09/08/99

CONTRACT: C202826 TIP PROJECT: U-4444B

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4444B	1	

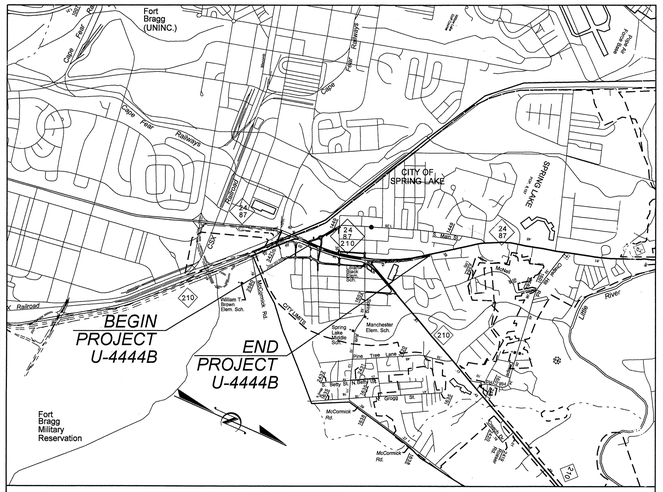
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
36492.1.3	STP-210(11)	PE
36492.2.2	STP-0210(25)	R/W & UTIL
36492.3.4	STP-0210(23)	CONST.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

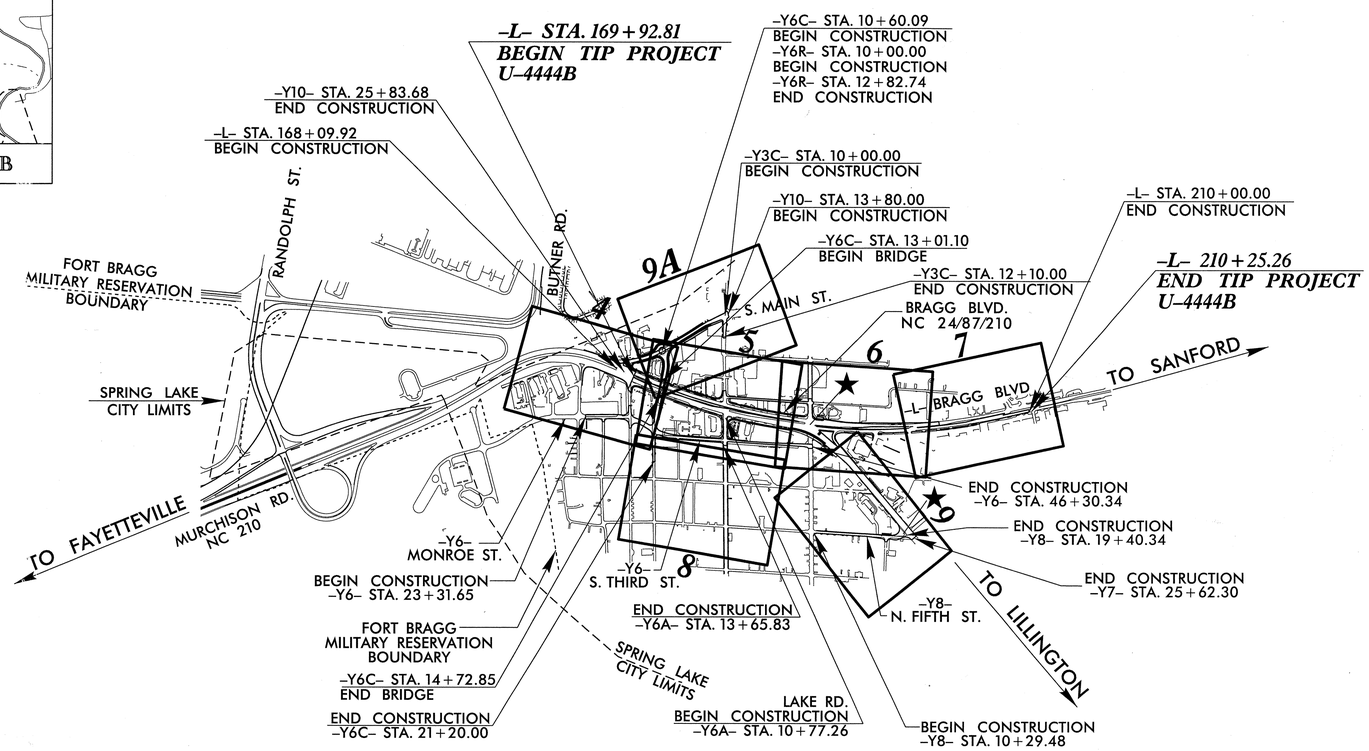
CUMBERLAND COUNTY

LOCATION: NC 24-87-210 (BRAGG BLVD.) FROM SOUTH MAIN ST. TO NORTH OF NC 24-87-210 INTERSECTION IN SPRING LAKE

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



VICINITY MAP FOR STATE PROJECT U-4444B



★ PROPOSED SIGNALS

PREPARED FOR
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, NC
PLANS COORDINATED BY:
Brenda Moore, P.E. – Project Engineer (NCDOT)

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

GRAPHIC SCALES

50' 25' 0 50' 100'
PLANS

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

10' 5' 0 10' 20'
PROFILE (VERTICAL)

DESIGN DATA

ADT 2012 = 57,400
ADT 2037 = 99,200
DHV = 10 %
D = 60 %
T = 7 % *
V = 40 MPH
* TTST 3% DUAL 4%
FUNC. CLASS. = URBAN ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY STATE TIP PROJECT U-4444B = 0.764 Miles

TOTAL LENGTH STATE TIP PROJECT U-4444B = 0.764 Miles

Prepared in the Office of:
LOCHNER
H. W. LOCHNER, INC. NC License Number F-0699
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
WETHERILL ENGINEERING, INC. NC License Number F-0377

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: June 17, 2010

LETTING DATE: October 16, 2012

BRIAN K. EASON, PE
PROJECT ENGINEER

DAVID W. MARTIN
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18462 ENGINEER JAMES C. DAVIS
SIGNATURE: James C. Davis P.E. 8/13/12

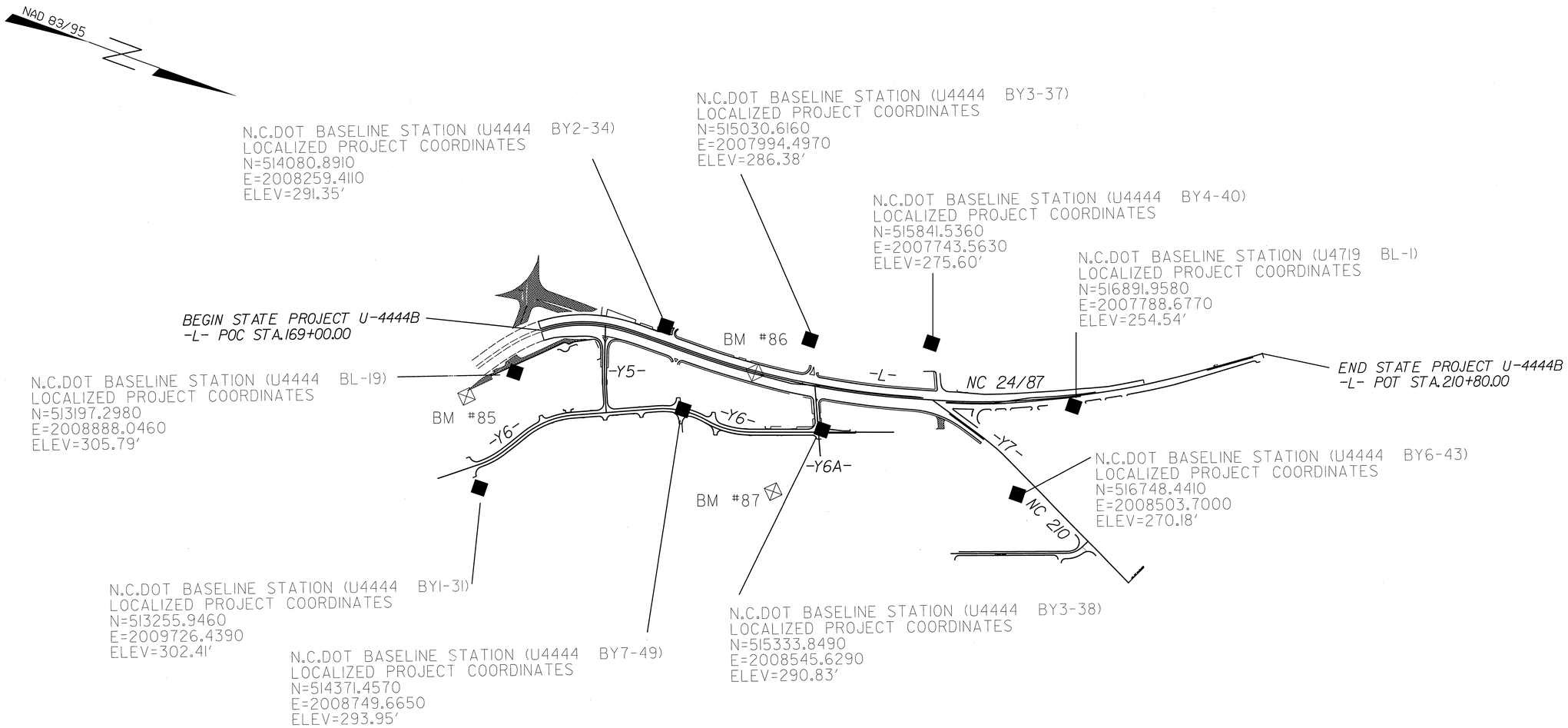
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER BRIAN K. EASON
SIGNATURE: Brian K Eason P.E. 8/9/12

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

10-AUG-2012 16:52
R:\Roadway\Proj\CONST\U-4444B_RDY_TSH.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	1-A
Location and Surveys	

SURVEY CONTROL SHEET U-4444-B



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT ""ACACIA""
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
NORTHING: 466066.2792(ft) EASTING: 1984258.8792(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999874730
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM ""ACACIA"" TO -L- STATION 10+06.64 IS
N 42° 23' 05.53" E AT 48,030.56'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   U4444B_LS_CONTROL_081028.TXT

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

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

6/26/96
SYTIME
R:\Roadway\Proj\CONSTU4444B_ls_1A_081028.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	1-B
Location and Surveys	

SURVEY CONTROL SHEET U-4444B

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
52	U2519X2 GPS-52	502996.4390	2015481.5930	245.47	28·60.50	68.27 RT
100	U2519X2 GPS-100	503583.8600	2014849.7310	236.46	37·22.62	4.18 RT
1	U4444 BL-1	503924.3180	2014644.6950	233.06	41·21.51	1.90 LT
2	U4444 BL-2	504535.0050	2014528.9950	231.65	47·45.59	8.37 LT
3	U4444 BL-3	505292.9060	2014704.8870	242.03	55·24.25	0.75 LT
4	U4444 BL-4	505830.0420	2014826.2430	253.46	60·76.94	14.49 LT
5	U4444 BL-5	506393.2300	2014668.0360	266.19	66·92.67	109.45 LT
6	U4444 BL-6	506860.8210	2014364.1910	272.36	72·76.15	133.12 LT
7	U4444 BL-7	507593.1870	2013982.8790	275.79	81·52.46	123.06 LT
8	U4444 BL-8	508136.2660	2013505.4240	265.88	88·13.76	132.63 LT
9	U4444 BL-9	508636.3600	2013175.8360	266.18	94·12.66	126.53 LT
10	U4444 BL-10	509136.5550	2012836.0620	286.50	100·26.92	115.66 LT
11	U4444 BL-11	509625.4580	2012421.2620	290.52	106·81.22	85.28 LT
12	U4444 BL-12	510093.5190	2011962.3520	289.49	113·36.50	68.36 LT
13	U4444 BL-13	510554.7910	2011495.6400	271.19	119·92.66	61.75 LT
14	U4444 BL-14	510992.5950	2011074.7550	273.60	125·99.58	40.11 LT
15	U4444 BL-15	511437.8790	2010635.7120	255.85	132·24.74	25.73 LT
16	U4444 BL-16	511824.6370	2010258.2460	250.09	137·64.96	10.55 LT
17	U4444 BL-17	512325.0270	2009722.1720	280.85	144·98.33	23.97 LT
18	U4444 BL-18	512846.3070	2009293.2320	302.74	151·57.04	101.41 RT
19	U4444 BL-19	513197.2980	2008888.0460	305.79	156·92.33	164.23 RT
20	U4444 BL-20	513552.7190	2008446.2410	296.43	163·06.40	24.71 RT
21	U4444 BL-21	514180.2850	2008437.3690	291.62	169·47.93	78.94 RT
22	U4444 BL-22	514670.5580	2008356.8530	287.69	174·38.44	13.44 RT
23	U4444 BL-23	515234.0490	2008285.6960	284.72	180·05.43	10.35 RT
24	U4444 BL-24	515818.0300	2008140.6720	279.89	186·06.84	1.17 LT
101	U4719 GPS-1	516134.9580	2008098.2950	277.41	189·21.80	48.26 RT
110	U4719 BL-1	516891.9580	2007788.6770	254.54	197·32.83	50.57 RT

BY

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
25	U4444 BY-25	507517.7800	2012692.4050	291.73	47·19.37	40.86 RT
26	U4444 BY-26	507527.1020	2013402.4340	284.49	40·08.03	37.32 LT
70	U4444 BL-7	507593.1870	2013982.8790	275.79	35·34.22	76.55 RT
27	U4444 BY-27	507437.7040	2014234.6700	274.34	31·68.10	41.31 LT
28	U4444 BY-28	507385.5960	2014781.4560	273.20	26·18.87	35.98 LT
29	U4444 BY-29	507335.2250	2015301.1880	257.62	20·96.72	31.75 LT
30	U4444 BY-30	507267.8960	2015977.0680	252.39	14·17.50	28.06 LT

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
71	U4444 BL-18	512846.3070	2009293.2320	302.74	151·57.04	101.41 RT
31	U4444 BY1-31	513255.9460	2009726.4390	302.41	150·61.26	688.61 RT

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
32	U4444 BY2-32	514782.7800	2007423.9210	270.69	176·49.44	906.10 LT
33	U4444 BY2-33	514470.6900	2007944.9430	277.17	172·54.28	408.58 LT
34	U4444 BY2-34	514080.8910	2008259.4110	291.35	168·50.44	100.07 LT
72	U4444 BL-21	514180.2850	2008437.3690	291.62	169·47.93	78.94 RT
35	U4444 BY2-35	514558.5610	2008594.0570	289.25	173·15.53	243.67 RT
73	U4444 BY2-36	514842.7160	2009227.2750	294.80	175·34.31	894.68 RT

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
74	U4444 BY2-32	514782.7800	2007423.9210	270.69	176·49.44	906.10 LT
37	U4444 BY3-37	515030.6160	2007994.4970	286.38	178·45.60	309.03 LT
75	U4444 BL-23	515234.0490	2008285.6960	284.72	180·05.43	10.35 RT
38	U4444 BY3-38	515333.8490	2008545.6290	290.83	180·57.02	283.71 RT
39	U4444 BY3-39	515458.5280	2008953.1150	288.79	181·01.21	707.12 RT

BY4

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
40	U4444 BY4-40	515841.5360	2007743.5630	275.60	187·40.84	375.05 LT
76	U4444 BL-24	515818.0300	2008140.6720	279.89	186·06.84	1.17 LT
41	U4444 BY4-41	516327.3690	2008667.8960	282.32	189·31.09	649.40 RT

BY5

POINT	DESC.	NORTH	EAST	ELEVATION	Y7 STATION	OFFSET
77	U4719 GPS-1	516134.9580	2008098.2950	277.41	11·53.78	43.65 LT
42	U4444 BY5-42	516555.5100	2008229.6540	272.78	15·89.84	45.97 LT
78	U4444 BY6-43	516748.4410	2008503.7000	270.18	18·79.86	119.80 RT

BY6

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
79	U4444 BY1-31	513255.9460	2009726.4390	302.41	150·61.26	688.61 RT
48	U4444 BY6-48	513791.7000	2009723.5690	304.04	153·27.09	1122.57 RT
47	U4444 BY6-47	514064.6200	2009536.5250	301.61	168·20.57	1176.80 RT
46	U4444 BY6-46	514584.5700	2009306.6160	297.67	173·08.67	956.67 RT
80		514842.7160	2009227.2750	0.00	175·34.31	894.68 RT
45	U4444 BY6-45	515046.8650	2009138.6550	292.47	177·18.28	827.54 RT
91	U4444 BY3-39	515458.5280	2008953.1150	288.79	181·01.21	707.12 RT
44	U4444 BY6-44	515866.5070	2008794.1520	282.33	184·87.80	641.95 RT
92	U4444 BY4-41	516327.3690	2008667.8960	282.32	189·31.09	649.40 RT
43	U4444 BY6-43	516748.4410	2008503.7000	270.18	193·27.08	641.15 RT

BY7

POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
51	U4444 BY7-51	513550.7300	2009165.8050	306.56	18·54.77	29.93 RT
50	U4444 BY7-50	513860.4190	2008951.8470	304.43	22·37.40	9.48 LT
49	U4444 BY7-49	514371.4570	2008749.6650	293.95	27·86.66	6.93 LT
90	U4444 BY6-46	514584.5700	2009306.6160	297.67	30·40.41	540.29 RT

BY8

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
53	U4444 BY8-53	510738.6250	2009874.5360	275.70	22·35.39	32.06 LT
54	U4444 BY8-54	510891.0540	2010453.7800	283.20	17·24.72	310.02 LT
55	U4444 BY8-55	510797.0390	2010896.7510	284.01	14·80.04	691.06 LT
93	U4444 BL-13	510554.7910	2011495.6400	271.19	12·31.10	1287.19 LT

BY9

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
56	U4444 BY9-56	510126.8180	2011497.1450	292.77	116·93.82	368.11 LT
57	U4444 BY9-57	510463.2280	2011164.2570	282.56	121·66.98	358.08 LT
95	U4444 BY8-55	510797.0390	2010896.7510	284.01	125·91.38	304.42 LT
58	U4444 BY9-58	511029.0470	2010615.2570	279.39	129·54.99	333.62 LT

BL-3423

POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
9011	U3423B BL11	508586.0040	2009836.9430	328.14	OUTSIDE PROJECT LIMITS	
9012	U3423B BL12	509681.2730	2009470.1400	311.77	OUTSIDE PROJECT LIMITS	
9029	U3423B BY6-29	510585.6330	2009166.8420	302.42	15·56.61	4.63 RT
9013	U3423B BL13	510776.9380	2009102.6830	298.76	17·58.39	4.93 RT
9031	U3423B BY7-31	511012.3720	2009022.6620	293.18	20·07.05	4.29 RT
9014	U3423B BL14	511839.2010	2008741.6450	298.93	28·80.32	2.07 RT
9015	U3423B BL15	512773.2180	2008421.2650	300.19	OUTSIDE PROJECT LIMITS	
9106	U3423B GP56	513188.8210	2008274.2650	299.22	OUTSIDE PROJECT LIMITS	

BY6-3423

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
9028	U3423B BY6-28	510296.2870	2008357.6430	308.90	OUTSIDE PROJECT LIMITS	
9034	U3423B BY6-29	510585.6330	2009166.8420	302.42	29·54.86	52.40 RT
9030	U3423B BY6-30	510658.0100	2009805.9800	279.48	23·30.93	67.13 LT

BY7-3423

POINT	DESC.	NORTH	EAST	ELEVATION	Y3A STATION	OFFSET
9035	U3423B BY7-31	511012.3720	2009022.6620	293.18	17·09.94	26.21 LT
9032	U3423B BY7-32	511040.5160	2009293.4730	288.72	16·39.66	236.83 RT

BY8-3423

POINT	DESC.	NORTH	EAST	ELEVATION	Y4B STATION	OFFSET
9033	U3423B BY8-33	513003.3300	2007858.1700	296.17	18·93.61	34.10 RT
9206	U3423B GP56	513188.8210	2008274.2650	299.22	15·20.15	158.95 RT
9105	U3423B GP55	513068.0680	2008907.2690	307.66	12·55.66	527.46 RT

****
BM80 ELEVATION - 240.95
N 503988 E 2014833
L STATION 41·07 196 RIGHT
RR SPIKE IN BASE OF 24 INCH PINE
****

****
BM81 ELEVATION - 261.54
N 506061 E 2014892
L STATION 63·08 42 RIGHT
RR SPIKE IN BASE OF 24 INCH PINE
****

****
BM82 ELEVATION - 274.92
N 507741 E 2013895
L STATION 82·68 30 LEFT
RR SPIKE IN BASE OF 15 INCH PINE
****

****
BM83 ELEVATION - 294.07
N 509891 E 2012286
L STATION 109·63 11 RIGHT
RR SPIKE IN BASE OF 15 INCH PINE
****

****
BM84 ELEVATION - 251.58
N 511515 E 2010689
L STATION 132·40 67 RIGHT
RR SPIKE IN BASE OF 24 INCH PINE
****

****
BM85 ELEVATION - 308.45
N 512951 E 2009168
L STATION 153·16 115 RIGHT
RR SPIKE IN BASE OF 24 INCH PINE
****

****
BM86 ELEVATION - 288.22
N 514762 E 2008337
L STATION 175·31 1 RIGHT
RR SPIKE IN BASE OF 12 INCH POWER POLE
****

****
BM87 ELEVATION - 292.51
N 515160 E 2009065
L STATION 178·25 769 RIGHT
RR SPIKE IN BASE OF 48 INCH PINE
****

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT ""ACACIA""
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
NORTHING: 466066.2792(ft) EASTING: 1984258.8792(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999874730
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM ""ACACIA"" TO -L- STATION 10+06.64 IS
N 42° 23′ 05.53″ E AT 48.030.56′
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NAD 83/95

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
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△ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
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SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

6/2/99
SYTIME
R:\Roadway\Proj\CONST\U4444B_ls_1B_081028.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
U-4444B	1-C

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CENTERLINE COORDINATE LIST

Point #	Chain	Station	Northing (Y)	Easting (X)
1	L	170+00.00	514231.5043	2008357.8820
2	L	171+00.00	514331.4986	2008356.8168
3	L	172+00.00	514431.4806	2008354.9870
4	L	173+00.00	514531.4142	2008351.3804
5	L	174+00.00	514631.2677	2008345.9935
6	L	175+00.00	514731.0093	2008338.8280
7	L	176+00.00	514830.6074	2008329.8861
8	L	177+00.00	514930.0303	2008319.1706
9	L	178+00.00	515029.2465	2008306.6850
10	L	179+00.00	515128.2244	2008292.4333
11	L	180+00.00	515226.9326	2008276.4199
12	L	181+00.00	515325.3397	2008258.6499
13	L	182+00.00	515423.4145	2008239.1291
14	L	183+00.00	515521.1259	2008217.8635
15	L	184+00.00	515618.4427	2008194.8600
16	L	185+00.00	515715.3342	2008170.1258
17	L	186+00.00	515811.7695	2008143.6688
18	L	187+00.00	515907.7986	2008115.7699
19	L	188+00.00	516003.7808	2008087.7088
20	L	189+00.00	516099.5295	2008058.8675
21	L	190+00.00	516194.6290	2008027.9535
22	L	191+00.00	516289.0278	2007994.9616
23	L	192+00.00	516382.6805	2007959.9076
24	L	193+00.00	516475.5420	2007922.8085
25	L	194+00.00	516567.5676	2007883.6820
26	L	195+00.00	516659.0034	2007843.1918
27	L	196+00.00	516749.8500	2007801.3992
28	L	197+00.00	516839.9508	2007758.0218
29	L	198+00.00	516929.2779	2007713.0729
30	L	199+00.00	517017.8041	2007666.5662
31	L	200+00.00	517105.5021	2007618.5162
32	L	201+00.00	517192.3450	2007568.9375
33	L	202+00.00	517278.3062	2007517.8453
34	L	203+00.00	517363.3593	2007465.2553
35	L	204+00.00	517447.4783	2007411.1836
36	L	205+00.00	517530.6373	2007355.6469
37	L	206+00.00	517612.8107	2007298.6621
38	L	207+00.00	517693.9939	2007240.2747
39	L	208+00.00	517774.8485	2007181.4314
40	L	209+00.00	517855.7031	2007122.5881
41	L	210+00.00	517936.5577	2007063.7447
42	Y6	23+50.00	513966.8885	2008913.9786
43	Y6	24+00.00	514012.4256	2008893.3298
44	Y6	24+50.00	514057.9627	2008872.6809
45	Y6	25+00.00	514103.4998	2008852.0321
46	Y6	25+50.00	514149.0369	2008831.3833
47	Y6	26+00.00	514194.5739	2008810.7345
48	Y6	26+50.00	514240.4901	2008790.9652
49	Y6	27+00.00	514287.8180	2008774.8837
50	Y6	27+50.00	514336.3204	2008762.7974
51	Y6	28+00.00	514385.6604	2008754.7903
52	Y6	28+50.00	514435.4957	2008750.9178
53	Y6	29+00.00	514485.4804	2008751.2070
54	Y6	29+50.00	514535.2676	2008755.6557
55	Y6	30+00.00	514584.6502	2008763.4631
56	Y6	30+50.00	514634.3849	2008768.4647
57	Y6	31+00.00	514684.3633	2008769.3092
58	Y6	31+50.00	514734.2385	2008765.9907
59	Y6	32+00.00	514783.6645	2008758.5323
60	Y6	32+50.00	514832.2981	2008746.9857
61	Y6	33+00.00	514879.8108	2008731.4555
62	Y6	33+50.00	514926.8001	2008714.3672
63	Y6	34+00.00	514973.7893	2008697.2789
64	Y6	34+50.00	515020.7786	2008680.1906
65	Y6	35+00.00	515067.7679	2008663.1023
66	Y6	35+50.00	515114.7571	2008646.0140
67	Y6	36+00.00	515161.7464	2008628.9257
68	Y6	36+50.00	515208.7356	2008611.8374
69	Y6	37+00.00	515255.7249	2008594.7491
70	Y6	37+50.00	515302.7141	2008577.6608
71	Y6	38+00.00	515349.7034	2008560.5725
72	Y6	38+50.00	515396.6926	2008543.4842
73	Y6	39+00.00	515443.6819	2008526.3959
74	Y6	39+50.00	515490.6711	2008509.3076
75	Y6	40+00.00	515537.6604	2008492.2193
76	Y6	40+50.00	515584.6496	2008475.1310
77	Y6	41+00.00	515631.6389	2008458.0427
78	Y6	41+50.00	515678.6282	2008440.9544
79	Y6	42+00.00	515725.6174	2008423.8661
80	Y6	42+50.00	515772.6067	2008406.7778
81	Y6	43+00.00	515819.5959	2008389.6895

Point #	Chain	Station	Northing (Y)	Easting (X)
82	Y6	43+50.00	515866.5852	2008372.6012
83	Y6	44+00.00	515913.5744	2008355.5129
84	Y6	44+50.00	515960.5637	2008338.4246
85	Y6	45+00.00	516007.5529	2008321.3363
86	Y6	45+50.00	516054.5422	2008304.2480
87	Y6	46+00.00	516101.5314	2008287.1597
88	Y6A	10+00.00	515181.9225	2008283.9458
89	Y6A	10+50.00	515202.5321	2008329.5007
90	Y6A	11+00.00	515223.1417	2008375.0555
91	Y6A	11+50.00	515243.7512	2008420.6104
92	Y6A	12+00.00	515264.3608	2008466.1653
93	Y6A	12+50.00	515284.9704	2008511.7201
94	Y6A	13+00.00	515305.5799	2008557.2750
95	Y6A	13+50.00	515326.1895	2008602.8299
96	Y6C	10+00.00	514379.8648	2008010.8076
97	Y6C	10+50.00	514416.6715	2008044.5642
98	Y6C	11+00.00	514447.3692	2008083.9579
99	Y6C	11+50.00	514471.1063	2008127.8984
100	Y6C	12+00.00	514487.2249	2008175.1679
101	Y6C	12+50.00	514498.2952	2008223.9264
102	Y6C	13+00.00	514509.2833	2008272.7041
103	Y6C	13+50.00	514520.2713	2008321.4818
104	Y6C	14+00.00	514531.2594	2008370.2595
105	Y6C	14+50.00	514542.2474	2008419.0372
106	Y6C	15+00.00	514553.2354	2008467.8149
107	Y6C	15+50.00	514564.2235	2008516.5925
108	Y6C	16+00.00	514575.2115	2008565.3702
109	Y6C	16+50.00	514586.1996	2008614.1479
110	Y6C	17+00.00	514597.1876	2008662.9256
111	Y6C	17+50.00	514609.0198	2008711.5005
112	Y6C	18+00.00	514623.3226	2008759.4053
113	Y6C	18+50.00	514640.0999	2008806.5005
114	Y6C	19+00.00	514659.3062	2008852.6584
115	Y6C	19+50.00	514679.9169	2008898.2127
116	Y6C	20+00.00	514700.5376	2008943.7626
117	Y6C	20+50.00	514721.1582	2008989.3124
118	Y6C	21+00.00	514741.7788	2009034.8623
119	Y7	10+00.00	515975.1181	2008096.0885
120	Y7	10+50.00	516023.0251	2008110.4035
121	Y7	11+00.00	516070.9321	2008124.7184
122	Y7	11+50.00	516118.8391	2008139.0334
123	Y7	12+00.00	516166.7462	2008153.3483
124	Y7	12+50.00	516214.6532	2008167.6633
125	Y7	13+00.00	516262.5602	2008181.9782
126	Y7	13+50.00	516310.4672	2008196.2932
127	Y7	14+00.00	516358.3742	2008210.6081
128	Y7	14+50.00	516406.2782	2008224.9331
129	Y7	15+00.00	516453.8606	2008240.2840
130	Y7	15+50.00	516500.8645	2008257.3242
131	Y7	16+00.00	516547.2300	2008276.0319
132	Y7	16+50.00	516592.8979	2008296.3832
133	Y7	17+00.00	516638.0164	2008317.9309
134	Y7	17+50.00	516683.1059	2008339.5395
135	Y7	18+00.00	516728.1955	2008361.1482
136	Y7	18+50.00	516773.2850	2008382.7569
137	Y7	19+00.00	516818.3745	2008404.3656
138	Y7	19+50.00	516863.4640	2008425.9743
139	Y7	20+00.00	516908.5535	2008447.5829
140	Y7A	10+00.00	515862.2945	2008194.7025
141	Y7A	10+50.00	515910.7896	2008182.5767
142	Y7A	11+00.00	515960.0615	2008174.1448
143	Y7A	11+50.00	516009.8291	2008169.4549
144	Y7A	12+00.00	516059.8087	2008168.5336
145	Y7A	12+50.00	516109.7154	2008171.3862
146	Y7A	13+00.00	516159.2645	2008177.9965
147	Y7A	13+50.00	516208.1736	2008188.3268
148	Y8	10+00.00	516457.8369	2009045.3112
149	Y8	10+50.00	516504.7534	2009028.0242
150	Y8	11+00.00	516551.6700	2009010.7373
151	Y8	11+50.00	516598.5865	2008993.4503
152	Y8	12+00.00	516645.5031	2008976.1634
153	Y8	12+50.00	516692.4196	2008958.8764
154	Y8	13+00.00	516739.3361	2008941.5895
155	Y8	13+50.00	516786.2527	2008924.3025
156	Y8	14+00.00	516833.1692	2008907.0156
157	Y8	14+50.00	516880.0858	2008889.7287
158	Y8	15+00.00	516927.0023	2008872.4417

Point #	Chain	Station	Northing (Y)	Easting (X)
159	Y8	15+50.00	516973.9188	2008855.1548
160	Y8	16+00.00	517020.8354	2008837.8678
161	Y8	16+50.00	517067.7519	2008820.5809
162	Y8	17+00.00	517114.6684	2008803.2939
163	Y8	17+50.00	517161.5850	2008786.0070
164	Y8	18+00.00	517208.4828	2008768.6706
165	Y8	18+50.00	517251.1399	2008743.0095
166	Y8	19+00.00	517283.3823	2008705.0814
167	Y8	19+50.00	517305.6117	2008660.3140
168	Y10	13+50.00	514862.5326	2007409.5870
169	Y10	14+00.00	514823.1224	2007440.3495
170	Y10	14+50.00	514785.2668	2007473.0061
171	Y10	15+00.00	514749.0569	2007507.4785
172	Y10	15+50.00	514714.5797	2007543.6837
173	Y10	16+00.00	514681.9179	2007581.5348
174	Y10	16+50.00	514651.1500	2007620.9409
175	Y10	17+00.00	514622.2715	2007661.7537
176	Y10	17+50.00	514593.9141	2007702.9345
177	Y10	18+00.00	514565.5568	2007744.1153
178	Y10	18+50.00	514537.1994	2007785.2962
179	Y10	19+00.00	514508.8420	2007826.4770
180	Y10	19+50.00	514480.4846	2007867.6578
181	Y10	20+00.00	514452.1272	2007908.8386
182	Y10	20+50.00	514423.7699	2007950.0194
183	Y10	21+00.00	514394.9779	2007990.8938
184	Y10	21+50.00	514364.2410	2008030.3233
185	Y10	22+00.00	514331.5032	2008068.1079
186	Y10	22+50.00	514296.8525	2008104.1464
187	Y10	23+00.00	514260.3819	2008138.3419
188	Y10	23+50.00	514222.1892	2008170.6027
189	Y10	24+00.00	514183.0053	2008201.6611
190	Y10	24+50.00	514143.8122	2008232.7077
191	Y10	25+00.00	514121.7957	2008275.3832
192	Y10	25+50.00	514121.2636	2008325.3804
193	Y10DR3	10+00.00	514215.3711	2008176.0227
194	Y10DR3	10+50.00	514186.4656	2008135.3831
195	Y10DR3	11+00.00	514165.5453	2008089.9701
196	Y10DR3	11+50.00	514144.6303	2008044.5546
197	Y10DR4	10+00.00	514680.0113	2007583.8640
198	Y10DR4	10+50.00	514713.3755	2007619.5912
199	Y10DR4	11+00.00	514685.2327	2007653.7960
200	Y10DR4	11+50.00	514653.7975	2007691.7942
201	Y10DR4	12+00.00	514625.4402	2007732.9750
202	Y10DR4	12+50.00	514598.1476	2007774.7363
203	Y16	10+00.00	515136.8076	2008184.2248
204	Y16	10+50.00	515183.7461	2008166.9976
205	Y16	11+00.00	515230.6846	2008149.7704
206	Y16	11+50.00	515277.6231	2008132.5432
207	Y16	12+00.00	515324.5617	2008115.3161
208	Y16	12+50.00	515371.5002	2008098.0889
209	Y16	13+00.00	515418.4387	2008080.8617
210	Y16	13+50.00	515465.3772	2008063.6345
211	Y16	14+00.00	515512.3157	2008046.4073
212	Y16	14+50.00	515559.2542	2008029.1801
213	Y16	15+00.00	515606.1927	2008011.9529
214	Y16	15+50.00	515653.1312	2007994.7258
215	Y16	16+00.00	515700.0698	2007977.4986
216	Y16	16+50.00	515747.0083	2007960.2714
217	Y16	17+00.00	515793.9468	2007943.0442
218	Y16	17+50.00	515840.8853	2007925.8170
219	Y16	18+00.00	515887.8238	2007908.5898
220	Y16	18+50.00	515934.7623	2007891.3626
221	Y17	10+00.00	515801.2000	2007594.1100
222	Y17	10+50.00	515821.5984	2007639.7598
223	Y17	11+00.00	515841.9969	2007685.4096
224	Y17	11+50.00	515862.3953	2007731.0594
225	Y17	12+00.00	515882.7938	2007776.7092
226	Y17	12+50.00	515903.1922	2007822.3590
227	Y17	13+00.00	515923.5906	2007868.0088
228	Y17	13+50.00	515943.9891	2007913.6586
229	Y17	14+00.00	515964.4095	2007959.2985
230	Y17	14+50.00	515984.8866	2008004.9131
231	Y17	15+00.00	516005.4206	2008050.5020
232	Y17	15+50.00	516026.0116	2008096.0653
233	Y17	16+00.00	516046.6596	2008141.6028
234	Y17	16+50.00	516067.3645	2008187.1144
235	Y17	17+00.00	516088.1262	2008232.6001

Point #	Chain	Station	Northing (Y)	Easting (X)
236	Y17	17+50.00	516108.9425	2008278.0609
237	Y17	18+00.00	516129.7733	2008323.5150
238	Y17	18+50.00	516150.6041	2008368.9691
239	Y17	19+00.00	516171.4349	2008414.4232
240	Y17	19+50.00	516192.2657	2008459.8774
241	Y17	20+00.00	516213.0965	2008505.3315
242	Y17	20+50.00	516233.9274	2008550.7856
243	Y17	21+00.00	516254.7582	2008596.2397
244	Y17	21+50.00	516275.5890	2008641.6939
245	Y17	22+00.00	516296.4198	2008687.1480
246	Y17	22+50.00	516317.2506	2008732.6021
247	Y17	23+00.00	516338.0814	2008778.0562
248	Y3C	10+00.00	514809.5009	2007451.7297
249	Y3C	10+50.00	514829.3153	2007497.6360
250	Y3C	11+00.00	514849.1298	2007543.5423
251	Y3C	11+50.00	514868.9442	2007589.4486
252	Y3C	12+00.00	514888.7587	2007635.3549

Point #	Chain	Station	Northing (Y)	Easting (X)

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2
R/W SHEET NO.	

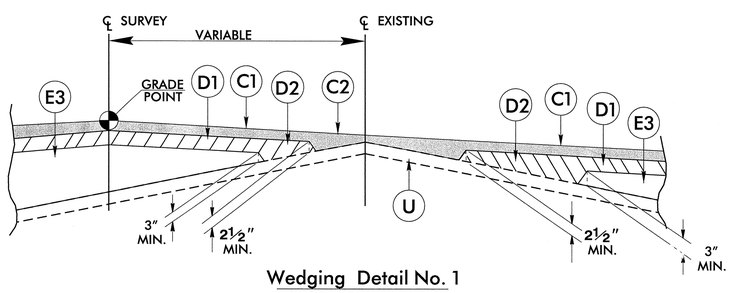
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER BRIAN K. EASON
8/16/12

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 13363 ENGINEER DONG-CHI CHEN
8/29/12

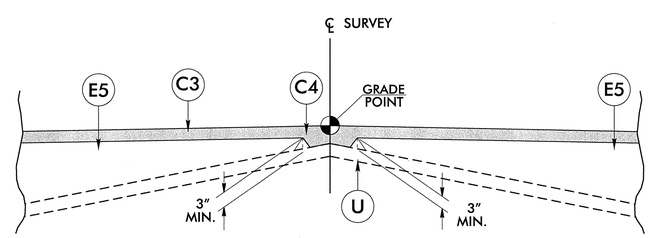
PAVEMENT SCHEDULE

C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E4	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R7	8″ PORTLAND CEMENT CONCRETE PAVEMENT, MISCELLANEOUS (WITHOUT DOWELS)
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2″ IN DEPTH.	E5	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ IN DEPTH.	S1	4″ CONCRETE SIDEWALK
C3	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.	E6	PROP. APPROX. 4.5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.	S2	4″ CONCRETE ISLAND COVERS
C4	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.	J1	PROP. 4″ AGGREGATE BASE COURSE	T	EARTH MATERIAL.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R1	2′-6″ CONCRETE CURB AND GUTTER.	U	EXISTING PAVEMENT.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.	R2	1′-6″ CONCRETE CURB AND GUTTER.	V1	MILLING ASPHALT PAVEMENT, 2.5″ DEPTH
D3	PROP. APPROX. 2.5″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R3	SHOULDER BERM GUTTER	V2	MILLING ASPHALT PAVEMENT, 3″ DEPTH
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R4	5″ MONOLITHIC CONCRETE ISLAND.	W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL No. 1)
				W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL No. 2)
E2	PROP. APPROX. 6.5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 370.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R5	CONCRETE MEDIAN BARRIER	W3	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL No. 3)
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ IN DEPTH.	R6	8″ X 18″ CONCRETE CURB		

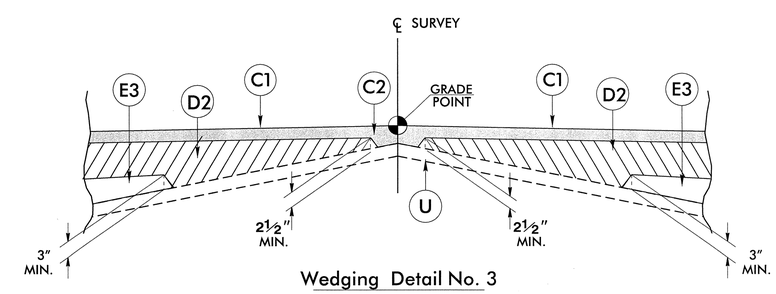
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



Wedging Detail No. 1



Wedging Detail No. 2



Wedging Detail No. 3

REVISIONS

8/17/99

15:41:56 2012 10:10
U-4444 Roadway\Proj\U-4444B\Roadway\Proj\CONST\U-4444B_RDY_TYP.dgn
$$$$USERNAME$$$$

8/17/99

REVISIONS

LOCHNER

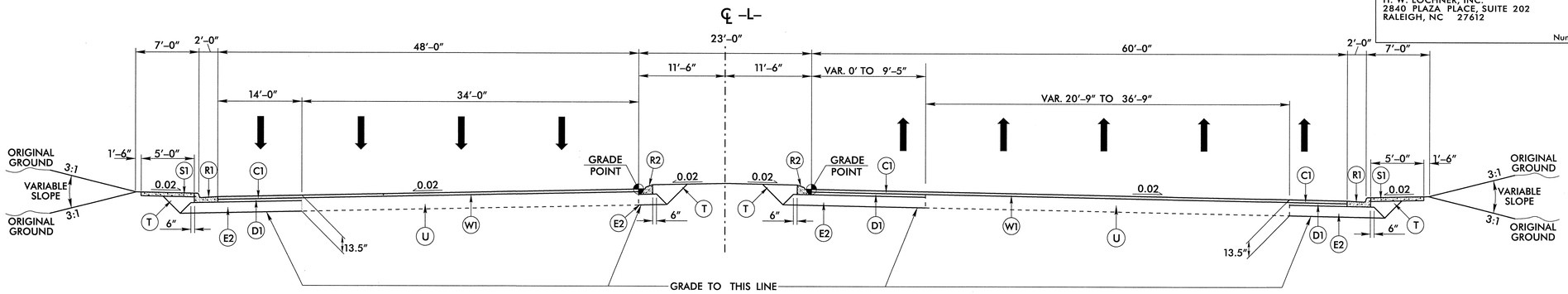
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

NC License Number F-0159

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER FRANK K. EASON 8/16/12

PAVEMENT DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER JOHN-CHI CHEN 8/29/12

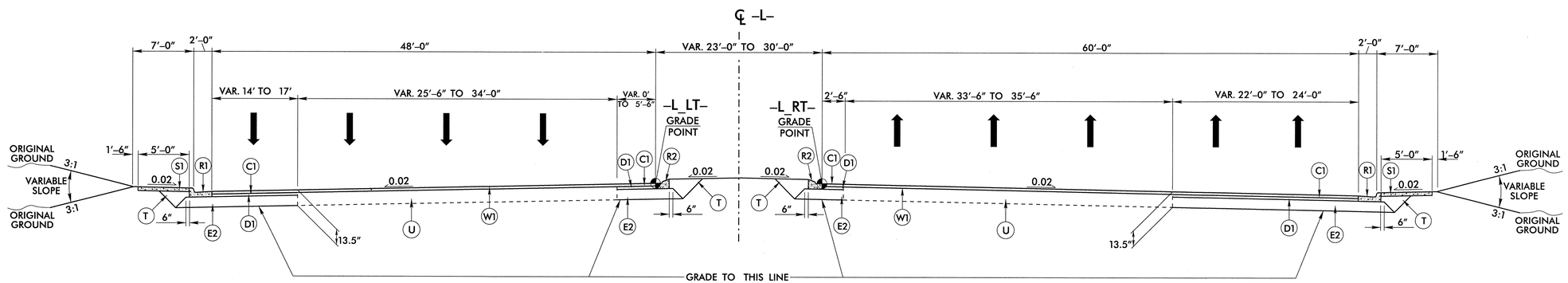


TYPICAL SECTION NO. 1

-L- BRAGG BLVD.

USE TYPICAL SECTION NO. 1 AS FOLLOWS

-L- STA. 168+09.92 TO STA. 176+25.00

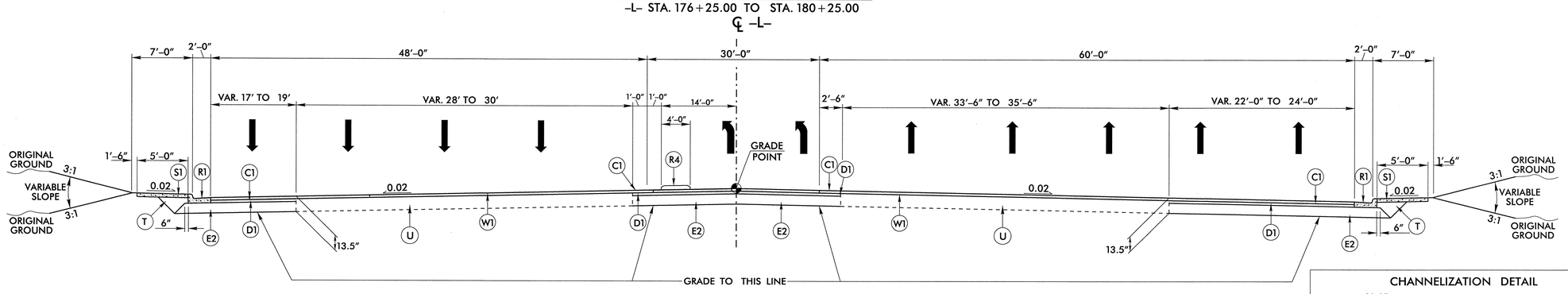


TYPICAL SECTION NO. 2

-L- BRAGG BLVD.

USE TYPICAL SECTION NO. 2 AS FOLLOWS

-L- STA. 176+25.00 TO STA. 180+25.00



TYPICAL SECTION NO. 3

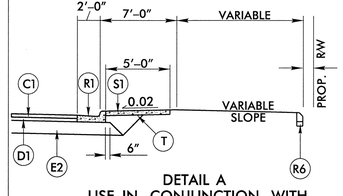
-L- BRAGG BLVD.

USE TYPICAL SECTION NO. 3 AS FOLLOWS

-L- STA. 180+25.00 TO STA. 187+05.00

TRANSITION FROM TYPICAL SECTION NO. 3 TO TYPICAL SECTION NO. 4 -L- STA 187+05 TO 188+65

CHANNELIZATION DETAIL



DETAIL A
USE IN CONJUNCTION WITH TYP. SECTIONS 1, 2, & 3

PAVEMENT SCHEDULE	
C1	3" TYPE S9.5C
C2	VAR. TYPE S9.5C
C3	3" TYPE S9.5B
C4	VAR. TYPE S9.5B
D1	4" TYPE I19.0C
D2	VAR. TYPE I19.0C
D3	2.5" TYPE I19.0C
E1	4" TYPE B25.0C
E2	6.5" TYPE B25.0C
E3	VAR. TYPE B25.0C
E4	4" TYPE B25.0B
E5	VAR. TYPE B25.0B
E6	4.5" TYPE B25.0C
J1	4" AGGREG. BASE COURSE
R1	2'-6" C & G
R2	1'-6" C & G
R3	SHOULDER BERM GUTTER
R4	5" MONO. CONC. ISLAND
R5	CONC. MEDIAN BARRIER
R6	8"X18" CONCRETE CURB
R7	8" JOINTED CONC. PAVE.
S1	4" CONCRETE SIDEWALK
S2	4" CONC. ISLAND COVERS
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILL. ASP. PAV., 2.5" DEPTH
V2	MILL. ASP. PAV., 3" DEPTH
W1	WEDGING DETAIL NO. 1
W2	WEDGING DETAIL NO. 2
W3	WEDGING DETAIL NO. 3

15-AUG-2012 10:11
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$$$$USERNAME$$$$

8/17/99

REVISIONS

LOCHNER

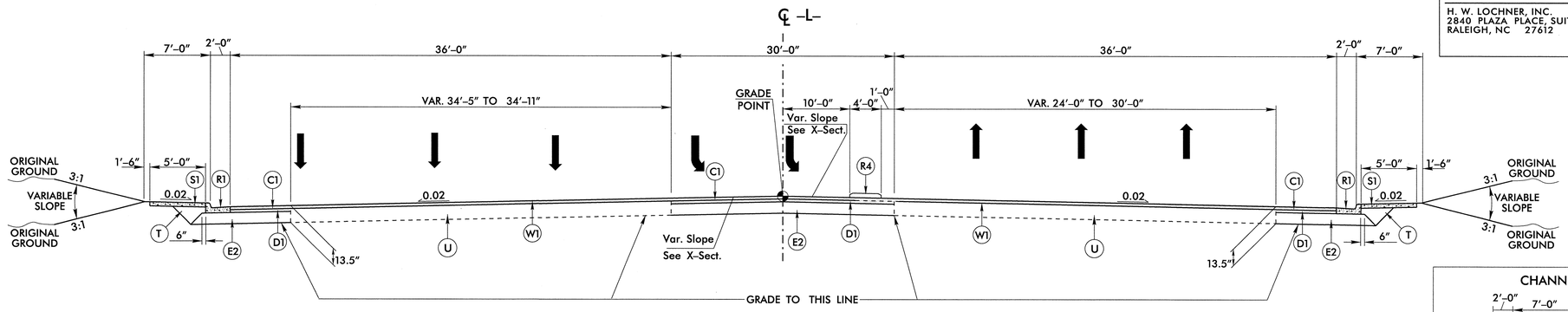
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

NC License Number F-0159

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER
8/16/12

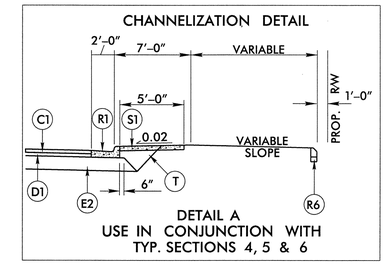
NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER
DUNG-CHI CHEN
8/29/12

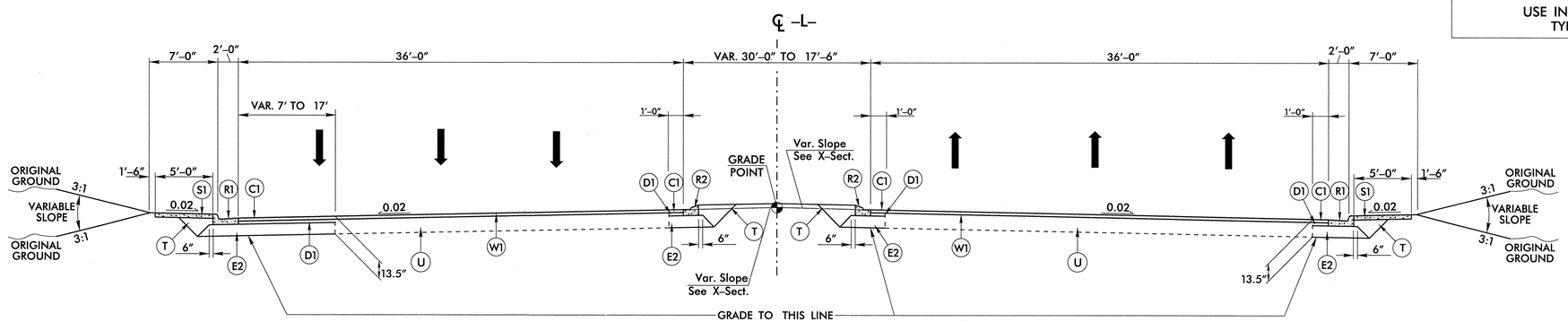


TYPICAL SECTION NO. 4

-L- BRAGG BLVD.

USE TYPICAL SECTION NO. 4 AS FOLLOWS
-L- STA. 188+65.00 TO STA. 193+45

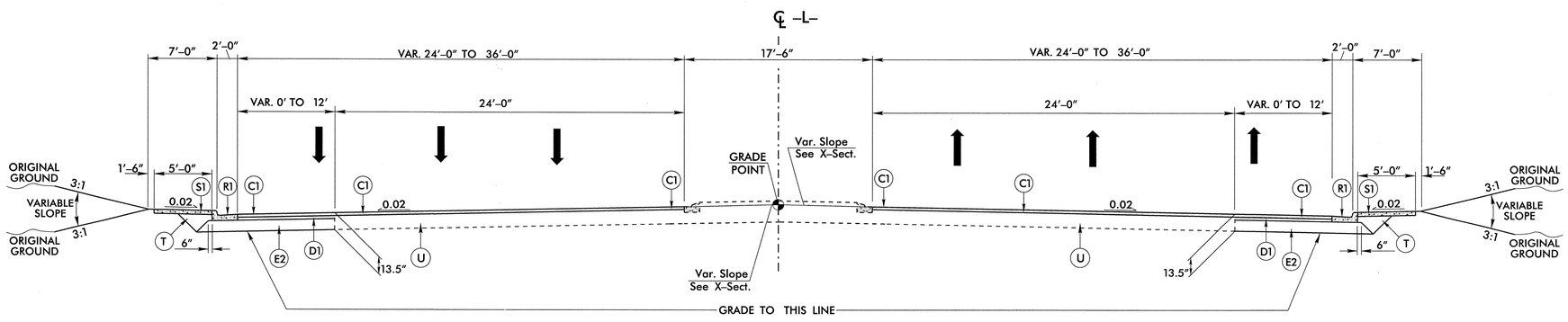




TYPICAL SECTION NO. 5

-L- BRAGG BLVD.

USE TYPICAL SECTION NO. 5 AS FOLLOWS
-L- STA. 193+45.00 TO STA. 197+75.00



TYPICAL SECTION NO. 6

-L- BRAGG BLVD.

USE TYPICAL SECTION NO. 6 AS FOLLOWS
-L- STA. 197+75.00 TO STA. 201+00.00
-L- STA. 201+00.00 TO STA. 210+00.00 (RT SIDE ONLY OVERLAY AND WIDEN)

PAVEMENT SCHEDULE	
C1	3" TYPE S9.5C
C2	VAR. TYPE S9.5C
C3	3" TYPE S9.5B
C4	VAR. TYPE S9.5B
D1	4" TYPE I19.0C
D2	VAR. TYPE I19.0C
D3	2.5" TYPE I19.0C
E1	4" TYPE B25.0C
E2	6.5" TYPE B25.0C
E3	VAR. TYPE B25.0C
E4	4" TYPE B25.0B
E5	VAR. TYPE B25.0B
E6	4.5" TYPE B25.0C
J1	4" AGGREG. BASE COURSE
R1	2'-6" C & G
R2	1'-6" C & G
R3	SHOULDER BERM GUTTER
R4	5" MONO. CONC. ISLAND
R5	CONC. MEDIAN BARRIER
R6	8"X18" CONCRETE CURB
R7	8" JOINTED CONC. PAVE.
S1	4" CONCRETE SIDEWALK
S2	4" CONC. ISLAND COVERS
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILL. ASP. PAV., 2.5" DEPTH
V2	MILL. ASP. PAV., 3" DEPTH
W1	WEDGING DETAIL NO. 1
W2	WEDGING DETAIL NO. 2
W3	WEDGING DETAIL NO. 3

16-AUG-2012 10:12
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LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

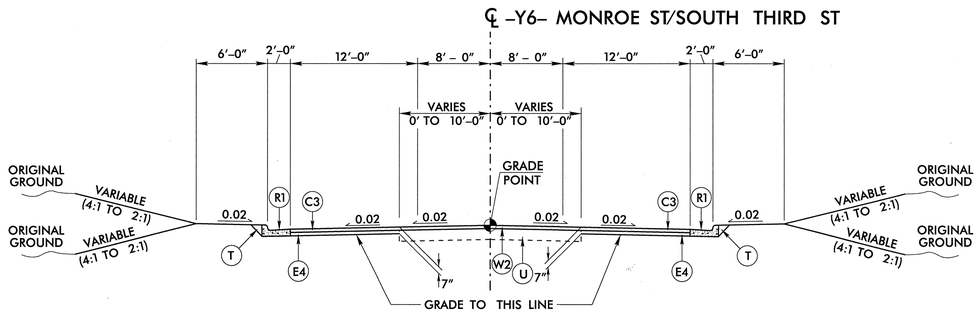
NC License Number F-0159

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-C
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER — 8/16/12

PAVEMENT DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER — DON-CHI CHEN — 8/29/12

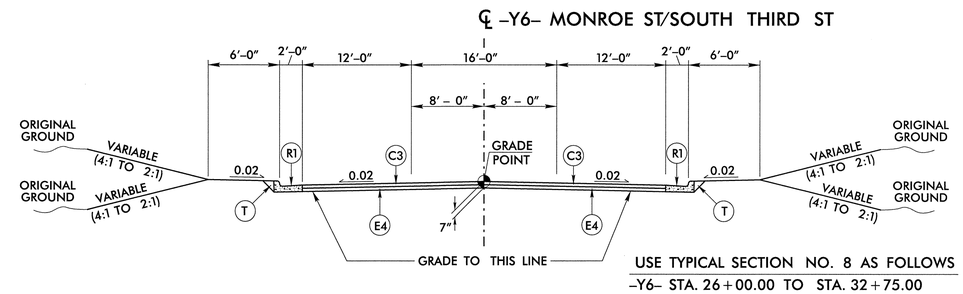
REVISIONS



USE TYPICAL SECTION NO. 7 AS FOLLOWS
-Y6- STA. 23+31.65 TO STA. 26+00.00
-Y6- STA. 32+75.00 TO STA. 37+77.30

TYPICAL SECTION NO. 7

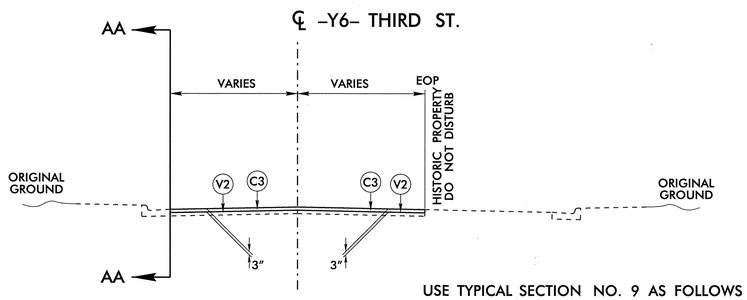
-Y6- MONROE ST./SOUTH THIRD ST.



USE TYPICAL SECTION NO. 8 AS FOLLOWS
-Y6- STA. 26+00.00 TO STA. 32+75.00

TYPICAL SECTION NO. 8

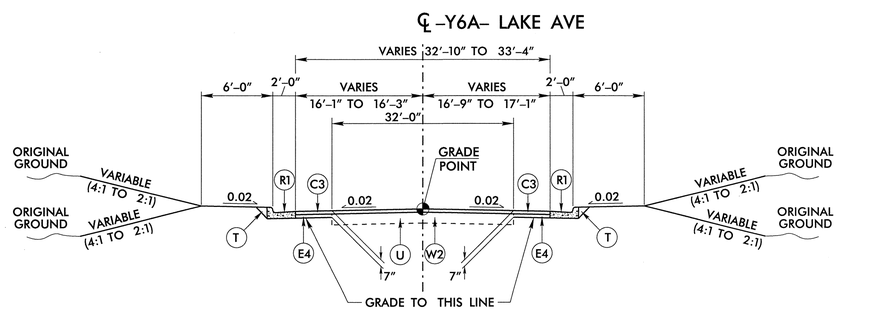
-Y6- MONROE ST./SOUTH THIRD ST.



USE TYPICAL SECTION NO. 9 AS FOLLOWS
-Y6- STA. 37+77.30 TO STA. 46+30.34

TYPICAL SECTION NO. 9

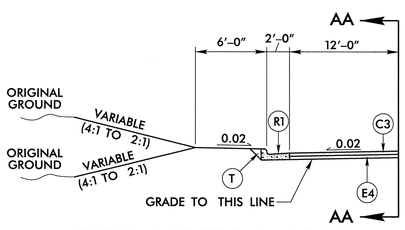
-Y6- THIRD ST.



-Y6A- STA. 10+77.18 TO STA. 13+65.83

TYPICAL SECTION NO. 10

-Y6A- LAKE AVE.



TYPICAL SECTION NO. 9A

-Y6- THIRD ST.

USE TYPICAL SECTION NO. 9A AS FOLLOWS
-Y6- STA. 37+77.30 TO STA. 39+76.00 LT.

PAVEMENT SCHEDULE	
C1	3" TYPE S9.5C
C2	VAR. TYPE S9.5C
C3	3" TYPE S9.5B
C4	VAR. TYPE S9.5B
D1	4" TYPE I19.0C
D2	VAR. TYPE I19.0C
D3	2.5" TYPE I19.0C
E1	4" TYPE B25.0C
E2	6.5" TYPE B25.0C
E3	VAR. TYPE B25.0C
E4	4" TYPE B25.0B
E5	VAR. TYPE B25.0B
E6	4.5" TYPE B25.0C
J1	4" AGGREG. BASE COURSE
R1	2'-6" C & G
R2	1'-6" C & G
R3	SHOULDER BERM GUTTER
R4	5" MONO. CONC. ISLAND
R5	CONC. MEDIAN BARRIER
R6	8"X18" CONCRETE CURB
R7	8" JOINTED CONC. PAVE.
S1	4" CONCRETE SIDEWALK
S2	4" CONC. ISLAND COVERS
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILL. ASP. PAV., 2.5" DEPTH
V2	MILL. ASP. PAV., 3" DEPTH
W1	WEDGING DETAIL NO. 1
W2	WEDGING DETAIL NO. 2
W3	WEDGING DETAIL NO. 3

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

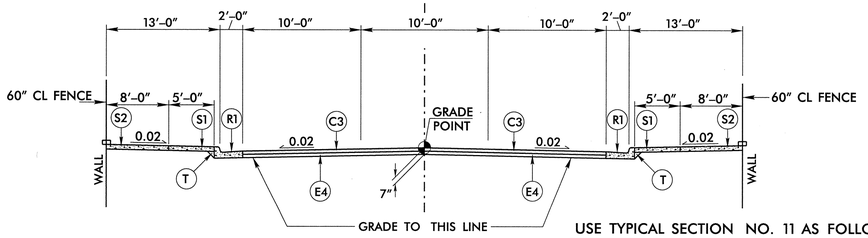
PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER BRIAN K. EASON 6/16/12

NORTH CAROLINA PROFESSIONAL SEAL 13362 ENGINEER PEIN-CHI CHEN 8/29/12

REVISIONS

℄-Y6C- POE AVE.

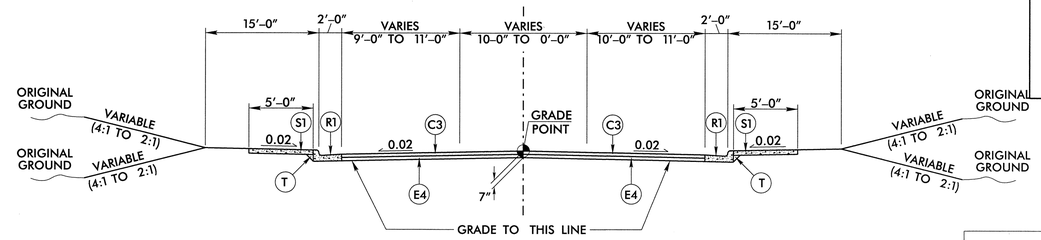


USE TYPICAL SECTION NO. 11 AS FOLLOWS
-Y6C- STA. 10+60.10 TO STA. 13+01.10 (BEGIN BRIDGE)
-Y6C- STA. 14+72.85 (END BRIDGE) TO STA. 17+00.00

TYPICAL SECTION NO. 11

-Y6C- POE AVE.

℄-Y6C- POE AVE.

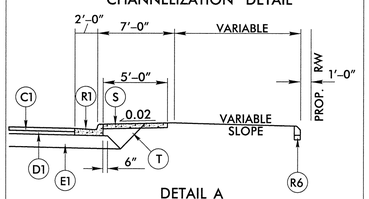


USE TYPICAL SECTION NO. 12 AS FOLLOWS
-Y6C- STA. 17+00.00 TO STA. 19+89.24

TYPICAL SECTION NO. 12

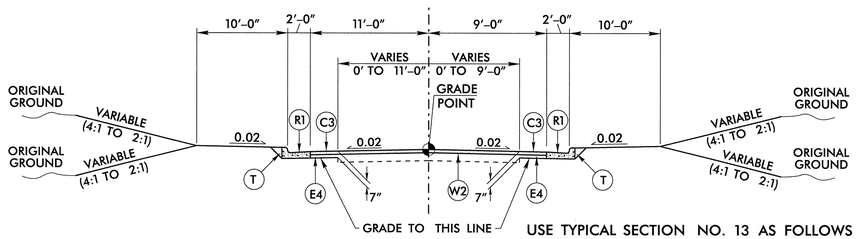
-Y6C- POE AVE.

CHANNELIZATION DETAIL



DETAIL A
USE IN CONJUNCTION WITH TYP. SECTION 15

℄-Y6C- POE AVE.

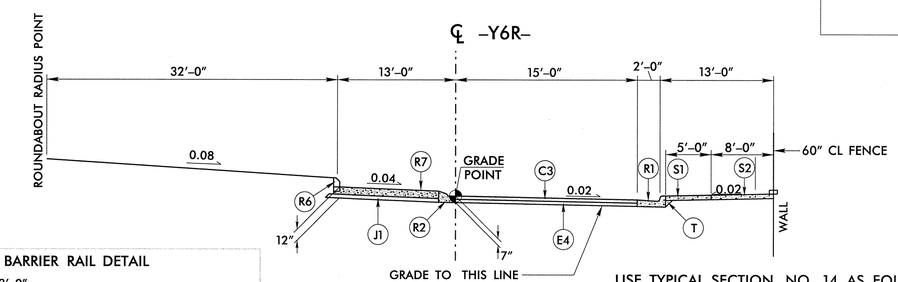


USE TYPICAL SECTION NO. 13 AS FOLLOWS
-Y6C- STA. 19+89.24 TO STA. 21+20.00

TYPICAL SECTION NO. 13

-Y6C- POE AVE.

℄ -Y6R-

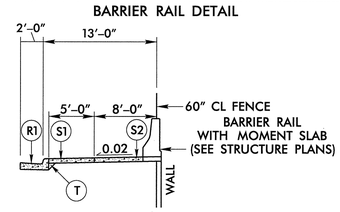


USE TYPICAL SECTION NO. 14 AS FOLLOWS
-Y6R- STA. 10+00.00 TO STA. 12+82.74

TYPICAL SECTION NO. 14

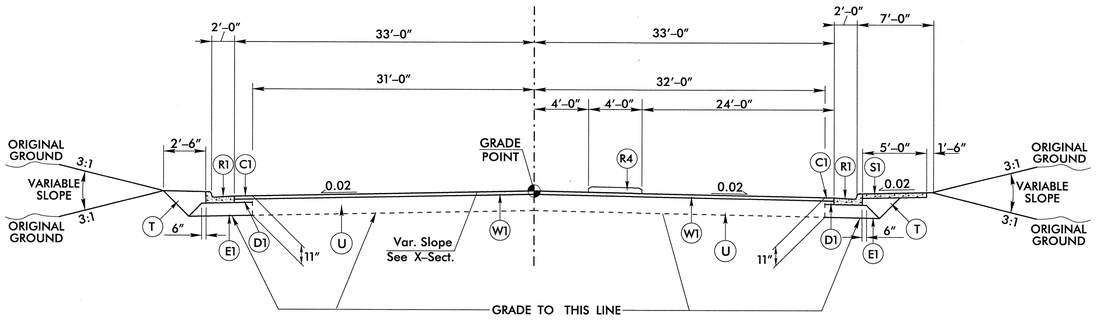
-Y6R-

BARRIER RAIL DETAIL



USE TYPICAL SECTION NO. 14A AS FOLLOWS
-Y6R- STA. 10+26.84 TO STA. 12+54.81

℄-Y7-

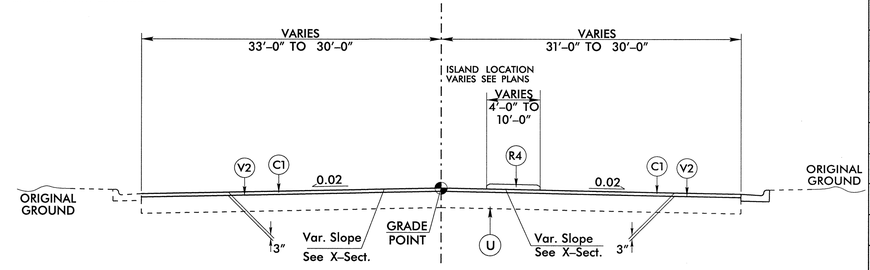


TYPICAL SECTION NO. 15

-Y7- NC 210

USE TYPICAL SECTION NO. 15 AS FOLLOWS
-Y7- STA. 11+50.73 TO STA. 14+44.60
(IN CONJUNCTION WITH -Y7A- AS APPLICABLE FOR WEDGING, RESURFACING, AND WIDENING)

℄-Y7-



TYPICAL SECTION NO. 16

-Y7- NC 210

USE TYPICAL SECTION NO. 16 AS FOLLOWS
-Y7- STA. 14+44.60 TO STA. 25+62.30

PAVEMENT SCHEDULE

C1	3" TYPE S9.5C
C2	VAR. TYPE S9.5C
C3	3" TYPE S9.5B
C4	VAR. TYPE S9.5B
D1	4" TYPE I19.0C
D2	VAR. TYPE I19.0C
D3	2.5" TYPE I19.0C
E1	4" TYPE B25.0C
E2	6.5" TYPE B25.0C
E3	VAR. TYPE B25.0C
E4	4" TYPE B25.0B
E5	VAR. TYPE B25.0B
E6	4.5" TYPE B25.0C
J1	4" AGGREG. BASE COURSE
R1	2'-6" C & G
R2	1'-6" C & G
R3	SHOULDER BERM GUTTER
R4	5" MONO. CONC. ISLAND
R5	CONC. MEDIAN BARRIER
R6	8"X18" CONCRETE CURB
R7	8" JOINTED CONC. PAVE.
S1	4" CONCRETE SIDEWALK
S2	4" CONC. ISLAND COVERS
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILL. ASP. PAV., 2.5" DEPTH
V2	MILL. ASP. PAV., 3" DEPTH
W1	WEDGING DETAIL NO. 1
W2	WEDGING DETAIL NO. 2
W3	WEDGING DETAIL NO. 3

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

NC License Number F-0159

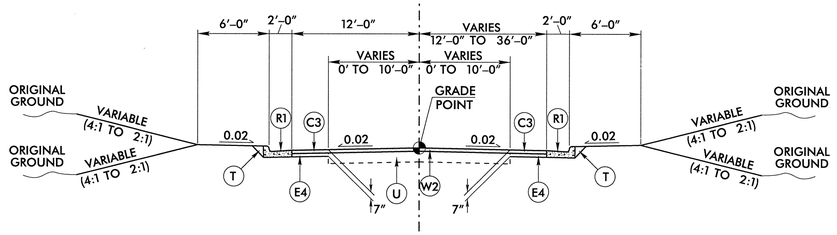
PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER K. KASONGO 8/16/12

NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DONG-CHI CHEN 8/29/12

REVISIONS

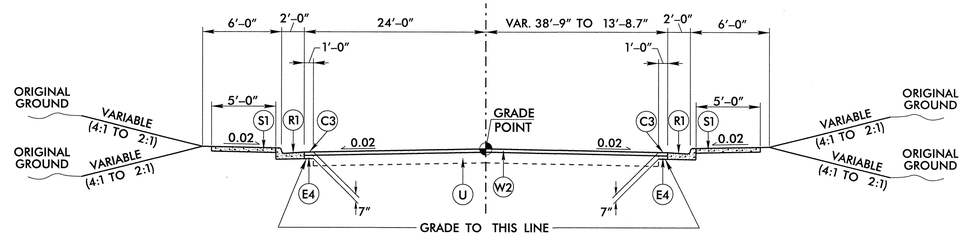
℄ -Y8- SOUTH FIFTH ST



USE TYPICAL SECTION NO. 17 AS FOLLOWS
-Y8- STA. 10+29.48 TO STA. 19+40.34

TYPICAL SECTION NO. 17
-Y8- SOUTH FIFTH ST.

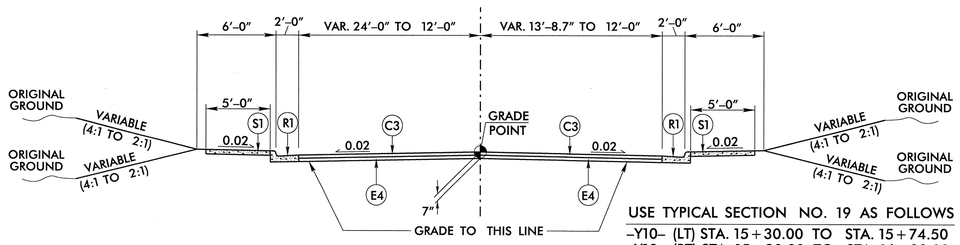
℄-Y10- MAIN ST



USE TYPICAL SECTION NO. 18 AS FOLLOWS
-Y10- STA. 13+80.00 TO STA. 15+50.00

TYPICAL SECTION NO. 18
-Y10- MAIN ST.

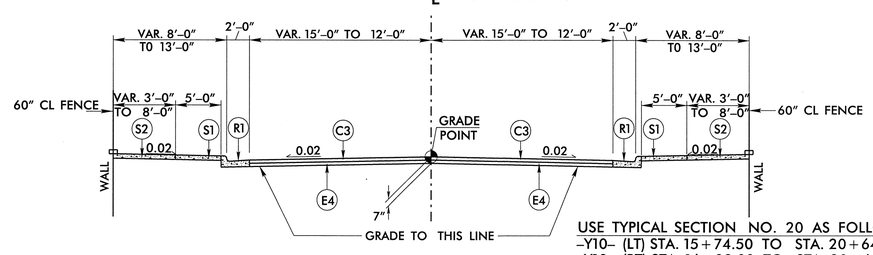
℄-Y10- MAIN ST



USE TYPICAL SECTION NO. 19 AS FOLLOWS
-Y10- (LT) STA. 15+30.00 TO STA. 15+74.50
-Y10- (RT) STA. 15+30.00 TO STA. 16+38.00
-Y10- (RT) STA. 23+40.00 TO STA. 25+24.17
-Y10- (LT) STA. 24+00.00 TO STA. 25+24.17

TYPICAL SECTION NO. 19
-Y10- MAIN ST.

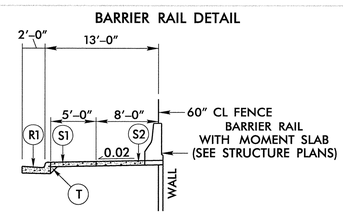
℄-Y10- MAIN ST



USE TYPICAL SECTION NO. 20 AS FOLLOWS
-Y10- (LT) STA. 15+74.50 TO STA. 20+64.99
-Y10- (RT) STA. 16+38.00 TO STA. 20+64.99
-Y10- (RT) STA. 21+85.01 TO STA. 23+40.00
-Y10- (LT) STA. 21+85.01 TO STA. 24+00.00

TYPICAL SECTION NO. 20
-Y10- MAIN ST.

BARRIER RAIL DETAIL



USE TYPICAL SECTION NO. 20A AS FOLLOWS
-Y10- (RT) STA. 19+80.81 TO STA. 20+88.26
-Y10- (RT) STA. 22+67.80 TO STA. 21+60.51

PAVEMENT SCHEDULE	
C1	3" TYPE S9.5C
C2	VAR. TYPE S9.5C
C3	3" TYPE S9.5B
C4	VAR. TYPE S9.5B
D1	4" TYPE I19.0C
D2	VAR. TYPE I19.0C
D3	2.5" TYPE I19.0C
E1	4" TYPE B25.0C
E2	6.5" TYPE B25.0C
E3	VAR. TYPE B25.0C
E4	4" TYPE B25.0B
E5	VAR. TYPE B25.0B
E6	4.5" TYPE B25.0C
J1	4" AGGREG. BASE COURSE
R1	2'-6" C & G
R2	1'-6" C & G
R3	SHOULDER BERM GUTTER
R4	5" MONO. CONC. ISLAND
R5	CONC. MEDIAN BARRIER
R6	8"X18" CONCRETE CURB
R7	8" JOINTED CONC. PAVE.
S1	4" CONCRETE SIDEWALK
S2	4" CONC. ISLAND COVERS
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILL. ASP. PAV., 2.5" DEPTH
V2	MILL. ASP. PAV., 3" DEPTH
W1	WEDGING DETAIL NO. 1
W2	WEDGING DETAIL NO. 2
W3	WEDGING DETAIL NO. 3

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

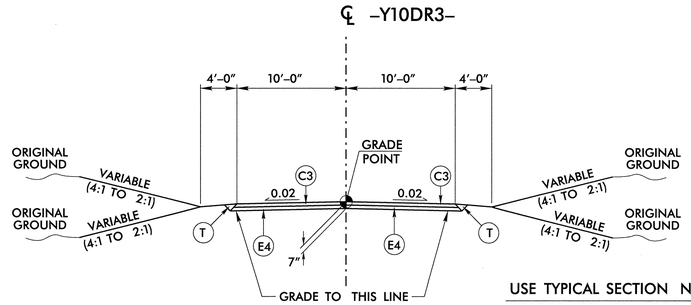
NC License Number F-0159

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-F
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER DAVID RUSSELL SASON 8/16/12

PAVEMENT DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 13368 ENGINEER DON-CHI CHEN 8/29/12

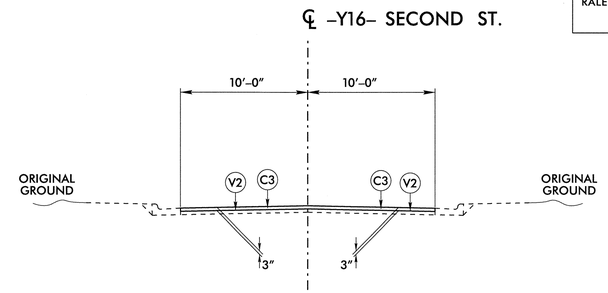
REVISIONS



USE TYPICAL SECTION NO. 21 AS FOLLOWS
-Y10DR3- STA. 10+15.97 TO STA. 11+00.00

TYPICAL SECTION NO. 21

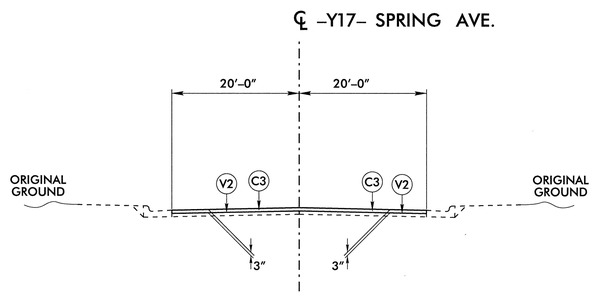
-Y10DR3-



USE TYPICAL SECTION NO. 22 AS FOLLOWS
-Y16- STA. 10+00.00 TO STA. 18+83.00

TYPICAL SECTION NO. 22

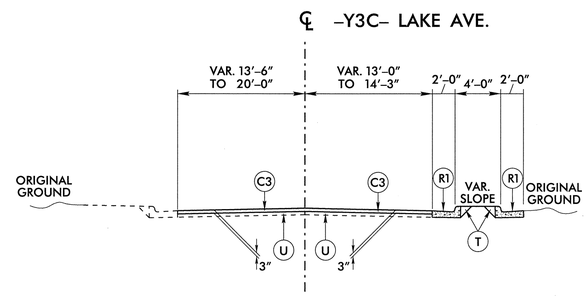
-Y16- SECOND ST.



USE TYPICAL SECTION NO. 23 AS FOLLOWS
-Y17- STA. 12+85.33 TO STA. 14+71.98

TYPICAL SECTION NO. 23

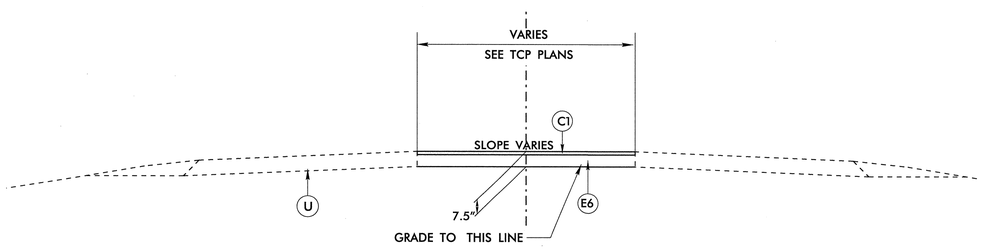
-Y17- SPRING AVE.



USE TYPICAL SECTION NO. 24 AS FOLLOWS
-Y3C- STA. 10+00 TO STA. 12+10

TYPICAL SECTION NO. 24

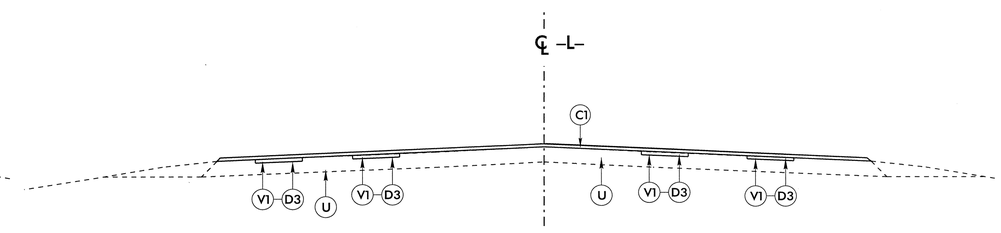
-Y3C- LAKE AVE.



TYPICAL SECTION NO. 25

-L-

USE TYPICAL SECTION NO. 25 AS FOLLOWS
SEE TCP PLANS



TYPICAL SECTION NO. 26

-L-

USE TYPICAL SECTION NO. 26 AS FOLLOWS
AS DIRECTED BY ENGINEER
(WHERE LONGITUDINAL CRACKING IS MODERATE OR SEVERE)

* NOTE: IF CRACKING STILL EXISTS AFTER MILLING, PAVEMENT SHOULD BE REPAIRED IN FULL DEPTH AND REPLACE WITH B25.0C.

PAVEMENT SCHEDULE	
C1	3" TYPE S9.5C
C2	VAR. TYPE S9.5C
C3	3" TYPE S9.5B
C4	VAR. TYPE S9.5B
D1	4" TYPE I19.0C
D2	VAR. TYPE I19.0C
D3	2.5" TYPE I19.0C
E1	4" TYPE B25.0C
E2	6.5" TYPE B25.0C
E3	VAR. TYPE B25.0C
E4	4" TYPE B25.0B
E5	VAR. TYPE B25.0B
E6	4.5" TYPE B25.0C
J1	4" AGGREG. BASE COURSE
R1	2'-6" C & G
R2	1'-6" C & G
R3	SHOULDER BERM GUTTER
R4	5" MONO. CONC. ISLAND
R5	CONC. MEDIAN BARRIER
R6	8"X18" CONCRETE CURB
R7	8" JOINTED CONC. PAVE.
S1	4" CONCRETE SIDEWALK
S2	4" CONC. ISLAND COVERS
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILL. ASP. PAV., 2.5" DEPTH
V2	MILL. ASP. PAV., 3" DEPTH
W1	WEDGING DETAIL NO. 1
W2	WEDGING DETAIL NO. 2
W3	WEDGING DETAIL NO. 3

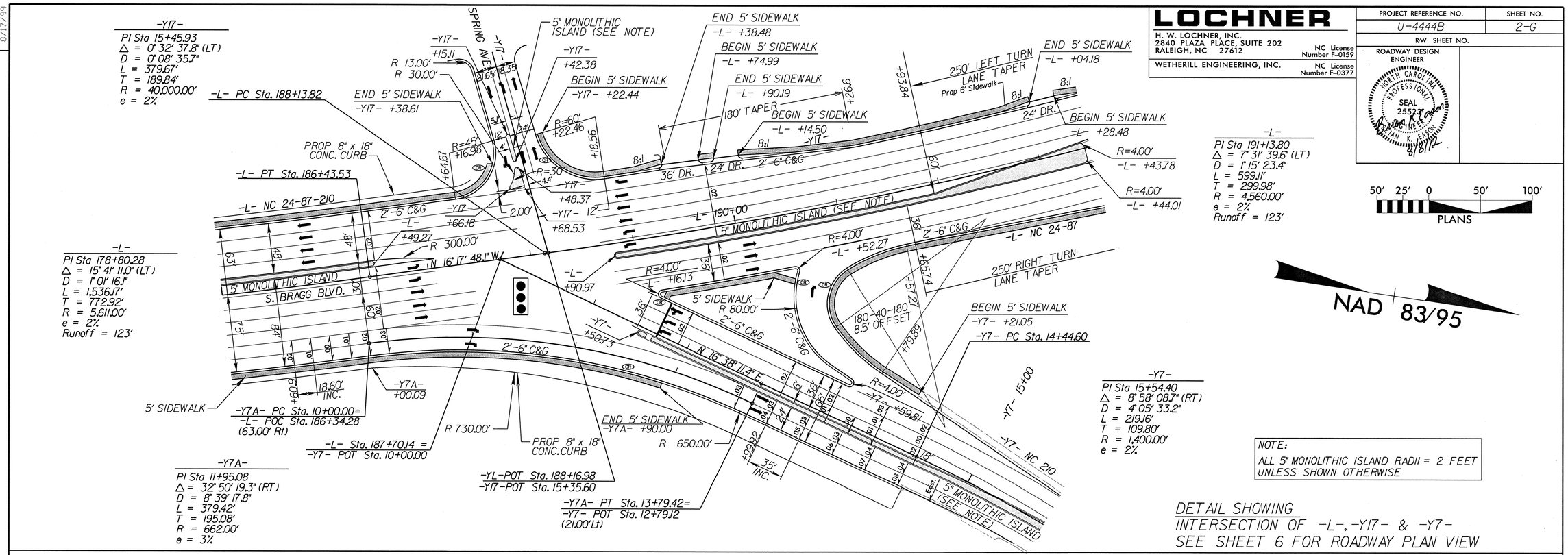
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159
WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-G
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	

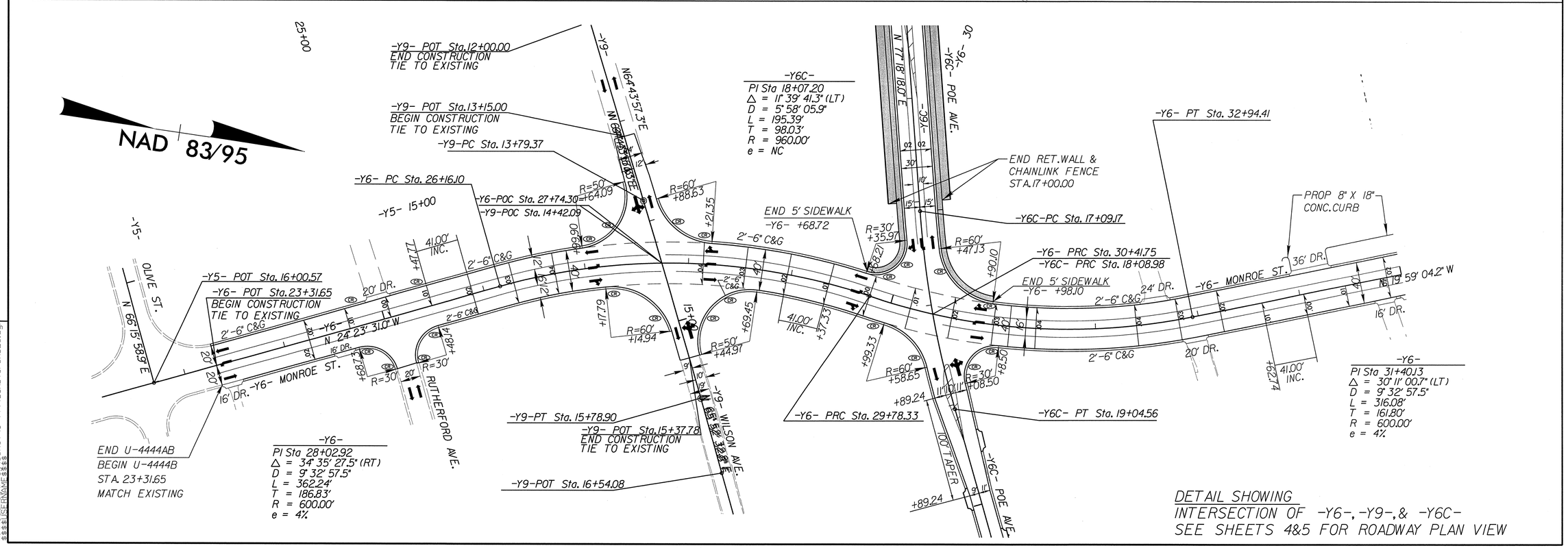
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER JAN K. EASON 8/18/99

8/17/99

REVISIONS



DETAIL SHOWING
INTERSECTION OF -L-, -Y17- & -Y7-
SEE SHEET 6 FOR ROADWAY PLAN VIEW



DETAIL SHOWING
INTERSECTION OF -Y6-, -Y9-, & -Y6C-
SEE SHEETS 4&5 FOR ROADWAY PLAN VIEW

SX TIME
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$$$$$USERNAME$$$$

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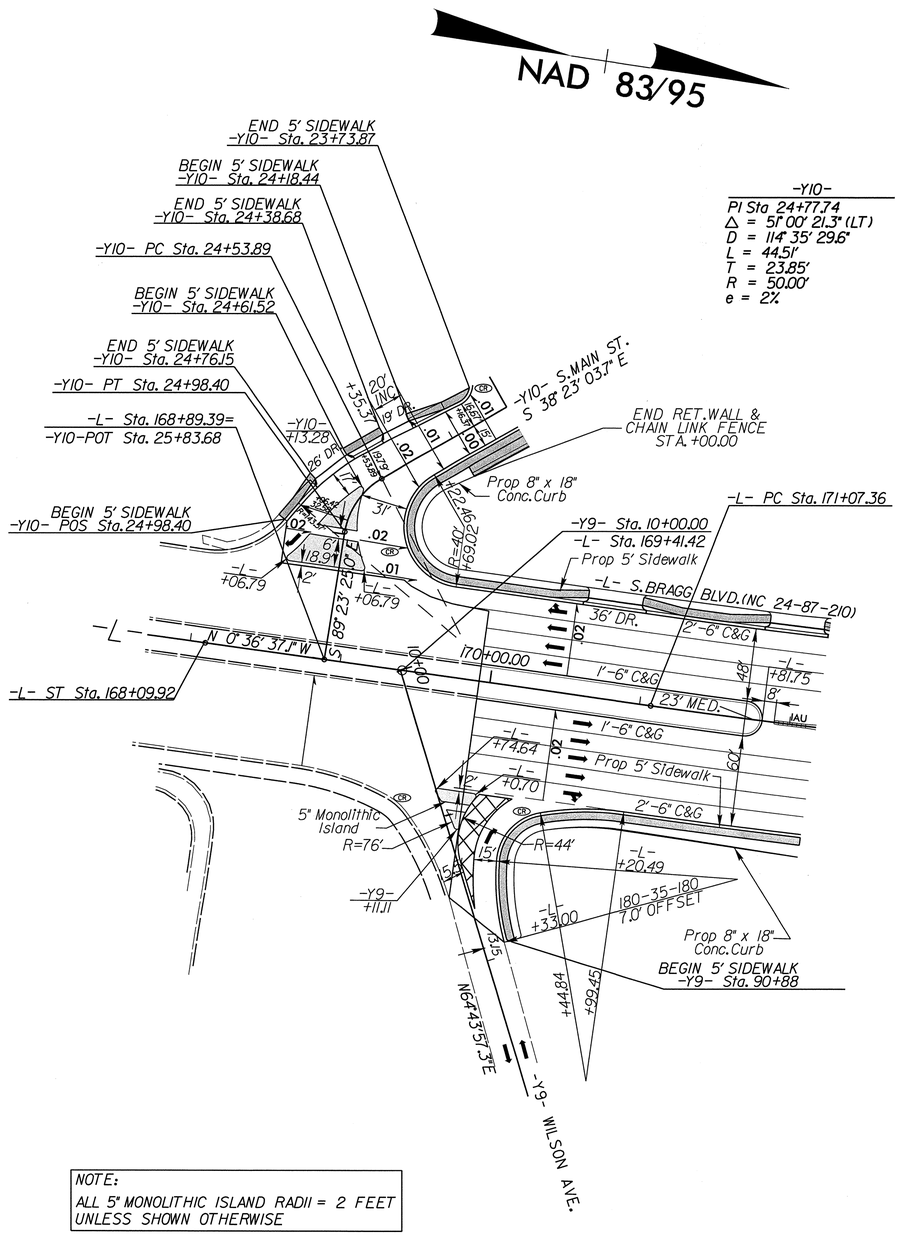
REVISIONS

LOCHNER	PROJECT REFERENCE NO.	SHEET NO.
H. W. LOCHNER, INC. 2840 PLAZA PLACE, SUITE 202 RALEIGH, NC 27612 — NC License Number F-0159	U-4444B	2-H
WETHERILL ENGINEERING, INC. — NC License Number F-0377	R/W SHEET NO.	
	ROADWAY DESIGN ENGINEER	

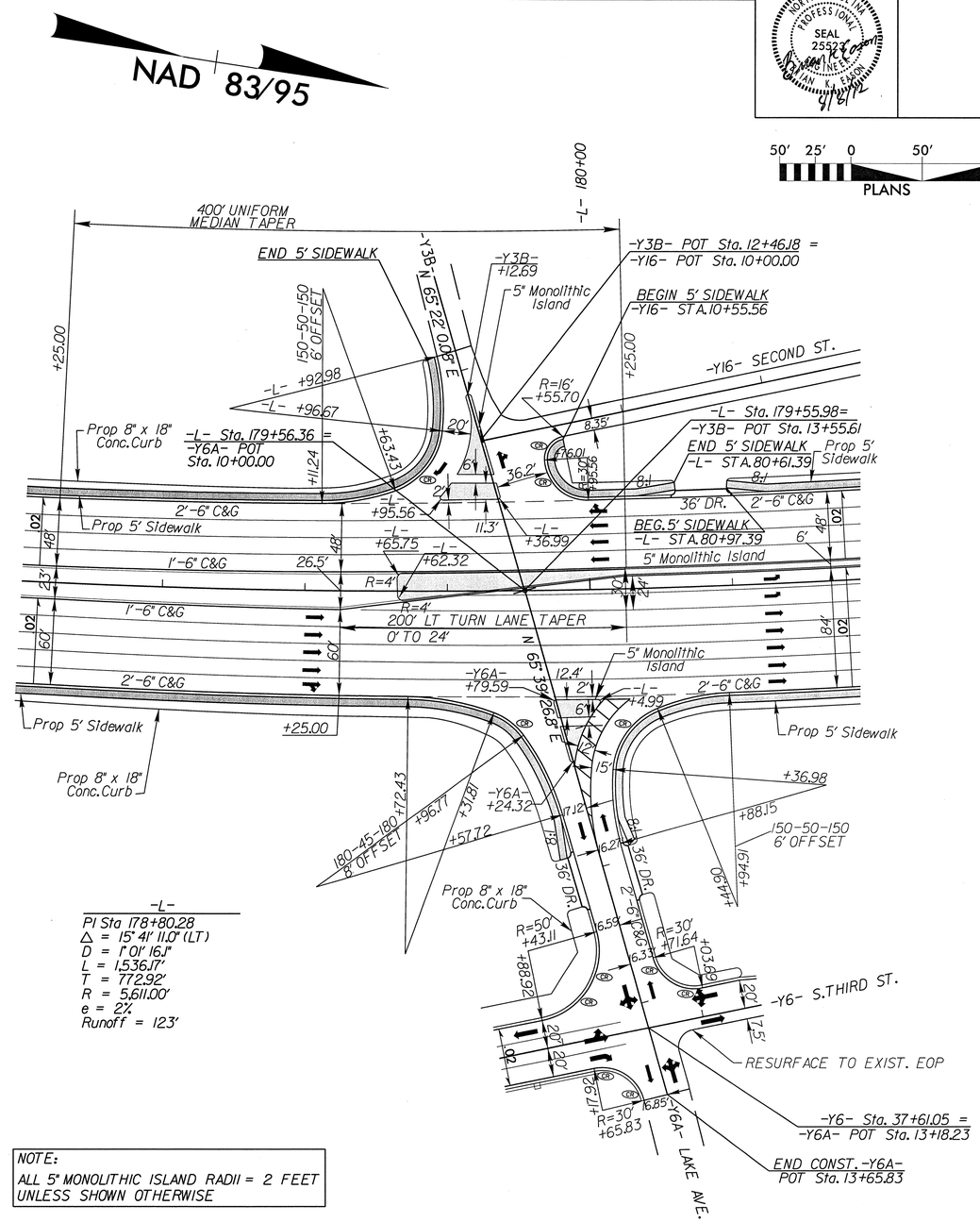
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER — 8/18/99

50' 25' 0 50' 100'
PLANS



NOTE:
ALL 5" MONOLITHIC ISLAND RADII = 2 FEET UNLESS SHOWN OTHERWISE

DETAIL SHOWING
INTERSECTION OF -Y10-, -Y9- AT -L-
SEE SHEET 4 FOR ROADWAY PLAN VIEW



-L-
PI Sta 178+80.28
Δ = 15° 41' 11.0" (LT)
D = 1° 01' 16.1"
L = 1,536.17'
T = 772.92'
R = 5,611.00'
e = 2%
Runoff = 123'

NOTE:
ALL 5" MONOLITHIC ISLAND RADII = 2 FEET UNLESS SHOWN OTHERWISE

DETAIL SHOWING
INTERSECTION OF -Y6A- AT -L-
INTERSECTION OF -Y6A- AT -Y6-
SEE SHEET 5 FOR ROADWAY PLAN VIEW

SYTIME
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8/18/99 12:09:00 PM EDT

LOCHNER

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

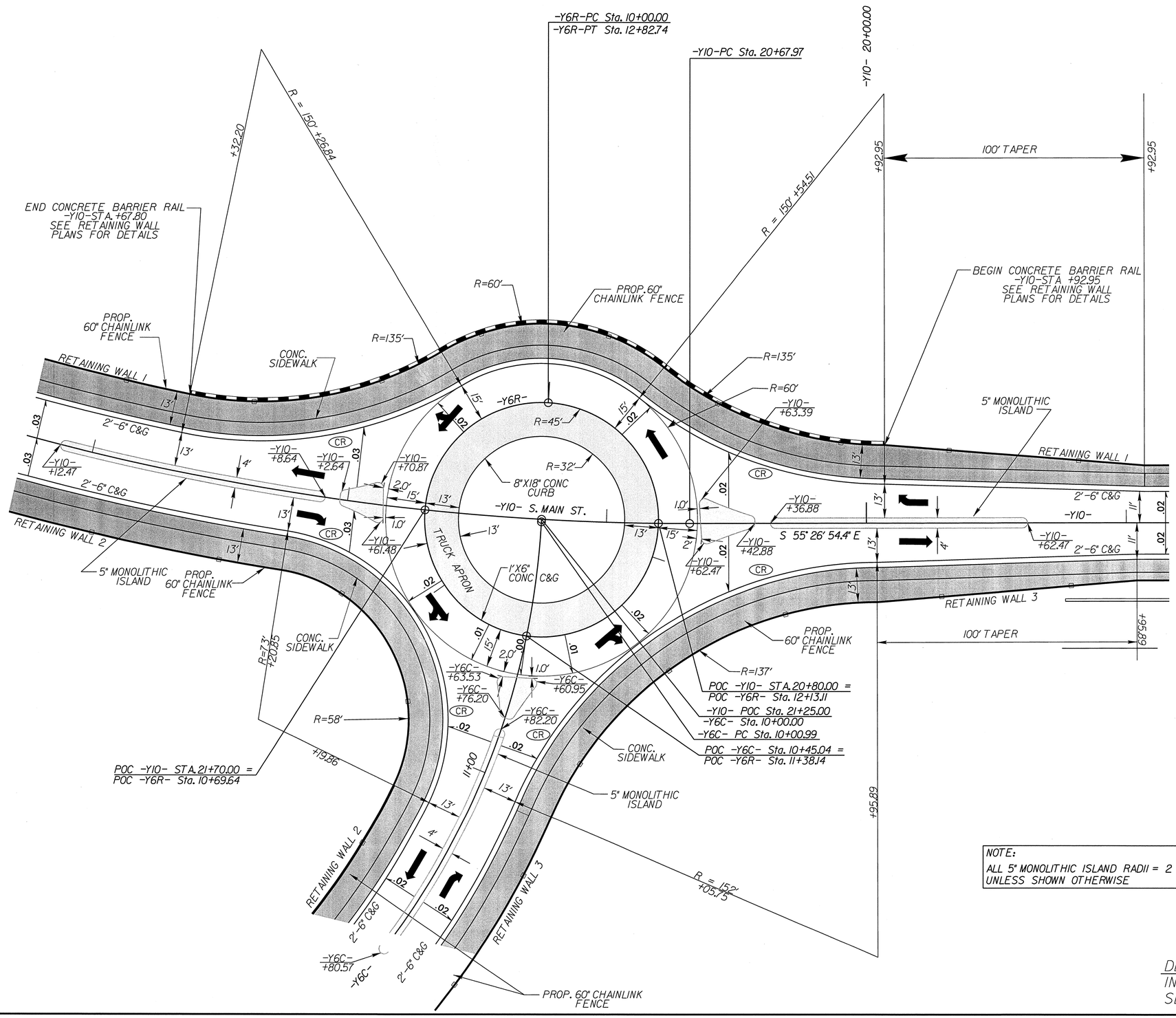
WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER JAN K. EASON
8/8/12

20' 10' 0 20' 40'
PLANS



NAD 83/95

-Y6R- (ROUNDABOUT)
PI Sta 10+00.00
△ = 360° 00' 00.0" (LT)
D = 127° 19' 26.2"
L = 282.74'
T = 0.00'
R = 45.00'
e = 2%

-Y10-
PI Sta 22+12.74
△ = 17° 03' 50.7" (RT)
D = 5° 56' 14.6"
L = 287.40'
T = 144.77'
R = 965.00'
e = 3%

-Y6C-
PI Sta 11+08.31
△ = 39° 22' 01.5" (RT)
D = 19° 05' 54.9"
L = 206.13'
T = 107.32'
R = 300.00'
e = NC

NOTE:
ALL 5" MONOLITHIC ISLAND RADII = 2 FEET
UNLESS SHOWN OTHERWISE

DETAIL SHOWING
INTERSECTION OF -Y10- AT -Y6C-
SEE SHEET 9A FOR ROADWAY PLAN VIEW

REVISIONS

8/17/99

SYTIME
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$$$$DATE$$$$
$$$$TIME$$$$
$$$$FILENAME$$$$

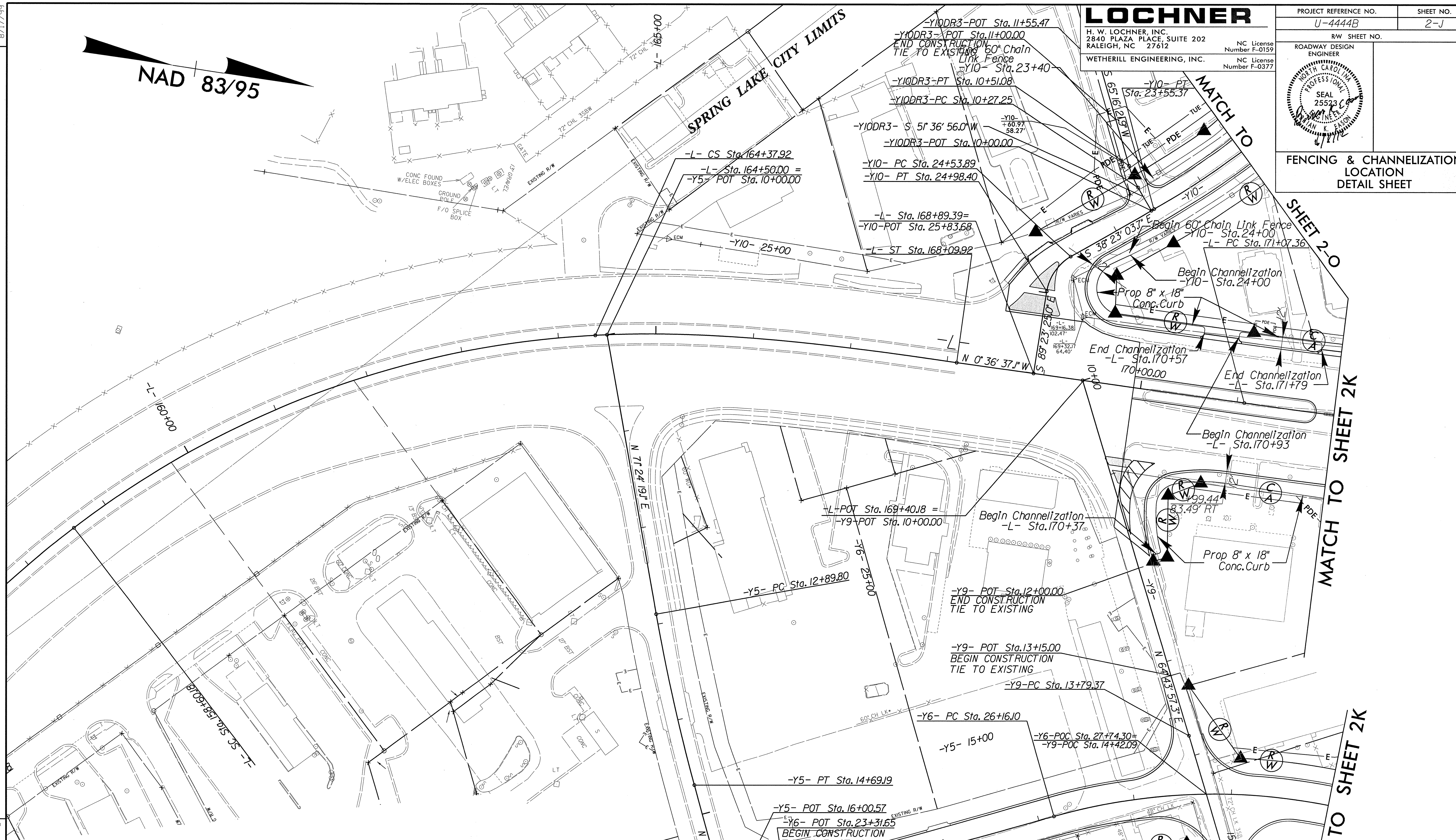
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159
WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-J
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER BRIAN K. EASON

FENCING & CHANNELIZATION LOCATION DETAIL SHEET



-L-

PIs Sta 157+36.66	PI Sta 161+58.00	PIs Sta 165+62.36
Θs = 11° 02' 36.7"	Δ = 34° 18' 09.4" (RT)	Θs = 11° 02' 36.7"
Ls = 372.00'	D = 5° 56' 14.6"	Ls = 372.00'
LT = 248.48'	L = 577.74'	LT = 248.48'
ST = 124.44'	T = 297.82'	ST = 124.44'
	R = 965.00'	
	e = 5%	

-Y5-	-Y6-
PI Sta 13+79.55	PI Sta 28+02.92
Δ = 5° 08' 20.1" (LT)	Δ = 34° 35' 27.5" (RT)
D = 2° 51' 53.2"	D = 9° 32' 57.5"
L = 179.38'	L = 362.24'
T = 89.75'	T = 186.83'
R = 2,000.00'	R = 600.00'
e = NC	e = 4%

See Sheet 04 for -L- Plan Sheet

REVISIONS

8/17/99

SYTIME
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$$$$USERNAME$$$$

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159
WETHERILL ENGINEERING, INC. NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-K
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25528 ENGINEER
8/8/12

FENCING & CHANNELIZATION LOCATION DETAIL SHEET

NAD 83/95

-Y6-
PI Sta 28+02.92
△ = 34° 35' 27.5" (RT)
D = 9° 32' 57.5"
L = 362.24'
T = 186.83'
R = 600.00'
e = 4%

MATCH TO SHEET 2-O

MATCH TO SHEET 2J

MATCH TO SHEET 2L

MATCH TO SHEET 2M

-Y6C- PT Sta. 12+07.12
Begin Channelization -L- Sta.172+15
END PROP.60' CH LK FENCE -Y6C- +96.38 27.00' RT
+00.00 72.60' LT
+55.14 71.50' LT
+18.43 72.07' LT
+50.00 72.90' LT
Begin Channelization -L- Sta.173+95
End Channelization -L- Sta.174+46
+98.11 81.42' LT
+43.58 73.81' LT
+85.57 71.50' LT
Prop 8" x 18" Conc.Curb
+25.12 71.50' LT
End Channelization -L- Sta.173+59
END PROP.60' CH LK FENCE -Y6C-, +05.70 27.00' LT
Begin Channelization -L- Sta.174+82
Prop 8" x 18" Conc.Curb
-Y3B-POT Sta. 10+00.00
End Channelization -L- Sta.178+91
-L- POC Sta. 179+56.36 = -Y6A- POT Sta. 10+00.00
-Y3B- +84.01 24.53' RT
-L- POC Sta. 179+53.99 = -Y3B- POT Sta. 13+55.61
+94.59 71.50' LT
+11.14 72.06' LT
Prop 8" x 18" Conc.Curb
-Y3B- POT Sta. 12+46.18 = -Y16- POT Sta. 10+00.00
Begin Channelization -Y16- Sta.10+56
N 65° 27' 00.8" E
N 65° 39' 26.8" E
N 20° 09' 14.2" W
N 19° 59' 04.2" W
N 77° 18' 18.0" E
+88.86 75.01' LT
+58.81 74.91' LT
+95.66 75.00' LT
+01.35 74.85' LT
+01.35 74.33' LT
REMOVE AND RESET FENCE
End Channelization -L- Sta.180+62
Begin Channelization -L- Sta.180+98
Prop 8" x 18" Conc.Curb
+50.00 87.48' RT
-Y6C- 15+00
BEGIN PROP.60' CH LK FENCE -Y6C-, +68.26 27.00' RT
+50.00 84.70' RT
+50.00 84.20' RT
+00.00 84.20' RT
BEGIN PROP.60' CH LK FENCE -Y6C-, +77.32 27.00' LT
END PROP.60' CH LK FENCE -Y6C-, +00.00 30.00' RT
+95.66 83.50' RT
+94.42 86.99' RT
+16.62 87.26' RT
+16.62 87.26' RT
+16.62 87.26' RT
-L- POC Sta. 172+95.63 = -Y6C- POT Sta. 13+80.85
-Y6- PT Sta. 32+94.41
End Channelization -Y6A- Sta.11+88
-Y6A- +84.74 33.15' RT
Begin Channelization -Y6A- Sta.12+24
-Y6A- +26.69 33.23' RT
-Y6A- +37.99 33.36' RT
-Y6A- +53.33 33.36' RT
-Y6- +98.84 37.00' LT
-Y6- +22.81 37.00' RT
Begin Channelization -Y6A- Sta.11+91
End Channelization -Y6A- Sta.12+27
-Y6A- +29.89 29.06' LT
-Y6A- +75.97 28.99' LT
-Y6- +03.30 29.00' LT
-Y6- +29.49 29.00' LT
Prop 8" x 18" Conc.Curb
END PROP.60' CH LK FENCE -Y6C-, +00.00 30.00' LT
-Y6C-PC Sta. 17+09.17
-Y6- PRC Sta. 29+78.33
-Y6- PRC Sta. 30+41.75
-Y6C- PRC Sta. 18+08.98
End Channelization -Y6- Sta.36+11
Tie to Existing Channelization
-Y6- +04.33 39.39' RT
-Y6- +35.46 39.34' RT
REMOVE AND RESET FENCE
-Y6C- PT Sta. 19+04.56
Tie to Existing Channelization
REMOVE AND RESET FENCE
REMOVE AND RESET FENCE
END CONST. -Y6A- POT Sta. 13+65.83
Begin Channelization -Y6- Sta.38+33
BEGIN OVERLAY -Y6- POT Sta. 37+77.30
-Y6- Sta. 37+61.05 = -Y6A- POT Sta. 13+18.23
-Y6A- POT Sta. 14+80.00

See Sheet 05 for -L- Plan Sheet

REVISIONS

8/17/99

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LOCHNER

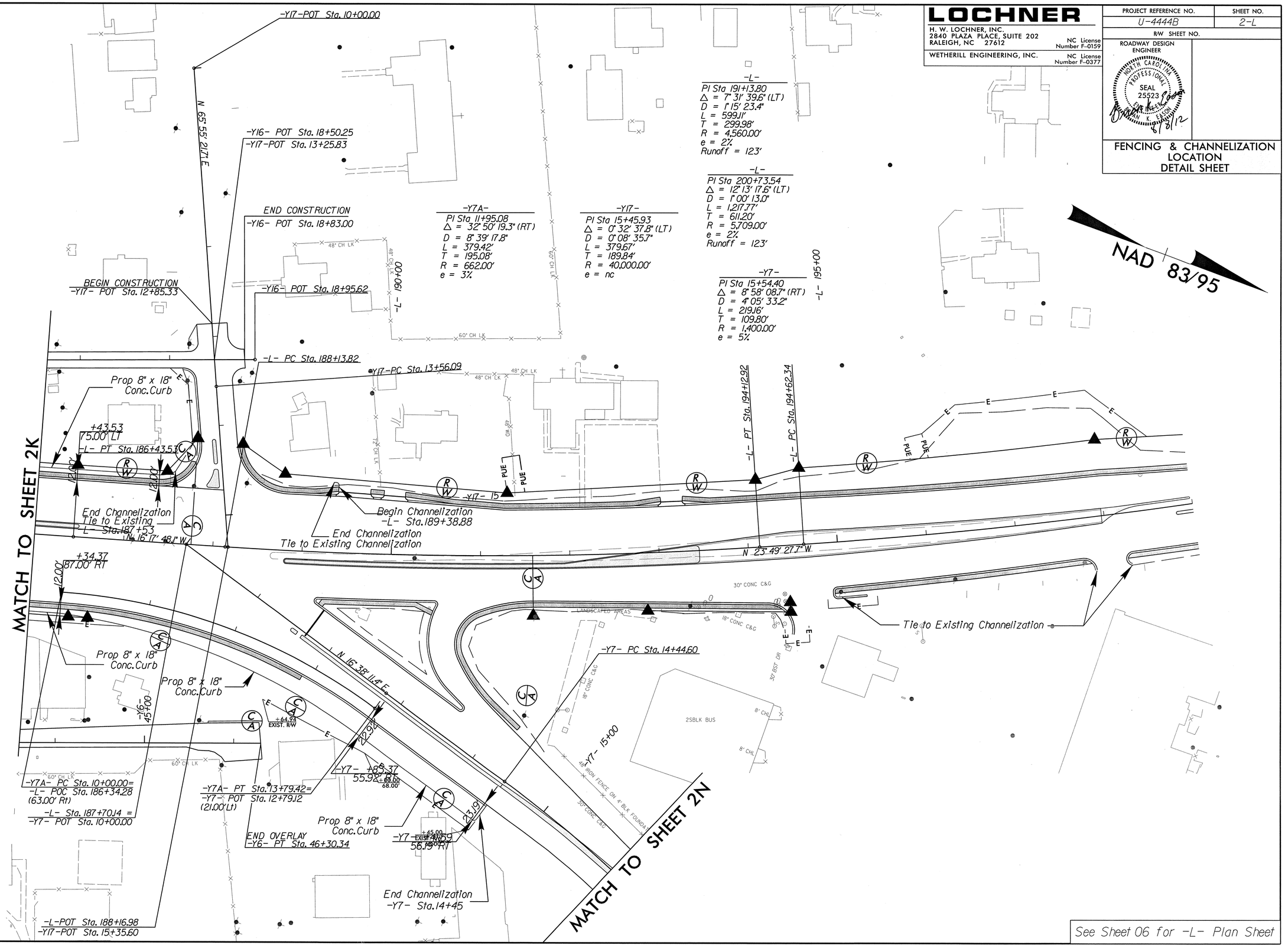
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-L
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER
6/21/12

FENCING & CHANNELIZATION LOCATION DETAIL SHEET



See Sheet 06 for -L- Plan Sheet

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LOCHNER

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

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-M
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER
9/8/12

FENCING & CHANNELIZATION LOCATION DETAIL SHEET

See Sheet 8 for Plan Sheet

REVISIONS

8/17/99

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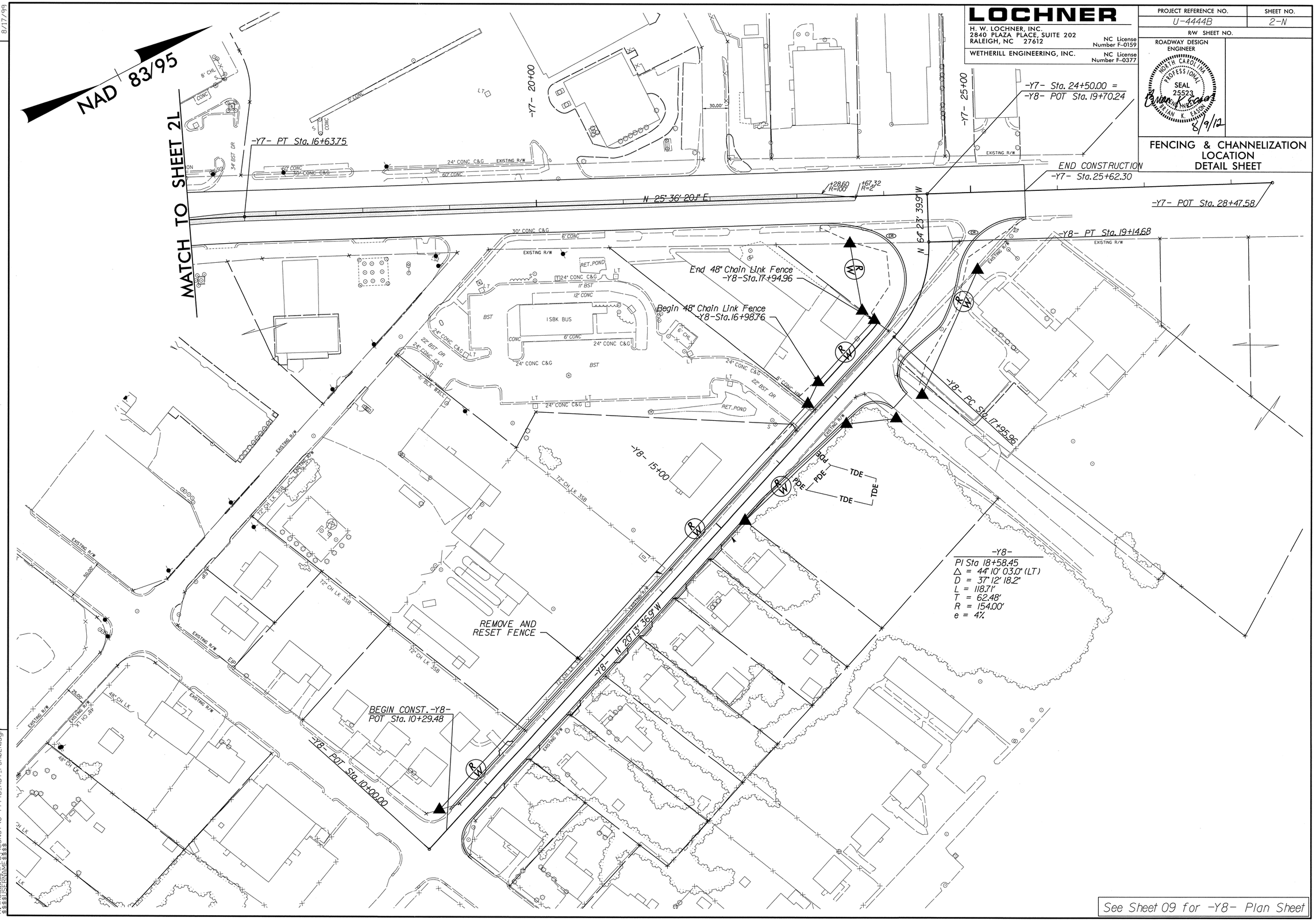

LOCHNER

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

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-N
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER BRIAN K. EASON

8/9/12

FENCING & CHANNELIZATION LOCATION DETAIL SHEET

REVISIONS

8/17/99

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LOCHNER

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

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	2-0
R/W SHEET NO.	U-4444B-4A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER TIMOTHY K. EASON
8/31/12

FENCING & CHANNELIZATION LOCATION DETAIL SHEET

8/17/99

REVISIONS

-Y10-
PI Sta 22+12.74
Δ = 17° 03' 50.7" (RT)
D = 5° 56' 14.6"
L = 287.40'
T = 144.77'
R = 965.00'
e = 3%

-Y10-
PI Sta 13+84.94
Δ = 34° 57' 27.4" (LT)
D = 5° 37' 02.0"
L = 622.33'
T = 321.19'
R = 1,020.00'
e = 2%

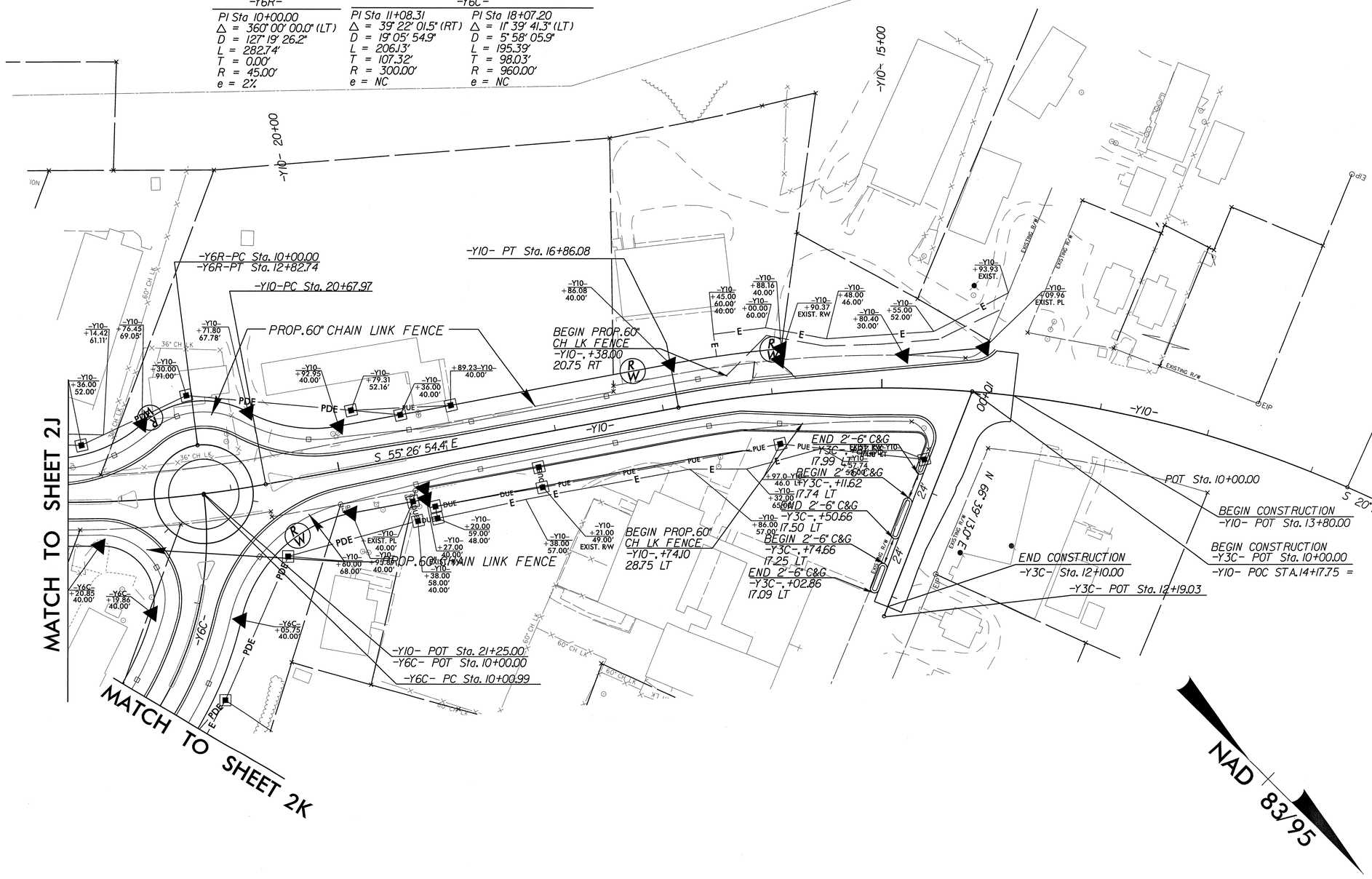
-Y6C-
PI Sta 11+08.31
Δ = 39° 22' 01.5" (RT)
D = 19° 05' 54.9"
L = 206.13'
T = 107.32'
R = 300.00'
e = NC

-Y6C-
PI Sta 18+07.20
Δ = 11° 39' 41.3" (LT)
D = 5° 58' 05.9"
L = 195.39'
T = 98.03'
R = 960.00'
e = NC

-Y6R-
PI Sta 10+00.00
Δ = 360° 00' 00.0" (LT)
D = 127° 19' 26.2"
L = 282.74'
T = 0.00'
R = 45.00'
e = 2%

-Y6C-
PI Sta 11+08.31
Δ = 39° 22' 01.5" (RT)
D = 19° 05' 54.9"
L = 206.13'
T = 107.32'
R = 300.00'
e = NC

-Y6C-
PI Sta 18+07.20
Δ = 11° 39' 41.3" (LT)
D = 5° 58' 05.9"
L = 195.39'
T = 98.03'
R = 960.00'
e = NC



See Sheet 09A for -Y6C- & -Y6R- Plan Sheet

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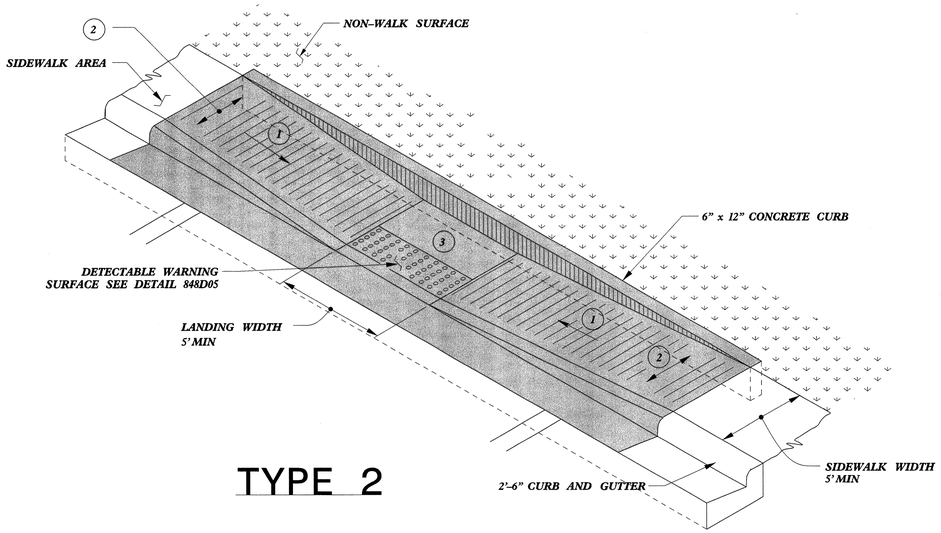
PROJECT REFERENCE NO.	SHEET NO.
U4444B	2P

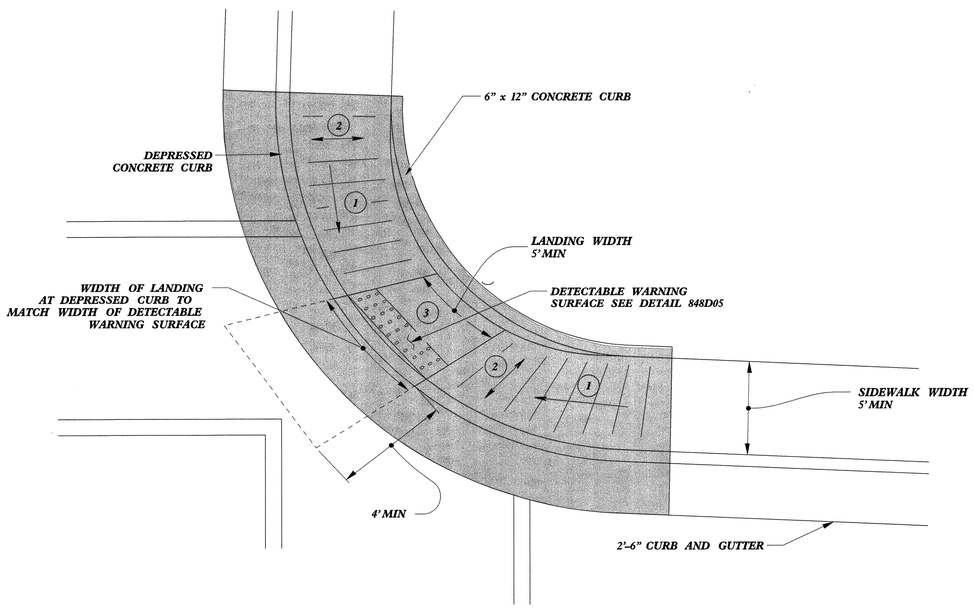
5/14/99



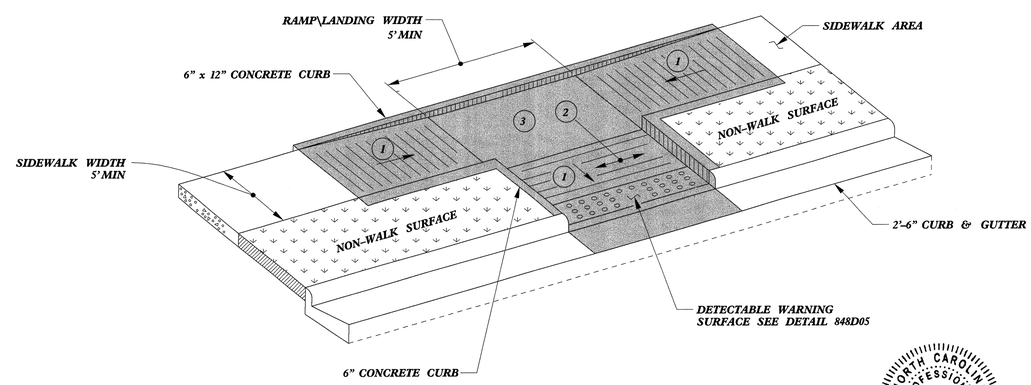
TYPE 2

PAY LIMITS FOR 1 CURB RAMP

1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



TYPE 2A



TYPE 3

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER
8/17/12

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

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

CURB RAMPS

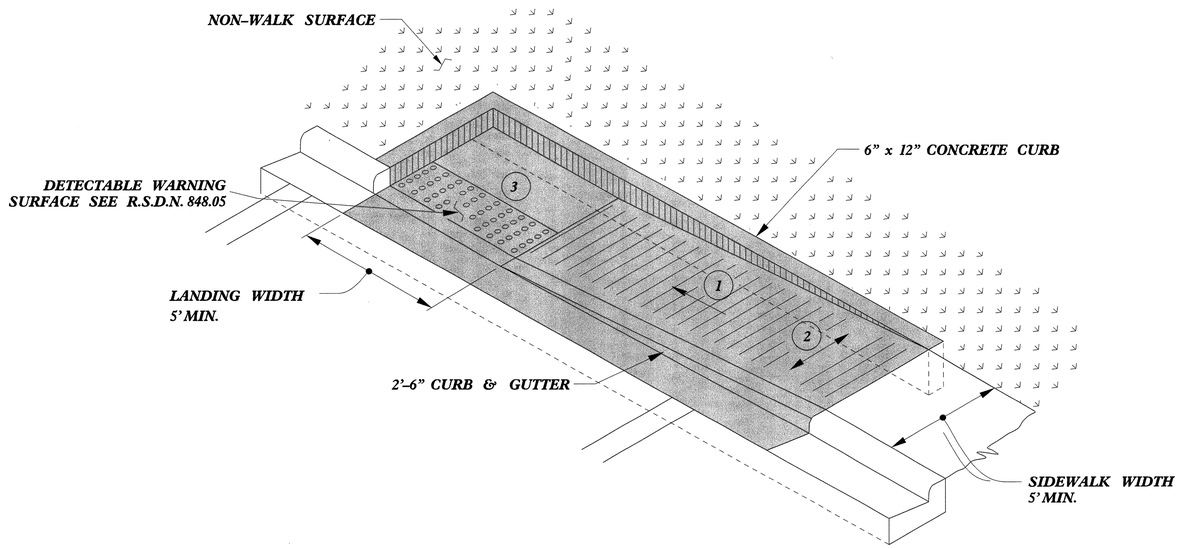
Parallel Ramps

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn

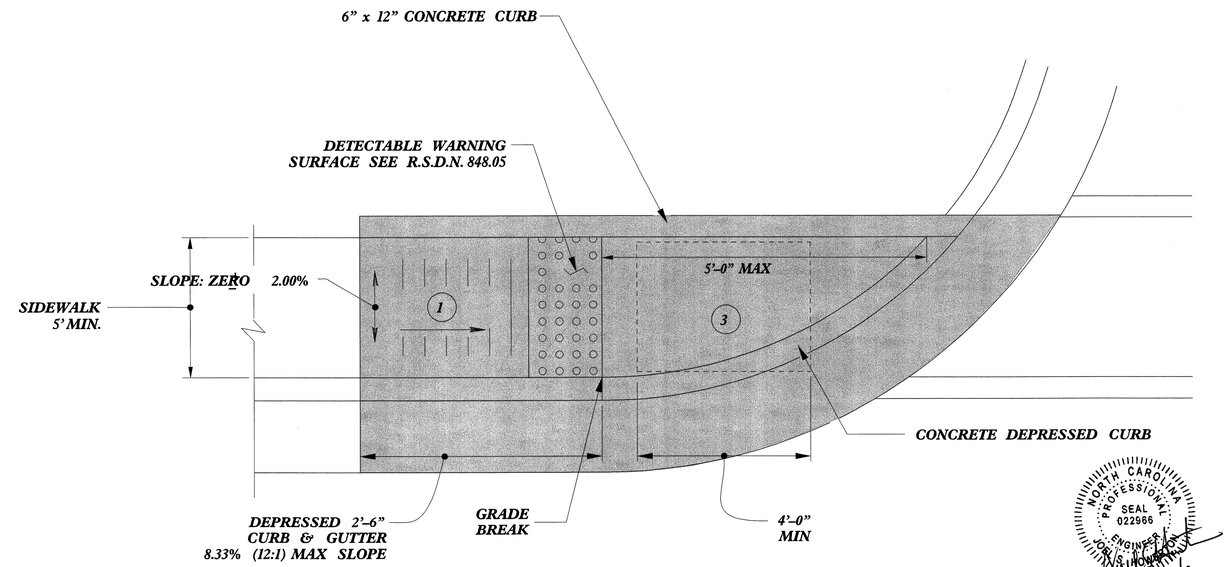
$$$$USERNAME$$$$ $$$$DGN$$$$ $$$$TIME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U4444B	2Q

PAY LIMITS FOR 1 CURB RAMP



TYPE 1A



TYPE 1

1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER J.S. HOWERTON 8/1/12

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

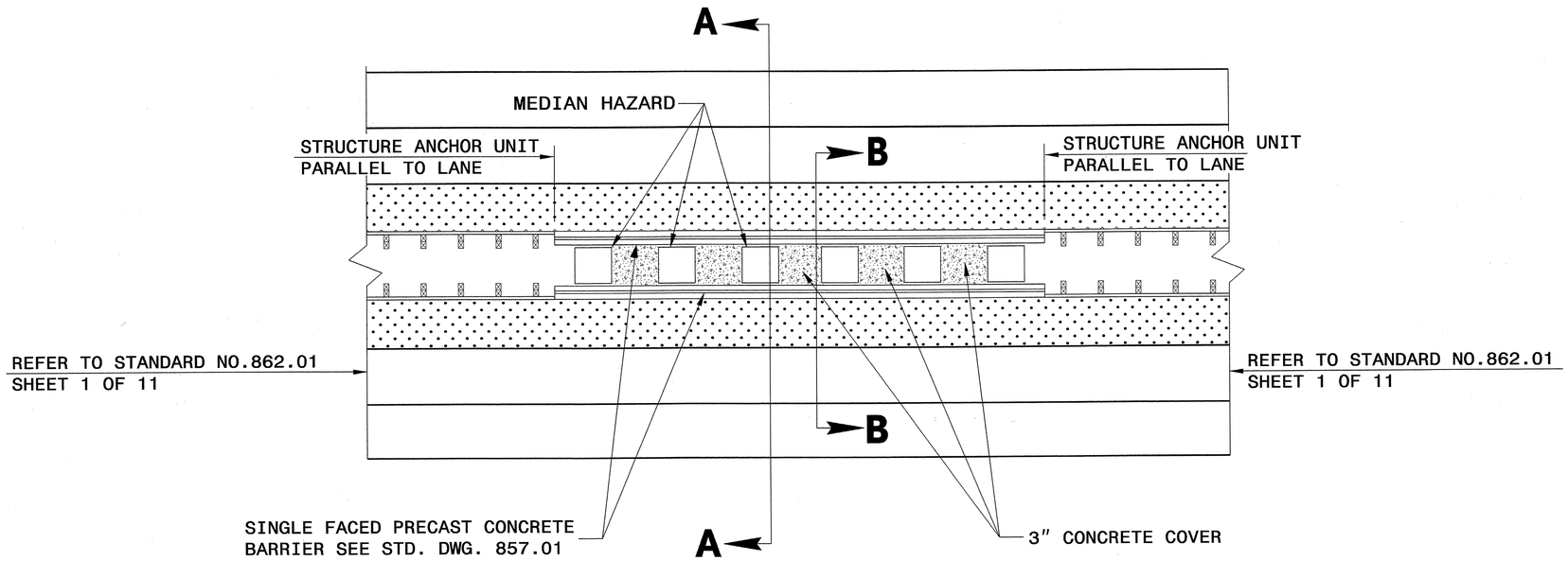
CURB RAMPS

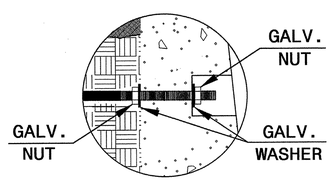
Directional Ramps

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn

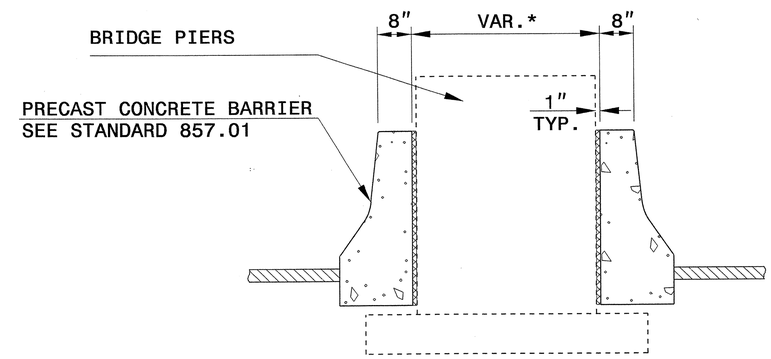
$$$$$SYSTIME$$$$
$$$$$SCREENAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U4444B	2R

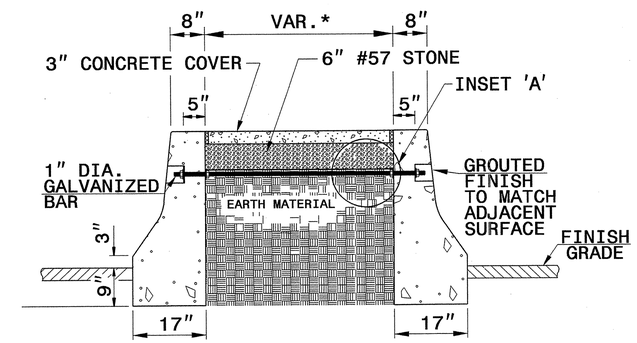




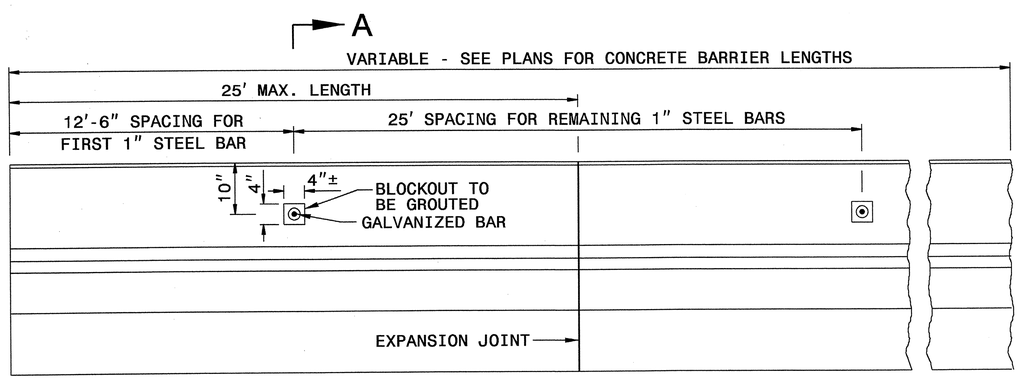
INSET 'A'



SECTION A-A



SECTION B-B



ELEVATION

GENERAL NOTES:

*THIS DIMENSION MAY VARY DEPENDING ON THE WIDTH OF THE PIER.

INSET FIRST 1" DIA. GALVANIZED BAR 12'-6" AND SPACE THE REMAINING 1" BARS AT 25'-0".

USE AN APPROVED BONDING SYSTEM IN ACCORDANCE WITH SECTION 1081-1, TYPE 3A OF THE STANDARD SPECIFICATIONS.

USE CLASS B CONCRETE FOR THE CONCRETE COVER

SEAL ALL EXPANSION JOINTS WITH JOINT FILLER (SEE SECTION 1028 OF THE SPECIFICATIONS).

PLACE A 1" BAR BETWEEN EACH SET OF PIERS

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOHN S. HOWERTON
01/17/12

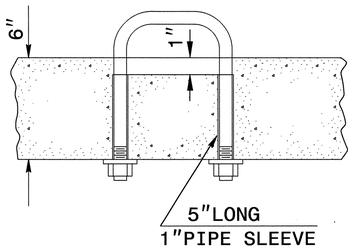
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

DETAIL OF MEDIAN HAZARD PROTECTION

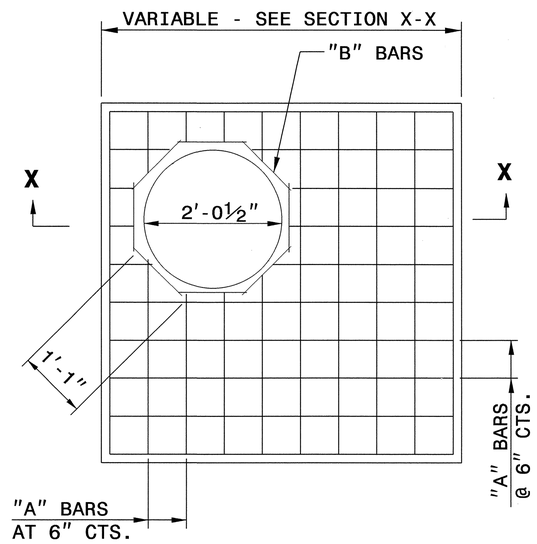
ORIGINAL BY: T.S.Spell DATE: 2-4-10
MODIFIED BY: DATE:
CHECKED BY: DATE: 2/23/12
FILE SPEC.: wsdot:details/stand/transition barrier_862d01.dgn

23-FEB-2012 14:05
S:\Contracts\Contracts\Special Details\jhowerton\Barrier Cover for Median Hazard Protection.dgn
$$$$USERNAME$$$$

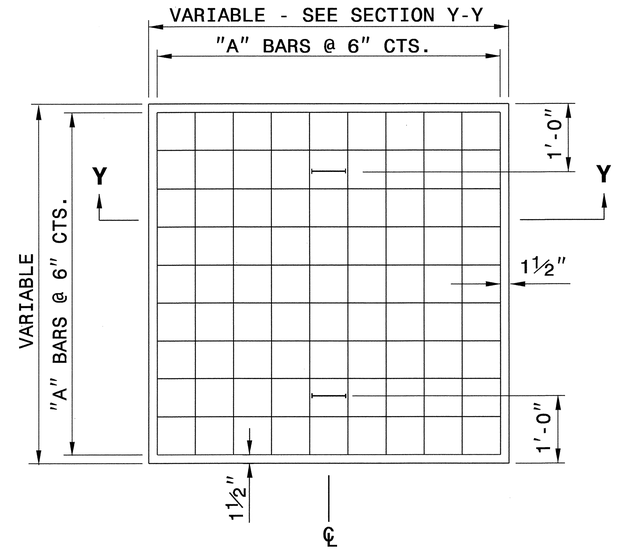
PROJECT REFERENCE NO.	SHEET NO.
U4444B	2S



PARTIAL SECTION



PLAN



PLAN

GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

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

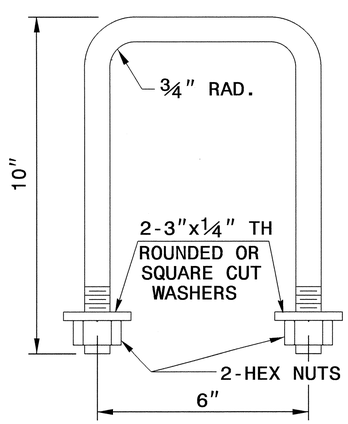
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

BILL OF MATERIALS

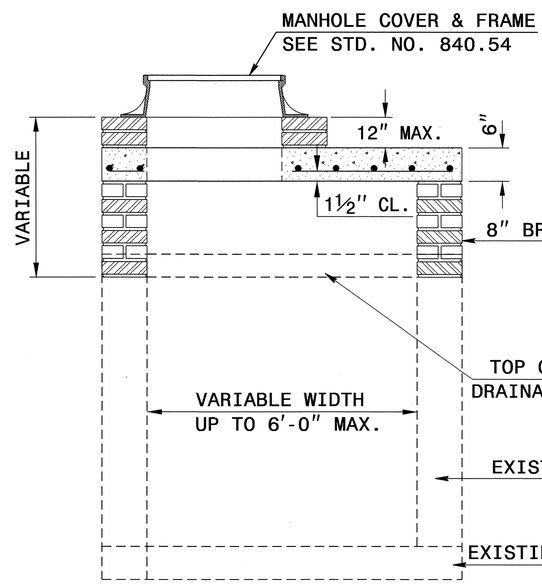
REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *

MASONRY	CU YDS
TOP SLAB CONCRETE CLASS "B"	.4326 *
BRICK MASONRY PER FT HT (MIN)	.4111

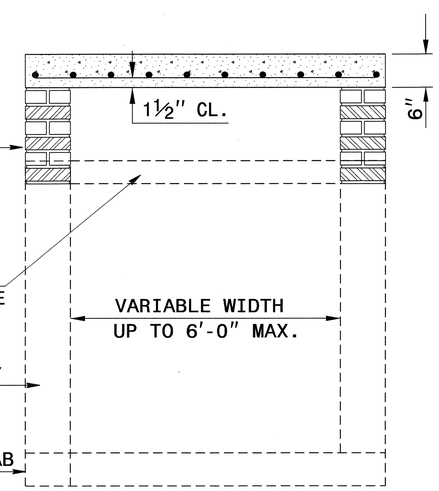
* NOTE:
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.



DETAIL OF HANDLE



SECTION X-X



SECTION Y-Y

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER
8/7/12

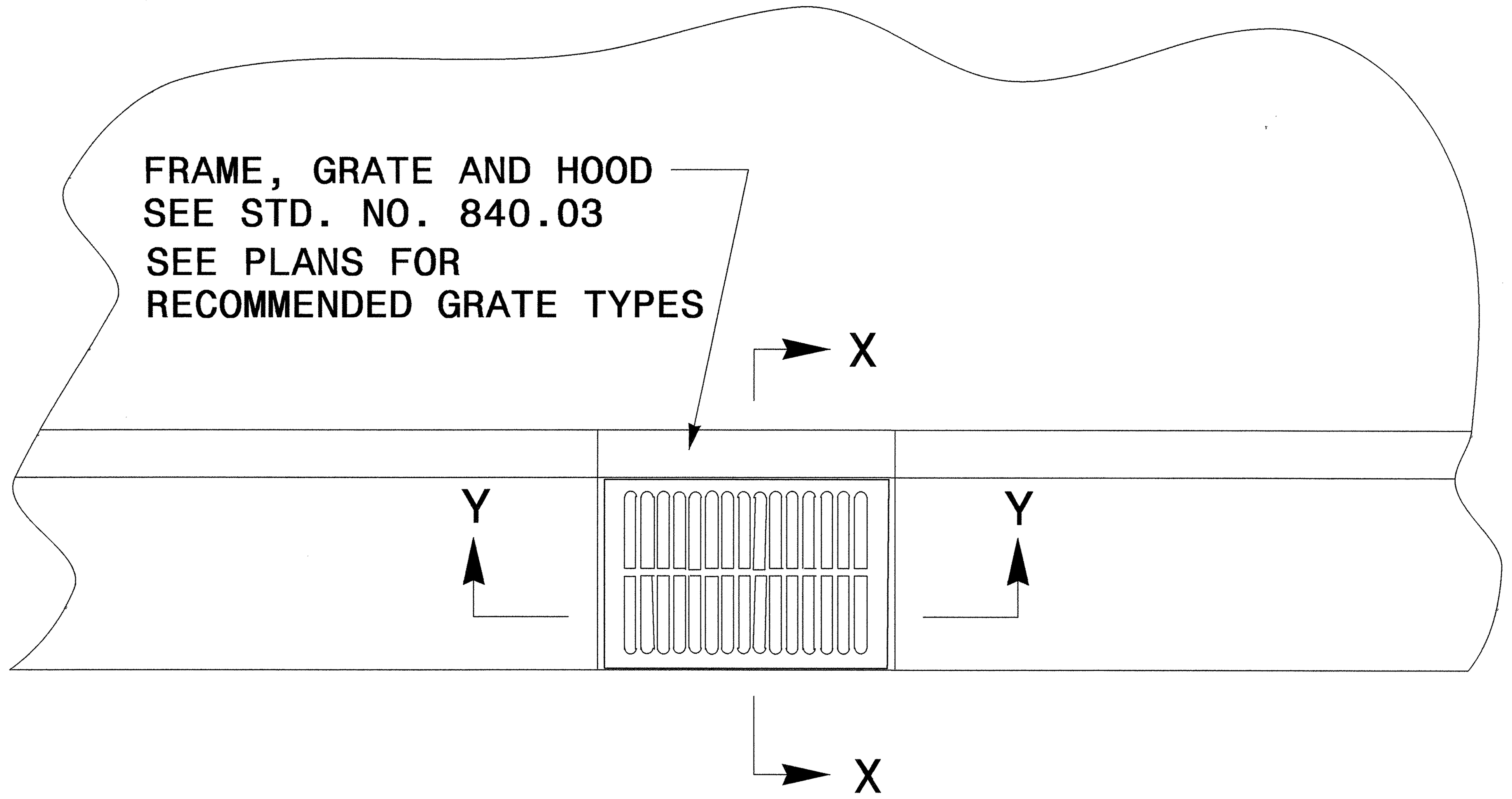
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

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

ORIGINAL BY: T.S.S. DATE: NOV.1997
MODIFIED BY: T.S.S. DATE: FEB.2000
CHECKED BY: DATE: 2/13/12
FILE SPEC.: ss174:/usr/details/stand/boxtojbe.dgn

17-FEB-2012 09:21
S:\Contracts\Contracts\Special Details\ericward\usr\details\stand\boxtojbe.dgn
$$$$USERNAME$$$$

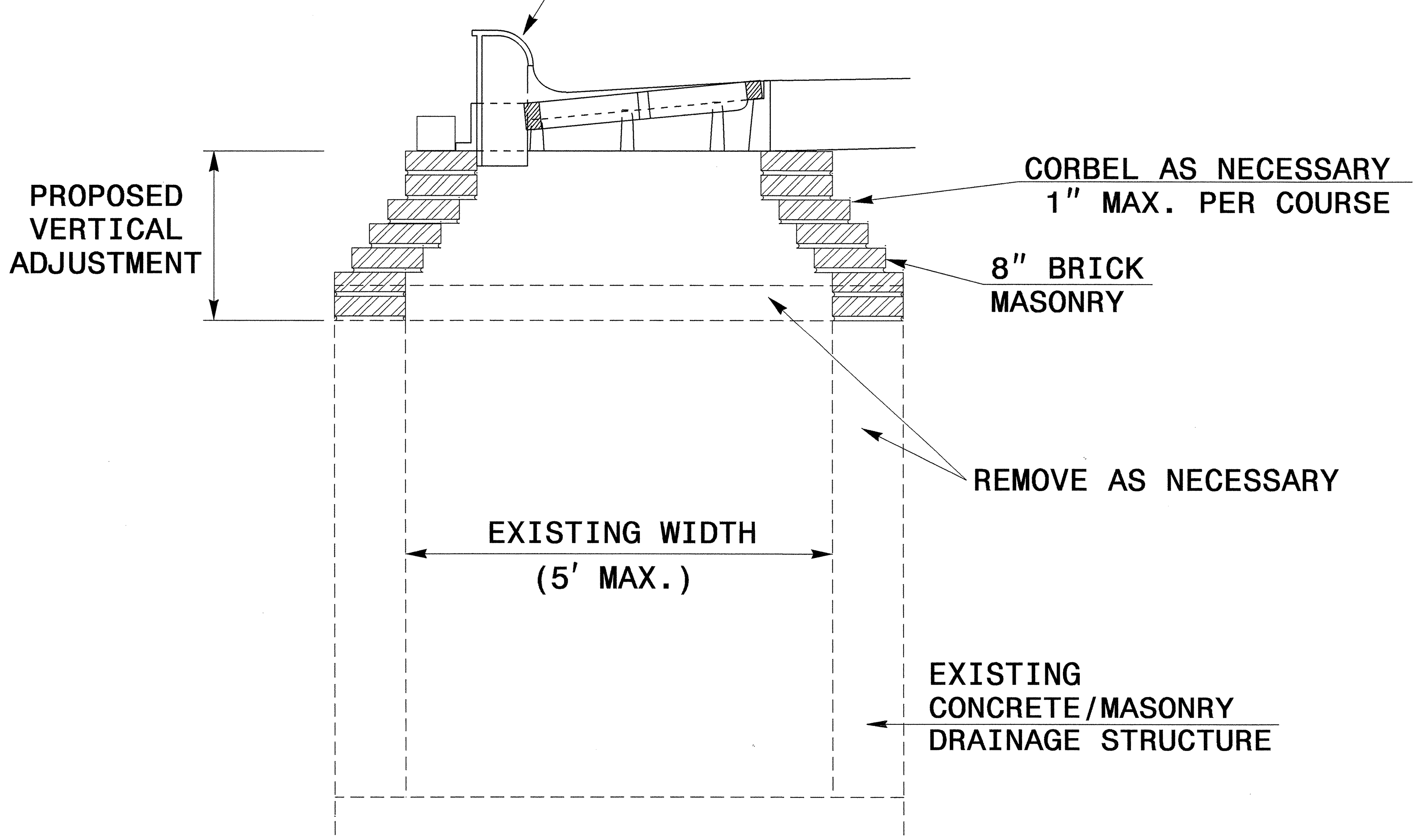
PROJECT REFERENCE NO.	SHEET NO.
U 4444B	2T



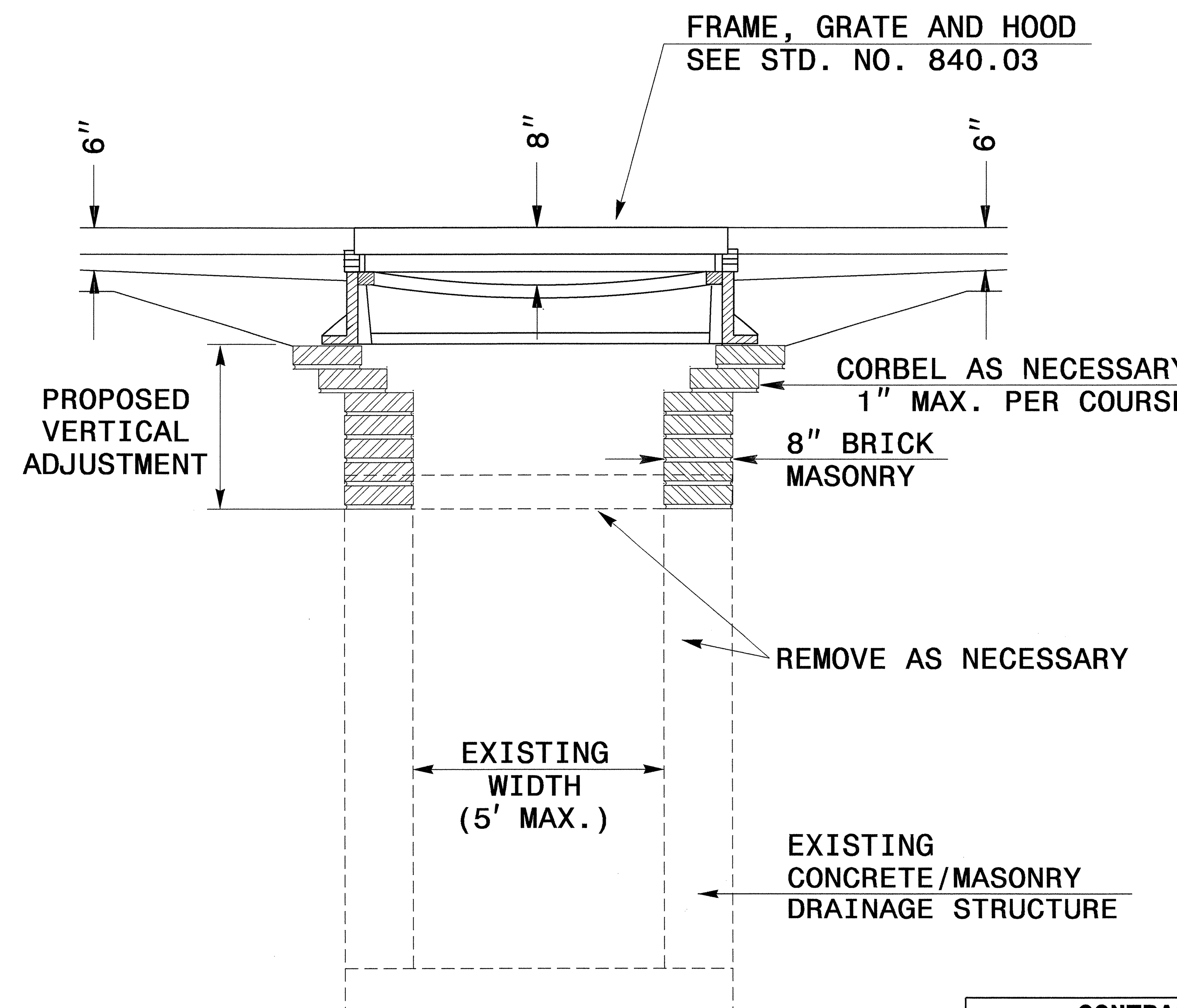
PLAN

GENERAL NOTES:

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



SECTION X-X



SECTION Y-Y

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON 8/17/12

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

CONVERSION OF DROP INLET OR JUNCTION BOX TO CATCH BASIN

ORIGINAL BY: E.E. WARD DATE: 11-97
MODIFIED BY: DATE:
CHECKED BY: [signature] DATE: 7/10/12
FILE SPEC.: DS37:usr\details\stand\jbtocb.dgn

5/14/99

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

CSD265813

COMPUTED BY: JR/WCB DATE: 10/31/2011

CHECKED BY: BKE DATE: 10/31/2011, 08/07/12

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-4444B	3

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

STATION	LOCATION (LT, RT, OR CL')	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L- 171+19.80	RT	0401		290.34	284.35														
-L- 171+19.80	RT	0401	0501	290.34	284.35	283.95													
-L- 171+18.54	LT	0402	0403	289.38	285.42	285.45			16										
-L- 171+18.54	LT	0402	0514	289.38	285.42	284.26													
-L- 171+18.54	LT	0403		287.70	285.45														
-Y10- 23+31.46	RT	0404	0405	292.35	289.35	288.49													
-Y10- 23+84.41	RT	0405		291.49	288.49	289.80													
-Y10- 23+84.41	RT	0405	0406	291.49	288.49	282.73			20										
-Y10DR3- 10+34.32	LT	0406	0407	286.40	282.73	283.63				24									
-Y10DR3- 10+34.32	LT	0406	09A01	286.40	282.73	278.23			144										
-Y10DR3- 10+50.65	LT	0407		287.91	283.63														
-Y10- 24+19.58	LT	0408	0409	289.30	287.05	288.50			16										
-Y10- 24+19.58	LT	0408	09A02	289.30	287.05	281.05			216										
-Y10- 24+19.86	LT	0409	0410	291.52	288.50	288.54													
-Y10- 24+33.28	LT	0410		291.54	288.54														
-L- 171+20.80	RT	0411	0412	290.30	287.13	286.90			76										
-L- 171+94.04	RT	0412	0504	290.20	286.90	283.98			44										
-Y6- 24+67.97	RT	0413	0414	300.30	298.05	297.52			16										
-Y6- 24+69.05	RT	0414	0415	300.52	297.52	295.57													
-Y6- 25+48.14	RT	0415	0416	298.57	295.57	296.10													
-Y6- 25+48.15	RT	0415	0417	298.57	295.57	291.59													
-Y6- 25+31.34	LT	0416		299.10	296.10														
-Y6- 26+95.95	RT	0417	0418	294.59	291.59	291.35													
-Y6- 27+24.47	RT	0418	0419	294.35	291.35	292.80			16										
-Y6- 27+24.47	RT	0418	0420	294.35	291.10	289.80													
-Y6- 27+24.95	RT	0419		295.05	292.80														
-Y6- 28+71.71	RT	0420	0509	296.30	289.80	289.00													
-L- 171+99.98	RT	0501	0502	289.84	283.95	283.64													
-L- 172+62.45	RT	0502	0503	289.60	283.64	283.22													
-L- 172+44.95	RT	0502	0506	289.60	283.10	283.98													
-L- 172+44.95	LT	0502	0514	289.60	283.10	282.54													
-L- 172+37.62	RT	0504	0505	287.90	284.40	285.40			32										
-L- 172+37.62	RT	0504	0506	287.90	283.98				8										
-L- 172+17.50	RT	0505		288.40	285.40														
-L- 172+45.57	RT	0506	0507			283.60						104							
-L- 172+45.57	RT	0506	0508			288.60					280								
-L- 173+46.43	RT	0507		288.50	283.60														
-Y6C- 17+30.09	RT	0508	0509	300.50	288.60	289.00													
-Y6C- 17+30.09	RT	0508	0510	300.50	288.60	291.00			20										
-Y6- 29+60.52	RT	0509		300.72	289.00	293.80			36										
-Y6C- 17+29.28	RT	0510	0511	301.76	291.00	291.20													
-Y6C- 17+27.79	LT	0511	0512	301.80	291.20	291.60			88										
-Y6- 30+98.11	LT	0512	0513	300.11	291.60	292.28													
-Y6- 33+08.68	LT	0513		295.28	292.28														
-L- 172+47.40	LT	0514	0515	288.46	282.54	284.35													
-L- 172+47.40	LT	0514	0516	288.46	284.26	281.55													
-L- 172+45.16	LT	0515		286.60	284.35														
-L- 173+47.00	LT	0516	09A07	288.37	281.55									308					
-L- 174+36.39	LT	0517		285.80	278.31														
-L- 174+35.76	LT	0518		288.10	278.74														
-L- 174+33.88	RT	0519		286.52	280.08														
SHEET TOTALS									748	24	280	104		308					

STATION	FROM	TO	C.S. PIPE 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
THICKNESS OR GAUGE			.064	.064	.064	.064	.079	.079	.109	.109																
-L- 171+19.80	0401														204											
-L- 171+19.80	0401	0501													80											
-L- 171+18.54	0402	0403																								
-L- 171+18.54	0402	0514										128														
-L- 171+18.54	0403																									
-Y10- 23+31.46	0404	0405										56														
-Y10- 23+84.41	0405											124														
-Y10- 23+84.41	0405	0406																								
-Y10DR3- 10+34.32	0406	0407																								
-Y10DR3- 10+34.32	0406	09A01																								
-Y10DR3- 10+50.65	0407																									
-Y10- 24+19.58	0408	0409																								
-Y10- 24+19.58	0408	09A02																								
-Y10- 24+19.86	0409	0410										16														
-Y10- 24+33.28	0410																									
-L- 171+20.80	0411	0412																								
-L- 171+94.04	0412	0504																								
-Y6- 24+67.97	0413	0414																								
-Y6- 24+69.05	0414	0415										80														
-Y6- 25+48.14	0415	0416										48														
-Y6- 25+48.15	0415	0417										148														
-Y6- 25+31.34	0416																									
-Y6- 26+95.95	0417	0418										28														
-Y6- 27+24.47	0418	0419																								
-Y6- 27+24.47	0418	0420											144													
-Y6- 27+24.95	0419																									
-Y6- 28+71.71	0420	0509											88													
-L- 171+99.98	0501	0502													44											
-L- 172+62.45	0502	0503										104														
-L- 172+44.95	0502	0506													76											
-L- 172+44.95	0502	0514														72										
-L- 172+37.62	0504	0505																								
-L- 172+37.62	0504	0506																								
-L- 172+17.50	0505																									
-L- 172+45.57	0506	0507																								
-L- 172+45.57	0506	0508																								
-L- 173+46.43	0507																									
-Y6C- 17+30.09	0508	0509												84												
-Y6C- 17+30.09	0508	0510																								
-Y6- 29+60.52	0509																									
-Y6C- 17+29.28	0510	0511										32														
-Y6C- 17+27.79	0511	0512																								
-Y6- 30+98.11	0512	0513										204														
-Y6- 33+08.68	0513																									
-L- 172+47.40	0514	0515										24														
-L- 172+47.40	0514	0516														72										
-L- 172+45.16	0515																									
-L- 173+47.00	0516	09A07																								
-L- 174+36.39	0517																									
-L- 174+35.76	0518																									
-L- 174+33.88	0519																									
SHEET TOTALS												992	232	84	404	144										

STATION	FROM	TO	** R.C. PIPE (CLASS V)	*** RC PIPE CULVERTS, CONTRACTOR DESIGN	*** RC PIPE CULVERTS, CONTRACTOR DESIGN	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME WITH TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26
-L- 171+19.80	0401							1	0.99		1			1		1			
-L- 171+19.80	0401	0501																	
-L- 171+18.54	0402	0403						1			1			1					
-L- 171+18.54	0402	0514																	
-L- 171+18.54	0403							1									1	1	
-Y10- 23+31.46	0404	0405						1			1		1						
-Y10- 23+84.41	0405							1			1		1						
-Y10- 23+84.41	0405	0406																	
-Y10DR3- 10+34.32	0406	0407						1											
-Y10DR3- 10+34.32	0406	09A01																	
-Y10DR3- 10+50.65	0407							1									1	1	
-Y10- 24+19.58	0408	0409						1									1	1	
-Y10- 24+19.58	0408	09A02																	
-Y10- 24+19.86	0409	0410						1			1	1							
-Y10- 24+33.28	0410							1			1		1						
-L- 171+20.80	0411	0412						1									1	1	
-L- 171+94.04	0412	0504						1	1.22		1			1					
-Y6- 24+67.97	0413	0414						1									1	1	
-Y6- 24+69.05	0414	0415						1			1		1						
-Y6- 25+48.14	0415	0416						1			1		1						
-Y6- 25+48.15	0415	0417																	
-Y6- 25+31.34	0416							1			1			1					
-Y6- 26+95.95	0417	0418						1			1		1						
-Y6- 27+24.47	0418	0419						1			1		1						
-Y6- 27+24.47	0418	0420																	
-Y6- 27+24.95	0419							1									1	1	
-Y6- 28+71.71	0420	0509						1	2.30		1		1						
-L- 171+99.98	0501	0502						1	1.2		1			1		1			
-L- 172+62.45	0502	0503						1	1.38		1			1		1			
-L- 172+44.95	0502	0506																	
-L- 172+44.95	0502	0514																	
-L- 172+37.62	0504	0505						1									1	1	
-L- 172+37.62	0504	0506																	
-L- 172+17.50	0505							1			1	1							
-L- 172+45.57	0506	0507						1									1	1	
-L- 172+45.57	0506	0508																	
-L- 173+46.43	0507							1									1	1	
-Y6C- 17+30.09	0508	0509						1	5.00	1.90									
-Y6C- 17+30.09	0508	0510																	
-Y6- 29+60.52	0509							1	5.00	1.72	1			1					
-Y6C- 17+29.28	0510	0511						1	5.00	0.76	1		1						
-Y6C- 17+27.79	0511	0512						1	5.00	0.60	1			1					
-Y6- 30+98.11	0512	0513						1	3.51		1		1						
-Y6- 33+08.68	0513							1			1	1							
-L- 172+47.40	0514	0515						1			1			1					
-L- 172+47.40	0514	0516																	
-L- 172+45.16	0515							1									1	1	
-L- 173+47.00	0516	09A07						1	1.82		1			1					
-L- 174+36.39	0517							1	2.49										1
-L- 174+35.76	0518							1	4.36		1			1					
-L- 174+33.88	0519																		
SHEET TOTALS								37	39.27	4.98	24	3	10	11		3	10	10	1

STATION	FROM	TO			G.D.I. (W.S. FLAT) FRAME WITH TWO GRATES STD. 840.20			G.D.I. (N.S. FLAT) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B.G.D.I. STD. 840.35	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO J.B. w/MH (SEE SHEET 2-S)			CONVERT EXISTING D.I. TO J.B. w/ M.H. (SEE SHEET 2-M)		CONVERT EXISTING D.I. TO C.B. (SEE SHEET 2-T)	CONVERT EXISTING J.B. TO C.B. (SEE SHEET 2-T)		ADJUSTMENT OF C.B.	ADJUSTMENT OF M.H.	CS PIPE ELBOWS	FLOWABLE FILL	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L- 171+19.80	0401																											
-L- 171+19.80	0401	0501																										
-L- 171+18.54	0402	0403																									52	REMOVE 52' OF 15" RCP & 2-DI
-L- 171+18.54	0402	0514																									152	REMOVE 152' OF 18" RCP & 1-DI
-L- 171+18.54	0403																											
-Y10- 23+31.46	0404	0405																										
-Y10- 23+84.41	0405																										164	REMOVE 164' OF 18" RCP & 1-DI
-Y10- 23+84.41	0405	0406																										
-Y10DR3- 10+34.32	0406	0407							1			1																
-Y10DR3- 10+34.32	0406	09A01																									92	REMOVE 92' OF 18" RCP & 1-DI
-Y10DR3- 10+50.65	0407																										60	REMOVE 60' OF 18" RCP & 1-DI
-Y10- 24+19.58	0408	0409																										
-Y10- 24+19.58	0408	09A02																										
-Y10- 24+19.86	0409	0410																										
-Y10- 24+33.28	0410																											
-L- 171+20.80	0411	0412																										
-L- 171+94.04	0412	0504																										
-Y6- 24+67.97	0413	0414																										
-Y6- 24+69.05	0414	0415																										
-Y6- 25+48.14	0415	0416																										
-Y6- 25+48.15	0415	0417																										
-Y6- 25+31.34	0416																											
-Y6- 26+95.95	0417	0418																										
-Y6- 27+24.47	0418	0419																										
-Y6- 27+24.47	0418	0420																										
-Y6- 27+24.95	0419																											
-Y6- 28+71.71	0420	0509																										
-L- 171+99.98	0501	0502																										
-L- 172+62.45	0502	0503																										
-L- 172+44.95	0502	0506																										
-L- 172+44.95	0502	0514																										
-L- 172+37.62	0504	0505																										
-L- 172+37.62	0504	0506																										
-L- 172+17.50	0505																											
-L- 172+45.57	0506	0507																									200	REMOVE 200' OF 18" RCP, 2-CB, & 2-D1
-L- 172+45.57	0506	0508																										
-L- 173+46.43	0507																											
-Y6C- 17+30.09	0508	0509							1			1																
-Y6C- 17+30.09	0508	0510																										
-Y6- 29+60.52	0509																											
-Y6C- 17+29.28	0510	0511																										
-Y6C- 17+27.79	0511	0512																										
-Y6- 30+98.11	0512	0513																										
-Y6- 33+08.68	0513																											
-L- 172+47.40	0514	0515																										
-L- 172+47.40	0514	0516																										
-L- 172+45.16	0515																											
-L- 173+47.00	0516	09A07																										
-L- 174+36.39	0517				1																							
-L- 174+35.76	0518																								0.065		24	REMOVE 24' OF 18" RCP AND 1-18" PLUG
-L- 174+33.88	0519											1				1												DI TO JBw/MH
SHEET TOTALS					1				2			3				1									0.065		744	

ABBREVIATIONS

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

CSD265813

COMPUTED BY: JR/WCB DATE: 10/31/2011

CHECKED BY: BKE DATE: 10/31/2011, 08/07/12

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-4444B	3-A

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

STATION	LOCATION (LT, RT, OR CL)'	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
-L- 174+33.88	RT	0520		289.06	280.15		
-L- 174+32.60	RT	0521	0522	291.10	281.63	282.92	
-L- 174+18.65	RT	0522	0523	288.50	282.42	284.30	
-L- 176+06.47	RT	0523	0524	288.50	284.30	284.47	
-L- 176+62.50	RT	0524	0525	289.50	284.47	284.63	
-L- 177+15.93	RT	0525	0526	288.40	284.63	284.73	
-L- 177+47.02	RT	0526		287.90	284.73		
-L- 175+85.19	LT	0527	0528	287.63	284.63	282.73	
-L- 177+86.77	LT	0528	0529	285.73	282.73	282.73	
-L- 177+86.77	LT	0528	0533	285.73	282.73		
-L- 177+86.77	LT	0528	0534	285.73	282.48	280.66	
-L- 177+86.55	LT	0529	0530	285.20	282.73	283.79	
-L- 178+55.50	LT	0530		285.00	282.75		
-L- 175+85.00	RT	0531	0532	288.59	285.59	284.97	
-L- 177+35.14	RT	0532	0533	287.97	284.97	283.79	
-L- 177+87.62	RT	0533		286.79	283.79		
-L- 180+07.92	LT	0534	0535	283.91	280.66	278.86	
-L- 181+31.43	LT	0535	0536	282.72	279.11	280.95	
-L- 181+31.43	LT	0535	0537	282.72	278.36	277.48	
-L- 181+31.43	LT	0536		283.20	280.95		
-L- 183+17.87	LT	0537	0538	281.23	278.23	279.45	
-L- 183+17.87	LT	0537	0540	281.23	277.48	276.30	
-L- 183+17.87	LT	0538	0539	281.70	279.45	280.45	
-L- 182+23.99	LT	0539		282.70	280.45		
-L- 184+67.31	LT	0540	0541	280.05	277.05	277.85	
-L- 184+67.31	LT	0540	0601	280.05	276.30	274.72	
-L- 184+67.31	LT	0541		280.10	277.85		
-L- 179+99.91	LT	0542	0543	285.12	282.12	281.34	
-L- 180+99.92	LT	0543	0544	284.51	281.34	280.50	
-L- 182+00.05	LT	0544	0545	283.67	280.50	279.65	
-L- 182+99.89	LT	0545	0546	282.82	279.65	278.81	
-L- 184+00.27	LT	0546	0547	281.98	278.81	277.94	
-L- 185+00.01	LT	0547	0548	281.11	277.69	276.88	
-L- 185+83.00	LT	0548	0603	280.30	276.88	276.40	
-L- 179+11.38	RT	0549	0550	287.38	284.38	283.34	
-L- 179+11.38	RT	0550	0551	286.34	283.34	285.23	
-L- 179+11.38	RT	0550	0556	286.34	283.34	282.22	
-Y6A- 11+80.94	RT	0551	0552	288.33	285.23	285.35	
-Y6A- 11+80.94	RT	0551	0553	288.33	285.23	286.65	
-Y6A- 11+81.92	LT	0552		288.35	285.35		
-Y6A- 12+42.65	RT	0553	0554	289.65	286.65	288.99	
-Y6- 36+89.09	LT	0554	0555	292.13	288.99	289.13	
-Y6- 36+89.66	RT	0555		292.13	289.13		
-L- 181+69.53	RT	0556	0557	285.24	282.22	282.25	
-L- 181+69.53	RT	0556	0559	285.24	282.22	279.62	
-L- 181+69.72	RT	0557	0558	284.50	282.25	283.35	
-L- 180+76.18	RT	0558		285.60	283.35		
-L- 184+25.62	RT	0559	0560	283.22	279.62	280.13	
-L- 184+25.62	RT	0559	0604	283.22	279.37	276.67	
-L- 184+25.62	RT	0560	0561	282.80	280.13	280.65	
-L- 183+22.61	RT	0561		282.90	280.65		
-L- 185+83.55	LT	0562	0602	278.90	276.65	276.15	
SHEET TOTALS							

STATION	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109
-L- 174+33.88																				
-L- 174+32.60				8																
-L- 174+18.65			192																	
-L- 176+06.47			60																	
-L- 176+62.50		56																		
-L- 177+15.93		32																		
-L- 177+47.02																				
-L- 175+85.19																				
-L- 177+86.77		8																		
-L- 177+86.77																				
-L- 177+86.77																				
-L- 177+86.55		68																		
-L- 178+55.50																				
-L- 175+85.00																				
-L- 177+35.14																				
-L- 177+87.62																				
-L- 180+07.92																				
-L- 181+31.43		8																		
-L- 181+31.43																				
-L- 181+31.43																				
-L- 183+17.87		8																		
-L- 183+17.87																				
-L- 183+17.87		96																		
-L- 182+23.99																				
-L- 184+67.31		8																		
-L- 184+67.31																				
-L- 184+67.31																				
-L- 179+99.91																				
-L- 180+99.92																				
-L- 182+00.05																				
-L- 182+99.89																				
-L- 184+00.27																				
-L- 185+00.01																				
-L- 185+83.00																				
-L- 179+11.38																				
-L- 179+11.38																				
-L- 179+11.38																				
-Y6A- 11+80.94																				
-Y6A- 11+80.94																				
-Y6A- 11+81.92																				
-Y6A- 12+42.65		76																		
-Y6- 36+89.09																				
-Y6- 36+89.66																				
-L- 181+69.53		8																		
-L- 181+69.53																				
-L- 181+69.72		96																		
-L- 180+76.18																				
-L- 184+25.62		8																		
-L- 184+25.62																				
-L- 184+25.62		108																		
-L- 183+22.61																				
-L- 185+83.55		48																		
SHEET TOTALS		628	252	8																

STATION	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
-L- 174+33.88																
-L- 174+32.60																
-L- 174+18.65																
-L- 176+06.47																
-L- 176+62.50																
-L- 177+15.93																
-L- 177+47.02																
-L- 175+85.19		200														
-L- 177+86.77																
-L- 177+86.77										76						
-L- 177+86.77											220					
-L- 177+86.55																
-L- 178+55.50																
-L- 175+85.00		152														
-L- 177+35.14		56														
-L- 177+87.62																
-L- 180+07.92			124													
-L- 181+31.43																
-L- 181+31.43				184												
-L- 181+31.43																
-L- 183+17.87																
-L- 183+17.87				148												
-L- 183+17.87																
-L- 182+23.99																
-L- 184+67.31																
-L- 184+67.31				164												
-L- 184+67.31																
-L- 179+99.91		100														
-L- 180+99.92		100														
-L- 182+00.05		100														
-L- 182+99.89		100														
-L- 184+00.27		100														
-L- 185+00.01			84													
-L- 185+83.00			48													
-L- 179+11.38										68						
-L- 179+11.38										100						
-L- 179+11.38										192						
-Y6A- 11+80.94										40						
-Y6A- 11+80.94		64														
-Y6A- 11+81.92																
-Y6A- 12+42.65																
-Y6- 36+89.09										44						
-Y6- 36+89.66																
-L- 181+69.53																
-L- 181+69.53		260														
-L- 181+69.72																
-L- 180+76.18																
-L- 184+25.62																
-L- 184+25.62			184													
-L- 184+25.62																
-L- 183+22.61																
-L- 185+83.55																
SHEET TOTALS		1232	440	496						520	220					

STATION	** " R.C. PIPE (CLASS V)	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME WITH TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26
-L- 174+33.88						1	3.91		1			1		1			
-L- 174+32.60						1	4.47										
-L- 174+18.65						1	1.08								1	1	
-L- 176+06.47						1									1	1	
-L- 176+62.50						1	0.03								1	1	
-L- 177+15.93						1									1	1	
-L- 177+47.02						1									1	1	
-L- 175+85.19						1			1			1					
-L- 177+86.77						1			1			1					
-L- 177+86.77																	
-L- 177+86.77																	
-L- 177+86.55						1									1	1	
-L- 178+55.50						1									1	1	
-L- 175+85.00						1			1			1		1			
-L- 177+35.14						1			1			1		1			
-L- 177+87.62						1			1			1		1			
-L- 180+07.92						1			1			1					
-L- 181+31.43						1			1			1					
-L- 181+31.43																	
-L- 181+31.43						1									1	1	
-L- 183+17.87						1			1			1					
-L- 183+17.87																	
-L- 183+17.87						1									1	1	
-L- 182+23.99						1									1	1	
-L- 184+67.31						1			1			1					
-L- 184+67.31																	
-L- 184+67.31						1									1	1	
-L- 179+99.91						1			1		1			1			
-L- 180+99.92						1							1		1	1	
-L- 182+00.05						1							1		1	1	
-L- 182+99.89						1							1		1	1	
-L- 184+00.27						1							1		1	1	
-L- 185+00.01						1							1		1	1	
-L- 185+83.00						1							1		1	1	
-L- 179+11.38						1			1		1						
-L- 179+11.38						1											
-L- 179+11.38																	
-Y6A- 11+80.94						1			1			1					
-Y6A- 11+80.94																	
-Y6A- 11+81.92						1			1			1					
-Y6A- 12+42.65						1			1			1					
-Y6- 36+89.09						1			1			1					
-Y6- 36+89.66						1			1		1						
-L- 181+69.53						1			1		1						
-L- 181+69.53																	
-L- 181+69.72						1									1	1	
-L- 180+76.18						1									1	1	
-L- 184+25.62						1			1		1						
-L- 184+25.62																	
-L- 184+25.62						1									1	1	
-L- 183+22.61						1									1	1	
-L- 185+83.55						1									1	1	
SHEET TOTALS						43	9.49		19		5	14	6	5	22	22	

STATION	G.D.I. (W.S. FLAT) FRAME WITH TWO GRATES STD. 840.20	G.D.I. (N.S. FLAT) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B.G.D.I. STD. 840.35	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO J.B. w/MH (SEE SHEET 2-S)	CONVERT EXISTING D.I. TO J.B. w/ M.H. (SEE SHEET 2-M)	CONVERT EXISTING D.I. TO C.B. (SEE SHEET 2-T)	CONVERT EXISTING J.B. TO C.B. (SEE SHEET 2-T)	ADJUSTMENT OF C.B.	ADJUSTMENT OF M.H.	CS PIPE ELBOWS	FLOWABLE FILL	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L- 174+33.88																		
-L- 174+32.60			1			1											116	REMOVE 108' OF 18" RCP & 8' OF 15" RCP
-L- 174+18.65																	212	REMOVE 212' OF 18" RCP,2-CB, 1-MH & 1-DI
-L- 176+06.47																		
-L- 176+62.50																	24	REMOVE 24' OF 18" RCP, 1-CB, & 1-DI
-L- 177+15.93																		
-L- 177+47.02																		
-L- 175+85.19																		
-L- 177+86.77																		
-L- 177+86.77															.220			REMOVE 2-CB, 2-15" PLUGS, & 2-18" PLUGS
-L- 177+86.77																		
-L- 177+86.55																		
-L- 178+55.50																		
-L- 175+85.00																		
-L- 177+35.14																		
-L- 177+87.62																		
-L- 180+07.92																		
-L- 181+31.43																		
-L- 181+31.43																	300	REMOVE 300' OF 15" RCP & 1-CB
-L- 181+31.43																		
-L- 183+17.87																		
-L- 183+17.87																		
-L- 183+17.87																		
-L- 182+23.99																		
-L- 184+67.31																		
-L- 184+67.31																	268	REMOVE 268' OF 15" RCP & 1-CB
-L- 184+67.31																		
-L- 179+99.91															.130		16	REMOVE 16' OF 18" RCP, 2-18" PLUGS, 1-DI, & 1-MH
-L- 180+99.92																		
-L- 182+00.05																		
-L- 182+99.89															.130		12	REMOVE 12' OF 15" & 18" RCP, 2-18" PLUGS, 1-CB, & 1-DI
-L- 184+00.27																		
-L- 185+00.01															.130		8	REMOVE 8' OF 18" RCP & 1-DI
-L- 185+83.00																		
-L- 179+11.38																	236	REMOVE 236' OF 12" & 15" RCP, 1-CB & 1-DI
-L- 179+11.38			1			1												
-L- 179+11.38																	172	REMOVE 172' OF 15" & 18" RCP, 1-CB & 2-MH
-Y6A- 11+80.94																		
-Y6A- 11+80.94																		
-Y6A- 11+81.92																		
-Y6A- 12+42.65																		
-Y6- 36+89.09																		
-Y6- 36+89.66																		
-L- 181+69.53																		
-L- 181+69.53																	268	REMOVE 268' OF 18" RCP & 1-CB
-L- 181+69.72																		
-L- 180+76.18																		
-L- 184+25.62																		
-L- 184+25.62																	120	REMOVE 120' OF 18" RCP, 1-CB & 1-DI
-L- 184+25.62																		
-L- 183+22.61																		
-L- 185+83.55																		
SHEET TOTALS			2			2									.610		1752	

ABBREVIATIONS

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

CSD265813

COMPUTED BY: JR/WCB DATE: 10/31/2011

CHECKED BY: BKE DATE: 10/31/2011, 08/07/12

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-4444B	3-B

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

ABBREVIATIONS

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L- 186+31.70	LT	0601	0602	278.47	275.47	276.15			8										
-L- 186+31.70	LT	0601	0603	278.47	275.22	276.4													
-L- 186+31.70	LT	0601	0616	278.47	274.22	272.83													
-L- 186+31.70	LT	0602		278.40	276.15														
-L- 186+31.02	LT	0603		279.82	276.40														
-L- 186+04.03	RT	0604	0605	281.58	276.92	277.65			12										
-L- 186+04.03	RT	0604	0606	281.58	276.17	275.68													
-L- 186+04.03	RT	0605		279.90	277.65														
-Y7A- 10+61.25	RT	0606	0607	279.43	275.68	274.38													
-Y7A- 11+69.08	RT	0607	0608	278.13	274.38	273.40													
-Y7A- 13+11.69	RT	0608	0609	277.15	273.40	271.00													
-Y7- 13+11.77	RT	0609	0610	276.10	271.00	271.07				8									
-Y7- 13+11.77	RT	0609	0611	276.10	271.00	268.92													
-Y7- 13+11.77	RT	0610		274.30	271.07														
-Y7- 14+39.16	RT	0611	0612	272.67	269.67	270.43			8										
-Y7- 14+39.16	RT	0611	0613	272.67	268.92	268.35													
-Y7- 14+39.16	RT	0612		273.60	270.43														
-Y7- 15+00.36	RT	0613	0614	272.10	269.10	270.89													
-Y7- 15+00.36	RT	0613	0615	272.10	268.35	267.70													
-Y7- 14+99.90	RT	0614		274.06	270.89														
-Y7- 15+81.94	RT	0615		271.45	267.70														
-L- 187+24.58	LT	0616	0617	277.08	272.83	272.83													
-L- 187+33.19	LT	0617	0618	277.08	272.83	273.15			16										
-L- 187+33.19	LT	0617	0619	277.08	272.83	270.87													
-L- 187+33.19	LT	0618		275.40	273.15														
-L- 189+30.88	LT	0619	0620	275.12	272.12	272.45			16										
-L- 189+30.88	LT	0619	0622	275.12	270.87	267.45													
-L- 189+30.88	LT	0620	0621	276.00	272.45	272.65			68										
-L- 188+62.90	LT	0621		276.30	272.65														
-L- 191+29.24	LT	0622	0623	271.70	267.45	260.93													
-L- 193+70.69	LT	0623	0624	265.18	259.24														
-L- 193+70.69	LT	0623	0628	265.18	259.24	253.46													
-L- 191+22.00	RT	0625	0626	273.36	270.19	264.53													
-L- 193+37.08	RT	0626	0627	267.53	264.53														
-L- 195+80.32	LT	0628	0629	257.71	253.46	243.36													
-L- 197+86.50	LT	0629	0630	250.40	242.86														
-L- 197+86.50	LT	0629	0701	250.40	242.86	238.66													
-L- 195+47.50	RT	0631	0632	260.03	257.03	256.74													
-L- 195+54.99	RT	0632	0633	259.74	256.74	244.78													
-L- 197+70.89	RT	0633		251.99	244.78														
-L- 199+96.53	LT	0701	0702	243.41	238.66	223.16													
-L- 201+06.70	LT	0702		240.56	223.16														
-Y6C- 20+65.04	RT	0801		294.95	292.75														
-Y6C- 20+94.01	RT	0802	0804	294.84	292.42	292.40													
-Y6C- 20+94.05	RT	0803		294.80	292.43														
-Y6C- 20+94.05	RT	0803	0804	294.80	292.43	292.40													
-Y8- 14+50.46	RT	0901		259.82	250.99														
-Y8- 15+22.16	LT	0902		256.28	251.77														
-Y8- 15+95.47	RT	0903		254.06	248.81														
-Y8- 16+14.64	LT	0904	0906	254.16	250.68	249.62													
-Y8- 16+13.77	RT	0905												16					
SHEET TOTALS									128	8				16					

STATION	FROM	TO	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
-L- 186+31.70	0601	0602																								
-L- 186+31.70	0601	0603																			56					
-L- 186+31.70	0601	0616													94											
-L- 186+31.70	0602																									
-L- 186+31.02	0603																									
-L- 186+04.03	0604	0605																								
-L- 186+04.03	0604	0606												92												
-L- 186+04.03	0605																									
-Y7A- 10+61.25	0606	0607												108												
-Y7A- 11+69.08	0607	0608												140												
-Y7A- 13+11.69	0608	0609												100												
-Y7- 13+11.77	0609	0610																								
-Y7- 13+11.77	0609	0611												128												
-Y7- 13+11.77	0610																									
-Y7- 14+39.16	0611	0612																								
-Y7- 14+39.16	0611	0613												60												
-Y7- 14+39.16	0612																									
-Y7- 15+00.36	0613	0614																		32						
-Y7- 15+00.36	0613	0615												80												
-Y7- 14+99.90	0614																									
-Y7- 15+81.94	0615																									
-L- 187+24.58	0616	0617													12											
-L- 187+33.19	0617	0618																								
-L- 187+33.19	0617	0619																					196			
-L- 187+33.19	0618																									
-L- 189+30.88	0619	0620																								
-L- 189+30.88	0619	0622													196											
-L- 189+30.88	0620	0621																								
-L- 188+62.90	0621																									
-L- 191+29.24	0622	0623													240											
-L- 193+70.69	0623	0624										16														
-L- 193+70.69	0623	0628													208											
-L- 191+22.00	0625	0626										216														
-L- 193+37.08	0626	0627										16														
-L- 195+80.32	0628	0629													208											
-L- 197+86.50	0629	0630										20														
-L- 197+86.50	0629	0701														212										
-L- 195+47.50	0631	0632										8														
-L- 195+54.99	0632	0633										216														
-L- 197+70.89	0633																									
-L- 199+96.53	0701	0702														112										
-L- 201+06.70	0702																									
-Y6C- 20+65.04	0801																									
-Y6C- 20+94.01	0802	0804																		12						
-Y6C- 20+94.05	0803																									
-Y6C- 20+94.05	0803	0804																		16						
-Y8- 14+50.46	0901																									
-Y8- 15+22.16	0902																									
-Y8- 15+95.47	0903																									
-Y8- 16+14.64	0904	0906										28														
-Y8- 16+13.77	0905																									
SHEET TOTALS												520		708	958	324				60	56		196			

STATION	FROM	TO	** R.C. PIPE (CLASS V)	*** RC PIPE CULVERTS, CONTRACTOR DESIGN	*** RC PIPE CULVERTS, CONTRACTOR DESIGN	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME WITH TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. (W.S. FLAT) FRAME WITH TWO GRATES STD. 840.20	G.D.I. (N.S. FLAT) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B.G.D.I. STD. 840.35	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO J.B. w/MH (SEE SHEET 2-S)	CONVERT EXISTING D.I. TO J.B. w/ M.H. (SEE SHEET 2-M)	CONVERT EXISTING D.I. TO C.B. (SEE SHEET 2-T)	CONVERT EXISTING J.B. TO C.B. (SEE SHEET 2-T)	ADJUSTMENT OF C.B.	ADJUSTMENT OF M.H.	CS PIPE ELBOWS	FLOWABLE FILL	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L- 186+31.70	0601	0602						1			1			1																				0.045		20	REMOVE 18' OF 15" RCP, 1-DI, & 1-15" PLUG
-L- 186+31.70	0601	0603																																			
-L- 186+31.70	0601	0616																																0.181		8	REMOVE 8' OF 15" RCP, 1-DI, 1-CB, 1-18" &24" PLUG
-L- 186+31.70	0602							1									1	1																			
-L- 186+31.02	0603							1							1		1	1																			
-L- 186+04.03	0604	0605						1			1		1																					0.065		68	REMOVE 68' OF 18" RCP, 1-DI, & 1-18" PLUG
-L- 186+04.03	0604	0606																																			
-L- 186+04.03	0605							1									1	1																			
-Y7A- 10+61.25	0606	0607						1			1		1																								
-Y7A- 11+69.08	0607	0608						1			1		1																								
-Y7A- 13+11.69	0608	0609						1			1			1																							
-Y7- 13+11.77	0609	0610						1	0.10		1			1																							
-Y7- 13+11.77	0609	0611																																			
-Y7- 13+11.77	0610							1									1	1																0.065		260	REMOVE 260' OF 18" RCP, 2-CB, & 1-18" PLUG
-Y7- 14+39.16	0611	0612						1			1			1																							
-Y7- 14+39.16	0611	0613																																			
-Y7- 14+39.16	0612							1									1	1																			
-Y7- 15+00.36	0613	0614						1			1		1																								
-Y7- 15+00.36	0613	0615																																			
-Y7- 14+99.90	0614							1							1		1	1																			
-Y7- 15+81.94	0615							1			1			1																							
-L- 187+24.58	0616	0617						1			1			1																							
-L- 187+33.19	0617	0618						1			1			1																						28	REMOVE 28' OF 15" RCP & 1-CB
-L- 187+33.19	0617	0619																																		116	REMOVE 116' OF 18" RCP & 1-CB
-L- 187+33.19	0618							1									1	1																			
-L- 189+30.88	0619	0620						1			1			1																							
-L- 189+30.88	0619	0622																																			
-L- 189+30.88	0620	0621						1			1		1																							220	REMOVE 220' OF 18" RCP & 1-MH
-L- 188+62.90	0621							1														1			1											36	REMOVE 36' OF 15" RCP & 1-MH
-L- 191+29.24	0622	0623						1			1			1																						256	REMOVE 256' OF 18" RCP & 2-CB
-L- 193+70.69	0623	0624						1	0.94		1		1																						0.399		15" COLLAR
-L- 193+70.69	0623	0628																																		412	REMOVE 412' OF 24" RCP & 1-CB
-L- 191+22.00	0625	0626						1							1		1	1																0.029			REMOVE 1-CB & 1-12" PLUG
-L- 193+37.08	0626	0627						1							1		1	1																	0.399	16	REMOVE 16' OF 12" & 15" RCP, 15" COLLAR
-L- 195+80.32	0628	0629						1			1		1																								
-L- 197+86.50	0629	0630						1	2.54		1		1																						0.447		18" COLLAR
-L- 197+86.50	0629	0701																																		320	REMOVE 320' OF 30" RCP & 1-CB
-L- 195+47.50	0631	0632						1			1		1			1																					
-L- 195+54.99	0632	0633						1			1		1			1																					
-L- 197+70.89	0633								2.21							1														1							ADJUST C.B.
-L- 199+96.53	0701	0702						1			1			1																							
-L- 201+06.70	0702							1	5.00	7.40	1			1																							REMOVE 1-CB
-Y6C- 20+65.04	0801							1			1		1																								
-Y6C- 20+94.01	0802	0804						1			1	1																									
-Y6C- 20+94.05	0803							1															1		1												
-Y6C- 20+94.05	0803	0804						1			1	1																									
-Y8- 14+50.46	0901							1	3.83		1		1																								REMOVE 1-MH
-Y8- 15+22.16	0902										1			1														1									CONVERT D.I. TO C.B.
-Y8- 15+95.47	0903								0.25																						1						ADJUST M.H.
-Y8- 16+14.64	0904	0906												1															1								CONVERT J.B. TO C.B.
-Y8- 16+13.77	0905							1				1																									SPECIAL C.B.
SHEET TOTALS								37	14.87	7.40	26	3	12	13	4	3	9	9				1	1		2			1	1	1	1			.385	1.245	1760	

CSD265813

COMPUTED BY: JR/WCB DATE: 10/31/2011

CHECKED BY: BKE DATE: 10/31/2011, 08/07/12

PROJECT NO.	SHEET NO.
U-4444B	3-C

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
-Y8- 16+13.77	RT	0905	0907	254.06	248.81	250.91	
-Y8- 16+41.17	LT	0906		254.04	251.04		
-Y8- 16+41.15	RT	0907		253.91	250.91		
-Y10- 22+36.38	RT	09A01	09A04	281.23	277.98	275.10	
-Y10- 22+08.81	LT	09A02	09A07	283.30	281.05	275.55	
-Y10- 22+08.81	LT	09A03	09A06	296.11	293.11	292.80	
-Y10- 21+29.75	RT	09A04	09A10	277.60	275.10	271.84	
-Y10- 21+25.36	RT	09A05	09A08	294.15	291.12	290.50	
-Y10- 20+81.19	LT	09A06	09A09	296.13	292.80	290.72	
-Y10- 20+65.81	LT	09A07	09A12	279.20	273.30	264.97	
-Y10- 19+95.21	RT	09A08	09A09	293.70	290.50	290.72	
-Y10- 19+95.21	RT	09A08	09A13	293.70	290.50	277.67	
-Y10- 19+96.02	LT	09A09		293.72	290.72		
-Y10- 19+43.23	RT	09A10	09A11	274.34	271.84	264.20	
-Y10- 18+33.70	RT	09A11		269.15	264.20	263.60	
-Y10- 18+35.77	LT	09A12		271.40	264.97		
-Y10- 17+41.38	RT	09A13	09A14	280.67	277.67	277.40	
-Y10- 17+41.43	LT	09A14	09A18	280.67	277.40	271.22	
-Y10- 16+89.96	LT	09A15		278.75	266.17		
-Y10- 16+83.37	RT	09A16	09A17	268.73	263.84	264.5	
-Y10- 16+33.08	RT	09A17	09A18	274.40	264.50	264.8	
-Y10- 16+31.06	LT	09A18	09A19	274.22	264.80	266.37	
-Y10- 14+86.60	LT	09A19	09A20	270.10	266.37	266.64	
-Y10- 14+60.09	LT	09A20	09A21	269.89	266.64	267.50	
-Y10- 14+04.19	LT	09A21	09A22	270.50	267.50	269.75	
-Y10- 14+21.63	LT	09A22		272.50	269.75		
SHEET TOTALS							

STATION (SIZE / THICKNESS OR GAUGE)	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109
-Y8- 16+13.77																				
-Y8- 16+41.17																				
-Y8- 16+41.15																				
-Y10- 22+36.38			108																	
-Y10- 22+08.81																				
-Y10- 22+08.81																				
-Y10- 21+29.75			188																	
-Y10- 21+25.36																				
-Y10- 20+81.19		92																		
-Y10- 20+65.81							232													
-Y10- 19+95.21																				
-Y10- 19+95.21																				
-Y10- 19+96.02																				
-Y10- 19+43.23			112																	
-Y10- 18+33.70			68																	
-Y10- 18+35.77																				
-Y10- 17+41.38																				
-Y10- 17+41.43																				
-Y10- 16+89.96																				
-Y10- 16+83.37				52																
-Y10- 16+33.08																				
-Y10- 16+31.06																				
-Y10- 14+86.60			28																	
-Y10- 14+60.09																				
-Y10- 14+04.19																				
-Y10- 14+21.63																				
SHEET TOTALS		92	504	52			232													

STATION	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
-Y8- 16+13.77		28														
-Y8- 16+41.17																
-Y8- 16+41.15																
-Y10- 22+36.38																
-Y10- 22+08.81		152														
-Y10- 22+08.81		96														
-Y10- 21+29.75																
-Y10- 21+25.36		136														
-Y10- 20+81.19																
-Y10- 20+65.81																
-Y10- 19+95.21										32						
-Y10- 19+95.21		256														
-Y10- 19+96.02																
-Y10- 19+43.23																
-Y10- 18+33.70																
-Y10- 18+35.77								96								
-Y10- 17+41.38		28														
-Y10- 17+41.43		112														
-Y10- 16+89.96																
-Y10- 16+83.37																
-Y10- 16+33.08				48												
-Y10- 16+31.06			144													
-Y10- 14+86.60																
-Y10- 14+60.09				56												
-Y10- 14+04.19			60													
-Y10- 14+21.63																
SHEET TOTALS		808	204	104				96		32						

STATION	** " R.C. PIPE (CLASS V)	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G
-Y8- 16+13.77												
-Y8- 16+41.17						1			1	1		
-Y8- 16+41.15						1			1	1		
-Y10- 22+36.38						1			1	1		
-Y10- 22+08.81						1						
-Y10- 22+08.81						1			1			1
-Y10- 21+29.75						1						
-Y10- 21+25.36						1			1	1		
-Y10- 20+81.19						1			1		1	
-Y10- 20+65.81						1	0.90					
-Y10- 19+95.21						1			1		1	
-Y10- 19+95.21												
-Y10- 19+96.02						1			1		1	
-Y10- 19+43.23						1						
-Y10- 18+33.70						1						
-Y10- 18+35.77						1	1.43					
-Y10- 17+41.38						1			1			1
-Y10- 17+41.43						1			1		1	
-Y10- 16+89.96												
-Y10- 16+83.37						1						
-Y10- 16+33.08						1	4.90					
-Y10- 16+31.06						1	4.42		1		1	
-Y10- 14+86.60						1			1		1	
-Y10- 14+60.09						1			1	1		
-Y10- 14+04.19						1						
-Y10- 14+21.63						1						
SHEET TOTALS						23	11.65		13	5	6	2

STATION	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME WITH TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26			G.D.I. (W.S. FLAT) FRAME WITH TWO GRATES STD. 840.20			G.D.I. (N.S. FLAT) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B.G.D.I. STD. 840.35	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO J.B. w/MH (SEE SHEET 2-S)
-Y8- 16+13.77																
-Y8- 16+41.17																
-Y8- 16+41.15																
-Y10- 22+36.38																
-Y10- 22+08.81			1	1												
-Y10- 22+08.81																
-Y10- 21+29.75			1	1												
-Y10- 21+25.36																
-Y10- 20+81.19																
-Y10- 20+65.81												1			1	
-Y10- 19+95.21																
-Y10- 19+95.21																
-Y10- 19+96.02																
-Y10- 19+43.23			1	1												
-Y10- 18+33.70												1			1	
-Y10- 18+35.77												1			1	
-Y10- 17+41.38																
-Y10- 17+41.43																
-Y10- 16+89.96															1	1
-Y10- 16+83.37												1			1	
-Y10- 16+33.08												1			1	
-Y10- 16+31.06																
-Y10- 14+86.60																
-Y10- 14+60.09																
-Y10- 14+04.19											1			1		
-Y10- 14+21.63											1			1		
SHEET TOTALS			3	3							2	5		2	6	1

STATION			CONVERT EXISTING D.I. TO J.B. w/ M.H. (SEE SHEET 2-M)		CONVERT EXISTING D.I. TO C.B. (SEE SHEET 2-T)	CONVERT EXISTING J.B. TO C.B. (SEE SHEET 2-T)		ADJUSTMENT OF C.B.	ADJUSTMENT OF M.H.	CS PIPE ELBOWS	FLOWABLE FILL	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-Y8- 16+13.77															
-Y8- 16+41.17															REMOVE C.B.
-Y8- 16+41.15															
-Y10- 22+36.38														28	REMOVE 28' OF 18" RCP & 1-DI
-Y10- 22+08.81														400	REMOVE 400' OF 18" RCP, 4-DI & 1-JB
-Y10- 22+08.81														120	REMOVE 120' OF 24" RCP, 1-DI & 1-CB
-Y10- 21+29.75															
-Y10- 21+25.36															
-Y10- 20+81.19															
-Y10- 20+65.81															
-Y10- 19+95.21															
-Y10- 19+95.21															
-Y10- 19+96.02															
-Y10- 19+43.23															
-Y10- 18+33.70														144	REMOVE 144' OF 30" RCP & 2-HW
-Y10- 18+35.77														380	REMOVE 380' OF 18" RCP, 1-JB, 1-DI, & 1-CB
-Y10- 17+41.38															
-Y10- 17+41.43															
-Y10- 16+89.96															CONVERT C.B. TO JB w/ M.H.
-Y10- 16+83.37															
-Y10- 16+33.08															
-Y10- 16+31.06															
-Y10- 14+86.60															
-Y10- 14+60.09															
-Y10- 14+04.19															T.B.G.I
-Y10- 14+21.63															T.B.G.I
SHEET TOTALS														1072	

ABBREVIATIONS

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

COMPUTED BY: JR/WCB DATE: 10/31/2011

CHECKED BY: BKE DATE: 10/31/2011, 08/07/12

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-4444B	3-D

CSD265813

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

STATION	LOCATION (LT, RT, OR CL)*	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
THICKNESS OR GAUGE																			
SHEET 3 TOTAL								748	24	280	104			308					
SHEET 3-A TOTAL								628	252	8									
SHEET 3-B TOTAL								128	8					16					
SHEET 3-C TOTAL								92	504	52				232					
PROJECT TOTALS								1596	788	340	104			556					

STATION	C.S. PIPE SIZE 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS III SIZE 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV SIZE 12"	15"	18"	24"	30"	36"	42"	48"
THICKNESS OR GAUGE	.064	.064	.064	.064	.079	.079	.109	.109																
SHEET 3 TOTAL									992	232	84	404	144											
SHEET 3-A TOTAL									1232	440	496						520	220						
SHEET 3-B TOTAL									520		708	958	324				60	56		196				
SHEET 3-C TOTAL									808	204	104					96	32							
PROJECT TOTALS									3552	876	1392	1362	468			96	612	276		196				

STATION	** " R.C. PIPE (CLASS V)	**** RC PIPE CULVERTS, CONTRACTOR DESIGN	**** RC PIPE CULVERTS, CONTRACTOR DESIGN	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	LIN. FT. A 5.01' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B')	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME WITH TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26		G.D.I. (W.S. FLAT) FRAME WITH TWO GRATES STD. 840.20		G.D.I. (N.S. FLAT) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B.G.D.I. STD. 840.35	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO J.B. w/MH (SEE SHEET 2-S)		CONVERT EXISTING D.I. TO J.B. w/ M.H. (SEE SHEET 2-M)		CONVERT EXISTING D.I. TO C.B. (SEE SHEET 2-T)	CONVERT EXISTING J.B. TO C.B. (SEE SHEET 2-T)		ADJUSTMENT OF C.B.	ADJUSTMENT OF M.H.	CS PIPE ELBOWS	FLOWABLE FILL	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
SHEET 3 TOTAL						37	39.27	4.98	24	3	10	11		3	10	10	1		1			2		3			1								.065		744	
SHEET 3-A TOTAL						43	9.49		19		5	14	6	5	22	22						2		2											.610		1752	
SHEET 3-B TOTAL						37	14.87	7.40	26	3	12	13	4	3	9	9						1	1	2				1	1		1	1			.385	1.245	1760	
SHEET 3-C TOTAL						23	11.65		13	5	6	2			3	3					2	5		2	6	1											1072	
PROJECT TOTALS						140	75.28	12.38	82	11	33	40	10	11	44	44	1		1		2	10	1	2	13	1		1		1	1		1	1		2.000	2.000	5328	

ABBREVIATIONS

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

60" CHAIN LINK FENCE SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LINEAR FEET	LINE POSTS	TERMINAL POSTS
Y10 & Y6C	-Y10- 24+00	-Y6C- 12+97	LT/RT	465	39	4
Y10	16+38	23+40	RT	710	59	5
Y10 & Y6C	-Y10- 15+62	-Y6C- 13+06	LT	804	67	5
Y6C	14+68	17+00	RT	232	19	2
Y6C	14+77	17+00	LT	223	18	2
			TOTAL:	2,434	202	18
			SAY:	2,435	202	18

REMOVE AND RESET EXISTING CHAIN LINK FENCE SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LINEAR FEET
Y6	25+22	26+35	RT	118
Y6C	19+41	20+40	RT	100
Y6	32+83	33+88	LT	105
Y6	33+90	34+95	RT	84
Y6	34+41	35+37	LT	96
Y6	36+38	37+21	RT	84
L	185+09	185+56	LT	47
Y8	36+38	37+21	LT	251
			TOTAL:	885
			SAY:	890

REMOVE AND RESET EXISTING WOVEN WIRE FENCE SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LINEAR FEET
Y6	23+53	23+99	RT	46
			TOTAL:	46
			SAY:	50

ASPHALT PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	SY
L	168+10	171+82	CL	732.39
Y6C	14+54	17+00	RT	479.75
Y7A	11+75	12+47	RT	298.79
Y8	18+76	19+28	RT	67.61
Y10	14+56	16+43	LT	32.53
			TOTAL:	1611.08
			SAY:	1,620

ASPHALT PAVEMENT BREAKING SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	SY
L	168+10	168+50	LT	49.44
L	169+50	171+07	LT	227.78
L	172+00	179+00	LT	2450.00
L	179+96	182+50	LT	94.78
L	169+22	171+07	RT	245.00
L	172+00	177+96	RT	2844.44
L	179+96	186+00	RT	620.11
Y10	15+50	25+27	LT/RT	5021.44
Y10DR4	10+24	10+72	LT/RT	182.44
Y6C	10+15	13+34	LT/RT	1928.11
Y6C	14+65	15+58	LT/RT	376.56
Y6C	16+02	20+25	RT	605.65
Y6C	17+54	20+25	LT	296.11
Y6	23+34	24+00	RT	53.78
Y6	26+45	26+86	LT	90.89
Y6	30+69	32+50	RT	369.44
Y6	31+89	32+50	LT	32.22
			TOTAL:	15,488.22
			SAY:	15,500

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GRAU 350	M-350	XIII	CAT-1	VI MOD	B-77	BIC	AT-1	EA	G	NG				
L	171+89.75	173+99.25	MED.	225.00			172+68.13	173+23.13	8.5	11.5	37.5	37.5	2.28	2.28								4			2		X				Bridge Pier Protection in 23' Median w/Conc. Barrier
		Sub-Total		225.00																		4			2						
	Anchor Deduction																														
	B-77	4	@ -18.75	-75.00																											
		Total		150.00																		4			2						
		SAY		150.00																		4			2						

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COMPUTED BY: WCB DATE: 10-31-11
CHECKED BY: B. EASON DATE: 07-24-12

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	3-F

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION		UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
SUMMARY 1 Phase 1						
-L- RT.	107+00.00 TO 125+00.00	1,778	-	32,245	30,516	49
TOTAL SUMMARY # 1		1,778	-	32,245	30,516	49
			-			
SUMMARY 2 Phase 1						
-L- RT.	125+00.00 TO 151+50.00	8,116	-	26,200	18,584	500
-Y3-	10+00.00 TO 10+58.58(Begin Bridge)		632	19,341	19,341	632
-Y3LPD-	13+00.00 TO 23+50.00	13,022	38,703	192,423	179,401	38,703
-Y3RPD_M-	13+00.00 TO 16+00.00	5,618	-	-	-	5,618
-Y3-	12+77.08(End Bridge) TO 17+50.00	35	-	31,533	31,498	-
-Y3RPB-	14+81.00(-L- 125+00) TO 21+92.00(-L 132+00)	3,954	-	7,929	3,975	-
-Y3RPA-	14+50.00 TO 29+50.00	10,294	-	26,385	16,091	-
-Y3RPAA-	10+00.00 (-Y3RPA 24+50) 14+59.00 (Y3RPA 28+50)	652	-	13,966	13,314	-
TOTAL SUMMARY # 2		41,691	39,335	317,776	282,203	45,453
SUMMARY 3 Phase 1						
-Y3-	17+50.00 TO 32+65.00	2,344	-	40,715	38,371	-
-Y4-	15+50.00 TO 37+00.00	2,578	-	1,668		911
-Y4SRREV-	10+50.00 TO 25+35.00	10,183	-	10	-	10,173
TOTAL SUMMARY # 3		15,105	-	42,393	38,371	11,084
SUMMARY 4 Phase 1						
-L- LT	151+50.00 TO 156+50.00	1,028	-	441	-	587
TOTAL SUMMARY # 4		1,028	-	441	-	587
SUMMARY 5 Phase 1						
-L-	158+50.00 TO 163+00.00	579	1186	35,774	35,195	1,186
TOTAL SUMMARY # 5		579	1186	35,774	35,195	1,186
SUMMARY 6 Phase 1						
-Y6-	12+52.00 TO 23+32.00	339	-	2,513	2,174	-
-Y6-	23+32.00 TO 46+00.00	597	-	10,779	10,182	-
-Y6C-	11+00.00 TO 13+01.10(Begin Bridge)	-	-	10,624	10,624	-
-Y6C-	14+72.85(End Bridge) TO 17+50.00	-	-	12,044	12,044	-
-Y6C-	18+50.00 TO 21+00.00	8	-	1,575	1,567	-
-Y10-	14+00.00 TO 20+50.00	1	-	14,435	14,434	-
-Y6R-	10+00.00 TO 12+82.74	-	-	17,363	17,363	-
-Y10-	22+00.00 TO 24+50.00	-	-	5,360	5,360	-
-Y10DR3-	10+50.00 TO 11+00.00	2	-	84	82	-
-Y3C-	10+50.00 TO 12+00.00	29	-	-	-	29
TOTAL SUMMARY # 6		976	-	74,775	73,828	29
SUMMARY 7 Phase 1						
-Y8-	10+50.00 TO 19+00.00	1,577	-	323	-	1,255
TOTAL SUMMARY # 7		1,577	-	323	-	1,255

LOCATION		UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
SUMMARY 8 Phase 2						
-L- LT.	107+00.00 TO 125+00.00	3,092	-	18,045	14,953	-
TOTAL SUMMARY # 8		3,092	-	18,045	14,953	-
			-			
SUMMARY 9 Phase 2						
-L- LT.	125+00.00 TO 151+50.00	12,317	-	30,606	18,289	-
TOTAL SUMMARY # 9		12,317	-	30,606	18,289	-
SUMMARY 10 Phase 2						
-L- RT.	151+50.00 TO 158+50.00	2,033	-	2,415	382	-
-L- LT.	156+50.00 TO 158+50.00	39	-	1,113	1,074	-
TOTAL SUMMARY # 10		2,072	-	3,528	1,456	-
SUMMARY 11 Phase 2						
-L-RT	163+00.00 TO 169+50.00	498	-	100	-	398
-L-	169+50.00 TO 193+00.00	990	-	3,871	2,881	-
-Y5-	10+60.00 TO 15+81.00	1,091	-	233	-	859
-Y7-	11+77.77 TO 15+50.00	101	-	313	212	-
-Y6A-	11+00.00 TO 12+50.00	46	-	44	-	2
-Y7A-	10+64.42 TO 12+49.07	12	-	124	112	-
-Y17-	13+00.00 TO 14+50.00	101	-	15	-	86
TOTAL SUMMARY # 11		2,839	-	4,699	3,205	1,345
SUMMARY 12 Phase 2						
-L-	193+00.00 TO 210+00.00	1,068	-	5,065	3,997	-
TOTAL SUMMARY # 12		1,068	-	5,065	3,997	-
SUMMARY 13 Phase 3						
-L- LT.	163+00.00 TO 169+50.00	786	-	3,251	2,465	-
TOTAL SUMMARY # 13		786	-	3,251	2,465	-
SUMMARY 14 Phase 4						
-Y3RPB_TIE-	10+00.00 TO 15+12.00	3,094	-	239	-	2,855
-Y4A-	10+00.00 TO 18+00.00	178	-	1,571	1,393	-
-Y4B-	10+00.00 TO 18+00.00	160	-	1,963	1,803	-
TOTAL SUMMARY # 14		3,432	-	3,773	3,196	2,855
TOTAL		88,340	40,521	572,692	507,673	63,842
MATERIAL FOR SHOULDER CONSTRUCTION				16,500	16,500	
EST.LOSS DUE TO CLEAR. & GRUBBING		-5,150			5,150	
ADDITIONAL UNDERCUT			4,300	5,375	5,375	4,300
WASTE IN LIEU OF BORROW					-22,772	-22,772
CL III MATERIAL IN LIEU OF BORROW				-56,026	-56,026	
PROJECT TOTALS		83,190	44,821	538,542	455,901	45,370
EST.5% TO REPLACE TOP SOIL ON BORROW PIT					22,795	
U-4444AB/B GRAND TOTALS		83,190	44,821	538,542	478,696	45,370
SAY		83,500	45,000		479,000	

GEOTECHNICAL ENGINEERING UNIT	U-4444AB	U-4444B	COMBINED PROJECT TOTALS
ESTIMATED DDE	1910 CY	40 CY	1950 CY
ESTIMATED SELECT MATERIAL CLASS III	56,026 CY	0 CY	56,026 CY
ESTIMATED ADDITIONAL UNDERCUT	2950 CY	200 CY	3,150 CY
GRADE POINT UNDERCUT	900 CY	250 CY	1,150 CY
SHALLOW UNDERCUT (CONTINGENCY)	200 CY	200 CY	400 CY

Quantities are approximate only. The Resident Engineer will re-cross-section the work accurately when the project is staked out. These cross section notes will be used in computing the final quantities for which the contractor will be paid.

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6/4/99

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	3-G

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

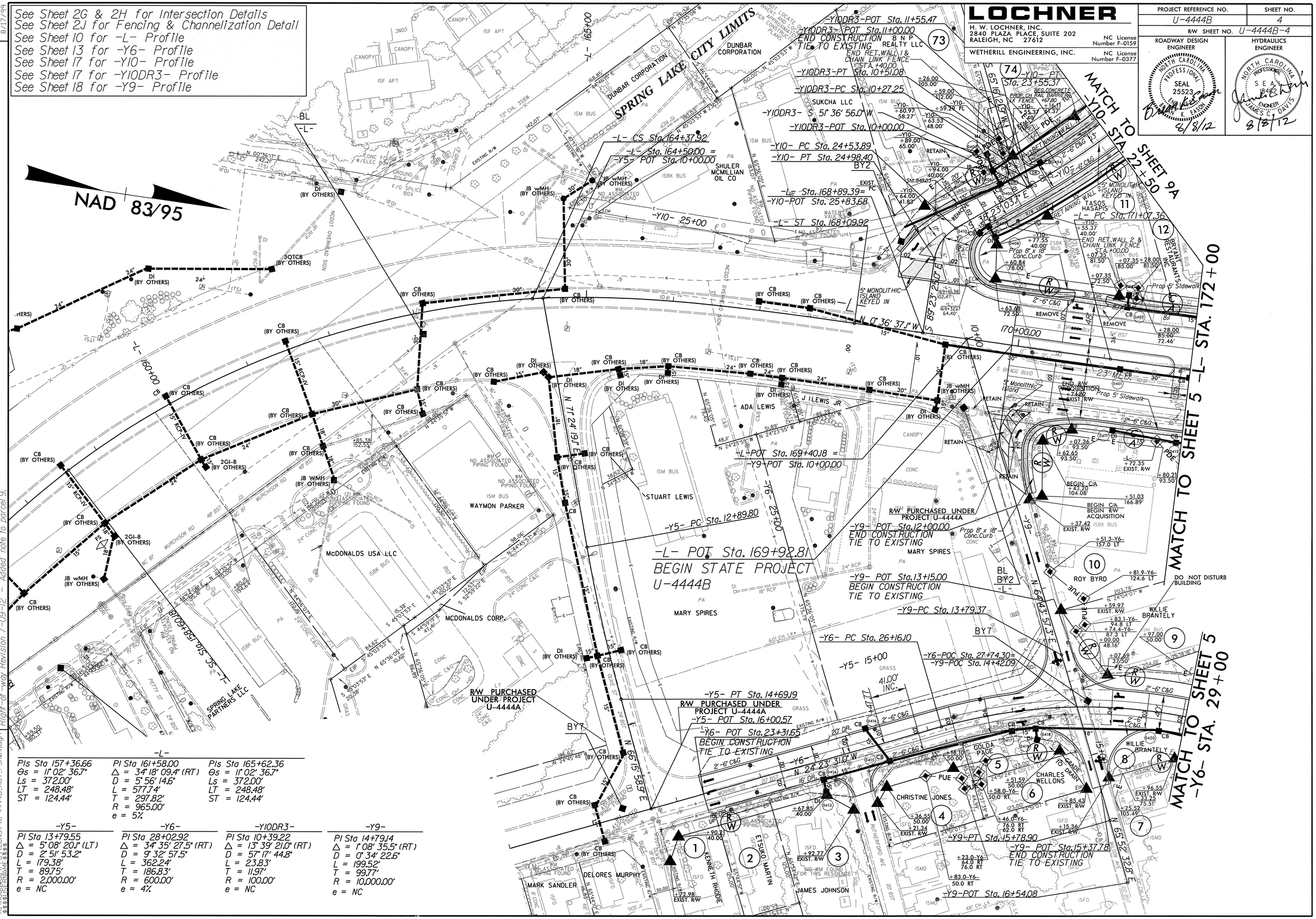
PARCEL INDEX

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	KENNETH RHODIE
2	4	ETSUKO MARTIN
3	4	JAMES JOHNSON
4	4	CHRISTINE JONES
5	4	GOLDA PAGE
6	4	CHARLES WELLONS
7	4,5	UNKNOWN
8	4,5	WILLIE BRANTELY
9	4,5	WILLIE BRANTELY
10	4,5	ROY BYRD
11	4,9A	TASOS HASAPIS
12	4,5,9A	BRYANT RESTURANTS
13	5,9A	BRYANT RESTURANTS
14	5,9A	JAMES JOHNSON
15	5	KENNETH TART
16	5	BRANCH BANKING & TRUST
17	5	BRANCH BANKING & TRUST
18	5	LEN METAXAKIS
19	5	CLAUDE MEACHUM
20	5	BILL PAPPAS
21	5	BILL PAPPAS
22	5	GEORGE FERRELL
23	5,6	GEORGE FERRELL
24	5	DIANNE HOWARD
25	5	WS REALITY INC.
26	5	RUBY TUESDAY INC.
27	5	PEGGY POWERS
28	5	JW LEWIS
29	5	CC POWERS JR. HEIRS
30	5	CC POWERS JR. HEIRS
31	5	CC POWERS JR. HEIRS
32	5	HELEN FAIRCLOTH PROPERTIES INC.
33	5,6	WS REALITY INC.

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
34	5	WAYNE DAHNKE
35	5	WS REALITY INC.
36	5,8	DIANNE HOWARD
37	5	BBC ENTERPRISES
38	5,8	BBC ENTERPRISES
39	5	MARIE CATO
40	5	TOWN OF SPRING LAKE
41	5	PEGGY POWERS
42	5	LEN H METAXAKIS
43	6	CUMBERLAND COUNTY ABC BOARD
44	6	JK FOOD ENTERPRISES LLC
45	6	AMY MATTHEWS
46	6	SPRING LAKE METHODIST CHURCH
47	6,7	DIANNE HOWARD
48	6	BBC ENTERPRISES
49	6	METTHEWS OIL CO. INC.
50	6	LISA DARDEN
51	6	JOHN DARDEN HEIRS
52	6	TONYS LEASING CO.
53	6	LOT 2 JRB INVESTMENT GROUP LLC
54	6,7	SPING LAKE SHOPPING CENTER INC.
55	7	W C JONES INVESTMENT CO.
56	7	SKYLAND INC.
57	7	ELLENWOOD PROPERTIES LLC
58	7	CATHY HUSKISSON
59	9	W S WELLONS, REALTY INC.
60	9	CARLTON JR & WIFE BEVERLY GILES
61	9	EVELYN P. ESWORTHY
62	9	PAUL BENJAMIN
63	9	SARAH GILFILLAN
64	9	KENNETH TART
65	9	BILLY E & WIFE LYNDA BATES
66	9	ANNA G MORRIS

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
67	9	TRINITY DEVELOPMENT
68	9	TRINITY DEVELOPMENT
69	9	R & S MATTHEWS PROPERTIES LLC
70	9	MICHEAL DAVID NEPSTAD & WIFE
71	9	HOLLANDALE ADVENT CHRISTIAN CHURCH
72	9	HOLLANDALE ADVENT CHRISTIAN CHURCH
73	4	B N P REALTY LLC
74	4,9A	LAXMI HOTELS OF SPRING LAKE
75	9A	SUBODH THAKUR
76	9A	OMEGA ENTERPRISES LLC
77	9A	TASOS HASAPIS
78	9A	OMEGA ENTERPRISES LLC
79	9A	FIRST BAPTIST CHURCH OF SPRING LAKE
79A	9A	JAMES KIRK
80	5	JAMES JOHNSON
81	8	RALPH WEEKS
82	8	RICHUSJAVOR ALLEN
83	8	SYLVESTER KIRKLAND

See Sheet 2G & 2H for Intersection Details
See Sheet 2J for Fencing & Channelization Detail
See Sheet 10 for -L- Profile
See Sheet 13 for -Y6- Profile
See Sheet 17 for -Y10- Profile
See Sheet 17 for -Y10DR3- Profile
See Sheet 18 for -Y9- Profile



-L-		
PIs Sta 157+36.66	PI Sta 161+58.00	PIs Sta 165+62.36
Θs = 11° 02' 36.7"	Δ = 34° 18' 09.4" (RT)	Θs = 11° 02' 36.7"
Ls = 372.00'	D = 5° 56' 14.6"	Ls = 372.00'
LT = 248.48'	L = 577.74'	LT = 248.48'
ST = 124.44'	T = 297.82'	ST = 124.44'
	R = 965.00'	
	e = 5%	

-Y5-	-Y6-	-Y10DR3-	-Y9-
PI Sta 13+79.55	PI Sta 28+02.92	PI Sta 10+39.22	PI Sta 14+79.14
Δ = 5° 08' 20.1" (LT)	Δ = 34° 35' 27.5" (RT)	Δ = 13° 39' 21.0" (RT)	Δ = 1° 08' 35.5" (RT)
D = 2° 51' 53.2"	D = 9° 32' 57.5"	D = 57° 17' 44.8"	D = 0° 34' 22.6"
L = 179.38'	L = 362.24'	L = 23.83'	L = 199.52'
T = 89.75'	T = 186.83'	T = 11.97'	T = 99.77'
R = 2,000.00'	R = 600.00'	R = 100.00'	R = 10,000.00'
e = NC	e = 4%	e = NC	e = NC

REVISIONS

8/17/99 Right-of-way Revision 03-22-11 - Added utility easement on parcel 4,5,6,9,and 10.
Right-of-way Revision 1- -12 - Added parcels 73 and 74.Revised right of way and temporary construction easement on parcel 11.Added PDE on parcel 11.
Right-of-way Revision 3- -12 - Adjusted TCE on parcel 73 and 74.Added TUE on parcel 74.
Right-of-way Revision 7-09-12 - Added note to parcel 9.

SYTIME
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LOCHNER

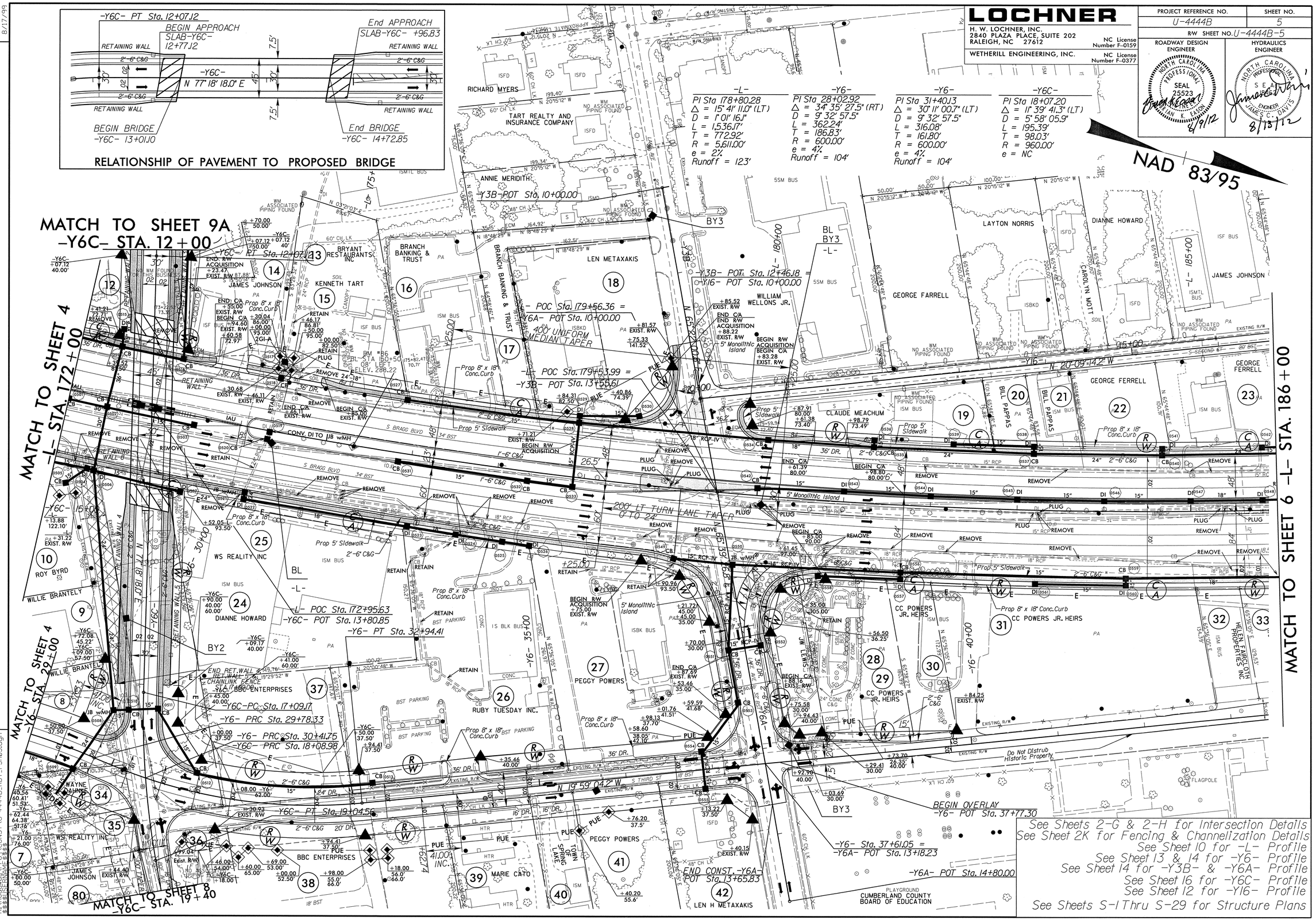
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	4
R/W SHEET NO. U-4444B-4	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER BRIAN K. EASON
8/8/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19482 ENGINEER JAMES C. DAVIS
8/8/12



LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159
WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	5
R/W SHEET NO. U-4444B-5	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER JEAN K. KEAN 8/9/12

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JAMES C. DAVIS 8/13/12

REVISIONS

8/17/99

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8/17/99

REVISIONS

LOCHNER

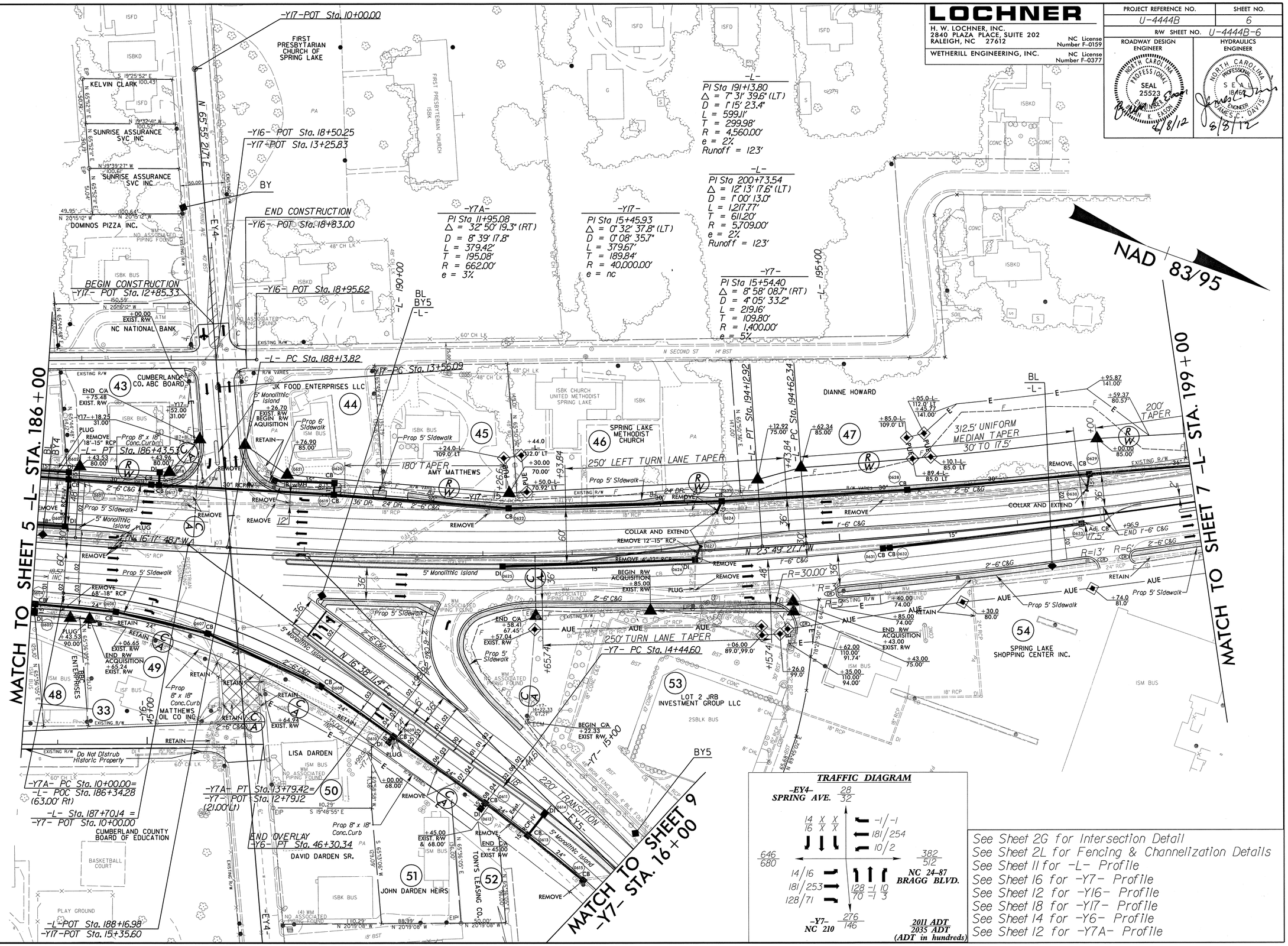
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	6
R/W SHEET NO. U-4444B-6	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER BRIAN K. EATON — 4/8/12

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 18462 ENGINEER JAMES C. DAVIS — 4/3/12



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LOCHNER

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

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	7
R/W SHEET NO.	U-4444B-7

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER
DARRYL K. SASON
8/8/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18621 ENGINEER
JAMES C. DAVIS
8/8/12

REVISIONS

8/17/99

NAD 83/95

-L-
PI Sta 200+73.54
Δ = 12° 13' 17.6" (LT)
D = 1° 00' 13.0"
L = 1,217.77'
T = 611.20'
R = 5,709.00'
e = 2%
Runoff = 123'

MATCH TO SHEET 6 -L- STA. 199+00

END CONSTRUCTION (LEFT SIDE)
TIE TO EXISTING
-L- Sta 201+00.00

-L- PT Sta. 206+80.11

END TIP PROJECT U-4444B
POT STA. 210+25.26

END CONSTRUCTION (RIGHT SIDE)
TIE TO EXISTING
-L- Sta 210+00.00
END STATE PROJECT U-4444B

200' TAPER

600' LANE TAPER TO EXISTING

N 36° 02' 45.3" W

47 W C JONES INVESTMENT CO

55 W C JONES INVESTMENT CO

54 ISBK BUS

56 SKYLAND INC

57 ELLENWOOD PROPERTIES LLC

58 CATHY HUSKISSON

RANDOLPH DEVELOPMENT

R.A.B. INVESTMENTS,LLC

JOHN I. LEWIS JR

M W HARBOUR & WIFE PATSY S

CAROLINA GAS PARTNERS LLC

GRAVEL/SOIL PARKING LOT

N SECOND ST 20' BST

N BRAGG BLVD 64' BST

SECOND ST 40' R/W

EXISTING R/W

Prop 5' Sidewalk

Prop 8" x 18" Conc.Curb

BEGIN R/W ACQUISITION +50.00 EXIST. R/W

END R/W ACQUISITION +41.90 EXIST. R/W

END R/W ACQUISITION +80.11 EXIST. R/W

+60.44 82.55'

+45.0 86.0'

+70.00 65.00'

+50.0 70.0' EXIST. R/W

+25.31 EXIST. R/W

See Sheet 11 for -L- Profile

SYTIME
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LOCHNER

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

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	8
RW SHEET NO. U-4444B-5A	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER JOHN K. EASON
8/8/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19662 ENGINEER JAMES C. DAVIS
8/8/12

8/17/99

REVISIONS

See Sheet 2-M for Fencing & Channelization Details
See Sheet 15 for -Y6C- Profile

SYTIME
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8/17/99

REVISIONS

LOCHNER

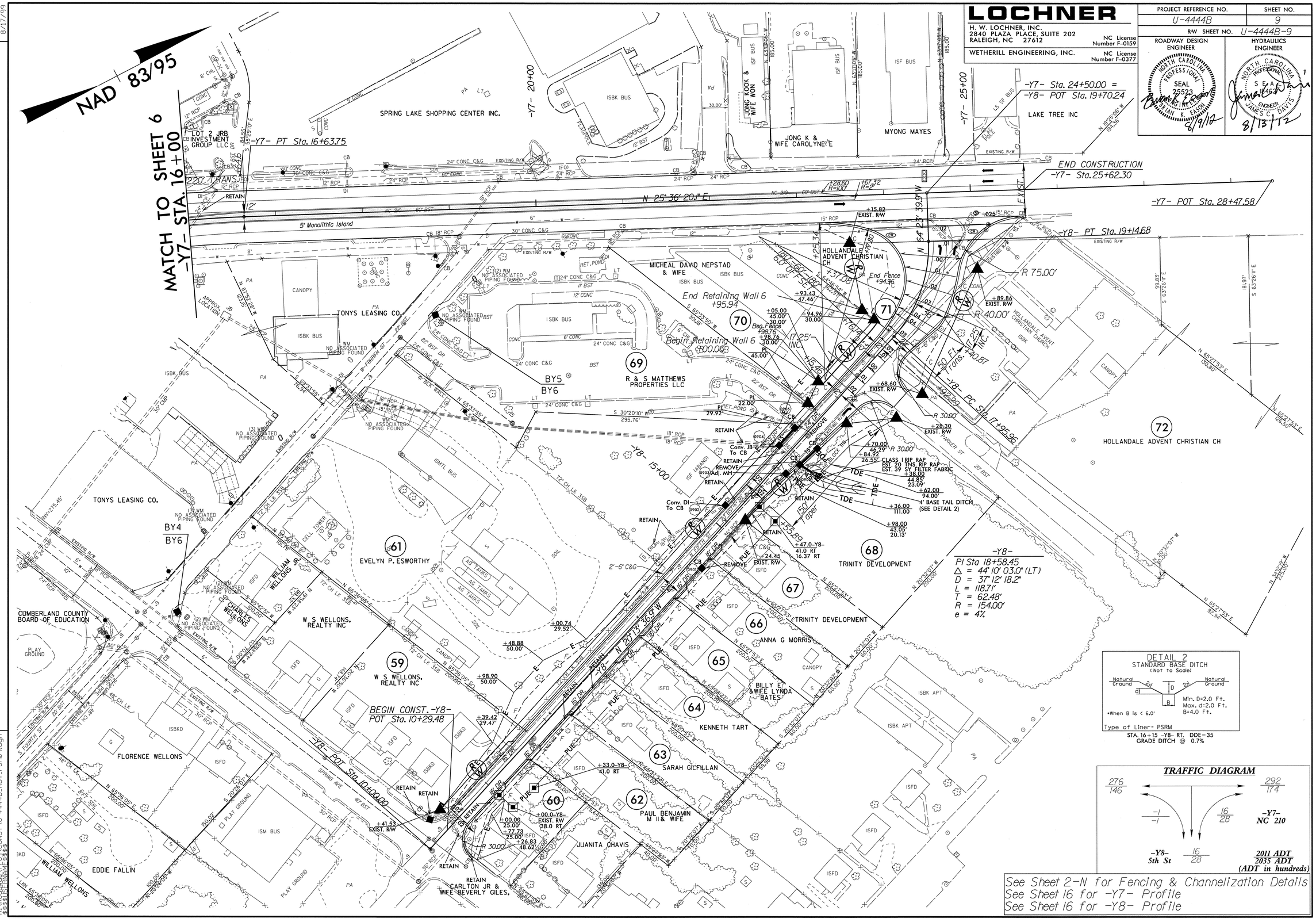
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	9
R/W SHEET NO. U-4444B-9	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER BRIAN K. JASON
8/9/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 14463 ENGINEER JAMES C. DAVIS
8/13/12



See Sheet 2-N for Fencing & Channelization Details
See Sheet 16 for -Y7- Profile
See Sheet 16 for -Y8- Profile

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REVISIONS

LOCHNER

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

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	9A
R/W SHEET NO.	U-4444B-9A

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER JAN K. EASON
6/8/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18862 ENGINEER JAMES C. DAVIS
8/8/12

-Y10-
PI Sta 22+12.74
Δ = 17° 03' 50.7" (RT)
D = 5° 56' 14.6"
L = 287.40'
T = 144.77'
R = 965.00'
e = 3%

-Y10-
PI Sta 13+84.94
Δ = 34° 57' 27.4" (LT)
D = 5° 37' 02.0"
L = 622.33'
T = 321.19'
R = 1,020.00'
e = 2%

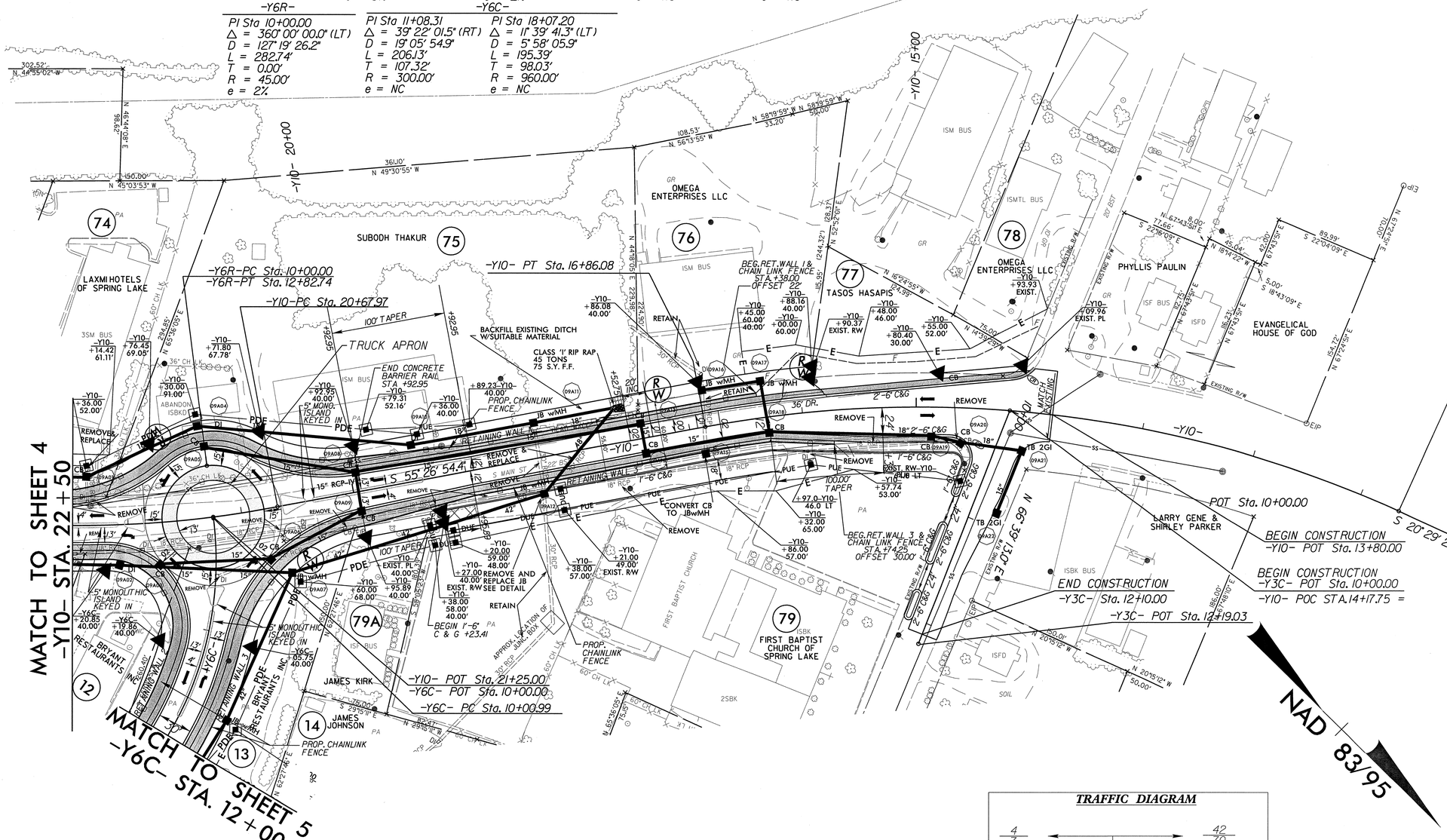
-Y6C-
PI Sta 11+08.31
Δ = 39° 22' 01.5" (RT)
D = 19° 05' 54.9"
L = 206.13'
T = 107.32'
R = 300.00'
e = NC

-Y6C-
PI Sta 18+07.20
Δ = 11° 39' 41.3" (LT)
D = 5° 58' 05.9"
L = 195.39'
T = 98.03'
R = 960.00'
e = NC

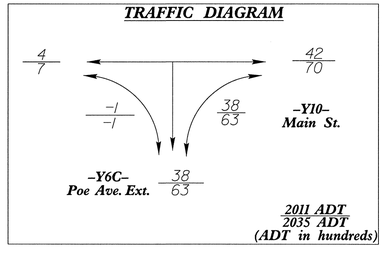
-Y6R-
PI Sta 10+00.00
Δ = 360° 00' 00.0" (LT)
D = 127° 19' 26.2"
L = 282.74'
T = 0.00'
R = 45.00'
e = 2%

-Y6C-
PI Sta 11+08.31
Δ = 39° 22' 01.5" (RT)
D = 19° 05' 54.9"
L = 206.13'
T = 107.32'
R = 300.00'
e = NC

-Y6C-
PI Sta 18+07.20
Δ = 11° 39' 41.3" (LT)
D = 5° 58' 05.9"
L = 195.39'
T = 98.03'
R = 960.00'
e = NC



TRAFFIC DIAGRAM



See Sheet 2-1 for Intersection Detail
See Sheet 2-O for Fencing Locations
See Sheet 15 for -Y6C- & -Y6R- Profile
See Sheet 17 for -Y10- Profile
See Sheet 18 for -Y10DR4- Profile

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LOCHNER

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

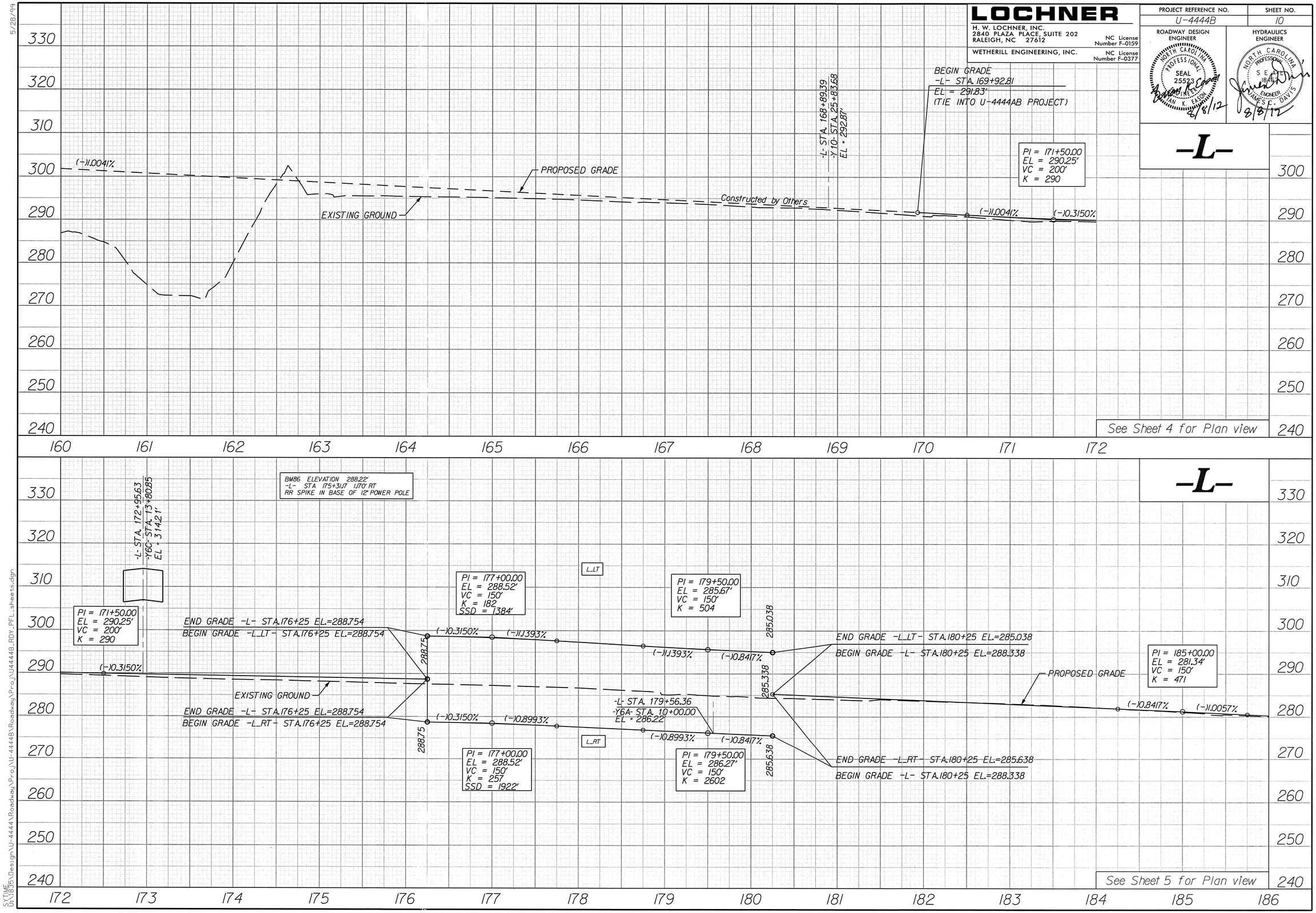
WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	10

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER JAN K. EASON — 8/8/12

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 18864 ENGINEER JAMES E. DAVIS — 8/8/12

-L-



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LOCHNER

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

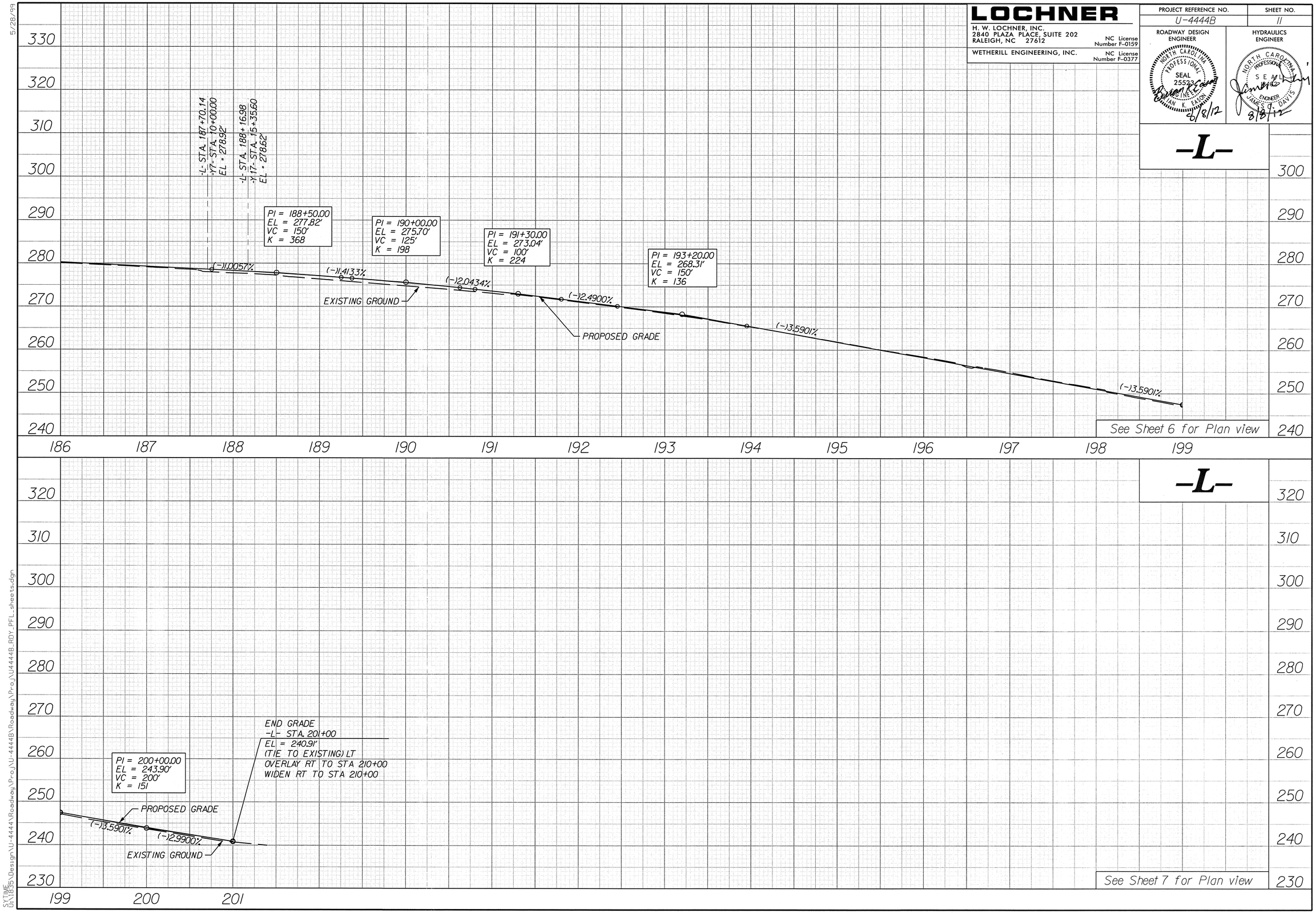
WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	11

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER JAN K. EASON
6/8/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JAMES G. DAVIS
8/8/12

-L-



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5/28/99

LOCHNER

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

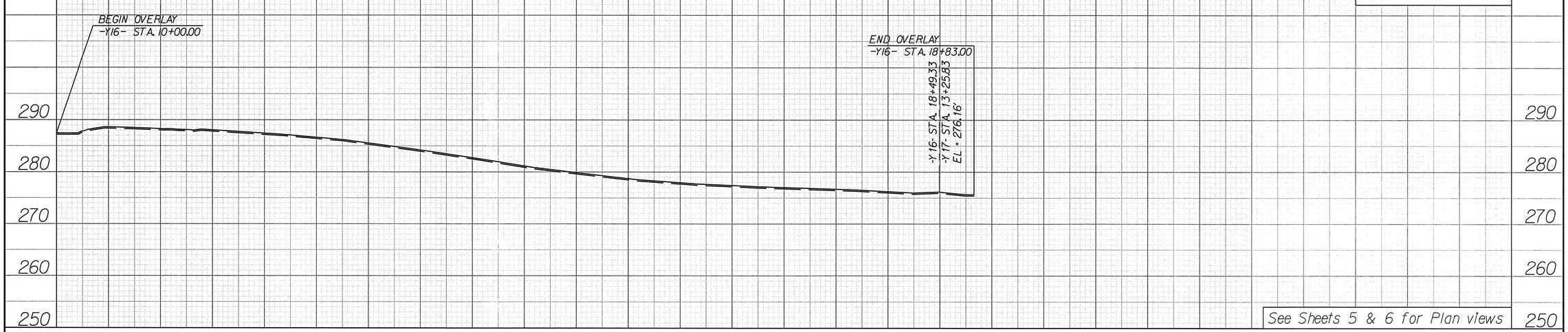
WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	12

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER DIAN K. KERSEY
8/8/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18621 ENGINEER JAMES C. DAVIS, JR.
8/8/12

-Y16-



See Sheets 5 & 6 for Plan views

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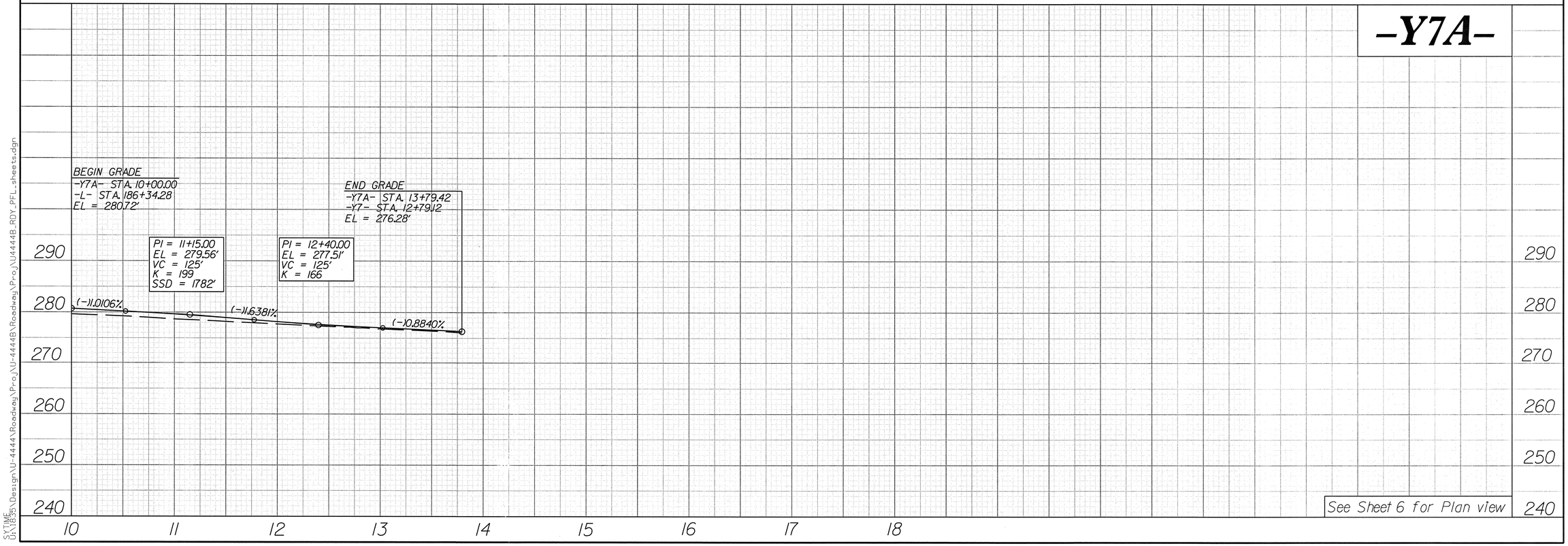

See Sheet 6 for Plan view

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5/28/99

LOCHNER

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

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	13

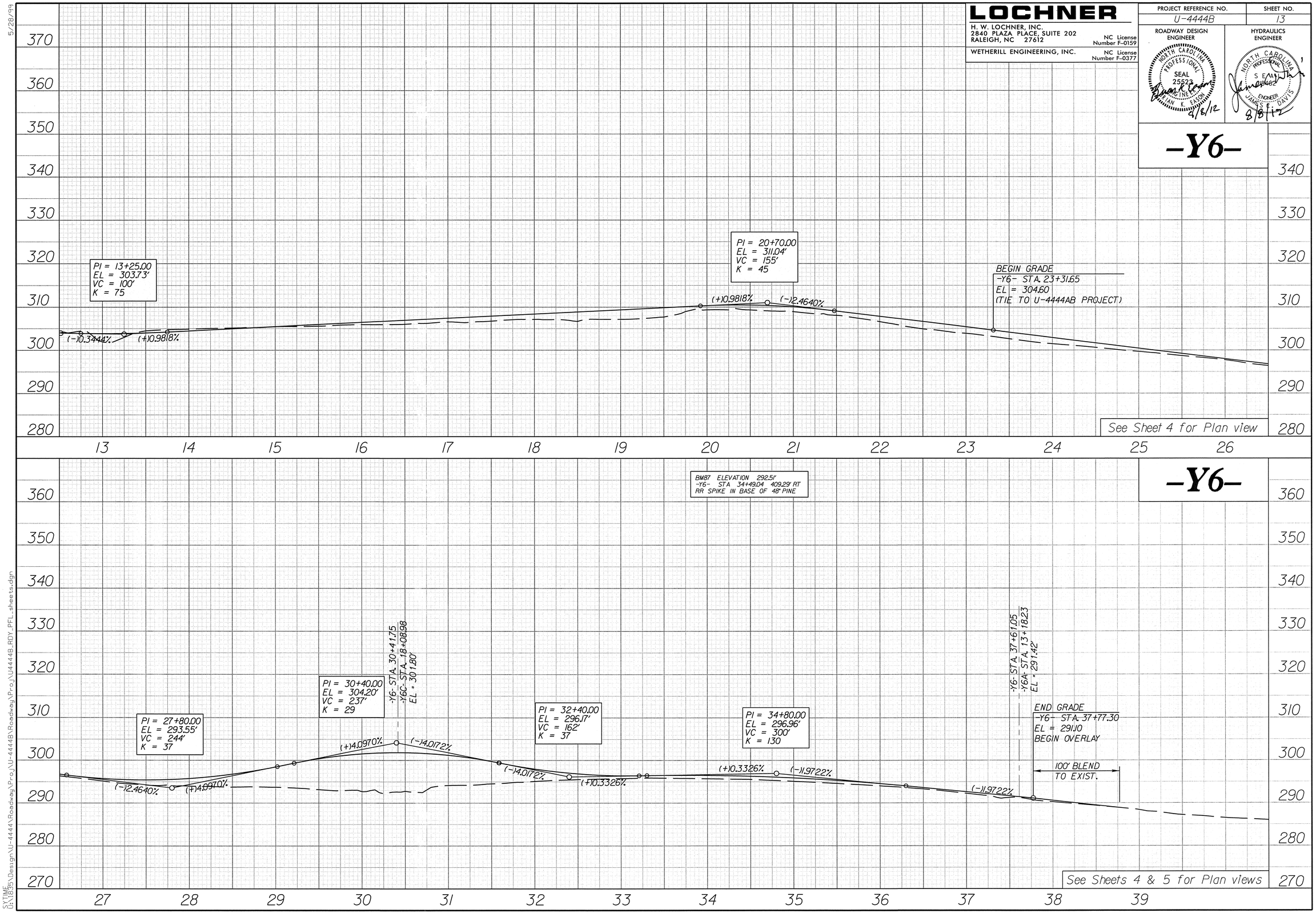
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25623 ENGINEER ALAN K. EASON
4/6/12

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19462 ENGINEER JAMES S. DAVIS
8/8/12

-Y6-



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LOCHNER

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

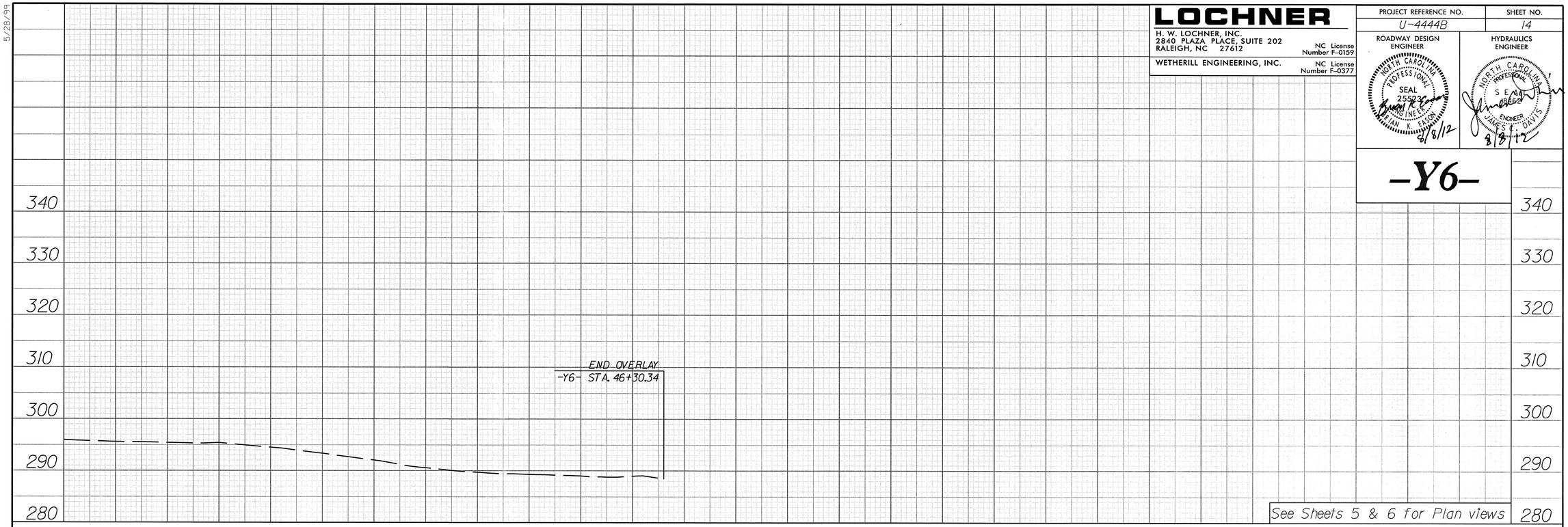
WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	14

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER BRIAN K. EASON
2/8/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025621 ENGINEER JAMES S. DAVIS
3/8/12

-Y6-



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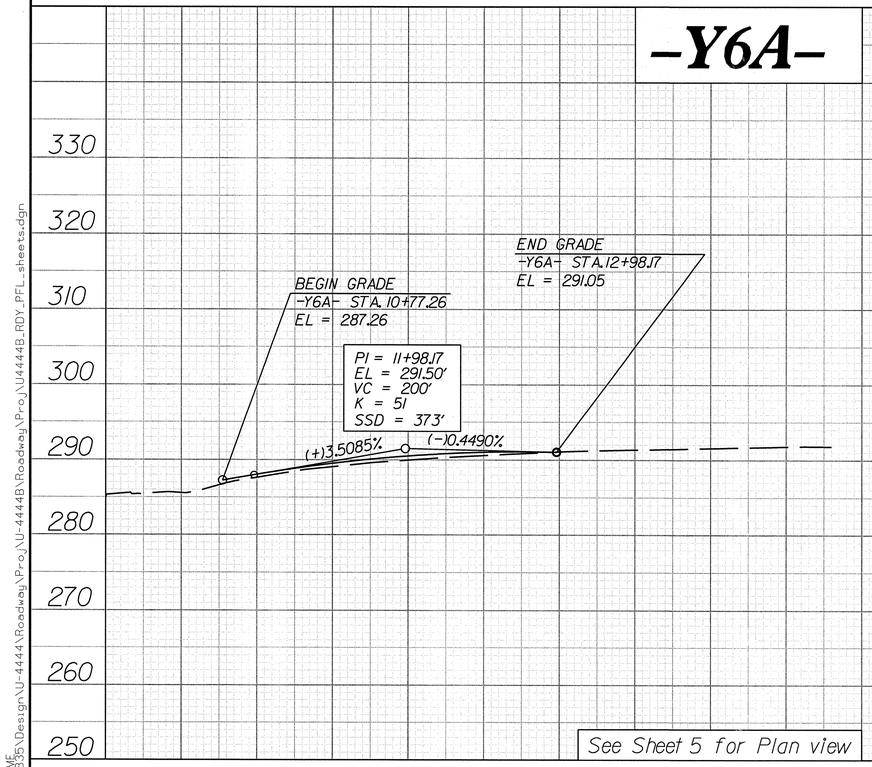

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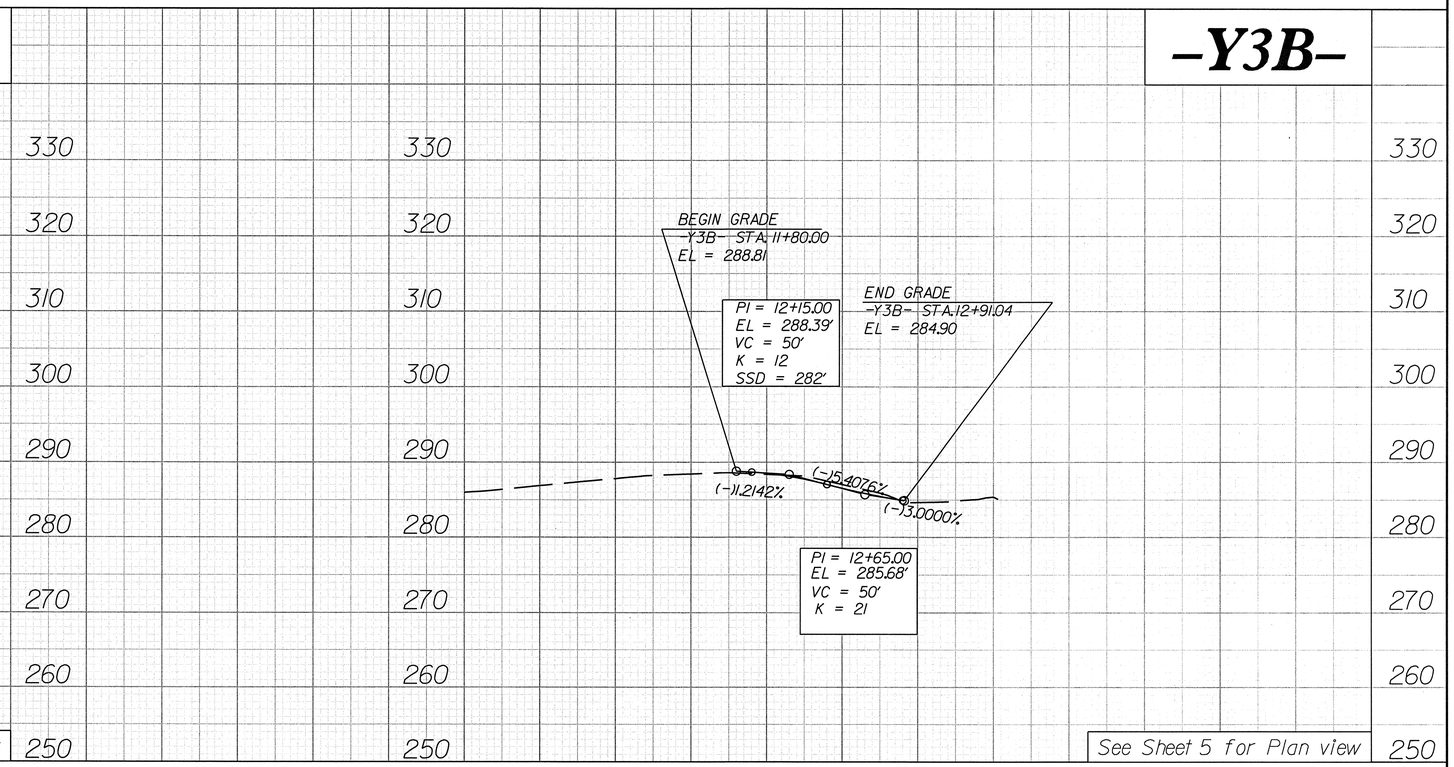

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5/28/99

LOCHNER

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

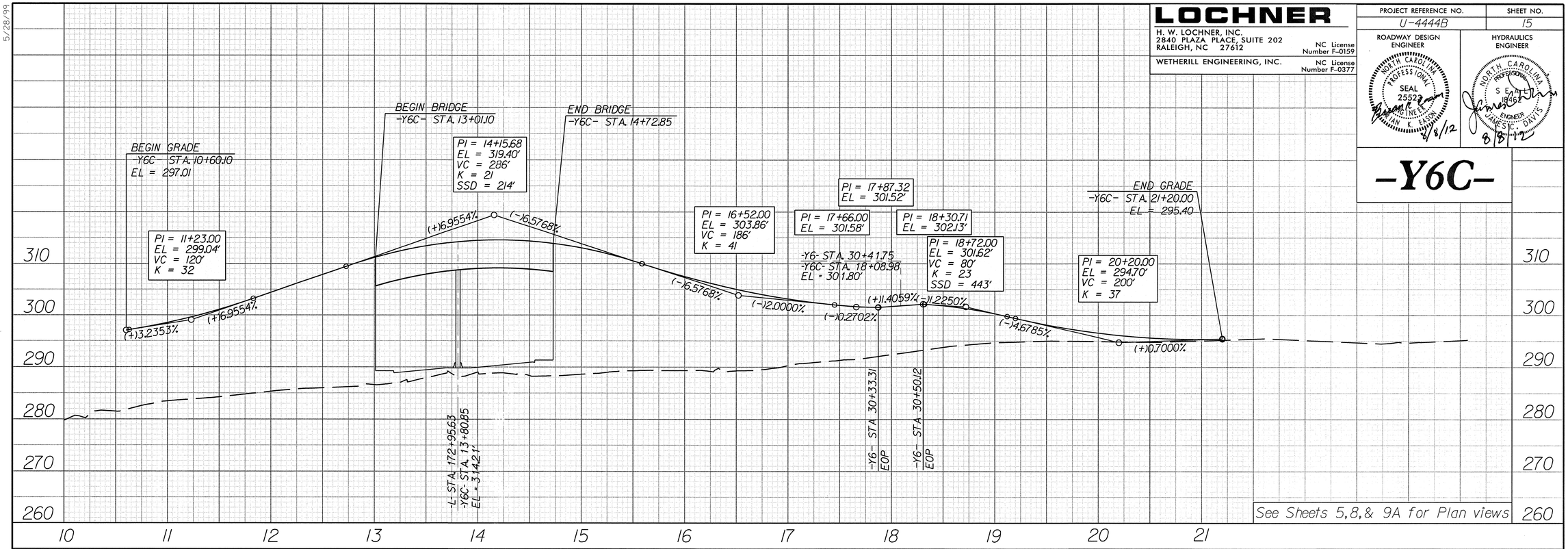
WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	15

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25529 ENGINEER IAN K. EASON
8/8/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19462 ENGINEER JAMES C. DAVIS
8/8/12

-Y6C-



See Sheets 5, 8, & 9A for Plan views

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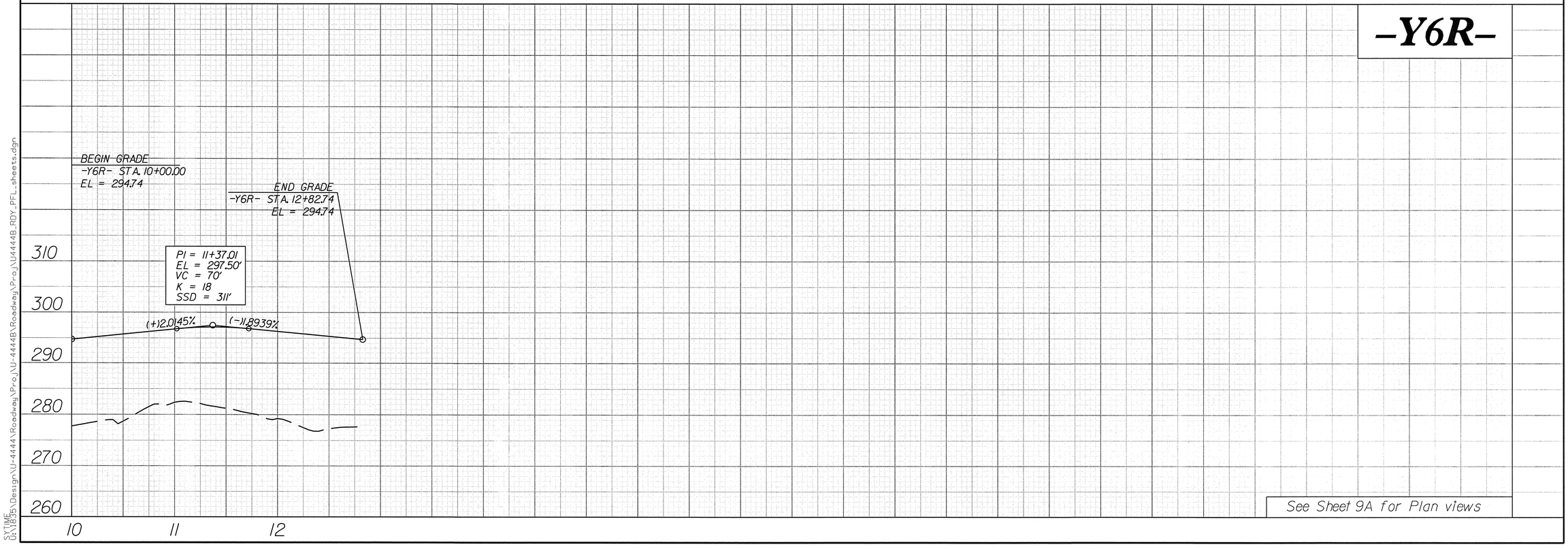

See Sheet 9A for Plan views

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5/28/99

LOCHNER

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

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	16

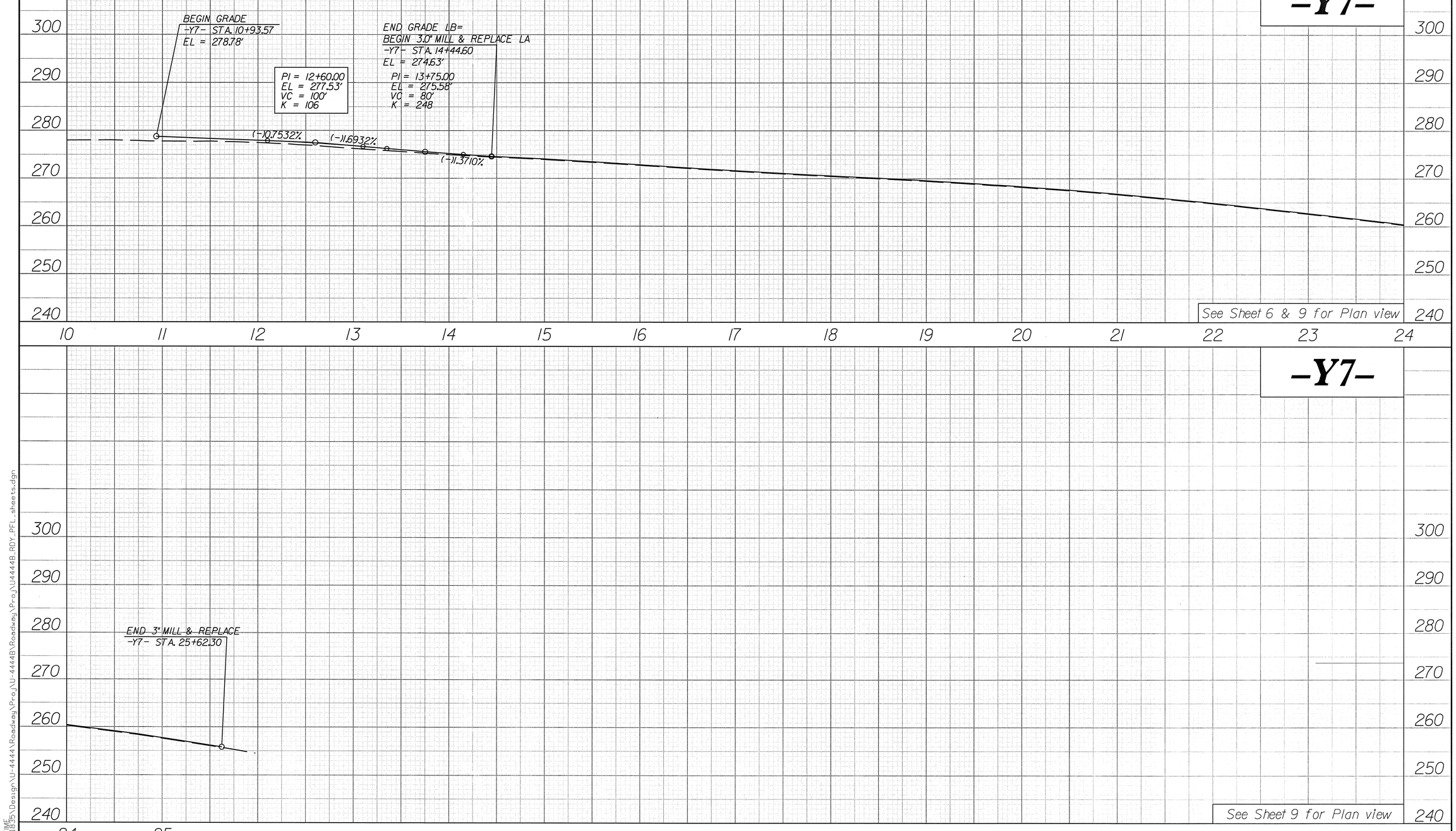
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25523 ENGINEER BRIAN K. CASON
8/8/12

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18662 ENGINEER JAMES G. DAVIS
8/8/12

-Y7-



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LOCHNER

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

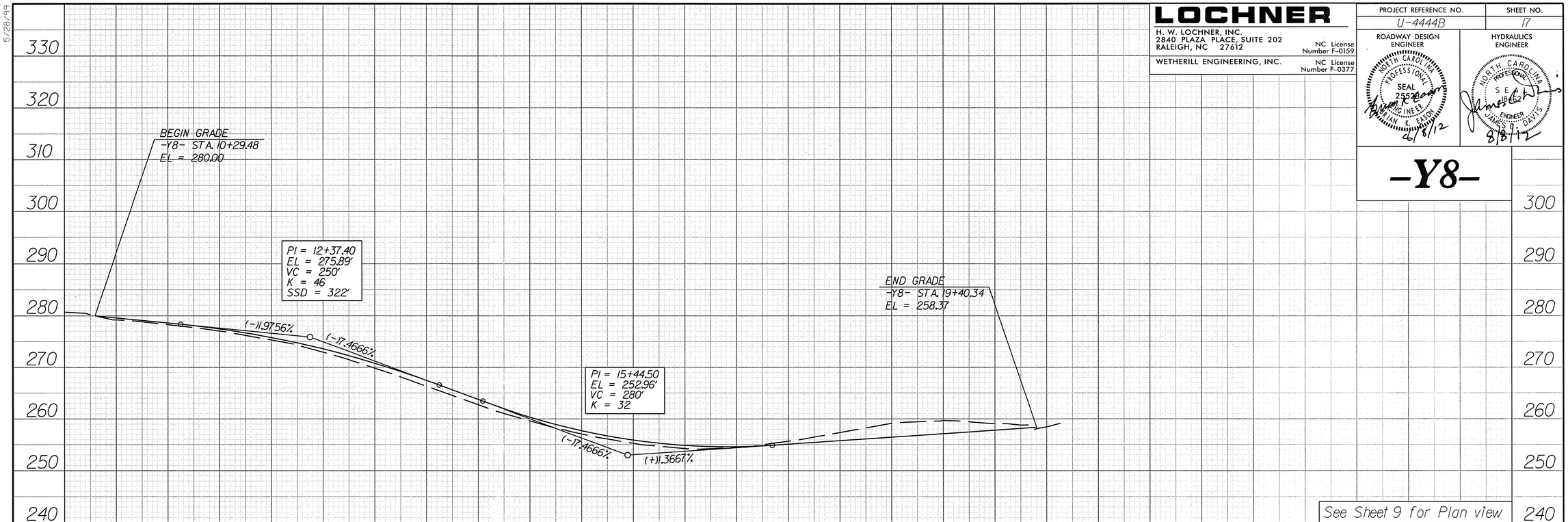
WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	17

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 25828 ENGINEER JAN K. EASON 6/8/12

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 019862 ENGINEER JAMES G. DAVIS 8/8/12

-Y8-



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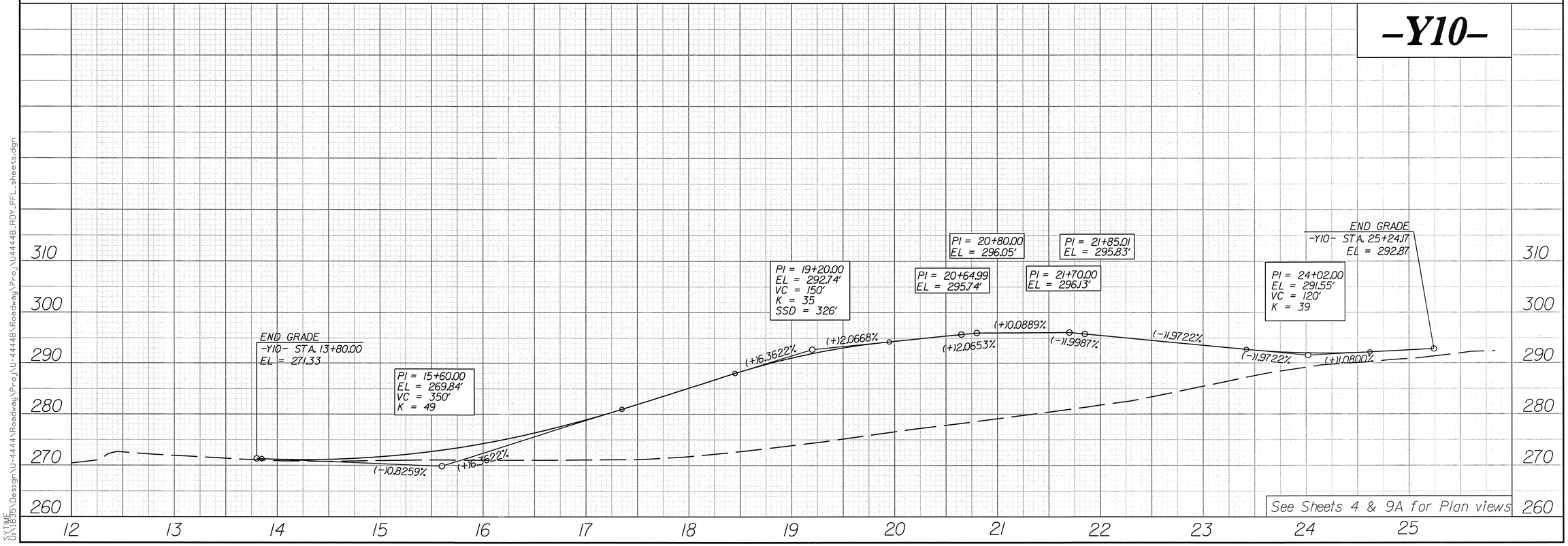

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5/28/99

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

WETHERILL ENGINEERING, INC.
NC License Number F-0377

PROJECT REFERENCE NO.	SHEET NO.
U-4444B	18

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 25536 ENGINEER MARIAN EASON
8/6/12

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19462 ENGINEER JAMES C. DAVIS
8/8/12

-Y10DR3-

-Y10- STA. 14+00.00
-Y10DR3- STA. 10+00.00
EL = 293.67

BEGIN GRADE
-Y10DR3- STA. 10+17.00
EL = 293.33

END GRADE
-Y10DR3- STA. 11+00.00
EL = 286.72

PI = 10+32.00
EL = 292.28'
VC = 30'
K = 4
SSD = 151'

PI = 10+70.00
EL = 286.60'
VC = 30'
K = 2

(-)2.0000% (-)7.0000% (-)4.9374% (+)0.4000%

See Sheet 4 for Plan view

-Y9-

BEGIN GRADE
-Y9- STA. 10+78.67
EL = 293.23

END GRADE
-Y9- STA. 12+00.00
EL = 291.05

PI = 11+50.00
EL = 290.86'
VC = 100'
K = 27

(-)3.3212% (+)0.3834%

BEGIN GRADE
-Y9- STA. 13+15.00
EL = 292.60

PI = 13+46.34
EL = 293.04'
VC = 50'
K = 11

(+)1.4037% (+)5.8056% (+)1.3278% (-)3.6722% (+)0.3346%

-Y6- STA. 27+68.8689
-Y9- STA. 14+21.3398
EL = 296.27'

-Y6- STA. 27+80.06=
-Y9- STA. 14+62.88
EL = 294.75'

295.00

END GRADE
-Y9- STA. 15+37.78
EL = 295.00

PI = 13+96.34
EL = 295.94'
VC = 50'
K = 11

See Sheet 4 for Plan view

-Y17-

BEGIN OVERLAY
-Y17- STA. 12+85.33

END OVERLAY
-Y17- STA. 14+71.98

PI = 14+00.00
EL = 276.30'
VC = 120'
K = 160

(+)0.1831% (+)0.9308%

See Sheet 6 for Plan view

-Y3C-

BEGIN GRADE
-Y3C- STA. 10+25.13
EL = 270.64

END GRADE
-Y3C- STA. 12+10.00
EL = 277.89

PI = 10+49.23
EL = 270.76'
VC = 40'
K = 6

PI = 11+65.00
EL = 276.64'
VC = 60'
K = 49
SSD = 908'

PI = 10+90.00
EL = 273.63'
VC = 40'
K = 13
SSD = 376'

(+)0.5196% (+)1.0401% (+)4.0069% (+)2.7784%

See Sheet 9A for Plan view

SYTIME
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