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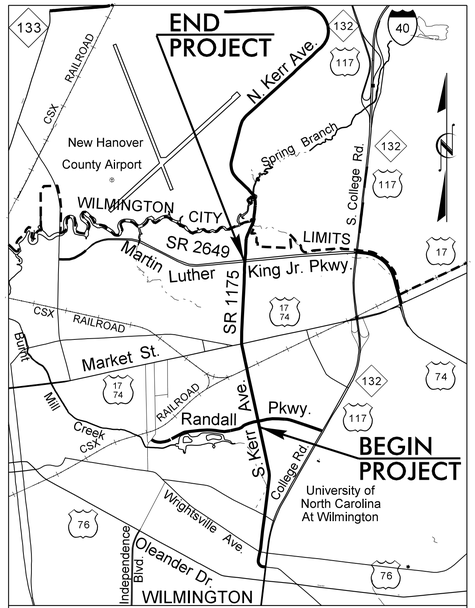
09/08/99

TIP PROJECT: U-3338B

CONTRACT: C203772

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheets 1C-1 Through 1C-13 For Survey Control Sheet




VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

# NEW HANOVER COUNTY

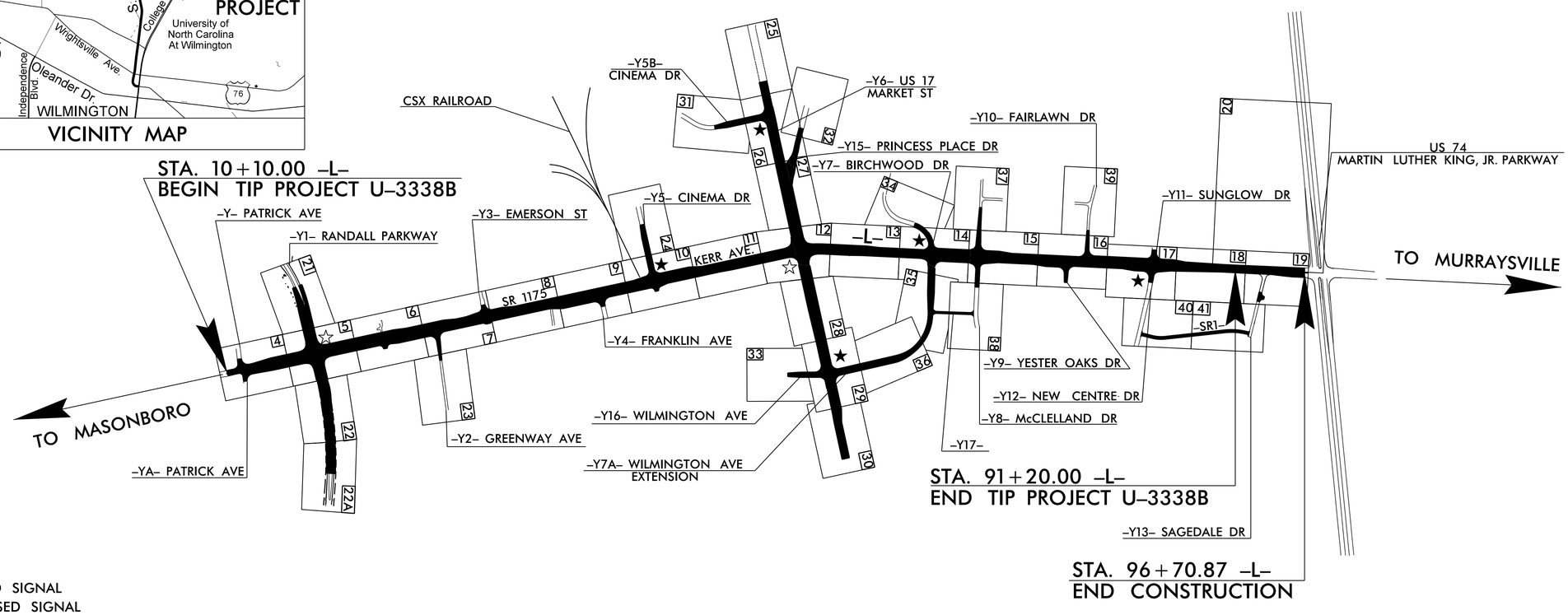
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| N.C. | U-3338B | 1 | |

| STATE PROJ. NO. | F. A. PROJ. NO. | DESCRIPTION |
|---|---|---|
| 34932.1.FD3 | STP-1175(10) | P.E. |
| 34932.2.2 | STP-1175(10) | R/W & UTILITIES |
| 34932.3.FD2 | STP-1175(10) | CONSTR. |

NAD 83/95

***LOCATION: SR 1175 (KERR AVENUE) FROM RANDALL PARKWAY TO SR 2649 (MARTIN LUTHER KING, JR. PARKWAY) IN WILMINGTON***

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




☆ REVISED SIGNAL
★ PROPOSED SIGNAL

THIS IS A FULL CONTROL OF ACCESS PROJECT FROM SUNGLOW DRIVE /NEW CENTRE DRIVE TO US 74 (MARTIN LUTHER KING, JR. PARKWAY).

## GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

4 2 0 4 8
PROFILE (VERTICAL)

## DESIGN DATA

ADT 2015 = 28,450
ADT 2035 = 29,400
K = 9 %
D = 55 %
T = 5 % *
V = 50 MPH
FUNC. CLASS = ARTERIAL
* ( TTST 1%+DUAL 4%)
REGIONAL TIER

## PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT U-3338B = 1.536 MI
TOTAL LENGTH OF TIP PROJECT U-3338B = 1.536 MI

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 29, 2012

LETTING DATE:
NOVEMBER 17, 2015

REKHA PATEL, PE
PROJECT ENGINEER

TATIA L. WHITE, PE
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**
9/15/2015
DocuSigned by:
Ray D. Lovinggood
SIGNATURE:
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD P.E.

**ROADWAY DESIGN ENGINEER**
9/15/2015
DocuSigned by:
Tatia L. White
SIGNATURE:
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

08-SEP-2015 10:46
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$$$$USERNAME$$$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1A |

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE

9/17/2015

DocuSigned

EFFECTIVE: 01-17-2012
REVISED: 10-31-2014

EFFECTIVE: 01-17-2012
REVISED: 10-30-2012

INDEX OF SHEETS


| SHEET NUMBER | SHEET |
|---|---|
| 1 | TITLE SHEET |
| 1A | INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS |
| 1B | CONVENTIONAL SYMBOLS |
| 1C-1 THROUGH 1C-13 | SURVEY CONTROL SHEETS |
| 2A-1 THROUGH 2A-6 | TYPICAL SECTIONS, PAVEMENT SCHEDULE, AND WEDGING DETAILS |
| 2B-1 | DETAIL OF -Y6-/-Y15- INTERSECTION |
| 2C-1 | DETAIL OF SPECIAL CATCH BASIN |
| 2C-2 | DETAIL OF CONCRETE JUNCTION BOX WITH 6" PIPE PASSING THRU |
| 2C-3 | DETAIL OF CONCRETE JUNCTION BOX WITH 8" PIPE PASSING THRU |
| 2C-4 | DETAIL OF CONCRETE JUNCTION BOX WITH 10" PIPE PASSING THRU |
| 2C-5 | DETAIL OF 24" ALUMINUM WALL SLEEVE FOR SEWER CONFLICT |
| 2C-6 | DETAIL OF SPECIAL CATCH BASIN |
| 2C-7 | DETAIL OF CONCRETE JUNCTION BOX FOR 103" X 71" CM PIPE ARCH |
| 2C-8 | DETAIL TO CONVERT EXISTING CATCH BASIN OR JUNCTION BOX TO DI OR 2-GI |
| 2C-9 | DETAIL OF REINFORCED CONCRETE ENDWALL FOR 103" X 71" (PIPE ARCH) 90D |
| 2C-10 | DETAIL OF MINIMUM DEPTH CONCRETE CATCH BASIN (12" THRU 84" PIPE) |
| 2C-11 | DETAIL OF COAL COMBUSTION PRODUCT PLACEMENT |
| 2G-1 THROUGH 2G-2 | DETAILS OF STANDARD REINFORCED SOIL SLOPES |
| 2H-1 | DETAIL OF STOCKPILE CONTAINMENT |
| 3B-1 | SUMMARY OF EARTHWORK, SUMMARY OF PAVEMENT BREAKUP AND REMOVAL, SUMMARY OF EXPRESSWAY GUTTER AND SUMMARY OF CHAIN LINK FENCE |
| 3B-2 | SUMMARY OF GUARDRAIL |
| 3D-1 THROUGH 3D-23 | SUMMARY OF DRAINAGE QUANTITIES |
| 3G-1 | SUMMARY OF SUBSURFACE DRAINAGE, SUMMARY OF REINFORCED SOIL SLOPES (RSS) AND SUMMARY OF AGGREGATE SUBGRADE STABILIZATION |
| 3P-1 THROUGH 3P-2 | PARCEL INDEX |
| 4 THROUGH 41 | PLAN SHEETS |
| 42 THROUGH 63 | PROFILE SHEETS |
| TMP-1 THROUGH TMP-52 | TRANSPORTATION MANAGEMENT PLANS |
| PMP-1 THROUGH PMP-12 | PAVEMENT MARKING PLANS |
| EC-1 THROUGH EC-79 | EROSION CONTROL PLANS |
| SIGN-1 THROUGH SIGN-9 | SIGNING PLANS |
| SIG-1.0 THROUGH SIG-M9 | SIGNAL PLANS |
| SCP-1 THROUGH SCP-31 | SIGNAL COMMUNICATION PLANS |
| UC-1 THROUGH UC-45 | UTILITY CONSTRUCTION PLANS |
| UO-1 THROUGH UO-41 | UTILITIES BY OTHERS PLANS |
| X-1 | INDEX OF CROSS SECTIONS |
| X-1A THROUGH X-1C | CROSS SECTION SUMMARY |
| X-2 THROUGH X-87 | CROSS SECTIONS |


2012 ROADWAY ENGLISH STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH – N. C. DEPARTMENT OF TRANSPORTATION – RALEIGH, N. C., DATED JANUARY, 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

| STD. NO. | TITLE |
|---|---|
| DIVISION 2 – EARTHWORK | |
| 200.03 | METHOD OF CLEARING – METHOD III |
| 225.02 | 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 |
| DIVISION 5 – SUBGRADE, BASES AND SHOULDERS | |
| 560.01 | METHOD OF SHOULDER CONSTRUCTION – HIGH SIDE OF SUPERELEVATED CURVE – METHOD I |
| DIVISION 6 – ASPHALT BASES AND PAVEMENTS | |
| 654.01 | PAVEMENT REPAIRS |
| DIVISION 8 – INCIDENTALS | |
| 815.02 | SUBSURFACE 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 |
| 838.80 | 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 |
| 840.30 | DRIVEWAY DROP INLET |
| 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 |
| 846.02 | DROP INLET INSTALLATION IN EXPRESSWAY GUTTER |
| 848.01 | CONCRETE SIDEWALK |
| 848.02 | DRIVEWAY TURNOUT – RADIUS TYPE |
| 848.04 | STREET TURNOUT |
| 848.05 | CURB RAMP – PROPOSED CURB & GUTTER |
| 852.01 | CONCRETE ISLANDS |
| 852.06 | METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS |
| 862.01 | GUARDRAIL PLACEMENT |
| 862.02 | GUARDRAIL INSTALLATION |
| 866.01 | CHAIN LINK FENCE – 4', 5' AND 6' HIGH FENCE |
| 876.02 | GUIDE FOR RIP RAP AT PIPE OUTLETS |

GENERAL NOTES: 2012 SPECIFICATIONS

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.

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.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3'-0" 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 WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE: DUKE ENERGY, AT&T, LEVEL 3, PIEDMONT NATURAL GAS, TIME WARNER CABLE, AND CAPE FEAR PUBLIC UTILITY AUTHORITY.

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

RIGHT-OF-WAY MARKERS:

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

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS IN ACCORDANCE WITH STD 848.05 AND/OR 848.06.

8/17/99

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12/05/11

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1B |

***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
- Proposed Permanent Easement with Iron Pin and Cap Marker

## *ROADS AND RELATED FEATURES:*

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

## *VEGETATION:*

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

## *EXISTING STRUCTURES:*

MAJOR:

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

MINOR:

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

## *UTILITIES:*

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

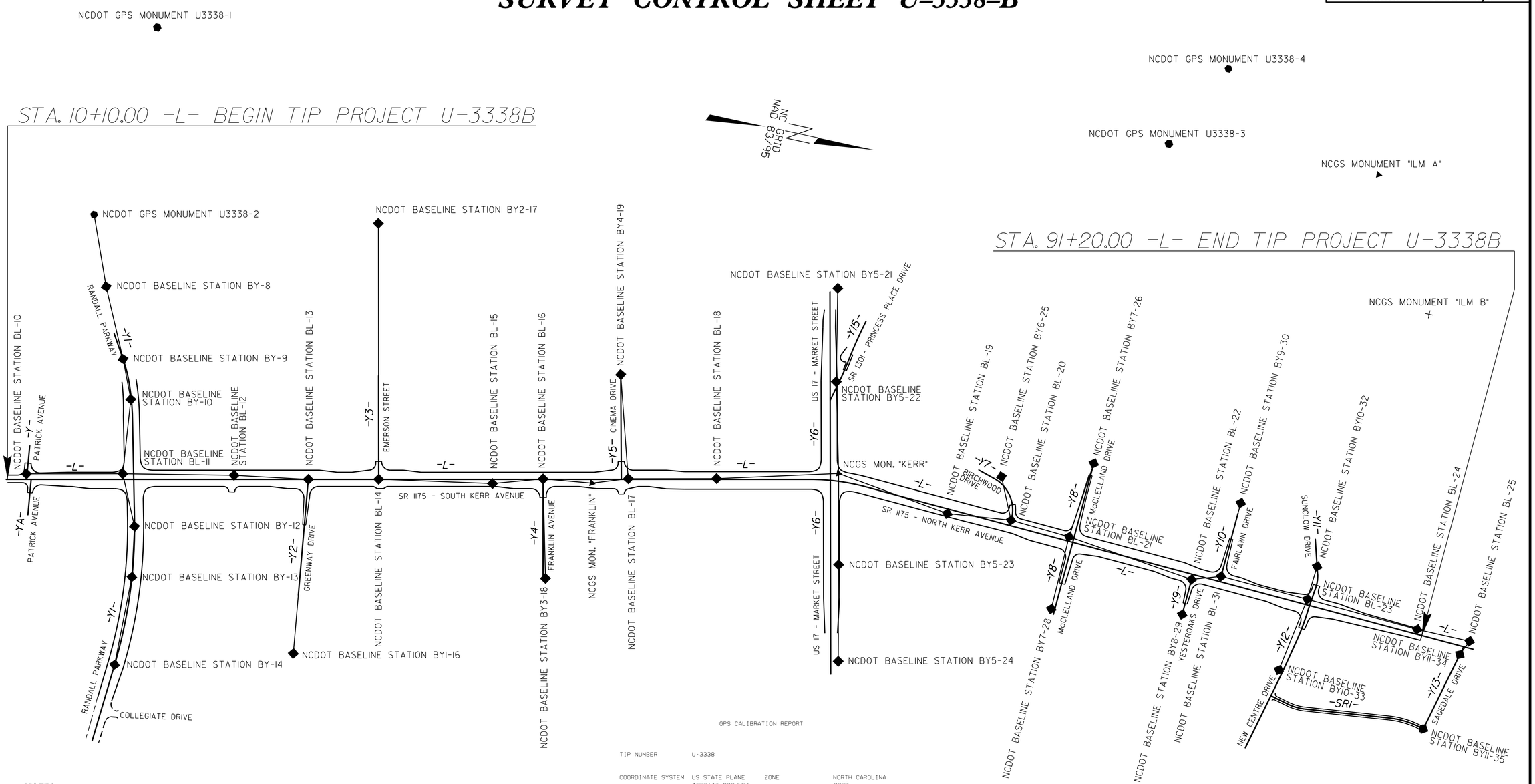
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

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

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1C-1 |
| Location and Surveys | |

# SURVEY CONTROL SHEET U-3338-B




GPS CALIBRATION REPORT

TIP NUMBER U-3338

| | | | |
|---|---|---|---|
| COORDINATE SYSTEM | US STATE PLANE 1983(AT GROUND) | ZONE | NORTH CAROLINA 3200 |
| HORIZONTAL DATUM | NAD 1983/95 (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 | U4718-5 |
| LATITUDE | 34-13'19.57526"N |
| LONGITUDE | 77-52'57.44291"W |
| SITE SCALE FACTOR | 0.9999702010 |
| HEIGHT | -25.519M |

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.

NCDOT GPS MONUMENT U3338-6

NCGS MONUMENT "CAMA"

## DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U4718-5"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 173,728.005'(ft) EASTING: 2,337,795.840'(ft)
ELEVATION: 37.656'(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0000299999
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U4718-5" TO -L- STATION 5+00.00 IS
N 27° 24' 19" W 2,734.170'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

*NOTES:*

1. *THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 8395 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.*
2. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   *HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/*
   *THE FILES TO BE FOUND ARE AS FOLLOWS:*
   *U3338B_LS_CONTROL_090428.TXT*
   *IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.*

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

*NOTE: DRAWING NOT TO SCALE*

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1C-2 |
| Location and Surveys | |

# SURVEY CONTROL SHEET U-3338-B

BL

| POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|---|---|---|---|---|---|---|
| BL10 | BL-10 | 176751.6070 | 2336376.3996 | 36.02 | 11+16.83 | 31.22 LT |
| BL11 | BL-11 | 177283.2704 | 2336260.7555 | 37.05 | 16+60.93 | 31.83 LT |
| U33381 | U3338-1 | 176940.5726 | 2333752.3135 | 28.77 | 18+56.41 | 2556.01 LT |
| BL12 | BL-12 | 177901.0270 | 2336136.0069 | 36.54 | 22+91.09 | 23.12 LT |
| BL13 | BL-13 | 178315.5055 | 2336069.9919 | 36.25 | 27+10.16 | 0.00 LT |
| BL14 | BL-14 | 178704.5974 | 2335984.9549 | 34.10 | 31+08.43 | 0.84 LT |
| BL15 | BL-15 | 179338.2014 | 2335872.6590 | 36.62 | 37+51.46 | 23.38 RT |
| BL16 | BL-16 | 179612.7201 | 2335786.5225 | 36.80 | 40+37.98 | 2.75 LT |
| FRANKLIN1 | NCGS FRANKLIN | 179887.5296 | 2335751.4725 | 39.58 | 43+13.99 | 21.10 RT |
| BL17 | BL-17 | 180082.4922 | 2335683.7889 | 39.32 | 45+18.85 | 3.83 LT |
| BL18 | BL-18 | 180571.0904 | 2335577.4305 | 38.98 | 50+18.89 | 4.46 LT |
| KERR1 | NCGS KERR | 181239.1825 | 2335403.2979 | 40.46 | 57+03.49 | 43.77 LT |
| BL19 | BL-19 | 181886.5648 | 2335493.6304 | 37.42 | 63+49.18 | 26.00 RT |
| BL20 | BL-20 | 182247.5226 | 2335454.4098 | 36.85 | 67+07.81 | 30.63 LT |
| BL21 | BL-21 | 182587.9705 | 2335476.6217 | 35.94 | 70+48.94 | 24.90 LT |
| BL22 | BL-22 | 183315.8606 | 2335566.0821 | 36.16 | 77+80.30 | 29.27 RT |
| BL31 | BL-31 | 183475.4431 | 2335513.8465 | 35.19 | 79+37.17 | 30.62 LT |
| BL23 | BL-23 | 183978.9108 | 2335537.5822 | 32.33 | 84+41.20 | 31.25 LT |
| CAMA1 | NCGS CAMA | 183540.3786 | 2346038.5285 | 40.92 | 85+10.81 | 10478.6184 RT |
| BL24 | BL-24 | 184622.0398 | 2335573.0594 | 29.94 | 90+85.29 | 26.90 LT |
| BL25 | BL-25 | 184925.6892 | 2335576.1580 | 29.07 | 93+88.74 | 38.49 LT |
| U33383 | U3338-3 | 185305.8906 | 2332347.7416 | 32.81 | 96+12.43 | 3281.5100 LT |
| U33384 | U3338-4 | 185860.4900 | 2331254.2131 | 29.41 | 101+13.51 | 4400.5703 LT |
| U33385 | U3338-5 | 185575.2836 | 2338177.2299 | 18.67 | 101+63.31 | 2528.1399 RT |
| U33386 | U3338-6 | 185689.8529 | 2339349.6781 | 19.01 | 103+34.42 | 3693.6788 RT |
| ILMA1 | NCGS ILM A | 189756.6495 | 2332699.6837 | 26.29 | OUTSIDE PROJECT LIMITS | |
| ILMB1 | NCGS ILM B | 189210.8582 | 2335309.7000 | 8.48 | OUTSIDE PROJECT LIMITS | |

BL

| POINT | DESC. | NORTH | EAST | ELEVATION | Y STATION | OFFSET |
|---|---|---|---|---|---|---|
| BL10 | BL-10 | 176751.6070 | 2336376.3996 | 36.02 | 11+61.16 | 3.73 RT |

BL

| POINT | DESC. | NORTH | EAST | ELEVATION | YA STATION | OFFSET |
|---|---|---|---|---|---|---|
| BL10 | BL-10 | 176751.6070 | 2336376.3996 | 36.02 | OUTSIDE PROJECT LIMITS | |

BY

| POINT | DESC. | NORTH | EAST | ELEVATION | Y1 STATION | OFFSET |
|---|---|---|---|---|---|---|
| U33382 | U3338-2 | 176815.3425 | 2334862.2876 | 32.97 | OUTSIDE PROJECT LIMITS | |
| BY8 | BY-8 | 176968.1864 | 2335246.6047 | 30.85 | OUTSIDE PROJECT LIMITS | |
| BY9 | BY- 9 | 177147.7303 | 2335625.2314 | 29.96 | 11+53.72 | 0.00 |
| BY10 | BY-10 | 177239.0001 | 2335839.3391 | 30.68 | 13+87.32 | 3.04 RT |
| BY11 | BY-11 | 177283.2704 | 2336260.7555 | 37.01 | 18+07.93 | 61.62 RT |
| BY12 | BY-12 | 177410.9902 | 2336536.0185 | 37.38 | 21+05.26 | 0.42 RT |
| BY13 | BY-13 | 177456.9654 | 2336819.5654 | 38.56 | 23+92.70 | 0.77 RT |
| BY14 | BY-14 | 177466.5947 | 2337325.7463 | 39.11 | 28+99.76 | 0.00 |

BY1

| POINT | DESC. | NORTH | EAST | ELEVATION | Y2 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY113 | BY1-13 | 178315.5055 | 2336069.9919 | 36.24 | 10+00.00 | 0.00 RT |
| BY116 | BY1-16 | 178440.8101 | 2337049.3797 | 38.10 | OUTSIDE PROJECT LIMITS | |

BY2

| POINT | DESC. | NORTH | EAST | ELEVATION | Y3 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY217 | BY2-17 | 178396.7494 | 2334570.6595 | 35.00 | OUTSIDE PROJECT LIMITS | |
| BY214 | BY2-14 | 178704.5974 | 2335984.9549 | 34.10 | 15+87.33 | 0.00 |

BY3

| POINT | DESC. | NORTH | EAST | ELEVATION | Y4 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY316 | BY3-16 | 179612.7201 | 2335786.5225 | 36.79 | OUTSIDE PROJECT LIMITS | |
| BY318 | BY3-18 | 179744.5968 | 2336332.9834 | 39.37 | OUTSIDE PROJECT LIMITS | |

BY4

| POINT | DESC. | NORTH | EAST | ELEVATION | Y5 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY419 | BY4-19 | 179916.2760 | 2335115.8837 | 39.02 | 10+00.00 | 0.00 |
| BY417 | BY4-17 | 180082.4922 | 2335683.7889 | 39.31 | 15+90.45 | 38.83 LT |

BY5

| POINT | DESC. | NORTH | EAST | ELEVATION | Y6 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY521 | BY5-21 | 181012.9273 | 2334380.9279 | 39.80 | OUTSIDE PROJECT LIMITS | |
| BY522 | BY5-22 | 181116.1538 | 2334898.0723 | 40.49 | 15+07.60 | 34.71 LT |
| AKERR1 | NCGS KERR | 181239.1825 | 2335403.2979 | 40.46 | 20+27.44 | 47.11 LT |
| BY523 | BY5-23 | 181348.0224 | 2335906.5590 | 40.88 | 25+42.34 | 46.06 LT |
| BY524 | BY5-24 | 181461.3014 | 2336441.2464 | 41.33 | 30+88.88 | 42.65 LT |

BY6

| POINT | DESC. | NORTH | EAST | ELEVATION | Y7 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY625 | BY6-25 | 182142.7349 | 2335226.1642 | 36.89 | 11+26.07 | 30.97 LT |
| BY620 | BY6-20 | 182247.5226 | 2335454.4098 | 36.84 | 13+73.53 | 0.52 RT |

BY7

| POINT | DESC. | NORTH | EAST | ELEVATION | Y8 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY726 | BY7-26 | 182637.3357 | 2335242.5902 | 35.96 | 10+00.00 | 0.00 |
| BY721 | BY7-21 | 182587.9705 | 2335476.6217 | 35.94 | 14+35.92 | 28.21 RT |
| BY728 | BY7-28 | 182575.8696 | 2335896.7371 | 36.19 | 18+56.13 | 19.87 RT |

BY8

| POINT | DESC. | NORTH | EAST | ELEVATION | Y9 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY822 | BY8-22 | 183315.8606 | 2335566.0821 | 36.15 | 10+29.27 | 0.00 |
| BY829 | BY8-29 | 183306.0524 | 2335771.1008 | 34.66 | 12+34.52 | 0.00 |

BY9

| POINT | DESC. | NORTH | EAST | ELEVATION | Y10 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY930 | BY9-30 | 183496.3650 | 2335084.2294 | 33.86 | OUTSIDE PROJECT LIMITS | |
| BY931 | BY9-31 | 183475.4431 | 2335513.8465 | 35.19 | 13+69.50 | 0.00 LT |

BY10

| POINT | DESC. | NORTH | EAST | ELEVATION | Y11 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY1032 | BY10-32 | 183993.9434 | 2335344.2818 | 30.56 | 11+53.30 | 0.01 LT |
| BY1023 | BY10-23 | 183978.9108 | 2335537.5822 | 32.30 | 13+52.50 | 23.63 RT |
| BY1033 | BY10-33 | 183906.8450 | 2335962.6323 | 30.55 | OUTSIDE PROJECT LIMITS | |

BY10

| POINT | DESC. | NORTH | EAST | ELEVATION | Y12 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY1032 | BY10-32 | 183993.9434 | 2335344.2818 | 30.56 | OUTSIDE PROJECT LIMITS | |
| BY1023 | BY10-23 | 183978.9108 | 2335537.5822 | 32.30 | OUTSIDE PROJECT LIMITS | |
| BY1033 | BY10-33 | 183906.8450 | 2335962.6323 | 30.55 | 14+04.37 | 22.57 RT |

BY11

| POINT | DESC. | NORTH | EAST | ELEVATION | Y13 STATION | OFFSET |
|---|---|---|---|---|---|---|
| BY1125 | BY11-25 | 184925.6892 | 2335576.1580 | 29.07 | OUTSIDE PROJECT LIMITS | |
| BY1134 | BY11-34 | 184887.9548 | 2335660.9262 | 27.55 | 10+48.94 | 0.00 |
| BY1135 | BY11-35 | 184775.0941 | 2336114.4358 | 25.83 | 15+16.28 | 0.00 |

BENCHMARKS

BL10 ELEVATION - 36.02
N 176752 E 2336376
L STATION 5+00 0 RIGHT
CONCRETE MONUMENT WITH REBAR

BL11 ELEVATION - 37.05
N 177283 E 2336261
L STATION 10+44 0 RIGHT
REBAR & CAP

BL12 ELEVATION - 36.54
N 177901 E 2336136
L STATION 16+74 0 RIGHT
REBAR & CAP

BL13 ELEVATION - 36.25
N 178316 E 2336070
L STATION 20+94 0 RIGHT
CONCRETE MONUMENT WITH BRASS CAP

BL14 ELEVATION - 34.10
N 178705 E 2335985
L STATION 29+81 0 RIGHT
CONCRETE MONUMENT WITH REBAR

BL15 ELEVATION - 36.62
N 179338 E 2335873
L STATION 36+25 0 RIGHT
REBAR & CAP

BL16 ELEVATION - 36.80
N 179613 E 2335787
L STATION 34+23 0 RIGHT
CONCRETE MONUMENT WITH BRASS CAP

BL17 ELEVATION - 39.32
N 180082 E 2335684
L STATION 39+07 0 RIGHT
CONCRETE MONUMENT WITH BRASS CAP

BL18 ELEVATION - 38.98
N 180571 E 2335577
L STATION 48+92 0 RIGHT
CONCRETE MONUMENT WITH BRASS CAP

BL19 ELEVATION - 37.42
N 181887 E 2335494
L STATION 57+51 0 RIGHT
REBAR & CAP

BL20 ELEVATION - 36.85
N 182248 E 2335454
L STATION 61+14 0 RIGHT
CONCRETE MONUMENT WITH REBAR

BL21 ELEVATION - 35.94
N 182588 E 2335477
L STATION 64+55 0 RIGHT
REBAR & CAP

BL22 ELEVATION - 36.16
N 183316 E 2335566
L STATION 71+89 0 RIGHT
CONCRETE MONUMENT WITH REBAR

BL23 ELEVATION - 32.33
N 183979 E 2335538
L STATION 19+34 0 RIGHT
REBAR & CAP

BENCHMARKS

BL24 ELEVATION - 29.94
N 184622 E 2335573
L STATION 85+05 0 RIGHT
REBAR & CAP

BL25 ELEVATION - 29.07
N 184926 E 2335576
L STATION 88+08 0 RIGHT
REBAR & CAP

BL31 ELEVATION - 35.19
N 183475 E 2335514
L STATION 11+98 0 RIGHT
CONCRETE MONUMENT WITH REBAR

FRANKLIN1 ELEVATION - 39.58
N 179888 E 2335751
L STATION 41+88 0 RIGHT
NCGS MONUMENT "FRANKLIN"

KERR1 ELEVATION - 40.46
N 181239 E 2335403
L STATION 55+82 0 RIGHT
NCGS MONUMENT "KERR"

BY116 ELEVATION - 38.10
N 178441 E 2337049
Y2 STATION 16+58
N 82° 42' 32.7" E DIST 329.72
CONCRETE MONUMENT WITH IRON PIPE

BY8 ELEVATION - 30.85
N 176968 E 2335247
Y1 STATION 10+00
S 68° 07' 47.7" W DIST 266.69
CONCRETE MONUMENT WITH REBAR

BY9 ELEVATION - 29.96
N 177148 E 2335625
Y1 STATION 11+54 0 RIGHT
CONCRETE MONUMENT WITH REBAR

BY10 ELEVATION - 30.68
N 177239 E 2335839
Y1 STATION 13+87 3 RIGHT
CONCRETE MONUMENT WITH REBAR

BY12 ELEVATION - 37.38
N 177411 E 2336536
Y1 STATION 21+05 0 RIGHT
CONCRETE MONUMENT WITH REBAR

BY14 ELEVATION - 39.11
N 177467 E 2337326
Y1 STATION 29+00 0 RIGHT
CONCRETE MONUMENT WITH REBAR

U33382 ELEVATION - 32.97
N 176815 E 2334862
Y1 STATION 10+00
S 68° 14' 26.6" W DIST 680.28
NCDOT GPS MONUMENT REBAR & CAP

BY217 ELEVATION - 35.00
N 178397 E 2334571
Y3 STATION 10+00
S 77° 43' 12.2" W DIST 860.09
CONCRETE MONUMENT WITH IRON PIN

BY419 ELEVATION - 39.02
N 179916 E 2335116
Y5 STATION 10+00 0 RIGHT
CONCRETE MONUMENT WITH REBAR

BENCHMARKS

BY726 ELEVATION - 35.96
N 182637 E 2335043
Y8 STATION 10+00 0 RIGHT
CONCRETE MONUMENT WITH REBAR

BY829 ELEVATION - 34.66
N 183306 E 2335771
Y9 STATION 12+35 0 RIGHT
CONCRETE MONUMENT WITH REBAR

BY930 ELEVATION - 33.86
N 183496 E 2335084
Y10 STATION 10+00
N 87° 12' 43.1" W DIST 60.63
CONCRETE MONUMENT WITH REBAR

BY1134 ELEVATION - 27.55
N 184888 E 2335661
Y13 STATION 10+49 0 RIGHT
CONCRETE MONUMENT WITH LARGE REBAR

BY1135 ELEVATION - 25.83
N 184775 E 2336114
Y13 STATION 15+16 0 RIGHT
CONCRETE MONUMENT WITH LARGE REBAR

CAMA1 ELEVATION - 40.92
N 183540 E 2346039
L STATION 85+11 10479 RIGHT
NCGS MONUMENT "CAMA"

FRANKLIN1 ELEVATION - 39.58
N 179888 E 2335751
L STATION 43+14 21 RIGHT
NCGS MONUMENT "FRANKLIN"

ILMA1 ELEVATION - 26.29
N 189757 E 2332700
L STATION 116+85
N 51° 43' 05.7" W DIST 4194.30
NCGS MONUMENT "ILM A"

ILMB1 ELEVATION - 8.48
N 189211 E 2335310
L STATION 116+85
N 18° 23' 19.8" W DIST 2163.15
NCGS MONUMENT "ILM B"

U33383 ELEVATION - 32.81
N 185306 E 2332348
L STATION 96+12 3282 LEFT
NCDOT GPS MONUMENT REBAR & CAP

U33384 ELEVATION - 29.41
N 185860 E 2331254
L STATION 101+14 4401 LEFT
NCDOT GPS MONUMENT REBAR & CAP

U33385 ELEVATION - 18.67
N 185575 E 2338177
L STATION 101+63 2528 RIGHT
NCDOT GPS MONUMENT REBAR & CAP

U33386 ELEVATION - 19.01
N 185690 E 2339350
L STATION 103+34 3694 RIGHT
NCDOT GPS MONUMENT REBAR & CAP

U33381 ELEVATION - 28.77
N 176941 E 2333752
Y1 STATION 10+00
S 85° 49' 52.3" W DIST 1746.40
CONCRETE MONUMENT WITH BRASS CAP

GPS CALIBRATION REPORT

| | | | |
|---|---|---|---|
| TIP NUMBER | U-3338 | | |
| COORDINATE SYSTEM | US STATE PLANE 1983(AT GROUND) | ZONE | NORTH CAROLINA 3200 |
| HORIZONTAL DATUM | NAD 1983/95 (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 | U4718-5 |
| LATITUDE | 34-13'19.57526"N |
| LONGITUDE | 77-52'57.44291"W |
| SITE SCALE FACTOR | 0.999970010 |
| HEIGHT | -25.519M |

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 DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "U4718-5"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 173,728.005'(ft) EASTING: 2,337,795.840'(ft)
ELEVATION: 37.656'(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 1.0000299999
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"U4718-5" TO -L- STATION 5+00.00 IS
N 27° 24' 19" W 2,734.170'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

*NOTES:*

1. *THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 8395 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.*

2. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
*HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAYLOCATION/PROJECT/*
*THE FILES TO BE FOUND ARE AS FOLLOWS:*
*U3338B_LS_CONTROL_090428.TXT*
*IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.*

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

*NOTE: DRAWING NOT TO SCALE*

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1C-3 |
| Location and Surveys | |

# SURVEY CONTROL SHEET U-3338B

L

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 5+00.00 | 176155.3256 | 2336537.3495 |
| PC | 55+48.30 | 181089.4688 | 2335469.8460 |
| PT | 58+62.01 | 181401.2285 | 2335444.1135 |
| PC | 107+75.05 | 186308.5251 | 2335681.6185 |
| PT | 111+19.62 | 186641.7391 | 2335761.1908 |
| POT | 116+85.31 | 187158.1592 | 2335992.0973 |

Y

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 176736.1607 | 2336215.9380 |
| POT | 11+92.17 | 176758.9990 | 2336406.7446 |

YA

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 176784.3133 | 2336401.2678 |
| POT | 12+00.64 | 176808.5051 | 2336600.4440 |

Y1

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 177067.5275 | 2335494.0969 |
| PC | 11+54.02 | 177147.8892 | 2335625.4912 |
| PCC | 12+80.62 | 177205.1385 | 2335738.2532 |
| PT | 14+96.61 | 177271.3390 | 2335943.6193 |
| PC | 20+53.59 | 177399.9480 | 2336485.5499 |
| PT | 28+98.97 | 177466.6536 | 2337324.9555 |
| POT | 33+47.56 | 177433.3076 | 2337772.3050 |

Y2

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 178315.5074 | 2336069.9935 |
| POT | 16+57.65 | 178398.9660 | 2336722.3240 |

Y3

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 178579.6799 | 2335411.0668 |
| POT | 15+88.17 | 178704.7759 | 2335985.7751 |

Y4

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 179613.3024 | 2335789.2151 |
| POT | 15+56.28 | 179730.8880 | 2336332.9302 |

Y5

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 6+00.00 | 179904.2061 | 2334716.5926 |
| PC | 9+15.59 | 179906.7322 | 2335032.1719 |
| PT | 10+00.01 | 179916.2782 | 2335115.8937 |
| POT | 18+94.05 | 180110.5610 | 2335988.5683 |

Y5B

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 180967.2351 | 2334378.8824 |
| PC | 14+43.10 | 180534.3158 | 2334473.3047 |
| PT | 16+24.45 | 180360.1849 | 2334442.6180 |
| POT | 16+86.52 | 180307.7203 | 2334409.4607 |

Y6

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 5+00.00 | 180867.2531 | 2333921.0789 |
| POT | 37+59.52 | 181562.7223 | 2337105.5358 |

Y6ALT

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 2+00.00 | 180803.7348 | 2333630.2374 |
| PC | 2+55.26 | 180815.5263 | 2333684.2293 |
| PRC | 5+52.06 | 180894.3603 | 2333970.2104 |
| PT | 8+48.85 | 180973.1943 | 2334256.1915 |
| PC | 11+06.42 | 181028.1504 | 2334507.8281 |
| PRC | 14+03.21 | 181075.7212 | 2334800.6369 |
| PT | 17+00.00 | 181123.2921 | 2335093.4458 |
| POT | 37+59.52 | 181562.7223 | 2337105.5358 |

Y7

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| PC | 8+00.00 | 181875.1731 | 2335080.1246 |
| PT | 10+00.00 | 182009.8987 | 2335216.5991 |
| PC | 11+00.32 | 182105.9751 | 2335245.4625 |
| PT | 13+61.42 | 182248.3610 | 2335442.3152 |
| POT | 14+04.18 | 182247.2258 | 2335485.0583 |

Y7A

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 182247.2258 | 2335485.0583 |
| PC | 14+81.09 | 182234.4534 | 2335965.9818 |
| PT | 19+70.15 | 181946.7336 | 2336317.6943 |
| POT | 25+13.45 | 181417.2555 | 2336439.4598 |

Y8

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 182637.3357 | 2335042.5902 |
| PC | 18+81.63 | 182594.4755 | 2335923.1786 |
| PT | 20+91.31 | 182628.7188 | 2336128.4208 |

Y9

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 183317.2593 | 2335536.8462 |
| POT | 12+34.52 | 183306.0524 | 2335771.1008 |

Y10

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 8+00.00 | 183542.3131 | 2334950.4175 |
| PC | 9+28.00 | 183510.8104 | 2335074.4803 |
| PT | 10+68.00 | 183490.1077 | 2335212.7053 |
| POT | 14+00.12 | 183473.9499 | 2335544.4297 |

Y11

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 183951.6764 | 2335196.9204 |
| PC | 11+95.45 | 184005.5463 | 2335384.8000 |
| PT | 12+75.95 | 184011.7750 | 2335464.5188 |
| POT | 13+82.07 | 183998.7256 | 2335569.8280 |

Y12

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 183998.7256 | 2335569.8280 |
| PC | 10+41.59 | 183995.0626 | 2335611.2526 |
| PT | 12+16.10 | 183968.9092 | 2335783.6849 |
| PC | 13+50.13 | 183940.5970 | 2335914.6825 |
| PT | 15+07.52 | 183904.9329 | 2336067.9716 |
| POT | 18+83.89 | 183813.8852 | 2336433.1665 |

Y13

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 184899.7729 | 2335613.4372 |
| POT | 15+16.28 | 184775.0941 | 2336114.4358 |

Y14

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 185123.8975 | 2333555.6450 |
| POT | 56+51.49 | 185576.0835 | 2338185.1036 |

Y15

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 181235.0591 | 2334321.9068 |
| PC | 14+00.32 | 181161.6620 | 2334715.4417 |
| PT | 15+17.46 | 181084.6935 | 2334794.8045 |
| POT | 15+43.47 | 181059.2823 | 2334800.3540 |

Y16

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 180632.2586 | 2336441.6699 |
| POT | 17+85.00 | 181417.2555 | 2336439.4598 |

Y17

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 182235.0509 | 2335943.4846 |
| POT | 13+59.13 | 182593.9701 | 2335955.8413 |

DR1

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| PC | 10+00.00 | 181144.0904 | 2334756.1169 |
| PRC | 11+10.67 | 181170.3723 | 2334857.8890 |
| PT | 11+62.24 | 181168.1896 | 2334908.8391 |
| POT | 12+73.01 | 181191.8250 | 2335017.0628 |

DR2

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| PC | 10+00.00 | 182548.2483 | 2335393.7170 |
| PRC | 10+23.82 | 182569.1057 | 2335384.1984 |
| PT | 10+47.65 | 182589.9736 | 2335374.6804 |
| POT | 10+78.81 | 182621.0984 | 2335376.1953 |

DR2_REV

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| PC | 10+00.00 | 182548.2483 | 2335393.7170 |
| PRC | 10+23.82 | 182569.1057 | 2335384.1984 |
| PT | 10+47.65 | 182589.9736 | 2335374.6804 |
| POT | 10+78.81 | 182621.0984 | 2335376.1953 |

*NOTE: DRAWING NOT TO SCALE*

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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1C-4 |
| Location and Surveys | |

# SURVEY CONTROL SHEET U-3338B

DR3

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 181333.3915 | 2336055.4617 |
| PC | 10+50.59 | 181283.9639 | 2336066.2564 |
| PT | 10+81.92 | 181252.8875 | 2336069.7076 |
| POT | 11+23.82 | 181210.9857 | 2336069.9670 |

SR1

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 183893.4460 | 2336114.0457 |
| PC | 11+04.31 | 183994.6571 | 2336139.2789 |
| PT | 12+09.93 | 184099.4874 | 2336146.4498 |
| PC | 16+84.98 | 184571.7832 | 2336095.3692 |
| PT | 18+60.80 | 184746.2941 | 2336107.2692 |
| POT | 18+90.48 | 184775.0940 | 2336114.4364 |

TAT

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 10+00.00 | 181235.0591 | 2334321.9068 |
| PC | 14+67.86 | 181149.2792 | 2334781.8352 |
| PT | 15+61.57 | 181087.7043 | 2334845.3254 |
| POT | 15+79.74 | 181069.9506 | 2334849.2027 |

WALL

| TYPE | STATION | NORTH | EAST |
|---|---|---|---|
| POT | 83+15.00 | 183848.2059 | 2335627.6192 |
| POT | 83+95.00 | 183928.1124 | 2335631.4865 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| L | 11+95.00 | -55.00 | 176822.9794 | 2336336.6299 |
| L | 12+02.00 | 63.00 | 176854.7732 | 2336450.4814 |
| L | 12+21.00 | 63.00 | 176873.3436 | 2336446.4637 |
| L | 12+50.00 | -55.00 | 176876.7357 | 2336324.9997 |
| L | 13+70.00 | -65.00 | 176991.9076 | 2336289.8509 |
| L | 13+73.00 | 69.00 | 177023.1751 | 2336420.1864 |
| L | 15+85.00 | -65.00 | 177202.0458 | 2336244.3874 |
| L | 16+07.79 | -85.00 | 177220.0885 | 2336220.0212 |
| L | 16+09.00 | 69.00 | 177253.8385 | 2336370.2823 |
| L | 18+40.00 | -77.00 | 177448.7420 | 2336178.7370 |
| L | 18+46.52 | 69.87 | 177486.1698 | 2336320.9057 |
| L | 18+57.00 | 57.00 | 177493.6930 | 2336306.1121 |
| L | 22+31.00 | 57.00 | 177859.2358 | 2336227.0268 |
| L | 23+72.00 | -77.00 | 177968.7120 | 2336066.2413 |
| L | 23+87.00 | 69.00 | 178014.2456 | 2336205.7680 |
| L | 25+72.00 | -57.00 | 178168.4185 | 2336043.4974 |
| L | 26+36.00 | 69.00 | 178257.6150 | 2336153.1149 |
| L | 27+68.00 | 57.00 | 178384.0926 | 2336113.4738 |
| L | 29+55.00 | -57.00 | 178542.7578 | 2335962.5090 |
| L | 31+15.00 | 57.00 | 178723.2459 | 2336040.0979 |
| L | 31+35.00 | 70.00 | 178745.5426 | 2336048.5747 |
| L | 31+70.00 | 70.00 | 178779.7512 | 2336041.1737 |
| L | 31+74.31 | -68.50 | 178754.6736 | 2335904.8949 |
| L | 31+90.00 | 56.50 | 178796.4442 | 2336023.7498 |
| L | 32+49.10 | -68.50 | 178827.7799 | 2335889.0783 |
| L | 33+49.12 | -56.50 | 178928.0709 | 2335879.6580 |
| L | 36+19.25 | 56.50 | 179215.9855 | 2335932.9819 |
| L | 37+19.25 | 77.00 | 179318.0591 | 2335931.8726 |
| L | 39+70.97 | 77.00 | 179564.0915 | 2335878.6434 |
| L | 41+04.97 | 65.00 | 179692.5248 | 2335838.5791 |
| L | 43+13.00 | -56.50 | 179870.1552 | 2335675.8377 |
| L | 44+10.00 | -68.00 | 179962.5299 | 2335644.0863 |
| L | 44+35.00 | 65.00 | 180015.0885 | 2335768.7924 |
| L | 44+54.00 | 92.00 | 180039.3683 | 2335791.1641 |
| L | 45+04.25 | 92.00 | 180088.4800 | 2335780.5388 |
| L | 45+22.68 | 68.82 | 180101.5883 | 2335753.9843 |
| L | 45+57.44 | -68.50 | 180106.5349 | 2335612.4192 |
| L | 45+77.35 | 56.50 | 180152.4245 | 2335730.3830 |
| L | 47+69.54 | -68.50 | 180313.8303 | 2335567.5708 |
| L | 48+69.54 | -51.50 | 180415.1638 | 2335563.0406 |
| L | 49+99.70 | 56.50 | 180565.2242 | 2335641.0737 |
| L | 50+99.70 | 60.00 | 180663.7030 | 2335623.3487 |
| L | 54+50.00 | -51.50 | 180982.5016 | 2335440.2969 |
| L | 55+33.00 | -51.50 | 181063.6247 | 2335422.7459 |
| L | 55+50.34 | 60.00 | 181104.0508 | 2335528.0810 |
| L | 55+88.28 | 65.81 | 181140.4458 | 2335526.7917 |
| L | 57+68.46 | -63.50 | 181305.8267 | 2335379.7639 |
| L | 57+69.60 | 66.70 | 181310.7551 | 2335509.8782 |
| L | 58+10.06 | 60.00 | 181348.9946 | 2335502.7251 |
| L | 58+52.00 | -63.50 | 181393.7662 | 2335380.2220 |
| L | 58+62.01 | 60.00 | 181398.3280 | 2335504.0433 |
| L | 58+62.01 | -63.50 | 181404.2982 | 2335380.6877 |
| L | 60+55.00 | 60.00 | 181591.0899 | 2335513.3727 |
| L | 61+27.00 | 56.50 | 181663.1749 | 2335513.3574 |
| L | 61+89.00 | -63.50 | 181730.9035 | 2335396.4949 |
| L | 62+90.00 | -57.00 | 181831.4711 | 2335407.8698 |
| L | 66+12.00 | 56.50 | 182147.6079 | 2335536.8031 |
| L | 66+34.00 | -57.00 | 182175.0690 | 2335424.4993 |
| L | 67+58.00 | -73.00 | 182299.6975 | 2335414.5124 |

*NOTE: DRAWING NOT TO SCALE*

# SURVEY CONTROL SHEET U–3338B

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1C-5 |
| Location and Surveys | |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| L | 67+89.00 | 73.00 | 182323.6033 | 2335561.8403 |
| L | 70+12.00 | 73.00 | 182546.3426 | 2335572.6205 |
| L | 70+13.00 | -73.00 | 182554.3993 | 2335426.8396 |
| L | 71+32.00 | 70.00 | 182666.3473 | 2335575.4250 |
| L | 71+43.00 | -69.00 | 182684.0540 | 2335437.1193 |
| L | 72+33.00 | 57.00 | 182767.8577 | 2335567.3228 |
| L | 72+42.00 | -69.00 | 182782.9382 | 2335441.9052 |
| L | 73+43.00 | -57.00 | 182883.2400 | 2335458.7736 |
| L | 75+15.00 | 57.00 | 183049.5280 | 2335580.9551 |
| L | 76+15.00 | 69.00 | 183148.8310 | 2335597.7753 |
| L | 77+15.00 | 69.00 | 183248.7141 | 2335602.6095 |
| L | 78+46.00 | 57.00 | 183380.1410 | 2335596.9563 |
| L | 78+72.00 | -57.00 | 183411.6216 | 2335484.3464 |
| L | 80+03.00 | -69.00 | 183543.0485 | 2335478.6932 |
| L | 82+22.00 | 57.00 | 183755.7014 | 2335615.1328 |
| L | 82+97.75 | 66.00 | 183830.9278 | 2335627.7841 |
| L | 83+92.32 | 66.00 | 183925.3862 | 2335632.3558 |
| L | 84+11.00 | -69.00 | 183950.5715 | 2335498.4167 |
| L | 85+39.03 | 70.76 | 184071.6926 | 2335644.2071 |
| L | 85+39.06 | -80.65 | 184079.0453 | 2335492.9749 |
| L | 86+93.35 | -74.96 | 184232.8743 | 2335506.1175 |
| L | 86+98.22 | 140.00 | 184227.3573 | 2335721.0560 |
| L | 87+10.00 | 81.03 | 184241.9690 | 2335662.7291 |
| L | 87+37.45 | 147.83 | 184266.1583 | 2335730.7762 |
| L | 87+50.31 | 83.45 | 184282.1112 | 2335667.0956 |
| L | 88+49.66 | 89.42 | 184381.0632 | 2335677.8592 |
| L | 88+59.53 | -68.83 | 184398.5652 | 2335520.2736 |
| L | 91+12.27 | -80.52 | 184651.5795 | 2335520.8105 |
| L | 91+12.30 | -192.98 | 184657.0405 | 2335408.4877 |
| L | 91+34.73 | -331.58 | 184686.1481 | 2335271.1290 |
| L | 92+46.39 | -530.95 | 184807.3184 | 2335077.3939 |
| L | 93+16.87 | 112.54 | 184846.6107 | 2335723.5378 |
| L | 93+66.96 | 116.99 | 184896.4263 | 2335730.4069 |
| L | 96+97.55 | 146.41 | 185225.2011 | 2335775.7704 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y | 11+00.00 | -27.44 | 176775.2901 | 2336311.9723 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| YA | 10+90.45 | -29.45 | 176824.4575 | 2336487.5067 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y1 | 17+09.00 | -60.56 | 177379.3052 | 2336136.2844 |
| Y1 | 19+64.00 | 60.00 | 177320.8819 | 2336412.2316 |
| Y1 | 20+53.59 | 60.00 | 177341.5694 | 2336499.4041 |
| Y1 | 21+95.00 | 60.00 | 177370.0347 | 2336634.7490 |
| Y1 | 28+98.97 | 60.00 | 177406.8196 | 2337320.4954 |
| Y1 | 29+27.40 | 60.00 | 177404.7063 | 2337348.8464 |
| Y1 | 29+27.40 | 50.34 | 177414.3362 | 2337349.5642 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y2 | 10+85.00 | -29.55 | 178355.6082 | 2336150.5558 |
| Y2 | 11+08.00 | 30.30 | 178299.1603 | 2336180.9652 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y3 | 14+86.75 | 30.00 | 178653.8924 | 2335893.0607 |
| Y3 | 14+86.75 | -29.97 | 178712.4906 | 2335880.3057 |
| Y3 | 14+86.75 | -33.00 | 178715.4508 | 2335879.6602 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y4 | 10+97.99 | -34.00 | 179667.2486 | 2335877.8083 |
| Y4 | 11+10.00 | 30.09 | 179607.1475 | 2335903.0891 |
| Y4 | 11+10.00 | -34.00 | 179669.7856 | 2335889.5428 |
| Y4 | 11+10.00 | -30.02 | 179665.8910 | 2335890.3851 |
| Y4 | 11+10.00 | 34.00 | 179603.3221 | 2335903.9164 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y5 | 8+85.00 | -45.00 | 179951.4859 | 2335001.2233 |
| Y5 | 8+85.00 | -30.00 | 179936.4864 | 2335001.3434 |
| Y5 | 9+15.59 | -45.00 | 179951.7308 | 2335031.8117 |
| Y5 | 9+15.59 | 39.00 | 179867.7334 | 2335032.4841 |
| Y5 | 9+15.59 | 30.00 | 179876.7332 | 2335032.4120 |
| Y5 | 10+00.01 | -45.00 | 179960.2029 | 2335106.1148 |
| Y5 | 10+00.01 | 39.00 | 179878.2102 | 2335124.3688 |
| Y5 | 13+00.00 | 39.00 | 179943.4007 | 2335417.1896 |
| Y5 | 13+00.00 | 42.00 | 179940.4724 | 2335417.8415 |
| Y5 | 14+93.02 | -45.00 | 180067.3372 | 2335587.3384 |
| Y5 | 15+00.00 | 42.00 | 179983.9341 | 2335613.0621 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y5B | 11+01.00 | -44.00 | 180877.9311 | 2334443.3945 |
| Y5B | 11+10.00 | 44.00 | 180850.3854 | 2334359.3336 |
| Y5B | 13+30.00 | -44.00 | 180654.1910 | 2334492.1935 |
| Y5B | 13+30.00 | -30.01 | 180651.2107 | 2334478.5292 |
| Y5B | 14+43.10 | 44.00 | 180524.9395 | 2334430.3153 |
| Y5B | 14+44.01 | 29.96 | 180527.1514 | 2334444.2024 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y6 | 5+90.00 | 49.30 | 180838.2944 | 2334019.5247 |
| Y6 | 5+90.00 | 56.00 | 180831.7456 | 2334020.9549 |
| Y6 | 8+85.00 | -49.62 | 180997.8719 | 2334286.6270 |
| Y6 | 8+91.00 | 56.00 | 180895.9687 | 2334315.0236 |
| Y6 | 10+45.00 | -49.46 | 181031.8568 | 2334442.9762 |
| Y6 | 10+46.00 | 68.00 | 180917.3167 | 2334469.0147 |
| Y6 | 14+97.53 | -80.72 | 181158.9572 | 2334878.4138 |
| Y6 | 15+56.00 | -68.00 | 181159.0015 | 2334938.2529 |
| Y6 | 18+30.00 | 68.00 | 181084.5955 | 2335234.9610 |
| Y6 | 18+92.00 | -68.00 | 181230.6924 | 2335266.5156 |
| Y6 | 19+48.00 | 68.00 | 181109.7727 | 2335350.2438 |
| Y6 | 19+58.00 | -68.00 | 181244.7746 | 2335330.9958 |
| Y6 | 21+40.57 | 62.19 | 181156.5409 | 2335537.1390 |
| Y6 | 21+64.43 | -72.62 | 181293.3321 | 2335531.6884 |
| Y6 | 21+76.41 | 55.75 | 181170.4755 | 2335570.7803 |
| Y6 | 22+01.41 | -65.75 | 181294.5118 | 2335569.2807 |
| Y6 | 25+29.79 | 55.75 | 181245.8747 | 2335916.0228 |
| Y6 | 26+07.81 | 54.00 | 181264.2313 | 2335991.8734 |
| Y6 | 29+87.00 | 54.00 | 181345.1374 | 2336362.3310 |
| Y6 | 29+99.90 | -65.75 | 181464.8822 | 2336349.3834 |
| Y6 | 31+30.00 | 49.89 | 181379.6671 | 2336501.1604 |
| Y6 | 31+54.00 | -68.00 | 181499.9601 | 2336499.4547 |
| Y6 | 33+70.00 | -68.00 | 181546.0471 | 2336710.4808 |
| Y6 | 34+60.00 | -49.80 | 181547.4689 | 2336802.2916 |

*NOTE: DRAWING NOT TO SCALE*

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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1C-6 |
| Location and Surveys | |

# SURVEY CONTROL SHEET U-3338B

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y7 | 10+11.42 | -34.00 | 182030.6169 | 2335187.3221 |
| Y7 | 10+11.42 | -25.00 | 182028.0275 | 2335195.9416 |
| Y7 | 10+11.42 | 39.00 | 182009.6135 | 2335257.2353 |
| Y7 | 10+11.42 | 25.00 | 182013.6415 | 2335243.8273 |
| Y7 | 11+00.32 | -34.00 | 182115.7575 | 2335212.9002 |
| Y7 | 11+00.32 | 44.00 | 182093.3155 | 2335287.6020 |
| Y7 | 13+03.00 | 44.00 | 182198.9633 | 2335396.0647 |
| Y7 | 13+20.00 | -34.00 | 182278.6277 | 2335394.9857 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y7A | 11+08.00 | -45.00 | 182289.3427 | 2335594.2149 |
| Y7A | 11+13.54 | 42.61 | 182201.6170 | 2335597.4314 |
| Y7A | 14+04.00 | -45.00 | 182281.4843 | 2335890.1106 |
| Y7A | 15+10.00 | -45.00 | 182277.3162 | 2335999.5120 |
| Y7A | 15+64.41 | 45.00 | 182179.3594 | 2336037.1386 |
| Y7A | 19+70.15 | -45.00 | 181956.8191 | 2336361.5496 |
| Y7A | 19+70.15 | 45.00 | 181936.6481 | 2336273.8391 |
| Y7A | 21+20.00 | -57.00 | 181813.4667 | 2336406.8299 |
| Y7A | 24+13.00 | 45.00 | 181505.0598 | 2336373.0926 |
| Y7A | 24+13.00 | -57.00 | 181527.9203 | 2336472.4978 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y8 | 13+50.00 | 30.00 | 182590.3560 | 2335390.7179 |
| Y8 | 13+59.00 | -30.06 | 182649.9123 | 2335402.6273 |
| Y8 | 15+54.00 | -34.00 | 182644.3630 | 2335597.5881 |
| Y8 | 15+67.00 | 30.00 | 182579.8067 | 2335607.4613 |
| Y8 | 17+02.29 | -34.00 | 182637.1539 | 2335745.7027 |
| Y8 | 17+02.29 | -30.00 | 182633.1586 | 2335745.5083 |
| Y8 | 18+72.00 | 30.00 | 182564.9792 | 2335912.1007 |
| Y8 | 19+51.00 | 30.00 | 182566.1355 | 2335995.2573 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y9 | 11+04.77 | 25.00 | 183287.2815 | 2335640.2985 |
| Y9 | 11+13.01 | -25.00 | 183336.8306 | 2335650.9179 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y10 | 12+98.00 | 30.00 | 183448.9564 | 2335440.9736 |
| Y10 | 12+98.00 | -30.07 | 183508.9484 | 2335443.8957 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y11 | 12+60.78 | 30.01 | 183983.0953 | 2335447.9812 |
| Y11 | 12+60.78 | -29.99 | 184043.0279 | 2335450.8251 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y12 | 11+08.00 | 35.00 | 183952.9674 | 2335672.5119 |
| Y12 | 11+35.76 | -29.32 | 184012.5898 | 2335709.2512 |
| Y12 | 11+35.76 | 35.00 | 183949.0418 | 2335699.2913 |
| Y12 | 11+35.76 | 30.68 | 183953.3131 | 2335699.9607 |
| Y12 | 15+05.00 | -30.00 | 183934.6544 | 2336072.7735 |
| Y12 | 16+00.00 | -30.00 | 183911.6694 | 2336164.9665 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y13 | 11+78.00 | -25.00 | 184881.0469 | 2335792.2061 |
| Y13 | 11+78.00 | -58.17 | 184913.2335 | 2335800.2161 |
| Y13 | 13+00.00 | -58.14 | 184883.7420 | 2335918.5979 |
| Y13 | 13+00.00 | -25.00 | 184851.5845 | 2335910.5952 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y14 | 23+19.74 | 316.52 | 184937.1703 | 2334899.9069 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y16 | 14+72.00 | 37.00 | 181104.3609 | 2336477.3409 |
| Y16 | 14+72.00 | 24.42 | 181104.3255 | 2336464.7589 |
| Y16 | 14+72.00 | -37.00 | 181104.1525 | 2336403.3412 |
| Y16 | 14+72.00 | -25.70 | 181104.1844 | 2336414.6441 |
| Y16 | 16+85.00 | -37.00 | 181317.1517 | 2336402.7415 |
| Y16 | 17+21.00 | 37.00 | 181353.3599 | 2336476.6399 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y17 | 10+65.00 | -35.00 | 182301.2167 | 2335910.7418 |
| Y17 | 10+65.00 | 35.00 | 182298.8082 | 2335980.7003 |
| Y17 | 13+13.00 | -35.00 | 182549.0698 | 2335919.2747 |
| Y17 | 13+17.00 | 35.00 | 182550.6590 | 2335989.3709 |

ROW MARKER IRON PIN AND CAP-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| SR1 | 10+50.00 | -30.00 | 183949.2182 | 2336097.0322 |
| SR1 | 10+50.00 | 30.00 | 183934.7037 | 2336155.2501 |
| SR1 | 11+04.31 | -30.00 | 184001.9143 | 2336110.1699 |
| SR1 | 11+04.31 | 30.00 | 183987.3998 | 2336168.3879 |
| SR1 | 12+09.93 | -30.00 | 184096.2616 | 2336116.6237 |
| SR1 | 12+09.93 | 30.00 | 184102.7132 | 2336176.2759 |
| SR1 | 16+84.98 | -30.00 | 184568.5574 | 2336065.5431 |
| SR1 | 16+84.98 | 30.00 | 184575.0090 | 2336125.1952 |
| SR1 | 18+60.80 | 30.00 | 184739.0492 | 2336136.3813 |
| SR1 | 18+60.80 | -30.00 | 184753.5389 | 2336078.1572 |
| SR1 | 18+65.48 | 30.00 | 184743.5891 | 2336137.5111 |
| SR1 | 18+65.48 | -30.00 | 184758.0787 | 2336079.2870 |

*NOTE: DRAWING NOT TO SCALE*

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$$$$USERNAME$$$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1C-7 |
| Location and Surveys | |

# SURVEY CONTROL SHEET U-3338B

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| L | 9+31.00 | 44.00 | 176585.8836 | 2336489.2162 |
| L | 9+31.00 | 29.07 | 176582.7274 | 2336474.6279 |
| L | 9+37.05 | -54.00 | 176571.0722 | 2336392.1533 |
| L | 9+37.10 | -31.00 | 176575.9883 | 2336414.6218 |
| L | 9+55.00 | -54.00 | 176588.6180 | 2336388.3572 |
| L | 9+55.00 | -31.05 | 176593.4709 | 2336410.7881 |
| L | 10+87.00 | 58.00 | 176741.3164 | 2336469.9121 |
| L | 11+69.00 | -76.47 | 176793.0274 | 2336321.1433 |
| L | 11+80.00 | -104.00 | 176797.9572 | 2336291.9098 |
| L | 11+92.00 | 70.95 | 176846.6803 | 2336460.3655 |
| L | 13+24.00 | 67.07 | 176974.8742 | 2336428.6574 |
| L | 13+24.00 | 82.00 | 176978.0321 | 2336443.2539 |
| L | 13+24.00 | 78.00 | 176977.1863 | 2336439.3443 |
| L | 13+44.00 | 82.00 | 176997.5799 | 2336439.0247 |
| L | 13+44.00 | 67.86 | 176994.5888 | 2336425.1998 |
| L | 13+63.00 | 82.00 | 177016.1502 | 2336435.0070 |
| L | 13+63.00 | 93.00 | 177018.4763 | 2336445.7583 |
| L | 13+73.00 | -100.00 | 176987.4387 | 2336255.0080 |
| L | 13+83.00 | 83.00 | 177035.9094 | 2336431.7552 |
| L | 13+83.00 | 93.00 | 177038.0240 | 2336441.5291 |
| L | 13+93.00 | -65.00 | 177014.3875 | 2336284.9874 |
| L | 13+93.00 | -100.00 | 177006.9865 | 2336250.7788 |
| L | 14+10.00 | 69.00 | 177059.3385 | 2336412.3624 |
| L | 14+10.00 | 85.00 | 177062.7218 | 2336428.0006 |
| L | 14+30.00 | 85.00 | 177082.2695 | 2336423.7715 |
| L | 14+30.00 | 69.00 | 177078.8862 | 2336408.1333 |
| L | 14+78.00 | 85.00 | 177129.1841 | 2336413.6215 |
| L | 14+78.00 | 69.00 | 177125.8008 | 2336397.9833 |
| L | 14+98.00 | 85.00 | 177148.7319 | 2336409.3923 |
| L | 14+98.00 | 69.00 | 177145.3485 | 2336393.7541 |
| L | 16+22.00 | 81.66 | 177269.2217 | 2336379.9076 |
| L | 18+12.00 | -103.71 | 177415.7273 | 2336158.5523 |
| L | 18+50.00 | -104.00 | 177452.8065 | 2336150.2329 |
| L | 18+50.00 | -77.00 | 177458.5159 | 2336176.6224 |
| L | 18+65.00 | 70.00 | 177504.2610 | 2336317.1264 |
| L | 18+65.00 | 57.00 | 177501.5121 | 2336304.4204 |
| L | 19+77.50 | 70.98 | 177614.4267 | 2336294.2930 |
| L | 19+78.32 | 62.00 | 177613.3310 | 2336285.3440 |
| L | 19+78.78 | 57.00 | 177612.7209 | 2336280.3603 |
| L | 19+95.00 | -77.00 | 177600.2370 | 2336145.9610 |
| L | 19+95.00 | -90.00 | 177597.4881 | 2336133.2550 |
| L | 20+00.00 | 62.00 | 177634.5166 | 2336280.7605 |
| L | 20+00.00 | 57.00 | 177633.4593 | 2336275.8736 |
| L | 20+15.00 | -90.00 | 177617.0358 | 2336129.0258 |
| L | 20+15.00 | -77.00 | 177619.7848 | 2336141.7318 |
| L | 20+28.00 | 62.00 | 177661.8835 | 2336274.8397 |
| L | 20+28.00 | 57.00 | 177660.8262 | 2336269.9527 |
| L | 20+36.00 | -77.00 | 177640.3099 | 2336137.2912 |
| L | 20+47.00 | -91.00 | 177648.1007 | 2336121.2817 |
| L | 20+48.00 | 62.00 | 177681.4312 | 2336270.6105 |
| L | 20+48.00 | 57.00 | 177680.3739 | 2336265.7236 |
| L | 20+67.00 | -77.00 | 177670.6089 | 2336130.7360 |
| L | 20+76.00 | -91.00 | 177676.4450 | 2336115.1495 |
| L | 21+24.00 | 82.00 | 177759.9418 | 2336274.0874 |
| L | 21+26.00 | 73.00 | 177759.9934 | 2336264.8680 |
| L | 21+39.00 | 88.00 | 177775.8713 | 2336276.7799 |
| L | 21+39.00 | 73.00 | 177772.6995 | 2336262.1191 |
| L | 21+80.00 | -77.00 | 177781.0536 | 2336106.8413 |
| L | 21+90.00 | 57.00 | 177819.1629 | 2336235.6965 |
| L | 21+90.00 | 62.00 | 177820.2202 | 2336240.5835 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| L | 21+95.00 | -118.00 | 177787.0447 | 2336063.5965 |
| L | 21+95.00 | -90.00 | 177792.9655 | 2336090.9633 |
| L | 21+95.00 | -77.00 | 177795.7144 | 2336103.6694 |
| L | 22+10.00 | 57.00 | 177838.7106 | 2336231.4674 |
| L | 22+10.00 | 62.00 | 177839.7679 | 2336236.3543 |
| L | 22+15.00 | -90.00 | 177812.5132 | 2336086.7342 |
| L | 22+15.00 | -77.00 | 177815.2622 | 2336099.4402 |
| L | 22+15.00 | -111.00 | 177808.0726 | 2336066.2091 |
| L | 22+30.80 | 62.00 | 177860.0976 | 2336231.9560 |
| L | 22+40.00 | 79.00 | 177872.6843 | 2336246.6262 |
| L | 22+40.00 | 73.00 | 177871.4156 | 2336240.7618 |
| L | 22+54.00 | 94.00 | 177889.5396 | 2336258.3265 |
| L | 22+59.00 | 82.00 | 177891.8890 | 2336245.5406 |
| L | 22+59.00 | 76.40 | 177890.7058 | 2336240.0716 |
| L | 22+63.00 | 89.00 | 177897.2788 | 2336251.5365 |
| L | 23+12.00 | 79.00 | 177943.0562 | 2336231.4012 |
| L | 23+79.50 | 73.50 | 178007.8668 | 2336211.7521 |
| L | 23+79.50 | 80.00 | 178009.2413 | 2336218.1051 |
| L | 24+45.00 | 80.00 | 178073.2601 | 2336204.2546 |
| L | 24+45.00 | 69.00 | 178070.9341 | 2336193.5034 |
| L | 24+65.00 | 69.00 | 178090.4818 | 2336189.2742 |
| L | 24+65.00 | 80.00 | 178092.8079 | 2336200.0255 |
| L | 25+53.00 | 80.00 | 178178.8179 | 2336181.4172 |
| L | 25+53.00 | 90.00 | 178180.9325 | 2336191.1910 |
| L | 25+73.00 | 90.00 | 178200.4803 | 2336186.9619 |
| L | 25+73.00 | 80.00 | 178198.3657 | 2336177.1880 |
| L | 26+44.00 | 77.30 | 178267.1886 | 2336159.5326 |
| L | 27+51.21 | 71.22 | 178370.6897 | 2336130.9222 |
| L | 27+79.00 | 71.00 | 178397.8043 | 2336124.8312 |
| L | 27+88.00 | -57.00 | 178379.5341 | 2335997.8225 |
| L | 27+95.00 | -85.00 | 178380.4550 | 2335968.9755 |
| L | 28+09.00 | -57.00 | 178400.0593 | 2335993.3819 |
| L | 28+15.00 | -80.00 | 178401.0601 | 2335969.6332 |
| L | 30+32.00 | 57.00 | 178642.1228 | 2336057.6489 |
| L | 30+32.00 | 100.00 | 178651.2155 | 2336099.6765 |
| L | 30+32.00 | 69.00 | 178644.6603 | 2336069.3775 |
| L | 31+00.00 | 100.00 | 178717.6778 | 2336085.2974 |
| L | 31+00.00 | 69.00 | 178711.1226 | 2336054.9984 |
| L | 31+00.00 | 57.00 | 178708.5851 | 2336043.2697 |
| L | 31+33.46 | 69.00 | 178743.8275 | 2336047.9227 |
| L | 31+71.48 | 69.00 | 178780.9877 | 2336039.8830 |
| L | 31+78.00 | -68.50 | 178758.2833 | 2335904.1139 |
| L | 31+78.00 | -78.00 | 178756.2745 | 2335894.8288 |
| L | 31+98.00 | -78.00 | 178775.8222 | 2335890.5996 |
| L | 31+98.00 | -68.50 | 178777.8311 | 2335899.8848 |
| L | 32+67.00 | -75.96 | 178843.6933 | 2335878.0029 |
| L | 32+67.00 | -66.35 | 178845.7248 | 2335887.3928 |
| L | 32+87.00 | -73.56 | 178863.7486 | 2335876.1194 |
| L | 32+87.00 | -63.95 | 178865.7800 | 2335885.5090 |
| L | 33+14.00 | 56.50 | 178917.6402 | 2335997.5290 |
| L | 33+14.00 | 69.00 | 178920.2835 | 2336009.7464 |
| L | 33+34.00 | 69.00 | 178939.8312 | 2336005.5172 |
| L | 33+34.00 | 56.50 | 178937.1880 | 2335993.2999 |
| L | 34+85.00 | -56.50 | 179060.8787 | 2335850.9250 |
| L | 34+87.00 | -112.00 | 179051.0975 | 2335796.2571 |
| L | 34+92.00 | 69.00 | 179094.2584 | 2335972.1068 |
| L | 35+05.00 | -56.50 | 179080.4264 | 2335846.6958 |
| L | 35+07.00 | -111.00 | 179070.8567 | 2335793.0053 |
| L | 36+68.00 | 66.49 | 179265.7486 | 2335932.4411 |
| L | 36+68.00 | 80.00 | 179268.6045 | 2335945.6415 |

*NOTE: DRAWING NOT TO SCALE*

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$$$$USERNAME$$$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1C-8 |
| Location and Surveys | |

# SURVEY CONTROL SHEET U-3338B

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| L | 36+88.00 | 81.78 | 179288.5292 | 2335943.1546 |
| L | 36+88.00 | 70.59 | 179286.1633 | 2335932.2192 |
| L | 37+18.00 | 87.00 | 179318.9541 | 2335941.9103 |
| L | 37+36.00 | 87.00 | 179336.5471 | 2335938.1040 |
| L | 37+36.00 | 77.00 | 179334.4325 | 2335928.3302 |
| L | 37+56.00 | 87.00 | 179356.0948 | 2335933.8749 |
| L | 37+56.00 | 77.00 | 179353.9802 | 2335924.1010 |
| L | 37+79.00 | 87.00 | 179378.5747 | 2335929.0114 |
| L | 38+21.00 | 90.00 | 179420.2593 | 2335923.0623 |
| L | 38+25.00 | 102.00 | 179426.7064 | 2335933.9451 |
| L | 38+40.00 | 83.00 | 179437.3495 | 2335912.2029 |
| L | 38+44.00 | 95.00 | 179443.7965 | 2335923.0857 |
| L | 38+83.00 | 77.00 | 179478.1084 | 2335897.2458 |
| L | 38+83.00 | 83.00 | 179479.3771 | 2335903.1102 |
| L | 38+83.00 | 86.00 | 179480.0115 | 2335906.0423 |
| L | 39+03.00 | 86.00 | 179499.5592 | 2335901.8132 |
| L | 39+03.00 | 77.00 | 179497.6561 | 2335893.0167 |
| L | 39+03.00 | 83.00 | 179498.9249 | 2335898.8810 |
| L | 39+62.00 | -56.50 | 179527.0923 | 2335750.0595 |
| L | 39+65.00 | -73.00 | 179526.5354 | 2335733.2982 |
| L | 39+76.97 | 83.00 | 179571.2249 | 2335883.2389 |
| L | 39+83.00 | -81.00 | 179542.4367 | 2335721.6729 |
| L | 39+88.00 | -69.00 | 179549.8611 | 2335732.3442 |
| L | 41+09.00 | 78.00 | 179699.2093 | 2335850.4337 |
| L | 41+09.00 | 65.00 | 179696.4604 | 2335837.7277 |
| L | 42+95.00 | 78.00 | 179881.0033 | 2335811.1025 |
| L | 42+95.00 | 65.00 | 179878.2544 | 2335798.3965 |
| L | 43+13.00 | -69.00 | 179867.5119 | 2335663.6204 |
| L | 43+19.00 | 78.00 | 179904.4606 | 2335806.0275 |
| L | 43+21.00 | 101.00 | 179911.2789 | 2335828.0845 |
| L | 43+22.00 | 112.00 | 179914.5823 | 2335838.6243 |
| L | 43+38.00 | -59.46 | 179893.9631 | 2335667.6544 |
| L | 43+38.00 | -64.00 | 179893.0039 | 2335663.2209 |
| L | 43+47.00 | 116.00 | 179939.8628 | 2335837.2474 |
| L | 44+05.00 | 89.00 | 179990.8419 | 2335798.5934 |
| L | 44+28.00 | 99.00 | 180015.4364 | 2335803.5037 |
| L | 44+45.00 | 110.00 | 180034.3780 | 2335810.6602 |
| L | 44+47.00 | 121.00 | 180038.6588 | 2335820.9886 |
| L | 44+67.00 | 117.00 | 180057.3607 | 2335812.8498 |
| L | 44+67.00 | 111.00 | 180056.0920 | 2335806.9855 |
| L | 45+04.25 | 97.16 | 180089.5702 | 2335785.5778 |
| L | 45+60.00 | -68.50 | 180109.0323 | 2335611.8789 |
| L | 45+80.00 | 69.00 | 180157.6555 | 2335742.0405 |
| L | 47+51.00 | -84.00 | 180292.4356 | 2335556.3410 |
| L | 47+55.00 | -68.50 | 180299.6228 | 2335570.6446 |
| L | 47+71.00 | -87.00 | 180311.3490 | 2335549.1796 |
| L | 47+75.00 | -67.57 | 180319.3669 | 2335567.3233 |
| L | 49+98.00 | -51.50 | 180540.7226 | 2335535.8759 |
| L | 49+99.00 | -61.00 | 180539.6911 | 2335526.3793 |
| L | 50+00.00 | -70.00 | 180538.7654 | 2335517.3713 |
| L | 50+00.00 | 68.00 | 180567.9466 | 2335652.2507 |
| L | 50+08.00 | -95.00 | 180541.2981 | 2335491.2450 |
| L | 50+28.00 | -92.00 | 180561.4802 | 2335489.9480 |
| L | 50+30.00 | -67.00 | 180568.7214 | 2335513.9598 |
| L | 50+38.00 | -51.50 | 180579.8181 | 2335527.4176 |
| L | 50+38.00 | -61.00 | 180577.8092 | 2335518.1324 |
| L | 50+92.00 | 83.00 | 180661.0381 | 2335647.4574 |
| L | 50+92.00 | 73.00 | 180658.9235 | 2335637.6835 |
| L | 51+12.00 | 83.00 | 180680.5858 | 2335643.2283 |
| L | 51+12.00 | 73.00 | 180678.4713 | 2335633.4544 |
| L | 51+12.00 | 60.00 | 180675.7223 | 2335620.7484 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| L | 51+26.00 | 73.00 | 180692.1547 | 2335630.4940 |
| L | 51+26.00 | 68.00 | 180691.0974 | 2335625.6070 |
| L | 51+38.00 | 60.00 | 180701.1344 | 2335615.2504 |
| L | 51+38.00 | 68.00 | 180702.8260 | 2335623.0695 |
| L | 51+94.00 | 68.00 | 180757.5597 | 2335611.2279 |
| L | 51+94.00 | 73.00 | 180758.6170 | 2335616.1148 |
| L | 53+08.00 | -51.50 | 180843.7126 | 2335470.3239 |
| L | 53+08.00 | -61.00 | 180841.7038 | 2335461.0387 |
| L | 53+28.00 | -51.50 | 180863.2603 | 2335466.0948 |
| L | 53+28.00 | -61.00 | 180861.2515 | 2335456.8096 |
| L | 53+45.00 | 74.00 | 180906.4139 | 2335585.1621 |
| L | 53+45.00 | 60.00 | 180903.4535 | 2335571.4786 |
| L | 54+14.00 | 75.00 | 180974.0651 | 2335571.5488 |
| L | 54+50.00 | -68.00 | 180979.0125 | 2335424.1700 |
| L | 55+00.00 | -63.00 | 181028.9392 | 2335418.4840 |
| L | 55+48.00 | -66.67 | 181075.0785 | 2335404.7510 |
| L | 55+80.00 | 73.00 | 181134.0834 | 2335535.2849 |
| L | 58+62.00 | -89.00 | 181405.5176 | 2335355.2169 |
| L | 58+90.00 | -94.00 | 181433.7275 | 2335351.5763 |
| L | 59+08.00 | 60.00 | 181444.2618 | 2335506.2664 |
| L | 59+08.00 | 68.00 | 181443.8750 | 2335514.2571 |
| L | 59+10.00 | -94.00 | 181453.7041 | 2335352.5432 |
| L | 59+10.00 | -63.50 | 181452.2296 | 2335383.0075 |
| L | 59+28.00 | 60.00 | 181464.2384 | 2335507.2333 |
| L | 59+28.00 | 68.00 | 181463.8517 | 2335515.2239 |
| L | 59+80.00 | 70.00 | 181515.6942 | 2335519.7353 |
| L | 60+05.00 | -77.00 | 181547.7712 | 2335374.1158 |
| L | 60+05.00 | -63.50 | 181547.1186 | 2335387.6000 |
| L | 60+25.00 | -63.50 | 181567.0952 | 2335388.5668 |
| L | 60+25.00 | -77.00 | 181567.7478 | 2335375.0826 |
| L | 60+25.00 | -74.00 | 181567.6028 | 2335378.0791 |
| L | 60+41.00 | 60.00 | 181577.1063 | 2335512.6959 |
| L | 60+41.00 | 70.00 | 181576.6229 | 2335522.6842 |
| L | 61+23.00 | -63.50 | 181664.9806 | 2335393.3043 |
| L | 61+23.00 | -74.00 | 181665.4882 | 2335382.8166 |
| L | 61+38.00 | -74.00 | 181680.4707 | 2335383.5417 |
| L | 61+41.00 | -94.00 | 181684.4340 | 2335363.7101 |
| L | 61+52.00 | -94.00 | 181695.4211 | 2335364.2419 |
| L | 61+52.00 | -92.00 | 181695.3245 | 2335366.2395 |
| L | 61+53.00 | 56.50 | 181689.1445 | 2335514.6143 |
| L | 61+53.00 | 71.45 | 181688.4218 | 2335529.5464 |
| L | 61+55.00 | -74.00 | 181697.4508 | 2335384.3635 |
| L | 61+55.00 | -92.00 | 181698.3209 | 2335366.3846 |
| L | 61+55.00 | -82.00 | 181697.8375 | 2335376.3729 |
| L | 61+61.00 | -82.00 | 181703.8305 | 2335376.6629 |
| L | 61+64.00 | -74.00 | 181706.4403 | 2335384.7986 |
| L | 61+67.50 | 56.50 | 181703.6276 | 2335515.3152 |
| L | 61+67.50 | 71.35 | 181702.9097 | 2335530.1478 |
| L | 62+00.00 | -74.00 | 181742.3982 | 2335386.5389 |
| L | 62+00.00 | -62.79 | 181741.8564 | 2335397.7337 |
| L | 62+19.00 | -61.57 | 181760.7750 | 2335399.8735 |
| L | 62+19.00 | -85.00 | 181761.9077 | 2335376.4702 |
| L | 62+38.00 | 69.00 | 181773.4409 | 2335531.2087 |
| L | 62+39.00 | -87.00 | 181781.9810 | 2335375.4394 |
| L | 62+40.00 | 80.00 | 181774.9068 | 2335542.2925 |
| L | 62+47.00 | -59.77 | 181788.6552 | 2335403.0270 |
| L | 62+48.00 | 56.50 | 181784.0335 | 2335519.2067 |
| L | 62+48.00 | 69.00 | 181783.4292 | 2335531.6921 |
| L | 62+59.00 | 78.00 | 181793.9813 | 2335541.2133 |
| L | 62+68.00 | 56.50 | 181804.0101 | 2335520.1736 |
| L | 62+68.00 | 69.00 | 181803.4058 | 2335532.6589 |

*NOTE: DRAWING NOT TO SCALE*

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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1C-9 |
| Location and Surveys | |

# SURVEY CONTROL SHEET U-3338B

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| L | 63+08.00 | -57.00 | 181849.4501 | 2335408.7399 |
| L | 63+08.00 | -69.00 | 181850.0302 | 2335396.7540 |
| L | 63+28.00 | -57.00 | 181869.4267 | 2335409.7068 |
| L | 63+28.00 | -69.00 | 181870.0068 | 2335397.7208 |
| L | 63+65.00 | 69.00 | 181900.2924 | 2335537.3481 |
| L | 64+06.00 | 66.00 | 181941.3895 | 2335536.3336 |
| L | 64+06.00 | 56.50 | 181941.8487 | 2335526.8447 |
| L | 64+26.00 | 66.00 | 181961.3661 | 2335537.3004 |
| L | 64+26.00 | 56.50 | 181961.8254 | 2335527.8116 |
| L | 64+61.00 | 71.00 | 181996.0835 | 2335543.9866 |
| L | 64+62.00 | -57.00 | 182003.2701 | 2335416.1846 |
| L | 64+64.00 | -84.00 | 182006.5729 | 2335389.3128 |
| L | 64+70.00 | 56.50 | 182005.7739 | 2335529.9386 |
| L | 64+70.00 | 68.00 | 182005.2180 | 2335541.4251 |
| L | 64+70.00 | 71.90 | 182005.0294 | 2335545.3207 |
| L | 64+82.00 | -57.00 | 182023.2467 | 2335417.1514 |
| L | 64+84.00 | -82.00 | 182026.4529 | 2335392.2773 |
| L | 64+90.00 | 56.50 | 182025.7505 | 2335530.9054 |
| L | 64+90.00 | 68.00 | 182025.1946 | 2335542.3920 |
| L | 65+96.00 | 56.50 | 182131.6266 | 2335536.0297 |
| L | 65+96.00 | 67.00 | 182131.1190 | 2335546.5174 |
| L | 66+22.31 | 67.00 | 182157.3944 | 2335547.7891 |
| L | 67+73.00 | 89.66 | 182306.8169 | 2335577.7027 |
| L | 68+00.00 | 73.00 | 182334.5905 | 2335562.3721 |
| L | 68+00.00 | -73.00 | 182341.6484 | 2335416.5428 |
| L | 68+00.00 | -94.00 | 182342.6635 | 2335395.5673 |
| L | 68+00.00 | 90.00 | 182333.7686 | 2335579.3522 |
| L | 68+20.00 | 90.00 | 182353.7453 | 2335580.3190 |
| L | 68+20.00 | 73.00 | 182354.5671 | 2335563.3389 |
| L | 68+66.00 | -73.00 | 182407.5712 | 2335419.7333 |
| L | 68+66.00 | -94.00 | 182408.5864 | 2335398.7579 |
| L | 69+62.00 | 73.00 | 182496.4011 | 2335570.2034 |
| L | 69+62.00 | 90.00 | 182495.5792 | 2335587.1836 |
| L | 69+82.00 | 90.00 | 182515.5559 | 2335588.1504 |
| L | 69+82.00 | 73.00 | 182516.3777 | 2335571.1703 |
| L | 70+00.00 | 98.00 | 182533.1481 | 2335597.0112 |
| L | 70+00.00 | 90.00 | 182533.5348 | 2335589.0206 |
| L | 70+08.00 | -73.00 | 182549.4052 | 2335426.5979 |
| L | 70+20.00 | 100.00 | 182553.0280 | 2335599.9757 |
| L | 70+21.00 | 88.00 | 182554.6069 | 2335588.0381 |
| L | 70+27.87 | 88.00 | 182561.4699 | 2335588.3702 |
| L | 71+21.00 | 82.22 | 182654.7695 | 2335587.0969 |
| L | 71+65.00 | 74.00 | 182699.1154 | 2335581.0156 |
| L | 71+65.00 | 65.75 | 182699.5141 | 2335572.7778 |
| L | 71+85.00 | 63.18 | 182719.6151 | 2335571.1734 |
| L | 71+85.00 | 74.00 | 182719.0920 | 2335581.9825 |
| L | 71+99.00 | -79.00 | 182740.4719 | 2335429.8381 |
| L | 71+99.00 | -69.00 | 182739.9885 | 2335439.8265 |
| L | 72+19.00 | -69.00 | 182759.9651 | 2335440.7933 |
| L | 72+19.00 | -79.00 | 182760.4485 | 2335430.8050 |
| L | 72+55.00 | 74.00 | 182789.0102 | 2335585.3664 |
| L | 72+55.00 | 57.00 | 182789.8320 | 2335568.3863 |
| L | 72+93.00 | -62.94 | 182833.5857 | 2335450.4229 |
| L | 72+95.00 | 74.00 | 182828.9634 | 2335587.3001 |
| L | 72+95.00 | 57.00 | 182829.7852 | 2335570.3200 |
| L | 72+96.00 | -73.00 | 182837.0685 | 2335440.5203 |
| L | 73+04.00 | -101.00 | 182846.4127 | 2335412.9398 |
| L | 73+17.00 | -60.09 | 182857.4198 | 2335454.4313 |
| L | 73+17.00 | -73.00 | 182858.0439 | 2335441.5355 |
| L | 73+23.00 | -95.00 | 182865.1004 | 2335419.8512 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| L | 73+59.00 | 57.00 | 182893.7104 | 2335573.4138 |
| L | 73+59.00 | 69.00 | 182893.1303 | 2335585.3998 |
| L | 73+79.00 | 69.00 | 182913.1069 | 2335586.3666 |
| L | 73+79.00 | 57.00 | 182913.6870 | 2335574.3807 |
| L | 73+99.00 | -68.00 | 182939.7063 | 2335450.4936 |
| L | 73+99.00 | -57.00 | 182939.1746 | 2335461.4808 |
| L | 74+19.00 | -68.00 | 182959.6829 | 2335451.4605 |
| L | 74+19.00 | -57.00 | 182959.1512 | 2335462.4476 |
| L | 74+51.00 | 86.00 | 182984.2009 | 2335606.8274 |
| L | 74+53.00 | 80.00 | 182986.4886 | 2335600.9311 |
| L | 74+70.00 | 92.00 | 183002.8886 | 2335613.7388 |
| L | 74+74.00 | 80.00 | 183007.4641 | 2335601.9462 |
| L | 74+90.00 | 57.00 | 183024.5572 | 2335579.7466 |
| L | 74+90.00 | 71.00 | 183023.8804 | 2335593.7302 |
| L | 74+93.00 | -57.00 | 183033.0647 | 2335466.0249 |
| L | 74+96.00 | -67.00 | 183036.5446 | 2335456.1816 |
| L | 75+05.00 | -95.00 | 183046.8876 | 2335428.6494 |
| L | 75+10.00 | 71.00 | 183043.8570 | 2335594.6971 |
| L | 75+10.00 | 57.00 | 183044.5338 | 2335580.7134 |
| L | 75+20.00 | -57.00 | 183060.0331 | 2335467.3301 |
| L | 75+20.00 | -67.00 | 183060.5165 | 2335457.3418 |
| L | 75+24.00 | -89.00 | 183065.5754 | 2335435.5609 |
| L | 75+97.00 | -65.00 | 183137.3300 | 2335463.0618 |
| L | 75+97.00 | -57.00 | 183136.9433 | 2335471.0525 |
| L | 76+17.00 | -57.00 | 183156.9199 | 2335472.0193 |
| L | 76+17.00 | -65.00 | 183157.3067 | 2335464.0286 |
| L | 76+50.00 | 78.00 | 183183.3550 | 2335608.4567 |
| L | 76+50.00 | 69.00 | 183183.7900 | 2335599.4672 |
| L | 76+56.00 | 85.00 | 183189.0096 | 2335615.7386 |
| L | 76+56.00 | 95.00 | 183188.5261 | 2335625.7269 |
| L | 76+70.00 | 78.00 | 183203.3316 | 2335609.4236 |
| L | 76+70.00 | 69.00 | 183203.7667 | 2335600.4341 |
| L | 76+76.00 | 84.00 | 183209.0345 | 2335615.7066 |
| L | 76+76.00 | 95.00 | 183208.5028 | 2335626.6937 |
| L | 76+94.00 | -57.00 | 183233.8297 | 2335475.7416 |
| L | 76+96.00 | -65.00 | 183236.2141 | 2335467.8476 |
| L | 77+00.00 | 69.00 | 183233.7316 | 2335601.8843 |
| L | 77+00.00 | 78.00 | 183233.2965 | 2335610.8738 |
| L | 77+04.00 | -88.00 | 183245.3166 | 2335445.2613 |
| L | 77+17.00 | -65.00 | 183257.1895 | 2335468.8628 |
| L | 77+17.00 | -57.00 | 183256.8028 | 2335476.8535 |
| L | 77+23.00 | -82.00 | 183264.0043 | 2335452.1727 |
| L | 77+25.15 | 78.00 | 183258.4150 | 2335612.0895 |
| L | 77+28.69 | 81.14 | 183261.7981 | 2335615.3955 |
| L | 78+06.00 | -57.00 | 183345.6987 | 2335481.1559 |
| L | 78+06.00 | -67.00 | 183346.1821 | 2335471.1676 |
| L | 78+26.00 | -57.00 | 183365.6753 | 2335482.1227 |
| L | 78+26.00 | -67.00 | 183366.1588 | 2335472.1344 |
| L | 78+33.00 | 74.91 | 183366.2906 | 2335614.2129 |
| L | 78+57.00 | 73.00 | 183390.3547 | 2335613.4693 |
| L | 78+59.00 | 68.00 | 183392.5940 | 2335608.5718 |
| L | 78+59.00 | 57.00 | 183393.1258 | 2335597.5847 |
| L | 78+79.00 | 68.00 | 183412.5707 | 2335609.5387 |
| L | 78+79.00 | 57.00 | 183413.1024 | 2335598.5515 |
| L | 78+79.00 | 73.52 | 183412.3038 | 2335615.0519 |
| L | 79+62.00 | 69.00 | 183495.4253 | 2335614.5499 |
| L | 79+62.00 | 57.00 | 183496.0054 | 2335602.5639 |
| L | 79+82.00 | 69.00 | 183515.4019 | 2335615.5167 |
| L | 79+82.00 | 57.00 | 183515.9820 | 2335603.5307 |
| L | 80+31.00 | -77.00 | 183571.4025 | 2335472.0561 |

*NOTE: DRAWING NOT TO SCALE*

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# SURVEY CONTROL SHEET U-3338B

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| L | 80+31.00 | -69.00 | 183571.0158 | 2335480.0468 |
| L | 80+51.00 | -77.00 | 183591.3791 | 2335473.0230 |
| L | 80+51.00 | -69.00 | 183590.9924 | 2335481.0136 |
| L | 80+60.00 | 57.00 | 183593.8908 | 2335607.3014 |
| L | 80+60.00 | 65.00 | 183593.5041 | 2335615.2920 |
| L | 80+80.00 | 57.00 | 183613.8674 | 2335608.2682 |
| L | 80+80.00 | 65.00 | 183613.4807 | 2335616.2589 |
| L | 81+11.00 | 79.00 | 183643.7677 | 2335631.7411 |
| L | 82+12.00 | 80.00 | 183744.6012 | 2335637.6225 |
| L | 82+92.00 | 83.00 | 183824.3627 | 2335644.4863 |
| L | 82+92.00 | 65.32 | 183825.2175 | 2335626.8238 |
| L | 83+03.00 | 95.00 | 183834.7697 | 2335657.0040 |
| L | 83+12.00 | 83.00 | 183844.3393 | 2335645.4531 |
| L | 83+12.00 | 66.00 | 183845.1611 | 2335628.4730 |
| L | 83+18.87 | 73.48 | 183851.6607 | 2335636.2725 |
| L | 83+23.00 | 90.00 | 183854.9880 | 2335652.9767 |
| L | 83+32.57 | 66.00 | 183865.7098 | 2335629.4675 |
| L | 83+85.00 | 66.00 | 183918.0758 | 2335632.0019 |
| L | 83+85.00 | 78.11 | 183917.4903 | 2335644.0978 |
| L | 84+00.00 | -69.00 | 183939.5844 | 2335497.8849 |
| L | 84+00.00 | -80.00 | 183940.1161 | 2335486.8978 |
| L | 84+01.53 | 78.11 | 183933.9976 | 2335644.8934 |
| L | 84+17.36 | -80.00 | 183957.4583 | 2335487.7371 |
| L | 85+39.06 | -89.00 | 184079.4486 | 2335484.6307 |
| L | 85+50.00 | 75.00 | 184082.4478 | 2335648.9678 |
| L | 85+50.00 | 71.42 | 184082.6206 | 2335645.3958 |
| L | 85+58.00 | -93.00 | 184098.5598 | 2335481.5510 |
| L | 85+61.29 | -79.83 | 184101.2126 | 2335494.8688 |
| L | 85+70.00 | 75.00 | 184102.4244 | 2335649.9346 |
| L | 85+70.00 | 72.63 | 184102.5392 | 2335647.5624 |
| L | 88+11.65 | -70.59 | 184350.8279 | 2335516.1951 |
| L | 88+16.00 | -88.00 | 184356.0165 | 2335499.0173 |
| L | 88+35.00 | -84.00 | 184374.8009 | 2335503.9311 |
| L | 88+35.00 | -69.73 | 184374.1111 | 2335518.1843 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y | 10+75.00 | -27.92 | 176772.7921 | 2336287.0888 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| YA | 10+81.00 | 30.64 | 176763.6596 | 2336485.3717 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y1 | 12+90.00 | -74.00 | 177277.2983 | 2335719.2326 |
| Y1 | 12+90.00 | -59.93 | 177264.2556 | 2335724.4998 |
| Y1 | 13+10.00 | -59.73 | 177271.7426 | 2335743.9852 |
| Y1 | 13+10.00 | -74.00 | 177285.0492 | 2335738.8360 |
| Y1 | 17+35.00 | 130.00 | 177199.8967 | 2336205.5831 |
| Y1 | 17+35.00 | 111.58 | 177217.8155 | 2336201.3307 |
| Y1 | 19+55.00 | -133.00 | 177506.5883 | 2336358.9104 |
| Y1 | 19+55.00 | -140.00 | 177513.3992 | 2336357.2941 |
| Y1 | 20+00.00 | -133.00 | 177516.9790 | 2336402.6944 |
| Y1 | 20+50.00 | -134.00 | 177529.4971 | 2336451.1123 |
| Y1 | 21+00.00 | -132.00 | 177539.2109 | 2336502.4828 |
| Y1 | 21+60.00 | -124.91 | 177545.0671 | 2336565.4113 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y2 | 11+93.00 | 62.00 | 178278.5013 | 2336269.3011 |
| Y2 | 11+96.00 | 30.20 | 178310.4224 | 2336268.2416 |
| Y2 | 12+12.00 | -45.00 | 178387.0474 | 2336274.5687 |
| Y2 | 12+13.00 | 64.00 | 178279.0556 | 2336289.3932 |
| Y2 | 12+16.00 | 30.18 | 178312.9819 | 2336288.0772 |
| Y2 | 13+29.00 | -45.00 | 178401.8953 | 2336390.6228 |
| Y2 | 13+29.00 | -29.88 | 178386.8962 | 2336392.5417 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y4 | 10+88.00 | -43.99 | 179674.9038 | 2335865.9273 |
| Y4 | 10+88.00 | -58.00 | 179688.5930 | 2335862.9669 |
| Y4 | 10+98.00 | 46.00 | 179589.0540 | 2335894.7247 |
| Y4 | 11+02.00 | -44.00 | 179677.8686 | 2335879.6098 |
| Y4 | 11+10.00 | -44.00 | 179679.5596 | 2335887.4290 |
| Y4 | 11+37.00 | 42.00 | 179601.2100 | 2335931.9974 |
| Y4 | 11+37.00 | 30.08 | 179612.8621 | 2335929.4774 |
| Y4 | 11+73.00 | 41.00 | 179609.7970 | 2335966.9725 |
| Y4 | 11+73.00 | 30.07 | 179620.4815 | 2335964.6619 |
| Y4 | 12+03.00 | 41.00 | 179616.1383 | 2335996.2947 |
| Y4 | 12+03.00 | 30.06 | 179626.8309 | 2335993.9823 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y5 | 14+51.00 | -45.00 | 180058.2069 | 2335546.3272 |
| Y5 | 14+51.00 | -60.00 | 180072.8485 | 2335543.0676 |
| Y5 | 14+51.00 | -50.00 | 180063.0875 | 2335545.2407 |
| Y5 | 14+70.00 | 42.00 | 179977.4149 | 2335583.7790 |
| Y5 | 14+74.00 | 69.00 | 179951.9293 | 2335593.5508 |
| Y5 | 14+93.00 | 66.00 | 179958.9865 | 2335611.4448 |
| Y5 | 15+02.37 | -54.30 | 180078.4532 | 2335594.4510 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y5B | 11+07.00 | 45.87 | 180852.9188 | 2334356.8710 |
| Y5B | 11+35.00 | -55.00 | 180847.0561 | 2334461.3871 |
| Y5B | 11+35.00 | -44.00 | 180844.7121 | 2334450.6398 |
| Y5B | 11+45.00 | -55.00 | 180837.2858 | 2334463.5181 |
| Y5B | 11+67.00 | -44.00 | 180813.4471 | 2334457.4588 |
| Y5B | 13+50.00 | 47.00 | 180615.2586 | 2334407.5456 |
| Y5B | 14+10.00 | 44.00 | 180557.2760 | 2334423.2625 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y6 | 6+27.00 | 56.00 | 180839.6401 | 2334057.1029 |
| Y6 | 6+75.00 | 56.00 | 180849.8817 | 2334103.9975 |
| Y6 | 6+75.00 | 62.00 | 180844.0198 | 2334105.2777 |
| Y6 | 6+95.00 | 63.00 | 180847.3102 | 2334125.0306 |
| Y6 | 6+95.00 | 56.00 | 180854.1490 | 2334123.5370 |
| Y6 | 7+49.00 | -49.79 | 180969.0253 | 2334153.7214 |
| Y6 | 7+49.00 | -59.00 | 180978.0226 | 2334151.7564 |
| Y6 | 7+58.00 | 56.00 | 180867.5910 | 2334185.0863 |
| Y6 | 7+58.00 | 65.00 | 180858.7983 | 2334187.0065 |
| Y6 | 7+69.00 | -49.76 | 180973.2674 | 2334173.2663 |
| Y6 | 7+69.00 | -59.00 | 180982.2899 | 2334171.2959 |
| Y6 | 7+78.00 | 56.00 | 180871.8583 | 2334204.6257 |
| Y6 | 7+78.00 | 65.00 | 180863.0656 | 2334206.5460 |
| Y6 | 8+95.00 | 62.43 | 180890.5362 | 2334320.3043 |
| Y6 | 9+27.00 | -49.56 | 181006.7804 | 2334327.6714 |

*NOTE: DRAWING NOT TO SCALE*


6/2/99

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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1C-11 |
| Location and Surveys | |

# SURVEY CONTROL SHEET U-3338B

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y6 | 9+27.00 | -58.00 | 181015.0247 | 2334325.8709 |
| Y6 | 9+47.00 | -58.00 | 181019.2920 | 2334345.4103 |
| Y6 | 9+47.00 | -49.54 | 181011.0226 | 2334347.2163 |
| Y6 | 9+81.00 | -49.51 | 181018.2505 | 2334380.4392 |
| Y6 | 9+81.00 | -60.00 | 181028.5004 | 2334378.2007 |
| Y6 | 11+48.00 | 89.00 | 180918.5636 | 2334573.1466 |
| Y6 | 11+53.00 | 68.00 | 180940.1469 | 2334573.5507 |
| Y6 | 11+67.00 | 94.00 | 180917.7327 | 2334592.7759 |
| Y6 | 11+79.00 | 68.00 | 180945.6944 | 2334598.9520 |
| Y6 | 11+83.00 | -60.00 | 181071.6003 | 2334575.5491 |
| Y6 | 11+86.00 | -70.00 | 181082.0101 | 2334576.3463 |
| Y6 | 12+06.00 | -59.00 | 181075.5307 | 2334598.2328 |
| Y6 | 12+06.00 | -66.00 | 181082.3695 | 2334596.7393 |
| Y6 | 13+12.56 | -60.00 | 181099.2429 | 2334702.1209 |
| Y6 | 13+46.00 | 68.00 | 180981.3265 | 2334762.1064 |
| Y6 | 13+52.00 | 85.00 | 180965.9981 | 2334771.5955 |
| Y6 | 14+70.00 | 76.00 | 180999.9680 | 2334884.9579 |
| Y6 | 15+37.00 | -78.00 | 181164.7173 | 2334917.5567 |
| Y6 | 15+70.00 | -76.00 | 181169.8044 | 2334950.2235 |
| Y6 | 16+34.00 | 76.00 | 181034.9600 | 2335045.1814 |
| Y6 | 16+34.00 | 68.00 | 181042.7758 | 2335043.4745 |
| Y6 | 16+77.00 | -79.00 | 181195.5655 | 2335054.1195 |
| Y6 | 16+98.00 | -78.00 | 181199.0692 | 2335074.8493 |
| Y6 | 17+17.00 | -85.00 | 181209.9619 | 2335091.9182 |
| Y6 | 17+24.00 | -71.00 | 181197.7779 | 2335101.7441 |
| Y6 | 18+30.00 | -81.00 | 181230.1644 | 2335203.1695 |
| Y6 | 18+30.00 | -71.00 | 181220.3947 | 2335205.3032 |
| Y6 | 18+88.00 | -92.00 | 181253.2863 | 2335257.4869 |
| Y6 | 18+88.00 | -82.00 | 181243.5166 | 2335259.6206 |
| Y6 | 19+08.00 | -92.00 | 181257.5536 | 2335277.0264 |
| Y6 | 19+08.00 | -82.00 | 181247.7839 | 2335279.1600 |
| Y6 | 19+29.00 | 68.00 | 181105.7187 | 2335331.6813 |
| Y6 | 19+65.00 | 84.88 | 181096.9088 | 2335370.4539 |
| Y6 | 19+77.00 | -83.42 | 181263.8938 | 2335346.2681 |
| Y6 | 21+52.00 | 67.00 | 181154.2763 | 2335549.3328 |
| Y6 | 21+52.00 | 60.13 | 181160.9852 | 2335547.8676 |
| Y6 | 21+81.00 | -85.00 | 181308.9637 | 2335545.2334 |
| Y6 | 22+78.00 | 55.75 | 181192.1513 | 2335670.0309 |
| Y6 | 22+78.00 | 63.00 | 181185.0682 | 2335671.5778 |
| Y6 | 22+84.00 | -85.00 | 181330.9404 | 2335645.8615 |
| Y6 | 25+90.00 | -80.00 | 181391.3454 | 2335945.8819 |
| Y6 | 26+37.00 | 63.00 | 181261.6666 | 2336022.3109 |
| Y6 | 26+37.00 | 54.00 | 181270.4593 | 2336020.3906 |
| Y6 | 28+98.00 | 54.00 | 181326.1478 | 2336275.3804 |
| Y6 | 29+19.00 | 75.00 | 181310.1121 | 2336300.3775 |
| Y6 | 29+26.00 | 54.00 | 181332.1220 | 2336302.7356 |
| Y6 | 29+34.00 | 61.00 | 181326.9902 | 2336312.0450 |
| Y6 | 29+62.00 | 54.00 | 181339.8032 | 2336337.9067 |
| Y6 | 29+68.00 | 80.00 | 181315.6821 | 2336349.3160 |
| Y6 | 29+68.00 | -78.00 | 181470.0438 | 2336315.6042 |
| Y6 | 29+73.00 | -83.00 | 181475.9954 | 2336319.4222 |
| Y6 | 29+82.00 | -91.00 | 181485.7315 | 2336326.5081 |
| Y6 | 29+82.00 | -83.00 | 181477.9157 | 2336328.2150 |
| Y6 | 29+88.00 | 80.00 | 181319.9494 | 2336368.8554 |
| Y6 | 30+15.91 | -83.00 | 181485.1510 | 2336361.3442 |
| Y6 | 31+16.00 | 59.58 | 181367.2115 | 2336489.5507 |
| Y6 | 31+37.03 | -95.54 | 181523.2469 | 2336477.0035 |
| Y6 | 31+48.00 | -83.00 | 181513.3345 | 2336490.3924 |
| Y6 | 31+50.00 | -91.00 | 181521.5770 | 2336490.6394 |
| Y6 | 33+03.00 | -77.00 | 181540.5443 | 2336643.1033 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y6 | 33+04.00 | -87.00 | 181550.5274 | 2336641.9466 |
| Y6 | 33+24.00 | -86.00 | 181553.8178 | 2336661.6994 |
| Y6 | 33+24.00 | -80.00 | 181547.9559 | 2336662.9796 |
| Y6 | 33+35.00 | -68.00 | 181538.5793 | 2336676.2867 |
| Y6 | 33+35.00 | -80.00 | 181550.3030 | 2336673.7263 |
| Y6 | 33+78.00 | -197.00 | 181673.7835 | 2336690.7723 |
| Y6 | 33+87.00 | -198.00 | 181676.6807 | 2336699.3517 |
| Y6 | 33+99.00 | -80.00 | 181563.9584 | 2336736.2526 |
| Y6 | 34+18.00 | -80.00 | 181568.0123 | 2336754.8150 |
| Y6 | 34+25.00 | -56.88 | 181546.9160 | 2336766.5874 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y7 | 9+58.00 | 25.00 | 181959.2075 | 2335222.3102 |
| Y7 | 9+69.00 | 39.00 | 181964.1639 | 2335240.5893 |
| Y7 | 9+86.00 | 25.00 | 181987.7914 | 2335235.4851 |
| Y7 | 9+86.00 | 39.00 | 181982.8351 | 2335248.5792 |
| Y7 | 11+09.00 | -34.00 | 182125.4176 | 2335216.0324 |
| Y7 | 11+09.00 | -40.00 | 182127.3916 | 2335210.3664 |
| Y7 | 11+25.00 | -34.00 | 182142.8303 | 2335222.8914 |
| Y7 | 11+25.00 | -40.00 | 182145.2508 | 2335217.4013 |
| Y7 | 11+52.00 | 51.00 | 182126.3430 | 2335309.9984 |
| Y7 | 11+52.00 | 44.00 | 182130.0032 | 2335304.0317 |
| Y7 | 11+65.00 | -34.00 | 182183.4866 | 2335245.9136 |
| Y7 | 11+80.00 | 53.00 | 182142.0302 | 2335323.6553 |
| Y7 | 11+80.00 | 44.00 | 182147.7607 | 2335316.7155 |
| Y7 | 11+86.00 | -40.00 | 182206.7280 | 2335256.6109 |
| Y7 | 12+10.00 | -40.00 | 182227.1850 | 2335276.8582 |
| Y7 | 12+30.00 | -40.00 | 182242.2801 | 2335295.5039 |
| Y7 | 12+50.00 | -40.00 | 182255.4382 | 2335315.5634 |
| Y7 | 12+72.00 | -40.00 | 182267.5188 | 2335339.0222 |
| Y7 | 12+74.00 | 44.00 | 182191.4680 | 2335374.7436 |
| Y7 | 12+74.00 | 51.00 | 182185.0497 | 2335377.5374 |
| Y7 | 12+89.00 | -40.00 | 182275.0464 | 2335357.9760 |
| Y7 | 13+28.63 | -42.05 | 182288.1992 | 2335403.8562 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y7A | 10+87.00 | 74.00 | 182170.9421 | 2335570.0631 |
| Y7A | 10+99.00 | 74.00 | 182170.6236 | 2335582.0588 |
| Y7A | 10+99.00 | 56.28 | 182188.3420 | 2335582.5294 |
| Y7A | 11+30.00 | 53.00 | 182190.7931 | 2335613.6054 |
| Y7A | 11+30.00 | 43.00 | 182200.7849 | 2335613.8708 |
| Y7A | 11+50.00 | 53.00 | 182190.2622 | 2335633.5984 |
| Y7A | 11+50.00 | 43.49 | 182199.7735 | 2335633.8510 |
| Y7A | 11+71.00 | -45.00 | 182287.6701 | 2335657.1927 |
| Y7A | 11+71.00 | -63.00 | 182305.6638 | 2335657.6706 |
| Y7A | 11+92.00 | -63.00 | 182305.1062 | 2335678.6632 |
| Y7A | 11+92.00 | -70.00 | 182312.1038 | 2335678.8491 |
| Y7A | 13+06.00 | 47.23 | 182191.8847 | 2335789.6965 |
| Y7A | 13+06.00 | 55.00 | 182184.1213 | 2335789.4903 |
| Y7A | 13+26.00 | 55.00 | 182183.5903 | 2335809.4832 |
| Y7A | 13+26.00 | 47.71 | 182190.8733 | 2335809.6767 |
| Y7A | 13+36.00 | 47.95 | 182190.3676 | 2335819.6668 |
| Y7A | 13+36.00 | 76.00 | 182162.3322 | 2335818.9222 |
| Y7A | 13+45.00 | -45.00 | 182283.0506 | 2335831.1314 |
| Y7A | 13+45.00 | -70.00 | 182308.0418 | 2335831.7951 |
| Y7A | 13+56.00 | 48.44 | 182189.3563 | 2335839.6470 |
| Y7A | 13+56.00 | 76.00 | 182161.8013 | 2335838.9151 |

*NOTE: DRAWING NOT TO SCALE*

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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 1C-12 |
| Location and Surveys | |

# SURVEY CONTROL SHEET U-3338B

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y7A | 16+35.00 | -65.00 | 182257.7964 | 2336142.3921 |
| Y7A | 16+35.00 | -45.00 | 182239.7132 | 2336133.8481 |
| Y7A | 16+62.00 | -80.00 | 182256.2701 | 2336177.9402 |
| Y7A | 16+80.00 | -45.00 | 182215.4468 | 2336178.0527 |
| Y7A | 17+02.00 | 45.00 | 182128.5314 | 2336146.0769 |
| Y7A | 17+16.00 | 61.00 | 182108.5342 | 2336146.1309 |
| Y7A | 17+29.00 | 52.50 | 182108.2564 | 2336160.0366 |
| Y7A | 17+50.00 | 59.00 | 182091.5799 | 2336169.1157 |
| Y7A | 18+00.00 | 62.00 | 182058.9980 | 2336195.4947 |
| Y7A | 18+50.00 | 65.00 | 182023.4967 | 2336217.0229 |
| Y7A | 19+00.00 | 70.00 | 181984.9761 | 2336231.5682 |
| Y7A | 19+21.97 | 62.00 | 181971.2478 | 2336245.7691 |
| Y7A | 19+29.67 | 45.00 | 181970.8089 | 2336263.9940 |
| Y7A | 21+26.00 | -70.00 | 181810.5329 | 2336420.8440 |
| Y7A | 21+58.00 | -82.67 | 181782.1876 | 2336440.3681 |
| Y7A | 21+81.00 | -57.00 | 181754.0185 | 2336420.5014 |
| Y7A | 21+81.00 | -86.05 | 181760.5284 | 2336448.8089 |
| Y7A | 22+23.00 | 54.00 | 181688.2093 | 2336321.7383 |
| Y7A | 22+23.00 | 45.00 | 181690.2264 | 2336330.5093 |
| Y7A | 22+51.00 | 59.00 | 181659.8010 | 2336323.1409 |
| Y7A | 22+51.00 | 54.00 | 181660.9216 | 2336328.0137 |
| Y7A | 23+87.00 | 59.00 | 181527.2607 | 2336353.6215 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y8 | 12+18.00 | -30.04 | 182656.7411 | 2335261.7928 |
| Y8 | 12+35.00 | -59.00 | 182684.8415 | 2335280.1806 |
| Y8 | 12+50.00 | -30.00 | 182655.1466 | 2335293.7530 |
| Y8 | 12+52.00 | -48.00 | 182673.0281 | 2335296.6257 |
| Y8 | 12+52.00 | 30.00 | 182595.1203 | 2335292.8338 |
| Y8 | 12+60.00 | 64.00 | 182560.7716 | 2335299.1714 |
| Y8 | 12+66.00 | 52.00 | 182572.4657 | 2335305.7477 |
| Y8 | 12+78.00 | 73.00 | 182550.9071 | 2335316.7126 |
| Y8 | 12+84.00 | 61.00 | 182562.6013 | 2335323.2889 |
| Y8 | 12+84.00 | 30.00 | 182593.5646 | 2335324.7960 |
| Y8 | 13+35.00 | 30.00 | 182591.0853 | 2335375.7357 |
| Y8 | 16+20.00 | -34.00 | 182641.1544 | 2335663.5100 |
| Y8 | 16+20.00 | -43.00 | 182650.1438 | 2335663.9475 |
| Y8 | 16+40.00 | -34.00 | 182640.1821 | 2335683.4864 |
| Y8 | 16+40.00 | -43.00 | 182649.1715 | 2335683.9239 |
| Y8 | 16+87.00 | -43.00 | 182646.8866 | 2335730.8683 |
| Y8 | 16+87.00 | -34.00 | 182637.8972 | 2335730.4308 |
| Y8 | 17+02.29 | -43.00 | 182646.1433 | 2335746.1402 |
| Y8 | 19+69.00 | 30.00 | 182568.2577 | 2336014.2402 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y10 | 13+00.00 | 37.00 | 183441.8645 | 2335442.6305 |
| Y10 | 13+12.00 | 40.91 | 183437.3766 | 2335454.4261 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y15 | 12+55.00 | 31.34 | 181157.4967 | 2334566.8380 |
| Y15 | 12+55.00 | 40.00 | 181148.9840 | 2334565.2503 |
| Y15 | 12+75.00 | 40.00 | 181145.3171 | 2334584.9113 |
| Y15 | 12+75.00 | 31.39 | 181153.7822 | 2334586.4901 |
| Y15 | 14+04.85 | -39.32 | 181199.0195 | 2334728.8320 |
| Y15 | 14+05.33 | -27.91 | 181187.7669 | 2334726.8250 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y16 | 13+61.00 | -25.39 | 180993.1857 | 2336415.2589 |
| Y16 | 13+61.00 | -49.00 | 180993.1192 | 2336391.6538 |
| Y16 | 13+61.00 | 24.69 | 180993.3267 | 2336465.3461 |
| Y16 | 13+61.00 | 34.00 | 180993.3529 | 2336474.6534 |
| Y16 | 13+81.00 | -49.00 | 181013.1191 | 2336391.5975 |
| Y16 | 13+81.00 | -25.43 | 181013.1855 | 2336415.1678 |
| Y16 | 15+90.00 | 44.00 | 181222.3801 | 2336484.0087 |
| Y16 | 15+90.00 | 37.00 | 181222.3604 | 2336477.0087 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| Y17 | 11+43.00 | 51.00 | 182376.2115 | 2335999.3746 |
| Y17 | 11+43.00 | 35.00 | 182376.7620 | 2335983.3841 |
| Y17 | 11+45.00 | -35.00 | 182381.1693 | 2335913.4943 |
| Y17 | 11+45.00 | -60.00 | 182382.0295 | 2335888.5091 |
| Y17 | 11+63.00 | 35.00 | 182396.7501 | 2335984.0722 |
| Y17 | 11+63.00 | 51.00 | 182396.1996 | 2336000.0627 |
| Y17 | 11+65.00 | -60.00 | 182402.0176 | 2335889.1973 |
| Y17 | 11+65.00 | -35.00 | 182401.1574 | 2335914.1825 |
| Y17 | 12+48.00 | 48.00 | 182481.2525 | 2335999.9891 |
| Y17 | 12+48.00 | 35.00 | 182481.6998 | 2335986.9968 |
| Y17 | 12+53.00 | -70.00 | 182490.3096 | 2335882.2310 |
| Y17 | 12+53.00 | -35.00 | 182489.1053 | 2335917.2103 |
| Y17 | 12+68.00 | 35.00 | 182501.6880 | 2335987.6850 |
| Y17 | 12+68.00 | 48.00 | 182501.2407 | 2336000.6773 |
| Y17 | 12+91.00 | 42.00 | 182524.4335 | 2335995.4722 |
| Y17 | 12+95.00 | -35.00 | 182531.0805 | 2335918.6554 |
| Y17 | 12+95.00 | -70.00 | 182532.2847 | 2335883.6761 |
| Y17 | 13+18.00 | 59.00 | 182550.8326 | 2336013.3911 |
| Y17 | 13+19.00 | 43.00 | 182552.3825 | 2335997.4350 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| DR1 | 10+56.49 | -17.00 | 181188.4710 | 2334800.3285 |
| DR1 | 11+10.67 | -17.00 | 181186.6098 | 2334862.9233 |
| DR1 | 11+65.46 | -17.06 | 181185.5473 | 2334908.3487 |

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
|---|---|---|---|---|
| SR1 | 10+44.00 | 50.00 | 183924.0438 | 2336173.2046 |
| SR1 | 10+44.00 | 34.50 | 183927.7933 | 2336158.1651 |
| SR1 | 10+45.00 | -35.00 | 183945.5772 | 2336090.9674 |
| SR1 | 10+45.00 | -46.00 | 183948.2372 | 2336080.2978 |
| SR1 | 10+64.00 | 30.00 | 183948.2879 | 2336158.6368 |
| SR1 | 10+64.00 | 50.00 | 183943.4498 | 2336178.0428 |
| SR1 | 10+65.00 | -46.00 | 183967.6432 | 2336085.1360 |
| SR1 | 10+65.00 | -30.00 | 183963.7727 | 2336100.6608 |
| SR1 | 12+06.00 | 30.00 | 184098.4134 | 2336176.7125 |
| SR1 | 12+06.00 | 41.00 | 184099.4528 | 2336187.6632 |
| SR1 | 12+28.00 | -47.00 | 184112.3998 | 2336097.7792 |
| SR1 | 12+28.00 | -30.00 | 184114.2278 | 2336114.6806 |
| SR1 | 12+29.00 | 30.00 | 184121.6736 | 2336174.2252 |
| SR1 | 12+29.00 | 41.00 | 184122.8564 | 2336185.1615 |
| SR1 | 12+85.00 | -30.00 | 184170.8973 | 2336108.5516 |
| SR1 | 12+85.00 | -52.00 | 184168.5317 | 2336086.6792 |
| SR1 | 13+40.00 | 30.00 | 184232.0300 | 2336162.2898 |
| SR1 | 13+40.00 | 49.00 | 184234.0730 | 2336181.1796 |
| SR1 | 13+44.00 | -30.00 | 184229.5552 | 2336102.2075 |
| SR1 | 13+44.00 | -36.00 | 184228.9101 | 2336096.2423 |

*NOTE: DRAWING NOT TO SCALE*

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# SURVEY CONTROL SHEET U-3338B

ROW MARKER PERMANENT EASEMENT-E

| ALIGN | STATION | OFFSET | NORTH | EAST |
| --- | --- | --- | --- | --- |
| SR1 | 13+60.00 | 49.00 | 184253.9571 | 2336179.0291 |
| SR1 | 13+60.00 | 30.00 | 184251.9141 | 2336160.1392 |
| SR1 | 13+64.00 | -30.00 | 184249.4393 | 2336100.0570 |
| SR1 | 13+64.00 | -36.00 | 184248.7941 | 2336094.0918 |
| SR1 | 17+08.00 | -48.00 | 184591.7601 | 2336045.5128 |
| SR1 | 17+11.00 | -30.00 | 184596.0444 | 2336063.2920 |
| SR1 | 17+13.00 | 30.00 | 184601.2616 | 2336123.0981 |
| SR1 | 17+18.00 | 48.00 | 184606.7067 | 2336140.8631 |
| SR1 | 17+19.00 | -50.00 | 184603.7210 | 2336042.9035 |
| SR1 | 17+23.00 | -30.00 | 184608.7519 | 2336062.7364 |
| SR1 | 17+32.00 | 63.00 | 184619.5628 | 2336155.5112 |
| SR1 | 17+39.00 | 62.00 | 184625.6809 | 2336154.4703 |
| SR1 | 17+51.00 | 30.00 | 184636.9696 | 2336122.6091 |
| SR1 | 17+51.00 | 43.00 | 184636.6537 | 2336135.6053 |

*NOTE: DRAWING NOT TO SCALE*


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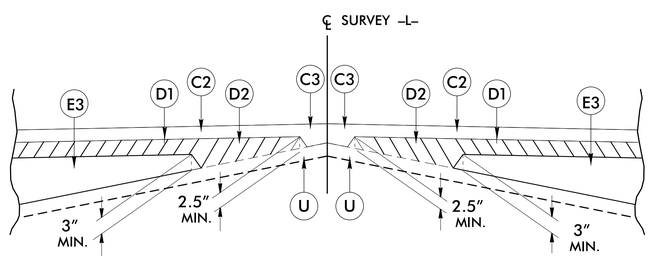
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2A-1 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/20/2015
DocuSigned by: Tatia L. White
5558CEC8F9E1472...

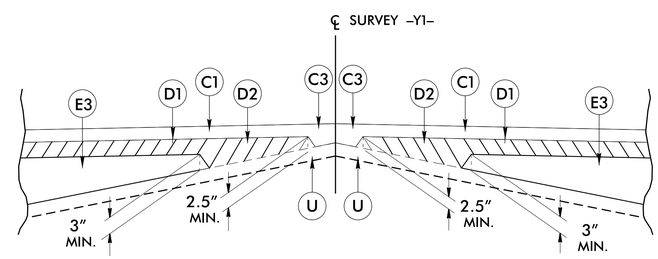
PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER VLADIMIR G. MITCHEV
2/20/2015
DocuSigned by: Vladimir G. Mitchev
A3C8BF405EA847E...

## PAVEMENT SCHEDULE
## (FINAL PAVEMENT DESIGN)

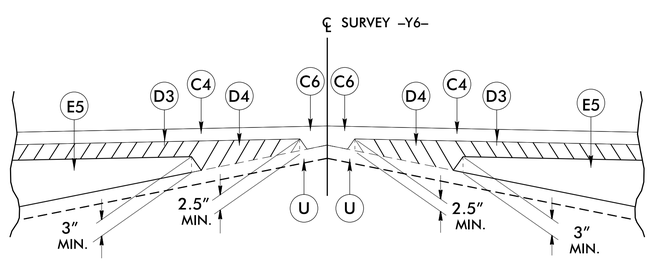
| | | | | | |
|---|---|---|---|---|---|
| C1 | PROP. APPROX. 1½″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. | E1 | PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. | S | 4″ CONCRETE SIDEWALK. |
| C2 | PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS. | E2 | PROP. APPROX. 5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD. | T | EARTH MATERIAL. |
| C3 | 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 LESS THAN 1½″ IN DEPTH OR GREATER THAN 2″ IN DEPTH. | E3 | PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ IN DEPTH. | U | EXISTING PAVEMENT. |
| C4 | PROP. APPROX. 1½″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. | E4 | PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. | V | MILLING BITUMINOUS PAVEMENT, 1.5″ DEPTH. |
| C5 | PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS. | E5 | PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ IN DEPTH. | W1 | VARIABLE DEPTH ASPHALT PAVEMENT. (SEE WEDGING DETAIL NO. 1) |
| C6 | PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½″ IN DEPTH OR GREATER THAN 2″ IN DEPTH. | J | PROP. 6″ AGGREGATE BASE COURSE. | W2 | VARIABLE DEPTH ASPHALT PAVEMENT. (SEE WEDGING DETAIL NO. 2) |
| C7 | PROP. APPROX. 2″ ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS. | N | GEOTEXTILE FOR SOIL STABILIZATION. | W3 | VARIABLE DEPTH ASPHALT PAVEMENT. (SEE WEDGING DETAIL NO. 3) |
| D1 | PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. | R1 | 1′-6″ CONCRETE CURB AND GUTTER. | W4 | VARIABLE DEPTH ASPHALT PAVEMENT. (SEE WEDGING DETAIL NO. 4) |
| D2 | 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. | R2 | 2′-6″ CONCRETE CURB AND GUTTER. | NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE. | |
| D3 | PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. | R3 | EXPRESSWAY CURB AND GUTTER. | | |
| D4 | PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½″ IN DEPTH OR GREATER THAN 4″ IN DEPTH. | R4 | 5″ MONOLITHIC ISLAND (KEYED IN). | | |



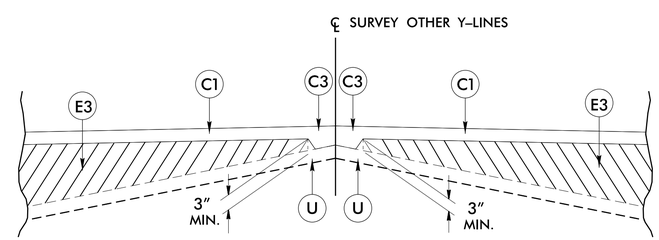

Detail No. 1 Showing Method of Wedging (W1)




Detail No. 2 Showing Method of Wedging (W2)




Detail No. 3 Showing Method of Wedging (W3)




Detail No. 4 Showing Method of Wedging (W4)

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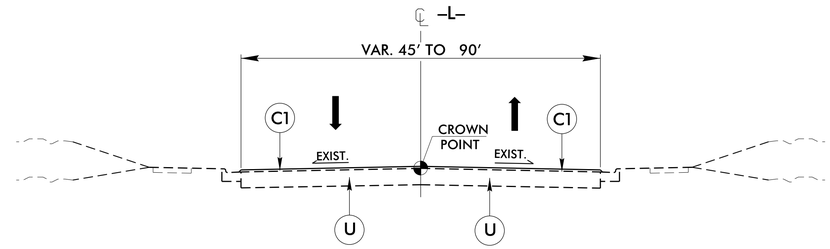
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2A-2 |
| ROADWAY DESIGN ENGINEER | PAVEMENT DESIGN ENGINEER |

NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE — 2/20/2015 — DocuSigned

NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER VLADIMIR G. MITCHEV — 2/20/2015 — DocuSigned

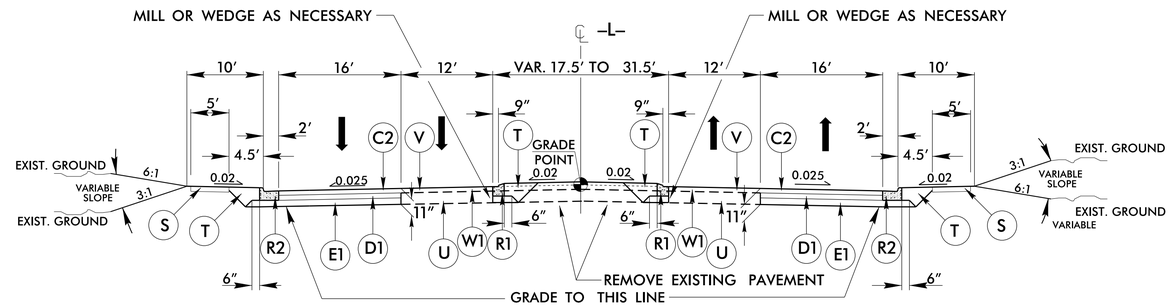
| PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN) | |
|---|---|
| C1 | 1½" S9.5B |
| C2 | 3" S9.5B |
| C3 | VAR. S9.5B |
| C4 | 1½" S9.5C |
| C5 | 3" S9.5C |
| C6 | VAR. S9.5C |
| C7 | 2" SF9.5A |
| D1 | 4" I19.0B |
| D2 | VAR. I19.0B |
| D3 | 4" I19.0C |
| D4 | VAR. I19.0C |
| E1 | 4" B25.0B |
| E2 | 5" B25.0B |
| E3 | VAR. B25.0B |
| E4 | 4" B25.0C |
| E5 | VAR. B25.0C |
| J | 6" ABC |
| N | GEOTEXTILE FOR SOIL STAB. |
| R1 | 1' 6" C & G |
| R2 | 2'-6" C & G |
| R3 | EXPRESSWAY C & G |
| R4 | 5" MONO. ISLAND (KEYED IN) |
| S | 4" SIDEWALK |
| T | EARTH MATERIAL |
| U | EXIST. PAVEMENT |
| V | 1½" MILLING |
| W1 | WEDGING DETAIL NO. 1 |
| W2 | WEDGING DETAIL NO. 2 |
| W3 | WEDGING DETAIL NO. 3 |
| W4 | WEDGING DETAIL NO. 4 |

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




## TYPICAL SECTION NO. 1

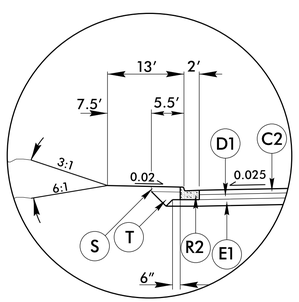
USE TYPICAL SECTION NO. 1
-L- STA. 10+10.00 TO -L- STA. 11+25.00
-L- STA. 91+20.00 TO -L- STA. 96+97.55




## TYPICAL SECTION NO. 2

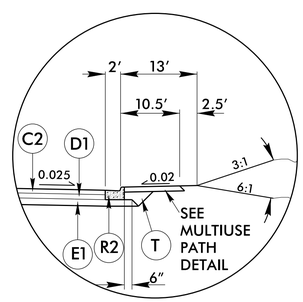
USE TYPICAL SECTION NO. 2
-L- STA. 11+25.00 TO -L- STA. 13+50.00
-L- STA. 18+50.00 TO -L- STA. 50+00.00
-L- STA. 53+00.00 TO -L- STA. 56+10.94
-L- STA. 57+11.99 TO -L- STA. 61+50.00
-L- STA. 64+50.00 TO -L- STA. 91+20.00

NOTE 1: 16' DIMENSION INCLUDES 4' BICYCLE LANE
NOTE 2: MILL EXISTING PAVEMENT FROM -L- STA. 11+25.00 TO -L- STA. 80+00.00



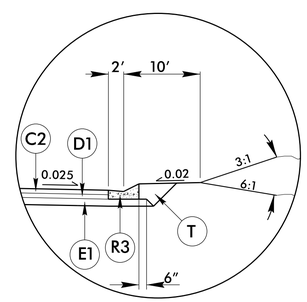
## INSET A

USE WITH TYPICAL SECTION NO. 2 & NO. 3
-L- STA. 11+50.00 TO -L- STA. 16+50.00 LT.



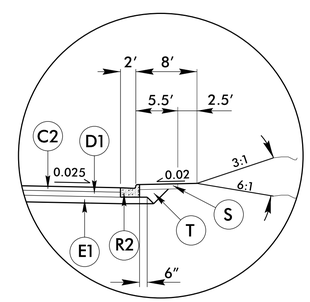

## INSET B

USE WITH TYPICAL SECTION NO. 2 & NO. 3
-L- STA. 11+50.00 TO -L- STA. 16+50.00 RT.



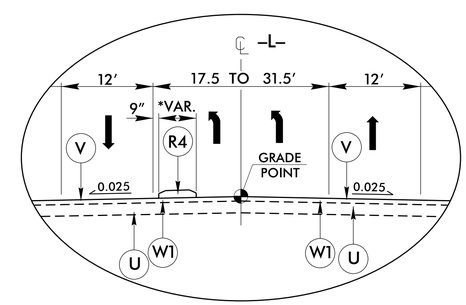
## INSET C

USE WITH TYPICAL SECTION NO. 2
-L- STA. 86+75.00 TO -L- STA. 87+35.00 RT.
-L- STA. 88+90.00 TO -L- STA. 89+50.00 RT.
-L- STA. 90+00.00 TO -L- STA. 90+60.00 LT.



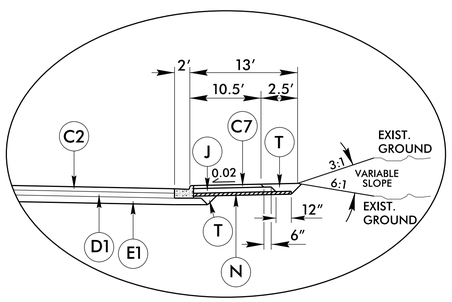
## INSET D

USE WITH TYPICAL SECTION NO. 2
-L- STA. 83+22.55 TO -L- STA. 83+88.97 RT.



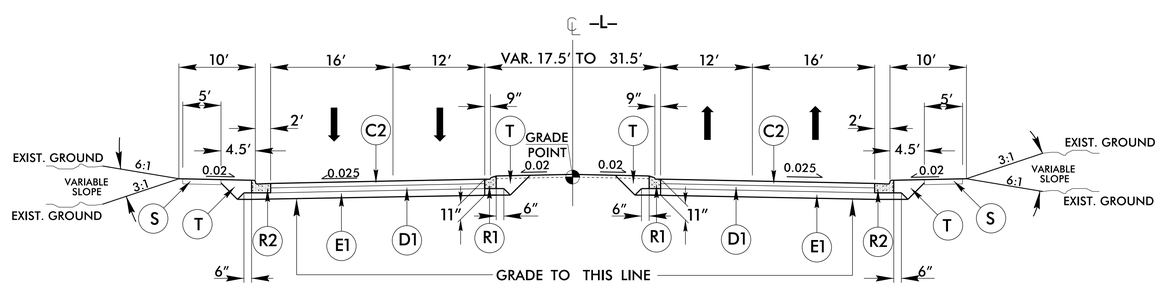

## INSET E

USE WITH TYPICAL SECTION NO. 2 & NO. 3
*SEE PLANS FOR WIDTH AND LOCATION
-L- STA. 13+42.00 TO -L- STA. 16+74.92
-L- STA. 17+71.35 TO -L- STA. 23+90.71
-L- STA. 29+89.67 TO -L- STA. 30+70.28
-L- STA. 31+46.45 TO -L- STA. 32+27.11
-L- STA. 37+95.17 TO -L- STA. 44+41.97
-L- STA. 45+18.10 TO -L- STA. 55+84.36
-L- STA. 57+41.62 TO -L- STA. 66+46.00
-L- STA. 67+55.54 TO -L- STA. 71+27.92
-L- STA. 83+43.90 TO -L- STA. 84+24.55
-L- STA. 85+09.17 TO -L- STA. 96+70.87




## DETAIL OF MULTIUSE PATH

USE WITH TYPICAL SECTION NO. 15 (MIRROR) & INSET B & F




## TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-L- STA. 13+50.00 TO -L- STA. 18+50.00
-L- STA. 50+00.00 TO -L- STA. 53+00.00
-L- STA. 61+50.00 TO -L- STA. 64+50.00

NOTE: 16' DIMENSION INCLUDES 4' BICYCLE LANE

6/2/99

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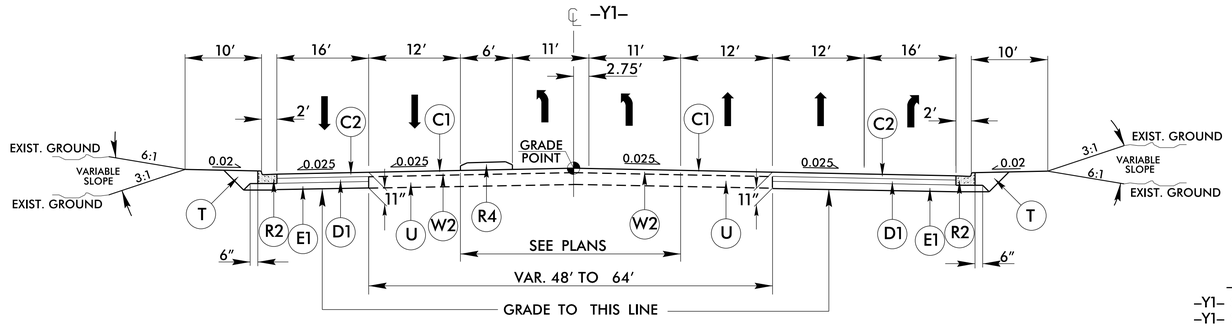
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2A-3 |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE — 2/20/2015 — DocuSigned by: Tatia L. White — 5558CCC0BF3E1472...

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER VLADIMIR G. MITCHEV — 2/20/2015 — DocuSigned by: Vladimir G. Mitchev — A8C0BF2405EA847E...

| PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN) | |
|---|---|
| C1 | 1½" S9.5B |
| C2 | 3" S9.5B |
| C3 | VAR. S9.5B |
| C4 | 1½" S9.5C |
| C5 | 3" S9.5C |
| C6 | VAR. S9.5C |
| C7 | 2" SF9.5A |
| D1 | 4" I19.0B |
| D2 | VAR. I19.0B |
| D3 | 4" I19.0C |
| D4 | VAR. I19.0C |
| E1 | 4" B25.0B |
| E2 | 5" B25.0B |
| E3 | VAR. B25.0B |
| E4 | 4" B25.0C |
| E5 | VAR. B25.0C |
| J | 6" ABC |
| N | GEOTEXTILE FOR SOIL STAB. |
| R1 | 1' 6" C & G |
| R2 | 2'-6" C & G |
| R3 | EXPRESSWAY C & G |
| R4 | 5" MONO. ISLAND (KEYED IN) |
| S | 4" SIDEWALK |
| T | EARTH MATERIAL |
| U | EXIST. PAVEMENT |
| V | 1½" MILLING |
| W1 | WEDGING DETAIL NO. 1 |
| W2 | WEDGING DETAIL NO. 2 |
| W3 | WEDGING DETAIL NO. 3 |
| W4 | WEDGING DETAIL NO. 4 |

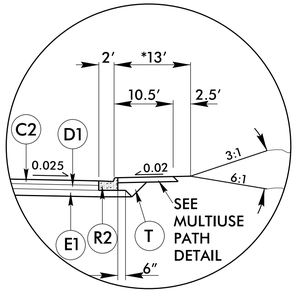
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.




## TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
–Y1– STA. 12+80.62 TO –Y1– STA. 17+93.05
–Y1– STA. 18+80.63 TO –Y1– STA. 21+90.00

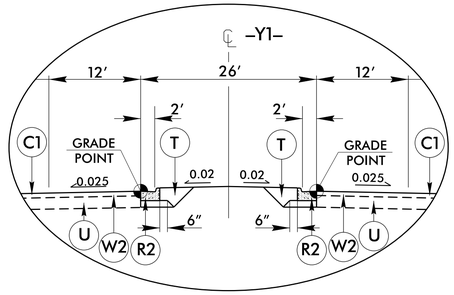
NOTE: 16′ DIMENSION INCLUDES 4′ BICYCLE LANE




## INSET F

USE WITH TYPICAL SECTION NO. 4
–Y1– STA. 12+80.62 TO –L– STA. 17+50.00 RT.

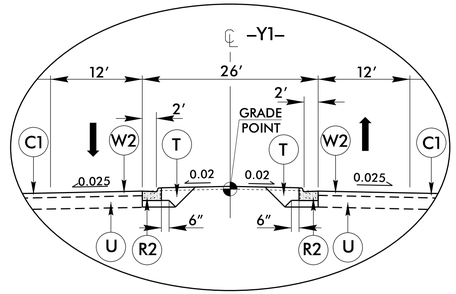
*NOTE: TRANSITION FROM 18′ BERM TO 13′ BERM
–Y1– STA. 11+27.09 TO –L– STA. 12+80.62 RT.




## INSET G

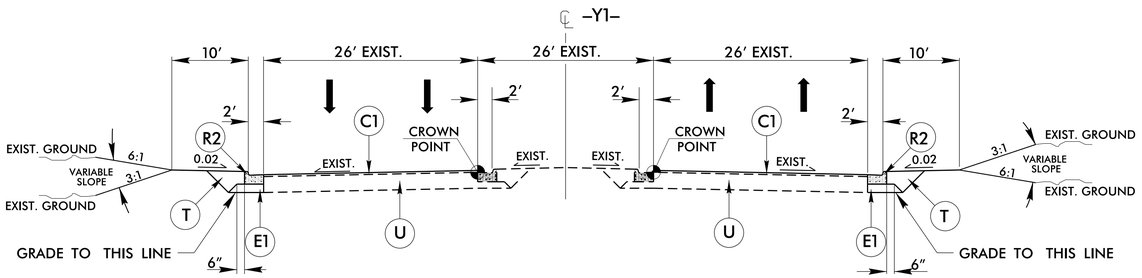
USE WITH TYPICAL SECTION NO. 4
–Y1– STA. 12+80.62 TO STA. 14+23.82

NOTE: TRANSITION FROM INSET G TO INSET H
–Y1– STA. 12+80.62 TO STA. 14+04.35



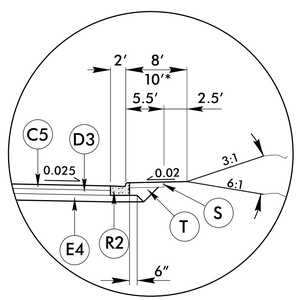

## INSET H

USE WITH TYPICAL SECTION NO. 4
–Y1– STA. 12+80.62 TO STA. 14+23.82



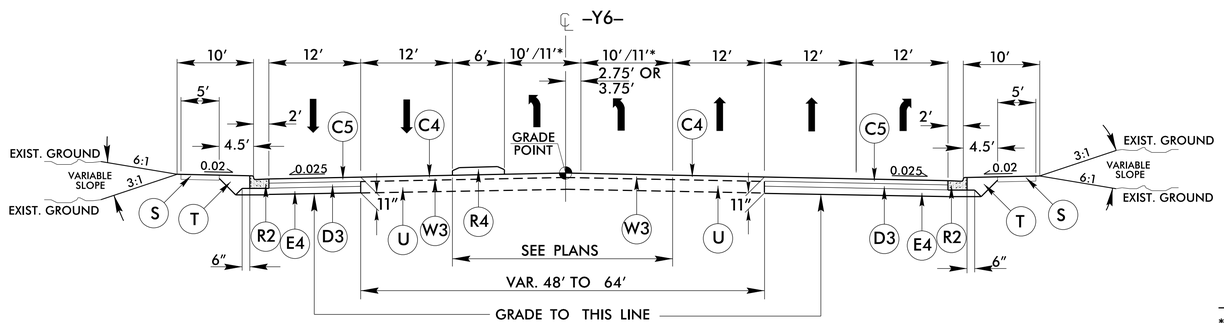

## TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
–Y1– STA. 11+27.09 RT. TO –Y1– STA. 12+80.62 RT.
–Y1– STA. 21+90.00 LT. TO –Y1– STA. 29+02.33 LT.
–Y1– STA. 21+90.00 RT. TO –Y1– STA. 29+27.40 RT.




## INSET I

USE WITH TYPICAL SECTION NO. 6
–Y6– STA. 6+91.82 TO –Y6– STA. 8+91.82 RT.
* –Y6– STA. 9+40.00 TO –Y6– STA. 9+65.00 LT.
* –Y6– STA. 12+67.06 TO –Y6– STA. 13+63.43 LT.




## TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
* –Y6– STA. 5+90.00 TO –Y6– STA. 18+50.00
–Y6– STA. 20+00.00 TO –Y6– STA. 34+70.00

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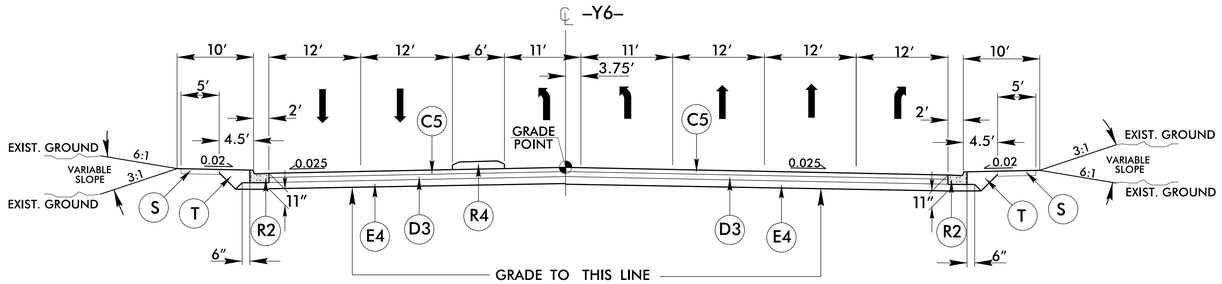
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2A-4 |
| ROADWAY DESIGN ENGINEER | PAVEMENT DESIGN ENGINEER |

NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE — DocuSigned by: Tatia L. White — 2/20/2015

NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER VLADIMIR G. MITCHEV — DocuSigned by: Vladimir G. Mitchev — 2/20/2015

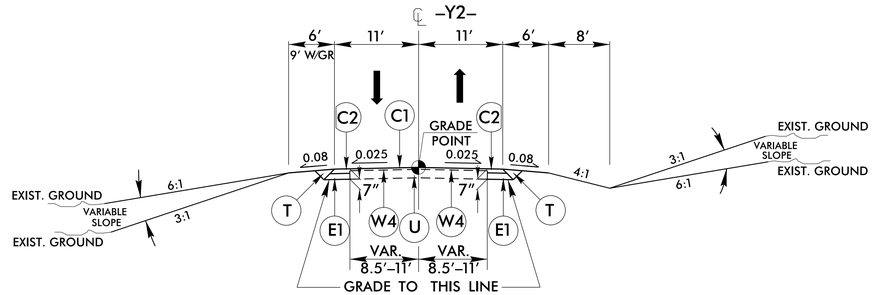
| PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN) | |
|---|---|
| C1 | 1½" S9.5B |
| C2 | 3" S9.5B |
| C3 | VAR. S9.5B |
| C4 | 1½" S9.5C |
| C5 | 3" S9.5C |
| C6 | VAR. S9.5C |
| C7 | 2" SF9.5A |
| D1 | 4" I19.0B |
| D2 | VAR. I19.0B |
| D3 | 4" I19.0C |
| D4 | VAR. I19.0C |
| E1 | 4" B25.0B |
| E2 | 5" B25.0B |
| E3 | VAR. B25.0B |
| E4 | 4" B25.0C |
| E5 | VAR. B25.0C |
| J | 6" ABC |
| N | GEOTEXTILE FOR SOIL STAB. |
| R1 | 1' 6" C & G |
| R2 | 2'-6" C & G |
| R3 | EXPRESSWAY C & G |
| R4 | 5" MONO. ISLAND (KEYED IN) |
| S | 4" SIDEWALK |
| T | EARTH MATERIAL |
| U | EXIST. PAVEMENT |
| V | 1½" MILLING |
| W1 | WEDGING DETAIL NO. 1 |
| W2 | WEDGING DETAIL NO. 2 |
| W3 | WEDGING DETAIL NO. 3 |
| W4 | WEDGING DETAIL NO. 4 |

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



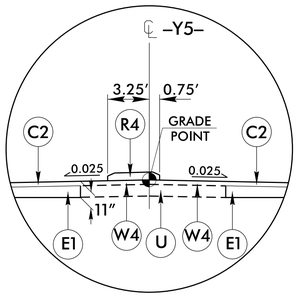

## TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7
–Y6– STA. 18+50.00 TO –Y6– STA. 20+00.00



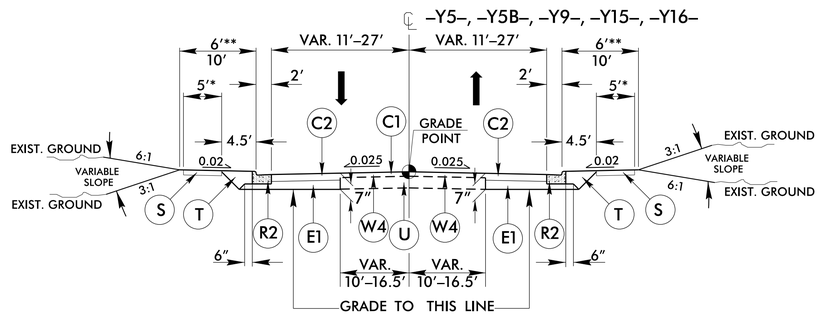

## TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8
–Y2– STA. 11+07.47 TO –Y2– STA. 12+57.47



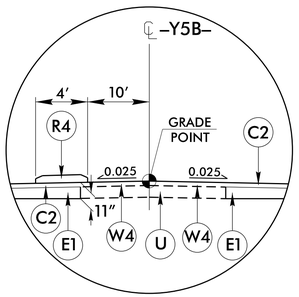

## INSET J

USE WITH TYPICAL SECTION NO. 9
–Y5– STA. 13+85.00 TO STA. 15+36.56 (SEE PLANS)



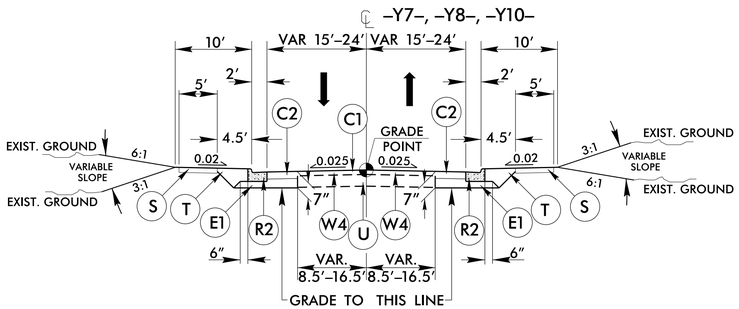

## TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9
–Y5– STA. 8+85.00 TO –Y5– STA. 15+54.55
–Y5B– STA. 10+44.75 TO –Y5B– STA. 14+58.75
*–Y9– STA. 10+39.50 TO –Y9– STA. 11+70.83
–Y15– STA. 12+01.52 TO –Y15– STA. 13+88.81
**–Y16– STA. 14+72+00 TO –Y16– STA. 17+52.27




## INSET K

USE WITH TYPICAL SECTION NO. 9
–Y5B– STA. 10+56.75 TO STA. 13+58.75 (SEE PLANS)




## TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10
–Y7– STA. 10+11.42 TO –Y7– STA. 13+62.15
–Y8– STA. 13+59.29 TO –Y8– STA. 14+07.16
–Y8– STA. 15+02.20 TO –Y8– STA. 17+02.29
–Y10– STA. 12+98.60 TO –Y10– STA. 13+60.62

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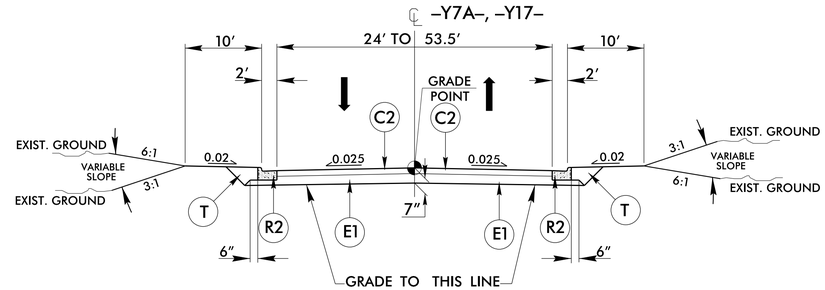
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2A-5 |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATA L. WHITE — 2/12/2015 — DocuSigned by: Tatia L. White — 5558CECE8F3E1472...

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER VLADIMIR G. MITCHEV — 2/12/2015 — DocuSigned by: Vladimir G. Mitchev — A8C0BEF405EA847E...

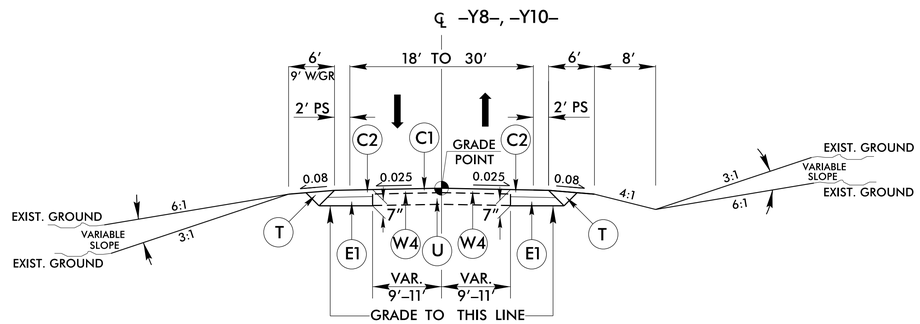
| PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN) | |
|---|---|
| C1 | 1½" S9.5B |
| C2 | 3" S9.5B |
| C3 | VAR. S9.5B |
| C4 | 1½" S9.5C |
| C5 | 3" S9.5C |
| C6 | VAR. S9.5C |
| C7 | 2" SF9.5A |
| D1 | 4" I19.0B |
| D2 | VAR. I19.0B |
| D3 | 4" I19.0C |
| D4 | VAR. I19.0C |
| E1 | 4" B25.0B |
| E2 | 5" B25.0B |
| E3 | VAR. B25.0B |
| E4 | 4" B25.0C |
| E5 | VAR. B25.0C |
| J | 6" ABC |
| N | GEOTEXTILE FOR SOIL STAB. |
| R1 | 1' 6" C & G |
| R2 | 2'-6" C & G |
| R3 | EXPRESSWAY C & G |
| R4 | 5" MONO. ISLAND (KEYED IN) |
| S | 4" SIDEWALK |
| T | EARTH MATERIAL |
| U | EXIST. PAVEMENT |
| V | 1½" MILLING |
| W1 | WEDGING DETAIL NO. 1 |
| W2 | WEDGING DETAIL NO. 2 |
| W3 | WEDGING DETAIL NO. 3 |
| W4 | WEDGING DETAIL NO. 4 |

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



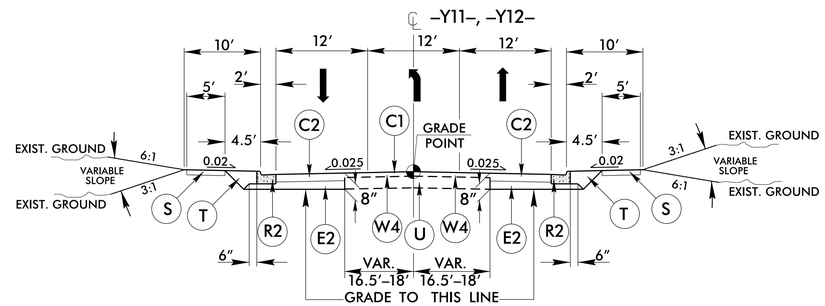

## TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11
–Y7A– STA. 10+41.97 TO –Y7A– STA. 24+63.68
–Y17– STA. 10+18.29 TO –Y17– STA. 13+43.57



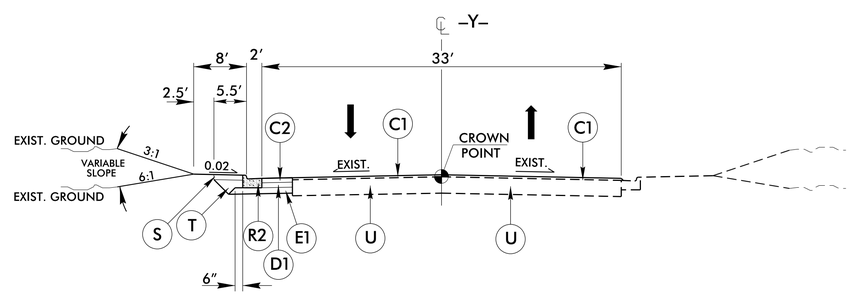

## TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12
–Y8– STA. 10+69.33 TO –Y8– STA. 13+59.29
–Y10– STA. 11+48.60 TO –Y10– STA. 12+98.60




## TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13
–Y11– STA. 12+60.78 TO –Y11– STA. 13+30.42
–Y12– STA. 10+51.54 TO –Y12– STA. 11+35.76




## TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14
–Y– STA. 10+75.00 TO –Y– STA. 11+68.56

6/2/99

21-JAN-2015 12:21
R:\Roadway\Proj\3338b_rdy_typ.dgn
$$USERNAME$$

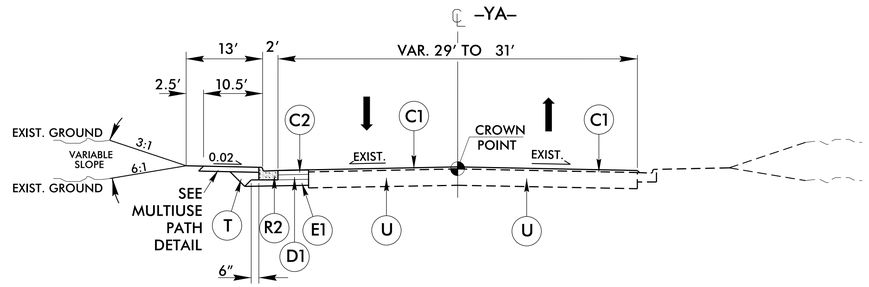
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2A-6 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 TATA L. WHITE
2/19/2015
DocuSigned by: Tatia L. White
5B3BCDE8F0E147E...

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031484 VLADIMIR G. MITCHEV
2/19/2015
DocuSigned by: Vladimir G. Mitchev
A3C0BEF409EA947E...

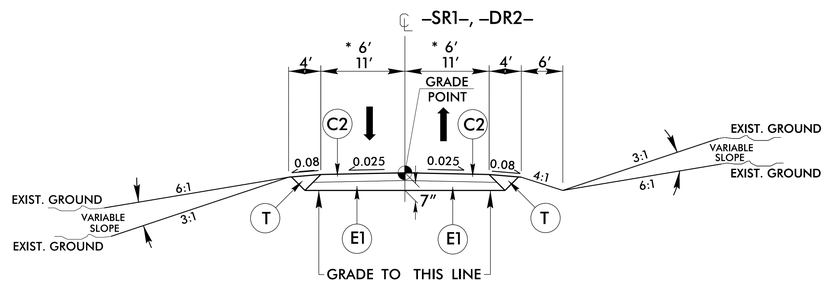
| PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN) | |
|---|---|
| C1 | 1½" S9.5B |
| C2 | 3" S9.5B |
| C3 | VAR. S9.5B |
| C4 | 1½" S9.5C |
| C5 | 3" S9.5C |
| C6 | VAR. S9.5C |
| C7 | 2" SF9.5A |
| D1 | 4" I19.0B |
| D2 | VAR. I19.0B |
| D3 | 4" I19.0C |
| D4 | VAR. I19.0C |
| E1 | 4" B25.0B |
| E2 | 5" B25.0B |
| E3 | VAR. B25.0B |
| E4 | 4" B25.0C |
| E5 | VAR. B25.0C |
| J | 6" ABC |
| N | GEOTEXTILE FOR SOIL STAB. |
| R1 | 1' 6" C & G |
| R2 | 2'-6" C & G |
| R3 | EXPRESSWAY C & G |
| R4 | 5" MONO. ISLAND (KEYED IN) |
| S | 4" SIDEWALK |
| T | EARTH MATERIAL |
| U | EXIST. PAVEMENT |
| V | 1½" MILLING |
| W1 | WEDGING DETAIL NO. 1 |
| W2 | WEDGING DETAIL NO. 2 |
| W3 | WEDGING DETAIL NO. 3 |
| W4 | WEDGING DETAIL NO. 4 |

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



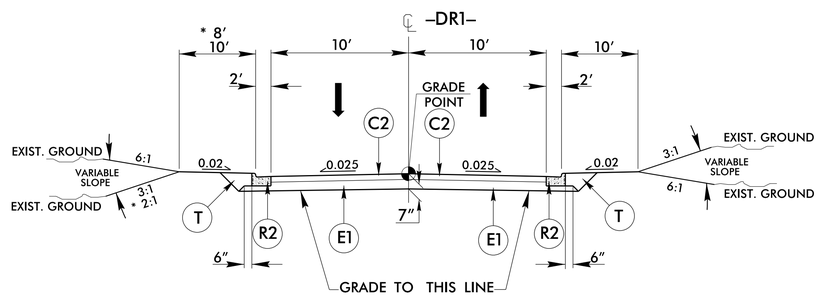

## TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15
–YA– STA. 10+18.08 TO –YA– STA. 10+90.45




## TYPICAL SECTION NO. 16

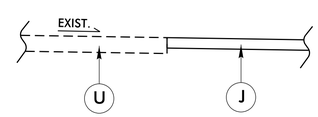
USE TYPICAL SECTION NO. 16
–SR1– STA. 10+16.32 TO –SR1– STA. 18+79.48
* –DR2– STA. 10+00.00 TO –DR2– STA. 10+64.64




## TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17
–DR1– STA. 10+12.21 TO –DR1– STA. 12+00.00
* –DR1– STA. 10+20.00 LT. TO –DR1– STA. 10+50.00 LT.

*TEMPORARY PAVEMENT




## TYPICAL SECTION NO. 18

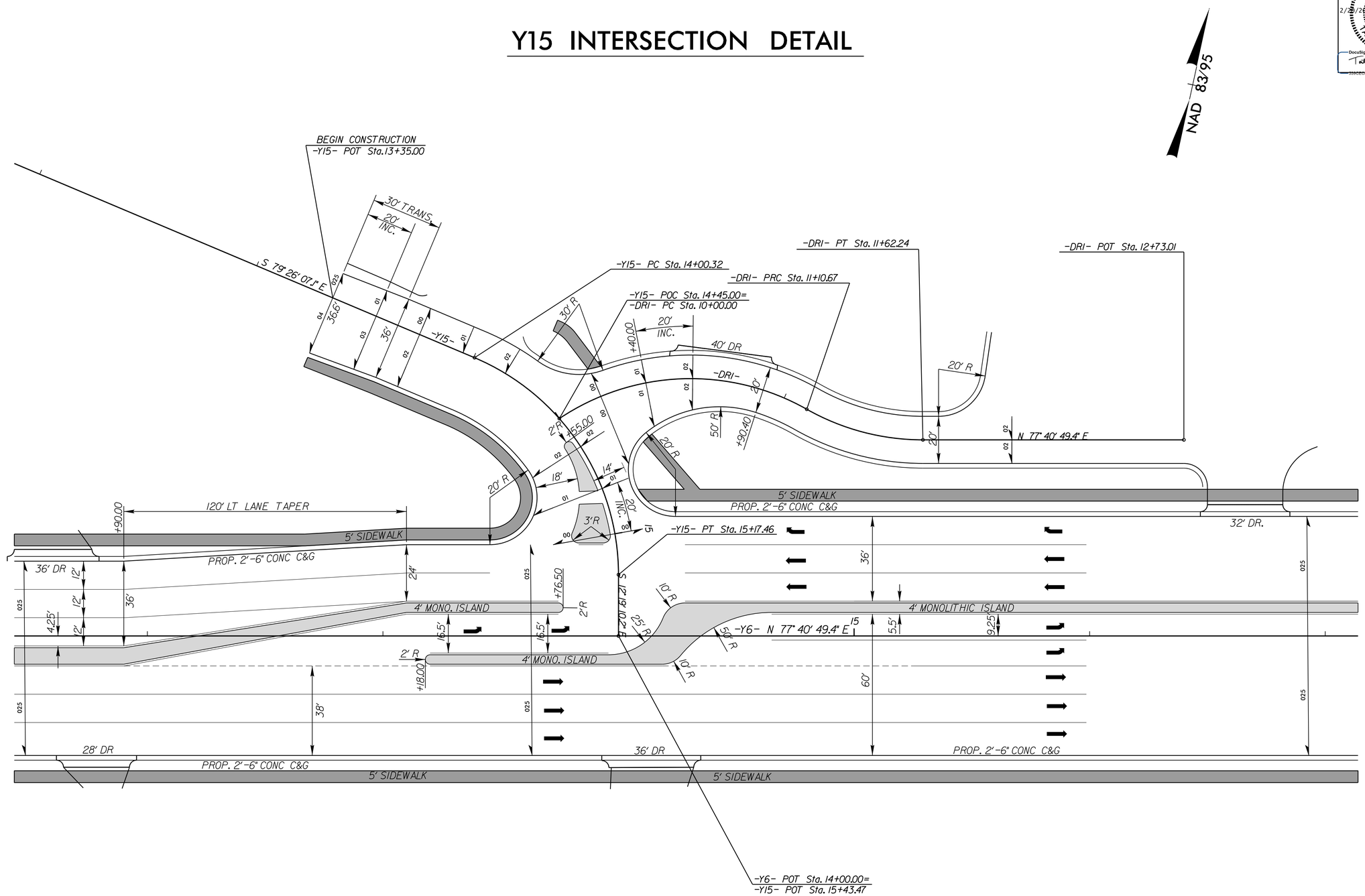
USE TYPICAL SECTION NO. 18
–Y1– STA. 12+81.00 TO STA. 14+25.00 LT.
*SEE SHEETS TMP-4 AND TMP-13

6/2/99
18-FEB-2015 09:17
R:\Roadway\Proj\3338b_rdy_typ.dgn
$$$$USERNAME$$$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2B-1 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/20/2015
DocuSigned by: Tatia Lynn White
339CBCB5F1DE1472...

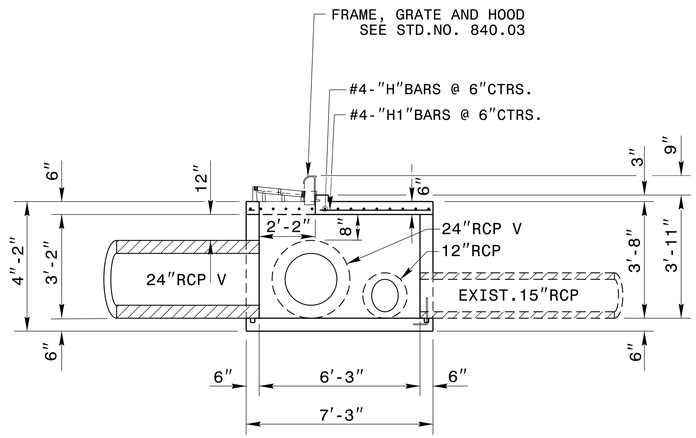
# Y15 INTERSECTION DETAIL



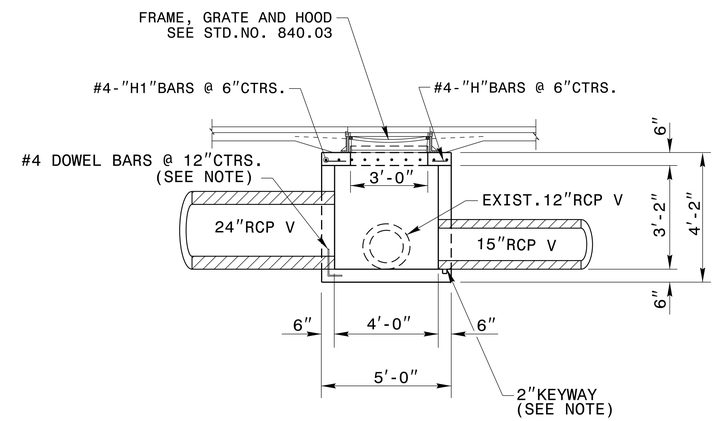

SEE SHEET 27 & 32

6/2/99
20-FEB-2015 07:40
R:\Roadway\Proj\u3338b_rdy_typ.dgn
$$$$USERNAME$$$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2C-1 |




SECTION A-A




SECTION B-B

NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

ALL REINFORCING STEEL SHOULD BE ASTMA615-GRADE 60.

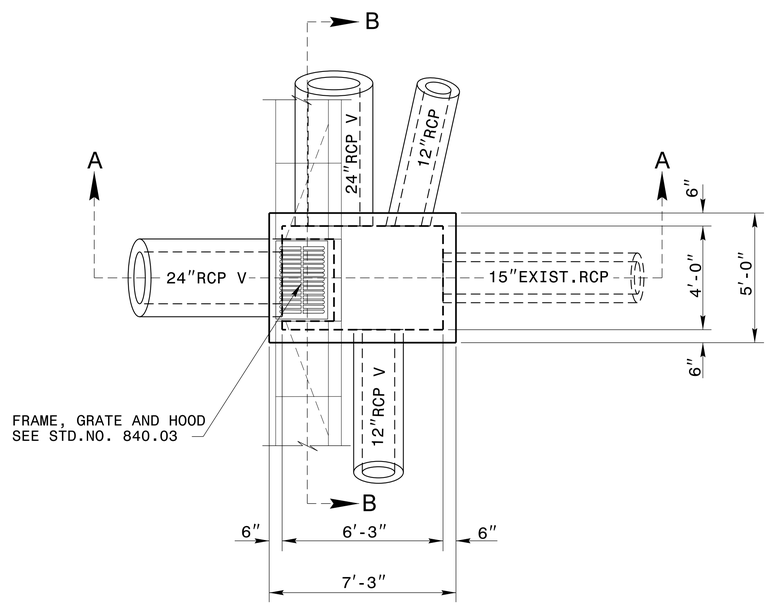
ALL REINFORCING STEEL SHOULD BE DEFORMED BARS. WHERE SPLICING OF REINFORCMENT IS NECESSARY, BARS ARE TO BE LAPPED 45 DIAMETERS. ALL DIMENSIONS RELATIVE TO REINFORCEMENT ARE TO CENTERS OF BARS.

REINFORCING STEEL TO BE CUT, BENT OR RELOCATED TO POSITION CATCH BASIN AS DIRECTED BY THE ENGINEER.

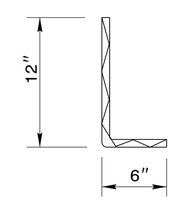
ALL EXPOSED CORNERS ARE TO BE CHAMFERED 1".

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

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




PLAN




DOWEL

## BILL OF MATERIAL

| REINF. STEEL | | | | |
|---|---|---|---|---|
| BAR | SIZE | LENGTH | NO. | WEIGHT |
| | | | | |
| H | #4 | 4'-8" | 15 | 47 |
| H1 | #4 | 6'-11" | 10 | 47 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| DOWEL (OPTION) | | | 20 | |
| REINF. STEEL LBS. | | | | 94 |
| | | | | |
| TOTAL CON./R.C. CU. YDS. | | | | 3 |
| DEDUCTION FOR 2-24" RCP | | | | -0.3 |
| DEDUCTION FOR 2-15" RCP | | | | -0.1 |
| NO DEDUCTION MADE FOR 1-12" RCP | | | | |
| | | | | |
| CON./R.C. CU. YDS. | | | | 2.6 |

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

2/4/2015

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DocuSigned by: Joel Howerton 873F3D17DCDC45F...

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

# DETAIL OF SPECIAL CATCH BASIN

ORIGINAL BY: DATE:
MODIFIED BY: rnbritt DATE: 04-12-13
CHECKED BY: DATE:
FILE SPEC.: details/nbritt/english/hydro/special cb.dgn

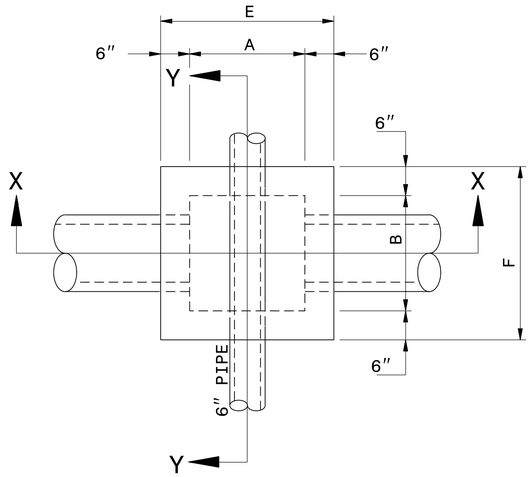
$$$$SYSTIME$$$$
$$$$USERNAME$$$$

5/14/99

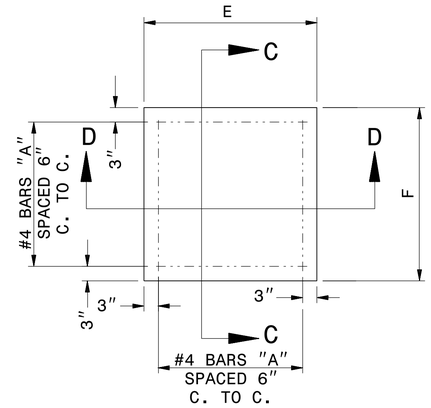
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**CONCRETE JUNCTION BOX WITH**
**6″ PIPE PASSING THRU**
12″ THRU 66″ PIPE

SHEET 1 OF 1
**840D31**




PLAN




GENERAL NOTES:

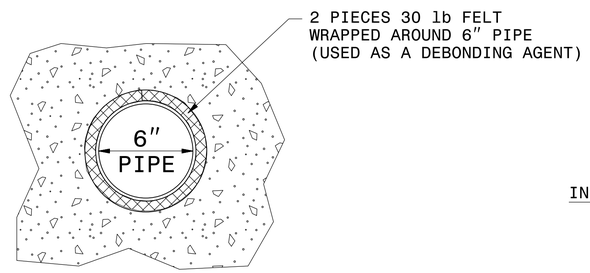
USE CLASS "B" CONCRETE THROUGHOUT.

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

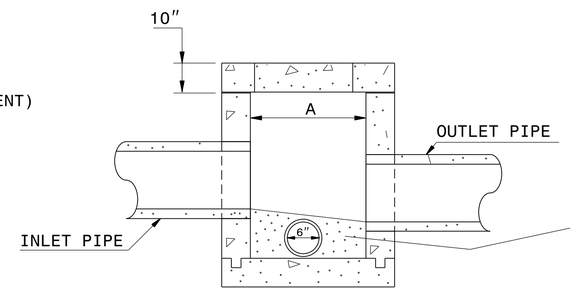
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.

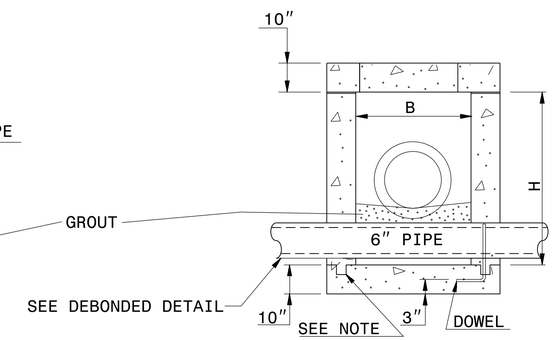
REFER TO R.S.D.N. 840.31 FOR PLACEMENT OF MANHOLE COVER IN JUNCTION BOX.




DEBONDED DETAIL



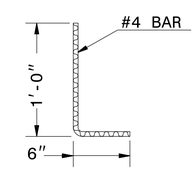

SECTION X-X




SECTION Y-Y

DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES

| DIMENSIONS OF BOX AND PIPE | | | | REINFORCEMENT BARS "A" | | COVER DIMENSIONS | | CUBIC YARDS IN BOX | | | TOTAL QUANTITIES BOX AND COVER | | DEDUCTIONS FOR ONE PIPE CU.YDS. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PIPE | SPAN | WIDTH | HEIGHT | | | | | | | | | | | |
| D | A | B | H | NO. | LENGTH | E | F | COVER | FLOOR | WALL/ FT. OF HT. | LBS. REINF | CU. YDS. MIN. "H" | C.S. | R.C. |
| 12″ | 2′-0″ | 2′-0″ | 2′-3″ | 12 | 2′-9″ | 3′-0″ | 3′-0″ | 0.222 | 0.222 | 0.185 | 22 | 0.750 | 0.015 | 0.024 |
| 15″ | 2′-3″ | 2′-3″ | 2′-6″ | 12 | 3′-0″ | 3′-3″ | 3′-3″ | 0.261 | 0.261 | 0.204 | 24 | 0.902 | 0.023 | 0.036 |
| 18″ | 2′-6″ | 2′-6″ | 2′-9″ | 14 | 3′-3″ | 3′-6″ | 3′-6″ | 0.302 | 0.302 | 0.222 | 30 | 1.065 | 0.033 | 0.049 |
| 24″ | 3′-0″ | 3′-0″ | 3′-3″ | 16 | 3′-9″ | 4′-0″ | 4′-0″ | 0.395 | 0.395 | 0.259 | 40 | 1.434 | 0.059 | 0.091 |
| 30″ | 3′-6″ | 3′-6″ | 3′-9″ | 18 | 4′-3″ | 4′-6″ | 4′-6″ | 0.500 | 0.500 | 0.296 | 51 | 1.860 | 0.092 | 0.138 |
| 36″ | 4′-0″ | 4′-0″ | 4′-3″ | 20 | 4′-9″ | 5′-0″ | 5′-0″ | 0.617 | 0.617 | 0.333 | 64 | 2.341 | 0.132 | 0.196 |
| 42″ | 4′-6″ | 4′-6″ | 4′-9″ | 22 | 5′-3″ | 5′-6″ | 5′-6″ | 0.747 | 0.747 | 0.370 | 77 | 2.878 | 0.180 | 0.284 |
| 48″ | 5′-0″ | 5′-0″ | 5′-3″ | 24 | 5′-9″ | 6′-0″ | 6′-0″ | 0.889 | 0.889 | 0.407 | 92 | 3.471 | 0.235 | 0.364 |
| 54″ | 5′-6″ | 5′-6″ | 5′-9″ | 26 | 6′-3″ | 6′-6″ | 6′-6″ | 1.043 | 1.043 | 0.444 | 109 | 4.283 | 0.297 | 0.440 |
| 60″ | 6′-0″ | 6′-0″ | 6′-3″ | 28 | 6′-9″ | 7′-0″ | 7′-0″ | 1.210 | 1.210 | 0.481 | 127 | 5.090 | 0.367 | 0.546 |
| 66″ | 6′-6″ | 6′-6″ | 6′-9″ | 30 | 7′-3″ | 7′-6″ | 7′-6″ | 1.389 | 1.389 | 0.518 | 146 | 5.917 | 0.444 | 0.655 |




DOWEL

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

ENGLISH DETAIL DRAWING FOR
**CONCRETE JUNCTION BOX WITH**
**6″ PIPE PASSING THRU**
12″ THRU 66″ PIPE

SHEET 1 OF 1
**840D31**

2/4/2015

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DocuSigned by: Joel Howerton
873F3D17DCDC45F...

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

**SEE PLATE FOR TITLE**

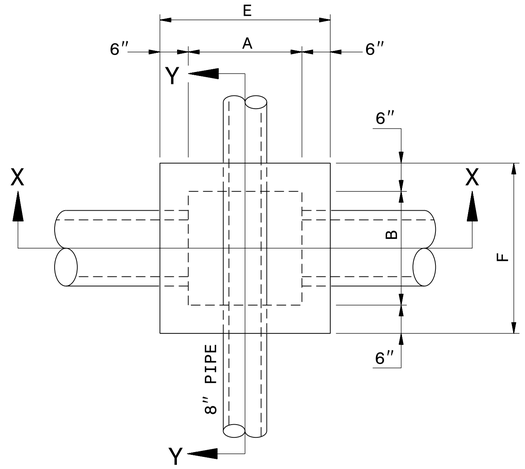
ORIGINAL BY: E.E. WARD DATE: 3-12-98
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: usr/details/stand/conflict box.dgn

$$$$SYSTEM$$$$
$$$$USERNAME$$$$

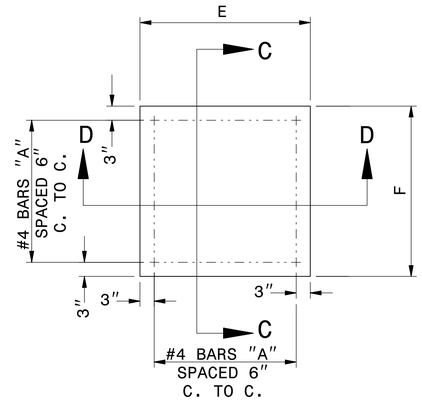
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**CONCRETE JUNCTION BOX WITH**
**8" PIPE PASSING THRU**
12" THRU 66" PIPE

SHEET 1 OF 1
**840D31**




PLAN




GENERAL NOTES:

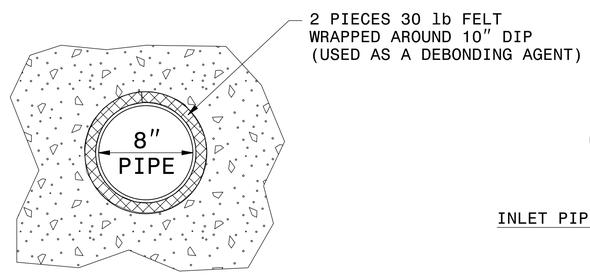
USE CLASS "B" CONCRETE THROUGHOUT.

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

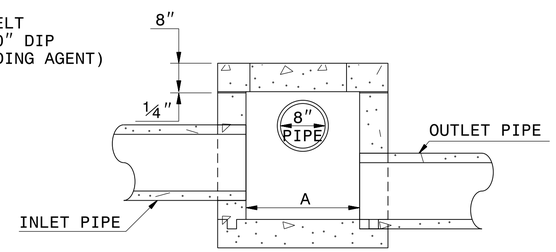
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.

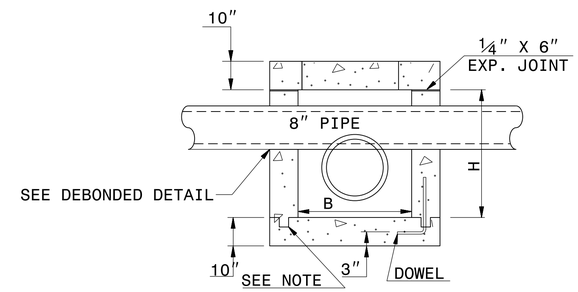
REFER TO R.S.D.N. 840.31 FOR PLACEMENT OF MANHOLE COVER IN JUNCTION BOX.




DEBONDED DETAIL

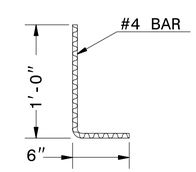



SECTION X-X




SECTION Y-Y

| DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIMENSIONS OF BOX AND PIPE | | | | REINFORCEMENT BARS "A" | | COVER DIMENSIONS | | CUBIC YARDS IN BOX | | | TOTAL QUANTITIES BOX AND COVER | | DEDUCTIONS FOR ONE PIPE CU.YDS. | |
| PIPE | SPAN | WIDTH | HEIGHT | | | | | | | | | | | |
| D | A | B | H | NO. | LENGTH | E | F | COVER | FLOOR | WALL/ FT. OF HT. | LBS. REINF | CU. YDS. MIN. "H" | C.S. | R.C. |
| 12" | 2'-0" | 2'-0" | 2'-3" | 12 | 2'-9" | 3'-0" | 3'-0" | 0.222 | 0.222 | 0.185 | 22 | 0.750 | 0.015 | 0.024 |
| 15" | 2'-3" | 2'-3" | 2'-6" | 12 | 3'-0" | 3'-3" | 3'-3" | 0.261 | 0.261 | 0.204 | 24 | 0.902 | 0.023 | 0.036 |
| 18" | 2'-6" | 2'-6" | 2'-9" | 14 | 3'-3" | 3'-6" | 3'-6" | 0.302 | 0.302 | 0.222 | 30 | 1.065 | 0.033 | 0.049 |
| 24" | 3'-0" | 3'-0" | 3'-3" | 16 | 3'-9" | 4'-0" | 4'-0" | 0.395 | 0.395 | 0.259 | 40 | 1.434 | 0.059 | 0.091 |
| 30" | 3'-6" | 3'-6" | 3'-9" | 18 | 4'-3" | 4'-6" | 4'-6" | 0.500 | 0.500 | 0.296 | 51 | 1.860 | 0.092 | 0.138 |
| 36" | 4'-0" | 4'-0" | 4'-3" | 20 | 4'-9" | 5'-0" | 5'-0" | 0.617 | 0.617 | 0.333 | 64 | 2.341 | 0.132 | 0.196 |
| 42" | 4'-6" | 4'-6" | 4'-9" | 22 | 5'-3" | 5'-6" | 5'-6" | 0.747 | 0.747 | 0.370 | 77 | 2.878 | 0.180 | 0.284 |
| 48" | 5'-0" | 5'-0" | 5'-3" | 24 | 5'-9" | 6'-0" | 6'-0" | 0.889 | 0.889 | 0.407 | 92 | 3.471 | 0.235 | 0.364 |
| 54" | 5'-6" | 5'-6" | 5'-9" | 26 | 6'-3" | 6'-6" | 6'-6" | 1.043 | 1.043 | 0.444 | 109 | 4.283 | 0.297 | 0.440 |
| 60" | 6'-0" | 6'-0" | 6'-3" | 28 | 6'-9" | 7'-0" | 7'-0" | 1.210 | 1.210 | 0.481 | 127 | 5.090 | 0.367 | 0.546 |
| 66" | 6'-6" | 6'-6" | 6'-9" | 30 | 7'-3" | 7'-6" | 7'-6" | 1.389 | 1.389 | 0.518 | 146 | 5.917 | 0.444 | 0.655 |




DOWEL

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

ENGLISH DETAIL DRAWING FOR
**CONCRETE JUNCTION BOX WITH**
**8" PIPE PASSING THRU**
12" THRU 66" PIPE

SHEET 1 OF 1
**840D31**

2/4/2015

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DocuSigned by: Joel Howerton
873F3D17DCDC45F...

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

**SEE PLATE FOR TITLE**

ORIGINAL BY: E.E. WARD DATE: 3-12-98
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: usr/details/stand/conflict box.dgn

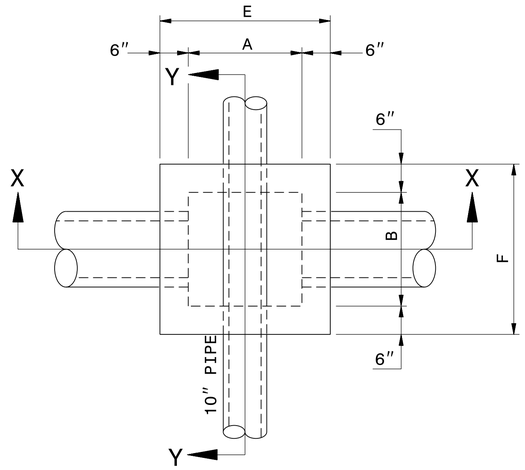
5/14/99

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

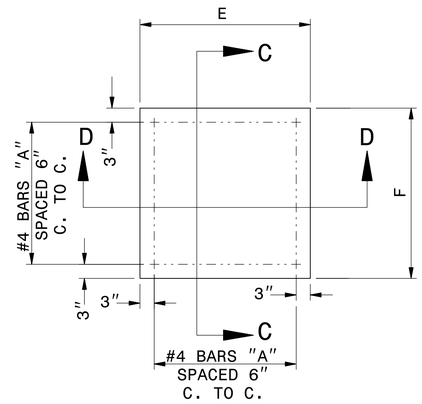
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**CONCRETE JUNCTION BOX WITH**
**10″ PIPE PASSING THRU**
12″ THRU 66″ PIPE

SHEET 1 OF 1
**840D31**




PLAN




GENERAL NOTES:

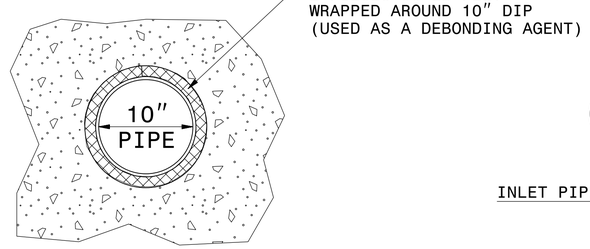
USE CLASS "B" CONCRETE THROUGHOUT.

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

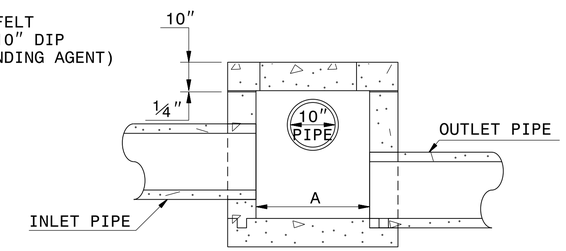
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.

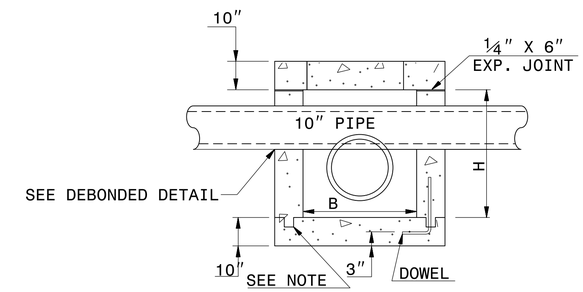
REFER TO R.S.D.N. 840.31 FOR PLACEMENT OF MANHOLE COVER IN JUNCTION BOX.




DEBONDED DETAIL

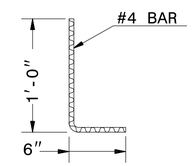



SECTION X-X




SECTION Y-Y

| DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIMENSIONS OF BOX AND PIPE | | | | REINFORCEMENT BARS "A" | | COVER DIMENSIONS | | CUBIC YARDS IN BOX | | | TOTAL QUANTITIES BOX AND COVER | | DEDUCTIONS FOR ONE PIPE CU.YDS. | |
| PIPE | SPAN | WIDTH | HEIGHT | | | | | | | | | | | |
| D | A | B | H | NO. | LENGTH | E | F | COVER | FLOOR | WALL/ FT. OF HT. | LBS. REINF | CU. YDS. MIN. "H" | C.S. | R.C. |
| 12″ | 2′-0″ | 2′-0″ | 2′-3″ | 12 | 2′-9″ | 3′-0″ | 3′-0″ | 0.222 | 0.222 | 0.185 | 22 | 0.750 | 0.015 | 0.024 |
| 15″ | 2′-3″ | 2′-3″ | 2′-6″ | 12 | 3′-0″ | 3′-3″ | 3′-3″ | 0.261 | 0.261 | 0.204 | 24 | 0.902 | 0.023 | 0.036 |
| 18″ | 2′-6″ | 2′-6″ | 2′-9″ | 14 | 3′-3″ | 3′-6″ | 3′-6″ | 0.302 | 0.302 | 0.222 | 30 | 1.065 | 0.033 | 0.049 |
| 24″ | 3′-0″ | 3′-0″ | 3′-3″ | 16 | 3′-9″ | 4′-0″ | 4′-0″ | 0.395 | 0.395 | 0.259 | 40 | 1.434 | 0.059 | 0.091 |
| 30″ | 3′-6″ | 3′-6″ | 3′-9″ | 18 | 4′-3″ | 4′-6″ | 4′-6″ | 0.500 | 0.500 | 0.296 | 51 | 1.860 | 0.092 | 0.138 |
| 36″ | 4′-0″ | 4′-0″ | 4′-3″ | 20 | 4′-9″ | 5′-0″ | 5′-0″ | 0.617 | 0.617 | 0.333 | 64 | 2.341 | 0.132 | 0.196 |
| 42″ | 4′-6″ | 4′-6″ | 4′-9″ | 22 | 5′-3″ | 5′-6″ | 5′-6″ | 0.747 | 0.747 | 0.370 | 77 | 2.878 | 0.180 | 0.284 |
| 48″ | 5′-0″ | 5′-0″ | 5′-3″ | 24 | 5′-9″ | 6′-0″ | 6′-0″ | 0.889 | 0.889 | 0.407 | 92 | 3.471 | 0.235 | 0.364 |
| 54″ | 5′-6″ | 5′-6″ | 5′-9″ | 26 | 6′-3″ | 6′-6″ | 6′-6″ | 1.043 | 1.043 | 0.444 | 109 | 4.283 | 0.297 | 0.440 |
| 60″ | 6′-0″ | 6′-0″ | 6′-3″ | 28 | 6′-9″ | 7′-0″ | 7′-0″ | 1.210 | 1.210 | 0.481 | 127 | 5.090 | 0.367 | 0.546 |
| 66″ | 6′-6″ | 6′-6″ | 6′-9″ | 30 | 7′-3″ | 7′-6″ | 7′-6″ | 1.389 | 1.389 | 0.518 | 146 | 5.917 | 0.444 | 0.655 |




DOWEL

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

ENGLISH DETAIL DRAWING FOR
**CONCRETE JUNCTION BOX WITH**
**10″ PIPE PASSING THRU**
12″ THRU 66″ PIPE

SHEET 1 OF 1
**840D31**

2/4/2015

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DocuSigned by: Joel Howerton
873F3D17DCDC45F...

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

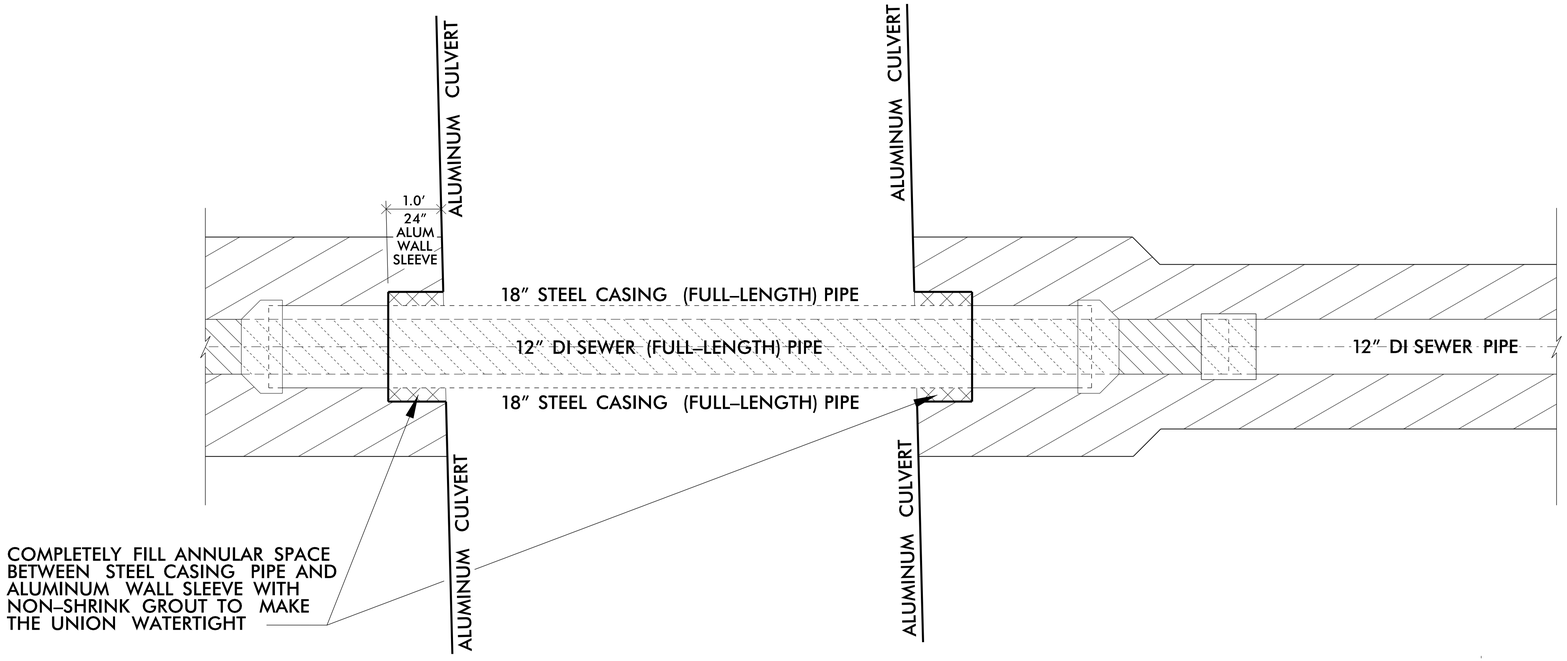
**SEE PLATE FOR TITLE**

ORIGINAL BY: E.E. WARD DATE: 3-12-98
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: usr/details/stand/conflict_box.dgn

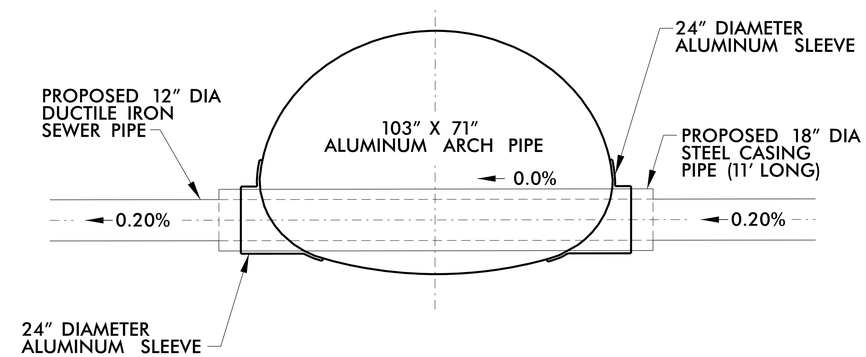
5/14/99

$$$$SYSTIME$$$$
$$$$SYSTIME$$$$
$$$$DGNS$$$$
$$$$USERNAME$$$$

| PROJ. REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2C-5 |




PLAN VIEW




SECTION VIEW

NOTE:

WELD THE 24" ALUMINUM WALL SLEEVE TO THE 103" X 71" ALUMINUM ARCH PIPE IN ACCORDANCE WITH SECTION 1032 OF THE NCDOT STANDARD SPECIFICATIONS.

2/4/2015

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

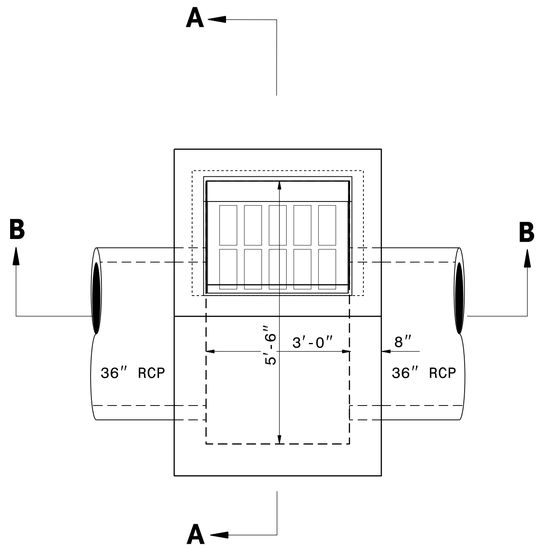
DocuSigned by: Joel Howerton 873F3D17DCDC45F...

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

# 24"ALUMINUM WALL SLEEVE FOR SEWER CONFLICT

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 09-12-14
CHECKED BY: _____ DATE: _____
FILE SPEC.: details/nbritt/english/urban/u3338b_wall_sleeve.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2C-6 |




## PLAN

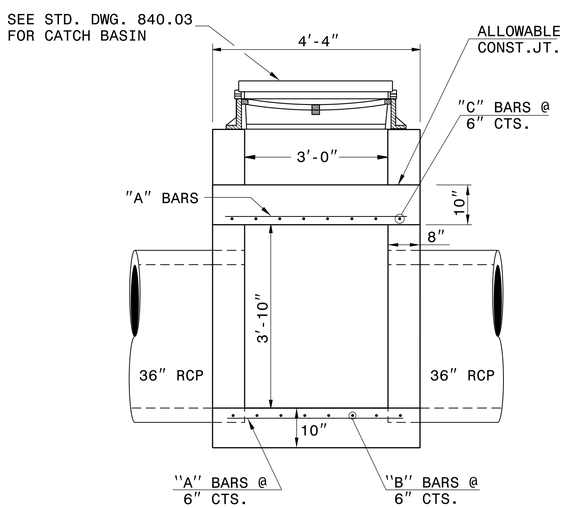
GENERAL NOTES:

1. USE CLASS "B" CONCRETE THROUGHOUT.
2. CONSTRUCT CONCRETE BOX IN ACCORDANCE WITH SECTION 825 OF THE STANDARD SPECIFICATIONS.
3. USE FORMS TOR CONSTRUCT THE BOTTOM SLAB.
4. ADJUST LENGTH OF STEEL BARS AS NEEDED TO COMPENSATE FOR PIPES AND FRAME AND GRATE OPENINGS.
5. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60.
6. CUT OR BEND STEEL BARS AS NEEDED TO PROVIDE 2" CLEARANCE.
7. LOCATE FRAME AND GRATE AS FIELD CONDITIONS DICTATE AND AS DIRECTED BY THE ENGINEER.
8. DIMENSIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

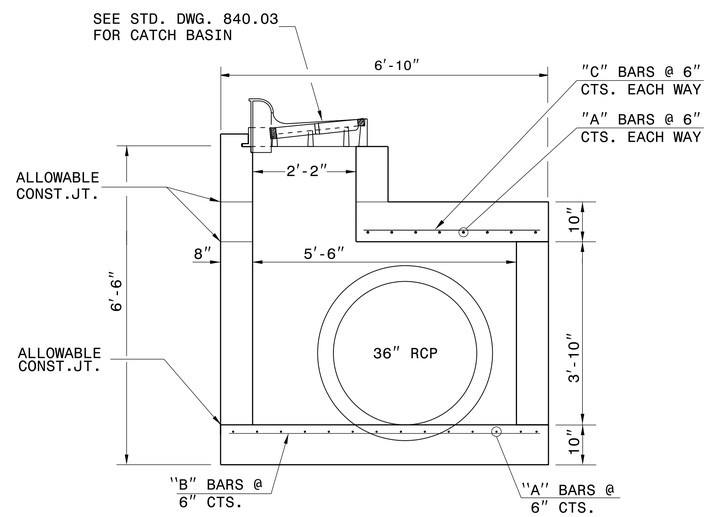
## BILL OF MATERIALS

| BAR | QTY | SIZE | LENGTH | WEIGHT |
|---|---|---|---|---|
| A | 22 | #5 | 4'-0" | 92 |
| | | | | |
| B | 8 | #5 | 5'-2" | 43 |
| | | | | |
| C | 8 | #5 | 3'-8" | 31 |
| | | | | |
| | | | | |
| | | | | |
| TOTAL REINF. STEEL (lbs.) | | | | 166 |
| TOTAL CONC. CU. YDS. | | | | 4.1 |

NO DEDUCTIONS HAVE BEEN MADE TO ACCOMMODATE PIPES OR CATCH BASIN OPENING.




## SECTION B-B




## SECTION A-A

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER DEL S. HOWERTON

Del Howerton
873F3D17DCDC45F...
6/26/2015

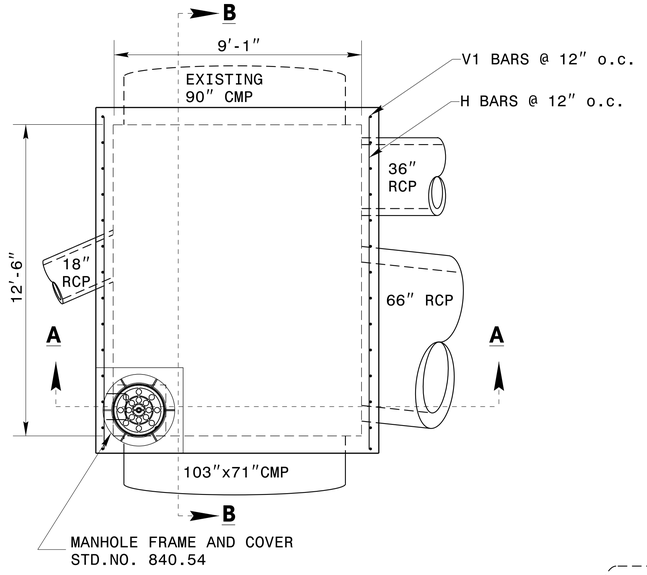
**CONTRACT SERVICES AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

# DETAIL OF SPECIAL CATCH BASIN

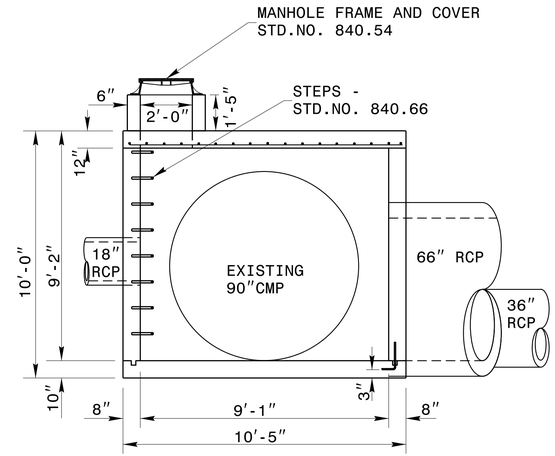
ORIGINAL BY: K.A.KEMPF DATE: JUNE 17,2014
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: s:details/kkempf/english/u3338B_cb_offset.dgn

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$CELL$$$$
$$$$DGNFILE$$$$

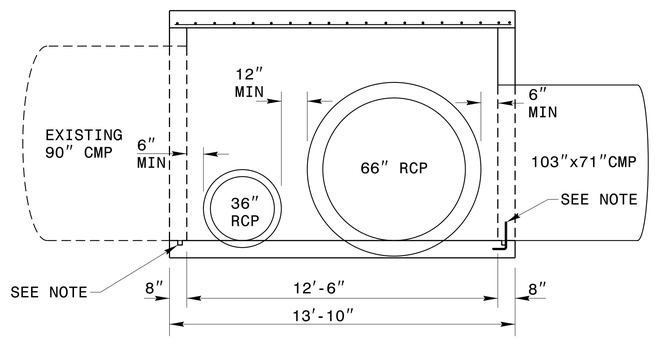
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2C-7 |



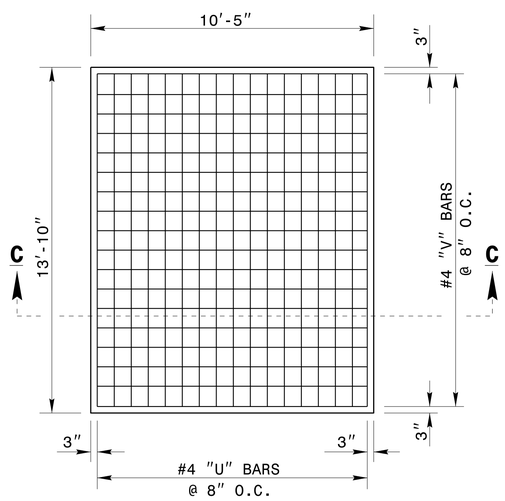

**PLAN**



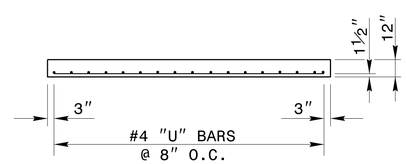

**SECTION A-A**



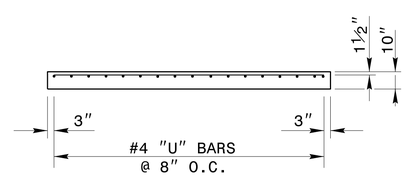

**SECTION B-B**



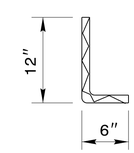

**PLAN OF TOP SLAB AND BOTTOM SLAB**




**SECTION C-C TOP SLAB**




**SECTION C-C BOTTOM SLAB**




**DOWEL**

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.

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

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

CONSTRUCT WITH PIPE CROWNS MATCHING.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

**BILL OF MATERIAL FOR JUNCTION BOX**

| REINF. STEEL | | | 1 PIPE | |
|---|---|---|---|---|
| BAR | SIZE | LENGTH | NO. | WEIGHT |
| V | #4 | 9'-11" | 40 | 265 |
| V1 | #4 | 8'-2" | 26 | 142 |
| | | | | |
| H | #4 | 12'-8" | 16 | 135 |
| | | | | |
| U | #4 | 13'-4" | 30 | 267 |
| REINF. STEEL LBS. | | | | 809 |
| | | | | |
| CLASS "B" CONCRETE | | | CU. YDS. | 17 |

NO DEDUCTIONS HAVE BEEN MADE TO ACCOMMODATE PIPES OR MANHOLE OPENING.

2/4/2015

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON

DocuSigned by: Joel Howerton
873F3D17DCDC45F...

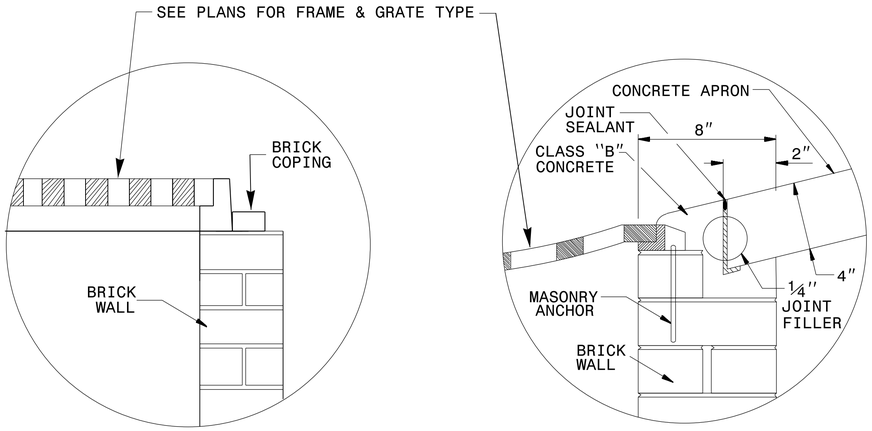

CONTRACT STANDARDS AND DEVELOPEMENT UNIT
Office 919-707-6950 FAX 919-250-4119


**CONCRETE JUNCTION BOX FOR 103"X71"CM PIPE ARCH**

ORIGINAL BY: kakempf DATE: 06-10-14
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: special details/kkempf/english/U3338B_pipearchJB103x71.dgn

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

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2C-8 |




## GRATE PLACEMENT DETAIL

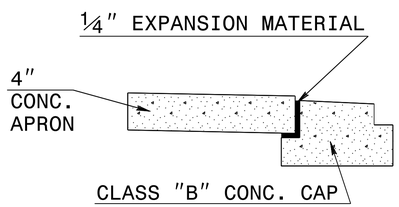
FOR DROP INLETS

## GRATE PLACEMENT DETAIL

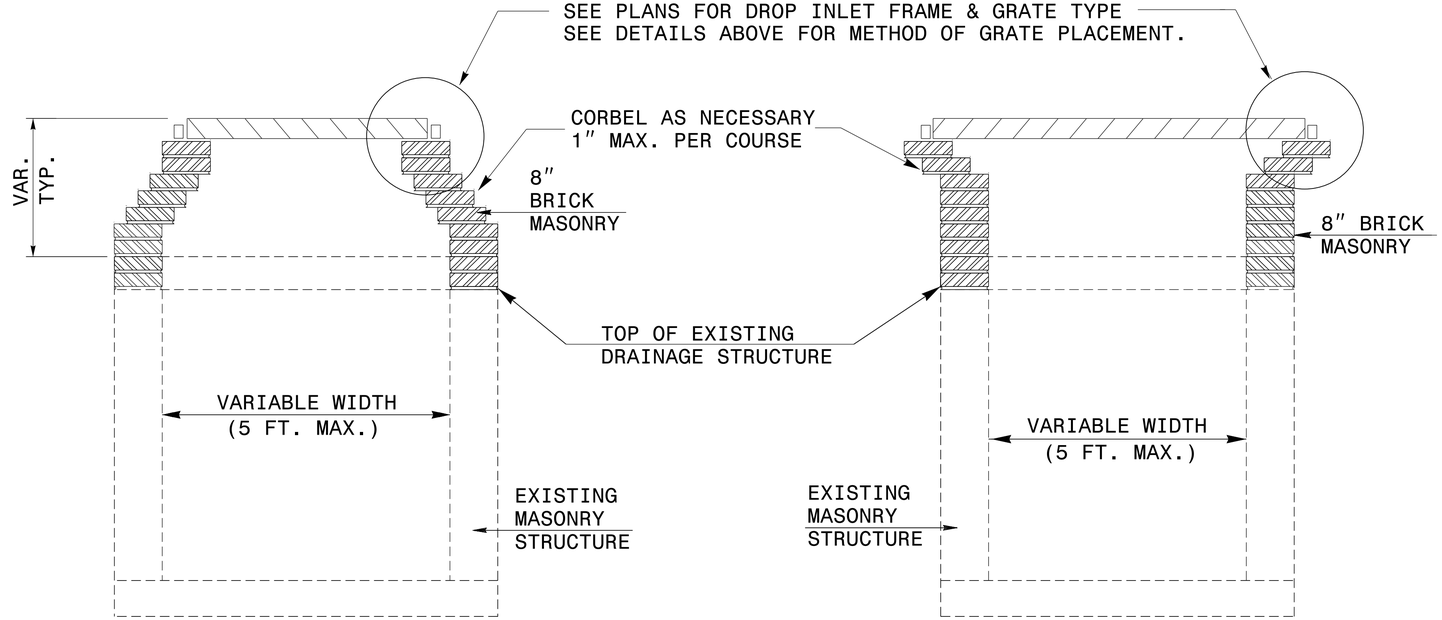
FOR GRATED DROP INLETS

GENERAL NOTES:

- -CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.
- -USE CLASS B CONCRETE.
- -THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.
- -JUMBO CONCRETE BRICK WILL BE PERMITTED. 4" CONCRETE BRICK OR 8" SOLID CONCRETE BLOCK ARE REQUIRED FOR DRAINAGE STRUCTURE.
- -INCLUDE 18" CONCRETE APRON IN UNIT PRICE BID PER EACH, CONVERT EXISTING CATCH BASIN TO DROP INLET.
- -SPECIAL DESIGN IS REQUIRED FOR USE UNDER PAVEMENT.
- -CONFIRM DIMENSIONS ON EACH INDIVIDUAL FRAME & GRATE PROPOSAL.
- -SEE STD. DRAWING 840.25 FOR MASONRY ANCHORAGE.




## EXPANSION JOINT DETAIL




## TYPICAL SECTION

## TYPICAL SECTION

2/4/2015

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DocuSigned by: Joel Howerton 873F3D17DCDC45F...

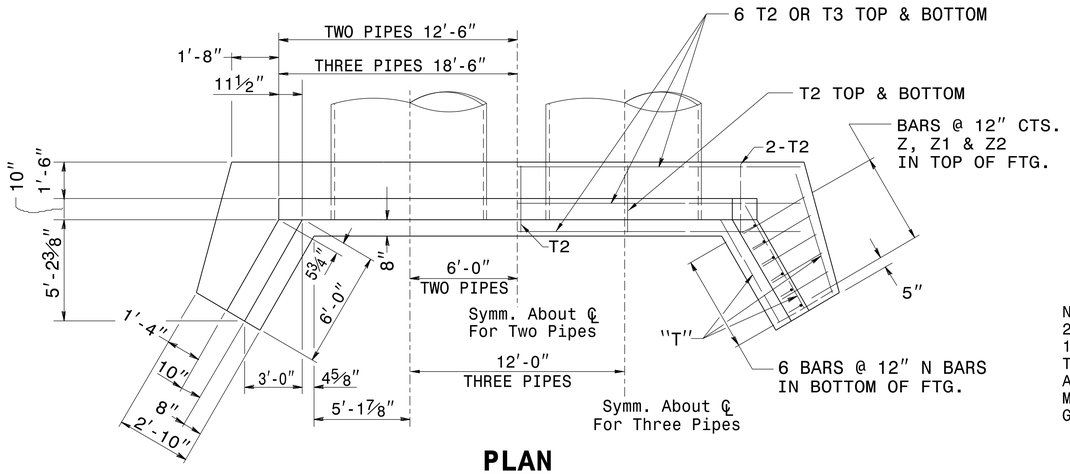
**CONTRACT STANDARDS AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

**DETAIL TO CONVERT EXISTING CATCH BASIN OR JUNCTION BOX TO DI OR 2-GI**

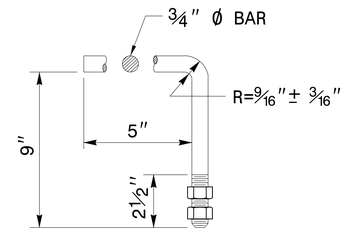
| | | | |
|---|---|---|---|
| ORIGINAL BY: | T.S.S. | DATE: | NOV.1997 |
| MODIFIED BY: | T.S.S. | DATE: | FEB.2000 |
| CHECKED BY: | | DATE: | |
| FILE SPEC.: | s:usr/details/stand/cbtodi02.dgn | | |

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

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2C-9 |




## PLAN




## HOOK BOLT

NOTE: CONSTRUCT HOOK BOLTS (ANCHORS) AT 2'-0" CTS. ALONG THE CIRCUMFERENCE OF THE 103"X 71" CSPA. EMBED THE HOOK BOLTS 6" IN DEPTH. THE GALVANIZED ¾" 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.

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.

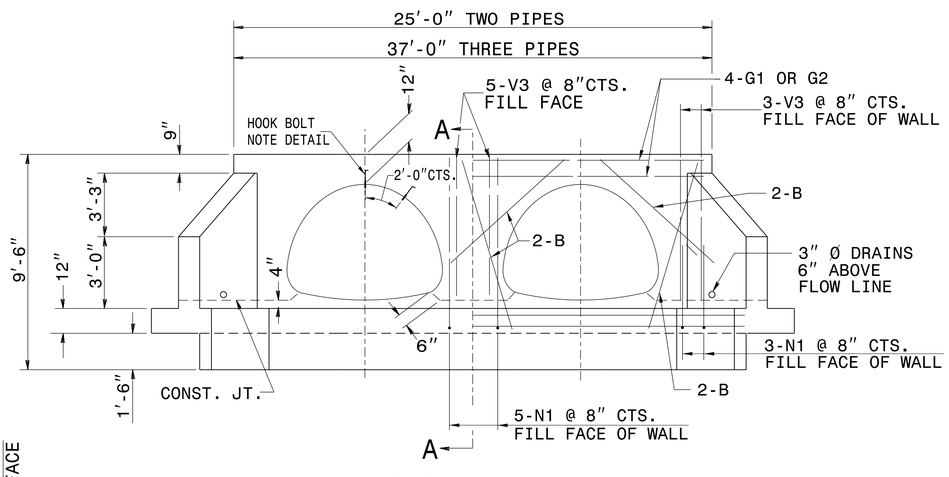
THE FOOTING, CURTAIN WALL AND 4" OF WALL ARE TO BE POURED IN ONE OPERATION ALLOWING NO TIME FOR INITIAL SET TO TAKE PLACE BETWEEN THEM. THE REMAINING WALL SHALL THEN BE POURED IN ONE OPERATION.

ALL EXPOSED CORNERS ARE TO BE CHAMFERED 1".

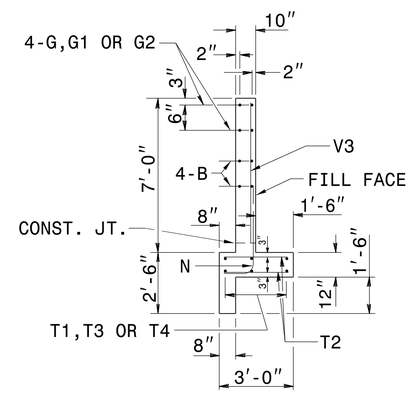
3" DIAMETER DRAINS SHALL BE PLACED IN WALL AS SHOWN AND BE 6" ABOVE NORMAL FLOW LINE.

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

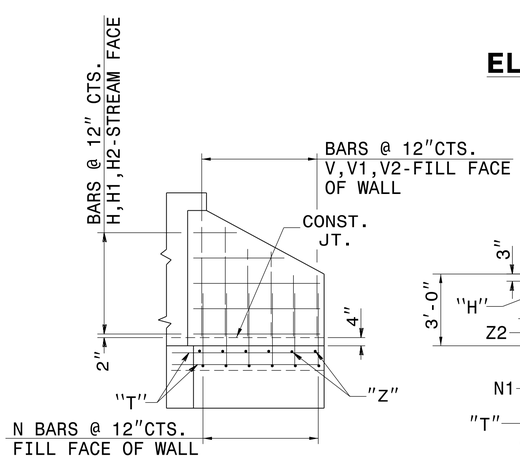
THE EXTRA BARS ARE PROVIDED FOR HOLDING REINFORCING STEEL IN CORRECT POSITION IN WING.



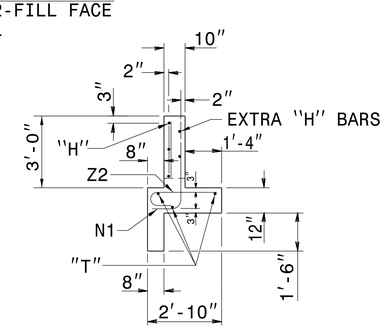

## ELEVATION



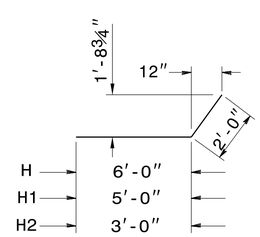

## SECTION - AA



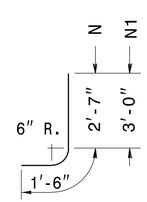

## WING ELEVATION



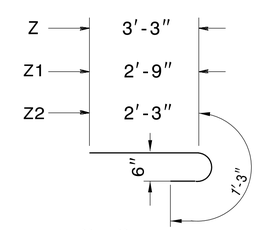

## END OF WING




## "H" BARS




## "N" BARS




## "Z" BARS

"H", "N", & "Z" BAR DIMENSIONS ARE OUT TO OUT.

## DESIGN DATA

| | |
|---|---|
| Specifications | A.A.S.H.T.O. |
| Steel in tension | 20,000 LBS. PER SQ.IN. |
| Concrete in compression | 1,200 LBS. PER SQ.IN. |
| Class "A" Concrete | SEE A.A.S.H.T.O. |
| Equiv. fluid pressure of earth | 30 LBS.PER CU. FT. |

## BILL OF MATERIAL FOR ENDWALL

| REINF. STEEL | | | 1 PIPES | | 2 PIPES | | 3 PIPES | |
|---|---|---|---|---|---|---|---|---|
| BAR | SIZE | LENGTH | NO. | WEIGHT | NO. | WEIGHT | NO. | WEIGHT |
| B | #4 | 6'-6" | 8 | 35 | 16 | 69 | 24 | 104 |
| | | | | | | | | |
| G | #5 | 12'-9" | 4 | 53 | - | - | - | - |
| G1 | #5 | 13'-6" | - | - | 8 | 113 | - | - |
| G2 | #5 | 19'-6" | - | - | - | - | 8 | 163 |
| | | | | | | | | |
| H | #4 | 8'-0" | 10 | 53 | 10 | 53 | 10 | 53 |
| H1 | #4 | 7'-0" | 2 | 9 | 2 | 9 | 2 | 9 |
| H2 | #4 | 5'-0" | 4 | 13 | 4 | 13 | 4 | 13 |
| | | | | | | | | |
| N | #4 | 4'-1" | 12 | 33 | 12 | 33 | 12 | 33 |
| N1 | #5 | 4'-6" | 6 | 28 | 11 | 52 | 16 | 75 |
| | | | | | | | | |
| T | #4 | 6'-0" | 6 | 24 | 6 | 24 | 6 | 24 |
| T1 | #4 | 16'-0" | 6 | 64 | - | - | - | - |
| T2 | #4 | 2'-9" | 6 | 11 | 10 | 18 | 14 | 26 |
| T3 | #4 | 15'-0" | - | - | 12 | 120 | - | - |
| T4 | #4 | 21'-0" | - | - | - | - | 12 | 168 |
| | | | | | | | | |
| V | #4 | 4'-10" | 6 | 19 | 6 | 19 | 6 | 19 |
| V1 | #4 | 3'-8" | 6 | 15 | 6 | 15 | 6 | 15 |
| V2 | #4 | 2'-6" | 4 | 7 | 4 | 7 | 4 | 7 |
| V3 | #4 | 6'-6" | 6 | 26 | 11 | 48 | 16 | 69 |
| | | | | | | | | |
| Z | #4 | 4'-6" | 4 | 19 | 4 | 19 | 4 | 19 |
| Z1 | #4 | 4'-0" | 4 | 11 | 4 | 11 | 4 | 11 |
| Z2 | #4 | 3'-6" | 4 | 9 | 4 | 9 | 4 | 9 |
| REINF. STEEL LBS. | | | | 429 | | 632 | | 817 |
| | | | | | | | | |
| CON./R.C. CU. YDS | | | 7.0 | | 10.1 | | 13.1 | |

2/4/2015

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DocuSigned by: Joel Howerton 873F3D17DCDC45F...


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


# DETAIL OF REINFORCED CONCRETE ENDWALL FOR 103"X 71" (Pipe Arch)-90°

ORIGINAL BY: KKEMPF DATE: 8/2/10
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: KKEMPF\ENGLISH\852D0601.DGN


USERNAME = SYSTIME = $DGN

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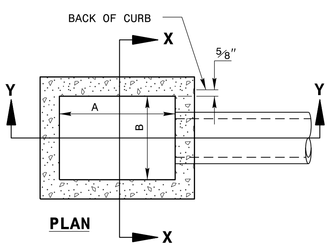
$$$$USERNAME$$$$

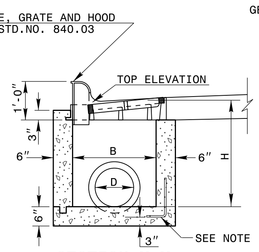


STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**MINIMUM DEPTH**
**CONCRETE CATCH BASIN**
12" THRU 84" PIPE




**PLAN**




**SECTION X-X**

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.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

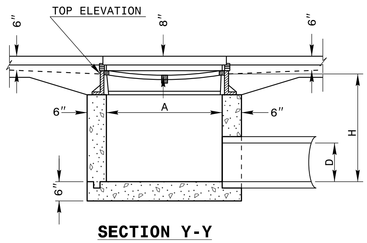
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

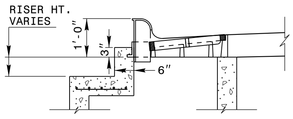
CONSTRUCT WITH PIPE CROWNS MATCHING.

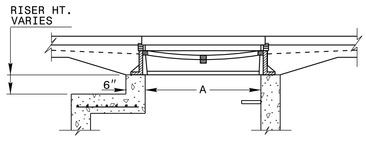
CHAMFER ALL EXPOSED CORNERS 1".

** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.

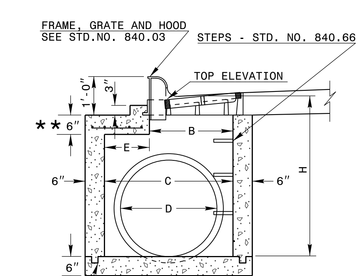



**SECTION Y-Y**

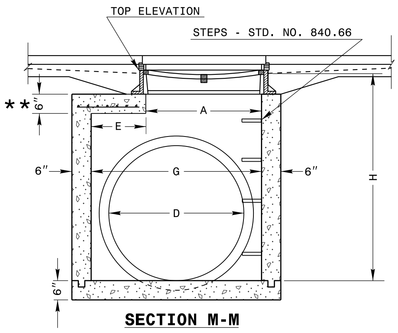


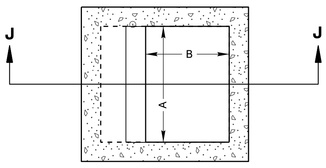

**DETAIL SHOWING METHOD OF RISER CONSTRUCTION**



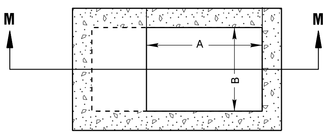

**SECTION J-J**




**SECTION M-M**




**PLAN**



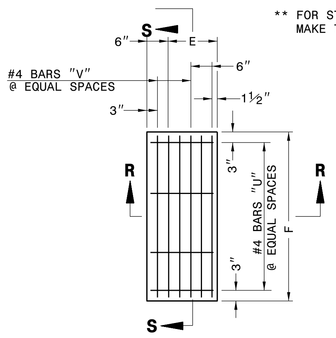

**PLAN**

SHEET 1 OF 2
**840D02**

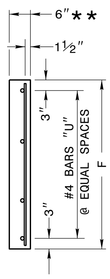
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**MINIMUM DEPTH**
**CONCRETE CATCH BASIN**
12" THRU 84" PIPE

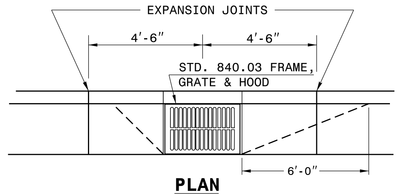
** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.




**PLAN OF TOP SLAB**

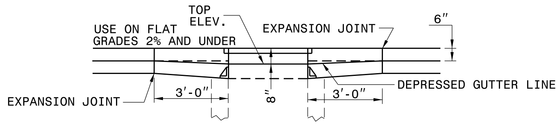



**SECTION S-S**



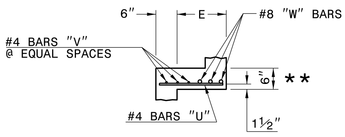

**PLAN**

CURB AND GUTTER WITH CATCH BASIN ON STEEP GRADES

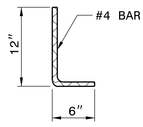



**ELEVATION**

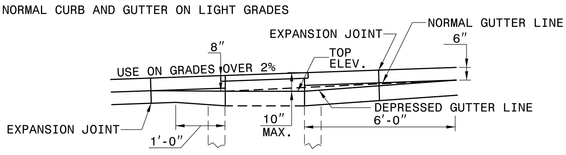
NORMAL CURB AND GUTTER ON LIGHT GRADES




**SECTION R-R**




**DOWEL**




**ELEVATION**

NORMAL CURB AND GUTTER ON STEEP GRADES

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

**MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) ***

| DIMENSIONS OF BOX AND PIPE | | | | | | COVER DIMENSION | | BARS-U | | BARS-V | | BARS-W | | TOTAL LBS. | CU.YDS. CONC. IN BOX | | DEDUCTIONS ONE PIPE | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PIPE | SPAN | WIDTH | WIDTH | SPAN | MIN. HEIGHT | | | | | | | | | | TOP SLAB | BOTTOM SLAB | TOT. CONC. FOR MINIMUM HEIGHT, H | | |
| D | A | B | C | G | H | E | F | NO. | LENGTH | NO. | LENGTH | NO. | LENGTH | | | | C.M. | R.C. |
| 12" | 3'-0" | 2'-2" | -- | -- | 2'-0" | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.235 | 0.772 | 0.015 | 0.026 |
| 15" | 3'-0" | 2'-2" | | | 2'-3" | | | | | | | | | | | 0.235 | 0.829 | 0.023 | 0.036 |
| 18" | 3'-0" | 2'-2" | | | 2'-6" | | | | | | | | | | | 0.235 | 0.887 | 0.033 | 0.049 |
| 24" | 3'-0" | 2'-2" | | | 3'-1" | | | | | | | | | | | 0.235 | 1.001 | 0.059 | 0.085 |
| 30" | 3'-0" | 2'-2" | 3'-4" | 3'-4" | 3'-10" | 1'-2" | 4'-4" | 4 | 1'-5" | 2 | 4'-1" | 3 | 4'-1" | 39 | 0.123 | 0.347 | 1.433 | 0.092 | 0.127 |
| 36" | 3'-0" | 2'-2" | 3'-10" | 3'-10" | 4'-6" | 1'-8" | 4'-10" | 4 | 1'-11" | 3 | 4'-7" | 3 | 4'-7" | 43 | 0.161 | 0.432 | 1.714 | 0.132 | 0.178 |
| 42" | 3'-0" | 2'-2" | 4'-5" | 4'-5" | 4'-11" | 2'-2" | 5'-5" | 5 | 2'-5" | 4 | 5'-2" | 3 | 5'-2" | 47 | 0.200 | 0.543 | 1.738 | 0.180 | 0.243 |
| 48" | 3'-0" | 2'-2" | 5'-0" | 5'-0" | 5'-6" | 2'-10" | 6'-0" | 5 | 3'-1" | 4 | 5'-9" | 3 | 5'-9" | 51 | 0.235 | 0.667 | 2.052 | 0.235 | 0.317 |
| 54" | 3'-0" | 2'-2" | 5'-7" | 5'-7" | 6'-0" | 3'-5" | 6'-7" | 6 | 3'-8" | 5 | 6'-4" | 3 | 6'-4" | 56 | 0.289 | 0.802 | 2.387 | 0.297 | 0.401 |
| 60" | 3'-0" | 2'-2" | 6'-3" | 6'-3" | 6'-6" | 4'-1" | 7'-3" | 6 | 4'-4" | 5 | 7'-0" | 3 | 7'-0" | 61 | 0.340 | 0.973 | 2.722 | 0.363 | 0.546 |
| 66" | 3'-0" | 2'-2" | 6'-11" | 6'-11" | 7'-0" | 4'-9" | 7'-11" | 7 | 5'-0" | 6 | 7'-8" | 3 | 7'-8" | 66 | 0.391 | 1.160 | 3.057 | 0.440 | 0.655 |
| 72" | 3'-0" | 2'-2" | 7'-6" | 7'-6" | 7'-6" | 5'-3" | 8'-6" | 7 | 5'-6" | 6 | 8'-3" | 3 | 8'-3" | 72 | 0.442 | 1.340 | 3.392 | 0.524 | 0.774 |
| 78" | 3'-0" | 2'-2" | 8'-1" | 8'-1" | 8'-0" | 5'-11" | 9'-1" | 8 | 6'-2" | 7 | 8'-10" | 3 | 8'-10" | 78 | 0.493 | 1.530 | 3.727 | 0.615 | 0.893 |
| 84" | 3'-0" | 2'-2" | 8'-9" | 8'-9" | 8'-6" | 6'-7" | 9'-9" | 8 | 6'-10" | 7 | 9'-6" | 3 | 9'-6" | 84 | 0.544 | 1.760 | 4.062 | 0.713 | 1.010 |

SHEET 2 OF 2
**840D02**

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

ENGLISH DETAIL DRAWING FOR
**MINIMUM DEPTH**
**CONCRETE CATCH BASIN**
12" THRU 84" PIPE

SHEET 2 OF 2
**840D02**

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

**SEE PLATE FOR TITLE**

ORIGINAL BY: 2002 Std.840.01 DATE:
MODIFIED BY: E.E. WARD DATE: 3-1-02
CHECKED BY: DATE:
FILE SPEC.: s:Special Details/jhowerton/840d02.dgn

2/4/2015

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER

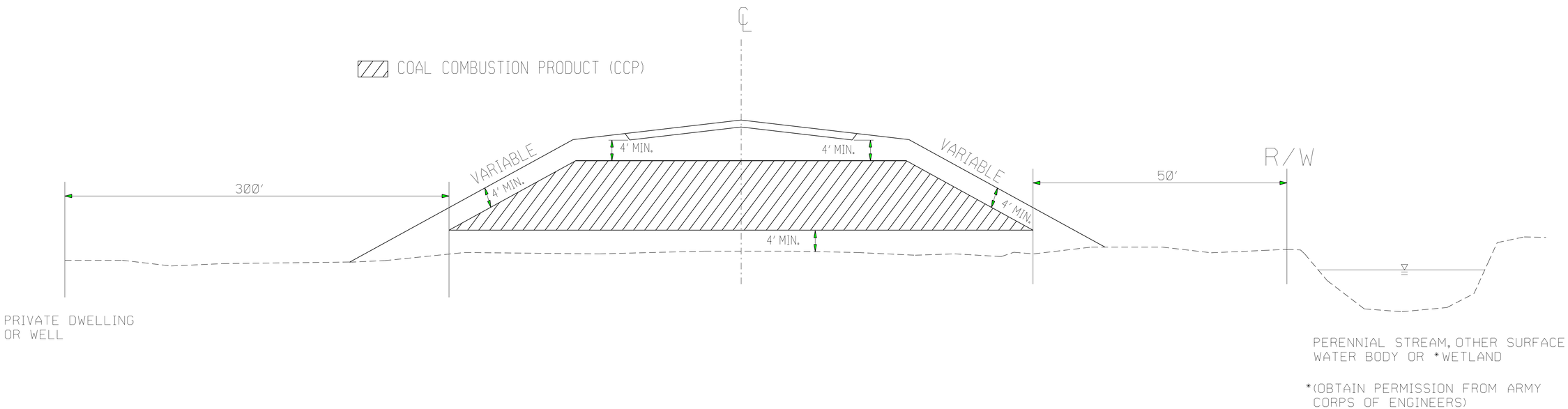
Document Generated by Bentley Automation Manager

PROJECT REFERENCE NO. U-3338B

SHEET NO. 2C-10

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 2C-11 |

# COAL COMBUSTION PRODUCT PLACEMENT




PLACE CCP IN HATCHED AREA IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS

PLACE CCP A MINIMUM OF 5' ABOVE SEASONAL HIGH GROUND WATER

PLACE AT LOCATIONS AS APPROVED BY THE ENGINEER

PLACE SOIL BORROW MATERIAL ON THE OUTSIDE OF CCP AS EACH LIFT OF CCP IS PLACED

9/8/2015

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DocuSigned by: Joel Howerton
873F3D17DCDC45F...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

**COAL COMBUSTION PRODUCT PLACEMENT DETAIL**

ORIGINAL BY: J.S.H. DATE: 3/16/15
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: joel/coal combustion material detail.dgn

$$$$SYSTIME$$$$
$$$$DGNNAME$$$$
$$$$USERNAME$$$$

| PROJECT REFERENCE NO. | SHEET |
|---|---|
| U-3338B | 2G-1 |

GEOTECHNICAL ENGINEER

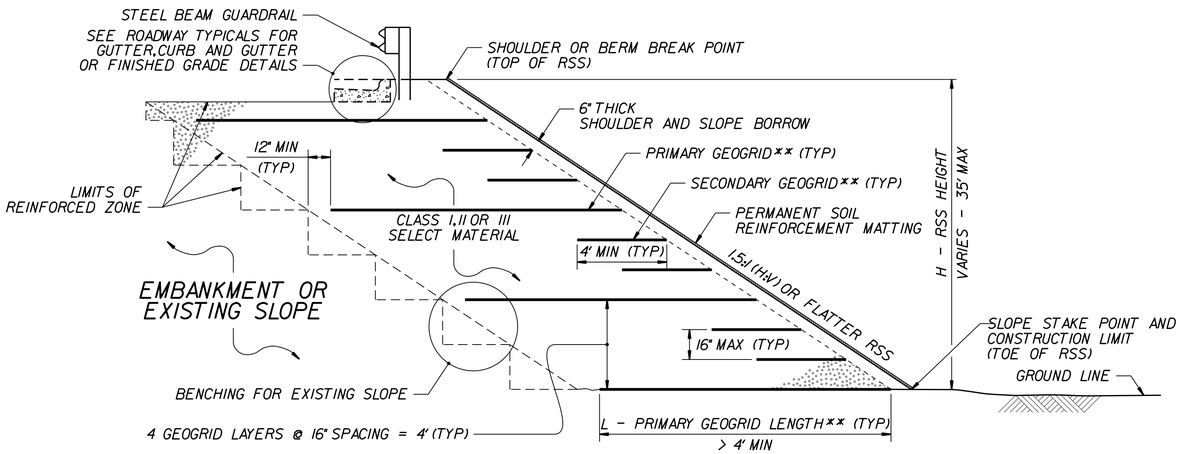
NORTH CAROLINA PROFESSIONAL SEAL 22246 ENGINEER SCOTT A. HIDDEN

DocuSigned by: Scott A. Hidden 7/30/2014

F760CAE8B5C410E... SIGNATURE DATE

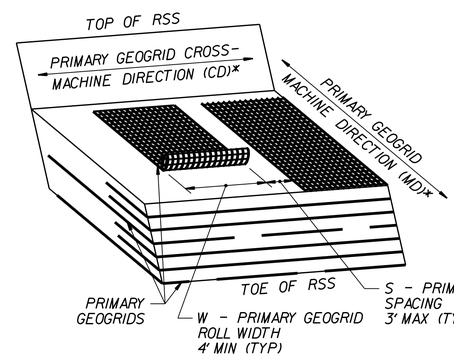
ENGINEER

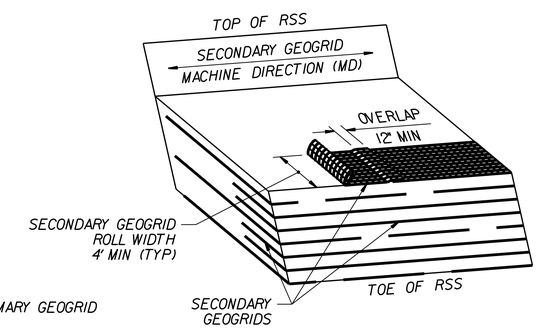
SIGNATURE DATE




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

**SEE TABLES ON SHEET 2 AND GEOGRID PLACEMENT DETAILS.

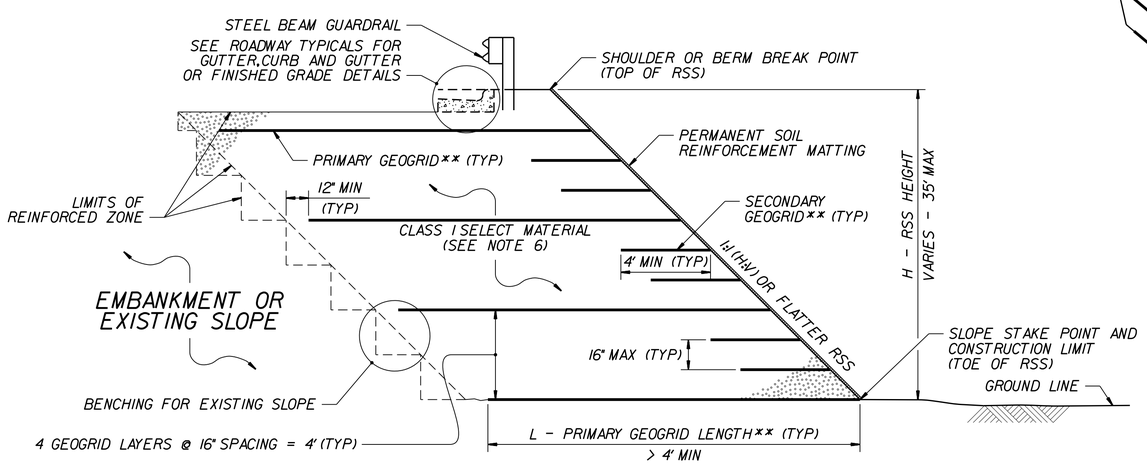



## GEOGRID PLACEMENT DETAILS

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

*SEE NOTES 8 AND 9 ON SHEET 2.




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

**SEE TABLES ON SHEET 2 AND GEOGRID PLACEMENT DETAILS.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

**GEOTECHNICAL ENGINEERING UNIT**

*STATE OF NORTH CAROLINA*
*DEPARTMENT OF TRANSPORTATION*
*RALEIGH*

*STANDARD DRAWING NO. 1803.01*

STANDARD
REINFORCED SOIL SLOPE (RSS)
SHEET 1 OF 2

DATE: 11-19-13

| PROJECT REFERENCE NO. | SHEET |
|---|---|
| U-3338B | 2G-2 |

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22246 ENGINEER SCOTT A. HODDEN

DocuSigned by: Scott A. Hodden 7/30/2014
F760CAE8B5D410E... SIGNATURE DATE

ENGINEER

SIGNATURE DATE

| GEOGRID TYPE, DIRECTION | H (FT) | 0 - < 10 | | 10 - 20 | | > 20 - 35 | |
|---|---|---|---|---|---|---|---|
| | SELECT MATERIAL CLASS | I | II OR III | I | II OR III | I | II OR III |
| PRIMARY GEOGRID, MD (SUBSTITUTE SECONDARY GEOGRID FOR PRIMARY GEOGRID FOR 2:1 (H:V) OR FLATTER RSS) | 1:1 TO < 1.5:1 (H:V) RSS | 600 | SEE NOTE 6 | 1200 | SEE NOTE 6 | 2100 | SEE NOTE 6 |
| | 1.5:1 TO 1.75:1 (H:V) RSS | 500 | 500 | 800 | 500 | 1100 | 700 |
| | > 1.75:1 TO < 2:1 (H:V) RSS | 500 | 500 | 600 | 500 | 800 | 500 |
| SECONDARY GEOGRID, CD | 1:1 (H:V) OR FLATTER RSS | 185 | | | | | |

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

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

## NOTES:

1. SEE ROADWAY PLANS AND SUMMARY SHEETS FOR REINFORCED SOIL SLOPE (RSS) LOCATIONS.

2. FOR STANDARD REINFORCED SOIL SLOPES, SEE REINFORCED SOIL SLOPES PROVISION. FOR PERMANENT SOIL REINFORCEMENT MATTING, SEE PERMANENT SOIL REINFORCEMENT MAT PROVISION. FOR STEEL BEAM GUARDRAIL, SEE SECTION 862 OF THE STANDARD SPECIFICATIONS.

3. STANDARD RSS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
   UNIT WEIGHT, $\gamma$ = 120 LB/CF
   FRICTION ANGLE, $\phi$ = 30 DEGREES
   COHESION, c = 0 LB/SF

4. DO NOT USE STANDARD RSS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE TOE OF RSS.

5. DO NOT USE STANDARD RSS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW RSS.

6. FOR 1:1 TO < 1.5:1 (H:V) RSS, USE CLASS I SELECT MATERIAL IN THE REINFORCED ZONE THAT MEETS ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS EXCEPT FOR SELECT MATERIAL THAT MEETS AASHTO M 145 FOR SOIL CLASSIFICATIONS A-4 AND A-5. DO NOT USE A-4 OR A-5 SOIL OR CLASS II OR III SELECT MATERIAL FOR 1:1 TO < 1.5:1 (H:V) RSS.

7. GEOGRIDS ARE TYPICALLY APPROVED FOR ULTIMATE TENSILE STRENGTHS IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) OR LONG-TERM DESIGN STRENGTHS FOR A 75-YEAR DESIGN LIFE IN THE MD BASED ON MATERIAL TYPE. THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM:
   connect.ncdot.gov/resources/Materials/Pages/SoilsLaboratory.aspx
   DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SELECT MATERIAL AS FOLLOWS:

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

   IF THE WEBSITE DOES NOT LIST A LONG-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID IN THE MD, DO NOT USE THE GEOGRID FOR PRIMARY GEOGRID. IF THE WEBSITE DOES NOT LIST A LONG-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID IN THE CD, USE A LONG-TERM DESIGN STRENGTH EQUAL TO THE ULTIMATE TENSILE STRENGTH DIVIDED BY 7 FOR THE SECONDARY GEOGRID.

8. DO NOT OVERLAP PRIMARY GEOGRIDS IN THE MD SO OVERLAPS ARE PARALLEL TO THE TOE OF RSS. POLYOLEFIN (e.g., HDPE OR PP) GEOGRIDS MAY BE SPLICED ONCE PER PRIMARY GEOGRID LENGTH IN ACCORDANCE WITH THE GEOGRID MANUFACTURER'S INSTRUCTIONS. USE POLYOLEFIN GEOGRID PIECES AT LEAST 4' LONG. DO NOT SPLICE POLYESTER TYPE (PET) GEOGRIDS.

9. FOR PRIMARY GEOGRIDS WITH 100% COVERAGE, PLACE PRIMARY GEOGRIDS SO GEOGRIDS ARE ADJACENT TO EACH OTHER IN THE CD. FOR PRIMARY GEOGRIDS WITH 75% TO LESS THAN 100% COVERAGE,

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

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

10. DO NOT PLACE PRIMARY GEOGRIDS UNTIL EXCAVATION DIMENSIONS AND IN-SITU MATERIAL ARE APPROVED.

| H (FT) | 0 - < 10 | | 10 - 20 | | > 20 - 35 | |
|---|---|---|---|---|---|---|
| SELECT MATERIAL CLASS | I | II OR III | I | II OR III | I | II OR III |
| 1:1 TO < 1.5:1 (H:V) RSS | 1.25 | SEE NOTE 6 | 1.15 | SEE NOTE 6 | 1.05 | SEE NOTE 6 |
| 1.5:1 TO 1.75:1 (H:V) RSS | 1.20 | 1.05 | 1.10 | 1.00 | 1.00 | 0.95 |
| > 1.75:1 TO < 2:1 (H:V) RSS | 1.15 | 0.80 | 1.05 | 0.75 | 0.95 | 0.70 |

## L/H RATIO (L > 4' MIN)

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

**GEOTECHNICAL ENGINEERING UNIT**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1803.01

STANDARD
REINFORCED SOIL SLOPE (RSS)
SHEET 2 OF 2

DATE: 11-19-13

| PROJECT REFERENCE NO. | SHEET |
|---|---|
| U-3338B | 2H-1 |

GEOENVIRONMENTAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31499 ENGINEER CYRUS F. PARKER

DocuSigned by: Cyrus Parker 1/23/2015
C96492AF5E824DF...

SIGNATURE DATE

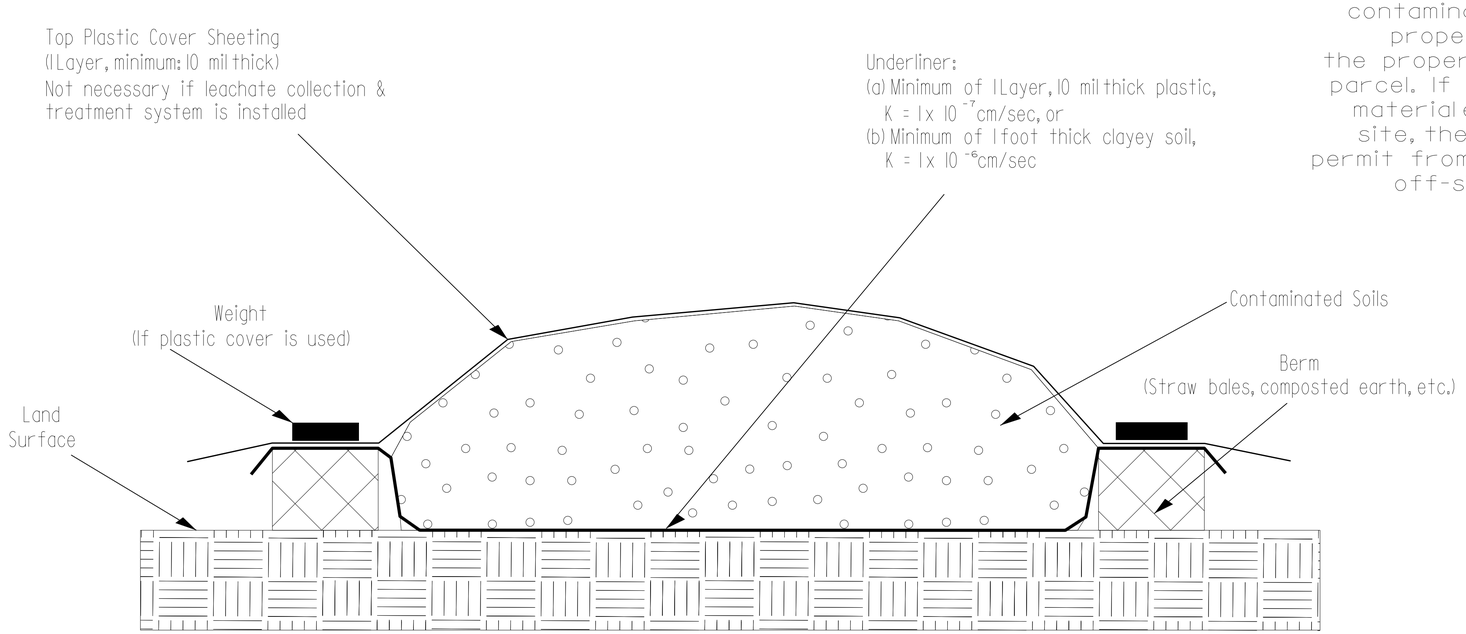
ENGINEER

SIGNATURE DATE

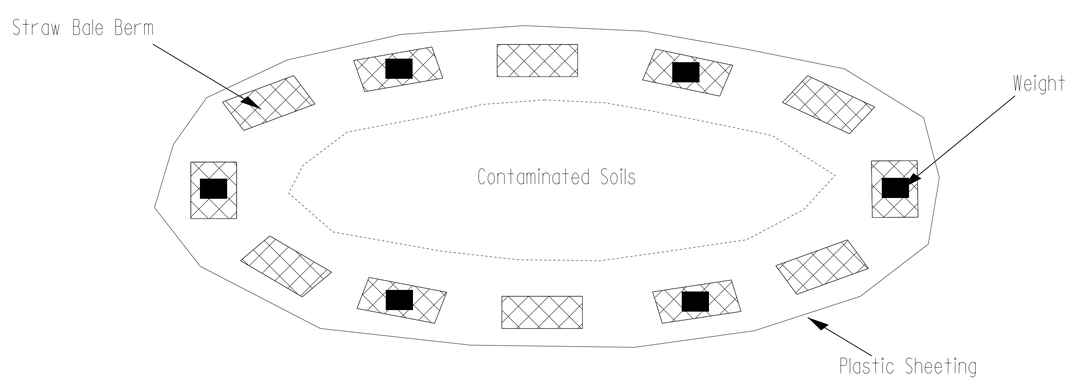
# Detail for Temporary Containment of Contaminated Soil

## Cross-Section View

NOTE:
The Contractor shall stockpile all contaminated soil excavated from a property in a location within the property boundaries of the source parcel. If the volume of contaminated material exceeds available space on site, the Contractor shall obtain a permit from the NCDENR UST Section for off-site temporary storage.




## Map View




| PREPARED BY: | DATE: |
|---|---|
| REVIEWED BY: | DATE: |

**GEOTECHNICAL ENGINEERING UNIT**

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

- ☐ EASTERN REGIONAL OFFICE
- ☐ WESTERN REGIONAL OFFICE
- ☒ CONTRACT OFFICE

**STATE OF NORTH CAROLINA**
**DEPARTMENT OF TRANSPORTATION**
**RALEIGH**

STOCKPILE CONTAINMENT DETAIL

REVISIONS

| NO. | BY | DATE | NO. | BY | DATE |
|---|---|---|---|---|---|
| 1 | | | 3 | | |
| 2 | | | 4 | | |

COMPUTED BY: TEM DATE: 09/11/15
CHECKED BY: PJS DATE: 09/14/15

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3B-1 |

# STATE OF NORTH CAROLINA
# DIVISION OF HIGHWAYS

## SUMMARY OF EARTHWORK

( IN CUBIC YARDS )

| Survey Line | Station | Station | Uncl. Excav. | Undercut | Embank. + % | Borrow | Waste |
|---|---|---|---|---|---|---|---|
| | **SUMMARY 1** | | | | | | |
| L LT | 10+10.00 | 45+50.00 | 2,411 | | 4,523 | 2,112 | |
| Y1 RT | 11+27.09 | 14+24.00 | 76 | | 690 | 614 | |
| Y1 | 14+24.00 | 17+93.23 | 204 | | 1,589 | 1,385 | |
| Y3 | 14+40.00 | 15+48.67 | 57 | | 11 | | 46 |
| Y5 | 8+85.00 | 15+50.39 | 640 | | 208 | | 432 |
| Y5B | 10+44.75 | 14+58.75 | 503 | | 45 | | 458 |
| | | **SUBTOTALS:** | 3,891 | | 7,066 | 4,111 | 936 |
| | **SUMMARY 2** | | | | | | |
| L RT | 66+11.00 | 68+00.00 | 13 | | 73 | 60 | |
| Y6 LT | 29+35.00 | 34+70.00 | 209 | | 304 | 95 | |
| Y7 | 10+11.47 | 13+62.46 | 303 | | 121 | | 182 |
| Y7A | 10+41.65 | 24+63.68 | 3,370 | | 3,418 | 48 | |
| | | **SUBTOTALS:** | 3,895 | | 3,916 | 203 | 182 |
| | **SUMMARY 3** | | | | | | |
| L LT | 66+11.00 | 96+97.55 | 1,299 | | 1,746 | 447 | |
| DR2 | 10+00.00 | 10+64.64 | 31 | | | | 31 |
| Y8 | 12+00.00 | 14+07.18 | 113 | | 35 | | 78 |
| Y10 | 9+61.50 | 13+60.62 | 220 | | 51 | | 169 |
| Y11 | 12+60.78 | 13+30.42 | 33 | | 15 | | 18 |
| Y16 | 14+72.00 | 17+55.35 | 202 | | 16 | | 186 |
| Y17 | 10+18.29 | 13+43.57 | 276 | | 1,185 | 909 | |
| SR1 | 10+16.32 | 18+79.48 | 766 | | 1,859 | 1,093 | |
| | | **SUBTOTALS:** | 2,940 | | 4,907 | 2,449 | 482 |
| | **SUMMARY 4** | | | | | | |
| L LT | 45+50.00 | 66+11.00 | 684 | | 1,711 | 1,027 | |
| Y6 | 5+90.00 | 9+31.00 | 137 | | 145 | 8 | |
| Y6 LT | 9+31.00 | 29+35.00 | 472 | | 1,510 | 1,038 | |
| Y15 | 13+35.00 | 15+04.69 | 21 | | 90 | 69 | |
| | | **SUBTOTALS:** | 1,314 | | 3,456 | 2,142 | |
| | **SUMMARY 5** | | | | | | |
| L RT | 10+10.00 | 40+10.00 | 2,113 | | 2,756 | 643 | |
| Y1 LT | 12+80.62 | 14+24.00 | 18 | | 156 | 138 | |
| Y1 | 18+80.50 | 29+27.40 | 772 | | 1,604 | 832 | |
| Y2 | 10+40.39 | 12+57.47 | 87 | | 83 | | 4 |
| | | **SUBTOTALS:** | 2,990 | | 4,599 | 1,613 | 4 |
| | **SUMMARY 6** | | | | | | |
| L RT | 40+10.00 | 66+11.00 | 1,079 | | 1,815 | 736 | |
| Y4 | 10+48.00 | 11+10.00 | 35 | | 15 | | 20 |
| Y6 RT | 9+31.00 | 34+70.00 | 554 | | 1,244 | 690 | |
| | | **SUBTOTALS:** | 1,668 | | 3,074 | 1,426 | 20 |
| | **SUMMARY 7** | | | | | | |
| L RT | 68+00.00 | 96+97.55 | 979 | | 1,713 | 734 | |
| Y8 | 15+02.29 | 17+02.29 | 54 | | 68 | 14 | |
| Y9 | 10+39.50 | 11+70.83 | 53 | | 64 | 11 | |
| Y12 | 10+39.50 | 11+35.76 | 43 | | 28 | | 15 |
| | | **SUBTOTALS:** | 1,129 | | 1,873 | 759 | 15 |
| | | | | | | | |
| | | **TOTALS:** | **17,827** | | **28,891** | **12,703** | **1,639** |
| | | | | | | | |
| | | EARTH WASTE IN LIEU OF BORROW: | | | | -1,639 | -1,639 |
| | | | | | | | |
| | | **PROJECT TOTALS:** | **17,827** | | **28,891** | **11,064** | |
| | | | | | | | |
| | | EST. 5% TO REPLACE TOP SOIL ON BORROW PIT: | | | | 553 | |
| | | | | | | | |
| | | **GRAND TOTALS:** | **17,827** | | **28,891** | **11,617** | |
| | | | | | | | |
| | | **SAY:** | **17,900** | | | **11,700** | |

UNDERCUT (CONTINGENCY) = 1,100 CY (PER GEOTECH. RECS., DATED SEPTEMBER 20, 2012)
SHALLOW UNDERCUT (CONTINGENCY) = 1,000 CY (PER GEOTECH. RECS., DATED SEPTEMBER 10, 2015)
SELECT GRANULAR MATERIAL (CONTINGENCY) = 1,100 CY (PER GEOTECH. RECS., DATED SEPTEMBER 20, 2012)
DRAINAGE DITCH EXCAVATION = 480 CY
PAVEMENT STRUCTURE VOLUME = 11,300 CY

Notes:
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.
Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

## SUMMARY OF PAVEMENT BREAKUP & REMOVAL

( IN SQUARE YARDS )

| Survey Line | Station | Station | Location LT/RT/CL | Asphalt Breakup | Asphalt Removal |
|---|---|---|---|---|---|
| L | 13+50.00 | 16+00.00 | CL | | 1,390.12 |
| L | 16+00.00 | 18+00.00 | CL | 2,161.97 | |
| L | 18+00.00 | 19+00.00 | CL | | 489.06 |
| L | 23+90.71 | 29+89.67 | CL | | 1,233.59 |
| L | 32+27.11 | 37+95.17 | CL | | 1,159.29 |
| L | 50+00.00 | 53+00.00 | CL | | 1,574.14 |
| L | 61+50.00 | 64+50.00 | CL | | 1,292.78 |
| L | 71+27.92 | 83+29.35 | CL | | 2,428.93 |
| Y6 | 18+50.00 | 20+00.00 | CL | | 1,302.70 |
| Y13 | 10+30.08 | 11+77.57 | CL | | 453.18 |
| Y15 | 13+35.00 | 14+84.83 | RT | | 127.34 |
| DR1 | 10+20.25 | 11+70.80 | RT | | 259.47 |
| | | | | | |
| | | | | | |
| | | | TOTALS: | 2,161.97 | 11,710.60 |
| | | | **SAY:** | **2,170** | **12,000** |

## SUMMARY OF CHAIN LINK FENCE

| Survey Line | Station | Station | Location LT/RT | 48" Fabric (LF) | End Brace | Corner Brace | Line Brace | Line Posts (EA) | Terminal Posts (EA) |
|---|---|---|---|---|---|---|---|---|---|
| Y11 / L | 12+60.78 | 89+85.00 | LT | 501.73 | 2 | 1 | 2 | 42 | 5 |
| L / Y14 | 90+15.00 | 23+19.74 | LT | 799.28 | 2 | 1 | 3 | 67 | 6 |
| Y12 / L | 11+35.76 | 87+03.13 | RT | 324.30 | 2 | 3 | 1 | 27 | 6 |
| L | 87+32.55 | 89+32.41 | RT | 253.04 | 2 | 2 | 1 | 21 | 5 |
| L | 89+62.38 | 96+99.29 | RT | 738.85 | 2 | | 2 | 62 | 4 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | TOTAL: | | 2,617.20 | | | | 219 | 26 |
| | | **SAY:** | | **2,630** | | | | **225** | **30** |

## SUMMARY OF EXPRESSWAY GUTTER

( IN FEET )

| Survey Line | Station | Station | Location LT/RT | Length |
|---|---|---|---|---|
| L | 86+55.00 | 87+95.00 | RT | 140.00 |
| L | 88+70.00 | 89+70.00 | RT | 100.00 |
| L | 89+80.00 | 90+80.00 | LT | 100.00 |
| | | | | |
| | | | | |
| | | | TOTAL: | 340.00 |
| | | | **SAY:** | **345** |

| COMPUTED BY: | PJS | DATE: | 12/23/14 |
|---|---|---|---|
| CHECKED BY: | JBW | DATE: | 12/30/14 |

# DIVISION OF HIGHWAYS
# STATE OF NORTH CAROLINA

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 3B-2 |

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

# *GUARDRAIL SUMMARY*

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

| SURVEY LINE | BEG. STA. | END STA. | LOCATION | LENGTH | | | WARRANT POINT | | "N" DIST. FROM E.O.L. | TOTAL SHOUL WIDTH | FLARE LENGTH | | W | | ANCHORS | | | | | | | | | IMPACT ATTENUATOR TYPE 350 | | SINGLE FACED CONCRETE BARRIER | REMOVE EXISTING GUARDRAIL | REMOVE & STOCKPILE EXISTING GUARDRAIL | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | STRAIGHT | SHOP CURVED | DOUBLE FACED | APPROACH END | TRAILING END | | | APPROACH END | TRAILING END | APPROACH END | TRAILING END | XI MOD | XI | TEMP. GRAU 350 | M-350 | XIII | TEMP. CAT-1 | VI MOD | BIC | | G | NG | | | | |
| TEMPORARY GUARDRAIL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -L- | 19+50.00 | 22+43.75 | RT. | 293.75 | | | | | 17.5 | 10 | 50 | | 1 | | | | 1 | | | 1 | | | | | | | | | |
| | | | PROJECT TOTALS: | 293.75 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | ANCHOR DEDUCTIONS: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | (1) TEMP. GRAU-350 @ 50' | 50 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | (1) TEMP. CAT-1 @ 6.25' | 6.25 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | GRAND TOTALS: | 237.50 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | SAY: | **250** | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | ADDITIONAL GUARDRAIL POSTS: | **5** | | | | | | | | | | | | | | | | | | | | | | | | | |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-1 |

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

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

| LINE & STATION | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 12+00 | 48 RT | 0402 | | 37.5 | | | | | | | | | | | | | | | | |
| L 12+57 | 74 LT | 0401 | | | | | | | | | | | | | | | | | | |
| | | 0402 | 0408 | | 34.1 | 34.0 | | | 40 | | | | | | | | X | | | |
| YA 10+75 | 19 LT | 0404 | | 37.2 | | | | | | | | | | | | | | | | |
| | | 0404 | 0426 | | 33.9 | 30.3 | | | | | | | | | | | | | | |
| YA 10+74 | 5 RT | 0426 | | 37.9 | | | | | | | | | | | | | | | | |
| Y 11+00 | 19 LT | 0405 | | 34.0 | | | | | | | | | | | | | | | | |
| L 11+36 | 27 LT | 0406 | | | | | | | | | | | | | | | | | | |
| YA 10+72 | 37 LT | 0408 | | 38.4 | | | | | | | | | | | | | | | | |
| | | 0408 | 0404 | | 34.0 | 33.9 | | | | 20 | | | | | | | X | | | |
| L 13+34 | 72 RT | 0410 | | 37.8 | | | | | | | | | | | | | | | | |
| | | 0410 | 0411 | | 35.8 | 35.5 | | 20 | | | | | | | | | X | | | |
| L 13+34 | 52 RT | 0411 | | 38.2 | | | | | | | | | | | | | | | | |
| | | 0411 | 0402 | | 34.5 | 34.1 | | | | | | | | | | | | | | |
| L 14+20 | 73 RT | 0412 | | 38.8 | | | | | | | | | | | | | | | | |
| | | 0412 | 0413 | | 36.5 | 35.0 | | 20 | | | | | | | | | X | | | |
| L 14+20 | 54 RT | 0413 | | 38.7 | | | | | | | | | | | | | | | | |
| | | 0413 | 0411 | | 34.7 | 34.5 | | | | | | | | | | | | | | |
| L 13+94 | 15 LT | 0414 | | 39.6 | | | | | | | | | | | | | | | | |
| | | 0414 | 0413 | | 36.4 | 35.5 | | | | | | | | | | | | | | |
| L 13+83 | 50 LT | 0415 | | 38.5 | | | | | | | | | | | | | | | | |
| | | 0415 | 0416 | | 33.6 | 31.0 | | 36 | | | | | | | | | X | | | |
| L 14+88 | 74 RT | 0418 | | 38.8 | | | | | | | | | | | | | | | | |
| | | 0418 | 0419 | | 36.8 | 36.0 | | 20 | | | | | | | | | X | | | |
| L 14+88 | 54 RT | 0419 | | 39.0 | | | | | | | | | | | | | | | | |
| | | 0419 | 0413 | | 36.0 | 35.5 | | | | | | | | | | | | | | |
| L 19+90 | 55 RT | 0501 | | 36.1 | | | | | | | | | | | | | | | | |
| | | 0501 | 0502 | | 34.1 | 34.0 | | 12 | | | | | | | | | X | | | |
| L 19+90 | 42 RT | 0502 | | 36.2 | | | | | | | | | | | | | | | | |
| | | 0502 | 0509 | | 33.4 | 32.4 | 0.4 | | | | | | | | | | | | | |
| L 20+38 | 53 RT | 0503 | | 36.8 | | | | | | | | | | | | | | | | |
| | | 0503 | 0504 | | 34.8 | 34.1 | | 12 | | | | | | | | | X | | | |
| L 20+38 | 42 RT | 0504 | | 36.1 | | | | | | | | | | | | | | | | |
| | | 0504 | 0502 | | 33.6 | 33.4 | | | | | | | | | | | | | | |
| L 20+05 | 80 LT | 0505 | | 35.0 | | | | | | | | | | | | | | | | |
| | | 0505 | 0506 | | 33.0 | 33.0 | | 20 | | | | | | | | | X | | | |
| L 20+05 | 62 LT | 0506 | | 35.6 | | | | | | | | | | | | | | | | |
| | | 0506 | 0507 | | 33.0 | 32.9 | | | | | | | | | | | | | | |
| L 20+38 | 62 LT | 0507 | | 35.6 | | | | | | | | | | | | | | | | |
| | | 0507 | 0607 | | 32.9 | 32.4 | 0.7 | | | 72 | | | | | | | X | | | |
| L 19+50 | 62 LT | 0508 | | 36.0 | | | | | | | | | | | | | | | | |
| | | 0508 | 0506 | | 34.0 | 33.0 | | | | | | | | | | | | | | |
| L 18+55 | 40 RT | 0509 | | 37.8 | | | | | | | | | | | | | | | | |
| | | 0509 | 0516 | | 32.4 | 31.1 | 0.5 | | | | 64 | | | | | | X | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| Y1 19+26 | 51 RT | 0513 | | 39.3 | | | | | | | | | | | | | | | | |
| | | 0513 | 0514 | | 34.3 | 32.1 | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | 140 | 40 | 92 | 64 | | | | | | | | | |

| LINE & STATION | FROM | TO | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 12+00 | 0402 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 12+57 | 0401 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0402 | 0408 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| YA 10+75 | 0404 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0404 | 0426 | | | | | | | | | | | | | | | | | | | | | | 24 | | | | | | | | |
| YA 10+74 | 0426 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y 11+00 | 0405 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 11+36 | 0406 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| YA 10+72 | 0408 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0408 | 0404 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 13+34 | 0410 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0410 | 0411 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 13+34 | 0411 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0411 | 0402 | | | | | | | | | | | | | | | | | | | | | 132 | | | | | | | | | |
| L 14+20 | 0412 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0412 | 0413 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 14+20 | 0413 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0413 | 0411 | | | | | | | | | | | | | | | | | | | | | 84 | | | | | | | | | |
| L 13+94 | 0414 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0414 | 0413 | | | | | | | | | | | | | | | | | | | | | 72 | | | | | | | | | |
| L 13+83 | 0415 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0415 | 0416 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 14+88 | 0418 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0418 | 0419 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 14+88 | 0419 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0419 | 0413 | | | | | | | | | | | | | | | | | | | | | 68 | | | | | | | | | |
| L 19+90 | 0501 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0501 | 0502 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 19+90 | 0502 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0502 | 0509 | | | | | | | | | | | | | | | | | | | | | | 136 | | | | | | | | |
| L 20+38 | 0503 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0503 | 0504 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 20+38 | 0504 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0504 | 0502 | | | | | | | | | | | | | | | | | | | | | | 48 | | | | | | | | |
| L 20+05 | 0505 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0505 | 0506 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 20+05 | 0506 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0506 | 0507 | | | | | | | | | | | | | | | | | | | | | 32 | | | | | | | | | |
| L 20+38 | 0507 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0507 | 0607 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 19+50 | 0508 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0508 | 0506 | | | | | | | | | | | | | | | | | | | 56 | | | | | | | | | | | |
| L 18+55 | 0509 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0509 | 0516 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1 19+26 | 0513 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0513 | 0514 | | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | | 64 | 388 | 208 | | | | | | | | |

| LINE & STATION | FROM | TO | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A: 5' THRU 10' LIN. FT. | B: 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 12+00 | 0402 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 12+57 | 0401 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 0402 | 0408 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| YA 10+75 | 0404 | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0404 | 0426 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| YA 10+74 | 0426 | | 1 | 2.6 | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | | | | | | | | |
| Y 11+00 | 0405 | | 1 | | | | | 1 | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | SEE DETAIL, SHEET 2C-6 |
| L 11+36 | 0406 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| YA 10+72 | 0408 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | 1 | | | | | | |
| | 0408 | 0404 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 13+34 | 0410 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 0410 | 0411 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 13+34 | 0411 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0411 | 0402 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 14+20 | 0412 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 0412 | 0413 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 14+20 | 0413 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0413 | 0411 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 13+94 | 0414 | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| | 0414 | 0413 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 13+83 | 0415 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0415 | 0416 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 14+88 | 0418 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 0418 | 0419 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 14+88 | 0419 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0419 | 0413 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 19+90 | 0501 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 0501 | 0502 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 19+90 | 0502 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0502 | 0509 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 20+38 | 0503 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 0503 | 0504 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 20+38 | 0504 | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0504 | 0502 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 20+05 | 0505 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 0505 | 0506 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 20+05 | 0506 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0506 | 0507 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 20+38 | 0507 | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0507 | 0607 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 19+50 | 0508 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0508 | 0506 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 18+55 | 0509 | | 1 | 0.4 | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0509 | 0516 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1 19+26 | 0513 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0513 | 0514 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | 24 | 3.0 | | 13 | 3 | 6 | 5 | | 1 | | | 1 | 8 | 8 | | | | | | 1 | | | | 1 | 1 | | 1 | | 1 | | | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-2 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

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

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

| LINE & STATION | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Y1 19+25 | 41 | RT | 0514 | | 39.9 | | | | | | | | | | | | | | | | |
| Y1 19+23 | 52 | LT | 0515 | | 39.5 | | | | | | | | | | | | | | | | |
| L 17+95 | 62 | RT | 0516 | | 38.8 | | | | | | | | | | | | | | | | |
| L 24+55 | 68 | RT | 0601 | | 37.9 | | | | | | | | | | | | | | | | |
| | | | 0601 | 0602 | | 35.9 | 35.4 | | 64 | | | | | | | | | X | | | |
| L 23+90 | 54 | RT | 0602 | | 37.4 | | | | | | | | | | | | | | | | |
| | | | 0602 | 0604 | | 35.1 | 34.3 | | | | | | | | | | | | | | |
| L 22+00 | 55 | RT | 0603 | | 37.0 | | | | | | | | | | | | | | | | |
| | | | 0603 | 0604 | | 35.0 | 34.6 | | 16 | | | | | | | | | X | | | |
| L 22+00 | 42 | RT | 0604 | | 36.6 | | | | | | | | | | | | | | | | |
| | | | 0604 | 0504 | | 34.3 | 33.8 | | | | | | | | | | | | | | |
| L 22+05 | 80 | LT | 0605 | | 36.1 | | | | | | | | | | | | | | | | |
| | | | 0605 | 0606 | | 34.1 | 34.1 | | 20 | | | | | | | | | X | | | |
| L 22+05 | 62 | LT | 0606 | | 36.4 | | | | | | | | | | | | | | | | |
| | | | 0606 | 0507 | | 34.1 | 32.9 | 0.3 | | | | | | | | | | | | | |
| L 23+25 | 62 | LT | 0608 | | 36.9 | | | | | | | | | | | | | | | | |
| | | | 0608 | 0606 | | 34.9 | 34.1 | 0.4 | | | | | | | | | | | | | |
| L 26+36 | 54 | RT | 0701 | | 36.9 | | | | | | | | | | | | | | | | |
| | | | 0701 | 0706 | | 33.5 | 31.4 | | | | | | | | | | | | | | |
| Y2 11+00 | 18 | RT | 0702 | | 36.7 | | | | | | | | | | | | | | | | |
| | | | 0702 | 0701 | | 34.0 | 33.8 | | 68 | | | | | | | | | X | | | |
| L 28+50 | 41 | LT | 0704 | | 34.9 | | | | | | | | | | | | | | | | |
| | | | 0704 | 0705 | | 31.9 | 31.0 | | | | | | | | | | | | | | |
| L 29+94 | 47 | LT | 0705 | | 34.0 | | | | | | | | | | | | | | | | |
| | | | 0705 | 0708 | | 30.6 | 29.7 | 0.9 | | | 64 | | | | | | | X | | | |
| L 29+00 | 42 | RT | 0706 | | 34.4 | | | | | | | | | | | | | | | | |
| | | | 0706 | 0707 | | 31.2 | 30.9 | | | | | | | | | | | | | | |
| L 29+94 | 42 | RT | 0707 | | 34.1 | | | | | | | | | | | | | | | | |
| | | | 0707 | 0705 | | 30.8 | 30.6 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| Y3 14+41 | 25 | LT | 0709 | | 31.8 | | | | | | | | | | | | | | | | |
| | | | 0709 | 0711 | | 29.8 | 29.6 | | | | | | | | | | | | | | |
| Y3 14+97 | 19 | LT | 0710 | | 33.9 | | | | | | | | | | | | | | | | |
| | | | 0710 | 0711 | | 30.8 | 30.6 | | | 12 | | | | | | | | X | | | |
| Y3 15+07 | 25 | LT | 0711 | | 34.9 | | | | | | | | | | | | | | | | |
| | | | 0711 | 0714 | | 26.9 | 26.7 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| Y3 14+90 | 26 | RT | 0713 | | 33.2 | | | | | | | | | | | | | | | | |
| | | | 0713 | 0714 | | 30.5 | 30.4 | | | | | | | | | | | | | | |
| Y3 15+07 | 27 | RT | 0714 | | 33.4 | | | | | | | | | | | | | | | | |
| | | | 0714 | 0708 | | 26.7 | 26.6 | 0.4 | | | | | | 28 | | | | X | | | |
| L 31+37 | 54 | RT | 0716 | | 34.5 | | | | | | | | | | | | | | | | |
| | | | 0716 | 0815 | | 31.8 | 31.6 | | | | | | | | | | | | | | |
| L 30+35 | 42 | RT | 0718 | | 34.2 | | | | | | | | | | | | | | | | |
| | | | 0718 | 0707 | | 31.4 | 31.3 | | | | | | | | | | | | | | |
| L 36+78 | 67 | RT | 0801 | | 37.2 | | | | | | | | | | | | | | | | |
| | | | 0801 | 0802 | | 34.3 | 34.2 | 0.4 | 16 | | | | | | | | | X | | | |
| L 36+82 | 54 | RT | 0802 | | 37.0 | | | | | | | | | | | | | | | | |
| | | | 0802 | 0912 | | 34.0 | 33.7 | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | 184 | 12 | 64 | | | 28 | | | | | | | |

SIZE / THICKNESS OR GAUGE (pipe class quantities, by structure number):

| FROM | TO | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0601 | 0602 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0602 | 0604 | | | | | | | | | | | | | | | | | | | | | 188 | | | | | | | |
| 0603 | 0604 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0604 | 0504 | | | | | | | | | | | | | | | | | | | | | 160 | | | | | | | |
| 0605 | 0606 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0606 | 0507 | | | | | | | | | | | | | | | | | | | | | 168 | | | | | | | |
| 0608 | 0606 | | | | | | | | | | | | | | | | | | | | 120 | | | | | | | | |
| 0701 | 0706 | | | | | | | | | | | | | | | | | | | | | 264 | | | | | | | |
| 0702 | 0701 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0704 | 0705 | | | | | | | | | | | | | | | | | | | | | 144 | | | | | | | |
| 0705 | 0708 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0706 | 0707 | | | | | | | | | | | | | | | | | | | | | | 92 | | | | | | |
| 0707 | 0705 | | | | | | | | | | | | | | | | | | | | | | 88 | | | | | | |
| 0709 | 0711 | | | | | | | | | | | | | | | | | | | | | | | | 68 | | | | |
| 0710 | 0711 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0711 | 0714 | | | | | | | | | | | | | | | | | | | | | | | | 56 | | | | |
| 0713 | 0714 | | | | | | | | | | | | | | | | | | | | | 16 | | | | | | | |
| 0714 | 0708 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0716 | 0815 | | | | | | | | | | | | | | | | | | | | 52 | | | | | | | | |
| 0718 | 0707 | | | | | | | | | | | | | | | | | | | | 40 | | | | | | | | |
| 0801 | 0802 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0802 | 0912 | | | | | | | | | | | | | | | | | | | | | 64 | | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | 212 | 1004 | 180 | | 124 | | | | |

| FROM | TO | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A: 5' THRU 10' LIN. FT. | B: 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION: D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0514 | | | | 1 | 3.3 | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | | | | | | | | REMOVE EXIST. DI |
| 0515 | | | | 1 | 3.4 | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | | | | | | | | REMOVE EXIST. DI |
| 0516 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| 0601 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 0601 | 0602 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0602 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0602 | 0604 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0603 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 0603 | 0604 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0604 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0604 | 0504 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0605 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 0605 | 0606 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0606 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0606 | 0507 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0608 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0608 | 0606 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0701 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0701 | 0706 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0702 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0702 | 0701 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0704 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0704 | 0705 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0705 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0705 | 0708 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0706 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0706 | 0707 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0707 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0707 | 0705 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0709 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0709 | 0711 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0710 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0710 | 0711 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0711 | | | | 1 | 3.0 | | | | | | | | | | | | | | | | | | | | | 1 | | | | 1 | | | | | | | | REMOVE EXIST. JB |
| 0711 | 0714 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0713 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0713 | 0714 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0714 | | | | 1 | 1.7 | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0714 | 0708 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0716 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0716 | 0815 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0718 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0718 | 0707 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0801 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0801 | 0802 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0802 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0802 | 0912 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | 23 | 11.4 | | 17 | 3 | 7 | 7 | | | | | | 3 | 3 | | | | | | | | | 1 | 2 | | | 3 | | 1 | | | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-3 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

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

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

| LINE & STATION | OFFSET | | STRUCTURE NUMBER FROM | TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 32+76 | 66 | LT | 0807 | | 35.7 | | | | | | | | | | | | | | | | |
| | | | 0807 | 0808 | | 32.5 | 32.5 | | | 16 | | | | | | | | X | | | |
| L 31+88 | 69 | LT | 0809 | | 35.3 | | | | | | | | | | | | | | | | |
| | | | 0809 | 0810 | | 32.2 | 31.9 | | | 20 | | | | | | | | X | | | |
| Y3 15+05 | 42 | LT | 0811 | | 34.7 | | | | | | | | | | | | | | | | |
| | | | 0811 | 0711 | | 31.5 | 31.5 | | 16 | | | | | | | | | X | | | |
| 34+56 | 25 | LT | 0813 | | 35.0 | | | | | | | | | | | | | | | | |
| | | | 0813 | 0806 | | 32.0 | 31.6 | | | | | | | | | | | | | | |
| L 33+24 | 41 | RT | 0814 | | 36.3 | | | | | | | | | | | | | | | | |
| | | | 0814 | 0815 | | 33.3 | 32.2 | | | | | | | | | | | | | | |
| L 31+89 | 42 | RT | 0815 | | 35.2 | | | | | | | | | | | | | | | | |
| | | | 0815 | 0810 | | 31.0 | 30.7 | | | | | | | | | | | | | | |
| L 33+24 | 58 | RT | 0816 | | 37.6 | | | | | | | | | | | | | | | | |
| | | | 0816 | 0814 | | 34.7 | 33.6 | | 16 | | | | | | | | | X | | | |
| L 41+07 | 50 | RT | 0901 | | 37.8 | | | | | | | | | | | | | | | | |
| | | | 0901 | 0902 | | 35.0 | 34.4 | 0.4 | 28 | | | | | | | | | X | | | |
| L 40+97 | 75 | RT | 0902 | | 35.9 | | | | | | | | | | | | | | | | |
| | | | 0902 | 0903 | | 33.4 | 33.2 | | | | | 48 | | | | | | X | | | |
| Y4 11+05 | 19 | LT | 0903 | | 36.6 | | | | | | | | | | | | | | | | |
| | | | 0903 | 0904 | | 33.2 | 32.4 | | | | | | | | | | | | | | |
| Y4 11+05 | 19 | RT | 0904 | | 36.3 | | | | | | | | | | | | | | | | |
| | | | 0904 | 0905 | | 32.4 | 32.4 | | | | | | 28 | | | | | X | | | |
| 10+87 | 42 | RT | 0905 | | 36.2 | | | | | | | | | | | | | | | | |
| | | | 0905 | 0908 | | 32.4 | 32.2 | | | | | | 40 | | | | | X | | | |
| L 39+65 | 62 | RT | 0908 | | 37.1 | | | | | | | | | | | | | | | | |
| | | | 0908 | 0910 | | 32.2 | 32.0 | | | | | | | | | | | | | | |
| 38+93 | 75 | RT | 0909 | | 36.5 | | | | | | | | | | | | | | | | |
| | | | 0909 | 0910 | | 34.0 | 34.0 | | 16 | | | | | | | | | X | | | |
| L 38+93 | 62 | RT | 0910 | | 36.8 | | | | | | | | | | | | | | | | |
| | | | 0910 | 0912 | | 32.0 | 31.6 | | | | | | | | | | | | | | |
| L 37+46 | 62 | RT | 0912 | | 36.7 | | | | | | | | | | | | | | | | |
| | | | 0912 | 0918 | | 31.6 | 31.3 | | | | | | | | | | | | | | |
| L 37+46 | 75 | RT | 0919 | | 37.4 | | | | | | | | | | | | | | | | |
| | | | 0919 | 0912 | | 34.4 | 33.7 | 0.3 | | 16 | | | | | | | | X | | | |
| | | | | | | | | SHEET TOTALS | 76 | 52 | | 48 | 68 | | | | | | | | |

| FROM | TO | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0807 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| 0809 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| 0811 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| 0813 | 0806 | | | | | | | | | | | | | | | | 16 | | | | | | | | | | | | | | | |
| 0814 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | | | 1 |
| 0814 | 0815 | | | | | | | | | | | | | | | | 136 | | | | | | | | | | | | | | | |
| 0815 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | | | 1 |
| 0815 | 0810 | | | | | | | | | | | | | | | | 96 | | | | | | | | | | | | | | | |
| 0816 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| 0901 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | | | 1 |
| 0902 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| 0903 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | 1 | | |
| 0903 | 0904 | | | | | | | | | | | | | | | | | | 36 | | | | | | | | | | | | | |
| 0904 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | 1 | | |
| 0905 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| 0908 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | | | 1 |
| 0908 | 0910 | | | | | | | | | | | | | | | | | | | 72 | | | | | | | | | | | | |
| 0909 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | 1 | | |
| 0910 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | | | 1 |
| 0910 | 0912 | | | | | | | | | | | | | | | | | | | | 148 | | | | | | | | | | | |
| 0912 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0.1 | | 1 | 1 | | |
| 0912 | 0918 | | | | | | | | | | | | | | | | | | | | 104 | | | | | | | | | | | |
| 0919 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | 1 | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | 248 | | 36 | 72 | 252 | | | | | 16 | 0.1 | | 10 | 5 | | 5 |

| FROM | TO | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0807 | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 0809 | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 0811 | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 0813 | | | | | | | | | | | | | | | | | | | | | | | | | 0.3990 | | | REMOVE EXIST. MH |
| 0816 | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 0902 | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 0905 | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | 6 | 6 | | | | | | | | | | | | | | | | | | 0.3990 | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-4 |

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

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

| Line & Station | Offset | Structure Number From | Structure Number To | Top Elevation FT. | Invert Elevation FT. | Invert Elevation FT. | Minimum Required Slope % | 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 | Do Not Use PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 44+98 | 78 RT | 1005 | | 39.3 | | | | | | | |  | | | |  | | | | |
| | | 1005 | 1006 | | 36.5 | 36.4 | | | | | |  | | | |  | | | | |
| L 44+64 | 80 RT | 1006 | | 39.3 | | | | | | | |  | | | |  | | | | |
| | | 1006 | 1012 | | 36.2 | 35.9 | | | 32 | | |  | | | |  | X | | | |
| L 47+10 | 41 RT | 1007 | | 39.3 | | | | | | | |  | | | |  | | | | |
| | | 1007 | 1023 | | 34.6 | 34.2 | 0.7 | | | | |  | | | |  | | | | |
| L 47+61 | 41 RT | 1008 | | 39.3 | | | | | | | |  | | | |  | | | | |
| | | 1008 | 1007 | | 36.2 | 34.6 | | | | | |  | | | |  | | | | |
| Y5 14+90 | 47 LT | 1009 | | 38.6 | | | | | | | |  | | | |  | | | | |
| | | 1009 | 1011 | | 33.5 | 33.4 | | | | | |  56 | | | |  | X | | | |
| L 47+67 | 54 LT | 1010 | | 39.0 | | | | | | | |  | | | |  | | | | |
| | | 1010 | 1002 | | 32.6 | 32.4 | | | | | |  | | | |  | | | | |
| L 44+17 | 70 RT | 1013 | | 40.7 | | | | | | | |  | | | |  | | | | |
| | | 1013 | 1014 | | 34.3 | 33.8 | 0.4 | | | | |  | | | |  | | | | |
| L 43+54 | 84 RT | 1015 | | 35.0 | | | | | | | |  | | | |  | | | | |
| | | 1015 | 1018 | | 31.3 | 31.2 | | | | | |  | | | 36 |  | X | | | |
| L 43+05 | 66 RT | 1017 | | 39.4 | | | | | | | |  | | | |  | | | | |
| | | 1017 | 1018 | | 36.2 | 36.1 | | | | | |  | | | |  | | | | |
| L 43+45 | 50 RT | 1018 | | 39.4 | | | | | | | |  | | | |  | | | | |
| | | 1018 | 1019 | | 31.2 | 30.9 | | | | | |  | | | |  | | | | |
| 44+39 | 86 RT | 1020 | | 37.9 | | | | | | | |  | | | |  | | | | |
| | | 1020 | 1021 | | 35.9 | 35.2 | | 8 | | | |  | | | |  | X | | | |
| L 47+61 | 6 RT | 1022 | | 40.4 | | | | | | | |  | | | |  | | | | |
| | | 1022 | 1023 | | 37.2 | 37.0 | | | | | |  | | | |  | | | | |
| L 47+03 | 6 RT | 1023 | | 40.5 | | | | | | | |  | | | |  | | | | |
| | | 1023 | 1002 | | 34.2 | 33.5 | 0.6 | | | | |  | | | |  | | | | |
| L 53+18 | 52 LT | 1101 | | 42.3 | | | | | | | |  | | | |  | | | | |
| | | 1101 | 1102 | | 39.1 | 38.3 | 1.1 | | 16 | | |  | | | |  | X | | | |
| L 53+18 | 37 LT | 1102 | | 41.3 | | | | | | | |  | | | |  | | | | |
| | | 1102 | 1103 | | 36.9 | 35.6 | | | | | |  | | | |  | | | | |
| L 51+15 | 37 LT | 1103 | | 40.7 | | | | | | | |  | | | |  | | | | |
| | | 1103 | 1106 | | 33.8 | 33.5 | | | | | |  | | | |  | | | | |
| L 50+28 | 53 LT | 1104 | | 38.5 | | | | | | | |  | | | |  | | | | |
| | | 1104 | 1105 | | 33.9 | 33.8 | 1.2 | | | 8 | |  | | | |  | X | | | |
| L 50+16 | 52 LT | 1105 | | 37.6 | | | | | | | |  | | | |  | | | | |
| | | 1105 | 1106 | | 33.8 | 33.7 | | | | | |  16 | | | |  | X | | | |
| L 50+15 | 37 LT | 1106 | | 40.2 | | | | | | | |  | | | |  | | | | |
| | | 1106 | 1110 | | 33.5 | 33.0 | | | | | |  | | | |  | | | | |
| L 51+29 | 61 RT | 1107 | | 39.2 | | | | | | | |  | | | |  | | | | |
| | | 1107 | 1108 | | 34.1 | 34.1 | | | | | |  16 | | | |  | X | | | |
| L 51+28 | 45 RT | 1108 | | 40.5 | | | | | | | |  | | | |  | | | | |
| | | 1108 | 1103 | | 34.1 | 33.8 | | | | | |  | | | |  | | | | |
| SHEET TOTALS | | | | | | | | 8 | 48 | 8 | |  88 | | | 36 |  | | | | |

| Line & Station | From | To | C.A.A. 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 | R.C. Pipe Class IV 12 | 15 | 18 | R.C. Pipe Class V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | | 15" Ductile Iron Pipe | Endwalls Std. 838.01 or Std. 838.11 (Unless Noted Otherwise) CY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1005 | 1006 | | | | | |  | | | | |  | | |  | | |  | | | 32 | | | | |  | | | | |  |
| | 1006 | 1012 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | | | |  |
| | 1007 | 1023 | | | | | |  | | | | |  | | |  | | |  | | | | | | 32 | |  | | | | |  |
| | 1008 | 1007 | | | | | |  | | | | |  | | |  | | |  | | | | 48 | | | |  | | | | |  |
| | 1009 | 1011 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | | | |  |
| | 1010 | 1002 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | 76 | | |  |
| L 44+17 | 1013 | | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | | | |  2.300 |
| | 1013 | 1014 | | | | | |  | | | | |  | | |  | | |  | | | | | | | 124 |  | | | | |  |
| L 43+54 | 1015 | | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | | | |  6.000 |
| | 1015 | 1018 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | | | |  |
| | 1017 | 1018 | | | | | |  | | | | |  | | |  | | |  | | | | 40 | | | |  | | | | |  |
| | 1018 | 1019 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | 96 | | |  |
| | 1020 | 1021 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | | | |  |
| | 1022 | 1023 | | | | | |  | | | | |  | | |  | | |  | | | | 56 | | | |  | | | | |  |
| | 1023 | 1002 | | | | | |  | | | | |  | | |  | | |  | | | | | | 60 | |  | | | | |  |
| | 1101 | 1102 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | | | |  |
| | 1102 | 1103 | | | | | |  | | | | |  | | |  | | |  | | | | | | 204 | |  | | | | |  |
| | 1103 | 1106 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | 100 | | | |  |
| | 1104 | 1105 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | | | |  |
| | 1105 | 1106 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | | | |  |
| | 1106 | 1110 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | 148 | | |  |
| | 1107 | 1108 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  | | | | |  |
| | 1108 | 1103 | | | | | |  | | | | |  | | |  | | |  | | | | | | | |  80 | | | | |  |
| SHEET TOTALS | | | | | | | |  | | | | |  | | |  | | |  | | | 32 | 144 | | 296 | 124 |  80 | 100 | 320 | | |  8.300 |

| Line & Station | From | To | Quantities for Drainage Structures (Note: Total Lin. Ft. for Pay Quantity shall be A + (1.3 X B)) 0' thru 5' EACH | A 5' thru 10' LIN. FT. | B 10' and above LIN. FT. | C.B. Std. 840.01 or Std. 840.02 | Frame, Grates, and Hood Std. 840.03 Grate Type E | F | G | | Concrete Transitional Section D.I. Std. 852.04 or Std. 852.06 | C.B. Std. 852.05 | Special Junction Box., See Sheet 2C-7 | Special Catch Basin, Sheet 2C-1 or 2C-6 | D.I. Std. 840.14 or Std. 840.15 | D.I. Frame and Grates Std. 840.16 | G.D.I. Type "A" Std. 840.17 or Std. 840.26 | G.D.I. Type "B" Std. 840.18 or Std. 840.27 | G.D.I. Type "D" Std. 840.19 or Std. 840.28 | G.D.I. (N.S. SAG) Frame w/ 2 Grates Std. 840.24 | G.D.I. (N.S. FLAT) Frame w/ Grate Std. 840.29 | G.D.I. (N.S. FLAT) Frame w/ 2 Grates Std. 840.29 | Driveway D.I. Std. 840.30 | Frame w/ Grate for Driveway Std. 840.30 | J.B. Std. 840.31 or Std. 840.32 | T.B.J.B. Std. 840.34 | T.B.D.I. Std. 840.35 | M.H. Std. 840.51, Std. 840.52, or Std. 840.53 | M.H. Frame and Cover Std. 840.54 | Convert Exsiting J.B. to 2GI | Adjust M.H. | Adjust C.B. | Flowable Fill CY | Concrete Collars Cl. "B" Std. 840.72 CY | Concrete and Brick Pipe Plug Std. 840.71 CY | Pipe Removal LIN. FT. | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 44+98 | 1005 | |  1 | | | 1 | |  | 1 | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 44+64 | 1006 | |  1 | | | 1 | |  1 | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 47+10 | 1007 | |  1 | | | 1 | |  1 | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 47+61 | 1008 | |  1 | | | 1 | 1 |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| Y5 14+90 | 1009 | |  1 | 0.1 | | | |  | | | | |  | | | | |  1 | | 1 | | |  | | | | |  | | | | |  | | | | |
| L 47+67 | 1010 | |  1 | 1.3 | | 1 | 1 |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 44+17 | 1013 | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 43+54 | 1015 | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 43+05 | 1017 | |  1 | | | | |  | | | | |  | | | | |  | | | | 1 |  | | | | 1 |  | | | | |  | | | | |
| L 43+45 | 1018 | |  1 | 3.2 | | 1 | |  | 1 | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| 44+39 | 1020 | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | 0.3528 | | | |
| L 47+61 | 1022 | |  1 | | | | |  | | | 1 | |  | | | | |  | | | | 1 |  | | | | 1 |  | | | | |  | | | | |
| L 47+03 | 1023 | |  1 | 1.3 | | | |  | | | 1 | |  | | | | |  | | | | 1 |  | | | | 1 |  | | | | |  | | | | |
| L 53+18 | 1101 | |  1 | | | | |  | | | | |  | | 1 | 1 | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 53+18 | 1102 | |  1 | | | 1 | |  | 1 | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 51+15 | 1103 | |  1 | 1.8 | | 1 | |  1 | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 50+28 | 1104 | |  1 | | | | |  | | | | |  | | 1 | 1 | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 50+16 | 1105 | |  1 | | | | |  | | | | |  | | | | |  1 | | 1 | | |  | | | | |  | | | | |  | | | | |
| L 50+15 | 1106 | |  1 | 1.8 | | 1 | |  1 | | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 51+29 | 1107 | |  1 | 0.1 | | | |  | | | | |  | | 1 | 1 | |  | | | | |  | | | | |  | | | | |  | | | | |
| L 51+28 | 1108 | |  1 | 1.4 | | 1 | |  | 1 | | | |  | | | | |  | | | | |  | | | | |  | | | | |  | | | | |
| SHEET TOTALS | | |  18 | 11.0 | | 10 | 2 |  4 | 4 | | 2 | |  | | 3 | 3 | |  2 | | 2 | | 3 |  | | | | 3 |  | | | | |  | 0.3528 | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-5 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
## DIVISION OF HIGHWAYS

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

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

| LINE & STATION | OFFSET | | STRUCTURE NUMBER FROM | TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 48+50 | 41 | RT | 1109 | | 39.4 | | | | | | | | | | | | | | | | |
| | | | 1109 | 1008 | | 36.4 | 36.2 | | | | | | | | | | | | | | |
| L 48+65 | 37 | LT | 1110 | | 39.6 | | | | | | | | | | | | | | | | |
| | | | 1110 | 1010 | | 33.0 | 32.6 | | | | | | | | | | | | | | |
| L 48+50 | 11 | RT | 1114 | | 40.5 | | | | | | | | | | | | | | | | |
| | | | 1114 | 1109 | | 37.6 | 36.7 | | | | | | | | | | | | | | |
| L 48+22 | 4 | LT | 1115 | | 40.5 | | | | | | | | | | | | | | | | |
| | | | 1115 | 1022 | | 37.6 | 37.5 | | | | | | | | | | | | | | |
| Y6 21+47 | 59 | RT | 1201 | | 40.4 | | | | | | | | | | | | | | | | |
| | | | 1201 | 1202 | | 35.8 | 35.7 | | | | | 28 | | | | | | X | | | |
| L 55+84 | 63 | RT | 1202 | | 40.6 | | | | | | | | | | | | | | | | |
| | | | 1202 | 1203 | | 35.7 | 35.6 | 0.3 | | | | 36 | | | | | | X | | | |
| L 55+44 | 58 | RT | 1203 | | 40.6 | | | | | | | | | | | | | | | | |
| | | | 1203 | 1228 | | 35.6 | 35.3 | 0.3 | | | | 76 | | | | | | X | | | |
| L 54+25 | 58 | RT | 1204 | | 40.3 | | | | | | | | | | | | | | | | |
| | | | 1204 | 1205 | | 35.2 | 35.0 | | | | | | 52 | | | | | X | | | |
| L 53+72 | 59 | RT | 1205 | | 40.3 | | | | | | | | | | | | | | | | |
| | | | 1205 | 1206 | | 35.0 | 35.0 | | | | | | 20 | | | | | X | | | |
| L 53+53 | 59 | RT | 1206 | | 40.8 | | | | | | | | | | | | | | | | |
| | | | 1206 | 1207 | | 35.0 | 34.9 | | | | | | 16 | | | | | X | | | |
| L 53+50 | 45 | RT | 1207 | | 40.9 | | | | | | | | | | | | | | | | |
| | | | 1207 | 1108 | | 34.9 | 34.1 | | | | | | | | | | | | | | |
| Y6 19+55 | 70 | RT | 1208 | | 40.3 | | | | | | | | | | | | | | | | |
| | | | 1208 | 1209 | | 37.8 | 37.7 | | 52 | | | | | | | | | X | | | |
| 55+68 | 61 | LT | 1209 | | 40.5 | | | | | | | | | | | | | | | | |
| | | | 1209 | 1210 | | 37.7 | 37.5 | | | | | | | | | | | | | | |
| L 55+03 | 50 | LT | 1210 | | 40.5 | | | | | | | | | | | | | | | | |
| | | | 1210 | 1211 | | 37.5 | 37.4 | | | 40 | | | | | | | | X | | | |
| L 54+60 | 57 | LT | 1211 | | 39.3 | | | | | | | | | | | | | | | | |
| | | | 1211 | 1214 | | 37.4 | 37.3 | | | 20 | | | | | | | | X | | | |
| L 54+92 | 5 | LT | 1212 | | 41.1 | | | | | | | | | | | | | | | | |
| | | | 1212 | 1213 | | 37.6 | 37.5 | | | | | | | | | | | | | | |
| L 54+59 | 5 | LT | 1213 | | 41.3 | | | | | | | | | | | | | | | | |
| | | | 1213 | 1214 | | 37.5 | 37.3 | | | | | | | | | | | | | | |
| L 54+59 | 37 | LT | 1214 | | 41.1 | | | | | | | | | | | | | | | | |
| | | | 1214 | 1223 | | 37.3 | 37.1 | | | | | | | | | | | | | | |
| Y6 22+47 | 8 | RT | 1215 | | 40.9 | | | | | | | | | | | | | | | | |
| | | | 1215 | 1216 | | 38.2 | 38.0 | | | | | | | | | | | | | | |
| Y6 22+05 | 11 | RT | 1216 | | 40.9 | | | | | | | | | | | | | | | | |
| | | | 1216 | 1231 | | 36.2 | 36.1 | | | | | | | | | | | | | | |
| Y6 22+47 | 41 | RT | 1217 | | 39.8 | | | | | | | | | | | | | | | | |
| | | | 1217 | 1231 | | 36.5 | 36.3 | 0.4 | | | | | | | | | | | | | |
| L 57+85 | 5 | LT | 1219 | | 40.5 | | | | | | | | | | | | | | | | |
| | | | 1219 | 1220 | | 38.0 | 36.5 | | | | | | | | | | | | | | |
| L 57+85 | 47 | RT | 1220 | | 39.5 | | | | | | | | | | | | | | | | |
| | | | 1220 | 1313 | | 36.5 | 35.6 | | | | | | | | | | | | | | |
| L 53+72 | 37 | LT | 1223 | | 41.2 | | | | | | | | | | | | | | | | |
| | | | 1223 | 1102 | | 37.1 | 36.9 | | | | | | | | | | | | | | |
| L 55+25 | 5 | LT | 1224 | | 41.0 | | | | | | | | | | | | | | | | |
| | | | 1224 | 1212 | | 37.7 | 37.6 | | | | | | | | | | | | | | |
| | | | | | | | | **SHEET TOTALS** | 52 | 60 | | 140 | 88 | | | | | | | | |

| LINE & STATION | FROM | TO | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | T.B.D.I. STD. 840.35 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 48+50 | 1109 | | | | | | | | | | | | 1 | | | 1 | | | 1 | | | |
| | 1109 | 1008 | | 88 | | | | | | | | | | | | | | | | | | |
| L 48+65 | 1110 | | | | | | | | | | | | 1 | 1.6 | | 1 | | 1 | | | | |
| | 1110 | 1010 | | | | | | | | 100 | | | | | | | | | | | | |
| L 48+50 | 1114 | | | | | | | | | | | | 1 | | | | | | | | 1 | 1 |
| | 1114 | 1109 | 32 | | | | | | | | | | | | | | | | | | | |
| L 48+22 | 1115 | | | | | | | | | | | | 1 | | | | | | | | 1 | 1 |
| | 1115 | 1022 | 60 | | | | | | | | | | | | | | | | | | | |
| Y6 21+47 | 1201 | | | | | | | | | | | | 1 | | | 1 | 1 | | | | | |
| | 1201 | 1202 | | | | | | | | | | | | | | | | | | | | |
| L 55+84 | 1202 | | | | | | | | | | | | 1 | | | 1 | 1 | | | | | |
| | 1202 | 1203 | | | | | | | | | | | | | | | | | | | | |
| L 55+44 | 1203 | | | | | | | | | | | | 1 | | | 1 | 1 | | | | | |
| | 1203 | 1228 | | | | | | | | | | | | | | | | | | | | |
| L 54+25 | 1204 | | | | | | | | | | | | 1 | 0.1 | | 1 | 1 | | | | | |
| | 1204 | 1205 | | | | | | | | | | | | | | | | | | | | |
| L 53+72 | 1205 | | | | | | | | | | | | 1 | 0.3 | | 1 | 1 | | | | | |
| | 1205 | 1206 | | | | | | | | | | | | | | | | | | | | |
| L 53+53 | 1206 | | | | | | | | | | | | 1 | 0.8 | | 1 | 1 | | | | | |
| | 1206 | 1207 | | | | | | | | | | | | | | | | | | | | |
| L 53+50 | 1207 | | | | | | | | | | | | 1 | 1.0 | | 1 | | | 1 | | | |
| | 1207 | 1108 | | | | | 220 | | | | | | | | | | | | | | | |
| Y6 19+55 | 1208 | | | | | | | | | | | | 1 | | | | | | | | 1 | 1 |
| | 1208 | 1209 | | | | | | | | | | | | | | | | | | | | |
| 55+68 | 1209 | | | | | | | | | | | | 1 | | | | | | | | 1 | 1 |
| | 1209 | 1210 | | | | | | | | | 64 | | | | | | | | | | | |
| L 55+03 | 1210 | | | | | | | | | | | | 1 | | | | | | | | 1 | 1 |
| | 1210 | 1211 | | | | | | | | | | | | | | | | | | | | |
| L 54+60 | 1211 | | | | | | | | | | | | 1 | | | | | | | | 1 | 1 |
| | 1211 | 1214 | | | | | | | | | | | | | | | | | | | | |
| L 54+92 | 1212 | | | | | | | | | | | | 1 | | | | | | | 1 | 1 | 1 |
| | 1212 | 1213 | | 32 | | | | | | | | | | | | | | | | | | |
| L 54+59 | 1213 | | | | | | | | | | | | 1 | | | | | | | 1 | 1 | 1 |
| | 1213 | 1214 | | 32 | | | | | | | | | | | | | | | | | | |
| L 54+59 | 1214 | | | | | | | | | | | | 1 | | | 1 | | | 1 | | | |
| | 1214 | 1223 | | 88 | | | | | | | | | | | | | | | | | | |
| Y6 22+47 | 1215 | | | | | | | | | | | | 1 | | | | | | | 1 | 1 | 1 |
| | 1215 | 1216 | 40 | | | | | | | | | | | | | | | | | | | |
| Y6 22+05 | 1216 | | | | | | | | | | | | 1 | | | | | | | 1 | 1 | 1 |
| | 1216 | 1231 | | | | 36 | | | | | | | | | | | | | | | | |
| Y6 22+47 | 1217 | | | | | | | | | | | | 1 | | | 1 | | | 1 | | | |
| | 1217 | 1231 | | | 60 | | | | | | | | | | | | | | | | | |
| L 57+85 | 1219 | | | | | | | | | | | | 1 | | | | | | | 1 | 1 | 1 |
| | 1219 | 1220 | | 48 | | | | | | | | | | | | | | | | | | |
| L 57+85 | 1220 | | | | | | | | | | | | 1 | | | 1 | | 1 | | | | |
| | 1220 | 1313 | | 128 | | | | | | | | | | | | | | | | | | |
| L 53+72 | 1223 | | | | | | | | | | | | 1 | | | 1 | | | 1 | | | |
| | 1223 | 1102 | | 52 | | | | | | | | | | | | | | | | | | |
| L 55+25 | 1224 | | | | | | | | | | | | 1 | | | | | | | 1 | 1 | 1 |
| | 1224 | 1212 | | 32 | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | 132 | 500 | 60 | 36 | 220 | | | 100 | 64 | | 25 | 3.8 | | 13 | 6 | 2 | 5 | 6 | 12 | 12 |

| C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

| C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-6 |

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 55+55 | 4 | LT | 1225 | | 40.9 | | | | | | | | | | | | | | | | |
| | | | 1225 | 1224 | | 38.0 | 37.9 | | | | | | | | | | | | | | |
| L 54+68 | 45 | RT | 1226 | | 40.1 | | | | | | | | | | | | | | | | |
| | | | 1226 | 1228 | | 36.3 | 36.3 | | | | | 16 | | | | | | X | | | |
| L 55+55 | 45 | RT | 1227 | | 40.2 | | | | | | | | | | | | | | | | |
| | | | 1227 | 1203 | | 37.4 | 37.3 | | 20 | | | | | | | | | X | | | |
| L 54+68 | 58 | RT | 1228 | | 40.1 | | | | | | | | | | | | | | | | |
| | | | 1228 | 1204 | | 35.3 | 35.2 | | | | | | 44 | | | | | X | | | |
| Y6 22+47 | 51 | LT | 1229 | | 39.6 | | | | | | | | | | | | | | | | |
| | | | 1229 | 1230 | | 36.6 | 36.4 | | | | | | | | | | | | | | |
| Y6 22+05 | 51 | LT | 1230 | | 39.4 | | | | | | | | | | | | | | | | |
| | | | 1230 | 1216 | | 36.3 | 36.2 | | | | | | | | | | | | | | |
| Y6 21+86 | 41 | RT | 1231 | | 39.9 | | | | | | | | | | | | | | | | |
| | | | 1231 | 1233 | | 36.1 | 36.0 | | | | | | | | | | | | | | |
| Y6 21+43 | 46 | RT | 1232 | | 40.1 | | | | | | | | | | | | | | | | |
| | | | 1232 | 1201 | | 37.0 | 36.8 | | | 16 | | | | | | | | X | | | |
| Y6 21+68 | 41 | RT | 1233 | | 40.0 | | | | | | | | | | | | | | | | |
| | | | 1233 | 1201 | | 36.0 | 35.8 | | | | | | | | | | | | | | |
| Y6 22+47 | 46 | RT | 1235 | | 38.2 | | | | | | | | | | | | | | | | |
| | | | 1235 | 1217 | | 37.2 | 36.6 | | | | | | | | | | | | | | |
| L 59+00 | 74 | LT | 1300 | | 37.5 | | | | | | | | | | | | | | | | |
| | | | 1300 | 1301 | | 35.2 | 35.1 | | | | | 28 | | | | | | X | | | |
| L 59+06 | 48 | LT | 1301 | | 38.8 | | | | | | | | | | | | | | | | |
| | | | 1301 | 1303 | | 35.1 | 34.7 | | | | | | | | | | | | | | |
| L 60+15 | 67 | LT | 1302 | | 37.9 | | | | | | | | | | | | | | | | |
| | | | 1302 | 1303 | | 36.4 | 34.7 | 0.4 | | | 20 | | | | | | | X | | | |
| L 60+15 | 49 | LT | 1303 | | 38.3 | | | | | | | | | | | | | | | | |
| | | | 1303 | 1304 | | 34.7 | 34.5 | | | | | | | | | | | | | | |
| L 60+30 | 49 | LT | 1304 | | 38.3 | | | | | | | | | | | | | | | | |
| | | | 1304 | 1308 | | 34.5 | 34.4 | | | | | | | | | | | | | | |
| L 61+34 | 60 | LT | 1305 | | 37.3 | | | | | | | | | | | | | | | | |
| | | | 1305 | 1307 | | 35.3 | 35.2 | | | | | | | | | | | | | | |
| L 61+92 | 67 | LT | 1307 | | 37.7 | | | | | | | | | | | | | | | | |
| | | | 1307 | 1308 | | 34.8 | 34.4 | | | 20 | | | | | | | | X | | | |
| L 61+85 | 49 | LT | 1308 | | 38.6 | | | | | | | | | | | | | | | | |
| | | | 1308 | 1310 | | 34.4 | 33.9 | | | | | | | | | | | | | | |
| L 63+18 | 58 | LT | 1309 | | 37.8 | | | | | | | | | | | | | | | | |
| | | | 1309 | 1310 | | 35.8 | 35.7 | | 16 | | | | | | | | | X | | | |
| L 63+18 | 42 | LT | 1310 | | 38.9 | | | | | | | | | | | | | | | | |
| | | | 1310 | 1402 | | 33.9 | 33.0 | | | | | | | | | | | | | | |
| L 60+31 | 2 | LT | 1311 | | 39.7 | | | | | | | | | | | | | | | | |
| | | | 1311 | 1315 | | 36.8 | 35.6 | | | | | | | | | | | | | | |
| L 59+18 | 59 | RT | 1312 | | 38.5 | | | | | | | | | | | | | | | | |
| | | | 1312 | 1313 | | 36.5 | 35.8 | | 16 | | | | | | | | | X | | | |
| L 59+18 | 45 | RT | 1313 | | 38.6 | | | | | | | | | | | | | | | | |
| | | | 1313 | 1315 | | 34.7 | 34.6 | | | | | | | | | | | | | | |
| L 60+30 | 53 | RT | 1315 | | 38.2 | | | | | | | | | | | | | | | | |
| | | | 1315 | 1316 | | 34.6 | 34.5 | | | | | | | | | | | | | | |
| L 61+28 | 41 | RT | 1316 | | 38.6 | | | | | | | | | | | | | | | | |
| | | | 1316 | 1318 | | 34.3 | 34.2 | | | | | | | | | | | | | | |
| | | | | | | | SHEET TOTALS | | 52 | 36 | 20 | 44 | 44 | | | | | | | | |

| FROM | TO | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1225 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1225 | 1224 | | | | | | | | | | | | | | | | | | | | 28 | | | | | | | | |
| 1226 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1226 | 1228 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1227 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1227 | 1203 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1228 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1228 | 1204 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1229 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1229 | 1230 | | | | | | | | | | | | | | | | | | | | | 40 | | | | | | | |
| 1230 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1230 | 1216 | | | | | | | | | | | | | | | | | | | | | | | 60 | | | | | |
| 1231 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1231 | 1233 | | | | | | | | | | | | | | | | | | | | | | | 16 | | | | | |
| 1232 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1232 | 1201 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1233 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1233 | 1201 | | | | | | | | | | | | | | | | | | | | | | | 28 | | | | | |
| 1235 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1235 | 1217 | | | | | | | | | | | | | | | | | | | | | 8 | | | | | | | |
| 1300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1300 | 1301 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1301 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1301 | 1303 | | | | | | | | | | | | | | | | | | | | | | | 108 | | | | | |
| 1302 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1302 | 1303 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1303 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1303 | 1304 | | | | | | | | | | | | | | | | | | | | | | | | 16 | | | | |
| 1304 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1304 | 1308 | | | | | | | | | | | | | | | | | | | | | | | | 156 | | | | |
| 1305 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1305 | 1307 | | | | | | | | | | | | | | | | | | | | 56 | | | | | | | | |
| 1307 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1307 | 1308 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1308 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1308 | 1310 | | | | | | | | | | | | | | | | | | | | | | | | 132 | | | | |
| 1309 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1309 | 1310 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1310 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1310 | 1402 | | | | | | | | | | | | | | | | | | | | | | | | 312 | | | | |
| 1311 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1311 | 1315 | | | | | | | | | | | | | | | | | | | | 56 | | | | | | | | |
| 1312 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1312 | 1313 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1313 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1313 | 1315 | | | | | | | | | | | | | | | | | | | | | | | 112 | | | | | |
| 1315 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1315 | 1316 | | | | | | | | | | | | | | | | | | | | | | | 96 | | | | | |
| 1316 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1316 | 1318 | | | | | | | | | | | | | | | | | | | | | | | 28 | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | 140 | 48 | | 448 | 616 | | | | |

| FROM | TO | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1225 | | | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 1225 | 1224 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1226 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1226 | 1228 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1227 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1227 | 1203 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1228 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1228 | 1204 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1229 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1229 | 1230 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1230 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1230 | 1216 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1231 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1231 | 1233 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1232 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1232 | 1201 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1233 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1233 | 1201 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1235 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.3990 | | | REMOVE EXIST. JB |
| 1235 | 1217 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1300 | 1301 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1301 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1301 | 1303 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1302 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1302 | 1303 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1303 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1303 | 1304 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1304 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1304 | 1308 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1305 | | | | 1 | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 1305 | 1307 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1307 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1307 | 1308 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1308 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1308 | 1310 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1309 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1309 | 1310 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1310 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1310 | 1402 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1311 | | | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 1311 | 1315 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1312 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1312 | 1313 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1313 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1313 | 1315 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1315 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1315 | 1316 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1316 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1316 | 1318 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | 22 | | | 16 | 7 | 5 | 4 | | 2 | | | | 3 | 3 | | | | | | 3 | | | | | 3 | | | | | | | 0.3990 | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-7 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

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

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

| LINE & STATION | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 61+58 | 57 | RT | 1317 | | 37.4 | | | | | | | | | | | | | | | | |
| L 61+58 | 42 | RT | 1318 | | 38.6 | | | | | | | | | | | | | | | | |
| | | | 1318 | 1320 | | 34.2 | 33.9 | | | | | | | | | | | | | | |
| L 62+58 | 55 | RT | 1319 | | 38.1 | | | | | | | | | | | | | | | | |
| | | | 1319 | 1320 | | 36.1 | 36.1 | | 12 | | | | | | | | | X | | | |
| L 62+58 | 41 | RT | 1320 | | 38.8 | | | | | | | | | | | | | | | | |
| | | | 1320 | 1322 | | 33.9 | 33.4 | | | | | | | | | | | | | | |
| L 64+16 | 54 | RT | 1321 | | 36.8 | | | | | | | | | | | | | | | | |
| | | | 1321 | 1322 | | 34.8 | 34.8 | | 12 | | | | | | | | | X | | | |
| L 64+16 | 41 | RT | 1322 | | 38.6 | | | | | | | | | | | | | | | | |
| | | | 1322 | 1408 | | 33.4 | 33.2 | | | | | | | | | | | | | | |
| L 60+70 | 66 | RT | 1330 | | | | | | | | | | | | | | | | | | |
| L 66+30 | 7 | LT | 1401 | | 39.1 | | | | | | | | | | | | | | | | |
| | | | 1401 | 1402 | | 36.2 | 35.1 | | | | | | | | | | | | | | |
| L 66+30 | 42 | LT | 1402 | | 37.8 | | | | | | | | | | | | | | | | |
| | | | 1402 | 1417 | | 33.0 | 32.4 | 0.3 | | | | | | | | | | | | | |
| L 68+56 | 82 | LT | 1403 | | 34.9 | | | | | | | | | | | | | | | | |
| | | | 1403 | 1404 | | 32.9 | 32.8 | | | | 28 | | | | | | | X | | | |
| L 68+56 | 58 | LT | 1404 | | 36.9 | | | | | | | | | | | | | | | | |
| | | | 1404 | 1405 | | 32.2 | 31.2 | | | | | | | | | | | | | | |
| L 69+75 | 58 | LT | 1405 | | 36.7 | | | | | | | | | | | | | | | | |
| | | | 1405 | 1406 | | 31.2 | 31.0 | | | | | | | | | | | | | | |
| L 69+75 | 9 | RT | 1406 | | 38.2 | | | | | | | | | | | | | | | | |
| | | | 1406 | 1413 | | 31.0 | 30.8 | | | | | | | | | | | | | | |
| L 64+80 | 58 | RT | 1407 | | 37.5 | | | | | | | | | | | | | | | | |
| | | | 1407 | 1408 | | 35.5 | 35.4 | | 16 | | | | | | | | | X | | | |
| L 64+85 | 41 | RT | 1408 | | 38.4 | | | | | | | | | | | | | | | | |
| | | | 1408 | 1410 | | 33.2 | 32.6 | | | | | | | | | | | | | | |
| L 66+06 | 57 | RT | 1409 | | 37.3 | | | | | | | | | | | | | | | | |
| | | | 1409 | 1410 | | 35.3 | 35.2 | | 16 | | | | | | | | | X | | | |
| L 66+06 | 41 | RT | 1410 | | 38.1 | | | | | | | | | | | | | | | | |
| | | | 1410 | 1412 | | 32.6 | 31.6 | | | | | | | | | | | | | | |
| L 68+10 | 75 | RT | 1411 | | 36.4 | | | | | | | | | | | | | | | | |
| | | | 1411 | 1412 | | 34.4 | 34.3 | | 16 | | | | | | | | | X | | | |
| L 68+10 | 58 | RT | 1412 | | 37.1 | | | | | | | | | | | | | | | | |
| | | | 1412 | 1418 | | 31.6 | 31.1 | | | | | | | | | | | | | | |
| L 69+75 | 58 | RT | 1413 | | 36.7 | | | | | | | | | | | | | | | | |
| | | | 1413 | 1414 | | 30.8 | 30.8 | 0.3 | | | | | | 16 | | | | X | | | |
| L 69+72 | 74 | RT | 1414 | | 35.0 | | | | | | | | | | | | | | | | |
| L 68+12 | 77 | LT | 1416 | | 35.7 | | | | | | | | | | | | | | | | |
| | | | 1416 | 1417 | | 34.5 | 32.4 | | | | 20 | | | | | | | X | | | |
| L 68+17 | 58 | LT | 1417 | | 37.0 | | | | | | | | | | | | | | | | |
| | | | 1417 | 1404 | | 32.4 | 32.2 | 0.4 | | | | | | | | | | | | | |
| L 69+25 | 58 | RT | 1418 | | 36.7 | | | | | | | | | | | | | | | | |
| | | | 1418 | 1413 | | 31.1 | 30.8 | | | | | | | | | | | | | | |
| Y7A 11+40 | 43 | RT | 1450 | | 36.9 | | | | | | | | | | | | | | | | |
| | | | 1450 | 1451 | | 34.9 | 33.3 | | 44 | | | | | | | | | X | | | |
| Y7A 11+81 | 29 | RT | 1451 | | 36.1 | | | | | | | | | | | | | | | | |
| | | | 1451 | 3905 | | 33.1 | 32.6 | | | | | | | | | | | | | | |
| Y7A 11+81 | 29 | LT | 1452 | | 36.1 | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | 116 | | 48 | | | 16 | | | | | | | |

| FROM | TO | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1317 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1318 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1318 | 1320 | | | | | | | | | | | | | | | | | | | | | | | 100 | | | | | |
| 1319 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1319 | 1320 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1320 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1320 | 1322 | | | | | | | | | | | | | | | | | | | | | | | 156 | | | | | |
| 1321 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1321 | 1322 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1322 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1322 | 1408 | | | | | | | | | | | | | | | | | | | | | | | 68 | | | | | |
| 1330 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1401 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1401 | 1402 | | | | | | | | | | | | | | | | | | | | 36 | | | | | | | | |
| 1402 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1402 | 1417 | | | | | | | | | | | | | | | | | | | | | | | | 188 | | | | |
| 1403 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1403 | 1404 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1404 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1404 | 1405 | | | | | | | | | | | | | | | | | | | | | | | | | 116 | | | |
| 1405 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1405 | 1406 | | | | | | | | | | | | | | | | | | | | | | | | | 68 | | | |
| 1406 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1406 | 1413 | | | | | | | | | | | | | | | | | | | | | | | | | 48 | | | |
| 1407 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1407 | 1408 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1408 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1408 | 1410 | | | | | | | | | | | | | | | | | | | | | | | 120 | | | | | |
| 1409 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1409 | 1410 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1410 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1410 | 1412 | | | | | | | | | | | | | | | | | | | | | | | 204 | | | | | |
| 1411 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1411 | 1412 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1412 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1412 | 1418 | | | | | | | | | | | | | | | | | | | | | | | 112 | | | | | |
| 1413 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1413 | 1414 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1414 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1416 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1416 | 1417 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1417 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1417 | 1404 | | | | | | | | | | | | | | | | | | | | | | | | 40 | | | | |
| 1418 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1418 | 1413 | | | | | | | | | | | | | | | | | | | | | | | 48 | | | | | |
| 1450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1450 | 1451 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1451 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1451 | 3905 | | | | | | | | | | | | | | | | | | | | | 160 | | | | | | | |
| 1452 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | 36 | 160 | | 808 | 228 | 232 | | | |

| FROM | TO | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1317 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1318 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1318 | 1320 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1319 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1319 | 1320 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1320 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1320 | 1322 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1321 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1321 | 1322 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1322 | | | | 1 | 0.2 | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1322 | 1408 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1330 | | | | 1 | | | | | | | | | | | | | | | | | | | | 1 | 45 | | | | | | | | | | | | | |
| 1401 | | | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 1401 | 1402 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1402 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1402 | 1417 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1403 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1403 | 1404 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1404 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1404 | 1405 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1405 | | | | 1 | 0.5 | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1405 | 1406 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1406 | | | | 1 | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 1406 | 1413 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1407 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1407 | 1408 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1408 | | | | 1 | 0.3 | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1408 | 1410 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1409 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1409 | 1410 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1410 | | | | 1 | 0.4 | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1410 | 1412 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1411 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1411 | 1412 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1412 | | | | 1 | 0.5 | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1412 | 1418 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1413 | | | | 1 | 0.9 | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1413 | 1414 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1414 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1416 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1416 | 1417 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1417 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1417 | 1404 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1418 | | | | 1 | 0.7 | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1418 | 1413 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1450 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1450 | 1451 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1451 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1451 | 3905 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1452 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | 25 | 3.5 | | 14 | 4 | 5 | 5 | | 1 | | | | 8 | 8 | | | | | | 2 | 1 | 45 | | | 2 | | | | | | | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-8 |

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1452 | 3906 | | 33.1 | 32.6 | | | | | | | | | | | | | | |
| L 73+69 | 59 | RT | 1501 | | 35.9 | | | | | | | | | | | | | | | | |
| | | | 1501 | 1502 | | 34.3 | 34.2 | | 16 | | | | | | | | | X | | | |
| L 73+66 | 42 | RT | 1502 | | 37.8 | | | | | | | | | | | | | | | | |
| | | | 1502 | 1505 | | 34.0 | 33.6 | | | | | | | | | | | | | | |
| L 75+00 | 61 | RT | 1504 | | 36.3 | | | | | | | | | | | | | | | | |
| | | | 1504 | 1505 | | 34.3 | 33.8 | | 20 | | | | | | | | | X | | | |
| L 75+00 | 42 | RT | 1505 | | 37.6 | | | | | | | | | | | | | | | | |
| | | | 1505 | 1602 | | 33.6 | 33.1 | | | | | | | | | | | | | | |
| L 75+10 | 57 | LT | 1506 | | 36.7 | | | | | | | | | | | | | | | | |
| | | | 1506 | 1507 | | 34.7 | 34.7 | | 16 | | | | | | | | | X | | | |
| L 75+10 | 41 | LT | 1507 | | 37.6 | | | | | | | | | | | | | | | | |
| | | | 1507 | 1509 | | 34.4 | 34.1 | | | | | | | | | | | | | | |
| L 74+09 | 58 | LT | 1508 | | 36.6 | | | | | | | | | | | | | | | | |
| | | | 1508 | 1509 | | 34.6 | 34.5 | | 16 | | | | | | | | | X | | | |
| L 74+06 | 41 | LT | 1509 | | 37.8 | | | | | | | | | | | | | | | | |
| | | | 1509 | 1511 | | 34.1 | 32.1 | | | | | | | | | | | | | | |
| L 73+07 | 63 | LT | 1510 | | 35.8 | | | | | | | | | | | | | | | | |
| | | | 1510 | 1511 | | 33.6 | 33.4 | 0.3 | | 16 | | | | | | | | X | | | |
| L 73+06 | 46 | LT | 1511 | | 35.9 | | | | | | | | | | | | | | | | |
| | | | 1511 | 1513 | | 32.1 | 31.8 | | | | | | | | | | | | | | |
| L 72+09 | 69 | LT | 1512 | | 36.2 | | | | | | | | | | | | | | | | |
| | | | 1512 | 1513 | | 34.2 | 34.1 | | 16 | | | | | | | | | X | | | |
| L 72+09 | 54 | LT | 1513 | | 37.3 | | | | | | | | | | | | | | | | |
| | | | 1513 | 1514 | | 31.8 | 31.7 | | | | | | | | | | | | | | |
| L 71+44 | 53 | LT | 1514 | | 37.2 | | | | | | | | | | | | | | | | |
| | | | 1514 | 1518 | | 31.7 | 31.3 | | | | | | | | | | | | | | |
| L 71+37 | 67 | LT | 1515 | | 37.0 | | | | | | | | | | | | | | | | |
| | | | 1515 | 1514 | | 35.0 | 34.4 | | 16 | | | | | | | | | X | | | |
| Y8 13+50 | 19 | RT | 1517 | | 37.2 | | | | | | | | | | | | | | | | |
| | | | 1517 | 1518 | | 32.2 | 31.3 | 0.3 | | | 68 | | | | | | | X | | | |
| L 70+13 | 58 | LT | 1518 | | 36.7 | | | | | | | | | | | | | | | | |
| | | | 1518 | 1405 | | 31.3 | 31.2 | | | | | | | | | | | | | | |
| L 72+85 | 61 | RT | 1519 | | 36.5 | | | | | | | | | | | | | | | | |
| | | | 1519 | 1520 | | 34.5 | 34.1 | | 20 | | | | | | | | | X | | | |
| L 72+65 | 61 | RT | 1520 | | 36.1 | | | | | | | | | | | | | | | | |
| | | | 1520 | 1521 | | 33.8 | 33.8 | | | 20 | | | | | | | | X | | | |
| L 72+63 | 42 | RT | 1521 | | 37.7 | | | | | | | | | | | | | | | | |
| | | | 1521 | 1523 | | 33.8 | 33.5 | | | | | | | | | | | | | | |
| L 71+75 | 64 | RT | 1522 | | 37.3 | | | | | | | | | | | | | | | | |
| | | | 1522 | 1523 | | 33.7 | 33.6 | | 16 | | | | | | | | | X | | | |
| L 71+75 | 49 | RT | 1523 | | 37.4 | | | | | | | | | | | | | | | | |
| | | | 1523 | 1413 | | 33.5 | 32.6 | | | | | | | | | | | | | | |
| Y8 16+30 | 32 | LT | 1524 | | 35.0 | | | | | | | | | | | | | | | | |
| | | | 1524 | 1525 | | 33.0 | 32.9 | | 12 | | | | | | | | | X | | | |
| Y8 16+30 | 19 | LT | 1525 | | 35.1 | | | | | | | | | | | | | | | | |
| | | | 1525 | 1526 | | 32.9 | 32.3 | | | | | | | | | | | | | | |
| Y8 16+30 | 17 | RT | 1526 | | 35.0 | | | | | | | | | | | | | | | | |
| | | | 1526 | 1527 | | 32.2 | 32.2 | 0.4 | | 12 | | | | | | | | X | | | |
| Y8 16+27 | 29 | RT | 1527 | | 35.2 | | | | | | | | | | | | | | | | |
| | | | | | | | | SHEET TOTALS | 148 | 48 | 68 | | | | | | | | | | |

| FROM | TO | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1452 | 3906 | | | | | | | | | | | | | | | | | | | | | 156 | | | | | | | |
| 1501 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1501 | 1502 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1502 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1502 | 1505 | | | | | | | | | | | | | | | | | | | | | 132 | | | | | | | |
| 1504 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1504 | 1505 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1505 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1505 | 1602 | | | | | | | | | | | | | | | | | | | | | 160 | | | | | | | |
| 1506 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1506 | 1507 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1507 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1507 | 1509 | | | | | | | | | | | | | | | | | | | | | 104 | | | | | | | |
| 1508 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1508 | 1509 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1509 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1509 | 1511 | | | | | | | | | | | | | | | | | | | | | 100 | | | | | | | |
| 1510 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1510 | 1511 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1511 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1511 | 1513 | | | | | | | | | | | | | | | | | | | | | | | 96 | | | | | |
| 1512 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1512 | 1513 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1513 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1513 | 1514 | | | | | | | | | | | | | | | | | | | | | | | 64 | | | | | |
| 1514 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1514 | 1518 | | | | | | | | | | | | | | | | | | | | | | | 132 | | | | | |
| 1515 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1515 | 1514 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1517 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1517 | 1518 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1518 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1518 | 1405 | | | | | | | | | | | | | | | | | | | | | | | 36 | | | | | |
| 1519 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1519 | 1520 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1520 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1520 | 1521 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1521 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1521 | 1523 | | | | | | | | | | | | | | | | | | | | | 88 | | | | | | | |
| 1522 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1522 | 1523 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1523 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1523 | 1413 | | | | | | | | | | | | | | | | | | | | | 200 | | | | | | | |
| 1524 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1524 | 1525 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1525 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1525 | 1526 | | | | | | | | | | | | | | | | | | | | | 36 | | | | | | | |
| 1526 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1526 | 1527 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1527 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | | 976 | | 328 | | | | | |

| FROM | TO | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1452 | 3906 | | | | | | | | | | | | |
| 1501 | | | | 1 | | | | | | | | | |
| 1501 | 1502 | | | | | | | | | | | | |
| 1502 | | | | 1 | | | 1 | | 1 | | | | |
| 1502 | 1505 | | | | | | | | | | | | |
| 1504 | | | | 1 | | | | | | | | | |
| 1504 | 1505 | | | | | | | | | | | | |
| 1505 | | | | 1 | | | 1 | | 1 | | | | |
| 1505 | 1602 | | | | | | | | | | | | |
| 1506 | | | | 1 | | | | | | | | | |
| 1506 | 1507 | | | | | | | | | | | | |
| 1507 | | | | 1 | | | 1 | | | 1 | | | |
| 1507 | 1509 | | | | | | | | | | | | |
| 1508 | | | | 1 | | | | | | | | | |
| 1508 | 1509 | | | | | | | | | | | | |
| 1509 | | | | 1 | | | 1 | | | 1 | | | |
| 1509 | 1511 | | | | | | | | | | | | |
| 1510 | | | | 1 | | | | | | | | | |
| 1510 | 1511 | | | | | | | | | | | | |
| 1511 | | | | 1 | | | 1 | | 1 | | | | |
| 1511 | 1513 | | | | | | | | | | | | |
| 1512 | | | | 1 | | | | | | | | | |
| 1512 | 1513 | | | | | | | | | | | | |
| 1513 | | | | 1 | 0.5 | | 1 | | 1 | | | | |
| 1513 | 1514 | | | | | | | | | | | | |
| 1514 | | | | 1 | 0.5 | | 1 | 1 | | | | | |
| 1514 | 1518 | | | | | | | | | | | | |
| 1515 | | | | 1 | | | | | | | | | |
| 1515 | 1514 | | | | | | | | | | | | |
| 1517 | | | | 1 | | | | | | | | | |
| 1517 | 1518 | | | | | | | | | | | | |
| 1518 | | | | 1 | 0.5 | | 1 | | 1 | | | | |
| 1518 | 1405 | | | | | | | | | | | | |
| 1519 | | | | 1 | | | | | | | | | |
| 1519 | 1520 | | | | | | | | | | | | |
| 1520 | | | | 1 | | | | | | | | | |
| 1520 | 1521 | | | | | | | | | | | | |
| 1521 | | | | 1 | | | 1 | | | 1 | | | |
| 1521 | 1523 | | | | | | | | | | | | |
| 1522 | | | | 1 | | | | | | | | | |
| 1522 | 1523 | | | | | | | | | | | | |
| 1523 | | | | 1 | | | 1 | | | 1 | | | |
| 1523 | 1413 | | | | | | | | | | | | |
| 1524 | | | | 1 | | | | | | | | | |
| 1524 | 1525 | | | | | | | | | | | | |
| 1525 | | | | | | | | | | | | | |
| 1525 | 1526 | | | | | | | | | | | | |
| 1526 | | | | | | | | | | | | | |
| 1526 | 1527 | | | | | | | | | | | | |
| 1527 | | | | 1 | | | | | | | | | |
| SHEET TOTALS | | | | 23 | 1.5 | | 10 | 1 | 5 | 4 | | | |

| FROM | TO | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1452 | 3906 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1501 | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 1501 | 1502 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1502 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1502 | 1505 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1504 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1504 | 1505 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1505 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1505 | 1602 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1506 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1506 | 1507 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1507 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1507 | 1509 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1508 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1508 | 1509 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1509 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1509 | 1511 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1510 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1510 | 1511 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1511 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1511 | 1513 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1512 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1512 | 1513 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1513 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1513 | 1514 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1514 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1514 | 1518 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1515 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1515 | 1514 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1517 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1517 | 1518 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1518 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1518 | 1405 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1519 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1519 | 1520 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1520 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1520 | 1521 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1521 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1521 | 1523 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1522 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1522 | 1523 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1523 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1523 | 1413 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1524 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1524 | 1525 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1525 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| 1525 | 1526 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1526 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| 1526 | 1527 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1527 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | 12 | 12 | | | 1 | 1 | | | | | | | | | | | | 2 | | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| | | | |
|---|---|---|---|
| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-9 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1527 | 1528 | | 32.2 | 32.1 | 0.5 | | 36 | | | | | | | | X | | | |
| L 76+60 | 68 | RT | 1601 | | 36.5 | | | | | | | | | | | | | | | | |
| | | | 1601 | 1602 | | 34.5 | 34.4 | | 16 | | | | | | | | | X | | | |
| L 76+60 | 54 | RT | 1602 | | 36.8 | | | | | | | | | | | | | | | | |
| | | | 1602 | 1604 | | 33.1 | 33.0 | | | | | | | | | | | | | | |
| L 77+10 | 68 | RT | 1603 | | 36.6 | | | | | | | | | | | | | | | | |
| | | | 1603 | 1604 | | 34.6 | 34.6 | | 16 | | | | | | | | | X | | | |
| L 77+10 | 54 | RT | 1604 | | 36.6 | | | | | | | | | | | | | | | | |
| | | | 1604 | 1606 | | 33.0 | 32.5 | 0.4 | | | | | | | | | | | | | |
| L 78+69 | 58 | RT | 1605 | | 35.8 | | | | | | | | | | | | | | | | |
| | | | 1605 | 1606 | | 33.8 | 33.7 | | 16 | | | | | | | | | X | | | |
| L 78+64 | 42 | RT | 1606 | | 36.0 | | | | | | | | | | | | | | | | |
| | | | 1606 | 1608 | | 32.5 | 32.2 | | | | | | | | | | | | | | |
| L 79+72 | 59 | RT | 1607 | | 34.6 | | | | | | | | | | | | | | | | |
| | | | 1607 | 1608 | | 32.6 | 32.4 | | 16 | | | | | | | | | X | | | |
| L 79+72 | 42 | RT | 1608 | | 35.4 | | | | | | | | | | | | | | | | |
| | | | 1608 | 1610 | | 32.2 | 31.6 | 0.4 | | | | | | | | | | | | | |
| L 80+70 | 55 | RT | 1609 | | 34.8 | | | | | | | | | | | | | | | | |
| | | | 1609 | 1610 | | 32.8 | 32.7 | | 12 | | | | | | | | | X | | | |
| L 80+70 | 42 | RT | 1610 | | 34.9 | | | | | | | | | | | | | | | | |
| | | | 1610 | 1702 | | 31.6 | 29.5 | 0.5 | | | | | | | | | | | | | |
| L 76+07 | 55 | LT | 1611 | | 37.6 | | | | | | | | | | | | | | | | |
| | | | 1611 | 1612 | | 35.6 | 34.6 | | 12 | | | | | | | | | X | | | |
| L 76+07 | 41 | LT | 1612 | | 37.3 | | | | | | | | | | | | | | | | |
| | | | 1612 | 1614 | | 34.3 | 33.9 | | | | | | | | | | | | | | |
| L 77+07 | 55 | LT | 1613 | | 37.2 | | | | | | | | | | | | | | | | |
| | | | 1613 | 1614 | | 35.2 | 34.1 | | 12 | | | | | | | | | X | | | |
| L 77+07 | 41 | LT | 1614 | | 36.9 | | | | | | | | | | | | | | | | |
| | | | 1614 | 1616 | | 33.9 | 33.3 | | | | | | | | | | | | | | |
| L 78+16 | 57 | LT | 1615 | | 35.7 | | | | | | | | | | | | | | | | |
| | | | 1615 | 1616 | | 33.7 | 33.5 | | 16 | | | | | | | | | X | | | |
| L 78+16 | 41 | LT | 1616 | | 36.3 | | | | | | | | | | | | | | | | |
| | | | 1616 | 1619 | | 32.8 | 32.0 | 0.3 | | | | | | | | | | | | | |
| L 79+00 | 50 | LT | 1619 | | 35.7 | | | | | | | | | | | | | | | | |
| | | | 1619 | 1621 | | 32.0 | 31.0 | | | | | | | | | | | | | | |
| L 80+41 | 67 | LT | 1620 | | 35.1 | | | | | | | | | | | | | | | | |
| | | | 1620 | 1621 | | 33.1 | 32.0 | | 12 | | | | | | | | | X | | | |
| L 80+41 | 53 | LT | 1621 | | 34.7 | | | | | | | | | | | | | | | | |
| | | | 1621 | 1709 | | 31.0 | 29.8 | | | | | | | | | | | | | | |
| Y9 11+50 | 14 | LT | 1624 | | 35.5 | | | | | | | | | | | | | | | | |
| | | | 1624 | 1626 | | 32.5 | 31.7 | | | | | | | | | | | | | | |
| Y10 12+61 | 23 | LT | 1617 | | | | | | | 44 | | | | | | | | X | | | |
| Y10 12+50 | 22 | RT | 1618 | | | | | | | 28 | | | | | | | | X | | | |
| Y10 12+17 | 22 | LT | 1628 | | | | | | | 20 | | | | | | | | X | | | |
| L 83+02 | 70 | RT | 1701 | | 32.4 | | | | | | | | | | | | | | | | |
| | | | 1701 | 1702 | | 30.2 | 30.1 | | | 24 | | | | | | | | X | | | |
| L 83+17 | 53 | RT | 1702 | | 33.2 | | | | | | | | | | | | | | | | |
| | | | 1702 | 1704 | | 29.5 | 29.1 | | | | | | | | | | | | | | |
| L 83+97 | 68 | RT | 1703 | | 32.0 | | | | | | | | | | | | | | | | |
| | | | 1703 | 1704 | | 30.0 | 29.9 | | 16 | | | | | | | | | X | | | |
| | | | | | | | SHEET TOTALS | | 144 | 152 | | | | | | | | | | | |

| FROM | TO | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1527 | 1528 | | | | | | | | | | | | | | | | | | | | | | |
| 1601 | | | | | | | | | | | | | | | | | | | | | | | |
| 1601 | 1602 | | | | | | | | | | | | | | | | | | | | | | |
| 1602 | | | | | | | | | | | | | | | | | | | | | | | |
| 1602 | 1604 | | | | | | | | | | | | | | | | 48 | | | | | | |
| 1603 | | | | | | | | | | | | | | | | | | | | | | | |
| 1603 | 1604 | | | | | | | | | | | | | | | | | | | | | | |
| 1604 | | | | | | | | | | | | | | | | | | | | | | | |
| 1604 | 1606 | | | | | | | | | | | | | | | | 152 | | | | | | |
| 1605 | | | | | | | | | | | | | | | | | | | | | | | |
| 1605 | 1606 | | | | | | | | | | | | | | | | | | | | | | |
| 1606 | | | | | | | | | | | | | | | | | | | | | | | |
| 1606 | 1608 | | | | | | | | | | | | | | | | | 108 | | | | | |
| 1607 | | | | | | | | | | | | | | | | | | | | | | | |
| 1607 | 1608 | | | | | | | | | | | | | | | | | | | | | | |
| 1608 | | | | | | | | | | | | | | | | | | | | | | | |
| 1608 | 1610 | | | | | | | | | | | | | | | | | 96 | | | | | |
| 1609 | | | | | | | | | | | | | | | | | | | | | | | |
| 1609 | 1610 | | | | | | | | | | | | | | | | | | | | | | |
| 1610 | | | | | | | | | | | | | | | | | | | | | | | |
| 1610 | 1702 | | | | | | | | | | | | | | | | | 248 | | | | | |
| 1611 | | | | | | | | | | | | | | | | | | | | | | | |
| 1611 | 1612 | | | | | | | | | | | | | | | | | | | | | | |
| 1612 | | | | | | | | | | | | | | | | | | | | | | | |
| 1612 | 1614 | | | | | | | | | | | | | | | | 100 | | | | | | |
| 1613 | | | | | | | | | | | | | | | | | | | | | | | |
| 1613 | 1614 | | | | | | | | | | | | | | | | | | | | | | |
| 1614 | | | | | | | | | | | | | | | | | | | | | | | |
| 1614 | 1616 | | | | | | | | | | | | | | | | 108 | | | | | | |
| 1615 | | | | | | | | | | | | | | | | | | | | | | | |
| 1615 | 1616 | | | | | | | | | | | | | | | | | | | | | | |
| 1616 | | | | | | | | | | | | | | | | | | | | | | | |
| 1616 | 1619 | | | | | | | | | | | | | | | | 84 | | | | | | |
| 1619 | | | | | | | | | | | | | | | | | | | | | | | |
| 1619 | 1621 | | | | | | | | | | | | | | | | | | 140 | | | | |
| 1620 | | | | | | | | | | | | | | | | | | | | | | | |
| 1620 | 1621 | | | | | | | | | | | | | | | | | | | | | | |
| 1621 | | | | | | | | | | | | | | | | | | | | | | | |
| 1621 | 1709 | | | | | | | | | | | | | | | | | | 208 | | | | |
| 1624 | | | | | | | | | | | | | | | | | | | | | | | |
| 1624 | 1626 | | | | | | | | | | | | | | | | 48 | | | | | | |
| 1617 | | | | | | | | | | | | | | | | | | | | | | | |
| 1618 | | | | | | | | | | | | | | | | | | | | | | | |
| 1628 | | | | | | | | | | | | | | | | | | | | | | | |
| 1701 | | | | | | | | | | | | | | | | | | | | | | | |
| 1701 | 1702 | | | | | | | | | | | | | | | | | | | | | | |
| 1702 | | | | | | | | | | | | | | | | | | | | | | | |
| 1702 | 1704 | | | | | | | | | | | | | | | | | | 72 | | | | |
| 1703 | | | | | | | | | | | | | | | | | | | | | | | |
| 1703 | 1704 | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | 540 | 452 | 420 | | | | |

| FROM | TO | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1527 | 1528 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1601 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1601 | 1602 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1602 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1602 | 1604 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1603 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1603 | 1604 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1604 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1604 | 1606 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1605 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1605 | 1606 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1606 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1606 | 1608 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1607 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1607 | 1608 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1608 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1608 | 1610 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1609 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1609 | 1610 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1610 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1610 | 1702 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1611 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1611 | 1612 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1612 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1612 | 1614 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1613 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1613 | 1614 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1614 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1614 | 1616 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1615 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1615 | 1616 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1616 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1616 | 1619 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1619 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1619 | 1621 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1620 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1620 | 1621 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1621 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1621 | 1709 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1624 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1624 | 1626 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1617 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1618 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1628 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1701 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1701 | 1702 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1702 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1702 | 1704 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1703 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1703 | 1704 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | 23 | | | 12 | | 6 | 6 | | | | | 11 | 11 | | | | | | | | | | | | | | | | | | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| | | | |
|---|---|---|---|
| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-10 |

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

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

| LINE & STATION<br>SIZE<br>THICKNESS OR GAUGE | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 83+89 | 54 | RT | 1704 | | 32.8 | | | | | | | | | | | | | | | | |
| | | | 1704 | 1708 | | 29.1 | 28.3 | | | | | | | | | | | | | | |
| Y12 11+31 | 18 | LT | 1705 | | 31.7 | | | | | | | | | | | | | | | | |
| | | | 1705 | 1706 | | 29.1 | 29.0 | | | | | | | | | | | | | | |
| L 85+61 | 65 | RT | 1707 | | 32.8 | | | | | | | | | | | | | | | | |
| | | | 1707 | 1708 | | 31.0 | 30.9 | | 16 | | | | | | | | | X | | | |
| L 85+59 | 48 | RT | 1708 | | 32.0 | | | | | | | | | | | | | | | | |
| | | | 1708 | 1802 | | 27.8 | 27.4 | | | | | | | | | | | | | | |
| L 82+50 | 53 | LT | 1709 | | 33.6 | | | | | | | | | | | | | | | | |
| | | | 1709 | 1711 | | 29.8 | 28.5 | | | | | | | | | | | | | | |
| L 84+10 | 70 | LT | 1710 | | 31.7 | | | | | | | | | | | | | | | | |
| | | | 1710 | 1711 | | 29.7 | 29.6 | | 16 | | | | | | | | | X | | | |
| L 84+10 | 53 | LT | 1711 | | 32.7 | | | | | | | | | | | | | | | | |
| | | | 1711 | 1712 | | 28.5 | 27.3 | | | | | | | | | | | | | | |
| L 86+20 | 53 | LT | 1712 | | 31.6 | | | | | | | | | | | | | | | | |
| | | | 1712 | 1808 | | 27.3 | 27.0 | | | | | | | | | | | | | | |
| L 86+77 | 58 | RT | 1801 | | 30.2 | | | | | | | | | | | | | | | | |
| | | | 1801 | 1802 | | 28.0 | 27.9 | | | 20 | | | | | | | | X | | | |
| L 86+77 | 38 | RT | 1802 | | 31.8 | | | | | | | | | | | | | | | | |
| | | | 1802 | 1804 | | 27.4 | 26.8 | | | | | | | | | | | | | | |
| L 88+60 | 53 | RT | 1803 | | 29.9 | | | | | | | | | | | | | | | | |
| | | | 1803 | 1804 | | 26.9 | 26.8 | | | 20 | | | | | | | | X | | | |
| L 88+70 | 34 | RT | 1804 | | 31.1 | | | | | | | | | | | | | | | | |
| | | | 1804 | 1809 | | 26.8 | 26.6 | | | | | | | | | | | | | | |
| L 90+89 | 30 | RT | 1807 | | 30.2 | | | | | | | | | | | | | | | | |
| L 87+80 | 39 | LT | 1808 | | 31.2 | | | | | | | | | | | | | | | | |
| | | | 1808 | 1809 | | 27.0 | 26.6 | | | | | | | | | | | | | | |
| L 88+70 | 37 | LT | 1809 | | 31.0 | | | | | | | | | | | | | | | | |
| | | | 1809 | 1811 | | 26.6 | 25.4 | 0.3 | | | | | | | | | | | | | |
| L 91+26 | 48 | LT | 1810 | | 28.0 | | | | | | | | | | | | | | | | |
| | | | 1810 | 1811 | | 25.8 | 25.8 | | | | 12 | | | | | | | X | | | |
| L 91+26 | 35 | LT | 1811 | | 30.0 | | | | | | | | | | | | | | | | |
| | | | 1811 | 1812 | | 25.4 | 25.0 | 0.4 | | | | | | | | | | | | | |
| L 91+98 | 34 | LT | 1812 | | 29.7 | | | | | | | | | | | | | | | | |
| | | | 1812 | 1913 | | 25.0 | 24.4 | 0.4 | | | | | | | | | | | | | |
| L 93+09 | 30 | RT | 1904 | | 28.5 | | | | | | | | | | | | | | | | |
| | | | 1904 | 1903 | | 25.4 | 25.4 | | | | 16 | | | | | | | X | | | |
| L 96+47 | 6 | LT | 1910 | | 28.6 | | | | | | | | | | | | | | | | |
| L 93+35 | 6 | LT | 1912 | | 29.8 | | | | | | | | | | | | | | | | |
| | | | 1912 | 1913 | | 26.9 | 26.8 | | | | | | | | | | | | | | |
| L 93+38 | 35 | LT | 1913 | | 29.0 | | | | | | | | | | | | | | | | |
| | | | 1913 | 1915 | | 24.4 | 23.9 | 0.5 | | | | | | | | | | | | | |
| L 94+34 | 49 | LT | 1914 | | 27.5 | | | | | | | | | | | | | | | | |
| | | | 1914 | 1915 | | 25.2 | 25.2 | | | 16 | | | | | | | | X | | | |
| L 94+34 | 35 | LT | 1915 | | 28.6 | | | | | | | | | | | | | | | | |
| | | | 1915 | 1916 | | 23.9 | 23.8 | 0.5 | | | | | | | | | | | | | |
| L 94+58 | 35 | LT | 1916 | | 28.6 | | | | | | | | | | | | | | | | |
| | | | 1916 | 1918 | | 23.8 | 23.6 | 0.5 | | | | | | | | | | | | | |
| L 94+93 | 34 | LT | 1918 | | 28.4 | | | | | | | | | | | | | | | | |
| | | | 1918 | 1920 | | 23.6 | 23.1 | 0.5 | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | 32 | 56 | 28 | | | | | | | | | | |

| FROM | TO | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1704 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1704 | 1708 | | | | | | | | | | | | | | | | | | | | | | | 168 | | | | | | | |
| 1705 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1705 | 1706 | | | | | | | | | | | | | | | | | | | | | 52 | | | | | | | | | |
| 1707 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1707 | 1708 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1708 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1708 | 1802 | | | | | | | | | | | | | | | | | | | | | | | | 116 | | | | | | |
| 1709 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1709 | 1711 | | | | | | | | | | | | | | | | | | | | | | | 160 | | | | | | | |
| 1710 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1710 | 1711 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1711 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1711 | 1712 | | | | | | | | | | | | | | | | | | | | | | | | 208 | | | | | | |
| 1712 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1712 | 1808 | | | | | | | | | | | | | | | | | | | | | | | | 160 | | | | | | |
| 1801 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1801 | 1802 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1802 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1802 | 1804 | | | | | | | | | | | | | | | | | | | | | | | | 192 | | | | | | |
| 1803 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1803 | 1804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1804 | 1809 | | | | | | | | | | | | | | | | | | | | | | | | 68 | | | | | | |
| 1807 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1808 | 1809 | | | | | | | | | | | | | | | | | | | | | | | | 88 | | | | | | |
| 1809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1809 | 1811 | | | | | | | | | | | | | | | | | | | | | | | | 256 | | | | | | |
| 1810 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1810 | 1811 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1811 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1811 | 1812 | | | | | | | | | | | | | | | | | | | | | | | | 72 | | | | | | |
| 1812 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1812 | 1913 | | | | | | | | | | | | | | | | | | | | | | | | 140 | | | | | | |
| 1904 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1904 | 1903 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1910 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1912 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1912 | 1913 | | | | | | | | | | | | | | | | | | | | 28 | | | | | | | | | | |
| 1913 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1913 | 1915 | | | | | | | | | | | | | | | | | | | | | | | | 96 | | | | | | |
| 1914 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1914 | 1915 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1915 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1915 | 1916 | | | | | | | | | | | | | | | | | | | | | | | | 24 | | | | | | |
| 1916 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1916 | 1918 | | | | | | | | | | | | | | | | | | | | | | | | 36 | | | | | | |
| 1918 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1918 | 1920 | | | | | | | | | | | | | | | | | | | | | | | | 112 | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | 28 | 52 | | 328 | 1568 | | | | | | |

| FROM | TO | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1704 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1704 | 1708 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1705 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1705 | 1706 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1707 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1707 | 1708 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1708 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1708 | 1802 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1709 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1709 | 1711 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1710 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1710 | 1711 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1711 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1711 | 1712 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1712 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1712 | 1808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1801 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1801 | 1802 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1802 | | 1 | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 1802 | 1804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1803 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1803 | 1804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1804 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1804 | 1809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1807 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| 1808 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1808 | 1809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1809 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1809 | 1811 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1810 | | 1 | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 1810 | 1811 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1811 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1811 | 1812 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1812 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1812 | 1913 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1904 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1904 | 1903 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1910 | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 1912 | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 1912 | 1913 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1913 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1913 | 1915 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1914 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | REMOVE EXIST. DI |
| 1914 | 1915 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1915 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1915 | 1916 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1916 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1916 | 1918 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1918 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1918 | 1920 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | 25 | | | 16 | | 4 | 12 | | 2 | | | | 5 | 5 | | | 1 | 1 | | 3 | | | | | 3 | | | | | 1 | | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

COMPUTED BY: Ray Lovinggood DATE: 01/09/15

CHECKED BY: Piotr Stojda DATE: 01/13/15

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-11 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

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

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

| LINE & STATION | OFFSET | | STRUCTURE NUMBER FROM | TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 96+05 | 35 | LT | 1920 | | 27.8 | | | | | | | | | | | | | | | | |
| | | | 1920 | 1921 | | 23.1 | 22.9 | 0.5 | | | | | | | | | | | | | |
| L 96+42 | 35 | LT | 1921 | | 27.9 | | | | | | | | | | | | | | | | |
| | | | 1921 | 1922 | | 22.9 | 22.9 | 0.5 | | | | | | | | | | | | | |
| L 96+49 | 35 | LT | 1922 | | 27.8 | | | | | | | | | | | | | | | | |
| Y1 16+50 | 45 | LT | 2001 | | 35.3 | | | | | | | | | | | | | | | | |
| | | | 2001 | 2002 | | 32.5 | 32.4 | | | | | | | | | | | | | | |
| Y1 16+25 | 9 | LT | 2002 | | 35.7 | | | | | | | | | | | | | | | | |
| | | | 2002 | 2005 | | 32.2 | 30.5 | | | | | | | | | | | | | | |
| Y1 15+00 | 57 | RT | 2003 | | 32.0 | | | | | | | | | | | | | | | | |
| | | | 2003 | 2008 | | 29.0 | 28.5 | 1.1 | | 16 | | | | | | | | X | | | |
| Y1 13+00 | 44 | RT | 2004 | | 29.2 | | | | | | | | | | | | | | | | |
| | | | 2004 | 2011 | | 26.0 | 25.9 | | | | 8 | | | | | | | X | | | |
| Y1 14+85 | 11 | LT | 2005 | | 33.6 | | | | | | | | | | | | | | | | |
| | | | 2005 | 2003 | | 30.5 | 29.0 | | | | | | | | | | | | | | |
| Y1 13+00 | 11 | LT | 2006 | | 30.4 | | | | | | | | | | | | | | | | |
| | | | 2006 | 2004 | | 27.4 | 26.2 | | | | | | | | | | | | | | |
| Y1 13+00 | 57 | LT | 2007 | | 31.5 | | | | | | | | | | | | | | | | |
| | | | 2007 | 2006 | | 29.5 | 27.7 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| Y1 24+54 | 43 | RT | 2102 | | 37.2 | | | | | | | | | | | | | | | | |
| | | | 2102 | 2103 | | 33.1 | 33.0 | | | | | | | | | | | | | | |
| Y1 24+84 | 43 | RT | 2103 | | 37.1 | | | | | | | | | | | | | | | | |
| Y1 24+86 | 66 | LT | 2105 | | | | | | | | | | | | | | | | | | |
| Y1 20+98 | 44 | RT | 2113 | | 37.6 | | | | | | | | | | | | | | | | |
| | | | 2113 | 2117 | | 34.6 | 34.5 | | | | | | | | | | | | | | |
| Y1 19+75 | 8 | RT | 2114 | | 39.3 | | | | | | | | | | | | | | | | |
| | | | 2114 | 2115 | | 36.4 | 36.1 | | | | | | | | | | | | | | |
| Y1 20+03 | 8 | RT | 2115 | | 39.0 | | | | | | | | | | | | | | | | |
| | | | 2115 | 2117 | | 35.8 | 35.4 | | | | | | | | | | | | | | |
| Y1 20+03 | 45 | RT | 2116 | | 38.4 | | | | | | | | | | | | | | | | |
| | | | 2116 | 2113 | | 35.6 | 34.8 | | | | | | | | | | | | | | |
| Y1 20+98 | 6 | RT | 2117 | | 38.6 | | | | | | | | | | | | | | | | |
| | | | 2117 | 2150 | | 34.5 | 31.6 | 0.5 | | | | | | | | | | | | | |
| Y1 21+63 | 5 | RT | 2119 | | 38.8 | | | | | | | | | | | | | | | | |
| | | | 2119 | 2117 | | 35.9 | 35.6 | | | | | | | | | | | | | | |
| Y1 28+50 | 43 | RT | 2201 | | 39.0 | | | | | | | | | | | | | | | | |
| | | | 2201 | 2204 | | 36.0 | 35.4 | | | | | | | | | | | | | | |
| Y1 27+35 | 43 | RT | 2204 | | 38.4 | | | | | | | | | | | | | | | | |
| Y1 27+32 | 72 | LT | 2207 | | | | | | | | | | | | | | | | | | |
| Y5B 11+81 | 29 | RT | 2501 | | 38.3 | | | | | | | | | | | | | | | | |
| | | | 2501 | 2502 | | 35.5 | 35.4 | | | | | | | | | | | | | | |
| Y5B 11+74 | 12 | RT | 2502 | | 39.1 | | | | | | | | | | | | | | | | |
| Y5B 11+74 | 29 | LT | 2504 | | 38.9 | | | | | | | | | | | | | | | | |
| | | | 2504 | 2507 | | 35.0 | 34.8 | | | | | | | | | | | | | | |
| Y5B 11+74 | 3 | LT | 2507 | | 39.2 | | | | | | | | | | | | | | | | |
| Y6 09+37 | 48 | LT | 2508 | | 39.8 | | | | | | | | | | | | | | | | |
| | | | 2508 | 2516 | | 36.5 | 36.5 | | 4 | | | | | | | | | X | | | |
| Y6 09+45 | 34 | LT | 2509 | | 40.0 | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | 4 | 16 | 8 | | | | | | | | | | |

| FROM | TO | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1920 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1920 | 1921 | | | | | | | | | | | | | | | | | | | | | | | | 36 | | | | |
| 1921 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1921 | 1922 | | | | | | | | | | | | | | | | | | | | | | | | 8 | | | | |
| 1922 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2001 | 2002 | | | | | | | | | | | | | | | | | | | | 40 | | | | | | | | |
| 2002 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2002 | 2005 | | | | | | | | | | | | | | | | | | | | | 140 | | | | | | | |
| 2003 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2003 | 2008 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2004 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2004 | 2011 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2005 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2005 | 2003 | | | | | | | | | | | | | | | | | | | | | 68 | | | | | | | |
| 2006 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2006 | 2004 | | | | | | | | | | | | | | | | | | | | | 56 | | | | | | | |
| 2007 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2007 | 2006 | | | | | | | | | | | | | | | | | | | | 44 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2102 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2102 | 2103 | | | | | | | | | | | | | | | | | | | | | 28 | | | | | | | |
| 2103 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2105 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2113 | 2117 | | | | | | | | | | | | | | | | | | | | | 36 | | | | | | | |
| 2114 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2114 | 2115 | | | | | | | | | | | | | | | | | | | | 28 | | | | | | | | |
| 2115 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2115 | 2117 | | | | | | | | | | | | | | | | | | | | | 92 | | | | | | | |
| 2116 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2116 | 2113 | | | | | | | | | | | | | | | | | | | | 92 | | | | | | | | |
| 2117 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2117 | 2150 | | | | | | | | | | | | | | | | | | | | | 108 | | | | | | | |
| 2119 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2119 | 2117 | | | | | | | | | | | | | | | | | | | | 64 | | | | | | | | |
| 2201 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2201 | 2204 | | | | | | | | | | | | | | | | | | | | | 112 | | | | | | | |
| 2204 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2207 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2501 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2501 | 2502 | | | | | | | | | | | | | | | | | | | | | 16 | | | | | | | |
| 2502 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2504 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2504 | 2507 | | | | | | | | | | | | | | | | | | | | | | | 24 | | | | | |
| 2507 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2508 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2508 | 2516 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2509 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | 268 | 656 | | 24 | 44 | | | | |

| FROM | TO | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1920 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1920 | 1921 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1921 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1921 | 1922 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1922 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2001 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2001 | 2002 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2002 | | | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2002 | 2005 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2003 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2003 | 2008 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2004 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2004 | 2011 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2005 | | | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2005 | 2003 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2006 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2006 | 2004 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2007 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 2007 | 2006 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2102 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2102 | 2103 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2103 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2105 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | SEE DETAIL, SHEET 2C-8 |
| 2113 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2113 | 2117 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2114 | | | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2114 | 2115 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2115 | | | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2115 | 2117 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2116 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2116 | 2113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2117 | | | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2117 | 2150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2119 | | | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2119 | 2117 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2201 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2201 | 2204 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2204 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2207 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | SEE DETAIL, SHEET 2C-8 |
| 2501 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2501 | 2502 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2502 | | | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2504 | | | | 1 | | | | 1 | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | SEE DETAIL, SHEET 2C-1 |
| 2504 | 2507 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2507 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| 2508 | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 2508 | 2516 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2509 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| SHEET TOTALS | | | | 24 | | | 14 | 5 | 3 | 7 | | 7 | | | 1 | 2 | 2 | | | | | | 7 | | | | | 7 | | | 2 | 1 | 1 | | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

R0261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-12 |

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

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

| LINE & STATION | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) SIZE | 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | THICKNESS OR GAUGE | | | | | | | | | | | | | |
| Y6 08+02 | 34 LT | 2510 | | 39.5 | | | | | | | | | | | | | | | | | |
| Y6 10+46 | 8 RT | 2511 | | 41.4 | | | | | | | | | | | | | | | | | |
| | | 2511 | 2512 | | 37.4 | 37.2 | | | | | | | | | | | | | | | |
| Y6 10+46 | 53 RT | 2512 | | 39.9 | | | | | | | | | | | | | | | | | |
| | | 2512 | 2513 | | 35.6 | 35.3 | 0.4 | | | | 68 | | | | | | | X | | | |
| Y5B 11+00 | 29 LT | 2513 | | 40.1 | | | | | | | | | | | | | | | | | |
| | | 2513 | 2504 | | 35.3 | 35.0 | | | | | | | | | | | | | | | |
| Y5B 11+45 | 44 LT | 2514 | | 39.3 | | | | | | | | | | | | | | | | | |
| | | 2514 | 2504 | | 36.4 | 35.7 | | 32 | | | | | | | | | | X | | | |
| Y6 09+38 | 45 LT | 2516 | | 37.5 | | | | | | | | | | | | | | | | | |
| Y6 13+38 | 41 LT | 2517 | | 40.7 | | | | | | | | | | | | | | | | | |
| | | 2517 | 2518 | | 37.6 | 37.5 | | | | 40 | | | | | | | | X | | | |
| Y15 14+07 | 42 RT | 2518 | | 39.3 | | | | | | | | | | | | | | | | | |
| | | 2518 | 2519 | | 37.5 | 37.4 | | | | 24 | | | | | | | | X | | | |
| Y15 13+90 | 26 RT | 2519 | | 39.7 | | | | | | | | | | | | | | | | | |
| | | 2519 | 2521 | | 37.4 | 37.2 | | | | | | | | | | | | | | | |
| Y5B 11+84 | 34 RT | 2522 | | | | | | | | | | | | | | | | | | | |
| Y6 18+64 | 53 RT | 2612 | | 41.3 | | | | | | | | | | | | | | | | | |
| Y6 16+50 | 53 RT | 2613 | | 39.9 | | | | | | | | | | | | | | | | | |
| | | 2613 | 2615 | | 37.9 | 37.5 | 0.5 | | | | | | | | | | | | | | |
| Y6 13+85 | 53 RT | 2614 | | 40.3 | | | | | | | | | | | | | | | | | |
| | | 2614 | 2512 | | 36.9 | 35.6 | | | | | | | | | | | | | | | |
| Y6 15+84 | 53 RT | 2615 | | 39.8 | | | | | | | | | | | | | | | | | |
| | | 2615 | 2617 | | 37.5 | 37.4 | | | | | | | | | | | | | | | |
| Y6 15+30 | 53 RT | 2617 | | 39.8 | | | | | | | | | | | | | | | | | |
| | | 2617 | 2614 | | 37.4 | 36.9 | | | | | | | | | | | | | | | |
| Y6 13+96 | 8 RT | 2619 | | 41.6 | | | | | | | | | | | | | | | | | |
| | | 2619 | 2614 | | 38.7 | 37.5 | | | | | | | | | | | | | | | |
| | | 2620 | 2621 | | 38.6 | 38.3 | | | | | | | | | | | | | | | |
| DR1 12+70 | 12 RT | 2621 | | 40.5 | | | | | | | | | | | | | | | | | |
| | | 2621 | 2623 | | 38.3 | 38.1 | | | | | | | | | | | | | | | |
| DR1 11+44 | 12 RT | 2622 | | 40.5 | | | | | | | | | | | | | | | | | |
| | | 2622 | 2623 | | 38.5 | 38.3 | | | | | | | | | | | | | | | |
| DR1 12+07 | 12 RT | 2623 | | 41.1 | | | | | | | | | | | | | | | | | |
| | | 2623 | 2624 | | 38.1 | 38.0 | 0.6 | | | | | | | | | | | | | | |
| DR1 11+50 | 35 LT | 2630 | | 39.2 | | | | | | | | | | | | | | | | | |
| | | 2630 | 2631 | | 37.9 | 37.2 | | | | 44 | | | | | | | | X | | | |
| DR1 10+98 | 33 LT | 2631 | | 39.8 | | | | | | | | | | | | | | | | | |
| | | 2631 | 2647 | | 37.2 | 37.0 | 0.4 | | | 112 | | | | | | | | X | | | |
| Y6 16+90 | 10 LT | 2640 | | 41.4 | | | | | | | | | | | | | | | | | |
| | | 2640 | 2641 | | 39.4 | 38.8 | | | | | | | | | | | | | | | |
| Y6 15+84 | 10 LT | 2641 | | 41.1 | | | | | | | | | | | | | | | | | |
| | | 2641 | 2643 | | 38.8 | 37.5 | | | | | | | | | | | | | | | |
| Y6 16+90 | 53 LT | 2642 | | 40.1 | | | | | | | | | | | | | | | | | |
| | | 2642 | 2643 | | 38.1 | 37.5 | | | | | | | | | | | | | | | |
| Y6 15+84 | 53 LT | 2643 | | 39.7 | | | | | | | | | | | | | | | | | |
| | | 2643 | 2644 | | 37.5 | 37.4 | | | | | | | | | | | | | | | |
| Y6 15+30 | 53 LT | 2644 | | 39.8 | | | | | | | | | | | | | | | | | |
| | | 2644 | 2645 | | 37.4 | 37.2 | 0.3 | | | | | | | | | | | | | | |
| Y6 14+30 | 53 LT | 2645 | | 40.1 | | | | | | | | | | | | | | | | | |
| | | | | | SHEET TOTALS | | | 32 | 220 | 68 | | | | | | | | | | | |

| LINE & STATION | C. A. A. PIPE SIZE | 12 | 15 | 18 | 24 | | 30 | | | 36 | | | 42 | 48 | R. C. PIPE CLASS III | | | R. C. PIPE CLASS IV | | | R. C. PIPE CLASS V | | | | | | | | | | | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | THICKNESS OR GAUGE | | .064 | .064 | .064 | .064 | .079 | | | .079 | | | .109 | .109 | | | | | | | | | | | | | | | | | | | |
| | FT. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | CY |
| Y6 08+02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 10+46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | 44 | | | | | | | | | | | | |
| Y6 10+46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y5B 11+00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | 72 | | | | | | | | | | |
| Y5B 11+45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 09+38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 13+38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y15 14+07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y15 13+90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | 124 | | | | | | | | | | | | |
| Y5B 11+84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 18+64 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 16+50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | 64 | | | | | | | | | | | | |
| Y6 13+85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | 340 | | | | | | | | | | |
| Y6 15+84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 52 | | | | | | | | | | | |
| Y6 15+30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | 144 | | | | | | | | | | |
| Y6 13+96 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | 44 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 76 | | | | | | | | | | | |
| DR1 12+70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 64 | | | | | | | | | | | |
| DR1 11+44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | 64 | | | | | | | | | | | | |
| DR1 12+07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 60 | | | | | | | | | | | |
| DR1 11+50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DR1 10+98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 16+90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | 104 | | | | | | | | | | | | |
| Y6 15+84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 40 | | | | | | | | | | | |
| Y6 16+90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | 104 | | | | | | | | | | | | |
| Y6 15+84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 52 | | | | | | | | | | | |
| Y6 15+30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 100 | | | | | | | | | | | |
| Y6 14+30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | 424 | 568 | 484 | 72 | | | | | | | | | |

| LINE & STATION | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) A: 0' THRU 5' EACH | A: 5' THRU 10' LIN. FT. | B: 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION: D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Y6 08+02 | 1 | | | | | 1 | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | SEE DETAIL, SHEET 2C-6 |
| Y6 10+46 | 1 | | | | | | | 1 | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 10+46 | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y5B 11+00 | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y5B 11+45 | 1 | | | | | | | | | | | | | | | | | | | | | | 1 | | | | 1 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 09+38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.3528 | | |
| Y6 13+38 | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y15 14+07 | 1 | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y15 13+90 | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y5B 11+84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Y6 18+64 | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 16+50 | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 13+85 | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 15+84 | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 15+30 | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 13+96 | 1 | | | | | | | 1 | | | | | | | | | 1 | | | | | | 1 | | | | 1 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DR1 12+70 | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DR1 11+44 | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DR1 12+07 | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DR1 11+50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DR1 10+98 | 1 | | | | | | | | | | | | | | | | | | | | | | 1 | | | | 1 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 16+90 | 1 | | | | | | | 1 | | | | | | | | | | | | | | | 1 | | | | 1 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 15+84 | 1 | | | | | | | 1 | | | | | | | | | | | | | | | 1 | | | | 1 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 16+90 | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 15+84 | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 15+30 | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y6 14+30 | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | 24 | | | 16 | 3 | 5 | 9 | 4 | | | 1 | 1 | 1 | | | | | 6 | | | | | 6 | | | | 1 | | | 0.3528 | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-13 |

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | | STRUCTURE NUMBER FROM | TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2645 | 2646 | | 37.2 | 37.0 | 0.4 | | | | | | | | | | | | | |
| Y15 14+20 | 14 | LT | 2646 | | 40.6 | | | | | | | | | | | | | | | | |
| | | | 2646 | 2647 | | 37.0 | 37.0 | 0.4 | | 8 | | | | | | | | X | | | |
| 14+20 | 22 | LT | 2647 | | 39.9 | | | | | | | | | | | | | | | | |
| Y6 26+00 | 51 | LT | 2702 | | 41.4 | | | | | | | | | | | | | | | | |
| | | | 2702 | 2704 | | 38.4 | 37.7 | | | | | | | | | | | | | | |
| Y6 23+99 | 51 | LT | 2704 | | 40.6 | | | | | | | | | | | | | | | | |
| | | | 2704 | 2706 | | 37.7 | 37.4 | | | | | | | | | | | | | | |
| Y6 25+40 | 40 | RT | 2705 | | 41.4 | | | | | | | | | | | | | | | | |
| | | | 2705 | 2710 | | 36.5 | 36.5 | | | 4 | | | | | | | | X | | | |
| Y6 23+94 | 8 | RT | 2706 | | 41.9 | | | | | | | | | | | | | | | | |
| | | | 2706 | 2712 | | 37.4 | 37.0 | | | | | | | | | | | | | | |
| Y6 25+40 | 44 | RT | 2710 | | | | | | | | | | | | | | | | | | |
| Y6 23+91 | 41 | RT | 2712 | | 40.8 | | | | | | | | | | | | | | | | |
| | | | 2712 | 1217 | | 37.0 | 36.6 | | | | | | | | | | | | | | |
| Y6 26+86 | 10 | LT | 2714 | | 42.9 | | | | | | | | | | | | | | | | |
| | | | 2714 | 2715 | | 40.0 | 38.6 | | | | | | | | | | | | | | |
| Y6 26+86 | 51 | LT | 2715 | | 41.6 | | | | | | | | | | | | | | | | |
| | | | 2715 | 2702 | | 38.6 | 38.4 | | | | | | | | | | | | | | |
| Y6 28+85 | 51 | LT | 2801 | | 41.7 | | | | | | | | | | | | | | | | |
| | | | 2801 | 2802 | | 38.7 | 38.3 | | | | | | | | | | | | | | |
| Y6 29+95 | 51 | LT | 2802 | | 41.4 | | | | | | | | | | | | | | | | |
| | | | 2802 | 2803 | | 37.4 | 37.3 | | | | | | | | | | | | | | |
| Y6 29+95 | 7 | LT | 2803 | | 42.8 | | | | | | | | | | | | | | | | |
| | | | 2803 | 2805 | | 37.3 | 37.2 | | | | | | | | | | | | | | |
| Y6 29+04 | 34 | RT | 2804 | | 42.1 | | | | | | | | | | | | | | | | |
| Y6 29+80 | 34 | RT | 2805 | | 41.9 | | | | | | | | | | | | | | | | |
| | | | 2805 | 2810 | | 37.2 | 36.8 | 0.9 | | 64 | | | | | | | | X | | | |
| Y6 32+53 | 53 | LT | 2806 | | 40.6 | | | | | | | | | | | | | | | | |
| | | | 2806 | 2807 | | 37.8 | 37.7 | | | | | | | | | | | | | | |
| Y6 32+25 | 29 | RT | 2807 | | 41.3 | | | | | | | | | | | | | | | | |
| | | | 2807 | 2808 | | 37.4 | 37.1 | | | 116 | | | | | | | | X | | | |
| Y6 31+10 | 35 | RT | 2808 | | 41.4 | | | | | | | | | | | | | | | | |
| | | | 2808 | 2809 | | 37.1 | 37.0 | | | 20 | | | | | | | | X | | | |
| Y16 17+40 | 47 | RT | 2809 | | 39.9 | | | | | | | | | | | | | | | | |
| | | | 2809 | 2811 | | 36.8 | 36.7 | | | | 36 | | | | | | | X | | | |
| Y16 17+08 | 28 | LT | 2810 | | 40.5 | | | | | | | | | | | | | | | | |
| | | | 2810 | 2811 | | 36.8 | 36.7 | | | | | | | | | | | | | | |
| Y16 17+12 | 23 | RT | 2811 | | 40.7 | | | | | | | | | | | | | | | | |
| | | | 2811 | 4102 | | 36.7 | 36.4 | 0.3 | | | | | | | | | | | | | |
| Y7A 22+83 | 41 | LT | 2814 | | 37.4 | | | | | | | | | | | | | | | | |
| | | | 2814 | 4001 | | 34.8 | 34.7 | | | | | | | | | | | | | | |
| Y7A 22+83 | 10 | LT | 2816 | | 38.4 | | | | | | | | | | | | | | | | |
| | | | 2816 | 2814 | | 35.5 | 34.8 | | | | | | | | | | | | | | |
| Y6 30+12 | 75 | LT | 2818 | | 39.3 | | | | | | | | | | | | | | | | |
| | | | 2818 | 2820 | | 37.6 | 37.5 | | 24 | | | | | | | | | X | | | |
| Y7A 22+83 | 30 | RT | 2819 | | 37.7 | | | | | | | | | | | | | | | | |
| | | | 2819 | 4006 | | 34.7 | 34.4 | | | | | | | | | | | | | | |
| Y6 30+25 | 58 | LT | 2820 | | 40.5 | | | | | | | | | | | | | | | | |
| | | | 2820 | 2802 | | 37.5 | 37.4 | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | 24 | 212 | 36 | | | | | | | | | | |

| FROM | TO | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2645 | 2646 | | | | | | | | | | | | | | | | | | | | | 96 | | | | | | |
| 2646 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2646 | 2647 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2647 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2702 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2702 | 2704 | | | | | | | | | | | | | | | | | | | | | 200 | | | | | | |
| 2704 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2704 | 2706 | | | | | | | | | | | | | | | | | | | | | | 60 | | | | | |
| 2705 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2705 | 2710 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2706 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2706 | 2712 | | | | | | | | | | | | | | | | | | | | | | 32 | | | | | |
| 2710 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2712 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2712 | 1217 | | | | | | | | | | | | | | | | | | | | | | 144 | | | | | |
| 2714 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2714 | 2715 | | | | | | | | | | | | | | | | | | | | 40 | | | | | | | |
| 2715 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2715 | 2702 | | | | | | | | | | | | | | | | | | | | | 84 | | | | | | |
| 2801 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2801 | 2802 | | | | | | | | | | | | | | | | | | | | | 108 | | | | | | |
| 2802 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2802 | 2803 | | | | | | | | | | | | | | | | | | | | | 44 | | | | | | |
| 2803 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2803 | 2805 | | | | | | | | | | | | | | | | | | | | | 40 | | | | | | |
| 2804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2805 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2805 | 2810 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2806 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2806 | 2807 | | | | | | | | | | | | | | | | | | | | 84 | | | | | | | |
| 2807 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2807 | 2808 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2808 | 2809 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2809 | 2811 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2810 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2810 | 2811 | | | | | | | | | | | | | | | | | | | | | | 48 | | | | | |
| 2811 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2811 | 4102 | | | | | | | | | | | | | | | | | | | | | | 76 | | | | | |
| 2814 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2814 | 4001 | | | | | | | | | | | | | | | | | | | | | 52 | | | | | | |
| 2816 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2816 | 2814 | | | | | | | | | | | | | | | | | | | | 28 | | | | | | | |
| 2818 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2818 | 2820 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2819 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2819 | 4006 | | | | | | | | | | | | | | | | | | | | | 184 | | | | | | |
| 2820 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2820 | 2802 | | | | | | | | | | | | | | | | | | | | | 32 | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | 152 | 840 | 360 | | | | | |

QUANTITIES FOR DRAINAGE STRUCTURES — NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)

| FROM | TO | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2645 | 2646 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2646 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2646 | 2647 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2647 | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 2702 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2702 | 2704 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2704 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2704 | 2706 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2705 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2705 | 2710 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2706 | | | | 1 | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2706 | 2712 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2710 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.3990 | | | |
| 2712 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2712 | 1217 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2714 | | | | 1 | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2714 | 2715 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2715 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2715 | 2702 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2801 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2801 | 2802 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2802 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2802 | 2803 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2803 | | | | 1 | 0.5 | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2803 | 2805 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| 2805 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| 2805 | 2810 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2806 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2806 | 2807 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2807 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2807 | 2808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2808 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2808 | 2809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2809 | | | | 1 | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2809 | 2811 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2810 | | | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2810 | 2811 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2811 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2811 | 4102 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2814 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2814 | 4001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2816 | | | | 1 | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 2816 | 2814 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2818 | | | | 1 | | | | | | | | | | | | | | | 1 | | | 1 | | | | | | | | | | | | | | | |
| 2818 | 2820 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2819 | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2819 | 4006 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2820 | | | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2820 | 2802 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | 23 | 0.5 | | 16 | 2 | 6 | 8 | 2 | | | | 1 | 1 | | | 1 | | | 6 | | | | | 5 | | | | | 2 | | 0.3990 | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-14 |

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

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

| LINE & STATION (SIZE / THICKNESS OR GAUGE) | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Y8 12+28 | 19 | RT | 2903 | | 36.2 | | | | | | | | | | | | | | | | |
| Y8 16+97 | 33 | LT | 3001 | | 35.3 | | | | | | | | | | | | | | | | |
| | | | 3001 | 3002 | | 33.3 | 32.7 | | 16 | | | | | | | | | X | | | |
| Y8 16+97 | 19 | LT | 3002 | | 34.7 | | | | | | | | | | | | | | | | |
| | | | 3002 | 3003 | | 32.4 | 32.4 | | | | | | | | | | | | | | |
| Y8 16+97 | 17 | RT | 3003 | | 34.7 | | | | | | | | | | | | | | | | |
| | | | 3003 | 1526 | | 32.4 | 32.2 | | | | | | | | | | | | | | |
| Y17 12+58 | 38 | RT | 3004 | | 30.8 | | | | | | | | | | | | | | | | |
| | | | 3004 | 3005 | | 30.8 | 30.7 | 5.1 | | | | 24 | | | | | | X | | | |
| Y17 12+62 | 14 | RT | 3005 | | 34.3 | | | | | | | | | | | | | | | | |
| | | | 3005 | 3006 | | 30.7 | 30.5 | 5.4 | | | | | | | | | | | | | |
| Y17 12+68 | 14 | LT | 3006 | | 34.3 | | | | | | | | | | | | | | | | |
| | | | 3006 | 3007 | | 30.5 | 30.3 | 5.6 | | | | 24 | | | | | | X | | | |
| Y17 11+55 | 41 | RT | 3010 | 3011 | | 31.3 | 30.9 | | | | | | | | | | | | | | |
| SR1 10+55 | 0 | LT | 3201 | 3202 | | 26.7 | 25.0 | | | | | | | | | | | | | | |
| SR1 12+53 | 21 | LT | 3203 | | | | | | | 40 | | | | | | | | X | | | |
| SR1 12+25 | 0 | LT | 3204 | 3205 | | 24.5 | 22.9 | | | | | | | | | | | | | | |
| SR1 13+52 | 0 | LT | 3206 | 3207 | | 22.3 | 19.6 | | | | | | | | | | | | | | |
| SR1 13+80 | 21 | LT | 3208 | | | | | | | 32 | | | | | | | | X | | | |
| SR1 17+22 | 0 | LT | 3301 | 3302 | | 21.9 | 18.2 | | | | | | | | | | | | | | |
| SR1 17+28 | 27 | LT | 3303 | | | | | | | 24 | | | | | | | | X | | | |
| Y5 13+65 | 30 | LT | 3401 | | 38.8 | | | | | | | | | | | | | | | | |
| | | | 3401 | 3404 | | 36.4 | 36.2 | | | | | | | | | | | | | | |
| Y5 13+50 | 27 | RT | 3402 | | 38.8 | | | | | | | | | | | | | | | | |
| | | | 3402 | 3403 | | 36.6 | 36.1 | | | | | | | | | | | | | | |
| Y5 12+93 | 27 | RT | 3403 | | 38.5 | | | | | | | | | | | | | | | | |
| | | | 3403 | 3408 | | 35.9 | 35.5 | | | | | | | | | | | | | | |
| Y5 12+95 | 30 | LT | 3404 | | 38.4 | | | | | | | | | | | | | | | | |
| | | | 3404 | 3408 | | 35.9 | 35.8 | | | | | | | | | | | | | | |
| Y5 12+00 | 47 | LT | 3406 | | 37.9 | | | | | | | | | | | | | | | | |
| | | | 3406 | 3407 | | 34.9 | 34.4 | | | | 156 | | | | | | | X | | | |
| Y5 13+55 | 47 | LT | 3407 | | 38.1 | | | | | | | | | | | | | | | | |
| | | | 3407 | 1009 | | 34.4 | 34.0 | | | | | 136 | | | | | | X | | | |
| Y5 12+91 | 2 | LT | 3408 | | | | | | | | | | | | | | | | | | |
| Y5B 12+20 | 29 | LT | 3501 | | 38.4 | | | | | | | | | | | | | | | | |
| | | | 3501 | 2504 | | 35.6 | 35.0 | | | | | | | | | | | | | | |
| Y6 07+60 | 34 | LT | 3602 | | 39.4 | | | | | | | | | | | | | | | | |
| Y6 06+13 | 32 | LT | 3603 | | 39.0 | | | | | | | | | | | | | | | | |
| Y6 07+65 | 55 | RT | 3604 | | 39.8 | | | | | | | | | | | | | | | | |
| | | | 3604 | 3606 | | 36.1 | 35.9 | | | 80 | | | | | | | | X | | | |
| Y6 07+65 | 45 | RT | 3605 | | 39.2 | | | | | | | | | | | | | | | | |
| | | | 3605 | 3604 | | 36.4 | 36.4 | | 12 | | | | | | | | | X | | | |
| Y6 06+85 | 55 | RT | 3606 | | 39.5 | | | | | | | | | | | | | | | | |
| | | | 3606 | 3607 | | 35.9 | 35.8 | | | 12 | | | | | | | | X | | | |
| Y6 06+85 | 44 | RT | 3607 | | 38.9 | | | | | | | | | | | | | | | | |
| | | | 3607 | 3608 | | 35.8 | 35.7 | | | | | | | | | | | | | | |
| Y6 06+25 | 36 | RT | 3608 | | 39.0 | | | | | | | | | | | | | | | | |
| | | | 3608 | 3609 | | 35.6 | 35.5 | | | | | | | | | | | | | | |
| Y6 05+90 | 32 | RT | 3609 | | 39.1 | | | | | | | | | | | | | | | | |
| Y7 11+67 | 42 | RT | 3801 | | 35.7 | | | | | | | | | | | | | | | | |
| | | | | | | | | SHEET TOTALS | 28 | 188 | 156 | 184 | | | | | | | | | |

| STRUCTURE (FROM–TO) | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2903 | | | | | | | | | | | | | | |
| 3001 | | | | | | | | | | | | | | |
| 3001–3002 | | | | | | | | | | | | | | |
| 3002 | | | | | | | | | | | | | | |
| 3002–3003 | | | | | | | | | | | | | | |
| 3003 | | | | | | | | | | | | | | |
| 3003–1526 | | | | | | | | | | | | | | |
| 3004 | | | | | | | | | | | | | | |
| 3004–3005 | | | | | | | | | | | | | | |
| 3005 | | | | | | | | | | | | | | |
| 3005–3006 | | | | | | | | | | | | | | |
| 3006 | | | | | | | | | | | | | | |
| 3006–3007 | | | | | | | | | | | | | | |
| 3010–3011 | | | | | | | | | | | | | | |
| 3201–3202 | | | | | | | | | | | | | | |
| 3203 | | | | | | | | | | | | | | |
| 3204–3205 | | | | | | | | | | | | | | |
| 3206–3207 | | | | | | | | | | | | | | |
| 3208 | | | | | | | | | | | | | | |
| 3301–3302 | | | | | | | | | | | | | | |
| 3303 | | | | | | | | | | | | | | |
| 3401 | | | | | | | | | | | | | | |
| 3401–3404 | | | | | | | | | | | | | | |
| 3402 | | | | | | | | | | | | | | |
| 3402–3403 | | | | | | | | | | | | | | |
| 3403 | | | | | | | | | | | | | | |
| 3403–3408 | | | | | | | | | | | | | | |
| 3404 | | | | | | | | | | | | | | |
| 3404–3408 | | | | | | | | | | | | | | |
| 3406 | | | | | | | | | | | | | | |
| 3406–3407 | | | | | | | | | | | | | | |
| 3407 | | | | | | | | | | | | | | |
| 3407–1009 | | | | | | | | | | | | | | |
| 3408 | | | | | | | | | | | | | | |
| 3501 | | | | | | | | | | | | | | |
| 3501–2504 | | | | | | | | | | | | | | |
| 3602 | | | | | | | | | | | | | | |
| 3603 | | | | | | | | | | | | | | |
| 3604 | | | | | | | | | | | | | | |
| 3604–3606 | | | | | | | | | | | | | | |
| 3605 | | | | | | | | | | | | | | |
| 3605–3604 | | | | | | | | | | | | | | |
| 3606 | | | | | | | | | | | | | | |
| 3606–3607 | | | | | | | | | | | | | | |
| 3607 | | | | | | | | | | | | | | |
| 3607–3608 | | | | | | | | | | | | | | |
| 3608 | | | | | | | | | | | | | | |
| 3608–3609 | | | | | | | | | | | | | | |
| 3609 | | | | | | | | | | | | | | |
| 3801 | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | |

| STRUCTURE (FROM–TO) | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2903 | | | | | | | | | | | 1 | | | | | | | | | | | 1 | 1 |
| 3001 | | | | | | | | | | | 1 | | | | | | | | | | | 1 | 1 |
| 3001–3002 | | | | | | | | | | | | | | | | | | | | | | | |
| 3002 | | | | | | | | | | | 1 | | | 1 | 1 | | | | | | | | |
| 3002–3003 | | 36 | | | | | | | | | | | | | | | | | | | | | |
| 3003 | | | | | | | | | | | 1 | | | 1 | 1 | | | | | | | | |
| 3003–1526 | | 68 | | | | | | | | | | | | | | | | | | | | | |
| 3004 | | | | | | | | | | | | | | | | | | | | | | | |
| 3004–3005 | | | | | | | | | | | | | | | | | | | | | | | |
| 3005 | | | | | | | | | | | 1 | | | 1 | 1 | | | | | | | | |
| 3005–3006 | | | | 28 | | | | | | | | | | | | | | | | | | | |
| 3006 | | | | | | | | | | | 1 | | | 1 | 1 | | | | | | | | |
| 3006–3007 | | | | | | | | | | | | | | | | | | | | | | | |
| 3010–3011 | | | | | 84 | | | | | | | | | | | | | | | | | | |
| 3201–3202 | | | 48 | | | | | | | | | | | | | | | | | | | | |
| 3203 | | | | | | | | | | | | | | | | | | | | | | | |
| 3204–3205 | | | 52 | | | | | | | | | | | | | | | | | | | | |
| 3206–3207 | | | 60 | | | | | | | | | | | | | | | | | | | | |
| 3208 | | | | | | | | | | | | | | | | | | | | | | | |
| 3301–3302 | | | | 64 | | | | | | | | | | | | | | | | | | | |
| 3303 | | | | | | | | | | | | | | | | | | | | | | | |
| 3401 | | | | | | | | | | | 1 | | | 1 | | 1 | | | | | | | |
| 3401–3404 | 72 | | | | | | | | | | | | | | | | | | | | | | |
| 3402 | | | | | | | | | | | 1 | | | 1 | | | 1 | | | | | | |
| 3402–3403 | 56 | | | | | | | | | | | | | | | | | | | | | | |
| 3403 | | | | | | | | | | | 1 | | | 1 | 1 | | | | | | | | |
| 3403–3408 | | | 32 | | | | | | | | | | | | | | | | | | | | |
| 3404 | | | | | | | | | | | 1 | | | 1 | 1 | | | | | | | | |
| 3404–3408 | | 28 | | | | | | | | | | | | | | | | | | | | | |
| 3406 | | | | | | | | | | | 1 | | | | | | | | | | | | |
| 3406–3407 | | | | | | | | | | | | | | | | | | | | | | | |
| 3407 | | | | | | | | | | | 1 | | | | | | | | | | | | |
| 3407–1009 | | | | | | | | | | | | | | | | | | | | | | | |
| 3408 | | | | | | | | | | | | | | | | | | | | | | | |
| 3501 | | | | | | | | | | | 1 | | | 1 | | 1 | | | | | | | |
| 3501–2504 | 44 | | | | | | | | | | | | | | | | | | | | | | |
| 3602 | | | | | | | | | | | 1 | | | | | 1 | | | | | 1 | | |
| 3603 | | | | | | | | | | | | | | | | | | | | | | | |
| 3604 | | | | | | | | | | | 1 | | | | | | | | | | | 1 | 1 |
| 3604–3606 | | | | | | | | | | | | | | | | | | | | | | | |
| 3605 | | | | | | | | | | | 1 | | | 1 | | | 1 | | | | | | |
| 3605–3604 | | | | | | | | | | | | | | | | | | | | | | | |
| 3606 | | | | | | | | | | | 1 | | | | | | | | | | | 1 | 1 |
| 3606–3607 | | | | | | | | | | | | | | | | | | | | | | | |
| 3607 | | | | | | | | | | | 1 | | | 1 | | | 1 | | | | | | |
| 3607–3608 | | 60 | | | | | | | | | | | | | | | | | | | | | |
| 3608 | | | | | | | | | | | 1 | | | 1 | 1 | | | | | | | | |
| 3608–3609 | | 36 | | | | | | | | | | | | | | | | | | | | | |
| 3609 | | | | | | | | | | | 1 | | | 1 | | | 1 | | | | | | |
| 3801 | | | | | | | | | | | 1 | | | | | | | | | | | 1 | 1 |
| SHEET TOTALS | 172 | 228 | 192 | 92 | 84 | | | | | | 21 | | | 13 | 7 | 3 | 4 | | | | 1 | 5 | 5 |

| STRUCTURE (FROM–TO) | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2903 | | | | | | | | | | | | | | | | | | | | | |
| 3001 | | | | | | | | | | | | | | | | | | | | | |
| 3001–3002 | | | | | | | | | | | | | | | | | | | | | |
| 3002 | | | | | | | | | | | | | | | | | | | | | |
| 3002–3003 | | | | | | | | | | | | | | | | | | | | | |
| 3003 | | | | | | | | | | | | | | | | | | | | | |
| 3003–1526 | | | | | | | | | | | | | | | | | | | | | |
| 3004 | | | | | | | | | | | | | | | | | | | | | |
| 3004–3005 | | | | | | | | | | | | | | | | | | | | | |
| 3005 | | | | | | | | | | | | | | | | | | | | | |
| 3005–3006 | | | | | | | | | | | | | | | | | | | | | |
| 3006 | | | | | | | | | | | | | | | | | | | | | |
| 3006–3007 | | | | | | | | | | | | | | | | | | | | | |
| 3010–3011 | | | | | | | | | | | | | | | | | | | | | |
| 3201–3202 | | | | | | | | | | | | | | | | | | | | | |
| 3203 | | | | | | | | | | | | | | | | | | | | | |
| 3204–3205 | | | | | | | | | | | | | | | | | | | | | |
| 3206–3207 | | | | | | | | | | | | | | | | | | | | | |
| 3208 | | | | | | | | | | | | | | | | | | | | | |
| 3301–3302 | | | | | | | | | | | | | | | | | | | | | |
| 3303 | | | | | | | | | | | | | | | | | | | | | |
| 3401 | | | | | | | | | | | | | | | | | | | | | |
| 3401–3404 | | | | | | | | | | | | | | | | | | | | | |
| 3402 | | | | | | | | | | | | | | | | | | | | | |
| 3402–3403 | | | | | | | | | | | | | | | | | | | | | |
| 3403 | | | | | | | | | | | | | | | | | | | | | |
| 3403–3408 | | | | | | | | | | | | | | | | | | | | | |
| 3404 | | | | | | | | | | | | | | | | | | | | | |
| 3404–3408 | | | | | | | | | | | | | | | | | | | | | |
| 3406 | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 3406–3407 | | | | | | | | | | | | | | | | | | | | | |
| 3407 | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 3407–1009 | | | | | | | | | | | | | | | | | | | | | |
| 3408 | | | | | | | | | | | | | | | 1 | | | | | | |
| 3501 | | | | | | | | | | | | | | | | | | | | | |
| 3501–2504 | | | | | | | | | | | | | | | | | | | | | |
| 3602 | | | | | | | | | | | | | | | | | | | | | SEE DETAIL, SHEET 2C-6 |
| 3603 | | | | | | | | | | | | | | | | 1 | | | | | |
| 3604 | | | | | | | | | | | | | | | | | | | | | |
| 3604–3606 | | | | | | | | | | | | | | | | | | | | | |
| 3605 | | | | | | | | | | | | | | | | | | | | | |
| 3605–3604 | | | | | | | | | | | | | | | | | | | | | |
| 3606 | | | | | | | | | | | | | | | | | | | | | |
| 3606–3607 | | | | | | | | | | | | | | | | | | | | | |
| 3607 | | | | | | | | | | | | | | | | | | | | | |
| 3607–3608 | | | | | | | | | | | | | | | | | | | | | |
| 3608 | | | | | | | | | | | | | | | | | | | | | |
| 3608–3609 | | | | | | | | | | | | | | | | | | | | | |
| 3609 | | | | | | | | | | | | | | | | | | | | | |
| 3801 | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | 2 | | | | | 2 | | | | 1 | 1 | | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

COMPUTED BY: Ray Lovinggood DATE: 01/09/15

CHECKED BY: Piotr Stojda DATE: 01/13/15

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

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

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

| LINE & STATION | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3801 | 3803 | | 33.7 | 33.4 | | 12 | | | | | | | | | X | | | |
| Y7 11+67 | 3 | LT | 3802 | | 35.9 | | | | | | | | | | | | | | | | |
| | | | 3802 | 3803 | | 33.3 | 33.2 | | | | | | | | | | | | | | |
| Y7 11+67 | 29 | RT | 3803 | | 35.3 | | | | | | | | | | | | | | | | |
| | | | 3803 | 3804 | | 33.2 | 32.4 | 0.4 | | | | | | | | | | | | | |
| Y7 09+63 | 17 | RT | 3804 | | 35.2 | | | | | | | | | | | | | | | | |
| | | | 3804 | 3806 | | 32.4 | 32.3 | 0.4 | | | | | | | | | | | | | |
| Y7 09+77 | 29 | RT | 3805 | | 36.1 | | | | | | | | | | | | | | | | |
| | | | 3805 | 3804 | | 34.1 | 32.9 | | 20 | | | | | | | | | X | | | |
| Y7 11+17 | 30 | LT | 3807 | | 36.7 | | | | | | | | | | | | | | | | |
| | | | 3807 | 3808 | | 34.7 | 33.7 | | 12 | | | | | | | | | X | | | |
| Y7 11+12 | 18 | LT | 3808 | | 36.5 | | | | | | | | | | | | | | | | |
| | | | 3808 | 3809 | | 33.5 | 32.5 | | | | | | | | | | | | | | |
| Y7 10+15 | 19 | LT | 3809 | | 35.0 | | | | | | | | | | | | | | | | |
| | | | 3809 | 3810 | | 32.5 | 32.3 | | | | | | | | | | | | | | |
| Y7A 15+15 | 35 | RT | 3901 | | 36.9 | | | | | | | | | | | | | | | | |
| | | | 3901 | 3902 | | 34.9 | 34.3 | | 16 | | | | | | | | | X | | | |
| Y7A 15+15 | 20 | RT | 3902 | | 37.1 | | | | | | | | | | | | | | | | |
| | | | 3902 | 3910 | | 33.8 | 33.5 | | | | | | | | | | | | | | |
| Y7A 13+46 | 57 | RT | 3904 | | 32.1 | | | | | | | | | | | | | | | | |
| | | | 3904 | 3905 | | 30.6 | 30.3 | 0.7 | | | 32 | | | | | | | X | | | |
| Y7A 13+43 | 27 | RT | 3905 | | 36.5 | | | | | | | | | | | | | | | | |
| | | | 3905 | 3906 | | 30.3 | 30.2 | | | | | | | | | | | | | | |
| Y7A 13+38 | 27 | LT | 3906 | | 36.5 | | | | | | | | | | | | | | | | |
| | | | 3906 | 3907 | | 30.2 | 30.1 | 0.5 | | | | | 32 | | | | | X | | | |
| Y7A 14+00 | 38 | RT | 3909 | | 36.4 | | | | | | | | | | | | | | | | |
| | | | 3909 | 3910 | | 34.4 | 34.4 | | 16 | | | | | | | | | X | | | |
| Y7A 14+00 | 24 | RT | 3910 | | 37.5 | | | | | | | | | | | | | | | | |
| | | | 3910 | 3905 | | 33.5 | 33.3 | | | | | | | | | | | | | | |
| Y7A 17+18 | 47 | RT | 3911 | 3912 | | 33.0 | 32.6 | | | | | | | | | | | | | | |
| Y7A 22+30 | 41 | LT | 4001 | | 37.6 | | | | | | | | | | | | | | | | |
| | | | 4001 | 4005 | | 34.7 | 34.5 | | | | | | | | | | | | | | |
| Y7A 22+30 | 24 | LT | 4004 | | 38.3 | | | | | | | | | | | | | | | | |
| | | | 4004 | 4001 | | 35.3 | 34.7 | | | | | | | | | | | | | | |
| Y7A 21+27 | 37 | LT | 4005 | | 38.2 | | | | | | | | | | | | | | | | |
| | | | 4005 | 4006 | | 34.5 | 34.4 | 0.3 | | | | | | | | | | | | | |
| Y7A 21+00 | 29 | RT | 4006 | | 38.5 | | | | | | | | | | | | | | | | |
| | | | 4006 | 4007 | | 34.4 | 34.1 | | | | | | | | | | | | | | |
| Y7A 19+30 | 27 | RT | 4007 | | 38.4 | | | | | | | | | | | | | | | | |
| | | | 4007 | 4008 | | 34.1 | 34.0 | 0.6 | | | | 36 | | | | | | X | | | |
| Y7A 21+34 | 54 | LT | 4009 | | 36.0 | | | | | | | | | | | | | | | | |
| | | | 4009 | 4005 | | 34.5 | 34.5 | | | | 20 | | | | | | | X | | | |
| Y16 16+37 | 20 | RT | 4102 | | 40.0 | | | | | | | | | | | | | | | | |
| | | | 4102 | 4106 | | 36.4 | 36.3 | 0.4 | | | | | | | | | | | | | |
| Y16 16+15 | 23 | LT | 4103 | | 39.8 | | | | | | | | | | | | | | | | |
| | | | 4103 | 4105 | | 37.0 | 36.9 | | | | | | | | | | | | | | |
| Y16 16+15 | 6 | LT | 4104 | | 40.5 | | | | | | | | | | | | | | | | |
| | | | 4104 | 4107 | | 37.6 | 37.4 | | | | | | | | | | | | | | |
| Y16 15+80 | 23 | LT | 4105 | | 40.0 | | | | | | | | | | | | | | | | |
| | | | 4105 | 4107 | | 36.7 | 36.6 | | | | | | | | | | | | | | |
| | | | | | | | SHEET TOTALS | | 76 | | 52 | 36 | 32 | | | | | | | | |

| FROM | TO | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3801 | 3803 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3802 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3802 | 3803 | | | | | | | | | | | | | | | | | | | | | 28 | | | | | | | | | |
| 3803 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3803 | 3804 | | | | | | | | | | | | | | | | | | | | | 196 | | | | | | | | | |
| 3804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3804 | 3806 | | | | | | | | | | | | | | | | | | | | | | 32 | | | | | | | | |
| 3805 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3805 | 3804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3807 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3807 | 3808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3808 | 3809 | | | | | | | | | | | | | | | | | | | | | 96 | | | | | | | | | |
| 3809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3809 | 3810 | | | | | | | | | | | | | | | | | | | | | 72 | | | | | | | | | |
| 3901 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3901 | 3902 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3902 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3902 | 3910 | | | | | | | | | | | | | | | | | | | | | | 112 | | | | | | | | |
| 3904 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3904 | 3905 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3905 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3905 | 3906 | | | | | | | | | | | | | | | | | | | | | | | | 52 | | | | | | |
| 3906 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3906 | 3907 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3909 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3909 | 3910 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3910 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3910 | 3905 | | | | | | | | | | | | | | | | | | | | | | 56 | | | | | | | | |
| 3911 | 3912 | | | | | | | | | | | | | | | | | | | | | | | | 120 | | | | | | |
| 4001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4001 | 4005 | | | | | | | | | | | | | | | | | | | | | | 104 | | | | | | | | |
| 4004 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4004 | 4001 | | | | | | | | | | | | | | | | | | | | 16 | | | | | | | | | | |
| 4005 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4005 | 4006 | | | | | | | | | | | | | | | | | | | | | | 68 | | | | | | | | |
| 4006 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4006 | 4007 | | | | | | | | | | | | | | | | | | | | | | | 168 | | | | | | | |
| 4007 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4007 | 4008 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4009 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4009 | 4005 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4102 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4102 | 4106 | | | | | | | | | | | | | | | | | | | | | | 60 | | | | | | | | |
| 4103 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4103 | 4105 | | | | | | | | | | | | | | | | | | | | 32 | | | | | | | | | | |
| 4104 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4104 | 4107 | | | | | | | | | | | | | | | | | | | | 32 | | | | | | | | | | |
| 4105 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4105 | 4107 | | | | | | | | | | | | | | | | | | | | | 16 | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | 80 | 408 | 432 | 168 | 172 | | | | | | |

| FROM | TO | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3801 | 3803 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3802 | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 3802 | 3803 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3803 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3803 | 3804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3804 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3804 | 3806 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3805 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 3805 | 3804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3807 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 3807 | 3808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3808 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3808 | 3809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3809 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3809 | 3810 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3901 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 3901 | 3902 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3902 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3902 | 3910 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3904 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3904 | 3905 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3905 | | 1 | 1.2 | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3905 | 3906 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3906 | | 1 | 1.3 | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3906 | 3907 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3909 | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 3909 | 3910 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3910 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3910 | 3905 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3911 | 3912 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4001 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4001 | 4005 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4004 | | 1 | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 4004 | 4001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4005 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4005 | 4006 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4006 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4006 | 4007 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4007 | | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4007 | 4008 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4009 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4009 | 4005 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4102 | | 1 | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 4102 | 4106 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4103 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4103 | 4105 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4104 | | 1 | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| 4104 | 4107 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4105 | | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4105 | 4107 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | 22 | 2.5 | | 14 | | 6 | 8 | | 2 | | | | 4 | 4 | | | | | | 4 | | | | | 4 | | | | | | | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/09/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-16 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

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

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

| LINE & STATION | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| Y16 15+75 | 23 | RT | 4106 | | 39.5 | | | | |
| | | | 4106 | 4108 | | 36.3 | 36.0 | 0.6 | |
| Y16 15+80 | 6 | LT | 4107 | | 40.3 | | | | |
| | | | 4107 | 4106 | | 36.6 | 36.6 | | |
| Y16 14+79 | 17 | RT | 4108 | | 39.0 | | | | |
| | | | 4108 | 4110 | | 36.0 | 35.9 | 0.7 | |
| Y16 14+79 | 11 | RT | 4110 | | 39.2 | | | | |
| | | | | | | | | | CONTINGENCY QUANTITY |
| | | | | | | | | | PER PFLI MINUTES |
| | | | | | | | | | TOTALS FROM SHEET 3D-22 |
| | | | | | | | | | TOTALS FROM SHEET 3D-23 |

| | 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 | DO NOT USE PVC | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT TOTALS | 1116 | 1140 | 648 | 516 | 320 | 44 | | 36 | | | | | | | | | | | | | | | | | | | | | | | | |

| LINE & STATION / STRUCTURE | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Y16 15+75 (4106) | | | | | | | | | | | | 1 | | | 1 | | | 1 | | | |
| 4106–4108 | | | 96 | | | | | | | | | | | | | | | | | | |
| Y16 15+80 (4107) | | | | | | | | | | | | 1 | | | | | | | | 1 | |
| 4107–4106 | | 28 | | | | | | | | | | | | | | | | | | | |
| Y16 14+79 (4108) | | | | | | | | | | | | 1 | | | 1 | | | 1 | | | |
| 4108–4110 | | | 4 | | | | | | | | | | | | | | | | | | |
| TOTALS FROM SHEET 3D-23 | | | | | | | | | | | | | | | 12 | 2 | 8 | 2 | | | |
| SHEET TOTALS | | 28 | 100 | | | | | | | | | 3 | | | 14 | 2 | 8 | 4 | | 1 | |
| PROJECT TOTALS | 1740 | 6788 | 2468 | 3056 | 3252 | 564 | 100 | 420 | | 64 | 8.300 | 341 | 37.3 | | 218 | 50 | 75 | 97 | | 30 | |

| LINE & STATION / STRUCTURE | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXSITING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Y16 15+80 (4107) | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | |
| Y16 14+79 (4110) | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| CONTINGENCY QUANTITY | | | | | | | | | | | | | | | | | | | | | | | 2.000 | |
| PER PFLI MINUTES | | | | | | | | | | | | | | | | | | | 50 | | | | | |
| TOTALS FROM SHEET 3D-22 | | | | | | | | | | | | | | | | | | | | | 1682 | | | 2195 |
| TOTALS FROM SHEET 3D-23 | 1 | | | | 1 | | | | | 1 | | | 4 | | | | 5 | | | | | | | |
| SHEET TOTALS | 1 | | | | 1 | | | | | 2 | | | 4 | | 1 | | 5 | | 51 | | 1682 | | 2.000 | 2195 |
| PROJECT TOTALS | 1 | 4 | 72 | 72 | 1 | 2 | 3 | 4 | | 51 | 1 | 45 | 5 | 3 | 49 | | 9 | 2 | 56 | 7 | 1682 | 1.9026 | 2.000 | 2195 |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| | | | |
|---|---|---|---|
| COMPUTED BY: | Ray Lovinggood | DATE: | 01/9/15 |
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-17 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX, SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SEE SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
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| L 40+19 | 7 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | |
| L 40+03 | 56 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 40+38 | 42 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 40+78 | 54 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 41+89 | 26 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 160 | | | | |
| L 40+64 | 8 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 40+73 | 14 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 41+07 | 35 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 43+62 | 29 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 33 | | | | |
| L 44+60 | 29 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 32 | | | | |
| L 45+21 | 34 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 46+06 | 27 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 44 | | | | |
| L 46+90 | 4 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 48+52 | 28 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 85 | | | | |
| L 47+53 | 33 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 50+21 | 27 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | |
| L 50+28 | 38 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 51+13 | 17 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 51+23 | 5 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | | | | |
| L 51+19 | 26 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 51+49 | 28 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| L 51+28 | 25 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 51+28 | 39 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 51+74 | 7 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| L 51+73 | 19 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 53+43 | 27 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | | | |
| L 54+49 | 51 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 55+29 | 49 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| L 55+08 | 38 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 55+72 | 54 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 55+90 | 28 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 55+50 | 25 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 55+98 | 56 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 56+07 | 66 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 56+18 | 62 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Y6 21+86 | 45 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | | | | |
| L 58+24 | 50 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 58+41 | 36 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 59+12 | 35 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 58+93 | 24 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| L 60+57 | 25 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | | | | |
| L 61+63 | 25 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | |
| L 61+91 | 45 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 62+91 | 21 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| L 63+34 | 21 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| L 64+53 | 21 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 13 | | | | |
| L 65+63 | 21 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 62+42 | 24 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 7 | | | | |
| L 63+87 | 23 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 12 | | | | |
| L 65+71 | 23 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 21 | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 508 | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/9/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-18 |

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

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

| LINE & STATION<br>SIZE<br>THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX, SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SEE SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 67+44 | 22 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 20 | | | | |
| L 68+27 | 25 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 68+22 | 37 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 68+42 | 22 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| L 69+15 | 23 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 14 | | | | |
| L 70+15 | 24 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | |
| Y8 14+06 | 21 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | |
| Y8 13+64 | 19 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 74+48 | 26 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | | | | |
| L 73+93 | 25 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| L 76+93 | 28 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 | | | | |
| L 78+59 | 24 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 14 | | | | |
| L 80+11 | 21 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | | | | |
| L 82+25 | 20 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | |
| L 84+54 | 32 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | |
| L 84+98 | 27 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 86+14 | 21 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 14 | | | | |
| L 87+71 | 21 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | | | | |
| L 88+38 | 23 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 88+72 | 33 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 79+63 | 36 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 85+49 | 29 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 16 | | | | |
| L 87+68 | 31 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 22 | | | | |
| Y6 08+50 | 29 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | | | | |
| Y6 09+15 | 33 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Y6 23+98 | 42 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Y10 12+25 | 17 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| Y6 07+61 | 38 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Y6 06+11 | 31 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | | | | |
| Y6 07+08 | 31 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 18 | | | | |
| YA 10+38 | 6 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 34+62 | 32 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 36+82 | 43 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 58+69 | 27 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 53+61 | 57 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 51+84 | 14 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 50+71 | 24 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 23 | | | | |
| L 46+99 | 30 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 37+59 | 42 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 37+52 | 56 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 31+42 | 77 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| Y6 15+83 | 47 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| DR1 11+73 | 27 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | |
| DR1 11+20 | 14 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 58+58 | 30 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 60+15 | 28 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 60+99 | 30 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 68+55 | 33 LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| L 69+83 | 25 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 71+08 | 24 RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 250 | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/9/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-19 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | | STRUCTURE NUMBER FROM | TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX, SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SEE SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 71+39 | 25 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 75+17 | 2 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 82+56 | 23 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Y6 16+72 | 70 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| DR1 12+17 | 21 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Y15 13+32 | 32 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | | | | |
| Y15 14+32 | 27 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| DR1 11+79 | 8 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| DR1 11+76 | 7 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| DR1 11+00 | 7 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Y7A 13+34 | 9 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | | | | |
| L 73+09 | 27 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 74+05 | 29 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 79+12 | 30 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 81+93 | 24 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Y6 24+65 | 43 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 7 | | | | |
| L 58+67 | 1008 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 58+94 | 1007 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 40+37 | 26 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 19 | | | | |
| L 39+25 | 26 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 112 | | | | |
| L 38+30 | 0 | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | |
| L 37+72 | 26 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 68 | | | | |
| L 35+86 | 25 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 152 | | | | |
| L 33+10 | 24 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 172 | | | | |
| L 31+07 | 23 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 67 | | | | |
| L 59+66 | 24 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | | | | |
| L 61+17 | 25 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 70+41 | 24 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | | | | |
| L 81+24 | 20 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | |
| DR1 10+60 | 9 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| Y6 23+20 | 44 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 7 | | | | |
| Y16 16+26 | 11 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Y16 16+74 | 12 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | | | | |
| L 36+47 | 28 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | |
| L 32+47 | 62 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| L 31+82 | 67 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | | | | |
| Y5 16+67 | 60 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | | | | |
| Y6 29+30 | 39 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| Y6 30+46 | 39 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | |
| Y6 31+00 | 6 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| Y16 15+47 | 11 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | |
| Y16 16+36 | 16 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Y16 17+37 | 38 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | | | | |
| Y16 17+42 | 22 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Y6 31+55 | 26 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | | | | |
| Y16 16+15 | 5 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| L 37+24 | 27 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| L 37+95 | 27 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | | | | |
| L 38+28 | 40 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| L 61+35 | 43 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 730 | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/9/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

RD261645

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-20 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

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

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

Column headings with no entries on this sheet:

| Group | Columns |
|---|---|
| STRUCTURE NUMBER | FROM; TO |
| TOP ELEVATION | FT. |
| INVERT ELEVATION | FT. |
| INVERT ELEVATION | FT. |
| MINIMUM REQUIRED SLOPE | % |
| 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; DO NOT USE PVC |
| C. A. A. PIPE (SIZE / THICKNESS OR GAUGE) | 12 / .064; 15 / .064; 18 / .064; 24 / .064; (blank); 30 / .079; (blank); (blank); 36 / .079; (blank); (blank); 42 / .109; 48 / .109 |
| R. C. PIPE CLASS III | 12; 15; 18 |
| R. C. PIPE CLASS IV | 12; 15; 18 |
| R. C. PIPE CLASS V | 12; 15; 18; 24; 30; 36; 42; 48; (blank) |
| 15" DUCTILE IRON PIPE | |
| ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) | CY |
| QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) | 0' THRU 5' (EACH); A: 5' THRU 10' (LIN. FT.); B: 10' AND ABOVE (LIN. FT.) |
| C.B. STD. 840.01 OR STD. 840.02 | |
| FRAME, GRATES, AND HOOD STD. 840.03 — GRATE TYPE | E; F; G; (blank) |
| CONCRETE TRANSITIONAL SECTION | D.I. STD. 852.04 OR STD. 852.06; C.B. STD. 852.05 |
| Other structures | SPECIAL JUNCTION BOX, SEE SHEET 2C-7; SPECIAL CATCH BASIN, SEE SHEET 2C-1 OR 2C-6; D.I. STD. 840.14 OR STD. 840.15; D.I. FRAME AND GRATES STD. 840.16; G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26; G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27; G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28; G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24; G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29; G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29; DRIVEWAY D.I. STD. 840.30; FRAME W/ GRATE FOR DRIVEWAY STD. 840.30; J.B. STD. 840.31 OR STD. 840.32; T.B.J.B. STD. 840.34; T.B.D.I. STD. 840.35; M.H. STD. 840.51, STD. 840.52, OR STD. 840.53; M.H. FRAME AND COVER STD. 840.54; CONVERT EXISTING J.B. TO 2GI; ADJUST M.H.; ADJUST C.B. |

| LINE & STATION | OFFSET | | FLOWABLE FILL (CY) | CONCRETE COLLARS CL. "B" STD. 840.72 (CY) | CONCRETE AND BRICK PIPE PLUG STD. 840.71 (CY) | PIPE REMOVAL (LIN. FT.) | REMARKS |
|---|---|---|---|---|---|---|---|
| L 61+34 | 34 | LT | 1 | | | | |
| L 14+24 | 34 | RT | 1 | | | | |
| L 14+02 | 2 | RT | 5 | | | | |
| L 13+80 | 31 | LT | 1 | | | | |
| L 20+38 | 30 | RT | 1 | | | | |
| L 20+38 | 11 | LT | 3 | | | | |
| L 38+36 | 33 | LT | 1 | | | | |
| L 37+17 | 32 | LT | 1 | | | | |
| L 40+98 | 69 | RT | 1 | | | | |
| L 47+67 | 42 | LT | 1 | | | | |
| L 62+18 | 21 | RT | 7 | | | | |
| L 61+62 | 21 | RT | 1 | | | | |
| L 61+08 | 21 | RT | 4 | | | | |
| L 59+72 | 34 | RT | 4 | | | | |
| L 60+35 | 27 | RT | 2 | | | | |
| L 69+66 | 25 | RT | 2 | | | | |
| L 66+63 | 22 | RT | 20 | | | | |
| L 68+54 | 22 | RT | 24 | | | | |
| L 71+54 | 23 | LT | 7 | | | | |
| L 72+10 | 25 | LT | 1 | | | | |
| L 72+25 | 23 | LT | 2 | | | | |
| L 72+74 | 23 | LT | 5 | | | | |
| L 73+19 | 24 | LT | 1 | | | | |
| L 73+67 | 25 | LT | 5 | | | | |
| L 74+79 | 25 | RT | 5 | | | | |
| L 74+27 | 24 | RT | 2 | | | | |
| L 75+93 | 26 | LT | 2 | | | | |
| L 76+55 | 26 | LT | 6 | | | | |
| L 77+53 | 26 | LT | 7 | | | | |
| L 78+57 | 26 | LT | 7 | | | | |
| L 79+39 | 27 | LT | 4 | | | | |
| L 80+18 | 27 | LT | 7 | | | | |
| L 81+14 | 27 | LT | 6 | | | | |
| L 75+76 | 27 | RT | 8 | | | | |
| L 81+94 | 27 | LT | 5 | | | | |
| L 83+27 | 27 | LT | 13 | | | | |
| Y6 23+92 | 39 | LT | 1 | | | | |
| Y6 06+36 | 37 | RT | 1 | | | | |
| L 70+77 | 24 | LT | 5 | | | | |
| L 83+38 | 29 | RT | 11 | | | | |
| Y4 10+73 | 20 | RT | 3 | | | | |
| L 18+52 | 38 | LT | | | | 21 | REMOVE EXIST. 15" RCP |
| Y1 16+72 | 44 | LT | | | | 40 | REMOVE EXIST. 15" RCP |
| L 17+97 | 54 | RT | | | | 30 | REMOVE EXIST. 15" CMP |
| L 20+59 | 84 | LT | | | | 84 | REMOVE EXIST. 15" RCP |
| L 12+65 | 71 | LT | | | | 16 | REMOVE EXIST. 15" RCP & DI |
| L 13+20 | 29 | RT | | | | 16 | REMOVE EXIST. 12" RCP & DI |
| L 37+46 | 66 | RT | | | | 17 | REMOVE EXIST. JB & 15" RCP |
| L 34+54 | 33 | LT | | | | 14 | REMOVE EXIST. MH & 24" RCP |
| Y5B 11+75 | 14 | RT | | | | 8 | REMOVE EXIST. CB & 15" RCP |
| SHEET TOTALS | | | 194 | | | 246 | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/9/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-21 |

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | | PIPE REMOVAL (LIN. FT.) | REMARKS |
|---|---|---|---|---|
| Y5B 11+78 | 24 | RT | 15 | REMOVE EXIST. 15" RCP |
| Y1 14+56 | 53 | RT | 63 | REMOVE EXIST. HW & 36" RCP |
| Y1 14+56 | 58 | RT | 63 | REMOVE EXIST. HW & 36" RCP |
| Y3 14+74 | 25 | LT | 65 | REMOVE EXIST. 24" RCP |
| Y3 15+02 | 25 | RT | 17 | REMOVE EXIST. 15" RCP |
| Y3 15+03 | 22 | RT | 9 | REMOVE EXIST. 15" RCP |
| Y3 15+07 | | CL | 48 | REMOVE EXIST. 30" RCP |
| Y3 15+07 | 42 | RT | 27 | REMOVE EXIST. 36" RCP |
| L 30+51 | 51 | LT | 55 | REMOVE EXIST. 73" x 55" CMAP |
| L 30+54 | 3 | LT | 41 | REMOVE EXIST. CB & 42" CMAP |
| L 30+52 | 20 | RT | 6 | REMOVE EXIST. CB & 15" RCP |
| L 30+55 | 26 | RT | 17 | REMOVE EXIST. MH & 42" CMAP |
| Y6 6+15 | 31 | RT | 32 | REMOVE EXIST. 24" CP |
| Y6 15+65 | 81 | LT | 26 | REMOVE EXIST. 15" HDPE |
| Y6 23+95 | | CL | 74 | REMOVE EXIST. 18" RCP |
| Y6 22+47 | 36 | RT | 6 | REMOVE EXIST. CB, JB & 15" RCP |
| L 51+28 | 52 | RT | 17 | REMOVE EXIST. 24" RCP |
| L 50+15 | 35 | LT | 11 | REMOVE EXIST. 18" RCP |
| L 43+36 | 16 | RT | 76 | REMOVE EXIST. MH & 36" RCP |
| L 13+19 | 29 | RT | 19 | REMOVE EXIST. DI & 12" RCP |
| Y6 16+14 | 53 | LT | 41 | REMOVE 2 EXIST. MH & 15" CMP |
| Y5B 11+73 | 12 | LT | 11 | REMOVE EXIST. CB & 15" RCP |
| Y5B 11+74 | 24 | LT | 7 | REMOVE EXIST. 15" RCP |
| Y6 23+92 | 39 | RT | 8 | REMOVE EXIST. 15" RCP |
| Y16 17+09 | 25 | LT | 8 | REMOVE EXIST. 6" PVC |
| Y16 17+11 | 4 | LT | 32 | REMOVE EXIST. 2 MH & 18" RCP |
| Y5 12+93 | 24 | RT | 15 | REMOVE EXIST. CB & 15" RCP |
| Y5 12+92 | 8 | RT | 21 | REMOVE EXIST. CB & 12" RCP |
| Y6 18+65 | 47 | RT | 12 | REMOVE EXIST. CB & 12" RCP |
| L 54+60 | 46 | LT | 30 | REMOVE EXIST. DI & 6" CIP |
| L 69+70 | 65 | RT | 20 | REMOVE EXIST. 36" RCP |
| L 71+98 | 26 | RT | 24 | REMOVE EXIST. 18" RCP |
| L 72+78 | 25 | RT | 24 | REMOVE EXIST. 18" RCP |
| L 73+43 | 26 | RT | 24 | REMOVE EXIST. 18" RCP |
| L 69+75 | 29 | LT | 6 | REMOVE EXIST. DI, MH & 15" RCP |
| L 90+46 | 38 | LT | 24 | REMOVE EXIST. 24" RCP |
| L 91+13 | 36 | LT | 24 | REMOVE EXIST. CB & 18" RCP |
| Y8 13+29 | 17 | LT | 20 | REMOVE EXIST. 8" TERRA COTTA |
| Y7A 16+86 | 7 | RT | 40 | REMOVE EXIST. 30" CMP |
| Y8 16+29 | 2 | LT | 36 | REMOVE EXIST. 15" RCP |
| Y8 16+26 | 38 | RT | 45 | REMOVE EXIST. 15" RCP |
| L 90+35 | 29 | RT | 105 | REMOVE EXIST. 18" RCP |
| L 91+26 | 40 | LT | 12 | REMOVE EXIST. DI & 12" RCP |
| L 91+61 | 33 | LT | 69 | REMOVE EXIST. CB & 18" RCP |
| L 92+68 | 33 | LT | 257 | REMOVE EXIST. 2 JB & 18" RCP |
| L 94+34 | 41 | LT | 13 | REMOVE EXIST. DI & 12" RCP |
| L 94+76 | 34 | LT | 181 | REMOVE EXIST. JB & 18" RCP |
| L 96+44 | 34 | LT | 4 | REMOVE 2 EXIST. CB & 18" RCP |
| Y15 14+41 | 55 | RT | 51 | REMOVE EXIST. 2 CB & 15" RCP |
| L 43+27 | 23 | LT | 9 | REMOVE EXIST. MH & 36" RCP |
| SHEET TOTALS | | | 1860 | |

| Column group | Sub-columns (empty on this sheet) |
|---|---|
| STRUCTURE NUMBER | FROM; TO |
| TOP ELEVATION | FT. |
| INVERT ELEVATION | FT. |
| INVERT ELEVATION | FT. |
| MINIMUM REQUIRED SLOPE | % |
| 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; DO NOT USE PVC |
| C. A. A. 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 |
| R. C. PIPE CLASS IV | 12; 15; 18 |
| R. C. PIPE CLASS V | 12; 15; 18; 24; 30; 36; 42; 48 |
| 15" DUCTILE IRON PIPE | |
| ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) | CY |
| QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) | 0' THRU 5' (EACH); A: 5' THRU 10' (LIN. FT.); B: 10' AND ABOVE (LIN. FT.) |
| C.B. STD. 840.01 OR STD. 840.02 | |
| FRAME, GRATES, AND HOOD STD. 840.03 | GRATE TYPE: E; F; G |
| CONCRETE TRANSITIONAL SECTION | D.I. STD. 852.04 OR STD. 852.06; C.B. STD. 852.05 |
| SPECIAL JUNCTION BOX, SEE SHEET 2C-7 | |
| SPECIAL CATCH BASIN, SEE SHEET 2C-1 OR 2C-6 | |
| D.I. STD. 840.14 OR STD. 840.15 | |
| D.I. FRAME AND GRATES STD. 840.16 | |
| G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | |
| G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | |
| G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | |
| G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | |
| G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | |
| G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | |
| DRIVEWAY D.I. STD. 840.30 | |
| FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | |
| J.B. STD. 840.31 OR STD. 840.32 | |
| T.B.J.B. STD. 840.34 | |
| T.B.D.I. STD. 840.35 | |
| M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | |
| M.H. FRAME AND COVER STD. 840.54 | |
| CONVERT EXISTING J.B. TO 2GI | |
| ADJUST M.H. | |
| ADJUST C.B. | |
| FLOWABLE FILL | CY |
| CONCRETE COLLARS CL. "B" STD. 840.72 | CY |
| CONCRETE AND BRICK PIPE PLUG STD. 840.71 | CY |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

| COMPUTED BY: | Ray Lovinggood | DATE: | 01/9/15 |
|---|---|---|---|
| CHECKED BY: | Piotr Stojda | DATE: | 01/13/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-22 |

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

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

| LINE & STATION | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | 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 | DO NOT USE PVC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 43+22 | 34 LT | | | | | | | | | | | | | | | | | | | |
| L 69+73 | 42 RT | | | | | | | | | | | | | | | | | | | |
| L 69+75 | 1 RT | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | |
| PROJECT TOTALS | | | | | | | | | | | | | | | | | | | | |

| LINE & STATION | C. A. A. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 43+22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 69+73 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 69+75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| LINE & STATION | 15" DUCTILE IRON PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX, SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SEE SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L 43+22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 14 | REMOVE EXIST. MH & 12" RCP |
| L 69+73 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 25 | REMOVE EXIST. CB & 36" RCP |
| L 69+75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 50 | REMOVE EXIST. DI & 24" RCP |
| SHEET TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 89 | |
| PROJECT TOTALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1682 | | | 2195 | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

RD261645

COMPUTED BY: Ray Lovinggood DATE: 01/09/15

CHECKED BY: Piotr Stojda DATE: 01/13/15

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3D-23 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

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

## *LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54 INCHES & OVER)*

LINE & STATION / SIZE / THICKNESS OR GAUGE

| LINE & STATION | OFFSET | | STRUCTURE NUMBER FROM | TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % |
|---|---|---|---|---|---|---|---|---|
| Y1 17+34 | 74 | RT | 0510 | | 38.0 | | | |
| | | | 0510 | 0511 | | 35.5 | 30.5 | |
| Y1 17+25 | 81 | RT | 0511 | | 37.1 | | | |
| | | | 0511 | 2008 | | 30.5 | 24.7 | |
| L 30+51 | 81 | LT | 0708 | | 36.0 | | | |
| | | | 0708 | OUT | | | | |
| L 34+69 | 41 | LT | 0805 | | 37.4 | | | |
| | | | 0805 | 0806 | | 28.1 | 28.0 | |
| L 34+52 | 41 | LT | 0806 | | 37.3 | | | |
| | | | 0806 | 0808 | | 28.0 | 27.4 | 0.3 |
| L 32+75 | 50 | LT | 0808 | | 35.7 | | | |
| | | | 0808 | 0810 | | 27.4 | 27.1 | 0.3 |
| L 31+80 | 53 | LT | 0810 | | 34.9 | | | |
| | | | 0810 | 0708 | | 27.1 | 26.6 | 0.3 |
| L 40+00 | 41 | LT | 0913 | | 37.7 | | | |
| | | | 0913 | 0915 | | 29.9 | 29.4 | 0.3 |
| L 38+45 | 41 | LT | 0915 | | 37.2 | | | |
| | | | 0915 | 0916 | | 29.4 | 29.2 | 0.3 |
| L 37+81 | 41 | LT | 0916 | | 37.2 | | | |
| | | | 0916 | 0918 | | 29.2 | 29.0 | 0.3 |
| L 37+20 | 41 | LT | 0918 | | 37.2 | | | |
| | | | 0918 | 0805 | | 29.0 | 28.1 | |
| L 46+90 | 54 | LT | 1002 | | 39.2 | | | |
| | | | 1002 | 1011 | | 32.4 | 31.9 | |
| L 45+50 | 53 | LT | 1011 | | 39.8 | | | |
| | | | 1011 | 1014 | | 31.9 | 31.3 | |
| L 43+95 | 51 | LT | 1014 | | 39.8 | | | |
| | | | 1014 | 1019 | | 31.3 | 31.1 | |
| L 43+18 | 42 | LT | 1019 | | 39.3 | | | |
| | | | 1019 | 0913 | | 30.9 | 29.9 | |
| Y1 15+00 | 75 | RT | 2008 | | 32.7 | | | |
| | | | 2008 | 2011 | | 24.7 | 24.2 | |
| Y1 11+51 | 50 | RT | 2010 | | 31.0 | | | |
| | | | 2010 | 2011 | | 23.7 | 24.2 | |
| Y1 13+00 | 49 | RT | 2011 | | 27.9 | | | |

Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) and C. A. A. PIPE

| FROM | TO | Drainage Pipe 54 | 60 | 66 | 72 | 78 | 84 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. A. A. PIPE 54 | 60 | 66 | 72 | 78 | 84 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0510 | 0511 | | 8 | | | | | | X | | | | | | | | | |
| 0511 | 2008 | | | | | | | | | | | | | 224 | | | | |
| 2008 | 2011 | | | | | | | | | | | | | 192 | | | | |
| 2010 | 2011 | | | | | | | | | | | | | 140 | | | | |
| SHEET TOTALS | | | 8 | | | | | | | | | | | 556 | | | | |
| PROJECT TOTALS | | | 8 | | | | | | | | | | | 556 | | | | |

R. C. PIPE CLASS III, CLASS IV, CLASS V

| FROM | TO | CLASS III 54 | 60 | 66 | 72 | 78 | 84 | CLASS IV 54 | 60 | 66 | 72 | 78 | 84 | CLASS V 54 | 60 | 66 | 72 | 78 | 84 | 103" x 71" C.A.A. PIPE ARCH CULVERTS, 0.135" THICK | REINFORCED ENDWALLS CY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0708 | OUT | | | | | | | | | | | | | | | | | | | 132 | 7.000 |
| 0805 | 0806 | | | | | | | | | | | | | | | 16 | | | | | |
| 0806 | 0808 | | | | | | | | | | | | | | | 176 | | | | | |
| 0808 | 0810 | | | | | | | | | | | | | | | 92 | | | | | |
| 0810 | 0708 | | | | | | | | | | | | | | | 128 | | | | | |
| 0913 | 0915 | | | | | | | | | | | | | | 156 | | | | | | |
| 0915 | 0916 | | | | | | | | | | | | | | 64 | | | | | | |
| 0916 | 0918 | | | | | | | | | | | | | | 60 | | | | | | |
| 0918 | 0805 | | | | | | | | | | | | | | | 252 | | | | | |
| 1002 | 1011 | | | | | | | | | | | | | 140 | | | | | | | |
| 1011 | 1014 | | | | | | | | | | | | | 152 | | | | | | | |
| 1014 | 1019 | | | | | | | | | | | | | 76 | | | | | | | |
| 1019 | 0913 | | | | | | | | | | | | | | 316 | | | | | | |
| SHEET TOTALS | | | | | | | | | | | | | | 368 | 596 | 664 | | | | 132 | 7.000 |
| PROJECT TOTALS | | | | | | | | | | | | | | 368 | 596 | 664 | | | | 132 | 7.000 |

QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)); FRAME, GRATES, AND HOOD STD. 840.03

| FROM | TO | DRAINAGE STRUCTURE MASONRY CY | 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | GRATE TYPE E | F | G | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 0510 | | 4.595 | | | | | | | | |
| 0510 | 0511 | | | | | | | | | |
| 0511 | | 4.100 | | | | | | | | |
| 0511 | 2008 | | | | | | | | | |
| 0708 | | 14.235 | | | | | | | | |
| 0708 | OUT | | | | | | | | | SEE DETAIL, SHEET 2C-9 |
| 0805 | | 1.747 | | | | 1 | | 1 | | SEE DETAIL, SHEET 2C-10 |
| 0805 | 0806 | | | | | | | | | |
| 0806 | | 1.747 | | | | 1 | | 1 | | SEE DETAIL, SHEET 2C-10 |
| 0806 | 0808 | | | | | | | | | |
| 0808 | | 1.711 | | | | 1 | | 1 | | SEE DETAIL, SHEET 2C-10 |
| 0808 | 0810 | | | | | | | | | |
| 0810 | | 1.675 | | | | 1 | | 1 | | SEE DETAIL, SHEET 2C-10 |
| 0810 | 0708 | | | | | | | | | |
| 0913 | | 1.630 | | | | 1 | | 1 | | SEE DETAIL, SHEET 2C-10 |
| 0913 | 0915 | | | | | | | | | |
| 0915 | | 1.630 | | | | 1 | | 1 | | SEE DETAIL, SHEET 2C-10 |
| 0915 | 0916 | | | | | | | | | |
| 0916 | | 1.630 | | | | 1 | 1 | | | SEE DETAIL, SHEET 2C-10 |
| 0916 | 0918 | | | | | | | | | |
| 0918 | | 1.678 | | | | 1 | 1 | | | SEE DETAIL, SHEET 2C-10 |
| 0918 | 0805 | | | | | | | | | |
| 1002 | | 1.584 | | | | 1 | | | 1 | SEE DETAIL, SHEET 2C-10 |
| 1002 | 1011 | | | | | | | | | |
| 1011 | | 1.458 | | | | 1 | | | 1 | SEE DETAIL, SHEET 2C-10 |
| 1011 | 1014 | | | | | | | | | |
| 1014 | | 1.458 | | | | 1 | | 1 | | SEE DETAIL, SHEET 2C-10 |
| 1014 | 1019 | | | | | | | | | |
| 1019 | | 1.458 | | | | 1 | | 1 | | SEE DETAIL, SHEET 2C-10 |
| 1019 | 0913 | | | | | | | | | |
| 2008 | | 4.064 | | | | | | | | |
| 2008 | 2011 | | | | | | | | | |
| 2010 | | 4.100 | | | | | | | | |
| 2010 | 2011 | | | | | | | | | |
| 2011 | | 3.973 | | | | | | | | |
| SHEET TOTALS | | 54.473 | | | | 12 | 2 | 8 | 2 | |
| PROJECT TOTALS | | 54.473 | | | | | | | | |

CONCRETE TRANSITIONAL SECTION and other structures (part 1)

| FROM | D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | SPECIAL JUNCTION BOX., SEE SHEET 2C-7 | SPECIAL CATCH BASIN, SHEET 2C-1 OR 2C-6 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0510 | | | | | | | | | | | | | | |
| 0511 | | | | | | | | | | | | | | |
| 0708 | | | 1 | | | | | | | | | | | |
| 2008 | | | | | | | 1 | | | | | 1 | | |
| 2010 | | | | | | | | | | | | | | |
| 2011 | | | | | | | | | | | | | | |
| SHEET TOTALS | | | 1 | | | | 1 | | | | | 1 | | |
| PROJECT TOTALS | | | | | | | | | | | | | | |

Other structures (part 2)

| FROM | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING J.B. TO 2GI | ADJUST M.H. | ADJUST C.B. | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0510 | 1 | | | | | 1 | | | | | | | |
| 0511 | 1 | | | | | 1 | | | | | | | |
| 0708 | | | | | | 1 | | | | | | | |
| 2008 | | | | | | | | | | | | | |
| 2010 | 1 | | | | | 1 | | | | | | | |
| 2011 | 1 | | | | | 1 | | | | | | | |
| SHEET TOTALS | 4 | | | | | 5 | | | | | | | |
| PROJECT TOTALS | | | | | | | | | | | | | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |

COMPUTED BY: TEM DATE: 09/11/15
CHECKED BY: PJS DATE: 09/14/15

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3338B | 3G-1 |

# STATE OF NORTH CAROLINA
# DIVISION OF HIGHWAYS

## SUMMARY OF SUBSURFACE DRAINAGE
(IN FEET)

| Survey Line | Station | Station | Location LT/RT/CL | Drain Type* UD/BD/SD | LENGTH |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| CONTINGENCY | | | | SD | 500 |
| | | | | **TOTAL:** | **500** |

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

## SUMMARY OF REINFORCED SOIL SLOPES (RSS)
(IN SQUARE YARDS)

| Survey Line | Beginning Slope | Approx. Station | Ending Slope | Approx. Station | Location LT/RT | AREA |
|---|---|---|---|---|---|---|
| L | 1.1:1 | 52+80.00 | 3:1 | 55+50.00 | LT | 200 |
| L | 1.4:1 | 57+50.00 | 3:1 | 58+35.00 | LT | 80 |
| | | | | | | |
| | | | | | **TOTAL:** | **280** |

## SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

| LINE | Station | Station | Aggregate Type* ASU/AST | Aggregate Thickness INCHES | Shallow Undercut CY | Class IV Subgrade Stabilization TONS | Geotextile for Soil Stabilization SY | Stabilizer Aggregate TONS | Class IV Aggregate Stabilization TONS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| CONTINGENCY | | | ASU | | 1,000 | 1,900 | 3,000 | | 12,000 |
| | | | | | | | | | |
| | | | **TOTAL CY/TONS/SY:** | | **1,000** | **1,900** | **3,000** | | **12,000** |
| | | | | | | | | | |

***ASU = Aggregate Subgrade**
***AST = Aggregate Stabilization**

**NOTE: Total square yards of Geotextile for Soil Stabilization is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.**

| PROJ. REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 3P-1 |

# STATE OF NORTH CAROLINA
# DIVISION OF HIGHWAYS

## *PARCEL INDEX SHEET*

| PARCEL No. | SHEET No. | PROPERTY OWNER NAME |
|---|---|---|
| 1 | 4 | SAMUEL T. NEWKIRK, ET UX |
| 2 | 4 | DONALD K. BREWINGTON, ET UX |
| 5 | 4, 21 | G&I IV MILL CREEK LP |
| 6 | 4, 5, 21 | KERR CROSSING UOA |
| 7 | 4 | INEZ S. RICHARDSON |
| 8 | 4 | GERALDINE ARMSTRONG |
| 9 | 4 | ROBERT HAWES |
| 10 | 4, 5, 22 | CUONG NGUYEN |
| 11 | 5, 21 | CITY OF WILMINGTON |
| 12 | 5, 21 | ROBERT E. JOHNSON, ET UX |
| 13 | 5 | LONGLEY SUPPLY CO. |
| 15 | 5, 22 | ABRAHAM CRUMMY |
| 16 | 5, 22 | CITY OF WILMINGTON |
| 17 | 5, 22 | RICHARD A. BROWN, HEIRS |
| 18 | 5, 6, 23 | GREENWAY VILLAGE HOMEOWNERS ASSOC., INC |
| 19 | 5, 6, 7, 21 | RPP HOLDINGS, LLC |
| 23 | 6 | LINDA P. ALSTON, ET VIR |
| 24 | 6, 23 | LETHIA S. HANKINS |
| 25 | 6, 7 | CARL O. SANDERS, ET UX |
| 26 | 7, 8 | PBRE2 CORPORATION |
| 27 | 7, 23 | JANICE P. HYMAN |
| 28 | 7, 23 | WILLIAM CRUMMY, ET UX |
| 29 | 7 | WILLIAM M. BISHOP, ET UX |
| 30 | 7, 8 | LEON B. HARRELL III |
| 31 | 8, 9 | 212 S. KERR AVE., LLC |
| 32 | 8 | WILMINGTON LAWN & LEISURE, INC |
| 33 | 8 | REAL PROPERTIES, LLC |
| 33i | 8 | REAL PROPERTIES, LLC |
| 34 | 8 | ALLISON PROPERTIES, INC |
| 35 | 8 | BRUCE A. KUBECK, ET UX |
| 36 | 8, 9 | TIMOTHY D. SMITH |
| 37 | 9 | SOUTH KERR BUSINESS OWNERS ASSOCIATION |
| 38 | 9 | MARTIN VENTURES II, LLC |
| 39 | 9, 10 | H & S FAMILY HOLDINGS, LLC |
| 40 | 9 | 215 S. KERR, LLC |
| 41 | 9 | MORELAG, LLC |
| 42 | 9, 10 | KERR STATION VILLAGE, LLC |
| 43 | 10, 24 | CSX TRANSPORTATION, INC |
| 44 | 10, 24 | CINEMA DRIVE, LLC |
| 45 | 10, 11, 24 | 68 SOUTH KERR, LLC |
| 46 | 10, 11, 12, 28 | MARKET PLAZA CENTER, LLC |
| 47 | 11, 12, 27 | CLI HOLDINGS, LLC |
| 48 | 12, 27 | RI CS5, LLC |
| 49 | 12 | RI CS5 |
| 50 | 12, 13, 27 | LODGING ENTERPRISES, LLC |
| 51 | 12, 28 | H. L. PREVATTE, ET UX |
| 52 | 12, 13, 28, 29 | MARKET & KERR, LLC |
| 53 | 13 | RANDY L. BLANTON |
| 54 | 13, 34 | DENNIS W. ANDERSON |
| 55 | 13, 34 | AHEPA 408, INC |
| 56 | 13, 14, 34 | KERR AVE. COMMERCIAL PROPERTY, LLC |
| 57 | 13 | BANK OF THE OZARKS |
| 58 | 13, 14, 36 | NORTH KERR OFFICE COA, INC |
| 59 | 14, 34 | KERR AVE. COMMERCIAL PROPERTY, LLC |
| 60 | 14, 15 | R&M RESTORATIONS, LLC |
| 61 | 14, 35 | WOODMEN OF THE WORLD, LODGE 6 |
| 63 | 14, 35, 36 | GENEVA C. EDGE |
| 64 | 14, 35 | CHARLES R. RACKLEY, ET AL |
| 65 | 14, 38 | WILLIAM J. BUCK, ET UX |
| 66 | 14, 15, 38 | HOLTON PROPERTIES, LLC |

| PARCEL No. | SHEET No. | PROPERTY OWNER NAME |
|---|---|---|
| 67 | 14, 15, 37 | STEVEN WILLIAM BONESKE |
| 68 | 15, 37 | CYNTHIA MITCHELL |
| 69 | 15 | KEVIN WITHERS |
| 70 | 15 | BARBARA BARNHILL |
| 71 | 15 | ELSIE A. WATTS |
| 72 | 15, 16 | CLAYBON R. JACKSON, ET UX |
| 73 | 15, 38 | DONALD G. BLAKE, ET UX |
| 74 | 15 | VVENA KIRBY |
| 75 | 15 | DEMOCRITO T. SANTOS, ET UX |
| 76 | 15, 16 | JERRY D. MOORE, ET AL |
| 77 | 16 | DONALD W. HOBBS, ET UX |
| 78 | 16 | DEE LORENZETTI |
| 79 | 16, 39 | JESS SKIP PROPERTIES, LLC |
| 80 | 16, 39 | ELSIE S. CARTER RATCLIFFE |
| 81 | 16, 17 | CHARLES E. RATCLIFFE, ET UX |
| 82 | 16 | CAROLINA MORTGAGE SOLUTIONS OF WILMINGTON, LLC |
| 83 | 16 | KIRKLAND E. PUGH |
| 84 | 16 | WILLIAM L. BAYRD, ET UX |
| 85 | 16, 17 | JUDY P. FORSYTHE |
| 86 | 17 | THOMAS A. BLOUNT, ET EX |
| 87 | 17 | TANYA BELL MILLHOUSE |
| 88 | 17 | MARGARET M. CLARK, ET AL |
| 89 | 17 | OLGA SELLARS |
| 90 | 17 | AWW PROPERTIES, LLC |
| 91 | 17 | WILLIAM J. GRABOFSKI, ET UX |
| 92 | 17 | WILMON K. ANDREWS, ET UX |
| 93 | 17, 18 | MARLON K. ANDREWS, ET AL |
| 93A | 18 | MARLON K. ANDREWS, ET AL |
| 93B | 18 | MARLON K. ANDREWS, ET AL |
| 94 | 17 | EVELYN PRYDE DAVIS |
| 95 | 17 | VANCE W. WRENN |
| 96 | 17, 40 | SMITH CREEK VILLAGE TOWNHOME ASSOC., INC |
| 97 | 17 | JASON M. LEWIS |
| 98 | 17 | RICHARD B. MITCHEL, ET UX |
| 99 | 17 | DORIS R. CASEY TRUST |
| 101 | 17, 18, 40 | JAMES M. HARRELL, ET UX |
| 102 | 18 | CAMERON CO. LTD. |
| 103 | 18 | PROGRESS ENERGY |
| 104 | 18, 20 | HAROLD P. LAING |
| 105 | 18, 20 | DAVID A. WILLS, ET AL |
| 107 | 18, 40, 41 | PROGRESS ENERGY |
| 108 | 18, 40, 41 | TEDDY A. PROCTOR |
| 109 | 18, 41 | MICHAEL E. RAINES, ET AL |
| 110 | 18, 19, 41 | DAVID E. RAINES |
| 111 | 19, 41 | WILLIAM CARTER CLAYTON, ET UX |
| 112 | 19, 41 | CORNERSTONE OWNERS ASSOC., INC |
| 113 | 19 | CLAYTON T. HELD |
| 115 | 19, 20 | RAYMOND CARRINO, JR. |
| 116 | 19, 20 | ELLA L. CASEY, ET AL |
| 117 | 23 | MICHAEL W. BOYD, ET UX |
| 118 | 25, 26, 32 | WACHOVIA BANK & TRUST CO, NA |
| 119 | 26, 32 | MORNING STAR FELLOWSHIP CHURCH |
| 120 | 26, 32 | MOORES MINI MARTS, INC |
| 121 | 25, 26, 31 | TRAC LIMITED PARTNERSHIP |
| 122 | 26, 31 | PNF REALITY, LLC |
| 123 | 26, 27, 31 | REGIONAL PROPERTY GROUP, LLC |
| 124 | 27, 32 | HERBERT C. FISHER, ET UX |
| 125 | 27 | NOT BAD, LLC |
| 126 | 27 | MCDONALDS REAL ESTATE, CO. |
| 127 | 27, 31 | THE FOUR MUSSERS |

| PROJ. REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 3P-2 |

# STATE OF NORTH CAROLINA
# DIVISION OF HIGHWAYS

## *PARCEL INDEX SHEET*

| PARCEL No. | SHEET No. | PROPERTY OWNER NAME |
|---|---|---|
| 128 | 27 | CARMINE, LLC |
| 129 | 28, 29 | BILTMORE DEVELOPERS, LLC |
| 130 | 29, 36 | PREVATTE PROPERTIES, LLC |
| 130A | 29, 36 | MARKET STREET VENTURES, LLC |
| 131 | 29, 30, 36 | WILMINGTON HOSPITALITY, LLC |
| 132 | 29, 33 | OCEAN TOWERS 2, LLC |
| 133 | 29, 33 | CHARLES RAY EDENS |
| 134 | 29, 33 | SAM BASS HEIRS |
| 134A | 33 | SAM BASS HEIRS |
| 136 | 37 | E. M. WALLACE, ET UX |
| 139 | 37 | R & M RESTORATIONS, LLC |
| 143 | 31 | BOKEN, LLC |
| 144 | 31 | CINEMA DRIVE OFFICE PARK HOA |
| 145 | 25 | IRVING PARKWAY ASSOC., LLC |
| 146 | 25 | CAMPBELL FOODS TOO, LLC |
| 147 | 25 | RAINBOW EAST, LLC |
| 148 | 25, 31 | PREMIER HOTELS, LLC |
| 149 | 30 | HOTELS PLUS, LLC |
| 151 | 33 | JACKSON H. YOUNG, ET UX |
| 152 | 33 | ATLANTIC FACILITIES, LLC |
| 153 | 24 | SPIRIT MASTER FUNDING II, LLC |
| 154 | 24 | ALL STAR DAY CARE AND PRESCHOOL, INC |
| 155 | 4 | CAROL D. YOUNG |
| 156 | 16 | CAROLINA MORTGAGE SOLUTIONS OF WILMINGTON, LLC |
| 157 | 21 | CITY OF WILMINGTON |
| 158 | 22A | B.J.'s CONSTRUCTION CO. |
| 159 | 22, 22A | EASTWOOD PARTNERS |
| 901 | 19 | NC DEPT. OF TRANSPORTATION |
| 910 | 18, 19, 20 | JAMAR COMPANY, LLC |

| PARCEL No. | SHEET No. | PROPERTY OWNER NAME |
|---|---|---|

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 4 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| 2/10/2015 SEAL 024641 ATTA L. WHITE | 2/10/2015 SEAL 019775 RAY D. LOVINGGOOD |

# STA. 10+10.00 –L– BEGIN TIP PROJECT U-3338B

NAD 83/95

-Y- POT Sta. 10+00.00

N 83°10' 28.3" E

BEGIN CONSTRUCTION
-Y- POT Sta. 10+75.00

TIE TO EXIST. C&G
50' R

150' TAPER

5' SIDEWALK
PROP. 2'-6" CONC C&G

6' MONOLITHIC ISLAND

4' MONOLITHIC ISLAND

N 12° 12' 28.1" W -L-

BEGIN CONSTRUCTION
-L- POT Sta. 9+35.00

-L- POT Sta. 11+17.64
-Y- POT Sta. 11+92.17

-L- POT Sta. 11+43.54
-YA- POT Sta. 10+00.00

PROP. 2'-6" CONC C&G

10' MULTIUSE PATH

END CONSTRUCTION
-YA- POT Sta. 10+90.45

BEGIN PROP.
2'-6" CONC C&G
50' R

150' TAPER LT LANE TAPER

-YA- N 83° 04' 29.4" E

-YA- POT Sta. 12+00.64

MATCHLINE –L– STA.15+00 SEE SHEET 5

1
NO CLAIM
SAMUEL T. NEWKIRK, ET UX
DB 3944 PG 99
DB 1588 PG 1587

2
DONALD K. BREWINGTON, ET UX
DB 983 PG 42
DB 1588 PG 1040

JEFFERY McDOWELL
DB 5352 PG 652
DB 4393 PG 720
DB 598 PG 601
DB 1592 PG 799
DB 1328 PG 596

5
G&I IV MILL CREEK LP
DB 2202 PG 234
DB 1970 PG 708
DB 2963 PG 170
DB 2963 PG 184
DB 2963 PG 191
DB 2591 PG 955
DB 2429 PG 845
DB 2351 PG 267
DB 2112 PG 472
MB 27 PG 11
MB 27 PG 12
MB 41 PG 73
MB 13 PG 33
MB 5 PG 92
MB 6 PG 55
MB 10 PG 5
DB 5287 PG 2857
DB 5287 PG 2869

6
KERR CROSSING UOA
DB 4931 PG 2281
DB 4931 PG 2286
DB 5546 PG 2776
DB 5307 PG 717
DB 5535 PG 636

7
INEZ S. RICHARDSON
DB 858 PG 763
DB 854 PG 521
PB 598 PG 350½

8
GERALDINE ARMSTRONG
DB 3870 PG 416

9
ROBERT HAWES
DB 4898 PG 105

10
CUONG NGUYEN
DB 5298 PG 1819
DB 4890 PG 703
DB 4623 PG 499

155
CAROL D. YOUNG
DB 1220 PG 1019
PB 598 PG 350½

NOTE 1:
PLUG AND FILL FULL WITH FLOWABLE FILL

| | | |
|---|---|---|
| | 2416 / 3800 | |
| 1185 / 1800 | -Y- Patrick Avenue | 1231 / 2000 |
| 21270 / 20500 | -L- Kerr Ave | 21516 / 20900 |
| 85 / 200 | -YA- Patrick Avenue | 247 / 400 |
| | 293 / 600 | |

2015 ADT
2035 ADT

FOR –L– PROFILE SEE SHEET 42
FOR –Y– PROFILE SEE SHEET 50
FOR –YA– PROFILE SEE SHEET 50

REVISIONS

8/17/99

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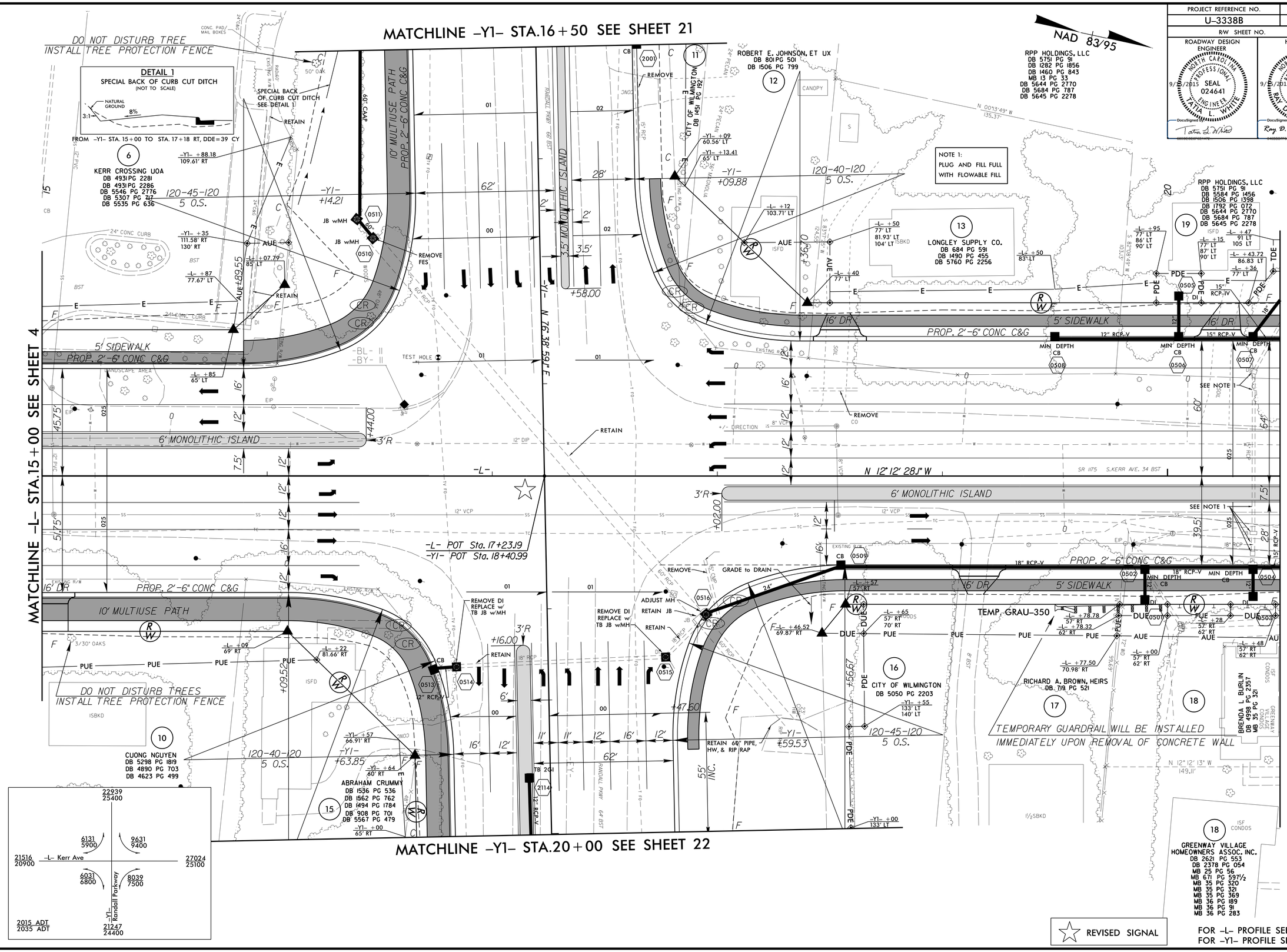
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 5 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024641 — TATIA L. WHITE — 9/15/2015 — DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 019775 — RAY D. LOVINGGOOD — 9/15/2015 — DocuSigned by: Ray D. Lovinggood

NAD 83/95




REVISED SIGNAL

FOR -L- PROFILE SEE SHEET 42
FOR -Y1- PROFILE SEE SHEET 51

REVISIONS

8/17/99

15-SEP-2015 10:57
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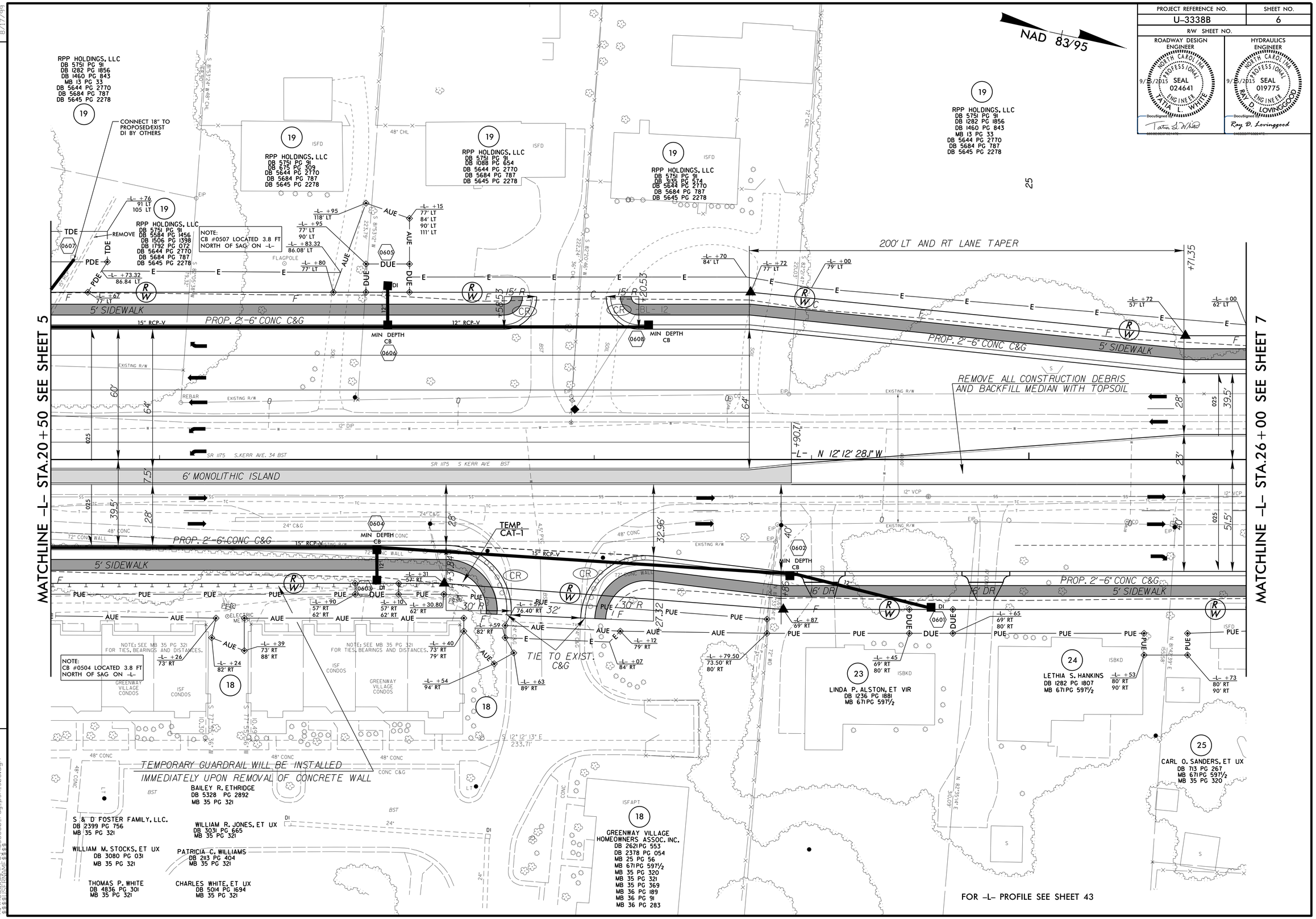
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 6 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TITIA L. WHITE — 9/15/2015 — DocuSigned

NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD — 9/15/2015 — DocuSigned




REVISIONS

8/17/99

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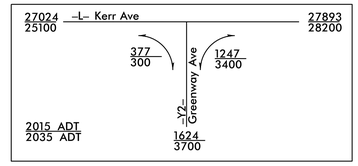
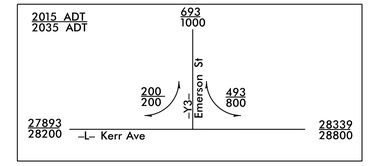
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 7 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024641 — ATTA L. WHITE — 2/23/2015 — DocuSigned

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 019775 — RAY D. LOVINGGOOD — 2/23/2015 — DocuSigned

NOTE 1:
PLUG AND FILL FULL WITH FLOWABLE FILL




NAD 83/95

19
RPP HOLDINGS, LLC
DB 5751 PG 91
DB 1282 PG 1856
DB 1460 PG 843
MB 13 PG 33
DB 5644 PG 2770
DB 5684 PG 787
DB 5645 PG 2278

DETAIL 3
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground — 3:1 — D — 4:1 or Flatter — Front Ditch Slope
Min. D = 1 Ft.
FROM –Y2– STA. 11+07 TO STA. 12+00 LT

VERIFY SIZE, LOCATION, CONDITION, AND ELEVATION OF EXISTING UPSTREAM END OF 90" CMP BEFORE INSTALLING SPECIAL DETAIL JB, STR #0708. ADJUST #0708 AS REQUIRED AND AS DIRECTED BY ENGINEER.

BEGIN CONSTRUCTION
–Y3– POT Sta. 14+40.00

–L– POT Sta. 31+08.43
–Y3– POT Sta. 15+88.17

–Y3– +86.75
END PROP. C&G

–L– POT Sta. 27+10.16
–Y2– POT Sta. 10+00.00

REMOVE ALL CONSTRUCTION DEBRIS AND BACKFILL MEDIAN WITH TOPSOIL

–Y3– +86.75 LT.
BEG. 2'-6" C&G
BEG 8"X18" CURB

26
PBRE2 CORPORATION
DB 5141 PG 798
DB 4274 PG 861
DB 982 PG 180

MATCHLINE –L– STA.26+00 SEE SHEET 6

MATCHLINE –L– STA.31+60 SEE SHEET 8

MATCH LINE –Y2– STA.12+00 SEE SHEET 23

5" SIDEWALK
PROP. 2'-6" CONC C&G
MONOLITHIC ISLAND
100' TAPER
100' LT LANE TAPER
150' TAPER
PROP. 1'-6" CONC C&G
N 12° 12' 28.1" W
N 82° 42' 33.3" E
–Y2– +07.47 END PROP. C&G
–Y2– +00.00 BEGIN PROP. C&G
–Y2– +84.24
SPECIAL CUT DITCH SEE DETAIL 3
103" x 71" 10 GA. CAAPA
PIPE ARCH SAN. SEWER CROSSING SEE SPECIAL DETAIL SHT. 2C-5
REMOVE JB & REPLACE w/JB w/MH SEE SPECIAL DETAIL SHT. 2C-1
REMOVE & REPLACE CB
REMOVE & REPLACE JB w/MH
REMOVE 30" & 36" RCP
36" RCP PLUGGED
SEE NOTE 1
DO NOT DISTURB PAVEMENT. IF DAMAGED, REPLACE OR REPAIR IN KIND.

25
CARL O. SANDERS, ET UX
DB 713 PG 267
MB 671 PG 597½
MB 35 PG 320

27
JANICE P. HYMAN
WILL 9993 PG E152
DB 6 PG 98

28
WILLIAM CRUMMY, ET UX
DB 801 PG 393
DB 6 PG 98

29
WILLIAM M. BISHOP, ET UX
DB 1246 PG 1252

30
LEON B. HARRELL III
DB 5612 PG 1436

FOR –L– PROFILE SEE SHEET 43
FOR –Y2– & –Y3– PROFILES SEE SHEET 53

REVISIONS

8/17/99

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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 8 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 ATTA L. WHITE
2/10/2015
DocuSigned by: Atta L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019775 RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

8/17/99

REVISIONS

NOTE 1:
PLUG AND FILL FULL WITH FLOWABLE FILL

NAD 83/95

MATCHLINE -L- STA.31+60 SEE SHEET 7

MATCHLINE -L- STA.37+00 SEE SHEET 9

26
PBRE2 CORPORATION
DB 5141 PG 798
DB 4274 PG 861
DB 982 PG 180

212 S. KERR AVE. LLC.
DB 4435 PG 239
MB 31 PG 329
MB 35 PG 292
MB 39 PG 341
DB 5700 PG 1051
31

REMOVE ALL CONSTRUCTION DEBRIS AND BACKFILL MEDIAN WITH TOPSOIL

100' TAPER

-L- +92.94 LT.
END 8" x 18" CONC.CURB

-L- +28.94 LT.
BEG. 2'-6" C&G

-L- +56.80 LT.
END 2'-6" C&G

-L- +92.80 LT.
BEG. 2'-6" C&G

-L- +91.48 LT.
BEG. 2'-6" C&G

-L- +50.00 LT.
END 2'-6" C&G

PROP. 8" x 18" CONC.CURB

PROP. 2'-6" CONC C&G

PROP. 2'-6" C&G

PROP. 1'-6" CONC C&G

5' SIDEWALK

36' DR

40' DR

28' DR

20' DR

MONO. ISLAND

N 12°12'28.1" W

SR 1175 S.KERR AVE. 34 BST

-L- +06.24 RT.
BEG. 8" x 18" CURB

-L- +54.56 RT.
END 8" x 18" CURB

-L- +18.89 RT.
BEG. 2'-6" C&G

-L- +14.09 RT.
END 2'-6" C&G

-L- +72.55 RT.
BEG. 2'-6" C&G

100' RT LANE TAPER

200' LT LANE TAPER

30
LEON B. HARRELL III
DB 5612 PG 1436

32
WILMINGTON LAWN & LEISURE INC.
DB 5472 PG 2392
DB 1513 PG 410
DB 1297 PG 340

33 33i
REAL PROPERTIES, LLC.
DB 4976 PG 1668

34
ALLISON PROPERTIES, INC.
DB 1693 PG 379

35
BRUCE A. KUBECK, ET UX
DB 2135 PG 023

36
TIMOTHY D. SMITH
DB 1808 PG 899
MB 5 PG 19

FOR -L- PROFILE SEE SHEET 44

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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 9 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TITIA L. WHITE
2/10/2015
DocuSigned by: Titia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

NAD 83/95

NOTE:
CB #0912 LOCATED 12 FT SOUTH OF SAG ON -L-

CB #0918 LOCATED 37.6 FT SOUTH OF SAG ON -L-

CB #0916 LOCATED 23.4 FT NORTH OF SAG ON -L-

NOTE 1:
PLUG AND FILL FULL WITH FLOWABLE FILL

MATCHLINE -L- STA. 37+00 SEE SHEET 8

MATCHLINE -L- STA.42+50 SEE SHEET 10

REMOVE ALL CONSTRUCTION DEBRIS AND BACKFILL MEDIAN WITH TOPSOIL

31
212 S. KERR AVE. LLC.
DB 4435 PG 239
MB 31 PG 329
MB 35 PG 292
MB 39 PG 341
DB 5700 PG 1051

37
SOUTH KERR BUSINESS OWNERS ASSOCIATION
DB 2351 PG 014
DB 2747 PG 907
MB 31 PG 329
MB 35 PG 292
MB 39 PG 341

38
MARTIN VENTURES II, LLC.
DB 4095 PG 498
DB 2600 PG 178
MB 31 PG 329
MB 35 PG 292
MB 39 PG 341

39
H & S FAMILY HOLDINGS LLC.
DB 5419 PG 2490
DB 1554 PG 385
DB 1641 PG 441
DB 1635 PG 314
DB 1913 PG 406
MB 31 PG 329
MB 35 PG 292
MB 39 PG 341

36
TIMOTHY D. SMITH
DB 1808 PG 699
MB 46 PG 99

40
215 S. KERR LLC.
DB 5328 PG 2854
DB 1680 PG 565
MB 29 PG 53
MB 5 PG 17
MB 5 PG 19

41
MORELAG LLC.
DB 5338 PG 1828
DB 3234 PG 929
MB 29 PG 53
MB 5 PG 17
MB 5 PG 19

42
KERR STATION VILLAGE, LLC
DB 2091 PG 440
DB 1636 PG 412
DB 1913 PG 406
DB 5794 PG 60

-L- POT Sta. 40+37.98
-Y4- POT Sta. 10+00.00

-L- +39.11 LT. END 2'-6" C&G
-L- +75.11 LT. BEG. 2'-6" C&G
-L- +90.55 LT. END 2'-6" C&G
-L- +39.55 LT. END 2'-6" C&G
-L- +26.55 LT. BEG. 2'-6" C&G
-L- +86.11 LT. BEG. 2'-6" C&G
-L- +04.34 LT. END 2'-6" C&G
-L- +83.39 RT. END 2'-6" C&G
-L- +20.80 RT. BEG. 2'-6" C&G
-Y4- +10 END PROP. C&G
-Y4- +10 BEGIN PROP. C&G
-Y4- +10.00 RT. BEG. 8" x 18" CURB
END CONSTRUCTION
-Y4- POT Sta. 11+10.00
-L- +39.85 RT. END 8" x 18" CURB
-L- +75.85 RT. BEG. 8" x 18" CURB

PROP. 2'-6" C&G
PROP. 2'-6" CONC C&G
PROP. 1'-6" CONC C&G
PROP. 8" x 18" CONC. CURB
6' MONOLITHIC ISLAND
200' LT LANE TAPER
-Y4- N 77° 47' 49.1" E

36' DR
5' SIDEWALK
24' DR
48' DR

28339 / 28800 -L- Kerr Ave 27993 / 28300
1031 / 1800 — 685 / 1300
Y4 Franklin Ave
2015 ADT 1716
2035 ADT 3100

FOR -L- PROFILE SEE SHEET 44
FOR -Y4- PROFILE SEE SHEET 53

REVISIONS

8/17/99

16-JAN-2015 08:43
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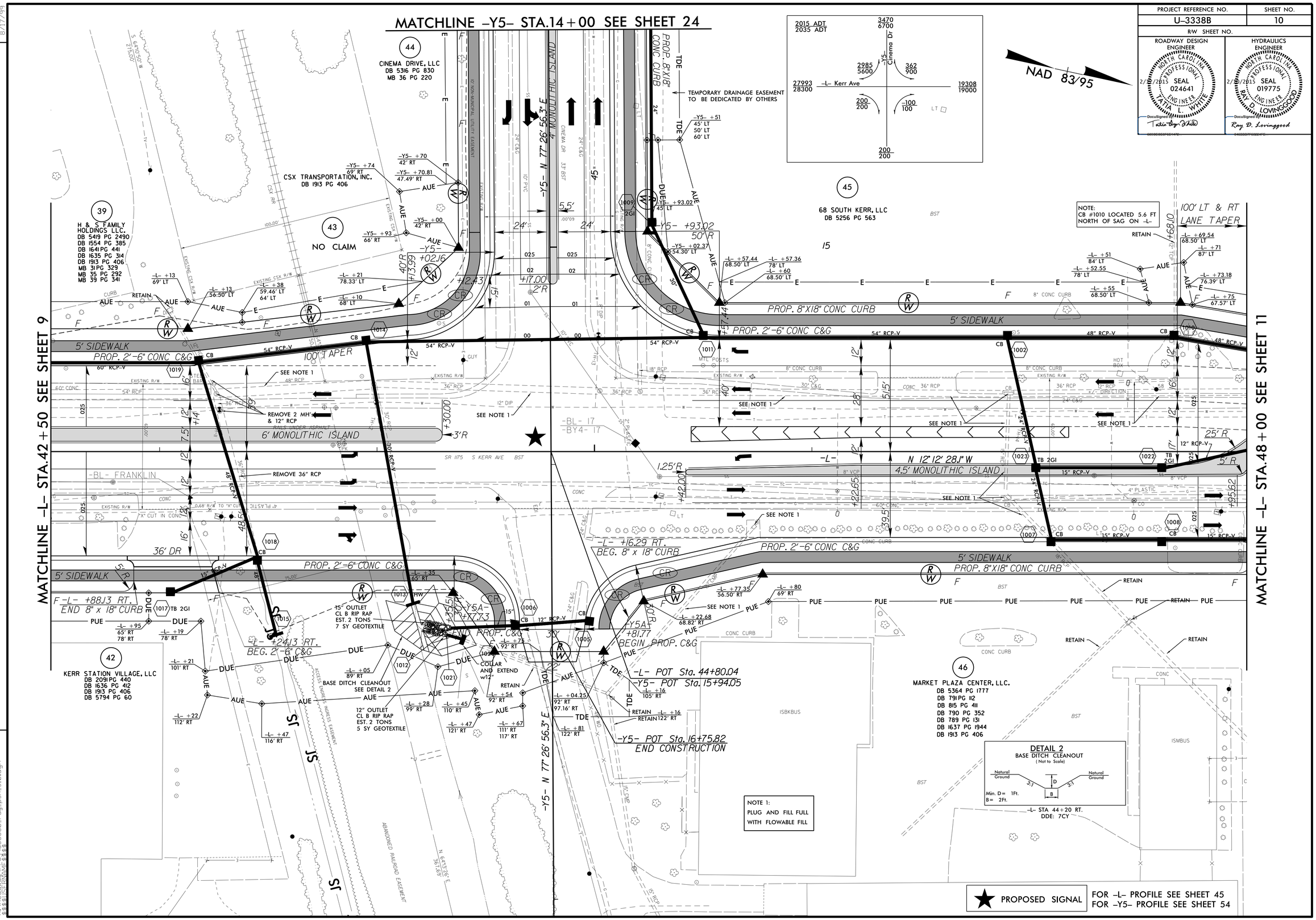
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 10 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| 2/10/2015 SEAL 024641 ATTIA L. WHITE | 2/10/2015 SEAL 019775 RAY D. LOVINGGOOD |




REVISIONS

8/17/99

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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 11 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
9/15/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
9/15/2015
DocuSigned by: Ray D. Lovinggood

8/17/99

REVISIONS

NOTE 1:
PLUG AND FILL FULL WITH FLOWABLE FILL

NAD 83/95

MATCHLINE -L- STA.48+00 SEE SHEET 10

MATCHLINE -L- STA.53+50 SEE SHEET 12

45
68 SOUTH KERR, LLC
DB 5256 PG 563

47
CLI HOLDINGS, LLC
DB 5269 PG 2858
DB 5374 PG 421
MB 51 PG 390

46
MARKET PLAZA CENTER, LLC.
DB 5364 PG 1777
DB 791 PG 112
DB 815 PG 411
DB 790 PG 352
DB 789 PG 131
DB 1637 PG 1944
DB 1913 PG 406

200 SY REINFORCED SOIL SLOPE
200 SY PSRM
-L- 52+80+/- LT. TO 55+50+/- LT.
SEE DETAIL SHEET 2G-1 & 2G-2

100' LT & RT LANE TAPER

-L- +95.50 LT.
END 8" x 18" CURB

-L- +31.50 LT.
BEG. 8" x 18" CURB

-L- +35.02 LT.
END 8" x 18" CURB

-L- +60.55 LT.
BEG. 8" x 18" CURB

-L- +39.66 LT.
END 8" x 18" CURB

-L- +77.19 LT.
BEG. 8" x 18" CURB

-L- +37.68 RT.
BEG. 8" x 18" CURB

-L- +01.69 RT.
END 8" x 18" CURB

-L- +39.10 RT.
END 8" x 18" CURB

-L- +76.63 RT.
BEG. 8" x 18" CURB

100' TAPER LT & RT

PROP. 8"X18" CONC CURB

PROP. 2'-6" CONC C&G

5' SIDEWALK

36' DR

24' DR

24' INC.

6.75' MONOLITHIC ISLAND

N 12° 12' 28.1" W

SR 1175 S KERR AVE

REMOVE 18" REPLACE w/ 30"

REMOVE 24" REPLACE w/ 30"

CONC WATER BASIN
CONTROL OPEN
NO INLETS OR SIZES

RETAIN

SEE NOTE 1

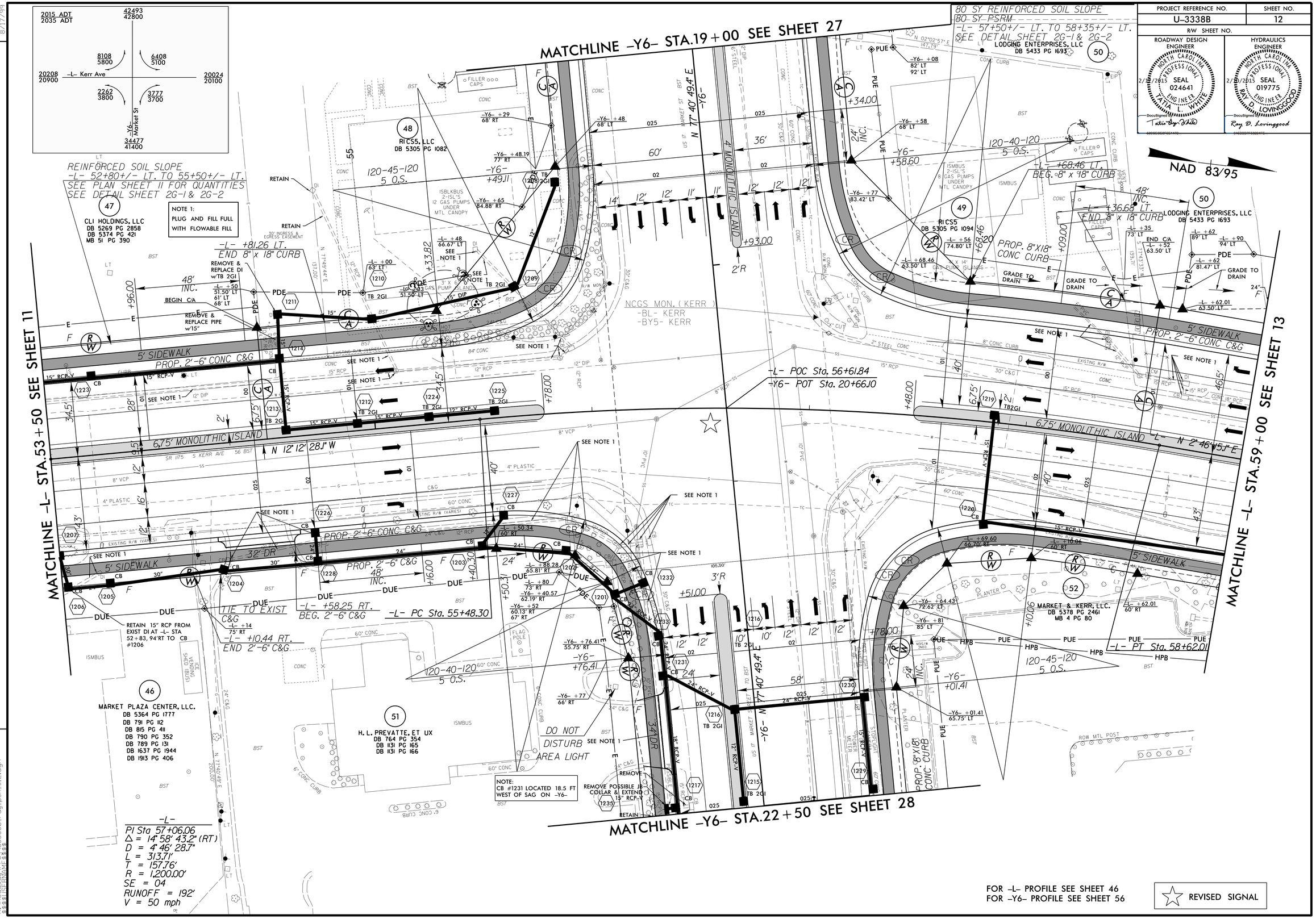
FOR -L- PROFILE SEE SHEET 45

15-SEP-2015 10:58
S:\Structures\Roadway\U-3338b_rdy_psh_s11.dgn
$$$$USERNAME$$$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 12 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER ATTA WHITE
2/19/2015
DocuSigned by: Atta White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/19/2015
DocuSigned by: Ray D. Lovinggood




REVISIONS

8/17/99

04-FEB-2015 12:12
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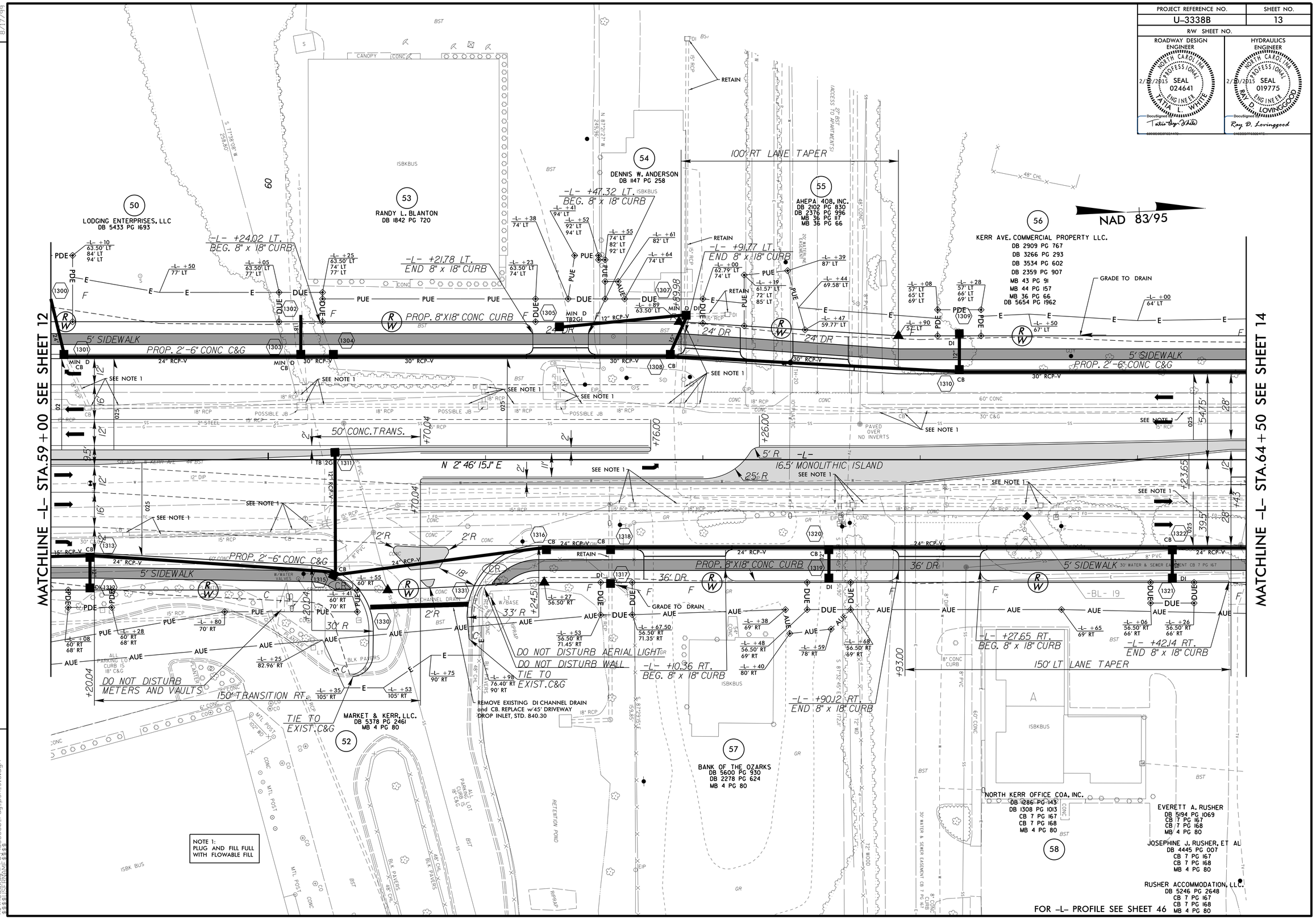
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 13 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 ATTA L. WHITE
2/10/2015
DocuSigned by: Atta L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019775 RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood




REVISIONS

8/17/99

13-JAN-2015 14:20
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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 14 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024641 — ATTA L. WHITE — 2/13/2015 — DocuSigned

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 019775 — RAY D. LOVINGGOOD — 2/13/2015 — DocuSigned

NAD 83/95

★ PROPOSED SIGNAL

2015 ADT 2370
2035 ADT 3600
-Y7- Birchwood Dr 539/1000 1831/2600
-L- Kerr Ave 20024/20100 21316/21700
-Y7A- Wilmington Ave Extension

MATCHLINE -Y7- STA.12+50 SEE SHEET 34

MATCHLINE -L- STA.64+50 SEE SHEET 13

MATCHLINE -L- STA.70+00 SEE SHEET 15

MATCHLINE -Y7A- STA.12+00 SEE SHEET 35

-Y7- PI Sta 12+53.23
Δ = 74° 47' 59.7" (RT)
D = 28° 38' 52.4"
L = 261.10'
T = 152.91'
R = 200.00'

-L- POT Sta. 67+09.00
-Y7- POT Sta. 14+04.18
-Y7A- POT Sta. 10+00.00

-Y7- PT Sta. 13+61.42
BRG AH S 88° 28' 43.3" E

N 2° 46' 15.1" E -L-

S 88° 28' 43.3" E -Y7A-

56 KERR AVE. COMMERCIAL PROPERTY LLC.
DB 2909 PG 767
DB 3266 PG 293
DB 3534 PG 602
DB 2359 PG 907
MB 43 PG 91
MB 44 PG 157
MB 36 PG 66
DB 5654 PG 1962

59 KERR AVE. COMMERCIAL PROPERTY LLC.
DB 2909 PG 767
DB 3266 PG 293
DB 3534 PG 602
DB 2359 PG 907
MB 43 PG 91
MB 44 PG 157
MB 36 PG 66
DB 5654 PG 1962

60 R&M RESTORATIONS, LLC.
DB 5509 PG 1809
MB 35 PG 239

67 STEVEN WILLIAM BONESKE
DB 5553 PG 2092
DB 5492 PG 2709
MB 35 PG 239

58 NORTH KERR OFFICE COA, INC.
DB 1286 PG 143
DB 1308 PG 103
DB 5649 PG 1967
CB 7 PG 168, MB 4 PG 80

61 WOODMEN OF THE WORLD LODGE 6
DB 1563 PG 376
MB 4 PG 80

62 MORRIS R. SKIPPER, ET UX
DB 973 PG 230
MB 4 PG 80

63 GENEVA C. EDGE
DB 1441 PG 1192
DB 817 PG 706
MB 4 PG 80

64 CHARLES R. RACKLEY, ET AL
DB 407 PG 341
DB 5497 PG 479
MB 4 PG 80

65 WILLIAM J. BUCK, ET UX
DB 2860 PG 368
MB 4 PG 80

66 HOLTON PROPERTIES, LLC.
DB 4074 PG 775
DB 958 PG 820
MB 2 PG 132
MB 4 PG 80
MB 42 PG 124
MB 39 PG 195
MB 38 PG 281
CB II PG 258
CB II PG 234

NOTE 1:
PLUG AND FILL FULL WITH FLOWABLE FILL

FOR -L- PROFILE SEE SHEET 47
FOR -Y7- PROFILE SEE SHEET 58
FOR -Y7A- PROFILE SEE SHEET 58

REVISIONS

8/17/99

16-JAN-2015 08:43
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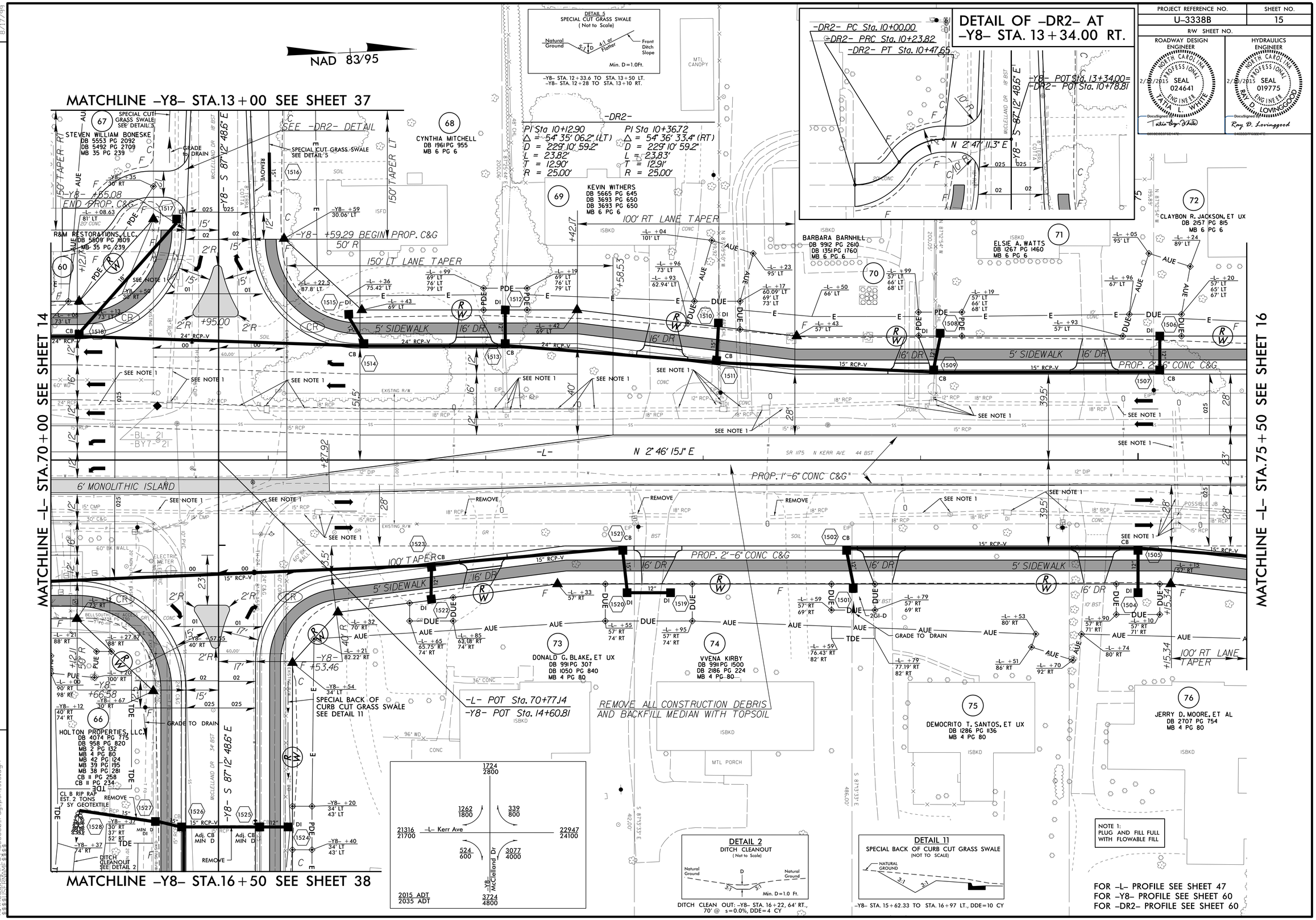
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 15 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024641 — ENGINEER ATTA L. WHITE — 2/20/2015 — DocuSigned

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 019775 — ENGINEER RAY D. LOVINGGOOD — 2/20/2015 — DocuSigned




REVISIONS

8/17/99

16-JAN-2015 08:43
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$$USERNAME$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 16 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| 2/10/2015 SEAL 024641 ATTA L. WHITE | 2/10/2015 SEAL 019775 RAY D. LOVINGGOOD |
| DocuSigned by: Tatia White | DocuSigned by: Ray D. Lovinggood |

MATCHLINE -Y10- STA.12+00 SEE SHEET 39

MATCHLINE -L- STA. 75+50 SEE SHEET 15

MATCHLINE -L- STA. 81+00 SEE SHEET 17

NAD 83/95

REMOVE ALL CONSTRUCTION DEBRIS AND BACKFILL MEDIAN WITH TOPSOIL

DETAIL 6
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 3:1, D, 3:1, Front Ditch Slope
Min. D=1.0 Ft.

-Y10- STA. 9+60 TO STA. 12+75 RT.
-Y10- STA. 11+48.6 TO STA. 12+85 LT.

2015 ADT 2731 4500
2035 ADT
547 1700 -Y10- Fairlawn Dr 2185 2800
22947 24100 -L- Kerr Ave 24585 25200

72 CLAYBON R. JACKSON, ET UX
DB 2157 PG 815
MB 6 PG 6

77 DONALD W. HOBBS, ET UX
DB 4805 PG 372
MB 6 PG 6

78 DEE LORENZETTI
DB 5147 PG 2957
WILL 9902 PG 2154
DB 507 PG 603
MB 6 PG 6

79 JESS SKIP PROPERTIES, LLC
DB 4010 PG 732
MB 6 PG 6

80 ELSIE S. CARTER RATCLIFFE
DB 5437 PG 2501
DB 766 PG 415
MB 6 PG 6

81 CHARLES E. RATCLIFFE, ET UX
DB 1442 PG 186
DB 501PG 138
MB 6 PG 6

76 JERRY D. MOORE, ET AL
DB 2707 PG 754
MB 4 PG 80

156 CAROLINA MORTGAGE SOLUTIONS OF WILMINGTON, LLC
DB 5349 PG 281
DB 2257 PG 984
DB 4870 PG 3054
DB 4870 PG 3057
DB 4870 PG 3060
DB 4890 PG 2283
MB 4 PG 80
MB 40 PG 89
MB 42 PG 196

82 CAROLINA MORTGAGE SOLUTIONS OF WILMINGTON, LLC
DB 5349 PG 312
DB 2257 PG 984
DB 4870 PG 3054
DB 4870 PG 3057
DB 4870 PG 3060
DB 4890 PG 2283
MB 4 PG 80
MB 40 PG 89
MB 42 PG 196

83 KIRKLAND E. PUGH
DB 5249 PG 2836
DB 2257 PG 984
DB 4870 PG 3054
DB 4870 PG 3057
DB 4870 PG 3060
DB 4890 PG 2283
MB 4 PG 80
MB 40 PG 89
MB 42 PG 196

84 WILLIAM L. BAYRD, ET UX
DB 2320 PG 151
MB 4 PG 80

85 JUDY P. FORSYTHE
DB 2479 PG 022
MB 4 PG 80

-Y10- S 87°12'41.1" E
-Y9- S 87°15'39.7" E
N 2°46'15.1" E -L-
SR 1175 N KERR AVE 36' BST

-Y10- +98.60 END PROP. C&G
-Y10- +98.60 BEGIN PROP. C&G
-L- POT Sta. 77+80.29
-Y9- POT Sta. 10+00.00
-L- POT Sta. 79+37.16
-Y10- POT Sta. 14+00.12
END CONSTRUCTION -Y9- POT Sta. 12+00.00

PROP. 1'-6" CONC C&G
PROP. 2'-6" CONC C&G
5' SIDEWALK
16' DR
100' TAPER
100' RT LANE TAPER
69.37' TAPER LT & RT
15" TAPER
SPECIAL CUT DITCH SEE DETAIL 6
GRADE TO DRAIN
TIE TO EXIST. C&G
TIE TO EXIST. SIDEWALK C&G
RETAIN
SEE NOTE 1

NOTE 1:
PLUG AND FILL FULL WITH FLOWABLE FILL

FOR -L- PROFILE SEE SHEET 48
FOR -Y9- & -Y10- PROFILES SEE SHEET 61

REVISIONS

8/17/99

23-JAN-2015 08:45
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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 17 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024641 — ENGINEER TITIA WHITE — 2/13/2015 — DocuSigned

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 019775 — ENGINEER RAY D. LOVINGGOOD — 2/13/2015 — DocuSigned

NAD 83/95

BEGIN CONSTRUCTION -Y11- POC Sta. 12+60.78

TIE TO EXIST. C&G

-Y11- PT Sta. 12+75.95

-L- POT Sta. 84+62.55

-Y11- POT Sta. 13+82.07

-Y11- +75.38

-Y11- +94.67

-Y12- POT Sta. 10+00.00

BRG AH = S 84° 56' 47.8" E

-Y12- PC Sta. 10+41.59

-Y12- PT Sta. 12+16.10

END CONSTRUCTION -Y12- POT Sta. 11+35.76

REMOVE ALL CONSTRUCTION DEBRIS AND BACKFILL MEDIAN WITH TOPSOIL

MATCHLINE -L- STA.81+00 SEE SHEET 16

MATCHLINE -L- STA.86+50 SEE SHEET 18

MATCHLINE -Y12- STA.12+50 SEE SHEET 40

PROP. 2'-6" CONC C&G

PROP. 1'-6" CONC C&G

5' SIDEWALK

MONOLITHIC ISLAND

100' RT LANE TAPER

100' TAPER

400' TAPER LT & RT

50' TAPER

48" CHAIN LINK FENCE

GRADE TO DRAIN

N 2° 46' 15.1" E -L-

SR 1175 N KERR AVE

NO CLAIM

86 THOMAS A. BLOUNT, ET EX
DB 5057 PG 534
DB 4437 PG 228
MB 44 PG 188
MB 2 PG 132

87 TANYA BELL MILLHOUSE
DB 5291PG 2710
DB 4519 PG 822
MB 44 PG 188
MB 2 PG 132

88 MARGARET M. CLARK, ET AL
DB 4599 PG 847
MB 44 PG 188
MB 2 PG 132

89 OLGA SELLARS
DB 5503 PG 1149
DB 4577 PG 943
MB 44 PG 188
MB 2 PG 132

90 AWW PROPERTIES LLC.
DB 5267 PG 29
DB 4655 PG 615
MB 43 PG 178
MB 2 PG 132

91 WILLIAM J. GRABOFSKI, ET UX
DB 4527 PG 206
MB 43 PG 178
MB 2 PG 132

92 WILMON K. ANDREWS, ET UX
DB 4652 PG 821
MB 46 PG 165
MB 2 PG 132

81 CHARLES E. RATCLIFFE, ET UX
DB 5047 PG 186
DB 5047 PG 188
MB 6 PG 6

30' PROGRESS ENERGY EASEMENT
NO DEED FOUND
MB 7 PG 17

85 JUDY P. FORSYTHE
DB 2479 PG 022
MB 4 PG 80

94 EVELYN PRYDE DAVIS
DB 9911 PG 1508
DB 1297 PG 957
MB 2 PG 132

95 VANCE W. WRENN
DB 5358 PG 1727
DB 5358 PG 1724
DB 4523 PG 081
MB 2 PG 132

96 SMITH CREEK VILLAGE TOWNHOME ASSOC., INC.
DB 4777 PG 681
DB 4760 PG 805
MB 47 PG 324
MB 47 PG 325
MB 47 PG 326
MB 47 PG 327
MB 47 PG 363
MB 47 PG 364
MB 47 PG 365
MB 2 PG 132

97 JASON M. LEWIS
DB 4897 PG 646
MB 47 PG 363
MB 47 PG 364
MB 47 PG 365

98 RICHARD B. MITCHEL, ET UX
DB 4893 PG 2051
MB 47 PG 364
MB 47 PG 363
MB 47 PG 365

99 DORIS R. CASEY TRUST
DB 5498 PG 2003
DB 4883 PG 2675
MB 47 PG 363
MB 47 PG 364
MB 47 PG 365

101 JAMES M. HARRELL, ET UX
DB 1595 PG 334
DB 1828 PG 257
MB 26 PG 34
MB 2 PG 132

NOTE 1:
PLUG AND FILL FULL WITH FLOWABLE FILL

-Y11-
PI Sta 12+36.25
D = 23° 03' 45.9" (RT)
D = 28° 38' 52.4"
L = 80.50'
T = 40.80'
R = 200.00'
SE = 02

-Y12-
PI Sta 11+28.96
D = 7° 08' 32.0" (RT)
D = 4° 05' 33.2"
L = 174.52'
T = 87.37'
R = 1,400.00'
SE = 02

1939 2400
-Y11- Sunglow Dr
893 1200
400 400
24585 25200 -L- Kerr Ave 28016 29400
516 900
4439 5900
-Y12- New Centre Dr
2015 ADT 5600
2035 ADT 7600

★ PROPOSED SIGNAL

FOR -L- PROFILE SEE SHEET 48

FOR -Y11- & -Y12- PROFILES SEE SHEET 61

MAINTAIN -L- ACCESS UNTIL -SR1- IS OPEN TO TRAFFIC FOR PARCEL 101

REVISIONS

8/17/99

29-JAN-2015 08:45
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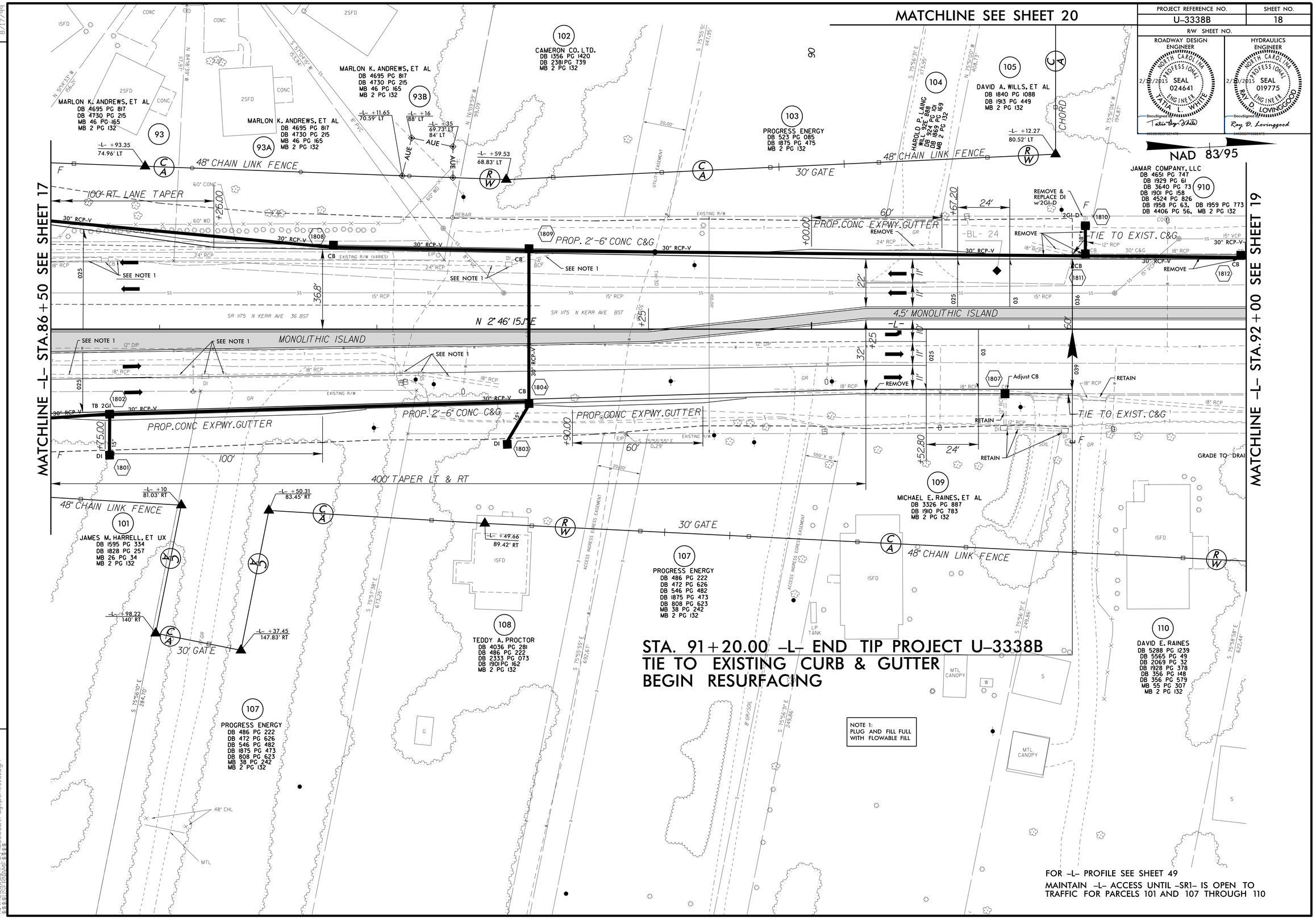
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 18 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024641 — ATTA L. WHITE — 2/13/2015 — DocuSigned by: Tatia Lynn White

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 019775 — RAY D. LOVINGGOOD — 2/13/2015 — DocuSigned by: Ray D. Lovinggood

NAD 83/95




FOR -L- PROFILE SEE SHEET 49

MAINTAIN -L- ACCESS UNTIL -SR1- IS OPEN TO TRAFFIC FOR PARCELS 101 AND 107 THROUGH 110

REVISIONS

8/17/99

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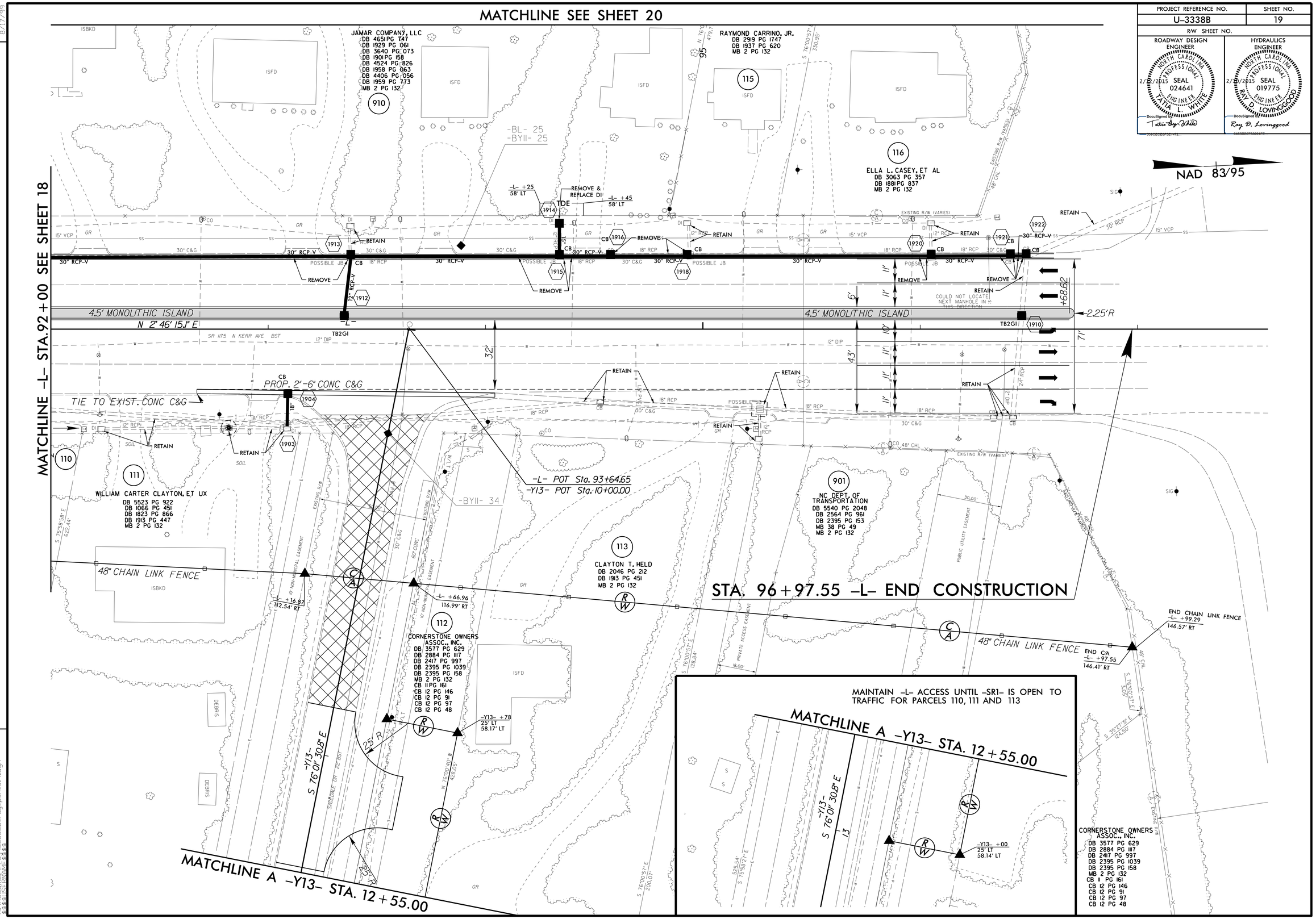
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 19 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| 2/10/2015 SEAL 024641 ATTA L. WHITE | 2/10/2015 SEAL 019775 RAY D. LOVINGGOOD |
| DocuSigned by: Tatia L. White | DocuSigned by: Ray D. Lovinggood |



| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 20 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEERING
2/12/2015

HYDRAULICS Engineer
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEERING
2/10/2015

DocuSigned by:
539CECEBF5E1472...
DocuSigned by:
Ray D. Lovinggood
045BBB7F58224FE...

MATCHLINE SEE SHEET 18

MATCHLINE SEE SHEET 19

REVISIONS

48" CHAIN LINK FENCE

CHORD

-L- =12.30
192.98' LT

-L- =24.73
331.58' LT

-L- =46.39
530.95' LT

END CA
END CHAIN LINK FENCE
-L- =58.74
859.59' RT

104
HAROLD P. LANG
DB 1, 301, 806
DB 1621 PG 70
DB 1621 PG 69
WB 2 PG 152

105
DAVID A. MILLS, ET AL
DB 1640 PG 1088
DB 1913 PG 449
WB 2 PG 152

910
JAMAR COMPANY, LLC
DB 1639 PG 141
DB 1673 PG 150
DB 2604 PG 273
DB 2609 PG 68
DB 2604 PG 276
DB 2604 PG 063
DB 2604 PG 054
DB 1899 PG 773
WB 2 PG 152

115
RAYMOND CARRING, JR.
DB 2313 PG 1743
DB 1517 PG 640
WB 2 PG 152

116
ELLA L. CASEY, ET AL
DB 3063 PG 357
DB 2895 PG 357
WB 2 PG 152

BRUCE B. CAMERON, TRUSTEE
DB 1653 PG 327
DB 1653 PG 327
DB 1653 PG 327
DB 2006 PG 630
DB 2006 PG 633
DB 1793 PG 378
DB 1793 PG 378
DB 1656 PG 145
DB 1656 PG 143
DB 1656 PG 143
DB 1344 PG 110
DB 2470 PG 720
WB 21 PG 68

NAD 83/95

WLB

SOUTH PAGE SECTION 2R

US 74 WLK.P.PKWY 74 BST

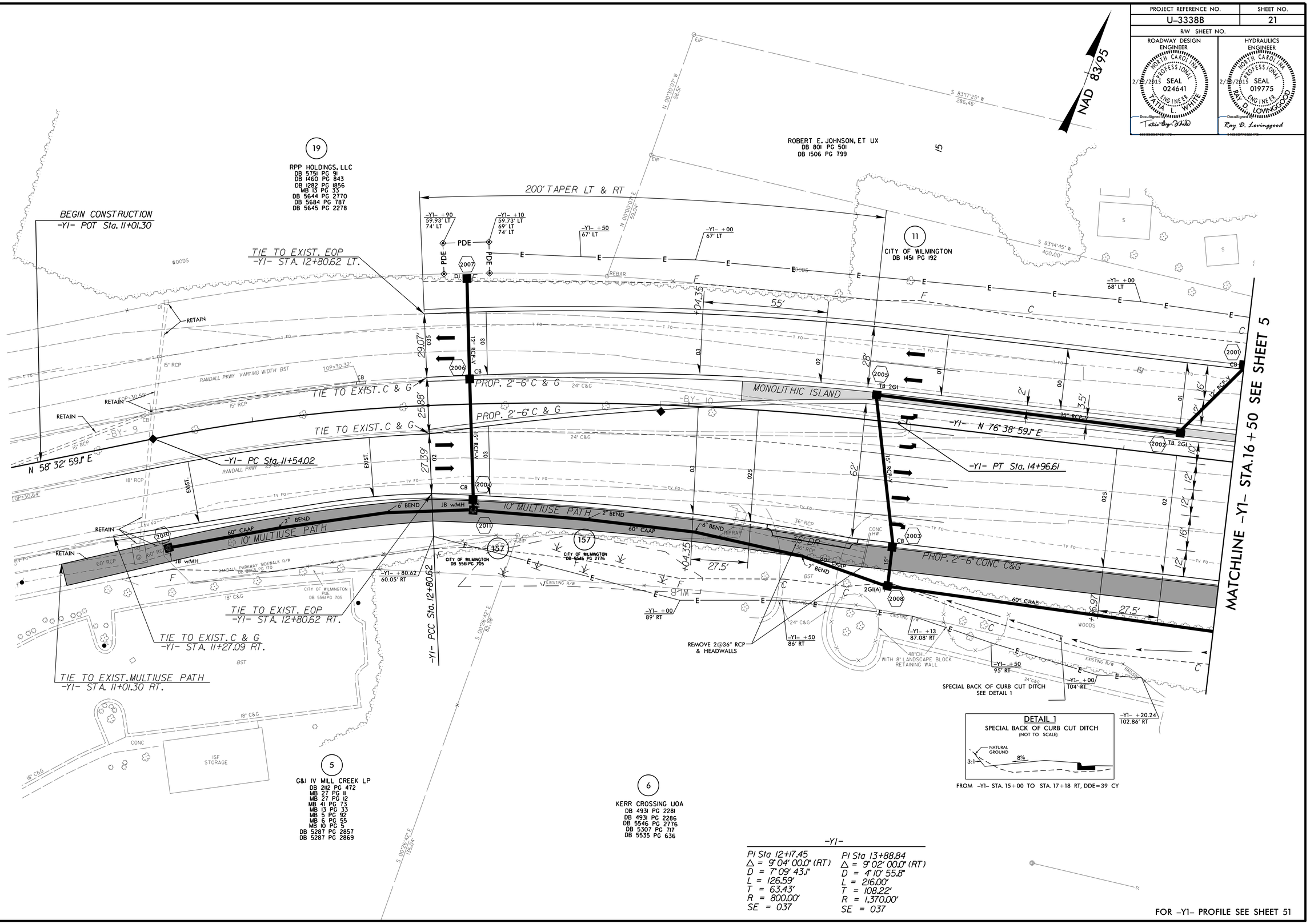
-Y14-

-B1-12-37

GRAPHIC SCALE
20 10 0 20 40
PLANS

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 21 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| 2/10/2015 SEAL 024641 ATTA L. WHITE | 2/10/2015 SEAL 019775 RAY D. LOVINGGOOD |




FOR -Y1- PROFILE SEE SHEET 51

REVISIONS

8/17/99

16-JAN-2015 14:21
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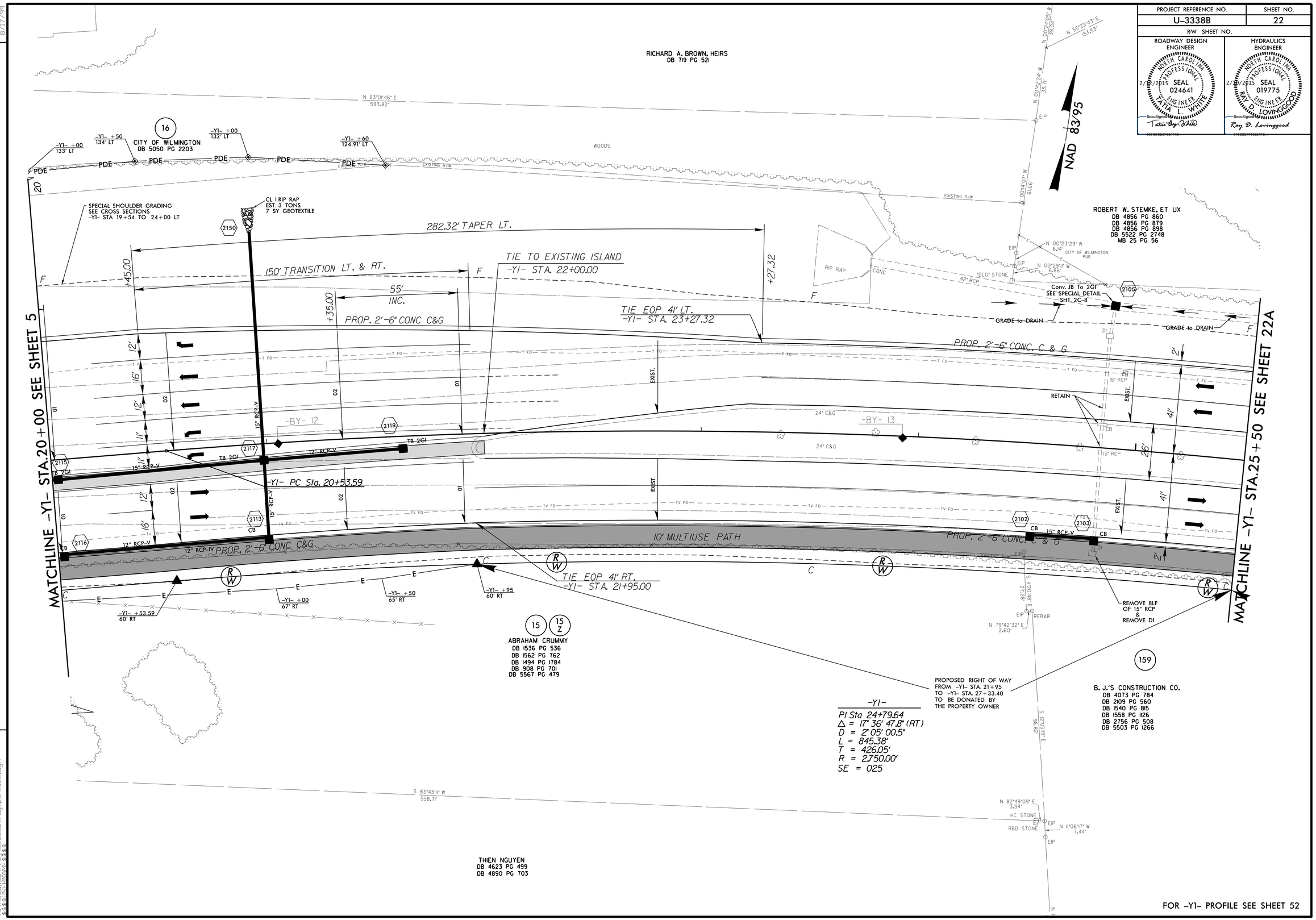
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 22 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| 2/10/2015 SEAL 024641 | 2/10/2015 SEAL 019775 |




FOR -Y1- PROFILE SEE SHEET 52

REVISIONS

8/17/99

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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 22A |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 TITA L. WHITE
2/10/2015
DocuSigned by: Tita L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019775 RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

8/17/99

REVISIONS

NAD 83/95

MATCHLINE -Y1- STA.25+50 SEE SHEET 22

WINTERWOOD APTS

ROBERT W. STEMKE, ET UX
DB 4856 PG 860
DB 4856 PG 879
DB 4856 PG 898
MB 25 PG 56

ISBK APT

ISBK APT

2SBK APT

WALTER O. WINTER
DB 1455 PG 058
MB 25 PG 56

N 42°42'31" W 105.94'

N 00°29'43" W 86.04'

EXISTING R/W

WOODS

WOODS

ISF S

S 85°41'39" W 59.43'

30

8" SOIL

BRADLEY DAVID ADAMS, ET AL
DB 5244 PG 1497
DB 5544 PG 2906

2SFD

SCATTERED TREES

TIE TO EXIST. C & G
-Y1- STA. 29+02.33 LT.

END CONSTRUCTION
-Y1- POC Sta. 29+27.40

Conv. JB To 2GI
SEE SPECIAL DETAIL
SHT. 2C-8

2207

GRADE to DRAIN

42" RCP

RETAIN

15" RCP

50' TAPER & TRANSITION

F

PROP. 2'-6" CONC. C & G

2'

41'

EXIST.

T FO

24" C&G

EXISTING R/W

CITY OF

-BY- 14

-Y1- S 85°44'13.1" E

-Y1- PT Sta. 28+98.97

18" RCP

CB

2204

16" RCP V

REMOVE

220

TV FO

CONC

PROP. 2'-6" CONC. C & G

10' MULTIUSE PATH

EIP

12°18'27" E 12.22' EIP TO EIP

C

-Y1- +98.97
60' RT

-Y1- +27.40
50.34' RT
60' RT

50' TAPER & TRANSITION

36"WD RAIL

9" CONC

4"CONC

GR

MT CARPORT

158

EASTWOOD PARTNERS
DB 1699 PG 580
DB 1477 PG 005
DB 5578 PG 358

TIE TO EXIST. C & G
-Y1- STA. 29+27.40 RT.

S 12°10'13" E 48.04'

S 12°12'56" E 276.45'

PROPOSED RIGHT OF WAY
FROM -Y1- STA. 21+95
TO -Y1- STA. 27+33.40
TO BE DONATED BY
THE PROPERTY OWNER

159

B. J.'S CONSTRUCTION CO.
DB 4073 PG 784
DB 2109 PG 560
DB 1540 PG 815
DB 1558 PG 1126
DB 2756 PG 508
DB 5503 PG 1266

N 82°39'24" E 213.15'

GENERAL UTILITY EASEMENT
DB 2109 PG 560

ISBKD

NOTE 1:
PLUG AND FILL FULL
WITH FLOWABLE FILL

GILBERT E. STONE, ET UX
DB 2108 PG 206
DB 5521 PG 2312

-Y1-
PI Sta 24+79.64
$\Delta$ = 17° 36' 47.8" (RT)
D = 2° 05' 00.5"
L = 845.38'
T = 426.05'
R = 2,750.00'
SE = EXIST.

FOR -Y1- PROFILE SEE PROFILE 52

27-JAN-2015 15:01
R:\Roadway\Proj\3338b_rdy_psh_s22A.dgn
$USERNAME$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 23 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER ATTA L. WHITE
2/10/2015
DocuSigned by: Tatia Lynn White
5D9CDCC0F3E74E...

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood
5A6BB8F56B84FC...

NAD 83/95

MATCHLINE -Y2- STA.12+00 SEE SHEET 7

-Y2- POT Sta. 16+57.65

WILLIAM CRUMMY, ET UX
DB 801 PG 353
DB 6 PG 98

N 20°08'08" W
102.35'

27
JANICE P. HYMAN
MB 6 PG 98
WILL 9993 PG E152

117 ISFD
MICHAEL W. BOYD, ET UX
DB 2888 PG 179
MB 6 PG 98

JONATHAN OSHITA, ET AL
DB 5020 PG 728
MB 6 PG 98

18
GREENWAY VILLAGE HOMEOWNERS ASSOC. INC.
DB 2621 PG 553
DB 2378 PG 054
MB 25 PG 56
MB 671 PG 597½
MB 35 PG 320
MB 35 PG 321
MB 35 PG 369
MB 36 PG 189
MB 36 PG 91
MB 36 PG 283

PETER MILLS
NO DEED FOUND
MB 671 PG 597½

LETHIA S. HANKINS
DB 1282 PG 1807
MB 671 PG 597½

END CONSTRUCTION
-Y2- POT Sta. 13+29.00

-Y2- N 82° 42' 33.3" E

-Y2- +12
45' LT

-Y2- +29
29.88' LT
45' LT

-Y2- +16
30.18' RT

-Y2- +13
64' RT

+57.47'

C
12.5'

N 81°42'39" E
120.34'

N 39°46'55" W
202.58'

S 07°17'46" E
26.40'

S 07°21'25" E
28.01'

S 07°21'25" E
8.48'

N 07°18'06" W
199.08'

N 07°13'33" W
199.03'

N 07°17'52" W
197.62'

GREENWAY AVE. 19' BST
60.00'

EXISTING R/W

72" WD
WD DK
ISFD
CARPORT
SOIL
POND
ISBKD
1½SBKD
20' CONC
CONC H/W
CONC BLOCK HW
CONC BOX
EIP
CB
DI
CO
18" RCP
15" RCP
24" RCP
18" CMP
8" VCP
8" DIP
36" CHL
AUE
RETAIN
SS
T
W
F
S

FOR -Y2- PROFILE SEE SHEET 53

REVISIONS

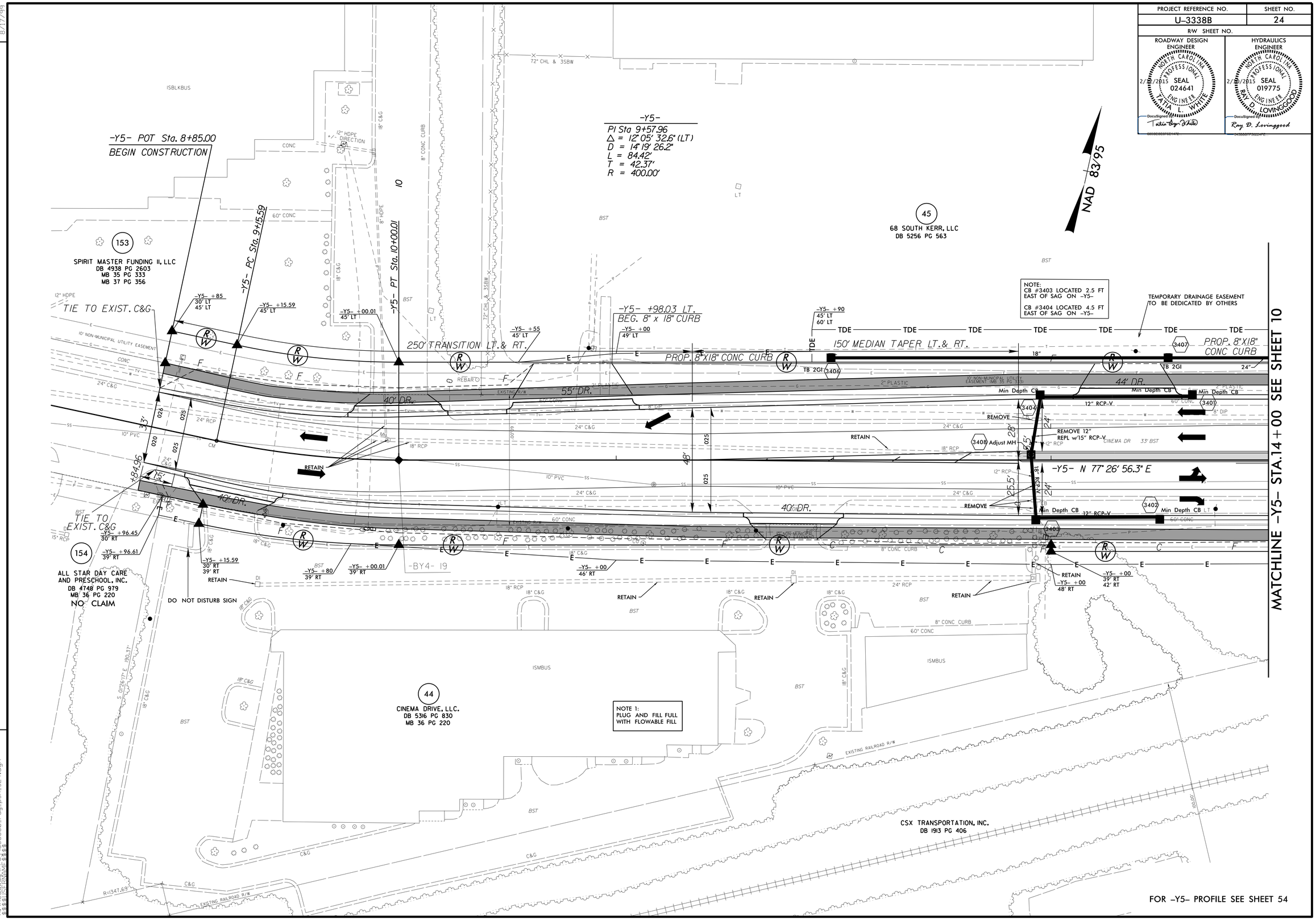
8/17/99

13-JAN-2015 14:18
s:\roadway\proj\3338b_rdy_psh_s23.dgn
$$$$USERNAME$$$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 24 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 TITIA L. WHITE
2/10/2015
DocuSigned by: Titia Lynn White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019775 RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood




REVISIONS

8/17/99

13-JAN-2015 14:18
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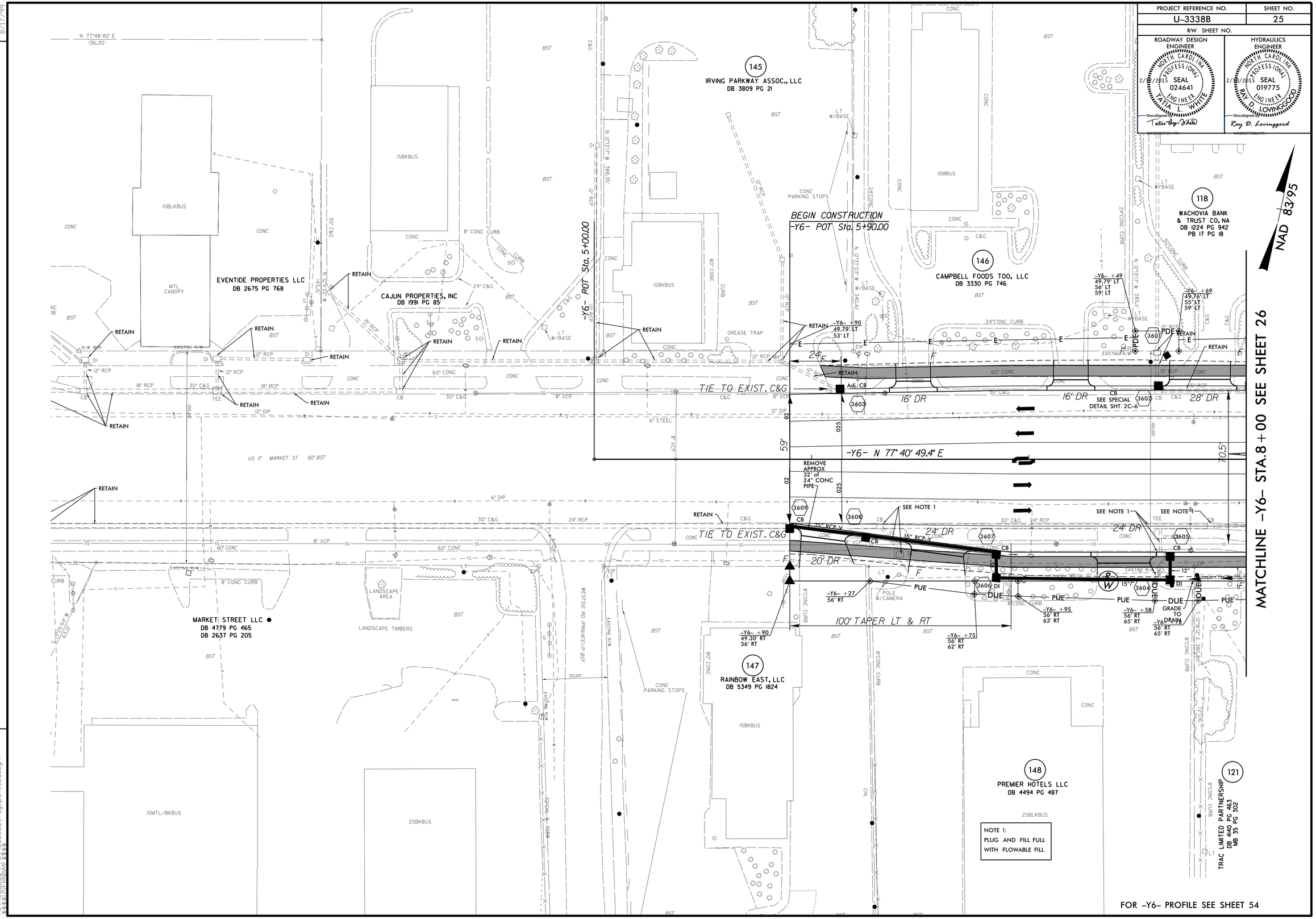
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 25 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 ATTIA L. WHITE
2/10/2015
DocuSigned by: Attia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019775 RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood




REVISIONS

8/17/99

27-JAN-2015 15:27
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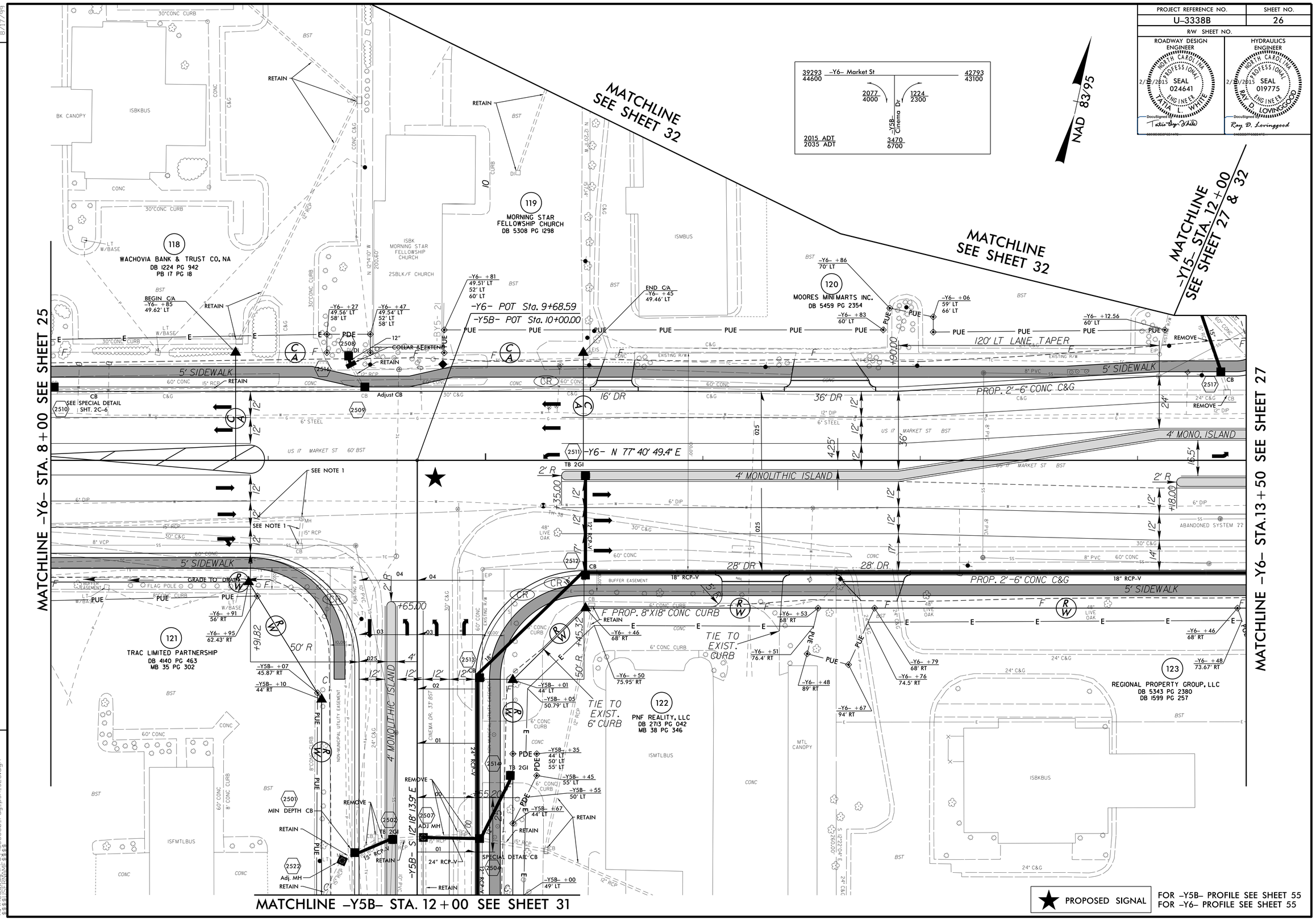
$$USERNAME$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 26 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024641 — ATTA L. WHITE — 2/10/2015 — DocuSigned

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 019775 — RAY D. LOVINGGOOD — 2/10/2015 — DocuSigned




REVISIONS

8/17/99

27-JAN-2015 15:00
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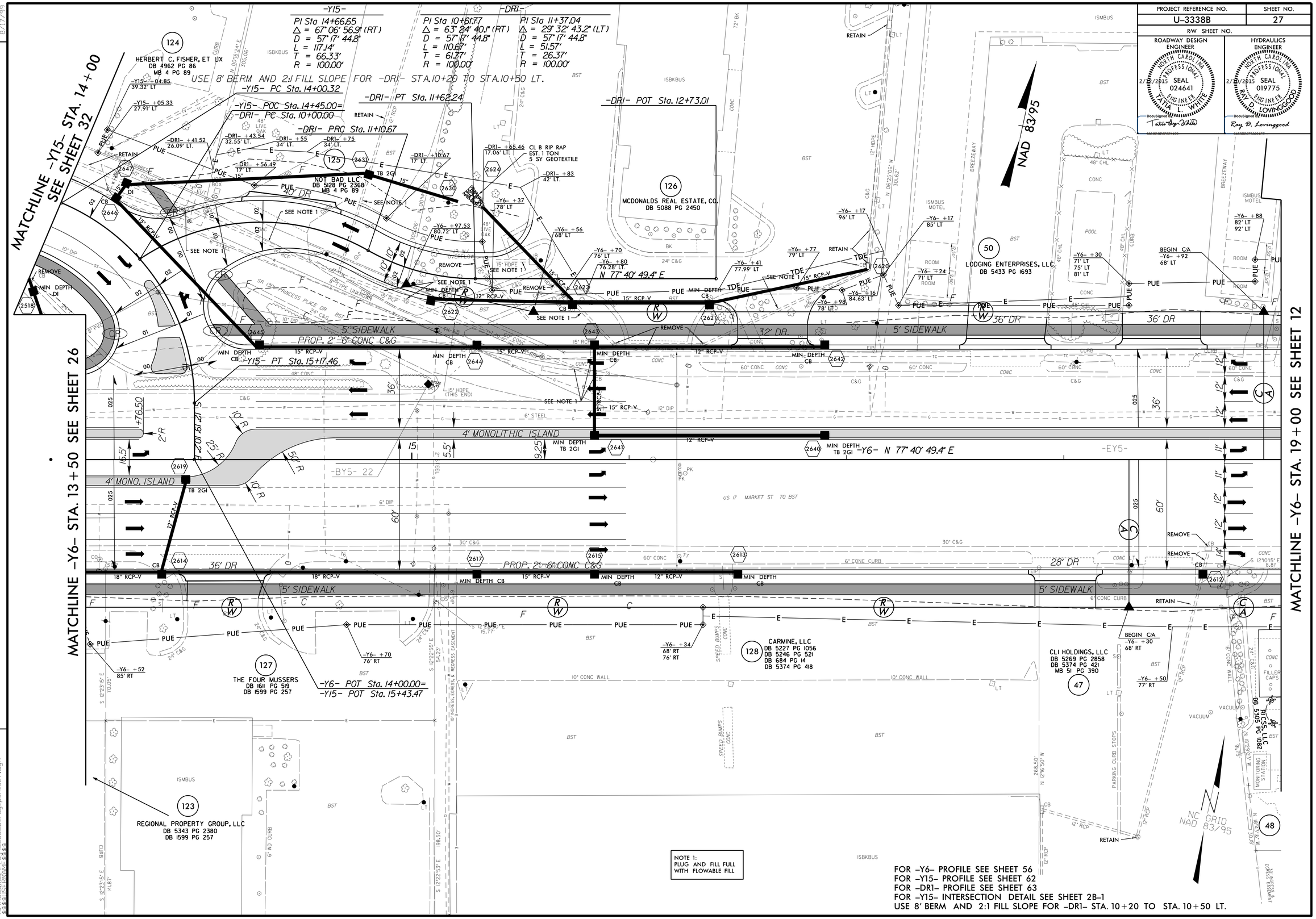
$$USERNAME$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 27 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 — ATTIA L. WHITE — 2/10/2015 — DocuSigned

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019775 — RAY D. LOVINGGOOD — 2/10/2015 — DocuSigned




REVISIONS

8/17/99

09-FEB-2015 07:42
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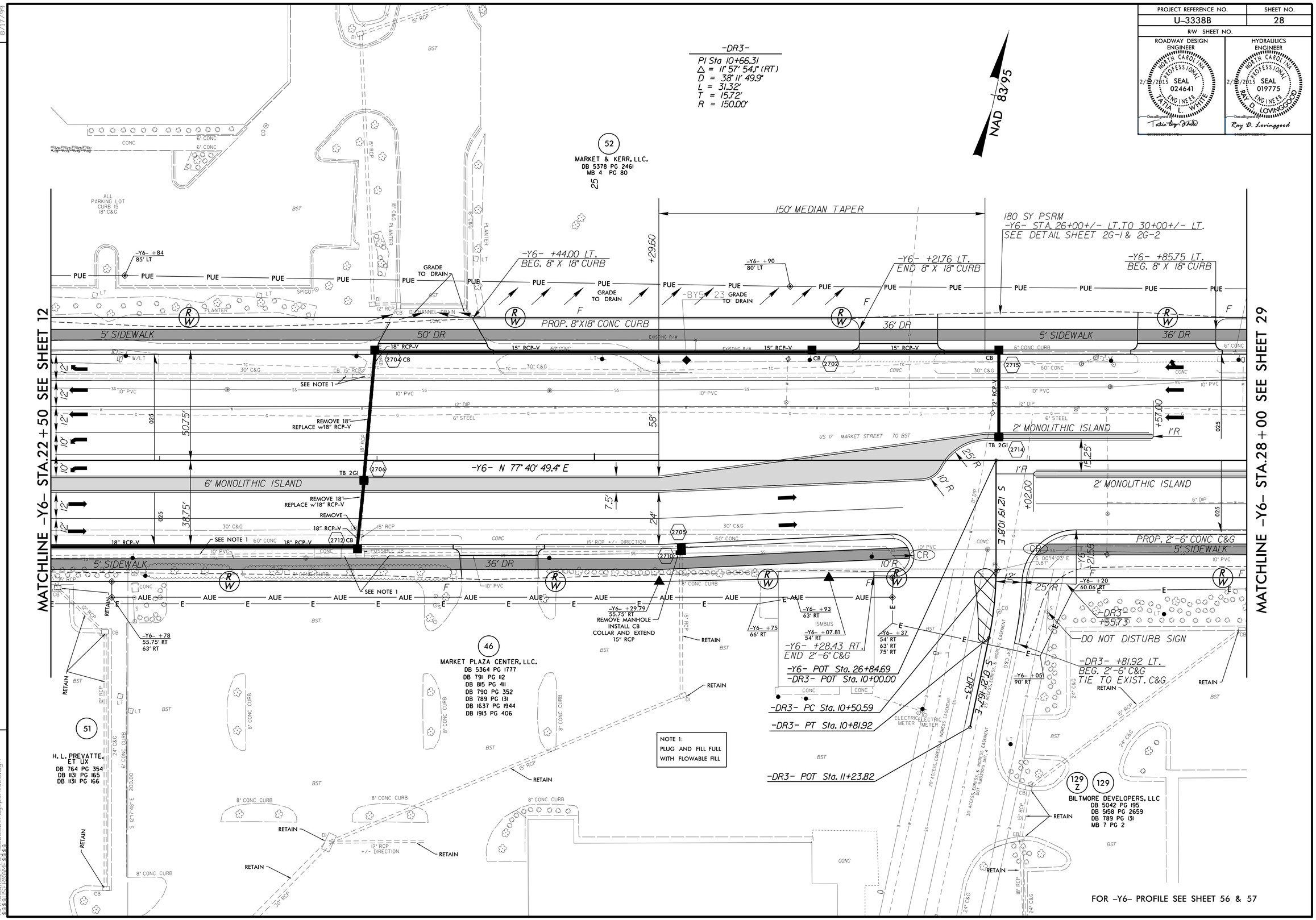
$$USERNAME$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 28 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 ATTIA L. WHITE
2/13/2015
DocuSigned by: Attia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019775 RAY D. LOVINGGOOD
2/13/2015
DocuSigned by: Ray D. Lovinggood




REVISIONS

8/17/99

13-JAN-2015 15:15
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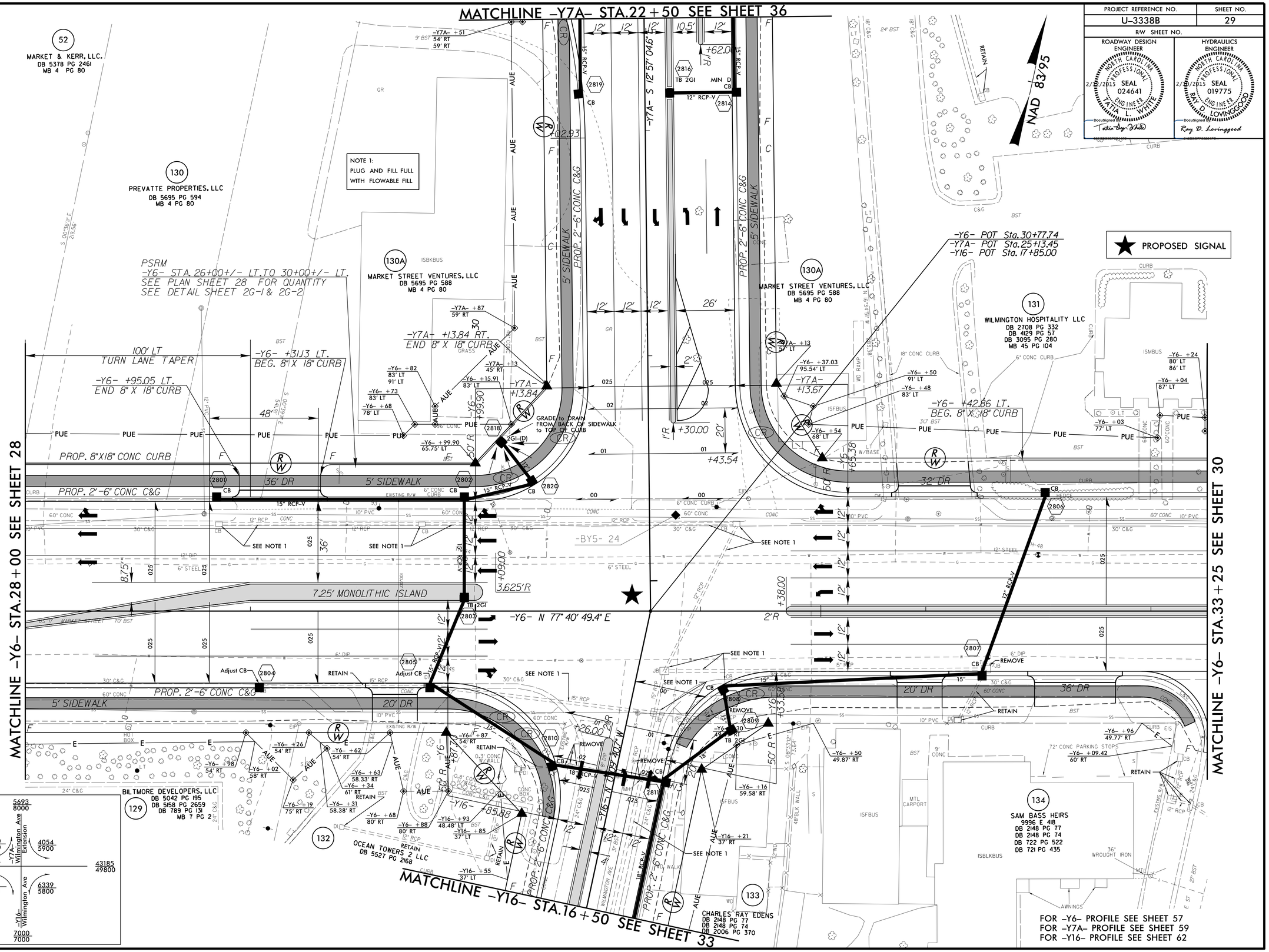
$$USERNAME$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 29 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024641 — ENGINEER ATTIA L. WHITE — 2/10/2015 — DocuSigned

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 019775 — ENGINEER RAY D. LOVINGGOOD — 2/10/2015 — DocuSigned




REVISIONS

8/17/99

03-FEB-2015 07:41
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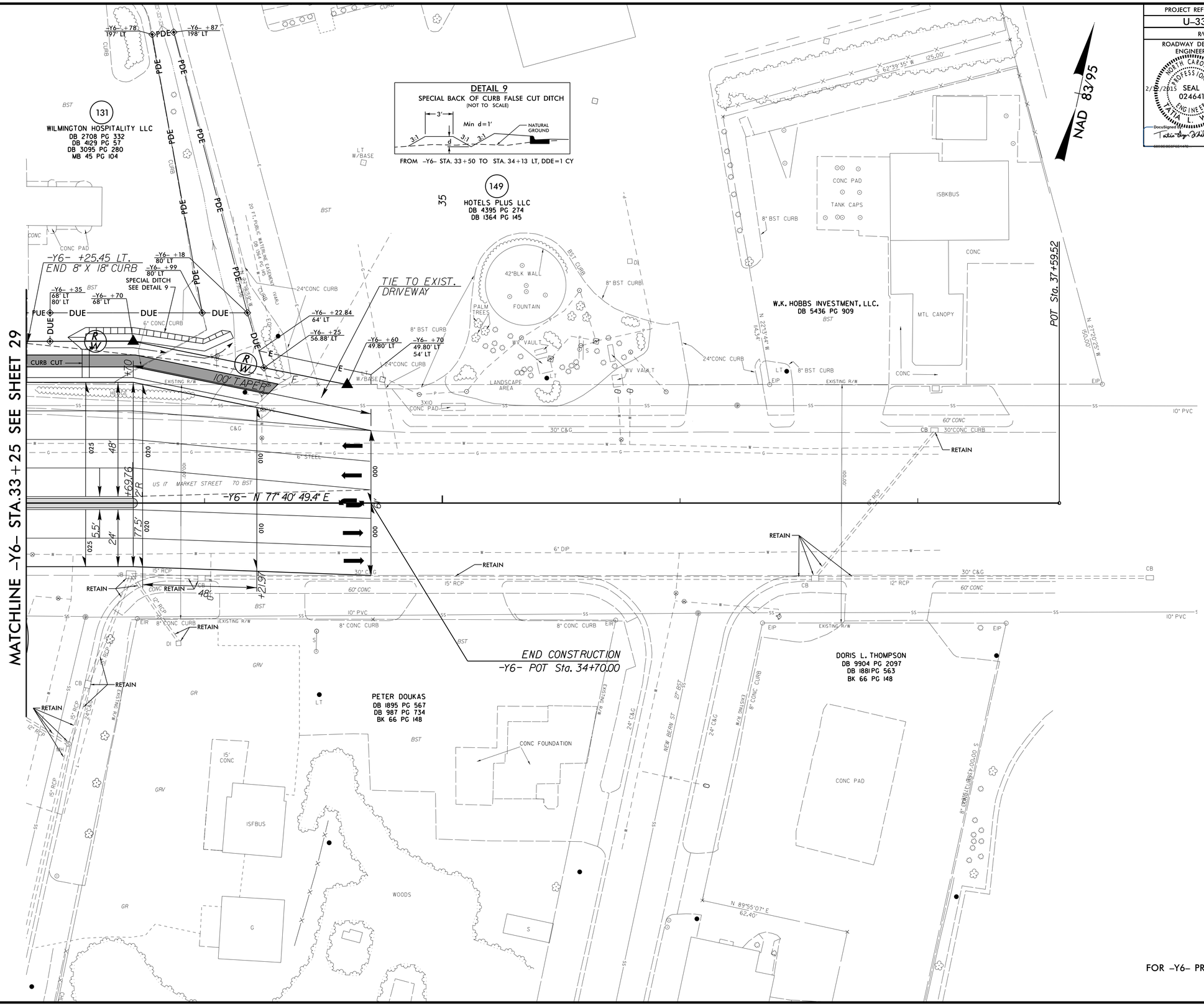
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 30 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER ATTA L. WHITE
2/10/2015
DocuSigned by: Atta L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

REVISIONS

8/17/99




FOR -Y6- PROFILE SEE SHEET 57

13-JAN-2015 14:18
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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 31 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 ATTA L. WHITE
2/10/2015
DocuSigned by: Tatia Lynn White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019775 RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

-Y5B-
PI Sta 15+38.65
Δ = 44° 35' 48.1" (RT)
D = 24° 35' 25.7"
L = 181.36'
T = 95.55'
R = 233.00'

NAD 83/95

THE FOUR MUSSERS
DB 1611 PG 519
DB 1599 PG 257

REGIONAL PROPERTY GROUP, LLC
DB 5343 PG 2380
DB 1599 PG 257

143
BOKEN, LLC
DB 5258 PG 1098
MB 38 PG 346

122
PNF REALITY, LLC
DB 2713 PG 42
MB 38 PG 346

SPIRIT MASTER FUNDING II, LLC
DB 4938 PG 2603
MB 35 PG 333
MB 37 PG 356

144
NO CLAIM
CINEMA DRIVE OFFICE PARK HOA
DB 5266 PG 172
MB 36 PG 220

121
TRAC LIMITED PARTNERSHIP
DB 4140 PG 463
MB 35 PG 302

ICON PROPERTIES, LLC
DB 4428 PG 462
MB 36 PG 220

PREMIER HOTELS LLC
DB 4494 PG 487

MATCHLINE -Y5B- STA. 12+00 SEE SHEET 26

-Y5B- PC Sta. 14+43.10

BEGIN CONSTRUCTION
-Y5B- PT Sta. 14+58.75

-Y5B- POT Sta. 16+86.52

-Y5B- PT Sta. 16+24.45

100' TAPER LT & RT

-Y5B- S 12° 18' 13.9" E

-Y5B- S 12° 18' 12" W 335.5'

4' MONOLITHIC ISLAND

CINEMA DR. 33' BST

38' DR
28' DR
45' DR
28' DR

-Y5B- +00 49' LT
-Y5B- +00 51' LT
-Y5B- +50 49' LT
-Y5B- +00 44' LT
-Y5B- +30 30.01' LT 44' LT
-Y5B- +43.10 44' LT
-Y5B- +58.75 30.09' LT 44' LT
-Y5B- +10 44' RT
-Y5B- +50 47' RT
-Y5B- +44.01 29.96' RT
-Y5B- +43.10 44' RT

RETAIN

FOR -Y5B- PROFILE SEE SHEET 55

REVISIONS

8/17/99

13-JAN-2015 14:18
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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 32 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER ATTA L. WHITE
2/10/2015
DocuSigned by: Tatia Lynn White
E8D9E9D5FEE447D...

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood
5A3BBBFF3022AFC...

REVISIONS

8/17/99

NAD 83/95

BIRCHWOOD APARTMENTS, LLC.
DB 2909 PG 767
DB 3266 PG 293
DB 3534 PG 602
DB 2359 PG 907
MB 43 PG 91
MB 44 PG 157

MARY CATHERINE BENTON, ET AL
DB 5112 PG 2798
DB 3041 PG 73
MB 4 PG 89

PROTESTANT EPISCOPAL CHURCH, USA
DB 5139 PG 682

ATLANTIC COAST FOOD, INC.
DB 1176 PG 1306
DB 4962 PG 86
MB 4 PG 89

HERBERT C. FISHER, ET UX
DB 4962 PG 86
MB 4 PG 89

MORNING STAR FELLOWSHIP CHURCH
DB 5308 PG 1298

MOORES MINI MARTS INC.
DB 5459 PG 2354

WACHOVIA BANK & TRUST CO, NA
DB 1224 PG 942
PB 17 PG 18

-Y15- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y15- POT Sta. 13+35.00

S 79° 26' 07.1" E

SR 1301 PRINCESS PLACE DR. 40' BST

30' TRANS.
20' INC.

5' SIDEWALK

MIN DEPTH CB

-Y15- +55
31.34' RT
40' RT

-Y15- +75
31.39' RT
40' RT

SEE NOTE 1
-Y15- +95.61
48' RT

MATCHLINE -Y15- STA. 14+00
SEE SHEET 27

MATCHLINE
SEE SHEET 26

MATCHLINE
SEE SHEET 26

MATCHLINE
SEE SHEET 26

FOR -Y15- PROFILE SEE SHEET 62

13-JAN-2015 14:18
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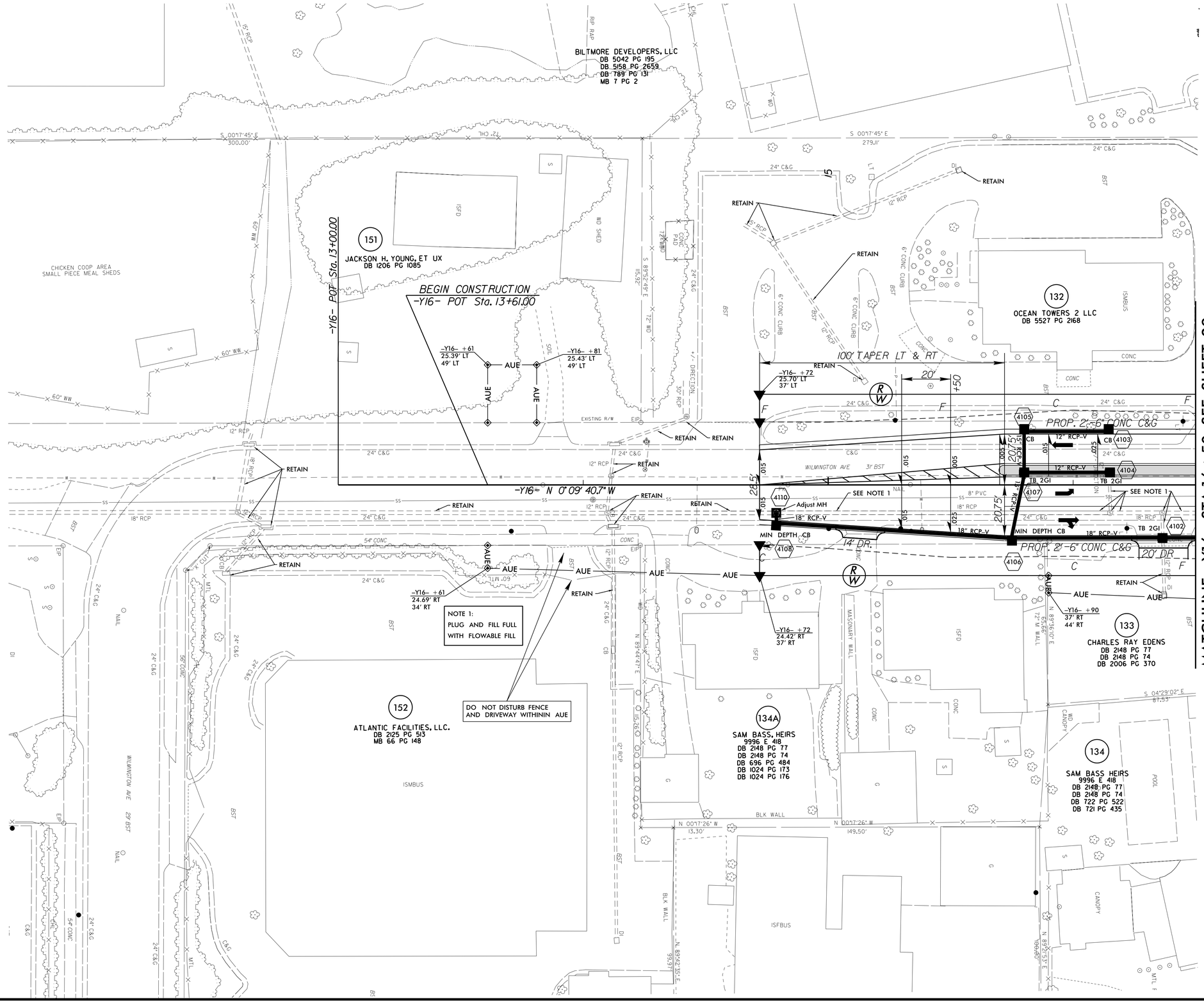
$$$$USERNAME$$$$

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 33 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TITIA L. WHITE
2/10/2015
DocuSigned: Titia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned: Ray D. Lovinggood

NAD 83/95




FOR -Y16- PROFILE SEE SHEET 62

REVISIONS

8/17/99

13-JAN-2015 14:18
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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 34 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TITIA L. WHITE
2/10/2015
DocuSigned by: Titia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

REVISIONS

8/17/99

NAD 83/95

59
KERR AVE. COMMERCIAL PROPERTY LLC.
DB 2909 PG 767
DB 3266 PG 293
DB 3534 PG 602
DB 2359 PG 907
MB 43 PG 91
MB 44 PG 157
MB 36 PG 66
DB 5654 PG 1962

3SF APTS

POOL

PC Sta. 8+00.00

-Y7- POT Sta. 10+00.00

-Y7- PC Sta. 11+00.32

TIE TO EXIT.C&G

26' DR.

36' DR.

-Y7- N 16°43'17.0" E

BEGIN CONSTRUCTION
-Y7- POC Sta. 9+38.00

150' TAPER RT

GRADE TO DRAIN

ROW OF WATER METERS

30' PRIVATE UTILITY EASEMENT

WATER LINE EASEMENT (PUBLIC)

BIRCHWOOD DR

MATCHLINE -Y7- STA.12+50 SEE SHEET 14

AHEPA 408, INC.
DB 2102 PG 830
DB 2376 PG 996
MB 36 PG 117
MB 36 PG 66

DENNIS W. ANDERSON
DB 1147 PG 258

-Y7-

| PI Sta 9+09.26 | PI Sta 12+53.23 |
|---|---|
| Δ = 57° 17' 46.2" (LT) | Δ = 74° 47' 59.7" (RT) |
| D = 28° 38' 52.4" | D = 28° 38' 52.4" |
| L = 200.00' | L = 261.10' |
| T = 109.26' | T = 152.91' |
| R = 200.00' | R = 200.00' |

56
KERR AVE. COMMERCIAL PROPERTY LLC.
DB 2909 PG 767
DB 3266 PG 293
DB 3534 PG 602
DB 2359 PG 907
MB 43 PG 91
MB 44 PG 157
MB 36 PG 66
DB 5654 PG 1962

FOR -Y7- PROFILE SEE SHEET 58

13-JAN-2015 14:17
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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 35 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 ATTA L. WHITE
2/10/2015
DocuSigned Tatia Lynn White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019775 RAY D. LOVINGGOOD
2/10/2015
DocuSigned Ray D. Lovinggood

REVISIONS

8/17/99

MATCHLINE -Y17- STA.11+50 SEE SHEET 38

MATCHLINE -Y7A- STA.12+00 SEE SHEET 14

MATCHLINE -Y7A- STA.17+25 SEE SHEET 36

NAD 83/95

DETAIL 8
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)
NATURAL GROUND 3:1 3:1
-Y7A- STA. 14+00 TO STA. 14+75 RT., DDE=2 CY

63 GENEVA C. EDGE
DB 1441 PG 1192
DB 817 PG 706
MB 4 PG 80

64 CHARLES R. RACKLEY, ET AL
DB 407 PG 341
DB 5497 PG 479
MB 4 PG 80

62 MORRIS R. SKIPPER, ET UX
DB 973 PG 230
MB 4 PG 80

61 WOODMEN OF THE WORLD LODGE 6
DB 1563 PG 376
MB 4 PG 80

-Y7A-
PI Sta 17+68.49
Δ = 75° 31' 38.7" (RT)
D = 15° 26' 37.0"
L = 489.05'
T = 287.40'
R = 371.00'

-Y17- POT Sta. 10+00.00
-Y7A- POT Sta. 14+58.59

-Y7A- PC Sta. 14+81.09

NOTE 1:
PLUG AND FILL FULL WITH FLOWABLE FILL

DETAIL 10
DITCH CLEANOUT
( Not to Scale)
Natural Ground D Natural Ground 3:1 3:1
Min. D=1.0 Ft.
DITCH CLEAN OUT: -Y7A- STA. 13+46.6, 66' RT., 92' @ s=0.4%, DDE=48 CY

FOR -Y7A- PROFILE SEE SHEET 58 & 59
FOR -Y17- PROFILE SEE SHEET 62

23-JAN-2015 08:44
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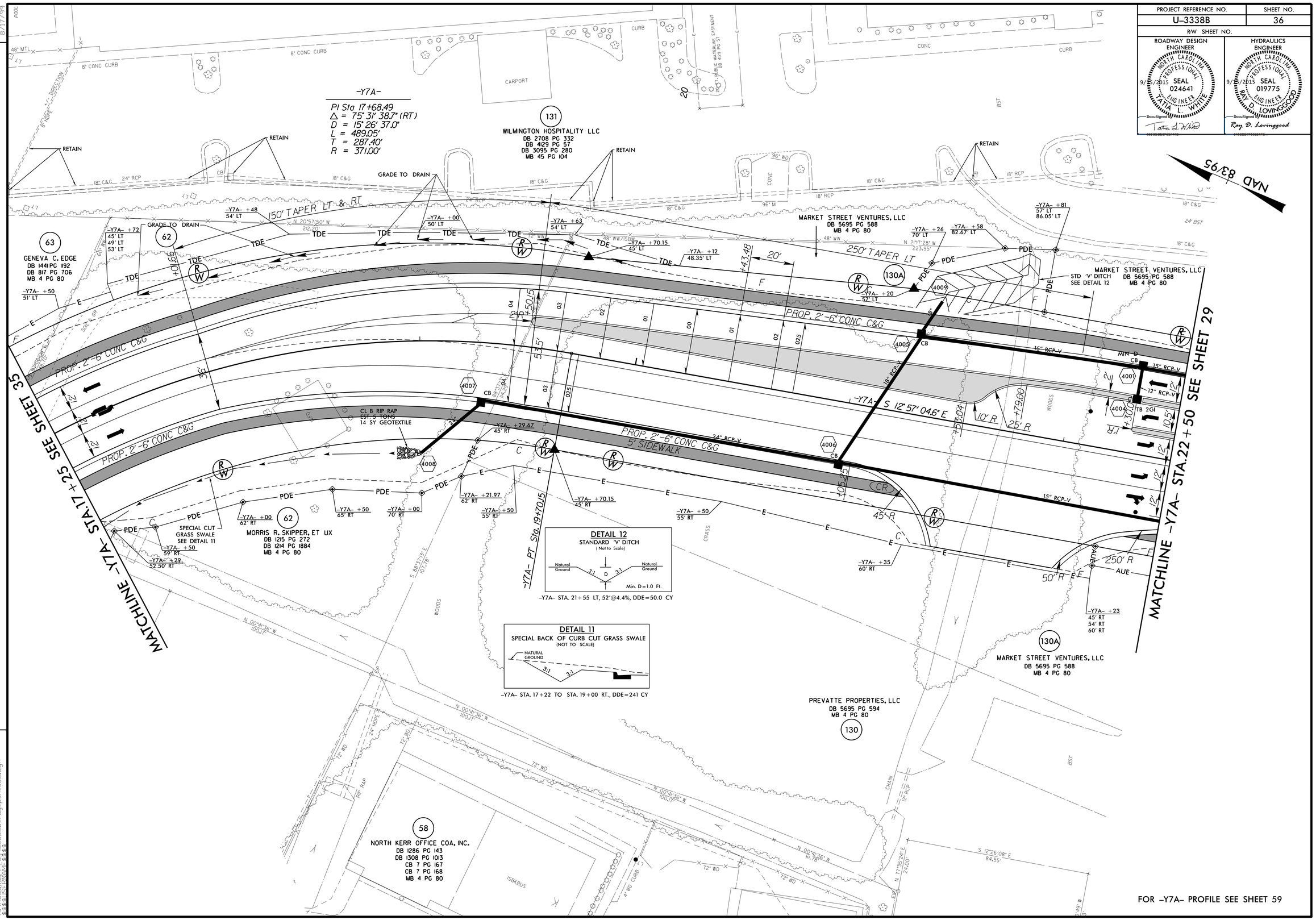
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 36 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| 9/15/2015 SEAL 024641 ATTA L. WHITE NORTH CAROLINA PROFESSIONAL ENGINEER DocuSigned | 9/15/2015 SEAL 019775 RAY D. LOVINGGOOD NORTH CAROLINA PROFESSIONAL ENGINEER DocuSigned Ray D. Lovinggood |




REVISIONS

8/17/99

15-SEP-2015 11:01
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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 37 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER ATTA L. WHITE
2/10/2015
DocuSigned by: Tatia Lynn White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

DETAIL 5
SPECIAL CUT GRASS SWALE
( Not to Scale)

Natural Ground — 2:1 D — 4:1 or Flatter — Front Ditch Slope

Min. D = 1.0Ft.

-Y8- STA. 12+33.6 TO STA. 13+50 LT.
-Y8- STA. 12+28 TO STA. 13+10 RT.

NAD 83/95

REVISIONS

8/17/99

ISFD
2SFD
CONC
36" CONC
LEROY LEE, JR., ET UX
DB 1154 PG 1547
MB 6 PG 6
N 02°46'30" E
193.98'
CLOVER RD 18' BST
-Y8- POT Sta. 10+00.00
8" VCP
EXISTING R/W
60.00'
-BY7- 26
POT 5+00.00
15" RCP
6" DIP
McCLELLAND DR 18' BST
SOIL
CONC
RICHARD W. HAMMONDS, JR.
DB 1236 PG 1817
MB 6 PG 6
G
S
ISFD
48" CHL
N 02°47'10" E
193.96'
ISBKD
FLAGPOLE
CO
EIP
68
CYNTHIA MITCHELL
DB 1961 PG 955
MB 6 PG 6
N 02°46'48" E
100.00'
BEGIN CONSTRUCTION
-Y8- POT Sta. 12+00.00
150' TAPER LT
136
E. M. WALLACE, ET UX
DB 655 PG 071
MB 6 PG 6
-Y8- +00
30.04' LT
44' LT
-Y8- +26.20
44' LT
-Y8- +35
59' LT
-Y8- +52
48' LT
-Y8- +51.56
44' LT
-Y8- +50
30' LT
SPECIAL CUT GRASS SWALE SEE DETAIL 5
RETAIN
-Y8- +18
30.04' LT
PUE
E
12" RCP
2' PS
-Y8- S 87° 12' 48.6" E
9'
025
03
02
RETAIN
6" DIP
DI
2903
14'
-Y8- +52
30' RT
-Y8- +06
30' RT
50' SHLD. TRANS. LT. & RT.
20' CONC
-Y8- +66
52' RT
-Y8- +78
73' RT
-Y8- +60
64' RT
-Y8- +84
30' RT
61' RT
150' TAPER RT
139
67
R & M RESTORATIONS, LLC
DB 5273 PG 227
MB 35 PG 239
STEVEN WILLIAM BONESKE
DB 1653
PG 2092
PG 2705
PG 2706
MB 35 PG 239
MATCHLINE -Y8- STA.13+00 SEE SHEET 15
CB
18" RCP
PK
RICHARDSON INVEST. GROUP, LLC
DB 4440 PG 513
MB 35 PG 239
JOHN A. IVEY
DB 2811 PG 250
MB 35 PG 239
S 02°47'11" W
200.00'
S 02°46'27" W
R & M RESTORATIONS, LLC
DB 5336 PG 2722
MB 35 PG 239
DAVID A. GOLDRUP
DB 5272 PG 196
MB 35 PG 239
2SF
G
W/APT

FOR -Y8- PROFILE SEE SHEET 60

13-JAN-2015 14:17
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$$$$USERNAME$$$$

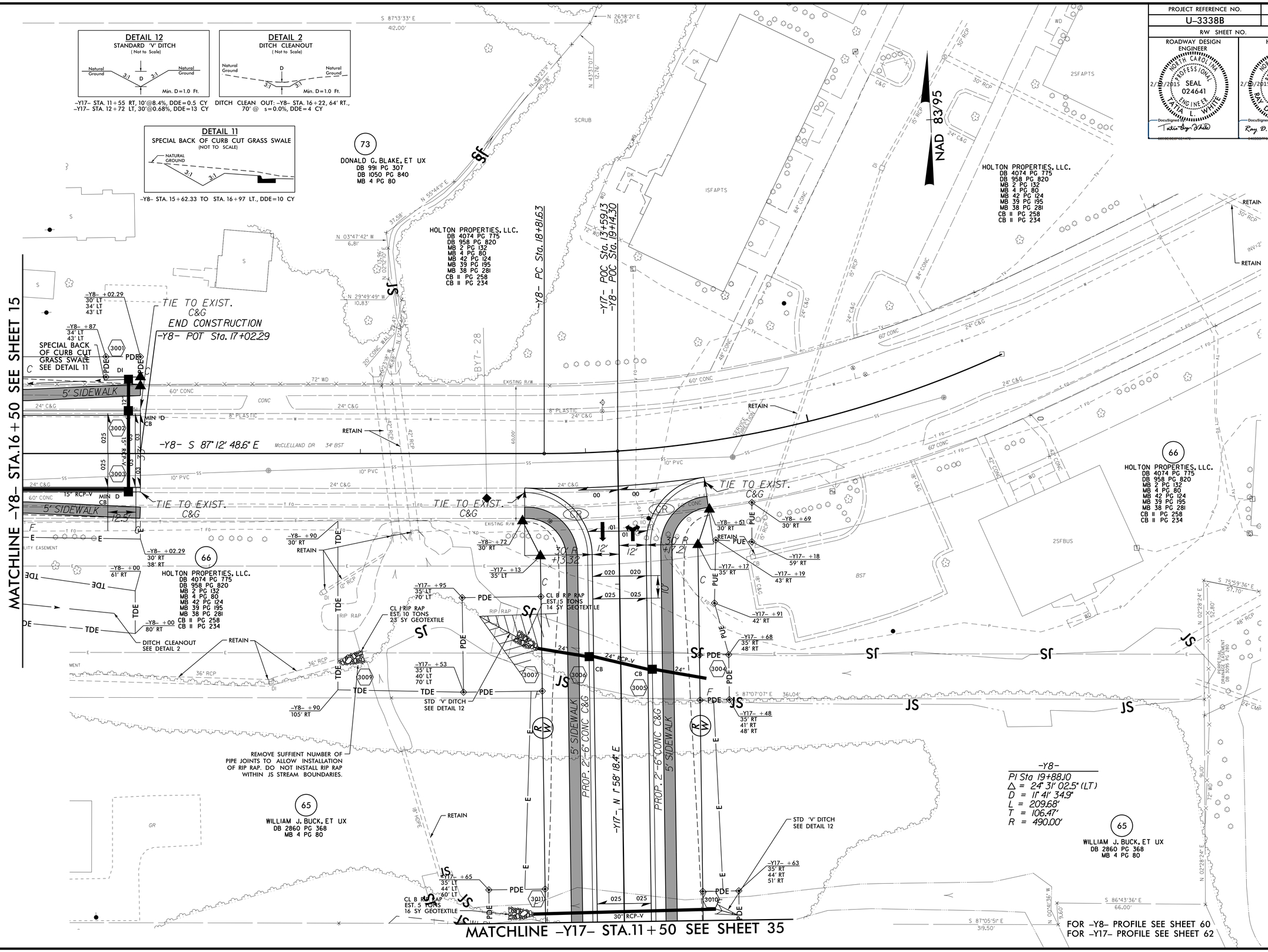
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 38 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024641 — ATTA L. WHITE — 2/10/2015 — DocuSigned

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 019775 — RAY D. LOVINGGOOD — 2/10/2015 — DocuSigned

REVISIONS

8/17/99

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| PROJECT REFERENCE NO. | SHEET NO. |
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| U-3338B | 39 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 ATTA L. WHITE
2/10/2015
DocuSigned by: Atta L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019775 RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

NOTE 1:
PLUG AND FILL FULL WITH FLOWABLE FILL

-Y10-
PI Sta 9+98.23
Δ = 11° 27' 33.0" (LT)
D = 8° 11' 06.4"
L = 140.00'
T = 70.23'
R = 700.00'

NAD 83/95

-Y10- POT Sta. 8+00.00
-Y10- PC Sta. 9+28.00
-Y10- PT Sta. 10+68.00
BEGIN CONSTRUCTION
-Y10- POC Sta. 9+61.50
-Y10- S 75° 45' 08.1" E
-Y10- S 87° 12' 41.1" E

DIANE M. TUCKER
DB 5059 PG 2423
DB 1107 PG 184
MB 6 PG 6

MARY D. BROWN
DB 3403 PG 454
MB 6 PG 6

ELSIE S. CARTER RATCLIFFE
DB 766 PG 415
MB 6 PG 6

EZELL J. JOHNSON
DB 1137 PG 1437
MB 6 PG 6

JAMES JAMISON, JR., ET UX
DB 1132 PG 268
MB 6 PG 6

EARL GRADY, ET UX
DB 1072 PG 558
MB 6 PG 6

JESS SKIP PROPERTIES, LLC
DB 4010 PG 732
MB 6 PG 6

FAIRLAWN DR 19' BST
CLOVER RD 19' BST

RETAIN
SPECIAL CUT DITCH SEE DETAIL 6
SEE NOTE 1
-Y10- +00 37' LT
-Y10- +69.47 30' LT
-Y10- +48.60
-Y10- +70 30' RT
-Y10- +00 37' RT
INV=32.56'
INV=32.53'
12" RCP
15" RCP
8" VCP
48" CHL
72" WD
EXISTING R/W
S 87°12'48" E 200.00'
S 87°13'24" E 200.10'
S 02°46'36" W 157.61'
N 02°46'48" E 100.00'
N 14°06'17" E 200.00'
N 02°47'15" E 192.76'
ISBKD
ISFD
CONC
80
79

MATCHLINE -Y10- STA.12+00 SEE SHEET 16

DETAIL 6
SPECIAL CUT DITCH
( Not to Scale)
Natural Ground
3:1
D
3:1
Front Ditch Slope
Min. D=1.0 Ft.
-Y10- STA. 9+60 TO STA. 12+75 RT.
-Y10- STA. 11+48.6 TO STA. 12+85 LT.

FOR -Y10- PROFILE SEE SHEET 61

REVISIONS
8/17/99

13-JAN-2015 14:17
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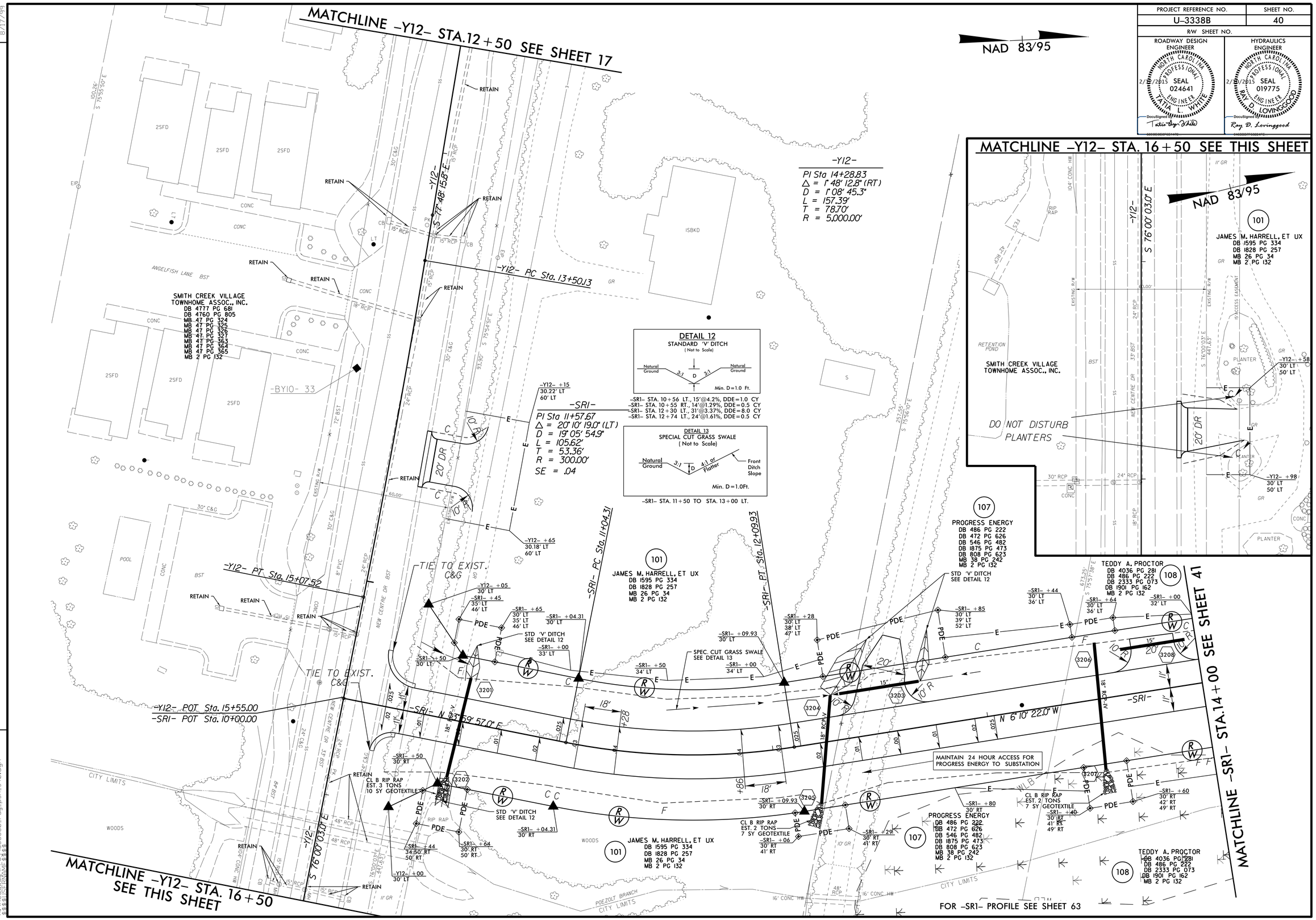
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 40 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024641 ATTA L. WHITE
2/10/2015
DocuSigned by: Atta L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019775 RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

REVISIONS

8/17/99

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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 41 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TITIA L. WHITE
2/10/2015
DocuSigned by: Titia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

8/17/99

REVISIONS

NAD 83/95

-SR1-
PI Sta 17+73.81
△ = 20° 08' 51.2" (RT)
D = 11° 27' 33.0"
L = 175.82'
T = 88.83'
R = 500.00'
SE = .03

DETAIL 12
STANDARD 'V' DITCH
( Not to Scale)
Natural Ground, 3:1, D, 3:1, Natural Ground
Min. D=1.0 Ft.
-SR1- STA. 17+15 LT., 20'@7.5%, DDE=3 CY

DETAIL 13
SPECIAL CUT GRASS SWALE
( Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D=1.0Ft.
-SR1- STA. 16+00 TO STA. 18+00 LT.

DETAIL 14
STANDARD BASE DITCH
( Not to Scale)
Natural Ground, 3:1, D, 3:1, Natural Ground
Min. D=2Ft.
B= 1ft.
-SR1- STA. 17+30 RT. 25'@5.9%, DDE=21 CY-

MICHAEL E. RAINES, ET AL
DB 3326 PG 887
DB 1910 PG 783
MB 2 PG 132

N 02°44'06" E 100.00'

MATCHLINE -SR1- STA.14+00 SEE SHEET 40

108 TEDDY A. PROCTOR
DB 4036 PG 281
DB 486 PG 222
DB 2333 PG 073
DB 1901 PG 162
MB 2 PG 132

107 PROGRESS ENERGY
DB 486 PG 222
DB 472 PG 626
DB 546 PG 482
DB 1875 PG 473
DB 808 PG 623
MB 38 PG 242
MB 2 PG 132

110 DAVID E. RAINES
DB 5288 PG 1239
DB 5565 PG 49
DB 2069 PG 32
DB 1928 PG 378
DB 356 PG 148
DB 356 PG 579
MB 55 PG 307
MB 2 PG 132

111 WILLIAM CARTER CLAYTON, ET UX
DB 5523 PG 922
DB 1066 PG 451
DB 1823 PG 866
DB 1913 PG 447
MB 2 PG 132

112 CORNERSTONE OWNERS ASSOC., INC.
DB 3577 PG 629
DB 2884 PG 1117
DB 2417 PG 997
DB 2395 PG 1039
DB 2395 PG 158
MB 2 PG 132
CB 11 PG 161
CB 12 PG 146
CB 12 PG 91
CB 12 PG 97
CB 12 PG 48

-SR1- +08 48' LT
STD 'V' DITCH SEE DETAIL 12
-SR1- +19 50' LT
-SR1- +19.97 45.02' LT
-SR1- +85 51' LT
SPEC. CUT GRASS SWALE SEE DETAIL 13
-SR1- +11 30' LT
-SR1- +23 30' LT
-SR1- +84.98 30' LT
-SR1- +90 35' LT
-SR1- +00 40' LT
-SR1- +50 39' LT
-SR1- +00 32' LT
-SR1- +10 39' LT
-SR1- +65.48 37' LT
-SR1- +65.48 30' LT
-SR1- +60.80 30' LT
TIE TO EXIST. C&G
RETAIN
GENERAL UTILITY EASEMENT 7
DB 2333 PG 767
N 6°10'22.0" W
-SR1- +51 30' RT
43' RT
CL B RIP RAP EST. 5 TONS
14 SY GEOTEXTILE
-SR1- +38 30' RT
-SR1- +13 30' RT
-SR1- +14.08 34' RT
-SR1- +18 48' RT
-SR1- +39 62' RT
-SR1- +32 63' RT
-SR1- +50 30' RT
-SR1- +84.98 30' RT
-SR1- +00 36' RT
-SR1- +50 35' RT
-SR1- +00 44' RT
-SR1- +60.80 30' RT
-SR1- +65.48 30' RT
STANDARD BASE DITCH SEE DETAIL 14
-SR1- PC Sta. 16+84.98
-SR1- PT Sta. 18+60.80
-Y13- POT Sta. 15+16.28
-SR1- POT Sta. 18+90.48
BRG BK N 13° 58' 29.2" E
CAPE FEAR PUBLIC UTILITY EASEMENT DB 5288 PG 1239 MB 55 PG 307
POEZOLT BRANCH
CITY LIMITS
WOODS
SOIL
MTL CAR PORT
MTL S
ISFD
WLB
PDE
24" RCP
18" RCP
60" CONC
10' NON-MUNICIPAL EASEMENT
SADEDALE DR. 21' BST
BST PA
EXISTING R/W

FOR -SR1- PROFILE SEE SHEET 63

13-JAN-2015 14:16
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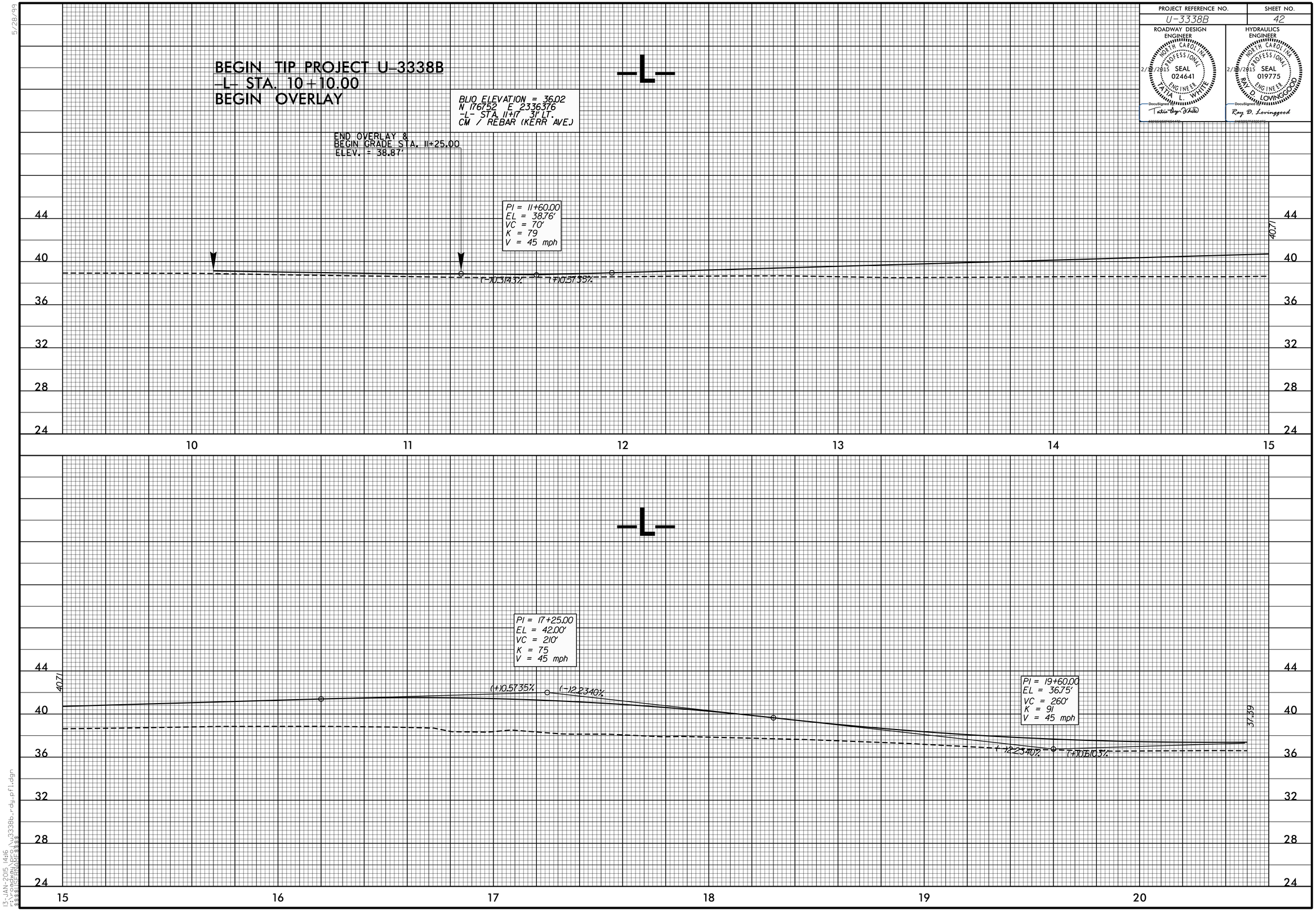
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 42 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/10/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

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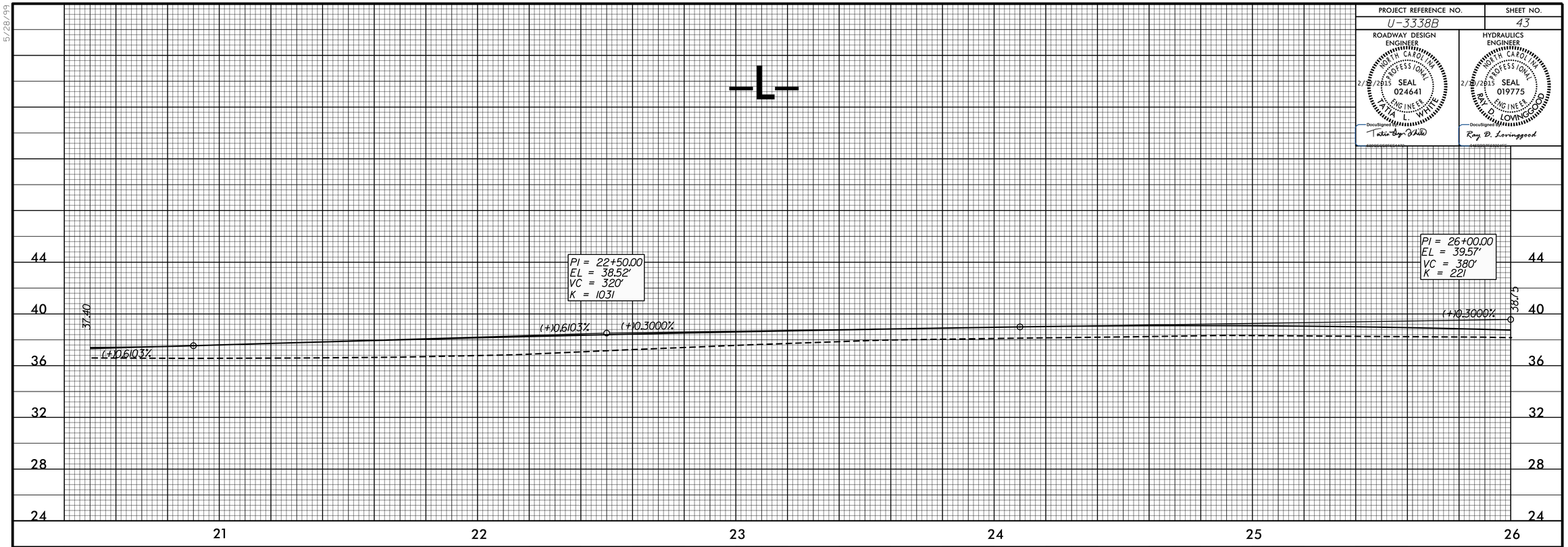
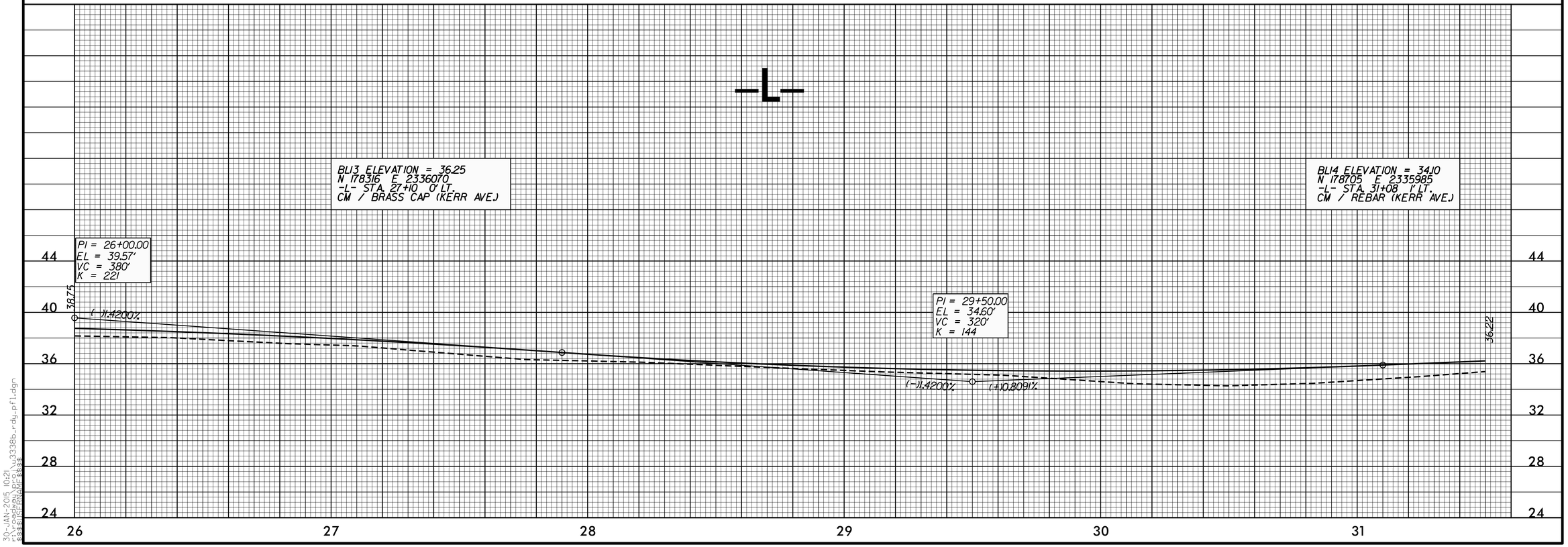
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 43 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/10/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

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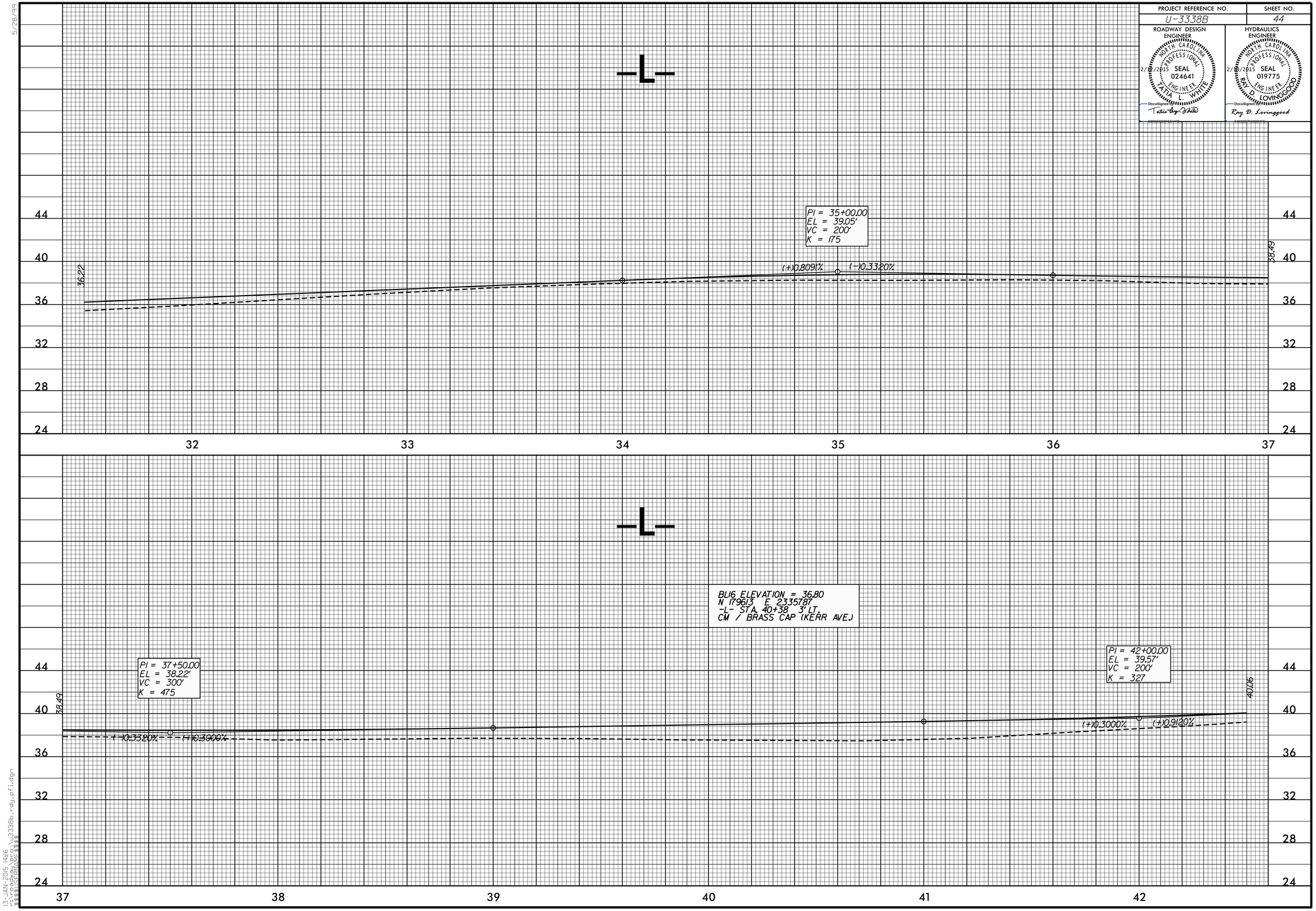
5/28/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 44 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/13/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/13/2015
DocuSigned by: Ray D. Lovinggood

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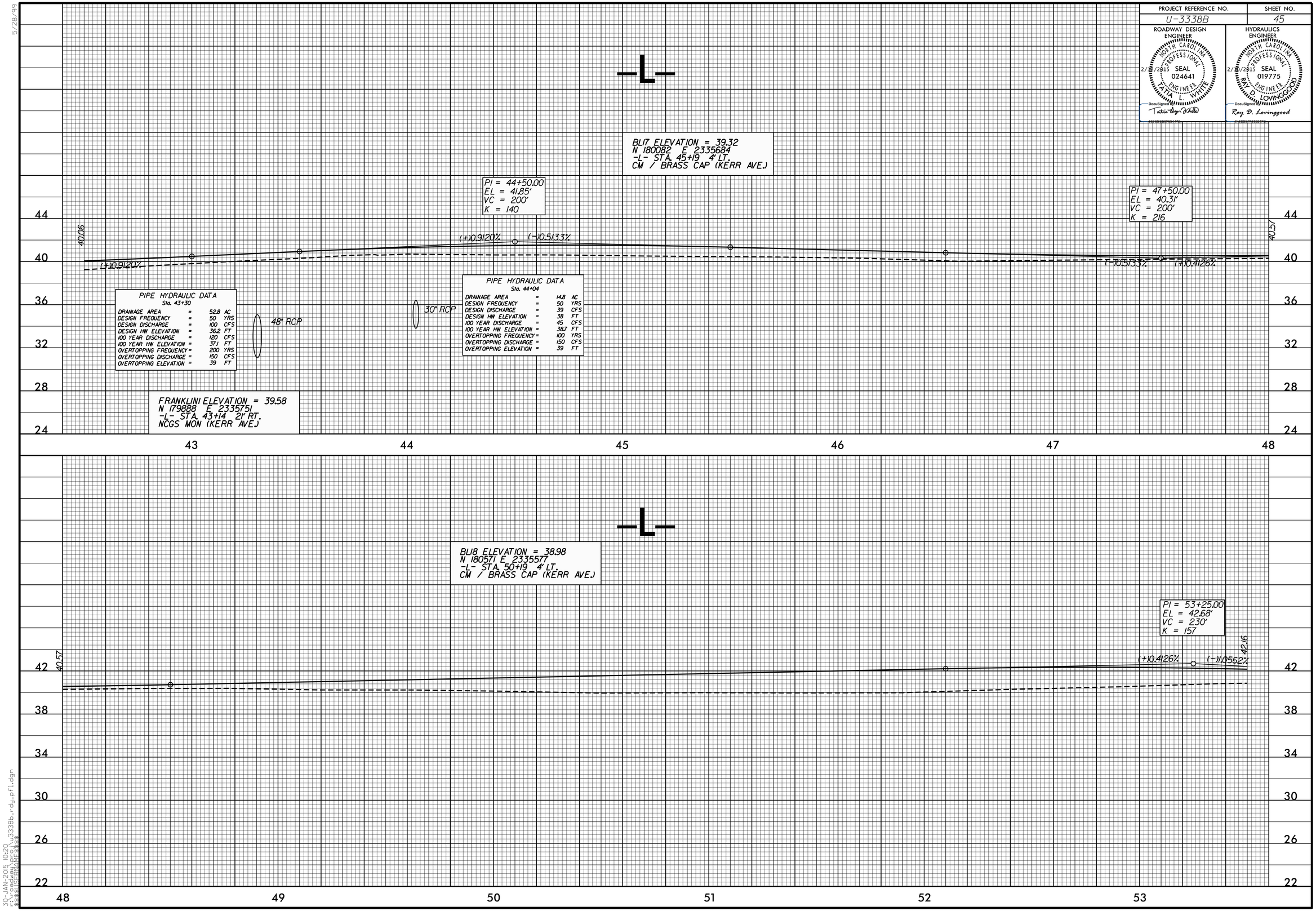
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 45 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/12/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/12/2015
DocuSigned by: Ray D. Lovinggood

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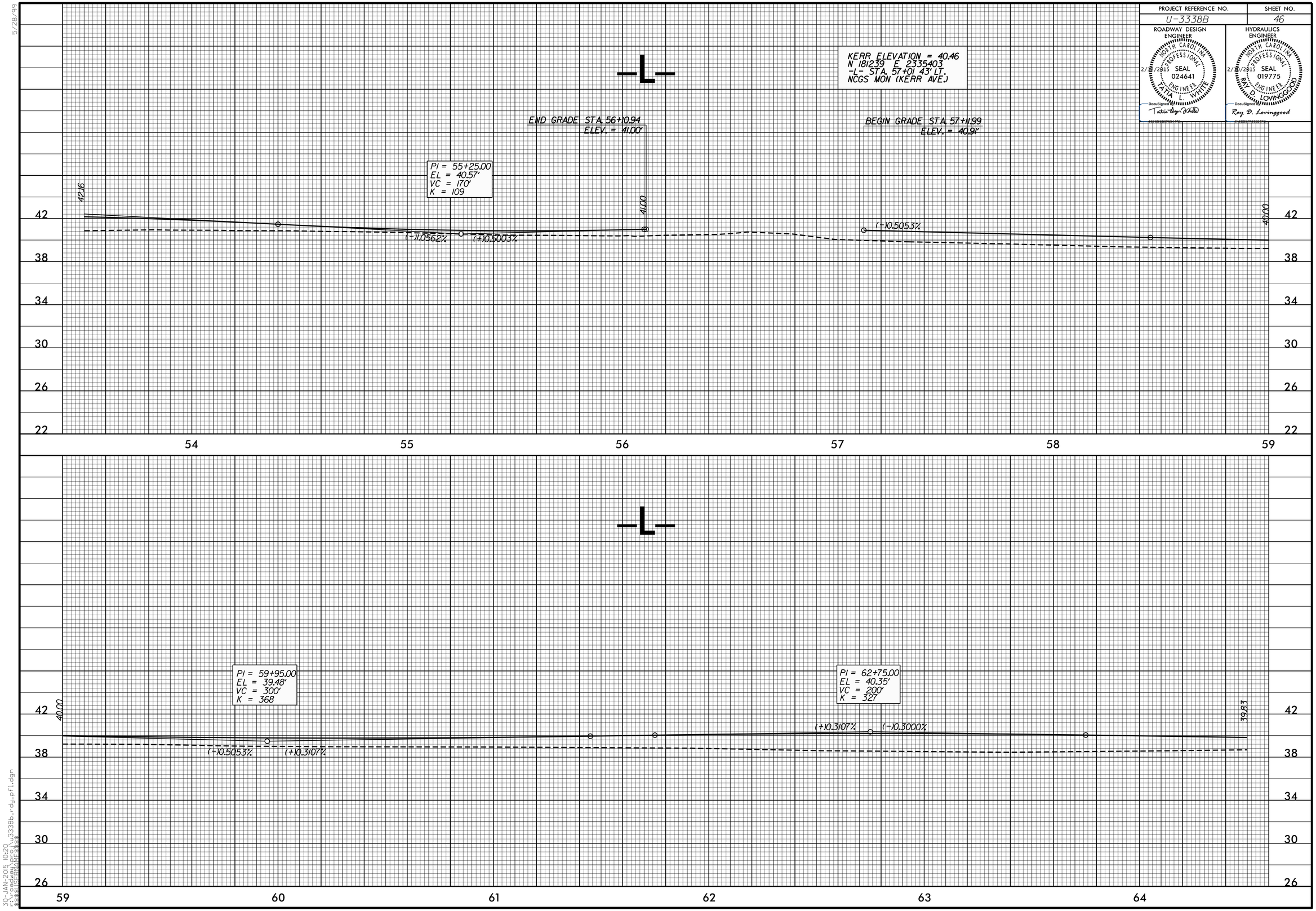
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 46 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/10/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

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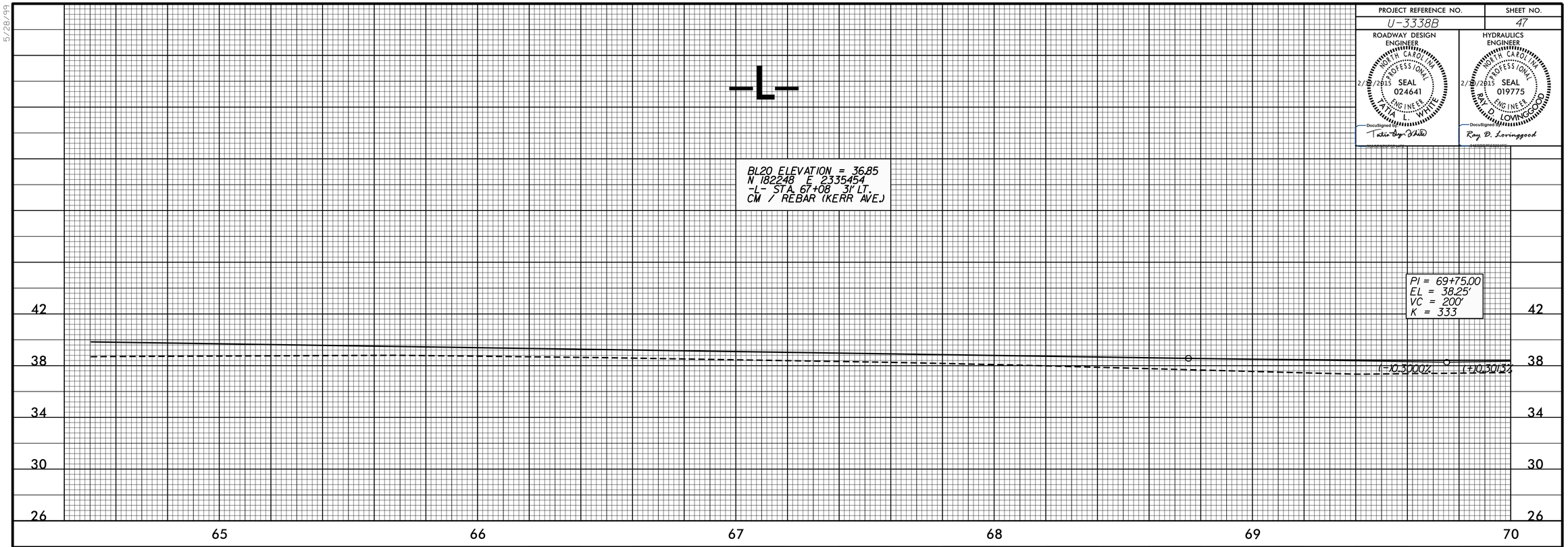
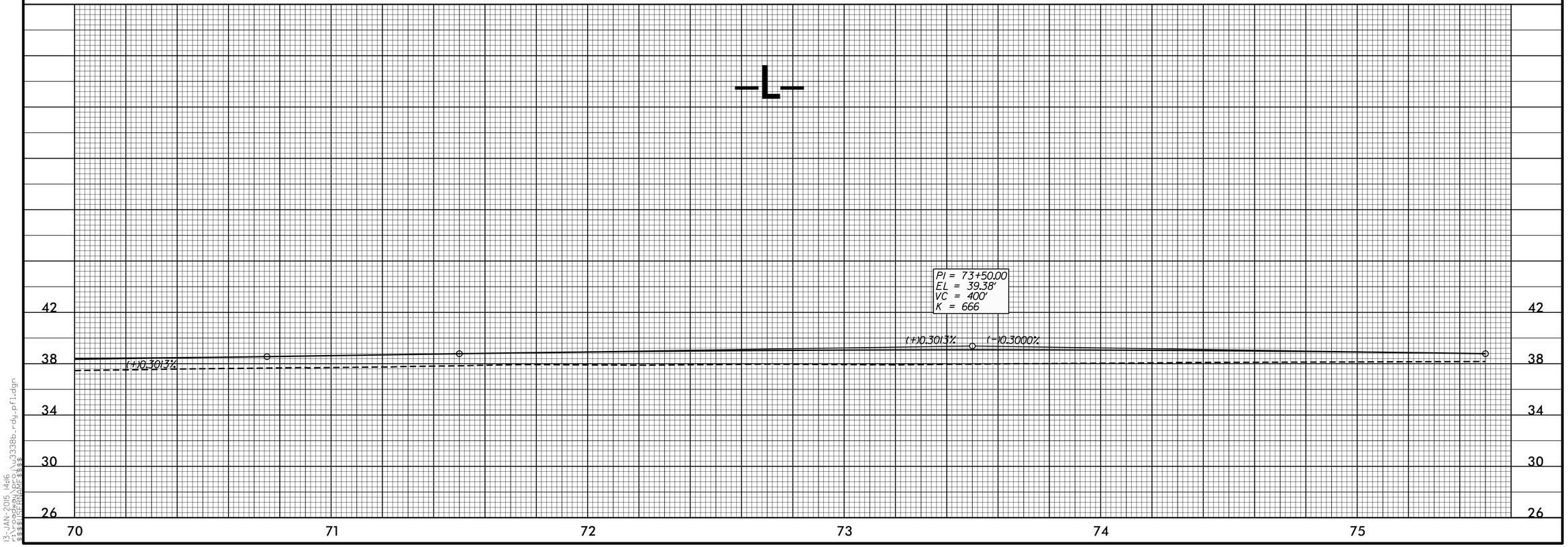
|---|---|
| U-3338B | 47 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/13/2015
DocuSigned: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/13/2015
DocuSigned: Ray D. Lovinggood

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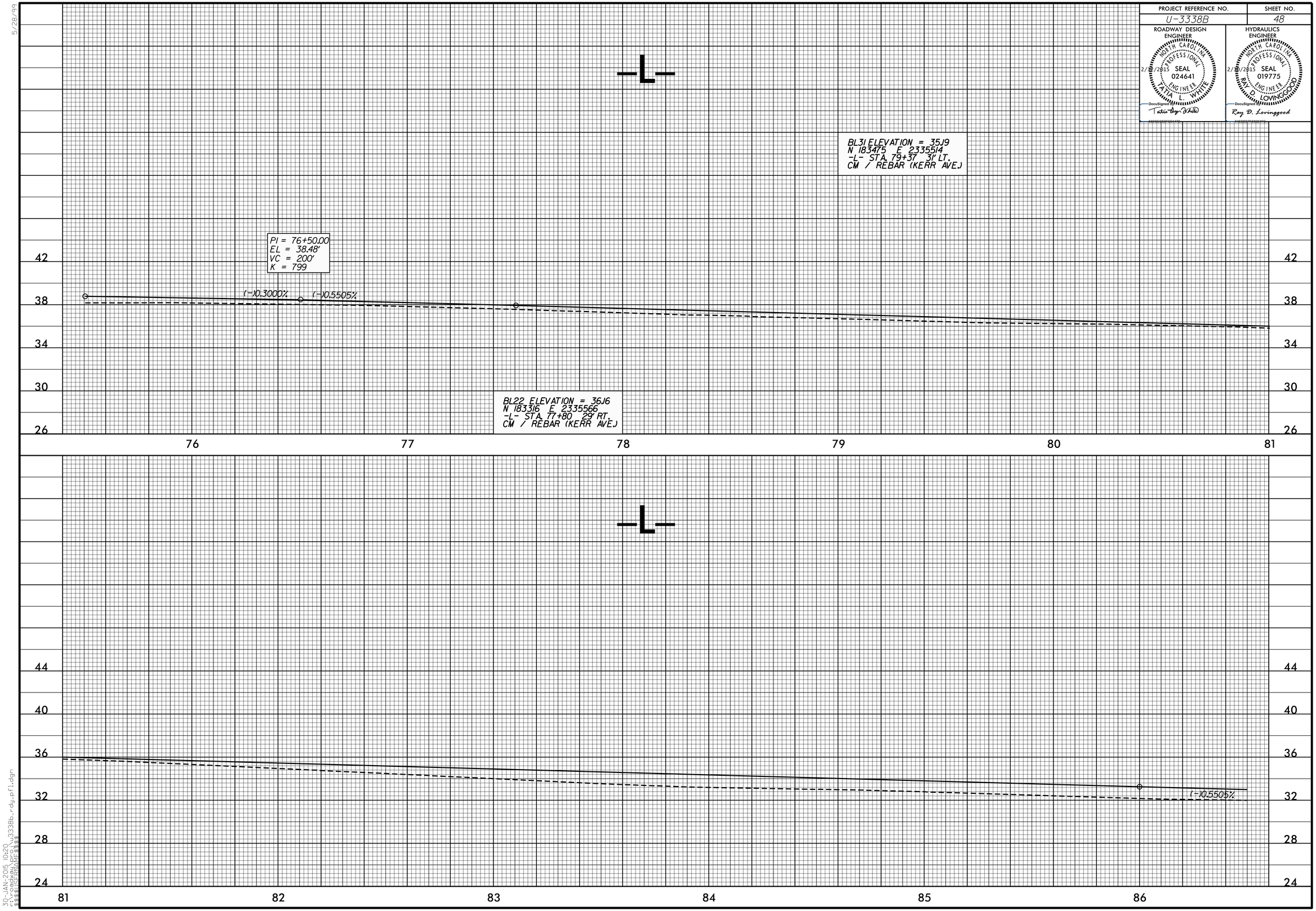
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 48 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/10/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

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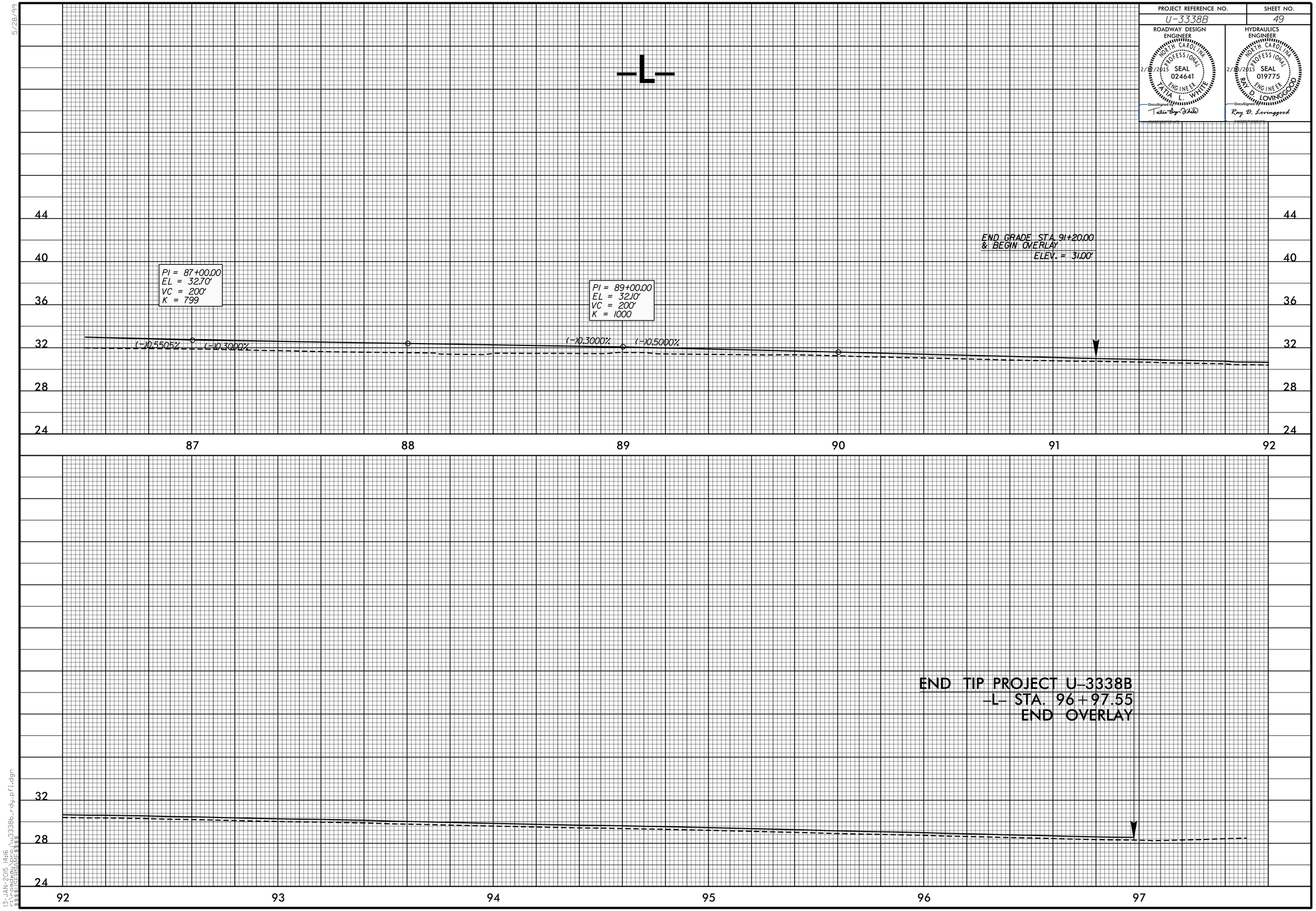
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 49 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/13/2015
DocuSigned Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/13/2015
DocuSigned Ray D. Lovinggood

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| PROJECT REFERENCE NO. | SHEET NO. |
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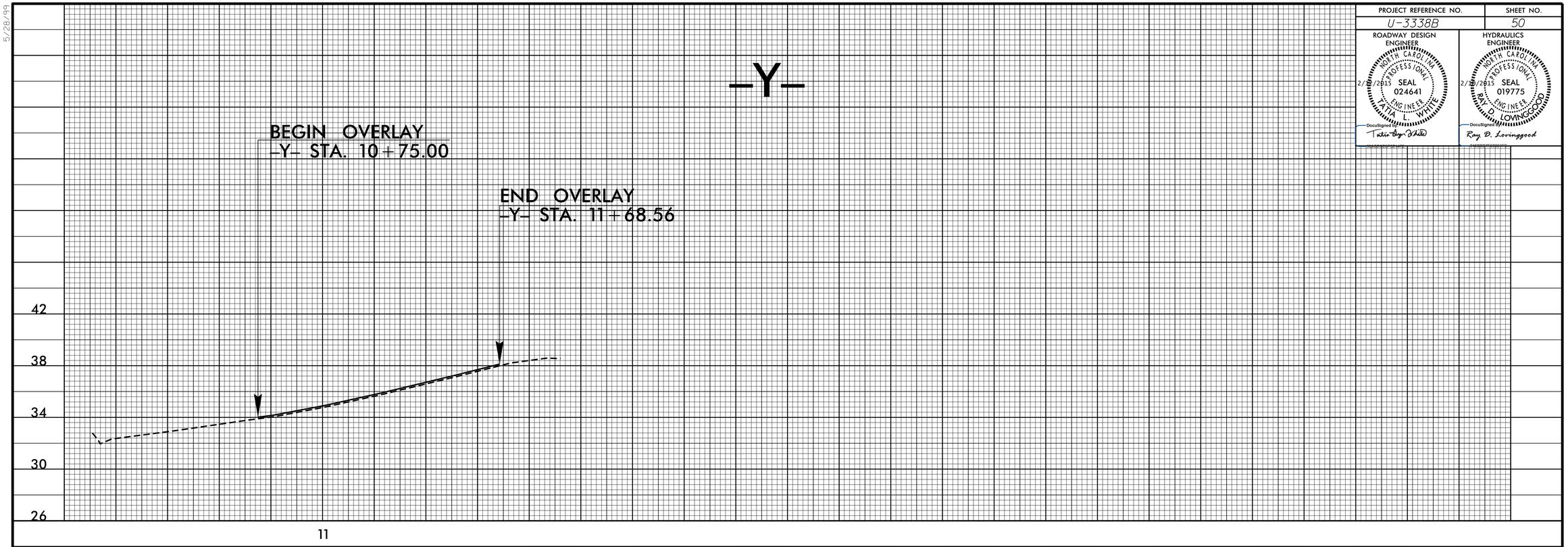
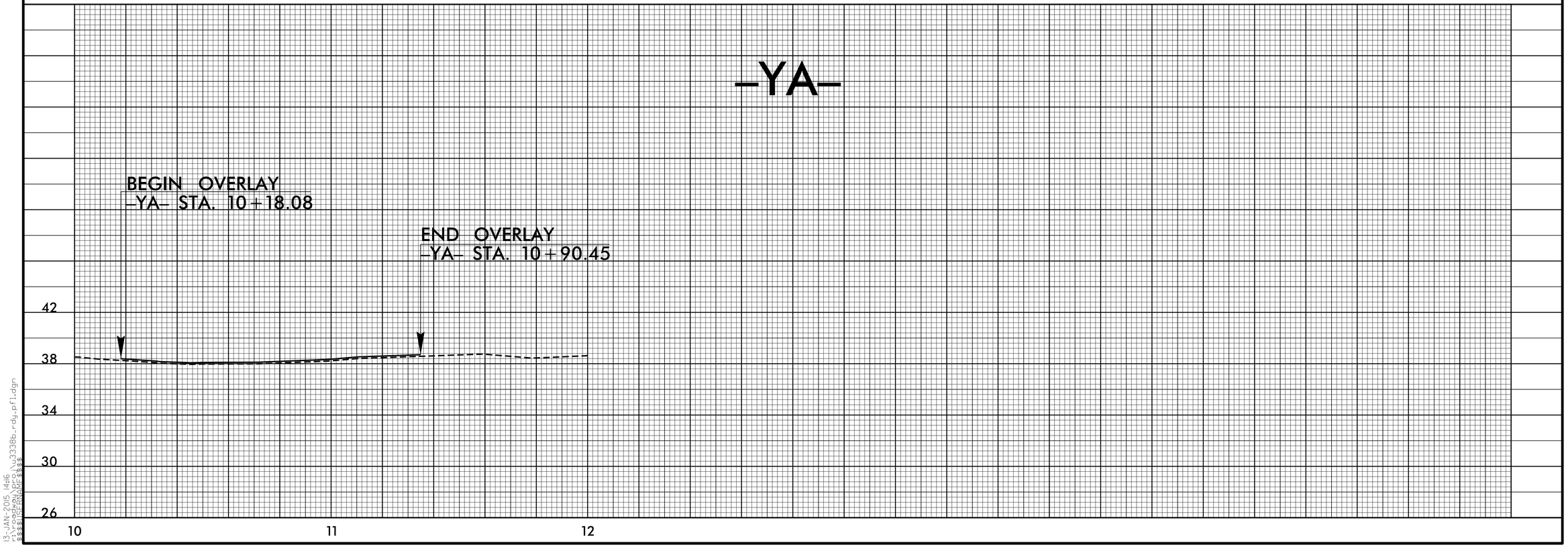
| U-3338B | 50 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/10/2015
DocuSigned Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned Ray D. Lovinggood

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| PROJECT REFERENCE NO. | SHEET NO. |
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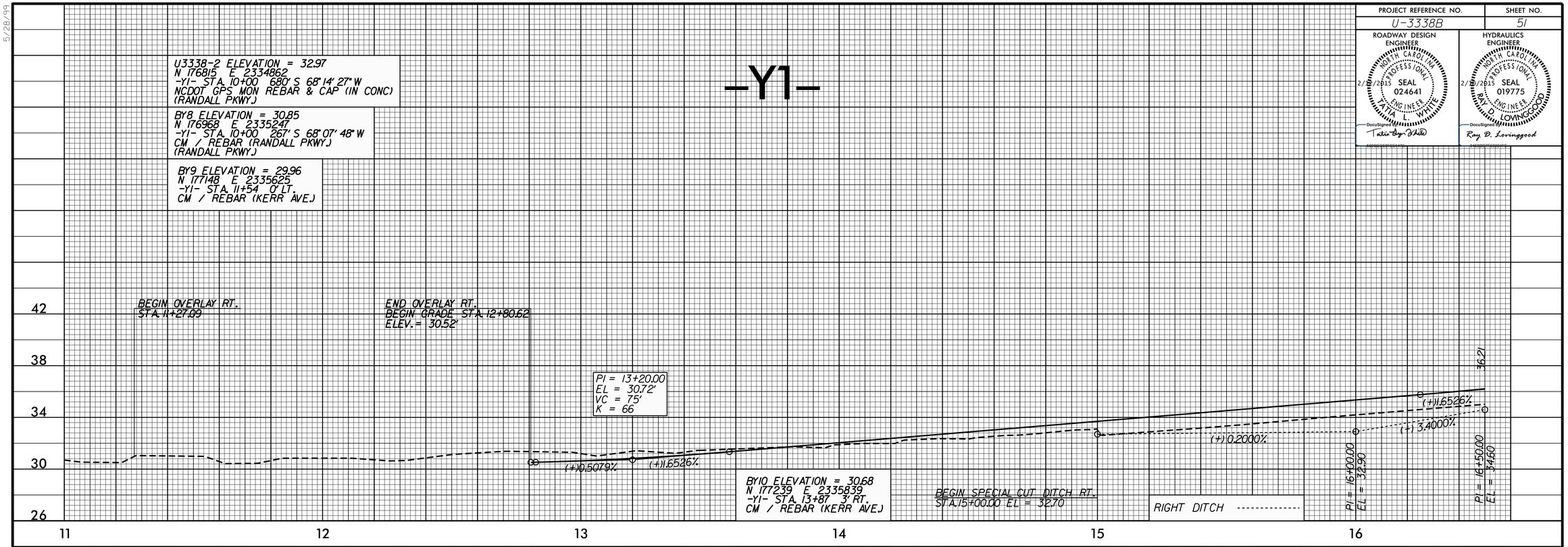
| U-3338B | 51 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/10/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/10/2015
DocuSigned by: Ray D. Lovinggood

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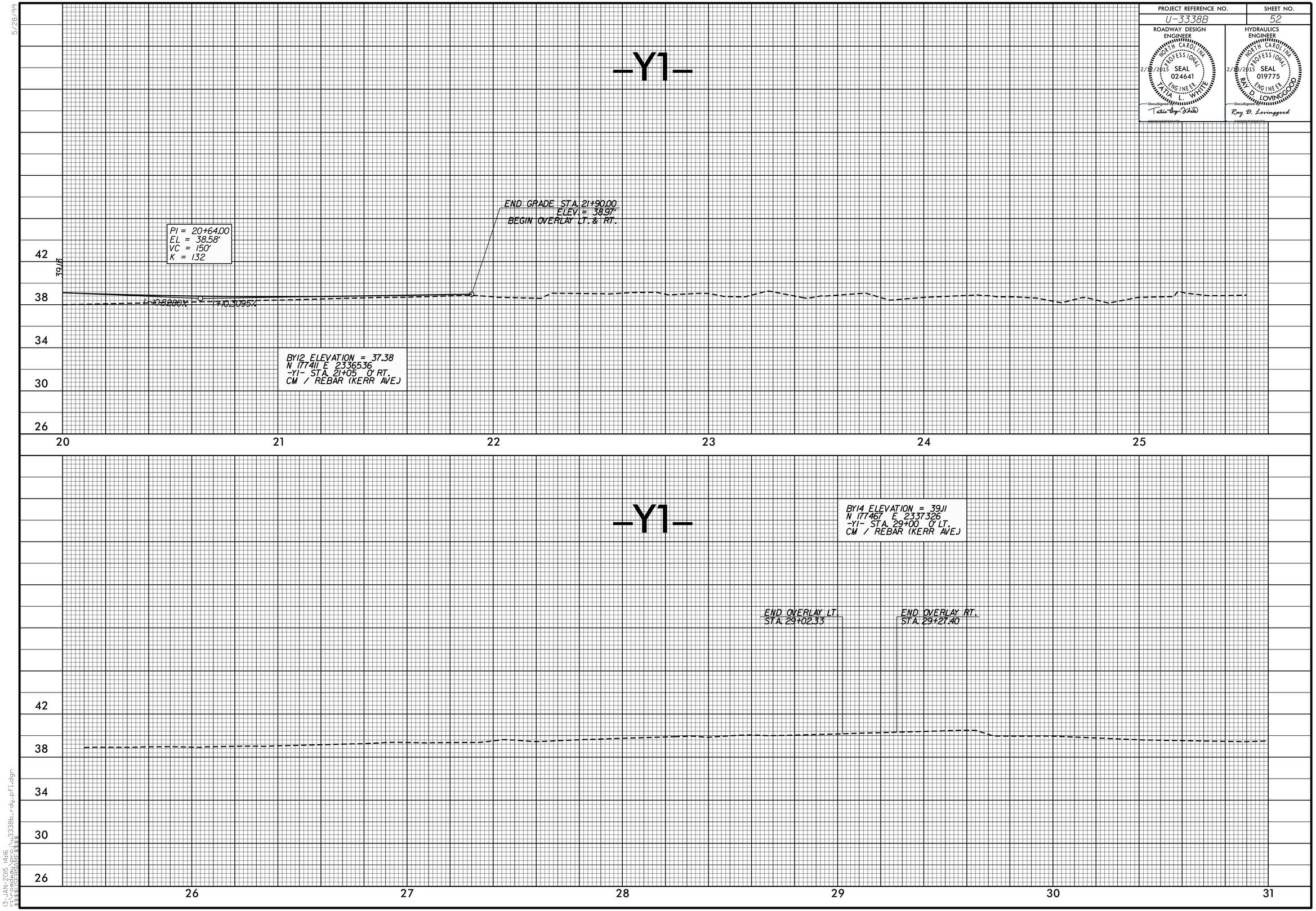
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 52 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/12/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/12/2015
DocuSigned by: Ray D. Lovinggood

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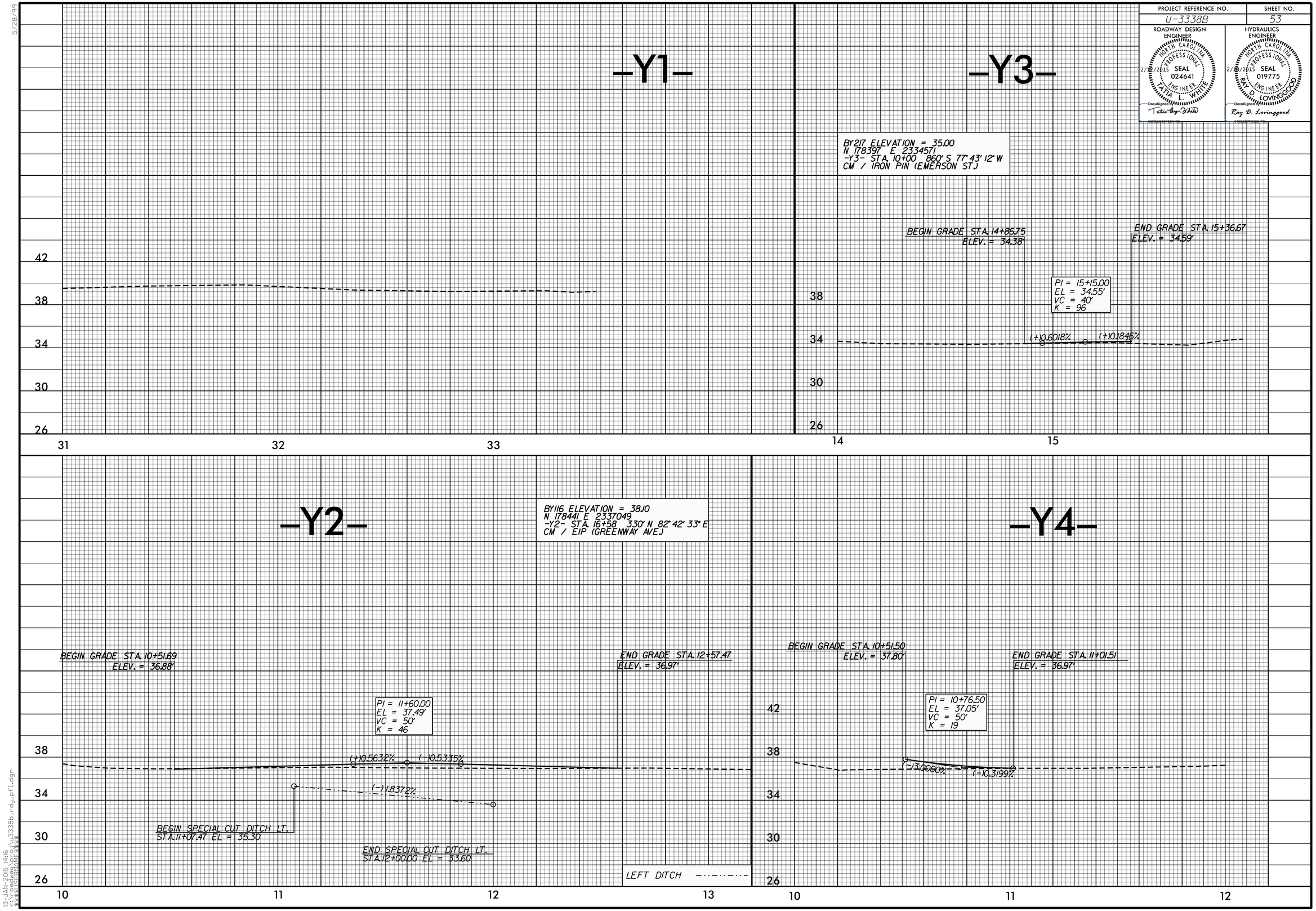
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 53 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/13/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/13/2015
DocuSigned by: Ray D. Lovinggood

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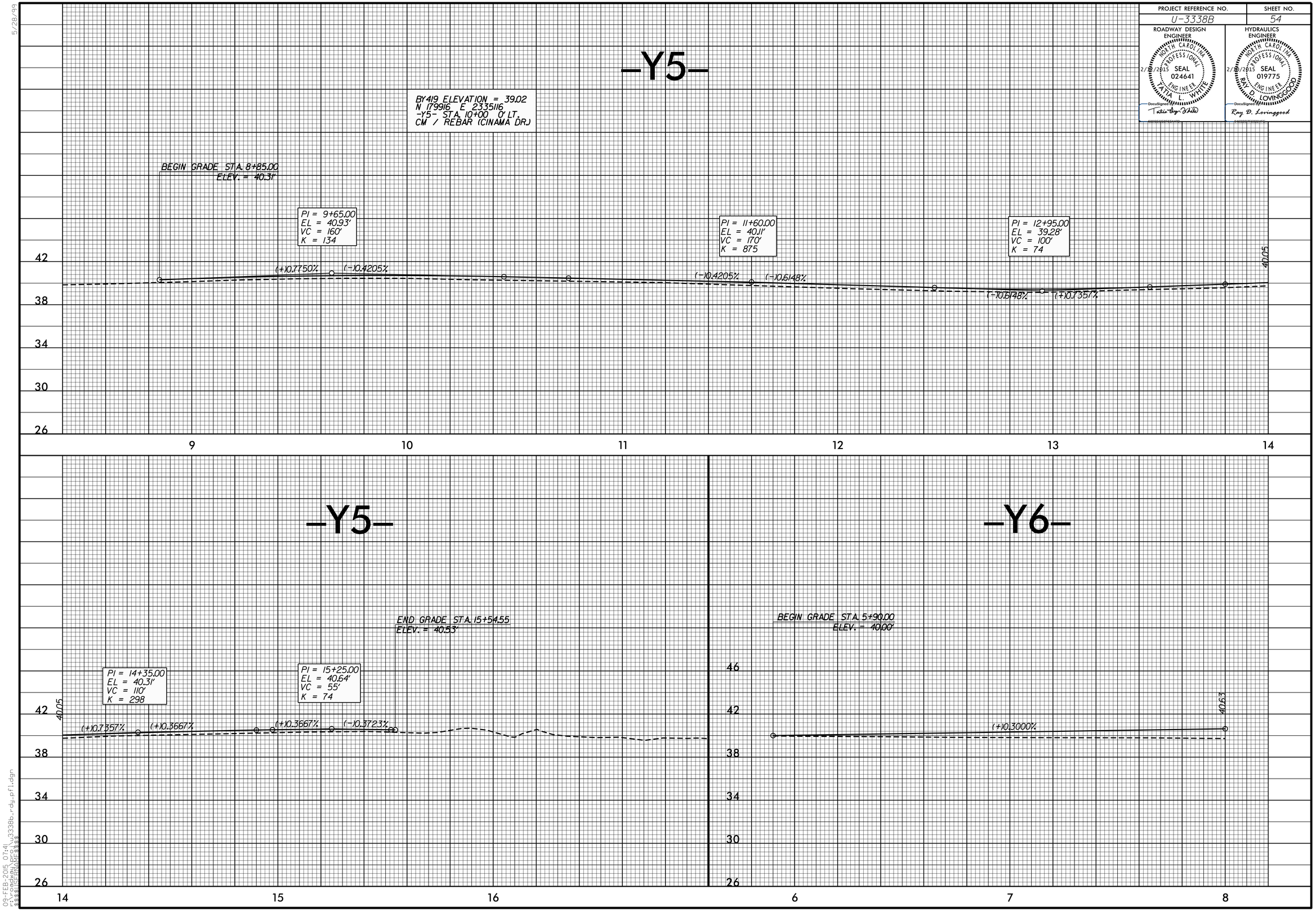
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 54 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/9/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/9/2015
DocuSigned by: Ray D. Lovinggood




5/28/99

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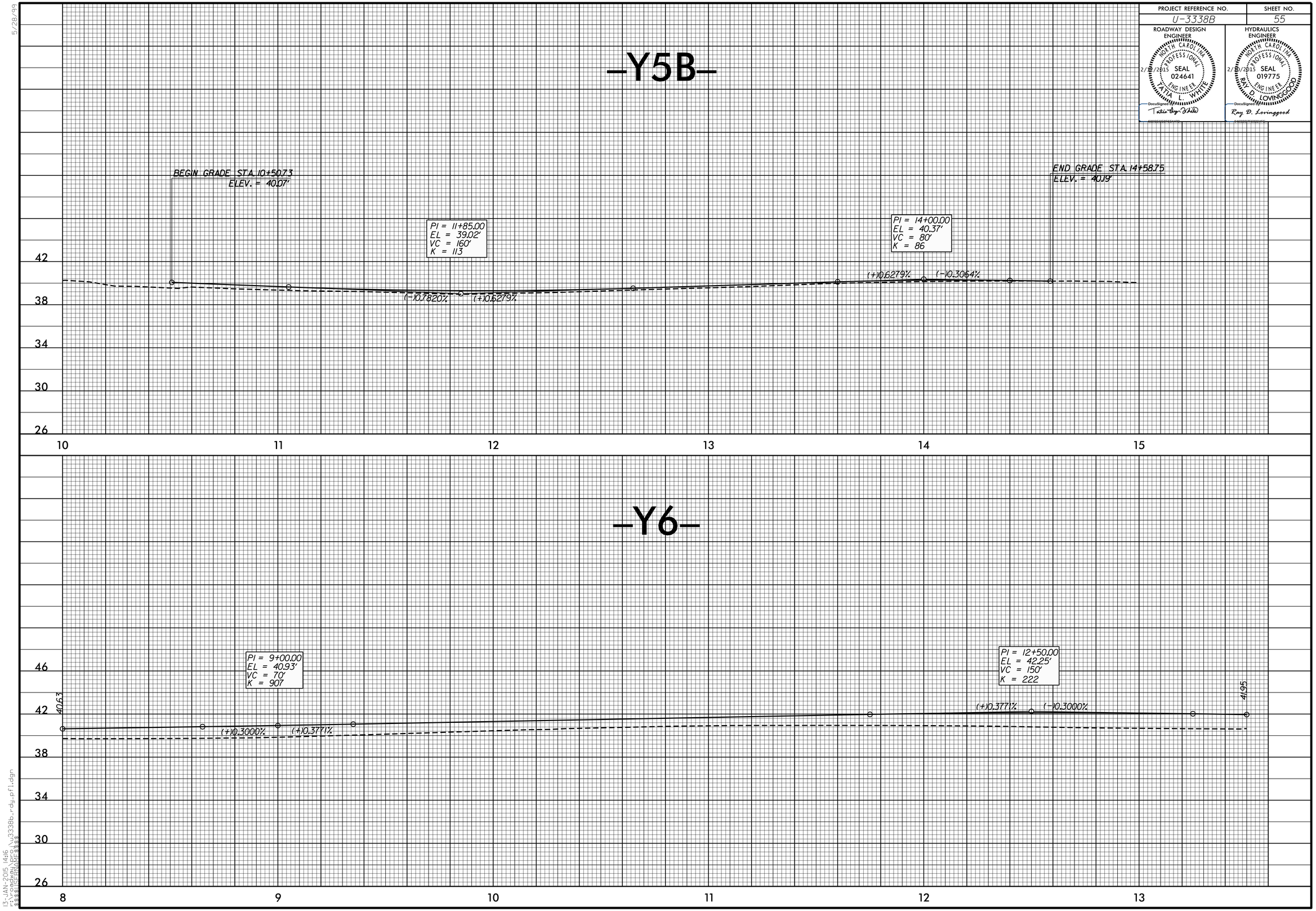
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3338B | 55 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/12/2015
DocuSigned by: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/12/2015
DocuSigned by: Ray D. Lovinggood




5/28/99

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| PROJECT REFERENCE NO. | SHEET NO. |
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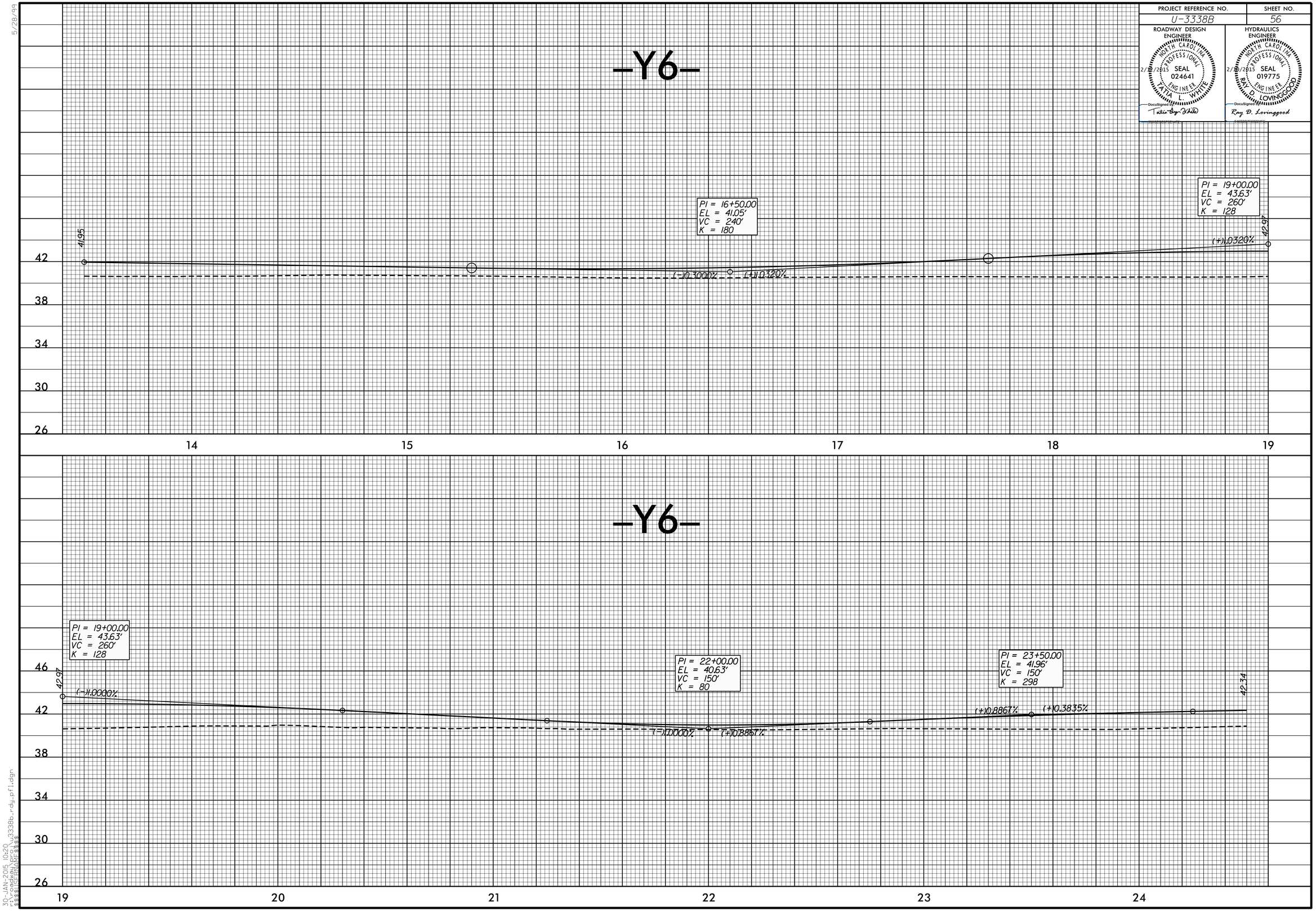
| U-3338B | 56 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/12/2015
DocuSigned: Tatia L. White

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/12/2015
DocuSigned: Ray D. Lovinggood

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| U-3338B | 57 |

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024641 ENGINEER TATIA L. WHITE
2/12/2015
DocuSigned by: Tatia L. White
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HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 019775 ENGINEER RAY D. LOVINGGOOD
2/12/2015
DocuSigned by: Ray D. Lovinggood
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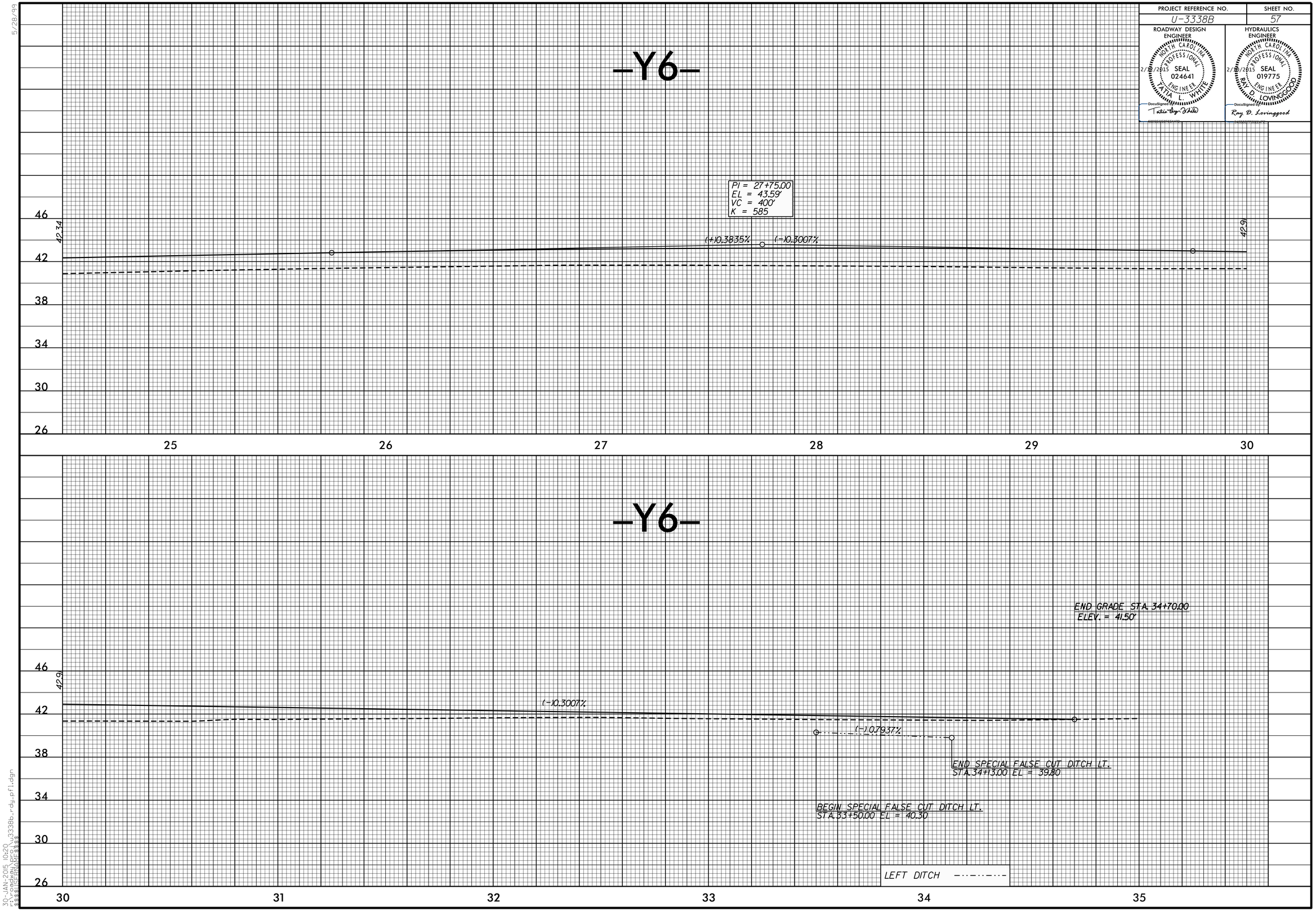


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| U-3338B | 58 |

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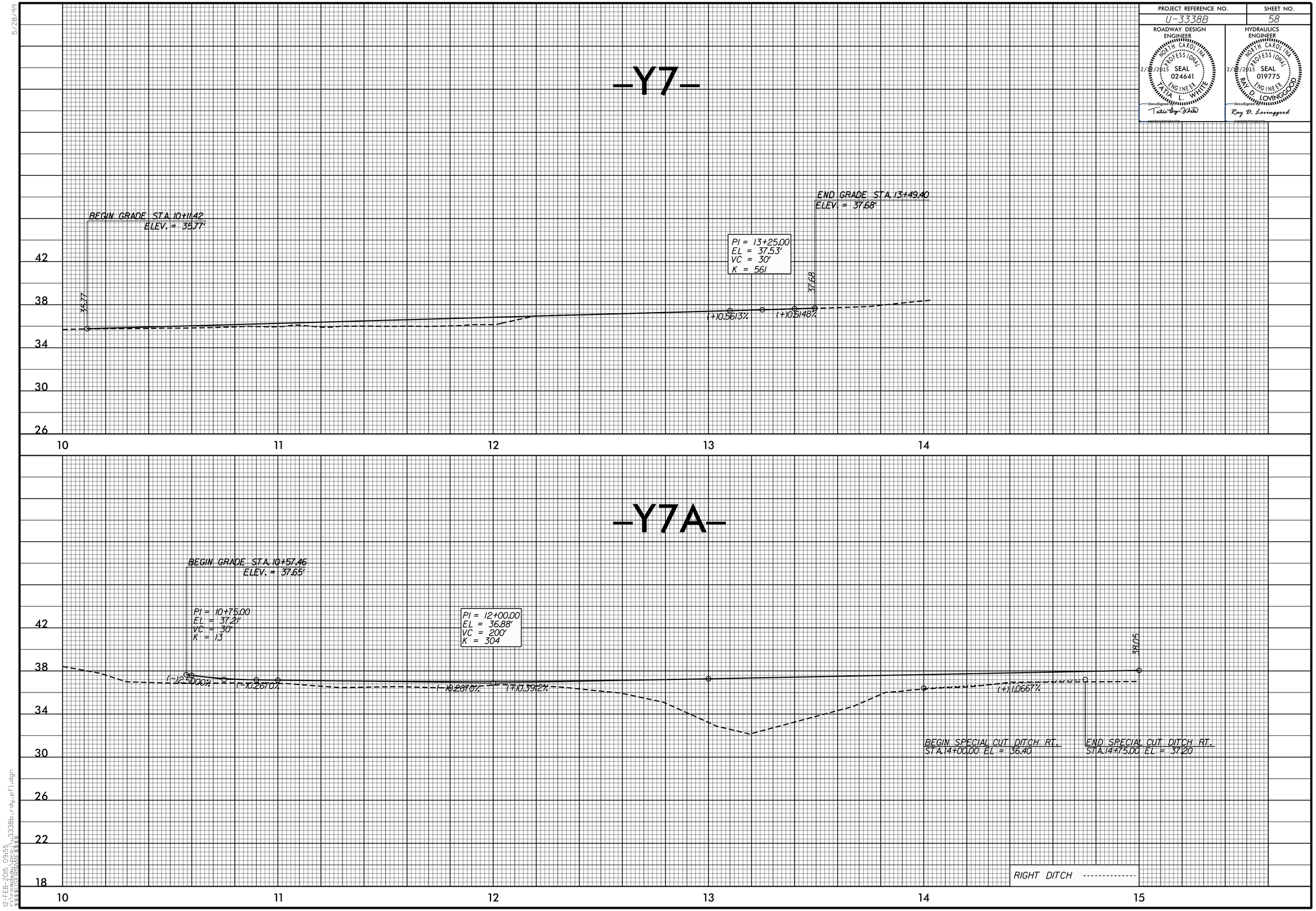


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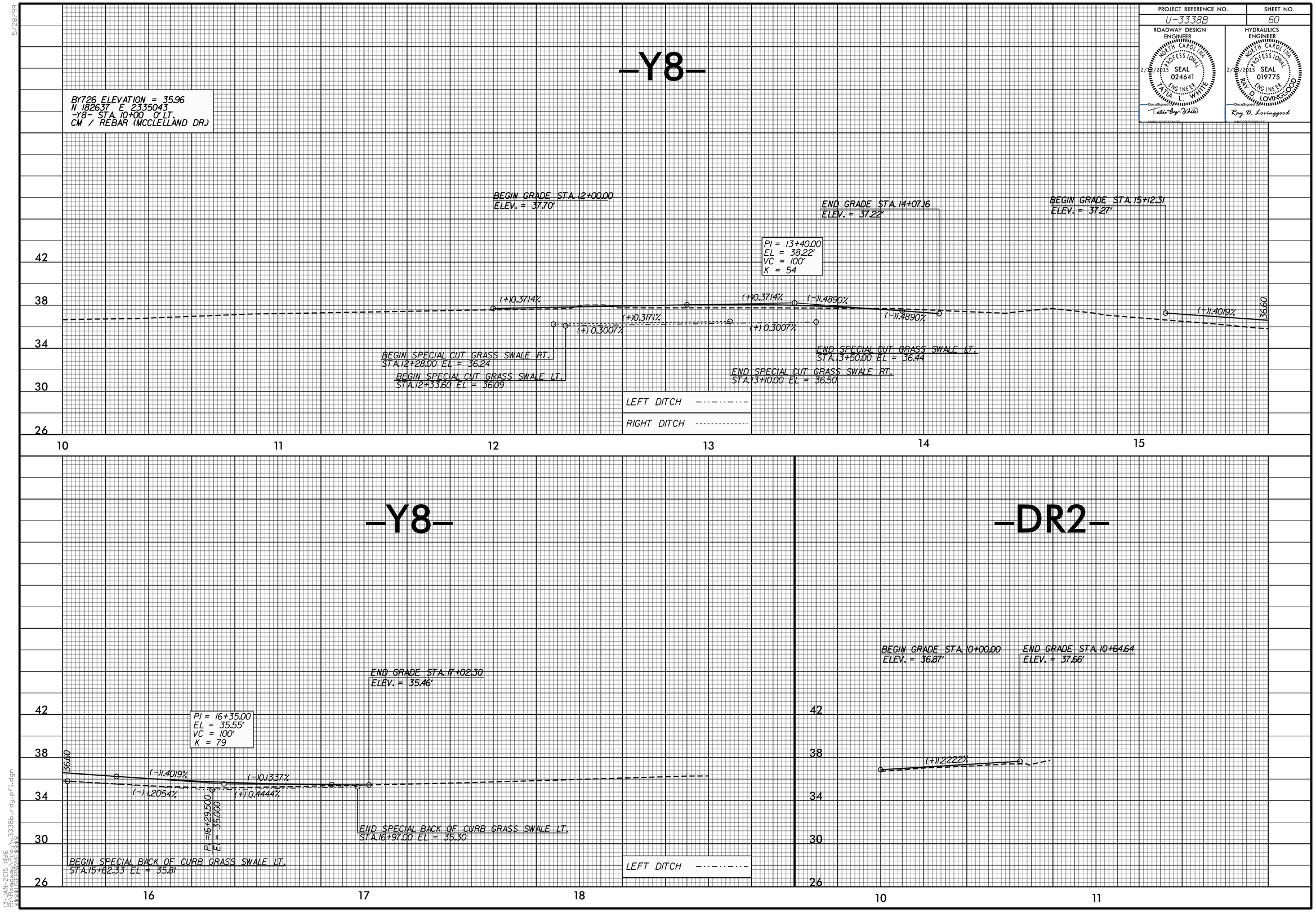


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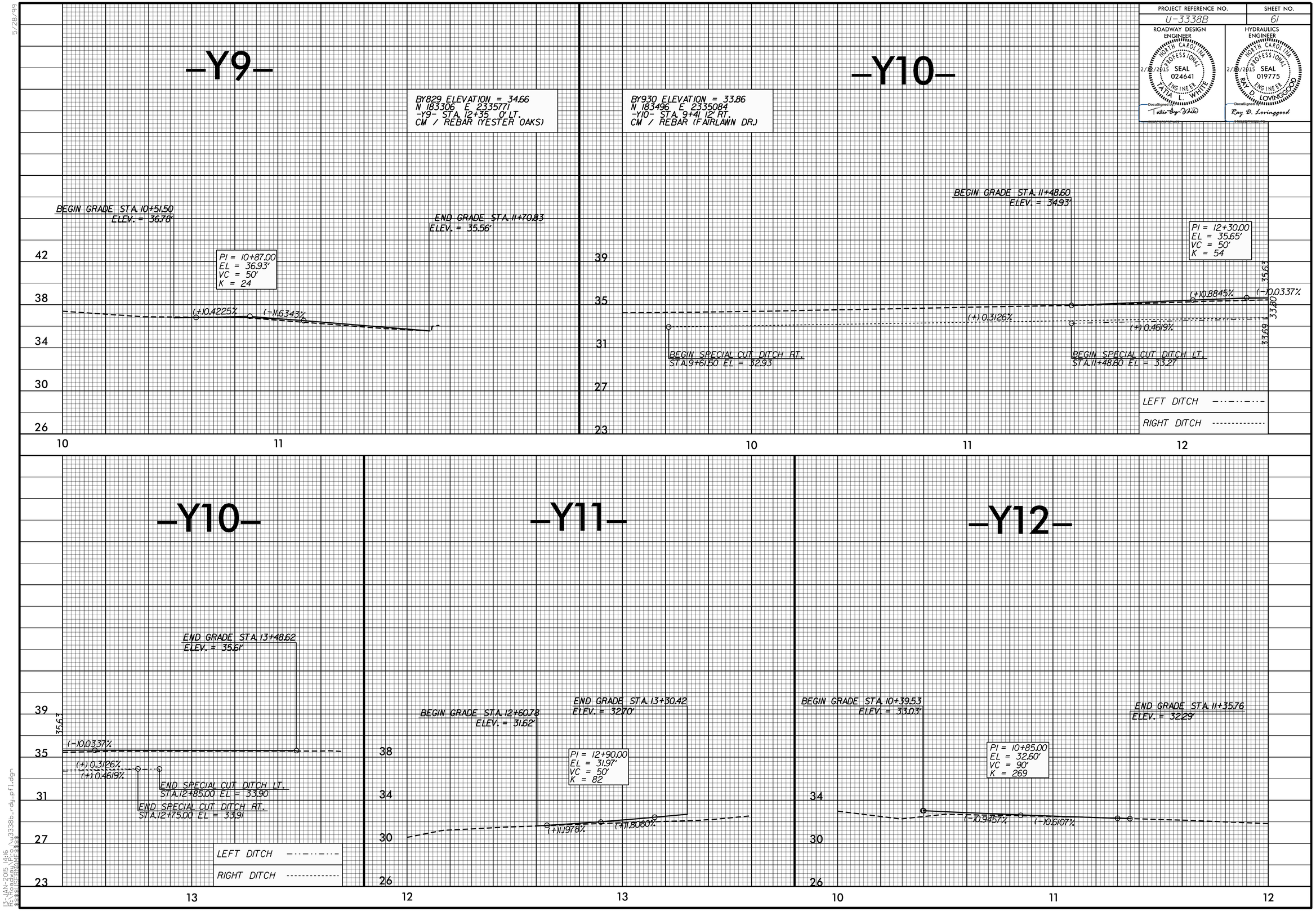


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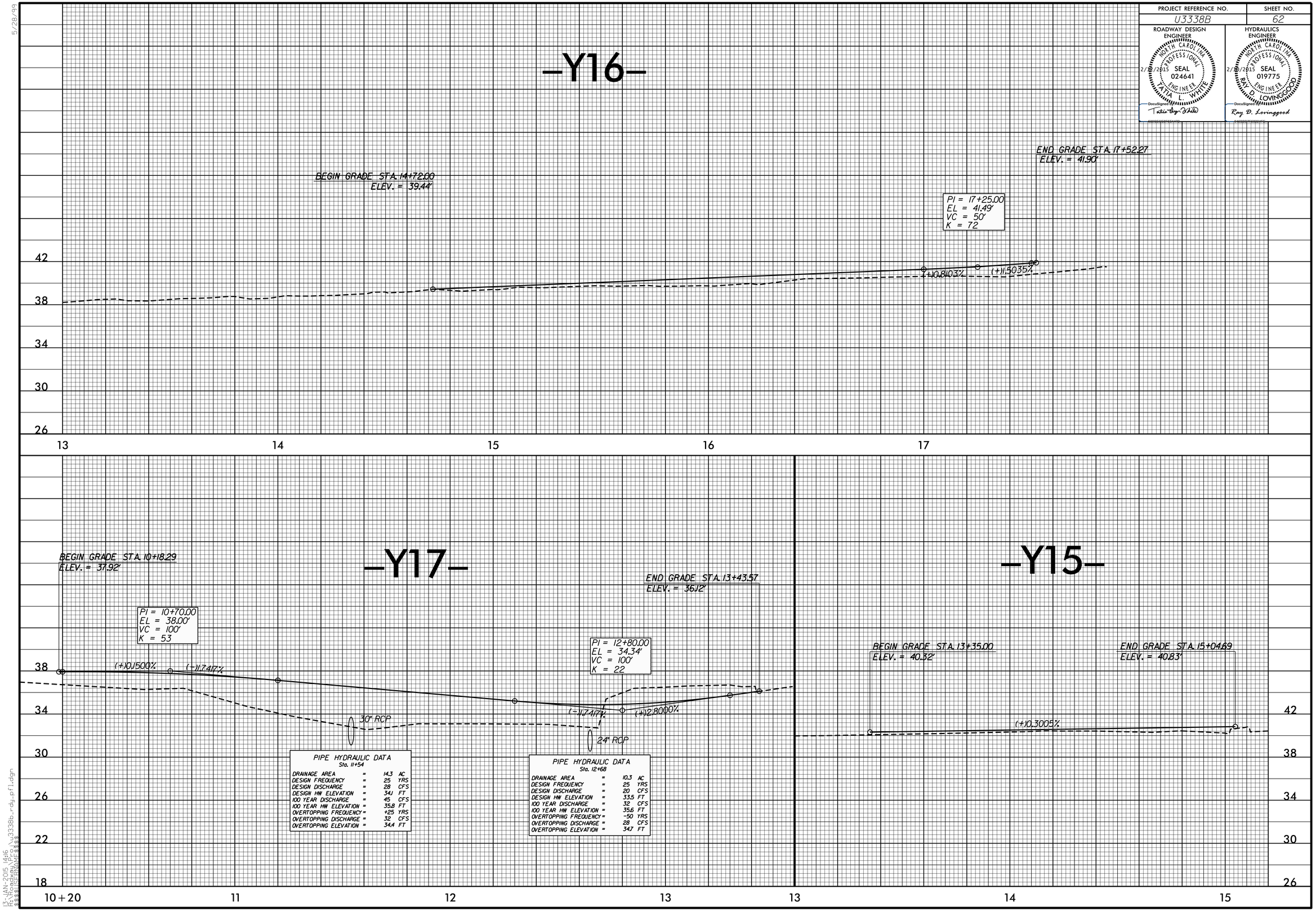


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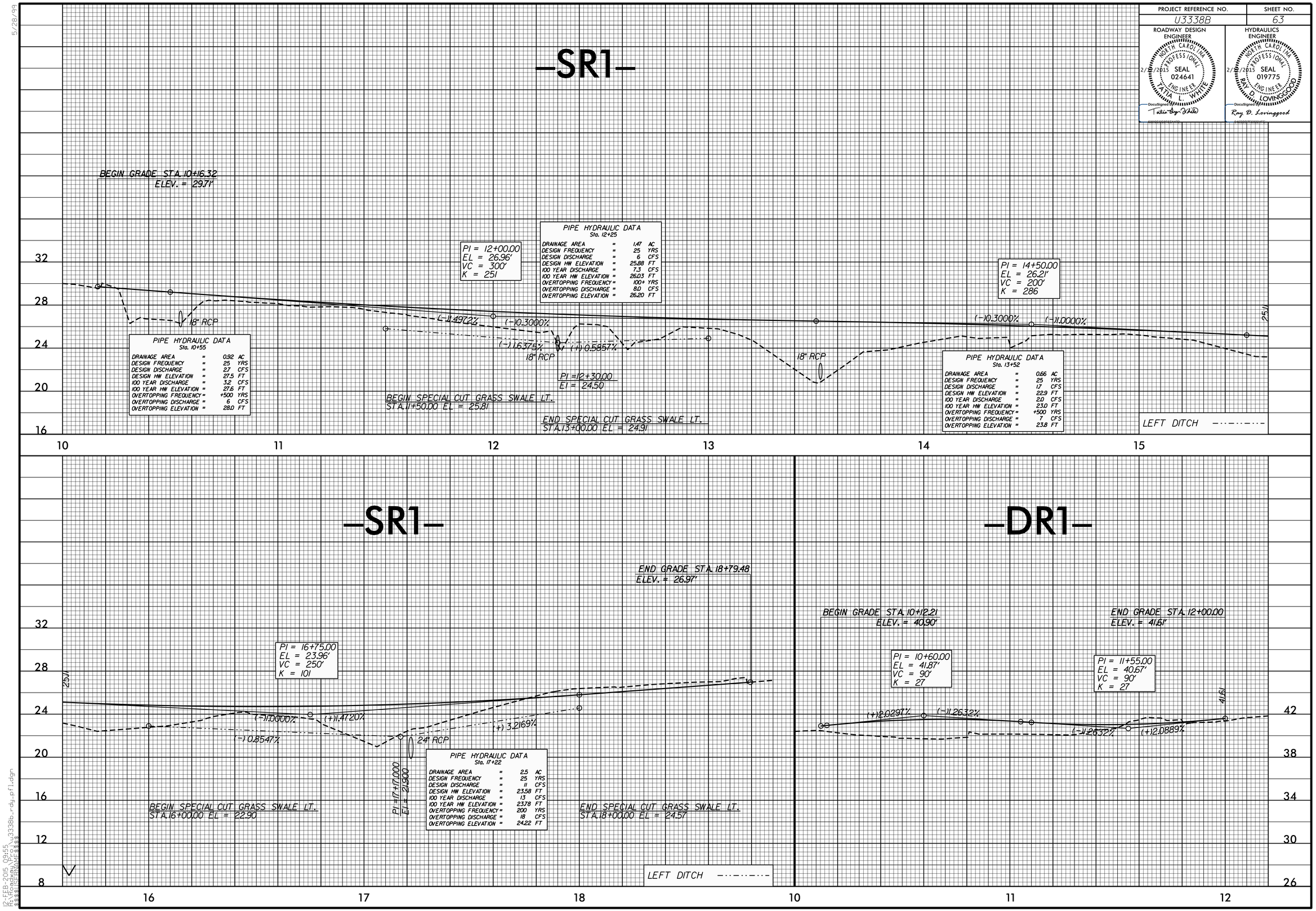


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