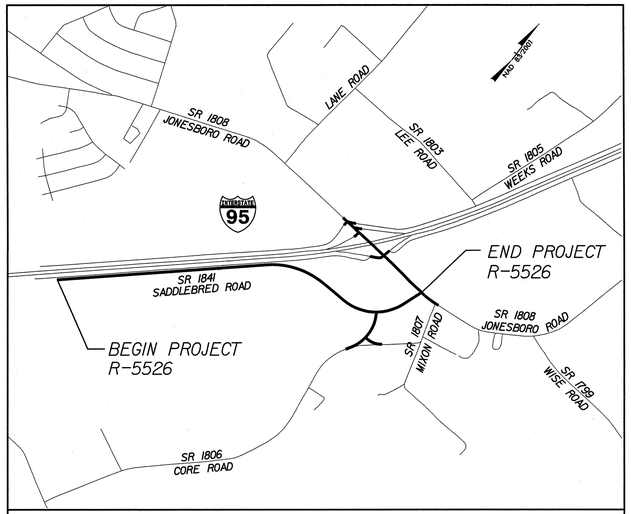
TIP PROJECT: R-5526

CONTRACT: C203456

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

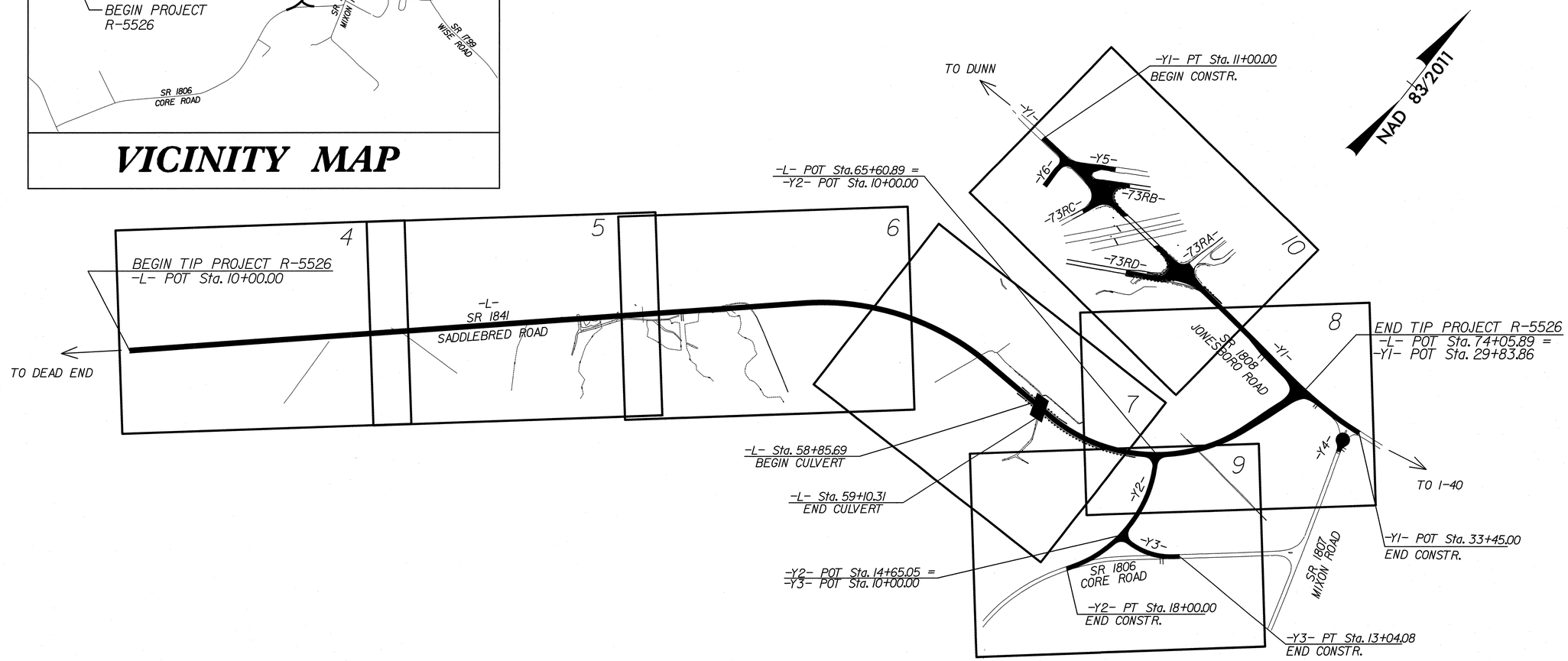
HARNETT COUNTY

LOCATION: SR 1841 (SADDLEBRED ROAD) SOUTH OF I-95 AND SR 1808 (JONESBORO ROAD)/I-95 INTERCHANGE

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5526	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
43836.1.1		PE
43836.2.D1		R/W & Util
43836.3.D1		CONST



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 2014 = 2,800
ADT 2034 = 5000
DHV = 20%
D = 60%
T = 13%
V = 50 MPH

*TTST=12% DUAL=1%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5526 = 1.209 MILES
LENGTH STRUCTURE TIP PROJECT R-5526 = 0.004 MILES
TOTAL LENGTH TIP PROJECT R-5526 = 1.213 MILES

NCDOT CONTACT: SCOTT PRIDGEN, DIVISION DESIGN ENGINEER

Prepared In the Office of:
ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 2013

LETTING DATE:
MARCH 18, 2014

DAVID W. BASS, PE
PROJECT ENGINEER

BRYAN LAMBETH, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, JR.
SIGNATURE:

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20107 ENGINEER DAVID W. BASS
1/28/14
SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

09/08/99

28-JAN-2014 08:57
R:\Saddlebred SR\Roadway\Proj\R-5526_rdy_psh_tsh.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5526	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030787 ENGINEER DAVID W. BAGGS

1/27/14

EFF. 01-17-2012

REV. 10-30-2012

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
1-D	CENTERLINE COORDINATE LIST
2 THRU 2C	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3A	SUMMARY OF DRAINAGE QUANTITIES
3B	SUMMARY OF GUARDRAIL,EARTHWORK SUMMARY, ASPHALT PAVEMENT REMOVAL SUMMARY, AND PARCEL INDEX
4 THRU 10	PLAN SHEET
11 THRU 19	PROFILE SHEET
TMP-1 THRU TMP-8	TRAFFIC CONTROL PLANS
PMP-1A THRU PMP-7	PAVEMENT MARKING PLANS
EC-1 THRU EC-18	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-12	SIGNING PLANS
SIG-1 THRU SIG-4	SIGNAL PLANS
UC-1 THRU UC- 4	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO- 7	UTILITIES BY OTHERS PLANS
X-0 THRU X-0B	CROSS SECTION SUMMARY AND INDEX SHEET
X-1 THRU X-74	CROSS-SECTIONS
S-1 THRU S-6	STRUCTURE PLANS

GENERAL NOTES:

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

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

SIDE ROADS:

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

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

DUKE ENERGY PROGRESS, CITY OF DUNN, CENTURY LINK, TIME WARNER CABLE,

HARNETT COUNTY

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

RIGHT-OF-WAY MARKERS:

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

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.72	Pipe Collar
852.01	Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets

8/17/99

27-JAN-2014 15:57
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$$$$USERNAME$$$$

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
R-5526	1-B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

PROJECT REFERENCE NO.	SHEET NO.
R-5526	1-C
Location and Surveys	

SURVEY CONTROL SHEET R-5526

FINAL ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	44+99.95	55.00	569326.0642	2125963.3885
L	48+16.60	-55.00	569598.0219	2126157.7671
L	55+26.97	-55.00	569769.5709	2126868.1623
L	55+33.95	-72.15	569786.4998	2126875.9552
L	55+43.47	55.00	569659.0981	2126881.1017
L	60+83.93	65.00	569638.0139	2127430.2789
L	61+08.33	-55.05	569760.1660	2127439.7940
L	68+02.06	65.00	570018.6113	2128076.8341
L	68+07.44	76.03	570017.0279	2128089.2112
L	73+00.00	-62.81	570533.1167	2128158.9764
L	70+40.33	-55.00	570285.3967	2128080.7332
L	61+43.82	-55.00	569765.3773	2127472.5723
L	73+43.58	78.75	570527.5839	2128306.9926
L	64+15.06	65.00	569744.1730	2127768.2010
L	41+60.00	55.00	569098.1994	2125711.1155
L	40+51.00	71.00	569013.2629	2125640.9510
L	35+00.00	71.00	568643.9303	2125232.0567
L	34+71.49	55.00	568636.6968	2125200.1782
L	24+50.00	55.00	567951.9941	2124442.1324
L	26+40.00	65.00	568071.9292	2124589.8334
L	28+50.00	55.00	568220.1121	2124738.9703
L	?+??.??	?.??	566973.3635	2123358.6740
L	?+??.??	?.??	567057.2352	2123282.9171
L	65+97.83	65.00	569856.1283	2127929.5216

FINAL ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	31+11.48	29.94	570576.4354	2128380.2377
Y1	28+63.65	44.00	570581.5649	2128128.4353
Y1	26+93.72	44.12	570601.6919	2127959.7012
Y1	25+47.36	29.49	570633.6550	2127816.1280
Y1	27+00.00	-26.08	570670.6443	2127974.3032
Y1	26+60.00	-41.00	570690.2231	2127936.3656
Y1	22+30.22	-57.00	570753.8161	2127509.9867
Y1	24+00.00	-60.00	570739.5398	2127679.7536

FINAL ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	11+38.98	50.00	569738.8978	2127876.5244
Y2	14+17.40	-50.00	569485.5347	2128023.8242
Y2	18+00.00	28.44	569143.7707	2127831.3205
Y2	18+00.00	40.00	569149.9262	2127821.5320
Y2	17+64.42	40.00	569180.0432	2127840.4712
Y2	16+67.56	40.00	569260.3122	2127882.9618
Y2	16+71.24	50.00	569261.2117	2127872.4300

FINAL ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y3	12+79.35	-50.00	569544.6399	2128205.2867
Y3	12+85.00	-30.27	569531.9050	2128221.1660

FINAL ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y4	11+35.00	30.55	570473.3114	2128556.8330
Y4	11+20.00	60.00	570478.5757	2128524.2011
Y4	11+28.00	-31.35	570498.9199	2128613.6108
Y4	11+00.00	-62.00	570534.9590	2128634.2234
Y4	10+47.00	58.91	570548.4044	2128502.8906
Y4	10+70.00	72.00	570522.5027	2128497.4724
Y4	10+45.24	-62.00	570587.0949	2128617.4604

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	567020.8817	2123329.2287
PC	44+99.95	569366.8794	2125926.5222
PT	55+43.47	569714.0576	2126883.2117
PC	59+58.15	569698.1490	2127297.5809
PT	70+40.33	570267.2622	2128132.6575
POT	74+05.89	570612.3716	2128253.1867

Y1

TYPE	STATION	NORTH	EAST
POT	10+00.00	570815.7944	2126279.8890
PC	11+67.30	570801.2697	2126446.5568
PT	12+86.35	570790.2286	2126565.0892
PC	23+04.42	570689.7736	2127578.1917
PT	25+10.38	570667.3418	2127782.9248
PC	29+09.40	570619.8008	2128179.0999
PT	33+30.37	570615.9247	2128599.2043
POT	34+84.58	570631.4700	2128752.6310

Y2

TYPE	STATION	NORTH	EAST
POT	10+00.00	569881.6666	2127858.5224
PC	10+71.89	569818.7146	2127893.2462
PT	17+64.42	569158.7495	2127874.3324
PC	18+54.36	569082.6144	2127826.4545
PT	22+06.60	568756.4539	2127699.0822

Y3

TYPE	STATION	NORTH	EAST
POT	10+00.00	569439.3689	2127970.7898
PC	10+20.57	569437.2993	2127991.2530
PT	13+04.08	569519.9269	2128254.4147
POT	19+62.87	569942.9500	2128759.4435

Y4

TYPE	STATION	NORTH	EAST
POT	10+00.00	570611.1815	2128544.5900
POT	17+01.92	569942.9500	2128759.4435

Y5

TYPE	STATION	NORTH	EAST
PC	10+00.00	570784.0926	2126626.9720
PT	10+93.50	570856.0075	2126682.9823
POT	13+71.65	570994.0959	2126924.4357

Y6

TYPE	STATION	NORTH	EAST
POT	10+00.00	570792.3951	2126542.9895
PC	10+57.11	570735.5600	2126537.3540
PT	10+94.56	570698.1643	2126535.9913
POT	13+26.80	570466.0019	2126542.0250

73RA

TYPE	STATION	NORTH	EAST
POT	10+00.00	570710.5410	2127368.7495
POT	12+70.07	570971.8459	2127436.9903

73RB

TYPE	STATION	NORTH	EAST
POT	10+00.00	570776.9048	2126699.4616
POT	13+24.32	570936.6084	2126981.7293

73RC

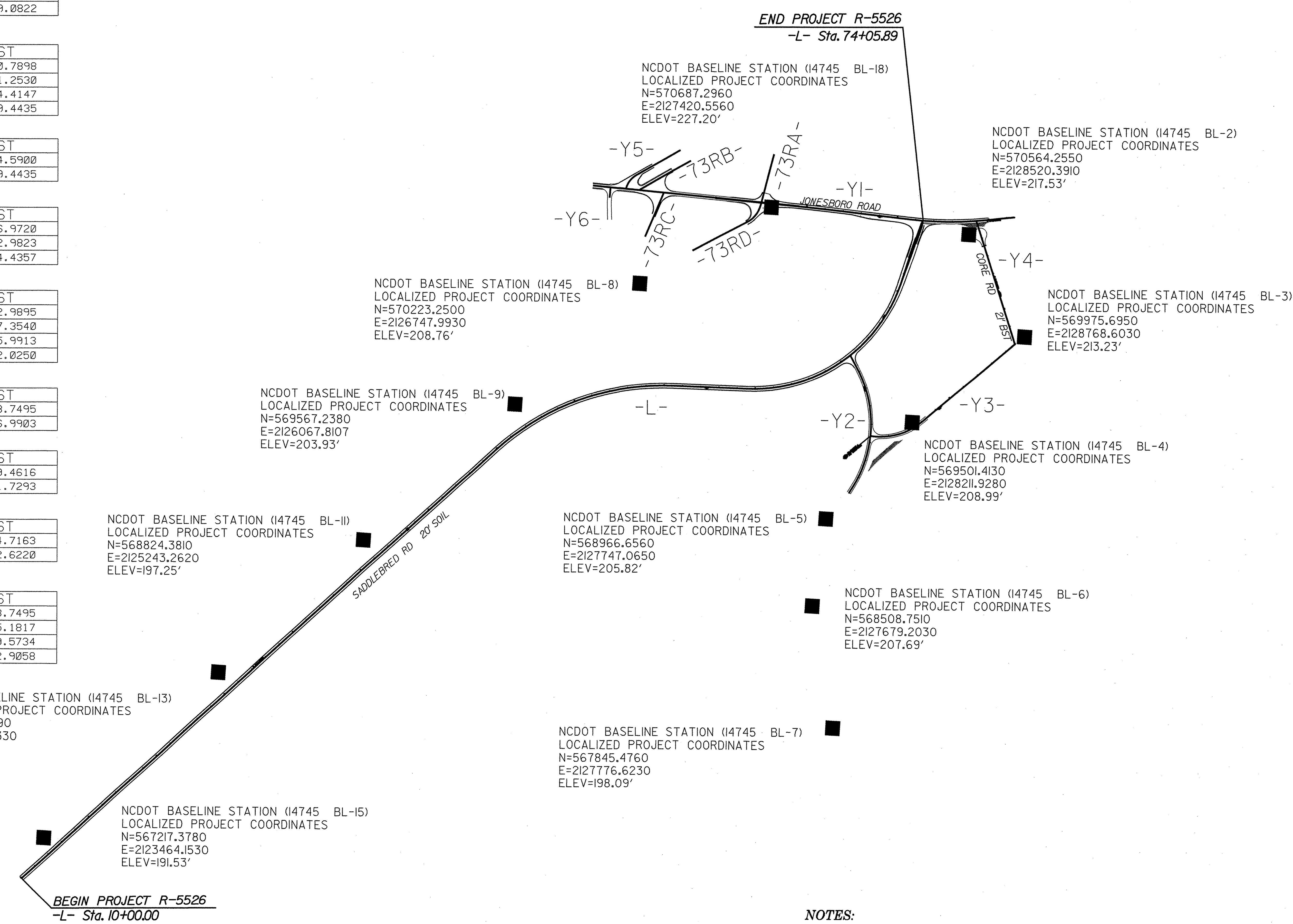
TYPE	STATION	NORTH	EAST
POT	10+00.00	570763.4935	2126834.7163
POT	12+62.42	570521.7518	2126732.6220

73RD

TYPE	STATION	NORTH	EAST
POT	10+00.00	570710.5410	2127368.7495
PC	10+14.12	570696.8795	2127365.1817
PT	11+39.13	570601.8664	2127289.5734
POT	14+73.93	570446.6879	2126992.9058

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
7	I-4745 BL-7	567845.4760	2127776.6230	198.09	61+29.94	1888.68 RT
6	I-4745 BL-6	568508.7510	2127679.2030	207.69	61+34.88	1218.43 RT
5	I-4745 BL-5	568966.6560	2127747.0650	205.82	62+09.92	784.91 RT
4	I-4745 BL-4	569501.4130	2128211.9280	208.99	65+86.05	518.14 RT
3	I-4745 BL-3	569975.6950	2128768.6030	213.23	70+04.31	697.91 RT
2	I-4745 BL-2	570564.2550	2128520.3910	217.53	OUTSIDE PROJECT LIMITS	
1	I-4745 BL-1	570651.1520	2127754.3870	218.87	72+78.03	483.69 LT
18	I-4745 BL-18	570687.2960	2127420.5560	227.20	72+02.09	810.77 LT
8	I-4745 BL-8	570223.2500	2126747.9930	208.76	54+31.10	510.07 LT
9	I-4745 BL-9	569567.2380	2126067.8107	203.93	47+27.72	74.20 LT
10	I-4745 BL-10	569150.4990	2125604.9120	198.78	41+16.24	55.00 LT
11	I-4745 BL-11	568824.3810	2125243.2620	197.25	36+29.27	55.40 LT
12	I-4745 BL-12	568464.1900	2124845.1940	197.29	30+92.43	54.93 LT
13	I-4745 BL-13	568104.3890	2124447.5330	201.78	25+56.16	54.47 LT

BM1 ELEVATION = 220.59
N 570701 E 2127752
L STATION 73+25.00 502 LEFT
PAINTED BOLT ON FLANG OF FIRE HYDRANT



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "NCDOT-72"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 478235.688(ft) EASTING: 2063962.659(ft)
ELEVATION: 128.40(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988892
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "NCDOT-72" TO -L- STATION 10+00.00 IS
N 33° 46' 07.76" 106,804.4953'
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:*
   HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   TIP####_LS_CONTROL_DATE.HTML

   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.

PROJECT REFERENCE NO.	SHEET NO.
R-5526	1-D

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CENTERLINE COORDINATE LIST

POINT #	CHAIN	STATION	NORTHING (Y)	EASTING (X)
1	-L-	10+00.00	567,020.88	2,123,329.23
2	-L-	11+00.00	567,087.91	2,123,403.44
3	-L-	12+00.00	567,154.94	2,123,477.65
4	-L-	13+00.00	567,221.97	2,123,551.86
5	-L-	14+00.00	567,289.00	2,123,626.07
6	-L-	15+00.00	567,356.03	2,123,700.28
7	-L-	16+00.00	567,423.06	2,123,774.49
8	-L-	17+00.00	567,490.09	2,123,848.70
9	-L-	18+00.00	567,557.12	2,123,922.90
10	-L-	19+00.00	567,624.15	2,123,997.11
11	-L-	20+00.00	567,691.18	2,124,071.32
12	-L-	21+00.00	567,758.21	2,124,145.53
13	-L-	22+00.00	567,825.24	2,124,219.74
14	-L-	23+00.00	567,892.27	2,124,293.95
15	-L-	24+00.00	567,959.29	2,124,368.16
16	-L-	25+00.00	568,026.32	2,124,442.37
17	-L-	26+00.00	568,093.35	2,124,516.58
18	-L-	27+00.00	568,160.38	2,124,590.79
19	-L-	28+00.00	568,227.41	2,124,665.00
20	-L-	29+00.00	568,294.44	2,124,739.21
21	-L-	30+00.00	568,361.47	2,124,813.42
22	-L-	31+00.00	568,428.50	2,124,887.63
23	-L-	32+00.00	568,495.53	2,124,961.84
24	-L-	33+00.00	568,562.56	2,125,036.05
25	-L-	34+00.00	568,629.59	2,125,110.26
26	-L-	35+00.00	568,696.62	2,125,184.47
27	-L-	36+00.00	568,763.65	2,125,258.68
28	-L-	37+00.00	568,830.68	2,125,332.88
29	-L-	38+00.00	568,897.71	2,125,407.09
30	-L-	39+00.00	568,964.74	2,125,481.30
31	-L-	40+00.00	569,031.77	2,125,555.51
32	-L-	41+00.00	569,098.80	2,125,629.72
33	-L-	42+00.00	569,165.83	2,125,703.93
34	-L-	43+00.00	569,232.86	2,125,778.14
35	-L-	44+00.00	569,299.88	2,125,852.35
36	-L-	45+00.00	569,366.91	2,125,926.56
37	-L-	46+00.00	569,431.13	2,126,003.19
38	-L-	47+00.00	569,489.50	2,126,084.35
39	-L-	48+00.00	569,541.71	2,126,169.62
40	-L-	49+00.00	569,587.46	2,126,258.51
41	-L-	50+00.00	569,626.50	2,126,350.55
42	-L-	51+00.00	569,658.63	2,126,445.23
43	-L-	52+00.00	569,683.67	2,126,542.02
44	-L-	53+00.00	569,701.47	2,126,640.40
45	-L-	54+00.00	569,711.94	2,126,739.82
46	-L-	55+00.00	569,715.03	2,126,839.75
47	-L-	56+00.00	569,711.89	2,126,939.70
48	-L-	57+00.00	569,708.05	2,127,039.63
49	-L-	58+00.00	569,704.22	2,127,139.55
50	-L-	59+00.00	569,700.38	2,127,239.48
51	-L-	60+00.00	569,697.57	2,127,339.43
52	-L-	61+00.00	569,704.53	2,127,439.13
53	-L-	62+00.00	569,723.15	2,127,537.32
54	-L-	63+00.00	569,753.16	2,127,632.65
55	-L-	64+00.00	569,794.15	2,127,723.80
56	-L-	65+00.00	569,845.56	2,127,809.51
57	-L-	66+00.00	569,906.67	2,127,888.59
58	-L-	67+00.00	569,976.64	2,127,959.95
59	-L-	68+00.00	570,054.51	2,128,022.60
60	-L-	69+00.00	570,139.19	2,128,075.68
61	-L-	70+00.00	570,229.51	2,128,118.46
62	-L-	71+00.00	570,323.59	2,128,152.33
63	-L-	72+00.00	570,418.00	2,128,185.30
64	-L-	73+00.00	570,512.41	2,128,218.27
65	-L-	74+00.00	570,606.81	2,128,251.25
66	-L-	74+05.89	570,612.37	2,128,253.19

POINT #	CHAIN	STATION	NORTHING (Y)	EASTING (X)
67	-Y1-	10+00.00	570,815.79	2,126,279.89
68	-Y1-	11+00.00	570,807.11	2,126,379.51
69	-Y1-	12+00.00	570,798.38	2,126,479.13
70	-Y1-	13+00.00	570,788.88	2,126,578.68
71	-Y1-	14+00.00	570,779.01	2,126,678.19
72	-Y1-	15+00.00	570,769.15	2,126,777.70
73	-Y1-	16+00.00	570,759.28	2,126,877.21
74	-Y1-	17+00.00	570,749.41	2,126,976.72
75	-Y1-	18+00.00	570,739.55	2,127,076.24
76	-Y1-	19+00.00	570,729.68	2,127,175.75
77	-Y1-	20+00.00	570,719.81	2,127,275.26
78	-Y1-	21+00.00	570,709.94	2,127,374.77
79	-Y1-	22+00.00	570,700.08	2,127,474.28
80	-Y1-	23+00.00	570,690.21	2,127,573.80
81	-Y1-	24+00.00	570,679.89	2,127,673.26
82	-Y1-	25+00.00	570,668.57	2,127,772.62
83	-Y1-	26+00.00	570,656.66	2,127,871.91
84	-Y1-	27+00.00	570,644.75	2,127,971.20
85	-Y1-	28+00.00	570,632.83	2,128,070.48
86	-Y1-	29+00.00	570,620.92	2,128,169.77
87	-Y1-	30+00.00	570,611.14	2,128,269.28
88	-Y1-	31+00.00	570,606.56	2,128,369.16
89	-Y1-	32+00.00	570,607.22	2,128,469.15
90	-Y1-	33+00.00	570,613.10	2,128,568.97
91	-Y1-	34+00.00	570,622.94	2,128,668.48
92	-Y1-	34+84.58	570,631.47	2,128,752.63
93	-Y2-	10+00.00	569,881.67	2,127,858.52
94	-Y2-	11+00.00	569,793.82	2,127,906.29
95	-Y2-	12+00.00	569,701.19	2,127,943.70
96	-Y2-	13+00.00	569,603.92	2,127,966.48
97	-Y2-	14+00.00	569,504.31	2,127,974.09
98	-Y2-	15+00.00	569,404.71	2,127,966.34
99	-Y2-	16+00.00	569,307.47	2,127,943.42
100	-Y2-	17+00.00	569,214.89	2,127,905.87
101	-Y2-	18+00.00	569,128.63	2,127,855.39
102	-Y2-	19+00.00	569,043.40	2,127,803.11
103	-Y2-	20+00.00	568,953.78	2,127,758.86
104	-Y2-	21+00.00	568,859.93	2,127,724.46
105	-Y2-	22+00.00	568,762.94	2,127,700.31
106	-Y2-	22+06.60	568,756.45	2,127,699.08
107	-Y3-	10+00.00	569,439.37	2,127,970.79
108	-Y3-	11+00.00	569,438.30	2,128,070.51
109	-Y3-	12+00.00	569,464.79	2,128,166.58
110	-Y3-	13+00.00	569,517.29	2,128,251.30
111	-Y3-	14+00.00	569,581.52	2,128,327.94
112	-Y3-	15+00.00	569,645.73	2,128,404.60
113	-Y3-	16+00.00	569,709.94	2,128,481.26
114	-Y3-	17+00.00	569,774.15	2,128,557.92
115	-Y3-	18+00.00	569,838.37	2,128,634.58
116	-Y3-	19+00.00	569,902.58	2,128,711.24
117	-Y3-	19+62.87	569,942.95	2,128,759.44
118	-Y4-	10+00.00	570,611.18	2,128,544.59
119	-Y4-	11+00.00	570,515.98	2,128,575.20
120	-Y4-	12+00.00	570,420.78	2,128,605.81
121	-Y4-	13+00.00	570,325.58	2,128,636.42
122	-Y4-	14+00.00	570,230.38	2,128,667.03
123	-Y4-	15+00.00	570,135.18	2,128,697.64
124	-Y4-	16+00.00	570,039.98	2,128,728.25
125	-Y4-	17+00.00	569,944.78	2,128,758.86
126	-Y4-	17+01.92	569,942.95	2,128,759.44

POINT #	CHAIN	STATION	NORTHING (Y)	EASTING (X)
127	-Y5-	10+00.00	570,784.09	2,126,626.97
128	-Y5-	11+00.00	570,859.23	2,126,688.62
129	-Y5-	12+00.00	570,908.88	2,126,775.43
130	-Y5-	13+00.00	570,958.52	2,126,862.24
131	-Y5-	13+71.65	570,994.10	2,126,924.44
132	-Y6-	10+00.00	570,792.40	2,126,542.99
133	-Y6-	11+00.00	570,692.72	2,126,536.13
134	-Y6-	12+00.00	570,592.76	2,126,538.73
135	-Y6-	13+00.00	570,492.79	2,126,541.33
136	-Y6-	13+26.80	570,466.00	2,126,542.03
137	-73RA-	10+00.00	570,710.54	2,127,368.75
138	-73RA-	11+00.00	570,807.30	2,127,394.02
139	-73RA-	12+00.00	570,904.05	2,127,419.29
140	-73RA-	12+70.07	570,971.85	2,127,436.99
141	-73RB-	10+00.00	570,776.90	2,126,699.46
142	-73RB-	11+00.00	570,826.15	2,126,786.50
143	-73RB-	12+00.00	570,875.39	2,126,873.53
144	-73RB-	13+00.00	570,924.63	2,126,960.57
145	-73RB-	13+24.32	570,936.61	2,126,981.73
146	-73RC-	10+00.00	570,763.49	2,126,834.72
147	-73RC-	11+00.00	570,671.37	2,126,795.81
148	-73RC-	12+00.00	570,579.25	2,126,756.91
149	-73RC-	12+62.42	570,521.75	2,126,732.62
150	-73RD-	10+00.00	570,710.54	2,127,368.75
151	-73RD-	11+00.00	570,624.30	2,127,321.50
152	-73RD-	12+00.00	570,573.65	2,127,235.64
153	-73RD-	13+00.00	570,527.30	2,127,147.03
154	-73RD-	14+00.00	570,480.96	2,127,058.42
155	-73RD-	14+73.93	570,446.69	2,126,992.91

POINT #	CHAIN	STATION	NORTHING (Y)	EASTING (X)

POINT #	CHAIN	STATION	NORTHING (Y)	EASTING (X)

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PROJECT REFERENCE NO.	SHEET NO.
R-5526	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

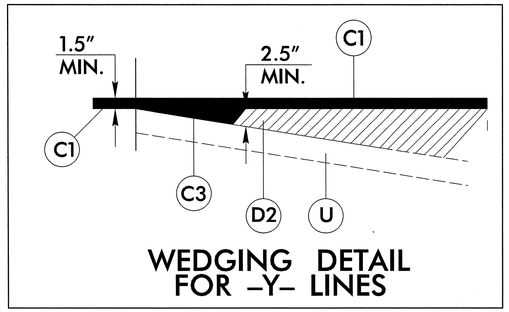
NORTH CAROLINA PROFESSIONAL SEAL 29007 ENGINEER DAVID W. GASS 12/30/13

NORTH CAROLINA PROFESSIONAL SEAL 031484 ENGINEER VLADIMIR G. MITCHEV 01/30/14

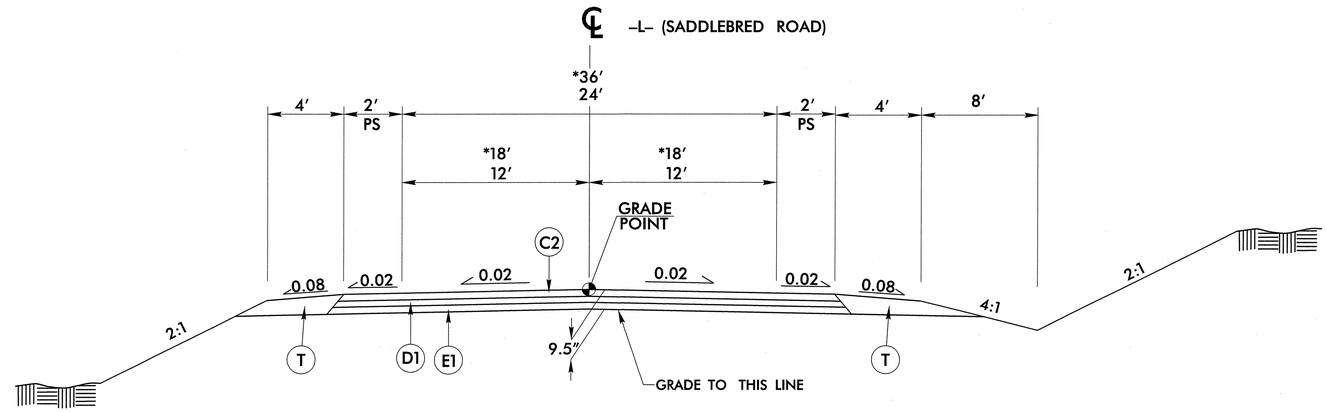
PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD., IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD.PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2″ IN DEPTH OR GREATER THAN 2″ IN DEPTH.
D1	PROP. APPROX. 2.5″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
J1	PROP. 6″ AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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



WEDGING DETAIL FOR –Y– LINES



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:

–L– STA. 10+00.00 TO STA. 69+00.00

*–L– STA. 69+00.00 TO STA. 73+95.00

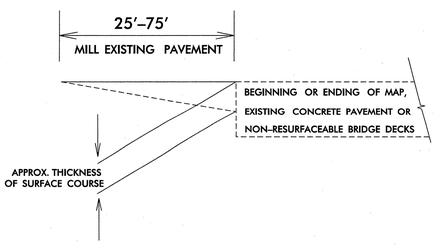
MILLING AT PAVEMENT TIE–INS

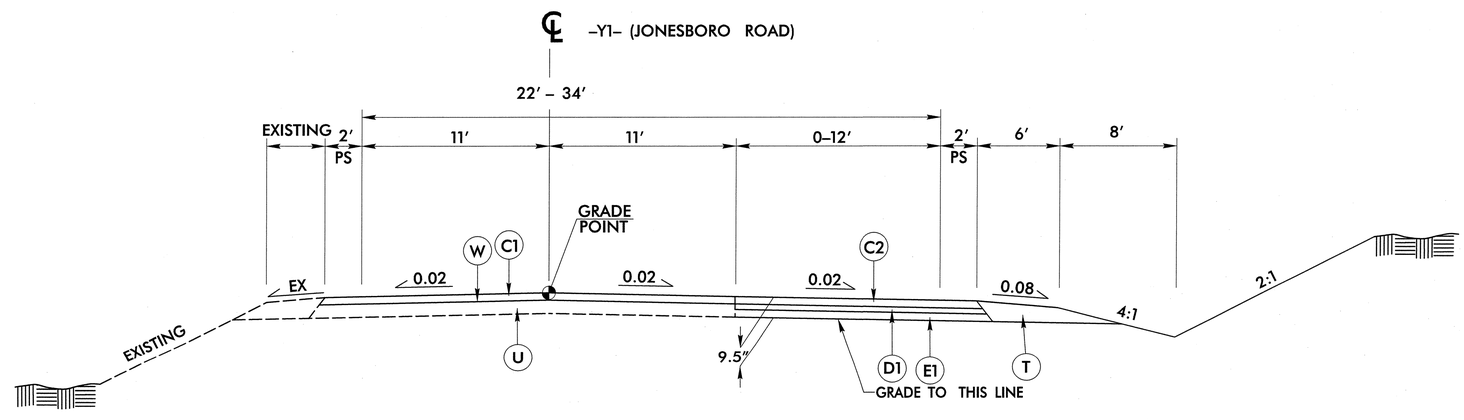
NOTES TO CONTRACTOR

For surface mixes over 1″ in thickness, mill the existing pavement in acoordance with the following sketch as directed by the Engineer.

Locations shall include ties into existing concrete pavement, at bridge approaches where the bridge will not be resurfaced, and at the beginning and ending point of each resurfacing map.

Perform the work in accordance with Section 607 of the January 2012 North Carolina Department of Transportation Standard Specifications for Roads and Structures. Resurfacing will be accomplished at the same time as the milling operation.





TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:

–Y1– STA. 10+00.00 TO STA. 16+88.5 +/– (BEGIN BRIDGE)
(END BRIDGE) –Y1– STA. 19+13.1 +/– TO STA. 33+45.00

RESURFACE FROM –Y1– STA 26+70.00 TO STA 33+45.00 AT A DEPTH OF 1 1/2″

6/2/99

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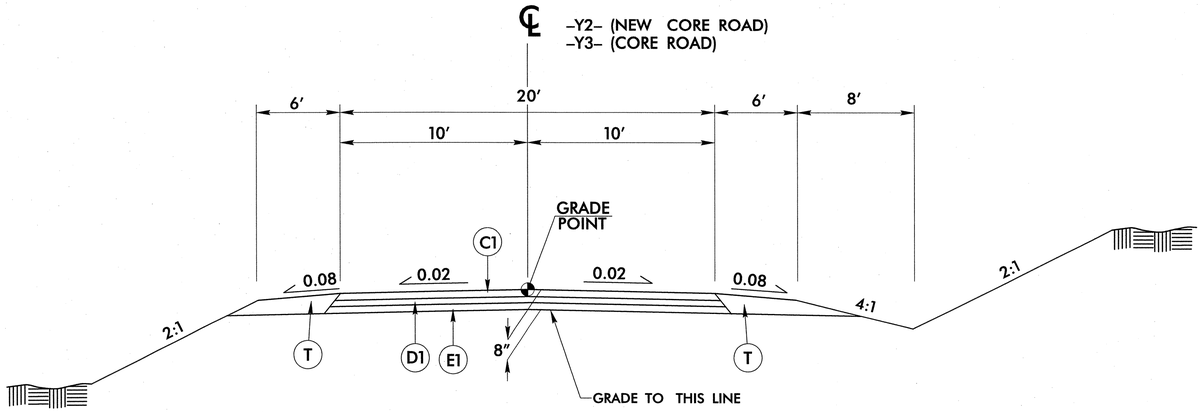
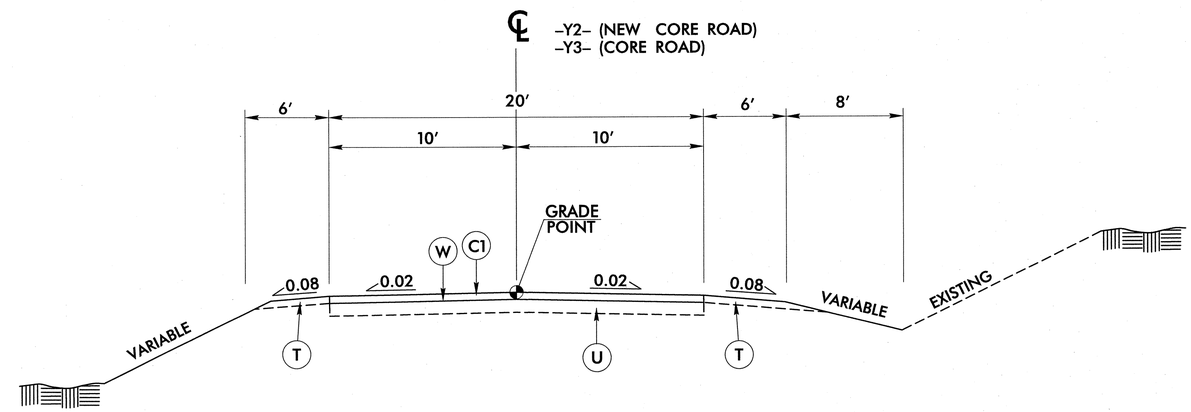
PROJECT REFERENCE NO.	SHEET NO.
R-5526	2A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:

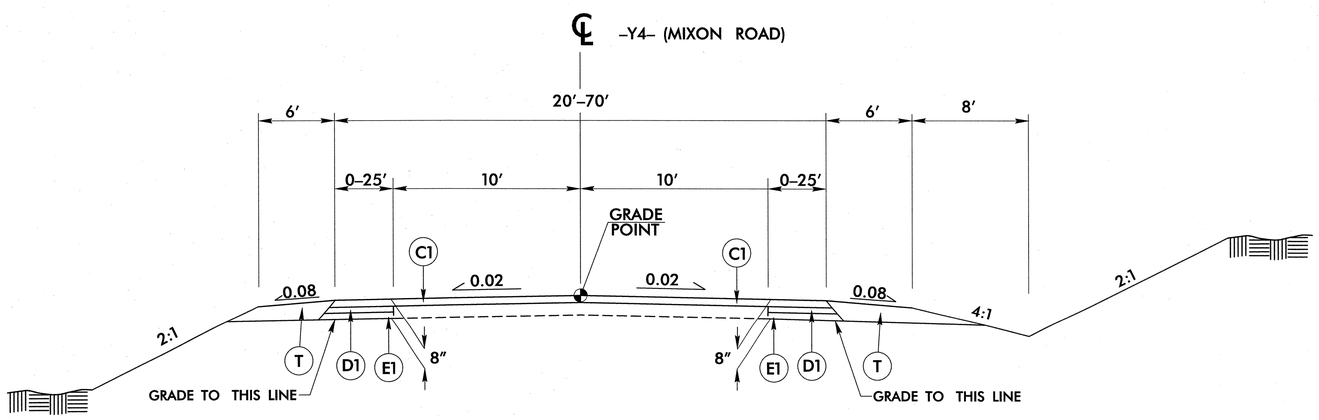
–Y2– STA. 10+12.17 TO STA. 17+79.00
–Y3– STA. 10+10.00 TO STA. 12+90.29



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AS FOLLOWS:

–Y2– STA. 17+79.00 TO STA. 18+00.00
–Y3– STA. 12+90.29 TO STA. 13+30.00



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5 AS FOLLOWS:

–Y4– STA. 10+41.97 TO STA. 11+43.51

C1	1.5″ S9.5B
C2	3″ S9.5B
D1	2.5″ I19.0B
E1	4″ B25.0B
T	EARTH
U	EX. PAVEMENT
W	WEDGING

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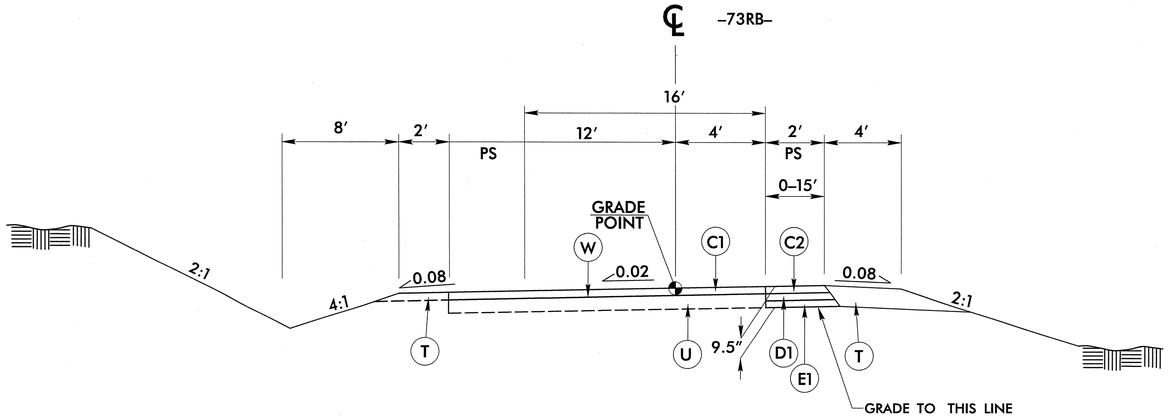
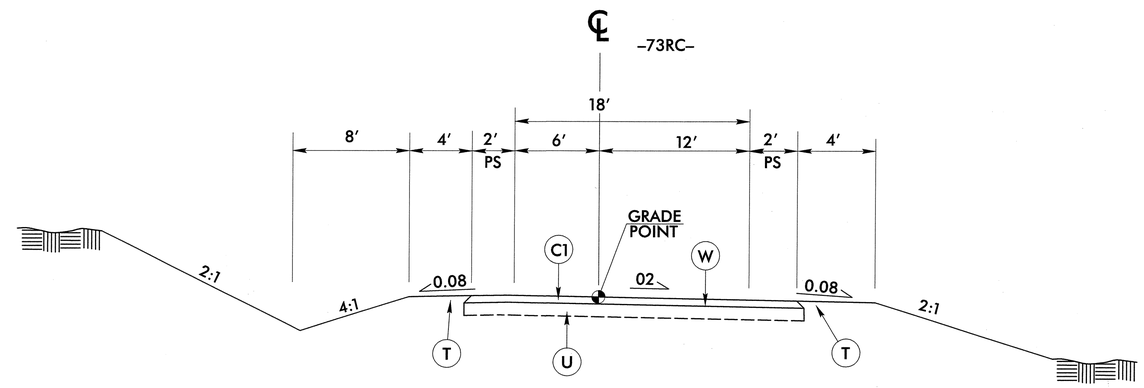
PROJECT REFERENCE NO.	SHEET NO.
R-5526	2B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6 AS FOLLOWS:

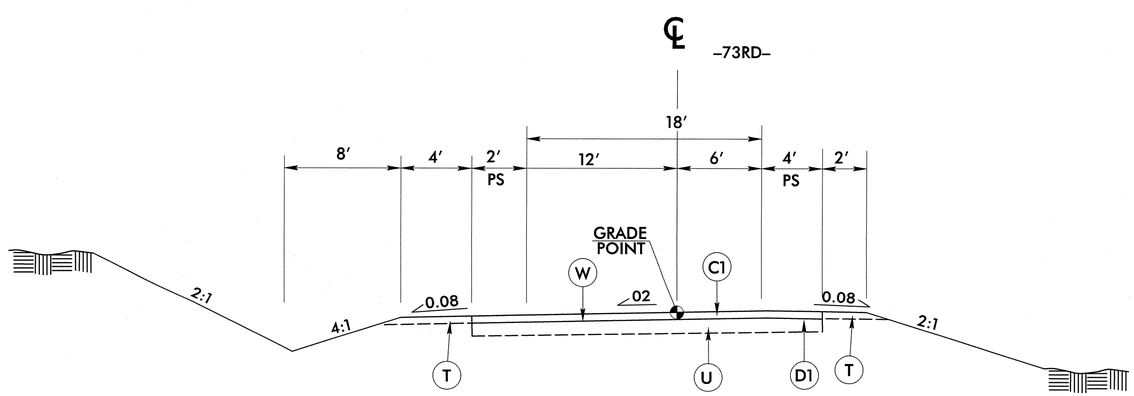
-73RB- STA. 10+19.10 TO STA. 12+10.00



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7 AS FOLLOWS:

-73RC- STA. 10+11.52 TO STA. 11+40.00



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8 AS FOLLOWS:

-73RD- STA. 10+11.14 TO STA. 13+10.00

C1	1.5" S9.5B
C2	3" S9.5B
D1	2.5" I19.0B
E1	4" B25.0B
T	EARTH
U	EX. PAVEMENT
W	WEDGING

6/2/99

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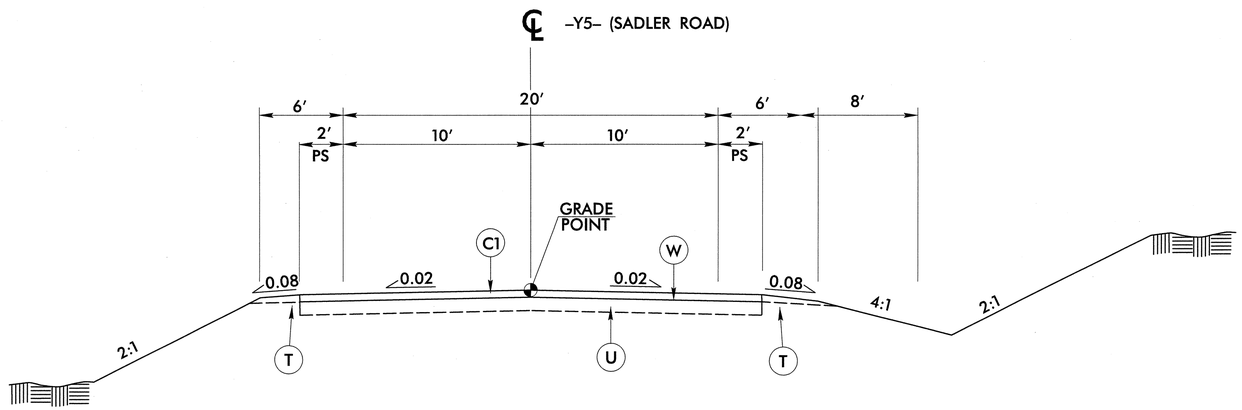
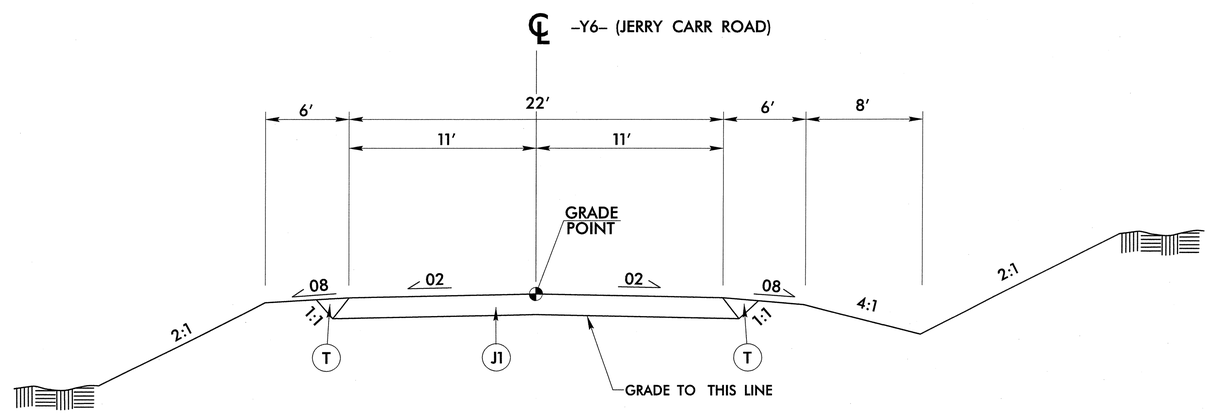
PROJECT REFERENCE NO.	SHEET NO.
R-5526	2C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9 AS FOLLOWS:

-Y5- STA. 10+11.28 TO STA. 12+00.00



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10 AS FOLLOWS:

-Y6- STA. 10+11.00 TO STA. 11+75.00

C1	1.5" S9.5B
J1	6" ABC
T	EARTH
U	EX. PAVEMENT
W	WEDGING

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CHECKED BY:	DATE:

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUB–REGIONAL

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

PROJECT REFERENCE NO.	SHEET NO.
R-5526	3-A

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

STATION (SIZE / THICKNESS OR GAUGE)	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
-L- Sta. 33+33	CL	501			191.6	191.4	
-L- Sta. 35+30	LT	502					
-L- Sta. 35+30	CL	502	503		191.0	190.5	
-L- Sta. 38+71	RT	601					
-L- Sta. 40+99	LT	602					
-L- Sta. 40+99	CL	602	603		192.9	192.2	
-Y2- Sta. 10+49	RT	801					
-Y2- Sta. 10+49	CL	801	802		202.9	202.0	
-Y4- Sta. 10+73	RT	803					
-Y4- Sta. 10+73	RT	803	804				
-Y4- Sta. 11+25	LT	805					
-Y1- Sta. 27+00	RT	806					
-Y3- Sta. 10+32	CL	901					
-Y3- Sta. 12+45	RT	902					
PROJECT TOTALS							

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

STATION	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- Sta. 33+33												
-L- Sta. 35+30												
-L- Sta. 35+30												
-L- Sta. 38+71								40				
-L- Sta. 40+99												
-L- Sta. 40+99												
-Y2- Sta. 10+49												
-Y2- Sta. 10+49												
-Y4- Sta. 10+73												
-Y4- Sta. 10+73												
-Y4- Sta. 11+25		16										
-Y1- Sta. 27+00		32										
-Y3- Sta. 10+32												
-Y3- Sta. 12+45		16										
PROJECT TOTALS		64						40				

C.S. PIPE

STATION	12"	15"	18"	24"	36"	42"	48"
THICKNESS OR GAUGE	.064	.064	.064	.064	.079	.109	.109
-L- Sta. 33+33							
-L- Sta. 35+30							
-L- Sta. 35+30							
-L- Sta. 38+71							
-L- Sta. 40+99							
-L- Sta. 40+99							
-Y2- Sta. 10+49							
-Y2- Sta. 10+49							
-Y4- Sta. 10+73							
-Y4- Sta. 10+73							
-Y4- Sta. 11+25							
-Y1- Sta. 27+00							
-Y3- Sta. 10+32							
-Y3- Sta. 12+45							
PROJECT TOTALS							

R.C. PIPE (CLASS III)

STATION	15"	18"	24"	30"	36"	42"	48"
-L- Sta. 33+33							
-L- Sta. 35+30							
-L- Sta. 35+30							
-L- Sta. 38+71							
-L- Sta. 40+99							
-L- Sta. 40+99							
-Y2- Sta. 10+49							
-Y2- Sta. 10+49						116	
-Y4- Sta. 10+73							
-Y4- Sta. 10+73				36			
-Y4- Sta. 11+25							
-Y1- Sta. 27+00							
-Y3- Sta. 10+32							
-Y3- Sta. 12+45							
PROJECT TOTALS				36		116	

R.C. PIPE (CLASS IV)

STATION	12"	15"	18"	24"	30"	36"	42"	48"
-L- Sta. 33+33			84					
-L- Sta. 35+30								
-L- Sta. 35+30						84		
-L- Sta. 38+71								
-L- Sta. 40+99								
-L- Sta. 40+99						100		
-Y2- Sta. 10+49								
-Y2- Sta. 10+49								
-Y4- Sta. 10+73								
-Y4- Sta. 10+73								
-Y4- Sta. 11+25								
-Y1- Sta. 27+00								
-Y3- Sta. 10+32			80					
-Y3- Sta. 12+45								
PROJECT TOTALS			164			184		

STATION	**" R. C. PIPE (CLASS V)	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	ENDWALLS CU. YDS. 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'	LIN. *FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02
-L- Sta. 33+33											
-L- Sta. 35+30						3.4					
-L- Sta. 35+30											
-L- Sta. 38+71											
-L- Sta. 40+99						3.4					
-L- Sta. 40+99											
-Y2- Sta. 10+49						4.5					
-Y2- Sta. 10+49											
-Y4- Sta. 10+73											
-Y4- Sta. 10+73											
-Y4- Sta. 11+25											
-Y1- Sta. 27+00											
-Y3- Sta. 10+32											
-Y3- Sta. 12+45											
PROJECT TOTALS						11.3					

STATION	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	M.H. FRAME & COVER STD. 840.54	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.20	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- Sta. 33+33																20	18" RCP
-L- Sta. 35+30																	36" ENDWALL
-L- Sta. 35+30																28	30" RCP
-L- Sta. 38+71																	
-L- Sta. 40+99																	36" ENDWALL
-L- Sta. 40+99																40	30" RCP
-Y2- Sta. 10+49																	42" ENDWALL
-Y2- Sta. 10+49																	
-Y4- Sta. 10+73														0.656			30" COLLAR
-Y4- Sta. 10+73																	
-Y4- Sta. 11+25																20	15" RCP
-Y1- Sta. 27+00																56	15" RCP
-Y3- Sta. 10+32																60	15" RCP
-Y3- Sta. 12+45																24	15" RCP
PROJECT TOTALS														0.656		248	

ABBREVIATIONS

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

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5526	3-B

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 10+00	-L- 36+50	16,289	2,544	0	13,754
SUBTOTALS: #1		16,289	2,544	0	13,745
-L- 36+50	-L- 58+87.11	4,789	4,957	168	0
SUBTOTALS: #2		4,789	4,957	168	0
-L- 59+08.11	-L- 73+81.87	1,152	13,445	12,293	0
-Y2- 10+12	-Y2- 18+00	368	3,831	3,463	0
-Y3- 10+12	-Y3- 13+00	706	307	0	399
-Y4- 10+41.97	-Y4- 11+43.51	161	79	0	82
-Y1- RIGHT 22+61	-Y1- RIGHT 29+00	274	610	337	0
SUBTOTALS: #3		2,661	18,273	16,093	481
-73RB- 10+23.75	-73RB- 12+10	9	14	5	0
-Y5- 10+12	-Y5- 12+00	122	49	0	73
-Y1- LEFT 11+00	-Y1- LEFT 16+88	3	15	12	0
SUBTOTALS: #4		134	78	17	73
-73RC- 10+12	-73RC- 13+00	485	169	0	316
-Y6- 10+12	-Y6- 11+75	48	122	74	0
-Y1- RIGHT 11+00	-Y1- RIGHT 16+88	3	88	85	0
SUBTOTALS: #5		536	380	160	316
-73RA- 10+12	-73RA- 10+55	3	0	0	3
-Y1- LEFT 19+13	-Y1- LEFT 26+50	291	313	23	0
SUBTOTALS: #6		294	313	23	3
-73RD- 10+12	-73RD- 13+00	490	142	0	348
-Y1- RIGHT 19+13	-Y1- RIGHT 22+61	23	9	0	14
SUBTOTALS: #7		513	151	0	362
TOTALS:		25,216	26,696	16,456	14,980
LOSS DUE TO C&G (5%):		-1,260		1,260	
USE SUIT. WASTE TO REPLACE BORROW:				-13,515	-13,515
PROJECT TOTALS:		23,956	26,696	4,206	1,465
REPLACE TOPSOIL ON BORROW PIT (5%):				210	
GRAND TOTALS:		23,956	26,696	4,416	1,465
SAY:		24,000		4,500	

UNDERCUT EXCAVATION = 1,200 CY (CONTINGENCY)
SHALLOW UNDERCUT = 300 CY (CONTINGENCY)
SELECT GRANULAR MATERIAL = 1,500 CY (CONTINGENCY)
CLASS IV SUBGRADE EXCAVATION = 300 TONS (CONTINGENCY)

SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	SQ. YARDS
-Y2-	14+03	17+75	LT	829
-Y4-	10+11	10+42	LT/RT	371
-73RD-	10+72	13+00	RT	211
-73RD-	10+12	11+23	LT	322
			TOTAL:	1,733
			SAY:	1,750

PARCEL INDEX

PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME
1	4 & 5	WEEKS FARMS, INC.
2	5	ROY S. TART & RICKY D.TART
3	5	ROY S. TART
4	5 & 6	HAZEL B. MCLAMB
5	6 & 7	OLA BRYANT IVEY
6	6	CORE ENTERPRISES
7	7, 8 & 9	BRENDA SKINNER
8	7 & 8	J.S. BRYANT
9	8 & 9	BETH L. HUDSON
10	8 & 9	JAMES JACKSON
11	8	BLACK RIVER INVESTMENTS, INC.
12	8	DALERIE C. HUDSON
13	8	DAVID EASON
14	9	TONY LEE THOMPSON
15	9	LORON D. JOHNSON
16	9	HAYWOOD TURNER
17	8 & 10	J.S. BRYANT
18	8 & 10	LEE MOORE OIL COMPANY
19	10	LEE MOORE OIL COMPANY

"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	B-77	GRAU 350	M-350	TYPE III	CAT-1	VI MOD	BIC	AT-1	EA	G	NG				
-Y1-	15+61.95	16+23.04	LT	31.25'	60'		16+50.00		6'	9'													1					87.5'		
-Y1-	22+35.03	2360.03	LT	125'			23+00.00		6'	9'	50'		1'				1													
-73RD-	10+67.16	11+91.03	RT	50'	125'		10+55.00		6'	9'	50'		1'				1											75'		
-73RD-	10+52.26	12+99.66	LT	168.75'	95'		12+00.00	11+00.00	6'	9'	50'		1'				1						1					312.5'		
-L-	56+87.00	61+15.00	RT																											
-L-	56+87.00	62+55.00	LT																											
SUBTOTAL:				375'	280'												3						2					475'		
LESS 3 GRAU-350 @ 50' EACH				150'																										
LESS 2 AT-1 @ 6.25' EACH				12.5'																										
PROJECT TOTALS:				212.5'	280'		NOTE: 5 ADDITIONAL GUARDRAIL POST										3						2					475'		
SAY:				212.5'	280'												3						2					475'		

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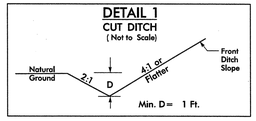
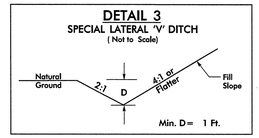
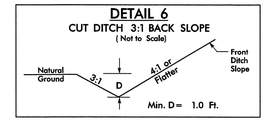
PROJECT REFERENCE NO.	SHEET NO.
R-5526	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



FROM STA. 13+50 TO STA. 15+50 -L- LT



FROM STA. 11+50 TO STA. 13+50 -L- LT



FROM STA. 20+53.90 TO STA. 33+28 -L- LT
FROM STA. 20+53.90 TO STA. 30+00 -L- RT

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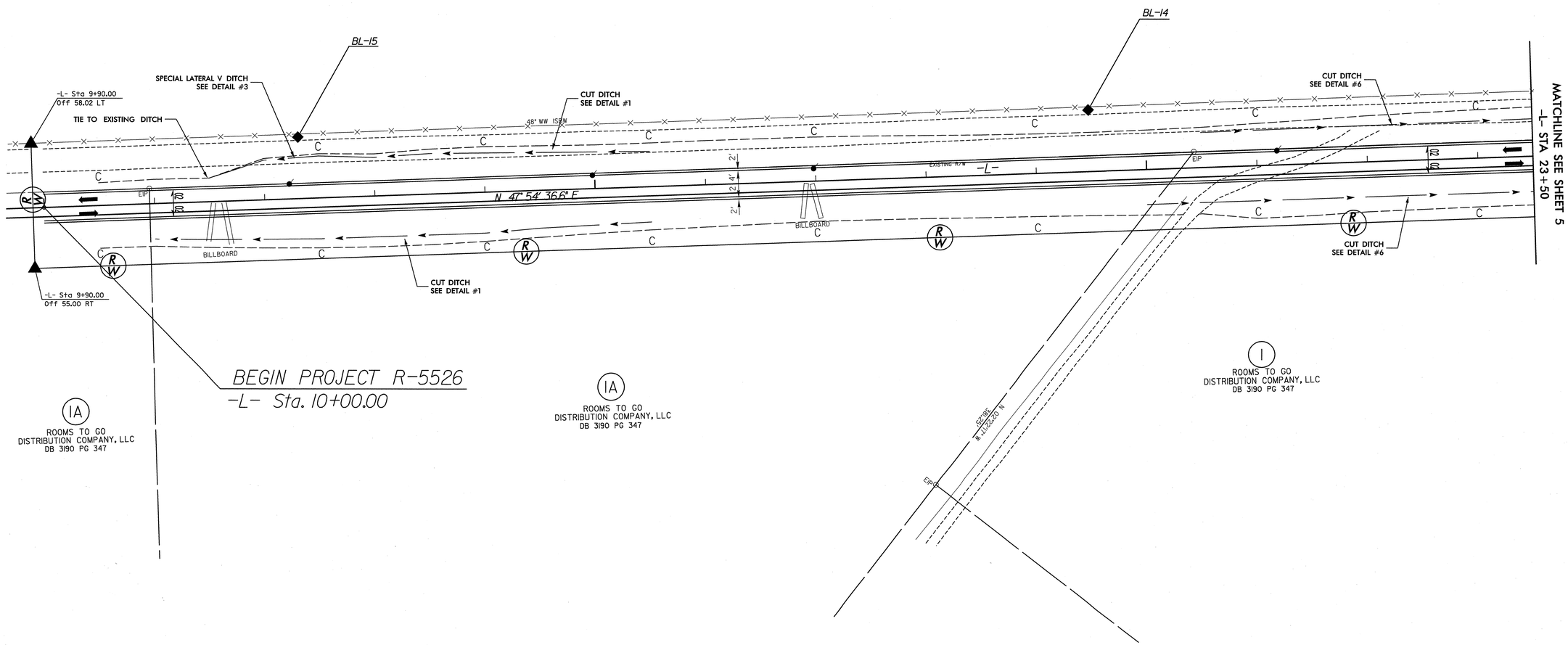

NOTE: SEE SHEET 11 FOR -L- PROFILE

8/17/99

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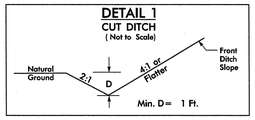
PROJECT REFERENCE NO.	SHEET NO.
R-5526	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20107 ENGINEER DAVID W. BASS 3/3/14

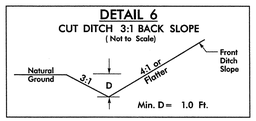
NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER HENRY WELLS, JR. 3/7/14

DETAIL 1
CUT DITCH
(Not to Scale)



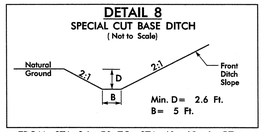
FROM STA. 33+28 TO STA. 43+50 -L- LT

DETAIL 6
CUT DITCH 3:1 BACK SLOPE
(Not to Scale)

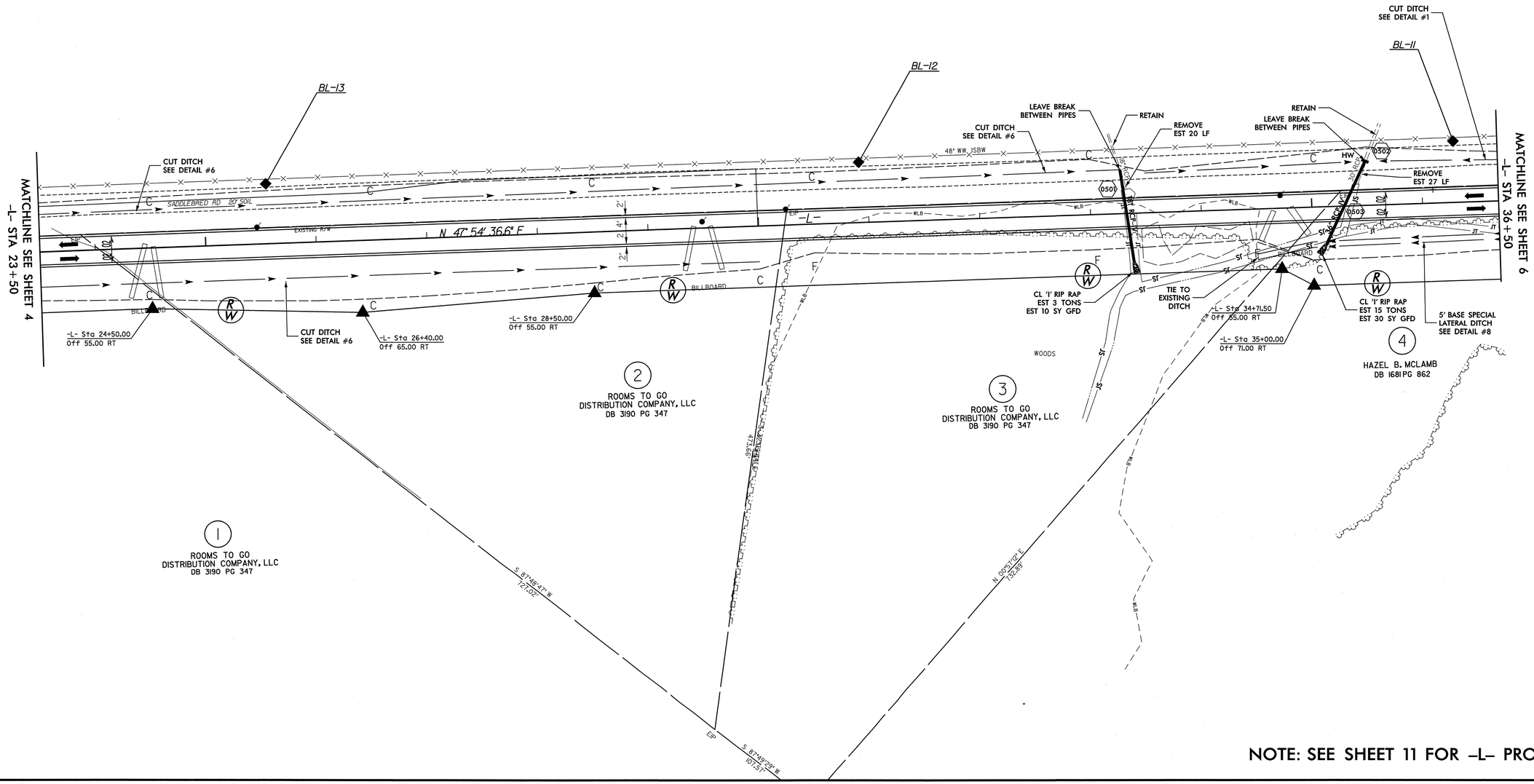


FROM STA. 20+53.90 TO STA. 33+28 -L- LT
FROM STA. 20+53.90 TO STA. 30+00 -L- RT

DETAIL 8
SPECIAL CUT BASE DITCH
(Not to Scale)



FROM STA. 34+50 TO STA. 40+68 -L- RT



NOTE: SEE SHEET 11 FOR -L- PROFILE

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-5526	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

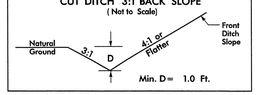
NORTH CAROLINA PROFESSIONAL SEAL 19002 ENGINEER DAVID W. BASS 12/30/13

NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER HENRY WELLS, JR. 1/2/14

DETAIL 1
CUT DITCH
(Not to Scale)

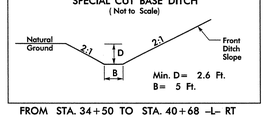
FROM STA. 33+28 TO STA. 43+50 -L- LT

DETAIL 6
CUT DITCH 3:1 BACK SLOPE
(Not to Scale)



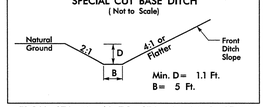
FROM STA. 43+50 TO STA. 58+62 -L- LT
FROM STA. 42+47 TO STA. 58+75 -L- RT

DETAIL 8
SPECIAL CUT BASE DITCH
(Not to Scale)



FROM STA. 34+50 TO STA. 40+68 -L- RT

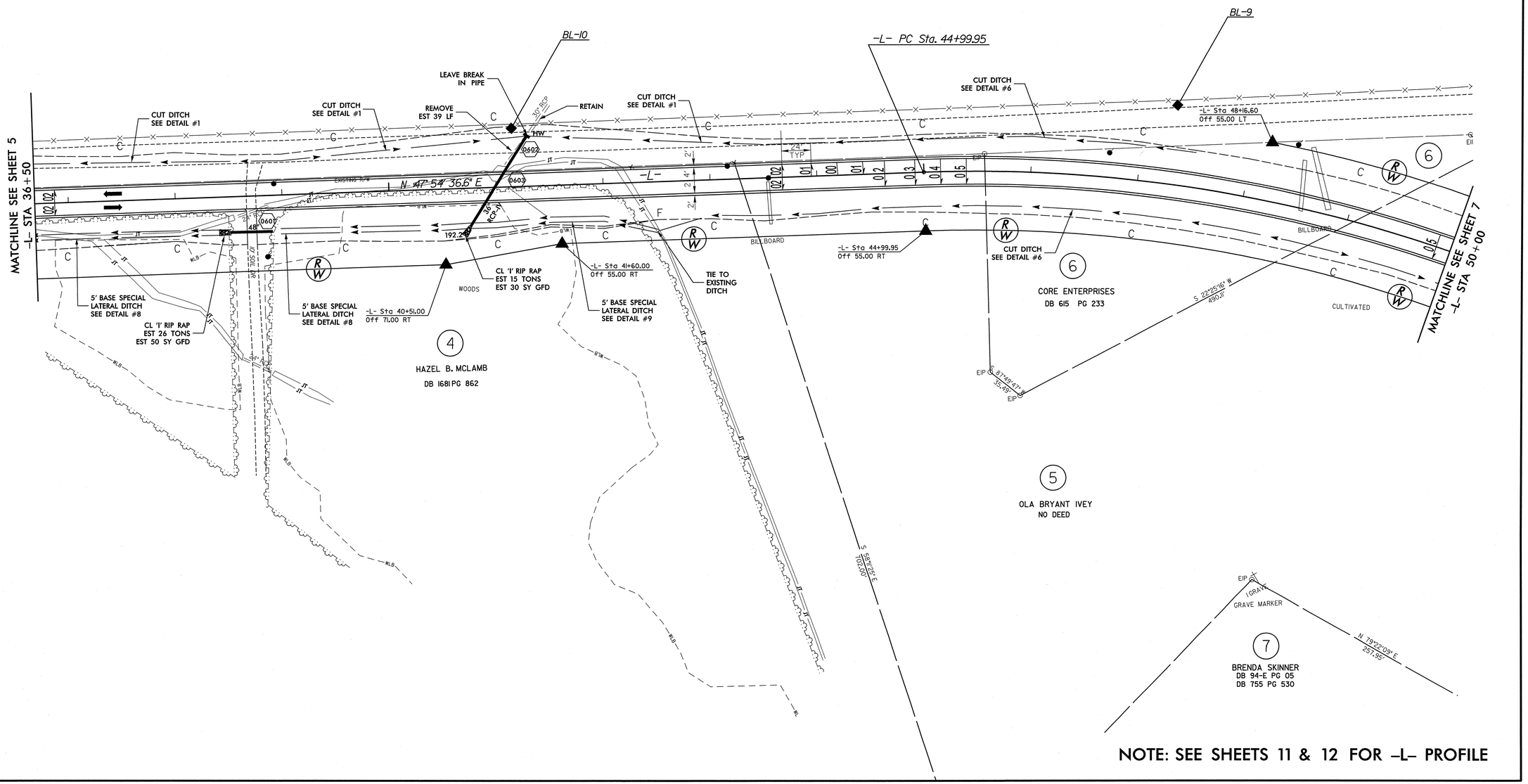
DETAIL 9
SPECIAL CUT BASE DITCH
(Not to Scale)



FROM STA. 40+68 TO STA. 42+47 -L- RT

-L-
PI Sta 50+49.34
Δ = 44° 17' 18.5" (RT)
D = 4° 14' 38.9"
L = 1,043.52'
T = 549.39'
R = 1,350.00'
SE = 5 %
DS = 50 MPH

NAD83/2011



NOTE: SEE SHEETS 11 & 12 FOR -L- PROFILE

REVISIONS

8/17/99

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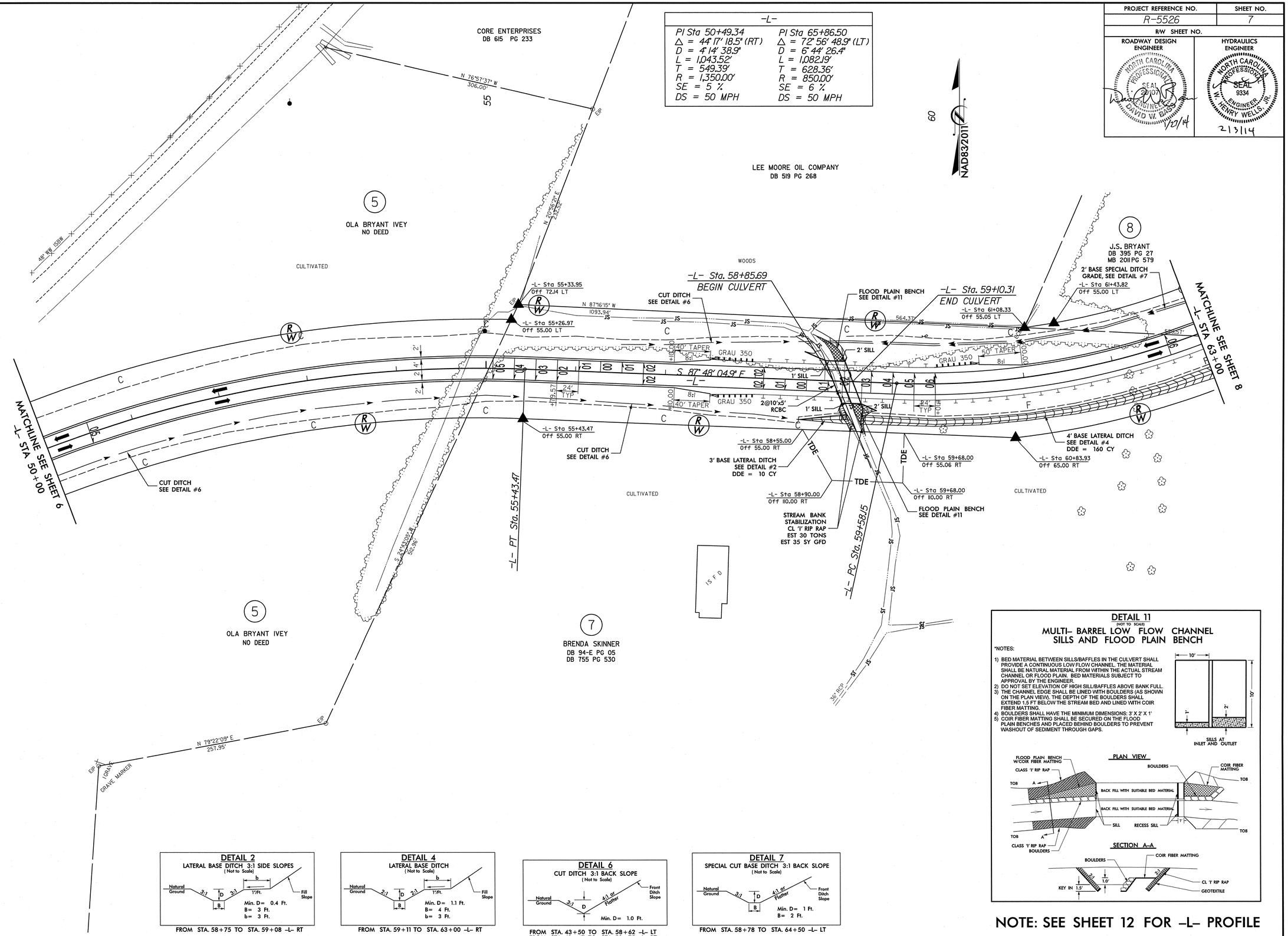
PROJECT REFERENCE NO.	SHEET NO.
R-5526	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 24102 ENGINEER DAVID M. BASS 1/27/14

NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, JR. 2/3/14

-L-	
PI Sta 50+49.34	PI Sta 65+86.50
Δ = 44° 17' 18.5" (RT)	Δ = 72° 56' 48.9" (LT)
D = 4° 14' 38.9"	D = 6° 44' 26.4"
L = 1,043.52'	L = 1,082.19'
T = 549.39'	T = 628.36'
R = 1,350.00'	R = 850.00'
SE = 5 %	SE = 6 %
DS = 50 MPH	DS = 50 MPH



DETAIL 11
(NOT TO SCALE)

MULTI- BARREL LOW FLOW CHANNEL SILLS AND FLOOD PLAIN BENCH

*NOTES:

1) BED MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. THE MATERIAL SHALL BE NATURAL MATERIAL FROM WITHIN THE ACTUAL STREAM CHANNEL OR FLOOD PLAIN. BED MATERIALS SUBJECT TO APPROVAL BY THE ENGINEER.
2) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.
3) THE CHANNEL EDGE SHALL BE LINED WITH BOULDERS (AS SHOWN ON THE PLAN VIEW). THE DEPTH OF THE BOULDERS SHALL EXTEND 1.5 FT BELOW THE STREAM BED AND LINED WITH COIR FIBER MATTING.
4) BOULDERS SHALL HAVE THE MINIMUM DIMENSIONS: 3' X 2' X 1'
5) COIR FIBER MATTING SHALL BE SECURED ON THE FLOOD PLAIN BENCHES AND PLACED BEHIND BOULDERS TO PREVENT WASHOUT OF SEDIMENT THROUGH GAPS.

DETAIL 2
LATERAL BASE DITCH 3:1 SIDE SLOPES
(Not to Scale)

FROM STA. 58+75 TO STA. 59+08 -L- RT

DETAIL 4
LATERAL BASE DITCH
(Not to Scale)

FROM STA. 59+11 TO STA. 63+00 -L- RT

DETAIL 6
CUT DITCH 3:1 BACK SLOPE
(Not to Scale)

FROM STA. 43+50 TO STA. 58+62 -L- LT
FROM STA. 42+47 TO STA. 58+75 -L- RT

DETAIL 7
SPECIAL CUT BASE DITCH 3:1 BACK SLOPE
(Not to Scale)

FROM STA. 58+78 TO STA. 64+50 -L- LT

NOTE: SEE SHEET 12 FOR -L- PROFILE

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-5526	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20101 ENGINEER DAVID W. BASS 1/27/14

NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER HENRY WELLS, JR. 2/3/14

9 BETH L. HUDSON
DB 2045 PG 959
MB 2005 PG 97

18 LEE MOORE OIL COMPANY
DB 519 PG 268

-L-	-Y1-		-Y2-
PI Sta 65+86.50	PI Sta 24+07.40	PI Sta 31+20.74	PI Sta 14+55.11
Δ = 72° 56' 48.9" (LT)	Δ = 1° 10' 48.3" (RT)	Δ = 12° 37' 41.8" (LT)	Δ = 61° 02' 40.6" (RT)
D = 6° 44' 26.4"	D = 0° 34' 22.6"	D = 2° 59' 59.2"	D = 8° 48' 53.0"
L = 1,082.19'	L = 205.96'	L = 420.97'	L = 692.53'
T = 628.36'	T = 102.98'	T = 211.34'	T = 383.22'
R = 850.00'	R = 10,000.00'	R = 1,910.00'	R = 650.00'
SE = 6 %	SE = NC	SE = N/A	SE = 6 %
DS = 50 MPH	DS = 50 MPH	DS = 50 MPH	DS = 45 MPH

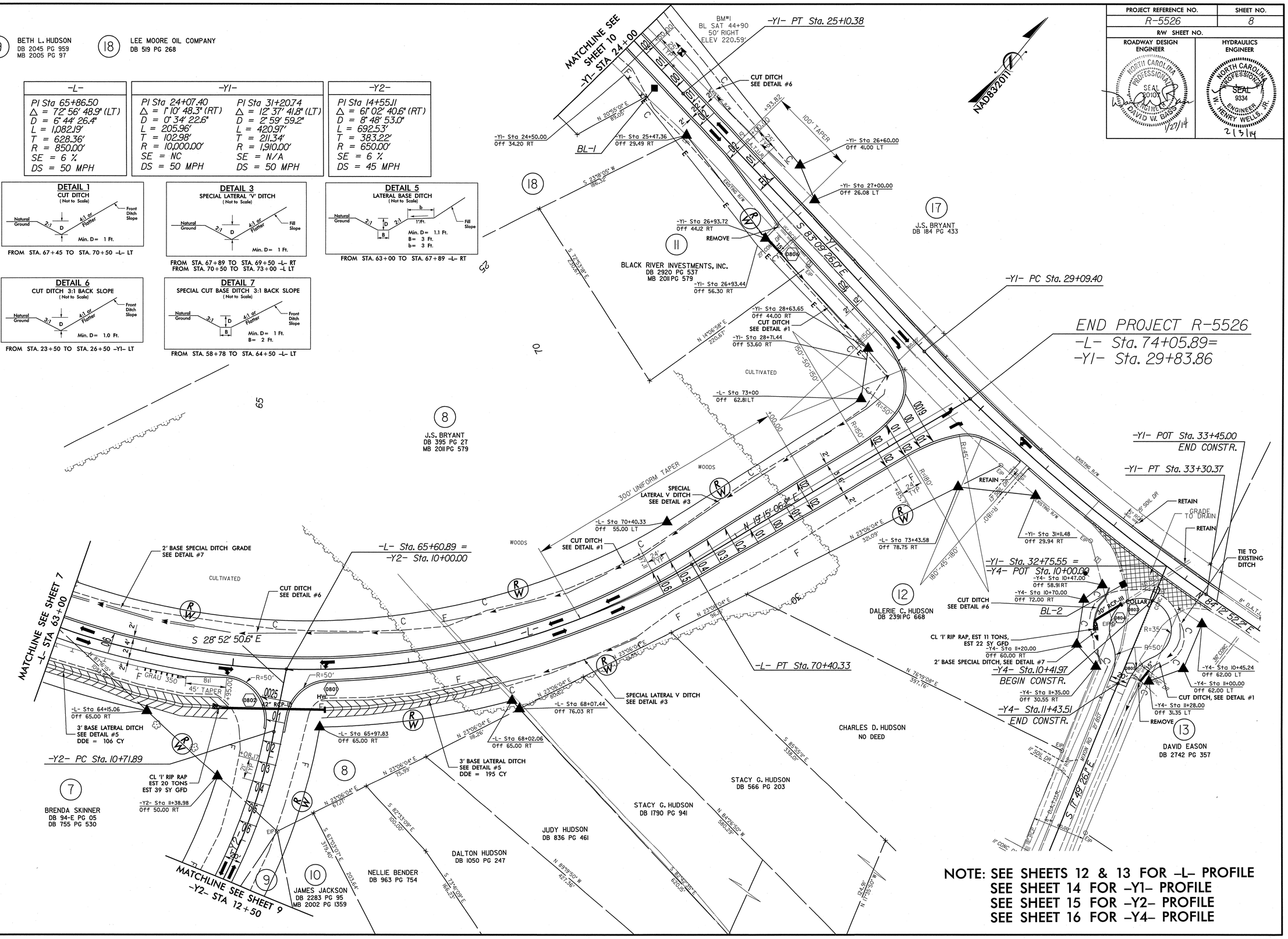
DETAIL 1
CUT DITCH
(Not to Scale)
Natural Ground, 2:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D = 1 Ft.
FROM STA. 67+45 TO STA. 70+50 -L- LT

DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, D, 4:1 or Flatter, Fill Slope
Min. D = 1 Ft.
FROM STA. 67+89 TO STA. 69+50 -L- RT
FROM STA. 70+50 TO STA. 73+00 -L LT

DETAIL 5
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, B, 2:1, b, 1'Ft., Fill Slope
Min. D = 1.1 Ft.
B = 3 Ft.
b = 3 Ft.
FROM STA. 63+00 TO STA. 67+89 -L- RT

DETAIL 6
CUT DITCH 3:1 BACK SLOPE
(Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D = 1.0 Ft.
FROM STA. 23+50 TO STA. 26+50 -Y1- LT

DETAIL 7
SPECIAL CUT BASE DITCH 3:1 BACK SLOPE
(Not to Scale)
Natural Ground, 3:1, D, B, 4:1 or Flatter, Front Ditch Slope
Min. D = 1 Ft.
B = 2 Ft.
FROM STA. 58+78 TO STA. 64+50 -L- LT



NOTE: SEE SHEETS 12 & 13 FOR -L- PROFILE
SEE SHEET 14 FOR -Y1- PROFILE
SEE SHEET 15 FOR -Y2- PROFILE
SEE SHEET 16 FOR -Y4- PROFILE

REVISIONS

8/17/99

27-JAN-2014 15:57
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5526	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER DAVID W. BASS — 12/30/13

NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER HENRY WELLS, JR. — 1/2/14

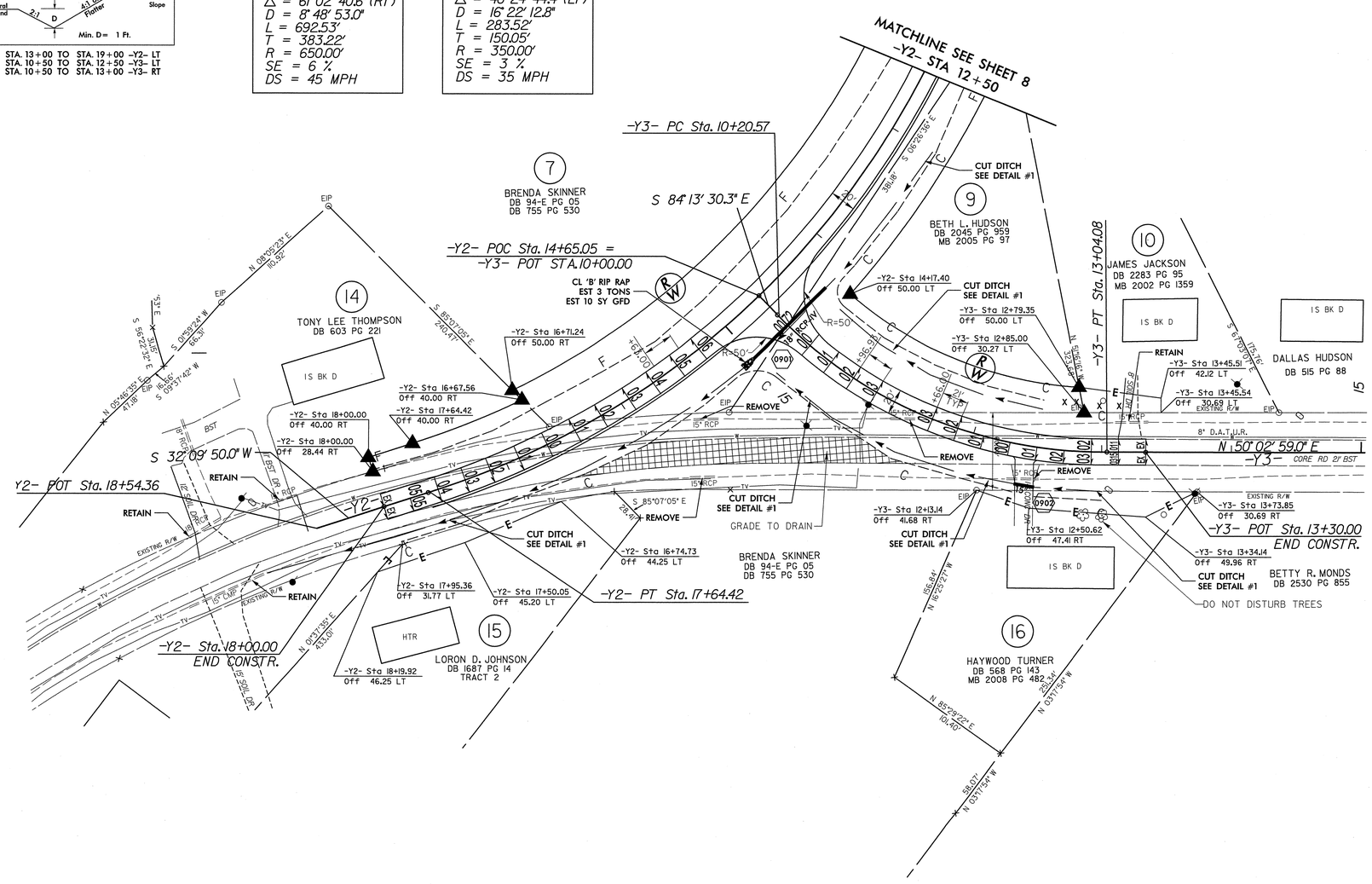
NAD83/2011

DETAIL 1
CUT DITCH
(Not to Scale)

FROM STA. 13+00 TO STA. 19+00 –Y2– LT
FROM STA. 10+50 TO STA. 12+50 –Y3– LT
FROM STA. 10+50 TO STA. 13+00 –Y3– RT

–Y2–
PI Sta 14+55.11
Δ = 61° 02' 40.6" (RT)
D = 8° 48' 53.0"
L = 692.53'
T = 383.22'
R = 650.00'
SE = 6 %
DS = 45 MPH

–Y3–
PI Sta 11+70.62
Δ = 46° 24' 44.4" (LT)
D = 16° 22' 12.8"
L = 283.52'
T = 150.05'
R = 350.00'
SE = 3 %
DS = 35 MPH



NOTE: SEE SHEET 15 FOR –Y2– PROFILE
SEE SHEET 15 FOR –Y3– PROFILE

REVISIONS

8/17/99

30-DEC-2013 14:14
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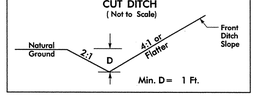
PROJECT REFERENCE NO.	SHEET NO.
R-5526	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20071 ENGINEER DAVID W. BASS 12/30/13

NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER HENRY WELLS, JR. 12/12/14

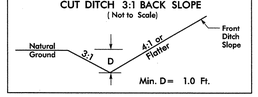
-Y1-	-Y5-	-Y6-	-73RD-
PI Sta 12+26.82 Δ = 0° 40' 55.5" (RT) D = 0° 34' 22.6" L = 119.05' T = 59.52' R = 10,000.00' SE = NC DS = 50 MPH	PI Sta 24+07.40 Δ = 1° 10' 48.3" (RT) D = 0° 34' 22.6" L = 205.96' T = 102.98' R = 10,000.00' SE = NC DS = 50 MPH	PI Sta 10+49.27 Δ = 44° 38' 35.6" (RT) D = 47° 44' 47.3" L = 93.50' T = 49.27' R = 120.00' SE = N/A DS = 20 MPH	PI Sta 10+75.86 Δ = 7° 09' 05.2" (LT) D = 19° 05' 54.9" L = 37.44' T = 18.75' R = 300.00' SE = N/A DS = 30 MPH	PI Sta 10+80.51 Δ = 47° 45' 03.8" (RT) D = 38° 11' 49.9" L = 125.01' T = 66.39' R = 150.00' SE = N/A DS = 25 MPH

DETAIL 1
CUT DITCH
(Not to Scale)



FROM STA. 11+00 TO STA. 12+00 -Y5- RT

DETAIL 6
CUT DITCH 3:1 BACK SLOPE
(Not to Scale)

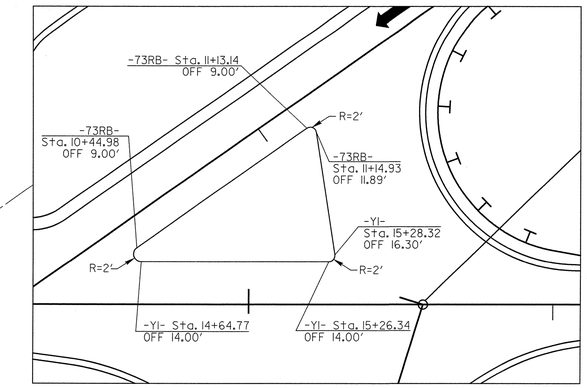


FROM STA. 10+75 TO STA. 11+75 -Y6- RT
FROM STA. 23+50 TO STA. 26+50 -Y1- LT

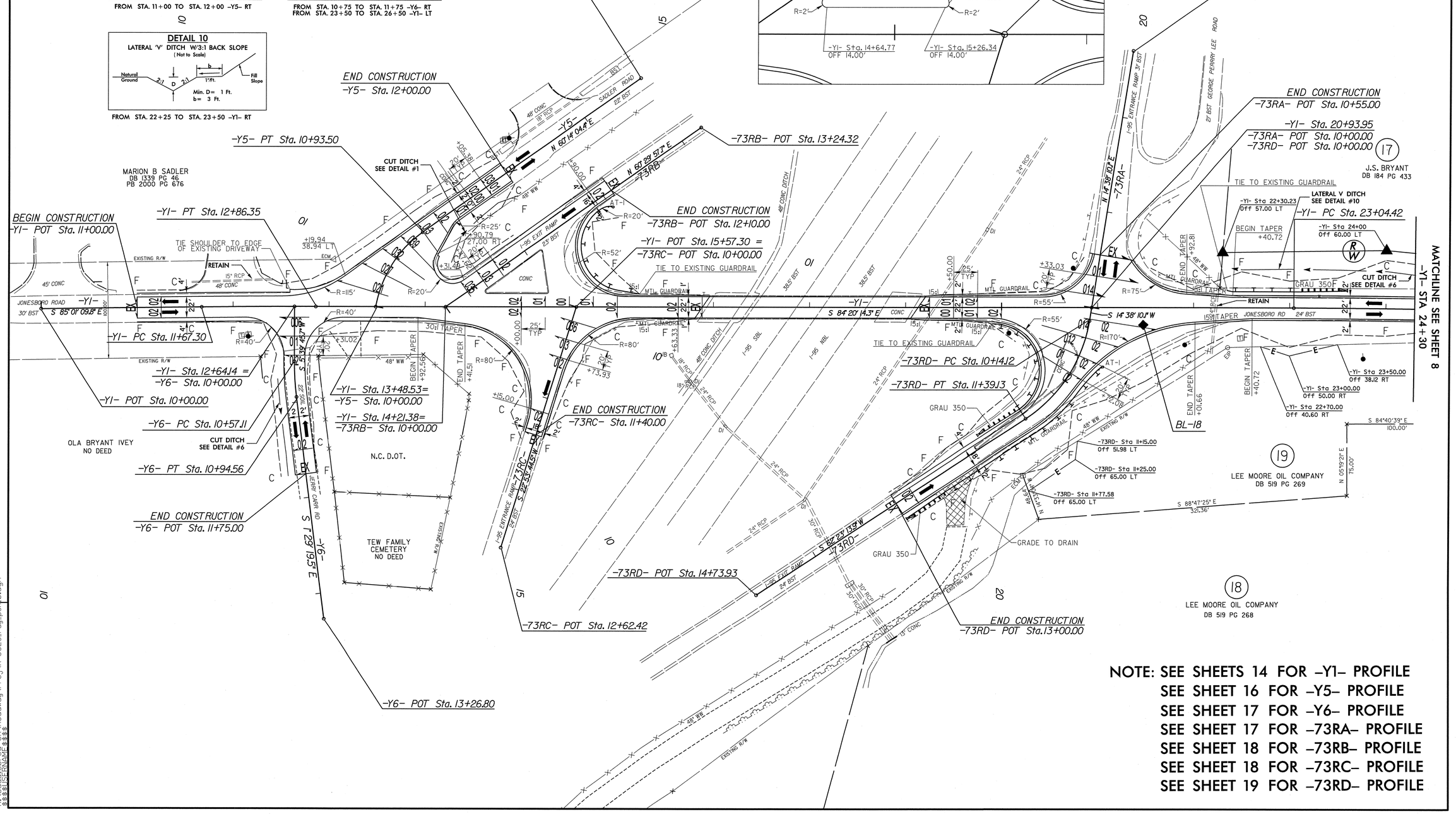
DETAIL 10
LATERAL 'V' DITCH W/3:1 BACK SLOPE
(Not to Scale)

FROM STA. 22+25 TO STA. 23+50 -Y1- RT

ISLAND DETAIL 1



NAD83/2011



NOTE: SEE SHEETS 14 FOR -Y1- PROFILE
SEE SHEET 16 FOR -Y5- PROFILE
SEE SHEET 17 FOR -Y6- PROFILE
SEE SHEET 17 FOR -73RA- PROFILE
SEE SHEET 18 FOR -73RB- PROFILE
SEE SHEET 18 FOR -73RC- PROFILE
SEE SHEET 19 FOR -73RD- PROFILE

REVISIONS

8/17/99

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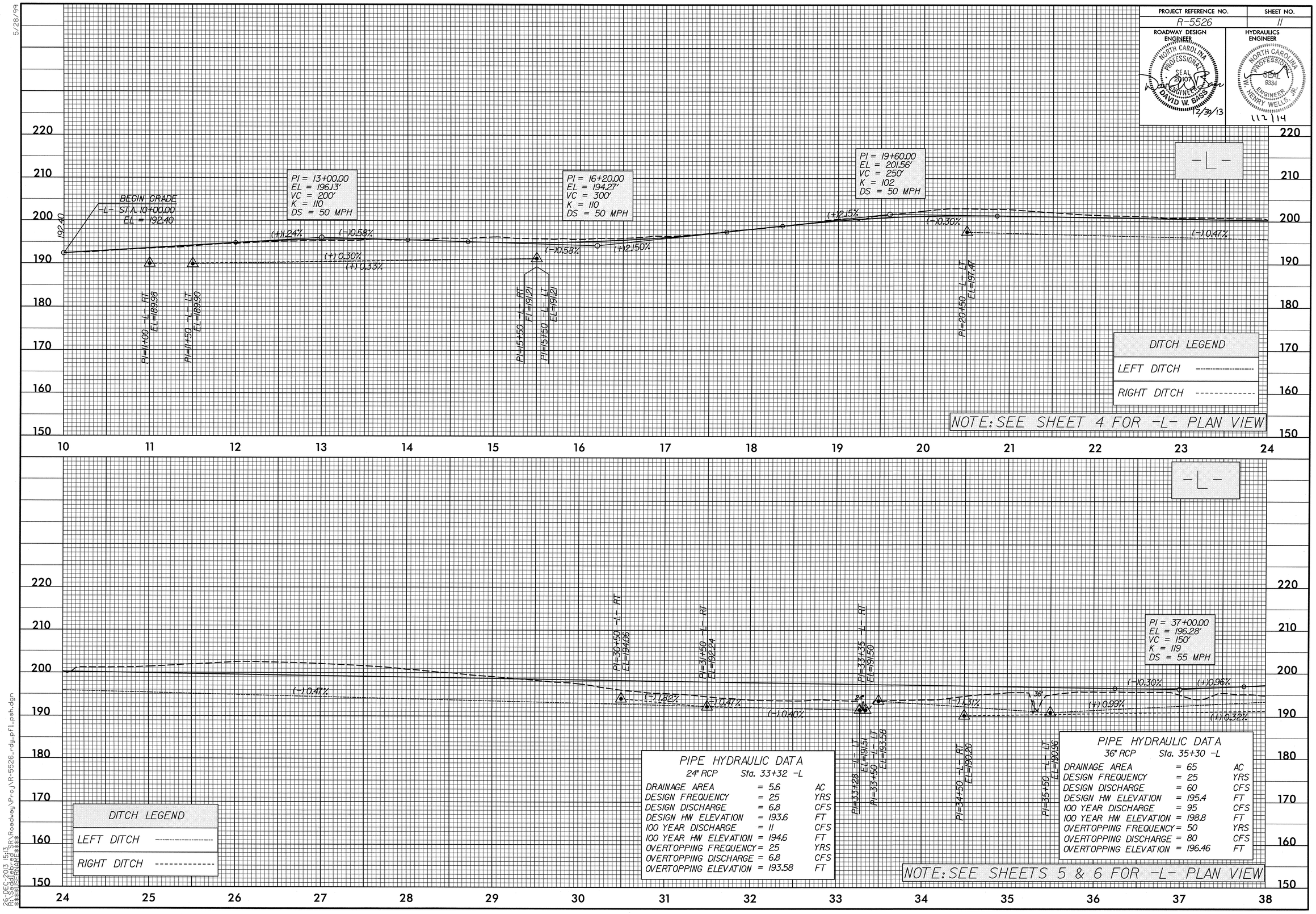
PROJECT REFERENCE NO.	SHEET NO.
R-5526	11

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20107 ENGINEER DAVID W. BASS
12/30/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, JR.
1/2/14



PIPE HYDRAULIC DATA
24" RCP Sta. 33+32 -L

DRAINAGE AREA	= 5.6	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 6.8	CFS
DESIGN HW ELEVATION	= 193.6	FT
100 YEAR DISCHARGE	= 11	CFS
100 YEAR HW ELEVATION	= 194.6	FT
OVERTOPPING FREQUENCY	= 25	YRS
OVERTOPPING DISCHARGE	= 6.8	CFS
OVERTOPPING ELEVATION	= 193.58	FT

PIPE HYDRAULIC DATA
36" RCP Sta. 35+30 -L

DRAINAGE AREA	= 65	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 60	CFS
DESIGN HW ELEVATION	= 195.4	FT
100 YEAR DISCHARGE	= 95	CFS
100 YEAR HW ELEVATION	= 198.8	FT
OVERTOPPING FREQUENCY	= 50	YRS
OVERTOPPING DISCHARGE	= 80	CFS
OVERTOPPING ELEVATION	= 196.46	FT

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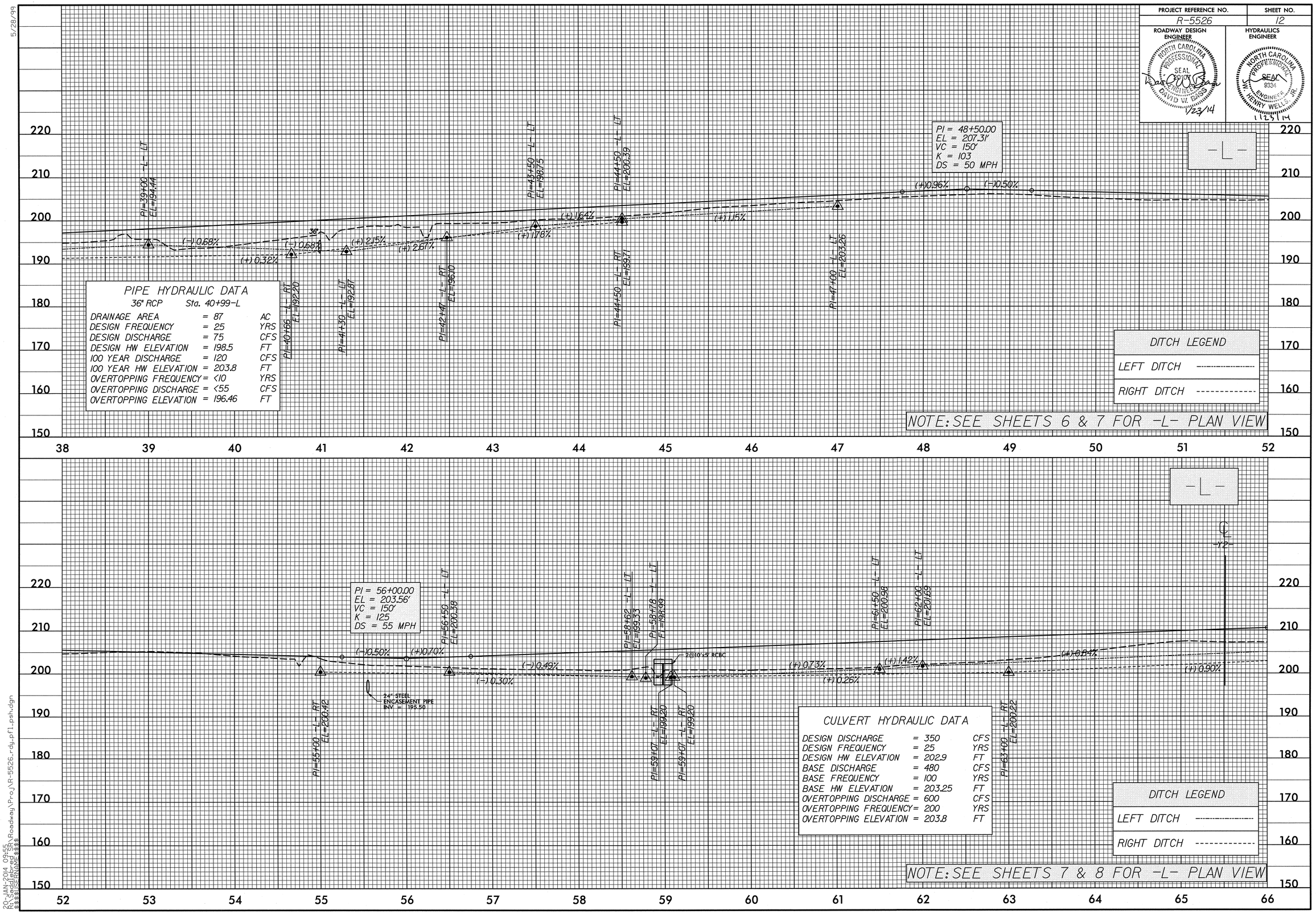
PROJECT REFERENCE NO.	SHEET NO.
R-5526	12

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 20107 ENGINEER DAVID W. BASS — 1/23/14

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, JR. — 1/23/14



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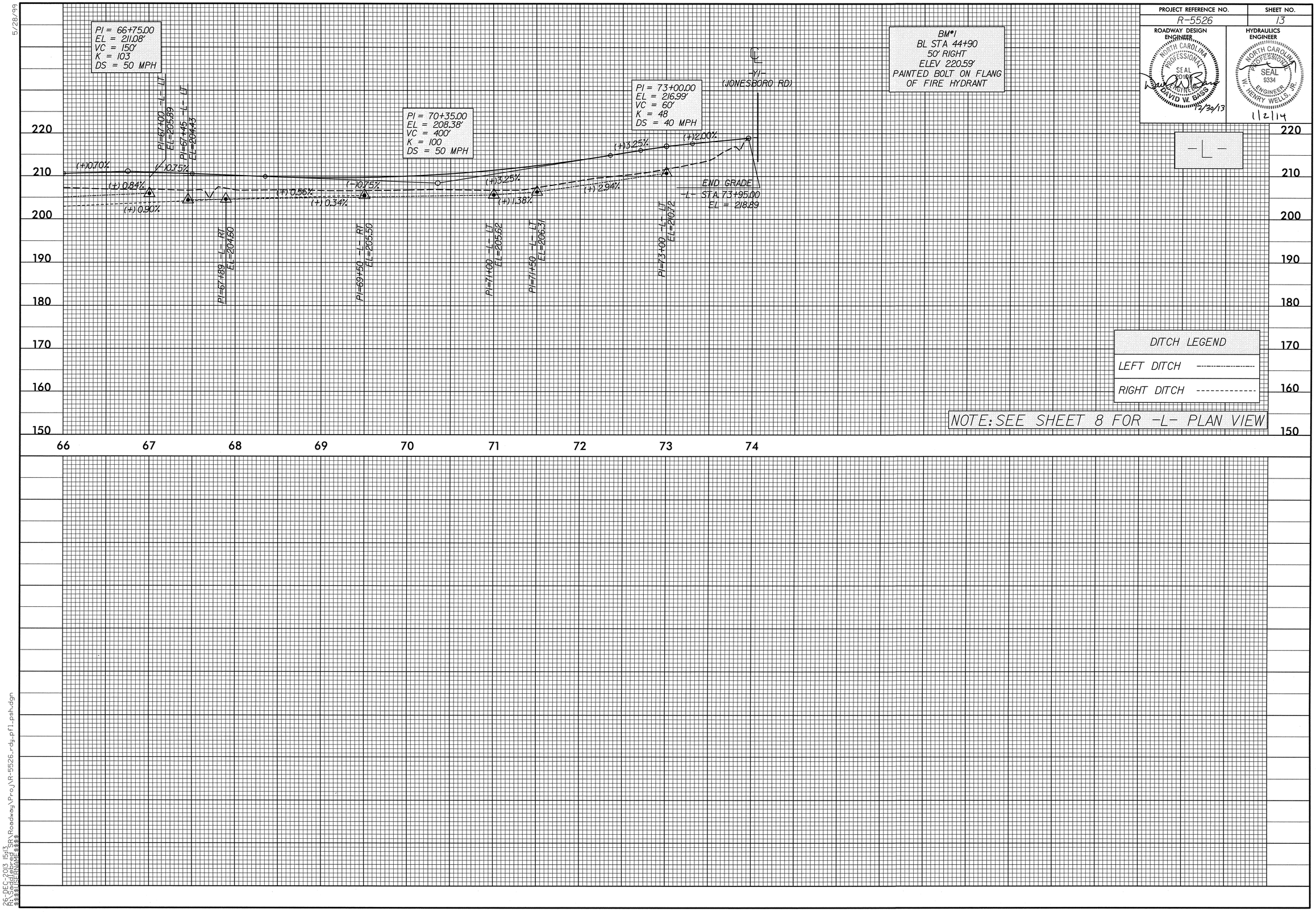
PROJECT REFERENCE NO.	SHEET NO.
R-5526	13

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20131 ENGINEER DAVID W. BASS
12/30/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, JR.
1/2/14



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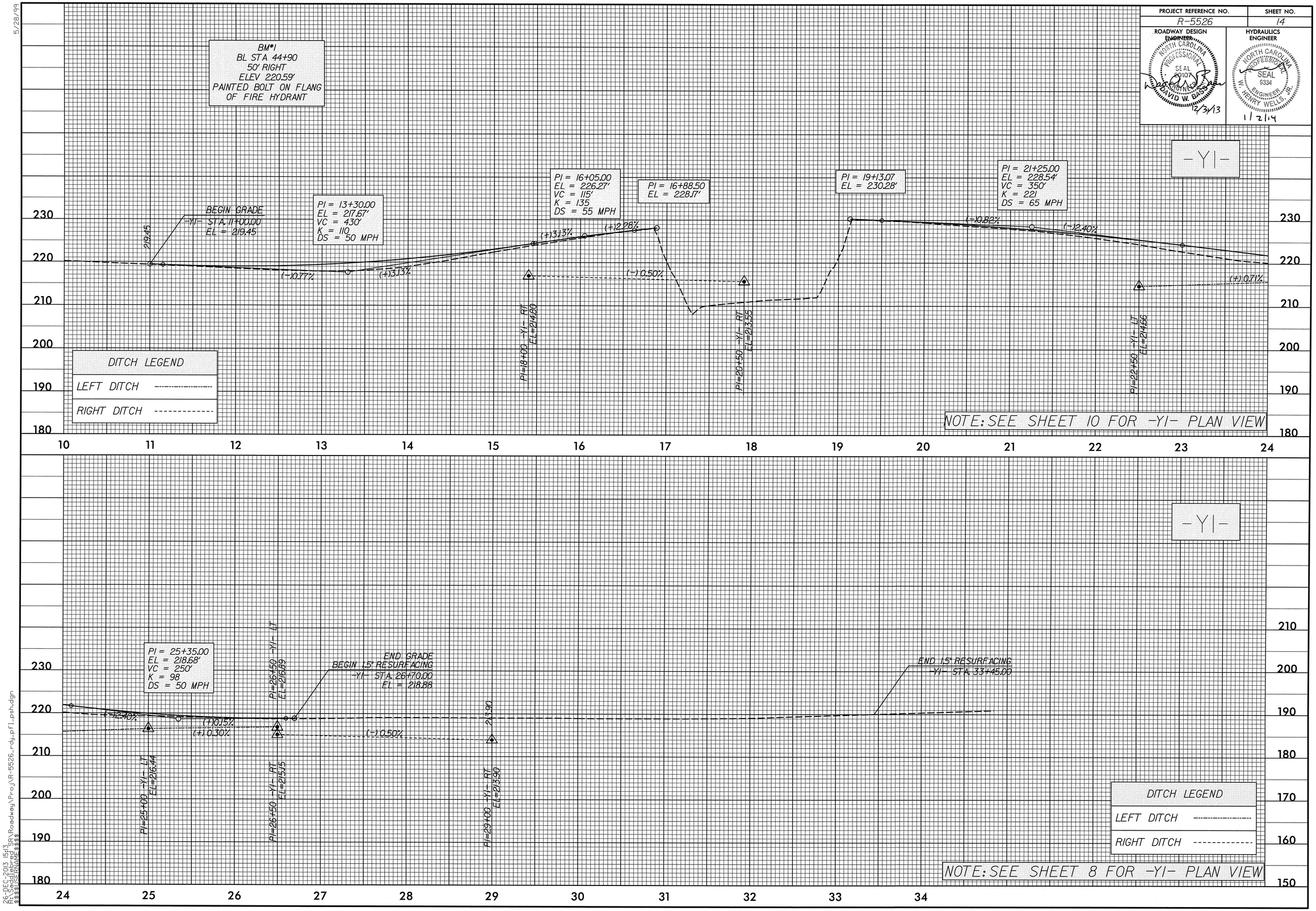
PROJECT REFERENCE NO.	SHEET NO.
R-5526	14

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20107 ENGINEER DAVID W. BASS
12/30/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, JR.
1/2/14



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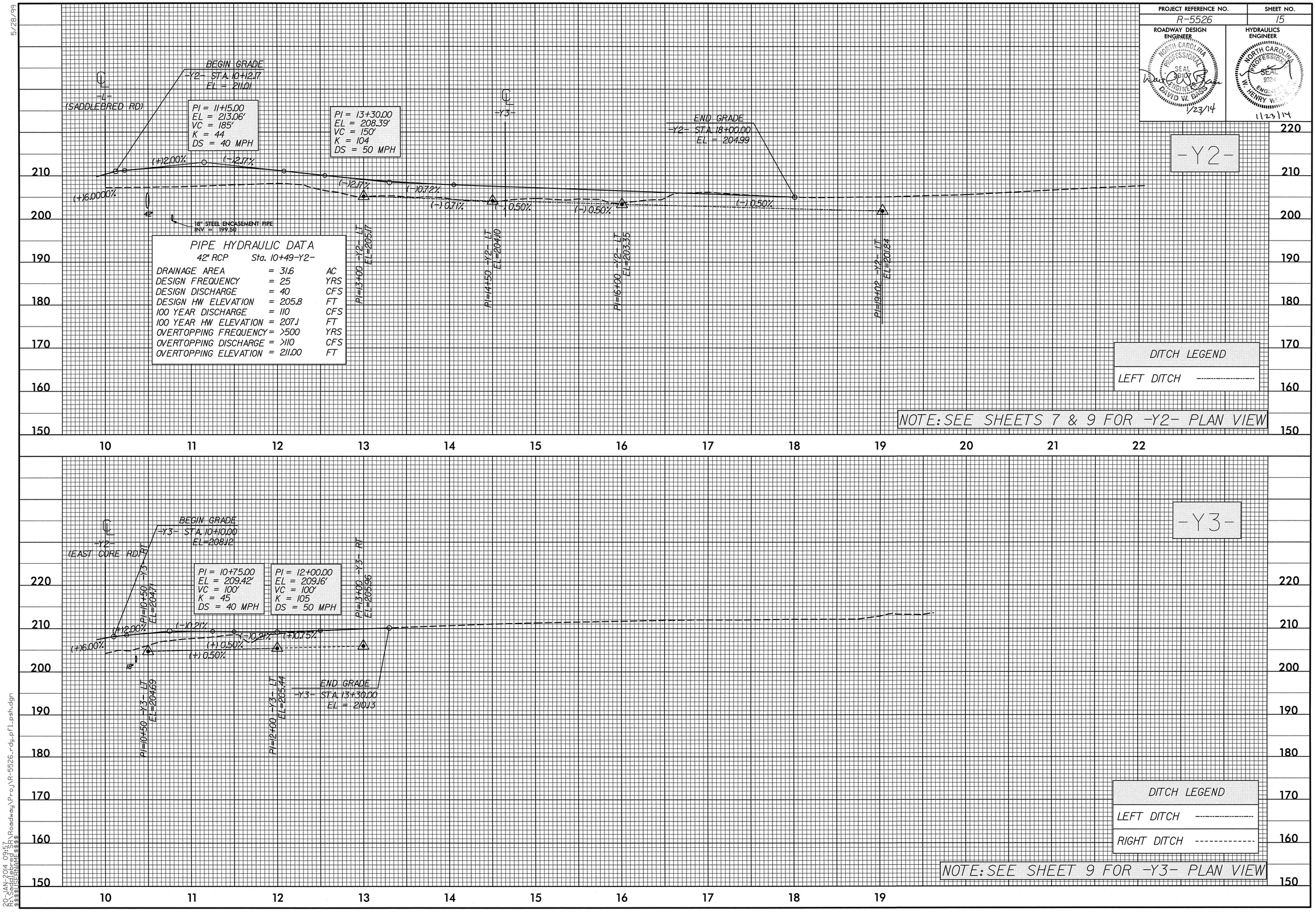
PROJECT REFERENCE NO.	SHEET NO.
R-5526	15

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 019107 ENGINEER DAVID W. GRESS — 1/23/14

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER HENRY W. [illegible] — 1/23/14



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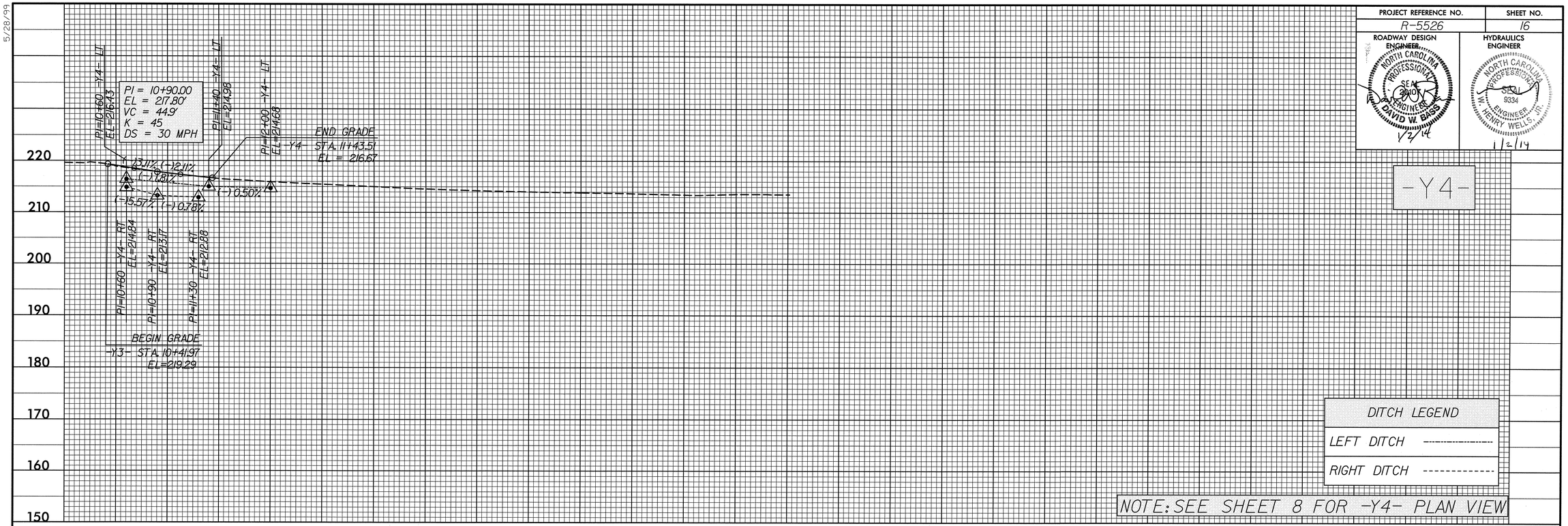
PROJECT REFERENCE NO.	SHEET NO.
R-5526	16

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20107 ENGINEER DAVID W BASS
1/2/14

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER HENRY WELLS JR.
1/2/14



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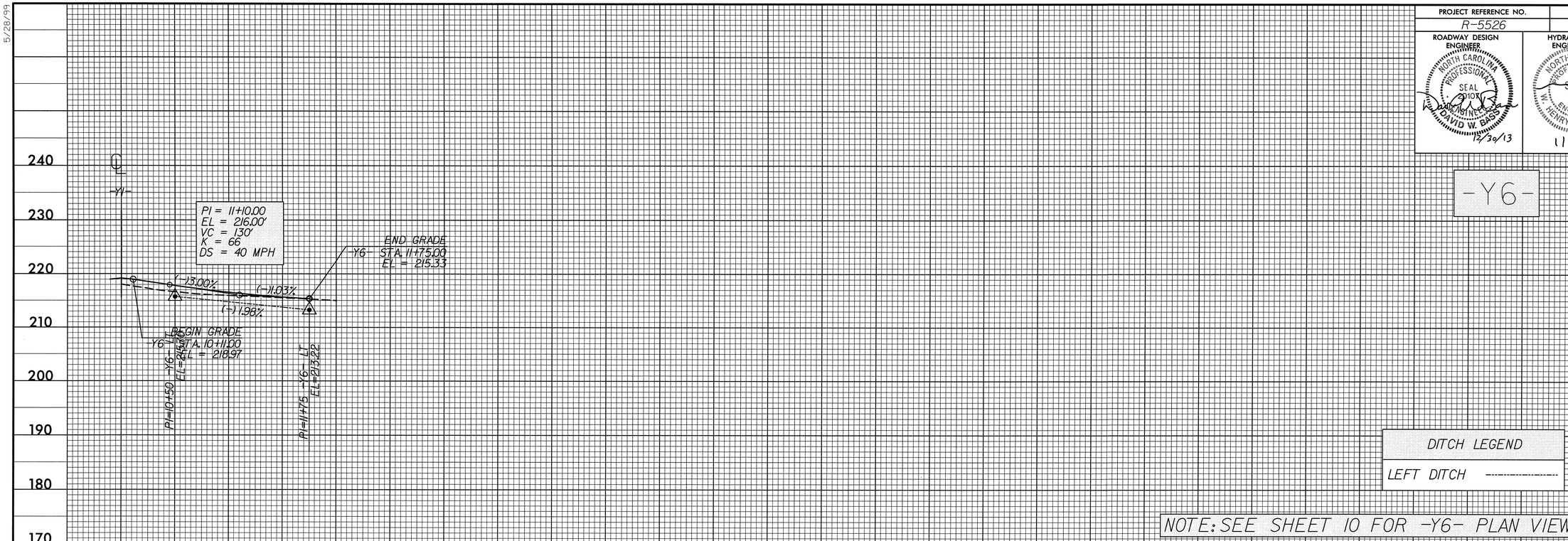
PROJECT REFERENCE NO.	SHEET NO.
R-5526	17

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20101 ENGINEER DAVID W. BASS
12/30/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, JR.
1/2/14

-Y6-

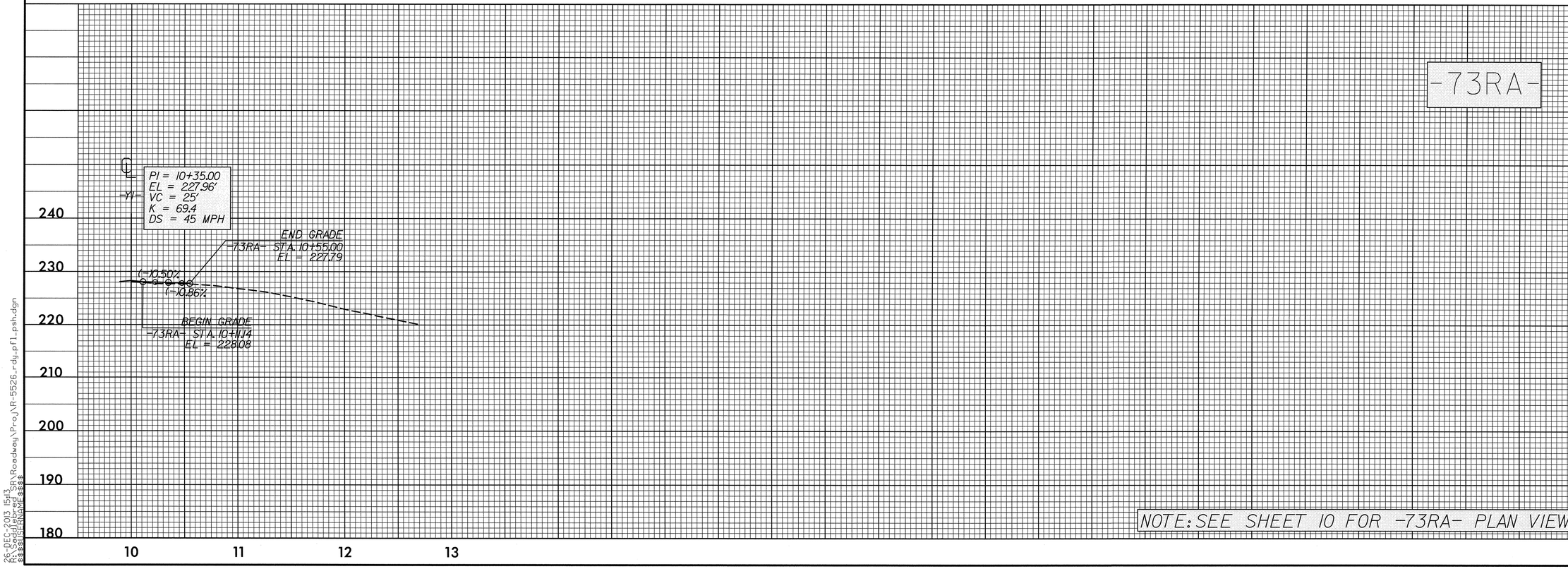


DITCH LEGEND

LEFT DITCH ----------

NOTE: SEE SHEET 10 FOR -Y6- PLAN VIEW

-73RA-



NOTE: SEE SHEET 10 FOR -73RA- PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
R-5526	18

ROADWAY DESIGN ENGINEER

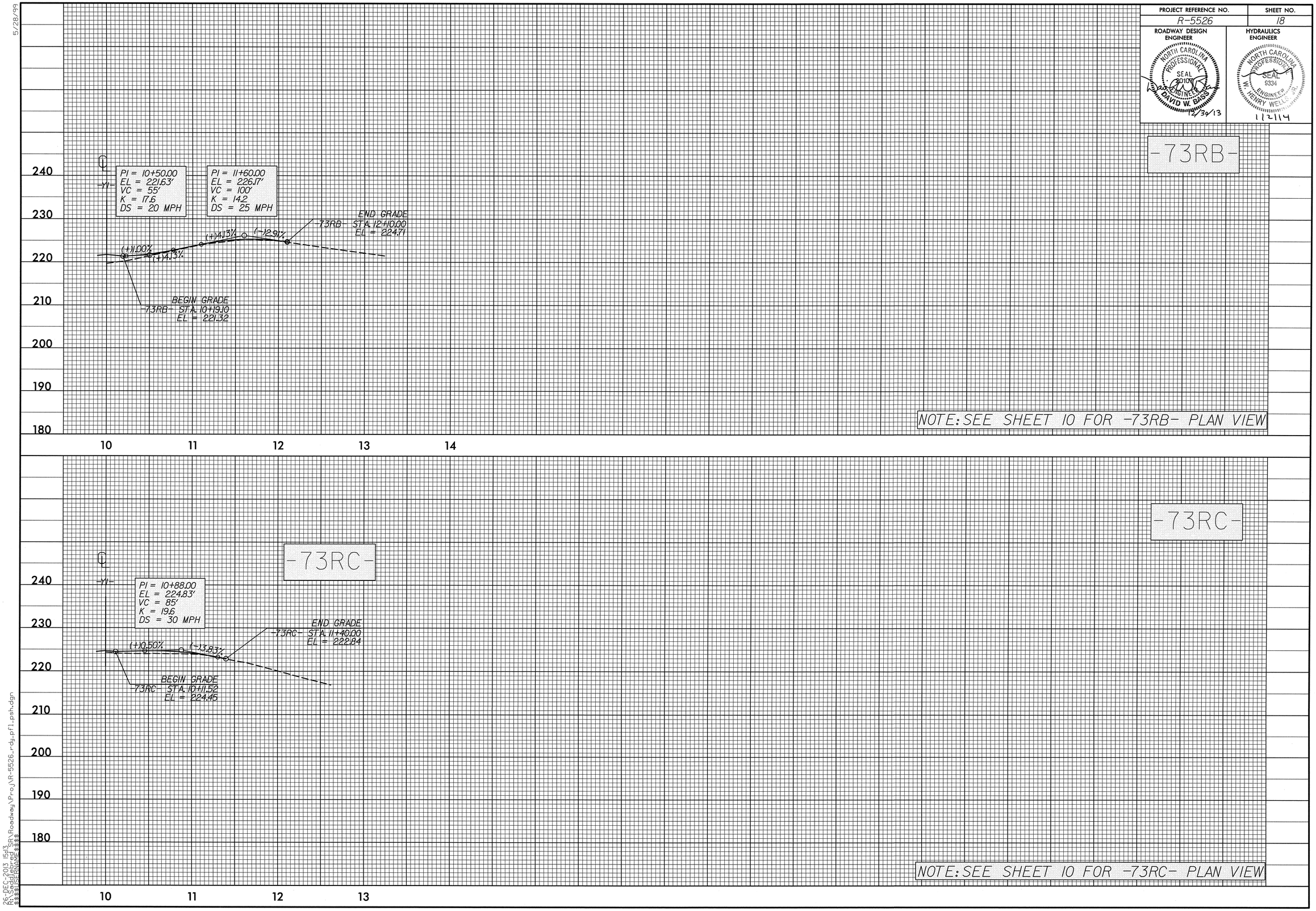
NORTH CAROLINA PROFESSIONAL SEAL 20107 ENGINEER DAVID W. BASS

12/30/13

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, JR.

1/2/14



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PROJECT REFERENCE NO.	SHEET NO.
R-5526	19

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26107 ENGINEER DAVID W. GRASS

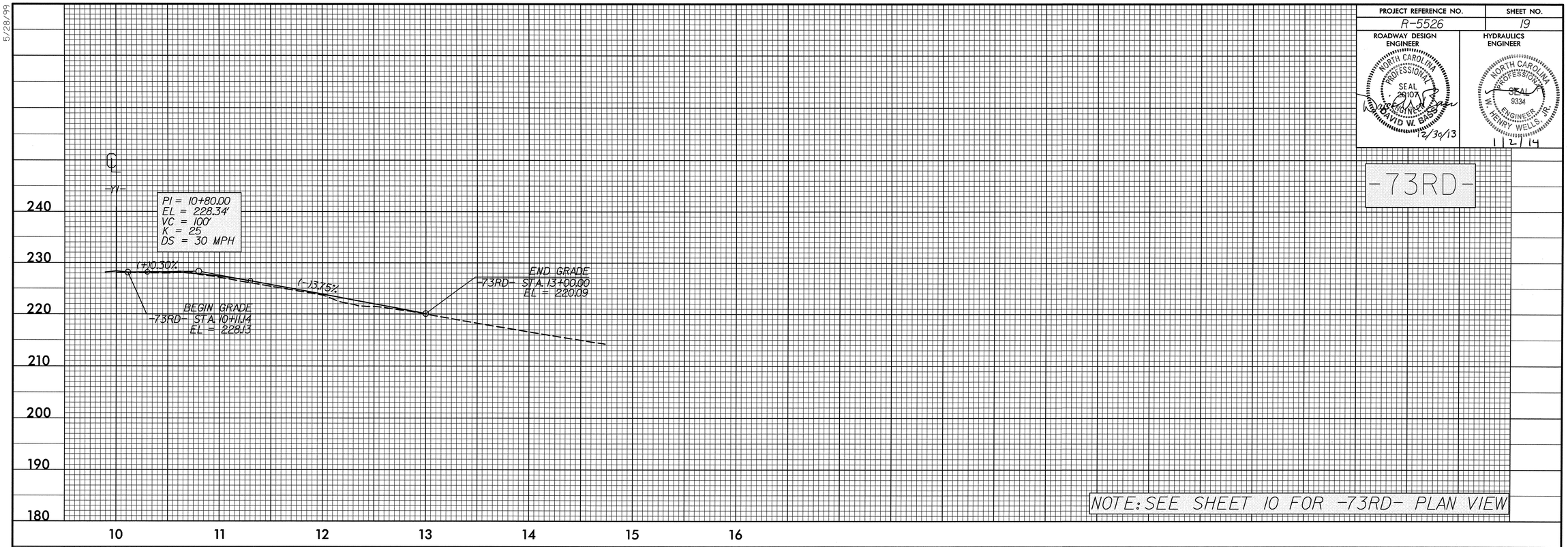
2/30/13

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, JR.

1/2/14

-73RD-



NOTE: SEE SHEET 10 FOR -73RD- PLAN VIEW

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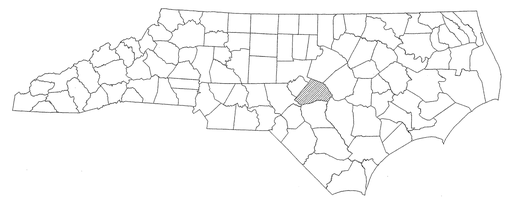
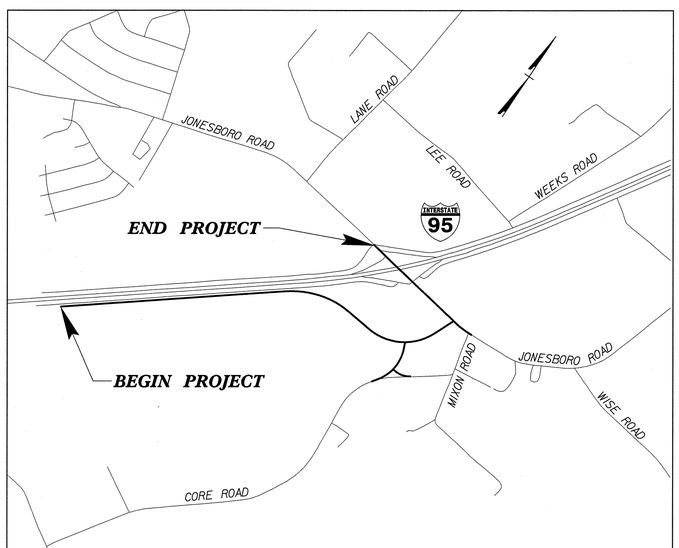
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

HARNETT COUNTY





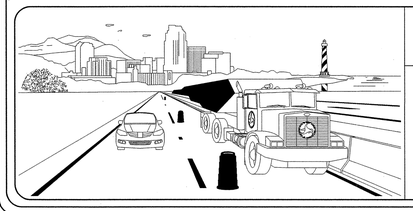
VICINITY MAP

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-2 - TMP-2A	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES)
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4 - TMP-7	TEMPORARY TRAFFIC CONTROL DETAILS
TMP-8	DETOUR ROUTE

SHEET NO.
TMP-1

TIP PROJECT: R-5526



N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. STUART BOURNE, P.E. — STATE TRAFFIC MANAGEMENT ENGINEER
STEVE KITE, P.E. — EASTERN WZTC ENGINEER
DON A. PARKER — EASTERN WZTC PROJECT DESIGN ENGINEER
SHEENA N. GREEN — EASTERN WZTC DESIGN ENGINEER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PLAN PREPARED FOR N.C.D.O.T. BY:
ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

LISA M. MOON, P.E.
TRAFFIC CONTROL
PROJECT ENGINEER

J. ABRAHAM WILES
TRAFFIC CONTROL
DESIGN ENGINEER

APPROVED: Lisa M. Moon
DATE: 1-22-2014

SEAL

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PROJ. REFERENCE NO.	SHEET NO.
R-5526	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE & MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMPORARY SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- WEDGING/OVERLAY OF EXIST
- TEMPORARY PAVEMENT
- GRADING & EMBANKMENT UP TO EDGE AND ELEVATION OF EXISTING TRAVEL WAY

TEMPORARY PAVEMENT MARKING

PA	WHITE EDGE LINE	PAINT (4")	LF
PB	YELLOW EDGE LINE	PAINT (4")	LF
PD	2 FT. WHITE MINISKIP	PAINT (4")	LF
PE	WHITE LANE LINE	PAINT (4")	LF
PI	YELLOW DOUBLE CENTER LINE	PAINT (4")	LF
PS	WHITE DIAGONAL	PAINT (12")	LF
PV	YELLOW DIAGONAL	PAINT (12")	LF
P1	WHITE GORELINE	PAINT (8")	LF
P2	WHITE STOP BAR	PAINT (24")	LF
QA	LEFT TURN ARROW MARKING SYMBOLS	PAINT	EA
QB	RIGHT TURN ARROW MARKING SYMBOLS	PAINT	EA
QQ	RAMP ARROW MARKING SYMBOLS	PAINT	EA
MH	YELLOW & YELLOW, TEMPORARY RAISED PAVEMENT MARKER		EA
MI	CRYSTAL & RED, TEMPORARY RAISED PAVEMENT MARKER		EA
RA	WHITE EDGE LINE	REMOVABLE TAPE (4")	LF
RI	YELLOW DOUBLE CENTER LINE	REMOVABLE TAPE (4")	LF

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM — SKINNY DRUM — TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD (TYPE C)
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (T.M.A.)
- CHANGEABLE MESSAGE SIGN (C.M.S.)
- PORTABLE CONCRETE BARRIER (P.C.B.)
- WATER FILLED BARRIER (W.F.B.)
- ORANGE CONSTRUCTION FENCING
- TEMPORARY GUARDRAIL

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

EXISTING PAVEMENT MARKING SYMBOLS

EXISTING PAVEMENT MARKING SYMBOLS

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

EXISTING — PROPOSED — TEMPORARY (TEMP)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: DATE: 2/10/14

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER J. TODD BROOKS

DIVISION OF HIGHWAYS — STATE OF NORTH CAROLINA — DEPARTMENT OF TRANSPORTATION — WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

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PROJ. REFERENCE NO.	SHEET NO.
R-5526	TMP-02

MANAGEMENT STRATEGIES

SADDLEBRED ROAD PROJECT CONSTRUCTION SUMMARY:

THE SADDLEBRED ROAD PROJECT INVOLVES CONSTRUCTION OF PROPOSED / RELOCATED SADDLEBRED ROAD; PARTIAL REALIGNMENT OF CORE ROAD SO THAT IT INTERSECTS WITH PROPOSED SADDLEBRED ROAD; PERMANENT CLOSURE OF THE EXISTING CORE ROAD INTERSECTION WITH JONESBORO ROAD AND THE CONSTRUCTION OF A CORE ROAD CUL-DE-SAC AT THAT LOCATION; AND RAISING OF THE JONESBORO ROAD PROFILE ON EITHER SIDE OF THE BRIDGE OVER I-95.

SADDLEBRED ROAD AND -Y- LINES WILL BE CONSTRUCTED MAINLY AWAY FROM TRAFFIC, BUT WILL ALSO EMPLOY A COMBINATION OF LANE CLOSURES, WEDGING UNDER TRAFFIC AND OFF-SITE DETOURS ALONG JONESBORO ROAD AT THE INTERCHANGE WITH I-95.

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
I-95 RAMPS	MONDAY THROUGH SUNDAY FROM 6:00 A.M. TO 9:00 P.M.

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

ANY ROAD

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.

2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 9:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY,SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 P.M. THE FOLLOWING TUESDAY.

3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 9:00 P.M. MONDAY.

4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 9:00 P.M. TUESDAY.

5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.

7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY AND 9:00 P.M. MONDAY.

8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

H) DO NOT INSTALL MORE THAN 1/2 MILE OF LANE CLOSURE ON JONESBORO ROAD MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

I) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON JONESBORO ROAD.

APPROVED: Lisa M. Moon DATE: 1-22-14

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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GENERAL NOTES CONTINUED

PAVEMENT EDGE DROP OFF REQUIREMENTS

J) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:
BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

K) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

L) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

M) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

N) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRANSPORTATION MANAGEMENT PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRANSPORTATION MANAGEMENT PLANS.

O) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

P) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

Q) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 500 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

R) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

S) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

T) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

U) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
-L-, -Y2-, -Y3- -Y5- & -Y6-	PAINT	NONE
-Y1-	PAINT	TEMPORARY RAISED
JONESBORO RD BRIDGE OVER I-95	REMOVABLE TAPE	TEMPORARY RAISED
RAMPS	PAINT	TEMPORARY RAISED

V) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6)MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

W) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

X) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

LOCAL NOTES

LN-1 CONSTRUCT TEMPORARY/PERMANENT LATERAL WEDGING BETWEEN NEWLY CONSTRUCTED PAVEMENT AND EXISTING PAVEMENT TO MAINTAIN POSITIVE DRAINAGE OF EXISTING PAVEMENT (I.E., PREVENT PONDING OF WATER) AND PREVENT DROP-OFF BETWEEN NEW AND EXISTING PAVEMENT AS DIRECTED BY THE ENGINEER.

APPROVED: Lisa M. Moon DATE: 1-22-14

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
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PHASING

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING DRIVEWAYS AS DIRECTED BY THE ENGINEER.

PHASE I

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS. SEE RSD 1101.01

STEPS 2 AND 3 CAN BE PERFORMED CONCURRENTLY.

THE DATE OF AVAILABILITY FOR -Y1- (JONESBORO ROAD) IS JUNE 1, 2014. SEE PROJECT SPECIAL PROVISIONS.

STEP 2: WHILE MAINTAINING TRAFFIC ON EXISTING JONESBORO ROAD, USING RSD 1101.02, SHEETS 1 AND 2 OF 15 AS NECESSARY, CONSTRUCT PROPOSED -Y1- FROM STA. 25+94 +/- TO -Y1- STA 30+82 +/- UP TO BUT NOT INCLUDING THE FINAL SURFACE. SEE TMP-04.

STEP 3: WHILE MAINTAINING TRAFFIC ON EXISTING JONESBORO ROAD, WEST CORE ROAD, MIXON ROAD, AND SADDLEBRED ROAD, USING RSD 1101.02, SHEETS 1 AND 2 OF 15 AS NECESSARY, CONSTRUCT THE FOLLOWING UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE (SEE TMP-04):

* PROPOSED -L- FROM STA. 10+00+/- TO -L- STA. 73+80+/-
* PROPOSED -Y2- FROM STA. 10+00+/- TO STA. 18+00+/-
* PROPOSED -Y3- FROM STA. 10+00+/- TO STA. 13+30+/-

PLACE TEMPORARY PAINT MARKINGS ON ABOVE ROADWAYS AS MUCH AS POSSIBLE AWAY FROM TRAFFIC. (SEE TMP-05)

STEP 4: USING RSD 1101.02, SHEETS 1 AND 2 OF 15, WORKING IN A CONTINUOUS MANNER IN ONE WORK PERIOD, PERFORM THE FOLLOWING (SEE TMP-05):

* COMPLETE TIE-IN WORK BETWEEN PROPOSED -Y2-, -Y3- AND EXISTING CORE ROAD THAT WAS PREVENTED BY THE MAINTENACE OF TRAFFIC ON EXISTING CORE ROAD.
* PLACE REMAINING TEMPORARY PAINT PAVEMENT MARKINGS ON -L-, -Y2- & -Y3-
* SHIFT TRAFFIC TO NEW ALIGNMENT

PHASE II

STEP 1: CLOSE EXISTING SADDLEBRED ROAD AT THE I-95 NORTH EXIT RAMP. SEE TMP-06

CLOSE THE LEFT TURN LANE FROM THE RAMP ONTO SADDLEBRED ROAD. SEE TMP-06

STEP 2: PERMANENTLY CLOSE EXISTING CORE ROAD AT -Y1- AND REROUTE TRAFFIC. AWAY FROM TRAFFIC AND USING RSD 1101.02, SHEET 1 OF 15, AS NECESSARY, CONSTRUCT THE -Y4- CUL-DE-SAC FROM -Y4- STA. 10+41 +/- TO STA. 11+43 +/- UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE. THIS INCLUDES REMOVAL OF ANY REMAINING CORE ROAD PAVEMENT AT JONESBORO ROAD.

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY AS PER RSD 1101.02, SHEET 1 OF 15, REMOVE ANY REMAINING EXISTING CORE ROAD PAVEMENT BETWEEN NEWLY BUILT -Y2- AND -Y3-.

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY AS PER RSD 1101.02, SHEET 1 OF 15, COMPLETE CONSTRUTION OF SIDE SLOPES AND DITCHES ALONG -L- BETWEEN STA 10+00 AND STA 46+00+/-.

STEP 2, CONT.:

CONSTRUCT WEDGING AND WIDENING ON -Y1- (JONESBORO ROAD) AT THE I-95 INTERCHANGE, UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, ONE SIDE OF THE EXISTING BRIDGE AT A TIME, IN THE FOLLOWING MANNER. THE CONTRACTOR MAY CONSTRUCT STEP 2A OR 2B FIRST AT HIS DISCRETION:

A. EAST OF THE BRIDGE (SEE TMP-06):

1. SHIFT TRAFFIC TO RIGHT SIDE OF -73RD- AND REMOVE EXISTING ISLAND AND TEMPORARILY PATCH PAVEMENT. USING 1101.02, SHEET 1 OF 15, BEGIN CONSTRUCTION OF -Y1- (JONESBORO ROAD) EAST OF THE BRIDGE AND -73RA-
2. SHIFT TRAFFIC TO LEFT SIDE OF -73RD- AND CONSTRUCT RIGHT SIDE OF -73RD-. MAINTAIN POSITIVE PROTECTION ALONG STEEP SLOPES WITH EITHER EXISTING OR PROPOSED GUARDRAIL.
3. SHIFT TRAFFIC TO NEWLY CONSTRUCTED RIGHT SIDE OF -73RD- AND CONSTRUCT LEFT SIDE OF -73RD-. MAINTAIN POSITIVE PROTECTION ALONG STEEP SLOPES WITH EITHER EXISTING OR PROPOSED GUARDRAIL. USING 1101.02, SHEET 1 OF 15, COMPLETE CONSTRUCTION OF -Y1- (JONESBORO ROAD) EAST OF THE BRIDGE AND -73RA-.
4. PLACE TEMPORARY PAINT PAVEMENT MARKINGS ON -Y1-, -73RA- & -73RD- AND SHIFT TRAFFIC TO NEW ALIGNMENT.PROJECT AS PER THE PAVEMENT MARKING PLANS.

B. WEST OF THE BRIDGE (SEE TMP-07):

1. REMOVE EXISTING ISLAND ON -73RB- AND TEMPORARILY PATCH PAVEMENT. USING RSD 1101.03, SHEET 1 AND 2 OF 15, CLOSE -Y5- (SADLER ROAD) BETWEEN STA 10+00 AND STA 12+00. DETOUR -Y5- TRAFFIC AS SHOWN ON TMP-08. AWAY FROM TRAFFIC AND USING 1101.02, SHEETS 1 AND 2 OF 15, AS NECESSARY, BEGIN CONSTRUCTION OF -Y1- (JONESBORO ROAD) WEST OF THE BRIDGE AND -Y5-.
2. SHIFT TRAFFIC TO LEFT SIDE OF -73RB- AND -73RC- AND CONSTRUCT RIGHT SIDE OF -73RB- AND -73C-. MAINTAIN POSITIVE PROTECTION ALONG STEEP SLOPES WITH EITHER EXISTING OR PROPOSED GUARDRAIL.
3. SHIFT TRAFFIC TO NEWLY CONSTRUCTED RIGHT SIDE OF -73RB- AND -73RC- AND CONSTRUCT LEFT SIDE OF -73RB- AND -73RC-. AWAY FROM TRAFFIC AND USING 1101.02, SHEET 1 OF 15, AS NECESSARY CONSTRUCT, -Y1- (JONESBORO ROAD) EAST OF THE BRIDGE, -Y5-, AND -73RA-.
4. PLACE TEMPORARY PAINT PAVEMENT MARKINGS ON -Y1-,-Y5-, -73RB- & -73RC- AND SHIFT TRAFFIC TO NEW ALIGNMENT.

STEP 3: USING TEMPORARY TRAFFIC SHIFTS AND RSD. 1101.02, SHEETS 1 AND 2 OF 15, AS NECESSARY, PERFORM THE FOLLOWING WORK:

* PLACE FINAL LAYER OF SURFACE COURSE ON -L-, -Y1-, -Y2-, -Y3- , RAMPS AND SERVICE ROADS.

* PLACE FINAL PAVEMENT MARKINGS ON THE PROJECT AS PER THE PAVEMENT MARKING PLANS.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: Lisa M. Moon DATE: 12-30-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

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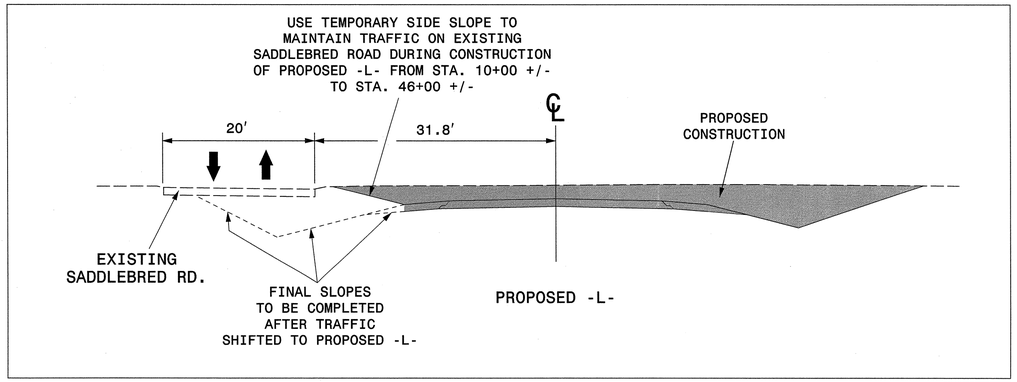

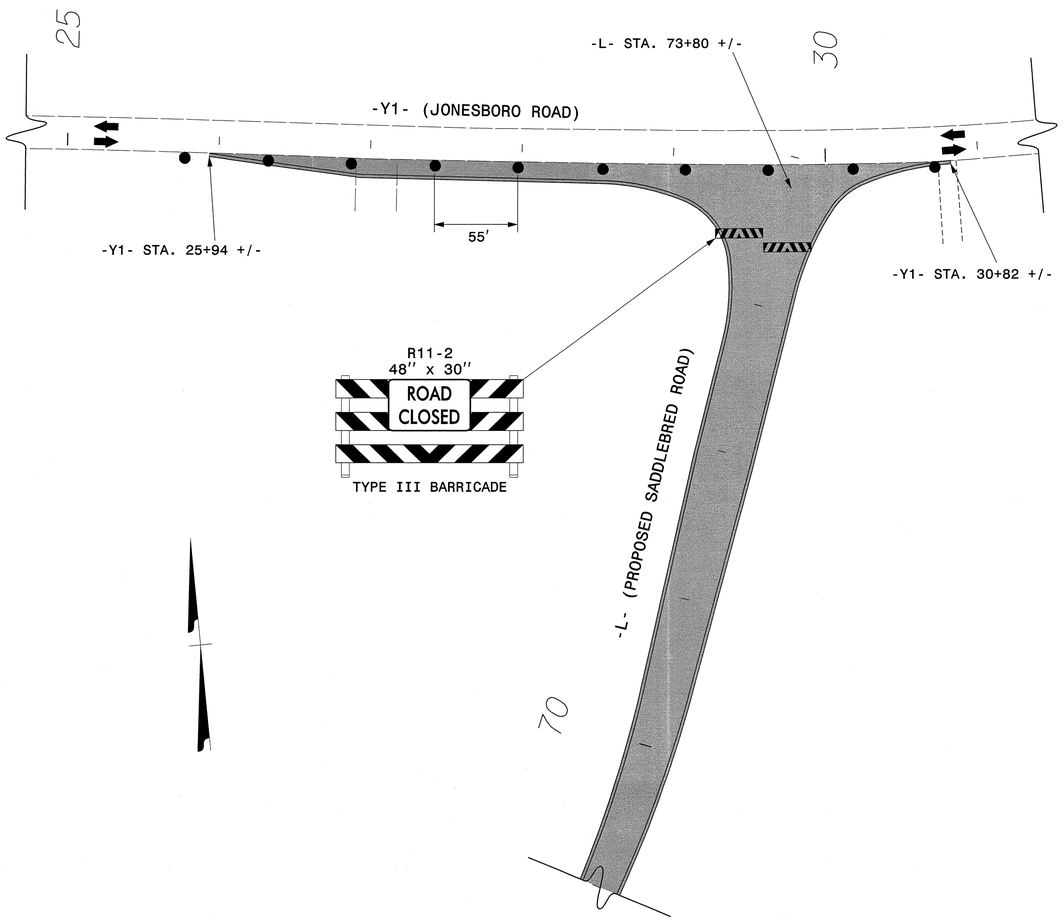

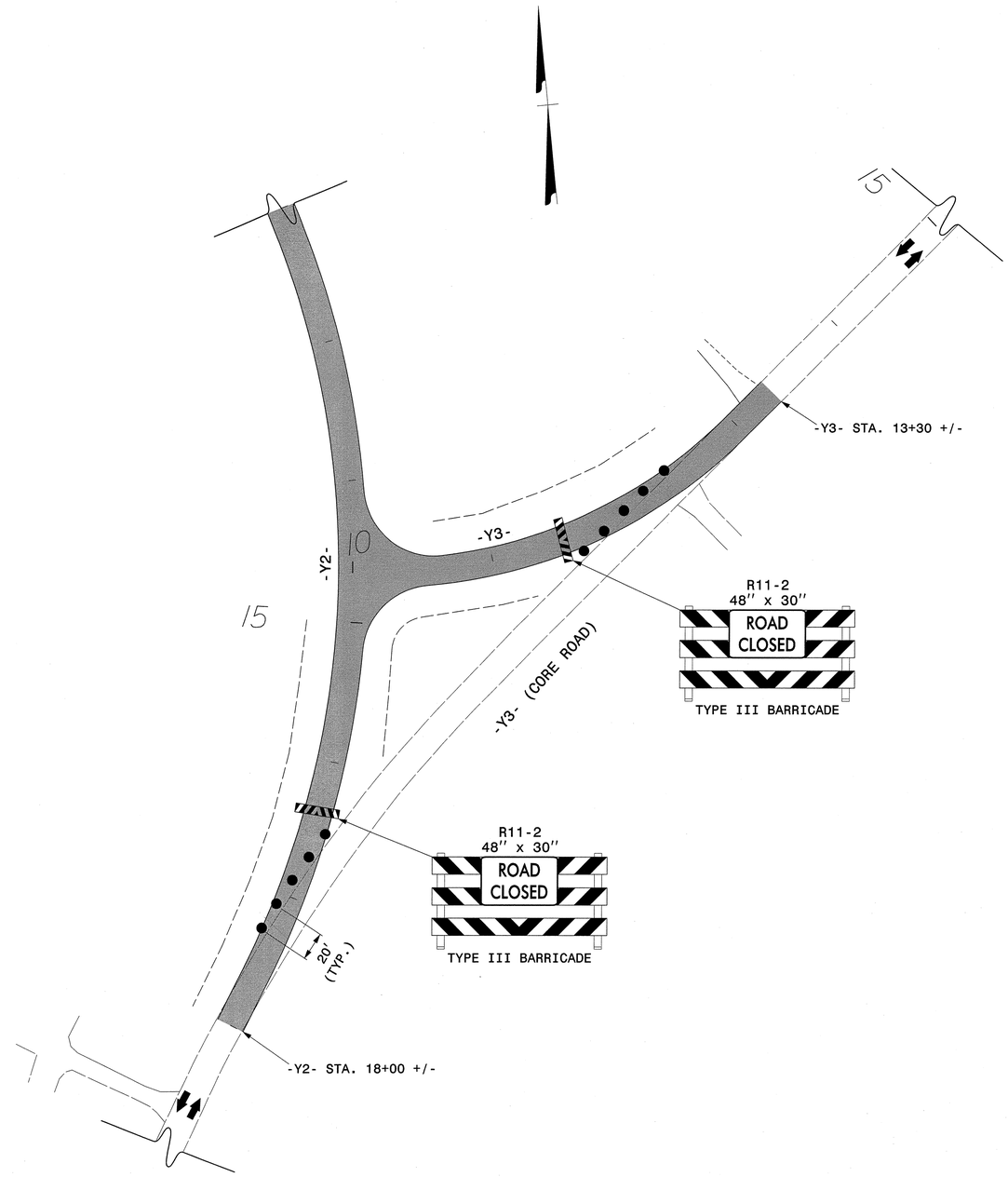

APPROVED: Lisa M. Moon DATE: 12-30-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

PHASE I DETAIL STEPS 2 & 3 –L–, –Y1–, –Y2– & –Y3–

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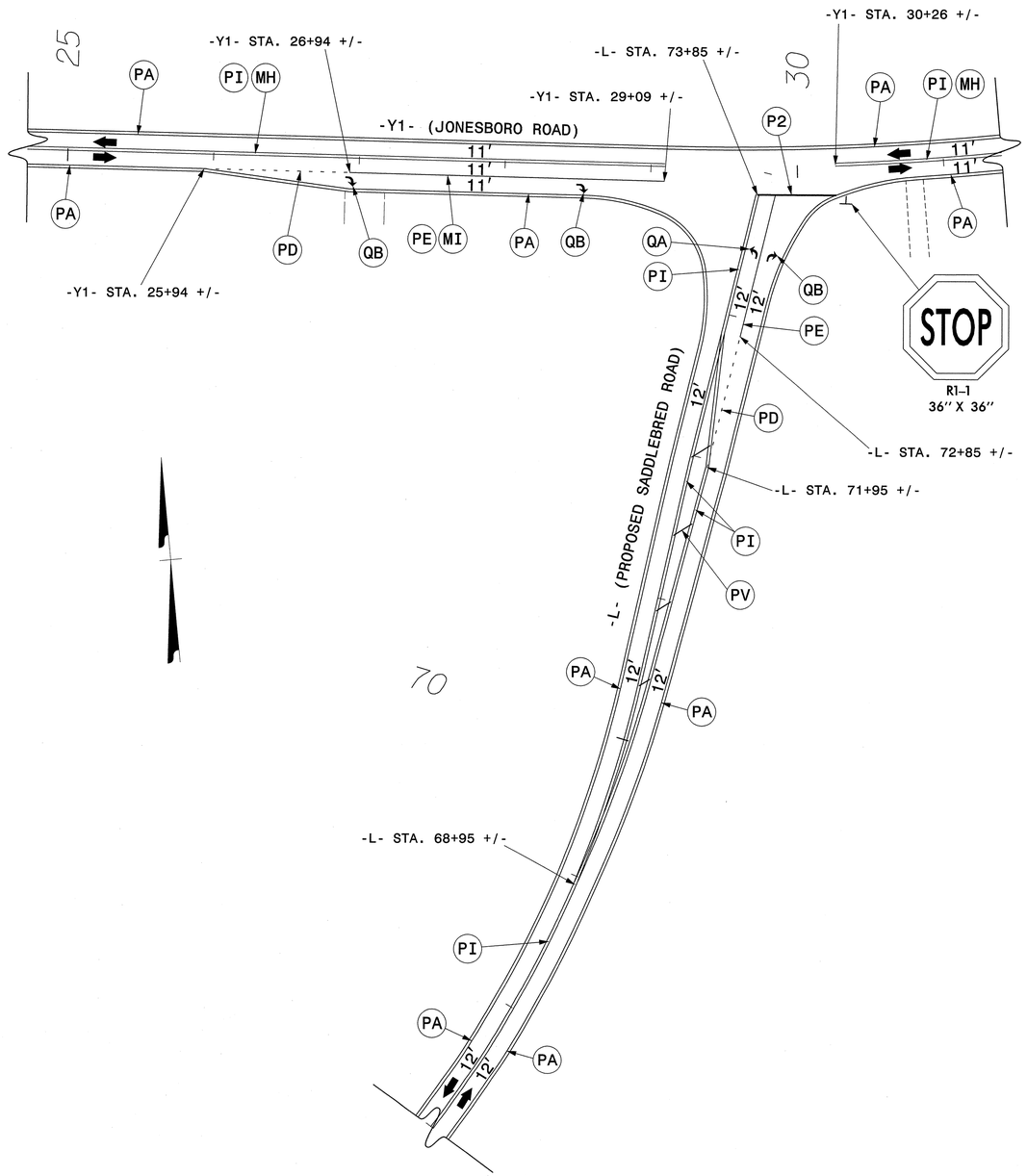
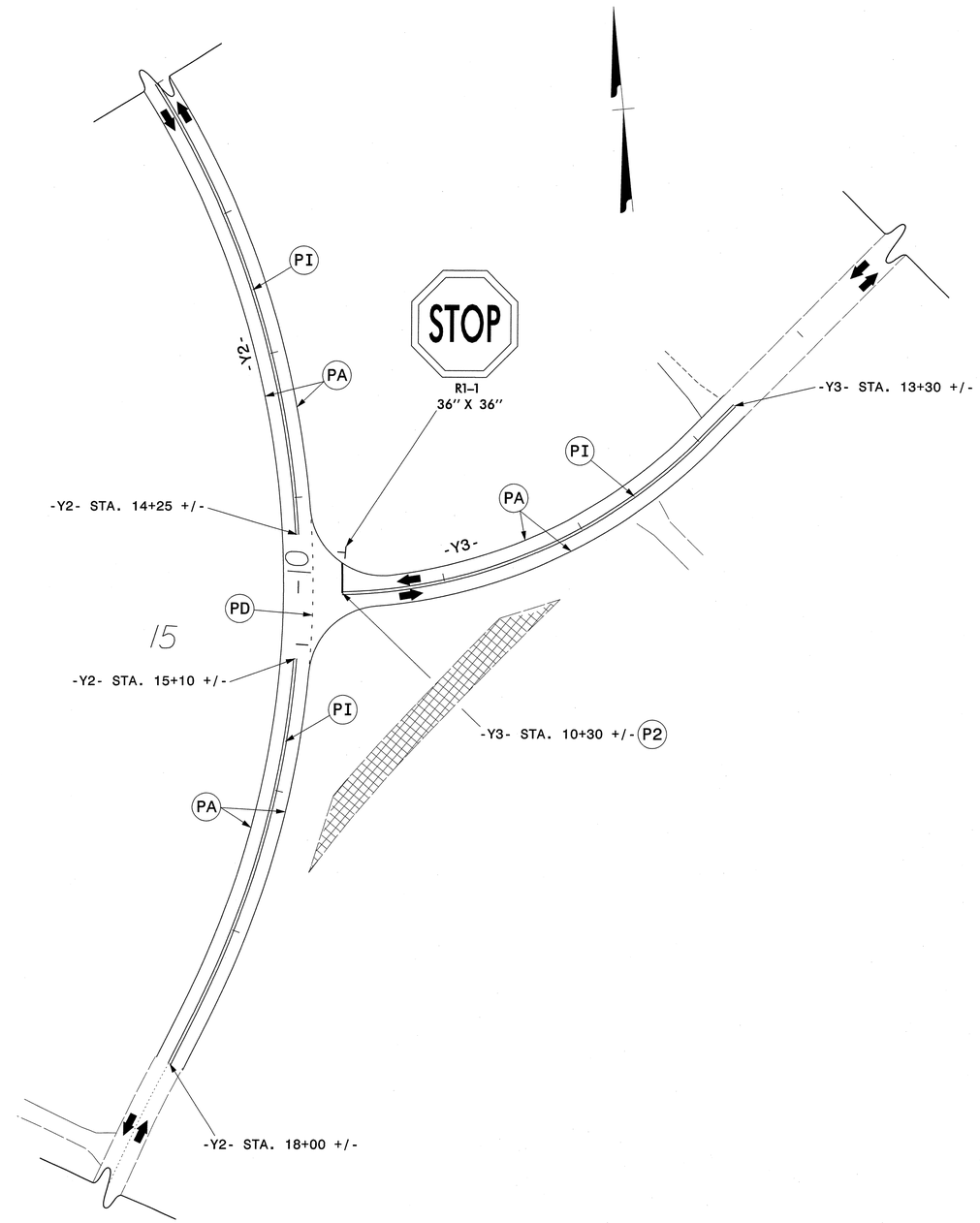
PROJ. REFERENCE NO.	SHEET NO.
R-5526	TMP-05





APPROVED: Lisa M. Moore DATE: 12-30-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

PHASE I DETAIL STEP 4 –L–, –Y1–, –Y2– & –Y3–

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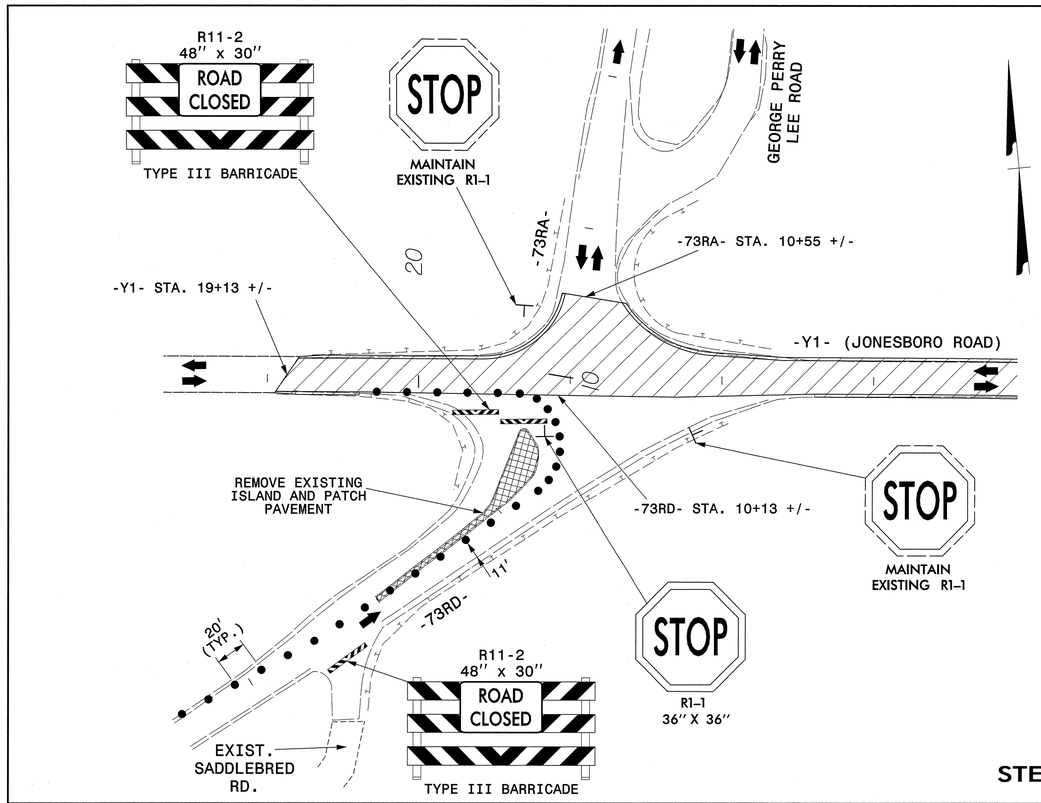
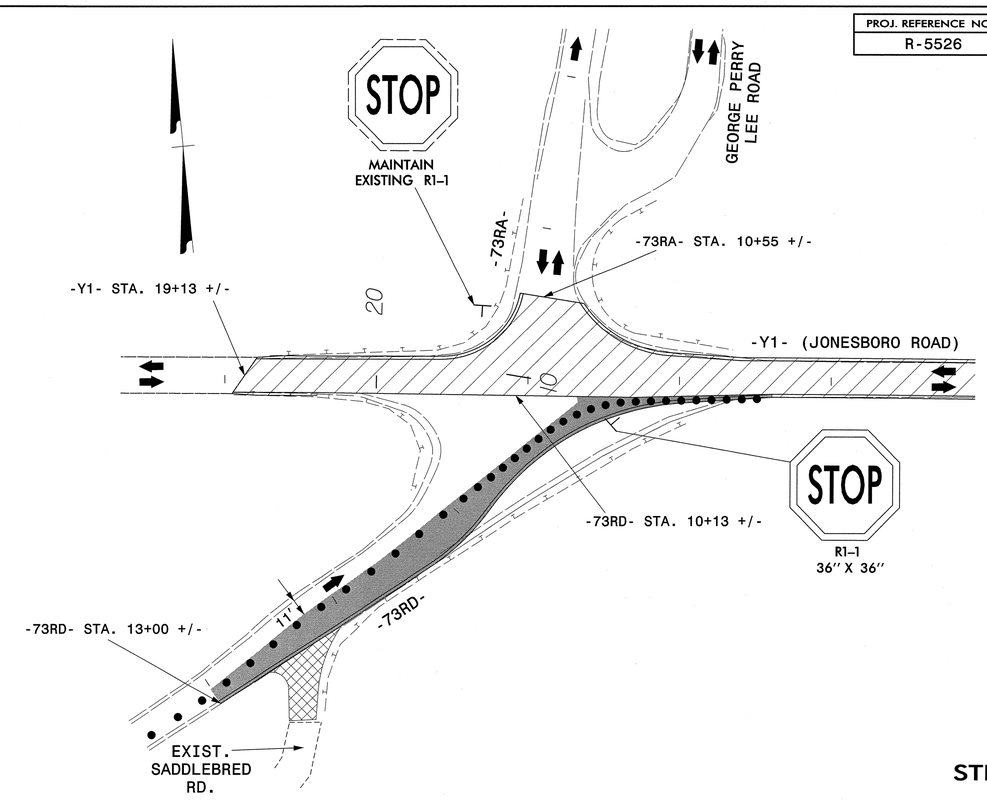
PROJ. REFERENCE NO.	SHEET NO.
R-5526	TMP-06



STEP A1



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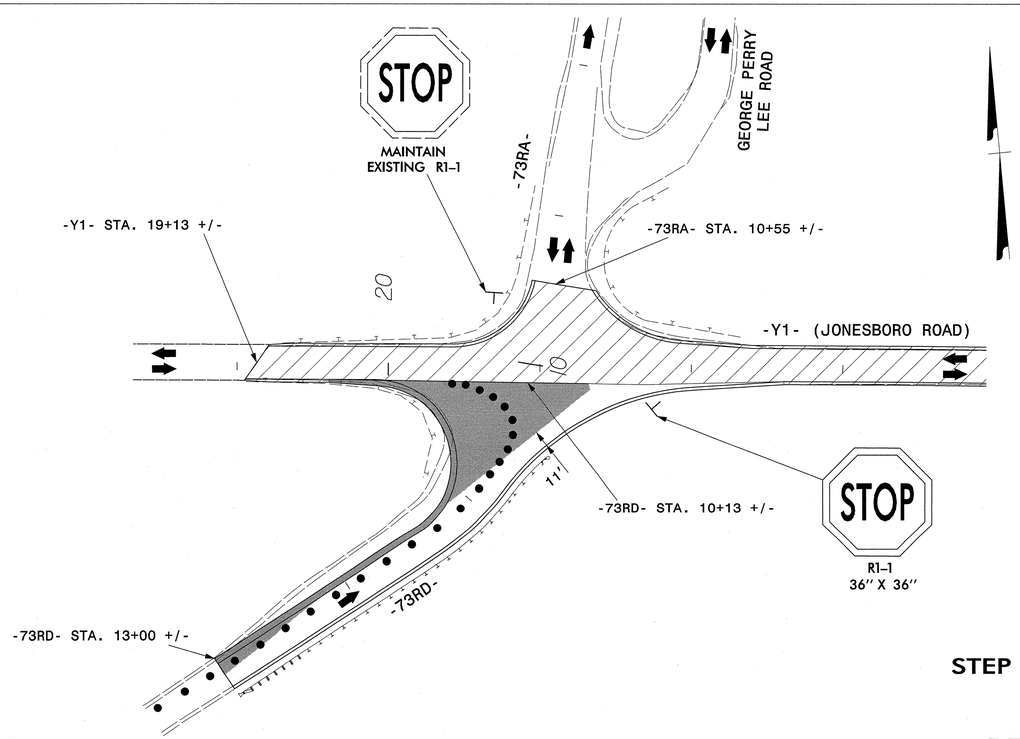

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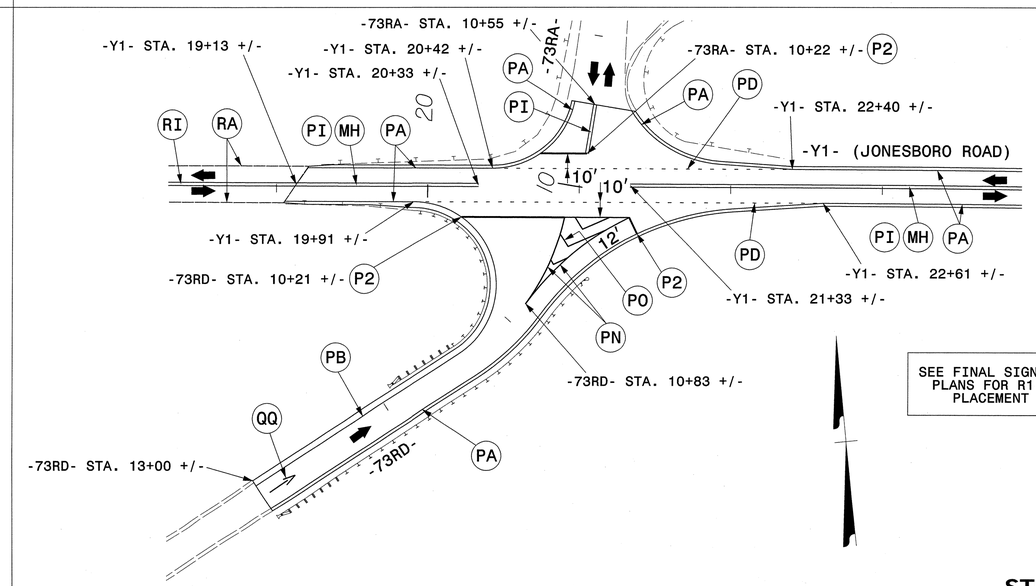

SEE FINAL SIGNING PLANS FOR R1-1 PLACEMENT

STEP A4

APPROVED: Lisa M. Moon DATE: 12-30-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

PHASE II DETAIL
STEP 2A
–Y1–, –73RA– & –73RD–

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

26-DEC-2013 16:22
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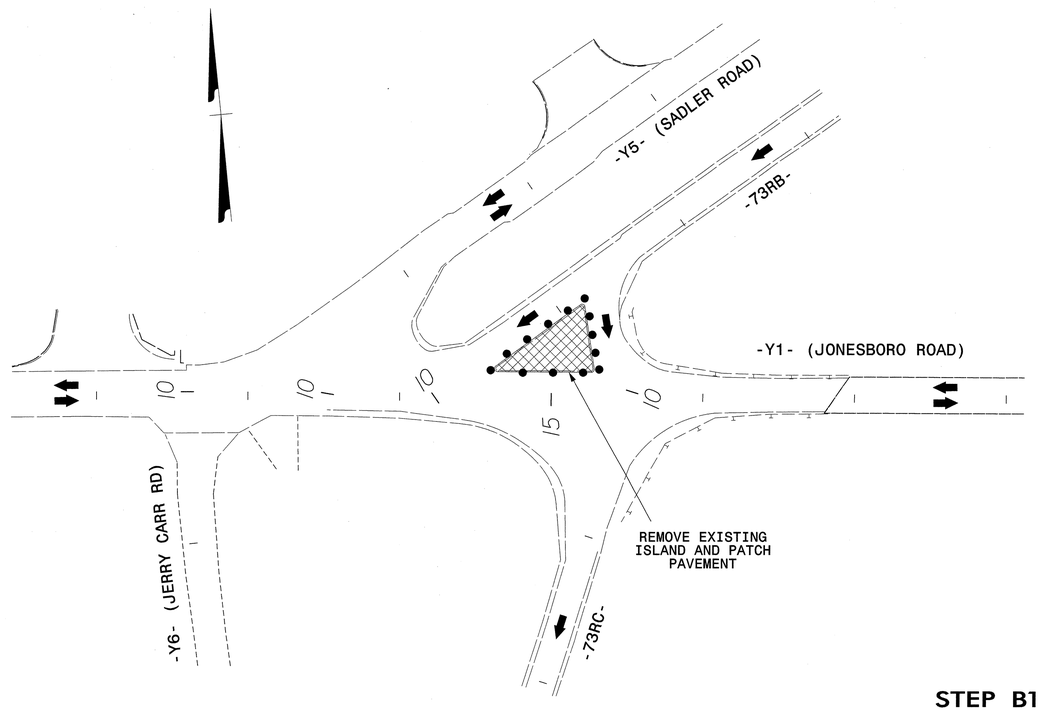
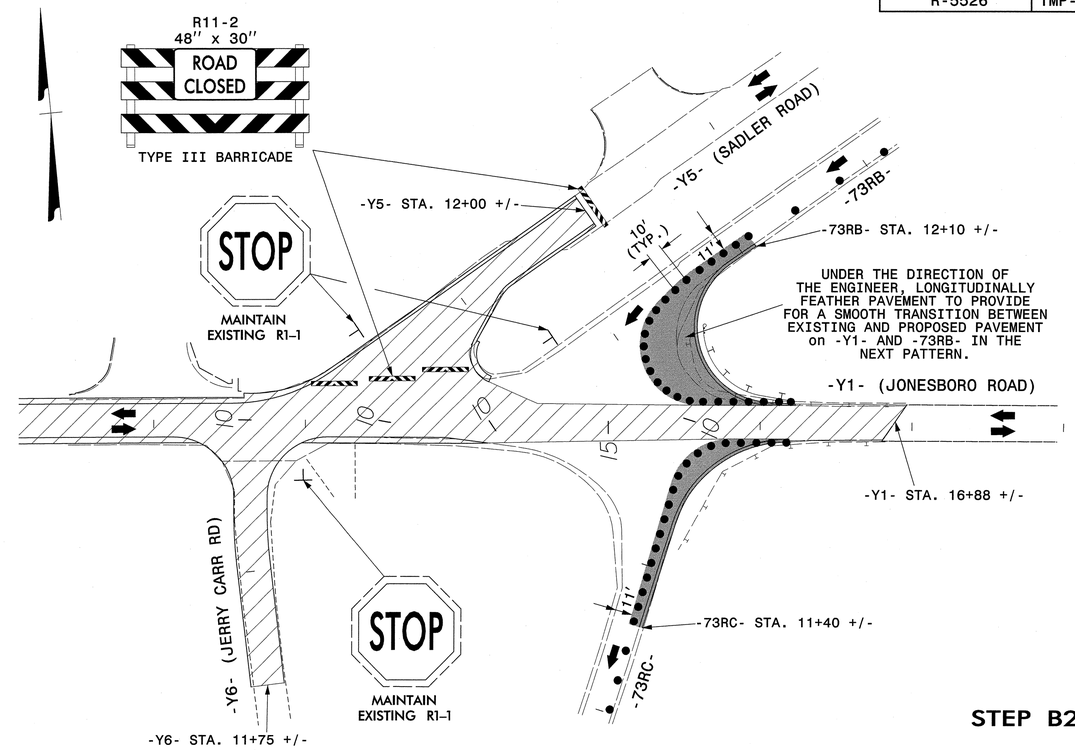
wilie2054 AT DUS290140

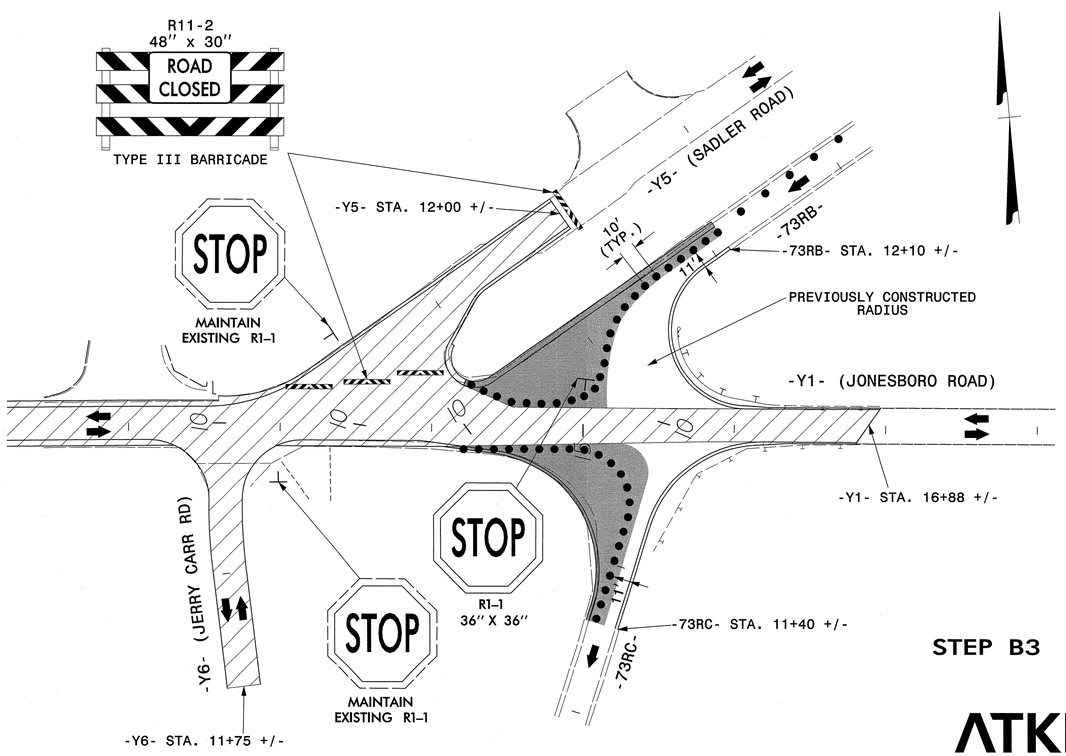
PROJ. REFERENCE NO.	SHEET NO.
R-5526	TMP-07



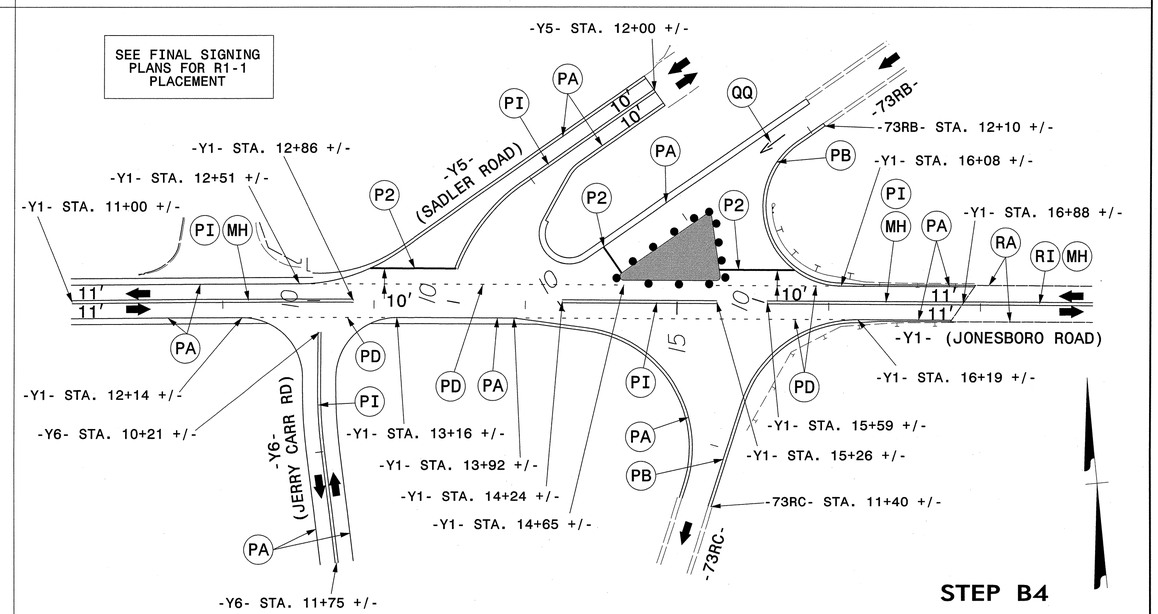
STEP B1



STEP B2



STEP B3



STEP B4

APPROVED: Lisa M. Moon DATE: 12-30-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

PHASE II DETAIL STEP 2B –Y1–, –73RB–, –73RC– & –Y5–

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

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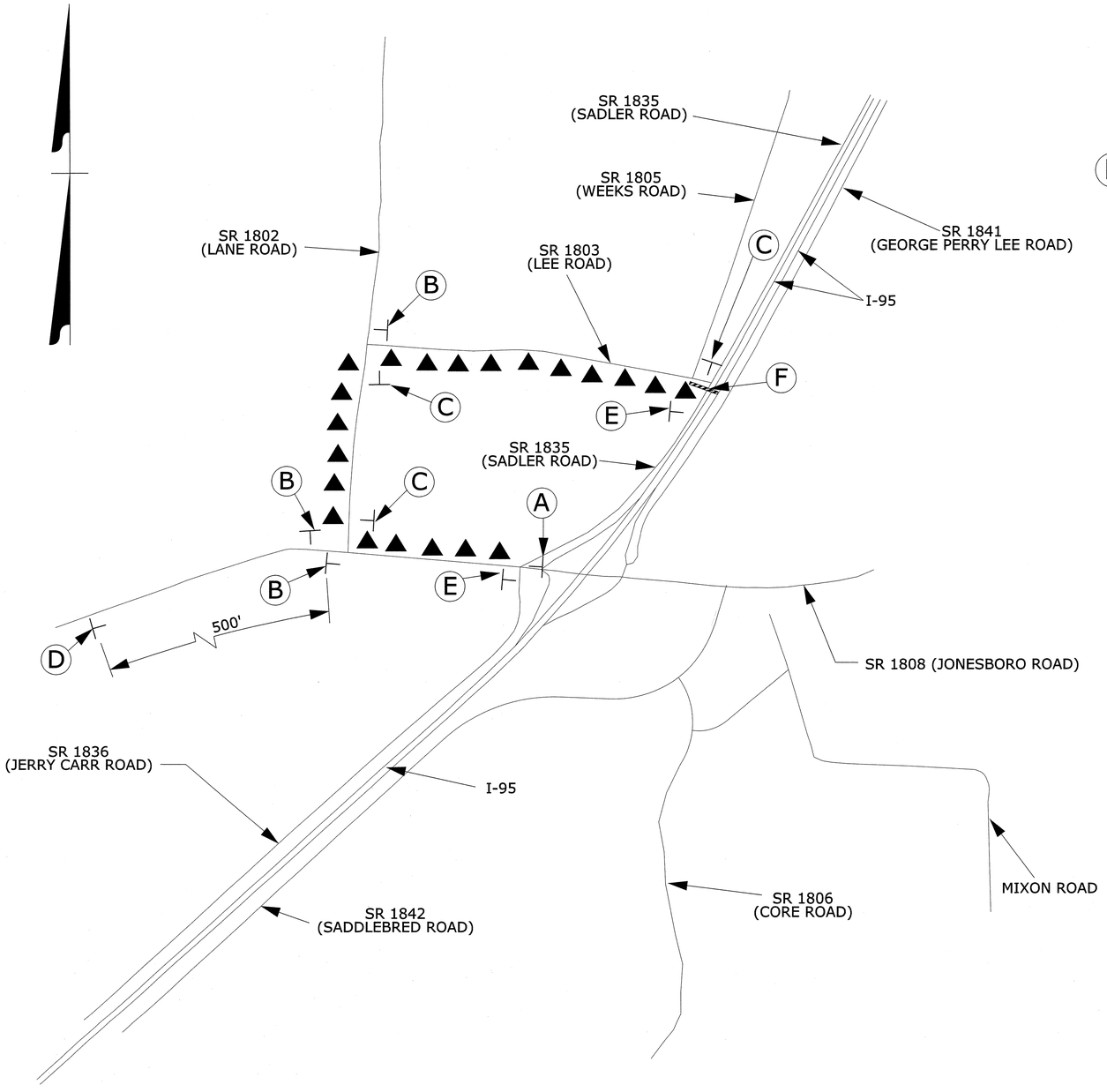
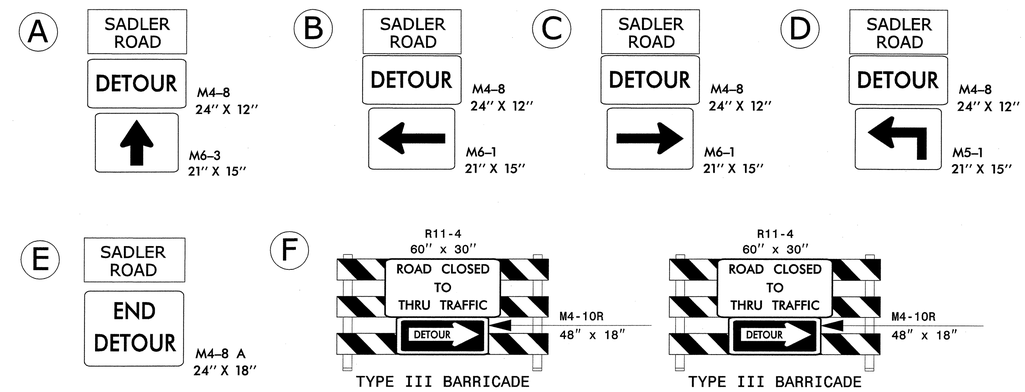
PROJ. REFERENCE NO.	SHEET NO.
R-5526	TMP-08





SIGN NUMBER: SP 01
TYPE: STATIONARY
QUANTITY: SEE PLANS

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

SIGN WIDTH: 3'-0"
HEIGHT: 2'-0"
TOTAL AREA: 6.0 Sq.Ft.

BORDER TYPE: INSET
RECESS: 0.47"
WIDTH: 0.63"
RADII: 1.5"

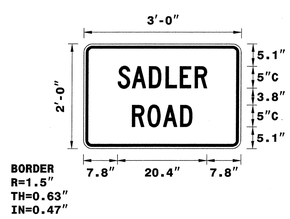
NO. Z BARS:
LENGTH:

MAT'L: 0.080" (2.0 mm) ALUMINUM

USE NOTES: 1,2

1. Legend and border shall be direct applied non-reflective sheeting.
2. Background shall be NC GRADE B fluoresent orange retroreflective sheeting.

DESIGN BY: M. THIGPEN
PROJECT ID: R-5526
CHECKED BY: L. MOON
DIV: 06
DATE: Nov 08, 2013



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

									Series/Size Text Length
	S	A	D	L	E	R			C 2000
7.8	3.3	3.9	3.8	3.3	3.4	2.8	7.8		20.4
	R	O	A	D					C 2000
11.1	3.5	3.6	3.9	2.8	11.1				13.8

FILENAME: Guidsign_English_8-2-13

NORTH CAROLINA D.O.T. SIGN DETAIL

APPROVED: Lisa M. Moon DATE: 12-3-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

SADLER ROAD
OFF SITE DETOUR ROUTES

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

26-DEC-2013 16:22
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wile2054 AT DUS290140

TIP NO.	SHEET NO.
R-5526	PMP-01A

APPROVED: Melissa B Toth

DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

T.I.P.: R-5526

CONTRACT:

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
HARNETT COUNTY

LOCATION: SR 1841 (SADDLEBRED ROAD) SOUTH OF I-95 AND SR 1808 (JONESBORO ROAD) INTERCHANGE

INDEX

SHEET NO.	DESCRIPTION
PMP-01A	PAVEMENT MARKING PLAN COVER SHEET
PMP-01-07	PAVEMENT MARKING DETAIL

ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
-L- (SADDLEBRED ROAD)	THERMOPLASTIC	NONE
-Y1- (JONESBORO ROAD)	THERMOPLASTIC	PERMANENT RAISED
-Y2-	THERMOPLASTIC	NONE
-Y3-	THERMOPLASTIC	NONE
-Y4-	NONE	NONE
-Y5- (SADLER ROAD)	THERMOPLASTIC	NONE
-Y6- (JERRY CARR ROAD)	THERMOPLASTIC	NONE
RAMPS	THERMOPLASTIC	PERMANENT RAISED
-Y1- BRIDGE OVER I-95	POLYUREA	NONE

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

E) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

F) REMOVE ALL RESIDUE AND SURFACE LAITANCE BY ACCEPTABLE METHODS ON CONCRETE BRIDGE DECKS PRIOR TO PLACING POLYUREA PAVEMENT MARKING MATERIAL.

G) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

PLAN REVIEWED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

AYMAN ALQUDWAH, PE — SIGNING & DELINEATION STANDARDS ENGINEER

_____ — SIGNING & DELINEATION PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL UNIT

PLAN PREPARED BY: ATKINS

MELISSA TOTH, PE — PROJECT ENGINEER

ABRAHAM WILES — DESIGN TECHNICIAN

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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wilwoods AI DUS290140

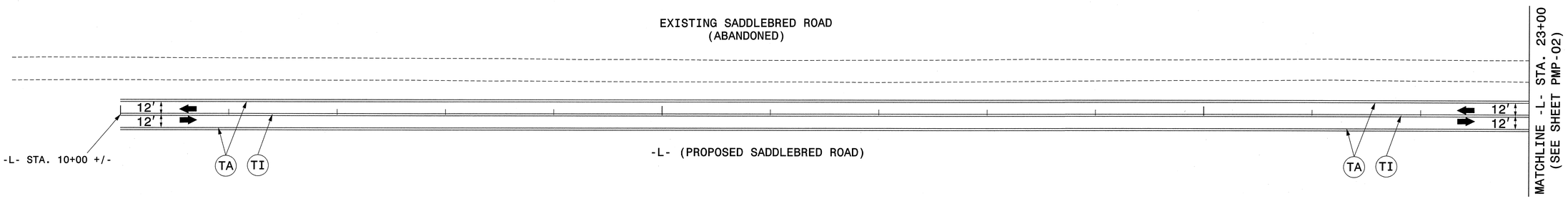
TIP NO.	SHEET NO.
R-5526	PMP-01

APPROVED: Melissa B. Toth

DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	
TA	WHITE EDGELINE	THERMOPLASTIC (4", 90 MILS)
TI	YELLOW DOUBLE CENTERLINE	THERMOPLASTIC (4", 120 MILS)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

PAVEMENT MARKING PLANS

-L- SADDLEBRED ROAD

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wile2054 AT DUS290140

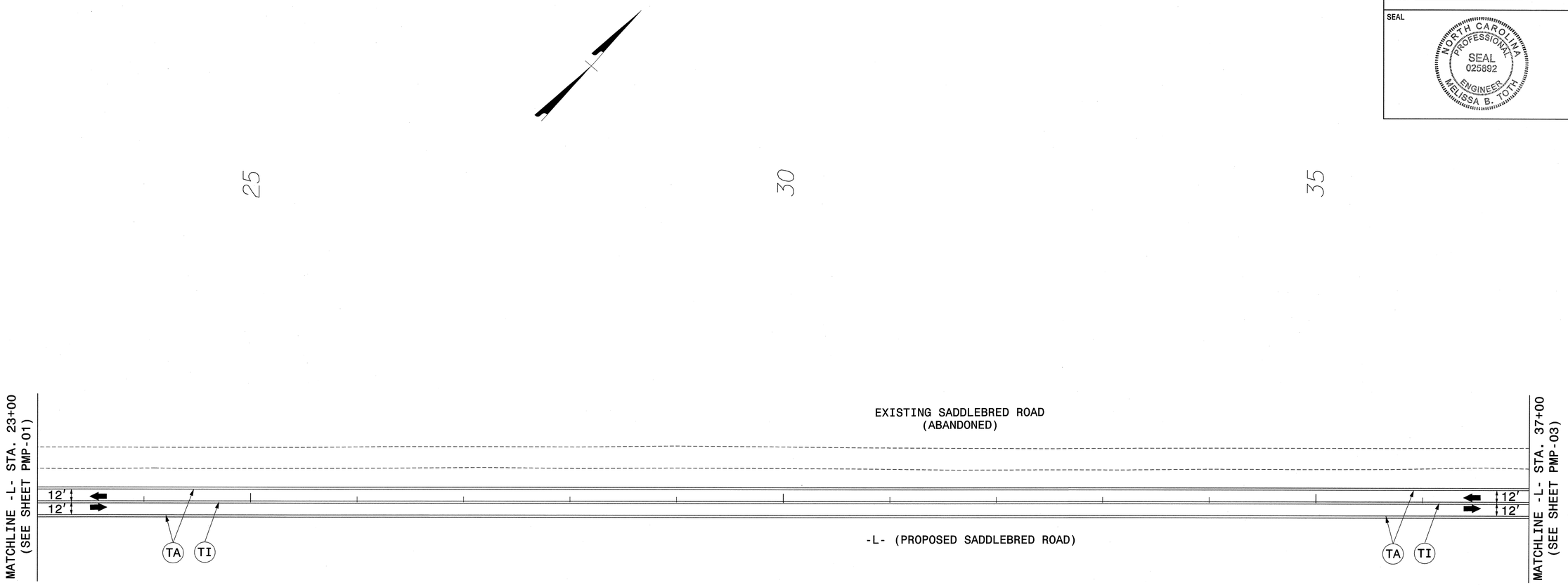
TIP NO.	SHEET NO.
R-5526	PMP-02

APPROVED: Melissa B Toth

DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	
TA	WHITE EDGELINE	THERMOPLASTIC (4", 90 MILS)
TI	YELLOW DOUBLE CENTERLINE	THERMOPLASTIC (4", 120 MILS)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

PAVEMENT MARKING PLANS

-L- SADDLEBRED ROAD

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wile2054 AT DUS290140

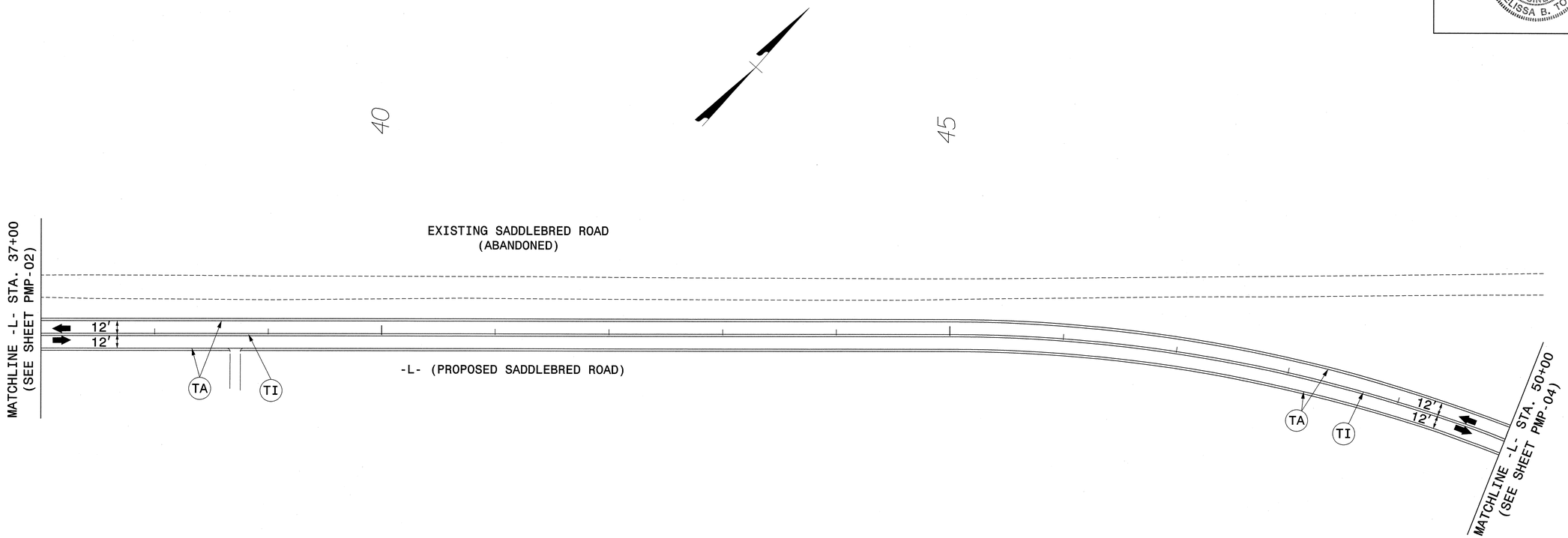
TIP NO.	SHEET NO.
R-5526	PMP-03

APPROVED: Melissa B Toth

DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	
TA	WHITE EDGELINE	THERMOPLASTIC (4", 90 MILS)
TI	YELLOW DOUBLE CENTERLINE	THERMOPLASTIC (4", 120 MILS)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

PAVEMENT MARKING PLANS

-L- SADDLEBRED ROAD

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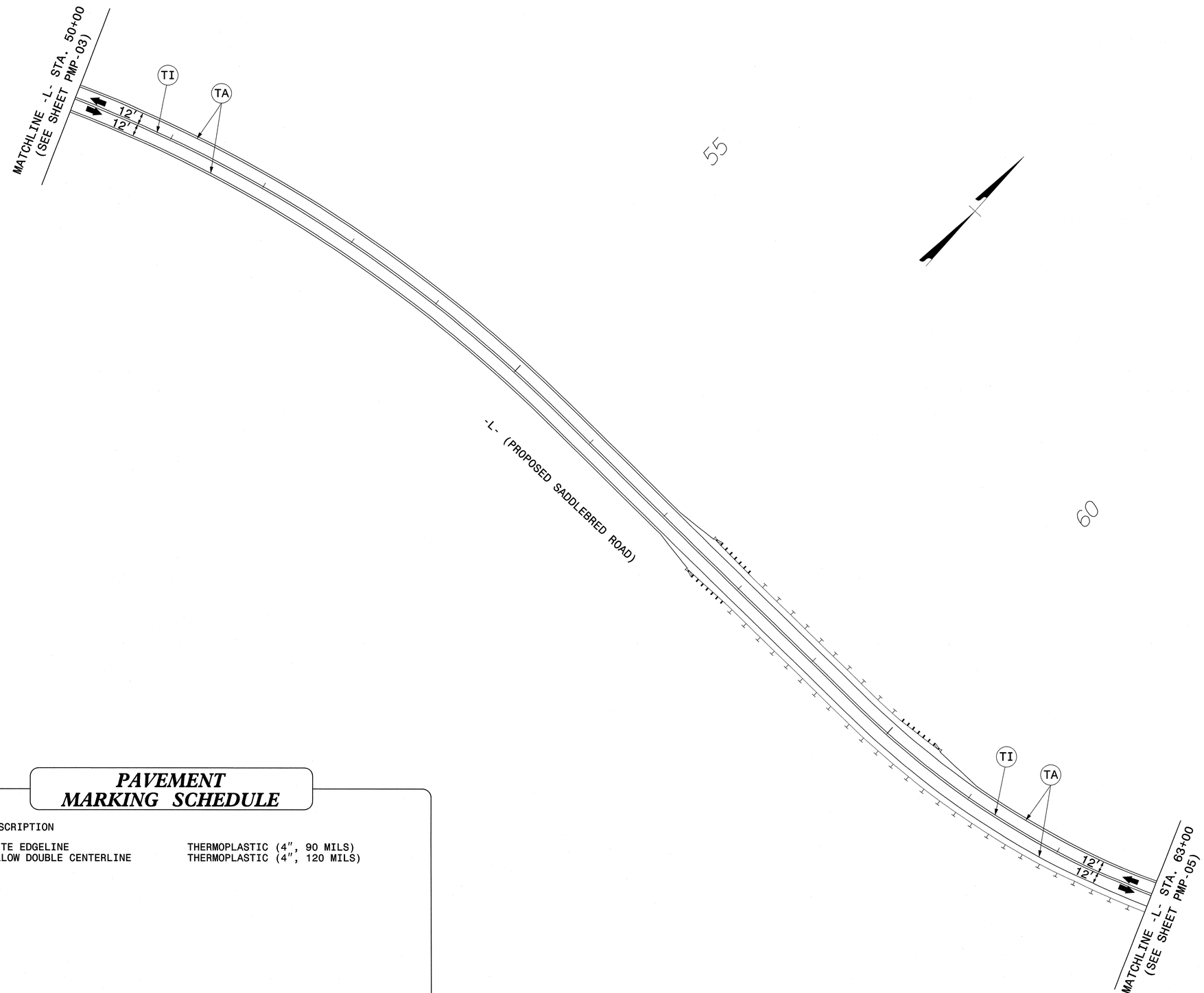
TIP NO.	SHEET NO.
R-5526	PMP-04

APPROVED: Melissa B Toth

DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	
TA	WHITE EDGELINE	THERMOPLASTIC (4", 90 MILS)
TI	YELLOW DOUBLE CENTERLINE	THERMOPLASTIC (4", 120 MILS)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

PAVEMENT MARKING PLANS

-L- SADDLEBRED ROAD

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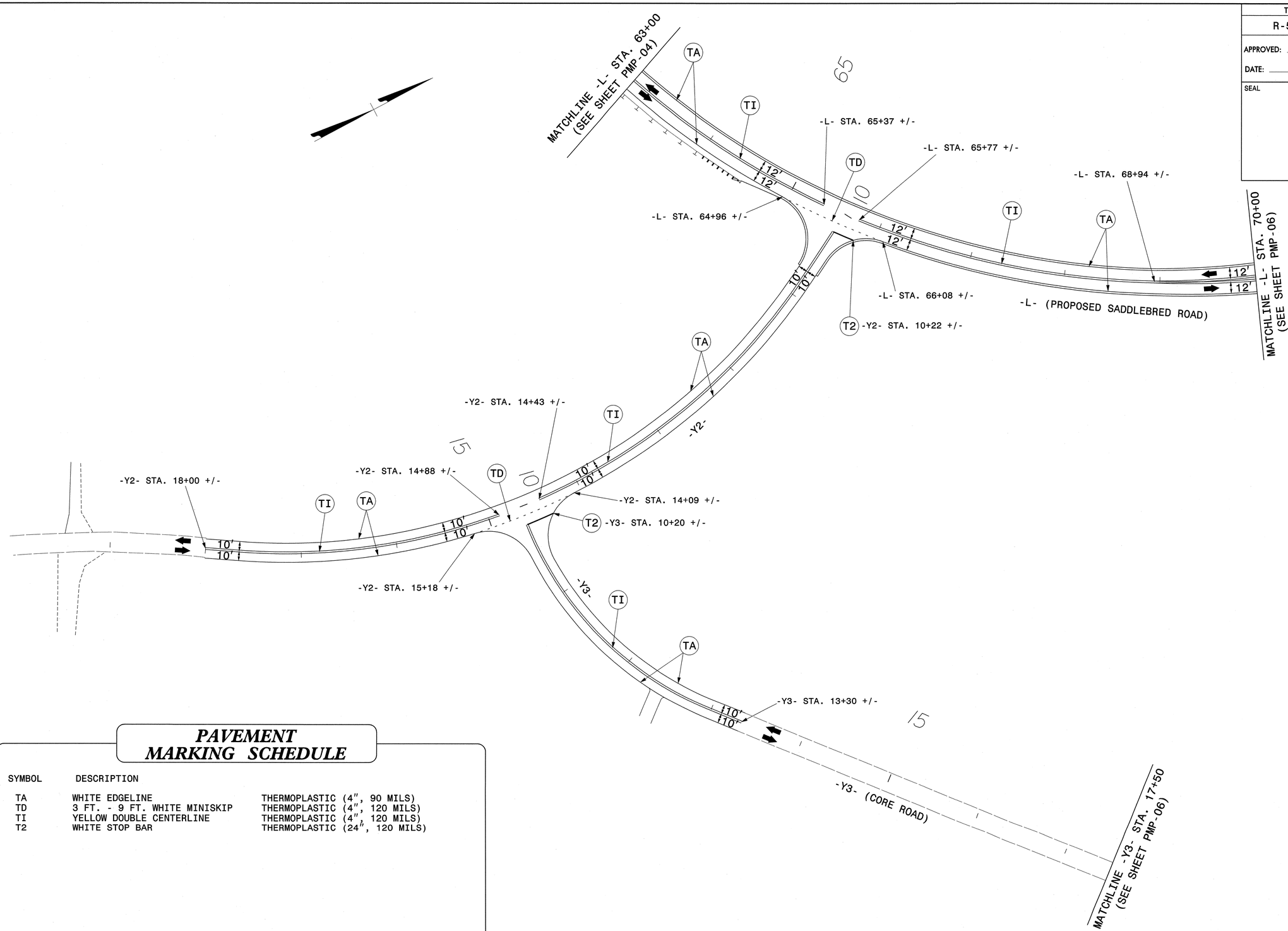
TIP NO.	SHEET NO.
R-5526	PMP-05

APPROVED: Melissa B. Toth

DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	
TA	WHITE EDGELINE	THERMOPLASTIC (4", 90 MILS)
TD	3 FT. - 9 FT. WHITE MINISKIP	THERMOPLASTIC (4", 120 MILS)
TI	YELLOW DOUBLE CENTERLINE	THERMOPLASTIC (4", 120 MILS)
T2	WHITE STOP BAR	THERMOPLASTIC (24", 120 MILS)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

PAVEMENT MARKING PLANS

-L-, -Y2- & -Y3-

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TIP NO.	SHEET NO.
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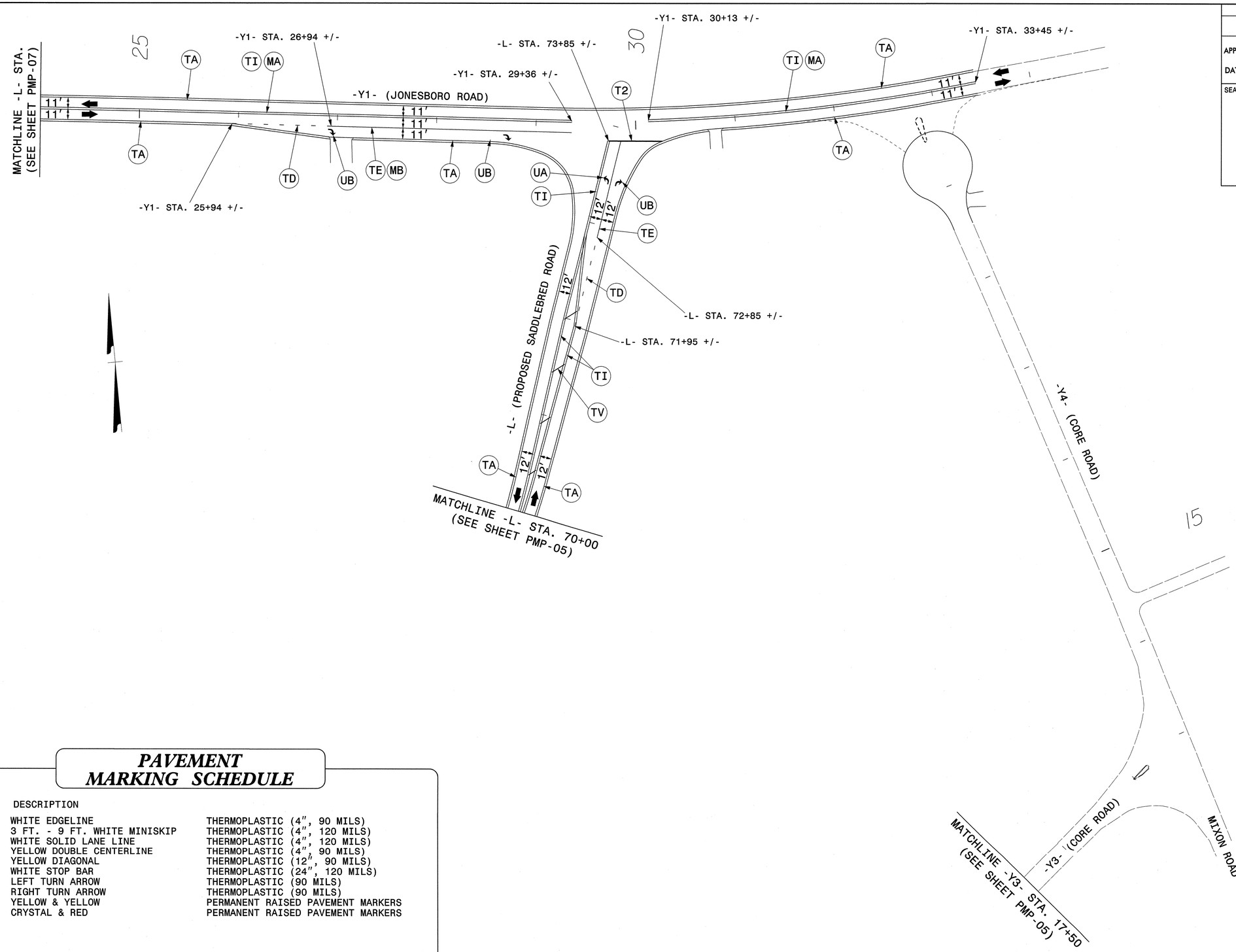
APPROVED: Melissa B Toth

DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	
TA	WHITE EDGELINE	THERMOPLASTIC (4", 90 MILS)
TD	3 FT. - 9 FT. WHITE MINISKIP	THERMOPLASTIC (4", 120 MILS)
TE	WHITE SOLID LANE LINE	THERMOPLASTIC (4", 120 MILS)
TI	YELLOW DOUBLE CENTERLINE	THERMOPLASTIC (4", 90 MILS)
TV	YELLOW DIAGONAL	THERMOPLASTIC (12", 90 MILS)
T2	WHITE STOP BAR	THERMOPLASTIC (24", 120 MILS)
UA	LEFT TURN ARROW	THERMOPLASTIC (90 MILS)
UB	RIGHT TURN ARROW	THERMOPLASTIC (90 MILS)
MA	YELLOW & YELLOW	PERMANENT RAISED PAVEMENT MARKERS
MB	CRYSTAL & RED	PERMANENT RAISED PAVEMENT MARKERS

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

PAVEMENT MARKING PLANS
-L-, -Y1-, -Y3- & -Y4-

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wile2054 AT DUS29040

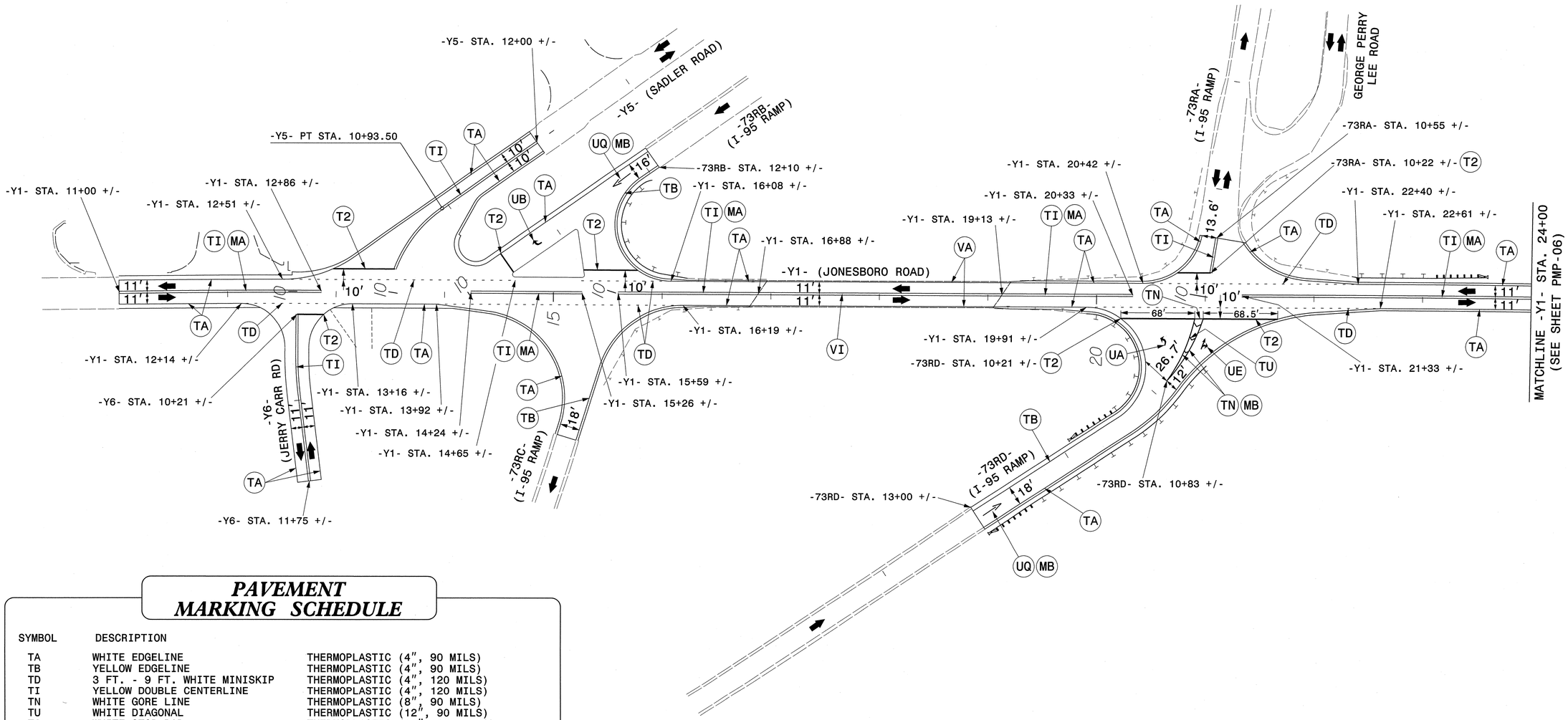
TIP NO.	SHEET NO.
R-5526	PMP-07

APPROVED: Melissa B Toth

DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	
TA	WHITE EDGELINE	THERMOPLASTIC (4", 90 MILS)
TB	YELLOW EDGELINE	THERMOPLASTIC (4", 90 MILS)
TD	3 FT. - 9 FT. WHITE MINISKIP	THERMOPLASTIC (4", 120 MILS)
TI	YELLOW DOUBLE CENTERLINE	THERMOPLASTIC (4", 120 MILS)
TN	WHITE GORE LINE	THERMOPLASTIC (8", 90 MILS)
TU	WHITE DIAGONAL	THERMOPLASTIC (12", 90 MILS)
T2	WHITE STOP BAR	THERMOPLASTIC (24", 120 MILS)
UA	LEFT TURN ARROW	THERMOPLASTIC (90 MILS)
UB	RIGHT TURN ARROW	THERMOPLASTIC (90 MILS)
UE	COMBO. STRAIGHT / RIGHT ARROW	THERMOPLASTIC (90 MILS)
UQ	RAMP ARROW SYMBOL	THERMOPLASTIC (90 MILS)
VA	WHITE EDGELINE	POLYUREA (4")
VI	YELLOW DOUBLE CENTERLINE	POLYUREA (4')
MA	YELLOW & YELLOW	PERMANENT RAISED PAVEMENT MARKERS
MB	CRYSTAL & RED	PERMANENT RAISED PAVEMENT MARKERS

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

PAVEMENT MARKING PLANS
-Y1- JONESBORO ROAD

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TIP PROJECT: R5526

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5526	EC-1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

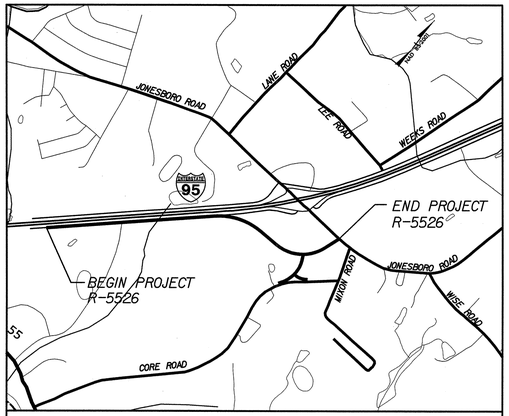
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

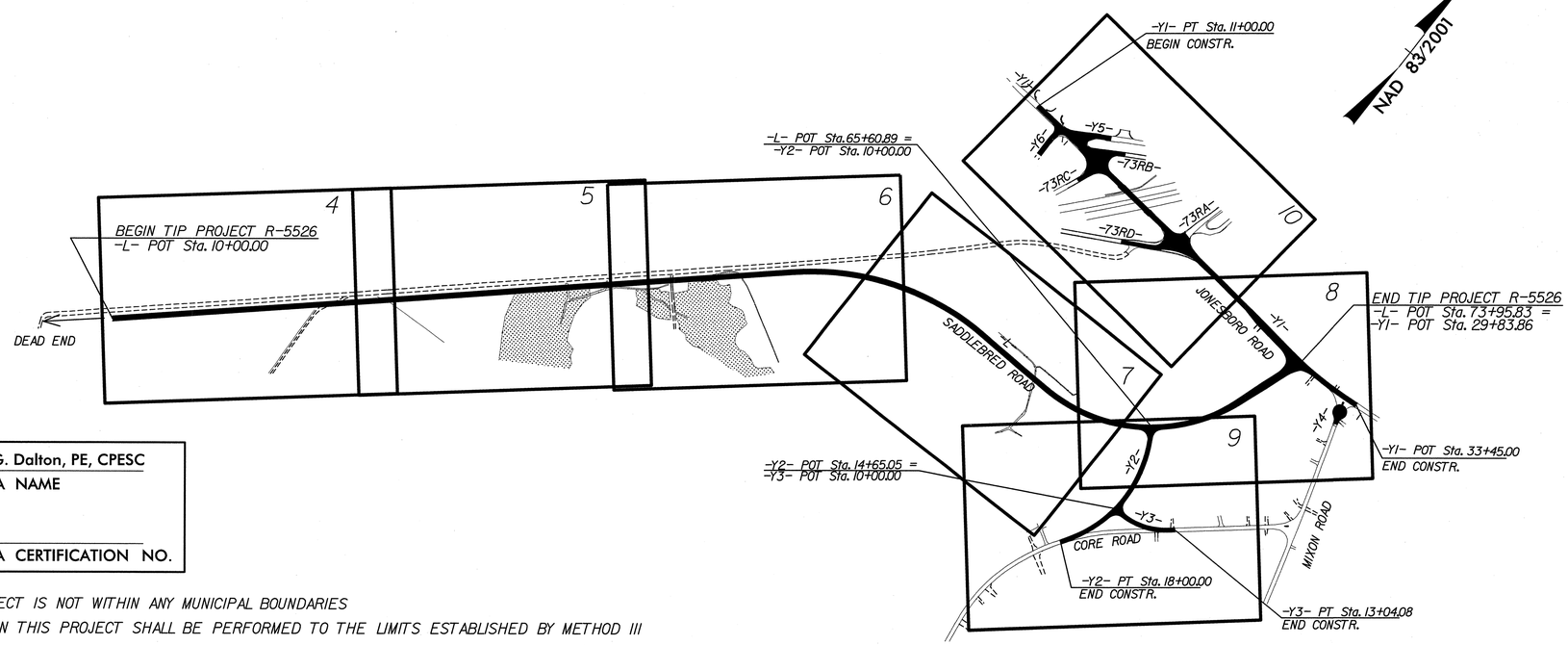
HARNETT COUNTY

LOCATION: SR 1841 (SADDLEBRED ROAD) SOUTH OF I-95 AND SR 1808 (JONESBORO ROAD) INTERCHANGE

TYPE OF WORK: GRADING, PAVING, WIDENING, RESURFACING, DRAINAGE, PAVEMENT MARKINGS, AND SIGNING



VICINITY MAP



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle/ Coir Fiber Wattle	EW / CFW
	Wattle/ Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

Joshua G. Dalton, PE, CPESC
LEVEL IIIA NAME

307
LEVEL IIIA CERTIFICATION NO.

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

GRAPHIC SCALE

50 25 0 50 100
PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared In the Office of:

SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258
ENG FIRM LICENSE NO. C-890

2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

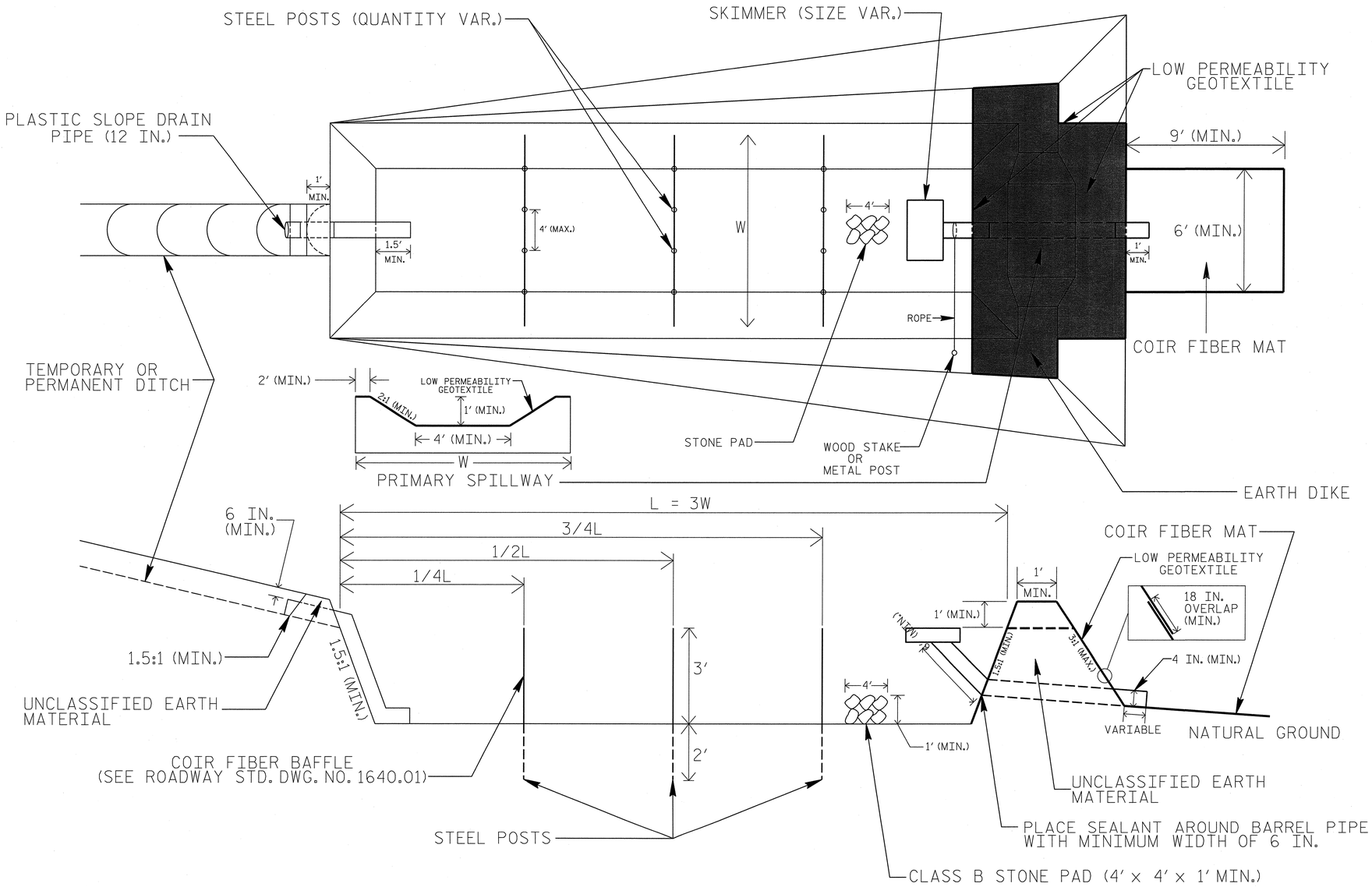
The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

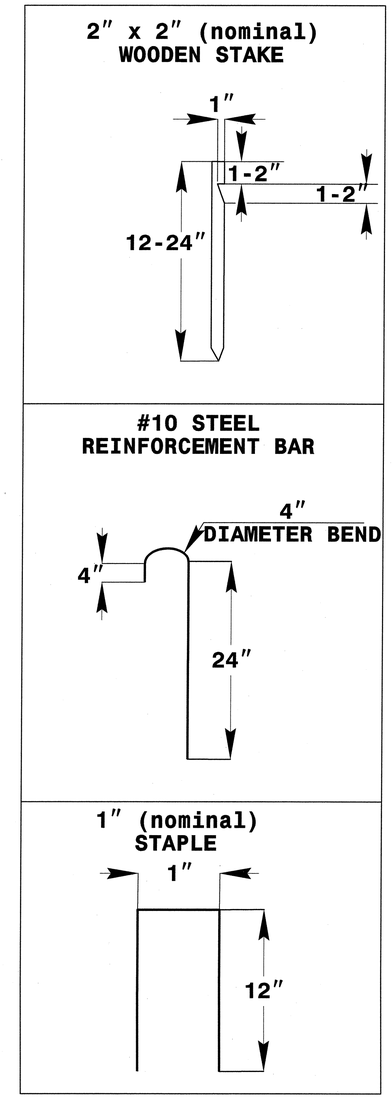
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

12/31/2013
R5526_EC_dsn_tsh
eteonher

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL (EAST)





COIR FIBER MAT ANCHOR OPTIONS

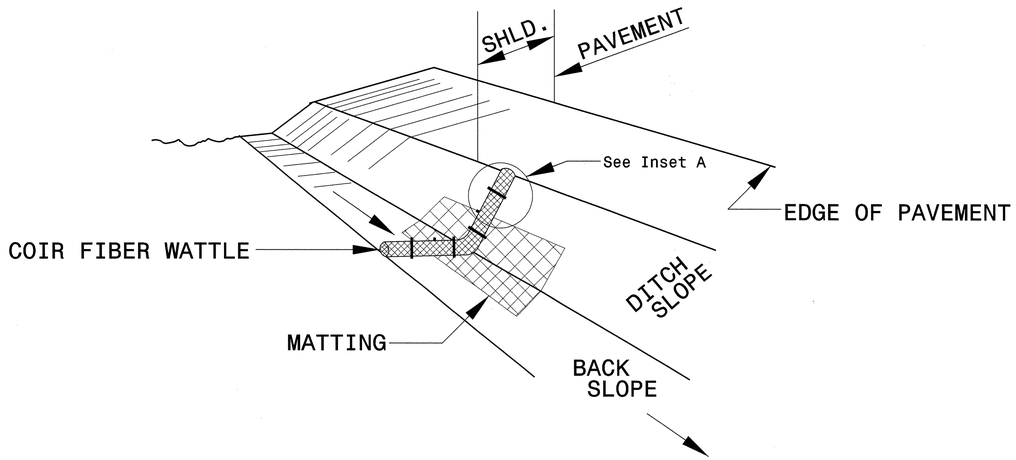
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE PRIMARY SPILLWAY WEIR LENGTH (FT.) USING Q/0.4, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. LOW PERMEABILITY GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

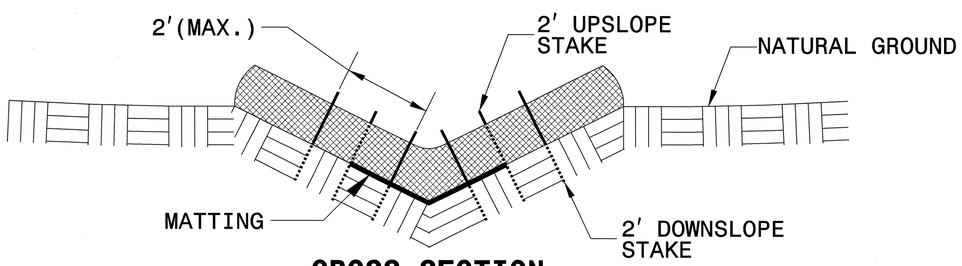
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

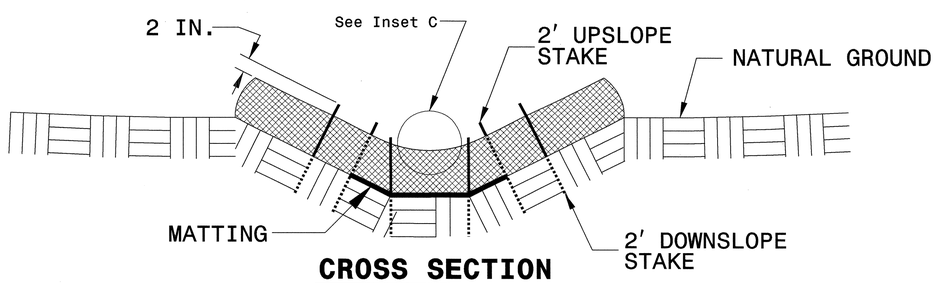
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

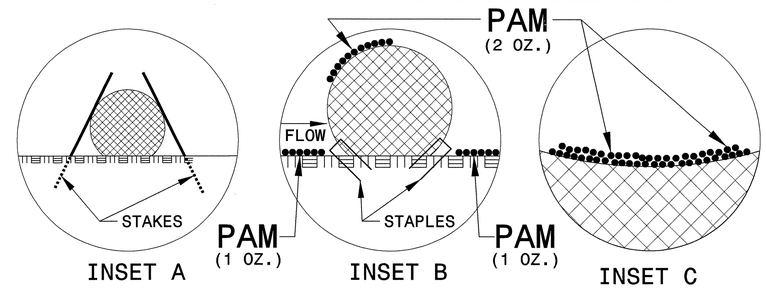
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

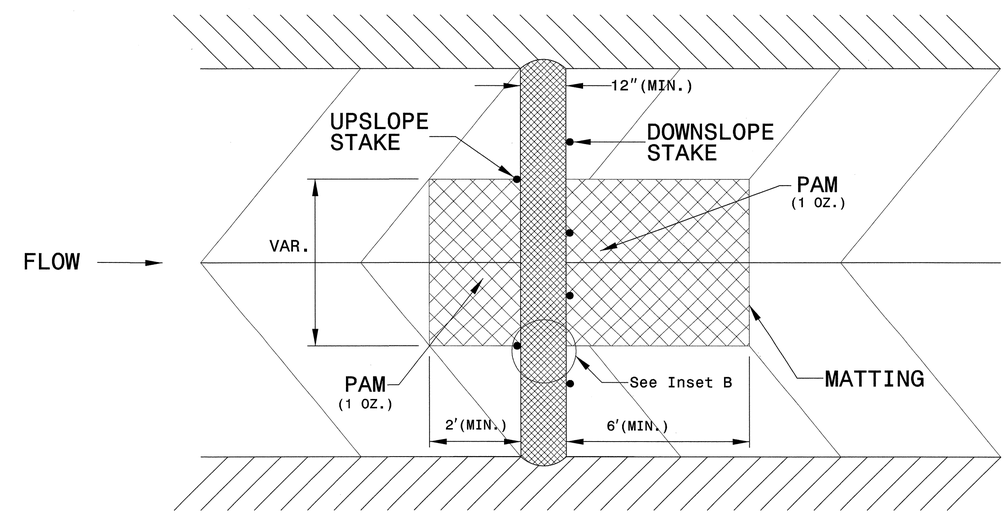
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

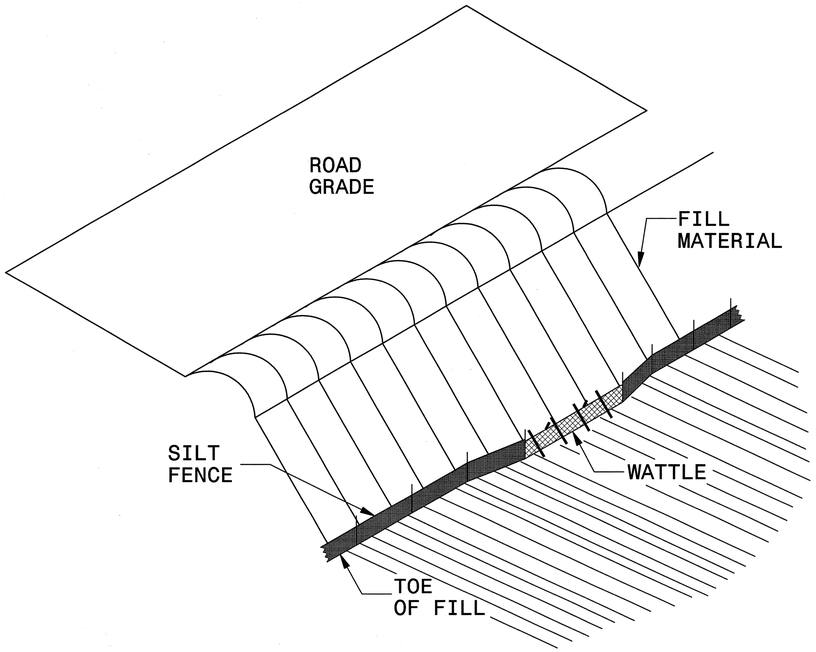




TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

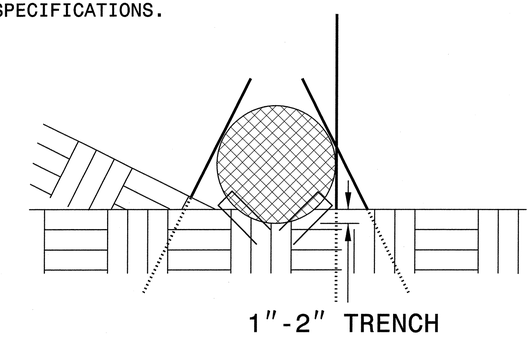
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

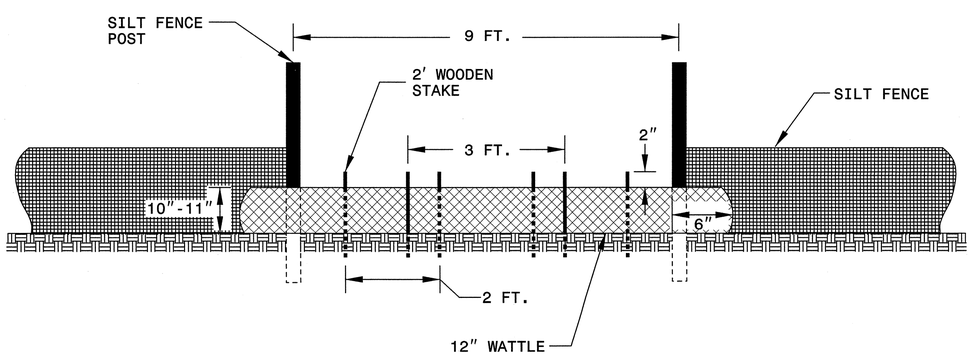
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

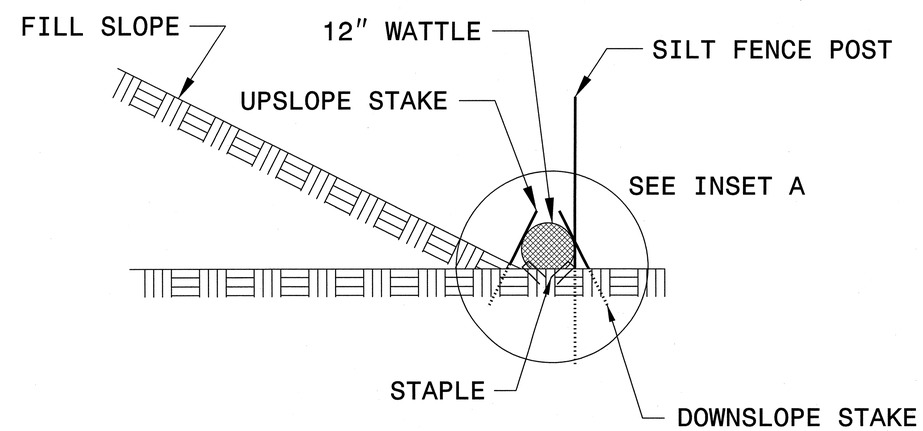
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





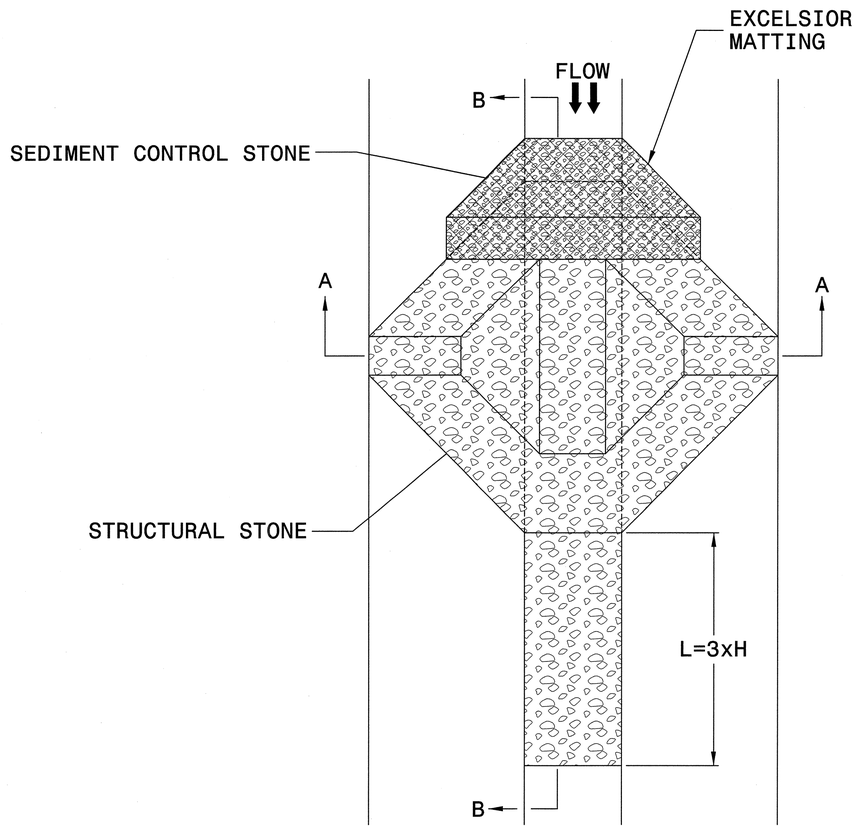
VIEW FROM SLOPE



SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



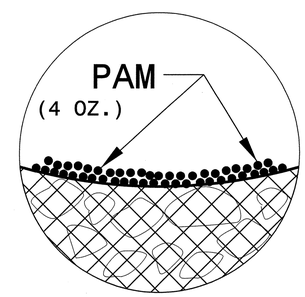
PLAN

NOTES

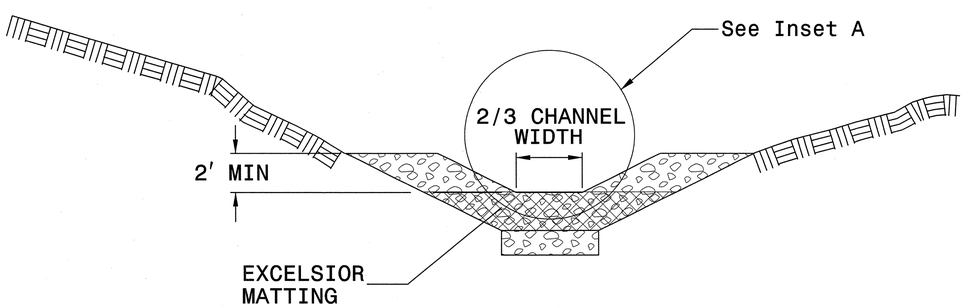
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

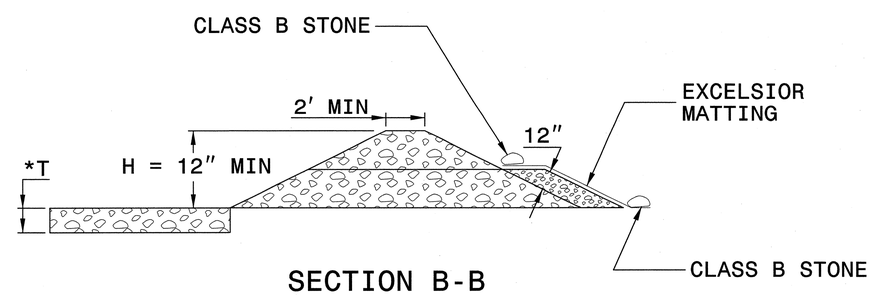
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

*T = 12" MIN., 18" MAX.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	15+50	20+50	LT	120
4	-L-	15+50	50+50	RT	120
5	-L-	33+50	35+50	LT	50
6	-L-	41+25	47+50	LT	170
6	-L-	36+50	42+50	RT	430
6	-L-	42+50	48+75	RT	170
7	-L-	58+85	63+00	LT	205
7	-L-	58+75	59+08	RT	20
8	-L-	63+00	64+50	LT	75
8	-L-	70+50	73+00	LT	60
8	-L-	58+75	59+08	RT	245
8	-Y4-	10+60	10+87	RT	10
8	-Y4-	10+60	11+40	LT	80
10	-Y6-	10+75	11+75	RT	30
10	-Y5-	10+75	11+75	RT	30
				SUBTOTAL	1815
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					51060
				TOTAL	52875

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-3B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

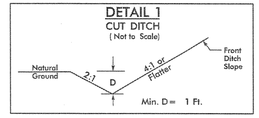
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

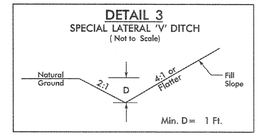
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

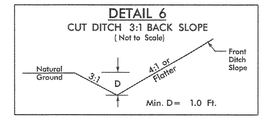
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.



FROM STA. 13+50 TO STA. 15+50 -L- LT



FROM STA. 11+50 TO STA. 13+50 -L- LT



FROM STA. 20+53.90 TO STA. 33+28 -L- LT
FROM STA. 20+53.90 TO STA. 30+00 -L- RT

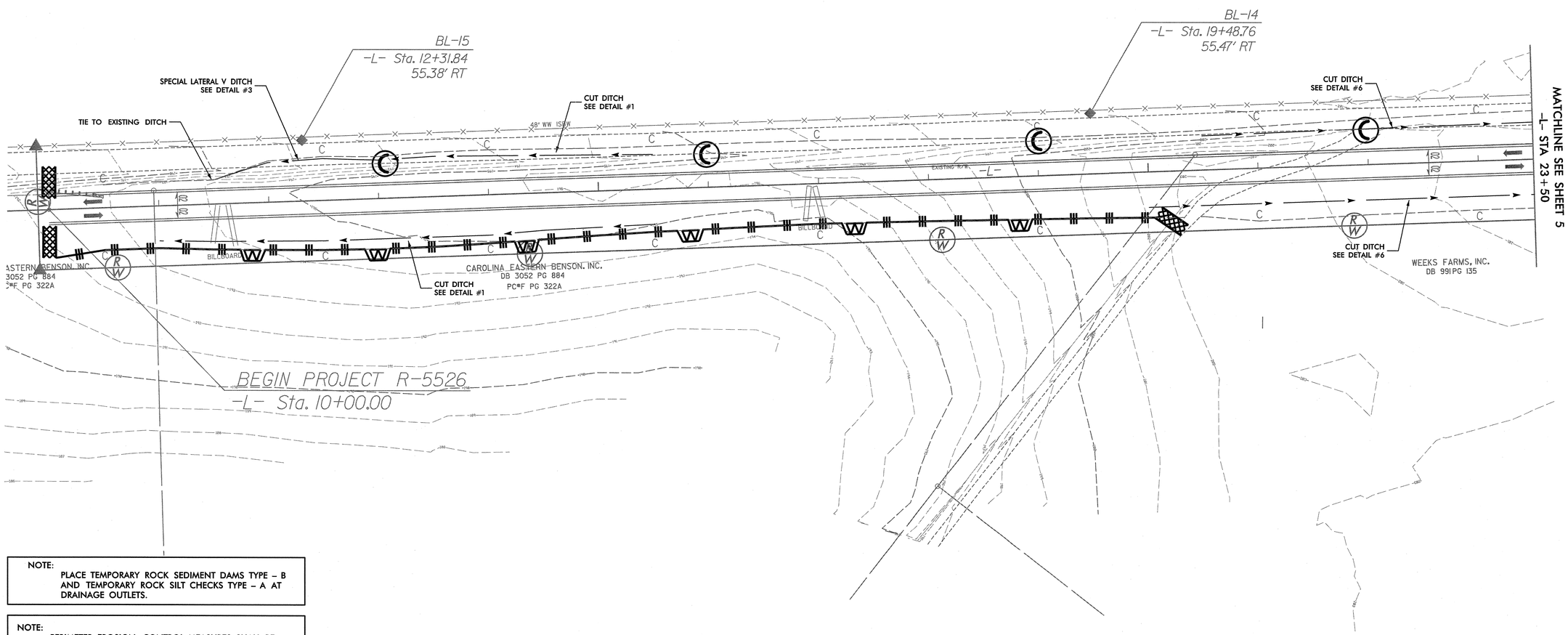
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-04/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83

50 25 0 50 100
PLANS

10 15 20



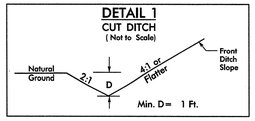
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-05/CONST.05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

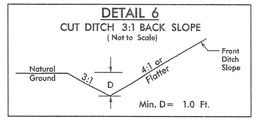
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 05

DETAIL 1
CUT DITCH
(Not to Scale)



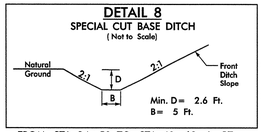
FROM STA. 33+28 TO STA. 43+50 –L– LT

DETAIL 6
CUT DITCH 3:1 BACK SLOPE
(Not to Scale)



FROM STA. 20+53.90 TO STA. 33+28 –L– LT
FROM STA. 20+53.90 TO STA. 30+00 –L– RT

DETAIL 8
SPECIAL CUT BASE DITCH
(Not to Scale)



FROM STA. 34+50 TO STA. 40+68 –L– RT

NAD 83

50 25 0 50 100
PLANS

25 30 35

52 x 26 x 3
1.5 inch Skimmer
with 1.000 inch
Orifice Diameter
18 ft. weir
ID 5.2

64 x 32 x 3
1.5 inch Skimmer
with 1.250 inch
Orifice Diameter
24 ft. weir
ID 5.1

BL-13
-L- Sta. 25+56.16
54.47' RT

BL-12
-L- Sta. 30+92.43
54.92' RT

BL-11
-L- Sta. 36+29.27
55.40' RT

MATCHLINE SEE SHEET 4
-L- STA 23+50

MATCHLINE SEE SHEET 6
-L- STA 36+50

CUT DITCH SEE DETAIL #6
CUT DITCH SEE DETAIL #6
CUT DITCH SEE DETAIL #6
CUT DITCH SEE DETAIL #1
LEAVE BREAK IN PIPE
LEAVE BREAK IN PIPE
RETAIN
RETAIN
REMOVE EST 20 LF
REMOVE EST 27 LF
I-95 SBL
I-95 NBL
DIVERSION CHANNEL SEE DETAIL
48" WW SBW
SADDLEBRED RD 20' SOIL
EXISTING R/W
BILLBOARD
ROY S. TART & RICKY D. TART DB 2192 PG 503
ROY S. TART DB 415 PG 127
WOODS
CL 'I' RIP RAP EST 3 TONS EST 10 SY GFD
TIE TO EXISTING DITCH
CL 'I' RIP RAP EST 15 TONS EST 30 SY GFD
5' BASE SPECIAL LATERAL DITCH SEE DETAIL #8
S 87°48'41" W 121.02'
N 00°57'07" E 73.49'
S 49°29' W 5.57'

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

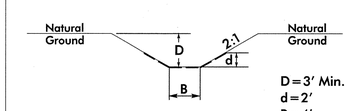
NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

DIVERSION CHANNEL
(Not to Scale)



D=3' Min.
d=2'
B=4'

Type of Liner= GEOTEXTILE

1. CONSTRUCT TEMPORARY DIVERSION CHANNEL AND INSTALL WITH LINER FOR STABILIZATION (SEE DETAIL)

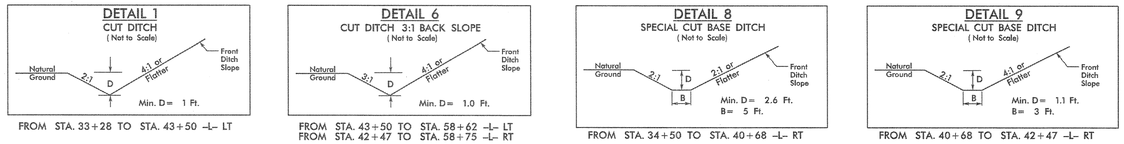
2. DIVERT JURISDICTIONAL STREAM FLOW INTO CONSTRUCTED DIVERSION CHANNEL.

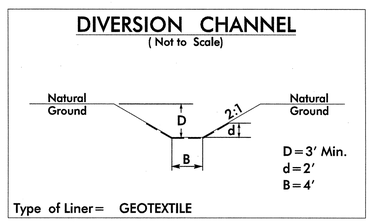
3. DEWATER AS NECESSARY USING SPECIAL STILLING BASINS

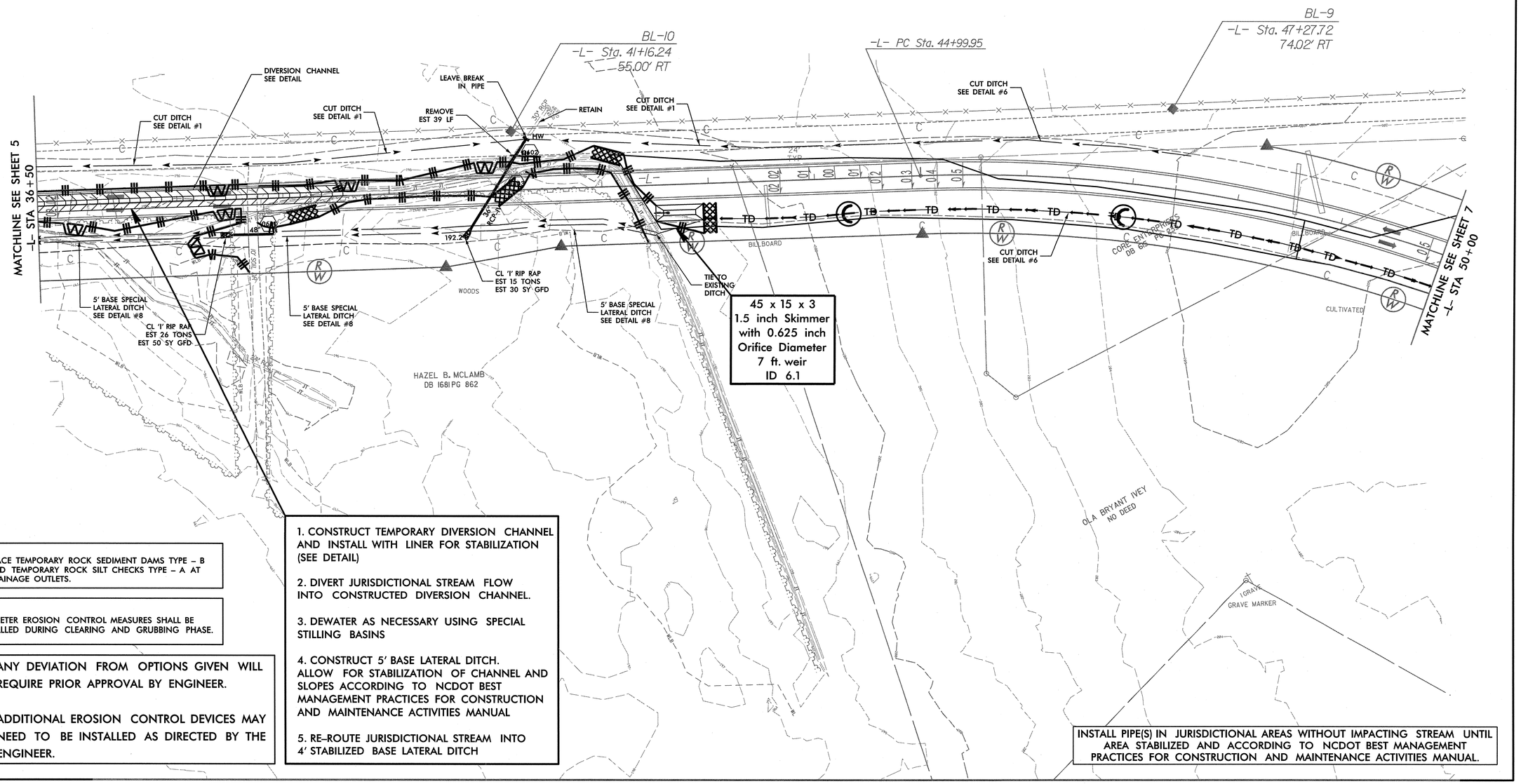
4. CONSTRUCT 5' BASE LATERAL DITCH. ALLOW FOR STABILIZATION OF CHANNEL AND SLOPES ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL

5. RE-ROUTE JURISDICTIONAL STREAM INTO STABILIZED 4' BASE LATERAL DITCH

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 06	PROJECT REFERENCE NO.	SHEET NO.
	R-5526	EC-06/CONST.06
	R/W SHEET NO.	
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER







NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

1. CONSTRUCT TEMPORARY DIVERSION CHANNEL AND INSTALL WITH LINER FOR STABILIZATION (SEE DETAIL)

2. DIVERT JURISDICTIONAL STREAM FLOW INTO CONSTRUCTED DIVERSION CHANNEL.

3. DEWATER AS NECESSARY USING SPECIAL STILLING BASINS

4. CONSTRUCT 5' BASE LATERAL DITCH. ALLOW FOR STABILIZATION OF CHANNEL AND SLOPES ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL

5. RE-ROUTE JURISDICTIONAL STREAM INTO 4' STABILIZED BASE LATERAL DITCH

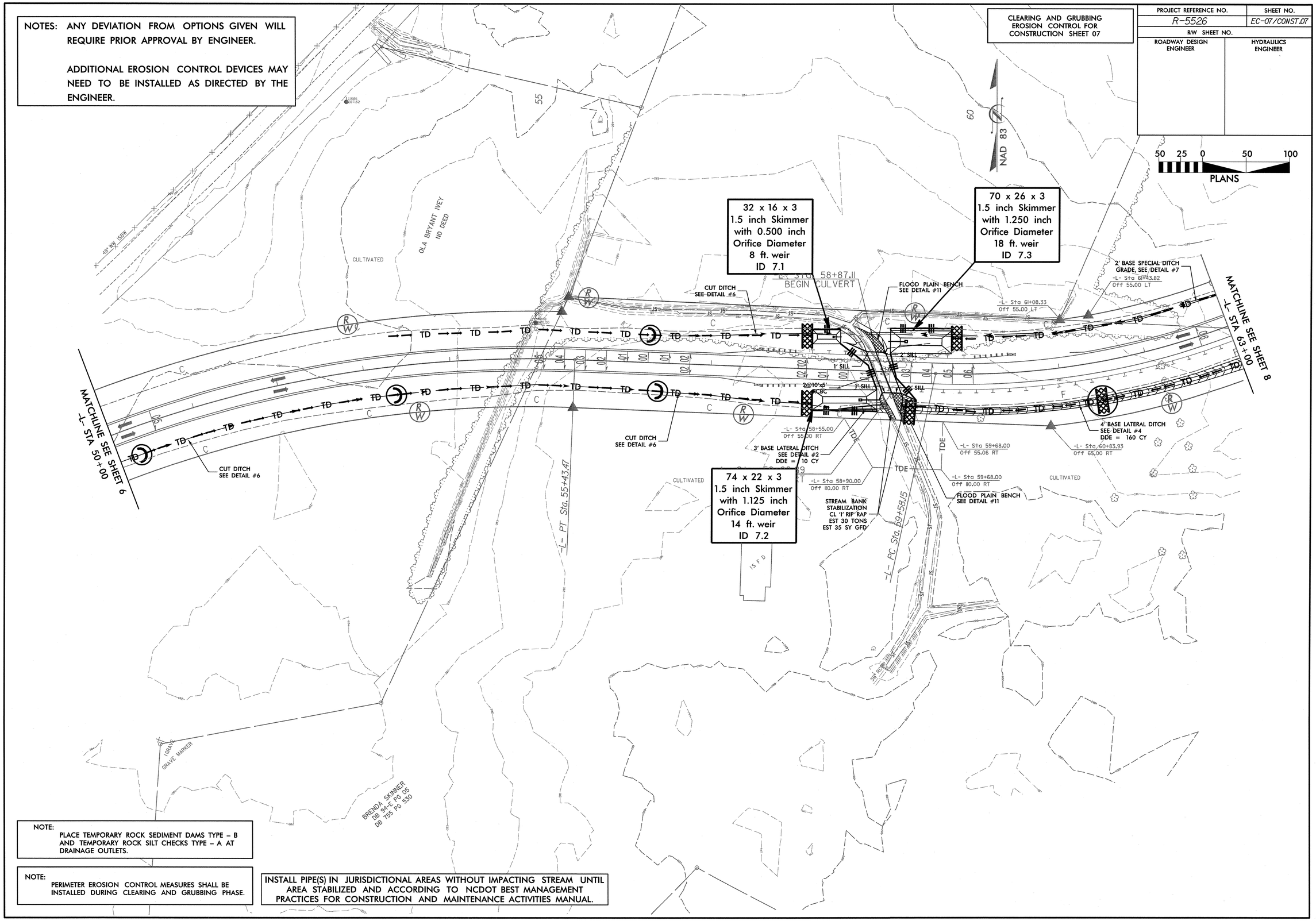
INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 07

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-07/CONST.07
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-08/CONST.08
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

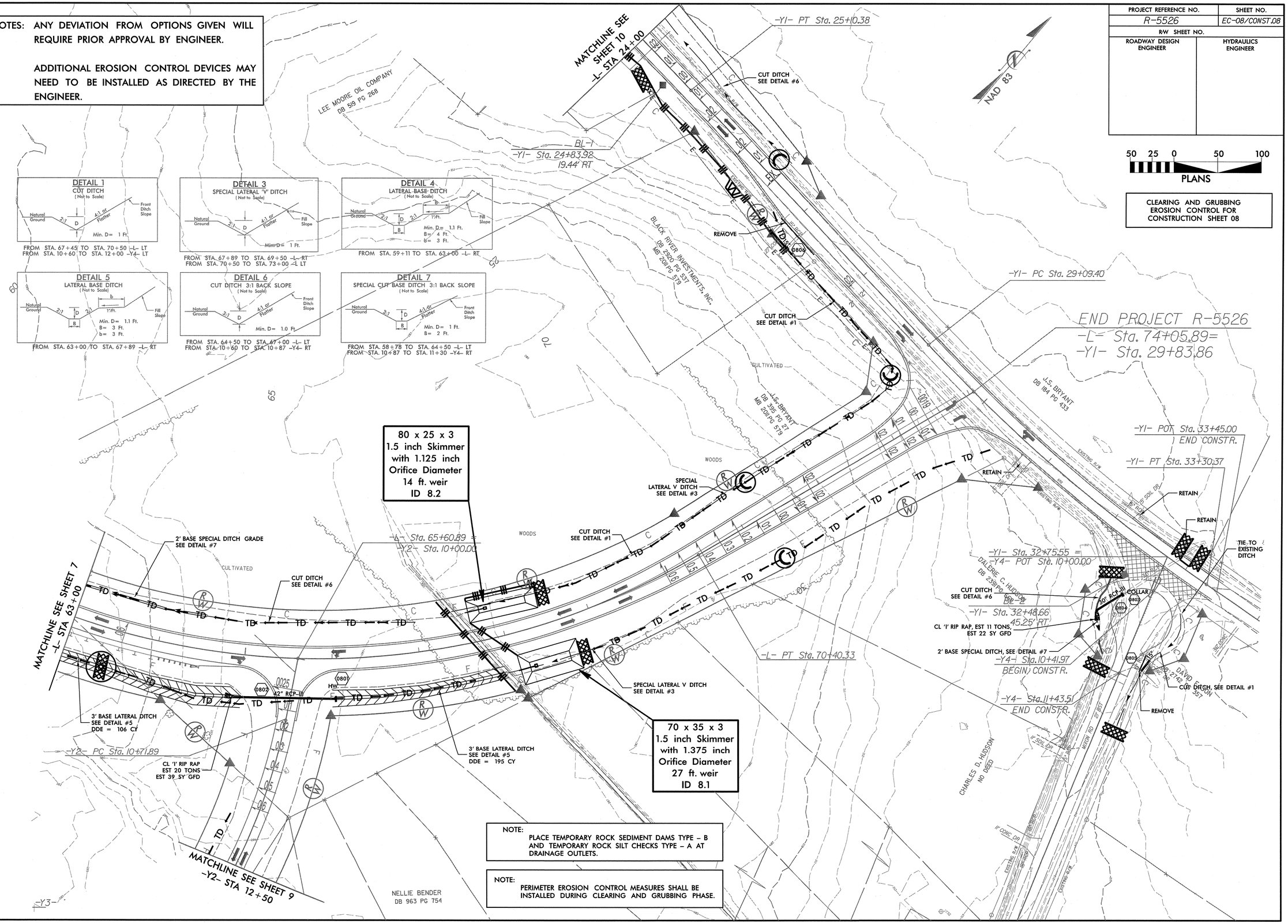
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

50 25 0 50 100

PLANS

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 08



NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 09

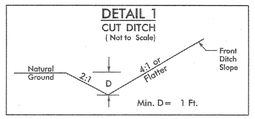
PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-09/CONST.09
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83

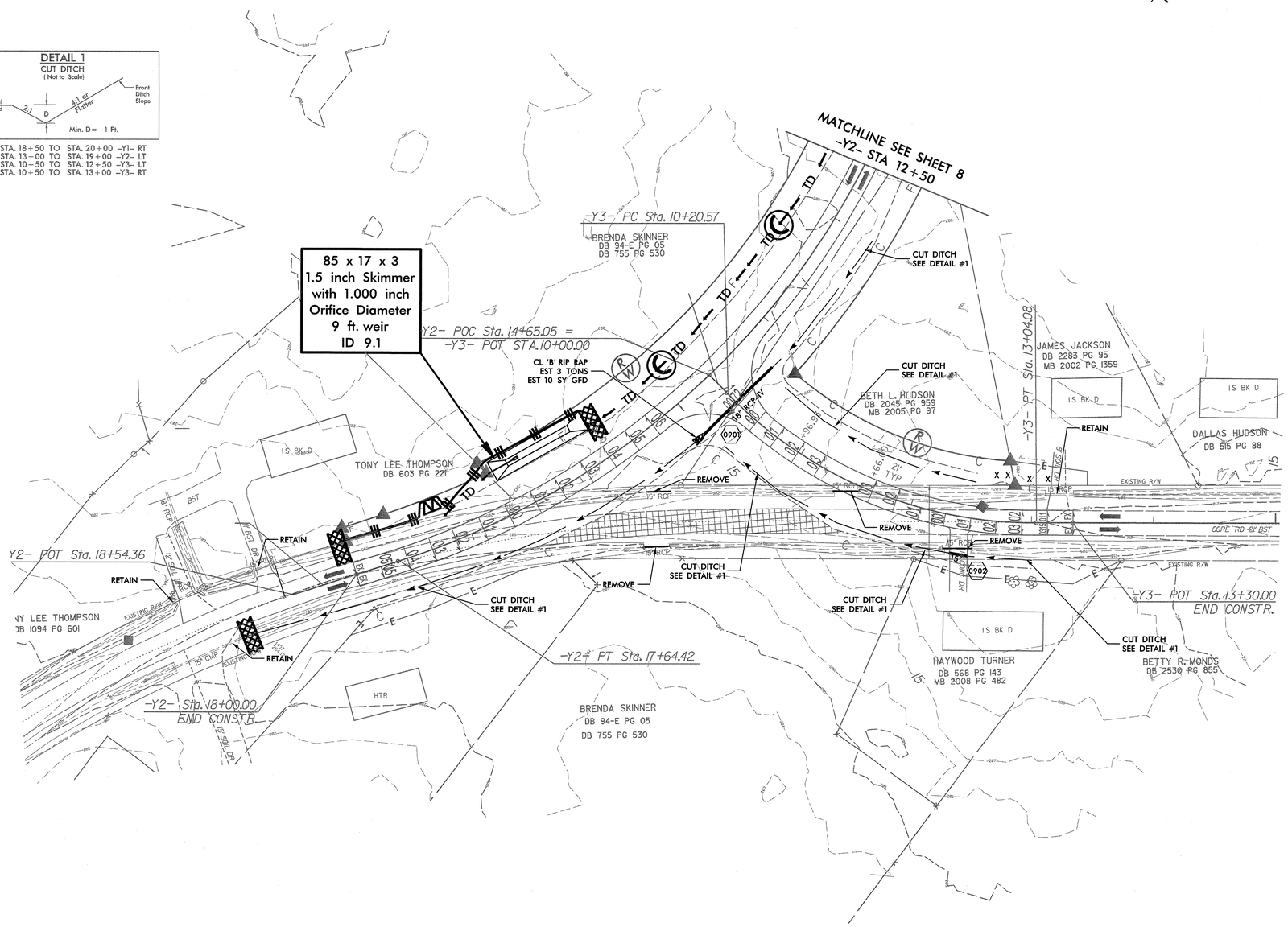
50 25 0 50 100

PLANS

DETAIL 1
CUT DITCH
(Not to Scale)



FROM STA. 18+50 TO STA. 20+00 –Y1– RT
FROM STA. 13+00 TO STA. 19+00 –Y2– LT
FROM STA. 10+50 TO STA. 12+50 –Y3– LT
FROM STA. 10+50 TO STA. 13+00 –Y3– RT



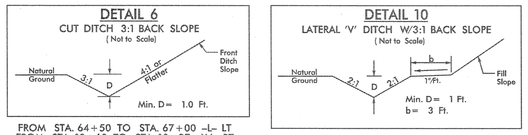
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

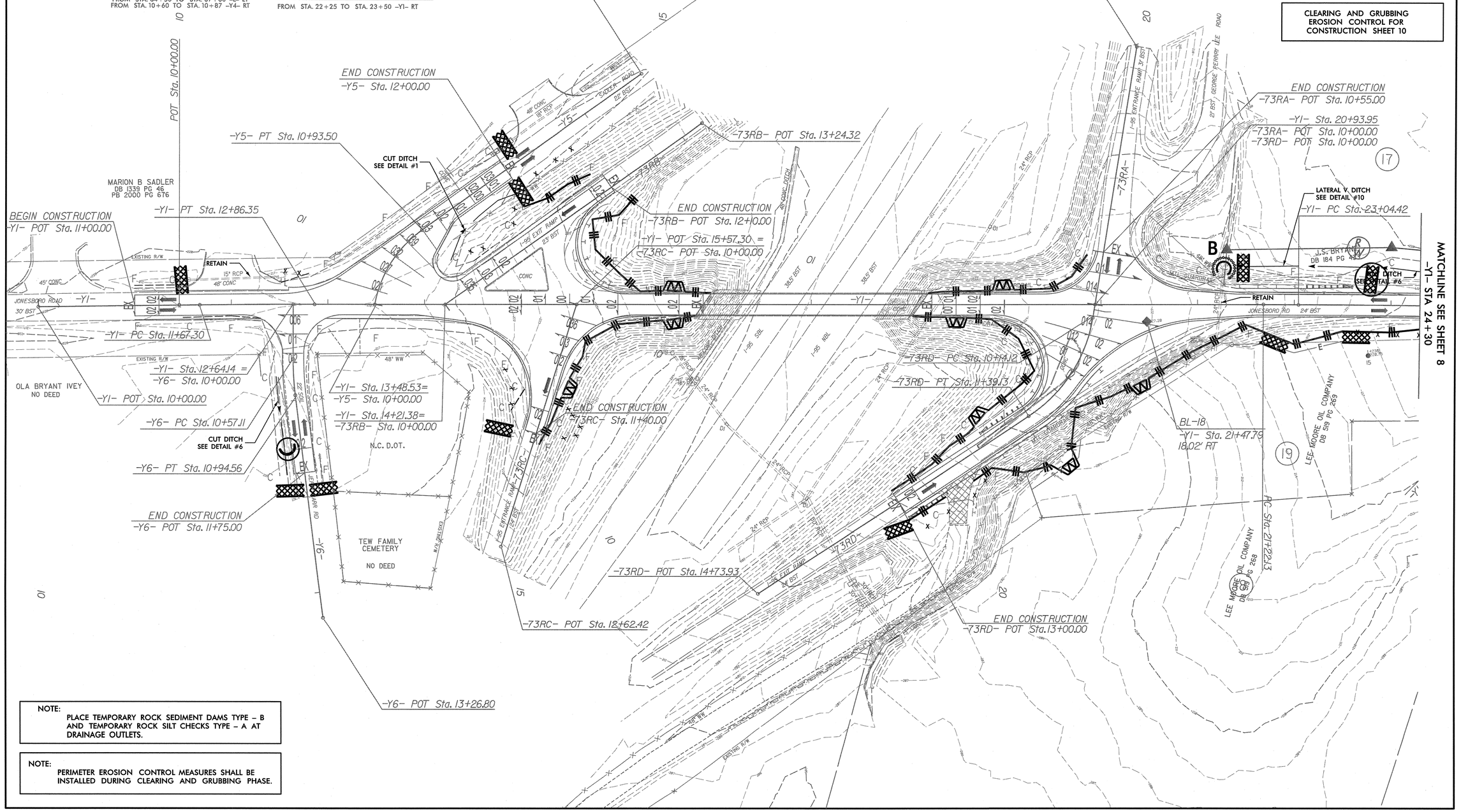
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-10/CONST10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



FROM STA. 64+50 TO STA. 67+00 -L- LT
FROM STA. 10+60 TO STA. 10+87 -Y4- RT

FROM STA. 22+25 TO STA. 23+50 -Y1- RT



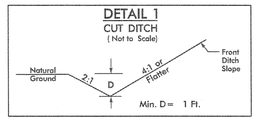
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

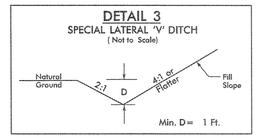
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

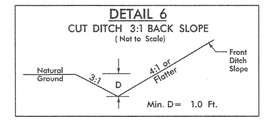
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.



FROM STA. 13+50 TO STA. 15+50 -L- LT



FROM STA. 11+50 TO STA. 13+50 -L- LT



FROM STA. 20+53.90 TO STA. 33+28 -L- LT
FROM STA. 20+53.90 TO STA. 30+00 -L- RT

FINAL GRADE
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-11/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

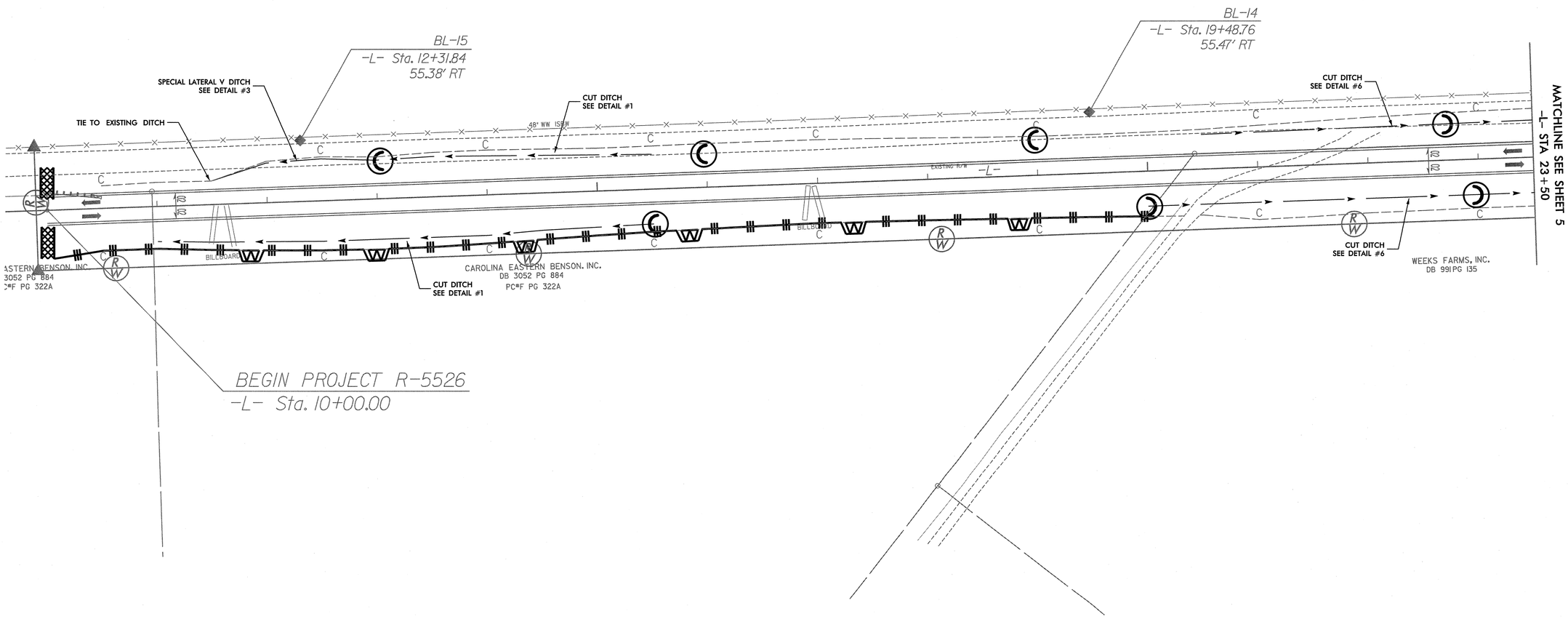
NAD 83

50 25 0 50 100
PLANS

10

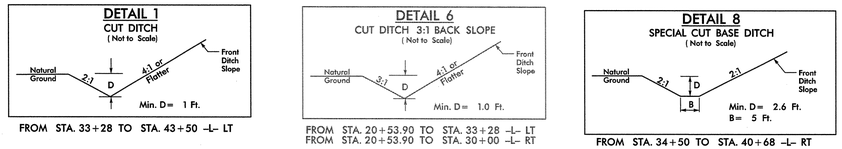
15

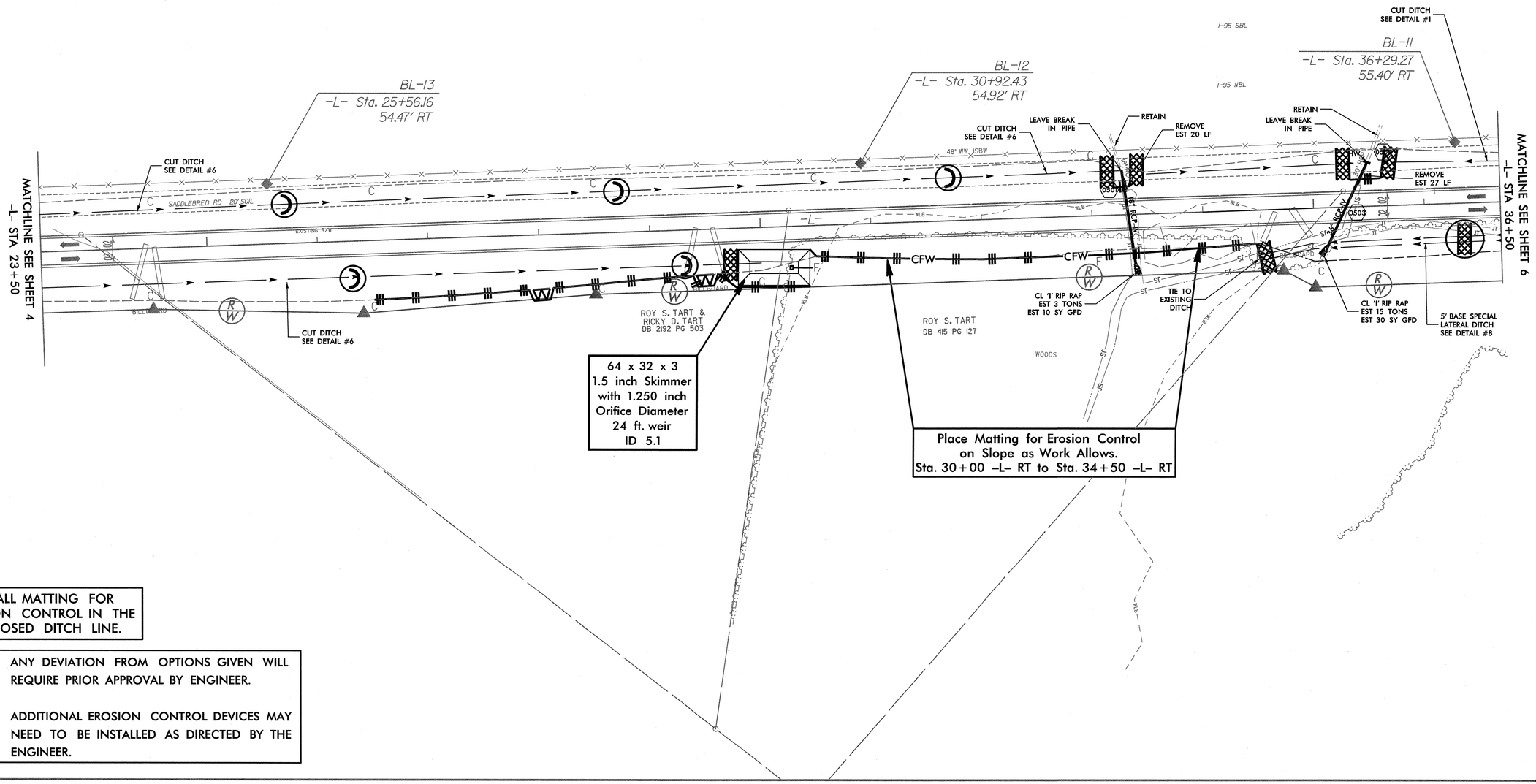
20



PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-12/CONST.05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADE
EROSION CONTROL FOR
CONSTRUCTION SHEET 05





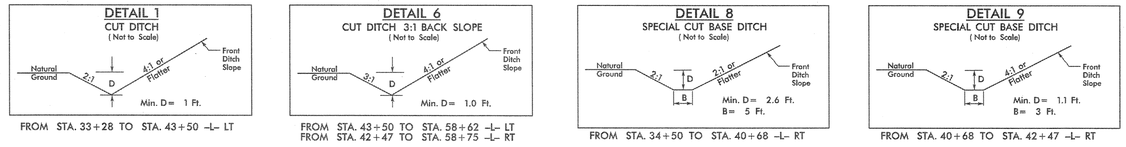
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

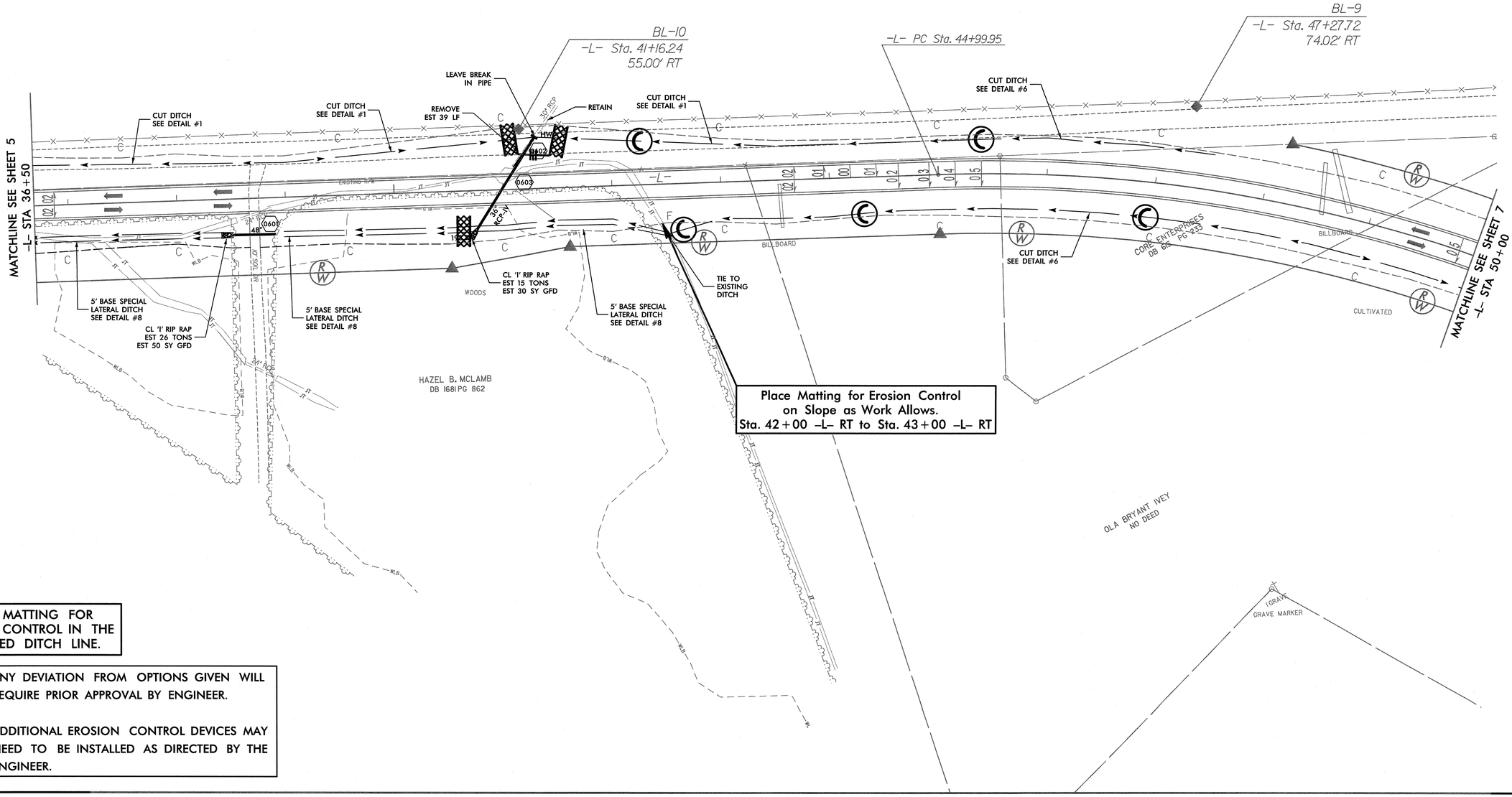
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-13/CONST.06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADE EROSION CONTROL FOR CONSTRUCTION SHEET 06





INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

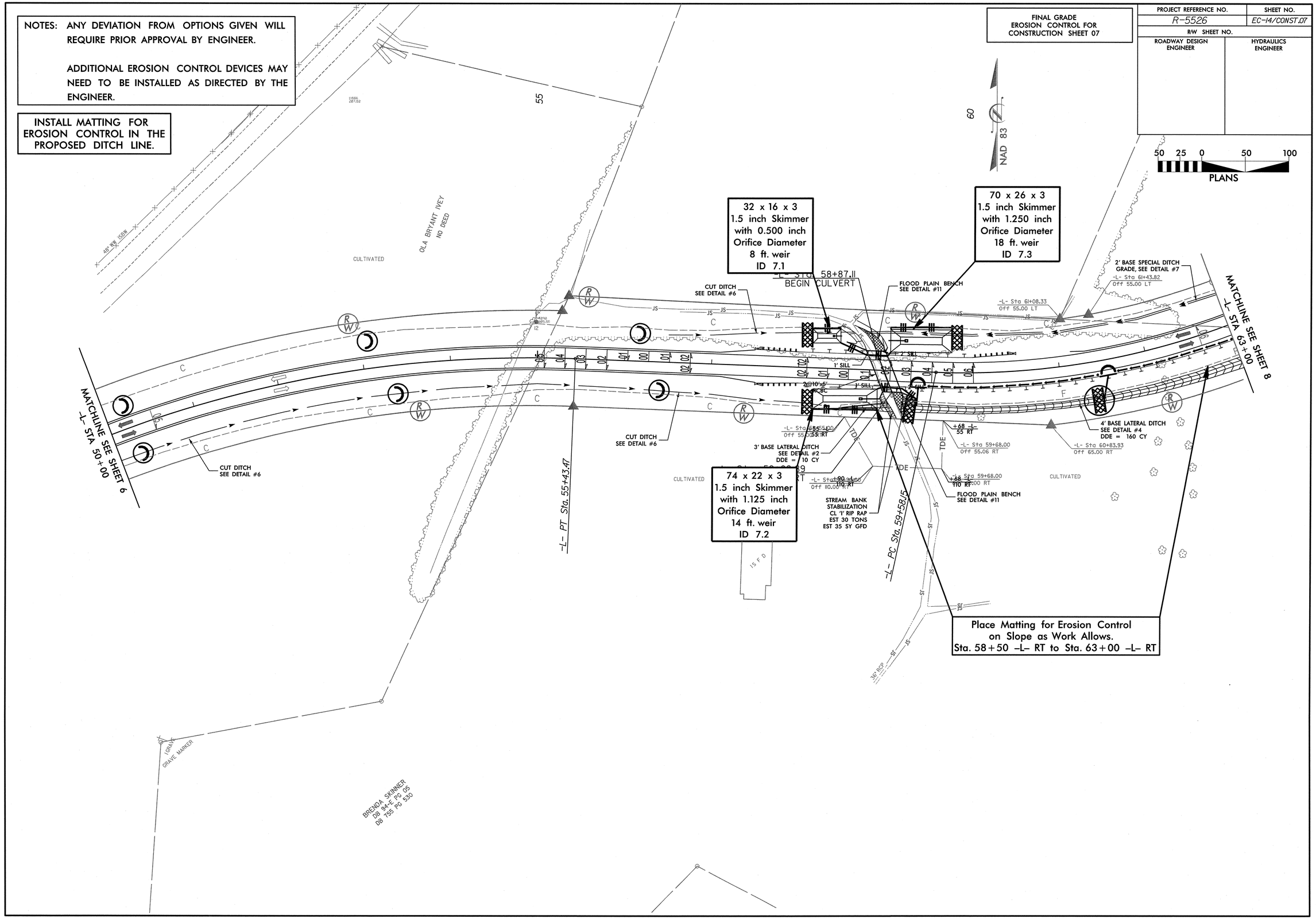
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

FINAL GRADE
EROSION CONTROL FOR
CONSTRUCTION SHEET 07

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-14/CONST.07
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

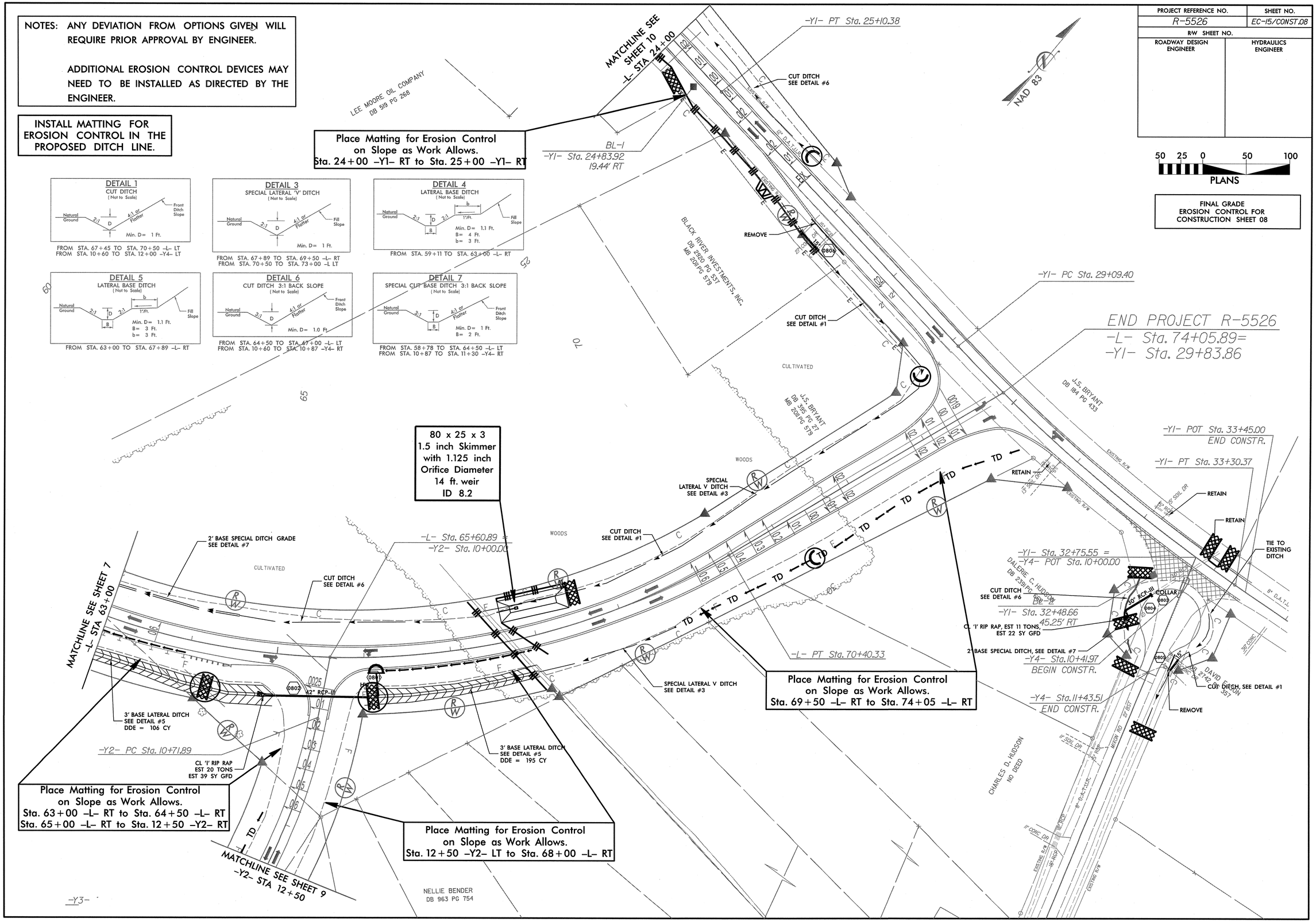
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-15/CONST.08
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

50 25 0 50 100

PLANS

FINAL GRADE EROSION CONTROL FOR CONSTRUCTION SHEET 08



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

FINAL GRADE EROSION CONTROL FOR CONSTRUCTION SHEET 09

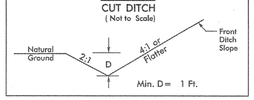
PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-16/CONST.09
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83

50 25 0 50 100

PLANS

DETAIL 1
CUT DITCH
(Not to Scale)

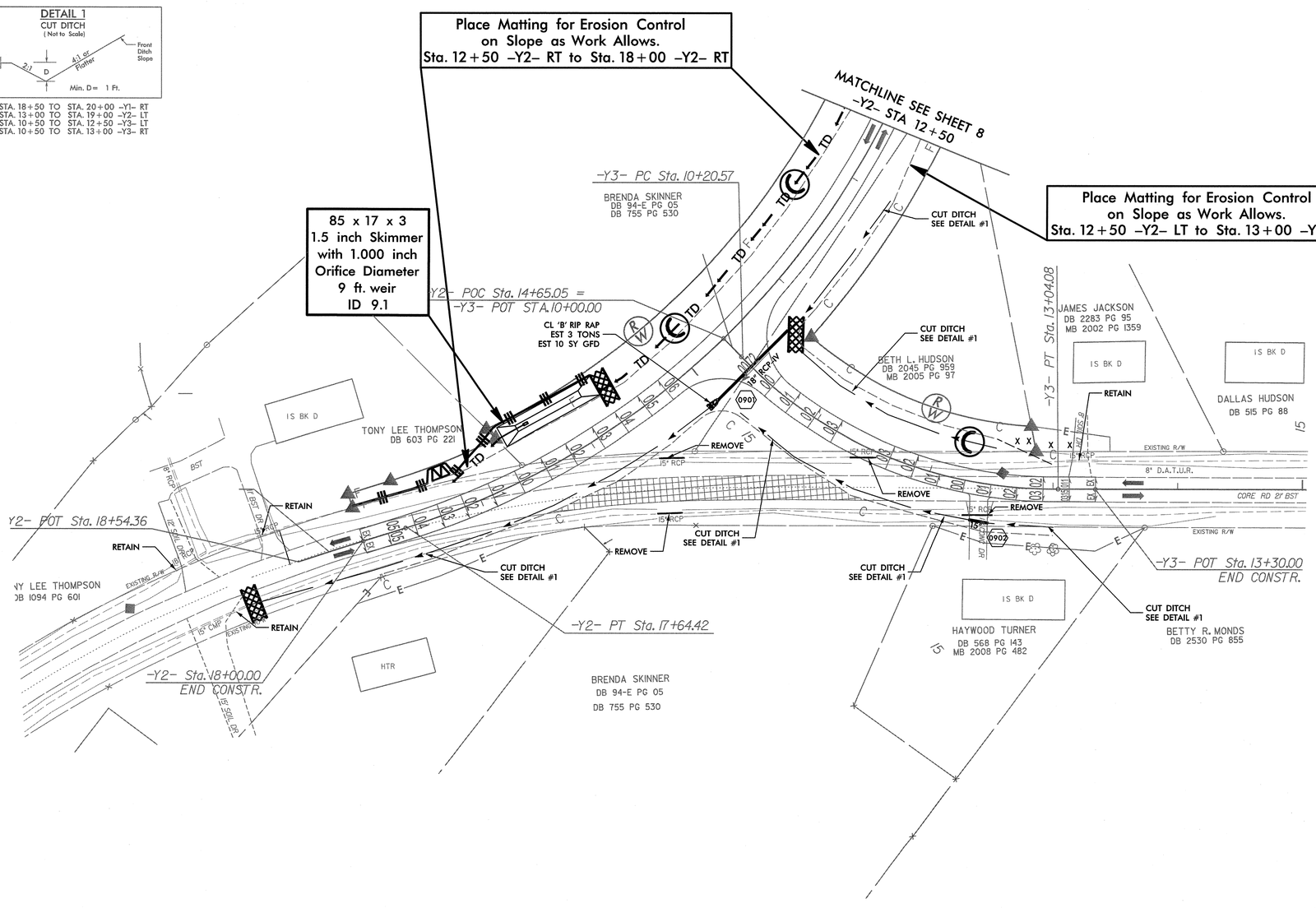


FROM STA. 18+50 TO STA. 20+00 -Y1- RT
FROM STA. 13+00 TO STA. 19+00 -Y2- LT
FROM STA. 10+50 TO STA. 12+50 -Y3- LT
FROM STA. 10+50 TO STA. 13+00 -Y3- RT

Place Matting for Erosion Control on Slope as Work Allows. Sta. 12+50 -Y2- RT to Sta. 18+00 -Y2- RT

Place Matting for Erosion Control on Slope as Work Allows. Sta. 12+50 -Y2- LT to Sta. 13+00 -Y2- LT

85 x 17 x 3 1.5 inch Skimmer with 1.000 inch Orifice Diameter 9 ft. weir ID 9.1

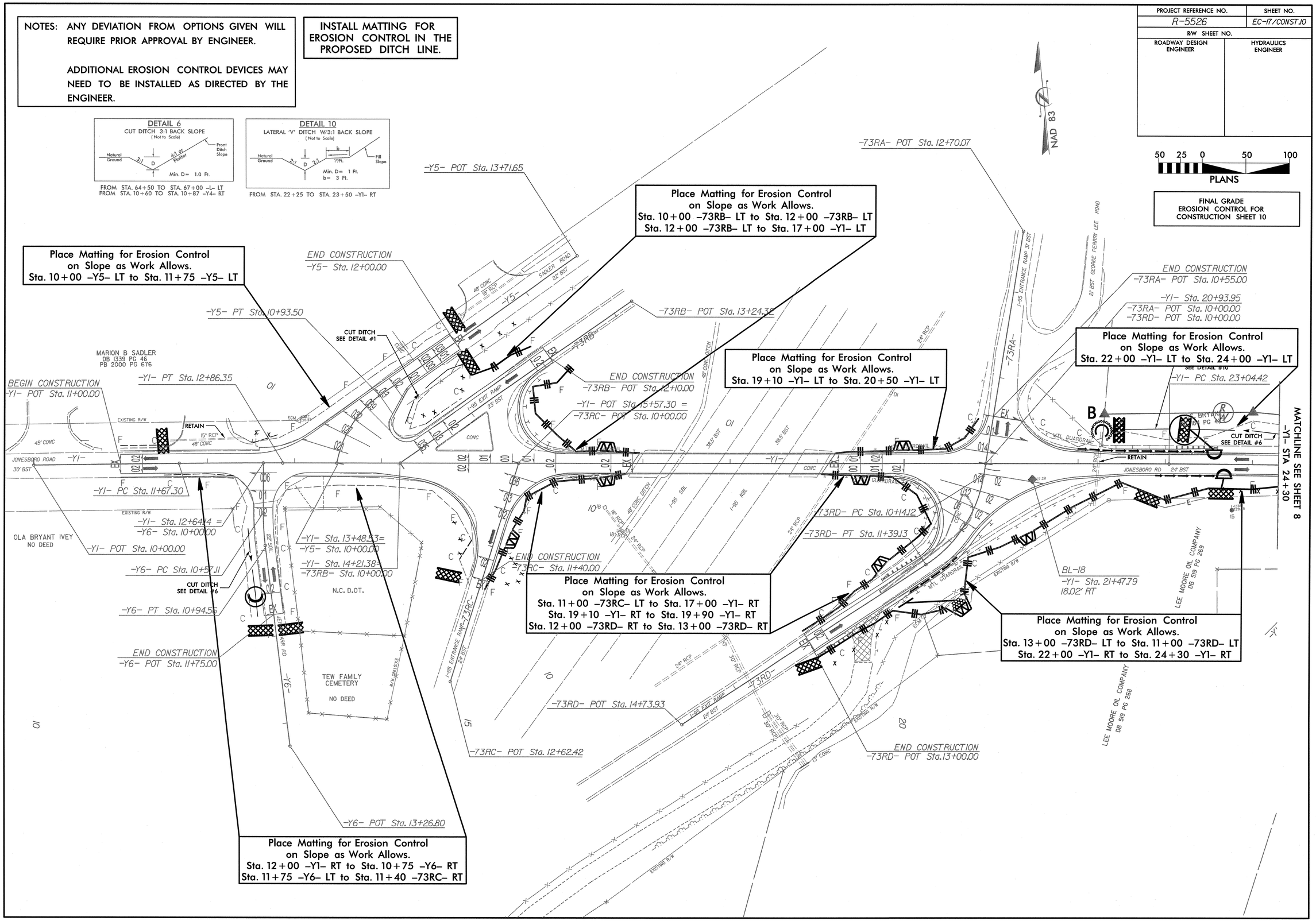


PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-17/CONST10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

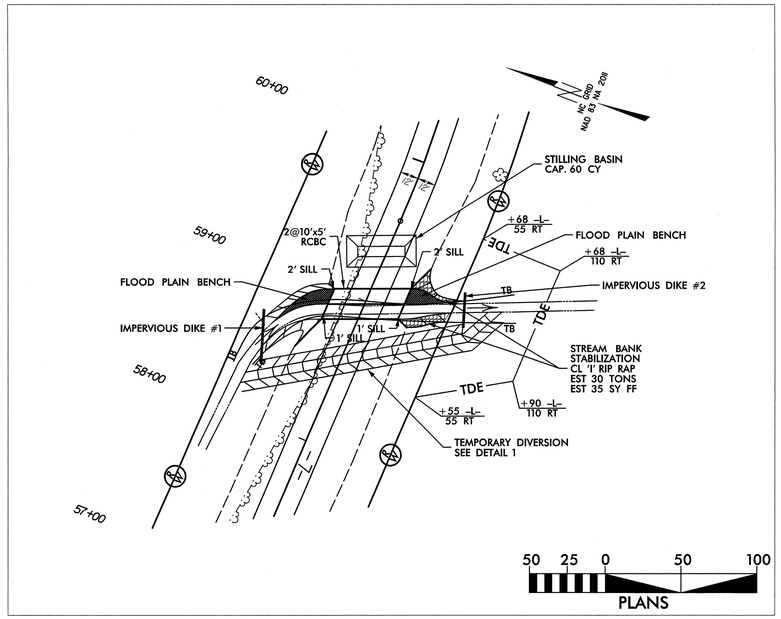


PROJECT REFERENCE NO.	SHEET NO.
R-5526	EC-18/CONST.07
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

R-5526
HARNETT COUNTY

CONSTRUCTION SEQUENCE FOR 2@10'x5' RCBC
STA. 58+98 -L-
UT TO MINGO SWAMP

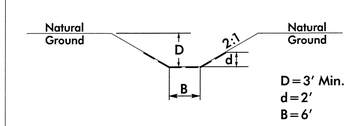
PHASE 1



PHASE 1

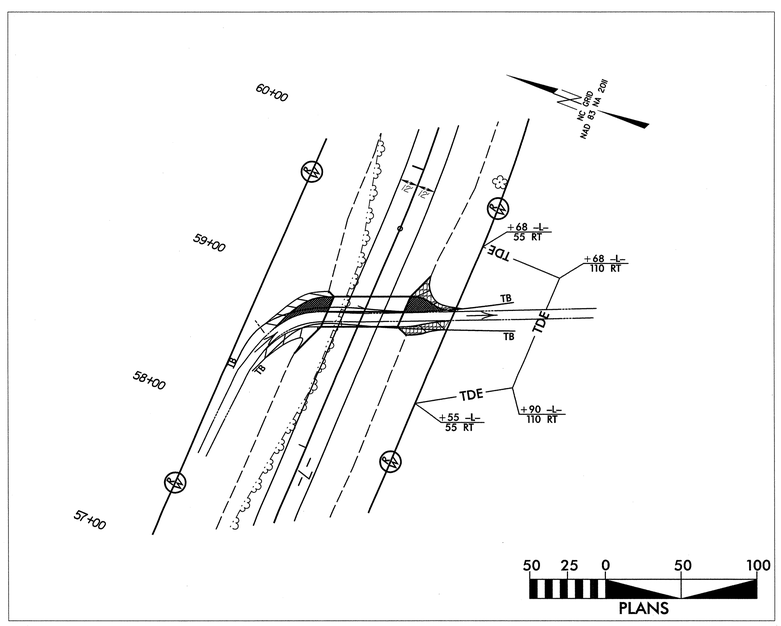
1. CONSTRUCT STILLING BASIN (MIN. CAPACITY=60 CY)
2. CONSTRUCT IMPERVIOUS DIKE #1 AND TEMPORARY DIVERSION.
3. CONSTRUCT IMPERVIOUS DIKE #2.
4. DEWATER CONSTRUCTION AREA.
5. CONSTRUCT PROPOSED 2@10'x5' RCBC, INLET & OUTLET CHANNELS, INSTALL SILLS, CONSTRUCT FLOODPLAIN BENCHES AND STREAMBANK STABILIZATION.

DETAIL 1
TEMPORARY DIVERSION
(Not to Scale)



Type of Liner= GEOTEXTILE

PHASE 2



PHASE 2

1. REMOVE IMPERVIOUS DIKE #2.
2. REMOVE TEMPORARY DIVERSION & IMPERVIOUS DIKE #1.
3. REMOVE STILLING BASIN.
4. CONSTRUCT ROADWAY.

5/14/99

12/31/2013
R5526_EC_dsn_phasing
eleonhart

TIP NO.	SHEET NO.
R-5526	SIGN-1

APPROVED: Melissa B. Toth

DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

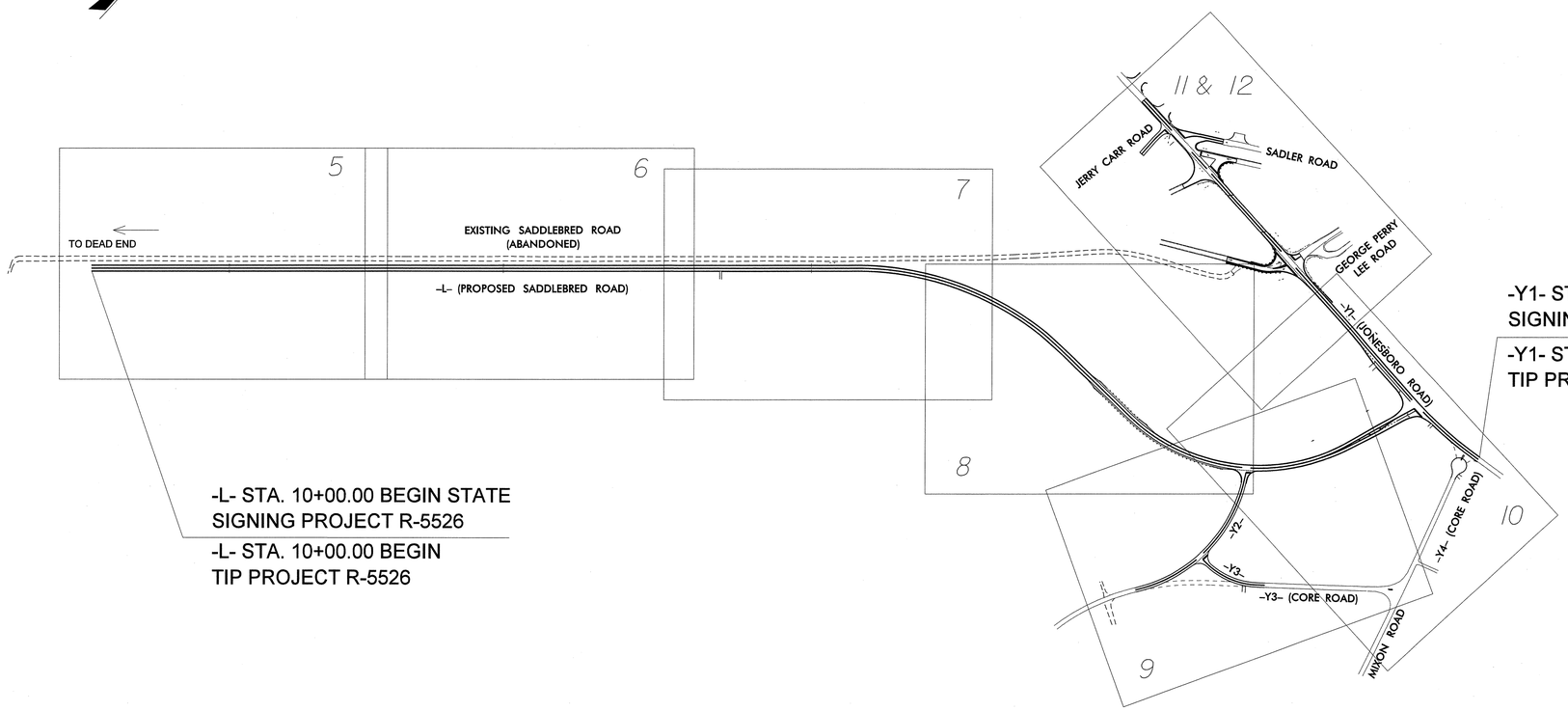
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
HARNETT COUNTY

LOCATION: SR 1841 (SADDLEBRED ROAD) SOUTH OF I-95 AND SR 1808 (JONESBORO ROAD) INTERCHANGE

T.I.P.: R-5526

CONTRACT: C203456



-L- STA. 10+00.00 BEGIN STATE SIGNING PROJECT R-5526

-L- STA. 10+00.00 BEGIN TIP PROJECT R-5526

-Y1- STA. 25+00.00 END STATE SIGNING PROJECT R-5526

-Y1- STA. 33+45.00 END TIP PROJECT R-5526

INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	NOTES
SIGN-3	E AND F SHEET
SIGN-4	SIGN DESIGNS
SIGN-5-12	SIGNING PLAN SHEETS

PLAN PREPARED FOR: N.C.D.O.T. SIGNING AND DELINEATION UNIT

AYMAN ALQUDWAH, PE — SIGNING & DELINEATION REGIONAL ENGINEER

_____ — SIGNING & DELINEATION PROJECT DESIGN ENGINEER

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY:

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

MELISSA TOTH, PE — SIGNING PROJECT ENGINEER

ABRAHAM WILES — SIGNING DESIGN TECHNICIAN

27-DEC-2013 08:58
O:\Transportation\Production\Trans\NCDOT\Division06\Saddlebred SR\Traffic\Signing\CADD\Proposed signs tsh.dgn
wile2034 AT UDS2-90140

TIP NO.	SHEET NO.
R-5526	SIGN-2

APPROVED: Melissa B Toth

DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
901.50	ARROWS AND SHIELDS
901.70	SIGN STRINGERS AND SUPPORT SPACING
903.10	GROUND MOUNTED SIGN SUPPORTS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

PAY ITEM NOTES

1. DISPOSAL OF SIGN SYSTEM, U CHANNEL
2. RETAIN SIGN SYSTEM, U CHANNEL
3. RETAIN SIGN SYSTEM, STEEL BEAM

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000	903	SUPPORTS, 3-LB STEEL U-CHANNEL	622	LF
4096000000	904	SIGN ERECTION, TYPE D	1	EA
4102000000	904	SIGN ERECTION, TYPE E	39	EA
4108000000	904	SIGN ERECTION, TYPE F	8	EA
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	38	EA

GENERAL NOTES

. SIGNS FURNISHED BY STATE

. ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.

. IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.

. WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER

. ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.

. WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.

. THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.

. SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

27-DEC-2013 08:58
R:\Roadway\Proj\Production\Trans\NCDOT\Division06\Saddlebred SR\Traffic\Signing\CADD\R-5526 _Sign 2.dgn
wi0203 AT DIS2490.HD

PROJ. REFERENCE NO.	SHEET NO.
R-5526	SIGN-3

APPROVED: Melissa B. Toth DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

401 QUANTITY REQ'D _9_ STOP 30 X 30 R1-1 ONE "U" POST PER SIGN: 3 MOUNT BEHIND SIGN 402 IN 3 INSTALLATIONS	406 QUANTITY REQ'D _4_ SPEED LIMIT 35 24 x 30 R2-1 ONE "U" POST PER SIGN	411 QUANTITY REQ'D _3_ 48 x 24 W1-7 TWO "U" POSTS PER SIGN	501 QUANTITY REQ'D _1_ SOUTH 24 x 12 INTERSTATE 95 24 x 24 21 x 15 ONE "U" POST PER SIGN	506 QUANTITY REQ'D _1_ TO 24 x 12 INTERSTATE 95 24 x 24 21 x 15 ONE "U" POST PER SIGN		
402 QUANTITY REQ'D _5_ DO NOT ENTER 36 X 36 R5-1 ONE "U" POST PER SIGN: 3 MOUNT BEHIND SIGN 401 IN 3 INSTALLATIONS	407 QUANTITY REQ'D _1_ SPEED LIMIT 45 24 x 30 R2-1 ONE "U" POST PER SIGN	412 QUANTITY REQ'D _1_ 30 x 30 W2-2R ONE "U" POST PER SIGN	502 QUANTITY REQ'D _1_ SOUTH 24 x 12 INTERSTATE 95 24 x 24 21 x 15 ONE "U" POST PER SIGN	507 QUANTITY REQ'D _1_ TO 24 x 12 INTERSTATE 95 24 x 24 21 x 15 ONE "U" POST PER SIGN		
403 QUANTITY REQ'D _2_ DEAD END 30 X 30 W14-1 ONE "U" POST PER SIGN	408 QUANTITY REQ'D _1_ SPEED LIMIT 55 24 x 30 R2-1 ONE "U" POST PER SIGN	413 QUANTITY REQ'D _2_ 30 x 30 W2-2L ONE "U" POST PER SIGN	503 QUANTITY REQ'D _1_ NORTH 24 x 12 INTERSTATE 95 24 x 24 21 x 15 ONE "U" POST PER SIGN	508 QUANTITY REQ'D _1_ JCT 24 x 12 INTERSTATE 95 24 x 24 ONE "U" POST PER SIGN		
404 QUANTITY REQ'D _2_ ONE WAY 54 x 18 R6-1 (R) TWO "U" POSTS PER SIGN MOUNT BEHIND SIGN 405 IN 2 INSTALLATIONS	409 QUANTITY REQ'D _1_ SPEED LIMIT 45 36 X 36 W3-5 ONE "U" POST PER SIGN	414 QUANTITY REQ'D _2_ TRUCKS ENTERING HIGHWAY 36 x 36 W8-6 ONE "U" POST PER SIGN	504 QUANTITY REQ'D _1_ NORTH 24 x 12 INTERSTATE 95 24 x 24 21 x 15 ONE "U" POST PER SIGN			
405 QUANTITY REQ'D _2_ ONE WAY 54 x 18 R6-1 (L) MOUNT BEHIND SIGN 404 IN 2 INSTALLATIONS	410 QUANTITY REQ'D _3_ 18 x 18 OM4-1 ONE "U" POST PER SIGN	415 QUANTITY REQ'D _1_ NO PARKING 24 x 30 R8-3a ONE "U" POST PER SIGN	505 QUANTITY REQ'D _1_ TO 24 x 12 INTERSTATE 95 24 x 24 21 x 15 ONE "U" POST PER SIGN			

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

TYPE "E", "F" SIGNS

27-DEC-2013 08:58
O:\Transportation\Production\Trans\NCDOT\Division06\Saddlebred SR\Traffic\Signing\CADD\sign legend.dgn
wile2054 AT DUS290140

PROJ. REFERENCE NO.	SHEET NO.
R-5526	SIGN-4
APPROVED: Melissa B Toth	DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

SIGN NUMBER: 301
TYPE: D
QUANTITY: 1

SIGN WIDTH: 7'-6"
HEIGHT: 2'-6"
TOTAL AREA: 18.8 Sq.Ft.

BORDER TYPE: RECESSED
RECESS: 0.5"
WIDTH: 1"
RADII: 4"

NO. Z BARS:
LENGTH:

BACKG COLOR: Yellow
COPY COLOR: Black

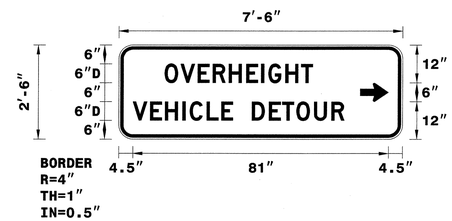
SYMBOL	X	Y	WID	HT
AR_Type D	76.5	12	6	9

MAT'L: 0.125" (3.2 mm) ALUMINUM

USE NOTES: 1,2

1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.

DESIGN BY: M. THIGPEN
PROJECT ID: R-5526
CHECKED BY: M. TOTH
DIV: 6
DATE: Nov 04, 2013



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																												Series/Size Text Length
		O	V	E	R	H	E	I	G	H	T																	D 2000
	14.5	5	5.5	4.7	5.1	5.5	4.7	2.3	5.4	5	3.7	28.5																47
		V	E	H	I	C	L	E		D	E	T	O	U	R													D 2000
	4.5	5.5	4.7	5.5	2.3	5.4	4.6	3.7	6	5.4	4.2	4.5	5.6	5.5	4.1	18.5												67

FILENAME: Guidsign_English_8-2-13

NORTH CAROLINA D.O.T. SIGN DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

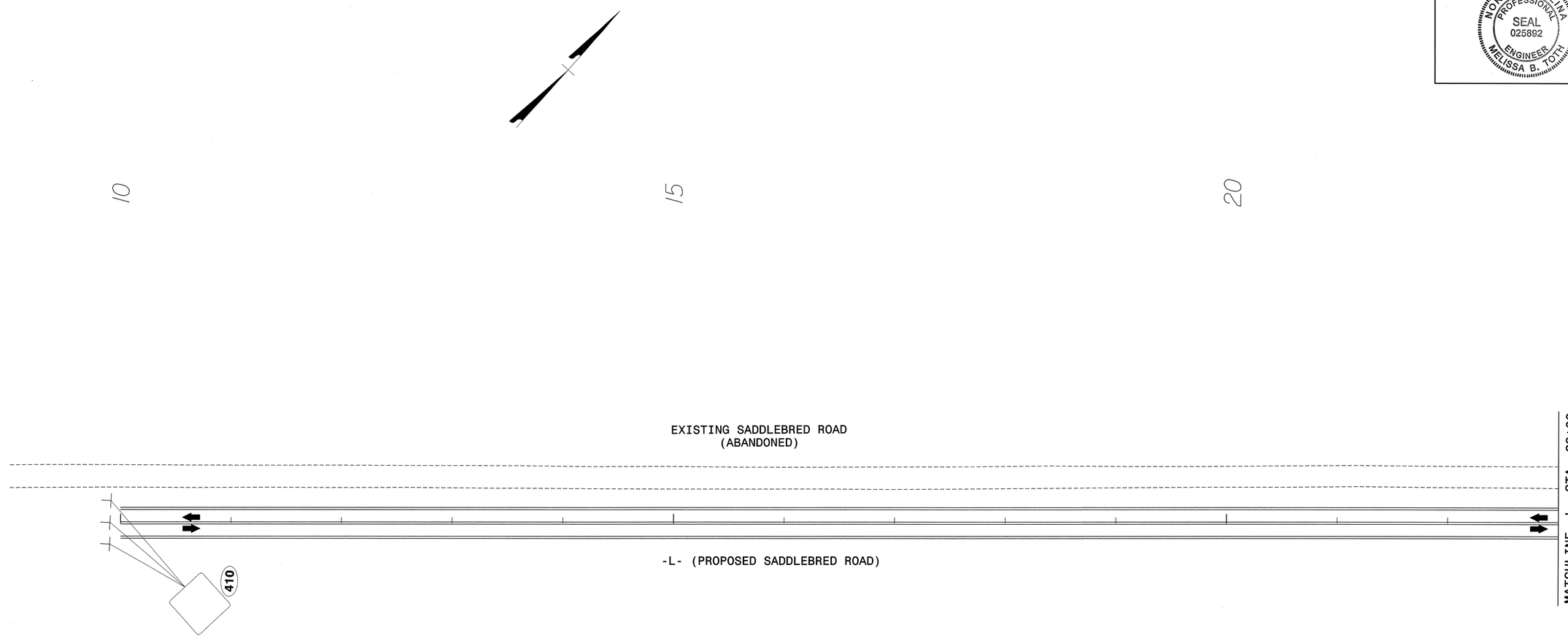
SIGN DESIGNS

27-DEC-2013 08:58
O:\Transportation\Production\Trans\NCDOT\Division06\Saddlebred SR\Traffic\Signing\CADD\signing design sheets.dgn
wile2054 AT DUS290140

PROJ. REFERENCE NO.	SHEET NO.
R-5526	SIGN-5
APPROVED: Melissa B. Toth	DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

EXISTING & PROPOSED SIGNS
-L- STA. 10+00 TO STA. 23+00
SADDLEBRED ROAD

27-DEC-2013 08:58
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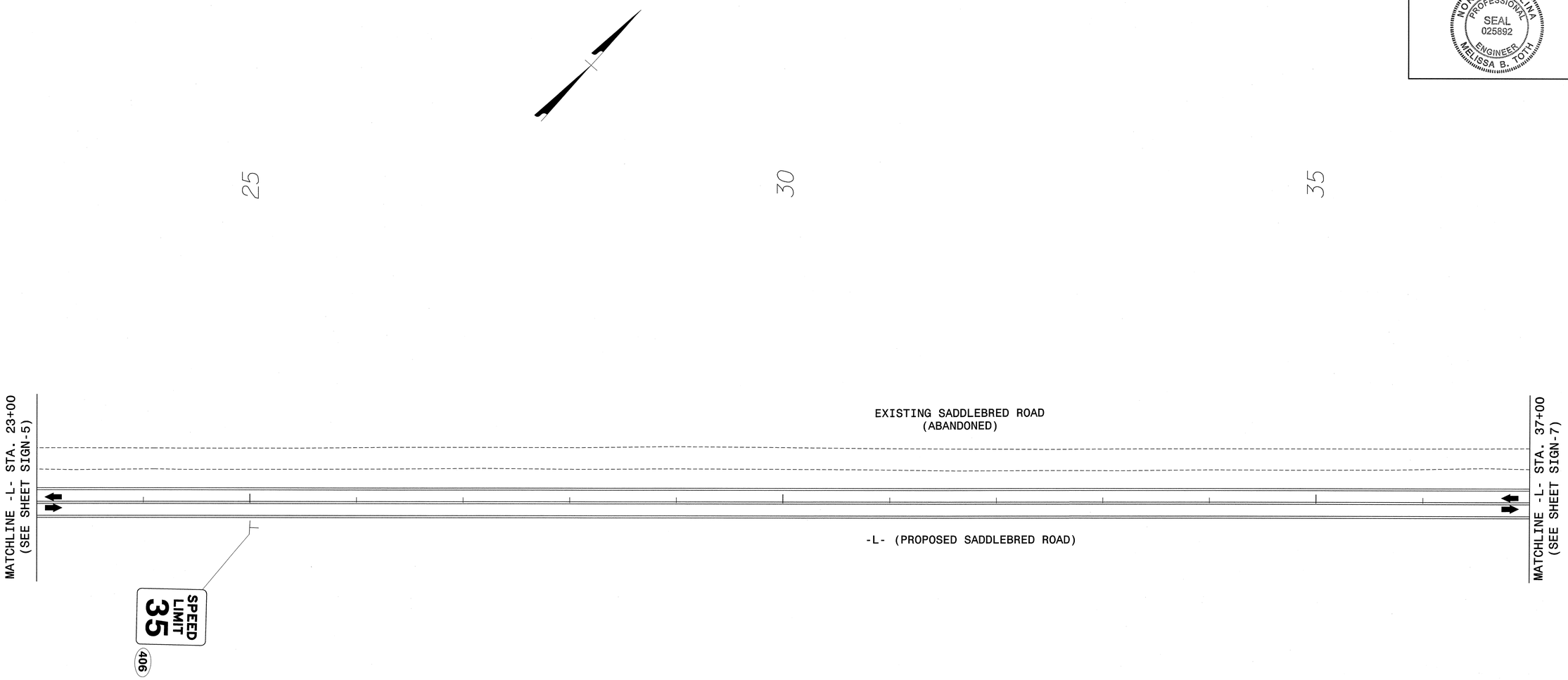
wile2094 AT DUS290140

PROJ. REFERENCE NO.	SHEET NO.
R-5526	SIGN-6
APPROVED: Melissa B. Toth	DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

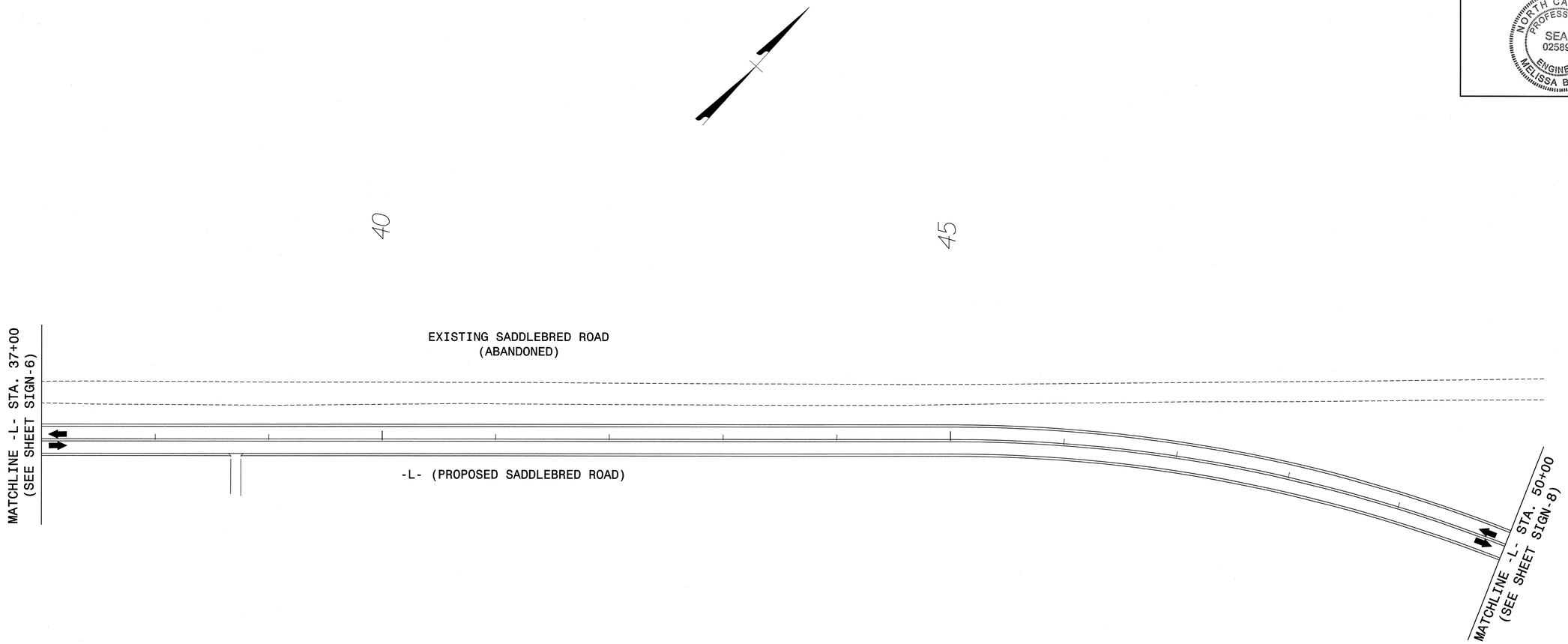
EXISTING & PROPOSED SIGNS
-L- STA. 23+00 TO STA. 37+00
SADDLEBRED ROAD

27-DEC-2013 08:58
O:\Transportation\Production\Trans\NCDOT\Division06\Saddlebred SR\Traffic\Signing\CADD\R-5526_Proposed_Signs_Psh02.dgn
wile2054 AT DUS290140

PROJ. REFERENCE NO.	SHEET NO.
R-5526	SIGN-7
APPROVED: Melissa Toth	DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

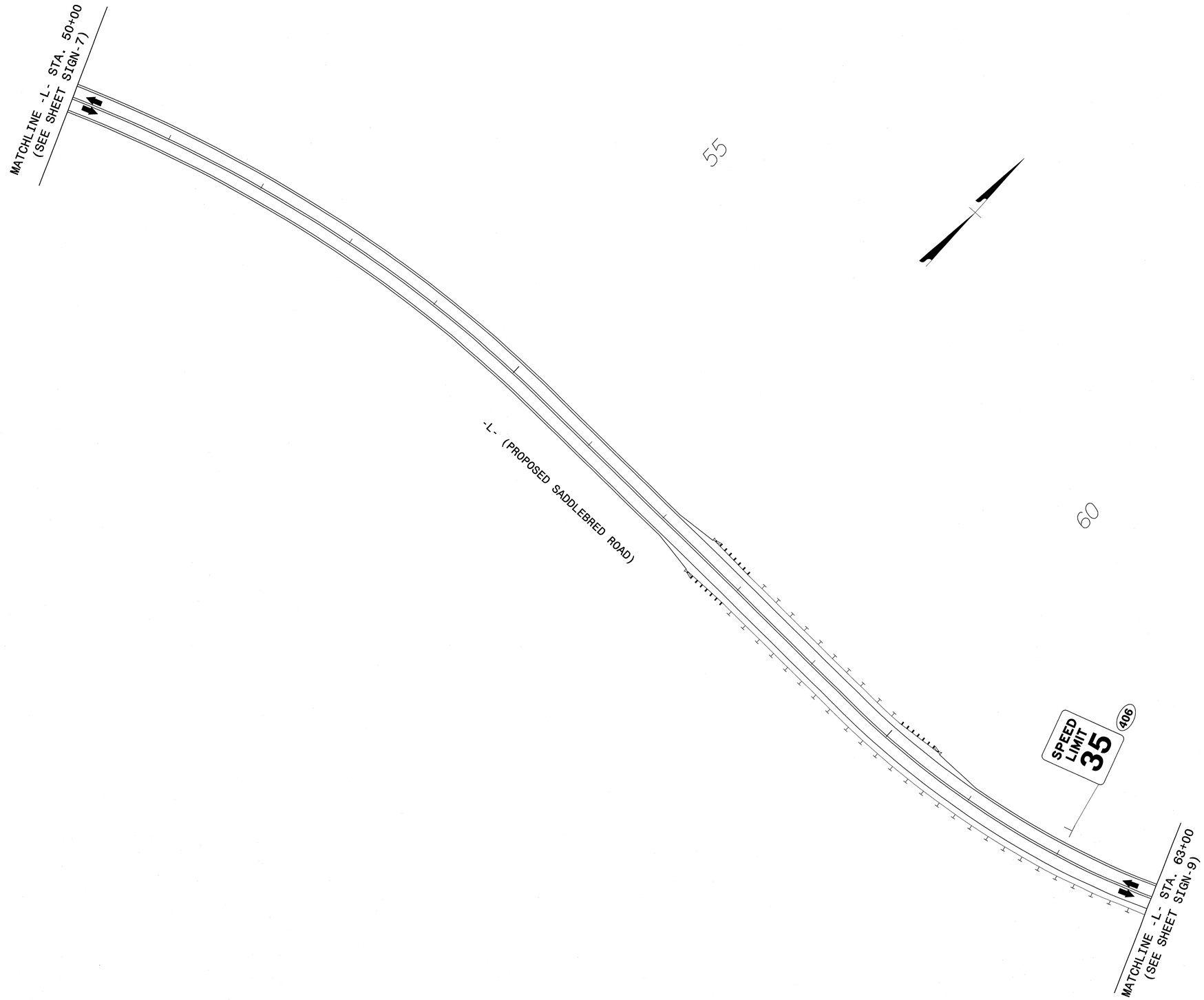
EXISTING & PROPOSED SIGNS
-L- STA. 37+00 TO STA. 50+00
SADDLEBRED ROAD

27-DEC-2013 08:59
O:\Transportation\Production\Trans\NCDOT\Division06\Saddlebred SR\Traffic\Signing\CADD\R-5526_Proposed_Signs_Psh03.dgn
wile2054 AT DUS290140

PROJ. REFERENCE NO.	SHEET NO.
R-5526	SIGN-8
APPROVED: Melissa B. Toth	DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

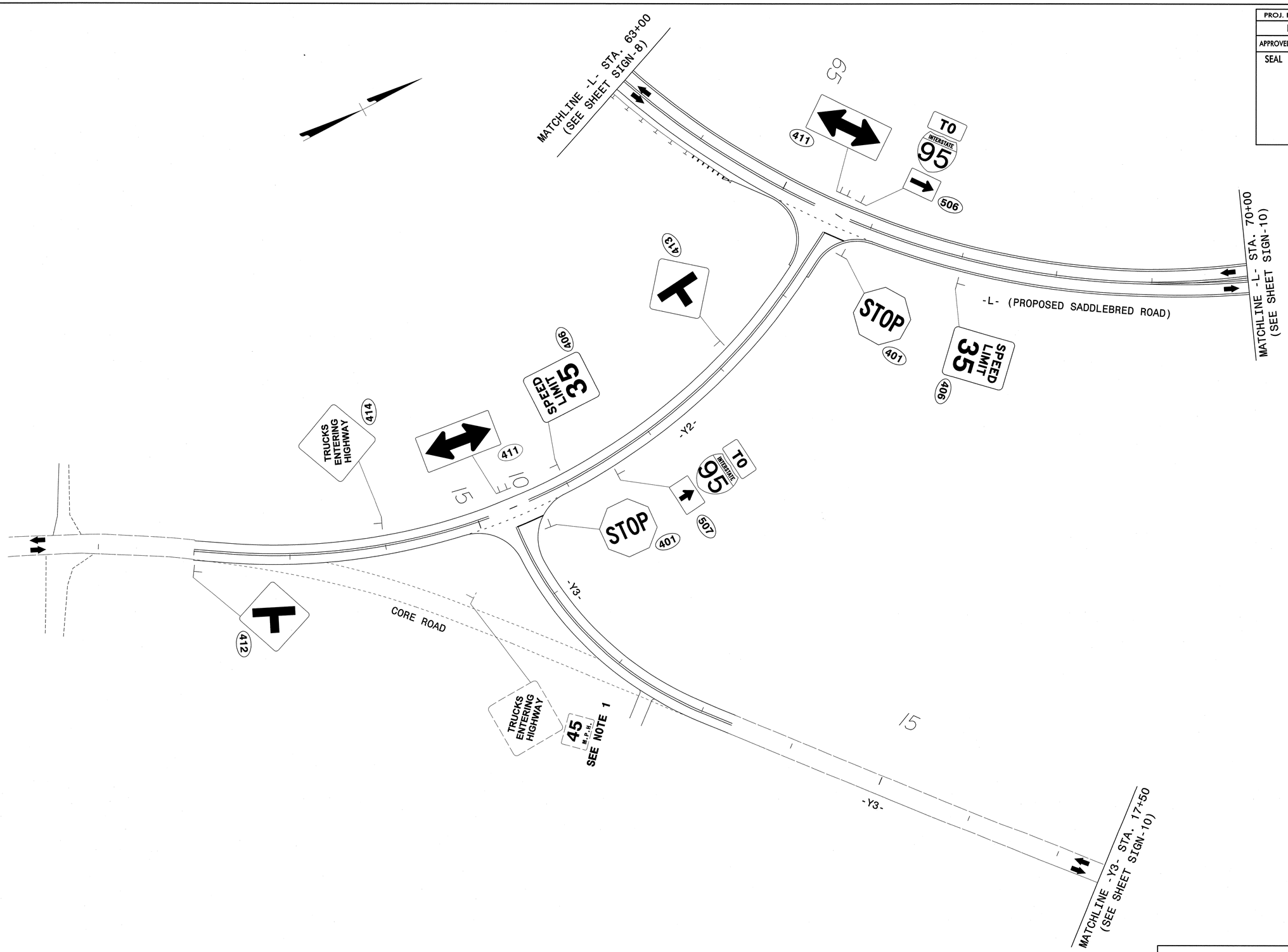
EXISTING & PROPOSED SIGNS
-L- STA. 50+00 TO STA. 63+00
SADDLEBRED ROAD

27-DEC-2013 08:59
G:\Transportation\Production\Trans\NCDOT\Division06\Saddlebred SR\Traffic\Signing\CADD\R-5526_Proposed_Signs_Psh04.dgn
wile2054 AI DUKS29140

PROJ. REFERENCE NO.	SHEET NO.
R-5526	SIGN-9
APPROVED: Melissa B. Toth	DATE: 1-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

EXISTING & PROPOSED SIGNS
-L- STA. 63+00 TO STA. 70+00
SADDLEBRED ROAD

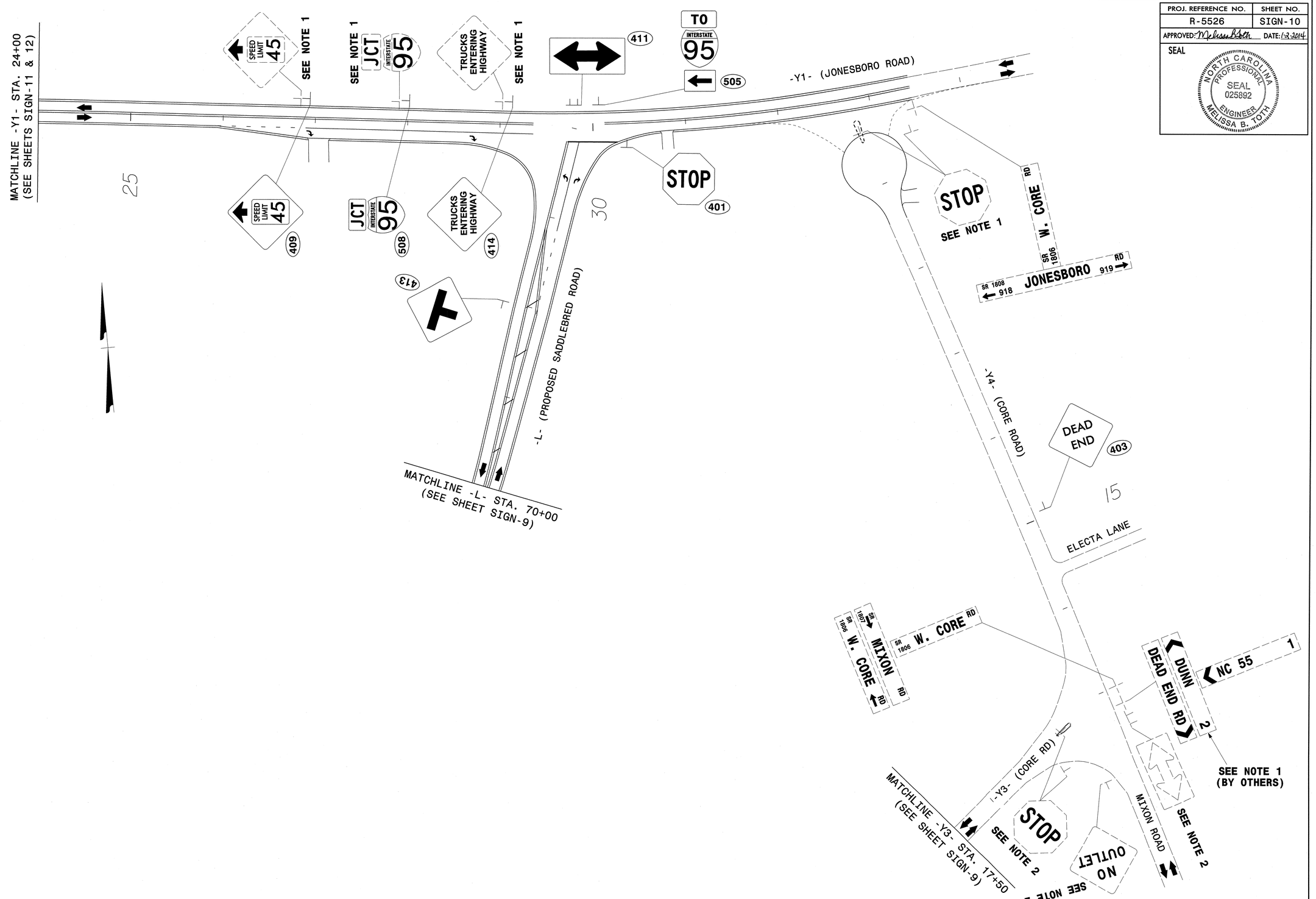
27-DEC-2013 08:59
C:\Transportation\Production\Trans\NCDOT\Division06\Saddlebred SR\Traffic\Signing\CADD\R-5526_Proposed_Signs_Psh05.dgn
wile2054 AT DJS29040

PROJ. REFERENCE NO.	SHEET NO.
R-5526	SIGN-10

APPROVED: Melissa B. Toth DATE: 12-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

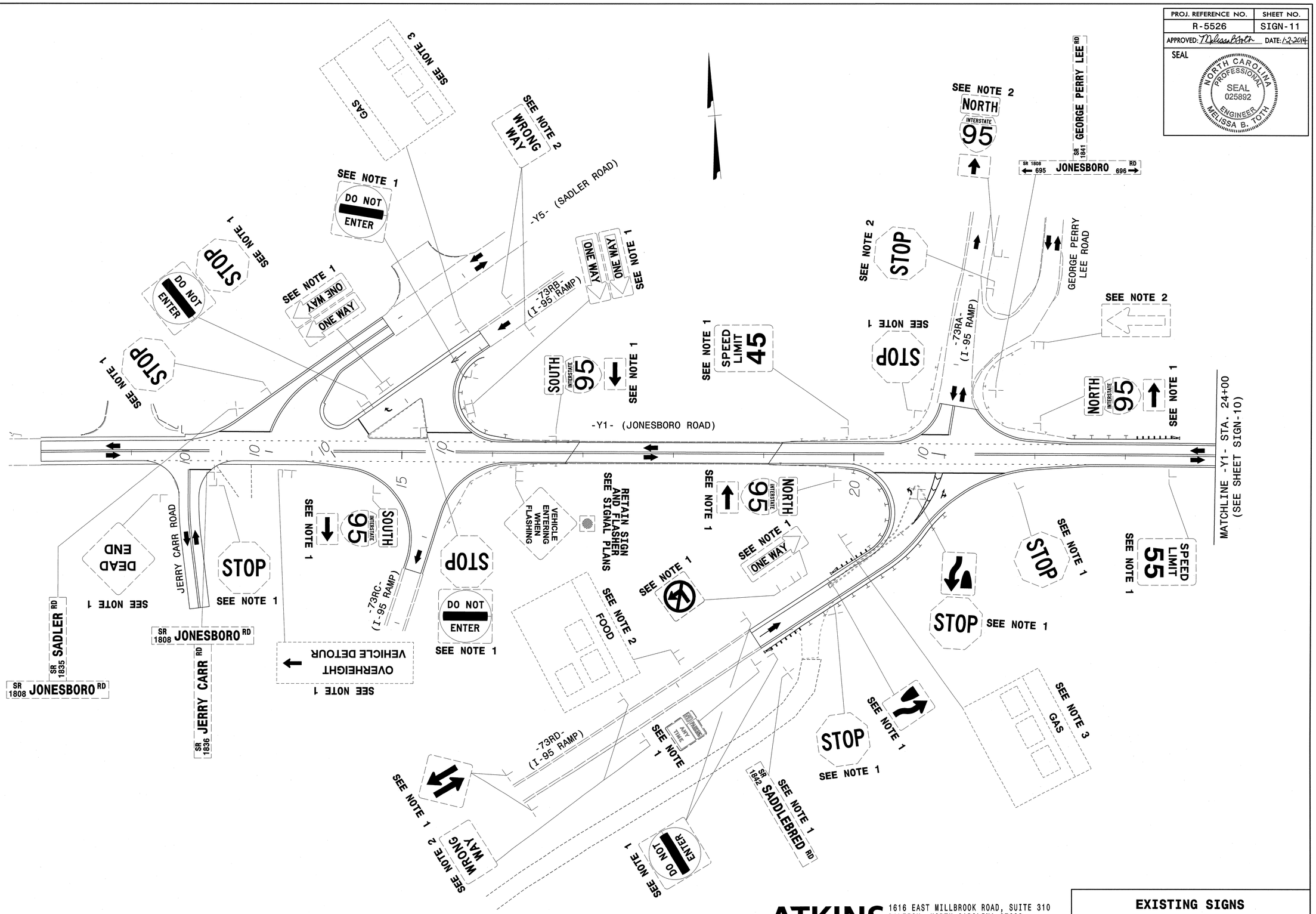
EXISTING & PROPOSED SIGNS
-Y1- STA. 24+00 TO STA. 33+45
-L- STA. 70+00 TO -L- STA. 74+05

27-DEC-2013 08:59
O:\Transportation\Production\Trans\NCDOT\Division06\Saddlebred SR\Traffic\Signing\CADD\R-5526_Proposed_Signs_Psh07.dgn
wile2054 AT DUS290/40

PROJ. REFERENCE NO.	SHEET NO.
R-5526	SIGN-11
APPROVED: Melissa B. Toth	DATE: 12-2-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

EXISTING SIGNS
-Y1- STA. 11+00 TO STA. 24+00
JONESBORO ROAD

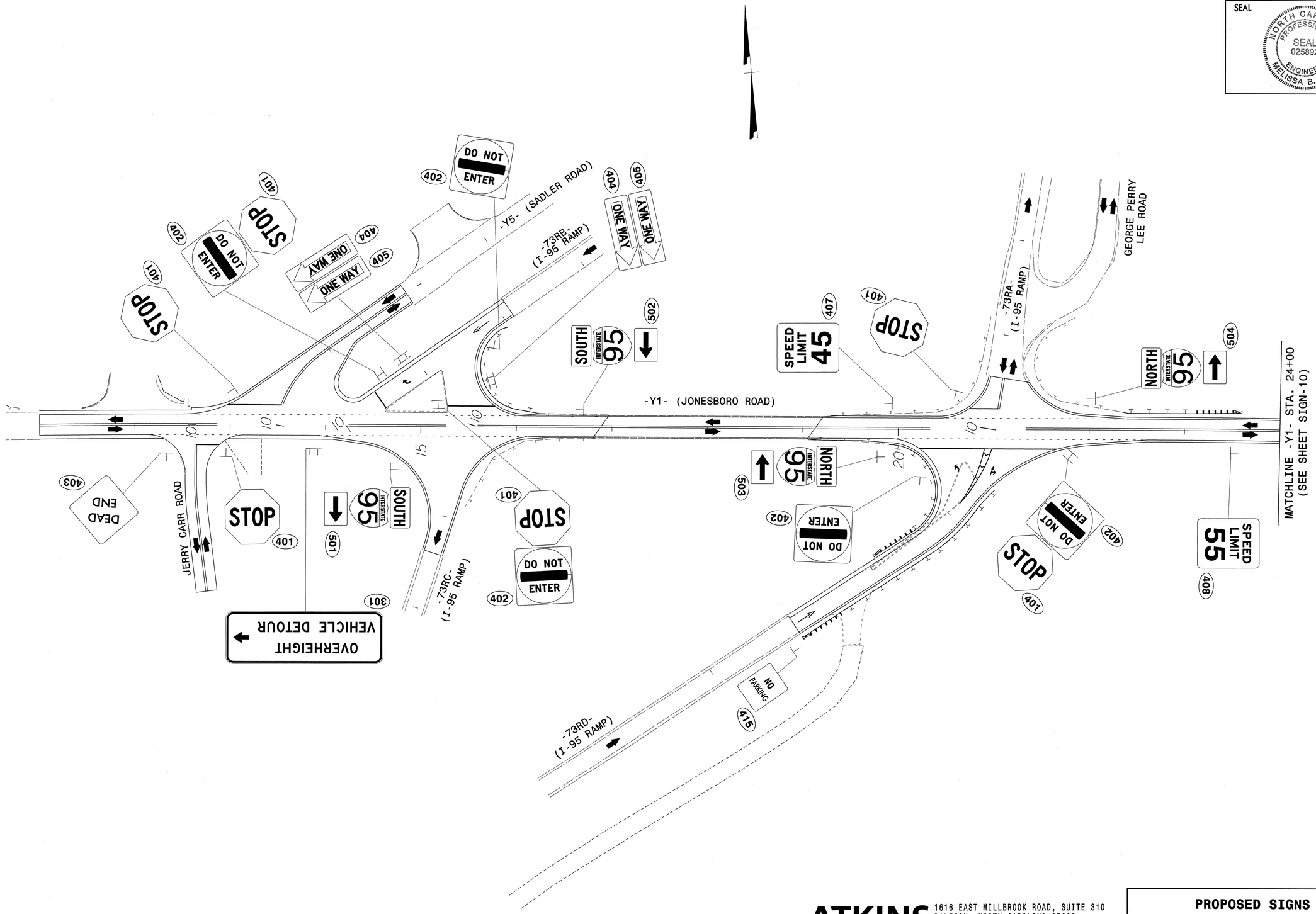
27-DEC-2013 08:59
O:\Transportation\Production\Trans\NCDOT\Division06\Saddlebred SR\Traffic\Signing\CADD\R-5526_Proposed_Signs_Psh06.dgn
wile2054 AT DUS290140

PROJ. REFERENCE NO.	SHEET NO.
R-5526	SIGN-12

APPROVED: Melissa B. Toth DATE: 1-3-2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH



ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

PROPOSED SIGNS
-Y1- STA. 11+00 TO STA. 24+00
JONESBORO ROAD

27-DEC-2013 08:59
O:\Transportation\Production\Trans\NCDOT\Division06\Saddlebred SR\Traffic\Signing\CADD\R-5526_Proposed_Signs_Psh06a.dgn
wile2054 ATDUS290140

PROJECT REFERENCE NO.	SHEET NO.
R-5526	Sig.1

FIGURE 1

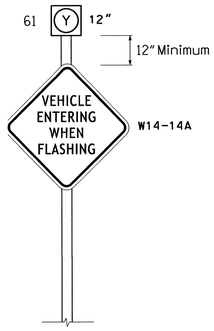


TABLE OF OPERATION		
SIGNAL FACE	INTERVAL 1	INTERVAL 2
21,23	ON	OFF
22,24	OFF	ON
41	ON	OFF
42	OFF	ON
43,44	ON	OFF
61	OFF	ON

SIGNAL FACE I.D.

All Heads L.E.D.

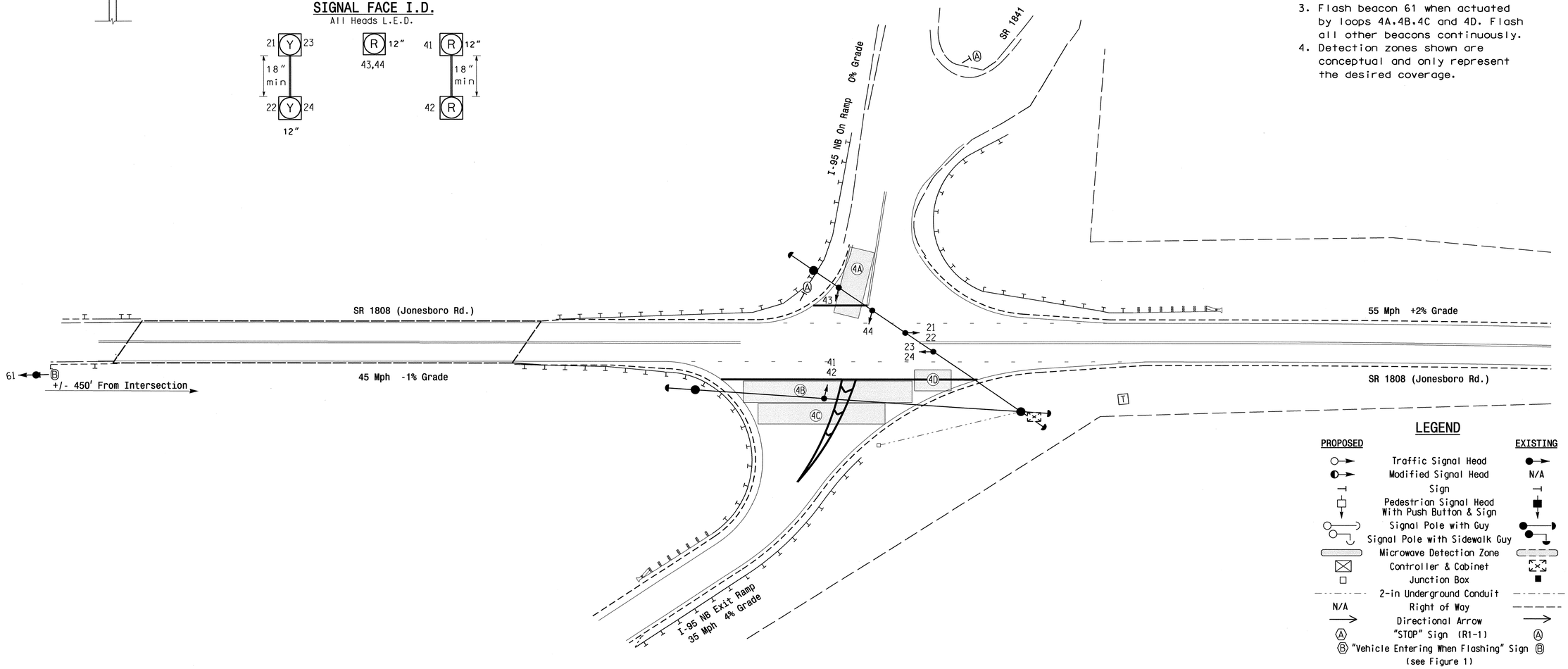
OASIS 2070L LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
4A	*	*	*	-	—	-	-	-	5	-	-	-
4B	*	*	*	-	—	-	-	-	5	-	-	-
4C	*	*	*	-	—	-	-	-	5	-	-	-
4D	*	*	*	-	—	-	-	-	5	-	-	-

* Detection Zone

Actuated Flasher

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Set all detector units to presence mode.
3. Flash beacon 61 when actuated by loops 4A,4B,4C and 4D. Flash all other beacons continuously.
4. Detection zones shown are conceptual and only represent the desired coverage.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Microwave Detection Zone	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
A	"STOP" Sign (R1-1)	A
B	"Vehicle Entering When Flashing" Sign (see Figure 1)	B

Signal Upgrade

Prepared in the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1808 (Jonesboro Road) at I-95 NB Ramp

Division 6 Harnett County Near Dunn

PLAN DATE: November 2013	REVIEWED BY: PLA
PREPARED BY: JPG	REVIEWED BY:

SCALE 0 30 1"=30'

REVISIONS	INIT.	DATE

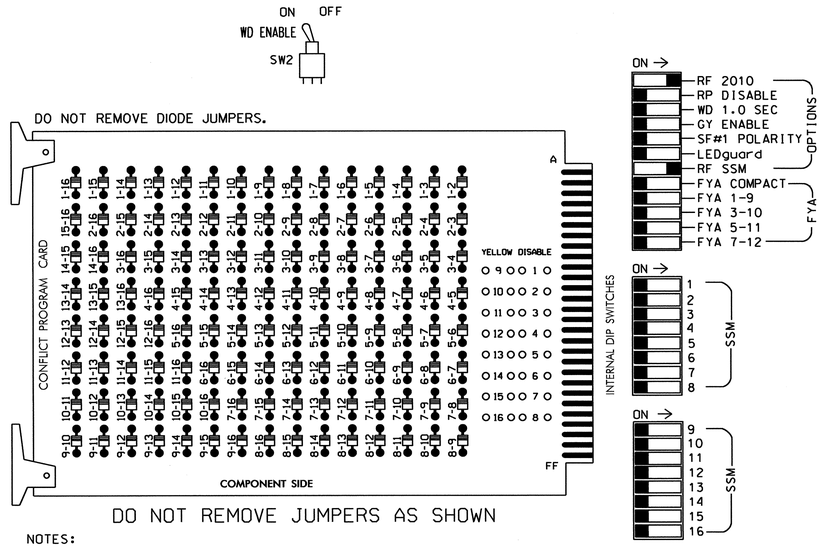
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 29904 ENGINEER JASON P. GALLOWAY
SIGNATURE DATE 12/19/13
SIG. INVENTORY NO. 00-0836

14-JAN-2014 15:18
S:*ITS&SU*ITS Signals*Signal Design Section*Eastern Region*Div-06*06-0836*060836_sig_dsn_20131219.dgn
jgalloway

PROJECT REFERENCE NO.	SHEET NO.
R-5526	Sig. 2

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(do not remove jumpers and set switches as shown)



DO NOT REMOVE JUMPERS AS SHOWN

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Make sure jumpers SEL2-SEL5 are present on the monitor board.

■ = DENOTES POSITION OF SWITCH

INPUT FILE POSITION LAYOUT

(front view)

FILE "I"	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	SLOT EMPTY	SLOT EMPTY	4A RADAR CARD	4C RADAR CARD	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
L			4B RADAR CARD	4D RADAR CARD										ST DC ISOLATOR

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
4A	★	I3U	58	20	3	-					
4B	★	I3L	49	11	24	-					
4C	★	I4U	41	3	4	-					
4D	★	I4L	45	7	14	-					

★ SPECIAL DETECTOR NOTE

For Zones 4A-4D install a Radar detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plan.

INPUT FILE POSITION LEGEND: I2L
FILE I
SLOT 2
LOWER

NOTES

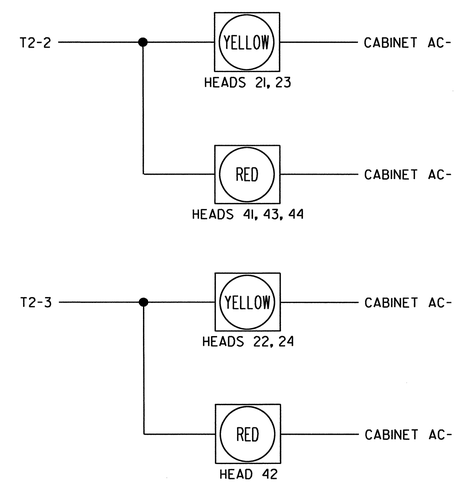
1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 1,2,3, 4,5,6,7,8,9,10,11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.

EQUIPMENT INFORMATION

CONTROLLER.....2070L
CABINET.....336
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....POLE
OUTPUT FILE POSITIONS...12
LOAD SWITCHES USED.....S6
PHASES USED.....NONE
OVERLAPS.....NONE

WARNING FLASHER WIRING DETAIL

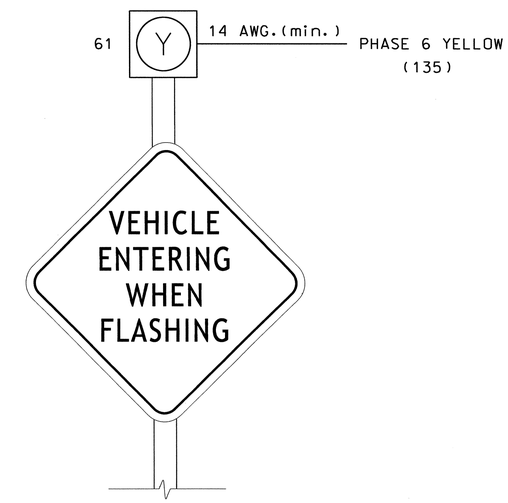
(wire as shown)



SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	NU	NU	NU	NU	NU	NU	NU	61	NU	NU	NU	NU
RED												
YELLOW								135				
GREEN												

NU = Not Used
NOTE: See pictorial diagram of Advance Beacon wiring below:



IMPORTANT

1. REMOVE, TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 134 (6R) AND TERMINAL 136 (6G).

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 06-0836
DESIGNED: November 2013
SEALED: 12/19/13
REVISED: N/A

Electrical Detail - Sheet 1 of 3

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1808 (Jonesboro Road)
at
I-95 NB Ramp

Division 6 Harnett County Near Dunn

PLAN DATE: December 2013 REVIEWED BY: T.J.M
PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022013 ENGINEER GEORGE C. BROWN
SIGNATURE 1/7/14 DATE
SIG. INVENTORY NO. 06-0836

02-JAN-2014 10:53
S:\ITS&SU\ITS Signals\WorkGroups\Sig Mgmt\Strickland\R5526B_sheet_xxx.dgn
CASTRICKLAND

PROJECT REFERENCE NO.	SHEET NO.
R-5526	Sig. 3

FLASHER CONTROL LOGIC PROGRAMMING DETAIL

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL). THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2 AND 3.

2. FROM MAIN MENU PRESS '6' (OUTPUTS). THEN '3' (LOGICAL I/O PROCESSOR).

```
LOGICAL I/O COMMAND #1  (+/-COMMAND#)
IF  INPUT              #20 IS ON
OR  INPUT              #11 IS ON
OR  INPUT              #3  IS ON
OR  INPUT              #7  IS ON
                 ↓
            SCROLL DOWN
THEN:
SET LOGIC FLAG          #1 ON
```

NOTE: SET LOGIC FLAG IF ANY ZONE ACTIVE

PRESS '+'

```
LOGICAL I/O COMMAND #2  (+/-COMMAND#)
IF  LOGIC FLAG          #1  IS ON
                 ↓
            SCROLL DOWN
THEN:
SET OUTPUT  ASSIGNMENT #28 ON
```

NOTE: ENABLE BEACON OUTPUT

PRESS '+'

```
LOGICAL I/O COMMAND #3  (+/-COMMAND#)
IF  INPUT              #20 IS OFF
AND INPUT              #11 IS OFF
AND INPUT              #3  IS OFF
AND INPUT              #7  IS OFF
                 ↓
            SCROLL DOWN
THEN:
DELAY (SEC)              5.0
SET LOGIC FLAG          #1 OFF
```

NOTE: ALL ZONES INACTIVE RESETS LOGIC FLAG AND EXTENDS BEACON OUTPUT 5 SECONDS.

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

I/O REFERENCE SCHEDULE

OUTPUT 28 = Phase 6 Yellow
INPUT 20 = Detector 3
INPUT 11 = Detector 24
INPUT 3 = Detector 4
INPUT 7 = Detector 14

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 06-0836
DESIGNED: November 2013
SEALED: 12/19/13
REVISED: N/A

Electrical Detail - Sheet 2 of 3

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:

Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

SR 1808 (Jonesboro Road)
at
I-95 NB Ramp

Division 6 | Harnett County | Near Dunn

PLAN DATE: December 2013 | REVIEWED BY: T. Jah
PREPARED BY: C. Strickland | REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022013 ENGINEER GEORGE C. BROWN

SIGNATURE | DATE 1/7/14

SIG. INVENTORY NO. 06-0836

06-JAN-2014 09:51
S:\TSASU\ITS Signals\Workgroups\Sig Man\Strickland\06836_smele_xxx.dgn
castrickland

PROJECT REFERENCE NO.	SHEET NO.
R-5526	Sig. 4

OUTPUT RE-ASSIGNMENT PROGRAMMING DETAIL
TO CONVERT LOAD SWITCH S6 (PHASE 6 VEH.) TO FLASHER OUTPUT

(program controller as shown below)

1. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT (ASSIGNMENTS).
2. WITH CURSOR IN "OUTPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE OUTPUT ASSIGNMENT NUMBER 27, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:29  VEHICLE PHASE
OUTPUT ASSIGNMENT #................27
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID, 1=FLASH.............0
SELECT ASSIGNMENT:
NOT ENABLED........................Y
VEHICLE PHASE......................Y
PEDESTRIAN PHASE...................
VEHICLE OVERLAP....................
PEDESTRIAN OVERLAP.................
WATCHDOG...........................
DETECTOR RESET.....................
ADVANCE BEACON.....................
OUT OF PHASE FLASHER...............
CONTROLLER FLASH...................
RUN FREE...........................
RESERVED...........................
PREEMPT............................
SOFT PREEMPT.......................
ANY PREEMPT........................
COORDINATION PLAN..................
OFFSET.............................
PHASE CHECK........................
PHASE ON...........................
PHASE NEXT.........................
```

ENTER A "Y" TO DISABLE THIS OUTPUT

THE VEH. PHASE "Y" WILL REMAIN UNTIL FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER A "N". ENTER A "YES" BESIDE "NOT ENABLED" AS SHOWN.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS "NOT ENABLED" AS SHOWN BELOW:

```
PAGE:1  C1 PIN:29  NOT ENABLED
OUTPUT ASSIGNMENT #................27
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID, 1=FLASH.............0
SELECT ASSIGNMENT:
NOT ENABLED........................Y
VEHICLE PHASE......................
PEDESTRIAN PHASE...................
VEHICLE OVERLAP....................
PEDESTRIAN OVERLAP.................
WATCHDOG...........................
DETECTOR RESET.....................
ADVANCE BEACON.....................
OUT OF PHASE FLASHER...............
CONTROLLER FLASH...................
RUN FREE...........................
RESERVED...........................
PREEMPT............................
SOFT PREEMPT.......................
ANY PREEMPT........................
COORDINATION PLAN..................
OFFSET.............................
PHASE CHECK........................
PHASE ON...........................
PHASE NEXT.........................
```

LS 6-RED = NOT ENABLED

PRESS + KEY ONCE TO ADVANCE TO OUTPUT 28

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:30  VEHICLE PHASE
OUTPUT ASSIGNMENT #................28
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID, 1=FLASH.............1
SELECT ASSIGNMENT:
NOT ENABLED........................Y
VEHICLE PHASE......................Y
PEDESTRIAN PHASE...................
VEHICLE OVERLAP....................
PEDESTRIAN OVERLAP.................
WATCHDOG...........................
DETECTOR RESET.....................
ADVANCE BEACON.....................
OUT OF PHASE FLASHER...............
CONTROLLER FLASH...................
RUN FREE...........................
RESERVED...........................
PREEMPT............................
SOFT PREEMPT.......................
ANY PREEMPT........................
COORDINATION PLAN..................
OFFSET.............................
PHASE CHECK........................
PHASE ON...........................
PHASE NEXT.........................
```

PROGRAM OUTPUT TO FLASH AS SHOWN

ENTER A "Y" BESIDE NOT ENABLED

THE VEHICLE PHASE "Y" WILL REMAIN UNTIL FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER A "N". ENTER A "YES" BESIDE "NOT ENABLED" AS SHOWN.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS "NOT ENABLED" AS SHOWN BELOW:

```
PAGE:1  C1 PIN:30  NOT ENABLED
OUTPUT ASSIGNMENT #................28
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID, 1=FLASH.............1
SELECT ASSIGNMENT:
NOT ENABLED........................Y
VEHICLE PHASE......................
PEDESTRIAN PHASE...................
VEHICLE OVERLAP....................
PEDESTRIAN OVERLAP.................
WATCHDOG...........................
DETECTOR RESET.....................
ADVANCE BEACON.....................
OUT OF PHASE FLASHER...............
CONTROLLER FLASH...................
RUN FREE...........................
RESERVED...........................
PREEMPT............................
SOFT PREEMPT.......................
ANY PREEMPT........................
COORDINATION PLAN..................
OFFSET.............................
PHASE CHECK........................
PHASE ON...........................
PHASE NEXT.........................
```

LS 6-YEL - FLASHER OUT

PRESS + KEY ONCE TO ADVANCE TO OUTPUT 31

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:31  VEHICLE PHASE
OUTPUT ASSIGNMENT #................29
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID, 1=FLASH.............0
SELECT ASSIGNMENT:
NOT ENABLED........................Y
VEHICLE PHASE......................Y
PEDESTRIAN PHASE...................
VEHICLE OVERLAP....................
PEDESTRIAN OVERLAP.................
WATCHDOG...........................
DETECTOR RESET.....................
ADVANCE BEACON.....................
OUT OF PHASE FLASHER...............
CONTROLLER FLASH...................
RUN FREE...........................
RESERVED...........................
PREEMPT............................
SOFT PREEMPT.......................
ANY PREEMPT........................
COORDINATION PLAN..................
OFFSET.............................
PHASE CHECK........................
PHASE ON...........................
PHASE NEXT.........................
```

ENTER A "Y" TO DISABLE THIS OUTPUT

THE VEH. PHASE "Y" WILL REMAIN UNTIL FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER A "N". ENTER A "YES" BESIDE "NOT ENABLED" AS SHOWN.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS "NOT ENABLED" AS SHOWN BELOW:

```
PAGE:1  C1 PIN:31  NOT ENABLED
OUTPUT ASSIGNMENT #................29
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID, 1=FLASH.............0
SELECT ASSIGNMENT:
NOT ENABLED........................Y
VEHICLE PHASE......................
PEDESTRIAN PHASE...................
VEHICLE OVERLAP....................
PEDESTRIAN OVERLAP.................
WATCHDOG...........................
DETECTOR RESET.....................
ADVANCE BEACON.....................
OUT OF PHASE FLASHER...............
CONTROLLER FLASH...................
RUN FREE...........................
RESERVED...........................
PREEMPT............................
SOFT PREEMPT.......................
ANY PREEMPT........................
COORDINATION PLAN..................
OFFSET.............................
PHASE CHECK........................
PHASE ON...........................
PHASE NEXT.........................
```

LS 6-GRN = NOT ENABLED

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 06-0836
DESIGNED: November 2013
SEALED: 12/19/13
REVISED: N/A

Electrical Detail - Sheet 3 of 3

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1808 (Jonesboro Road)
at
I-95 NB Ramp

Division 6 | Harnett County | Near Dunn

PLAN DATE: December 2013 | REVIEWED BY: T. Uyen
PREPARED BY: C. Strickland | REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022013 ENGINEER GEORGE C. BROWN

SIGNATURE | DATE 1/7/14

SIG. INVENTORY NO. 06-0836

02-JAN-2014 10:56
S:\MTSDSW\TS Signals\Workgroups\Sig Mgmt\Fritz\ctlr\n06083b_smd18_xxx.dgn
dsstr1\ps1009

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5526	UC-1	5

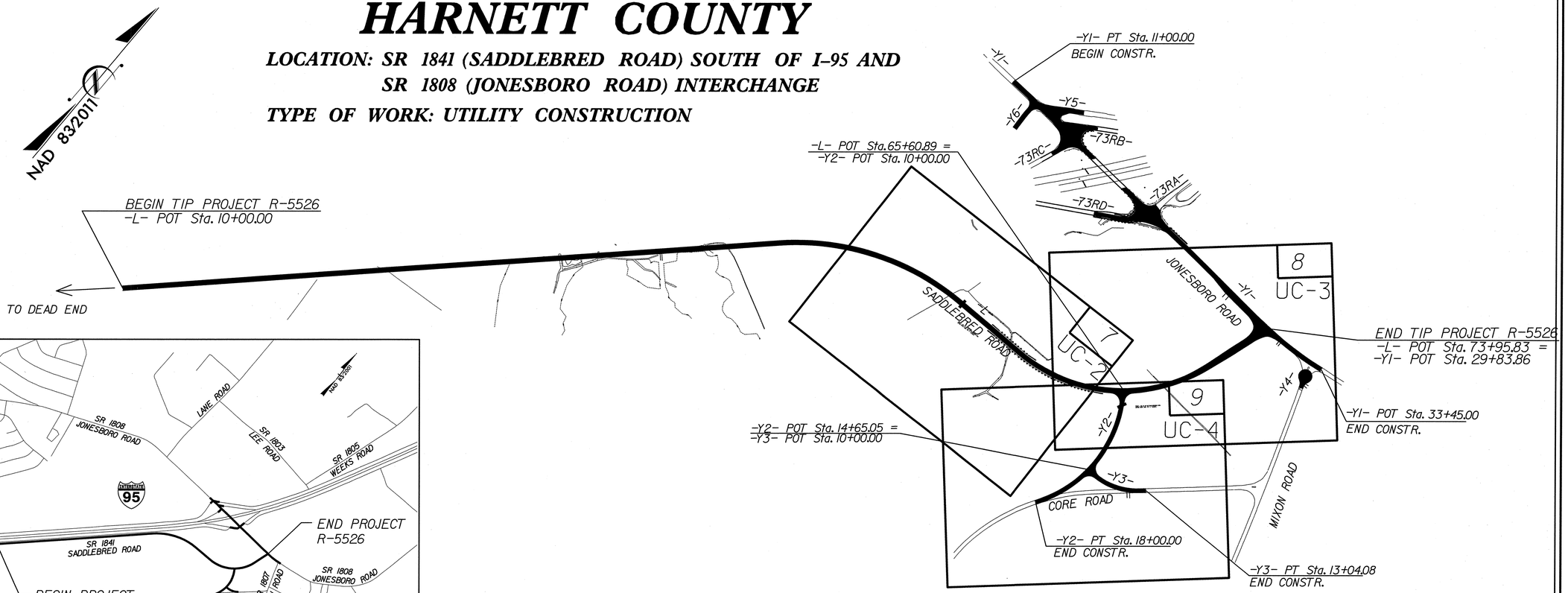
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

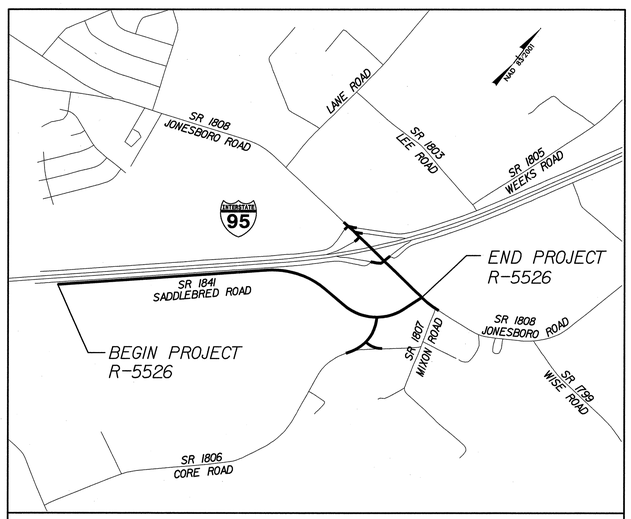
UTILITY CONSTRUCTION PLANS

HARNETT COUNTY

LOCATION: SR 1841 (SADDLEBRED ROAD) SOUTH OF I-95 AND SR 1808 (JONESBORO ROAD) INTERCHANGE

TYPE OF WORK: UTILITY CONSTRUCTION





VICINITY MAP

TIP PROJECT: R-5526

CONTRACT: C203456

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

WATER OWNERS ON PROJECT

HARNETT COUNTY

CITY OF DUNN

PROJECT LENGTH

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-1A	UTILITY NOTES
UC-2 THRU UC-4	UTILITY CONSTRUCTION SHEETS

Prepared In the Office of:
ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 2013

LETTING DATE:
MARCH 2014

MICHAEL BAREFOOT, PE
PROJECT ENGINEER

IAN BERDEAU, EI
PROJECT DESIGN ENGINEER

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 37830 ENGINEER MICHAEL P. BAREFOOT
1-28-14

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

09/08/99
27-JAN-2014 15:16
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5526	UC-1A
R/W SHEET NO.	

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 37830 ENGINEER MICHAEL P. BAREFOOT

1-28-14

8/17/99

REVISIONS

2012 HCDPU REQUIRED UTILITY NOTES

(Revision 5 – March 2012)

The following utility notes should be added to the coversheet of utility plans for projects located in Harnett County:

WATER

A. The Fire Marshal's Office shall approve all hydrant types and locations in new subdivisions. However, Harnett County Department of Public Utilities (HCDPU) prefers the contractors to install one of the following fire hydrants:

1. Mueller - Super Centurion 250 A-423 model with a 5¼" main valve opening three way (two hose nozzles and one pumper nozzle);
2. American Darling - Mark B-84-B model with a 5¼" main valve opening three way (two hose nozzles and one pumper nozzle);
3. Waterous - Pacer B-67-250 model with a 5¼" main valve opening three way (two hose nozzles and one pumper nozzle) or approved equal for standardization.

B. Fire hydrants are installed at certain elevations. Any grade change in the vicinity of any fire hydrant which impedes its operation shall become the responsibility of the Utility Contractor for correction. Corrections will be monitored by the HCDPU Utility Construction Inspector and the Harnett County Fire Marshal.

C. The Professional Engineer (PE) shall obtain and provide the NCDENR "Authorization to Construct" permit to the Utility Contractor before the construction of the water line shall begin. The Utility Contractor must post a copy of the NCDENR "Authorization to Construct" permit issued by the North Carolina Department of Environment and Natural Resources – Division of Environmental Health, Public Water Supply Section (NCDENR-DEH,PWSS) on site prior to the start of construction. The permit must be maintained on site throughout the entire construction process of the proposed water lines that will serve this project.

D. The Utility Contractor shall notify Harnett County Department of Public Utilities (HCDPU) and the Professional Engineer (PE) at least two days prior to construction commencing. The Utility Contractor must schedule a pre-construction conference with Mr. Alan Moss, HCDPU Utility Construction Inspector at least two (2) days before construction will begin and the Utility Contractor must coordinate with HCDPU for regular inspection visitations and acceptance of the water system(s). Construction work shall be performed only during the normal working hours of HCDPU which is 8:00 am – 5:00 pm Monday through Friday. Holiday and weekend work is not permitted by HCDPU.

E. The Professional Engineer (PE) shall provide HCDPU and the Utility Contractor with a set of NCDENR approved plans marked "Released For Construction" at least two days prior to construction commencing. The Registered Land Surveyor (RLS) should stake out all lot corners and the grade stakes for the proposed finish grade for each street before the Utility Contractor begins construction of the water line(s). The grade stakes should be set with a consistent offset from the street centerline so as not to interfere with the street grading and utility construction.

F. The Utility Contractor shall provide the HCDPU Utility Construction Inspector with material submittals and shop drawings for all project materials prior to the construction of any water line extension(s), and associated water services in Harnett County. The materials to be used on the project must meet the established specifications of HCDPU and be approved by the Engineer of Record prior to construction. All substandard materials or materials not approved for use in Harnett County found on the project site must be removed immediately when notified by the HCDPU Utility Construction Inspector.

G. The water main(s), fire hydrants, service lines, meter setters and all associated appurtenances shall be constructed in strict in accordance with the standard specifications of the Harnett County Department of Public Utilities (HCDPU). The Utility Contractor shall be responsible to locate the newly installed water main(s), water service lines and all associated meter setters and meter boxes for other utility companies and their contractors until the new water main(s) have been approved by the North Carolina Department of Environment and Natural Resources – Division of Environmental Health, Public Water Supply Section (NCDENR-DEH, PWSS)and accepted by HCDPU.

H. Prior to acceptance, all services will be inspected to insure that they are installed at the proper depth. All meter boxes must be flush with the ground level at finish grade and the meter setters must be a minimum of 8" below the meter box lid. Meter setters shall be centered in the meter box and supported by brick, block or stone.

I. The Utility Contractor shall provide the Professional Engineer (PE) and HCDPU Utility Construction Inspector with a set of red line drawings identifying the complete water system installed for each project. The red line drawings should identify the materials, pipe sizes and approximate depths of the water lines as well as the gate valves, fire hydrants, meter setters, blow off assemblies and all associated appurtenances for all water line(s) constructed in Harnett County. The red line drawings should clearly identify any deviations from the NCDENR approved plans. All change orders must be approved by HCDPU and the Professional Engineer (PE) in writing and properly documented in the red line field drawings.

J. Potable water mains crossing other utilities and non-potable water lines (sanitary sewer, storm sewer, RCP, etc.) shall be laid to provide a minimum vertical distance of twenty-four (24") inches between the potable water main and all other utilities. NCDOT requires the new water mains to be installed under the storm water lines. The potable water main shall be installed with twenty-four (24") inches of vertical separation and with ductile iron pipe when designed to be placed under a non-potable water line such as sanitary sewer or storm sewer lines. If these separations cannot be maintained then the water main shall be installed with ductile iron pipe. Both the potable water main and the non-potable water line must be cast iron or ductile iron pipe (DIP) if the state minimum separations cannot be maintained. The ductile iron pipe must be laid so the mechanical joints are at least (10') feet from the point where the potable water main crosses the non-potable water line.

K. Potable water mains installed parallel to non-potable water lines (sanitary sewer, storm sewer, RCP, etc.) shall be laid to provide a minimum horizontal distance of ten (10') feet between the potable water main and sanitary sewer mains, sewer laterals and services. The horizontal separation between the potable water main and any other utility or storm sewer shall not be less than five (5') feet. The potable water main must be ductile iron pipe if this horizontal separation of ten (10') feet cannot be maintained. The ductile iron pipe shall extend at least ten (10') feet beyond the point where the minimum required horizontal separation of ten (10') feet can be re-established.

L. Meter setters shall be installed in pairs on every other lot line where possible to leave adequate space for other utilities to be installed at a later time. The meter setters shall be installed at least one (1') foot inside the right-of-way and at least three (3') to five (5') feet from the property line between the lots.

M. HCDPU requires that meter boxes for ¾" services shall be 12" wide x 17" long ABS plastic boxes at least 18" in height with cast iron lids/covers. Meter boxes for 1" services shall be 17" wide x 21" long ABS plastic boxes at least 18" in height with plastic lids and cast iron flip covers in the center of the lids. Meter boxes for 2" services shall be 20" wide x 32" long ABS plastic boxes at least 20" in height with plastic lids and cast iron flip covers in the center of the lids.

N. Master meters must be installed in concrete vaults sized for the meter assembly and associated appurtenances so as to provide at least eighteen (18") inches of clearance between the bottom of the concrete vault and the bottom of the meter setter. The master meter must be provided test ports if the meter is not equipped with test ports from the manufacturer in accordance with the HCDPU established standard specifications and details. Ductile iron pipe must be used for the master meter vault piping and valve vault piping. The Utility Contractor must provide shop drawings for the meter vaults to HCDPU prior to ordering the concrete vaults.

O. The Utility Contractor will install polyethylene SDR-9 water service lines that cross under the pavement inside a schedule 40 PVC conduit to allow for removal and replacement in the future. Two (2) independent ¾" water service lines may be installed inside one (1) – two (2") inch schedule 40 PVC conduit or two (2) independent 1" water service lines may be installed inside one (1) – three (3") inch schedule 40 PVC conduit, but each water service shall be tapped directly to the water main. Split services are not allowed by HCDPU.

P. The water main(s), fire hydrants, gate valves, service lines, meter setters and associated appurtenances must be rated for 200 psi and hydrostatically pressure tested to 200 psi. The hydrostatic pressure test(s) must be witnessed by the HCDPU Utility Construction Inspector. The Utility Contractor must notify HCDPU when they are ready to begin filling in lines and coordinate with Harnett County to witness all pressure testing.

Q. The Utility Contractor shall conduct a pneumatic pressure test using compressed air or other inert gas on the stainless steel tapping sleeve(s) prior to making the tap on the existing water main. This pneumatic pressure test must be witnessed by the HCDPU Utility Construction Inspector. The Utility Contractor shall use <u>Romac</u> brand stainless steel tapping sleeve(s) or approved equal for all taps made in Harnett County. All new water line extensions must begin with a resilient wedge type gate valve sized equal to the diameter of the new water line extension in order to provide a means of isolation between Harnett County's existing water mains and the new water line extensions under construction.

R. All water mains will be constructed with SDR-21 PVC Pipe or Class 50 Ductile Iron Pipe rated for at least 200 psi or greater. All pipes must be protected during loading, transport, unloading, staging, and installation. PVC pipe must be protected from extended exposure to sunlight prior to installation.

S. All water mains will be flushed and disinfected in strict accordance with the standard specifications of the Harnett County Department of Public Utilities. All water samples collected for bacteria testing will be collected by the HCDPU Utility Construction Inspector and tested in the HCDPU Laboratory.

T. All fittings larger than two (2") inches diameter shall be ductile iron. HCDPU requires that mechanical joints be assembled with grip rings as "Megalug" fittings are not approved by Harnett County for pipe sizes smaller than twelve inches (12") diameter. PVC pipe used for water mains shall be connected by slip joint or mechanical joint with grip rings. Glued pipe joints are not allowed on PVC pipe used for water mains in Harnett County.

U. HCDPU requires that the Utility Contractor install tracer wire in the trench with all water lines. The tracer wire shall be 12 ga. insulated, solid copper conductor and it shall be terminated at the top of the valve boxes or manholes. No spliced wire connections shall be made underground on tracer wire installed in Harnett County. The tracer wire may be secured with duct tape to the top of the pipe before backfilling.

V. The Utility Contractor will provide Professional Engineer (PE) and the HCDPU Utility Construction Inspector with a set of red line field drawings to identify the installed locations of the water line(s) and all associated services. All change orders must be pre-approved by HCDPU and the Professional Engineer (PE) in writing and properly documented in the red line field drawings.

W. The Utility Contractor shall spot dig to expose each utility pipe or line which may conflict with construction of proposed water line extensions well in advance to verify locations of the existing utilities. The Utility Contractor shall provide both horizontal and vertical clearances to the Professional Engineer (PE) to allow the PE to adjust the water line design in order to avoid conflicts with existing underground utilities. The Utility Contractor shall coordinate with the utility owner and be responsible for temporary relocation and/or securing existing utility poles, pipes, wires, cables, signs and/or utilities including services in accordance with the utility owner requirements during water line installation, grading and street construction.

X. Prior to the commencement of any work within established utility easements or NCDOT right-of-ways the Utility Contractor is required to have a signed NCDOT encroachment agreement posted on site and notify all concerned utility companies in accordance with G.S. 87-102. The Utility Contractor must call the NC One Call Center at 811 or (800) 632-4949 to verify the location of existing utilities prior to the beginning of construction. Existing utilities shown in these plans are taken from maps furnished by various utility companies and have not been physically located or verified by the P.E. (i.e. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC, NATURAL GAS, ETC.). The Utility Contractor will be responsible to repair any and all damages to the satisfaction of the related utility company.

Y. The Utility Contractor shall provide HCDPU with at least one (1) fire hydrant wrench and one (1) break-away flange kit for every subdivision with fire hydrants developed in Harnett County. These items must be provided to HCDPU before the final inspection will be scheduled by the HCDPU Utility Construction Inspector. In addition, the Utility Contractor shall install a 4" x 4" concrete valve marker at the edge of the right-of-way to identify the location of each gate valve installed in the new water system with the exception of the fire hydrant isolation valves. The contractor shall measure the distance from the center of the concrete marker to the center of the valve box. This distance (in linear feet) shall be stamped on the brass plate located on the top of the concrete valve marker. In lieu of installing the concrete valve markers, the Utility Contractor may provide at least two measurements from two independent permanent above ground structures to the Professional Engineer (PE) in the red line drawings to identify the valve locations. The Professional Engineer (PE) must include these measurements in the As-Built Record Drawings submitted to HCDPU.

Z. The Utility Contractor will be responsible for any and all repairs due to leakage damage from poor workmanship during the one (1) year warranty period once the water system improvements have been accepted by Harnett County. Harnett County will provide maintenance and repairs when requested and bill the Developer and/or Utility Contractor if necessary due to lack of response within 48 hours of notification of warranty work. The Utility Contractor will be responsible for any and all repairs due to damages resulting from failure to locate the new water lines and associated appurtenances for other utilities and their contractors until the water lines have been approved by NCDENR and accepted by HCDPU. The final inspection of water system improvements cannot be scheduled with HCDPU until the streets have been paved, the rights-of-way and utility easements have been seeded and stabilized with an adequate stand of grass in place to prevent erosion issues on site.

AA The Engineer of Record is responsible to insure that construction is, at all times, in compliance with accepted sanitary engineering practices and approved plans and specifications. No field changes to the approved plans are allowed without prior written approval by HCDPU. A copy of each engineer's field report is to be submitted to HCDPU as each such inspection is made on system improvements or testing is performed by the contractor. Water and sewer infrastructure must pass all tests required by HCDPU specifications and those of all applicable regulatory agencies. These tests include, but are not limited to: air test, vacuum test, mandrel test, visual test, pressure test, bacteriological test, etc. A HCDPU Inspector must be present during testing and all test results shall be submitted to HCDPU. All tests must be satisfied before the final inspection will be scheduled with the HCDPU Inspector. The Engineer of Record must request in writing to schedule the final inspection once all construction is complete. The Developer's Engineer of Record and the HCDPU Utility Construction Inspector shall prepare a written punch list of any defects or deficiencies noted during the final inspection, should any exist. Upon completion of the punch list, the Developer's Engineer of Record will schedule another inspection. In the event the number of inspections performed by the HCDPU exceeds two, additional fees may be accessed to the Developer.

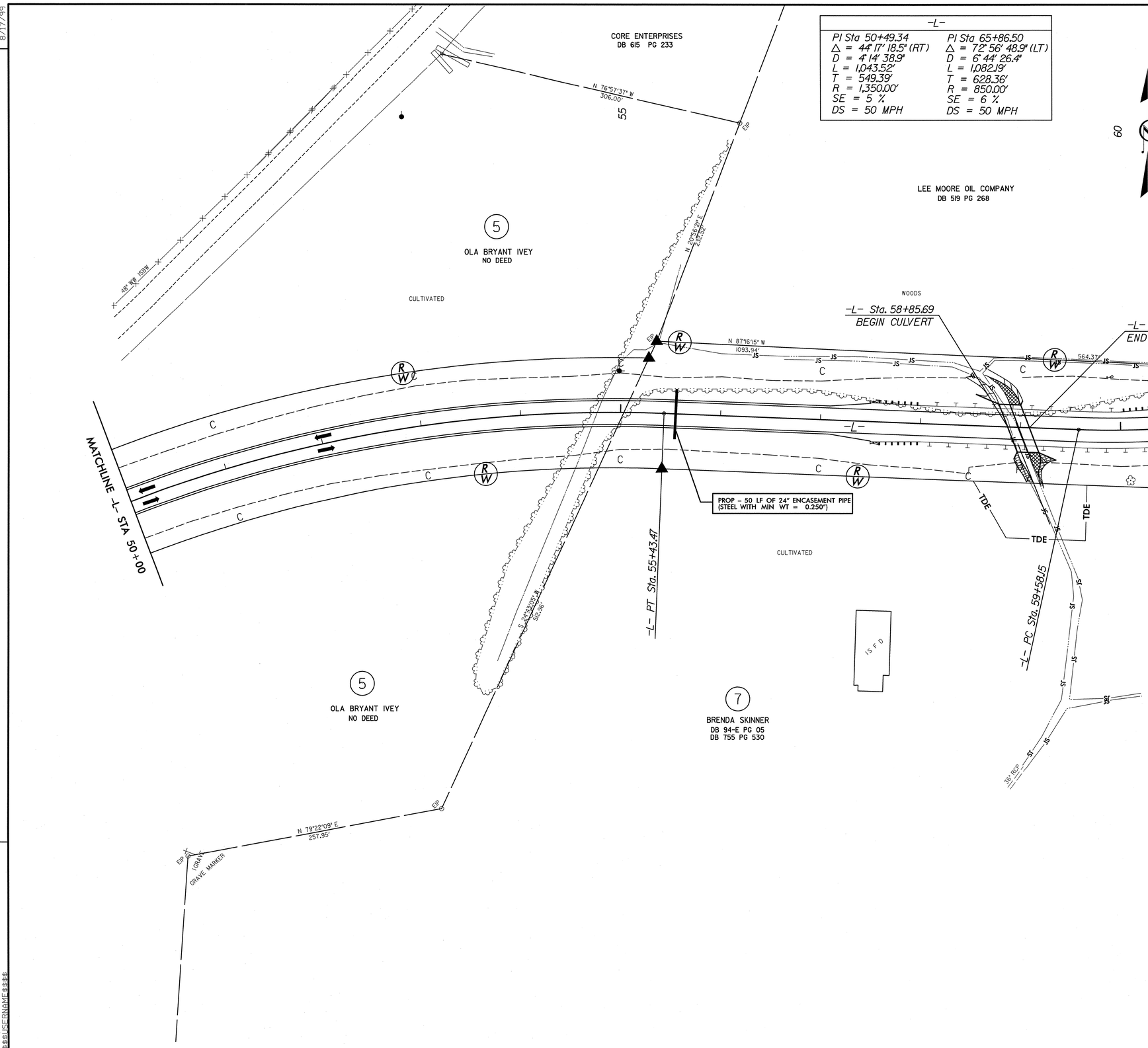
09-JAN-2014 11:25
O:\Transportation\Roadway\NCDOT\Division06\Saddlebred SR\Utilities\UC Plans\R-5526_rdy_utl_psh1a_waterline_notes.dgn
CHAP5535 AT DUS290137

PROJECT REFERENCE NO.	SHEET NO.
R-5526	UC-2
R/W SHEET NO.	

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 37830 ENGINEER MICHAEL P. BAREFOOT 1-28-14

-L-	
PI Sta 50+49.34	PI Sta 65+86.50
Δ = 44° 17' 18.5" (RT)	Δ = 72° 56' 48.9" (LT)
D = 4° 14' 38.9"	D = 6° 44' 26.4"
L = 1,043.52'	L = 1,082.19'
T = 549.39'	T = 628.36'
R = 1,350.00'	R = 850.00'
SE = 5 %	SE = 6 %
DS = 50 MPH	DS = 50 MPH



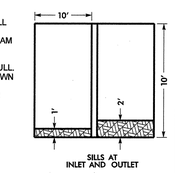
DETAIL 11

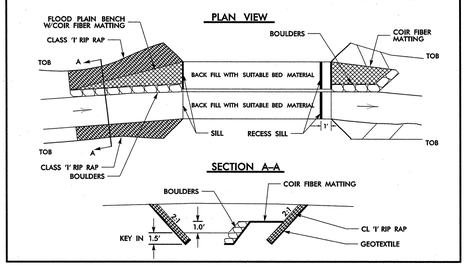
(NOT TO SCALE)

MULTI- BARREL LOW FLOW CHANNEL SILLS AND FLOOD PLAIN BENCH

*NOTES:

1) BED MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. THE MATERIAL SHALL BE NATURAL MATERIAL FROM WITHIN THE ACTUAL STREAM CHANNEL OR FLOOD PLAIN. BED MATERIALS SUBJECT TO APPROVAL BY THE ENGINEER.
2) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.
3) THE CHANNEL EDGE SHALL BE LINED WITH BOULDERS (AS SHOWN ON THE PLAN VIEW). THE DEPTH OF THE BOULDERS SHALL EXTEND 1.5 FT BELOW THE STREAM BED AND LINED WITH COIR FIBER MATTING.
4) BOULDERS SHALL HAVE THE MINIMUM DIMENSIONS: 3' X 2' X 1'
5) COIR FIBER MATTING SHALL BE SECURED ON THE FLOOD PLAIN BENCHES AND PLACED BEHIND BOULDERS TO PREVENT WASHOUT OF SEDIMENT THROUGH GAPS.





NOTE: SEE SHEET 12 FOR -L- PROFILE

REVISIONS

8/17/99

27-JAN-2014 15:17

$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5526	UC-3
R/W SHEET NO.	

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 37830 ENGINEER MICHAEL P. BAREFOOT 1-28-14

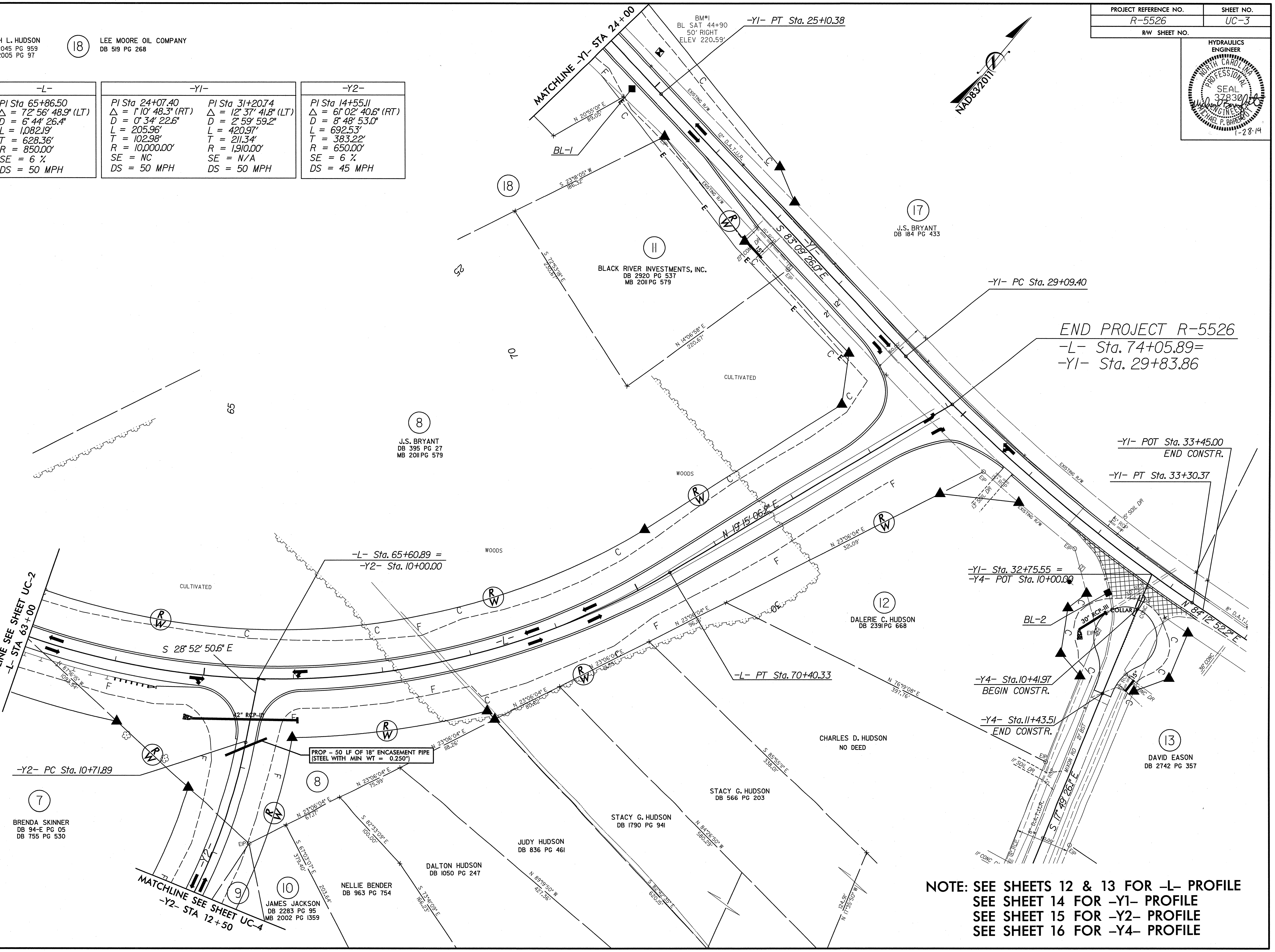
9 BETH L. HUDSON DB 2045 PG 959 MB 2005 PG 97

18 LEE MOORE OIL COMPANY DB 519 PG 268

-L-
PI Sta 65+86.50
△ = 72° 56′ 48.9″ (LT)
D = 6° 44′ 26.4″
L = 1,082.19′
T = 628.36′
R = 850.00′
SE = 6 %
DS = 50 MPH

-Y1-	
PI Sta 24+07.40	PI Sta 31+20.74
△ = 1° 10′ 48.3″ (RT)	△ = 12° 37′ 41.8″ (LT)
D = 0° 34′ 22.6″	D = 2° 59′ 59.2″
L = 205.96′	L = 420.97′
T = 102.98′	T = 211.34′
R = 10,000.00′	R = 1,910.00′
SE = NC	SE = N/A
DS = 50 MPH	DS = 50 MPH

-Y2-
PI Sta 14+55.11
△ = 61° 02′ 40.6″ (RT)
D = 8° 48′ 53.0″
L = 692.53′
T = 383.22′
R = 650.00′
SE = 6 %
DS = 45 MPH



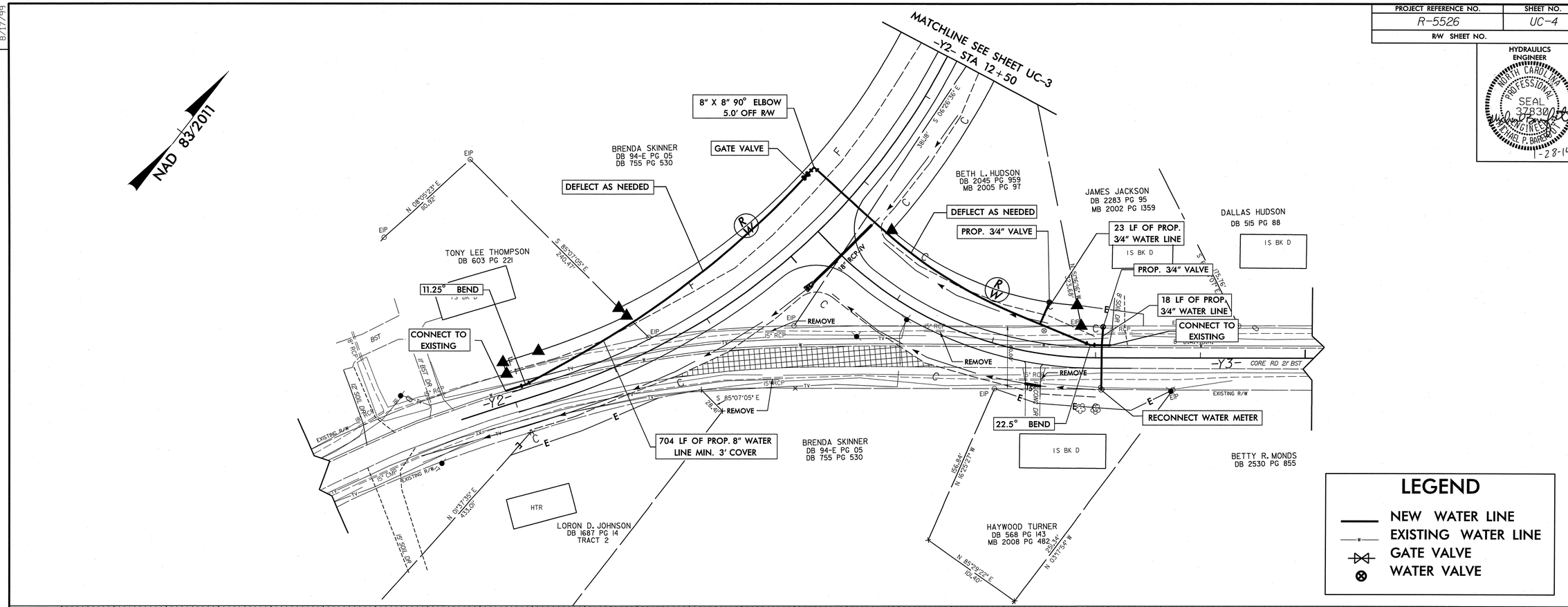
NOTE: SEE SHEETS 12 & 13 FOR -L- PROFILE
SEE SHEET 14 FOR -Y1- PROFILE
SEE SHEET 15 FOR -Y2- PROFILE
SEE SHEET 16 FOR -Y4- PROFILE

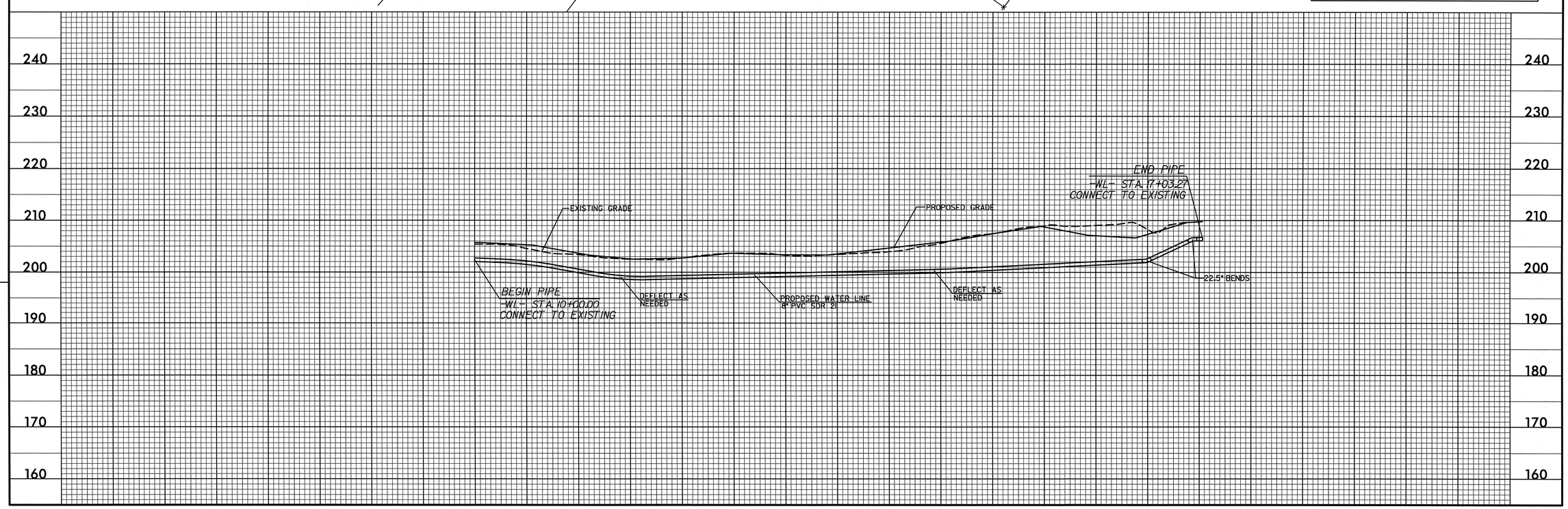
PROJECT REFERENCE NO.	SHEET NO.
R-5526	UC-4
R/W SHEET NO.	

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 37830 ENGINEER MICHAEL P. BARGER
1-28-14

REVISIONS

8/17/99





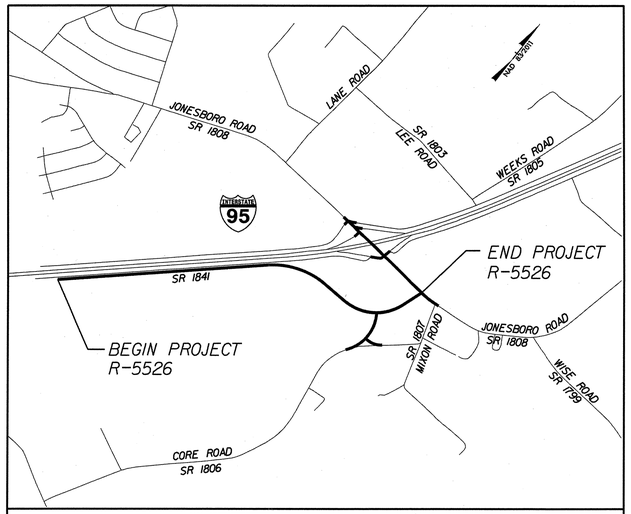
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5526	UO-1	7

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

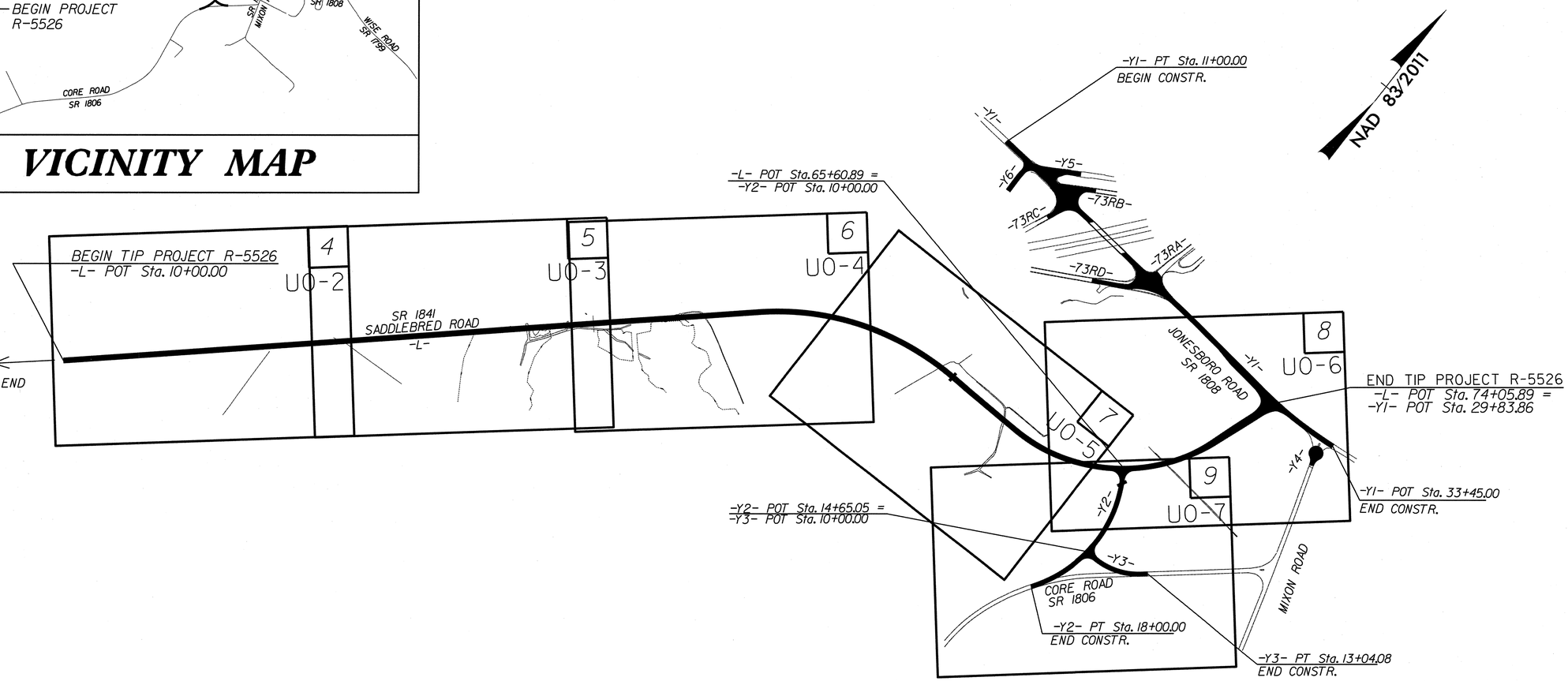
UTILITIES BY OTHERS PLANS

HARNETT COUNTY

LOCATION: SR 1841 (SADDLEBRED ROAD) SOUTH OF I-95 AND SR 1808 (JONESBORO ROAD) I-95 INTERCHANGE



VICINITY MAP



GRAPHIC SCALES

50 25 0 50 100
PLANS

INDEX OF UTILITY SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-7	UTILITY PLAN SHEETS

UTILITY OWNERS

WATER – CITY OF DUNN
SEWER – CITY OF DUNN
POWER – DUKE ENERGY PROGRESS
TELEPHONE – CENTURY LINK
CATV – CHARTER

LEGEND

SEWER LINE	—XX" SS—	WATER METER	PWM
WATER LINE	—XX" WL—	CLEAN OUT	SSCO
GATE VALVE	GV	MANHOLE	
BACKFLOW PREVENTER	PRPZ		

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

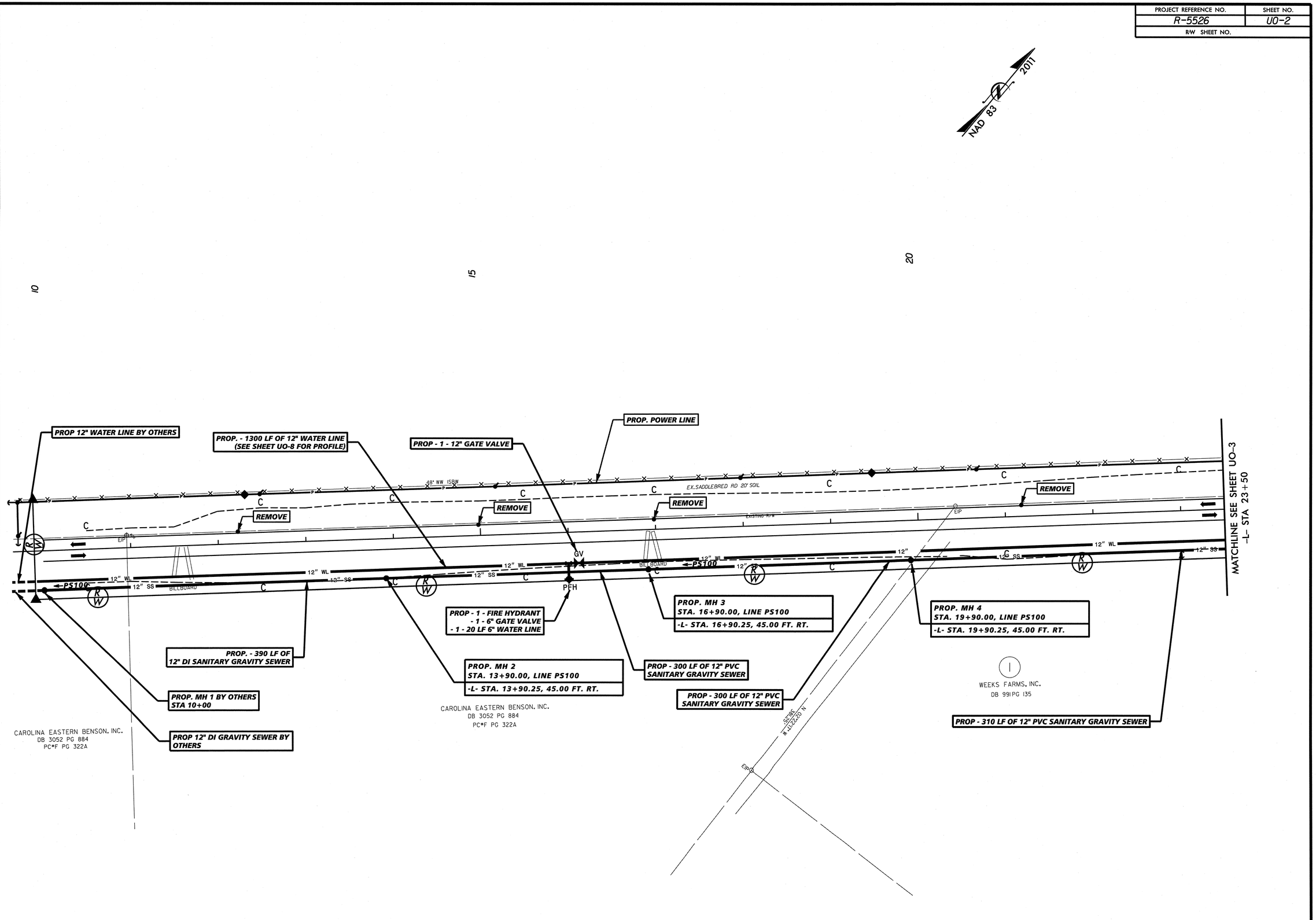
TIP PROJECT: R-5526

CONTRACT: C203456

09/08/99

24-JAN-2014 10:33
R:\Saddlebred SR\Utilities\Plan sheets\R-5526_rdy_utl_psh_UB0_tsh.dgn
BERD5650 AT LUS290293

PROJECT REFERENCE NO.	SHEET NO.
R-5526	UO-2
R/W SHEET NO.	



REVISIONS

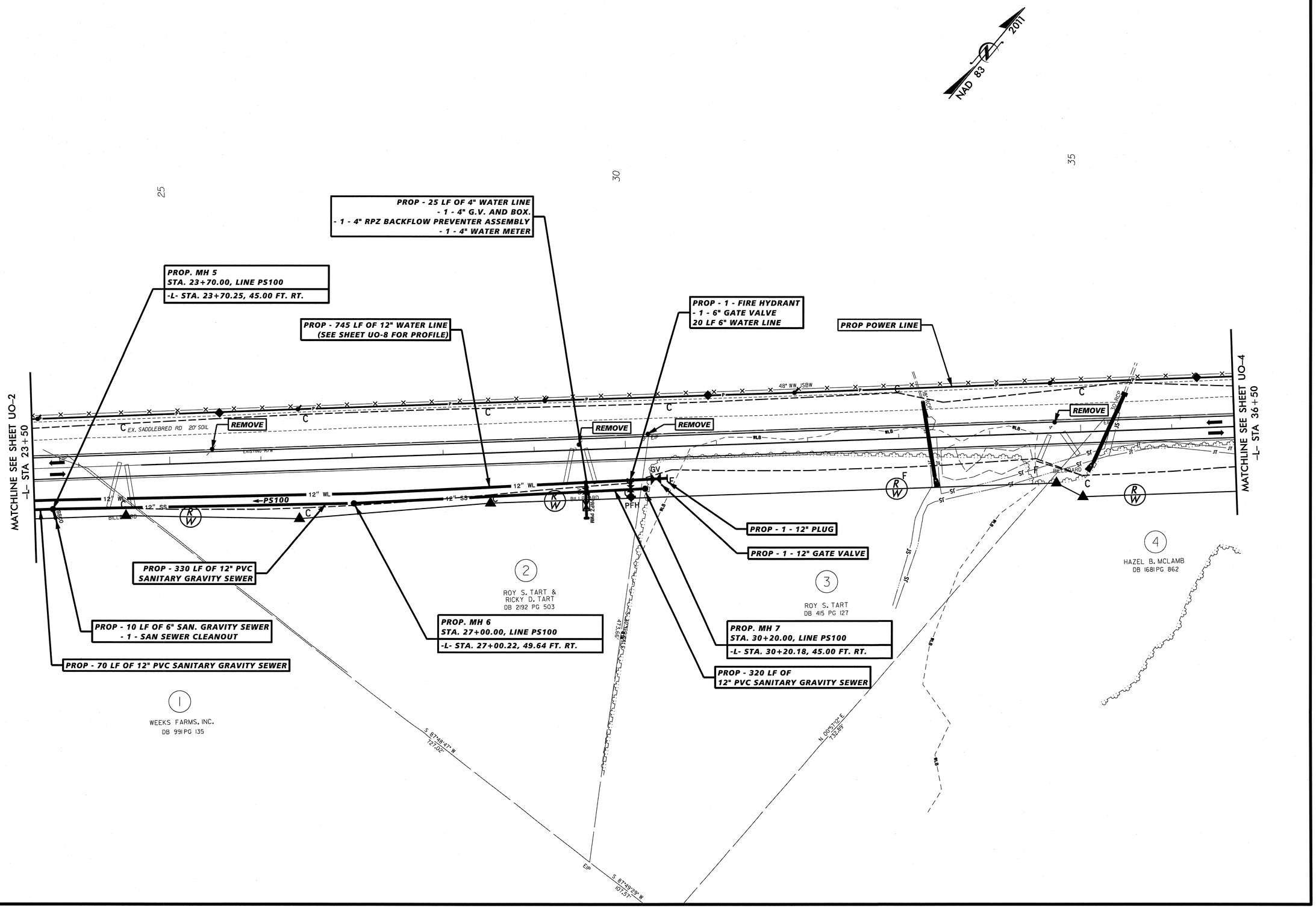
8/17/99

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

PROJECT REFERENCE NO.	SHEET NO.
R-5526	U0-3
R/W SHEET NO.	

REVISIONS

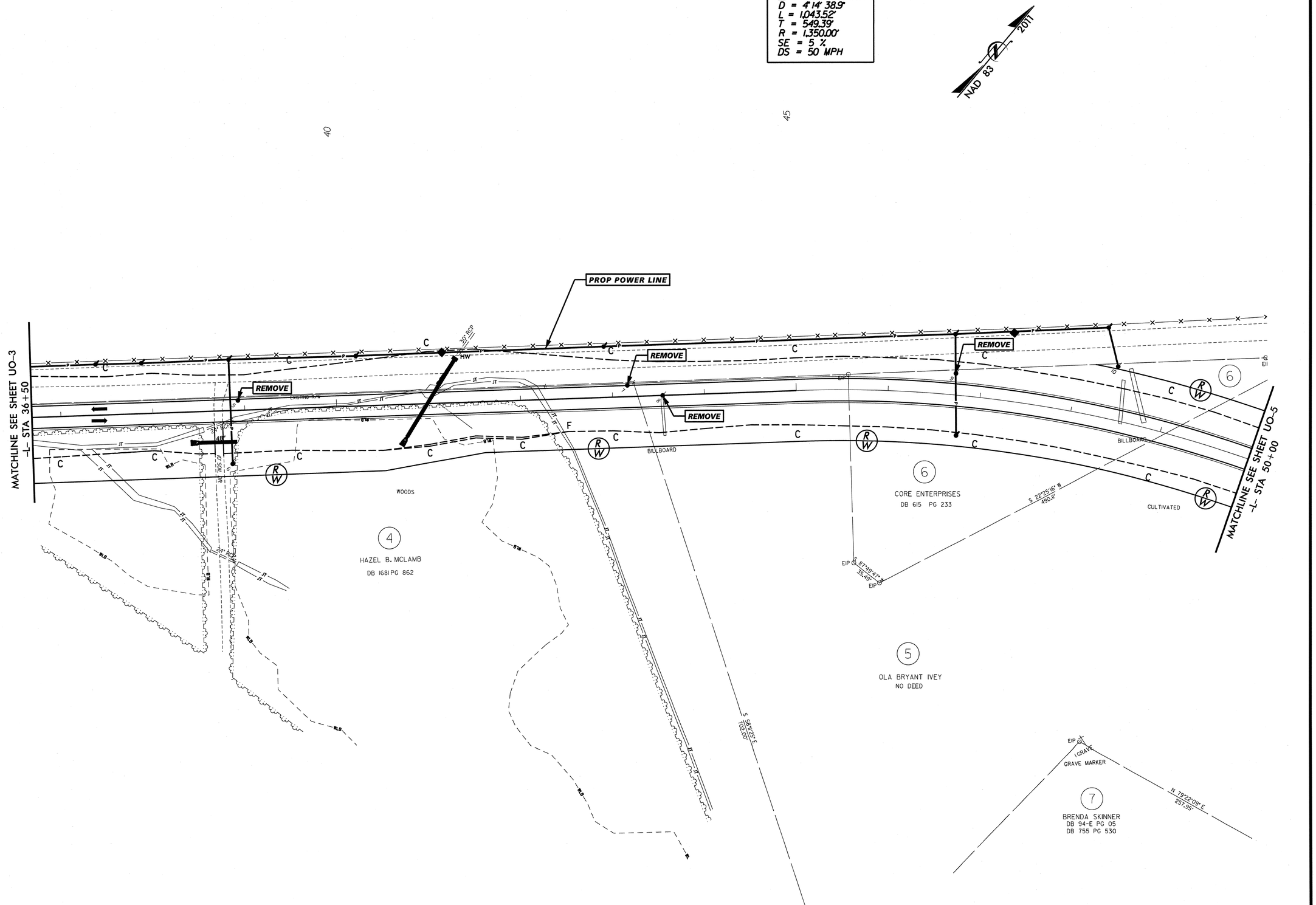
8/17/99



$$$$SYSTIME$$$$
$$$$JOB$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5526	U0-4
R/W SHEET NO.	

-L-
PI Sta 50+49.34
Δ = 44° 17' 18.5" (RT)
D = 4° 14' 38.9"
L = 1,043.52'
T = 549.39'
R = 1,350.00'
SE = 5 %
DS = 50 MPH



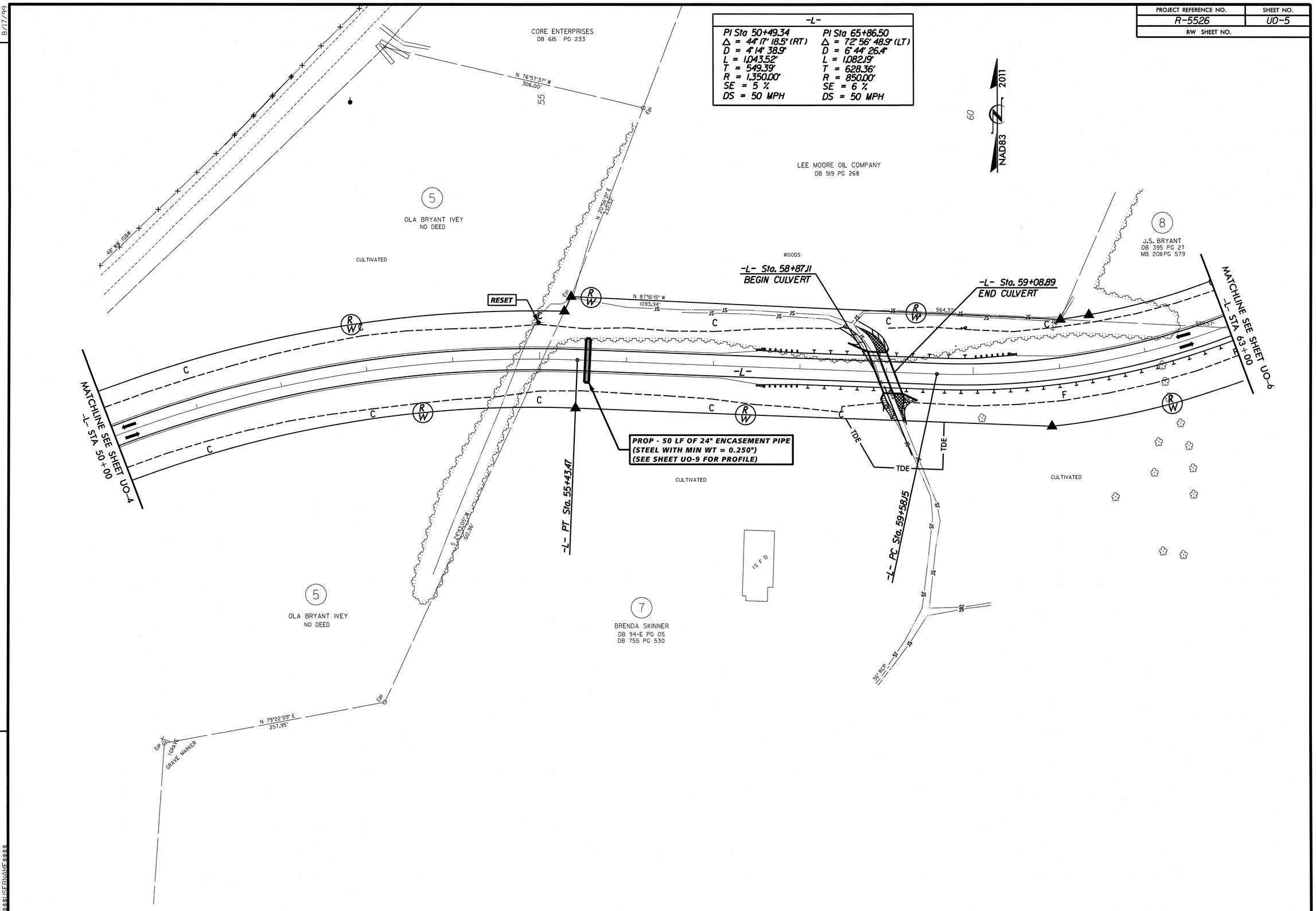
REVISIONS

8/17/99

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

PROJECT REFERENCE NO.	SHEET NO.
R-5526	U0-5
R/W SHEET NO.	

-L-	
PI Sta 50+49.34	PI Sta 65+86.50
Δ = 44° 17' 18.5" (RT)	Δ = 72° 56' 48.9" (LT)
D = 4° 14' 38.9"	D = 6° 44' 26.4"
L = 1,043.52'	L = 1,082.19'
T = 549.39'	T = 628.36'
R = 1,350.00'	R = 850.00'
SE = 5 %	SE = 6 %
DS = 50 MPH	DS = 50 MPH



REVISIONS

8/17/99

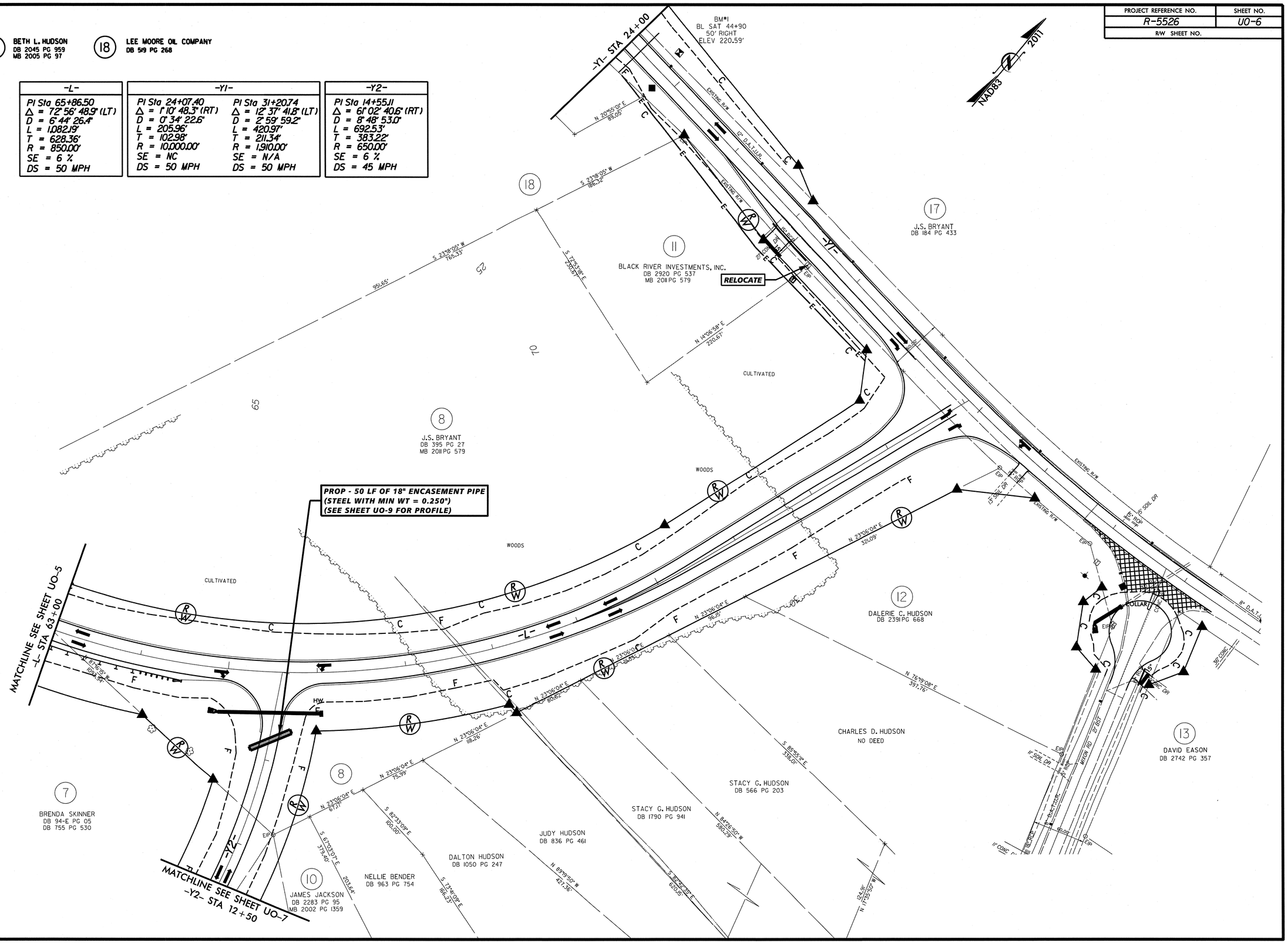
$$$$$SYSTIME$$$$$
$$$$$USERNAME$$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-5526	U0-6
R/W SHEET NO.	

9 BETH L. HUDSON
DB 2045 PG 959
MB 2005 PG 97

18 LEE MOORE OIL COMPANY
DB 519 PG 268

-L-	-Y1-		-Y2-
PI Sta 65+86.50	PI Sta 24+07.40	PI Sta 31+20.74	PI Sta 14+55.11
Δ = 72° 56' 48.9" (LT)	Δ = 1° 10' 48.3" (RT)	Δ = 12° 37' 41.8" (LT)	Δ = 61° 02' 40.6" (RT)
D = 6° 44' 26.4"	D = 0° 34' 22.6"	D = 2° 59' 59.2"	D = 8° 48' 53.0"
L = 1,082.19'	L = 205.96'	L = 420.97'	L = 692.53'
T = 628.36'	T = 102.98'	T = 211.34'	T = 383.22'
R = 850.00'	R = 10,000.00'	R = 1,910.00'	R = 650.00'
SE = 6 %	SE = NC	SE = N/A	SE = 6 %
DS = 50 MPH	DS = 50 MPH	DS = 50 MPH	DS = 45 MPH



REVISIONS

8/17/99

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

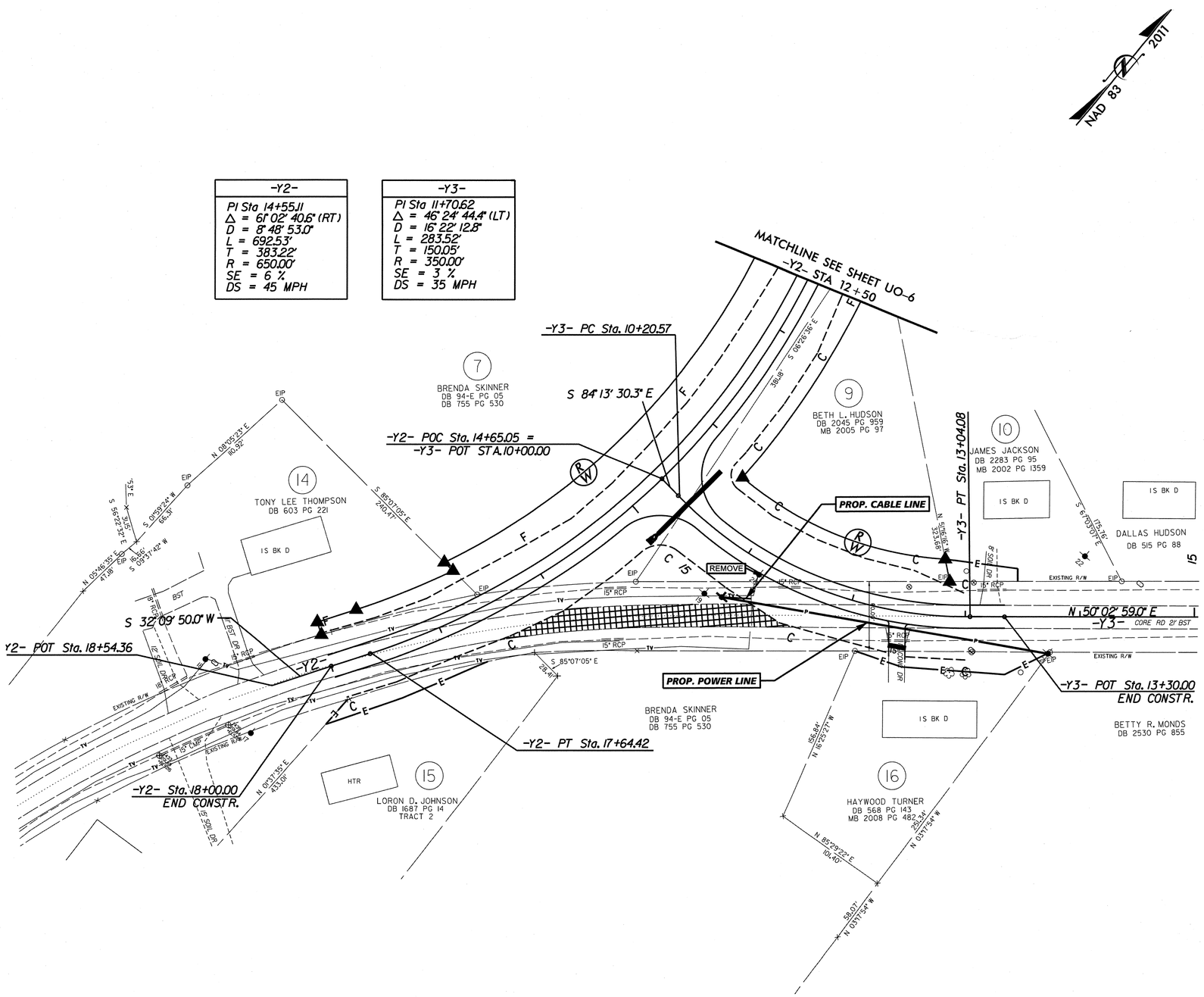
PROJECT REFERENCE NO.	SHEET NO.
R-5526	U0-7
R/W SHEET NO.	

8/17/99

REVISIONS

-Y2-
PI Sta 14+55.11
Δ = 61° 02' 40.6" (RT)
D = 8° 48' 53.0"
L = 692.53'
T = 383.22'
R = 650.00'
SE = 6 %
DS = 45 MPH

-Y3-
PI Sta 11+70.62
Δ = 46° 24' 44.4" (LT)
D = 16° 22' 12.8"
L = 283.52'
T = 150.05'
R = 350.00'
SE = 3 %
DS = 35 MPH



$$$$$$SYSTIME$$$$$$
$$$$$$SYSDON$$$$$$
$$$$$$USERNAME$$$$$$