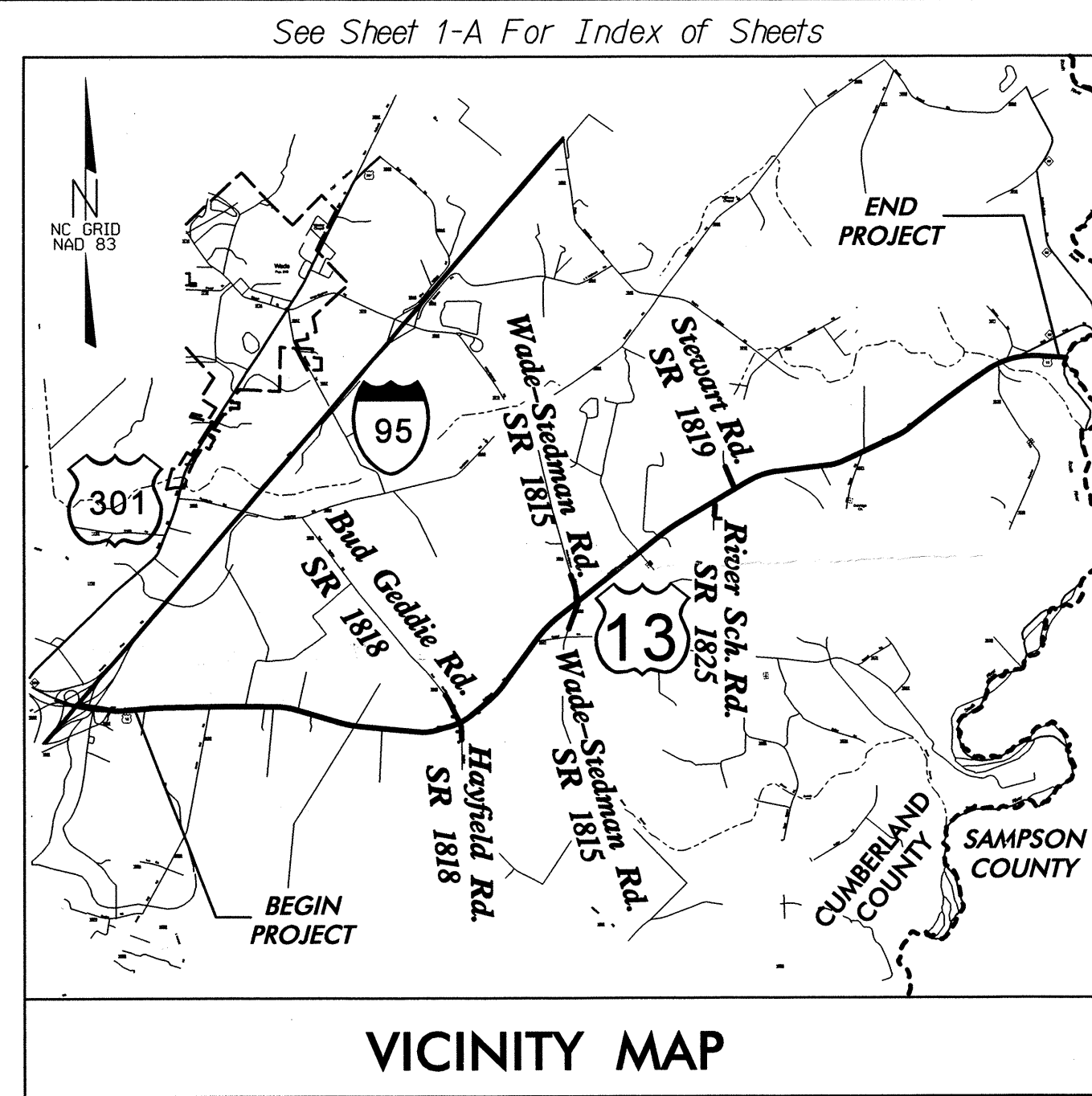


09/28/08/099
 CONTRACT: C201905
 TIP PROJECT: W-5001
 SYSTEMS
 DESIGN
 USERNAME



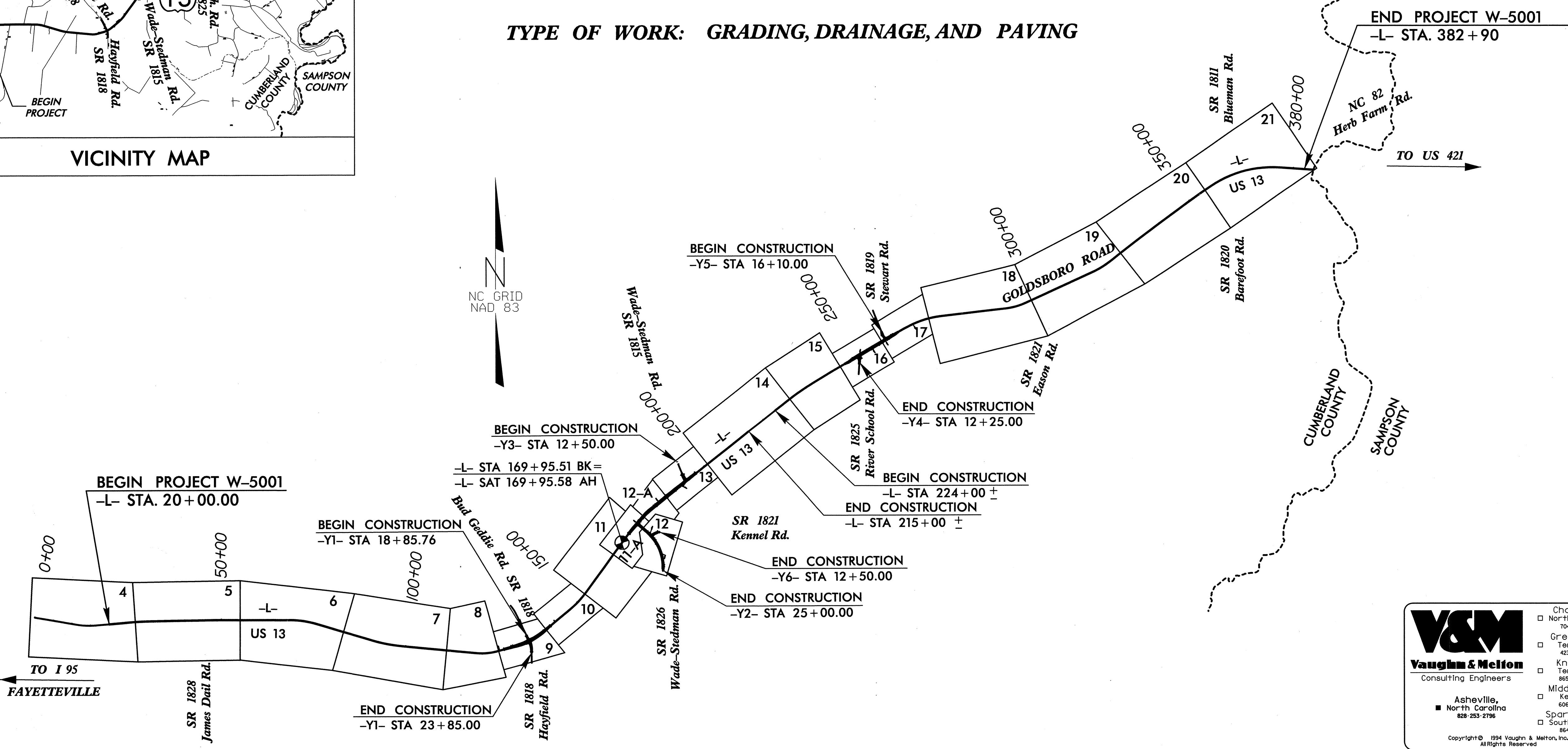
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

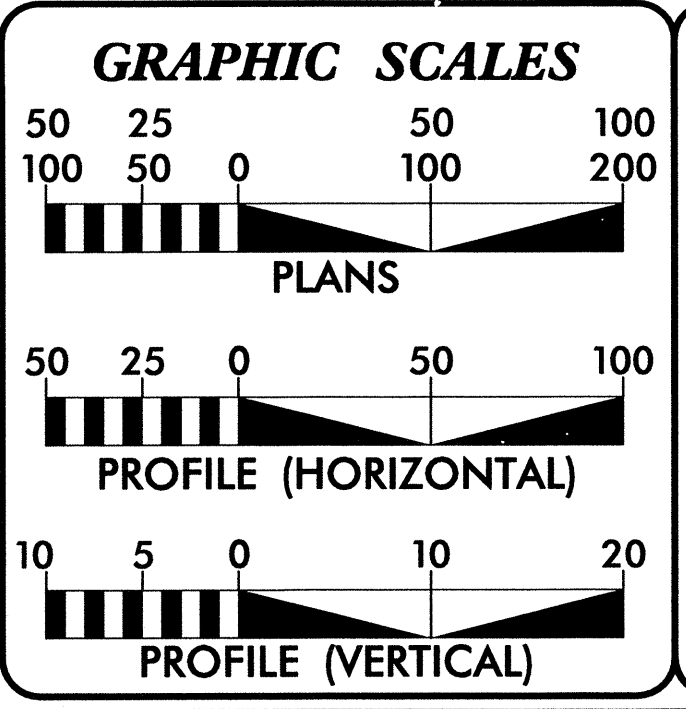
LOCATION: US 13 FROM I-95 TO SAMPSON COUNTY

TYPE OF WORK: GRADING, DRAINAGE, AND PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5001	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41174.1.1	STP.13(22)	PE	
41174.2.1	STP.13(22)	RW & UTILITY	
41174.3.1	STP.13(22)	CONST.	



Charlotte, NC 704-895-9071
 Greenville, TN 423-639-0271
 Knoxville, TN 865-546-5800
 Middlesboro, KY 606-248-6600
 Spartanburg, SC 864-574-4775
 Asheville, NC 828-253-2796



DESIGN DATA

ADT 2009 = 4650
V = 60 MPH

PROJECT LENGTH

LENGTH ROADWAY PROJECT W-5001	=	6.873 MI
TOTAL PROJECT LENGTH	=	6.873 MI

Prepared in the Office of:
VAUGHN & MELTON
 1318-F PATTON AVE.
 ASHEVILLE NC, 28806
 FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: JANUARY 4, 2008	REECE M. SCHULER, P.E. PROJECT ENGINEER
LETTING DATE: JUNE 16, 2009	AARON C. CARVER, P.E. PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
3/24/09
SIGNATURE: [Signature]

ROADWAY DESIGN ENGINEER
SIGNATURE: [Signature]

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030453
 NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 26960
 REECE M. SCHULER
 AARON C. SCHULER
 P.E. 3/24/09

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

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	○
Property Corner	—x—
Property Monument	□
Parcel/Sequence Number	②③
Existing Fence Line	—x—x—x—
Proposed Woven Wire Fence	—o—
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—

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or UG Tank Cap	○
Sign	○
Well	○
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	○
Swamp Marsh	—
Proposed Lateral, Tail, Head Ditch	—
False Sump	—

RAILROADS:

Standard Gauge	_____
RR Signal Milepost	○
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	—
Proposed Right of Way Line with Iron Pin and Cap Marker	—
Proposed Right of Way Line with Concrete or Granite Marker	—
Existing Control of Access	—
Proposed Control of Access	—
Existing Easement Line	—E—
Proposed Temporary Construction Easement	—E—
Proposed Temporary Drainage Easement	—TDE—
Proposed Permanent Drainage Easement	—PDE—
Proposed Permanent Utility Easement	—PUE—

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	—C—
Proposed Slope Stakes Fill	—F—
Proposed Wheel Chair Ramp	—WCR—
Proposed Wheel Chair Ramp Curb Cut	—WCC—
Curb Cut for Future Wheel Chair Ramp	—CCFR—
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	—

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	—
Bridge Wing Wall, Head Wall and End Wall	—
MINOR:	
Head and End Wall	—
Pipe Culvert	—
Footbridge	—
Drainage Box: Catch Basin, DI or JB	—
Paved Ditch Gutter	—
Storm Sewer Manhole	—
Storm Sewer	—

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

Sanitary Sewer Manhole	—
Sanitary Sewer Cleanout	—
UG Sanitary Sewer Line	—
Above Ground Sanitary Sewer	—
Recorded SS Forced Main Line	—
Designated SS Forced Main Line (S.U.E.*)	—

MISCELLANEOUS:

Utility Pole	—
Utility Pole with Base	—
Utility Located Object	—
Utility Traffic Signal Box	—
Utility Unknown U/G Line	—
UG Tank; Water, Gas, Oil	—
A/G Tank; Water, Gas, Oil	—
UG Test Hole (S.U.E.*)	—
Abandoned According to Utility Records	—
End of Information	—

SURVEY CONTROL SHEET W-5001



**NCDOT BASELINE STATION W5001-BY12
LOCALIZED PROJECT COORDINATES**

N = 500127.7600
E = 2086298.7010
ELEV. = 153.76

(BUD -Y1- SR 1818 ROAD)

**NCDOT BASELINE STATION W5001-BL3
LOCALIZED PROJECT COORDINATES**

N = 499779.4040
E = 2087411.156
ELEV. = 155.25

BM-2
ELEV. = 156.53

**NCDOT BASELINE STATION W5001-BL1
LOCALIZED PROJECT COORDINATES**

N = 499032.2810
E = 2085924.2780
ELEV. = 151.29

-L- (US13)

**NCDOT BASELINE STATION W5001-BL2
NCGS MONUMENT "NEIL"
LOCALIZED PROJECT COORDINATES**

N = 499214.7200
E = 2086736.058
ELEV. = 152.84

**-Y1- SR 1818
(HAYFIELD ROAD)**

BM-1
ELEV. = 154.72

**NCDOT BASELINE STATION W5001-BY14
LOCALIZED PROJECT COORDINATES**

N = 498405.8060
E = 2086809.2440
ELEV. = 152.33

Point	Description	North	East	Elevation	L Station Offset
1	BL-1	499032.2810	2085924.2780	151.29	125+21.97 -17.6480
2	NCGS "NEIL"	499214.7200	2086736.0580	152.84	133+45.56 52.8494
3	BL-3	499779.4040	2087411.1560	155.25	142+17.45 -17.1560

Point	Description	North	East	Elevation	Y1 Station Offset
12	BY-12	500127.7600	2086298.7010	153.76	10+97.65 -13.4047
BY2	NCGS "NEIL"	499214.7200	2086736.0580	152.84	21+09.82 12.8039
14	BY-14	498405.8060	2086809.2440	152.33	OUTSIDE LIMITS

.....
 BM-1 ELEVATION = 154.72
 N 498782 E 2086885
 Y1 STATION 25+54 95 LEFT
 RR SPIKE IN 15' PINE

 BM-2 ELEVATION = 156.53
 N 499704 E 2087514
 L STATION 142+50 106 RIGHT
 RR SPIKE IN POWER POLE

⊙ INDICATES GEODETIC CONTROL MONUMENTS
 USED OR SET FOR HORIZONTAL PROJECT CONTROL.

NOTE: DRAWING NOT TO SCALE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "NCGS 'MATTHEWS'" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 505605.7408(ft) EASTING: 2093540.0583(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998725494 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "NCGS 'MATTHEWS'" TO -L- STATION 20+00 IS S 71° 56' 14" W 18962.68 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

REVISIONS

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SURVEY CONTROL SHEET W-5001

BM-4
ELEV. = 170.01

**NCDOT BASELINE STATION W5001-BY15
LOCALIZED PROJECT COORDINATES**
 N = 504270.9530
 E = 2090624.2790
 ELEV. = 168.20

**NCDOT BASELINE STATION W5001-BL5
LOCALIZED PROJECT COORDINATES**
 N = 503389.4340
 E = 2090801.2150
 ELEV. = 166.71

**NCDOT BASELINE STATION W5001-BL4
LOCALIZED PROJECT COORDINATES**
 N = 502953.8780
 E = 2090184.7720
 ELEV. = 164.17

**NCDOT BASELINE STATION W5001-BL25
LOCALIZED PROJECT COORDINATES**
 N = 502401.5062
 E = 2089601.2692
 ELEV. = 161.81

**NCDOT BASELINE STATION W5001-BL24
LOCALIZED PROJECT COORDINATES
300' WEST OF INTERSECTION**
 N = 501759.2614
 E = 2089097.6035
 ELEV. = 159.61

**NCDOT BASELINE STATION W5001-BY26
LOCALIZED PROJECT COORDINATES**
 N = 502138.3006
 E = 2089964.6437
 ELEV. = 162.18

**NCDOT BASELINE STATION W5001-BY23
LOCALIZED PROJECT COORDINATES**
 N = 501567.1696
 E = 2090293.6919
 ELEV. = 161.50

BM-3
ELEV. = 167.47

**NCDOT BASELINE STATION W5001-BY17
LOCALIZED PROJECT COORDINATES**
 N = 502613.0010
 E = 2090558.9880
 ELEV. = 164.73

**NCDOT BASELINE STATION W5001-BL6
LOCALIZED PROJECT COORDINATES**
 N = 503986.5720
 E = 2091492.9780
 ELEV. = 170.34

**NCGS MONUMENT "CENTER"
LOCALIZED PROJECT COORDINATES**
 N = 502108.3827
 E = 2090393.5383
 ELEV. = 164.15

Point	Description	North	East	Elevation	L Station	Offset
24	BL-24	501759.2614	2089097.6035	159.61	168+37.56	-19.82
25	BL-25	502401.5062	2089601.2692	161.81	176+52.69	-16.69
4	BL-4	502953.8780	2090184.7720	164.17	184+55.46	-17.06
5	NCGS "KNIGHT"	503389.4340	2090801.2150	166.71	192+09.23	22.19
6	BL-6	503986.5720	2091492.9780	170.34	201+22.15	-18.89

Point	Description	North	East	Elevation	Y2 Station	Offset
17	BY-17	502613.0010	2090558.9880	164.73	14+87.54	-801.91
22	NCGS "CENTER"	502108.3827	2090393.5383	164.15	16+84.25	-356.41
23	BY-23	501567.1696	2090293.6919	161.50	20+73.17	-36.17
26	BY-26	502138.3006	2089964.6437	162.18	14+27.98	-45.31

Point	Description	North	East	Elevation	Y3 Station	Offset
15	BY-15	504270.9530	2090624.2790	168.20	OUTSIDE LIMITS	
BY5	NCGS "KNIGHT"	503389.4340	2090801.2150	166.71	OUTSIDE LIMITS	

.....
 BM-3 ELEVATION = 167.47
 N 502985 E 2090552
 L STATION 187+63 185 RIGHT
 RR SPIKE IN PINE

 BM-4 ELEVATION = 170.01
 N 504570 E 2090533
 Y3 STATION
 N 15° 42' 53" W DIST 637.15
 RR SPIKE IN PINE

INDICATES GEODETIC CONTROL MONUMENTS
USED OR SET FOR HORIZONTAL PROJECT CONTROL.

NOTE: DRAWING NOT TO SCALE

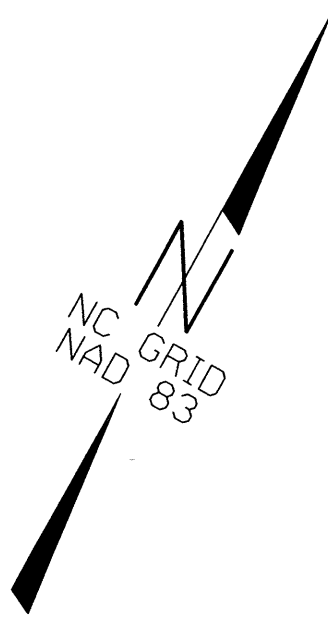
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS 18962.68 FOR MONUMENT "NCGS "MATTHEWS"" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 5056057408(ft) EASTING: 2093540.0583(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998725494 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "NCGS "MATTHEWS"" TO -L- STATION 20+00 IS S 71° 56' 14" W 18962.68 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

SURVEY CONTROL SHEET W-5001

NCDOT BASELINE STATION W5001-BY20 LOCALIZED PROJECT COORDINATES

N = 508028.9110
E = 2095904.8050
ELEV. = 153.97



Point	Description	North	East	Elevation	L Station	Offset
7	BL-7	506442.2240	2094819.3580	164.676	242+59.71	-16.4359
8	NCGS "SOUTH"	506880.2280	2095549.7390	158.54	251+11.35	-17.2388
9	BL-9	507041.7170	2095889.7830	151.56	254+86.07	18.7987
10	BL-10	507251.4810	2096238.1840	147.29	258+92.64	18.6442
11	BL-11	507670.7940	2096985.0120	141.23	267+52.06	21.3538

Point	Description	North	East	Elevation	Y4 Station	Offset
BY8	NCGS "SOUTH"	506880.2280	2095549.7390	158.54	OUTSIDE LIMITS	
19	BY-19	505980.4260	2095491.4710	154.30	OUTSIDE LIMITS	

Point	Description	North	East	Elevation	Y5 Station	Offset
20	BY-20	508028.9110	2095904.8050	153.97	10+22.49	12.3953
BY10	BL-10	507251.4810	2096238.1840	147.29	OUTSIDE LIMITS	

.....
 BM-5 ELEVATION = 147.98
 N 507477 E 2096224
 Y5 STATION 16+54 74 LEFT
 RR SPIKE IN 15' PINE

 BM-6 ELEVATION = 143.91
 N 507798 E 2096930
 L STATION 267+55 117 LEFT
 RR SPIKE IN 18' PINE

**NCDOT BASELINE
STATION W5001-BL7
LOCALIZED PROJECT
COORDINATES**
N = 506442.2240
E = 2094819.3580
ELEV. = 164.676

**NCDOT BASELINE
STATION W5001-BL8
NCGS MONUMENT "SOUTH"
LOCALIZED PROJECT COORDINATES**
N = 506880.2280
E = 2095549.7390
ELEV. = 158.54

**BM-5
ELEV. = 147.98**

**BM-6
ELEV. = 143.91**

-L- (US 13)

**(BAREFOOT SR 1825
Y4-
SR 1819
STEWART ROAD)**

**NCDOT BASELINE
STATION W5001-BL9
LOCALIZED PROJECT
COORDINATES**
N = 507041.7170
E = 2095889.7830
ELEV. = 151.56

**NCDOT BASELINE
STATION W5001-BL10
LOCALIZED PROJECT
COORDINATES**
N = 507251.4810
E = 2096238.1840
ELEV. = 147.29

**NCDOT BASELINE STATION W5001-BL11
LOCALIZED PROJECT COORDINATES**
N = 507670.7940
E = 2096985.0120
ELEV. = 141.23

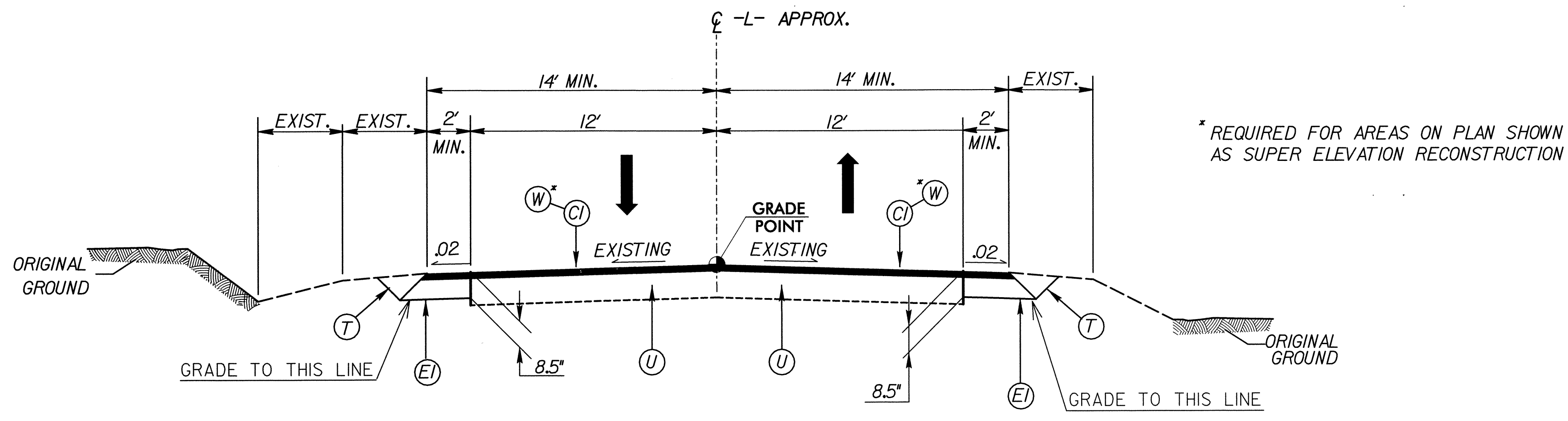
**NCDOT BASELINE STATION W5001-BY19
LOCALIZED PROJECT COORDINATES**
N = 505980.4260
E = 2095491.4710
ELEV. = 154.30

⊕ INDICATES GEODETIC CONTROL MONUMENTS
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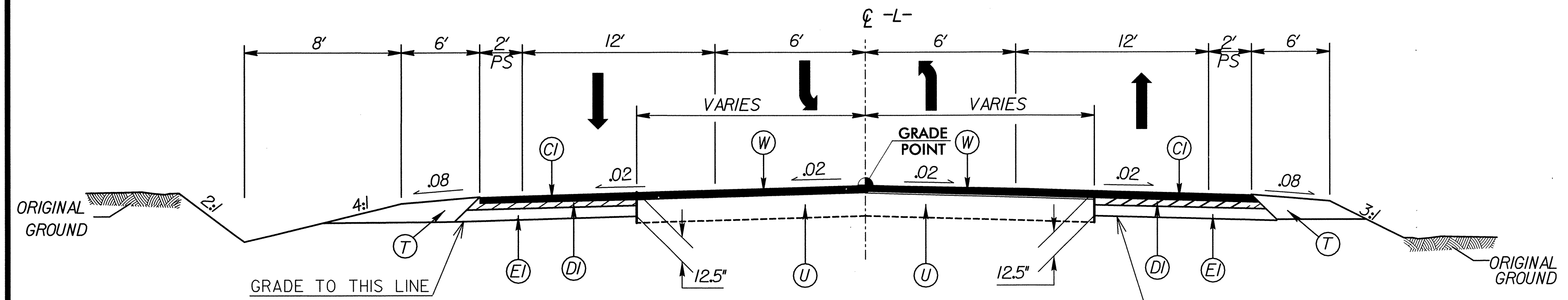
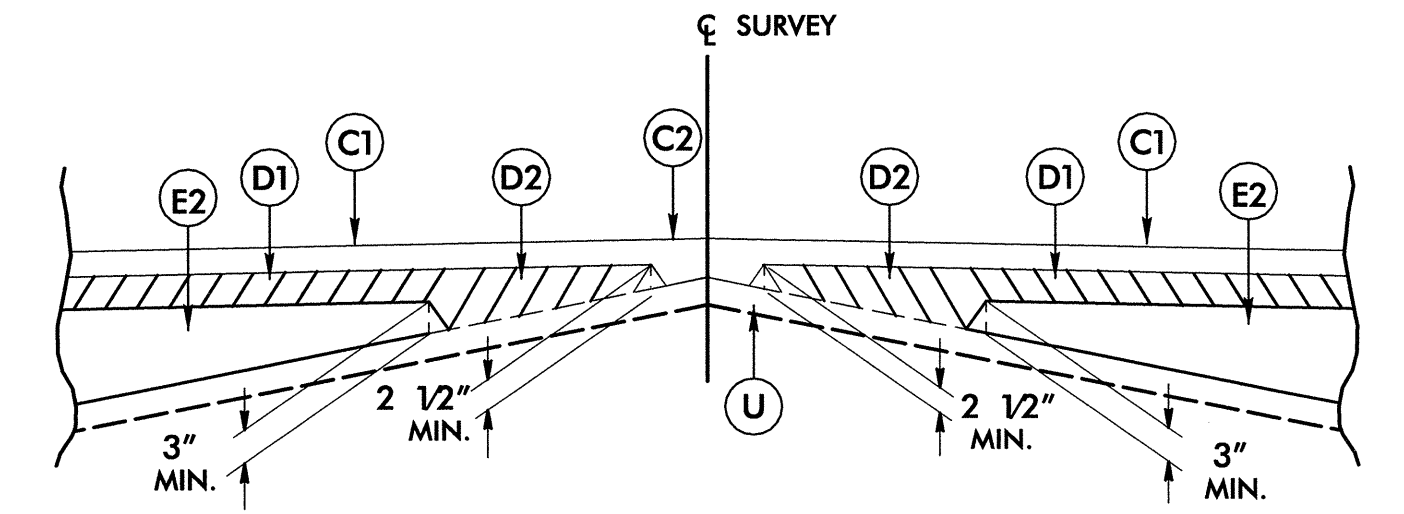
NOTE: DRAWING NOT TO SCALE

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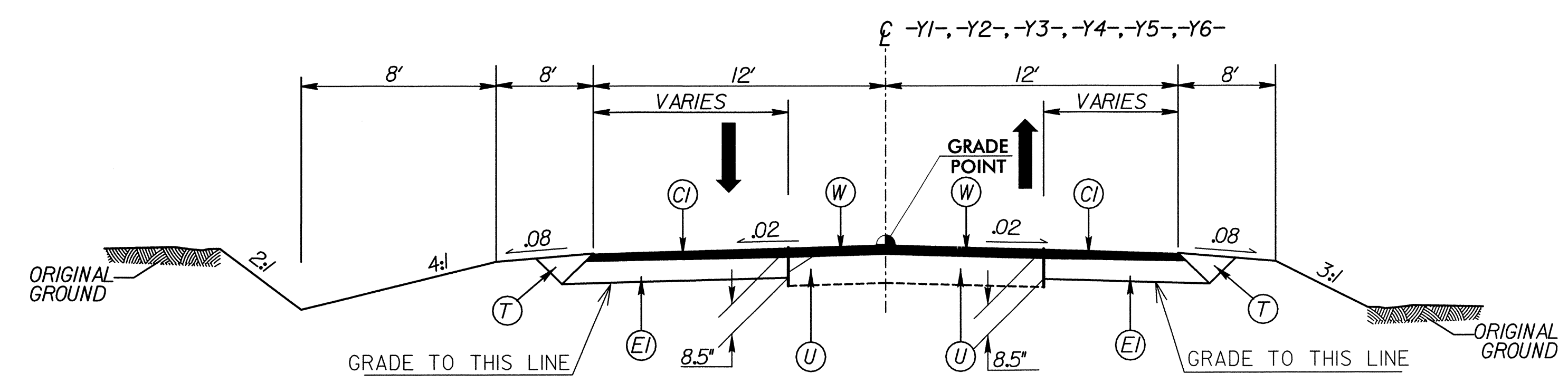
TYPICAL SECTION NO. 1

- L- STA 20+00.00 TO -L- STA 126+44.70
- L- STA 140+73.70 TO -L- STA 172+58.31
- L- STA 197+41.21 TO -L- STA 246+51.76
- L- STA 262+92.07 TO -L- STA 382+90



TYPICAL SECTION NO. 2

- L- STA 126+44.70 TO -L- STA 140+73.70
- L- STA 172+58.31 TO -L- STA 197+41.21
- L- STA 246+51.76 TO -L- STA 262+92.07



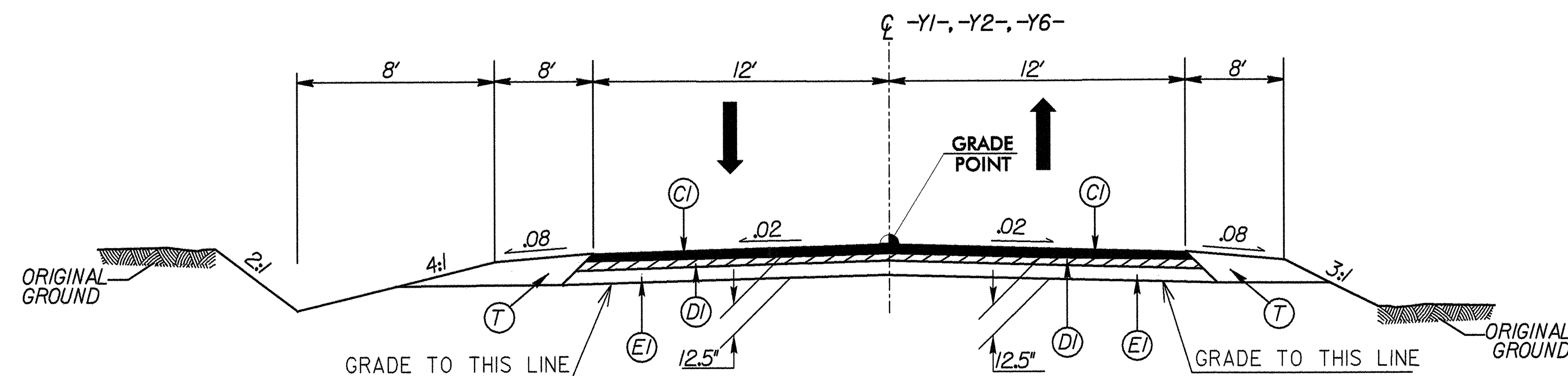
TYPICAL SECTION NO. 3

- Y1- STA 18+85.76 TO -Y1- STA 20+37.94
- Y1- STA 22+00.00 TO -Y1- STA 23+85.00
- Y2- STA 22+60.00 TO -Y2- STA 25+00.00
- Y3- STA 12+50.00 TO -Y3- STA 14+97.63
- Y4- STA 10+18.00 TO -Y4- STA 12+25.00
- Y5- STA 16+10.00 TO -Y5- STA 18+47.30
- Y6- STA 11+50.00 TO -Y6- STA 12+50.00

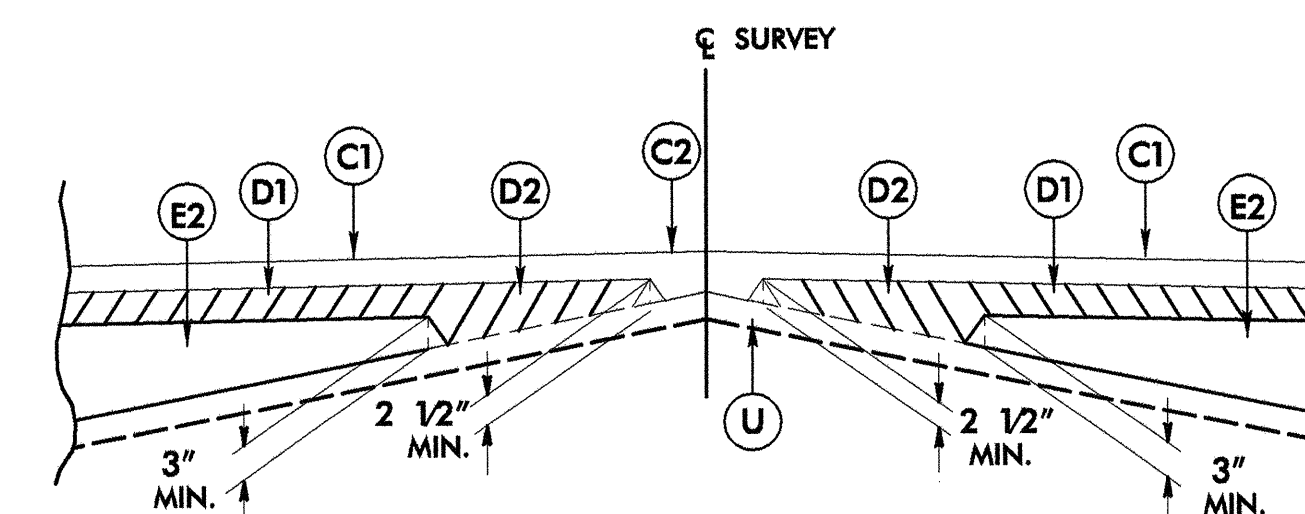
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT FOR ROADWAY (SEE WEDGING DETAIL FOR RESURFACING).

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

PROJECT REFERENCE NO.	SHEET NO.
W-5001	2-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER WALTER SCHILLER SEAL 26880 DATE: 3/24/09	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22896 CLARK S. MORRISON DATE: 3/23/09



TYPICAL SECTION NO.4
 -Y1- STA 20+73.94 TO -Y1- STA 22+00.00
 -Y2- STA 10+18.00 TO -Y2- STA 22+60.00
 -Y6- STA 10+12.00 TO -Y6- STA 11+50.00

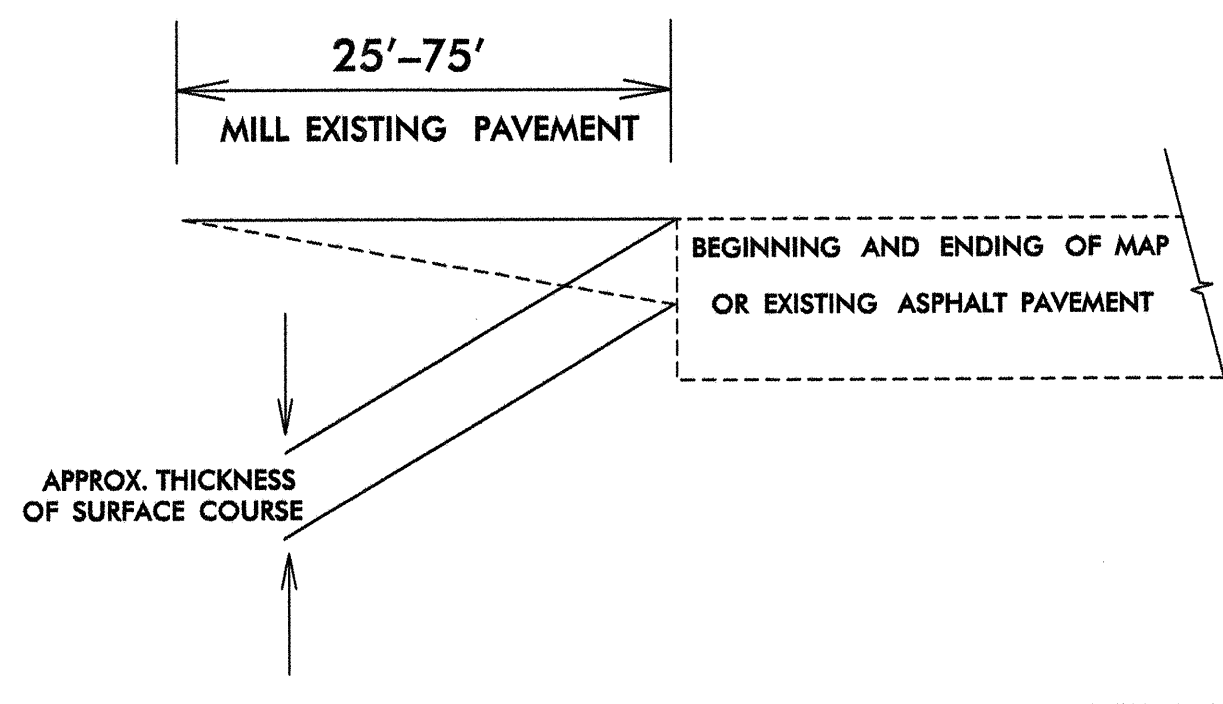


Detail Showing Method of Wedging

MILLING AT PAVEMENT TIE-INS

NOTES TO CONTRACTOR

For surface mixes over 1" in thickness, mill the existing pavement in accordance with the following sketch as directed by the Engineer.
 Locations shall include ties into existing asphalt pavement and at the beginning and ending point of each resurfacing map.
 Perform the work in accordance with Section 607 of the January 2006 North Carolina Department of Transportation Standard Specifications for Roads and Structures. Resurfacing will be accomplished at the same time as the milling operation.



PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT FOR ROADWAY (SEE WEDGING DETAIL FOR RESURFACING).

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

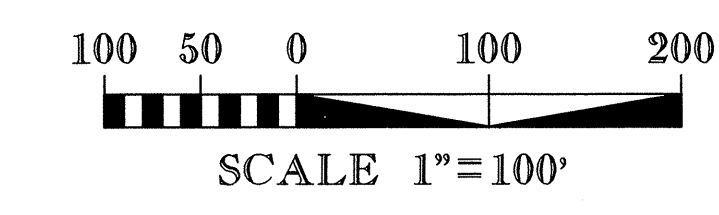
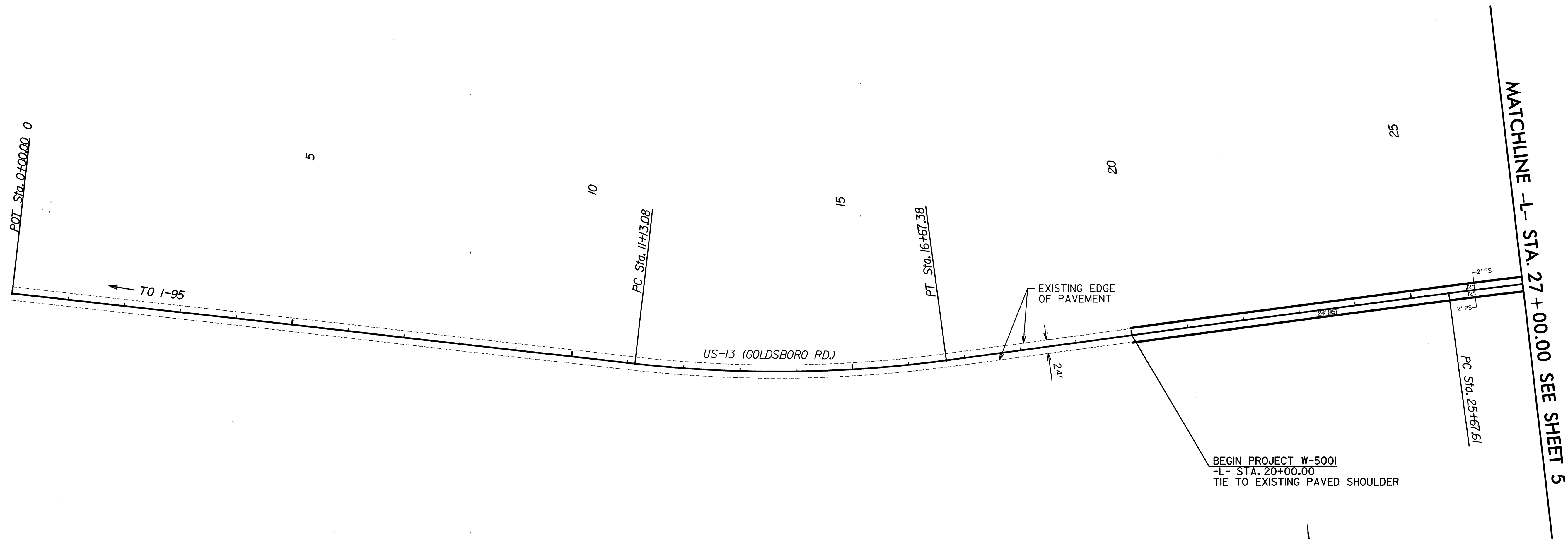
DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA
SUMMARY OF EARTHWORK
 IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY NO.1					
-L- STA 20+00.00 TO -L- STA 126+44.70	1676				1676
-L- STA 140+73.70 TO -L- STA 179+92.96	617				617
-L- STA 197+41.21 TO -L- STA 246+51.76	773				773
-L- STA 262+92.07 TO -L- STA 382+90	1889				1889
SUBTOTAL SUMMARY NO.1	4955				4955
SUMMARY NO.2					
-L- STA. 126+73.70 TO STA. 140+73.70 LT	658		139		519
-Y1- STA. 18+85.76 TO STA. 20+20.00	99		3		96
SUBTOTAL SUMMARY NO.2	757		142		615
SUMMARY NO.3					
-L- STA. 172+58.21 TO STA. 197+41.21 LT	778		1019	241	
-Y3- STA. 12+50.00 TO STA. 14+97.53	300		4		296
SUBTOTAL SUMMARY NO.3	1078		1023	241	296
SUMMARY NO.4					
-L- STA. 246+51.76 TO STA. 262+92.07 LT	648		180		468
-Y5- STA. 16+10.00 TO STA. 18+47.30	160		69		91
SUBTOTAL SUMMARY NO.4	808		249		559
SUMMARY NO.5					
-L- STA. 126+73.70 TO STA. 140+73.70 RT	88		1782	1694	
-Y1- STA. 20+70.00 TO STA. 23+85.00	17		1029	1012	
SUBTOTAL SUMMARY NO.5	105		2811	2706	
SUMMARY NO.6					
-L- STA. 172+58.21 TO STA. 197+41.21 RT	604		506		98
-Y2- STA. 10+18.00 TO STA. 25+00.00	1351		1192		159
-Y6- STA. 10+12.00 TO STA. 12+50.00	66		321	255	
SUBTOTAL SUMMARY NO.6	2021		2019	255	257
SUMMARY NO.7					
-L- STA. 246+51.76 TO STA. 262+92.07 RT	361		550	189	
-Y4- STA. 10+18.00 TO STA. 12+25.00	39		95	56	
SUBTOTAL SUMMARY NO.7	400		645	245	
PROJECT SUB-TOTAL	10,124		6889	3447	6682
LOSS DUE TO CLEARING & GRUBBING	-200			200	
EST. FOR SHOULDER MATERIAL			5000	5000	
WASTE TO REPLACE BORROW				-6682	-6682
PROJECT TOTAL	9924		11889	1965	0
EST. 5% TO REPLACE TOPSOIL ON BORROW PITS				100	
GRAND TOTAL	9924		11889	2065	
SAY	10,100			2300	

-L- PAVEMENT STRUCTURE VOLUME = 1700 CY
 CONTINGENT UNDERCUT = 200 CY
 SELECT GRANULAR MATERIAL = 200 CY
 FABRIC FOR SOIL STABILIZATION = 200 SY

Approximate quantities only. Unclassified excavation, Borrow excavation, fine grading, clearing and grubbing, breaking of existing pavement and removal of existing pavement will be paid for at the contract lump sum price for "grading".

PROJECT REFERENCE NO. W-5001	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 20960 3/24/09	HYDRAULICS ENGINEER SEAL 030453 3/24/09



REVISIONS

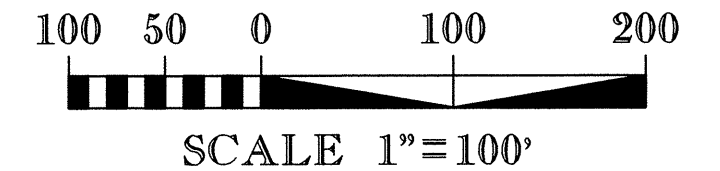
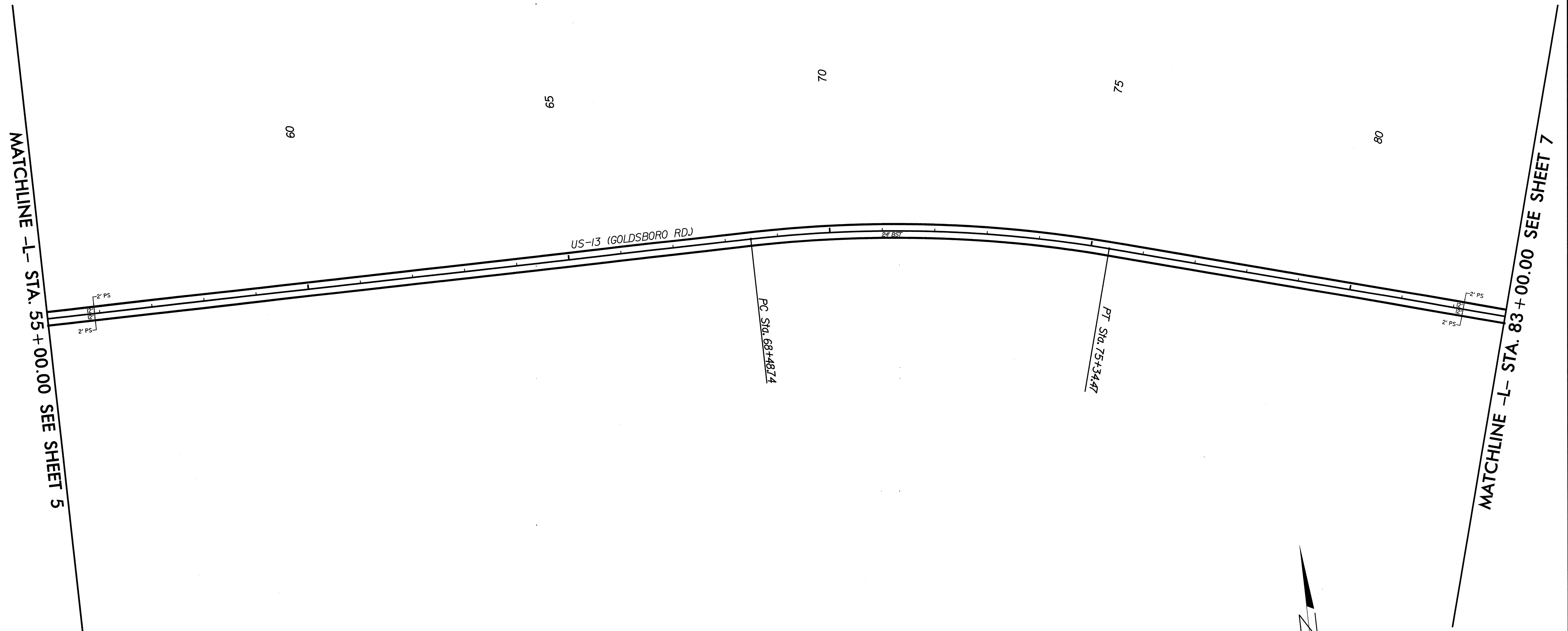
8/17/99

SYSTEMS DESIGN
CONSULTANTS
SERVICES

PROJECT REFERENCE NO. W-5001	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 20960 3/24/09	HYDRAULICS ENGINEER SEAL 030453 3/24/09

8/17/99

REVISIONS

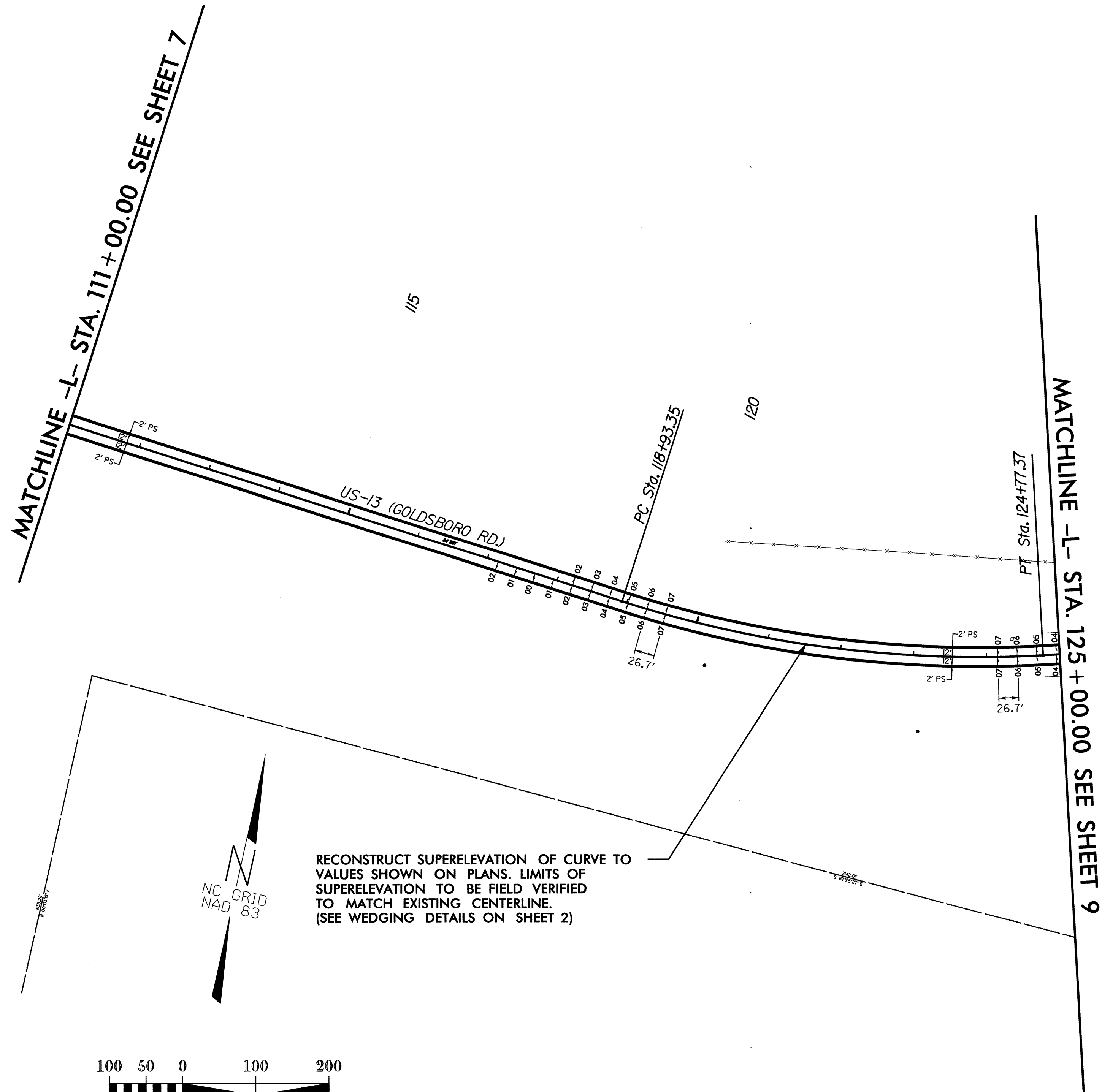


SYSTEMS
SERVICES

PROJECT REFERENCE NO. W-5001	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 26960 3/24/09	HYDRAULICS ENGINEER SEAL 030453 3/24/09

8/17/99

REVISIONS

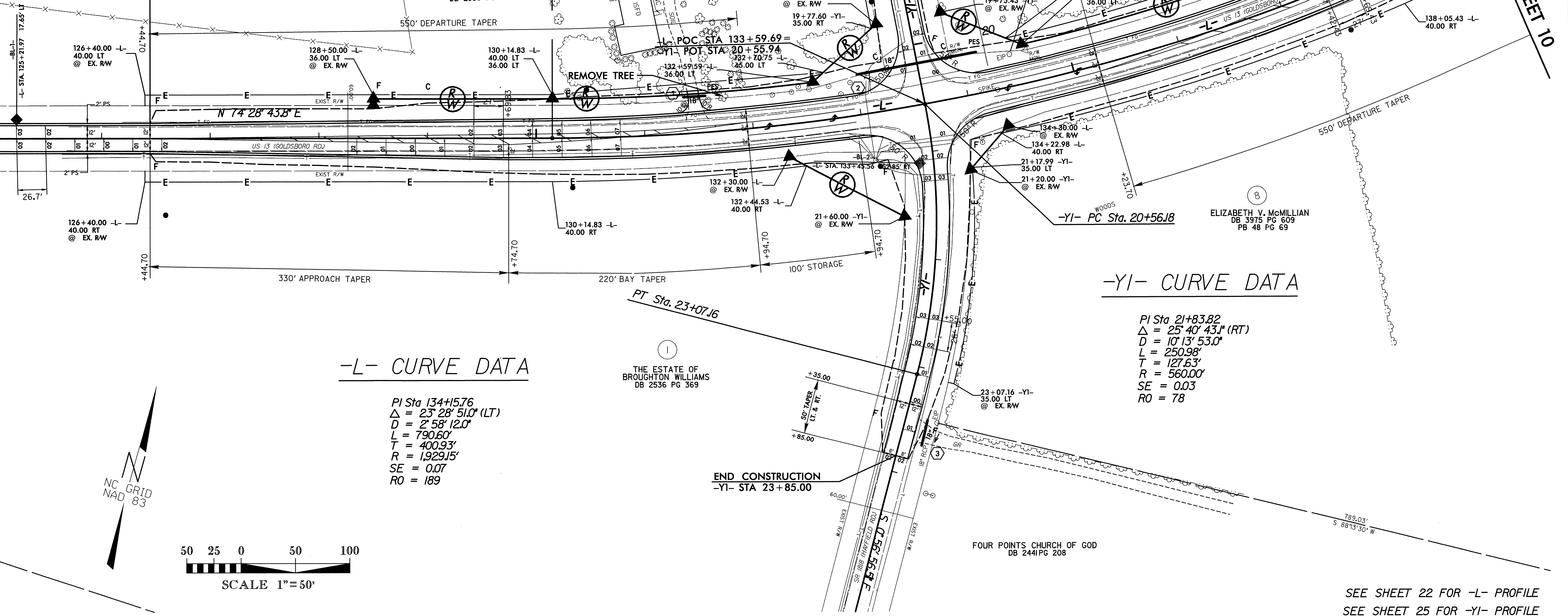


REVISIONS

MATCHLINE -L- STA. 125 + 00.00 SEE SHEET 8

MATCHLINE -L- STA. 139 + 00.00 SEE SHEET 10

END 2' WIDENING PER
TYPICAL SECTION 1
BEGIN WIDENING
CONSTRUCTION
PER TYPICAL SECTION 2
-L- STA 126+44.70

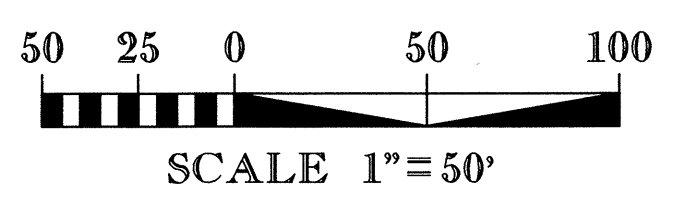


-L- CURVE DATA

$PI\ Sta\ 134+15.76$
 $\Delta = 23^\circ 28' 51.0'' (LT)$
 $D = 2^\circ 58' 12.0''$
 $L = 790.60'$
 $T = 400.93'$
 $R = 1,929.15'$
 $SE = 0.07$
 $RO = 189$

-YI- CURVE DATA

$PI\ Sta\ 21+83.82$
 $\Delta = 25^\circ 40' 43.1'' (RT)$
 $D = 10^\circ 13' 53.0''$
 $L = 250.98'$
 $T = 127.63'$
 $R = 560.00'$
 $SE = 0.03$
 $RO = 78$



REVISIONS

8/17/99

SEE SHEET 22 FOR -L- PROFILE
SEE SHEET 25 FOR -YI- PROFILE

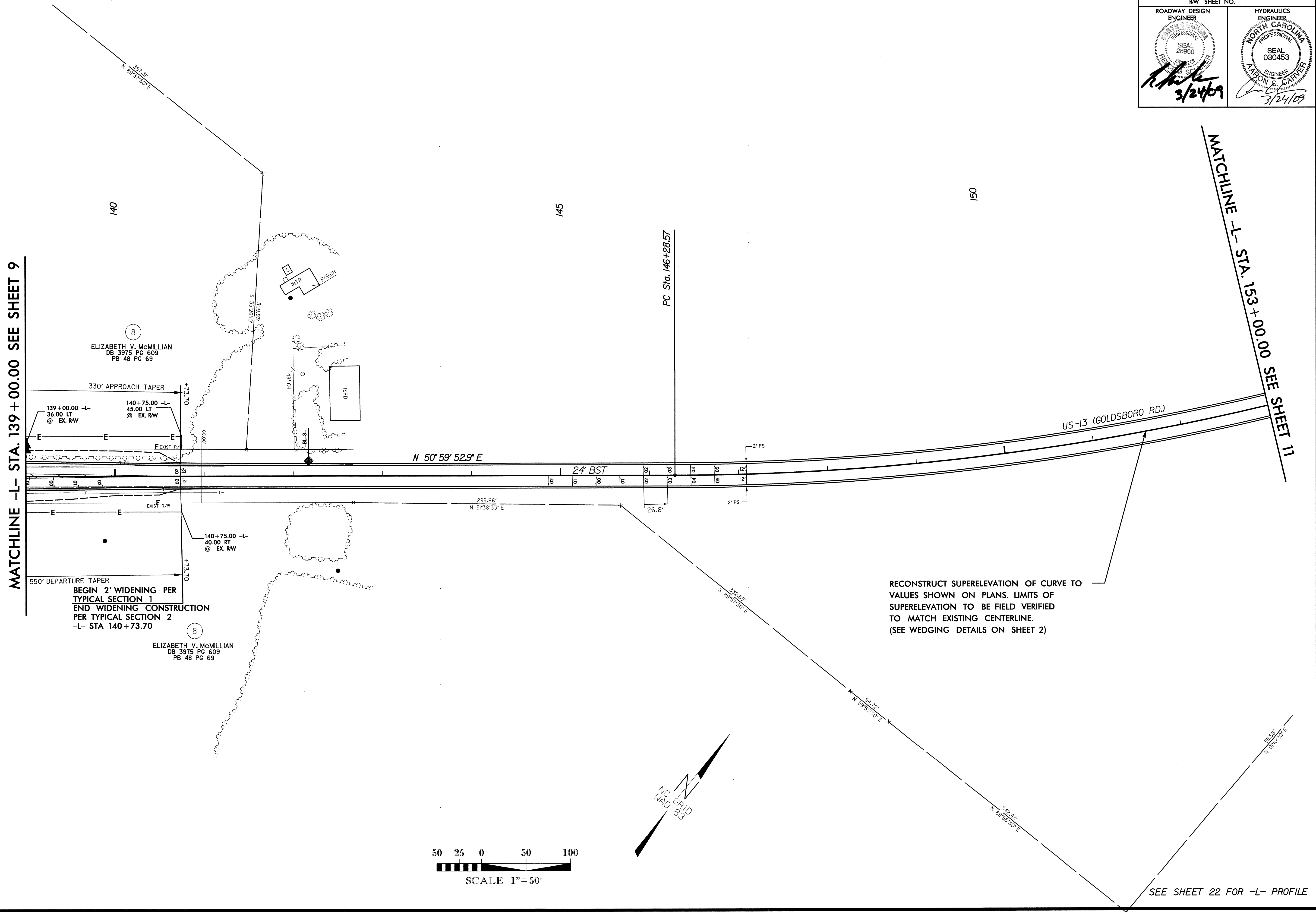
PROJECT REFERENCE NO. W-5001	SHEET NO. 10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 26960 3/24/09	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 030453 3/24/09

8/17/99

REVISIONS

MATCHLINE -L- STA. 139 + 00.00 SEE SHEET 9

MATCHLINE -L- STA. 153 + 00.00 SEE SHEET 11



8
ELIZABETH V. McMILLIAN
DB 3975 PG 609
PB 48 PG 69

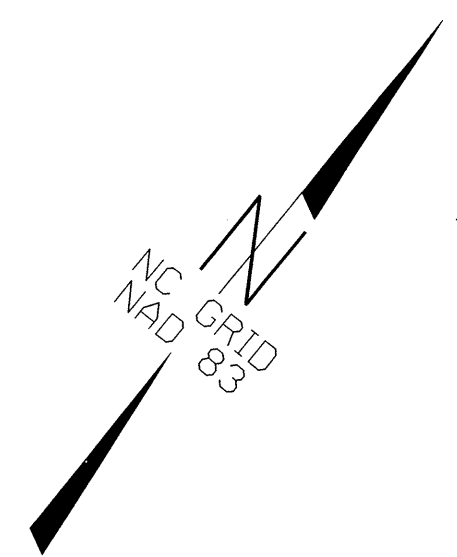
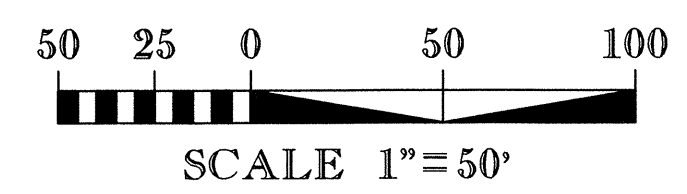
8
ELIZABETH V. McMILLIAN
DB 3975 PG 609
PB 48 PG 69

330' APPROACH TAPER
139+00.00 -L- 36.00 LT @ EX. RW
140+75.00 -L- 45.00 LT @ EX. RW

140+75.00 -L- 40.00 RT @ EX. RW

550' DEPARTURE TAPER
BEGIN 2' WIDENING PER TYPICAL SECTION 1
END WIDENING CONSTRUCTION PER TYPICAL SECTION 2
-L- STA 140+73.70

RECONSTRUCT SUPERELEVATION OF CURVE TO VALUES SHOWN ON PLANS. LIMITS OF SUPERELEVATION TO BE FIELD VERIFIED TO MATCH EXISTING CENTERLINE. (SEE WEDGING DETAILS ON SHEET 2)



SEE SHEET 22 FOR -L- PROFILE

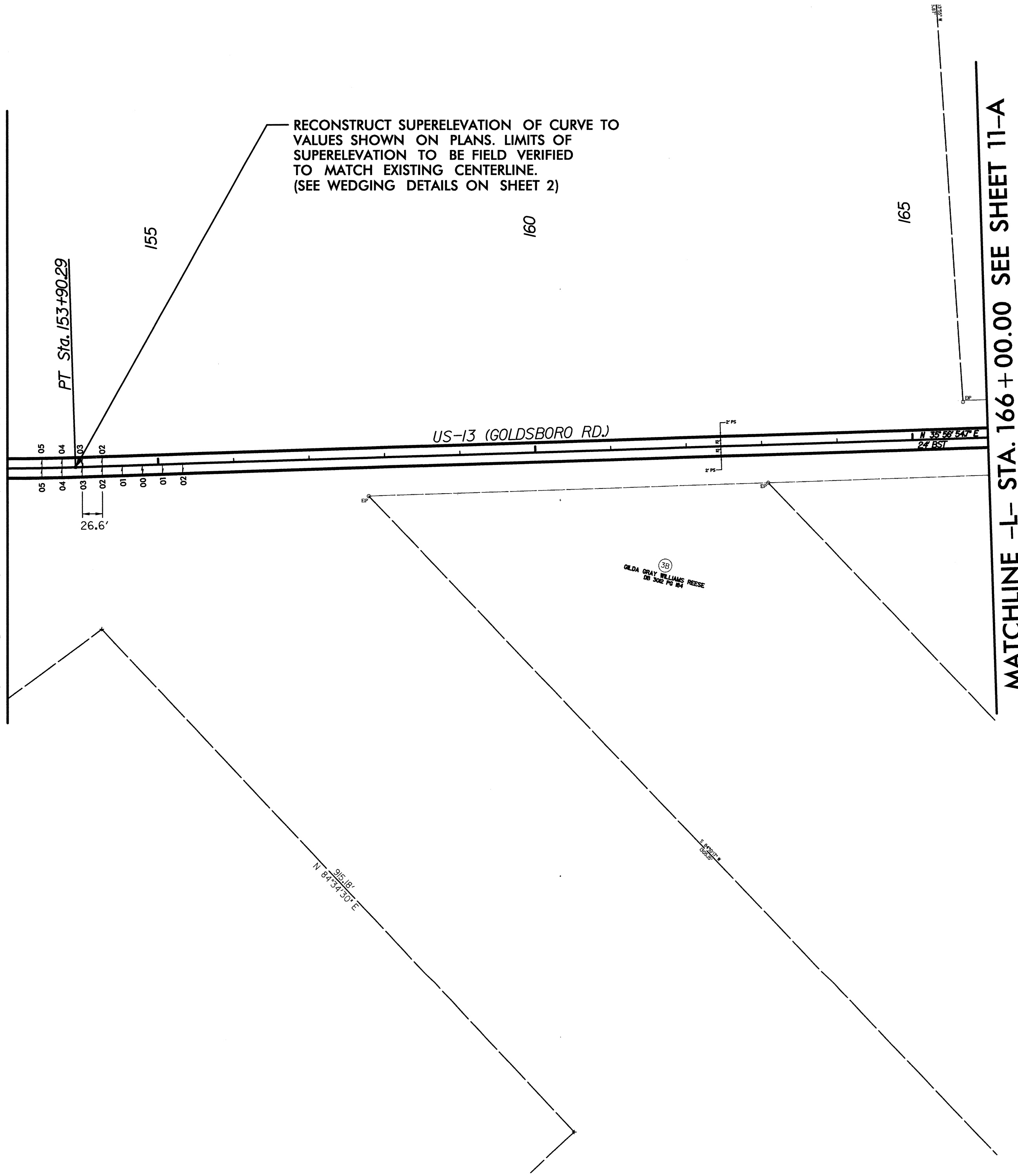
SYSTEM DESIGN
LAYOUT
CONSTRUCTION
SERVICES

8/17/99

REVISIONS

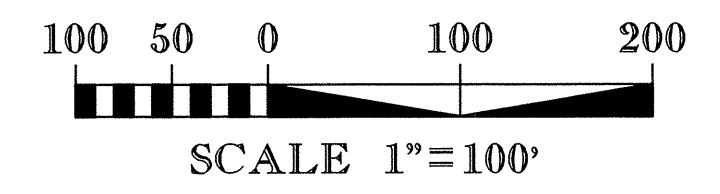
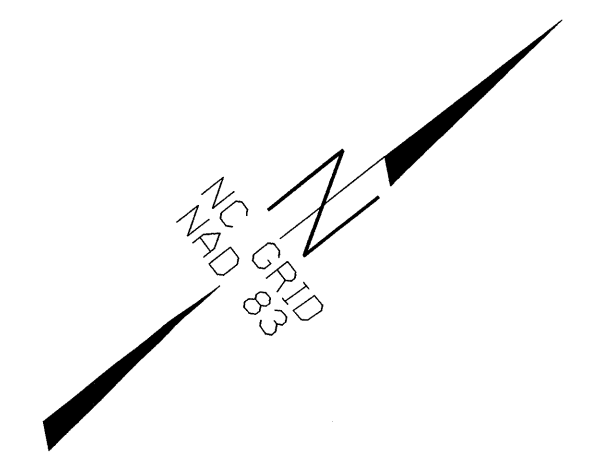
STANDARD CONDITIONS

MATCHLINE -L- STA. 153 + 00.00 SEE SHEET 10



MATCHLINE -L- STA. 166 + 00.00 SEE SHEET 11-A

PROJECT REFERENCE NO. W-5001	SHEET NO. 11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 26960 3/24/09	HYDRAULICS ENGINEER SEAL 030453 3/24/09



-L- CURVE DATA

PI Sta 173+02.48 PIs Sta 178+79.34
 $\Delta = 4^{\circ}30'11.5''$ (RT) $\Theta_s = 3^{\circ}06'42.3''$
 $D = 0^{\circ}44'02.6''$ $L_s = 189.00'$
 $L = 613.48'$ $LT = 126.02'$
 $T = 306.90'$ $ST = 63.02'$
 $R = 7,805.51'$
 $SE = 0.022$
 $RO = 58.96$

EQUATION:
 $Sta\ 169+95.51\ BK = 170$
 $Sta\ 169+95.58\ AH$

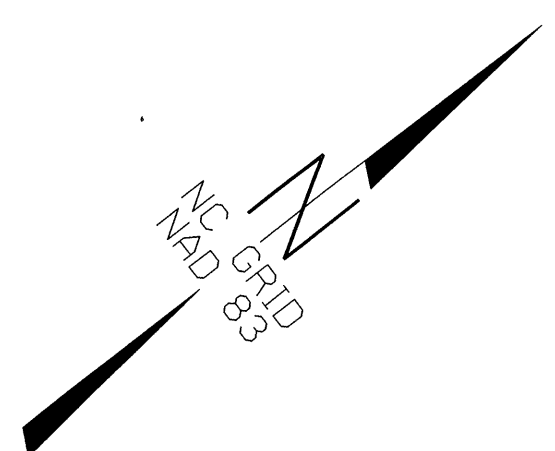
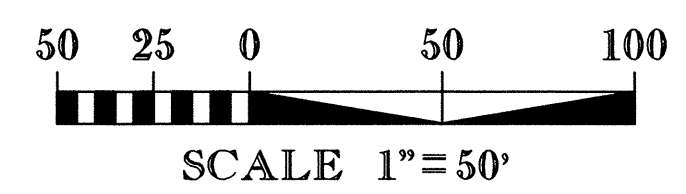
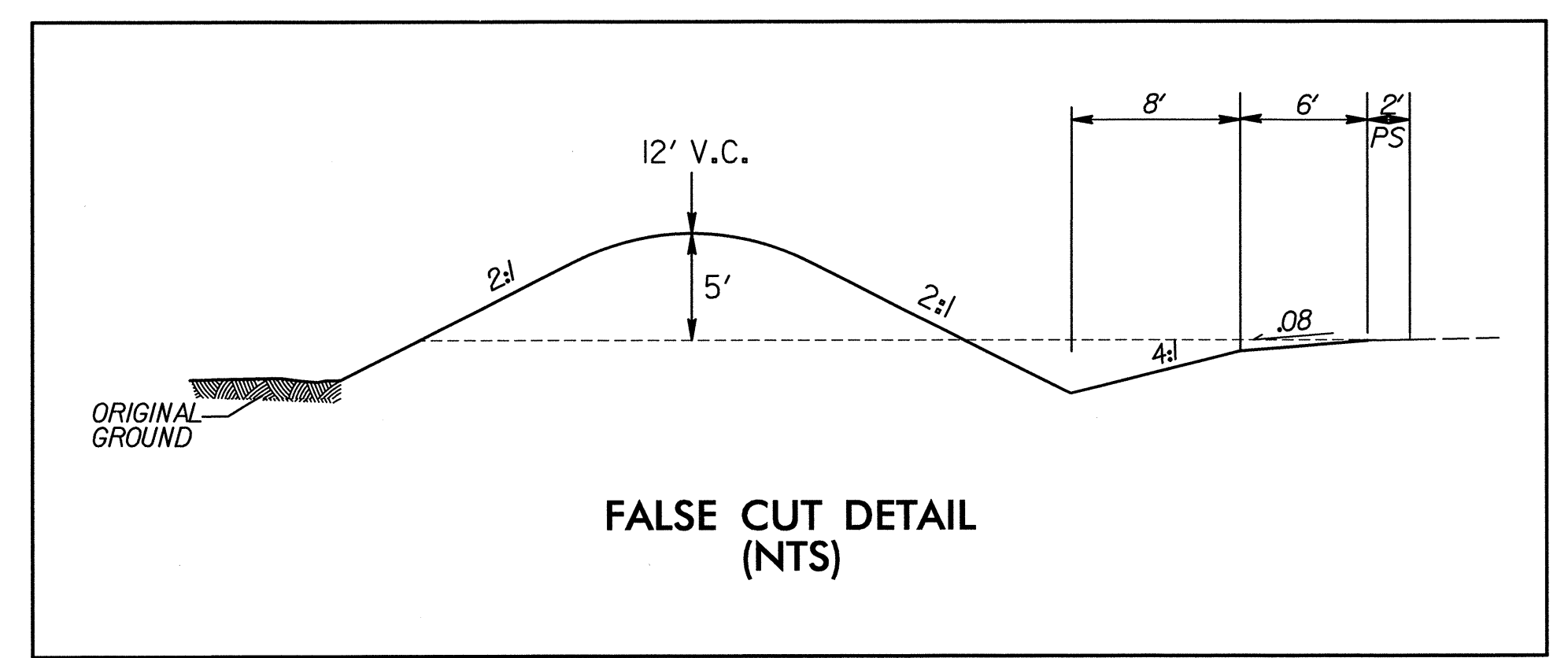
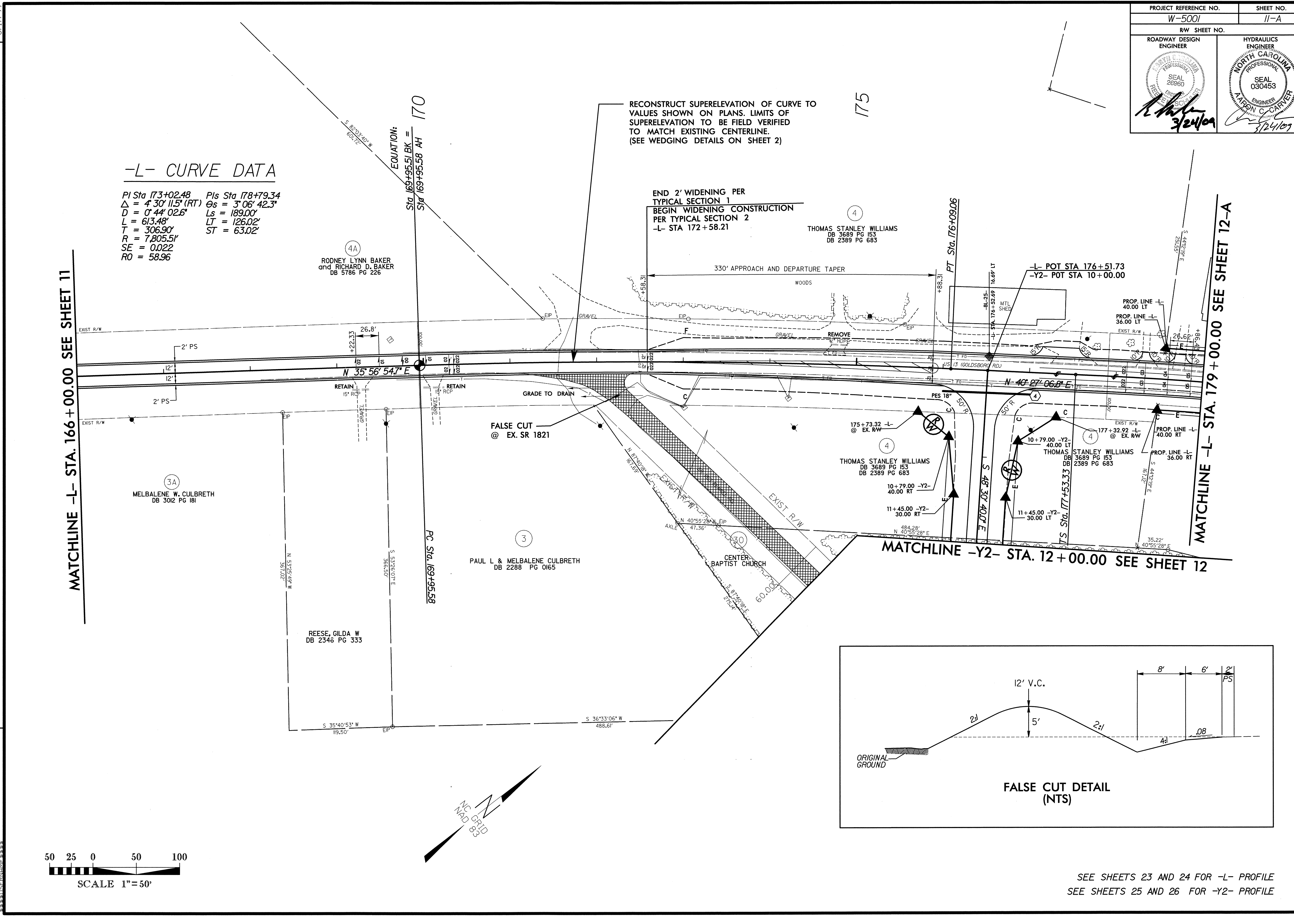
RECONSTRUCT SUPERELEVATION OF CURVE TO VALUES SHOWN ON PLANS. LIMITS OF SUPERELEVATION TO BE FIELD VERIFIED TO MATCH EXISTING CENTERLINE. (SEE WEDGING DETAILS ON SHEET 2)

END 2' WIDENING PER TYPICAL SECTION 1
 BEGIN WIDENING CONSTRUCTION PER TYPICAL SECTION 2
 -L- STA 172+58.21

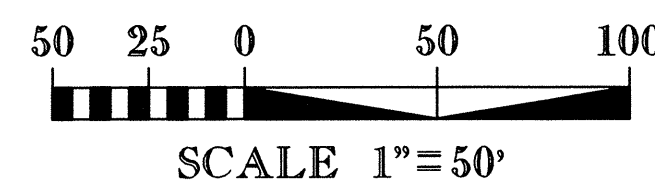
MATCHLINE -L- STA. 166 + 00.00 SEE SHEET 11

MATCHLINE -L- STA. 179 + 00.00 SEE SHEET 12-A

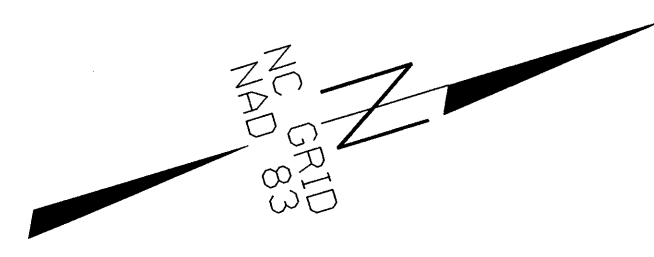
MATCHLINE -Y2- STA. 12 + 00.00 SEE SHEET 12



SEE SHEETS 23 AND 24 FOR -L- PROFILE
 SEE SHEETS 25 AND 26 FOR -Y2- PROFILE



SEE SHEETS 25 AND 26 FOR -Y2- PROFILE
SEE SHEET 27 FOR -Y6- PROFILE



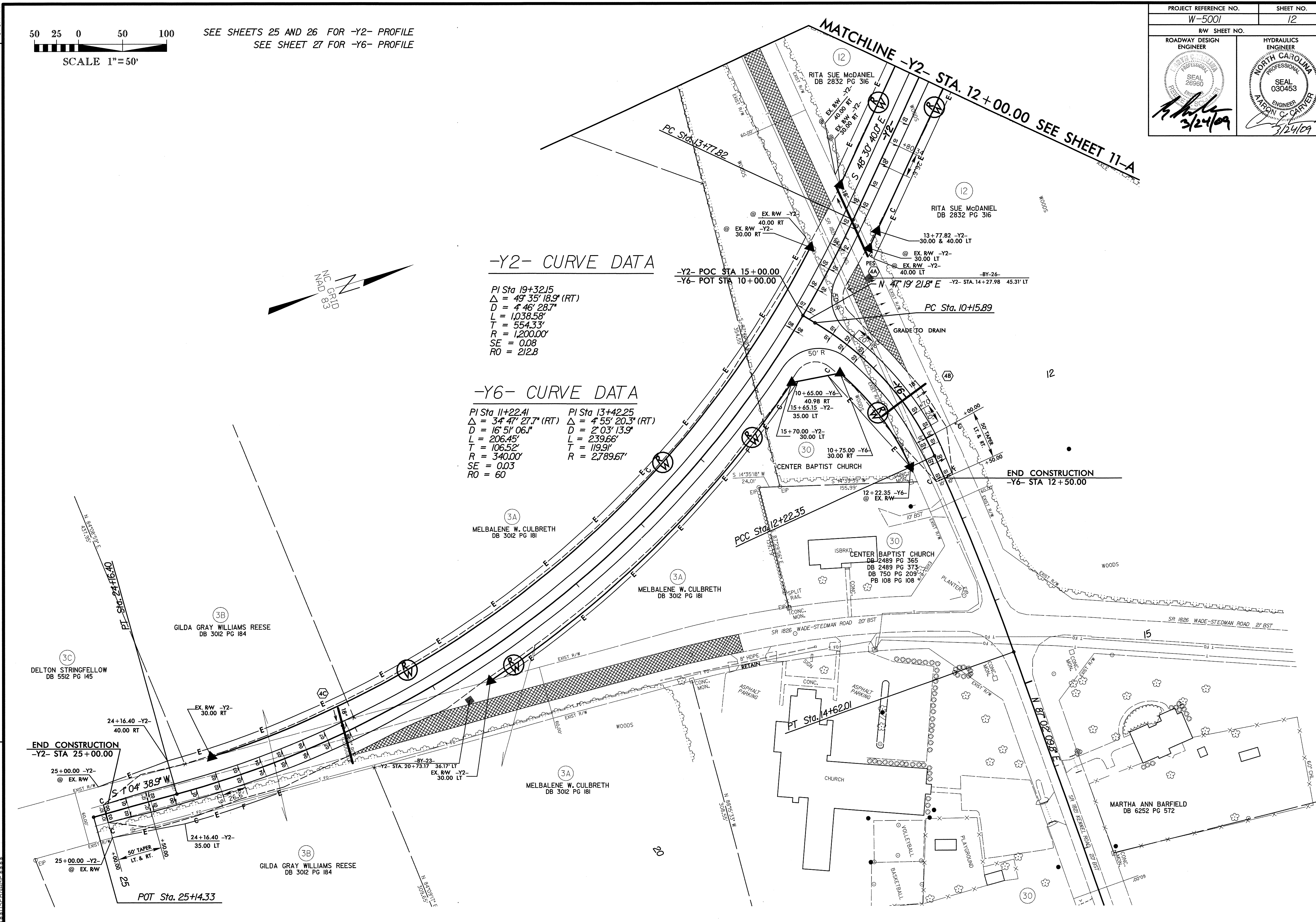
-Y2- CURVE DATA

PI Sta 19+32.15
 $\Delta = 49^{\circ} 35' 18.9''$ (RT)
 $D = 4' 46'' 28.7''$
 $L = 1,038.58'$
 $T = 554.33'$
 $R = 1,200.00'$
 $SE = 0.08$
 $RO = 212.8$

-Y6- CURVE DATA

PI Sta 11+22.41 $\Delta = 34^{\circ} 47' 27.7''$ (RT) $D = 16' 51'' 06.1''$ $L = 206.45'$ $T = 106.52'$ $R = 340.00'$ $SE = 0.03$ $RO = 60$	PI Sta 13+42.25 $\Delta = 4^{\circ} 55' 20.3''$ (RT) $D = 2' 03'' 13.9''$ $L = 239.66'$ $T = 119.91'$ $R = 2,789.67'$
--	--

REVISIONS

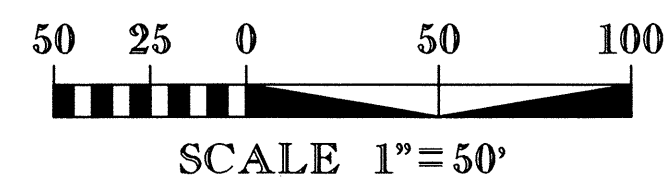
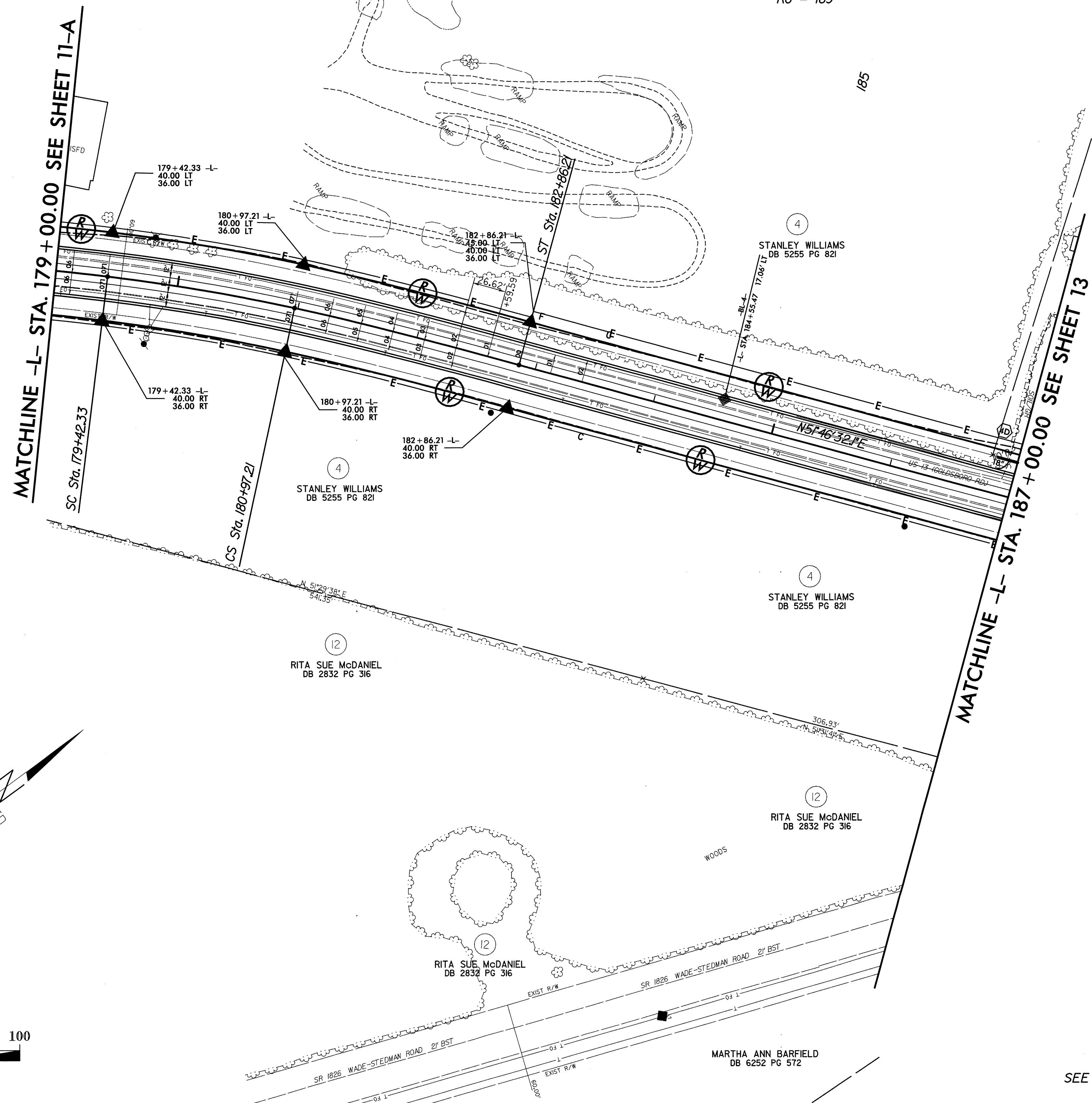


SYSTEMS DESIGN
 DESIGN
 CONSTRUCTION
 MAINTENANCE

PROJECT REFERENCE NO. W-5001	SHEET NO. 12-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER RECEM SCHLEIER SEAL 26960 3/24/09	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030453 TARON C. CAVATIER 7/24/09

-L- CURVE DATA

PIs Sta 178+79.34	PI Sta 180+19.82	PIs Sta 181+60.23
$\Theta_s = 3^\circ 06' 42.3"$	$\Delta = 5^\circ 06' 00.7" (RT)$	$\Theta_s = 3^\circ 06' 42.3"$
$L_s = 189.00'$	$D = 3^\circ 17' 34.3"$	$L_s = 189.00'$
$LT = 126.02'$	$L = 154.89'$	$LT = 126.02'$
$ST = 63.02'$	$T = 77.49'$	$ST = 63.02'$
	$R = 1,740.00'$	
	$SE = 0.071$	
	$RO = 189$	

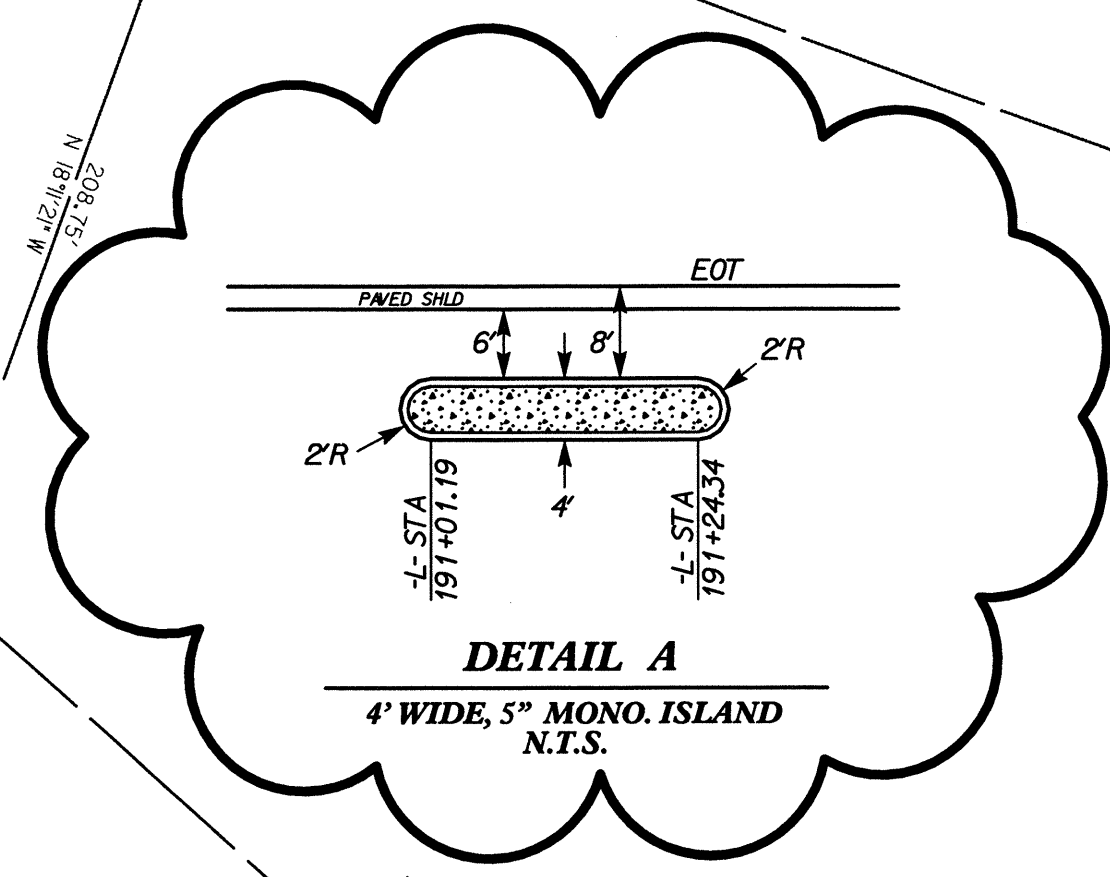


SEE SHEETS 23 AND 24 FOR -L- PROFILE

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REVISIONS

DATE
BY
DESCRIPTION
REVISIONS



-Y3- CURVE DATA

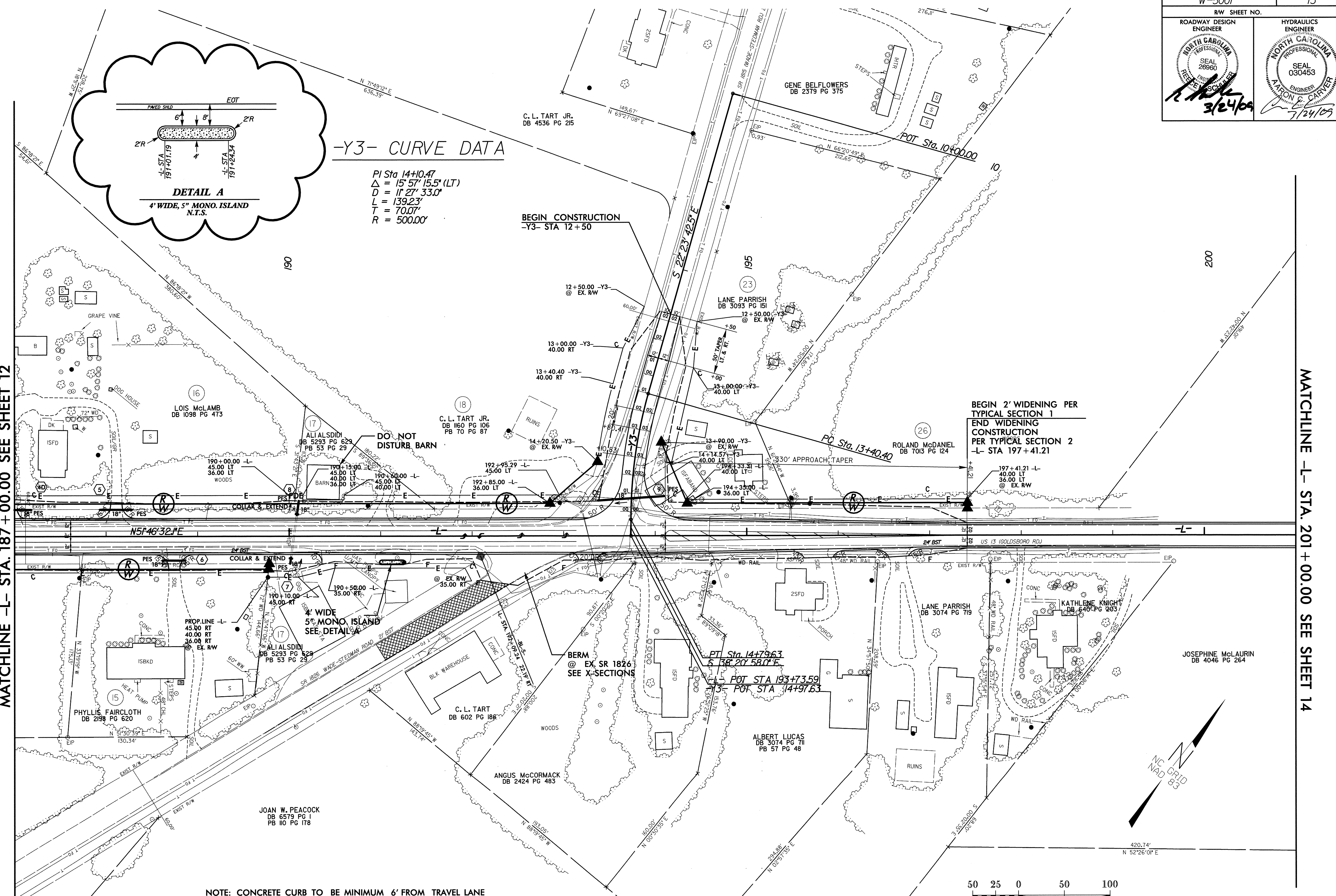
PI Sta 14+00.47
 $\Delta = 15^\circ 57' 15.5" (LT)$
 $D = 11' 27" 33.0"$
 $L = 139.23'$
 $T = 70.07'$
 $R = 500.00'$

BEGIN CONSTRUCTION
 -Y3- STA 12+50

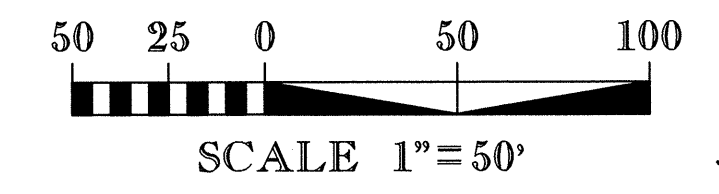
BEGIN 2' WIDENING PER
 TYPICAL SECTION 1
 END WIDENING
 CONSTRUCTION
 PER TYPICAL SECTION 2
 -L- STA 197+41.21

MATCHLINE -L- STA. 187+00.00 SEE SHEET 12

MATCHLINE -L- STA. 201+00.00 SEE SHEET 14



NOTE: CONCRETE CURB TO BE MINIMUM 6' FROM TRAVEL LANE



SEE SHEETS 23 AND 24 FOR -L- PROFILE
 SEE SHEET 26 FOR -Y3- PROFILE

REVISIONS

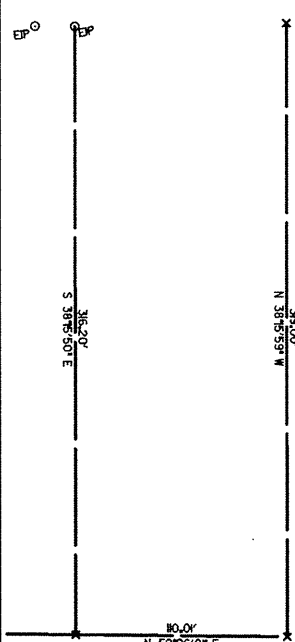
8/17/99
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PROJECT REFERENCE NO. W-5001	SHEET NO. 14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 26960 DEBRA SCHMIDT 3/24/09	HYDRAULICS ENGINEER SEAL 030453 A. DONOFRIO 3/24/09

8/17/99

REVISIONS

MATCHLINE -L- STA. 201 + 00.00 SEE SHEET 13



205

210

215

220

225

END CONSTRUCTION
-L- STA 215+00±
TIE TO EXISTING WIDENING

US-13 (GOLDSBORO RD.)

BEGIN CONSTRUCTION
-L- STA 224+00±
TIE TO EXISTING WIDENING

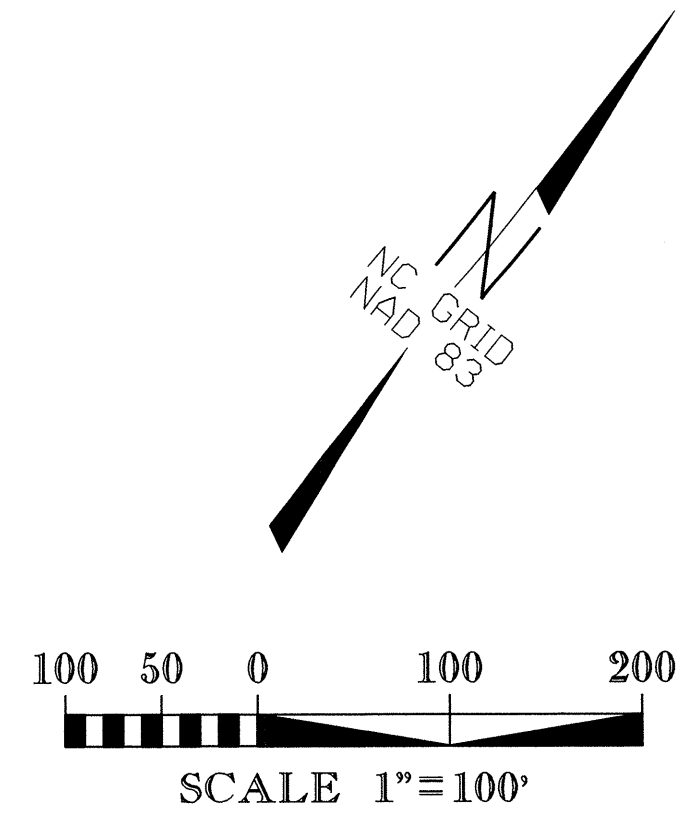
2' PS

24 BS1

2' PS

MATCHLINE -L- STA. 229 + 00.00 SEE SHEET 15

PC Sta. 228+87.12



CONSTRUCTION RESERVE

8/17/99

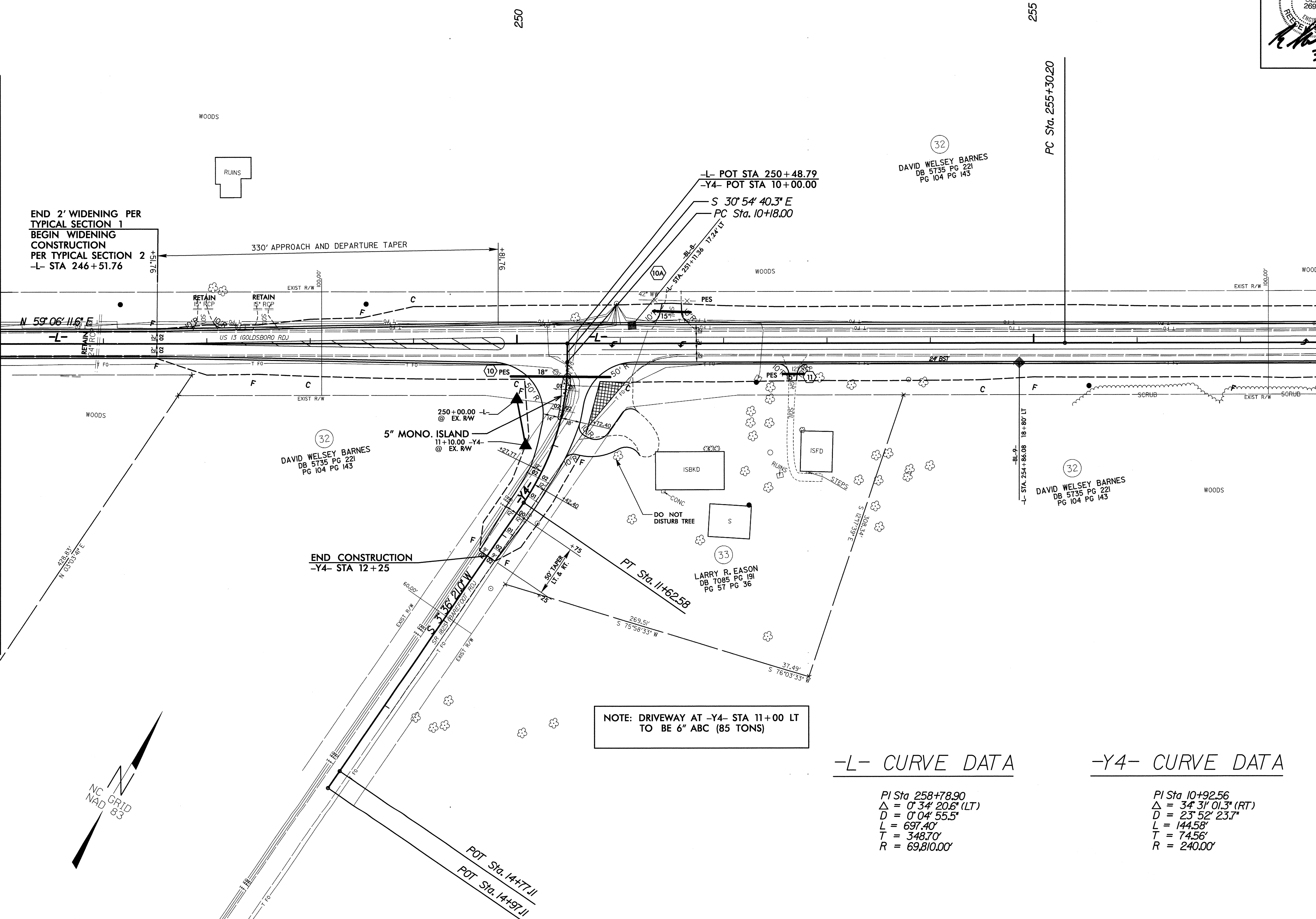
PROJECT REFERENCE NO. W-5001	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER DAVID WELSEY BARNES SEAL 26960 3/24/09	HYDRAULICS ENGINEER DAVID WELSEY BARNES SEAL 030453 3/24/09

MATCHLINE -L- STA. 245 + 00.00 SEE SHEET 15

MATCHLINE -L- STA. 258 + 00.00 SEE SHEET 17

END 2' WIDENING PER
TYPICAL SECTION 1
BEGIN WIDENING
CONSTRUCTION
PER TYPICAL SECTION 2
-L- STA 246+51.76

330' APPROACH AND DEPARTURE TAPER



32
DAVID WELSEY BARNES
DB 5735 PG 221
PG 104 PG 143

33
LARRY R. EASON
DB 7085 PG 191
PG 57 PG 36

32
DAVID WELSEY BARNES
DB 5735 PG 221
PG 104 PG 143

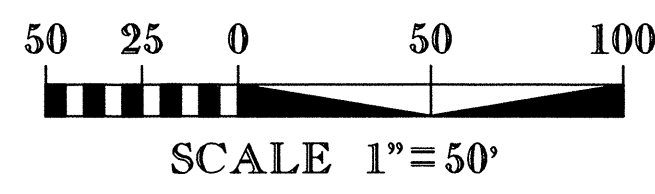
NOTE: DRIVEWAY AT -Y4- STA 11+00 LT
TO BE 6" ABC (85 TONS)

-L- CURVE DATA

PI Sta 258+78.90
Δ = 0° 34' 20.6" (LT)
D = 0° 04' 55.5"
L = 697.40'
T = 348.70'
R = 69,810.00'

-Y4- CURVE DATA

PI Sta 10+92.56
Δ = 34° 31' 01.3" (RT)
D = 23° 52' 23.7"
L = 144.58'
T = 74.56'
R = 240.00'

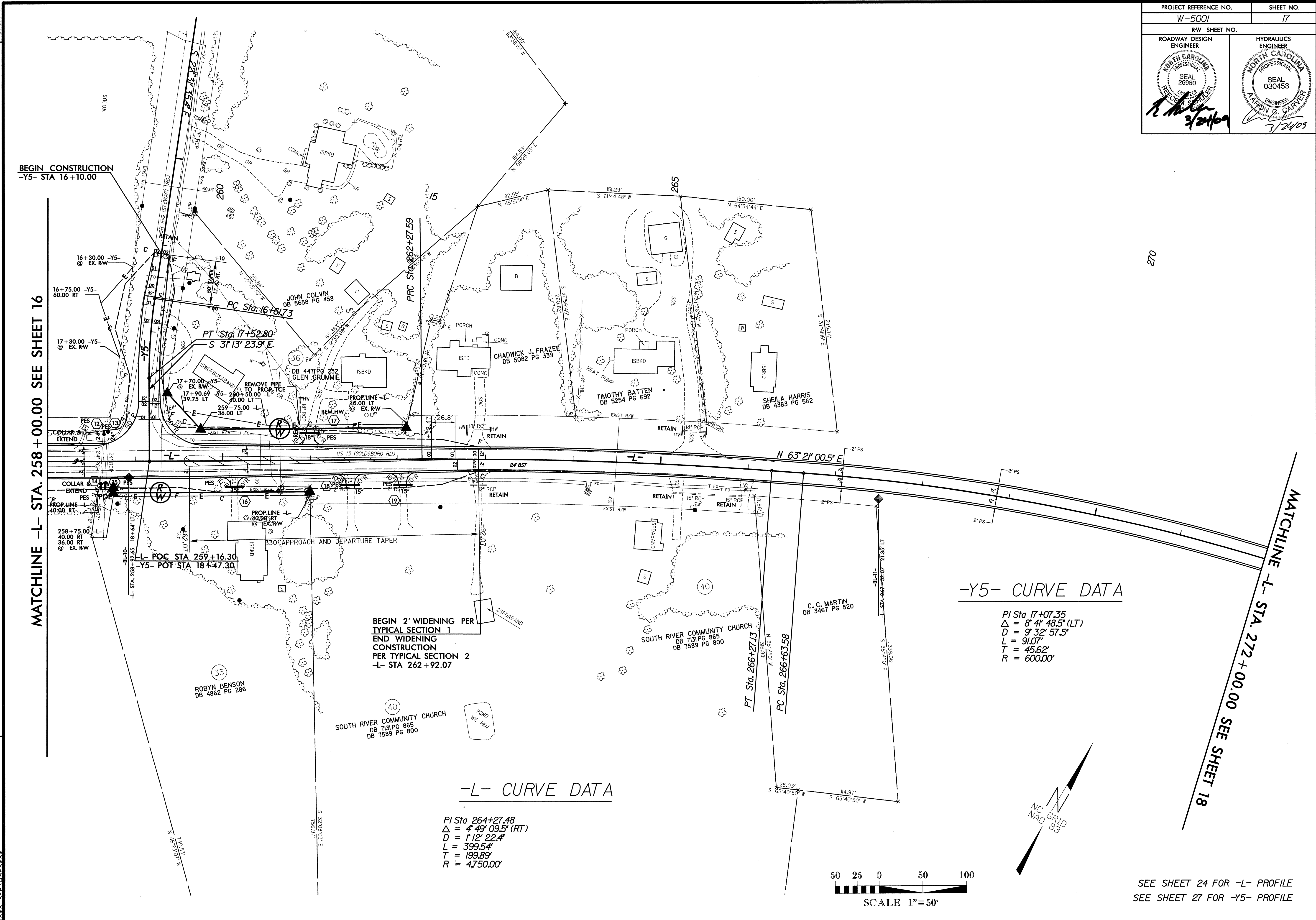


REVISIONS

DATE: 3/24/09
BY: DWB
CHECKED: [Signature]
DATE: 3/24/09

SEE SHEET 24 FOR -L- PROFILE
SEE SHEET 26 FOR -Y4- PROFILE

PROJECT REFERENCE NO. W-5001	SHEET NO. 17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 26960 3/24/09	HYDRAULICS ENGINEER SEAL 030453 3/24/09



BEGIN CONSTRUCTION
-Y5- STA 16+10.00

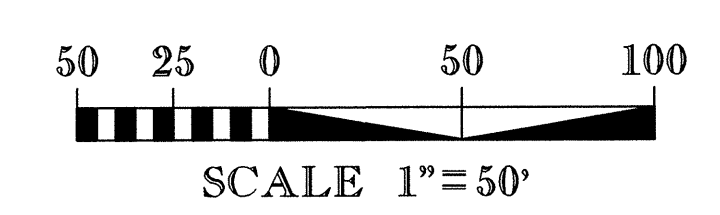
MATCHLINE -L- STA. 258 + 00.00 SEE SHEET 16

MATCHLINE -L- STA. 272 + 00.00 SEE SHEET 18

-Y5- CURVE DATA
 PI Sta 17+07.35
 $\Delta = 8' 41'' 48.5''$ (LT)
 $D = 9' 32'' 57.5''$
 $L = 91.07'$
 $T = 45.62'$
 $R = 600.00'$

BEGIN 2' WIDENING PER
TYPICAL SECTION 1
END WIDENING
CONSTRUCTION
PER TYPICAL SECTION 2
-L- STA 262 + 92.07

-L- CURVE DATA
 PI Sta 264+27.48
 $\Delta = 4' 49'' 09.5''$ (RT)
 $D = 1' 12'' 22.4''$
 $L = 399.54'$
 $T = 199.89'$
 $R = 4750.00'$



SEE SHEET 24 FOR -L- PROFILE
SEE SHEET 27 FOR -Y5- PROFILE

REVISIONS

8/17/99

270

DATE: 3/24/09
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 DESIGNED BY: [Signature]
 IN CHARGE: [Signature]

PROJECT REFERENCE NO. W-5001	SHEET NO. 18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 26960 RECEIVED 3/24/09	HYDRAULICS ENGINEER SEAL 030453 JASON C. CAVIER 3/24/09

8/17/99

REVISIONS

MATCHLINE -L- STA. 272 + 00.00 SEE SHEET 17

PT Sta. 275+25.69

275

280

285

290

295

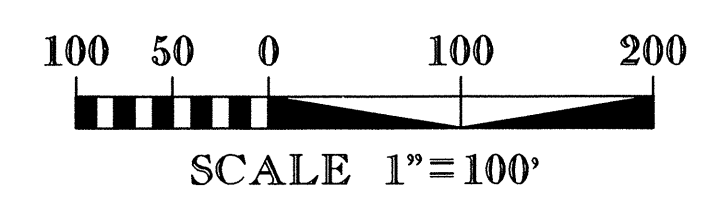
US-13 (GOLDSBORO RD.)

PC Sta. 292+73.68

PT Sta. 298+21.21

MATCHLINE -L- STA. 300 + 00.00 SEE SHEET 19

RECONSTRUCT SUPERELEVATION OF CURVE TO VALUES SHOWN ON PLANS. LIMITS OF SUPERELEVATION TO BE FIELD VERIFIED TO MATCH EXISTING CENTERLINE. (SEE WEDGING DETAILS ON SHEET 2)



TIME
Y-
C-
USERNAME

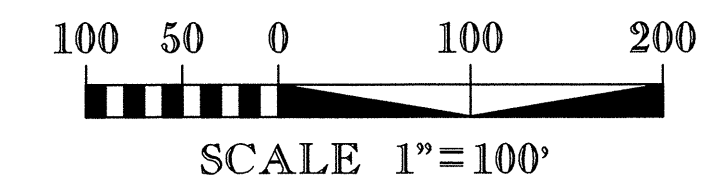
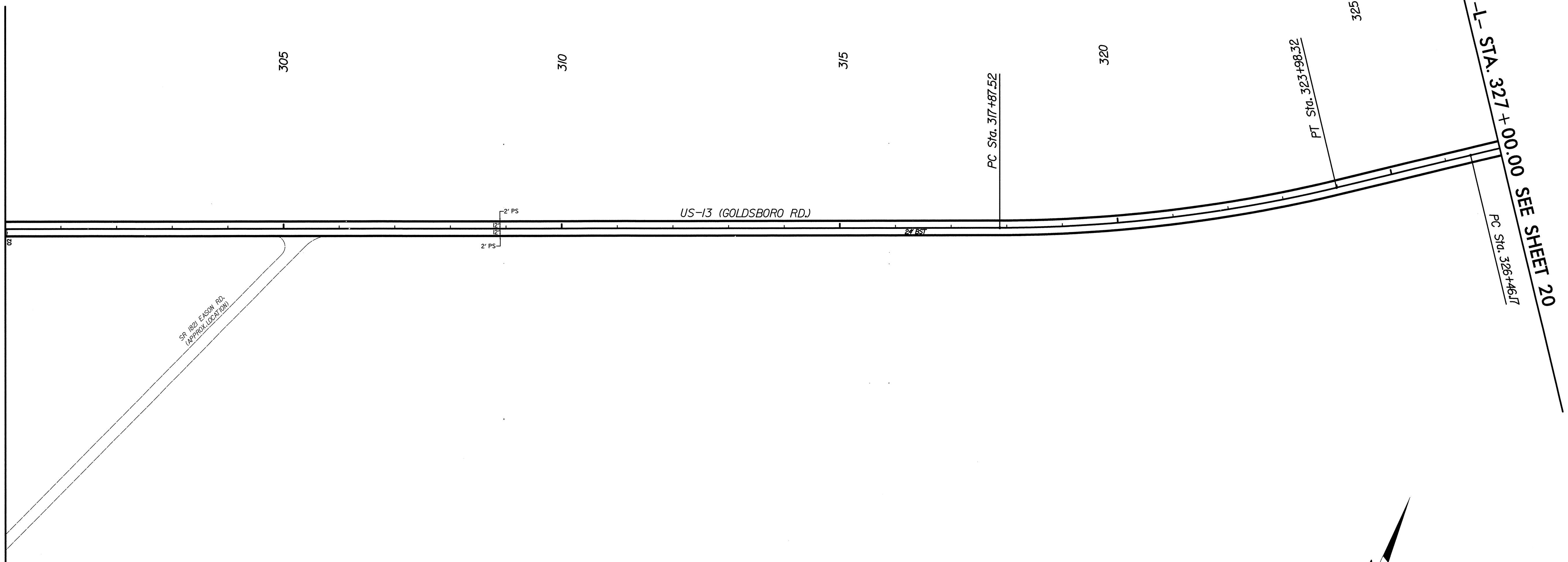
8/17/99

REVISIONS

SECTION 18

PROJECT REFERENCE NO. W-5001	SHEET NO. 19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 26960 REXCE M. SCHULTZ 3/24/09	HYDRAULICS ENGINEER SEAL 030453 ARON S. CAVYER 3/24/09

MATCHLINE -L- STA. 300 + 00.00 SEE SHEET 18



SCALE 1"=100'

8/17/99

REVISIONS

PROJECT REFERENCE NO. W-5001	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 26960 3/24/09	HYDRAULICS ENGINEER SEAL 030453 3/24/09

MATCHLINE -L- STA. 327 + 00.00 SEE SHEET 19

330

335

340

345

350

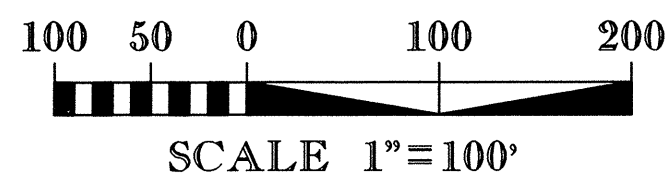
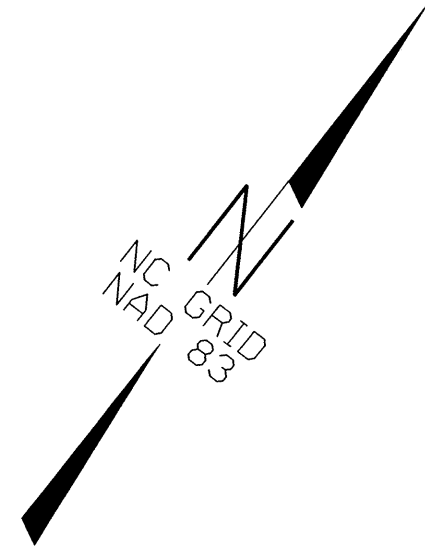
2' PS
2' PS

US-13 (GOLDSBORO RD.)

24 BS1

PT STA. 354+29.41

MATCHLINE -L- STA. 355 + 00.00 SEE SHEET 21



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8/17/99

PROJECT REFERENCE NO. W-5001	SHEET NO. 21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 26960 RENE M. SCHULTZ 3/24/09	HYDRAULICS ENGINEER SEAL 030453 ATRON C. CARVER 3/24/09

REVISIONS

MATCHLINE -L- STA. 355 + 00.00 SEE SHEET 20

PC Sta. 356+88.00

SR 1820 SHREFFERT RD.
(APPROX. LOCATION)

365

SR 1911 BLUMAKI RD.
(APPROX. LOCATION)

370

NC 82 HERB FARM RD.
(APPROX. LOCATION)

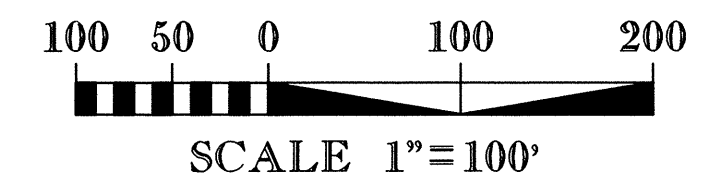
375

US-13 (GOLDSBORO RD.)

380

PT. Sta. 376+27.75

END PROJECT W-5001
-L- STA. 382+90 (APPROX.)
TIE TO EXISTING
PAVED SHOULDER

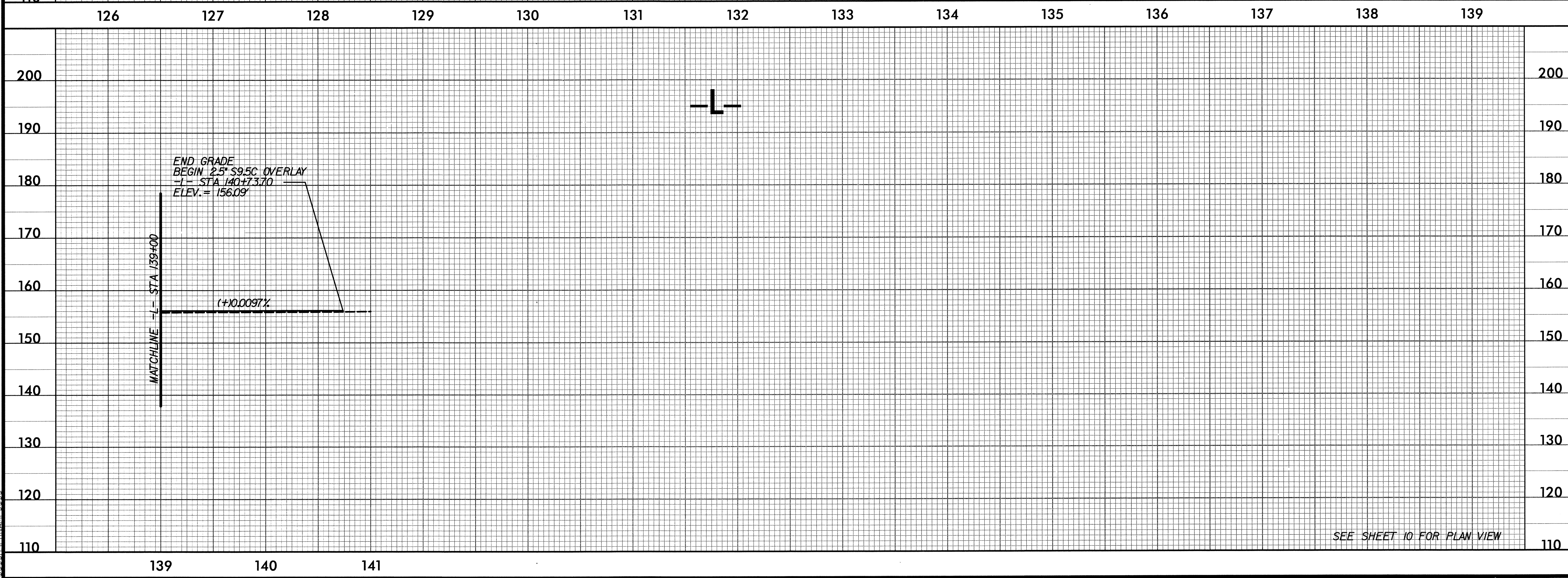
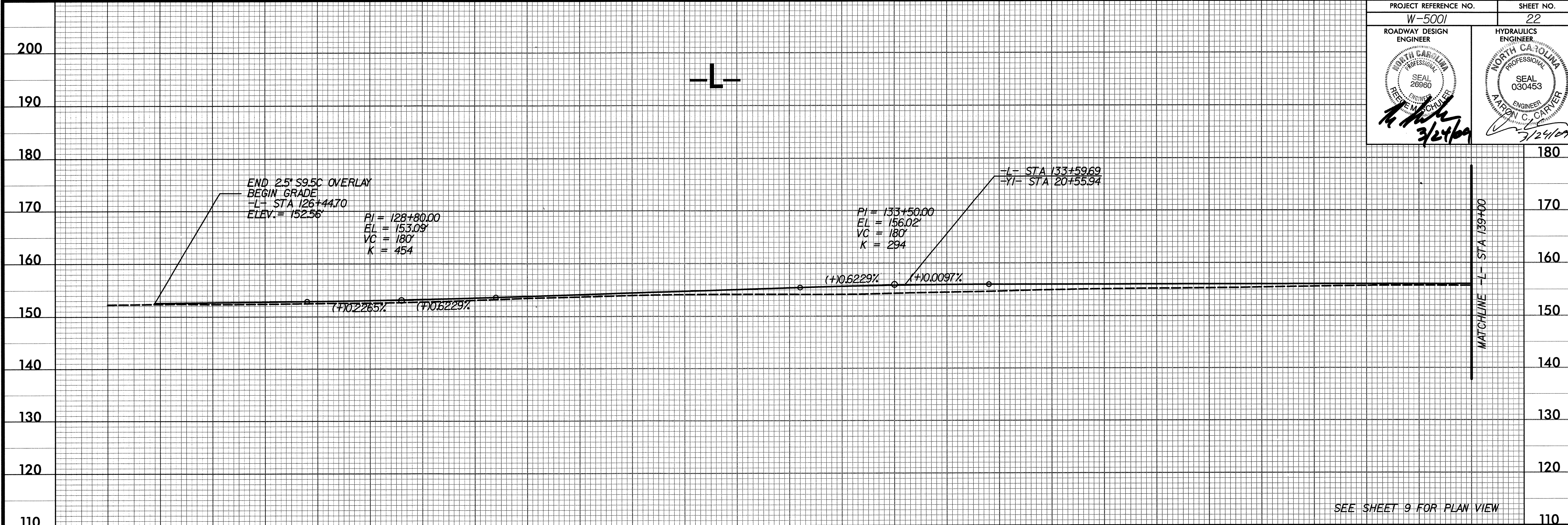


CUMBERLAND COUNTY
SAMPSON COUNTY

DATE: 8/17/99
DRAWN BY: [illegible]
CHECKED BY: [illegible]
SCALE: AS SHOWN
SHEET NO.: 21
PROJECT NO.: W-5001

5/28/99

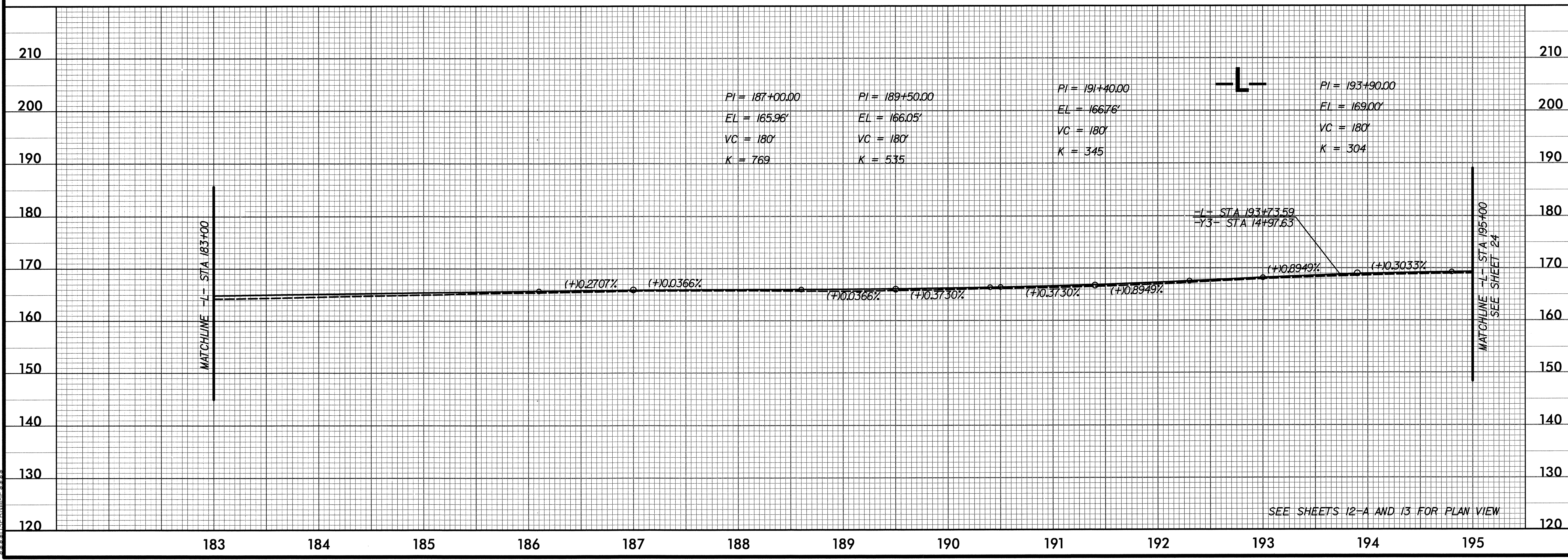
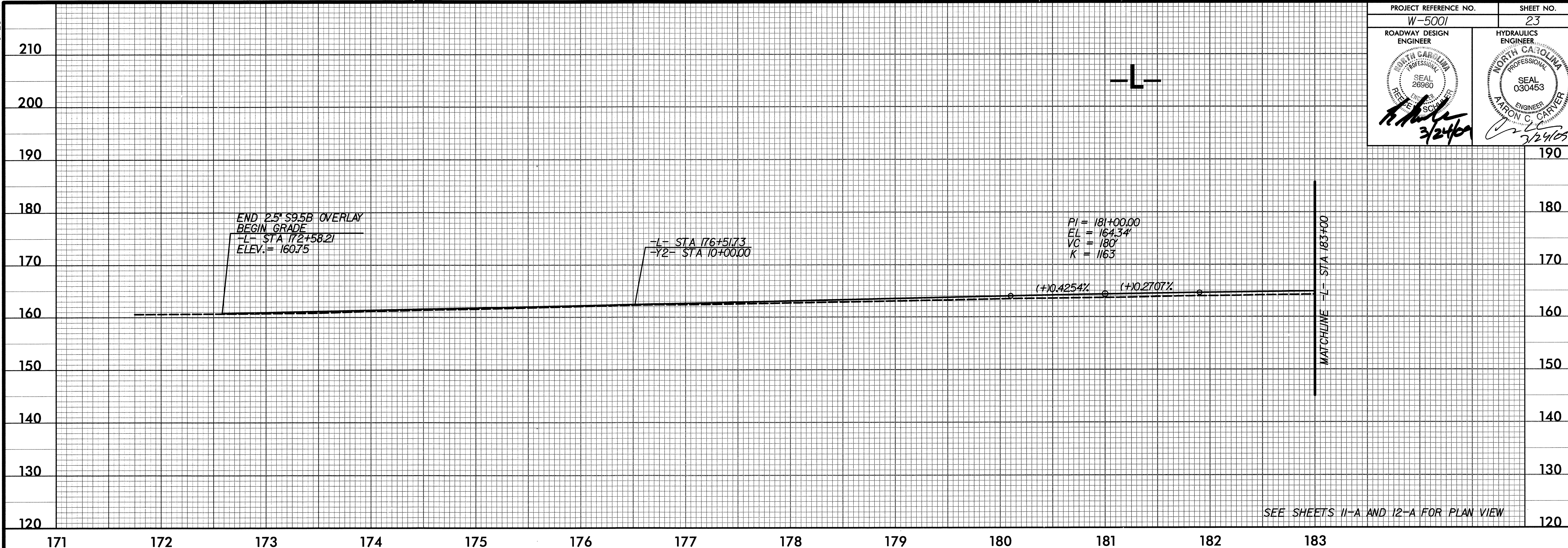
PROJECT REFERENCE NO. W-5001	SHEET NO. 22
ROADWAY DESIGN ENGINEER DEWEE M. SCHULTE SEAL 26960 3/24/09	HYDRAULICS ENGINEER SEAL 030453 3/24/09



STATIONING

5/28/99

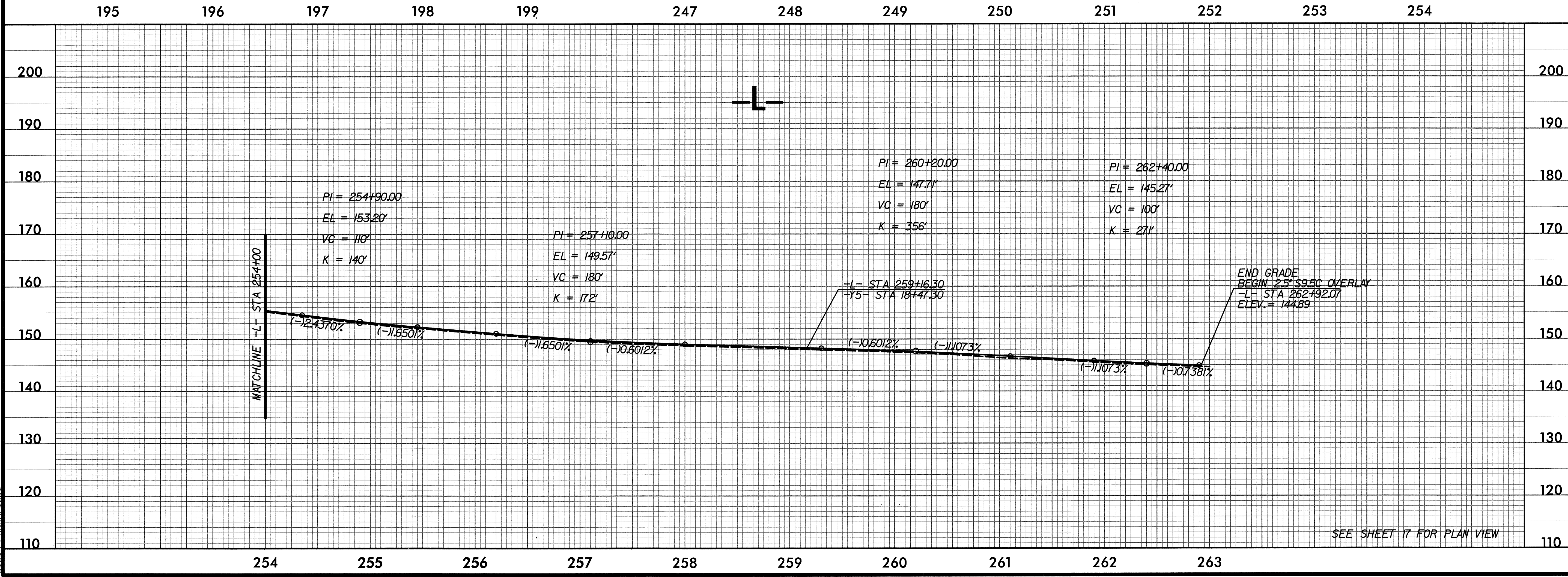
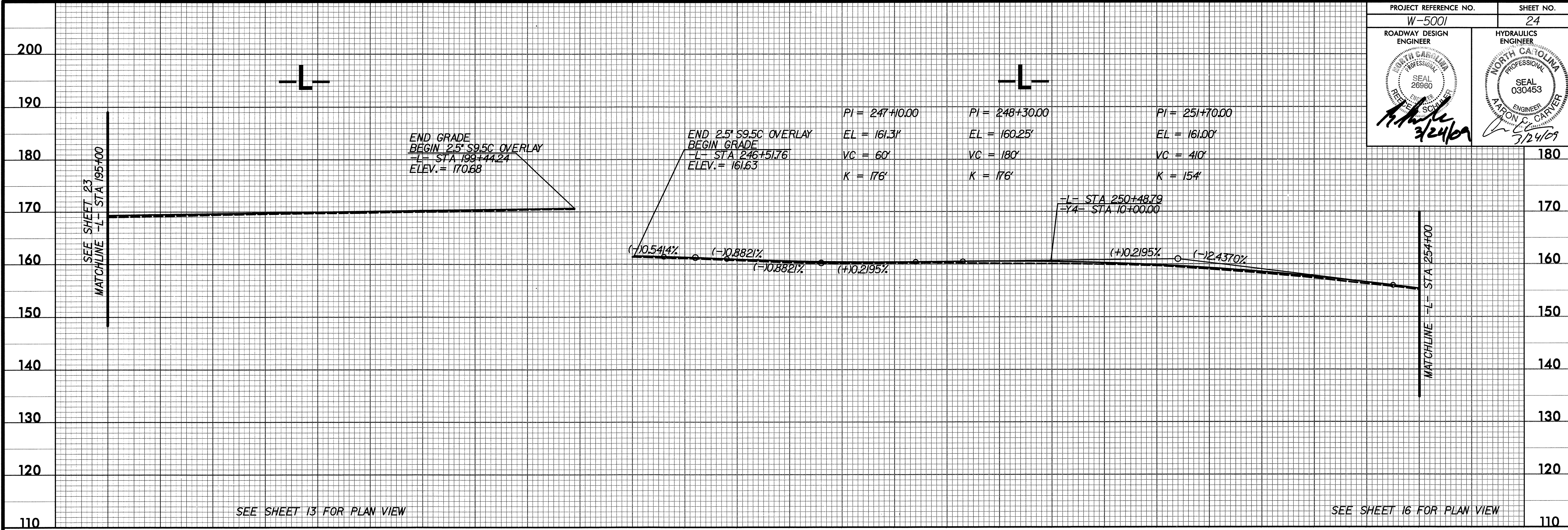
PROJECT REFERENCE NO. W-5001	SHEET NO. 23
ROADWAY DESIGN ENGINEER A. SCHULZ 3/24/05	HYDRAULICS ENGINEER AARON C. CARVER 3/24/05



SYSTEMS
DESIGN
INCORPORATED
10000
WILSONVILLE
OR 97147
503-638-1000

5/28/99

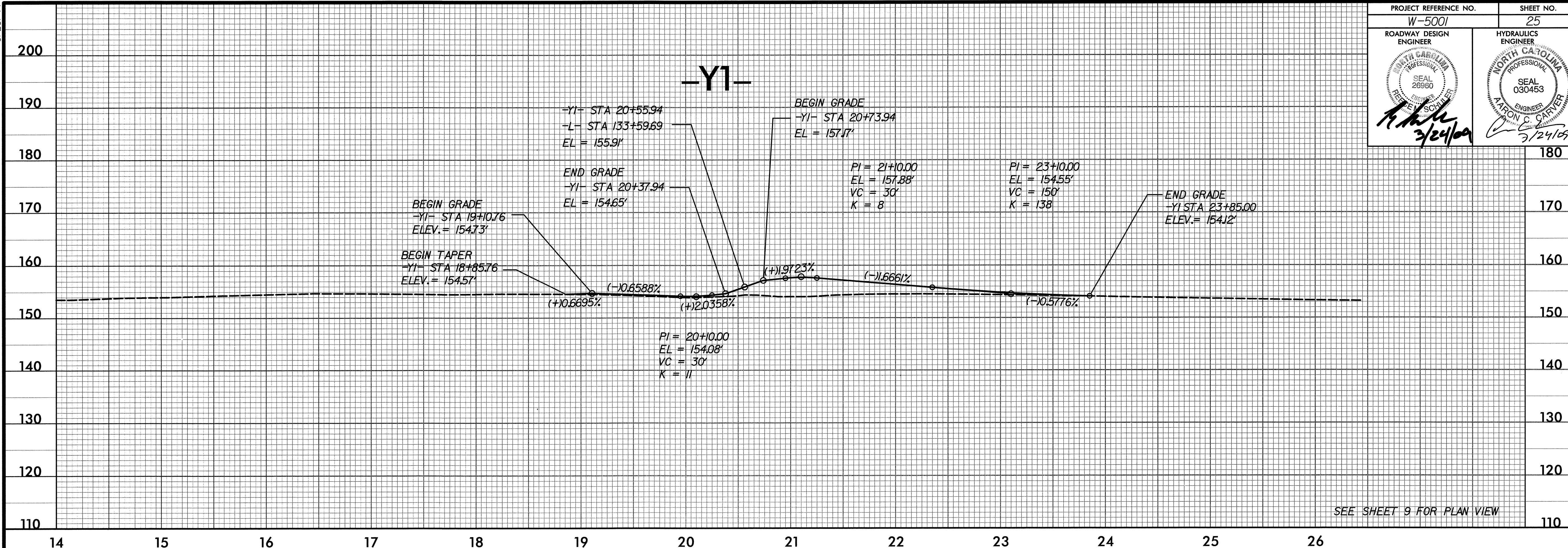
PROJECT REFERENCE NO. W-5001	SHEET NO. 24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



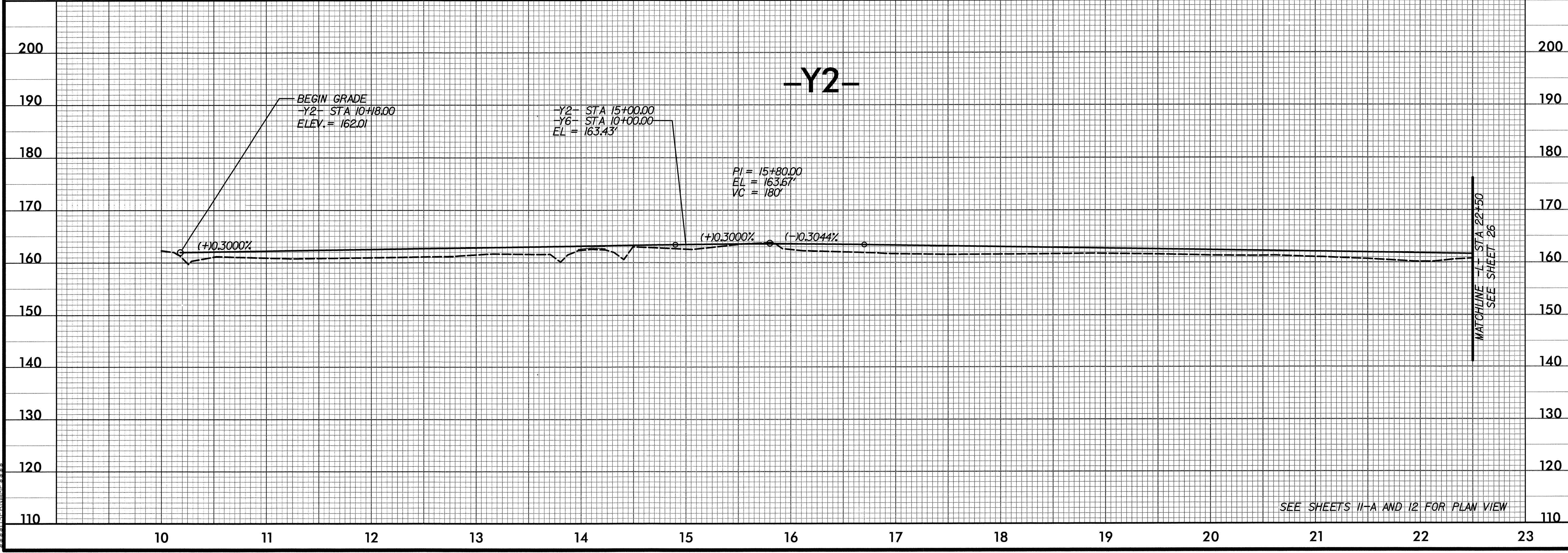
SYSTEMS CONDITIONING

5/28/99

PROJECT REFERENCE NO. W-5001	SHEET NO. 25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



SEE SHEET 9 FOR PLAN VIEW



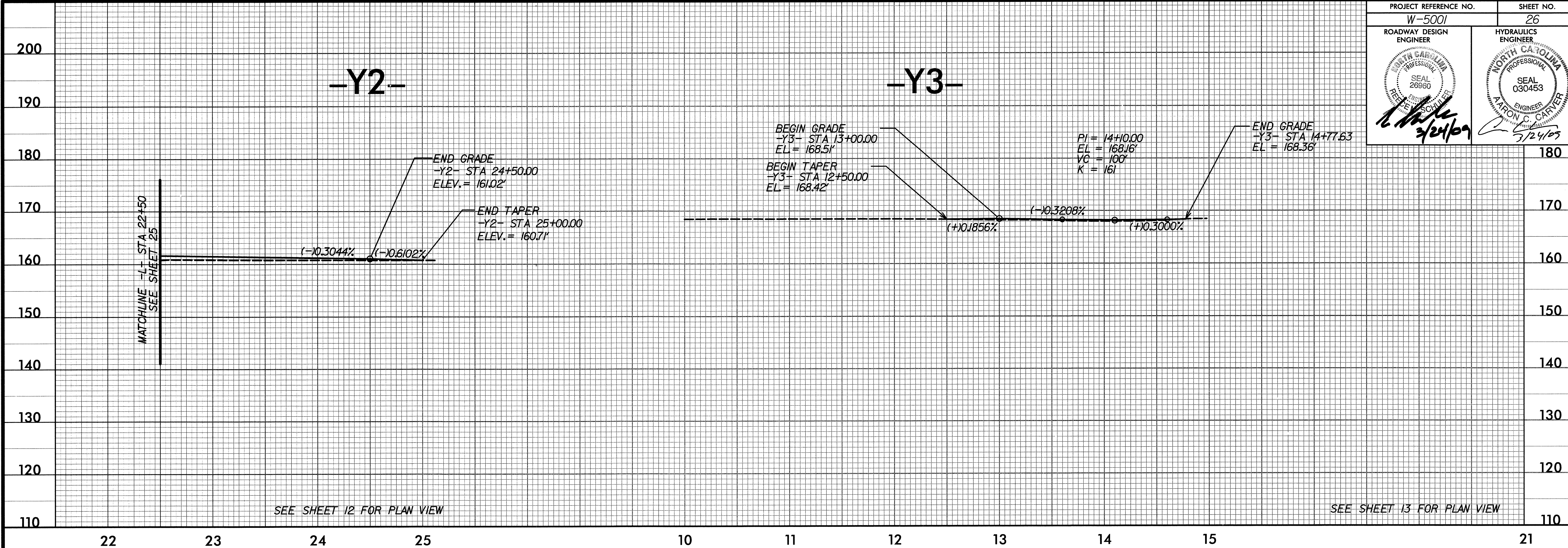
MATCHLINE -L- STA 22+50
SEE SHEET 26

SEE SHEETS 11-A AND 12 FOR PLAN VIEW

SYSTEMS
DESIGN
INC.
1100
SOUTH
MAIN
ST.
Raleigh,
NC 27601
919-876-1100

5/28/99

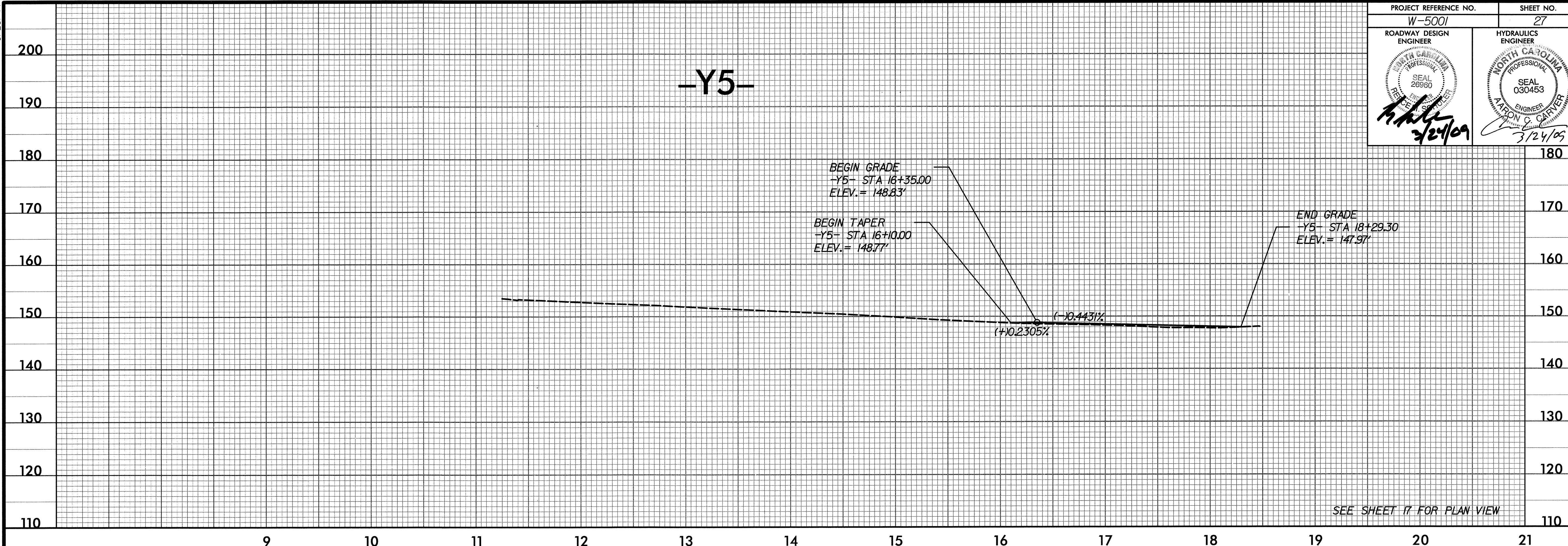
PROJECT REFERENCE NO. W-5001	SHEET NO. 26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<i>J. Schiller</i> 3/24/09	<i>A. C. Calver</i> 3/24/09



STATIONING
22 23 24 25 10 11 12 13 14 15 16 17 18 19 20 21

5/28/09

PROJECT REFERENCE NO. W-5001	SHEET NO. 27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



5/28/09

