+00	RT	640.72	39	12
-Y13RPC- 16+00	RT	16.23	0	3
-Y13RPC- 16+00/-Y13- 27+80	RT	334.73	21	6
-Y13- 27+80	RT	12.85	0	3
-Y13- 27+80 TO 29+00	RT	120.68	8	2
-Y13- 19+10 TO 20+12	LT	101.57	5	5
-Y13- 20+12 TO 20+90	LT	84.38	4	3
-L- 202+99 TO 208+19	LT	566.72	37	6
-L- 208+19 TO 208+65	LT	47.35	2	3
-L- 208+65 TO 209+55	LT	119.80	7	3
-L- 209+55 TO 210+25	LT	69.51	2	5
-L- 210+25 TO 211+68	LT	155.00	8	5
-L- 211+68 TO 218+15	LT	647.00	40	11
-Y13- 27+07 TO 27+67	LT	77.85	4	3
-Y13- 27+67 TO 29+00	LT	132.06	7	5
-Y13RPD- 13+00 TO 16+11	LT	294.48	19	3
-Y13RPD- 12+25 TO 13+00	LT	78.19	4	3
-Y13RPD- 11+80 TO 12+25	LT	40.06	2	2
-Y13RPD- 11+25 TO 11+72	LT	41.15	0	5
-Y13RPD- 10+80 TO 11+25	LT	45.31	2	3
-Y13RPD- 10+80	LT	20.41	0	3
-L- 209+88 TO 216+71.25	RT	689.74	42	14
-L- 288+00 TO -Y21RPB- 16+89	LT	1733.23	106	32
-Y21RPB- 16+89 TO 17+17	LT	35.40	1	3
-Y21- 16+15 TO 17+86	RT	173.48	11	2
-L- 286+50 TO 290+00	RT	358.53	21	8
-L- 290+00 TO 290+39	RT	41.05	2	2
-L- 290+46 TO 291+70	RT	126.91	6	5
-L- 291+70 TO 292+74	RT	104.71	6	2
-L- 292+81 TO 293+16	RT	34.73	0	5
-L- 293+16	RT	15.00	0	3
-L- 293+16 TO 295+00	RT	189.66	12	3
-L- 295+00 TO 297+00	RT	196.17	12	3
-L- 297+00 TO 297+36	RT	41.39	1	3
-Y21RPC- 10+00 TO 11+20	RT	88.74	5	3
-Y21RPC- 11+20 TO 13+62	RT	108.08	6	3
-Y21RPC- 13+62 TO 14+14	RT	76.23	4	3
-Y21RPC- 14+14 TO 14+35	RT	66.61	3	3
-Y21RPC- 14+35 TO 15+64	RT	226.58	15	3
-Y21RPC- 15+64 TO 15+66	RT	14.50	0	3
Y21RPC 15+66 TO Y21 27+72	RT	131.55	7	5
-Y21- 15+15 TO 18+28	LT	306.15	18	7
-Y21- 18+88 TO 21+48	LT	259.28	16	5
-L- 304+93 TO 308+45	LT	355.07	23	5
-L- 309+05 TO 310+00	LT	95.00	4	5
-L- 310+00 TO 311+57	LT	167.87	11	2
-L- 311+76 TO 312+40	LT	85.09	3	5
-L- 312+40 TO 313+50	LT	110.00	7	2
-Y21- 26+65 TO 27+25	LT	63.62	2	4
-Y21- 25+78 TO 26+05	LT	28.17	0	5
-Y21- 25+03 TO 25+78	LT	99.23	5	3
-L- 304+94 TO 309+75	RT	502.33	33	6
-L- 309+75 TO 310+88	RT	113.24	7	2
-L- 311+08 TO 312+15	RT	117.92	6	5
-L- 312+15 TO 313+50	RT	135.00	9	2
TOTALS		21131.57	1260	465
SAY		21,140	1,270	470

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2	SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	24+78	28+00	LT/RT	698.21		TEMPORARY PAVEMENT			
-L-	28+00	33+78	LT/RT	1541.33	-L-	111+00	122+00	RT	2933.33
-L-	36+40	37+07	RT	395.01	-L-	181+74	199+00	RT	3835.56
-L-	42+31	52+00	LT/RT	2099.50	-L-	198+50	202+00	LT	155.56
-L-	52+00	55+75	LT/RT	1000	-L-	204+00	207+90	LT	173.33
-L-	59+98	61+96	LT/RT	528.56	-L-	252+78	258+94	RT	1368.62
-L-	66+73	68+35	RT	902.85	-L-	266+75	270+74	RT	532.40
-L-	70+46	75+03	LT/RT	1100.87	-L-	288+92	311+31	RT	5970.67
-L-	80+34	83+32	LT/RT	963.87	-Y17DET-	16+16.11	23+94.72	RT	2768.39
-L-	95+27	105+00	LT/RT	2108.17					
-L-	105+00	111+00	LT/RT	1668.45	-Y10DETB-	10+12.79	12+00.61	CL	1559.40
-L-	109+30	112+83	RT	1554.54	-Y10DETB-	12+00.61	12+08	CL	44.41
-L-	111+00	122+00	LT/RT	2933.33	-Y10DETB-	12+08	13+88	CL	988.87
-L-	114+10	116+43	LT	1444.64	-Y10DETB-	13+88	15+03.52	CL	564.76
-L-	114+14	120+69	LT	3446.13	-Y10DETB-	15+03.52	16+13.84	CL	754.02
-L-	122+00	123+00	LT/RT	250	-Y10DETC-	10+15.62	11+46.82	CL	1281.29
-L-	123+00	125+00	LT/RT	433.33	-Y10DETC-	11+46.82	12+03	CL	340.24
-L-	125+00	128+56	LT/RT	867.11	-Y10DETC-	12+03	13+83	CL	986.33
-L-	137+06	138+77	LT/RT	299.23	-Y10DETC-	13+83	15+07.79	CL	610.08
-L-	147+27	150+53	LT/RT	706.33	-Y10DETC-	15+07.79	15+92.84	CL	704.61
-L-	159+32	163+75	LT/RT	1181.33	-Y21DETB-	10+12.57	11+50.33	CL	1262.73
-L-	172+25	174+52	LT/RT	491.83	-Y21DETB-	11+50.33	11+75	CL	153.51
-L-	183+64	200+00	LT/RT	4362.67	-Y21DETB-	11+75	13+55	CL	997.71
-L-	193+42	202+08	LT	1722.33	-Y21DETB-	13+55	15+53.36	CL	969.76
-L-	195+32	203+66	RT	1858.05	-Y21DETB-	15+53.36	16+74.95	CL	831.35
-L-	202+55	209+00	LT	1428.99	-Y21DETC-	10+11.26	11+22.08	CL	1205.24
-L-	204+23	211+09	RT	1549.71	-Y21DETC-	11+22.08	11+25	CL	18.03
-L-	207+50	209+00	LT/RT	400	-Y21DETC-	11+25	13+05	CL	995.01
-L-	209+00	214+00	LT/RT	1224.01	-Y21DETC-	13+05	15+21.31	CL	1058.84
-L-	214+00	218+97	LT/RT	1076.83	-Y21DETC-	15+21.31	15+94.67	CL	638.00
-L-	227+33	234+12	LT/RT	1608.24					
-L-	252+78	267+30	LT/RT	3872					
-L-	276+12	280+22	LT/RT	1093.33					
-L-	288+92	311+31	LT/RT	5970.67					
-L-	297+50	304+09	LT	2821.07					
-L-	295+09	304+05	RT	1616.75					
-L-	304+26	312+76	RT	1831.33					
-L-	327+88	329+61	LT/RT	492.48					
-Y8-	15+20	15+77	LT/RT	228					
-Y9-	10+30	11+98	LT/RT	1468.02					
-Y10-	23+37	23+81	LT/RT	117.33					
-Y10-	25+08	25+60	LT/RT	144.44					
-Y10B-	11+87	14+60	LT/RT	611.09					
-Y11-	12+50	13+25	LT/RT	150					
-Y14-	11+54	13+48	LT/RT	714.35					
-Y17-	15+13	15+59	LT/RT	89.90					
-Y17-	16+85	17+25	LT/RT	83.59					
-Y21-	13+92	17+48	LT	976.67					
-Y21-	13+98	14+16	LT	59.35					
-Y21-	21+32	21+62	LT/RT	88.37					
-Y21-	22+85	23+04	LT/RT	57.48				TOTAL	98891.22
-Y21-	26+50	29+00	LT/RT	804.59					
-DRV2-	10+60	10+80	LT/RT	52.89				SAY	98,900

CABLE GUIDERAIL SUMMARY

SURVEY LINE	LOCATION	LENGTH	END ANCHOR UNIT	COMMENTS
US 29 NBL	OVERHEAD ASSEMBLY "A" EXIT 149	477.50	2	REMOVE 3-STRAND CABLE GUIDERAIL (STOCKPILE POSTS)
US 29 SBL	OVERHEAD ASSEMBLY "B" EXIT 153	477.50	2	REMOVE 3-STRAND CABLE GUIDERAIL (STOCKPILE POSTS)
	SUBTOTAL:	955	4	
	GRAND TOTALS:	955	4	
	SAY:	975	4	

SUMMARY OF BREAKING EXISTING PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	200+00	202+45	RT	653.33
-L-	203+70	207+50	RT	1013.33
-Y10-	21+00	23+37	LT/RT	965.87
-Y10-	25+60	29+00	LT/RT	1538.67
-Y21-	17+48	21+32	LT/RT	947.12
-Y21-	23+04	26+50	LT/RT	1042.66
			TOTAL:	6161.00
			SAY:	6,200

PRECAST REINFORCED CONCRETE BARRIER, SINGLE FACED

SURVEY LINE	LOCATION LT/RT/CL	STATION	STATION	LENGTH
-Y13-	LT	22+74.00	24+44.00	170.00
-Y13-	RT	22+32.00	24+14.00	182.00
-Y13-	RT	26+41.00	27+80.00	158.00
-Y13RPC-	RT	16+00.00	17+68.00	177.00
			TOTAL:	687.0
			SAY:	700

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-L- RT	32+50	36+50	400
-L- RT	48+50	50+50	200
-L- RT	123+00	126+85	385
-L- RT	208+50	210+00	150
-Y10- LT	25+50	26+80	130
		TOTAL:	1265
		SAY:	1300

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-A1

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION		UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT PLUS %	BORROW	TOTAL WASTE
STATION	STATION					
–L– TEMP. PVMT. RIGHT						
SUMMARY NO. 1						
–L– 111+00.00	–L– 122+00.00	11193		102		11091
–Y10DETB– 12+00.61	–Y10DETB– 15+03.52	23885				23885
–Y10DETC– 11+25.77	–Y10DETC– 15+07.79	9807		486		9321
TOTAL SUMMARY NO. 1		44885		588		44297
SUMMARY NO. 2						
–L– 181+74.00	–L– 199+00.00	2016		1464		552
TOTAL SUMMARY NO. 2		2016		1464		552
SUMMARY NO. 3						
–L– 252+78.00	–L– 270+74.00	8769		1232		7537
TOTAL SUMMARY NO. 3		8769		1232		7537
SUMMARY NO. 4						
–L– 288+92.00	–L– 311+30.00	13047		23458	10411	
–Y21DETB– 10+12.57	–Y21DETB– 16+75.40	3700		10680	6980	
–Y21DETC– 10+11.26	–Y21DETC– 15+94.67	48535		111		48424
TOTAL SUMMARY NO. 4		65282		34249	17391	48424
CONSTRUCT –L– LEFT						
SUMMARY NO. 5						
–L– 14+00.00	–L– 46+00.00	6189		6554	365	
–Y2– 11+05.00	–Y2– 12+61.53	191		15		176
–DRV4– 10+35.00	–DRV4– 11+75.00	22		482	460	
TOTAL SUMMARY NO. 5		6402		7051	825	176
SUMMARY NO. 6						
–L– 46+00.00	–L– 76+00.00	5419		2591		2828
–Y3– 11+50.00	–Y3– 13+68.59	28		887	859	
–Y5– 11+00.00	–Y5– 15+14.24	475		40		435
TOTAL SUMMARY NO. 6		5922		3518	859	3263
SUMMARY NO. 7						
–L– 76+00.00	–L– 94+00.00	4126		330		3796
–Y8– 15+20.00	–Y8– 16+28.66	311				311
–Y8A– 10+17.33	–Y8A– 24+38.36	5037		3658		1379
TOTAL SUMMARY NO. 7		9474		3988		5486
SUMMARY NO. 8						
–L– 94+00.00	–L– 113+50.00	24510		551		23959
–Y10– 12+50.00	–Y10– 23+64.10	1118		5643	4525	
–Y10RPB– 14+30.00	–Y10RPB– 20+95.67	10204		3654		6550
TOTAL SUMMARY NO. 8		35832		9848	4525	30509

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

LOCATION		UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT PLUS %	BORROW	TOTAL WASTE
STATION	STATION					
SUMMARY NO. 9						
–L– 113+50.00	–L– 146+00.00	9717		8678		1039
–Y10A– 10+20.00	–Y10A– 22+00.00	3514		6396	2882	
–Y10C– 10+80.00	–Y10C– 12+50.00	202				202
–Y10F– 10+18.00	–Y10F– 10+88.00	5		255	250	
–Y10RPA– 14+43.00	–Y10RPA– 17+38.94	2730		371		2359
TOTAL SUMMARY NO. 9		16168		15700	3132	3600
SUMMARY NO. 10						
–L– 146+00.00	–L– 179+00.00	2129		14422	12293	
–Y11– 11+25.00	–Y11– 13+41.41	731		41		690
–Y12– 10+00.00	–Y12– 14+97.97	289		1082	793	
TOTAL SUMMARY NO. 10		3149		15545	13086	690
SUMMARY NO. 11						
–L– 179+00.00	–L– 202+52.00	1511		48699	47188	
–Y13– 8+70.00	–Y13– 23+50.00	5646		839		4807
–Y13A– 13+00.00	–Y13A– 13+80.13	35		17		18
–Y13C– 10+00.00	–Y13C– 18+24.67	2609		2420		189
–DRV3– 10+15.00	–DRV3– 10+93.96	338		9		329
–Y13RPB– 13+00.00	–Y13RPB– 19+79.35	3861		545		3316
–Y13LPB– 12+15.00	–Y13LPB– 13+80.00	3		6294	6291	
TOTAL SUMMARY NO. 11		14003		58823	53479	8659
SUMMARY NO. 12						
–L– 203+57.00	–L– 239+00.00	3126		37554	34428	
–Y15– 12+60.00	–Y15– 13+88.65	38		161	123	
–Y16– 12+38.86	–Y16– 13+74.92	164		280	116	
TOTAL SUMMARY NO. 12		3328		37995	34667	
SUMMARY NO. 13						
–L– 239+00.00	–L– 271+50.00	11012		26102	15090	
–Y17– 13+00.00	–Y17– 15+31.75	52		148	96	
–Y18– 11+00.00	–Y18– 12+14.03	34		92	58	
TOTAL SUMMARY NO. 13		11098		26342	15244	
SUMMARY NO. 14						
–L– 271+50.00	–L– 304+00.00	3247		71200	67953	
–Y20A– 10+63.00	–Y20A– 12+11.01	937		29		908
–Y20B– 10+12.00	–Y20B– 13+00.00	4831		3362		1469
–Y21– 12+25.00	–Y21– 21+33.96	436		11103	10667	
–Y21A– 11+75.00	–Y21A– 13+67.93	108		132	121	97
–Y21RPB– 12+00.00	–Y21RPB– 17+49.57	755		15890	15135	
–Y21LPB– 12+00.00	–Y21LPB– 12+50.00	382				382
TOTAL SUMMARY NO. 14		10696		101716	93876	2856
SUMMARY NO. 15						
–L– 304+00.00	–L– 323+00.00	4646		13461	8815	
–Y22– 12+19.00	–Y22– 15+78.77	1147		284		863
TOTAL SUMMARY NO. 15		5793		13745	8815	863

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	3-AJ

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION		UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT PLUS %	BORROW	TOTAL WASTE
STATION	STATION					
SUMMARY NO. 16						
–L– 323+00.00	–L– 333+52.00	2677		20294	17617	
TOTAL SUMMARY NO. 16		2677		20294	17617	
CONSTRUCT –L– RIGHT						
SUMMARY NO. 17						
–L– 14+00.00	–L– 46+00.00	6764		6172	1550	2142
TOTAL SUMMARY NO. 17		6764		6172	1550	2142
SUMMARY NO. 18						
–L– 46+00.00	–L– 76+00.00	6095		6429	1905	1571
–Y4– 10+32.75	–Y4– 12+75.00	1172		42		1130
–Y6– 10+41.61	–Y6– 13+75.00	402		86		316
TOTAL SUMMARY NO. 18		7669		6557	1905	3017
SUMMARY NO. 19						
–L– 76+00.00	–L– 94+00.00	1302		1908	1013	407
–Y7– 10+34.44	–Y7– 11+00.00	141		22		119
–Y9– 10+33.05	–Y9– 12+25.00	811				811
TOTAL SUMMARY NO. 19		2254		1930	1013	1337
SUMMARY NO. 20						
–L– 94+00.00	–L– 113+50.00	8127		5382		2745
–Y10– 25+35.10	–Y10– 33+16.00	281		14253	13972	
–Y10RPC– 15+00.00	–Y10RPC– 20+90.66	4129		8864	4735	
–Y10LPC– 11+80.00	–Y10LPC– 13+50.00	3673		762		2911
TOTAL SUMMARY NO. 20		16210		29261	18707	5656
SUMMARY NO. 21						
–L– 113+50.00	–L– 146+00.00	2959		28898	25939	
TOTAL SUMMARY NO. 21		2959		28898	25939	
SUMMARY NO. 22						
–L– 146+00.00	–L– 179+00.00	1167		20793	19626	
–Y12– 15+64.86	–Y12– 20+00.00	85		460	375	
TOTAL SUMMARY NO. 22		1252		21253	20001	
TOTAL SUMMARY NO. 23						
–L– 179+00.00	–L– 202+52.00	2198		11295	9097	
–Y12B– 10+35.30	–Y12B– 12+80.00	790		42		748
–Y13– 23+50.00	–Y13– 35+50.00	3651		3780	129	
–Y13RPC– 13+80.00	–Y13RPC– 18+27.49	1207		756		451
–DRV1– 11+25.00	–DRV1– 12+24.14	39		45	6	
TOTAL SUMMARY NO. 23		7885		15918	9232	1199

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

LOCATION		UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT PLUS %	BORROW	TOTAL WASTE
STATION	STATION					
SUMMARY NO. 24						
–L– 203+57.00	–L– 239+00.00	6640		21750	15110	
–Y13RPD– 13+10.00	–Y13RPD– 16+73.75	1142		297		845
–Y14– 10+00.00	–Y14– 13+50.00	591		286		305
–Y14C– 10+00.00	–Y14C– 10+74.11	72		18		54
–Y15A– 10+32.77	–Y15A– 13+00.00	49		1587	1538	
–Y16A– 10+33.56	–Y16A– 11+20.00	10		132	122	
TOTAL SUMMARY NO. 24		8504		24070	16770	1204
SUMMARY NO. 25						
–L– 239+00.00	–L– 271+50.00	7007		22373	15366	
–Y17– 17+18.75	–Y17– 18+50.00	10		166	156	
–Y19– 10+36.53	–Y19– 12+05.00	238		261	23	
TOTAL SUMMARY NO. 25		7255		22800	15545	
SUMMARY NO. 26						
–L– 271+50.00	–L– 304+00.00	16877		32227	15350	
–DRV2– 10+35.43	–DRV2– 10+80.00	99				99
–Y20– 10+32.75	–Y20– 11+25.00	32		60	28	
–Y21– 23+23.96	–Y21– 29+00.00	1031		9585	8554	
–Y21RPC– 12+50.00	–Y21RPC– 17+31.51	33155		25709		7446
–Y21LPC– 11+70.00	–Y21LPC– 12+70.00	2100		91		2009
TOTAL SUMMARY NO. 26		53294		67672	23932	9554
SUMMARY NO. 27						
–L– 304+00.00	–L– 323+00.00	2792		5962	3170	
–Y22– 16+45.85	–Y22– 17+58.93	44		1530	1486	
TOTAL SUMMARY NO. 27		2836		7492	4656	
SUMMARY NO. 28						
–L– 323+00.00	–L– 333+52.00	6027		14716	8689	
TOTAL SUMMARY NO. 28		6027		14716	8689	
SUMMARY TOTALS		368403		598837	411455	181021
ROCK WASTE IN LIEU OF BORROW						
ADJUST FOR ROCK WASTE						
WASTE IN LIEU OF BORROW					–174542	–174542
SHOULDER MATERIAL				15240	15240	
LOSS DUE TO C&G		–21150			21150	
GRAND TOTALS		347253		614077	273303	6479
+5% TO REPLACE TOPSOIL IN BORROW PIT					13666	
PROJECT GRAND TOTALS		347253		614077	286969	6479
SAY		347,300			287000	
DRAINAGE DITCH EXCAVATION = 3124 CY						
EST. SHALLOW UNDERCUT BY STATIONS = 1970 CY						
EST. UNDERCUT CONTINGENCY = 5905 CY						
SELECT GRANULAR MATERIAL = 5000 CY						
FABRIC FOR SOIL STABILIZATION = 9000 SY						
CLASS IV SUBGRADE STABILIZATION MATERIAL = 3750 TONS						
UNDERDRAIN (6" PERFORATED SUBDRAIN PIPE) = 4000 LF						

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PROJ. REFERENCE NO.	SHEET NO.
U-3326A/B	3-AK

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	SALEM DISTRIBUTING COMPANY, INC.
2	4,5	KATHLEEN B. CASSADY AND HUSBAND WILLIAM J. CASSADY
3	4,5	RICHARD W. WIKLE AND WIFE CLAUDINE P. WIKLE
4	5	ROY GARLAND CHRISMON REBECCA RAKESTRAW
5	5,6	CLAUDINE P. WIKLE
6	5,6	HOLY INFANT CATHOLIC CHURCH
7	6,7	M. L. BOWES CONSTRUCTION CO.
8	6,7	RICHARD W. WIKLE AND WIFE CLAUDENE P. WIKLE
9	7	DONNIE L. TILLOTSON
10	7	J. EVERETT JOHNSON AND HELEN M. JOHNSON
11	7	CRESCENT PROPERTIES
12	7	H E A RENTALS
13	7,8	G. I. R. P. RICHARDSON IV JANE VEITH
14	7,8	MAULDIN PROPERTIES, LLC
15	8	WOODLAND HEIGHTS APARTMENTS, LLC A NORTH
		CAROLINA LIMITED LIABILITY COMPANY
16	8	87 PROPERTIES, LLC
17	8,9	CMH HOMES, INC. A TENNESSEE CORPORATION
18	8,9	QUALITY OIL COMPANY, LLC
19	8,9	BELMONT SQUARE SHOPPING CENTER, LLC A VIRGINIA
		LIMITED LIABILITY COMPANY
20	9	ASHCROFT BUSINEES PARK, LLC A NORTH CAROLINA
		LIMITED LIABILITY COMPANY
21	9	ELIXIR INDUSTRIES
22	9	ALEXANDER SANDS SMITH
23	9	MARK E. OVERBY AND WIFE DEBRA A. OVERBY
24	9	EUNICE JONES-OBENG
25	9,9A	SONSET HOLDING, LLC
25A	9A	REIDSVILLE BIBLE CHAPEL, INC.
26	9	BETA FLUID SYSTEMS, LLC
27	9	JOSEPH B. KING, JR.
28	9	JEFF WAYNE JOHNSON AND WIFE JAN APPLE JOHNSON
29	9	HILL/GRAY SEVEN, LLC
30	9	MELVIN S. KREIGSMAN
31	9,10	THERESA VAUGHN MCCOLLUM
32	9,10	ELDEN LONG DEWEY PRYER DOUGLAS CLYMER ALVIN A.
		KEEN TRUSTEES OF CHRISTIAN AND MISSIONARY
		ALLIANCE CHURCH OF REIDSVILLE, NORTH CAROLINA AND
		THEIR SUCCESSORS IN OFFICE
33	10	DANIEL K. BAILEY
34	10	ASHCROFT DEVELOPMENT, LLC A NORTH CAROLINA
		LIMITED LIABILITY COMPANY
35	10	ROBERT L. WHELESS JAN H. WHELESS
36	10	B & S SERVICES INC OF NC
37	10	MITCHELLENE A. MARTIN
38	10,11	ASHCROFT DEVELOPMENT LLC
39	10	JAMES L. THOMPSON, JR. FAMILY LIMITED PARTNERSHIP
40	10	ASHCROFT COMMONS, LLC A NORTH CAROLINA LIMITED
		LIABILITY COMPANY
41	10	CHARLES C. RHODES AND WIFE BETTIE STOCKS RHODES
42	10	KUO KANG HUANG AND WIFE LILING HUANG
42A	10,11	KUO KANG HUANG AND WIFE LILING HUANG
42B	11	KUO KANG HUANG AND WIFE LILING HUANG
43	10	HUGH W. COBB AND WIFE JUDITH T. COBB
44	10	NORTH CAROLINA FARM CREDIT, ACA
45	10,11	CURTIS L. BOOTH AND WIFE PEGGY S. BOOTH
46	11	ELIZABETH HOBBS HUX AND HUSBAND KENNETH
		JEFFERSON HUX
47	11	RENDAL CLAYTON PUTNAM AND WIFE CYNTHIA GENTRY
		PUTNAM

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
48	11	JAMES L. BOSWELL
49	11	JAMES L. THOMPSON, JR.
50	11	JOSEPH F. GREGORY
51	11	N.C.D.O.T.
52	11	FAITH CHRISTIAN CHURCH
53	11	BENNY L. GOODMAN NANCY DIANE BROOKS
54	11	RALPH PENN SCOGGINS AND LINDA K. SCOGGINS
55	11,26	R. P. RICHARDSON HEIRS
56	11	HUGH WELDON COBB, JR. AND WIFE JUDITH T. COBB
57	11	N.C.D.O.T.
58	11	BILLY JACK LEE
59	11	STEPHEN LEE MATKINS AND WIFE DORIS H. MATKINS
60	11	IUCILLE S. ANDERSON
61	11	CHARLES A. & SUSAN D. BRITT
61A	11	CHARLES A. & SUSAN D. BRITT
62	11	REIDSVILLE BUILDING GROUP, LLC
63	11	CHARLES A. & SUSAN D. BRITT
63A	11	S & E INVESTMENTS, LLC
64	11	CITY OF REIDSVILLE
65	11	HOMETRUST BANK
66	11	GLENNWOOD REIDSVILLE COMPANY, LLC A NORTH
		CAROLINA LIMITED LIABILITY COMPANY
67	11,12	R. E. FUTURE, LLC
68	11,12	H.E.A. RENTALS, LLC
69	12	GOODWILL INDUSTRIES OF CENTRAL NORTH CAROLINA, INC.
		A NORTH CAROLINA CORPORATION
70	12,13	ALVIS B. CARR, JR. AND WIFE JANICE T. CARR LIVING TRUST
71	13	DANNY W. TRENT
71A	13	GEORGE W. TRENT, JR STEPHANIE D. TRENT
72	13	CHARLES W. TRENT, JR. AND BETTY P. TRENT
73	13,14	STEPHEN E. SMITH
74	13,14	SUNNYCREST CHURCH OF CHRIST
75	14	STATE EMPLOYEES CREDIT UNION
76	14	REIDSVILLE CENTRE, LLC A NORTH CAROLINA LIMITED
		LIABILITY COMPANY
77	14	WILCOHESS, LLC
78	14,15	LIBBY HILL SEAFOOD, INC A NORTH CAROLINA
		CORPORATION
79	15	GOLDEN MULLETT, LLC A NORTH CAROLINA LIMITED
		LIABILITY COMPANY
80	15	NAGINBHAI G. PATEL AND WIFE MANJULABEN N. PATEL
81	15	ROBERT PERRY STUTTS, JR. AND WIFE ANNE LOVE STUTTS
82	15	JOHN D. LOVE OIL COMPANY
83	15	THE FIRST NATIONAL BANK OF REIDSVILLE, NORTH
		CAROLINA
84	15,15A	MEDIA GENERAL NEWSPAPERS, INC.
85	15,16	AXINN BROWNSVILLE, LLC
85A	15,16	CAINE FAMILY, LLC
86	15,15A,16	BODDIE-NOEL ENTERPRISES, INC. A NORTH CAROLINA
		CORPORATION
87	15A	REIDSVILLE OIL COMPANY
88	16	NELLIE K. LOFTIS CROUCH
89	16	SHRI LAXMI PARTNERSHIP, LLC
89A	15A,16	SHRI LAXMI PARTNERSHIP, LLC
90	16	ROCKINGHAM COUNTY, A BODY POLITIC
91	16	THOMAS F. WILKERSON AND BETTY RUTH WILKERSON
92	16,17	THE COURTYARD AT MT HERMON LLC
93	16,17	WALTER L. WRIGHT AND SANDRA D. WRIGHT
94	16,17	PIERCE AUTO
96	17	STARLING W. GUNN, SR. GLENDA T. GUNN

PROJ. REFERENCE NO.	SHEET NO.
U-3326A/B	3-AL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
97	17	HARRY L. MANUEL AND WIFE MARY L. MANUAL
98	17,27	WILLIAM BUSICK
99	17	KINNARNEY AND JERNIGAN PARTNERSHIP
100	17	REID P. KING AND WIFE BOBBIE K. KING
101	17,28	CARDINAL HOLDINGS, LLC
102	17,27	LOVE TRACTOR SALES, INC.
103	17	SMOTHERS WAREHOUSE, INC.
104	17	WILLIAM HARMON, JUDY HARMON, ET AL
105	17,28	ADOLA INVESTMENTS, LLC
106	17	JARED RUSSELL COX
107	17,18	JOANNA H. GIBBS
108	17	RESOURCE RECYCLING, INC.
109	17	CHARLES LEWIS YARBROUGH AND WIFE KAREN W.
		YARBROUGH
110	17	TODD HOWERTON
111	17,18	DAVID L. HOWERTON AND WIFE KATHERINE B. HOWERTON
112	18	RAMESH PATEL MANJULABEN PATEL
113	18	CAROL ANN ADAMS
114	18	IRVING K. BASS AND WIFE MAE P. BASS
115	18,19	SCOTT COOK, LLC
116	18,19	CHARLES P. BALLENTINE AND WIFE AUDREY T. BALLENTINE
117	19	E.G. DUNCAN JOSEPH WARR, JR. RALPH L. PERKINS
		TRUSTEES OF PENN MEMORIAL BAPTIST CHURCH AND
		THEIR SUCCESSORS
118	19	ISAAC J. IRVING, JR.
119	19,20	ROCKINGHAM COUNTY
120	19,20	ROCKINGHAM COUNTY SCHOOL
121	20	DUKE POWER COMPANY
122	20	REIDSVILLE INSURANCE COMPANY
123	20,21	VEITA J. BLAND
124	21	REIDSVILLE INSURANCE COMPANY
125	21	ROBERT G. SIMYON
126	21	JAMES MARK FOSTER AND PHYLLIS W. FOSTER
127	21	EDMOND VICTOR SMITH
128	21	JOE SHERWOOD KING
129	21	DAVID L. LYNN AND WIFE MELINDA F. LYNN
130	21	RODNEY CLARK HORD, JR.
131	21,22	KENAN C. WRIGHT
132	21,22	WILLIAM EDWARD COATES, JR. AND WIFE JANICE L. COATES
133	22	WRIGHT AND WRIGHT I
134	22	PREBLE PROPERTIES, LLC
135	22	HALL RENTAL PROPERTIES, LLC
136	22	JERRY DALE GILMORE
137	22,23	WISE DEVELOPMENTS, LLC
138	23	SPARKS AND SONS SERVICE STATIONS, INC.
139	23	BARBARA C. LOY
140	23	THE CITY OF REIDSVILLE, A MUNICIPAL CORPORATION
141	23	PAULINE R. TILLOTSON
142	23	RONALD E. HARRIS AND WIFE BARBARA W. HARRIS
143	23	HOWARD G. BURNSIDE
144	23	TANK LAND, A NORTH CAROLINA GENERAL PARTNERSHIP
145	23	PAULINE R. TILLOTSON
146	23,29	THE STATE OF NORTH CAROLINA
147	23	DONALD L. ALLEN
148	23	WILLIAM FRANK FINCANON
149	23	STEVEN RAY ALLEN
150	23	KATE MARTIN BIBEE
151	23	ROBERT L. HEFFNER
152	23	RODNEY ERVIN BUMPUS
153	23	VINCENT R. BOLDEN

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
154	23,29	HUNTER EDWARD PAGE AND WIFE BRENDA CARTER PAGE
155	23	HUNTER E. PAGE
156	23,24	HOWARD VAUGHN WILLIE SETLIFF JOE W. ROBERTSON
		TRUSTEES OF LITTLE SALEM CHRISTIAN CHURCH OF
		REIDSVILLE, N.C.
157	23	CALVARY'S HILL BAPTIST CHURCH
158	23	BRIAN LEE WASHBURN
159	23	MATTHEW BLACKWELL
160	24,25	LOWE'S HOME CENTERS, INC. A NORTH CAROLINA
		CORPORATION
161	24	LIMA HOLDINGS, LLC A NORTH CAROLINA LIMITED
		LIABILITY COMPANY
162	24	REIDSVILLE CROSS POINTE, LLC
162A	24	LIMA HOLDINGS, LLC A NORTH CAROLINA LIMITED
		LIABILITY COMPANY
163	25	MICHAEL W. APPLE
164	25	PEGGY S. RICKMAN
165	25	ANTHONY TYRONE BRIIDGES
166	26	ROBERT MICHAEL ROURK AND WIFE JEAN ANN GALINDO
		ROURK NAJEEB UR REHMAN AND WIFE MUNIRA RAUF
		REHMAN
167	26	CHRISTOPHER WADE TRENT
168	26	ELTON H. TRENT, JR. ET. AL.
168A	11,26	S&E INVESTMENTS LLC.
169	27	JOHN D. LOVE OIL COMPANY
170	28	JAMES K. FESTERMAN AND WIFE PRISCILLA G. FESTERMAN

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER 10/4/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KEITH W. GUILDER 10/4/11

-L-	-Y1-	-DRV4-
PI Sta 38+14.77	PI Sta 19+70.59	PI Sta 10+83.16
Δ = 62° 00' 31.6" (RT)	Δ = 10° 45' 19.9" (RT)	Δ = 17° 11' 44.4" (RT)
D = 1° 18' 18.5"	D = 6° 21' 58.3"	D = 10° 25' 02.7"
L = 4,751.11'	L = 168.95'	L = 165.07'
T = 2,638.24'	T = 84.72'	T = 83.16'
R = 4,390.00'	R = 900.00'	R = 550.00'
SE = 0.02	SE = EXIST.	SE = SEE PLANS
RO = SEE PLANS		

NAD 83'95

REVISIONS

8/17/99

-L- POT Sta. 10+00.00

-L- PC Sta. 11+76.54

-L- POC Sta. 15+54.00= -Y1- POT Sta. 18+03.92

-Y1- STA. 16+55.00 BEGIN CONSTRUCTION

-L- STA. 14+00.00 BEGIN PROJECT U-3326A/B

-L- STA. 23+00.00 SEE SHEET 5

MATCHLINE -L- STA. 23+00.00

-DRV4- PC Sta. 10+00.00

-DRV4- STA. 10+35.00 BEGIN CONSTRUCTION

-DRV4- PT Sta. 11+65.07

-DRV4- POT Sta. 12+30.85= -L- POC Sta. 22+85.00

-Y1- STA. 19+75.00 END CONSTRUCTION

-BL-GPS U3326-2 PINC 11+60.34
-BY1- PINC 16+22.23 =
-L- Sta. 15+65.60 (83.80' RT.)
-Y1- Sta. 18+77.08 (42.45' RT.)

-Y1- PC Sta. 18+85.87

-Y1- PT Sta. 20+54.82

-BL-I2 - PINC 16+64.41
-BY2- POT 10+06.37 =
-L- Sta. 20+76.13 (46.28' RT.)

-BY1-51 POT 21+85.87
-Y1- Sta. 24+49.28 (35.8' RT.)

JUDY WALL EVANS
DB 820 PG 320
DB 288 PG 142
PB 47 PG 7

CITIZENS ECONOMIC DEVELOPMENT, INC.
DB 1064 PG 1868
PB 47 PG 7

KATHLEEN B. CASSADY AND WILLIAM J. CASSADY
DB 1272 PG 1630
PB 43 PG 78

ADYLENE M. BURCH
DB 1049 PG 362
PB 43 PG 78

WILLIAM K. SNIDER AND WIFE DELORIES L. SNIDER
DB 714 PG 63

DONALD K. BROWN
DB 911 PG 2061

CICERO W. HANKINS
DB 1204 PG 296

CICERO W. HANKINS
DB 716 PG 701

SALEM DISTRIBUTING COMPANY, INC.
DB 875 PG 2197
DB 711 PG 814

RICHARD W. WIKLE AND WIFE CLAUDINE P. WIKLE
DB 1084 PG 1468

KATHLEEN B. CASSADY AND HUSBAND WILLIAM J. CASSADY
DB 840 PG 1524

ETHYL ANNE HUTCHERSON BURCH
DB 836 PG 355
DB 840 PG 1524

MICHAEL P. BRANCH AND WIFE JEAN V. BRANCH
DB 806 PG 446

ROY GARLAND CHRISMON REBECCA RAKESTRAW
DB 03E PG 104

DAVID VAUGHN
DB 1059 PG 2312
PB 4 PG 44

TO GREENSBORO

TO US 29 BYP.

N 33°35'13.5" W

S 89°20'32.6" W

N 89°00'33" W 956.79'

S 67°17'05" W 367.52'

S 65°01'31" W 169.37'

S 65°01'31" W 774.38'

S 72°31'25" W 752.45'

N 32°58'29" W 224.04'

S 64°05'28" W 730.41'

N 22°49'53.8" W

S 89°52'04" E 227.47'

S 22°45'15" E 29.14'

N 88°13'26" W 229.58'

N 88°13'26" W 136.24'

N 88°13'26" W 72.57'

N 01°46'34" E 100.00'

S 68°20'19" E 166.17'

S 66°43'42" W 276.13'

N 23°36'18" W 43.14'

N 23°36'18" W 135.50'

N 22°19'17" W 100.54'

S 09°23'38" E 124.40'

N 13°48'33.9" E

-Y1-
SR 2670
SOUTH SCALES STREET

8,778 / 16,000	
430 / 800	4,389 / 8,000
-L- FREEWAY DRIVE	-L- FREEWAY DRIVE
9,589 / 23,200	12,804 / 29,100
1,497 / 2,700	752 / 1,400
6,208 / 11,300	

-Y1- SR 2670 SOUTH SCALES STREET — 2010 ADT / 2035 ADT

★ Rev. REVISED SIGNAL

SEE SHEET 30 FOR -L- PROFILE
SEE SHEET 43 FOR -DRV4- PROFILE

29-AUG-2011 lhd
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	5
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER JAMES W. GARDNER JR.

HYDRAULICS ENGINEER — SEAL 31026 ENGINEER KEVIN H. GULLEDGE

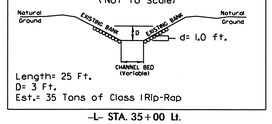
10/4/11

REVISIONS

8/17/99

NAD 83/95

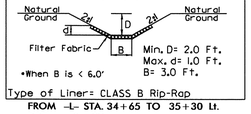
DETAIL B
BANK STABILIZATION
(Not to Scale)



Length= 25 Ft.
D= 3 Ft.
Est.= 35 Tons of Class I Rip-Rap

-L- STA. 35+00 Lt.

DETAIL H
STANDARD BASE DITCH
(Not to Scale)



Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
B= 3.0 Ft.

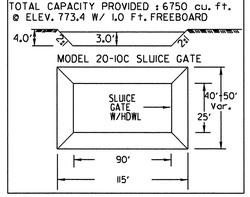
*When B is < 6.0'

Type of Liner= CLASS B Rip-Rap

FROM -L- STA. 34+65 TO 35+30 Lt.
DDE = 84 CY

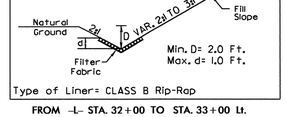
DETAIL A17
HAZARDOUS SPILLBASIN

TOTAL CAPACITY REQUIRED : 6500 cu. ft.
TOTAL CAPACITY PROVIDED : 6750 cu. ft.
@ ELEV. 773.4 W/ 1.0 Ft. FREEBOARD



FROM -L- STA. 33+60 TO STA. 34+50 Lt.

DETAIL A18
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D= 2.0 Ft.
Max. d= 1.0 Ft.

Type of Liner= CLASS B Rip-Rap

FROM -L- STA. 32+00 TO STA. 33+00 Lt.

RICHARD W. WIKLE AND WIFE CLAUDINE P. WIKLE DB 1084 PG 1468

3

CLAUDINE P. WIKLE DB 1167 PG 1030

5

-Y2- STA. 11+05.00
BEGIN CONSTRUCTION

-BY2-52 POT 5+00.00 =
-Y2- Sta. 11+15.58 (18.54' RT.)

-Y2- POT Sta. 10+00.00

BM#2
SEE SHEET 1-E
ELEV. 809.21'

MATCHLINE -L- STA. 23+00.00 SEE SHEET 4

MATCHLINE -L- STA. 36+00.00 SEE SHEET 6

S 75°45'54" W 285.42'

S 75°35'39" W 176.85'

E/P

N 43°20'53" E

-L- POC Sta. 24+62.62=
-Y2- POT Sta. 12+98.32

-BL-13 PINC 23+08.85 =
-L- Sta. 27+26.30 (27.02' RT.)

-BL-14 PINC 29+68.84 =
-L- Sta. 33+89.97 (14.83' RT.)

N 88°13'26" W 813.15'

N 88°52'42" W 111.40'

N 14°45'02" W 474.26'

N 27°05'38" E 284.79'

N 87°50'32" E 352.38'

2

KATHLEEN B. CASSADY AND HUSBAND WILLIAM J. CASSADY DB 840 PG 1524

4

ROY GARLAND CHRISMON REBECCA RAKESTRAW DB 03E PG 104

6

HOLY INFANT CATHOLIC CHURCH DB 515 PG 285

SEE DETAIL B
BANK STABILIZATION
W/CL I RIP RAP
W/FILTER FABRIC
EST. 35 TONS
EST. 69 SY FABRIC

SEE DETAIL H
STD. BASE DITCH
W/CL B RIP RAP
EST. 33 TONS
EST. 90 SY FABRIC

SEE DETAIL A17
HAZARDOUS SPILL BASIN
(LUMP SUM PAY ITEM)

SEE DETAIL A18
SPECIAL LATERAL V DITCH
W/CLASS B RIP RAP
EST. 35 TONS
EST. 105 SY FABRIC

CL B RIP RAP
W/FILTER FABRIC
EST. 5 TONS
EST. 14 SY FABRIC

SEE DETAIL A
LATERAL BASE DITCH

CL B RIP RAP
W/FILTER FABRIC
EST. 17 TONS
EST. 36 SY FABRIC

SLUICE GATE HWL

JB wSlab Lid COLLAR/EXTEND

BEGIN SBG -L- STA. 32+50 RT

GRAU 350

8:1

RETAIN

CAT-1

PDE

EXISTING R/W

W/LT

FSS

1'-6" C&G

REMOVE

100' TAPER

15" RCP-IV

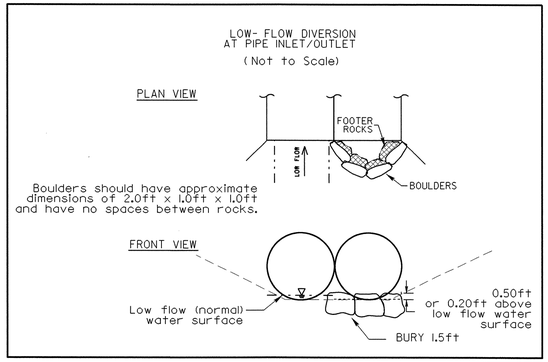
18" RCP-IV

24" RCP-IV

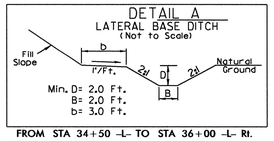
24" BST

US 29 BUS NC 87 FREEWAY DR

LOW- FLOW DIVERSION
AT PIPE INLET/OUTLET
(Not to Scale)



DETAIL A
LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.0 Ft.
B= 2.0 Ft.
b= 3.0 Ft.

FROM STA 34+50 -L- TO STA 36+00 -L- Rt.
DDE = 115 CY

-L-

PI Sta 38+14.77
Δ = 62° 00' 31.6" (RT)
D = 1° 18' 18.5"
L = 4,751.11'
T = 2,638.24'
R = 4,390.00'
SE = 0.02
RO = 72°

SBG = SHOULDER BERM GUTTER

SEE SHEET 30 FOR -L- PROFILE
SEE SHEET 43 FOR -Y2- PROFILE

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	6
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR. 10/4/11 Daniel W. Gardner

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31425 ENGINEER KAREN H. GULLEDGE 10/4/11

-L-	-DRV-	
PI Sta 38+14.77	PI Sta 11+02.19	PI Sta 12+29.25
Δ = 62° 00' 31.6" (RT)	Δ = 89° 49' 24.2" (RT)	Δ = 70° 02' 40.5" (LT)
D = 1° 18' 18.5"	D = 229° 10' 59.2"	D = 71° 37' 11.0"
L = 4,751.11'	L = 39.19'	L = 97.80'
T = 2,638.24'	T = 24.92'	T = 56.06'
R = 4,390.00'	R = 25.00'	R = 80.00'
SE = 0.02	SE = 0.02	SE = 0.02
RO = 72'	RO = SEE PLANS	RO = SEE PLANS

NAD 83/95

REVISIONS

9/17/99

CLAUDINE P. WIKLE
DB 1167 PG 1030
5

DO NOT DISTURB SECURITY FENCE AND RETAINING WALL

MTL STORAGE SHEDS

MATCHLINE -L- STA. 36+00.00 SEE SHEET 5

N 89°23'49" W 302.64'

EIP

72" CMP

18" RCP

72" CHL 35BW

W/LT

GR

HTR

ISBLK BUS

TOWER

DK

LT

+00.00 -L- 85.00' (LT)

+50.00 -L- 85.00' (LT)

+00.00 -L- @ EXIST. R/W

EXISTING R/W

E

F

C

S

50'

40'

30'

20'

15"

10'

100' TAPER

GRAU 350

4' PS

+41.07

+58.08

+65.35

END SBG
-L- STA. 36+50 RT

CAT-1 8:1

523

REMOVE

REMOVE AND REPLACE W/18"

18" RCP

24" RCP

RIP RAP

2GI

DI

CB

15" RCP-IV

+81.00

+51.00

+40.00

+45.30

+85.19
73.08'

100' TAPER

2GI TYPE D

26A

26

27

28

29

30

31

32

33

34

35

36

37

38

39

BEGIN EXPRESSWAY GUTTER
-L- STA. 38+50.00 RT.

END EXPRESSWAY GUTTER
-L- STA. 41+00.00 RT.

BM#3
SEE SHEET 1-E
ELEV. 811.82'

+50.00 -L- @ EXIST. R/W 85.00' (RT)

+00.00 -L- @ EXIST. R/W 86.00' (RT)

+00.00 -L- 97.00' (RT)

+50.00 -L- 97.00' (RT)

+00.00 -L- 84.00' (RT)

+00.00 -L- 85.00' (RT)

+00.00 -L- 74.00' (RT)

+40.00 -L- @ EXIST. R/W 75.00' (RT) 90.00' (RT)

+25.00 -L- @ EXIST. R/W 90.00' (RT)

+50.00 -L- 79.00' (RT)

+00.00 -L- 84.00' (RT)

+00.00 -L- 85.00' (RT)

+40.00 -L- @ EXIST. R/W 75.00' (RT) 85.00' (RT)

+10.00 -L- @ EXIST. R/W 84.00' (RT) 100.00' (RT)

PDE

24" RCP

1'-6" C&G

1'-6" C&G 45+00

US 29 BUS NC 87 FREEWAY DR

24" BST

CONVERT DI TO JB

JB w/Slab Lid

RETAIN EXISTING R/W

RETAIN

24" RCP COLLAR/EXTEND

GRAU 350
BEGIN SBG
-L- STA 48+50 RT

-BL-15 PINC 38+51.23 =
-L- Sta. 42+76.79 (14.09' RT.)

CL B RIP RAP W/FILTER FABRIC
EST. 2 TON
EST. 7 SY FABRIC

SEE DETAIL C
SPECIAL LATERAL V DITCH

CL B RIP RAP W/FILTER FABRIC
EST. 2 TONS
EST. 7 SY FABRIC

SEE DETAIL D
LATERAL BASE DITCH
W/CLASS B RIP RAP
EST. 50 TONS
EST. 138 SY FABRIC

MATCHLINE -L- STA. 49+00.00 SEE SHEET 7

M. L. BOWES CONSTRUCTION CO.
PB 8 PG 45
7

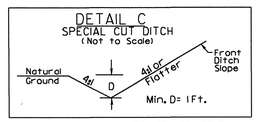
8
RICHARD W. WIKLE
AND WIFE
CLAUDENE P. WIKLE
DB 803 PG 677
DB 1046 PG 1287
PB 36 PG 82

DO NOT DISTURB SECURITY FENCE

6
HOLY INFANT CATHOLIC CHURCH
DB 515 PG 285

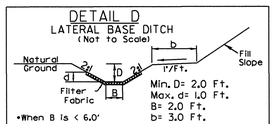
N 2725358' E 545.57'

DETAIL C
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 45+50 TO STA. 46+50 Rt.

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CLASS B Rip-Rap

FROM -L- STA. 48+50 TO STA. 49+50 Rt.
DDE = 35 CY

SBG=SHOULDER BERM GUTTER

SEE SHEET 31 FOR -L- PROFILE

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER, JR. 10/7/11

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KEVIN M. GULLEDGE 10/4/11

REVISIONS

8/17/99

NAD 83/95

MATCHLINE -L- STA. 49+00.00 SEE SHEET 6

MATCHLINE -L- STA. 62+00.00 SEE SHEET 8

N 53°48'40" W 470.17'

S 15°40'01" W 80.00'

N 53°48'39" W 199.20'

DETAIL D
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2d, dl, Td, 2d, b, 1'/Ft., Fill Slope, Filter Fabric, B

Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 3.0 Ft.

*When B is < 6.0'

Type of Liner= CLASS B Rip-Rap

FROM -L- STA. 48+50 TO STA. 49+50 Rt.
DDE = 35 CY

DETAIL A1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 2d, dl, Td, 4d or Flatter, Fill Slope, Filter Fabric

Min. D= 1.0 Ft.
Max. d= 1.0 Ft.

Type of Liner= CL B Rip-Rap

FROM -L- STA. 50+50 TO STA. 51+00 Rt.

DONNIE L. TILLOTSON
DB 813 PG 1051
DB 813 PG 1052
9

M. L. BOWES CONSTRUCTION CO.
PB 8 PG 45

S 39°50'00" W 339.28'

7

DO NOT DISTURB SIGNS

72" CMP

W/LT

MTL CANOPY

ISF BUS

MTL STORAGE SHEDS

GATE

-BY3-53 POT 5+00.00

IS MTL BUS

CONC

MTL STORAGE SHEDS

-Y3- POT Sta. 10+00.00

10+00 N 5°08'54" E

SR 2438 GIBBS LAKE RD

RETAIN EXISTING R/W

-Y3- STA. 11+50.00
BEGIN CONSTRUCTION

+50.00 -Y3- @ EXIST. R/W

+75.00 -Y3- 36.00' (LT)

-Y3- PC Sta. 12+01.25

100' TAPER

+25.00 -Y3- 40.00' (LT)

+50.00 -Y3- @ EXIST. R/W

+75.00 -Y3- 38.00' (RT)

+01.25 -Y3- @ EXIST. R/W

@ PROP. R/W 40.00' (RT)

+35.00 -L- 90.00' (LT) 81.00' (LT) @ EXIST. R/W

@ PROP. R/W 81.00' (LT)

+27.65 -L- @ EXIST. R/W

+05.00 -L- 20.00' (LT) 83.00' (LT) @ EXIST. R/W

CL B RIP RAP W/FILTER FABRIC EST. 2 TON EST. 2 SY FABRIC

+75.00 -L- @ EXIST. R/W

+00.00 -L- 81.00' (LT)

+80.00 -L- @ EXIST. R/W

+00.00 -L- 85.00' (LT)

+50.00 -L- 85.00' (LT)

+00.00 -L- @ EXIST. R/W

G. I. R. P. RICHARDSON IV
JANE VEITH
DB 868 PG 1785
PB 14 PG 62
13

+00.00 -Y3- 48.00' (LT)

+31.00 -Y3- 42.00' (LT)

-Y3- PT Sta. 13+57.35

+00.00 -L- @ EXIST. R/W

+50.00 -L- 85.00' (LT)

+40.00 -L- @ EXIST. R/W

N 49°51'59.9" E

60+00

N 28°38'55.9" W

100' TAPER

RETAIN

COLLAR/EXTEND

REMOVE

REMOVE 70' OF 12" RCP

REMOVE 40'-18" RCP

REMOVE DI

1'-6" C&G

15" RCP-IV

18" RCP

24" RCP

4' PS

CB

DI

PDE

EXISTING R/W

BST

GR

CAT 8

END SBG 50+50 -L- RT

2 CL B RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 14 SY FABRIC

SEE DETAIL A1 SPECIAL LATERAL V DITCH W/CL B RIP RAP EST. 18 TONS EST. 53 SY FABRIC

+50.00 -L- @ EXIST. R/W

+50.00 -L- 82.00' (RT)

+50.00 -L- 100.00' (RT)

SEE DETAIL D LATERAL BASE DITCH W/CLASS B RIP RAP EST. 50 TONS EST. 138 SY FABRIC

+00.00 -L- 85.00' (RT)

SEE DETAIL E LATERAL GRASS SWALE

TRANSITION FROM DETAIL E TO DETAIL A1

-BL-16 PINC 48+37.06 =
-L- Sta. 52+68.22 (16.97' RT.)

REMOVE AND REPLACE DI

+30.00 @ EXIST. R/W 85.00' (RT)

+00.00 -L- @ EXIST. R/W 85.00' (RT)

6" CONC CURB

J. EVERETT JOHNSON AND HELEN M. JOHNSON
DB 1312 PG 401
10

RICHARD W. WIKLE AND WIFE CLAUDENE P. WIKLE
DB 803 PG 677
DB 1046 PG 1287
PB 36 PG 82
8

IS MTL BUS
11
CRESCENT PROPERTIES
DB 750 PG 550

H E A RENTALS
DB 704 PG 783
12
ISMTL BUS

MTL WAREHOUSE

-L- POT Sta. 60+01.85 =
-Y3- POT Sta. 14+02.01

+00.00 -L- 85.00' (RT)

+00.00 -L- 95.00' (RT)

BM#4
SEE SHEET 1-E
ELEV. 823.77'

MAULDIN PROPERTIES, LLC
DB 1282 PG 2494
14

-BL-17 PINC 55+14.94
-BY3- POT 10+05.74 =
-L- Sta. 59+49.34 (17.18' RT.)

-L- PT Sta. 59+27.65

KENNETH V. HOWARD AND WIFE SUZANNE F. HOWARD
DB 1180 PG 2370
PB 13 PG 2

N 57°36'41" W 101.58'

N 59°39'30" W 100.23'

N 57°22'36" W 98.28'

S 31°38'40" W 190.39'

S 31°29'55" W 200.49'

N 31°54'52" E 221.63'

N 31°54'52" E 200.06'

N 26°42'55" E 339.01'

N 32°51'08" E 608.80'

N 85°22'41" W 316.54'

N 3°40'02" E 224.49'

N 66°22'01" W 155.19'

EIP

DETAIL E
LATERAL GRASSED SWALE
(Not to Scale)

Natural Ground, 3d, D, 3d, b, 1'/Ft., Fill Slope, B

Min. D= 2.0 Ft.
B= 2.0 Ft.
b= 3.0 Ft.

FROM -L- STA. 49+50 TO STA. 50+50 Rt.
DDE = 25 CY

-L-	-Y3-
PI Sta 38+14.77	PI Sta 12+83.52
Δ = 62° 00' 31.6" (RT)	Δ = 44° 43' 08.4" (RT)
D = 1° 18' 18.5"	D = 28° 38' 52.4"
L = 4,751.11'	L = 156.10
T = 2,638.24'	T = 82.27'
R = 4,390.00'	R = 200.00'
SE = 0.02	SE = 0.02
RO = 72°	RO = SEE PLANS

-Y3-
SR 2438
GIBBS LAKE ROAD

-L- FREEWAY DRIVE

100-200
100-100
100-100

12,804 / 29,100
12,804 / 29,100

2010 ADT
2035 ADT

SBG = SHOULDER BERM GUTTER

SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 43 FOR -Y3- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER — 10/11/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 37928 ENGINEER KEVIN H. GULLEDGE — 10/11/11 — 16/4/11

8/17/99

REVISIONS

MATCHLINE –L– STA. 62+00.00 SEE SHEET 7

MATCHLINE –L– STA. 74+00.00 SEE SHEET 9

–Y4–
PI Sta 11+04.60
Δ = 61° 03' 02.5" (RT)
D = 57° 17' 44.8"
L = 106.55'
T = 58.96'
R = 100.00'
SE = 0.01
RO = SEE PLANS

NAD 83/95

–L– FREEWAY DRIVE — –L– FREEWAY DRIVE

12,804 / 29,100 — 323 / 600 — 2,197 / 3,400 — 14,678 / 31,900

2,519 / 4,000

–Y4– SR 2500 LAWNDALE DRIVE — 2010 ADT / 2035 ADT

G. I. R. P. RICHARDSON IV
JANE VEITH
DB 868 PG 1785
PB 14 PG 62
13

DETAIL F
STANDARD BASE DITCH
(Not to Scale)
Natural Ground — 2H — D — 2H — Natural Ground
Min. D= 1.0 Ft.
B= 2.0 Ft.

FROM –L– STA. 66+00 Lt.
DDE = 17 CY

S 6°22'33" W 725.77'

87 PROPERTIES, LLC
DB 1222 PG 1790
PB 41 PG 45
16

+95.00 –L– 190.00' (LT) 90.00' (LT) @ EXIST. R/W

+15.00 –L– 190.00' (LT) 82.00' (LT) @ EXIST. R/W

SEE DETAIL 'F' STANDARD BASE DITCH

CL B RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC

–L– POT Sta. 66+21.12=
–Y4– POT Sta. 10+00.00

+00.00 –L– 85.00' (LT)

+50.00 –L– 77.00' (LT)

+50.00 –L– 78.00' (LT)

+50.00 –L– 82.00' (LT)

+00.00 –L– 76.00' (LT)

+00.00 –L– 78.00' (LT)

+50.00 –L– 91.00' (LT)

100' TAPER

50' TAPER

+84.00

+65.00

65+00

+66.00

+96.00

80+00

+73.00

4' PS

330' FULL LANE

RETAIN EXISTING R/W

RETAIN

REMOVE

1'-6" C&G

30" VINYL RAIL

15" RCP

18" RCP

16" CI

2GI

2GI TYPE D

DI

COLLAR/EXTEND

5' SIDEWALK

+80.00 –L– 90.00' (RT)

@ EXIST. R/W 98.00' (RT)

@ EXIST. R/W 40.00' (RT)

+50.00 –Y4– 38.00' (RT)

+75.00 –Y4– @ EXIST. R/W

+11.00 –Y4– @ EXIST. R/W

+50.00 –Y4– 37.00' (LT)

+75.00 –Y4– @ EXIST. R/W

+25.00 –Y4– 41.00' (LT)

MAULDIN PROPERTIES, LLC
DB 1282 PG 2494
14

–Y4– STA. 12+75.00
END CONSTRUCTION

S 57° 37' 19.0" E 175.00'

S 31°58'40" W 190.99'

N 31°58'40" E 6.18'

N 42°55'09" E 2.55'

N 42°55'10" E 102.236'

N 42°55'07" E 950.96'

–BY4-54 POT 10+20.48

–Y4– PC Sta. 10+45.63

–Y4– PT Sta. 11+52.18

20' TRANSITION FROM EXPRESSWAY GUTTER TO 2'-6" C&G
–Y4– STA. 10+89.77 TO STA. 11+09.77 LT.
SEE STD. 846.01 SHEET 3 OF 3

END 2'-6" C&G AND 5' SIDEWALK
–Y4– STA. 12+75.00 LT.

–Y4– POT Sta. 13+70.59

WOODLAND HEIGHTS APARTMENTS, LLC
A NORTH CAROLINA LIMITED LIABILITY COMPANY
DB 1037 PG 2324
PB 44 PG 65
15

THOMAS ALEXANDER SMITH
KAREN SUTTLE SMITH
ALEXANDER SANDS SMITH
DB 805 PG 790

–BL-18 PINC 63+84.45
–BY4- POT 5+00.00 =
–L- Sta. 68+18.78 (28.76' RT.)
–Y4- Sta. 10+28.84 (197.64' LT.)

–L– 600' TRANSITION LT. & RT.

N 28° 38' 55.9" W

N 6° 19' 38.5" E

S 29°05'11" E 91.04'

CMH HOMES, INC.
A TENNESSEE CORPORATION
DB 1011 PG 210
17

S 59°43'44" W 340.00'

HTR BUS

BST

GR

CAR WASH

MTL CANOPY

ISBK BUS

REMOVE CONC. ISLAND
REPAVE TURNOUT

6" CONC CURB

30' C&G

QUALITY OIL COMPANY, LLC
DB 1341 PG 923
18

N 28°32'30" W 190.01'

N 28°34'30" W 175.01'

BELMONT SQUARE SHOPPING CENTER, LLC
A VIRGINIA LIMITED LIABILITY COMPANY
DB 1155 PG 1821
19

★ PROPOSED SIGNAL

SEE SHEET 32 FOR –L– PROFILE
SEE SHEET 43 FOR –Y4– PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	9
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR. 10/7/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 34025 ENGINEER KEVIN H. GULLEDGE 10/4/11

REVISIONS

8/17/99

MATCHLINE –L– STA. 74+00.00 SEE SHEET 8

MATCHLINE –L– STA. 88+00.00 SEE SHEET 10

MATCHLINE –Y6– STA. 14+50.00 SEE SHEET 9A

–Y5– POT Sta. 10+00.00

–Y5– STA. 11+00.00
BEGIN CONSTRUCTION

ASHCROFT BUSINESS PARK, LLC
A NORTH CAROLINA LIMITED LIABILITY COMPANY
DB 1009 PG 1673

–Y5–
SR 2437
McCOY ROAD

	3,423 / 6,200		
967 / 1,800		1,067 / 1,900	
–L– FREEWAY DRIVE		–L– FREEWAY DRIVE	
14,678 / 31,900		16,282 / 34,800	
1,282 / 2,300		2,786 / 5,100	
	5,456 / 9,900		

–Y6–
SR 2512
SOUTH PARK DRIVE

2010 ADT
2035 ADT

–L– FREEWAY DRIVE		–L– FREEWAY DRIVE	
16,282 / 34,800		16,682 / 30,800	
	215 / 400	615 / 800	
	830 / 1,200		

–Y7–
BELMONT DRIVE

2010 ADT
2035 ADT

DETAIL F
STANDARD BASE DITCH
(Not to Scale)

Natural Ground — 2H — D — 2H — Natural Ground
Min. D= 1.0 Ft.
B= 2.0 Ft.

FROM –L– STA. 82+00 Lt.
DDE = 29 CY

–Y7–
PI Sta 11+02.01
Δ = 10° 29' 57.3" (LT)
D = 6° 59' 14.2"
L = 150.26'
T = 75.34'
R = 820.00'
SE = SEE PLANS
RO = SEE PLANS

NAD 83/95

–Y7– PC Sta. 10+26.67
N 59°19' 28.4" E

–L– POT Sta. 83+37.32=
–Y7– POT Sta. 10+00.00

–L– POT Sta. 75+89.64=
–Y5– POT Sta. 15+56.04

–L– POT Sta. 75+92.44=
–Y6– POT Sta. 10+00.00

–BL-19 PINC 74+25.15
–BY5- POT 11+23.16
–BY6- POT 5+00.00 =
–L- Sta. 75+59.21 (48.27' RT.)
–Y6- Sta. 10+32.85 (48.52' RT.)

–BL-20 PINC 78+61.71
–BY7- POT 5+00.00 =
–L- Sta. 82+95.36 (23.86' RT.)
–Y7- Sta. 10+22.36 (42.97' RT.)

–BY7-57 POT 9+51.20

–Y7– STA. 11+00.00
END CONSTRUCTION

–Y6– STA. 13+75.00
END RESURFACING

–Y7– POT Sta. 12+06.80

–Y7– PT Sta. 11+76.93

N 28°38'43" W 199.37'
N 28°38'43" W 79.37'
EIP

S 84°29'02" W 365.97'
S 84°20'03" W 87.56'
S 84°29'02" W 334.24'
S 61°21'17" W 399.31'
S 61°19'06" W 398.30'
S 61°22'02" W 399.29'

N 30°35'03" W 94.64'
N 28°34'30" W 175.01'
N 30°31'59" W 90.00'
N 87°41'21" W 51.75'
N 28°26'52" E 161.36'
S 60°39'56" E 330.63'
S 87°37'28" E 260.39'
S 87°37'59" E 2.43'
S 64°19'26" E 45.98'
S 23°07'35" E 104.39'
S 06°29'56" E 43.82'
S 23°37'46" W 17.46'

N 28°38'55.9" W

N 30°35'59" W 340.11'

N 30°49'31" E

BELMONT DR 38' BST

100' TAPER
330' FULL LANE
275' TAPER
600' TRANSITION LT & RT.
TRANSITION PROP. EXPRESSWAY GUTTER TO EXIST. 2'–6" C&G –Y7– STA. 10+80.00 TO 11+00.00 LT. & RT.
RETAIN
REMOVE CONC. ISLAND REPAVE TURNOUT
REMOVE
RELOCATE
SEE DETAIL 'F' STANDARD BASE DITCH
SEE SHEET 4-E ELEV. 810.73'
BM#5

BELTA FLUID SYSTEMS, LLC
DB 1041 PG 1342
26

JOSEPH B. KING, JR.
DB 1029 PG 567
PB 24 PG 2
27

HILL/GRAY SEVEN, LLC
DB 1173 PG 605
PB 24 PG 2
29

MELVIN S. KREIGSMAN
DB 811 PG 1286
PB 24 PG 2
30

THERESA VAUGHN MCCOLLUM
DB 1136 PG 1361
PB 24 PG 2
31

CMH HOMES, INC.
A TENNESSEE CORPORATION
DB 1011 PG 210
17

ELIXIR INDUSTRIES
DB 685 PG 730
21

BELMONT SQUARE SHOPPING CENTER, LLC
A VIRGINIA LIMITED LIABILITY COMPANY
DB 1155 PG 1821
19

QUALITY OIL COMPANY, LLC
DB 1341 PG 923
18

EUNICE JONES-OBENG
DB 1029 PG 1200
PB 38 PG 80
24

SONSET HOLDING, LLC
DB 1333 Pg 240
PB 38 PG 82
25

MARK E. OVERBY AND WIFE DEBRA A. OVERBY
DB 1148 PG 445
DB 1148 PG 448
PB 38 PG 82
23

ALEXANDER SANDS SMITH
DB 719 PG 915
22

JEFF WAYNE JOHNSON AND WIFE JAN APPLE JOHNSON
DB 775 PG 488
28

ELDEN LIONG
DEWEY PRYER
DOUGLAS CLYMER
ALVIN A. KEEN
TRUSTEES OF CHRISTIAN AND MISSIONARY ALLIANCE CHURCH OF REIDSVILLE, NORTH CAROLINA AND THEIR SUCCESSORS IN OFFICE
DB 730 PG 866
DB 764 PG 707
32

ISBK CHURCH
ISBK BUS
ISMBUS
2SFD

★Rev. REVISED SIGNAL

SEE SHEET 32 FOR –L– PROFILE
SEE SHEET 43 FOR –Y5– PROFILE
SEE SHEET 43 FOR –Y6– PROFILE
SEE SHEET 44 FOR –Y7– PROFILE

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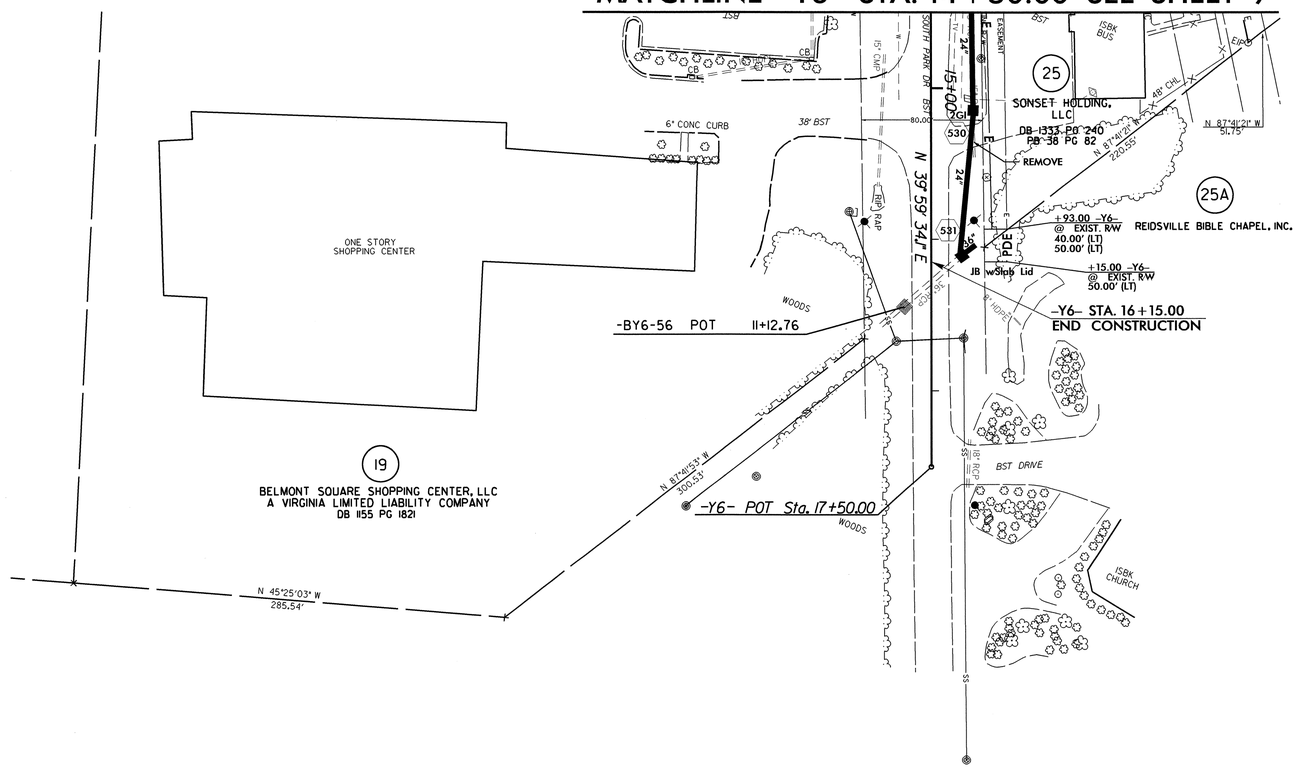
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	9A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR.
10/4/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31075 ENGINEER KAREN H. GULLEDGE
10/4/11

MATCHLINE –Y6– STA. 14+50.00 SEE SHEET 9



REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	10
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER — 10/4/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 41025 ENGINEER KATHLEEN M. GILLESPIE — 10/4/11

-Y8-	-Y8A-	-Y9-	
PI Sta 12+27.30	PI Sta 12+23.12	PI Sta 10+95.85	PI Sta 13+39.80
Δ = 67° 59' 50.0" (LT)	Δ = 14° 22' 48.6" (RT)	Δ = 63° 27' 50.6" (LT)	Δ = 11° 50' 49.2" (LT)
D = 17° 00' 06.2"	D = 6° 46' 50.0"	D = 36° 57' 54.1"	D = 3° 41' 47.4"
L = 399.94'	L = 212.08'	L = 171.69'	L = 320.49'
T = 227.30'	T = 106.60'	T = 95.85'	T = 160.82'
R = 337.00'	R = 845.00'	R = 155.00'	R = 1,550.00'
SE = EXIST.	SE = 0.03	SE = 0.02	SE = 0.02
	RO = 68'	RO = SEE PLANS	RO = SEE PLANS

-Y8-
ASHCROFT DRIVE

645 / 1,200 — 223 / 500 — 423 / 700 — 615 / 800

-L- FREEWAY DRIVE — 16,682 / 35,200 — 208 / 300

-L- FREEWAY DRIVE — 17,082 / 35,600 — 408 / 500

-Y9-
SR 2516 FRONT STREET — 2010 ADT 2035 ADT

DETAIL I
LATERAL BASE DITCH
(Not to Scale)

Natural Ground — 2H — d1 — D — B — 1'/Ft. — Fill Slope

Filter Fabric

Min. D= 2.0 Ft.
Max. d1= 1.0 Ft.
B= 4.0 Ft.
b= 3.0 Ft.

*When B is < 6.0'

Type of Liner= CL B Rip-Rap

FROM -Y8A- STA. 11+15 TO STA. 12+00 Lt.
DDE = 73 CY

-BY8-58 POT 5+00.00 =
-Y8- Sta. 11+75.72 (48.21' RT.)

CL B RIP RAP W/FILTER FABRIC
EST. 8 TON
EST. 21 SY FABRIC

-Y8- PC Sta. 10+00.00

NAD 83'95

-Y8- STA. 12+80.00
BEGIN CONSTRUCTION
-Y8A- STA. 10+17.33
BEGIN CONSTRUCTION
N 43° 32' 00.5" W

-Y8- POC Sta. 13+35.94
-Y8A- POT Sta. 10+00.00

-Y8- PT Sta. 13+99.94

-Y8A- PC Sta. 11+96.50

-L- POT Sta. 91+02.92
-Y8- POT Sta. 16+61.41
-Y9- PCC Sta. 10+00.00

-BL-21 PINC 86+04.71
-BY8- POT 10+60.21
-BY9- POT 5+00.00 =
-L- Sta. 90+37.83 (52.23' RT.)
-Y9- Sta. 10+35.45 (71.66' RT.)

-Y9- PT Sta. 11+71.69

-Y9- PC Sta. 11+78.98

-Y9- STA. 12+25.00
END CONSTRUCTION

-BY9-59 POT 10+98.03

DETAIL G
LATERAL BASE DITCH
(Not to Scale)

Natural Ground — 2H — d1 — D — B — 1'/Ft. — Fill Slope

Filter Fabric

Min. D= 2.0 Ft.
Max. d1= 1.0 Ft.
B= 3.0 Ft.
b= 3.0 Ft.

*When B is < 6.0'

Type of Liner= CLASS B Rip-Rap

FROM -L- STA. 98+50 TO STA. 99+00 Rt
DDE = 14 CY

DETAIL H
STANDARD BASE DITCH
(Not to Scale)

Natural Ground — 2H — d1 — D — B — Natural Ground

Filter Fabric

Min. D= 2.0 Ft.
Max. d1= 1.0 Ft.
B= 3.0 Ft.

*When B is < 6.0'

Type of Liner= CLASS B Rip-Rap

FROM -L- STA. 98+80 Rt.
DDE = 17 CY

MATCHLINE -L- STA. 88+00.00 SEE SHEET 9

MATCHLINE -L- STA. 101+00.00 SEE SHEET 11

MATCHLINE -Y8A- STA. 20+00.00 SEE SHEET 11

REVISIONS

8/17/99

31 THERESA VAUGHN MCCOLLUM DB 1138 PG 1361 PB 24 PG 2

33 DANIEL K. BAILEY DB 1096 PG 21 DB 24 PG 2

34 ASHCROFT DEVELOPMENT, LLC A NORTH CAROLINA LIMITED LIABILITY COMPANY DB 1047 PG 2594 PB 24 PG 2

39 JAMES L. THOMPSON, JR. FAMILY LIMITED PARTNERSHIP DB 1022 PG 2292

40 ASHCROFT COMMONS, LLC A NORTH CAROLINA LIMITED LIABILITY COMPANY DB 980 PG 587 PB 24 PG 2

41 CHARLES C. RHODES AND WIFE BETTIE STOCKS RHODES DB 785 PG 58 PB 24 PG 2

42 KUO KANG HUANG AND WIFE LILING HUANG DB 809 PG 1947 DB 865 PG 2140 PB 24 PG 2

42A KUO KANG HUANG AND WIFE LILING HUANG DB 809 PG 1947 DB 865 PG 2140 PB 24 PG 2

43 HUGH W. COBB AND WIFE JUDITH T. COBB DB 713 PG 107 DB 772 PG 2249

44 NORTH CAROLINA FARM CREDIT, ACA DB 1022 PG 2544

45 CURTIS L. BOOTH AND WIFE PEGGY S. BOOTH DB 86 PG 1960

35 ROBERT L. WHELESS JAN H. WHELESS DB 1301 PG 1532

36 B & S SERVICES INC OF NC DB 1222 PG 732 PB 25 PG 4

37 MITCHELLENE A. MARTIN DB 863 PG 166 PB 25 PG 4

38 ASHCROFT DEVELOPMENT LLC DB 920 PG 185 PB 25 PG 4

32 ELDEN LONG DEWEY PRYER DOUGLAS CLYMER ALVIN A. KEEN TRUSTEES OF CHRISTIAN AND MISSIONARY ALLIANCE CHURCH OF REIDSVILLE, NORTH CAROLINA AND THEIR SUCCESSORS IN OFFICE DB 730 PG 866 DB 764 PG 707

PAT BRADY OIL CO. DB 714 PG 664

MARC L. COBB DB 1156 PG 520

SEE SHEET 33 FOR -L- PROFILE
SEE SHEET 44 FOR -Y8- PROFILE
SEE SHEET 44 FOR -Y8A- PROFILE
SEE SHEET 44 FOR -Y9- PROFILE
SEE SHEET 59 FOR -SW1- PROFILE

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCHLINE -Y10- STA. 18+00.00 SEE SHEET 26

MATCHLINE -Y8A- STA. 20+00.00 SEE SHEET 10

MATCHLINE -L- STA. 101+00.00 SEE SHEET 11

MATCHLINE -L- STA. 127+00.00 SEE SHEET 12

-Y10- US 158

FREEWAY DRIVE — FREEWAY DRIVE

RICHARDSON DRIVE — 2010 ADT 2035 ADT

DETAIL J
LATERAL "V" DITCH
(Not to Scale)

FROM -L- STA. 104+95 TO STA. 105+00 Lt.
FROM -Y10APC- STA. 13+90 TO 14+00 Lt.

DETAIL A5
LATERAL "V" DITCH
(Not to Scale)

FROM -L- STA. 122+95 TO STA. 123+50 Lt.
DDE = 30 CY

DETAIL K
LATERAL "V" DITCH
(Not to Scale)

FROM -L- STA. 103+00 TO STA. 104+00 Rt
DDE = 34 CY

DETAIL KI
BERM "V" DITCH
(Not to Scale)

FROM -L- STA. 104+00 TO STA. 107+00 Rt.

DETAIL L
LATERAL "V" DITCH
(Not to Scale)

FROM -Y10- STA. 26+00 TO STA. 29+50 Lt.
DDE = 97 CY

NAD 83/92

END U-3326A
BEGIN U-3326B
-L- STA. 126+85.00

BEGIN BRIDGE -Y10- STA. 23+64.10
FUTURE 5.5' SIDEWALK
2-BAR METAL RAIL
END BRIDGE -Y10- STA. 25+35.10
4' PS
TYPE III
4' PS
TYPE B-77
4' PS
BEGIN APPR. SLAB -Y10- STA. 23+39.94
END APPR. SLAB -Y10- STA. 25+59.26
FOR (FACE OF RAIL)
SKETCH SHOWING BRIDGE /ROADWAY RELATIONSHIP

★ PROPOSED SIGNAL

SBG - SHOULDER BERM GUTTER

SEE SHEET 33 AND 34 FOR -L- PROFILE
SEE SHEET 45 FOR -Y8A- PROFILE
SEE SHEET 46 FOR -Y10- PROFILE
SEE SHEET 48 FOR -Y10A- PROFILE
SEE SHEET 48 FOR -Y10B- PROFILE
SEE SHEET 47 FOR -Y10APC- PROFILE
SEE SHEET 46 FOR -Y10RPA- PROFILE
SEE SHEET 46 FOR -Y10RPB- PROFILE
SEE SHEET 47 FOR -Y10RPC- PROFILE
SEE SHEETS 5-1 THRU 5-3 FOR -SW1- PROFILE
SEE SHEETS 5-J THRU 5-39 FOR STRUCTURE PLANS
SEE TMP PLANS FOR LOCATION OF TEMP. WIDENING AND DRAINAGE

GRAPHIC SCALE
50 25 0 50 100
PLANS

-Y10RPB-

Pt Sta 10+88.68	Pt Sta 12+81.72	Pt Sta 14+73.36	Pt Sta 17+75.16
Bs = 3°05'52"	Δ = 13°47'09.62" (LT)	Bs = 3°05'52"	Δ = 24°26'49.6" (RT)
Ls = 133.00'	D = 4°39'29.5"	Ls = 133.00'	D = 8°49'53.0"
LT = 88.68	L = 246.00'	LT = 88.68	L = 277.5'
ST = 44.35'	T = 140.2'	ST = 44.35'	T = 140.8'
	R = 1230.00'		R = 650.00'
	SE = 0.06		SE = 0.08
			RD = SEE PLANS

-Y10RPC-

Pt Sta 12+96.48	Pt Sta 14+79.00	Pt Sta 16+56.40	Pt Sta 18+94.58
Bs = 8°29'53.9"	Δ = 23°13'59.62" (RT)	Bs = 8°29'53.9"	Δ = 29°53'29.8" (LT)
Ls = 178.00'	D = 9°32'57.5"	Ls = 178.00'	D = 28°38'52.4"
LT = 118.80'	L = 244.00'	LT = 118.80'	L = 104.54'
ST = 59.46'	T = 123.33'	ST = 59.46'	T = 53.39'
	R = 600.00'		R = 200.00'
	SE = 0.08		SE = 0.04
			RD = SEE PLANS

-Y10LPC-

Pt Sta 10+90.27	Pt Sta 16+26.39
Bs = 7°59'04.2"	Δ = 145°54'47.3" (LT)
Ls = 135.12' 0.08'	D = 39°11'49.5"
LT = 90.07'	L = 350.00'
ST = 40.39'	T = 489.30'
	R = 150.00'
	SE = 0.08
	RD = SEE PLANS

-L-

Pt Sta 115+13.9
Δ = 30°21'38.2" (RT)
D = 7°25'07.8"
L = 1,255.54'
T = 642.54'
R = 773.00'
SE = 0.03
RD = 7.41'

-Y8A-

Pt Sta 22+54.24
Δ = 34°56'33.3" (RT)
D = 5°45'40"
L = 609.82'
T = 313.90'
R = 995.00'
SE = 0.03
RD = 6.8'

-Y10-

Pt Sta 13+60.22	Pt Sta 29+39.35
Δ = 2°39'30.5" (LT)	Δ = 17°07'08.8" (LT)
D = 2°57'17.2"	D = 5°34'54.6"
L = 271.44'	L = 478.45'
T = 135.74'	T = 242.54'
R = 1,000.00'	R = 1,600.00'
SE = 0.02	SE = 0.08
RD = 72'	RD = SEE PLANS

-Y10A-

Pt Sta 11+70.61	Pt Sta 15+44.06
Δ = 45°28'17.9" (RT)	Δ = 79°13'05.7" (LT)
D = 17°37'46.7"	D = 13°09'52.9"
L = 247.93'	L = 581.61'
T = 130.9'	T = 350.70'
R = 325.00'	R = 435.00'
SE = 0.04	SE = 0.04
RD = SEE PLANS	RD = SEE PLANS

-Y10C-

Pt Sta 11+79.97
Δ = 45°13'14.4" (LT)
D = 57°17'44.8"
L = 80.67'
T = 42.62'
R = 100.00'
SE = EXIST.

-Y10RPA-

Pt Sta 10+88.68	Pt Sta 12+50.37	Pt Sta 14+91.33	Pt Sta 16+48.70
Bs = 3°05'52"	Δ = 9°51'19.5" (RT)	Bs = 3°05'52"	Δ = 23°09'01.8" (LT)
Ls = 133.00'	D = 5°46'28.7"	Ls = 133.00'	D = 14°19'26.2"
LT = 88.68'	L = 233.99'	LT = 88.68'	L = 160.70'
ST = 44.35'	T = 117.31'	ST = 44.35'	T = 81.45'
	R = 1,200.00'		R = 400.00'
	SE = 0.06		SE = 0.02
			RD = SEE PLANS

-Y10F-

Pt Sta 10+62.89
Δ = 23°43'57.8" (LT)
D = 57°17'44.8"
L = 41.42'
T = 21.01'
R = 100.00'
SE = SEE PLANS

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

SEAL 31026 — KAREN H. GULLEDGE — NORTH CAROLINA PROFESSIONAL ENGINEER — 10/7/11

SEAL 33871 — DANIEL W. GARDNER, JR. — NORTH CAROLINA PROFESSIONAL ENGINEER — 10/7/11

REVISIONS

–Y10– DETOUR

PROJECT REFERENCE NO.	SHEET NO.
U-5526AZ/B	11A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 1983

-Y10DETB- PCC Sta 12+57.43

-Y10DETB- PCT Sta 15+26.00

-Y10DETB- PT Sta 14+19.66

-Y10DETB- PC Sta 10+10.78

-L- PC Sta 108+16.86

-Y10DETB- PCT Sta 10+00.00

-Y10DETC- PCT Sta 10+00.00

-L- POC Sta 109+00.00

-Y10DETC- PC Sta 11+46.82

-Y10- POC Sta 22+10.00

-Y10DETB- POT Sta 15+26.00

-Y10DETC- PT Sta 14+54.77

-Y10- POC Sta 20+28.00

-Y10DETC- POT Sta 16+10.79

-Y10- PT Sta 27+54.92

TEMPORARY SHORING
SEE SHEET TCP-7

TWO-CENTERED CURVE
90°-110'-24" (OS)

TWO-CENTERED CURVE
60°-200' (S OS)

TWO-CENTERED CURVE
90°-150' (OS)

THREE-CENTERED CURVE
90°-120'-60' (OS, S OS)

TWO-CENTERED CURVE
120°-100' (S OS)

TWO-CENTERED CURVE
120°-100' (OS)

-B1Y10-63 PINC 97+75.33 ↓
-L- Sta. 102+08.10 (23.48' RT)

-B1Y10R-65 POT 10+60.75

-B1Y10-64 PINC 97+42.60 ↓
-L- Sta. 102+08.10 (38.05' RT)

-B1Y10-60 PINC 22+55.78
-B1Y10R-60 POT 20+00.00 ↓
-Y10- Sta. 21+54.52 (42.90' RT)

-B1Y10-61 PINC 27+34.92 ↓
-Y10- Sta. 29+85.30 (29.50' RT)

-BL-23 PINC 98+42.60 ↓
-L- Sta. 122+57.94 (2.55' RT)

-BL-22 PINC 97+75.33 ↓
-L- Sta. 102+08.10 (23.48' RT)

A

B

C

V_{DESIGN} = 25MPH	V_{DESIGN} = 25MPH	
-L-	-Y10DETB-	-Y10DETC-
PI Sta 116+13.19 Δ = 37° 21' 38.2" (RT) D = 1°59' 07.8" L_s = 450.94' T = 196.54' R = 2935.00'	PI Sta 11+61.08 Δ = 78° 37' 34.5" (RT) D = 32° 44' 25.6" L_s = 240.10' T = 143.90' R = 175.00' SE = SEE PLANS	PI Sta 13+39.62 Δ = 14° 19' 20.7" (RT) D = 8° 45' 53.0" L_s = 162.73' T = 81.68' R = 650.00' SE = .08 RD = SEE PLANS	PI Sta 13+97.57 Δ = 77° 13' 02" (LT) D = 25° 27' 53.2" L_s = 304.60' T = 180.79' R = 225.00' SE = .08 RD = SEE PLANS

★ TEMPORARY SIGNAL

SEE SHEET 60 FOR -Y10DETB- PROFILE
SEE SHEET 60 FOR -Y10DETC- PROFILE

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

NORTH CAROLINA PROFESSIONAL SEAL 031025 ENGINEER KAREN H. GULLEDGE
10/4/11

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER, JR.
10/7/11

P:\PROJECTS\U-5526\...\dgn\Y10_sht.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	12
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER — 10/7/11

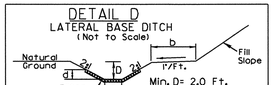
HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31035 ENGINEER KRISTIN N. GULLEDGE — 10/4/11

REVISIONS

8/17/99

NAD 83/95

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 3.0 Ft.
*When B is < 6.0'

Type of Liner= CLASS B Rip-Rap

FROM -L- STA. 138+70 TO STA. 141+50 Lt.
DDE = 138 CY

ACI FREEWAY CROSSING, LLC
DB 1263 PG 1252
PB 56 PG 21

ALVIS B. CARR, JR.
AND WIFE
JANICE T. CARR
LIVING TRUST
DB 1115 PG 1549
PB 16 PG 11
70

GOODWILL INDUSTRIES OF CENTRAL NORTH CAROLINA, INC.
A NORTH CAROLINA CORPORATION
DB 1186 PG 471
PB 52 PG 69
69

R. E. FUTURE, LLC
DB 1220 PG 232
PB 38 PG 52
67

A. J. HOLDINGS, LLC
DB 997 PG 2315
PB 37 PG 8

BLUE LINE DEVELOPMENT, LLC
A NORTH CAROLINA LIMITED LIABILITY COMPANY
DB 9515 PG 2065
PB 36 PG 9

ALVIS B. CARR, JR.
AND WIFE
JANICE T. CARR
LIVING TRUST
DB 1115 PG 1549
PB 16 PG 11
70

H.E.A. RENTALS, LLC
DB 1307 PG 1296
68

THOMAS L. HINKLE
DB 824 PG 1486
PB 28 PG 58

REIDSVILLE CENTRE, LLC
DB 990 PG 2259
PB 39 PG 77

CHARLES W. TRENT, JR. AND
BETTY P. TRENT
PB 16 PG 11

MATCHLINE -L- STA. 127+00.00 SEE SHEET 11

MATCHLINE -L- STA. 140+00.00 SEE SHEET 13

★ PROPOSED SIGNAL

SEE SHEET 34 FOR -L- PROFILE

29-AUG-2011 11:40
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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	13
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER, JR. — 10/4/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER LAUREN M. GULLEDGE — 10/4/11

REVISIONS

8/17/99

NAD 83/95

MATCHLINE –L– STA. 140+00.00 SEE SHEET 12

MATCHLINE –L– STA. 153+00.00 SEE SHEET 14

DETAIL X
TOE PROTECTION
(Not to Scale)

Natural Ground, d1, 2H OR FLATTER, Fill Slope, d= 1.0Ft., Filter Fabric

Type of Liner= CL B Rip-Rap

FROM –L– STA. 149+00 TO STA. 150+50 Rt.

DETAIL D
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2H, D, 2H, b, 1'/Ft., Fill Slope, d1, Filter Fabric, B, *When B is < 6.0'

Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 3.0 Ft.

Type of Liner= CLASS B Rip-Rap

FROM –L– STA. 138+70 TO STA. 141+50 Lt.
DDE = 138 CY

DETAIL H
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 2H, D, 2H, Natural Ground, d1, Filter Fabric, B, *When B is < 6.0'

Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.

Type of Liner= CL B Rip-Rap

–L– STA. 148+70 TO STA. 148+90 Lt
DDE = 9 CY

DETAIL T
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2H, D, 3H, B, 2H, b, 1'/Ft., Fill Slope, B2

D2= 1.0 Ft.
B2= VAR.-5.0 Ft.

Min. D= 3.0 Ft.
B= 5.0 Ft.
b= VAR.-5.0 Ft.

FROM –L– STA. 148+20 TO STA. 148+75 Lt.
DDE = 161 CY

ALVIS B. CARR, JR. AND WIFE JANICE T. CARR LIVING TRUST
DB 1115 PG 1549
PB 16 PG 11
70

DANNY W. TRENT
DB 745 PG 468
PB 16 PG 11
71

GEORGE W. TRENT, JR
STEPHANIE D. TRENT
DB 745 PG 466
71A

SUNNYCREST CHURCH OF CHRIST
DB 771 PG 1183
74

REIDSVILLE CENTRE, LLC
DB 990 PG 2259
PB 39 PG 77

REIDSVILLE CORRAL GROUP, LLC
A NORTH CAROLINA LIMITED LIABILITY COMPANY
DB 999 PG 2258
PB 39 PG 77

UNITED DEVELOPMENT CORP.
DB 1267 PG 2280

CHARLES W. TRENT, JR. AND BETTY P. TRENT
PB 16 PG 11
72

STEPHEN E. SMITH
DB 1082 PG 1247
PB 18 PG 5
73

-BL-25 PINC 138+30.54 =
-L- Sta. 142+46.74 (30.52' RT.)

BM#8
SEE SHEET 1-E
ELEV. 809.51'

BM#9
SEE SHEET 1-E
ELEV. 786.08'

SEE DETAIL D LATERAL BASE DITCH W/CLASS B RIP RAP EST. 126 TONS EST. 356 SY FABRIC

SEE DETAIL N PSH SEE SHEET 2-Q

SEE DETAIL T LATERAL BASE DITCH

SEE DETAIL H STD. BASE DITCH W/CL B RIP RAP EST. 9 TONS EST. 25 SY FABRIC

CL B RIP RAP W/FILTER FABRIC EST. 3 TON EST. 10 SY FABRIC

SEE DETAIL X TOE PROTECTION W/CL B RIP RAP EST. 53 TONS EST. 157 SY FABRIC

CL B RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC

SEE DETAIL S LATERAL BASE DITCH W/CL I RIP RAP EST. 130 TON EST. 237 SY FABRIC

DETAIL S
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2H, d1, D, 3H, B, b, 1'/Ft., Fill Slope, Filter Fabric, *When B is ≥ 6.0' Std. No. 876.01

Min. D= 3.0 Ft.
Max. d= 2.0 Ft.
B= 5.0 Ft.
b= min. 5.0-Var. Ft.

Type of Liner= CLASS I Rip-Rap

FROM –L– STA. 150+50 TO STA. 151+80 Rt.
DDE = 888 CY

DO NOT DISTURB SIGN

RETAIN +52.46 14.67'

SEE SHEET 35 FOR –L– PROFILE

28-AUG-2011 14:0
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	14
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER, JR. 10/7/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KEVIN N. GUILLOT 10/7/11

NAD 83/95

REVISIONS

8/17/99

MATCHLINE –L– STA. 153+00.00 SEE SHEET 13

MATCHLINE –L– STA. 167+00.00 SEE SHEET 15

-BYII-66 POT 5+00.00

-YII- POT Sta. 10+00.00

-Y11- STA. 11+25.00
BEGIN CONSTRUCTION

N 00°40'22" W 507.81'

N 00°40'22" W 529.68'

N 00°59'42" W 102.83'

S 01°33'30" W 206.52'

N 77°51'02" E 100.00'

74 SUNNYCREST CHURCH OF CHRIST DB 771 PG 1183

ISF CHURCH

75 STATE EMPLOYEES CREDIT UNION DB 1052 PG 692 PB 41 PG 87

76 REIDSVILLE CENTRE, LLC A NORTH CAROLINA LIMITED LIABILITY COMPANY DB 1014 PG 2006 DB 1035 PG 1287 PB 41 PG 87

LINDA PRIDDY HUNDLEY AND HUSBAND MILTON D. HUNDLEY DB 1046 PG 917

LIBBY HILL SEAFOOD, INC A NORTH CAROLINA CORPORATION DB 821 PG 2284

78

N 89°23'30" W 371.41'

N 88°57'58" W 376.23'

ISFBUS

ISBKBUS

6' CONC CURB

DO NOT DISTURB WATER VAULT

LOW FLOW SILL +00.00 –L– 84.00' (LT)

+50.00 –L– @ EXIST. R/W

+00.00 –L– 82.00' (LT)

+50.00 –L– 78.00' (LT)

+00.00 –L– @ EXIST. R/W

+50.00 –L– @ EXIST. R/W

SEE DETAIL U SPECIAL LATERAL GRASS SWALE

CL B RIP RAP W/FILTER FABRIC EST. 2 TON EST. 7 SY FABRIC

CL B RIP RAP W/FILTER FABRIC EST. 5 TON EST. 14 SY FABRIC

+50.00 –L– 85.00' (LT)

+00.00 –L– @ EXIST. R/W

270' TAPER

100' TAPER

50' TAPER

GRAU 350

CAT-1 JB w/Slab Lid

15" RCP-IV

24" RCP-IV

18" DI

6' STEEL

2'-6" C&G

1'-6" C&G

REMOVE

155+00

160+00

165+00

N 1°42'42.4" E

US 29 BUS US 158 NC 87 24' BST

5' SIDEWALK

+00.00 –L– 85.00' (RT)

+50.00 –L– 85.00' (RT)

+87.00 –L– @ EXIST. R/W 85.00' (RT)

+13.00 –L– @ EXIST. R/W 85.00' (RT)

+00.00 –L– 81.00' (RT)

+50.00 –L– 81.00' (RT)

+00.00 –L– 81.00' (RT)

+50.00 –L– @ EXIST. R/W

+80.00 –L– @ EXIST. R/W 85.00' (RT)

+50.00 –L– @ EXIST. R/W

+20.00 –L– @ EXIST. R/W 85.00' (RT)

+40.00 –L– @ EXIST. R/W 85.00' (RT) 105.00' (RT)

+00.00 –L– 83.00' (RT)

+85.00 –L– 105.00' (RT)

+00.00 –L– 95.00' (RT)

+70.00 –L– @ EXIST. R/W

+13.00 –L– @ EXIST. R/W

+00.00 –L– 80.00' (RT)

+69.00 –L– @ EXIST. R/W

+50.00 –L– 81.00' (RT)

CL B RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC

-BL-26 PINC 150+68.74
-BYII POT 9+61.50 =
-L- Sta. 154+84.92 (22.07' RT.)

-L- POT Sta. 155+08.42=
-Y11- POT Sta. 13+75.14

SEE DETAIL M PSH SHEET 2-Q

SEE DETAIL M PSH SEE SHEET 2-Q

SEE DETAIL A21 CL 1 RIP RAP ON BANKS ONLY EST. 10 TONS EST. 14 SY FABRIC

SEE DETAIL D LATERAL BASE DITCH W/CL B RIP RAP EST. 23 TON EST. 64 SY FABRIC

SEE DETAIL V SPECIAL LATERAL BASE DITCH W/CL B RIP RAP EST. 45 TON EST. 127 SY FABRIC

CL B RIP RAP W/FILTER FABRIC EST. 2 TON EST. 7 SY FABRIC

SEE DETAIL U SPECIAL LATERAL GRASS SWALE

CL B RIP RAP W/FILTER FABRIC EST. 2 TON EST. 7 SY FABRIC

-BL-27 PINC 162+57.50 =
-L- Sta. 166+73.67 (24.78' RT.)

S 88°17'08" E 124.97'

S 88°17'08" E 239.37'

N 02°32'03" E 144.84'

WILCOHESS, LLC DB 852 PG 682

77

BM#10
SEE SHEET 1-E
ELEV. 800.93'

N 01°42'52" E 300.00'

N 88°17'08" W 115.00'

LOW- FLOW DIVERSION AT PIPE INLET/OUTLET
(Not to Scale)

PLAN VIEW

FOOTER ROCKS

BOULDERS

LOW FLOW

Boulders should have approximate dimensions of 2.0ft x 1.0ft x 1.0ft and have no spaces between rocks.

FRONT VIEW

0.50ft or 0.20ft above low flow water surface

Low flow (normal) water surface

BURY 1.5ft

DETAIL A21
PIPE OUTLET CHANNEL
(Not to Scale)

Natural Ground — Existing Bank — Existing Bank — Natural Ground

d= 1.0 Ft.

CHANNEL BED (Varies)

Length= 10.0 Ft.
D= 2.0 Ft.
Est.= 10 Tons of Class I Rip-Rap

FROM –L– STA. 158+75 +/– Lt.

73 STEPHEN E. SMITH DB 1082 PG 1247 PB 18 PG 5

DETAIL D
LATERAL BASE DITCH
(Not to Scale)

Natural Ground — 2d — d1 — D — 2d — b — 1'-0" — Fill Slope — Filter Fabric — B

Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 3.0 Ft.

*When B is < 6.0'

Type of Liner= CLASS B Rip-Rap

FROM –L– STA. 158+80 TO STA. 159+50 Rt.
DDE = 30 CY

DETAIL V
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground — 2d — d1 — D — 4d or Flatter — Fill Slope — Filter Fabric — B

Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.

Type of Liner= CLASS B Rip-Rap

FROM –L– STA. 159+50 TO STA. 160+50 Rt.

DETAIL U
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)

Natural Ground — 3d — D — 4d or Flatter — Fill Slope — B

Min. D= 2.0Ft.
B= 2.0Ft.

FROM –L– STA. 160+65 TO STA. 163+50 Lt
FROM –L– STA. 160+50 TO STA. 163+50 Rt

–Y11–
SR 2462
SUNNYCREST DRIVE

830 / 1,200

415 / 600 — 415 / 600

–L– FREEWAY DRIVE — –L– FREEWAY DRIVE

20,260 / 41,000 — 20,260 / 41,000

2010 ADT
2035 ADT

SEE SHEET 35 FOR –L– PROFILE
SEE SHEET 48 FOR –Y11– PROFILE

29-AUG-2011 11:10
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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	15
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 — DANIEL W. GARDNER JR. — 10/7/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31025 — KAREN H. GULLETTE — 10/4/11

8/17/99

REVISIONS

-Y12-
SR 2413
VANCE STREET

7,623 / 15,400		
2,071 / 4,200		2,071 / 4,200
-L- FREEWAY DRIVE		-L- FREEWAY DRIVE
20,260 / 41,000		18,512 / 37,400
	2,945 / 6,000	1,197 / 2,400
7,623 / 15,400		

-Y12-
SR 2525
VANCE STREET

2010 ADT
2035 ADT

-L-	-Y12-	
PI Sta 186+88.71	PI Sta 11+50.14	PI Sta 17+41.77
Δ = 31° 56' 07.0" (RT)	Δ = 2° 35' 54.5" (RT)	Δ = 3° 23' 46.7" (LT)
D = 1° 58' 44.9"	D = 0° 59' 59.7"	D = 0° 49' 06.6"
L = 1,613.60'	L = 259.87'	L = 414.94'
T = 828.36'	T = 129.96'	T = 207.53'
R = 2,895.00'	R = 5,730.00'	R = 7,000.00'
SE = 0.03	SE = NC	SE = NC
RO = 108'		

NAD 83/95

-Y12- STA. 10+00.00
BEGIN CONSTRUCTION

-Y12- POT Sta. 10+00.00

-BY12-67 POT 5+00.00

-Y12A- POT Sta. 10+85.07
BEGIN 2'-6" C&G
-Y12- STA. 11+22.65 LT.

-Y12- PT Sta. 12+80.05

BEGIN 2'-6" C&G
-Y12- STA. 12+46.00 RT.

-L- POC Sta. 179+01.42=
-Y12- POT Sta. 15+31.40

-Y12- PC Sta. 15+34.24

-L- PC Sta. 178+60.35

-Y12- POC Sta. 10+97.29=
-Y12A- POT Sta. 10+00.00

-Y12- PC Sta. 10+20.18

BL-28 PINC 174+49.96
BY-12 PINC 10+60.85 =
-L- Sta. 178+66.17 (32.79 RT.)
Y12- Sta. 15+56.55 (40.83 RT.)

END SIDEWALK
-L- STA. 178+98.83 RT.

MATCHLINE -L- STA. 167+00.00 SEE SHEET 14

MATCHLINE -L- STA. 181+00.00 SEE SHEET 16

MATCHLINE -Y12- STA. 18+00.00 SEE SHEET 15A

★Rev. REVISED SIGNAL

SEE SHEET 36 FOR -L- PROFILE
SEE SHEET 49 FOR -Y12- PROFILE

80 NAGINBHAI G. PATEL AND WIFE MANJULABEN N. PATEL DB 776 PG 52

MICHAEL D. CARTER DB 1050 PG 1227 PB 45 PG 58

VERA HODGES DB 1315 PG 218

81 ROBERT PERRY STUTTS, JR. AND WIFE ANNE LOVE STUTTS DB 721PG 228

82 JOHN D. LOVE OIL COMPANY

85A CAINE FAMILY, LLC

85 AXINN BROWNSVILLE, LLC DB 1245 PG 886

86 ENTERPRISES, INC. A NORTH CAROLINA CORPORATION DB 1465 PG 2080

78 LIBBY HILL SEAFOOD, INC A NORTH CAROLINA CORPORATION DB 821PG 2284

A & LD OF GREENSBOROUGH, INC. DB 1302 PG 1077 PB 52 PG 155

FREEWAY PARTNERS, LLC A NORTH CAROLINA LIMITED LIABILITY COMPANY DB 974 PG 1523 PB 45 PG 58

79 GOLDEN MULLETT, LLC ANORTH CAROLINA LIMITED LIABILITY COMPANY DB 1099 PG 581

FREEWAY INVESTMENTS, LLC DB 1312 PG 843

TACO REALTY INVESTMENTS, LLC A NORTH CAROLINA LIMITED LIABILITY COMPANY DB 996 PG 2264

EARL B. FURR, JR. AND WIFE BETTEC. FURR DB 755 PG 44

83 THE FIRST NATIONAL BANK OF REIDSVILLE, NORTH CAROLINA DB 675 PG 795

84 MEDIA GENERAL NEWSPAPERS, INC. DB 955 PG 160

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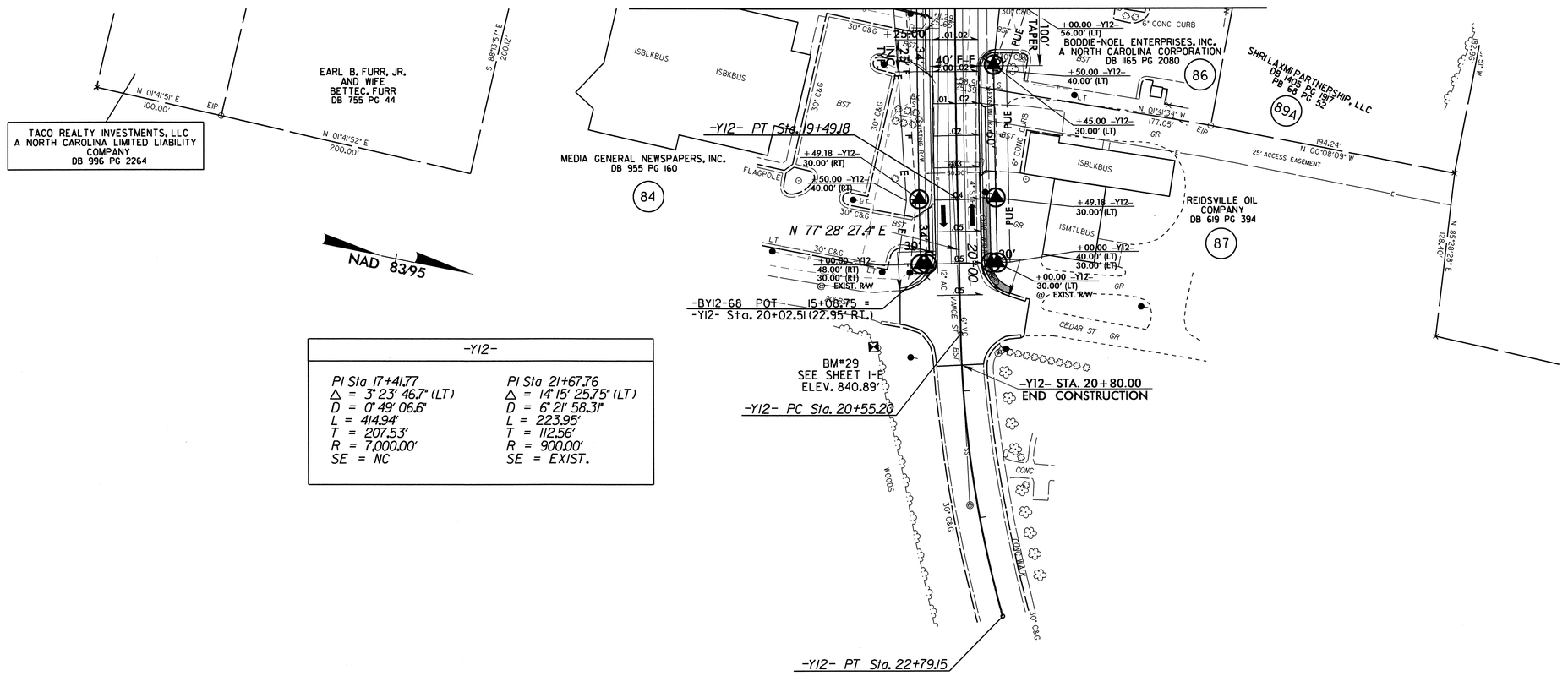
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	15A
RW SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31026 ENGINEER WARREN H. GULLEDGE
10/4/11

MATCHLINE –Y12– STA. 18+00.00 SEE SHEET 15



SEE SHEET 49 FOR –Y12– PROFILE

REVISIONS
8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	16
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER — 10/17/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN H. GULLEDGE — 10/4/11

REVISIONS

8/17/99

NAD 83/95

-L-	-Y12C-
PI Sta 186+88.71	PI Sta 12+87.38
Δ = 31° 56' 07.0" (RT)	Δ = 13° 10' 39.5" (RT)
D = 1° 58' 44.9"	D = 3° 49' 11.0"
L = 1,613.60'	L = 344.99'
T = 828.36'	T = 173.26'
R = 2,895.00'	R = 1,500.00'
SE = 0.03	SE = 0.02
RO = 108'	RO = SEE PLANS

DETAIL X
TOE PROTECTION
(Not to Scale)

d= 1.0Ft.

Type of Liner= CL B Rip-Rap

FROM -L- STA. 184+25 TO STA. 186+00 LT.

DETAIL H
STANDARD BASE DITCH
(Not to Scale)

Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
*When B is < 6.0'

Type of Liner= CL B Rip-Rap

-L- STA. 189+00 Lt
DDE = 25 CY

MATCHLINE -L- STA. 181+00.00 SEE SHEET 15

MATCHLINE -L- STA. 192+00.00 SEE SHEET 17

MATCHLINE -Y12B- STA. 14+00.00 SEE SHEET 17

AXINN BROWNSVILLE, LLC
DG 1245 PG 886
85

NELLIE K. LOFTIS CROUCH
DB 963 PG 335
PB 11 PG 7
88

THOMAS F. WILKERSON AND BETTY RUTH WILKERSON
DB 1215 PG 288
PB 11 PG 7
91

THE COURTYARD AT MT HERMON LLC
DB 1295 PG 435
92

BODDIE-NOEL ENTERPRISES, INC.
A NORTH CAROLINA CORPORATION
DB 1165 PG 2080
86

SHRI LAXMI PARTNERSHIP, LLC
DB 1405 PG 197
PB 68 PG 52
89A

SHRI LAXMI PARTNERSHIP, LLC
DB 1374 PG 197
89

ROCKINGHAM COUNTY, A BODY POLITIC
DB 1045 PG 898
90

WALTER L. WRIGHT AND SANDRA D. WRIGHT
DB 1288 PG 2296
93

PIERCE AUTO
DB 675 PG 202
94

FAYE LOVELACE CAYTON
DB 978 PG 628
PB 11 PG 7

JURISDICTIONAL STREAM BEGINS HERE +00.00 -L- 125.00' (LT)

+00.00 -L- @ PROP. R/W BEGIN C/A FENCE

SEE DETAIL X TOE PROTECTION W/CL B RIP RAP EST. 61 TONS EST. 184 SY FABRIC

-L- POC Sta. 188+04.22=
-Y12B- POT Sta. 10+00.00

CL B RIP RAP W/FILTER FABRIC EST. 6 TONS EST. 11 SY FABRIC
+35.00 -L- 150.00' (LT) 125.00' (LT)

+40.00 -L- 90.00' (LT)

+00.00 -L- @ EXIST. R/W

+80.00 -L- 322.00' (LT)

+05.00 -L- 340.00' (LT)
CL B RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC

+44.00 -L- 274.00' (LT)

SEE DETAIL H STD. BASE DITCH W/CL B RIP RAP EST. 25 TONS EST. 70 SY FABRIC

+13.00 -L- 265.00' (LT)

@ PROP. PDE 100.00' (LT)

+85.00 -L- @ EXIST. R/W

+97.00 -L- @ EXIST. R/W

+50.00 -L- 98.00' (LT)

+20.00 -L- @ EXIST. R/W

100' TAPER

330' FULL LANE

150' TAPER

350' FULL LANE

GRAU 350

185+00

190+00

REMOVE FES COLLAR/EXTEND

RETAIN

RETAIN EXIST. R/W

REMOVE

30" CSP

18" CSP

15" CSP

18" RCP-IV

15" RCP-IV

W/2 ELBOWS

30' 2'-6" C&G

2'-6" C&G

1'-6" C&G

CAT-1

GRAVEL PARKING

I-5 MTL STORAGE BUS

8" TYPE UNKNOWN

4" STEEL

-BE-29 PINC 180+46.61 =
-L- Sta. 184+67.89 (17.30' RT.)

+50.00 -L- 100.00' (RT)

SEE DETAIL W LATERAL V DITCH W/CL B RIP RAP EST. 210 SY FABRIC

+50.00 -L- 90.00' (RT)

BM#11
SEE SHEET 1-E
ELEV. 815.02'

CL B RIP RAP W/FILTER FABRIC EST. 2 TON EST. 7 SY FABRIC

+70.00 -L- @ EXIST. R/W

+00.00 -L- 95.00' (RT)

SEE DETAIL AI SPECIAL LATERAL V DITCH W/CL B RIP RAP EST. 35 TONS EST. 105 SY FABRIC

-Y12B- POT Sta. 11+02.07=
-Y12C- POT Sta. 10+00.00

+00.00 -L- 50.00' (RT) BEGIN C/A FENCE

+81.49 -L-

+82.00 -Y12B- 42.00' (RT) 25.00' (RT)

+00.00 -Y12B- 42.00' (RT)

+72.00 -Y12B- 31.00' (RT)

@ PL 34.00' (RT)

@ EXIST. PL 25.00' (RT)

+80.00 -Y12B- 25.00' (LT) @ EXIST. R/W

-Y12B- STA. 12+80.00
END CONSTRUCTION

-Y12C- PC Sta. 1+14.13

+60.00 -Y12C- 25.00' (RT)

+50.00 -Y12C- 25.00' (RT) 35.00' (RT)

+80.00 -Y12C- 25.00' (RT) 39.00' (RT)

+60.00 -Y12B- 35.00' (LT)

+59.00 -Y12B- 25.00' (LT)

+14.13 -Y12C- 25.00' (RT)

72° CHL & 358W

ISMTL

ISMTLBUS

ISBKBUS

ISBLKBUS

6' CONC CURB

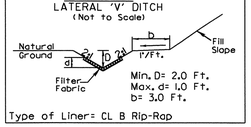
25' ACCESS EASEMENT

194.24'
N 00°08'09" W

N 85°29'08" E
128.40'

N 01°43'35" E
274.90'

DETAIL W
LATERAL "V" DITCH
(Not to Scale)

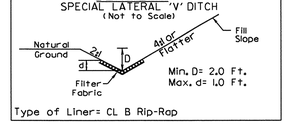


Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
b= 3.0 Ft.

Type of Liner= CL B Rip-Rap

FROM -L- STA. 183+50 TO STA. 185+50 Rt.
DDE = 67 CY

DETAIL AI
SPECIAL LATERAL "V" DITCH
(Not to Scale)



Min. D= 2.0 Ft.
Max. d= 1.0 Ft.

Type of Liner= CL B Rip-Rap

FROM -L- STA 185+50 TO STA. 186+50 Rt.

SEE SHEET 36 FOR -L- PROFILE
SEE SHEET 49 FOR -Y12B- PROFILE
SEE SHEET 49 FOR -Y12C- PROFILE
SEE TMP PLANS FOR LOCATION OF TEMP. WIDENING AND DRAINAGE

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REVISIONS

SKETCH SHOWING BRIDGE /ROADWAY RELATIONSHIP

BEGIN BRIDGE -L- STA. 202+48.46
BEGIN APPR SLAB -L- STA. 202+24.34
END APPR SLAB -L- STA. 203+77.38
END BRIDGE -L- STA. 203+53.46
GRADE LINE LEFT
2'-6" C&G
TYPE B-77
TYPE B-77
4' PS
BEGIN BRIDGE -L- STA. 202+55.54
BEGIN APPR SLAB -L- STA. 202+31.62
END BRIDGE -L- STA. 203+60.54
END APPR SLAB -L- STA. 203+84.46
GRADE LINE RIGHT

-Y13C- MATCHLINE -Y13C- STA. 15+35.00 SEE SHEET 27

-Y13- MATCHLINE -Y13- STA. 16+00.00 SEE SHEET 27

MATCHLINE -Y12B- STA. 14+00.00 SEE SHEET 16

MATCHLINE -L- STA. 192+00.00 SEE SHEET 16

MATCHLINE -L- STA. 218+00.00 SEE SHEET 18

MATCHLINE -Y13- STA. 31+00.00 SEE SHEET 28

-L-
PI Sta 186+88.71 Δ = 3° 56' 01.2" (RT) D = 1° 59' 44.5" L = 160.342' T = 80.16' R = 2,895.00' SE = 0.03 RD = SEE PLANS	PI Sta 198+52.87 Δ = 5° 12' 24.8" (RT) D = 1° 59' 34.6" L = 642.76' T = 321.57' R = 4,000.00' SE = 0.02 RD = 72'	PI Sta 207+08.62 Δ = 5° 46' 04.0" (RT) D = 1° 34' 22.5" L = 483.10' T = 241.58' R = 10,000.00' SE = NC	PI Sta 211+91.68 Δ = 5° 46' 04.0" (LT) D = 1° 34' 22.5" L = 483.10' T = 241.58' R = 10,000.00' SE = NC

-DRV1-
PI Sta 10+25.98 Δ = 21° 07' 37.3" (LT) D = 40° 55' 32.0" L = 54.38' T = 27.58' R = 140.00' SE = SEE PLANS	PI Sta 11+81.71 Δ = 89° 53' 29.8" (LT) D = 171° 37' 54.5" L = 51.46' T = 32.55' R = 33.00' SE = SEE PLANS

-Y14C-
PI Sta 10+40.29 Δ = 46° 40' 44.2" (RT) D = 143° 14' 22.0" L = 32.65' T = 17.29' R = 40.00' SE = 0.06 RD = SEE PLANS

-Y13PB-
Pls Sta 11+11.80 Ea = 8° 29' 55.9" Le = 178.00' LT = 118.80' ST = 59.46'	PI Sta 13+13.34 Δ = 25° 55' 29.1" (LT) D = 9° 32' 57.5" L = 366.22' T = 185.74' R = 600.00' SE = 0.08 RD = SEE PLANS	Pls Sta 15+03.68 Ea = 8° 29' 55.9" Le = 178.00' LT = 118.80' ST = 59.46'	Pls Sta 17+76.78 Δ = 35° 13' 10.4" (RT) D = 29° 54' 42.5" L = 191.69' T = 98.26' R = 194.00' SE = 0.04 RD = SEE PLANS

-Y13PC-
Pls Sta 11+38.13 Ea = 8° 29' 55.9" Le = 178.00' LT = 118.80' ST = 59.46'	PI Sta 12+74.66 Δ = 14° 41' 25.1" (RT) D = 9° 32' 57.5" L = 153.13' T = 77.04' R = 600.00' SE = 0.08	Pls Sta 14+40.61 Ea = 8° 29' 55.9" Le = 178.00' LT = 118.80' ST = 59.46'	Pls Sta 17+79.57 Δ = 29° 32' 40.3" (LT) D = 33° 42' 12.2" L = 87.66' T = 44.83' R = 170.00' SE = 0.02 RD = SEE PLANS

-Y13PD-
Pls Sta 10+98.97 Ea = 20° 45' 57.4" Le = 137.00' LT = 91.31' ST = 46.24'

-Y12C-
PI Sta 13+22.29 D = 1° 54' 35.5" L = 270.68' T = 135.43' R = 3,000.00' SE = NC

-Y13-
PI Sta 24+14.60 D = 1° 10' 09.7" (LT) D = 0° 39' 11.8" L = 569.08' T = 285.01' R = 9,000.00' SE = NC

-Y13A-
PI Sta 13+44.93 Δ = 13° 23' 01.6" (RT) D = 10° 30' 46.8" L = 127.13' T = 63.96' R = 545.00' SE = SEE PLANS	PI Sta 10+93.22 Δ = 29° 59' 07.8" (LT) D = 19° 05' 54.5" L = 136.06' T = 69.22' R = 300.00' SE = SEE PLANS

-Y13C-
PI Sta 12+14.67 Δ = 6° 18' 41.8" (LT) D = 22° 02' 12.6" L = 173.22' T = 86.77' R = 260.00' SE = 0.04 RD = 80'

-Y14-
PI Sta 16+90.11 Δ = 6° 16' 38.5" (RT) D = 4° 09' 33.2" L = 153.36' T = 76.71' R = 1,400.00' SE = EXIST.

-Y13PA-
PI Sta 13+31.52 Δ = 13° 23' 01.6" (RT) D = 10° 30' 46.8" L = 127.13' T = 63.96' R = 545.00' SE = SEE PLANS

-Y13PB-
PI Sta 11+80.80 Ea = 8° 29' 55.9" Le = 178.00' LT = 118.80' ST = 59.46'

-Y13PC-
PI Sta 11+38.13 Ea = 8° 29' 55.9" Le = 178.00' LT = 118.80' ST = 59.46'

-Y13PD-
Pls Sta 11+81.80 Ea = 8° 29' 55.9" Le = 178.00' LT = 118.80' ST = 59.46'

-Y13PE-
Pl Sta 12+70.95 Δ = 0° 39' 45.0" (LT) D = 9° 32' 57.5" L = 84.43' T = 42.25' R = 600.00' SE = 0.08

-Y14PA-
Pls Sta 11+21.89 Ea = 8° 29' 55.9" Le = 178.00' LT = 118.80' ST = 59.46'

DETAIL X
TOE PROTECTION
(Not to Scale)
Type of Liner= CL B Rip-Rap
FROM -L- STA. 207+80 TO STA. 209+00 Rt.
FROM -L- STA. 209+20 TO STA. 209+80 Rt.
FROM -L- STA. 210+20 TO STA. 211+50 Lt.

DETAIL Y
CONC. PAVED DITCH
(Not to Scale)
Type of Liner= CL II Rip-Rap
FROM -Y13PC- STA. 16+30 TO STA. 17+80 Rt.
FROM -Y13- STA. 27+85 TO STA. 27+50 Rt.
DDE = .34 CY

DETAIL Z
CHANNEL RELOCATION
(Not to Scale)
Type of Liner= CL III Rip-Rap
FROM -L- STA. 210+10 Lt.
DDE = .43 CY

DETAIL A2
PIPE OUTLET CHANNEL
Length= 60.0 Ft.
D= 2.0 Ft.
Estim. D Tons of Class III Rip-Rap
FROM -Y13- STA. 29+85+/- Lt.

-Y13- NC 65/87
2010 ADT
2035 ADT

-DUNN, N. CROSS DR No. 8 CAB

-L- PT Sta. 214+33.17

-Y14- PT Sta. 10+00.00

-Y14- PT Sta. 13+38.79

-Y14- PT Sta. 11+84.62

-Y14- PT Sta. 11+26.20

-Y14- PT Sta. 10+60.57

-Y14- PT Sta. 16+13.34

-Y14- PT Sta. 17+66.73

-Y14A- STA. 13+50.00 END CONSTRUCTION

-Y14C- PT Sta. 10+00.00

-Y14C- PC Sta. 10+29.52

-Y14C- PT Sta. 10+51.20

-Y14C- PC Sta. 10+40.29

-Y14C- PT Sta. 10+40.29

-Y14C- PC Sta. 10+00.00

-Y14- PC Sta. 10+00.00

-Y14- PC Sta. 10+00.00

-Y14- PT Sta. 10+00.00

-Y14- PC Sta. 16+64.41 (22.50' RT)

-Y14- PT Sta. 16+64.41 (22.50' RT)

-Y14- PC Sta. 17+25.20

-Y14- PT Sta. 17+25.20

-Y13- PC Sta. 29+25.67

-Y13- PT Sta. 29+72.50

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-Y13- PT Sta. 162

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	18
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER, JR. DANIEL W. GARDNER — 10/4/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KENNETH W. GUILLOU — 10/4/11

-L-	-Y15-	-Y15A-
PI Sta 235+67.97	PI Sta 11+85.76	PI Sta 11+95.78
Δ = 14° 10' 46.6" (LT)	Δ = 41° 08' 17.8" (RT)	Δ = 30° 20' 54.1" (RT)
D = 0° 55' 26.9"	D = 13° 38' 30.7"	D = 9° 32' 57.5"
L = 1,534.38'	L = 301.56'	L = 317.81'
T = 771.13'	T = 157.61'	T = 162.73'
R = 6,200.00'	R = 420.00'	R = 600.00'
SE = 0.02	SE = EXIST.	SE = SEE PLANS
RO = 72'		

-Y15-
SR 2003
GIBBS DRIVE

645 / 1,200	215 / 400
430 / 800	
-L- FREEWAY DRIVE	-L- FREEWAY DRIVE
16,149 / 33,000	15,934 / 32,600
100- / 200	100- / 200
100- / 400	

-Y15A-
GIBBS DRIVE — 2010 ADT / 2035 ADT

-Y15- POT Sta. 10+00.00
-BY15-73 POT 5+00.00 =
-Y15- Sta. 10+09.27 (16.62' LT.)
-Y15- PC Sta. 10+28.15

-Y15- STA. 12+60.00
BEGIN CONSTRUCTION

-Y15- PT Sta. 13+29.71

-L- PC Sta. 227+96.84

-L- POT Sta. 223+14.66=
-Y15- POT Sta. 14+21.42
-Y15A- POT Sta. 10+00.00

-BL-33 PINC 219+45.12
-BY-15 PINC 9+46.86 =
-L- Sta. 223+63.94 (28.26' RT.)
-Y15A- Sta. 10+26.34 (50.33' LT.)

-Y15A- PC Sta. 10+33.05

-Y15A- PT Sta. 13+50.86

-Y15A- STA. 13+00.00
END CONSTRUCTION

-BY15-74 POT 14+70.66

-Y15A- POT Sta. 14+78.20

NAD 83/95

MATCHLINE -L- STA. 218+00.00 SEE SHEET 17

MATCHLINE -L- STA. 231+00.00 SEE SHEET 19

JOANNA H. GIBBS
DB 866 PG 640
107

ROCKINGHAM COUNTY FARM BUREAU, INC
DB 709 PG 70

CAROL ANN ADAMS
113

SCOTT COOK, LLC
DB 1196 PG 1764
PB 13 PG 68
115

IRVING K. BASS
AND WIFE
MAE P. BASS
DB 726 PG 782
114

CHARLES P. BALLENTINE
AND WIFE
AUDREY T. BALLENTINE
DB 877 PG 801
116

DAVID L. HOWERTON
AND WIFE
KATHERINE B. HOWERTON
DB 1136 PG 1726
111

RAMESH PATEL
MANJULABEN PATEL
DB 1105 PG 1555
112

ANNIE PEARL GORDON
DB 832 PG 283

BM#13
SEE SHEET 1-E
ELEV. 710.41'

SEE DETAIL D
LAT. BASE DITCH
W/CL B RIP RAP
EST. 12 TONS
EST. 32 SY FABRIC

CL B RIP RAP
W/FILTER FABRIC
EST. 5 TON
EST. 16 SY FABRIC

CL B RIP RAP
W/FILTER FABRIC
EST. 1 TON
EST. 5 SY FABRIC

SEE DETAIL X
TOE PROTECTION
W/CL B RIP RAP
EST. 32 TONS
EST. 95 SY FABRIC

SEE DETAIL J
BERM V DITCH

CL B RIP RAP
W/FILTER FABRIC
EST. 1 TON
EST. 5 SY FABRIC

SEE DETAIL X
TOE PROTECTION
W/CL B RIP RAP
EST. 16 TONS
EST. 48 SY FABRIC

REMOVE FES

RETAIN EXIST. R/W

100' TAPER

265' TAPER

GRAU 350

CAT-1

JB w/Slab Lid

36' INC. TYP.

DETAIL D
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2H, d1, D, 2H, b, 1'/Ft., Fill Slope, Filter Fabric, B

Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 3.0 Ft.

*When B is < 6.0'

Type of Liner= CLASS B Rip-Rap

FROM -L- STA. 226+95 TO STA. 227+20 Lt.
DDE = 6 CY

DETAIL X
TOE PROTECTION
(Not to Scale)

Natural Ground, d1, 24" FLATTER, Fill Slope, Filter Fabric

d= 1.0Ft.

Type of Liner= CL B Rip-Rap

FROM -L- STA. 226+20 TO STA. 227+10 Rt.
FROM -Y15A- STA. 11+80 TO STA. 12+25 Rt.

DETAIL J
BERM "V" DITCH
(Not to Scale)

Natural Ground, 2H, D, 2H, b, RDWY, 2H

Min. D= 1.0Ft.
b= 3.0 Ft.

FROM -L- STA. 228+50 TO STA. 229+00 Rt.

SEE SHEET 38 FOR -L- PROFILE
SEE SHEET 54 FOR -Y15- PROFILE
SEE SHEET 54 FOR -Y15A- PROFILE
SEE SHEETS C-1 THRU C-7 FOR CULVERT PLANS

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	19
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER — 10/7/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31065 ENGINEER KEVIN H. GULLEDGE — 10/4/11

-L-	-Y16-	-Y16A-	
PI Sta 235+67.97	PI Sta 11+86.30	PI Sta 11+69.27	PI Sta 13+21.62
Δ = 14° 10' 46.6" (LT)	Δ = 18° 24' 03.2" (LT)	Δ = 88° 33' 17.2" (RT)	Δ = 44° 51' 28.6" (LT)
D = 0° 55' 26.9"	D = 5° 43' 46.5"	D = 114° 35' 29.6"	D = 19° 05' 54.9"
L = 1,534.38'	L = 321.16'	L = 77.28'	L = 234.88'
T = 771.13'	T = 161.97'	T = 48.75'	T = 123.83'
R = 6,200.00'	R = 1,000.00'	R = 50.00'	R = 300.00'
SE = 0.02	SE = SEE PLANS	SE = EXIST.	SE = EXIST.
RO = 72'			

REVISIONS

8/17/99

MATCHLINE -L- STA. 231+00.00 SEE SHEET 18

MATCHLINE -L- STA. 244+00.00 SEE SHEET 20

SCOTT COOK, LLC
DB 1196 PG 1764
PB 13 PG 68
115

E.G. DUNCAN
JOSEPH WARR, JR.
RALPH L. PERKINS
TRUSTEES OF PENN MEMORIAL BAPTIST CHURCH
AND THEIR SUCCESSORS
DB 838 PG 1998
117

ROCKINGHAM COUNTY
DB 1194 PG 643
119

CHARLES P. BALLENTINE
AND WIFE
AUDREY T. BALLENTINE
DB 877 PG 801
116

ISAAC J. IRVING, JR.
DB 794 PG 213
118

ROCKINGHAM COUNTY SCHOOL
120

BM#15
SEE SHEET 1-E
ELEV. 724.27'

BM#14
SEE SHEET 1-E
ELEV. 737.97'

NAD 83/95

-BY16-75 POT 5:00.00

-Y16- POT Sta. 10+00.00

-Y16- PC Sta. 10+24.33

-Y16- STA. 12+38.86
BEGIN CONSTRUCTION

-Y16- PT Sta. 13+45.49

-L- POC Sta. 238+67.35=
-Y16- POT Sta. 14+08.00

-L- PT Sta. 243+31.22

-L- POC Sta. 238+59.36=
-Y16A- POT Sta. 10+00.00

-Y16A- PC Sta. 11+20.51

-Y16A- STA. 11+20.00
END CONSTRUCTION

-Y16A- PRC Sta. 11+97.79

-Y16A- POT Sta. 14+58.65

-Y16A- PT Sta. 14+32.67

-BY16A-77 POT 9+31.39

-BY16-76 POT 12+50.48

-BL-34 PINC 227+70.13 =
-L- Sta. 231+87.40 (26.73' RT.)

-BL-35 PINC 234+68.71 =
-BY16 PINC 9+49.10
-BY16A POT 5+00.00
-L- Sta. 238+82.60 (38.27' RT.)
-Y16A- Sta. 10+32.18 (31.18' LT.)

S 28°43'41" W 330.38'

S 29°23'32" E 10.00

S 47°47'35.7" E

N 28°40'27.5" E

S 44°19'23.1" E

S 0°37'34.5" E

S 79°25'15" E 146.36'

N 03°50'28" W 138.19'

N 51°59'08" W 553.94'

N 51°59'08" W 5.68'

S 79°25'15" E 5.20'

100' TAPER

265' TAPER

330' FULL LANE

RETAIN EXISTING R/W

REMOVE

CAT-1

GRAU 350

SEE DETAIL A4
LINE EXISTING DITCH
W/CLASS I RIP RAP
EST. 237 TONS
EST. 419 SY FABRIC

SEE DETAIL SHEET 2-U
FOR ISLAND CUT FOR
ROCKINGHAM COUNTY EMS
EMERGENCY ACCESS

SEE DETAIL A3
BERM 'V' DITCH
W/CL B RIP RAP
EST. 18 TONS
EST. 53 SY FABRIC

SEE DETAIL J
BERM 'V' DITCH

SEE DETAIL A2
SPECIAL LATERAL 'V' DITCH

CONV. CB TO JB

REMOVE 18' OF 15" RCP

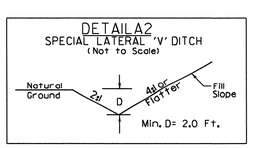
REMOVE 17' OF 24" RCP

BANDEXTEND 40'CB

COLLAR/EXTEND

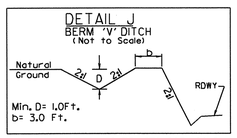
FLUSH OUT DITCH

DETAIL A2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



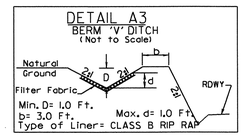
FROM -L- STA. 231+00 TO STA. 232+00 Rt.

DETAIL J
BERM 'V' DITCH
(Not to Scale)



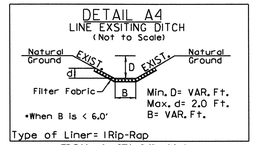
FROM -L- STA. 232+50 TO STA. 235+00 Rt.

DETAIL A3
BERM 'V' DITCH
(Not to Scale)



FROM -L- STA. 232+00 TO STA. 232+50 Rt.

DETAIL A4
LINE EXSITING DITCH
(Not to Scale)



FROM -L- STA. 241+00 Lt.

-Y16-
MOSS STREET

	2,319 / 3,800	
1,475 / 2,400		108 / 200
-L- FREEWAY DRIVE		-L- FREEWAY DRIVE
15,934 / 32,600		14,445 / 30,000
	1,152 / 1,800	845 / 1,400
	2,744 / 4,400	

-Y16A-
MOSS STREET

2010 ADT
2035 ADT

★Rev. REVISED SIGNAL

SEE SHEET 38 FOR -L- PROFILE
SEE SHEET 54 FOR -Y16- PROFILE
SEE SHEET 54 FOR -Y16A- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	20
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER — 10/4/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KEITH H. GULLEDGE — 10/4/11

REVISIONS

8/17/99

"A REINFORCED SOIL SLOPE SHALL BE PLACED BETWEEN -L- STATION 250+00+/- TO -L- STATION 253+50+/- (LEFT). SEE REINFORCED SOIL SLOPE SPECIAL PROVISION" SEE SHEET 2-Y FOR REINFORCED SOIL SLOPE DETAIL.

LOW- FLOW DIVERSION AT CULVERT INLET/OUTLET (Not to Scale)

PLAN VIEW

FOOTER ROCKS — BOULDERS — Low Flow

Boulders should have approximate dimensions of 3.0ft x 2.0ft x 2.0ft and have no spaces between rocks. Approximate weight = 2000lbs

FRONT VIEW

0.50ft or 0.20ft above low flow water surface — Low flow (normal) water surface — BURY 1.5ft

DETAIL X
TOE PROTECTION
(Not to Scale)

Natural Ground — d — 1.5:1 OR FLATTER — Fill Slope — Filter Fabric

d= 1.0 Ft.

Type of Liner= CLASS B RIP RAP

FROM -L- STA. 249+00 TO STA. 250+50 Lt.

DETAIL G
LATERAL BASE DITCH
(Not to Scale)

Natural Ground — d — 2' — D — 2:1 — b — 1':Ft. — Fill Slope — Filter Fabric — B

Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
B= 3.0 Ft.
b= 3.0 Ft.

•When B is < 6.0'

Type of Liner= CLASS B RIP RAP

FROM STA. 255+80 TO STA. 256+37-L-LT
DDE = 28 CY

DETAIL W
LATERAL "V" DITCH
(Not to Scale)

Natural Ground — d — 2' — D — 2:1 — b — 1':Ft. — Fill Slope — Filter Fabric

Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
b= 3.0 Ft.

Type of Liner= CLASS B RIP RAP

FROM -L- STA. 249+60 STA. TO STA. 253+50 Rt.
DDE = 223 CY

MATCHLINE -L- STA. 244+00.00 SEE SHEET 19

MATCHLINE -L- STA. 257+00.00 SEE SHEET 21

NAD 83/95

ROCKINGHAM COUNTY DB 194 PG 643 — (119)

DUKE POWER COMPANY DB 691 PG 353 — (121) ISBKBUS

VEITA J. BLAND DB 796 PG 1939 — (123)

ROCKINGHAM COUNTY SCHOOL — (120) PLAYGROUND

REIDSVILLE INSURANCE COMPANY PB 7 PG 139 PB 3 PG III — (122)

RAYMOND J. HOLCOMB DB 883 PG 476 PB 3 PG III

BM#16 SEE SHEET 1-E ELEV. 712.03'

-BL-36 PINC 246+86.57 = -L- Sta. 250+98.09 (23.45' RT.)

245+00 — 250+00 — 255+00

N 28° 40' 27.5" E

GRAU 350

CAT-1

2 @ 8' X 8' BOX CULVERT

US 29 BUS/US 158 FREEWAY DR 24 BST

SEE DETAIL X TOE PROTECTION W/CL B RIP RAP EST. 53 TONS EST. 157 SY FABRIC

CL B RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC

SEE DETAIL W 2' LATERAL BASE DITCH W/CLASS I RIP RAP EST. 136 TONS EST. 409 SY FABRIC

CL B RIP RAP W/FILTER FABRIC EST. 5 TON EST. 14 SY FABRIC

SEE DETAIL G 3' LATERAL BASE DITCH W/CLASS B RIP RAP EST. 35 TONS EST. 97 SY FABRIC

CL B RIP RAP W/FILTER FABRIC EST. 3 TON EST. 11 SY FABRIC

CL B RIP RAP W/FILTER FABRIC EST. 5 TON EST. 14 SY FABRIC

SEE SHEET 39 FOR -L- PROFILE
SEE SHEETS C-8 THRU C-18 FOR CULVERT PLANS
SEE TMP PLANS FOR LOCATION OF TEMP. WIDENING AND DRAINAGE

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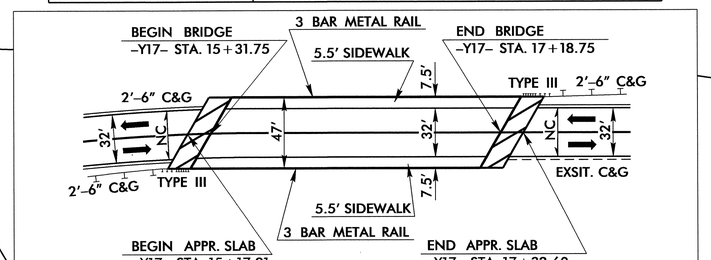
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	21
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER — 10/4/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31045 ENGINEER KAREN H. GULLEDGE — 10/4/11

-L-	-Y17-	
PI Sta 268+39.37	PI Sta 13+64.58	PI Sta 19+67.93
Δ = 17° 59' 20.6" (RT)	Δ = 18° 40' 30.5" (RT)	Δ = 17° 03' 14.8" (LT)
D = 2° 00' 37.4"	D = 4° 51' 20.1"	D = 15° 04' 40.2"
L = 894.81'	L = 384.61'	L = 113.11'
T = 451.12'	T = 194.03'	T = 56.97'
R = 2,850.00'	R = 1,180.00'	R = 380.00'
SE = 0.03	SE = 0.03	SE = 0.02
RO = 108'	RO = SEE PLANS	RO = SEE PLANS



SKETCH SHOWING BRIDGE /ROADWAY RELATIONSHIP

MATCHLINE -L- STA. 257+00.00 SEE SHEET 20

MATCHLINE -L- STA. 270+00.00 SEE SHEET 22

-Y17- POT Sta. 10+00.00

-BY17-78 POT 5+00.00
-Y17- Sta. 10+10.36 (20.19' LT.)

-Y17- PC Sta. 11+70.56

-Y17- STA. 13+00.00
BEGIN CONSTRUCTION

-L- POT Sta. 262+51.60=
-Y17- POT Sta. 16+20.75
Δ = 59° 59' 30.34"

-L- PC Sta. 263+88.25

-Y17- PT Sta. 15+55.17

-BY17-79 PINC 9+27.91 =
-Y17- Sta. 14+35.43 (16.81' LT.)

-BY17-81 POT 18+46.03

-BL-37 PINC 259+38.71
-BY17- PINC 11+59.83 =
-L- Sta. 263+49.36 (23.30' LT.)
-Y17- Sta. 16+49.46 (96.31' LT.)

-BY17-80 PINC 13+89.44 =
-L- Sta. 18+67.24 (23.57' LT.)

-Y17- PC Sta. 19+10.95

-Y17- PT Sta. 20+24.06

-Y17- POT Sta. 21+79.45 =
-Y17A- POT Sta. 10+91.14

-Y17A- POT Sta. 10+00.00

-Y17- POT Sta. 22+63.90

-Y19- POT Sta. 13+53.69

-Y19- PT Sta. 12+97.15

N 66°59'22.3" E

N 28°40'27.5" E

N 71°36'43.1" E

N 17°51'44.2" E

NAD 83/95

RENCE RICHMOND ROSE AND WIFE AMA POSTALWIT ROSE DB 936 PG 2045

KEVIN PAUL BARKER AND WIFE HOLLY ANNE ALICIA BARKER DB 1137 PG 818 DB 1104 PG 2027

LEOPOLDO S. SALINAS AND WIFE SUSANA R. SALINAS DB 3221 PG 798

OLD CEMETERY

VEITA J. BLAND DB 796 PG 1939

THOMAS HOWARD BLACKWELL DB 914 PG 137

REIDSVILLE INSURANCE COMPANY

EDMOND VICTOR SMITH

KENAN C. WRIGHT DB 787 PG 2298

DAVID L. LYNN AND WIFE MELINDA F. LYNN
DAVID L. CARTER AND WIFE GLORIA J. CARTER
RODNEY A. LYNN AND WIFE KIMBERLY K. LYNN

JOE SHERWOOD KING DB 1228 PG 214

JERRY WAYNE STEWART AND WIFE BRENDA JONES STEWART DB 800 PG 914

WILLIAM EDWARD COATES, JR. AND WIFE JANICE L. COATES DB 801 PG 268 DB 751 PG 305

J. MICHAEL FLOYD AND WIFE DEBRA P. FLOYD DB 882 PG 2262

JERRY W. STEWART

ROBERT C. SIMYON DB 1231 PG 123 PB 7 PG 139

ROBERT C. SIMYON DB 1083 PG 1085 PB 7 PG 139

JAMES MARK FOSTER AND PHYLLIS M. FOSTER DB 1267 PG 862 PB 7 PG 139

ISBK CHURCH

RAYMOND J. HOLCOMB DB 883 PG 476 PB 3 PG III

JEWEL MASSEY AND WIFE EDITH WINFRED MASSEY DB 321 PG 57

FRANK E. BANKS DB 495 PG 92

JOYCE P. DOCKERY DB 1298 PG 2369 PB 3 PG III

COLLEEN THACKER DB 1346 PG 1709

GERALD ALEXANDER WALKER DB 364 PG 368

THOMAS B. RUGH DB 860 PG 5 PB 3 PG III

TIE PROP. 2'-6" C&G TO EXIST. 2'-6" C&G +50.00 -Y17- Y17- STA. 14+00 RT. 30.00' (RT)

MAINTAIN EXIST. C&G FROM END BRIDGE -Y17- STA. 17+18.75 TO -Y17- STA 18+50.00 RT.

BM#18 SEE SHEET 1-E ELEV. 754.02'

-Y17- STA. 18+50.00 END RESURFACING

-Y17- STA. 19+00.00 END CONSTRUCTION

DETAIL J
BERM 'V' DITCH
(Not to Scale)

Natural Ground — 2H — D — 2H — b — 2H — RDWY

Min. D= 1.0Ft.
b= 3.0 Ft.

FROM -L- STA. 263+65 TO STA. 264+50 Rt.

DETAIL A21 PSH SEE SHEET 2-R

CL B RIP RAP W/FILTER FABRIC EST. 5 TON
FABRIC EST. 16 SY

REMOVE DI — PLUG — REMOVE 18" RCP — CAT-1

REMOVE HW

RETAIN

BERM DITCH SEE DETAIL J

250' TAPER

SEE SHEET 39 FOR -L- PROFILE
SEE SHEET 54 FOR -Y17- PROFILE
SEE SHEETS S-90 THRU S-121 FOR STRUCTURE PLANS
SEE TMP PLANS FOR LOCATION OF TEMP. WIDENING AND DRAINAGE

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	21A
RW SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN H. GULLEDGE
10/4/11

-Y17DET-

-L-
PI Sta 268+39.37
Δ = 17° 59' 20.6" (RT)
D = 2° 00' 37.4"
L = 894.81'
T = 451.12'
R = 2,850.00'
SE = 0.03
RO = 108'

-Y17DET-				
PI Sta 15+05.00	PI Sta 18+69.03	PI Sta 21+06.95	PI Sta 24+50.44	PI Sta 27+99.87
Δ = 4° 34' 03.5" (RT)	Δ = 4° 34' 03.5" (LT)	Δ = 1° 26' 30.3" (LT)	Δ = 9° 16' 10.9" (RT)	Δ = 7° 23' 13.1" (RT)
D = 1° 53' 27.4'	D = 3° 00' 56.0'	D = 1° 53' 27.4'	D = 3° 00' 56.0'	D = 5° 45' 30.1'
L = 241.55'	L = 151.47'	L = 76.24'	L = 307.39'	L = 128.28'
T = 120.84'	T = 75.77'	T = 38.12'	T = 154.03'	T = 64.23'
R = 3,030.00'	R = 1,900.00'	R = 3,030.00'	R = 1,900.00'	R = 995.00'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	

V_{DESIGN} = 40 MPH

NAD 83/95

REVISIONS

8/17/99

-BY17-78 POT 5+00.00
-Y17- Sta. 10+10.36 (20.19' LT.)

-BY17-79 PINC 9+27.91 =
-Y17- Sta. 14+35.43 (16.81' LT.)

-BY17-80 PINC 13+89.44 =
-L- Sta. 18+67.24 (23.57' LT.)

-BL-37 PINC 259+38.71
-BY17- PINC 11+59.83 =
-L- Sta. 263+49.36 (23.30' LT.)
-Y17- Sta. 16+49.46 (96.31' LT.)

-BY17-81 POT 18+46.03

-Y17DET- PC Sta. 13+84.16
-Y17DET- PT Sta. 16+25.71
-Y17DET- PC Sta. 17+93.25
-Y17DET- PT Sta. 19+43.80
-Y17DET- PC Sta. 20+68.82
-Y17DET- PT Sta. 21+45.07
-Y17DET- PC Sta. 22+96.44
-Y17DET- PT Sta. 23+80.80
-L- PC Sta. 263+88.25
END PAVED OUT

BEGIN CONSTRUCTION -Y17DET- STA. 16+16.11 =
-L- STA. 258+93.88

END CONSTRUCTION -Y17DET- STA. 23+94.72 =
-L- STA. 266+74.70

NOTE: SEE TMP PLANS FOR LOCATION OF TEMPORARY PAVEMENT WIDENING AND DRAINAGE FOR THE ADJACENT AREAS NORTH AND SOUTH OF -Y17DET-. SEE TMP PLANS FOR TEMPORARY SHORING OFFSETS AND STATIONS ALONG -Y17DET-.

SEE SHEET 61 FOR -Y17DET- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	22
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/14/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24030 ENGINEER KAREN H. GULLEDGE
10/14/11

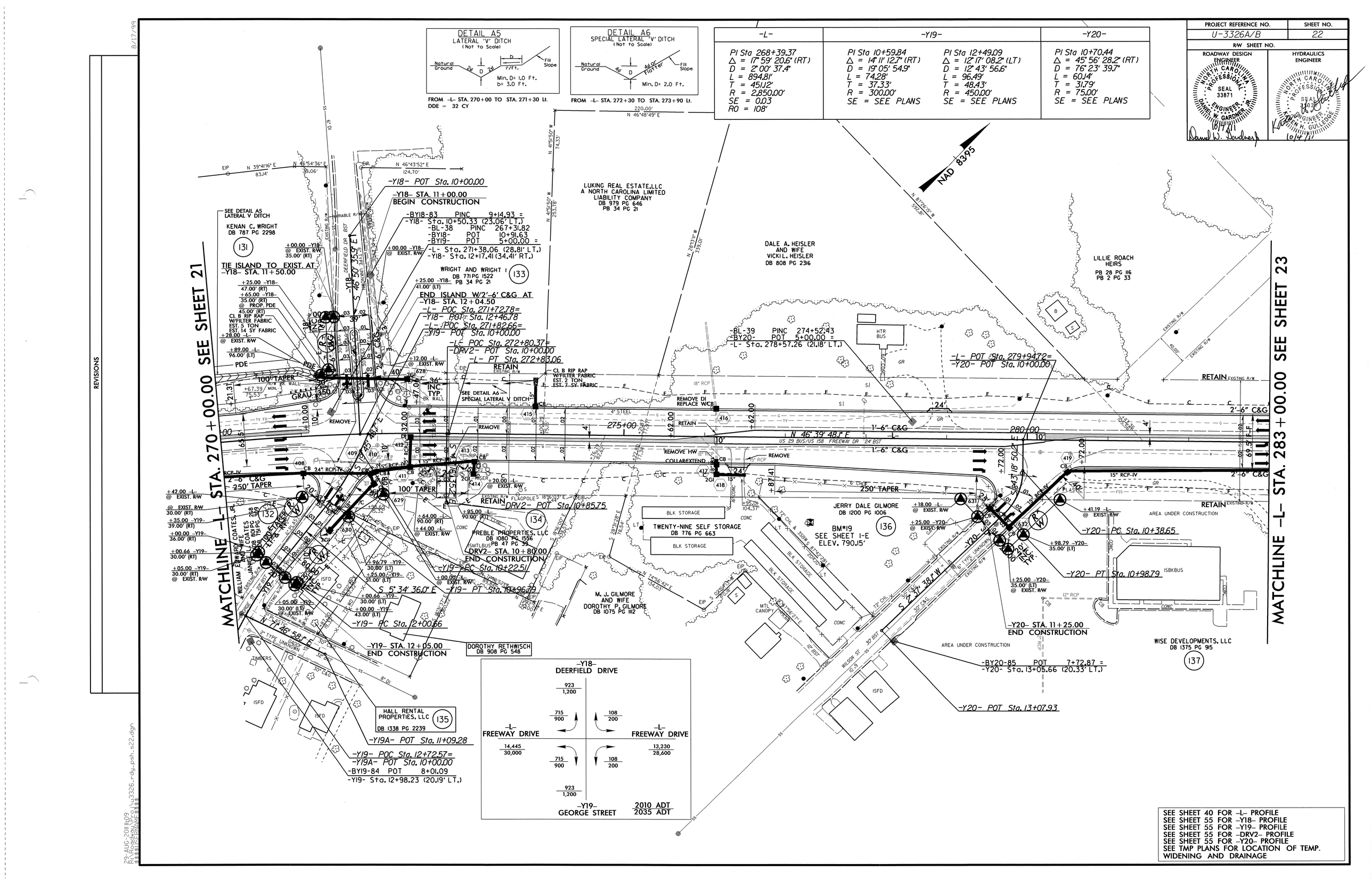
-L-	-Y19-	-Y20-
PI Sta 268+39.37 Δ = 17° 59' 20.6" (RT) D = 2° 00' 37.4' L = 894.81' T = 451.12' R = 2,850.00' SE = 0.03 RO = 108'	PI Sta 10+59.84 Δ = 14° 11' 12.7" (RT) D = 19° 05' 54.9" L = 74.28' T = 37.33' R = 300.00' SE = SEE PLANS PI Sta 12+49.09 Δ = 12° 17' 08.2" (LT) D = 12° 43' 56.6" L = 96.49' T = 48.43' R = 450.00' SE = SEE PLANS	PI Sta 10+70.44 Δ = 45° 56' 28.2" (RT) D = 76° 23' 39.7" L = 60.14' T = 31.79' R = 75.00' SE = SEE PLANS

DETAIL A5
LATERAL 'V' DITCH
(Not to Scale)

FROM -L- STA. 270+00 TO STA. 271+30 Lt.
DDE = 32 CY

DETAIL A6
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

FROM -L- STA. 272+30 TO STA. 273+90 Lt.



REVISIONS
8/17/99

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3326AJB	23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER JAMES W. GARDNER — 10/7/11

NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN H. GULLEDGE — 10/4/11

-L-			
PI Sta 299+65.13	PI Sta 11+49.94	PI Sta 13+28.27	PI Sta 16+59.67
Δ = 28° 59' 10.2" (RT)	Δ = 18° 19' 25.2" (RT)	Δ = 47° 14' 04.4" (LT)	Δ = 7° 13' 12.4" (RT)
D = 1° 57' 43.9"	D = 9° 43' 46.5"	D = 5° 45' 46.3"	D = 1° 54' 55.3"
L = 1278.37'	L = 179.02'	L = 178.63'	L = 168.6'
T = 649.59'	T = 89.71'	T = 89.55'	T = 84.32'
R = 2,920.00'	R = 1,000.00'	R = 1,000.00'	R = 3,000.00'
SE = 0.03	SE = SEE PLANS	SE = SEE PLANS	SE = 0.02
RD = 108'			RD = SEE PLANS

-Y20B-		
PI Sta 15+28.27	PI Sta 16+59.67	PI Sta 20+45.86
Δ = 47° 14' 04.4" (LT)	Δ = 7° 13' 12.4" (RT)	Δ = 13° 21' 12.5" (LT)
D = 5° 45' 46.3"	D = 1° 54' 55.3"	D = 5° 45' 31.3"
L = 178.63'	L = 168.6'	L = 236.37'
T = 89.55'	T = 84.32'	T = 119.71'
R = 1,000.00'	R = 3,000.00'	R = 1,000.00'
SE = SEE PLANS	SE = 0.02	SE = EXIST.
	RD = SEE PLANS	

-Y21-		
PI Sta 16+50.81	PI Sta 20+22.04	PI Sta 30+45.86
Δ = 7° 29' 08.5" (LT)	Δ = 27° 24' 42.3" (RT)	Δ = 13° 21' 12.5" (LT)
D = 1° 21' 54.6"	D = 1° 35' 20.7"	D = 5° 45' 31.3"
L = 522.39'	L = 365.62'	L = 236.37'
T = 261.07'	T = 186.52'	T = 119.71'
R = 4,000.00'	R = 760.00'	R = 1,000.00'
SE = 0.03	SE = 0.04	SE = EXIST.
RD = 90'	RD = SEE PLANS	

-Y21LPB-		
PI Sta 10+92.35	PI Sta 18+44.44	
Ba = 88° 09' 54.3"	Δ = 125° 5' 39.0" (RT)	
Ls = 117.00'	D = 50° 9' 49.3"	
LT = 92.35'	L = 704.44'	
ST = 46.59'	R = 150.00'	
	SE = 0.08	
	RD = SEE PLANS	

-Y21LPC-		
PI Sta 10+92.35	PI Sta 15+32.32	
Ba = 26° 09' 54.3"	Δ = 138° 26' 34.4" (LT)	
Ls = 117.00'	D = 35° 1' 49.5"	
LT = 92.35'	L = 362.44'	
ST = 46.59'	T = 395.32'	
	R = 150.00'	
	SE = 0.08	
	RD = SEE PLANS	

-Y21RPB-		
PI Sta 10+80.38	PI Sta 12+18.03	PI Sta 15+17.47
Ba = 17° 1' 19.4"	Δ = 52° 13' 23.3" (LT)	Δ = 80° 54' 00.8" (RT)
Ls = 100.00'	D = 28° 39' 52.4"	D = 31° 28' 52.5"
LT = 80.38'	L = 182.29'	L = 256.98'
ST = 40.35'	T = 98.03'	T = 159.71'
	R = 200.00'	R = 182.00'
	SE = 0.03	SE = 0.04
	RD = SEE PLANS	RD = SEE PLANS

-Y21RPC-		
PI Sta 10+80.38	PI Sta 12+58.32	PI Sta 14+78.42
Ba = 17° 1' 19.4"	Δ = 69° 20' 12.8" (RT)	Δ = 62° 24' 19.7" (LT)
Ls = 100.00'	D = 29° 39' 52.4"	D = 31° 28' 52.5"
LT = 80.38'	L = 242.03'	L = 194.88'
ST = 40.35'	T = 136.32'	T = 103.94'
	R = 200.00'	R = 182.00'
	SE = 0.07	SE = 0.03
	RD = SEE PLANS	RD = SEE PLANS

Y21- SR 2670 NORTH SCALES STREET

FREEWAY DRIVE — FREEWAY DRIVE

Y21- SR 2670 NORTH SCALES STREET — 2010 ADT 29,000 — 2035 ADT 41,000

BEGIN BRIDGE -Y21- STA. 21+33.96 — 3-BAR METAL RAIL — 5.5' SIDEWALK — END BRIDGE -Y21- STA. 23+23.96

5' SIDEWALK — TYPE III — 5' SIDEWALK

2'-6" C&G — TYPE III — 2'-6" C&G

BEGIN APPR. SLAB -Y21- STA. 21+09.79 — FUTURE 5.5' SIDEWALK — END APPR. SLAB -Y21- STA. 23+48.13

2-BAR METAL RAIL

FOR - FACE OF RAIL
SKETCH SHOWING BRIDGE /ROADWAY RELATIONSHIP

MATCHLINE -Y21- STA. 15+00.00 SEE SHEET 29

MATCHLINE -L- STA. 283+00.00 SEE SHEET 22

MATCHLINE -L- STA. 309+00.00 SEE SHEET 24

DETAIL AG STANDARD V-DITCH (NOT to Scale) — FROM STA. 10+35 TO STA. 10+65 -Y21LPB- RT, DDE = 15 CY

DETAIL AR LATERAL BERM DITCH (NOT to Scale) — FROM STA. 299+00 TO STA. 299+60 -L- LT, DDE = 24 CY

DETAIL AS BERM V-DITCH (NOT to Scale) — FROM STA. 307+00 TO STA. 308+50 -L- RT

DETAIL D LATERAL BERM DITCH (NOT to Scale) — FROM STA. 290+40 TO STA. 293+20 -L- RT, DDE = 103 CY; FROM STA. 293+80 TO STA. 293+00 -L- RT, DDE = 15 CY

SEE SHEET 40 AND 41 FOR -L- PROFILE
SEE SHEET 55 FOR -Y20A- PROFILE
SEE SHEET 55 FOR -Y20B- PROFILE
SEE SHEET 56 FOR -Y21- PROFILE
SEE SHEET 58 FOR -Y21LPB- PROFILE
SEE SHEET 58 FOR -Y21LPC- PROFILE
SEE SHEET 57 FOR -Y21RPB- PROFILE
SEE SHEET 57 FOR -Y21RPC- PROFILE
SEE SHEETS S-727 THRU S-729 FOR STRUCTURE PLANS
SEE SHEETS W-3 THRU W-4 FOR SOIL NAIL WALL PLANS
SEE TMP PLANS FOR LOCATION OF TEMP. WIDENING AND DRAINAGE

GRAPHIC SCALE 50 25 0 50 100 PLANS

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

REVISIONS

-Y21- DETOUR

-L-	-Y21DETB-		-Y21DETC-	
PI Sta 299+65.13	PI Sta 10+44.41	PI Sta 14+14.42	PI Sta 11+12.58	PI Sta 13+28.25
Δ = 25° 05' 02.5" (RT)	Δ = 26° 57' 17.4" (RT)	Δ = 71° 36' 11.0" (RT)	Δ = 6° 39' 11.3" (LT)	Δ = 60° 17' 12.3" (LT)
D = 7° 52' 43.9"	D = 30° 48' 15.1"	D = 31° 28' 52.3"	D = 7° 09' 43.1"	D = 31° 28' 52.3"
L = 1,078.37'	L = 81.18'	L = 227.45'	L = 120.85'	L = 186.50'
T = 545.59'	T = 41.44'	T = 131.07'	T = 60.53'	T = 103.40'
R = 2,920.00'	R = 186.00'	R = 182.00'	R = 800.00'	R = 182.00'
	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SC = 0.11 NO = SEE PLANS

V_{DESIGN} = 25MPH V_{DESIGN} = 25MPH

PROJECT REFERENCE NO.	SHEET NO.
U-3326A,B	23A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 033025 ENGINEER KEVIN H. GULLEDGE
10/4/11

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR.
10/7/11
Daniel W. Gardner

NAD 1983

-B12A- POT Sta 9+78.39
-B12- POC Sta 10+06.6 ±
-Y2- Sta 15+46.95 (5.10' RT)

THE STATE OF NORTH CAROLINA DB 858 PG 940 (146)

HUNTER EDWARD PAGE AND WIFE BRENDA CARTER PAGE DB 922 PG 1238 (154)

TANK LAND, A NORTH CAROLINA GENERAL PARTNERSHIP (144)

TWO-CENTERED CURVE 70'-180' (17' OS)

-Y21- POT Sta 18+59.04
-Y21DETB- POT Sta 15+89.36

MITCHELENE A. MARTIN

N 68° 30' 23.7" E

-Y21DETB- PT Sta 15+10.59

-Y21DETB- PC Sta 12+83.15

B

TWO-CENTERED CURVE 50'-200' (7' OS)

-Y21DETB- PT Sta 10+87.18

HOWARD VAUGHN BILLIE SETLIFF JOE B. ROBERTSON TRUSTEES OF LITTLE SALEM CHRISTIAN CHURCH OF REIDSVILLE, N.C. (156)

HUNTER E. PAGE DB 1088 PG 244 (155)

CEMETERY

-L- PT Sta 305+93.91

N 77° 44' 50.6" E

RETAIN EXIST. R/W

ACCESS POINT

305+00

TWO-CENTERED CURVE 70'-180' (17' OS)

-L- PC Sta 300+00.00 ±
-Y21DETB- PC Sta 10+00.00
-Y21DETC- POT Sta 10+00.00

-Y21DETC- PT Sta 11+72.88

TWO-CENTERED CURVE 60'-280' (16' OS)

-Y21DETC- PC Sta 10+52.06

S 39° 58' 22.2" E

S 39° 58' 11.5" E

C

-Y21DETC- PC Sta 11+22.54

-B12- POC 302+16.8
-L- Sta. 302+52.30 (36.00' RT)
-Y2- Sta. 17+52.28 (60.09' LT)

RONALD D. ALLEN DB 1149 PG 1

WILLIAM FRANKLIN HUNTER DB 1097 PG 376 (148)

-Y21DETC- PT Sta 14+14.06

N 56° 09' 14.2" E

-L- PC Sta 293+45.53

-B12- POC 291+26.03 ±
-L- Sta. 293+30.86 (4.42' LT)

RONALD E. HARRIS AND BARBARA B. HARRIS DB 1095 PG 383 (142)

-BL-6 POC 291+79.58 ±
-L- Sta. 293+82.62 (22.98' LT)

-L- PT Sta 295+82.62

RETAIN EXIST. R/W

295+00

N 86° 39' 48.2" E

290+00

285+00

BM=20 SEE SHEET 1-E ELEV. 750.9'

HOWARD C. BURRSOE DB C'VD 1788 (143)

TIE FENCING TO PIPE ENDWALLS (TYP.)

TIE FENCING TO PIPE ENDWALLS (TYP.)

THE CITY OF REIDSVILLE, A MUNICIPAL CORPORATION DB 1821 PG 72

PAULINE D. TILLOTSON DB 47 PG 434 (141)

BARBARA C. LOY PB 26 PG 46 (139)

SPARKS AND SONS SERVICE STATIONS, INC. DB 638 PG 90 PB 18 PG 96 (136)

CARLAND L. HALBROOK CARLAND SCOTT HALBROOK PB 28 PG 92

LILLIE ROACH HEIRS PB 29 PG 15 DB 747 33

BISE DEVELOPMENTS, LLC DB 1375 PG 99 (137)

HOWARD C. BURRSOE DB C'VD 1788 (145)

PAULINE D. TILLOTSON (149)

STEVEN RAY KAY DB 1172 PG 349

KATE MASTER REID DB 542 PG 55 (150)

RUSSELL L. MITCHELL DB 1418 PG 306 (152)

DONNELL LEWIS BURTON DB 1476 PG 1839 (151)

VINCENT D. WILSON DB 1317 PG 1370 (153)

REGINA M. DILL DB 1200 PG 2436

LUCILLE M. CALLAHAN DB 1103 PG 1251

RUBY Z. TAYLOR

LUCAS R. SLATE DB 1418 PG 1839

ANNA BELL ROBERTSON ESTATE DB 9 PG 56 (160)

LONG'S CHAPEL UNITED METHODIST CHURCH DB 1181 PG 1

CALVARY'S HILL BAPTIST CHURCH DB 88 PG 390 (157)

-Y2- POC Sta 26+43.00 ±
-Y21DETC- POT Sta 16+87.54

-B12- POC 22+52.30 ±
-Y2- Sta. 27+50.13 (24.52' LT)

BRIAN LEE RAINBOW DB 1376 PG 304 (158)

MATTHEW BLACKWELL (159)

TEMPORARY SIGNAL

SEE SHEET 6C FOR -Y21DETB- PROFILE
SEE SHEET 6D FOR -Y21DETC- PROFILE

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

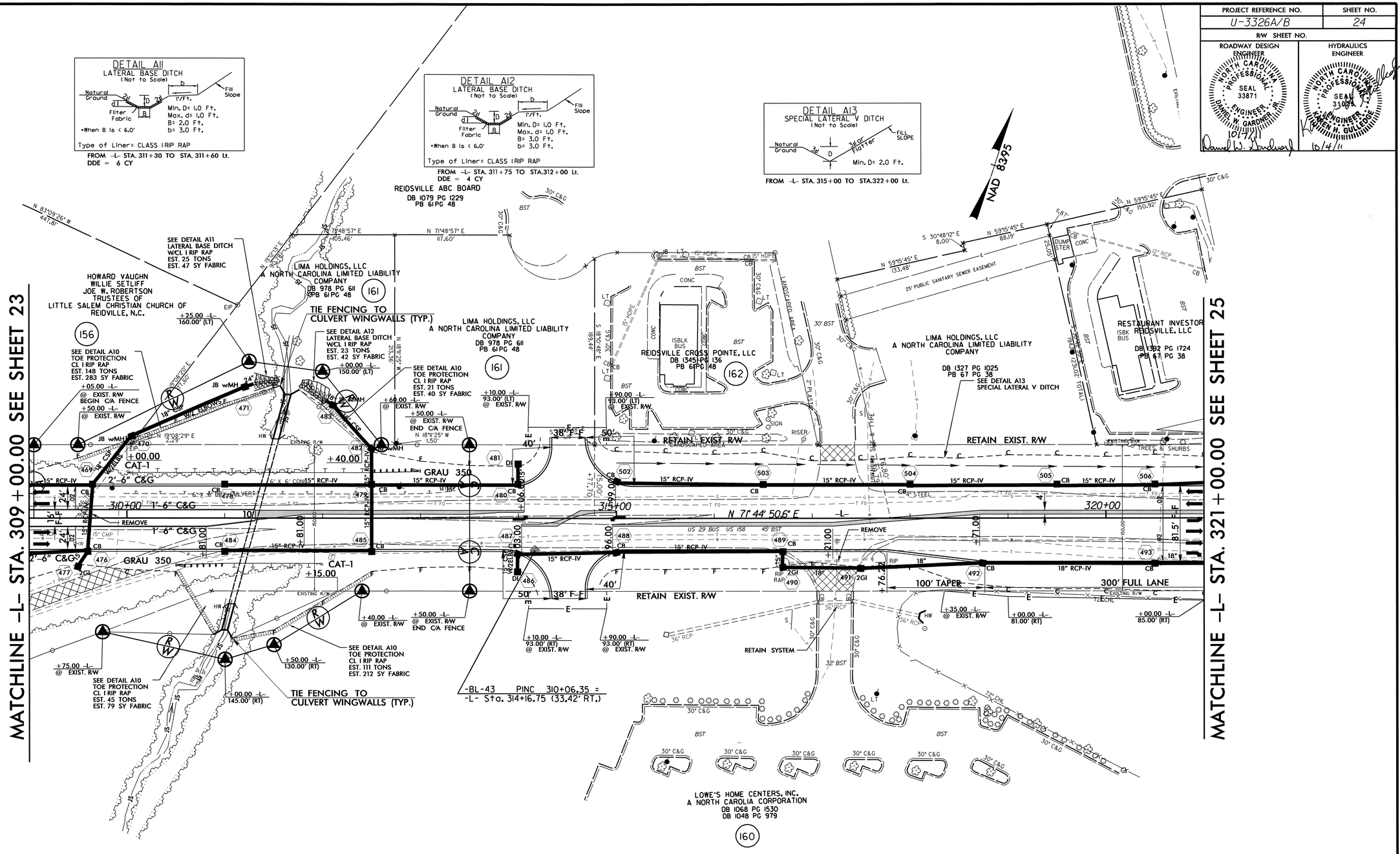
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	24
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER JOHN W. GARDNER 10/7/11

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 31004 ENGINEER KAREN H. GULLEDGE 10/4/11

REVISIONS

8/17/99



SEE SHEET 41 FOR -L- PROFILE
SEE SHEETS C-19 THRU C-25 FOR CULVERT PLANS
SEE TMP PLANS FOR LOCATION OF TEMP. WIDENING AND DRAINAGE

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	25
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER 10/4/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31626 ENGINEER KEVIN N. GULLEDGE 10/4/11

8/17/99

REVISIONS

MATCHLINE -L- STA. 321+00.00 SEE SHEET 24

-Y22- STA. 12+19.00 BEGIN CONSTRUCTION

BEGIN 2'-6" C&G -Y22- STA. 14+67.38 LT. & RT.

-L- POT Sta. 323+01.07= -Y22- POT Sta. 16+12.31

-Y22-
PI Sta 21+09.44
Δ = 2° 54' 43.7" (LT)
D = 5° 43' 46.5"
L = 50.83'
T = 25.42'
R = 1,000.00'
SE = EXIST.

NAD 83'95

DETAIL A13
SPECIAL LATERAL V DITCH
(Not to Scale)
Natural Ground, 3H, D, 3H or Flatter, FILL SLOPE
Min. D= 2.0 Ft.
FROM -L- STA. 315+00 TO STA. 322+00 Lt.

-Y22-
NC 14

	16,845 / 32,400		
3,345 / 6,400		1,726 / 3,300	
-L- FREEWAY DRIVE		-L- FREEWAY DRIVE	
10,912 / 24,800		6,815 / 17,000	
	2,693 / 5,100	215 / 400	
	14,682 / 28,200		

-Y22- NC 14 — 2010 ADT / 2035 ADT

DETAIL A14
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2H, dT, D, 2H, B, b, 1':1Ft., Fill Slope, Filter Fabric
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 3.0 Ft.
b= 3.0 Ft.
*When B is < 6.0'
Type of Liner= CLASS B Rip-Rap
FROM -L- STA. 324+00 TO STA. 325+00 Lt.
DDE = 218 CY

DETAIL A15
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2H, dT, D, 2H, B, b, 1':1Ft., Fill Slope, Filter Fabric
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 3.0 Ft.
b= 3.0 Ft.
*When B is < 6.0'
Type of Liner= CLASS B RIP RAP
FROM -L- STA. 325+30 TO STA. 326+40 Lt.
DDE = 27 CY

REMOVE/REPLACE CB
RIP RAP (15' WIDTH)
RETAIN SYSTEM
CONC ISL
10' C&G
28' BST
30' C&G
653
REMOVE CB
100' TAPER
50'
RIP RAP
44'
-Y22-
180'
200' FULL LANE
RETAIN EXISTING R/W
PLUG FILL W/FLOWABLE MATERIAL
+75.00 -Y22- @ EXIST. R/W
+50.00 -L- 170.00' (LT)
+00.00 -L- 170.00' (LT)
SEE DETAIL A14 LATERAL BASE DITCH W/CLASS B RIP RAP EST. 50 TONS EST. 138 SY FABRIC
MICHAEL W. APPLE DB 1030 PG 2382
163
SEE DETAIL A15 LATERAL BASE DITCH W/CLASS B RIP RAP EST. 55 TONS EST. 152 SY FABRIC
+70.00 -L- 130.00' (LT) 115.00' (LT) @ EXIST. R/W
BM#25 SEE SHEET 1-E ELEV. 727.23'
+15.00 -L- @ EXIST. R/W
-BL-45 PINC 324+24.10 = -L- Sta. 328+30.86 (21.17' LT.)
END 2'-6" C&G -L- STA. 329+52.00 LT. & RT.
164
PEGGY S. RICKMAN DB 759 PG 640
C & G TRUCKING, INC. DB 793 PG 1156
@ EXIST. R/W 87.00' (LT)
+00.00 -L- 91.00' (LT)
+50.00 -L- 85.00' (LT)
+00.00 -L- @ EXIST. R/W
+50.00 -L- @ EXIST. R/W
+00.00 -L- 86.00' (RT)
+15.00 -L- @ EXIST. R/W
-L- POT Sta. 335+29.09
400' LANE TRANSITION LT. & RT.
RETAIN EXISTING R/W
N 07°13'22" E 43.47'
N 07°13'22" E 1.64'
+50.80 16.52
509
REMOVE 44
18" RCP-IV
510
2Gh60
CB
CAT-1
511
I-1
18" RCP
15" CPP-IV
REMOVE DI
45'
90'
514
18" CSP W/2 ELBOWS
18" JB w/MH
517
PDE
+70.00 -L- 130.00' (LT) 115.00' (RT) @ EXIST. R/W
+15.00 -L- @ EXIST. R/W
260' TAPER
508
SIG LT
507
CB
30" RCP-IV
15" RCP-IV
512
CB
18" RCP-IV
613
CB
6' x 2' BOX CULVERT
515
CB
516
+90.63
+38.00
+08.00
325+00
-L- N 71° 44' 50.6" E
CB
518
15" RCP-IV
519
CB
+52.00
+40.00
330+00
GRAU 350
2'-6" C&G
1'-6" C&G
1'-6" C&G
4' PS
520
15"
335+00
-L- STA. 333+52.00
END PROJECT U-3326A/B
US 29 BUS
24" BST
REMOVE
15" RCP
GR
521
36" INC. TYP.
+16.00
+01.00
81.5' F-F
02
12" CI
CB
18" RCP-IV
494
R/W MON.
SIG LT
RETAIN SYSTEM
18" CMP
DI
90'
180'
+50.00 -L- @ EXIST. R/W
+00.00 -L- 85.00' (RT)
+89.66 75.00'
SHOP CURVED GUARDRAIL (150' R)
END 2'-6" C&G -Y22- STA. 17+58.93 LT. & RT.
-BL-44 PINC 318+22.03
-BY22- PINC 11+80.54 =
-L- Sta. 322+32.36 (44.25' RT.)
-Y22- Sta. 16+40.65 (16.65' RT.)
498
496
CB
15" RCP-IV
MTL
CB
15" RCP-IV
CB
15" RCP-IV
CB
15" RCP-IV
499
CB
500
2'-6" C&G
4' PS
CAT-1
495
12"
45'
180'
18" CSP W/2 ELBOWS
24" CSP
497
18" JB w/MH
501
18" CSP
BANDEXTEND
100' FULL LANE
180'
+10.00 -L- @ EXIST. R/W
+80.00 -L- @ EXIST. R/W
+90.00 -L- 95.00' (RT) @ EXIST. R/W
+50.00 -L- @ PROP. PUE
+00.00 -L- 105.00' (RT)
+80.00 -L- @ EXIST. R/W
+50.00 -L- 105.00' (RT)
+50.00 -L- 123.00' (RT)
+48.66 80.40'
RETAIN EXISTING R/W
PUE
PDE
+65.00 -L- @ EXIST. R/W 130.00' (RT) 150.00' (RT)
SEE DETAIL A16 LATERAL BASE DITCH LINE W/PSRM EST. 51 SY
+00.00 -Y22- @ EXIST. R/W
N 00°25'29" E 64.48'
S
165
ANTHONY TYRONE BRIDGES DB 1226 PG 2176
ISFD
S 00°43'17" W 61.51'
W/LT
B & B INVESTMENTS OF REIDSVILLE, LLC DB 1110 PG 428
N 87°46'23" E 66.13'
S 14°36'22" W 87.64'
S 09°48'36" W 89.24'
N 85°34'29" E 64.32'
NORMAN CARL DAVIS ESTATE
S 00°23'58" E 55.07'
S 00°23'57" E 23.94'
S 87°09'06" E 602.36'
N 85°34'30" E 260.86'
TIE TO EXISTING GUARDRAIL -Y22- STA. 17+71.86 LT.
-Y22- STA. 17+75.00 END CONSTRUCTION
-Y22- PC Sta. 20+84.02
-Y22- PT Sta. 21+34.85
S 33° 39' 21.2" E
160
LOWE'S HOME CENTERS, INC. A NORTH CAROLINA CORPORATION DB 1068 PG 1530 DB 1048 PG 979
RETAIN EXISTING R/W
US 158
76' BST
60' CMP
20+00
25.00'
S
CB
20' C&G
163
MICHAEL W. APPLE DB 1030 PG 2382

DETAIL A16
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2H, dT, D, 2H, B, b, 1':1Ft., Fill Slope
Min. D= 1.0Ft.
Max. d= 1.0Ft.
B= 2.0Ft.
b= 3.0Ft.
Type of Liner= PSRM
FROM -L- STA. 324+80 TO STA. 325+50 Rt.
DDE = 23 CY

★Rev. REVISED SIGNAL

SEE SHEET 42 FOR -L- PROFILE
SEE SHEETS C-26 THRU C-32 FOR CULVERT PLANS
SEE SHEET 59 FOR -Y22- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	26
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER — 10/7/11

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 31935 ENGINEER KEITH H. GULLEDGE — 10/4/11

REVISIONS

8/17/99

-Y10A-	
PI Sta 11+70.61	PI Sta 16+44.06
△ = 45° 28' 17.9" (RT)	△ = 79° 13' 05.7" (LT)
D = 17° 37' 46.1"	D = 13° 28' 52.9"
L = 257.93'	L = 587.61'
T = 136.19'	T = 351.70'
R = 325.00'	R = 425.00'
SE = 0.04	SE = 0.04
R0 = SEE PLANS	R0 = SEE PLANS

NAD 83/95

-Y10- POT Sta. 10+00.00

-Y10- STA. 12+50.00 BEGIN CONSTRUCTION

-BY10- U3326-3 POT 5+00.00

-Y10A- PRC Sta. 12+92.35

-Y10A- PC Sta. 10+34.42

-Y10- POT Sta. 16+23.14=
-Y10A- POT Sta. 10+00.00

65' LANE TRANSITION LT. AND RT.

N 83°16'34.1" E -Y10- 15+00

MATCHLINE -Y10- STA. 18+00.00 SEE SHEET 11

R. P. RICHARDSON HEIRS

POND W.E. 832.9

CL B RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC

CL B RIP RAP W/FILTER FABRIC EST. 2 TON EST. 7 SY FABRIC

+00.00 -Y10- 60.00' (LT) @ EXIST. R/W

+50.00 -Y10- 70.00' (LT)

+00.00 -Y10- 74.00' (LT)

+54.00 -Y10- 73.00' (LT)

+50.00 -Y10- 60.00' (LT)

+80.00 -Y10- 40.00' (LT)

+82.00 -Y10- 55.00' (LT)

+00.00 -Y10- 54.00' (LT)

+50.00 -Y10- 57.00' (LT)

+92.35 -Y10- 40.00' (LT)

+50.00 -Y10- 42.00' (LT)

+00.00 -Y10- 45.00' (RT)

+92.35 -Y10- 40.00' (RT)

+00.00 -Y10- 56.00' (RT)

+00.00 -Y10- 40.00' (RT)

+05.00 -Y10- 53.00' (RT)

+88.00 -Y10- 82.00' (LT)

+80.00 -Y10- 70.00' (LT) BEGIN C/A FENCE

+00.00 -Y10- @ EXIST. R/W

+50.00 -Y10- @ EXIST. R/W 35.00' (RT)

+50.00 -Y10- 48.00' (RT)

+00.00 -Y10- 56.00' (RT)

+80.00 -Y10- 35.00' (RT)

+65.00 -Y10- 35.00' (RT)

+45.00 -Y10- 55.00' (RT)

+50.00 -Y10- 46.00' (RT)

+50.00 -Y10- 47.00' (RT)

+60.00 -Y10- 35.00' (RT)

+00.00 -Y10- 63.00' (RT)

DO NOT DISTURB SIGN BEGIN 2'-6" C&G -Y10- STA. 14+39.39 RT.

DO NOT DISTURB SIGN

LANE TRANSITION

TAPER

REMOVE

COLLAR/EXTEND

CLARA SMITH FREEMAN, ET AL
DB 1265 PG 1978
DB 805 PG 540
PB 25 PG 51

(D.C. SMITH FARM ELIGIBLE FOR NATIONAL REG. OF HISTORIC PLACES)

BM#31
SEE SHEET 1-E
ELEV. 821.52'

166 ROBERT MICHAEL ROURK AND WIFE JEAN ANN GALINDO ROURK NAJEEB UR REHMAN AND WIFE MUNIRA RAUF REHMAN
DB 928 PG 1179
PB 33 PG 84

167 CHRISTOPHER WADE TRENT
DB 1286 PG 833
PB 57 PG 98

168 ELTON H. TRENT, JR. ET. AL.
DB 735 PG 470
DB 704 PG 427

168A S&E INVESTMENTS LLC.
DB 1221 PG 1141
PB 54 PG 77

ELTON H. TRENT, III
SALLIE E. TRENT
DB 999 PG 1855
DB 1001 PG 1807
DB 1054 PG 801
DB 1063 PG 1836

-Y10A-
SR 2414
REID SCHOOL ROAD

-Y10- US 158		-Y10- US 158
4,126 / 8,200		
767 / 1,600 — 100 / 100 — 1,197 / 2,400		1,634 / 3,300
		4,145 / 7,200
		100 / 100
9,745 / 17,800 — 330 / 700		11,756 / 21,200
4,582 / 8,100		100 / 100 — 100 / 100 — 100 / 100
100 / 100		
508 / 600		

HEMCO CONV. STORE — 2010 ADT / 2035 ADT

★ PROPOSED SIGNAL

SEE SHEET 45 FOR -Y10- PROFILE
SEE SHEET 48 FOR -Y10A- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	27
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR. — 10/4/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31015 ENGINEER KEITH H. GULLEDGE — 10/4/11

-Y13C-	-DRV3-
PI Sta 17+06.44	PI Sta 10+50.08
Δ = 51° 11' 24.4" (RT)	Δ = 64° 15' 33.5" (LT)
D = 19° 05' 54.9"	D = 173° 37' 24.9"
L = 268.03'	L = 37.01'
T = 143.70'	T = 20.72'
R = 300.00'	R = 33.00'
SE = SEE PLANS	SE = SEE PLANS

NAD 83/95

REVISIONS

8/17/99

ROBERT J. FRENCH
DB 1030 PG 2375

S 88°37'02" W 186.85'

S 25°50'58" W 324.06'

N 36°09'38" E 360.00'

-Y13- POT Sta. 7+00.00

IS BK D

-Y13- STA. 8+50.00
BEGIN CONSTRUCTION

CL B RIP RAP
W/FILTER FABRIC
EST. 2 TON
EST. 7 SY FABRIC

169

JOHN D. LOVE OIL COMPANY
DB 1072 PG 1846

600' LANE TRANSITION LT. & RT.

+50.00 -Y13- @ EXIST. R/W
+00.00 -Y13- 57.00' (LT)
+50.00 -Y13- 52.00' (LT)
+75.00 -Y13- 61.00' (LT)
+50.00 -Y13- 59.00' (LT)

+70.00

10+00

NC 87 HARRISON ST 22' BST

REMOVE 2GI

4' PS

-Y13- S 66° 41' 25.9" E

8" TYPE UNKNOWN

15" RCP

+47.57 51.23'

+00.00 -Y13- @ EXIST. R/W
+50.00 -Y13- 56.00' (RT)
+00.00 -Y13- 61.00' (RT)
+50.00 -Y13- 69.60' (RT)
+00.00 -Y13- 73.00' (RT)
+75.00 -Y13- @ EXIST. R/W
+00.00 -Y13- @ PROP. R/W 66.00' (RT)

-BY13-69 POT 5+00.00 =
-Y13- Sta. 11+49.36 (17.22' RT.)

BM#27
SEE SHEET 1-E
ELEV. 762.46'

-Y13- POT Sta. 14+35.30=
-Y13C- POT Sta. 18+61.18
@ PROP. R/W
N 23° 19' 12.5" E

-Y13C- PT Sta. 18+30.77

+90.00 -Y13C- 30.00' (LT)
+38.00 -Y13C- 30.00' (LT) 66.00' (LT)
+03.00 -Y13C- 30.00' (LT) 66.00' (LT)

CL B RIP RAP
W/FILTER FABRIC
EST. 7 TON
EST. 22 SY FABRIC

WILLIAM BUSICK
DB 1222 PG 1609

98

S 36°06'49" W 355.80'

-Y13C- PC Sta. 15+62.74
N 27° 52' 11.9" W

+62.74 -Y13C- 30.00' (LT)

-DRV3- POT Sta. 10+00.00
S 87° 34' 07.5" W
-DRV3- PC Sta. 10+29.36
-DRV3- PT Sta. 10+66.37
S 23° 18' 34.1" W

-Y13- POT Sta. 14+33.84=
-DRV3- POT Sta. 11+19.10

102

LOVE TRACTOR SALES, INC.
DB 714 PG 720

TIE -DRV3- TO EXIST. PARKING
AS DIRECTED BY ENGINEER

+05.00 -DRV3- 50.00' (RT)
+50.00 -DRV3- 47.00' (RT)
+58.00 -DRV3- 42.00' (RT)

END 2'-6" C&G
-Y13- STA. 15+50.00
58.00' LT.

+70.00 -Y13- 70.00' (RT) @ EXIST. R/W
+90.00 -Y13- 70.00' (LT) @ EXIST. R/W
+50.00 -Y13- 70.00' (LT)
+00.00 -Y13- 62.00' (LT)

-DRV3-

15+00

2'-6" C&G

-15" RCP-IV

RETAIN

BYJB w/MH

4' PS 30"

+00.00 -Y13- 70.00' (RT)
+15.00 -Y13- 70.00' (RT) 80.00' (RT)
+95.00 -Y13- 70.00' (RT)
END C/A FENCE
+18.00 -Y13C- 30.00' (RT) 47.00' (RT)
+50.00 -Y13C- 30.00' (RT) 34.00' (RT)
+62.74 -Y13C- 30.00' (RT)

98

WILLIAM BUSICK
DB 1222 PG 1609

-Y13- STA. 16+00.00 SEE SHEET 17

-Y13C- STA. 15+35.00 SEE SHEET 17

SEE SHEET 50 FOR -Y13- PROFILE
SEE SHEET 53 FOR -Y13C- PROFILE
SEE SHEET 53 FOR -DRV3- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	28
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER JAMIE W. GARDNER 10/7/11

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KRISTY H. GULLEDGE 10/4/11

NAD 83/95

REVISIONS

8/17/99

MATCHLINE -Y13- STA. 31+00.00 SEE SHEET 17

105

ADOLA INVESTMENTS, LLC
DB 1038 PG 2205

-Y14- STA. 21+00.00
BEGIN CONSTRUCTION

-Y14- POT Sta. 21+95.88=
-Y14B- POT Sta. 10+00.00
-Y14B- PC Sta. 10+15.97

N 86° 00' 24.4" E

-Y14B- STA. 10+50.00
END CONSTRUCTION

-Y14B- PT Sta. 10+65.99

-Y14B- POT Sta. 11+41.04

-Y13- POT Sta. 34+55.17=
-Y14- POT Sta. 22+27.28
-BL- SPS U3326-6
-BY13- PINC 26+64.47
-L- Sta. 207+41.86 (854.16' RT.)
-Y13- Sta. 32+98.80 (19.60' LT.)

-BY13-71 POT 31+53.30

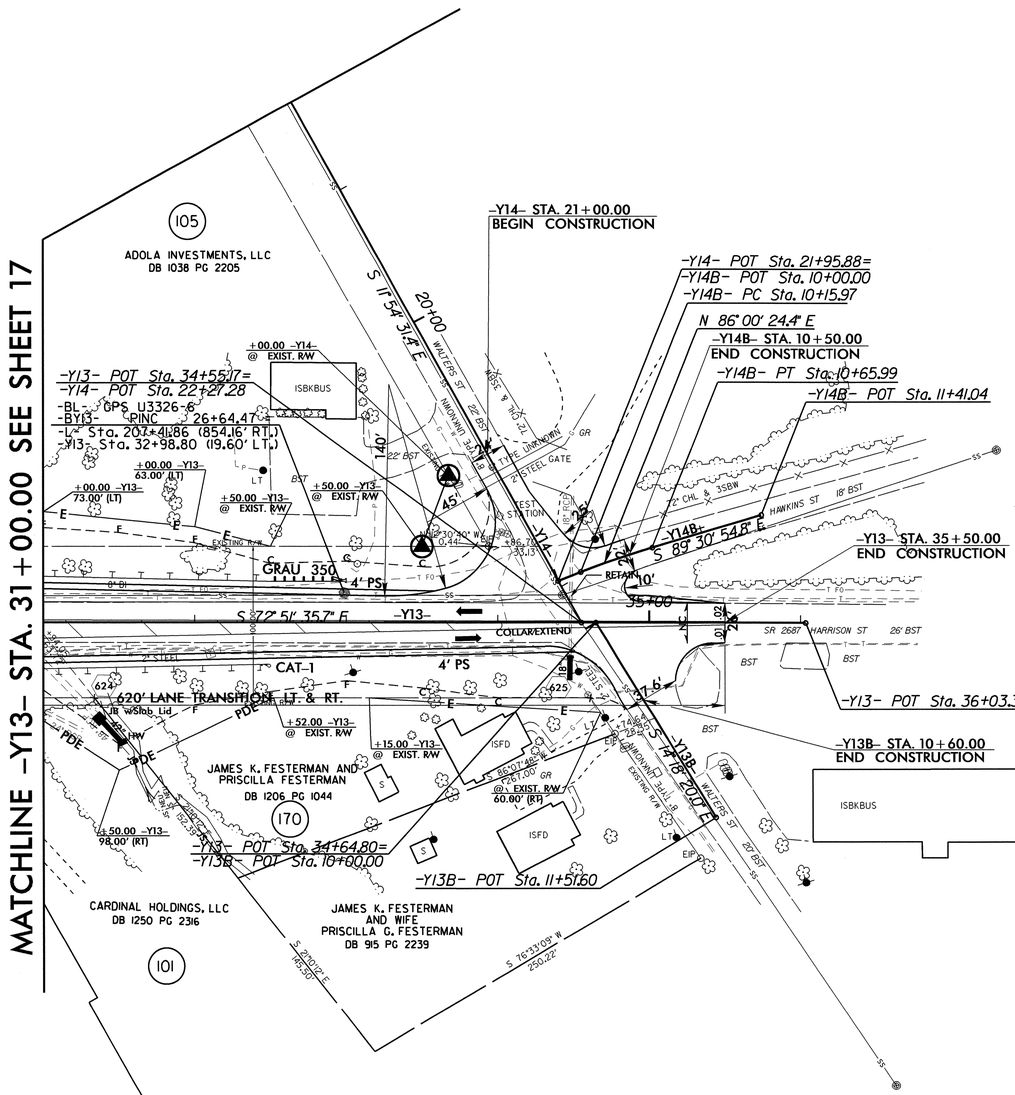
-Y13- STA. 35+50.00
END CONSTRUCTION

-Y14B-
PI Sta 10+40.99
Δ = 4° 28' 40.8" (RT)
D = 8° 57' 08.9"
L = 50.02'
T = 25.02'
R = 640.00'
SE = EXIST.

-Y13- POT Sta. 36+03.30

-Y13B- STA. 10+60.00
END CONSTRUCTION

BM=28
SEE SHEET 1-E
ELEV. 792.22'



SEE SHEET 50 FOR -Y13- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	29
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER JAMES W. GARDNER JR.
8/17/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN H. GULLEDGE
10/4/11

-Y21-		-Y21A-	
PI Sta 11+42.72	PI Sta 16+50.81	PI Sta 12+33.50	PI Sta 13+31.59
Δ = 8° 58' 47.5" (LT)	Δ = 7° 28' 06.3" (LT)	Δ = 3° 40' 24.5" (LT)	Δ = 58° 36' 21.2" (RT)
D = 5° 43' 46.5"	D = 1° 25' 56.6"	D = 3° 27' 05.6"	D = 71° 37' 11.0"
L = 156.73'	L = 521.39'	L = 106.43'	L = 81.83'
T = 78.52'	T = 261.07'	T = 53.23'	T = 44.90'
R = 1,000.00'	R = 4,000.00'	R = 1,660.00'	R = 80.00'
SE = EXIST.	SE = 0.03	SE = SEE PLANS	SE = SEE PLANS
	R0 = SEE PLANS		

NAD 83/95

N 723356.5
E 1982300

-Y21A- POT Sta. 10+00.00
-Y21A- STA. 11+75.00
BEGIN CONSTRUCTION

-BY21A-90 POT 5+00.00

FLUSH DITCH OUT

154
HUNTER EDWARD PAGE AND WIFE BRENDA CARTER PAGE
DB 1012 PG 1338

+15.00 -Y21A- @ EXIST. R/W
+00.00 -Y21A- 41.00' (LT)

-Y21A- PRC Sta. 12+86.69
+75.00 -Y21A- @ EXIST. R/W
+00.00 -Y21A- 39.00' (LT)

EXISTING R/W
CITY HEIGHTS LOOP SR 3335 12' BST
EXISTING R/W

S 19° 58' 58.5" W -Y21A-

100' TAPER
25' LT. & RT.
TYP.

WAL-MART REAL ESTATE
DB 1204 PG 598
DB 1204 PG 602
DB 1204 PG 606
DB 1204 PG 609
PB 54 PG 47

-Y21A- PC Sta. 11+80.26

-Y21- STA. 12+25.00
BEGIN CONSTRUCTION

-Y21- POT Sta. 10+00.00

EXISTING R/W
RETAIN

-Y21A- PT Sta. 13+68.52

4.0' CONC. SW

30' INC. TYP.

+50.00

REMOVE/REPLACE W/15" RCP

640 2GI

S 14° 04' 22.8" E

SR 2670 NORTH SCALES ST 24' BST -Y21-

S 5° 05' 35.3" E

-BY21-86 POT 5+00.00 =
-Y21- Sta. 10+08.74 (21.76' RT.)

400' LANE TRANSITION
LT. & RT.

641 40TCB

RETAIN
EXISTING R/W

W/LT

72' CHL

-Y21- PC Sta. 13+89.74

REMOVE/REPLACE OTCB

-Y21- POC Sta. 14+55.50=
-Y21A- POT Sta. 13+84.05

-Y21- PC Sta. 10+64.19

-Y21- PT Sta. 12+20.92

THE STATE OF NORTH CAROLINA
DB 658 PG 942
146

TANK LAND, A NORTH CAROLINA GENERAL PARTNERSHIP
DB 861PG 905

ISMTL
BUS

MATCHLINE -Y21- STA. 15+00.00 SEE SHEET 23

BM#22
SEE SHEET I-E
ELEV. 740.73'

SEE SHEET 56 FOR -Y21- PROFILE
SEE SHEET 56 FOR -Y21A- PROFILE

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	30

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER, JR.
10/4/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KEITH H. GULLEDGE
10/4/11

BEGIN GRADE -L- STA. 14+00.00
ELEV. = 822.94'

BM1 ELEVATION = 800.58
N 934290 E 1802927
-L- STATION 10+00
N 77^ 48' 57.7" E DIST. 355.82
R/R SPIKE IN BASE OF 22" WHITE OAK

PI = 15+30.00
EL = 825.94'
VC = 240'
K = 88 (DS > 50 MPH)

(+)2.3077%
(-)10.4190%

PIPE HYDRAULIC DATA
EXISTING CROSSPIPE STA. 18+25

DRAINAGE AREA	=	4.8	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	12	CFS
DESIGN HW ELEVATION	=	816.92	FT
100 YEAR DISCHARGE	=	13	CFS
100 YEAR HW ELEVATION	=	817.17	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	24	CFS
OVERTOPPING ELEVATION	=	821.31	FT

PI = 21+60.00
EL = 823.30'
VC = 360'
K = 234 (DS > 65 MPH)

(-)10.4190%
(-)11.9559%
820.53

18"

-L-

SEE SHEET 4 FOR PLAN VIEW

BM2 ELEVATION = 809.21
N 934120 E 1801240
-L- STATION 23+03.213' LEFT
R/R SPIKE IN BASE OF 10" TWIN PEAR

820.53

(-)11.9559%
(-)11.9559%
(-)13.3892%

PI = 25+00.00
EL = 816.65'
VC = 320'
K = 223 (DS > 65 MPH)

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 19,20,21

DRAINAGE AREA	=	59	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	120	CFS
DESIGN HW ELEVATION	=	772.75	FT
100 YEAR DISCHARGE	=	140	CFS
100 YEAR HW ELEVATION	=	772.37	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	397	CFS
OVERTOPPING ELEVATION	=	788.50	FT

PI = 34+25.00
EL = 785.30'
VC = 630'
K = 130 (DS > 55 MPH)

(-)13.3892%
(+)1.4522%
788.59

BEGIN SPEC LAT V DITCH
-L- STA. 32+00.00 LT
EL. = 787.38

(-)1.1020%

END SPEC LAT V DITCH
-L- STA. 33+00.00 LT
EL. = 776.38

PI = 35+00.000
EL = 772.35
(+).01600%
(+).05600%
(-)1.3846%
36.42

BEGIN LAT BASE DITCH
-L- STA. 34+50.00 RT
EL. = 772.21

BEGIN STD BASE DITCH
-L- STA. 34+65.00 LT
EL. = 770.46

END STD BASE DITCH
-L- STA. 35+90.00 LT
EL. = 763.00

END LAT BASE DITCH
-L- STA. 36+00.00 RT
EL. = 780.91

DITCH LEGEND
LEFT DITCH
RIGHT DITCH

SEE SHEET 5 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	31

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/4/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN H. GULLEDGE
10/4/11

-L-

840 830 820 810 800 790 780 770 760

36 37 38 39 40 41 42 43 44 45 46 47 48 49

788.59

(+)1.45222%

BM3 ELEVATION = 811.82
N 935304 E 1799675
-L- STATION 42+35 153' RIGHT
R/R SPIKE IN BASE OF 15" POPLAR

BEGIN SPEC LAT V DITCH
-L- STA 46+50.00 RT
EL = 794.90

(-)1.46400%

PI =46+00.000
EI = 792.58

(+)8.4200%

END SPEC LAT V DITCH
-L- STA 46+50.00 RT
EL = 796.79

BEGIN LAT BASE DITCH
-L- STA 48+50.00 RT
EL = 799.22

(-)5.58400%

PI =49+00.000
EI = 791.30

806.72

DITCH LEGEND
RIGHT DITCH ----------
SEE SHEET 6 FOR PLAN VIEW

-L-

840 830 820 810 800 790 780 770 760

49 50 51 52 53 54 55 56 57 58 59 60 61 62

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 42

DRAINAGE AREA	=	15	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	37	CFS
DESIGN HW ELEVATION	=	794.35	FT
100 YEAR DISCHARGE	=	43	CFS
100 YEAR HW ELEVATION	=	796.42	FT
OVERTOPPING FREQUENCY	=	100+	YRS
OVERTOPPING DISCHARGE	=	47	CFS
OVERTOPPING ELEVATION	=	801.00	FT

PI = 57+60.00
EL = 819.21'
VC = 470'
K = 246 (DS > 65 MPH)

(+)1.45222%

(-)0.45704%

817.20

806.72

(-)5.26000%

24"

(+)1.16000%

(-)0.50000%

(+)24.00000%

PI =49+00.000
EI = 791.30

END LAT BASE DITCH
BEGIN LAT GRASS SWALE
-L- STA 49+50.00 RT
EL = 788.67

PI =50+00.000
EI = 788.42

END LAT GRASS SWALE
-L- STA 50+50.00 RT
EL = 789.00

SPEC LAT V DITCH
-L- STA 51+00.00
EL = 801.03

BM4 ELEVATION = 823.77
N 936715 E 1798515
-L- STATION 61+29 122' RIGHT
R/R SPIKE IN BASE OF 16" RED OAK

DITCH LEGEND
RIGHT DITCH ----------
SEE SHEET 7 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	32

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

10/4/11

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KARA N. GULLEDGE

10/4/11

-L-

PI = 65+50.00
EL = 815.60'
VC = 320'
K = 285 (DS > 80 MPH)

PI = 73+65.00
EL = 821.02'
VC = 150'
K = 113 (DS > 50 MPH)

817.20

820.72

(-)0.4570%

(+)0.6650%

(+)0.6650%

(-)0.6611%

SEE SHEET 8 FOR PLAN VIEW

820.72

(-)0.6611%

PI = 82+00.00
EL = 815.50'
VC = 550'
K = 472 (DS > 80 MPH)

820.52

(-)0.6611%

(+)0.5032%

BM5 ELEVATION = 810.73
N 938426 E 1797584
-L- STATION 80+76 125' RIGHT
R/R SPIKE IN BASE OF 14" TWIN WHITE OAK

SEE SHEET 9 FOR PLAN VIEW

62 63 64 65 66 67 68 69 70 71 72 73 74

74 75 76 77 78 79 80 81 82 83 84 85 86 87 88

780 790 800 810 820 830 840

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	33

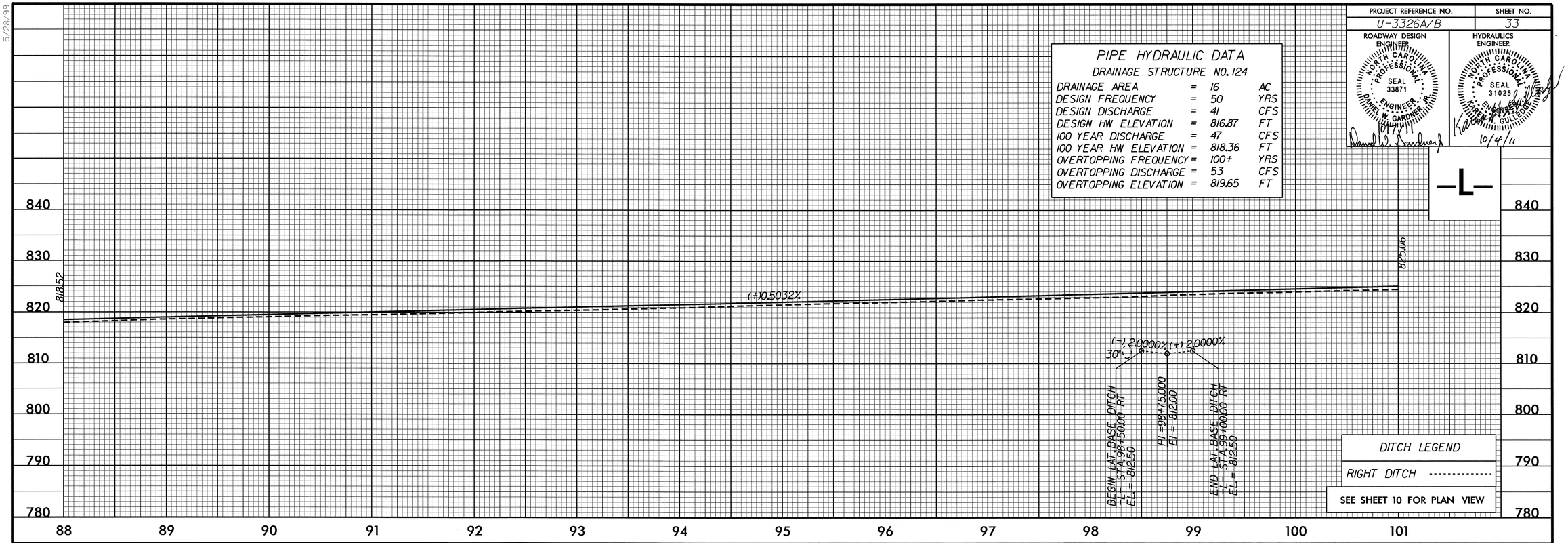
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR.
10/4/11

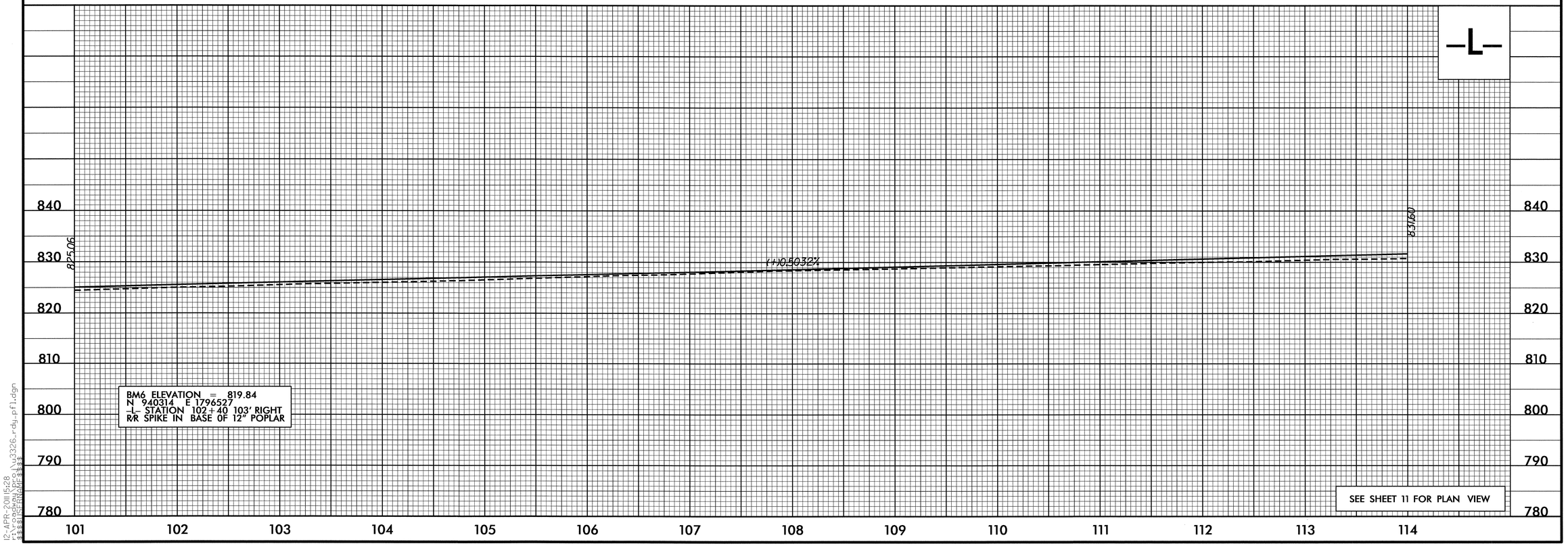
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN M. GULLEDGE
10/4/11

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 124

DRAINAGE AREA	=	16	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	41	CFS
DESIGN HW ELEVATION	=	816.87	FT
100 YEAR DISCHARGE	=	47	CFS
100 YEAR HW ELEVATION	=	818.36	FT
OVERTOPPING FREQUENCY	=	100+	YRS
OVERTOPPING DISCHARGE	=	53	CFS
OVERTOPPING ELEVATION	=	819.65	FT





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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	34

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR.
10/7/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER MARK A. GULLEDGE
10/7/11

BM7 ELEVATION = 847.64
N 941700 E 1795608
℄ STATION 118+40 229' LEFT
RR SPIKE IN BASE OF 6" WILLOW OAK

-L-

831.60
837.73
(+)0.5032%
(-)12.0000%
(-)4.0000%
BEGIN LAT'L DITCH
-L- STA. 122+95.00 LT
EL = 829.50
PI = 123+00.00
EL = 828.90
END LAT'L DITCH
-L- STA. 123+50.00 LT
EL = 826.90

DITCH LEGEND
LEFT DITCH
SEE SHEET 11 FOR PLAN VIEW

PI = 129+00.00
EL = 839.15'
VC = 740'
K = 347 (DS > 75 MPH)

837.73
(+)0.5032%
(-)1.6312%
821.21
BEGIN LAT. BASE DITCH
-L- STA. 138+10.00 LT
EL = 812.50
PI = 139+00.000
EL = 808.19
(-)1.6800%
PI = 139+50.000
EL = 807.35
(-)0.2500%
807.23

DITCH LEGEND
LEFT DITCH
SEE SHEET 12 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	35

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR.
10/4/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN R. GULLEDGE
10/4/11

5/28/99

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 186

DRAINAGE AREA	=	117	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	240	CFS
DESIGN HW ELEVATION	=	777.54	FT
100 YEAR DISCHARGE	=	280	CFS
100 YEAR HW ELEVATION	=	778.62	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	587	CFS
OVERTOPPING ELEVATION	=	792.40	FT

PI = 142+45.00
EL = 817.21'
VC = 150'
K = 319 (DS > 75 MPH)

(-)1.63123%
(-)2.10118%
(-)0.25000%
(+)4.47700%
66'
821.21
807.23
795.04
PI =140+50.000
EL = 807.10
END LAT BASE DITCH
-L- STA.141+50.00 LT
EL = 811.57
BEGIN LAT BASE DITCH
-L- STA.148+20.00 LT
EL = 771.54
END LAT BASE DITCH
-L- STA.148+75.00 LT
EL = 770.54
(-)1.81812%
66'
BEGIN LAT BASE DITCH
-L- STA.150+50.00 RT
EL = 765.30
(-)1.80000%
PI =151+50.000
EL = 763.50
(+)1.66667%
END LAT BASE DITCH
-L- STA.151+80.00 RT
EL = 763.30

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 171

DRAINAGE AREA	=	11	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	28	CFS
DESIGN HW ELEVATION	=	808.88	FT
100 YEAR DISCHARGE	=	30	CFS
100 YEAR HW ELEVATION	=	808.95	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	329	CFS
OVERTOPPING ELEVATION	=	816.60	FT

BM8 ELEVATION = 809.51
N 944251 E 1796068
-L- STATION 143+65 207' RIGHT
"X" IN BACK OF CONCRETE CURB

BM9 ELEVATION = 786.08
N 944886 E 1796034
-L- STATION 149+98 154' RIGHT
R/R SPIKE IN BASE OF 24" POPLAR

DITCH LEGEND
LEFT DITCH
RIGHT DITCH

SEE SHEET 13 FOR PLAN VIEW

-L-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 198

DRAINAGE AREA	=	98.5	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	200	CFS
DESIGN HW ELEVATION	=	776.89	FT
100 YEAR DISCHARGE	=	240	CFS
100 YEAR HW ELEVATION	=	777.69	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	486	CFS
OVERTOPPING ELEVATION	=	785.94	FT

PI = 159+05.00
EL = 782.32'
VC = 620'
K = 128 (DS > 55 MPH)

795.04
(-)2.10187%
(+)2.73325%
(+)1.12200%
(+)1.12000%
54'
48"
BEGIN LAT BASE DITCH
-L- STA.158+80.00 RT
EL = 768.90
PI =159+00.000
EL = 771.14
END LAT BASE DITCH
-L- STA.159+50.00 RT
EL = 776.75
(+)6.50000%
(+)3.50000%
BEGIN SPEC LAT GRASS SWALE
-L- STA.160+65.00 LT
EL = 784.55
PI =161+00.000
EL = 785.00
END SPEC LAT BASE DITCH
BEGIN SPEC LAT GRASS SWALE
-L- STA.160+55.00 RT
EL = 783.25
(+)1.28571%
(+)1.56400%
(+)0.50000%
PI =161+50.000
EL = 785.25
END SPEC LAT GRASS SWALE
-L- STA.163+50.00 LT
EL = 788.91
END SPEC LAT GRASS SWALE
-L- STA.163+50.00 RT
EL = 790.20
(+)2.41750%
(+)1.56400%
804.04

BM10 ELEVATION = 800.93
N 946459 E 1796157
-L- STATION 165+74 230' RIGHT
R/R SPIKE IN BASE OF 16" ASH

DITCH LEGEND
LEFT DITCH
RIGHT DITCH

SEE SHEET 14 FOR PLAN VIEW

-L-

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	36

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR.
10/4/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KATHERINE DEST GULLEDGE
10/4/11

—L—

PI = 178+45.00
EL = 834.92'
VC = 740'
K = 214 (DS > 65 MPH)

PI = 171+50.00
EL = 816.34'
VC = 150'
K = 2536 (DS > 80 MPH)

804.04

(+)2.73250%

(+)2.67334%

(+)2.67334%

(-)10.79210%

832.59

SEE SHEET 15 FOR PLAN VIEW

840 830 820 810 800 790 780

167 168 169 170 171 172 173 174 175 176 177 178 179 180 181

—L—

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 244

DRAINAGE AREA	=	11	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	28	CFS
DESIGN HW ELEVATION	=	821.54	FT
100 YEAR DISCHARGE	=	32	CFS
100 YEAR HW ELEVATION	=	824	FT
OVERTOPPING FREQUENCY	=	100+	YRS
OVERTOPPING DISCHARGE	=	36.5	CFS
OVERTOPPING ELEVATION	=	828.42	FT

832.59

(-)10.79210%

824.19

(-)10.98600%

(-) 3.46000%

(-) 3.44000%

(+) 2.8000%

(+) 9.52900%

18"

BEGIN LAT.V. DITCH
L1 STA.183+50.00 RT
EL = 821.50

PI =184+00.000
EI = 815.81

PI =184+50.000
EI = 814.08

PI =185+00.000
EI = 812.36

END LAT.V. DITCH
BEGIN SPEC.LAT.V. DITCH
L1 STA.185+50.00 RT
EL = 813.45

END SPEC.LAT.V. DITCH
L1 STA.186+50.00 RT
EL = 823.14

BM11 ELEVATION = 815.01
N 948377 E 1796209
—L— STATION 185+33.150' RIGHT
RR SPIKE IN BASE OF 14" POPLAR

DITCH LEGEND

RIGHT DITCH ----------

SEE SHEET 16 FOR PLAN VIEW

840 830 820 810 800 790 780

181 182 183 184 185 186 187 188 189 190 191 192

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	37

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER, JR.

10/4/11

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN M. GULLEDGE

10/4/11

-L-

824.19

PI = 203+50.00
EL = 815.08'
VC = 600'
K = 126 (DS > 55 MPH)

(-)0.7920%

(-)5.5500%

805.08

PI = 203+50.00
EL = 814.9050'
VC = 600'
K = 126 (DS > 55 MPH)

BEGIN GRADE -GLLT- & -GLRT- STA. 200+50.00
ELEV. = 817.2810'

END GRADE -GLLT- & -GLRT- STA. 206+50.00
ELEV. = 798.2550'

SEE SHEET 17 FOR PLAN VIEW

805.86

PI = 208+50.00
EL = 787.33'
VC = 250'
K = 123 (DS > 55 MPH)

(-)5.5500%

(-)3.5460%

753.92

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 288

DRAINAGE AREA	=	54	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	111	CFS
DESIGN HW ELEVATION	=	752.87	FT
100 YEAR DISCHARGE	=	111	CFS
100 YEAR HW ELEVATION	=	753.53	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	452	CFS
OVERTOPPING ELEVATION	=	775.20	FT

BM12 ELEVATION = 758.56
N 937949 E 1797723
-L- STATION 209+18 213' RIGHT
R/R SPIKE IN BASE OF 14" POPLAR

54"

SEE SHEET 17 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	38

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR. — 10/4/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KRISTIN W. GULLEDGE — 10/4/11

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	470	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	711.23	FT
BASE DISCHARGE	=	540	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	712.07	FT
OVERTOPPING DISCHARGE	=	800+	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	735.20	FT

PI = 222+10.00
EL = 739.50'
VC = 520'
K = 209 (DS > 75 MPH)

PI = 226+00.00
EL = 735.50'
VC = 150'
K = 264 (DS > 80 MPH)

753.92

(-)3.5169%

(-)1.0256%

(-)1.0256%

(-)0.4571%

735.27

(-)0.4571%

C-L STA 225+82.25
1@7'X7' RCBC
G.P. ELEV. = 735.74
SKEW = 120 DEG
EXTEND INLET 1@7'X7'
EXTEND OUTLET 1@7'X8'

BM13 ELEVATION = 710.41
N 951368 E 1798543
-L- STATION 224+40 144' RIGHT
R/R SPIKE IN BASE OF 24" POPLAR

BEGIN LAT BASE DITCH
EL STA 226+95.60 LT
EL. = 710.06

END LAT BASE DITCH
EL STA 227+20.00 LT
EL. = 706.47

(+)1.6400%

-L-

SEE SHEET 18 FOR PLAN VIEW

733.21

(-)0.4571%

(-)0.6420%

(-)0.6420%

(-)0.7333%

724.70

PI = 233+00.00
EL = 732.30'
VC = 500'
K = 2705 (DS > 80 MPH)

PI = 238+00.00
EL = 729.09'
VC = 150'
K = 1679 (DS > 80 MPH)

BM15 ELEVATION = 724.27
N 953008 E 1799081
-L- STATION 241+12 447' LEFT
R/R SPIKE IN BASE OF 14" RED OAK

(-)5.2400%

(+)7.4200%

BEGIN SPEC LAT V DITCH
EL STA 231+40.00 RT
EL. = 728.39

PI = 231+50.00
EL = 725.77

END SPEC LAT V DITCH
EL STA 232+00.00 RT
EL. = 729.48

BM14 ELEVATION = 737.97
N 952388 E 1799737
-L- STATION 239+27 436' RIGHT
R/R SPIKE IN BASE OF 15" PINE

-L-

DITCH LEGEND

RIGHT DITCH ----------

SEE SHEET 19 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	39

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR.

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN L. GULLEDGE

10/4/11

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	1140	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	696.37	FT
BASE DISCHARGE	=	1350	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	697.40	FT
OVERTOPPING DISCHARGE	=	1980+	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	701.2	FT

BM16 ELEVATION = 712.03
N 953704 E 1799780
-L- STATION 250+74 172' LEFT
R/R SPIKE IN BASE OF 24" RED OAK

724.70

℄ -L- STA. 250+30.41
2@8'X8' RCBC
G.P. ELEV. = 720.09
SKEW = 120 DEG
EXTEND 2@8'X8'

PI = 253+00.00
EL = 718.12'
VC = 150'
K = 645 (DS > 80 MPH)

718.75

T=-0.7313%

(-)0.4988%

(-)0.4988%

BEGIN LAT. V. DITCH
-L- STA. 250+00.00 RT
EL. = 689.58

PI = 250+50.000
EL = 692.20

(+) 4.4400%

(+) 1.0700%

PI = 251+50.000
EL = 695.21

(+) 9.4600%

PI = 252+00.000
EL = 698.00

(+) 5.5500%

(+) 8.6800%

PI = 253+00.000
EL = 703.55

END LAT. V. DITCH
-L- STA. 253+50.00 RT
EL. = 707.89

(+) 3.0526%

END LAT. BASE DITCH
-L- STA. 256+37.00 LT
EL. = 702.91

BEGIN LAT. BASE DITCH
-L- STA. 255+80.00 LT
EL. = 701.71

DITCH LEGEND

LEFT DITCH

RIGHT DITCH

SEE SHEET 20 FOR PLAN VIEW

-L-

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 395

DRAINAGE AREA	=	12	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	27	CFS
DESIGN HW ELEVATION	=	716.67	FT
100 YEAR DISCHARGE	=	31	CFS
100 YEAR HW ELEVATION	=	717.41	FT
OVERTOPPING FREQUENCY	=	100+	YRS
OVERTOPPING DISCHARGE	=	36	CFS
OVERTOPPING ELEVATION	=	718.50	FT

PI = 257+25.00
EL = 716.00'
VC = 600'
K = 187 (DS > 50 MPH)

718.15

(-)0.4988%

(+)2.7136%

24"

PI = 263+50.00
EL = 732.96'
VC = 320'
K = 98 (DS > 50 MPH)

(+)2.7136%

(+)5.9977%

PI = 267+10.00
EL = 754.53'
VC = 180'
K = 87 (DS > 50 MPH)

(+)5.9977%

(+)3.9121%

758.91

SEE SHEET 21 FOR PLAN VIEW

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	40

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/4/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN H. GULLEDGE
10/4/11

-L-

PI = 279+50.00
EL = 803.04'
VC = 1,245'
K = 146 (DS > 55 MPH)

(+)3.912%

(-)1.6186%

784.33

765.88

(+)1.5769%

(+)3.0250%

(+)2.0500%

END LAT. V. DITCH
-L- STA. 271+30.00 LT
EL. = 762.67

BEGIN LAT. V. DITCH
-L- STA. 270+00.00 LT
EL. = 752.82

BEGIN SPEC. CUT DITCH
-L- STA. 272+30.00 LT
EL. = 772.23

PI = 273+50.000
EL. = 775.86

END SPEC. CUT DITCH
-L- STA. 275+90.00 LT
EL. = 776.68

BM19 ELEVATION = 790.15
N 955711 E 1801504
-L- STATION 277+32 105' RIGHT
R/R SPIKE IN BASE OF 28" POPLAR

DITCH LEGEND
LEFT DITCH
SEE SHEET 22 FOR PLAN VIEW

784.33

(-)1.6186%

(-)0.5107%

750.45

-L-

PI = 290+25.00
EL = 753.39'
VC = 600'
K = 146 (DS > 60 MPH)

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 434

DRAINAGE AREA	= 52	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 110	CFS
DESIGN HW ELEVATION	= 710.02	FT
100 YEAR DISCHARGE	= 130	CFS
100 YEAR HW ELEVATION	= 710.57	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 254	CFS
OVERTOPPING ELEVATION	= 717.59	FT

BEGIN LAT. BASE DITCH
-L- STA. 290+56.00 RT
EL. = 706.39

(+)8.1500%

END LAT. BASE DITCH
-L- STA. 291+76.00 RT
EL. = 716.17

60"

BEGIN LAT. BASE DITCH
-L- STA. 292+80.00 RT
EL. = 708.89

END LAT. BASE DITCH
-L- STA. 293+40.00 RT
EL. = 710.69

(+)10.2000%

60"

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 435

DRAINAGE AREA	= 62	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 140	CFS
DESIGN HW ELEVATION	= 714.11	FT
100 YEAR DISCHARGE	= 160	CFS
100 YEAR HW ELEVATION	= 714.66	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 232	CFS
OVERTOPPING ELEVATION	= 717.55	FT

DITCH LEGEND
RIGHT DITCH
SEE SHEET 23 FOR PLAN VIEW

BM20 ELEVATION = 750.19
N 956899 E 1802756
-L- STATION 294+62 97' RIGHT
R/R SPIKE IN BASE OF 16" PINE

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	41

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER, JR.
10/14/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN HIGGINS
10/14/11

-L-

PI = 308+50.00
EL = 744.07'
VC = 150'
K = 528 (DS > 80 MPH)

750.45

(-)10.5107%

(-)10.7950%

743.67

BEGIN LAT. BASE DITCH
-L- STA. 299+00.00 LT
EL. = 719.69

6' (+) 11.0000%

END LAT. BASE DITCH -L-
-L- STA. 299+50.00 LT
EL. = 712.59

DITCH LEGEND
LEFT DITCH
SEE SHEET 23 FOR PLAN VIEW

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	250	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	706.73	FT
BASE DISCHARGE	=	290	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	707.51	FT
OVERTOPPING DISCHARGE	=	450+	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	739.60	FT

℄ -L- STA. 311+30.62
1@6'X6' RCBC
G.P. ELEV. = 741.84
SKEW = 105 DEG.
EXTEND INLET 1@6'X6'
EXTEND OUTLET 1@6'X7'

PI = 312+50.00
EL = 740.89'
VC = 150'
K = 243 (DS > 65 MPH)

743.67

(-)10.7950%

(-)11.4128%

(-) 11.1292%

(-)11.4128%

729.05

726.41

BEGIN LAT. BASE DITCH
-L- STA. 311+30.00 LT
EL. = 699.33

END LAT. BASE DITCH
-L- STA. 311+60.00 LT
EL. = 699.96

BEGIN LAT. BASE DITCH
-L- STA. 311+75.00 LT
EL. = 699.57

END LAT. BASE DITCH
-L- STA. 312+00.00 LT
EL. = 706.92

BEGIN SPEC. CUT DITCH
-L- STA. 315+00.00 LT
EL. = 733.25

DITCH LEGEND
LEFT DITCH
SEE SHEET 24 FOR PLAN VIEW

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	42

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER, JR.
10/4/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN N. GULLEDGE
10/4/11

-L-

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	360	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	692.77	FT
BASE DISCHARGE	=	420	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	693.61	FT
OVERTOPPING DISCHARGE	=	750+	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	725.00	FT

PI = 325+00.00
EL = 723.23'
VC = 960'
K = 193 (DS > 70 MPH)

BM25 ELEVATION = 727.23
N 958334 E 1805725
-L- STATION 327+96 127' LEFT
R/R SPIKE IN BASE OF 15" PINE

BM26 ELEVATION = 773.23
N 958616 E 1806701
-L- STATION 59+28 23605 LEFT
R/R SPIKE IN BASE OF 20" SWEET GUM

-L- STA. 324+72.83
1@5'X6' RCBC
G.P. ELEV. = 728.92
SKEW = 90 DEG
EXTEND 1@5'X6'

END GRADE -L- STA. 333+52.00
ELEV. = 753.51'

729.05
726.47

(-)1.1292% (-)5.8600% (-)1.4128% (+)3.5540%

PI = 321+50.000
El = 725.91

END SPEC. CUT DITCH
-L- STA. 322+00.00 LT
EL = 722.98'

BEGIN LAT. BASE DITCH
-L- STA. 324+80.00 RT
EL = 688.30

END LAT. BASE DITCH
-L- STA. 325+50.00 RT
EL = 691.96

(-)10.0000% (+)5.2286% (+)11.1182%

BEGIN LAT. BASE DITCH
-L- STA. 324+00.00 LT
EL = 694.51

END LAT. BASE DITCH
-L- STA. 325+00.00 LT
EL = 684.51

BEGIN LAT. BASE DITCH
-L- STA. 325+30.00 LT
EL = 684.59

END LAT. BASE DITCH
-L- STA. 326+40.00 LT
EL = 696.82

DITCH LEGEND
LEFT DITCH
RIGHT DITCH

SEE SHEET 25 FOR PLAN VIEW

830 820 810 800 790 780 770 760 750 740 730 720 710 700 690 680 670 660 650 640 630

321 322 323 324 325 326 327 328 329 330 331 332 333 334 335

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	43

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

10/17/11

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31035 ENGINEER KAREN H. GULLEDGE

10/4/11

–Y– LINES

–Y2–

PI = 12+15.00
EL = 816.62'
VC = 80'
K = 44 (DS > 35 MPH)

BEGIN RESURFACING –Y2– STA. 11+05.00
ELEV. = 812.65'

(+)3.2250%

(+)1.3969%

0.02

BEGIN GRADE –Y2– STA. 11+75.00
ELEV. = 815.33'
INCLUDES 3" RESURFACING DEPTH

END GRADE –Y2– STA. 12+61.53
ELEV. = 817.27'

SEE SHEET 5 FOR PLAN VIEW

–DRV4–

PI = 10+65.00
EL = 810.90'
VC = 60'
K = 15 (DS > 15 MPH)

PI = 11+70.00
EL = 821.17'
VC = 55'
K = 6 (DS > 15 MPH)

(+)0.9964%

0.020

(+)9.7810%

(+)5.6333%

BEGIN GRADE –DRV4– STA. 10+35.00
ELEV. = 809.21'

END GRADE –DRV4– STA. 11+98.10
ELEV. = 821.45'

SEE SHEET 4 FOR PLAN VIEW

–Y3–

BEGIN GRADE –Y3– STA. 11+50.00
ELEV. = 806.32'

PI = 12+00.00
EL = 806.66'
VC = 100'
K = 13 (DS > 15 MPH

PI = 13+25.00
EL = 817.36'
VC = 80'
K = 11 (DS > 20 MPH)

(+)0.6800%

(+)1.8560%

(+)2.5600%

(+)1.3765% 0.005

END GRADE –Y3– STA. 13+68.59
ELEV. = 817.96'

SEE SHEET 7 FOR PLAN VIEW

–Y– LINES

–Y4–

PI = 10+83.00
EL = 814.56'
VC = 100'
K = 13 (DS > 15 MPH)

PI = 11+85.00
EL = 820.18'
VC = 100'
K = 20 (DS > 30 MPH)

0.02

(+)0.9900%

(+)5.5137%

(+)2.5137%

(+)10.3938%

BEGIN GRADE –Y4– STA. 10+32.75
ELEV. = 815.56'

END GRADE –Y4– STA. 12+50.00
ELEV. = 820.44'
INCLUDES 3" RESURFACING DEPTH

END RESURFACING+WIDENING
–Y4– STA. 12+75.00

SEE SHEET 8 FOR PLAN VIEW

–Y5–

BEGIN GRADE –Y5– STA. 14+00.00
ELEV. = 820.67'
INCLUDES 3" RESURFACING DEPTH

BEGIN RESURFACING+WIDENING
–Y5– STA. 11+00.00

PI = 14+50.00
EL = 820.50'
VC = 100'
K = 45 (DS > 35 MPH)

(–)0.3400%

(–)2.5529%

0.002

15"

END GRADE –Y5– STA. 15+14.24
ELEV. = 818.86'

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 525

DRAINAGE AREA	=	0.50	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	1.84	CFS
DESIGN HW ELEVATION	=	816.70	FT
100 YEAR DISCHARGE	=	1.94	CFS
100 YEAR HW ELEVATION	=	816.74	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	9.7	CFS
OVERTOPPING ELEVATION	=	819.66	FT

SEE SHEET 9 FOR PLAN VIEW

–Y6–

BEGIN RESURFACING+WIDENING
–Y6– STA. 10+41.61

END RESURFACING+WIDENING
–Y6– STA. 13+75.00

0.02

SEE SHEET 9 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	44

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN H. GULLEDGE
10/4/11

–Y– LINES

–Y7–

BEGIN GRADE –Y7– STA. 10+34.44
ELEV. = 815.71'

0.02 (+)1.9315%

END GRADE –Y7– STA. 10+80.00
ELEV. = 816.59'

SEE SHEET 9 FOR PLAN VIEW

–Y8A–

BEGIN GRADE –Y8A– STA. 10+17.33
ELEV. = 810.73'

PI = 11+05.00
EL = 809.91'
VC = 150'
K = 40 (DS > 30 MPH)

0.014 (–)10.9353% (+)2.7939%

(+) 0.00000% (–)1.7940%

BEGIN LAT. BASE DITCH –Y8A– STA. 11+15.00 LT
EL. = 804.00

PI = 11+50.000
EL = 804.00

END LAT. BASE DITCH –Y8A– STA. 12+00.00 LT
EL. = 800.03

PI = 16+92.00
EL = 826.31'
VC = 200'
K = 88 (DS > 50 MPH)

827.88

(+)2.7939% (+)10.5112%

DITCH LEGEND
LEFT DITCH

SEE SHEET 10 FOR PLAN VIEW

–Y– LINES

–Y8A–

827.88

PI = 22+30.00
EL = 829.06'
VC = 320'
K = 213 (DS > 65 MPH)

(+)10.5112% (–)10.0867%

END GRADE –Y8A– STA. 24+38.36
ELEV. = 827.00'

SEE SHEET 11 FOR PLAN VIEW

–Y8–

PI = 15+70.00
EL = 816.61'
VC = 100'
K = 37 (DS > 35 MPH)

0.02 (+)4.7392% (+)2.0600%

BEGIN GRADE –Y8– STA. 15+20.00
ELEV. = 815.58'

END GRADE –Y8– STA. 16+28.66
ELEV. = 819.39'

SEE SHEET 10 FOR PLAN VIEW

–Y9–

PI = 10+85.00
EL = 819.93'
VC = 100'
K = 22 (DS > 20 MPH)

PI = 11+80.00
EL = 825.14'
VC = 90'
K = 13 (DS > 25 MPH)

0.02 (+)11.0010% (+)5.4842% (–)11.2889%

END GRADE –Y9– STA. 12+25.00
ELEV. = 824.56'

BEGIN GRADE –Y9– STA. 10+33.05
ELEV. = 819.41'

SEE SHEET 10 FOR PLAN VIEW

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	45

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER III — 10/7/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN K. GULLEDGE — 10/4/11

–Y10–

–Y– LINES

BEGIN RESURFACING + WIDENING
–Y10– STA. 12+50.00

BM31 ELEVATION = 821.52
N 941004 E 1794835
–Y10– STATION 13+06 99' RIGHT
R/R SPIKE IN BASE OF 12" ASH

BEGIN GRADE –Y10– STA. 15+50.00
ELEV. = 834.50'
INCLUDES 3" RESURFACING DEPTH

PI = 17+45.00
EL = 842.55'
VC = 100'
K = 88 (DS > 50 MPH)

PI = 23+60.00
EL = 860.92'
VC = 620'
K = 109 (DS > 50 MPH)

(+)14.1282%
(+)2.9870%
(+)2.9870%
(–)2.6810%

SEE SHEET 11 & 26 FOR PLAN VIEW

860 850 840 830 820

12 13 14 15 16 17 18 19 20 21 22 23 24 25

855.17

–Y10–

–Y– LINES

END GRADE –Y10– STA. 32+00.00
ELEV. = 851.41'
INCLUDES 3" RESURFACING DEPTH

(–)2.6810%
(–)2.6810%
(+)2.3231%

END RESURFACING + WIDENING
–Y10– STA. 33+16.00

PI = 29+40.00
EL = 845.37'
VC = 520'
K = 104 (DS > 50 MPH)

BEGIN LAT. V. DITCH
–Y10– STA. 26+80.00 LT
EL = 833.50

(–)5.4286%
(–)2.4000%
(+)5.7600%
(+)5.8400%
(+)9.5600%

PI = 27+50.000
EL = 829.70

PI = 28+00.000
EL = 828.50

PI = 28+50.000
EL = 831.38

PI = 29+00.000
EL = 834.30

END LAT. V. DITCH
–Y10– STA. 29+50.00 LT
EL = 839.08

DITCH LEGEND
LEFT DITCH

SEE SHEET 11 FOR PLAN VIEW

800 810 820 830 840 850 860

26 27 28 29 30 31 32 33 34

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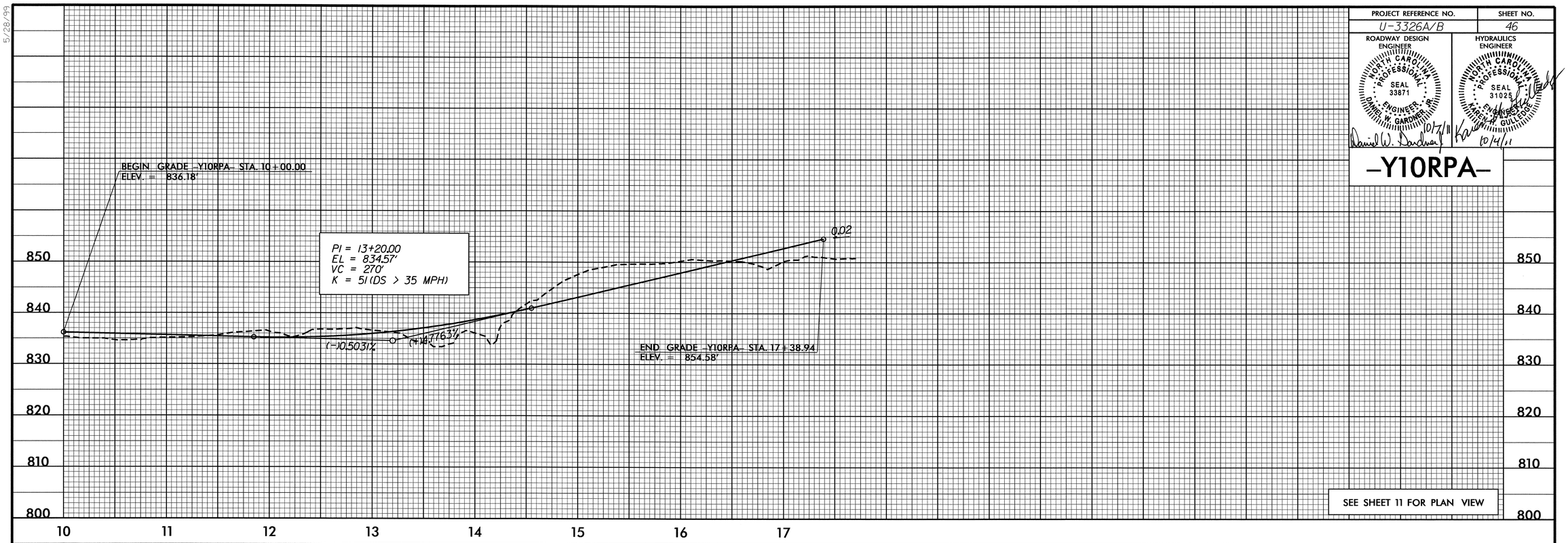
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	46

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

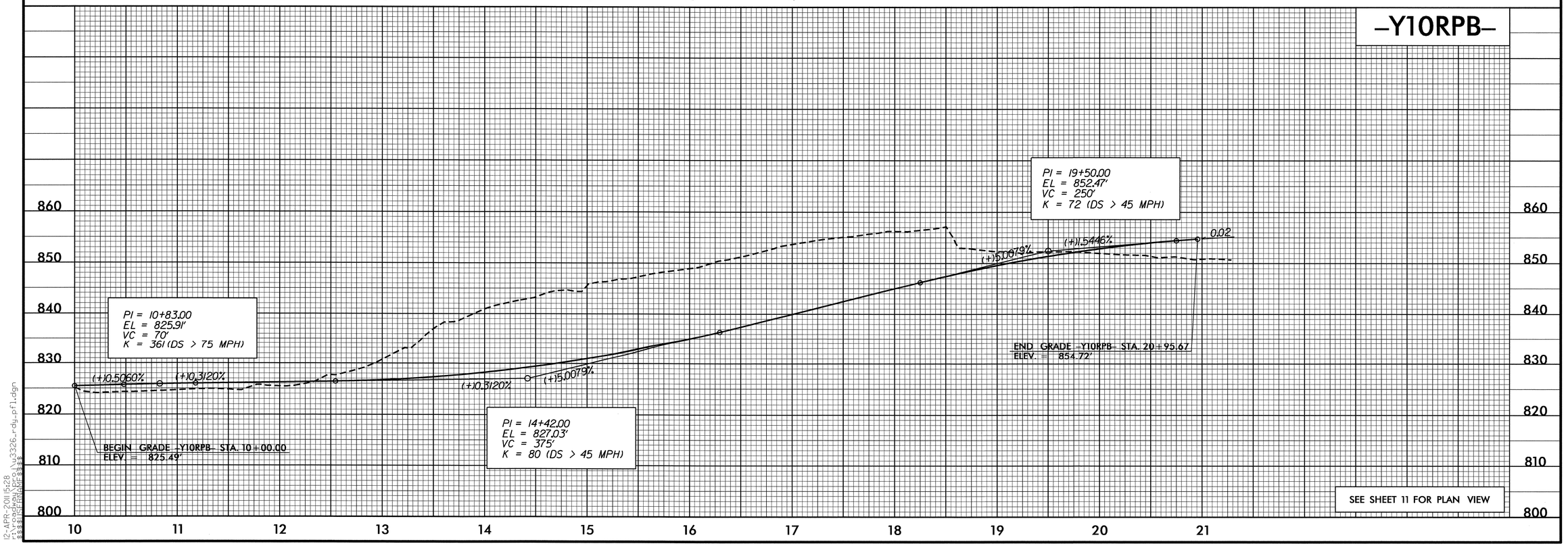
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN A. GULLEDGE
10/4/11

–Y10RPA–



SEE SHEET 11 FOR PLAN VIEW

–Y10RPB–



SEE SHEET 11 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	47

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11
Daniel W. Gardner

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KRISTA H. GULLEDGE
10/4/11

-Y10RPC-

BEGIN GRADE -Y10RPC- STA. 10+00.00
ELEV. = 824.99'

PI = 10+93.00
EL = 825.46'
VC = 150'
K = 732 (DS > 80 MPH)

PI = 15+99.00
EL = 826.98'
VC = 370'
K = 80 (DS > 45 MPH)

PI = 18+75.00
EL = 840.56'
VC = 120'
K = 37 (DS > 30 MPH)

PI = 20+25.00
EL = 852.78'
VC = 125'
K = 11 (DS > 20 MPH)

END GRADE -Y10RPC- STA. 20+90.66
ELEV. = 850.50'

(+)10.5054%
(+)10.3004%
(-)0.8600%
(-)0.9020%
(+)2.9423%
(+)5.2202%
(+)10.3004%
(+)14.9203%
(+)18.1461%
(-)3.4724%
0.06

(+)11.1800%
(+)3.6400%

BEGIN LAT. V. DITCH -Y10RPC- STA. 11+35.00 RT
EL. = 819.75

PI =11+85.000
El = 820.34
PI =12+35.000
El = 822.16
PI =12+85.000
El = 826.19
PI =13+87.000
El = 825.27
PI =14+39.000
El = 826.80

END LAT. V. DITCH -Y10RPC- STA. 14+93.00 RT
EL. = 829.62

DITCH LEGEND
RIGHT DITCH ----------

SEE SHEET 11 FOR PLAN VIEW

-Y10LPC-

BEGIN GRADE -Y10LPC- STA. 10+00.00
ELEV. = 829.58'

PI = 10+70.00
EL = 829.22'
VC = 130'
K = 146 (DS > 55 MPH)

PI = 13+15.00
EL = 825.78'
VC = 290'
K = 27 (DS > 30 MPH)

PI = 15+91.00
EL = 852.00'
VC = 100'
K = 9 (DS > 20 MPH)

END GRADE -Y10LPC- STA. 16+64.70
ELEV. = 850.69'

(-)0.5143%
(-)1.4041%
(-)1.4041%
(+)9.5000%
(+)9.5000%
(-)11.7775%
0.05

SEE SHEET 11 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	48

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER — 10/4/11

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN M. GULLEDGE — 10/4/11

–Y– LINES

–Y10A–

PI = 10+90.00
EL = 834.17'
VC = 140'
K = 17 (DS = 20 MPH)

PI = 15+50.00
EL = 851.88'
VC = 600'
K = 177 (DS > 60 MPH)

PI = 19+85.00
EL = 853.87'
VC = 80'
K = 58 (DS > 40 MPH)

(+)3.8500%
(+)0.4575%
(+)0.4575%
(+)0.9217%
(+)4.2143%
(+)3.8500%
0.02
18"

BEGIN GRADE –Y10A– STA. 10+20.00
ELEV. = 837.12'

END GRADE –Y10A– STA. 21+00.00
ELEV. = 852.81'
INCLUDES 1.5" RESURFACING

END RESURFACING + WIDENING
–Y10A– STA. 22+00.00

PIPE HYDRAULIC DATA		
DRAINAGE STRUCTURE NO. 557		
DRAINAGE AREA	= 1.8	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 6.56	CFS
DESIGN HW ELEVATION	= 843.97	FT
100 YEAR DISCHARGE	= 7.32	CFS
100 YEAR HW ELEVATION	= 844.09	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 12.5	CFS
OVERTOPPING ELEVATION	= 845.11	FT

SEE SHEET 11 & 26 FOR PLAN VIEW

–Y10C–

END RESURFACING + WIDENING
–Y10C– STA. 13+80.00

BEGIN RESURFACING + WIDENING
–Y10C– STA. 10+80.00

SEE SHEET 11 FOR PLAN VIEW

–Y10F–

PI = 10+37.00
EL = 852.28'
VC = 35'
K = 11 (DS > 20 MPH)

(–)0.5789%
(–)3.8235%
0.04

END GRADE –Y10F– STA. 10+88.00
ELEV. = 850.33'

BEGIN GRADE –Y10F– STA. 10+18.00
ELEV. = 852.39'

SEE SHEET 11 FOR PLAN VIEW

–Y11–

BEGIN RESURFACING + WIDENING
–Y11– STA. 11+25.00

PI = 12+40.00
EL = 796.83'
VC = 70'
K = 14 (DS > 25 MPH)

PI = 13+10.00
EL = 791.11'
VC = 60'
K = 12 (DS > 15 MPH)

(–)3.1000%
(–)18.1714%
0.02
(–)12.9927%

BEGIN GRADE –Y11– STA. 12+00.00
ELEV. = 798.15'
INCLUDES 1.5" RESURFACING

END GRADE –Y11– STA. 13+41.41
ELEV. = 790.17'

SEE SHEET 14 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	49

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

10/7/11

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KRISTEN HUGLER COX

10/4/11

–Y12–

–Y– LINES

BEGIN GRADE –Y12– STA. 10+00.00
ELEV. = 837.26'

PI = 10+95.00
EL = 838.02'
VC = 140'
K = 47 (DS > 40 MPH)

PI = 12+90.00
EL = 833.75'
VC = 170'
K = 67 (DS > 40 MPH)

PI = 14+40.00
EL = 834.25'
VC = 110'
K = 47 (DS > 40 MPH)

PI = 16+00.00
EL = 831.91'
VC = 70'
K = 69 (DS > 40 MPH)

PI = 18+25.00
EL = 838.55'
VC = 170'
K = 72 (DS > 45 MPH)

PI = 19+60.00
EL = 839.36'
VC = 100'
K = 53 (DS > 35 MPH)

(+)0.8000% (–)12.1897% (–)12.1897% (+)0.3333% (+)10.3333% (–)12.0010% (–)12.7807% (+)0.9511% (+)2.9511% (+)0.6000% (+)0.6000% (+)12.4923%

END GRADE –Y12– STA. 14+97.97
ELEV. = 833.09'

BEGIN GRADE –Y12– STA. 15+64.86
ELEV. = 831.23'

END GRADE –Y12– STA. 20+25.00
ELEV. = 840.98'
INCLUDES 3" RESURFACING

BM30 ELEVATION = 833.98
N 947613 E 1795258
–Y12– STATION 10+00
S 64^ 32' 13.7" W DIST. 206.19'
R/R SPIKE IN BASE OF 16" WHITE PINE

BM29 ELEVATION = 840.89
N 947829 E 1796505
–Y12– STATION 20+10
S 50^ 39' 29.3" E DIST. 86.91
R/R SPIKE IN BASE OF 20" RED OAK

SEE SHEET 15 & 15A FOR PLAN VIEW

–Y12B–

–Y– LINES

PI = 10+81.00
EL = 825.33'
VC = 90'
K = 9 (DS < 15 MPH)

PI = 11+80.00
EL = 832.82'
VC = 90'
K = 17 (DS > 25 MPH)

0.03 (–)1.9912% (+)7.5651% (+)12.3700%

END GRADE –Y12B– STA. 12+25.00
ELEV. = 835.19'

BEGIN GRADE –Y12B– STA. 10+35.30
ELEV. = 826.24'

SEE SHEET 16 FOR PLAN VIEW

–Y12C–

–Y– LINES

PI = 10+55.00
EL = 827.07'
VC = 80'
K = 19 (DS > 20 MPH)

PI = 11+55.00
EL = 830.88'
VC = 120'
K = 15 (DS > 25 MPH)

PI = 13+85.00
EL = 820.64'
VC = 145'
K = 22 (DS > 20 MPH)

0.02 (–)10.3463% (+)3.8100% (+)3.8100% (–)14.4522% (–)14.4522% (+)12.2666%

BEGIN GRADE –Y12C– STA. 10+14.57
ELEV. = 827.21'

END GRADE –Y12C– STA. 14+59.12
ELEV. = 822.32'

SEE SHEET 16 & 17 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	50

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11
David W. Gardner

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN M. GULLEDGE
10/4/11

–Y– LINES

–Y13–

BEGIN RESURFACING –Y13– STA. 8+50.00
ELEV. = 748.93'

BEGIN GRADE –Y13– STA. 8+70.00
ELEV. = 749.92'
INCLUDES 3" RESURFACING

PI = 10+70.00
EL = 757.31'
VC = 250'
K = 4278 (DS > 80 MPH)

PI = 15+24.00
EL = 773.82'
VC = 265'
K = 249 (DS > 70 MPH)

PI = 18+75.00
EL = 782.85'
VC = 230'
K = 159 (DS > 60 MPH)

(+)3.6950%
(+)3.6366%
(+)3.6366%
(+)2.5726%
(+)1.1267%

786.33

BM27 ELEVATION = 762.46
N 950267 E 1795890
–Y13– STATION 12+18 96' RIGHT
R/R SPIKE IN BASE OF 10" ELM

SEE SHEET 17 & 27 FOR PLAN VIEW

800 790 780 770 760 750 740

8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

–Y– LINES

–Y13–

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 624

DRAINAGE AREA	=	45	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	100	CFS
DESIGN HW ELEVATION	=	770.36	FT
100 YEAR DISCHARGE	=	120	CFS
100 YEAR HW ELEVATION	=	771.75	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	247	CFS
OVERTOPPING ELEVATION	=	787.30	FT

PI = 23+25.00
EL = 787.92'
VC = 670'
K = 1239 (DS > 80 MPH)

PI = 29+84.00
EL = 791.78'
VC = 375'
K = 422 (DS > 80 MPH)

PI = 32+82.00
EL = 790.88'
VC = 150'
K = 170 (DS > 80 MPH)

(+)1.1267%
(+)0.5857%
(+)0.5857%
(–)0.3020%
(–)0.3020%
(–)1.1866%

786.33

END GRADE –Y13– STA. 35+50.00
ELEV. = 787.70

42"

BM28 ELEVATION = 792.22
N 949344 E 1798290
–Y13– STATION 36+03
S 34^ 27' 08.7" DIST. 223.81'
R/R SPIKE IN BASE OF 24" MAPLE

SEE SHEET 17 & 28 FOR PLAN VIEW

800 790 780 770 760 750

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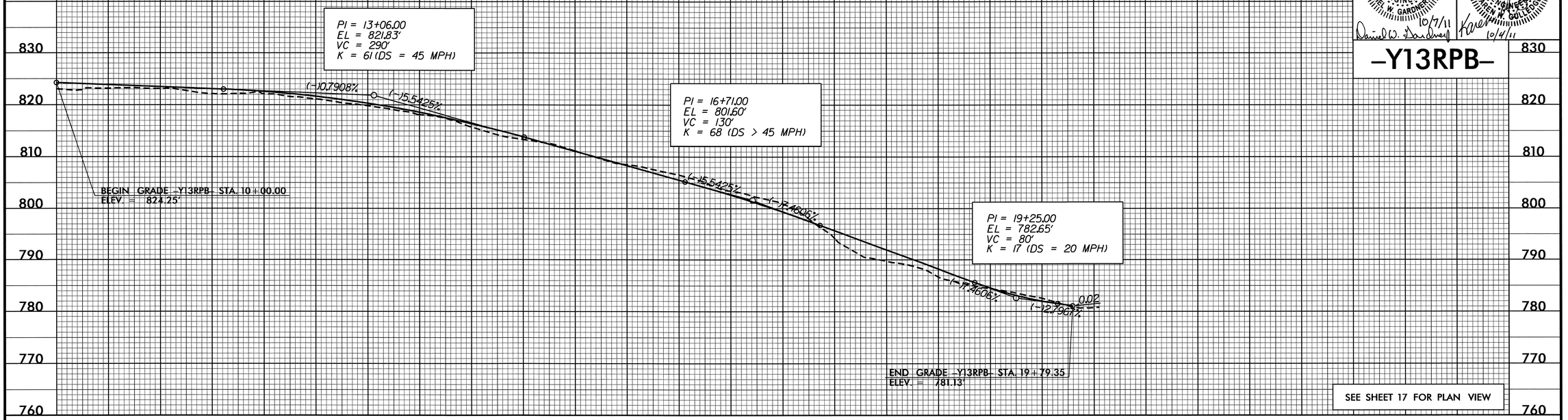
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	51

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

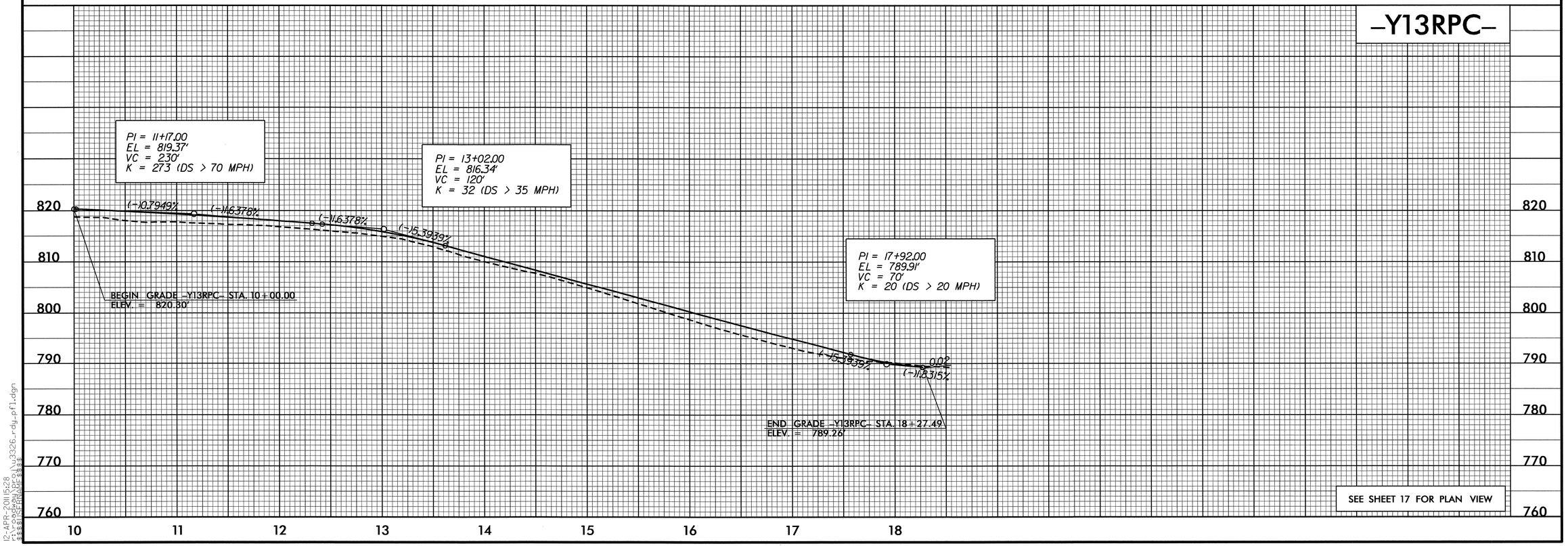
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN M. GULLEDGE
10/4/11

-Y13RPB-



SEE SHEET 17 FOR PLAN VIEW

-Y13RPC-



SEE SHEET 17 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	52

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

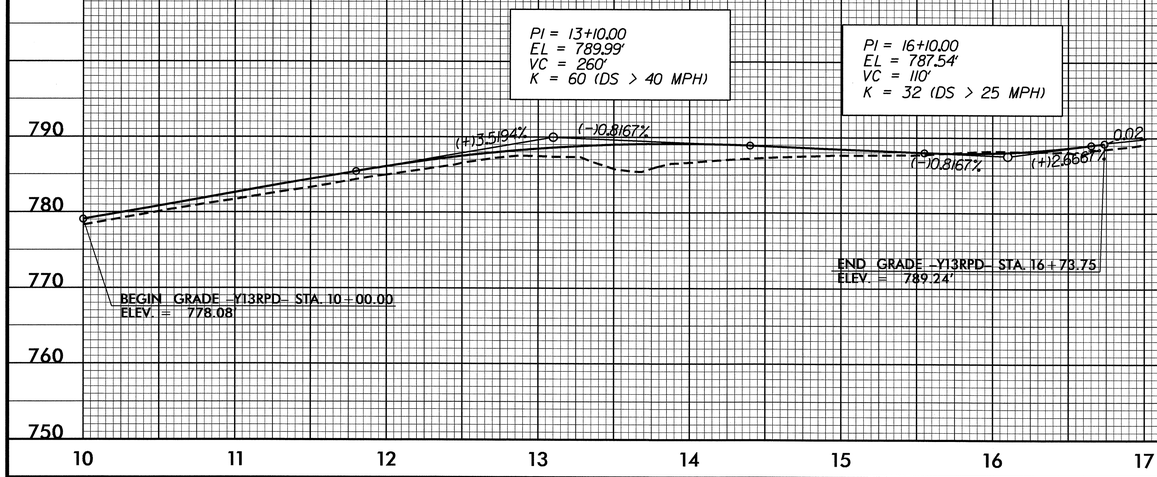
10/7/11

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER JOHN H. GULLEDGE

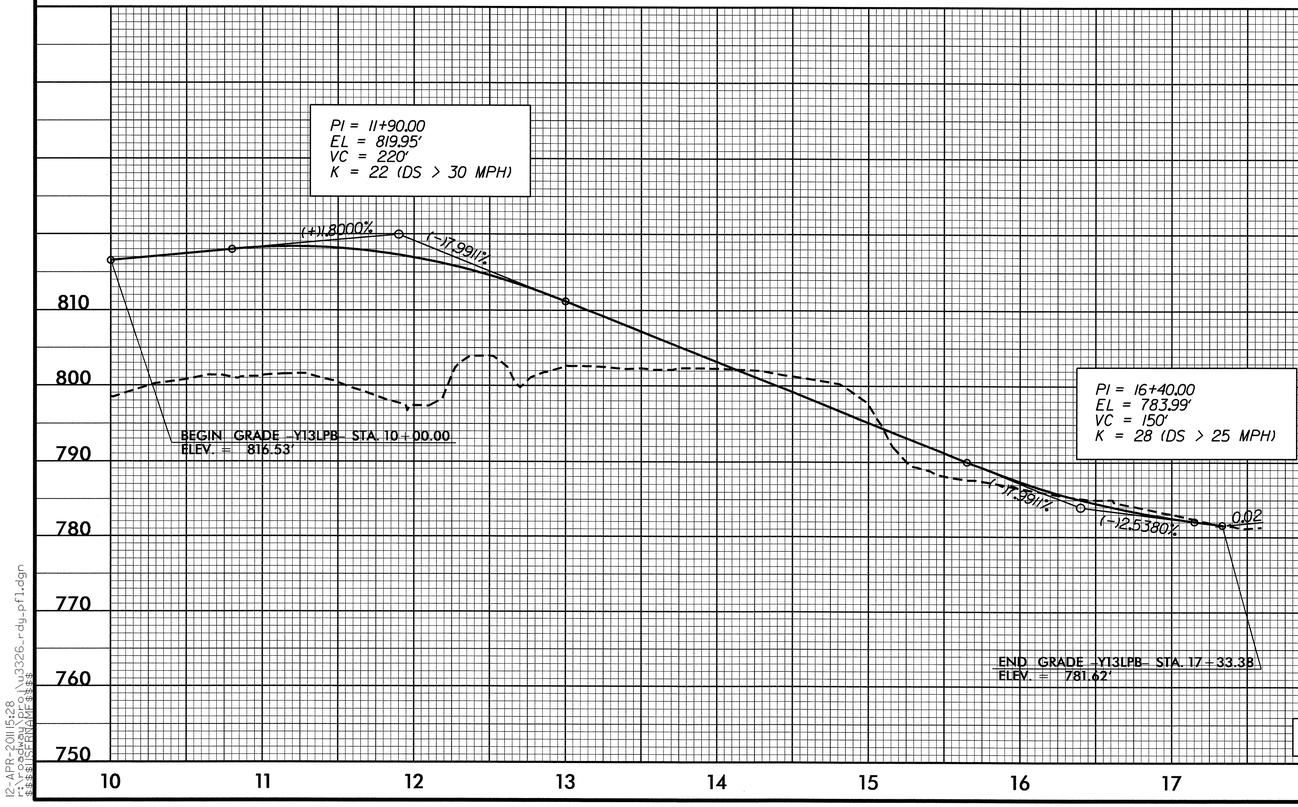
10/4/11

–Y13RPD–



SEE SHEET 17 FOR PLAN VIEW

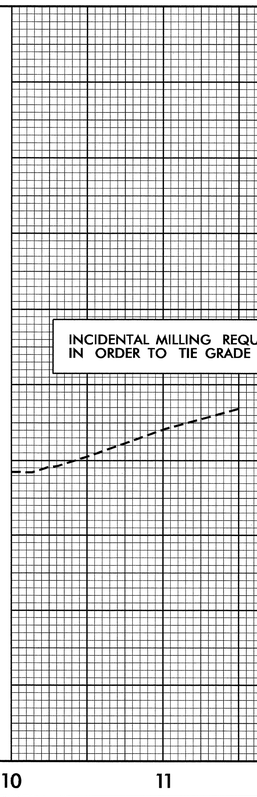
–Y13LPB–



SEE SHEET 17 FOR PLAN VIEW

–Y13B–

INCIDENTAL MILLING REQUIRED IN ORDER TO TIE GRADE



SEE SHEET 28 FOR PLAN VIEW

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	53

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KATHRYN M. GULLEDGE
10/4/11

–Y– LINES

–Y13A–

BEGIN GRADE –Y13A– STA. 13+00.00
ELEV. = 781.56'

PI = 13+40.00
EL = 780.86'
VC = 80'
K = 25 (DS > 20 MPH)

(–)1.7500%
(+)1.1429%
0.02

END GRADE –Y13A– STA. 13+80.13
ELEV. = 781.43'

SEE SHEET 17 FOR PLAN VIEW

–Y13C–

BEGIN GRADE –Y13C– STA. 10+00.00
ELEV. = 821.64'

PI = 16+00.00
EL = 775.18'
VC = 350'
K = 65 (DS > 40 MPH)

(–)17.7433%
(+)2.3813%
0.02

END GRADE –Y13C– STA. 18+24.67
ELEV. = 769.83'

SEE SHEET 17 & 27 FOR PLAN VIEW

–DRV1–

PI = 10+30.00
EL = 793.40'
VC = 60'
K = 12 (DS < 15 MPH)

BEGIN GRADE –DRV1– STA. 10+00.00
ELEV. = 794.57'

PI = 11+35.00
EL = 794.60'
VC = 60'
K = 10 (DS < 20 MPH)

(–)13.9000%
(+)1.1429%
(–)14.8167%
(–)12.9636%
0.02

PI = 11+95.00
EL = 791.71'
VC = 55'
K = 30 (DS > 25 MPH)

END GRADE –DRV1– STA. 12+24.14
ELEV. = 790.84'

SEE SHEET 17 FOR PLAN VIEW

–DRV3–

PI = 10+27.00
EL = 779.24'
VC = 20'
K = 3 (DS < 15 MPH)

PI = 10+82.00
EL = 770.35'
VC = 20'
K = 2 (DS < 15 MPH)

(–)8.4167%
(–)16.1636%
0.02
(–)2.9264%

END GRADE –DRV3– STA. 10+93.96
ELEV. = 770.00'

BEGIN GRADE –DRV3– STA. 10+15.00
ELEV. = 780.25'

SEE SHEET 27 FOR PLAN VIEW

–Y14–

BEGIN GRADE –Y14– STA. 10+00.00
ELEV. = 763.83'

PI = 11+00.00
EL = 766.09'
VC = 200'
K = 68 (DS > 40 MPH)

PI = 12+75.00
EL = 775.19'
VC = 150'
K = 54 (DS > 40 MPH)

(+)2.2600%
(+)5.2000%
(+)15.2000%
(+)2.4267%

END GRADE –Y14– STA. 13+50.00
ELEV. = 777.01'

SEE SHEET 17 FOR PLAN VIEW

–Y14C–

BEGIN GRADE –Y14C– STA. 10+00.00
ELEV. = 773.98'

(+)1.5113%
0.03

END GRADE –Y14C– STA. 10+74.11
ELEV. = 772.86'

SEE SHEET 17 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	54

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN R. GULLEDGE
10/4/11

–Y15–

BEGIN RESURFACING + WIDENING
–Y15– STA. 12 + 60.00

END RESURFACING + WIDENING
–Y15– STA. 13 + 88.65

0.02

SEE SHEET 18 FOR PLAN VIEW

–Y15A–

PI = 10+85.00
EL = 735.00'
VC = 100'
K = 63 (DS > 45 MPH)

PI = 12+25.00
EL = 723.73'
VC = 150'
K = 28 (DS > 25 MPH)

0.02
(–)18.4522%
(–)18.0500%
(–)18.0500%
(–)2.6267%

BEGIN GRADE –Y15A– STA. 10 + 32.77
ELEV. = 738.37'

END GRADE –Y15A– STA. 13 + 00.00
ELEV. = 721.76'

SEE SHEET 18 FOR PLAN VIEW

–Y16–

BEGIN GRADE –Y16– STA. 13 + 00.00
ELEV. = 728.23'
INCLUDES 3" RESURFACING

END GRADE –Y16– STA. 13 + 74.92
ELEV. = 727.90'

PI = 13+35.00
EL = 727.59'
VC = 70'
K = 27 (DS > 25 MPH)

(–)11.8266%
0.02
(+)0.1766%

BEGIN RESURFACING + WIDENING
–Y16– STA. 12 + 38.86

SEE SHEET 19 FOR PLAN VIEW

–Y– LINES

–Y16A–

PI = 10+85.00
EL = 729.53'
VC = 70'
K = 20 (DS > 20 MPH)

0.02
(+)0.3305%
(+)3.9143%

END GRADE –Y16A– STA. 11 + 20.00
ELEV. = 730.90'

BEGIN GRADE –Y16A– STA. 10 + 33.56
ELEV. = 729.36'

SEE SHEET 19 FOR PLAN VIEW

–Y17–

BM17 ELEVATION = 711.22
N 954539 E 1799793
–Y17– STATION 10+00
N 81 ° 16' 12.8" W DIST. 101.06
R/R SPIKE IN BASE OF 24" POPLAR

PI = 15+68.00
EL = 754.22'
VC = 280'
K = 50 (DS > 40 MPH)

(+)7.4702%
(+)11.9130%

BEGIN GRADE –Y17– STA. 14 + 00.00
ELEV. = 741.67'
INCLUDES 3" RESURFACING

BEGIN RESURFACING + WIDENING
–Y17– STA. 13 + 00.00

END GRADE –Y17– STA. 17 + 75.00
ELEV. = 758.18'
INCLUDES 3" RESURFACING

BM18 ELEVATION = 754.02
N 954544 E 1800732
–Y17– STATION 18+55 116' RIGHT
R/R SPIKE IN BASE OF 40" TWIN POPLAR

END RESURFACING + WIDENING
–Y17– STA. 18 + 50.00

SEE SHEET 21 FOR PLAN VIEW

–Y– LINES

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	55

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER, JR.
10/7/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN M. GULLEDGE
10/4/11

–Y– LINES

–Y18–

BEGIN GRADE –Y18– STA. 11+00.00
ELEV. = 771.56'

(+)1.7802%

0.03

END GRADE –Y18– STA. 12+14.03
ELEV. = 773.59'

SEE SHEET 22 FOR PLAN VIEW

–Y19–

PI = 10+63.00
EL = 771.25'
VC = 50'
K = 5 (DS < 15 MPH)

PI = 11+40.00
EL = 778.35'
VC = 50'
K = 8 (DS > 20 MPH)

0.03

(–)0.5667%

(+)1.9208%

(+)1.9208%

(+)3.0000%

BEGIN GRADE –Y19– STA. 10+36.53
ELEV. = 771.40'

END GRADE –Y19– STA. 12+05.00
ELEV. = 780.30'

SEE SHEET 22 FOR PLAN VIEW

–DRV2–

PI = 10+46.00
EL = 776.42'
VC = 20'
K = 2 (DS < 15 MPH)

BEGIN GRADE –DRV2– STA. 10+35.43
ELEV. = 776.11'

0.02

(+)2.9328%

(+)14.8529%

END GRADE –DRV2– STA. 10+80.00
ELEV. = 781.47'

SEE SHEET 22 FOR PLAN VIEW

–Y20–

PI = 10+80.00
EL = 789.60'
VC = 90'
K = 121 (DS > 55 MPH)

0.02 (+)1.5238% (+)0.7778%

BEGIN GRADE –Y20– STA. 10+32.75
ELEV. = 788.88'

END GRADE –Y20– STA. 11+25.00
ELEV. = 789.95'

SEE SHEET 22 FOR PLAN VIEW

–Y– LINES

–Y20A–

PI = 11+60.00
EL = 766.64'
VC = 100'
K = 14 (DS > 15 MPH)

(–)9.6495%

0.02

(–)2.4113%

BEGIN GRADE –Y20A– STA. 10+63.00
ELEV. = 776.00'

END GRADE –Y20A– STA. 12+11.01
ELEV. = 765.41'

SEE SHEET 23 FOR PLAN VIEW

–Y20B–

PI = 14+50.00
EL = 748.97'
VC = 400'
K = 77 (DS > 40 MPH)

0.02

BEGIN GRADE –Y20B– STA. 10+12.00
ELEV. = 771.13'

(–)5.0594%

(+)0.1395%

END GRADE –Y20B– STA. 17+43.95
ELEV. = 749.38'

SEE SHEET 23 FOR PLAN VIEW

–Y– LINES

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	56

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN A. GULLEDGE
10/4/11

–Y21–

–Y– LINES

BM22 ELEVATION = 740.73
N 958933 E 1803062
–Y21– STATION 10+00
N 13^ 58' 47.2" W DIST. 320.90'
R/R SPIKE IN BASE OF 42" POPLAR

BEGIN RESURFACING + WIDENING
–Y21– STA. 12+25.00

BEGIN GRADE –Y21– STA. 12+50.00
ELEV. = 756.24'
INCLUDES 3" RESURFACING

PI = 16+85.00
EL = 759.94'
VC = 180'
K = 118 (DS > 55 MPH)

(+)0.8506%
(+)2.5781%
(+)2.3781%
776.70

SEE SHEET 23 & 29 FOR PLAN VIEW

–Y21–

–Y– LINES

PI = 26+00.00
EL = 781.70'
VC = 600'
K = 208 (DS > 65 MPH)

BM21 ELEVATION = 784.11
N 956309 E 1803679
–Y21– STATION 32+38
S 23^ 46' 26.7" E DIST. 167.33'
"X" IN CORNER OF CONRETE WALK

END GRADE –Y21– STA. 29+00.00
ELEV. = 780.16'

(+)2.378%
(–)0.5133%
776.70

SEE SHEET 23 FOR PLAN VIEW

–Y21A–

PI = 12+10.00
EL = 756.66'
VC = 70'
K = 43 (DS > 30 MPH)

(–)1.0857%
(+)0.5319%
0.03

BEGIN GRADE –Y21A– STA. 11+75.00
ELEV. = 756.04'

END GRADE –Y21A– STA. 13+67.93
ELEV. = 757.50'

SEE SHEET 29 FOR PLAN VIEW

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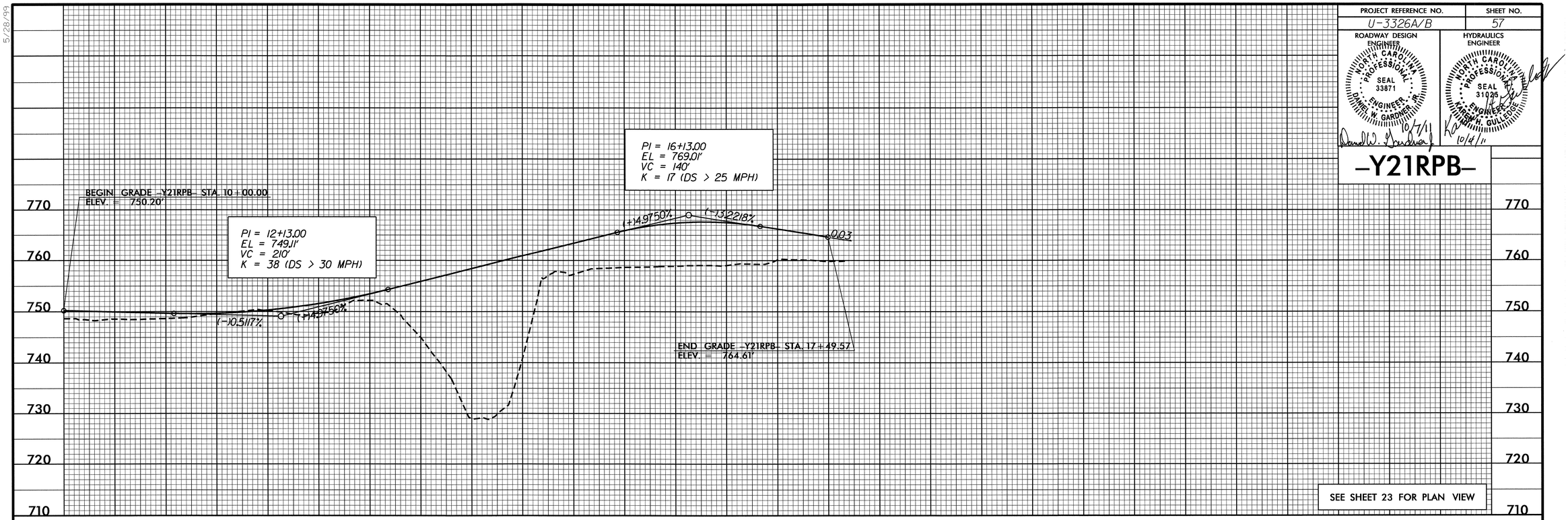
PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	57

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

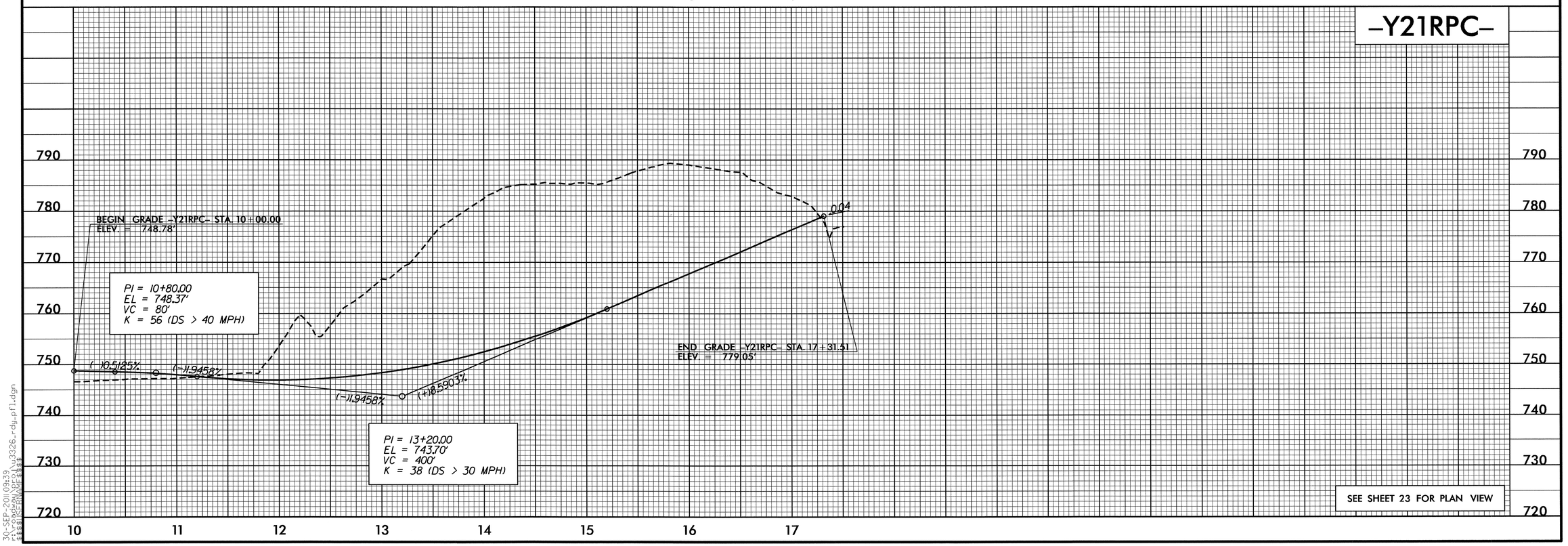
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN H. GULLEDGE
10/4/11

–Y21RPB–



SEE SHEET 23 FOR PLAN VIEW

–Y21RPC–



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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	58

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER JR.

10/7/11

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN M. GULLEDGE

10/4/11

–Y21LPB–

PI = 12+55.00
EL = 749.08'
VC = 290'
K = 50 (DS > 35 MPH)

PI = 15+61.00
EL = 768.53'
VC = 165'
K = 18 (DS > 25 MPH)

(+)0.5098%
(+)3.3562%
(+)3.3562%
(−)2.8111%
0.0278

BEGIN GRADE –Y21LPB– STA. 10+00.00
ELEV. = 747.78'

END GRADE –Y21LPB– STA. 16+75.19
ELEV. = 765.32'

SEE SHEET 23 FOR PLAN VIEW

770 760 750 740 730 720 710

10 11 12 13 14 15 16

–Y21LPC–

BEGIN GRADE –Y21LPC– STA. 10+00.00
ELEV. = 745.99'

PI = 10+90.00
EL = 746.45'
VC = 100'
K = 44 (DS = 40 MPH)

PI = 12+70.00
EL = 743.32'
VC = 260'
K = 24 (DS > 20 MPH)

(+)0.5411%
(−)1.7389%
(−)1.7389%
(+)1.9205%
0.04

END GRADE –Y21LPC– STA. 16+67.40
ELEV. = 778.77'

SEE SHEET 23 FOR PLAN VIEW

790 780 770 760 750 740 730

10 11 12 13 14 15 16

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	59

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

10/7/11

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN M. GULLEDGE

10/4/11

–Y– LINES

–Y22–

BM24 ELEVATION = 731.80
N 958701 E 1805030
–Y22– STATION 10+00
N 22^ 35' 42.1" E DIST. 126.56'
R/R SPIKE IN BASE OF 9" RED OAK

BM23 ELEVATION = 748.73
N 957410 E 1805830
–Y22– STATION 21+99
S 57^ 45' 10.2" E DIST. 273.85'
R/R SPIKE IN BASE OF 14" WHITE OAK

BEGIN RESURFACING + WIDENING
–Y21– STA. 12+19.00

END RESURFACING + WIDENING
–Y21– STA. 17+58.93

SEE SHEET 25 FOR PLAN VIEW

740 730 720 710 700 690 680

10 11 12 13 14 15 16 17 18 19 20 21

–Y– LINES

–SW1–

BEGIN GRADE –SW1– STA. 10+00.00
EL. = 824.41

END GRADE –SW1– STA. 20+08.44
EL. = 841.60

PI = 11+00.00
EL = 819.45'

PI = 13+14.13
EL = 821.80'

PI = 13+64.14
EL = 822.39'

PI = 14+14.51
EL = 824.20'

PI = 14+66.58
EL = 828.24'

PI = 15+17.22
EL = 828.81'

PI = 15+68.74
EL = 827.32'

PI = 16+21.69
EL = 828.55'

PI = 16+78.44
EL = 831.72'

(–)1.4980%
(+)11.0975%
(+)1.1798%
(+)3.5934%
(+)17.7588%
(+)1.2441%
(–)13.0085%
(+)2.8895%
(+)5.0307%
(+)2.9967%

SEE SHEET 10 & 11 FOR PLAN VIEW

850 840 830 820 810 800 790

10 11 12 13 14 15 16 17 18 19 20

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	60

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER
10/7/11

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN M. GULLEDGE
10/1/11

–Y10DETB–

PI = 14+20.00
EL = 850.31'
VC = 250'
K = 52 (DS > 30 MPH)

BEGIN GRADE –Y10DETB– STA. 10+12.79
ELEV. = 829.42'

END GRADE –Y10DETB– STA. 16+13.82
ELEV. = 850.99'

0.051
(+)5.300%
(+)0.350%
0.009

SEE SHEET 11A FOR PLAN VIEW

–Y10DETC–

PI = 15+05.00
EL = 850.67'
VC = 175'
K = 14 (DS > 25 MPH)

BEGIN GRADE –Y10DETC– STA. 10+15.62
ELEV. = 827.85'

PI = 11+85.00
EL = 821.92'
VC = 335'
K = 27 (DS > 25 MPH)

END GRADE –Y10DETC– STA. 15+92.97
ELEV. = 847.36'

0.055
(–)3.500%
(+)8.984%
(+)8.984%
(–)3.762%
0.066

SEE SHEET 11A FOR PLAN VIEW

–Y21DETB–

BEGIN GRADE –Y21DETB– STA. 10+12.57
ELEV. = 748.53'

PI = 10+75.00
EL = 751.68'
VC = 120'
K = 29 (DS > 30 MPH)

END GRADE –Y21DETB– STA. 16+73.90
ELEV. = 760.16'

PI = 15+00.00
EL = 755.65'
VC = 300'
K = 181 (DS > 30 MPH)

0.051
(+)5.045%
(+)0.934%
(+)0.934%
(+)2.593%
0.003

SEE SHEET 23A FOR PLAN VIEW

–Y21DETC–

END GRADE –Y21DETC– STA. 15+94.67
ELEV. = 776.82'

PI = 11+60.00
EL = 743.50
VC = 295'
K = 26 (DS = 25 MPH)

PI = 15+25.00
EL = 775.23'
VC = 135'
K = 21 (DS > 25 MPH)

BEGIN GRADE –Y21DETC– STA. 10+11.26
ELEV. = 747.34'

0.056
(–)2.581%
(+)8.693%
(+)8.693%
(+)2.282%
0.011

SEE SHEET 23A FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-3326A/B	61

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33871 ENGINEER DANIEL W. GARDNER

10/7/14

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31025 ENGINEER KAREN R. GULLEDGE

10/4/14

-Y17DET-

BEGIN GRADE -Y17DET- STA. 16+16.11
ELEV = 721.98'

PI = 16+70.00
EL = 723.48'
VC = 100'
K = 87 (DS > 45 MPH)

(+)2.7834%

(+)3.9551%

PI = 22+40.00
EL = 745.91'
VC = 100'
K = 75 (DS > 45 MPH)

(+)3.9551%

(+)2.6100%

(+)1.4484%

PI = 23+40.00
EL = 748.52'
VC = 100'
K = 65 (DS > 40 MPH)

END GRADE -Y17DET- STA. 23+94.72
ELEV = 750.79'

SEE SHEET 21A FOR PLAN VIEW

780 770 760 750 740 730 720 710 700

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