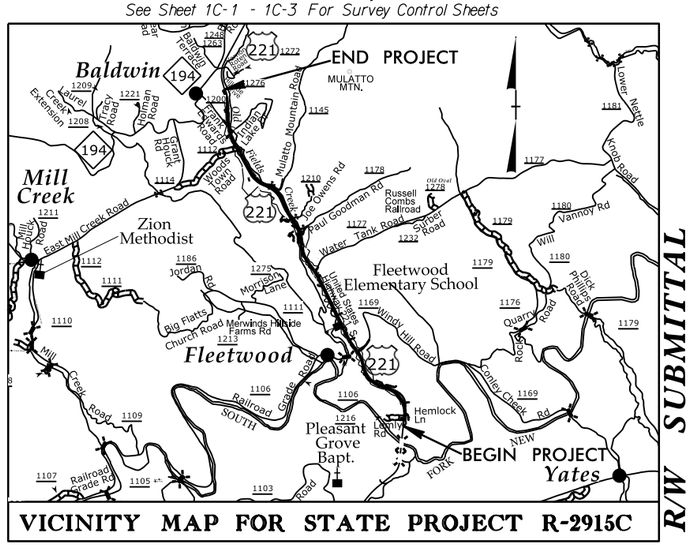
09/08/99

TIP PROJECT: R-2915C

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C-1 - 1C-3 For Survey Control Sheets



VICINITY MAP FOR STATE PROJECT R-2915C

R/W SUBMITTAL

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2915C	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34518.1.4	STP-0221(41)	P.E.
34518.2.3	STP-0221(41)	R/W
34518.2.U3	STP-0221(41)	UTILITIES

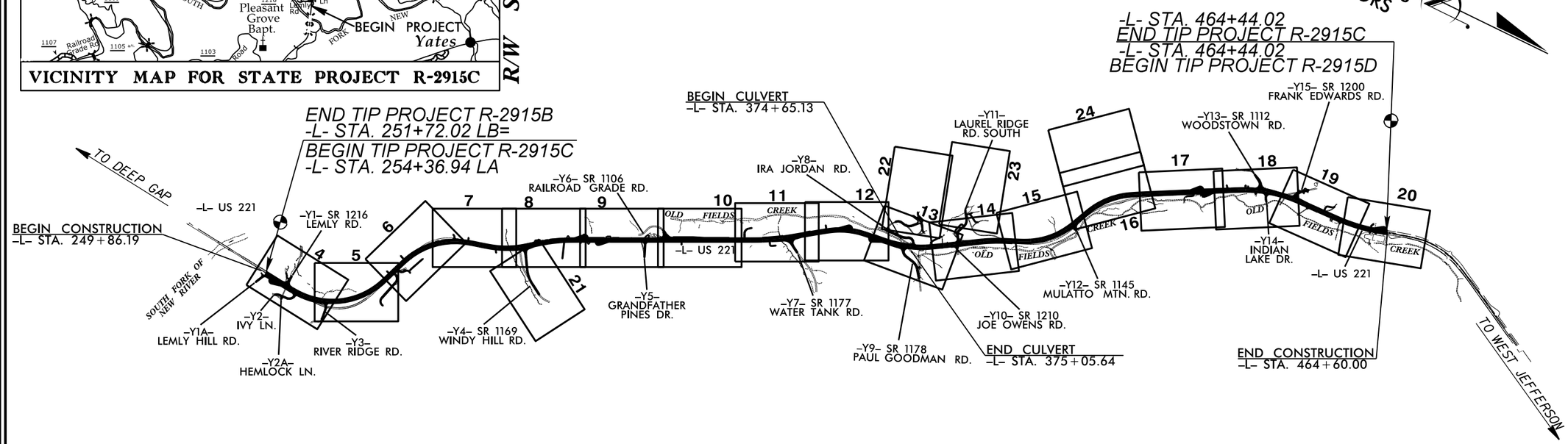
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ASHE COUNTY

LOCATION: US 221 FROM NORTH OF SOUTH FORK NEW RIVER TO SOUTH OF NC 194.

TYPE OF WORK: GRADING, DRAINAGE, PAVING, CULVERTS, AND RETAINING WALLS

NAD 83
CORS



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

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

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

*** DESIGN EXCEPTION REQUIRED FOR MAXIMUM GRADE*

PREPARED FOR
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, NC
PLANS COORDINATED BY:
Brenda L. Moore, PE – Assistant State Roadway Deisgn Engineer (NCDOT)

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

GRAPHIC SCALES

50′ 25′ 0 50′ 100′
PLANS

50′ 25′ 0 50′ 100′
PROFILE (HORIZONTAL)

10′ 5′ 0 10′ 20′
PROFILE (VERTICAL)

DESIGN DATA

ADT 2017 = 12,743
ADT 2037 = 21,029
K = 9 %
D = 60 %
T = 9 % *
V = 60 MPH**
* = (TTST 2% + DUAL 7%)
FUNC CLASS =
RURAL ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2915C	= 3.971 Miles
LENGTH STRUCTURES TIP PROJECT R-2915C	= 0.008 Miles
TOTAL LENGTH TIP PROJECT R-2915C	= 3.979 Miles

Prepared In the Office of:

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
HNTB
343 E. S&K FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
November 21, 2014

LETTING DATE:
November 15, 2016

Brian Eason, PE
PROJECT ENGINEER

Bill Bollman
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

02-DEC-2014 17:09
R:\Roadway\Proj\R-2915C_RDY_TSH.dgn
$$$$USERNAME$$$$

12/05/11

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	1-B

Note: Not to Scale

**S.U.E. = Subsurface Utility Engineering*

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite 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
- Designated U/G Water Line (S.U.E.*)
- 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:

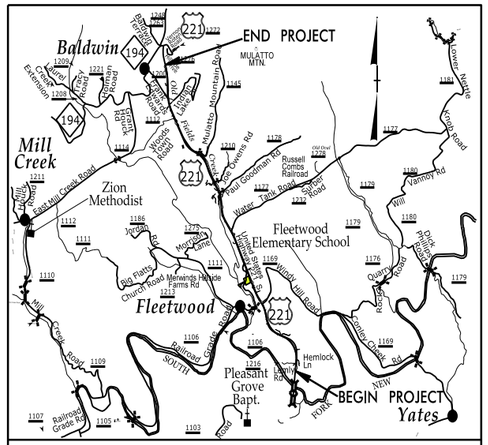
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

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.
34518.1.1	1C-1
Location and Surveys	

SURVEY CONTROL SHEET R-2915C



VICINITY MAP FOR STATE PROJECT R-2915C

BL C

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL56	BL-56	933897.1188	1263605.8128	2878.03	OUTSIDE PROJECT LIMITS	
BL57	BL-57	934099.1246	1263752.0530	2878.93	248+46.66	7.77 LT
BL58	BL-58	934148.1089	1263880.7456	2884.88	248+95.32	7.88 LT
BL59	BL-59	936424.4463	1263916.1781	2937.49	250+49.56	43.14 LT
BL60	BL-60	937238.1188	1264883.2714	3004.10	266+32.87	118.03 RT
BL61	BL-61	937534.2877	1265893.9084	3029.43	269+28.84	106.24 RT
BL62	BL-62	937848.0994	1263463.6362	3073.07	274+33.28	96.50 RT
BL63	BL-63	938845.8861	1262529.7954	3067.68	279+54.97	4.91 RT
BL64	BL-64	938284.2888	1262287.8787	3029.48	286+42.37	48.37 LT
BL65	BL-65	938615.8929	1261924.6635	2995.79	291+87.58	87.74 LT
BL66	BL-66	939498.8481	1261785.9973	2948.98	299+96.96	8.21 RT
BL67	BL-67	939926.8949	1261398.7852	2928.21	305+28.57	66.38 LT
BL68	BL-68	940481.9584	1261028.1858	2906.85	311+96.87	52.21 LT
BL69	BL-69	940931.7492	1260852.5682	2891.31	316+78.18	2.65 RT
R2915B	GPS-R2915-18	941223.4318	1260829.3848	2892.84	320+38.67	78.94 LT
BLC10	BL-C10	941772.4193	1260449.2832	2880.98	326+82.96	8.89 RT
BLC11	BL-C11	942261.2144	1260142.1275	2816.34	331+94.52	44.86 LT
BLC12	BL-C12	942858.2349	1259867.8457	2826.98	338+26.54	41.75 LT
BLC13	BL-C13	943222.4826	1259684.9683	2825.26	342+29.83	37.52 LT
BLC14	BL-C14	943678.8751	1259462.3748	2811.12	347+41.48	45.38 LT
BLC15	BL-C15	944183.2888	1259266.6608	2802.47	352+19.02	7.21 RT
BLC16	BL-C16	944546.4188	1258886.9836	2808.49	357+98.18	47.16 LT
BLC17	BL-C17	945081.1548	1258585.7796	2798.62	363+82.98	98.05 LT
BLC18	BL-C18	945836.8536	1258474.9413	2777.77	371+58.68	33.04 LT
BLC19	BL-C19	946321.3457	1258481.8927	2969.29	376+45.61	35.85 RT
BLC20	BL-C20	946928.2772	1258823.1991	2981.88	383+58.83	11.16 RT
BLC21	BL-C21	947836.1898	1257805.1454	2994.89	394+89.89	2.29 LT
BLC22	BL-C22	948148.3187	1257397.8211	3012.12	397+69.74	69.24 RT
BLC23	BL-C23	948486.0529	1257176.7812	3015.63	401+13.28	88.49 RT
BLC24	BL-C24	948786.8823	1256866.3281	3015.87	404+98.96	69.45 RT
BLC25	BL-C25	948928.4787	1256295.4791	3026.69	410+85.36	43.27 RT
BLC26	BL-C26	949024.8882	1255774.3889	3042.72	415+84.24	32.83 RT
BLC27	BL-C27	950351.1722	1255349.9986	3068.65	428+34.73	51.89 RT
BLC28	BL-C28	951189.6478	1254858.8695	3054.99	436+86.72	16.09 RT
R2915B	GPS-R2915-13	951569.5128	1254826.4658	3052.21	441+85.22	117.52 RT
BL C29	BL-C29	952461.9985	1254618.6151	3064.84	451+18.11	8.91 LT
BLC30	BL-C30	953314.5365	1254587.6431	3074.24	459+71.98	38.58 RT
BLD53	BL-D53	953823.2826	1254599.6867	3074.48	465+41.23	56.84 RT
BLD1	BL-D1	954796.9943	1254266.4138	3096.24	OUTSIDE PROJECT LIMITS	
BLD2	BL-D2	955396.2584	1254561.4334	3104.23	OUTSIDE PROJECT LIMITS	
BLD3	BL-D3	956126.1518	1254943.8413	3117.47	OUTSIDE PROJECT LIMITS	
BLD4	BL-D4	956571.2982	1255187.4388	3125.38	OUTSIDE PROJECT LIMITS	

BYC1

POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
BYC131	BL-C7	939526.8949	1261396.7852	2988.21	OUTSIDE PROJECT LIMITS	
BYC132	BY-C132	940831.1722	1261714.5821	2935.17	12+54.96	101.48 RT
BYC133	BY-C133	940323.4989	1261986.5781	2938.26	18+15.28	16.88 RT
BYC134	BY-C134	940881.8680	1262155.5886	2969.81	20+24.89	16.48 RT
BYC135	BY-C135	940961.6344	1262153.4412	2992.84	OUTSIDE PROJECT LIMITS	

BYC2

POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
BYC236	BY-C236	941232.5836	1260382.7315	2942.73	OUTSIDE PROJECT LIMITS	
BYC237	BY-C237	941784.9531	1260341.2732	2944.48	OUTSIDE PROJECT LIMITS	
BYC238	BY-C238	941816.3655	1260194.6143	2889.53	11+24.29	16.38 LT
BYC239	BY-C239	941992.2263	1260048.6828	3080.53	13+15.87	36.12 LT
BYC240	BY-C240	942281.2144	1260142.1275	3016.34	15+78.27	92.48 LT

BYC3

POINT	DESC.	NORTH	EAST	ELEVATION	Y7 STATION	OFFSET
BYC341		944182.2888	1254288.6888	3003.47	OUTSIDE PROJECT LIMITS	
BYC342	BY-C342	944248.8285	1254328.1852	3008.46	11+72.45	12.84 LT
BYC343	BY-C343	944894.5565	1254656.8887	3017.34	OUTSIDE PROJECT LIMITS	
BYC344	BY-C344	945128.1254	1260134.1974	3024.07	OUTSIDE PROJECT LIMITS	

BYC4

POINT	DESC.	NORTH	EAST	ELEVATION	Y9 STATION	OFFSET
BYC445	BL-C19	946321.3457	1258481.8927	2969.35	12+76.86	219.68 LT
BYC446	GPS-R2915-11	946476.3118	1258539.4520	2961.58	14+15.94	131.84 LT
BYC447	BY-C447	946523.2864	1258772.9117	2977.38	15+82.88	4.18 RT
BYC448	BY-C448	946859.4733	1258976.8454	2986.77	OUTSIDE PROJECT LIMITS	

BYC5

POINT	DESC.	NORTH	EAST	ELEVATION	Y10 STATION	OFFSET
BYC549	BL-C20	948928.2772	1258823.1991	2981.88	18+18.76	5.34 RT
BYC550	GPS-R2915-12	947842.3518	1258133.1788	2978.46	11+72.28	25.21 LT
BYC551	BY-C551	947857.2883	1258416.2633	3086.28	OUTSIDE PROJECT LIMITS	

BYC6

POINT	DESC.	NORTH	EAST	ELEVATION	Y12 STATION	OFFSET
BYC652	BL-C24	948678.8823	1256866.3281	3015.87	11+86.47	69.22 RT
BYC653	BY-C653	948701.6247	1256943.4681	3011.23	OUTSIDE PROJECT LIMITS	
BYC654	BY-C654	948585.6305	1257419.9535	3009.05	OUTSIDE PROJECT LIMITS	
BYC655	BY-C655	948758.5341	1257538.8338	3038.94	OUTSIDE PROJECT LIMITS	

BYC7

POINT	DESC.	NORTH	EAST	ELEVATION	Y13 STATION	OFFSET
BYC756	BY-C756	950824.2212	1254599.4548	3009.61	OUTSIDE PROJECT LIMITS	
BYC757	BY-C757	950798.5774	1254536.8893	3010.72	OUTSIDE PROJECT LIMITS	
BYC758	BY-C758	951277.6424	1254571.8587	3052.97	11+27.27	11.67 LT
BYC759	GPS-R2915-13	951569.5128	1254826.4658	3052.21	OUTSIDE PROJECT LIMITS	

BYC8

POINT	DESC.	NORTH	EAST	ELEVATION	Y15 STATION	OFFSET
BYC868	GPS-R2915-14	952368.7888	1254245.9778	3078.45	OUTSIDE PROJECT LIMITS	
BYC861	GPS-R2915-13	951569.5128	1254826.4658	3052.21	OUTSIDE PROJECT LIMITS	

BMC1 ELEVATION = 3861.28
N 937982 E 1262944
L STATION 278+54.88 112 LEFT
8"SPIKE IN ROOT OF 15" WHITE PINE

BMC2 ELEVATION = 2973.57
N 939614 E 1261815
L STATION 288+76.88 151 RIGHT
8"SPIKE IN ROOT OF 15" WHITE PINE

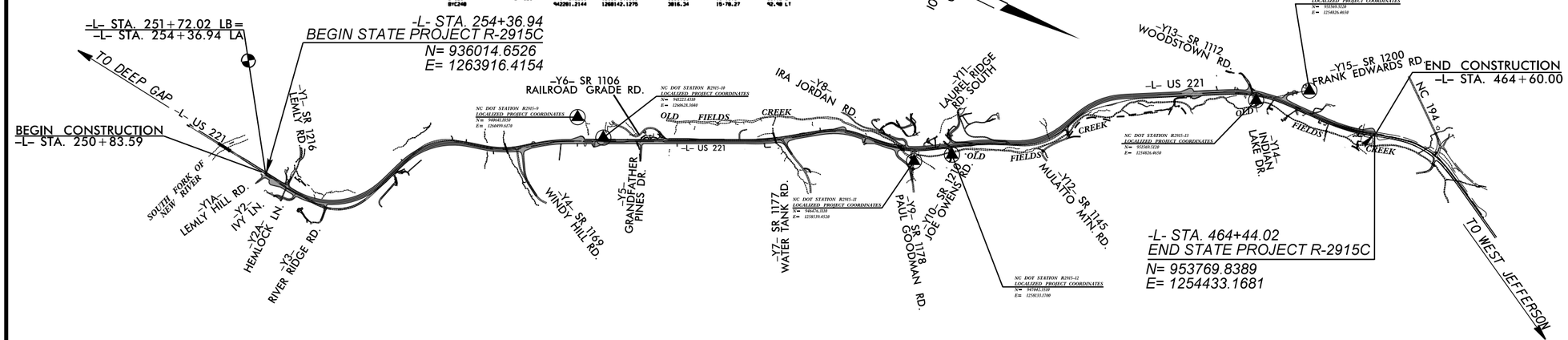
BMC3 ELEVATION = 2905.31
N 941144 E 1260898
L STATION 321+84.88 414 LEFT
CHISELED SQUARE IN NE CORNER OF CONCRETE PAD

BMC4 ELEVATION = 3054.58
N 944985 E 1259389
L STATION 358+81.88 572 RIGHT
8"SPIKE IN ROOT OF 18" CRAB APPLE TREE

BMC5 ELEVATION = 2964.46
N 948347 E 1259021
Y9 STATION 13+88.88 128 LEFT
CHISELED SQUARE IN SW WING WALL OF BRIDGE

BMC6 ELEVATION = 3084.34
N 948532 E 1257341
L STATION 408+24.88 228 RIGHT
CHISELED SQUARE IN NORTH HEAD WALL OF 48x72 PIPE

BMC7 ELEVATION = 3043.48
N 950254 E 1255523
L STATION 426+67.88 150 RIGHT
CHISELED SQUARE IN EAST HEAD WALL OF PRIVATE BRIDGE



NC DOT STATION R2915-9
LOCALIZED PROJECT COORDINATES
N= 940641.1850
E= 1260499.4470

NC DOT STATION R2915-10
LOCALIZED PROJECT COORDINATES
N= 940223.8108
E= 1260628.3040

NC DOT STATION R2915-11
LOCALIZED PROJECT COORDINATES
N= 946476.3118
E= 1258539.4520

NC DOT STATION R2915-12
LOCALIZED PROJECT COORDINATES
N= 947842.3518
E= 1258133.1788

NC DOT STATION R2915-13
LOCALIZED PROJECT COORDINATES
N= 951569.5128
E= 1254826.4658

NC DOT STATION R2915-14
LOCALIZED PROJECT COORDINATES
N= 952368.7888
E= 1254245.9778

NC DOT STATION R2915-15
LOCALIZED PROJECT COORDINATES
N= 953769.8389
E= 1254826.4658

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R2915-15"
WITH NAD 83/CORS STATE PLANE GRID COORDINATES OF
NORTHING: 954880.7810(ft) EASTING: 1254012.2870(ft)
ELEVATION: 3097.5210(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991292
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R2915-15" TO -L- STATION 254+36.94 IS
S 27°41'53" E 21307.8051
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/CORS 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:
HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/

THE FILES TO BE FOUND ARE AS FOLLOWS:
R2915C_LS_GPSCALIB.HTML
R2915C_LS_WGS84.TXT
R2915C_LS_LOCAL.TXT
R2915C_LS_CONTROL.TXT

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

◆ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

6/2/99

02-DEC-2014 17:10
R:\Roadway\Proj\34518_R2915c_ls_1C_1.dgn
$$USERNAME$$

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
34518.1.1	1C-2
Location and Surveys	

SURVEY CONTROL SHEET R–2915C

GPS Calibration Report

Project: r2915c.vrtcle

JOB Number	[illegible]		
User name	rbrasser	Date & Time	[illegible]
Coordinate System	US State Plane 1983	Zone	North Carolina 3200
Horizontal Datum	NAD_1983 (Conus)		
Vertical Datum		Geoid Model	GEOID03
Coordinate Units	US survey feet		
Distance Units	US survey feet		
Height Units	US survey feet		

CONTROL POINT INFORMATION

Localized control

Latitude	N/A
Longitude	N/A
NH Scale Factor	N/A
Height	N/A

The North Carolina Department of Transportation uses a Localized Coordinate System which is not equivalent to the North Carolina State Plane Grid from which it is derived.
Please take care in utilizing these coordinates or at minimum conversion of the input data.
Data Not Corrected for the Local Best Fitting Ellipsoid (LBF) GPS datum transformation layer.

Datum Transformation Parameters

Datum Transformation computation not requested

Updated Default Projection (Transverse Mercator) Definition

Updated default projection not requested

Horizontal Adjustment Parameters

Northing coordinate of origin point	[illegible]
Easting coordinate of origin point	[illegible]
Rotation about the origin point	[illegible]
Translation north	[illegible]
Translation east	[illegible]
Scale factor	[illegible]

Vertical Adjustment Parameters

Northing coordinate of origin point	[illegible]
Easting coordinate of origin point	[illegible]
Vertical translation at origin	[illegible]
Slope north	[illegible]
Slope east	[illegible]

Geoid Model Definition

GEOID03

Residual Differences Between GPS (WGS84) And Local Coordinates

Summary

	Maximum error	Root Mean Square error	Point
Horizontal	[illegible]	[illegible]	[illegible]
Vertical	[illegible]	[illegible]	[illegible]
Three dimensional	[illegible]	[illegible]	[illegible]

Point Residuals

WGS84 Coordinates			Calculated point FOR DISPLAY ONLY			Local Coordinates		
Point	[illegible]		Northing	[illegible]		Point	[illegible]	
Latitude	[illegible]		Easting	[illegible]		Northing	[illegible]	
Longitude	[illegible]		Elevation	[illegible]		Easting	[illegible]	
Height	[illegible]		Horizontal error	[illegible]		Elevation	[illegible]	
			Vertical error	[illegible]		Method	Horizontal Vert	
			3D error	[illegible]		Quality	Survey quality	
Point	[illegible]		Northing	[illegible]		Point	[illegible]	
Latitude	[illegible]		Easting	[illegible]		Northing	[illegible]	
Longitude	[illegible]		Elevation	[illegible]		Easting	[illegible]	
Height	[illegible]		Horizontal error	[illegible]		Elevation	[illegible]	
			Vertical error	[illegible]		Method	Horizontal Vert	
			3D error	[illegible]		Quality	Survey quality	
Point	[illegible]		Northing	[illegible]		Point	[illegible]	
Latitude	[illegible]		Easting	[illegible]		Northing	[illegible]	
Longitude	[illegible]		Elevation	[illegible]		Easting	[illegible]	
Height	[illegible]		Horizontal error	[illegible]		Elevation	[illegible]	
			Vertical error	[illegible]		Method	Horizontal Vert	
			3D error	[illegible]		Quality	Survey quality	
Point	[illegible]		Northing	[illegible]		Point	[illegible]	
Latitude	[illegible]		Easting	[illegible]		Northing	[illegible]	
Longitude	[illegible]		Elevation	[illegible]		Easting	[illegible]	
Height	[illegible]		Horizontal error	[illegible]		Elevation	[illegible]	
			Vertical error	[illegible]		Method	Horizontal Vert	
			3D error	[illegible]		Quality	Survey quality	
Point	[illegible]		Northing	[illegible]		Point	[illegible]	
Latitude	[illegible]		Easting	[illegible]		Northing	[illegible]	
Longitude	[illegible]		Elevation	[illegible]		Easting	[illegible]	
Height	[illegible]		Horizontal error	[illegible]		Elevation	[illegible]	
			Vertical error	[illegible]		Method	Horizontal Vert	
			3D error	[illegible]		Quality	Survey quality	
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Latitude	[illegible]		Easting	[illegible]		Northing	[illegible]	
Longitude	[illegible]		Elevation	[illegible]		Easting	[illegible]	
Height	[illegible]		Horizontal error	[illegible]		Elevation	[illegible]	
			Vertical error	[illegible]		Method	Horizontal Vert	
			3D error	[illegible]		Quality	Survey quality	
Point	[illegible]		Northing	[illegible]		Point	[illegible]	
Latitude	[illegible]		Easting	[illegible]		Northing	[illegible]	

Latitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal error	[illegible]	Elevation	[illegible]
		Vertical error	[illegible]	Method	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality
Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
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Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal error	[illegible]	Elevation	[illegible]
		Vertical error	[illegible]	Method	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality
Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal error	[illegible]	Elevation	[illegible]
		Vertical error	[illegible]	Method	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality
Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal error	[illegible]	Elevation	[illegible]
		Vertical error	[illegible]	Method	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality
Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal error	[illegible]	Elevation	[illegible]
		Vertical error	[illegible]	Method	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality
Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal error	[illegible]	Elevation	[illegible]
		Vertical error	[illegible]	Method	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality
Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal error	[illegible]	Elevation	[illegible]
		Vertical error	[illegible]	Method	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality
Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal error	[illegible]	Elevation	[illegible]
		Vertical error	[illegible]	Method	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality
Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "R2915-15"
WITH NAD 83/CORS STATE PLANE GRID COORDINATES OF
NORTHING: 954880.7810(ft) EASTING: 1254012.2870(ft)
ELEVATION: 3097.5210(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.99991292
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"R2915-15" TO -L- STATION 254+36.94 IS
S 27°41'53" E 21307.8051
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. *THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/95 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE 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:*
HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/

THE FILES TO BE FOUND ARE AS FOLLOWS:
R2915C_LS_GPSCALIB.HTML
R2915C_LS_WGS84.TXT
R2915C_LS_LOCAL.TXT
R2915C_LS_CONTROL.TXT

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

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

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PROJECT REFERENCE NO.	SHEET NO.
34518.1.1	1C-3
Location and Surveys	

SURVEY CONTROL SHEET R–2915C

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Height	[illegible]	Horizontal	[illegible]	Elevation	[illegible]
		Vertical	[illegible]	Ellipsoid	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality

Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal	[illegible]	Elevation	[illegible]
		Vertical	[illegible]	Ellipsoid	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality

Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal	[illegible]	Elevation	[illegible]
		Vertical	[illegible]	Ellipsoid	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality

Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Latitude	[illegible]	Horizontal	[illegible]	Elevation	[illegible]
		Vertical	[illegible]	Ellipsoid	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality

Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal	[illegible]	Elevation	[illegible]
		Vertical	[illegible]	Ellipsoid	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality

Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Latitude	[illegible]	Horizontal	[illegible]	Elevation	[illegible]
		Vertical	[illegible]	Ellipsoid	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality

Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal	[illegible]	Elevation	[illegible]
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		3D error	[illegible]	Quality	Survey quality

Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal	[illegible]	Elevation	[illegible]
		Vertical	[illegible]	Ellipsoid	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality

Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal	[illegible]	Elevation	[illegible]
		Vertical	[illegible]	Ellipsoid	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality

Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]
Longitude	[illegible]	Elevation	[illegible]	Easting	[illegible]
Height	[illegible]	Horizontal	[illegible]	Elevation	[illegible]
		Vertical	[illegible]	Ellipsoid	Horizontal Vert
		3D error	[illegible]	Quality	Survey quality

Point	[illegible]	Northing	[illegible]	Point [illegible] Local	
Latitude	[illegible]	Easting	[illegible]	Northing	[illegible]

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
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NCDOT FOR MONUMENT "R2915-15"
WITH NAD 83/CORS STATE PLANE GRID COORDINATES OF
NORTHING: 954880.7810(ft) EASTING: 1254012.2870(ft)
ELEVATION: 3097.5210(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
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LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"R2915-15" TO -L- STATION 254+36.94 IS
S 27°41'53" E 21307.8051
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

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   R2915C_LS_GPSCALIB.HTML
   R2915C_LS_WGS84.TXT
   R2915C_LS_LOCAL.TXT
   R2915C_LS_CONTROL.TXT

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  PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
  SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

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PRELIMINARY PAVEMENT DESIGN SCHEDULE

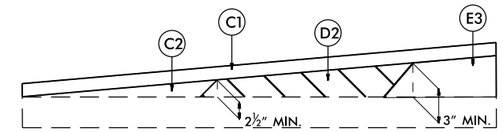
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J2	PROP. 10″ AGGREGATE BASE COURSE.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2″ IN DEPTH.	K	PROP. 8″ LIME AT 20 LBS. PER SQ. YD. OR 7″ CEMENT AT 55 LBS. PER SQ. YD.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R1	2′-9″ CONCRETE CURB AND GUTTER.
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	SHOULDER BERM GUTTER.
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R3	EXPRESSWAY GUTTER.
E2	PROP. APPROX. 5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	T	EARTH MATERIAL.
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.
J1	PROP. 6″ AGGREGATE BASE COURSE.	W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL No. 1)
		W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL No. 2)

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

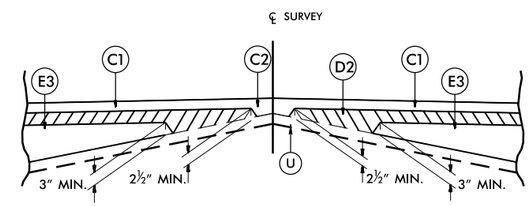
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

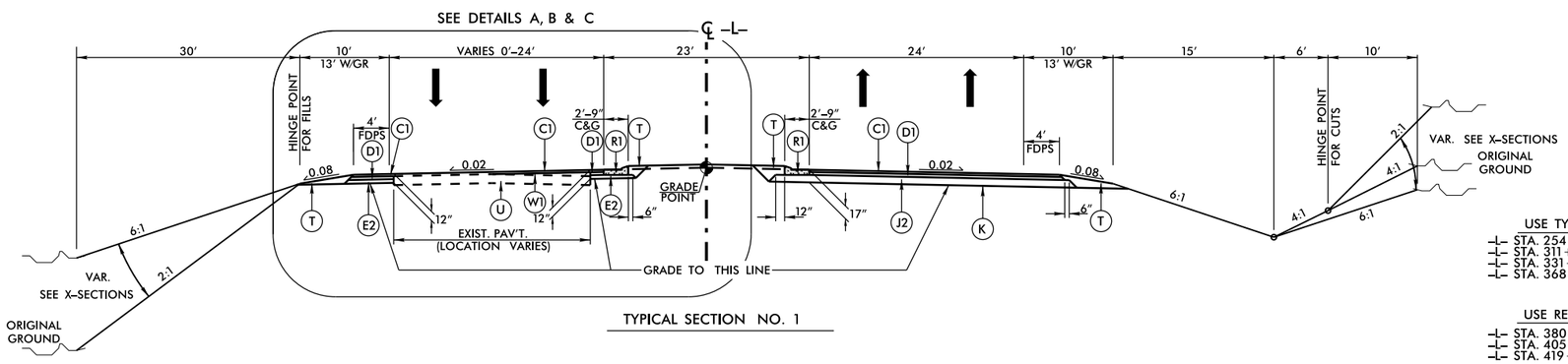
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



Wedging Detail For Resurfacing
WEDGING DETAIL NO. 1



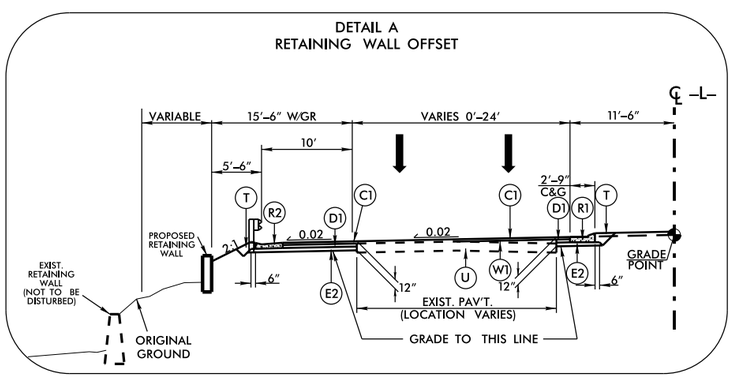
Wedging Detail For Resurfacing
WEDGING DETAIL NO. 2



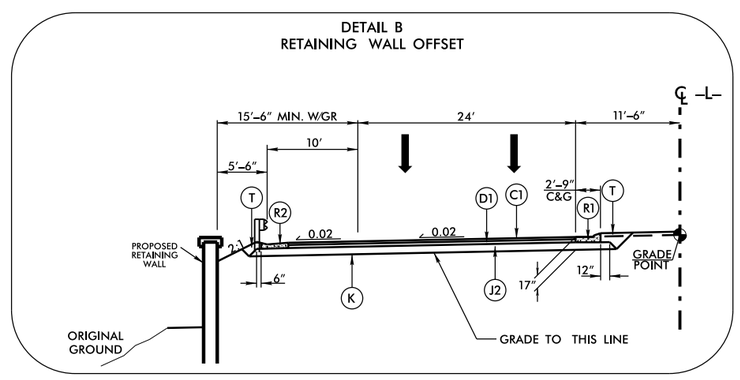
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
–L– STA. 254+36.94 TO STA. 262+34
–L– STA. 311+40 TO STA. 324+50
–L– STA. 331+60 TO STA. 361+14
–L– STA. 368+30 TO STA. 373+07

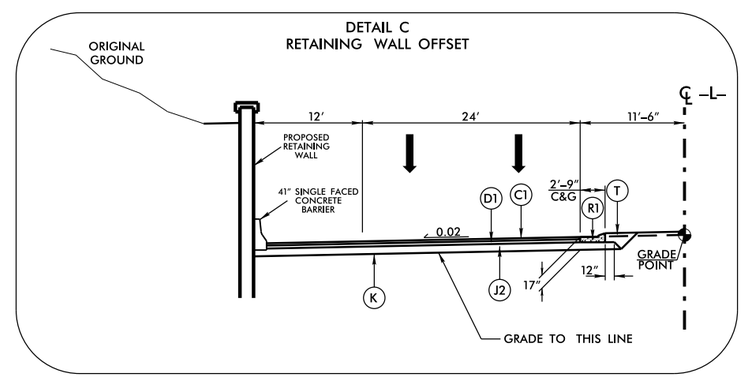
USE REVERSE OF TYPICAL SECTION NO. 1
–L– STA. 380+57 TO STA. 395+50
–L– STA. 405+30 TO STA. 409+79
–L– STA. 419+51 TO STA. 464+60



USE DETAIL A AS FOLLOWS:
–L– STA. 321+25.00 TO STA. 322+25 LT.



USE DETAIL B AS FOLLOWS:
–L– STA. 364+75.00 TO STA. 368+63.57 LT.



USE DETAIL C AS FOLLOWS:
–L– STA. 456+00.00 TO STA. 459+50 LT.

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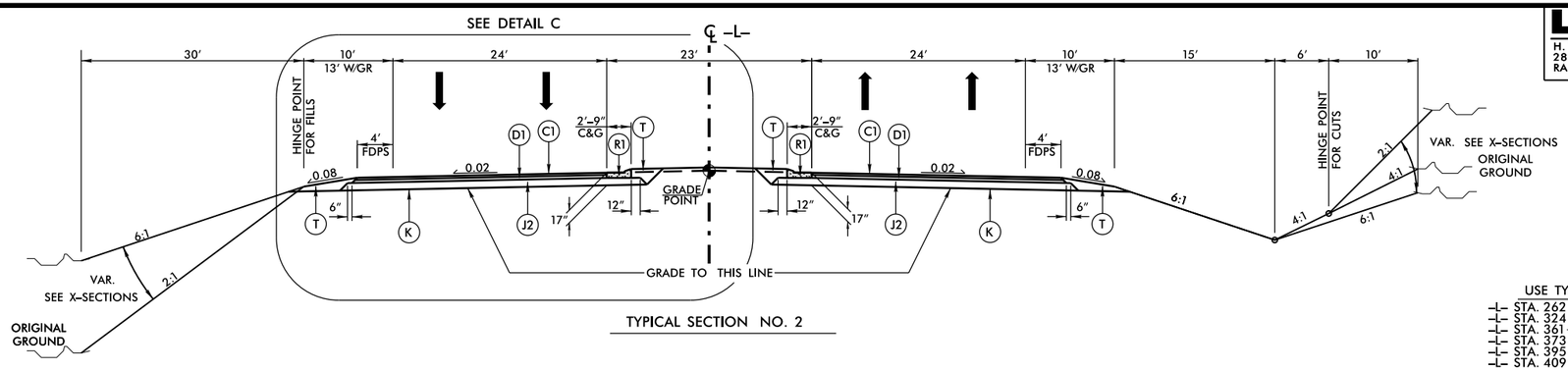
$$$$USERNAME$$$$

6/2/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

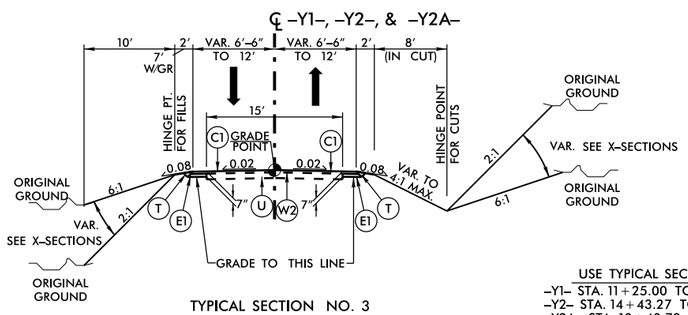
PROJECT REFERENCE NO.	SHEET NO.
R-2915C	2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



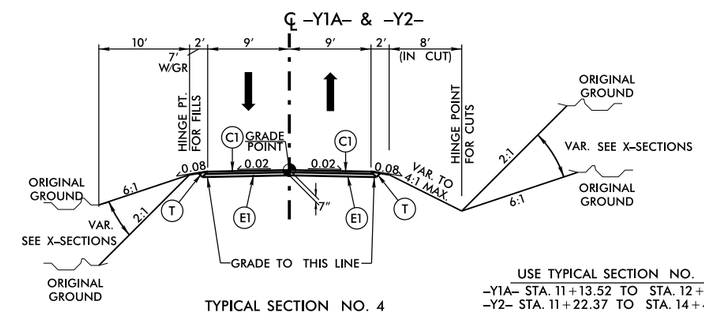
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
–L– STA. 262+34 TO STA. 311+40
–L– STA. 324+50 TO STA. 331+60
–L– STA. 361+14 TO STA. 368+30
–L– STA. 373+07 TO STA. 380+57
–L– STA. 395+50 TO STA. 405+30
–L– STA. 409+79 TO STA. 419+51



TYPICAL SECTION NO. 3

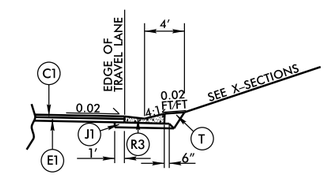
USE TYPICAL SECTION NO. 3
–Y1– STA. 11+25.00 TO STA. 11+90.00
–Y2– STA. 14+43.27 TO STA. 14+72.93
–Y2A– STA. 10+40.78 TO STA. 10+65.00



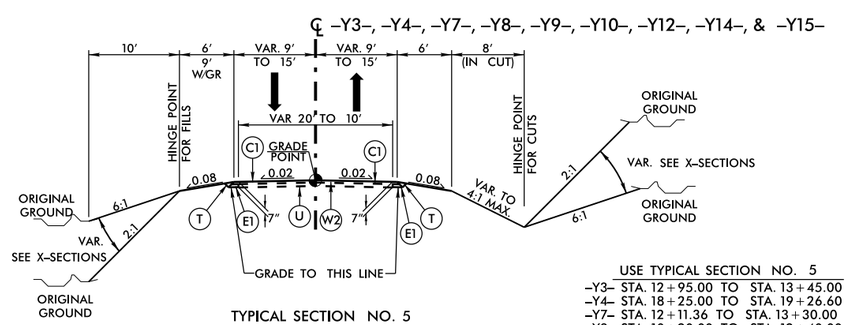
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
–Y1A– STA. 11+13.52 TO STA. 12+05.00
–Y2– STA. 11+22.37 TO STA. 14+43.27

DETAIL OF EXPRESSWAY GUTTER

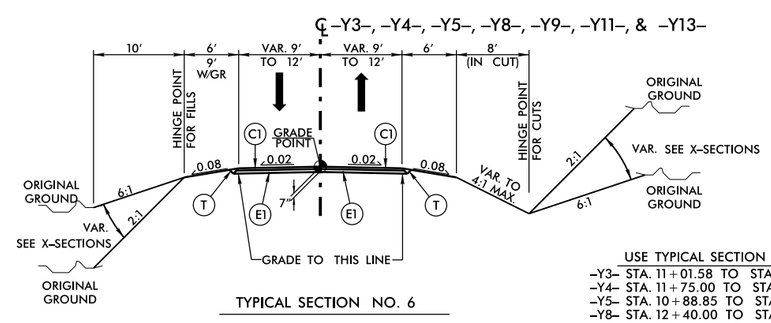


PARTIAL TYPICAL SECTION NO. 4A
USE PARTIAL TYPICAL 4A IN CONJUNCTION WITH TYPICAL 4 AT:
–Y2– STA. 10+79 LT. TO 12+36 LT.



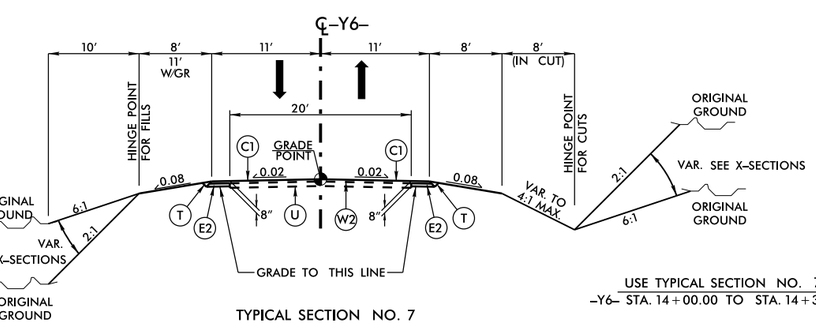
TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
–Y3– STA. 12+95.00 TO STA. 13+45.00
–Y4– STA. 18+25.00 TO STA. 19+26.60
–Y7– STA. 12+11.36 TO STA. 13+30.00
–Y8– STA. 10+20.00 TO STA. 12+40.00
–Y9– STA. 16+23.00 TO STA. 17+00.00
–Y10– STA. 10+80.84 TO STA. 11+05.00
–Y12– STA. 10+39.22 TO STA. 11+35.00
–Y14– STA. 11+06.72 TO STA. 11+95.00
–Y15– STA. 12+00.00 TO STA. 13+31.45



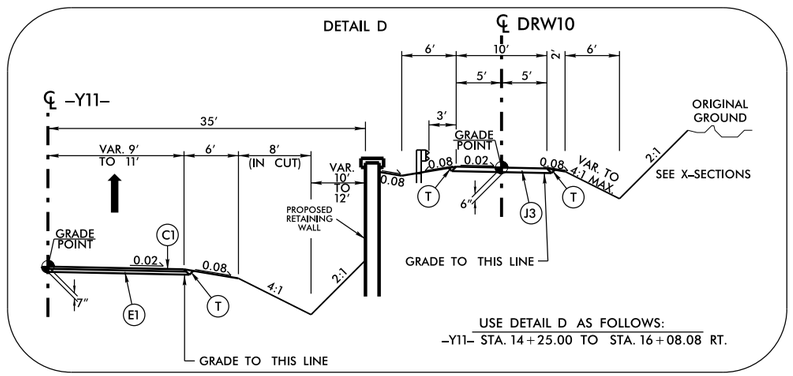
TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
–Y3– STA. 11+01.58 TO STA. 12+95.00
–Y4– STA. 11+75.00 TO STA. 18+25.00
–Y5– STA. 10+88.85 TO STA. 13+15.00
–Y8– STA. 12+40.00 TO STA. 15+78.44
–Y9– STA. 11+36.40 TO STA. 16+23.00
–Y13– STA. 10+25.00 TO STA. 11+96.54
–Y11– STA. 10+95 TO STA. 16+78.33
(ALSO SEE DETAIL D FOR –Y11–)



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7
–Y6– STA. 14+00.00 TO STA. 14+32.92



USE DETAIL D AS FOLLOWS:
–Y11– STA. 14+25.00 TO STA. 16+08.08 RT.

	PAVEMENT SCHEDULE
C1	3″ TYPE S9.5B
C2	VAR. TYPE S9.5B
D1	4″ TYPE I19.0B
D2	VAR. TYPE I19.0B
E1	4″ TYPE B25.0B
E2	5″ TYPE B25.0B
E3	VAR. TYPE B25.0B
K	8″ LIME OR 7″ CEMENT
J1	6″ ABC
J2	10″ ABC
R1	2′-9″ C & G
R2	SHOULDER BERM GUTTER
R3	EXPRESSWAY GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	WEDGING SEE DETAIL 1
W2	WEDGING SEE DETAIL 2

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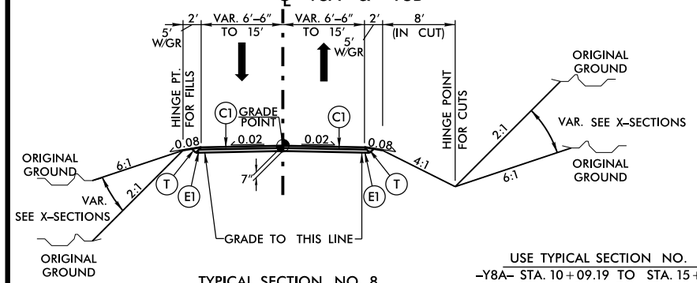
6/2/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	2A-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

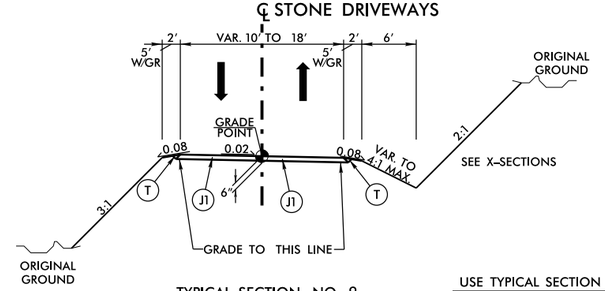
℄ –Y8A– & –Y8B–



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8
–Y8A– STA. 10+09.19 TO STA. 15+00.00
–Y8B– STA. 11+30.00 TO STA. 15+06.90

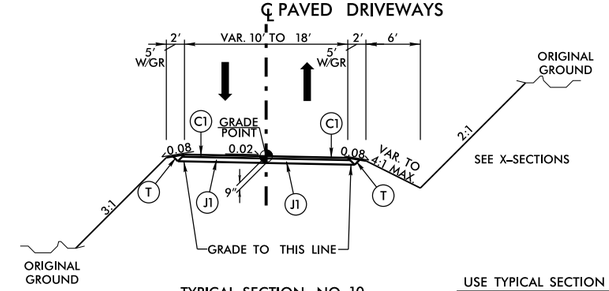
℄ STONE DRIVEWAYS



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9
–DRW2– STA. 10+39.50 TO STA. 17+55.00
–DRW7– STA. 10+39.50 TO STA. 12+15.00
–DRW10– STA. 10+09.00 TO STA. 12+70.00
–DRW13– STA. 10+39.50 TO STA. 12+00.00

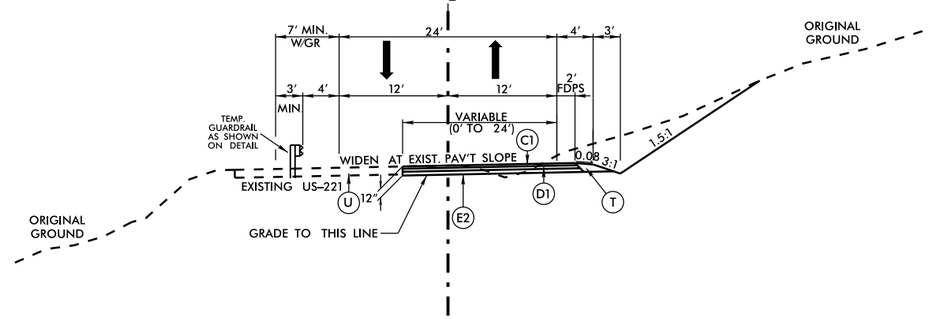
℄ PAVED DRIVEWAYS



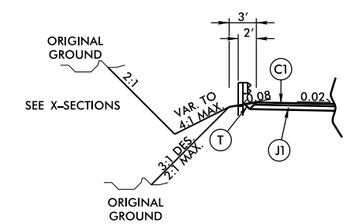
TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10
–DRW1– STA. 10+16.11 TO STA. 11+55.00
–DRW3– STA. 10+39.50 TO STA. 12+90.00
–DRW4– STA. 10+05.00 TO STA. 13+34.85
–DRW5– STA. 10+05.00 TO STA. 11+01.58
–DRW6– STA. 10+39.98 TO STA. 13+35.00
–DRW6A– STA. 10+39.50 TO STA. 13+05.00
–DRW8– STA. 10+09.03 TO STA. 12+30.00
–DRW9– STA. 10+39.50 TO STA. 13+00.00
–DRW11– STA. 10+08.40 TO STA. 13+00.00
–DRW12– STA. 10+39.50 TO STA. 12+80.00

℄ –LDET–

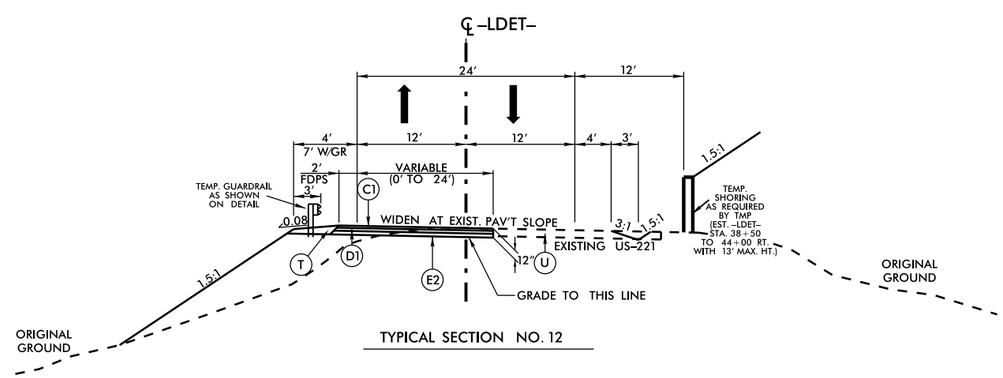


TYPICAL SECTION NO. 11



USE TYPICAL SECTION NO. 10A
–DRW3– STA. 10+70.00 TO STA. 12+31.00 LT.

℄ –LDET–



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12
–L_DET– STA. 28+87.95 TO STA. 52+59.22 LT.

	PAVEMENT SCHEDULE
C1	3″ TYPE S9.5B
C2	VAR. TYPE S9.5B
D1	4″ TYPE I19.0B
D2	VAR. TYPE I19.0B
E1	4″ TYPE B25.0B
E2	5″ TYPE B25.0B
E3	VAR. TYPE B25.0B
K	8″ LIME OR 7″ CEMENT
J1	6″ ABC
J2	10″ ABC
R1	2′-9″ C & G
R2	SHOULDER BERM GUTTER
R3	EXPRESSWAY GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	WEDGING SEE DETAIL 1
W2	WEDGING SEE DETAIL 2

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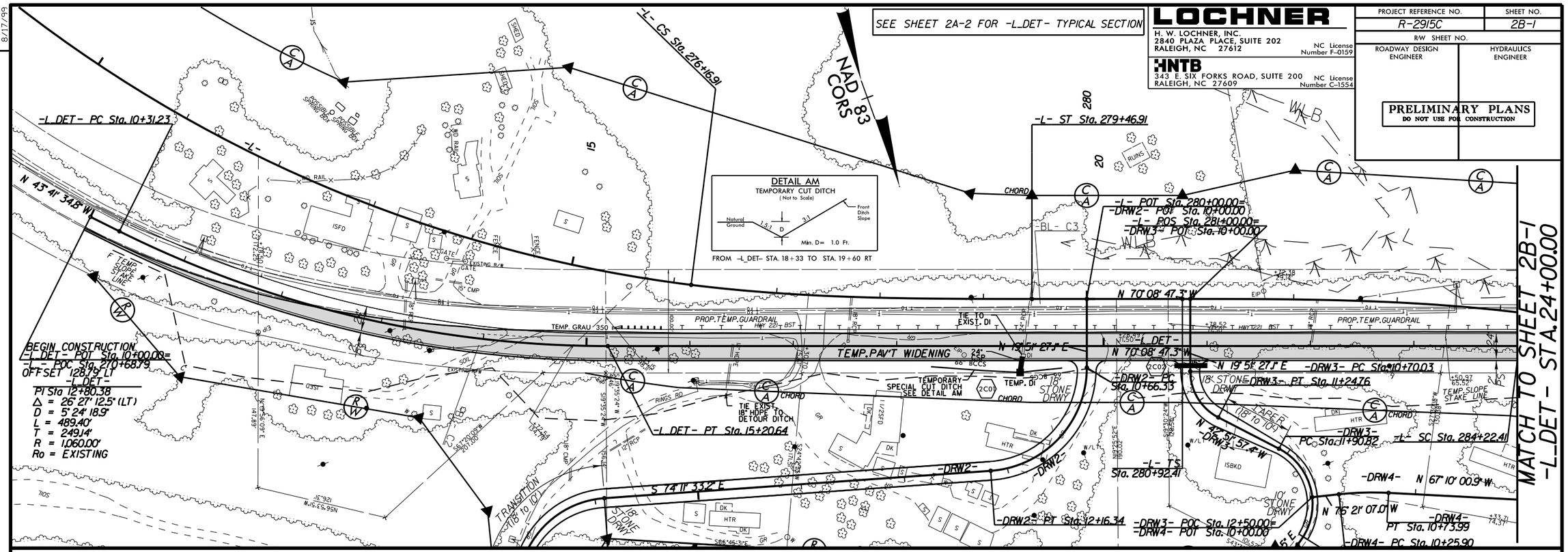
SEE SHEET 2A-2 FOR -L_DET- TYPICAL SECTION

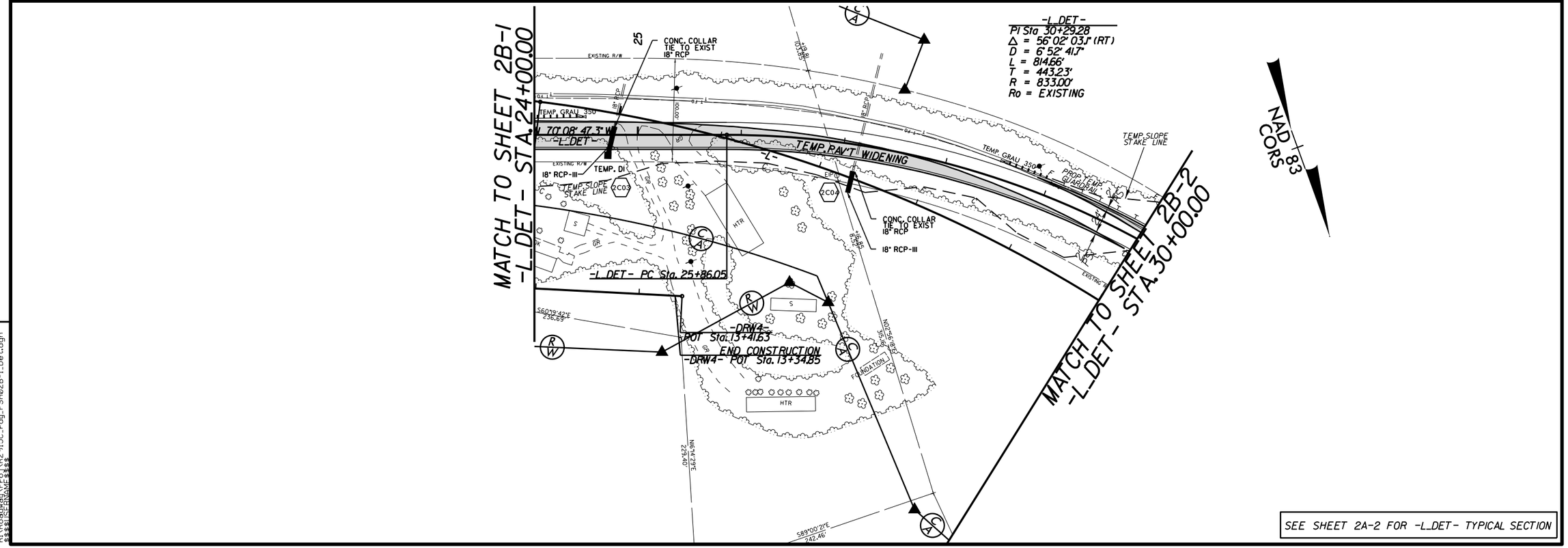
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	2B-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





SEE SHEET 2A-2 FOR -L_DET- TYPICAL SECTION

REVISIONS

8/17/99

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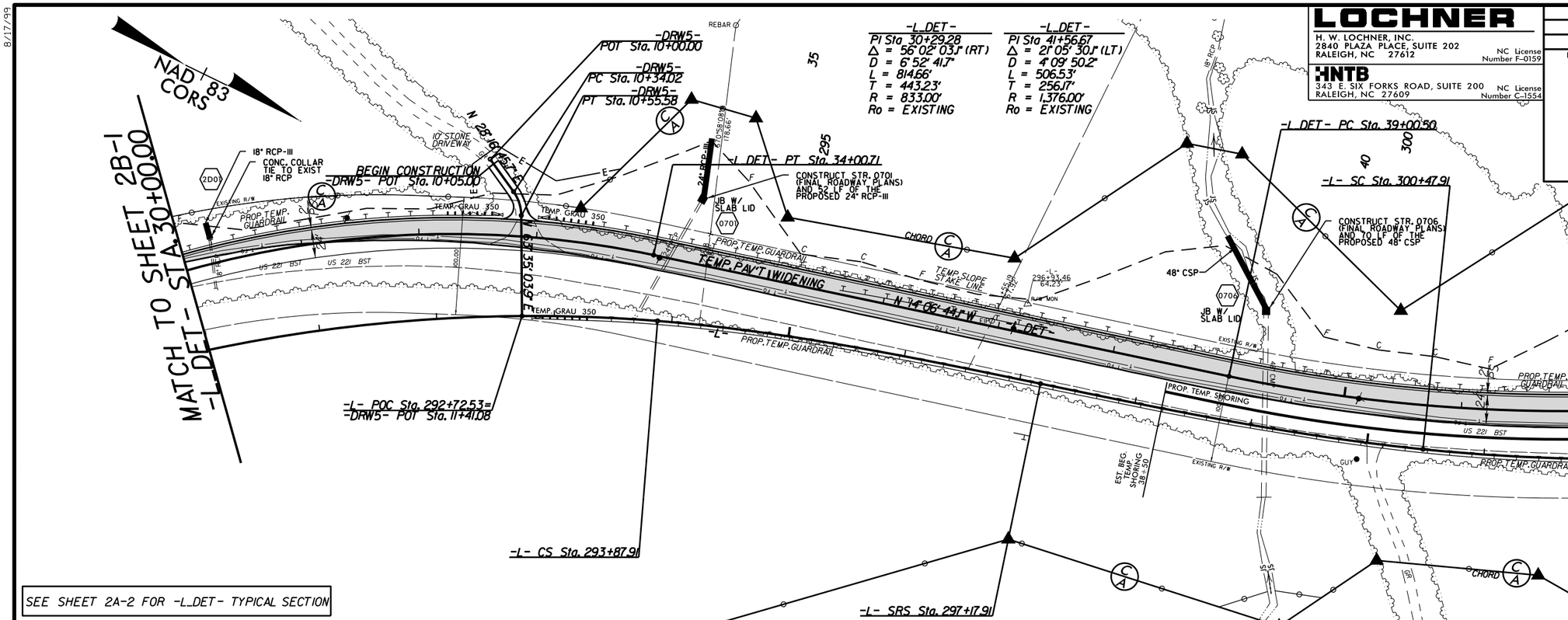
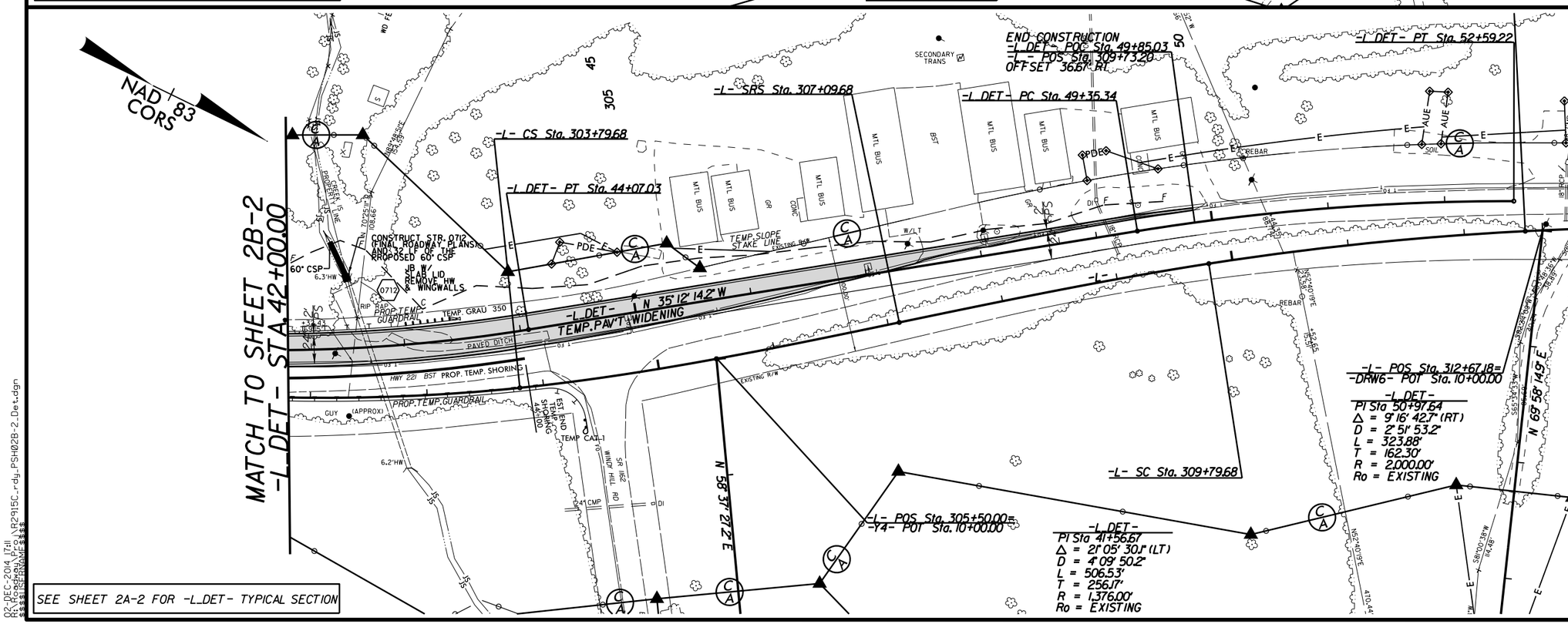
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	2B-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





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8/17/99

REVISIONS

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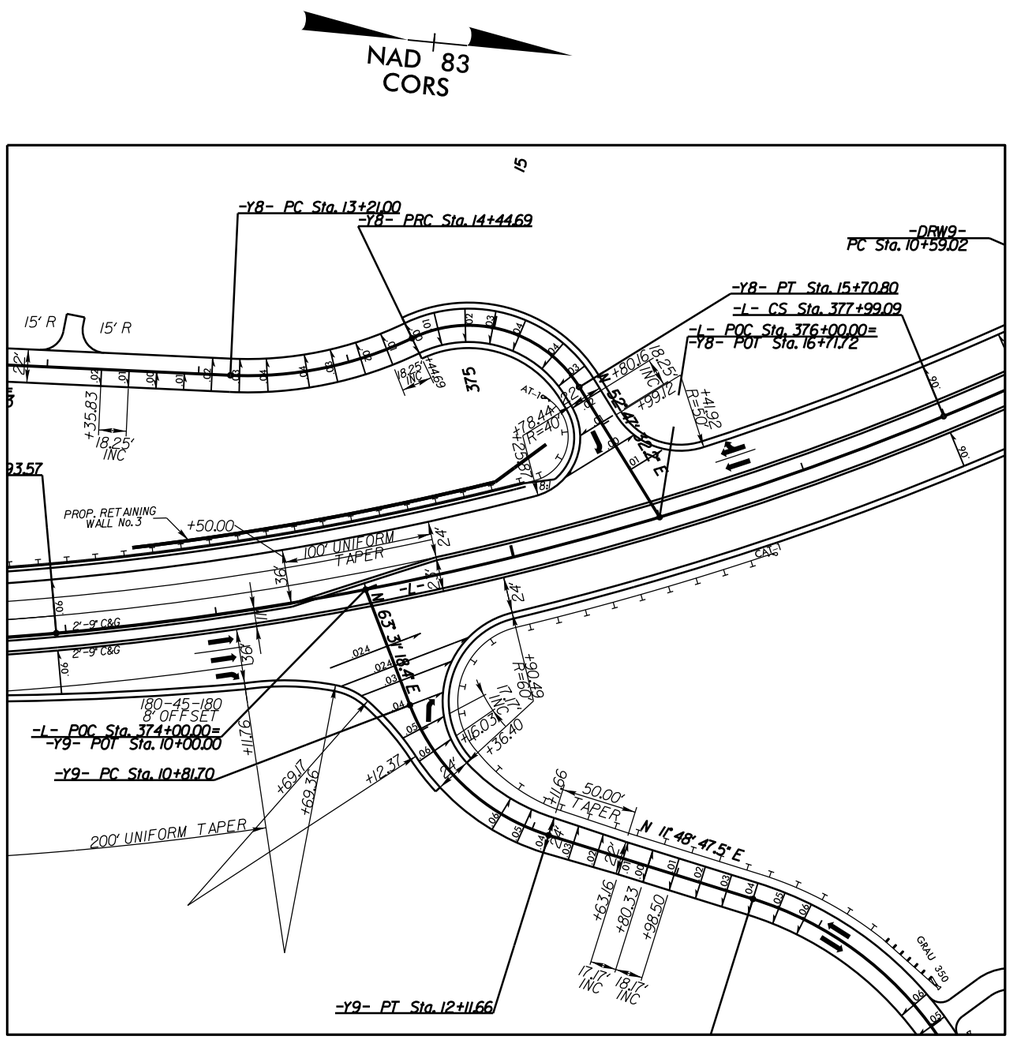
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	2B-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

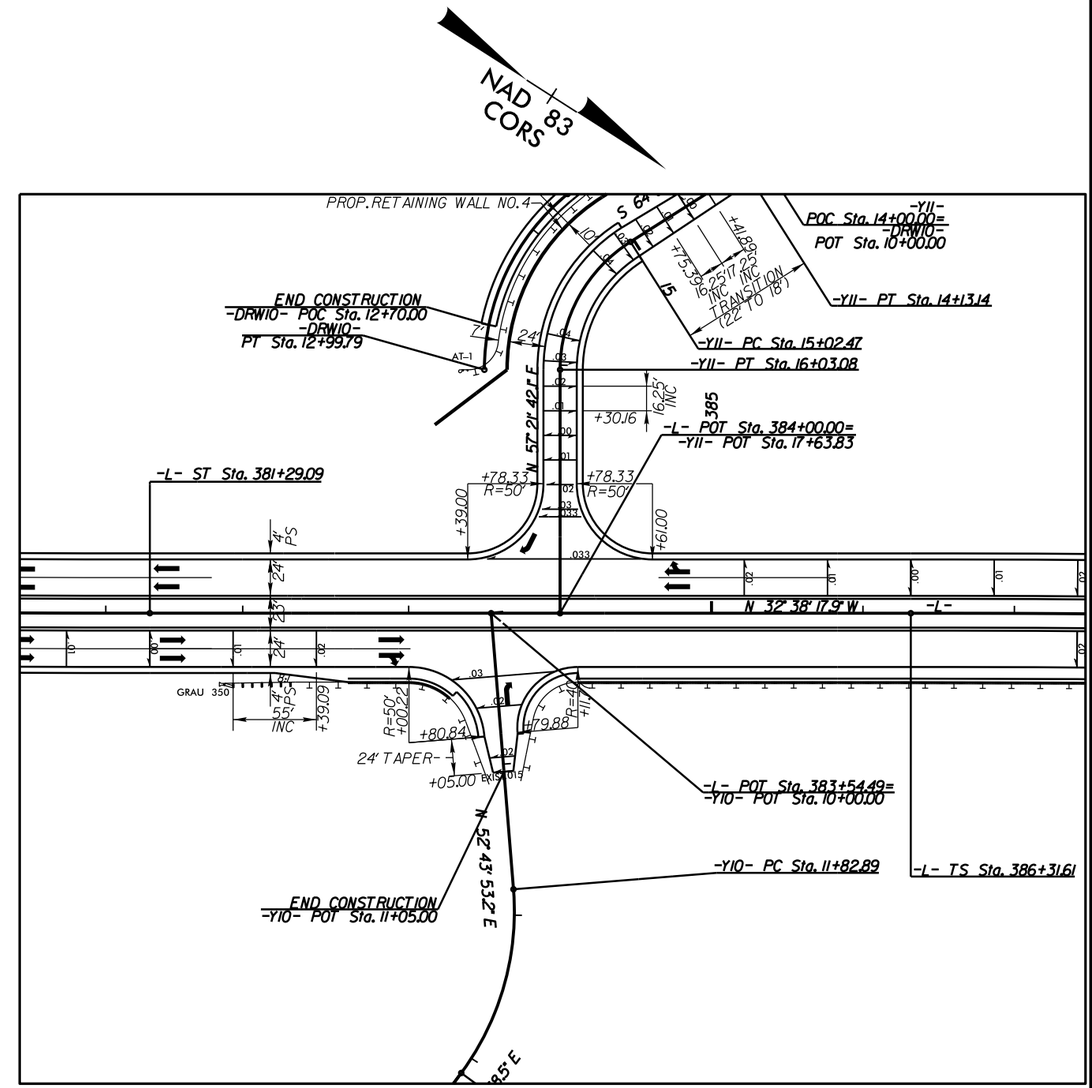
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DETAIL SHOWING
INTERSECTION OF -L- (US 221) AT -Y8- IRA JORDAN ROAD
& -Y9- PAUL GOODMAN ROAD (SR 1178)

50' 0' 50' 100'
25'
(ENGLISH)

SEE SHEET 13 FOR ROADWAY PLAN VIEW



DETAIL SHOWING
INTERSECTION OF -L- (US 221) AT -Y10- JOE OWENS ROAD (SR 1210)
& -Y11- LAUREL RIDGE ROAD

50' 0' 50' 100'
25'
(ENGLISH)

SEE SHEET 14 FOR ROADWAY PLAN VIEW

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2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

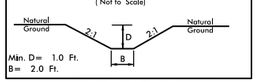
PROJECT REFERENCE NO.	SHEET NO.
R-2915C	2D-1
R/W SHEET NO.	

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HYDRAULIC DETAILS

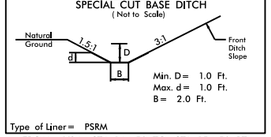
DETAIL U
STANDARD BASE DITCH
(Not to Scale)



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

–Y8– STA. 10+10 RT

DETAIL V
SPECIAL CUT BASE DITCH
(Not to Scale)

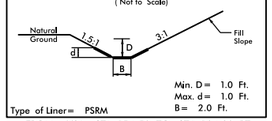


Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.

Type of Liner= PSRM

FROM –Y8A– STA. 14+50 TO STA. 15+50 RT

DETAIL W
SPECIAL LATERAL BASE DITCH
(Not to Scale)

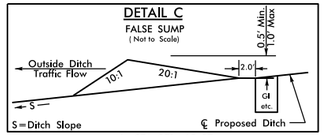


Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.

Type of Liner= PSRM

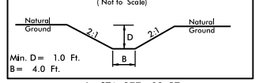
FROM –Y8A– STA. 15+50 TO STA. 16+80 RT

DETAIL C
FALSE SUMP
(Not to Scale)



–L– STA. 371+65 RT
–L– STA. 378+00 LT

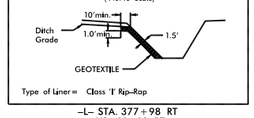
DETAIL X
STANDARD BASE DITCH
(Not to Scale)



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

–L– STA. 377+98 RT

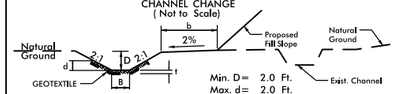
DETAIL Y
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= Class 'I' Rip-Rap

–L– STA. 377+98 RT
–Y8– 10+10 RT

DETAIL Z
CHANNEL CHANGE
(Not to Scale)

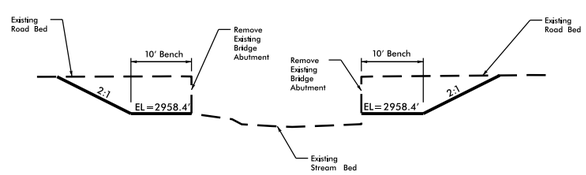


Min. D= 2.0 Ft.
Max. d= 2.0 Ft.
B= 5.0 Ft.
b= 5.0 Ft.
t= 1.5 ft (Counter-Sunk in Channel)

Type of Liner= Class 'I' Rip-rap

FROM –Y9– STA. 15+50 TO STA. 17+00 LT

DETAIL AK
STREAM REBUILD DETAIL
(Not to Scale)



EXISTING –Y9–

SEE SHEET 13 FOR PLAN VIEW

REVISIONS

8/17/99

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COMPUTED BY: B. BOLLMAN	DATE: 01-15-13	
CHECKED BY: B. EASON	DATE: 01-15-13	
REVISED BY: D. MARTIN	DATE: 11-14-14	

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	3B-1

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

LOCATION		UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY 1						
-L- LEFT	254+50 TO 284+50	87,751	-	46,514	-	41,597
-Y1-	11+50 TO 12+50	143		173	30	-
-DRW1-	10+00 TO 11+50	546		3	-	543
TOTAL SUMMARY # 1		88,440		46,330	30	42,139
SUMMARY 2						
-L- RIGHT	254+50 TO 284+50	238,140	-	26,838	-	211,302
-Y1A-	11+00 TO 12+00	105	-	1,732	1,672	-
-Y2-	10+50 TO 14+50	26,488	-	788	-	25,700
-Y2A-	10+15 TO 10+65	103	-	146	43	-
-Y3-	10+50 TO 13+00	370	-	3,854	3,484	-
-DRW2-	10+25 TO 11+75	9,649	-	-	-	9,649
-DRW2-	16+50 TO 17+55	101	-	15	-	86
-DRW3-	10+00 TO 12+50	8,944	-	1	-	8,943
-DRW4-	10+00 TO 13+40	2,146	-	-	-	2,146
TOTAL SUMMARY # 2		286,046	-	33,373	5,154	257,827
SUMMARY 3						
-L- LEFT	284+50 TO 314+50	11,766		110,560	98,879	-
-DRW5-	10+00 TO 11+00	36	-	480	444	-
TOTAL SUMMARY # 3		11,802	-	111,039	99,237	-
SUMMARY 4						
-L- RIGHT	284+50 TO 314+50	272,466	-	93,424	-	179,042
-Y4-	11+00 TO 19+00	17,601	-	13,573	-	4,028
-DRW6-	10+00 TO 13+35	4,038	-	48	-	3,990
TOTAL SUMMARY # 4		294,105	-	107,045	-	187,060
SUMMARY 5						
-L- LEFT	314+50 TO 344+50	2,386	-	65,406	63,020	-
-Y6-	14+00 TO 15+50	527	-	256	-	271
TOTAL SUMMARY # 5		2,913	-	65,663	63,020	271
SUMMARY 6						
-L- RIGHT	314+50 TO 344+50	276,655	-	5,996	-	270,659
-Y5-	10+50 TO 13+00	1,329	-	1,157	-	172
TOTAL SUMMARY # 6		277,984	-	7,153	-	270,831
SUMMARY 7						
-L- LEFT	344+50 TO 374+50	9,623	-	42,617	32,994	-
-DRW6A-	10+00 TO 13+05	3,771	-	388	-	3,383
TOTAL SUMMARY # 7		13,394	-	43,004	32,994	3,383
SUMMARY 8						
-L- RIGHT	344+50 TO 374+50	335,253	-	21,334	-	313,919
-Y7-	11+00 TO 13+00	12,720	-	2,555	-	10,165
-Y9-	10+50 TO 17+00	95,696	-	1,278	-	94,418
-DRW7-	10+00 TO 12+15	1,144	-	1,103	-	41
TOTAL SUMMARY # 8		444,813	-	26,269	-	418,544

LOCATION		UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY 9						
-L- LEFT	374+50 TO 404+50	914,549	-	3,019	-	911,530
-Y8-	10+50 TO 16+00	31,195	-	288	-	30,908
-Y8A-	10+50 TO 15+00	6,595	-	2,578	-	4,017
-Y8B-	11+30 TO 15+07	5,018	-	123	-	4,895
-DRW9-	10+00 TO 13+18	2,911	-	43	-	2,868
TOTAL SUMMARY # 9		960,268	-	6,050	-	954,218
SUMMARY 10						
-L- RIGHT	374+50 TO 404+50	24,442	-	18,104	-	6,338
-Y10-	10+50 TO 11+00	39	-	183	144	-
-Y11-	11+00 TO 17+00	91,078	-	67	-	91,011
-DRW10-	10+50 TO 12+70	10,803	-	-	-	10,803
-DRW11-	10+00 TO 13+15	1,788	-	84	-	1,704
TOTAL SUMMARY # 10		128,150	-	18,438	144	109,856
SUMMARY 11			-			
-L- LEFT	404+50 TO 434+50	868,702	-	1,219	-	867,483
TOTAL SUMMARY # 11		868,702	-	1,219	-	867,483
SUMMARY 12						
-L- RIGHT	404+50 TO 434+50	41,516	-	9,318	-	32,198
-Y12-	10+50 TO 11+00	2	-	198	196	-
-DRW13-	10+50 TO 12+00	-	-	656	656	-
TOTAL SUMMARY # 12		41,518	-	10,172	851	32,198
SUMMARY 13						
-L- LEFT	434+50 TO 464+50	95,783	-	14,727	-	81,056
-Y13-	10+50 TO 13+00	5,675	-	761	-	4,914
-Y15-	12+00 TO 14+50	136	-	733	597	-
-DRW12-	10+00 TO 12+95	2,661	-	-	-	2,661
TOTAL SUMMARY # 13		104,225	-	16,221	597	88,631
SUMMARY 14						
-L- RIGHT	434+50 TO 464+50	2,820	-	12,886	10,066	-
-Y14-	10+50 TO 11+50	25	-	293	268	-
TOTAL SUMMARY # 14		2,845	-	13,179	10,334	-
TOTAL SUMMARIES 1-14		3,525,235	-	505,156	212,360	3,232,439
LOSS DUE TO CLEARING & GRUBBING		-20,000				-20,000
CL VII SELECT MAT TO REPLACE BORROW					-21,927	
WASTE IN LIEU OF BORROW					-190,433	-190,433
PROJECT TOTALS		3,505,235	-	505,156	-	3,022,006
SAY		3,506,000				
SHOULDER BORROW = 16,750 CY						
BENCHING EXCAVATION = 11,400 CY						
UNDERCUT EXCAVATION = 1,000 CY						

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PROJECT REFERENCE NO.	SHEET NO.
R-2915C	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4,5	KEITH & JOYCE K. BLACKBURN
2	5	RIVER RIDGE UNLIMITED
3	5	CHARLES J. & WANDA W. ARNETTE
4	5,6	GROVER & SUE GOODMAN
5	5	DONALD EDWARD BLACKBURN et al.
6	5	TERRI ANNE WELLS
7	5	LESLIE DELEON & BETTY ROSE SASSER
8	5,6	MICHAEL DEAN & MARLENE E. BLEDSOE
9	6	JAMES MICHAEL & RHONDA B. HERMAN
10	6	LARRY BAKER
11	6	W.C. CANNON, JR. et al.
12	6	DELORIS TRIPLETT
13	6,7,8,21	NO HEAD, LLC
14	6,7	JOHN MICHAEL GRAY
15	6	DELORIS TRIPLETT
16	7	LILLIAN B EDWARDS WORLEY
17	7	GERALD K. & MAUREEN E. DENNY
18	7,8	DAVID LEE HOLMAN
19	7,8	JERRY G. & GERALDINE M. STYERS
20	8,21	MILITARY WARRIORS SUPPORT FOUNDATION
21	21	AFFORDABLE HOUSING ASSOCIATES, LLC
22	8	B&B LAND DEVELOPERS
23	8	LAINE N. KELLER
24	8	JOSEPH L. & CANDICE L. KELLER
25	8	DONALD E. BLACKBURN JIMMY BLEDSOE
26	8,9	MAUDE K. WILLIAMS (LÆ)
27	8,9	BARRY & CAROLYN GOODMAN
28	8,9	T. MAURICE JORDAN
29	9	JOHN RAY PHILLIPS, SR. JOHN RAY PHILLIPS, JR. & HEATHER R. PHILLIPS
30	9	FLEETWOOD VOL. FIRE DEPARTMENT
31	9	FLEETWOOD VOL. FIRE DEPARTMENT
32	9	ASHE COUNTY BOARD OF EDUCATION
33	9	BARRY & CAROLYN GOODMAN

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
34	9	CHRISTOPHER EVAN MOORE & KAYLA PHIPPS MOORE
35	9,10	TIMOTHY RAY HAMBY
36	9,10	CHRISTOPHER EVAN & KAYLA PHIPPS MOORE
37	9,10	TRAVIS MARIE WOODE HAMBY
38	10	TRAVIS MARIE WOODIE HAMBY
39	10	JOHN B. COX
40	10,11	CHRISTOPHER EVAN & KAYLA PHIPPS MOORE
41	10,11	MICHAEL DEAN & MARLENE E. BLEDSOE
42	11	NELL BALDWIN
43	11	JASON & EMILY STOPPER
44	11	WILLIAM W. STURDIVANT & LINDA H. STURDIVANT
45	11	RUTH BAKER LINDA BAKER TAYLOR & WAYNE BAKER
46	11,12	SANDRA MILLER COX
47	11,12	SANDRA MILLER COX
48	11,12	JAMES P. & LINDA J. HUTCHINS
49	12,13	EDGAR D. WADE, JR.
50	12,13	JOSEPH D. & VANESSA G. STARNES
51	12,13	JOSEPH D. STARNES & VANESSA G. STARNESS
52	13	HENRY A. THOMPSON & LOIS W. THOMPSON
53	13	MARK H. & ROSANN POPLIN HOLLARS
54	13	JESSE PRESTON MELTON & ALAINA JOELLE BORGET
55	13,22	COLE WILLIAM & ZEE PREVETTE YOUNGER
56	13	DENNIS L. GROGAN
57	13	JOYCE MAHAFFEY WINFORD & MARY JUNE KIMBERLIN
58	13	JAMES ALFRED & JESSIE K. CHURCH
59	13	DENNIS L. GROGAN
60	13	ROBERT E. & CHRISTINA L. LITTLE
61	13,22	ELBERT F. & LANDA CAIN BROWN
62	13,22	HAROLD G. HAMILTON et al
63	13	GEORGETTE L. M. SCOTT
64	13	FELIX OTERO & BRENDA OTERO
65	13	DAVID R. & JULIE E. TESTERMAN
66	13	LAURA K. ELDRETH

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
67	13,22	LAURA K. ELDRETH
68	13,14,22,23	ILLA K. BRYAN
69	13,14	ILLA K. BRYAN
70	14	LECIA DARE K. LAMBERT
71	14	LECIA DARE K. LAMBERT
72	14,23	TIM & APRIL RUSSELL
73	14,23	NELDA H. JORDAN
74	14,15	DAVID & BARBARA M. THOMAS
75	14,15	ROBERT W. & EVA T. MCELROY
76	15	DONALD A. & THERESA CHURCH
77	15,16	HAROLD L. & MABEL F. POLING
78	15	RENNA MILLER
79	15	RENNA MILLER
80	15	AGNES BALDWIN TRUSTEE
81	15,16	GRACE COMMUNITY CHURCH
82	16,24	HOMER R. & GERTRUDE LUCAS
83	16	RENNA SUE MILLER
84	16	BOBBY R. HAM
85	16,17,24	NELL B. BALDWIN
86	16,17	JOHN D. & SHIRLEY H. BALDWIN et al
87	16,17	NELL BALDWIN
88	17	JERROLD W. & SARA W. AHSLEY
89	17	NELL B. BALDWIN
90	17,18	JESSIE G. BALDWIN
91	17,18	RENNA SUE MILLER
92	17,18	NEAL WAGNER
93	18	W.G. BLACK
94	18	LAWRENCE & VIVIAN P. GOODWIN
95	18	BOBBY N. & BARBARA P. GENTRY
96	18	EDWARD EUGENE PARLIER
97	18	JOSEPH RHYNE RANKIN, JR. & SANDRA M. RANKIN
98	18	HADLEY JORDAN
99	18	RITA TRIVETTE HOUCK

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	3P-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
100	18	JO ANN GOODMAN WOODIE
101	18,19	JAMES A. & LINDA TRIVETTE
102	18,19	JOANN GREER
103	18,19	JAMES A. TRIVETTE & LINDA TRIVETTE
104	19	JAMES A. TRIVETTE & LINDA TRIVETTE
105	19	MARY LAVON CAUDILL
106	19	JOHN C. & NANCY P. EDWARDS
107	19	JEFF & MARGIE SMITH
108	19	JOANN GREER
109	19	JOANN GREER
110	19	BARRY K. & SANDRA T. LIDDLE
111	20	THOMAS M. HOWELL AND WIFE, KATHY H. HOWELL

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

12/06/07

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8/17/99

REVISIONS

04242015 ROW REV: REVISED AUE TO REFLECT THE ACQUISITION ON PARCELS 42 & 44 ON R-2915B; REVISED ROW AND TCE BETWEEN TO REFLECT THE ACQUISITION ON PARCEL 47 ON R-2915B - KH

-L-

PIs Sta 260+86.12	PI Sta 269+92.55	PIs Sta 277+21.08
Θs = 9°02'48.1"	Δ = 59°55'50.5" (LT)	Θs = 1°06'29.2"
Ls = 420.00'	D = 4°18'28.6"	Ls = 330.00'
LT = 280.37'	L = 1,391.16'	LT = 220.18'
ST = 140.33'	T = 766.80'	ST = 110.16'
	R = 1,330.00'	
	SE = .06	
	Ro = As Shown	

-Y2-

PI Sta 11+68.28
Δ = 85°17'20.7" (RT)
D = 47°44'47.3"
L = 178.63'
T = 110.52'
R = 120.00'
SE = .06
Ro = As Shown

-Y2-

PI Sta 14+22.87
Δ = 42°44'42.0" (LT)
D = 47°44'47.3"
L = 89.52'
T = 46.96'
R = 120.00'
SE = .04
Ro = As Shown

-DRWI-

PI Sta 10+63.97
Δ = 66°43'21.7" (RT)
D = 190°59'09.4"
L = 34.94'
T = 19.75'
R = 30.00'

-DRWI-

PI Sta 10+97.13
Δ = 23°36'36.5" (LT)
D = 66°37'22.8"
L = 35.44'
T = 17.97'
R = 86.00'

DETAIL A
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
20:1
10:1
2'
0.5' Min. 1.0' Max.
GI etc.
S=Ditch Slope
℄ Proposed Ditch
-L- STA. 254+77 RT

-Y1- (SR 1216) LEMLY RD.
100/100
100/100 0/0
8714/18000 US 221 -L- 8514/17800
100/100 0/0
100/100
HEMLOCK LN. 2017 ADT / 2037 ADT

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

END TIP PROJECT R-2915B LB =
-L- POT Sta. 251+72.02
BEGIN TIP PROJECT R-2915C LA
-L- POT Sta. 254+36.94

BEGIN CONSTRUCTION R-2915C
-L- POT Sta. 249+86.19

NAD 83
CORS

-Y1- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y1- POT Sta. 11+25.00

-L- SC Sta. 262+25.75

-L- POT Sta. 254+50.09=
-Y1A- POT Sta. 10+00.00

-L- TS Sta. 258+05.75

-L- POS Sta. 258+74.62=
-Y1- POT Sta. 13+33.76

-L- POS Sta. 260+85.75=
-Y2- POT Sta. 10+00.00

-Y1- POT Sta. 12+00.00=
-DRWI- POT Sta. 10+00.00

END CONSTRUCTION
-DRWI- POT Sta. 11+55.00

-Y2- PC Sta. 10+57.77

-Y2- PT Sta. 14+65.43

-Y2- POT Sta. 15+00.09

-Y2- PT Sta. 12+36.39

-Y2- POT Sta. 13+21.57=
-Y2A- POT Sta. 10+00.00

-Y2- PC Sta. 13+75.91

-Y2A- POT Sta. 11+20.00

END CONSTRUCTION
-Y1A- POT Sta. 12+50.00
-Y1A- POT Sta. 12+65.12

END CONSTRUCTION
-Y2A- POT Sta. 10+65.00
END CONSTRUCTION
-Y2- POT Sta. 14+72.93

TRACY C. LEMLY
ELIZABETH C. LEMLY
DB M-5, PG 121

CRICK D. WEAVER
ALLISON L. WEAVER
DB 230, PG 1480

JANET LOU YOUNG
DB 142, PG 1055

RIVER RIDGE
UNLIMITED INC.
DB 159, PG 1976
A PORTION OF
PB 5, PG 66

JAMES CLINE CHURCH
ELLEN L. CHURCH
EVELYN LEMLY
DB 176, PG 381
LOT 10 OF
PB 5, PG 265

RICHARD C. CORNEJO
LORETTA A. CORNEJO
DB 208, PG 66
LOT 11 OF
PB 5, PG 265

BARNEY F. WATSON
RAMONA N. WATSON
TRUSTEES OF THE
WATSON FAMILY TRUST
DB 211, PG 1209
LOT 12 OF
PB 5, PG 265

RONALD S. GREENE
CARLENE G. GREENE
DB 237, PG 2498
PB 5, PG 265

BARBARA CARTER
LIVING TRUST
DB 271, PG 99
A PORTION OF
PB 5, PG 66

BARBARA CARTER
LIVING TRUST
DB 248, PG 348
A PORTION OF
PB 5, PG 66

KEITH & JOYCE K.
BLACKBURN
D.B. 165, PG. 459

RICHARD W. LEMLY
MINNIE C. LEMLY
DB 283, PG 271

JACKIE W. NOBLETT
DB 198, PG 1234
PB 5, PG 265

ROBERT T. PAISLEY
DB 239, PG 507
PB 5, PG 265

DETAIL B
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
2:1
D
4:1 or Flatter
Fill Slope
Min. D= 1.0 Ft.
FROM -Y2- STA. 13+50 TO STA. 14+00 LT

DETAIL C
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
10:1
20:1
2.0'
0.5' Min. 1.0' Max.
GI etc.
S=Ditch Slope
℄ Proposed Ditch
-L- STA. 255+36 LT
-L- STA. 259+36 LT

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 40 FOR -DRWI- PROFILE	SEE SHEET 36 FOR -Y1- PROFILE	SEE SHEET 36 FOR -Y1A- PROFILE
SEE SHEET 36 FOR -Y2A- PROFILE	SEE SHEET 36 FOR -Y2- PROFILE	SEE SHEET 25 FOR -L- PROFILE

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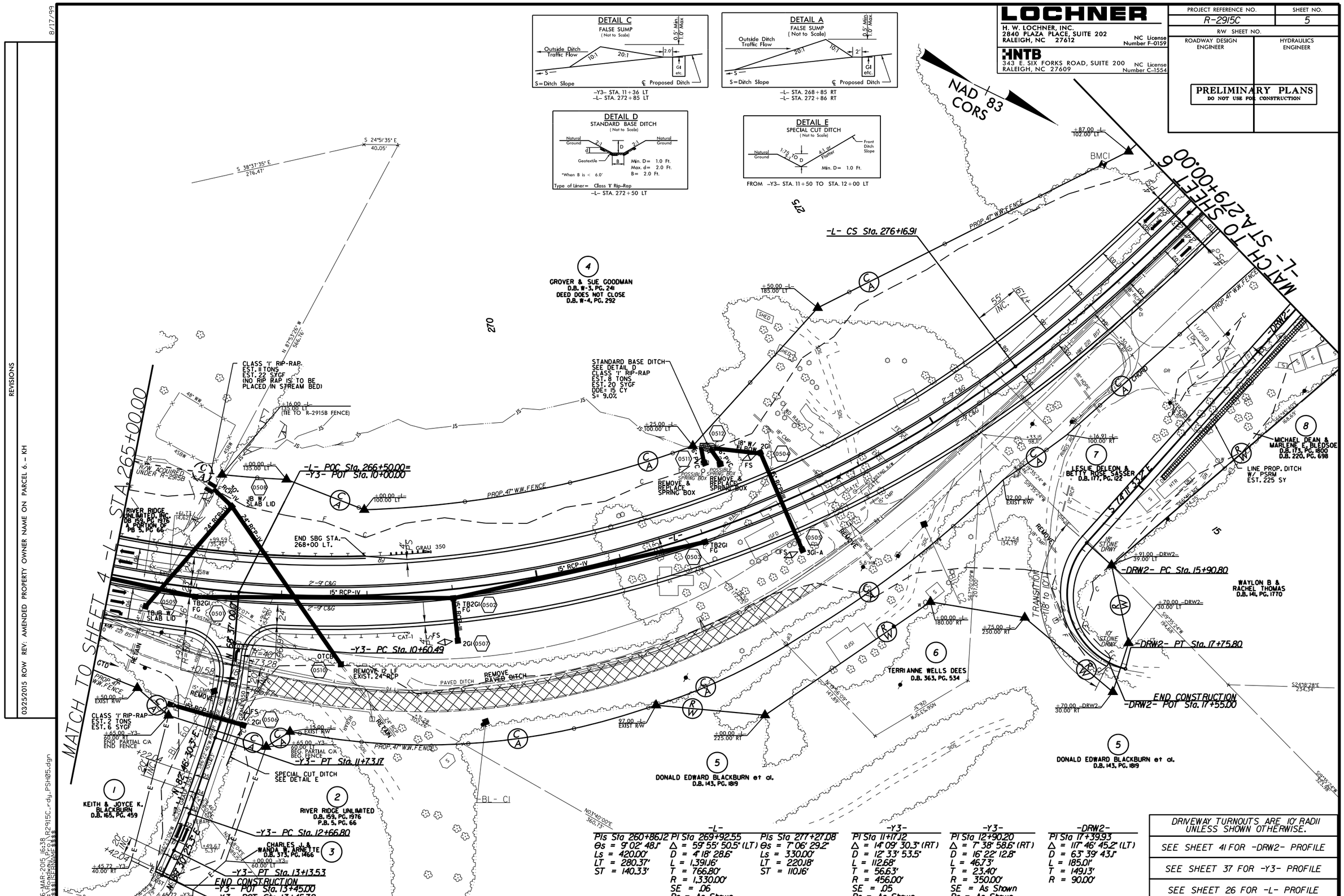
DETAIL C
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
-Y3- STA. 11+36 LT
-L- STA. 272+85 LT
DETAIL A
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
-L- STA. 268+85 RT
-L- STA. 272+86 RT
DETAIL D
STANDARD BASE DITCH
(Not to Scale)
Natural Ground
Geotextile
Min. D= 1.0 Ft.
Max. d= 2.0 Ft.
B= 2.0 Ft.
*When B is < 6.0'
Type of Liner= Class 'I' Rip-Rap
-L- STA. 272+50 LT
DETAIL E
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D= 1.0 Ft.
FROM -Y3- STA. 11+50 TO STA. 12+00 LT
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159
HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554
PROJECT REFERENCE NO.
R-2915C
SHEET NO.
5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
NAD 83 CORS
MATCH TO SHEET 6 -L- STA 279+00.00
MATCH TO SHEET 4 -L- STA 265+00.00
-L- CS Sta. 276+16.91
-L- POC Sta. 266+50.00=
-Y3- POT Sta. 10+00.00
-Y3- PC Sta. 10+60.49
-Y3- PT Sta. 11+73.17
-Y3- PC Sta. 12+66.80
-Y3- PT Sta. 13+13.53
END CONSTRUCTION
-Y3- POT Sta. 13+45.00
-Y3- POT Sta. 13+45.72
-DRW2- PC Sta. 15+90.80
-DRW2- PT Sta. 17+75.80
END CONSTRUCTION
-DRW2- POT Sta. 17+55.00
GROVER & SUE GOODMAN
D.B. W-3, PG. 241
DEED DOES NOT CLOSE
D.B. W-4, PG. 292
KEITH & JOYCE K. BLACKBURN
D.B. 165, PG. 459
RIVER RIDGE UNLIMITED
D.B. 159, PG. 1976
P.B. 5, PG. 66
CHARLES J. & WANDA W. ARNETTE
D.B. 373, PG. 1466
DONALD EDWARD BLACKBURN et al.
D.B. 143, PG. 1819
TERRI ANNE WELLS DEES
D.B. 363, PG. 534
LESLIE DELEON & BETTY ROSE SASSER
D.B. 177, PG. 122
MICHAEL DEAN & MARLENE E. BLEDSOE
D.B. 173, PG. 1800
D.B. 220, PG. 698
WAYLON B. & RACHEL THOMAS
D.B. 141, PG. 1770
CLASS 'I' RIP-RAP
EST. 11 TONS
EST. 22 SYGF
(NO RIP RAP IS TO BE PLACED IN STREAM BED)
STANDARD BASE DITCH
SEE DETAIL D
CLASS 'I' RIP-RAP
EST. 8 TONS
EST. 20 SYGF
DDE= 15 CY
S= 9.0%
SPECIAL CUT DITCH
SEE DETAIL E
REMOVE & REPLACE SPRING BOX
END SBG STA. 268+00 LT.
15" RCP-IV
24" RCP-IV
PROP. 47" W.W. FENCE
REMOVE 12 LF EXIST. 24" RCP
REMOVE PAVED DITCH
PAVED DITCH
LINE PROP. DITCH W/ PSRM EST. 225 SY
10' STONE DRWY
TRANSITION
Pls Sta 260+86.12
Θs = 9°02'48.1"
Ls = 420.00'
LT = 280.37'
ST = 140.33'
Pl Sta 269+92.55
Δ = 59°55'50.5" (LT)
D = 4°18'28.6"
L = 1,391.16'
T = 766.80'
R = 1,330.00'
SE = .06
Ro = As Shown
Pls Sta 277+27.08
Θs = 7°06'29.2"
Ls = 330.00'
LT = 220.18'
ST = 110.16'
-Y3-
Pl Sta 11+17.12
Δ = 14°09'30.3" (RT)
D = 12°33'53.5"
L = 112.68'
T = 56.63'
R = 456.00'
SE = .05
Ro = As Shown
-Y3-
Pl Sta 12+90.20
Δ = 7°38'58.6" (RT)
D = 16°22'12.8"
L = 46.73'
T = 23.40'
R = 350.00'
SE = As Shown
Ro = As Shown
-DRW2-
Pl Sta 17+39.93
Δ = 117°46'45.2" (LT)
D = 63°39'43.1"
L = 185.01'
T = 149.13'
R = 90.00'
DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.
SEE SHEET 41 FOR -DRW2- PROFILE
SEE SHEET 37 FOR -Y3- PROFILE
SEE SHEET 26 FOR -L- PROFILE
REVISIONS
03/25/2015 ROW REV: AMENDED PROPERTY OWNER NAME ON PARCEL 6. - KH
8/17/99
26-MAR-2015 16:38
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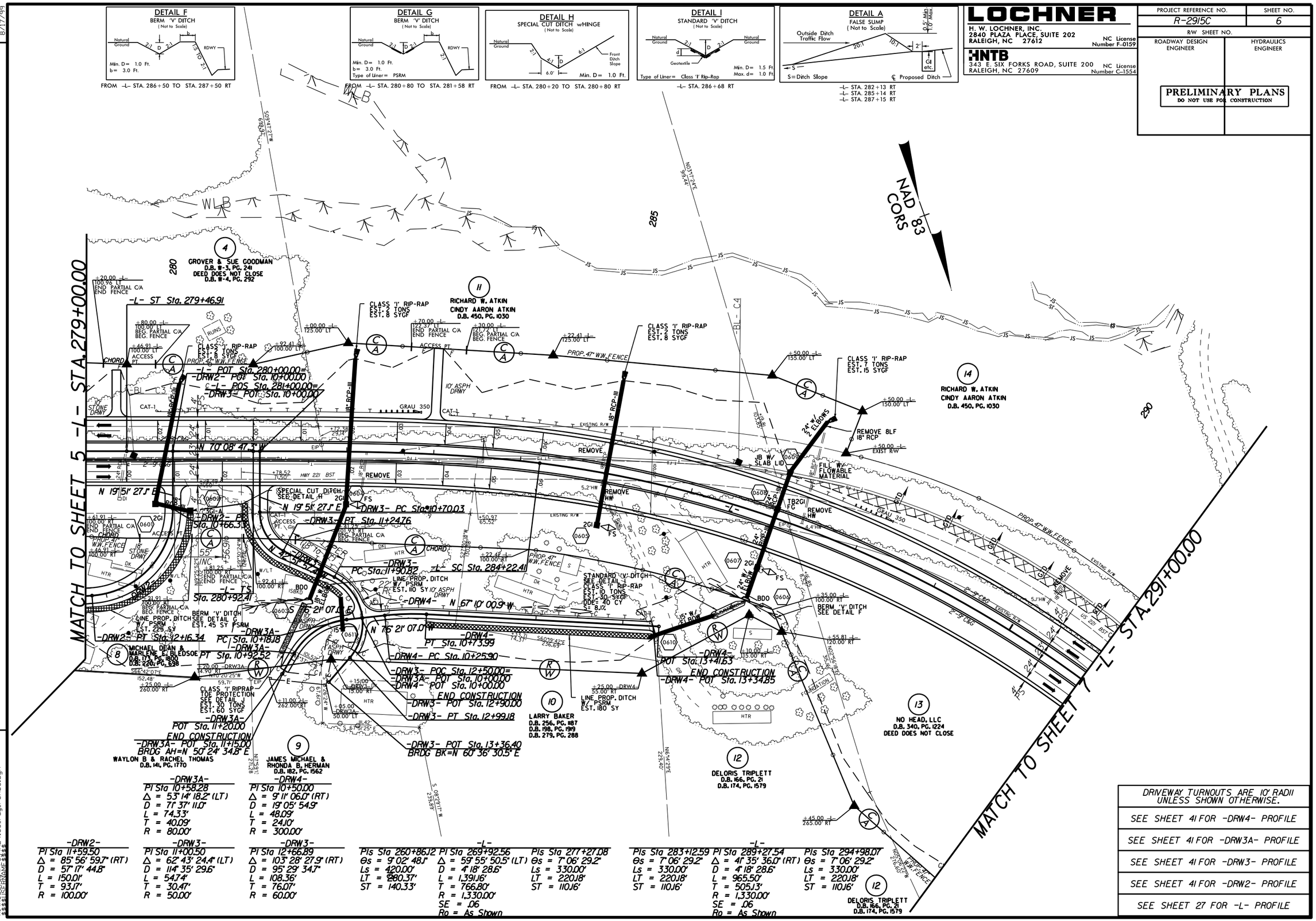
8/17/99

REVISIONS

03252015 ROW REV: AMENDED PROPERTY LINES AND DEED REFERENCES FOR PARCEL 10; AMENDED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCELS 11 & 14. – KH
04242015 ROW REV: ADDED TCE FOR -DRW3A- ON PARCELS 9 & 10; COMBINED PARCEL 12 AND OMITTED PARCEL 13. – BB



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LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

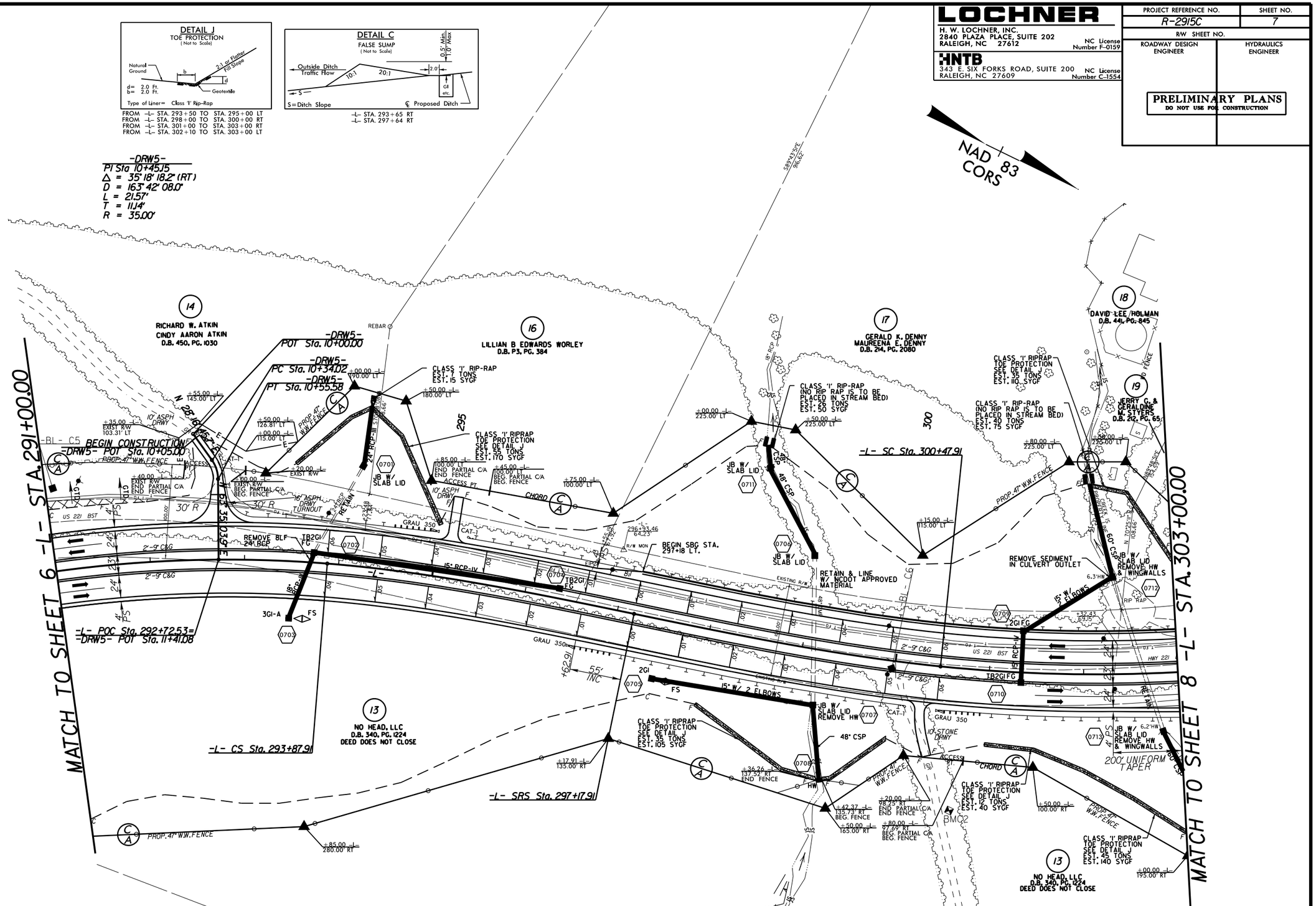
PROJECT REFERENCE NO.	SHEET NO.
R-2915C	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

03/25/2015 ROW REV: AMENDED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCEL 14; ADDED DEED REFERENCE ON PARCEL 16; AMENDED PROPERTY OWNER NAME ON PARCEL 17; AMENDED DEED REFERENCE ON PARCEL 18. - KH



26-MAR-2015 16:39
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8/17/99

REVISIONS

03/25/2015 ROW REV: AMENDED DEED REFERENCE ON PARCEL 18; AMENDED PROPERTY OWNER NAME ON PARCEL 26. - KH

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8515 / 17800	US 221 -L-	9093 / 18200

54/500 632/900

686/1400

-Y4- (SR 1169) WINDY HILL RD.

2017 ADT / 2037 ADT

DETAIL J
TOE PROTECTION
(Not to Scale)

Natural Ground; 2:1 or Flatter Fill Slope; b; d; Geotextile

d= 2.0 Ft.
b= 2.0 Ft.

Type of Liner= Class 'I' Rip-Rap

FROM -L- STA. 303+00 TO STA. 303+35 LT
FROM -L- STA. 303+00 TO STA. 303+25 RT
FROM -L- STA. 303+35 TO STA. 304+50 RT

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

Natural Ground; 2:1; D; 4:1 or Flatter; Fill Slope

Min. D= 1.0 Ft.

FROM -Y4- STA. 11+00 TO STA. 12+00 LT

DETAIL C
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow; 10:1; 20:1; 2.0'; 0.5' Min. 1.0' Max.; GI etc.; S=Ditch Slope; ℄ Proposed Ditch

-L- STA. 305+26 LT

DETAIL A
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow; 20:1; 10:1; 2'; 0.5' Min. 1.0' Max.; GI etc.; S=Ditch Slope; ℄ Proposed Ditch

-L- STA. 306+36 RT
-L- STA. 308+85 RT
-L- STA. 315+64 LT

DETAIL E
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground; 1.75:1; D; 4:1 or Flatter; Front Ditch Slope

Min. D= 1.0 Ft.

FROM -Y4- STA. 12+00 TO STA. 13+00 LT

DETAIL K
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground; 4:1; D; 4:1 or Flatter; Front Ditch Slope

Min. D= 1.0 Ft.

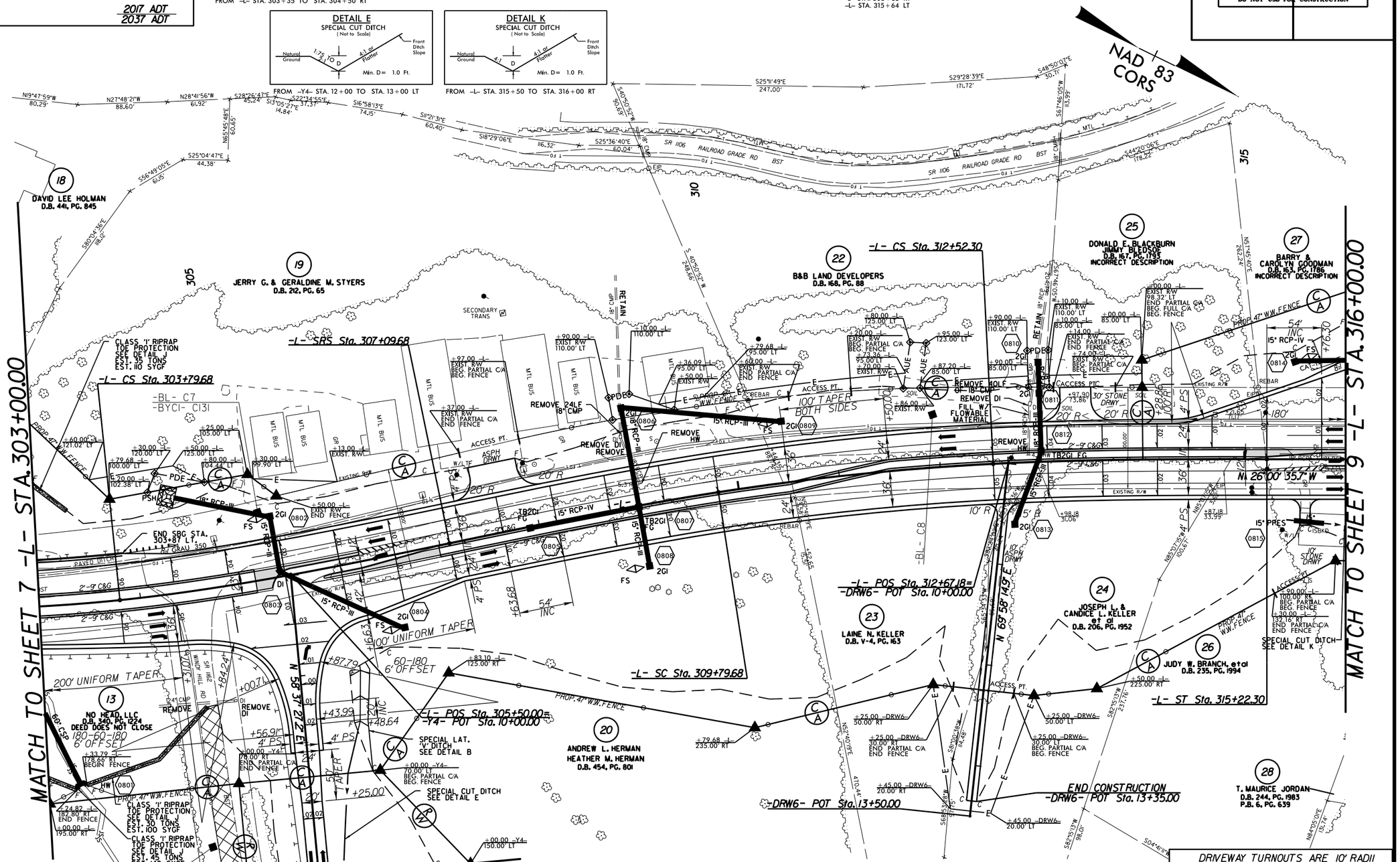
FROM -L- STA. 315+50 TO STA. 316+00 RT

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-L-			-L-	
Pls Sta 299+38.03	Pl Sta 302+14.38	Pls Sta 304+89.79	Pls Sta 308+89.70	Pl Sta 311+16.11	Pls Sta 313+42.33
Θs = 5° 50' 08.5"	Δ = 11° 44' 01.8" (LT)	Θs = 5° 50' 08.5"	Θs = 2° 55' 07.8"	Δ = 5° 53' 40.2" (RT)	Θs = 2° 55' 07.8"
Ls = 330.00'	D = 3° 32' 12.4"	Ls = 330.00'	Ls = 270.00'	D = 2° 09' 43.6"	Ls = 270.00'
LT = 220.12'	L = 331.77'	LT = 220.12'	LT = 180.02'	L = 272.63'	LT = 180.02'
ST = 110.11'	T = 166.47'	ST = 110.11'	ST = 90.02'	T = 136.43'	ST = 90.02'
	R = 1,620.00'			R = 2,650.00'	
	SE = .06			SE = .05	
	Ro = As Shown			Ro = As Shown	

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 41 FOR -DRW6- PROFILE

SEE SHEET 37 FOR -Y4- PROFILE

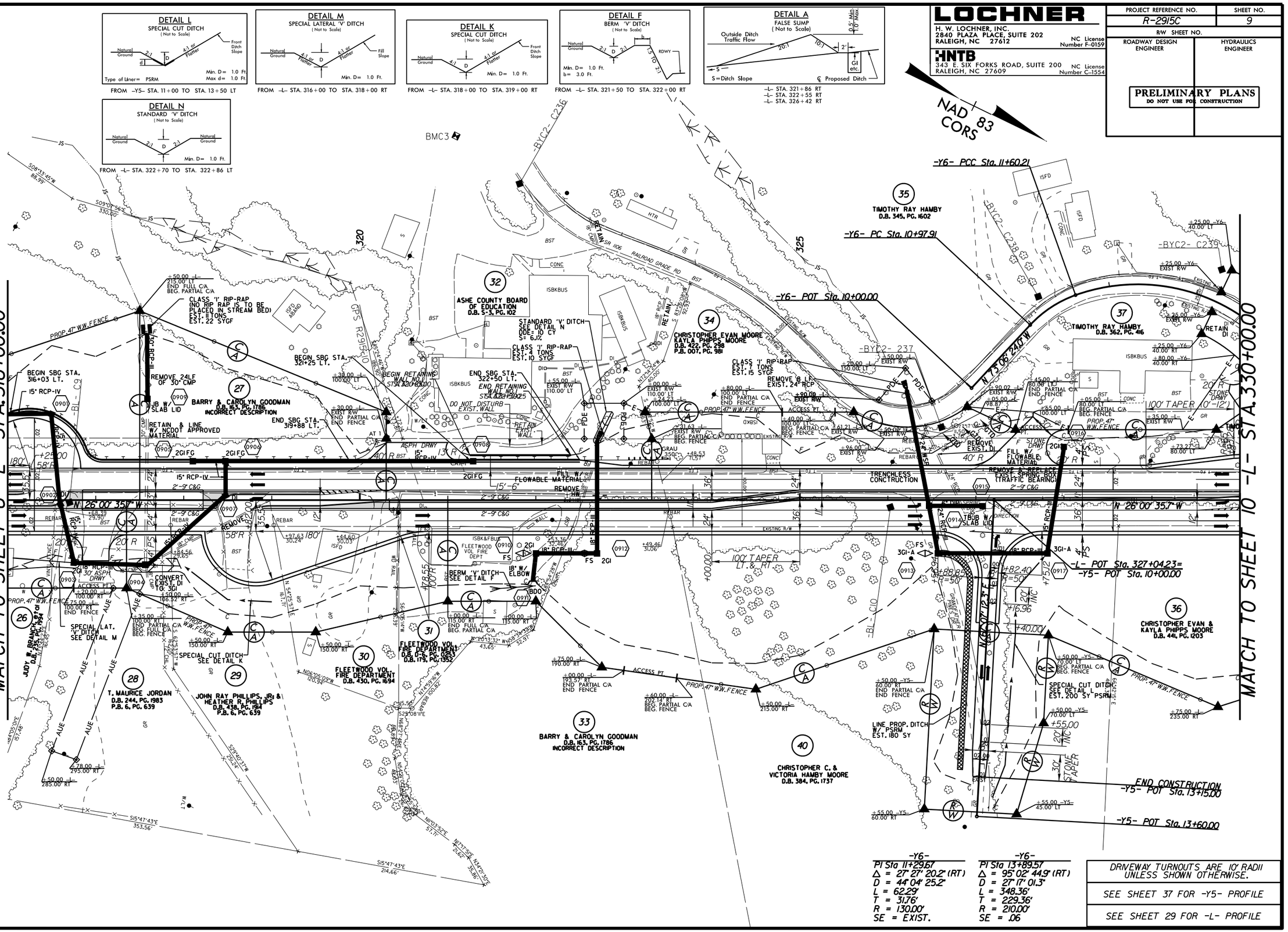
SEE SHEET 29 FOR -L- PROFILE

8/17/99

REVISIONS

03/25/2015 ROW REV: AMENDED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCEL 26; AMENDED PROPERTY LINE FOR PARCEL 29; AMENDED PROPERTY OWNER NAME ON PARCEL 34 AND 37; AMENDED PROPERTY OWNER NAME ON PARCEL 37; CREATED PARCEL NO. 40. – KH

04/24/2015 ROW REV: AMENDED DEED REFERENCE ON PARCEL 32. – BB



-Y6-
Pi Sta 11+29.67
Δ = 27° 27' 20.2" (RT)
D = 44° 04' 25.2"
L = 62.29'
T = 31.76'
R = 130.00'
SE = EXIST.

27-APR-2015 17:37
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8/17/99

REVISIONS

03252015 ROW REV: AMENDED PROPERTY LINE FOR PARCEL 36; AMENDED PARCEL 40. CH

04242015 ROW REV: ADDED TCE FOR -DRW6B- ON PARCEL 41. - BB

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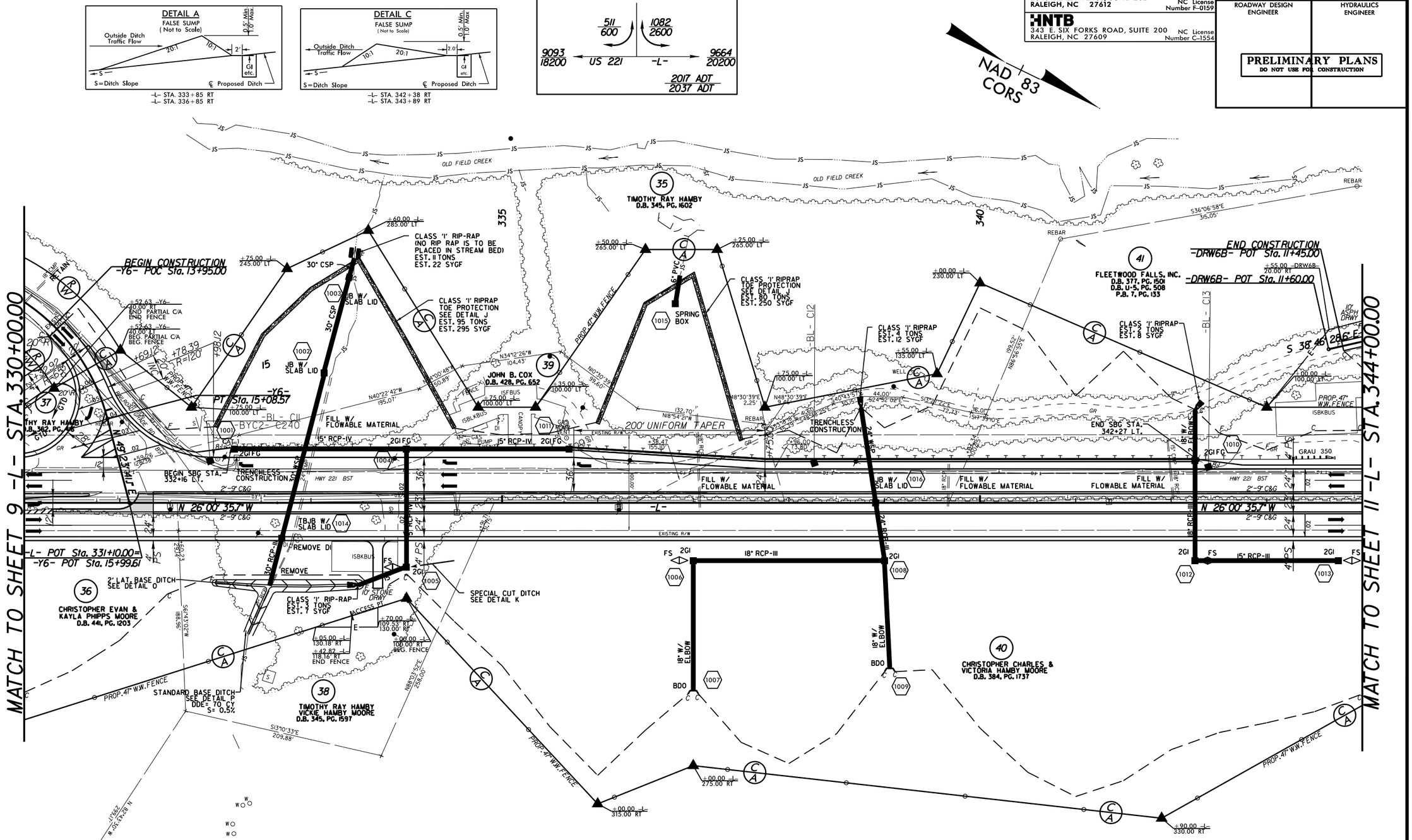
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 42 FOR -DRW6B- PROFILE

SEE SHEET 37 FOR -Y6- PROFILE

SEE SHEET 30 FOR -L- PROFILE

27-APR-2015 17:38
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8/17/99

REVISIONS

03252015 ROW REV: AMENDED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCEL 40; CORRECTED STATION ON ROW MONUMENT FROM -Y7- 12+00 TO -Y7- 12+10; REVISED ROW BETWEEN -DRW7- 12+34.16 & -L- 350+95; AND AMENDED PROPERTY LINE ON PARCEL 42; AMENDED DEED REFERENCE ON PARCEL 46; CREATED PARCEL NO. 118. - KH

04242015 ROW REV: ADDED TCE FOR -DRW6B- ON PARCEL 41; REMOVED PROPERTY OWNER NAME, DEED REFERENCE, AND PARCEL NO. 47 FROM THIS SHEET. - BB

27-APR-2015 17:38
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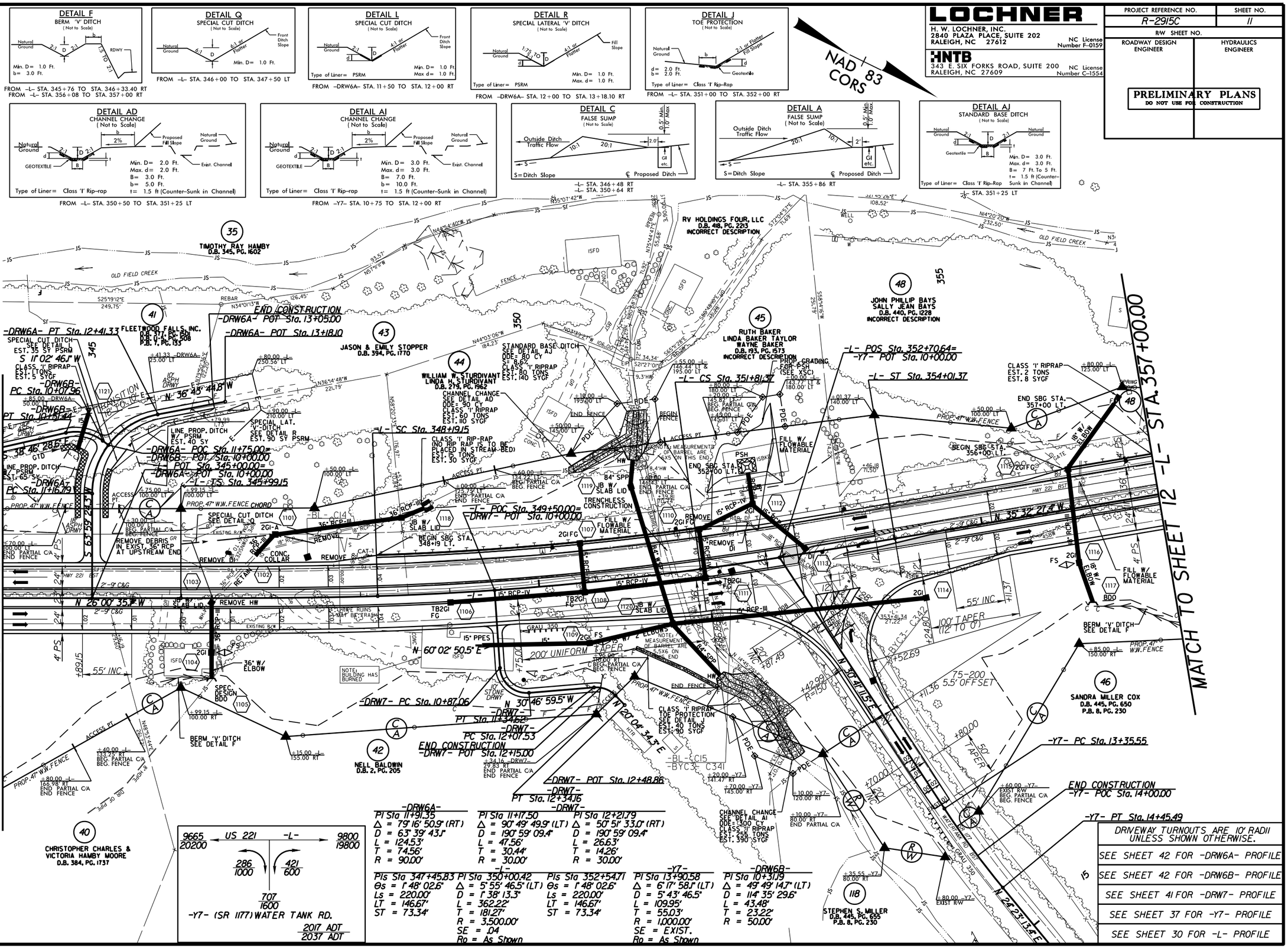

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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RALEIGH, NC 27609
NC License Number C-1554

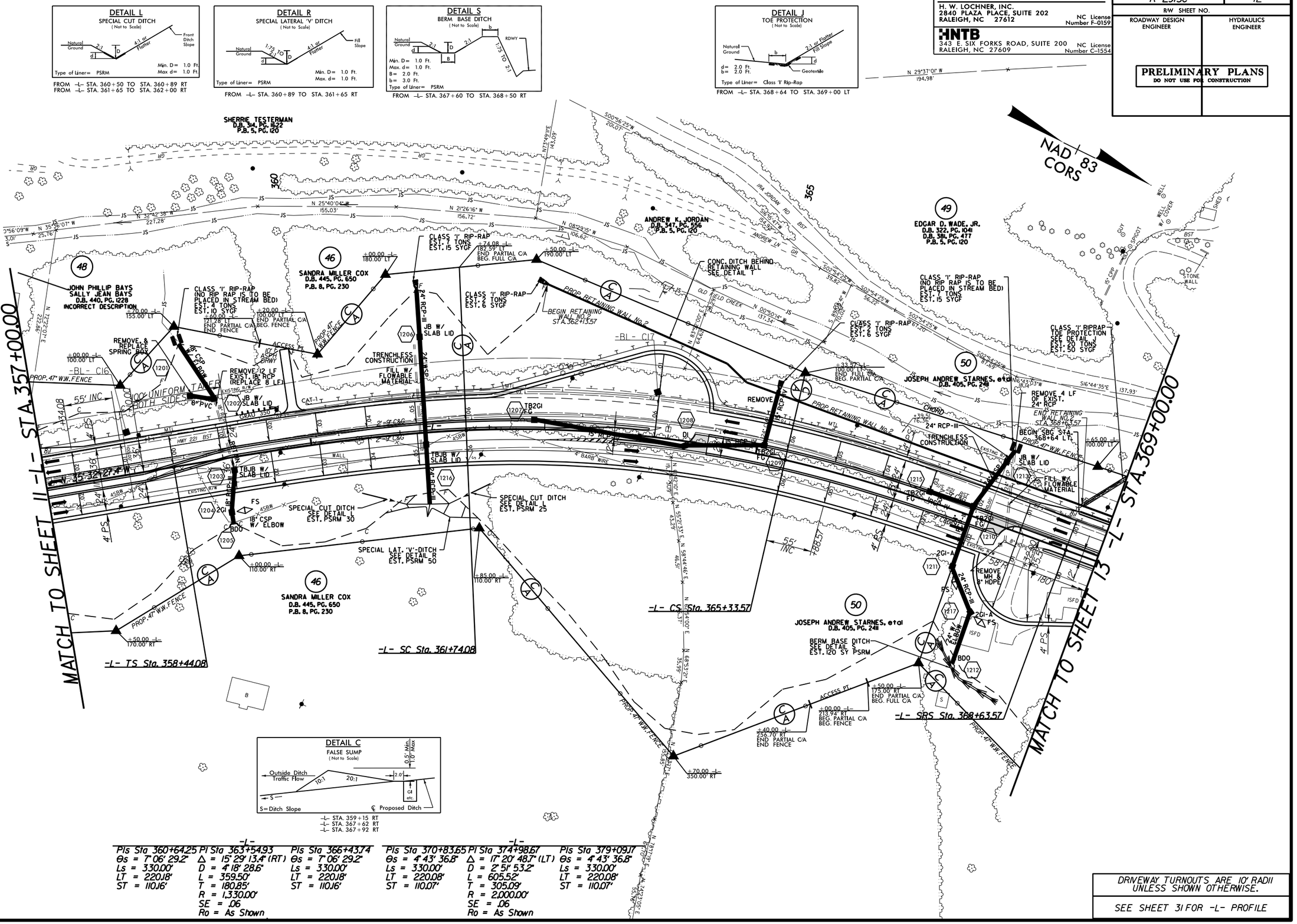
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

03/25/2015 ROW REV: AMENDED DEED REFERENCE ON PARCELS 46 & 47; AMENDED PROPERTY LINES BETWEEN PARCELS 47, 48, & 50; AMENDED PROPERTY OWNER NAME AND COMBINED PARCELS 50 & 51 INTO PARCEL 50; REMOVED PARCEL NO. 51. - KH

04/24/2015 ROW REV: COMBINED PARCELS 46 & 47 INTO PARCEL 46 AND OMITTED PARCEL 47. - BB



-L-

Pls Sta 360+64.25	Pi Sta 363+54.93	Pls Sta 366+43.74	Pls Sta 370+83.65
Θs = 7° 06' 29.2"	Δ = 15° 29' 13.4" (RT)	Θs = 7° 06' 29.2"	Θs = 4° 43' 36.8"
Ls = 330.00'	D = 4° 18' 28.6"	Ls = 330.00'	Ls = 330.00'
LT = 220.18'	L = 359.50'	LT = 220.18'	LT = 220.08'
ST = 110.16'	T = 180.85'	ST = 110.16'	ST = 110.07'
	R = 1,330.00'		
	SE = .06		
	Ro = As Shown		

-L-

Pi Sta 374+98.67	Pls Sta 379+09.17
Δ = 17° 20' 48.7" (LT)	Θs = 4° 43' 36.8"
D = 2° 51' 53.2"	Ls = 330.00'
L = 605.52'	LT = 220.08'
T = 305.09'	ST = 110.07'
R = 2,000.00'	
SE = .06	
Ro = As Shown	

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 31 FOR -L- PROFILE

27-APR-2015 17:39
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8/17/99

REVISIONS

03/25/2015 ROW REV: AMENDED PROPERTY LINE BETWEEN PARCELS 49 & 50; AMENDED PROPERTY LINE BETWEEN PARCELS 50 & 51; REMOVED PARCEL 50; COMBINED PARCELS 50 & 51 INTO PARCEL 50; REMOVED PARCEL 66 AND OMITTED PARCEL 67; COMBINED PARCELS 66 & 67 INTO PARCEL 66; COMBINED PARCELS 56 & 59 INTO PARCEL 56; AND OMITTED PARCEL 59; COMBINED PARCELS 68 & 69 INTO PARCEL 68 AND OMITTED PARCEL 69. - BB

04/24/2015 ROW REV: COMBINED PARCELS 56 & 59 INTO PARCEL 56 AND OMITTED PARCEL 69. - BB

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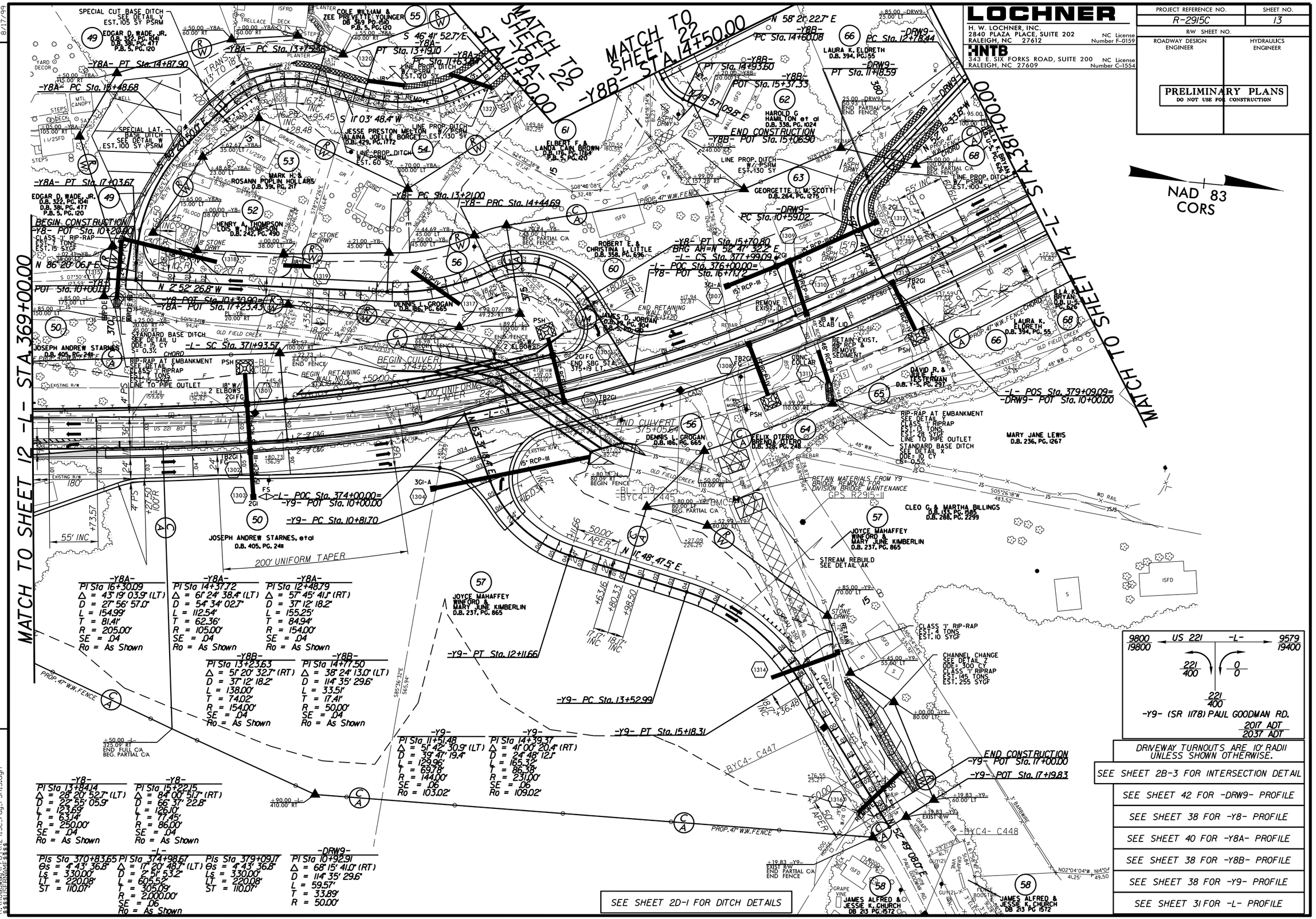

LOCHNER
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2840 PLAZA PLACE, SUITE 202 NC License
RALEIGH, NC 27612 Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200 NC License
RALEIGH, NC 27609 Number C-1554

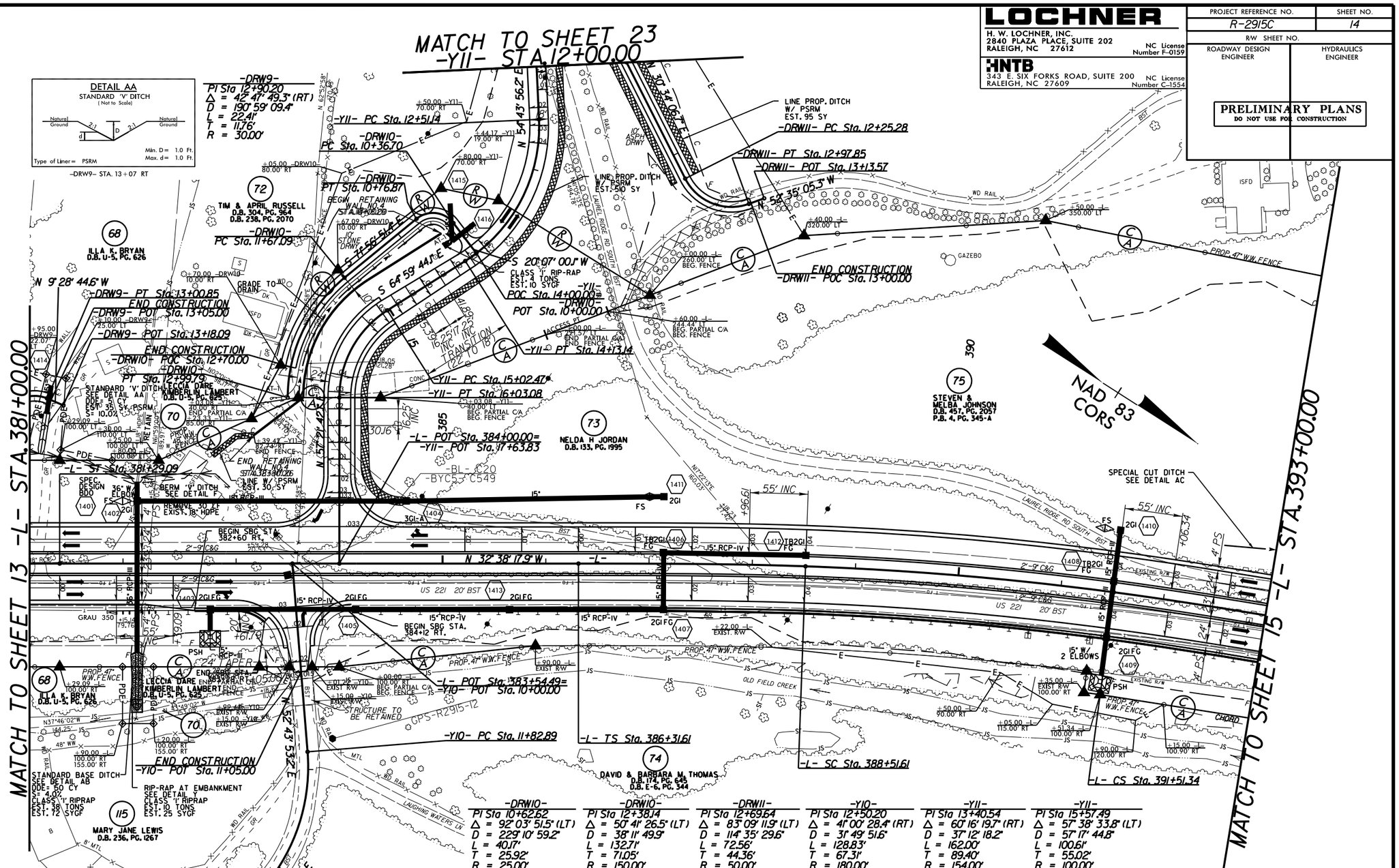
PROJECT REFERENCE NO.	SHEET NO.
R-2915C	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

03252015 ROW REV: CORRECTED ALIGNMENT NAME ON ROW MONUMENT FROM -Y11- 12+70 TO -DRW10- 12+70 AND CORRECTED STATION ON PDE MONUMENT LABEL FROM -DRW9- 13+10 TO -DRW10- 12+95 ON PARCEL 68; AMENDED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCEL 75; ADDED PARCEL NO. 115 - KH
04242015 ROW REV: COMBINED PARCELS 68 & 69 INTO PARCEL 68 AND OMITTED PARCEL 69; AMENDED PROPERTY OWNER NAME ON PARCEL 70; COMBINED PARCELS 70 & 71 INTO PARCEL 70 AND OMITTED PARCEL 71. - BB



-DRW10-
PI Sta 10+62.62
Δ = 92° 03' 51.5" (LT)
D = 229° 10' 59.2"
L = 40.17'
T = 25.92'
R = 25.00'

-DRW10-
PI Sta 12+38.14
Δ = 50° 41' 26.5" (LT)
D = 38° 11' 49.9"
L = 132.71'
T = 71.05'
R = 150.00'

-DRW11-
PI Sta 12+69.64
Δ = 83° 09' 11.9" (LT)
D = 114° 35' 29.6"
L = 72.56'
T = 44.36'
R = 50.00'

-Y10-
PI Sta 12+50.20
Δ = 41° 00' 28.4" (RT)
D = 31° 49' 51.6"
L = 128.83'
T = 67.31'
R = 180.00'
SE = EXIST.

-Y11-
PI Sta 13+40.54
Δ = 60° 16' 19.7" (RT)
D = 37° 12' 18.2"
L = 162.00'
T = 89.40'
R = 154.00'
SE = .04
Ro = 69.00'

-Y11-
PI Sta 15+57.49
Δ = 57° 38' 33.8" (LT)
D = 57° 17' 44.8"
L = 100.61'
T = 55.02'
R = 100.00'
SE = .04
Ro = 65.00'

-L-
Pis Sta 370+83.65
θs = 4° 43' 36.8"
Ls = 330.00'
LT = 220.08'
ST = 110.07'

-L-
PI Sta 374+98.67
Δ = 17° 20' 48.7" (LT)
D = 2° 51' 53.2"
L = 605.52'
T = 305.09'
R = 2,000.00'
SE = .06
Ro = As Shown

-L-
Pis Sta 379+09.17
θs = 4° 43' 36.8"
Ls = 330.00'
LT = 220.08'
ST = 110.07'

-L-
Pis Sta 387+78.28
θs = 2° 01' 59.1"
Ls = 220.00'
LT = 146.68'
ST = 73.34'

-L-
PI Sta 390+01.59
Δ = 5° 32' 23.2" (RT)
D = 1° 50' 53.7"
L = 299.73'
T = 149.98'
R = 3,100.00'
SE = .04
Ro = As Shown

-L-
Pis Sta 392+24.68
θs = 2° 01' 59.1"
Ls = 220.00'
LT = 146.68'
ST = 73.34'

DETAIL C
FALSE SUMP
(Not to Scale)
S = Ditch Slope
℄ Proposed Ditch
-L- STA. 381+90 LT
-L- STA. 387+00 LT
-L- STA. 391+35 LT

DETAIL F
BERM 'V' DITCH
(Not to Scale)
Min. D = 1.0 Ft.
b = 3.0 Ft.
FROM -L- STA. 381+00 TO STA. 382+80 LT

DETAIL AB
STANDARD BASE DITCH
(Not to Scale)
Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 3.0 Ft.
t = 1.5 ft (Counter-Sunk in Channel)
Type of Liner = Class 'I' Rip-Rap
-L- STA. 382+05 RT

DETAIL Y
RIP RAP AT EMBANKMENT
(Not to Scale)
GEOTEXTILE
Type of Liner = Class 'I' Rip-Rap
-L- STA. 382+05 RT

DETAIL AC
SPECIAL CUT DITCH wHINGE
(Not to Scale)
Min. D = 1.0 Ft.
FROM -L- STA. 392+50 TO STA. 393+00 LT

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 2B-3 FOR INTERSECTION DETAIL

SEE SHEET 42 FOR -DRW10- PROFILE

SEE SHEET 42 FOR -DRW11- PROFILE

SEE SHEET 38 FOR -Y10- PROFILE

SEE SHEET 39 FOR -Y11- PROFILE

SEE SHEET 32 FOR -L- PROFILE

LOCHNER
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RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

27-APR-2015 17:39
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PROJECT REFERENCE NO.	SHEET NO.
R-2915C	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

LOCHNER
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2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

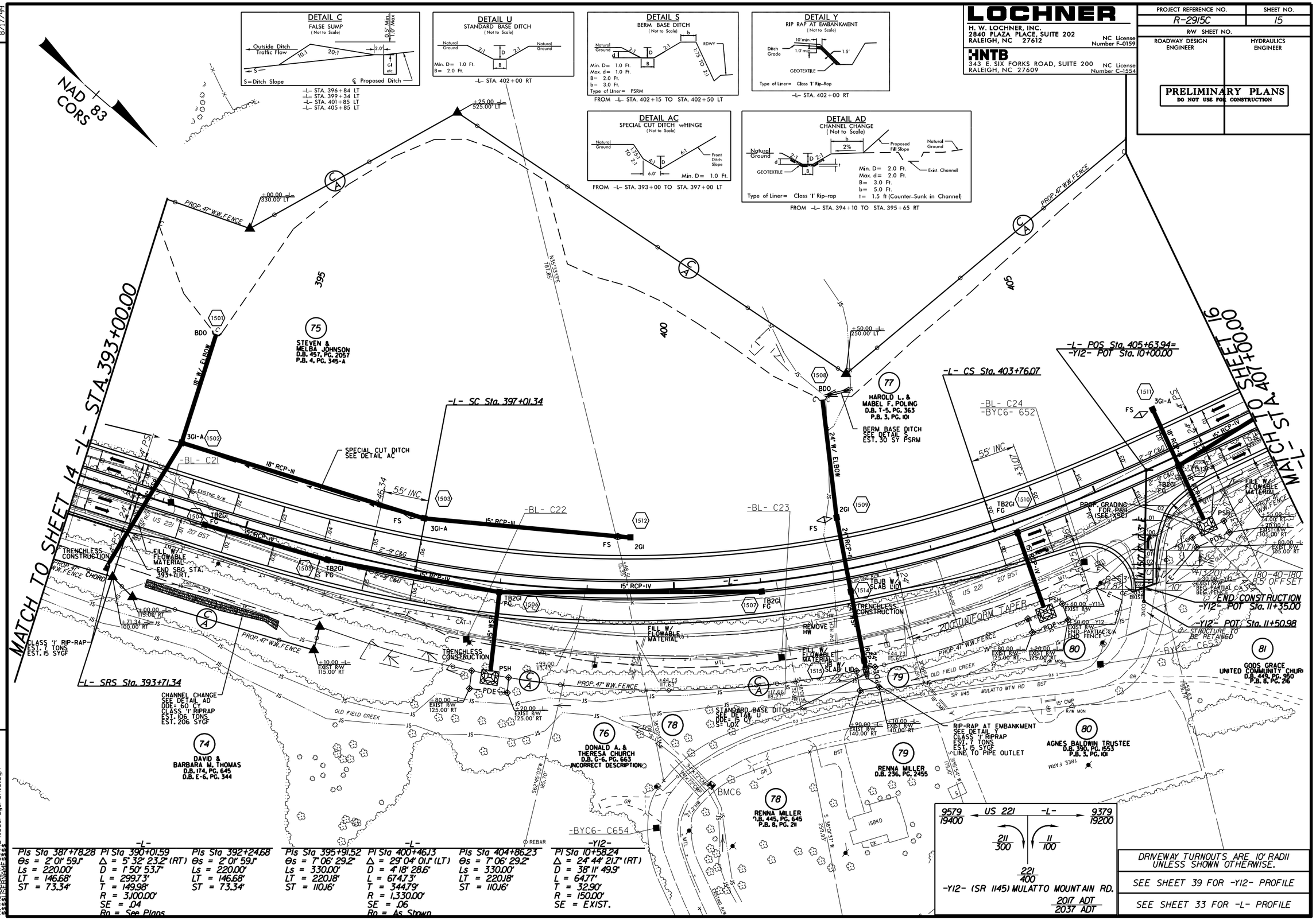
HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

03/25/2015 ROW REV. AMENDED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCELS 75 & 81. - KH



-L-		
PIs Sta 387+78.28	PI Sta 390+01.59	PIs Sta 392+24.68
Θs = 2° 01' 59.1"	Δ = 5° 32' 23.2" (RT)	Θs = 2° 01' 59.1"
Ls = 220.00'	D = 1° 50' 53.7"	Ls = 220.00'
LT = 146.68'	L = 299.73'	LT = 146.68'
ST = 73.34'	T = 149.98'	ST = 73.34'
	R = 3,100.00'	
	SE = .04	
	Rn = See Plans	

-L-		
PIs Sta 395+91.52	PI Sta 400+46.13	PIs Sta 404+86.23
Θs = 1° 06' 29.2"	Δ = 29° 04' 01.1" (LT)	Θs = 1° 06' 29.2"
Ls = 330.00'	D = 4° 18' 28.6"	Ls = 330.00'
LT = 220.18'	L = 674.73'	LT = 220.18'
ST = 110.16'	T = 344.79'	ST = 110.16'
	R = 1,330.00'	
	SE = .06	
	Rn = As Shown	

-Y12-
PI Sta 10+58.24
Δ = 24° 44' 21.7" (RT)
D = 38° 11' 49.9"
L = 64.77'
T = 32.90'
R = 150.00'
SE = EXIST.

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 39 FOR -Y12- PROFILE

SEE SHEET 33 FOR -L- PROFILE

26-MAR-2015 16:43
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PROJECT REFERENCE NO.	SHEET NO.
R-2915C	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
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RALEIGH, NC 27609
NC License Number C-1554

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS
03/25/2015 ROW REV: AMENDED PROPERTY OWNER NAME AND DEED REFERENCES ON PARCEL 81. - KH
04/24/2015 ROW REV: AMENDED PROPERTY OWNER NAME ON PARCEL 82. - BB

MATCH TO SHEET 24 -L- STA. 413+50 @ 625.00' LT.

-L-

PIs Sta 395+91.52	PI Sta 400+46.13	PIs Sta 404+86.23
Θs = 7° 06' 29.2"	Δ = 29° 04' 01.1" (LT)	Θs = 7° 06' 29.2"
Ls = 330.00'	D = 4° 18' 28.6"	Ls = 330.00'
LT = 220.18'	L = 674.73'	LT = 220.18'
ST = 110.16'	T = 344.79'	ST = 110.16'
	R = 1,330.00'	
	SE = .06	
	Ro = As Shown	

-L-

PIs Sta 409+26.24	PI Sta 413+12.92	PIs Sta 416+92.14
Θs = 7° 06' 29.2"	Δ = 23° 31' 04.1" (RT)	Θs = 7° 06' 29.2"
Ls = 330.00'	D = 4° 18' 28.6"	Ls = 330.00'
LT = 220.18'	L = 545.92'	LT = 220.18'
ST = 110.16'	T = 276.86'	ST = 110.16'
	R = 1,330.00'	
	SE = .06	
	Ro = As Shown	

DETAIL C
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow; 10:1; 20:1; 2.0'; 0.5' Min. 1.0' Max; GI etc.; S
S=Ditch Slope ℄ Proposed Ditch

-L- STA. 409+85 LT
-L- STA. 410+86 LT
-L- STA. 413+37 LT
-L- STA. 415+35 LT
-L- STA. 416+85 LT
-L- STA. 419+72 LT

DETAIL U
STANDARD BASE DITCH
(Not to Scale)
Natural Ground; 2:1; D; B; Natural Ground
Min. D= 1.0 Ft.
B= 2.0 Ft.
-L- STA. 419+61 RT

DETAIL Y
RIP RAP AT EMBANKMENT
(Not to Scale)
10' min.; Ditch Grade; 1.0' min.; 1.5'; GEOTEXTILE
Type of Liner= Class 'I' Rip-Rap
-L- STA. 419+61 RT

DETAIL AL
VARIABLE BASE DITCH
(Not to Scale)
Natural Ground; 2:1; D; d; t; B; Natural Ground; Geotextile
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft. to 10.0 Ft.
t= 1.5 ft (Counter-Sunk in Channel)
Type of Liner= Class 'I' Rip-Rap
-L- STA. 415+00 RT

77
HAROLD L. & MABEL F. POLING
D.B. T-5, PG. 363
P.B. 3, PG. 101

82
GERTRUDE LUCAS
D.B. T-5, PG. 365
P.B. 3, PG. 101

85
NELL B. BALDWIN
D.B. 236, PG. 904

84
BOBBY R. HAM
D.B. 154, PG. 826

86
JOHN D. & SHIRLEY H. BALDWIN ET AL
D.B. 392, PG. 1357
P.B. 3, PG. 101

81
GOOS GRACE UNITED COMMUNITY CHURCH
D.B. 449, PG. 950
P.B. 8, PG. 216

83
RENNA SUE MILLER
D.B. 445, PG. 645
P.B. 3, PG. 101

87
NELL BALDWIN
D.B. T-5, PG. 371
P.B. 3, PG. 101

NAD 83 CORS

MATCH TO SHEET 15 -L- STA. 407+00.00

MATCH TO SHEET 19 -L- STA. 420+00.00

-L- SRS Sta. 407+06.07

-L- SC Sta. 410+36.07

-L- ST Sta. 419+11.98

-L- SE Sta. 415+81.98

-BL- C25

-BL- C26

PROP. 47" W.W. FENCE

18" W/ ELBOW

55' INC

18" RCP-III

15" RCP-IV

18" RCP-IV

TB2GI FG

3GI-A

2GI

FS

REMOVE 1 CF EXIST. 24" RCP

RETAIN & REMOVE SEDIMENT

TB.JB W/ SLAB LID

REMOVE HW

FILL W/ FLOWABLE MATERIAL

CLASS 'I' RIP-RAP (NO RIP RAP IS TO BE PLACED IN STREAM BED) EST. 7 TONS EST. 15 SYGF

VARIABLE BASE DITCH SEE DETAIL AL DDE= 70 CY S= 0.3% CLASS 'I' RIPRAP EST. 20 TONS EST. 40 SYGF SEE XSC FOR GRADING

CLASS 'I' RIP-RAP EST. 7 TONS EST. 15 SYGF

RIP-RAP AT EMBANKMENT SEE DETAIL Y CLASS 'I' RIPRAP EST. 7 TONS EST. 15 SYGF

STANDARD BASE DITCH SEE DETAIL U DDE= 15 CY S= 1.0%

LINE TO PIPE OUTLET

TRENCHLESS CONSTRUCTION 18" RCP-III

OLD FIELD CREEK

US 221 BST

GRAU 350

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 34 FOR -L- PROFILE

27-APR-2015 17:40
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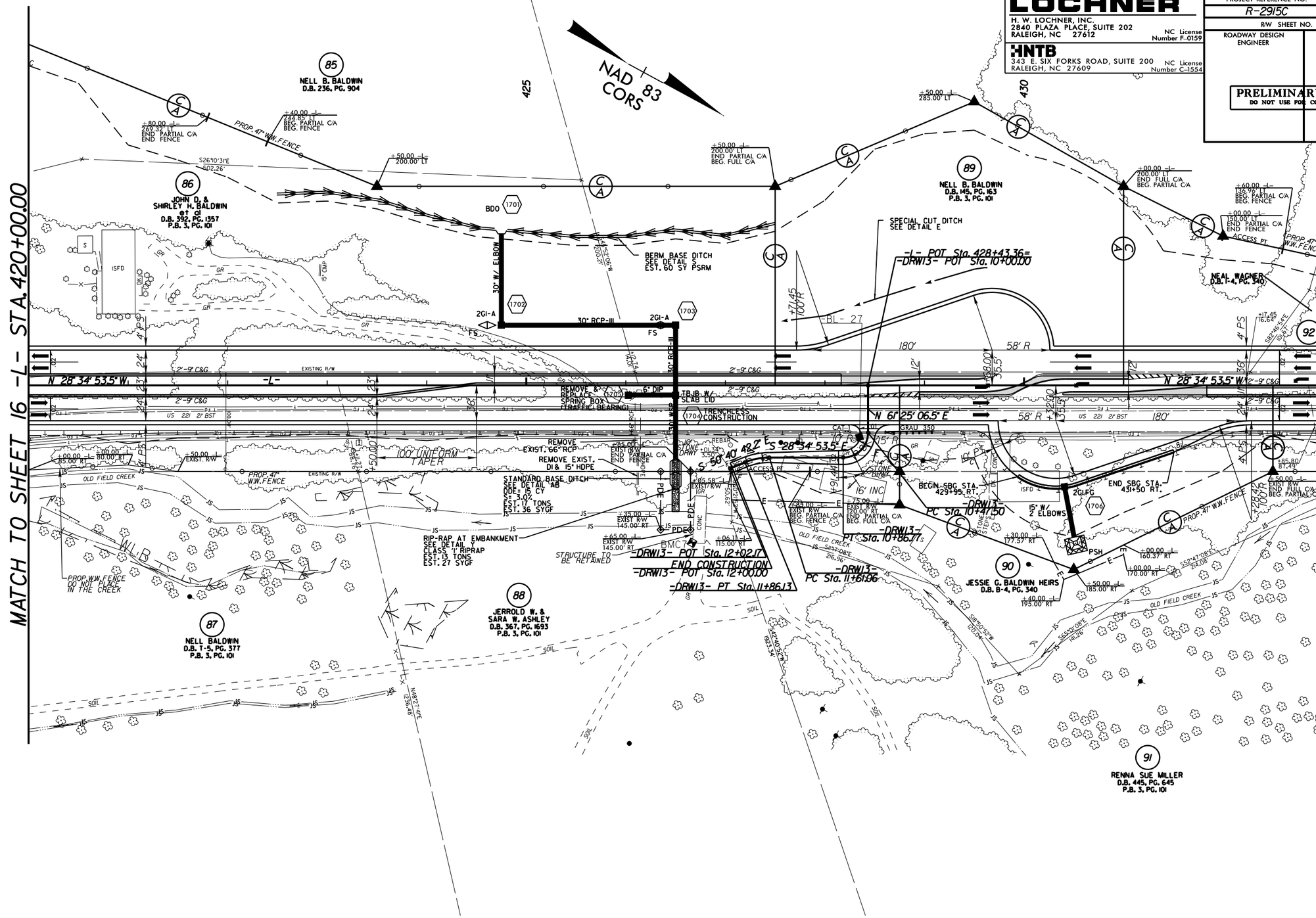
$$$$USERNAME$$$$

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

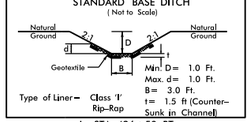
HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

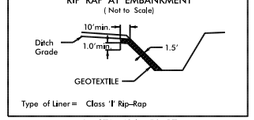


DETAIL AB
STANDARD BASE DITCH
(Not to Scale)



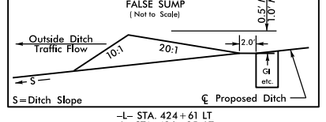
-L- STA. 426+50 RT

DETAIL Y
RIP RAP AT EMBANKMENT
(Not to Scale)



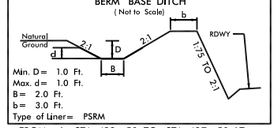
-L- STA. 426+50 RT

DETAIL C
FALSE SUMP
(Not to Scale)



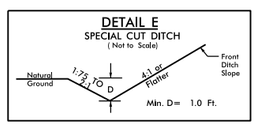
-L- STA. 424+61 LT
-L- STA. 426+35 LT

DETAIL S
BERM BASE DITCH
(Not to Scale)



FROM -L- STA. 422+50 TO STA. 427+50 LT

DETAIL E
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 427+00 TO STA. 429+68 LT

-DRW13-
PI Sta 10+72.50
Δ = 90° 00' 00.0" (RT)
D = 229° 10' 59.2"
L = 39.27'
T = 25.00'
R = 25.00'
SE = As Shown
Ro = As Shown

-DRW13-
PI Sta 11+73.75
Δ = 22° 05' 48.6" (LT)
D = 88° 08' 50.5"
L = 25.07'
T = 12.69'
R = 65.00'
SE = As Shown
Ro = As Shown

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 42 FOR -DRW13- PROFILE

SEE SHEET 34 FOR -L- PROFILE

REVISIONS
03/25/2015 ROW REV: AMENDED PROPERTY OWNER NAMES ON PARCELS 88 & 90. - KH

8/17/99

26-MAR-2015 16:44
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8/17/99

REVISIONS

03252015 ROW REV. AMENDED PROPERTY OWNER NAME ON PARCEL 90; AMENDED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCEL 91; ADDED PARCEL NO. 116; ADDED EXIST EASEMENT AND DEED REFERENCE ON PARCEL 102; REMOVED PROPERTY OWNER NAME AND DEED REFERENCE FOR PARCEL 103. - KH

04242015 ROW REV. AMENDED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCEL 90; ADDED C/A BREAK BETWEEN -L- 444+62 & -L- 445+22; ADDED 14' DRIVEWAY AT -L- 445+00, AND REVISED TCE ON PARCEL 102. - BB

27-APR-2015 17:40
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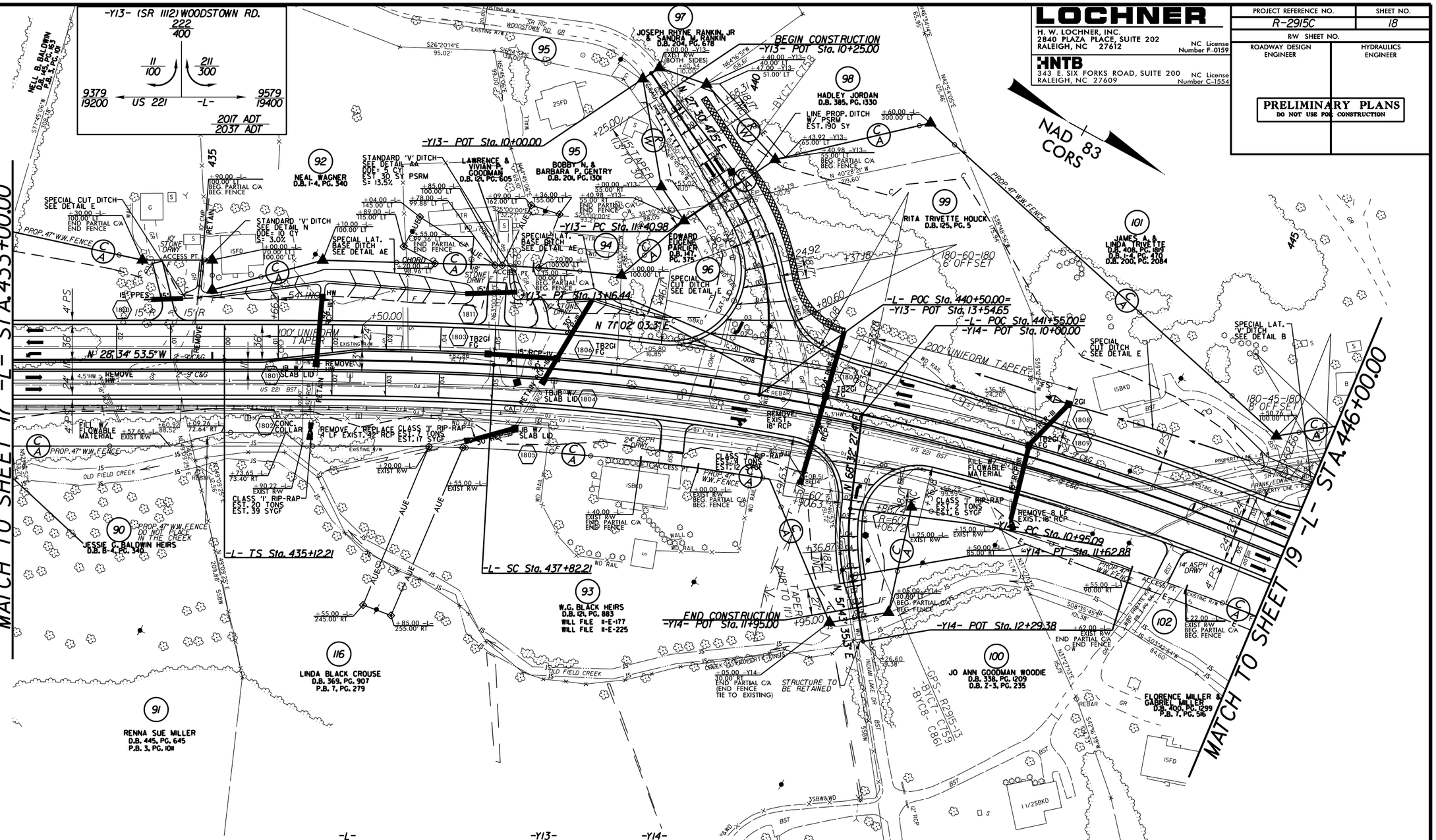
$$USERNAME$$



	-L-		-Y13-	-Y14-
PIs Sta 436+92.24	PI Sta 442+09.80	PIs Sta 447+18.53	PI Sta 12+33.19	PI Sta 11+29.23
Θs = 3° 13' 22.4"	Δ = 20° 12' 13.3" (RT)	Θs = 3° 13' 22.4"	Δ = 43° 31' 15.8" (RT)	Δ = 16° 48' 52.1" (LT)
Ls = 270.00'	D = 2° 23' 14.4"	Ls = 270.00'	D = 24° 48' 12.1"	D = 24° 48' 12.1"
LT = 180.03'	L = 846.29'	LT = 180.03'	L = 175.46'	L = 67.79'
ST = 90.03'	T = 427.59'	ST = 90.03'	T = 92.21'	T = 34.14'
	R = 2,400.00'		R = 231.00'	R = 231.00'
	SE = .05		SE = .06	SE = .04
	Ro = As Shown		Ro = As Shown	Ro = As Shown

DETAIL B
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, D, 4:1 or Flatter, Fill Slope
Min. D= 1.0 Ft.
FROM -L- STA. 445+44 TO STA. 446+00 LT

DETAIL N
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, Natural Ground
Min. D= 1.0 Ft.
FROM -L- STA. 434+86 LT

DETAIL E
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 1.75 TO 2:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D= 1.0 Ft.
FROM -L- STA. 434+50 TO STA. 434+87 LT
FROM -L- STA. 439+21 TO STA. 439+50 LT
FROM -L- STA. 442+50 TO STA. 445+44 LT

DETAIL AE
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, B, 4:1 or Flatter, Fill Slope
Min. D= 1.0 Ft.
B= 2.0 Ft.
FROM -L- STA. 434+87 TO STA. 437+50 LT
FROM -L- STA. 438+50 TO STA. 439+21 LT

DETAIL AA
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, Natural Ground
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
Type of Liner= PSRM
-L- STA. 438+00 LT

DETAIL C
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow, 10:1, 20:1, 2.0', 0.5' Min. 1.0' Max., d, Gt etc.
S=Ditch Slope
℄ Proposed Ditch
-L- STA. 443+36 LT

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 39 FOR -Y13- PROFILE

SEE SHEET 39 FOR -Y14- PROFILE

SEE SHEET 35 FOR -L- PROFILE

LOCHNER
H. W. LOCHNER, INC.
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NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

03252015 ROW REV: AMENDED PROPERTY LINES FOR PARCEL 102; COMBINED PARCELS 102 & 109 INTO PARCEL 102; REMOVED PARCEL NO. 109. - KH
04242015 ROW REV: REVISED C/A BREAK BETWEEN -L- 449+25 & -L- 449+85 AND DRIVEWAY ON PARCEL 102. - BB

27-APR-2015 17:41
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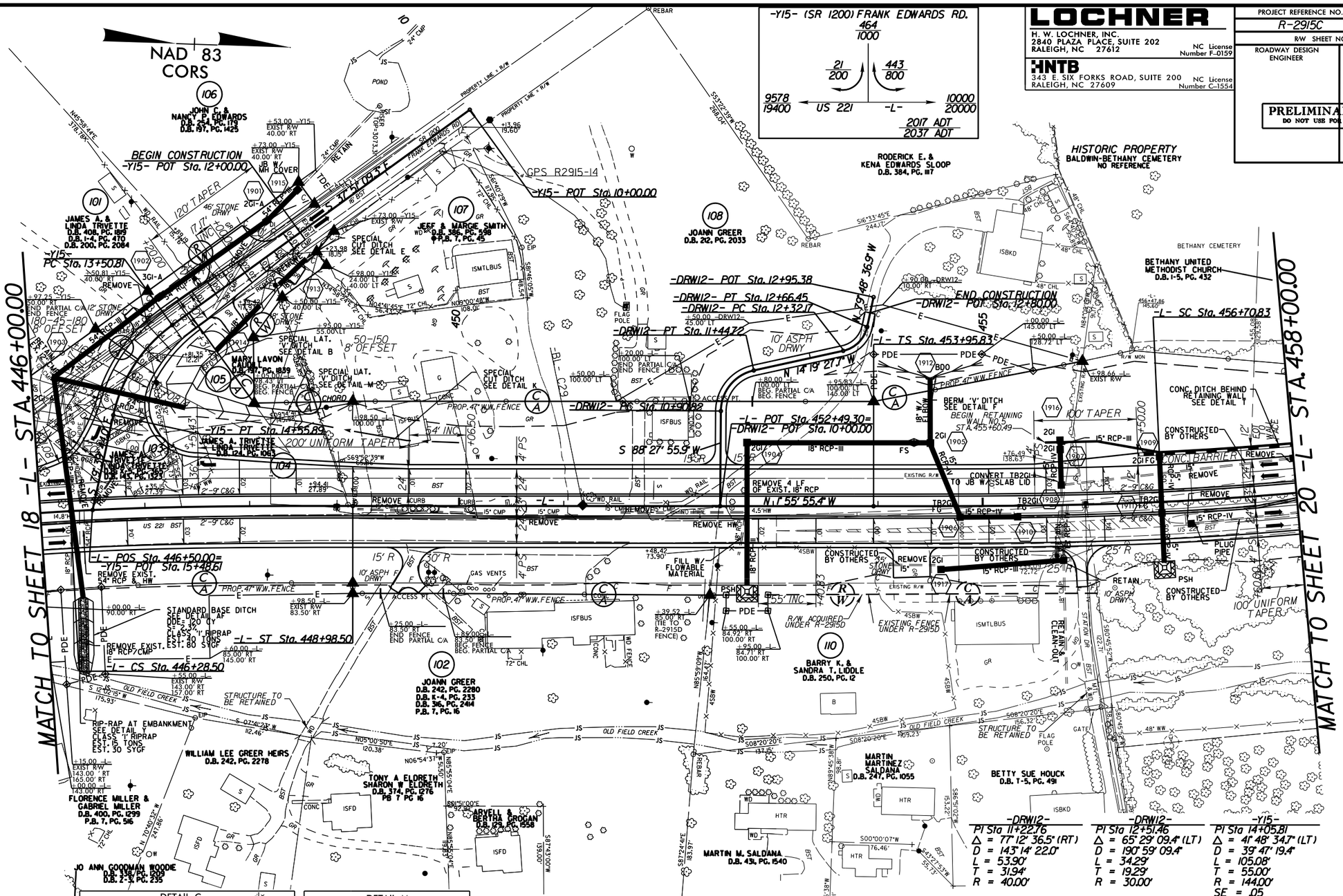
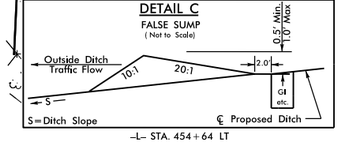
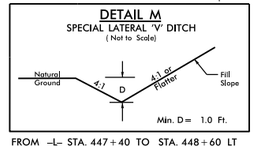
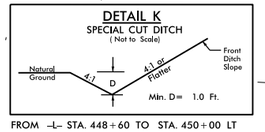




-L- STA. 454+64 LT



FROM -L- STA. 447+40 TO STA. 448+60 LT



FROM -L- STA. 448+60 TO STA. 450+00 LT

-L-

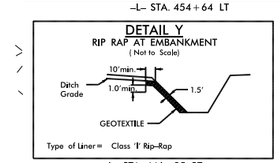
Pls Sta 436+92.24	Pl Sta 442+09.80	Pls Sta 447+18.53	Pls Sta 455+79.18	Pl Sta 459+20.50	Pls Sta 462+60.70
Θs = 3° 13' 22.4"	Δ = 20° 12' 13.3" (RT)	Θs = 3° 13' 22.4"	Θs = 2° 37' 33.8"	Δ = 9° 30' 53.1" (LT)	Θs = 2° 37' 33.8"
Ls = 270.00'	D = 2° 23' 14.4"	Ls = 270.00'	Ls = 275.00'	D = 1° 54' 35.5"	Ls = 275.00'
LT = 180.03'	L = 846.29'	LT = 180.03'	LT = 183.35'	L = 498.19'	LT = 183.35'
ST = 90.03'	T = 427.59'	ST = 90.03'	ST = 91.69'	T = 249.67'	ST = 91.69'
	R = 2,400.00'			R = 3,000.00'	
	SE = .05			SE = .05	
	Ro = As Shown			Ro = As Shown	

-DRW12-

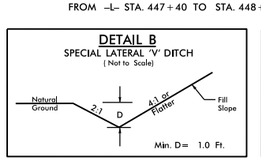
Pl Sta 11+22.76	Pl Sta 12+51.46
Δ = 77° 12' 36.5" (RT)	Δ = 65° 29' 09.4" (LT)
D = 143° 14' 22.0"	D = 190° 59' 09.4"
L = 53.90'	L = 34.29'
T = 31.94'	T = 19.29'
R = 40.00'	R = 30.00'

-Y15-

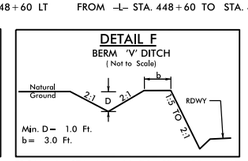
Pl Sta 14+05.81
Δ = 41° 48' 34.7" (LT)
D = 39° 47' 19.4"
L = 105.08'
T = 55.00'
R = 144.00'
SE = .05
Ro = As Shown



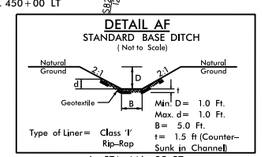
-L- STA. 446+35 RT



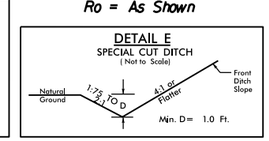
FROM -Y15- STA. 12+35 TO STA. 14+18 LT



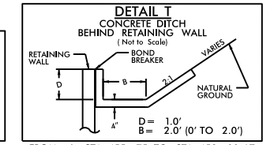
FROM -L- STA. 454+00 TO STA. 455+00 LT



-L- STA. 446+35 RT



FROM -Y15- STA. 12+00 TO STA. 12+35 LT



FROM -L- STA. 455+75 TO STA. 458+00 LT

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 42 FOR -DRW12- PROFILE

SEE SHEET 39 FOR -Y15- PROFILE

SEE SHEET 35 FOR -L- PROFILE

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

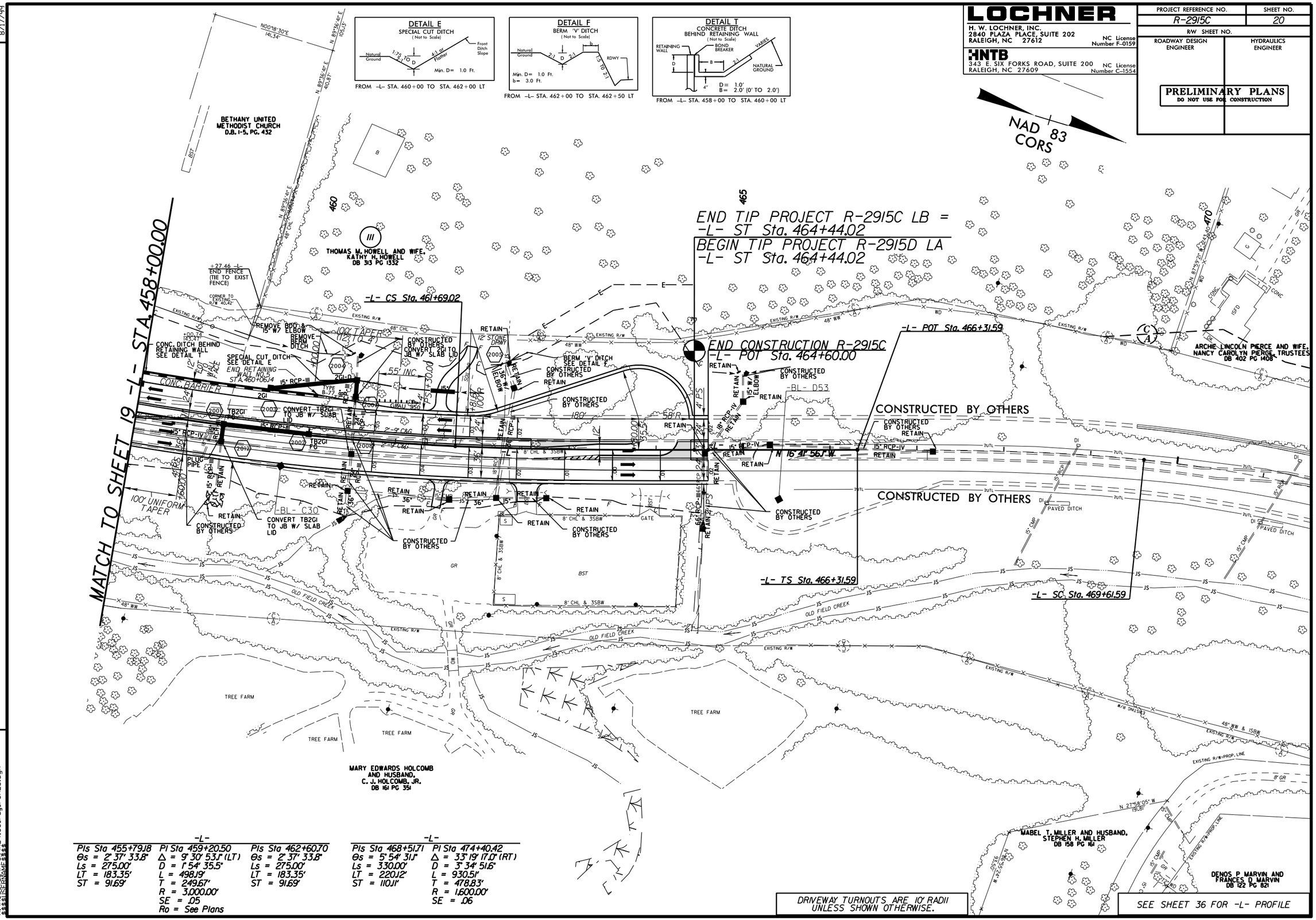
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

02-DEC-2014 16:42
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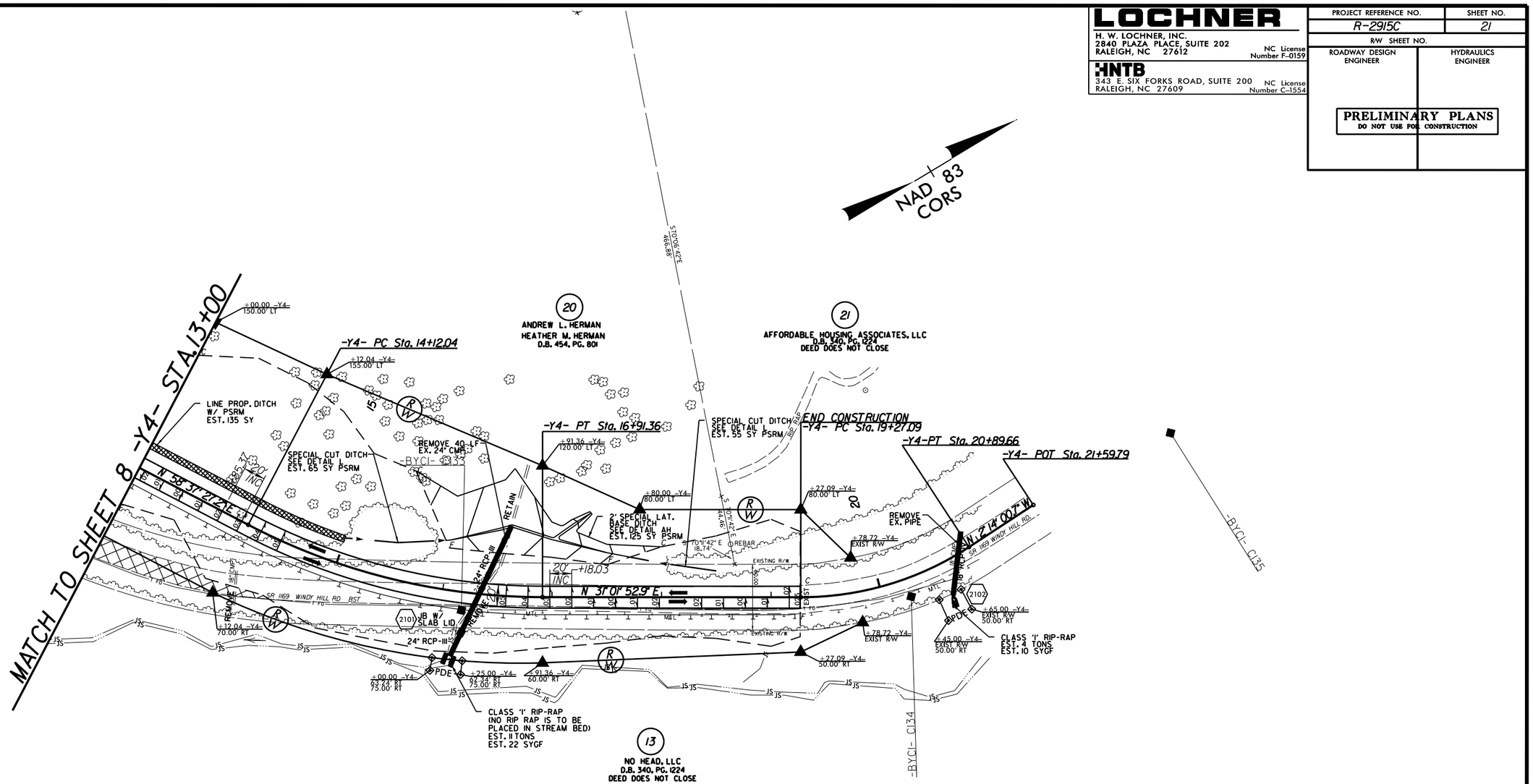
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

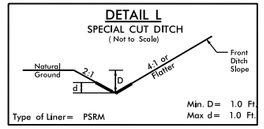
HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



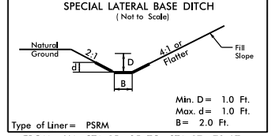
DETAIL L
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1.0 Ft.
Max d= 1.0 Ft.
Type of Liner= PSRM

FROM -Y4- STA. 15+00 TO STA. 15+95 LT
FROM -Y4- STA. 17+70 TO STA. 18+50 LT

DETAIL AH
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
Type of Liner= PSRM

FROM -Y4- STA. 15+95 TO STA. 17+70 LT

-Y4-	-Y4-
PI Sta 15+54.47	PI Sta 20+10.74
Δ = 27° 35' 34.3" (LT)	Δ = 33° 15' 53.7" (LT)
D = 9° 52' 42.9"	D = 20° 27' 46.0"
L = 279.32'	L = 162.56'
T = 142.42'	T = 83.64'
R = 580.00'	R = 280.00'
SE = .05	SE = EXIST.
Ro = 100.00'	Ro = As Shown

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 37 FOR -Y4- PROFILE

REVISIONS
03/25/2015 ROW REV: AMENDED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCEL 20. - KH

8/17/99

26-MAR-2015 16:45
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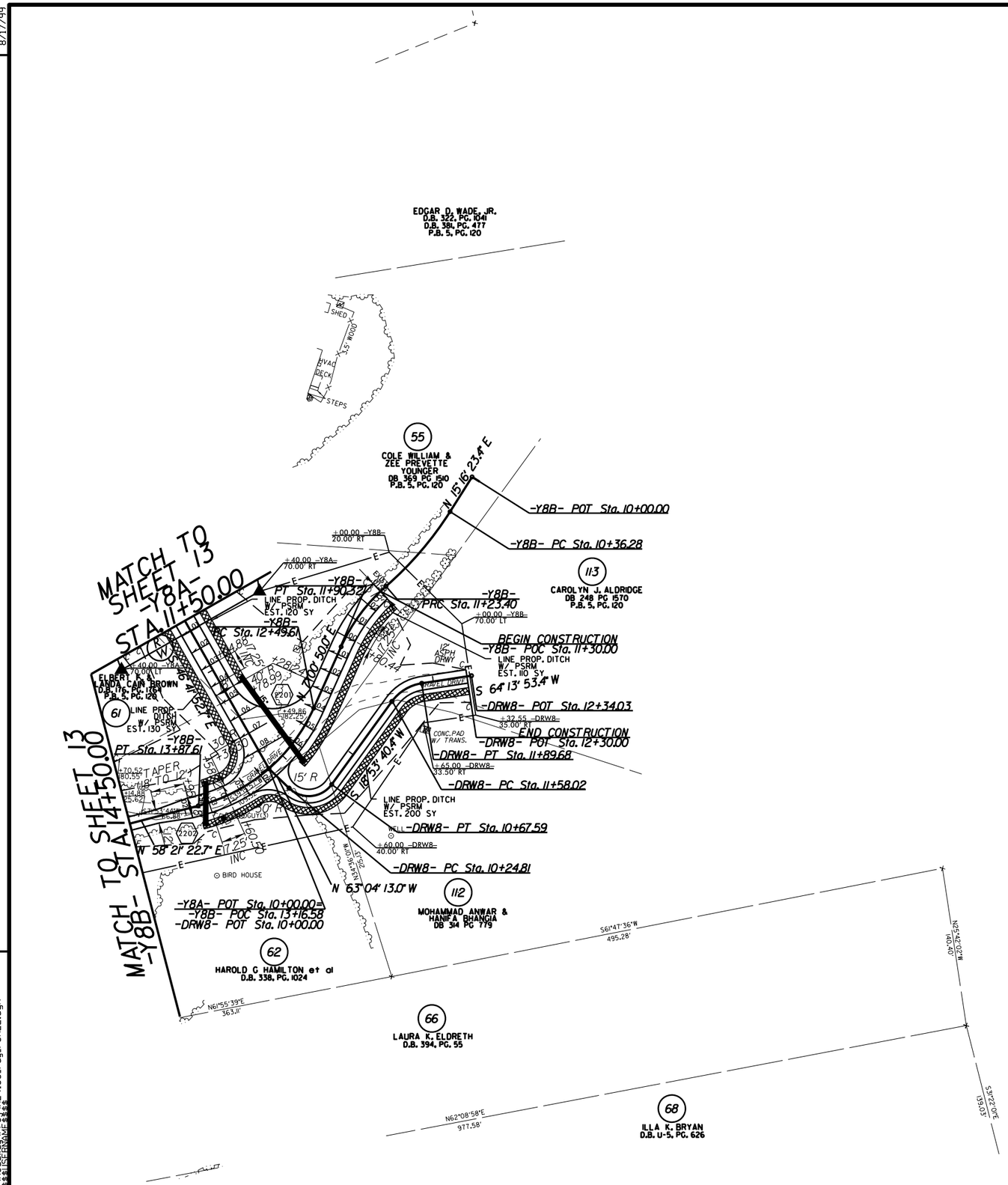
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-Y8B-	-Y8B-	-Y8B-
PI Sta 10+80.15	PI Sta 11+57.39	PI Sta 13+23.63
Δ = 16° 38' 18.2" (RT)	Δ = 24° 53' 51.6" (LT)	Δ = 51° 20' 32.7" (RT)
D = 19° 05' 54.9"	D = 37° 12' 18.2"	D = 37° 12' 18.2"
L = 87.12'	L = 66.92'	L = 138.00'
T = 43.87'	T = 34.00'	T = 74.02'
R = 300.00'	R = 154.00'	R = 154.00'
SE = .04	SE = .04	SE = .04
Ro = As Shown	Ro = As Shown	Ro = As Shown

-DRW8-	-DRW8-
PI Sta 10+53.59	PI Sta 11+74.73
Δ = 98° 02' 06.5" (LT)	Δ = 45° 20' 12.9" (RT)
D = 229° 10' 59.2"	D = 143° 14' 22.0"
L = 42.78'	L = 31.65'
T = 28.78'	T = 16.71'
R = 25.00'	R = 40.00'

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 40 FOR -Y8A- PROFILE

SEE SHEET 38 FOR -Y8B- PROFILE

SEE SHEET 42 FOR -DRW8- PROFILE

8/17/99

REVISIONS

04242015 ROW REV: AMENDED DEED REFERENCE ON PARCEL 112. - BB

27-APR-2015 17:41
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LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

HNTB
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NC 27609
NC License Number C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-2915C	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-YII-	-DRWII-
PI Sta 10+65.31	PI Sta 10+73.94
Δ = 70° 18' 25.5" (LT)	Δ = 65° 50' 10.5" (RT)
D = 95° 29' 34.7"	D = 114° 35' 29.6"
L = 73.63'	L = 57.45'
T = 42.25'	T = 32.37'
R = 60.00'	R = 50.00'
SE = .04	
Ro = As Shown	

DRIVEWAY TURNOUTS ARE 10' RADII UNLESS SHOWN OTHERWISE.

SEE SHEET 42 FOR -DRWII- PROFILE

SEE SHEET 39 FOR -YII- PROFILE

REVISIONS

8/17/99

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8/17/99

REVISIONS

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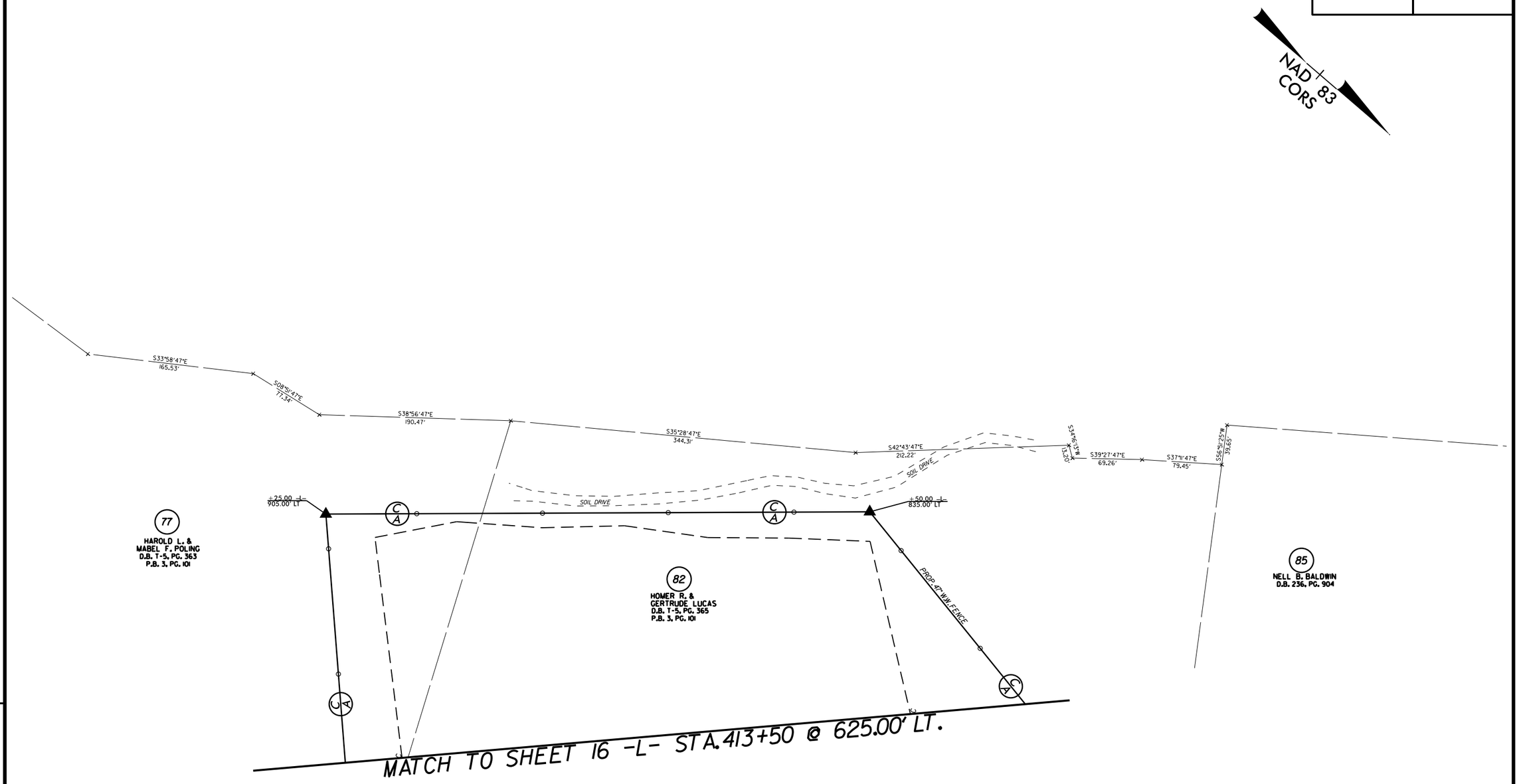
PROJECT REFERENCE NO.	SHEET NO.
R-2915C	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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