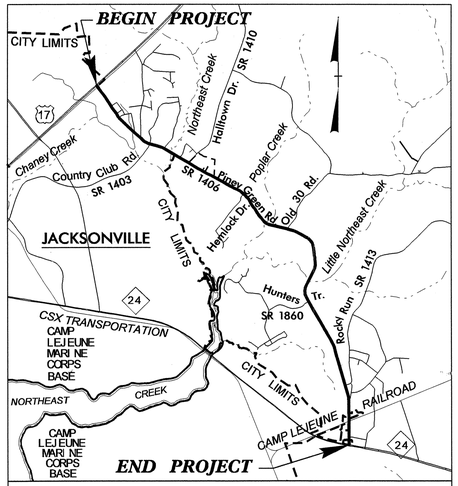
09/08/99

TIP PROJECT: U-3810

CONTRACT: C202887

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

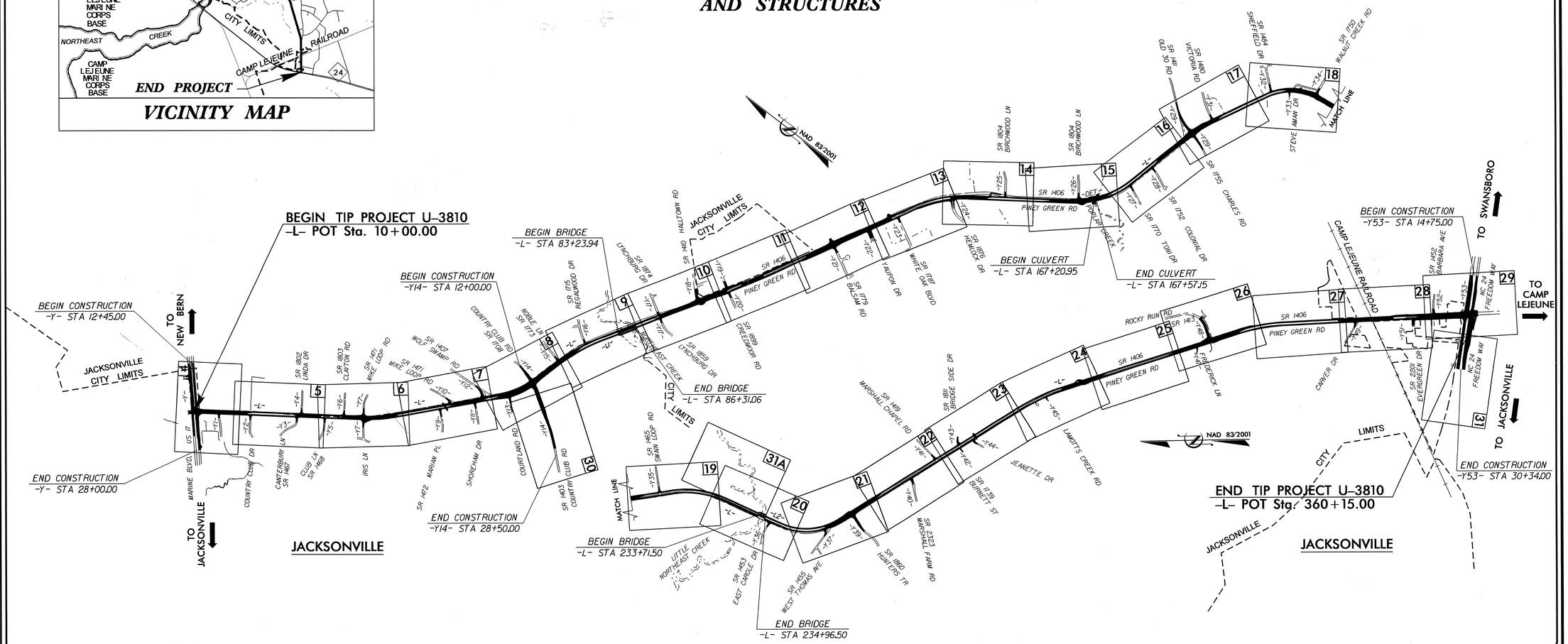
ONSLOW COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3810	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
35801.1.1	STP-1406(4)	PE
35801.1.2	STP-1406(10)	PE
35801.2.1	STP-1406(6)	R/W & UTIL
35801.3.1	STP-1406(7)	CONSTR.

LOCATION: SR 1406 (PINEY GREEN ROAD) FROM US 17 (MARINE BOULEVARD) TO NC 24 (FREEDOM WAY)

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



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2012 = 27,100
ADT 2032 = 36,300
DHV = 7 %
D = 60 %
T = 5 % *
V = 50 MPH
FUNC CLASS = URBAN ARTERIAL
* TTST 1 % + DUAL 4 %
TIER = SUB-REGIONAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJ. U-3810 = 6.543 MILES
LENGTH STRUCTURES TIP PROJ. U-3810 = 0.089 MILES
TOTAL LENGTH OF TIP PROJ. U-3810 = 6.632 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 30, 2009

LETTING DATE:
SEPTEMBER 18, 2012

REKHA PATEL, PE
PROJECT ENGINEER

SAMUEL L. ST.CLAIR
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCARCE
8-14-12
SIGNATURE:

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL
7-30-12
P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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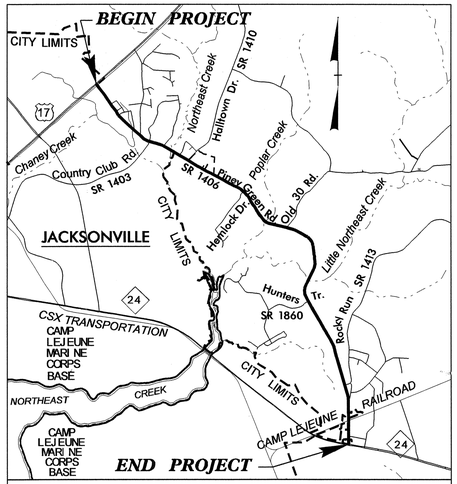
TIP PROJECT: U-3810

CONTRACT: C202887

See Sheet 1-A For Index of Sheets



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N.C.	U-3810	1	

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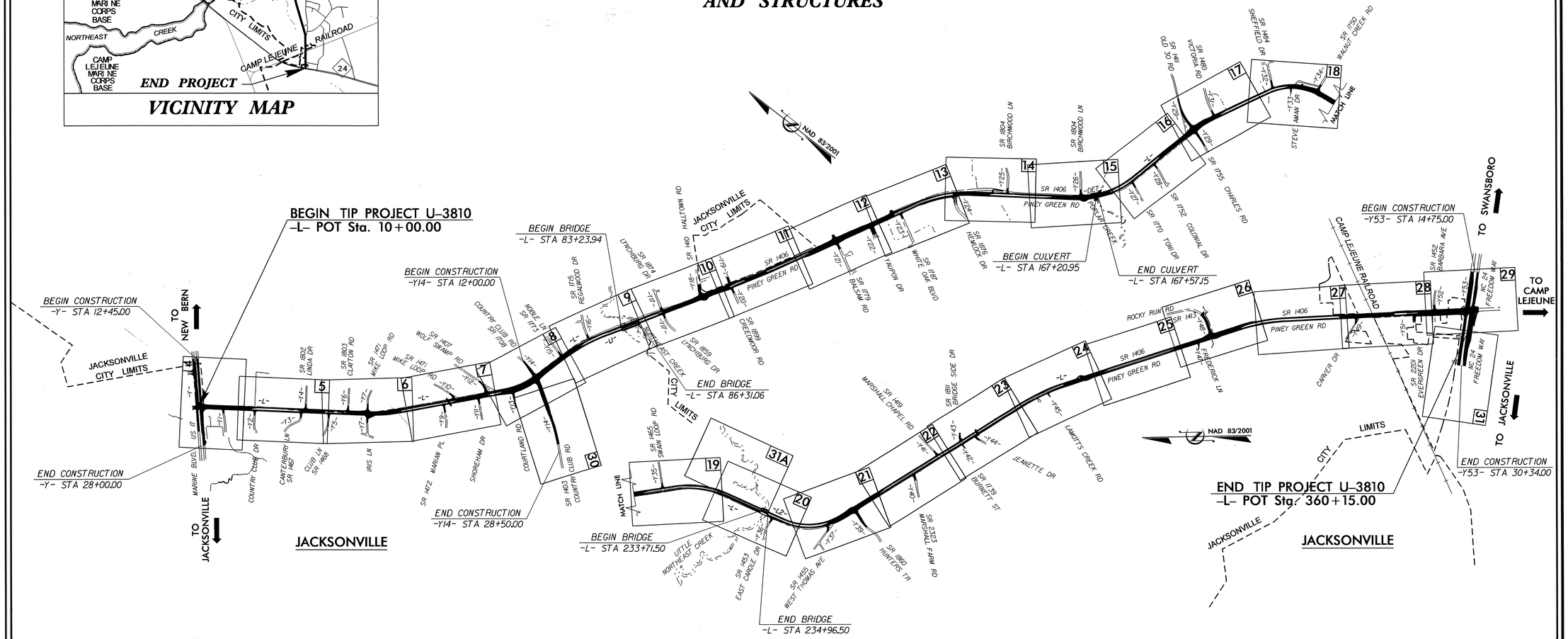
Part 1 of 4



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13-JUL-2012 08:34
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

8/31/12

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-R	SURVEY CONTROL SHEETS
2 THRU 2-G	PAVEMENT SCHEDULE, TYPICAL SECTIONS, WEDGING DETAILS, AND DETAILS FOR TEMPORARY PAVEMENT
2-H THRU 2-M	DRAINAGE DITCH DETAILS
2-N THRU 2-W	INTERSECTION DETAILS
2-X	DETAIL FOR TEMPORARY DETOUR
2-Y (3 OF 3 SHEETS)	DETAIL FOR PERMENANT WETLAND MITIGATION
2-Z	UNDERCUT DETAILS
2-AA	DETAIL OF ROCK PLATING
2-AB	DETAILS SHOWING PAVEMENT-BRIDGE RELATIONSHIP
2-AC	DETAIL FOR OPEN THROAT CATCH BASIN
2-AD	DETAIL OF EMERGENCY VEHICLE ACCESS FOR CONCRETE ISLAND
2-AE	DETAIL OF JUNCTION BOX
2-AF	DETAIL OF SPECIAL HEADWALL
2-AG	DETAIL OF SPECIAL JUNCTION BOX WITH MANHOLE
2-AH	DETAIL OF TRAFFIC BEARING CATCH BASIN
2-AI	DETAIL OF TRAFFIC BEARING CATCH BASIN
2-AJ	DETAIL OF ENDWALL
2-AK	DETAIL FOR CONVERTING DROP INLET OR CATCH BASIN TO JUNCTION BOX
2-AL & 2-AM	DETAIL FOR METHOD OF SHOULDER CONSTRUCTION
2-AN	DETAIL FOR REINFORCED CONCRETE HEADWALL FOR 84" PIPE
2-AO	DETAIL FOR SPECIAL JUNCTION BOX
2-AP THRU 2-AR	DETAILS FOR STANDARD TEMPORARY WALL
2-AS	DETAIL FOR STANDARD TEMPORARY SHORING
2-AT	STRUCTURE TYPICAL SECTIONS
2-AU	DETAIL FOR MEDIAN CURB FOR TWO CATCH BASINS
2-AV	DETAIL FOR PLACEMENT OF GRATED DROP INLETS IN CONCRETE ISLANDS
2-AW	DETAIL FOR TEMPORARY CONTAINMENT OF PETROLEUM CONTAMINATED SOIL
3 (3 SHEETS)	SUMMARY OF QUANTITIES
3-A	SUMMARY OF EARTHWORK
3-B	GUARDRAIL SUMMARY
3-C	PAVEMENT REMOVAL SUMMARY, BREAKING OF PAVEMENT SUMMARY, AND SHOULDER BERM GUTTER SUMMARY
3-D THRU 3-AM	SUMMARY OF DRAINAGE QUANTITIES FOR PIPES 48" AND UNDER
3-AN	SUMMARY OF DRAINAGE QUANTITIES FOR PIPES 54" AND OVER
3-AO (4 OF 4 SHEETS)	PARCEL INDEX SHEET
4 THRU 31A	PLAN SHEETS
32 THRU 57	PROFILE SHEETS
TMP-1 THRU TMP-125	TRAFFIC MANAGEMENT PLANS
SD-1	TEMPORARY SIGN DESIGN PLAN
PMP-1 THRU PMP-20	PAVEMENT MARKING PLANS
EC-1 THRU EC-68	EROSION CONTROL PLANS
RF-1 THRU RF-3	REFORESTATION PLANS
SIGN-1 THRU SIGN-17	SIGNING PLANS
SIG-1 THRU SIG-101	SIGNAL PLANS
ITS-1 THRU ITS-24	INTELLIGENT TRANPORTATION SYSTEM PLANS
UC-1 THRU UC-45	UTILITIES CONSTRUCTION PLANS
UO-1 THRU UO-29	UTILITIES BY OTHERS PLANS
RR-1 THRU RR-22	RAILROAD CROSSING PLANS
X-0 (15 OF 15 SHEETS)	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-215	CROSS-SECTIONS
C-1 THRU C-28	CULVERT PLANS
S-1 THRU S-62	STRUCTURE PLANS
W-1 AND W-2	SEGMENTAL GRAVITY RETAINING WALL PLANS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 11/01/11

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH DETAIL DRAWING 560D01.

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 JONES-ONSLOW EMC (POWER), PROGRESS ENERGY (POWER), CENTURYLINK (TELEPHONE), ONWASA (POTABLE WATER), CITY OF JACKSONVILLE (RAW WATER), TIME WARNER (CATV), INTERCOASTAL ENGINEERING (POTABLE WATER AND SANITARY SEWER)

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 IN ACCORDANCE WITH STD 848.05 and/or 848.06.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
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
838.39	Reinforced Concrete Endwall - for Single 72" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.69	Reinforced Brick Endwall - for Single 72" 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
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	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
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
850.01	Concrete Paved Ditches
852.01	Concrete Islands
852.05	Median Curb for Catch Basin - for Use with 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
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

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-B

04/16/11

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 R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- 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
- Sanitary Sewer Easement (by others)
- Temporary Construction Easement – Sanitary Sewer (by others)
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

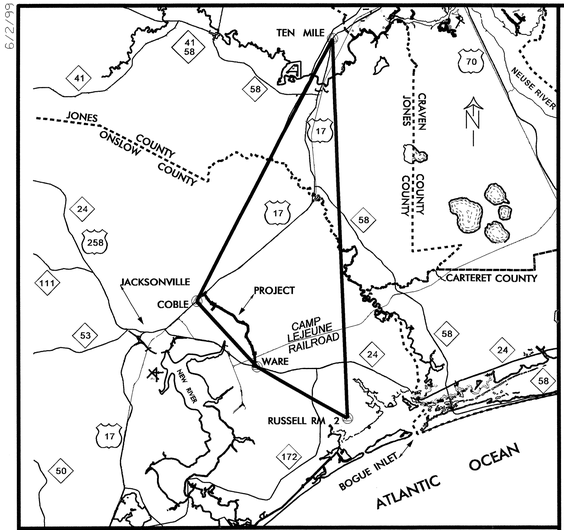
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

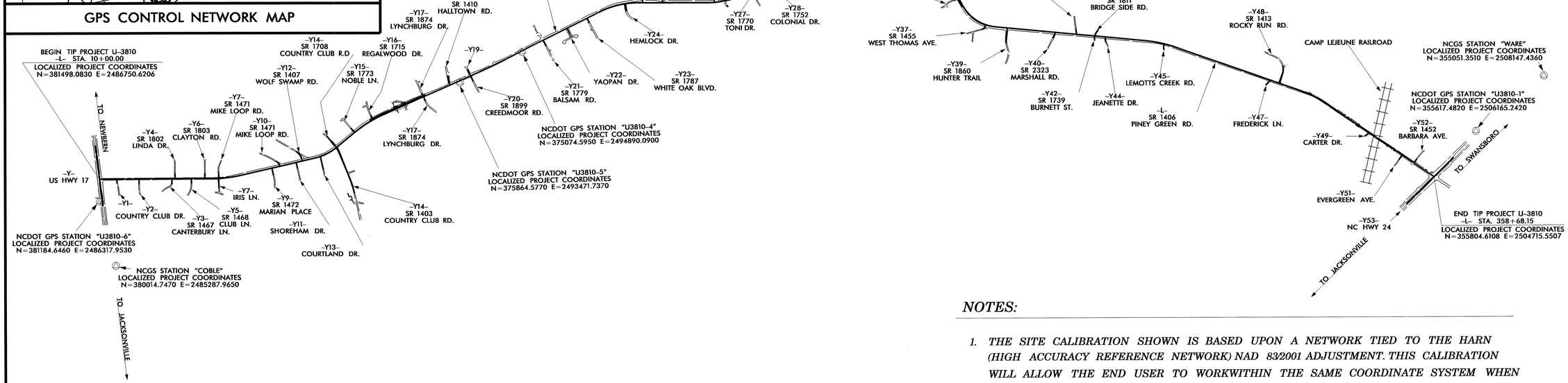
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ZUTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-C
Location and Surveys	

SURVEY CONTROL SHEET U-3810



GPS CONTROL NETWORK MAP



NOTES:

1. *THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/2001 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORKWITHIN 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:
   U3810_LS_GPSCALIB_080515.HTML
   U3810_LS_WGS84_080515.TXT
   U3810_LS_LOCAL_080515.TXT
   U3810_LS_CONTROL_080515.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.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS U4007-3"
WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
NORTHING: 376224.375(ft) EASTING: 2480992.509(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999911272
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS U4007-3" TO -L- STATION 10+00.00 IS
N 47°30'51.2" E 7808.19 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

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SURVEY CONTROL SHEET U-3810

PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-D
Location and Surveys	

GPS Calibration Report

PROJECT : 35801.1.1

TIP NUMBER	U-3810		
USER NAME	BREIGNER	DATE & TIME	7:27:01 AM 1/30/2007
COORDINATE SYSTEM	US STATE PLANE 1983(AT GROUND)	ZONE	NORTH CAROLINA 3200
HORIZONTAL DATUM	NAD 1983/2001 (CONUS)		
VERTICAL DATUM	NAVD 88	GEOID MODEL	GEOID03 (CONUS) NC SUB GRID
COORDINATE UNITS	US SURVEY FEET		
DISTANCE UNITS	US SURVEY FEET		
HEIGHT UNITS	US SURVEY FEET		

LOCAL SITE INFORMATION

LOCALIZED AROUND	NCDOT GPS U4007-3
LATITUDE	34°46'23.06985"N
LONGITUDE	77°23'53.56573"W
SITE SCALE FACTOR	1.0000887360
HEIGHT	-82.738SFT

THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION USES A LOCALIZED COORDINATE SYSTEM WHICH IS VERY SIMILAR TO NORTH CAROLINA ZONE 3200 FROM WHICH IT IS DERIVED.
PLEASE TAKE CARE IN UTILIZING THESE COORDINATES TO ELIMINATE CONFUSION OF THE TWO SYSTEMS.
THIS FILE IS TO AID IN THE USE OF REAL TIME KINEMATIC (RTK) GPS DURING CONSTRUCTION LAYOUT.

DATUM TRANSFORMATION PARAMETERS

DATUM TRANSFORMATION COMPUTATION NOT REQUESTED

UPDATED DEFAULT PROJECTION (TRANSVERSE MERCATOR) DEFINITION

UPDATED DEFAULT PROJECTION NOT REQUESTED

HORIZONTAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ROTATION CENTER	377695.865SFT
EASTING COORDINATE OF ROTATION CENTER	2505844.578SFT
ROTATION ABOUT THE CENTER POINT	0°00'00"
TRANSLATION NORTH	0.020SFT
TRANSLATION EAST	0.002SFT
SCALE FACTOR	1.00000000

VERTICAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ORIGIN POINT	355051.357SFT
EASTING COORDINATE OF ORIGIN POINT	2508147.436SFT
VERTICAL SEPARATION AT ORIGIN	0.023SFT
SLOPE NORTH	-0.825PPM
SLOPE EAST	-1.821PPM

GEOID MODEL DEFINITION

GEOID03 (CONUS) NC SUB GRID

RESIDUAL DIFFERENCES BETWEEN GPS (WGS84) AND LOCAL COORDINATES

SUMMARY

	MAXIMUM ERROR	ROOT MEAN SQUARE ERROR	POINT
HORIZONTAL	0.023SFT	0.003	TEN MILE_GPS
VERTICAL	0.054SFT	0.006	WARE_GPS
THREE-DIMENSIONAL	0.055SFT	0.007	WARE_GPS

POINT RESIDUALS

WGS84 COORDINATES		CALCULATED POINT FOR DISPLAY ONLY		LOCAL COORDINATES	
POINT	WARE_GPS	NORTHING	355051.357SFT	POINT	WARE
LATITUDE	34°42'49.21887"N	EASTING	2508147.436SFT	NORTHING	355051.351SFT
LONGITUDE	77°18'32.42902"W	ELEVATION	36.634SFT	EASTING	2508147.436SFT
HEIGHT	-85.056SFT	HORZ ERROR	0.006SFT	ELEVATION	36.580SFT
		VERT ERROR	0.054SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.055SFT	QUALITY	ADJUSTED QUALITY
POINT	U3810-1_GPS	NORTHING	355617.486SFT	POINT	U3810-1
LATITUDE	34°42'55.15103"N	EASTING	2506165.241SFT	NORTHING	355617.482SFT
LONGITUDE	77°18'56.05395"W	ELEVATION	36.426SFT	EASTING	2506165.242SFT
HEIGHT	-85.261SFT	HORZ ERROR	0.005SFT	ELEVATION	36.426SFT
		VERT ERROR	0.000SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.005SFT	QUALITY	ADJUSTED QUALITY
POINT	U3810-2_GPS	NORTHING	368546.878SFT	POINT	U3810-2
LATITUDE	34°45'03.65932"N	EASTING	2502336.839SFT	NORTHING	368546.876SFT
LONGITUDE	77°19'39.29723"W	ELEVATION	24.998SFT	EASTING	2502336.839SFT
HEIGHT	-96.636SFT	HORZ ERROR	0.002SFT	ELEVATION	24.998SFT
		VERT ERROR	0.000SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.002SFT	QUALITY	ADJUSTED QUALITY
POINT	U3810-3_GPS	NORTHING	370246.202SFT	POINT	U3810-3
LATITUDE	34°45'20.49590"N	EASTING	2502152.458SFT	NORTHING	370246.201SFT
LONGITUDE	77°19'41.16356"W	ELEVATION	37.934SFT	EASTING	2502152.457SFT
HEIGHT	-83.697SFT	HORZ ERROR	0.002SFT	ELEVATION	37.934SFT
		VERT ERROR	0.000SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.002SFT	QUALITY	ADJUSTED QUALITY
POINT	U3810-4_GPS	NORTHING	375074.595SFT	POINT	U3810-4
LATITUDE	34°46'09.44857"N	EASTING	2494890.092SFT	NORTHING	375074.595SFT
LONGITUDE	77°21'07.22673"W	ELEVATION	32.332SFT	EASTING	2494890.090SFT
HEIGHT	-89.286SFT	HORZ ERROR	0.002SFT	ELEVATION	32.332SFT
		VERT ERROR	0.000SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.002SFT	QUALITY	ADJUSTED QUALITY
POINT	U3810-5_GPS	NORTHING	375864.577SFT	POINT	U3810-5
LATITUDE	34°46'17.49387"N	EASTING	2493471.739SFT	NORTHING	375864.577SFT
LONGITUDE	77°21'24.06871"W	ELEVATION	34.742SFT	EASTING	2493471.737SFT
HEIGHT	-86.873SFT	HORZ ERROR	0.003SFT	ELEVATION	34.743SFT
		VERT ERROR	0.001SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.003SFT	QUALITY	ADJUSTED QUALITY
POINT	U3810-6_GPS	NORTHING	381184.645SFT	POINT	U3810-6
LATITUDE	34°47'11.27113"N	EASTING	2486317.957SFT	NORTHING	381184.646SFT
LONGITUDE	77°22'48.76781"W	ELEVATION	40.302SFT	EASTING	2486317.953SFT
HEIGHT	-81.297SFT	HORZ ERROR	0.004SFT	ELEVATION	40.303SFT
		VERT ERROR	0.001SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.004SFT	QUALITY	ADJUSTED QUALITY
POINT	COBLE_GPS	NORTHING	380014.745SFT	POINT	COBLE
LATITUDE	34°46'59.86708"N	EASTING	2485287.968SFT	NORTHING	380014.747SFT
LONGITUDE	77°23'01.34305"W	ELEVATION	43.880SFT	EASTING	2485287.965SFT
HEIGHT	-77.719SFT	HORZ ERROR	0.004SFT	ELEVATION	43.911SFT
		VERT ERROR	0.031SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.032SFT	QUALITY	CONTROL QUALITY
POINT	TEN MILE_GPS	NORTHING	480135.766SFT	POINT	TEN MILE
LATITUDE	35°03'21.28016"N	EASTING	2536763.393SFT	NORTHING	480135.789SFT
LONGITUDE	77°12'22.64207"W	ELEVATION	33.904SFT	EASTING	2536763.398SFT
HEIGHT	-87.731SFT	HORZ ERROR	0.023SFT	ELEVATION	33.901SFT
		VERT ERROR	0.003SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.024SFT	QUALITY	CONTROL QUALITY
POINT	RUSSELL 2 RM A_G	NORTHING	335222.600SFT	POINT	RUSSELL 2 RM A
LATITUDE	34°39'27.06496"N	EASTING	2542912.685SFT	NORTHING	335222.588SFT
LONGITUDE	77°11'40.38710"W	ELEVATION	36.452SFT	EASTING	2542912.692SFT
HEIGHT	-85.315SFT	HORZ ERROR	0.014SFT	ELEVATION	36.476SFT
		VERT ERROR	0.024SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.028SFT	QUALITY	CONTROL QUALITY

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-E
Location and Surveys	

SURVEY CONTROL SHEET U-3810

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	381489.3600	2486649.4650	40.41	OUTSIDE PROJECT LIMITS	
2	BL-2	381131.7030	2486972.5480	39.68	14+27.21	31.27 RT
3	BL-3	380730.9160	2487325.8530	43.54	19+58.56	24.63 LT
4	BL-4	380053.7760	2487804.8680	42.62	27+88.00	22.95 LT
5	BL-5	379703.0530	2487987.9180	42.32	31+79.93	30.95 RT
6	BL-6	379470.2160	2488219.5630	41.96	35+03.90	23.04 LT
7	BL-7	379177.5570	2488353.3890	39.65	38+19.21	37.89 RT
8	BL-8	378870.0370	2488752.4390	34.63	43+17.31	51.00 LT
9	BL-9	378353.9530	2489248.4820	24.78	50+31.29	0.68 RT
10	BL-10	377953.2140	2489780.2180	23.30	56+94.60	57.24 LT
11	BL-11	377535.9230	2490163.1390	27.92	62+58.15	4.67 RT
12	BL-12	377324.2310	2490586.1350	27.39	67+28.84	24.16 RT
13	BL-13	377281.7490	2491118.0480	28.78	72+52.90	72.02 LT
14	BL-14	377093.0010	2491636.4920	17.99	77+91.75	79.19 LT
15	BL-15	376760.8890	2492058.3980	12.23	83+17.75	0.26 LT
16	BL-16	376591.7250	2492326.8510	12.05	86+35.00	5.62 RT
17	BL-17	376454.2670	2492678.8380	16.45	90+07.33	58.84 LT
18	BL-18	376083.4870	2493271.2910	29.06	97+06.16	48.04 LT
GPS5	GPS U3810-5	375864.5770	2493471.7370	34.74	99+90.95	35.60 RT
20	BL-20	375486.9610	2494275.4380	37.08	108+75.70	51.64 LT
GPS4	GPS U3810-4	375074.5950	2494890.0900	32.33	116+13.34	19.90 RT
22	BL-22	374869.0910	2495459.2600	32.02	122+12.31	66.21 LT
23	BL-23	374599.3670	2495965.4480	30.89	127+85.88	66.04 LT
24	BL-24	374335.1000	2496469.7050	29.87	133+55.17	69.78 LT
25	BL-25	374118.8950	2496845.3450	28.94	137+84.79	59.36 LT
26	BL-26	373773.4750	2497286.3400	29.70	143+28.71	71.88 LT
27	BL-27	373044.5010	2497817.0600	26.94	152+21.41	67.77 LT
28	BL-28	372503.8990	2498113.2560	27.42	158+34.01	0.88 RT
29	BL-29	372054.8330	2498433.3140	13.50	163+85.44	1.40 RT
30	BL-30	371812.2830	2498648.8010	10.65	167+07.14	23.24 RT
31	BL-31	371516.9300	2499127.0510	15.23	172+55.77	60.91 RT
32	BL-32	371445.8540	2499662.0450	24.06	177+88.46	1.57 RT
33	BL-33	371211.2040	2500383.3000	25.30	185+46.13	60.77 RT
34	BL-34	371114.7330	2500896.2920	30.99	190+63.63	32.56 LT
35	BL-35	370827.0150	2501324.3790	29.20	195+75.70	27.38 RT
36	BL-36	370645.0280	2501811.0660	37.38	200+89.12	36.19 LT
GPS3	GPS U3810-3	370246.2010	2502152.4570	37.93	206+05.93	16.49 LT
38	BL-38	369220.3470	2502315.9880	28.07	216+44.76	5.71 LT
GPS2	GPS U3810-2	368546.8760	2502336.8390	25.00	223+18.25	14.67 LT
40	BL-40	368001.9770	2502121.3850	12.19	229+03.62	4.51 LT
41	BL-41	367481.3140	2501797.5940	7.03	235+14.12	52.20 RT
42	BL-42	366961.7230	2501562.7210	10.34	240+67.29	72.83 RT
43	BL-43	366554.2900	2501630.2960	12.14	244+61.92	11.22 RT
44	BL-44	366071.2240	2501789.5760	25.04	249+62.09	64.91 RT
45	BL-45	365629.0560	2502116.6050	34.02	255+07.84	3.05 LT
46	BL-46	365106.6550	2502342.7720	33.92	260+74.00	56.25 RT
47	BL-47	364612.4640	2502699.2710	30.69	266+79.54	11.86 LT
48	BL-48	364201.8830	2502851.6530	24.30	271+12.06	56.86 RT
49	BL-49	363703.2070	2503206.5280	21.49	277+20.71	7.63 LT
50	BL-50	362798.1520	2503619.2790	28.60	287+20.01	45.37 RT
51	BL-51	362039.9950	2503909.0390	33.72	295+32.89	15.73 LT
52	BL-52	360962.7950	2504149.0000	34.55	306+34.84	44.74 RT
53	BL-53	359996.2790	2504503.1420	34.09	316+61.12	34.66 LT
54	BL-54	359521.0280	2504549.6510	35.49	321+32.63	47.92 RT
55	BL-55	359159.6190	2504716.9580	36.49	325+18.24	51.91 LT
56	BL-56	358468.0230	2504718.9650	34.09	332+04.90	29.77 LT
57	BL-57	357597.5950	2504658.8470	36.41	340+74.69	38.96 RT
58	BL-58	356740.2810	2504670.1970	39.35	349+32.08	36.09 RT
59	BL-59	355909.4700	2504756.1840	41.30	357+63.70	41.67 LT

BY

POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
70	BY-70	382236.0960	2487563.9420	43.81	OUTSIDE PROJECT LIMITS	
71	BY-71	381972.3850	2487139.5240	43.09	14+49.60	92.85 RT
72	BL-1	381489.3600	2486649.4650	40.41	21+36.96	61.12 RT
73	GPS R3810-6	381184.6460	2486317.9530	40.30	25+87.21	56.05 RT
74	BY-74	380699.0920	2485748.6570	38.37	OUTSIDE PROJECT LIMITS	

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
75	BL-2	381131.7030	2486972.5480	39.68	10+34.75	24.20 LT
76	BY1-76	380735.4330	2486482.5350	35.84	OUTSIDE PROJECT LIMITS	

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
77	BL-3	380730.9160	2487325.8530	43.54	OUTSIDE PROJECT LIMITS	
78	BY2-78	380559.1680	2487014.6240	40.57	OUTSIDE PROJECT LIMITS	

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
79	BL-4	380053.7760	2487804.8680	42.62	OUTSIDE PROJECT LIMITS	
80	BY3-80	380037.4720	2487642.1360	43.57	11+17.50	11.27 LT
81	BY3-81	380141.0270	2487294.9400	42.54	OUTSIDE PROJECT LIMITS	

BY4

POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
82	BY4-82	380331.2330	2488146.1870	36.18	OUTSIDE PROJECT LIMITS	
83	BL-4	380053.7760	2487804.8680	42.62	14+33.32	17.51 LT

BY5

POINT	DESC.	NORTH	EAST	ELEVATION	Y5 STATION	OFFSET
84	BL-5	379703.0530	2487987.9180	42.30	10+30.87	22.79 LT
85	BY5-85	379562.5630	2487606.3030	42.87	14+37.49	14.91 LT

BY6

POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
86	BY6-86	379761.7420	2488521.1550	37.92	10+16.43	30.90 RT
87	BL-6	379470.2160	2488219.5630	41.96	14+30.93	33.41 LT

BY7

POINT	DESC.	NORTH	EAST	ELEVATION	Y7 STATION	OFFSET
88	BL-7	379177.5570	2488353.3890	39.65	14+77.95	22.59 LT
89	BY7-89	379051.8350	2488085.7130	41.98	17+66.04	43.28 RT

BY8

POINT	DESC.	NORTH	EAST	ELEVATION	Y7 STATION	OFFSET
90	BY8-90	379442.3260	2488782.5770	32.19	OUTSIDE PROJECT LIMITS	
91	BY8-91	379386.4730	2488603.6840	36.18	11+55.25	12.97 RT
92	BL-7	379177.5570	2488353.3890	39.65	14+77.95	22.59 LT

BY9

POINT	DESC.	NORTH	EAST	ELEVATION	Y9 STATION	OFFSET
93	BL-9	378353.9530	2489248.4820	24.78	10+00.62	39.78 RT
94	BY9-94	378150.9640	2489140.2730	27.25	12+23.97	15.28 LT
95	BY9-95	378006.5700	2488940.8420	27.08	14+64.60	20.58 LT

BY10

POINT	DESC.	NORTH	EAST	ELEVATION	Y10 STATION	OFFSET
96	BY10-96	378754.7830	2489413.0430	26.01	12+44.88	14.30 LT
97	BY10-97	378328.6680	2489480.9070	21.90	16+75.01	13.33 LT
98	BL-9	378353.9530	2489248.4820	24.78	16+35.24	217.17 RT

BY11

POINT	DESC.	NORTH	EAST	ELEVATION	Y11 STATION	OFFSET
99	BL-10	377953.2140	2489780.2180	23.30	OUTSIDE PROJECT LIMITS	
100	BY11-100	377645.9060	2489428.7060	16.17	OUTSIDE PROJECT LIMITS	

BY12

POINT	DESC.	NORTH	EAST	ELEVATION	Y12 STATION	OFFSET
101	BY12-101	378649.2950	2489859.4760	32.33	OUTSIDE PROJECT LIMITS	
102	BY12-102	378049.8550	2489937.1160	27.39	15+83.58	15.52 LT
103	BL-10	377953.2140	2489780.2180	23.30	17+57.48	105.88 RT

BY13

POINT	DESC.	NORTH	EAST	ELEVATION	Y13 STATION	OFFSET
104	BL-11	377535.9230	2490163.1390	27.92	10+02.84	17.32 LT
105	BY13-105	377207.1610	2489825.2380	14.13	OUTSIDE PROJECT LIMITS	

BY14

POINT	DESC.	NORTH	EAST	ELEVATION	Y14 STATION	OFFSET
106	BY14-106	377819.8800	2490650.9080	36.42	10+81.94	17.75 LT
107	BL-12	377324.2310	2490586.1350	27.39	15+67.57	54.48 LT
108	BY14-108	376931.7840	2490255.0270	22.79	20+68.45	25.72 RT
109	BY14-109	376480.5450	2489998.2100	22.14	25+85.16	21.25 LT
110	BY14-110	375984.7480	2489489.9410	17.60	32+92.81	27.16 RT

PROJECT REFERENCE NO.	SHEET NO.
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BY15

POINT	DESC.	NORTH	EAST	ELEVATION	Y15 STATION	OFFSET
111	BY15-111	377654.2260	2491179.5730	32.71	OUTSIDE PROJECT LIMITS	
112	BL-13	377281.7490	2491118.0480	28.78	13+15.28	16.77 LT

BY16

POINT	DESC.	NORTH	EAST	ELEVATION	Y16 STATION	OFFSET
113	BY16-113	377413.7330	2491823.3800	22.78	OUTSIDE PROJECT LIMITS	
114	BL-14	377093.0010	2491636.4920	17.99	11+15.52	25.40 LT

BY17

POINT	DESC.	NORTH	EAST	ELEVATION	Y17 STATION	OFFSET
115	BY17-115	376741.3730	2492893.7630	24.54	OUTSIDE PROJECT LIMITS	
116	BY17-116	376513.8530	2492810.9880	17.85	11+56.58	21.66 LT
117	BL-17	376454.2670	2492678.8380	16.45	12+75.75	60.88 RT
118	BY17-118	375864.5980	2492555.4470	29.92	OUTSIDE PROJECT LIMITS	

BY18

POINT	DESC.	NORTH	EAST	ELEVATION	Y18 STATION	OFFSET
119	BY18-119	376362.0770	2493560.9380	35.19	10+22.55	33.43 RT
120	BL-18	376083.4870	2493271.2910	29.06	14+24.07	50.26 RT

BY19

POINT	DESC.	NORTH	EAST	ELEVATION	Y19 STATION	OFFSET
121	BY19-121	375921.6610	2493902.3410	36.25	10+07.89	51.33 LT
122	GPS U3810-5	375864.5770	2493471.7370	34.74	OUTSIDE PROJECT LIMITS	

BY20

POINT	DESC.	NORTH	EAST	ELEVATION	Y20 STATION	OFFSET
123	GPS U3810-5	375864.5770	2493471.7370	34.74	10+20.72	290.63 RT
124	BY20-124	375708.9750	2493689.1540	35.80	10+55.05	25.48 RT
125	BY20-125	375322.1130	2493546.4010	34.69	OUTSIDE PROJECT LIMITS	

BY21

POINT	DESC.	NORTH	EAST	ELEVATION	Y21 STATION	OFFSET
126	BL-22	374869.0910	2495459.2600	32.02	OUTSIDE PROJECT LIMITS	
127	BY21-127	374359.5440	2495131.0690	26.90	15+37.79	21.13 RT

BY22

POINT	DESC.	NORTH	EAST	ELEVATION	Y22 STATION	OFFSET
128	BL-23	374599.3670	2495965.4480	30.89	OUTSIDE PROJECT LIMITS	
129	BY22-129	374306.5800	2495818.0180	31.09	OUTSIDE PROJECT LIMITS	

BY23

POINT	DESC.	NORTH	EAST	ELEVATION	Y23 STATION	OFFSET
130	BL-24	374335.1000	2496469.7050	29.87	OUTSIDE PROJECT LIMITS	
131	BY23-131	373806.0910	2496148.4380	26.66	15+48.15	23.02 RT

BY24

POINT	DESC.	NORTH	EAST	ELEVATION	Y24 STATION	OFFSET
132	BL-26	373773.4750	2497286.3400	29.70	OUTSIDE PROJECT LIMITS	
133	BY24-133	373681.8040	2497094.9770	28.29	11+29.52	41.58 RT
134	BY24-134	373353.1130	2496995.1370	27.03	OUTSIDE PROJECT LIMITS	

BY25

POINT	DESC.	NORTH	EAST	ELEVATION	Y25 STATION	OFFSET
135	BY25-135	373285.4580	2498073.1880	24.91	OUTSIDE PROJECT LIMITS	
136	BL-27	373044.5010	2497817.0600	26.94	12+40.36	36.89 LT

BY26

POINT	DESC.	NORTH	EAST	ELEVATION	Y26 STATION	OFFSET
137	BY26-137	372293.6880	2498792.4220	12.38	OUTSIDE PROJECT LIMITS	
138	BL-29	372054.8330	2498433.3140	13.50	OUTSIDE PROJECT LIMITS	

BY27

POINT	DESC.	NORTH	EAST	ELEVATION	Y27 STATION	OFFSET
139	BL-31	371516.9300	2499127.0510	15.23	10+67.73	42.74 RT
140	BY27-140	371125.2770	2498988.5730	12.75	OUTSIDE PROJECT LIMITS	

BY28

POINT	DESC.	NORTH	EAST	ELEVATION	Y28 STATION	OFFSET
141	BL-32	371445.8540	2499662.0450	24.06	10+01.45	24.35 LT
142	BY28-142	371025.7430	2499494.5800	21.70	14+50.91	19.23 LT

BY29

POINT	DESC.	NORTH	EAST	ELEVATION	Y29 STATION	OFFSET
143	BY29-143	372274.8790	2500993.3140	38.52	OUTSIDE PROJECT LIMITS	
144	BY29-144	372046.8940	2500972.3990	37.84	OUTSIDE PROJECT LIMITS	
145	BY29-145	371423.3940	2500433.3080	29.52	15+99.17	96.64 RT
146	BL-33	371211.2040	2500383.3000	25.30	18+17.64	89.82 RT

BY30

POINT	DESC.	NORTH	EAST	ELEVATION	Y29 STATION	OFFSET
147	BL-33	371211.2040	2500383.3000	25.30	18+17.64	89.82 RT
148	BY30-148	370819.9800	2500349.2850	18.11	22+01.38	20.62 LT

BY31

POINT	DESC.	NORTH	EAST	ELEVATION	Y31 STATION	OFFSET
149	BY31-149	371542.5490	2501115.6630	30.26	OUTSIDE PROJECT LIMITS	
150	BL-34	371114.7330	2500896.2920	30.99	11+84.03	26.24 LT

BY32

POINT	DESC.	NORTH	EAST	ELEVATION	Y32 STATION	OFFSET
151	BY32-151	370947.5150	2502148.8380	39.24	OUTSIDE PROJECT LIMITS	
152	BL-36	370645.0280	2501811.0660	37.38	14+28.70	23.52 RT

BY33

POINT	DESC.	NORTH	EAST	ELEVATION	Y33 STATION	OFFSET
153	GPS U3810-3	370246.2010	2502152.4570	37.93	OUTSIDE PROJECT LIMITS	
154	BY33-154	370197.6140	2501720.7740	41.55	OUTSIDE PROJECT LIMITS	

BY34

POINT	DESC.	NORTH	EAST	ELEVATION	Y34 STATION	OFFSET
156	BY34-156	370034.0830	2502638.5290	37.12	10+41.27	19.97 LT
157	BY34-157	370045.2010	2502336.1290	36.76	13+40.74	23.50 RT
158	GPS U3810-3	370246.2010	2502152.4570	37.93	OUTSIDE PROJECT LIMITS	

BY35

POINT	DESC.	NORTH	EAST	ELEVATION	Y35 STATION	OFFSET
159	BY35-159	369198.4380	2502765.0770	33.70	OUTSIDE PROJECT LIMITS	
160	BL-38	369220.3470	2502315.9880	28.07	14+01.67	37.19 RT

BY36

POINT	DESC.	NORTH	EAST	ELEVATION	Y36 STATION	OFFSET
161	BL-41	367481.3140	2501797.5940	7.03	10+63.01	77.38 RT
162	BY36-162	367533.0390	2501448.8070	7.60	OUTSIDE PROJECT LIMITS	

BY37

POINT	DESC.	NORTH	EAST	ELEVATION	Y37 STATION	OFFSET
163	BL-43	366554.2900	2501630.2960	12.14	10+09.24	48.11 RT
164	BY37-164	366471.9230	2501594.3960	15.86	10+63.55	22.24 LT
165	BY37-165	366628.1800	2501343.3930	22.10	13+49.50	21.22 LT
166	BY37-166	366791.8690	2501154.3440	19.67	OUTSIDE PROJECT LIMITS	

BY39

POINT	DESC.	NORTH	EAST	ELEVATION	Y39 STATION	OFFSET
169	BL-44	366071.2240	2501789.5760	25.04	10+65.49	62.76 RT
170	BY39-170	365778.7770	2501532.3120	34.36	14+49.02	28.03 LT
171	BY39-171	365573.8510	2501190.8550	32.07	OUTSIDE PROJECT LIMITS	

BY40

POINT	DESC.	NORTH	EAST	ELEVATION	Y40 STATION	OFFSET
172	BL-46	365106.6550	2502342.7720	33.92	10+82.76	67.12 RT
173	BY40-173	364951.8630	2501946.4210	33.11	OUTSIDE PROJECT LIMITS	

BY41

POINT	DESC.	NORTH	EAST	ELEVATION	Y41 STATION	OFFSET
174	BY41-174	364941.4160	2503016.0100	32.15	OUTSIDE PROJECT LIMITS	
175	BL-47	364612.4640	2502699.2710	30.69	14+32.34	20.09 LT

BY42

POINT	DESC.	NORTH	EAST	ELEVATION	Y42 STATION	OFFSET
176	BL-48	364201.8830	2502851.6530	24.30	10+59.60	19.68 LT
177	BY42-177	364150.0520	2502719.6980	25.97	11+96.71	16.37 RT

BY43

POINT	DESC.	NORTH	EAST	ELEVATION	Y43 STATION	OFFSET
178	BY43-178	364282.1360	2503004.8860	26.39	11+82.44	13.88 RT
179	BL-48	364201.8830	2502851.6530	24.30	OUTSIDE PROJECT LIMITS	

BY44

POINT	DESC.	NORTH	EAST	ELEVATION	Y44 STATION	OFFSET
180	BL-48	364201.8830	2502851.6530	24.30	10+53.71	234.94 RT
181	BY44-181	364001.1000	2502949.2070	19.50	10+68.61	13.35 RT
182	BY44-182	363739.7160	2502801.3800	21.79	OUTSIDE PROJECT LIMITS	

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SURVEY CONTROL SHEET U-3810

BY45

POINT	DESC.	NORTH	EAST	ELEVATION	Y45 STATION	OFFSET
183	BL-50	362798.1520	2503619.2790	28.60	10+46.25	17.03 RT
184	BY45-184	362732.3630	2503531.9340	29.74	11+48.93	18.91 RT

BY47

POINT	DESC.	NORTH	EAST	ELEVATION	Y47 STATION	OFFSET
207	BL-53	359996.2790	2504503.1420	34.09	OUTSIDE PROJECT LIMITS	
208	BY47-208	360267.3100	2504338.3510	34.64	10+50.47	8.86 LT
209	BY47-209	360301.6670	2504193.4280	34.56	11+97.76	8.28 RT

BY48

POINT	DESC.	NORTH	EAST	ELEVATION	Y48 STATION	OFFSET
187	BY48-187	360754.3590	2504873.4260	35.61	13+62.98	17.49 LT
188	BY48-188	360199.6420	2504857.2560	36.61	19+18.47	29.84 LT
189	BL-53	359996.2790	2504503.1420	34.09	23+08.89	69.82 LT

BY49

POINT	DESC.	NORTH	EAST	ELEVATION	Y49 STATION	OFFSET
190	BL-57	357597.5950	2504658.8470	36.41	10+38.96	72.82 LT
191	BY49-191	357879.3580	2504349.4590	37.07	14+17.58	25.46 RT

BY50

POINT	DESC.	NORTH	EAST	ELEVATION	Y50 STATION	OFFSET
192	BY50-192	357619.1660	2505081.5240	34.63	11+40.73	12.54 RT
193	BY50-193	357505.1300	2504794.9170	35.06	14+49.18	14.65 RT
194	BL-57	357597.5950	2504658.8470	36.41	15+40.49	151.50 RT
195	BY50-195	357290.8520	2504271.1500	35.94	20+15.08	13.06 RT

BY51

POINT	DESC.	NORTH	EAST	ELEVATION	Y51 STATION	OFFSET
196	BL-58	356740.2810	2504670.1970	39.35	10+36.19	25.12 RT
197	BY51-197	356689.8760	2504381.7930	36.86	13+24.90	23.52 LT

BY52

POINT	DESC.	NORTH	EAST	ELEVATION	Y52 STATION	OFFSET
198	BY52-198	356327.1870	2505064.7990	38.16	OUTSIDE PROJECT LIMITS	
199	BY52-199	356410.8100	2504775.2790	39.87	10+87.26	32.65 RT
200	BL-58	356740.2810	2504670.1970	39.35	OUTSIDE PROJECT LIMITS	

BY53

POINT	DESC.	NORTH	EAST	ELEVATION	Y53 STATION	OFFSET
201	GPS U3810-1	355617.4820	2506165.2420	36.43	OUTSIDE PROJECT LIMITS	
202	BY53-202	355537.4680	2505733.0340	36.76	10+65.22	79.27 LT
203	BY53-203	355637.3360	2505171.9720	39.61	16+35.09	82.22 LT
204	BL-59	355909.4700	2504756.1840	41.30	20+93.14	110.47 RT
205	BY53-205	355833.0470	2504138.8800	37.38	26+86.54	76.02 LT
206	BY53-206	355917.8320	2503688.7220	39.55	31+44.61	73.81 LT

NOTE: THERE WERE NO SUPPLEMENTAL BENCHMARKS SET FOR THIS PROJECT.

PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-H
Location and Surveys	

SURVEY CONTROL SHEET U-3810

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+30.00	-60.00	381426.8547	2486874.8242
L	11+60.00	-55.00	381399.5025	2486888.1230
L	11+88.00	55.00	381312.9689	2486814.6659
L	18+67.00	55.00	380759.4386	2487207.9154
L	19+77.00	-55.00	380733.4738	2487361.2982
L	19+77.00	-60.00	380736.3684	2487365.3726
L	19+87.00	55.00	380661.6129	2487277.4145
L	22+25.00	-60.00	380534.1953	2487509.0042
L	22+25.00	-55.00	380531.2995	2487504.9281
L	26+37.00	55.00	380131.7238	2487653.8684
L	27+10.00	-55.00	380135.9207	2487785.8206
L	27+57.00	55.00	380033.8981	2487723.3676
L	28+30.00	-55.00	380038.0950	2487855.3198
L	30+97.00	55.00	379756.7253	2487920.2819
L	32+17.00	55.00	379658.8996	2487989.7811
L	34+00.00	-55.00	379573.4230	2488185.4409
L	35+40.00	-55.00	379459.2931	2488266.5232
L	36+45.00	-55.00	379373.6956	2488327.3350
L	37+31.00	55.00	379239.8796	2488287.4692
L	37+45.00	-65.00	379297.9658	2488393.4031
L	38+64.00	-55.00	379197.9430	2488454.4016
L	39+45.00	55.00	379066.0764	2488418.7864
L	41+78.00	-55.00	378966.9881	2488656.4941
L	43+18.54	55.00	378790.4522	2488682.4140
L	43+18.54	-54.31	378871.6954	2488755.5502
L	49+30.00	-54.33	378462.6120	2489210.0104
L	50+11.00	55.00	378327.1601	2489197.0606
L	50+25.00	-112.00	378441.9118	2489319.1988
L	51+01.23	110.00	378225.9140.	2489227.3237
L	51+45.00	-112.00	378361.6255	2489408.3846
L	52+91.00	110.00	378098.9485	2489368.3629
L	52+91.00	55.00	378139.8254	2489405.1608
L	53+24.00	-76.00	378215.1078	2489517.3328
L	53+80.00	-55.08	378162.0892	2489544.9531
L	55+96.00	55.00	377935.7643	2489631.8414
L	56+70.00	-54.35	377967.5283	2489760.0032
L	56+70.00	-76.00	377983.6156	2489774.4852
L	57+16.00	55.00	377855.4780	2489721.0272
L	58+62.00	55.00	377757.7963	2489829.5366
L	59+82.00	-70.04	377770.4407	2490002.3800
L	60+51.00	60.00	377627.6293	2489966.6590
L	61+20.06	-70.00	377678.0422	2490104.9626
L	61+91.00	70.00	377525.4392	2490068.5459
L	62+85.00	70.00	377466.4711	2490148.6373
L	65+65.00	70.00	377330.2510	2490411.0489
L	66+00.00	-70.00	377449.9446	2490491.6354
L	67+46.00	70.00	377275.5204	2490590.9110
L	67+72.00	-60.00	377394.4352	2490649.5221
L	68+30.00	60.00	377263.5441	2490674.6520
L	68+80.00	-71.00	377377.2427	2490756.7108
L	68+80.00	-60.00	377366.6139	2490753.8771
L	69+22.00	-71.00	377366.4233	2490797.2933
L	69+22.00	-95.00	377389.6133	2490803.4758
L	69+72.00	60.00	377226.9643	2490811.8596
L	69+72.00	95.00	377193.1455	2490802.8434
L	69+74.00	-112.00	377392.6441	2490858.1001
L	69+88.00	-71.00	377349.4214	2490861.0658
L	70+17.00	95.00	377181.5533	2490846.3247
L	70+17.00	60.00	377215.3720	2490855.3409
L	71+82.96	-71.00	377299.1988	2491049.4461
L	72+17.69	60.00	377163.6727	2491049.2604
L	72+74.67	-80.00	377283.3416	2491141.7054
L	74+98.00	60.00	377080.6200	2491311.0008
L	76+63.00	55.00	377025.0156	2491463.0465
L	77+21.67	-80.00	377124.3899	2491571.7652

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	77+98.96	-115.00	377121.9397	2491658.8637
L	80+67.29	-110.00	376984.3669	2491900.8389
L	80+67.29	55.00	376843.1635	2491815.4774
L	82+90.00	110.00	376680.8808	2491977.6098
L	82+90.00	55.00	376727.9486	2492006.0636
L	85+74.05	-114.04	376725.6567	2492336.6023
L	86+72.00	110.00	376483.2559	2492304.5171
L	86+72.00	55.00	376530.3237	2492332.9709
L	88+34.56	-95.00	376574.5944	2492549.6863
L	90+10.00	55.00	376355.4618	2492622.2240
L	90+19.73	-95.00	376478.7944	2492708.1528
L	92+00.00	92.00	376225.5029	2492765.6802
L	93+11.00	80.00	376178.3472	2492866.8797
L	93+11.00	55.00	376199.7417	2492879.8132
L	95+10.00	-65.00	376199.4857	2493112.1953
L	95+10.00	-55.76	376191.5765	2493107.4140
L	96+90.00	55.00	376003.6688	2493204.1532
L	96+92.57	-65.00	376105.0366	2493268.4311
L	97+85.00	85.00	375928.8479	2493269.9319
L	98+25.00	85.00	375908.1542	2493304.1630
L	98+55.69	-65.00	376020.6423	2493408.0284
L	98+95.00	55.00	375897.6135	2493379.5878
L	102+00.00	65.00	375731.2662	2493635.4267
L	102+31.00	-65.00	375826.4798	2493729.2104
L	103+28.03	-65.50	375776.7099	2493812.5052
L	103+70.00	55.00	375651.8757	2493786.0825
L	105+15.13	55.00	375576.7963	2493910.2774
L	105+76.00	-55.00	375639.7165	2494019.1221
L	108+35.00	-55.00	375509.8583	2494241.8366
L	108+76.00	-90.00	375520.2248	2494294.5446
L	109+38.00	-90.00	375490.1265	2494348.2161
L	109+60.00	-65.00	375457.6559	2494355.1676
L	111+68.66	-65.00	375358.5299	2494537.4881
L	111+68.66	55.00	375252.6095	2494481.0891
L	115+68.00	55.00	375064.9220	2494833.5763
L	116+70.00	70.00	375003.7427	2494916.5589
L	117+90.00	110.00	374912.0387	2495003.6806
L	117+90.00	70.00	374947.3437	2495022.4793
L	118+30.56	-65.00	375047.4419	2495121.7329
L	118+90.00	-110.00	375059.2252	2495195.3450
L	119+50.00	-110.00	375031.0256	2495248.3052
L	119+50.00	-70.00	374995.7188	2495229.5055
L	119+60.00	110.00	374832.1382	2495153.7337
L	119+60.00	62.00	374874.5064	2495176.2933
L	120+90.00	-70.00	374929.9199	2495353.0794
L	121+20.00	62.00	374799.3076	2495317.5206
L	121+43.00	-115.00	374944.7324	2495421.0116
L	122+15.00	-115.00	374910.8911	2495484.5629
L	122+50.00	69.00	374732.0300	2495428.9778
L	122+68.00	65.00	374727.1008	2495446.7458
L	122+75.00	-70.00	374842.9714	2495516.3735
L	123+07.00	65.00	374708.7711	2495481.1700
L	123+25.00	60.00	374704.7246	2495499.4080
L	126+85.00	-70.00	374650.2746	2495878.2684
L	127+25.00	-65.13	374627.1787	2495911.2877
L	127+40.00	60.00	374509.6779	2495865.7163
L	128+90.00	55.00	374443.5924	2496000.4669
L	130+85.00	60.00	374347.5306	2496170.2377
L	130+85.00	55.00	374351.9439	2496172.5877
L	131+60.00	-65.36	374422.9327	2496295.3562
L	131+75.00	-95.00	374442.0452	2496322.5268
L	132+50.00	-100.00	374411.2110	2496391.0782
L	132+80.00	-70.00	374370.6293	2496403.4574
L	132+94.00	60.00	374249.3022	2496354.7159
L	133+80.00	-65.47	374319.6306	2496489.5950

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	134+03.00	55.00	374202.4864	2496453.2769
L	136+62.09	55.00	374080.7166	2496681.9672
L	137+78.00	65.00	374016.3451	2496774.6711
L	137+97.49	-66.53	374118.1061	2496860.2583
L	139+96.21	-61.51	373997.1099	2497025.8129
L	142+28.00	65.00	373750.0622	2497117.9589
L	143+80.00	55.00	373650.1632	2497226.8080
L	145+99.45	55.00	373482.6621	2497358.8845
L	151+45.00	-82.24	373115.3302	2497784.9427
L	152+85.00	-63.75	372990.1727	2497850.3447
L	162+50.00	-56.80	372196.7856	2498399.7173
L	162+75.46	55.00	372111.6484	2498322.9056
L	163+30.00	-65.00	372138.5465	2498451.8471
L	163+70.00	55.00	372033.3083	2498381.7641
L	164+35.00	85.00	371961.9041	2498402.4724
L	164+68.00	85.00	371935.9248	2498425.7306
L	165+55.00	-90.00	371995.3875	2498611.7552
L	166+60.00	115.00	371772.5162	2498552.5365
L	166+60.00	70.00	371806.8875	2498581.5815
L	167+25.00	-95.00	371894.6386	2498735.4197
L	167+42.00	117.00	371715.8073	2498620.2886
L	167+75.00	-110.00	371878.7760	2498781.7136
L	168+60.00	-95.00	371821.8854	2498838.7918
L	169+50.00	85.00	371621.4296	2498823.5603
L	170+45.00	70.00	371588.9245	2498919.1978
L	171+75.00	-95.00	371690.2764	2499102.2574
L	172+05.00	-121.00	371705.2134	2499137.2982
L	172+66.93	70.00	371504.7968	2499135.4869
L	173+59.44	60.00	371489.0585	2499231.2195
L	175+26.00	-125.00	371630.1245	2499436.3235
L	176+50.00	-140.00	371615.8008	2499560.4034
L	177+00.00	60.00	371409.6552	2499562.3960
L	178+17.00	65.00	371377.5167	2499675.0064
L	179+00.00	-130.00	371547.7895	2499801.1823
L	180+10.00	65.00	371332.5172	2499862.6871
L	180+10.00	60.00	371337.3794	2499863.8528
L	182+50.00	-100.00	371437.0167	2500134.5429
L	184+30.00	60.00	371239.4575	2500272.2782
L	184+30.00	73.00	371226.8157	2500269.2473
L	184+81.45	73.00	371214.8222	2500319.2802
L	185+13.82	-100.00	371374.9915	2500392.3015
L	185+76.00	73.00	371191.7373	2500408.1130
L	187+00.00	-89.00	371310.0405	2500574.5570
L	187+12.00	65.00	371160.2576	2500536.7901
L	187+93.00	55.00	371143.0304	2500614.5879
L	190+09.58	-80.00	371181.6997	2500867.6549
L	190+81.72	55.00	371028.5555	2500872.5369
L	190+85.00	-55.00	371124.8544	2500925.8031
L	192+65.00	-55.00	371042.4662	2501085.8412
L	192+65.00	-70.00	371055.8027	2501092.7069
L	192+95.00	-55.00	371028.7348	2501112.5142
L	192+95.00	-70.00	371042.0714	2501119.3799
L	200+20.79	-55.00	370696.5315	2501757.8151
L	200+20.79	55.00	370598.7305	2501707.4668
L	200+65.00	-55.00	370674.1197	2501798.9229
L	201+60.00	-55.00	370619.5043	2501883.3754
L	203+35.00	55.00	370421.9970	2501942.6951
L	204+37.00	-55.00	370415.1805	2502092.3973
L	204+37.00	-60.00	370418.1978	2502096.3843
L	204+60.00	55.00	370331.3855	2502017.5304
L	207+10.00	-60.00	370164.2237	2502235.4824

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "GPS U4007-3"
WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
NORTHING: 376224.375(ft) EASTING: 2480992.509(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999911272
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"GPS U4007-3" TO -L- STATION 10+00.00 IS
N 47°30'51.2" E 7808.19 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-1
Location and Surveys	

SURVEY CONTROL SHEET U-3810

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	207+95.00	-65.00	370079.3435	2502267.7826
L	208+49.00	65.00	369996.7080	2502153.8865
L	208+49.00	55.00	369998.7420	2502163.6775
L	209+15.00	-55.00	369952.2270	2502283.1568
L	209+35.49	65.00	369917.2969	2502166.5675
L	209+35.49	-55.00	369930.6870	2502285.8163
L	210+00.00	55.00	369854.3068	2502183.7020
L	214+30.00	55.00	369426.9926	2502231.6871
L	214+30.00	60.00	369426.4346	2502226.7183
L	216+14.00	-55.00	369256.4171	2502361.5332
L	216+25.00	55.00	369233.2106	2502253.4477
L	216+25.00	60.00	369232.6526	2502248.4790
L	217+25.00	-55.00	369146.1104	2502373.9200
L	218+82.74	55.00	368977.0832	2502282.2095
L	218+82.74	-55.00	368989.3584	2502391.5224
L	223+04.20	-374.72	368500.2391	2502694.1976
L	223+58.01	-55.00	368499.2527	2502368.6683
L	224+97.00	-952.95	368096.3699	2503191.3020
L	225+73.12	-848.38	368014.0459	2503053.5055
L	226+29.82	55.00	368271.5033	2502184.7911
L	226+51.06	-843.52	367902.3767	2503004.4079
L	226+76.18	-835.22	367869.7315	2502981.2120
L	227+22.12	-766.00	367834.7659	2502888.8444
L	227+36.71	-645.67	367868.0940	2502771.2500
L	227+47.64	-638.85	367857.7500	2502758.5000
L	228+80.94	-681.31	367719.5362	2502736.8572
L	229+87.25	-665.48	367631.5315	2502675.1385
L	230+03.52	-498.74	367691.5614	2502518.7335
L	230+22.33	-626.68	367617.5122	2502624.7570
L	230+87.54	-436.45	367644.2729	2502425.4403
L	231+33.44	-364.92	367635.2191	2502340.9334
L	231+34.60	-288.95	367668.1629	2502272.4737
L	231+84.00	100.00	367797.9490	2501902.5025
L	231+84.00	57.29	367778.8445	2501940.7038
L	231+93.67	-237.52	367638.3303	2502200.0475
L	234+03.48	-178.58	367477.0411	2502053.4873
L	234+31.87	-85.00	367493.5091	2501957.0968
L	235+55.54	100.00	367465.6491	2501736.3194
L	236+44.00	57.28	367367.4196	2501734.9623
L	237+88.47	-85.00	367174.9545	2501797.8035
L	238+18.68	-55.00	367162.4481	2501758.6535
L	242+40.00	-55.00	366776.5688	2501673.2872
L	242+40.00	-90.00	366776.3220	2501708.2863
L	244+38.00	63.90	366567.9880	2501573.7026
L	245+35.00	-90.00	366511.4780	2501745.7293
L	245+35.00	-55.00	366501.5386	2501712.1703
L	245+78.28	90.00	366415.4345	2501587.5107
L	247+59.98	-55.00	366306.1607	2501794.8758
L	247+59.98	90.00	366235.0051	2501668.5378
L	248+73.00	-55.00	366207.6890	2501850.3364
L	249+10.00	90.00	366104.2942	2501742.1535
L	249+49.00	-70.00	366148.8304	2501900.7017
L	249+99.00	-70.00	366105.2649	2501925.2384
L	250+80.00	-55.00	366027.3278	2501951.9181
L	251+45.00	53.59	365917.4040	2501889.2003
L	256+24.00	70.00	365491.9936	2502109.9632
L	256+24.00	53.71	365499.9876	2502124.1568
L	258+00.00	-55.00	365399.9846	2502305.2459
L	260+85.00	70.00	365090.3197	2502336.1911
L	262+15.00	53.86	364984.9707	2502414.0509
L	265+80.37	-55.00	364720.0390	2502688.2002
L	267+18.70	-55.00	364599.5154	2502756.0806
L	270+43.00	54.06	364263.4252	2502820.1988
L	270+63.00	-55.00	364299.5212	2502925.0437
L	271+35.00	54.09	364183.2533	2502865.3262
L	271+59.00	-55.00	364215.8744	2502972.1522
L	273+20.00	54.13	364022.0382	2502956.0714
L	273+20.00	110.00	363994.6226	2502907.3941
L	274+60.00	-55.00	363953.6101	2503119.8629

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	274+60.00	-90.00	363970.7858	2503150.3587
L	275+15.00	-90.00	363922.8637	2503177.3491
L	275+15.00	-55.00	363905.6881	2503146.8532
L	275+30.00	110.00	363811.6475	2503010.4481
L	275+30.00	54.19	363839.0373	2503059.0795
L	282+81.50	-55.00	363237.8315	2503522.9987
L	282+81.50	53.85	363184.4145	2503428.1611
L	282+90.00	55.00	363176.5723	2503431.2405
L	285+60.00	-55.00	362984.6196	2503650.5131
L	285+60.00	-77.00	362993.5923	2503670.6003
L	285+90.00	-77.00	362965.4355	2503683.0091
L	285+90.00	-55.00	362956.6641	2503662.8333
L	287+05.00	55.00	362808.4392	2503604.9688
L	287+68.00	55.00	362750.5873	2503626.8279
L	289+98.27	-55.00	362565.2977	2503802.1782
L	289+98.27	55.00	362535.5327	2503696.2818
L	292+45.00	-55.00	362327.7711	2503868.9414
L	293+07.00	-86.00	362276.4724	2503915.5615
L	293+47.00	-86.00	362237.9646	2503926.3852
L	293+65.00	55.00	362182.4828	2503795.5159
L	293+90.00	65.00	362155.7095	2503792.6538
L	294+07.00	-55.00	362171.8146	2503912.7771
L	294+40.00	65.00	362107.5748	2503806.1833
L	295+18.00	55.00	362035.1905	2503836.9164
L	304+00.00	-55.00	361215.8591	2504181.4741
L	304+00.00	55.00	361186.0941	2504075.5777
L	311+90.00	55.00	360425.5655	2504289.3447
L	312+20.97	54.21	360395.9679	2504298.4860
L	314+28.00	-55.00	360226.2093	2504459.6417
L	315+30.00	53.02	360098.7845	2504383.2491
L	316+15.00	70.00	360012.3621	2504389.9075
L	316+65.00	70.00	359964.2274	2504403.4371
L	316+70.00	-65.00	359995.9432	2504534.7517
L	317+40.00	55.00	359896.0842	2504438.1718
L	317+65.00	-65.00	359904.4872	2504560.4579
L	318+80.00	-84.00	359798.9186	2504609.8671
L	320+45.56	55.00	359601.9205	2504520.8522
L	320+45.56	-84.00	359639.5349	2504654.6661
L	320+83.00	-84.00	359602.4185	2504664.8492
L	321+45.00	-150.00	359556.4274	2504744.7860
L	323+05.00	-152.00	359392.6589	2504782.4569
L	323+89.00	-147.10	359304.9529	2504792.8572
L	325+68.00	-149.13	359118.9833	2504819.1631
L	327+50.00	-140.00	358928.0687	2504823.3058
L	328+37.90	55.00	358834.1666	2504630.5732
L	328+37.90	100.00	358833.7214	2504585.5754
L	330+00.00	110.00	358671.5321	2504577.1796
L	331+81.00	-55.00	358492.1735	2504743.9623
L	331+81.00	-111.00	358492.7275	2504799.9595
L	332+30.00	125.00	358441.3950	2504564.4559
L	334+10.00	123.00	358261.4236	2504568.2366
L	334+10.00	55.00	358262.0964	2504636.2333
L	336+90.00	60.00	357982.0606	2504634.0038
L	336+90.00	55.00	357982.1101	2504639.0035
L	339+50.00	60.00	357722.0733	2504636.5761
L	340+23.12	-55.00	357650.0925	2504752.2939
L	340+66.50	55.00	357605.6260	2504642.7306
L	342+34.52	-105.00	357439.2008	2504804.3830
L	342+97.62	55.00	357374.5223	2504645.0151
L	349+10.00	55.00	356762.1698	2504651.0738
L	350+00.00	75.00	356671.9763	2504631.9673
L	352+65.04	-105.00	356408.7344	2504814.5807
L	353+40.00	-55.00	356333.2791	2504765.3227
L	356+30.00	-55.00	356043.2933	2504768.1919
L	356+30.00	-50.00	356043.2439	2504763.1921
L	356+70.00	75.00	356002.0091	2504638.5940
L	357+17.00	79.00	355954.9718	2504635.0592
L	357+47.83	-50.00	355925.4174	2504764.3579

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y	12+60.00	-57.50	381987.2736	2487381.0422
Y	12+60.00	-90.00	381963.0997	2487402.7648
Y	19+50.00	-90.00	381501.9119	2486889.5340
Y	22+00.00	-100.00	381327.3768	2486710.2647
Y	24+50.00	-100.00	381160.2798	2486524.3115
Y	28+00.00	-57.50	380957.9560	2486235.5705
Y	28+00.00	-75.00	380944.9393	2486247.2673

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	10+85.00	30.00	380717.7205	2487200.8851
Y2	10+85.00	-30.00	380668.6842	2487235.4602

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y3	11+04.92	-30.00	380029.4877	2487665.1378
Y3	11+04.92	30.00	380078.5240	2487630.5626

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y4	13+71.00	30.00	380128.5269	2487828.3911
Y4	13+71.00	-30.00	380079.5029	2487862.9837

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y5	11+00.00	30.00	379706.3571	2487900.9971
Y5	11+00.00	-30.00	379657.3208	2487935.5722

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y6	13+60.00	30.00	379562.9221	2488240.9590
Y6	13+60.00	-30.00	379513.8981	2488275.5515

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y7	13+48.00	26.05	379293.2404	2488430.0108
Y7	13+50.00	-34.06	379243.4137	2488463.6882
Y7	15+20.80	40.00	379203.0616	2488281.9502
Y7	15+45.00	-40.00	379124.2306	2488309.7205
Y7	15+60.00	32.69	379173.5714	2488254.2830
Y7	15+60.00	40.00	379179.4219	2488249.8969
Y7	16+00.00	-28.88	379100.3392	2488259.7716

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y9	11+00.00	30.00	378273.4660	2489189.3803

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y10	16+36.72	30.00	378364.2405	2489435.3696
Y10	16+60.00	-30.00	378344.6455	2489496.6518

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y11	10+85.00	30.00	377893.2330	2489634.1806
Y11	11+25.00	-30.00	377823.3881	2489652.1160

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "GPS U4007-3"
WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
NORTHING: 376224.375(ft) EASTING: 2480992.509(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999911272
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"GPS U4007-3" TO -L- STATION 10+00.00 IS
N 47°30'51.2" E 7808.19 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-J
Location and Surveys	

SURVEY CONTROL SHEET U-3810

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y12	15+56.93	30.00	378075.0096	2489891.2057
Y12	15+56.93	-30.00	378078.9103	2489951.0788
Y12	16+00.00	-43.00	378030.1196	2489963.4626
Y12	16+45.00	30.00	377997.0291	2489883.9942
Y12	16+70.00	-57.12	377946.7214	2489959.6909
Y12	17+10.00	50.00	377952.2143	2489845.5697

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y13	10+95.00	-30.00	377458.8698	2490111.0205
Y13	11+05.00	30.00	377491.5040	2490059.6881

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y14	14+25.00	31.67	377488.4412	2490551.5554
Y14	14+46.00	-28.53	377452.3906	2490604.1339
Y14	17+25.56	100.00	377260.3917	2490377.9341
Y14	17+25.56	-80.00	377163.0665	2490529.3535
Y14	18+50.00	85.00	377147.5994	2490323.2679
Y14	21+85.16	-65.00	376784.5554	2490268.2333
Y14	22+44.82	-55.00	376739.7692	2490227.5593
Y14	22+59.81	-55.00	376727.1590	2490219.4541
Y14	22+59.81	70.00	376794.7459	2490114.3018
Y14	27+15.10	70.00	376442.4429	2489845.0515
Y14	27+15.10	30.00	376415.6532	2489874.7552
Y14	27+15.10	-55.00	376358.7249	2489937.8755
Y14	28+65.00	-30.00	376264.1507	2489818.9131
Y14	28+65.00	-55.00	376247.4071	2489837.4779

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y17	14+26.00	26.27	376307.6684	2492631.0604
Y17	14+26.00	-26.23	376280.6100	2492676.0555

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y18	11+35.00	30.00	376278.4269	2493485.7030
Y18	11+35.00	40.00	376285.3376	2493478.4751
Y18	12+25.00	-30.00	376171.9118	2493466.8740
Y18	12+25.00	-40.00	376165.0011	2493474.1019
Y18	13+32.77	-40.00	376087.1041	2493399.6232
Y18	13+75.33	40.00	376111.6286	2493312.3884

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y19	11+50.00	18.00	375835.4247	2493769.8060
Y19	11+50.00	-18.00	375816.9143	2493800.6826

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y20	11+05.00	40.00	375671.8223	2493652.7406
Y20	11+05.00	-40.00	375634.0012	2493723.2357
Y20	11+62.29	30.00	375616.6118	2493634.4681
Y20	11+62.29	-30.00	375588.2460	2493687.3395

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y21	10+96.00	-30.00	374725.5946	2495383.6490
Y21	11+10.00	30.00	374741.4060	2495324.1006

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y22	10+84.00	-50.00	374430.7038	2495963.0242
Y22	10+84.00	50.00	374477.6574	2495874.7329
Y22	11+05.00	50.00	374459.1162	2495864.8726
Y22	11+60.00	-50.00	374363.6024	2495927.3395
Y22	11+60.00	40.00	374405.8606	2495847.8773

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y23	10+79.00	30.00	374223.5854	2496362.5543
Y23	10+85.00	-30.00	374190.1157	2496412.7119

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y24	11+00.00	35.00	373697.7514	2497120.6726
Y24	11+00.00	-35.00	373647.7391	2497169.6415

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y25	11+90.00	25.00	373124.1023	2497822.5986
Y25	11+90.00	30.00	373128.1882	2497819.7215
Y25	11+90.00	-25.00	373083.2174	2497851.3882
Y25	11+90.00	-30.00	373079.1304	2497854.2661
Y25	12+35.00	-45.00	373040.9575	2497826.1088

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y26	11+45.00	25.00	372149.6087	2498544.9265
Y26	11+45.00	30.00	372153.6303	2498541.9613
Y26	11+45.00	-25.00	372109.3646	2498574.5988
Y26	11+45.00	-30.00	372105.3377	2498577.5678
Y26	11+75.00	-30.00	372087.5345	2498553.4215
Y26	11+95.00	30.00	372123.9582	2498501.7175

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y27	10+85.00	-30.00	371470.8295	2499185.9053

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y28	10+90.00	30.00	371372.7602	2499588.2066
Y28	10+90.00	-30.00	371358.5022	2499646.4873

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y29	11+73.00	40.00	371791.1070	2500701.3580
Y29	11+73.00	29.93	371784.7480	2500709.1628
Y29	11+73.00	-30.07	371746.8490	2500755.6788
Y29	11+73.00	-40.00	371740.5755	2500763.3787
Y29	12+33.58	40.00	371744.1388	2500663.0905
Y29	12+33.58	-40.00	371693.6072	2500725.1112
Y29	13+90.00	-50.00	371565.2523	2500649.9495
Y29	14+80.00	70.00	371536.9344	2500502.1787
Y29	15+25.00	71.60	371492.5516	2500482.4711
Y29	16+16.18	-50.00	371367.7307	2500570.0890
Y29	18+53.00	-45.00	371138.7614	2500502.2638
Y29	18+53.00	35.00	371162.4826	2500425.8616
Y29	20+00.00	24.83	371022.2057	2500387.8729
Y29	20+00.00	35.00	371025.8622	2500378.3853
Y29	20+00.00	-35.24	371000.6016	2500443.9287
Y29	20+00.00	-45.00	370997.0927	2500453.0332

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y31	11+50.00	-30.00	371143.2139	2500915.2868

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y32	13+90.00	30.00	370678.7528	2501831.1249
Y32	13+90.00	-30.00	370639.9835	2501876.9173

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y33	11+00.00	30.00	370366.6383	2501935.9107
Y33	11+00.00	-30.00	370317.4799	2501970.3119

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y34	13+27.00	-30.00	369993.4856	2502355.5245
Y34	13+70.00	30.00	370048.5311	2502306.3413

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y35	12+90.00	30.00	369225.4500	2502427.7732
Y35	13+40.00	-30.00	369160.3280	2502384.6557

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y36	10+75.00	-30.00	367399.2160	2501727.3440

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y37	11+47.05	25.00	366535.0181	2501528.9762

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y39	10+91.00	-65.00	365947.0232	2501828.8988
Y39	11+31.00	65.00	366041.5707	2501731.1196
Y39	12+32.88	65.00	365992.3957	2501641.8918
Y39	12+32.88	-65.00	365878.5414	2501704.6388
Y39	13+70.00	65.00	365901.5794	2501518.1316
Y39	13+70.00	35.02	365879.8980	2501538.8387
Y39	13+70.00	-34.98	365829.2761	2501587.1856
Y39	13+70.00	-65.00	365807.5673	2501607.9187

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y40	11+15.00	-25.00	365010.2600	2502327.5113
Y40	11+51.00	25.00	365053.0234	2502283.1580
Y40	11+51.00	33.00	365060.8947	2502281.7285

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y41	13+38.77	30.00	364712.1113	2502735.7939
Y41	13+51.89	-30.00	364658.5893	2502765.9205

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y42	10+75.00	25.00	364228.8567	2502812.8524
Y42	11+15.00	10.00	364193.1382	2502789.4175
Y42	11+15.00	-10.00	364176.9939	2502801.2226
Y42	11+15.00	-25.00	364164.8857	2502810.0765
Y42	11+15.00	25.00	364205.2465	2502780.5637

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y43	12+00.00	-25.00	364242.9478	2502988.5450
Y43	12+25.00	25.00	364289.7451	2502958.0980

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y45	10+75.00	9.96	362777.7594	2503592.9331
Y45	10+75.00	-10.04	362761.4846	2503604.5577

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "GPS U4007-3"
WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
NORTHING: 376224.375(ft) EASTING: 2480992.509(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999911272
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"GPS U4007-3" TO -L- STATION 10+00.00 IS
N 47°30'51.2" E 7808.19 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-K
Location and Surveys	

SURVEY CONTROL SHEET U-3810

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y48	18+50.00	29.40	360289.3476	2504847.3150
Y48	18+50.00	40.00	360294.3685	2504837.9847
Y48	19+00.00	40.00	360257.6154	2504814.3334
Y48	20+20.00	50.00	360196.2891	2504731.5908
Y48	21+05.43	50.00	360167.4857	2504665.7496
Y48	21+43.00	-31.23	360079.0510	2504651.9920
Y48	21+43.00	-40.00	360070.6198	2504654.4064
Y48	22+35.00	50.00	360131.8143	2504541.1843
Y48	22+40.00	-60.00	360024.6884	2504566.6607

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y49	11+15.00	25.00	357709.6632	2504599.9802
Y49	11+30.00	-25.00	357676.6168	2504559.5706

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y51	10+80.00	20.25	356735.1500	2504626.4169
Y51	10+80.00	-20.00	356694.8965	2504626.6655

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y52	10+85.00	-30.00	356348.1958	2504778.4619

FINAL ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y53	23+00.00	100.00	355936.4762	2504550.8284

END FINAL ROW MARKER CONCRETE OR GRANITE-E

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+15.76	-75.00	381447.1545	2486878.8026
L	11+34.00	112.41	381323.7433	2486736.5932
L	11+55.00	183.00	381265.7385	2486691.2062
L	11+77.00	66.69	381315.1637	2486798.7622
L	12+08.00	167.00	381231.7988	2486734.9451
L	12+34.00	-100.00	381365.2389	2486967.6654
L	12+63.00	67.00	381244.8780	2486848.3203
L	12+63.00	55.00	381251.8279	2486858.1029
L	12+72.00	-100.00	381334.2607	2486989.6735
L	13+95.00	-75.00	381219.5104	2487040.5298
L	14+35.00	55.00	381111.6111	2486957.7184
L	14+35.00	67.00	381104.6611	2486947.9358
L	14+60.00	55.00	381091.2307	2486972.1973
L	14+60.00	67.00	381084.2808	2486962.4148
L	17+55.00	55.00	380850.7426	2487143.0495
L	17+55.00	73.00	380840.3177	2487128.3756
L	17+80.00	55.00	380830.3622	2487157.5285
L	17+80.00	73.00	380819.9373	2487142.8546
L	21+53.00	75.00	380514.7042	2487357.2508
L	21+53.00	55.00	380526.2874	2487373.5551
L	21+78.00	55.00	380505.9070	2487388.0341
L	21+78.00	75.00	380494.3238	2487371.7298
L	22+77.00	74.00	380414.1968	2487429.8818
L	22+77.00	55.00	380425.2008	2487445.3709
L	23+02.00	55.00	380404.8205	2487459.8499
L	23+02.00	74.00	380393.8164	2487444.3608
L	23+90.00	55.00	380333.0816	2487510.8159
L	23+90.00	72.00	380323.2359	2487496.9573
L	24+15.00	55.00	380312.7013	2487525.2949
L	24+15.00	72.00	380302.8556	2487511.4363
L	25+50.00	76.00	380190.4850	2487586.3620
L	25+50.00	55.00	380202.6474	2487603.4815
L	25+75.00	55.00	380182.2670	2487617.9605
L	25+75.00	76.00	380170.1047	2487600.8410
L	27+17.00	-75.00	380141.7974	2487806.1790
L	27+46.76	72.00	380032.3989	2487703.5792
L	28+23.00	-80.00	380058.2805	2487871.6460
L	28+85.00	55.00	379929.5507	2487797.5000
L	28+85.00	72.00	379919.7044	2487783.6405
L	29+35.00	55.00	379888.7900	2487826.4580
L	29+35.00	72.00	379878.9437	2487812.5985
L	30+75.00	72.00	379764.8143	2487893.6817
L	30+75.00	55.00	379774.6600	2487907.5404
L	32+66.00	73.00	379608.5293	2488003.4860
L	32+66.00	55.00	379618.9541	2488018.1599
L	32+91.00	55.00	379598.5738	2488032.6389
L	32+91.00	73.00	379588.1489	2488017.9650
L	33+45.00	74.00	379543.5482	2488048.4245
L	33+45.00	55.00	379554.5522	2488063.9135
L	33+70.00	55.00	379534.1719	2488078.3925
L	33+70.00	74.00	379523.1678	2488062.9035
L	34+25.98	-80.00	379566.7222	2488220.8682
L	34+40.00	74.00	379466.1029	2488103.4446
L	34+40.00	55.00	379477.1069	2488118.9337
L	34+65.00	74.00	379445.7225	2488117.9236
L	34+65.00	55.00	379456.7265	2488133.4127
L	35+15.81	-79.00	379492.9090	2488272.0812
L	35+41.00	55.00	379394.7703	2488177.4288
L	35+69.00	76.00	379359.7819	2488176.5258

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	36+20.00	76.00	379318.2060	2488206.0630
L	36+35.00	85.00	379300.7654	2488207.4134
L	36+38.00	-94.00	379401.9893	2488355.0742
L	36+38.00	-84.00	379396.1977	2488346.9221
L	36+45.00	85.00	379292.6132	2488213.2050
L	36+48.00	-94.00	379393.8372	2488360.8658
L	36+48.00	-84.00	379388.0456	2488352.7137
L	36+60.00	76.00	379285.5974	2488229.2294
L	36+60.00	55.00	379297.7598	2488246.3489
L	38+70.00	110.00	379092.3358	2488327.4809
L	38+70.00	88.30	379105.6110	2488344.6408
L	39+92.00	80.00	379013.0284	2488430.6473
L	39+92.00	55.00	379029.2720	2488449.6511
L	40+46.00	80.00	378971.0609	2488467.3109
L	40+60.00	106.00	378942.8859	2488457.6663
L	40+70.00	106.00	378935.1632	2488464.6677
L	40+70.00	-81.00	379061.0404	2488602.9569
L	40+70.00	-81.00	379061.0404	2488602.9569
L	40+85.00	80.00	378941.2485	2488494.3495
L	42+56.00	80.00	378815.6488	2488618.2646
L	42+70.00	106.00	378786.7640	2488611.0180
L	42+80.00	106.00	378779.6559	2488618.6426
L	43+00.00	55.00	378803.1815	2488668.3787
L	43+00.00	80.00	378784.7257	2488651.5151
L	43+18.54	-78.00	378889.2998	2488771.3980
L	45+39.00	75.00	378628.0886	2488832.8821
L	45+39.00	55.00	378642.9529	2488846.2631
L	45+53.00	92.00	378606.0872	2488831.9132
L	45+63.00	-92.00	378736.1483	2488962.4510
L	45+63.00	92.00	378599.3967	2488839.3453
L	45+63.00	-84.00	378730.2025	2488957.0986
L	45+74.00	-92.00	378728.7887	2488970.6264
L	45+74.00	-84.00	378722.8430	2488965.2740
L	45+80.00	75.00	378600.6567	2488863.3532
L	45+80.00	55.00	378615.5218	2488876.7349
L	46+78.00	-75.00	378646.5726	2489036.5468
L	46+87.00	117.00	378497.8538	2488914.7777
L	47+07.00	55.00	378530.5521	2488971.1232
L	47+28.00	128.00	378462.2473	2488937.8899
L	47+50.00	55.00	378501.7828	2489003.0815
L	49+25.00	-75.00	378481.3166	2489220.1210
L	50+19.00	-132.00	378460.7889	2489328.1192
L	52+16.00	110.00	378149.1275	2489312.6218
L	52+45.00	136.00	378110.4014	2489316.7797
L	52+54.69	-132.00	378303.1029	2489503.2842
L	52+87.00	-132.00	378281.4828	2489527.3008
L	53+56.00	-76.00	378193.6983	2489541.1155
L	56+08.00	-54.35	378009.0082	2489713.9226
L	56+08.00	-76.00	378025.0969	2489728.4059
L	58+07.00	55.00	377794.5942	2489788.6598
L	58+20.00	83.00	377765.0865	2489779.5881
L	58+47.00	103.00	377732.1578	2489786.2739
L	58+57.00	55.00	377761.1416	2489825.8206
L	58+57.00	99.00	377728.4401	2489796.3822
L	59+13.00	-97.73	377837.1842	2489969.6235
L	60+16.00	81.00	377635.4386	2489926.5964
L	60+16.00	59.07	377651.7343	2489941.2660
L	60+31.00	111.00	377603.1064	2489917.6730
L	60+37.00	-91.00	377749.2215	2490057.2810

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "GPS U4007-3"
WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
NORTHING: 376224.375(ft) EASTING: 2480992.509(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999911272
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"GPS U4007-3" TO -L- STATION 10+00.00 IS
N 47°30'51.2" E 7808.19 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-L
Location and Surveys	

SURVEY CONTROL SHEET U-3810

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	60+41.00	111.00	377596.4159	2489925.1052
L	60+57.00	81.00	377608.0075	2489957.0682
L	60+57.00	60.32	377623.3742	2489970.9015
L	62+63.00	-91.00	377611.3172	2490222.2170
L	63+64.00	-89.00	377559.1002	2490299.6797
L	64+11.00	70.00	377397.6017	2490262.7552
L	64+11.00	90.00	377379.9596	2490253.3342
L	64+24.00	121.00	377345.9417	2490251.3915
L	64+33.00	121.00	377341.4027	2490260.1980
L	64+49.00	70.00	377379.2224	2490298.5246
L	64+49.00	92.00	377359.4977	2490288.7810
L	66+08.00	-90.00	377466.4506	2490505.1742
L	68+77.90	-87.00	377393.2432	2490758.8050
L	69+72.00	124.00	377165.1242	2490795.3729
L	69+80.83	-92.00	377371.5599	2490859.5468
L	70+17.00	124.00	377153.5320	2490838.8542
L	72+03.71	-92.00	377314.1443	2491074.9070
L	72+65.33	-92.60	377298.0944	2491135.9170
L	74+25.00	80.00	377085.6761	2491237.1270
L	74+25.00	60.00	377104.5992	2491243.6011
L	74+38.00	97.00	377065.4935	2491243.5174
L	74+49.00	97.00	377061.9858	2491253.5672
L	74+50.00	-141.00	377286.2008	2491333.3963
L	74+50.00	-101.00	377248.4637	2491320.1331
L	74+60.00	-141.00	377282.7127	2491343.2681
L	74+60.00	-101.00	377245.0200	2491329.8792
L	74+66.00	84.00	377068.7338	2491273.4491
L	74+66.00	60.00	377091.3333	2491281.5277
L	79+46.00	-171.00	377100.6614	2491821.3678
L	79+46.00	-131.00	377065.6218	2491802.0747
L	79+58.00	-131.00	377059.5592	2491813.0335
L	79+58.00	-171.00	377094.5213	2491832.4666
L	87+50.00	-168.00	376680.8095	2492515.0890
L	87+50.00	-135.00	376652.5688	2492498.0167
L	87+62.00	-168.00	376674.6014	2492525.3584
L	87+62.00	-135.00	376646.3607	2492508.2861
L	88+57.00	55.00	376434.6153	2492491.2899
L	91+20.00	113.00	376248.9190	2492686.3537
L	91+20.00	91.40	376267.4062	2492697.5298
L	91+30.00	-103.00	376428.5937	2492806.6575
L	91+30.00	-132.00	376453.4112	2492821.6605
L	91+35.00	143.00	376215.4855	2492683.6701
L	91+40.00	-132.00	376448.2378	2492830.2182
L	91+40.00	-102.00	376422.5645	2492814.6980
L	91+45.00	143.00	376210.3121	2492692.2279
L	91+60.00	113.00	376228.2253	2492720.5848
L	91+60.00	91.70	376246.4546	2492731.6050
L	93+04.00	80.76	376181.3210	2492860.4977
L	93+04.00	106.00	376159.7184	2492847.4383
L	93+14.00	106.00	376154.5449	2492855.9961
L	93+17.00	-86.00	376317.3024	2492957.8932
L	93+31.00	77.00	376170.5677	2492885.5473
L	93+31.00	58.63	376186.2849	2492895.0488
L	94+85.00	64.04	376101.9892	2493024.0427
L	94+85.00	73.00	376094.3200	2493019.4065
L	94+93.00	104.00	376063.6522	2493010.2151
L	95+03.00	106.00	376056.7672	2493017.7382
L	95+27.00	63.59	376080.6422	2493060.2160
L	95+27.00	80.00	376066.6012	2493051.7278
L	97+71.00	93.00	375929.2444	2493253.8122
L	97+71.00	80.58	375939.8741	2493260.2382
L	97+80.00	126.00	375896.3477	2493244.4419
L	97+90.00	128.00	375889.4627	2493251.9650
L	98+36.70	-89.00	376051.0091	2493404.1892
L	101+26.00	62.65	375771.5600	2493573.3145

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	101+43.00	92.00	375737.6487	2493572.6791
L	101+72.00	110.00	375707.2418	2493588.1845
L	101+80.07	64.37	375742.1187	2493618.6978
L	101+80.29	110.00	375702.9521	2493595.2803
L	102+00.00	-89.00	375863.0561	2493715.0975
L	102+00.00	-65.00	375842.5174	2493702.6813
L	102+56.22	-89.00	375833.9711	2493763.2092
L	104+90.00	-90.00	375713.8824	2493963.7906
L	105+15.13	-90.00	375700.8841	2493985.2921
L	108+29.00	76.00	375398.9692	2494171.8278
L	108+29.00	55.00	375417.2185	2494182.2183
L	108+44.00	106.00	375365.4196	2494170.1394
L	108+54.00	106.00	375360.4427	2494178.9146
L	108+69.00	76.00	375379.1108	2494206.8417
L	109+05.00	76.00	375361.3382	2494238.4107
L	109+05.00	55.00	375379.6529	2494248.6854
L	111+68.66	-91.00	375381.4794	2494549.7079
L	114+60.00	-91.00	375244.5510	2494806.8668
L	116+50.00	-135.00	375194.0900	2494995.2538
L	116+50.00	-170.00	375224.9835	2495011.7036
L	116+70.00	-170.00	375215.5837	2495029.3570
L	116+74.00	-138.00	375185.4582	2495017.8479
L	118+79.00	130.00	374852.5541	2495072.8375
L	118+79.00	110.00	374870.2075	2495082.2373
L	118+91.00	161.00	374819.5514	2495068.8598
L	119+01.00	161.00	374814.8515	2495077.6865
L	119+10.00	-138.00	375074.5401	2495226.1582
L	119+12.00	-170.00	375101.8456	2495242.9633
L	119+21.00	133.00	374830.1664	2495108.4997
L	119+21.00	110.00	374850.4679	2495119.3095
L	119+32.00	-170.00	375092.4457	2495260.6167
L	119+32.00	-135.00	375061.5513	2495244.1665
L	120+94.00	88.00	374788.5780	2495282.3513
L	120+94.00	98.00	374779.7513	2495277.6514
L	121+14.73	-91.00	374936.8315	2495384.7806
L	121+43.00	-125.00	374953.5572	2495425.7105
L	121+65.00	-115.00	374934.3907	2495440.4294
L	121+65.00	-125.00	374943.2174	2495445.1293
L	122+37.67	-98.00	374885.2325	2495496.5802
L	122+56.00	-121.00	374896.9174	2495523.5723
L	122+66.00	-119.00	374890.4522	2495531.4591
L	122+66.00	-101.00	374874.5641	2495522.9992
L	123+15.00	73.00	374697.9498	2495484.4714
L	123+15.00	62.78	374706.9726	2495489.2758
L	123+40.00	73.00	374686.2000	2495506.5382
L	123+40.00	60.00	374697.6747	2495512.6481
L	123+87.00	73.00	374664.1104	2495548.0237
L	123+87.00	60.00	374675.5851	2495554.1336
L	124+12.00	73.00	374652.3605	2495570.0905
L	124+12.00	60.00	374663.8353	2495576.2004
L	124+82.00	75.00	374617.6958	2495630.9374
L	124+82.00	60.00	374630.9358	2495637.9873
L	125+07.00	60.00	374619.1860	2495660.0541
L	125+07.00	75.00	374605.9460	2495653.0042
L	125+91.00	81.00	374561.1706	2495724.3286
L	125+91.00	60.00	374579.7067	2495734.1984
L	126+06.00	111.00	374527.6406	2495723.4689
L	126+06.00	81.00	374554.1207	2495737.5686
L	126+07.00	-96.00	374709.8834	2495821.6399
L	126+07.00	-131.00	374740.7769	2495838.0896
L	126+16.00	111.00	374522.9407	2495732.2956
L	126+16.00	81.00	374549.4208	2495746.3954
L	126+17.00	-96.00	374705.1835	2495830.4666
L	126+17.00	-131.00	374736.0770	2495846.9163
L	126+31.00	81.00	374542.3709	2495759.6354

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	126+31.00	60.00	374560.9070	2495769.5052
L	126+79.00	71.00	374528.6380	2495806.7035
L	126+79.00	60.00	374538.3474	2495811.8734
L	127+04.00	60.00	374526.5976	2495833.9402
L	127+04.00	71.00	374516.8882	2495828.7703
L	128+53.00	-104.00	374601.3267	2496042.5368
L	128+53.00	-91.00	374589.8520	2496036.4269
L	128+63.00	-104.00	374596.6268	2496051.3635
L	128+63.00	-91.00	374585.1521	2496045.2536
L	129+01.00	55.00	374438.4225	2496010.1763
L	129+01.00	65.00	374429.5958	2496005.4763
L	130+15.00	-90.00	374512.8306	2496178.9496
L	130+55.00	55.00	374366.0437	2496146.1075
L	130+84.00	105.00	374308.2804	2496148.2054
L	131+04.00	105.00	374298.8805	2496165.8588
L	131+21.00	60.00	374330.6109	2496202.0138
L	132+78.00	60.00	374256.8221	2496340.5931
L	132+78.00	72.00	374246.2300	2496334.9532
L	133+05.99	72.00	374233.0732	2496359.6624
L	133+68.00	-115.00	374368.9902	2496502.2821
L	133+68.00	-92.00	374348.6887	2496491.4723
L	133+78.00	-115.00	374364.2902	2496511.1088
L	133+78.00	-92.00	374343.9888	2496500.2990
L	134+50.00	-92.00	374310.1494	2496563.8513
L	134+78.00	-85.00	374290.8109	2496585.2761
L	136+62.09	-85.00	374204.2901	2496747.7669
L	137+02.00	80.00	374040.3061	2496703.8546
L	137+04.00	59.38	374057.3623	2496715.6007
L	137+14.00	112.00	374006.8142	2496698.1283
L	137+24.00	112.00	374002.1422	2496706.3311
L	137+34.00	-85.00	374167.8746	2496813.2898
L	137+34.00	-124.00	374201.6176	2496832.8451
L	137+43.00	84.00	374017.3150	2496736.0001
L	137+44.00	-85.00	374162.6248	2496822.2965
L	137+44.00	-124.00	374196.2696	2496842.0202
L	137+46.00	62.90	374034.0534	2496749.1687
L	137+76.00	-85.00	374145.5239	2496850.9395
L	137+76.00	-105.00	374162.6136	2496861.3290
L	138+05.00	-94.00	374137.2539	2496881.4443
L	138+05.00	-105.00	374146.5694	2496887.2942
L	138+60.00	105.00	373940.4108	2496819.3595
L	138+60.00	65.00	373973.6876	2496841.5553
L	138+84.00	105.00	373927.6793	2496838.2012
L	138+84.00	65.00	373960.6874	2496860.7947
L	140+86.00	-124.00	373986.7528	2497138.1599
L	140+86.00	-94.00	373963.8315	2497118.8050
L	140+96.00	-90.00	373954.0134	2497124.1917
L	140+96.00	-124.00	373979.8809	2497146.2569
L	144+15.00	-90.00	373718.4069	2497359.5208
L	144+60.00	55.00	373590.7909	2497277.0769
L	145+00.00	80.00	373544.9842	2497281.6002
L	145+39.00	-100.00	373623.1794	2497448.3894
L	145+39.00	-140.00	373647.1653	2497480.4000
L	145+39.59	55.00	373529.7770	2497324.6909
L	145+42.40	72.00	373517.4192	2497312.7044
L	145+52.00	-141.00	373636.6010	2497489.5090
L	145+52.00	-101.00	373612.8237	2497457.3432
L	146+60.00	-125.00	373536.6656	2497540.9553
L	146+60.00	-109.00	373527.4626	2497527.8669
L	147+05.00	-112.00	373492.3772	2497556.2044

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "GPS U4007-3"
WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
NORTHING: 376224.375(ft) EASTING: 2480992.509(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999911272
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"GPS U4007-3" TO -L- STATION 10+00.00 IS
N 47°30'51.2" E 7808.19 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-M
Location and Surveys	

SURVEY CONTROL SHEET U-3810

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	147+05.00	-125.00	373499.8546	2497566.8387
L	147+08.00	81.00	373378.9119	2497400.0518
L	147+08.00	55.00	373393.8668	2497421.3204
L	147+33.00	55.00	373373.4163	2497435.7001
L	147+33.00	81.00	373358.4614	2497414.4315
L	148+61.00	74.00	373257.7810	2497493.7817
L	148+61.00	55.00	373268.7095	2497509.3241
L	148+80.00	94.00	373230.7348	2497488.3498
L	148+90.00	96.00	373221.4042	2497492.4657
L	149+10.00	80.00	373214.2468	2497517.0578
L	149+10.00	55.00	373228.6265	2497537.5083
L	149+20.00	-129.00	373326.2808	2497693.7761
L	149+20.00	-170.00	373349.8634	2497727.3150
L	149+31.00	-170.00	373340.8652	2497733.6421
L	149+38.00	-129.00	373311.5564	2497704.1295
L	149+38.00	-148.00	373322.4849	2497719.6719
L	150+17.00	108.00	373110.6132	2497555.6982
L	150+17.00	55.00	373141.0982	2497599.0534
L	150+61.00	55.00	373105.1052	2497624.3616
L	150+61.00	96.00	373081.5225	2497590.8227
L	151+10.00	262.00	372945.9583	2497483.2153
L	151+47.00	240.00	372928.3457	2497522.4938
L	152+65.00	78.00	372924.9995	2497722.8854
L	152+65.00	55.00	372938.2288	2497741.6999
L	152+78.00	106.00	372898.2600	2497707.4582
L	152+88.00	106.00	372890.0797	2497713.2101
L	152+94.00	-84.00	372994.4573	2497872.0853
L	153+06.00	77.00	372892.0358	2497747.2861
L	153+06.00	55.00	372904.6899	2497765.2826
L	158+49.00	-100.00	372549.6583	2498204.4028
L	158+49.00	-92.00	372545.0568	2498197.8586
L	158+65.00	-92.00	372531.9684	2498207.0616
L	158+65.00	-109.00	372541.7466	2498220.9679
L	159+27.00	55.00	372396.6985	2498122.4740
L	159+48.00	94.00	372357.0878	2498102.6501
L	159+85.00	80.00	372334.8736	2498135.3844
L	159+93.00	55.00	372342.7091	2498160.4364
L	163+63.00	80.00	372023.4323	2498357.6608
L	163+63.00	55.00	372038.9803	2498377.2378
L	163+80.00	105.00	371993.7045	2498349.4769
L	163+90.00	105.00	371985.4240	2498356.2536
L	164+04.00	70.18	371996.2992	2498392.4973
L	164+93.00	81.56	371918.9539	2498446.2281
L	165+77.00	-139.00	372016.6970	2498660.3319
L	165+77.00	-124.00	372005.7929	2498650.0314
L	165+88.00	-139.00	372009.8700	2498667.6123
L	165+88.00	-125.00	371999.6225	2498658.0734
L	166+55.00	187.00	371721.1588	2498501.7754
L	166+89.00	210.00	371678.8615	2498516.6755
L	167+17.00	154.00	371703.0820	2498576.1301
L	167+20.00	203.00	371662.3857	2498548.6333
L	168+27.00	113.00	371666.0014	2498697.1549
L	168+27.00	100.04	371676.7694	2498704.3689
L	168+39.00	-134.00	371865.1604	2498843.7349
L	168+39.00	-120.00	371853.4674	2498836.0360
L	168+42.00	143.00	371632.0014	2498694.1526
L	168+50.00	-120.00	371847.9333	2498844.5087
L	168+50.00	-134.00	371859.6824	2498852.1216
L	168+51.00	143.00	371626.6215	2498702.4132
L	168+82.00	98.00	371646.7506	2498754.7693
L	169+00.00	98.00	371636.7668	2498771.1412
L	169+20.00	87.66	371634.8368	2498794.6837
L	170+03.00	-143.00	371798.0178	2498976.8103
L	170+03.00	-130.00	371786.4447	2498970.8887
L	170+18.00	-130.00	371780.2654	2498983.1159

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	170+18.00	-145.00	371793.6866	2498989.8146
L	171+84.00	91.00	371512.7661	2499045.9852
L	171+84.00	70.00	371532.4765	2499053.2309
L	171+98.00	121.00	371479.4546	2499049.8587
L	172+08.00	121.00	371475.8548	2499060.0481
L	172+22.00	91.00	371499.3402	2499083.9875
L	172+22.00	70.00	371519.2278	2499090.7316
L	174+12.00	-156.00	371686.8490	2499332.6927
L	174+12.00	-126.30	371657.9644	2499325.7675
L	174+23.00	-126.18	371655.2894	2499336.4379
L	174+23.00	-156.00	371684.2844	2499343.3896
L	176+28.00	77.00	371409.9103	2499488.4167
L	176+28.00	60.00	371426.4418	2499492.3802
L	176+53.00	60.00	371420.6131	2499516.6912
L	176+53.00	77.00	371404.0816	2499512.7277
L	178+03.00	-133.88	371574.1779	2499707.7601
L	178+03.00	-153.00	371592.7710	2499712.2179
L	178+05.88	77.00	371368.4387	2499661.3919
L	178+14.00	-133.44	371571.1854	2499718.3544
L	178+14.00	-153.00	371590.2064	2499722.9147
L	178+30.00	65.00	371374.4838	2499687.6476
L	178+30.00	77.00	371362.8145	2499684.8498
L	179+28.00	77.00	371339.9660	2499780.1491
L	179+28.00	65.00	371351.6353	2499782.9469
L	179+53.00	77.00	371334.1373	2499804.4601
L	179+53.00	65.00	371345.8066	2499807.2579
L	180+12.00	-120.40	371512.3416	2499907.8575
L	180+78.00	60.00	371321.5254	2499929.9788
L	180+78.00	82.00	371300.1317	2499924.8496
L	181+03.00	60.00	371315.6967	2499954.2899
L	181+03.00	82.00	371294.3030	2499949.1606
L	181+92.00	77.00	371278.4151	2500036.8736
L	181+92.00	60.00	371294.9466	2500040.8371
L	182+17.00	60.00	371289.1179	2500065.1482
L	182+17.00	77.00	371272.5864	2500061.1847
L	183+01.00	60.00	371269.5335	2500146.8332
L	183+01.00	72.00	371257.8642	2500144.0355
L	183+26.00	72.00	371252.0355	2500168.3465
L	183+26.00	60.00	371263.7048	2500171.1443
L	184+05.00	89.00	371217.0854	2500241.2059
L	184+05.00	60.00	371245.2862	2500247.9671
L	184+46.00	89.00	371207.5263	2500281.0760
L	184+50.00	73.00	371222.1528	2500288.6961
L	184+84.00	-144.00	371425.2100	2500372.4946
L	184+84.00	-116.00	371397.9883	2500365.9387
L	187+40.00	93.00	371124.9306	2500553.2584
L	187+40.00	61.84	371154.3183	2500563.6120
L	189+65.00	75.00	371060.2259	2500761.5488
L	189+65.00	55.00	371078.4158	2500769.8632
L	189+76.00	105.00	371028.5392	2500758.6518
L	189+86.00	106.00	371023.5950	2500766.9157
L	189+95.00	-79.07	371187.3199	2500853.6699
L	189+95.00	-118.00	371222.5268	2500870.2761
L	190+08.00	78.00	371039.8543	2500798.0389
L	190+08.00	67.00	371049.7786	2500802.7832
L	190+81.72	-76.00	371145.0276	2500932.4972
L	191+00.00	55.00	371020.1877	2500888.7913
L	191+70.00	69.00	370975.7004	2500944.6203
L	191+70.00	55.00	370988.1478	2500951.0283
L	191+95.00	69.00	370964.2576	2500966.8478
L	191+95.00	55.00	370976.7050	2500973.2558
L	192+29.00	93.00	370927.3570	2500986.0922
L	192+29.00	55.00	370961.1428	2501003.4852
L	192+54.00	55.00	370949.6990	2501025.7123
L	192+54.00	93.00	370915.9142	2501008.3197

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	193+75.00	162.00	370799.1831	2501084.3187
L	193+82.00	55.00	370891.1128	2501139.5176
L	193+83.00	270.00	370699.4985	2501041.9986
L	194+13.00	274.00	370682.2108	2501066.8407
L	194+40.00	136.00	370792.5484	2501154.0107
L	194+47.00	55.00	370861.3615	2501197.3091
L	196+71.00	55.00	370758.8340	2501396.4676
L	196+71.00	69.00	370746.3866	2501390.0596
L	196+96.00	55.00	370747.3912	2501418.6951
L	196+96.00	69.00	370734.9438	2501412.2871
L	198+77.20	-71.00	370776.4800	2501637.4726
L	198+77.22	-76.00	370780.9190	2501639.7738
L	199+65.00	-71.00	370736.2933	2501715.5349
L	199+88.00	-88.00	370740.8806	2501743.7653
L	199+95.00	55.00	370610.5352	2501684.5361
L	199+95.00	84.00	370584.7513	2501671.2625
L	200+20.00	84.00	370573.3085	2501693.4900
L	200+20.00	55.00	370599.0924	2501706.7636
L	200+97.00	55.00	370563.3377	2501769.8020
L	200+97.00	68.00	370552.3052	2501762.9256
L	201+19.00	105.00	370510.3871	2501759.7931
L	201+31.00	106.00	370503.6582	2501768.0938
L	201+46.00	78.00	370519.0814	2501795.0893
L	201+46.00	55.00	370537.9326	2501808.2662
L	203+00.00	-116.00	370567.5796	2502039.3536
L	203+00.00	-78.00	370540.4488	2502012.7469
L	203+10.00	-116.00	370559.6615	2502047.3414
L	203+10.00	-78.00	370532.8183	2502020.4445
L	204+62.00	-60.00	370396.7637	2502112.1571
L	204+62.00	-89.00	370413.6363	2502135.7434
L	204+62.00	-116.00	370429.3453	2502157.7031
L	204+71.00	-116.00	370421.0840	2502163.5527
L	204+71.00	-84.00	370402.7187	2502137.3474
L	207+06.00	72.00	370121.8879	2502110.3929
L	207+06.00	55.00	370127.8542	2502126.3115
L	207+22.00	-85.00	370160.5845	2502263.3940
L	207+22.00	-60.20	370152.2821	2502240.0266
L	207+47.00	-85.00	370134.7545	2502272.1822
L	207+47.00	-61.15	370127.3772	2502249.5039
L	207+78.00	72.00	370058.8475	2502131.2756
L	207+78.00	55.00	370063.5647	2502147.6080
L	208+99.00	65.91	369950.8052	2502161.2156
L	208+99.00	83.00	369948.2336	2502144.3224
L	209+09.00	-71.00	369960.7639	2502298.1306
L	209+24.00	65.43	369927.8569	2502164.8796
L	209+24.00	83.00	369925.6808	2502147.4460
L	210+33.00	55.00	369821.5129	2502187.3845
L	210+33.00	70.00	369819.8390	2502172.4782
L	210+81.00	55.00	369773.8127	2502192.7410
L	210+81.00	70.00	369772.1388	2502177.8347
L	211+50.00	70.00	369703.5698	2502185.5346
L	211+50.00	55.00	369705.2437	2502200.4409
L	212+10.00	70.00	369643.9446	2502192.2302
L	212+10.00	55.00	369645.6185	2502207.1365
L	213+02.45	-71.00	369567.8064	2502342.6664
L	213+02.46	-76.00	369568.3565	2502347.6360
L	214+25.00	55.00	369431.9614	2502231.1291
L	214+25.00	70.00	369430.2875	2502216.2228
L	214+50.00	60.00	369406.5595	2502228.9502
L	214+50.00	70.00	369405.4436	2502219.0126

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "GPS U4007-3"
WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
NORTHING: 376224.375(ft) EASTING: 2480992.509(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999911272
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"GPS U4007-3" TO -L- STATION 10+00.00 IS
N 47°30'51.2" E 7808.19 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-N
Location and Surveys	

SURVEY CONTROL SHEET U-3810

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	215+50.00	70.00	369306.0682	2502230.1719
L	215+50.00	60.00	369307.1841	2502240.1095
L	215+75.00	70.00	369281.2244	2502232.9617
L	215+75.00	60.00	369282.3403	2502242.8993
L	216+26.85	-76.00	369245.9906	2502383.8360
L	217+12.09	-76.00	369161.2871	2502393.3477
L	218+65.00	-92.00	369011.1138	2502426.3120
L	218+65.00	-76.00	369009.3283	2502410.4119
L	218+69.00	55.00	368990.7346	2502280.6765
L	218+69.00	74.00	368988.6143	2502261.7952
L	218+94.00	74.00	368964.3183	2502264.4830
L	218+94.00	55.00	368966.2967	2502283.3797
L	219+45.00	-78.00	368926.7008	2502420.3353
L	219+45.00	-120.00	368929.6517	2502462.2315
L	219+95.00	-121.00	368875.7688	2502466.1265
L	219+95.00	-80.00	368874.2528	2502425.1545
L	220+05.00	-121.00	368864.9683	2502466.4901
L	220+05.00	-80.00	368863.7255	2502425.5089
L	224+90.00	-123.00	368347.0425	2502400.0582
L	225+83.00	-152.00	368241.5874	2502395.2180
L	225+83.00	-193.00	368227.3356	2502433.6613
L	225+95.00	-153.00	368228.8589	2502391.5093
L	225+95.00	-193.00	368214.6551	2502428.9026
L	227+65.00	58.85	368154.2931	2502126.7194
L	227+65.00	74.00	368161.0696	2502113.1691
L	227+90.00	58.76	368131.8916	2502115.6206
L	227+90.00	74.00	368138.7098	2502101.9870
L	229+80.00	58.05	367961.6405	2502031.2698
L	229+80.00	84.00	367973.2483	2502008.0589
L	230+10.00	91.00	367949.5475	2501988.3796
L	230+20.00	91.00	367940.6036	2501983.9068
L	230+35.00	75.00	367920.0312	2501991.5078
L	230+35.00	57.84	367912.3572	2502006.8525
L	231+34.06	-127.00	367741.0841	2502127.8683
L	234+21.86	-118.00	367487.7017	2501991.0890
L	234+68.00	-147.00	367433.4624	2501996.3883
L	234+68.00	-117.00	367446.8809	2501969.5565
L	234+79.00	-147.00	367423.6241	2501991.4681
L	234+79.00	-117.00	367437.0426	2501964.6364
L	236+28.00	-125.00	367300.2000	2501905.1461
L	236+28.00	-112.00	367306.0147	2501893.5190
L	236+43.00	-125.00	367286.7841	2501898.4368
L	236+43.00	-112.00	367292.5988	2501886.8097
L	236+44.00	80.00	367377.5832	2501714.6392
L	236+69.00	57.49	367345.1529	2501723.5941
L	236+69.00	80.00	367355.2234	2501703.4571
L	238+13.00	80.00	367224.0993	2501638.4136
L	238+13.00	57.23	367214.5226	2501659.0739
L	238+59.00	58.78	367170.5324	2501638.2064
L	238+59.00	80.00	367178.5617	2501618.5645
L	239+84.00	85.00	367052.0361	2501570.5871
L	239+84.00	64.33	367046.6604	2501590.5494
L	239+96.00	116.00	367047.1451	2501537.2488
L	240+05.00	116.00	367037.4049	2501534.7975
L	240+12.00	-77.00	366984.8654	2501720.6444
L	240+22.00	65.88	367007.7636	2501579.2625
L	240+22.00	87.00	367012.4766	2501558.6754
L	240+39.00	75.00	366991.9507	2501566.4462
L	240+39.00	66.55	366990.2062	2501574.7100
L	241+12.00	68.70	366913.7969	2501559.2932
L	241+12.00	76.00	366914.7795	2501552.0616
L	242+40.00	83.00	366777.5422	2501535.2906
L	242+40.00	68.16	366777.4375	2501550.1261
L	242+40.00	-80.00	366776.3925	2501698.2866
L	242+69.00	118.00	366745.3691	2501500.5329

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	242+78.00	118.00	366735.3106	2501500.7990
L	242+95.00	67.27	366718.7510	2501552.2204
L	243+40.00	-90.00	366685.4437	2501712.1916
L	245+28.00	126.11	366457.6725	2501536.3057
L	245+28.00	155.00	366449.6620	2501508.5473
L	245+35.00	-111.00	366517.4417	2501765.8647
L	245+43.00	185.00	366424.3036	2501484.7798
L	245+51.00	184.00	366415.5461	2501488.5350
L	245+64.00	99.74	366427.1526	2501573.3049
L	245+64.00	154.00	366410.2400	2501521.7427
L	246+05.00	-96.00	366453.1855	2501771.5609
L	248+90.00	90.00	366121.7204	2501732.3389
L	248+90.00	123.00	366105.5262	2501703.5857
L	249+26.00	126.00	366072.6868	2501718.6381
L	249+26.00	103.13	366083.9116	2501738.5680
L	252+85.00	53.63	365795.4034	2501957.8723
L	252+85.00	77.00	365783.9325	2501937.5055
L	252+95.00	-88.00	365856.1904	2502086.1790
L	253+10.00	77.00	365762.1497	2501949.7738
L	253+10.00	53.63	365773.6175	2501970.1352
L	253+60.00	53.64	365730.0459	2501994.6609
L	253+60.00	76.00	365719.0750	2501975.1818
L	253+74.99	76.00	365706.0147	2501982.5375
L	253+75.02	106.00	365691.2649	2501956.4139
L	253+85.00	106.00	365682.5702	2501961.3108
L	253+85.00	76.00	365697.2922	2501987.4501
L	254+00.00	76.00	365684.2226	2501994.8111
L	254+00.00	53.65	365695.1886	2502014.2815
L	256+22.00	-84.00	365569.3091	2502243.1634
L	256+22.00	-116.00	365585.0125	2502271.0454
L	256+24.00	79.00	365487.5770	2502102.1214
L	256+33.00	-116.00	365575.4281	2502276.4434
L	256+33.00	-84.00	365559.7247	2502248.5615
L	257+00.00	70.00	365425.7740	2502147.2589
L	257+00.00	79.00	365421.3574	2502139.4171
L	259+11.00	-116.00	365333.2040	2502412.8672
L	259+11.00	-84.00	365317.5005	2502384.9853
L	259+46.00	-76.00	365283.0788	2502395.1905
L	259+46.00	-118.00	365303.6896	2502431.7855
L	261+16.00	-106.00	365149.6781	2502504.7544
L	261+16.00	-76.00	365134.9561	2502478.6151
L	261+32.00	-76.00	365121.0151	2502486.4668
L	261+32.00	-106.00	365135.7371	2502512.6061
L	262+53.00	74.00	364941.9767	2502415.1491
L	262+53.00	53.87	364951.8562	2502432.6905
L	262+78.00	74.00	364920.1939	2502427.4174
L	262+78.00	53.87	364930.0704	2502444.9533
L	262+89.00	-76.00	364984.2195	2502563.5119
L	263+04.00	-105.00	364985.3811	2502596.1409
L	263+24.00	-105.00	364967.9549	2502605.9556
L	263+37.00	-76.00	364942.3966	2502587.0671
L	263+51.00	76.00	364855.6068	2502461.4983
L	263+51.00	53.89	364866.4558	2502480.7609
L	263+76.00	76.00	364833.8241	2502473.7666
L	263+76.00	53.90	364844.6700	2502493.0238
L	264+68.00	-76.00	364828.2550	2502651.3532
L	264+79.00	-95.00	364827.9945	2502673.3061
L	264+83.12	76.00	364740.4888	2502526.3330
L	264+83.12	53.93	364751.3218	2502545.5678
L	264+96.00	-95.00	364813.1822	2502681.6486
L	265+00.00	106.00	364711.0597	2502508.4782
L	265+07.00	-76.00	364794.2739	2502670.4918
L	265+10.00	106.00	364702.3466	2502513.3855
L	265+40.00	53.94	364701.7549	2502573.4682
L	265+40.00	77.00	364690.4385	2502553.3755

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	265+97.28	-76.00	364715.6088	2502714.7970
L	266+35.00	53.96	364618.9688	2502620.0671
L	266+35.00	77.00	364607.6641	2502599.9952
L	266+60.00	77.00	364585.8813	2502612.2635
L	266+60.00	53.97	364597.1830	2502632.3299
L	266+92.62	-76.00	364632.5412	2502761.5817
L	268+75.00	54.02	364409.8249	2502737.7906
L	268+75.00	72.00	364401.0033	2502722.1277
L	269+00.00	72.00	364379.2206	2502734.3960
L	269+00.00	54.03	364388.0391	2502750.0534
L	269+42.00	54.04	364351.4389	2502770.6550
L	269+42.00	72.00	364342.6256	2502755.0068
L	269+67.00	72.00	364320.8428	2502767.2751
L	269+67.00	54.05	364329.6531	2502782.9179
L	270+84.64	-76.00	364290.9688	2502953.9597
L	271+72.00	-79.00	364216.3250	2502999.4432
L	271+90.00	75.00	364125.0685	2502874.0947
L	271+90.00	54.10	364135.3235	2502892.3027
L	272+16.61	-74.00	364175.0049	2503016.9767
L	272+50.00	-69.00	364143.4555	2503029.0073
L	272+50.00	-74.00	364145.9091	2503033.3638
L	273+20.00	155.00	363972.5396	2502868.1852
L	273+20.00	-69.00	364082.4638	2503063.3586
L	273+20.00	-74.00	364084.9175	2503067.7151
L	273+42.00	177.00	363942.5746	2502859.8125
L	273+60.00	-92.00	364058.8982	2503103.0280
L	273+60.00	-79.00	364052.5187	2503091.7010
L	273+72.00	-80.00	364042.5537	2503098.4611
L	273+72.00	-92.00	364048.4425	2503108.9168
L	274+05.00	130.00	363910.7466	2502931.6802
L	274+46.00	190.00	363845.5789	2502899.5217
L	274+80.00	166.00	363827.7319	2502937.1180
L	274+80.00	110.00	363855.2130	2502985.9114
L	274+85.00	-105.00	363956.3640	2503175.6967
L	276+27.00	-76.00	363818.4068	2503220.1128
L	276+82.08	54.23	363706.5083	2503133.6754
L	277+47.00	54.24	363649.9353	2503165.5193
L	277+47.00	73.00	363640.7303	2503149.1756
L	277+72.00	73.00	363618.9476	2503161.4439
L	277+72.00	54.25	363628.1495	2503177.7822
L	278+46.00	-76.00	363627.5899	2503327.5834
L	278+46.00	-92.00	363635.4416	2503341.5243
L	278+57.26	-76.00	363617.7828	2503333.1069
L	278+61.07	-92.00	363622.3098	2503348.9204
L	279+60.00	77.00	363453.1784	2503250.2165
L	279+60.00	54.30	363464.3205	2503269.9996
L	279+78.00	91.00	363430.6245	2503246.8514
L	279+88.89	91.00	363421.1347	2503252.1962
L	280+37.00	75.00	363387.0690	2503289.7456
L	280+37.00	54.27	363397.2428	2503307.8095
L	281+40.00	75.00	363297.3241	2503340.2911
L	281+40.00	54.12	363307.5699	2503358.4829
L	281+77.98	75.00	363264.2360	2503358.9267
L	282+06.00	112.00	363221.6605	2503340.4410
L	282+13.00	117.00	363213.1076	2503339.5196
L	282+13.01	98.00	363222.4222	2503356.0798
L	282+34.34	112.00	363196.9703	2503354.3469
L	282+64.00	53.88	363199.6457	2503419.5437
L	282+90.00	-76.00	363240.5345	2503545.5638
L	282+90.00	-116.00	363260.0650	2503580.4717

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "GPS U4007-3"
WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
NORTHING: 376224.375(ft) EASTING: 2480992.509(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999911272
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"GPS U4007-3" TO -L- STATION 10+00.00 IS
N 47°30'51.2" E 7808.19 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-O
Location and Surveys	

SURVEY CONTROL SHEET U-3810

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	283+00.00	-116.00	363250.9921	2503585.5280
L	283+18.00	-80.00	363217.3353	2503562.9732
L	284+57.00	-85.00	363092.8033	2503633.0545
L	284+57.00	-116.00	363106.4107	2503660.9083
L	284+67.00	-116.00	363097.0706	2503665.4520
L	284+67.00	-84.00	363083.1201	2503636.6530
L	284+68.00	83.00	363009.4409	2503486.7818
L	284+68.00	55.00	363021.6392	2503511.9850
L	284+94.00	55.00	362998.6173	2503523.0046
L	284+94.00	83.00	362986.6379	2503497.6966
L	285+60.00	-85.00	362996.8551	2503677.9046
L	285+62.00	55.00	362937.9634	2503550.8778
L	285+75.00	81.00	362915.8114	2503532.2576
L	285+90.00	-85.00	362968.6251	2503690.3457
L	285+96.00	108.00	362886.3697	2503515.6496
L	286+18.00	55.00	362887.5491	2503572.7953
L	286+24.00	97.00	362865.8158	2503536.3829
L	286+33.00	-116.00	362939.8992	2503736.2880
L	286+33.00	-79.00	362925.6352	2503702.1480
L	286+43.00	-79.00	362916.1586	2503706.0889
L	286+43.00	-116.00	362930.3087	2503740.2762
L	287+80.00	55.00	362739.5165	2503630.8535
L	288+40.00	-120.00	362740.0973	2503816.0558
L	288+40.00	-83.00	362728.2210	2503781.0136
L	288+50.00	-83.00	362718.4827	2503784.2960
L	288+50.00	-120.00	362730.2420	2503819.3776
L	289+82.00	55.00	362550.8958	2503691.9186
L	289+82.00	94.00	362540.1393	2503654.4313
L	289+95.00	118.00	362521.5082	2503634.7806
L	290+23.92	110.00	362495.9605	2503650.2733
L	290+37.00	55.00	362498.2465	2503706.7620
L	290+52.00	-79.00	362520.0653	2503839.8220
L	290+52.00	-91.00	362523.3124	2503851.3743
L	290+68.00	-91.00	362507.9093	2503855.7037
L	290+68.00	-80.00	362504.9328	2503845.1141
L	291+81.00	-91.00	362399.1248	2503886.2805
L	291+81.00	-80.00	362396.1483	2503875.6909
L	291+85.00	72.00	362351.1677	2503730.4437
L	291+85.00	55.00	362355.7678	2503746.8095
L	291+91.00	-91.00	362389.4979	2503888.9864
L	291+91.00	-76.00	362385.4390	2503874.5460
L	292+10.00	55.00	362331.7004	2503753.5743
L	292+10.00	72.00	362327.1004	2503737.2085
L	292+87.00	-76.00	362293.0204	2503900.5228
L	293+50.00	75.00	362191.5114	2503772.2032
L	293+50.00	55.00	362196.9232	2503791.4571
L	293+66.35	-76.00	362216.6259	2503921.9955
L	293+75.00	75.00	362167.4440	2503778.9679
L	293+75.00	59.00	362171.7735	2503794.3711
L	295+05.00	79.00	362041.2114	2503810.2940
L	295+05.00	56.67	362047.2546	2503831.7942
L	295+30.00	55.00	362023.6382	2503840.1635
L	295+30.00	79.00	362017.1440	2503817.0588
L	297+57.00	-76.00	361840.5540	2504027.7006
L	297+57.00	-91.00	361844.6129	2504042.1410
L	297+67.00	-76.00	361830.9271	2504030.4065
L	297+67.00	-91.00	361834.9859	2504044.8469
L	301+69.35	-76.00	361443.5849	2504139.2794
L	301+72.14	-85.00	361443.3376	2504148.6977
L	301+86.00	-76.00	361427.5581	2504143.7842
L	301+86.00	-85.00	361429.9935	2504152.4484
L	303+35.00	-76.00	361284.1167	2504184.1022
L	303+35.00	-85.00	361286.5520	2504192.7665
L	303+35.00	83.00	361241.0927	2504031.0338
L	303+35.00	55.00	361248.6692	2504057.9893

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	303+60.00	-85.00	361262.4846	2504199.5313
L	303+60.00	55.00	361224.6019	2504064.7541
L	303+60.00	83.00	361217.0253	2504037.7986
L	303+60.00	-76.00	361260.0493	2504190.8670
L	304+58.03	-74.00	361165.1389	2504215.4666
L	304+58.71	-76.00	361165.0175	2504217.5783
L	305+47.88	-74.00	361078.6324	2504239.7816
L	305+48.57	-76.00	361078.5110	2504241.8932
L	306+55.00	-76.00	360976.0542	2504270.6904
L	306+55.00	-105.00	360983.9013	2504298.6085
L	306+76.00	-105.00	360963.6847	2504304.2909
L	306+76.00	-76.00	360955.8376	2504276.3728
L	307+91.00	55.00	360809.6806	2504181.3788
L	307+91.00	79.00	360803.1864	2504158.2742
L	308+16.00	79.00	360779.1191	2504165.0389
L	308+16.00	55.00	360785.6132	2504188.1436
L	309+85.00	55.00	360622.9179	2504233.8735
L	309+85.00	76.00	360617.2355	2504213.6569
L	310+10.00	55.00	360598.8505	2504240.6383
L	310+10.00	76.00	360593.1681	2504220.4217
L	310+13.00	-71.00	360630.0569	2504362.7495
L	310+13.00	-76.00	360631.4099	2504367.5630
L	310+78.00	76.00	360527.7049	2504238.8219
L	310+78.00	55.00	360533.3873	2504259.0385
L	311+01.79	-71.00	360544.5777	2504386.7758
L	311+02.87	-76.00	360544.8895	2504391.8819
L	311+21.00	76.00	360486.3090	2504250.4573
L	311+21.00	55.00	360491.9915	2504270.6739
L	312+06.00	77.00	360404.2094	2504272.4949
L	312+06.00	54.59	360410.2731	2504294.0678
L	312+62.00	77.00	360350.2985	2504287.6480
L	312+62.00	54.05	360356.5082	2504309.7404
L	312+80.00	53.98	360339.1984	2504314.6775
L	313+65.00	-91.00	360296.6003	2504477.2515
L	313+65.00	-76.00	360292.5415	2504462.8111
L	313+80.00	-77.00	360278.3716	2504467.8326
L	313+80.00	-91.00	360282.1599	2504481.3104
L	313+90.00	80.00	360226.2619	2504319.3955
L	314+15.00	53.47	360209.3746	2504351.7051
L	314+15.00	80.00	360202.1945	2504326.1603
L	314+85.00	-81.73	360178.5681	2504500.7963
L	315+61.00	59.22	360067.2652	2504385.6754
L	315+61.00	83.00	360060.8294	2504362.7785
L	315+86.00	64.21	360041.8468	2504387.6338
L	315+86.00	83.00	360036.7620	2504369.5433
L	318+07.07	-93.00	359871.5588	2504598.7983
L	318+08.82	-98.00	359871.2277	2504604.0841
L	318+83.00	-95.00	359799.0070	2504621.2685
L	319+47.00	78.00	359690.5823	2504472.0402
L	319+47.00	55.00	359696.8059	2504494.1821
L	319+72.00	111.00	359657.5854	2504447.0360
L	320+05.00	55.00	359640.9696	2504509.8764
L	320+05.00	78.00	359634.7460	2504487.7345
L	321+38.00	-142.34	359561.7186	2504735.5895
L	321+41.00	-182.00	359568.1802	2504774.8475
L	321+52.00	-149.90	359549.2639	2504746.4338
L	321+52.00	-182.00	359556.8483	2504777.6249
L	325+00.00	55.00	359164.9718	2504608.6382
L	325+00.00	75.00	359162.5273	2504588.7882
L	325+25.00	55.00	359140.6019	2504611.5362
L	325+25.00	75.00	359138.3229	2504591.6665
L	325+75.00	-148.57	359111.6159	2504819.3219
L	325+75.00	-194.00	359116.0398	2504864.5392
L	325+85.00	-194.00	359105.4420	2504865.5582
L	325+85.00	-147.79	359101.0955	2504819.5502

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	325+85.00	74.00	359080.2352	2504598.7463
L	325+85.00	55.00	359082.0223	2504617.6621
L	326+10.00	55.00	359057.5801	2504619.8685
L	326+10.00	74.00	359055.9507	2504600.9385
L	327+43.00	71.00	358926.6296	2504612.1920
L	327+43.00	55.00	358927.2938	2504628.1783
L	327+68.00	55.00	358902.7694	2504629.0949
L	327+68.00	71.00	358902.2383	2504613.1038
L	328+35.00	-133.00	358839.0569	2504818.5323
L	328+35.00	-172.00	358839.4804	2504857.5302
L	328+45.00	-172.00	358829.3146	2504857.6323
L	328+45.00	-132.35	358828.9223	2504817.9888
L	331+70.00	-111.70	358503.7339	2504800.5498
L	331+80.00	-150.00	358494.1133	2504838.9477
L	331+90.00	-148.00	358484.0940	2504837.0468
L	332+50.00	-80.00	358423.4242	2504769.6437
L	334+61.00	111.00	358210.5448	2504580.7406
L	334+67.00	72.00	358204.9310	2504619.7981
L	339+36.00	72.00	357735.9539	2504624.4382
L	339+49.00	-80.00	357724.4584	2504776.5594
L	339+69.00	-106.00	357704.7166	2504802.7560
L	339+79.00	-106.00	357694.7171	2504802.8549
L	339+90.00	-80.00	357683.4604	2504776.9650
L	340+13.26	-80.00	357660.1985	2504777.1952
L	340+81.09	92.00	357590.6691	2504605.8747
L	343+11.81	91.00	357359.9697	2504609.1573
L	343+55.00	55.00	357317.1426	2504645.5828
L	343+55.00	87.00	357316.8260	2504613.5844
L	343+80.00	55.00	357292.1438	2504645.8302
L	343+80.00	85.00	357291.8470	2504615.8316
L	345+13.00	-105.00	357160.7333	2504807.1382
L	345+13.00	-125.00	357160.9312	2504827.1372
L	345+30.00	72.00	357141.9830	2504630.3150
L	345+30.00	55.00	357142.1512	2504647.3142
L	345+54.00	-113.00	357119.8145	2504815.5434
L	345+54.00	-127.00	357119.9530	2504829.5428
L	345+55.00	72.00	357116.9842	2504630.5624
L	345+55.00	55.00	357117.1524	2504647.5616
L	345+85.00	76.00	357086.9461	2504626.8594
L	345+85.00	55.00	357087.1539	2504647.8584
L	346+10.00	76.00	357061.9473	2504627.1067
L	346+10.00	55.00	357062.1551	2504648.1057
L	346+75.00	71.00	356997.0000	2504632.7485
L	346+75.00	55.00	356997.1583	2504648.7488
L	347+00.00	55.00	356972.1595	2504648.9961
L	347+00.00	71.00	356972.0012	2504632.9969
L	348+09.00	73.00	356862.9867	2504632.0754
L	348+09.00	55.00	356863.1648	2504650.0745
L	348+34.00	55.00	356838.1661	2504650.3219
L	348+34.00	73.00	356837.9880	2504632.3228
L	349+15.00	-127.00	356758.9706	2504833.1133
L	349+15.00	-113.00	356758.8322	2504819.1151
L	349+27.19	71.00	356744.8238	2504635.2446
L	349+32.00	-156.00	356742.2584	2504862.2811
L	349+42.00	-156.00	356732.2589	2504862.3801
L	349+56.00	-125.00	356717.9529	2504831.5191
L	349+56.00	-105.00	356717.7550	2504811.5200
L	350+73.00	125.00	356598.4852	2504582.6899
L	350+73.00	85.00	356598.8809	2504622.6879
L	350+86.00	125.00	356585.4858	2504582.8185

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "GPS U4007-3"
WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
NORTHING: 376224.375(ft) EASTING: 2480992.509(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999911272
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"GPS U4007-3" TO -L- STATION 10+00.00 IS
N 47°30'51.2" E 7808.19 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-P
Location and Surveys	

SURVEY CONTROL SHEET U-3810

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	350+86.00	85.00	356585.8816	2504622.8166
L	354+05.00	-75.00	356268.4802	2504785.9648
L	354+05.00	-55.00	356268.2823	2504765.9658
L	354+30.00	-75.00	356243.4814	2504786.2122
L	354+30.00	-55.00	356243.2835	2504766.2131
L	354+92.88	93.00	356178.9448	2504618.8425
L	354+94.21	75.00	356177.7925	2504636.8547
L	356+85.00	-55.00	355988.2960	2504768.7360
L	356+85.00	-50.00	355988.2465	2504763.7363
L	357+13.00	-50.00	355960.2479	2504764.0133
L	357+13.00	-58.00	355960.3271	2504772.0129
L	357+38.00	-50.00	355935.2491	2504764.2606
L	357+38.00	-58.00	355935.3283	2504772.2602

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y7	15+68.00	-35.51	379114.2658	2488288.8874
Y7	15+68.00	-63.00	379092.3219	2488305.4484

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y11	11+35.00	30.00	377856.0223	2489600.7837

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y12	15+20.00	30.00	378111.8580	2489888.8051
Y12	15+20.00	50.00	378110.5577	2489868.8474
Y12	15+29.00	-55.00	378108.4030	2489974.2104
Y12	15+29.00	-30.00	378106.7777	2489949.2633
Y12	15+36.00	50.00	378094.5916	2489869.8876
Y12	15+54.00	-83.00	378085.2763	2490003.7764
Y12	15+62.00	-81.00	378075.6951	2490002.3370
Y12	15+71.00	-49.00	378063.6241	2489970.6986
Y12	15+71.00	-33.32	378063.3921	2489955.0176
Y12	17+05.00	65.00	377962.5810	2489834.0241

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y13	10+94.00	-51.00	377445.5873	2490127.3170
Y13	11+08.00	-38.00	377443.8515	2490108.2910
Y13	11+08.00	-30.00	377449.1955	2490102.3363

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y14	14+18.00	60.00	377501.9352	2490525.7746
Y14	14+20.00	-28.35	377478.2941	2490610.9224
Y14	14+20.00	-35.00	377476.6505	2490617.3692
Y14	14+51.00	-35.67	377445.4525	2490609.5675
Y14	14+61.00	-50.35	377431.2673	2490620.6768
Y14	16+83.00	-77.78	377203.5420	2490551.5099
Y14	16+83.00	-122.00	377181.3247	2490589.7380
Y14	16+93.00	-153.00	377155.7404	2490610.6535
Y14	17+03.00	-153.00	377145.7955	2490604.6617
Y14	17+14.00	151.00	377296.1772	2490340.2387
Y14	17+14.00	116.00	377277.6125	2490369.9095
Y14	17+21.00	-124.00	377143.6186	2490569.1436
Y14	17+21.00	-79.66	377167.4120	2490531.7322
Y14	17+30.00	151.00	377284.2315	2490332.6309
Y14	17+30.00	111.00	377262.6037	2490366.2797
Y14	21+46.00	125.00	376920.2265	2490129.5734
Y14	21+46.00	95.00	376904.0057	2490154.8099
Y14	21+60.53	95.00	376891.7859	2490146.9556
Y14	21+61.06	125.00	376907.5562	2490121.4295
Y14	22+89.00	-76.00	376690.6711	2490220.7794
Y14	22+89.00	-55.00	376702.2092	2490203.2331
Y14	23+05.00	89.00	376768.4085	2490074.3674
Y14	23+05.00	-106.00	376660.3395	2490236.6822
Y14	23+15.00	-106.00	376651.7108	2490230.9150

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y14	23+29.00	-55.00	376668.2924	2490180.5814
Y14	23+29.00	-75.00	376657.0662	2490197.1335
Y14	24+64.00	-74.00	376544.8674	2490115.7919
Y14	24+64.00	-55.00	376556.2779	2490100.5997
Y14	24+74.00	-96.00	376523.3964	2490127.1567
Y14	24+84.00	-98.00	376513.9473	2490122.4916
Y14	25+05.00	-82.00	376506.5066	2490096.5989
Y14	25+05.00	-55.00	376523.0358	2490075.2497
Y14	26+35.00	96.00	376518.0284	2489876.7199
Y14	26+35.00	70.00	376501.1744	2489896.5174
Y14	28+50.00	30.00	376315.4742	2489784.4038

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y16	10+92.00	30.00	377141.3714	2491600.6793

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y17	12+23.93	31.32	376483.4375	2492730.8735
Y17	12+30.00	-37.78	376442.6259	2492786.9619

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y18	13+81.79	45.00	376110.4158	2493304.3118

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y19	11+50.00	-50.00	375800.4606	2493828.1285

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y21	10+77.05	-56.00	374730.1168	2495415.5018
Y21	10+86.00	-63.00	374718.9291	2495417.4805
Y21	10+91.63	-36.00	374726.6382	2495390.9996
Y21	11+00.00	-43.00	374715.9590	2495393.2487
Y21	11+20.00	60.00	374746.6629	2495292.9179
Y21	11+20.00	30.00	374732.5769	2495319.4053

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y22	10+83.00	-65.00	374424.5437	2495976.7375
Y22	11+25.00	-65.00	374387.4613	2495957.0170
Y22	11+25.00	-50.00	374394.5043	2495943.7732

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y25	12+05.07	34.00	373122.7798	2497805.0933
Y25	12+15.00	-38.33	373057.9232	2497838.6232

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y29	14+56.00	79.00	371564.3236	2500504.6455
Y29	14+56.00	63.77	371557.8839	2500518.4478
Y29	14+64.00	112.00	371570.1075	2500470.9732
Y29	14+70.00	83.00	371552.1080	2500494.6635
Y29	14+73.00	114.00	371561.6893	2500464.9941
Y29	14+79.00	85.00	371543.9154	2500488.8578
Y29	16+12.00	133.00	371419.1603	2500394.4104
Y29	18+75.00	-70.00	371109.7034	2500519.3004
Y29	18+75.00	-45.00	371117.3546	2500495.5000

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y31	11+00.00	30.00	371215.2179	2500885.0309
Y31	11+15.00	-30.00	371174.2867	2500931.3951

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y32	13+08.00	30.00	370741.3357	2501884.1097
Y32	13+15.00	-45.00	370687.5315	2501936.8270
Y32	13+15.00	-30.00	370697.2239	2501925.3790
Y32	13+25.00	43.00	370736.7612	2501863.2034
Y32	13+75.00	-45.00	370641.7392	2501898.0577
Y32	13+90.00	38.00	370683.9221	2501825.0193

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y34	13+20.00	30.00	370053.8902	2502356.0533
Y34	13+32.00	88.00	370110.2699	2502337.9058
Y34	13+42.00	30.00	370051.5322	2502334.1800
Y34	13+52.00	85.00	370105.1436	2502318.3426

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y37	13+02.00	25.00	366633.6138	2501409.4464
Y37	13+45.00	25.00	366660.9760	2501376.2754

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y40	10+63.32	-50.86	364994.0490	2502382.9850
Y40	11+44.00	-76.19	364954.7126	2502308.1251
Y40	11+44.00	-25.00	365005.0780	2502298.9781

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y43	11+40.00	-25.00	364239.1107	2503041.7336

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y45	10+85.00	33.00	362787.6043	2503568.5881
Y45	11+10.00	34.00	362770.3203	2503549.3223
Y45	11+10.00	-20.00	362731.6045	2503586.9665

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y47	10+97.00	-43.00	360236.1392	2504289.8585
Y47	11+10.00	20.00	360299.8329	2504280.8527
Y47	11+10.00	-24.00	360255.9203	2504278.0811

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y48	19+04.00	54.00	360263.4528	2504801.1590
Y48	19+35.00	59.00	360247.3751	2504780.7251
Y48	19+35.00	47.04	360239.1382	2504789.4035
Y48	22+53.00	-66.35	360015.0047	2504555.9112

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y49	10+76.00	-41.93	357632.1348	2504611.6764
Y49	10+96.00	-87.00	357600.4154	2504566.0309
Y49	10+98.00	-78.00	357610.1117	2504566.5762
Y49	11+80.00	25.00	357746.0342	2504546.1086

FINAL ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y53	22+38.00	126.03	355950.8975	2504616.5038

DATUM DESCRIPTION

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IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "GPS U4007-3"
WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
NORTHING: 376224.375(ft) EASTING: 2480992.509(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999911272
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"GPS U4007-3" TO -L- STATION 10+00.00 IS
N 47°30'51.2" E 7808.19 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	1-Q
Location and Surveys	

SURVEY CONTROL SHEET U-3810

ALIGNMENTS

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	381498.0830	2486750.6206
PC	37+68.13	379241.4672	2488353.8082
PT	43+18.54	378831.3290	2488719.2119
PC	61+20.06	377626.0171	2490058.1290
PT	66+86.93	377358.3747	2490551.8666
PC	72+17.69	377221.6477	2491064.7167
PT	80+67.29	376890.2313	2491843.9312
PC	105+15.13	375623.8641	2493938.7313
PT	111+68.66	375301.1563	2494506.9386
PC	136+62.09	374129.2635	2496707.8168
PT	145+99.45	373514.2974	2497403.8757
PC	162+75.46	372143.2837	2498367.8967
PT	173+59.44	371547.4030	2499245.2078
PC	184+81.45	371285.8084	2500336.2994
PT	190+81.72	371077.4560	2500897.7111
PC	200+20.79	370647.6310	2501732.6410
PT	209+35.49	369924.5493	2502231.1598
PC	218+82.74	368983.2208	2502336.8659
PT	227+46.07	368144.9035	2502187.8222
PC	237+83.33	367217.1885	2501723.8722
PT	247+59.98	366279.1704	2501746.9537
PC	282+81.50	363210.8412	2503475.0767
PT	289+98.27	362550.4152	2503749.2300
PC	320+45.56	359616.8030	2504573.8004
PT	328+37.90	358834.7107	2504685.5705
POT	358+68.15	355804.6081	2504715.5508
POT	360+15.00	355657.7680	2504717.0036

Y

TYPE	STATION	NORTH	EAST
POT	10+00.00	382203.8237	2487536.0012
POT	31+50.00	380766.7894	2485936.8037

Y2

TYPE	STATION	NORTH	EAST
POT	10+00.00	380742.1838	2487287.6408
POT	12+87.02	380576.7856	2487053.0643

Y3

TYPE	STATION	NORTH	EAST
POT	10+00.00	380114.4650	2487733.5966
PC	11+04.92	380054.0056	2487647.8499
PT	11+95.29	380046.9010	2487561.9682
POT	13+20.34	380101.1858	2487449.3201

Y4

TYPE	STATION	NORTH	EAST
POT	10+00.00	380317.9124	2488148.8192
POT	14+56.33	380054.8207	2487775.9703

Y5

TYPE	STATION	NORTH	EAST
POT	10+00.00	379739.4642	2488000.0118
PC	11+57.82	379648.5221	2487871.0330
PT	13+52.28	379583.7240	2487690.1821
POT	14+43.96	379576.9501	2487598.7554

Y6

TYPE	STATION	NORTH	EAST
POT	10+00.00	379745.9656	2488552.3993
POT	14+54.08	379484.1680	2488181.3842

Y7

TYPE	STATION	NORTH	EAST
POT	10+00.00	379408.4533	2488759.1714
PC	11+23.82	379382.4817	2488638.1050
PT	12+40.39	379335.3496	2488532.4131
PC	15+20.80	379170.6846	2488305.4390
PT	16+75.19	379076.2237	2488183.3499
POT	18+00.24	378996.6823	2488086.8532

Y9

TYPE	STATION	NORTH	EAST
POT	10+00.00	378327.8494	2489278.5006
PC	12+54.91	378138.1394	2489108.2346
PT	14+49.45	378031.0310	2488948.2472
POT	16+55.67	377962.1579	2488753.8767

Y10

TYPE	STATION	NORTH	EAST
POT	10+00.00	378991.5889	2489349.0718
PC	14+43.94	378556.9932	2489439.6613
PT	16+39.22	378363.5948	2489465.4642
PC	17+05.33	378297.6086	2489469.4128
PT	17+84.60	378224.7301	2489443.9128
POT	18+18.63	378199.4388	2489421.1452

Y11

TYPE	STATION	NORTH	EAST
POT	10+00.00	377936.4532	2489713.2819
POT	13+52.01	377674.4826	2489478.1615

Y12

TYPE	STATION	NORTH	EAST
POT	10+00.00	378632.7082	2489884.9353
PC	15+56.93	378076.9600	2489921.1423
PT	17+80.36	377871.4219	2489849.8348
POT	18+23.39	377839.4422	2489821.0463

Y13

TYPE	STATION	NORTH	EAST
POT	10+00.00	377549.6085	2490152.1482
POT	14+70.38	377199.5413	2489837.9604

Y14

TYPE	STATION	NORTH	EAST
POT	10+00.00	377895.1715	2490610.2258
PC	10+21.52	377874.9643	2490617.6332
PT	12+28.44	377671.3677	2490628.9999
PC	14+10.69	377494.3320	2490585.7103
PT	17+25.56	377206.3221	2490462.0560
PC	22+59.81	376756.8973	2490173.1871
PT	27+15.10	376395.5609	2489897.0330
POT	36+20.33	375723.3383	2489290.7553

Y16

TYPE	STATION	NORTH	EAST
POT	10+00.00	377205.4396	2491673.2001
POT	11+97.17	377035.5178	2491573.1857

Y17

TYPE	STATION	NORTH	EAST
POT	10+00.00	376659.1999	2492873.1182
PC	14+49.79	376273.7378	2492641.3155
PT	16+34.58	376098.9235	2492587.1343

Y18

TYPE	STATION	NORTH	EAST
POT	10+00.00	376355.2713	2493600.6811
POT	14+62.09	376021.2751	2493281.3418

Y19

TYPE	STATION	NORTH	EAST
POT	10+00.00	375954.8220	2493862.3710
POT	12+43.72	375745.7841	2493737.0536

Y20

TYPE	STATION	NORTH	EAST
POT	10+00.00	375745.4366	2493737.6283
POT	13+77.27	375412.9908	2493559.2692

Y21

TYPE	STATION	NORTH	EAST
POT	10+00.00	374824.4404	2495402.2370
POT	15+64.30	374326.2141	2495137.2789

Y22

TYPE	STATION	NORTH	EAST
POT	10+00.00	374528.3453	2495958.3195
POT	12+42.84	374313.9415	2495844.2990

Y23

TYPE	STATION	NORTH	EAST
POT	10+00.00	374279.2495	2496426.1350
POT	15+63.70	373781.5526	2496161.4585

Y24

TYPE	STATION	NORTH	EAST
POT	10+00.00	373742.7066	2497216.6092
POT	11+49.59	373638.0518	2497109.7244

Y25

TYPE	STATION	NORTH	EAST
POT	10+00.00	373213.0504	2497992.3437
POT	13+08.11	373035.6606	2497740.4266

Y26

TYPE	STATION	NORTH	EAST
POT	10+00.00	372215.5332	2498676.4717
POT	12+88.84	372044.1213	2498443.9885

Y27

TYPE	STATION	NORTH	EAST
POT	10+00.00	371560.5869	2499194.1884
POT	13+05.47	371283.0910	2499066.4807

Y28

TYPE	STATION	NORTH	EAST
POT	10+00.00	371453.0532	2499638.7338
PC	11+09.52	371346.6725	2499612.7086
PT	12+08.27	371253.6775	2499579.9502
POT	14+73.89	371013.0750	2499467.4301

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SURVEY CONTROL SHEET U-3810

ALIGNMENTS

Y29

TYPE	STATION	NORTH	EAST
POT	10+00.00	371899.9611	2500841.6427
PC	12+33.58	371718.8730	2500694.1008
PT	16+16.18	371380.5152	2500521.7510
PC	17+59.54	371241.9186	2500485.0947
PT	21+53.08	370872.4644	2500351.0692
POT	23+19.92	370721.3365	2500280.3927

Y31

TYPE	STATION	NORTH	EAST
POT	10+00.00	371290.1904	2500957.6885
POT	12+16.99	371097.5436	2500857.8196

Y32

TYPE	STATION	NORTH	EAST
POT	10+00.00	370957.0182	2502106.0220
POT	14+61.86	370604.5265	2501807.5902

Y33

TYPE	STATION	NORTH	EAST
POT	10+00.00	370399.3945	2502035.0421
POT	13+44.42	370201.9195	2501752.8553

Y34

TYPE	STATION	NORTH	EAST
POT	10+00.00	370058.3613	2502677.4253
POT	14+62.33	370008.8079	2502217.7599

Y35

TYPE	STATION	NORTH	EAST
POT	10+00.00	369227.4385	2502719.3140
POT	14+07.31	369182.7640	2502314.4583

Y36

TYPE	STATION	NORTH	EAST
POT	10+00.00	367381.8974	2501806.2431
POT	12+07.39	367498.4105	2501634.6813

Y37

TYPE	STATION	NORTH	EAST
POT	10+00.00	366510.6038	2501652.4668
PC	10+50.09	366496.7655	2501604.3249
PT	11+47.05	366515.7320	2501513.0660
POT	15+08.86	366745.9599	2501233.9620

Y39

TYPE	STATION	NORTH	EAST
POT	10+00.00	366047.8733	2501877.2233
PC	12+32.88	365935.4685	2501673.2653
PT	14+74.16	365775.7187	2501495.2310

Y40

TYPE	STATION	NORTH	EAST
POT	10+00.00	365055.4071	2502436.1932
POT	14+29.63	364978.6358	2502013.4758

Y41

TYPE	STATION	NORTH	EAST
POT	10+00.00	364915.1269	2503008.6464
POT	14+40.08	364622.3026	2502680.1232

Y42

TYPE	STATION	NORTH	EAST
POT	10+00.00	364252.9454	2502888.1500
POT	12+03.18	364133.0177	2502724.1402

Y43

TYPE	STATION	NORTH	EAST
POT	10+00.00	364217.1204	2503178.6944
PC	11+04.05	364253.6536	2503081.2712
PT	12+54.28	364258.4023	2502933.7765
POT	12+97.74	364245.7899	2502892.1801

Y45

TYPE	STATION	NORTH	EAST
POT	10+00.00	362796.2929	2503668.5254
PC	10+50.58	362780.6214	2503620.4329
PT	10+87.09	362761.9147	2503589.4498
POT	11+59.22	362711.6338	2503537.7377

Y47

TYPE	STATION	NORTH	EAST
POT	10+00.00	360272.9437	2504389.3745
POT	12+06.53	360285.9534	2504183.2500

Y48

TYPE	STATION	NORTH	EAST
POT	10+00.00	361107.9000	2504789.3450
PC	16+32.72	360486.0201	2504905.9382
PT	21+05.43	360119.4178	2504679.5147
POT	23+43.20	360053.9576	2504450.9264

Y49

TYPE	STATION	NORTH	EAST
POT	10+00.00	357670.7948	2504697.0864
PC	10+51.86	357670.2817	2504645.2260
PT	11+12.24	357687.3974	2504588.2812
POT	14+78.96	357892.6005	2504284.3409

Y51

TYPE	STATION	NORTH	EAST
POT	10+00.00	356715.3860	2504706.5394
POT	14+33.52	356712.7315	2504273.0273

Y52

TYPE	STATION	NORTH	EAST
POT	10+00.00	356379.4445	2504863.0108
POT	11+53.14	356377.1889	2504709.8856

Y53

TYPE	STATION	NORTH	EAST
POT	10+00.00	355603.6762	2505811.4786
POT	32+01.55	356000.6999	2503646.0219

DATUM DESCRIPTION

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ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

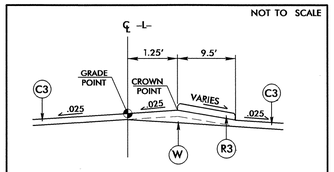
SEE DETAIL SHEET 2-AT FOR STRUCTURE TYPICAL SECTIONS

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. PER 1½" DEPTH, IN EACH OF TWO LAYERS.
C4	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. PER 1½" DEPTH, IN EACH OF TWO LAYERS.
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, 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. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E3	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E4	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E5	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J1	PROP. 8" AGGREGATE BASE COURSE
P1	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	1'-6" CONCRETE CURB AND GUTTER.
R3	5" MONOLITHIC CONCRETE ISLAND.
R4	8" X 12" CONCRETE CURB
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2)

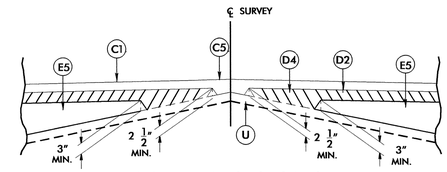
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

NOT TO SCALE



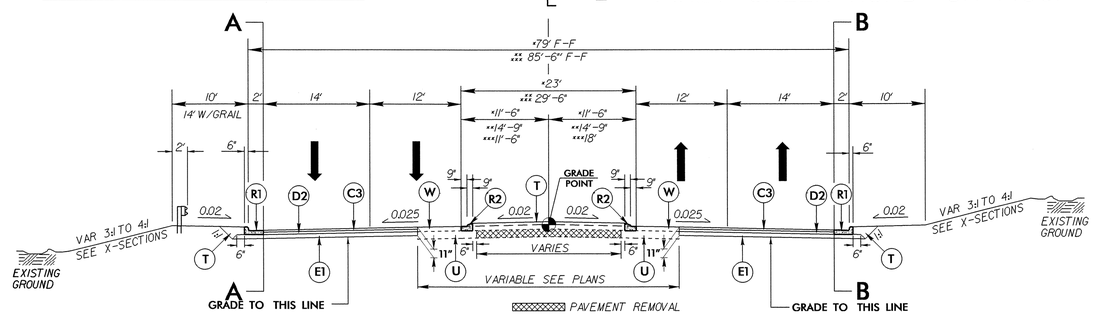
SUPERELEVATION TREATMENT ADJACENT TO PROPOSED MONO. CONC. ISLAND

TO BE USED IN CONJUNCTION WITH TYPICAL SECTIONS 1 & 3 (SEE PLANS FOR LOCATIONS)



Detail Showing Method of Wedging

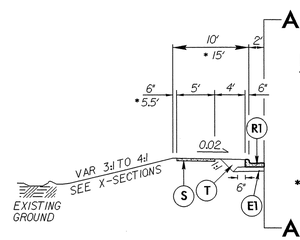
℄ -L- PINEY GREEN ROAD (SR 1406)



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:

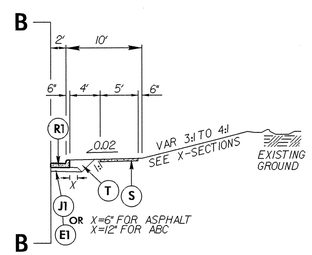
*FROM -L- STA. 10+47.31 TO STA. 43+60.00
*FROM -L- STA. 53+00.00 TO STA. 58+62.00
FROM -L- STA. 58+62.00 TO STA 60+27.00
(TRANSITION FROM 23' MEDIAN TO 29'-6" MEDIAN)
**FROM -L- STA. 60+27.00 TO STA. 74+98.00
FROM -L- STA. 74+98.00 TO STA 76+63.00
(TRANSITION FROM 29'-6" MEDIAN TO 23' MEDIAN)
*FROM -L- STA. 90+56.00 TO STA. 93+00.00
*FROM -L- STA. 99+86.00 TO STA. 109+32.00
*FROM -L- STA. 116+87.00 TO STA. 132+45.00
*FROM -L- STA. 159+21.00 TO STA. 169+04.00
*FROM -L- STA. 179+00.00 TO STA. 213+50.00
*FROM -L- STA. 245+22.00 TO STA. 255+15.00
*FROM -L- STA. 290+25.00 TO STA. 297+17.00
*FROM -L- STA. 309+32.00 TO STA. 350+02.00
FROM -L- STA. 350+02.00 TO STA 353+27.00
(TRANSITION FROM 23' MEDIAN TO 29'-6" MEDIAN)
***FROM -L- STA. 353+27.00 TO STA. 358+00.00



DETAIL OF SIDEWALK

TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 1 & 2

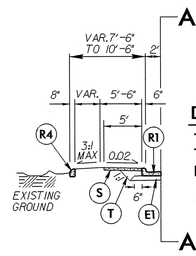
FROM -L- STA. 10+53 LT TO -L- STA. 11+76 LT
FROM -L- STA. 40+94 LT TO -L- STA. 57+74 LT
FROM -L- STA. 67+13 LT TO -L- STA. 76+92.21 LT
FROM -L- STA. 99+86 LT TO -L- STA. 118+34 LT
* FROM -L- STA. 118+34 LT TO -L- STA. 137+97 LT
FROM -L- STA. 151+40 LT TO -L- STA. 163+84 LT
FROM -L- STA. 301+59 LT TO -L- STA. 303+26 LT
FROM -L- STA. 355+26 LT TO -L- STA. 355+92 LT



DETAIL OF SIDEWALK

TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 1 & 2

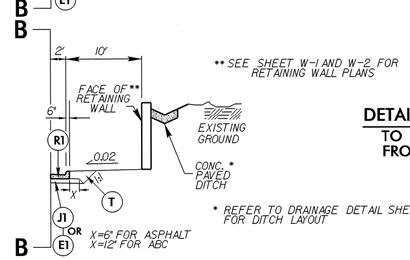
FROM -L- STA. 10+87 RT TO -L- STA. 83+00 RT
FROM -L- STA. 128+51 RT TO -L- STA. 130+72 RT
FROM -L- STA. 343+57 RT TO -Y53- STA. 22+75 RT



DETAIL OF SIDEWALK AND 8" X 12" CONC. CURB

TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 1

FROM -L- STA. 356+26 LT TO -L- STA. 357+52 LT

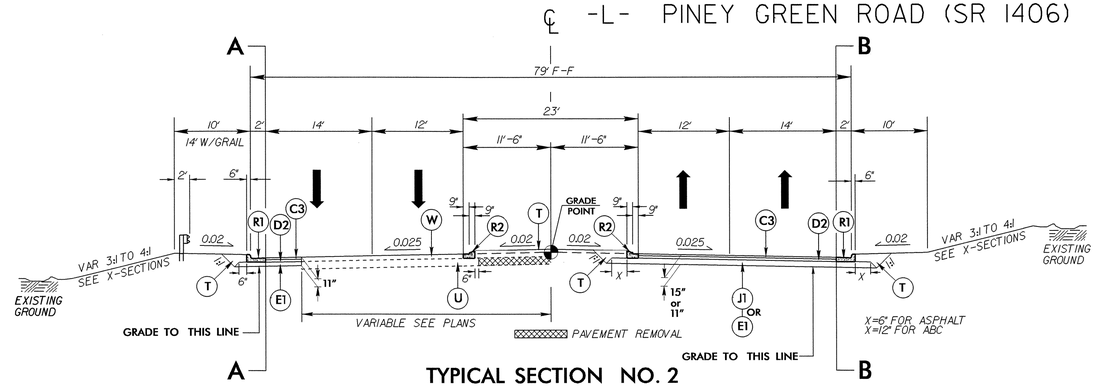


DETAIL OF RETAINING WALL

TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 2

FROM -L- STA. 201+17 RT TO -L- STA. 203+45 RT

℄ -L- PINEY GREEN ROAD (SR 1406)



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:

FROM -L- STA. 43+60.00 TO STA. 53+00.00
FROM -L- STA. 76+63.00 TO STA. 76+92.21
FROM -L- STA. 109+32.00 TO STA. 116+87.00
FROM -L- STA. 132+45.00 TO STA. 136+00.00
FROM -L- STA. 151+40.00 TO STA. 159+21.00

REVERSE TYPICAL SECTIONS AT THE FOLLOWING LOCATIONS:

FROM -L- STA. 169+04.00 TO STA. 179+00.00
FROM -L- STA. 213+50.00 TO STA. 230+39.32
FROM -L- STA. 238+04.20 TO STA. 245+22.00
FROM -L- STA. 255+15.00 TO STA. 290+25.00
FROM -L- STA. 297+17.00 TO STA. 309+32.00

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-A

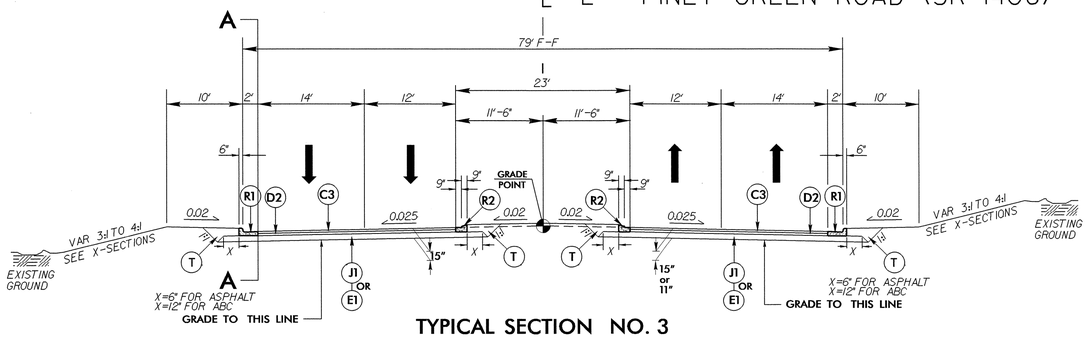
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 031384 ENGINEER HEMAN V. PATEL

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER VLADIMIR G. MITCHEV

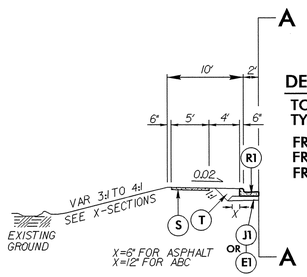
℄ -L- PINEY GREEN ROAD (SR 1406)



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATIONS:

FROM -L- STA. 93+00.00 TO STA. 99+86.00
FROM -L- STA. 136+60.00 TO STA. 151+40.00

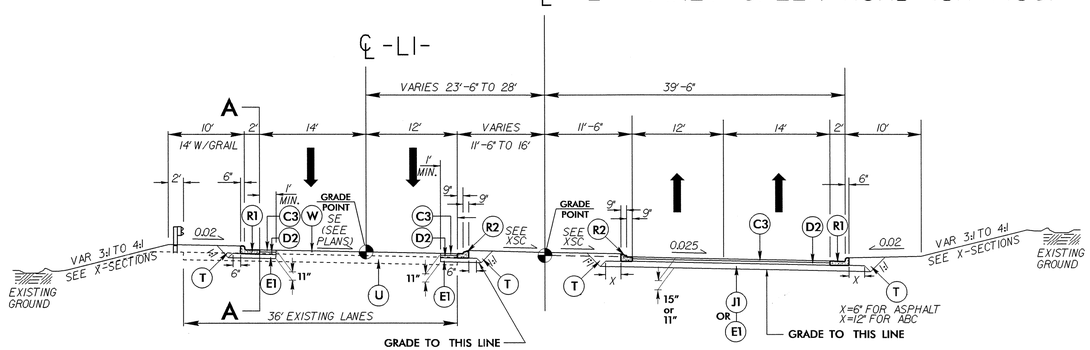


DETAIL OF SIDEWALK

TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 3 & 4

FROM -L- STA. 76+92.21 LT TO -L- STA. 77+45 LT
FROM -L- STA. 97+93 LT TO -L- STA. 99+86 LT
FROM -L- STA. 149+53 LT TO -L- STA. 151+40 LT

℄ -L- PINEY GREEN ROAD (SR 1406)



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 5 AT THE FOLLOWING LOCATIONS:

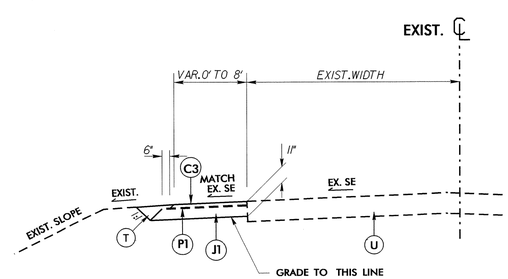
FROM -L- STA. 76+92.21 TO STA. 80+00.00
FROM -L- STA. 88+50.00 TO STA. 90+56.00

PAVEMENT SCHEDULE

C3	3" S9.5B
D2	4" I19.0B
E1	4" B25.0B
J1	8" ABC
P1	PRIME COAT
R1	2'-6" CURB & GUTTER
R2	1'-6" CURB & GUTTER
S	4" CONC. SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

DETAIL FOR TEMPORARY PAVEMENT

(FOR PLAN VIEW, REFER TO TRAFFIC MANAGEMENT PLANS)



USE DETAIL AT THE FOLLOWING LOCATION:

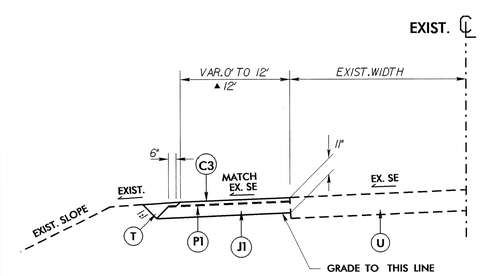
-L- LT. STA. 326+18± TO STA. 331+48±

OR

AS DIRECTED BY THE ENGINEER

DETAIL FOR TEMPORARY PAVEMENT

(FOR PLAN VIEW, REFER TO TRAFFIC MANAGEMENT PLANS)



USE DETAIL AT THE FOLLOWING LOCATIONS:

▲ -L- STA. 93+70± TO STA. 97+30±
-L- STA. 213+83± TO STA. 221+25±
-L- STA. 279+91± TO STA. 294+52 ±

REVERSE DETAIL AT THE FOLLOWING LOCATION:

-L- STA. 38+12 ± TO STA. 51+75 ±

OR

AS DIRECTED BY THE ENGINEER

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 12-16378 ENGINEER REKHA V. PATEL

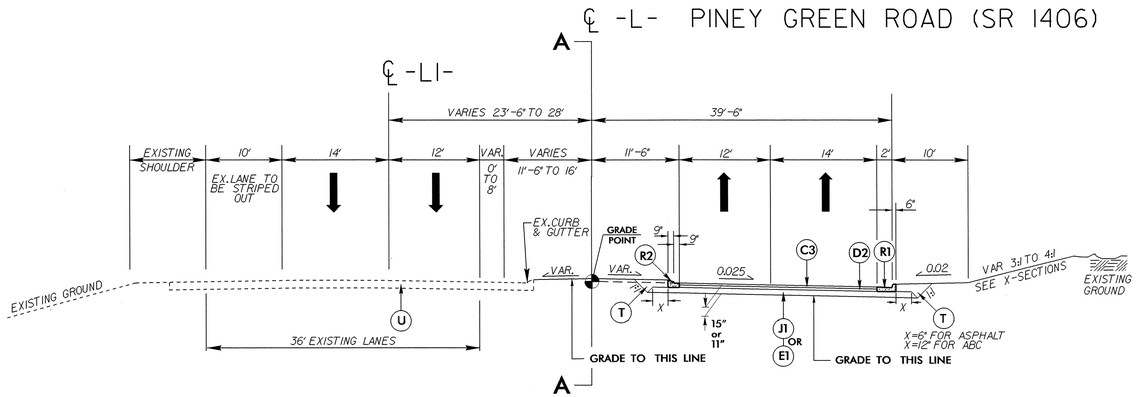
NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER VLADIMIR G. MITCHEV

03/12/12

PAVEMENT SCHEDULE

C3	3" S9.5B
D2	4" I19.0B
E1	4" B25.0B
J1	8" ABC
P1	PRIME COAT
R1	2'-6" CURB & GUTTER
R2	1'-6" CURB & GUTTER
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

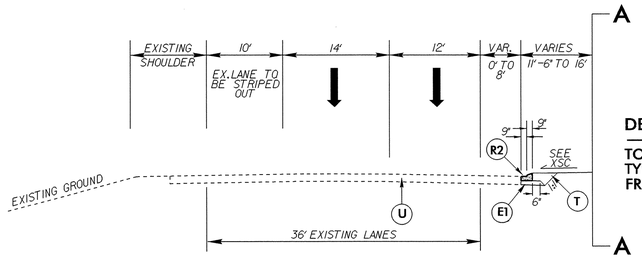
FDPS - FULL DEPTH PAVED SHOULDER



TYPICAL SECTION NO. 5

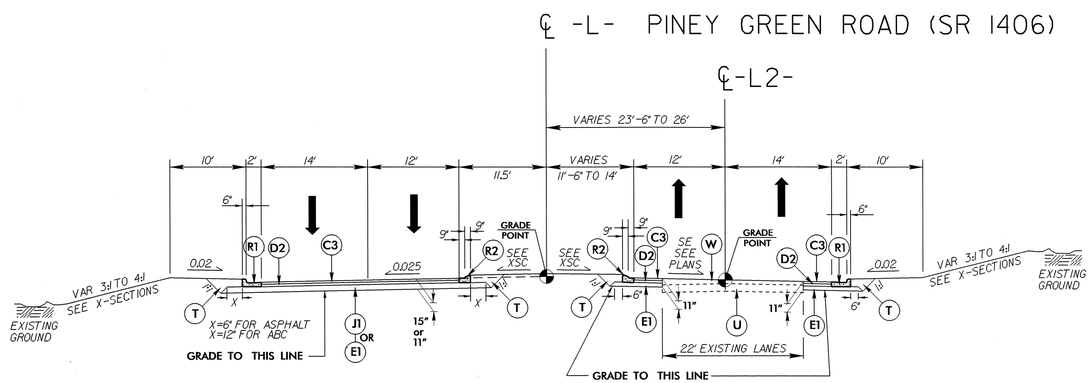
USE TYPICAL SECTION NO. 5 AT THE FOLLOWING LOCATIONS:

FROM -L- STA. 80+00.00 TO STA. 83+23.94 (BEGIN BRIDGE)
FROM -L- STA. 86+31.06 (END BRIDGE) TO STA. 88+50.00



DETAIL OF 1'-6" CURB AND GUTTER

TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 5
FROM -L- STA. 86+72.00 TO STA. 88+50.00

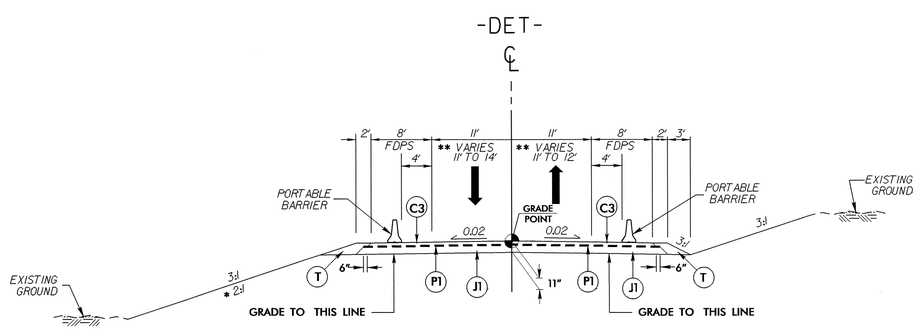


TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6 AT THE FOLLOWING LOCATIONS:

FROM -L- STA. 230+39.32 TO STA. 233+71.50 (BEGIN BRIDGE)
FROM -L- STA. 234+96.50 (END BRIDGE) TO STA. 238+04.72

NOTE: -L2- STA. 230+39.32 (BEGIN GRADE) TO -L2- STA. 233+00.00 (END GRADE)
-L2- STA. 235+43.81 (BEGIN GRADE) TO -L2- STA. 238+04.72 (END GRADE)



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7 AT THE FOLLOWING LOCATIONS:

FROM -DET- STA. 10+00.00 TO STA. 14+11.06
* FROM -DET- STA. 11+40.00 LT TO STA. 13+20.00 LT
** FROM -DET- STA. 14+11.06 TO STA. 14+91.06

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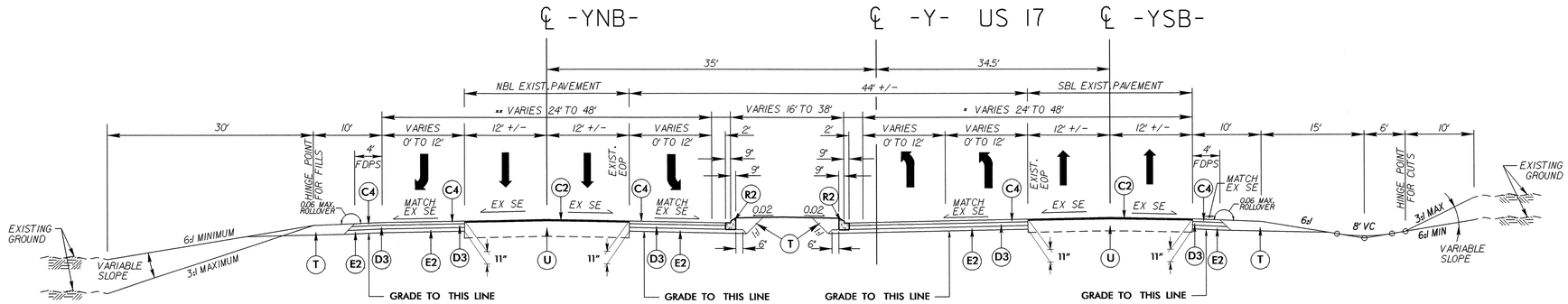
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-C

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER
RAKHA V. PATEL

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER
VLADIMIR G. MITCHICH
04/12/12



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8 AT THE FOLLOWING LOCATIONS:

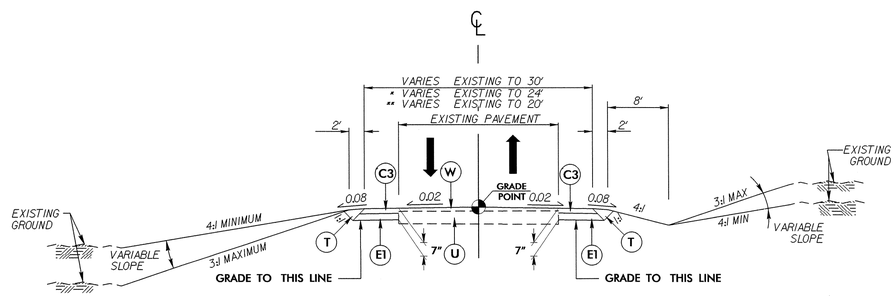
* FROM -Y- STA. 12+60.00 SBL TO STA. 24+66.00 SBL

** FROM -Y- STA. 12+60.00 NBL TO STA. 28+00.00 NBL

PAVEMENT SCHEDULE

C2	1½"	S9.5C
C3	3"	S9.5B
C4	3"	S9.5C
D3	4"	I19.0C
E1	4"	B25.0B
E2	4"	B25.0C
R2	1'-6" CURB & GUTTER	
T	EARTH MATERIAL	
U	EXIST. PAVEMENT	
W	WEDGING	

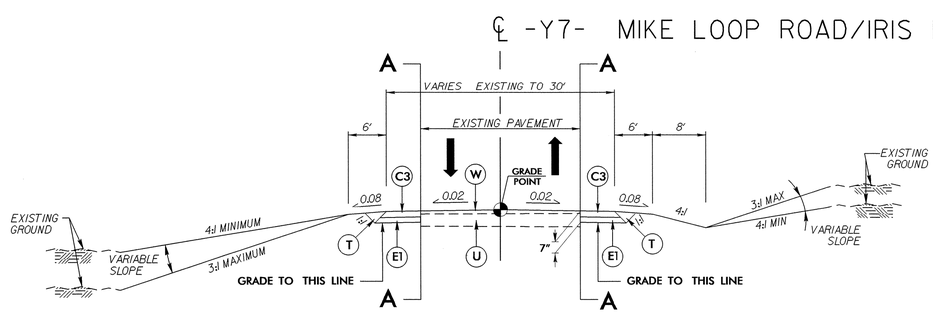
FDPS - FULL DEPTH PAVED SHOULDER



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9 AT THE FOLLOWING LOCATIONS:

* FROM -Y1- STA. 10+37.83 TO STA. 11+00.00
FROM -Y2- STA. 10+37.50 TO STA. 11+15.00
FROM -Y3- STA. 10+37.50 TO STA. 11+25.00
FROM -Y4- STA. 13+35.00 TO STA. 14+18.83
FROM -Y5- STA. 10+37.50 TO STA. 11+10.00
FROM -Y9- STA. 10+37.50 TO STA. 11+61.00
FROM -Y10- STA. 16+60.00 TO STA. 17+81.12
FROM -Y11- STA. 10+37.50 TO STA. 11+35.00
FROM -Y13- STA. 11+30.00 TO STA. 13+00.00
FROM -Y16- STA. 10+75.00 TO STA. 11+59.38
FROM -Y27- STA. 10+37.98 TO STA. 11+40.00
FROM -Y31- STA. 10+95.00 TO STA. 11+79.49
FROM -Y32- STA. 13+00.00 TO STA. 14+24.03
* FROM -Y33- STA. 10+37.57 TO STA. 11+10.00
FROM -Y35- STA. 12+90.00 TO STA. 13+69.81
FROM -Y36- STA. 10+40.25 TO STA. 11+24.00
FROM -Y37- STA. 10+37.51 TO STA. 11+50.00
FROM -Y40- STA. 11+15.00 TO STA. 11+44.00
FROM -Y41- STA. 13+11.00 TO STA. 13+45.00
* FROM -Y42- STA. 11+05.00 TO STA. 11+15.00
FROM -Y43- STA. 11+32.00 TO STA. 12+59.33
FROM -Y44- STA. 10+87.58 TO STA. 11+38.00
** FROM -Y45- STA. 10+60.00 TO STA. 11+10.00
* FROM -Y47- STA. 10+72.00 TO STA. 11+00.00
FROM -Y49- STA. 10+98.00 TO STA. 11+30.00
FROM -Y51- STA. 10+49.50 TO STA. 11+30.00
FROM -Y52- STA. 10+35.00 TO STA. 11+15.64



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10 AT THE FOLLOWING LOCATIONS:

FROM -Y7- STA. 12+80.00 TO STA. 14+02.70
FROM -Y7- STA. 14+77.70 TO STA. 16+00.00

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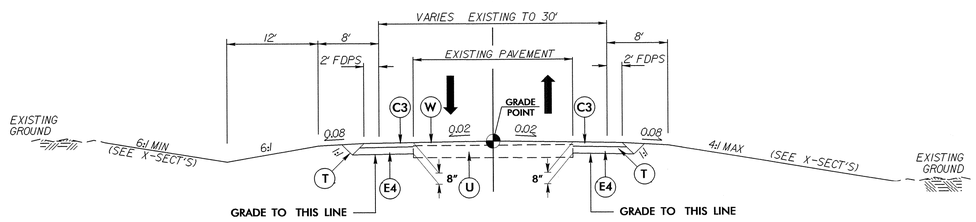
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-D
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER DARSHIKA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER VLADIMIR G. MITCHEV

07/12/12

℄ -Y12- WOLF SWAMP ROAD (SR 1407)

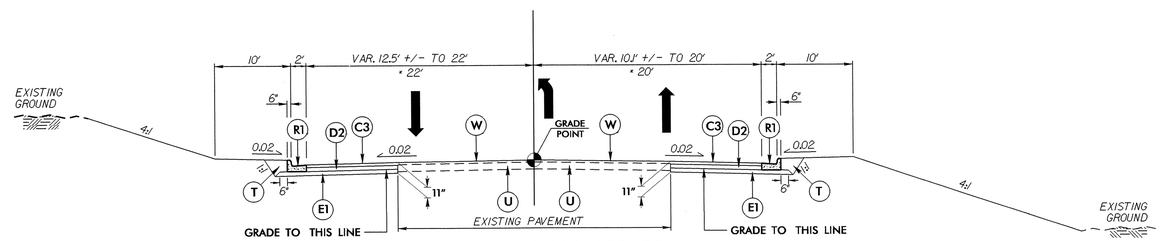


TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11 AT THE FOLLOWING LOCATIONS:

FROM –Y12– STA. 15+56.93 TO STA. 17+18.00

℄ -Y14- COUNTRY CLUB ROAD (SR 1708)

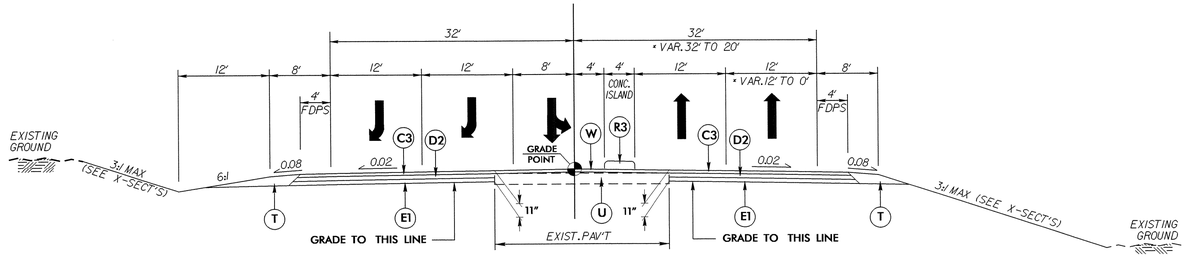


TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12 AT THE FOLLOWING LOCATIONS:

FROM –Y14– STA. 12+00.00 TO STA. 14+10.69
*** FROM –Y14– STA. 14+10.69 TO STA. 15+10.11**

℄ -Y14- COUNTRY CLUB ROAD (SR 1403)



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13 AT THE FOLLOWING LOCATIONS:

FROM –Y14– STA. 15+92.21 TO STA. 20+53.00
*** FROM –Y14– STA. 20+53.00 TO STA. 23+53.00**

PAVEMENT SCHEDULE

C3	3" S9.5B
D2	4" I19.0B
E1	4" B25.0B
E4	5" B25.0B
R1	2'-6" CURB & GUTTER
R3	5" MONOLITHIC CONC. ISLAND
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

FDPS - FULL DEPTH PAVED SHOULDER

6/2/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-E

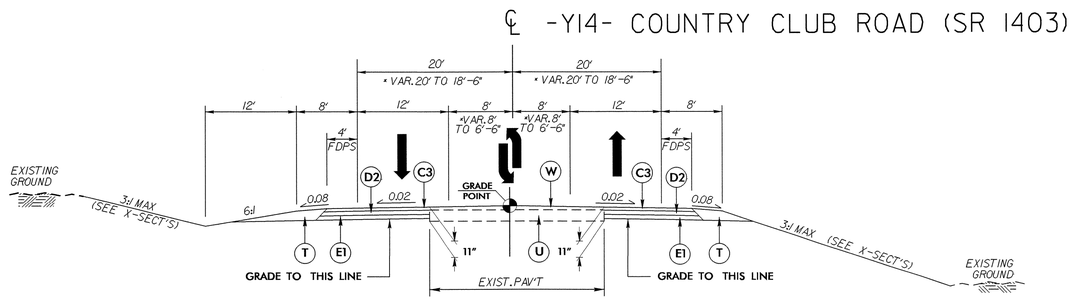
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 12603 REKHA V. PATEL

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031484 VLADIMIR G. MITCHEV

07/12/12



TYPICAL SECTION NO. 14

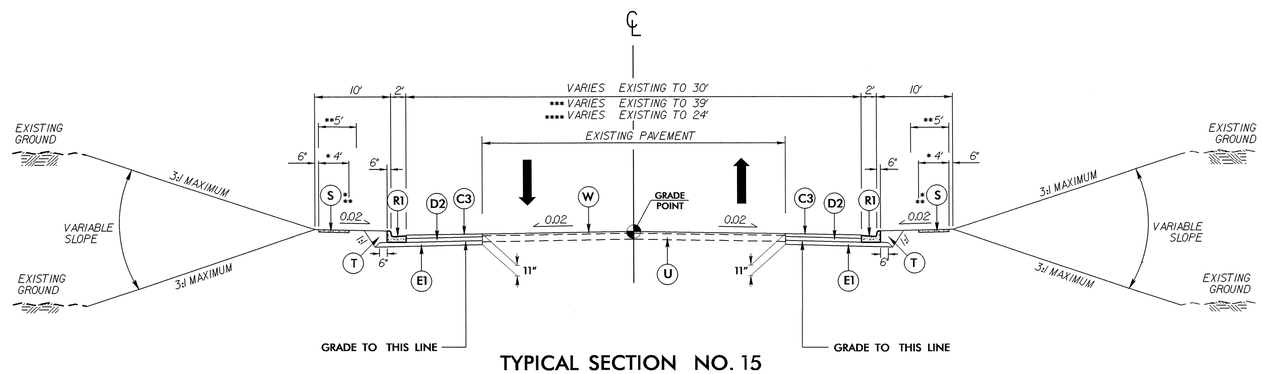
USE TYPICAL SECTION NO. 14 AT THE FOLLOWING LOCATIONS:

FROM -Y14- STA. 23+53.00 TO STA. 26+00.00
* FROM -Y14- STA. 26+00.00 TO STA. 27+00.00

PAVEMENT SCHEDULE

C3	3" S9.5B
D2	4" I19.0B
E1	4" B25.0B
R1	2'-6" CURB & GUTTER
S	4" CONC. SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

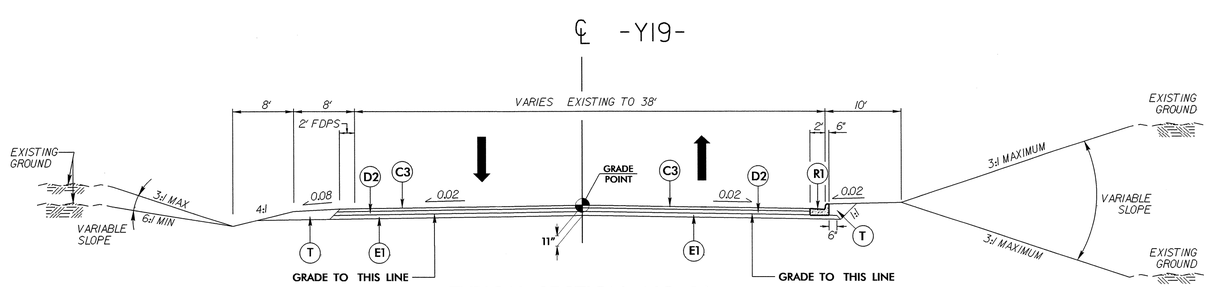
FDPS - FULL DEPTH PAVED SHOULDER



TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15 AT THE FOLLOWING LOCATIONS:

FROM -Y6- STA. 13+35.00 TO STA. 14+16.58
FROM -Y12- STA. 17+18.00 TO STA. 17+85.89
FROM -Y13- STA. 10+40.95 TO STA. 11+30.00
FROM -Y15- STA. 12+60.00 TO STA. 13+46.26
FROM -Y17- STA. 12+45.00 TO STA. 12+97.08
* FROM -Y17- STA. 13+72.23 TO STA. 14+43.00
*** FROM -Y18- STA. 12+35.00 TO STA. 14+23.67
** FROM -Y20- STA. 10+49.57 TO STA. 11+30.00
FROM -Y21- STA. 10+49.50 TO STA. 11+50.00
FROM -Y23- STA. 10+37.50 TO STA. 11+20.00
FROM -Y25- STA. 11+90.00 TO STA. 12+70.61
FROM -Y26- STA. 11+45.00 TO STA. 12+51.27
FROM -Y28- STA. 10+37.50 TO STA. 11+18.00
FROM -Y34- STA. 13+20.00 TO STA. 14+24.66
FROM -Y40- STA. 10+39.68 TO STA. 11+15.00
FROM -Y41- STA. 13+45.00 TO STA. 14+01.70
FROM -Y42- STA. 10+37.76 TO STA. 11+05.00
FROM -Y44- STA. 10+37.50 TO STA. 10+87.58
**** FROM -Y47- STA. 10+39.74 TO STA. 10+72.00
FROM -Y49- STA. 10+37.50 TO STA. 10+98.00



TYPICAL SECTION NO. 16

USE TYPICAL SECTION NO. 16 AT THE FOLLOWING LOCATIONS:

FROM -Y19- STA. 10+80.00 TO STA. 12+06.22

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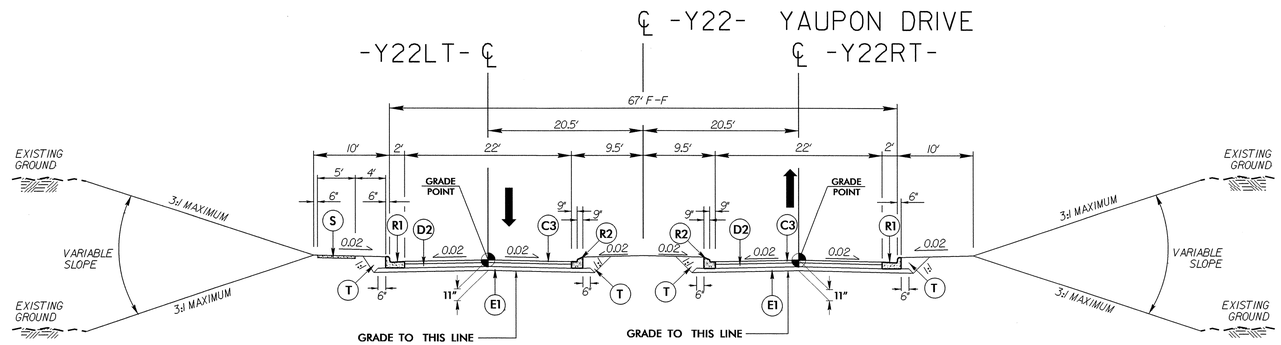
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-F
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 12-16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER VLADIMIR G. MITCHICH

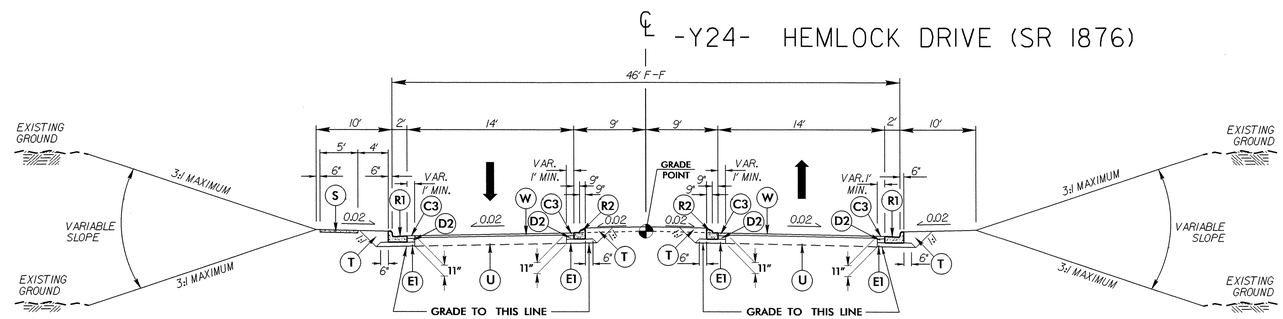
07/12/12



TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17 AT THE FOLLOWING LOCATIONS:

FROM –Y22– STA. 10+37.50 TO STA. 11+60.00



TYPICAL SECTION NO. 18

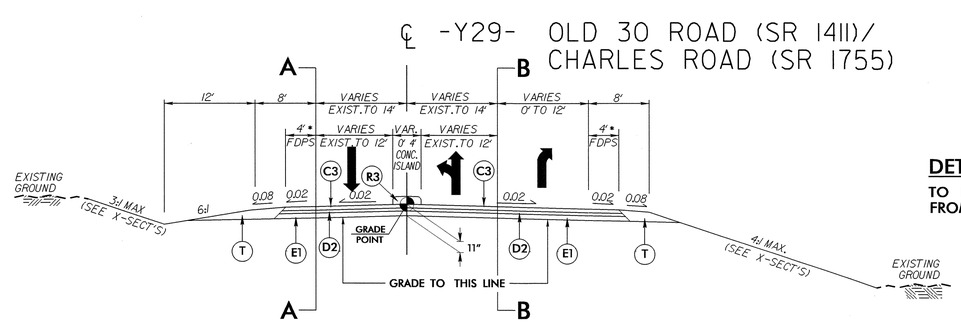
USE TYPICAL SECTION NO. 18 AT THE FOLLOWING LOCATIONS:

FROM –Y24– STA. 10+37.50 TO STA. 11+40.00

PAVEMENT SCHEDULE

C3	3" S9.5B
D2	4" I19.0B
E1	4" B25.0B
R1	2'-6" CURB & GUTTER
R2	1'-6" CURB & GUTTER
R3	5" MONOLITHIC CONC. ISLAND
S	4" CONC. SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

FDPS - FULL DEPTH PAVED SHOULDER

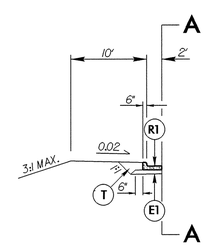


TYPICAL SECTION NO. 19

USE TYPICAL SECTION NO. 19 AT THE FOLLOWING LOCATIONS:

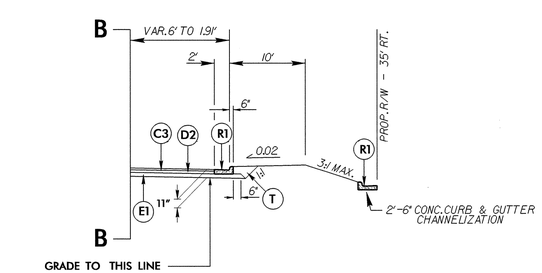
FROM –Y29– STA. 11+73.00 TO STA. 17+18.84

*** FROM –Y29– STA. 17+93.88 TO STA. 20+83.00 (NO FDPS)**



DETAIL OF 2'-6" CONC. CURB & GUTTER

TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 19
FROM –Y29– STA. 18+41.00 LT. TO STA. 19+51.00 LT.



DETAIL OF 2'-6" CONC. CURB & GUTTER CHANNELIZATION

TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 19
FROM –Y29– STA. 18+57.00 RT. TO STA. 20+00.00 RT.

6/2/99

12-JUL-2012 13:23
R:\Roadway\Proj\u3810_rdy_typ.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-G

ROADWAY DESIGN ENGINEER

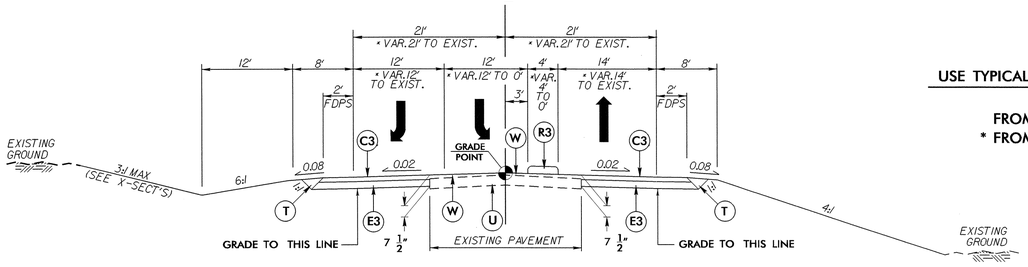
NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER NADIR G. MITCHELL

07/12/12

℄ -Y39- HUNTERS TRAIL (SR 1860)

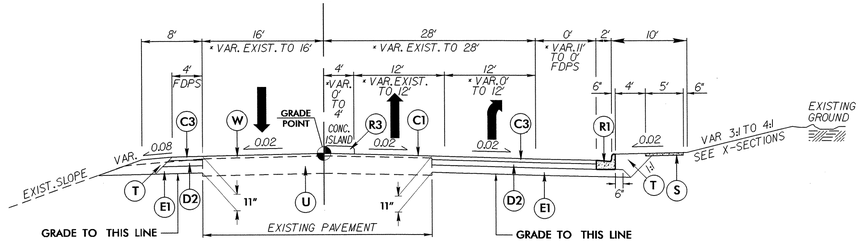


TYPICAL SECTION NO. 20

USE TYPICAL SECTION NO. 20 AT THE FOLLOWING LOCATIONS:

FROM –Y39– STA. 10+49.50 TO STA. 12+20.00
* FROM –Y39– STA. 12+20.00 TO STA. 13+70.00

℄ -Y48- ROCKY RUN ROAD (SR 1860)

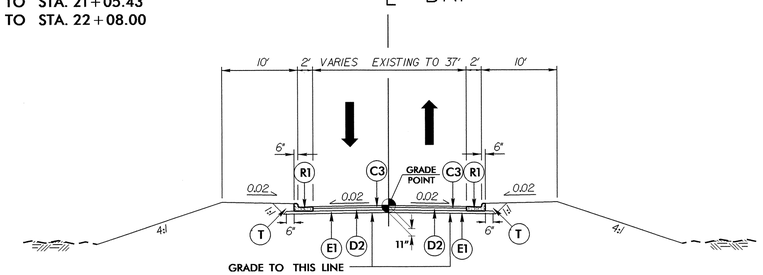


TYPICAL SECTION NO. 21

USE TYPICAL SECTION NO. 21 AT THE FOLLOWING LOCATIONS:

* FROM –Y48– STA. 19+20.00 TO STA. 21+05.43
FROM –Y48– STA. 21+05.43 TO STA. 22+08.00

℄ -DRI-

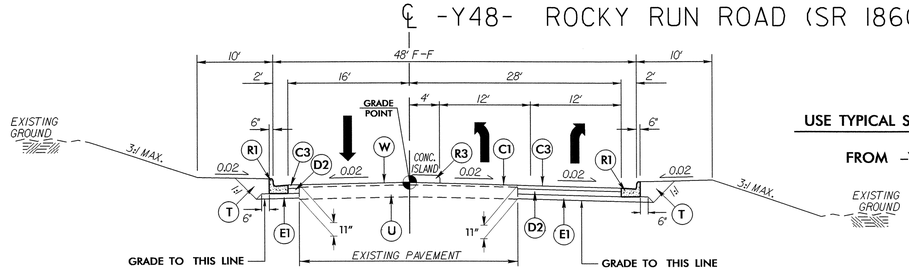


TYPICAL SECTION NO. 23

USE TYPICAL SECTION NO. 23 AT THE FOLLOWING LOCATIONS:

FROM –DRI– STA. 13+10.00 TO STA. 13+88.45

℄ -Y48- ROCKY RUN ROAD (SR 1860)



TYPICAL SECTION NO. 22

USE TYPICAL SECTION NO. 22 AT THE FOLLOWING LOCATIONS:

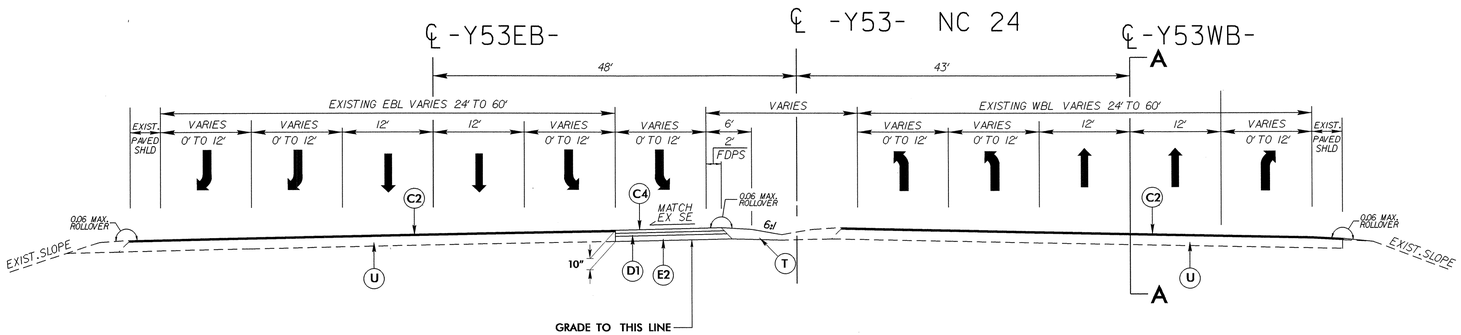
FROM –Y48– STA. 22+08.00 TO STA. 22+44.00

PAVEMENT SCHEDULE

C1	1½" S9.5B
C2	1½" S9.5C
C3	3" S9.5B
C4	3" S9.5C
D1	3" I19.0C
D2	4" I19.0B
E1	4" B25.0B
E2	4" B25.0C
E3	4½" B25.0B
E5	VAR. B25.0B
R1	2'-6" CURB & GUTTER
R3	5" MONOLITHIC CONC. ISLAND
R4	8" x 12" CONC. CURB
S	4" CONC. SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

FDPS - FULL DEPTH PAVED SHOULDER

℄ -Y53EB- ℄ -Y53- NC 24 ℄ -Y53WB-

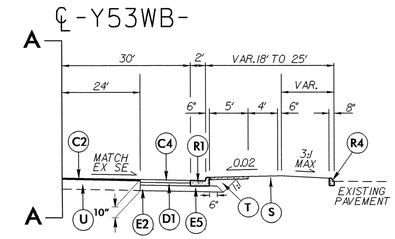


TYPICAL SECTION NO. 24

USE TYPICAL SECTION NO. 24 AT THE FOLLOWING LOCATIONS:

FROM –Y53– STA. 14+75.00 TO STA. 30+34.00

℄ -Y53WB-



DETAIL OF 2'-6" CURB & GUTTER, SIDEWALK, & 8"X12" CONC. CURB

TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 24
FROM –Y53WB– STA. 20+38 RT TO –Y53WB– STA. 20+60 RT

6/2/99

12-JUL-2012 13:23
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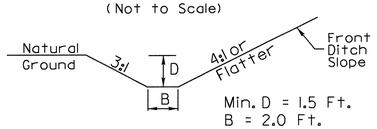
$$$$USERNAME$$$$

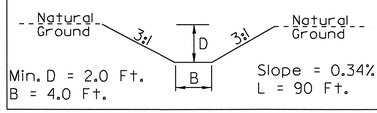
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-H
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DETAIL 1
SPECIAL CUT BASE DITCH
(Not to Scale)



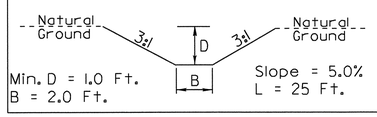
FROM STA. 13+00 TO STA. 19+50 –Y– LT.

DETAIL 2
TAIL DITCH
(Not to Scale)



STA. 11+58 –L– RT., DDE = 120 CY

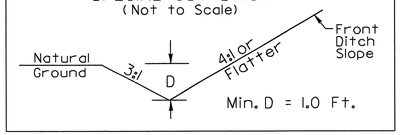
DETAIL 3
HEAD DITCH
(Not to Scale)



STA. 12+50 –L– LT., DDE = 5 CY

PSH4

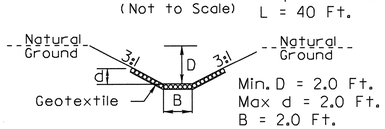
DETAIL 4
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 15+50 TO STA. 16+00 –Y7– LT.
FROM STA. 15+50 TO STA. 16+00 –Y7– RT.

PSH6

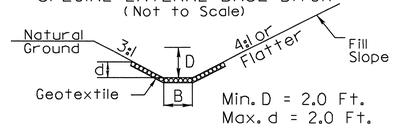
DETAIL 5
HEAD DITCH
(Not to Scale)



Type of Liner= Class B Rip Rap

STA. 47+20 –L– RT., CL. B RIP RAP 25 TON, 54 SY GEOTEXTILE, DDE=55 CY

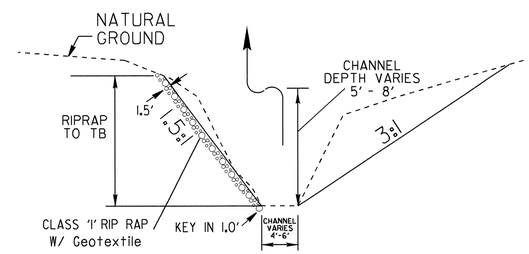
DETAIL 6
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class I Rip-Rap

FROM STA. 50+00 TO STA. 50+85 –L– LT.

DETAIL 7

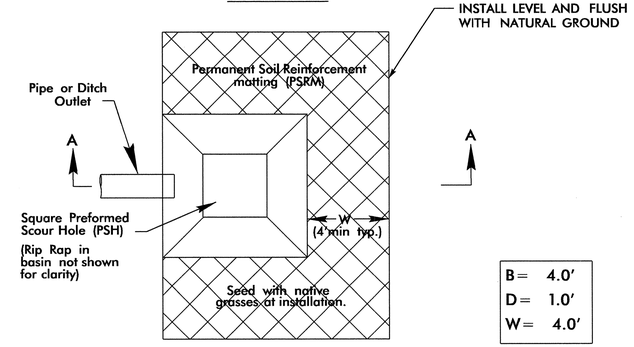


INLET TYPICAL
NOT TO SCALE

EST TONS CLASS 'I' = 30 TONS
EST Geotextile = 40 SY
DDE = 65 CY

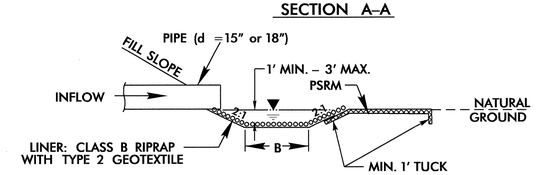
DETAIL 10
PREFORMED SCOUR HOLE
*NOT TO SCALE

PLAN VIEW



B = 4.0'
D = 1.0'
W = 4.0'

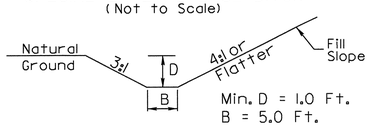
SECTION A-A



3/08

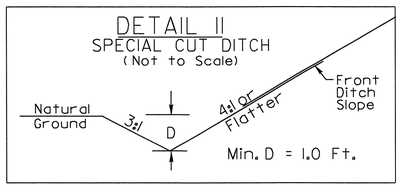
STA. 52+70 –L– RT.

DETAIL 9
SPECIAL LATERAL BASE DITCH
(Not to Scale)



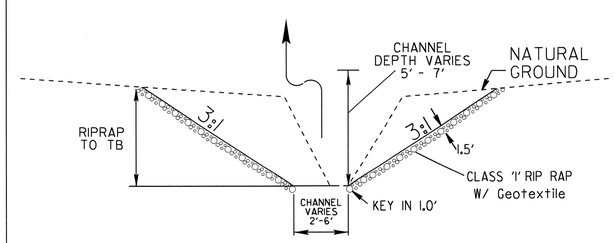
FROM STA. 51+50 TO STA. 52+00 –L– LT.

DETAIL 11
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 16+60 TO STA. 17+25 –Y10– LT.

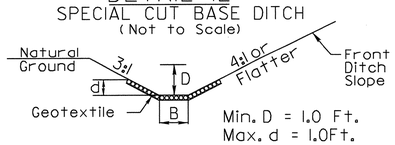
DETAIL 8



OUTLET TYPICAL
NOT TO SCALE

EST TONS CLASS 'I' = 105 TONS
EST Geotextile = 145 SY
DDE = 145 CY

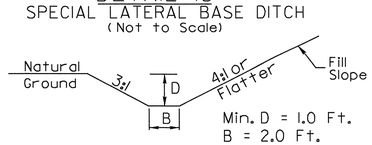
DETAIL 12
SPECIAL CUT BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

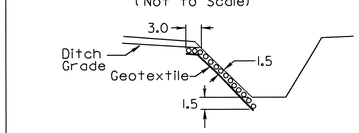
FROM STA. 17+25 TO STA. 17+70 –Y10– LT.

DETAIL 13
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 15+57 TO STA. 17+22 –Y12– LT.
FROM STA. 17+22 TO STA. 17+60 –Y12– LT.

DETAIL 65
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 4 TONS,CL I Rip-Rap
Geotextile= 7 sy

STA. 50+85 –L– LT.

PSH7

REVISIONS

8/17/99

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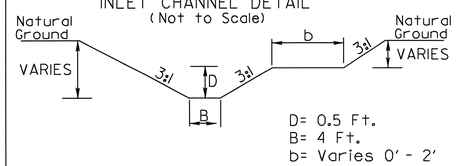
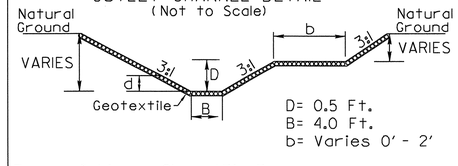
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DETAIL 14
INLET CHANNEL DETAIL
(Not to Scale)



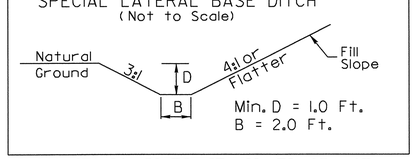
STA. 69+67 –L– LT., DDE=65 CY

DETAIL 15
OUTLET CHANNEL DETAIL
(Not to Scale)



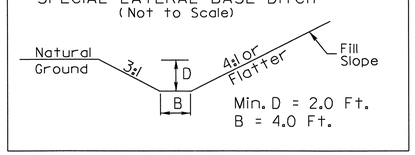
STA. 69+95 –L– RT., CL. I RIP RAP 60 TON, 85 SY GEOTEXTILE, DDE=30CY

DETAIL 16
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 16+50 TO STA. 21+73 –Y14– LT.

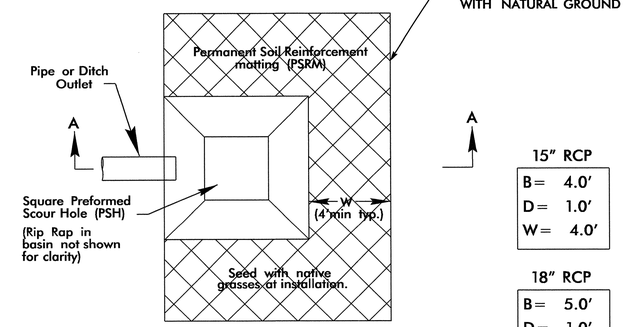
DETAIL 17
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 16+70 TO STA. 21+63 –Y14– RT.

DETAIL 18 PREFORMED SCOUR HOLE
*NOT TO SCALE

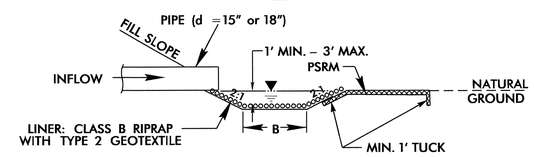
PLAN VIEW



15" RCP	
B=	4.0'
D=	1.0'
W=	4.0'

18" RCP	
B=	5.0'
D=	1.0'
W=	4.0'

SECTION A–A



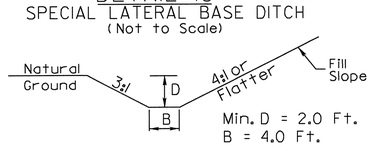
3/08

STA. 69+50 –L– LT., 18" RCP

PSH8

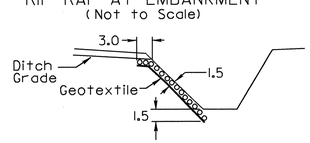
PSH9

DETAIL 19
SPECIAL LATERAL BASE DITCH
(Not to Scale)



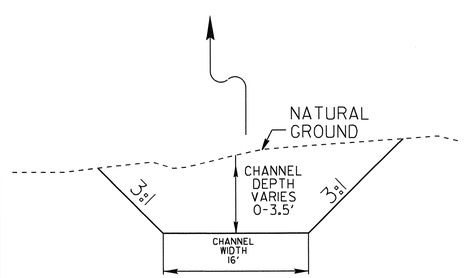
FROM STA. 78+20 TO STA. 81+60 –L– LT

DETAIL 20
RIP RAP AT EMBANKMENT
(Not to Scale)



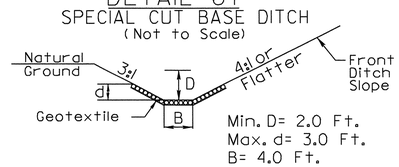
STA. 83+45 –L– LT.

DETAIL 21



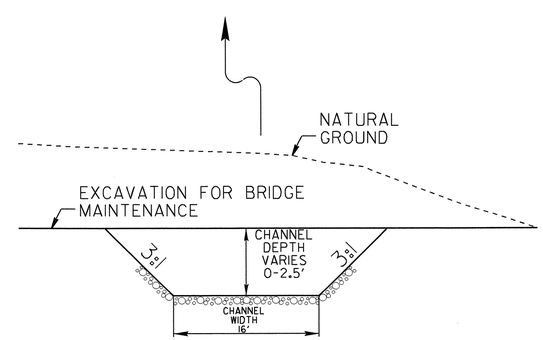
OVERFLOW PIPESTA. 84+45 -L-
INLET TYPICAL
NOT TO SCALE
DDE = 55 CY

DETAIL 67
SPECIAL CUT BASE DITCH
(Not to Scale)



FROM STA. 81+60 TO STA. 83+45 –L– LT

DETAIL 22

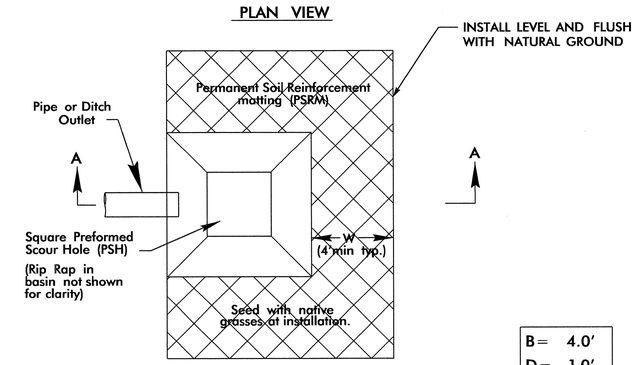


OVERFLOW PIPE STA. 84+45 -L-
OUTLET TYPICAL
NOT TO SCALE
DDE = 140 CY

EST TONS CLASS 'II'
= 203 TONS
EST Geotextile
= 160 SY

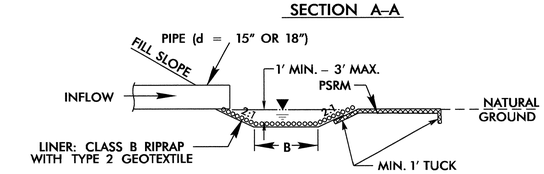
DETAIL 23 PREFORMED SCOUR HOLE
*NOT TO SCALE

PLAN VIEW



B=	4.0'
D=	1.0'
W=	4.0'

SECTION A–A



3/08

STA. 86+15 –L– RT.

REVISIONS

8/17/99

26-JUL-2012 08:11
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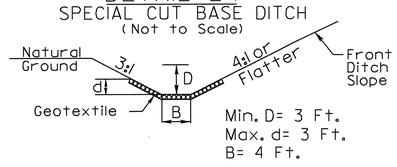
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-J
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

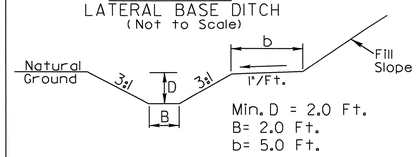
DETAIL 24
SPECIAL CUT BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

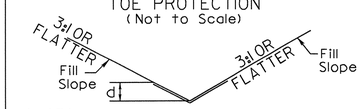
FROM STA. 88+50 TO STA. 90+25 -L- LT

DETAIL 25
LATERAL BASE DITCH
(Not to Scale)



FROM STA. 91+17 TO STA. 91+75 -L- RT.
FROM STA. 92+00 TO STA. 93+00 -L- RT.

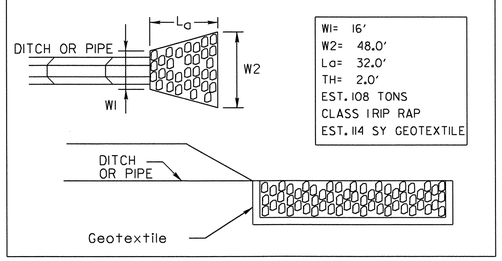
DETAIL 26
TOE PROTECTION
(Not to Scale)



Type of Liner= PSRM

FROM STA. 93+50 TO STA. 95+55 -L- LT

DETAIL 66
DISSIPATOR PAD
(Not to Scale)

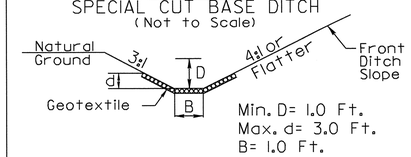


W1= 16'
W2= 48.0'
La= 32.0'
TH= 2.0'
EST. 108 TONS
CLASS I RIP RAP
EST. 114 SY GEOTEXTILE

STA. 88+00 -L- IT.

PSH10

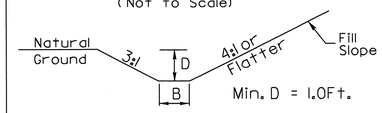
DETAIL 27
SPECIAL CUT BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

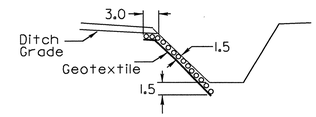
FROM STA. 119+15 TO STA. 119+40 -L- LT.

DETAIL 28
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 118+00 TO STA. 119+10 -L- RT., B=5.0 Ft.
FROM STA. 119+20 TO STA. 119+50 -L- RT., B=4.0 Ft.

DETAIL 29
RIP RAP AT EMBANKMENT
(Not to Scale)

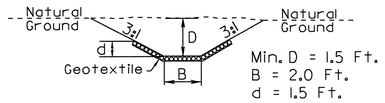


STA. 119+10 -L- RT., CL. I RIP RAP 8 TONS, 16 SY GEOTEXTILE
STA. 119+15 -L- LT., CL. I RIP RAP 8 TONS, 16 SY GEOTEXTILE
STA. 119+20 -L- RT., CL. I RIP RAP 8 TONS, 16 SY GEOTEXTILE

PSH12

DETAIL 30
HEAD DITCH
(Not to Scale)

Slope = 3.7%
L = 20 Ft.

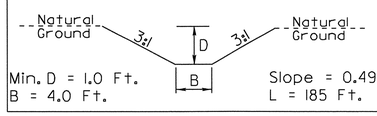


Type of Liner= Class B Rip-Rap

STA. 137+95 -L- LT., 26 TON, DDE=50 CY

PSH13

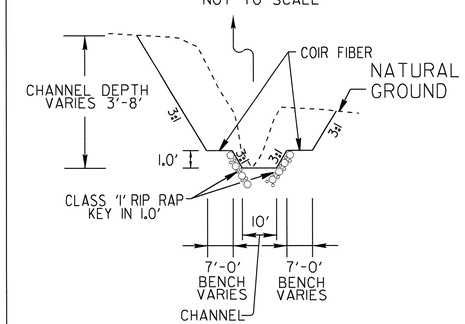
DETAIL 31
TAIL DITCH
(Not to Scale)



STA. 150+49 -L- RT., DDE = 250 CY

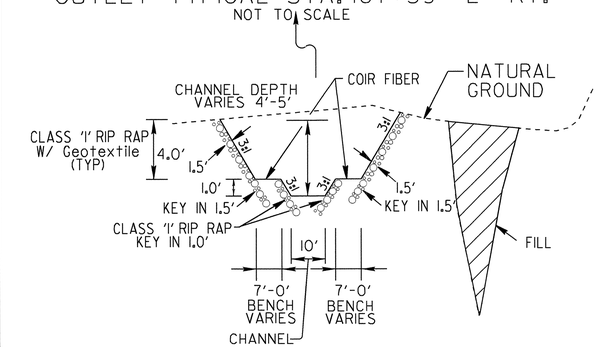
PSH14

DETAIL 34
INLET TYPICAL STA. 167+39 -L- LT.
NOT TO SCALE



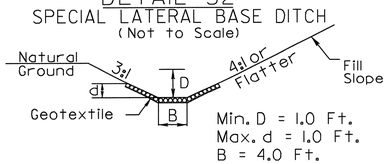
DDE = 175 CY

DETAIL 35
OUTLET TYPICAL STA. 167+39 -L- RT.
NOT TO SCALE



EST TONS CLASS 'I'
= 350 TONS
EST Geotextile
= 500 SY
EST FILL = 25 CY
DDE = 375 CY

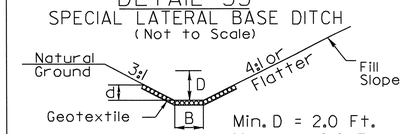
DETAIL 32
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

FROM STA. 164+75 TO STA. 165+50 -L- LT.

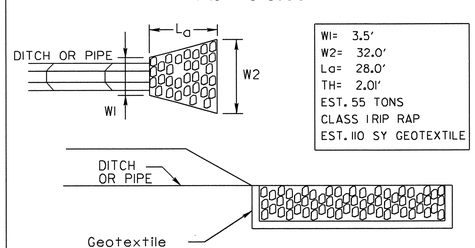
DETAIL 33
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

FROM STA. 168+10 TO STA. 178+50 -L- LT.

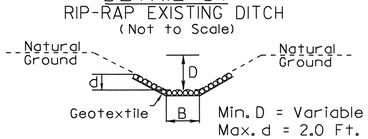
DETAIL 36
DISSIPATOR PAD
(Not to Scale)



W1= 3.5'
W2= 32.0'
La= 28.0'
TH= 2.01'
EST. 55 TONS
CLASS I RIP RAP
EST. 110 SY GEOTEXTILE

STA. 169+20 -L- RT.

DETAIL 37
RIP-RAP EXISTING DITCH
(Not to Scale)



Type of Liner= Class I Rip-Rap

FROM STA. 169+20 TO STA. 169+50 -L- RT.

PSH15

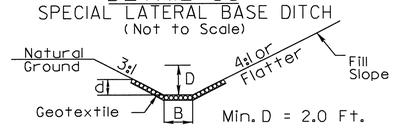
REVISIONS

8/17/99

26-JUL-2012 08:11
R:\Drainage\u3810_hyd_drn.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-K
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DETAIL 33
SPECIAL LATERAL BASE DITCH
(Not to Scale)

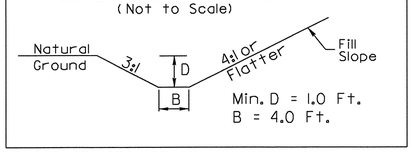


Min. D = 2.0 Ft.
Max. d = 2.0 Ft.
B = 2.0 Ft.

Type of Liner= Class B Rip-Rap

FROM STA. 168+10 TO STA. 178+50 –L– LT.

DETAIL 38
SPECIAL LATERAL BASE DITCH
(Not to Scale)

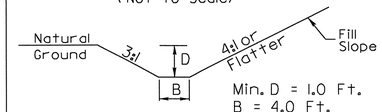


Min. D = 1.0 Ft.
B = 4.0 Ft.

FROM STA. 178+50 TO STA. 182+49 –L– LT.
FROM STA. 182+49 TO STA. 185+69 –L– LT.

PSH16

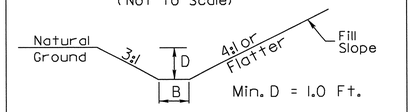
DETAIL 38
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 1.0 Ft.
B = 4.0 Ft.

FROM STA. 182+49 TO STA. 185+69 –L– LT.

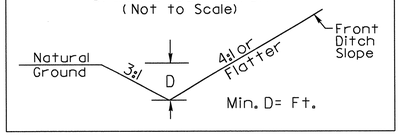
DETAIL 39
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 1.0 Ft.

FROM STA. 182+49 TO STA. 185+69 –L– LT., B=4.0 Ft.
FROM STA. 15+00 TO STA. 16+51 –Y29– RT., B=2.0 Ft.

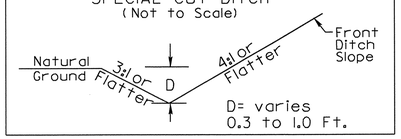
DETAIL 40
SPECIAL CUT DITCH
(Not to Scale)



Min. D= Ft.

FROM STA. 14+00 TO STA. 15+00 –Y29– LT.
FROM STA. 12+00 TO STA. 15+00 –Y29– RT.
FROM STA. 15+00 TO STA. 16+00 –Y29– LT.

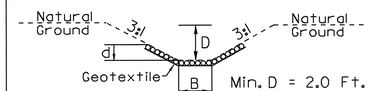
DETAIL 41
SPECIAL CUT DITCH
(Not to Scale)



D= varies
0.3 to 1.0 Ft.

FROM STA. 20+00 TO STA. 20+83 –Y29– LT.
FROM STA. 20+00 TO STA. 20+83 –Y29– RT.

DETAIL 42
TAIL DITCH
(Not to Scale)



Min. D = 2.0 Ft.
Max. d = 2.0 Ft.
B = 4.0 Ft.

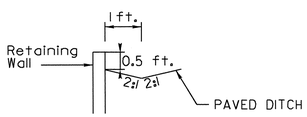
Slope = 2.1%
L=150 Ft.

Type of Liner= Class I Rip-Rap

FROM STA. 194+23 –L– RT., CL. I RIP RAP 240 TONS, 540 SY GEOTEXTILE, DDE=680 CY

PSH17

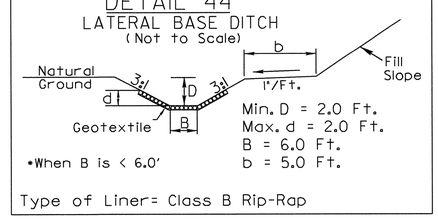
DETAIL 43
PAVED DITCH
(Not to Scale)



FROM STA. 201+17.00 TO STA. 202+58.76 –L– RT.
FROM STA. 202+58.76 TO STA. 203+45.00 –L– RT.

PSH18

DETAIL 44
LATERAL BASE DITCH
(Not to Scale)



Min. D = 2.0 Ft.
Max. d = 2.0 Ft.
B = 6.0 Ft.
b = 5.0 Ft.

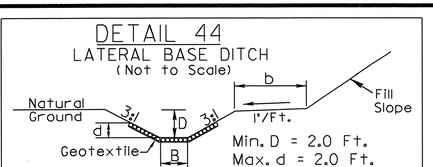
*When B is < 6.0'

Type of Liner= Class B Rip-Rap

FROM STA. 225+00 TO STA. 231+65 –L– LT.

PSH19

DETAIL 44
LATERAL BASE DITCH
(Not to Scale)

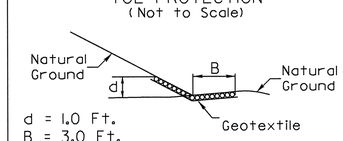


Min. D = 2.0 Ft.
Max. d = 2.0 Ft.
B = 6.0 Ft.
b = 5.0 Ft.

Type of Liner= Class B Rip-Rap

FROM STA. 225+00 TO STA. 231+65 –L– LT.

DETAIL 45
TOE PROTECTION
(Not to Scale)



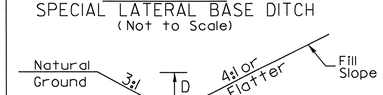
d = 1.0 Ft.
B = 3.0 Ft.

Type of Liner= Class 'B' Rip-Rap

FROM STA. 235+11 TO STA. 237+50 –L– LT.

PSH20

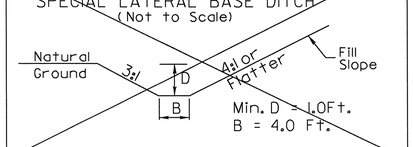
DETAIL 46
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 2.0Ft.
B = 4.0 Ft.

FROM STA. 242+35 TO STA. 245+25 –L– LT.

DETAIL 47
SPECIAL LATERAL BASE DITCH
(Not to Scale)

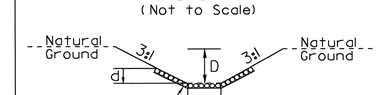


Min. D = 1.0Ft.
B = 4.0 Ft.

FROM STA. 245+65 TO STA. 249+54 –L– RT.

PSH21

DETAIL 48
HEAD DITCH
(Not to Scale)



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

Type of Liner= Class B Rip-Rap

FROM STA. 263+21 –L– LT., CL. B RIP RAP 52 TONS, 78 SY GEOTEXTILE, 40 CY DDE, SLOPE=9.5%, L=30 Ft.

FROM STA. 264+96 –L– LT., CL. B RIP RAP 19 TONS, 28 SY GEOTEXTILE, 14 CY DDE, SLOPE=8.15%, L=20 Ft.

PSH22

REVISIONS

8/17/99

26-JUL-2012 08:11
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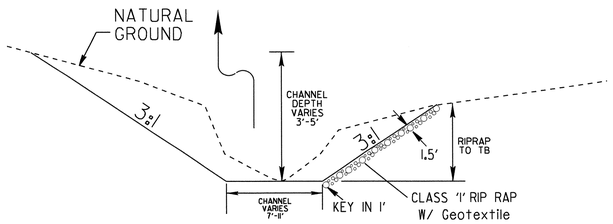
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-L
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DETAIL 49

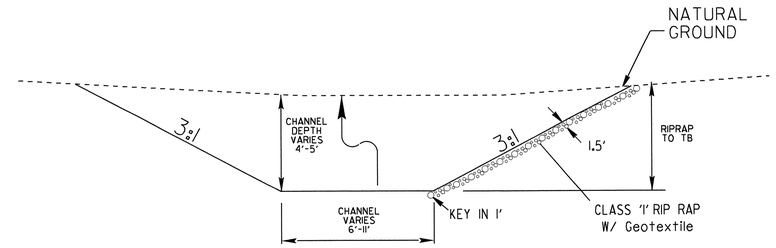
INLET TYPICAL STA. 274+68 -L- LT.
NOT TO SCALE



EST TONS CLASS 'I' = 25 TONS
EST Geotextile = 32 SY
DDE = 12 CY

DETAIL 50

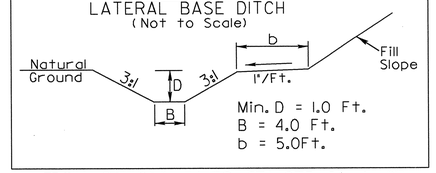
OUTLET TYPICAL STA. 274+68 -L- RT.
NOT TO SCALE



EST TONS CLASS 'I' = 135 TONS
EST Geotextile = 190 SY
DDE = 440 CY

DETAIL 51

LATERAL BASE DITCH
(Not to Scale)



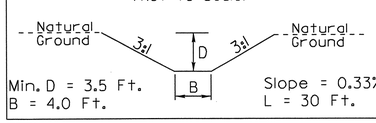
FROM STA. 274+56 TO STA. 275+16 -L- RT.

PSH23

REVISIONS

DETAIL 52

TAIL DITCH
(Not to Scale)

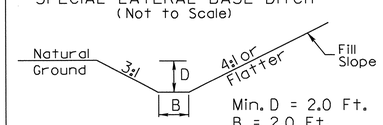


STA. 285+86 -L- RT., DDE = 65 CY

PSH24

DETAIL 53

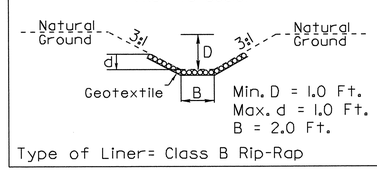
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 325+00 TO STA. 329+60 -L- LT.
FROM STA. 329+82 TO STA. 333+50 -L- RT.

DETAIL 54

HEAD DITCH
(Not to Scale)



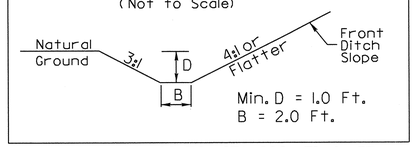
Type of Liner= Class B Rip-Rap

STA. 324+69 -L- LT., CL. B RIP RAP 60 TONS,
90 SY GEOTEXTILE, DDE=32 CY, 100 LF, SLOPE=7.16%

STA. 325+82 -L- LT., CL. B RIP RAP 60 TONS,
90 SY GEOTEXTILE, DDE=45 CY, 100 LF, SLOPE=4.85%

DETAIL 55

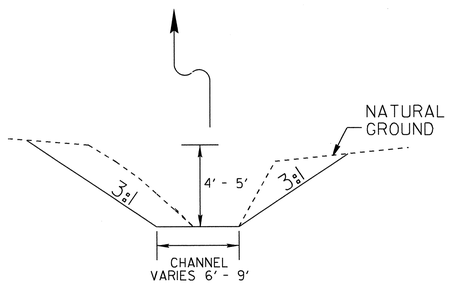
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 328+88 TO STA. 329+71 -L- RT.
FROM STA. 329+75 TO STA. 331+63 -L- LT.

DETAIL 56

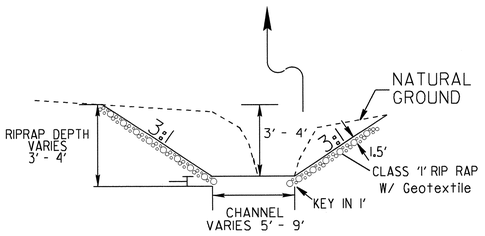
INLET TYPICAL
NOT TO SCALE



DDE = 40 CY

DETAIL 57

OUTLET TYPICAL
NOT TO SCALE



EST TONS CLASS 'I' = 50 TONS
EST Geotextile = 70 SY
DDE = 55 CY

PSH27

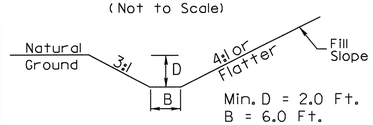
8/17/99
26-JUL-2012 08:10
R:\Or-Ritpage\U3810_hyd_drn.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-M
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

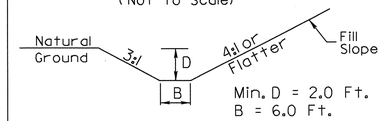
DETAIL 58
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 342+22 TO STA. 352+50 –L– LT.

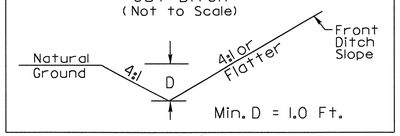
PSH28

DETAIL 58
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 342+22 TO STA. 352+50 –L– LT.

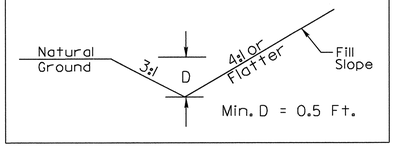
DETAIL 59
CUT DITCH
(Not to Scale)



FROM STA. 10+00 TO STA. 10+50 –Y52– LT.

PSH29

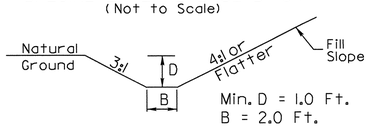
DETAIL 60
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 23+09 TO STA. 25+90 –Y53– LT.
FROM STA. 25+90 TO STA. 27+50 –Y53– LT.

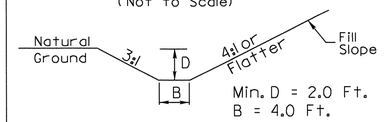
PSH31

DETAIL 16
SPECIAL LATERAL BASE DITCH
(Not to Scale)



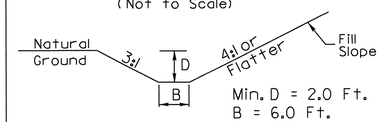
FROM STA. 16+50 TO STA. 21+73 –Y14– LT.

DETAIL 17
SPECIAL LATERAL BASE DITCH
(Not to Scale)



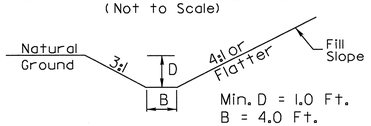
FROM STA. 16+70 TO STA. 21+73 –Y14– RT.

DETAIL 61
SPECIAL LATERAL BASE DITCH
(Not to Scale)



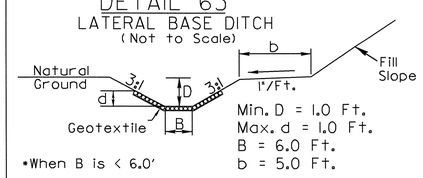
FROM STA. 21+73 TO STA. 25+50 –Y14– RT.

DETAIL 62
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 24+00 TO STA. 28+50 –Y14– LT.

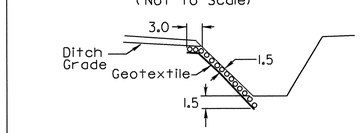
DETAIL 63
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

FROM STA. 26+50 TO STA. 27+75 –Y14– RT.

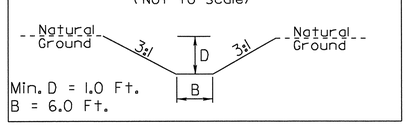
DETAIL 64
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 35 TONS,CL I Rip-Rap
Geotextile= 48 sy

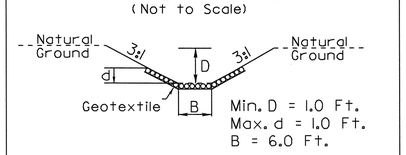
STA. 27+75 –Y14– RT.

DETAIL 68
STANDARD BASE DITCH
(Not to Scale)



FROM STA. 25+50 TO STA. 26+00 –Y14– RT.

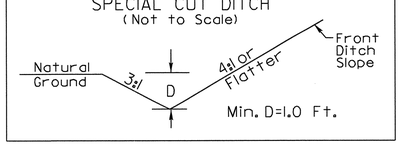
DETAIL 69
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

FROM STA. 26+00 TO STA. 26+50 –Y14– RT.

DETAIL 70
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 25+50 TO STA. 26+50 –Y14– RT.

PSH30

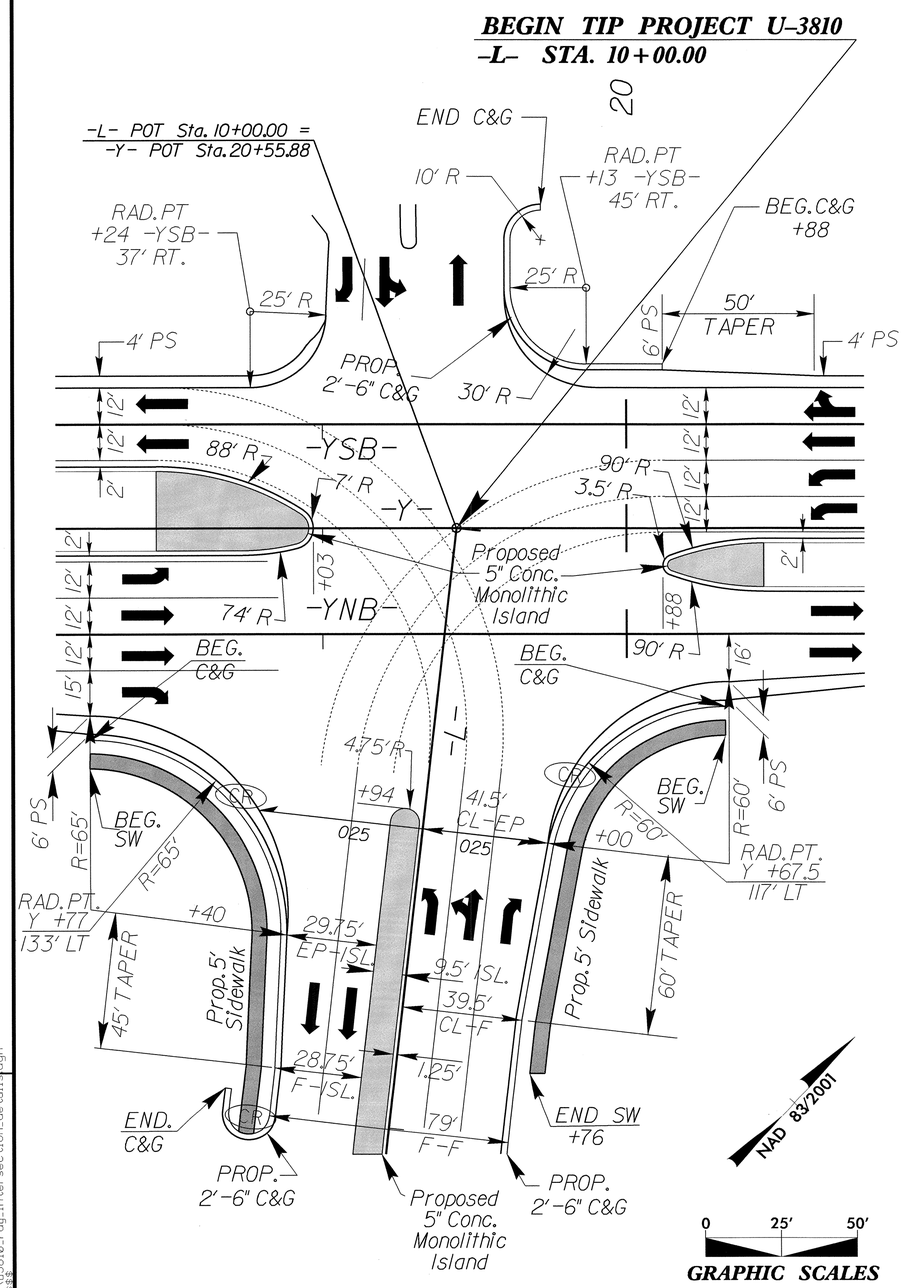
26-JUL-2012 08:10
R:\Drainage\u3810_hyd_drn.dgn
$$$$USERNAME$$$$

INTERSECTION DETAILS

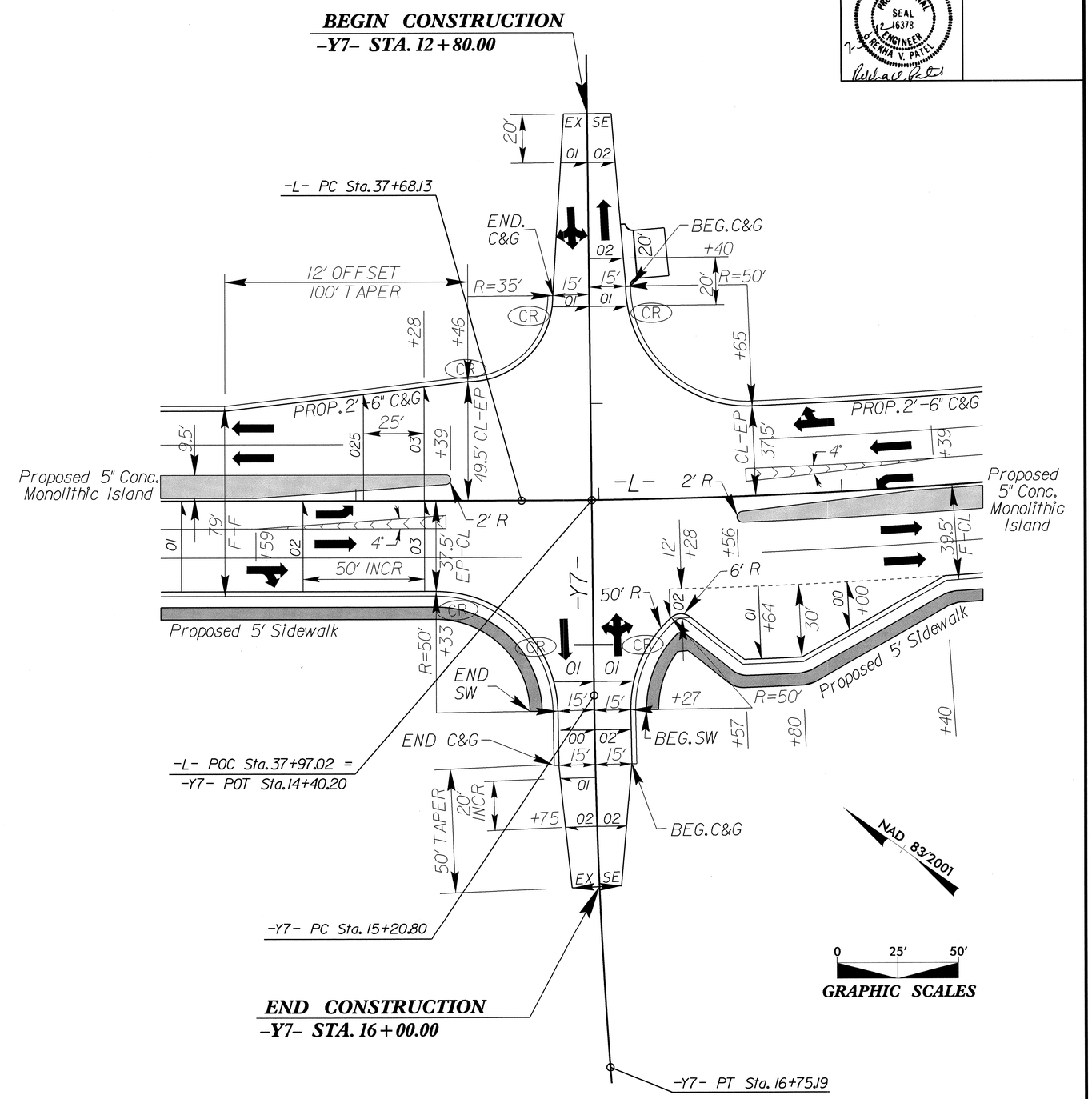
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-N
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL



DETAIL OF INTERSECTION -L- AND -Y-



DETAIL OF INTERSECTION -L- AND -Y7-

REVISIONS

8/17/99

26-JUN-2012 14:26
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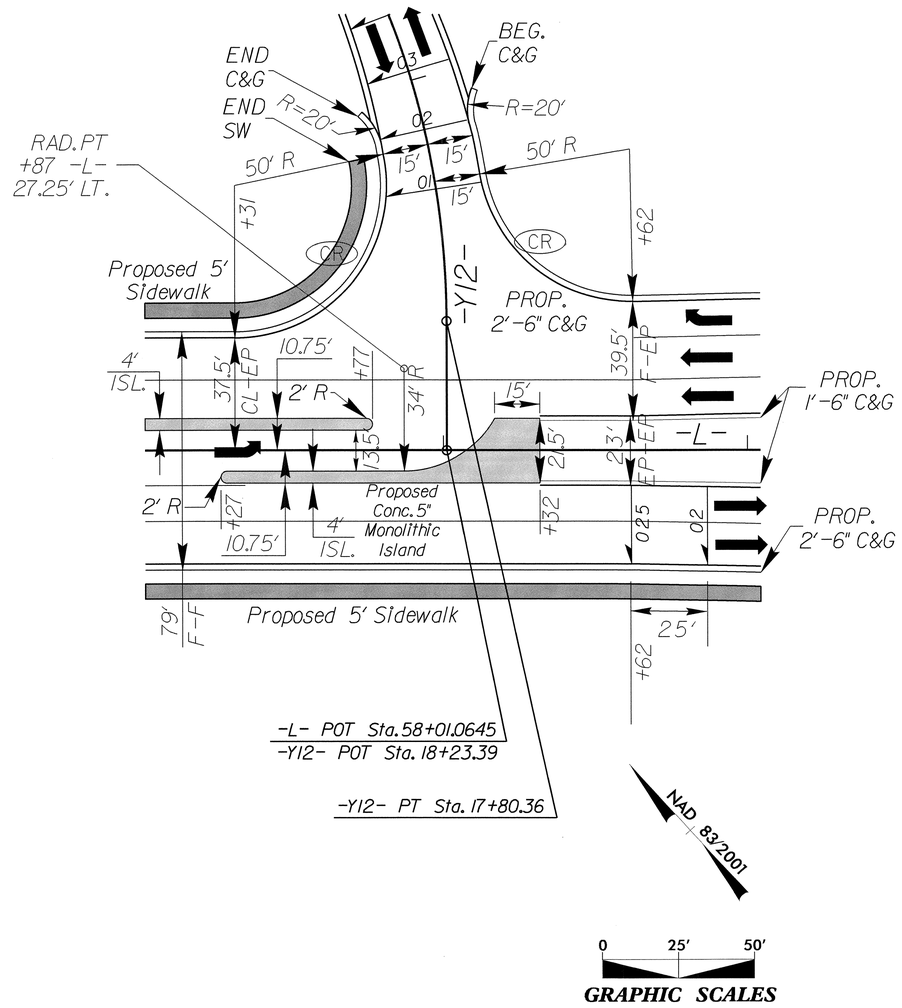
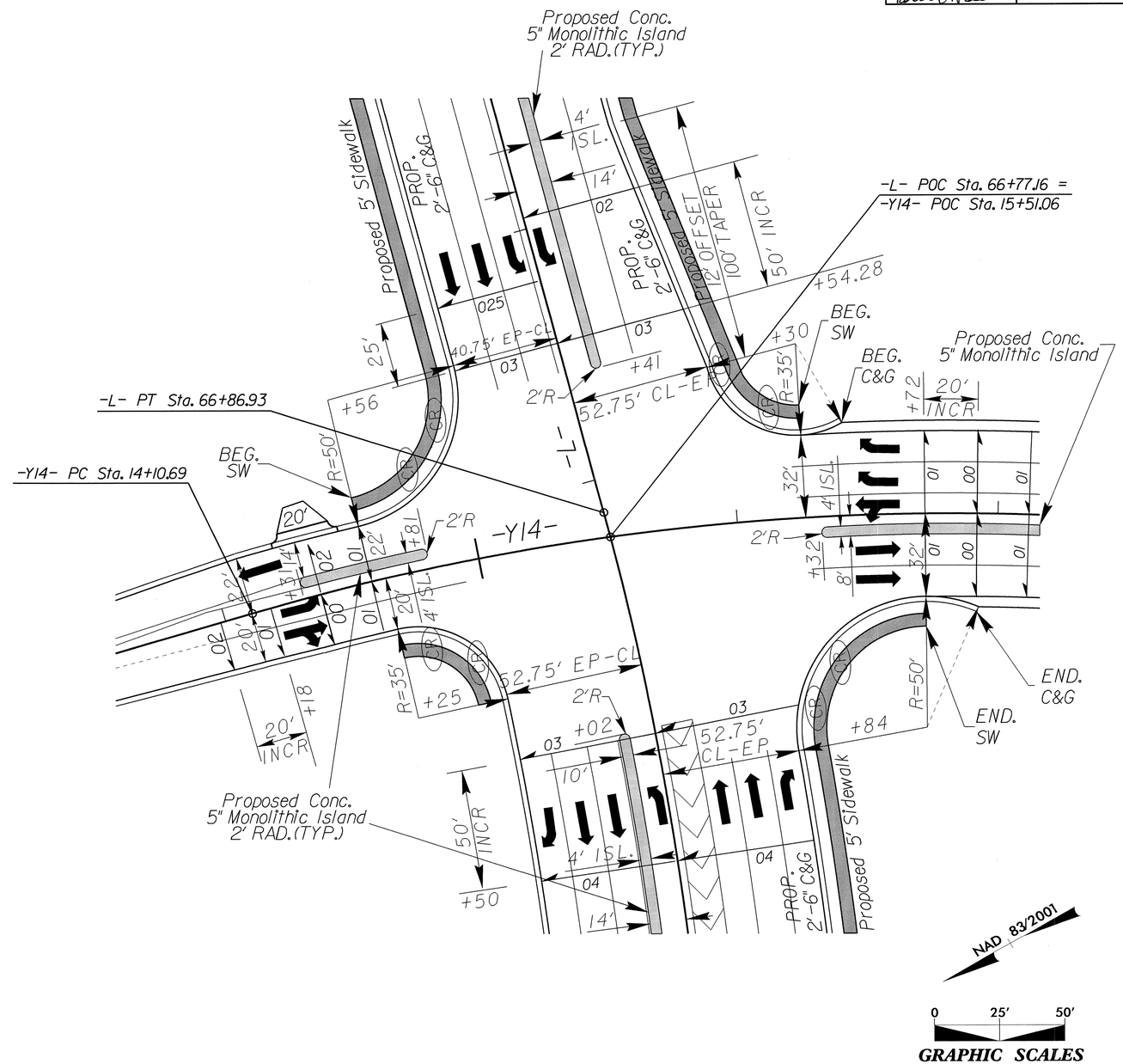
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-0
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	

NORTH CAROLINA PROFESSIONAL SEAL 12-16378 ENGINEER REKHA V. PATEL



DETAIL OF INTERSECTION -L- AND -Y12-



DETAIL OF INTERSECTION -L- AND -Y14-

REVISIONS

8/17/99

26-JUN-2012 14:26
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$$$$USERNAME$$$$

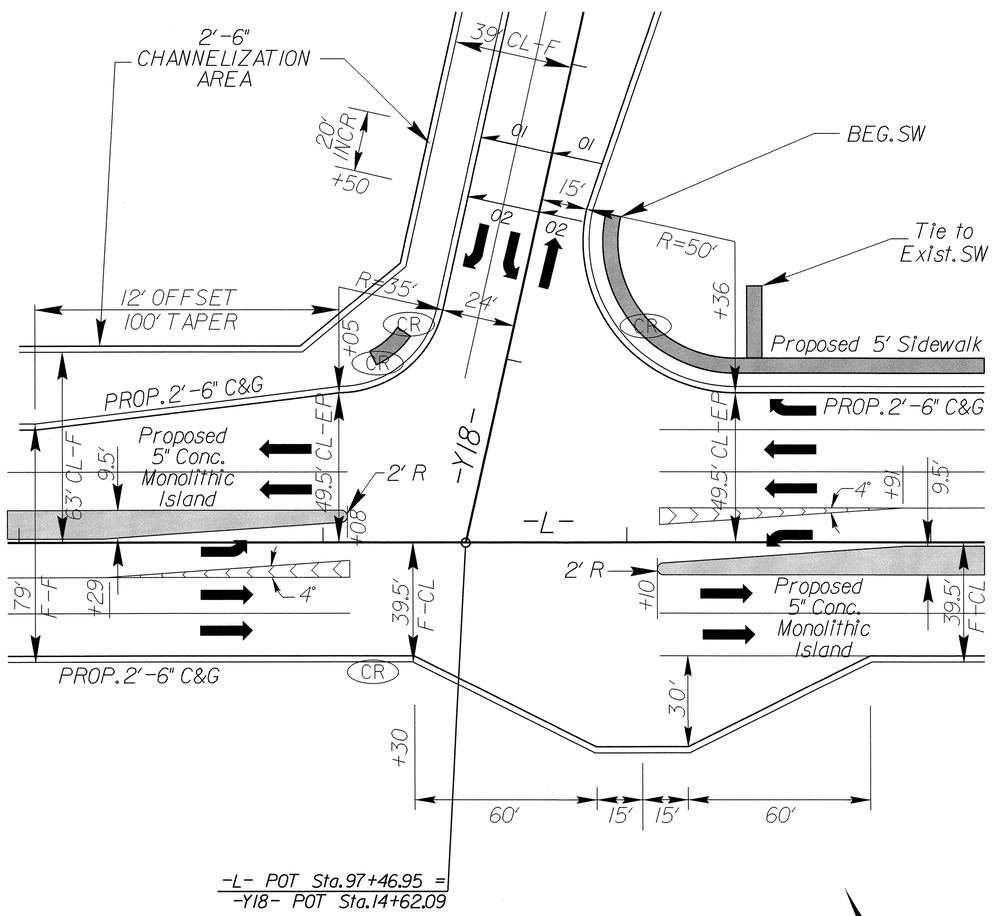
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-P
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

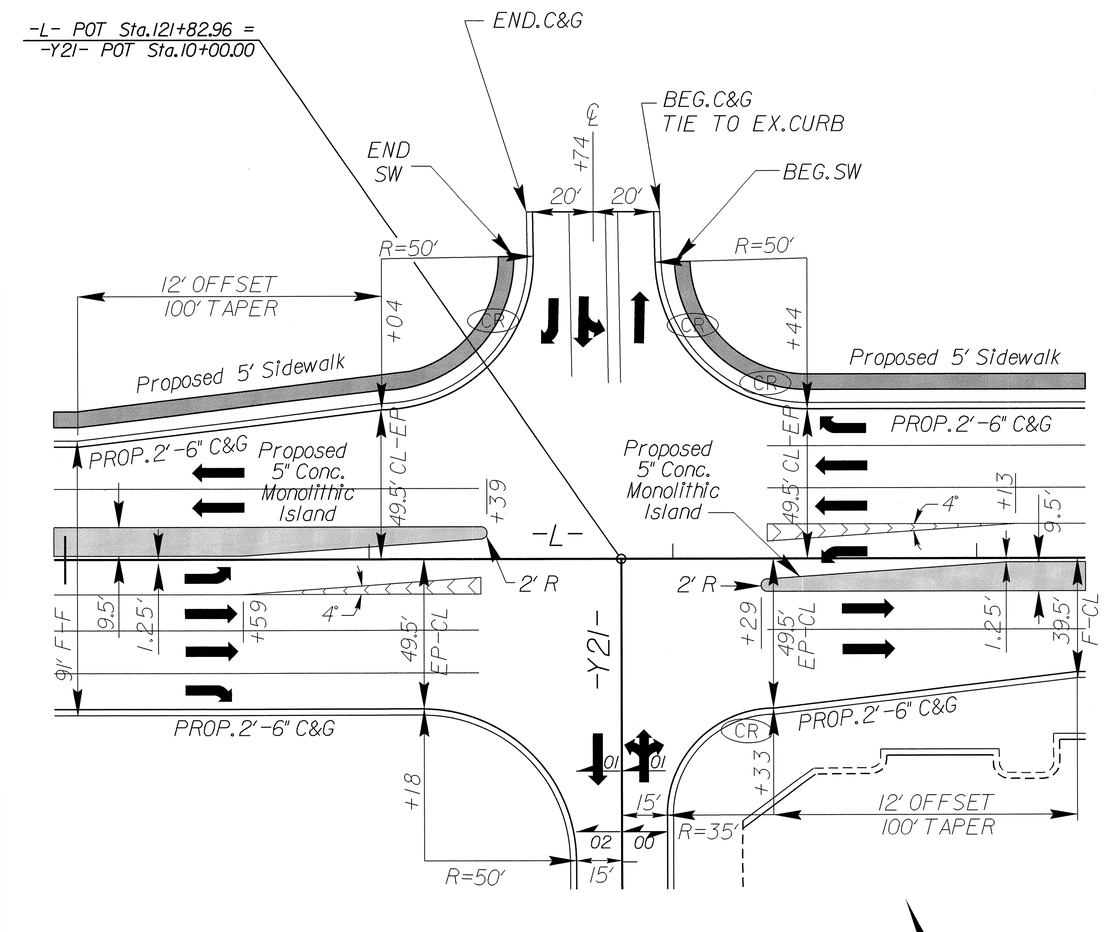
NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATIL

REVISIONS

8/17/99



DETAIL OF INTERSECTION -L- AND -Y18-



DETAIL OF INTERSECTION -L- AND -Y21-

26-JUN-2012 14:26
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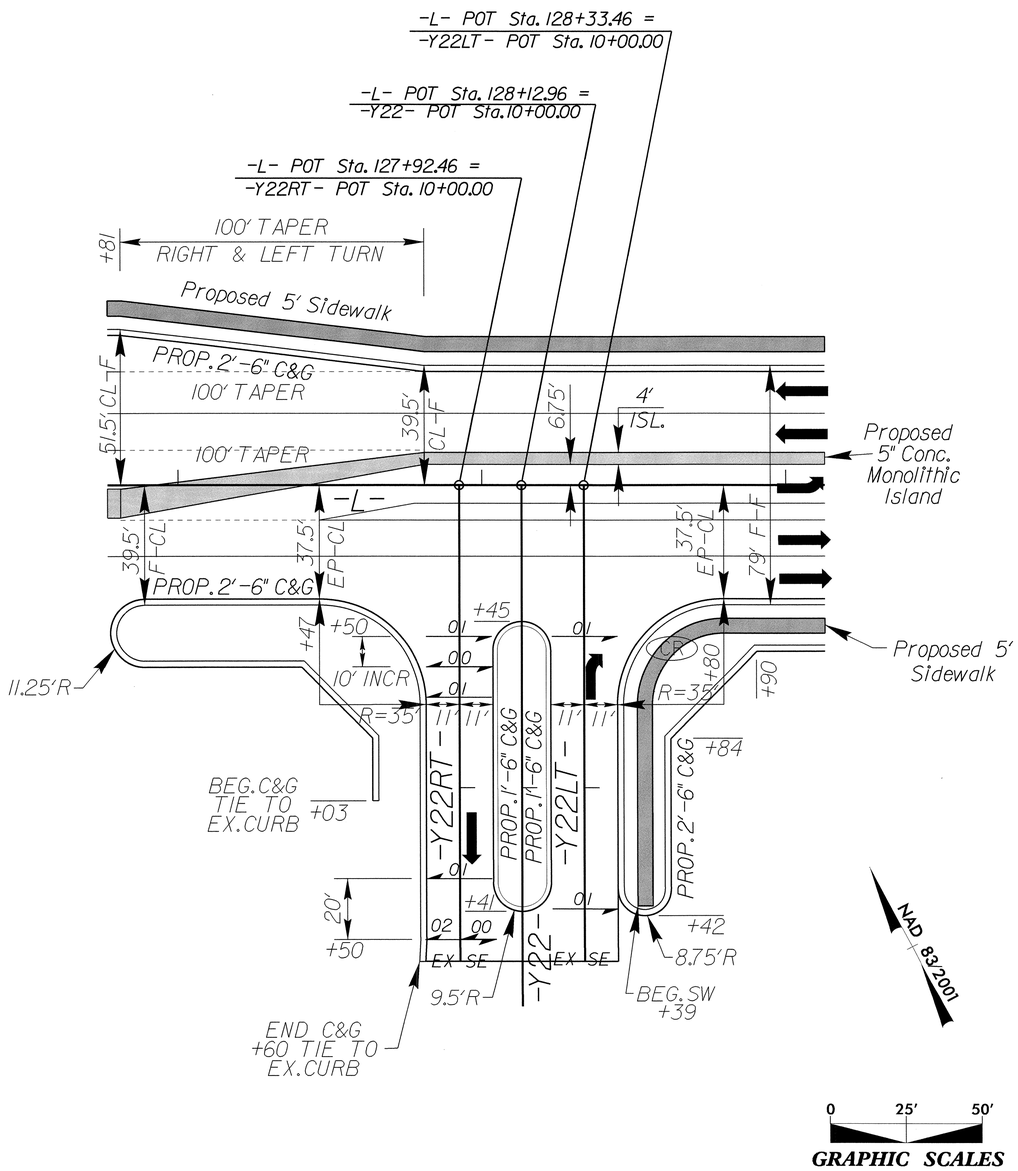
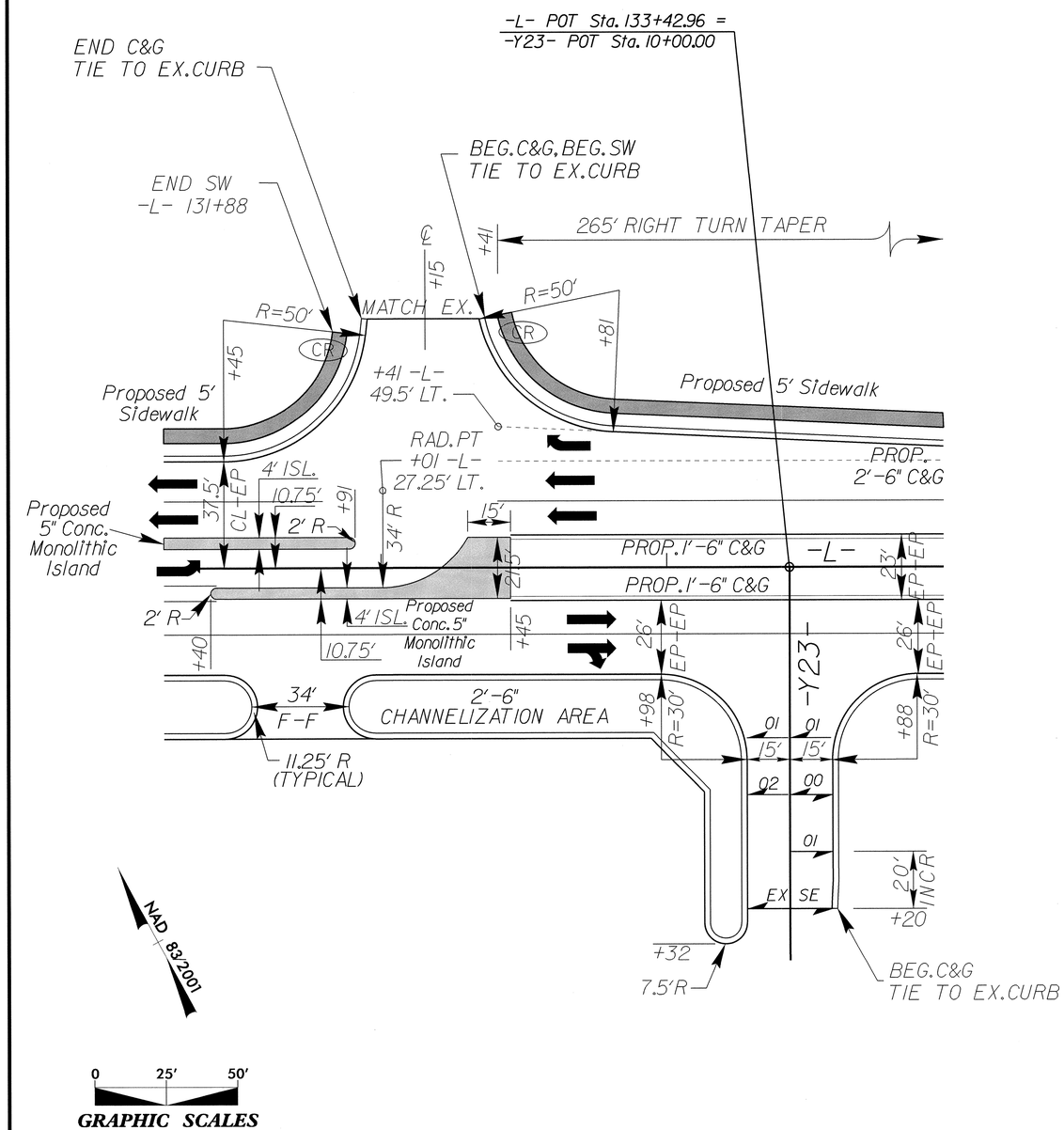
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-0
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL



DETAIL OF INTERSECTION -L- AND -Y22-



DETAIL OF INTERSECTION -L- AND -Y23-

REVISIONS

8/17/99

26-JUN-2012 14:26
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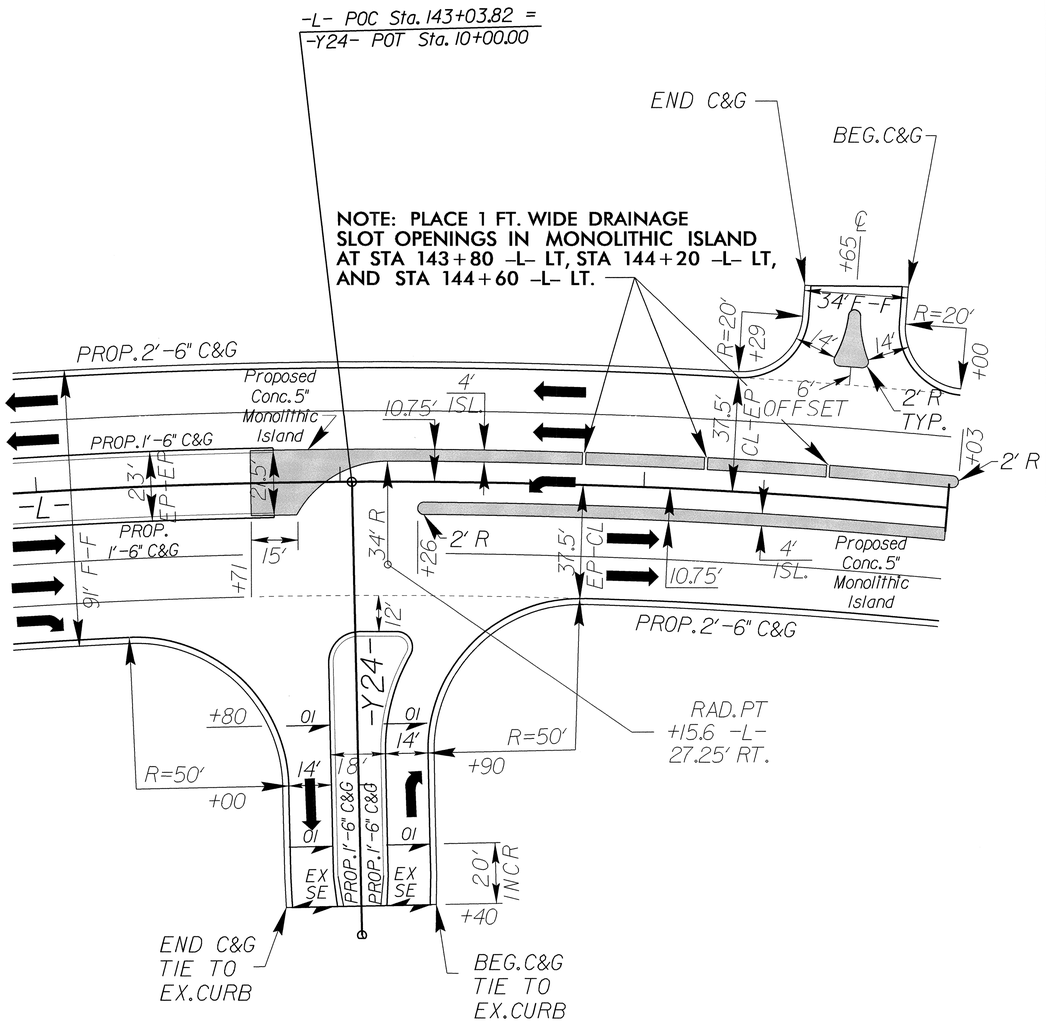
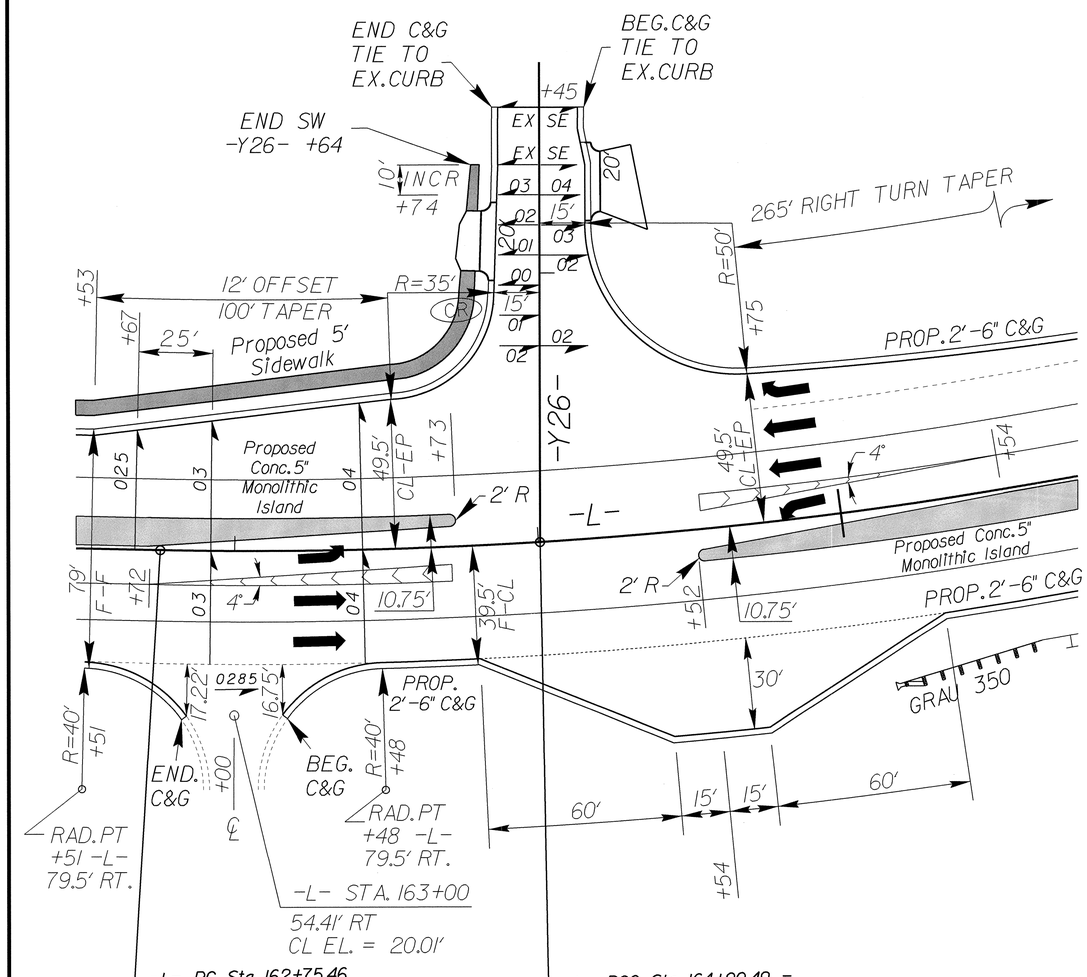
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-R
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER R. REKHA V. PATEL



DETAIL OF INTERSECTION -L- AND -Y24-



DETAIL OF INTERSECTION -L- AND -Y26-

REVISIONS

8/17/99

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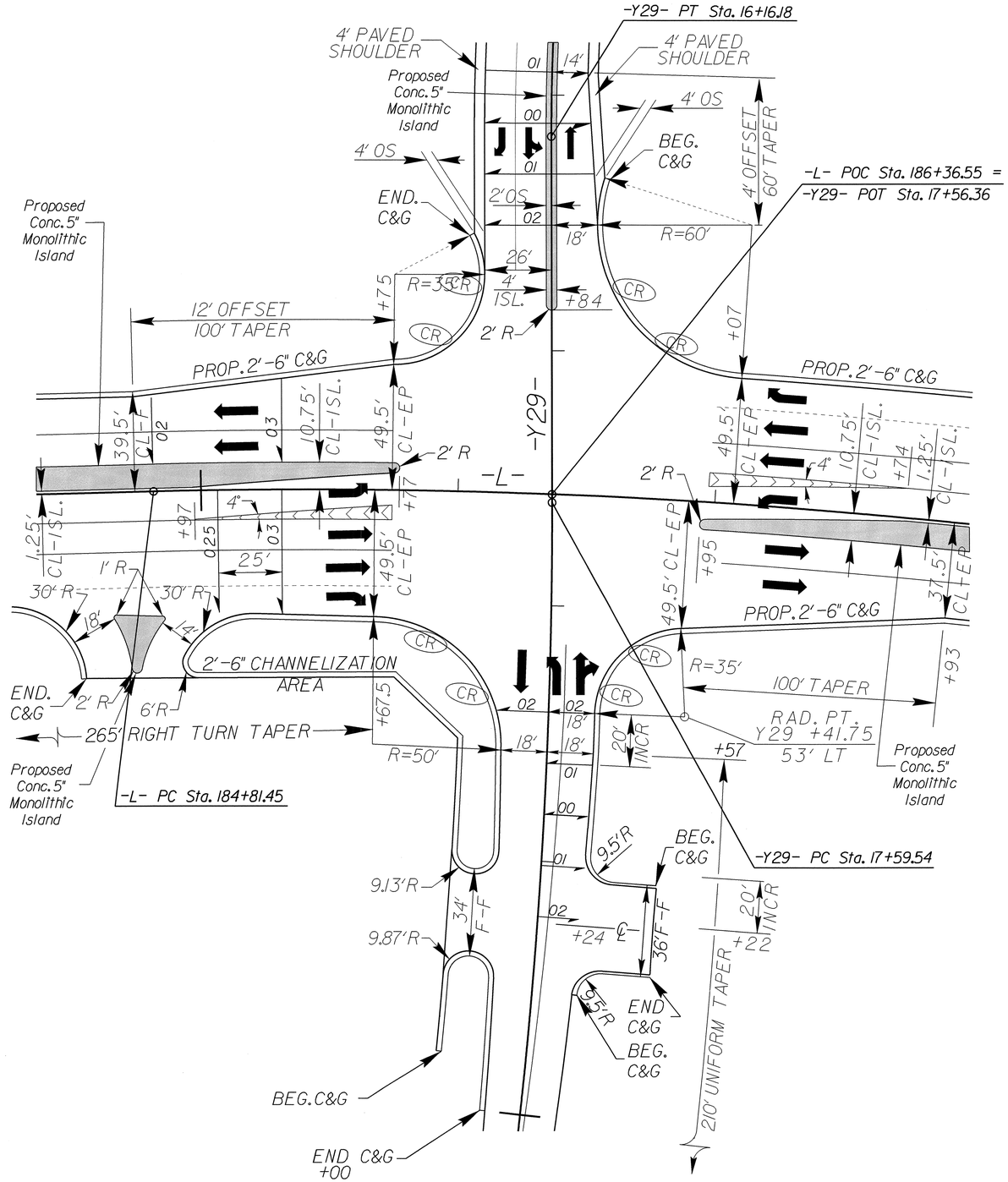
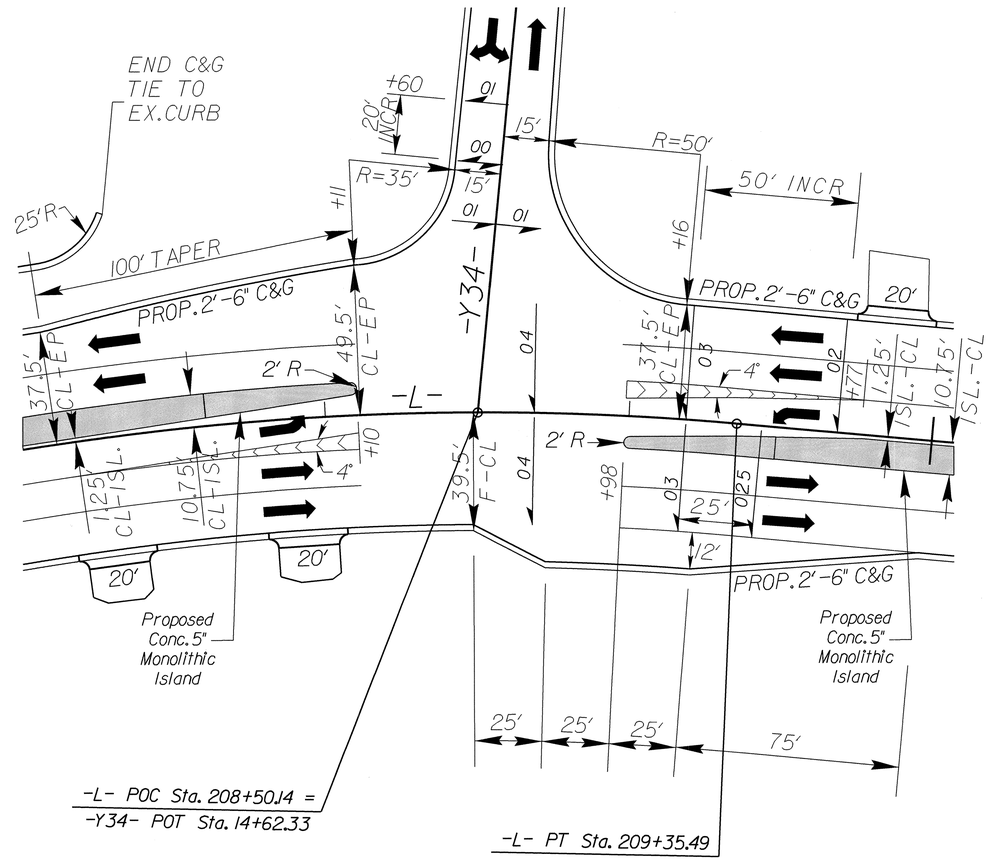
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-S
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	

NORTH CAROLINA PROFESSIONAL SEAL 12-16375 ENGINEER REKHA V. PATEL



0 25' 50'
GRAPHIC SCALES

DETAIL OF INTERSECTION -L- AND -Y29-



0 25' 50'
GRAPHIC SCALES

DETAIL OF INTERSECTION -L- AND -Y34-

REVISIONS

8/17/99

26-JUN-2012 14:25
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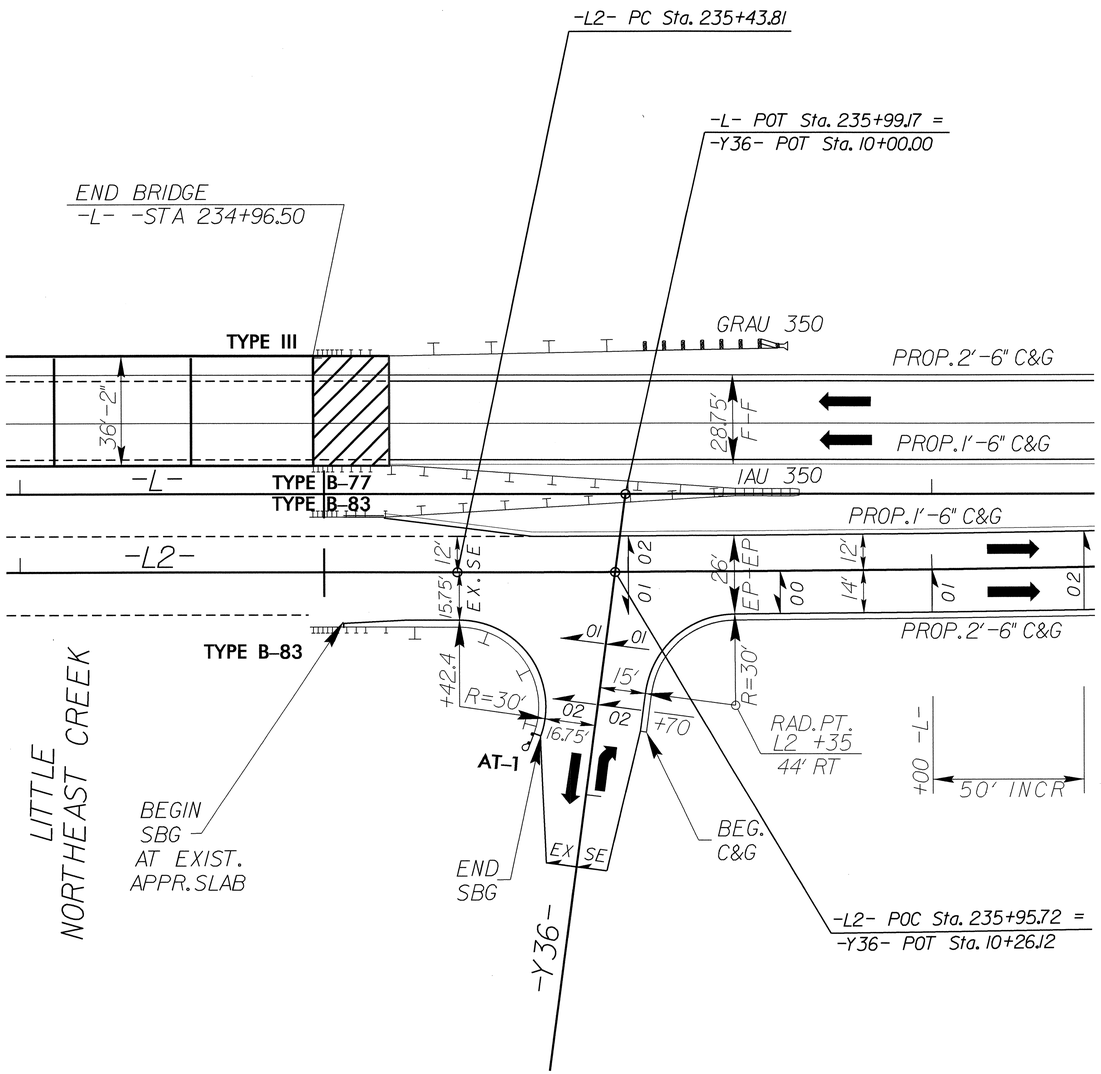
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-T
R/W SHEET NO.	

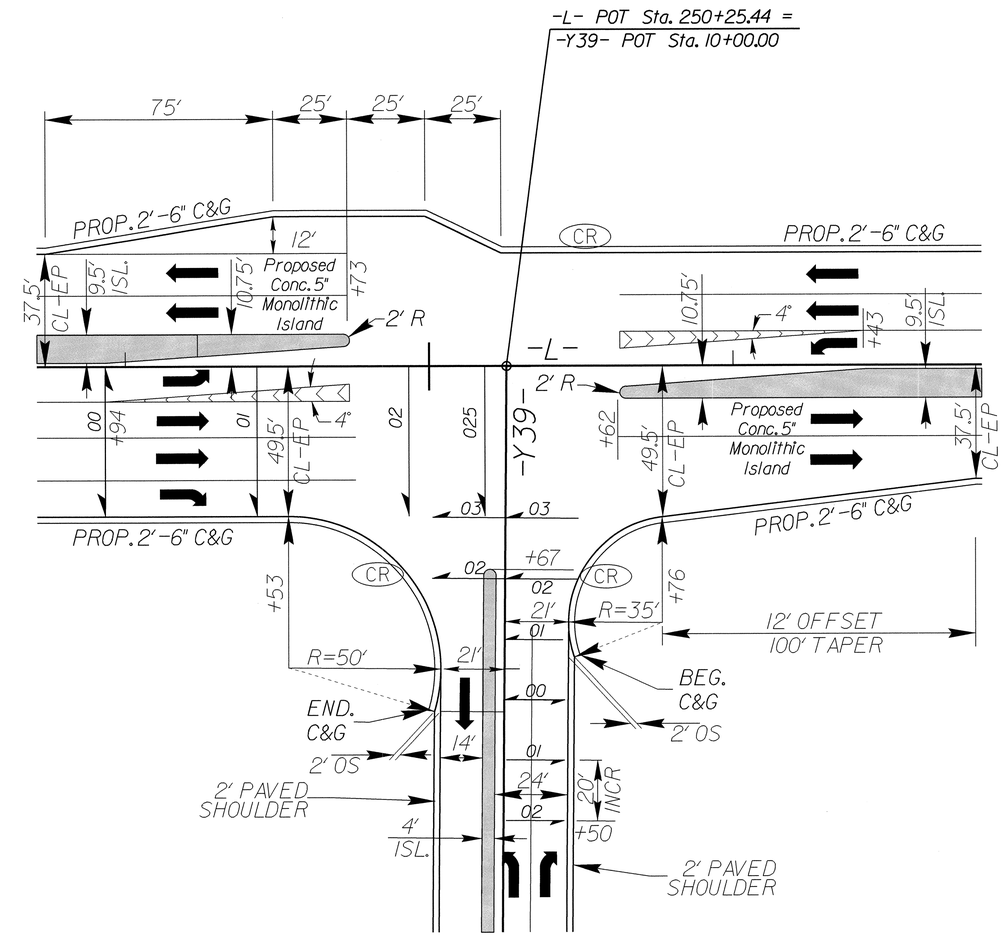
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 12-16378 ENGINEER REKHA V. PATEL

Rekha V. Patel



DETAIL OF INTERSECTION -L- AND -Y36-



DETAIL OF INTERSECTION -L- AND -Y39-

REVISIONS

8/17/99

26-JUN-2012 14:25
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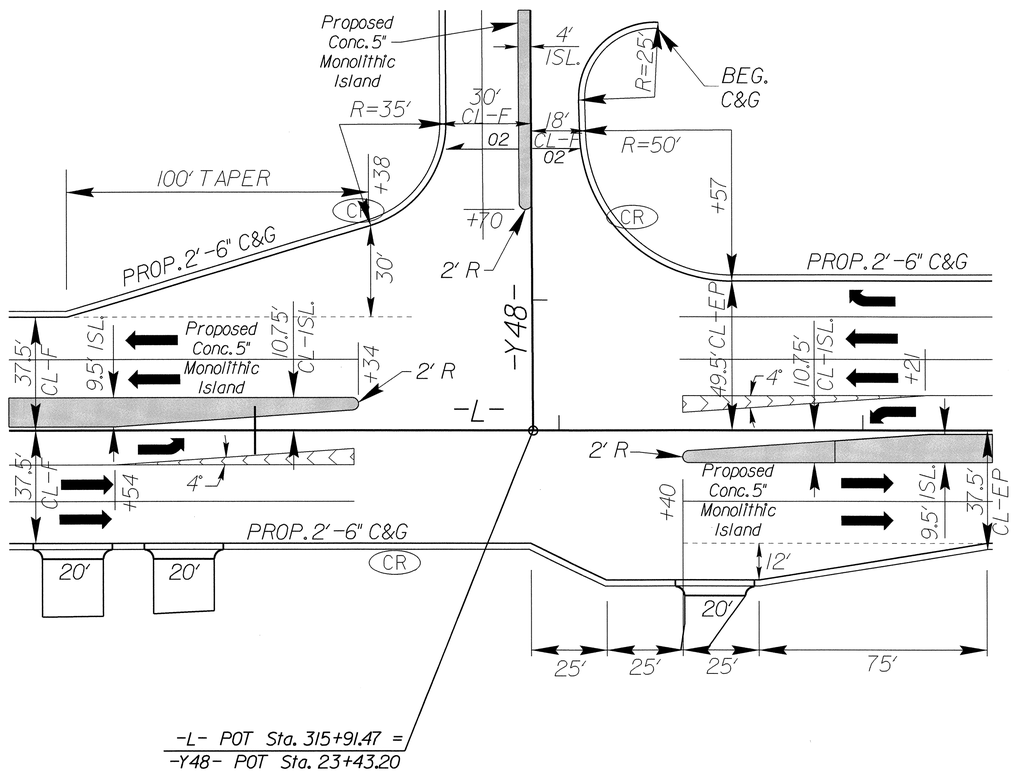
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-U
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

7/3/12

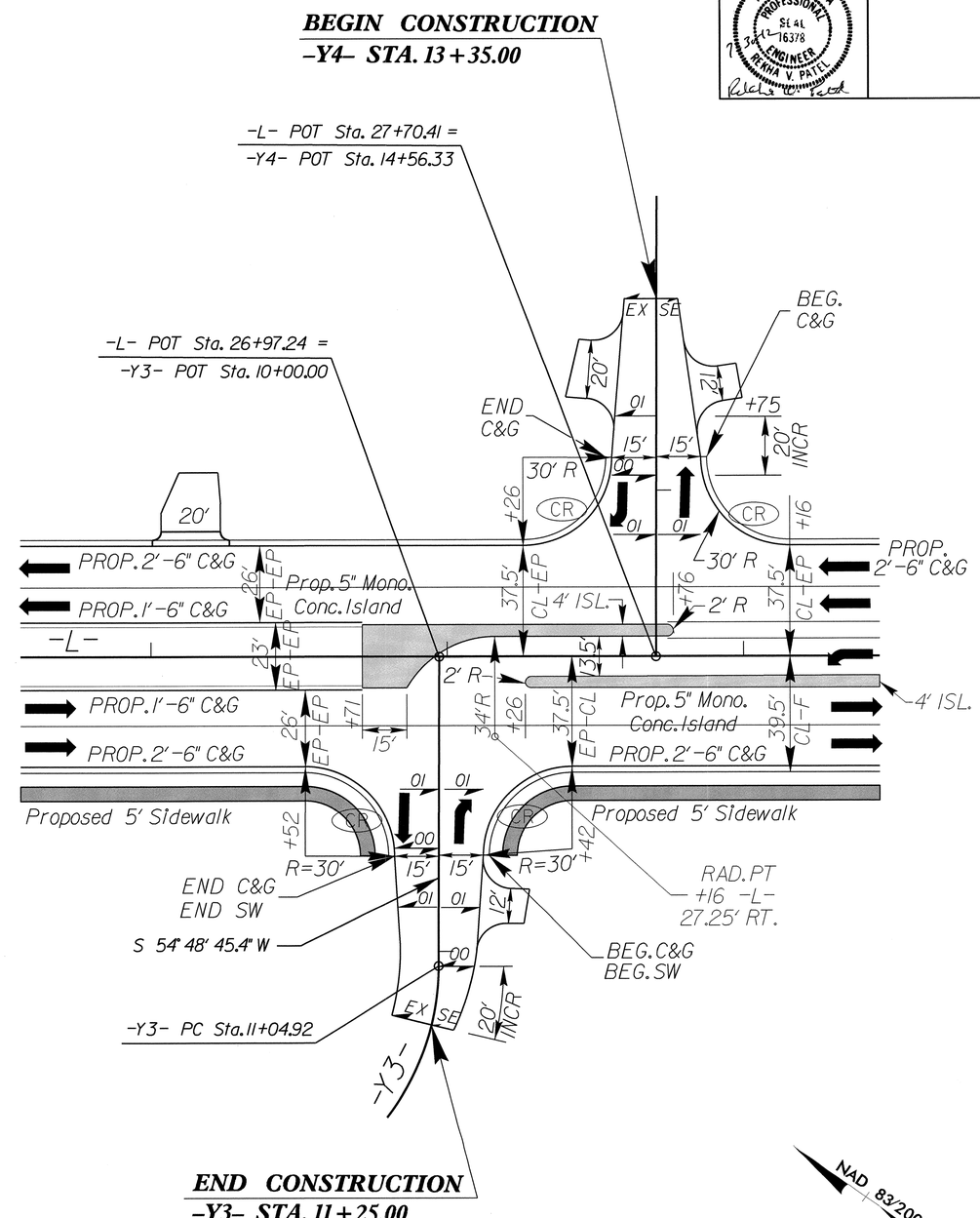


NAD 83/2001

0 25' 50'

GRAPHIC SCALES

DETAIL OF INTERSECTION -L- AND -Y48-



NAD 83/2001

0 25' 50'

GRAPHIC SCALES

DETAIL OF INTERSECTION -L- AND -Y3-, -Y4-

REVISIONS

8/17/99

26-JUN-2012 14:25
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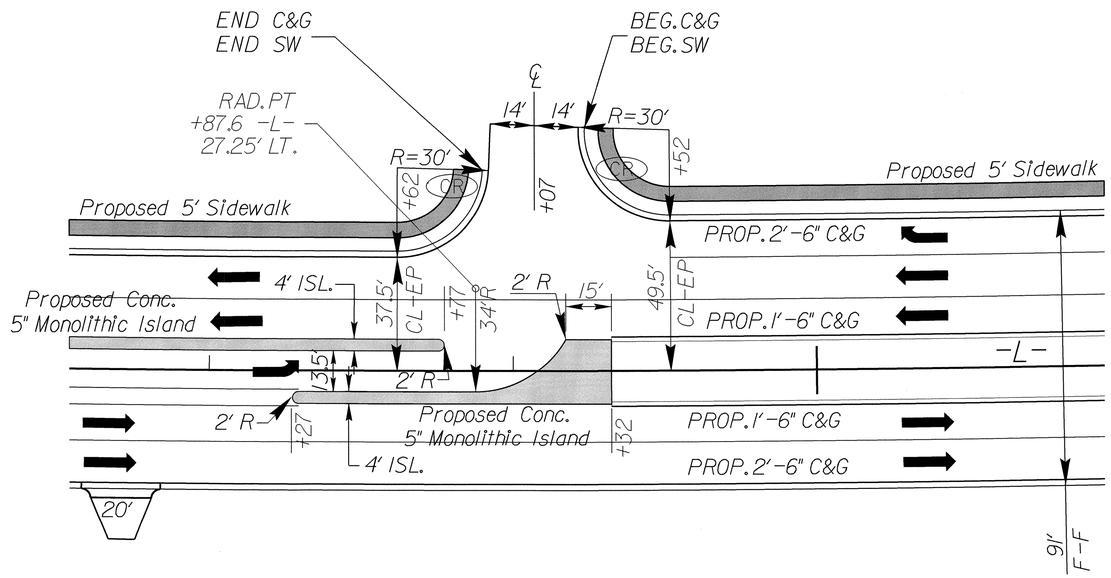
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-V
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

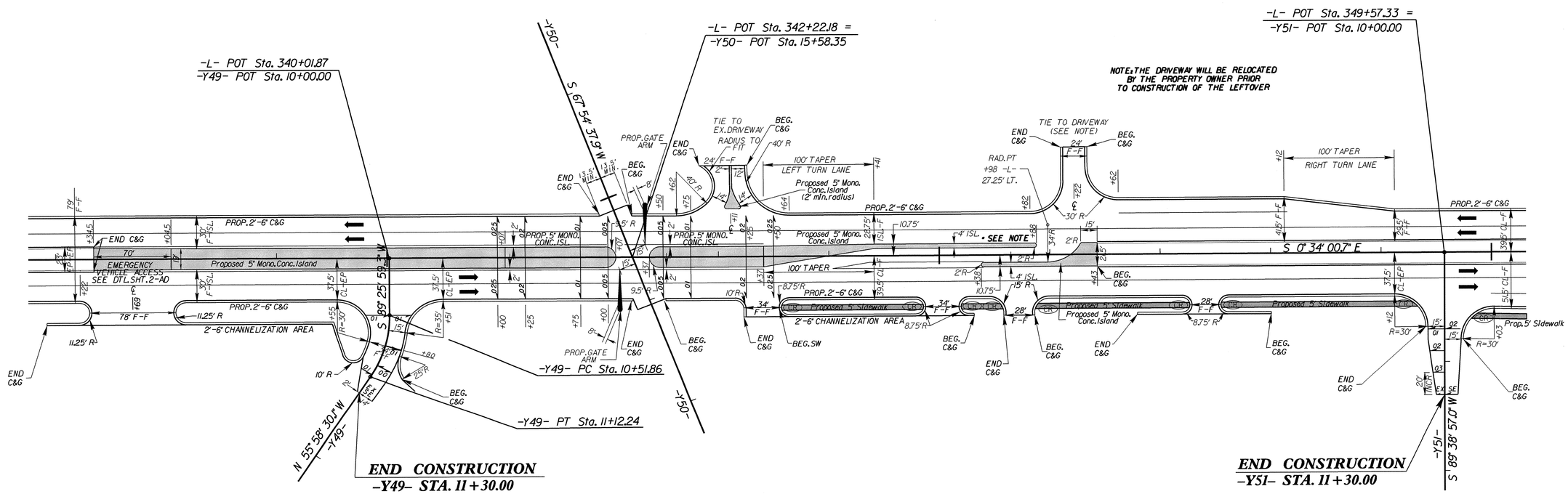


DETAIL OF LEFT OVER AT -L- STA. 109+07

NAD 83/2001

0 25' 50'

GRAPHIC SCALES



DETAIL OF INTERSECTION -L- AND -Y49-, -Y50-, -Y51-

0 50' 100'

GRAPHIC SCALES

REVISIONS

8/17/99

26-JUN-2012 14:25
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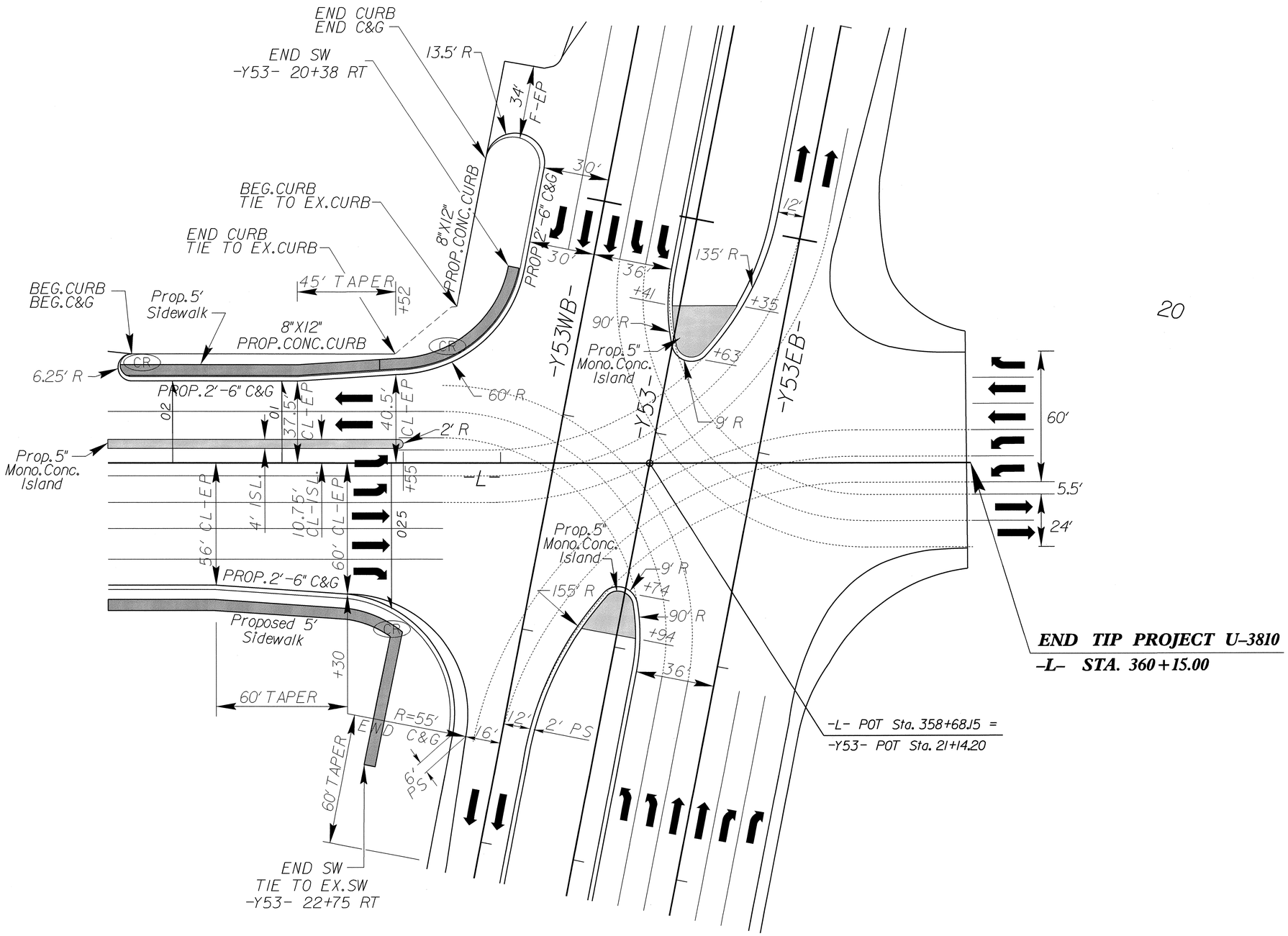
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-W
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL



20

DETAIL OF INTERSECTION -L- AND -Y53-

REVISIONS

8/17/99

26-JUN-2012 14:09
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-X
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16375 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SANDERS

40 20 0 40 80
SCALE

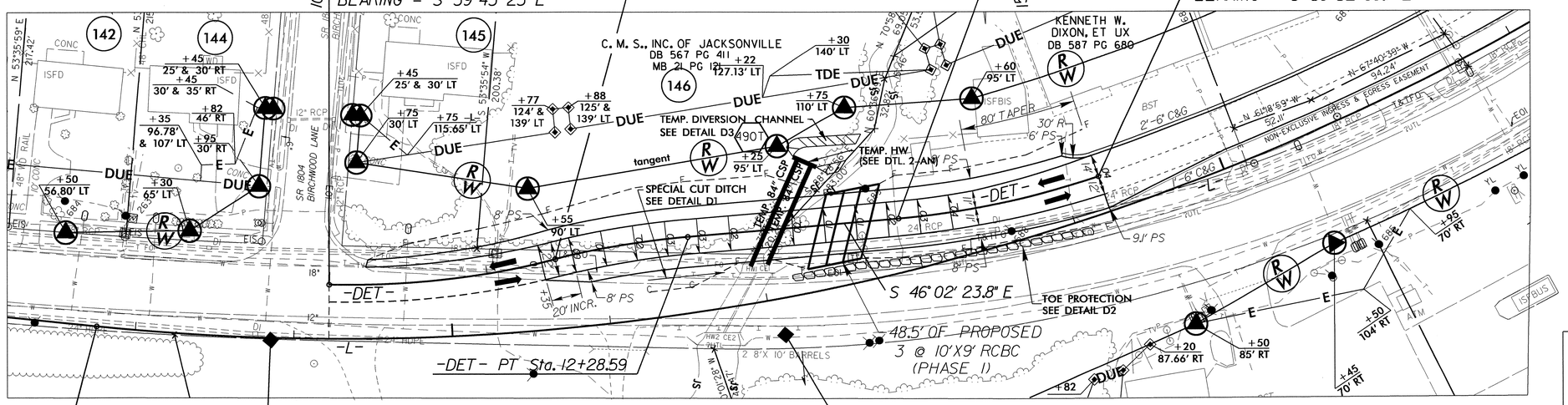
NAD 83/2001

BEGIN -DET- PC Sta. 10+00.00 =
-L- Sta. 164+22.10, 34.30' LT
BEARING = S 39° 43' 23" E

-DET- PRC Sta. 11+43.79

-DET- PC Sta. 13+61.92

END -DET- PT Sta. 14+91.06=
-L- STA. 169+23.59, 23.50' LT
BEARING = S 59° 52' 09.7" E



-DET-

PI Sta 10+72.33
△ = 15° 23' 56.2" (LT)
D = 10° 42' 34.2"
L = 143.79'
T = 72.33'
R = 535.00'
SE = 03
RO = SEE PLANS

PI Sta 11+86.28
△ = 9° 04' 55.3" (RT)
D = 10° 42' 34.2"
L = 84.80'
T = 42.49'
R = 535.00'
SE = 03
RO = SEE PLANS

PI Sta 14+26.81
△ = 13° 49' 45.9" (LT)
D = 10° 42' 34.2"
L = 129.13'
T = 64.88'
R = 535.00'
SE = 04
RO = SEE PLANS

-L-

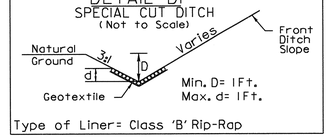
PI Sta 168+42.34
△ = 41° 24' 17.2" (LT)
D = 3° 49' 11.0"
L = 1,083.97'
T = 566.87'
R = 1,500.00'
SE = 04

DETOUR FOR PHASED CONSTRUCTION (PHASE 2) OF BOX CULVERT AT -L- STA 167+39

DETOUR DESIGN SPEED = 40 MPH

NOTE: SEE TMP PLANS FOR TEMPORARY SHORING LIMITS

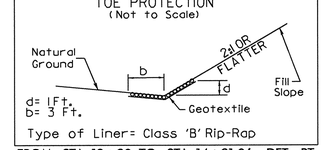
DETAIL D1
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

FROM STA. 12+00 TO STA. 12+50 -DET- RT.
EST. CL. B RIP RAP = 17 TONS
EST. GEOTEXTILE = 50 SY

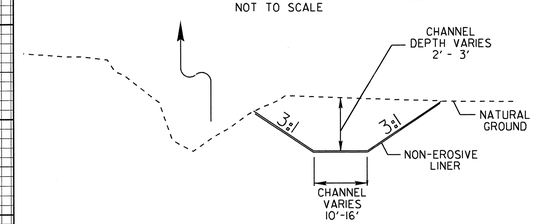
DETAIL D2
TOE PROTECTION
(Not to Scale)



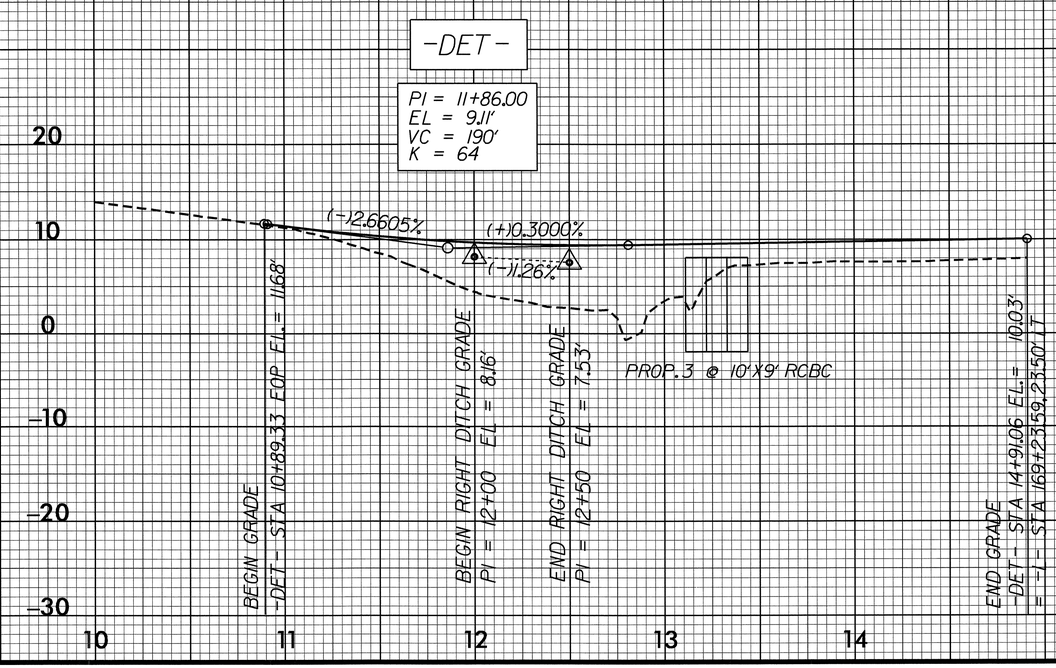
Type of Liner= Class 'B' Rip-Rap

FROM STA. 12+90 TO STA. 14+91.06 -DET- RT.
EST. CL. B RIP RAP = 64 TONS
EST. GEOTEXTILE = 192 SY

DETAIL D3
TEMPORARY DIVERSION CHANNEL
NOT TO SCALE



EST GEOTEXTILE FOR SOIL STABILIZATION = 100 SY
EST CULVERT DIVERSION CHANNEL = 55 CY



DITCH LEGEND

RIGHT DITCH ----------

REVISIONS

8/17/99

21-JUN-2012 11:23
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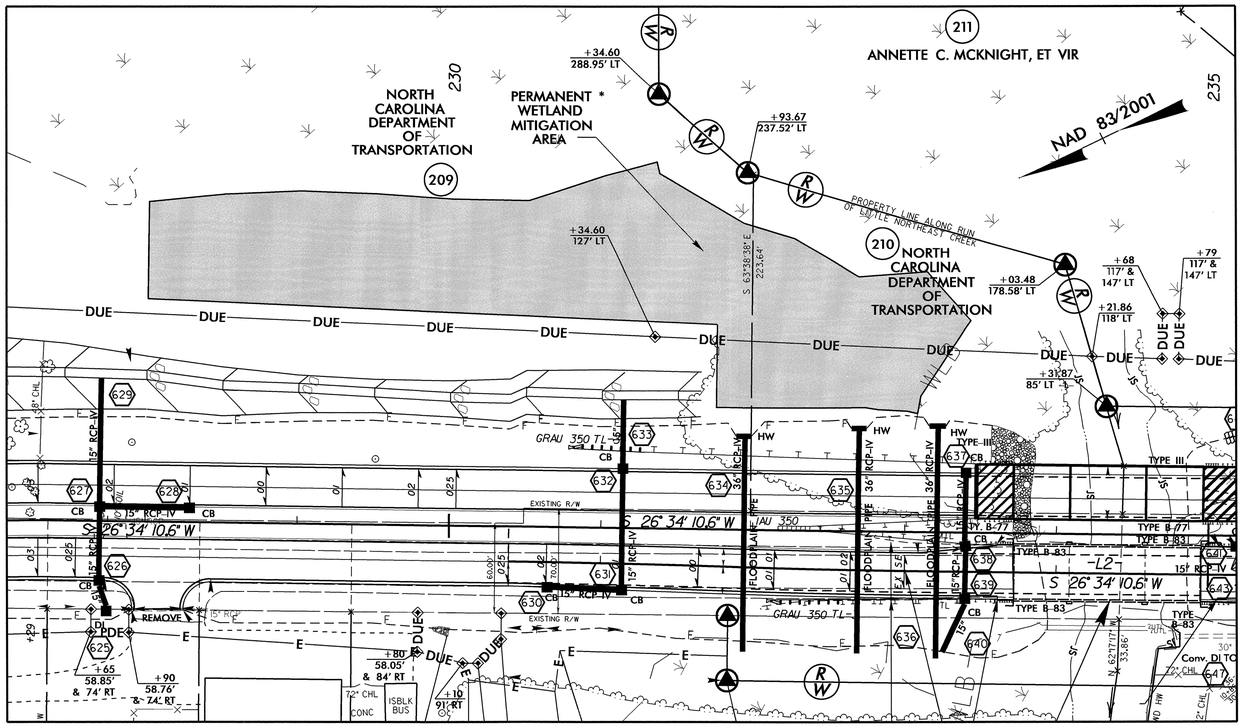
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-Y 1of3
R/W SHEET NO.	

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 10329 ENGINEER AMY A. BILLINGS 2/1/12

PERMANENT WETLAND MITIGATION AREA DETAIL
-L- LT. STA 228+00 TO -L- LT. STA 233+42

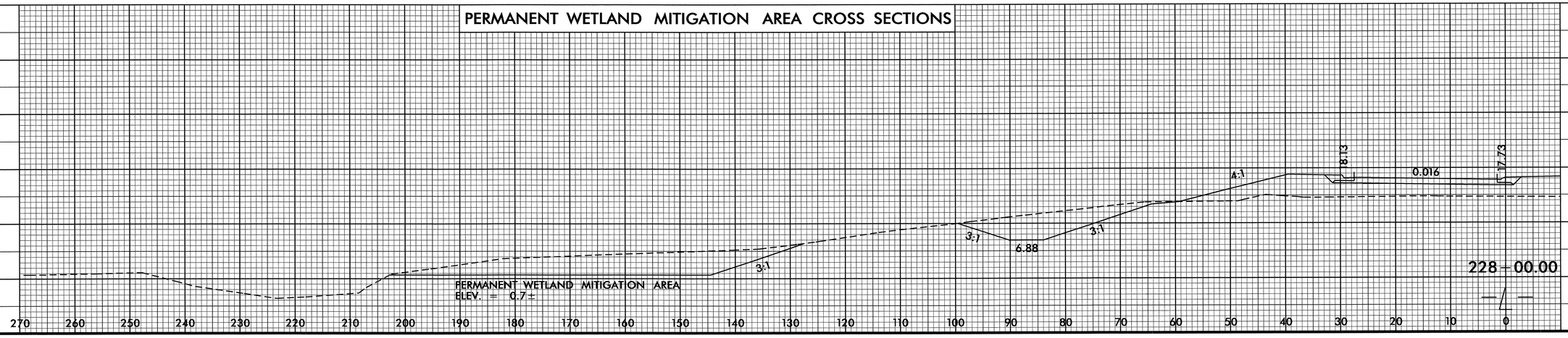


PERMANENT WETLAND MITIGATION AREA

EST. DRAINAGE DITCH EXCAVATION = 4,139 CY

* SEE 404 AND 401 PERMIT FOR MITIGATION PLAN

PERMANENT WETLAND MITIGATION AREA CROSS SECTIONS



REFER TO SHEET 20 FOR PLAN VIEW

REVISIONS

8/17/99

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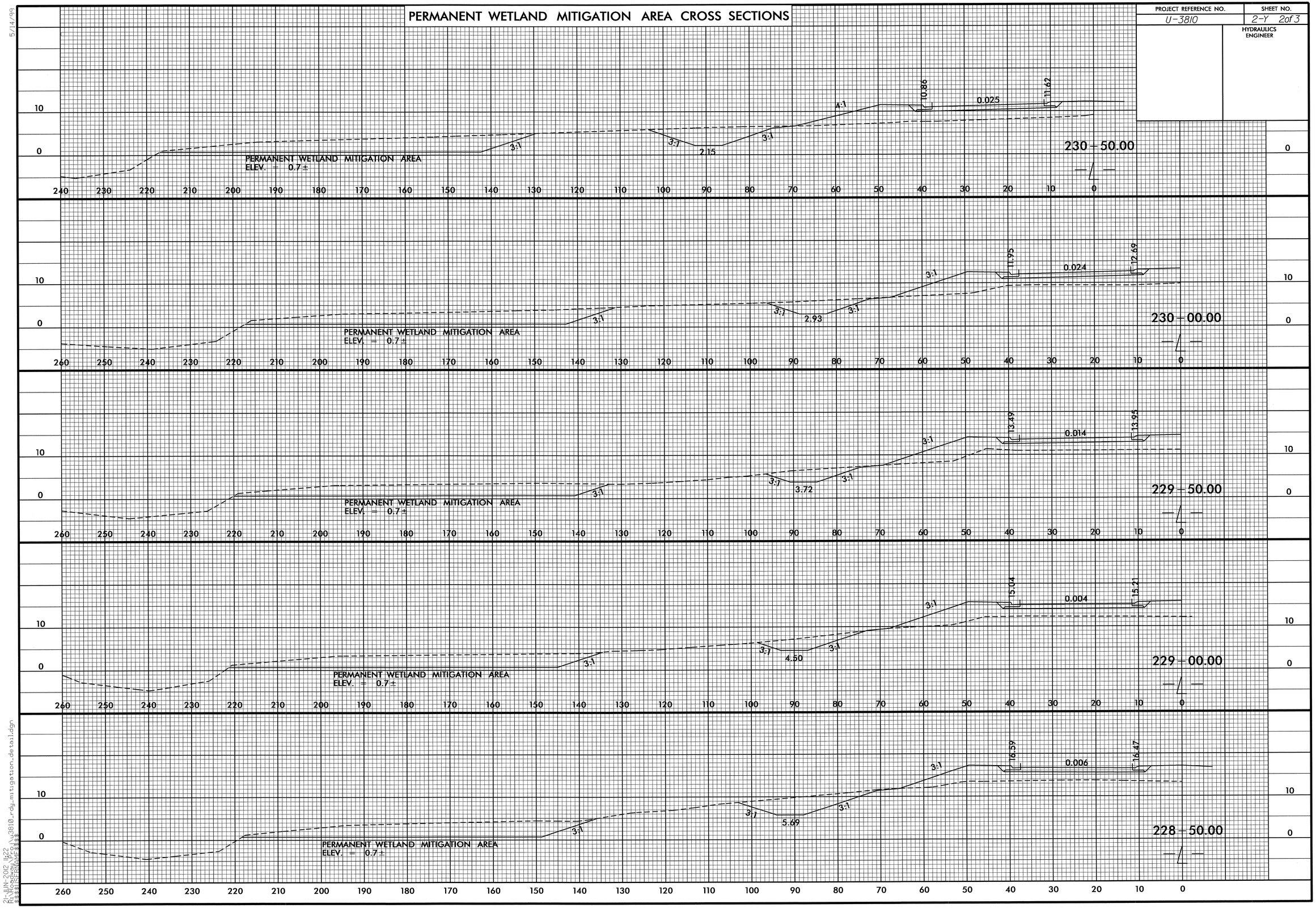
PERMANENT WETLAND MITIGATION AREA CROSS SECTIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-Y 2 of 3
HYDRAULICS ENGINEER	



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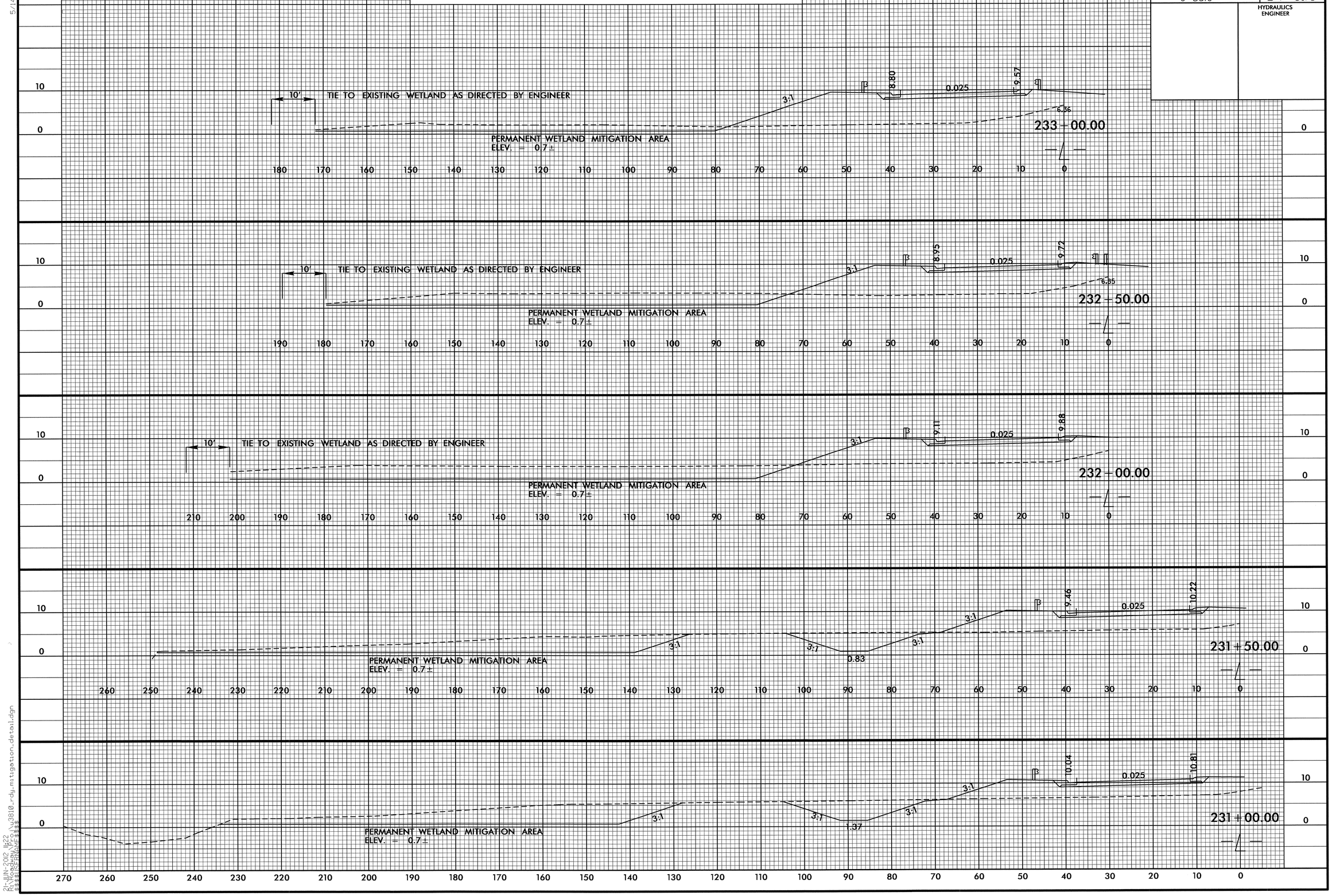
PERMANENT WETLAND MITIGATION AREA CROSS SECTIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-Y 3 of 3

HYDRAULICS ENGINEER



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PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-Z

ROADWAY DESIGN ENGINEER

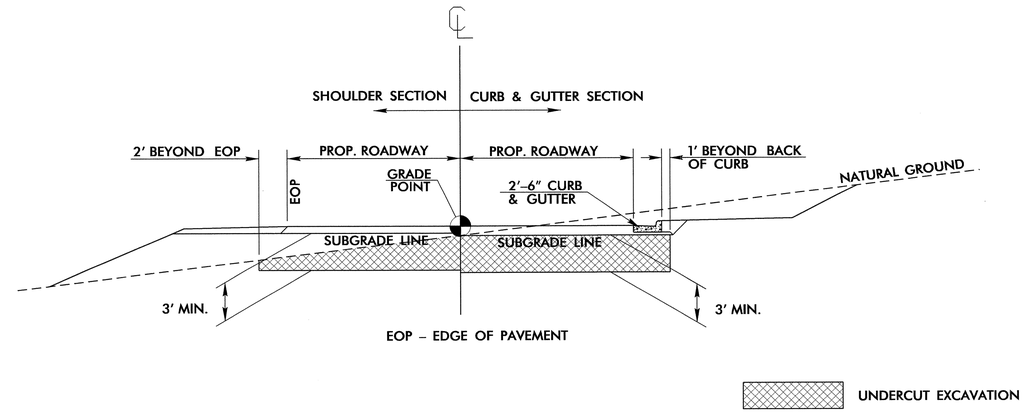
-L- STA. 10+48 TO STA. 37+92
-L- STA. 38+02 TO STA. 50+63
-L- STA. 50+83 TO STA. 51+25
-L- STA. 53+25 TO STA. 56+49
-L- STA. 58+48 TO STA. 65+16
-L- STA. 65+30 TO STA. 66+57
-L- STA. 66+79 TO STA. 69+26
-L- STA. 70+25 TO STA. 78+75
-L- STA. 93+75 TO STA. 102+70
-L- STA. 102+96 TO STA. 118+25
-L- STA. 119+95 TO STA. 121+69
-L- STA. 121+94 TO STA. 133+28
-L- STA. 133+57 TO STA. 142+82
-L- STA. 142+95 TO STA. 143+12
-L- STA. 143+25 TO STA. 161+25
-L- STA. 162+25 TO STA. 164+60
-L- STA. 175+75 TO STA. 177+75
-L- STA. 186+05 TO STA. 192+25
-L- STA. 192+75 TO STA. 196+25
-L- STA. 199+25 TO STA. 203+85
-L- STA. 208+51 TO STA. 209+75
-L- STA. 213+32 TO STA. 216+70
-L- STA. 216+90 TO STA. 218+75

-L- STA. 275+75 TO STA. 278+75
-L- STA. 316+73 TO STA. 319+25
-Y- STA. 14+75 TO STA. 18+75
-Y- STA. 22+75 TO STA. 23+75
-Y- STA. 24+25 TO STA. 26+75
-Y1- STA. 10+20 TO STA. 10+90
-Y2- STA. 10+20 TO STA. 11+15
-Y3- STA. 10+20 TO STA. 11+25
-Y4- STA. 13+35 TO STA. 14+42
-Y5- STA. 10+20 TO STA. 11+10
-Y6- STA. 13+35 TO STA. 14+41
-Y7- STA. 12+81 TO STA. 14+25
-Y7- STA. 14+60 TO STA. 16+74
-Y9- STA. 10+10 TO STA. 11+60
-Y10- STA. 16+60 TO STA. 17+25
-Y11- STA. 10+10 TO STA. 10+70
-Y12- STA. 15+56 TO STA. 17+80
-Y14- STA. 12+01 TO STA. 15+10
-Y14- STA. 17+75 TO STA. 26+99
-Y15- STA. 12+60 TO STA. 13+47
-Y16- STA. 10+75 TO STA. 11+34
-Y18- STA. 13+55 TO STA. 14+40
-Y19- STA. 10+81 TO STA. 12+06

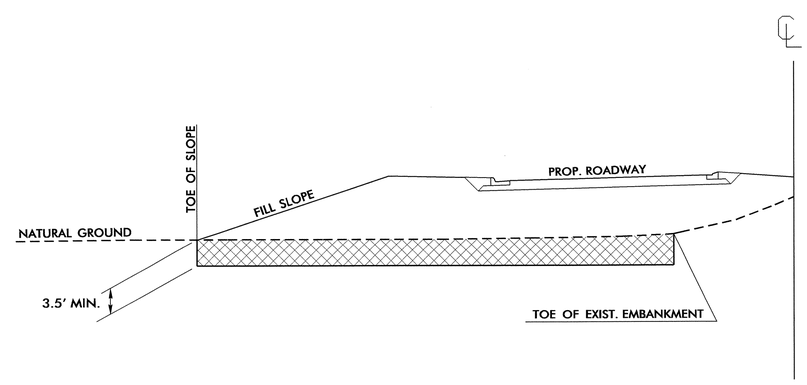
-Y20- STA. 10+12 TO STA. 11+29
-Y21- STA. 10+10 TO STA. 11+49
-Y22- STA. 10+00 TO STA. 11+59
-Y23- STA. 10+10 TO STA. 11+20
-Y24- STA. 10+00 TO STA. 11+40
-Y25- STA. 11+91 TO STA. 12+42
-Y29- STA. 11+75 TO STA. 17+59
-Y31- STA. 10+96 TO STA. 12+05
-Y32- STA. 13+65 TO STA. 14+45
-Y33- STA. 10+60 TO STA. 11+75
-Y35- STA. 12+91 TO STA. 13+95
-Y42- STA. 10+72 TO STA. 11+15
-Y43- STA. 11+30 TO STA. 12+10
-Y45- STA. 10+59 TO STA. 11+19
-Y53- STA. 14+75 TO STA. 18+25
-Y53- STA. 22+23 TO STA. 23+29
-Y53- STA. 28+75 TO STA. 30+34

OR

AS DIRECTED BY ENGINEER



DETAIL OF UNDERCUT



DETAIL OF UNDERCUT

-L- STA. 233+50 TO STA. 233+90
-L- STA. 234+80 TO STA. 235+20

OR

AS DIRECTED BY ENGINEER

UNDERCUT EXCAVATION

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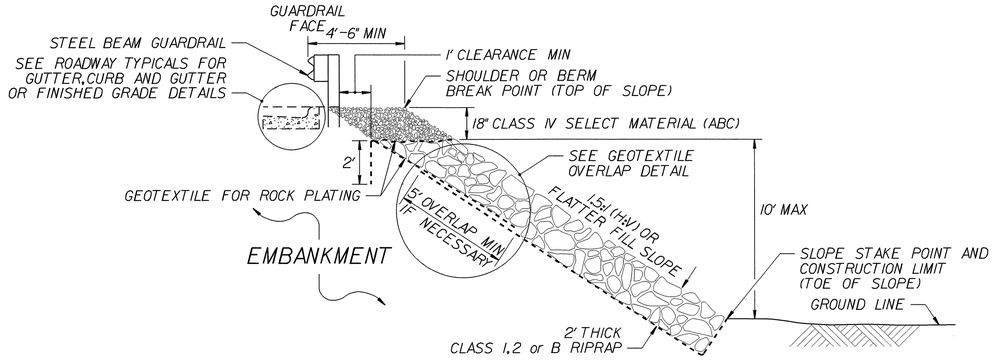
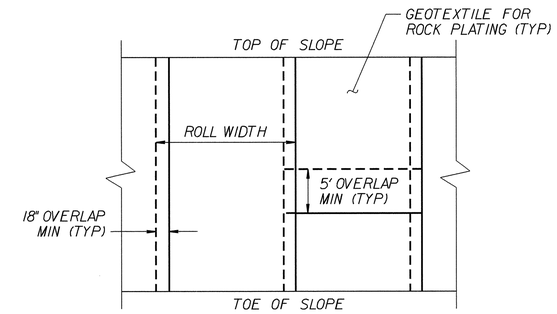
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-AA



ROCK PLATING DETAIL NO. 1 – TYPICAL SECTION



GEOTEXTILE OVERLAP DETAIL

(PLAN VIEW)

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

–L– STA 168+00± TO –L– STA 169+00± (RIGHT)
EXTEND ROCK PLATING LIMITS TO 2.5:1 (H:V) SLOPES.
EST. ROCK PLATING = 100 SY

–L– STA 284+75± TO –L– STA 286+75± (LEFT)
EXTEND ROCK PLATING LIMITS TO 2.5:1 (H:V) SLOPES.
EST. ROCK PLATING = 310 SY

ESTIMATED QUANTITIES:

ROCK PLATING ---------- 410 SQ. YD.

FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.

ROCK PLATING DETAIL AND LOCATIONS WERE RECOMMENDED BY THE GEOTECHNICAL ENGINEERING UNIT. THE RECOMMENDATIONS WERE SUBMITTED TO THE ROADWAY DESIGN UNIT ON MARCH 23, 2012 AND SEALED BY A PROFESSIONAL ENGINEER, THEIN T. ZAN, LICENSE #30943.

5/14/99
30-JUL-2012 15:34
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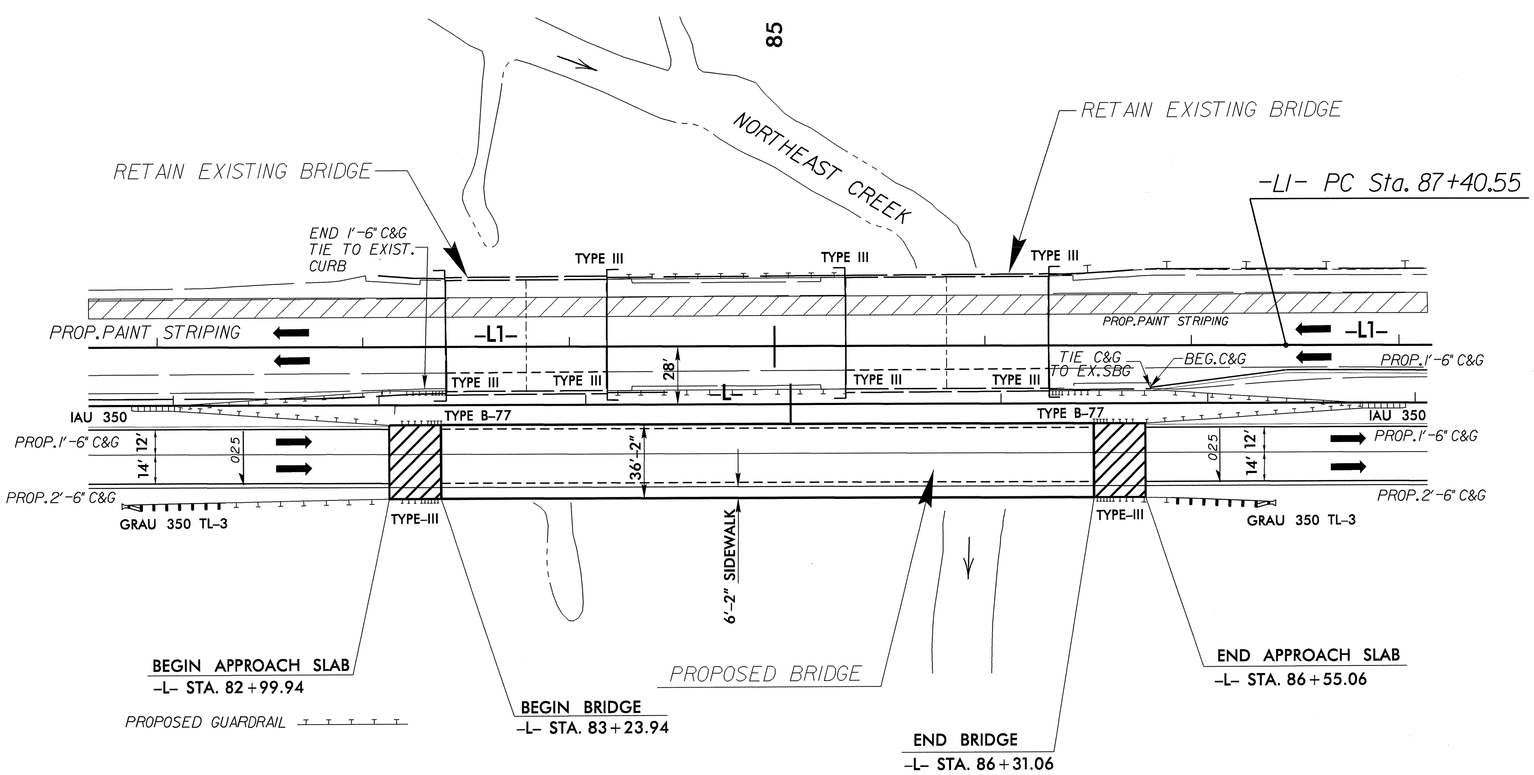
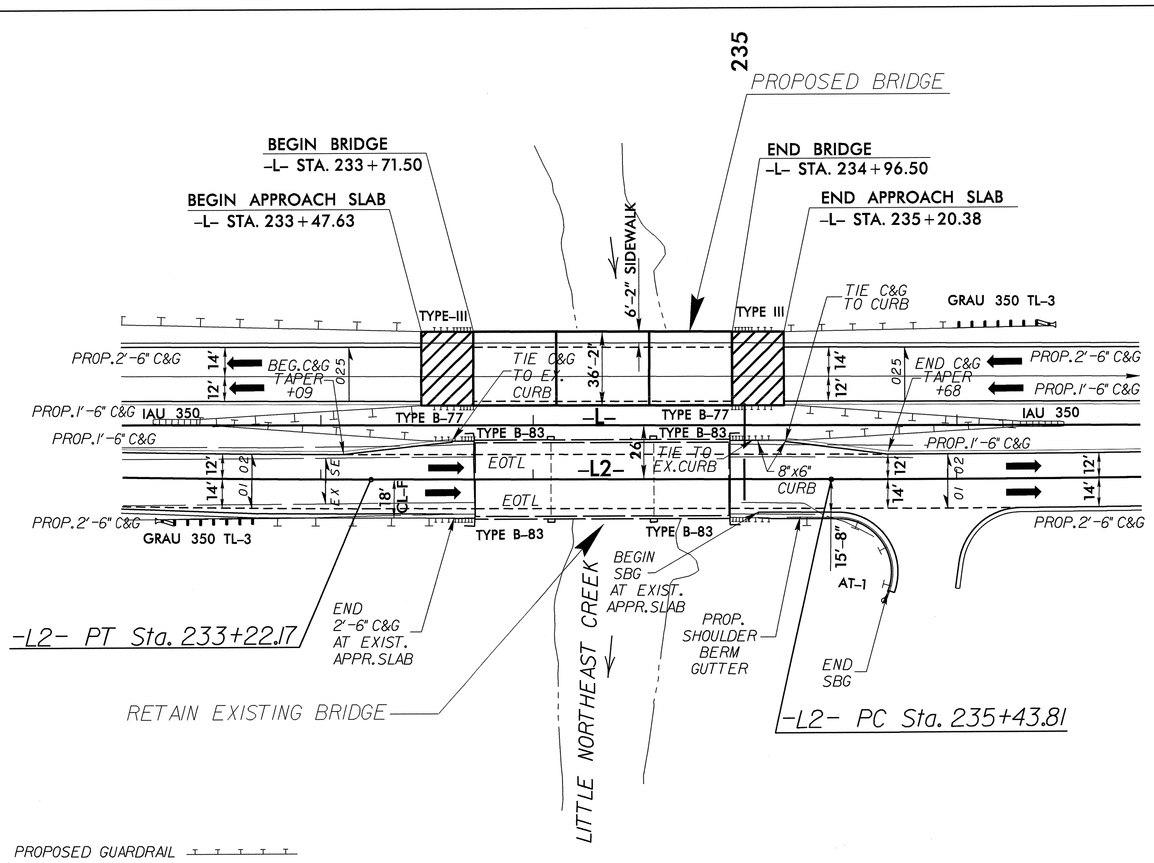
REVISIONS

SKETCH SHOWING PAVEMENT WIDTH TO BRIDGE WIDTH RELATIONSHIP



DETAIL SHOWING PAVEMENT BRIDGE RELATIONSHIP FOR -L- OVER NORTHEAST CREEK

SKETCH SHOWING PAVEMENT WIDTH TO BRIDGE WIDTH RELATIONSHIP



DETAIL SHOWING PAVEMENT BRIDGE RELATIONSHIP FOR -L- OVER LITTLE NORTHEAST CREEK

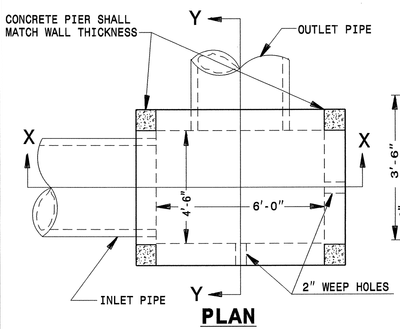
PROJECT REFERENCE NO. U-3810
RW SHEET NO.
ROADWAY DESIGN ENGINEER
SHEET NO. 2-AB

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

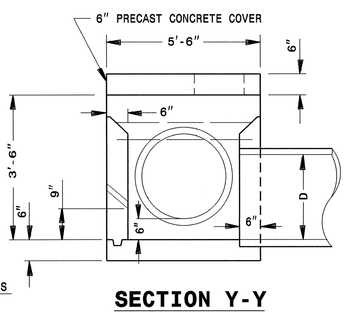
5/14/99

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

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



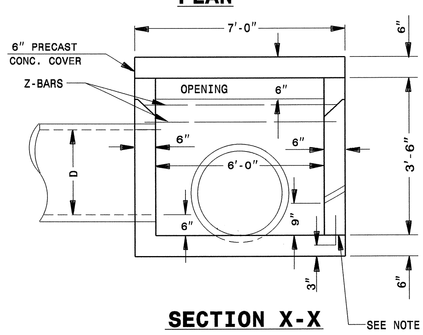
PLAN



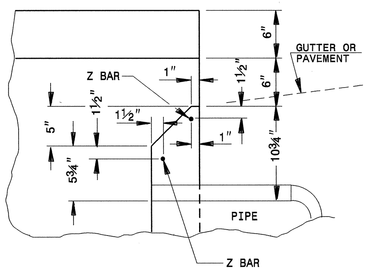
SECTION Y-Y

GENERAL NOTES:

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

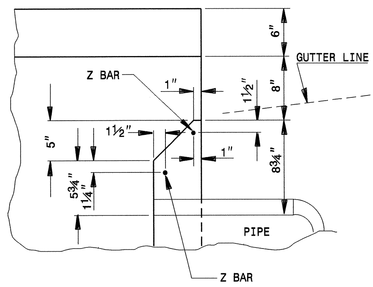


SECTION X-X



PART SECTION Y-Y

SHOWING METHOD OF CONSTRUCTION FOR 6" OPENING



PART SECTION Y-Y

SHOWING METHOD OF CONSTRUCTION IF INCREASED OPENING IS USED

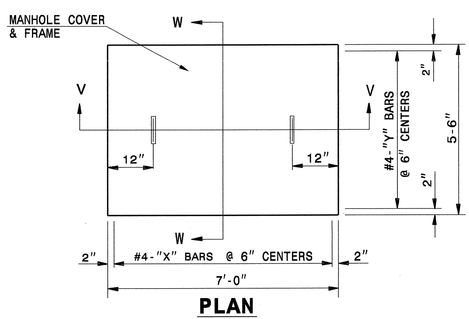
BILL OF MATERIALS

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

SHEET 1 OF 2
840D04

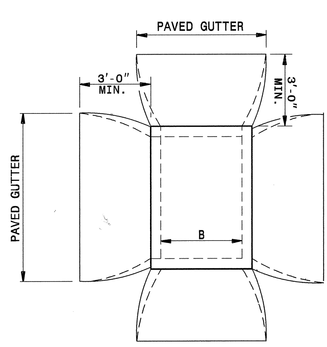
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

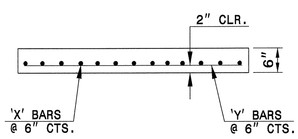


PLAN

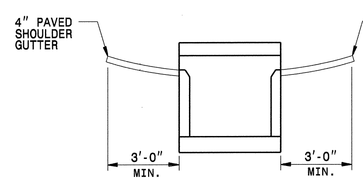
PLAN OF PRECAST COVER



PLAN OF CATCH BASIN IN MEDIAN STRIP

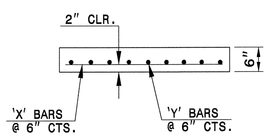


SECTION V-V

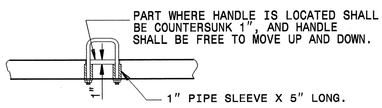


SECTION OF CATCH BASIN MEDIAN STRIP

DETAIL SHOWING METHOD OF PLACING CATCH BASIN AND PAVED SHOULDER GUTTER

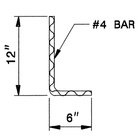


SECTION W-W

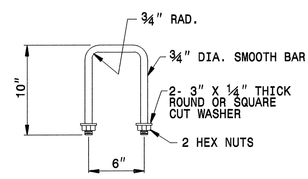


PART SECTION

THRU COVER SHOWING HANDLE



DOWEL



DETAIL OF HANDLE

SHEET 2 OF 2
840D04

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

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

ORIGINAL BY: E.F. HARD DATE: 8-21-03
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: w:\award\detail\metric\stand\840d04.dgn

SEE PLATE FOR TITLE

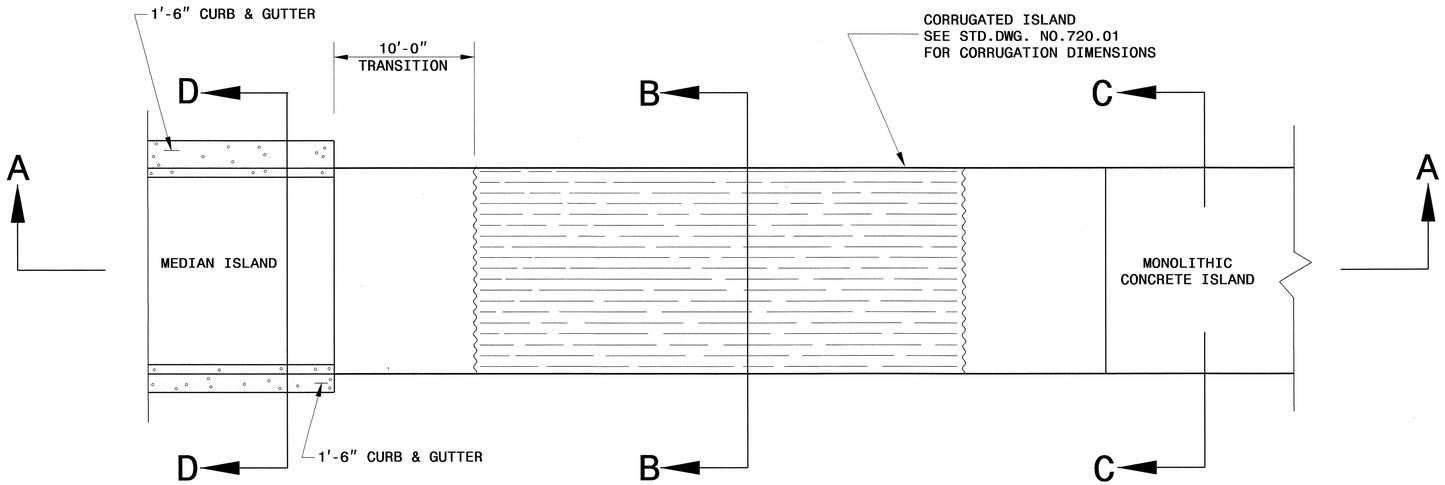
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

STR # 665
STR # 541

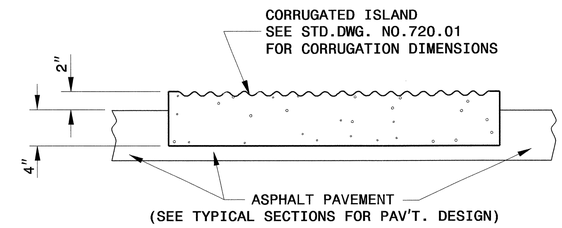
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19781 WILLIAM B. PERRY
1/12/12

PROJECT REFERENCE NO. U-3810
SHEET NO. 2-AC

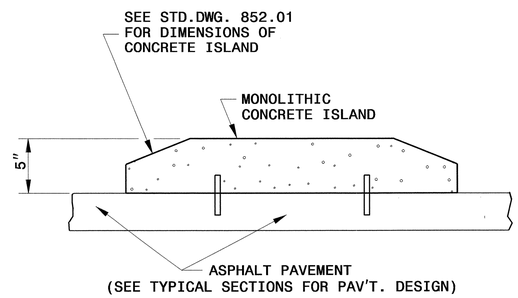
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-AD



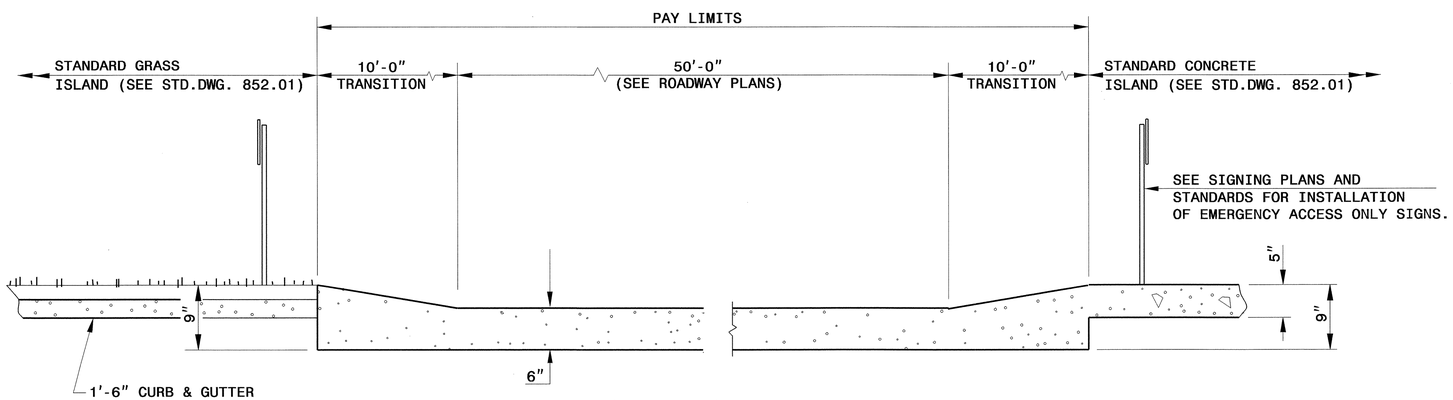
TOP VIEW



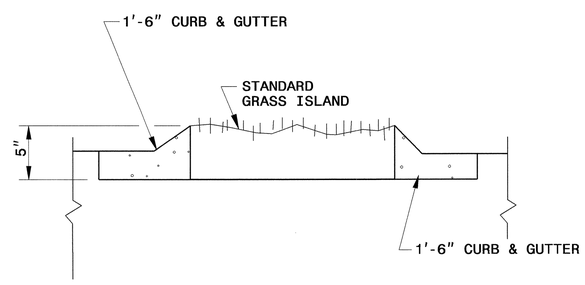
SECTION B-B



SECTION C-C



SECTION A-A



SECTION D-D

SEE SHT. 27

DETAIL OF EMERGENCY VEHICLE ACCESS

NOTES:

REFER TO SECTION 852 OF STANDARD SPECIFICATIONS FOR CONCRETE ISLANDS.

REFER TO STANDARD DRAWING 852.01 FOR CONTRACTION/EXPANSION JOINTS.

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

NORTH CAROLINA PROFESSIONAL SEAL 19761 ENGINEER CYNTHIA B. PERRY 7/22/12

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

EMERGENCY VEHICLE ACCESS FOR CONCRETE ISLAND

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 04-12-2012
CHECKED BY: [signature] DATE: 4/12/12
FILE SPEC.: jbritt\metric\murban\u3810 emergency access.dgn

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

PROJ. REFERENCE NO.	SHEET NO.
U-3810	2-AE

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

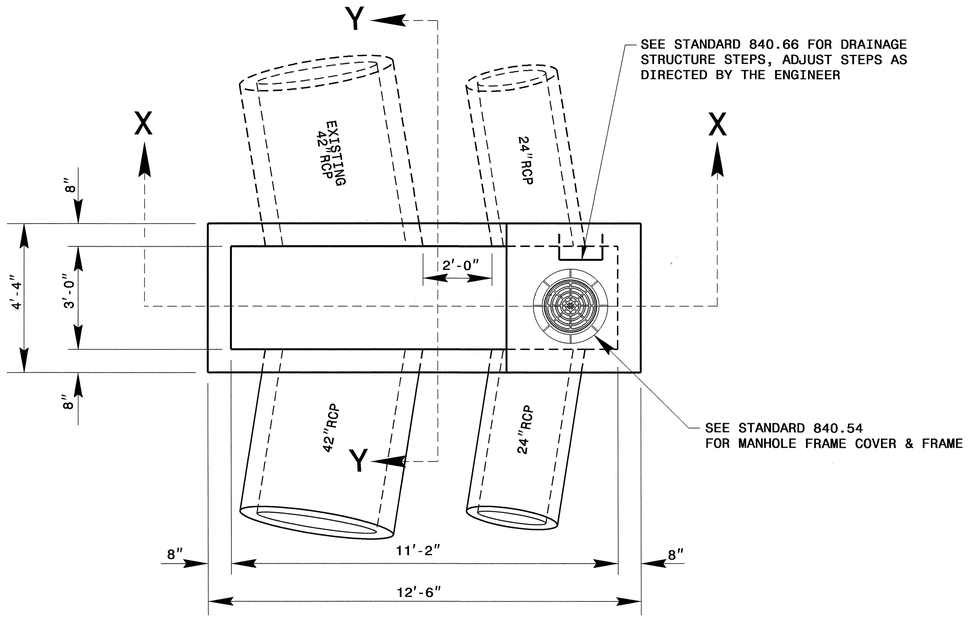
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

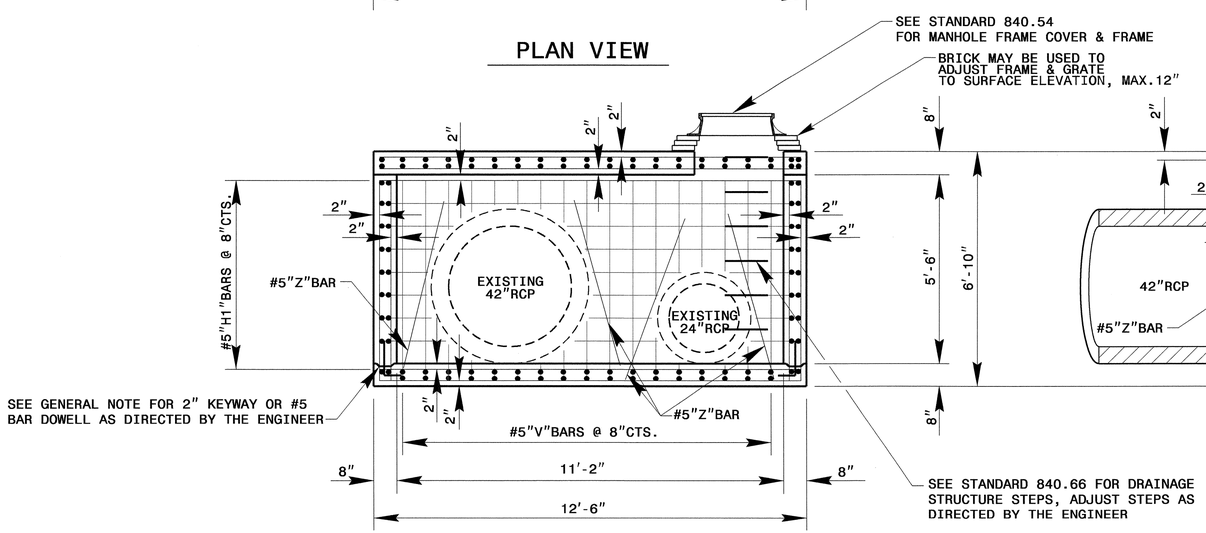
INSTALL CATCH BASIN IN POSITION AS DIRECTED BY THE ENGINEER. CUT AND BEND ALL REBAR CROSSING THIS OPENING TO ALLOW 2" MINIMUM CONCRETE COVERAGE.

CHAMFER ALL EXPOSED CORNERS 1".

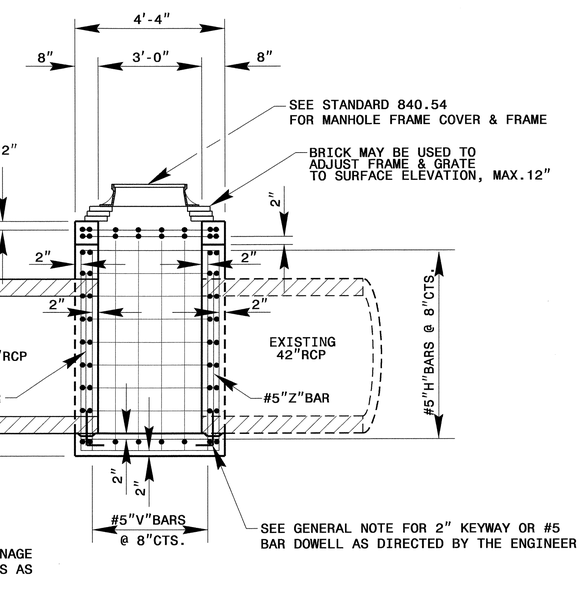
2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.



PLAN VIEW



VIEW X-X



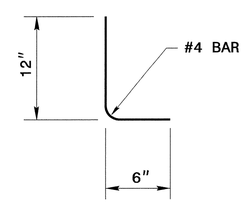
VIEW Y-Y

BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH	WEIGHT
H	124	#5	4'-0"	518
H1	56	#5	12'-4"	721
V	56	#5	6'-6"	380
Z	10	#5	4'-3"	45
TOTAL REINF. STEEL (LBS.)				1664
TOTAL CONC. (CU. YDS.)				6.9

* 0.30 CU. YD. PER FOOT OF RISER HEIGHT
* 0.28 CU. YD. DEDUCTION FOR 2-24" RC PIPE
* 0.78 CU. YD. DEDUCTION FOR 2-42" RC PIPE

* NO DEDUCTION HAS BEEN MADE FOR PIPES



DOWEL "C"

STR.#0218

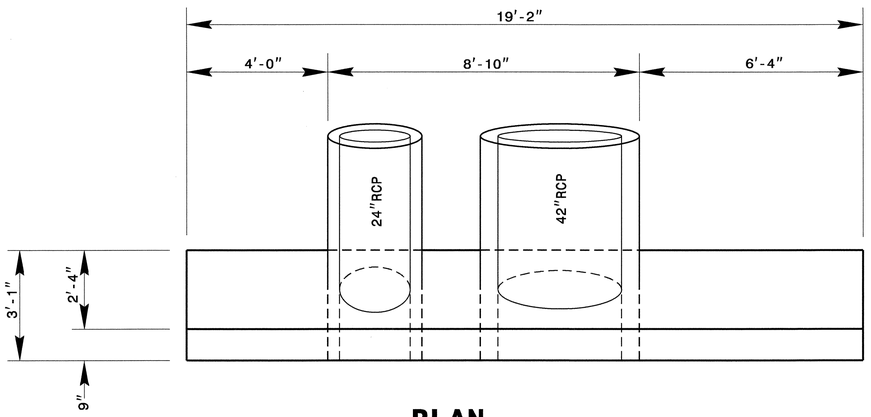
CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

NORTH CAROLINA PROFESSIONAL SEAL 19761 ENGINEER CYNTHIA B. PERRY 7/22/12

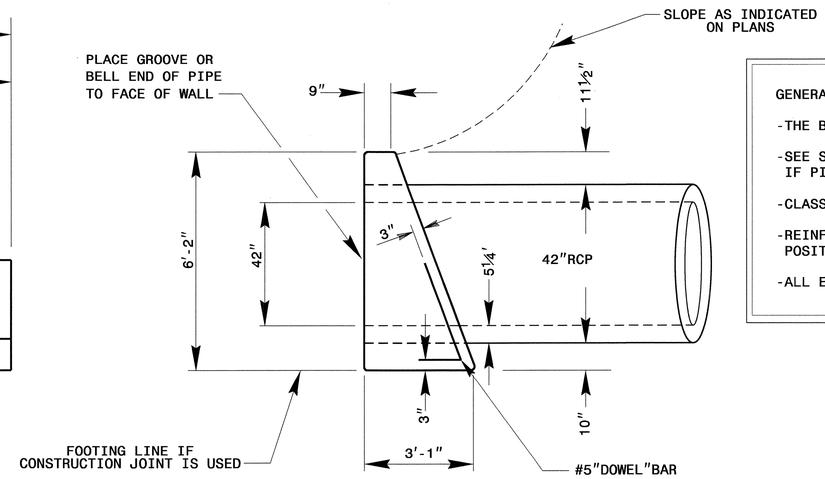
DETAIL OF JUNCTION BOX

ORIGINAL BY: rnbritt DATE: 05-15-12
MODIFIED BY: DATE:
CHECKED BY: DATE: 5/15/12
FILE SPEC.: /details/nbritt/english/urban/u3401jb.dgn

PROJ. REFERENCE NO.	SHEET NO.
U-3810	2-AF



PLAN



END ELEVATION

GENERAL NOTES:

-THE BASE SLAB SHALL BE CONSTRUCTED BY FORMING.

-SEE STD. DWG. 840.00 FOR CONSTRUCTION OF BASE SLAB IF PIPE IS SET INTO BASE SLAB.

-CLASS 'B' CONCRETE SHALL BE USED THROUGHOUT.

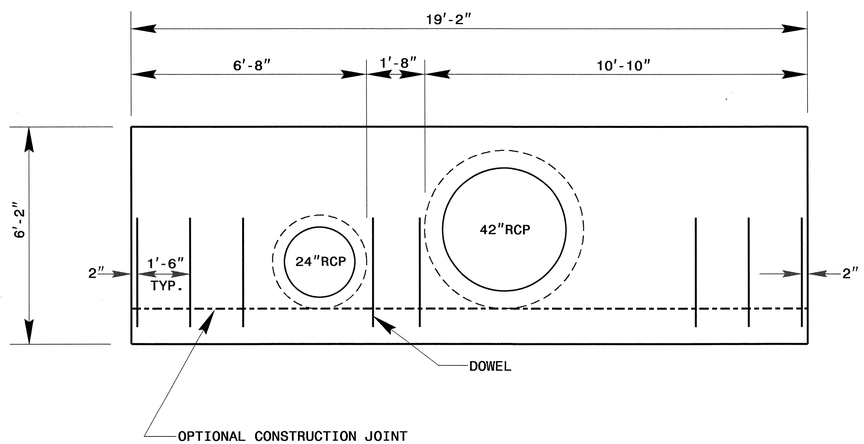
-REINFORCING STEEL SHALL BE CUT, BENT OR RELOCATED TO POSITION PIPE AS DIRECTED BY THE ENGINEER.

-ALL EXPOSED CORNERS SHALL BE CHAMFERED 1 INCH.

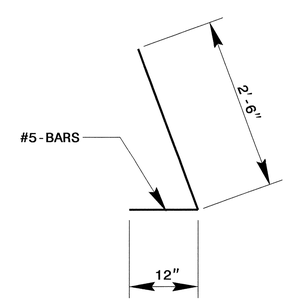
BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH	TOTAL LENGTH	WEIGHT
DOWEL	8	#5	3'-6"	28	30
TOTAL CONC.			(CU.YDS.)		8.4
TOTAL REINF. STEEL (LBS.)					30

* NO DEDUCTION HAS BEEN MADE FOR PIPES
* 1.2 CU. YD. DEDUCTION FOR 1-42"RC PIPE
* 0.46 CU. YD. DEDUCTION FOR 1-24"RC PIPE



ELEVATION



DOWEL
BAR-"X"

STR.#0218B

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

DETAIL OF SPECIAL HEADWALL

ORIGINAL BY: rnbritt DATE: 05-15-12
MODIFIED BY: DATE:
CHECKED BY: DATE: 5/15/12
FILE SPEC.: details/nbritt/english/urban/u3810 60 tbcb.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-AG

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

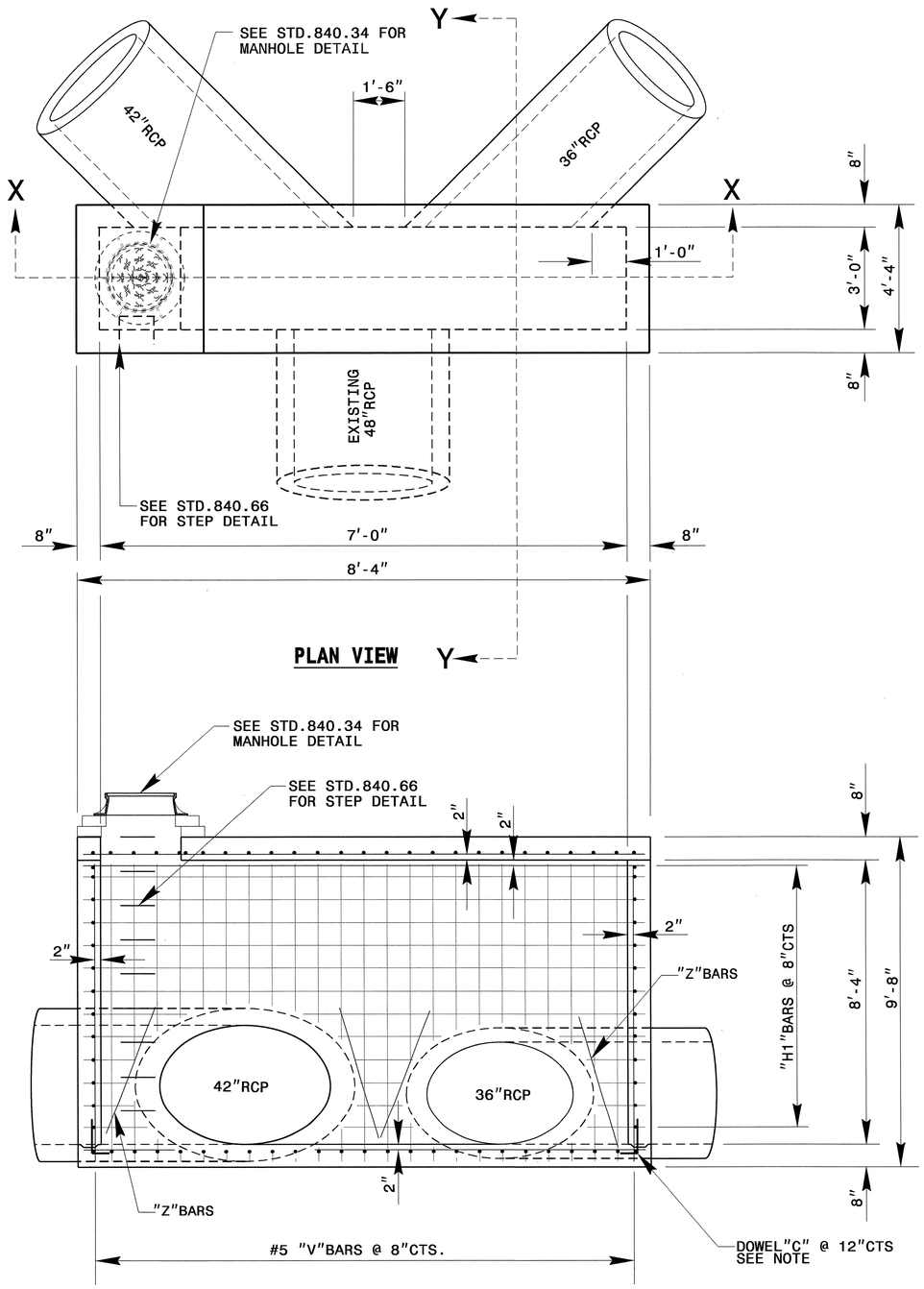
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

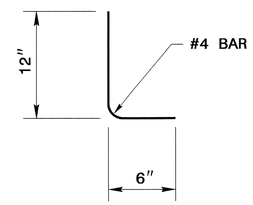
INSTALL MANHOLE IN POSITION AS DIRECTED BY THE ENGINEER. CUT AND BEND ALL REBAR CROSSING THIS OPENING TO ALLOW 2" MINIMUM CONCRETE COVERAGE.

CHAMFER ALL EXPOSED CORNERS 1".

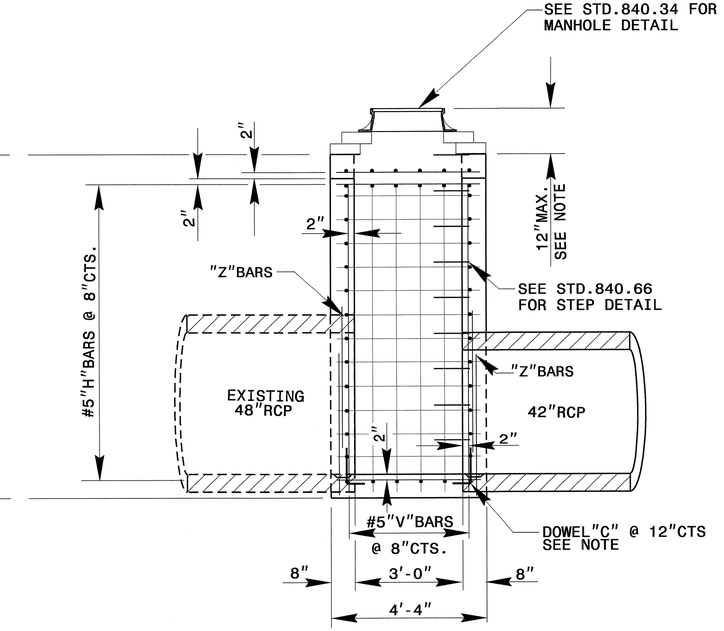
2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.



SECTION X-X



DOWEL "C"



SECTION Y-Y

BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH	WEIGHT
H	42	#5	7'-0"	307
H1	84	#5	8'-0"	701
V	62	#5	7'-0"	453
Z	10	#5	4'-0"	42
TOTAL REINF. STEEL (LBS.)				1503
TOTAL CONC. (CU. YDS.)				6.5

* 0.30 CU. YD. PER FOOT OF RISER HEIGHT
* 0.29 CU. YD. DEDUCTION FOR 1-36"RC PIPE
* 0.39 CU. YD. DEDUCTION FOR 1-42"RC PIPE
* 0.49 CU. YD. DEDUCTION FOR 1-48"RC PIPE
* NO DEDUCTION HAS BEEN MADE FOR PIPES

NORTH CAROLINA PROFESSIONAL SEAL 19761 ENGINEER CYNTHIA B. PERRY 7/22/12

STR.#0338

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

SPECIAL JUNCTION BOX WITH MANHOLE

ORIGINAL BY: nbritt DATE: 05/15/12
MODIFIED BY: DATE:
CHECKED BY: DATE: 5/15/12
FILE SPEC.: detail/nbritt/english/urban/u3810 60 tbcb.dgn

5/14/99

SYSTIME$$$$$$$$
SYSDATE$$$$$$$$
USERNAME$$$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-AH

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

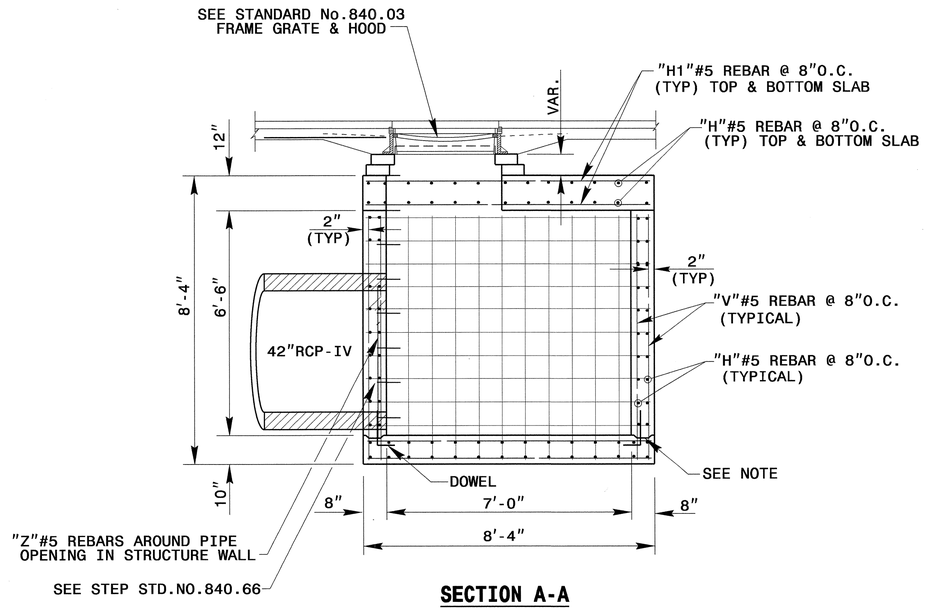
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

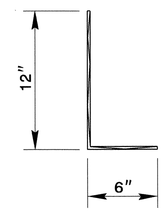
INSTALL CATCH BASIN IN POSITION AS DIRECTED BY THE ENGINEER. CUT AND BEND ALL REBAR CROSSING THIS OPENING TO ALLOW 2" MINIMUM CONCRETE COVERAGE.

CHAMFER ALL EXPOSED CORNERS 1".

2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.



SECTION A-A

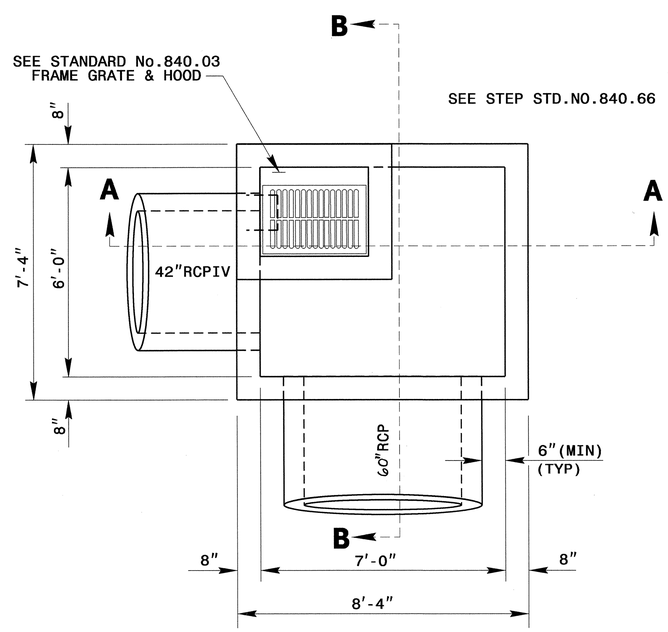


DOWEL

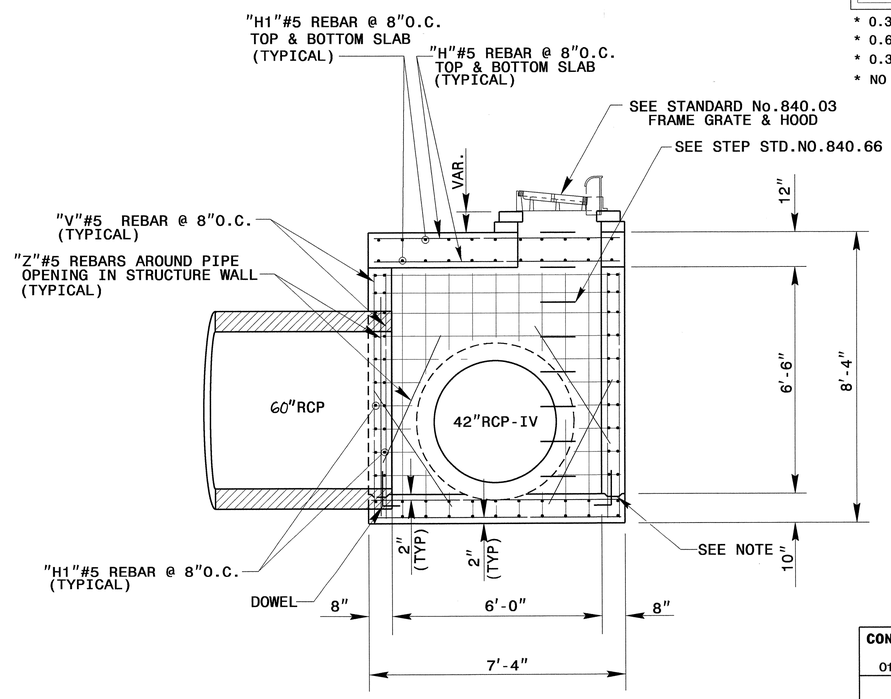
SEE NOTE

BILL OF MATERIALS				
BAR	NO.	SIZE	LENGTH	WEIGHT
H	92	#5	7'-0"	672
H1	80	#5	8'-0"	668
V	48	#5	7'-0"	351
Z	10	#5	4'-0"	42
TOTAL REINF. STEEL (LBS.)				1733
TOTAL CONC. (CU. YDS.)				8.8

* 0.30 CU. YD. PER FOOT OF RISER HEIGHT
* 0.63 CU. YD. DEDUCTION FOR 1-60" RC PIPE
* 0.39 CU. YD. DEDUCTION FOR 1-42"IV-RC PIPE
* NO DEDUCTION HAS BEEN MADE FOR PIPES



PLAN VIEW



SECTION B-B

STR.#0752

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

TRAFFIC BEARING CATCH BASIN

ORIGINAL BY: nbritt DATE: 05/15/12
MODIFIED BY: DATE:
CHECKED BY: DATE: 5/15/12
FILE SPEC.: detail/nbritt/english/urban/u3810 60 tbcb.dgn

5/14/99

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

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-A1

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

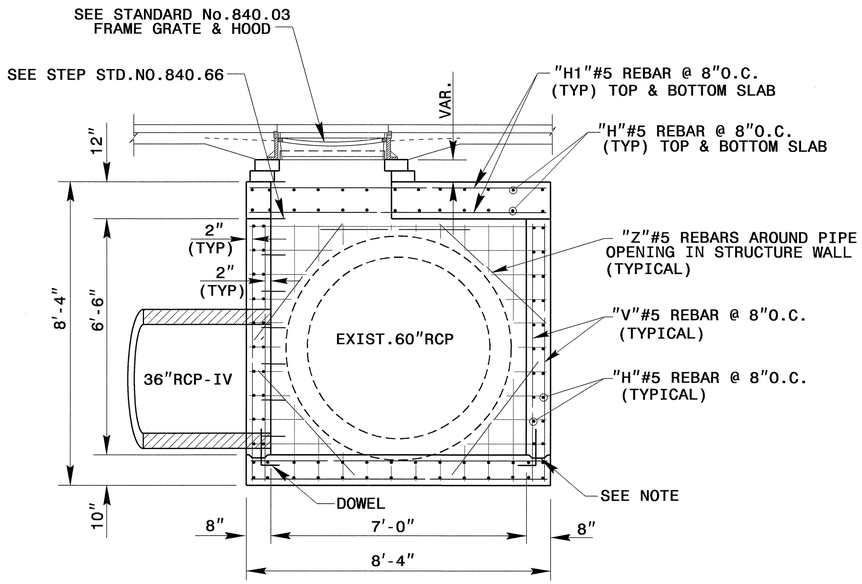
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

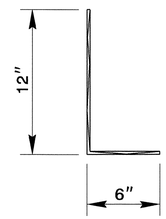
INSTALL CATCH BASIN IN POSITION AS DIRECTED BY THE ENGINEER. CUT AND BEND ALL REBAR CROSSING THIS OPENING TO ALLOW 2" MINIMUM CONCRETE COVERAGE.

CHAMFER ALL EXPOSED CORNERS 1".

2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.



SECTION A-A

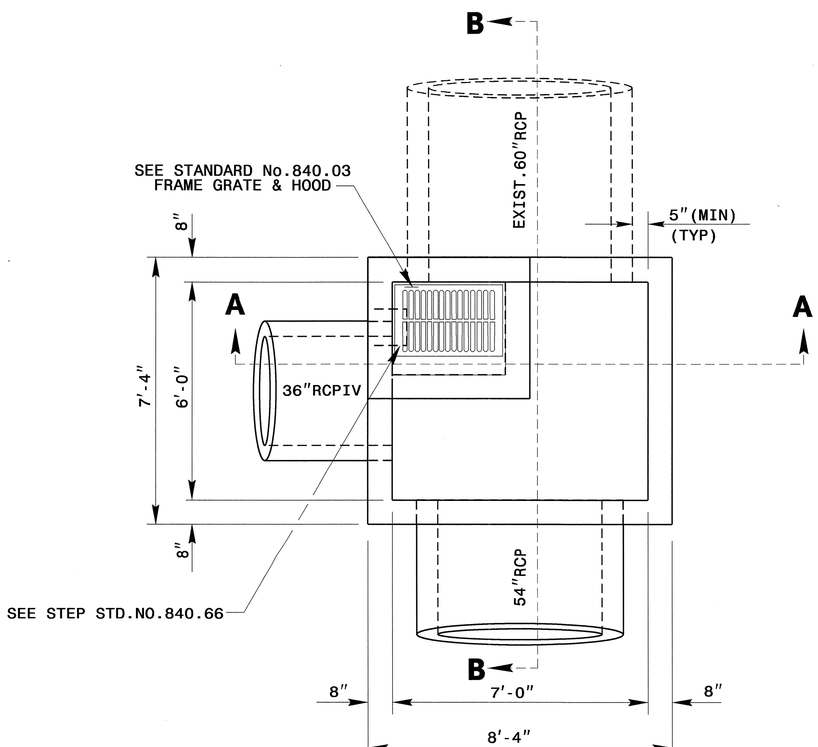


DOWEL

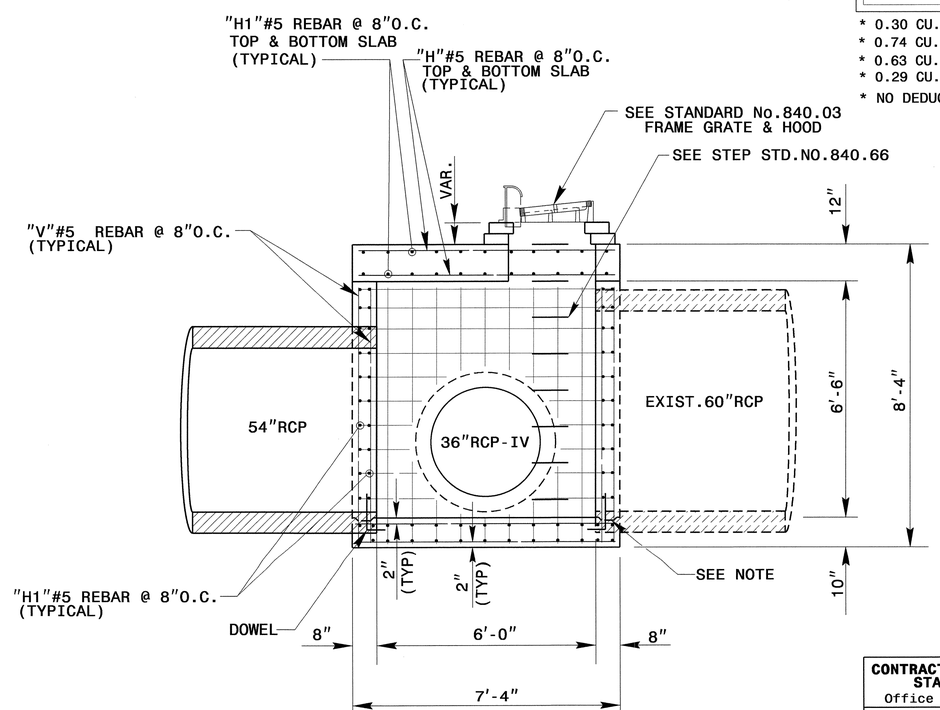
SEE NOTE

BILL OF MATERIALS				
BAR	NO.	SIZE	LENGTH	WEIGHT
H	92	#5	7'-0"	672
H1	84	#5	8'-0"	701
V	48	#5	7'-0"	351
Z	14	#5	4'-0"	59
TOTAL REINF. STEEL (LBS.)				1783
TOTAL CONC. (CU. YDS.)				8.8

* 0.30 CU. YD. PER FOOT OF RISER HEIGHT
* 0.74 CU. YD. DEDUCTION FOR 1-60" RC PIPE
* 0.63 CU. YD. DEDUCTION FOR 1-54" RC PIPE
* 0.29 CU. YD. DEDUCTION FOR 1-36"IV-RC PIPE
* NO DEDUCTION HAS BEEN MADE FOR PIPES



PLAN VIEW



SECTION B-B

STR.#0753

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

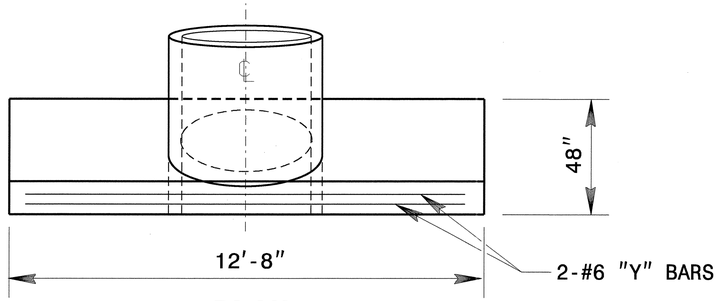
TRAFFIC BEARING CATCH BASIN

ORIGINAL BY: nbritt DATE: 05/15/12
MODIFIED BY: DATE:
CHECKED BY: DATE: 5/15/12
FILE SPEC.: detail/nbritt/english/urban/u3810 60 tbcb.dgn

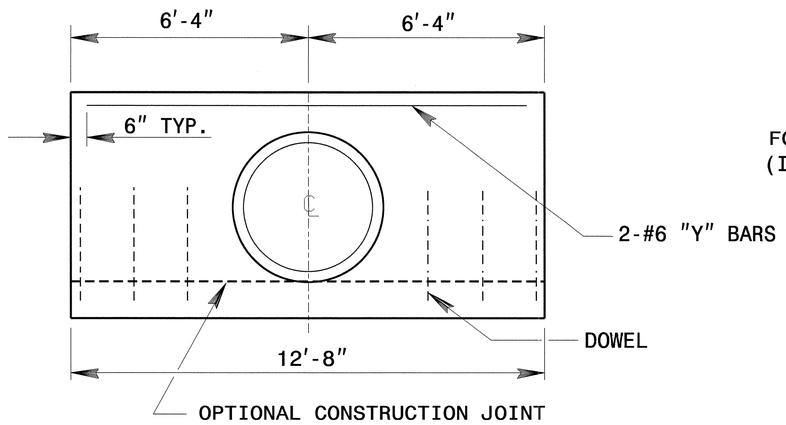
5/14/98

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

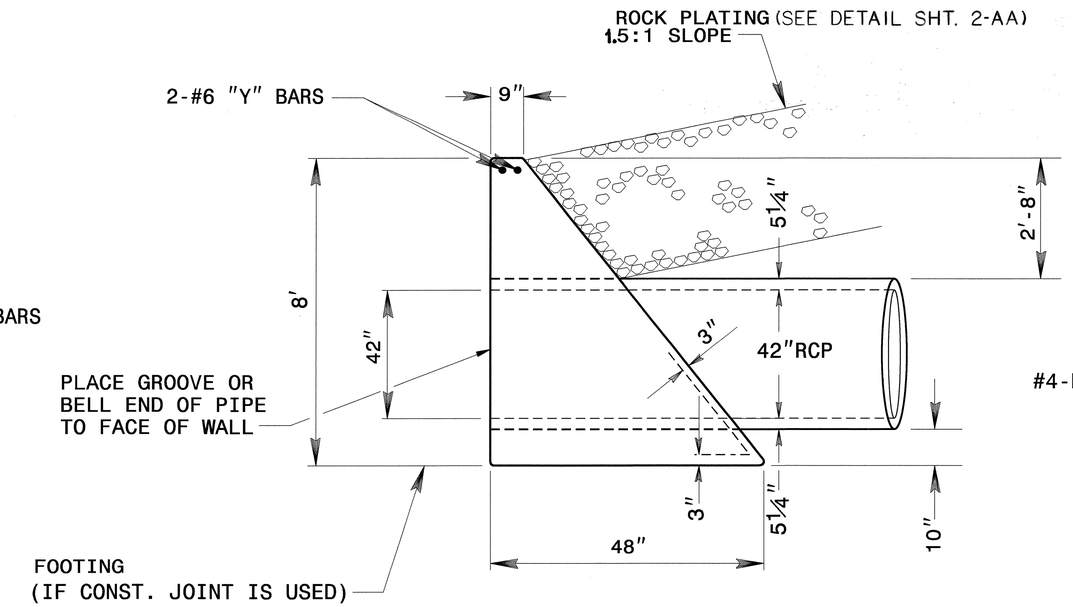
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-AJ



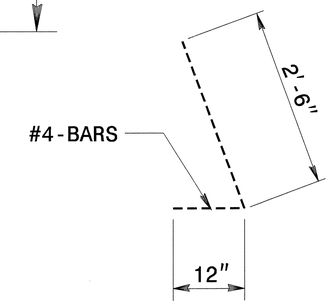
PLAN



ELEVATION



END ELEVATION



DOWEL
BAR-"X"

GENERAL NOTES:

CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

PLACE 2 #6 "Y" BARS IN THE TOP OF ALL ENDWALL FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL LENGTH.

CONSTRUCT BOTTOM SLAB WITH FORMS.

DO NOT INTERPRET WALL THICKNESS (T) SHOWN FOR THE THICKNESS ACCEPTABLE, BUT IS USED IN COMPUTING ENDWALL QUANTITIES.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR "X" DOWELS IN THE BASE AS SHOWN ON PLANS. SPACE BARS APPROXIMATELY ON 12" CENTERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE AND POUR THE BASE SEPARATELY LEAVE THE POUR ROUGH.

USE CLASS "B" CONCRETE.

STRUCTURE QUANTITIES

LENGTH	BAR #	LENGTH	LBS/FT	QTY.	LBS
DOWELS	#4	3'-6"	0.668	55	129
TOTAL LBS.					129
CLASS "B" CONCRETE				4.5	CU.YDS.

NORTH CAROLINA PROFESSIONAL SEAL 19761 ENGINEER CYNTHIA B. PERRY
7/2/12

STR # 781

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

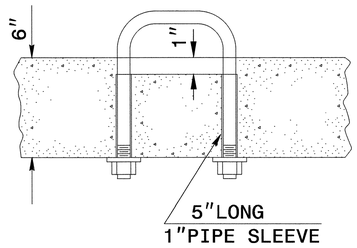
42" ENDWALL, 90°SK

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 12-19-11
CHECKED BY: [signature] DATE: 1/6/12
FILE SPEC.: /projects/rnbritt/english/urban/u3810 42endwall90sk.dgn

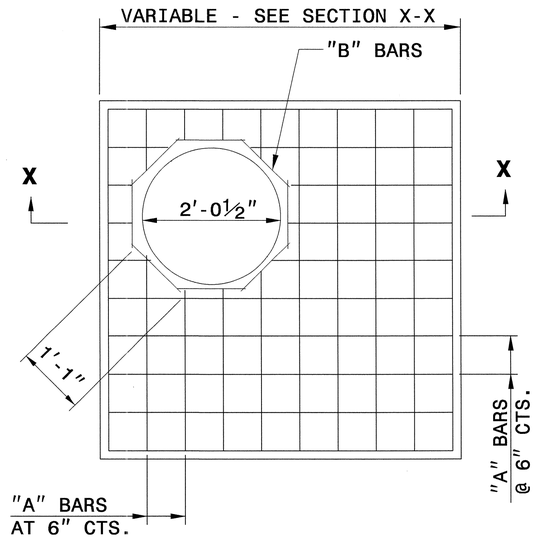
5/14/99

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

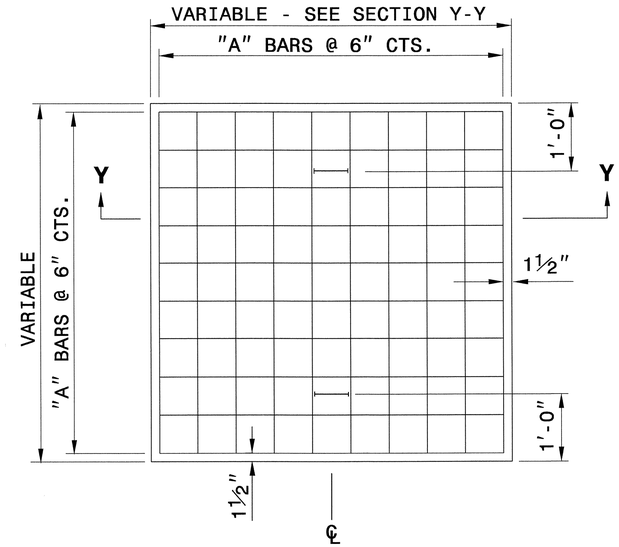
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-AK



PARTIAL SECTION



PLAN



PLAN

GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

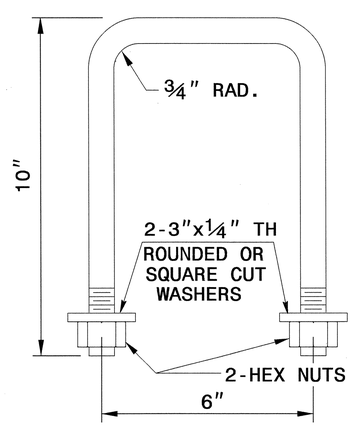
THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

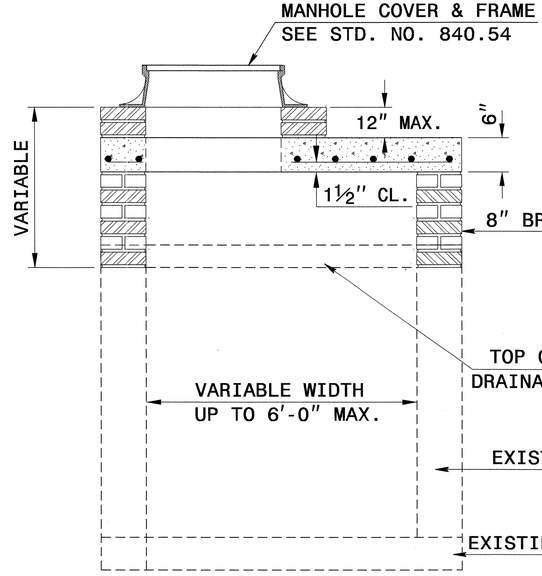
BILL OF MATERIALS

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

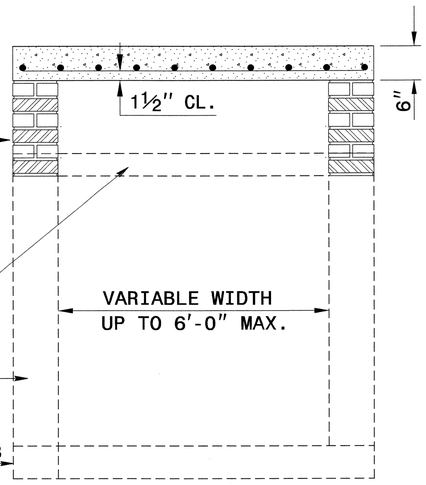
* NOTE:
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.



DETAIL OF HANDLE



SECTION X-X



SECTION Y-Y

NORTH CAROLINA PROFESSIONAL SEAL 19761 ENGINEER CYNTHIA B. PERRY 7/22/12

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

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

ORIGINAL BY: T.S.S. DATE: NOV.1997
MODIFIED BY: T.S.S. DATE: FEB.2000
CHECKED BY: [signature] DATE: 6/6/12
FILE SPEC.: pw174:/usr/details/stand/boxtojbe.dgn

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

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-AL

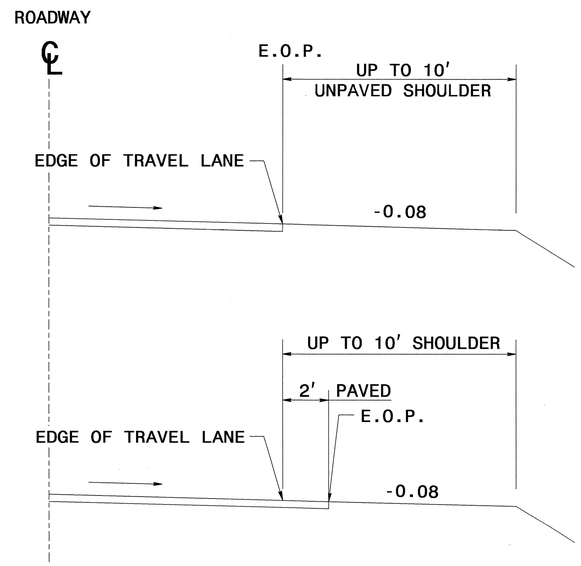
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

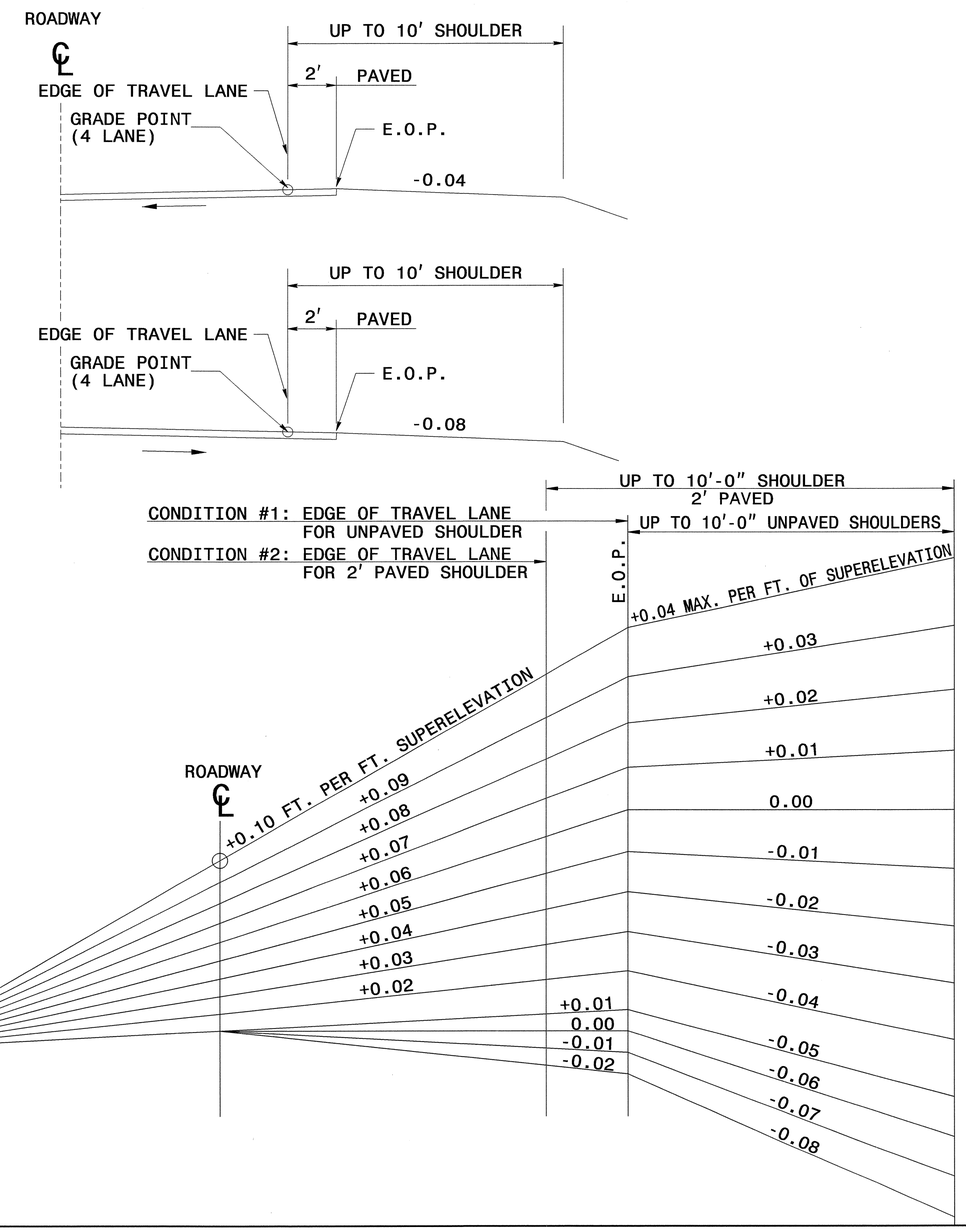
SHEET 1 OF 1

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 19761 ENGINEER CYNTHIA B. PERRY 7/22/12

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: 6/6/12
FILE SPEC: /er/coward/stds/stdstodetails/30001/0300d01.dgn

5/14/99

DGN FILE NAME = 0300d01.dgn
DATE/TIME = 8/8/2012 8:08:12 AM

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-AM

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

ENGLISH DETAIL DRAWING FOR

METHOD OF SHOULDER CONSTRUCTION

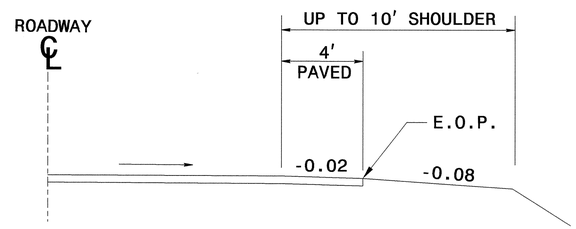
HIGH SIDE OF SUPERELEVATED CURVE

METHOD I (SHOULDERS UP TO 10')

SHEET 2 OF 2

560D01

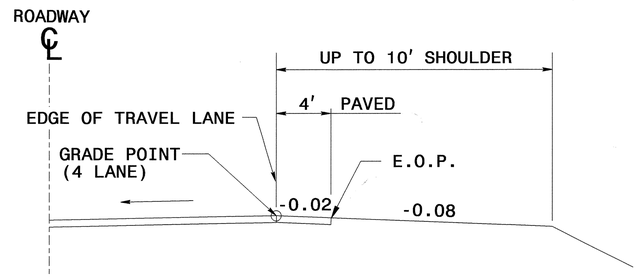
NORMAL OUTSIDE SHOULDER SLOPES

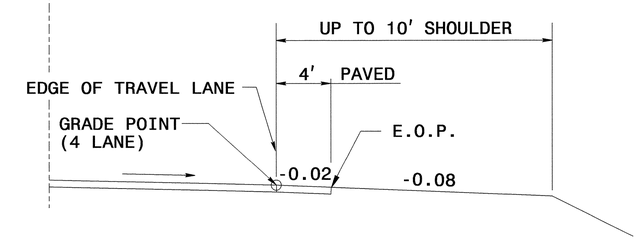


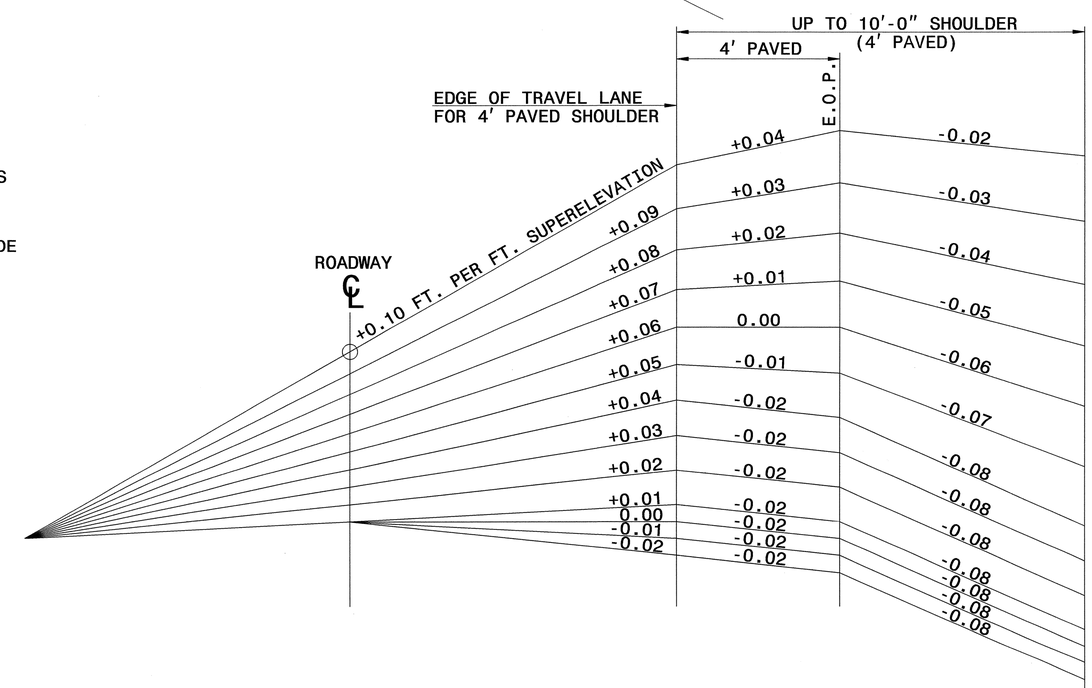
NOTE: ON LOW SIDE OF SUPERELEVATED PAVEMENT USE NORMAL SHOULDER SLOPE UNLESS NORMAL SHOULDER SLOPE IS FLATTER THAN SUPERELEVATION, THEN USE SUPER-ELEVATION RATE ON SHOULDER.

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.

NORMAL MEDIAN SHOULDER SLOPES







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

NORTH CAROLINA PROFESSIONAL SEAL 19761 ENGINEER CYNTHIA B. PERRY 7/23/12

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

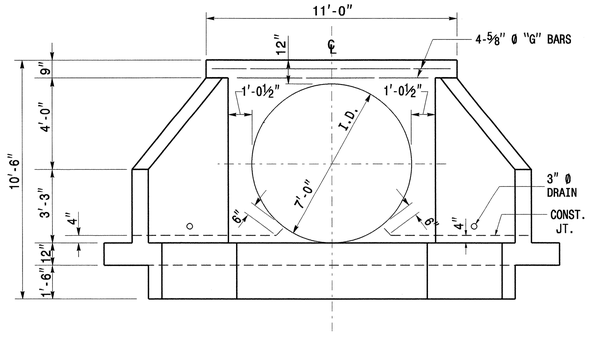
SEE PLATE FOR TITLE

ORIGINAL BY: KKempf DATE: 5-15-09
MODIFIED BY: DATE:
CHECKED BY: DATE: 6/6/12
FILE SPEC: c:/engward/stds/stdstodetails/30001/0300d01.dgn

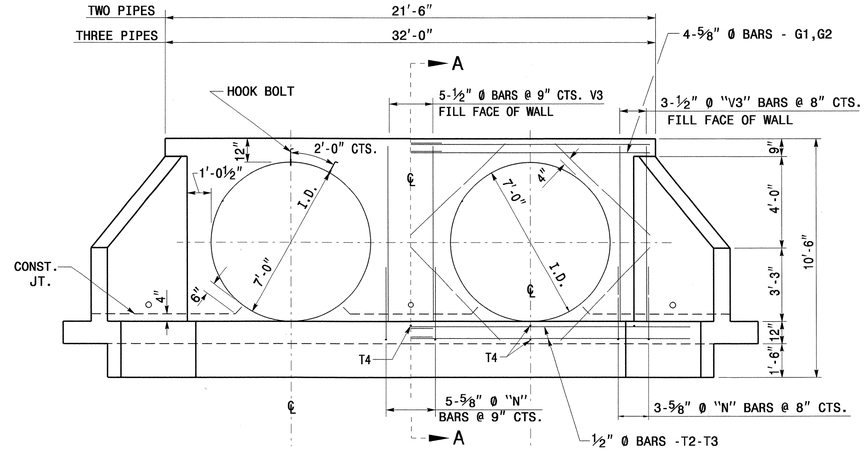
5/14/99

$$$$$(TIME)$$$$
$$$$$(DGNNAME)$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-AN



END ELEVATION



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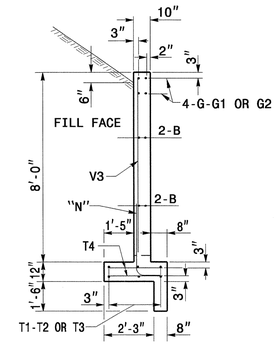


SECTION A-A FOR ALL ENDWALLS

NOTES:

ALL CONCRETE TO BE CLASS "A".

ALL REINFORCING STEEL SHALL BE ASTMA615-GRADE 60.

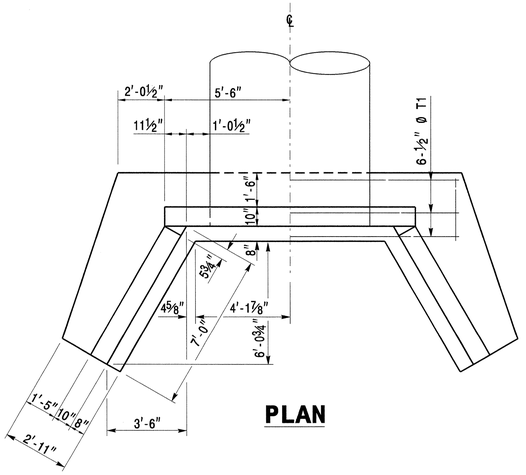
ALL REINFORCING STEEL SHALL BE DEFORMED BARS. WHERE SPLICING OF REINFORCMENT IS NECESSARY, BARS ARE TO BE LAPPED 45 DIAMETERS. ALL DIMENSIONS RELATIVE TO REINFORCEMENT ARE TO CENTERS OF BARS.

THE FOOTING, CURTAIN WALL AND 4" OF WALL ARE TO BE POURED IN ONE OPERATION ALLOWING NO TIME FOR INITIAL SET TO TAKE PLACE BETWEEN THEM. THE REMAINING WALL SHALL THEN BE POURED IN ONE OPERATION.

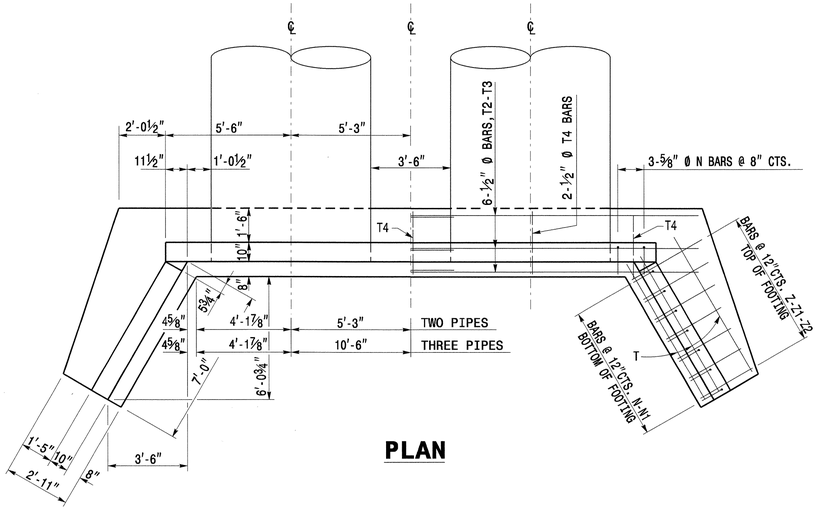
ALL EXPOSED CORNERS ARE TO BE CHAMFERED 1".

3" DIAMETER DRAINS SHALL BE PLACED IN WALL AS SHOWN AND BE 6" ABOVE NORMAL FLOW LINE.

ALL MATERIAL AND WORKMANSHIP AS PER N.C.DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.



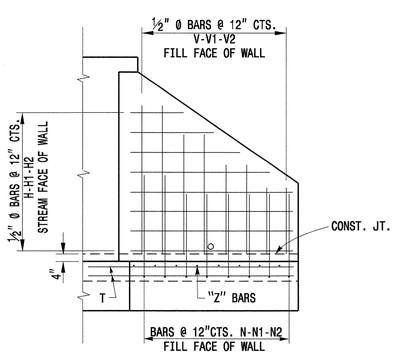
PLAN



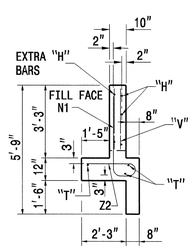
PLAN

BILL OF MATERIAL FOR ONE ENDWALL

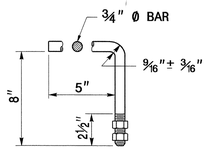
REINFORCING STEEL			1 PIPE		2 PIPES		3 PIPES	
BAR	SIZE	LENGTH	NO.	WEIGHT	NO.	WEIGHT	NO.	WEIGHT
B	#4	6'-0"	8	32	16	64	24	96
G	#5	10'-9"	4	45	-	-	-	-
G1	#5	11'-9"	-	-	8	98	-	-
G2	#5	17'-0"	-	-	-	-	8	142
H	#4	9'-0"	10	60	10	60	10	60
H1	#4	7'-0"	6	28	6	28	6	28
H2	#4	3'-9"	4	10	4	10	4	10
N	#5	4'-6"	10	47	15	70	20	94
N1	#4	4'-1"	10	27	10	27	10	27
T	#4	6'-6"	6	26	6	26	6	26
T1	#4	15'-0"	6	60	-	-	-	-
T2	#4	13'-9"	-	-	12	110	-	-
T3	#4	19'-0"	-	-	-	-	12	152
T4	#4	2'-9"	4	7	7	13	10	18
V	#4	5'-9"	6	23	6	23	6	23
V1	#4	4'-6"	6	18	6	18	6	18
V2	#4	2'-9"	8	15	8	15	8	15
V3	#4	7'-6"	6	30	11	55	16	80
Z	#5	4'-9"	4	20	4	20	4	20
Z1	#4	4'-3"	4	11	4	11	4	11
Z2	#4	3'-6"	6	14	6	14	6	14
TOTAL REINF. STEEL (lbs.)				473		662		834
CLASS "A" CONC. (cu. yds.)				7.9		10.8		13.8



ELEVATION OF WING SHOWING REINFORCEMENT

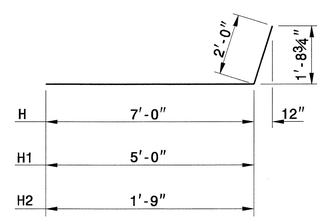


END OF WING

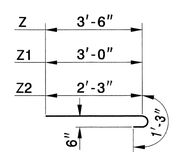


HOOK BOLT

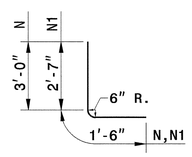
HOOK BOLTS (ANCHORS SHALL BE CONSTRUCTED AT 2'-0" CTS. ALONG THE CIRCUMFERENCE OF THE 7'-0" CSPA. THE HOOK BOLTS SHALL BE EMBEDDED IN THE CONCRETE ENDWALL 8" IN DEPTH. THE GALVANIZED¾" DIA. HOOK BOLTS MUST MEET ASTM A-307 OR ASTM A-836. BOTH BOLTS AND NUTS MUST BE IN ACCORDANCE WITH ASTM A-153 FOR GALVANIZING.



BARS H-H1-H2



BARS Z-Z1-Z2



BARS N-N1

*TEMPORARY INSTALLATION

CONTRACT STANDARDS & DEVELOPMENT UNIT
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DETAIL OF REINFORCED CONCRETE ENDWALL FOR 84" DIAMETER PIPE - 90° SKEW

ORIGINAL BY: R.S.WICKER DATE: 6-46
MODIFIED BY: R.E.D.&T.S.S. DATE: 6-96 & 5-00
CHECKED BY: DATE: 6/20/12
FILE SPEC.: details/nbritt/english/hydro/endwall90sk.dgn

$$$$$$SYTIME$$$$$
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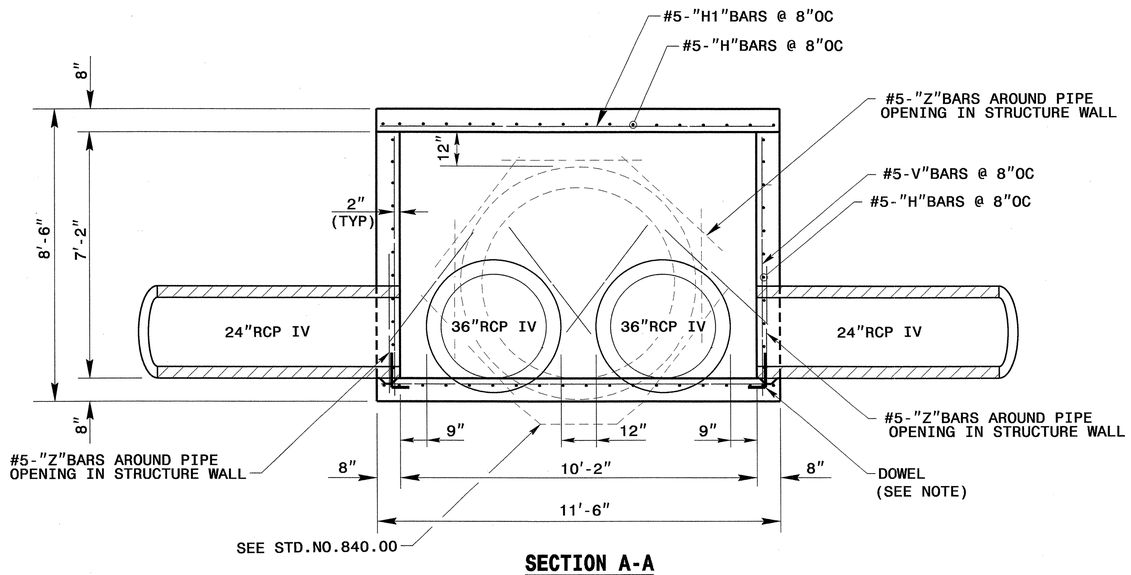
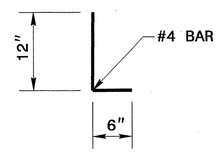
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-AO



SECTION A-A



DOWEL DETAIL

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.

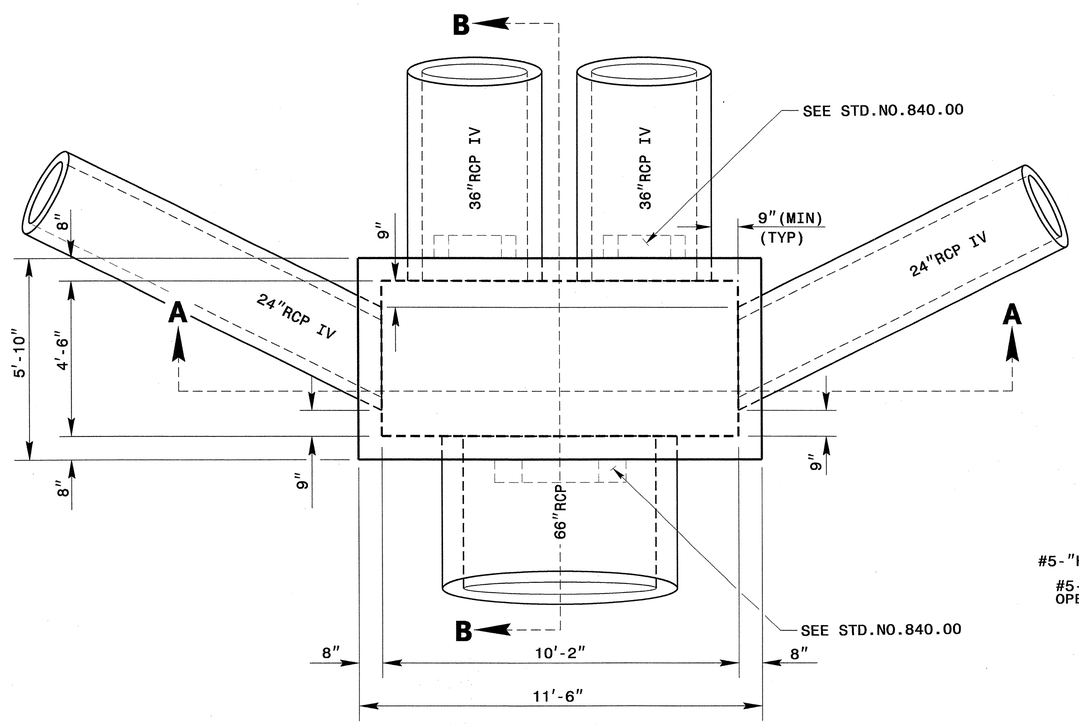
CHAMFER ALL EXPOSED CORNERS 1".

HEIGHT DIMENSIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

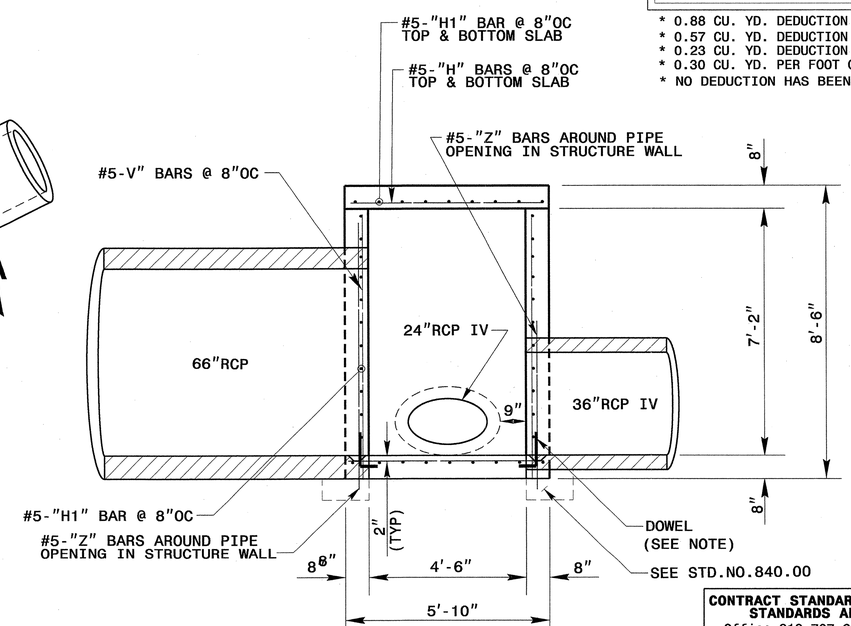
BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH	WEIGHT
H	60	#4	5'-6"	221
H1	42	#4	11'-2"	314
V	50	#4	7'-6"	251
Z	12	#4	4'-0"	32
TOTAL REINF. STEEL (LBS.)				918
TOTAL CL."AA" CONC.(CU.YDS.)				9.0

* 0.88 CU. YD. DEDUCTION FOR 1-66" RC PIPE
* 0.57 CU. YD. DEDUCTION FOR 2-36" RC PIPE
* 0.23 CU. YD. DEDUCTION FOR 2-24" RC PIPE
* 0.30 CU. YD. PER FOOT OF RISER HEIGHT
* NO DEDUCTION HAS BEEN MADE FOR PIPES



PLAN VIEW



SECTION B-B

NORTH CAROLINA PROFESSIONAL SEAL 19761 ENGINEER CYNTHIA B. PERRY 7/23/12

STR. # 386

CONTRACT STANDARDS & DEVELOPMENT UNIT
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66" JUNCTION BOX

ORIGINAL BY: DATE:
MODIFIED BY: nbritt DATE: 06/27/12
CHECKED BY: DATE: 6/27/12
FILE SPEC.: c:\dgnlib\nbritt\english\urban\u3810 66jb.dgn

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PROJECT REFERENCE NO.	SHEET
U-3810	2-AP

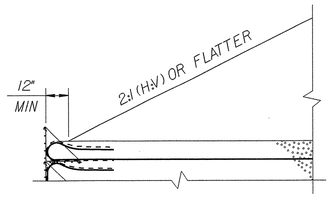
GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

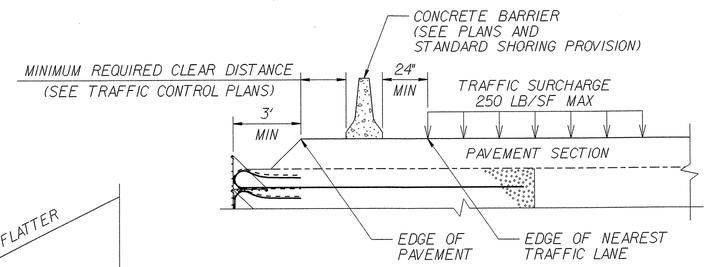
Scott A. Hidden 11/8/11
SIGNATURE DATE

ENGINEER

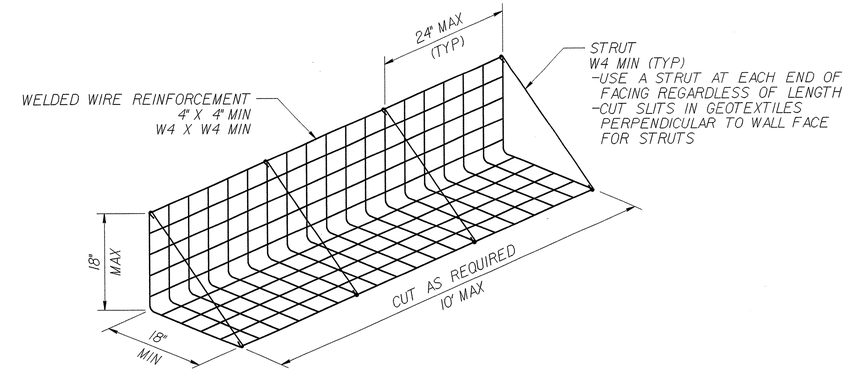
SIGNATURE DATE



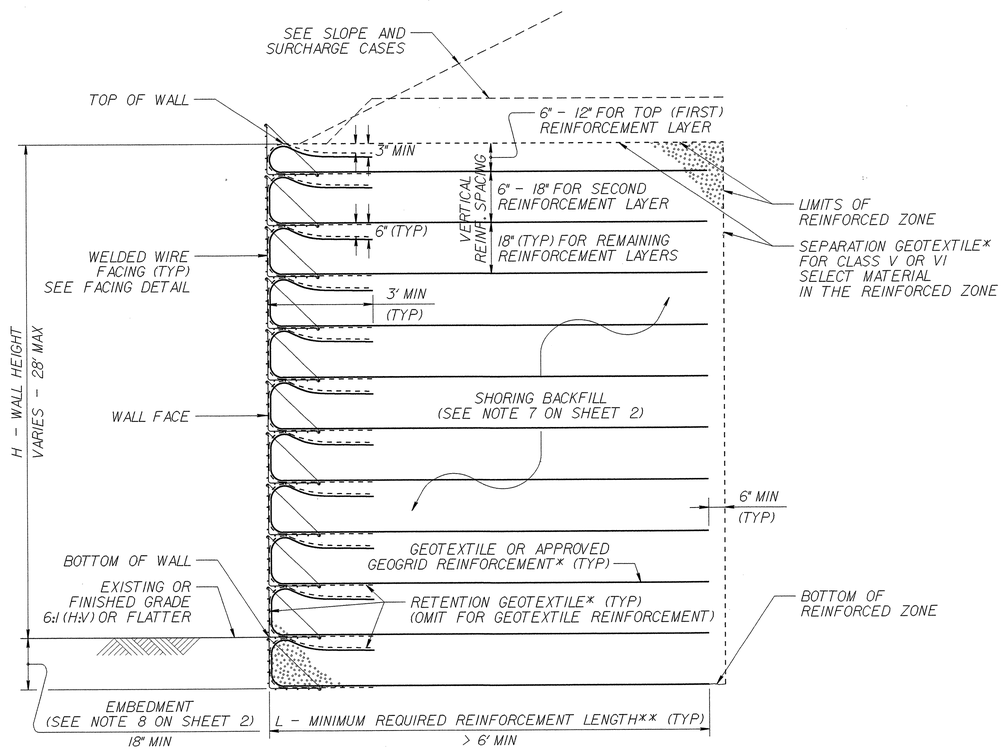
SLOPE CASE



SURCHARGE CASE

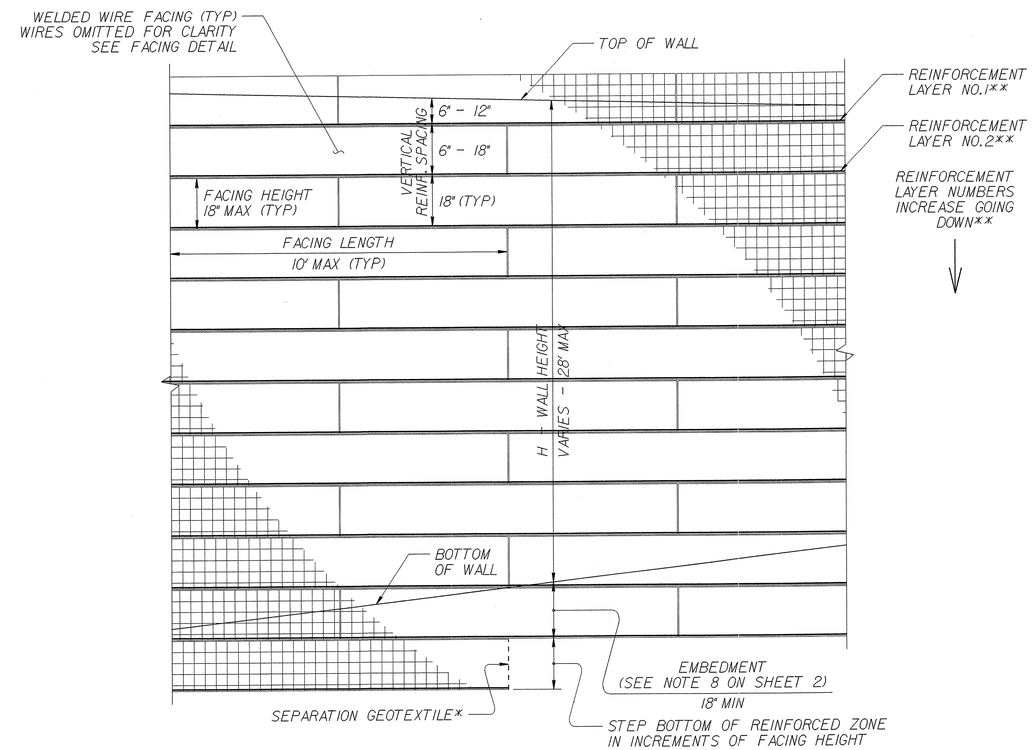


FACING DETAIL



STANDARD TEMPORARY WALL

(FOR STANDARD TEMPORARY WALLS ON STRUCTURES, SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)
*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
**SEE REINFORCEMENT TABLES ON SHEET 3.



STANDARD TEMPORARY WALL – PARTIAL ELEVATION

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
**SEE REINFORCEMENT TABLES ON SHEET 3.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

STANDARD TEMPORARY WALL
Sheet 1 of 3

DATE: 1-17-12

PROJECT REFERENCE NO.	SHEET
U-3810	2-AQ

GEOTECHNICAL ENGINEER

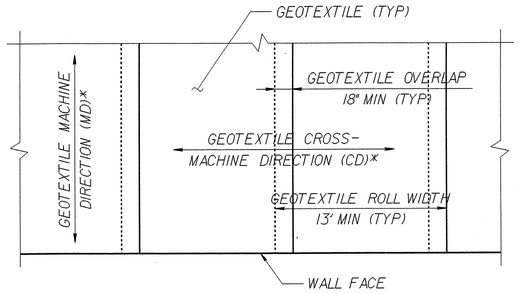
NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

Scott A. Hidden 11/18/11

SIGNATURE DATE

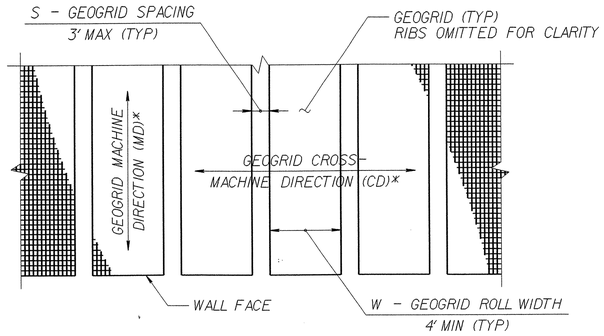
ENGINEER

SIGNATURE DATE



GEOTEXTILE PLACEMENT

(100% COVERAGE MIN FOR GEOTEXTILE REINFORCEMENT)

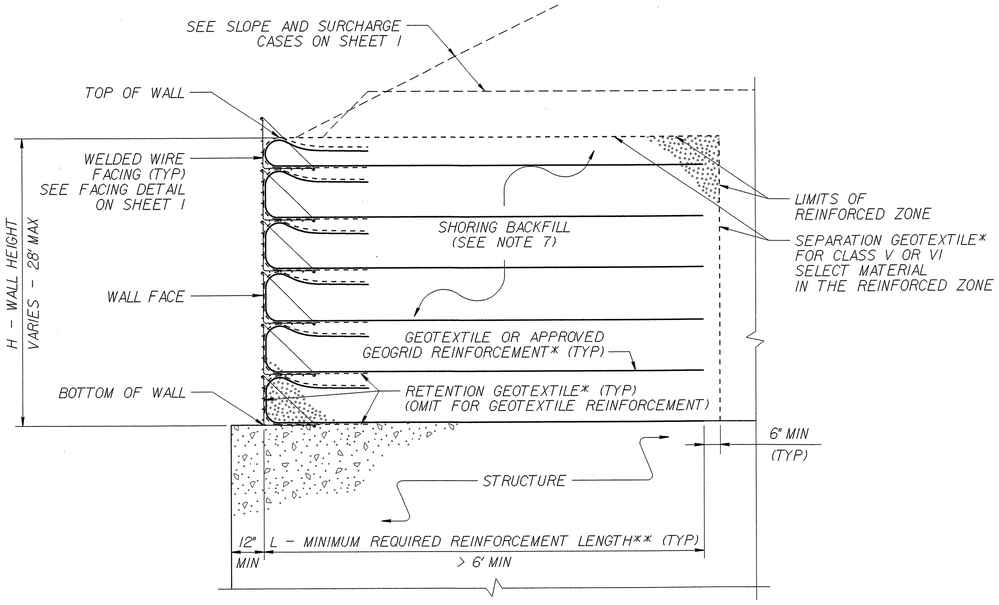


GEOGRID PLACEMENT

(80% COVERAGE MIN FOR GEOGRID REINFORCEMENT – $\frac{W}{W+S} \times 100 \geq 80\%$, SEE NOTE 11)

GEOSYNTHETIC PLACEMENT DETAILS

(PLAN VIEW)
***SEE NOTE 12.**



TEMPORARY WALL ON STRUCTURE DETAIL

***SEE GEOSYNTHETIC PLACEMENT DETAILS.**
****SEE REINFORCEMENT TABLES ON SHEET 3.**

NOTES:

1. AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY WALLS AS NOTED IN THE PLANS.
2. FOR STANDARD TEMPORARY WALLS, SEE STANDARD SHORING PROVISION.
3. STANDARD TEMPORARY WALLS 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 TEMPORARY WALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE STANDARD TEMPORARY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW TEMPORARY WALLS.
6. USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, ASSUME GROUNDWATER DEPTH IS LESS THAN 7' BELOW BOTTOM OF REINFORCED ZONE. DO NOT USE STANDARD TEMPORARY WALLS IF GROUNDWATER IS ABOVE BOTTOM OF REINFORCED ZONE.
7. DO NOT USE A-2-4 SOIL FOR STANDARD TEMPORARY WALLS AROUND CULVERTS OR IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS FOR SLOPE CASES. DO NOT USE CLASS VI SELECT MATERIAL IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS WITH GEOTEXTILE REINFORCEMENT.
8. EMBEDMENT IS NOT REQUIRED FOR STANDARD TEMPORARY WALLS ON STRUCTURES OR ROCK AS DETERMINED BY THE ENGINEER.
9. DO NOT USE MORE THAN 4 DIFFERENT REINFORCEMENT STRENGTHS FOR EACH STANDARD TEMPORARY WALL.
10. GEOGRIDS ARE APPROVED FOR SHORT-TERM DESIGN STRENGTHS FOR A 3-YEAR DESIGN LIFE IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) BASED ON MATERIAL TYPE. FOR DETAILS OF APPROVED GEOGRIDS AND SHORT-TERM DESIGN STRENGTHS, SEE www.ncdot.org/doh/operations/materials/soils/gep.html
    DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SHORING BACKFILL AS FOLLOWS:

MATERIAL TYPE	SHORING BACKFILL
BORROW	A-2-4 SOIL
FINE AGGREGATE	CLASS II, TYPE I OR CLASS III SELECT MATERIAL
COARSE AGGREGATE	CLASS V OR VI SELECT MATERIAL

11. FOR GEOGRID REINFORCEMENT WITH LESS THAN 100% COVERAGE, STAGGER REINFORCEMENT SO GEOGRIDS ARE CENTERED OVER GAPS IN THE REINFORCEMENT LAYER BELOW.
12. AT THE CONTRACTOR'S OPTION, REINFORCEMENT MAY BE INSTALLED WITH THE MD PARALLEL TO THE WALL FACE IF BOTH THE FOLLOWING CONDITIONS OCCUR:
    - W (REINFORCEMENT ROLL WIDTH) ≥ L (MINIMUM REQUIRED REINFORCEMENT LENGTH) + 4.5' AND
    - REINFORCEMENT STRENGTH IN CD ≥ MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD.
13. SUBMIT A "STANDARD TEMPORARY WALL SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY WALL CONSTRUCTION.
14. DO NOT PLACE SHORING BACKFILL OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
15. FOR STANDARD TEMPORARY WALLS WITH PILE FOUNDATIONS IN THE REINFORCED ZONE, DRIVE PILES THROUGH REINFORCEMENT AFTER CONSTRUCTING TEMPORARY WALLS.
16. DO NOT SPLICE OR OVERLAP REINFORCEMENT SO SEAMS ARE PARALLEL TO THE WALL FACE.
17. CONTACT THE ENGINEER WHEN EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT.
18. FOR STANDARD TEMPORARY WALLS WITH INTERIOR ANGLES LESS THAN 90 DEGREES, WRAP GEOSYNTHETICS AT ACUTE CORNERS AS DIRECTED BY THE ENGINEER.
19. FOR STANDARD TEMPORARY WALLS WITH TOP OF WALL WITHIN 5' OF FINISHED GRADE, REMOVE TOP FACING AND INCORPORATE TOP REINFORCEMENT LAYER INTO FILL WHEN PLACING FILL IN FRONT OF WALL.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.02

STANDARD
TEMPORARY WALL
Sheet 2 of 3

DATE: 1-17-12

PROJECT REFERENCE NO.	SHEET
U-3810	2-AR

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

Scott A. Hidden 11/18/11
SIGNATURE DATE

ENGINEER

SIGNATURE DATE

SLOPE OR SURCHARGE CASE	GROUNDWATER DEPTH BELOW BOTTOM OF REINFORCED ZONE (SEE NOTE 6 ON SHEET 2) (FT)	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)	H – WALL HEIGHT (FT)																								
			< 4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
SLOPE CASE	> 0	CLASS II, TYPE I, CLASS III, CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	8	9	11	12	13	13	14	15	16	17	18	19	20	21	22	23	24	24	25	26	27	27
SURCHARGE CASE	> 0 TO 7 FOR H < 20′ > 0 TO 10 FOR H ≥ 20′	ALL SHORING BACKFILL TYPES	6	7	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21
	> 7 FOR H < 20′ > 10 FOR H ≥ 20′	A-2-4 SOIL	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	15	16	16	17	17	18	19	19	20
		CLASS II, TYPE I OR CLASS III SELECT MATERIAL	6	6	7	7	8	8	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18	19
		CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	15	16	16	17	18	18

L – MINIMUM REQUIRED REINFORCEMENT LENGTH (FT)

(FOR ALL REINFORCEMENT TYPES)

WALL HEIGHT (H) + EMBEDMENT (FT)	NUMBER OF REINFORCEMENT LAYERS*
2.5 – 4	3
4 – 5.5	4
5.5 – 7	5
7 – 8.5	6
8.5 – 10	7
10 – 11.5	8
11.5 – 13	9
13 – 14.5	10
14.5 – 16	11
16 – 17.5	12
17.5 – 19	13
19 – 20.5	14
20.5 – 22	15
22 – 23.5	16
23.5 – 25	17
25 – 26.5	18
26.5 – 28	19
28 – 29.5	20

*BASED ON VERTICAL REINFORCEMENT SPACING SHOWN ON SHEET 1.

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL	A-2-4 SOIL	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL
1	2400	2400	2400	2400	2400
2	2400	2400	2400	2400	2400
3	2400	2400	2400	2400	2400
4	2400	2400	2500	2400	2400
5	2500	2400	3000	2400	2400
6	3000	2400	3500	2800	2400
7	3500	2700	4000	3200	2600
8	4000	3100	4500	3600	2900
9	4500	3500	5000	4000	3200
10	5000	3900	5500	4400	3500
11	5500	4300	6000	4800	3800
12	6000	4700	6500	5200	4100
13	6500	5100	7000	5600	4400
14	7000	5400	7500	6000	4700
15	7500	5800	8000	6400	5000
16	8000	6200	8500	6800	5300
17	8500	6600	9000	7200	5600
18	9000	7000	9500	7600	5900
19	9500	7400	10000	8000	6200
20	10000	7800	10500	8400	6500

GEOTEXTILE REINFORCEMENT
ULTIMATE TENSILE STRENGTH (LB/FT)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL	A-2-4 SOIL	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL
1	240	200	340	290	240
2	380	310	520	430	350
3	530	420	700	570	460
4	690	550	870	720	570
5	860	690	1050	860	680
6	1030	830	1220	1000	790
7	1200	970	1400	1150	900
8	1370	1110	1580	1290	1010
9	1550	1240	1750	1430	1120
10	1720	1380	1930	1580	1230
11	1890	1520	2100	1720	1340
12	2060	1660	2280	1860	1450
13	2240	1800	2450	2010	1560
14	2410	1940	2630	2150	1670
15	2580	2080	2800	2290	1780
16	2750	2220	2980	2440	1890
17	2930	2360	3160	2580	2000
18	3100	2500	3330	2720	2110
19	3270	2640	3510	2860	2220
20	3440	2780	3690	3000	2330

GEOGRID REINFORCEMENT
SHORT-TERM DESIGN STRENGTH (LB/FT)
(SEE NOTE 10 ON SHEET 2.)

MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD
(SEE NOTE 9 ON SHEET 2.)
*SEE PARTIAL ELEVATION ON SHEET 1
FOR REINFORCEMENT LAYER NUMBERING.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.02

STANDARD
TEMPORARY WALL
Sheet 3 of 3

DATE: 1-17-12

PROJECT REFERENCE NO.	SHEET
U-3810	2-AS

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

Scott A. Hidden 11/18/11
SIGNATURE DATE

ENGINEER

SIGNATURE DATE

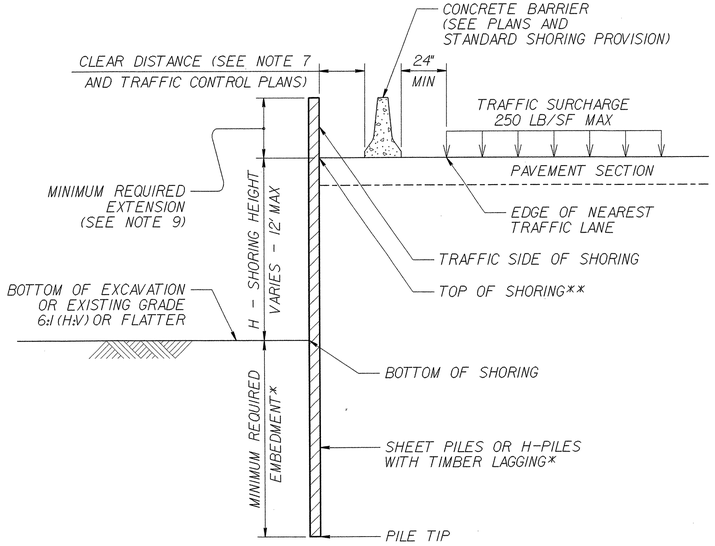
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (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 "--".**

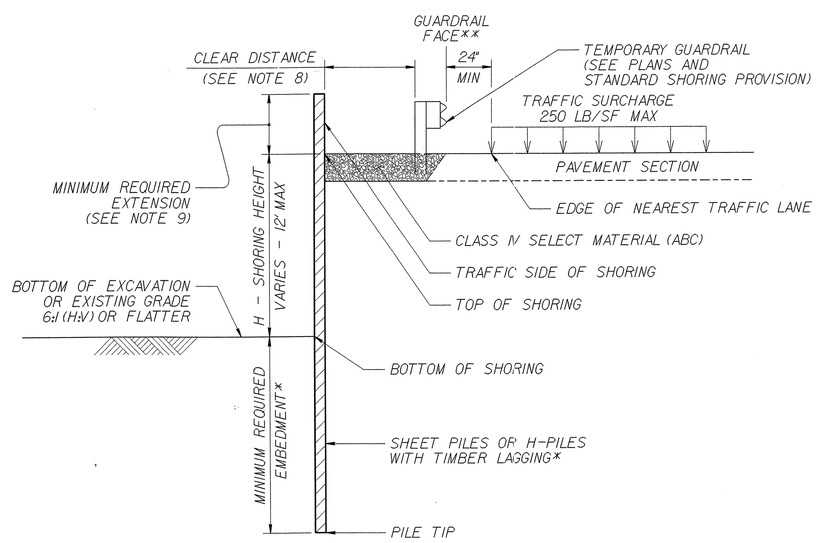
NOTES:

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.



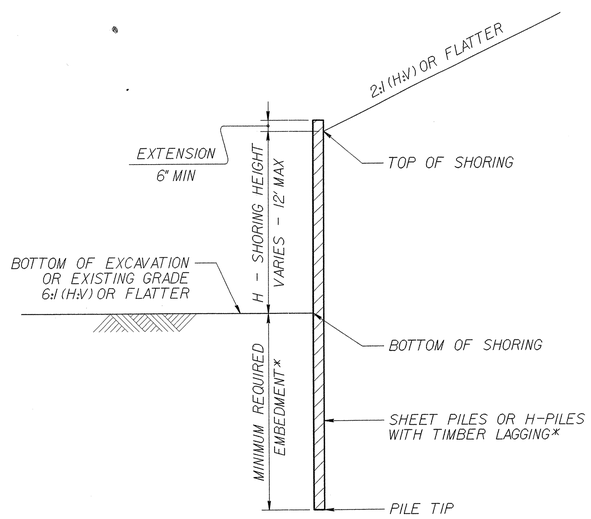
CONCRETE BARRIER

****TOP OF SHORING = EDGE OF PAVEMENT**



TEMPORARY GUARDRAIL

****GUARDRAIL FACE = EDGE OF PAVEMENT**



STANDARD TEMPORARY SHORING

(SLOPE CASE)

***SEE TABLE ABOVE.**

STANDARD TEMPORARY SHORING

(SURCHARGE CASE)

***SEE TABLE ABOVE.**

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 1-17-12

REVISIONS

8/17/99

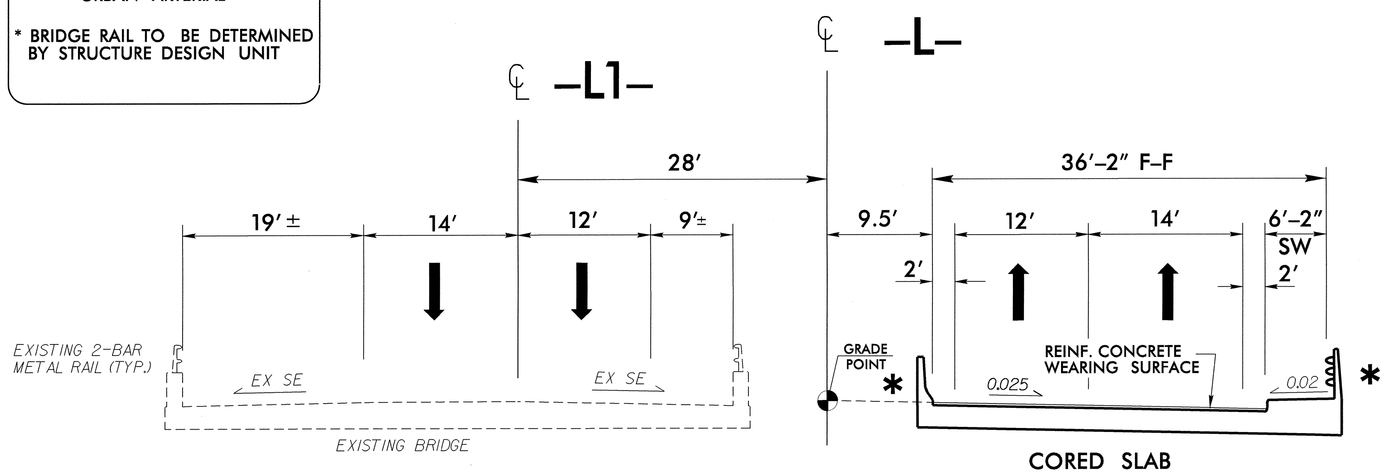
STRUCTURE TYPICAL SECTIONS

DESIGN DATA -L-
ADT 2012 = 27,100
ADT 2032 = 36,300
DHV = 7 %
D = 60 %
TTST = 1%
DUAL = 4%
V = 50 MPH

FUNC CLASSIFICATION:
URBAN ARTERIAL

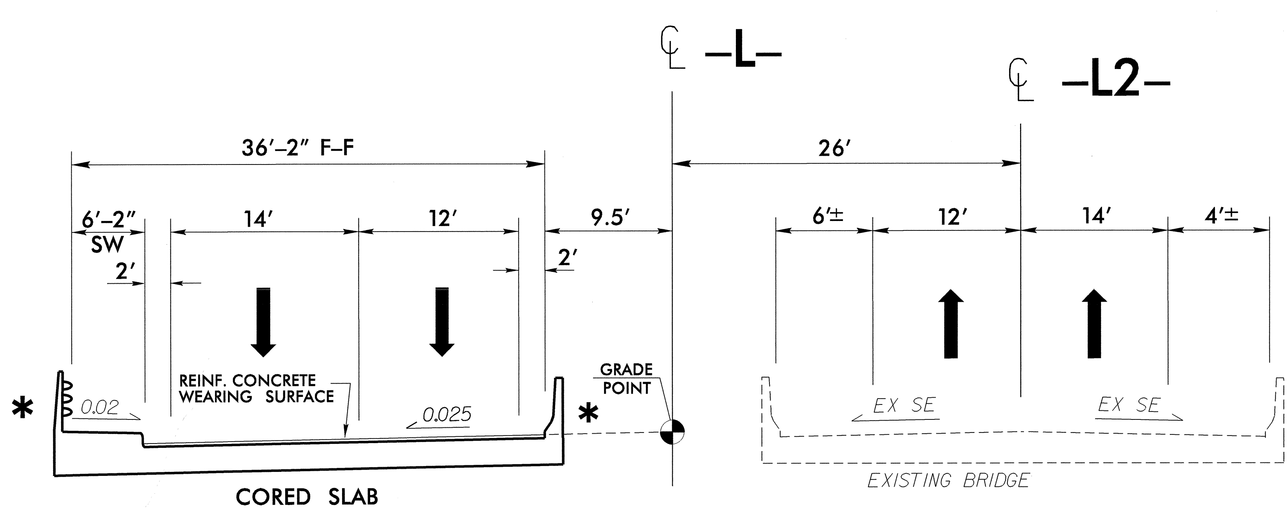
* BRIDGE RAIL TO BE DETERMINED BY STRUCTURE DESIGN UNIT

SR 1406 (PINEY GREEN RD.) OVER NORTHEAST CREEK



STRUCTURE TYPICAL SECTIONS

SR 1406 (PINEY GREEN RD.) OVER LITTLE NORTHEAST CREEK



DESIGN DATA -L-
ADT 2012 = 27,100
ADT 2032 = 36,300
DHV = 7 %
D = 60 %
TTST = 1%
DUAL = 4%
V = 50 MPH

FUNC CLASSIFICATION:
URBAN ARTERIAL

* BRIDGE RAIL TO BE DETERMINED BY STRUCTURE DESIGN UNIT

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER PRAVIN V. PATEL

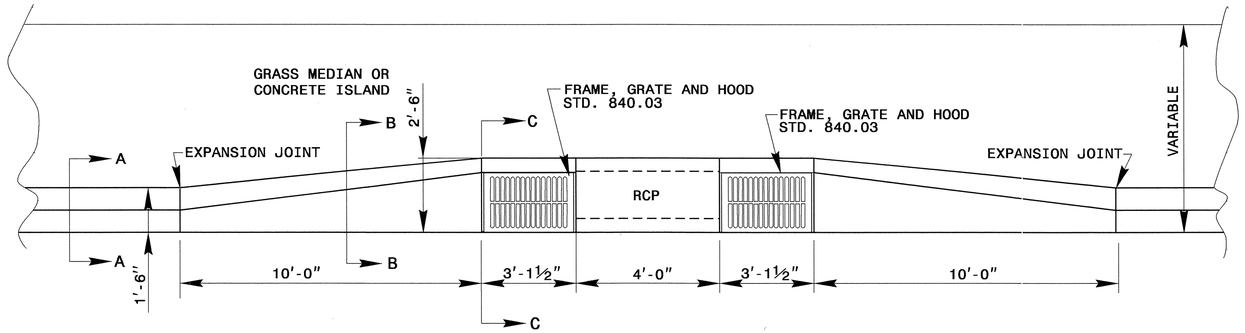
ROADWAY DESIGN ENGINEER

R/W SHEET NO.

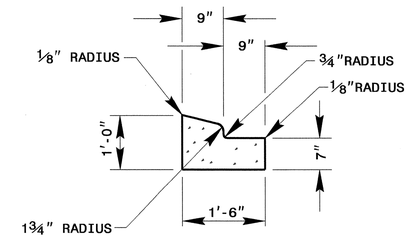
PROJECT REFERENCE NO. U-3810

SHEET NO. 2-AT

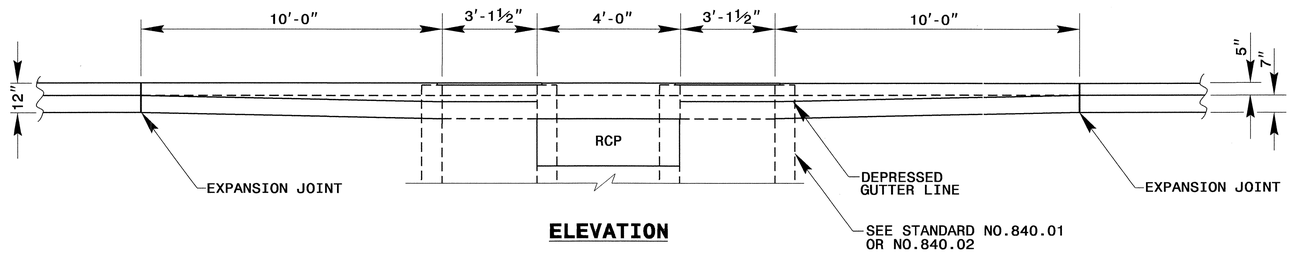
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-A4



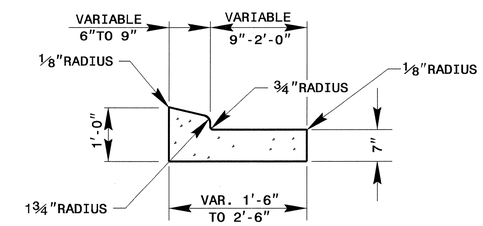
PLAN



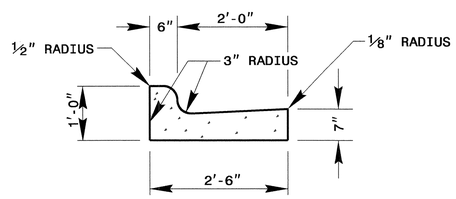
SECTION - AA



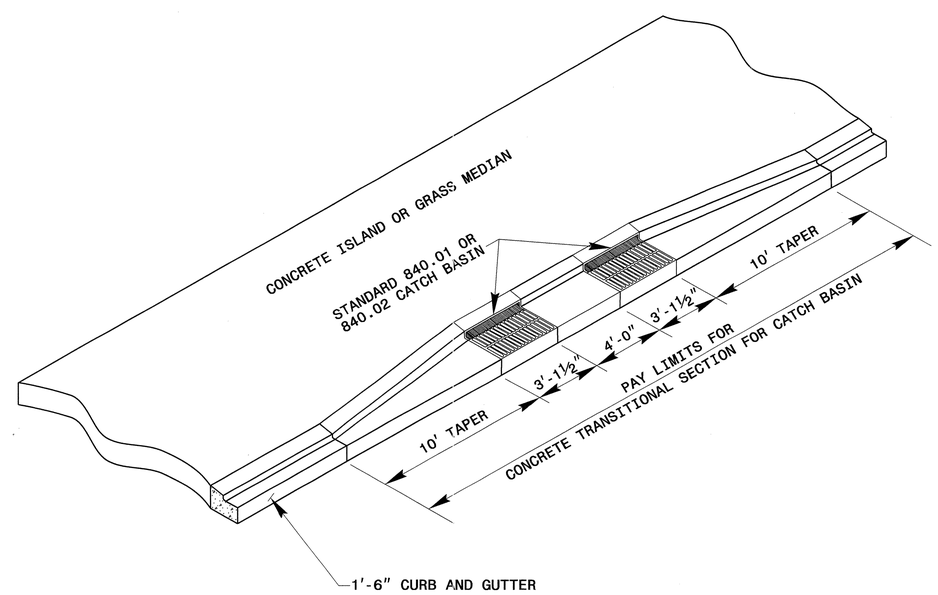
ELEVATION



SECTION - BB



SECTION - CC



NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER
JOHN S. HOWERTON III
6/15/12

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

METHOD FOR PLACEMENT OF 2 CATCH BASINS IN CONCRETE ISLAND

ORIGINAL BY:	rnbritt	DATE:	08-02-12
MODIFIED BY:		DATE:	
CHECKED BY:		DATE:	6/15/12
FILE SPEC.:	details/nbritt/english/hydro/di42.dgn		

5/14/99

$$$$$$$$$$TIME$$$$
$$$$$$$$$$DGN$$$$$$$$$$
$$$$$$$$$$SCRNAME$$$$

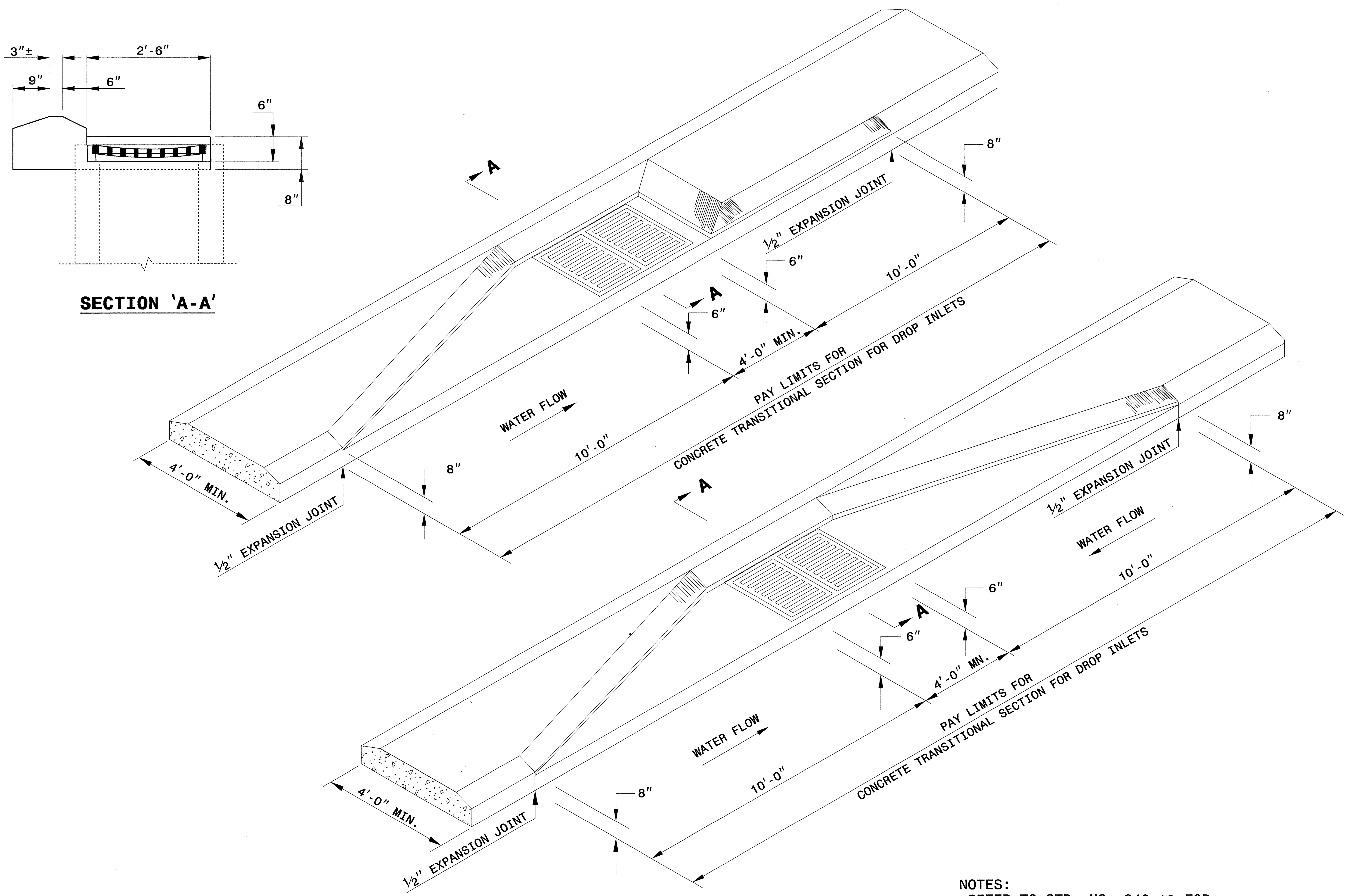
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS

SHEET 1 OF 1

852D06



NOTES:
-REFER TO STD. NO. 840.17 FOR DRAINAGE STRUCTURE.
-REFER TO STD. NO. 840.29 FOR GRATE AND FRAME.

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

ENGLISH DETAIL DRAWING FOR
METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS

SHEET 1 OF 1
852D06

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON 8/15/12

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

SEE TITLE PLATE

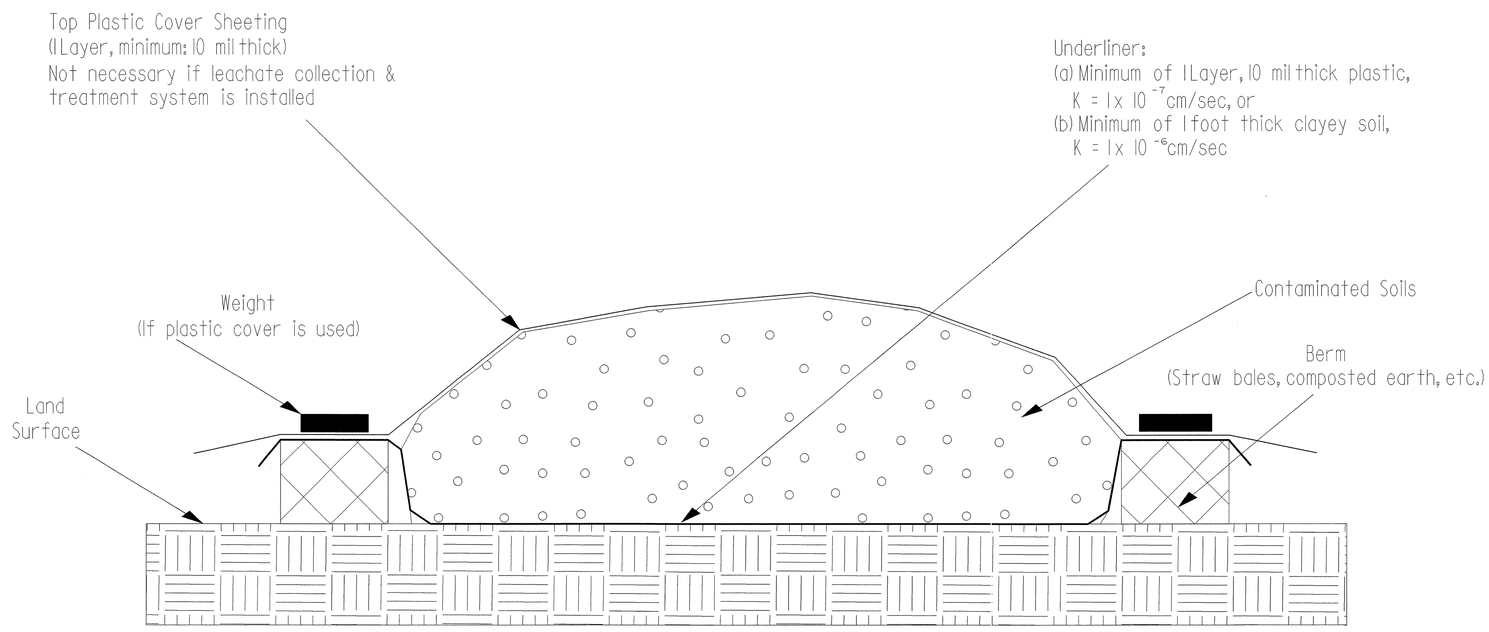
ORIGINAL BY: KKEMPF DATE: 8/2/10
MODIFIED BY: DATE:
CHECKED BY: [signature] DATE: 8/15/12
FILE SPEC.: KKEMPF\ENGLISH\852D0601.DGN

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

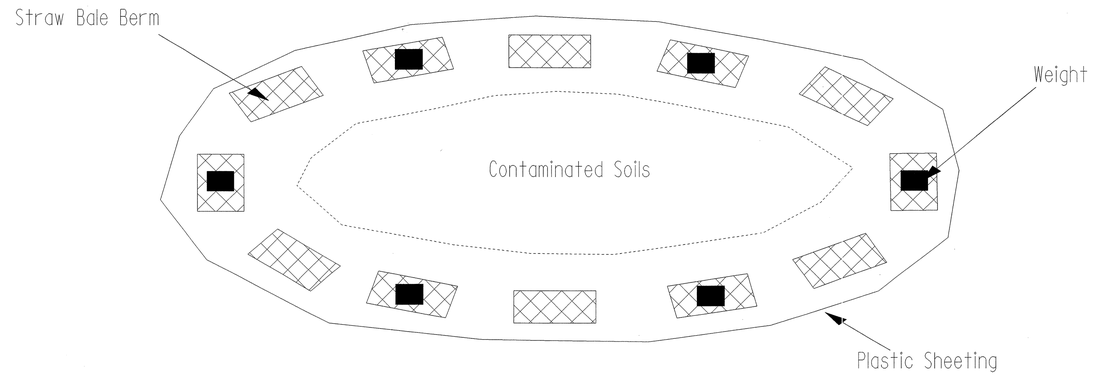
PROJECT REFERENCE NO.	SHEET
U-3810	2-AW

Detail for Temporary Containment of Petroleum Contaminated Soil

Cross-Section View



Map View



5/14/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202887

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0000900000-N	SP	Lump Sum		GENERIC MISCELLANEOUS ITEM PINEY GREEN RD CROSSING SURFACE INSTALLATION
0000900000-N	SP	Lump Sum		GENERIC MISCELLANEOUS ITEM PINEY GREEN RD CROSSING SIGNAL INSTALLATION
0001000000-E	200	Lump Sum		CLEARING & GRUBBING .. ACRE(S)
0008000000-E	200	2	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ********** (234+34.00-L-)
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ********** (84+77.50-L-)
0134000000-E	240	10,120	CY	DRAINAGE DITCH EXCAVATION
0156000000-E	250	50,825	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT
0177000000-E	250	5,410	SY	BREAKING OF EXISTING ASPHALT PAVEMENT
0192000000-N	260	40	HR	PROOF ROLLING
0195000000-E	265	85,050	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	86,650	SY	GEOTEXTILE FOR SOIL STABILIZATION
0199000000-E	SP	5,970	SF	TEMPORARY SHORING
0223000000-E	275	410	SY	ROCK PLATING
0255000000-E	SP	450	TON	GENERIC GRADING ITEM HAULING AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL
0318000000-E	300	8,690	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	24,530	SY	FOUNDATION CONDITIONING GEOTEXTILE
0335200000-E	305	7,232	LF	15" DRAINAGE PIPE
0335300000-E	305	784	LF	18" DRAINAGE PIPE
0335400000-E	305	1,184	LF	24" DRAINAGE PIPE
0335500000-E	305	788	LF	30" DRAINAGE PIPE
0335600000-E	305	468	LF	36" DRAINAGE PIPE
0335700000-E	305	244	LF	42" DRAINAGE PIPE
0335800000-E	305	68	LF	48" DRAINAGE PIPE
0335850000-E	305	2	EA	**" DRAINAGE PIPE ELBOWS (15")
0342000000-E	310	96	LF	**" SIDE DRAIN PIPE (54")
0342000000-E	310	20	LF	**" SIDE DRAIN PIPE (66")
0343000000-E	310	20	LF	15" SIDE DRAIN PIPE
0426000000-E	310	160	LF	72" RC PIPE CULVERTS, CLASS III
0448000000-E	310	1,760	LF	****" RC PIPE CULVERTS, CLASS IV (48")
0448000000-E	310	52	LF	****" RC PIPE CULVERTS, CLASS IV (54")
0448000000-E	310	40	LF	****" RC PIPE CULVERTS, CLASS IV (60")
0448200000-E	310	22,008	LF	15" RC PIPE CULVERTS, CLASS IV
0448300000-E	310	7,552	LF	18" RC PIPE CULVERTS, CLASS IV
0448400000-E	310	8,048	LF	24" RC PIPE CULVERTS, CLASS IV
0448500000-E	310	4,088	LF	30" RC PIPE CULVERTS, CLASS IV
0448600000-E	310	2,240	LF	36" RC PIPE CULVERTS, CLASS IV
0448700000-E	310	3,244	LF	42" RC PIPE CULVERTS, CLASS IV
0576000000-E	310	136	LF	**" CS PIPE CULVERTS, *****" THICK (84", 0.105")
0974000000-E	SP	24	LF	**" WELDED STEEL PIPE, *****" THICK, GRADE B, (UNDER RR) (24", 0.50")
0986000000-E	SP	412	LF	GENERIC PIPE ITEM 36" DUCTILE IRON PIPE (SEALED SYSTEM)
0995000000-E	340	30,960	LF	PIPE REMOVAL
1099500000-E	505	12,500	CY	SHALLOW UNDERCUT
1099700000-E	505	23,650	TON	CLASS IV SUBGRADE STABILIZATION
1110000000-E	510	20,000	TON	STABILIZER AGGREGATE
1220000000-E	545	11,700	TON	INCIDENTAL STONE BASE
1275000000-E	600	2,590	GAL	PRIME COAT
1330000000-E	607	10,000	SY	INCIDENTAL MILLING
1491000000-E	610	1,050	TON	ASPHALT CONC BASE COURSE, TYPE B25.0C
1498000000-E	610	55,510	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
1503000000-E	610	920	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C
1519000000-E	610	51,300	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1523000000-E	610	3,380	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5C
1693000000-E	654	7,025	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2000000000-N	806	485	EA	RIGHT OF WAY MARKERS
2022000000-E	815	70	CY	SUBDRAIN EXCAVATION
2033000000-E	815	35	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	200	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE
2209000000-E	838	44	CY	ENDWALLS
2220000000-E	838	34	CY	REINFORCED ENDWALLS
2253000000-E	840	12.5	CY	PIPE COLLARS
2264000000-E	840	1	CY	PIPE PLUGS
2275000000-E	SP	16	CY	FLOWABLE FILL
2286000000-N	840	817	EA	MASONRY DRAINAGE STRUCTURES
2297000000-E	840	27	CY	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	520	LF	MASONRY DRAINAGE STRUCTURES
2364000000-N	840	251	EA	FRAME WITH TWO GRATES, STD 840.16
2366000000-N	840	27	EA	FRAME WITH TWO GRATES, STD 840.24
2367000000-N	840	17	EA	FRAME WITH TWO GRATES, STD 840.29
2374000000-N	840	63	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
2374000000-N	840	236	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
2374000000-N	840	213	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
2396000000-N	840	13	EA	FRAME WITH COVER, STD 840.54
2440000000-N	852	37	EA	CONCRETE TRANSITIONAL SECTION FOR CATCH BASIN
2451000000-N	852	70	EA	CONCRETE TRANSITIONAL SECTION FOR DROP INLET
2533000000-E	846	200	LF	**"X **" CONCRETE CURB (8" X 12")
2535000000-E	846	20	LF	**"X **" CONCRETE CURB (8" X 6")
2542000000-E	846	36,700	LF	1'-6" CONCRETE CURB & GUTTER
2549000000-E	846	70,800	LF	2'-6" CONCRETE CURB & GUTTER
2556000000-E	846	250	LF	SHOULDER BERM GUTTER
2591000000-E	848	9,350	SY	4" CONCRETE SIDEWALK
2605000000-N	848	90	EA	CONCRETE CURB RAMP
2612000000-E	848	4,050	SY	6" CONCRETE DRIVEWAY
2619000000-E	850	90	SY	4" CONCRETE PAVED DITCH
2647000000-E	852	14,230	SY	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)
2655000000-E	852	2	SY	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)
2759000000-N	SP	1	EA	GENERIC PAVING ITEM EMERGENCY VEHICLE ACCESS
2938000000-N	859	3	EA	CONVERT EXISTING DROP INLET TO JUNCTION BOX WITH MANHOLE
3000000000-N	SP	4	EA	IMPACT ATTENUATOR UNIT, TYPE 350
3030000000-E	862	3,200	LF	STEEL BM GUARDRAIL
3045000000-E	862	150	LF	STEEL BM GUARDRAIL, SHOP CURVED
3105000000-N	862	2	EA	STEEL BM GUARDRAIL TERMINAL SECTIONS
3150000000-N	862	10	EA	ADDITIONAL GUARDRAIL POSTS
3195000000-N	862	3	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
3210000000-N	862	6	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1
3215000000-N	862	11	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	19	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3319000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-83
3345000000-E	864	80	LF	REMOVE & RESET EXISTING GUARDRAIL
3360000000-E	863	1,575	LF	REMOVE EXISTING GUARDRAIL
3572000000-E	867	510	LF	CHAIN LINK FENCE RESET
3628000000-E	876	1,935	TON	RIP RAP, CLASS I
3635000000-E	876	205	TON	RIP RAP, CLASS II
3649000000-E	876	2,980	TON	RIP RAP, CLASS B
3656000000-E	876	20,270	SY	GEOTEXTILE FOR DRAINAGE
3659000000-N	SP	3	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
4072000000-E	903	1,095	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4096000000-N	904	4	EA	SIGN ERECTION, TYPE D
4102000000-N	904	71	EA	SIGN ERECTION, TYPE E
4108000000-N	904	8	EA	SIGN ERECTION, TYPE F
4155000000-N	907	68	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4400000000-E	1110	3811	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	1,770	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	1,861	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4415000000-N	1115	5	EA	FLASHING ARROW BOARD
4420000000-N	1120	5	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4430000000-N	1130	1,670	EA	DRUMS
4435000000-N	1135	100	EA	CONES
4445000000-E	1145	3,500	LF	BARRICADES (TYPE III)
4450000000-N	1150	5,000	HR	FLAGGER
4465000000-N	1160	14	EA	TEMPORARY CRASH CUSHIONS
4470000000-N	1160	12	EA	RESET TEMPORARY CRASH CUSHION
4480000000-N	1165	4	EA	TMA
4485000000-E	1170	1,834	LF	PORTABLE CONCRETE BARRIER
4490000000-E	1170	1,390	LF	PORTABLE CONCRETE BARRIER (ANCHORED)
4500000000-E	1170	358	LF	RESET PORTABLE CONCRETE BARRIER
4507000000-E	1170	690	LF	WATER FILLED BARRIER
4508000000-E	1170	170	LF	RESET WATER FILLED BARRIER
4510000000-N	SP	500	HR	LAW ENFORCEMENT
4516000000-N	1180	100	EA	SKINNY DRUM
4650000000-N	1251	1,327	EA	TEMPORARY RAISED PAVEMENT MARKERS
4685000000-E	1205	7,025	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	51,305	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4695000000-E	1205	2,575	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
4697000000-E	1205	4,929	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 120 MILS)

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STATE OF NORTH CAROLINA
SUMMARY OF QUANTITIES

PROJECT REFERENCE No.	SHEET No.
U-3810	3 (2 of 3)

ItemNumber	Sec #	Quantity	Unit	Description
4710000000-E	1205	9,046	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
4721000000-E	1205	120	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)
4725000000-E	1205	142	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
4770000000-E	1205	9,980	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV)
4810000000-E	1205	561,493	LF	PAINT PAVEMENT MARKING LINES (4")
4820000000-E	1205	18,752	LF	PAINT PAVEMENT MARKING LINES (8")
4825000000-E	1205	2,690	LF	PAINT PAVEMENT MARKING LINES (12")
4830000000-E	1205	480	LF	PAINT PAVEMENT MARKING LINES (16")
4835000000-E	1205	4,328	LF	PAINT PAVEMENT MARKING LINES (24")
4840000000-N	1205	72	EA	PAINT PAVEMENT MARKING CHARACTER
4845000000-N	1205	217	EA	PAINT PAVEMENT MARKING SYMBOL
4847000000-E	1205	1,170	LF	POLYUREA PAVEMENT MARKING LINES (4", **********) (HIGHLY REFLECTIVE ELEMENTS)
4850000000-E	1205	106,908	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
4860000000-E	1205	518	LF	REMOVAL OF PAVEMENT MARKING LINES (8")
4865000000-E	1205	80	LF	REMOVAL OF PAVEMENT MARKING LINES (12")
4870000000-E	1205	561	LF	REMOVAL OF PAVEMENT MARKING LINES (24")
4875000000-N	1205	111	EA	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS
4900000000-N	1251	7	EA	PERMANENT RAISED PAVEMENT MARKERS
4905000000-N	1253	429	EA	SNOWPLOWABLE PAVEMENT MARKERS
4957000000-N	1264	26	EA	OBJECT MARKERS (TYPE **) (II)
5255000000-N	1413	Lump Sum		PORTABLE LIGHTING
5534000000-E	1515	2	EA	**" VALVE (14")
5538000000-E	1515	2	EA	4" VALVE
5540000000-E	1515	1	EA	6" VALVE
5546000000-E	1515	9	EA	8" VALVE
5558000000-E	1515	2	EA	12" VALVE
5589200000-E	1515	1	EA	2" AIR RELEASE VALVE
5589300000-E	1515	5	EA	3" AIR RELEASE VALVE
5691300000-E	1520	1,723	LF	8" SANITARY GRAVITY SEWER
5691500000-E	1520	492	LF	12" SANITARY GRAVITY SEWER
5691700000-E	1520	5,869	LF	18" SANITARY GRAVITY SEWER
5691900000-E	1520	1,280	LF	24" SANITARY GRAVITY SEWER
5709000000-E	1520	5,822	LF	**" FORCE MAIN SEWER (14")
5709100000-E	1520	113	LF	2" FORCE MAIN SEWER
5709200000-E	1520	1,658	LF	4" FORCE MAIN SEWER
5709300000-E	1520	55	LF	6" FORCE MAIN SEWER
5709400000-E	1520	3,436	LF	8" FORCE MAIN SEWER
5709600000-E	1520	4,230	LF	12" FORCE MAIN SEWER
5768000000-N	1520	35	EA	SANITARY SEWER CLEAN-OUT
5775000000-E	1525	16	EA	4' DIA UTILITY MANHOLE
5776000000-E	1525	36	EA	5' DIA UTILITY MANHOLE
5781000000-E	1525	42	LF	UTILITY MANHOLE WALL, 4' DIA
5782000000-E	1525	260	LF	UTILITY MANHOLE WALL, 5' DIA
5816000000-N	1530	12	EA	ABANDON UTILITY MANHOLE
5828000000-N	1530	1	EA	REMOVE UTILITY MANHOLE
5835700000-E	1540	529	LF	16" ENCASEMENT PIPE
5836000000-E	1540	408	LF	24" ENCASEMENT PIPE
5836200000-E	1540	58	LF	30" ENCASEMENT PIPE
5836400000-E	1540	130	LF	36" ENCASEMENT PIPE

ItemNumber	Sec #	Quantity	Unit	Description
5871300000-E	1550	204	LF	TRENCHLESS INSTALLATION OF 4" IN SOIL
5871310000-E	1550	88	LF	TRENCHLESS INSTALLATION OF 4" NOT IN SOIL
5871500000-E	1550	590	LF	TRENCHLESS INSTALLATION OF 8" IN SOIL
5871510000-E	1550	253	LF	TRENCHLESS INSTALLATION OF 8" NOT IN SOIL
5871800000-E	1550	438	LF	TRENCHLESS INSTALLATION OF 14" IN SOIL
5871810000-E	1550	188	LF	TRENCHLESS INSTALLATION OF 14" NOT IN SOIL
5872300000-E	1550	41	LF	TRENCHLESS INSTALLATION OF 30" IN SOIL
5872310000-E	1550	17	LF	TRENCHLESS INSTALLATION OF 30" NOT IN SOIL
5872400000-E	1550	91	LF	TRENCHLESS INSTALLATION OF 36" IN SOIL
5872410000-E	1550	39	LF	TRENCHLESS INSTALLATION OF 36" NOT IN SOIL
5882000000-N	SP	1	EA	GENERIC UTILITY ITEM 4" CHECK VALVE AND MANHOLE
5882000000-N	SP	1	EA	GENERIC UTILITY ITEM 8" CHECK VALVE AND MANHOLE
6000000000-E	1605	67,000	LF	TEMPORARY SILT FENCE
6006000000-E	1610	14,000	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	10,250	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	17,000	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	155.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	3,200	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	13.75	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	2,000	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	6,000	LF	SAFETY FENCE
6030000000-E	1630	23,000	CY	SILT EXCAVATION
6036000000-E	1631	33,500	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	1,400	SY	COIR FIBER MAT
6038000000-E	SP	175	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	57,000	LF	1/4" HARDWARE CLOTH
6045000000-E	SP	375	LF	**" TEMPORARY PIPE (24")
6048000000-E	SP	250	SY	FLOATING TURBIDITY CURTAIN
6069000000-E	1638	1,040	CY	STILLING BASINS
6071012000-E	SP	1,100	LF	COIR FIBER WATTLE
6071020000-E	SP	525	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	5,000	LF	COIR FIBER BAFFLE
6071050000-E	SP	33	EA	**" SKIMMER (1-1/2")
6071050000-E	SP	1	EA	**" SKIMMER (2-1/2")
6084000000-E	1660	105	ACR	SEEDING & MULCHING
6087000000-E	1660	55	ACR	MOWING
6090000000-E	1661	1,600	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	5	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	2,400	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	71.75	TON	FERTILIZER TOPDRESSING
6111000000-E	SP	300	LF	IMPERVIOUS DIKE
6114500000-N	1667	50	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	150	EA	RESPONSE FOR EROSION CONTROL
6120000000-E	SP	375	CY	CULVERT DIVERSION CHANNEL
6123000000-E	1670	2.5	ACR	REFORESTATION
6126000000-E	SP	0.91	ACR	STREAMBANK REFORESTATION
6135000000-E	SP	1	ACR	GENERIC EROSION CONTROL ITEM DISKING
6135000000-E	SP	1	ACR	GENERIC EROSION CONTROL ITEM RIPPING
7048500000-E	1705	21	EA	PEDESTRIAN SIGNAL HEAD (16", 1 SECTION W/COUNTDOWN)

ItemNumber	Sec #	Quantity	Unit	Description
7060000000-E	1705	23,760	LF	SIGNAL CABLE
7108000000-E	1705	6	EA	VEHICLE SIGNAL HEAD (12", 1 SECTION)
7120000000-E	1705	87	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7132000000-E	1705	25	EA	VEHICLE SIGNAL HEAD (12", 4 SECTION)
7144000000-E	1705	25	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
7216000000-N	1705	2	EA	MODIFY EXISTING VEHICLE SIGNAL HEAD
7228000000-N	SP	5	EA	RELOCATE EXISTING VEHICLE SIGNAL HEAD
7252000000-E	1710	220	LF	MESSENGER CABLE (1/4")
7264000000-E	1710	3,550	LF	MESSENGER CABLE (3/8")
7276000000-E	1715	500	LF	BORE & JACK (**********) (1, 5")
7279000000-E	1715	1,070	LF	TRACER WIRE
7288000000-E	1715	200	LF	PAVED TRENCHING (**********) (1, 2")
7288000000-E	1715	30	LF	PAVED TRENCHING (**********) (3, 2")
7300000000-E	1715	5,850	LF	UNPAVED TRENCHING (**********) (1, 2")
7300000000-E	1715	1,040	LF	UNPAVED TRENCHING (**********) (2, 2")
7300000000-E	1715	180	LF	UNPAVED TRENCHING (**********) (3, 2")
7300000000-E	1715	20	LF	UNPAVED TRENCHING (**********) (4, 2")
7300000000-E	1715	30	LF	UNPAVED TRENCHING (**********) (5, 2")
7300100000-E	1715	320	LF	UNPAVED TRENCHING FOR TEMPORARY LEAD-IN
7301000000-E	1715	2,306	LF	DIRECTIONAL DRILL (**********) (1, 2")
7301000000-E	1715	1,760	LF	DIRECTIONAL DRILL (**********) (3, 2")
7301000000-E	1715	910	LF	DIRECTIONAL DRILL (**********) (5, 2")
7324000000-N	1716	86	EA	JUNCTION BOX (STANDARD SIZE)
7348000000-N	1716	40	EA	JUNCTION BOX (OVER-SIZED, HEAVY DUTY)
7372000000-N	1721	48	EA	GUY ASSEMBLY
7396000000-E	1722	5	EA	1/2" RISER WITH WEATHERHEAD
7408000000-E	1722	7	EA	1" RISER WITH WEATHERHEAD
7420000000-E	1722	31	EA	2" RISER WITH WEATHERHEAD
7432000000-E	1722	10	EA	2" RISER WITH HEAT SHRINK TUBING
7444000000-E	1725	11,320	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	32,590	LF	LEAD-IN CABLE (**********) (14-2)
7481000000-N	SP	24	EA	SITE SURVEY
7481200000-N	SP	47	EA	LUMINAIRE ARM FOR VIDEO SYSTEM
7481240000-N	SP	47	EA	CAMERA WITHOUT INTERNAL LOOP EMULATOR PROCESSING UNIT
7481260000-N	SP	14	EA	EXTERNAL LOOP EMULATOR PROCESSING UNIT
7481280000-N	SP	43	EA	RELOCATE CAMERA SENSOR UNIT
7552000000-N	1731	10	EA	INTERCONNECT CENTER
7566000000-N	1733	18	EA	DELINEATOR MARKER
7575180000-N	1735	1	EA	CABLE TRANSFER
7588000000-N	SP	25	EA	METAL POLE WITH SINGLE MAST ARM
7613000000-N	SP	25	EA	SOIL TEST
7614100000-E	SP	300	CY	DRILLED PIER FOUNDATION
7631000000-N	SP	25	EA	MAST ARM WITH METAL POLE DESIGN
7636000000-N	1745	20	EA	SIGN FOR SIGNALS
7642100000-N	1743	11	EA	TYPE I POST WITH FOUNDATION
7642200000-N	1743	8	EA	TYPE II PEDESTAL WITH FOUNDATION
7642300000-N	1743	2	EA	TYPE III PEDESTAL WITH FOUNDATION

STATE OF NORTH CAROLINA
SUMMARY OF QUANTITIES

PROJECT REFERENCE No.	SHEET No.
U-3810	3 (3 of 3)

ItemNumber	Sec #	Quantity	Unit	Description
7648000000-N	1746	2	EA	RELOCATE EXISTING SIGN
7684000000-N	1750	7	EA	SIGNAL CABINET FOUNDATION
7686000000-N	1752	4	EA	CONDUIT ENTRANCE INTO EXISTING FOUNDATION
7756000000-N	1751	7	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
7780000000-N	1751	49	EA	DETECTOR CARD (TYPE 2070L)
7901000000-N	1753	7	EA	CABINET BASE EXTENDER
7912000000-N	1755	3	EA	BEACON CONTROLLER ASSEMBLY & CABINET (********) (F1)
7980000000-N	SP	10	EA	GENERIC SIGNAL ITEM 2" CONDUIT STUB-OUT FOR UNDER-GROUD ELECTRICAL SERVICE
7980000000-N	SP	5	EA	GENERIC SIGNAL ITEM CCTV CAMERA ASSEMBLY
7980000000-N	SP	11	EA	GENERIC SIGNAL ITEM FIELD ETHERNET SWITCH
7980000000-N	SP	5	EA	GENERIC SIGNAL ITEM FIELD VIDEO CODEC UNIT
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FRONT ACCESS ENCLOSURE DMS
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM PEDESTAL STRUCTURE FOR FRONT ACCESS DMS
7980000000-N	SP	8	EA	GENERIC SIGNAL ITEM POWDER COAT FOR METAL POLE WITH SINGLE MAST ARM
7980000000-N	SP	10	EA	GENERIC SIGNAL ITEM POWDER COAT FOR PEDESTAL
7980000000-N	SP	5	EA	GENERIC SIGNAL ITEM RELOCATE EXISTING PEDESTRIAN HEAD
7980000000-N	SP	10	EA	GENERIC SIGNAL ITEM SERVICE DISCONNECT
7980000000-N	SP	5	EA	GENERIC SIGNAL ITEM TEMPORARY PEDESTRIAN PUSH BUT-TON POST
7980000000-N	SP	32	EA	GENERIC SIGNAL ITEM WOOD POLE (40' CLASS III)
7980000000-N	SP	10	EA	GENERIC SIGNAL ITEM WOOD POSTS

ItemNumber	Sec #	Quantity	Unit	Description
7990000000-E	SP	510	LF	GENERIC SIGNAL ITEM 1-1/4" FEEDER CONDUIT
7990000000-E	SP	115	LF	GENERIC SIGNAL ITEM ETHERNET CABLE (OUTDOOR RATED)
7990000000-E	SP	280	LF	GENERIC SIGNAL ITEM FEEDER CONDUCTORS - 2 #8 AWG & 1 #4 AWG, STRANDED COPPER
7990000000-E	SP	195	LF	GENERIC SIGNAL ITEM FEEDER CONDUCTORS - 3 #12 AWG, STRANDED COPPER
7990000000-E	SP	35	LF	GENERIC SIGNAL ITEM FEEDER CONDUCTORS - 4 #6 AWG, STRANDED COPPER
7992000000-E	SP	7	CY	GENERIC SIGNAL ITEM OVERHEAD FOOTINGS
				******* BEGIN SCHEDULE AA ******* ******* (2 ALTERNATES) *******
0022000000-E AA1	225	63,300	CY	UNCLASSIFIED EXCAVATION
0036000000-E AA1	225	62,850	CY	UNDERCUT EXCAVATION
0106000000-E AA1	230	204,000	CY	BORROW EXCAVATION
1011000000-N AA1	500	Lump Sum		FINE GRADING
1121000000-E AA1	520	32,900	TON	AGGREGATE BASE COURSE
1489000000-E AA1	610	62,440	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1575000000-E AA1	620	8,780	TON	ASPHALT BINDER FOR PLANT MIX
				*** OR ***
0022000000-E AA2	225	62,700	CY	UNCLASSIFIED EXCAVATION
0036000000-E AA2	225	59,350	CY	UNDERCUT EXCAVATION
0106000000-E AA2	230	212,500	CY	BORROW EXCAVATION
1011000000-N AA2	500	Lump Sum		FINE GRADING
1121000000-E AA2	520	3,655	TON	AGGREGATE BASE COURSE
1489000000-E AA2	610	76,810	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1575000000-E AA2	620	9,415	TON	ASPHALT BINDER FOR PLANT MIX
				******* END SCHEDULE AA *******

ItemNumber	Sec #	Quantity	Unit	Description
				******* BEGIN SCHEDULE BB ******* ******* (2 ALTERNATES) *******
0241000000-E BB1	SP	37,500	SY	GENERIC GRADING ITEM GEOGRID
0241000000-E BB1	SP	37,500	SY	GENERIC GRADING ITEM NONWOVEN SEPARATION GEOTEXTILE
				*** OR ***
0241000000-E BB2	SP	37,500	SY	GENERIC GRADING ITEM HIGH STRENGTH GEOTEXTILE
				******* END SCHEDULE BB *******

COMPUTED BY: JDE DATE: 5/17/12
CHECKED BY: SS DATE: 6/5/12

PROJECT REFERENCE NO.	SHEET NO.
U-3810	3-A

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- LT. 10+47.31 TO 40+00.00	457	6,392	12,636	12,179	6,392
-L- RT. 10+47.31 TO 40+00.00	569	5,350	10,431	9,862	5,350
-Y- 12+45.00 TO 19+92.33	1,492	1,017	2,185	693	1,017
-Y- 21+50.00 TO 28+00.00	462	865	1,764	1,302	865
-Y1- 10+37.83 TO 11+00.00	0	62	144	144	62
-Y2- 10+37.50 TO 11+15.00	25	141	220	195	141
-Y3- 10+37.50 TO 11+25.00	23	148	275	252	148
-Y4- 13+35.00 TO 14+18.83	27	158	321	294	158
-Y5- 10+37.50 TO 11+10.00	17	128	248	231	128
-Y6- 13+35.00 TO 14+16.58	4	175	288	284	175
-Y7- 12+80.00 TO 14+18.83	38	210	373	335	210
-Y7- 14+77.70 TO 16+75.00	148	131	720	572	131
SUBTOTAL =	3,262	14,777	29,605	26,343	14,777
-L- LT. 40+00.00 TO 65+50.00	720	790	7,136	6,439	813
-L- RT. 40+00.00 TO 65+50.00	1,408	4,768	25,633	25,301	5,844
-Y9- 10+37.50 TO 11+61.00	153	201	349	196	201
-Y10- 16+60.00 TO 17+81.12	76	98	409	333	98
-Y11- 10+37.50 TO 11+35.00	0	22	544	544	22
-Y12- 15+56.93 TO 17+85.89	280	355	1,044	764	355
-Y13- 10+40.95 TO 13+00.00	14	0	3,269	3,255	0
SUBTOTAL =	2,651	6,234	38,384	36,832	7,333
-L- LT. 65+50.00 TO 83+23.94	3,350	507	2,774	0	1,083
-L- RT. 65+50.00 TO 83+23.94	4,189	2,759	14,619	10,430	2,759
SUBTOTAL =	7,539	3,266	17,393	10,430	3,842
-L- LT. 86+31.06 TO 110+00.00	404	594	7,223	6,819	594
-L- RT. 86+31.06 TO 110+00.00	449	3,519	13,278	13,073	3,763
-Y14- 12+00.00 TO 15+10.11	63	241	405	342	241
-Y14- 15+92.21 TO 28+50.00	4,936	1,710	6,340	1,404	1,710
-Y15- 12+60.00 TO 13+46.26	18	94	189	171	94
-Y16- 10+75.00 TO 11+59.38	264	46	169	0	141
-Y17- 12+45.00 TO 12+97.08	3	0	24	21	0
-Y17- 13+72.23 TO 14+43.00	10	0	14	4	0
-Y18- 12+35.00 TO 14+23.67	16	0	634	618	0
-Y19- 10+80.00 TO 12+06.22	267	132	196	0	203
-Y20- 10+49.57 TO 11+30.00	27	114	180	153	114
SUBTOTAL =	6,457	6,450	28,652	22,605	6,860
-L- LT. 110+00.00 TO 140+00.00	247	1,672	10,588	10,377	1,708
-L- RT. 110+00.00 TO 140+00.00	1,436	7,876	21,170	20,126	8,268
-Y21- 10+49.50 TO 11+50.00	10	117	176	166	117
-Y22- 10+37.50 TO 11+60.00	341	184	245	0	280
-Y23- 10+37.50 TO 11+20.00	11	86	179	177	95
SUBTOTAL =	2,045	9,935	32,358	30,846	10,468
-L- LT. 140+00.00 TO 167+21.87	200	1,694	12,926	12,726	1,694
-L- RT. 140+00.00 TO 167+21.87	812	5,962	21,990	21,178	5,962
-Y24- 10+37.50 TO 11+40.00	71	173	300	229	173
-DR1- 13+10.00 TO 13+88.45	3	0	121	118	0
-Y25- 11+90.00 TO 12+70.61	27	52	118	91	52
-Y26- 11+45.00 TO 12+51.27	29	0	233	204	0
-DET- 10+50.00 TO 14+91.0567	63	0	2,346	2,283	0
SUBTOTAL =	1,205	7,881	38,034	36,829	7,881
-L- LT. 167+56.22 TO 200+00.00	16,940	2,264	8,603	0	10,601
-L- RT. 167+56.22 TO 200+00.00	610	1,274	7,558	6,980	1,306
-Y27- 10+37.98 TO 11+40.00	0	0	189	189	0
-Y28- 10+37.50 TO 11+18.00	22	0	78	56	0
-Y29- 11+73.00 TO 17+18.84	1,445	1,705	3,425	1,980	1,705
-Y29- 17+93.88 TO 20+83.00	290	0	326	36	0
-Y31- 10+95.00 TO 11+79.49	0	101	174	174	101
SUBTOTAL =	19,307	5,344	20,353	9,415	13,713
-L- LT. 200+00.00 TO 233+71.50	747	2,237	27,925	27,178	2,237
-L- RT. 200+00.00 TO 233+71.50	642	710	9,438	8,796	710
-Y32- 13+00.00 TO 14+24.03	38	45	163	125	45
-Y33- 10+37.57 TO 11+10.00	103	294	383	280	294
-Y34- 13+20.00 TO 14+24.66	8	0	169	161	0
-Y35- 12+90.00 TO 13+69.81	19	95	234	215	95
SUBTOTAL =	1,557	3,381	38,312	36,755	3,381
-L- LT. 234+96.50 TO 265+00.00	1,495	1,876	12,720	11,225	1,876
-L- RT. 234+96.50 TO 265+00.00	86	0	6,070	5,984	0
-Y36- 10+40.25 TO 11+24.00	1	0	154	153	0
-Y37- 10+37.51 TO 11+50.00	54	0	320	266	0
-Y39- 10+49.50 TO 13+70.00	722	0	179	0	543
-Y40- 10+39.68 TO 11+44.00	0	24	154	154	24
SUBTOTAL =	2,358	1,900	19,597	17,782	2,443

EST. DDE = 10,120 CY

PER GEOTECHNICAL RECOMMENDATIONS:
EST. SHALLOW UNDERCUT (CONTINGENCY) = 12,500 CY
EST. CL. IV SUBGRADE STABILIZATION = 23,650 TONS

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- LT. 265+00.00 TO 295+00.00	1,159	764	17,728	16,569	764
-L- RT. 265+00.00 TO 295+00.00	124	36	8,099	7,975	36
-Y41- 13+11.00 TO 14+01.70	1	0	174	173	0
-Y42- 10+37.76 TO 11+15.00	47	33	75	28	33
-Y43- 11+32.00 TO 12+59.33	227	65	221	0	71
-Y44- 10+37.50 TO 11+38.00	0	0	63	63	0
-Y45- 10+37.50 TO 11+10.00	90	80	138	48	80
SUBTOTAL =	1,648	978	26,498	24,856	984
-L- LT. 295+00.00 TO 320+00.00	153	578	12,984	12,831	578
-L- RT. 295+00.00 TO 320+00.00	81	252	9,274	9,193	252
-Y47- 10+39.74 TO 11+00.00	5	0	143	138	0
-Y48- 18+50.00 TO 23+05.70	61	0	466	405	0
SUBTOTAL =	300	830	22,867	22,567	830
-L- LT. 320+00.00 TO 342+00.00	6,086	0	6,328	242	0
-L- RT. 320+00.00 TO 342+00.00	3,337	0	5,035	1,698	0
-Y49- 10+37.50 TO 11+30.00	11	0	59	48	0
SUBTOTAL =	9,434	0	11,422	1,988	0
-L- LT. 342+00.00 TO 357+50.00	3,756	0	1,890	0	1,866
-L- RT. 342+00.00 TO 357+50.00	672	0	1,634	962	0
-Y51- 10+49.50 TO 11+30.00	2	0	64	62	0
-Y52- 10+35.00 TO 11+15.64	19	0	133	114	0
-Y53- 14+75.00 TO 30+34.25	433	537	1,269	836	537
SUBTOTAL =	4,882	537	4,990	1,974	2,403
PROJECT SUBTOTAL =	62,645	61,513	328,465	279,222	74,915
ADDITIONAL UNDERCUT (PER GEOTECH)		700	875	875	700
SHOULDER MATERIAL			1,613	1,613	
WASTE TO REPLACE BORROW				-11,577	-11,577
SELECT GRANULAR MATERIAL (PER GEOTECH)			-77,766	-77,766	
PROJECT TOTAL =	62,645	62,213	253,187	192,367	64,038
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				9,618	
GRAND TOTAL =	62,645			201,985	
SAY =	63,300	62,850		204,000	

-L- PAVEMENT STRUCTURE VOLUME = 12,316 CY

EARTHWORK TOTALS FOR ALTERNATE ASPHALT PAVEMENT DESIGN

PROJECT SUBTOTAL =	62,645	61,513	328,465	279,222	74,915
ADJUSTMENT FOR ALTERNATE PAVEMENT	-608	-3,464	3,193	3,281	-3,984
ADDITIONAL UNDERCUT (PER GEOTECH)		700	875	875	700
SHOULDER MATERIAL			1,613	1,613	
WASTE TO REPLACE BORROW				-11,220	-11,220
SELECT GRANULAR MATERIAL			-73,436	-73,436	
PROJECT TOTAL =	62,037	58,049	260,710	200,335	60,411
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				10,017	
GRAND TOTAL =	62,037			210,352	
SAY =	62,700	59,350		212,500	

-L- PAVEMENT STRUCTURE VOLUME = 11,115 CY

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

5/9/06

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COMPUTED BY: BAK DATE: 1-24-2012
CHECKED BY: JDE DATE: 3-7-2012

PROJECT REFERENCE NO.	SHEET NO.
U-3810	3-B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			REMOVE EXIST. GUARDRAIL	REMOVE & RESET EXIST. GUARDRAIL		REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU-350 TL-3	TYPE III	B-77	B-83	CAT-1	AT-1	TES		NO.	PERMITTED G	PERMITTED NG				
YNB	22+45	23+50	LEFT	106.25′			22+50		10′	13′	50′		1′		1				1										
L /Y10	L 50+65	Y10 17+00	L LEFT/Y10 RIGHT	137.50′	50.00′		51+75		14′	14′ BERM									1	1									
L	51+17	53+79	RIGHT	262.50′			51+75		14′	14′ BERM					2														
L	81+68	83+24	RIGHT	156.25′			83+23.94		8.2′	14′ BERM	131.25′		2.6′		1	1													
L	82+00	83+24	MED. RIGHT	125.00′			83+23.94		2′	MEDIAN	106.25′		7.1′				1						1		X				
L	82+00	83+33	MED. LEFT	131.25′				83+32.17	9.1′	MEDIAN		112.50′		6.9′		1										205′			TIE TO EXISTING BRIDGE RAIL
L1	84+13	85+28	RIGHT	125.00′			84+13.30		9′	EX. WIDTH						2										115′			TIE TO EXISTING BRIDGE RAILS
L1	84+13	85+28	LEFT	125.00′			84+13.30		18.6′	EX. WIDTH						2										115′			TIE TO EXISTING BRIDGE RAILS
L1	86+23	86+63	LEFT	43.75′			86+26.14		19.2′	EX. WIDTH						1										43′			TIE TO EXISTING BRIDGE RAIL & GUARDRAIL
L	86+23	87+74	MED. LEFT	150.00′			86+23.36		9.2′	MEDIAN	100.00′		6.2′			1							1		X				
L	86+31	87+74	MED. RIGHT	143.75′				86+31.06	2′	MEDIAN		118.25′		7′			1												
L	86+31	87+31	RIGHT	100.00′				86+31.06	8.2′	14′ BERM		75.00′		1.5′	1	1													
L	118+66	120+10	LEFT	143.75′			118+92		14′	19′ BERM					1				1										
L	165+30	169+55	RIGHT	425.00′			167+21.87	169+00	14′	14′ BERM					2											120′			
L	167+33	169+08	LEFT	175.00′			167+56.22		14′	14′ BERM					1				1							105′			
L2	232+10	233+72	RIGHT	162.50′			233+72.11		4.2′	14′ BERM	137.50′		2.7′		1			1								170′			TIE TO EXISTING BRIDGE RAIL
L	232+34	233+72	MED. RIGHT	137.50′			233+72.15		6.1′	MEDIAN	112.50′		7′					1					1		X	95′			TIE TO EXISTING BRIDGE RAIL
L	232+35	233+72	MED. LEFT	137.50′				233+71.50	2′	MEDIAN		112.50′		7.4′			1												
L	230+72	233+72	LEFT	300.00′				233+71.50	8.2′	14′ BERM		275.00′		3.8′	1	1													
L2 /Y36	L2 234+95	Y36 10+88	RIGHT	56.25′	50.00′			234+95.25	4′	14′ BERM								1		1						70′			TIE TO EXISTING BRIDGE RAIL
L	234+95	236+56	MED. RIGHT	150.00′				234+96.33	6.4′	MEDIAN		125.00′		6.6′				1					1		X	170′			TIE TO EXISTING BRIDGE RAIL
L	234+96	236+56	MED. LEFT	150.00′			234+96.50		2′	MEDIAN	131.25′		7.6′				1												
L	234+96	236+52	LEFT	156.25′			234+96.50		8.2′	14′ BERM	125.00′		2.6′		1	1													
Y44 /L	Y44 10+91	L 274+73	Y44 LEFT/L RIGHT	87.50′	50.00′		274+67		14′	14′ BERM									1	1									
L	273+72	275+97	LEFT	225.00′			274+67		14′	14′ BERM					2														
L	284+50	288+00	LEFT	350.00′			287+00	284+00	14′	14′ BERM					2														
L	325+30		LEFT	25.00′																	2					30′			BARRICADE W/2 TES
L	328+68	330+31	RIGHT	162.50′			329+69.74		14′	14′ BERM					2											164′			
L	329+46	330+75	LEFT	131.25′			329+69.74		14′	14′ BERM					1				1							164′			
Y53	21+81	22+58	RIGHT																								77′		
			SUBTOTAL	4,581.25′	150.00′										19	11	4	4	6	3	2		4			1566′	77′		
			LESS ANCHORS																							SAY 1575′	SAY 80′		
			GRAU350 19@50′	950.00′																									
			TYPE-III 11@18.75′	206.25′																									
			B-77 4@18.75′	75.00′																									
			B-83 4@25′	100.00′																									
			CAT-1 6@6.25′	37.50′																									
			AT-1 3@6.25′	18.75′																									
			TOTAL DEDUCTION	(-) 1,387.50′																									
			PROJECT TOTAL	3193.25′																									
			SAY	3200′	150′																								
			ADDITIONAL GUARDRAIL POST = 10 EA																										

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COMPUTED BY: JDE DATE: 3/14/12
CHECKED BY: SS DATE: 6/11/12

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-3810	3-C

SUMMARY OF REMOVAL EXISTING ASPHALT PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
L	11+00	13+87	RT SHLDR	156
L	14+30	19+00	RT SHLDR	124
L	19+00	26+50	CL	3,150
L	31+00	34+00	CL	1,256
L	41+50	60+50	CL	2,452
Y14	13+41	14+88	RT	47
L	70+15	80+15	LT	902
L	86+75	93+20	CL	522
Y19	10+80	12+05	CL	548
L	102+62	105+26	RT	501
L	109+32	116+87	RT	1,339
Y22	10+00	11+60	CL	926
L	127+68	136+00	CL	823
L	141+00	163+19	CL	6,192
L	168+31	184+40	RT	1,543
Y29	13+27	17+11	CL	728
L	192+47	203+00	CL	4,201
L	205+25	233+68	CL	2,753
L	235+00	250+05	CL	1,552
L	251+40	289+53	CL	2,627
L	297+17	309+16	CL	2,767
L	316+50	321+00	LT SHLDR	189
L	321+00	327+22	CL	7,486
L	337+00	352+50	LT SHLDR	631
DET	10+23	14+91	CL	1,695
TEMPORARY	PAVEMENT PER	TRAFFIC MANAGEMENT	PLANS:	
L	38+12	51+75		1,817
L	93+70	97+30		480
L	213+83	221+25		989
L	279+91	294+52		1948
L	326+18	331+48		471
			TOTAL:	50,815
			SAY:	50,825

SUMMARY OF BREAKING EXISTING ASPHALT PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
L	93+50	99+50	CL	3,274
L	136+00	141+00	CL	2,134
			TOTAL:	5,408
			SAY:	5,410 SY

SUMMARY OF SHOULDER BERM GUTTER

SURVEY LINE	STATION	STATION	LENGTH
L1 LT	84+26	84+95	69
L1 RT	84+37	84+59	22
L1 RT	86+38	86+82	44
L1 LT	86+42	86+57	15
L, Y36	L RT 235+06	Y36 RT 10+83	93
		TOTAL:	243
		SAY:	250 LF

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CSD244201

COMPUTED BY: JBJAVELLANA DATE: 12/29/2011

CHECKED BY: JDE DATE: 7/18/2012

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-D

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

SUB-REGIONAL & REGIONAL
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
-Y-																			
24+50	RT	1		41.7															
	RT	1	2		38.5	34.9													
22+85	RT	2		42.0															
22+95	LT	3		39.8															
	LT	3	4		36.0	35.8													
	LT	3	5		36.0	36.5													
22+90	CL	4		39.7															
22+55	LT	5		39.7															
	LT	5	8		36.5	36.8													
22+50	LT	6																	
	LT	6	7		31.4	Ex.									16		X	X	
22+50	LT	7																	
22+00	LT	8		40.0															
	LT	8	9		36.8	37.1													
21+58	LT	9		40.3															
20+16	LT	10		42.5															
	LT	10	11		37.0	39.3													
19+52	LT	11		42.7															
	LT	11	12		39.3	39.7			12								X	X	
	LT	11	13		39.3	39.9													
19+52	LT	12		42.8															
18+00	LT	13		44.1															
	LT	13	14		39.9	40.0			12								X	X	
18+00	LT	14		43.1															
14+92	LT	15		44.9															
	LT	15	16		41.5	EX													
	LT	15	17		41.5	41.8													
14+92	RT	16		EX															
14+00	LT	17		45.0															
	LT	17	18		41.8	42.6													
-L-																			
11+00	LT	19		40.7															
	LT	19	20		36.9	38.0					68						X	X	
10+48	LT	20		42.4															
	LT	20	21		38.0	38.6					24						X	X	
11+08	RT	22																	
	RT	22	23		EX	36.1													
11+11	RT	23		40.3															
	RT	23	24		36.1	35.0													
11+50	RT	24		41.4															
	RT	24	25		34.0	33.7						28					X	X	
	RT	24	26		34.5	34.7													
11+96	RT	26		40.1															
	RT	26	27		36.0	36.4			8								X	X	
	RT	26	29		34.7	35.1													
11+96	RT	27		39.4															
12+30	LT	28		40.1															
	LT	28	31		37.0	36.9													
12+61	RT	29		40.0															
	RT	29	30		35.4	35.7			12								X	X	
						SHEET TOTALS			44		92	28			16				

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)
24+50	1																														
	1	2																		164											
22+85	2																														
22+95	3																														
	3	4																		4											
	3	5																		36											
22+90	4																														
22+55	5																														
	5	8																		52											
22+50	6																														
	6	7																													
22+50	7																														
22+00	8																														
	8	9																		36											
21+58	9																														
20+16	10																														
	10	11																		60											
19+52	11																														
	11	12																													
	11	13																		148											
19+52	12																														
18+00	13																														
	13	14																													
18+00	14																														
14+92	15																														
	15	16																			20										
	15	17																		84											
14+92	16																														
14+00	17																														
	17	18																		152											
-L-																															
11+00	19																														
	19	20																													
10+48	20																														
	20	21																													
11+08	22																														
	22	23																				12									
11+11	23																														
	23	24																				36									
11+50	24																														
	24	25																													
	24	26																					40								
11+96	26																														
	26	27																													
	26	29																					60								
11+96	27																														
12+30	28																														
	28	31																		24											
12+61	29																														
	29	30																													
SHEET TOTALS																				760	20	48	100								

STATION	FROM	TO	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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 GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
24+50	1				1							1		1	1																				
	1	2																																	
22+85	2				1	2.11						1		1	1																				
22+95	3				1							1		1	1																				
	3	4																																	
	3	5																																	
22+90	4																																0.3990		
22+55	5				1							1		1	1																				
	5	8																																	
22+50	6		6.00																																
	6	7																																	
22+50	7																																1.0126		
22+00	8				1							1		1	1																				
	8	9																																	
21+58	9				1							1		1	1																				
20+16	10				1	0.48																			1	1									REMOVE EXIST. DI
	10	11																																	
19+52	11				1							1		1	1																				
	11	12																																	
	11	13																																	
19+52	12				1							1		1	1																				
18+00	13				1							1		1	1																				
	13	14																																	
18+00	14				1							1		1	1																				
14+92	15				1							1		1	1																				
	15	16																																	
	15	17																																	
14+92	16																																0.4465		REMOVE EXIST. DI
14+00	17				1							1		1	1																				
	17	18																																	
-L-																																			
11+00	19				1			1			1																								
	19	20																																	
10+48	20				1			1			1																								
	20	21																																	
11+08	22																																0.5526		
	22	23																																	
11+11	23				1			1		1																									
	23	24																																	
11+50	24				1	1.44		1		1																									
	24	25																																	
	24	26																																	
11+96	26				1	0.40		1		1																									
	26	27																																	
	26	29																																	
11+96	27				1			1	1																										
12+30	28				1			1			1																								
	28	31																																	
12+61	29				1			1	1																										
	29	30																																	
SHEET TOTALS			6.00		21	4.43		8	2	3	3	12		12	12										1	1								2.4107		

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

RD245795

COMPUTED BY: JBJAVELLANA DATE: 12/30/2011

CHECKED BY: JDE DATE: 7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-E

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

STATION (-L-)	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+61	RT	29	31		35.1	35.6													
	RT	29	33		35.1	35.9													
12+61	LT	31		40.0															
	LT	31	32		36.9	37.8			24								X	X	
	LT	31	34		36.1	36.3													
12+90	RT	33		40.0															
	RT	33	37		35.9	37.1													
12+90	LT	34		40.0															
	LT	34	35		36.3	37.0													
14+05	LT	35		40.7															
	LT	35	36		37.7	38.8			12								X	X	
	LT	35	40		37.5	39.1													
14+05	LT	36		41.1															
14+50	RT	37		41.2															
	RT	37	38		37.3	38.0			12							X	X	X	
	RT	37	39		37.3	38.7													
15+25	RT	39		41.8															
	RT	39	42		38.7	39.4													
15+85	LT	40		42.3															
	LT	40	41		39.1	40.3				16							X	X	
	LT	40	43		39.1	40.0													
16+73	RT	42		43.0															
	RT	42	45		39.4	39.9													
17+08	LT	43		43.2															
	LT	43	44		40.2	40.5			12								X	X	
	LT	43	47		40.2	40.7													
17+08	LT	44		42.8															
17+65	RT	45		43.7															
	RT	45	46		39.9	40.0	X		16							X	X	X	
17+65	RT	46		42.2															
17+85	LT	47		43.8															
	LT	47	48		40.7	40.8			16								X	X	
	LT	47	49		40.7	41.5													
17+85	LT	48		43.0															
19+20	LT	49		44.6															
	LT	49	50		41.5	41.6			16								X	X	
	LT	49	51		41.5	41.7													
19+20	LT	50		43.9															
19+70	LT	51		44.7															
	LT	51	52		41.7	42.4			16								X	X	
20+42	LT	53		43.6															
	LT	53	55		40.6	39.7													
21+52	LT	54		44.4															
	LT	54	55		39.6	39.7			16								X	X	
	LT	54	59		39.6	39.4													
21+52	LT	55		42.7															
21+63	RT	56		44.4															
	RT	56	57		40.8	40.9			16								X	X	
	RT	56	58		40.8	40.6													
21+63	RT	57		43.2															
SHEET TOTALS									156	16									

FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
29	31																					76			
29	33																			24					
31																									
31	32																								
31	34																				24				
33																									
33	37																			156					
34																									
34	35																				112				
35																									
35	36																								
35	40																			176					
36																									
37																									
37	38																								
37	39																		76						
39																									
39	42																		144						
40																									
40	41																								
40	43																			120					
42																									
42	45																		84						
43																									
43	44																								
43	47																		72						
44																									
45																									
45	46																								
46																									
47																									
47	48																								
47	49																		132						
48																									
49																									
49	50																								
49	51																		44						
50																									
51																									
51	52																								
53																									
53	55																		104						
54																									
54	55																								
54	59																		68						
55																									
56																									
56	57																								
56	58																		56						
57																									
SHEET TOTALS																			780	476	136	76			

FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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
29	31																
29	33																
31									1			1	1				
31	32																
31	34																
33									1			1			1		
33	37																
34									1			1		1			
34	35																
35									1			1		1			
35	36																
35	40																
36									1								
37									1			1			1		
37	38																
37	39																
39									1			1			1		
39	42																
40									1			1		1			
40	41																
40	43																
42									1			1			1		
42	45																
43									1			1		1			
43	44																
43	47																
44									1								
45									1			1			1		
45	46																
46									1								
47									1			1		1			
47	48																
47	49																
48									1								
49									1			1		1			
49	50																
49	51																
50									1								
51									1			1		1			
51	52																
53									1			1	1				
53	55																
54									1			1			1		
54	55																
54	59																
55									1			1		1			
56									1			1		1			
56	57																
56	58																
57									1								
SHEET TOTALS									23			17	2	9	6		

FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
29	31							2.9												0.13		31	REM. 3 EXIST. DI'S &PLUG 18"RCP(BOTH ENDS)
29	33																						
31																							
31	32																						
31	34																						
33																							
33	37																					20	REMOVE EXIST. DI
34																							
34	35																					147	REMOVE EXIST. DI
35																							
35	36																						
35	40																					181	REMOVE EXIST. DI
36		1	1																				
37																							
37	38																						
37	39																					82	REMOVE EXIST. DI
39																							
39	42																					152	REMOVE 2 EXIST. DI'S
40																							
40	41																						
40	43																					198	
42																							
42	45																					201	REMOVE EXIST. DI
43																							
43	44																						
43	47																						
44		1	1																				
45																							
45	46																						
46		1	1																				
47																							
47	48																						
47	49																					181	REMOVE 2 EXIST. DI'S
48		1	1																				
49																							
49	50																						
49	51																					50	
50		1	1																				
51																						102	REMOVE EXIST. DI
51	52																						
53																							
53	55																					107	REMOVE EXIST. DI
54																							
54	55																						
54	59																					47	REMOVE EXIST DI
55																							
56																							
56	57																						
56	58																					323	REMOVE 2 EXIST. DI'S
57		1	1																				
SHEET TOTALS		6	6					2.9												0.13		1,822	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA	DATE: 12/30/2011	PROJECT NO. U-3810	SHEET NO. 3-F
CHECKED BY: JDE	DATE: 7/18/2012		

RD245795

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L-																			
22+21	RT	58		44.3															
	RT	58	62		40.6	40.2													
22+21	LT	59		44.3															
	LT	59	60		39.2	41.6			20								X	X	
	LT	59	61		38.7	38.5													
22+92	LT	61		44.3															
	LT	61	66		38.5	37.3													
22+92	RT	62		44.3															
	RT	62	63		40.2	40.9	X		16							X	X	X	
	RT	62	64		40.0	39.4													
22+92	RT	63		43.2															
24+00	RT	64		44.7															
	RT	64	65		39.7	39.8	X		16							X	X	X	
	RT	64	68		39.4	38.6													
24+00	RT	65		44.0															
25+40	LT	66		44.8															
	LT	66	67		36.8	37.3			16										
	LT	66	70		37.3	36.8													
25+40	LT	67		42.0															
25+60	RT	68		44.8															
	RT	68	69		38.9	39.5	X		20							X	X	X	
	RT	68	72		38.1	37.7													
25+60	RT	69		43.3															
26+35	LT	70		44.6															
	LT	70	71		37.6	37.7			24								X	X	
	LT	70	75		36.8	36.4													
26+35	LT	71		41.9															
26+52	RT	72		44.6															
	RT	72	73		37.7	37.5					40						X	X	
-Y3-																			
10+67	RT	73		44.0															
	RT	73	74		38.2	41.6			36								X	X	
	RT	73	78		37.5	37.3													
10+67	LT	78		43.8															
	LT	78	79		38.0	41.8			32								X	X	
	LT	78	77		37.3	37.1					40						X	X	
-L-																			
27+25	LT	75		44.3															
	LT	75	76		37.1	39.0			28								X	X	
	LT	75	80		36.4	35.9													
27+31	LT	76		39.0															
27+44	RT	77		44.3															
	RT	77	82		37.1	36.5													
28+25	LT	80		44.0															
	LT	80	81		36.6	37.0			32								X	X	
	LT	80	85		35.4	35.0													
28+10	LT	81		41.7															
28+70	RT	82		43.9															
	RT	82	83		35.8	37.9			16								X	X	
							SHEET TOTALS		256		80								

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
	58	62																		68						
	59	61																				68				
	61	66																				244				
	62	64																		104						
	64	68																			160					
	66	70																				92				
	68	72																				92				
	70	75																				84				
	73	78																				32				
	75	80																				96				
	77	82																				124				
	80	85																					72			
SHEET TOTALS																				172	160	832	72			

STATION	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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
22+21	58									1			1	1				
22+21	59									1	0.56		1	1				
22+92	61									1	0.82		1		1			
22+92	62									1			1			1		
22+92	63									1								
24+00	64									1	0.27		1			1		
24+00	65									1								
25+40	66									1	2.49		1			1		
25+40	67									1								
25+60	68									1	1.64		1		1			
25+60	69									1								
26+35	70									1	2.80		1			1		
26+35	71									1								
26+52	72									1	1.90		1		1			
10+67	73									1	1.54		1		1			
10+67	78									1	1.55		1			1		
27+25	75									1	2.99		1			1		
27+31	76									1								
27+44	77									1	2.20		1		1			
28+25	80									1	3.69		1			1		
28+10	81									1								
28+70	82									1	2.45		1		1			
SHEET TOTALS										22	24.90		15	2	6	7		

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
	59	61																					64	REMOVE EXIST. DI
	61	66																					297	REMOVE 4 EXIST. DI'S
	62	64																					110	REMOVE EXIST. DI
22+92	63		1	1																				
	64	68																					162	REMOVE EXIST. DI
24+00	65		1	1																				
	66	70																					60	REMOVE EXIST. DI
25+40	67		1	1																				
	68	72																					120	REMOVE 2 EXIST. DI'S
25+60	69		1	1																				
	70	75																					116	REMOVE 2 EXIST. DI'S
26+35	71		1	1																				
	78	79																					20	
	75	80																			0.045			PLUG 15" HDPE
27+31	76		1	1																				
	77	82																					146	
	80	85																					101	REMOVE EXIST. DI
28+10	81		1	1																				
SHEET TOTALS			7	7																	0.045		1,196	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 12/30/2011

CHECKED BY: JDE DATE: 7/18/2012

RD245795

PROJECT NO.	SHEET NO.
U-3810	3-G

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

Column headings of the form (columns with no entries on this sheet): DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12", 18", 24", 30", 36", 42", 48"; DO NOT USE HDPE; 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", 18", 36", 48"; ** " R.C. PIPE (CLASS V); 36" DUCTILE IRON PIPE (SEALED SYSTEM); 15" DRAINAGE PIPE ELBOW; 15" SIDE DRAIN PIPE; SPECIAL HW CU. YARDS (SEE DETAIL 2-AF); ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P., C.S.P.; CONCRETE TRANSITIONAL SECTION DROP INLET, CATCH BASIN; 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; SP CB (SEE DETAIL 2-AI); FLOWABLE FILL, C.Y.; SPEC. JB (SEE DETAIL 2-AG); G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24; J.B. STD. 840.31 OR 840.32; T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR.. #218); M.H. FRAME & COVER STD. 840.54; T.B.D.I. STD. 840.35; G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29; OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC); CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK); 24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR); SP CB (SEE DETAIL 2-AH); CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71; CONC. COLLARS CL. "B" C.Y. STD. 840.72.

STATION -L-	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE 15"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	R.C. PIPE CLASS IV 15"	R.C. PIPE CLASS IV 24"	R.C. PIPE CLASS IV 30"	R.C. PIPE CLASS IV 42"	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	PIPE REMOVAL LIN. FT.	REMARKS
28+70	RT	82	89		36.5	35.8	X						136												124	REMOVE 2 EXIST. DI'S
28+70	RT	83		42.9												1							1	1		
	RT	83	84		37.9	38.5		100		X	X															
27+65	RT	84		43.5												1							1	1		
29+00	LT	85		43.8												1	3.84		1			1				
	LT	85	86		36.2	36.5		20		X	X															
	LT	85	87		35.0	36.5								96											96	REMOVE 2 EXIST. DI'S
29+00	LT	86		41.5												1							1	1		
30+00	LT	87		43.5												1	4.04		1			1				
	LT	87	88		35.7	35.8		20		X	X															
	LT	87	94		34.5	34.0								96											79	REMOVE EXIST. DI
30+00	LT	88		40.7												1							1	1		
30+05	RT	89		43.5												1	2.71		1		1					
	RT	89	90		36.5	37.9	X	16	X	X	X															
	RT	89	96		35.8	35.2	X						100												137	REMOVE 3 EXIST. DI'S
30+05	RT	90		42.9												1							1	1		
	RT	90	91		37.9	38.1		16		X	X															
	RT	90	93		37.9	38.1		52		X	X															
29+85	RT	91		42.5												1							1	1		
	RT	91	92		38.1	38.2		32		X	X															
29+50	RT	92		43.2												1							1	1		
30+60	RT	93		42.7												1							1	1		
31+00	LT	94		43.2												1	4.24		1			1				
	LT	94	95		35.2	37.7		16		X	X															
	LT	94	98		34.0	33.5								96											101	REMOVE EXIST. DI
31+00	LT	95		42.7												1							1	1		
31+05	RT	96		43.2												1	2.97		1		1					
	RT	96	100		35.2	34.1							96													
31+38	RT	97		40.4												1							1	1		
	RT	97	101		38.2	38.0						40														
32+00	LT	98		43.0												1	4.53		1			1				
	LT	98	99		34.7	35.8		20		X	X															
	LT	98	102		33.5	33.3								36											97	REMOVE EXIST. HW
32+05	LT	99		40.8												1							1	1		
32+02	RT	100		43.0												1	4.37		1		1					
	RT	100	101		34.9	38.0	X	60	X	X	X															
	RT	100	103		33.6	33.5								36											99	
31+77	RT	101		40.6												1							1	1		
32+39	LT	102		43.0												1	4.69		1	1						
	LT	102	104		33.3	33.1								28												
32+39	RT	103		43.0												1	4.47		1	1						
	RT	103	105		33.5	33.4	X							36												
32+75	LT	104		43.0												1	5.00	0.92	1		1					
	LT	104	105		33.1	33.4	X							76												REMOVE 2 EXIST. DI'S
	LT	104	107		32.1	31.9									64										70	
32+75	RT	105		43.0												1	4.59		1			1				
	RT	105	106		34.7	37.2	X	16	X	X	X															
	RT	105	110		34.7	37.1						76													83	REMOVE EXIST. DI
32+75	RT	106		42.2												1							1	1		
33+42	LT	107		43.1												1	5.00	1.24	1		1					
							SHEET TOTALS	368				116	332	500	64	25	50.45	2.16	12	2	5	5	13	13	886	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 12/30/2011

CHECKED BY: JDE DATE: 7/18/2012

RD245795

PROJECT NO.	SHEET NO.
U-3810	3-H

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L-																			
33+42	LT	107	108		34.1	36.1			20								X	X	
	LT	107	112		31.9	31.6													
33+42	LT	108		41.1															
	LT	108	109		36.1	36.2			28								X	X	
33+10	LT	109		40.8															
33+55	RT	110		43.1															
	RT	110	111		37.1	37.2			16								X	X	
	RT	110	114		37.1	37.6													
33+55	RT	111		42.0															
34+25	LT	112		43.4															
	LT	112	113		33.9	34.9			20								X	X	
	LT	112	116		31.6	31.4													
34+25	LT	113		42.0															
34+55	RT	114		43.4															
	RT	114	115		37.6	37.7	X		16							X	X	X	
	RT	114	117		37.6	38.0													
34+55	RT	115		42.1															
35+16	LT	116		43.1															
	LT	116	119		31.4	30.4													
35+28	RT	117		43.7															
	RT	117	118		38.0	39.2			56								X	X	
35+85	RT	118		41.5															
36+65	LT	119		41.9															
	LT	119	120		32.7	33.7			16								X	X	
	LT	119	122		30.4	29.7													
36+65	LT	120		41.0															
37+32	LT	121		42.3															
	LT	121	122		35.0	32.0													
	LT	121	123		35.0	38.1													
37+46	LT	122		40.6															
	LT	122	128		29.7	28.4													
37+32	RT	123		43.5															
	RT	123	124		38.1	38.4			72								X	X	
-Y7-																			
15+30	RT	124		41.8															
	RT	124	125		38.4	39.2			28								X	X	
	RT	124	126		38.4	38.6													
15+28	LT	126		41.4															
	LT	126	127		38.6	39.7			24								X	X	
-L-																			
39+38	LT	128		39.4															
	LT	128	129		30.6	32.8			16								X	X	
	LT	128	130		28.4	27.8													
39+38	LT	129		37.8															
40+60	LT	130		38.3															
	LT	130	131		30.0	32.1			16								X	X	
	LT	130	133		27.8	27.2													
40+60	LT	131		37.1															
	LT	131	132		32.1	32.3			40								X	X	
40+15	LT	132		37.3															
SHEET TOTALS									368										

SIZE / THICKNESS OR GAUGE:

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"

STATION	LOCATION	FROM	TO	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
-L-											
33+42	LT	107	108								
	LT	107	112							80	
33+42	LT	108									
	LT	108	109								
33+10	LT	109									
33+55	RT	110									
	RT	110	111								
	RT	110	114		96						
33+55	RT	111									
34+25	LT	112									
	LT	112	113								
	LT	112	116							88	
34+25	LT	113									
34+55	RT	114									
	RT	114	115								
	RT	114	117		68						
34+55	RT	115									
35+16	LT	116									
	LT	116	119							144	
35+28	RT	117									
	RT	117	118								
35+85	RT	118									
36+65	LT	119									
	LT	119	120								
	LT	119	122							76	
36+65	LT	120									
37+32	LT	121									
	LT	121	122		44						
	LT	121	123		44						
37+46	LT	122									
	LT	122	128							184	
37+32	RT	123									
	RT	123	124								
-Y7-											
15+30	RT	124									
	RT	124	125								
	RT	124	126		40						
15+28	LT	126									
	LT	126	127								
-L-											
39+38	LT	128									
	LT	128	129								
	LT	128	130							116	
39+38	LT	129									
40+60	LT	130									
	LT	130	131								
	LT	130	133							104	
40+60	LT	131									
	LT	131	132								
40+15	LT	132									
SHEET TOTALS					292					792	

** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.

STATION	LOCATION	FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16
-L-														
33+42	LT	107	108											
	LT	107	112											
33+42	LT	108		1									1	1
	LT	108	109											
33+10	LT	109		1									1	1
33+55	RT	110		1	1.02		1			1				
	RT	110	111											
	RT	110	114											
33+55	RT	111		1									1	1
34+25	LT	112		1	5.00	1.72	1		1					
	LT	112	113											
	LT	112	116											
34+25	LT	113		1	2.09								1	1
34+55	RT	114		1	0.74		1		1					
	RT	114	115											
	RT	114	117											
34+55	RT	115		1									1	1
35+16	LT	116		1	5.00	1.76	1			1				
	LT	116	119											
35+28	RT	117		1	0.67		1		1					
	RT	117	118											
35+85	RT	118		1									1	1
36+65	LT	119		1	5.00	1.45	1			1				
	LT	119	120											
	LT	119	122											
36+65	LT	120		1	2.22								1	1
37+32	LT	121		1	2.30						1		1	1
	LT	121	122											
	LT	121	123											
37+46	LT	122		1	5.00	0.94	1			1				
	LT	122	128											
37+32	RT	123		1	0.40		1		1					
	RT	123	124											
-Y7-														
15+30	RT	124		1			1		1					
	RT	124	125											
	RT	124	126											
15+28	LT	126		1			1			1				
	LT	126	127											
-L-														
39+38	LT	128		1	5.00	1.01	1			1				
	LT	128	129											
	LT	128	130											
39+38	LT	129		1									1	1
40+60	LT	130		1	5.00	0.57	1			1				
	LT	130	131											
	LT	130	133											
40+60	LT	131		1									1	1
	LT	131	132											
40+15	LT	132		1									1	1
SHEET TOTALS				23	39.44	7.45	12		5	7	1		11	11

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	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72

STATION	LOCATION	FROM	TO	PIPE REMOVAL LIN. FT.	REMARKS
33+42	LT	107	112	91	REMOVE 2 EXIST. DI'S
	RT	110	114	102	REMOVE 2 EXIST. DI'S
	LT	121	123	177	REMOVE EXIST. DI
	LT	122	128	43	
	LT	128	130	113	REMOVE 2 EXIST. DI'S
	LT	130	133	107	
SHEET TOTALS				633	

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

RD245795

COMPUTED BY: JBJAVELLANA DATE: 12/30/2011

CHECKED BY: JDE DATE: 7/18/2012

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-I

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

STATION (-L-)	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
41+68	LT	133		37.4															
	LT	133	134		29.5	30.8			20								X	X	
	LT	133	135		27.2	26.8													
41+68	LT	134		35.8															
42+55	LT	135		36.7															
	LT	135	136		28.3	32.2													
	LT	135	145		26.8	25.7													
42+23	RT	136		38.5															
	RT	136	137		32.7	32.9													
42+23	RT	137		36.7															
	RT	137	138		33.2	34.7			60								X	X	
	RT	137	141		33.2	33.5			60								X	X	
41+60	RT	138		37.0															
	RT	138	139		34.7	35.2			60								X	X	
40+95	RT	139		37.8															
	RT	139	140		35.2	35.7			84								X	X	
40+07	RT	140		37.9															
42+85	RT	141		35.7															
43+20	RT	142		37.6															
	RT	142	143		34.4	34.0													
43+70	RT	143		37.0															
	RT	143	144		34.0	33.2													
43+95	RT	144		36.8															
	RT	144	149		33.2	27.8													
45+08	LT	145		34.7															
	LT	145	146		28.0	28.1			20								X	X	
	LT	145	147		25.7	25.4	X												
45+08	LT	146		32.3															
45+83	LT	147		34.0															
	LT	147	148		27.6	27.7			20								X	X	
	LT	147	151		25.4	24.4	X												
45+83	LT	148		32.2															
47+20	RT	149		32.3															
	RT	149	150		27.1	27.2				32							X	X	
	RT	149	155		27.1	22.6													
47+87	LT	151		31.2															
	LT	151	152		24.4	23.2													
49+25	LT	152		28.5															
	LT	152	153		23.2	20.8									84			X	X	
-Y9- 11+25	RT	154																	
50+26	RT	155		26.3															
	RT	155	156		23.3	24.2			56								X	X	
	RT	155	157		22.6	20.6													
51+65	RT	157		24.3															
	RT	157	158		20.6	17.4					44						X	X	
51+30	LT	159										40					X	X	
51+95	LT	160		24.0															
	LT	160	161		19.0	17.9			40								X	X	
52+33	LT	161	162		17.9	18.3													
52+60	LT	163							24								X	X	
							SHEET TOTALS		444	32	44	40		84					

FROM	TO	C.S. PIPE 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. PIPE CLASS III 12"	III 15"	III 18"	III 24"	III 30"	III 36"	III 42"	III 48"	R.C. PIPE CLASS IV 12"	IV 15"	IV 18"	IV 24"	IV 30"	IV 36"	IV 42"	IV 48"	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
133	135																							80								
135	136																				56											
135	145																							248								
136	137																			52												
142	143																		44													
143	144																		36													
144	149																		320													
145	147																							72								
147	151																							200								
149	155																				300											
151	152																							136								
154																													20			
155	157																				136											
161	162																					80										
SHEET TOTALS																			400	52	492	80		736					20			

FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
133		1	5.00	0.16	1			1																								
133	135																														85	
134		1									1	1																				
135		1	4.84		1			1																								
135	145																														243	REMOVE 3 EXIST. DI'S
136		1	1.34						1		1	1																				
136	137																														1,341	REMOVE 6 EXIST. DI'S
137		1									1	1																				
138		1									1	1																				
139		1									1	1																				
140		1									1	1																				
141		1									1	1																				
142		1							1		1	1																				
143		1			1			1		1																						
144		1			1		1																									
145		1	3.96		1			1																								
145	147																														75	REMOVE EXIST. DI
146		1									1	1																				
147		1	3.66		1			1																								
147	151																														209	REMOVE EXIST. JB
148		1									1	1																				
149		1	0.24		1		1																									
151		1	1.88		1			1									2.7												0.13			PLUG 18" CMP (BOTH ENDS)
152		1	0.25		1			1																								
152	153																														21	REMOVE EXIST. DI
154																															20	
155		1			1		1																									
157		1			1		1																									
159																															61	
160		1			1			1																								
161	162																														41	
163																															21	
SHEET TOTALS		22	21.17	0.16	12		4	8	2	1	10	10					2.7												0.13		2,117	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/3/2012

CHECKED BY: JDE DATE: 7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-J

RD245795

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L-																			
52+70	RT	164		23.6															
	RT	164	165		18.7	15.5			32								X	X	
	RT	164	166		20.4	18.7													
53+21	RT	166		23.5															
	RT	166	167		20.4	21.2													
	RT	166	170		20.4	20.6													
53+21	LT	167		24.5															
	LT	167	171		21.2	21.4													
53+21	LT	168		23.5															
	LT	168	169		19.8	19.5					24						X	X	
	LT	168	172		19.8	20.1													
53+70	RT	170		23.6															
53+70	LT	171		24.6															
53+70	LT	172		23.8															
	LT	172	173		20.1	21.0													
55+50	LT	173		24.9															
	LT	173	174		21.0	21.7					24						X	X	
-Y11-																			
11+17	RT	175							24								X	X	
11+05	LT	179		18.4															
	LT	179	178		15.6	18.1					64						X	X	
-L-																			
56+84	LT	176		26.9															
	LT	176	177		18.5	19.1													
	LT	176	178		18.5	18.1													
56+84	LT	177		23.9															
	LT	177	182		19.1	22.7													
57+03	RT	178		26.1															
	RT	178	180		18.8	22.4													
57+40	RT	180		26.4															
	RT	180	181		22.4	24.2													
	RT	180	187		22.4	24.2													
57+40	RT	181		27.4															
-Y12-																			
17+25	RT	182		26.4															
	RT	182	183		23.4	24.0			56								X	X	
	RT	182	184		22.7	23.1													
-L-																			
58+68	LT	185		27.1															
	LT	185	186		24.1	23.9			24								X	X	
	LT	185	189		24.1	25.0													
60+05	RT	187		29.4															
	RT	187	188		25.8	26.1													
60+22	RT	188		29.4															
	RT	188	190		26.1	26.3													
60+37	LT	189		28.0															
60+87	LT	190		29.8															
	LT	190	191		26.3	26.6													
61+50	LT	191		29.8															
SHEET TOTALS									136		112								

STATION	LOC.	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
52+70	RT	164																									
	RT	164	165																								
	RT	164	166																		48						
53+21	RT	166																									
	RT	166	167																		44						
	RT	166	170																		44						
53+21	LT	167																									
	LT	167	171																		44						
53+21	LT	168																									
	LT	168	169																								
	LT	168	172																				44				
53+70	RT	170																									
53+70	LT	171																									
53+70	LT	172																									
	LT	172	173																				176				
55+50	LT	173																									
	LT	173	174																								
-Y11-																											
11+17	RT	175																									
11+05	LT	179																									
	LT	179	178																								
-L-																											
56+84	LT	176																									
	LT	176	177																				52				
	LT	176	178																				48				
56+84	LT	177																									
	LT	177	182																				96				
57+03	RT	178																									
	RT	178	180																		32						
57+40	RT	180																									
	RT	180	181																		24						
	RT	180	187																		260						
57+40	RT	181																									
-Y12-																											
17+25	RT	182																									
	RT	182	183																								
	RT	182	184																				64				
-L-																											
58+68	LT	185																									
	LT	185	186																								
	LT	185	189																		164						
60+05	RT	187																									
	RT	187	188																		40						
60+22	RT	188																									
	RT	188	190																		60						
60+37	LT	189																									
60+87	LT	190																									
	LT	190	191																		60						
61+50	LT	191																									
SHEET TOTALS																					820		480				

STATION	LOC.	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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
52+70	RT	164									1			1		1			
	RT	164	165																
	RT	164	166																
53+21	RT	166									1			1	1				
	RT	166	167																
	RT	166	170																
53+21	LT	167									1							1	
	LT	167	171																
53+21	LT	168									1			1	1				
	LT	168	169																
	LT	168	172																
53+70	RT	170									1			1			1		
53+70	LT	171									1							1	
53+70	LT	172									1			1		1			
	LT	172	173																
55+50	LT	173									1			1		1			
	LT	173	174																
-Y11-																			
11+17	RT	175																	
11+05	LT	179									1								
	LT	179	178																
-L-																			
56+84	LT	176									1	3.40						1	
	LT	176	177																
	LT	176	178																
56+84	LT	177									1								
	LT	177	182																
57+03	RT	178									1	3.07		1			1		
	RT	178	180																
57+40	RT	180									1			1			1		
	RT	180	181																
	RT	180	187																
57+40	RT	181									1							1	
-Y12-																			
17+25	RT	182									1			1	1				
	RT	182	183																
	RT	182	184																
-L-																			
58+68	LT	185									1			1		1			
	LT	185	186																
	LT	185	189																
60+05	RT	187									1			1			1		
	RT	187	188																
60+22	RT	188									1			1		1			1
	RT	188	190																
60+37	LT	189									1			1		1			
60+87	LT	190									1							1	
	LT	190	191																
61+50	LT	191									1							1	
SHEET TOTALS											21	6.47		13	3	6	4	6	1

STATION	LOC.	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
52+70	RT	164																							
	RT	164	165																						
	RT	164	166																						
53+21	RT	166																							
	RT	166	167																						
	RT	166	170																						
53+21	LT	167		1	1																				
	LT	167	171																						
53+21	LT	168																							
	LT	168	169																						
	LT	168	172																					22	REMOVE EXIST. JB
53+70	RT	170																							
53+70	LT	171		1	1																			192	REMOVE 2 EXIST. DI'S
53+70	LT	172																							
	LT	172	173																					350	REMOVE EXIST. JB
55+50	LT	173																							
	LT	173	174																						
-Y11-																									
11+17	RT	175																						24	
11+05	LT	179		1	1																				REMOVE EXIST. DI
	LT	179	178																					104	
-L-																									
56+84	LT	176		1	1																				
	LT	176	177																					70	REMOVE 2 EXIST. DI'S
	LT	176	178																					182	
56+84	LT	177		1	1																				
	LT	177	182																					141	
57+03	RT	178																							
	RT	178	180																						
57+40	RT	180																							
	RT	180	181																						
	RT	180	187																						
57+40	RT	181		1	1																				
-Y12-																									
17+25	RT	182																							
	RT	182	183																					37	
	RT	182	184																						
-L-																									
58+68	LT	185																							
	LT	185	186																						
	LT	185	189																						
60+05	RT	187																							
	RT	187	188																					346	REMOVE 3 DI'S
60+22	RT	188																							
	RT	188	190																						
60+37	LT	189																							
60+87	LT	190		1	1																				
	LT	190	191																						
61+50	LT	191		1	1																				
SHEET TOTALS				8	8																			1,468	

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

RD245795

COMPUTED BY: JBJAVELLANA DATE: 1/3/2012

CHECKED BY: JDE DATE: 7/18/2012

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-K

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

SUB-REGIONAL & REGIONAL
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	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"	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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 GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L-																																																																																	
62+60	LT	192		30.0																																															1							1		1	1																				
	LT	192	195		26.9	23.2																															112																																												
62+75	LT	193		28.2																																															1			1		1																									
	LT	193	194		24.3	24.4					24						X	X																																																														
	LT	193	196		24.3	22.7																																	92																																										64	
63+78	LT	195		30.7																																															1	3.67						1				1											1								SEE DTL SHT 2-AV FOR TRANSITION SECTION
	LT	195	196		22.5	22.7																																	40																																												
	LT	195	199		22.0	20.9																																		204																																											
63+78	LT	196		28.5																																															1	0.76		1		1																									
	LT	196	197		23.2	23.3					20						X	X																																																														
63+78	LT	197		26.2																																															1									1	1																				
	LT	197	198		23.3	23.9					108						X	X																																																													
64+95	LT	198		26.4																																															1									1	1																				
65+90	LT	199		30.7																																															1	4.76						1				1											1								SEE DTL SHT 2-AV FOR TRANSITION SECTION
	LT	199	200		22.2	25.6																															52																																												
	LT	199	203		20.9	20.3																																		112																																									67	
66+25	LT	200		29.2																																															1			1			1																								
	LT	200	201		25.6	26.0			64								X	X																																																														
	LT	200	204		25.6	26.1																															60																																												
-Y14-																																																																																		
14+38	RT	201		29.3																																															1			1		1																									
	RT	201	202		26.0	26.2																															36																																												
13+97	RT	202		29.2																																															1			1		1																									
14+76	LT	204		29.5																																															1							1		1	1																				
	LT	204	205		26.1	26.2																															20																																												
14+51	LT	205		29.4																																															1							1		1	1																				
14+51	LT	208		29.1																																															1			1	1																										
	LT	208	209		25.8	25.9																															8																																												
	LT	208	207		25.8	25.7			48								X	X																																																													
14+38	LT	209		28.9																																															1			1			1																								
	LT	209	210		25.9	26.9																															84																																												
13+50	LT	210		29.9																																															1			1			1																								
-L-																																																																																		
67+54	LT	206		29.5																																															1			1			1																								
	LT	206	207		25.6	25.7			20								X	X																																																														
	LT	206	213		25.6	24.8																															132																																												
67+50	LT	207		27.9																																															1									1	1																				
68+35	RT	211		31.2																																															1			1		1																									
	RT	211	212		27.7	27.8																															28																																												
	RT	211	217		27.7	26.7																															124																																												
68+20	RT	212		31.0																																															1							1		1	1																				
68+90	LT	213		29.4																																															1			1			1																								
	LT	213	214		24.8	24.9				16							X	X																																																												57	
	LT	213	215		24.5	24.3																																56																																											
68+90	LT	214		27.4																																															1									1	1																				
69+50	LT	215		29.3																																															1			1			1																								
	LT	215	216		24.3	24.1				32							X	X																																																													
69+65	RT	217		29.7																																															1			1		1																									
	RT	217	223		26.7	26.0																															72																																												
70+03	RT	218			21.0																																														1																			1	1										SPECIAL TBJB W/ MH
SHEET TOTALS									132	48	152																										728	56	132	316											24	9.19		13	1	6	6	6		8	8	2								1	1		2							188	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/3/2012

CHECKED BY: JDE DATE: 7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-L

RD245795

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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
-L-																			
70+03	RT	218	219		20.5	19.2													
	RT	218	220		21.0	19.7													
69+75	LT	218A																	
69+81	LT	218B																	
70+18	LT	221		29.3															
	LT	221	224		26.3	25.2													
70+40	RT	222		29.9															
	RT	222	223		26.8	26.0													
70+40	RT	223		29.0															
	RT	223	231		26.0	25.0													
70+80	LT	224		29.6															
	LT	224	225		25.2	25.3			16								X	X	
	LT	224	227		25.2	24.1													
70+80	LT	225		27.8															
	LT	225	226		25.3	25.5			32								X	X	
71+18	LT	226		27.8															
71+92	LT	227		30.0															
	LT	227	228		24.1	23.7			40								X	X	
-Y15-																			
13+13	RT	228		29.6															
	RT	228	229		23.7	26.1													
	RT	228	232		23.7	23.4													
12+80	RT	229		29.1															
13+13	LT	232		29.3															
	LT	232	233		23.4	24.6													
	LT	232	234		23.4	22.9			44								X	X	
12+93	LT	233		29.1															
-L-																			
72+43	RT	230		28.9															
	RT	230	231		25.8	25.0													
72+43	RT	231		28.0															
	RT	231	238		25.0	19.8													
73+00	LT	234		27.8															
	LT	234	235		22.9	22.4			52								X	X	
73+55	LT	235		27.2															
	LT	235	236		22.2	21.4			72								X	X	
74+30	LT	236		27.1															
	LT	236	239		21.4	14.1			312								X	X	
75+40	RT	237		23.9															
	RT	237	238		20.7	19.8													
75+40	RT	238		22.8															
	RT	238	242		19.8	12.6													
77+39	LT	239		17.6															
	LT	239	240		14.1	6.3													
78+00	RT	241		17.2															
	RT	241	242		14.2	12.6													
78+00	RT	242		15.6															
	RT	242	245		12.3	8.6													
79+50	LT	243		13.9															
	LT	243	244		10.9	10.4													
SHEET TOTALS									568										

Station	From	To	C.S. Pipe 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. Pipe Class III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. Pipe Class IV 12"	15"	18"	24"	30"	36"	42"	48"	** " R.C. Pipe (Class V)	36" Ductile Iron Pipe (Sealed System)	15" Drainage Pipe Elbow	15" Side Drain Pipe	Special HW (See Detail 2-AF) Cu. Yards	Endwalls Std. 838.01, 838.11 or Std. 838.80 (Unless Noted Otherwise) Cu. Yards R.C.P.	C.S.P.
70+03	218	219																							68								
	218	220																				68											
69+75	218A																								16						8.4		
69+81	218B																					20											
70+18	221																																
	221	224																		56													
70+40	222																																
	222	223																		28													
70+40	223																																
	223	231																		196													
70+80	224																																
	224	225																															
	224	227																		108													
70+80	225																																
	225	226																															
71+18	226																																
71+92	227																																
	227	228																															
-Y15-																																	
13+13	228																																
	228	229																		28													
	228	232																		28													
12+80	229																																
13+13	232																																
	232	233																		16													
	232	234																															
12+93	233																																
-L-																																	
72+43	230																																
	230	231																		28													
72+43	231																																
	231	238																		288													
73+00	234																																
	234	235																															
73+55	235																																
	235	236																															
74+30	236																																
	236	239																															
75+40	237																																
	237	238																		28													
75+40	238																																
	238	242																		252													
77+39	239																																
	239	240																			84												
78+00	241																																
	241	242																		44													
78+00	242																																
	242	245																			188												
79+50	243																																
	243	244																		40													
SHEET TOTALS																				1,140	272	88			84						8		

Station	From	To	Quantities for Drainage Structures Per Each (0' thru 5.0')	*Total L.F. for Pay Quantity Shall Be Col. 'A' + (1.3 X Col. 'B') Lin. Ft. A 5.0' thru 10.0'	B 10.0' and Above	C.B. Std. 840.01 or Std. 840.02	Frame, Grates, and Hood Standard 840.03 Type of Grate E	F	G	Concrete Transitional Section Drop Inlet	Catch Basin	D.I. Std. 840.14 or Std. 840.15	D.I. Frame and Grate Std. 840.16	G.D.I. Type "A" Std. 840.17 or 840.26	G.D.I. Type "B" Std. 840.18 or 840.27	G.D.I. Type "D" Std. 840.19 or 840.28	SP CB (See Detail 2-AI)	Flowable Fill, C.Y.	Spec. JB (See Detail 2-AG)	G.D.I. (N.S.) Frame with Two Grates Std. 840.24	J.B. Std. 840.31 or 840.32	T.B.J.B. Std. 840.34 (See Detail 2-AE for Str. #218)	M.H. Frame & Cover Std. 840.54	T.B.D.I. Std. 840.35	G.D.I. (N.S.) Frame with Two Grates Std. 840.29	Open Throat Catch Basin (See Detail 2-AC)	Convert DI to JB w/ MH (See Detail 2-AK)	24" Welded Steel Pipe, 0.50" Thick, Grade B (Under RR)	SP CB (See Detail 2-AH)	Conc. & Brick Pipe Plug, C.Y. Std. 840.71	Conc. Collars Cl. "B" C.Y. Std. 840.72	Pipe Removal Lin. Ft.	Remarks
70+03	218	219																															
	218	220																															
69+75	218A																														0.8856		SPECIAL HW
69+81	218B																														0.5526		SPECIAL HW
70+18	221		1			1			1																								
	221	224																														99	
70+40	222		1							1		1	1																				
	222	223																															
70+40	223		1			1		1																									
	223	231																															
70+80	224		1			1			1																								
	224	225																															
	224	227																															
70+80	225		1									1	1																				
	225	226																														32	REMOVE EXIST. DI
71+18	226		1									1	1																				
71+92	227		1	0.92		1			1																								
	227	228																															
-Y15-																																	
13+13	228		1	0.89		1			1																								
	228	229																															
	228	232																															
12+80	229		1			1		1																									
13+13	232		1	0.87		1		1																									
	232	233																															
	232	234																															
12+93	233		1			1	1																										
-L-																																	
72+43	230		1							1		1	1																				
	230	231																															
72+43	231		1			1		1																									
	231	238																															
73+00	234		1									1	1																				
	234	235																														21	
73+55	235		1									1	1																				
	235	236																														20	
74+30	236		1	0.62								1	1																				
	236	239																															
75+40	237		1							1		1	1																				
	237	238																															
75+40	238		1			1		1																									
	238	242																															
77+39	239		1									1	1																				
	239	240																														61	
78+00	241		1			1		1			1																						
	241	242																														196	REMOVE EXIST. DI
78+00	242		1			1		1																									
	242	245																															
79+50	243		1			1		1			1																						
	243	244																														34	REMOVE EXIST. DI
SHEET TOTALS			22	3.30		13	1	8	4	3	2	9	9																		1.4382	463	

ABBREVIATIONS

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

COMPUTED BY:	JBJAVELLANA	DATE:	1/3/2012
CHECKED BY:	JDE	DATE:	7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-M

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

RD245795

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

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

STATION -L-	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	THICKNESS OR GAUGE	C.S. PIPE SIZE	THICKNESS OR GAUGE	R.C. PIPE CLASS III SIZE	R.C. PIPE CLASS IV SIZE	THICKNESS OR GAUGE	* * R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE (SEE DETAIL 2-AF)	SPECIAL HW CU. YARDS	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	ENDWALLS CU. YARDS C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES "TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
79+95	LT	244		13.4																			1			1		1			1																					
	LT	244	245		10.4	8.9																48																													
79+95	RT	245		11.9																			1			1		1																							
	RT	245	246		8.1	6.6																			100																									
81+00	RT	246		11.7																			1	0.08		1		1																							
	RT	246	247		6.6	6.5																			24																									
81+31	RT	247		11.8																			1	0.30		1	1																							
	RT	247	248		6.5	6.3	X																		24																									
81+60	RT	248		11.9																			1	1.03		1			1																						
	RT	248	249		5.8	5.6																			36																									
81+60	LT	249		11.8																			1	1.13		1			1		1																				
	LT	249	250		5.6	4.9																			88																									
	LT	249	251		6.9	8.6																48																													
82+15	LT	251		11.7																			1			1			1		1																				
	LT	251	252		8.6	9.0																84																											25	REMOVE EXIST. DI
83+05	LT	252		11.8																			1			1			1		1																				
	LT	252	253		9.0	9.2																44																											33	REMOVE EXIST. DI
82+85	RT	253		12.2																			1			1			1																						
84+33	LT	254		12.2																			1										1											1							2GI
	LT	254	255		9.2	8.4																			52																									
86+65	RT	258		13.4																			1			1			1																						
	RT	258	264		9.7	10.5																40																												
	RT	258	259		9.7	10.1																44																												
	RT	258	261		9.7	5.8		36							X	X																																		
86+70	LT	259		13.1																			1								1			1										1							2GI
	LT	259	260		10.1	10.2																16																												
	LT	260		13.0																			1								1			1										1							2GI
86+46	LT	262		12.8																			1											1										1							2GI
	LT	262	263		7.8	6.5		12							X	X					2																													ROD & LUG CONNETORS
87+11	RT	264		13.5																			1			1			1																						
	RT	264	265		10.5	11.1																136																												
88+50	RT	265		14.1																			1			1			1																						
		266																																																NOT USED
		267																																																NOT USED
-Y17-																																																		
14+02	RT	268		17.6																			1			1	1																							
	RT	268	269		14.6	14.0																4																												
14+13	RT	269		17.7																			1			1			1																						
	RT	269	270		14.0	15.1																40																												
14+43	LT	270		18.5																			1			1		1																						
	LT	270	271		15.1	15.4																28																												
14+76	LT	271		18.4																			1			1		1																						
14+02	LT	272		18.2																			1			1	1																							
	LT	272	273		14.2	15.6				28					X	X																																	32	
12+63	LT	276		19.6																			1	2.60										1										1							2GI
12+63	RT	277		18.1																			1	1.38		1	1																						73	
-L-																																																	
91+17	RT	274		19.3																			1			1			1																						
	RT	274	275		15.5	15.0																			72																								122	
	RT	274	279		15.5	17.0																			76																									
						SHEET TOTALS		48		28											2		24	6.52		19	4	5	10	2	4		1	4										5						285	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/4/2012

CHECKED BY: JDE DATE: 7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-N

RD245795

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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) 12"	15"	18"	24"	30"	36"	42"	48"	Do Not Use RCP	Do Not Use CSP	Do Not Use CAAP	Do Not Use HDPE
-L-																			
91+17	LT	275		19.8															
	LT	275	282		13.0	14.4													
92+00	RT	279		21.3															
	RT	279	280		17.0	17.2					32						X	X	
	RT	279	281		17.8	21.5													
93+50	RT	281		24.5															
	RT	281	284		21.5	26.5													
93+50	LT	282		24.5															
	LT	282	283		17.2	17.3			28								X	X	
	LT	282	285		14.4	21.9													
93+50	LT	283		20.0															
96+00	RT	284		29.5															
	RT	284	294		26.5	29.0													
96+00	LT	285		29.5															
	LT	285	286		24.7	24.8			20								X	X	
	LT	285	287		21.9	24.9													
96+00	LT	286		27.8															
97+05	LT	287		31.2															
	LT	287	288		24.9	25.2													
97+32	LT	288		32.1															
	LT	288	289		27.2	28.2													
	LT	288	297		25.7	26.7													
-Y18-																			
13+87	RT	289		32.1															
	RT	289	290		28.2	28.6													
13+50	RT	290		32.3															
	RT	290	291		28.6	29.6													
12+79	RT	291		33.4															
	RT	291	292		29.6	30.2													
11+48	RT	292		35.0															
	RT	292	293		31.0	32.7													
-L-																			
97+27	RT	294		32.0															
	RT	294	295		29.0	29.5													
97+93	RT	295		32.5															
	RT	295	296		29.5	31.5													
	RT	295	298		29.5	31.9													
98+20	RT	296		34.6															
98+33	LT	297		33.6															
	LT	297	300		26.7	28.0													
99+11	RT	298		34.9															
	RT	298	299		31.9	33.1													
101+00	RT	299		36.1															
101+00	LT	300		35.8															
	LT	300	301		28.0	28.5													
102+10	LT	301		36.4															
	LT	301	302		30.8	31.0			20								X	X	
	LT	301	303		28.5	28.6								28			X	X	
102+10	LT	302		35.0															
102+37	LT	303		36.0															
SHEET TOTALS									68		32			28					

Station	Location	From	To	C.S. Pipe 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. Pipe Class III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. Pipe Class IV 12"	15"	18"	24"	30"	36"	42"	48"
91+17	LT	275																									
	LT	275	282																								228
92+00	RT	279																									
	RT	279	280																								
	RT	279	281																		144						
93+50	RT	281																									
	RT	281	284																		244						
93+50	LT	282																									
	LT	282	283																								
	LT	282	285																								244
93+50	LT	283																									
96+00	RT	284																									
	RT	284	294																		120						
96+00	LT	285																									
	LT	285	286																								
	LT	285	287																								100
96+00	LT	286																									
97+05	LT	287																									
	LT	287	288																								20
97+32	LT	288																									
	LT	288	289																				24				
	LT	288	297																								96
-Y18-																											
13+87	RT	289																									
	RT	289	290																				32				
13+50	RT	290																									
	RT	290	291																				64				
12+79	RT	291																									
	RT	291	292																				124				
11+48	RT	292																									
	RT	292	293																				56				
-L-																											
97+27	RT	294																									
	RT	294	295																		68						
97+93	RT	295																									
	RT	295	296																		64						
	RT	295	298																		116						
98+20	RT	296																									
98+33	LT	297																									
	LT	297	300																							264	
99+11	RT	298																									
	RT	298	299																		184						
101+00	RT	299																									
101+00	LT	300																									
	LT	300	301																							104	
102+10	LT	301																									
	LT	301	302																								
	LT	301	303																								
102+10	LT	302																									
102+37	LT	303																									
SHEET TOTALS																					940		300			368	688

Station	Location	From	To	** " R.C. Pipe (Class V)	36" Ductile Iron Pipe (Sealed System)	15" Drainage Pipe Elbow	15" Side Drain Pipe	Special HW Cu. Yards (See Detail 2-AF)	Endwalls Std. 838.01, 838.11 or Std. 838.80 (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
91+17	LT	275									1	1.81		1		1			
	LT	275	282																
92+00	RT	279									1			1			1		
	RT	279	280																
	RT	279	281																
93+50	RT	281									1			1			1		
	RT	281	284																
93+50	LT	282									1	5.00	0.10	1		1			
	LT	282	283																
	LT	282	285																
93+50	LT	283									1								
96+00	RT	284									1			1			1		
	RT	284	294																
96+00	LT	285									1	2.52		1		1			
	LT	285	286																
	LT	285	287																
96+00	LT	286									1			1		1			
97+05	LT	287									1	1.30		1		1			
	LT	287	288																
97+32	LT	288									1	1.90							
	LT	288	289																
	LT	288	297																
-Y18-																			
13+87	RT	289									1			1	1				
	RT	289	290																
13+50	RT	290									1			1		1			
	RT	290	291																
12+79	RT	291									1			1		1			
	RT	291	292																
11+48	RT	292									1								
	RT	292	293																
-L-																			
97+27	RT	294									1			1			1		
	RT	294	295																
97+93	RT	295									1			1			1		
	RT	295	296																
	RT	295	298																
98+20	RT	296									1							1	
98+33	LT	297									1	1.95		1		1			
	LT	297	300																
99+11	RT	298									1			1			1		
	RT	298	299																
101+00	RT	299									1			1			1		
101+00	LT	300									1	2.81		1		1			
	LT	300	301																
102+10	LT	301									1	2.89		1		1			
	LT	301	302																
	LT	301	303																
102+10	LT	302									1								
102+37	LT	303									1	2.37							
SHEET TOTALS											24	22.55	0.10	18	1	10	7	1	

Station	Location	From	To	D.I. Std. 840.14 or Std. 840.15	D.I. Frame and Grate Std. 840.16	G.D.I. Type "A" Std. 840.17 or 840.26	G.D.I. Type "B" Std. 840.18 or 840.27	G.D.I. Type "D" Std. 840.19 or 840.28	SP CB (See Detail 2-AI)	Flowable Fill, C.Y.	Spec. JB (See Detail 2-AG)	G.D.I. (N.S.) Frame with Two Grates Std. 840.24	J.B. Std. 840.31 or 840.32	T.B.J.B. Std. 840.34 (See Detail 2-AE for Str. #218)	M.H. Frame & Cover Std. 840.54	T.B.D.I. Std. 840.35	G.D.I. (N.S.) Frame with Two Grates Std. 840.29	Open Throat Catch Basin (See Detail 2-AC)	Convert DI to JB w/ MH (See Detail 2-AK)	24" Welded Steel Pipe, 0.50" Thick, Grade B (Under RR)	SP CB (See Detail 2-AH)	Conc. & Brick Pipe Plug, C.Y. Std. 840.71	Conc. Collars Cl. "B" C.Y. Std. 840.72	Pipe Removal Lin. Ft.	Remarks
91+17	LT	275																							
	LT	275	282																					451	
92+00	RT	279																							
	RT	279	280																						
	RT	279	281																						
93+50	RT	281																							
	RT	281	284																						
93+50	LT	282																							
	LT	282	283																						
	LT	282	285																						
93+50	LT	283				1											1								2GI
96+00	RT	284																							
	RT	284	294																						
96+00	LT	285																							
	LT	285	286																						
	LT	285	287																						
96+00	LT	286																							
97+05	LT	287																							
	LT	287	288																					39	REMOVE EXIST. DI
97+32	LT	288												1	1										
	LT	288	289																						
	LT	288	297																					110	REMOVE EXIST. MH, JB AND DI
-Y18-																									
13+87	RT	289																							
	RT	289	290																						
13+50	RT	290																							
	RT	290	291																						REMOVE EXIST. DI
12+79	RT	291																							
	RT	291	292																						REMOVE 2 EXIST. DI'S
11+48	RT	292				1											1								2GI
	RT	292	293																						
-L-																									
97+27	RT	294																							
	RT	294	295																						
97+93	RT	295																							
	RT	295	296																						
	RT	295	298																						
98+20	RT	296		1	1																				
98+33	LT	297																							
	LT	297	300																					239	REMOVE EXIST. DI
99+11	RT	298																							
	RT	298	299																						
101+00	RT	299																							
101+00	LT	300																							
	LT	300	301																					119	REMOVE EXIST. DI
102+10	LT	301																							
	LT	301	302																						
	LT	301	303																						
102+10	LT	302					1										1								2GI
102+37	LT	303											1		1										
SHEET TOTALS				1	1	2	1						1	1	2		3							958	

ABBREVIATIONS

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

COMPUTED BY:	JBJAVELLANA	DATE:	1/4/2012
CHECKED BY:	JDE	DATE:	7/18/2012

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-O

R0245795

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

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

STATION -L-	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
								12"	15"	18"	24"	30"	36"	42"	48"				
THICKNESS OR GAUGE																			
102+37	LT	303	304		30.1	30.2					16						X	X	
102+56	LT	304		36.1															
	LT	304	305		30.2	30.6													
103+27	LT	305		36.5															
	LT	305	310		30.8	31.9													
		306																	
		307																	
103+40	RT	308		36.8															
	RT	308	309		33.7	33.3			20								X	X	
	RT	308	313		33.7	34.4													
104+45	LT	310		37.0															
	LT	310	314		31.9	32.9													
		311																	
105+61	LT	312		38.3															
	LT	312	313		35.1	34.4													
105+61	RT	313		37.4															
106+50	LT	314		37.4															
	LT	314	315		32.9	34.0													
108+62	LT	315		37.0															
	LT	315	316		34.0	34.7			12								X	X	
108+62	LT	316		37.9															
108+50	LT	317		37.9															
	LT	317	318		34.7	34.6													
108+90	RT	318		36.3															
	RT	318	319		34.6	33.9													
108+90	RT	319		36.9															
	RT	319	320		34.1	33.9			16								X	X	
	RT	319	323		33.9	32.2													
108+90	RT	320		37.8															
111+20	LT	321		35.2															
	LT	321	322		32.2	33.2			12								X	X	
	LT	321	325		32.2	29.5													
111+20	LT	322		35.4															
111+50	RT	323		35.2															
	RT	323	324		32.2	29.8													
114+00	RT	324		32.8															
	RT	324	327		29.8	28.6													
114+00	LT	325		32.5															
	LT	325	326		29.2	28.7	X												
115+03	LT	326		32.0															
	LT	326	328		28.5	27.7													
115+68	RT	327		31.6															
	RT	327	329		28.1	27.7													
116+00	LT	328		31.4															
	LT	328	331		27.7	27.4													
116+68	RT	329		30.9															
	RT	329	330		27.7	27.5													
117+00	RT	330		30.9															
	RT	330	332		27.5	27.3													
117+00	LT	331		31.2															
						SHEET TOTALS			60		16								

STATION -L-	C.S. PIPE SIZE	12"	15"	18"	24"	30"	36"	42"	48"
	THICKNESS OR GAUGE	.064	.064	.064	.064	.079	.079	.109	.109
102+37									
102+56									
					64				
103+27									
			112						
103+40									
			216						
104+45									
			200						
105+61									
			40						
105+61									
106+50									
			208						
108+62									
108+62									
108+50									
			40						
108+90									
			28						
108+90									
			256						
108+90									
111+20									
			276						
111+20									
111+50									
			244						
114+00									
			160						
114+00									
				100					
115+03									
					92				
115+68									
				100					
116+00									
					96				
116+68									
				24					
117+00									
				52					
117+00									
	SHEET TOTALS		1,780	340	188				

STATION -L-	R.C. PIPE CLASS III SIZE	12"	15"	18"	24"	30"	36"	42"	48"
102+37									
102+56									
103+27									
103+40									
104+45									
105+61									
105+61									
106+50									
108+62									
108+62									
108+50									
108+90									
108+90									
108+90									
111+20									
111+20									
111+50									
114+00									
114+00									
115+03									
115+68									
116+00									
116+68									
117+00									
117+00									
	SHEET TOTALS								

STATION -L-	R.C. PIPE CLASS IV SIZE	12"	15"	18"	24"	30"	36"	42"	48"	* " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	ENDWALLS CU. YARDS C.S.P.
	THICKNESS OR GAUGE															
102+37																
102+56																
				64												
103+27																
			112													
103+40																
			216													
104+45																
			200													
105+61																
			40													
105+61																
106+50																
			208													
108+62																
108+62																
108+50																
			40													
108+90																
			28													
108+90																
			256													
108+90																
111+20																
			276													
111+20																
111+50																
			244													
114+00																
			160													
114+00																
				100												
115+03																
					92											
115+68																
				100												
116+00																
					96											
116+68																
				24												
117+00																
				52												
117+00																
	SHEET TOTALS		1,780	340	188											

STATION -L-	QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" * (1.3 X COL. "B") PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
102+37																														
102+56	1	0.98		1		1																								
																														REMOVE EXIST. DI
103+27	1	0.93		1		1																								
																														NOT USED
																														NOT USED
103+40	1			1			1																							
104+45	1	0.09		1		1																								
																														NOT USED
105+61	1							1		1	1																			
105+61	1			1			1																							
106+50	1			1			1																							
108+62	1			1			1																							
108+62	1									1	1																			
108+50	1							1		1	1																			
108+90	1							1		1	1																			
108+90	1			1		1																								
108+90	1									1	1																			
111+20	1			1			1																							
																													34	
111+20	1									1	1																			
111+50	1			1		1																								
114+00	1			1		1																								
114+00	1			1			1																							
115+03	1			1			1																							
115+68	1			1		1																								
																													49	
116+00	1			1			1																							
116+68	1			1		1																								
117+00	1			1		1																								
117+00	1			1			1																							
	24	2.00		18		9	9	3		6	6																		83	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/4/2012

CHECKED BY: JDE DATE: 7/18/2012

RD245795

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-P

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

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

ABBREVIATIONS

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

STATION (SIZE / THICKNESS OR GAUGE) -L-	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
117+00	LT	331	333		27.4	27.2													
117+56	RT	332		30.8															
	RT	332	336		26.8	26.6													
117+56	LT	333		31.1															
	LT	333	335		27.2	27.1													
		334																	
118+00	LT	335		31.1															
	LT	335	336		27.1	26.6													
118+00	RT	336		30.8															
	RT	336	337		26.1	26.0						28					X	X	
118+91	LT	338		32.2															
	LT	338	339		23.0									28			X	X	
	LT	338	340		23.0								28				X	X	
118+91	RT	341		32.4															
	RT	341	343		EX	22.6													
		342																	
119+40	LT	344		31.6															
	LT	344	345		24.2	24.1					48						X	X	
	LT	344	348		24.2	24.5													
119+50	RT	346		31.3															
	RT	346	347		25.1	24.9				36							X	X	
	RT	346	351		25.1	26.0													
120+04	LT	348		31.9															
	LT	348	349		24.5	25.0													
121+04	LT	349		32.1															
	LT	349	350		25.8	28.0			72								X	X	
	LT	349	355		25.0	25.7													
121+52	LT	350		31.0															
121+18	RT	351		32.1															
	RT	351	353		26.0	26.5													
122+33	RT	352		33.8															
	RT	352	353		28.8	26.8													
122+33	RT	353		32.6															
	RT	353	354		26.5	27.2			32								X	X	
	RT	353	359		26.8	27.3													
122+26	RT	354		30.6															
122+44	LT	355		32.6															
	LT	355	356		26.5	26.7			20								X	X	
	LT	355	357		26.2	26.6													
122+44	LT	356		31.7															
123+10	LT	357		32.7															
	LT	357	358		26.8	26.9			20								X	X	
	LT	357	363		26.6	27.5													
123+10	LT	358		31.5															
123+33	RT	359		33.0															
	RT	359	360		27.3	27.8			16								X	X	
	RT	359	361		27.3	27.6													
123+25	RT	360		30.8															
124+03	RT	361		32.9															
	RT	361	362		27.6	27.9			16								X	X	
SHEET TOTALS									176	36	48	28	28	28					

STATION -L-	LOC.	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
117+00	LT	331	333																				52				
117+56	RT	332																									
	RT	332	336																				40				
117+56	LT	333																									
	LT	333	335																				40				
		334																									
118+00	LT	335																									
	LT	335	336																				84				
118+00	RT	336																									
	RT	336	337																								
118+91	LT	338																									
	LT	338	339																								
	LT	338	340																								
118+91	RT	341																									
	RT	341	343																								80
		342																									
119+40	LT	344																									
	LT	344	345																								
	LT	344	348																				56				
119+50	RT	346																									
	RT	346	347																								
	RT	346	351																			164					
120+04	LT	348																									
	LT	348	349																				96				
121+04	LT	349																									
	LT	349	350																								
	LT	349	355																				136				
121+52	LT	350																									
121+18	RT	351																									
	RT	351	353																			108					
122+33	RT	352																									
	RT	352	353																		36						
122+33	RT	353																									
	RT	353	354																								
	RT	353	359																		96						
122+26	RT	354																									
122+44	LT	355																									
	LT	355	356																								
	LT	355	357																			60					
122+44	LT	356																									
123+10	LT	357																									
	LT	357	358																								
	LT	357	363																			180					
123+10	LT	358																									
123+33	RT	359																									
	RT	359	360																								
	RT	359	361																		64						
123+25	RT	360																									
124+03	RT	361																									
	RT	361	362																								
SHEET TOTALS																					196	512	504				80

STATION -L-	LOC.	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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
117+00	LT	331	333																
117+56	RT	332									1			1	1				
	RT	332	336																
117+56	LT	333									1			1	1				
	LT	333	335																
		334																	
118+00	LT	335									1			1		1			
	LT	335	336																
118+00	RT	336									1			1			1		
	RT	336	337																
118+91	LT	338									1	4.26							
	LT	338	339						4.50										
	LT	338	340						3.40										
118+91	RT	341									1								
	RT	341	343																
		342																	
119+40	LT	344									1	2.33		1		1			
	LT	344	345																
	LT	344	348																
119+50	RT	346									1	1.19		1			1		
	RT	346	347																
	RT	346	351																
120+04	LT	348									1	2.33		1		1			
	LT	348	349																
121+04	LT	349									1	2.02		1		1			
	LT	349	350																
	LT	349	355																
121+52	LT	350									1			1			1		
121+18	RT	351									1	1.18		1			1		
	RT	351	353																
122+33	RT	352									1							1	
	RT	352	353																
122+33	RT	353									1	1.05		1			1		
	RT	353	354																
	RT	353	359																
122+26	RT	354									1			1	1				
122+44	LT	355									1	1.84		1		1			
	LT	355	356																
	LT	355	357																
122+44	LT	356									1								
123+10	LT	357									1	1.11		1		1			
	LT	357	358																
	LT	357	363																
123+10	LT	358									1								
123+33	RT	359									1	0.72		1			1		
	RT	359	360																
	RT	359	361																
123+25	RT	360									1			1	1				
124+03	RT	361									1	0.33		1		1			
	RT	361	362																
SHEET TOTALS									7.90		22	18.36		17	4	7	6	1	

STATION -L-	LOC.	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
117+00	LT	331	333																						
117+56	RT	332																							
	RT	332	336																						
117+56	LT	333																							
	LT	333	335																						
		334																							NOT USED
118+00	LT	335																							
	LT	335	336																						
118+00	RT	336																							
	RT	336	337																						
118+91	LT	338									1				1										SPECIAL JB W/ MH
	LT	338	339																						
	LT	338	340																						
118+91	RT	341												1	1										TBJB W/ MH
	RT	341	343																					42	
		342																							NOT USED
119+40	LT	344																							
	LT	344	345																						
	LT	344	348																						
119+50	RT	346																							
	RT	346	347																						
	RT	346	351																						
120+04	LT	348																							
	LT	348	349																						
121+04	LT	349																							
	LT	349	350																						
	LT	349	355																					137	
121+52	LT	350																							
121+18	RT	351																							
	RT	351	353																					80	
122+33	RT	352		1	1																				
	RT	352	353																						
122+33	RT	353																							
	RT	353	354																						
	RT	353	359																						
122+26	RT	354																							
122+44	LT	355																							
	LT	355	356																						
	LT	355	357																						
122+44	LT	356		1	1																				
123+10	LT	357																							
	LT	357	358																						
	LT	357	363																						
123+10	LT	358		1	1																				
123+33	RT	359																							
	RT	359	360																						
	RT	359	361																						
123+25	RT	360																							
124+03	RT	361																							
	RT	361	362																						
SHEET TOTALS				3	3						1			1	2									259	

RD245795

COMPUTED BY:	JBJAVELLANA	DATE:	1/4/2012
CHECKED BY:	JDE	DATE:	7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-Q

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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
-L-																			
124+03	RT	361	365		27.6	27.9													
124+03	RT	362		32.9															
124+97	LT	363		32.4															
	LT	363	364		27.7	27.8			20								X	X	
	LT	363	367		27.7	28.2													
124+97	LT	364		31.9															
124+97	RT	365		32.9															
	RT	365	366		28.1	28.2			16								X	X	
	RT	365	368		28.1	29.0													
124+97	RT	366		30.5															
126+00	LT	367		31.9															
	LT	367	369		28.2	28.6													
126+36	RT	368		32.0															
126+81	LT	369		31.6															
126+87	RT	370		31.6															
	RT	370	371		28.2	28.3			12								X	X	
	RT	370	372		28.2	27.9													
126+87	RT	371		31.3															
127+46	RT	372		31.1															
	RT	372	373		27.9	27.4			48								X	X	
-Y22-																			
10+76	RT	373		30.4															
	RT	373	374		27.2	26.8													
10+77	LT	374		30.1															
	LT	374	375		27.1	28.1			32								X	X	
11+09	LT	375		31.1															
-L-																			
128+80	RT	376		29.9															
	RT	376	374		26.6	26.8				48							X	X	
	RT	376	377		26.8	28.2			16								X	X	
	RT	376	378		26.6	25.5													
128+89	RT	377		31.2															
130+25	RT	378		28.8															
	RT	378	379		25.5	24.3													
130+64	RT	379		28.7															
	RT	379	385		23.8	23.7					12						X	X	
	RT	379	380		23.8	24.2													
130+64	LT	380		29.7															
	LT	380	381		24.9	26.6													
	LT	380	382		24.2	24.3													
130+25	LT	381		29.7															
130+64	LT	382		28.7															
	LT	382	383		24.8	25.0													
130+25	LT	383		28.8															
	LT	383	384		25.3	25.4			20								X	X	
130+25	LT	384		27.6															
130+68	RT	385		28.9															
	RT	385	386		23.7	23.4													
130+96	RT	386	387		23.4	EX													
	RT	386	388		23.4	EX													
	RT	386	389		23.4	23.7													
							SHEET TOTALS		164	48	12								

STATION	FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
124+03	361	365																		88						
124+03	362																									
124+97	363																									
	363	364																								
	363	367																		96						
124+97	364																									
124+97	365																									
	365	366																								
	365	368																		132						
124+97	366																									
126+00	367																									
	367	369																		76						
126+36	368																									
126+81	369																									
126+87	370																									
	370	371																								
	370	372																		52						
126+87	371																									
127+46	372																									
	372	373																								
-Y22-																										
10+76	373																									
	373	374																			64					
10+77	374																									
	374	375																								
11+09	375																									
-L-																										
128+80	376																									
	376	374																								
	376	377																								
	376	378																			140					
128+89	377																									
130+25	378																									
	378	379																			32					
130+64	379																									
	379	385																								
	379	380																				44				
130+64	380																									
	380	381																		32						
	380	382																				28				
130+25	381																									
130+64	382																									
	382	383																			32					
130+25	383																									
	383	384																								
130+25	384																									
130+68	385																									
	385	386																				24				
130+96	386	387																						56		
	386	388																						56		
	386	389																				12				
SHEET TOTALS																				476	268	108		112		

STATION	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW (SEE DETAIL 2-AF) CU. YARDS	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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 GRATE STD. 840.16
124+03	361	365																		
124+03	362									1			1	1						
124+97	363									1			1			1				
	363	364																		
	363	367																		
124+97	364									1									1	1
124+97	365									1			1		1					
	365	366																		
	365	368																		
124+97	366									1									1	1
126+00	367									1			1			1				
	367	369																		
126+36	368									1			1		1					
126+81	369									1			1			1				
126+87	370									1			1		1					
	370	371																		
	370	372																		
126+87	371									1			1		1					
127+46	372									1			1		1					
	372	373																		
-Y22-																				
10+76	373									1			1	1						
	373	374																		
10+77	374									1			1	1						
	374	375																		
11+09	375									1			1	1						
-L-																				
128+80	376									1			1		1					
	376	374																		
	376	377																		
	376	378																		
128+89	377									1			1	1						
130+25	378									1			1		1					
	378	379																		
130+64	379									1			1	1						
	379	385																		
	379	380																		
130+64	380									1	0.50						1		1	1
	380	381																		
	380	382																		
130+25	381									1							1		1	1
130+64	382									1			1	1						
	382	383																		
130+25	383									1			1			1				
	383	384																		
130+25	384									1									1	1
130+68	385									1	0.28		1			1				
	385	386																		
130+96	386	387																		
	386	388																		
	386	389																		
SHEET TOTALS										24	0.78		19	7	7	5	2		5	5

STATION	FROM	TO	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	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
124+03	361	365																				
124+03	362																					
124+97	363																					
	363	364																				
	363	367																				
124+97	364																					
124+97	365																					
	365	366																				
	365	368																				
124+97	366																					
126+00	367																					
	367	369																				
126+36	368																					
126+81	369																					
126+87	370																					
	370	371																				
	370	372																				
126+87	371																					
127+46	372																					
	372	373																				
-Y22-																						
10+76	373																					
	373	374																			113	REMOVE 2 EXIST. DI'S
10+77	374																					
	374	375																				
11+09	375																					
-L-																						
128+80	376																					
	376	374																				
	376	377																				
	376	378																				
128+89	377																					
130+25	378																					
	378	379																				
130+64	379																					
	379	385																				
	379	380																				
130+64	380																					
	380	381																				
	380	382																				
130+25	381																					
130+64	382																					
	382	383																				
130+25	383																					
	383	384																				
130+25	384																					
130+68	385																					
	385	386																				
130+96	386	387																		0.7640		
	386	388																		0.7640		
	386	389																				
SHEET TOTALS																				1.5280	113	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/4/2012

CHECKED BY: JDE DATE: 7/18/2012

RD245795

PROJECT NO.	SHEET NO.
U-3810	3-R

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

Size / Thickness or Gauge / -L-

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) 12"	15"	18"	24"	30"	36"	42"	48"	Do Not Use RCP	Do Not Use CSP	Do Not Use CAAP	Do Not Use HDPE
131+10	RT	389		27.5															
	RT	389	391		23.7	23.9					36						X	X	
131+45	RT	391		29.0															
	RT	391	392		23.9	24.3													
	RT	391	396		23.9	24.2													
131+67	RT	392		30.1															
	RT	392	393		24.3	24.6													
131+75	LT	393		29.0															
	LT	393	394		25.3	25.7			40								X	X	
	LT	393	397		25.3	26.9													
131+93	LT	394		29.5															
	LT	394	395		25.7	25.9													
132+34	LT	395		28.9															
131+98	RT	396		29.5															
	RT	396	399		24.2	24.7													
132+83	LT	397		29.9															
	LT	397	398		26.9	27.3			24								X	X	
133+00	LT	398		29.5															
132+97	RT	399		30.4															
	RT	399	400		24.7	24.8			16								X	X	
	RT	399	401		24.7	28.0													
132+94	RT	400		27.8															
133+88	RT	401		31.0															
134+50	LT	402		31.4															
	LT	402	397		27.9	26.9													
	LT	402	403		27.9	28.0			24								X	X	
134+50	LT	403		30.2															
136+00	RT	404		32.0															
	RT	404	405		29.0	30.1													
	RT	404	406		29.0	28.6													
136+00	LT	405		33.1															
136+78	RT	406		32.0															
	RT	406	407		28.6	28.1													
137+80	RT	407		31.2															
	RT	407	408		28.1	24.6													
138+75	RT	408		31.2															
	RT	408	409		23.4	23.2						32					X	X	
	RT	408	410		23.4	23.6													
	RT	408	417		24.4	25.9													
138+70	LT	410		33.6															
	LT	410	411		23.6	23.9													
138+70	LT	411		28.8															
	LT	411	412		23.9	24.2					48						X	X	
	LT	411	414		24.4	26.3				120							X	X	
138+17	LT	412		28.0															
	LT	412	413		24.7	27.4				20							X	X	
139+90	LT	414		28.8															
	LT	414	415		26.3	26.7				56							X	X	
140+47	LT	415		29.9															
SHEET TOTALS									104	196	84	32							

Station	From	To	C.S. Pipe 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. Pipe Class III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. Pipe Class IV 12"	15"	18"	24"	30"	36"	42"	48"
131+10	389																									
	389	391																								
131+45	391																									
	391	392																				36				
	391	396																		48						
131+67	392																									
	392	393																				56				
131+75	393																									
	393	394																								
	393	397																		104						
131+93	394																									
	394	395																		44						
132+34	395																									
131+98	396																									
	396	399																		92						
132+83	397																									
	397	398																								
133+00	398																									
132+97	399																									
	399	400																								
	399	401																		84						
132+94	400																									
133+88	401																									
134+50	402																									
	402	397																		160						
	402	403																								
134+50	403																									
136+00	404																									
	404	405																		44						
	404	406																		72						
136+00	405																									
136+78	406																									
	406	407																		96						
137+80	407																									
	407	408																		88						
138+75	408																									
	408	409																								
	408	410																				56				
	408	417																			216					
138+70	410																									
	410	411																				56				
138+70	411																									
	411	412																								
	411	414																								
138+17	412																									
	412	413																								
139+90	414																									
	414	415																								
140+47	415																									
SHEET TOTALS																				832	216	204				

Station	From	To	** " R.C. Pipe (Class V)	36" Ductile Iron Pipe (Sealed System)	15" Drainage Pipe Elbow	15" Side Drain Pipe	Special HW (See Detail 2-AF) Cu. Yards	Endwalls Std. 838.01, 838.11 or Std. 838.80 (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
131+10	389									1			1		1			
	389	391																
131+45	391									1	0.07		1			1		
	391	392																
	391	396																
131+67	392									1	0.83						1	
	392	393																
131+75	393									1			1		1			
	393	394																
	393	397																
131+93	394									1			1			1		
	394	395																
132+34	395									1			1		1			
131+98	396									1	0.30		1			1		
	396	399																
132+83	397									1			1		1			
	397	398																
133+00	398									1								
132+97	399									1	0.65		1			1		
	399	400																
	399	401																
132+94	400									1			1	1				
133+88	401									1			1			1		
134+50	402									1			1		1			
	402	397																
	402	403																
134+50	403									1								
136+00	404									1			1			1		
	404	405																
	404	406																
136+00	405									1			1			1		1
136+78	406									1			1			1		
	406	407																
137+80	407									1			1			1		
	407	408																
138+75	408									1	2.79		1		1			
	408	409																
	408	410																
	408	417																
138+70	410									1	4.94		1		1			1
	410	411																
138+70	411									1								
	411	412																
	411	414																
138+17	412									1								
	412	413																
139+90	414									1								
	414	415																
140+47	415									1								
SHEET TOTALS										24	9.58		17	1	7	9	1	2

Station	From	To	D.I. Std. 840.14 or Std. 840.15	D.I. Frame and Grate Std. 840.16	G.D.I. Type "A" Std. 840.17 or 840.26	G.D.I. Type "B" Std. 840.18 or 840.27	G.D.I. Type "D" Std. 840.19 or 840.28	SP CB (See Detail 2-AI)	Flowable Fill, C.Y.	Spec. JB (See Detail 2-AG)	G.D.I. (N.S.) Frame with Two Grates Std. 840.24	J.B. Std. 840.31 or 840.32	T.B.J.B. Std. 840.34 (See Detail 2-AE for Str. #218)	M.H. Frame & Cover Std. 840.54	T.B.D.I. Std. 840.35	G.D.I. (N.S.) Frame with Two Grates Std. 840.29	Open Throat Catch Basin (See Detail 2-AC)	Convert DI to JB w/ MH (See Detail 2-AK)	24" Welded Steel Pipe, 0.50" Thick, Grade B (Under RR)	SP CB (See Detail 2-AH)	Conc. & Brick Pipe Plug, C.Y. Std. 840.71	Conc. Collars Cl. "B" C.Y. Std. 840.72	Pipe Removal Lin. Ft.	Remarks
131+10	389																							
	389	391																						
131+45	391																							
	391	392																						
	391	396																						
131+67	392		1	1																				
	392	393																						
131+75	393																							
	393	394																						
	393	397																					175	
131+93	394																							
	394	395																						
132+34	395																							
131+98	396																							
	396	399																						
132+83	397																							
	397	398																						
133+00	398		1	1																				
132+97	399																							
	399	400																						
	399	401																						
132+94	400																							
133+88	401																						246	REMOVE 2 EXIST. DI'S
134+50	402																							
	402	397																						
	402	403																						
134+50	403		1	1																				
136+00	404																							
	404	405																						
	404	406																						
136+00	405																							
136+78	406																							
	406	407																					222	REMOVE EXIST. DI
137+80	407																							
	407	408																						
138+75	408																							
	408	409																						
	408	410																						
	408	417																					202	REMOVE EXIST. DI
138+70	410																							
	410	411																						
138+70	411		1	1																				
	411	412																					215	REMOVE 3 EXIST. DI'S
	411	414																					167	
138+17	412		1	1																				
	412	413																						
139+90	414		1	1																				
	414	415																					118	REMOVE EXIST. DI
140+47	415		1	1																				
SHEET TOTALS			7	7																			1,345	

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

RD245795

COMPUTED BY: JBJAVELLANA DATE: 1/4/2012

CHECKED BY: JDE DATE: 7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-S

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

STATION (SIZE / THICKNESS OR GAUGE) -L-	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
140+47	LT	415	418		26.7	26.9				56							X	X	
141+00	LT	416		33.0															
	LT	416	417		30.0	26.2													
141+00	RT	417		30.5															
	RT	417	422		26.2	26.8													
141+05	LT	418		29.9															
	LT	418	419		27.1	27.6			84								X	X	
141+90	LT	419		30.0															
	LT	419	420		27.6	27.7			28								X	X	
142+22	LT	420		30.0															
142+28	LT	421		32.3															
	LT	421	422		28.1	26.8													
	LT	421	423		28.1	28.7													
142+28	RT	422		29.8															
143+40	LT	423		31.9															
143+00	LT	424		29.4															
	LT	424	425		27.2	26.3			164								X	X	
144+65	LT	425		28.3															
	LT	425	426		25.2	24.7													
145+25	LT	426		27.4															
146+75	LT	428		27.1															
	LT	428	427		23.2	23.0					8						X	X	
	LT	428	429		23.2	23.5													
146+83	RT	429		29.6															
	RT	429	430		23.5	23.6													
146+83	RT	430		28.7															
	RT	430	431		23.6	23.7													
147+23	RT	431		28.5															
	RT	431	432		23.7	23.8			24								X	X	
147+23	RT	432		26.0															
146+93	LT	433		26.5															
	LT	433	434		24.3	24.2			20								X	X	
148+61	RT	435		28.8															
	RT	435	436		25.6	22.9													
148+76	RT	436		27.8															
	RT	436	437		22.9	24.2			16								X	X	
	RT	436	440		22.1	21.8													
148+76	RT	437		26.4															
149+08	LT	438		27.7															
	LT	438	439		23.7	23.8			20								X	X	
	LT	438	441		23.7	23.4													
149+16	LT	439		26.1															
149+33	RT	440		27.7															
	RT	440	444		21.8	20.6													
149+68	LT	441		27.7															
	LT	441	442		23.4	24.0			16								X	X	
	LT	441	443		23.4	22.5													
149+68	LT	442		26.2															
150+60	LT	443		28.0															
	LT	443	444		21.7	20.6													
						SHEET TOTALS			372	56	8								

FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
415	418																								
416																									
416	417																		56						
417																									
417	422																		120						
418																									
418	419																								
419																									
419	420																								
420																									
421																									
421	422																		56						
421	423																		108						
422																									
423																									
424																									
424	425																								
425																									
425	426																		56						
426																									
428																									
428	427																								
428	429																				92				
429																									
429	430																			28					
430																									
430	431																		36						
431																									
431	432																								
432																									
433																									
433	434																								
435																									
435	436																		32						
436																									
436	437																								
436	440																				52				
437																									
438																									
438	439																								
438	441																		56						
439																									
440																									
440	444																				112				
441																									
441	442																								
441	443																		88						
442																									
443																									
443	444																				72				
SHEET TOTALS																			608	28	328				

FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01, 838.11 OR STD. 838.80 (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 GRATE STD. 840.16
415	418																		
416									1			1		1			1		
416	417																		
417									1			1		1					
417	422																		
418									1									1	1
418	419																		
419									1									1	1
419	420																		
420									1									1	1
421									1			1		1			1		
421	422																		
421	423																		
422									1			1		1					
423									1							1		1	1
424									1									1	1
424	425																		
425									1									1	1
425	426																		
426									1									1	1
428									1									1	1
428	427																		
428	429																		
429									1	1.13						1		1	1
429	430																		
430									1	0.11		1		1					
430	431																		
431									1			1		1					
431	432																		
432									1									1	1
433									1			1			1				
433	434																		
435									1							1		1	1
435	436																		
436									1	0.65		1		1					
436	437																		
436	440																		
437									1									1	1
438									1			1			1				
438	439																		
438	441																		
439									1									1	1
440									1	0.84		1	1						
440	444																		
441									1			1		1					
441	442																		
441	443																		
442									1									1	1
443									1	1.26		1		1					
443	444																		
SHEET TOTALS									26	3.99		12	1	9	2	3	2	14	14

FROM	TO	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	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
415	418																				
416																					
416	417																			171	REMOVE EXIST. DI
417																					
417	422																				
418																					
418	419																			101	REMOVE 2 EXIST. DI'S
419																					
419	420																				
420																					
421																					
421	422																				
421	423																			317	REMOVE 3 EXIST. DI'S
422																					
423																					
424																					
424	425																			164	REMOVE 2 EXIST. DI'S
425																					
425	426																			57	REMOVE EXIST. DI
426																					
428																					
428	427																				
428	429																			55	REMOVE 3 EXIST. DI'S
429																					
429	430																				
430																					
430	431																				
431																					
431	432																				
432																					
433																					
433	434																				
435																					
435	436																				
436																					
436	437																				
436	440																				
437																					
438																					
438	439																				
438	441																			182	REMOVE EXIST. DI
439																					
440																					
440	444																				
441																					
441	442																				
441	443																				
442																					
443																					
443	444																				
SHEET TOTALS																				1,047	

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

RD245795

COMPUTED BY: JBJAVELLANA DATE: 1/5/2012

CHECKED BY: JDE DATE: 7/18/2012

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-T

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

SUB-REGIONAL & REGIONAL
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
-L-																			
150+60	LT	443	446		22.2	22.6													
150+49	RT	444		28.0															
	RT	444	445		20.1	19.9													
	RT	444	449		21.3	25.4													
151+39	LT	446		28.2															
	LT	446	447		22.9	23.5			68								X	X	
	LT	446	450		22.9	23.5													
-Y25-																			
12+03	RT	447		26.5															
	RT	447	448		23.5	23.7													
	LT	448		26.7															
-L-																			
152+00	RT	449		28.4															
	RT	449	455		25.4	26.0													
152+31	LT	450		28.5															
	LT	450	451		23.5	24.3			20								X	X	
	LT	450	452		23.5	23.9													
152+36	LT	451		26.6															
152+99	LT	452		28.7															
	LT	452	453		23.9	24.8			20								X	X	
	LT	452	456		23.9	24.7													
152+99	LT	453		27.1															
	LT	453	454		24.8	25.9													
153+61	LT	454		28.2															
154+00	RT	455		29.0															
	RT	455	462		26.0	26.6													
154+68	LT	456		29.2															
	LT	456	457		24.7	25.4			16								X	X	
	LT	456	460		24.7	25.3													
154+68	LT	457		27.8															
	LT	457	458		25.4	25.9			32								X	X	
	LT	457	459		25.4	25.5			36								X	X	
154+31	LT	458		28.1															
155+11	LT	459		27.8															
155+86	LT	460		29.6															
	LT	460	461		25.3	25.4			20								X	X	
155+86	LT	461		27.6															
156+00	RT	462		29.6															
156+60	LT	463		29.7															
	LT	463	464		25.2	25.3			20								X	X	
	LT	463	469		25.2	23.4													
156+60	LT	464		27.6															
157+32	LT	465		27.8															
	LT	465	466		25.5	25.1			60								X	X	
157+98	LT	466		27.3															
	LT	466	467		25.1	24.7			64								X	X	
158+66	LT	467		26.9															
	LT	467	468		24.7	23.6			72								X	X	
159+43	LT	468		25.8															
	LT	468	469		23.6	23.4			16								X	X	
SHEET TOTALS									444										

STATION	FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
150+60	443	446																			72					
150+49	444																									
	444	445																					36			
	444	449																		144						
151+39	446																									
	446	447																								
	446	450																		88						
12+03	447																									
	447	448																		28						
	448																									
152+00	449																									
	449	455																		196						
152+31	450																									
	450	451																								
	450	452																		64						
152+36	451																									
152+99	452																									
	452	453																								
	452	456																		164						
152+99	453																									
	453	454																		56						
153+61	454																									
154+00	455																									
	455	462																		196						
154+68	456																									
	456	457																								
	456	460																		112						
154+68	457																									
	457	458																								
	457	459																								
154+31	458																									
155+11	459																									
155+86	460																									
	460	461																								
155+86	461																									
156+00	462																									
156+60	463																									
	463	464																								
	463	469																		276						
156+60	464																									
157+32	465																									
	465	466																								
157+98	466																									
	466	467																								
158+66	467																									
	467	468																								
159+43	468																									
	468	469																								
SHEET TOTALS																				1,324	72		36			

STATION	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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
150+60	443	446																
150+49	444									1	2.37		1			1		
	444	445																
	444	449																
151+39	446									1	0.60		1		1			
	446	447																
	446	450																
12+03	447									1			1	1				
	447	448																
	448									1			1	1				
152+00	449									1			1			1		
	449	455																
152+31	450									1			1		1			
	450	451																
	450	452																
152+36	451									1								
152+99	452									1			1		1			
	452	453																
	452	456																
152+99	453									1								
	453	454																
153+61	454									1								
154+00	455									1			1			1		
	455	462																
154+68	456									1			1		1			
	456	457																
	456	460																
154+68	457									1								
	457	458																
	457	459																
154+31	458									1								
155+11	459									1								
155+86	460									1			1		1			
	460	461																
155+86	461									1								
156+00	462									1			1			1		
156+60	463									1			1			1		
	463	464																
	463	469																
156+60	464									1								
157+32	465									1								
	465	466																
157+98	466									1								
	466	467																
158+66	467									1								
	467	468																
159+43	468									1								
	468	469																
SHEET TOTALS										24	2.97		12	2	5	5		

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
150+60	443	446																						
150+49	444																							
	444	445																						
	444	449																						
151+39	446																							
	446	447																						
	446	450																						
12+03	447																							
	447	448																					164	REMOVE 4 EXIST. DI'S
	448																							
152+00	449																							
	449	455																						
152+31	450																							
	450	451																						
	450	452																						
152+36	451		1	1																				
152+99	452																							
	452	453																						
	452	456																					164	REMOVE 3 EXIST. DI'S
152+99	453		1	1																				
	453	454																						
153+61	454		1	1																				
154+00	455																							
	455	462																						
154+68	456																							
	456	457																						
	456	460																					185	REMOVE 2 EXIST. DI'S
154+68	457		1	1																				
	457	458																						
	457	459																						
154+31	458		1	1																				
155+11	459		1	1																				
155+86	460																							
	460	461																						
155+86	461		1	1																				
156+00	462																							
156+60	463																							
	463	464																						
	463	469																					275	REMOVE 5 EXIST. DI'S
156+60	464		1	1																				
157+32	465		1	1																				
	465	466																						
157+98	466		1	1																				
	466	467																						
158+66	467		1	1																				
	467	468																						
159+43	468		1	1																				
	468	469																						
SHEET TOTALS			12	12																			788	

ABBREVIATIONS

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

COMPUTED BY:	JBJAVELLANA	DATE:	1/5/2012
CHECKED BY:	JDE	DATE:	7/18/2012

RD245795

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-U

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

SUB-REGIONAL & REGIONAL
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) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L-																			
159+43	LT	469		27.2															
	LT	469	471		23.4	20.2													
160+94	LT	470		22.8															
	LT	470	471		20.6	20.2			16								X	X	
160+94	LT	471		23.7															
	LT	471	472		20.2	21.3													
	LT	471	474		20.0	17.3													
160+94	RT	472		24.3															
	RT	472	473		21.3	22.3													
160+42	RT	473		25.3															
161+81	LT	474		22.2															
	LT	474	475		17.6	17.7			16								X	X	
	LT	474	476		17.3	16.0													
161+81	LT	475		19.9															
162+53	LT	476		19.2															
	LT	476	477		16.0	11.2													
163+53	LT	477		15.3															
	LT	477	478		11.4	11.7			20								X	X	
	LT	477	479		11.4	13.7													
	LT	477	481		11.2	7.9													
163+61	LT	478		13.9															
163+66	LT	479		16.9															
	LT	479	480		13.7	15.7													
163+00	LT	480		18.9															
164+22	LT	481		13.9															
	LT	481	482		8.2	8.4													
	LT	481	485		7.4	7.2													
-Y26-																			
11+51	LT	482		11.7															
	LT	482	483		8.4	8.5													
11+51	RT	483		11.8															
	RT	483	484		8.5	8.6													
11+64	RT	484		11.6															
-L-																			
164+75	LT	485		12.5															
	LT	485	486		7.2	6.4					36						X	X	
168+00	RT	487		11.3															
	RT	487	488		8.1	7.9													
168+62	RT	488		11.1															
	RT	488	489		7.9	8.3													
	RT	488	491		7.9	6.0													
169+55	RT	489		11.3															
168+00	LT	490		9.1															
	LT	490	491		6.1	6.0													
168+62	LT	491		9.0															
	LT	491	492		5.7	2.4				44							X	X	
	LT	491	493		6.0	6.1													
169+10	LT	493		9.1															
	LT	493	494		6.1	6.3													
169+55	LT	494		9.3															
SHEET TOTALS									52	44	36								

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
159+43	469																									
	469	471																		144						
160+94	470																									
	470	471																								
160+94	471																									
	471	472																		72						
	471	474																			80					
160+94	472																									
	472	473																		48						
160+42	473																									
161+81	474																									
	474	475																								
	474	476																			68					
161+81	475																									
162+53	476																									
	476	477																			96					
163+53	477																									
	477	478																								
	477	479																		40						
	477	481																			60					
163+61	478																									
163+66	479																									
	479	480																		60						
163+00	480																									
164+22	481																									
	481	482																		76						
	481	485																				48				
-Y26-																										
11+51	482																									
	482	483																		24						
11+51	483																									
	483	484																		8						
11+64	484																									
-L-																										
164+75	485																									
	485	486																								
168+00	487																									
	487	488																		56						
168+62	488																									
	488	489																		88						
	488	491																		44						
169+55	489																									
168+00	490																									
	490	491																		56						
168+62	491																									
	491	492																								
	491	493																		40						
169+10	493																									
	493	494																		40						
169+55	494																									
SHEET TOTALS																				796	304	48				

STATION	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01, 838.11 OR STD. 838.80 (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 GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)
159+43	469									1			1			1																				
	469	471																																		
160+94	470									1									1	1																
	470	471																																		
160+94	471									1			1			1																				
	471	472																																		
	471	474																																		
160+94	472									1			1		1																					
	472	473																																		
160+42	473									1			1		1																					
161+81	474									1			1			1																				
	474	475																																		
	474	476																																		
161+81	475									1									1	1																
162+53	476									1			1			1																				
	476	477																																		
163+53	477									1			1			1																				
	477	478																																		
	477	479																																		
	477	481																																		
163+61	478									1									1	1																
163+66	479									1							1		1	1																
	479	480																																		
163+00	480									1							1		1	1																
164+22	481									1	1.51																	1		1						
	481	482																																		
	481	485																																		
-Y26-																																				
11+51	482									1			1		1																					
	482	483																																		
11+51	483									1			1			1																				
	483	484																																		
11+64	484									1			1			1																				
-L-																																				
164+75	485									1	0.31		1			1																				
	485	486																																		
168+00	487									1							1		1	1																
	487	488																																		
168+62	488									1							1		1	1																
	488	489																																		
	488	491																																		
169+55	489									1			1		1			1																		
168+00	490									1			1			1																				
	490	491																																		
168+62	491									1			1	1																						
	491	492																																		
	491	493																																		
169+10	493									1			1		1																					
	493	494																																		
169+55	494									1			1		1																					
SHEET TOTALS										24	1.82		16	1	6	9	4	1	7	7								1		1						

STATION	FROM	TO	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
159+43	469					
	469	471			149	
160+94	470					
	470	471				
160+94	471					
	471	472			693	REMOVE 4 EXIST. DI'S
	471	474			85	REMOVE 2 EXIST. DI'S
160+94	472					
	472	473				
160+42	473					
161+81	474					
	474	475				
	474	476			157	
161+81	475					
162+53	476					
	476	477				
163+53	477					
	477	478				
	477	479				
	477	481			75	REMOVE EXIST. DI
163+61	478					
163+66	479					
	479	480				
163+00	480					
164+22	481					
	481	482				
	481	485				
-Y26-						
11+51	482					
	482	483				REMOVE 2 EXIST. DI'S
11+51	483					
	483	484				
11+64	484					
-L-						
164+75	485					
	485	486				
168+00	487					
	487	488				
168+62	488					
	488	489				
	488	491			399	REMOVE 3 EXIST. DI'S
169+55	489					
168+00	490					
	490	491				
168+62	491					
	491	492				
	491	493				
169+10	493					
	493	494				
169+55	494					
SHEET TOTALS					1,558	

ABBREVIATIONS

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

COMPUTED BY:	JBJAVELLANA	DATE:	1/5/2012
CHECKED BY:	JDE	DATE:	7/18/2012

RD245795

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-V

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

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

STATION (SIZE / THICKNESS OR GAUGE / -L-)	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
170+13	RT	496		10.5														
	RT	496	495		7.0	5.2												
	RT	496	500		7.0	12.2												
172+00	RT	497		14.1														
	RT	497	498		11.1	9.0												
172+00	LT	498		12.0														
	LT	498	499		9.0	5.0			40							X	X	
172+70	RT	500		15.7														
	RT	500	501		12.2	14.1												
175+71	RT	501		22.1														
	RT	501	504		14.1	14.4												
175+43	LT	502		21.0														
	LT	502	503		18.0	14.0			40							X	X	
176+38	RT	504		23.6														
	RT	504	505		15.7	17.3			20							X	X	
	RT	504	506		14.4	15.3												
176+38	RT	505		22.3														
178+18	RT	506		26.5														
	RT	506	507		16.6	18.0			20							X	X	
	RT	506	508		15.3	16.0												
178+18	RT	507		23.0														
179+43	RT	508		26.6														
	RT	508	508A		17.3	19.4			20							X	X	
	RT	508	509		16.0	16.7												
179+43	RT	508A		23.2														
180+92	RT	509		26.1														
	RT	509	510		18.0	18.5			24							X	X	
	RT	509	515		17.2	17.8	X											
180+92	RT	510		21.7														
182+00	LT	511		25.7														
	LT	511	512		22.7	22.5												
182+49	LT	512		25.7														
	LT	512	513		22.5	21.5			28							X	X	
	LT	512	514		22.5	23.1												
183+00	LT	514		26.1														
182+00	RT	515		25.7														
	RT	515	516		18.5	18.6			20							X	X	
	RT	515	517		17.8	18.0												
182+00	RT	516		21.7														
182+49	RT	517		25.7														
	RT	517	518		18.0	18.3												
183+16	RT	518		25.7														
	RT	518	519		19.0	19.3			12							X	X	
	RT	518	520		18.8	22.7												
183+16	RT	519		22.3														
184+13	RT	520		26.0														
	RT	520	521		22.7	23.5												
185+05	RT	521		26.8														
	RT	521	522		23.8	24.2												
	RT	521	531		23.8	25.3												
SHEET TOTALS										224										

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
170+13	496																								
	496	495																					56			
	496	500																					260			
172+00	497																								
	497	498																		44						
172+00	498																								
	498	499																								
172+70	500																								
	500	501																					300			
175+71	501																								
	501	504																					60			
175+43	502																								
	502	503																								
176+38	504																								
	504	505																								
	504	506																					176			
176+38	505																								
178+18	506																								
	506	507																								
	506	508																					124			
178+18	507																								
179+43	508																								
	508	508A																								
	508	509																					144			
179+43	508A																								
180+92	509																								
	509	510																								
	509	515																				104				
180+92	510																								
182+00	511																								
	511	512																		44						
182+49	512																								
	512	513																								
	512	514																		44						
183+00	514																								
182+00	515																								
	515	516																								
	515	517																				44				
182+00	516																								
182+49	517																								
	517	518																				64				
183+16	518																								
	518	519																								
	518	520																			96					
183+16	519																								
184+13	520																								
	520	521																			88					
185+05	521																								
	521	522																		52						
	521	531																		176						
SHEET TOTALS																					360	184	212	1,120			

STATION	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01, 838.11 OR STD. 838.80 (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 GRATE STD. 840.16
170+13	496									1									1	1
	496	495																		
	496	500																		
172+00	497									1			1		1			1		
	497	498																		
172+00	498									1			1		1					
	498	499																		
172+70	500									1									1	1
	500	501																		
175+71	501									1	3.02		1			1				
	501	504																		
175+43	502									1			1		1					
	502	503																		
176+38	504									1	4.16		1			1				
	504	505																		
	504	506																		
176+38	505									1									1	1
178+18	506									1	5.00	1.22	1			1				
	506	507																		
	506	508																		
178+18	507									1			1	1						
179+43	508									1	5.00	0.63	1		1					
	508	508A																		
	508	509																		
179+43	508A									1			1		1					
180+92	509									1	4.33		1		1					
	509	510																		
	509	515																		
180+92	510									1									1	1
182+00	511									1			1			1				
	511	512																		
182+49	512									1			1	1						
	512	513																		
	512	514																		
183+00	514									1			1		1					
182+00	515									1	2.96		1		1					
	515	516																		
	515	517																		
182+00	516									1									1	1
182+49	517									1	2.68		1	1						
	517	518																		
183+16	518									1	2.47		1			1				
	518	519																		
	518	520																		
183+16	519									1			1	1						
184+13	520									1			1			1				
	520	521																		
185+05	521									1			1			1				
	521	522																		
	521	531																		
SHEET TOTALS											24	29.62	1.85	19	4	8	7		1	5	5

STATION	FROM	TO	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	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
170+13	496																				
	496	495																				
	496	500																			200	
172+00	497																				
	497	498																			857	REMOVE 6 EXIST. DI'S
172+00	498																				
	498	499																				
172+70	500																				
	500	501																			390	REMOVE 3 EXIST. DI'S
175+71	501																				
	501	504																				
175+43	502																				
	502	503																				
176+38	504																				
	504	505																				
	504	506																			441	REMOVE EXIST. DI & JB
176+38	505																				
178+18	506																				
	506	507																				
	506	508																				
178+18	507																				
179+43	508																				
	508	508A																				
	508	509																				
179+43	508A																				
180+92	509																				
	509	510																				
	509	515																			113	REMOVE EXIST. DI
180+92	510																				
182+00	511																				
	511	512																				
182+49	512																				
	512	513																				
	512	514																				
183+00	514																				
182+00	515																				
	515	516																				
	515	517																			114	REMOVE EXIST. DI
182+00	516																				
182+49	517																				
	517	518																				
183+16	518																				
	518	519																				
	518	520																			135	REMOVE EXIST. DI
183+16	519																				
184+13	520																				
	520	521																			65	REMOVE EXIST. DI
185+05	521																				
	521	522																				
	521	531																			464	REMOVE 5 EXIST. DI'S
SHEET TOTALS																					2,779	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/5/2012

CHECKED BY: JDE DATE: 7/18/2012

RD245795

PROJECT NO.	SHEET NO.
U-3810	3-W

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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
-L-																			
185+05	LT	522		28.1															
	LT	522	523		24.2	24.5													
184+56	LT	523		27.7															
Y29 16+79	LT	524		30.8															
	LT	524	525		27.7	24.0													
Y29 15+08	RT	527		30.9															
	RT	527	526		26.4	25.9													
	RT	527	528		26.4	26.5													
Y29 14+72	RT	528A																	
Y29 12+36	LT	529																	
Y29 19+26	LT	530																	
-L-																			
186+92	RT	531		28.3															
	RT	531	532		25.3	26.9													
187+05	RT	532		30.1															
	RT	532	533		26.9	27.8													
189+09	RT	533		32.0															
	RT	533	534		27.8	28.2													
189+09	LT	534		31.2															
	LT	534	535		28.2	28.7			88								X	X	
190+00	LT	535		30.9															
190+16	RT	536		31.4															
	RT	536	537		29.2	27.8			120								X	X	
191+40	RT	537		30.8															
	RT	537	538		27.8	28.5													
	RT	537	539		27.8	27.8													
191+40	RT	538		31.7															
191+80	RT	539		30.8															
	RT	539	540		27.8	28.2			12								X	X	
	RT	539	542		27.8	25.8													
191+80	RT	540		30.4															
192+43	RT	541		26.2															
192+32	RT	542		30.8															
	RT	542	543		25.8	25.6													
192+45	RT	543		30.8															
	RT	543	544		22.8	22.6													
	RT	543	546		22.8	23.2													
192+80	RT	544		30.8															
	RT	544	550		22.6	21.9													
192+32	LT	545		31.4															
	LT	545	546		26.4	25.9													
192+47	LT	546		31.2															
	LT	546	547		23.2	23.4													
192+82	LT	547		32.6															
	LT	547	548		23.4	23.7								20		X	X	
	LT	547	549		25.4	27.3													
192+82	LT	548																	
194+25	LT	549		31.1															
	LT	549	552		27.3	28.0													
194+23	RT	550		31.1															
SHEET TOTALS									220						20				

STATION	STRUCTURE NO. FROM	STRUCTURE NO. 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"	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01, 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
185+05	522																																
	522	523																		44													
184+56	523																																
Y29 16+79	524																																
	524	525																		60													
Y29 15+08	527																																
	527	526																				52											
	527	528																				44											
Y29 14+72	528A																				32												
Y29 12+36	529																			20													
Y29 19+26	530																			60													
-L-																																	
186+92	531																																
	531	532																		44													
187+05	532																																
	532	533																		200													
189+09	533																																
	533	534																		64													
189+09	534																																
	534	535																															
190+00	535																																
190+16	536																																
	536	537																															
191+40	537																																
	537	538																		32													
	537	539																		36													
191+40	538																																
191+80	539																																
	539	540																															
	539	542																		48													
191+80	540																																
192+43	541																																
192+32	542																																
	542	543																		8													
192+45	543																																
	543	544																								32							
	543	546																								72							
192+80	544																																
	544	550																								140							
192+32	545																																
	545	546																		8													
192+47	546																																
	546	547																								28							
192+82	547																																
	547	548																															
	547	549																				136											
192+82	548																															6.00	
194+25	549																																
	549	552																				124											
194+23	550																																
SHEET TOTALS																				624	32	356				272						6.00	

STATION	STRUCTURE NO. FROM	STRUCTURE NO. TO	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
185+05	522		1							1		1	1																				
	522	523																														497	REMOVE 4 EXIST. DI'S
184+56	523		1							1		1	1																				
Y29 16+79	524		1							1		1	1																				
	524	525																														37	
Y29 15+08	527		1							1		1	1																				
	527	526																															
	527	528																															
Y29 14+72	528A																																
Y29 12+36	529																																
Y29 19+26	530																															30	
-L-																																	
186+92	531		1			1			1																								
	531	532																															
187+05	532		1							1		1	1																				
	532	533																														317	REMOVE 3 EXIST. DI'S
189+09	533		1							1		1	1																				
	533	534																															
189+09	534		1									1	1																				
	534	535																															
190+00	535		1									1	1																				
190+16	536		1									1	1																				
	536	537																															
191+40	537		1			1		1																									
	537	538																															
	537	539																															
191+40	538		1							1		1	1																				
191+80	539		1			1		1																									
	539	540																															
	539	542																														24	
191+80	540		1									1	1																				
192+43	541		1																							1							4OTCB
192+32	542		1			1	1																										
	542	543																															
192+45	543		1	2.96		1			1																								
	543	544																															
	543	546																															REMOVE EXIST. HW
192+80	544		1	3.16		1			1																								
	544	550																															
192+32	545		1			1	1																										
	545	546																															
192+47	546		1	3.05		1		1																									
	546	547																															
192+82	547		1	4.19		1		1																									
	547	548																															
	547	549																															
192+82	548																																
194+25	549		1			1		1																									
	549	552																														500	REMOVE 8 EXIST. DI'S & 1 HW
194+23	550		1	4.19		1			1																								
SHEET TOTALS			23	17.55		11	2	5	4	7		11	11													1						1,405	

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

RD245795

COMPUTED BY:	JBJAVELLANA	DATE:	1/5/2012
CHECKED BY:	JDE	DATE:	7/18/2012

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-X

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

SUB-REGIONAL & REGIONAL
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) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L-																			
194+23	RT	550	551		21.9	21.0									32		X	X	
	RT	550	554		24.7	28.8													
195+56	LT	552		31.7															
	LT	552	553		28.7	30.0			16								X	X	
	LT	552	555		28.5	29.4													
195+56	LT	553		33.7															
195+72	RT	554		31.8															
	RT	554	557		28.8	30.4													
196+77	LT	555		32.7															
	LT	555	556		29.7	31.2			12								X	X	
	LT	555	559		29.7	30.5													
196+77	LT	556		33.4															
196+86	RT	557		36.6															
	RT	557	558		30.4	30.5			12								X	X	
196+86	RT	558		32.7															
197+73	LT	559		33.5															
	LT	559	560		30.5	30.8			12								X	X	
197+73	LT	560		34.8															
199+37	RT	561		35.4															
	RT	561	562		32.4	31.6													
200+07	RT	562		36.3															
	RT	562	563		31.6	31.3						24					X	X	
	RT	562	565		31.6	31.9													
	RT	562	562A		31.6	34.3													
201+12	RT	562A		37.3															
	RT	562A	562B		34.3	35.3			8								X	X	
	RT	562B		38.0															
199+37	LT	564		36.5															
	LT	564	565		32.1	31.9													
200+00	LT	565		37.5															
	LT	565	566		31.9	32.3													
	LT	565	567		33.2	35.1													
200+37	LT	567		38.1															
-Y32-																			
13+40	RT	568		35.6															
	RT	568	569		33.6	33.5													
13+40	LT	569		35.4															
	LT	569	570		33.5	33.3			64								X	X	
-Y33-																			
11+00	RT	571		37.2															
	RT	571	572		34.4	34.2													
11+00	LT	572		37.1															
	LT	572	573		34.2	33.9			60								X	X	
-L-																			
204+50	RT	573		39.1															
	RT	573	574		33.9	36.1													
	RT	573	575		33.9	33.0													
204+47	LT	574		38.3															
206+50	RT	575		37.0															
	RT	575	576		33.0	35.9													
SHEET TOTALS									184			24			32				

STATION	LOC.	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"
194+23	RT	550	551																
	RT	550	554																
195+56	LT	552																	
	LT	552	553																
	LT	552	555																
195+56	LT	553																	
195+72	RT	554																	
	RT	554	557																
196+77	LT	555																	
	LT	555	556																
	LT	555	559																
196+77	LT	556																	
196+86	RT	557																	
	RT	557	558																
196+86	RT	558																	
197+73	LT	559																	
	LT	559	560																
197+73	LT	560																	
199+37	RT	561																	
	RT	561	562																
200+07	RT	562																	
	RT	562	563																
	RT	562	565																
	RT	562	562A																
201+12	RT	562A																	
	RT	562A	562B																
	RT	562B																	
199+37	LT	564																	
	LT	564	565																
200+00	LT	565																	
	LT	565	566																
	LT	565	567																
200+37	LT	567																	
-Y32-																			
13+40	RT	568																	
	RT	568	569																
13+40	LT	569																	
	LT	569	570																
-Y33-																			
11+00	RT	571																	
	RT	571	572																
11+00	LT	572																	
	LT	572	573																
-L-																			
204+50	RT	573																	
	RT	573	574																
	RT	573	575																
204+47	LT	574																	
206+50	RT	575																	
	RT	575	576																
SHEET TOTALS																			

STATION	LOC.	FROM	TO	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01, 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
194+23	RT	550	551															
	RT	550	554		144													
195+56	LT	552																
	LT	552	553															
	LT	552	555			116												
195+56	LT	553																
195+72	RT	554																
	RT	554	557		108													
196+77	LT	555																
	LT	555	556															
	LT	555	559		92													
196+77	LT	556																
196+86	RT	557																
	RT	557	558															
196+86	RT	558																
197+73	LT	559																
	LT	559	560															
197+73	LT	560																
199+37	RT	561																
	RT	561	562		64													
200+07	RT	562																
	RT	562	563															
	RT	562	565					44										
	RT	562	562A		100													
201+12	RT	562A																
	RT	562A	562B															
	RT	562B																
199+37	LT	564																
	LT	564	565		56													
200+00	LT	565																
	LT	565	566					64										
	LT	565	567		32													
200+37	LT	567																
-Y32-																		
13+40	RT	568																
	RT	568	569		44													
13+40	LT	569																
	LT	569	570															
-Y33-																		
11+00	RT	571																
	RT	571	572		28													
11+00	LT	572																
	LT	572	573															
-L-																		
204+50	RT	573																
	RT	573	574		108													
	RT	573	575		184													
204+47	LT	574																
206+50	RT	575																
	RT	575	576		44													
SHEET TOTALS					1,004	116		108										

STATION	LOC.	FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
194+23	RT	550	551																															
	RT	550	554																															
195+56	LT	552		1			1		1																									
	LT	552	553																															
	LT	552	555																															
195+56	LT	553		1									1	1																				
195+72	RT	554		1			1			1																								
	RT	554	557																														403	REMOVE 3 EXIST. DI'S
196+77	LT	555		1			1		1																									
	LT	555	556																															
	LT	555	559																															
196+77	LT	556		1									1	1																				
196+86	RT	557		1	1.24		1			1																								
	RT	557	558																															
196+86	RT	558		1									1	1																				
197+73	LT	559		1			1		1																									
	LT	559	560																															
197+73	LT	560		1									1	1																				
199+37	RT	561		1			1			1																								
	RT	561	562																														39	REMOVE EXIST. DI
200+07	RT	562		1			1			1																								
	RT	562	563																															
	RT	562	565																														61	
	RT	562	562A																														357	REMOVE 2 EXIST. DI'S
201+12	RT	562A		1			1			1																								
	RT	562A	562B																															
	RT	562B		1												1					1													2GI
199+37	LT	564		1			1			1																								
	LT	564	565																															
200+00	LT	565		1	0.59		1			1																								
	LT	565	566																															
	LT	565	567																															
200+37	LT	567		1			1			1																								
-Y32-																																		
13+40	RT	568		1												1					1													2GI
	RT	568	569																															
13+40	LT	569		1												1					1													2GI
	LT	569	570																															
-Y33-																																		
11+00	RT	571		1												1					1													2GI
	RT	571	572																															
11+00	LT	572		1												1					1													2GI
	LT	572	573																															
-L-																																		
204+50	RT	573		1	0.21		1		1																									
	RT	573	574																															
	RT	573	575																														52	REMOVE EXIST. DI
204+47	LT	574		1									1	1																				
206+50	RT	575		1			1		1																									
	RT	575	576																															
SHEET TOTALS				23	2.04		13		5	8			5	5		5					5												912	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/6/2012

CHECKED BY: JDE DATE: 7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-Y

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

RD245795

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

SUB-REGIONAL & REGIONAL
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) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L-																			
206+50	RT	575	577		32.8	32.1													
206+50	LT	576		39.0															
207+17	RT	577		36.3															
	RT	577	578		32.1	32.2													
	RT	577	581		31.6	31.2													
207+17	RT	578		35.8															
	RT	578	579		32.4	32.7													
207+67	RT	579		34.9															
207+34	LT	580		36.0															
208+00	RT	581		35.5															
	RT	581	582		32.0	34.4													
	RT	581	583		31.2	30.6													
208+00	LT	582		37.5															
209+15	RT	583		34.3															
	RT	583	584		31.3	31.7			12								X	X	
	RT	583	589		30.6	30.1	X												
209+15	RT	584		33.9															
209+15	LT	585		37.3															
	LT	585	591		27.9	27.4													
-Y34-																			
13+30	LT	586		36.3															
	LT	586	587		28.5	28.7													
	LT	586	585		28.5	27.9					100						X	X	
13+30	RT	587		36.3															
	RT	587	588		28.7	29.1					56						X	X	
13+40	RT	588		36.0															
-L-																			
210+15	RT	589		33.9															
	RT	589	590		30.9	31.9													
	RT	589	595		30.1	28.8													
210+15	RT	590		35.0															
210+19	LT	591		34.9															
	LT	591	592		28.1	30.0			16								X	X	
	LT	591	596		26.9	26.6													
210+19	LT	592		33.2															
210+43	RT	593		33.0															
	RT	593	594		30.8	29.7			24								X	X	
210+71	RT	594		31.9															
	RT	594	595		29.7	29.6			12								X	X	
210+71	RT	595		34.4															
	RT	595	598		28.8	27.4													
210+81	LT	596		34.2															
	LT	596	597		27.8	28.5			16								X	X	
	LT	596	600		26.6	26.3													
210+81	LT	597		33.5															
211+60	RT	598		32.6															
	RT	598	599		28.2	29.7			12								X	X	
	RT	598	602		27.4	27.1													
211+60	RT	599		31.9															
211+65	LT	600		33.6															
SHEET TOTALS									92		156								

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)
206+50	575	577																			60										
206+50	576																														
207+17	577																														
	577	578																			12										
	577	581																				76									
207+17	578																														
	578	579																		40											
207+67	579																														
207+34	580																														
208+00	581																														
	581	582																		40											
	581	583																				104									
208+00	582																														
209+15	583																														
	583	584																													
	583	589																				96									
209+15	584																														
209+15	585																														
	585	591																				100									
13+30	586																														
	586	587																				28									
	586	585																													
13+30	587																														
	587	588																													
13+40	588																														
210+15	589																														
	589	590																		32											
	589	595																				52									
210+15	590																														
210+19	591																														
	591	592																													
	591	596																					56								
210+19	592																														
210+43	593																														
	593	594																													
210+71	594																														
	594	595																													
210+71	595																														
	595	598																				84									
210+81	596																														
	596	597																													
	596	600																					80								
210+81	597																														
211+60	598																														
	598	599																													
	598	602																				36									
211+60	599																														
211+65	600																														
SHEET TOTALS																				112	72	576	136								

STATION	FROM	TO	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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 GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
206+50	575	577																																	
206+50	576				1							1		1	1																				
207+17	577				1			1		1																									
	577	578																																	
	577	581																																61	REMOVE 2 EXIST. DI'S
207+17	578				1									1	1																				
	578	579																																	
207+67	579				1									1	1																				
207+34	580				1			1		1																								82	REMOVE 2 EXIST. CB'S
208+00	581				1			1		1																									
	581	582																																	
	581	583																																132	REMOVE 2 EXIST. DI'S
208+00	582				1							1		1	1																				
209+15	583				1			1		1																									
	583	584																																	
	583	589																																123	
209+15	584				1									1	1																				
209+15	585				1	4.42		1			1																								
	585	591																																	
13+30	586				1	2.75		1	1																										
	586	587																																	
	586	585																																	
13+30	587				1	2.54		1	1																										
	587	588																																	
13+40	588				1	1.87											1					1													2GI
210+15	589				1			1		1																									
	589	590																																863	REMOVE 16 EXIST. DI'S
	589	595																																22	REMOVE 2 EXIST. DI'S
210+15	590				1							1		1	1																				
210+19	591				1	3.04		1			1																								
	591	592																																	
	591	596																																	
210+19	592				1									1	1																				
210+43	593				1									1	1																				
	593	594																																	
210+71	594				1									1	1																				
	594	595																																	
210+71	595				1	0.61		1		1																									
	595	598																																87	REMOVE EXIST. DI
210+81	596				1	2.68		1			1																								
	596	597																																	
	596	600																																	
210+81	597				1									1	1																				
211+60	598				1	0.19		1		1																									
	598	599																																	
	598	602																																43	
211+60	599				1									1	1																				
211+65	600				1	2.27		1			1																								
SHEET TOTALS					25	20.37		13	2	7	4	3		11	11		1					1												1,413	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/6/2012

CHECKED BY: JDE DATE: 7/18/2012

RD245795

PROJECT NO.	SHEET NO.
U-3810	3-Z

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

STATION -L-	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
211+65	LT	600	601		27.6	29.0			8								X	X	
	LT	600	604		26.3	25.2													
211+65	LT	601		33.0															
212+00	RT	602		32.3															
	RT	602	603		27.9	29.4			16								X	X	
	RT	602	605		27.1	25.3	X												
212+00	RT	603		31.6															
213+82	LT	604		30.8															
	LT	604	610		25.2	22.7													
214+40	RT	605		30.4															
	RT	605	606		26.0	26.4			16								X	X	
	RT	605	607		24.8	23.8													
214+35	RT	606		29.4															
215+60	RT	607		29.5															
	RT	607	608		25.0	25.1			12								X	X	
	RT	607	609		23.8	22.4													
215+60	RT	608		28.1															
216+32	RT	609		29.0															
	RT	609	610		21.9	22.2													
	RT	609	616		21.4	17.2													
216+34	LT	610		29.0															
	LT	610	611		23.2	23.4					20						X	X	
216+34	LT	611		27.6															
	LT	611	612		23.9	27.2				48							X	X	
	LT	611	613		24.1	25.5													
216+98	LT	613		28.5															
	LT	613	614		25.5	26.0			16								X	X	
218+79	RT	615		26.6															
	RT	615	616		20.4	19.5			16								X	X	
218+75	RT	616		27.5															
	RT	616	617		18.7	18.9													
	RT	616	620		16.7	15.8	X												
218+75	LT	617		28.8															
	LT	617	618		18.9	19.1													
218+75	LT	618		22.3															
	LT	618	619		19.1	19.3					60						X	X	
219+34	LT	619		24.0															
222+00	RT	620		25.2															
	RT	620	621		18.5	23.1													
	RT	620	622		15.8	14.8													
222+00	LT	621		27.3															
225+00	RT	622		22.1															
	RT	622	623		14.8	14.6													
225+00	LT	623		24.2															
	LT	623	624		14.6	14.0													
227+75	RT	625		12.2															
	RT	625	626		10.0	8.9			16								X	X	
227+70	RT	626		17.1															
	RT	626	627		8.9	8.8													
227+70	LT	627		18.3															
SHEET TOTALS									100	48	80								

STATION -L-	LOCATION	FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
211+65	LT	600	601																															
	LT	600	604																					212										
211+65	LT	601																																
212+00	RT	602																																
	RT	602	603																															
	RT	602	605																				236											
212+00	RT	603																																
213+82	LT	604																																
	LT	604	610																					248										
214+40	RT	605																																
	RT	605	606																															
	RT	605	607																					116										
214+35	RT	606																																
215+60	RT	607																																
	RT	607	608																															
	RT	607	609																					68										
215+60	RT	608																																
216+32	RT	609																																
	RT	609	610																						76									
	RT	609	616																							240								
216+34	LT	610																																
	LT	610	611																															
216+34	LT	611																																
	LT	611	612																															
	LT	611	613																		60													
216+98	LT	613																																
	LT	613	614																															
218+79	RT	615																																
	RT	615	616																															
218+75	RT	616																																
	RT	616	617																				44											
	RT	616	620																								312							
218+75	LT	617																																
	LT	617	618																				64											
218+75	LT	618																																
	LT	618	619																															
219+34	LT	619																																
222+00	RT	620																																
	RT	620	621																		44													
	RT	620	622																								288							
222+00	LT	621																																
225+00	RT	622																																
	RT	622	623																								44							
225+00	LT	623																																
	LT	623	624																								76							
227+75	RT	625																																
	RT	625	626																															
227+70	RT	626																																
	RT	626	627																		44													
227+70	LT	627																																
SHEET TOTALS																					148		344	644	76	240	720							

STATION -L-	LOCATION	FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
211+65	LT	600	601																															
	LT	600	604																															
211+65	LT	601		1									1	1																				
212+00	RT	602		1	0.15		1		1																									
	RT	602	603																															
	RT	602	605																														262	REMOVE 3 EXIST. DI'S
212+00	RT	603		1									1	1																				
213+82	LT	604		1	0.65		1			1																								
	LT	604	610																															
214+40	RT	605		1	0.58		1		1																									
	RT	605	606																															
	RT	605	607																														80	REMOVE 2 EXIST. DI'S
214+35	RT	606		1			1		1																									
215+60	RT	607		1	0.70		1		1																									
	RT	607	608																														21	REMOVE EXIST. DI
	RT	607	609																														84	REMOVE EXIST. DI
215+60	RT	608		1			1	1																										
216+32	RT	609		1	2.64		1		1																									
	RT	609	610																															
	RT	609	616																															
216+34	LT	610		1	1.75		1			1																								
	LT	610	611																															
216+34	LT	611		1									1	1																				
	LT	611	612																														22	
	LT	611	613																															
216+98	LT	613		1			1	1																										
	LT	613	614																															
218+79	RT	615		1	1.20								1	1																				
	RT	615	616																															
218+75	RT	616		1	5.00	0.77	1		1																									
	RT	616	617																														790	REMOVE 4 EXIST. DI'S & 1 JB
	RT	616	620																															
218+75	LT	617		1	4.91		1			1		1																						
	LT	617	618																															
218+75	LT	618		1												1					1													2GI
	LT	618	619																														41	
219+34	LT	619		1												1					1													2GI
222+00	RT	620		1	4.46		1		1																									
	RT	620	621																															
	RT	620	622																															
222+00	LT	621		1			1		1			1																						
225+00	RT	622		1	2.31		1		1																									
	RT	622	623																														52	
225+00	LT	623		1	4.55		1		1			1																						
	LT	623	624																															
227+75	RT	625		1									1	1																				
	RT	625	626																														53	
227+70	RT	626		1	3.12		1		1																									
	RT	626	627																															
227+70	LT	627		1	4.56		1		1			1																						
SHEET TOTALS				24	36.58	0.77	17	2	12	3		4	5	5		2					2												1,405	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/6/2012

CHECKED BY: JDE DATE: 7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-AA

RD245795

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

ABBREVIATIONS

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

STATION -L-	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
227+70	LT	627	628		8.8	13.9													
	LT	627	629		8.8	7.2													
228+29	LT	628		16.9															
230+65	RT	630		10.5															
	RT	630	631		7.5	6.9													
231+14	RT	631		9.9															
	RT	631	632		6.9	4.7													
231+14	RT	632		9.7															
	RT	632	633		4.7	1.4			44								X	X	
231+94	CL	634																	
232+69	CL	635																	
233+21	CL	636																	
233+40	LT	637		8.5															
	LT	637	638		5.5	5.0													
233+40	RT	638		8.0															
	RT	638	639		5.0	4.9													
233+40	RT	639		8.3															
	RT	639	640		4.9	2.0			36								X	X	
235+18	RT	641		7.9															
	RT	641	642		4.9	4.7													
235+30	RT	642		7.9															
	RT	642	643		4.9	5.2													
	RT	642	644		4.7	5.0													
	RT	642	645		4.7	1.9													
235+30	RT	643		8.2															
235+70	RT	644		8.0															
235+30	LT	645		7.9															
	LT	645	646		1.6	1.5			36								X	X	
235+69	RT	647		EX															
236+54	RT	648		5.4															
236+12	RT	648A		EX															
236+60	RT	649		8.1															
	RT	649	650A		5.1	4.9													
237+20	RT	650		8.2															
237+09	RT	650A		8.2															
237+09	RT	650A	650		4.9	4.9													
	RT	650	652		4.9	4.4													
236+60	LT	651		7.6															
	LT	651	652A		4.6	3.7													
237+20	LT	652		7.4															
237+09	LT	652A		7.4															
237+09	LT	652A	652		3.7	3.7													
	LT	652	653		3.7	3.6					24						X	X	
	LT	652	654		3.7	4.6													
237+75	LT	654		7.6															
	LT	654	656		4.6	5.3													
238+28	RT	654A																	
238+50	RT	655		7.6															
239+50	LT	656		8.3															
	LT	656	657		5.3	6.6													
239+50	RT	657		9.6															
240+76	RT	658																	
243+00	RT	659		13.3															
	RT	659	660		10.3	8.2													
SHEET TOTALS									116		24								

STATION	LOC.	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
227+70	LT	627	628																		52						
	LT	627	629																		84						
228+29	LT	628																									
230+65	RT	630																									
	RT	630	631																		44						
231+14	RT	631																									
	RT	631	632																		76						
231+14	RT	632																									
	RT	632	633																								
231+94	CL	634																							144		
232+69	CL	635																							152		
233+21	CL	636																							156		
233+40	LT	637																									
	LT	637	638																		44						
233+40	RT	638																									
	RT	638	639																		28						
233+40	RT	639																									
	RT	639	640																								
235+18	RT	641																									
	RT	641	642																		8						
235+30	RT	642																									
	RT	642	643																		28						
	RT	642	644																		36						
	RT	642	645																		40						
235+30	RT	643																									
235+70	RT	644																									
235+30	LT	645																									
	LT	645	646																								
235+69	RT	647																									
236+54	RT	648																									
236+12	RT	648A																									
236+60	RT	649																									
	RT	649	650A																		48						
237+20	RT	650																									
237+09	RT	650A																									
237+09	RT	650A	650																		4						
	RT	650	652																		44						
236+60	LT	651																									
	LT	651	652A																		48						
237+20	LT	652																									
237+09	LT	652A																									
237+09	LT	652A	652																		4						
	LT	652	653																								
	LT	652	654																		48						
237+75	LT	654																									
	LT	654	656																		164						
238+28	RT	654A																									
238+50	RT	655																									
239+50	LT	656																									
	LT	656	657																		44						
239+50	RT	657																									
240+76	RT	658																			60						
243+00	RT	659																									
	RT	659	660																		44						
SHEET TOTALS																					948				452		

STATION	LOC.	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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
227+70	LT	627	628																
	LT	627	629																
228+29	LT	628									1			1		1			
230+65	RT	630									1			1		1			
	RT	630	631																
231+14	RT	631									1			1		1			
	RT	631	632																
231+14	RT	632									1			1			1		
	RT	632	633																
231+94	CL	634							3.40										
232+69	CL	635							3.40										
233+21	CL	636							3.40										
233+40	LT	637									1			1			1		
	LT	637	638																
233+40	RT	638									1			1			1		1
	RT	638	639																
233+40	RT	639									1			1		1			
	RT	639	640																
235+18	RT	641									1			1			1		1
	RT	641	642																
235+30	RT	642									1			1			1		1
	RT	642	643																
	RT	642	644																
	RT	642	645																
235+30	RT	643									1								
235+70	RT	644									1			1			1		1
235+30	LT	645									1	1.34		1			1		
	LT	645	646																
235+69	RT	647																	
236+54	RT	648									1								
236+12	RT	648A																	
236+60	RT	649									1			1			1		1
	RT	649	650A																
237+20	RT	650									1			1	1				
237+09	RT	650A									1			1	1				1
237+09	RT	650A	650																
	RT	650	652																
236+60	LT	651									1			1			1		
	LT	651	652A																
237+20	LT	652									1			1	1				
237+09	LT	652A									1			1	1				1
237+09	LT	652A	652																
	LT	652	653																
	LT	652	654																
237+75	LT	654									1			1		1			
	LT	654	656																
238+28	RT	654A																	
238+50	RT	655									1								
239+50	LT	656									1			1		1			
	LT	656	657																
239+50	RT	657									1			1		1			1
240+76	RT	658																	
243+00	RT	659									1			1		1			1
	RT	659	660																
SHEET TOTALS									10.20		24	1.34		21	4	8	9		9

STATION	LOC.	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
227+70	LT	627	628																					21	
	LT	627	629																						
228+29	LT	628																							
230+65	RT	630																							
	RT	630	631																						
231+14	RT	631																							
	RT	631	632																						
231+14	RT	632																							
	RT	632	633																						
231+94	CL	634																							FLOODPLAIN PIPE
232+69	CL	635																							FLOODPLAIN PIPE
233+21	CL	636																							FLOODPLAIN PIPE
233+40	LT	637																							
	LT	637	638																						
233+40	RT	638																							
	RT	638	639																						
233+40	RT	639																							
	RT	639	640																						
235+18	RT	641																							
	RT	641	642																						
235+30	RT	642																							
	RT	642	643																						
	RT	642	644																						
	RT	642	645																						
235+30	RT	643					1										1								2GI
235+70	RT	644																							
235+30	LT	645																							
	LT	645	646																						
235+69	RT	647													1				1						
236+54	RT	648		1	1																				
236+12	RT	648A													1				1						
236+60	RT	649																							
	RT	649	650A																						
237+20	RT	650																							
237+09	RT	650A																							SEE DTL SHT 2-AU FOR TRANSITION SECTION
237+09	RT	650A	650																						
	RT	650	652																						
236+60	LT	651																							
	LT	651	652A																						
237+20	LT	652																							
237+09	LT	652A																							SEE DTL SHT 2-AU FOR TRANSITION SECTION
237+09	LT	652A	652																						
	LT	652	653																						
	LT	652	654																						
237+75	LT	654																							
	LT	654	656																						
238+28	RT	654A													1				1						
238+50	RT	655						1									1								2GI
239+50	LT	656																							
	LT	656	657																						
239+50	RT	657																							
240+76	RT	658																							
243+00	RT	659																							
	RT	659	660																						
SHEET TOTALS				1	1		1	1							3		2		3					21	

COMPUTED BY: JBJAVELLANA DATE: 1/6/2012

CHECKED BY: JDE DATE: 7/18/2012

RD245795

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-AB

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

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

ABBREVIATIONS

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

Station / Size / Thickness or Gauge: -L-

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) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
243+00	LT	660		11.2															
	LT	660	661		8.2	7.4			28								X	X	
244+63	RT	662		14.0															
	RT	662	663		11.8	11.1													
245+28	RT	663		15.5															
	RT	663	664		11.1	13.0													
	RT	663	665		9.4	9.6							60				X	X	
	RT	663	666		9.4	9.0													
245+23	RT	664		15.7															
245+90	RT	665		16.5															
	RT	665	665A		10.1	14.4						100					X	X	
246+87	RT	665A		17.9															
	RT	675B	675A		14.4	19.0						224					X	X	
245+25	LT	666		15.1															
	LT	666	667		9.0	8.7													
245+25	LT	667		13.5															
	LT	667	668		8.7	8.1							36				X	X	
	LT	667	670		10.2	17.0													
248+00	LT	669		21.5															
	LT	669	670		18.3	17.2													
248+00	LT	670		20.4															
	LT	670	671		17.2	18.0			16								X	X	
	LT	670	672		17.0	21.6													
248+10	LT	671		20.2															
249+50	LT	672		24.8															
	LT	672	673		21.8	23.2			8								X	X	
	LT	672	682		21.6	24.6													
249+50	LT	673		25.4															
249+49	RT	674		25.3															
	RT	674	675		21.5	20.0					36						X	X	
	RT	674	680		22.0	25.4													
249+49	RT	675		25.5															
	RT	675	675A		20.0	19.0						40					X	X	
	RT	675	676		20.5	23.1				48							X	X	
249+09	RT	675A		22.5															
250+02	RT	676		26.4															
	RT	676	677		23.4	25.1			48								X	X	
	RT	676	678		23.1	24.0													
250+20	RT	678		27.4															
	RT	678	679		24.0	25.5													
250+82	RT	680		28.7															
	RT	680	681		25.6	25.7			20								X	X	
	RT	680	686		25.6	30.1													
250+92	RT	681		28.6															
250+84	LT	682		29.0															
	LT	682	683		24.8	25.0			20								X	X	
	LT	682	684		24.8	25.9													
250+84	LT	683		27.2															
251+89	LT	684		31.6															
	LT	684	685		25.9	26.0			20								X	X	
						SHEET TOTALS			160	48	36	364	96						

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"
243+00	660																	
	660	661																
244+63	662																	
	662	663																
245+28	663																	
	663	664																
	663	665																
	663	666																
245+23	664																	
245+90	665																	
	665	665A																
246+87	665A																	
	675B	675A																
245+25	666																	
	666	667																
245+25	667																	
	667	668																
	667	670																
248+00	669																	
	669	670																
248+00	670																	
	670	671																
	670	672																
248+10	671																	
249+50	672																	
	672	673																
	672	682																
249+50	673																	
249+49	674																	
	674	675																
	674	680																
249+49	675																	
	675	675A																
	675	676																
249+09	675A																	
250+02	676																	
	676	677																
	676	678																
250+20	678																	
	678	679																
250+82	680																	
	680	681																
	680	686																
250+92	681																	
250+84	682																	
	682	683																
	682	684																
250+84	683																	
251+89	684																	
	684	685																
SHEET TOTALS																		

STATION	FROM	TO	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01, 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
243+00	660																
	660	661															
244+63	662																
	662	663		64													
245+28	663																
	663	664		20													
	663	665															
	663	666						76									
245+23	664																
245+90	665																
	665	665A															
246+87	665A																
	675B	675A															
245+25	666																
	666	667						32									
245+25	667																
	667	668															
	667	670			260												
248+00	669																
	669	670		32													
248+00	670																
	670	671															
	670	672			144												
248+10	671																
249+50	672																
	672	673															
	672	682			128												
249+50	673																
249+49	674																
	674	675															
	674	680			128												
249+49	675																
	675	675A															
	675	676															
249+09	675A																
250+02	676																
	676	677															
	676	678			12												
250+20	678																
	678	679			48												
250+82	680																
	680	681															
	680	686		212													
250+92	681																
250+84	682																
	682	683															
	682	684		100													
250+84	683																
251+89	684																
	684	685															
SHEET TOTALS				428	720			108									

STATION	FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.
243+00	660		1			1		1										
	660	661																
244+63	662		1									1	1					5.5
	662	663																
245+28	663		1	1.14														
	663	664																
	663	665																
	663	666																
245+23	664		1												1			
245+90	665		1	1.90														
	665	665A																
246+87	665A		1												1			
	675B	675A																
245+25	666		1	1.06						1					1			
	666	667																
245+25	667		1			1		1										
	667	668																
	667	670																
248+00	669		1							1		1	1					
	669	670																
248+00	670		1			1		1										
	670	671																
	670	672																
248+10	671		1									1	1					
249+50	672		1			1		1										
	672	673																
	672	682																
249+50	673		1									1	1					
249+49	674		1			1			1									
	674	675																
	674	680																
249+49	675		1	0.50														
	675	675A																
	675	676																
249+09	675A		1									1	1					4.3
250+02	676		1			1	1											
	676	677																
	676	678																
250+20	678		1							1		1	1					
	678	679																
250+82	680		1			1			1									
	680	681																
	680	686																
250+92	681		1									1	1					
250+84	682		1			1		1										
	682	683																
	682	684																
250+84	683		1									1	1					
251+89	684		1	0.66		1		1										
	684	685																
SHEET TOTALS			23	5.26		9	1	6	2	3		8	8		3			9.8

STATION	FROM	TO	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
243+00	660																
	660	661															
244+63	662													0.13			PLUG 18" CMP (BOTH ENDS)
	662	663															
245+28	663				1		1										
	663	664															
	663	665														70	
	663	666														799	REMOVE 7 EXIST. DI'S & 1 HW
245+23	664			1													2GI
245+90	665									1							4OTCB
	665	665A															
246+87	665A			1													2GI
	675B	675A															
245+25	666								1								2GI
	666	667															
245+25	667																
	667	668															
	667	670															
248+00	669																
	669	670															
248+00	670																
	670	671															
	670	672															
248+10	671																
249+50	672																
	672	673															
	672	682														31	
249+50	673																
249+49	674																
	674	675														350	
	674	680															
249+49	675				1		1										
	675	675A															
	675	676															
249+09	675A													0.13			PLUG 18" RCP (BOTH ENDS)
250+02	676																
	676	677															
	676	678															
250+20	678																
	678	679															
250+82	680																
	680	681															
	680	686															
250+92	681																
250+84	682																
	682	683															
	682	684														29	
250+84	683																
251+89	684																
	684	685															
SHEET TOTALS				2	2		2		1	1				0.26		1,279	

RD245795

COMPUTED BY: JBJAVELLANA DATE: 1/6/2012

CHECKED BY: JDE DATE: 7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-AC

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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
-L-																			
251+89	LT	684	688		25.9	27.8													
251+89	LT	685		28.3															
253+00	RT	686		33.7															
	RT	686	687		30.1	30.2			20								X	X	
253+00	RT	687		32.4															
253+00	LT	688		33.7															
	LT	688	689		27.8	27.9			28								X	X	
253+11	LT	689		31.3															
	LT	689	690		27.9	28.1			12								X	X	
253+29	LT	690		31.3															
	LT	690	691		28.1	29.1			12								X	X	
253+48	LT	691		31.3															
255+06	LT	692		35.1															
	LT	692	693		32.9	31.1			120								X	X	
256+33	LT	693		33.3															
	LT	693	697		31.1	30.3			156								X	X	
257+07	RT	694		36.6															
	RT	694	695		30.0	30.3													
	RT	694	700		30.0	28.4													
256+85	RT	695		33.5															
	RT	695	696		30.5	31.3													
256+34	RT	696		33.5															
257+96	LT	697		33.4															
	LT	697	698		30.3	29.7			104								X	X	
259+07	LT	698		33.4															
	LT	698	699		29.7	29.6			20								X	X	
259+09	LT	699		35.8															
	LT	699	706		29.4	28.5	X												
259+74	RT	700		35.5															
	RT	700	701		27.9	28.6			16								X	X	
	RT	700	702		27.9	27.4													
259+74	RT	701		34.6															
260+85	RT	702		35.2															
	RT	702	703		27.4	27.1													
261+10	RT	703		34.5															
	RT	703	704		28.1	28.6				32							X	X	
	RT	703	709		27.1	26.7													
-Y40-																			
11+04	RT	704		32.3															
	RT	704	705		28.6	32.2				36							X	X	
-L-																			
261+48	LT	706		35.0															
	LT	706	707		28.8	30.5			16								X	X	
	LT	706	713		28.0	27.4													
261+48	LT	707		33.1															
	LT	707	708		30.5	30.7			16								X	X	
261+70	LT	708		32.9															
262+08	RT	709		34.8															
	RT	709	710		27.9	29.1				24							X	X	
	RT	709	711		26.7	26.4													
SHEET TOTALS									520	92									

Station	From	To	C.S. Pipe 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. Pipe Class III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. Pipe Class IV 12"	15"	18"	24"	30"	36"	42"	48"	** " R.C. Pipe (Class V)	36" Ductile Iron Pipe (Sealed System)	15" Drainage Pipe Elbow	15" Side Drain Pipe	Special HW CU. Yards (See Detail 2-AF)	Endwalls Std. 838.01, 838.11 or Std. 838.80 (Unless Noted Otherwise) CU. Yards R.C.P.	C.S.P.
-L-																																	
251+89	684	688																		104													
251+89	685																																
253+00	686																																
	686	687																															
253+00	687																																
253+00	688																																
	688	689																															
253+11	689																																
	689	690																															
253+29	690																																
	690	691																															
253+48	691																																
255+06	692																																
	692	693																															
256+33	693																																
	693	697																															
257+07	694																																
	694	695																			32												
	694	700																			260												
256+85	695																																
	695	696																		44													
256+34	696																																
257+96	697																																
	697	698																															
259+07	698																																
	698	699																															
259+09	699																																
	699	706																			232												
259+74	700																																
	700	701																															
	700	702																			104												
259+74	701																																
260+85	702																																
	702	703																			24												
261+10	703																																
	703	704																															
	703	709																			96												
-Y40-																																	
11+04	704																																
	704	705																															
-L-																																	
261+48	706																																
	706	707																															
	706	713																				168											
261+48	707																																
	707	708																															
261+70	708																																
262+08	709																																
	709	710																															
	709	711																			48												
SHEET TOTALS																				148	796	168											

Station	From	To	Quantities for Drainage Structures: Per Each (0' thru 5.0')	Lin. Ft. A: 5.0' thru 10.0'	Lin. Ft. B: 10.0' and above (*Total L.F. for pay quantity shall be col. 'A' + (1.3 X col. '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 Grate Std. 840.16
-L-													
251+89	684	688											
251+89	685		1									1	1
253+00	686		1			1			1				
	686	687											
253+00	687		1									1	1
253+00	688		1	0.90		1		1					
	688	689											
253+11	689		1									1	1
	689	690											
253+29	690		1									1	1
	690	691											
253+48	691		1									1	1
255+06	692		1									1	1
	692	693											
256+33	693		1									1	1
	693	697											
257+07	694		1	1.53		1		1					
	694	695											
	694	700											
256+85	695		1									1	1
	695	696											
256+34	696		1									1	1
257+96	697		1									1	1
	697	698											
259+07	698		1									1	1
	698	699											
259+09	699		1	1.40		1			1				
	699	706											
259+74	700		1	2.64		1		1					
	700	701											
	700	702											
259+74	701		1	1.00								1	1
260+85	702		1	2.83		1		1					
	702	703											
261+10	703		1	2.40									
	703	704											
	703	709											
-Y40-													
11+04	704		1									1	1
	704	705											
-L-													
261+48	706		1	1.99		1			1				
	706	707											
	706	713											
261+48	707		1									1	1
	707	708											
261+70	708		1									1	1
262+08	709		1	3.13		1		1					
	709	710											
	709	711											
SHEET TOTALS			24	17.82		8		5	3			15	15

Station	From	To	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	SP CB (See Detail 2-AI)	Flowable Fill, C.Y.	Spec. JB (See Detail 2-AG)	G.D.I. (N.S.) Frame with Two Grates Std. 840.24	J.B. Std. 840.31 or 840.32	T.B.J.B. Std. 840.34 (See Detail 2-AE for Str. #218)	M.H. Frame & Cover Std. 840.54	T.B.D.I. Std. 840.35	G.D.I. (N.S.) Frame with Two Grates Std. 840.29	Open Throat Catch Basin (See Detail 2-AC)	Convert DI to JB w/ MH (See Detail 2-AK)	24" Welded Steel Pipe, 0.50" Thick, Grade B (Under RR)	SP CB (See Detail 2-AH)	Conc. & Brick Pipe Plug, C.Y. Std. 840.71	Conc. Collars Cl. "B" C.Y. Std. 840.72	Pipe Removal Lin. Ft.	Remarks
-L-																						
251+89	684	688																				
251+89	685																					
253+00	686																					
	686	687																				
253+00	687																					
253+00	688																					
	688	689																				
253+11	689																					
	689	690																				
253+29	690																					
	690	691																			29	
253+48	691																					
255+06	692																					
	692	693																				
256+33	693																					
	693	697																				
257+07	694																					
	694	695																				
	694	700																				
256+85	695																					
	695	696																			49	
256+34	696																					
257+96	697																					
	697	698																				
259+07	698																					
	698	699																				
259+09	699																					
	699	706																			21	
259+74	700																					
	700	701																				
	700	702																			88	REMOVE EXIST. DI
259+74	701																					
260+85	702																					
	702	703																				
261+10	703									1		1										
	703	704																				
	703	709																			243	REMOVE EXIST. DI
-Y40-																						
11+04	704																					
	704	705																				
-L-																						
261+48	706																					
	706	707																				
	706	713																			21	
261+48	707																					
	707	708																				
261+70	708																					
262+08	709																					
	709	710																				
	709	711																				
SHEET TOTALS										1		1									451	

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

RD245795

COMPUTED BY: JBJAVELLANA DATE: 1/9/2012

CHECKED BY: JDE DATE: 7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-AD

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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
-L-																			
261+91	RT	710		34.1															
262+63	RT	711		34.6															
	RT	711	712		27.7	29.7				16							X	X	
	RT	711	715		26.4	25.3													
262+63	RT	712		31.9															
263+21	LT	713		34.4															
	LT	713	714		27.4	29.1					20						X	X	
	LT	713	717		26.9	26.4													
263+61	RT	715		34.3															
	RT	715	716		26.5	28.4				16							X	X	
	RT	715	720		25.3	24.3													
263+61	RT	716		32.4															
264+96	LT	717		33.9															
	LT	717	718		27.4	29.1				24							X	X	
	LT	717	719		26.4	26.0													
265+94	LT	719		33.2															
	LT	719	722		26.0	25.4													
266+50	RT	720		32.6															
	RT	720	721		25.6	26.4				20							X	X	
	RT	720	731		24.3	23.1													
266+50	RT	721		30.4															
266+97	LT	722		32.0															
	LT	722	723		25.9	26.9						60					X	X	
	LT	722	728		25.4	25.0													
-Y41-																			
13+51	LT	723		31.3															
	LT	723	724		26.3	28.9					48						X	X	
	LT	723	725		26.9	27.2													
13+51	RT	725		31.4															
	RT	725	726		27.2	29.1						24					X	X	
	RT	725	727		28.4	30.0			16								X	X	
13+61	RT	727		32.2															
-L-																			
267+95	LT	728		30.4															
	LT	728	729		26.7	28.4			16								X	X	
	LT	728	730		25.0	24.2													
268+50	LT	730		29.5															
	LT	730	735		24.2	22.6													
268+90	RT	731		28.8															
	RT	731	732		24.4	25.7			12								X	X	
	RT	731	733		23.1	22.8													
268+90	RT	732		27.9															
269+57	RT	733		27.6															
	RT	733	734		24.1	25.5			12								X	X	
	RT	733	738		22.8	21.6													
269+57	RT	734		27.7															
269+70	LT	735		27.4															
	LT	735	736		24.4	26.3			16								X	X	
	LT	735	737		22.1	20.6													
270+63	LT	737		25.9															
SHEET TOTALS									72	76	68	84							

FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
710																									
711																									
711	712																								
711	715																			92					
712																									
713																									
713	714																								
713	717																					168			
715																									
715	716																								
715	720																			284					
716																									
717																									
717	718																								
717	719																					92			
719																									
719	722																						96		
720																									
720	721																								
720	731																			236					
721																									
722																									
722	723																								
722	728																						92		
723																									
723	724																								
723	725																					28			
725																									
725	726																								
725	727																								
727																									
728																									
728	729																								
728	730																						48		
730																									
730	735																						116		
731																									
731	732																								
731	733																					60			
732																									
733																									
733	734																								
733	738																					96			
734																									
735																									
735	736																								
735	737																							88	
737																									
SHEET TOTALS																				612		444	352	88	

FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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
710									1						
711									1	3.22		1		1	
711	712														
711	715														
712									1						
713									1	2.53		1			1
713	714														
713	717														
715									1	4.02		1		1	
715	716														
715	720														
716									1						
717									1	2.42		1			1
717	718														
717	719														
719									1	2.22		1			1
719	722														
720									1	3.30		1		1	
720	721														
720	731														
721									1						
722									1	1.55		1			1
722	723														
722	728														
723									1			1	1		
723	724														
723	725														
725									1			1	1		
725	726														
725	727														
727									1						
728									1	0.44		1			1
728	729														
728	730														
730									1	0.27		1			1
730	735														
731									1	0.62		1		1	
731	732														
731	733														
732									1						
733									1			1		1	
733	734														
733	738														
734									1						
735									1	0.26		1			1
735	736														
735	737														
737									1	0.27		1			1
SHEET TOTALS									22	21.12		15	2	5	8

FROM	TO	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
710				1	1																				
711																									
711	712																								
711	715																								
712				1	1																				
713																									
713	714																								
713	717																								
715																									
715	716																								
715	720																							17	
716				1	1																				
717																									
717	718																								
717	719																								
719																									
719	722																							191	
720																									
720	721																								
720	731																								
721				1	1																				
722																									
722	723																								
722	728																								
723																									
723	724																								
723	725																								
725																									
725	726																								
725	727																								
727				1	1																				
728																									
728	729																								
728	730																								
730																									
730	735																							36	
731																									
731	732																								
731	733																							23	
732				1	1																				
733																									
733	734																								
733	738																								
734				1	1																				
735																									
735	736																								
735	737																								
737																									
SHEET TOTALS				7	7																			267	

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

RD245795

COMPUTED BY:	JBJAVELLANA	DATE:	1/9/2012
CHECKED BY:	JDE	DATE:	7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-AE

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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
-L-																			
270+63	LT	737	745		20.6	16.8													
270+58	RT	738		25.9															
	RT	738	739		22.9	23.7			12								X	X	
	RT	738	740		21.1	18.7													
270+58	RT	739		25.9															
271+27	RT	740		24.8															
	RT	740	743		18.7	16.6													
-Y42-																			
11+05	LT	741		23.8															
	LT	741	740		20.4	20.2													
	LT	741	742		20.7	20.8													
11+05	RT	742		23.8															
-L-																			
272+05	RT	743		23.8															
	RT	743	744		18.3	19.8			24								X	X	
	RT	743	747		16.6	15.7													
272+25	LT	745		23.5															
	LT	745	746		19.1	19.2			16								X	X	
	LT	745	752		16.8	14.1													
272+25	LT	746		22.9															
272+70	RT	747		23.1															
	RT	747	748		17.4	17.6			24								X	X	
	RT	747	749		15.7	15.3													
272+75	RT	748		19.8															
273+04	RT	749		22.8															
	RT	749	750		17.0	17.8			24								X	X	
	RT	749	753		15.3	14.3													
273+98	LT	751																	
273+98	LT	752		22.3															
273+98	RT	753		22.2															
274+77	RT	755		22.0															
	RT	755	757		19.0	18.0													
275+15	RT	757		22.0															
	RT	757	756		16.7	15.0						40					X	X	
	RT	757	760		17.2	19.4													
	RT	757	758		17.7	18.5													
275+15	LT	758		22.0															
	LT	758	759		18.5	18.8													
275+66	LT	759		22.0															
	LT	759	762		19.0	21.2													
277+66	RT	760		23.1															
	RT	760	761		20.1	20.9			16								X	X	
	RT	760	765		19.4	21.1													
277+64	RT	761		23.1															
278+98	LT	762		22.0															
	LT	762	763		19.0	21.2			16								X	X	
278+98	LT	763		23.8															
	LT	763	764		21.4	21.5			28								X	X	
279+30	LT	764		23.7															
280+27	RT	765		25.8															
SHEET TOTALS									160			40							

STATION	LOCATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
-L-																																		
270+63	LT	737	745																							156								
270+58	RT	738																																
	RT	738	739																															
	RT	738	740																						64									
270+58	RT	739																																
271+27	RT	740																																
	RT	740	743																						72									
-Y42-																																		
11+05	LT	741																																
	LT	741	740																			60												
	LT	741	742																		16													
11+05	RT	742																																
-L-																																		
272+05	RT	743																																
	RT	743	744																															
	RT	743	747																						60									
272+25	LT	745																																
	LT	745	746																															
	LT	745	752																							168								
272+25	LT	746																																
272+70	RT	747																																
	RT	747	748																															
	RT	747	749																						28									
272+75	RT	748																																
273+04	RT	749																																
	RT	749	750																															
	RT	749	753																						88									
273+98	LT	751																																
273+98	LT	752																																
273+98	RT	753																																
274+77	RT	755																																
	RT	755	757																		32													
275+15	RT	757																																
	RT	757	756																															
	RT	757	760																				244											
	RT	757	758																			72												
275+15	LT	758																																
	LT	758	759																			44												
275+66	LT	759																																
	LT	759	762																		328													
277+66	RT	760																																
	RT	760	761																															
	RT	760	765																				256											
277+64	RT	761																																
278+98	LT	762																																
	LT	762	763																															
278+98	LT	763																																
	LT	763	764																															
279+30	LT	764																																
280+27	RT	765																																
SHEET TOTALS																					376	176	500		312	324								

STATION	LOCATION	FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L-																																		
270+63	LT	737	745																														287	REMOVE 3 EXIST. DI'S
270+58	RT	738		1			1		1																									
	RT	738	739																															
	RT	738	740																														26	
270+58	RT	739		1									1	1																				
271+27	RT	740		1	1.11		1		1																									
	RT	740	743																															
-Y42-																																		
11+05	LT	741		1												1					1													2GI
	LT	741	740																															
	LT	741	742																															
11+05	RT	742		1												1					1													2GI
-L-																																		
272+05	RT	743		1	2.21		1		1																									
	RT	743	744																															
	RT	743	747																															
272+25	LT	745		1	1.72		1			1																								
	LT	745	746																															
	LT	745	752																															
272+25	LT	746		1									1	1																				
272+70	RT	747		1	2.44		1		1																									
	RT	747	748																															
	RT	747	749																															
272+75	RT	748		1									1	1																				
273+04	RT	749		1	2.55		1		1																									
	RT	749	750																															
	RT	749	753																														57	
273+98	LT	751																														2.5793	47	REMOVE EXIST . HW
273+98	LT	752								1																				1				SP CB (See Sheet 2-AH)
273+98	RT	753							1									1																SP CB (See Sheet 2-AI)
274+77	RT	755		1			1		1																									
	RT	755	757																															
275+15	RT	757		1	0.26		1	1																										
	RT	757	756																															
	RT	757	760																															
	RT	757	758																														42	
275+15	LT	758		1			1	1																										
	LT	758	759																														21	
275+66	LT	759		1			1		1																									
	LT	759	762																														96	
277+66	RT	760		1			1			1																								
	RT	760	761																															
	RT	760	765																															
277+64	RT	761		1									1	1																				
278+98	LT	762		1			1		1																									
	LT	762	763																															
278+98	LT	763		1									1	1																				
	LT	763	764																															
279+30	LT	764		1									1	1																				
280+27	RT	765		1			1			1																								
SHEET TOTALS				21	10.29		13	2	9	4			6	6		2		1			2									1		2.5793	576	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/9/2012

CHECKED BY: JDE DATE: 7/18/2012

RD245795

PROJECT NO.	SHEET NO.
U-3810	3-AF

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L-																			
280+27	RT	765	766		21.9	22.6			16								X	X	
	RT	765	767		21.6	22.4													
280+27	RT	766		24.8															
281+55	RT	767		26.9															
	RT	767	768		22.7	23.7			16								X	X	
	RT	767	769		22.4	22.7													
281+55	RT	768		25.9															
282+41	RT	769		27.9															
	RT	769	770		22.9	25.5													
	RT	769	771		22.9	23.8													
282+41	LT	770		28.5															
284+25	RT	771		27.2															
	RT	771	772		23.8	24.1													
284+79	RT	772		27.1															
	RT	772	773		24.1	26.3			24								X	X	
	RT	772	774		24.1	24.2													
284+79	RT	773		28.5															
285+25	RT	774		27.2															
284+79	LT	775		28.6															
	LT	775	772		25.4	24.1													
	LT	775	776		25.4	25.6													
	LT	775	777		25.4	25.7													
284+25	LT	776		28.6															
285+25	LT	777		28.7															
285+65	RT	779		27.4															
	RT	779	778		21.8	21.6								36			X	X	
	RT	779	780		21.8	22.1													
	RT	779	784		21.8	22.3													
285+65	LT	780		28.9															
	LT	780	781		22.1	22.7													
285+75	LT	781		28.0															
-Y45-																			
11+00	RT	782		27.3															
	RT	782	783		24.5	24.4													
11+00	LT	783		27.6															
	LT	783	784		24.4	24.1			48								X	X	
-L-																			
287+72	RT	784		29.5															
	RT	784	785		24.1	28.0													
	RT	784	787		22.8	24.2													
287+72	LT	785		31.0															
292+00	RT	786		32.7															
	RT	786	787		26.7	25.4			12								X	X	
292+00	RT	787		33.8															
	RT	787	788		24.7	25.7													
	RT	787	790		24.7	26.3													
292+00	LT	788		33.9															
	LT	788	789		26.2	26.7													
293+15	LT	789		33.7															
	LT	789	789A		26.7	27.2													
SHEET TOTALS									116					36					

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
280+27	765	766																								
	765	767																			124					
280+27	766																									
281+55	767																									
	767	768																								
	767	769																			80					
281+55	768																									
282+41	769																									
	769	770																		44						
	769	771																		176						
282+41	770																									
284+25	771																									
	771	772																		48						
284+79	772																									
	772	773																								
	772	774																		40						
284+79	773																									
285+25	774																									
284+79	775																									
	775	772																		44						
	775	776																		48						
	775	777																		40						
284+25	776																									
285+25	777																									
285+65	779																									
	779	778																								
	779	780																							44	
	779	784																						200		
285+65	780																									
	780	781																							48	
285+75	781																									
11+00	782																									
	782	783																		28						
11+00	783																									
	783	784																								
287+72	784																									
	784	785																		44						
	784	787																					420			
287+72	785																									
292+00	786																									
	786	787																								
292+00	787																									
	787	788																				72				
	787	790																				160				
292+00	788																									
	788	789																			116					
293+15	789																									
	789	789A																			92					
SHEET TOTALS																				512	412	232	420	200	92	

STATION	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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 GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
280+27	765	766																																						
	765	767																																						
280+27	766									1									1	1																				
281+55	767									1			1			1																								
	767	768																																						
	767	769																																					21	
281+55	768									1									1	1																				
282+41	769									1	0.21		1			1																								
	769	770																																						
	769	771																																						
282+41	770									1			1			1		1																						
284+25	771									1			1		1																									
	771	772																																						
284+79	772									1			1	1																										
	772	773																																						
	772	774																																						
284+79	773									1									1	1																				
285+25	774									1			1			1																								
284+79	775									1			1	1				1																						
	775	772																																						
	775	776																																					22	
	775	777																																						
284+25	776									1			1		1			1																						
285+25	777									1			1			1		1																						
285+65	779									1	0.65		1			1																								
	779	778																																						
	779	780																																						
	779	784																																					43	
285+65	780									1	1.78		1			1		1																						
	780	781																																						
285+75	781							4.50																																SEE DETAIL 2-AJ
11+00	782									1												1					1													2GI
	782	783																																						
11+00	783									1												1					1													2GI
	783	784																																						
287+72	784									1	2.22		1			1																								
	784	785																																					28	
	784	787																																					75	
287+72	785									1			1			1		1																						
292+00	786									1	1.00								1	1																				
	786	787																																						
292+00	787									1	4.56		1			1																								
	787	788																																						
	787	790																																						
292+00	788									1	3.27		1		1																									
	788	789																																						
293+15	789									1	2.06		1		1																									
	789	789A																																						
SHEET TOTALS								4.50		22	15.75		16	2	4	10		6	4	4		2					2												189	

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

RD245795

COMPUTED BY:	JBJAVELLANA	DATE:	1/9/2012
CHECKED BY:	JDE	DATE:	7/18/2012

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-AG

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

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

STATION (SIZE / THICKNESS OR GAUGE) -L-	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
294+05	LT	789A		34.9															
	LT	789A	796		27.2	27.9													
293+65	RT	790		34.7															
	RT	790	791		27.0	29.2			16								X	X	
	RT	790	792		26.3	26.4													
293+65	RT	791		34.2															
293+93	RT	792		34.6															
	RT	792	793		26.9	27.5													
295+11	RT	793		35.4															
	RT	793	794		27.7	29.4			24								X	X	
	RT	793	795		27.5	28.0													
295+20	RT	794		34.3															
295+80	RT	795		35.6															
	RT	795	798		28.3	29.9													
295+80	LT	796		35.6															
	LT	796	797		28.1	29.5													
298+50	LT	797		36.4															
	LT	797	800		29.5	30.4	X												
298+50	RT	798		36.4															
	RT	798	799		29.9	31.2													
301+50	RT	799		37.2															
	RT	799	803		31.2	31.8													
301+71	LT	800		37.2															
	LT	800	801		30.4	30.5			24								X	X	
	LT	800	802		30.4	31.8													
301+71	LT	801		32.7															
303+50	LT	802		37.5															
	LT	802	802A		31.8	32.3			24								X	X	
303+50	LT	802A		34.5															
303+50	RT	803		37.5															
	RT	803	804		31.8	32.0			24								X	X	
303+50	RT	804		34.2															
308+06	RT	805		37.6															
	RT	805	806		33.0	33.1			20								X	X	
	RT	805	809		33.0	32.5													
308+06	RT	806		35.0															
310+00	LT	807		37.3															
	LT	807	808		32.3	32.4			20								X	X	
	LT	807	816		32.3	31.4													
310+00	LT	808		34.3															
310+00	RT	809		37.3															
	RT	809	810		32.8	34.0			16								X	X	
	RT	809	811		32.5	32.2													
310+00	RT	810		35.9															
311+06	RT	811		37.1															
	RT	811	812		32.5	33.5			16								X	X	
	RT	811	813		32.2	31.8													
311+06	RT	812		35.7															
312+52	RT	813		36.7															
	RT	813	814		32.0	32.1			16								X	X	
SHEET TOTALS									200										

STATION	LOC.	FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
294+05	LT	789A																									
	LT	789A	796																			168					
293+65	RT	790																									
	RT	790	791																								
	RT	790	792																				28				
293+65	RT	791																									
293+93	RT	792																									
	RT	792	793																			112					
295+11	RT	793																									
	RT	793	794																								
	RT	793	795																		64						
295+20	RT	794																									
295+80	RT	795																									
	RT	795	798																		264						
295+80	LT	796																									
	LT	796	797																		264						
298+50	LT	797																									
	LT	797	800																		316						
298+50	RT	798																									
	RT	798	799																		296						
301+50	RT	799																									
	RT	799	803																		196						
301+71	LT	800																									
	LT	800	801																								
	LT	800	802																		172						
301+71	LT	801																									
303+50	LT	802																									
	LT	802	802A																								
303+50	LT	802A																									
303+50	RT	803																									
	RT	803	804																								
303+50	RT	804																									
308+06	RT	805																									
	RT	805	806																								
	RT	805	809																		188						
308+06	RT	806																									
310+00	LT	807																									
	LT	807	808																								
	LT	807	816																		292						
310+00	LT	808																									
310+00	RT	809																									
	RT	809	810																								
	RT	809	811																			100					
310+00	RT	810																									
311+06	RT	811																									
	RT	811	812																								
	RT	811	813																			140					
311+06	RT	812																									
312+52	RT	813																									
	RT	813	814																								
SHEET TOTALS																					2,052	520	28				

STATION	LOC.	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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
294+05	LT	789A									1	2.79		1		1	
	LT	789A	796														
293+65	RT	790									1	3.45		1			1
	RT	790	791														
	RT	790	792														
293+65	RT	791									1						
293+93	RT	792									1	3.19		1			1
	RT	792	793														
295+11	RT	793									1	2.89		1			1
	RT	793	794														
	RT	793	795														
295+20	RT	794									1						
295+80	RT	795									1	2.57		1			1
	RT	795	798														
295+80	LT	796									1	2.71		1		1	
	LT	796	797														
298+50	LT	797									1	1.91		1		1	
	LT	797	800														
298+50	RT	798									1	1.47		1			1
	RT	798	799														
301+50	RT	799									1	0.98		1			1
	RT	799	803														
301+71	LT	800									1	1.81		1		1	
	LT	800	801														
	LT	800	802														
301+71	LT	801									1						
303+50	LT	802									1	0.71		1		1	
	LT	802	802A														
303+50	LT	802A									1						
303+50	RT	803									1	0.71		1			1
	RT	803	804														
303+50	RT	804									1						
308+06	RT	805									1			1		1	
	RT	805	806														
	RT	805	809														
308+06	RT	806									1						
310+00	LT	807									1	0.02		1			1
	LT	807	808														
	LT	807	816														
310+00	LT	808									1						
310+00	RT	809									1			1		1	
	RT	809	810														
	RT	809	811														
310+00	RT	810									1						
311+06	RT	811									1			1		1	
	RT	811	812														
	RT	811	813														
311+06	RT	812									1						
312+52	RT	813									1	0.51		1		1	
	RT	813	814														
SHEET TOTALS											26	25.72		17		9	8

STATION	LOC.	FROM	TO	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
294+05	LT	789A																									
	LT	789A	796																							19	
293+65	RT	790																									
	RT	790	791																							19	
	RT	790	792																								
293+65	RT	791				1	1																				
293+93	RT	792																									
	RT	792	793																								
295+11	RT	793																									
	RT	793	794																								
	RT	793	795																								
295+20	RT	794				1	1																				
295+80	RT	795																									
	RT	795	798																							44	
295+80	LT	796																									
	LT	796	797																							21	
298+50	LT	797																									
	LT	797	800																							21	
298+50	RT	798																									
	RT	798	799																							19	
301+50	RT	799																									
	RT	799	803																								
301+71	LT	800																									
	LT	800	801																							17	
	LT	800	802																							53	
301+71	LT	801				1	1																				
303+50	LT	802																									
	LT	802	802A																							17	
303+50	LT	802A				1	1																				
303+50	RT	803																									
	RT	803	804																							22	
303+50	RT	804				1	1																				
308+06	RT	805																									
	RT	805	806																							20	
	RT	805	809																								
308+06	RT	806							1					1													2GI
310+00	LT	807																									
	LT	807	808																								
	LT	807	816																							127	
310+00	LT	808							1					1													2GI
310+00	RT	809																									
	RT	809	810																								
	RT	809	811																								
310+00	RT	810							1					1													2GI
311+06	RT	811																									
	RT	811	812																								
	RT	811	813																								
311+06	RT	812				1	1																				
312+52	RT	813																									
	RT	813	814																								
SHEET TOTALS						6	6		3					3												399	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/9/2012

CHECKED BY: JDE DATE: 7/18/2012

RD245795

PROJECT NO.	SHEET NO.
U-3810	3-AH

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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
-L-																			
312+52	RT	813	818		31.3	31.1													
312+52	RT	814		34.0															
	RT	814	815		32.1	32.4			32								X	X	
312+14	RT	815		34.3															
312+97	LT	816		36.6															
	LT	816	817		31.7	33.1			16								X	X	
	LT	816	822		31.4	31.1													
312+97	LT	817		35.3															
312+99	RT	818		36.6															
	RT	818	819		31.1	31.2			16								X	X	
	RT	818	824		31.1	30.8													
313+00	RT	819		35.3															
-Y47-																			
11+00	RT	820		33.3															
	RT	820	819		31.3	31.2			28								X	X	
	RT	820	821		31.3	31.4													
11+00	LT	821		33.3															
-L-																			
314+03	LT	822		36.3															
	LT	822	823		31.3	32.4			16								X	X	
	LT	822	826		31.0	30.6													
314+03	LT	823		35.4															
314+00	RT	824		36.3															
	RT	824	825		31.5	31.8			20								X	X	
	RT	824	831		30.8	30.3													
314+00	RT	825		33.7															
315+18	LT	826		35.3															
	LT	826	831		30.6	30.3													
315+25	LT	827		34.9															
-Y48-																			
22+36	RT	828		34.7															
	RT	828	827		31.2	31.5			40								X	X	
	RT	828	829		31.2	31.4													
	RT	828	833		31.2	31.1													
21+95	RT	829		34.6															
	RT	829	830		31.4	31.7													
20+75	RT	830		35.1															
	RT	830	830A		31.7	31.9													
19+85	RT	830A		35.0															
	RT	830A	830C		31.9	32.2													
19+25	RT	830B		35.5															
	RT	830B	830C		32.5	32.2			16								X	X	
19+25	RT	830C		35.4															
	RT	830C	830D		32.2	34.1			68								X	X	
22+36	LT	833		35.0															
	LT	833	838		31.1	31.1				24							X	X	
22+36	LT	838		34.4															
	LT	838	837		31.1	32.4													
	LT	838	839		31.1	30.8						60					X	X	
SHEET TOTALS									252	24		60							

STATION	FROM	TO	C.S. PIPE 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
THICKNESS OR GAUGE			.064	.064	.064	.064	.079	.079	.109	.109																
-L-																										
312+52	813	818																				44				
312+52	814																									
	814	815																								
312+14	815																									
312+97	816																									
	816	817																								
	816	822																			100					
312+97	817																									
312+99	818																									
	818	819																								
	818	824																				96				
313+00	819																									
-Y47-																										
11+00	820																									
	820	819																								
	820	821																		32						
11+00	821																									
-L-																										
314+03	822																									
	822	823																								
	822	826																			112					
314+03	823																									
314+00	824																									
	824	825																								
	824	831																				172				
314+00	825																									
315+18	826																									
	826	831																				116				
315+25	827																									
-Y48-																										
22+36	828																									
	828	827																								
	828	829																		36						
	828	833																			40					
21+95	829																									
	829	830																		112						
20+75	830																									
	830	830A																		80						
19+85	830A																									
	830A	830C																		52						
19+25	830B																									
	830B	830C																								
19+25	830C																									
	830C	830D																								
22+36	833																									
	833	838																								
22+36	838																									
	838	837																				84				
	838	839																								
SHEET TOTALS																				312	252	512				

STATION	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN
-L-																		
312+52	813	818																
312+52	814									1								
	814	815																
312+14	815									1								
312+97	816									1	0.20		1			1		
	816	817																
	816	822																
312+97	817									1								
312+99	818									1	0.51		1		1			
	818	819																
	818	824																
313+00	819									1								
-Y47-																		
11+00	820									1								
	820	819																
	820	821																
11+00	821									1								
-L-																		
314+03	822									1	0.20		1			1		
	822	823																
	822	826																
314+03	823									1								
314+00	824									1	0.52		1		1			
	824	825																
	824	831																
314+00	825									1								
315+18	826									1			1			1		
	826	831																
315+25	827									1								
-Y48-																		
22+36	828									1			1			1		
	828	827																
	828	829																
	828	833																
21+95	829									1			1	1				
	829	830																
20+75	830									1			1		1			
	830	830A																
19+85	830A									1			1		1			
	830A	830C																
19+25	830B									1			1		1			
	830B	830C																
19+25	830C									1			1		1			
	830C	830D																
22+36	833									1			1		1			
	833	838																
22+36	838									1								
	838	837																
	838	839																
SHEET TOTALS										22	1.43		12	1	7	4		

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L-																								
312+52	813	818																						
312+52	814					1					1													2GI
	814	815																						
312+14	815					1					1													2GI
312+97	816																							
	816	817																						
	816	822																					11	
312+97	817		1	1																				
312+99	818																							
	818	819																						
	818	824																					55	
313+00	819		1	1																				
-Y47-																								
11+00	820					1					1													2GI
	820	819																						
	820	821																						
11+00	821					1					1													2GI
-L-																								
314+03	822																							
	822	823																						
	822	826																					40	
314+03	823		1	1																				
314+00	824																							
	824	825																						
	824	831																					33	
314+00	825					1					1													2GI
315+18	826																							
	826	831																					183	
315+25	827		1	1																				
-Y48-																								
22+36	828																							
	828	827																						
	828	829																						
	828	833																						
21+95	829																							
	829	830																						
20+75	830																							
	830	830A																						
19+85	830A																							
	830A	830C																						
19+25	830B																							
	830B	830C																						
19+25	830C																							
	830C	830D																						
22+36	833																							
	833	838																						
22+36	838					1					1													
	838	837																					59	
	838	839																						
SHEET TOTALS			4	4		6					6												381	

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

RD245795

COMPUTED BY: JBJAVELLANA DATE: 1/9/2012

CHECKED BY: JDE DATE: 7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-AI

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

Station / Size / Thickness or Gauge / -L-

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) 12"	15"	18"	24"	30"	36"	42"	48"	Do Not Use RCP	Do Not Use CSP	Do Not Use CAAP	Do Not Use HDPE
315+78	RT	831		35.8															
	RT	831	832		30.3	30.0						24					X	X	
	RT	831	834		31.5	32.1													
316+16	RT	834		35.4															
	RT	834	835		32.1	32.3													
316+63	RT	835		35.3															
	RT	835	836		32.3	32.7													
317+43	RT	836		35.7															
316+63	LT	839		35.6															
	LT	839	840		30.8	30.6													
317+43	LT	840		35.7															
	LT	840	841		30.6	30.2							136				X	X	
318+81	LT	841		36.5															
	LT	841	842		30.2	29.9							108				X	X	
319+95	LT	842		37.3															
	LT	842	843		31.8	32.1													
	LT	842	848		29.9	29.6							100				X	X	
319+95	RT	843		37.8															
	RT	843	844		32.1	32.3													
	RT	843	846		32.1	34.4													
319+95	RT	844		36.7															
	RT	844	845		32.3	32.4			20								X	X	
319+95	RT	845		34.6															
320+45	RT	846		37.6															
	RT	846	847		34.4	35.0													
320+95	RT	847		38.0															
321+00	LT	848		38.0															
	LT	848	849		29.6	28.9													
322+90	LT	849		37.4															
	LT	849	849A		28.9	28.2													
324+47	LT	849A		37.4															
	LT	849A	849B		28.2	28.0													
325+10	LT	850		38.2															
	LT	850	851		35.2	33.2													
325+10	RT	851		36.6															
	RT	851	852		33.2	33.3			16								X	X	
	RT	851	853		33.2	32.6													
325+10	RT	852		35.5															
326+00	RT	853		36.0															
	RT	853	854		32.6	32.8			16								X	X	
	RT	853	855		32.6	31.9													
326+00	RT	854		35.0															
327+50	RT	855		35.0															
	RT	855	856		31.9	32.5			12								X	X	
	RT	855	860		31.9	30.9													
327+50	RT	856		34.7															
327+92	LT	857		36.4															
	LT	857	858		32.4	28.8													
	LT	857	859		32.4	32.9													
328+88	LT	859		35.9															
SHEET TOTALS									64			24	344						

Station	From	To	C.S. Pipe 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. Pipe Class III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. Pipe Class IV 12"	15"	18"	24"	30"	36"	42"	48"
315+78	831																									
	831	832																								
	831	834																		36						
316+16	834																									
	834	835																		40						
316+63	835																									
	835	836																		76						
317+43	836																									
316+63	839																									
	839	840																						76		
317+43	840																									
	840	841																								
318+81	841																									
	841	842																								
319+95	842																									
	842	843																		72						
	842	848																								
319+95	843																									
	843	844																		32						
	843	846																		44						
319+95	844																									
	844	845																								
319+95	845																									
320+45	846																									
	846	847																		44						
320+95	847																									
321+00	848																									
	848	849																								
322+90	849																									
	849	849A																								
324+47	849A																									
	849A	849B																								
325+10	850																									
	850	851																		44						
325+10	851																									
	851	852																								
	851	853																		84						
325+10	852																									
326+00	853																									
	853	854																								
	853	855																		144						
326+00	854																									
327+50	855																									
	855	856																								
	855	860																		132						
327+50	856																									
327+92	857																									
	857	858																		84						
	857	859																		92						
328+88	859																									
SHEET TOTALS																				924				76		

Station	From	To	** " R.C. Pipe (Class V)	36" Ductile Iron Pipe (Sealed System)	15" Drainage Pipe Elbow	15" Side Drain Pipe	Special HW (See Detail 2-AF) Cu. Yards	Endwalls Std. 838.01, 838.11 or Std. 838.80 (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
315+78	831									1	0.50		1		1			
	831	832																
	831	834																
316+16	834									1			1		1			
	834	835																
316+63	835									1			1	1				
	835	836																
317+43	836									1			1			1		
316+63	839									1			1	1				
	839	840																
317+43	840									1	0.12		1		1			
	840	841																
318+81	841									1	1.27							
	841	842																
319+95	842									1	2.40							
	842	843																
	842	848																
319+95	843									1	0.71						1	
	843	844																
	843	846																
319+95	844									1			1			1		
	844	845																
319+95	845									1								
320+45	846									1							1	
	846	847																
320+95	847									1			1			1		1
321+00	848									1	3.40							
	848	849		192														
322+90	849									1	3.57							
	849	849A		160														
324+47	849A									1	4.21							
	849A	849B		60														
325+10	850									1			1		1			1
	850	851																
325+10	851									1			1		1			
	851	852																
	851	853																
325+10	852									1								
326+00	853									1			1		1			
	853	854																
	853	855																
326+00	854									1								
327+50	855									1			1		1			
	855	856																
	855	860																
327+50	856									1								
327+92	857									1			1		1			1
	857	858																
	857	859																
328+88	859									1			1		1			1
SHEET TOTALS				412						25	16.18		14	2	9	3	2	4

Station	From	To	D.I. Std. 840.14 or Std. 840.15	D.I. Frame and Grate Std. 840.16	G.D.I. Type "A" Std. 840.17 or 840.26	G.D.I. Type "B" Std. 840.18 or 840.27	G.D.I. Type "D" Std. 840.19 or 840.28	SP CB (See Detail 2-AI)	Flowable Fill, C.Y.	Spec. JB (See Detail 2-AG)	G.D.I. (N.S.) Frame with Two Grates Std. 840.24	J.B. Std. 840.31 or 840.32	T.B.J.B. Std. 840.34 (See Detail 2-AE for Str. #218)	M.H. Frame & Cover Std. 840.54	T.B.D.I. Std. 840.35	G.D.I. (N.S.) Frame with Two Grates Std. 840.29	Open Throat Catch Basin (See Detail 2-AC)	Convert DI to JB w/ MH (See Detail 2-AK)	24" Welded Steel Pipe, 0.50" Thick, Grade B (Under RR)	SP CB (See Detail 2-AH)	Conc. & Brick Pipe Plug, C.Y. Std. 840.71	Conc. Collars Cl. "B" C.Y. Std. 840.72	Pipe Removal Lin. Ft.	Remarks
315+78	831																							
	831	832																						
	831	834																						
316+16	834																							
	834	835																						
316+63	835																							
	835	836																						
317+43	836																							
316+63	839																							
	839	840																						
317+43	840																							
	840	841																						
318+81	841					1										1								2GI
	841	842																					36	
319+95	842					1					1													2GI
	842	843																						
	842	848																						
319+95	843		1	1																				
	843	844																						
	843	846																						
319+95	844																							
	844	845																						
319+95	845		1	1																				
320+45	846		1	1																				
	846	847																					27	
320+95	847																							
321+00	848					1										1								
	848	849																						
322+90	849										1				1									TB2GI
	849	849A																					122	REMOVE 2 EXIST. DI'S
324+47	849A										1				1									TB2GI
	849A	849B																						
325+10	850																							
	850	851																						
325+10	851																							
	851	852																						
	851	853																					24	
325+10	852		1	1																				
326+00	853																							
	853	854																						
	853	855																						
326+00	854		1	1																				
327+50	855																							
	855	856																						
	855	860																					24	
327+50	856		1	1																				
327+92	857																							
	857	858																					24	
	857	859																						
328+88	859																							
SHEET TOTALS			6	6		3					3				2	2							257	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/10/2012

CHECKED BY: JDE DATE: 7/18/2012

RD245795

PROJECT NO.	SHEET NO.
U-3810	3-AJ

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109
-L-																											
328+88	RT	860		34.6																							
	RT	860	861		30.9	29.0			40								X	X									
331+15	RT	862		34.1																							
	RT	862	863		31.1	30.9																					
331+63	RT	863		34.1																							
	RT	863	864		30.9	30.0			44								X	X									
	RT	863	865		30.9	31.1																					
332+13	RT	865		34.1																							
331+15	LT	866		34.1																							
	LT	866	867		31.1	29.5																					
331+63	LT	867		34.1																							
	LT	867	868		28.2	28.0						36					X	X									
	LT	867	869		28.2	28.4																					
332+13	LT	869		34.1																							
	LT	869	870		28.4	28.6																					
332+67	LT	870		34.2																							
	LT	870	871		29.4	30.2			16								X	X									
	LT	870	874		28.6	29.1																					
332+67	LT	871		33.4																							
334+00	RT	872		34.5																							
	RT	872	873		26.3	26.2								68			X	X									
	RT	872	872A		26.3	26.4																					
334+50	RT	872A		34.6																							
	RT	872A	872B		28.7	28.8			12								X	X									
	RT	872A	876		26.4	26.8																					
334+50	RT	872B		35.0																							
334+22	LT	874		34.5																							
	LT	874	875		29.8	30.4			8								X	X									
	LT	874	878		29.6	31.0																					
334+22	LT	875		35.1																							
335+87	RT	876		35.3																							
	RT	876	877		29.0	31.0			8								X	X									
	RT	876	881		26.8	27.1																					
335+87	RT	877		35.9																							
336+25	LT	878		35.4																							
	LT	878	879		31.2	31.4				8							X	X									
336+25	LT	879		35.0																							
	LT	879	880		31.4	31.8			72								X	X									
337+00	LT	880		34.4																							
	LT	880	884		31.8	32.2			76								X	X									
337+20	RT	881		35.9																							
	RT	881	882		29.3	31.0			12								X	X									
	RT	881	885		27.1	27.5	X																				
337+20	RT	882		36.5																							
	RT	882	883		31.0	32.8																					
337+69	RT	883		36.0																							
337+80	LT	884		34.4																							
338+90	RT	885		36.8																							
	RT	885	886		29.3	30.7			12								X	X									
	RT	885	887		27.5	27.8																					
SHEET TOTALS									300	8		36		68													

STATION	LOCATION	FROM	TO	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"	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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
328+88	RT	860																									1			1		1			
	RT	860	861																																
331+15	RT	862																									1			1		1			
	RT	862	863										44																						
331+63	RT	863																									1			1	1				
	RT	863	864																																
	RT	863	865										44																						
332+13	RT	865																									1			1			1		
331+15	LT	866																									1			1			1		
	LT	866	867										44																						
331+63	LT	867																									1	0.88		1	1				
	LT	867	868																																
	LT	867	869												44																				
332+13	LT	869																									1	0.70		1		1			
	LT	869	870												48																				
332+67	LT	870																									1	0.55		1		1			
	LT	870	871																																
	LT	870	874												148																				
332+67	LT	871																									1								
334+00	RT	872																									1	3.17		1			1		
	RT	872	873																																
	RT	872	872A															44																	
334+50	RT	872A																									1	3.22		1			1		
	RT	872A	872B																																
	RT	872A	876															132																	
334+50	RT	872B																									1	1.24							
334+22	LT	874																									1	0.48		1		1			
	LT	874	875																																
	LT	874	878											196																					
334+22	LT	875																									1			1		1			
335+87	RT	876																									1	3.51		1			1		
	RT	876	877																																
	RT	876	881															128																	
335+87	RT	877																									1								
336+25	LT	878																									1			1		1			
	LT	878	879																																
336+25	LT	879																									1			1			1		
	LT	879	880																																
337+00	LT	880																									1								
	LT	880	884																																
337+20	RT	881																									1	3.83		1			1		
	RT	881	882																																
	RT	881	885														164																		
337+20	RT	882																									1	0.54		1		1			
	RT	882	883										44																						
337+69	RT	883																									1								
337+80	LT	884																									1								
338+90	RT	885																									1	4.23		1			1		
	RT	885	886																																
	RT	885	887														132																		
SHEET TOTALS													176	196	240		296	304									24	22.35		18	2	8	8		

STATION	LOCATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
328+88	RT	860																							
	RT	860	861																					79	REMOVE EXIST. 72" RCP
331+15	RT	862																							
	RT	862	863																						
331+63	RT	863																							
	RT	863	864																						
	RT	863	865																						
332+13	RT	865																							
331+15	LT	866																							
	LT	866	867																					123	
331+63	LT	867																							
	LT	867	868																						
	LT	867	869																						
332+13	LT	869																							
	LT	869	870																						REMOVE EXIST. DI
332+67	LT	870																							
	LT	870	871																						
	LT	870	874																						REMOVE 2 EXIST. DI'S
332+67	LT	871														1	1								TB2GI
334+00	RT	872																							
	RT	872	873																						
	RT	872	872A																						
334+50	RT	872A																							
	RT	872A	872B																						
	RT	872A	876																						
334+50	RT	872B		1	1																				
334+22	LT	874																							
	LT	874	875																						
	LT	874	878																						REMOVE 4 EXIST. DI'S
334+22	LT	875																							
335+87	RT	876																							
	RT	876	877																						
	RT	876	881																					215	REMOVE 2 EXIST. DI'S
335+87	RT	877		1	1																				
336+25	LT	878																							
	LT	878	879																						
336+25	LT	879																							
	LT	879	880																					81	
337+00	LT	880		1	1																				
	LT	880	884																					110	REMOVE EXIST. DI
337+20	RT	881																							
	RT	881	882																						
	RT	881	885																					52	REMOVE EXIST. DI
337+20	RT	882																							
	RT	882	883																						
337+69	RT	883														1	1								TB2GI
337+80	LT	884		1	1																				
338+90	RT	885																							
	RT	885	886																						
	RT	885	887																					37	
SHEET TOTALS				4	4											2	2							697	

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

RD245795

COMPUTED BY: JBJAVELLANA	DATE: 1/10/2012	PROJECT NO.	SHEET NO.
CHECKED BY: JDE	DATE: 7/18/2012	U-3810	3-AK

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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	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"	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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 GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L-																																																																																	
338+90	RT	886		35.7																																															1			1			1																								
-Y49-																																																																																
10+51	LT	887		36.6																																															1	3.72		1			1																								
	LT	887	888		28.8	32.5																																	28																																									41	
	LT	887	892		27.8	28.0																																			56																																								
10+80	LT	888		36.3																																															1			1	1																									
	LT	888	889		33.0	35.1				12							X	X																																																															
	LT	888	890		33.3	35.0																															56																																											
-L-																																																																																	
341+01	RT	891		36.2																																															1	3.22		1		1																									
	RT	891	892		28.0	28.0																																		12																																									
	RT	891	897		28.0	28.2																																	80																																									
340+83	RT	892		36.4																																															1	3.41		1		1																									
	RT	892	893		29.7	32.0																															44																																											
340+83	RT	893		37.3																																															1	0.31						1		1	1																						
	RT	893	894		32.0	33.2																															28																																											
340+83	LT	894		36.4																																															1			1			1																								
	LT	894	895		33.2	33.2																															12																																											
341+01	LT	895		36.2																																															1			1			1																								
	LT	895	896		33.2	33.6																															80																																											
341+88	LT	896		36.6																																															1			1	1																									
341+88	RT	897		36.6																																															1	3.40		1	1																									
	RT	897	900		28.2	29.1																																	132																																							0.5526	54	
																																																																										24			0.5526		WELDED STEEL (TRENCHLESS INSTALLATION)
343+70	LT	898		37.2																																															1			1		1																									
	LT	898	899		34.2	33.9			24								X	X																																																																
343+11	LT	899A																																							56																																								
343+70	RT	900		37.2																																															1	3.15		1			1																								
	RT	900	901		29.8	31.0			8								X	X																																																																
	RT	900	904		29.6	34.7																																164																																										
343+70	RT	901		37.0																																															1	1.00		1			1																								
344+45	LT	898A		39.0																																															1							1		1	1																						
	LT	898A	899B		35.8	34.9																															24																																											
344+45	LT	899B		37.9																																															1			1		1																									
	LT	899B	899C		34.9	34.3			28								X	X																																																																
345+40	LT	902		38.5																																															1			1		1																									
	LT	902	903		35.2	34.5			28								X	X																																																															28	
346+22	LT	903A																																							48																																								
345+40	RT	904		38.5																																															1			1			1																								
	RT	904	905		35.0	35.3			12								X	X																																																																	
	RT	904	906		34.7	35.0																																56																																								196	REMOVE EXIST. DI
345+40	RT	905		37.2																																															1									1	1																						
346+00	RT	906		38.8																																															1			1			1																								
	RT	906	907		35.3	35.8			16								X	X																																																																	
	RT	906	908		35.0	35.5																																80																																										
346+00	RT	907		37.7																																															1									1	1																						
346+85	RT	908		39.2																																															1			1			1																								
	RT	908	909		35.7	35.8			8								X	X																																																																	
	RT	908	912		35.5	36.2																																132																																								151	REMOVE EXIST. DI
346+85	RT	909		38.8																																															1			1		1																									
SHEET TOTALS									124	12																											244	432	240	12	56	104									22	18.21		18	3	6	9	2		4	4																	24			1.1052	470	

ABBREVIATIONS

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

COMPUTED BY: JBJAVELLANA DATE: 1/10/2012

CHECKED BY: JDE DATE: 7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-AL

RD245795

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
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) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L-																			
348+09	LT	910		39.6															
	LT	910	911		36.6	35.4			28								X	X	
348+24	RT	912		40.0															
	RT	912	913		36.5	36.7			16								X	X	
	RT	912	914		36.5	37.5													
348+24	RT	913		38.9															
349+06	RT	914		40.5															
	RT	914	915		37.5	37.7													
350+07	RT	915		40.7															
350+24	LT	916		41.1															
	LT	916	917		38.1	36.0			32								X	X	
351+14	LT	918																	
-Y52-																			
10+80	RT	920		40.9															
	RT	920	919		36.7	36.7					20						X	X	
	RT	920	921		37.0	38.8													
	RT	920	922		36.7	37.0													
-L-																			
354+21	LT	923		41.2															
	LT	923	924		38.2	38.3			16								X	X	
	LT	923	926		38.2	37.7													
354+21	LT	924		40.5															
355+18	RT	925		40.4															
	RT	925	927		37.4	36.8													
355+36	LT	926		40.7															
	LT	926	929		37.7	37.4													
356+45	RT	927		39.8															
	RT	927	931		36.8	36.6													
356+50	LT	928		41.2															
	LT	928	929		38.0	37.4													
356+50	LT	929		40.4															
	LT	929	934		37.4	37.0													
357+17	RT	931		39.6															
	RT	931	930		36.6	36.3					84						X	X	
	RT	931	932		36.6	36.9													
357+23	LT	932		41.1															
	LT	932	933		37.1	37.9													
	LT	932	934		36.9	37.0													
357+39	LT	933		41.1															
357+27	LT	934		40.6															
	LT	934	935		37.3	37.4			4								X	X	
	LT	934	936		37.3	37.6													
357+26	LT	935		40.4															
357+60	LT	936		40.6															
-Y14-																			
18+90	RT	937																	
19+27	LT	938																	
18+42	LT	938A																	
20+00	RT	939		26.5															
	RT	939	940		23.3	23.1													
SHEET TOTALS									96		104								

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
-L-																										
348+09	910																									
	910	911																								
348+24	912																									
	912	913																								
	912	914																		76						
348+24	913																									
349+06	914																									
	914	915																		96						
350+07	915																									
350+24	916																									
	916	917																								
351+14	918																								48	
-Y52-																										
10+80	920																									
	920	919																								
	920	921																		44						
	920	922																			44					
-L-																										
354+21	923																									
	923	924																								
	923	926																		108						
354+21	924																									
355+18	925																									
	925	927																		120						
355+36	926																									
	926	929																		108						
356+45	927																									
	927	931																			68					
356+50	928																									
	928	929																		28						
356+50	929																									
	929	934																		72						
357+17	931																									
	931	930																								
	931	932																			64					
357+23	932																									
	932	933																		12						
	932	934																			28					
357+39	933																									
357+27	934																									
	934	935																								
	934	936																		28						
357+26	935																									
357+60	936																									
-Y14-																										
18+90	937																						24			
19+27	938																			28						
18+42	938A																			28						
20+00	939																									
	939	940																		44						
SHEET TOTALS																				792	204		24		48	

STATION	FROM	TO	** " R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW (SEE DETAIL 2-AF) CU. YARDS	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN
-L-																		
348+09	910									1			1		1			
	910	911																
348+24	912									1			1			1		
	912	913																
	912	914																
348+24	913									1								
349+06	914									1			1			1		
	914	915																
350+07	915									1			1			1		
350+24	916									1			1		1			
	916	917																
351+14	918																	
-Y52-																		
10+80	920									1								
	920	919																
	920	921																
	920	922																
-L-																		
354+21	923									1			1			1		
	923	924																
	923	926																
354+21	924									1								
355+18	925									1			1		1			
	925	927																
355+36	926									1			1			1		
	926	929																
356+45	927									1			1		1			
	927	931																
356+50	928									1							1	
	928	929																
356+50	929									1			1			1		
	929	934																
357+17	931									1			1		1			
	931	930																
	931	932																
357+23	932									1							1	
	932	933																
	932	934																
357+39	933									1							1	
357+27	934									1			1			1		
	934	935																
	934	936																
357+26	935									1							1	
357+60	936									1			1		1			
-Y14-																		
18+90	937																	
19+27	938																	
18+42	938A																	
20+00	939									1							1	
	939	940																
SHEET TOTALS										21			13		6	7	5	

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L-																								
348+09	910																							
	910	911																						
348+24	912																							
	912	913																						
	912	914																					74	REMOVE 3 EXIST. DI'S
348+24	913		1	1																				
349+06	914																							
	914	915																					900	REMOVE 7 EXIST. DI'S
350+07	915																							
350+24	916																							
	916	917																						
351+14	918																						24	
-Y52-																								
10+80	920		1	1																				
	920	919																						
	920	921																					258	
	920	922																						
-L-																								
354+21	923																							
	923	924																						
	923	926																					129	REMOVE 3 EXIST. DI'S
354+21	924		1	1																				
355+18	925																							
	925	927																						
355+36	926																							
	926	929																						
356+45	927																							
	927	931																					82	REMOVE 2 EXIST. DI'S
356+50	928		1	1																				
	928	929																						
356+50	929																							
	929	934																						
357+17	931																							
	931	930																						
	931	932																					165	REMOVE 3 EXIST. DI'S
357+23	932		1	1																				
	932	933																						
	932	934																						
357+39	933		1	1																				
357+27	934																							
	934	935																						
	934	936																						
357+26	935		1	1																				
357+60	936																							
-Y14-																								
18+90	937																						304	
19+27	938																						21	
18+42	938A																						20	
20+00	939		1	1																				
	939	940																					165	
SHEET TOTALS			8	8																			2,142	

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

R0245795

COMPUTED BY:	JBJAVELLANA	DATE:	1/10/2012
CHECKED BY:	JDE	DATE:	7/18/2012

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-3810	3-AM

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

SUB-REGIONAL & REGIONAL
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
								12"	15"	18"	24"	30"	36"	42"	48"				
THICKNESS OR GAUGE -Y14-																			
20+50	RT	940		26.3															
20+50	RT	940	941		23.1	19.2													
21+96	RT	942																	
21+73	CL	943																	
23+33	LT	944																	
23+76	RT	945																	
24+72	LT	946																	
25+27	LT	947																	
26+49	LT	948																	
-Y53-																			
26+73	RT	950		35.8															
	RT	950	951		30.7	30.7													
	RT	950	952		31.5	33.6		272									X	X	
26+69	LT	951																	
29+50	CL	952		36.3															
						SHEET TOTALS		272											
PROJECT TOTALS (SHEET 3-D TO SHEET 3-AM)								7,232	784	1,184	788	468	244	68					

STATION	C.S. PIPE 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
THICKNESS OR GAUGE -Y14-	.064	.064	.064	.064	.079	.079	.109	.109																
20+50																								
20+50																	56							
21+96																						40		
21+73																						112		
23+33																	28							
23+76																						48		
24+72																	16							
25+27																	16							
26+49																	24							
-Y53-																								
26+73																								
																	16							
26+69																								
29+50																								
SHEET TOTALS																	156					200		
PROJECT TOTALS (SHEET 3-D TO SHEET 3-AM)																	22,008	7,552	8,048	4,088	2,240	3,244	1,760	

STATION	** R.C. PIPE (CLASS V)	36" DUCTILE IRON PIPE (SEALED SYSTEM)	15" DRAINAGE PIPE ELBOW	15" SIDE DRAIN PIPE	SPECIAL HW CU. YARDS (SEE DETAIL 2-AF)	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (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") PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	SP CB (SEE DETAIL 2-AI)	FLOWABLE FILL, C.Y.	SPEC. JB (SEE DETAIL 2-AG)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34 (SEE DETAIL 2-AE FOR STR. #218)	M.H. FRAME & COVER STD. 840.54	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	OPEN THROAT CATCH BASIN (SEE DETAIL 2-AC)	CONVERT DI TO JB W/ MH (SEE DETAIL 2-AK)	24" WELDED STEEL PIPE, 0.50" THICK, GRADE B (UNDER RR)	SP CB (SEE DETAIL 2-AH)	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
20+50								1							1			1																						
20+50																																								
21+96																																							181	REMOVE EXIST. DI
21+73																																								REMOVE EXIST. DI AND MH
23+33																																							25	
23+76																																							289	REMOVE 2 EXIST. DI's
24+72																																							19	
25+27																																							25	
26+49																																							25	
-Y53-																																								
26+73																																								
								1	0.07										1	1																			
26+69																																						0.3990		
29+50								1													1			1															
SHEET TOTALS								3	0.07						1			2	2		1			1													0.3990	564	
PROJECT TOTALS (SHEET 3-D TO SHEET 3-AM)					8.4	34.60		817	489.62	12.49		510	63	236	213	70	37	251	251	5	34	1	1	15.4	1	27	5	4	13	4	17	2	3	24	1	0.57	9.4604	30,816	
						SAY 44			SAY 490	SAY 13														SAY 16												SAY 1.0			

ABBREVIATIONS

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

COMPUTED BY:	JBJAVELLANA	DATE:	1/9/2012
CHECKED BY:	JDE	DATE:	7/18/2012

PROJECT NO.	SHEET NO.
U-3810	3-AN

RD245795

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SUB-REGIONAL & REGIONAL

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

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

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 54"	60"	66"	72"	78"	84"	CLASS IV 54"	CLASS IV 60"	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) 54"	66"	C.S. PIPE 54" .109	54" .138	54" .168	SHOP ELON-GATED .138	SHOP ELON-GATED .168	60" .138	60" .168	66" .138	66" .168	84" .105	STRUCTURAL PLATE PIPE 60" 12	60" 10	66" 12	66" 10	72" 12	72" 10	REINFORCED ENDWALLS WITH R.C. - C.Y.	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	SPECIAL JB (SEE DETAIL 2-AO)	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
-L-																																																	
84+40	CL	256									80																							9.80															
84+50	CL	257									80																							9.80															
-Y17-																																																	
12+63	LT	276	275		12.0	12.5										28																																	DO NOT USE CSP OR CAAP
12+63	CL	276	277		12.0	11.7								52																																			
12+63	RT	277	278		11.7	11.5										28																																	DO NOT USE CSP OR CAAP
-L-																																																	
273+98		752																																		8.8													SP CB (SEE SHEET 2-AH)
273+98	LT	751	752		EX	14.1									40																																2.8506		
273+98	RT	753	754		12.3	12.0										40																																	
273+98		753																																		8.8													SP CB (SEE SHEET 2-AI)
-DET-																																																	
12+83		490T			-0.7	-1.4																					136							13.80														136	TEMP. PIPE & HW (SEE DTL 2-AN)
-L-																																																	
130+96	RT	386		30.63																																9.0							1						SPECIAL JB w/ SLAB LID
	RT	386	390		23.4	23.3											20																																DO NOT USE CSP OR CAAP
																																															9.4604	30,816	TOTALS FROM SHEET 3-AM
PROJECT TOTALS											160			52	40	96	20										136							33.40		26.6							1				12.3110	30,952	PROJECT TOTAL
																																		SAY 34		SAY 27											SAY 12.5	SAY 30,960	

PROJ. REFERENCE NO.	SHEET NO.
U-3810	3-AO (1of4)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	NO CLAIM
2	4	CITY OF JACKSONVILLE
3	4	HARRY C. BROWN FAMILY, L.L.C.
4	4	DARYLL L. THOMPSON
5	4	A. G. LEE OIL COMPANY, INC.
6	4	BAILEY & FULLER PROPERTIES, LLC
7	4	UNITED PENTECOSTAL CHURCH OF JACKSONVILLE
8	4	ARLINE K. COLLINS
9	5	JOSEPH C. SINK, ET UX
10	5	OMITTED
11	5	BAILEY & ASSOCIATES, INC
12	5	SAMUEL G. MURRAY, ET UX
13	5	WILLIAM T. HUMPHREY, ET UX
14	5	EDGAR S. BANKHEAD, ET UX
15	5	THOMAS G. COLLINS ET AL
16	5	PHILLIP L. GURGANUS, ET UX
17	5	THOMAS GLENN COLLINS
18	5	JAMES E. WHITE JR.
19	5	CANDICE L. HARRIS, ET VIR
20	5	JAMES M. WADE, ET UX
21	5	PRISCILLA A. HORN
22	5	PHILIP H. MINIX
23	5	DONALD E. SUMMERS, ET UX
24	5	GLEN H. GARNER, ET UX
25	5,6	JAMES E. CAMPBELL
26	5	TREVER P. TULLY, ET UX
27	6	GERALD J. McGURTY, ET UX
28	6	JAMIE M. LYBRAND, ET UX
29	6	KENNETH R. MOODY, ET UX
30	6	DONALD E. WILLIAMS, ET UX
31	6	HAZEL PATE
32	6	PAMELA A. PLANTE
33	6	DOMINIC D. COLVILLE
34	6	CARMELO MAZZOTTA
35	6	MICHAEL J. ROSAGE, ET UX
36	6	VERNA B. RESPASS
37	6	RENEE A. BURLESON
38	6	TALMADGE MURPHY, ET UX
39	6	STEVEN A. BUREK, ET UX
40	6	ALAN R. BOUDREAU
41	6	BRUCE DUFFY
42	6	KENNETH D. FARMER, ET UX
43	6	EARLIE T. JOHNSON, JR.
44	6,7	JERRY LAWSON
45	7	DURWOOD L. HUMPHREY, ET UX, DORIS PARKER HUMPHREY
46	7	LUCILLE A. BUGLISI, ET VIR
47	7	LINDA LITTLETON & D. P HUMPHREY
48	7	VIRGINIA B. GODFREY
49	7	MARTHA YAGER HARRIS
50	7	DALE R. DANEHY, ET UX
51	7	CANDICE L. THOMPSON, ET VIR
52	7	WILLIAM O. LOWDER, ET UX
53	7	MARY M. MYERS
54	7	MARY M. MYERS
55	7	SHARON J. COLLINS
56	7	DAN E. BAUCOM, ET UX
57	7	LINDA LITTLETON
57A	7	BILLY L. WILLIAMS
58	7	IRENE W. MINIX
59	7,8	LARRY N. BARKER, ET UX

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
60	7,8	DONALD R. LITTLE, ET UX
61	8	DAWN L. McCULLEN
62	8,30	LISA M. FLETCHER, ET VIR
63	8	ARTHUR MARTIN, ET UX
64	8,30	DUNCAN M. MOORE
65	8	MRS. SACHIKO JOHNSON
66	8	TWF. INC.
67	8	JIMMY E. BOLLENBACH, ET UX
68	8	OMITTED
69	8	CARL L. SUTTON
70	8	LUTHER M. WARREN
71	8	CIRCLE K. PROPERTIES, INC.
72	8,30	J & T SIDING, INC.
72A	30	TERRY D. TRAYNOR
73	8	DALE E. JOHNSON, ET UX
74	8	ILENA GILBERT MAYS
75	8	CHARLES M. SPENCER, ET UX
76	8	EDWARD A. HOWARD, ET UX
77	8	BYRON R. CAVENAUGH, ET UX
78	8	ROBERT R. HAMILTON, ET UX
79	8,9	WILLIE HALL
80	9	CHARLES W. SUMMERLIN, ET UX
81	9	KENNETH J. BAGARELLA, ET UX
82	9	WILLIE HALL
83	9	COLLIER S. SMITH
84	9	PANSY H. MANN
85	9	WILLIE HALL
86	9	RONALD D. MABEE, ET UX
87	9	JOHN KOSTELLO, ET UX
88	9,10	KIN WA ZHANG
89	9,10	N C DEPARTMENT OF TRANSPORTATION
90	10	EARNEST A. PERRY, ET UX
91	10	ANGELA M. DAMIANO
92	10	DANIEL M. HAGAN, ET UX
93	10	MICHAEL L. VARGA, ET UX
94	10	EMMANUEL FREE WILL BAPTIST CHURCH, INC.
95	10	OMITTED
96	10,11	EDWIN L. REFFELT
97	10,11	REDCO PROPERTIES, LLC
98	11	BAILEY AND ASSOCIATES, INC.
99	11	HIGHLAND CROSSING, LLC
100	11	EMMANUEL FREE WILL BAPTIST CHURCH
101	11	HOWARD AND SONS RENTALS
102	11,12	HARVEST PRESBYTERIAN CHURCH OF JACKSONVILLE (PCA), INC.
103	11	OMITTED
104	11,12	GEORGE A. HOWARD, JR., ET UX
105	12,13	ONSLOW COUNTY
106	12	KEYSTONE CONTRACTORS, INC.
107	12	CAROLINA TELEPHONE AND TELEGRAPH COMPANY
108	12	ANDREW J. MAY, ET UX
109	12	PINEY GREEN CONSTRUCTION COMPANY, INC.
110	12	MICHAEL LE & PHUONG NGUYEN
111	12	JOYCE MAXEY
112	12,13	CHILDRENS CASTLE LLC
113	13	T. L. EDWARDS, ET AL
114	13,14	PINEY GREEN CONSTRUCTION COMPANY, INC.
115	13	ESTATE BUILDERS, LLC
116	13	CENTERVIEW BAPTIST CHURCH OF JACKSONVILLE, NORTH CAROLINA, INC.
117	13	CENTERVIEW BAPTIST CHURCH OF JACKSONVILLE, NORTH CAROLINA, INC.
118	13,14	CENTERVIEW BAPTIST CHURCH OF JACKSONVILLE, NORTH CAROLINA, INC.

PROJ. REFERENCE NO.	SHEET NO.
U-3810	3-AO (2of4)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
119	13,14	OMITTED
120	14	NANCY T. HERNANDEZ
121	14	ROY LAIRD, ET UX
122	14	HOWARD AND SONS RENTALS, A NORTH CAROLINA GENERAL PARTNERSHIP
122A	14	JEAN M. RODRIGUEZ & VANESSA MAESTRE
122B	14	ALBERT W. GAMBLIN, ET UX
123	14	JOSE L. MURILLO, SR., ET UX
124	14	OMITTED
125	14	PAMELA A. JAMES, ET VIR
126	14	CHARLES F. SINNAMON, ET UX
127	14,15	OMITTED
128	14	JOHN L. DILLAHUNT
129	14	CHARLES R. KIMBROUGH, ET UX
130	14	CECILIA N. CLARKE
131	14,15	CLIFTON CAIN, ET UX
132	15	OMITTED
133	15	LUIS E. LOPEZ
134	15	WILLIS J. BRINTON, ET UX
135	15	TIMOTHY POWELL, JR.
136	15	DANIEL L. WOTRING, ET UX
137	15	DEREK D. ELWART, ET UX
138	15	OMITTED
139	15	HOWARD CEMETERY
140	15	JOHN WAGGONER
141	15	WILLIAM FORRESTER, ET UX
142	15	JONATHAN NERIS, ET UX
143	15	OMITTED
144	15	ELIJAH K. WANNE-MACHER, ET UX
145	15	MICHAEL T. DEMARK, ET UX
146	15	C. M. S., INC. OF JACKSONVILLE
147	15,16	W.R. WILLIS RENTALS, LLC
148	15,16	KENNETH W. DIXON, ET UX
149	16	LEONARD L. BROWNLEY
150	16	W.R. WILLIS RENTALS, LLC
151	16	OMITTED
152	16	OMITTED
153	16	W. R. WILLIS, ET UX
154	16	MONICA E. MCCOY
155	16	RANDY K. WILLIS
156	16	ONSLOW COUNTY
157	16	W. R. WILLIS RENTALS, LLC
158	16,17	S. CATHERINE AMAN, ET AL
159	16	VETERANS OF FOREIGN WARS DOWN EAST POST 9133, INC.
160	16	JAMES T. GRAHAM, ET UX
161	16	LEONARD L. BROWNLEY, ET UX
162	16,17	PHILLIP CROOM, ET UX
163	17	BADER OTHMAN
164	17	S. CATHERINE AMAN
165	17	JOHN W. SIMMA, ET UX
166	17	GREGORY ALLEN
167	17	WHITE OAK RIVER ROAD INVESTMENTS, LLC
167A	17	ELAINE H. MURPHY
168	17	AARON E. MATTHEWS
169	17	EDWARDS PROPERTY GROUP, LLC
170	17	MICHAEL V. TARAVELLA, ET UX
171	17	BARBARA A. HANSEN, ET VIR
172	17	ANTHONY H. MARTIN
173	17	HOYT T. MARTIN
174	17	WHITE OAK RIVER ROAD INVESTMENTS, LLC
175	17	CATHERINE S. AMAN

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
176	17	SCOT E. CONKLIN
177	17	DAVID K. BULLOCK, ET UX
178	17	ANN AVERY
179	17	IGOR GLOUCHENKO AND SVETLANA NESTEROVA
180	17	JAMES E. BENEFIELD, ET UX
181	17,18	WILLIAM WAHMHOFF
182	17	STEVEN C. TAYLOR
183	17,18	OMITTED
184	17,18	EARL F. HAYDEL, JR., ET UX
185	18	SAMUEL P. FIELDS, ET UX
186	18	KURT T. POSTREICH, ET UX
187	18	THOMAS PRIEST
188	18	FRANK R. GILBERT, JR.
189	18	CEMETERY
190	18	NORTH EAST PRIMITIVE BAPTIST CHURCH
191	18	PAUL T. MARCUM, ET UX
192	18	SANCTUARY OF FAITH CHURCH
193	18	CLARA W. WILLIAMS
194	18	FRED M. HECKLE
195	18	STEVE HEMBY, III, ET UX
196	18,19	TIMOTHY O. CARR, ET UX
197	18,19	LEONARD W. MORTON
197A	17,18	LEONARD W. MORTON
198	19	TIMOTHY O. CARR, ET UX
199	19	TIMOTHY O. CARR, ET UX
200	19	OMITTED
201	19	WILLIAM P. REED
202	19	MICHAEL E. SMEN
203	19	TIMOTHY O. CARR, ET UX
204	19	NANNIE M. GERRITY
205	19	LINDA G. AMES, ET VIR
206	19	TERRY J. LYONS
207	19	JEFFREY T. SANTIAGO
208	19,20	TOMMY MORTON, JR., ET UX
209	19,20,31A	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
210	20	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
211	20	ANNETTE C. MCKNIGHT, ET VIR
212	20	CECIL C. MORTON, ET AL
213	20	OMITTED
214	20,21	OMITTED
215	20,21	MCLARRY J. HUMPHREY HEIRS
216	21	DALE K. VENTERS, ET UX
217	21	ROBERT A. CROM, ET UX
218	21	ROBERT A. CROM, ET UX
219	21	JOHN S. MARTIN
220	21	OMITTED
221	21	GARLAND W. TUTON, ET UX
222	21	HUNTER DEVELOPMENT CORPORATION
223	21	SUSAN M. JACOBS
224	21	PRICILLA R. ETZEL, ET VIR
225	21,22	DALE K. VENTERS, ET AL
226	21	MARTHA W. MELTS
227	21,22	MICHAEL L. LANIER
228	21,22	SHIRLEY SMITH
229	21,22	MICHAEL L. LANIER
230	22	MAJORIE T. RIGGS
231	22	JONES - ONSLOW ELECTRIC MEMBERSHIP CORP.
232	22	CHERYL D. LANIER
233	22	OMITTED
234	22	LEWIS HUMPHREY

PROJ. REFERENCE NO.	SHEET NO.
U-3810	3-AO (3of4)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
235	22	HADNOT FARM INVESTMENTS, LLC
236	22	ALPHANA B. HOBBS
237	22	ALVIN R. HOBBS
238	22	BENJAMIN R. HUMPHREY
239	22	CARRIE WASHINGTON
240	22	HADNOT FARM INVESTMENTS, LLC
241	22	BROWN FAMILY REVOCABLE LIVING TRUST, U A D
242	22	HADNOT FARM INVESTMENTS, LLC
243	22,23	PATRICIA MADDEN, ET AL
244	22,23	HERBERT C. HOLLIDAY
245	23	DONALD CHADWICK
246	23	SAMPSON JONES
247	23	MOSES WASHINGTON
248	23	DELETED
249	23	CLIFFORD R. ROBINSON, JR.
250	23	THERESS POLLOCK
251	23	ROY L. HURST
252	23	ROY L. HURST
253	23	TONY PEARSON
254	23	HADNOT FARM INVESTMENTS, LLC
255	23	DAVID DIXON, ET UX
256	23	HANNAH SHEPARD HEIRS
257	23	WAS INCORPORATED INTO PARCEL 259
258	23	MARY MONK DIXON
259	23,24	EDITH A. ADAMS
260	23	ANNIE SHEPARD
261	23	ANGELA DAMIANO, ET AL
262	23	DAVID DIXON, JR.
263	23,24	DAVID R. DIXON, ET UX, ET AL
264	23,24	BETSY J. ALBRIGHT
265	24	EDITH A. ADAMS
266	24	TORRIE JONES
267	24	VANIE PARKER
267A	24	BEATRICE J. MORSE
268	24	OMITTED
268A	24	OMITTED
269	24	CHAD EVERETT FONVILLE
270	24	MARY FONVILLE
271	24	EDITH ADAMS, ET AL
272	24	EDITH A. ADAMS
273	24	AMBROSE CEMETERY
274	24	ROGER MOORE, ET UX
275	24	ROSA FONVILLE
276	24,25	THOMAS R. KNOWLES, ET UX
276Z	24,25	THOMAS R. KNOWLES, ET UX
277	24	JOHN MOLLETT
278	24,25	HARPER BRINSON, ET UX
279	25	MALLIE BURNETT DAVIS
280	25	HARRIET B. GIBSON
281	25	OMITTED
282	25	DIANE GLASPIE WALKER, ET AL
283	25	NEW TESTAMENT CHRISTIAN CHURCHES
284	25	HARUKO S. KOSTELLO
285	25	WILLIE J. WHITE, ET UX
285Z	25	WILLIE J. WHITE, ET UX
286	25	MARVEL H. McDOWELL
287	25	BIBLICAL HOUSE OF GOD
288	25	MARVEL H. McDOWELL
289	25	MICHAEL FOYE
290	25	TOMMY L. ADAMS, ET UX

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
291	25	ANGELA DAMIANO, ET UX
292	25	BILLY LEE ADAMS, ET AL
293	25,26	STAR REALTY, INC
294	25,26	STAR REALTY, INC
295	25	OMITTED
296	25,26	PATRICIA MILLS
297	25,26	CYNTHIA AMBROSE
298	26	DAVID DIXON, ET UX
299	26	MILDERD AVERY
299A	25,26	BRAD AVERY, ET AL
300	26	SYLVESTER HOWARD, ET UX
301	26	PHILLIP DEAVER HEIRS
301A	26	DAVID DIXON
302	26	WILLIAMS FAMILY HEIRS LLC
303	26	MOSE L. HAIRSTON, ET UX
304	26	SHIRLEY M. KEITH AND MELVIN L. FELTON, JR.
305	26	OMITTED
306	26	CARY O'NEAL WHITE
307	26	ANDREW G. ROBERTS, ET UX
308	26	OMITTED
309	26	THOMAS LITTLETON EASTSIDE AUTO SALVAGE
310	26	W. RANDOLPH THOMAS
311	26	PAULINE RAY BURTON
312	26	TRUSTEES OF PROVIDENCE HOLINESS CHURCH
313	26	ALFRED SHARPLESS, ET UX
314	26	ROBERT J. JONES HEIRS
315	26,27	HORACE L. HAMS
316	26	ALICE H. KOONCE
317	26,27	HORACE L. HAMS
318	27	GARY HAMS
319	27	OMITTED
320	27	CARRIE TAYLOR, ET VIR
321	27	CARRIE TAYLOR, ET AL
322	27	HORACE L. HAMS
323	27	GEORGE WASHINGTON LIVING HEIRS
324	27	PINEY GREEN DEVELOPERS, LLC
325	27	BOBBY R. MORTON, ET UX
326	27	ROBERT A. CROM, ET UX
327	27	JOHN T. SMITH, ET UX
328	27,28	WPPT INC.
329	27,28	PINEY GREEN VOLUNTEER FIRE DEPARTMENT INC.
330	28	TONY CHOW
331	28	MICHIKO M. HENDERSON
332	28	UNITED STATES OF AMERICA "CAMP LEJEUNE RAILROAD"
333	28	PINEY GREEN DEVELOPERS, LLC
334	28	POLLARD ENTERPRISES INC.
335	28	MACIE W. GREGORY
336	28	MATTHEW HAMILTON
336A	28	CARL SUTTON
337	28	H & M FARMS, LLC
338	28	JOHN D. KOSTELLO, ET UX
339	28,29	NAVY FEDERAL CREDIT UNION
340	28,29	ENON CHAPEL BAPTIST CHURCH
341	29,31	H & M FARMS, LLC
342	29	ENON CHAPEL BAPTIST CHURCH
343	29	MAN KIL CHOE, ET UX
344	29	OMITTED
345	29	BARBARA RONZO
346	29	A. G. LEE OIL COMPANY, INC.
347	29	GWEN WYNN, ET AL

PROJ. REFERENCE NO.	SHEET NO.
U-3810	3-AO (4of4)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
348	29	OMITTED
349	30	JAMES WILSON, JR.
350	30	SUELLEN B. GREER
351	30	OMITTED
352	30	WILLIAM LOCKE SR.
353	30	HUBERT SAUNDERS, ET UX
354	30	CHARLES B. CLARK, ET AL
355	30	DONALD K. COPELAND, ET UX
356	30	J and J REALTY, INC.
357	30	LARRY J. MINER, ET UX
358	30	OMITTED
359	30	J and J REALTY, INC.

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

PROJECT REFERENCE NO.	SHEET NO.
U-3810	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 216378 ENGINEER RELKHA V. PATEL	NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCHOLZ

BEGIN TIP PROJECT U-3810
-L- STA. 10+00.00

NAD 83/2001

SEE SHEET 2-N
FOR -L- & -Y- INTERSECTION DETAIL
SEE SHEET 2-H FOR DITCH DETAILS
SEE SHEET 32 FOR -L- PROFILE
SEE SHEET 48 FOR -Y- & -YI- PROFILES

-Y- POT STA.28+25.00 =
-YSB- POT STA.28+25.00 (34.5' RT)
-YNB- POT STA.28+25.00 (35.0' LT)

END CONSTRUCTION
-Y- STA. 28+00.00

WILLIAM T. HUMPHREY, ET UX

NCDOT GPS U3810-6

C D W HOLDINGS LLC (1) (NO CLAIM) -BL-1

END RESURFACING
-YSB- Sta.24+66.00

BEGIN RESURFACING

END C&G

BEG.C&G +88

-L- POT Sta. 10+00.00 =
-Y- POT Sta.20+55.88

SPECIAL CUT BASE DITCH SEE DETAIL 1

MATCH TO INSET -Y- STA. 17+00.00

TAIL DITCH OUTLET CLASS B RIP RAP EST. 25 TONS EST. 50 SY GEOTEXTILE SEE DETAIL 2

TAIL DITCH EST. 120 CY DDE SEE DETAIL 2

CLASS 'B' RIP RAP EST. 8 TONS EST. 21 SY GEOTEXTILE

HEAD DITCH EST. 5 CY DDE SEE DETAIL 3

A. G. LEE OIL COMPANY, INC. (5)

DARYLL L. THOMPSON (4)

HARRY C. BROWN FAMILY, L.L.C. (3)

BAILEY & FULLER PROPERTIES, LLC (6)

END CONSTRUCTION
-Y1- STA. 11+00.00

-Y1- POT Sta.11+09.24

UNITED PENTECOSTAL CHURCH

-L- POT Sta. 13+98.66 =
-Y1- POT Sta. 10+00.00

UNITED PENTECOSTAL CHURCH OF JACKSONVILLE (7)

ARLINE K. COLLINS (8)

-BYI- 76

-BL- 2

MATCH TO SHEET 5 -L- STA.17+00.00

INSET

-Y- POT STA.12+00.00 =
YSB- POT STA.12+00.00 (34.5' RT)
YNB- POT STA.12+00.00 (35.0' LT)

M H C PROPERTIES, LLC (2)

CITY OF JACKSONVILLE

JUANITA HUMPHREY

CRAIG B. HUMPHREY

BEGIN RESURFACING
-Y- Sta.12+60.00

BEGIN CONSTRUCTION
-Y- STA. 12+45.00

BAILEY & FULLER PROPERTIES, LLC (6)

SPECIAL CUT BASE DITCH SEE DETAIL 1

JACKSONVILLE CITY LIMITS

2012 ADT / 2032 ADT	SERVICE ROAD
1630 / 2372	
1096 / 1656	356 / 516
20608 / 35488	
-Y- US 17 MARINE BLVD.	-Y- US 17
30508 / 43388	13000 / 13000
3840 / 6240	
17040 / 19440	
-L- PINEY GREEN ROAD (SR 1406)	

REVISIONS

8/17/99

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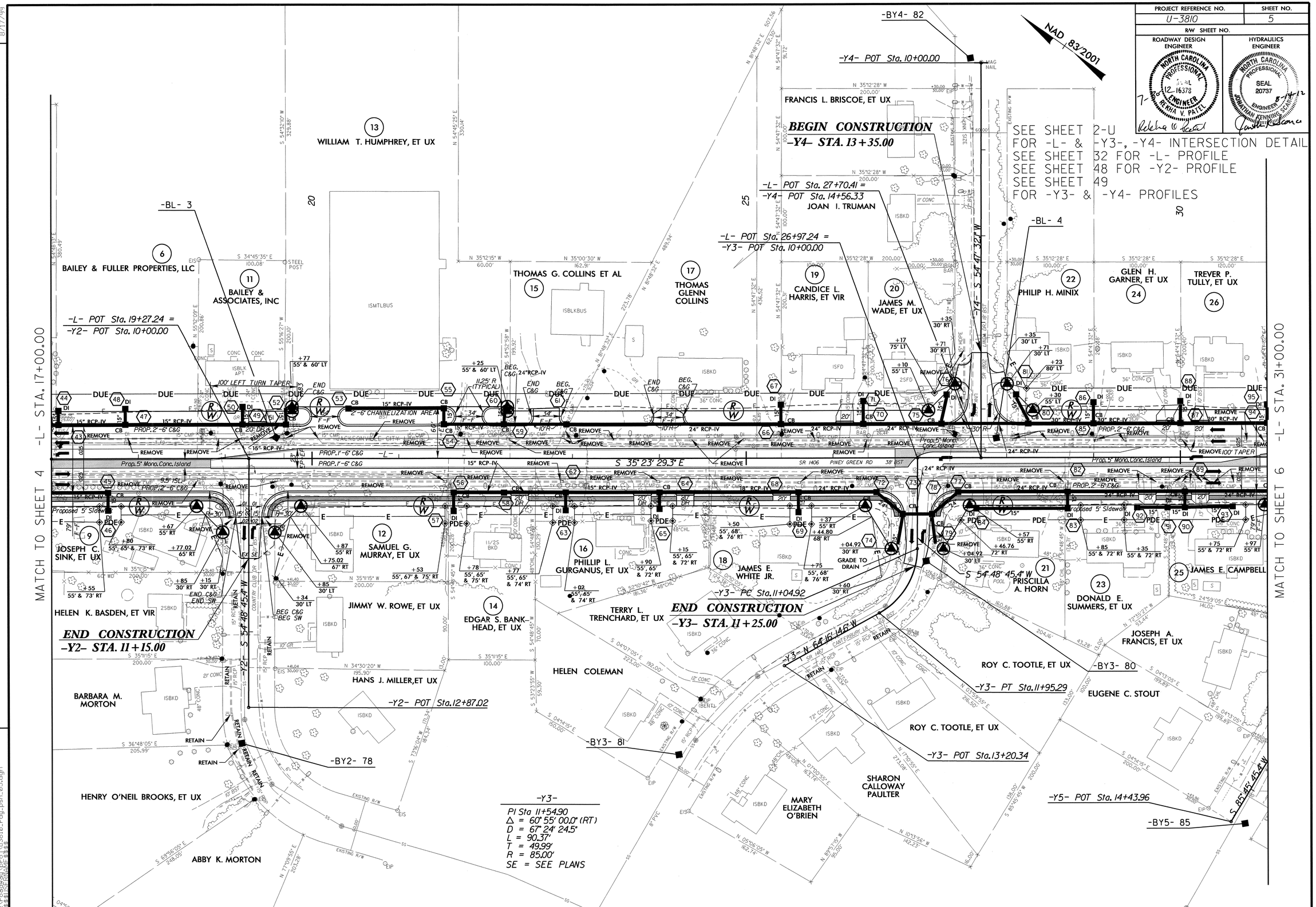
PROJECT REFERENCE NO.	SHEET NO.
U-3810	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL — 7-25-12

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCALF — 8-14-12



REVISIONS

8/17/99

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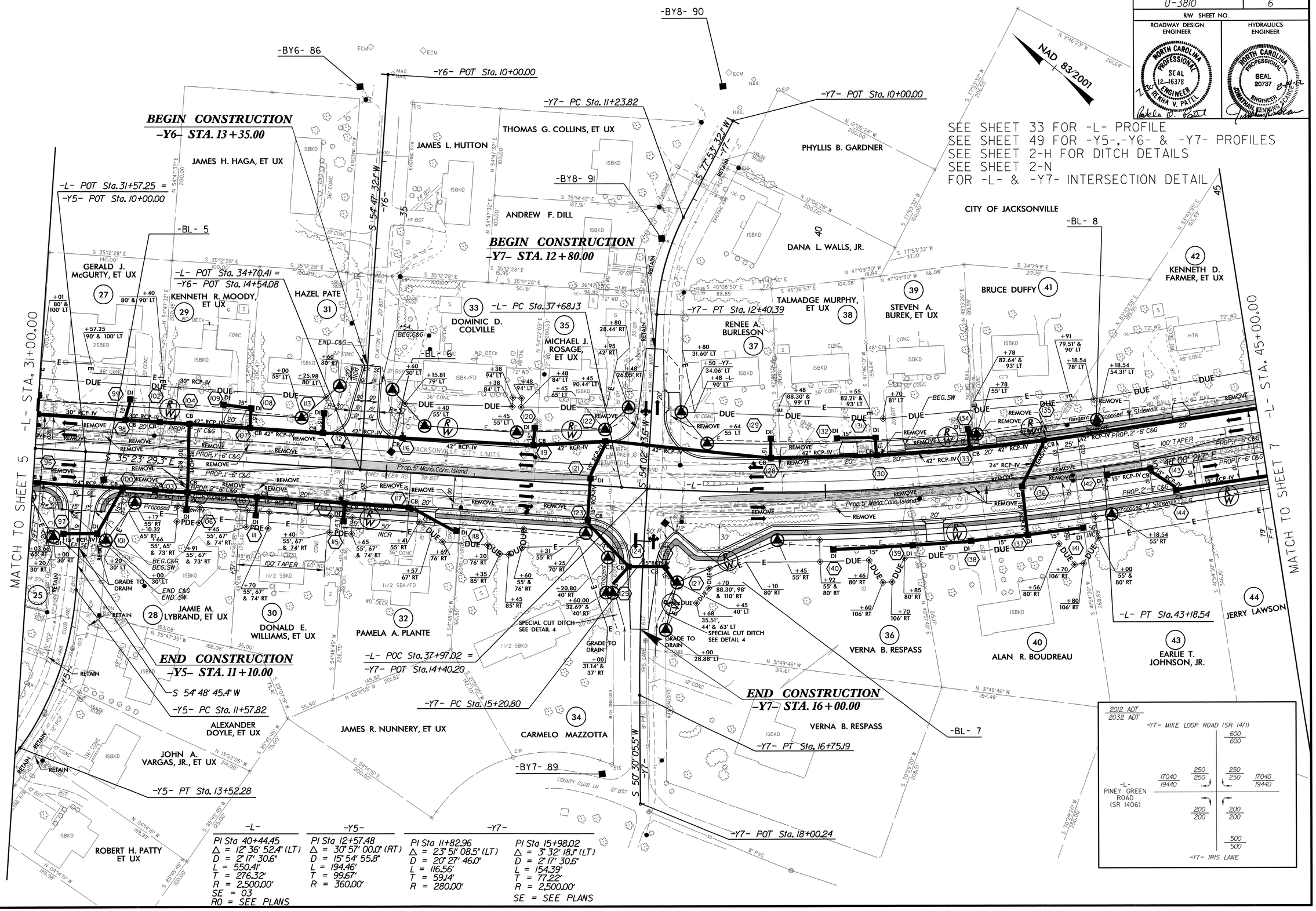
PROJECT REFERENCE NO.	SHEET NO.
U-3810	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 12-16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN PENNINGTON



REVISIONS

8/17/99

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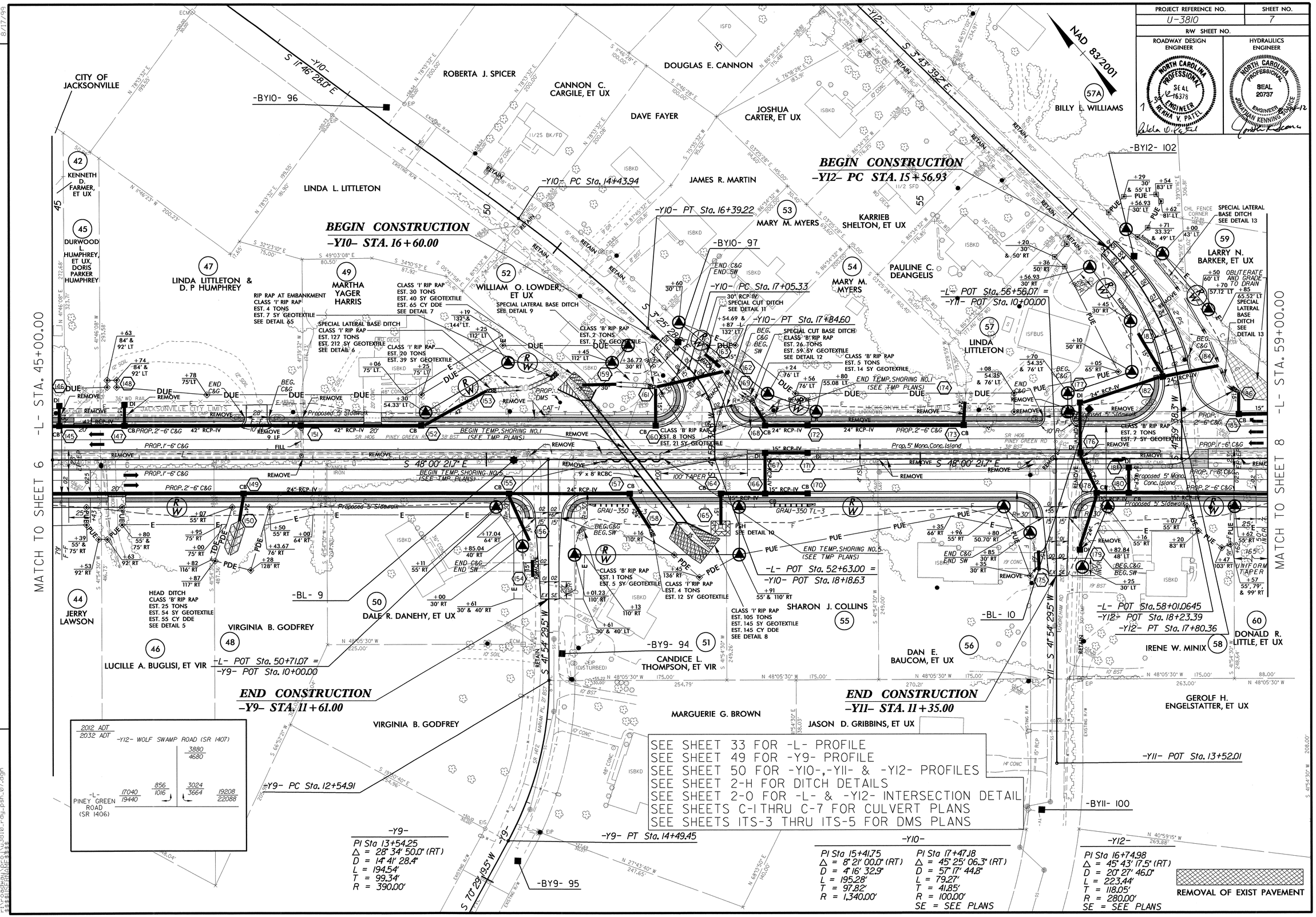
PROJECT REFERENCE NO.	SHEET NO.
U-3810	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL	NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SPRUCE



SEE SHEET 33 FOR -L- PROFILE
SEE SHEET 49 FOR -Y9- PROFILE
SEE SHEET 50 FOR -Y10-,-Y11- & -Y12- PROFILES
SEE SHEET 2-H FOR DITCH DETAILS
SEE SHEET 2-O FOR -L- & -Y12- INTERSECTION DETAIL
SEE SHEETS C-1 THRU C-7 FOR CULVERT PLANS
SEE SHEETS ITS-3 THRU ITS-5 FOR DMS PLANS

REVISIONS

8/17/99

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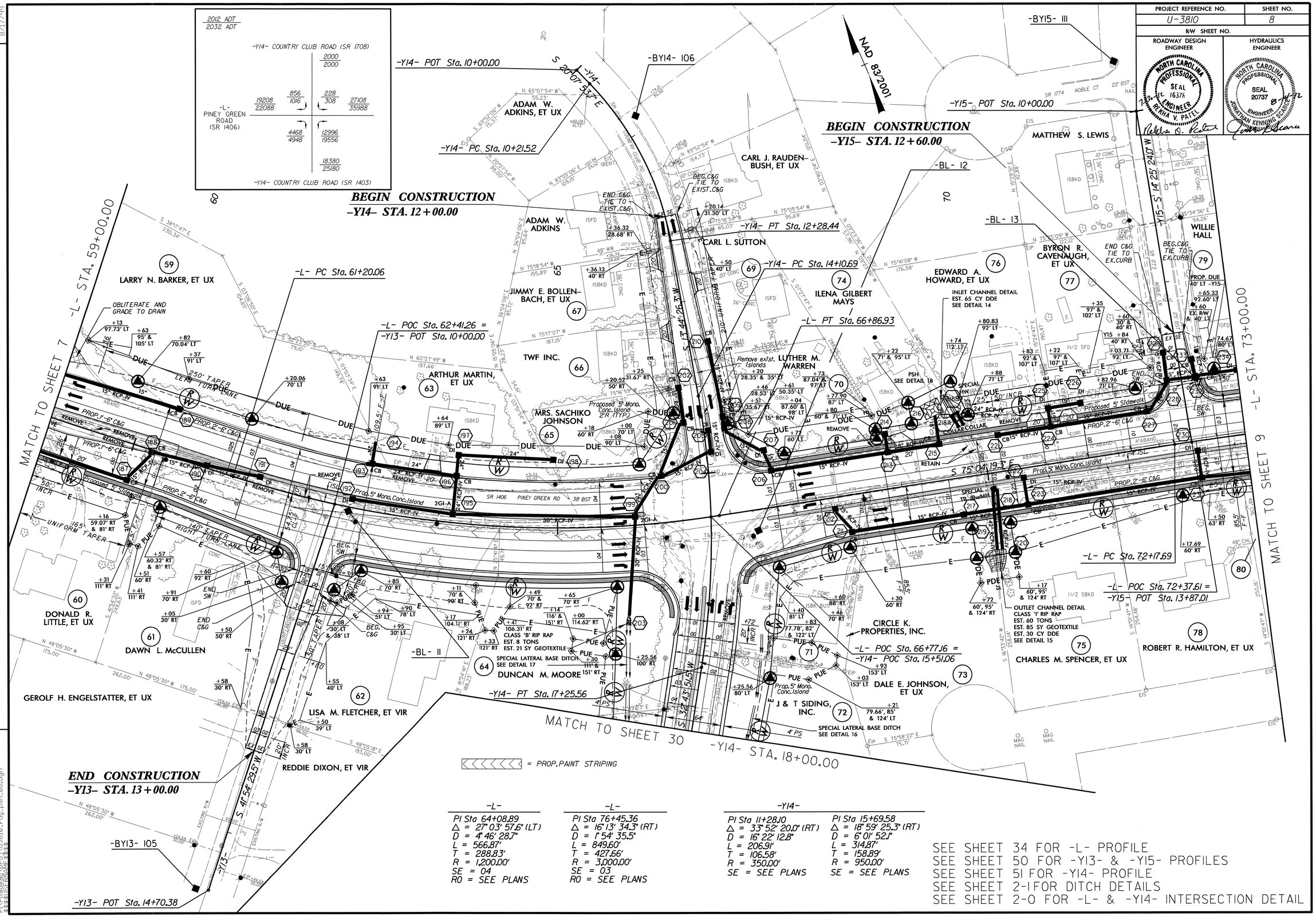
PROJECT REFERENCE NO.	SHEET NO.
U-3810	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 16376 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCANLON



-L-	-L-	-Y14-	
PI Sta 64+08.89	PI Sta 76+45.36	PI Sta 11+28.10	PI Sta 15+69.58
Δ = 27° 03' 57.6" (LT)	Δ = 16° 13' 34.3" (RT)	Δ = 33° 52' 20.0" (RT)	Δ = 18° 59' 25.3" (RT)
D = 4° 46' 28.7"	D = 1° 54' 35.5"	D = 16° 22' 12.8"	D = 6° 01' 52.1"
L = 566.87'	L = 849.60'	L = 206.91'	L = 314.87'
T = 288.83'	T = 427.66'	T = 106.58'	T = 158.89'
R = 1,200.00'	R = 3,000.00'	R = 350.00'	R = 950.00'
SE = 04	SE = 03	SE = SEE PLANS	SE = SEE PLANS
RO = SEE PLANS	RO = SEE PLANS		

SEE SHEET 34 FOR -L- PROFILE
SEE SHEET 50 FOR -Y13- & -Y15- PROFILES
SEE SHEET 51 FOR -Y14- PROFILE
SEE SHEET 2-1 FOR DITCH DETAILS
SEE SHEET 2-0 FOR -L- & -Y14- INTERSECTION DETAIL

REVISIONS

8/17/99

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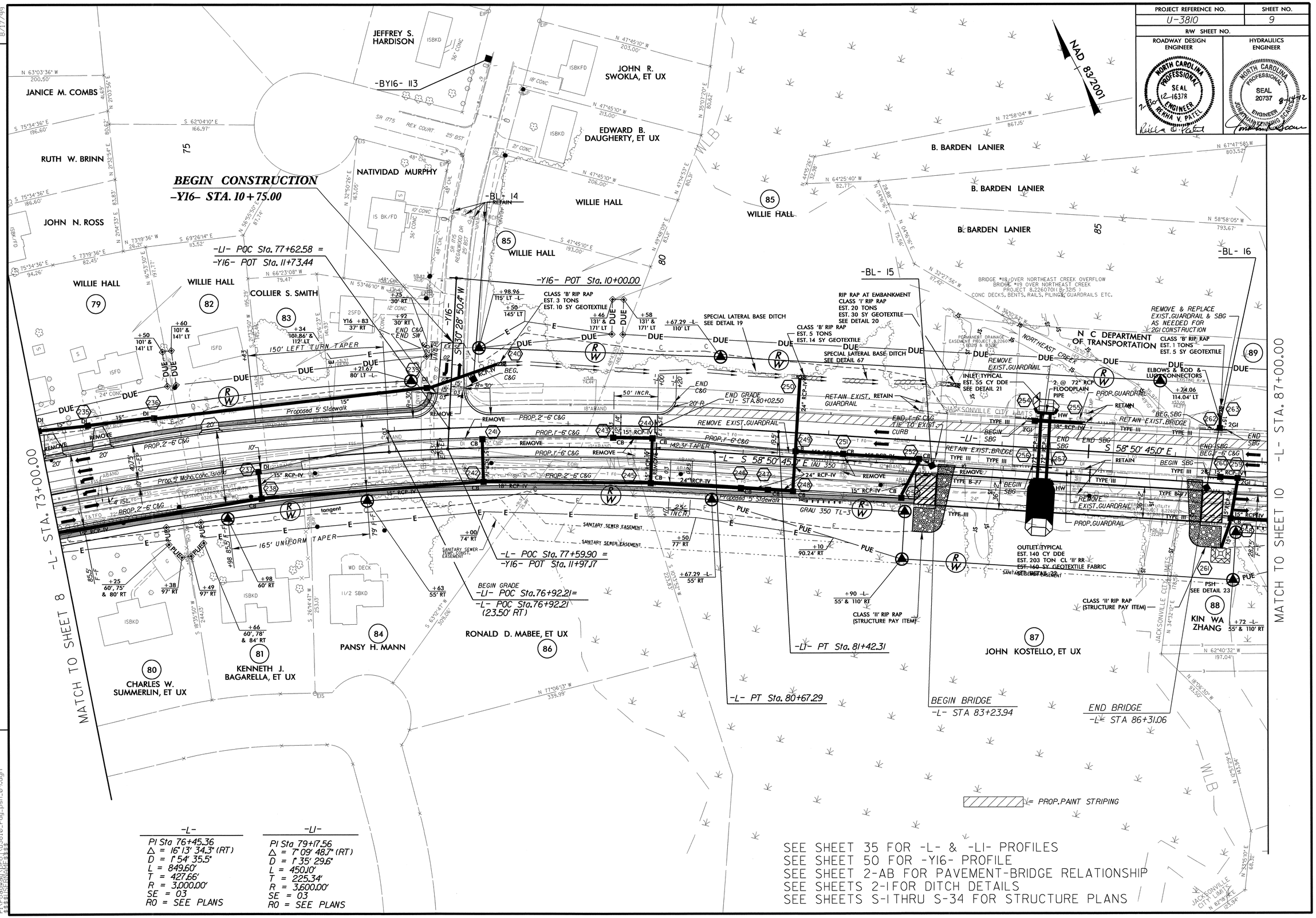
PROJECT REFERENCE NO.	SHEET NO.
U-3810	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCHEUNEMANN



-L-	-LI-
PI Sta 76+45.36	PI Sta 79+17.56
Δ = 16° 13' 34.3" (RT)	Δ = 7° 09' 48.7" (RT)
D = 1° 54' 35.5"	D = 1° 35' 29.6"
L = 849.60'	L = 450.10'
T = 427.66'	T = 225.34'
R = 3,000.00'	R = 3,600.00'
SE = 03	SE = 03
RO = SEE PLANS	RO = SEE PLANS

SEE SHEET 35 FOR -L- & -LI- PROFILES
SEE SHEET 50 FOR -Y16- PROFILE
SEE SHEET 2-AB FOR PAVEMENT-BRIDGE RELATIONSHIP
SEE SHEETS 2-I FOR DITCH DETAILS
SEE SHEETS S-1 THRU S-34 FOR STRUCTURE PLANS

REVISIONS

8/17/99

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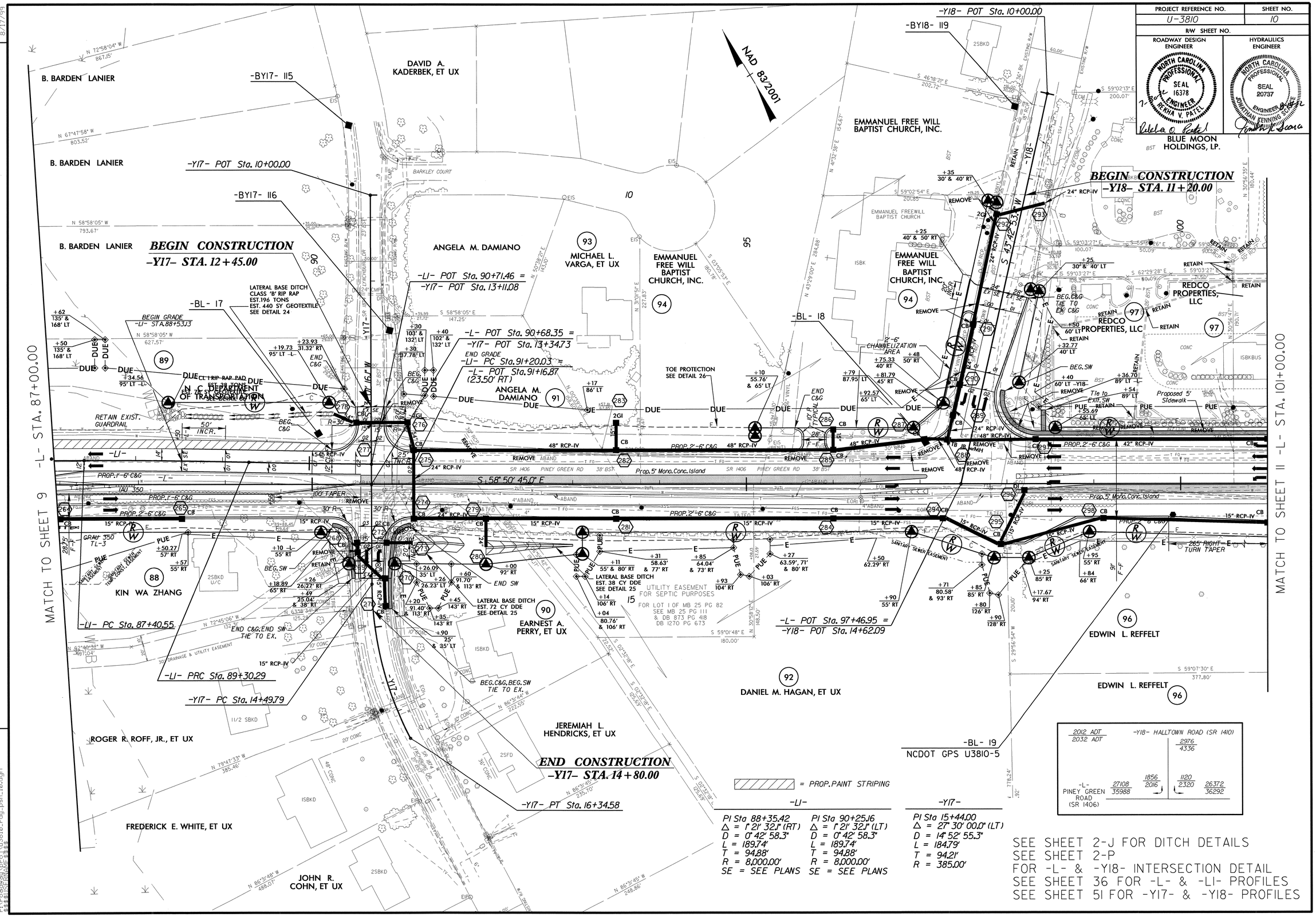
PROJECT REFERENCE NO.	SHEET NO.
U-3810	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING STORIE



REVISIONS

8/17/99

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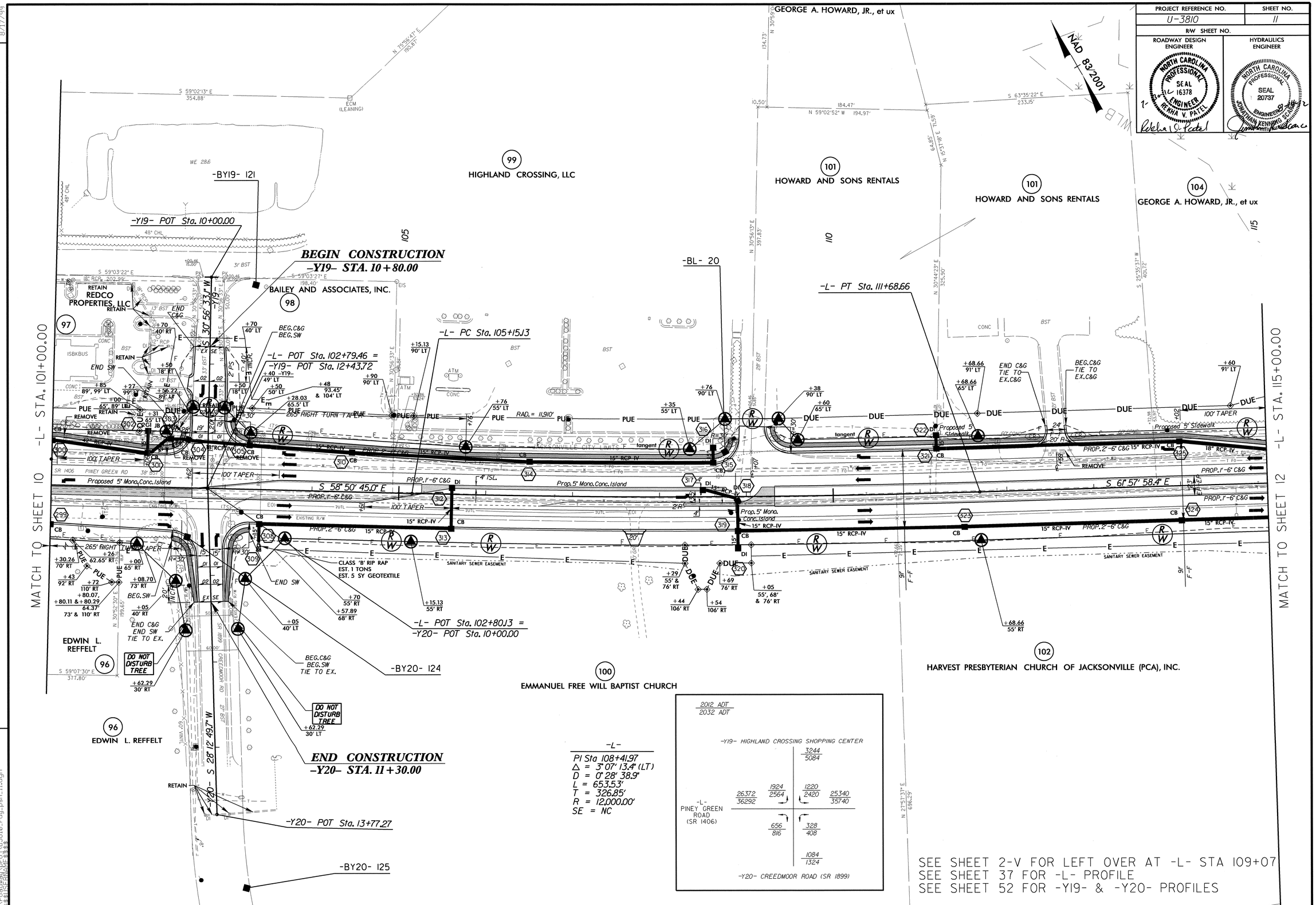
PROJECT REFERENCE NO.	SHEET NO.
U-3810	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCALF



SEE SHEET 2-V FOR LEFT OVER AT -L- STA 109+07
SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 52 FOR -Y19- & -Y20- PROFILES

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL 7-18-12

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCALF 8-14-12

SEE SHEET 2-J FOR DITCH DETAILS
SEE SHEET 2-P FOR -L- & -Y21- INTERSECTION DETAILS
SEE SHEET 2-P FOR -L- & -Y22- INTERSECTION DETAILS
SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 52 FOR -Y21- PROFILE
SEE SHEET 52 FOR -Y22LT- & -Y22RT- PROFILES

NAD 83/2001

2012 ADT / 2032 ADT
WHITE OAK HIGH SCHOOL 2100/2100
-L- PINEY GREEN ROAD (SR 1406): 25340/35740, 1200/1200, 800/800, 23488/33168, 1580/2380, 128/208, 1808/2688
-Y21- BALSAM ROAD (SR 1779)

-L- POT Sta. 128+33.46 = -Y22LT- POT Sta. 10+00.00
-L- POT Sta. 128+12.96 = -Y22- POT Sta. 10+00.00
-L- POT Sta. 127+92.46 = -Y22RT- POT Sta. 10+00.00
-L- POT Sta. 121+82.96 = -Y21- POT Sta. 10+00.00

MATCH TO SHEET 11 -L- STA. 115+00.00
MATCH TO SHEET 13 -L- STA. 129+00.00

END CONSTRUCTION -Y21- STA. 11+50.00
END CONSTRUCTION -Y22- STA. 11+60.00

-BL- 21 NCDOT GPS U3810-4
-BL- 22
-BL- 23
-BY21- 127
-BY22- 129
-Y22RT- POT Sta. 12+42.85
-Y22- POT Sta. 12+42.84
-Y22LT- POT Sta. 12+42.83

104 GEORGE A. HOWARD, JR., et ux
105 ONSLOW COUNTY
106 KEYSTONE CONTRACTORS, INC.
107 CAROLINA TELEPHONE AND TELEGRAPH COMPANY
108 ANDREW J. MAY, ET UX
109 PINEY GREEN CONSTRUCTION COMPANY, INC.
110 MICHAEL LE & PHUONG NGUYEN
111 JOYCE MAXEY
112 CHILDRENS CASTLE LLC DB 2935 PG 532
102 HARVEST PRESBYTERIAN CHURCH OF JACKSONVILLE (PCA), INC.

RAMON R. ROSARIO, ET UX
KAREN E. NETHERCUTT
HOWARD F. ESLICK, ET UX
BEATRICE A. GEORGE
MARY G. THAXTON
JENNIFER PARKHURST & ROBERT E. MULLINS, JR.
ERIC C. NUNEZ, ET UX
LINDA F. HORNAGE
MARIUS G. CRISTEA, ET UX
WILLIE L. BURNS
LESLEY D. EXUM
DANNY M. KOLESKI JR., ET UX
VINSON D. HARRELL, ET UX
DONALD WARNICK, ET UX
LAURA K. SCHOFIELD
KEVIN D. WARD
BRITT BLANKENSHIP & CYNTHIA JOHNSTON
RUBY PREE

DO NOT DISTURB CEMETERY
SUMMERSILL CEMETERY
JACKSONVILLE CITY LIMITS
WHITE OAK HIGH SCHOOL
SR 1406 PINEY GREEN RD
SR 1779 BALSAM RD
ASPEN PLACE
S 61°57' 58.4" E
S 28°00' 15.0" W
N 69°18' 56" W 558.05'

RIP RAP AT EMBANKMENT CLASS 'I' EST. 8 TONS EST. 16 SY GEOTEXTILE SEE DETAIL 29
SPECIAL LATERAL BASE DITCH SEE DETAIL 27
CLASS 'B' RIP RAP EST. 5 TONS EST. 14 SY GEOTEXTILE
SPECIAL LATERAL BASE DITCH SEE DETAIL 28
CLASS 'B' RIP RAP EST. 8 TONS EST. 21 SY GEOTEXTILE
CLASS 'I' RIP RAP EST. 26 TONS EST. 50 SY GEOTEXTILE
RIP RAP AT EMBANKMENT CLASS 'I' EST. 8 TONS EST. 16 SY GEOTEXTILE SEE DETAIL 29
CLASS 'B' RIP RAP EST. 3 TONS EST. 10 SY GEOTEXTILE
Do Not Disturb Sign
Proposed 5' Sidewalk
Prop. 5' Mono. Conc. Island
Prop. 5' Sidewalk
CHANNELIZATION AREA
SANITARY SEWER EASEMENT
100' TAPER
PROP. 5' SIDEWALK
PROP. 2'-6" C&G
PROP. 1'-6" C&G
PROP. GRAV. GRAV-350 TL-3
SPEC. JB wMH
TB JB wMH
RETAIN
REMOVE
END C&G TIE TO EX. CURB
BEG. C&G TIE TO EX. CURB

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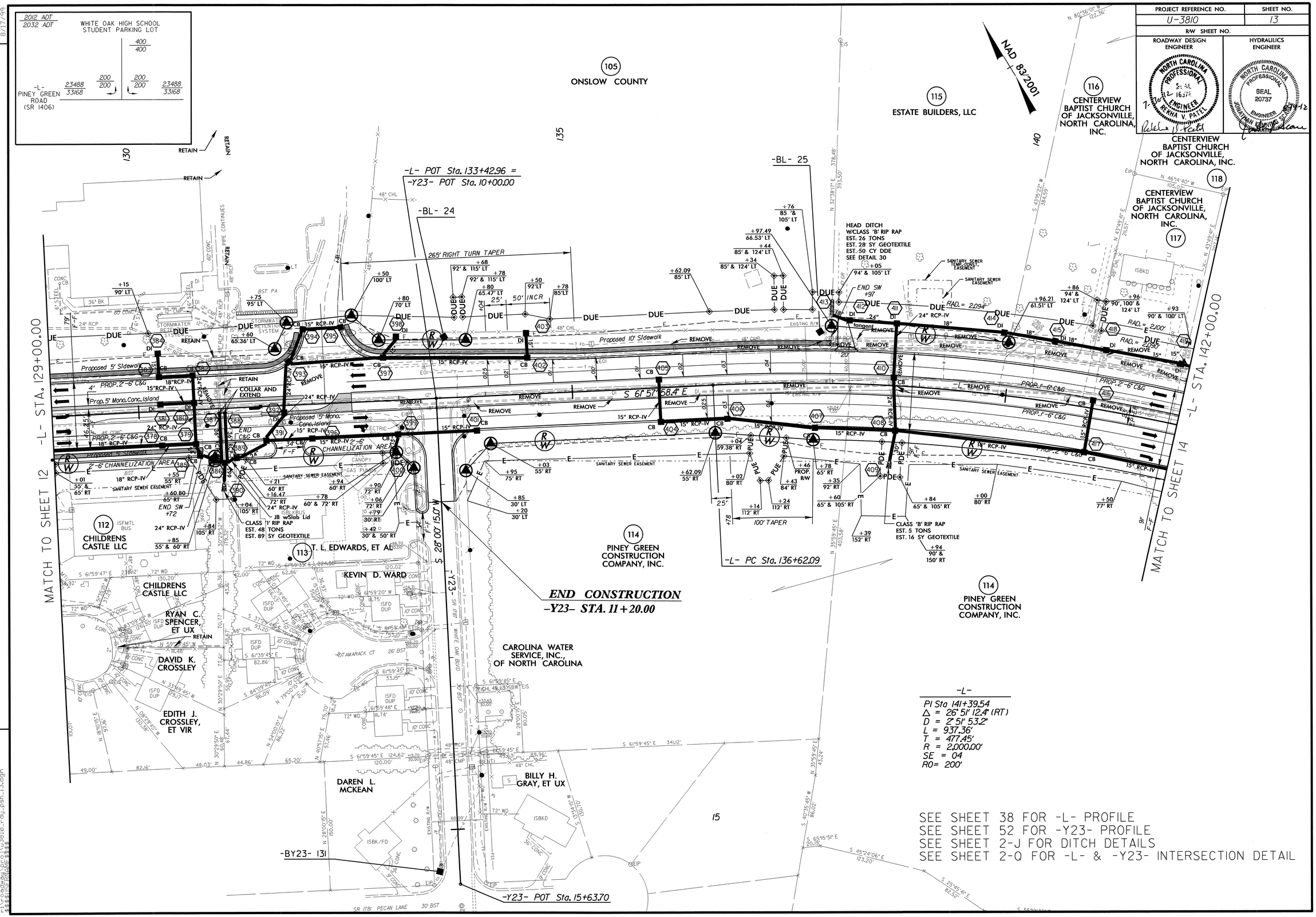
PROJECT REFERENCE NO.	SHEET NO.
U-3810	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 016372 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN DOWING STEVENS



REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCARCE

NAD 83/2001

REVISIONS

8/17/99

2012 ADT / 2032 ADT

-L- PINEY GREEN ROAD (SR 1406): 23488 / 33168 — 23936 / 34896

856 / 3016 — 1304 / 4744 — 2160 / 7760

-Y24- HEMLOCK DRIVE (SR 1876)

CENTERVIEW BAPTIST CHURCH OF JACKSONVILLE, NORTH CAROLINA, INC. (118)

-L- POC Sta. 143+03.82 = -Y24- POT Sta. 10+00.00

-BL- 26

NOTE: PLACE 1 FT. WIDE DRAINAGE SLOT OPENINGS IN MONOLITHIC ISLAND AT STA 143+84 -L- LT AND STA 144+28 -L- LT.

ROY LAIRD, ET UX (121)

-DRI- POT Sta. 10+00.00

-DRI- S 46°10'43.0" W

-DRI- PC Sta. 12+82.16

BEGIN CONSTRUCTION -DRI- STA. 13+10.00

-DRI- PT Sta. 13+58.16

CLASS 'B' RIP RAP EST. 3 TONS EST. 11 SY GEOTEXTILE

GILROY B. WILSON, ET UX

FELICIA C. HINDS, ET VIR

BEGIN CONSTRUCTION -Y25- STA. 11+90.00

EVA C. JAKOBSSON

JEAN M. RODRIGUEZ & VANESSA MAESTRE (122A)

JOSE L. MURILLO, SR. ET UX (123)

ALBERT W. GAMBLIN, ET UX (122B)

DAVID SPENCER

CHARLES R. WILSON

JOHN O. ADAMS

-Y25- POT Sta. 10+00.00

-BY25- 135

PAMELA A. JAMES, ET VIR (125)

CHARLES F. SINNAMON, ET UX (126)

JOHN L. DILLAHUNT (128)

CHARLES R. KIMBROUGH, ET UX (129)

CECILIA N. CLARKE (130)

CLIFTON CAIN, ET UX (131)

-Y25- S 54°50'54.0" W

Remove Existing Sidewalk Per Engineer -L- Sta.149+26 to 151+65 LT

Remove Existing Sidewalk Per Engineer -L- Sta.152+00 to 156+00 LT

Proposed 5' Sidewalk

Proposed 5' Mono. Conc. Island

Prop. 5' Mono. Conc. Island

PROP. 2'-6" C&G

PROP. 1'-6" C&G

S 35°06'46.0" E

SANITARY SEWER EASEMENT

NANCY T. HERNANDEZ (120)

-BY24- 133

-DRI- POT Sta. 14+25.95

-L- POT Sta. 147+18.90

-L- PT Sta. 145+99.45

-L- POT Sta. 151+84.57 = -Y25- POT Sta. 13+08.11

-BL- 27

END CONSTRUCTION -Y24- STA. 11+40.00

-Y24- POT Sta. 11+49.59

C. M. S., INC. OF JACKSONVILLE

HOWARD AND SONS RENTALS, A NORTH CAROLINA GENERAL PARTNERSHIP (122)

PINEY GREEN CONSTRUCTION COMPANY, INC. (114)

-BY24- 134

TAIL DITCH EST. 250 CY DDE SEE DETAIL 31

CLASS 'B' RIP RAP EST. 8 TONS EST. 21 SY GEOTEXTILE

MATCH TO SHEET 13 -L- STA. 142+00.00

MATCH TO SHEET 15 -L- STA. 156+00.00

-L-

PI Sta 141+39.54
Δ = 26° 51' 12.4" (RT)
D = 2° 51' 53.2"
L = 937.36'
T = 477.45'
R = 2,000.00'
SE = 04
RO = 200'

-DRI-

PI Sta 13+20.23
Δ = 8° 42' 31.0" (RT)
D = 11° 27' 33.0"
L = 76.00'
T = 38.07'
R = 500.00'

2012 ADT / 2032 ADT — -Y25- BIRCHWOOD LANE (SR 1804): 500 / 500

-L- PINEY GREEN ROAD (SR 1406): 23936 / 34896 — 250 / 250 — 250 / 250 — 23936 / 34896

HOWARD AND SONS RENTALS, A NORTH CAROLINA GENERAL PARTNERSHIP (122)

REMOVAL OF EXIST PAVEMENT

SEE SHEET 2-J FOR DITCH DETAILS
SEE SHEET 2-R FOR -L- & -Y24- INTERSECTION DETAIL
SEE SHEET 38 FOR -L- PROFILE
SEE SHEET 52 FOR -Y24- & -Y25- PROFILES
SEE SHEET 56 FOR -DRI- PROFILE

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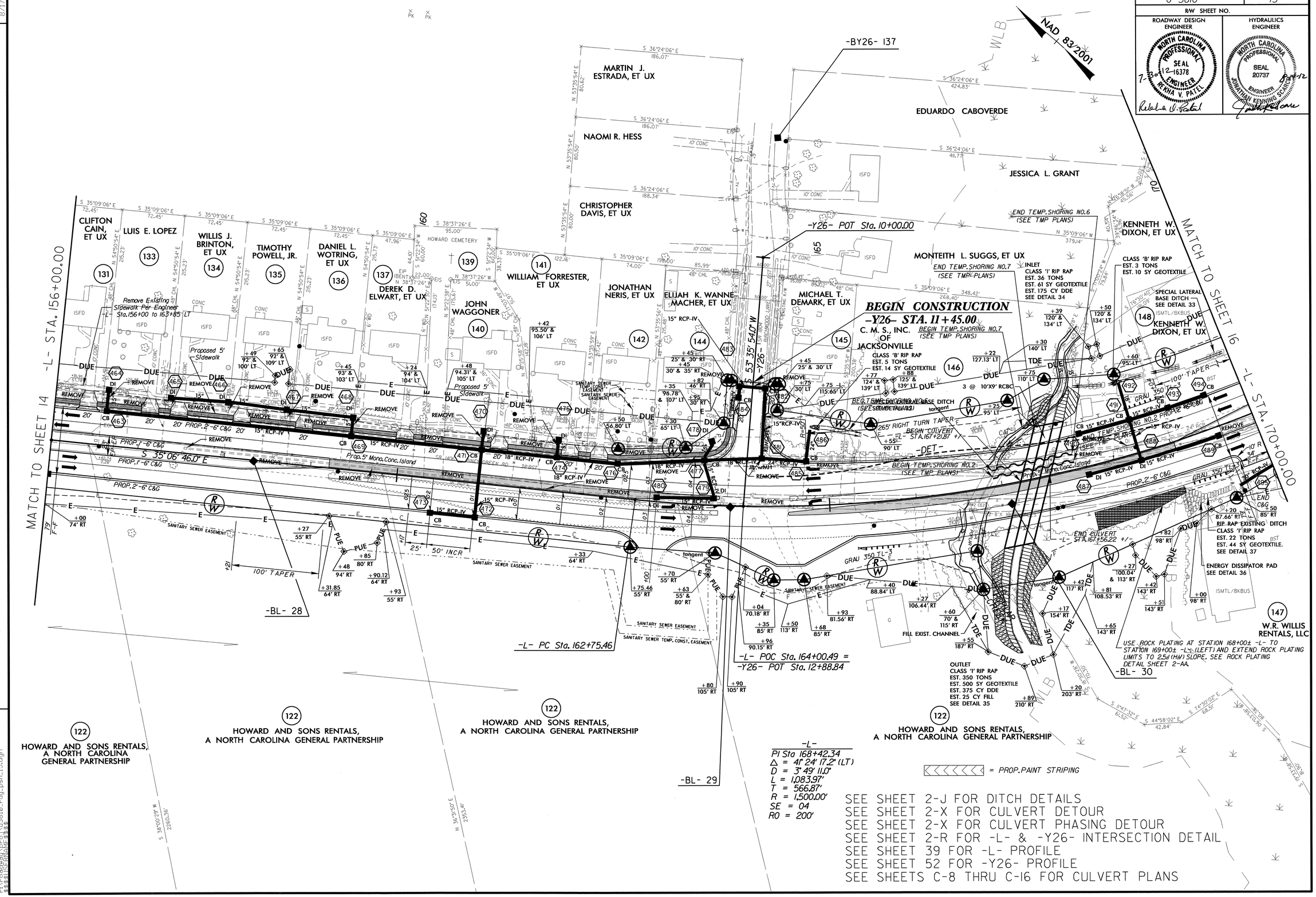
PROJECT REFERENCE NO.	SHEET NO.
U-3810	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 12-16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCARBOROUGH



SEE SHEET 2-J FOR DITCH DETAILS
SEE SHEET 2-X FOR CULVERT DETOUR
SEE SHEET 2-X FOR CULVERT PHASING DETOUR
SEE SHEET 2-R FOR -L- & -Y26- INTERSECTION DETAIL
SEE SHEET 39 FOR -L- PROFILE
SEE SHEET 52 FOR -Y26- PROFILE
SEE SHEETS C-8 THRU C-16 FOR CULVERT PLANS

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN W. SCARCE

NAD 83/2001

-L- PI Sta 168+42.34
Δ = 41° 24' 17.2" (LT)
D = 3° 49' 11.0"
L = 1,083.97'
T = 566.87'
R = 1,500.00'
SE = 04
RO = 200'

-Y28- PI Sta 11+59.06
Δ = 11° 19' 00.0" (RT)
D = 11° 27' 33.0"
L = 98.76'
T = 49.54'
R = 500.00'
SE = SEE PLANS

-L- POC Sta. 173+06.74 = -Y27- POT Sta. 10+00.00

-L- PT Sta. 173+59.44

-L- POT Sta. 177+64.12 = -Y28- POT Sta. 10+00.00

-BL- 32

S. CATHERINE AMAN, ET AL

SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 39 FOR -L- PROFILE
SEE SHEET 53 FOR -Y27- & -Y28- PROFILES

MATCH TO SHEET 15 -L- STA. 170+00.00

MATCH TO SHEET 17 -L- STA. 184+00.00

END CONSTRUCTION
-Y28- STA. 11+18.00
-Y28- PT Sta. 12+08.27

END CONSTRUCTION
-Y27- STA. 11+40.00

-Y28- PC Sta. 11+09.52

-Y27- POT Sta. 13+05.47

-Y28- POT Sta. 14+73.89

-BL- 31

-BY27- 140

-BY28- 142

S 24°42'45.3" W

S 25°03'49.0" W

S 13°44'49.0" W

S 76°31'03.2" E

CLASS 'B' RIP RAP
EST. 2 TONS
EST. 7 SY GEOTEXTILE

SPECIAL LATERAL BASE DITCH
SEE DETAIL 38

SPECIAL LATERAL BASE DITCH
SEE DETAIL 33

2'-6" CHANNELIZATION AREA

DO NOT DISTURB SIGN

147 W.R. WILLIS RENTALS, LLC

148 LEONARD L. BROWNLEY

149 LEONARD L. BROWNLEY

150 W.R. WILLIS RENTALS, LLC

153 W.R. WILLIS, ET UX

154 MONICA E. MCCOY

155 RANDY K. WILLIS

156 ONSLOW COUNTY

157 W.R. WILLIS RENTALS, LLC

158 S. CATHERINE AMAN, ET AL

159 VETERANS OF FOREIGN WARS DOWN EAST POST 9135, INC.

160 JAMES T. GRAHAM, ET UX

161 LEONARDL. BROWNLEY, ET UX

162 PHILLIP CROOM, ET UX

JEFFREY L. BROWN, ET UX

DONNA M. TOMON

KELVIN D. BURNETTE, ET UX

ESTEBAN RODRIGUEZ, ET UX

JOSEPH C. MURPHY, ET UX

VIRGINIA D. STEVENS

AARON L. FRANKLIN, ET UX

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19661 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN W. KENNING, SEAL

8/17/99

REVISIONS

NAD 83/2001

BEGIN CONSTRUCTION
-Y29- STA. 11+73.00

-BY31- 149

LUIS A. RIVERA, ET AL

RYAN E. DAVIS, ET UX

S. CATHERINE AMAN

-Y29- PC Sta. 12+33.58

S. CATHERINE AMAN, ET AL

KATHERINE L. CATO

-Y29- PT Sta. 16+16.18

-Y31- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y31- STA. 10+95.00

-BY29- 145

JOHN W. SIMMA, ET UX

-L- POC Sta. 186+36.55 =
-Y29- POT Sta. 17+56.36

AARON E. MATTHEWS

MICHAEL V. TARAVELLA, ET UX

GREGORY ALLEN

-BL- 34

ANTHONY H. MARTIN

HOYT T. MARTIN

CATHERINE S. AMAN

SCOT E. CONKLIN

DAVID K. BULLOCK, ET UX

IGOR GLOUCHENKO & SVETLANA NESTEROVA

JAMES E. BENEFIELD, ET UX

STEVEN C. TAYLOR

EARL F. HAYDEL, JR., ET UX

EDWARDS PROPERTY GROUP, LLC

-Y29- PC Sta. 17+59.54

-L- PT Sta. 190+81.72

-BL- 33

WHITE OAK RIVER ROAD INVESTMENTS, LLC

BARBARA A. HANSEN, ET VIR

-L- POC Sta. 190+37.05 =
-Y31- POT Sta. 12+16.99

WHITE OAK RIVER ROAD INVESTMENTS, LLC

ANN AVERY

-BL- 35

WILLIAM WAHMHOFF

WILLIAM WAHMHOFF

-L- PC Sta. 184+81.45

BADER OTHMAN

ELAINE H. MURPHY

END CONSTRUCTION
-Y29- STA. 20+83.00

-Y29- PT Sta. 21+53.08

NICHOLUS BLACKMON, ET UX

MATCH TO SHEET 16 -L- STA. 184+00.00

MATCH TO SHEET 18 -L- STA. 198+00.00

2012 ADT
2032 ADT

-Y29- OLD 30 ROAD (SR 1411)

DHV = 7%
DIR = 60%
TTST = 2%
DUAL = 5%

-L- PINEY GREEN ROAD (SR 1406)

-Y29- CHARLES ROAD (SR 1755)

-Y29-	-Y29-	-L-
PI Sta 14+27.82	PI Sta 19+56.84	PI Sta 187+83.03
Δ = 24° 21' 25.1" (LT)	Δ = 10° 14' 56.8" (RT)	Δ = 13° 45' 25.7" (RT)
D = 6° 21' 58.3"	D = 2° 36' 15.7"	D = 2° 17' 30.6"
L = 382.60'	L = 393.54'	L = 600.27'
T = 194.23'	T = 197.30'	T = 301.58'
R = 900.00'	R = 2,200.00'	R = 2,500.00'
SE = 04	SE = SEE PLANS	SE = 03
RO = SEE PLANS		RO = 150'

REMOVAL OF EXIST PAVEMENT

= PROP. PAINT STRIPING

SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 2-S FOR -L- & -Y29- INTERSECTION DETAIL
SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 53 FOR -Y29- & -Y31- PROFILES

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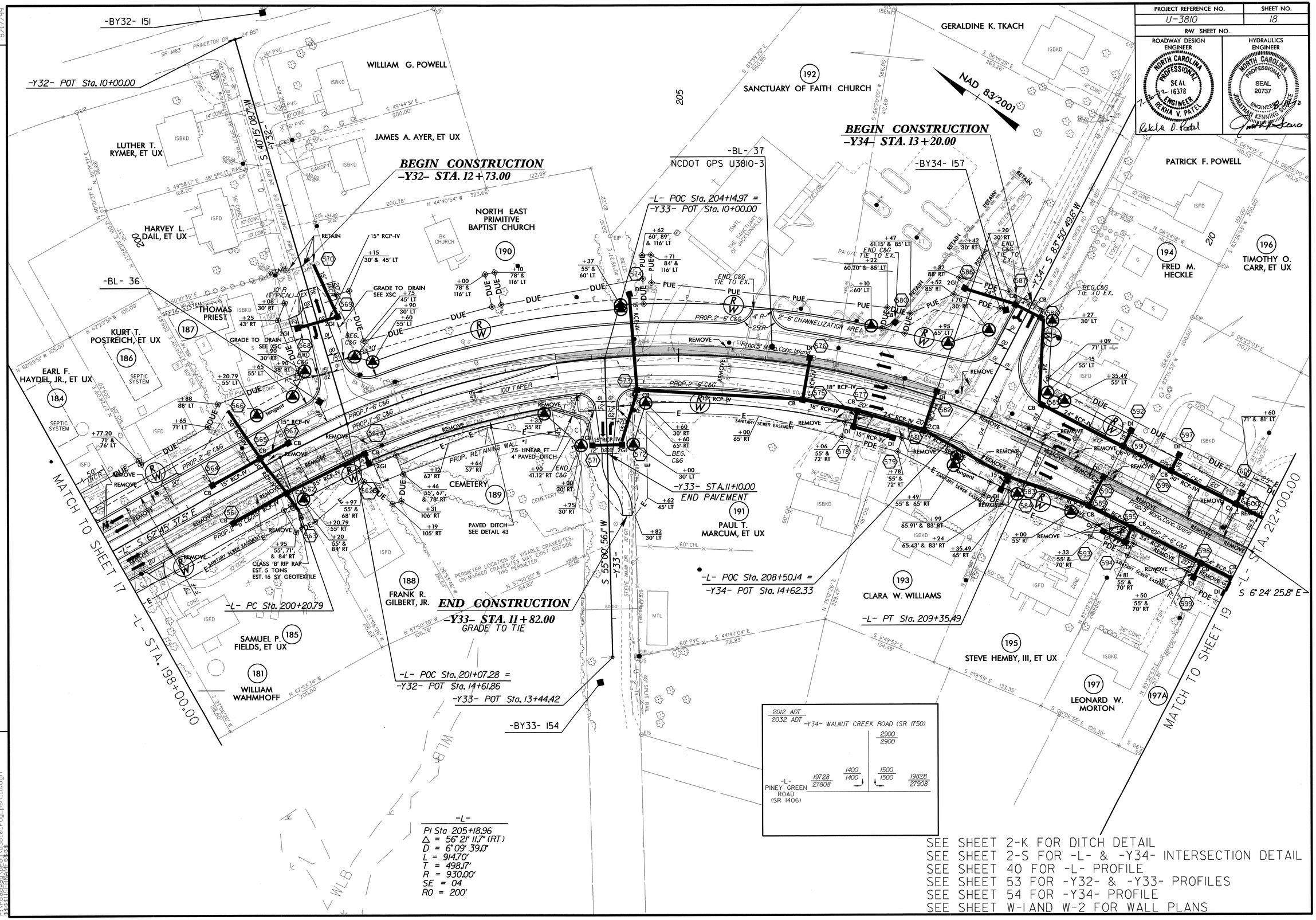
PROJECT REFERENCE NO.	SHEET NO.
U-3810	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING BRANCH



REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCHEER

REVISIONS

8/17/99

MATCH TO SHEET 31A

NAD 83/2001

-BY35- 159

-Y35- POT Sta. 10+00.00

NASSAU LN

201 WILLIAM P. REED

196 TIMOTHY O. CARR, ET UX

199 TIMOTHY O. CARR, ET UX

203 TIMOTHY O. CARR, ET UX

206 TERRY J. LYONS

-BL- 39

NCDOT GPS U3810-2

209 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

BEGIN CONSTRUCTION
-Y35- STA. 12+90.00

GRADE DRY POND TO NATURAL GROUND SEE XSC

EXIST. 18" OUTLET TO CONCRETE FLUME ELEV. 10.84

LATERAL BASE DITCH
CLASS 'B' RIP RAP
EST. 731 TONS
EST. 2337 SY GEOTEXTILE
EST. 7570 CY DDE
SEE DETAIL 44

-L- STA. 212+00.00

-L- STA. 226+00.00

MATCH TO SHEET 18

MATCH TO SHEET 20

2'-6' CHANNELIZATION AREA

Proposed 5' Mono. Conc. Island

-L- POT Sta. 216+81.94 = -Y35- POT Sta. 14+07.31

-L- PC Sta. 218+82.74

-BL- 38

197A LEONARD W. MORTON

198 TIMOTHY O. CARR, ET UX

198 TIMOTHY O. CARR, ET UX

MICHAEL E. SMEN 202

204 NANNIE M. GERRITY

205 LINDA G. AMES, ET VIR

207 JEFFREY T. SANTIAGO

208 TOMMY MORTON, JR., ET UX

TOMMY MORTON, JR., ET UX

TIMOTHY O. CARR, ET UX

-L-
PI Sta 223+26.73
Δ = 32° 58' 36.4" (RT)
D = 3° 49' 11.0"
L = 863.33'
T = 443.99'
R = 1,500.00'
SE = 04
RO = 200'

SEE SHEET 2-K FOR DITCH DETAIL
SEE SHEET 41 FOR -L- PROFILE
SEE SHEET 54 FOR -Y35- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	20
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCHAFER

8/17/99

REVISIONS

= PERMANENT WETLAND MITIGATION AREA, SEE 404 AND 401 PERMIT FOR MITIGATION PLAN

SEE SHEET 2-Y FOR PERMANENT WETLAND MITIGATION AREA DETAIL AND CROSS SECTIONS

MATCH TO SHEET 31A

2012 ADT
2032 ADT

-L- PINEY GREEN ROAD (SR 1406)

19828 / 27908	20228 / 28308
200 / 200	600 / 600
	800 / 800

-Y36- EAST CAROLE DRIVE (SR 1453)

NAD 83/2001

MATCH TO SHEET 21

MATCH TO SHEET 19

-L- STA. 226+00.00

-L- STA. 240+00.00

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (209)

PERMANENT WETLAND MITIGATION AREA

+34.60 288.95' LT

+93.67 237.52' LT

+34.60 127' LT

-BL- 40

LATERAL BASE DITCH
CLASS 'B' RIP RAP
EST. 731 TONS
EST. 2337 SY GEOTEXTILE
EST. 7570 CY DDE
SEE DETAIL 44

CLASS 'B' RIP RAP
EST. 2 TONS
EST. 7 SY GEOTEXTILE

CLASS 'B' RIP RAP
EST. 2 TONS
EST. 7 SY GEOTEXTILE

-L2- PT Sta. 233+22.17

BEGIN BRIDGE
-L- STA 233+71.50

END BRIDGE
-L- STA 234+96.50

BRIDGE #121 OVER LITTLE NORTHEAST CREEK
STATE PROJECT REF. NO. 8.2260401
CONC BENTS, PILINGS, SEATS, GUARDRAILS,
DECK COVERED WITH ASPHALT

PROPERTY LINE ALONG RUN OF LITTLE NORTHEAST CREEK

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (210)

ANNETTE C. MCKNIGHT, ET VIR (211)

MCLARRY J. HUMPHREY HEIRS (215)

+03.48 178.58' LT

+21.86 118' LT

+31.87 85' LT

+68 117' & 147' LT

+79 117' & 147' LT

CLASS 'B' RIP RAP
EST. 1 TONS
EST. 5 SY GEOTEXTILE

CLASS 'II' RIP RAP (STRUCTURE PAY ITEM)

TOE PROTECTION SEE DETAIL 45

CLASS 'B' RIP RAP
EST. 3 TONS
EST. 11 SY GEOTEXTILE

+43 112' & 125' LT

+28 112' & 125' LT

+88.47 85' LT -L-

+18.68 55' RT

-L2- PC Sta. 235+43.81
BEGIN GRADE

-L- POT Sta. 235+99.17 =
-Y36- POT Sta. 10+00.00

END GRADE
-L2- PT Sta. 238+04.72 =
-L- POC Sta. 238+04.20
(23.50' LT)

-L- PC Sta. 237+83.33

-L- PT Sta. 227+46.07

BEGIN GRADE
-L2- PC Sta. 230+39.32 =
-L- POT Sta. 230+39.32
(23.50' LT)

-L2- PRC Sta. 231+80.74

TOMMY MORTON, JR., ET UX (208)

CECIL C. MORTON, ET AL (212)

-L2- POC Sta. 235+95.72 =
-Y36- POT Sta. 10+26.12

END CONSTRUCTION
-Y36- STA. 11+24.00

CECIL C. MORTON (212)

-Y36- POT Sta. 12+07.39

-BL- 41

-BY36- 162

RETAIN EXISTING BRIDGE

CLASS 'B' RIP RAP
EST. 1 TONS
EST. 5 SY GEOTEXTILE

SEE SHEET 2-AB FOR SKETCH OF PAVEMENT-BRIDGE RELATIONSHIP
SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 2-T FOR -L- & -Y36- INTERSECTION DETAIL
SEE SHEET 42 FOR -L- & -L2- PROFILES
SEE SHEET 54 FOR -Y36- PROFILE
SEE SHEETS S-35 THRU S-62 FOR STRUCTURE PLANS

-L-

PI Sta 223+26.73	PI Sta 243+14.57
Δ = 32° 58' 36.4" (RT)	Δ = 55° 57' 30.2" (LT)
D = 3° 49' 11.0"	D = 5° 43' 46.5"
L = 863.33'	L = 976.66'
T = 443.99'	T = 531.24'
R = 1,500.00'	R = 1,000.00'
SE = 04	SE = 04
RO = 200'	RO = 200'

-L2-

PI Sta 231+10.03	PI Sta 232+51.46	PI Sta 236+74.27
Δ = 1° 00' 46.3" (RT)	Δ = 1° 00' 46.3" (LT)	Δ = 1° 11' 45.4" (LT)
D = 0° 42' 58.3"	D = 0° 42' 58.3"	D = 0° 27' 30.1"
L = 141.42'	L = 141.42'	L = 260.91'
T = 70.71'	T = 70.71'	T = 130.46'
R = 8,000.00'	R = 8,000.00'	R = 12,500.00'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 12-16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN BENNING STARCE

REVISIONS

8/17/99

NAD 83/2001

-L-	-Y37-	-Y39-
PI Sta 243+14.57	PI Sta 11+02.77	PI Sta 13+55.65
Δ = 55° 57' 30.2" (LT)	Δ = 55° 33' 20.7" (RT)	Δ = 26° 05' 00.0" (LT)
D = 5° 43' 46.5"	D = 57° 17' 44.8"	D = 10° 48' 37.9"
L = 976.66'	L = 96.96'	L = 241.28'
T = 531.24'	T = 52.67'	T = 122.77'
R = 1,000.00'	R = 100.00'	R = 530.00'
SE = 04	SE = SEE PLANS	SE = SEE PLANS
RO = 200'		

-L- 2012 ADT 2032 ADT: PINEY GREEN ROAD (SR 1406) 19728 / 27808; 20616 / 28376; 1880 / 2680; 2768 / 3248; 4648 / 5928

-Y39- HUNTERS TRAIL (SR 1860)

MATCH TO SHEET 20 -L- STA. 240+00.00

MATCH TO SHEET 22 -L- STA. 254+00.00

216 DALE K. VENTERS, ET UX

215 MCLARRY J. HUMPHREY HEIRS

212 CECIL C. MORTON, ET AL

217 ROBERT A. CROM, ET UX

218 ROBERT A. CROM, ET UX

223 SUSAN M. JACOBS

224 PRICILLA R. ETZEL, ET VIR

225 DALE K. VENTERS, ET AL

DALE K. VENTERS, ET UX

DALE K. VENTERS, ET AL

227 MICHAEL L. LANIER

228 MICHAEL L. LANIER

229 MICHAEL L. LANIER

226 MARTHA W. MELTS

222 HUNTER DEVELOPMENT CORPORATION

221 GARLAND W. TUTON, ET UX

219 JOHN S. MARTIN

CECIL C. MORTON

WILLIAM A. LUTNICK TRUST

PATRICIA H. PALMER

-L- PT Sta. 247+59.98

-L- POT Sta. 250+25.44 = -Y39- POT Sta. 10+00.00

-L- POC Sta. 245+09.35 = -Y37- POT Sta. 10+00.00

CLASS 'B' RIP RAP EST. 11 TONS EST. 28 SY GEOTEXTILE

SPECIAL LATERAL BASE DITCH SEE DETAIL 46

CLASS 'B' RIP RAP EST. 2 TONS EST. 7 SY GEOTEXTILE

CLASS 'B' RIP RAP EST. 24 TONS EST. 34 SY GEOTEXTILE 1.5' DEEP

-BL- 43

-BL- 42

-BL- 44

-Y37- POT Sta. 15+08.86

-Y37- N 50° 28' 53.0" W

-Y37- PT Sta. 11+47.05

-Y37- PC Sta. 10+50.09

-Y39- PC Sta. 12+32.88

-Y39- PT Sta. 14+74.16

-BY37- 166

-BY37- 165

-BY37- 164

-BY39- 170

END CONSTRUCTION -Y37- STA. 11+50.00

END CONSTRUCTION -Y39- STA. 13+70.00

SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 2-T
FOR -L- & -Y39- INTERSECTION DETAIL
SEE SHEET 43 FOR -L- PROFILE
SEE SHEET 54 FOR -Y37- PROFILE
SEE SHEET 54 FOR -Y39- PROFILE

26-JUL-2012 08:00
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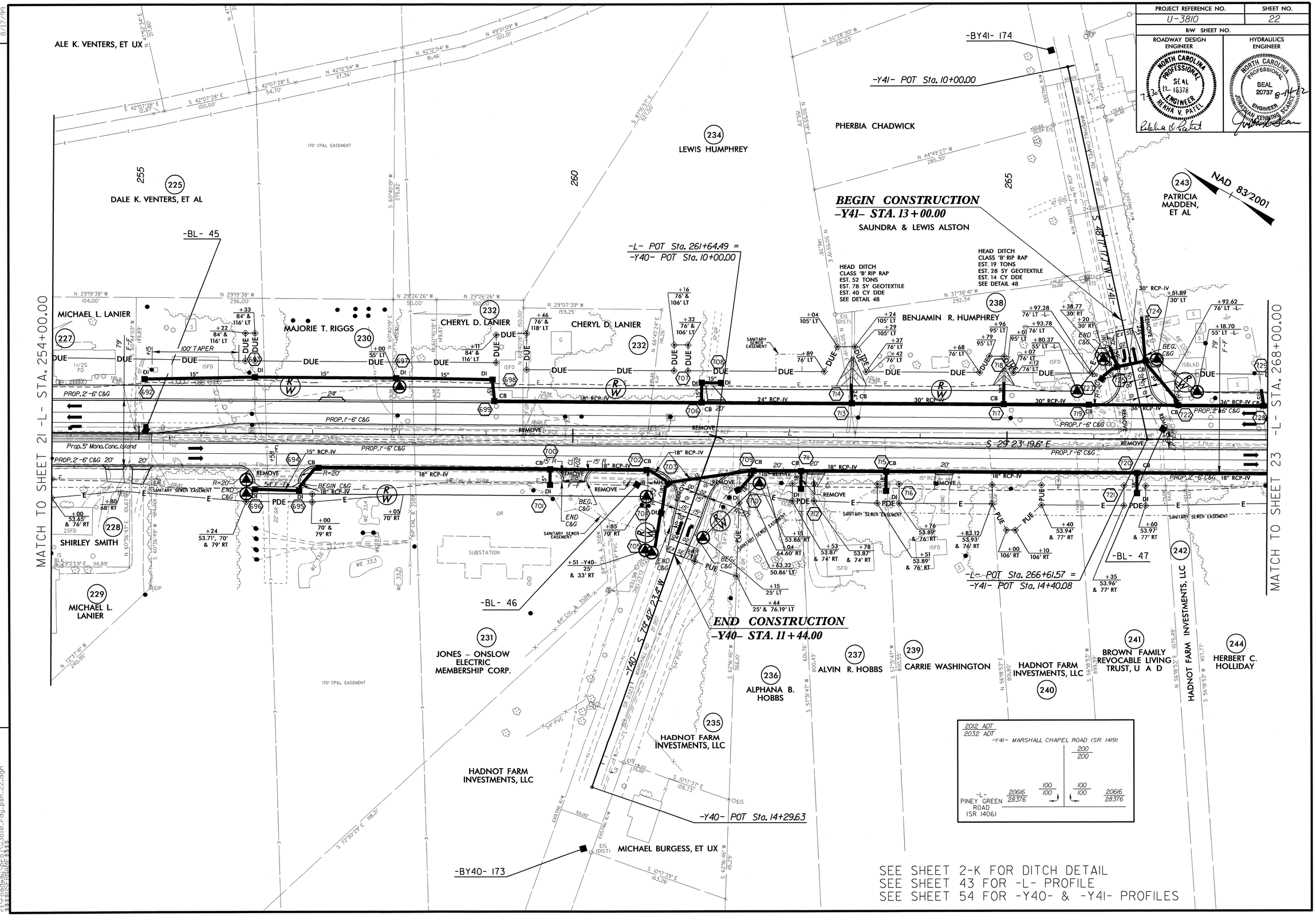
PROJECT REFERENCE NO.	SHEET NO.
U-3810	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCARCE

REVISIONS

8/17/99



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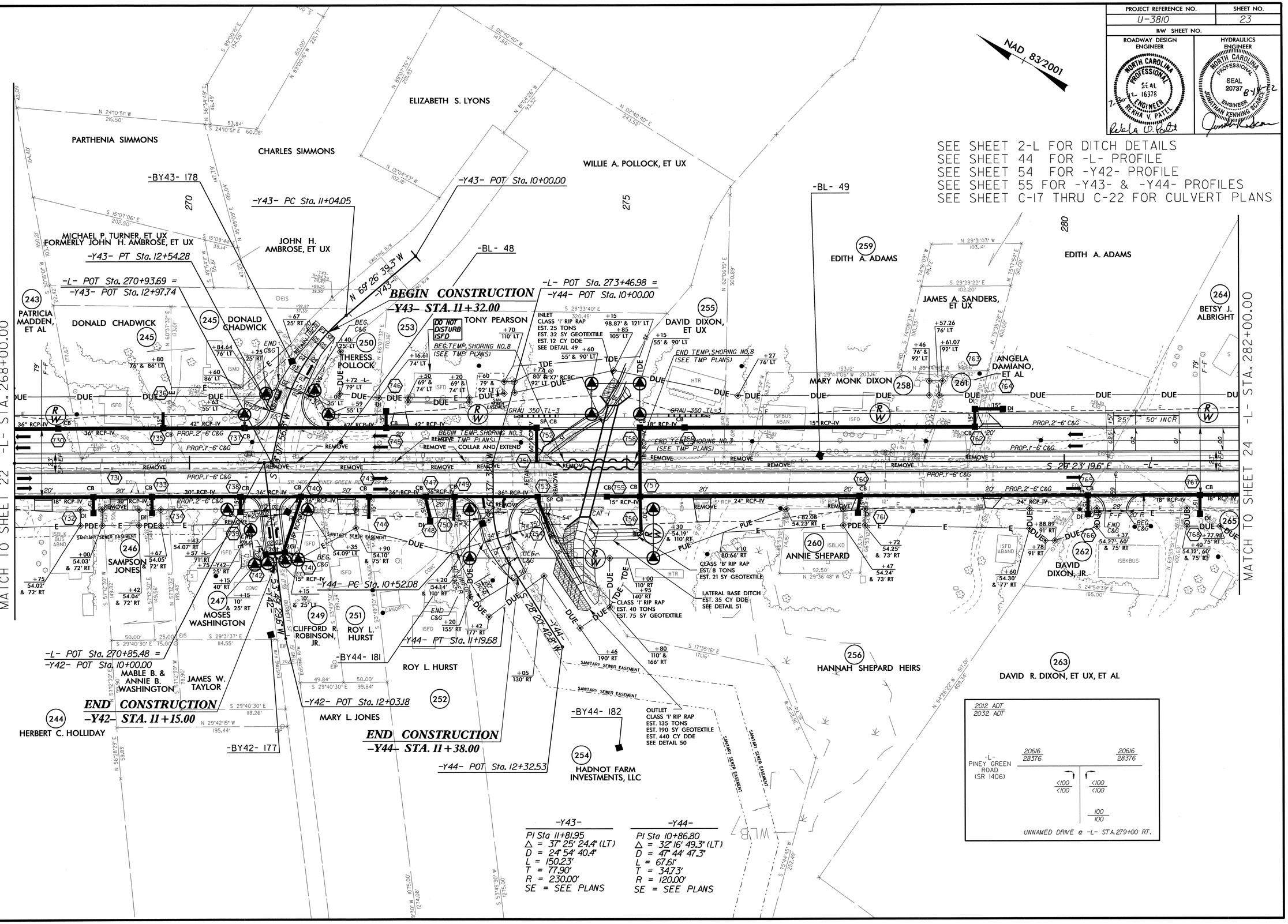
U-3810	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCARBOROUGH



PROJECT REFERENCE NO.	SHEET NO.
U-3810	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN D. VANDERVEEN

7-30-12 8-1-12

NAD 83/2001

SEE SHEET 2-L FOR DITCH DETAIL
SEE SHEET 44 FOR -L- PROFILE
SEE SHEET 55 FOR -Y45- PROFILE

259 EDITH A. ADAMS

266 TORRIE JONES

264 BETSY J. ALBRIGHT

271 EDITH ADAMS, ET AL

276

263 DAVID R. DIXON, ET UX, ET AL

265 EDITH A. ADAMS

267 VANIE PARKER

267A BEATRICE J. MORSE

269 CHAD EVERETT FONVILLE

270 MARY FONVILLE

272 EDITH A. ADAMS

273 AMBROSE CEMETERY

274 ROGER MOORE, ET UX

275 ROSA FONVILLE

277 JOHN MOLLETT

278

-BL- 50

-BL- 51

-L- POC Sta. 287+39.40 =
-Y45- POT Sta. 10+00.00

-L- PT Sta. 289+98.27

USE ROCK PLATING AT STATION 284+75± -L- TO STATION 286+75± -L- (LEFT) AND EXTEND ROCK PLATING LIMITS TO 25:1 (HW) SLOPE. SEE ROCK PLATING DETAIL SHEET 2-AA.

-L- PC Sta. 282+81.50

-Y45- PC Sta. 10+50.58

-Y45- PT Sta. 10+87.09

-Y45- POT Sta. 11+59.22

END CONSTRUCTION
-Y45- STA. 11+10.00

WILLIAM L. AMBROSE, ET UX

-BY45- 184

-BY46- 186

MATCH TO SHEET 23 -L- STA. 282+00.00

MATCH TO SHEET 25 -L- STA. 296+00.00

S 23° 23' 19.6" E

S 15° 41' 58.0" E

SR 1406 PINEY GREEN RD

CLASS 'I' RIP RAP
EST. 20 TONS
EST. 39 SY GEOTEXTILE

TAIL DITCH
EST. 65 CY DDE
SEE DETAIL 52

DO NOT DISTURB MOBILE HOME

-L-	-Y45-
PI Sta 286+41.60	PI Sta 10+69.16
Δ = 13° 41' 21.6" (RT)	Δ = 26° 08' 50.0" (LT)
D = 1° 54' 35.5"	D = 71° 37' 11.0"
L = 716.77'	L = 36.51'
T = 360.10'	T = 18.58'
R = 3,000.00'	R = 80.00'
SE = 03	SE = SEE PLANS
RO = 150'	

REVISIONS

8/17/99

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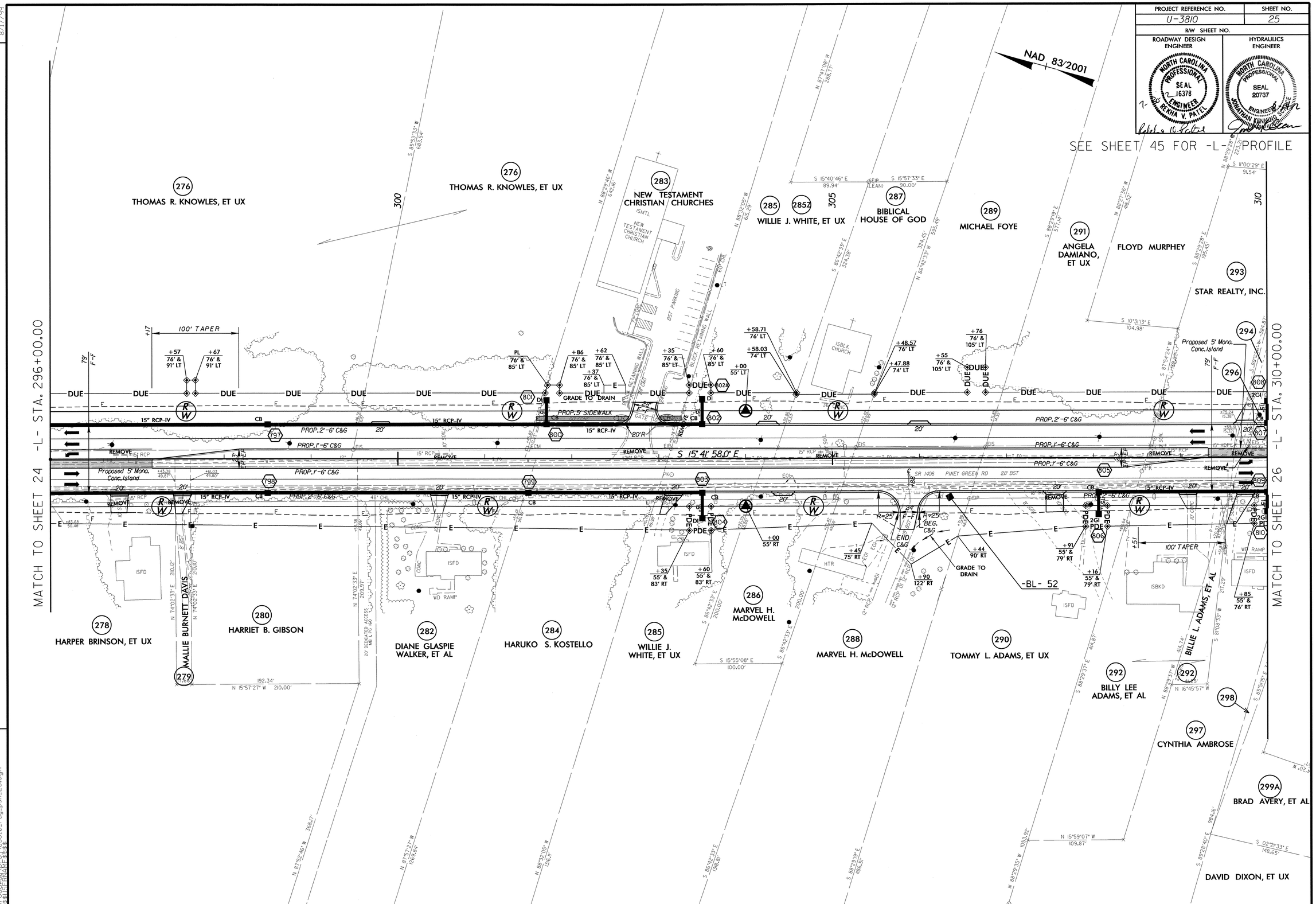
PROJECT REFERENCE NO.	SHEET NO.
U-3810	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER RAKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN EDWARD STEWART



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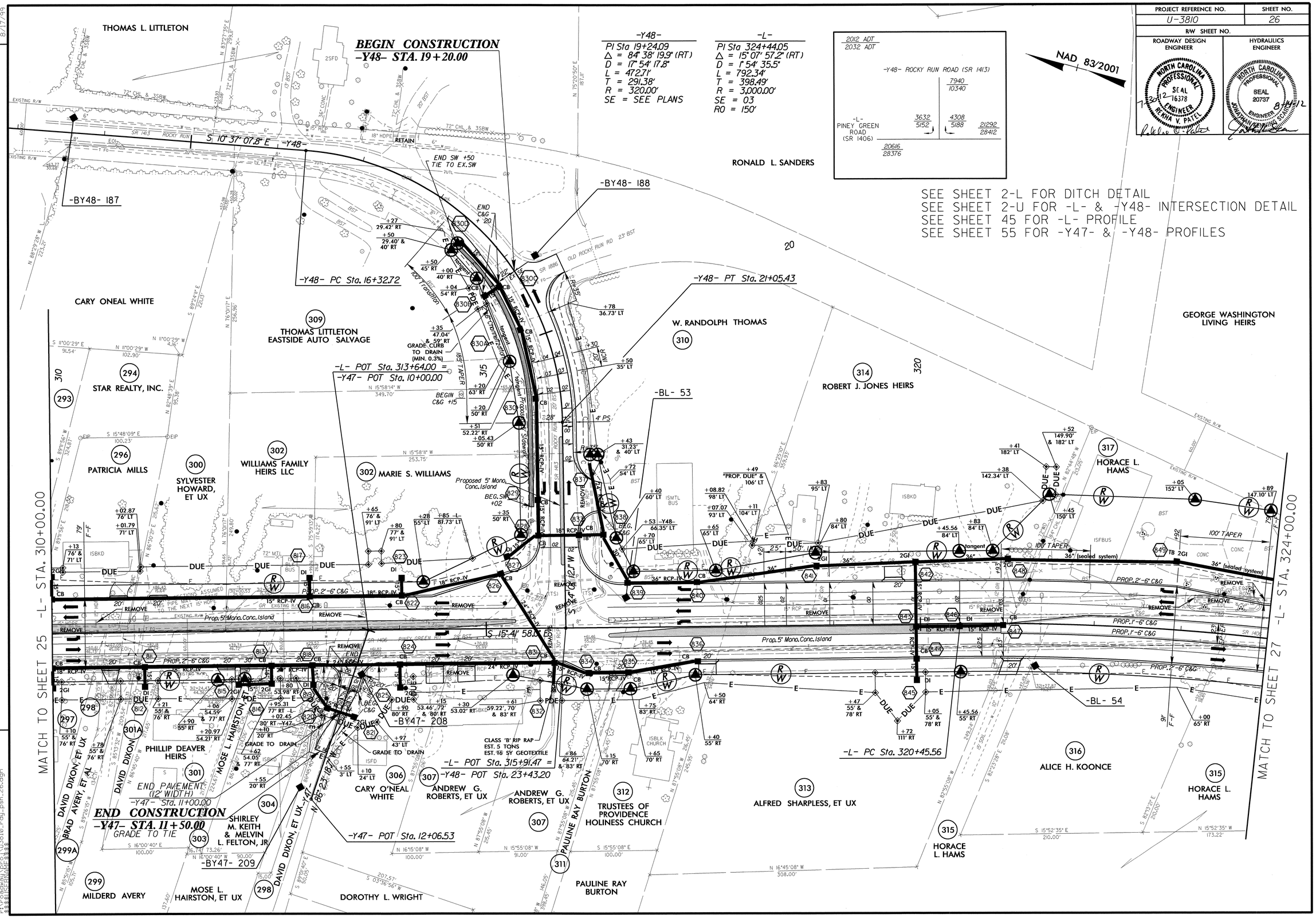
PROJECT REFERENCE NO.	SHEET NO.
U-3810	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL 7/30/12

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN W. STANLEY 8/10/12



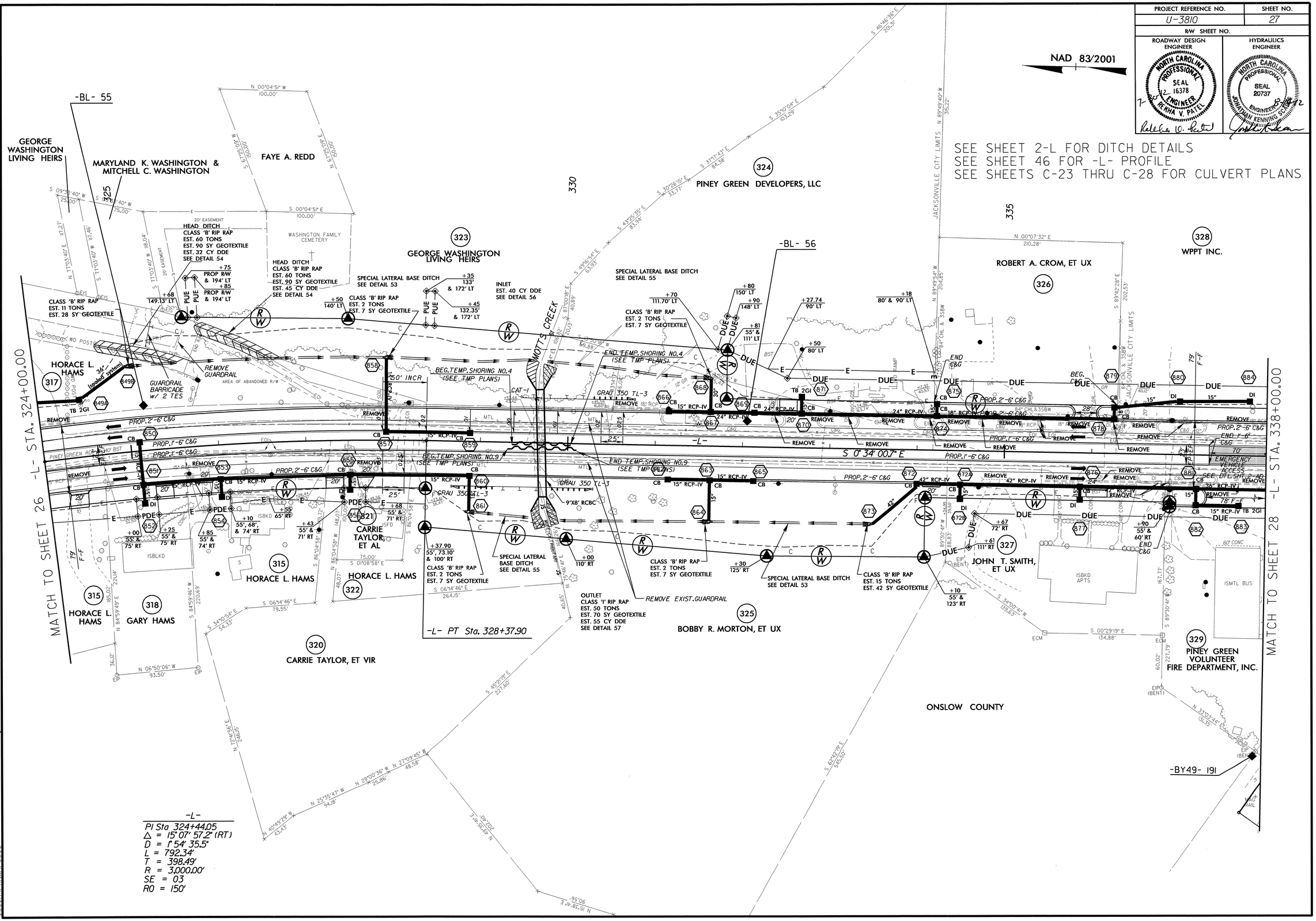
PROJECT REFERENCE NO.	SHEET NO.
U-3810	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER R. KHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNITH SCAR

NAD 83/2001

SEE SHEET 2-L FOR DITCH DETAILS
SEE SHEET 46 FOR -L- PROFILE
SEE SHEETS C-23 THRU C-28 FOR CULVERT PLANS



REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19578 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN CANNING SCARBOROUGH

NAD 83/2001

-Y50- POT Sta. 10+00.00

-Y49-
PI Sta 10+83.00
Δ = 34° 35' 30.7" (RT)
D = 57° 17' 44.8"
L = 60.37'
T = 31.14'
R = 100.00'
SE = SEE PLANS

UNITED STATES OF AMERICA "CAMP LEJEUNE RAILROAD" (332)

-BY50- 192

(328) WPPT INC.

-BY50- 193

-L- POT Sta. 340+01.87
-Y49- POT Sta. 10+00.00

-L- POT Sta. 342+22.18 =
-Y50- POT Sta. 15+58.35

SPECIAL LATERAL BASE DITCH SEE DETAIL 58

CLASS 'B' RIP RAP EST. 2 TONS EST. 7 SY GEOTEXTILE

(333) PINEY GREEN DEVELOPERS, LLC

ISF BUS

NOTE: THE DRIVEWAY WILL BE RELOCATED BY THE PROPERTY OWNER PRIOR TO CONSTRUCTION OF THE LEFTOVER

(336A) CARL SUTTON

(336) MATTHEW HAMILTON

-BL- 58

-L- POT Sta. 349+57.33 =
-Y51- POT Sta. 10+00.00

(336) MATTHEW HAMILTON

ENON CHAPEL BAPTIST CHURCH (340)

CLASS 'B' RIP RAP EST. 1 TONS EST. 5 SY GEOTEXTILE

150' LEFT TURN TAPER

MATCH TO SHEET 27 -L- STA. 338+00.00

MATCH TO SHEET 29 -L- STA. 352+00.00

JACKSONVILLE CITY LIMITS

PROP. 2'-6" C&G

Prop. 5' Mono. Conc. Island

S 0° 34' 00.7" E

SEE NOTE

PINEY GREEN VOLUNTEER FIRE DEPARTMENT, INC. (329)

TONY CHOW (330)

-Y49- PC Sta. 10+51.86

-Y49- PT Sta. 11+12.24

(331) MICHIKO M. HENDERSON

TRENCHLESS INSTALLATION 24" WELDED STEEL

(334) POLLARD ENTERPRISES INC.

ISMTL BUS

ISBKBUS

ISBK/BLK CHURCH

(337) H & M FARMS, LLC

GRADE TO DRAIN SEE XSC

(338) JOHN D. KOSTELLO, ET UX

NAVY FEDERAL CREDIT UNION (339)

325' TAPER RIGHT

END CONSTRUCTION
-Y51- STA. 11+30.00

-BL- 57

END CONSTRUCTION
-Y49- STA. 11+30.00

N 55° 58' 30.1" W

(335) MACIE W. GREGORY

MACIE W. GREGORY

-BY51- 197

MARY ANN R. DAMIANO

-BY50- 195

-Y50- POT Sta. 20+25.00

-Y51- POT Sta. 14+33.52

COASTAL CAROLINA COMMUNITY COLLEGE

(332) UNITED STATES OF AMERICA "CAMP LEJEUNE RAILROAD"

MACIE W. GREGORY

SEE SHEET 2-M FOR DITCH DETAIL
SEE SHEET 2-U FOR -L- & -Y49-/-Y50-/-Y51- INTERSECTION DETAIL
SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 55 FOR -Y49- & -Y51- PROFILES
SEE SHEET 57 FOR -Y50- PROFILE
SEE SHEET RR-1 THRU RR-22 FOR RR CROSSING PLANS

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3810	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN BERNARD SCHICK

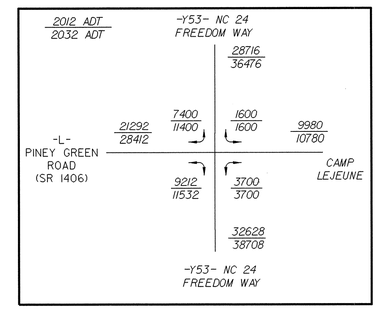
NAD 83/2001

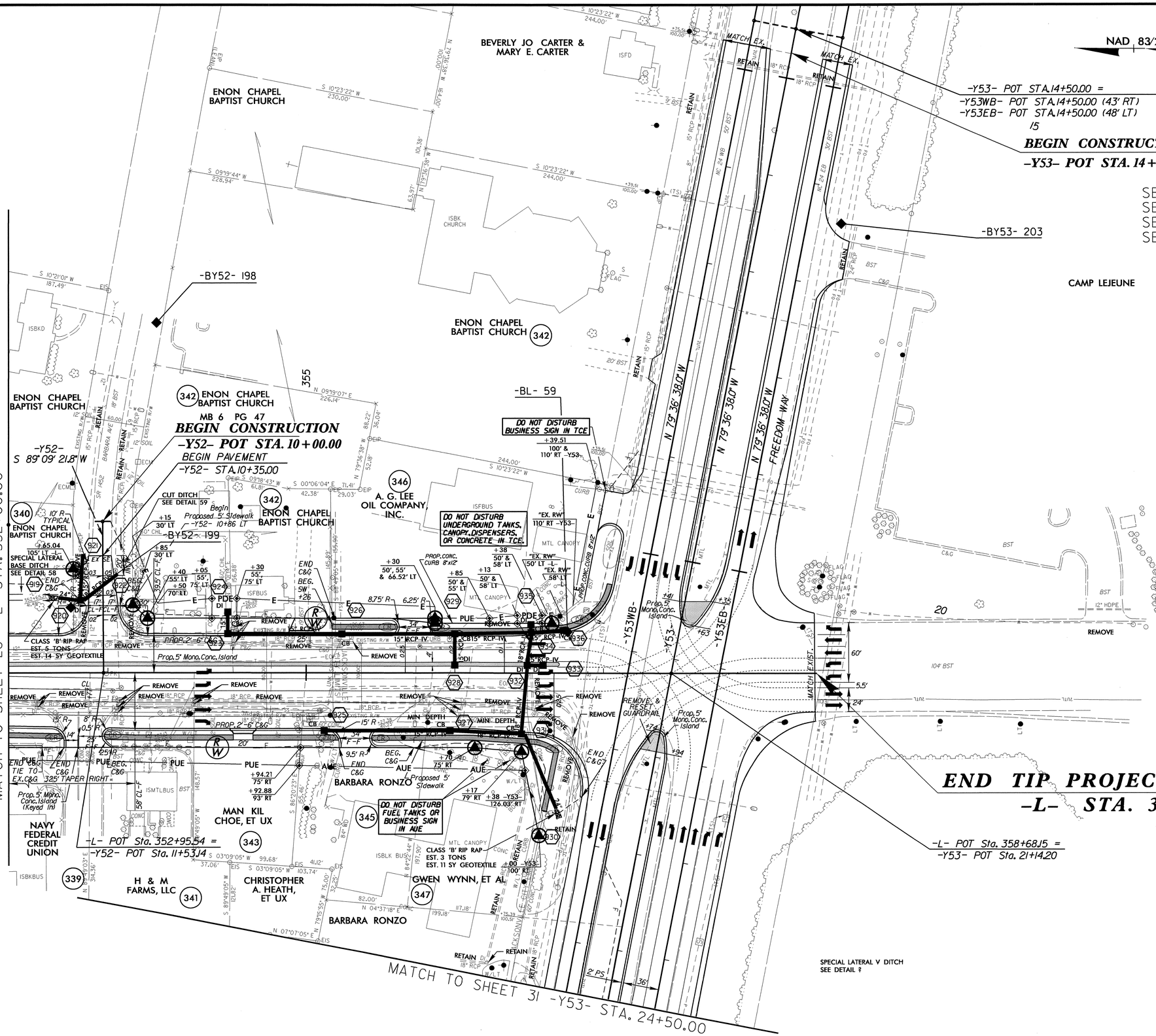
-Y53- POT STA.14+50.00 =
-Y53WB- POT STA.14+50.00 (43' RT)
-Y53EB- POT STA.14+50.00 (48' LT)
15

BEGIN CONSTRUCTION
-Y53- POT STA. 14+75.00

SEE SHEET 2-M FOR DITCH DETAILS
SEE SHEET 47 FOR -L- PROFILE
SEE SHEET 55 FOR -Y52- PROFILE
SEE SHEET 56 FOR -Y53- PROFILE

CAMP LEJEUNE





REVISIONS

8/17/99

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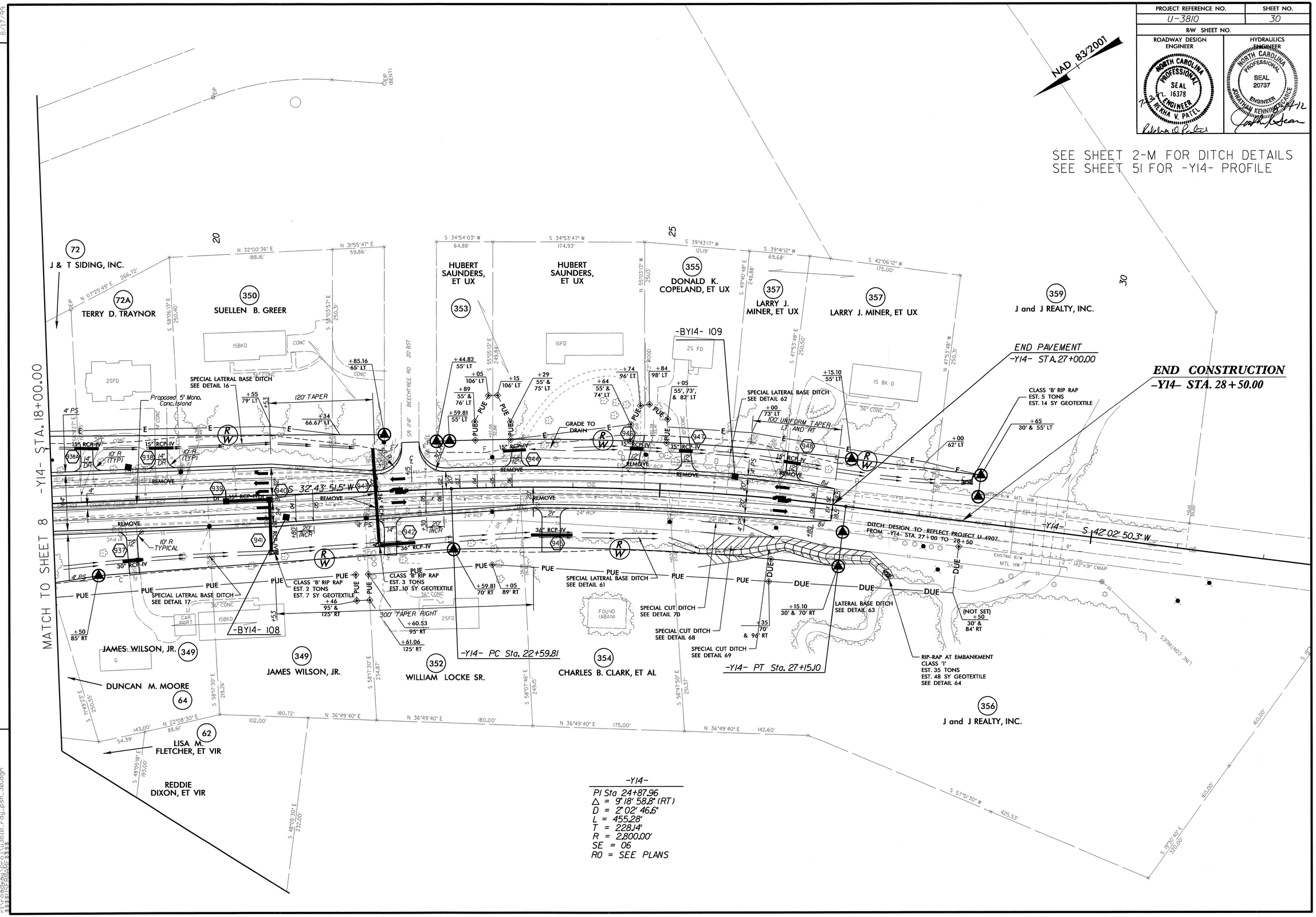
PROJECT REFERENCE NO.	SHEET NO.
U-3810	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER DR. REKHA V. PATEL 7/12

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNINGTON GRANDE 7/12

SEE SHEET 2-M FOR DITCH DETAILS
SEE SHEET 51 FOR -Y14- PROFILE



REVISIONS

8/17/99

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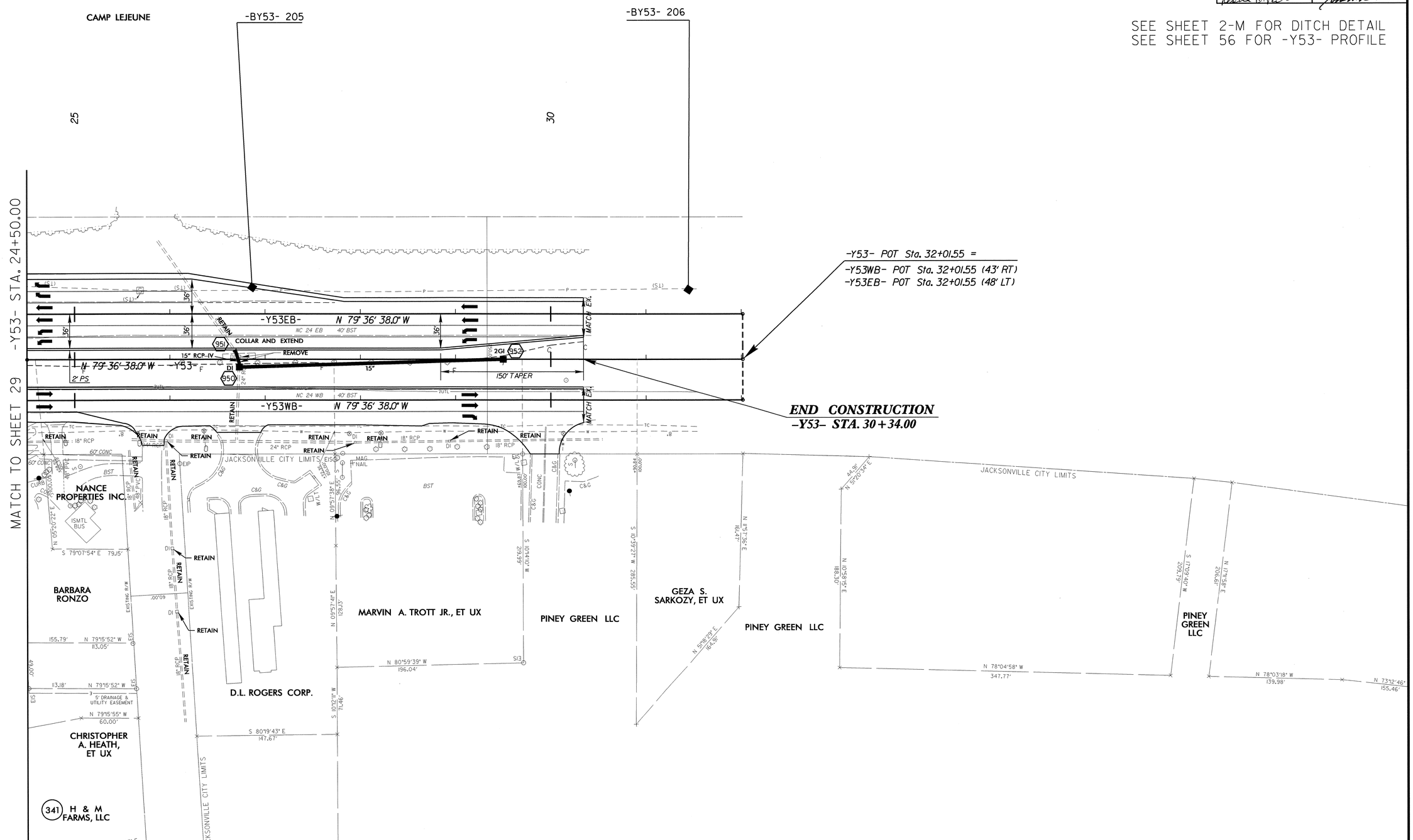
PROJECT REFERENCE NO.	SHEET NO.
U-3810	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN DANIEL STANCE

NAD 83/2001

SEE SHEET 2-M FOR DITCH DETAIL
SEE SHEET 56 FOR -Y53- PROFILE



REVISIONS

8/17/99

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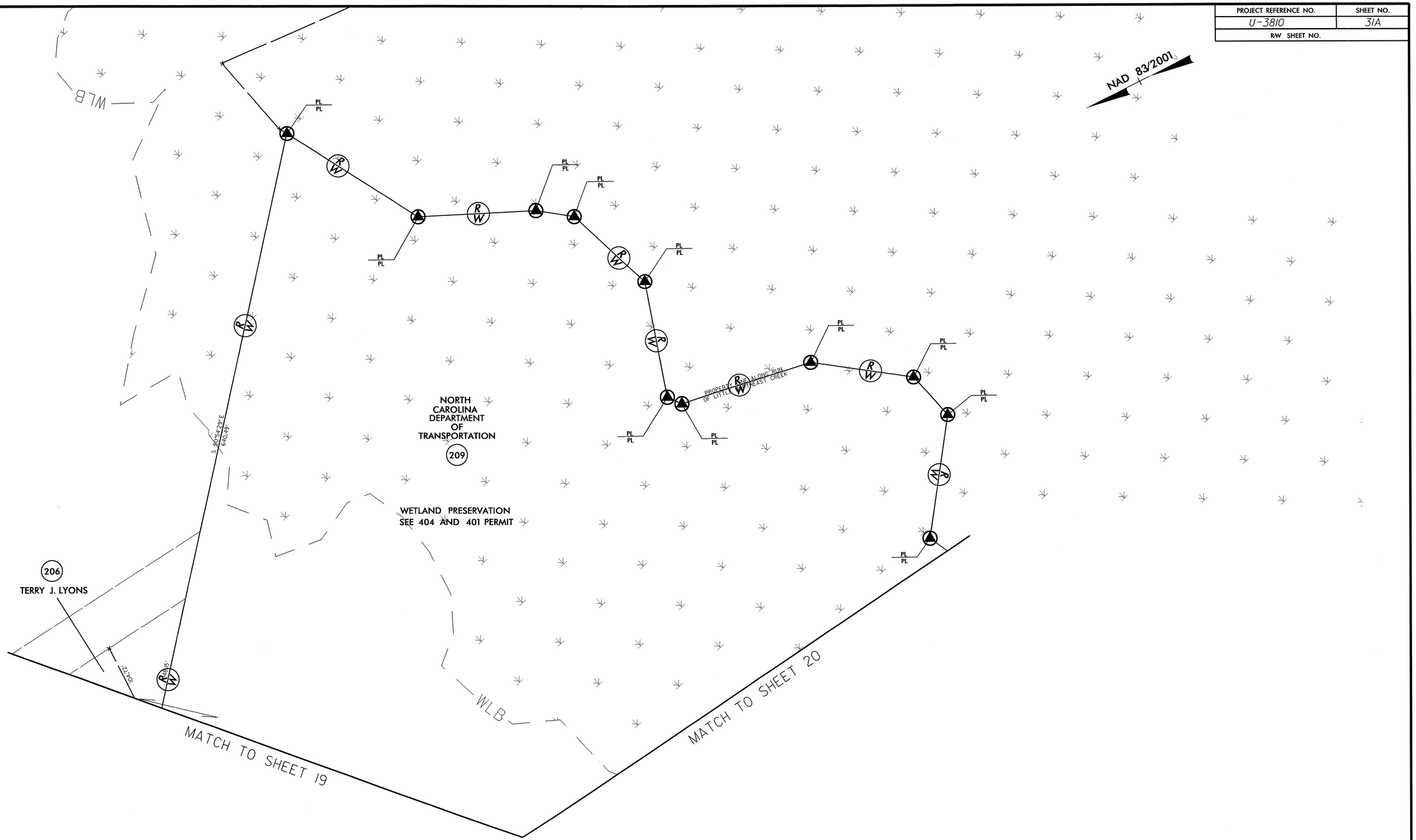
PROJECT REFERENCE NO.	SHEET NO.
U-3810	31A
R/W SHEET NO.	



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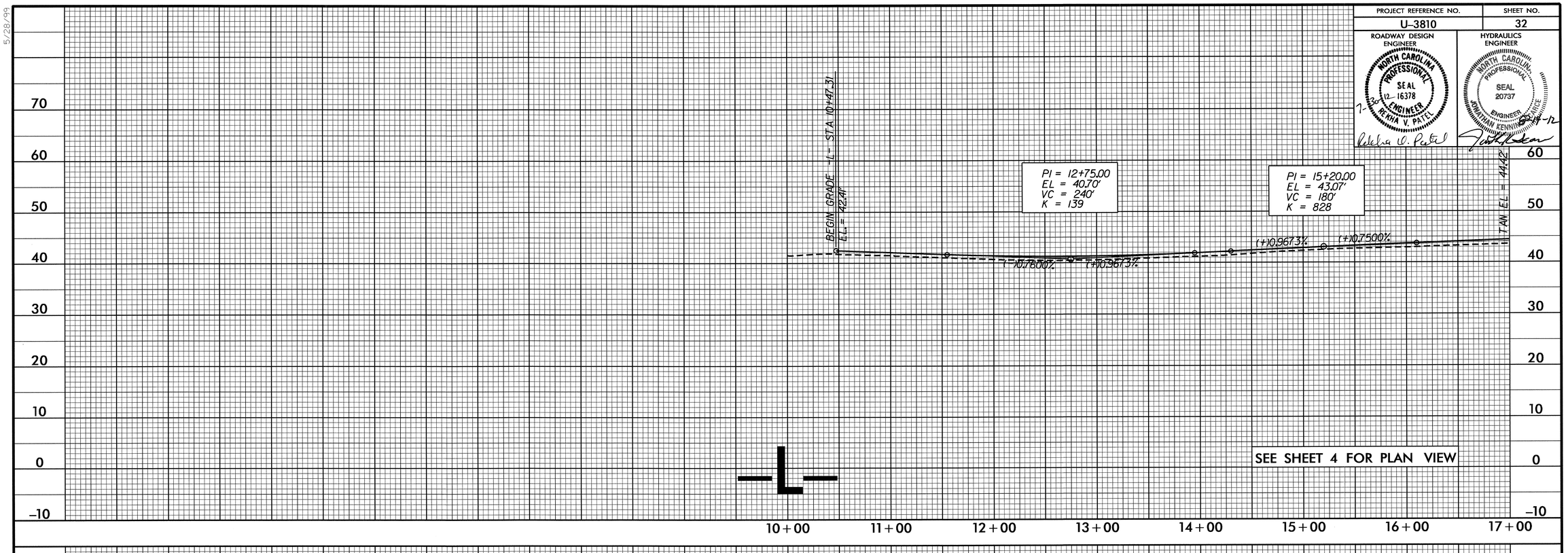
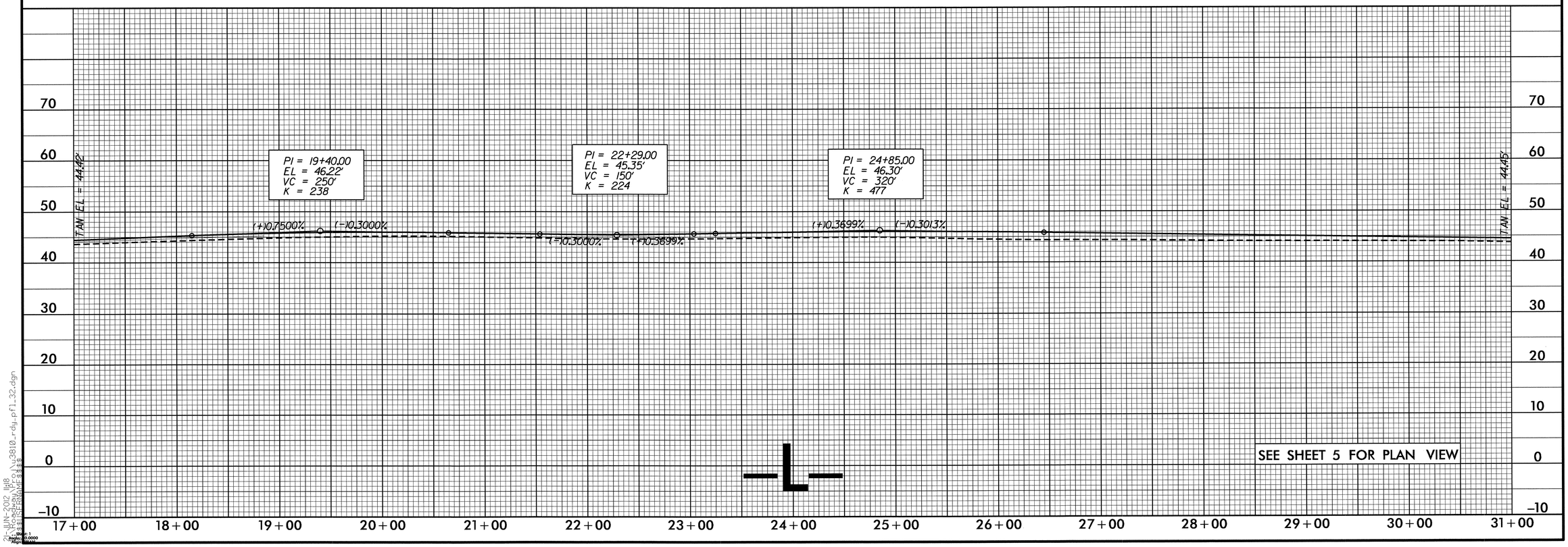
PROJECT REFERENCE NO.	SHEET NO.
U-3810	32

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL
7-23-12
Rekha V. Patel

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNINGTON PRICE
7-23-12





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Active Model

PROJECT REFERENCE NO.	SHEET NO.
U-3810	33

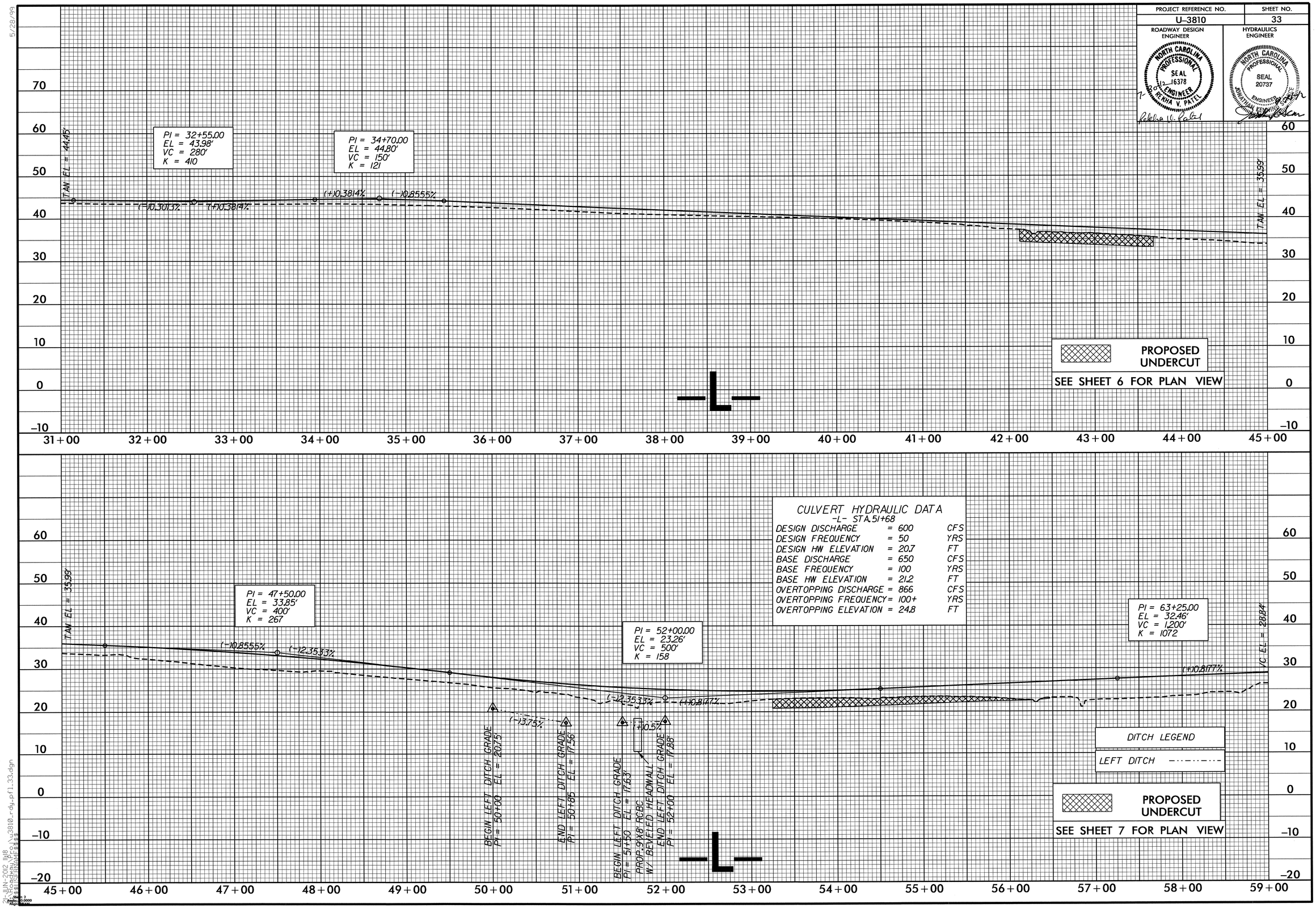
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER RUPEKHA V. PATEL

Rupekha V. Patel

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KEMPIS SMITH



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Aspect: 1.0000

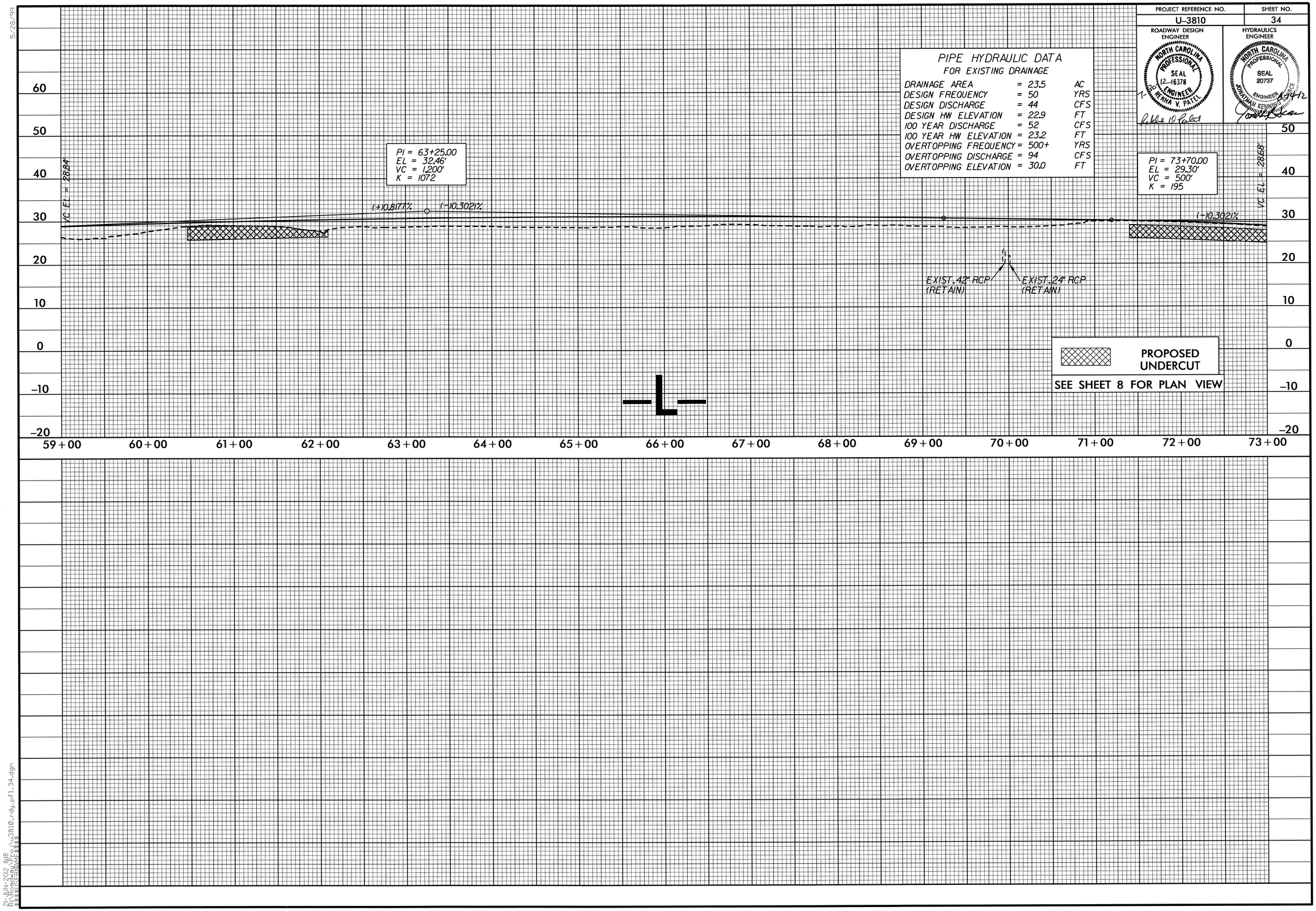
PROJECT REFERENCE NO.	SHEET NO.
U-3810	34

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 12-16378 ENGINEER REKHA V. PATEL
7/24/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNUTH SCOTT
6/24/12

PIPE HYDRAULIC DATA
FOR EXISTING DRAINAGE

DRAINAGE AREA	=	23.5	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	44	CFS
DESIGN HW ELEVATION	=	22.9	FT
100 YEAR DISCHARGE	=	52	CFS
100 YEAR HW ELEVATION	=	23.2	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	94	CFS
OVERTOPPING ELEVATION	=	30.0	FT



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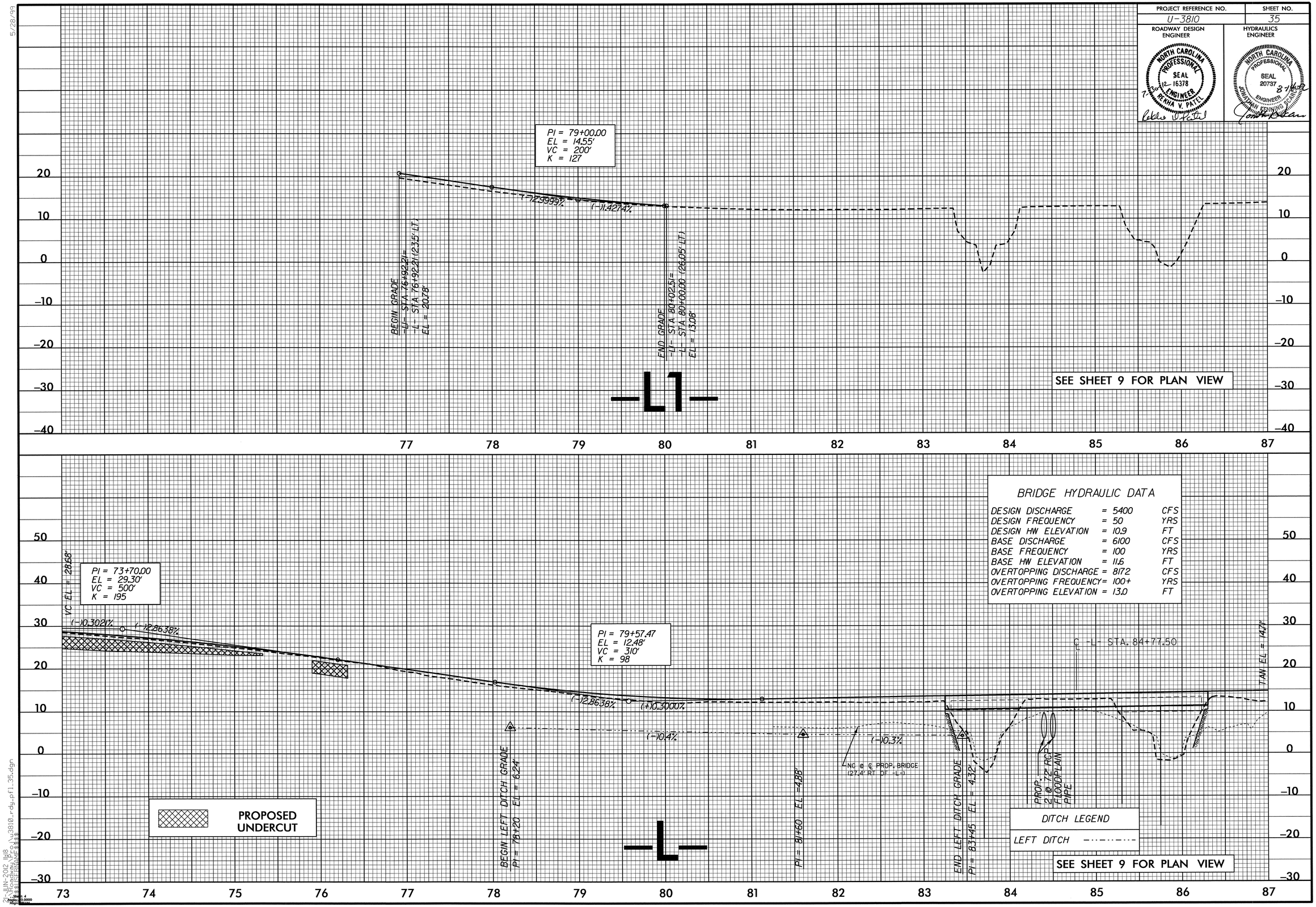
PROJECT REFERENCE NO.	SHEET NO.
U-3810	35

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCHICK



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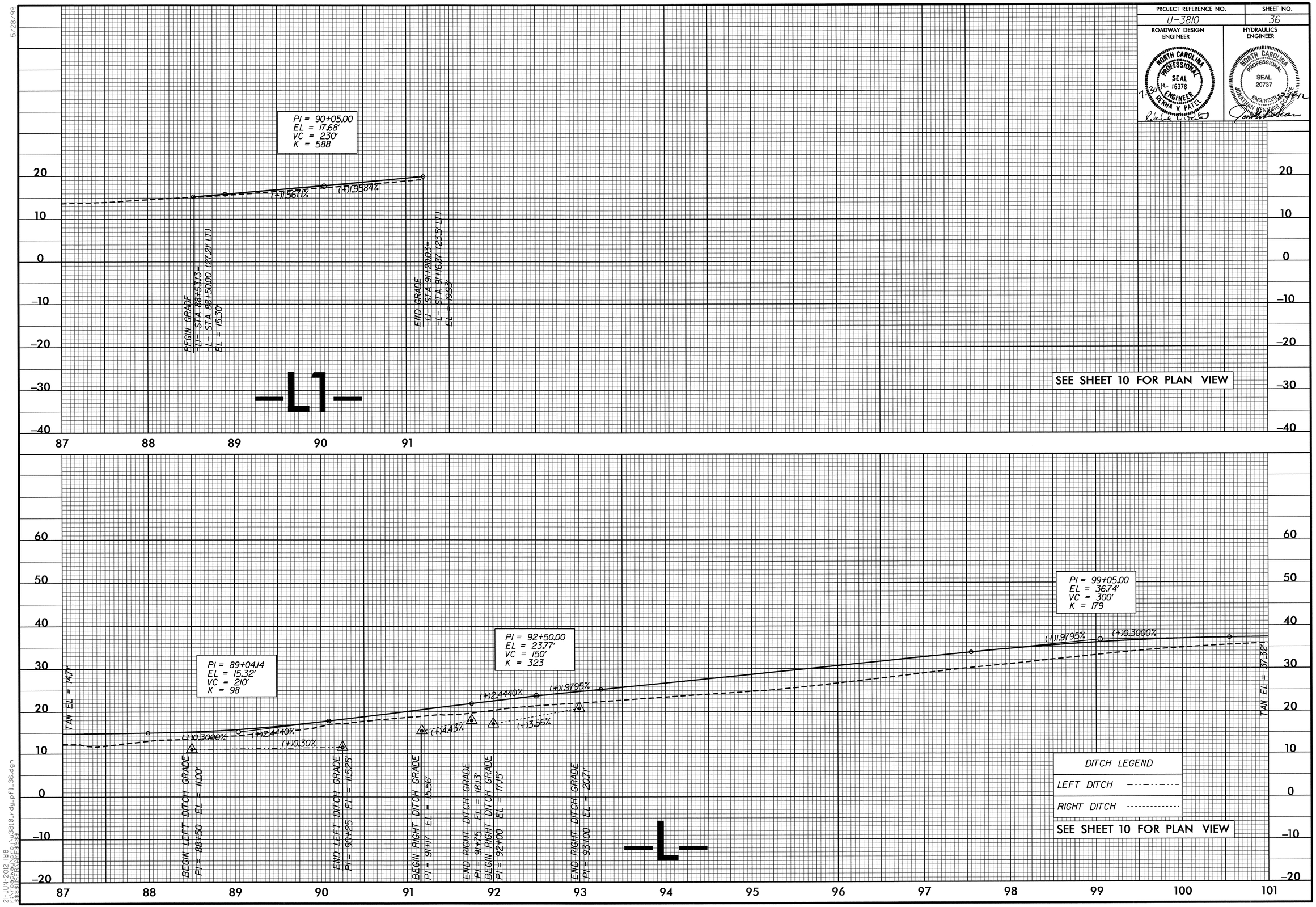
PROJECT REFERENCE NO.	SHEET NO.
U-3810	36

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN DERRICK WILLIAMS



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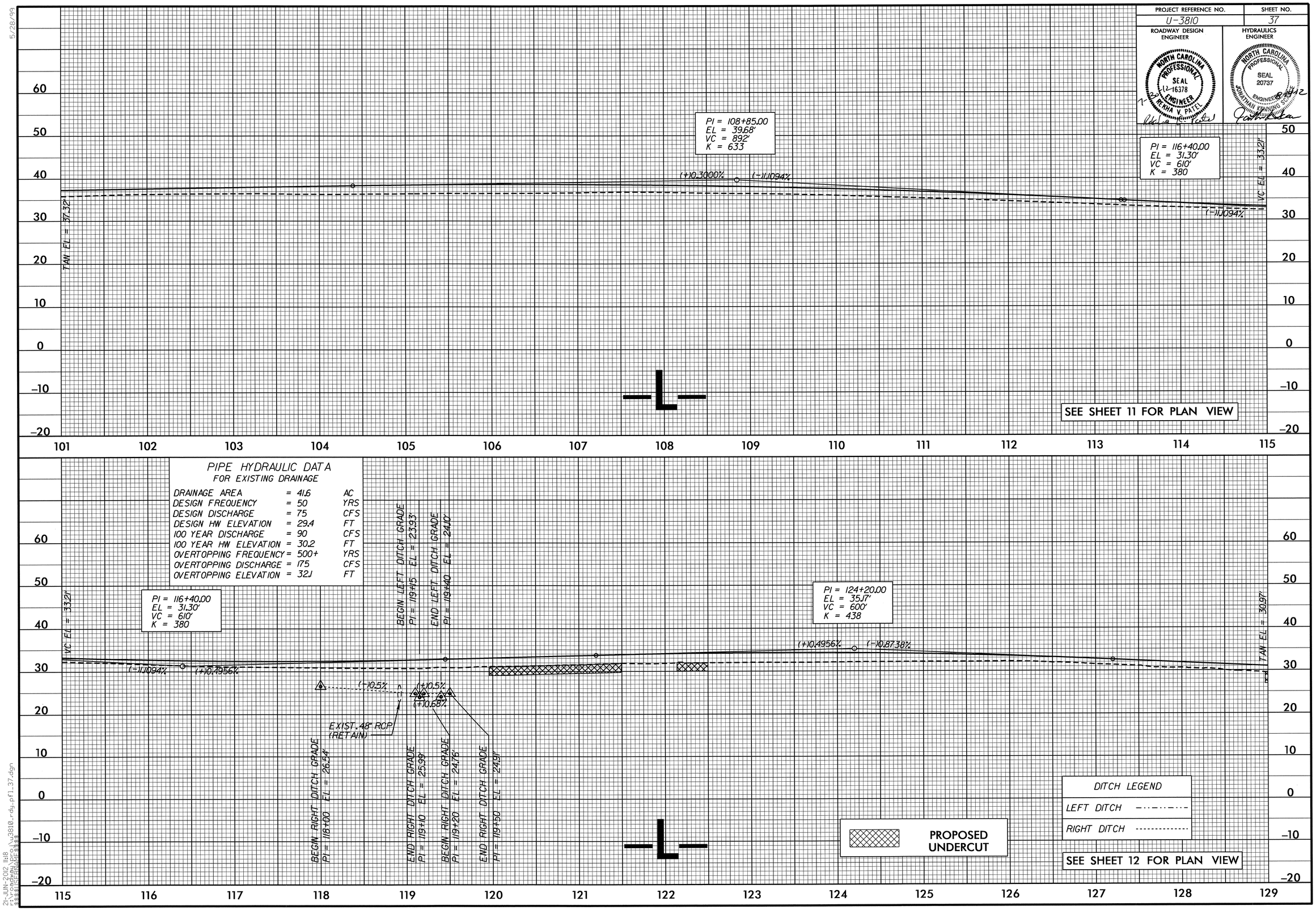
PROJECT REFERENCE NO.	SHEET NO.
U-3810	37

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 12-16378 ENGINEER RICHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCOTT



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PROJECT REFERENCE NO.	SHEET NO.
U-3810	38

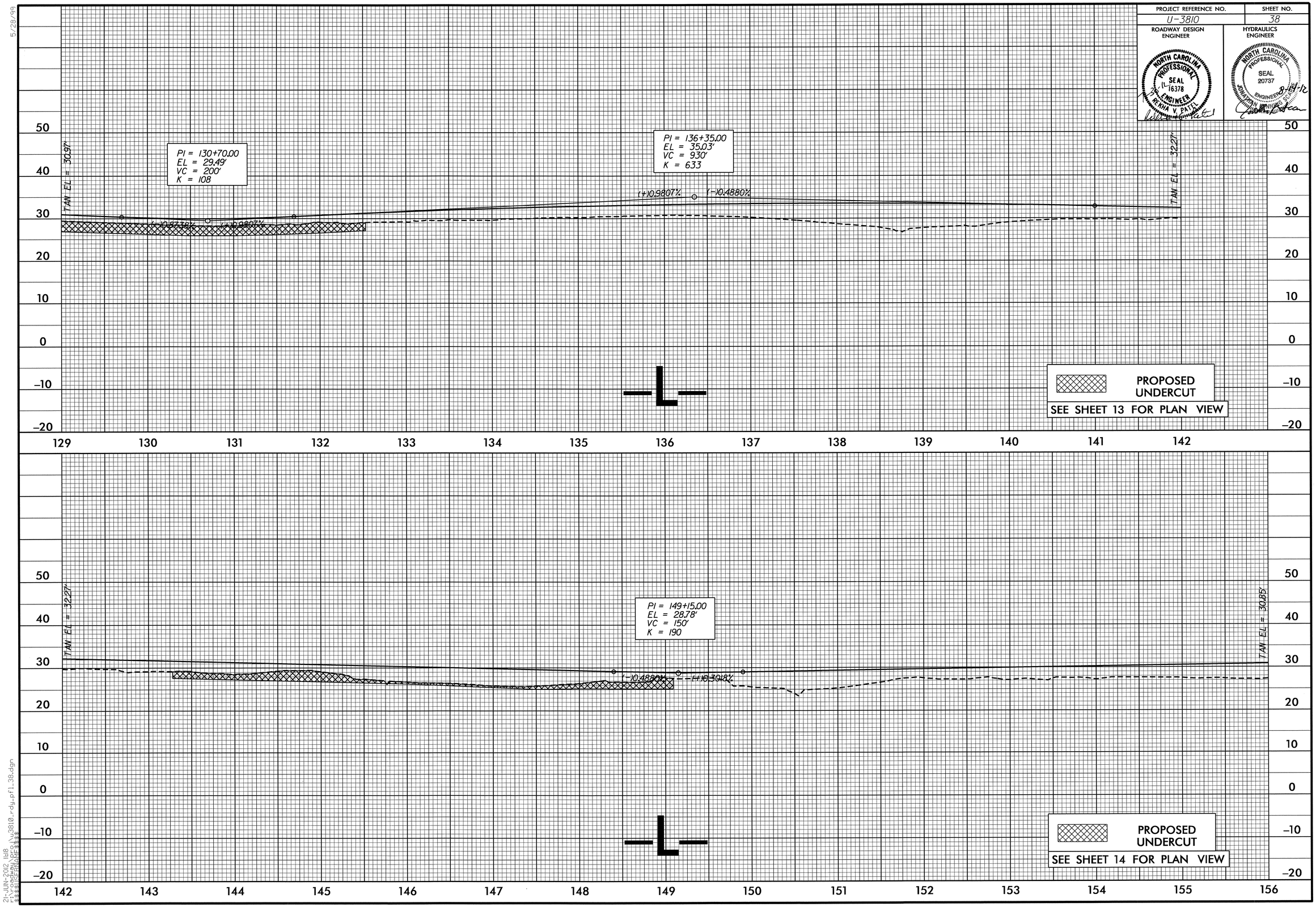
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER

8-31-12



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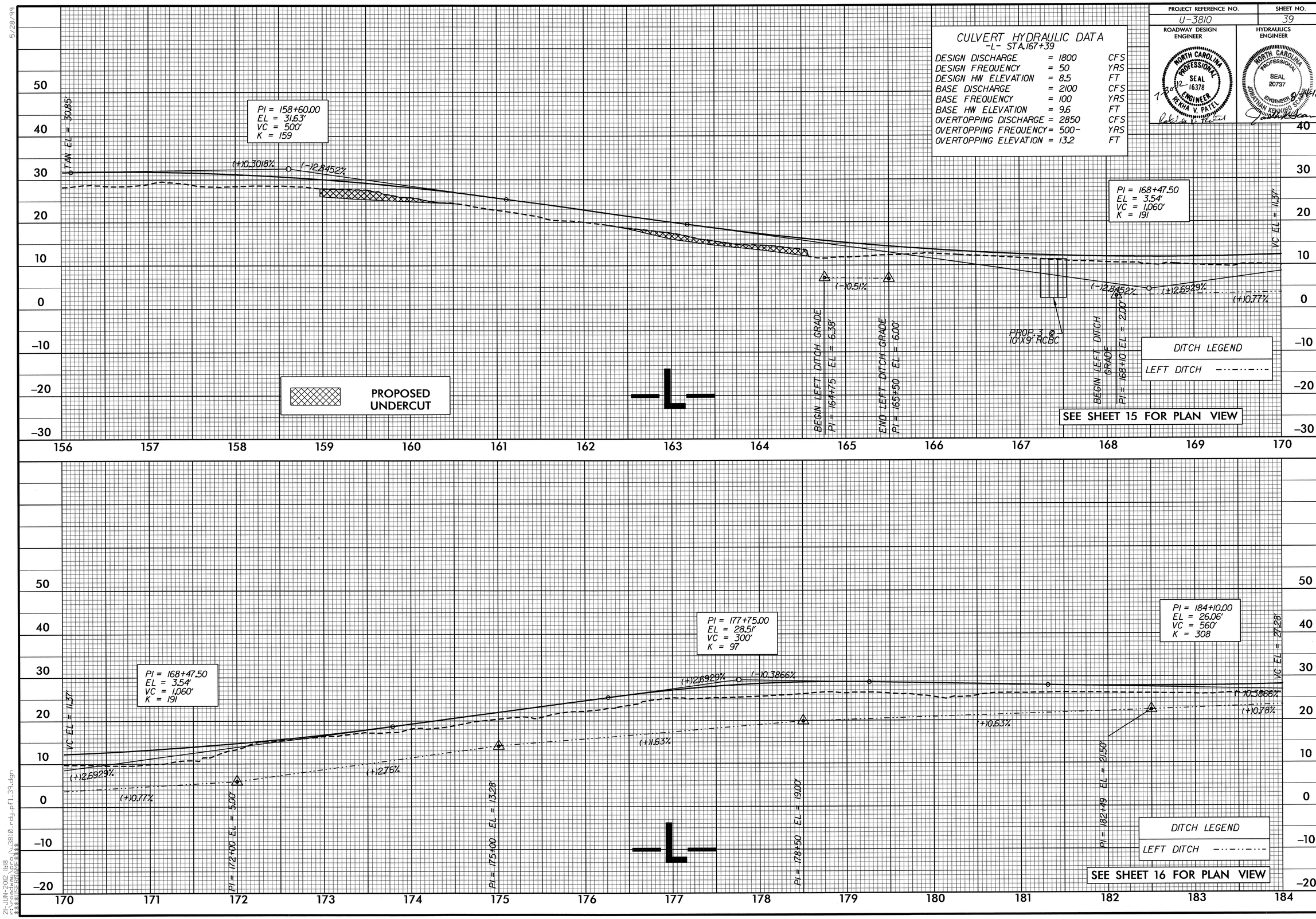
PROJECT REFERENCE NO.	SHEET NO.
U-3810	39

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCHMUCKER

CULVERT HYDRAULIC DATA
-L- STA.167+39

DESIGN DISCHARGE	= 1800	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 8.5	FT
BASE DISCHARGE	= 2100	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 9.6	FT
OVERTOPPING DISCHARGE	= 2850	CFS
OVERTOPPING FREQUENCY	= 500-	YRS
OVERTOPPING ELEVATION	= 13.2	FT



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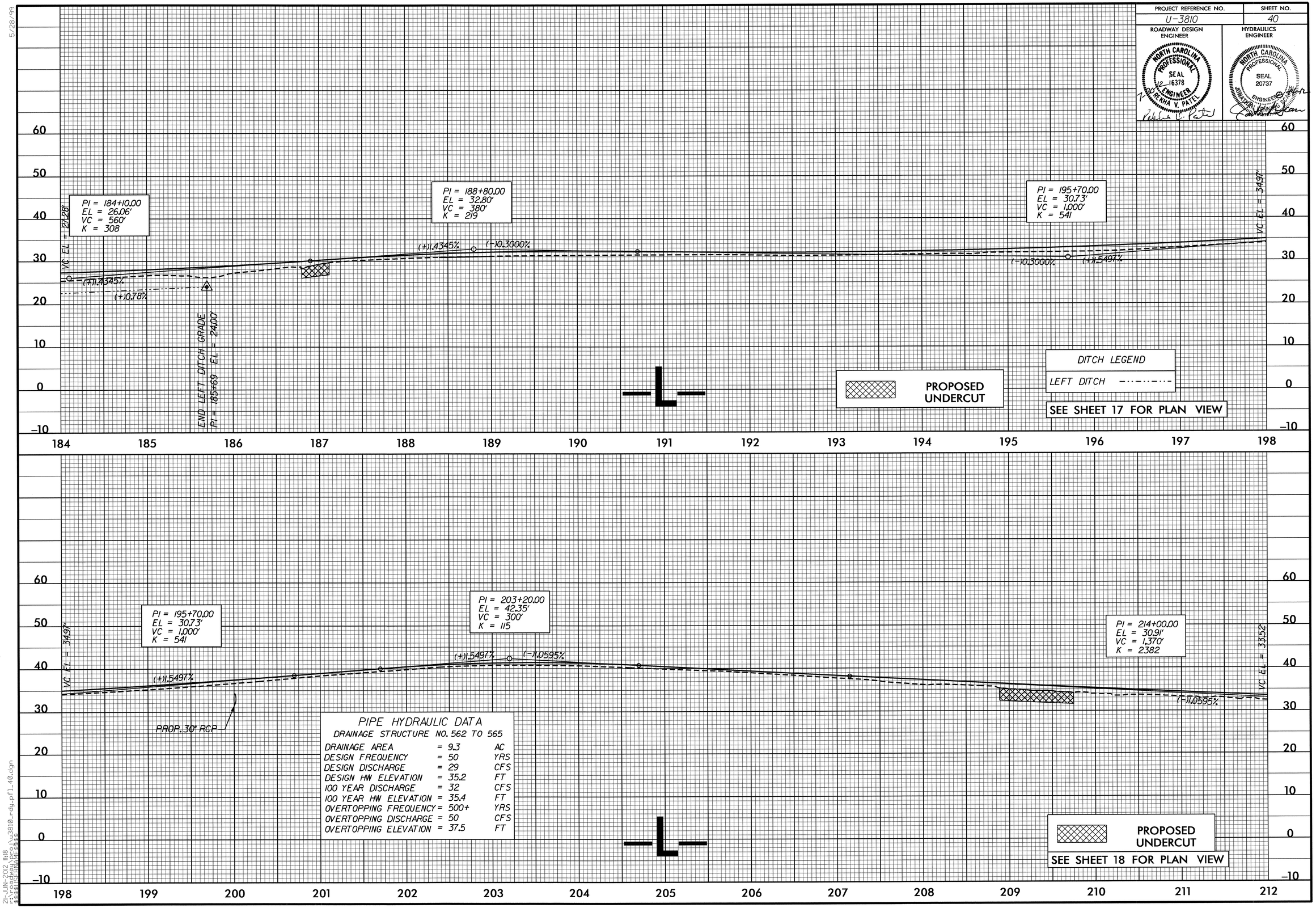
PROJECT REFERENCE NO.	SHEET NO.
U-3810	40

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 562 TO 565

DRAINAGE AREA	= 9.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 29	CFS
DESIGN HW ELEVATION	= 35.2	FT
100 YEAR DISCHARGE	= 32	CFS
100 YEAR HW ELEVATION	= 35.4	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 50	CFS
OVERTOPPING ELEVATION	= 37.5	FT

5/28/99

21-JUN-2012 11:18
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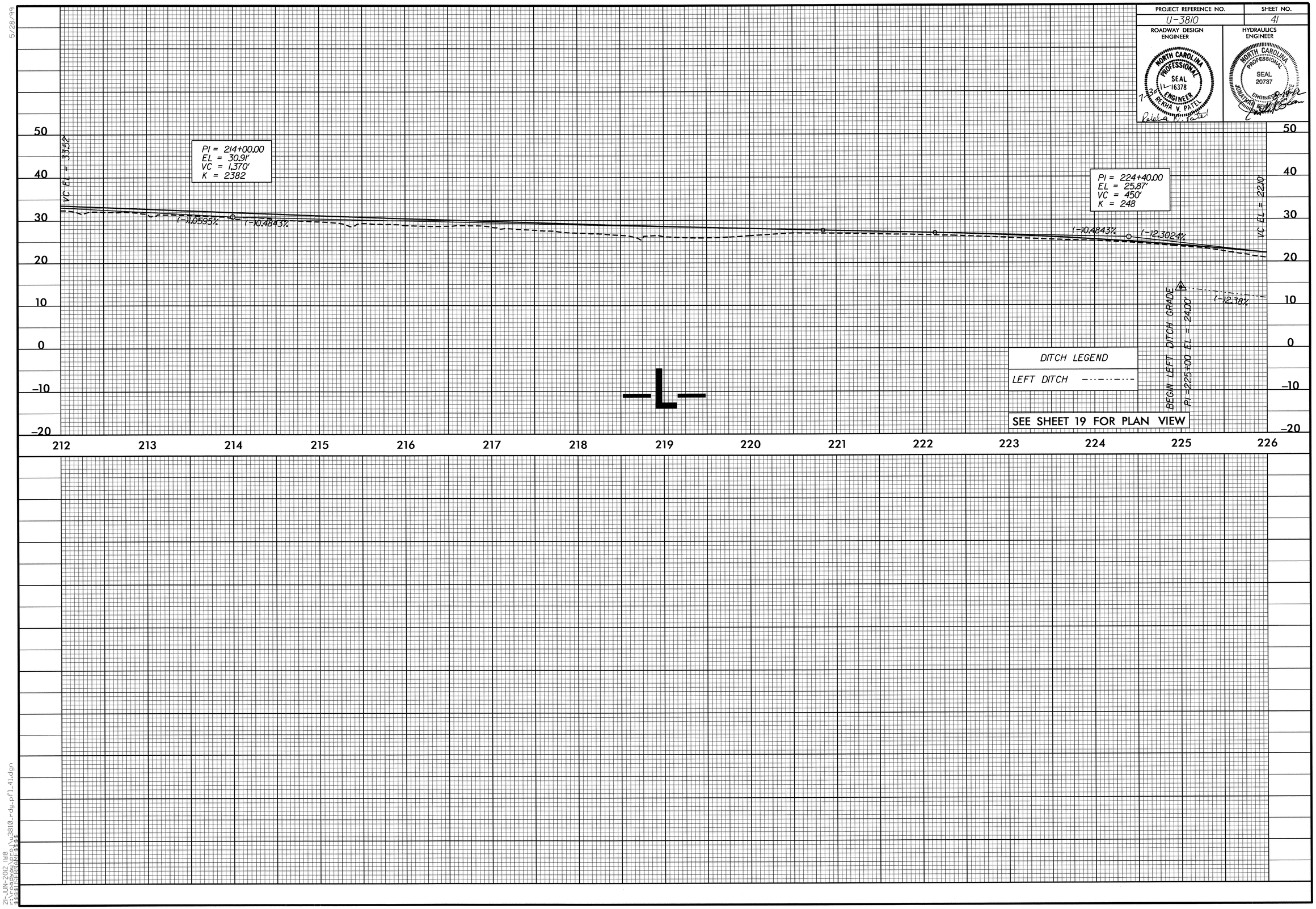
PROJECT REFERENCE NO.	SHEET NO.
U-3810	41

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER



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PROJECT REFERENCE NO.	SHEET NO.
U-3810	42

ROADWAY DESIGN ENGINEER

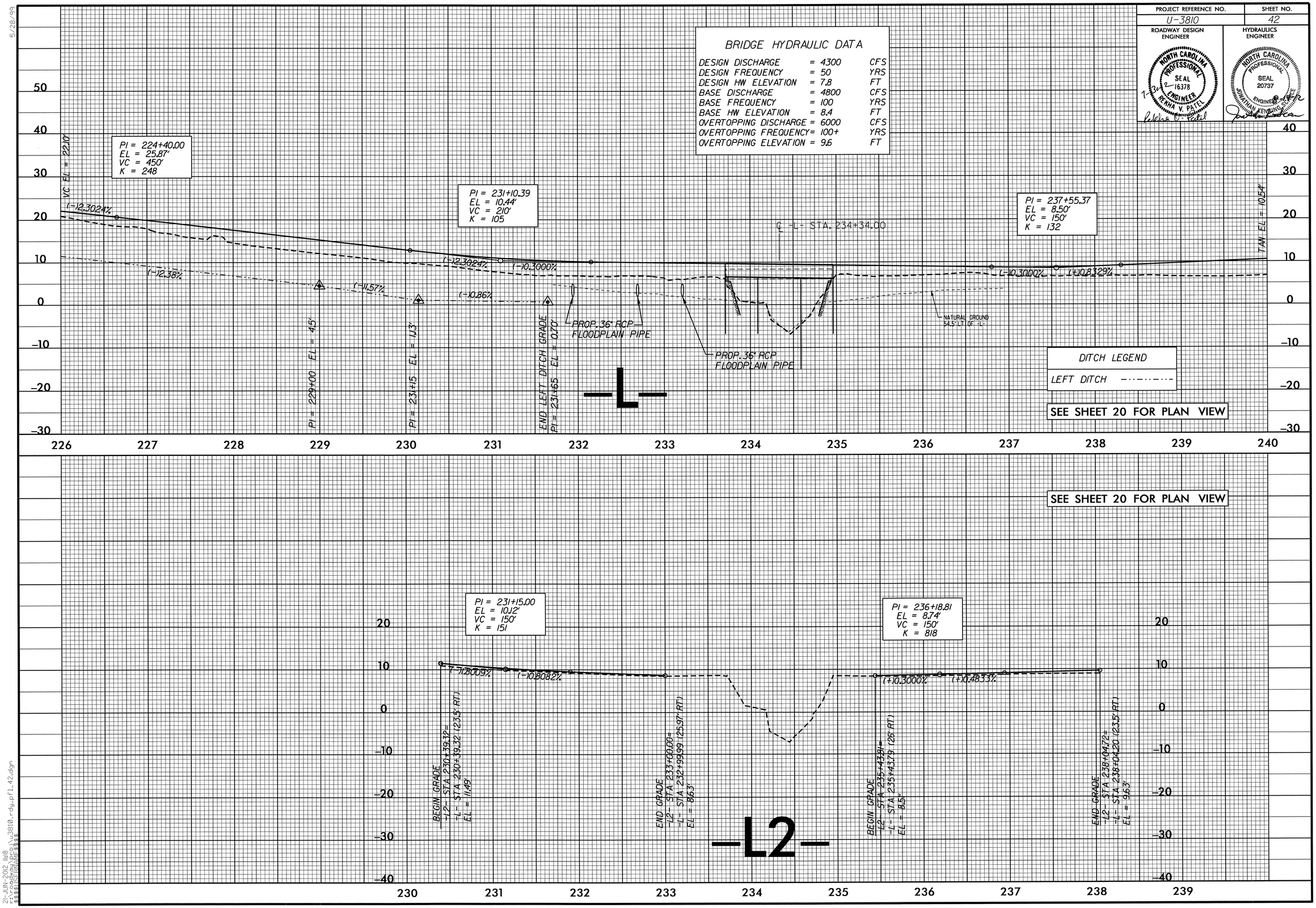
NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENDRICK

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 4300	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 7.8	FT
BASE DISCHARGE	= 4800	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 8.4	FT
OVERTOPPING DISCHARGE	= 6000	CFS
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING ELEVATION	= 9.6	FT



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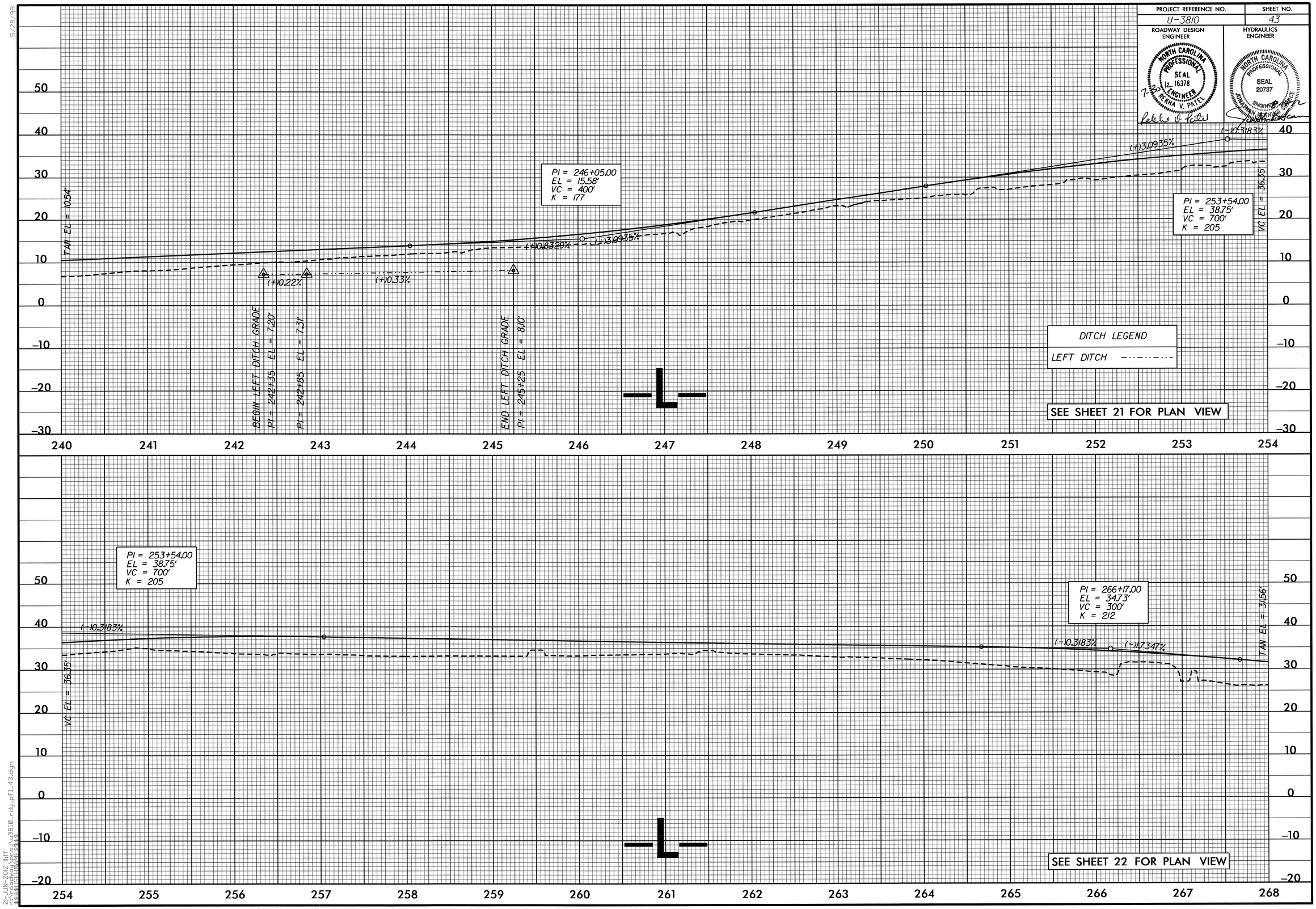
PROJECT REFERENCE NO.	SHEET NO.
U-3810	43

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER R. KHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER



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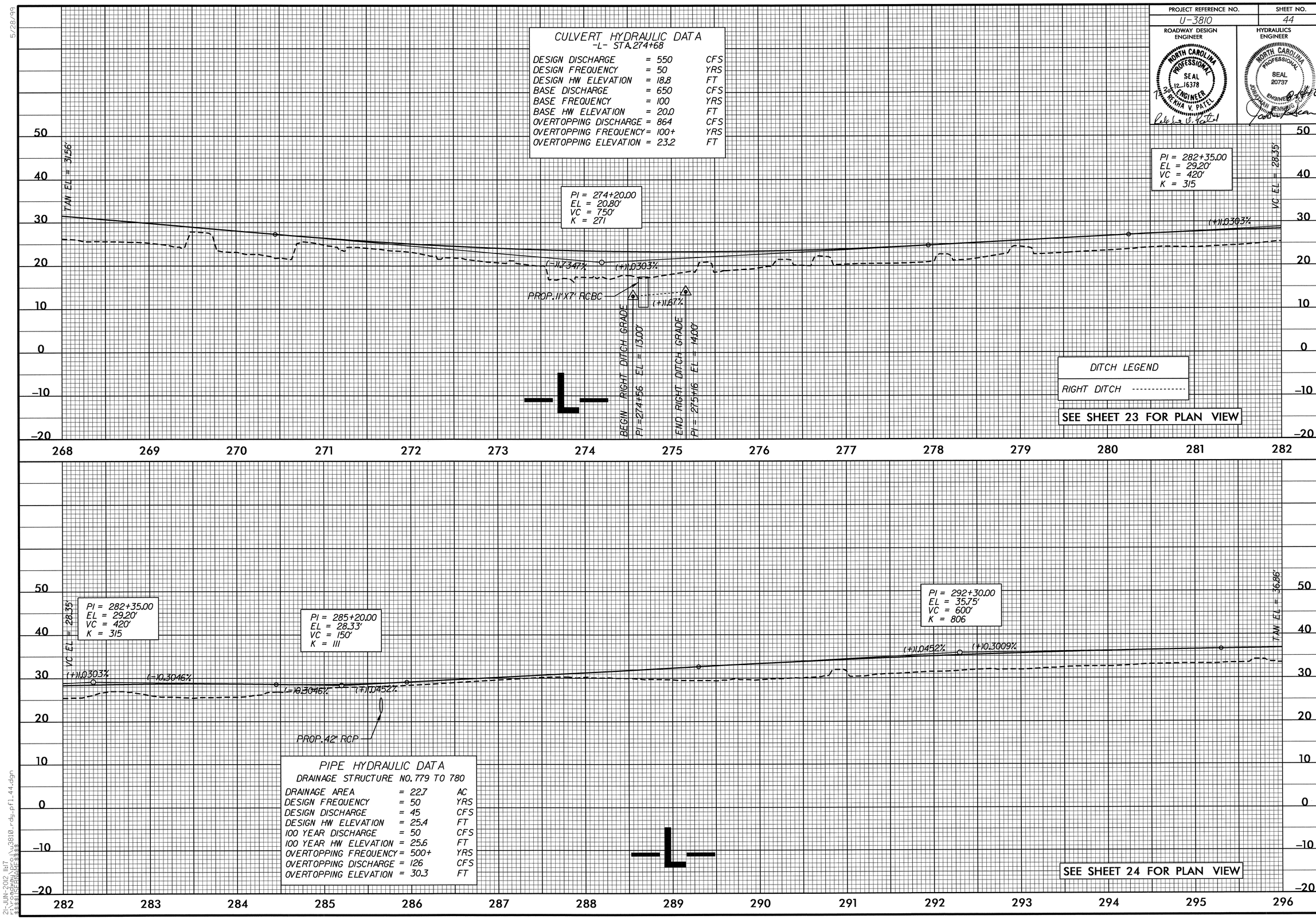
PROJECT REFERENCE NO.	SHEET NO.
U-3810	44

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JENNIFER L. SCHAFER



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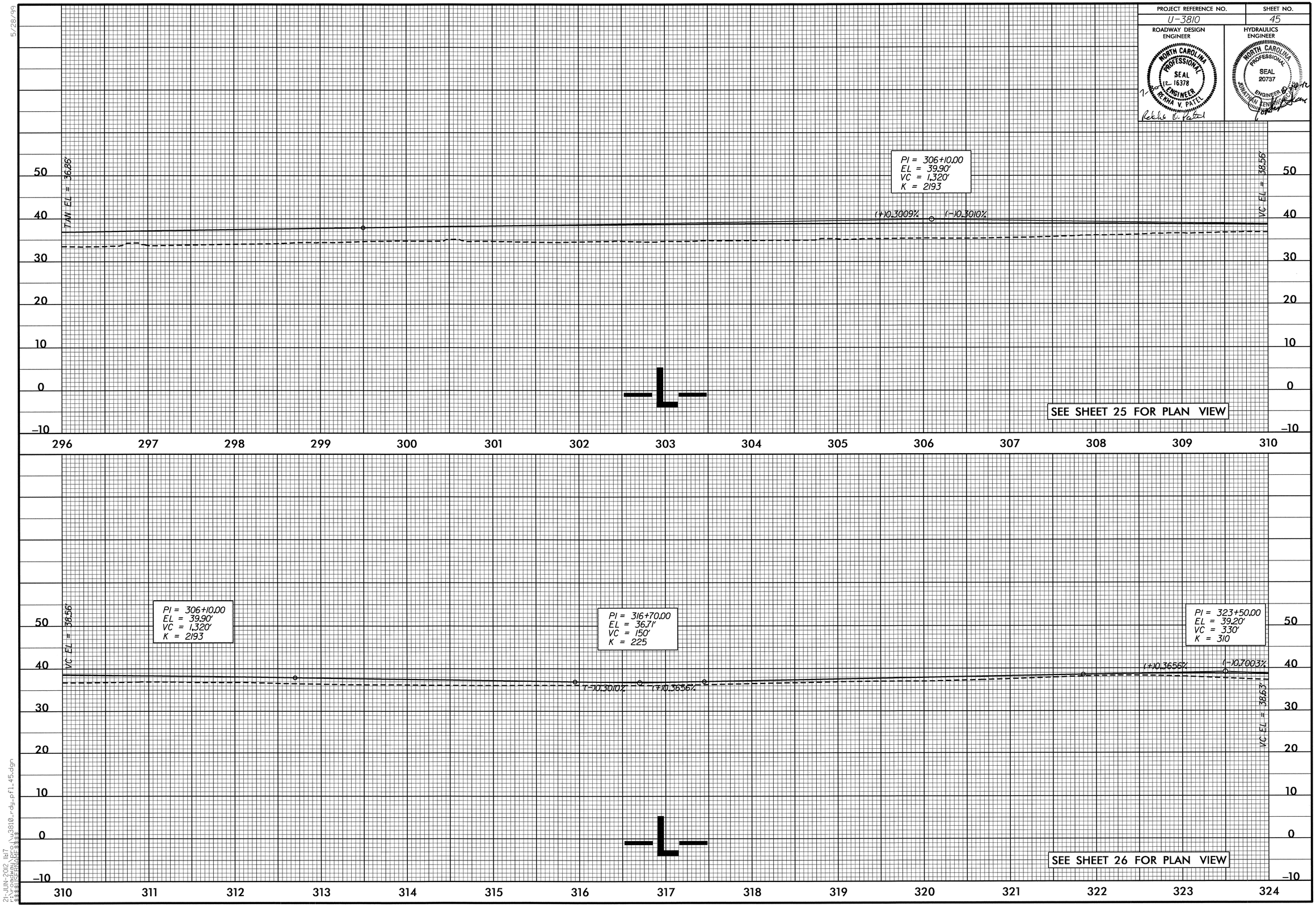
PROJECT REFERENCE NO.	SHEET NO.
U-3810	45

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN W. KENNEDY



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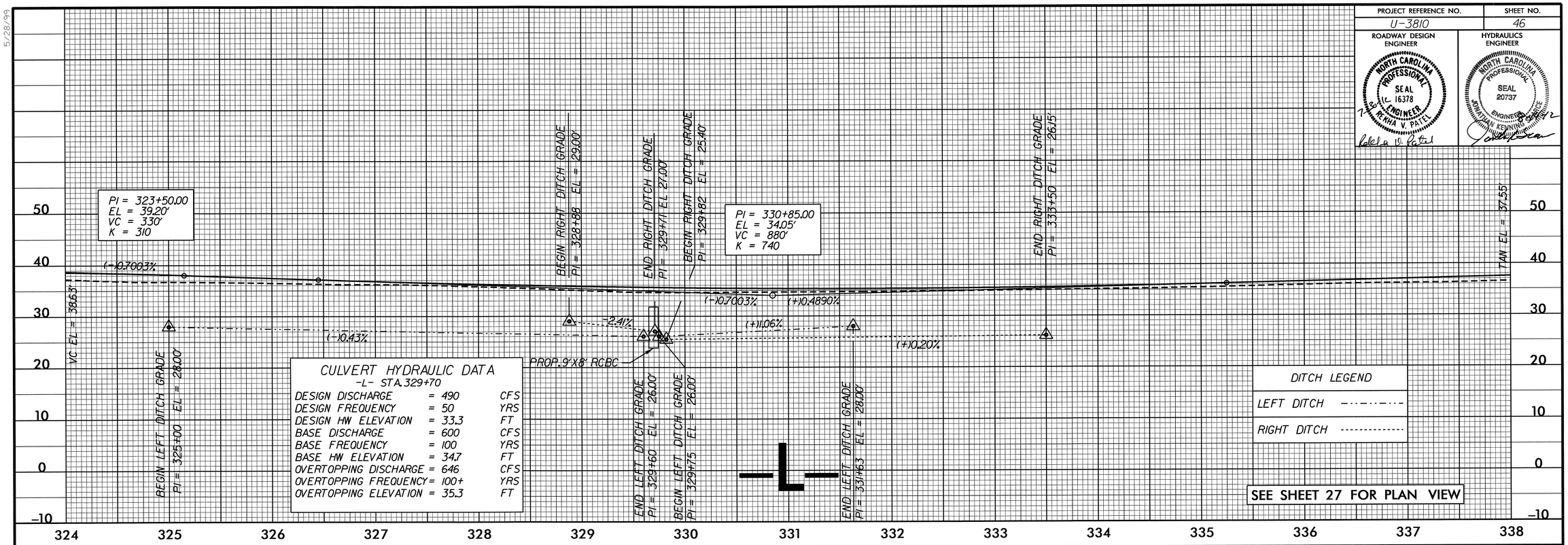
PROJECT REFERENCE NO.	SHEET NO.
U-3810	46

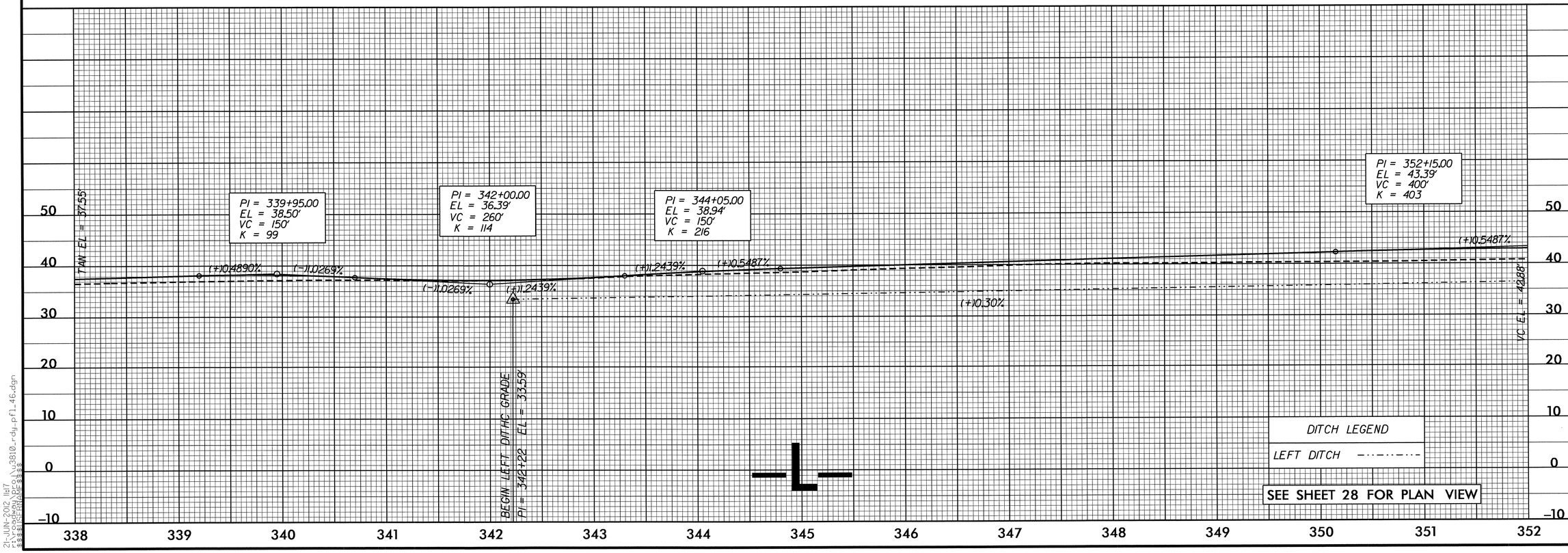
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING SCHEUTZOW





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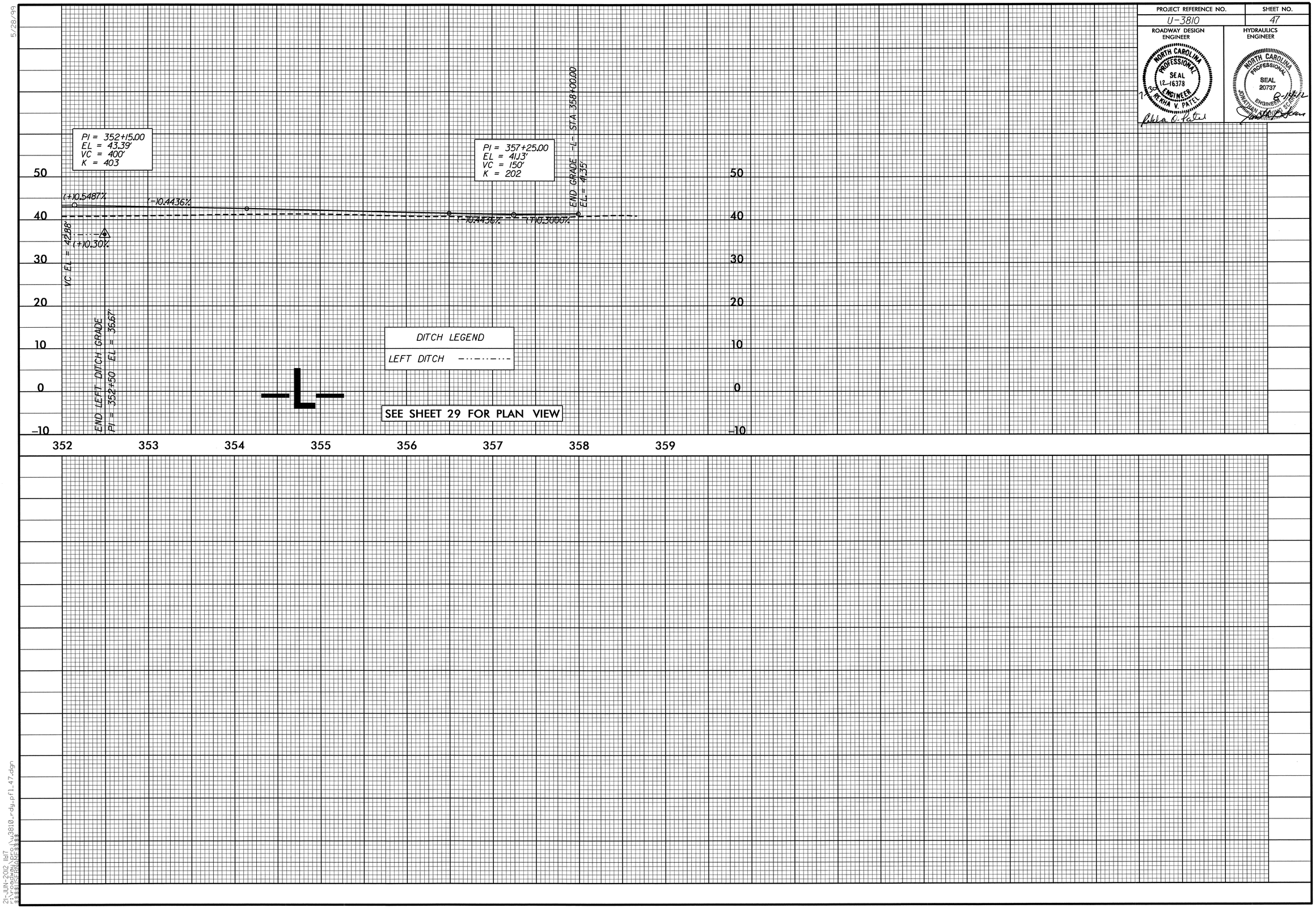
PROJECT REFERENCE NO.	SHEET NO.
U-3810	47

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 12-16378 ENGINEER RICHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN C. SCHMIDT



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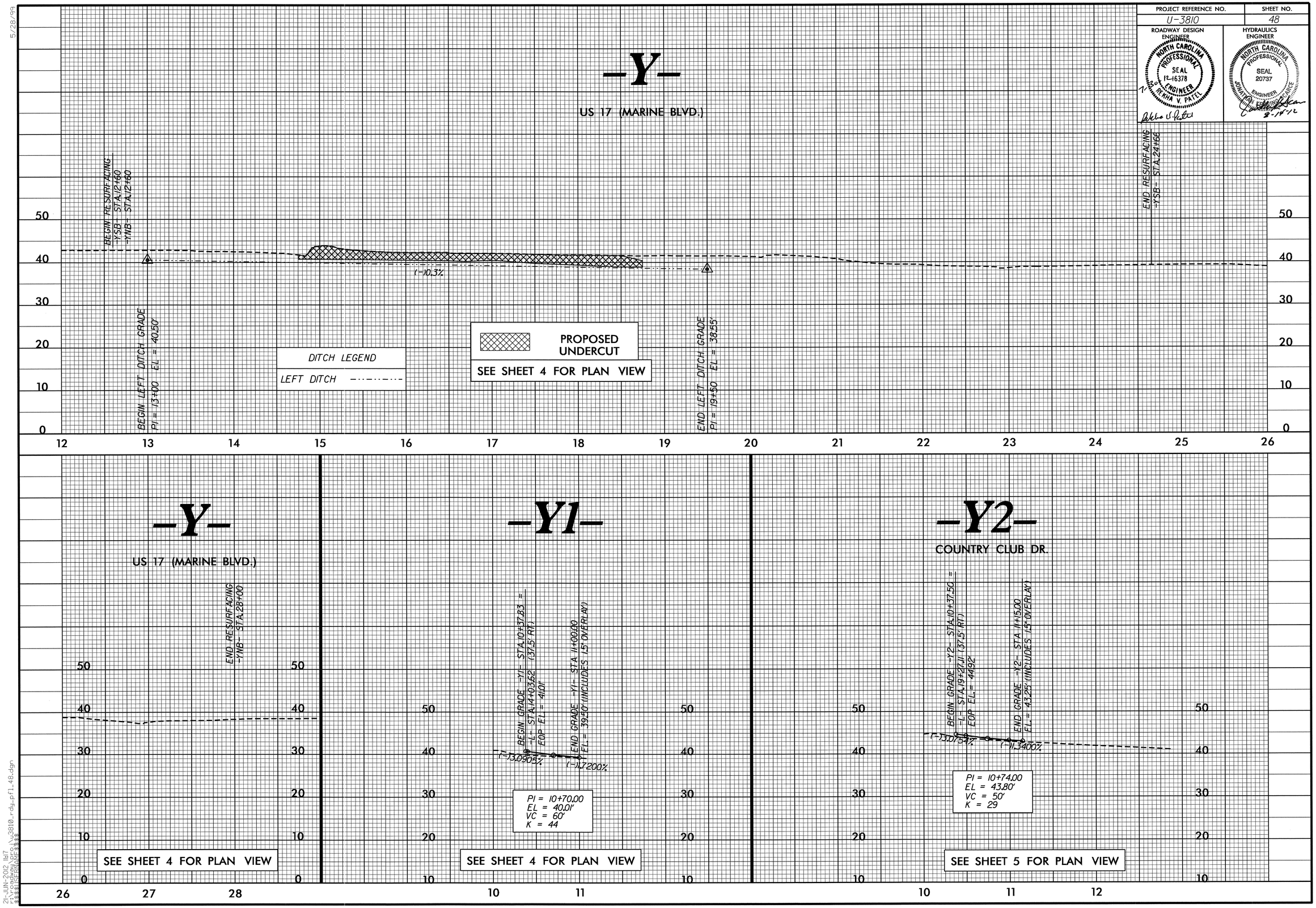
PROJECT REFERENCE NO.	SHEET NO.
U-3810	48

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 12-16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN W. CAMPBELL



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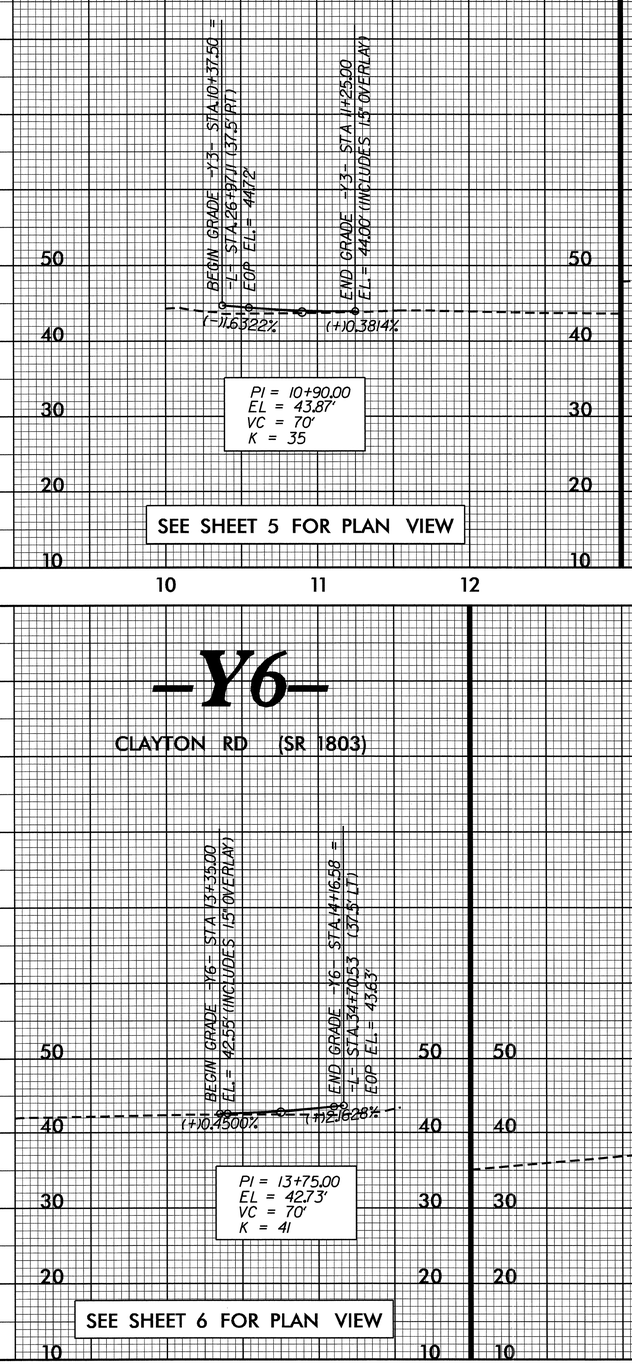
PROJECT REFERENCE NO.	SHEET NO.
U-3810	49

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN C. SKEEN

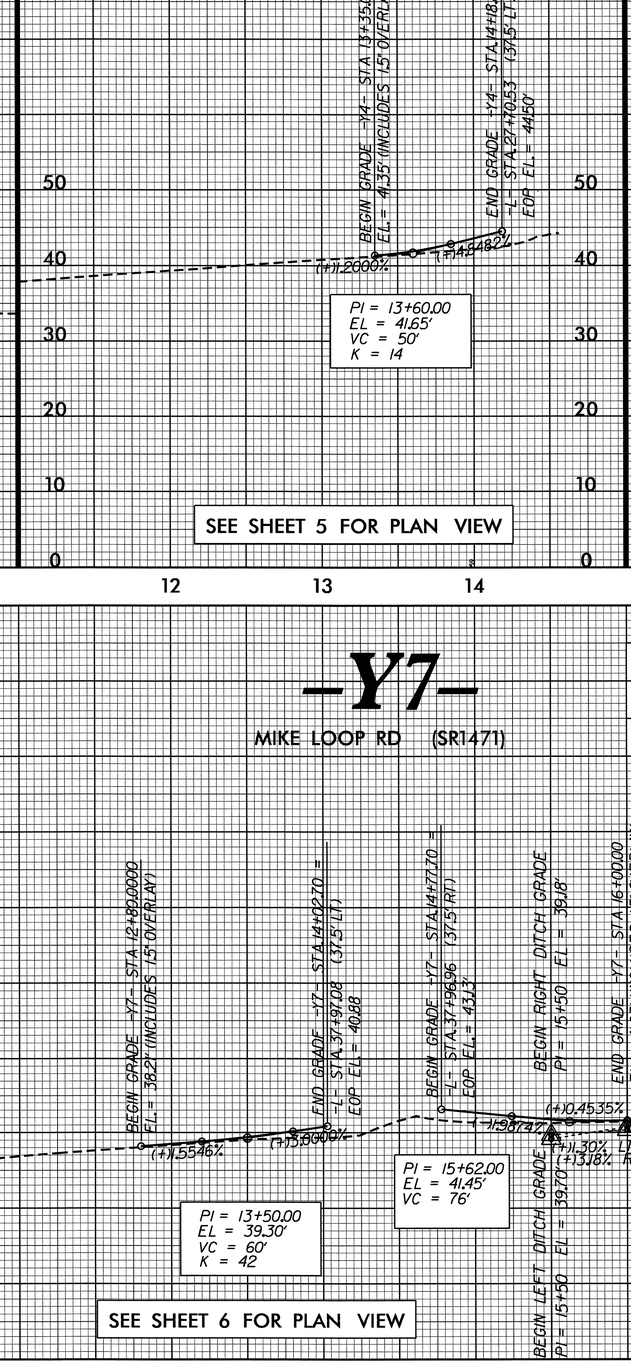
-Y3-

CANTERBURY LN (SR 1467)



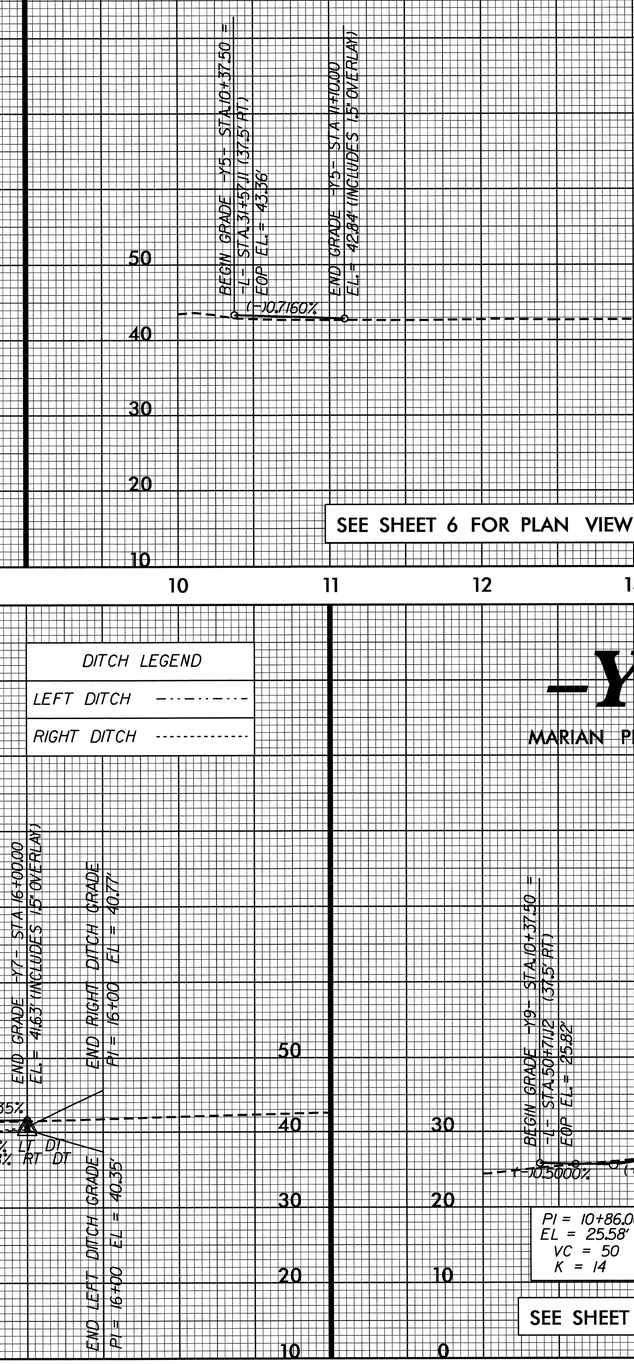
-Y4-

LINDA DR. (SR 1802)



-Y5-

CLUB LN (SR 1468)



-Y6-

CLAYTON RD (SR 1803)

-Y7-

MIKE LOOP RD (SR1471)

DITCH LEGEND

LEFT DITCH -·-·-·-·-

RIGHT DITCH ----------

-Y9-

MARIAN PL (SR 1472)

5/28/99

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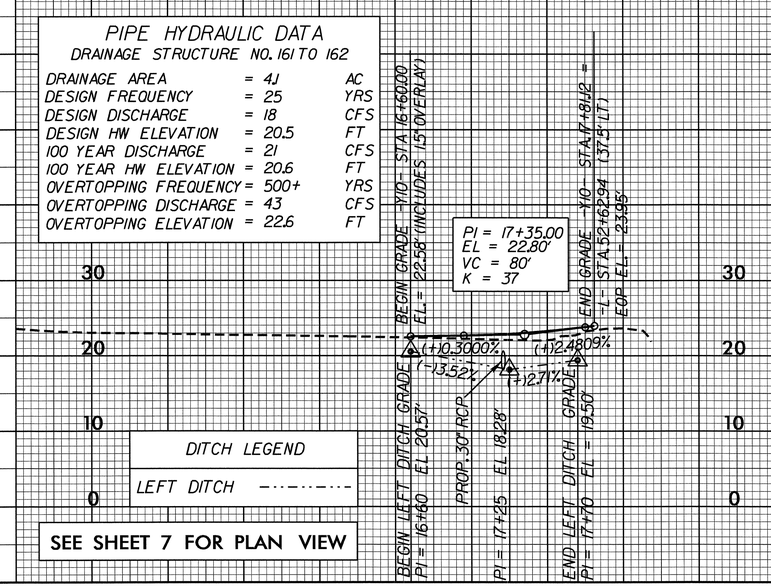
PROJECT REFERENCE NO.	SHEET NO.
U-3810	50

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER BEKHA V. PATEL

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN C. SCHAFER

-Y10-

MIKE LOOP RD (SR 1471)

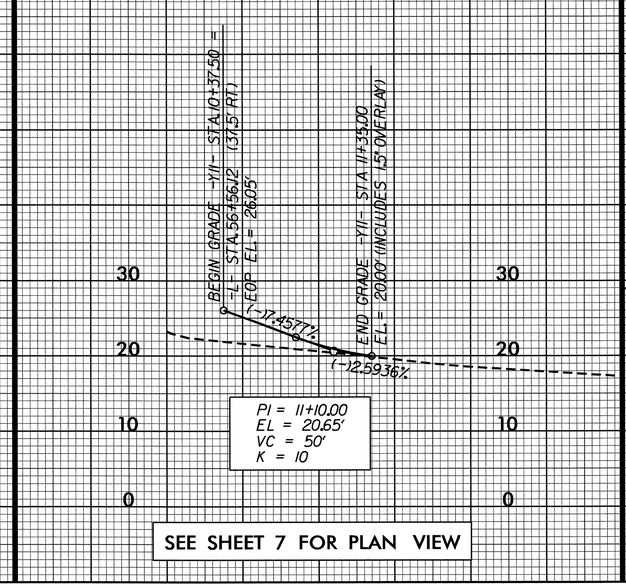


PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 161 TO 162

DRAINAGE AREA	= 4.1	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 18	CFS
DESIGN HW ELEVATION	= 20.5	FT
100 YEAR DISCHARGE	= 21	CFS
100 YEAR HW ELEVATION	= 20.6	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 43	CFS
OVERTOPPING ELEVATION	= 22.6	FT

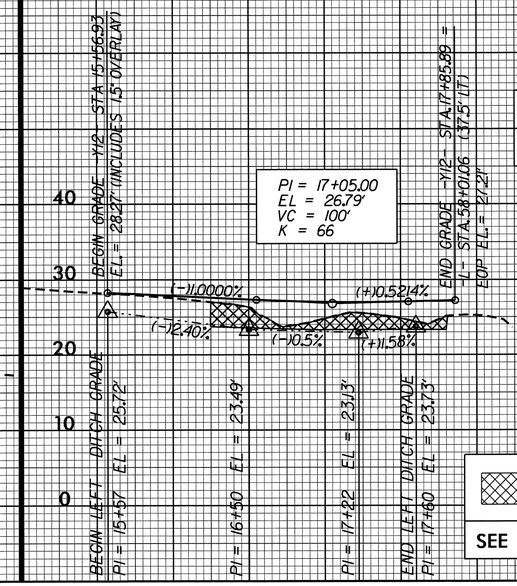
-Y11-

SHOREHAM DR



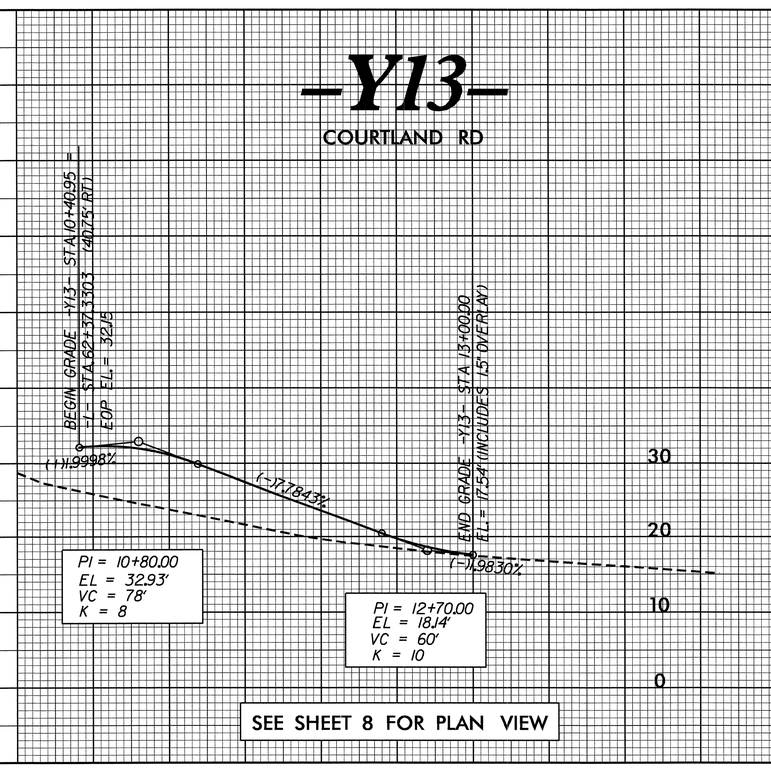
-Y12-

WOLF SWAMP RD (SR 1407)



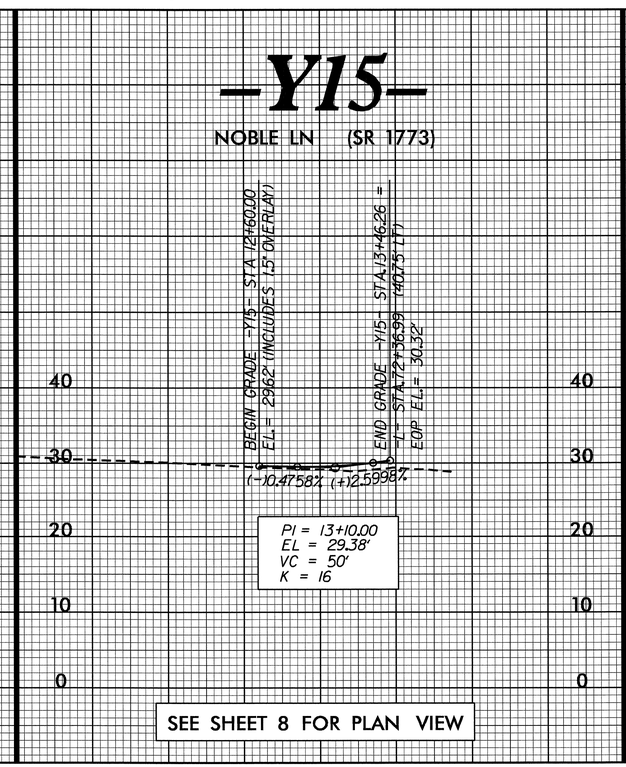
-Y13-

COURTLAND RD



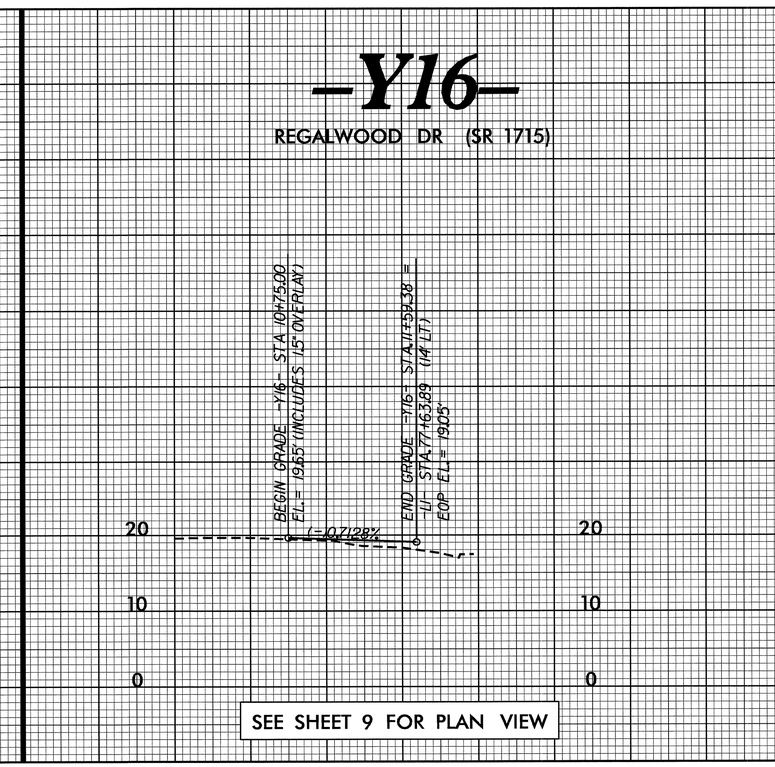
-Y15-

NOBLE LN (SR 1773)



-Y16-

REGALWOOD DR (SR 1715)



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PROJECT REFERENCE NO.	SHEET NO.
U-3810	51

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

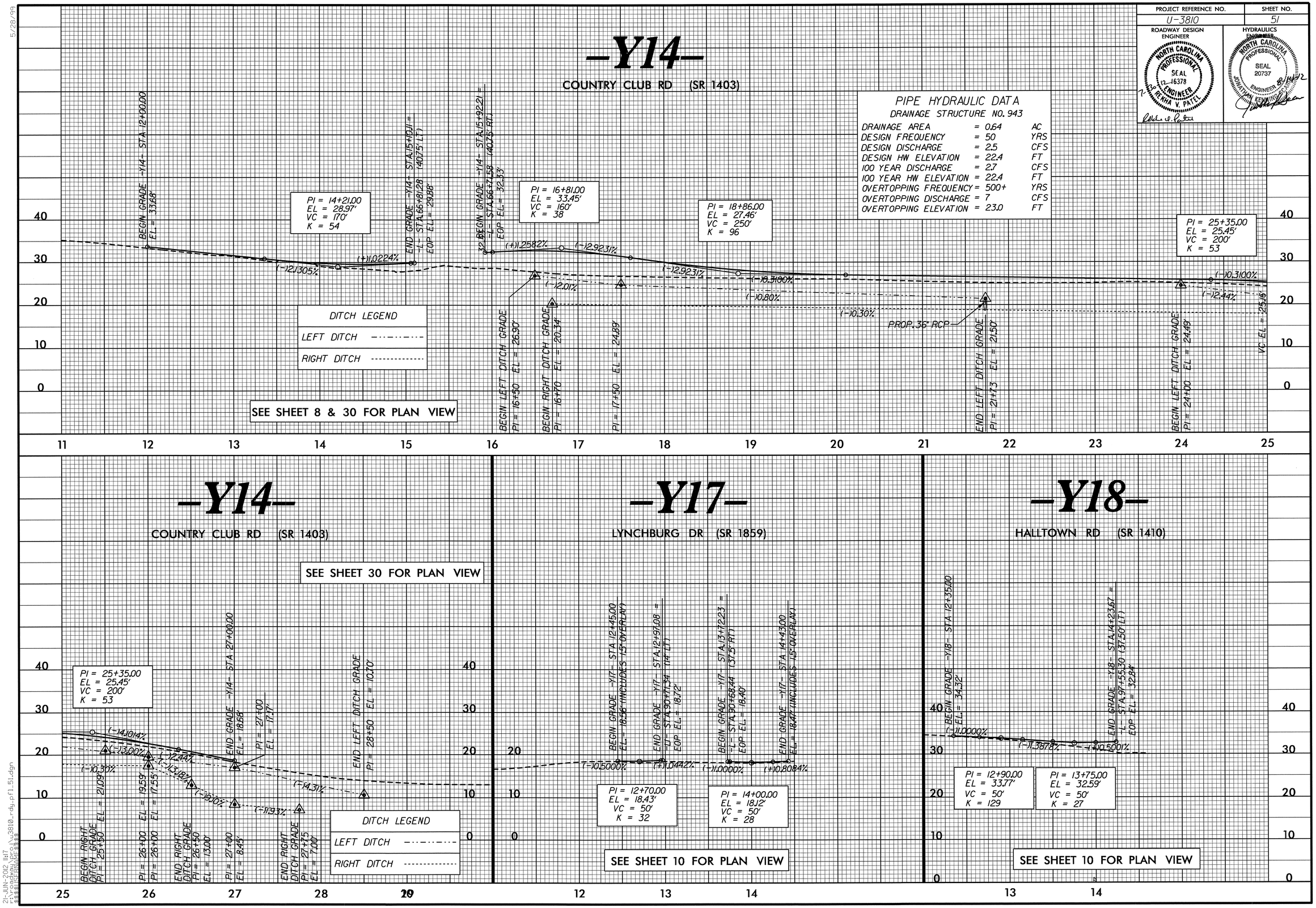
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER KENNETH E. ALSTON JR.

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 943

DRAINAGE AREA	= 0.64	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 2.5	CFS
DESIGN HW ELEVATION	= 22.4	FT
100 YEAR DISCHARGE	= 2.7	CFS
100 YEAR HW ELEVATION	= 22.4	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 7	CFS
OVERTOPPING ELEVATION	= 23.0	FT



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PROJECT REFERENCE NO.	SHEET NO.
U-3810	52

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER RAKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER

8/14/12

-Y19-

BEGIN GRADE -Y19- STA 10+80.00
EL = 36.75' (INCLUDES 1.5" OVERLAY)

END GRADE -Y19- STA 12+06.22 =
-L- STA 102+79.32 (37.50' LT)
EOP EL = 36.92'

(+)1.4428% (-)0.9100% (+)0.5000%

PI = 11+06.00
EL = 37.13'
VC = 50'
K = 21

PI = 11+56.00
EL = 36.67'
VC = 50'
K = 36

SEE SHEET 11 FOR PLAN VIEW

-Y20-

CREEDMOOR RD (SR 1899)

BEGIN GRADE -Y20- STA 10+49.57 =
-L- STA 102+82.67 (49.50' RT)
EOP EL = 36.63'

END GRADE -Y20- STA 11+30.00
EL = 35.58' (INCLUDES 1.5" OVERLAY)

(-)2.5311% (-)0.5620%

PI = 10+80.00
EL = 35.86'
VC = 60'
K = 31

SEE SHEET 11 FOR PLAN VIEW

-Y21-

BALSAM RD (SR 1779)

BEGIN GRADE -Y21- STA 10+49.50 =
-L- STA 121+82.99 (49.5' RT)
EOP EL = 32.71'

END GRADE -Y21- STA 11+50.00
EL = 29.55' (MATCH EX. GRADE AND C&G)

(-)4.5763% (-)0.3715%

PI = 11+10.00
EL = 29.94'
VC = 80'
K = 22

SEE SHEET 12 FOR PLAN VIEW

-Y22LT-

YOAPAN DR

BEGIN GRADE
-Y22LT1- STA 10+37.50 =
-L- STA 128+33.48 (37.50' RT)
EOP EL = 30.62'

END GRADE
-Y22LT- STA 11+60.00
EL = 31.73'

(-)0.5000% (+)3.2447% (-)0.3000%

PI = 10+95.00
EL = 30.33'
VC = 50'
K = 13

PI = 11+40.00
EL = 31.79'
VC = 40'
K = 11

SEE SHEET 12 FOR PLAN VIEW

-Y22RT-

YOAPAN DR

BEGIN GRADE
-Y22RT1- STA 10+37.50 =
-L- STA 127+92.48 (37.50' RT)
EOP EL = 30.97'

END GRADE
-Y22RT- STA 11+60.00
EL = 31.68'

(-)0.5000% (+)1.8270% (+)0.3000%

PI = 10+90.00
EL = 30.71'
VC = 50'
K = 22

PI = 11+40.00
EL = 31.62'
VC = 40'
K = 26

SEE SHEET 12 FOR PLAN VIEW

PROPOSED UNDERCUT

-Y23-

WHITE OAK BLVD (SR 1787)

BEGIN GRADE -Y23- STA 10+37.50 =
-L- STA 133+92.98 (37.50' RT)
EOP EL = 30.99'

END GRADE -Y23- STA 11+20.00
EL = 28.50' (INCLUDES 1.5" OVERLAY)

(-)1.9877% (-)0.6000%

PI = 10+85.00
EL = 28.71'
VC = 70'
K = 17

SEE SHEET 13 FOR PLAN VIEW

-Y24-

HEMLOCK DR (SR 1876)

BEGIN GRADE -Y24- STA 10+37.50 =
-L- STA 143+04.36 (37.50' RT)
EOP EL = 30.26'

END GRADE -Y24- STA 11+40.00
EL = 28.44'

(-)0.5099%

PI = 10+76.00
EL = 28.77'
VC = 50'
K = 15

PROPOSED UNDERCUT

SEE SHEET 14 FOR PLAN VIEW

-Y25-

BIRCHWOOD LN (SR 1804)

BEGIN GRADE -Y25- STA 11+90.00
EL = 27.12' (INCLUDES 1.5" OVERLAY)

END GRADE -Y25- STA 12+70.61 =
-L- STA 151+84.54 (37.50' LT)
EOP EL = 28.66'

(-)0.4808% (+)1.3758%

PI = 12+31.00
EL = 26.92'
VC = 70'
K = 14

SEE SHEET 14 FOR PLAN VIEW

-Y26-

BIRCHWOOD LN (SR 1804)

BEGIN RESURFACING -Y26- STA 11+45.00
EL = 12.79' (INCLUDES 1.5" OVERLAY)
BEGIN GRADE -Y26- STA 11+61.00
EL = 12.49' (INCLUDES 1.5" OVERLAY)

END GRADE -Y26- STA 12+51.27 =
-L- STA 164+02.84 (37.50' LT)
EOP EL = 14.88'

(+)0.8919% (+)4.0929%

PI = 12+01.00
EL = 12.82'
VC = 70'
K = 22

SEE SHEET 15 FOR PLAN VIEW

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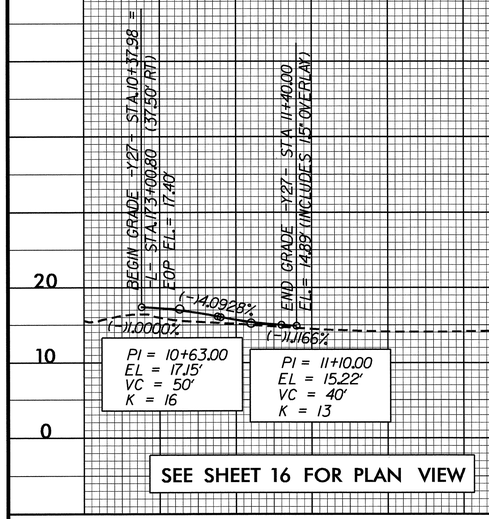
PROJECT REFERENCE NO.	SHEET NO.
U-3810	53

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL — 7-24-12

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KENNING STEWART — 7-24-12

-Y27-

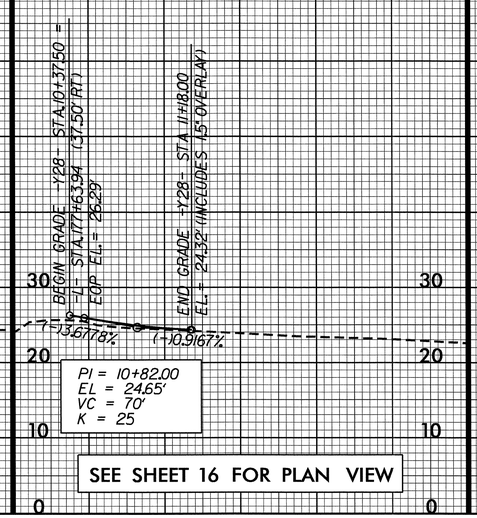
TONI DR (SR 1770)



SEE SHEET 16 FOR PLAN VIEW

-Y28-

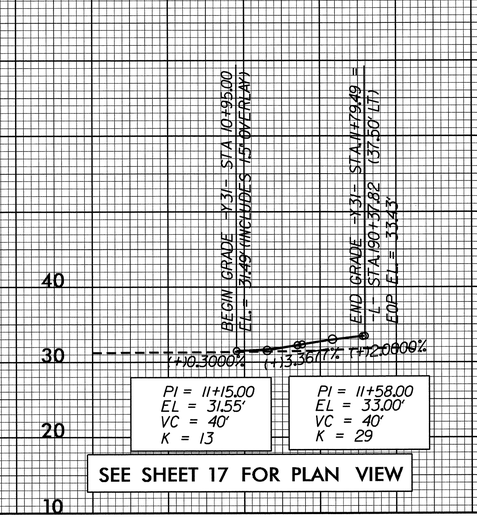
COLONIAL DR (SR 1752)



SEE SHEET 16 FOR PLAN VIEW

-Y31-

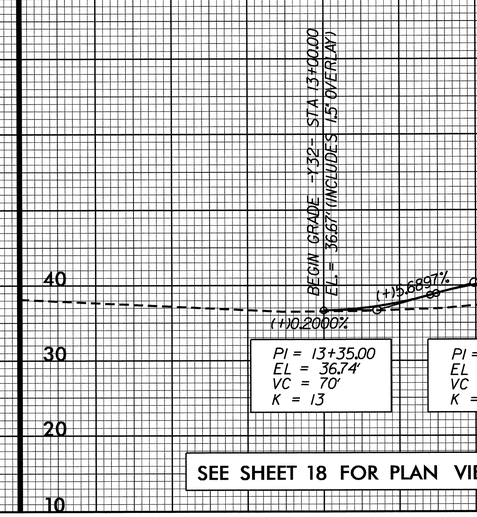
VICTORIA RD (SR 1480)



SEE SHEET 17 FOR PLAN VIEW

-Y32-

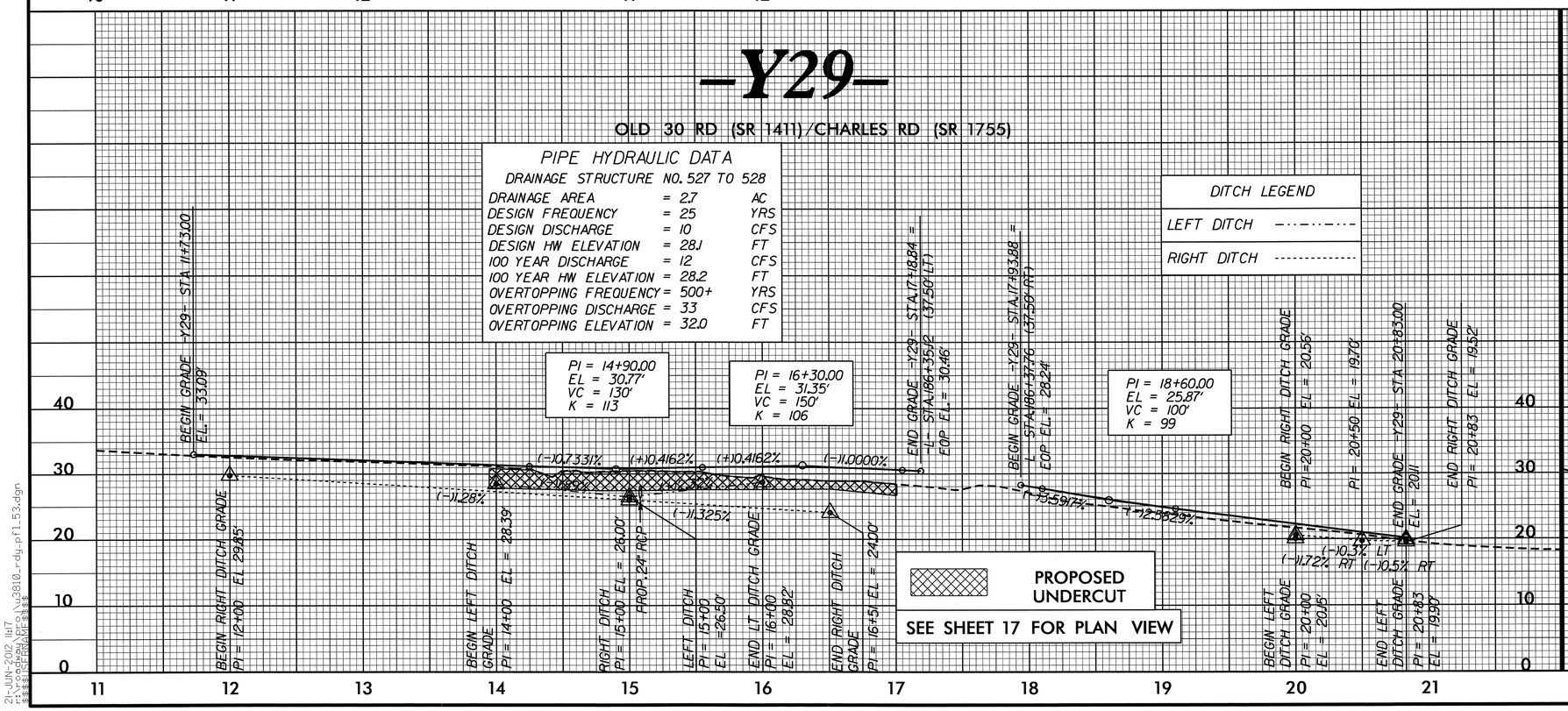
SHEFFIELD DR (SR 1484)



SEE SHEET 18 FOR PLAN VIEW

-Y29-

OLD 30 RD (SR 1411)/CHARLES RD (SR 1755)



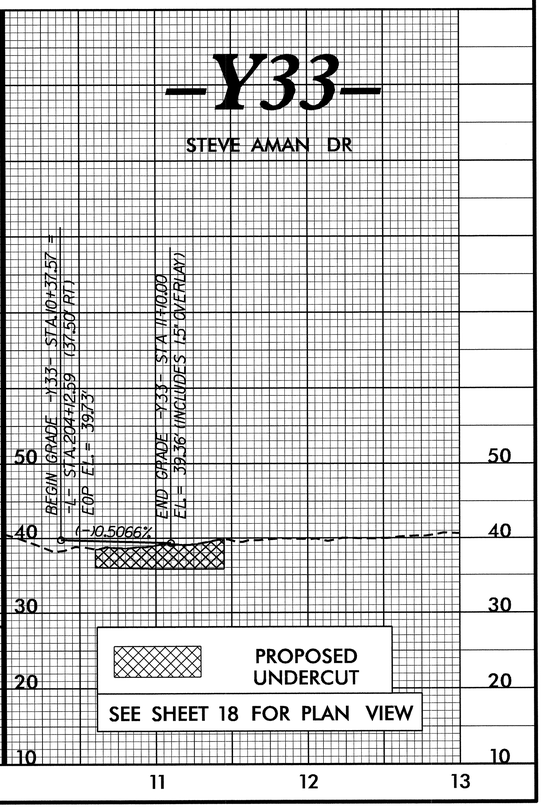
DITCH LEGEND

LEFT DITCH -·-·-·-·-

RIGHT DITCH ----------

-Y33-

STEVE AMAN DR



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PROJECT REFERENCE NO.	SHEET NO.
U-3810	54

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

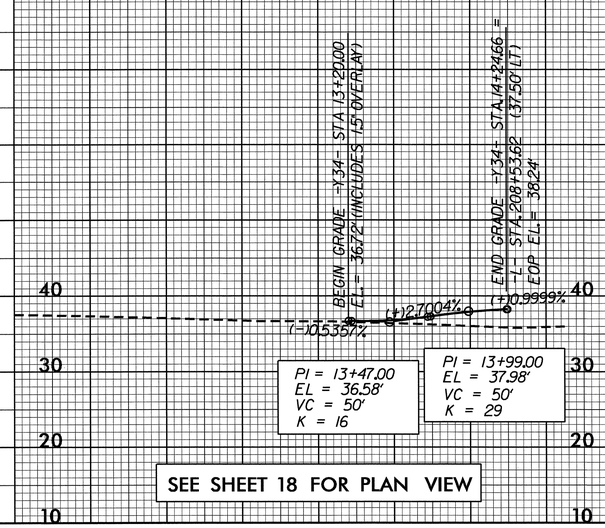
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JONATHAN KEVIN STARTZMAN

8-14-12

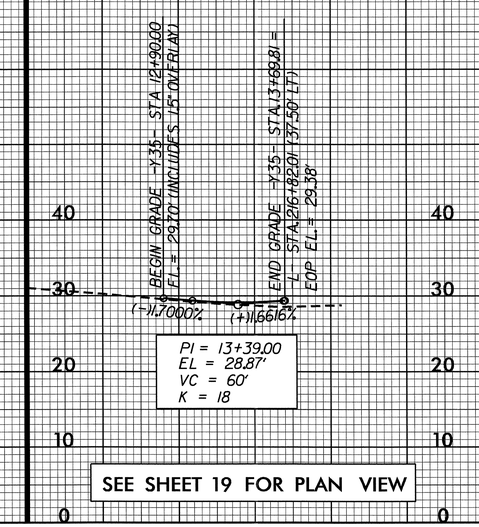
-Y34-

WALNUT CREEK RD



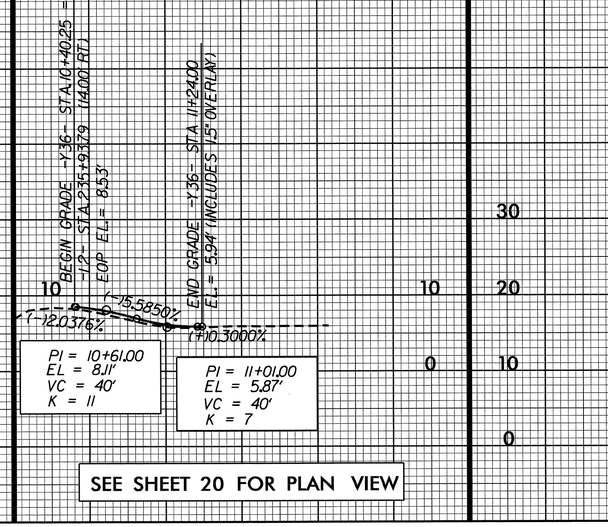
-Y35-

SWAIN LOOP RD (SR 1465)



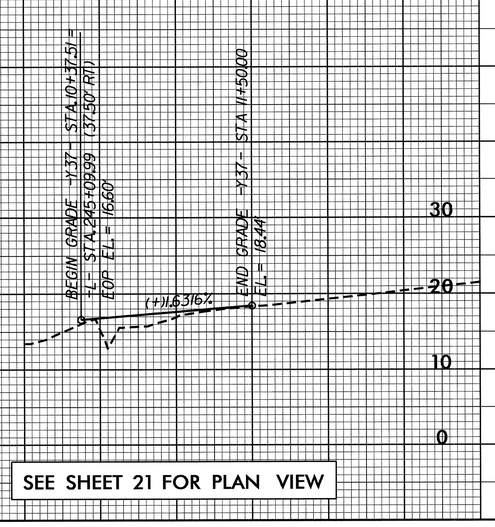
-Y36-

EAST CAROLE DR (SR 1453)



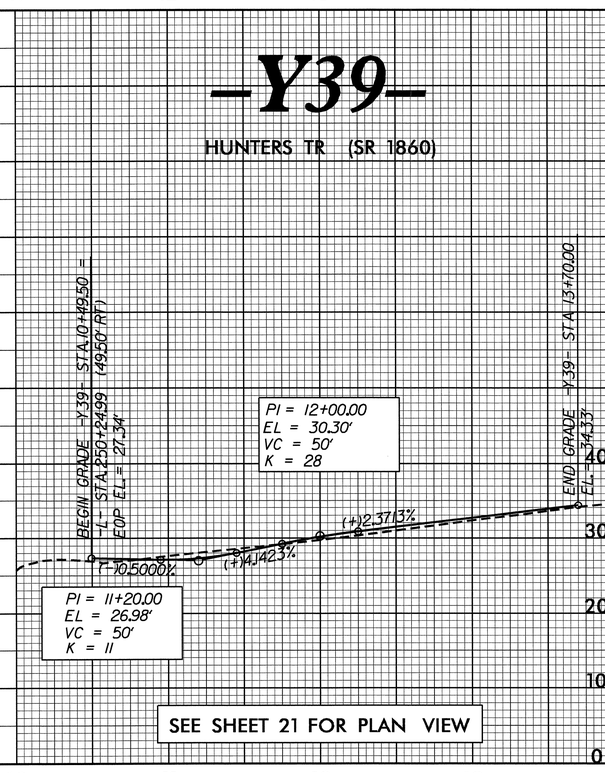
-Y37-

WEST THOMAS AVE (SR 1455)



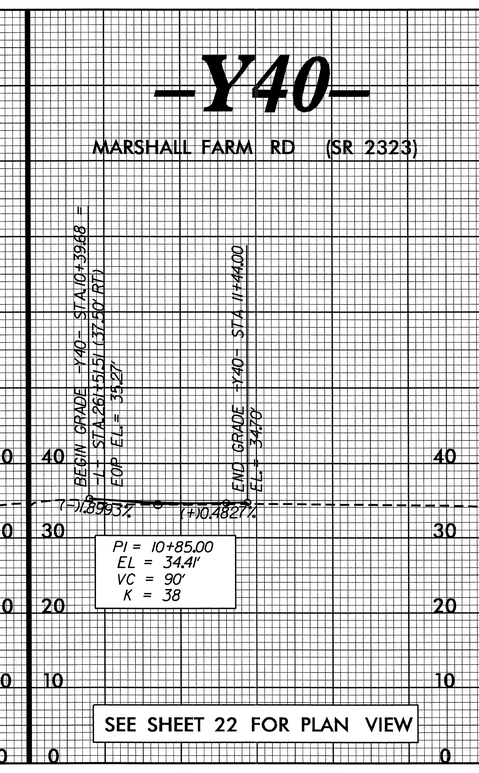
-Y39-

HUNTERS TR (SR 1860)



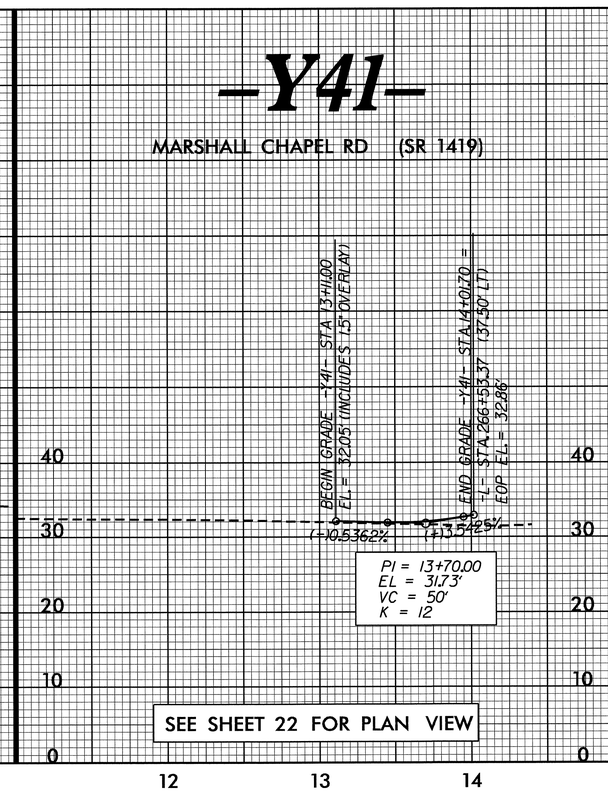
-Y40-

MARSHALL FARM RD (SR 2323)



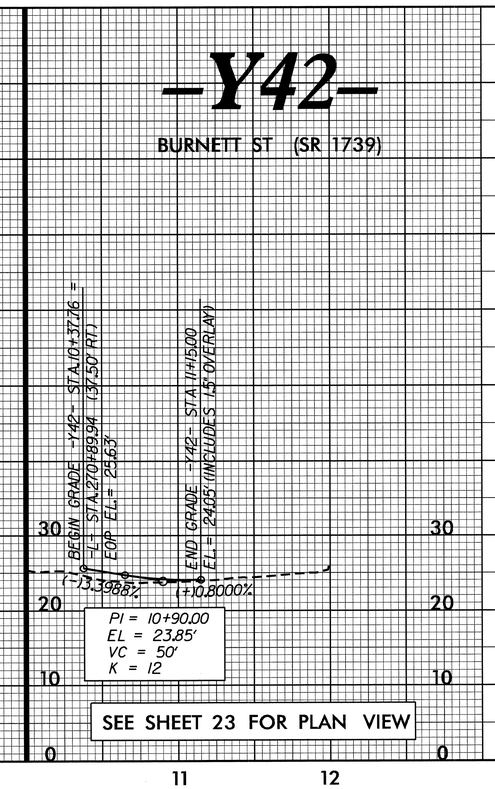
-Y41-

MARSHALL CHAPEL RD (SR 1419)



-Y42-

BURNETT ST (SR 1739)



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PROJECT REFERENCE NO.	SHEET NO.
U-3810	55

ROADWAY DESIGN ENGINEER

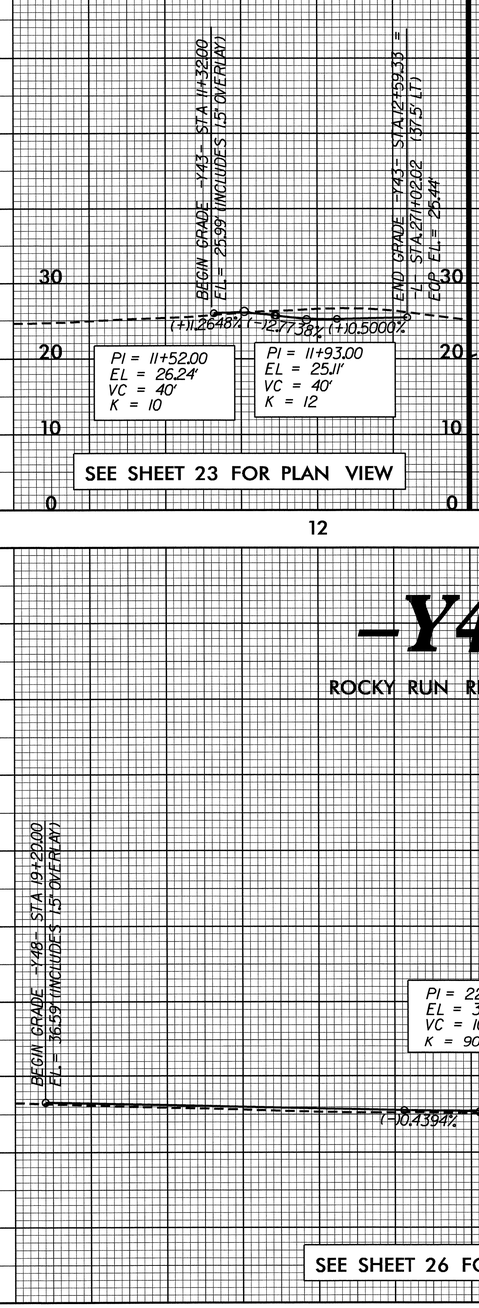
NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20733 ENGINEER JONATHAN D. WEAVER

-Y43-

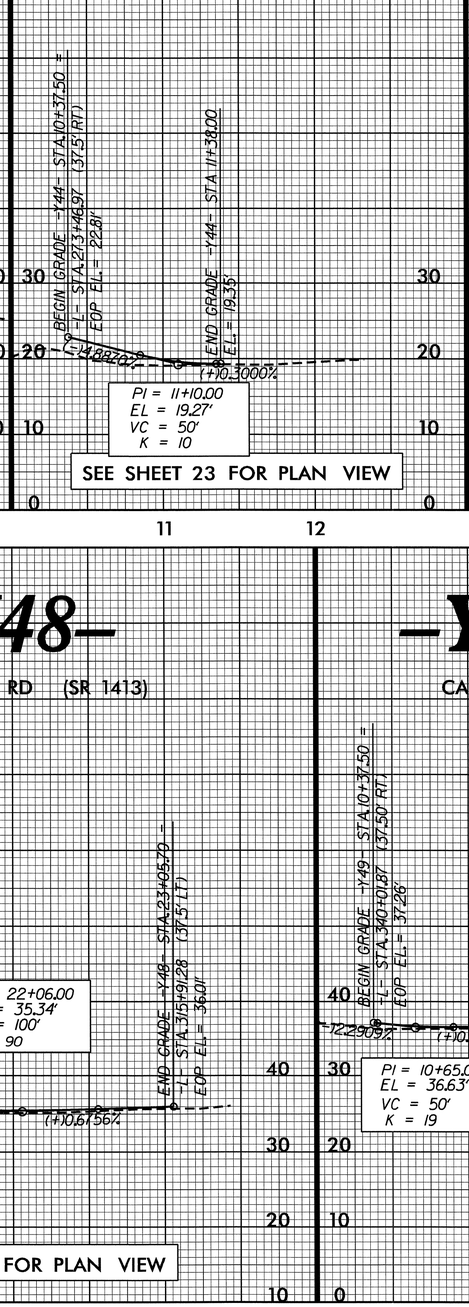
BRIDGE SIDE DR (SR 1811)



SEE SHEET 23 FOR PLAN VIEW

-Y44-

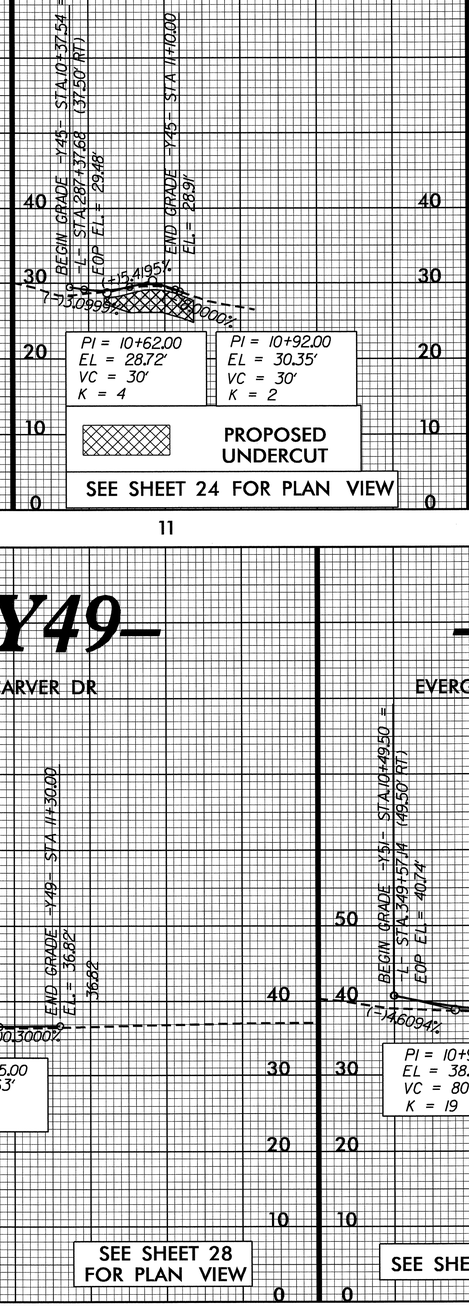
JEANETTE DR



SEE SHEET 23 FOR PLAN VIEW

-Y45-

LAMOTTS CREEK RD



SEE SHEET 24 FOR PLAN VIEW

-Y47-

SEE SHEET 26 FOR PLAN VIEW

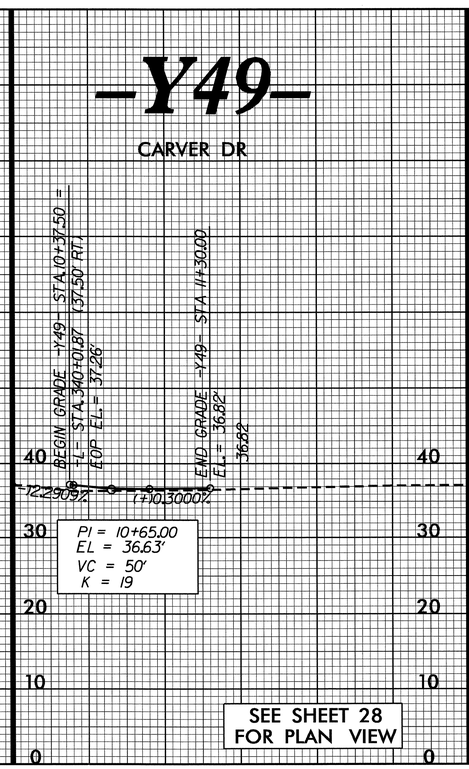
-Y48-

ROCKY RUN RD (SR 1413)

SEE SHEET 26 FOR PLAN VIEW

-Y49-

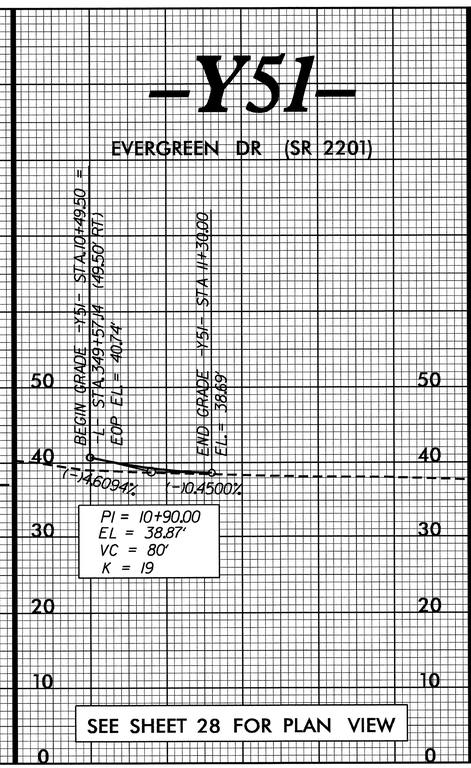
CARVER DR



SEE SHEET 28 FOR PLAN VIEW

-Y51-

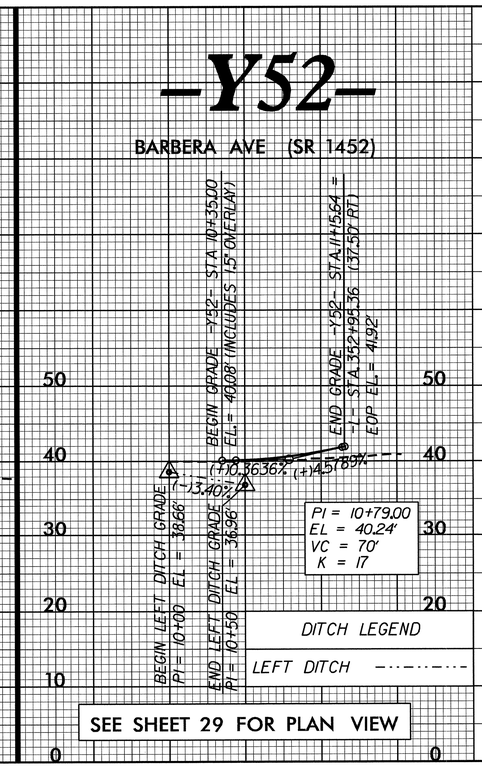
EVERGREEN DR (SR 2201)



SEE SHEET 28 FOR PLAN VIEW

-Y52-

BARBERA AVE (SR 1452)



SEE SHEET 29 FOR PLAN VIEW

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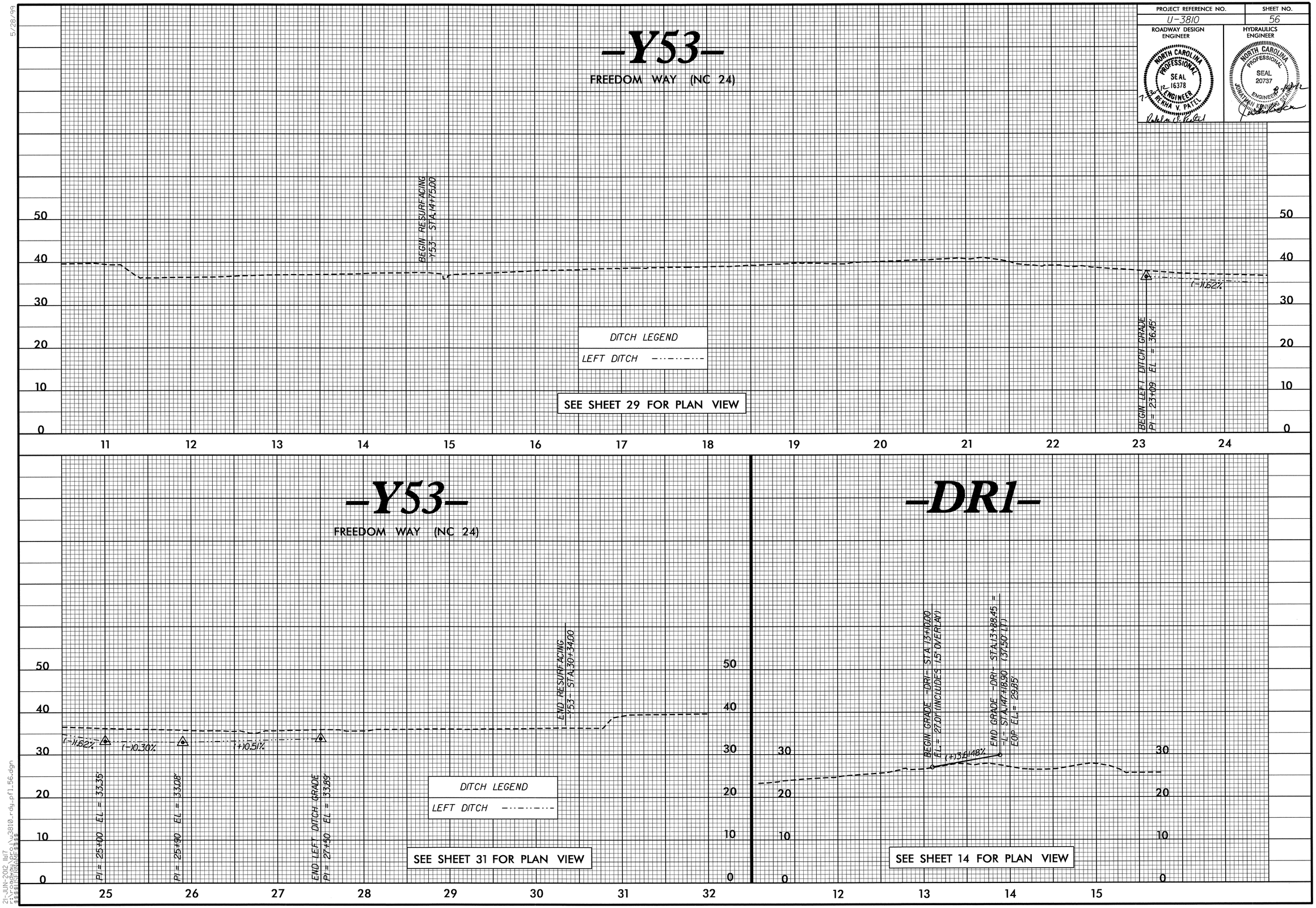
U-3810	56

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER



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PROJECT REFERENCE NO.	SHEET NO.
U-3810	57

ROADWAY DESIGN ENGINEER

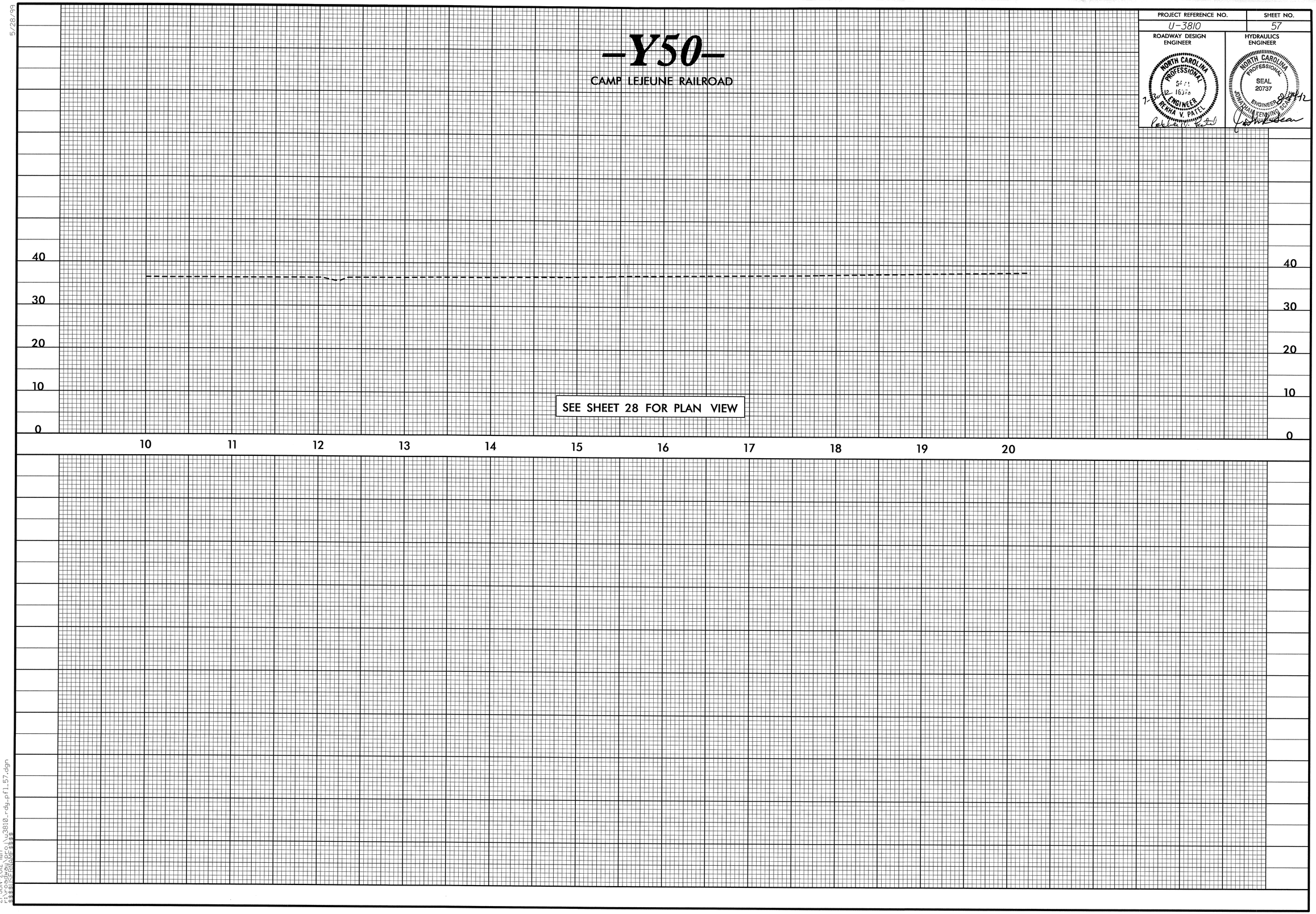
NORTH CAROLINA PROFESSIONAL SEAL 16378 ENGINEER REKHA V. PATEL

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20737 ENGINEER JOHNATHAN KENDRICK WILLIAMS

-Y50-

CAMP LEJEUNE RAILROAD



SEE SHEET 28 FOR PLAN VIEW

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