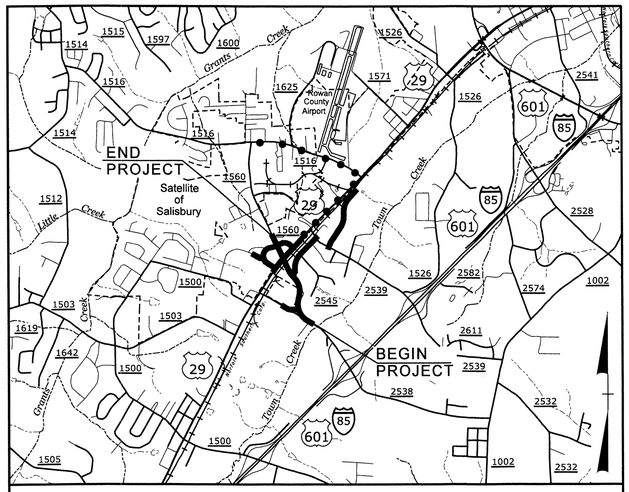
DGN 0151DEL_P10D1

TIP PROJECT: P-5206A

CONTRACT: C203143

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



VICINITY MAP

OFF-SITE DETOUR ROUTE

STATE OF NORTH CAROLINA
RAIL DIVISIONS

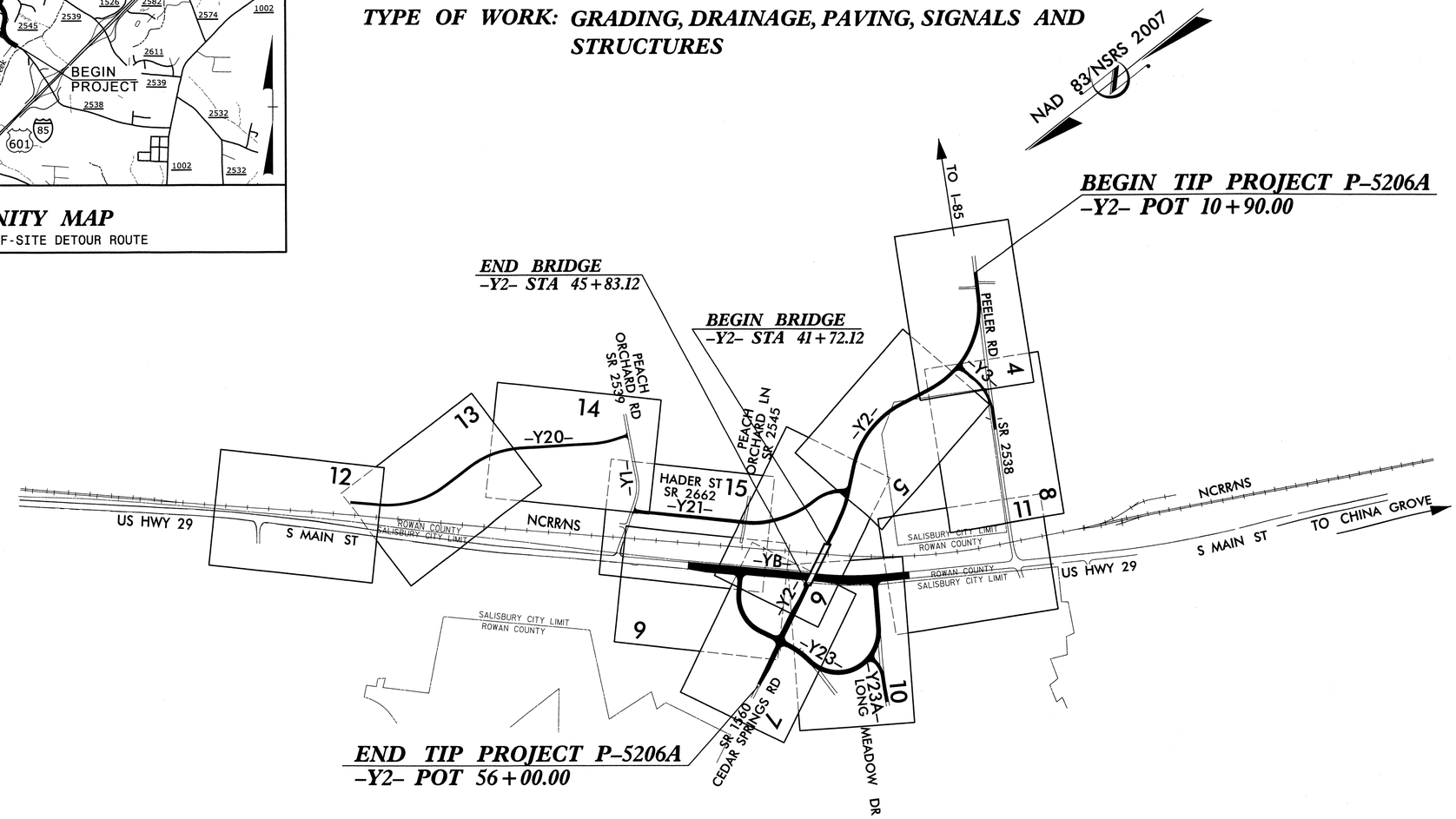
ROWAN COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-5206A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
52000.1.STR03T1B		P.E., UTIL P.E.
52000.1.STR04T3		P.E., UTIL P.E.
43219.2.STR08P5206		R/W
52000.3.STR01T4A	FRA-FR-HSR-0006-10-01-00	UTIL. CONST.
52000.3.STR01T4A	FRA-FR-HSR-0006-10-01-00	CONST.

LOCATION: PEELER ROAD (SR 2538)/CEDAR SPRINGS ROAD (SR 1560) GRADE SEPARATION OVER NCRR/NS

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS AND STRUCTURES



NDOT RAIL DIVISION CONTACT: SANDRA STEPNEY, PE

DESIGN DATA

ADT 2015 = 8520
ADT 2035 = 15400
DHV = 9 %
D = 55 %
T = 8 % *
V = 50 MPH
* 4% TTST + 4% DUALS
FUNC CLASS = LOCAL
SUBREGIONAL TIER

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH RDWY (-Y2-) TIP PROJECT P-5206A = 0.776 MILES
LENGTH STR (-Y2-) TIP PROJECT P-5206A = 0.078 MILES
TOTAL LENGTH (-Y2-) TIP PROJECT P-5206A = 0.854 MILES

SUBMITTAL: Let PLANS
DATE: JANUARY 10, 2012

Prepared In the Office of:

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: P-0258

2012 STANDARD SPECIFICATIONS

BRIAN A. WILES, PE
PROJECT ENGINEER

LETTING DATE: MARCH 19, 2013
RIGHT OF WAY DATE: MARCH 30, 2012

ROADWAY ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16689 ENGINEER BRIAN ALLEN WILES

SIGNATURE: 1/24/13 P.E.

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STACEY H. BAILEY

SIGNATURE: 1/24/13 P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
PLANNING AND DEVELOPMENT

1/24/2013
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Florence & Hutcheson, Inc.

0151DEL_P10b1 6/4/99

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16685 ENGINEER BRYAN ALLEN WILES
1/4/13

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

P-5206A - INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES & LIST OF STANDARDS
1-B	CONVENTIONAL PLAN SHEET SYMBOLS
1-C THRU 1-E	SURVEY CONTROL SHEETS
1-F AND 1-G	SURVEY CONTROL SHEETS FINAL
1-H	CENTERLINE COORDINATE LIST
2	PAVEMENT SCHEDULE, MILLING DETAIL, WEDGING DETAILS AND TYPICAL SECTIONS NO. 1 THRU NO. 4
2-A	TYPICAL SECTIONS NO. 5 THRU NO. 9
2-B	TYPICAL SECTIONS NO. 10 AND NO. 11 AND UNDERCUT DETAILS
2-C	INTERSECTION DETAIL -Y2- AND -Y23-
2-D	STANDARD REINFORCED SOIL SLOPE
2-E	STANDARD TEMPORARY SHORING
2-F AND 2-G	DETAIL OF METHOD OF SHOULDER CONSTRUCTION
3 (2 SHEETS)	SUMMARY OF QUANTITIES
3-A THRU 3-E	DRAINAGE SUMMARY
3-F	GUARDRAIL SUMMARY
3-G	EARTHWORK SUMMARY
3-H	PAVEMENT REMOVAL SUMMARY AND PAVEMENT BREAKING SUMMARY
3-I	GEOTECHNICAL SUMMARY TABLES
3-J	PARCEL INDEX
4 THRU 15	PLAN SHEETS
16 THRU 24	PROFILE SHEETS
TMP-1 THRU TMP-12	TRAFFIC CONTROL PLANS
PMP-1 THRU PMP-9	PAVEMENT MARKING PLANS
EC-1 THRU EC-27	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-6	SIGNING PLANS
SIG-1 THRU SIG-8	SIGNAL PLANS
UC-1 THRU UC-16	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-14	UTILITY BY OTHERS PLANS
X-1	CROSS SECTION INDEX
XSUM-1A AND XSUM-1B	CROSS SECTION SUMMARY
X-2 THRU X-89	CROSS SECTIONS
S-1 THRU S-53	STRUCTURE PLANS

EFF. 01-17-12

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
310.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
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
838.11	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
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.51	Reinforced Brick Endwall - for Single 54" Pipe 90 Skew
838.75	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
840.14	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
840.18	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
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.28	Brick Grated Drop Inler 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
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
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
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
850.01	Concrete Paved Ditches
852.01	Concrete Islands
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
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 07-30-12

GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH DETAILS ON SHEETS 2-F AND 2-G.

SIDE ROADS:

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

UNDERDRAINS:

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

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 Duke Energy, Piedmont Natural Gas, Fibrant Cable, Time Warner Cable, Windstream Concord Telephone, Salisbury/Rowan Utilities, Wilco (Private), VPS Convenience Stores (Private).

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. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD. 848.05.

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5121 Kingdom Way, Suite 100 Raleigh, NC 27607
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1/9/2013
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04/16/11

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	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 — G
- 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.
- 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.

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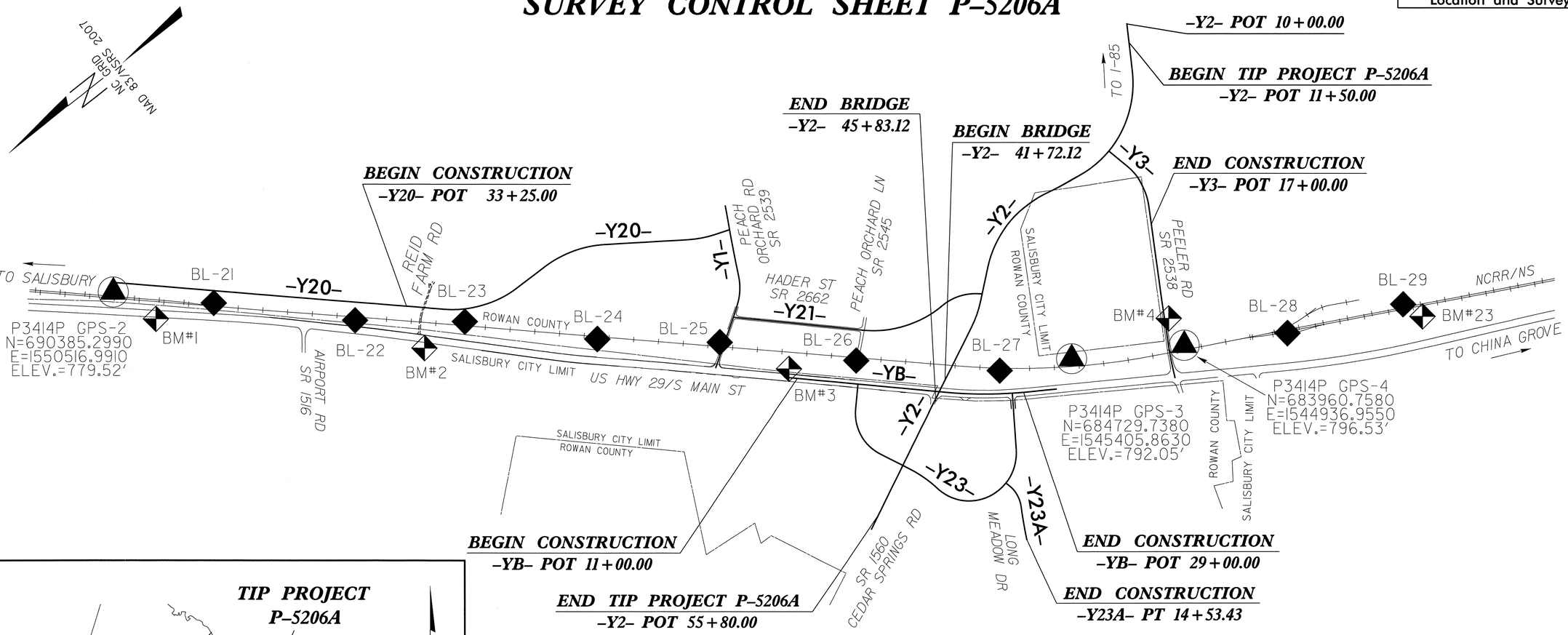
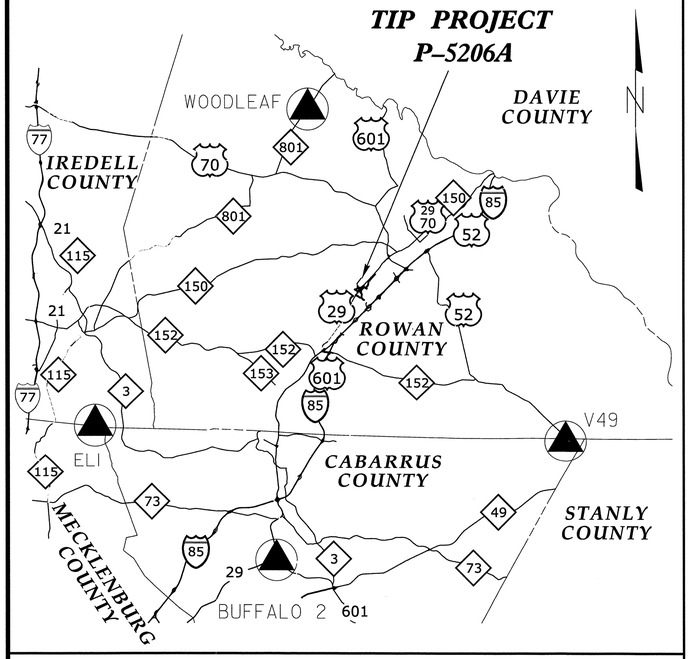
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	1C
Location and Surveys	

SURVEY CONTROL SHEET P-5206A





VICINITY MAP

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "P3414P-10" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 666744.654(ft) EASTING: 1531939.796(ft) ELEVATION: 821.60(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985378

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "P3414P-10" TO -Y2- STATION 10+00.00 IS N 43°40'59.4" E 22123.39'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES

VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. *THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 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 STATION) 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.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   P5206A-P3414P_LS_GPSCALIB.HTML
   P5206A-P3414P_LS_WGS84.TXT
   P5206A-P3414P_LS_LOCAL.TXT
   P5206A_LS_CONTROL.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.

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

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

0151DEL_P10b1 6/2/99

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	1D
Location and Surveys	

SURVEY CONTROL SHEET P-5206A

GPS Calibration Report

Project : P3414PZ

TIP Number P3414P
User name tbovender Date & Time 6:15:58 AM 3/30/2009
Coordinate System US State Plane 1983(at ground) Zone North Carolina 3200
Horizontal Datum NAD 1983 (Conus)
Vertical Datum NAVD 88 Geoid Model G03NC
Coordinate Units US survey feet
Distance Units US survey feet
Height Units US survey feet

LOCAL SITE INFORMATION
Localized around
Latitude 35^34'18.46142"N
Longitude 80^34'26.64222"W
Site Scale Factor 1.0001462406
Height 719.931sft

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.

Updated Default Projection (Transverse Mercator) Definition

Updated default projection not requested

Horizontal Adjustment Parameters

Northing coordinate of rotation center 667263.504sft
Easting coordinate of rotation center 1532682.097sft
Rotation about the center point 0^00'00"
Translation north 0.075sft
Translation east 0.003sft
Scale factor 0.99999875

Vertical Adjustment Parameters

Northing coordinate of origin point 691593.681sft
Easting coordinate of origin point 1551534.529sft
Vertical separation at origin 0.061sft
Slope north -0.708ppm
Slope east 0.902ppm

Geoid Model Definition

G03NC

Residual Differences Between GPS (WGS84) And Local Coordinates

Summary

	Maximum error	Root Mean Square error	Point
Horizontal	0.003sft	0.001	1_GPS
Vertical	0.001sft	0.000	9_GPS
Three-dimensional	0.003sft	0.001	1_GPS

Datum Transformation Parameters

Datum Transformation computation not requested

Point P3414P GPS-1
Latitude 35^38'27.18153"N
Longitude 80^30'34.06069"W
Height 669.991sft

Northing 691593.681sft
Easting 1551534.529sft
Elevation 772.105sft
Horz error 0.003sft
Vert error 0.000sft
3D error 0.003sft

Point 1
Northing 691593.682sft
Easting 1551534.532sft
Elevation 772.105sft
Utilized Horz and Vert
Quality Adjusted quality

Point P3414P GPS -2
Latitude 35^38'15.07971"N
Longitude 80^30'46.16340"W
Height 677.436sft

Northing 690385.298sft
Easting 1550516.988sft
Elevation 779.520sft
Horz error 0.003sft
Vert error 0.000sft
3D error 0.003sft

Point 2
Northing 690385.299sft
Easting 1550516.991sft
Elevation 779.519sft
Utilized Horz and Vert
Quality Adjusted quality

Point P3414P GPS-3
Latitude 35^37'18.38221"N
Longitude 80^31'47.01758"W
Height 690.082sft

Northing 684729.738sft
Easting 1545405.862sft
Elevation 792.047sft
Horz error 0.001sft
Vert error 0.000sft
3D error 0.001sft

Point 3
Northing 684729.738sft
Easting 1545405.863sft
Elevation 792.047sft
Utilized Horz and Vert
Quality Adjusted quality

Point P3414P GPS-4
Latitude 35^37'10.70693"N
Longitude 80^31'52.55258"W
Height 694.583sft

Northing 683960.759sft
Easting 1544936.955sft
Elevation 796.530sft
Horz error 0.000sft
Vert error 0.000sft
3D error 0.000sft

Point 4
Northing 683960.758sft
Easting 1544936.955sft
Elevation 796.530sft
Utilized Horz and Vert
Quality Adjusted quality

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "P3414P-10" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 666744.654(ft) EASTING: 1531939.796(ft) ELEVATION: 821.60(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985378
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "P3414P-10" TO -Y2- STATION 10+00.00 IS N 43°40'59.4" E 22123.39'
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/NSRS 2007 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 STATION) 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.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:
P3414P_LS_GPSCALIB.HTML
P3414P_LS_WGS84.TXT
P3414P_LS_LOCAL.TXT
P5206A_LS_CONTROL.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.

▲ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
P-5206A	1E
Location and Surveys	

SURVEY CONTROL SHEET P-5206A

BL

POINT	DESC.	NORTH	EAST	ELEVATION	Y20 STATION	OFFSET
2	GPS P3414P-2	690385.2990	1550516.9910	779.52	OUTSIDE PROJECT LIMITS	
21	BL-21	689811.5040	1549955.3930	782.82	17+98.88	98.54 RT
22	BL-22	689015.3890	1549154.1400	781.73	29+27.39	146.10 RT
23	BL-23	688335.9870	1548608.0370	778.24	37+79.06	101.96 RT
24	BL-24	687593.7820	1547851.4750	781.72	45+03.13	708.62 RT

BL

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
25	BL-25	686845.7320	1547231.1750	786.52	21+29.01	36.65 RT

BL

POINT	DESC.	NORTH	EAST	ELEVATION	YB STATION	OFFSET
26	BL-26	686082.5120	1546448.9100	790.33	15+52.10	184.96 LT
27	BL-27	685236.3920	1545683.3430	793.03	27+17.31	183.80 LT

BL

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
3	GPS P3414P-3	684729.7380	1545405.8630	792.05	26+63.82	777.39 RT
4	GPS P3414P-4	683960.7580	1544936.9550	796.53	26+91.89	122.81 LT
28	BL-28	683256.8090	1544505.8800	801.95	27+43.83	947.30 LT
29	BL-29	682393.0480	1544119.2340	807.66	26+26.36	1889.84 LT

BENCHMARKS (NAVD 88)

****

BM#1 ELEVATION = 785.02'
N 690252 E 1550140
Y20 STATION 13+51 262' RIGHT
CHISELED SQUARE IN TRAFFIC ISLAND OF
TRI STATE HOSPITAL SUPPLY CO

****

****

BM#2 ELEVATION = 777.50'
N 688718 E 1548643
Y20 STATION 34+93 319' RIGHT
CHISELED SQUARE AT SW CORNER OF CONC
PAD AT BELLSOUTH BUILDING

****

****

BM#3 ELEVATION = 788.72'
N 686544 E 1546727
YB STATION 10+26 70' LEFT
PAINTED BOLT NEAREST TO RR ON BILLBOARD
AT ON TRACK AUTO SALES

****

****

BM#4 ELEVATION = 799.90'
N 683926 E 1545180
Y3 STATION 24+63 33' LEFT
CHISELED SQUARE IN NE CORNER OF
CONCRETE TAYLOR CLAY PRODUCTS SIGN PAD

****

****

BM#23 ELEVATION = 800.09'
N 682332 E 1543949
Y3 STATION 28+88 2023' LEFT
CHISELED SQUARE IN CONCRETE PAD AT CITY
AUTO & SALVAGE

****

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NCDOT FOR MONUMENT "P3414P-10"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
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ELEVATION: 821.60(ft)
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N 43°40'59.4" E 22123.39'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

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   THE FILES TO BE FOUND ARE AS FOLLOWS:
   P3414P_LS_GPSCALIB.HTML
   P3414P_LS_WGS84.TXT
   P3414P_LS_LOCAL.TXT
   P5206A_LS_CONTROL.TXT

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

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

0151DEL_P10b1 6/2/99

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	1F
Location and Surveys	

SURVEY CONTROL SHEET P-5206A

FINAL

Y1

TYPE	STATION	NORTH	EAST
PC	10+00.00	686138.5930	1548058.0656
PT	14+56.93	686351.4416	1547653.7601
PC	15+75.68	686404.9989	1547547.7776
PCC	17+68.86	686525.9206	1547399.0240
PT	18+90.43	686624.8001	1547328.3927
POT	23+27.04	686993.0963	1547093.9084

Y2

TYPE	STATION	NORTH	EAST
POT	10+00.00	682743.6282	1547219.7580
PC	13+77.66	682941.5530	1546898.1150
PT	23+96.41	683818.5959	1546514.0407
PC	26+83.06	684099.8894	1546569.2007
PT	34+28.49	684798.6655	1546390.7212
PC	37+13.91	685018.1049	1546208.2115
PT	39+26.49	685196.9098	1546094.2969
POT	57+04.47	686805.0002	1545335.8389

Y3

TYPE	STATION	NORTH	EAST
POT	10+00.00	683477.9310	1546517.6407
PC	11+81.49	683439.2521	1546340.3251
PT	15+54.55	683496.7054	1545980.4097
PC	22+06.59	683827.0967	1545418.2769
PT	23+46.55	683897.1709	1545297.1186
PC	26+74.42	684059.3290	1545012.1641
PT	28+52.40	684141.7818	1544854.4678
POT	29+34.49	684177.2037	1544780.4158

Y20

TYPE	STATION	NORTH	EAST
POT	10+00.00	690331.0258	1550570.2171
PC	36+21.33	688406.7699	1548790.1516
PT	42+42.10	687843.3161	1548564.2266
PC	45+32.10	687553.3540	1548559.5339
PT	50+35.32	687081.4223	1548407.2189
PC	56+91.07	686543.2653	1548032.5268
PT	59+09.52	686349.9972	1547931.9828
POT	60+37.13	686230.1817	1547888.0843

Y21

TYPE	STATION	NORTH	EAST
POT	10+00.00	686631.7876	1547323.9439
PC	20+34.64	685884.9782	1546607.8699
PRC	26+94.30	685286.7688	1546371.4611
PT	29+77.65	685025.4241	1546278.2761
POT	30+37.16	684979.7792	1546240.0874

Y23

TYPE	STATION	NORTH	EAST
POT	10+00.00	686187.8158	1546293.9002
PC	12+02.03	686326.6181	1546147.0947
PT	16+21.83	686388.6545	1545756.9138
PC	18+94.35	686272.0765	1545510.5889
PRC	21+45.45	686199.9251	1545271.0552
PT	30+46.37	685518.4206	1545114.0260
POT	34+90.09	685269.3300	1545481.2368

Y23A

TYPE	STATION	NORTH	EAST
POT	10+00.00	685744.8769	1544959.0399
PC	10+38.64	685736.2344	1544921.3820
PRC	12+28.09	685764.4805	1544738.5966
PT	14+53.43	685872.5028	1544540.8818
POT	14+87.09	685887.6827	1544510.8382

YB

TYPE	STATION	NORTH	EAST
POT	10+00.00	686610.5774	1546694.2067
PC	22+67.22	685690.4121	1545822.9161
PT	29+40.81	685160.4262	1545408.8232
POT	31+59.48	684976.1362	1545291.1197

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	11+00.00	20.00	686203.9351	1547979.6758
Y1	18+00.00	-30.00	686532.4547	1547355.9840

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	10+90.00	30.00	682816.3454	1547158.8302
Y2	11+25.00	-40.00	682775.0705	1547092.3356
Y2	11+25.00	-30.00	682783.5872	1547097.5764
Y2	11+35.00	40.00	682848.4457	1547125.7458
Y2	12+30.05	-40.00	682830.1251	1547002.8678
Y2	12+47.22	40.00	682907.2567	1547030.1733
Y2	12+70.62	-40.00	682851.3870	1546968.3156
Y2	13+07.35	40.00	682938.7734	1546978.9564
Y2	13+77.66	40.00	682975.6180	1546919.0792
Y2	13+77.66	-40.00	682907.4844	1546877.1529
Y2	15+04.42	-40.00	682985.3343	1546769.7248
Y2	18+50.00	40.00	683304.0529	1546620.3864
Y2	20+05.00	50.00	683444.4630	1546577.4561
Y2	21+50.00	-80.00	683565.3720	1546422.9116
Y2	23+00.00	-50.00	683727.0673	1546451.1077
Y2	23+50.00	40.00	683767.3087	1546545.9895
Y2	24+25.00	-40.00	683854.3454	1546480.2891
Y2	25+75.00	40.00	683986.1476	1546587.6584
Y2	26+83.06	70.00	684086.4193	1546637.8925
Y2	26+83.06	-40.00	684107.5865	1546529.9483
Y2	29+00.00	70.00	684320.2931	1546653.0003
Y2	29+25.00	-65.00	684334.5673	1546516.4504
Y2	30+00.00	65.00	684426.8160	1546634.6780
Y2	30+10.00	-80.00	684409.2191	1546490.4115
Y2	31+00.00	-70.00	684491.0769	1546479.8882
Y2	33+00.00	75.00	684732.6002	1546529.3217
Y2	33+00.00	-70.00	684657.9497	1546405.0143
Y2	34+28.49	-80.00	684747.5097	1546329.2144
Y2	35+70.00	105.00	684974.6026	1546380.9630
Y2	37+50.00	-105.00	684982.7253	1546102.2010
Y2	38+15.00	125.00	685167.3378	1546253.4029
Y2	39+26.49	130.00	685252.3657	1546211.8751
Y2	39+26.49	-120.00	685145.7197	1545985.7631
Y2	41+29.32	-120.00	685329.1749	1545899.2362
Y2	42+29.81	130.00	685526.7084	1546082.4810
Y2	44+54.48	152.49	685739.5034	1546006.9823
Y2	46+05.00	-85.00	685774.3297	1545727.9760
Y2	46+55.00	85.00	685892.0713	1545860.4030
Y2	48+00.00	-47.50	685966.6939	1545678.7089
Y2	50+50.00	-47.50	686192.8059	1545572.0629
Y2	50+65.00	80.00	686260.7621	1545680.9813
Y2	52+15.93	-40.00	686346.0782	1545508.0642
Y2	52+16.09	55.00	686386.7539	1545593.9159
Y2	53+27.50	-40.00	686446.9896	1545460.4692
Y2	53+50.00	55.00	686507.8651	1545536.7936
Y2	53+90.00	-50.00	686499.2517	1545424.7632
Y2	55+80.00	-31.36	686679.0497	1545360.5739
Y2	55+90.00	30.00	686714.2680	1545411.8023

DATUM DESCRIPTION

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THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985378
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "P3414P-10" TO -Y2- STATION 10+00.00 IS N 43°40'59.4" E 22123.39'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y3	11+10.00	65.00	683517.9940	1546396.3148
Y3	11+81.49	60.00	683497.8736	1546327.5377
Y3	15+00.00	60.00	683526.4117	1546053.4416
Y3	16+00.00	40.00	683554.2194	1545961.4956
Y3	17+50.00	40.00	683630.2254	1545832.1779
Y3	17+50.00	30.00	683621.6042	1545827.1108
Y3	25+75.00	-30.00	683984.0853	1545083.7309
Y3	25+75.00	-65.00	683953.6659	1545066.4202
Y3	26+53.66	-65.00	683992.5714	1544998.0531

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y20	33+25.00	27.51	688642.9795	1548971.1919
Y20	33+25.00	-55.00	688586.9528	1549031.7570
Y20	34+15.00	-55.00	688520.8860	1548970.6408
Y20	34+15.00	-30.00	688537.8627	1548952.2890
Y20	36+21.33	-30.00	688386.3979	1548812.1738
Y20	36+86.75	30.00	688375.7036	1548724.0942
Y20	42+42.10	-30.00	687842.8306	1548594.2226
Y20	42+42.10	30.00	687843.8015	1548534.2305
Y20	45+32.10	30.00	687553.8395	1548529.5378
Y20	45+32.10	-30.00	687552.8686	1548589.5300
Y20	47+00.00	30.00	687393.1942	1548510.9902
Y20	49+00.00	52.00	687220.7191	1548428.5460
Y20	50+35.32	60.00	687115.7060	1548357.9784
Y20	50+35.32	-30.00	687064.2804	1548431.8391
Y20	50+58.44	78.78	687107.4636	1548329.3566
Y20	56+91.07	-30.00	686526.1234	1548057.1470
Y20	57+93.43	86.58	686496.5205	1547902.7455
Y20	59+09.52	-30.00	686339.6765	1547960.1517
Y20	59+90.00	-30.00	686264.1134	1547932.4665
Y20	60+07.56	70.02	686282.0342	1547832.5088

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y21	10+66.95	-30.00	686562.6978	1547299.2601
Y21	20+08.84	-30.00	685882.8383	1546647.3806
Y21	20+50.08	60.00	685914.4684	1546553.2293
Y21	20+63.15	-60.00	685824.0251	1546633.1659
Y21	25+50.00	60.00	685439.9576	1546322.7509
Y21	26+00.00	-60.00	685374.9861	1546435.2921
Y21	26+94.30	-65.00	685287.5279	1546436.4567
Y21	27+40.00	75.00	685248.8220	1546294.7804
Y21	27+45.00	-75.00	685227.5616	1546443.3473
Y21	28+04.00	-82.00	685156.9898	1546436.9688
Y21	28+45.00	-100.00	685103.5920	1546438.5384

NOTES:

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NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
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0151DEL_P10b1 6/2/99

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	1G
Location and Surveys	

SURVEY CONTROL SHEET P-5206A
FINAL

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y23	11+00.00	-30.00	686234.7190	1546200.6259
Y23	11+00.00	30.00	686278.3172	1546241.8473
Y23	12+02.03	-30.00	686304.8190	1546126.4840
Y23	12+02.03	30.00	686348.4172	1546167.7053
Y23	16+21.83	30.00	686415.7710	1545744.0804
Y23	16+21.83	-30.00	686361.5380	1545769.7472
Y23	16+72.69	-30.00	686339.7831	1545723.7799
Y23	17+50.00	30.00	686360.9429	1545628.2307
Y23	18+94.35	45.00	686312.7513	1545491.3388
Y23	19+05.00	-60.00	686213.0276	1545525.9107
Y23	19+85.00	-60.00	686181.1083	1545446.3963
Y23	19+86.86	45.00	686279.7277	1545410.3034
Y23	20+30.00	60.00	686281.8329	1545367.2209
Y23	20+50.00	-74.00	686147.2958	1545383.3421
Y23	20+60.00	-60.00	686158.1780	1545369.4081
Y23	21+00.00	-57.00	686151.7253	1545327.0097
Y23	21+30.00	-47.00	686155.8804	1545293.8815
Y23	21+75.00	-47.00	686148.7154	1545252.3460
Y23	22+00.00	75.00	686260.1505	1545196.4714
Y23	22+90.98	75.00	686216.7493	1545096.5836
Y23	23+00.00	-30.00	686121.9292	1545142.6699
Y23	23+44.17	57.83	686167.2080	1545054.7290
Y23	24+00.00	30.00	686104.4908	1545027.8955
Y23	27+08.01	30.00	685799.4292	1544920.6014
Y23	29+86.43	30.00	685534.0465	1545046.7436
Y23	30+46.37	-30.00	685543.2476	1545130.8670
Y23	30+46.37	30.00	685493.5935	1545097.1850
Y23	33+85.00	-30.00	685353.1504	1545411.1094
Y23	33+94.78	30.00	685298.0048	1545385.5231

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y23A	10+74.30	24.79	685755.4596	1544884.1213
Y23A	12+28.09	24.79	685785.8375	1544751.1741

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
YB	11+08.45	50.00	686566.2095	1546583.3371
YB	12+65.00	60.00	686459.4070	1546468.4357
YB	15+00.00	60.00	686288.7670	1546306.8592
YB	16+75.00	60.00	686161.6946	1546186.5363
YB	20+70.00	60.00	685874.8740	1545914.9502
YB	21+04.64	-50.00	685774.0878	1545971.0057
YB	23+62.07	65.00	685664.0950	1545710.2576
YB	25+71.88	-70.00	685416.8843	1545677.9561
YB	25+74.11	-93.06	685400.8263	1545694.6470
YB	26+40.00	-70.00	685364.2435	1545636.8723
YB	26+40.00	-50.18	685376.2888	1545621.1295
YB	27+35.00	65.00	685368.6707	1545471.9060
YB	28+86.14	49.07	685233.3176	1545397.6602

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	52+30.47	55.00	686399.7552	1545587.7838
Y2	52+35.00	-70.00	686350.5306	1545472.7948
Y2	55+05.00	38.85	686641.1670	1545456.0700
Y2	55+35.00	65.00	686679.4538	1545466.9201
Y2	55+45.00	34.69	686675.5675	1545435.2381
Y2	55+45.00	55.00	686684.2325	1545453.6097
Y2	55+80.00	-70.00	686662.5652	1545325.6233

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y3	14+19.30	-50.00	683396.3715	1546091.9135
Y3	15+54.55	-50.00	683453.5995	1545955.0744
Y3	17+50.00	-50.00	683552.6348	1545786.5743
Y3	17+50.00	-30.00	683569.8771	1545796.7084

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y20	38+00.00	-45.00	688240.8823	1548722.1323
Y20	38+00.00	-30.00	688248.5467	1548709.2382
Y20	39+30.00	30.00	688158.7132	1548597.9907
Y20	39+30.00	55.00	688168.0641	1548574.8053
Y20	39+50.00	-50.00	688111.2519	1548665.3492
Y20	39+50.00	-30.00	688118.2942	1548646.6300
Y20	39+55.00	55.00	688143.2356	1548565.2138
Y20	39+55.00	30.00	688134.5706	1548588.6641
Y20	48+85.00	-30.00	687199.1740	1548509.0352
Y20	48+85.00	-55.00	687188.7213	1548531.7451
Y20	49+15.00	-55.00	687159.9477	1548517.8810
Y20	49+15.00	-30.00	687171.1953	1548495.5541
Y20	51+00.00	-30.00	687011.1974	1548394.8800
Y20	51+50.00	-48.00	686959.8785	1548381.0824
Y20	54+00.00	-60.00	686747.8530	1548248.0816

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
YB	10+00.00	-70.00	686562.4482	1546745.0356
YB	10+00.00	-50.00	686576.1994	1546730.5131
YB	10+10.00	-70.00	686555.1869	1546738.1600
YB	10+10.00	-50.00	686568.9381	1546723.6375
YB	11+10.87	74.57	686581.3433	1546563.8362
YB	12+65.00	85.00	686476.5960	1546450.2825
YB	12+69.01	-50.00	686380.8602	1546545.5494
YB	12+71.06	-50.00	686379.3760	1546544.1440
YB	12+71.95	-63.94	686369.1454	1546553.6477
YB	12+73.91	-63.52	686368.0081	1546552.0025
YB	15+07.43	80.00	686297.1240	1546287.2291
YB	16+52.14	74.57	686188.3087	1546191.6713
YB	16+75.00	70.00	686168.5702	1546179.2750
YB	18+00.00	60.00	686070.9286	1546100.5913
YB	18+00.00	70.00	686077.8042	1546093.3301
YB	23+40.00	80.00	685690.8591	1545714.2164
YB	25+00.00	90.00	685573.7264	1545599.2559
YB	27+00.00	91.00	685412.8904	1545472.0274
YB	27+45.00	-80.50	685275.4533	1545584.0679
YB	27+45.00	-50.00	685293.2626	1545559.3074
YB	27+60.50	-80.50	685263.1362	1545575.2494
YB	27+60.50	-65.50	685271.8416	1545563.0340
YB	28+70.00	-50.00	685191.9685	1545489.1227
YB	28+70.00	-65.00	685183.6439	1545501.6008
YB	29+00.00	80.00	685238.5243	1545364.0632
YB	29+40.81	80.00	685203.4877	1545341.4012
YB	31+59.48	49.53	685002.7983	1545249.3745
YB	31+59.48	80.00	685019.1976	1545223.6978

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y21	12+40.00	-30.00	686437.7917	1547179.4946
Y21	12+40.00	-55.00	686420.4893	1547197.5397
Y21	12+74.29	-30.00	686413.0400	1547155.7616
Y21	12+80.58	-55.00	686391.1996	1547169.4554
Y21	14+50.00	-30.00	686286.2129	1547034.1541
Y21	14+65.00	-50.00	686261.5439	1547038.2087
Y21	14+85.00	-50.00	686247.1078	1547024.3667
Y21	15+50.00	-30.00	686214.0325	1546964.9443
Y21	16+90.00	-30.00	686112.9800	1546868.0506
Y21	16+90.00	-55.00	686095.6775	1546886.0957
Y21	18+00.00	-55.00	686016.2791	1546809.9650
Y21	19+00.00	-30.00	685961.4011	1546722.7101

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y23	11+75.00	-30.00	686286.2457	1546146.1282
Y23	11+75.00	-50.00	686271.7130	1546132.3878
Y23	12+02.03	-50.00	686290.2863	1546112.7435
Y23	12+05.00	63.50	686375.1557	1546188.1646
Y23	12+65.00	68.00	686422.5126	1546134.8297
Y23	13+80.00	109.00	686517.1497	1546019.7106
Y23	15+55.00	78.00	686486.8744	1545800.2962
Y23	15+85.00	-65.00	686341.2830	1545812.4522
Y23	15+85.00	-30.00	686374.3166	1545800.8857
Y23	16+21.83	-65.00	686329.9021	1545784.7195
Y23	19+25.00	45.00	686300.8231	1545464.8981
Y23	19+85.00	-70.00	686171.6613	1545449.6757
Y23	20+61.00	-81.00	686137.5391	1545373.4345
Y23	21+75.00	-68.31	686127.9261	1545257.0367
Y23	23+00.00	-55.00	686100.6850	1545155.8487
Y23	24+45.00	-30.00	686031.7017	1545045.5414
Y23	27+00.00	-30.00	685811.1305	1544979.9887
Y23	28+00.00	-30.00	685720.9589	1544996.8122
Y23	28+50.00	-50.00	685687.0677	1545032.0509
Y23	29+96.00	-60.00	685594.1011	1545114.3931
Y23	33+65.00	60.00	685289.8966	1545344.0352
Y23	33+65.00	30.00	685314.7236	1545360.8761
Y23	33+75.00	-70.00	685391.8668	1545425.2883

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "P3414P-10" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 666744.654(ft) EASTING: 1531939.796(ft) ELEVATION: 821.60(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985378
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "P3414P-10" TO -Y2- STATION 10+00.00 IS N 43°40'59.4" E 22123.39'
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/NSRS 2007 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 STATION) 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.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:
P5206A-P3414P_LS_GPSCALIB.HTML
P5206A-P3414P_LS_WGS84.TXT
P5206A-P3414P_LS_LOCAL.TXT
P5206A_LS_CONTROL.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.

▲ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

0151DEL_P10b1

PROJ. REFERENCE NO.	SHEET NO.
P-5206A	1-H

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

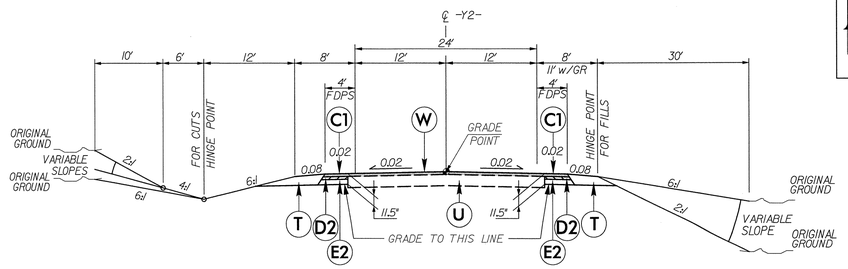
CENTERLINE COORDINATE LIST

Point #	Chain	Station	Northing (Y)	Easting (X)
1	Y2	10+00.00	682743.6282	1547219.7580
2	Y2	10+50.00	682769.8322	1547177.1745
3	Y2	11+00.00	682796.0361	1547134.5911
4	Y2	11+50.00	682822.2401	1547092.0076
5	Y2	12+00.00	682848.4441	1547049.4241
6	Y2	12+50.00	682874.6481	1547006.8407
7	Y2	13+00.00	682900.8520	1546964.2572
8	Y2	13+50.00	682927.0560	1546921.6737
9	Y2	14+00.00	682953.5115	1546879.2482
10	Y2	14+50.00	682982.0682	1546838.2143
11	Y2	15+00.00	683013.0154	1546798.9519
12	Y2	15+50.00	683046.2434	1546761.6001
13	Y2	16+00.00	683081.6346	1546726.2910
14	Y2	16+50.00	683119.0636	1546693.1499
15	Y2	17+00.00	683158.3978	1546662.2941
16	Y2	17+50.00	683199.4979	1546633.8329
17	Y2	18+00.00	683242.2184	1546607.8671
18	Y2	18+50.00	683286.4078	1546584.4886
19	Y2	19+00.00	683331.9098	1546563.7803
20	Y2	19+50.00	683378.5631	1546545.8156
21	Y2	20+00.00	683426.2025	1546530.6580
22	Y2	20+50.00	683474.6592	1546518.3612
23	Y2	21+00.00	683523.7616	1546508.9689
24	Y2	21+50.00	683573.3357	1546502.5142
25	Y2	22+00.00	683623.2061	1546499.0200
26	Y2	22+50.00	683673.1960	1546498.4988
27	Y2	23+00.00	683723.1284	1546500.9523
28	Y2	23+50.00	683772.8264	1546506.3719
29	Y2	24+00.00	683822.1154	1546514.7308
30	Y2	24+50.00	683871.1810	1546524.3523
31	Y2	25+00.00	683920.2465	1546533.9738
32	Y2	25+50.00	683969.3120	1546543.5952
33	Y2	26+00.00	684018.3776	1546553.2167
34	Y2	26+50.00	684067.4431	1546562.8382
35	Y2	27+00.00	684116.5404	1546572.2919
36	Y2	27+50.00	684166.0176	1546579.4518
37	Y2	28+00.00	684215.8332	1546583.6557
38	Y2	28+50.00	684265.8106	1546584.8887
39	Y2	29+00.00	684315.7728	1546583.1464
40	Y2	29+50.00	684365.5430	1546578.4350
41	Y2	30+00.00	684414.9447	1546570.7712
42	Y2	30+50.00	684463.8030	1546560.1822
43	Y2	31+00.00	684511.9448	1546546.7054
44	Y2	31+50.00	684559.1997	1546530.3885
45	Y2	32+00.00	684605.4002	1546511.2894
46	Y2	32+50.00	684650.3827	1546489.4757
47	Y2	33+00.00	684693.9879	1546465.0248
48	Y2	33+50.00	684736.0613	1546438.0231
49	Y2	34+00.00	684776.4538	1546408.5663
50	Y2	34+50.00	684815.2004	1546376.9690
51	Y2	35+00.00	684853.6422	1546344.9966
52	Y2	35+50.00	684892.0839	1546313.0243
53	Y2	36+00.00	684930.5257	1546281.0519
54	Y2	36+50.00	684968.9674	1546249.0796
55	Y2	37+00.00	685007.4092	1546217.1072
56	Y2	37+50.00	685046.3381	1546185.7379
57	Y2	38+00.00	685086.9953	1546156.6476
58	Y2	38+50.00	685129.3111	1546130.0274
59	Y2	39+00.00	685173.1356	1546105.9716
60	Y2	39+50.00	685218.1759	1546084.2666
61	Y2	40+00.00	685263.3983	1546062.9374
62	Y2	40+50.00	685308.6207	1546041.6082
63	Y2	41+00.00	685353.8431	1546020.2790
64	Y2	41+50.00	685399.0655	1545998.9498
65	Y2	42+00.00	685444.2879	1545977.6206
66	Y2	42+50.00	685489.5103	1545956.2914
67	Y2	43+00.00	685534.7327	1545934.9622
68	Y2	43+50.00	685579.9551	1545913.6330
69	Y2	44+00.00	685625.1775	1545892.3038
70	Y2	44+50.00	685670.3999	1545870.9746
71	Y2	45+00.00	685715.6223	1545849.6454
72	Y2	45+50.00	685760.8447	1545828.3162
73	Y2	46+00.00	685806.0671	1545806.9870
74	Y2	46+50.00	685851.2895	1545785.6578
75	Y2	47+00.00	685896.5119	1545764.3286
76	Y2	47+50.00	685941.7343	1545742.9994
77	Y2	48+00.00	685986.9567	1545721.6702
78	Y2	48+50.00	686032.1790	1545700.3410
79	Y2	49+00.00	686077.4014	1545679.0118
80	Y2	49+50.00	686122.6238	1545657.6826
81	Y2	50+00.00	686167.8462	1545636.3534
82	Y2	50+50.00	686213.0686	1545615.0242
83	Y2	51+00.00	686258.2910	1545593.6950
84	Y2	51+50.00	686303.5134	1545572.3658
85	Y2	52+00.00	686348.7358	1545551.0366
86	Y2	52+50.00	686393.9582	1545529.7074
87	Y2	53+00.00	686439.1806	1545508.3782
88	Y2	53+50.00	686484.4030	1545487.0490
89	Y2	54+00.00	686529.6254	1545465.7198
90	Y2	54+50.00	686574.8478	1545444.3906
91	Y2	55+00.00	686620.0702	1545423.0614
92	Y2	55+50.00	686665.2926	1545401.7322
93	Y2	56+00.00	686710.5150	1545380.4030
94	Y2	56+50.00	686755.7374	1545359.0738
95	Y2	57+00.00	686800.9598	1545337.7446
96	Y2	57+04.47	686805.0002	1545335.8389
97	Y3	10+00.00	683477.9310	1546517.6407
98	Y3	10+50.00	683467.2748	1546468.7894
99	Y3	11+00.00	683456.6186	1546419.9382
100	Y3	11+50.00	683445.9624	1546371.0869
101	Y3	12+00.00	683435.6419	1546322.1667
102	Y3	12+50.00	683429.2749	1546272.5948
103	Y3	13+00.00	683427.8885	1546222.6348
104	Y3	13+50.00	683431.4968	1546172.7861
105	Y3	14+00.00	683440.0636	1546123.5466
106	Y3	14+50.00	683453.5034	1546075.4084
107	Y3	15+00.00	683471.6818	1546028.8524
108	Y3	15+50.00	683494.4172	1545984.3437
109	Y3	16+00.00	683519.7347	1545941.2274
110	Y3	16+50.00	683545.0700	1545898.1215
111	Y3	17+00.00	683570.4053	1545855.0155
112	Y3	17+50.00	683595.7407	1545811.9096
113	Y3	18+00.00	683621.0760	1545768.8037
114	Y3	18+50.00	683646.4113	1545725.6977
115	Y3	19+00.00	683671.7467	1545682.5918
116	Y3	19+50.00	683697.0820	1545639.4859
117	Y3	20+00.00	683722.4173	1545596.3800
118	Y3	20+50.00	683747.7527	1545553.2740
119	Y3	21+00.00	683773.0880	1545510.1681
120	Y3	21+50.00	683798.4234	1545467.0622
121	Y3	22+00.00	683823.7587	1545423.9563
122	Y3	22+50.00	683849.0127	1545380.8027
123	Y3	23+00.00	683874.0525	1545337.5245
124	Y3	23+50.00	683898.8762	1545294.1220
125	Y3	24+00.00	683923.6057	1545250.6657
126	Y3	24+50.00	683948.3353	1545207.2094
127	Y3	25+00.00	683973.0648	1545163.7531
128	Y3	25+50.00	683997.7943	1545120.2968
129	Y3	26+00.00	684022.5239	1545076.8405
130	Y3	26+50.00	684047.2534	1545033.3842
131	Y3	27+00.00	684071.8690	1544989.8635
132	Y3	27+50.00	684095.7138	1544945.9165
133	Y3	28+00.00	684118.6750	1544901.5014
134	Y3	28+50.00	684140.7434	1544856.6360
135	Y3	29+00.00	684162.3201	1544811.5312
136	Y3	29+34.49	684177.2037	1544780.4158
137	Y20	10+00.00	690331.0258	1550570.2171
138	Y20	10+50.00	690294.3220	1550536.2636
139	Y20	11+00.00	690257.6183	1550502.3102
140	Y20	11+50.00	690220.9145	1550468.3568
141	Y20	12+00.00	690184.2108	1550434.4034
142	Y20	12+50.00	690147.5070	1550400.4499
143	Y20	13+00.00	690110.8033	1550366.4965
144	Y20	13+50.00	690074.0995	1550332.5431
145	Y20	14+00.00	690037.3958	1550298.5897
146	Y20	14+50.00	690000.6921	1550264.6362
147	Y20	15+00.00	689963.9883	1550230.6828
148	Y20	15+50.00	689927.2846	1550196.7294
149	Y20	16+00.00	689890.5808	1550162.7760
150	Y20	16+50.00	689853.8771	1550128.8226
151	Y20	17+00.00	689817.1733	1550094.8691
152	Y20	17+50.00	689780.4696	1550060.9157
153	Y20	18+00.00	689743.7658	1550026.9623
154	Y20	18+50.00	689707.0621	1549993.0089
155	Y20	19+00.00	689670.3583	1549959.0554
156	Y20	19+50.00	689633.6546	1549925.1020
157	Y20	20+00.00	689596.9508	1549891.1486
158	Y20	20+50.00	689560.2471	1549857.1952
159	Y20	21+00.00	689523.5433	1549823.2417
160	Y20	21+50.00	689486.8396	1549789.2883
161	Y20	22+00.00	689450.1358	1549755.3349
162	Y20	22+50.00	689413.4321	1549721.3815
163	Y20	23+00.00	689376.7284	1549687.4281
164	Y20	23+50.00	689340.0246	1549653.4746
165	Y20	24+00.00	689303.3209	1549619.5212
166	Y20	24+50.00	689266.6171	1549585.5678
167	Y20	25+00.00	689229.9134	1549551.6144
168	Y20	25+50.00	689193.2096	1549517.6609
169	Y20	26+00.00	689156.5059	1549483.7075
170	Y20	26+50.00	689119.8021	1549449.7541
171	Y20	27+00.00	689083.0984	1549415.8007
172	Y20	27+50.00	689046.3946	1549381.8472
173	Y20	28+00.00	689009.6909	1549347.8938
174	Y20	28+50.00	688972.9871	1549313.9404
175	Y20	29+00.00	688936.2834	1549279.9870
176	Y20	29+50.00	688899.5796	1549246.0336
177	Y20	30+00.00	688862.8759	1549212.0801
178	Y20	30+50.00	688826.1721	1549178.1267
179	Y20	31+00.00	688789.4684	1549144.1733
180	Y20	31+50.00	688752.7647	1549110.2199
181	Y20	32+00.00	688716.0609	1549076.2664
182	Y20	32+50.00	688679.3572	1549042.3130
183	Y20	33+00.00	688642.6534	1549008.3596
184	Y20	33+50.00	688605.9497	1548974.4062
185	Y20	34+00.00	688569.2459	1548940.4527
186	Y20	34+50.00	688532.5422	1548906.4993
187	Y20	35+00.00	688495.8384	1548872.5459
188	Y20	35+50.00	688459.1347	1548838.5925
189	Y20	36+00.00	688422.4309	1548804.6390
190	Y20	36+50.00	688385.4030	1548771.0441
191	Y20	37+00.00	688346.6357	1548739.4787
192	Y20	37+50.00	688306.0797	1548710.2470
193	Y20	38+00.00	688263.8754	1548683.4501
194	Y20	38+50.00	688220.1687	1548659.1807
195	Y20	39+00.00	688175.1108	1548637.5228
196	Y20	39+50.00	688128.8575	1548618.5513
197	Y20	40+00.00	688081.5690	1548602.3318
198	Y20	40+50.00	688033.4087	1548588.9205
199	Y20	41+00.00	687984.5432	1548578.3637
200	Y20	41+50.00	687935.1416	1548570.6979
201	Y20	42+00.00	687885.3748	1548565.9497
202	Y20	42+50.00	687835.4155	1548564.0987
203	Y20	43+00.00	687785.4220	1548563.2896
204	Y20	43+50.00	687735.4286	1548562.4805
205	Y20	44+00.00	687685.4351	1548561.6715
206	Y20	44+50.00	687635.4417	1548560.8624
207	Y20	45+00.00	687585.4482	1548560.0533
208	Y20	45+50.00	687535.4591	1548559.0558
209	Y20	46+00.00	687485.5773	1548555.7260
210	Y20	46+50.00	687435.9776	1548549.4694
211	Y20	47+00.00	687386.8315	1548540.3077
212	Y20	47+50.00	687338.3089	1548528.2726
213	Y20	48+00.00	687290.5779	1548513.4057
214	Y20	48+50.00	687243.8034	1548495.7584
215	Y20	49+00.00	687198.1473	1548475.3917
216	Y20	49+50.00	687153.7675	1548452.3762
217	Y20	50+00.00	687110.8176	1548426.7914
218	Y20	50+50.00	687069.3730	1548398.8295
219	Y20	51+00.00	687028.3392	1548370.2598
220	Y20	51+50.00	686987.3055	1548341.6900
221	Y20	52+00.00	686946.2717	1548313.1202
222	Y20	52+50.00	686905.2380	1548284.5505
223	Y20	53+00.00	686864.2043	1548255.9807
224	Y20	53+50.00	686823.1705	1548227.4109
225	Y20	54+00.00	686782.1368	1548198.8411
226	Y20	54+50.00	686741.1030	1548170.2714
227	Y20	55+00.00	686700.0693	1548141.7016
228	Y20	55+50.00	686659.0355	1548113.1318
229	Y20	56+00.00	686618.0018	1548084.5621
230	Y20	56+50.00	686576.9680	1548055.9923
231	Y20	57+00.00	686535.9076	1548027.4611
232	Y20	57+50.00	686493.7724	1548000.5557
233	Y20	58+00.00	686450.1283	1547976.1739
234	Y20	58+50.00	686405.1263	1547954.4001
235	Y20	59+00.00	686358.9220	1547935.3096
236	Y20	59+50.00	686311.9925	1547918.0585
237	Y20	60+00.00	686265.0444	1547900.8574
238	Y20	60+37.13	686230.1817	1547888.0843
239	Y21	10+00.00	686631.7876	1547323.9439
240	Y21	10+50.00	686595.6974	1547289.3390
241	Y21	11+00.00	686559.6072	1547254.7341
242	Y21	11+50.00	686523.5170	1547220.1293
243	Y21	12+00.00	686487.4268	1547185.5244
244	Y21	12+50.00	686451.3366	1547150.9195
245	Y21	13+00.00	686415.2464	1547116.3146
246	Y21	13+50.00	686379.1562	1547081.7097
247	Y21	14+00.00	686343.0660	1547047.1048
248	Y21	14+50.00	686306.9758	1547012.5000
249	Y21	15+00.00	686270.8856	1546977.8951
250	Y21	15+50.00	686234.7954	1546943.2902
251	Y21	16+00.00	686198.7052	1546908.6853
252	Y21	16+50.00	686162.6150	1546874.0804
253	Y21	17+00.00	686126.5249	1546839.4756
254	Y21	17+50.00	686090.4347	1546804.8707
255	Y21	18+00.00	686054.3445	1546770.2658
256	Y21	18+50.00	686018.2543	1546735.6609
257	Y21	19+00.00	685982.1641	1546701.0560
258	Y21	19+50.00	685946.0739	1546666.4511
259	Y21	20+00.00	685909.9837	1546631.8463
260	Y21	20+50.00	685873.7981	1546597.3421
261	Y21	21+00.00	685836.1116	1546564.4938
262	Y21	21+50.00	685796.5592	1546533.9179
263	Y21	22+00.00	685755.2776	1546505.7202
264	Y21	22+50.00	685712.4097	1546479.9981
265	Y21	23+00.00	685668.1038	1546456.8408
266	Y21	23+50.00	685622.5131	1546436.3282
267	Y21	24+00.00	685575.7953	1546418.5314
268	Y21	24+50.00	685528.1121	1546403.5118
269	Y21	25+00.00	685479.6283	1546391.3216
270	Y21	25+50.00	685430.5117	1546382.0027
271	Y21	26+00.00	685380.9322	1546375.5875
272	Y21	26+50.00	685331.0614	1546372.0982
273	Y21	27+00.00	685281.0711	1546371.4871
274	Y21	27+50.00	685231.2093	1546368.2382
275	Y21	28+00.00	685182.1417	1546358.7981
276	Y21	28+50.00	685134.6339	1546343.3142
277	Y21	29+00.00	685089.4271	1546322.0281
278	Y21	29+50.00	685047.2270	1546295.2719
279	Y21	30+00.00	685008.2824	1546263.9345
280	Y21	30+37.16	684979.7792	1546240.0874
281	Y23	10+00.00	686187.8158	1546293.9002
282	Y23	10+50.00	686222.1670	1546257.5684
283	Y23	11+00.00	686256.5181	1546221.2366
284	Y23	11+50.00	686290.8692	1546184.9048
285	Y23	12+00.00	686325.2204	1546148.5730
286	Y23	12+50.00	686357.0840	1546110.0957
287	Y23	13+00.00	686383.1497	1546067.4773
288	Y23	13+50.00	686402.8822	1546021.5820
289	Y23	14+00.00	686415.8796	1545973.3449
290	Y23	14+50.00	686421.8769	1545923.7487
291	Y23	15+00.00	686420.7521	1545873.8038
292	Y23	15+50.00	686412.5280	1545824.5279
293	Y23	16+00.00	686397.3722	1545776.9249
294	Y23	16+50.00	686376.6044	1545731.4523
295	Y23	17+00.00	686355.2154	1545686.2582
296	Y23	17+50.00	686333.8264	1545641.0641
297	Y23	18+00.00	686312.4374	1545595.8699
298	Y23	18+50.00	686291.0484	1545550.6758
299	Y23	19+00.00	686269.6596	1545505.4735
300	Y23	19+50.00	686249.9535	1545459.5360
301	Y23	20+00.00	686232.9980	1545412.5065
302	Y23	20+50.00	686218.8703	1545364.5516
303	Y23	21+00.00	686207.6204	1545315.8412
304	Y23	21+50.00	686199.2486	1545266.5536
305	Y23	22+00.00	686188.2519	1545217.8159
306	Y23	22+50.00	686170.8736	1545170.9726
307	Y23	23+00.00	686147.4223	1545126.8553
308	Y23	23+50.00	686118.3143	1545086.2471
309	Y23	24+00.00	686084.0662	1545049.8690
310	Y23	24+50.00	686045.2860	1545018.3667
311	Y23	25+00.00	686002.6622	1544992.2993
312	Y23	25+50.00	685956.9513	1544972.1297
313	Y23	26+00.00	685908.9648	1544958.2158
314	Y23	26+50.00	685859.5546	1544950.8047
315	Y23	27+00.00	685809.5976	1544950.0278
316	Y23	27+50.00	685759.9808	1544955.8991
317	Y23	28+00.00	685711.5850	1544968.3143
318	Y23	28+50.00	685665.2691	1544987.0529
319	Y23	29+00.00	685621.8554	1545011.7824
320	Y23	29+50.00	685582.1145	1545042.0638
321	Y23	30+00.00	685546.7519	1545077.3595
322	Y23	30+50.00	685516.3807	1545117.0331
323	Y23	31+00.00	685488.3125	1545158.4116
324	Y23	31+50.00	685460.2442	1545199.7900
325	Y23	32+00.00	685432.1759	1545241.1684
326	Y23	32+50.00	685404.1077	1545282.5468
327	Y23	33+00.00	685376.0394	1545323.9252
328	Y23	33+50.00	685347.9711	1545365.3036
329	Y23	34+00.00	685319.9029	1545406.6820
330	Y23	34+50.00	685291.8346	1545448.0604
331	Y23	34+90.09	685269.3300	1545481.2368
332	Y23A	10+00.00	685744.8769	1544959.0399
333	Y23A	10+50.00	685733.9452	1544910.2529
334	Y23A	11+00.00	685729.9491	1544860.4964
335	Y23A	11+50.00	685735.9177	1544810.9378
336	Y23A	12+00.00	685751.6132	1544763.5529
337	Y23A	12+50.00	685775.5382	1544719.6851
338	Y23A	13+00.00	685800.3312	1544676.2655
339	Y23A	13+50.00	685824.5014	1544632.4961
340	Y23A	14+00.00	685848.0438	1544588.3859
341	Y23A	14+50.00	685870.9538	1544543.9439
342	Y23A	14+87.09	685887.6827	1544510.8382
343	YB	10+00.00	686610.5774	1546694.2067
344	YB	10+50.00	686574.2710	1546659.8287
345	YB	11+00.00	686537.9646	1546625.4507
346	YB	11+50.00	686501.6582	1546591.0727
347	YB	12+00.00	686465.3518	1546556.6948
348	YB	12+50.00	686429.0454	1546522.3168
349	YB	13+00.00	686392.7390	1546487.9388
350	YB	13+50.00	686356.4326	1546453.5608
351	YB	14+00.00	686320.1262	1546419.1829
352	YB	14+50.00	686283.8198	1546384.8049
353	YB	15+00.00	686247.5134	1546350.4269
354	YB	15+50.00	686211.2070	1546316.0489
355	YB	16+00.00	686174.9006	1546281.6709
356	YB	16+50.00	686138.5942	1546247.2930
357	YB	17+00.00	686102.2878	1546212.9150
358	YB	17+50.00	686065.9814	1546178.5370
359	YB	18+00.00	686029.6750	1546144.1590
360	YB	18+50.00	685993.3686	1546109.7810
361	YB	19+00.00	685957.0622	1546075.4031
362	YB	19+50.00	685920.7558	1546041.0251
363	YB	20+00.00	685884.4494	1546006.6471
364	YB	20+50.00	685848.1430	1545972.2691
365	YB	21+00.00	685811.8366	1545937.8911
366	YB	21+50.00	685775.5302	1545903.5132
367	YB	22+00.00	685739.2238	1545869.1352
368	YB	22+50.00	685702.9174	1545834.7572
369	YB	23+00.00	685666.5073	1545800.4894
370	YB	23+50.00	685629.6465	1545766.7072
371	YB	24+00.00	685592.3136	1545733.4474
372	YB	24+50.00	685554.5160	1545700.7167
373	YB	25+00.00	685516.2611	1545668.5216
374	YB	25+50.00	685477.5566	1545636.8685
375	YB	26+00.00	685438.4101	1545605.7637
376	YB	26+50.00	685398.8294	1545575.2133
377	YB	27+00.00	685358.8224	1545545.2233
378	YB	27+50.00	685318.3970	1545515.7998
379	YB	28+00.00	685277.5611	1545486.9486
380	YB	28+50.00	685236.3230	1545458.6754
381	YB	29+00.00	685194.6908	1545430.9857
382	YB	29+50.00	685152.6791	1545403.8752
383	YB	30+00.00	685110.5404	1545376.9618
384	YB	30+50.00	685068.4017	1545350.0484
385	YB	31+00.00	685026.2630	1545323.1350
386	YB	31+50.00	684984.1243	1545296.2216
387	YB	31+59.48	684976.1362	1545291.1197

DGN 0151DEL_P10b1

PAVEMENT SCHEDULE	
C1	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.
C2	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.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D3	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D4	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	SHOULDER BERM GUTTER
R3	EXPRESSWAY GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL THIS SHEET)

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



TYPICAL SECTION NO. 1

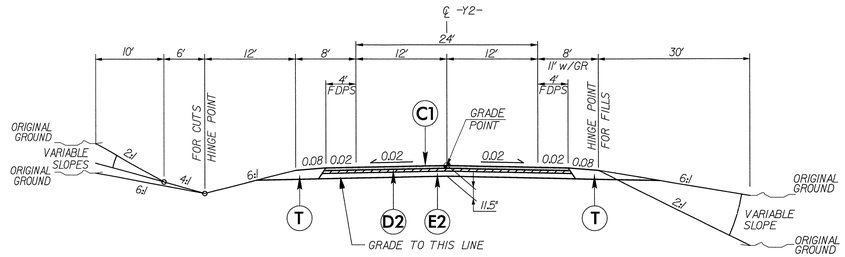
(-Y2-) SR 1560 (CEDAR SPRINGS RD./PEELER RD.)

USE TYPICAL SECTION NO. 1

-Y2- STA. 11+50.00 TO STA. 14+75.00
-Y2- STA. 53+00.00 TO STA. 55+80.00

TYPICAL SECTION NO. 1 NOTES

-Y2- LEFT STA. 11+50.00 TO STA. 14+75.00 – USE 6' SH.
-Y2- RIGHT STA. 11+50.00 TO STA. 12+75.00 – USE 6 ' SH.

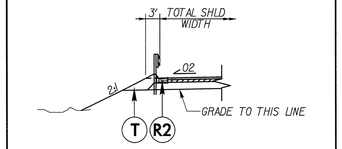


TYPICAL SECTION NO. 2

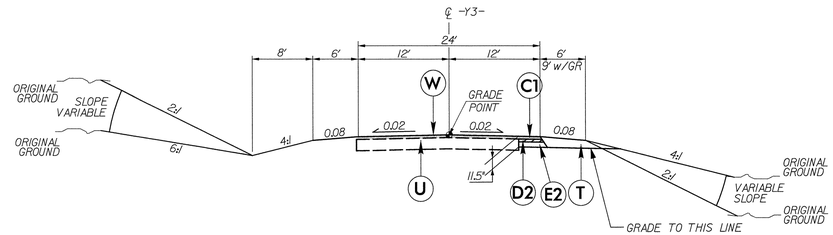
(-Y2-) SR 1560 (CEDAR SPRINGS RD./PEELER RD.)

USE TYPICAL SECTION NO. 2

-Y2- STA. 14+75.00 TO STA. 41+72.12 (BEGIN BRIDGE)
-Y2- STA. 45+83.12 (END BRIDGE) TO STA. 53+00.00



SHOULDER BERM GUTTER DETAIL

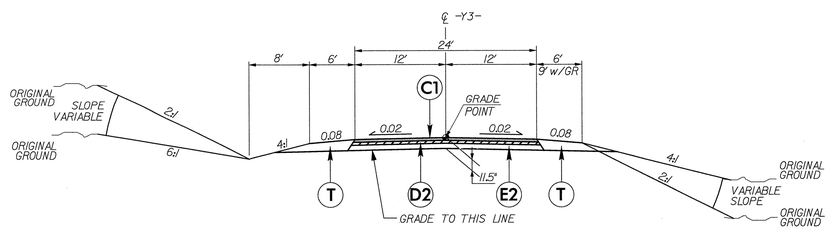


TYPICAL SECTION NO. 3

(-Y3-) (PEELER RD. TO PEELER RD. EXT.)

USE TYPICAL SECTION NO. 3

-Y3- STA. 15+25.00 TO STA. 17+00.00

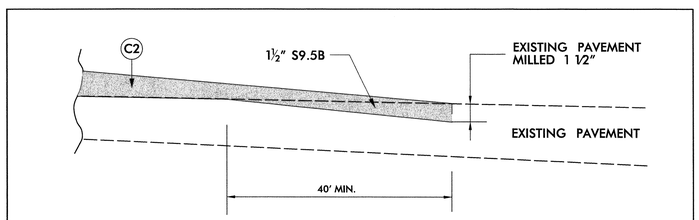


TYPICAL SECTION NO. 4

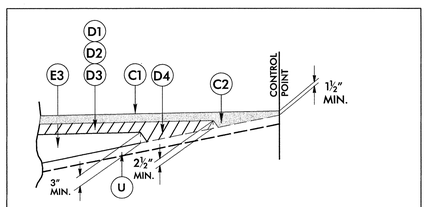
(-Y3-) (PEELER RD. TO PEELER RD. EXT.)

USE TYPICAL SECTION NO. 4

-Y3- STA. 10+12.00 TO STA. 15+25.00



Incidental Milling Existing Pavement



Detail Showing Method of Wedging

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	2
R/W SHEET NO.	

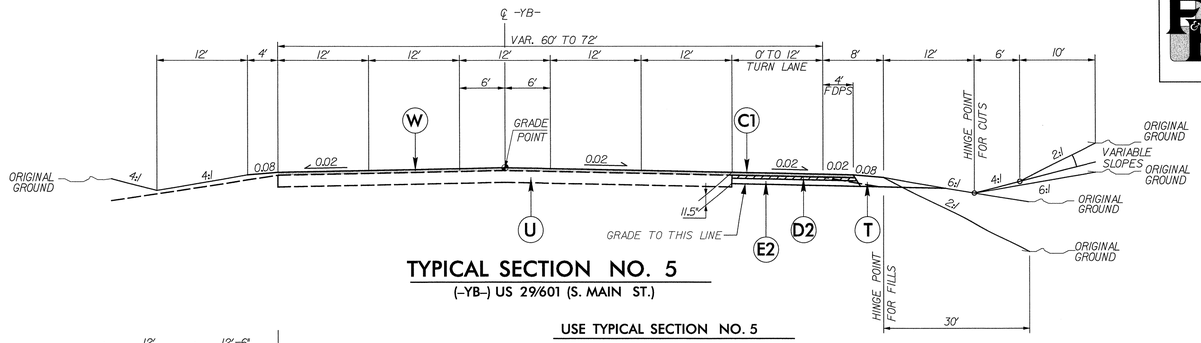
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16686 ENGINEER ALLEN WILS
11/4/13

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON
11/1/13

11/7/2013
R:\Roadway\Proj\p5206a_rdy_typ.dgn
Florence & Hutcheson, Inc.

DGN 0151DEL_P10b1

C1	3" S9.5B
C2	VAR S9.5B
D1	2½" I19.0B
D2	3" I19.0B
D3	4" I19.0B
D4	VAR I19.0B
E1	4" B25.0B
E2	5½" B25.0B
E3	VAR B25.0B
R1	2'-6" C&G
R2	SHLD BERM GUTTER
R3	EXP. GUTTER
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	VAR WEDGING

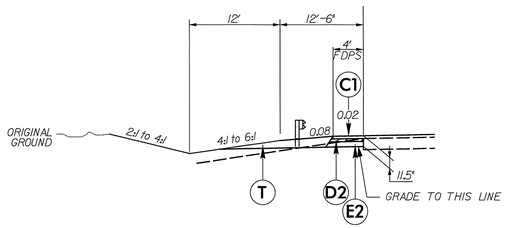


TYPICAL SECTION NO. 5

(–YB–) US 29/601 (S. MAIN ST.)

USE TYPICAL SECTION NO. 5

–YB– STA. 11+00.00 TO STA. 31+25.00

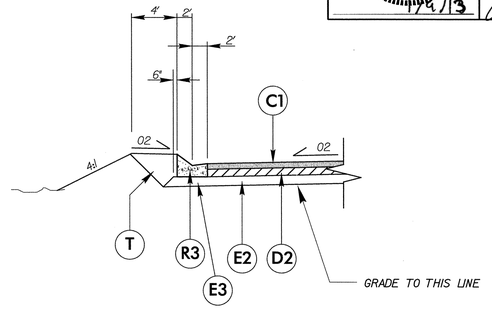


TYPICAL SECTION NO. 5A

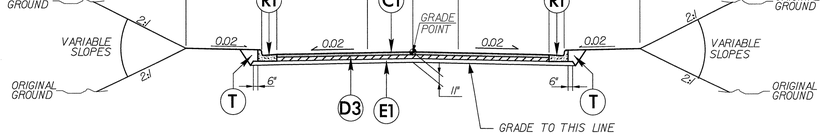
(–YB–) US 29/601 (S. MAIN ST.)

USE TYPICAL SECTION NO. 5A LEFT SIDE

–YB– LEFT STA. 22+00.00 TO STA. 25+25.00



EXPRESSWAY GUTTER DETAIL



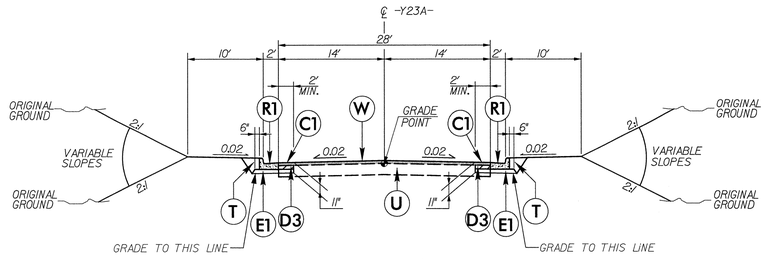
TYPICAL SECTION NO. 6

(–Y23–) (PEELER RD. CONNECTOR LOOPS)

USE TYPICAL SECTION NO. 6

–Y23– STA. 10+42.00 TO STA. 18+01.07

–Y23– STA. 18+49.07 TO STA. 34+48.09

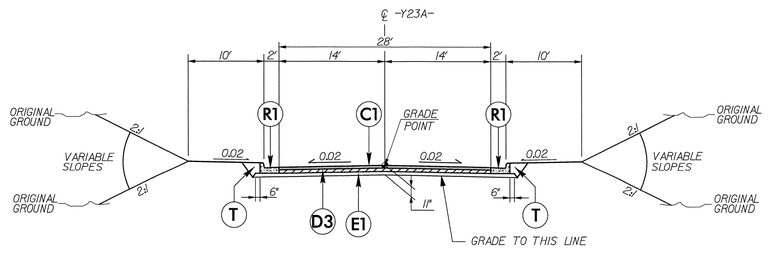


TYPICAL SECTION NO. 7

(–Y23A–) (LONG MEADOW DR.)

USE TYPICAL SECTION NO. 7

–Y23A– STA. 12+00.00 TO STA. 13+55.00

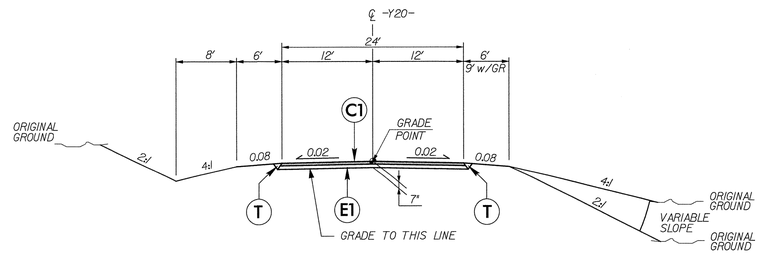


TYPICAL SECTION NO. 8

(–Y23A–) (LONG MEADOW DR.)

USE TYPICAL SECTION NO. 8

–Y23A– STA. 10+18.00 TO STA. 12+00.00



TYPICAL SECTION NO. 9

(–Y20–) (SERVICE RD.)

USE TYPICAL SECTION NO. 9

–Y20– STA. 33+50.00 TO STA. 60+26.00

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	2-A
R/W SHEET NO.	

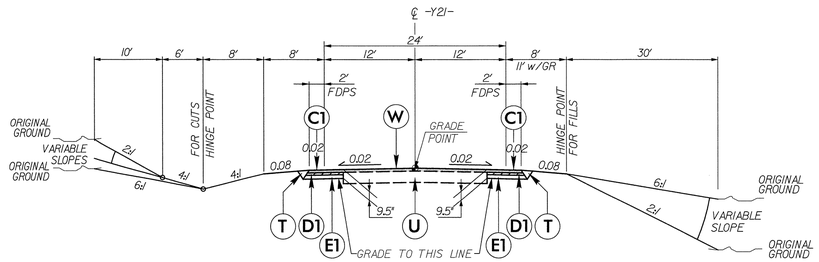
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16489 ENGINEER BRIAN ALLEN WILES
11/4/13

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CHARLES S. MORRISON
11/7/13

1/7/2013
R:\Roadway\Proj\p5206a_rdy_typ.dgn
florence & hutcheson, inc.

0151DEL_P10b1

C1	3" S9.5B
C2	VAR S9.5B
D1	2½" I19.0B
D2	3" I19.0B
D3	4" I19.0B
D4	VAR I19.0B
E1	4" B25.0B
E2	5½" B25.0B
E3	VAR B25.0B
R1	2'-6" C&G
R2	SHLD BERM GUTTER
R3	EXP. GUTTER
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	VAR WEDGING

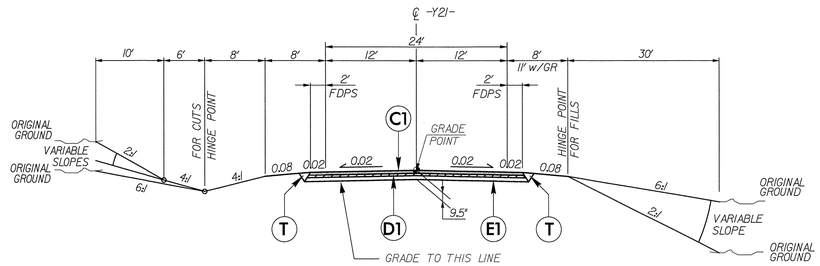


TYPICAL SECTION NO. 10

(-Y21-) SR 2662 (HADER ST.)

USE TYPICAL SECTION NO. 10

-Y21- STA. 10+12.50 TO STA. 20+00.00

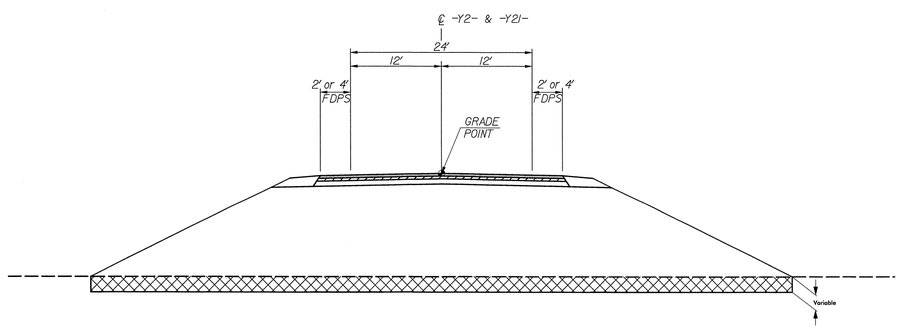


TYPICAL SECTION NO. 11

(-Y21-) SR 2662 (HADER ST.)

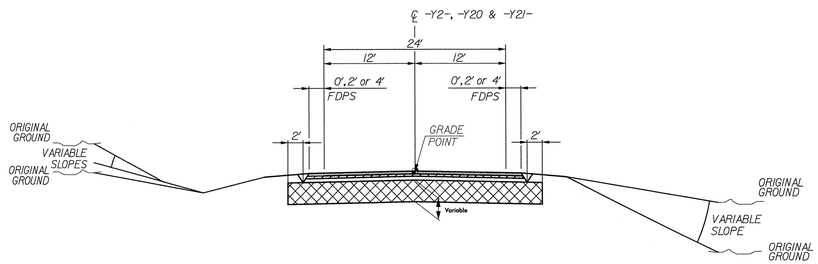
USE TYPICAL SECTION NO. 11

-Y21- STA. 20+00.00 TO STA. 30+24.97



UNDERCUT DETAIL NO. 1

-Y2- STA. 36+50 TO STA. 42+30
-Y2- STA. 46+00 TO STA. 49+50
-Y21- STA. 27+50 TO STA. 30+50



UNDERCUT DETAIL NO. 2

-Y2- STA. 26+50 TO STA. 27+50
-Y20- STA. 45+50 TO STA. 46+50
-Y21- STA. 23+50 TO STA. 25+00

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	2-B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16689 ENGINEER BRIAN ALLEN WILES 1/9/13	NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON 1/17/13

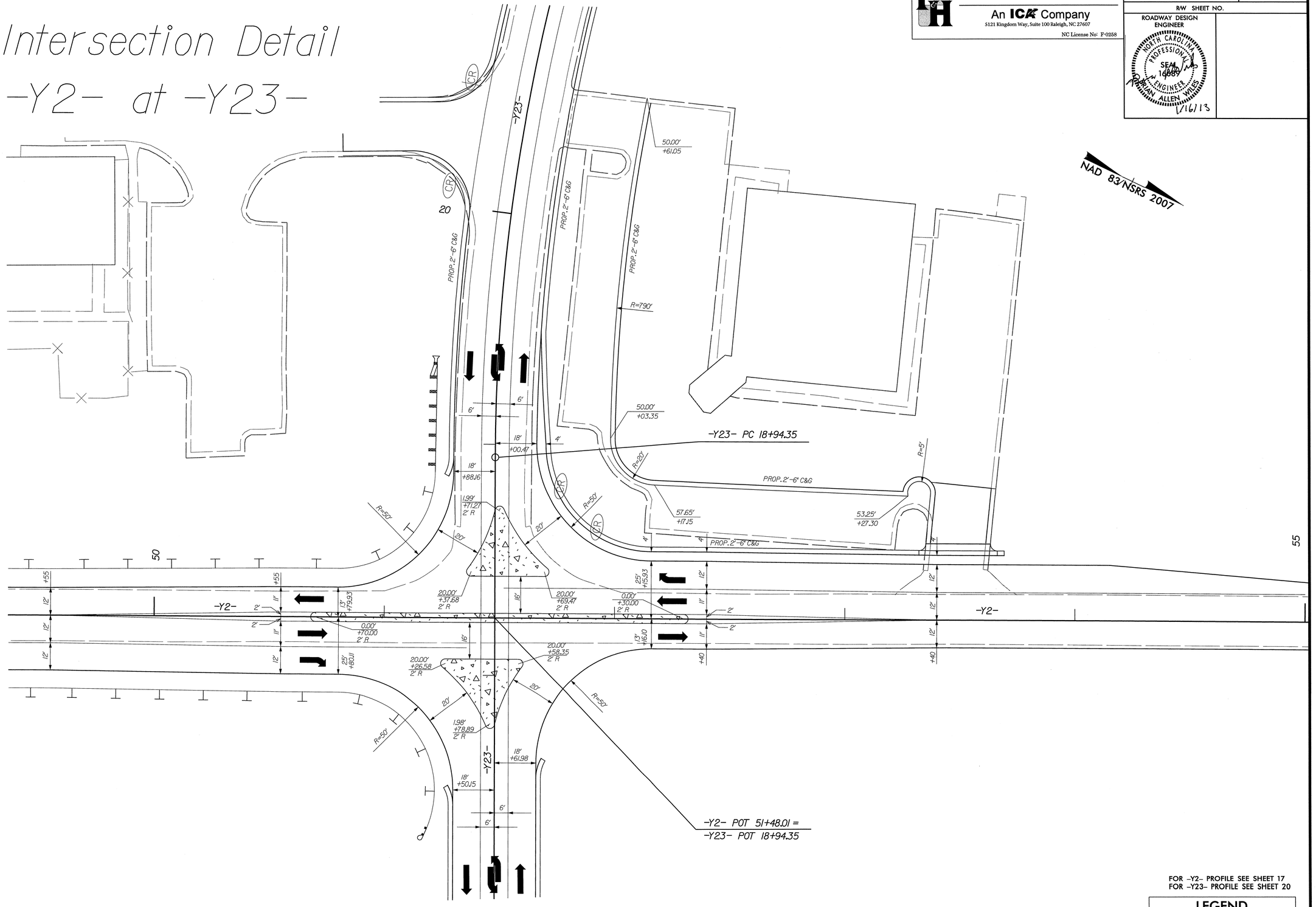
1/7/2013
R:\Roadway\Proj\p5206a_rdy_typ.dgn
Florence & Hutcheson, Inc.

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	2-C
R/W SHEET NO.	

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16689 BRIAN ALLEN WILES
1/16/13

Intersection Detail
-Y2- at -Y23-



FOR -Y2- PROFILE SEE SHEET 17
FOR -Y23- PROFILE SEE SHEET 20

LEGEND

PAVED SHOULDER

REVISIONS

DCN 0151DEL_P10b1

1/21/2013
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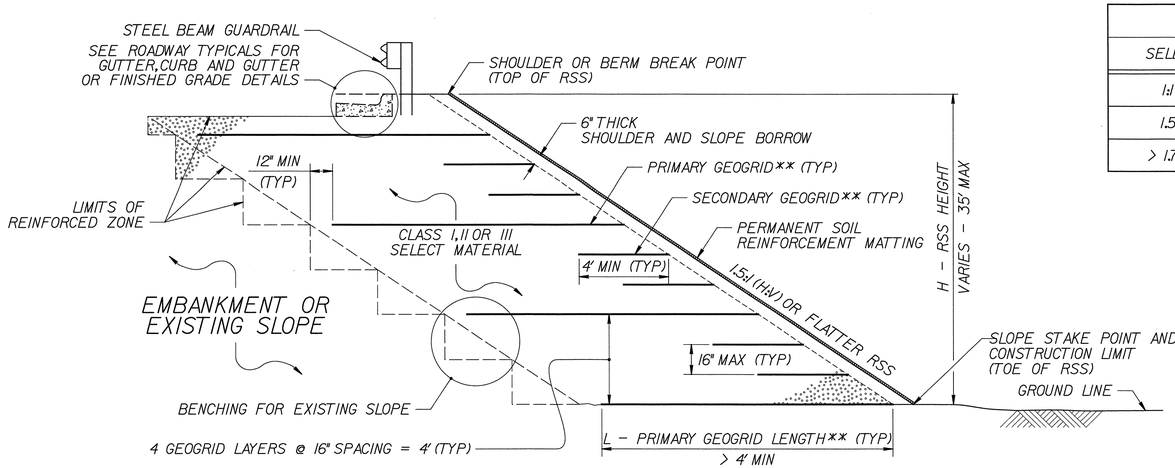
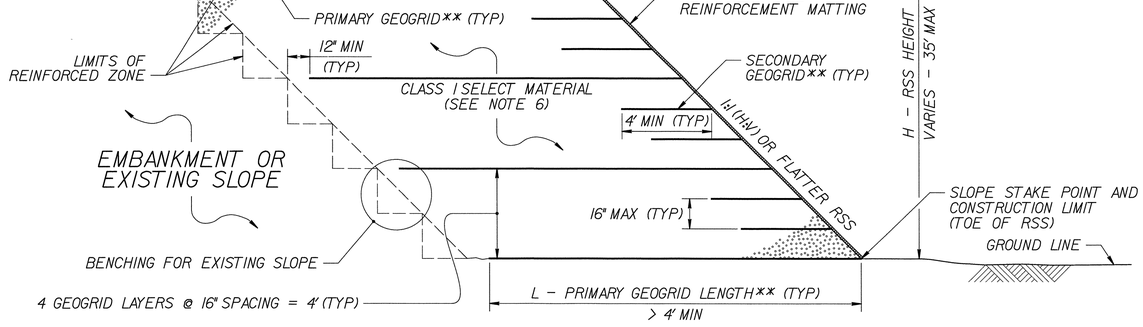
Florence & Hutcheson, Inc.

0151DEL_P10b1



STANDARD RSS WITH SELECT MATERIAL THAT DOES NOT MEET ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS

**SEE TABLES AND GEOGRID PLACEMENT DETAILS.



STANDARD RSS WITH SELECT MATERIAL THAT MEETS ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS

**SEE TABLES AND GEOGRID PLACEMENT DETAILS.

GEOGRID TYPE, DIRECTION	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, MD (SUBSTITUTE SECONDARY GEOGRID FOR PRIMARY GEOGRID FOR 2:1 (H:V) OR FLATTER RSS)	1:1 TO < 1.5:1 (H:V) RSS	600	SEE NOTE 6	1200	SEE NOTE 6	2100	SEE NOTE 6
	1.5:1 TO 1.75:1 (H:V) RSS	500	500	800	500	1100	700
	> 1.75:1 TO < 2:1 (H:V) RSS	500	500	600	500	800	500
SECONDARY GEOGRID, CD	1:1 (H:V) OR FLATTER RSS	200					

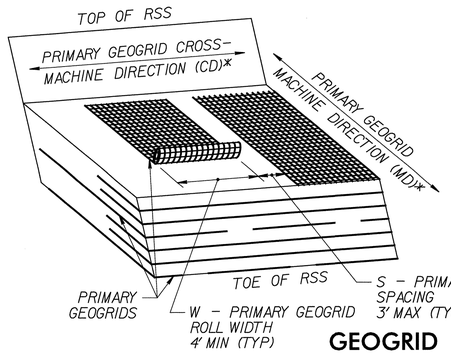
LTDS - MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH (LB/FT)

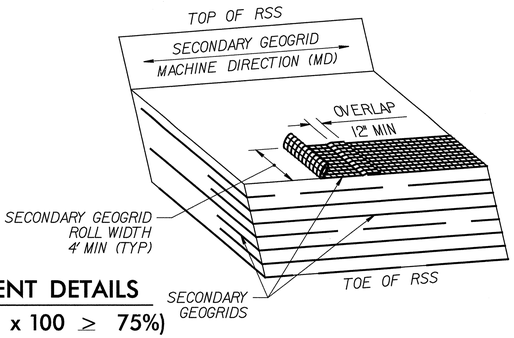
(LTDS IS BASED ON 100% COVERAGE FOR PRIMARY GEOGRID. SEE NOTE 9 FOR LESS THAN 100% COVERAGE.)

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	1.25	SEE NOTE 6	1.15	SEE NOTE 6	1.05	SEE NOTE 6
1.5:1 TO 1.75:1 (H:V) RSS	1.20	1.05	1.10	1.00	1.00	0.95
> 1.75:1 TO < 2:1 (H:V) RSS	1.15	0.80	1.05	0.75	0.95	0.70

L/H RATIO (L > 4' MIN)

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





GEOGRID PLACEMENT DETAILS

(% COVERAGE = $\frac{W}{W+S}$ x 100 ≥ 75%)

*SEE NOTES 8 AND 9.

NOTES:

1. SEE ROADWAY PLANS AND SUMMARY SHEETS FOR REINFORCED SOIL SLOPE (RSS) LOCATIONS.
2. FOR STANDARD REINFORCED SOIL SLOPES, SEE REINFORCED SOIL SLOPES PROVISION. FOR PERMANENT SOIL REINFORCEMENT MATTING, SEE PERMANENT SOIL REINFORCEMENT MAT PROVISION. FOR STEEL BEAM GUARDRAIL, SEE SECTION 862 OF THE STANDARD SPECIFICATIONS.
3. STANDARD RSS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
   UNIT WEIGHT, γ = 120 LB/CF
   FRICTION ANGLE, ϕ = 30 DEGREES
   COHESION, c = 0 LB/SF
4. DO NOT USE STANDARD RSS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE TOE OF RSS.
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 1019-2 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. GEOGRIDS ARE APPROVED FOR LONG-TERM DESIGN STRENGTHS FOR A 75-YEAR DESIGN LIFE IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) BASED ON MATERIAL TYPE. FOR DETAILS OF APPROVED GEOGRIDS AND LONG-TERM DESIGN STRENGTHS, SEE www.ncdot.org/doh/operations/materials/soils/geo.html
   DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SELECT MATERIAL AS FOLLOWS:

MATERIAL TYPE	SELECT MATERIAL
BORROW	CLASS I SELECT MATERIAL
FINE AGGREGATE	CLASS II OR III SELECT MATERIAL

8. DO NOT OVERLAP PRIMARY GEOGRIDS IN THE MD SO OVERLAPS ARE PARALLEL TO THE TOE OF RSS. POLYOLEFIN (e.g., HDPE OR PP) GEOGRIDS MAY BE SPLICED ONCE PER PRIMARY GEOGRID LENGTH IN ACCORDANCE WITH THE GEOGRID MANUFACTURER'S INSTRUCTIONS. USE POLYOLEFIN GEOGRID PIECES AT LEAST 4' LONG. DO NOT SPLICE POLYESTER TYPE (PET) GEOGRIDS.
9. FOR PRIMARY GEOGRIDS WITH 100% COVERAGE, PLACE PRIMARY GEOGRIDS SO GEOGRIDS ARE ADJACENT TO EACH OTHER IN THE CD. FOR PRIMARY GEOGRIDS WITH 75% TO LESS THAN 100% COVERAGE,

   MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH = LTDS BASED ON 100% COVERAGE x (W + S) / W

   SEE TABLE FOR LTDS BASED ON 100% COVERAGE AND GEOGRID PLACEMENT DETAILS FOR PRIMARY GEOGRID ROLL WIDTH (W) AND SPACING (S). FOR PRIMARY GEOGRIDS WITH LESS THAN 100% COVERAGE, STAGGER PRIMARY GEOGRIDS SO GEOGRIDS ARE CENTERED OVER GAPS IN THE PRIMARY GEOGRID LAYER BELOW. DO NOT USE LESS THAN 75% COVERAGE FOR PRIMARY GEOGRIDS.
10. DO NOT PLACE PRIMARY GEOGRIDS UNTIL EXCAVATION DIMENSIONS AND IN-SITU MATERIAL ARE APPROVED.

PROJECT REFERENCE NO.	SHEET
P-5206A	2-D

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL NO. 037631 ENGINEER KEVIN E. WALKER

SIGNATURE 1-8-13 DATE

ENGINEER

SIGNATURE DATE

THE INFORMATION PRESENTED IN THIS STANDARD DRAWING WAS DESIGNED AND PREPARED BY NCDOT. THE GEOTECHNICAL ENGINEER OF RECORD HAS REVIEWED AND APPROVED THIS DESIGN FOR USE ON THIS PROJECT AS DIRECTED.

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1803.01

STANDARD REINFORCED SOIL SLOPE (RSS)

DATE: 11-20-12

0151DEL_P10b1

PROJECT REFERENCE NO.	SHEET
P-5206A	2-E

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL NO. 037631 ENGINEER KEVIN E. WALKER

SIGNATURE 1-8-13 DATE

ENGINEER

SIGNATURE DATE

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

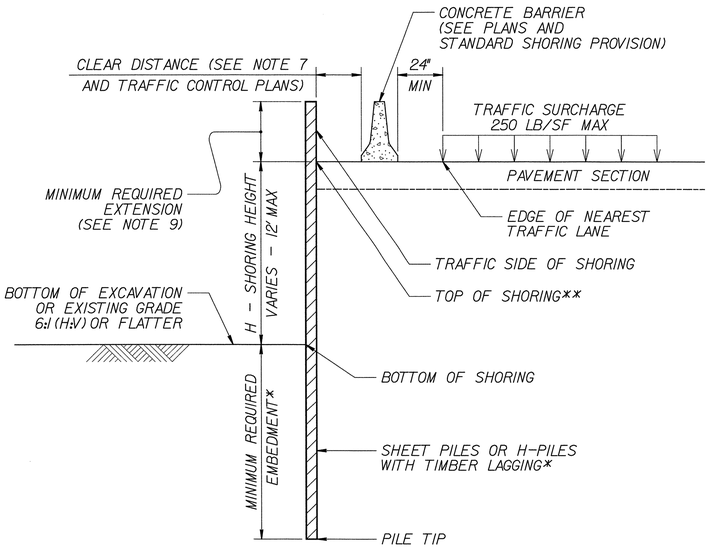
MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

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

NOTES:

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

THE INFORMATION PRESENTED IN THIS STANDARD DRAWING WAS DESIGNED AND PREPARED BY NCDOT. THE GEOTECHNICAL ENGINEER OF RECORD HAS REVIEWED AND APPROVED THIS DESIGN FOR USE ON THIS PROJECT AS DIRECTED.



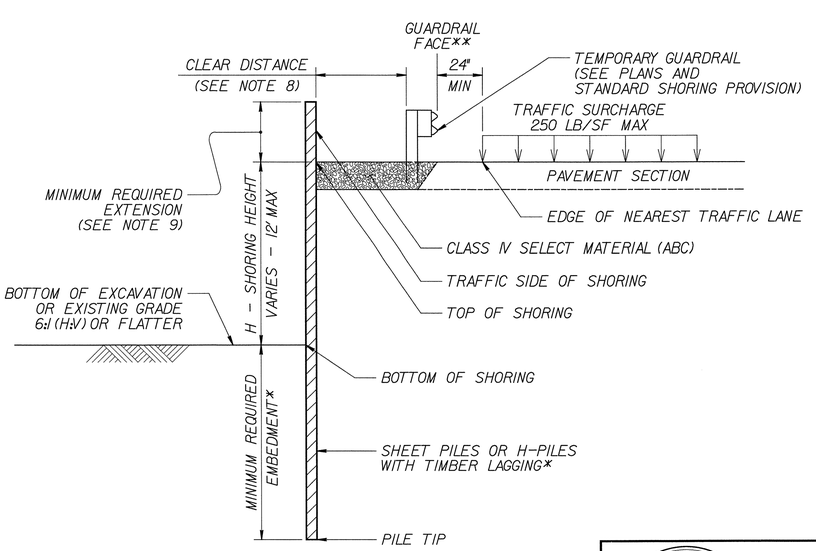
CONCRETE BARRIER

**TOP OF SHORING = EDGE OF PAVEMENT

STANDARD TEMPORARY SHORING

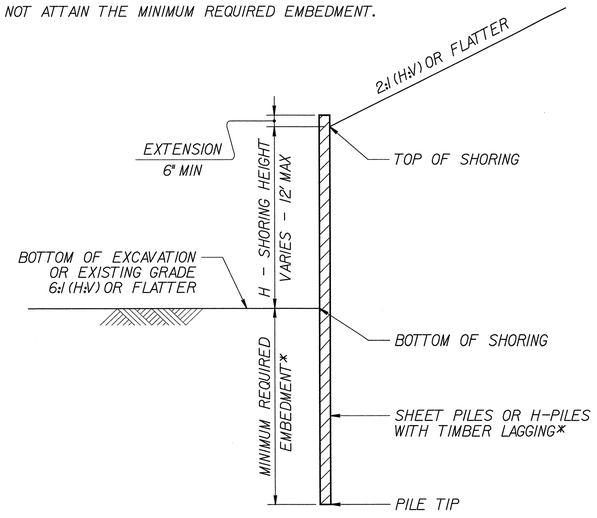
(SURCHARGE CASE)

*SEE TABLE ABOVE.



TEMPORARY GUARDRAIL

**GUARDRAIL FACE = EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING

(SLOPE CASE)

*SEE TABLE ABOVE.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 11-20-12

0151DEL_P10b1 5/14/99

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

ENGLISH DETAIL DRAWING FOR
METHOD OF SHOULDER CONSTRUCTION
HIGH SIDE OF SUPERELEVATED CURVE
METHOD I (SHOULDERS UP TO 10′)

SHEET 1 OF 2
560D01

NORMAL OUTSIDE SHOULDER SLOPES

NORMAL MEDIAN SHOULDER SLOPES

NOTE: ON LOW SIDE OF SUPERELEVATED PAVEMENT USE NORMAL SHOULDER SLOPE UNLESS NORMAL SHOULDER SLOPE IS FLATTER THAN SUPERELEVATION, THEN USE SUPER-ELEVATION RATE ON SHOULDER.

NOTE: "ROLL-OVER" ALGEBRAIC DIFFERENCE IN RATES OF CROSS SLOPE NOT TO EXCEED 0.06 AS SHOWN. IF SUPER-ELEVATION IS REVOLVED ABOUT CENTER LINE OF PAVEMENT, SAME APPLIES. ON DIVIDED ROADWAYS, GRADE POINT TO BE AT THE MEDIAN EDGE OF TRAVEL LANE.

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

ENGLISH DETAIL DRAWING FOR
METHOD OF SHOULDER CONSTRUCTION
HIGH SIDE OF SUPERELEVATED CURVE
METHOD I (SHOULDERS UP TO 10′)

SHEET 1 OF 2
560D01

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON 1/22/13

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

SEE PLATE FOR TITLE

ORIGINAL BY: KKempf DATE: 5-15-09
MODIFIED BY: DATE:
CHECKED BY: DATE:
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0151DEL_P10b1 5/14/99

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

ENGLISH DETAIL DRAWING FOR
METHOD OF SHOULDER CONSTRUCTION
HIGH SIDE OF SUPERELEVATED CURVE
METHOD I (SHOULDERS UP TO 10')

SHEET 2 OF 2
560D01

NORMAL OUTSIDE SHOULDER SLOPES

NORMAL MEDIAN SHOULDER SLOPES

NOTE: ON LOW SIDE OF SUPERELEVATED PAVEMENT USE NORMAL SHOULDER SLOPE UNLESS NORMAL SHOULDER SLOPE IS FLATTER THAN SUPERELEVATION, THEN USE SUPER-ELEVATION RATE ON SHOULDER.

NOTE: "ROLL-OVER" ALGEBRAIC DIFFERENCE IN RATES OF CROSS SLOPE NOT TO EXCEED 0.06 AS SHOWN. IF SUPER-ELEVATION IS REVOLVED ABOUT CENTER LINE OF PAVEMENT, SAME APPLIES. ON DIVIDED ROADWAYS, GRADE POINT TO BE AT THE MEDIAN EDGE OF TRAVEL LANE.

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

ENGLISH DETAIL DRAWING FOR
METHOD OF SHOULDER CONSTRUCTION
HIGH SIDE OF SUPERELEVATED CURVE
METHOD I (SHOULDERS UP TO 10')

SHEET 2 OF 2
560D01

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

SEE PLATE FOR TITLE

ORIGINAL BY: KKempf DATE: 5-15-09
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203143

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
0015000000-N	205	1	EA	SEALING ABANDONED WELLS
0022000000-E	225	21,400	CY	UNCLASSIFIED EXCAVATION
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ********** (45+02.23 -Y2-)
0036000000-E	225	16,240	CY	UNDERCUT EXCAVATION
0106000000-E	230	229,600	CY	BORROW EXCAVATION
0134000000-E	240	1,010	CY	DRAINAGE DITCH EXCAVATION
0156000000-E	250	7,490	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT
0177000000-E	250	2,680	SY	BREAKING OF EXISTING ASPHALT PAVEMENT
0192000000-N	260	7	HR	PROOF ROLLING
0195000000-E	265	13,110	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	22,760	SY	GEOTEXTILE FOR SOIL STABILIZATION
0199000000-E	SP	285	SF	TEMPORARY SHORING
0225000000-E	SP	1,350	SY	REINFORCED SOIL SLOPES
0255000000-E	SP	100	TON	GENERIC GRADING ITEM HAULING AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL
0318000000-E	300	550	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	1,620	SY	FOUNDATION CONDITIONING GEOTEXTILE
0335200000-E	305	1,676	LF	15" DRAINAGE PIPE
0335300000-E	305	52	LF	18" DRAINAGE PIPE
0335400000-E	305	88	LF	24" DRAINAGE PIPE
0335500000-E	305	72	LF	30" DRAINAGE PIPE

SUMMARY OF QUANTITIES - P-5206A

ItemNumber	Sec #	Quantity	Unit	Description
0335850000-E	305	12	EA	** DRAINAGE PIPE ELBOWS (15")
0366000000-E	310	324	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E	310	176	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E	310	40	LF	24" RC PIPE CULVERTS, CLASS III
0384000000-E	310	76	LF	30" RC PIPE CULVERTS, CLASS III
0390000000-E	310	88	LF	36" RC PIPE CULVERTS, CLASS III
0448000000-E	310	196	LF	**** RC PIPE CULVERTS, CLASS IV (54")
0448200000-E	310	1,164	LF	15" RC PIPE CULVERTS, CLASS IV
0448300000-E	310	540	LF	18" RC PIPE CULVERTS, CLASS IV
0448400000-E	310	340	LF	24" RC PIPE CULVERTS, CLASS IV
0588000000-E	310	32	LF	18" CS PIPE CULVERTS, 0.064" THICK
0636000000-E	310	1	EA	** CS PIPE ELBOWS, ***** THICK (18", 0.064" THICK)
0995000000-E	340	1,684	LF	PIPE REMOVAL
0996000000-N	350	1	EA	PIPE CLEAN-OUT
1000000000-E	462	41	SY	6" SLOPE PROTECTION
1011000000-N	500	Lump Sum		FINE GRADING
1220000000-E	545	200	TON	INCIDENTAL STONE BASE
1330000000-E	607	1,230	SY	INCIDENTAL MILLING
1489000000-E	610	12,100	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1498000000-E	610	6,550	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
1519000000-E	610	9,800	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1575000000-E	620	1,435	TON	ASPHALT BINDER FOR PLANT MIX
1693000000-E	654	20	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR

ItemNumber	Sec #	Quantity	Unit	Description
2000000000-N	806	134	EA	RIGHT OF WAY MARKERS
2022000000-E	815	168	CY	SUBDRAIN EXCAVATION
2033000000-E	815	84	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	500	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE
2209000000-E	838	3.4	CY	ENDWALLS
2220000000-E	838	6	CY	REINFORCED ENDWALLS
2286000000-N	840	51	EA	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	62.9	LF	MASONRY DRAINAGE STRUCTURES
2364000000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.16
2365000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.22
2366000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.24
2367000000-N	840	19	EA	FRAME WITH TWO GRATES, STD 840.29
2374000000-N	840	5	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
2374000000-N	840	8	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
2374000000-N	840	9	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
2396000000-N	840	5	EA	FRAME WITH COVER, STD 840.54
2549000000-E	846	4,240	LF	2'-6" CONCRETE CURB & GUTTER
2556000000-E	846	1,988	LF	SHOULDER BERM GUTTER
2577000000-E	846	545	LF	CONCRETE EXPRESSWAY GUTTER
2605000000-N	848	10	EA	CONCRETE CURB RAMP
2612000000-E	848	340	SY	6" CONCRETE DRIVEWAY
2619000000-E	850	30	SY	4" CONCRETE PAVED DITCH

ItemNumber	Sec #	Quantity	Unit	Description
2647000000-E	852	195	SY	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)
2724000000-E	857	45	LF	PRECAST REINFORCED CONCRETE BARRIER, SINGLE FACED
2830000000-N	858	16	EA	ADJUSTMENT OF MANHOLES
2845000000-N	858	18	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES
3030000000-E	862	4,025	LF	STEEL BM GUARDRAIL
3045000000-E	862	325	LF	STEEL BM GUARDRAIL, SHOP CURVED
3105000000-N	862	6	EA	STEEL BM GUARDRAIL TERMINAL SECTIONS
3150000000-N	862	10	EA	ADDITIONAL GUARDRAIL POSTS
3195000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	6	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3628000000-E	876	170	TON	RIP RAP, CLASS I
3649000000-E	876	820	TON	RIP RAP, CLASS B
3656000000-E	876	6,250	SY	GEOTEXTILE FOR DRAINAGE
4025000000-E	901	54	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (D)
4025000000-E	901	102	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (E)
4025000000-E	901	107	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (F)
4072000000-E	903	590	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4096000000-N	904	3	EA	SIGN ERECTION, TYPE D
4102000000-N	904	19	EA	SIGN ERECTION, TYPE E
4108000000-N	904	9	EA	SIGN ERECTION, TYPE F

ItemNumber	Sec #	Quantity	Unit	Description
4155000000-N	907	25	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4400000000-E	1110	329	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	288	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	162	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4415000000-N	1115	1	EA	FLASHING ARROW BOARD
4420000000-N	1120	1	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4430000000-N	1130	100	EA	DRUMS
4435000000-N	1135	80	EA	CONES
4445000000-E	1145	264	LF	BARRICADES (TYPE III)
4455000000-N	1150	360	DAY	FLAGGER
4465000000-N	1160	1	EA	TEMPORARY CRASH CUSHIONS
4480000000-N	1165	1	EA	TMA
4485000000-E	1170	150	LF	PORTABLE CONCRETE BARRIER
4650000000-N	1251	200	EA	TEMPORARY RAISED PAVEMENT MARKERS
4685000000-E	1205	18,298	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	31,910	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4695000000-E	1205	100	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
4710000000-E	1205	284	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
4721000000-E	1205	3	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)
4725000000-E	1205	54	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
4770000000-E	1205	1,744	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (II)
4810000000-E	1205	18,391	LF	PAINT PAVEMENT MARKING LINES (4")
4845000000-N	1205	25	EA	PAINT PAVEMENT MARKING SYMBOL

ItemNumber	Sec #	Quantity	Unit	Description
4850000000-E	1205	1,606	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
4875000000-N	1205	3	EA	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS
4900000000-N	1251	313	EA	PERMANENT RAISED PAVEMENT MARKERS
5326200000-E	1510	65	LF	12" WATER LINE
5648000000-N	1515	2	EA	RELOCATE WATER METER
5672000000-N	1515	7	EA	RELOCATE FIRE HYDRANT
5709200000-E	1520	75	LF	4" FORCE MAIN SEWER
5798000000-E	1530	64	LF	ABANDON ** UTILITY PIPE (4")
5804000000-E	1530	695	LF	ABANDON 12" UTILITY PIPE
6000000000-E	1605	20,000	LF	TEMPORARY SILT FENCE
6006000000-E	1610	2,200	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	7,200	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	3,500	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	50	ACR	TEMPORARY MULCHING
6018000000-E	1620	1,400	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	6.25	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	2,000	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	200	LF	SAFETY FENCE
6030000000-E	1630	14,150	CY	SILT EXCAVATION
6036000000-E	1631	35,390	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	100	SY	COIR FIBER MAT
6038000000-E	SP	2,810	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	3,500	LF	1/4" HARDWARE CLOTH
6070000000-N	1639	2	EA	SPECIAL STILLING BASINS
6071010000-E	SP	1,800	LF	WATTLE
6071020000-E	SP	1,400	LB	POLYACRYLAMIDE (PAM)

SUMMARY OF QUANTITIES - P-5206A

ItemNumber	Sec #	Quantity	Unit	Description
6071030000-E	1640	5,000	LF	COIR FIBER BAFFLE
6071050000-E	SP	7	EA	*** SKIMMER (1-1/2")
6071050000-E	SP	1	EA	*** SKIMMER (2")
6084000000-E	1660	50	ACR	SEEDING & MULCHING
6087000000-E	1660	25	ACR	MOWING
6090000000-E	1661	600	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	2	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	1,250	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	37	TON	FERTILIZER TOPDRESSING
6111000000-E	SP	60	LF	IMPERVIOUS DIKE
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	100	EA	RESPONSE FOR EROSION CONTROL
7060000000-E	1705	1,350	LF	SIGNAL CABLE
7120000000-E	1705	8	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7132000000-E	1705	2	EA	VEHICLE SIGNAL HEAD (12", 4 SECTION)
7144000000-E	1705	4	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
7264000000-E	1710	750	LF	MESSENGER CABLE (3/8")
7300000000-E	1715	1,550	LF	UNPAVED TRENCHING (**********) (1, 2")
7301000000-E	1715	150	LF	DIRECTIONAL DRILL (**********) (1, 2")
7324000000-N	1716	16	EA	JUNCTION BOX (STANDARD SIZE)
7360000000-N	1720	8	EA	WOOD POLE
7372000000-N	1721	16	EA	GUY ASSEMBLY
7408000000-E	1722	2	EA	1" RISER WITH WEATHERHEAD
7420000000-E	1722	8	EA	2" RISER WITH WEATHERHEAD
7444000000-E	1725	1,450	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	5,400	LF	LEAD-IN CABLE (**********) (14-2)
7575142000-N	1736	2	EA	900MHZ RADIO
7684000000-N	1750	2	EA	SIGNAL CABINET FOUNDATION
7756000000-N	1751	2	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
7780000000-N	1751	10	EA	DETECTOR CARD (TYPE 2070L)
7901000000-N	1753	2	EA	CABINET BASE EXTENDER
7948000000-N	1757	1	EA	TRAFFIC SIGNAL REMOVAL

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COMPUTED BY:	DATE:
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
P-5206A	3-A

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.

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

Station / Size / Thickness or Gauge	Location (LT, RT, or CL)	Structure No. From	Structure No. To	Top Elevation	Invert Elevation	Invert Elevation	Slope Critical	Drainage 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
12+50 -Y2-	LT	0405							28										
12+90 -Y2-	RT	0406							40										
14+25 -Y2-	RT																		
15+00 -Y2-	LT	0407							28										
15+30 -Y2-	LT	0408							28										
16+00 -Y2-	RT	0409							40										
19+10 -Y2-	LT																		
20+00 -Y2-	LT	0401	0403		776.3	775.5													
21+00 -Y2-	LT	0403		781.0	774.5														
21+00 -Y2-	LT	0402	0403		775.2	774.5						32							
21-00 -Y2-	LT	0403	0404		774.5	773.8													
28+75 -Y2-	LT	0505							44										
32+05 -Y2-	LT	0503		780.9	776.9														
	LT	0503	0504		776.9	774.0			32							X			
37+60 -Y2-	LT	0604		810.1	807.3														
		0604	0605		807.3	777.2			64							X			
41+33 -Y2-	LT	0601		824.7	821.9														
		0601	0602		821.9	821.8													
41+33 -Y2-	RT	0602		824.6	821.8														
		0602	0603		821.8	786.3			80							X			
46+20 -Y2-	LT	0612		819.4	816.6														
		0612	0613		816.6	816.5	X												
46+20 -Y2-	RT	0613		819.4	816.5														
		0613	0614		816.5	793.7			56							X			
27+45 -Y21-	RT	0609		794.1	791.4														
		0609	0610		791.4	790.5			24										
27+20 -Y21-	RT	0610		793.3	790.5														
		0610	0611		790.5	782.5			24							X			
28+65 -Y21-	CL	0615			770.1	775.4													
19+45 -YB-	RT	0616							32										
29+15 -Y21-	LT	0606		800.6	797.8														
		0606	0607		797.8	796.8			36										
28+82 -Y21-	LT	0607		799.6	796.8														
		0607	0608		796.8	771.1			60							X			
SHEET TOTALS									616			32							

Station	Str. From	Str. To	C.S. Pipe 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. Pipe Class III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. Pipe Class IV 12"	15"	18"	24"	30"	36"	42"	48"
20+00 -Y2-	0401	0403											108													
21-00 -Y2-	0403	0404													76											
41+33 -Y2-	0601	0602																		32						
46+20 -Y2-	0612	0613																		32						
28+65 -Y21-	0615																					140				
SHEET TOTALS													108		76					64		140				

Station	Str. From	Str. To	Parallel Pipe End Section Std. 310.02	Cross Pipe End Section Std. 310.03	***" RC Pipe Culverts, Contractor Design	15" Side Drain Pipe	18" Side Drain Pipe	Endwalls Std. 838.01 or Std. 838.11 (Unless Noted Otherwise) Cu. Yards R.C.P.	C.S.P.	Quantities for Drainage Structures Per Each (0' thru 5.0')	*Total L.F. for pay quantity shall be col. 'A' + (1.3 X col. 'B') Lin. Ft. A 5.0' thru 10.0'	B 10.0' and above	C.B. Std. 840.01 or Std. 840.02	Frame, Grates, and Hood Standard 840.03 Type of Grate E	F	G	Concrete Transitional Section Drop Inlet	Catch Basin	D.I. Std. 840.14 or Std. 840.15	D.I. Frame and Grates Std. 840.16	G.D.I. Type "A" Std. 840.17 or 840.26	G.D.I. Type "B" Std. 840.18 or 840.27	G.D.I. Type "D" Std. 840.19 or 840.28	G.D.I. Frame with Two Grates Std. 840.22	G.D.I. (N.S.) Frame with Two Grates Std. 840.24	G.D.I. (N.S.) Frame with Two Grates Std. 840.29	J.B. Std. 840.31 or 840.32	Manhole Frame and Cover Std. 840.54	T.B.D.I. Std. 840.35	Adjust Manhole	T.B.J.B. Std. 840.34	Adjust CB	Drainage Pipe Elbows No. & Size	C. S. Pipe Elbows No. & Size	Conc. & Brick Pipe Plug, C.Y. Std. 840.71	Conc. Collars Cl. "B" C.Y. Std. 840.72	Pipe Removal Lin. Ft.	Remarks
12+50 -Y2-	0405																																				28	
12+90 -Y2-	0406																																				28	
14+25 -Y2-																																					20	
15+00 -Y2-	0407																																				24	
15+30 -Y2-	0408																																				28	
16+00 -Y2-	0409																																				24	
19+10 -Y2-																																					44	
21+00 -Y2-	0403									1	1.5																1	1										
32+05 -Y2-	0503									1												1				1												
	0503	0504																															1 @15					
37+60 -Y2-	0604									1												1				1												
	0604	0605																															2 @15					
41+33 -Y2-	0601									1																1			1									
41+33 -Y2-	0602									1																1			1									
	0602	0603																															2 @15					
46+20 -Y2-	0612									1																1			1									
46+20 -Y2-	0613									1																1			1									
	0613	0614																															2 @15					
27+45 -Y21-	0609									1												1				1												
27+20 -Y21-	0610									1												1				1												
	0610	0611																															2 @15					
19+45 -YB-	0616																																				44	
29+15 -Y21-	0606									1												1				1												
28+82 -Y21-	0607									1												1				1												
	0607	0608																															2 @15					
SHEET TOTALS										11	1.5											6				10	1	1	4				11 @15"				240	

ABBREVIATIONS

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

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NC10440

COMPUTED BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____

PROJECT NO.	SHEET NO.
P-5206A	3-B

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.

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

STATION	LOCATION (LT, RT, OR CL)*	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE								DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	C.S. PIPE THICKNESS OR GAUGE								R.C. PIPE CLASS III							
								12"	15"	18"	24"	30"	36"	42"	48"					.064	.064	.064	.064	.079	.079	.109	.109	12"	15"	18"	24"	30"	36"	42"	48"
50+40 -Y2-	RT	0708		799.0	795.8																												
		0708	0709		795.8	794.5			36																								
50+75 -Y2-	RT	0709		797.7	794.5																												
		0709	0726		794.5	794.2	X																										
50+75 -Y2-	LT	0726		797.9	794.2																												
		0726	0711		794.2	791.2			32																								
50+83 -Y2-	LT	0710	0711		789.3	786.4			28							X																	
51+06 -Y2-	LT	0711		796.8	786.2																												
51+80 -Y2-	LT	0707		794.6	785.5																												
		0707	0705		785.5	786.2	X																										
53+20 -Y2-	LT	0705		791.8	786.2																												
		0706	0705		786.6	786.2	X																										
		0704	0705		788.8	786.2																											
		0701	0702		786.0	785.9	X			28																							
16+00 -Y23-	LT	0702		789.7	785.9																												
		0702	0703		785.9	783.3																											
20+05 -Y23-		0716		788.6	781.1																												
		0716	0715		781.1	782.8			20																								
20+05 -Y23-		0715		790.6	782.8																												
		0715	0714		782.8	783.2	X																										
20+00 -Y23-		0714		787.0	783.2																												
		0714	0713		783.2	783.3	X		24																								
20+17 -Y23-		0713		786.4	783.3																												
		0713	0712		783.3	783.4	X																										
20+40 -Y23-		0712		786.4	783.4																												
21+05 -Y23-	RT	0717		788.3	785.3																												
		0717	0718		785.3	784.4			12																								
21+05 -Y23-		0718		789.0	778.1																												
20+54 -Y23-	RT	0723		783.7	780.5																												
		0723	0724		780.5	776.6			112																								
21+67 -Y23-	RT	0724		779.9	775.9																												
21+69 -Y23-	LT	0720		787.5	777.2																												
		0720	0722		777.2	776.6																											
21+65 -Y23-	RT	0722		788.1	776.1																												
		0722	0724		776.1	775.9	X					40																						
22+63 -Y23-	LT	1014		786.7	783.7																												
		1014	1016		783.7	782.9																											
22+30 -Y23-	LT	1016		786.8	782.9																												
		1015	1016		783.0	782.9			28																								
		1016	0720		782.9	778.0																											
SHEET TOTALS									292	28		40																272	68	40					

STATION	C.S. PIPE 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	PARALLEL PIPE END SECTION STD. 310.02	CROSS PIPE END SECTION STD. 310.03	**** RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. A + (1.5X COL. B) PER EACH (0 THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN
50+40 -Y2-																								1								
50+75 -Y2-																								1								
											48																						
50+75 -Y2-																								1								
50+83 -Y2-																																
51+06 -Y2-																								1	5	0.56						
51+80 -Y2-																								1	4.12							
											140																						
53+20 -Y2-																								1	0.63		1			1		
16+00 -Y23-																								1			1		1			
20+05 -Y23-																								1	2.52							
20+05 -Y23-																								1	2.75		1		1			
20+00 -Y23-																								1								
20+17 -Y23-																								1			1		1			
20+40 -Y23-																								1			1		1			
21+05 -Y23-																								1			1					
21+05 -Y23-																								1	5	0.86						
20+54 -Y23-																								1								
21+67 -Y23-																								1								
21+69 -Y23-																								1	5	0.31	1			1		
21+65 -Y23-																								1	5	2	1		1			
22+63 -Y23-																								1			1		1			
22+30 -Y23-																								1			1		1			
SHEET TOTALS											104	140												20	30.02	3.73	10	3	5	2		

STATION	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
50+40 -Y2-				
50+75 -Y2-				
50+75 -Y2-				
50+83 -Y2-				
51+06 -Y2-				
51+80 -Y2-			48	
53+20 -Y2-				
			48	
16+00 -Y23-				
20+05 -Y23-				
20+05 -Y23-				
20+00 -Y23-				
20+17 -Y23-				
20+40 -Y23-				
21+05 -Y23-				
21+05 -Y23-				
20+54 -Y23-				
21+67 -Y23-				
21+69 -Y23-				
			33	
21+65 -Y23-				
			38	
22+63 -Y23-				
22+30 -Y23-				
SHEET TOTALS			167	

ABBREVIATIONS

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

0151DEL_P10b1

NC1044D

COMPUTED BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
P-5206A	3-C

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.

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

STATION	LOCATION (LT, RT, OR CL)'	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE 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
								THICKNESS OR GAUGE											
12+60 -Y3-	LT	0801							60										
15+55 -Y3-	RT	0802							72										
15+90 -Y3-	LT	0083							76										
12+25 -YB-	RT																		
13+42 -YB-	RT	0910		786.7	783.7														
		0910	0911		783.7	783.6	X												
13+80 -YB-	RT	0911		786.9	783.6														
		0911	0903		783.6	783.0	X												
15+25 -YB-	RT	0903		787.9	783.0														
15+25 -YB-	CL	0901	0903		784.3	783.0													
16+42 -YB-	RT	0902		787.7	785.0														
		0902	0903		785.0	783.0													
		0903	0904		783.0	782.8	X				28								
17+75 -YB-	RT	0913							24										
16+80 -YB-	LT	0912							268										
12+25 -Y23-	RT	0914									40								
11+85 -Y23-	LT	0905		785.7	783.5														
		0905	0906		783.5	783.3	X		20										
11+85 -Y23-	LT	0906		787.4	783.3														
		0906	0907		783.3	782.6	X												
13+30 -Y23-	LT	0907		786.4	782.6														
		0907	0908		782.6	782.4	X												
13+72 -Y23-	LT	0908		786.3	782.4														
		0908	0909		782.4	782.1	X												
23+52 -Y23-	RT	1011		784.5	781.5														
		1011	1012		781.5	781.3	X												
		1012		784.5	781.3														
		1012	1013		781.3	781.3	X		16										
10+40 -Y23A-	LT	1001		795.4	792.4														
		1001	1002		792.4	790.5													
28+00 -Y23-	LT	1002		793.5	790.5														
		1002	1003		790.5	786.7													
30+10 -Y23-	LT	1003		789.7	786.7														
		1003	1004		786.7	786.5	X												
30+65 -Y23-	LT	1004		789.9	786.5														
		1004	1006		786.5	786.1	X												
		1005	1006		788.4	786.4					24								
31+37 -Y23-	LT	1006		790.3	786.1														
		1006	1008		786.1	783.7													
31+37 -Y23-	RT	1008		790.6	783.7														
31+61 -Y23-	RT	1007		790.7	787.7														
		1007	1008		787.7	787.2													
SHEET TOTALS									536	24	68								

STATION	C.S. PIPE SIZE 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS III SIZE 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV SIZE 12"	15"	18"	24"	30"	36"	42"	48"	PARALLEL PIPE END SECTION STD. 310.02	CROSS PIPE END SECTION STD. 310.03	**** RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE
	THICKNESS OR GAUGE .064	.064	.064	.064	.079	.079	.109	.109																					
12+60 -Y3-																													
15+55 -Y3-																													
15+90 -Y3-																													
12+25 -YB-																													
13+42 -YB-																													
																	40												
13+80 -YB-																													
																	144												
15+25 -YB-																													
15+25 -YB-																		84											
16+42 -YB-																													
																	120												
17+75 -YB-																													
16+80 -YB-																													
12+25 -Y23-																													
11+85 -Y23-																													
11+85 -Y23-																													
																	140												
13+30 -Y23-																													
																		40											
13+72 -Y23-																													
																		68											
23+52 -Y23-																													
																	32												
10+40 -Y23A-																													
																	64												
28+00 -Y23-																													
																	200												
30+10 -Y23-																													
																	52												
30+65 -Y23-																													
																	76												
31+37 -Y23-																													
																		40											
31+37 -Y23-																													
31+61 -Y23-																													
																	24												
SHEET TOTALS																	892	108	124										

STATION	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS 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	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	MANHOLE FRAME AND COVER STD. 840.54	T.B.D.I. STD. 840.35	ADJUST MANHOLE	T.B.J.B. STD. 840.34	ADJUST CB	DRAINAGE PIPE ELBOWS NO. & SIZE	C. S. PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
			PER EACH (Ø THRU 5.0')	5.0' THRU 10.0'	10.0' AND ABOVE																									
12+60 -Y3-																											34		
15+55 -Y3-																											80		
15+90 -Y3-																													
12+25 -YB-																											60		
13+42 -YB-			1																	1			1						
																											20		
13+80 -YB-			1																	1			1						
																											146		
15+25 -YB-			1																	1			1						
15+25 -YB-																													
16+42 -YB-			1															1		1									
																											225		
17+75 -YB-																											36		
																											64		
16+80 -YB-																											268		
12+25 -Y23-																													
11+85 -Y23-			1															1	1										
11+85 -Y23-			1			1																							
13+30 -Y23-			1			1																							
13+72 -Y23-			1	1																									
23+52 -Y23-			1			1																							
			1			1																							
10+40 -Y23A-			1			1																							
28+00 -Y23-			1			1																							
30+10 -Y23-			1			1																							
30+65 -Y23-			1	1																									
31+37 -Y23-			1			1																							
31+37 -Y23-			1	1.89		1																							
31+61 -Y23-			1			1																							
SHEET TOTALS			17	1.89		12	2	3	7		1	1		1		1	3		3								933		

ABBREVIATIONS

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

0151DEL_P10b1

NC10440

COMPUTED BY: ______________________ DATE: __________

CHECKED BY: ______________________ DATE: __________

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
P-5206A	3-D

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
23+80 -YB-	LT						
24+40 -YB-	RT	1017					
25+55 -YB-	LT						
26+00 -YB-	LT	1019					
27+08 -Y3-	CL						
34+75 -Y20-	LT	1201					
39+35 -Y20-	CL	1301			776.9	776.0	
49+00 -Y20-	CL	1401			774.6	774.3	
52+96 -Y20-	CL	1402			769.7	769.9	
60+15 -Y20-	CL	1403			785.2	785.6	
18+35 -Y1-	LT	1501					
12+60 -Y21-	LT	1502					
		1503	1504		777.3	776.8	
13+12 -Y21-	LT	1504		780.1	776.8		
		1504	1505		776.8	775.2	
14+10 -Y21-	LT	1505		778.4	775.2		
		1505	1507		775.2	774.8	X
14+60 -Y21-	LT	1507		778.1	774.7		
		1507	1508		774.7	774.6	X
NOT USED		1506					
17+25 -Y21-	LT	1509			774.2	773.5	
18+40 -Y21-	LT	1512					
20+11 -Y21-	CL	1510			781.8	780.7	
20+50 -Y21-	CL	1511			782.3	780.4	
TOTAL SHT 3-D							
TOTAL SHT 3-A							
TOTAL SHT 3-B							
TOTAL SHT 3-C							
PROJECT TOTALS							
UTILITIES							
SAY							

DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)

STATION	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
23+80 -YB-														
24+40 -YB-	1017			44										
25+55 -YB-														
26+00 -YB-	1019			32										
27+08 -Y3-														
34+75 -Y20-	1201			28										
39+35 -Y20-	1301													
49+00 -Y20-	1401													
52+96 -Y20-	1402													
60+15 -Y20-	1403													
18+35 -Y1-	1501													
12+60 -Y21-	1502			24										
	1503	1504		32										
13+12 -Y21-	1504													
	1504	1505												
14+10 -Y21-	1505													
	1505	1507		48										
14+60 -Y21-	1507													
	1507	1508				20						X		
NOT USED	1506													
17+25 -Y21-	1509													
18+40 -Y21-	1512			24										
20+11 -Y21-	1510													
20+50 -Y21-	1511													
TOTAL SHT 3-D				232		20								
TOTAL SHT 3-A				616			32							
TOTAL SHT 3-B				292	28		40							
TOTAL SHT 3-C				536	24	68								
PROJECT TOTALS				1676	52	88	72							
UTILITIES														
SAY				1676	52	88	72							

C.S. PIPE (thickness or gauge in parentheses) and R.C. PIPE CLASS III

STATION	FROM	TO	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)	C.S. 48" (.109)	R.C. III 12"	R.C. III 15"	R.C. III 18"	R.C. III 24"	R.C. III 30"	R.C. III 36"	R.C. III 42"	R.C. III 48"
23+80 -YB-																		
24+40 -YB-	1017																	
25+55 -YB-																		
26+00 -YB-	1019																	
27+08 -Y3-																		
34+75 -Y20-	1201																	
39+35 -Y20-	1301																	
49+00 -Y20-	1401																	
52+96 -Y20-	1402															88		
60+15 -Y20-	1403																	
18+35 -Y1-	1501											52						
12+60 -Y21-	1502																	
	1503	1504																
13+12 -Y21-	1504																	
	1504	1505																
14+10 -Y21-	1505																	
	1505	1507																
14+60 -Y21-	1507																	
	1507	1508																
NOT USED	1506																	
17+25 -Y21-	1509				32													
18+40 -Y21-	1512																	
20+11 -Y21-	1510																	
20+50 -Y21-	1511																	
TOTAL SHT 3-D					32							52				88		
TOTAL SHT 3-A													108		76			
TOTAL SHT 3-B												272	68	40				
TOTAL SHT 3-C																		
PROJECT TOTALS					32							324	176	40	76	88		
UTILITIES																		
SAY					32							324	176	40	76	88		

R.C. PIPE CLASS IV

STATION	FROM	TO	12"	15"	18"	24"	30"	36"	42"	48"
23+80 -YB-										
24+40 -YB-	1017									
25+55 -YB-										
26+00 -YB-	1019									
27+08 -Y3-										
34+75 -Y20-	1201									
39+35 -Y20-	1301					76				
49+00 -Y20-	1401				68					
52+96 -Y20-	1402									
60+15 -Y20-	1403				80					
18+35 -Y1-	1501									
12+60 -Y21-	1502									
	1503	1504								
13+12 -Y21-	1504									
	1504	1505		104						
14+10 -Y21-	1505									
	1505	1507								
14+60 -Y21-	1507									
	1507	1508								
NOT USED	1506									
17+25 -Y21-	1509									
18+40 -Y21-	1512									
20+11 -Y21-	1510				68					
20+50 -Y21-	1511				76					
TOTAL SHT 3-D				104	292	76				
TOTAL SHT 3-A				64		140				
TOTAL SHT 3-B				104	140					
TOTAL SHT 3-C				892	108	124				
PROJECT TOTALS				1164	540	340				
UTILITIES										
SAY				1164	540	340				

ENDWALLS: STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE), CU. YARDS. 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	PARALLEL PIPE END SECTION STD. 310.02	CROSS PIPE END SECTION STD. 310.03	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	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	GRATE E	GRATE F	GRATE G	CONC. TRANS. SECTION: DROP INLET	CONC. TRANS. SECTION: CATCH BASIN
23+80 -YB-																		
24+40 -YB-	1017																	
25+55 -YB-																		
26+00 -YB-	1019																	
27+08 -Y3-																		
34+75 -Y20-	1201																	
39+35 -Y20-	1301																	
49+00 -Y20-	1401																	
52+96 -Y20-	1402							3.4										
60+15 -Y20-	1403																	
18+35 -Y1-	1501																	
12+60 -Y21-	1502																	
	1503	1504																
13+12 -Y21-	1504									1								
	1504	1505																
14+10 -Y21-	1505									1								
	1505	1507																
14+60 -Y21-	1507									1								
	1507	1508																
NOT USED	1506																	
17+25 -Y21-	1509																	
18+40 -Y21-	1512																	
20+11 -Y21-	1510																	
20+50 -Y21-	1511																	
TOTAL SHT 3-D								3.4		3								
TOTAL SHT 3-A										11	1.5							
TOTAL SHT 3-B										20	30.02	3.73	10	3	5	2		
TOTAL SHT 3-C										17	1.89		12	2	3	7		
PROJECT TOTALS								3.4		51	33.41	3.73	22	5	8	9		
UTILITIES											24.64							
SAY								3.4		51	62.90		22	5	8	9		

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	MANHOLE FRAME AND COVER STD. 840.54	T.B.D.I. STD. 840.35	ADJUST MANHOLE	T.B.J.B. STD. 840.34	ADJUST CB	DRAINAGE PIPE ELBOWS NO. & SIZE	C. S. PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
23+80 -YB-																					20	
24+40 -YB-	1017																					
25+55 -YB-																					20	
26+00 -YB-	1019																				32	
27+08 -Y3-																					50	
34+75 -Y20-	1201																					
39+35 -Y20-	1301																					
49+00 -Y20-	1401																					
52+96 -Y20-	1402																					
60+15 -Y20-	1403																					
18+35 -Y1-	1501																				60	
12+60 -Y21-	1502																				20	
	1503	1504																			24	
13+12 -Y21-	1504									1			1									
	1504	1505																				
14+10 -Y21-	1505									1			1									
	1505	1507																				
14+60 -Y21-	1507						1			1												
	1507	1508																				
NOT USED	1506																					
17+25 -Y21-	1509																	1 @18"				
18+40 -Y21-	1512																				20	
20+11 -Y21-	1510																				40	
20+50 -Y21-	1511																				58	
TOTAL SHT 3-D							1			3			2					1 @18"			344	
TOTAL SHT 3-A						6				10	1	1	4				11 @15"				240	
TOTAL SHT 3-B			2	2		4		1		3	3	4			1		1 @15"				167	
TOTAL SHT 3-C			1	1		1			1	3			3								933	
PROJECT TOTALS			3	3		11	1	1	1	19	4	5	9		1		12 @15"	1 @18"			1684	
UTILITIES																						
SAY			3	3		11	1	1	1	19	4	5	9		1		12 @15"	1 @18"			1684	

ABBREVIATIONS

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

0151DEL_P10b1

NC10440

COMPUTED BY:	DATE:
CHECKED BY:	DATE:

PROJECT NO.	SHEET NO.
P-5206A	3-E

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS IV R.C. PIPE (UNLESS NOTED OTHERWISE) 54"	60"	66"	72"	78"	84"		
28+78 -Y2-	CL	0501	0502		767.9	766.9	X	196							
SHEET TOTALS								196							
SAY								196							

STATION	C.S. PIPE 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" .139	72" .168		STRUCTURAL PLATE PIPE 60" 12	60" 10		66" 12	66" 10		72" 12	72" 10			
28+78 -Y2-																							
SHEET TOTALS																							
SAY																							

STATION	REINFORCED ENDWALLS WITH R.C. - C.Y.	REINFORCED ENDWALLS WITH C.S. - C.Y.	MASONRY DRAINAGE STRUCTURES CUBIC YARDS	C.B. STD. 840.01 OR 840.02	FRAMES, GRATES & HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	REINF. CONC. FLARED END SECTIONS NO. & SIZE	CORR. STEEL FLARED END SECTIONS NO. & Size	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72		PIPE REMOVAL LIN. FT.	REMARKS
28+78 -Y2-	5.2																
SHEET TOTALS	5.2																
SAY	6																

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

NC10440, 17720153,R:\Roadway\P10\P-5206A_guardrail_summary.xls

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RD244544

COMPUTED BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	3-F

"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

GUARDRAIL SUMMARY

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	B-77	TYPE III	GRAU 350	M-350	XIII	AT-1	VI MOD	TERM END SECT	G	NG				
Y2	28+75.00	41+65.88	LT	1290.88			29+70	41+65.88	8	11	50		1			1	1										
Y2	31+00.00	36+09.29	RT	509.29			32+00		8	11	50		1				1										
Y2-Y21	36+09.29	29+86.00	RT		75.00																						
Y21	25+86.00	29+86.00	LT	400.00			26+90		8	11	50		1				1										
Y21	25+96.10	29+58.60	RT	362.50			26+90		8	11	50		1				1										
Y21-Y2	29+58.60	37+44.15	RT		75.00																						
Y2	37+44.15	41+78.37	RT	434.22				41+78.37	8	11						1											
Y2	45+76.88	50+79.93	LT	503.05			45+76.88		8	11						1											
Y2	45+89.37	50+80.11	RT	490.74			45+89.37		8	11						1											
Y2-Y23	50+79.93	18+37.16	LT	50.00	75.00												1										
Y2-Y23	50+80.11	17+01.15	RT	0.00	87.50															1							
YB	22+22.67	22+67.02	LT																						44.35		
YB	22+67.02	25+29.52	LT	262.50			22+67.02		9.5	12.5	50		1		1		1										
Y23	23+50.00		RT	32.50																		2					
Y3	26+55.00		CL	36.00																		2					
Y1	20+60.00		CL	32.50																		2					
	TOTAL			4404.18	312.50										1	4	6			1		6			44.35		
	B-77	1	18.75	-18.75																							
	TYPE III	4	18.75	-75.00																							
	GRAU 350	6	50.00	-300.00																							
	TOTAL			4010.43	312.50										1	4	6			1		6			44.35		
	SAY			4025.00	325.00										1	4	6			1		6			45.00		

10 ADDITIONAL GUARDRAIL POSTS

COMPUTED BY:
CHECKED BY:
DATE:
DATE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
–Y2– 11+50 TO –Y2– 41+72.12	12,680	7,465	128,194	115,889	7,840
–Y3– 10+12 TO –Y3– 17+00	818		2,594	1,776	
–Y21– 10+12.50 TO –Y21– 30+50.30	397	3,030	33,455	33,058	3,030
SUBTOTAL	13,895	10,495	164,243	150,723	10,870
–Y20– 33+50 TO –Y20– 60+26	4,154	210	11,944	7,880	300
SUBTOTAL	4,154	210	11,944	7,880	300
–Y2– 45+83.12 TO –Y2– 55+80	558	3,335	34,381	33,823	3,335
–Y23– 10+42.00 TO –Y23– 18+01.07	55		7,678	7,623	
–Y23– 18+49.07 TO –Y23– 34+48.09	1,629		12,532	10,903	
–Y23A– 10+18.00 TO –Y23A– 13+55	294		200		94
–YB– 11+00 TO –YB– 31+25	783		1,846	1,063	
SUBTOTAL	3,319	3,335	56,636	53,411	3,429
TOTAL	21,368	14,040	232,823	212,013	14,599
MATERIAL FOR SHOULDER CONSTRUCTION			4,061	4,061	
LOSS DUE TO CLEARING & GRUBBING					
ADDITIONAL UNDERCUT		2,200	2,640	2,640	2,200
WASTE IN LIEU OF BORROW				–94	–94
PROJECT TOTAL	21,368	16,240	239,524	218,621	
EST. 5% TO REPLACE TOPSOIL ON BORROW PIT				10,931	
GRAND TOTAL	21,368	16,240		229,552	16,705
SAY	21,400			229,600	

BACKFILL UNDERCUT WITH SELCET GRANULAR MATERIAL

PROJECT REFERENCE NO.
P-5206A

SHEET NO.
3-G

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

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	3-H

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	ASPHALT SY	CONCRETE SY
-Y2- & -Y3-	15+00	14+50	LT	2470	
-Y3-	28+55	29+20	CL	351	
-Y23-	22+00	23+50	RT	622	
-Y23-	29+50	34+48	RT	1549	
-Y23- & -Y23A-	34+00	11+75	RT	2489	
		TOTAL P-5206A:		7481	
		SAY P-5206A:		7490	

SUMMARY OF BREAKING OF PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	ASPHALT SY	CONCRETE SY
-Y2-	45+50	52+00	CL	1589	
-Y23-	18+50	22+00	CL	1089	
		TOTAL P-5206A:		2678	
		SAY P-5206A:		2680	

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6/4/99
1/7/2013
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Florence & Hutchison, Inc.

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

(2-19-13)

PROJECT NO.	SHEET NO.
P-5206A	3-I

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				UD	500
				TOTAL LF:	500

*UD = Underdrain
*BD = Blind Drain
*SD = Subsurface Drain

SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS
-Y2- STA. 45+02.23	No. 1	8
-Y2- STA. 45+02.23	No. 2	8

SUMMARY OF SETTLEMENT GAUGES

Gauge No.	LINE	Approx. Station	Approx. Offset
		TOTAL GAUGES (EACH):	

SUMMARY OF ROCK PLATING

LINE	Beginning Slope	Approx. Station	Ending Slope	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	SY
							TOTAL SY:	0

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

SUMMARY OF EMBANKMENT WAITING PERIODS

LINE	Station	Station	MONTHS

SUMMARY OF SURCHARGES AND SURCHARGE WAITING PERIODS

LINE	Station	Station	Surcharge Height	MONTHS

SUMMARY OF REINFORCED SOIL SLOPES (RSS)

LINE	Beginning Slope	Approx. Station	Ending Slope	Approx. Station	Location LT/RT	SY
-Y2-	2:1	46+50	1.5:1	47+00	LT	222
-Y2-	1.5:1	47+00	1.5:1	50+00	LT	1011
-Y2-	1.5:1	50+50	2:1	50+50	LT	100
					TOTAL SY:	1333
					SAY SY:	**1350**

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PROJ. REFERENCE NO.	SHEET NO.
P-5206A	3-J

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No. R/W / Const.	PROPERTY OWNER NAME
1A	4 / 4	LINDA CHAPMAN RINEHART, RONNIE CARLEE RINEHART
2A	4 / 4	LESTER WAYNE HONEYCUTT, LOUISE PAGE HONEYCUTT
3A	4 / 4	VIRDIE K. RITCHIE, RUTH T. RITCHIE
* 4A	4 / 4	PAMELA W. PEELER
5A	4 / 4	JOSE PEDRO COLOCHO-GONZALEZ, MARTA ALFARO DE COLOCHO
6A	4 / 4	ALFRED RAY CAUBLE, JR., BETTY H. CAUBLE
7A	4, 5, 6, 8 / 4, 5, 6, 8	WILLIAM MARSHALL ISENHOUR
8A	5, 8, 11 / 5, 8, 11	WALK-ON PRODUCTS, INC.
9A	5 / 5	BEATRICE B. STILLER
* 10A	6 / 6	CORINNE STILLER DEMARCUS
11A	6, 16 / 6, 15	RANDY LEE BEACH
12A	8 / 8	JEFF C. MARTIN, JANET L. MARTIN
13A	8 / 8	PAUL A. SCOGGINS
14A	8, 11 / 8, 11	TAYLOR CLAY PRODUCTS, INC.
* 15A	9 / 9	JACK WEAVER
16A	9 / 9	MARY G. PEARSON
17A	9 / 9	TOMMY LEE FERGUSON
18A	9 / 9	JOHNNY R. MORGAN, BRENDA K. MORGAN
19A	6, 7, 9 / 6, 7, 9	ROBERT W. EDISON, RUTH M. EDISON
* 20A	9 / 9	TIMOTHY L. NOONER, CYNTHIA C. NOONER
* 21A	9 / 9	MARK ALLEN STOUT, SHARON WEAST STOUT
22A	6, 9 / 6, 9	CORINNE STILLER DEMARCUS
23A	6, 7 / 6, 7	ROBERT W. EDISON, RUTH M. EDISON
* 24A	6 / 6	CORINNE STILLER DEMARCUS
25A	6 / 6	AMHART CORP.
26A	6, 10 / 6, 10	SHERRY ROSE ROSS
27A	6, 7, 10 / 6, 7, 10	LIBERTY HEALTHCARE PROPERTIES
28A	10 / 10	LIBERTY HEALTHCARE PROPERTIES
29A	10 / 10	LIBERTY HEALTHCARE PROPERTIES
30A	10 / 10	LIBERTY HEALTHCARE PROPERTIES
31A	10, 11 / 10, 11	A.R.I., INC.
32A	10, 11 / 10, 11	W.A. BROWN & SON, INC.
33A	10 / 10	W.A. BROWN & SON, INC.
34A	7 / 7	LINDA G. FRANKS
* 35A	10 / 10	W.A. BROWN & SON, INC.
36A	10 / 10	ROWAN COUNTY HOUSING AUTHORITY
37A	10 / 10	SOUTHMARK LIMITED III, LLC
38A	7, 10 / 7, 10	A.R.I., INC.
39A	7, 9 / 7, 9	LINDA G. FRANKS
40A	7, 9 / 7, 9	ROBERT W. EDISON, RUTH M. EDISON
41A	12 / NA	C H ANGELINE & QUEZRYTH O CHUNN
42A	12, 13 / NA, 12	NANCY BORROW & CORY R. ORBISON
43A	13, 14 / 12, 13	NANCY COOK BORROW
44A	13, 14 / 12, 13	EDWARD E. ORBISON, JR.
45A	14, 15 / 13, 14	MARTIN MARIETTA MATERIALS, INC
* 46A	15, 16 / 14, 15	TYLER NORTH AMERICA
* 47A	15, 16 / 14, 15	LESTER M. & DEMETRA E. BRADWAY
48A	15, 16 / 14, 15	RUBBER ONE RECYCLING, LLC
49A	16 / 15	CARLA G. HOWELL, PATRICIA G. FULCHER, KATHY G. CLYBURN
50A	16 / 15	ROBERT DEL POWERS
* 51A	16 / 15	RONNIE K. GAULTNEY
52A	16 / 15	HECTOR DELGADO
* 53A	16 / 15	BETTY DONAHUE
* 54A	16 / 15	APRIL D. DONAHUE, CRYSTAL M. DONAHUE
55A	9 / 9	CORINNE STILLER DEMARCUS
56A	NA	QUEZRYTH O. CHUN
57A	NA	QUEZRYTH O. CHUN
58A	NA	C H ANGELINE & QUEZRYTH O CHUNN
59A	NA	STEPHEN FISHER

* NO CLAIM ON THESE PARCELS.

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

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REVISIONS

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

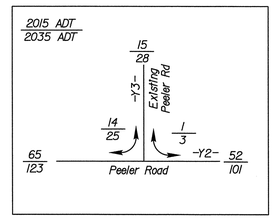
PROJECT REFERENCE NO.	SHEET NO.
P-5206A	4
R/W SHEET NO.	4

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16689 ENGINEER ALLEN WILLIS
1/9/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER JEFFREY H. BAILEY
1/9/13

NAD 83/NSRS 2007

2015 ADT
2035 ADT



PLATINUM CONSTRUCTION CORP.
DB 1107 PG 874

LINDA CHAPMAN RINEHART
RONNIE CARLEE RINEHART
DB 813 PG 522
1A

-Y2- POT 10+00.00

SPECIAL LATERAL V DITCH
SEE DETAIL A

BEGIN PAVING P-5206A
-Y2- POT 11+50.00

BEGIN TIP PROJECT P-5206A
-Y2- POT 10+90.00

PEELER RD SR 2538 (66' BST)

SPECIAL LATERAL V DITCH
SEE DETAIL A

LESTER WAYNE HONEYCUTT
LOUISE PAGE HONEYCUTT
DB 618 PG 158
2A

JOSE PEDRO COLOCHO-GONZALEZ
MARTA ALFARO DE COLOCHO
DB 1079 PG 376

-Y2- PC 13+77.66

VIRDIE K. RITCHIE
RUTH T. RITCHIE
DB 1122 PG 834
PB 9995 PG 6452
3A

PAMELA W. PEELER
DT 402 PG 30
4A

DAVID L. PARRIS
DB 9911 PG 649
PB 9995 PG 4834

ALFRED RAY CAUBLE, JR.
BETTY H. CAUBLE
DB 560 PG 214
DB 565 PG 802
5A
6A

THOMAS EUGENE GRUBB
VICKIE LYNN SPRY GRUBB
DB 565 PG 759

WILLIAM MARSHALL ISENHOUR
DB 647 PG 546
7A

SPECIAL CUT DITCH
SEE DETAIL B

GRADE TO DRAIN

OBLITERATE

REMOVE

-Y3- PC 11+81.49

2' BASE DITCH
SLOPE = 1.6%, L=45'
SEE DETAIL C
DDE = 65 CY

SPECIAL LATERAL V DITCH
SEE DETAIL A

-Y2- POC 20+53.35 =
-Y3- POT 10+00.00

CLASS B RIP RAP
EST 8 TONS
EST 21 SY GT

2' BASE TAIL DITCH
SLOPE = 0.3%, L = 100'
SEE DETAIL C
DDE = 40 CY

-MATCHLINE- STA. 12+00.00 -Y3- SEE SHEET NO. 8

-MATCHLINE- STA. 22+00.00 -Y2- SEE SHEET NO. 5

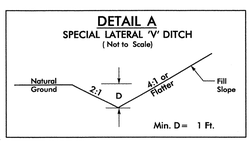
JB w/MH

STONE

-Y2-
PI Sta 19+60.26
Δ = 69° 29' 17.9" (RT)
D = 6° 49' 15.3"
L = 1,018.75'
T = 582.60'
R = 840.00'
SE = .06

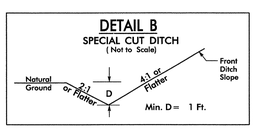
-Y3-
PI Sta 13+77.18
Δ = 42° 45' 00.8" (RT)
D = 11° 27' 33.0"
L = 373.07'
T = 195.70'
R = 500.00'
SE = .06

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



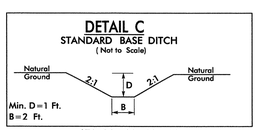
FROM -Y2- STA. 11+10 RT TO -Y2- STA. 13+50 RT
FROM -Y2- STA. 11+50 LT TO -Y2- STA. 13+00 LT
FROM -Y2- STA. 20+00 RT TO -Y2- STA. 22+00 RT
FROM -Y2- STA. 21+00 LT TO -Y2- STA. 22+00 LT
FROM -Y3- STA. 10+46 LT TO -Y3- STA. 12+00 LT
FROM -Y3- STA. 10+62 RT TO -Y3- STA. 12+00 RT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



FROM -Y2- STA. 14+50 LT TO -Y2- STA. 17+50 LT
FROM -Y2- STA. 18+50 RT TO -Y2- STA. 20+00 RT
FROM -Y2- STA. 19+00 LT TO -Y2- STA. 20+00 LT

DETAIL C
STANDARD BASE DITCH
(Not to Scale)



STA. 20+00 -Y2- LT
STA. 21+03 -Y2- RT

FOR -Y2- PROFILE SEE SHEET 16
FOR -Y3- PROFILE SEE SHEET 18

LEGEND
PAVED SHOULDER
PAVEMENT REMOVAL

1/7/2013
E:\Roadway\Proj\p5206a_rdy_psh_04.dgn
Florence & Hutcheson, Inc.

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	5
R/W SHEET NO.	5

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16089 ENGINEER ALLEN WILES — 1/9/13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER TRACEY H. BAILEY — 1/9/13

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

DGN: 0151DEL_P10b1

REVISIONS

NAD 83/NSRS 2007

WALK-ON PRODUCTS, INC.
DB 957 PG 38
8A

WILLIAM MARSHALL ISENHOUR
DB 647 PG 546
7A

BEATRICE B. STILLER
DB 405 PG 189
9A

SALISBURY CITY LIMIT
ROWAN COUNTY

-MATCHLINE- STA. 22+00.00 -Y2- SEE SHEET NO. 4

-MATCHLINE- STA. 35+00.00 -Y2- SEE SHEET NO. 6

-Y2- PT 23+96.41

-Y2- PC 26+83.06

-Y2- PT 34+28.49

SPECIAL CUT DITCH
SEE DETAIL B

TAIL 'V' DITCH
W/ CLASS B RIP RAP
EST 7 TONS
EST 14 SY GT
DDE = 5 CY
S = 10.0%, L =30'
SEE DETAIL P

4' BASE HEAD DITCH
W/ CLASS I RIP RAP
EST 75 TONS
EST 110 SY GT
DDE = 40 CY
SLOPE = 5.7%; L=55'
SEE DETAIL H

4' TO 3' BASE TAIL DITCH
DDE = 20 CY
SLOPE = 0.5%; L=50'
SEE DETAIL L

CLASS I RIP RAP
EST 10 TONS
EST 15 SY GT
BANKS ONLY
SEE DETAIL H

TOE PROTECTION
W/ CLASS B RIP RAP
EST 18 TONS
EST 53 SY GT
SEE DETAIL F

LATERAL V DITCH
DDE = 115 CY
SEE DETAIL E

SPECIAL LATERAL V DITCH
SEE DETAIL D

SBG FROM STA. 32+00
TO STA. 35+28 -Y2- LT

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GT

PROPOSED GUARDRAIL

15" W/ELBOW

20' X 10' PSRM

270' TAPER LT and RT

-Y2-

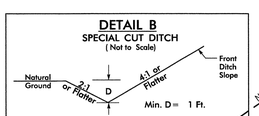
-Y2- PI Sta 19+60.26
Δ = 69° 29' 17.9" (RT)
D = 6° 49' 15.3"
L = 1,018.75'
T = 582.60'
R = 840.00'
SE = .06

-Y2- PI Sta 30+82.33
Δ = 50° 50' 42.7" (LT)
D = 6° 49' 15.3"
L = 745.43'
T = 399.27'
R = 840.00'
SE = .06

FOR -Y2- PROFILE SEE SHEET 16

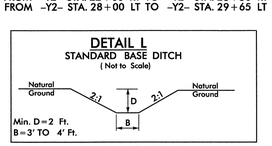
LEGEND
PAVED SHOULDER

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



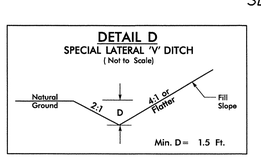
FROM -Y2- STA. 22+00 LT TO -Y2- STA. 24+00 LT
FROM -Y2- STA. 22+00 RT TO -Y2- STA. 23+50 RT
FROM -Y2- STA. 28+00 LT TO -Y2- STA. 29+65 LT

DETAIL L
STANDARD BASE DITCH
(Not to Scale)



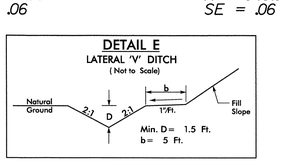
STA. 27+90 -Y2- RT

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



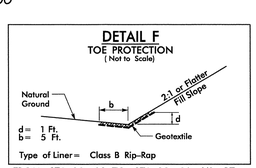
FROM -Y2- STA. 29+65 LT TO -Y2- STA. 32+00 LT

DETAIL E
LATERAL 'V' DITCH
(Not to Scale)



FROM -Y2- STA. 32+00 LT TO -Y2- STA. 34+50 LT

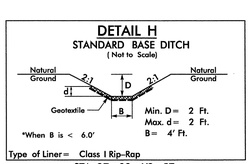
DETAIL F
TOE PROTECTION
(Not to Scale)



Type of Liner = Class B Rip-Rap

FROM STA. 28+00 TO STA. 29+80 -Y2- RT
FROM STA. 34+50 TO STA. 35+00 -Y2- LT

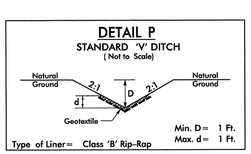
DETAIL H
STANDARD BASE DITCH
(Not to Scale)



Type of Liner = Class I Rip-Rap

STA. 27+80 -Y2- RT
STA. 29+70 -Y2- LT

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



Type of Liner = Class 'B' Rip-Rap

STA. 26+92 -Y2- LT

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Florence & Hutcheson

Florence & Hutcheson
An ICK Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	6
R/W SHEET NO.	6

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16689 ENGINEER BRIAN WILES ALLEN — 1/9/13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 24431 ENGINEER JEFFREY H. BAILEY — 1/9/13

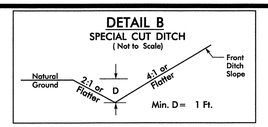
0151DEL_P10b1

DATE

REVISIONS

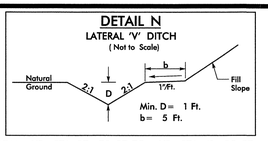
NAD 83/NSRS 2007

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



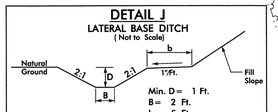
FROM –YB– STA. 18+25 LT TO –YB– STA. 19+50 LT
FROM –YB– STA. 18+00 RT TO –YB– STA. 19+50 RT
FROM –YB– STA. 22+00 LT TO –YB– STA. 24+00 LT
FROM –YB– STA. 22+67 RT TO –YB– STA. 24+00 RT

DETAIL N
LATERAL 'V' DITCH
(Not to Scale)



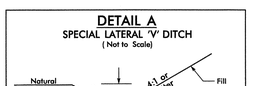
FROM –Y2– STA. 37+70 RT TO –Y2– STA. 41+35 RT
FROM –Y21– STA. 28+57 RT TO –Y21– STA. 29+18 RT

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



FROM –Y21– STA. 26+65 RT TO –Y21– STA. 28+57 RT

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



FROM –YB– STA. 19+50 RT TO –YB– STA. 21+00 RT

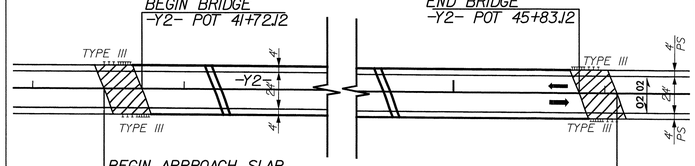
DETAIL F
TOE PROTECTION
(Not to Scale)

Type of Liner= Class B Rip-Rap

FROM STA. 34+50 TO STA. 41+00 –Y2– LT
FROM STA. 22+00 TO STA. 26+65 –Y21– RT

BEGIN BRIDGE
–Y2– POT 41+72.12

END BRIDGE
–Y2– POT 45+83.12

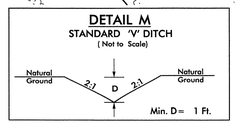


BEGIN APPROACH SLAB
–Y2– POT 41+47.12

END APPROACH SLAB
–Y2– POT 46+08.12

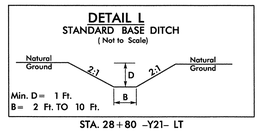
PAVEMENT–BRIDGE RELATIONSHIP SKETCH

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



STA. 46+20 –Y2– RT

DETAIL L
STANDARD BASE DITCH
(Not to Scale)



STA. 28+80 –Y21– LT

–Y2–
PI Sta 38+20.77
Δ = 14° 29' 58.6" (RT)
D = 6° 49' 15.3"
L = 212.58'
T = 106.86'
R = 840.00'
SE = .06

–YB–
PI Sta 26+05.03
Δ = 10° 52' 17.2" (LT)
D = 1° 36' 50.3"
L = 673.59'
T = 337.81'
R = 3,550.00'
SE = .02

–Y21–
PI Sta 23+82.09
Δ = 44° 27' 55.8" (LT)
D = 6° 44' 26.4"
L = 659.66'
T = 347.45'
R = 850.00'
SE = .06

PI Sta 28+42.21
Δ = 40° 35' 11.8" (RT)
D = 14° 19' 26.2"
L = 283.35'
T = 147.91'
R = 400.00'
SE = .02

WILLIAM MARSHALL ISENHOUR
DB 647 PG 546
7A

TOE PROTECTION
W/ CLASS B RIP RAP
EST 210 TONS
EST 633 SY GT
SEE DETAIL F

–Y2– PC 37+13.91

–Y2– POT 36+64+06 =
–Y21– POT 30+37.16

SBG FROM STA. 32+00
TO STA. 35+28 –Y2– LT

–Y2– PT 39+26.49

SBG FROM STA. 41+30
TO STA. 41+41 –Y2– LT

PROPOSED GUARDRAIL

SBG FROM STA. 37+44
TO STA. 41+53 –Y2– RT

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GT

LATERAL V DITCH
DDE = 65 CY
SEE DETAIL N

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GT

BEGIN BRIDGE
–Y2– POT 41+72.12

LATERAL V DITCH
DDE = 108 CY
SEE DETAIL N

–Y21– PT 29+77.65

SBG FROM
STA. 28+75 –Y21– LT
TO STA. 36+10 –Y2– RT

–MATCHLINE– STA. 35+00.00 –Y2– SEE SHEET NO. 5

WILLIAM MARSHALL ISENHOUR
DB 647 PG 546
7A

CLASS 1 RIP RAP
EST 17 TONS
30 SY GT

2' TO 10' BASE
TAIL DITCH
SLOPE = 0.5%, L=60'
DDE = 20 CY
SEE DETAIL L

–Y21– PRC 26+94.30

LATERAL 2' BASE
DITCH, DDE = 102 CY
SEE DETAIL J

SBG FROM STA. 27+15
TO STA. 28+70 –Y21– RT

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GT

PROPOSED GUARDRAIL

CORINNE STILLER DEMARCUS
DB 1167 PG 106
PB 9995 PG 6577
10A

RANDY LEE BEACH
DB 1147 PG 172
DB 1164 PG 705
PB 9995 PG 6926
11A

TOE PROTECTION
W/ CLASS B RIP RAP
EST 163 TONS
EST 491 SY GT
SEE DETAIL F

–Y21–

–MATCHLINE– STA. 22+00.00 –Y21– SEE SHEET NO. 15

–MATCHLINE– STA. 24+00.00 –YB– SEE SHEET NO. 10

LIBERTY HEALTHCARE PROPERTIES
DB 952 PG 487
PB 9995 PG 2071

SPECIAL CUT DITCH
SEE DETAIL B
27A

PROPOSED REINFORCED SOIL SLOPE
(SEE DETAIL SHT 2-D)
STA 46+50 TO 50+50

END BRIDGE
–Y2– POT 45+83.12

SBG FROM STA. 46+02
TO STA. 50+80 –Y2– LT

SHERRY ROSE ROSS
DB 1151 PG 339
26A

SPECIAL CUT DITCH
SEE DETAIL B

–YB– PC 22+67.22

NO DECK DRAINS REQUIRED

AMHART CORP.
DB 595 PG 216

PROPOSED SINGLE FACED CONCRETE BARRIER

–Y2– POT 45+02.23 =
–YB– POT 22+29.73
25A

–Y2– PT 45+83.12

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GT

TAIL 'V' DITCH
SLOPE = 1.9%
DDE = 5 CY
SEE DETAIL M
23A

–Y2– PT 47+00.00

–MATCHLINE– STA. 47+00.00 –Y2– SEE SHEET NO. 7

CORINNE STILLER DEMARCUS
DB 542 PG 487
24A

SPECIAL LATERAL V DITCH
SEE DETAIL A

ROBERT W. EIDSON
RUTH M. EIDSON
DB 594 PG 68

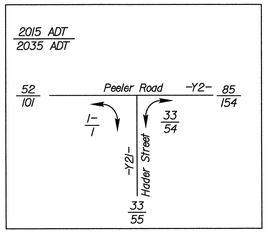
SPECIAL CUT DITCH
SEE DETAIL B
19A

CORINNE STILLER DEMARCUS
DB 313 PG 34
22A

–YB–

–MATCHLINE– STA. 18+00.00 –YB– SEE SHEET NO. 9

2015 ADT
2035 ADT



FOR –Y2– PROFILE SEE SHEET 17
FOR –YB– PROFILE SEE SHEET 19
FOR –Y21– PROFILE SEE SHEET 24
FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-53

LEGEND
PAVED SHOULDER

1/7/2013
R:\Roadway\Proj\p5206a_rdy_psh_06.dgn
florence & hutcheson, inc.

REVISIONS

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	7
R/W SHEET NO.	7

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19689 ENGINEER BRIAN ALLEN WILES
1/16/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STACEY H. BAILEY
1/16/13

-Y23-
PI Sta 20+20.84
Δ = 11° 07' 38.0" (RT)
D = 6° 49' 15.3"
L = 251.10'
T = 126.49'
R = 840.00'
SE = .03

PI Sta 31+13.51
Δ = 137° 39' 00.7" (LT)
D = 15° 16' 43.9"
L = 900.92'
T = 968.07'
R = 375.00'
SE = .04

-MATCHLINE- STA. 22+00.00 -Y23- SEE SHEET NO. 10

-MATCHLINE- STA. 47+00.00 -Y2- SEE SHEET NO. 6

-MATCHLINE- STA. 14+00.00 -Y23- SEE SHEET NO. 9

NAD 83/NSRS 2007

LIBERTY HEALTHCARE PROPERTIES
DB 952 PG 487
PB 9995 PG 2071

ROBERT W. EIDSON
RUTH M. EIDSON
DB 594 PG 68

ROBERT W. EIDSON
RUTH M. EIDSON
DB 637 PG 581

ROBERT W. EIDSON
RUTH M. EIDSON
DB 389 PG 131

A.R.L., INC.
DB 682 PG 789
PB 9995 PG 2071

AKZO NOBEL SPG, LLC
DB 1118 PG 198

LINDA G. FRANKS
DB 637 PG 582

LINDA G. FRANKS
DB 621 PG 736

BERNICE L. LERNER
DB 720 PG 670

END PAVING P-5206A
-Y2- POT 55+80.00

END TIP PROJECT P-5206A
-Y2- POT 56+00.00

-Y2- POT 57+04.47

-Y23- PRC 21+45.45

-Y23- PC 18+94.35

-Y2- POT 51+48.01 = -Y23- POT 18+25.07

-Y23- PT 16+21.83

PROPOSED REINFORCED SOIL SLOPE (SEE DETAIL SHT 2-D) STA 46+50 TO 50+50

SBG FROM STA. 46+02 TO STA. 50+80 -Y2- LT

SBG FROM STA. 46+14 TO STA. 50+80 -Y2- RT

-BY5-107 = -BY6-

-BY5-108

PROPOSED GUARDRAIL

22' BST CEDAR SPRINGS SR 1560

N 25°15'03.5" W

SPECIAL CUT DITCH SEE DETAIL B

TOE PROTECTION W/ PSRM SEE DETAIL O

LATERAL 2' BASE DITCH SEE DETAIL J

REMOVE 38 LF OF EX. 24" RCP

LATERAL V DITCH, SEE DETAIL N

LATERAL V DITCH DDE = 110 CY SEE DETAIL E

CLASS B RIP RAP EST 3 TONS EST 10 SY GT

TAIL V DITCH SLOPE ±0.58% DDE = 65 CY SEE DETAIL M

GRADE TO DRAIN

-Y23-
PI Sta 14+41.33
Δ = 68° 43' 17.9" (LT)
D = 16° 22' 12.8"
L = 419.80'
T = 239.30'
R = 350.00'
SE = .04

30' SEWER EASEMENT PER DB 3811, PG. 804

15' SEWER EASEMENT PER DB 3811, PG. 804

15' SEWER EASEMENT PER DB 3811, PG. 805

15' SEWER EASEMENT PER DB 1814, PG. 628

2015 ADT 51 / 82
2035 ADT 85 / 154

Peeler Road

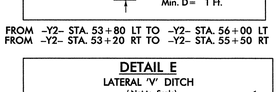
-Y23- 40 / 72 and 11 / 10

-Y2- 27 / 30

-Y23- 40 / 72 and 11 / 10

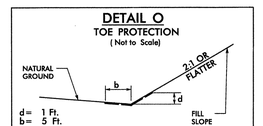
-Y23- 51 / 82

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



FROM -Y2- STA. 53+80 LT TO -Y2- STA. 56+00 LT
FROM -Y2- STA. 53+20 RT TO -Y2- STA. 55+50 RT

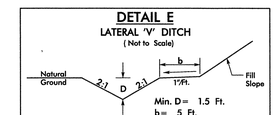
DETAIL O
TOE PROTECTION
(Not to Scale)



d= 1 Ft.
b= 5 Ft.
Type of Liner= PSRM

FROM -Y23- STA. 20+60 RT TO -Y23- STA. 21+45 RT
FROM -Y23- STA. 20+50 LT TO -Y23- STA. 21+22 LT

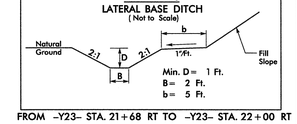
DETAIL E
LATERAL 'V' DITCH
(Not to Scale)



Min. D= 1.5 Ft.
b= 5 Ft.

FROM -Y23- STA. 15+00 RT TO -Y23- STA. 17+30 RT

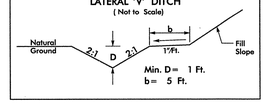
DETAIL J
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1 Ft.
B= 2 Ft.
b= 5 Ft.

FROM -Y23- STA. 21+68 RT TO -Y23- STA. 22+00 RT

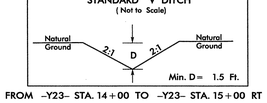
DETAIL N
LATERAL 'V' DITCH
(Not to Scale)



Min. D= 1 Ft.
b= 5 Ft.

FROM -Y23- STA. 21+45 RT TO -Y23- STA. 21+68 RT

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



Min. D= 1.5 Ft.

FROM -Y23- STA. 14+00 TO -Y23- STA. 15+00 RT

FOR -Y2- PROFILE SEE SHEET 17
FOR -Y23- PROFILE SEE SHEET 20

LEGEND
PAVED SHOULDER

2/4/2013
P:\Projects\P-5206a_rdy_pst_07.dgn
FLorence & Hutcheson, Inc.

Florence & Hutcheson
An ICA Company
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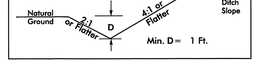
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	8
R/W SHEET NO.	8

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16681 ENGINEER BRIAN ALLEN WILES
1/9/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24457 ENGINEER KELLEY H. BAILEY
1/9/13

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



FROM -Y3- STA. 12+00 LT TO -Y3- STA. 14+00 LT
FROM -Y3- STA. 12+00 RT TO -Y3- STA. 16+50 RT

N 58°58'09" W 450.05'
N 58°58'09" W 179.93'
S 37°50'30" W 457.08'
S 37°51'34" W 453.43'
S 37°47'14" W 451.50'
S 34°16'33" W 448.26'
S 27°02'23" W 960.07'

100' DUKE POWER COMPANY R/W PER DB 570, PG 245

NAD 83/NSRS 2007

15 MTL BLS

12A
JEFF C. MARTIN
JANET L. MARTIN
DB 960 PG 987

13A
PAUL A. SCOGGINS
DB 1029 PG 793

CABARRUS CONCRETE COMPANY
DB 855 PG 169
PB 9995 PG 3622
PB 9995 PG 3854

20

14A
TAYLOR CLAY PRODUCTS, INC.
DB 587 PG 353

CABARRUS CONCRETE COMPANY
DB 855 PG 169
PB 9995 PG 3622
PB 9995 PG 3854

-BY8-112
-BY8-111
-Y3- PT 15+54.55
-Y3- PC 22+06.59
-Y3- PT 23+46.55

END CONSTRUCTION
-Y3- POT 17+00.00

SPECIAL CUT DITCH
SEE DETAIL B

GRADE TO DRAIN

+54.55 50.00'
+70.00 65.00'
+17.00 65.00'
+25.00 50.00'
+19.30 50.00'
+50.00 30.00' 50.00'
+00.00 60.00'
+00.00 40.00'
+85.00 65.00'
+50.00 30.00' 40.00'

OBLITERATE
RETAIN
REMOVE
EXISTING R/W
PUE
SLE
CONCRETE MONUMENT
SPECIAL CUT DITCH SEE DETAIL B

7A
WILLIAM MARSHALL SENHOUR
DB 647 PG 546

-MATCHLINE- STA. 12+00.00 -Y3- SEE SHEET NO. 9

8A
WALK-ON PRODUCTS, INC.
DB 957 PG 38

72" CHL W/ 35BW
GATE
MTL POSTS
FLAG POLES
VAULT
PIV
CONC
BST
GRV
FSS
ARV
EIP
EIP TO R/W 0.32'
EIP TO R/W 0.28'
EIP TO R/W 0.40'
CM TO R/W 0.28'
CABLE
UNKNOWN SIZE
36" RCP
15" CMP
15" RCP
18" RCP
3"PVC
4"PVC
4"PL
10"DI
12"DI
10.2ft
71.5±
S 40°25' 25.88'

-Y3-
PI Sta 13+77.18
Δ = 42° 45' 00.8" (RT)
D = 11° 27' 33.0"
L = 373.07'
T = 195.70'
R = 500.00'
SE = .06

-Y3-
PI Sta 22+76.57
Δ = 0° 48' 07.0" (LT)
D = 0° 34' 22.6"
L = 139.96'
T = 69.98'
R = 10,000.00'
SE = NC

-BL- STA. 105+30.87
BM#4
225.60' LT
ELEV. 799.90'

-MATCHLINE- STA. 25+00.00 -Y3- SEE SHEET NO. 11

S-4

N 30°06'21" E 854.52'
SALISBURY CITY LIMIT
ROWAN COUNTY
PEELER RD SR 2538 26' BST
N 59° 33' 19.0" W
N 60° 21' 26.0" W

FOR -Y3- PROFILE SEE SHEET 18

LEGEND
PAVEMENT REMOVAL

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	9
R/W SHEET NO.	9

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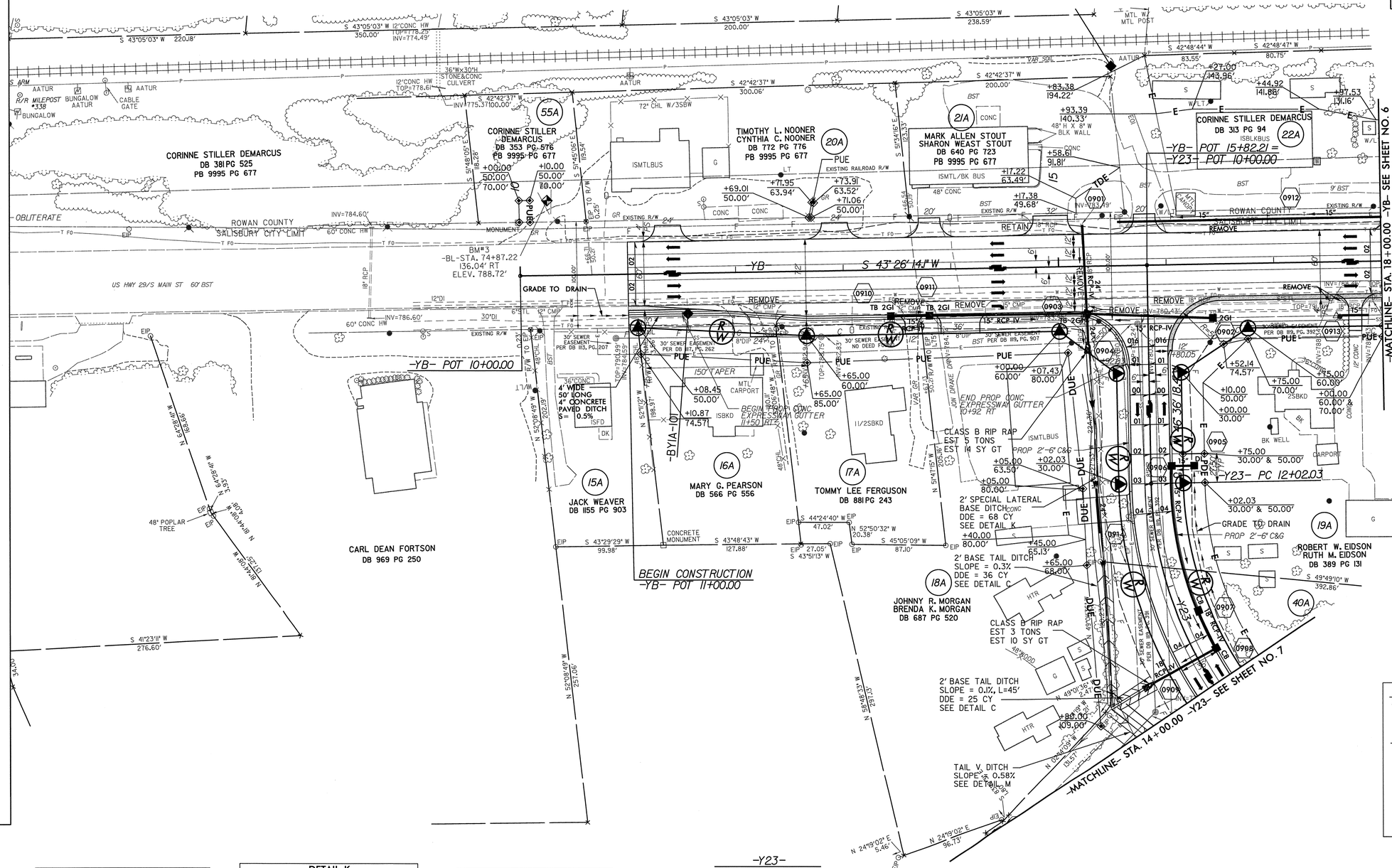
NC License No: F-0258

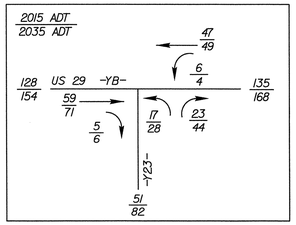
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16689 ENGINEER BRIAN ALLEN WILES — 1/9/13

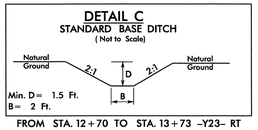
HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER JACEY H. BAILEY — 1/9/13

0151DEL_P10b1

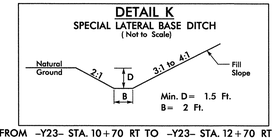
REVISIONS



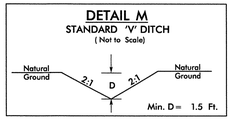




FROM STA. 12+70 TO STA. 13+73 -Y23- RT



FROM -Y23- STA. 10+70 RT TO -Y23- STA. 12+70 RT



FROM -Y23- STA. 13+73 RT TO -Y23- STA. 14+00 RT

-Y23-

PI Sta 14+41.33
Δ = 68° 43' 17.9" (LT)
D = 16° 22' 12.8"
L = 419.80'
T = 239.30'
R = 350.00'
SE = .04

FOR -YB- PROFILE SEE SHEET 19
FOR -Y23- PROFILE SEE SHEET 20

LEGEND

PAVED SHOULDER

1/7/2013
R:\Roadway\Proj\p5206a_rdy_psh_09.dgn
Florence & Hutcheson, Inc.

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	10
R/W SHEET NO.	
10	

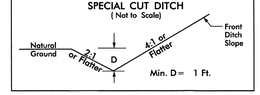
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16689 ENGINEER BRIAN YATES ALLEN WIES — 1/9/13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER JEFFREY H. BAILEY — 1/9/13

DRN 0151DEL_P10b1

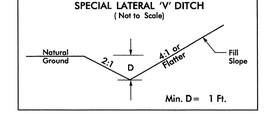
REVISIONS

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



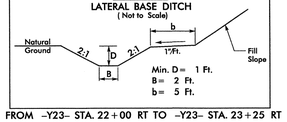
FROM –YB– STA. 24+00 LT TO –YB– STA. 26+00 LT
FROM –YB– STA. 24+00 LT TO –YB– STA. 26+00 RT
FROM –YB– STA. 29+00 LT TO –YB– STA. 30+00 LT

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



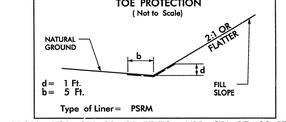
FROM –YB– STA. 26+00 LT TO –YB– STA. 29+00 LT
FROM –Y23– STA. 31+00 LT TO –Y23– STA. 31+37 LT
FROM –Y23– STA. 31+37 LT TO –Y23– STA. 34+00 LT

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



FROM –Y23– STA. 22+00 RT TO –Y23– STA. 23+25 RT

DETAIL O
TOE PROTECTION
(Not to Scale)



FROM –Y23– STA. 23+25 RT TO –Y23– STA. 27+38 RT

END CONST. –YB– POT 31+25.00

–YB–
PI Sta 26+05.03
Δ = 10° 52' 17.2" (LT)
D = 1° 36' 50.3"
L = 673.59'
T = 337.81'
R = 3,550.00'
SE = .02

NAD 83/NSRS 2007

–MATCHLINE– STA. 30+00.00 –YB– SEE SHEET NO. 11

–MATCHLINE– STA. 24+00.00 –YB– SEE SHEET NO. 6

–MATCHLINE– STA. 22+00.00 –Y23– SEE SHEET NO. 7

END CONSTRUCTION –Y23A– POT 13+55.00

–Y23A– PRC 12+28.09

END CONSTRUCTION –Y23A– PT 14+53.43

–Y23A– POT 14+87.09

–YB– PT 29+40.81

–YB– POT 28+10.02 = –Y23– POT 34+90.09

–Y23– PT 30+46.37

–Y23– POC 27+65.43 = –Y23A– POT 10+00.00

–Y23A– PC 10+38.64

N 63° 11' 39.3" W

S 55° 50' 59.0" E

S 32° 33' 56.9" W

S 17° 04' 28.4" W

SPECIAL CUT DITCH SEE DETAIL B

SPECIAL LATERAL V DITCH SEE DETAIL A

TOE PROTECTION W/ PSRM SEE DETAIL O

20' X 10' PSRM

PROPOSED GUARDRAIL

OBLITERATE

GRADE TO DRAIN

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GT

TAIL DITCH
SLOPE = 0.5%, L=75'
DDE = 35 CY
SEE DETAIL M

LATERAL 2' BASE DI
DDE = 65 CY
SEE DETAIL J

32A W.A. BROWN & SON, INC. DB 844 PG 894 PB 9995 PG 2071 PB 9995 PG 225I

33A W.A. BROWN & SON, INC. DB 844 PG 894 PB 9995 PG 2071 PB 9995 PG 225I

35A W.A. BROWN & SON, INC. DB 694 PG 616 PB 9995 PG 2071

31A A.R.L., INC. DB 682 PG 789

29A LIBERTY HEALTHCARE PROPERTIES DB 952 PG 486 PB 9995 PG 2071

30A LIBERTY HEALTHCARE PROPERTIES DB 952 PG 486 PB 9995 PG 2071

27A LIBERTY HEALTHCARE PROPERTIES DB 952 PG 487 PB 9995 PG 2071

28A LIBERTY HEALTHCARE PROPERTIES DB 952 PG 486 PB 9995 PG 2071

36A ROWAN COUNTY HOUSING AUTHORITY DB 772 PG 140 PB 9995 PG 2071

37A SOUTHMARK LIMITED III, LLC DB 806 PG 459 PB 9995 PG 2071

SHERRY ROSE ROSS DB 1151 PG 339

38A

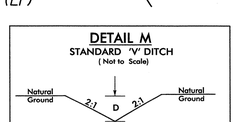
25

–Y23A–
PI Sta 11+38.17
Δ = 43° 25' 12.5" (RT)
D = 22° 55' 05.9"
L = 189.46'
T = 99.54'
R = 250.00'
SE = NC

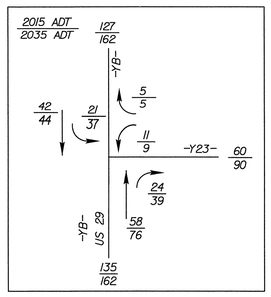
PI Sta 13+40.80
Δ = 3° 41' 19.8" (LT)
D = 1° 38' 13.3"
L = 225.34'
T = 112.71'
R = 3,500.00'
SE = NC

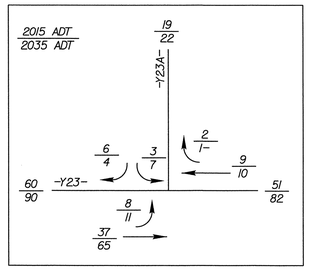
–Y23–
PI Sta 31+13.51
Δ = 137° 39' 00.7" (LT)
D = 15° 16' 43.9"
L = 900.92'
T = 968.07'
R = 375.00'
SE = .04

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



FROM –Y23– STA. 22+81 RT TO STA. 23+35 –Y23– RT





FOR –YB– PROFILE SEE SHEET 19
FOR –Y23– PROFILE SEE SHEET 20
FOR –Y23A– PROFILE SEE SHEET 21

LEGEND
PAVED SHOULDER
PAVEMENT REMOVAL

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Florence & Hutcheson, Inc.

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DGN

REVISIONS

NAD 83/NSRS 2007

P3414P GPS-3 = -BY8-

P3414P GP

30

25

8A
WALK-ON PRODUCTS, INC.
DB 957 PG 38

14A
TAYLOR CLAY PRODUCTS, INC.
DB 587 PG 353

31A
A.R.L., INC.
DB 682 PG 789

32A
W.A. BROWN & SON, INC.
DB 844 PG 894
PB 9995 PG 207I
PB 9995 PG 225I

33A
W.A. BROWN & SON, INC.
DB 844 PG 894
PB 9995 PG 207I
PB 9995 PG 225I

-MATCHLINE- STA. 25+00.00 -Y3- SEE SHEET NO. 8

-MATCHLINE- STA. 30+00.00 -YB- SEE SHEET NO. 10

SALISBURY CITY LIMIT
ROWAN COUNTY

ROWAN COUNTY
SALISBURY CITY LIMIT

ABANDONED RR

RR R/W

EIP

PROPOSED GUARDRAIL

EXISTING R/W

EXISTING RAILROAD R/W

FEELER RD SR 2538 28' BST

US HWY 29/S MAIN ST 60' BST

24" STONE HWT

SIZE/TYPE UNKNOWN TOP=792.41' INV=774.91'

18" RCP

12"VC

6"STL

G

P

F

FSS

FO

W

OHU LINE

CABLE GATE

CROSS ARM

VENT INV 795.79'

INV=796.06'

INV=786.51'

S 35°53'11" W 79.87'

S 37°20'06" W 4.97'

S 59°39'26" E 103.07'

S 32° 33' 56.9" W

N 64°40'27" W 194.55'

N 64°40'27" W 314.64'

S 34°09'21" W 484.28'

N 69° 21' 26" W

-BY1A-104

MH A TOP=794.89' INV=777.59'

MH B TOP=795.36' INV=789.86'

MH C TOP=795.77' INV=790.67'

TOP=797.02' IN(A)=776.74' IN(B)=789.02' IN(C)=789.02' OUT=776.70'

-YB- POT 31+59.48

-YB-

END CONSTRUCTION
-YB- POT 31+25.00

+39.49 60.00'
+39.88 50.00'
+59.48 49.53'
+59.48 80.00'

+75.00 30.00'
+75.00 65.00'
+53.66 65.00'

-Y3- PC 26+74.42

-Y3- PT 28+52.40

-Y3- POT 29+34.49

OBLITERATE

-Y3-
PI Sta 27+63.45
Δ = 4° 04' 45.1" (LT)
D = 2° 17' 30.6"
L = 177.99'
T = 89.03'
R = 2,500.00'
SE = NC

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)

FROM -YB- STA. 30+00 LT TO -YB- STA. 31+50 LT

FOR -YB- PROFILE SEE SHEET 19

LEGEND
PAVED SHOULDER
PAVEMENT REMOVAL

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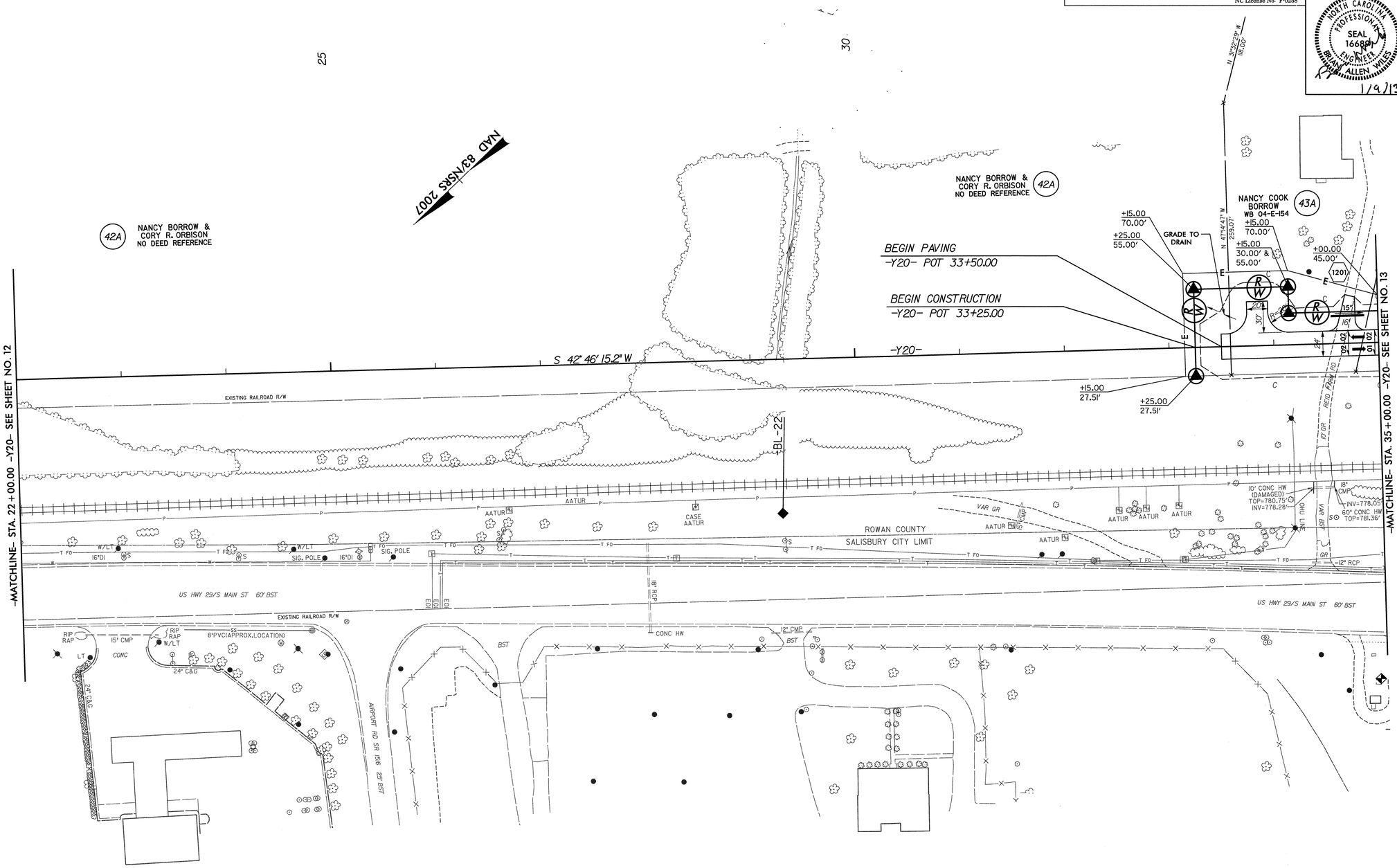
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	12
R/W SHEET NO.	13

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16689 ENGINEER BRIAN ALLEN WILES
1/9/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER NACEY H. BAILEY
1/9/13



FOR -Y20- PROFILE SEE SHEET 22

LEGEND

PAVEMENT REMOVAL

DRIVEWAY AND RR CROSSING REMOVAL

REVISIONS

0151DEL_P10b1

1/7/2013
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Florence & Hutcheson, Inc.

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	13
R/W SHEET NO.	14

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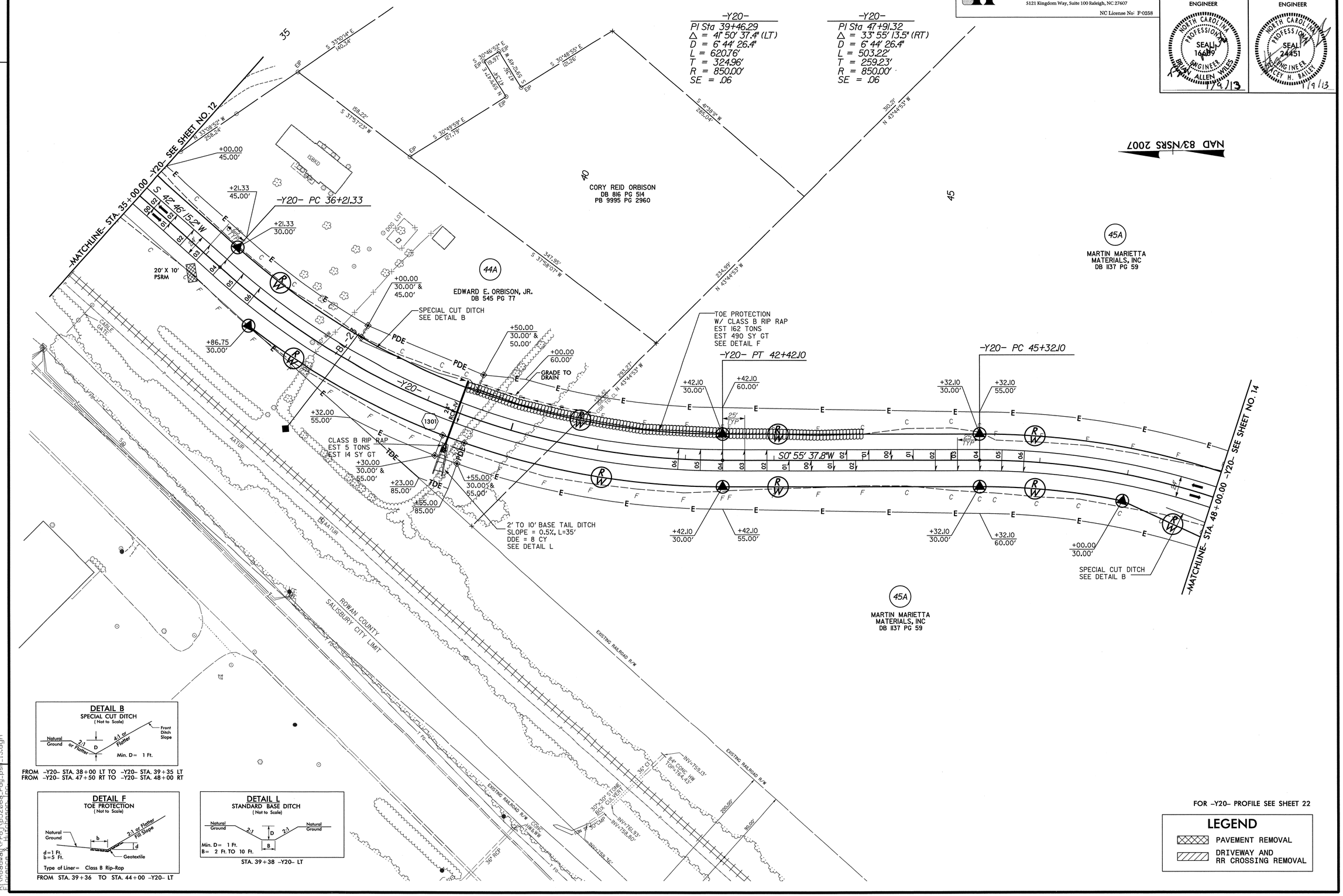
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16689 BRIAN ALLEN WILES 1/9/13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24451 JACEY H. BAILEY 1/9/13

-Y20-
PI Sta 39+46.29
Δ = 41° 50' 37.4" (LT)
D = 6° 44' 26.4"
L = 620.76'
T = 324.96'
R = 850.00'
SE = .06

-Y20-
PI Sta 47+91.32
Δ = 33° 55' 13.5" (RT)
D = 6° 44' 26.4"
L = 503.22'
T = 259.23'
R = 850.00'
SE = .06



DETAIL B
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground — 2:1 or Flatter — D — 4:1 or Flatter — Front Ditch Slope
Min. D = 1 Ft.
FROM -Y20- STA. 38+00 LT TO -Y20- STA. 39+35 LT
FROM -Y20- STA. 47+50 RT TO -Y20- STA. 48+00 RT

DETAIL F
TOE PROTECTION
(Not to Scale)
Natural Ground — b — 2:1 or Flatter Fill Slope — d — Geotextile
d = 1 Ft.
b = 5 Ft.
Type of Liner = Class B Rip-Rap
FROM STA. 39+36 TO STA. 44+00 -Y20- LT

DETAIL L
STANDARD BASE DITCH
(Not to Scale)
Natural Ground — 2:1 — D — 2:1 — Natural Ground
Min. D = 1 Ft.
B = 2 Ft. TO 10 Ft.
STA. 39+38 -Y20- LT

FOR -Y20- PROFILE SEE SHEET 22

LEGEND
PAVEMENT REMOVAL
DRIVEWAY AND RR CROSSING REMOVAL

REVISIONS

DGN 0151DEL_P10b1

1/7/2013
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Florence & Hutcheson, Inc.

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	14
R/W SHEET NO.	15

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16689 ENGINEER BRIAN WILLES ALLEN — 1/9/13

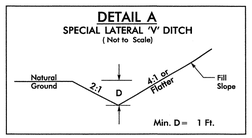
HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STACEY H. BAILEY — 1/9/13

0151DEL_P10b1

DGN

REVISIONS

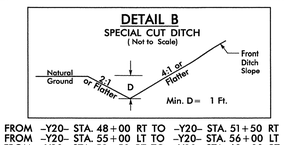
DETAIL A
SPECIAL LATERAL "V" DITCH
(Not to Scale)



Min. D = 1 Ft.

FROM –Y20– STA. 52+82 RT TO –Y20– STA. 54+50 RT
FROM –Y20– STA. 54+00 LT TO –Y20– STA. 55+00 LT

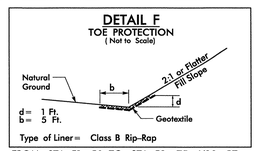
DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



Min. D = 1 Ft.

FROM –Y20– STA. 48+00 RT TO –Y20– STA. 51+50 RT
FROM –Y20– STA. 55+00 LT TO –Y20– STA. 56+00 LT
FROM –Y20– STA. 59+50 RT TO –Y20– STA. 60+00 RT
FROM –Y20– STA. 59+50 LT TO –Y20– STA. 60+00 LT

DETAIL F
TOE PROTECTION
(Not to Scale)

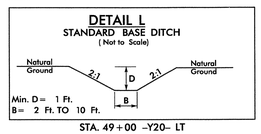


d = 1 Ft.
b = 5 Ft.

Type of Liner = Class B Rip-Rap

FROM STA. 51+50 TO STA. 52+75 –Y20– RT
FROM STA. 51+50 TO STA. 54+00 –Y20– LT

DETAIL L
STANDARD BASE DITCH
(Not to Scale)



Min. D = 1 Ft.
B = 2 Ft. TO 10 Ft.

STA. 49+00 –Y20– LT

NAD 83/NSRS 2007

MARY G. GASKEY
DB 1163 PG 694
PB 9995 PG 2980

PHYLLIS G. HAGERTY
DB 549 PG 431

MMILBRON E. JR & SHIRLENE G. POTTS
DB 991PG 11

MARTIN MARIETTA MATERIALS, INC
DB 1137 PG 59

LESTER M. & DEMETRA E. BRADWAY
DB 1058 PG 311

RUBBER ONE RECYCLING, LLC
DB 1066 PG 61
PB 9995 PG 677

TYLER NORTH AMERICA
DB 795 PG 870

–Y1– PC 10+00.00

–Y1– POC 11+93.09
–Y20– POT 60+37.13

–Y20– PC 56+91.07

–Y20– PT 50+35.32

–Y20– PT 59+09.52

–Y1– PT 14+56.93

–Y1– PC 15+75.68

–MATCHLINE– STA. 48+00.00 –Y20– SEE SHEET NO. 13

–MATCHLINE– STA. 16+00.00 –Y1– SEE SHEET NO. 15

GRADE TO DRAIN

SPECIAL LATERAL V DITCH SEE DETAIL A

SPECIAL CUT DITCH SEE DETAIL B

CLASS I RIP RAP
EST 15 TONS
EST 30 SY GT

TOE PROTECTION
W/ CLASS B RIP RAP
EST 88 TONS
EST 264 SY GT
SEE DETAIL F

2' to 10' BASE TAIL DITCH
SLOPE = 0.5, L=40'
DDE= 8 CY
SEE DETAIL L

CLASS B RIP RAP
EST 3 TONS
EST 10 SY GT

TOE PROTECTION
W/ CLASS B RIP RAP
EST 44 TONS
EST 132 SY GT
SEE DETAIL F

RAIL 22 -BYI-II

RAIL 22 -BYI-I(
-BY2-

S 34° 50' 51.3" W 745.15'

N 34°55'33" E 745.15'

S 20° 07' 26.5" W 263.27'

N 63° 11' 26.5" E 263.27'

S 27°17'37" W 202.45'

N 69°04'05" W 234.27'

N 18°07'54" E 249.69'

S 16°24'40" E 294.02'

N 16°24'40" W 294.02'

N 28°57'27" E 210.55'

N 35°05'33" W 152.30'

N 28°04'26" W 335.20'

N 28°04'26" W 183.91'

S 38°28'48" E 457.29'

S 20° 07' 26.5" W 263.27'

–Y20–
PI Sta 47+91.32
Δ = 33° 55' 13.5" (RT)
D = 6° 44' 26.4"
L = 503.22'
T = 259.23'
R = 850.00'
SE = .06

–Y20–
PI Sta 58+00.90
Δ = 14° 43' 31.9" (LT)
D = 6° 44' 26.4"
L = 218.46'
T = 109.83'
R = 850.00'
SE = .06

–Y1–
PI Sta 12+28.49
Δ = 1° 54' 39.5" (LT)
D = 0° 25' 05.6"
L = 456.93'
T = 228.49'
R = 13,700.00'

–Y1–
PI Sta 16+73.78
Δ = 24° 35' 48.2" (RT)
D = 12° 43' 56.6"
L = 193.18'
T = 98.10'
R = 450.00'

LEGEND
- PAVEMENT REMOVAL
- DRIVEWAY AND RR CROSSING REMOVAL

FOR –Y20– PROFILE SEE SHEET 23
FOR –Y1– PROFILE SEE SHEET 24

1/7/2013
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PROJECT REFERENCE NO.	SHEET NO.
P-5206A	15
R/W SHEET NO.	16

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16649 ENGINEER BRIAN ALLEN WILES
1/9/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER JEFFREY W. BAILEY
1/9/13

DGN: 0151DEL_P10b1

REVISIONS

NAD 83/NSRS 2007

-MATCHLINE- STA. 16+00.00 -Y1- SEE SHEET NO. 14

-Y1- PCC 17+68.86

-Y1- PT 18+90.43

-Y1- PT 18+98.72
-Y2- POT 10+00.00

-Y1- POT 23+27.04

-Y1-
PI Sta 16+73.78
Δ = 24° 35' 48.2" (RT)
D = 12° 43' 56.6"
L = 193.18'
T = 98.10'
R = 450.00'

-Y1-
PI Sta 18+29.70
Δ = 6° 06' 36.6" (RT)
D = 5° 01' 33.4"
L = 121.57'
T = 60.84'
R = 1,140.00'

-Y21-
PI Sta 23+82.09
Δ = 44° 27' 55.8" (LT)
D = 6° 44' 26.4"
L = 659.66'
T = 347.45'
R = 850.00'
SE = .06

-Y21- PC 20+34.64

-Y21- SEE SHEET NO. 6

46A
TYLER NORTH AMERICA
DB 795 PG 870

47A

48A
RUBBER ONE RECYCLING, LLC
DB 1066 PG 61
PB 9995 PG 677

49A
CARLA G. HOWELL
PATRICIA G. FULCHER
KATHY G. CLYBURN
DB 993 PG 256
PB 9995 PG 677

50A
ROBERT DEL POWERS
DB 925 PG 957
PB 9995 PG 677

51A
RONNIE K. GAULTNEY
DB 765 PG 412
PB 9995 PG 677

52A
HECTOR DELGADO
DB 1148 PG 400
PB 9995 PG 677

53A
BETTY DONAHUE
DB 1148 PG 401
PB 9995 PG 677

54A
APRIL D. DONAHUE
CRYSTAL M. DONAHUE
DB 1074 PG 326
PB 9995 PG 677

11A
RANDY LEE BEACH
DB 1147 PG 172
DB 1164 PG 705
PB 9995 PG 6926

CORINNE STILLER DEMARCUS
DB 381PG 525
PB 9995 PG 677

ISMTLBUS
ISBKD
ISBLKBUS
ISFD
HTR
BST
MTL CANOPY
MTL GATE
36" CHAIN W/WD POSTS
24' BST
GRADE TO DRAIN
PROPOSED GUARDRAIL
SPECIAL CUT DITCH SEE DETAIL B
CLASS B RIP RAP EST 5 TONS EST 14 SY GT
CLASS B RIP RAP EST 10 SY GT
SPECIAL LATERAL V DITCH SEE DETAIL A
PIPE CLEAN OUT
REMOVE
RETAIN
EXISTING R/W
PROP CONC EXPRESSWAY GUTTER
CITY MONUMENT
S 39°30'23" E 334.33'
S 54°38'40" W 113.53'
S 43°47'47.0" W
S 43°05'03" W 220.18'
S 43°05'03" W 350.00'
S 43°05'03" W 200.00'
S 43°05'03" W 238.59'
S 42°42'37" W 300.06'
S 42°42'37" W 200.00'
S 42°48'44" W 83.55'
S 42°48'47" W 80.75'
S 43°32'46" W
S 42°41'21" W 14.03'
N 40°24'27" W 182.50'
N 40°22'08" W 186.88'
N 40°25'45" W 176.39'
N 3°29'07" W
-BL-25-BY2- =RAIL=
-BY1-
-BY3-106
-BL-26-BY4- =
-BY3-105
-BY4-
-Y1-
-Y2-
-Y21-
-MATCHLINE- STA. 22+00.00
CROSS ARM
R/R MILEPOST •338
BUNGALOW
CABLE GATE
OHU LINE
AATUR
OBLITERATE
ROWAN COUNTY
SALISBURY CITY LIMIT
INV=784.60'
60' CONC HW
US HWY 29/S MAIN ST 60' BST
INV=786.60'
60' CONC HW
36"W x 30"H STONE&CONC CULVERT
12'CONC HW TOP=778.61'
INV=774.49'
INV=774.99'
INV=774.24'
INV=783.95' 15" PLASTIC
INV=783.84' CROSS ARM S/G
PEACH ORCHARD RD SR 2549
PEACH ORCHARD LN
HADER ST SR 2662
EXISTING RAILROAD R/W
36" RCP
30" RCP
24" CSP
18" RCP
15" RCP-IV
12" RCP
12" WW
12" CMP
TB 2GI
TB 2GI-D
ELBOW
MTL W/ MTL POST
PDE
RUE
GRV
WOOD
CONC
BB
T FO
OHU
TV
GS
VENT
W/LT
SOIL
VAR GR
VAR SLOPE
SR 2549
SR 2545
SR 2662

2015 ADT
2035 ADT

33/53 -Y1- Peach Orchard Rd
33/53 -Y21- Hader Street
1-/1- 1-/1- 1-/1- 1-/1-

2015 ADT
2035 ADT

2/4 Peach Orchard Ln
33/53 Hader Street
1/1 1/3 1-/1- 1-/1-
-Y21- 33/55

FOR -Y21- PROFILE SEE SHEET 23
FOR -Y1- PROFILE SEE SHEET 24

LEGEND
PAVED SHOULDER
PAVEMENT REMOVAL

1/7/2013
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PROJECT REFERENCE NO.	SHEET NO.
P-5206A	16
R/W SHEET NO.	17

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16680 ENGINEER BRIAN ALLEN WILLS
1/9/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STEVEN H. BAILEY
1/9/13

-Y2-

PROPOSED GRADE LINE

EXISTING GROUND LINE

BEGIN GRADE
-Y2- STA 11+50.00
EL = 756.70

PI = 14+00.00
EL = 767.00'
VC = 100'
K = 20
DS = 65 MPH

PI = 18+25.00
EL = 782.40'
VC = 400'
K = 94
DS = 50 MPH

-Y2- STA 20+53.35 =
-Y3- STA 10+00.00

(+)2.20%
(+)5.90%
(+)1.22%
(+)5.44%
(+)1.04%
(+)14.08%
(+)14.1200%
(+)1.80%
(+)3.6235%
(+)3.89%
(+) 1.95%
(+) 6.78%
(+)3.6235%
(-) 0.30%
(+) 2.21%
(-) 2.15%
(-)0.6420%
(+) 0.30%
(+) 0.50%
(+) 0.51%
(+) 1.27%
(-) 6.22%

BEGIN DITCH
STA. 11+50 - RT
ELEV. 753.15

BEGIN DITCH
STA. 11+50 - LT
ELEV. 750.52

STA. 12+00 - RT
ELEV. 754.25

STA. 12+00 - LT
ELEV. 753.63

STA. 12+50 - LT
ELEV. 757.23

STA. 12+50 - RT
ELEV. 757.00

END DITCH
STA. 13+00 - LT
ELEV. 760.75

STA. 13+00 - RT
ELEV. 759.72

BEGIN DITCH
STA. 14+50 - LT
ELEV. 767.20

END DITCH
STA. 13+50 - RT
ELEV. 762.16

STA. 15+00 - LT
ELEV. 768.10

STA. 16+00 - LT
ELEV. 771.99

STA. 17+00 - LT
ELEV. 773.94

END DITCH
STA. 17+50 - LT
ELEV. 777.33

BEGIN DITCH
STA. 18+50 - RT
ELEV. 777.33

BEGIN DITCH
STA. 19+00 - LT
ELEV. 778.53

STA. 19+50 - RT
ELEV. 777.03

END DITCH
STA. 20+00 - LT
ELEV. 776.32

BEGIN DITCH
STA. 2+00 - LT
ELEV. 775.20

STA. 2+00 - RT
ELEV. 775.80

30" RCP CL IV

STA. 21+50 - LT
ELEV. 776.35

STA. 21+50 - RT
ELEV. 774.05

PIPE HYDRAULIC DATA
30" RCP - STA. 21+00 -Y2-

DRAINAGE AREA	=	7.90	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	29	CFS
DESIGN HW ELEVATION	=	778.03	FT
100 YEAR DISCHARGE	=	33	CFS
100 YEAR HW ELEVATION	=	778.35	FT
OVERTOPPING FREQUENCY	=	100+	YRS
OVERTOPPING DISCHARGE	=	57	CFS
OVERTOPPING ELEVATION	=	781.35	FT

(FOR -Y2- PLAN SEE SHEET 4)

-Y2-

PROPOSED GRADE LINE

EXISTING GROUND LINE

PI = 31+10.00
EL = 774.15'
VC = 660'
K = 106
DS = 50 MPH

(-)0.6420%
(+) 0.51%
(+) 1.27%
(+) 0.30%
(+) 0.72%
(-)0.6420%
(+) 2.41%
(+) 2.59%
(+)5.5957%
(+) 0.50%

STA. 22+50 - RT
ELEV. 775.32

STA. 23+50 - LT
ELEV. 776.38

END DITCH
STA. 24+00 - LT
ELEV. 776.74

END DITCH
STA. 24+00 - RT
ELEV. 775.77

UNDERCUT

BEGIN DITCH
STA. 28+00 - LT
ELEV. 772.88

54" RCP CL IV

STA. 29+65 - LT
ELEV. 768.90

STA. 31+50 - LT
ELEV. 773.70

END DITCH
STA. 34+50 - LT
ELEV. 775.20

PIPE HYDRAULIC DATA
54" RCP - STA. 28+78 -Y2-

DRAINAGE AREA	=	37.40	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	70	CFS
DESIGN HW ELEVATION	=	772.86	FT
100 YEAR DISCHARGE	=	110	CFS
100 YEAR HW ELEVATION	=	774.09	FT
OVERTOPPING FREQUENCY	=	200+	YRS
OVERTOPPING DISCHARGE	=	160	CFS
OVERTOPPING ELEVATION	=	776.77	FT

(FOR -Y2- PLAN SEE SHEET 5)

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PROJECT REFERENCE NO.	SHEET NO.
P-5206A	17
R/W SHEET NO.	18

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16689 ENGINEER BRIAN ALLEN WILES — 1/9/13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER JEFFREY H. BAILEY — 1/9/13

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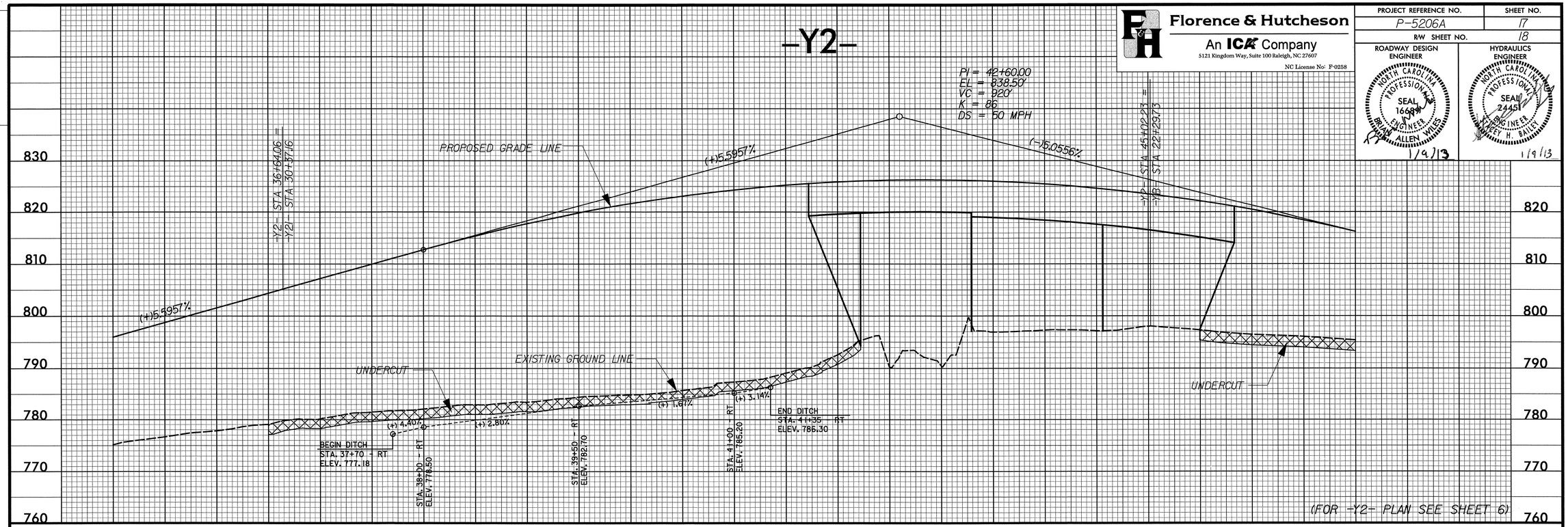

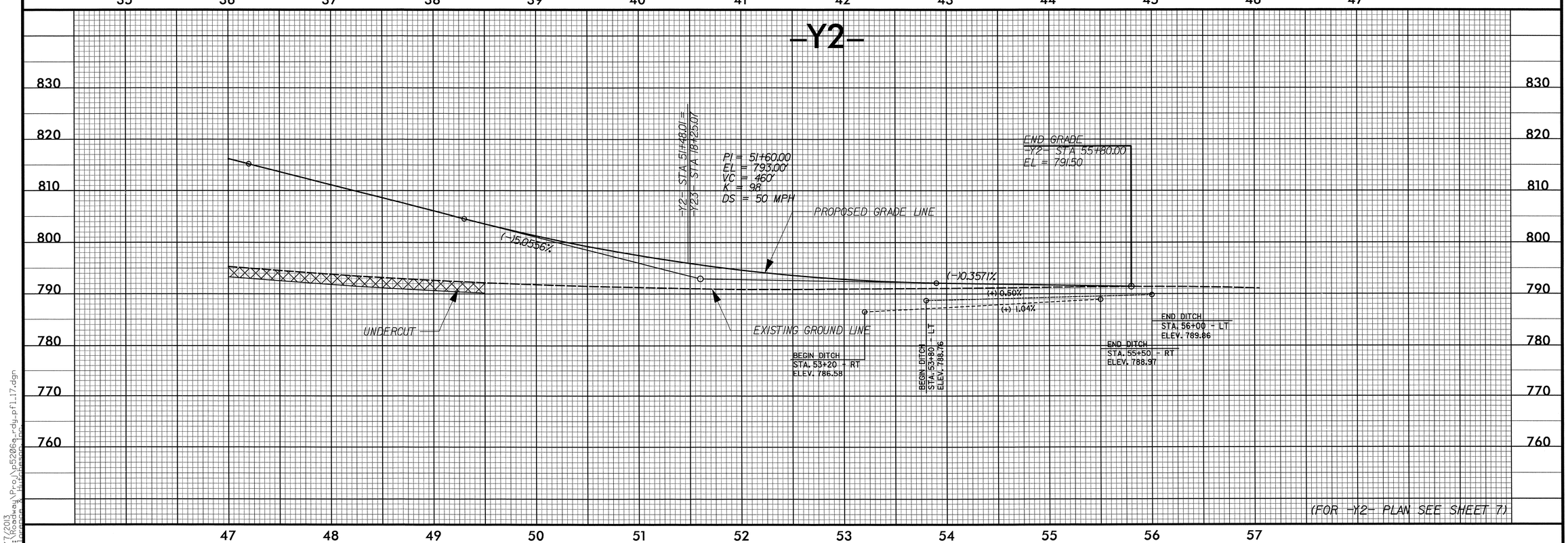

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-Y3-

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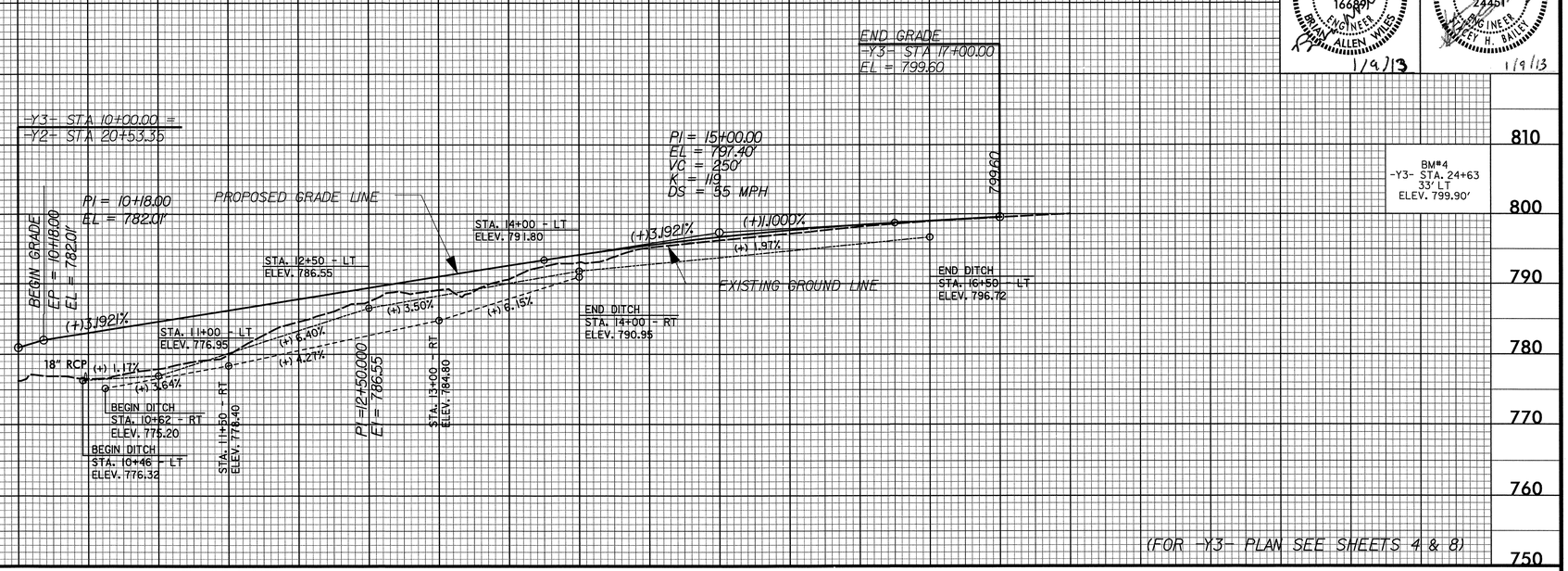
PROJECT REFERENCE NO.	SHEET NO.
P-5206A	18
R/W SHEET NO.	19

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16689 ENGINEER BRIAN WILLIS ALLEN
1/9/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER JEFFREY H. BAILEY
1/9/13



PIPE HYDRAULIC DATA

18" RCP - STA. 10+48 -Y3-

DRAINAGE AREA	=	2.04	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	7	CFS
DESIGN HW ELEVATION	=	777.85	FT
100 YEAR DISCHARGE	=	8	CFS
100 YEAR HW ELEVATION	=	778.00	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	20	CFS
OVERTOPPING ELEVATION	=	782.23	FT

(FOR -Y3- PLAN SEE SHEETS 4 & 8)

1/7/2013
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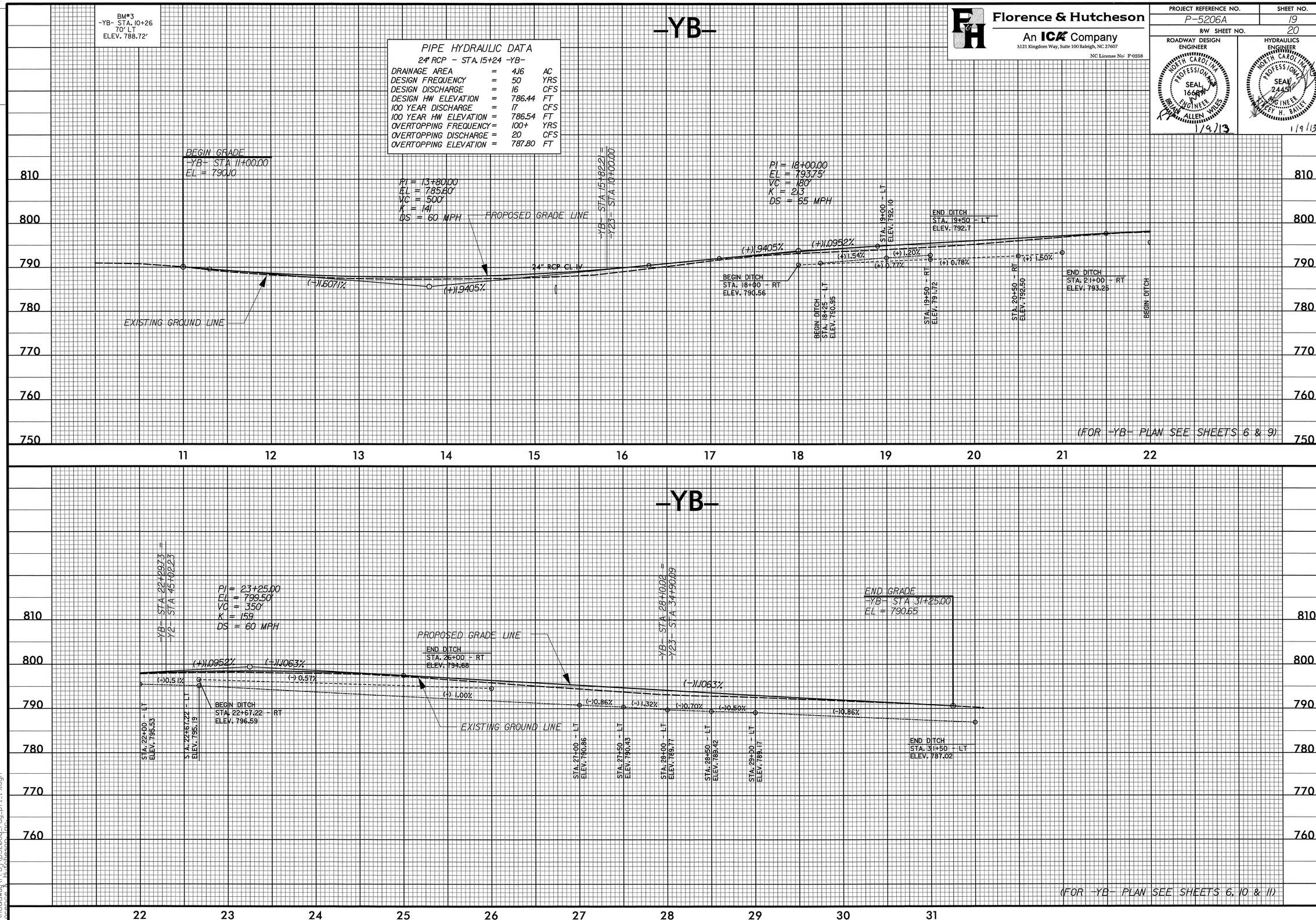
PROJECT REFERENCE NO.	SHEET NO.
P-5206A	19
R/W SHEET NO.	20

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16689 ENGINEER BRIAN ALLEN WILES — 1/9/13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER TREY H. BAILEY — 1/9/13



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DGN: 0151DEL_P10b1

-Y23-

-Y23- STA 10+00.00 =
-YB- STA 15+82.21

-Y23- STA 18+25.07 =
-Y2- STA 51+48.01

BEGIN GRADE
EP = 10+42.00
EL = 788.77'

PI = 14+40.00
EL = 787.00'
VC = 200'
K = 71
DS = 40 MPH

PROPOSED GRADE LINE

EP = 18+10.07
EL = 795.55'
CL = 18+25.07
EL = 796.03'

EP = 18+49.07
EL = 795.55'

(+)10.4436%
(-)0.30% (TRUE SLOPE)
(-)0.4436%
(+)2.3687%
(+) 0.58%
(+) 1.00%
(+)2.3687%
(-)1.2679%
(-) 4.6 I%
(+) 0.50%
(-)1.2679%

BEGIN DITCH
STA. 10+70 - RT
ELEV. 782.84

STA. 13+72 - RT
ELEV. 781.93

EXISTING GROUND LINE

STA. 13+73 - RT
ELEV. 781.94

STA. 16+00 - RT
ELEV. 783.25

END DITCH
STA. 17+30 - RT
ELEV. 784.55

BEGIN DITCH
STA. 21+45 - RT
ELEV. 780.95

STA. 2+68 - RT
ELEV. 779.89

(FOR -Y23- PLAN SEE SHEETS 7 & 9)

-Y23-

PI = 22+15.00
EL = 785.75'
VC = 320'
K = 65
DS = 40 MPH

PI = 27+00.00
EL = 796.50'
VC = 200'
K = 47
DS = 40 MPH

-Y23- STA 27+65.43 =
-Y25A- STA 10+90.00

PI = 30+40.00
EL = 789.70'
VC = 220'
K = 67
DS = 40 MPH

PROPOSED GRADE LINE

-Y23- STA 34+90.09 =
-YB- STA 28+10.02

END GRADE
EP = 34+48.09
EL = 794.97'

(+)2.2165%
(-)2.0000%
(+)1.2918%
(-) 1.54%
(+)0.50%
(+) 0.93%
(+)1.2918%

(+) 0.50%
(+) 1.73%

EXISTING GROUND LINE

END DITCH
STA. 23+25 - RT
ELEV. 781.60

STA. 22+50 - RT
ELEV. 780.30

BEGIN DITCH
STA. 31+00 - LT
ELEV. 789.00

STA. 31+37 - LT
ELEV. 788.43

STA. 32+50 - LT
ELEV. 788.00

END DITCH
STA. 34+00 - LT
ELEV. 790.40

(FOR -Y23- PLAN SEE SHEET 10)

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PROJECT REFERENCE NO.	SHEET NO.
P-5206A	20
R/W SHEET NO.	21

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16685 ENGINEER BRIAN E. ALLEN-WILES
1/9/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER JEFFREY H. BAILEY
1/9/13

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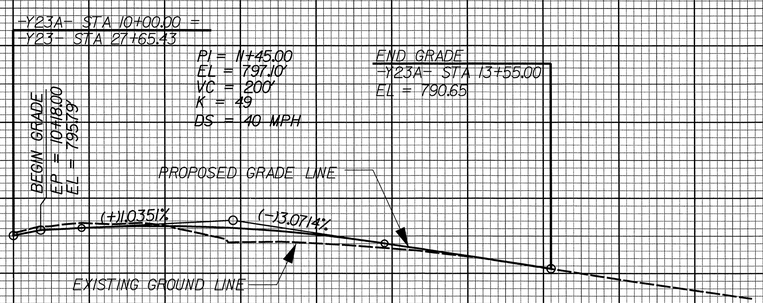
-Y23A-



(FOR -Y23A- PLAN SEE SHEET 10)

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PROJECT REFERENCE NO.	SHEET NO.
P-5206A	21
R/W SHEET NO.	22

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16989 ENGINEER BRIAN ALLEN WILES
1/9/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER JEFFREY H. BAILEY
1/9/13

DGN 0151DEL_P10b1

REVISIONS

1/7/2013
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REVISIONS

-Y20-

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PROJECT REFERENCE NO.	SHEET NO.
P-5206A	22
R/W SHEET NO.	23

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16989 ENGINEER BRIAN ALLEN WILES
1/9/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER JEFFREY H. BAILEY
1/9/13

BM#2
-Y20- STA. 34+93
320' RT
ELEV. 777.50'

BEGIN GRADE
-Y20- STA 33+50.00
EL = 787.20

EXISTING GROUND LINE

(FOR -Y20+ PLAN SEE SHEET 12)

800 790 780 770 760 750

22 23 24 25 26 27 28 29 30 31 32 33 34 35

-Y20-

PI = 39+50.00
EL = 782.50'
VC = 130'
K = 104
DS = 50 MPH

PROPOSED GRADE LINE

PI = 44+80.00
EL = 785.00'
VC = 150'
K = 98
DS = 50 MPH

(+)0.4117%
(-)1.0526%
(-)0.7833%
(+)0.4117%
(-)2.6 1%
(-)2.9067%

BEGIN DITCH
STA. 38+00 - LT
ELEV. 780.47

24" RCP CL IV

END DITCH
STA. 39+35 - LT
ELEV. 776.94

EXISTING GROUND LINE

UNDERCUT

BEGIN DITCH
STA. 47+50 - RT
ELEV. 778.96

PIPE HYDRAULIC DATA
24" RCP - STA. 39+36 -Y20-

DRAINAGE AREA	=	5.85	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	16	CFS
DESIGN HW ELEVATION	=	779.13	FT
100 YEAR DISCHARGE	=	18	CFS
100 YEAR HW ELEVATION	=	779.35	FT
OVERTOPPING FREQUENCY	=	100+	YRS
OVERTOPPING DISCHARGE	=	22	CFS
OVERTOPPING ELEVATION	=	779.95	FT

(FOR -Y20- PLAN SEE SHEET 13)

800 790 780 770 760 750

35 36 37 38 39 40 41 42 43 44 45 46 47 48

1/7/2013
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DGN 0151DEL_P10b1

-Y20-

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	23
R/W SHEET NO.	24

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16619 ENGINEER BRIAN ALLEN WILES
1/9/13

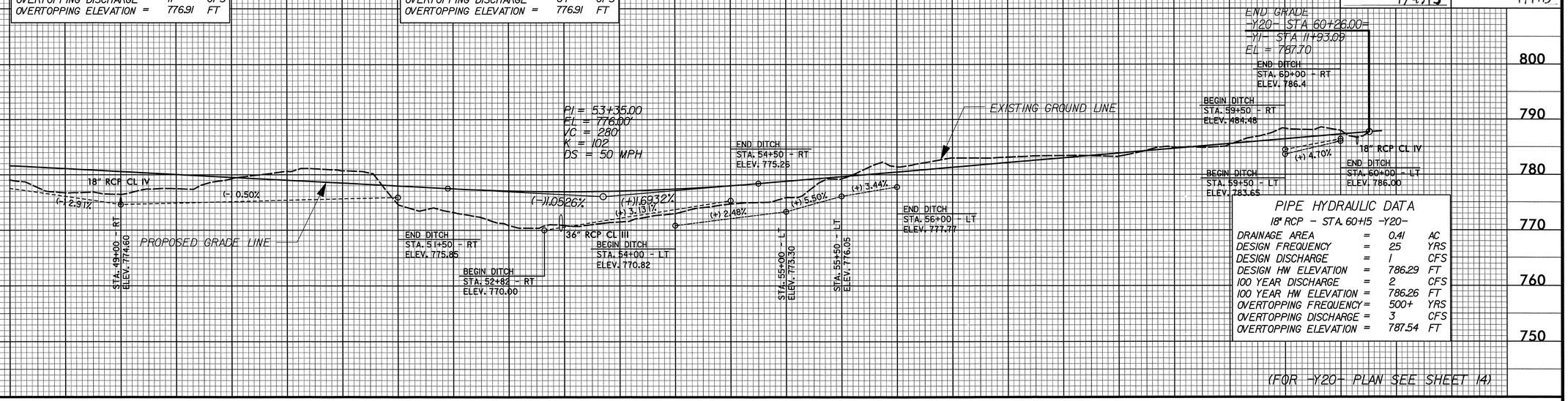
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER ROBERT H. BAILEY
1/9/13

PIPE HYDRAULIC DATA
18" RCP - STA. 49+00 -Y20-

DRAINAGE AREA	=	1.91	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	6	CFS
DESIGN HW ELEVATION	=	776.03	FT
100 YEAR DISCHARGE	=	7	CFS
100 YEAR HW ELEVATION	=	776.13	FT
OVERTOPPING FREQUENCY	=	500-	YRS
OVERTOPPING DISCHARGE	=	11	CFS
OVERTOPPING ELEVATION	=	776.91	FT

PIPE HYDRAULIC DATA
36" RCP - STA. 52+97 -Y20-

DRAINAGE AREA	=	10.83	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	33	CFS
DESIGN HW ELEVATION	=	772.71	FT
100 YEAR DISCHARGE	=	37	CFS
100 YEAR HW ELEVATION	=	773.05	FT
OVERTOPPING FREQUENCY	=	500-	YRS
OVERTOPPING DISCHARGE	=	64	CFS
OVERTOPPING ELEVATION	=	776.91	FT



PIPE HYDRAULIC DATA
18" RCP - STA. 60+15 -Y20-

DRAINAGE AREA	=	0.41	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	1	CFS
DESIGN HW ELEVATION	=	786.29	FT
100 YEAR DISCHARGE	=	2	CFS
100 YEAR HW ELEVATION	=	786.26	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	3	CFS
OVERTOPPING ELEVATION	=	787.54	FT

(FOR -Y20- PLAN SEE SHEET 14)

-Y21-

PIPE HYDRAULIC DATA
24" CSP - STA. 14+50 -Y21-

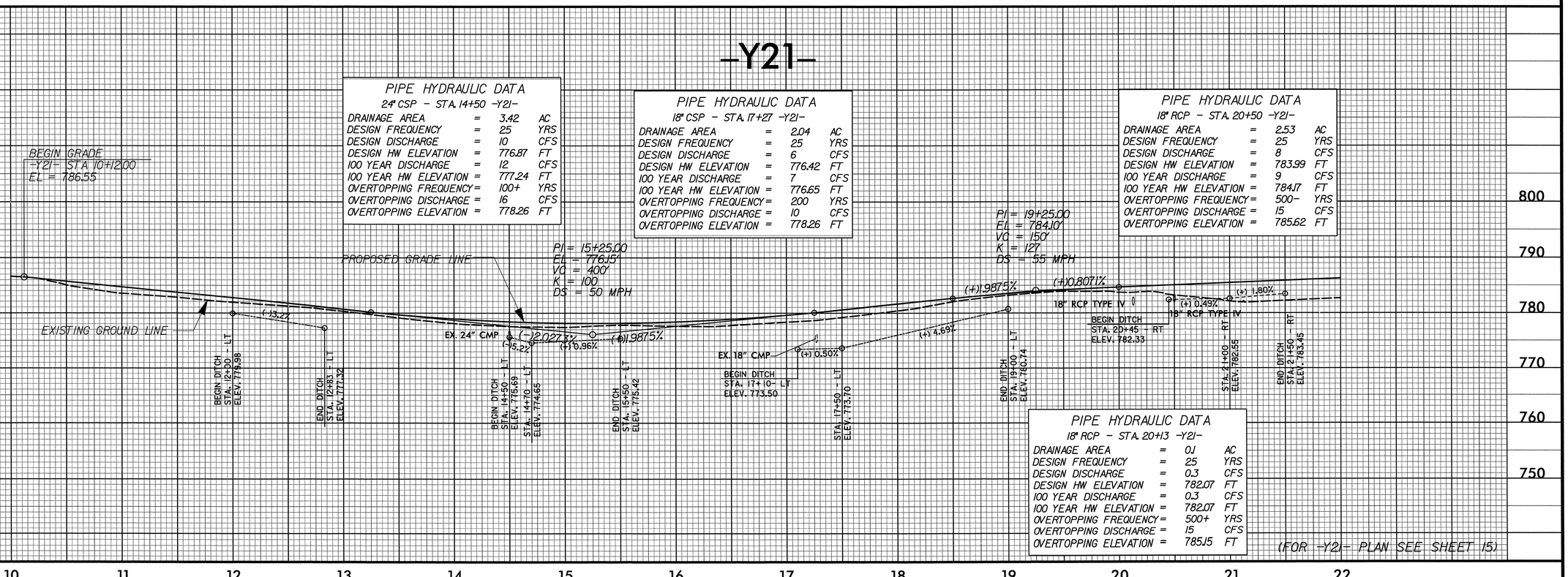
DRAINAGE AREA	=	3.42	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	10	CFS
DESIGN HW ELEVATION	=	776.87	FT
100 YEAR DISCHARGE	=	12	CFS
100 YEAR HW ELEVATION	=	777.24	FT
OVERTOPPING FREQUENCY	=	100+	YRS
OVERTOPPING DISCHARGE	=	16	CFS
OVERTOPPING ELEVATION	=	778.26	FT

PIPE HYDRAULIC DATA
18" CSP - STA. 17+27 -Y21-

DRAINAGE AREA	=	2.04	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	6	CFS
DESIGN HW ELEVATION	=	776.42	FT
100 YEAR DISCHARGE	=	7	CFS
100 YEAR HW ELEVATION	=	776.65	FT
OVERTOPPING FREQUENCY	=	200	YRS
OVERTOPPING DISCHARGE	=	10	CFS
OVERTOPPING ELEVATION	=	778.26	FT

PIPE HYDRAULIC DATA
18" RCP - STA. 20+50 -Y21-

DRAINAGE AREA	=	2.53	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	8	CFS
DESIGN HW ELEVATION	=	783.99	FT
100 YEAR DISCHARGE	=	9	CFS
100 YEAR HW ELEVATION	=	784.17	FT
OVERTOPPING FREQUENCY	=	500-	YRS
OVERTOPPING DISCHARGE	=	15	CFS
OVERTOPPING ELEVATION	=	785.62	FT



PIPE HYDRAULIC DATA
18" RCP - STA. 20+13 -Y21-

DRAINAGE AREA	=	0.1	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	0.3	CFS
DESIGN HW ELEVATION	=	782.07	FT
100 YEAR DISCHARGE	=	0.3	CFS
100 YEAR HW ELEVATION	=	782.07	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	15	CFS
OVERTOPPING ELEVATION	=	785.15	FT

(FOR -Y21- PLAN SEE SHEET 15)

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-Y21-

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NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-5206A	24
R/W SHEET NO.	25

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16089 ENGINEER BRIAN ALLEN WILES
1/9/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STACEY H. BAILEY
1/9/13

-Y21- STA 30+37.16 =
-Y2- STA 36+64.06

END GRADE
EP = 30+18.87
EL = 804.95

PROPOSED GRADE LINE

PI = 26+25.00
EL = 789.75
VC = 350'
K = 115
DS = 55 MPH

(+)3.859%

(+)0.807%

(+)3.859%

(+)0.807%

EXISTING GROUND LINE

UNDERCUT

BEGIN DITCH
STA. 26+65 - RT
ELEV. 786.00

(-)5.93%

STA. 28+00 - RT
ELEV. 778.00

STA. 28+51 - RT
ELEV. 775.41

(-)4.54%

(+)2.90%

END DITCH
STA. 29+18 - RT
ELEV. 777.18

24" RCP TYPE IV

UNDERCUT

PIPE HYDRAULIC DATA

24" RCP - STA. 28+69 -Y21-

DRAINAGE AREA	=	4.45	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	13	CFS
DESIGN HW ELEVATION	=	777.41	FT
100 YEAR DISCHARGE	=	15	CFS
100 YEAR HW ELEVATION	=	777.47	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	95	CFS
OVERTOPPING ELEVATION	=	788.74	FT

(FOR -Y21- PLAN SEE SHEET 6)

-Y1-

EXISTING GROUND LINE

(FOR -Y1- PLAN SEE SHEETS 14 & 15)

1/7/2013
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