

09/08/09

See Sheet 1-A For Index of Sheets

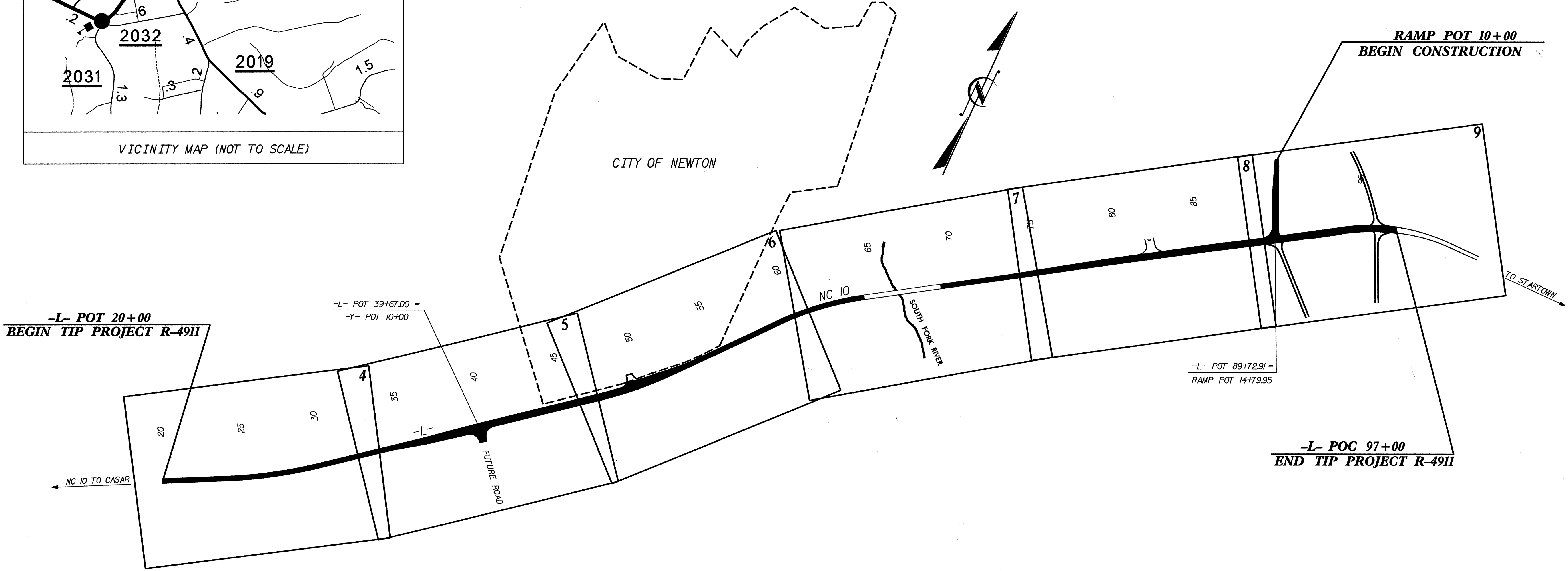
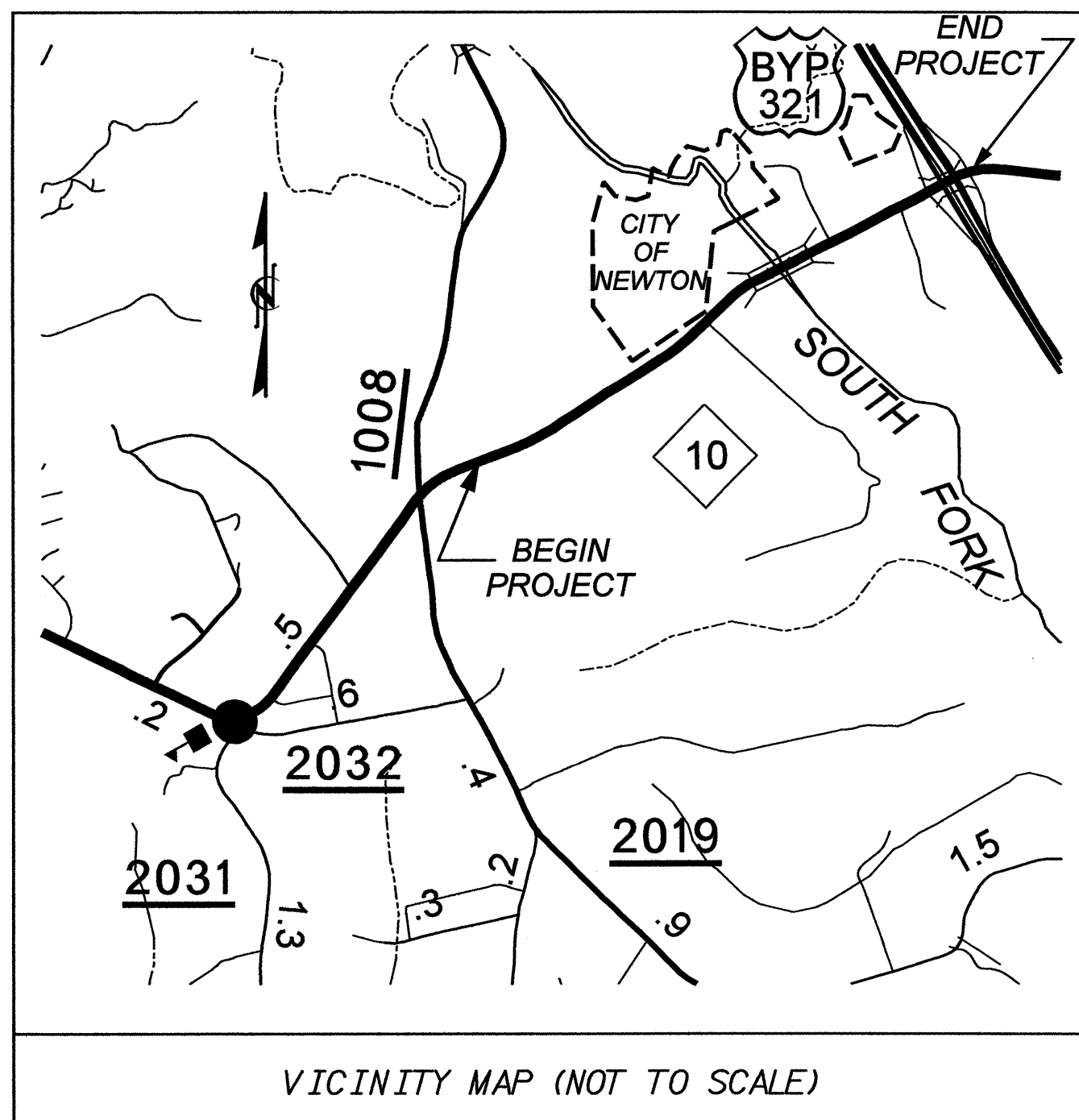
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CATAWBA COUNTY**

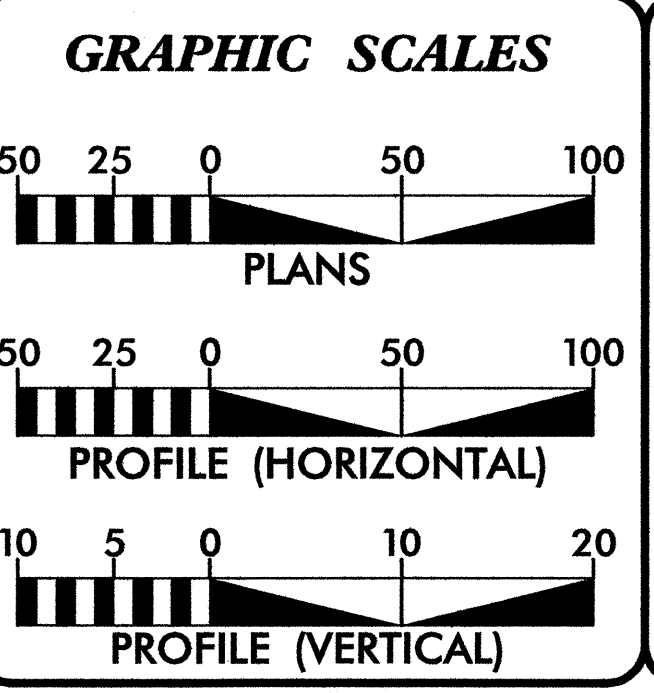
LOCATION: NC 10 FROM 1000' EAST OF SR 1008 TO US 321 NB RAMPS  
TYPE OF WORK: GRADING, PAVING, DRAINAGE AND GUARDRAIL

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-4911	1	16
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40930.1.1	HPP-0010(2)	PE	
40930.2.1	HPP-0010(2)	ROW	
40930.3.1	HPP-0010(2)	CONSTRUCTION	

TIP PROJECT: R-4911



CONTRACT: C202016



**DESIGN DATA**

ADT 2006 =	8035
ADT 2016 =	13,250
DHV =	10 %
D =	50 %
T =	8 % *
V =	50 MPH
* TTST 5%	DUAL 3%

**PROJECT LENGTH**

TOTAL PROJECT LENGTH =	1.458 MILES
TOTAL ROADWAY LENGTH =	1.405 MILES

Prepared In the Office of:  
**DIVISION OF HIGHWAYS**  
1710 East Marion St., Shelby, NC 28152

2006 STANDARD SPECIFICATIONS	
<b>RIGHT OF WAY DATE:</b> March 2007	<b>Mark Stafford, PE</b> DIVISION OPERATIONS ENGINEER
<b>LETTING DATE:</b> May 20, 2008	<b>R.E. Humphries, PLS</b> DIVISION DESIGN /CONSTRUCT ENGINEER

**HYDRAULICS ENGINEER**

S.D. RACKLEY, PE  
SIGNATURE: *S.D. Rackley* 3/7/08

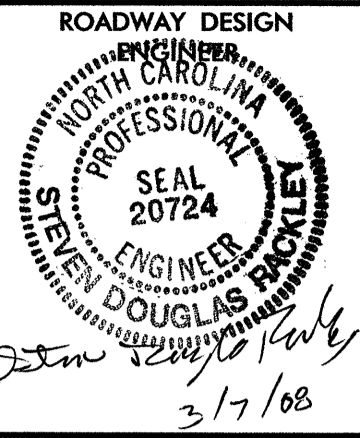
**ROADWAY DESIGN ENGINEER**

S.D. RACKLEY, PE  
SIGNATURE: *S.D. Rackley* 3/7/08

**DIVISION OF HIGHWAYS**  
STATE OF NORTH CAROLINA

**M. L. Holder**  
DIVISION ENGINEER P.E.

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$DGN\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$



EFF. 07-18-06  
REV. 01-02-07

2006 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 July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

Table with columns: STD. NO., TITLE. Lists standard drawing numbers and titles for various engineering divisions from 200.02 to 876.04, including earthwork, pipe culverts, subgrades, and guardrails.

GENERAL NOTES: 2006 SPECIFICATIONS EFFECTIVE: 07-18-06 REVISED: 07-18-06

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.

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

SUPERELEVATION: ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS.

BERM DITCHES: BERM DITCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 240.01 AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

GUARDRAIL: THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.

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.

UTILITIES: UTILITY OWNERS ON THIS PROJECT ARE CITY OF NEWTON, BELLSOUTH, DUKE ENERGY AND PIEDMONT NATURAL GAS. ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

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
2-2 A	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2B-2C	GRAB BENT ANCHORAGE FOR FRAMES DETAILS
3	SUMMARY OF QUANTITIES
3A-3B	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
3C	ROW AREA DATA SHEET
4 THRU 9	PLAN SHEET
10 THRU 16	PROFILE SHEET
TCP-1 THRU TCP-8	TRAFFIC CONTROL PLANS
PM-1 THRU PM-4	PAVEMENT MARKING PLANS
EC-1 THRU EC-15	EROSION CONTROL PLANS
X-1 THRU X-42	CROSS-SECTIONS

3/15/06

**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	✕
Property Monument	EM
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

**BUILDINGS AND OTHER CULTURE:**

Gas Pump Vent or U/G 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	CSX TRANSPORTATION 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	-----
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	XXXX

**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	⊙
Storm Sewer	S

**UTILITIES:**

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊙
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	PH
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	⊙
Telephone Booth	⊠
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	PH
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	⊙
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	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	PH
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

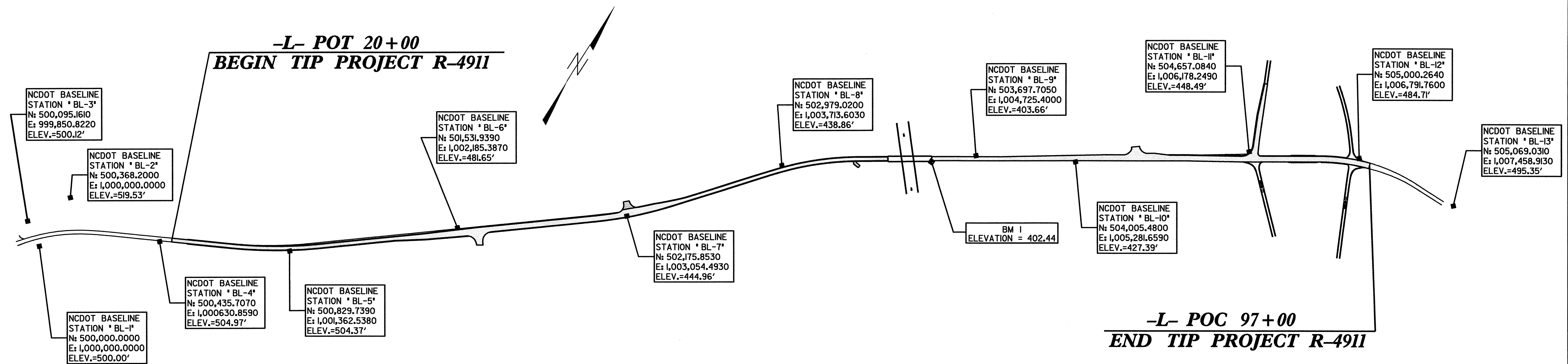
**SANITARY SEWER:**

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	⊠
Utility Unknown U/G Line	U/L
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

# SURVEY CONTROL SHEET R-4911



## CONTROL DATA

POINT	NORTH	EAST	ELEVATION	-L- STATION	OFFSET
1	500000.0000	1000000.0000	500.00	OUTSIDE PROJECT LIMITS	
2	500368.2000	1000000.0000	519.53	OUTSIDE PROJECT LIMITS	
3	500095.1610	999850.8220	500.12	OUTSIDE PROJECT LIMITS	
4	500435.7070	1000630.8590	504.97	OUTSIDE PROJECT LIMITS	
5	500829.7390	1001362.5380	504.37	27+52.22	19.08 RT
6	501531.9390	1002185.3870	481.65	38+31.99	29.37 LT
7	502175.8530	1003054.4930	444.96	49+12.40	12.35 RT
8	502979.0200	1003713.6030	438.86	59+49.85	26.48 LT
9	503697.7050	1004725.4000	403.66	71+88.26	20.88 LT
10	504005.4800	1005281.6590	427.39	78+22.71	19.35 RT
11	504657.0840	1006178.2490	448.49	89+29.10	46.84 LT
12	505000.2640	1006791.7600	484.71	96+26.44	30.81 LT
13	505069.0310	1007458.9130	495.35	OUTSIDE PROJECT LIMITS	

## BENCHMARK DATA

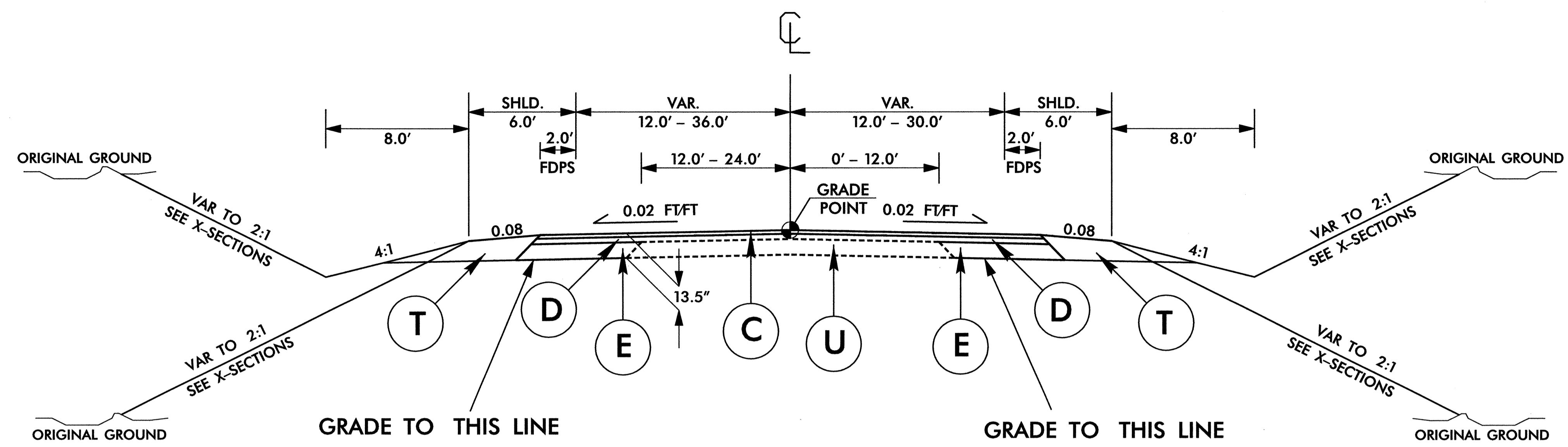
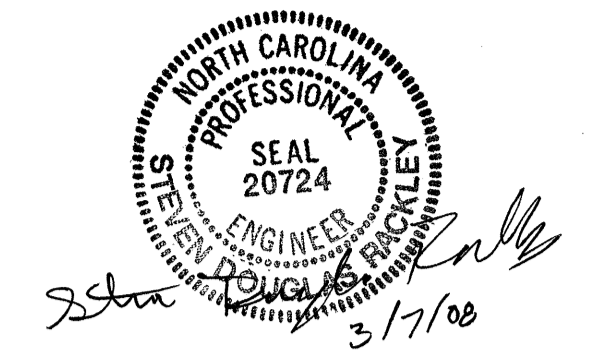
BM 1 ELEVATION = 402.44

N: 503511 E: 1004508

-L- STATION 69+04 19.39' RT

NAIL IN BACKWALL OF END BENT ON  
SOUTHEAST CORNER OF BRIDGE OVER  
THE SOUTHFORK RIVER

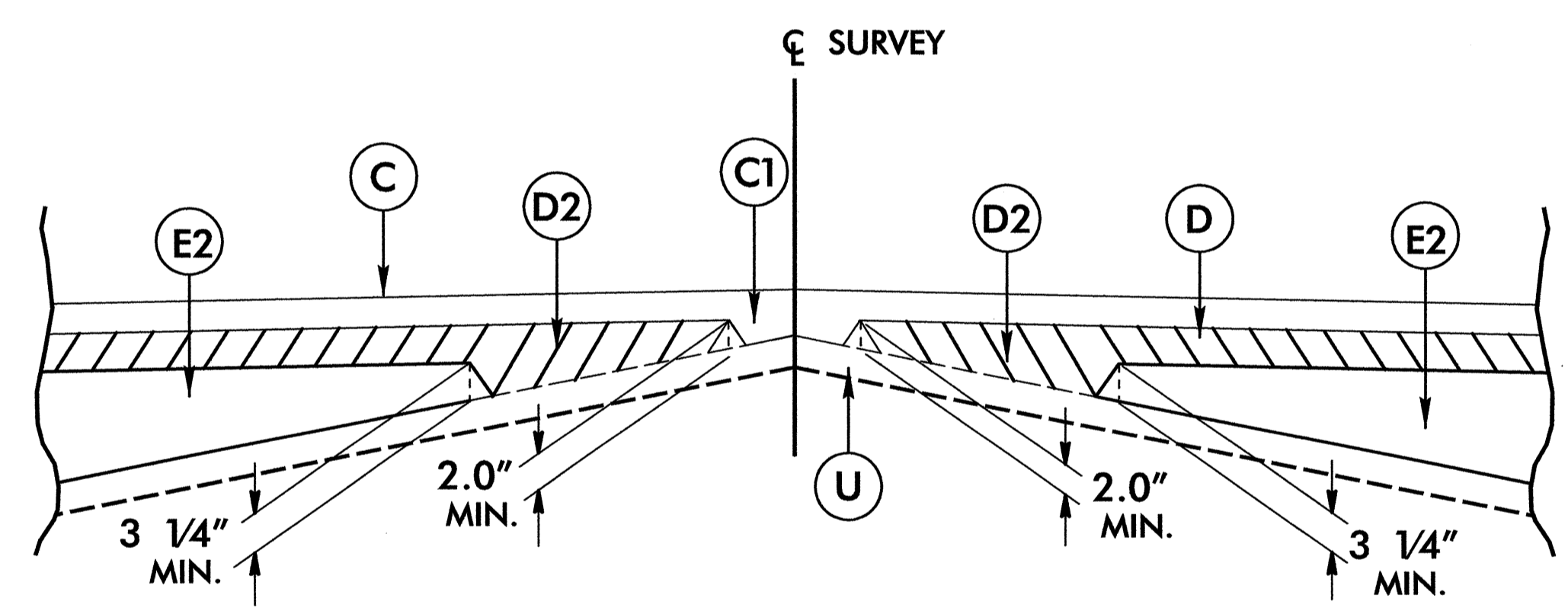
NOTE: DRAWING NOT TO SCALE  
NOTE: ASSUMED COORDINATES AND ELEVATIONS



**TYPICAL SECTION NO. 1**

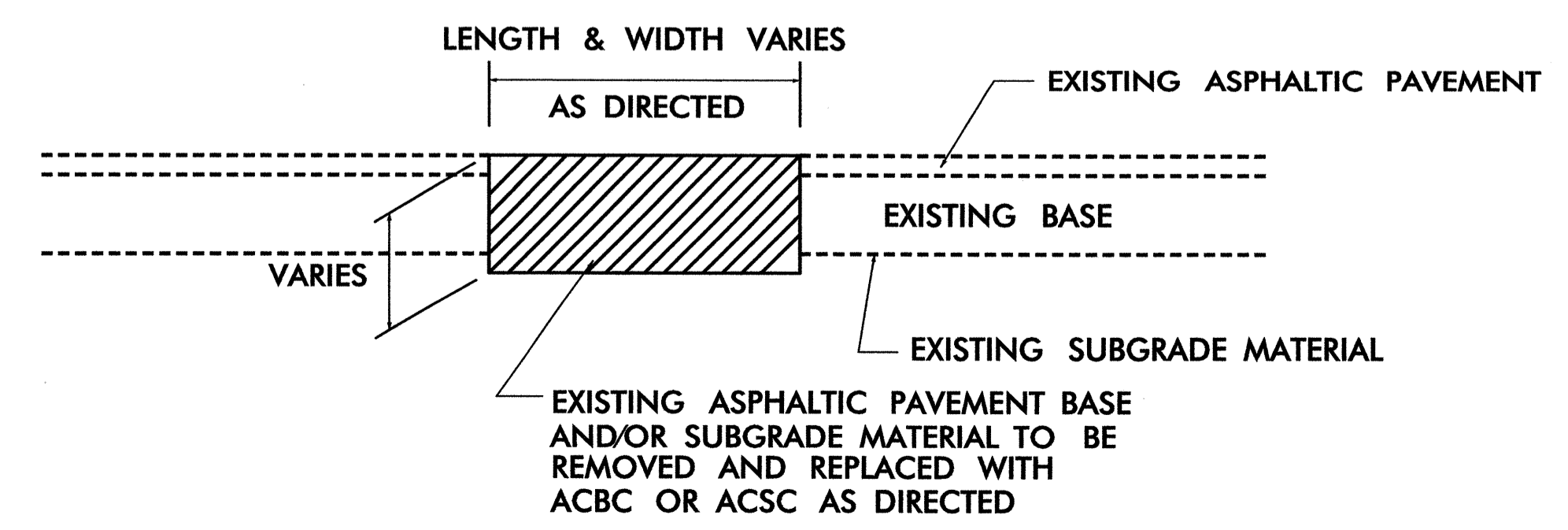
USE TYPICAL SECTION NO. 1  
 -L- Sta 20+00 - 64+50  
 -L- Sta 72+00 - 97+00

**SHOULDER RECONSTRUCTION**  
 -L- STA 20+00 TO 24+44  
 -L- STA 49+00 TO 64+50  
 -L- STA 72+00 TO 97+00



**Detail Showing Method of Wedging**

**DETAIL FOR PATCHING EXISTING PAVEMENT**

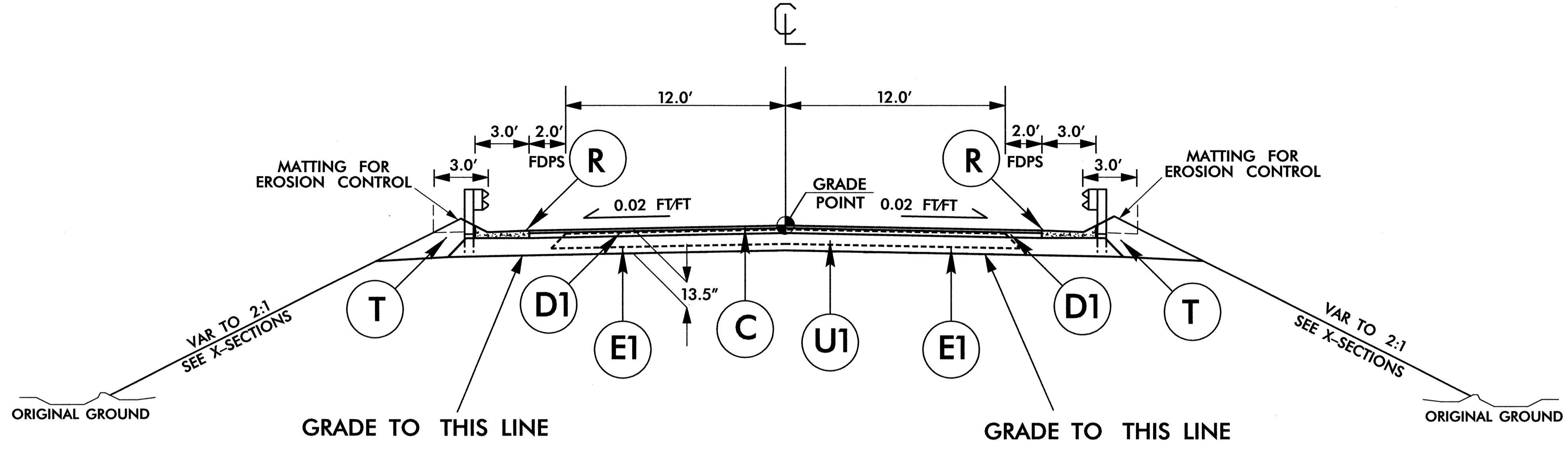


PAVEMENT SCHEDULE	
C	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C1	PROP. VAR. ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 lbs. per sq. yard per 1" DEPTH TO BE PLACE IN LAYERS NOT TO EXCEED 1.5" IN DEPTH
D	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D1	PROP. APPROX. 3 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
D2	PROP. VAR. ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C AT AN AVERAGE RATE OF 114 lbs. per sq. yard per 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2 1/4" OR GREATER THAN 4" IN DEPTH
E	PROP. APPROX. 9 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 541.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 8.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 484.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
U1	REMOVE EXISTING PAVEMENT

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

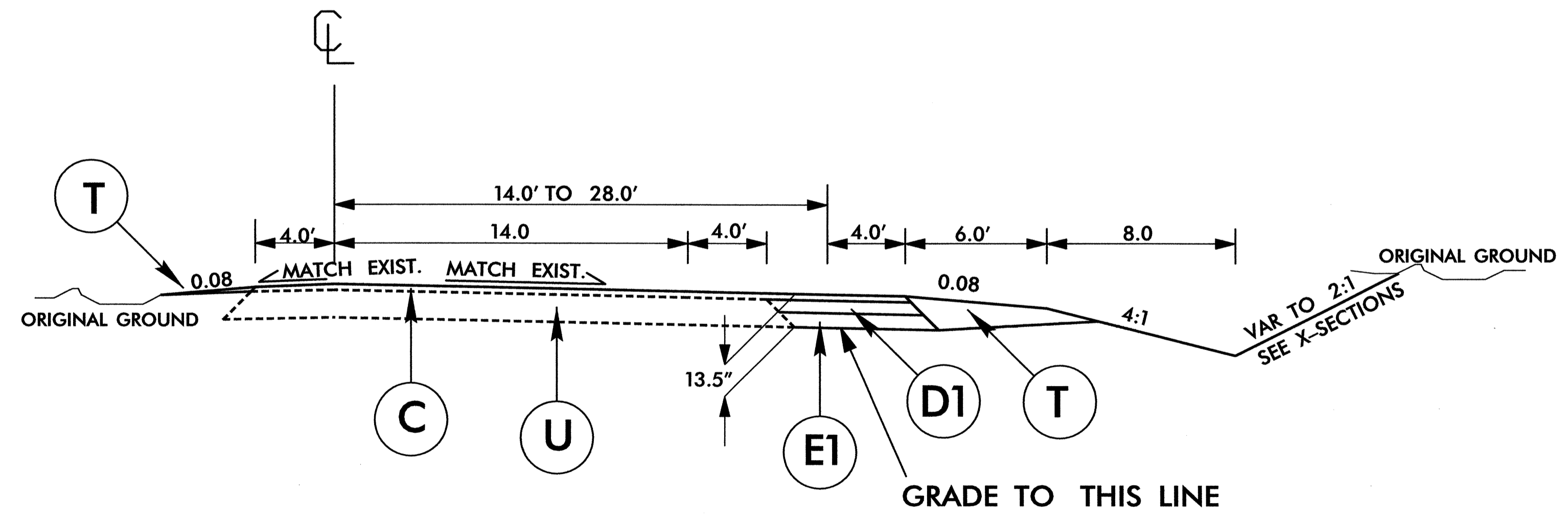
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**TYPICAL SECTION NO. 2**

USE TYPICAL SECTION NO. 2  
 -L- Sta 64+50 - 66+25.15  
 -L- Sta 69+05.04 - 72+00



**TYPICAL SECTION NO. 3**

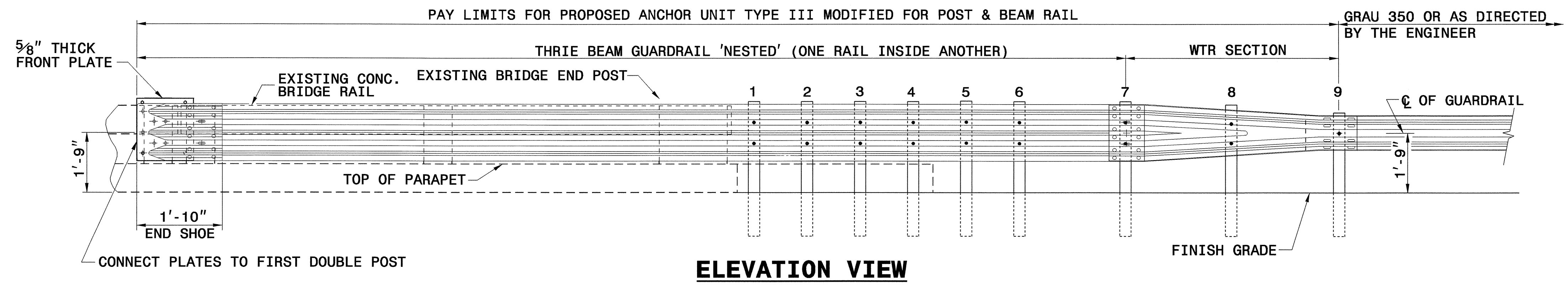
USE TYPICAL SECTION NO. 3  
 RAMP A

PAVEMENT SCHEDULE	
C	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C1	PROP. VAR. ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 lbs. per sq. yard per 1" DEPTH TO BE PLACE IN LAYERS NOT TO EXCEED 1.5" IN DEPTH
D	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D1	PROP. APPROX. 3½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
D2	PROP. VAR. ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C AT AN AVERAGE RATE OF 114 lbs. per sq. yard per 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2¼" OR GREATER THAN 4" IN DEPTH
E	PROP. APPROX. 9½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 541.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 8.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 484.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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 5½" IN DEPTH.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
U1	REMOVE EXISTING PAVEMENT

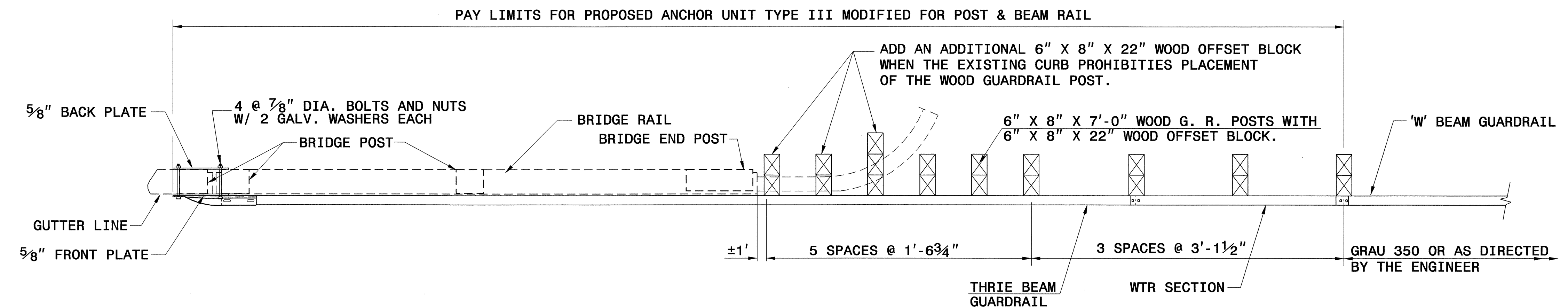
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

5/14/99

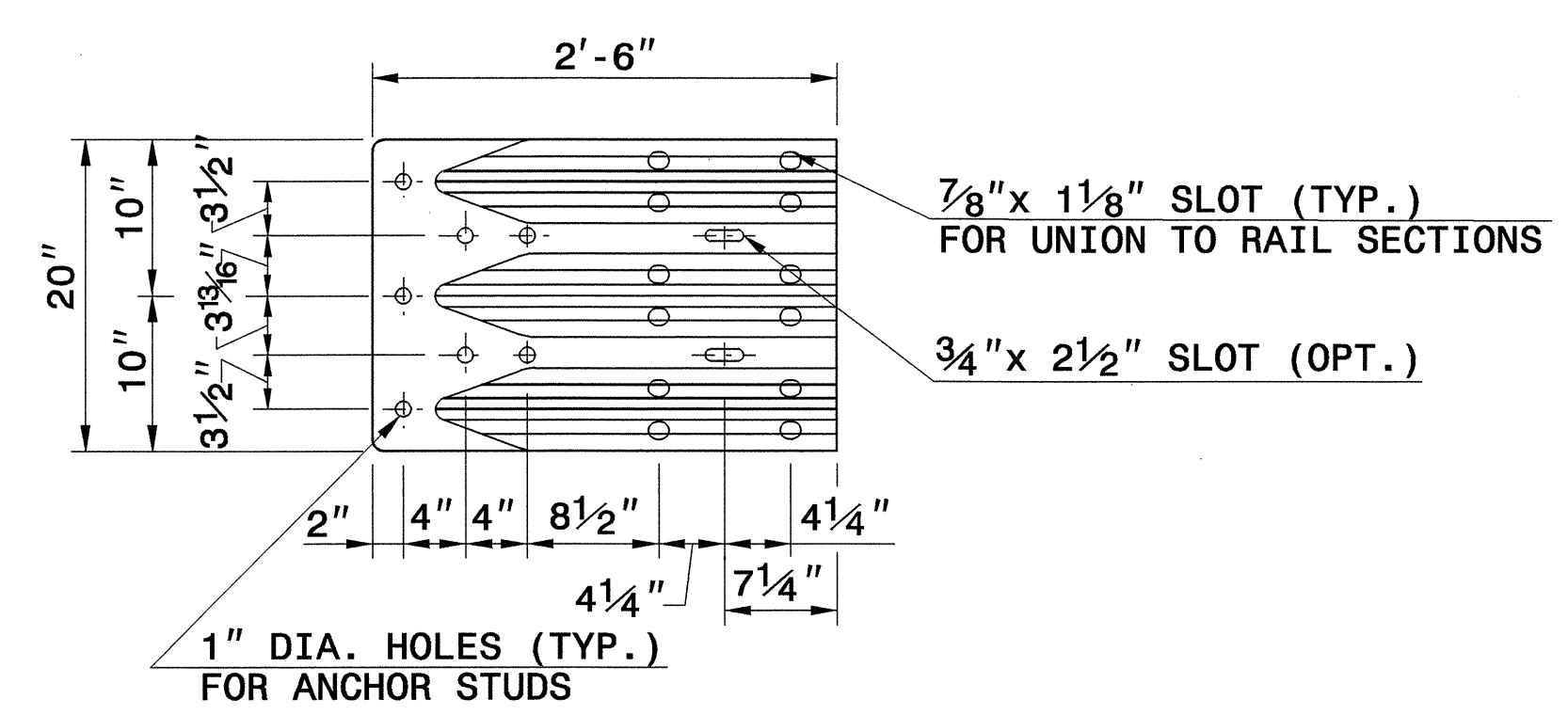
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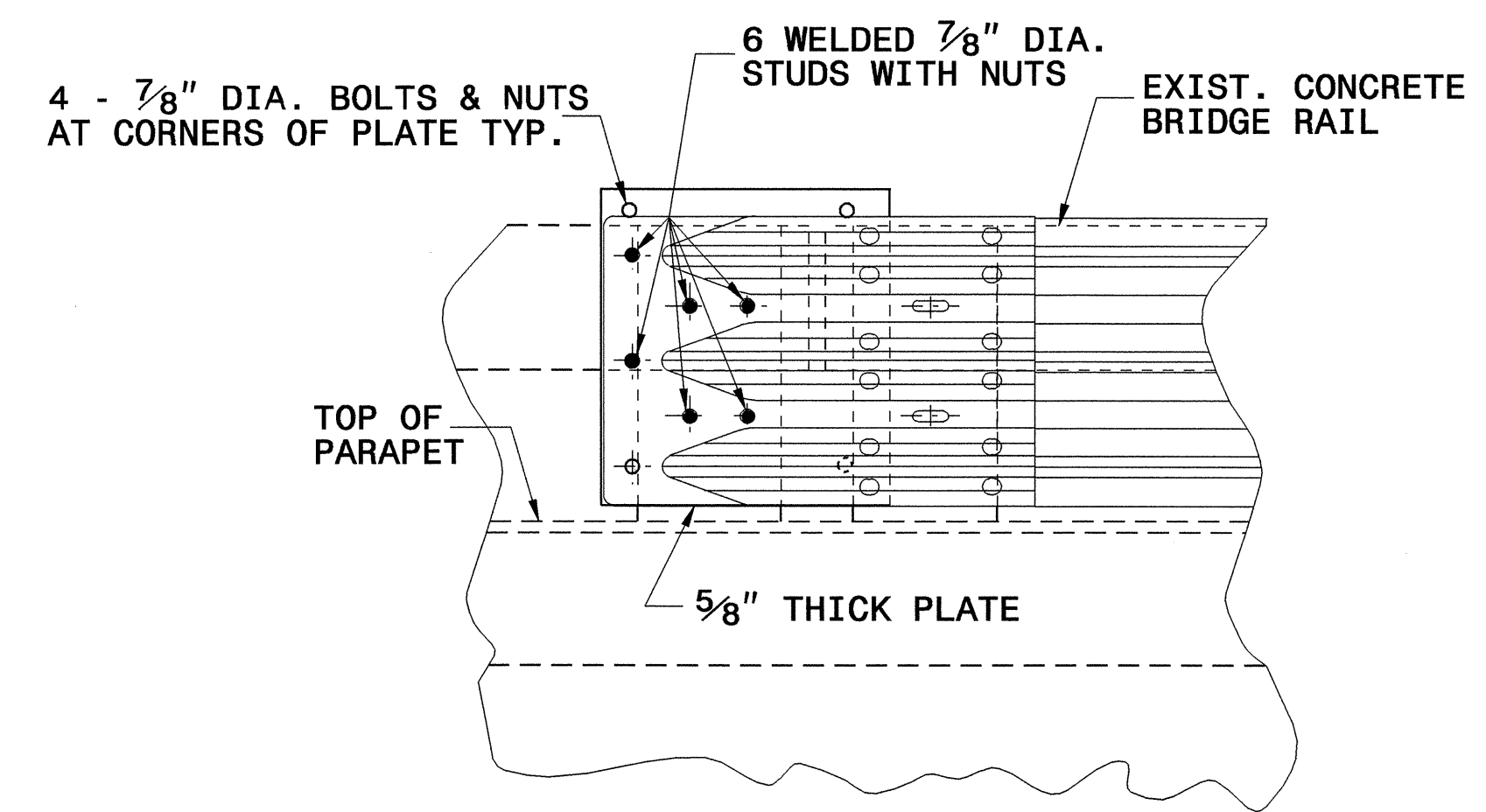
**ELEVATION VIEW**



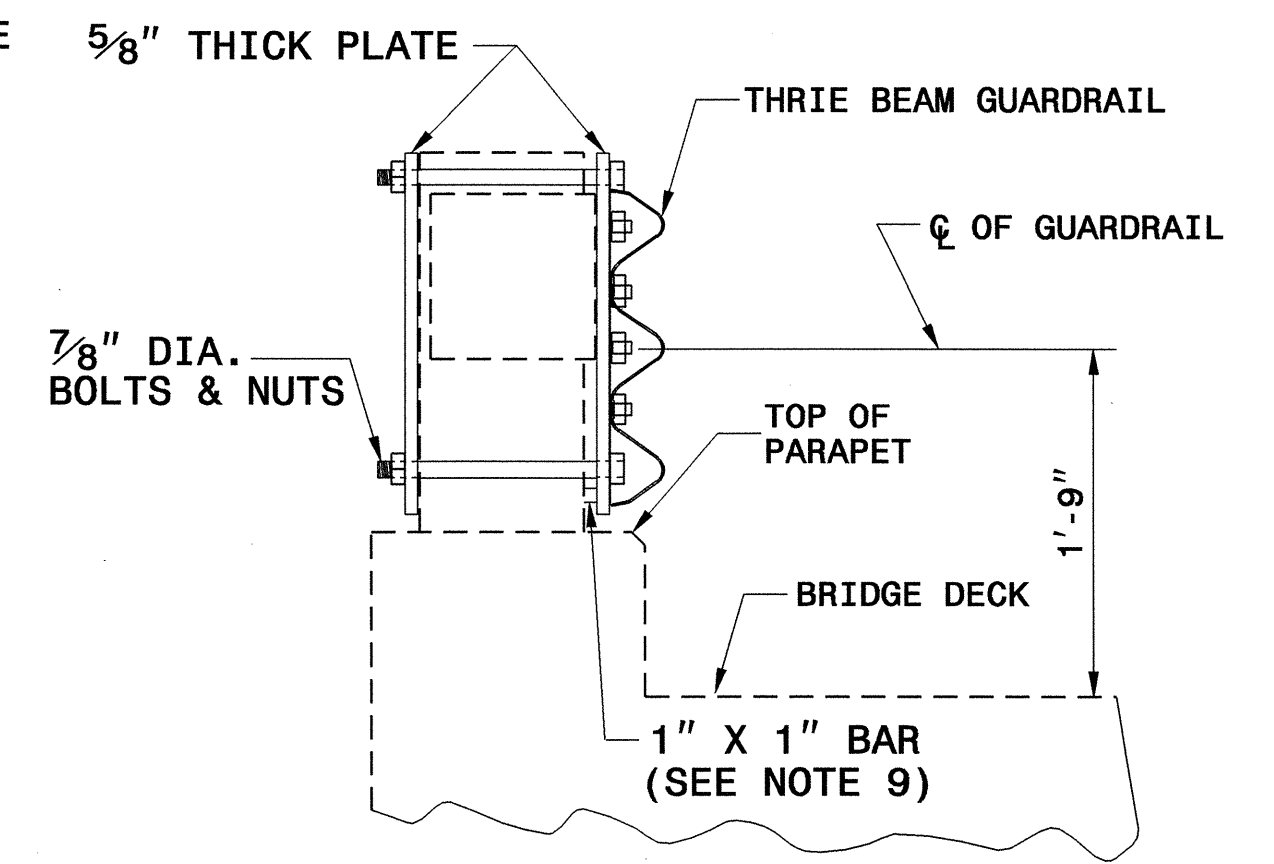
**PLAN VIEW**



**END SHOE**



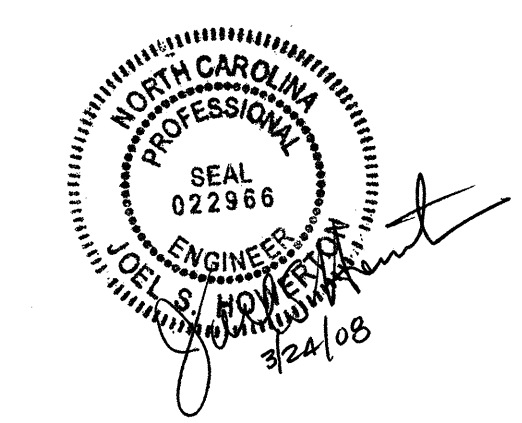
**ELEVATION VIEW**



**SECTION VIEW**

**GUARDRAIL ATTACHMENT  
TO BRIDGE POST**

- GENERAL NOTES:**
1. USE NUTS, BOLTS, AND WASHERS CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-307 AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
  2. TAP NUTS FOR THE 7/8" DIA. STUDS AND BOLTS AFTER GALVANIZING SEE A.S.T.M. A-563.
  3. USE PLATES AND TUBES CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-36 AND GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
  4. ADDITIONAL FIELD HOLES MAY BE DRILLED IN STEEL RAIL AS DIRECTED BY THE ENGINEER.
  5. INSTALL FACE OF GUARDRAIL AS NEAR AS POSSIBLE TO PLUMB WITH THE PARAPET FACE AT BRIDGE END POST SPACER TUBE LOCATION BY USING STANDARD OR ALTERED SPACER TUBES OR A COMBINATION THEREOF OR AS DIRECTED BY THE ENGINEER. FOR VERY SMALL PARAPET WIDTHS, GUARDRAIL MAY BE INSTALLED AGAINST BRIDGE RAIL WITHOUT SPACER TUBES.
  6. DO NOT DRILL BRIDGE RAIL IN ORDER TO INSTALL GUARDRAIL ANCHOR UNIT.
  7. USE THIS DETAIL ONLY FOR BRIGES WITH POST AND BEAM TYPE RAIL.
  8. ATTACH 1" X 1" BAR AND THREADED STUDS TO PLATE WITH 1/4" WELDS ALL AROUND.
  9. 1" X 1" BAR MAY NOT BE NEEDED ON BRIDGE RAILS WHERE FACE OF RAIL DOES NOT PROJECT BEYOND FACE OF POST.
  10. PROVIDE SHOP DRAWINGS OF THE PLATES TO THE ENGINEER FOR APPROVAL BEFORE FABRICATING THE PLATES.
  11. LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
  12. SEE ROADWAY STARDARD DRAWING 862.03 SHEET 4 FOR ADDITIONAL INFORMATION ON THE TYPE III ANCHOR UNIT



**PROJECT SERVICES UNIT  
STANDARDS AND SPECIAL DESIGN**  
Office 919-250-4128 FAX 919-250-4119

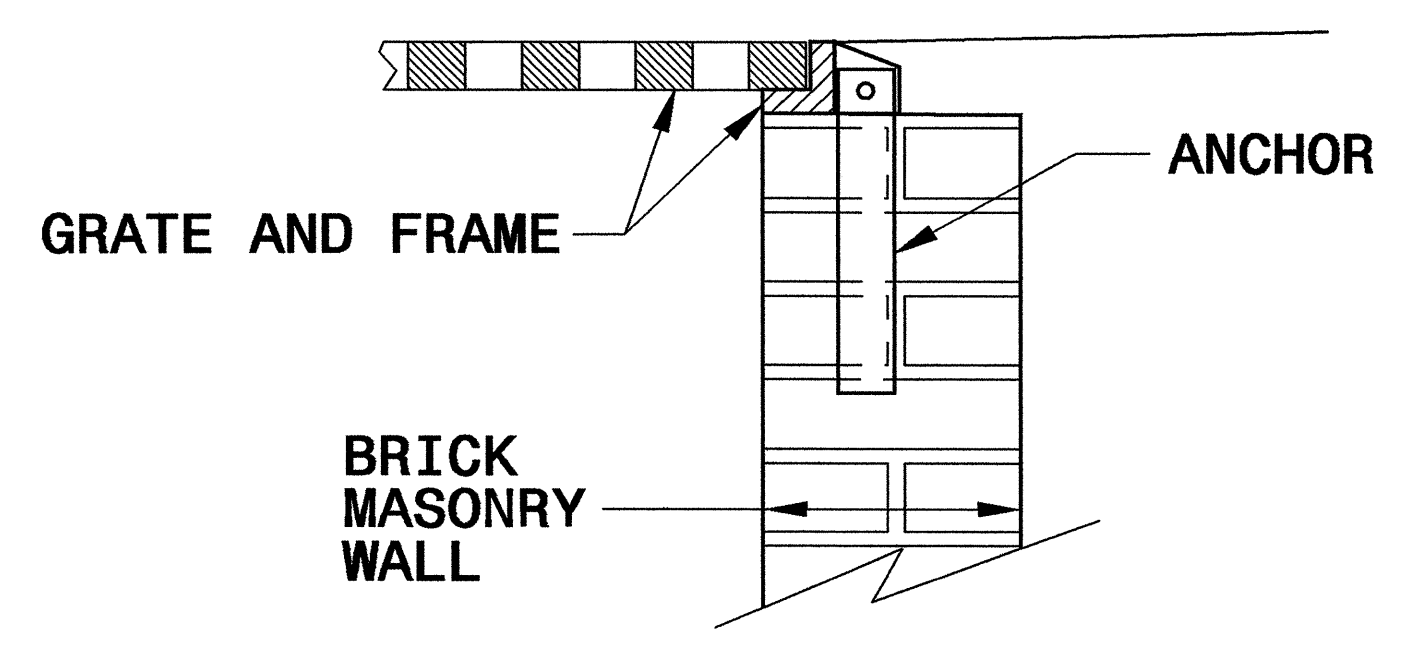
**GUARDRAIL ANCHOR UNIT  
TYPE III MODIFIED  
FOR POST & BEAM RAIL**

ORIGINAL BY: C.O. CUEVAS	DATE: 12-00
MODIFIED BY: E.E. WARD	DATE: 02-04
CHECKED BY:	DATE:
FILE SPEC.: \\usr\details\stand\bpiii.dgn	

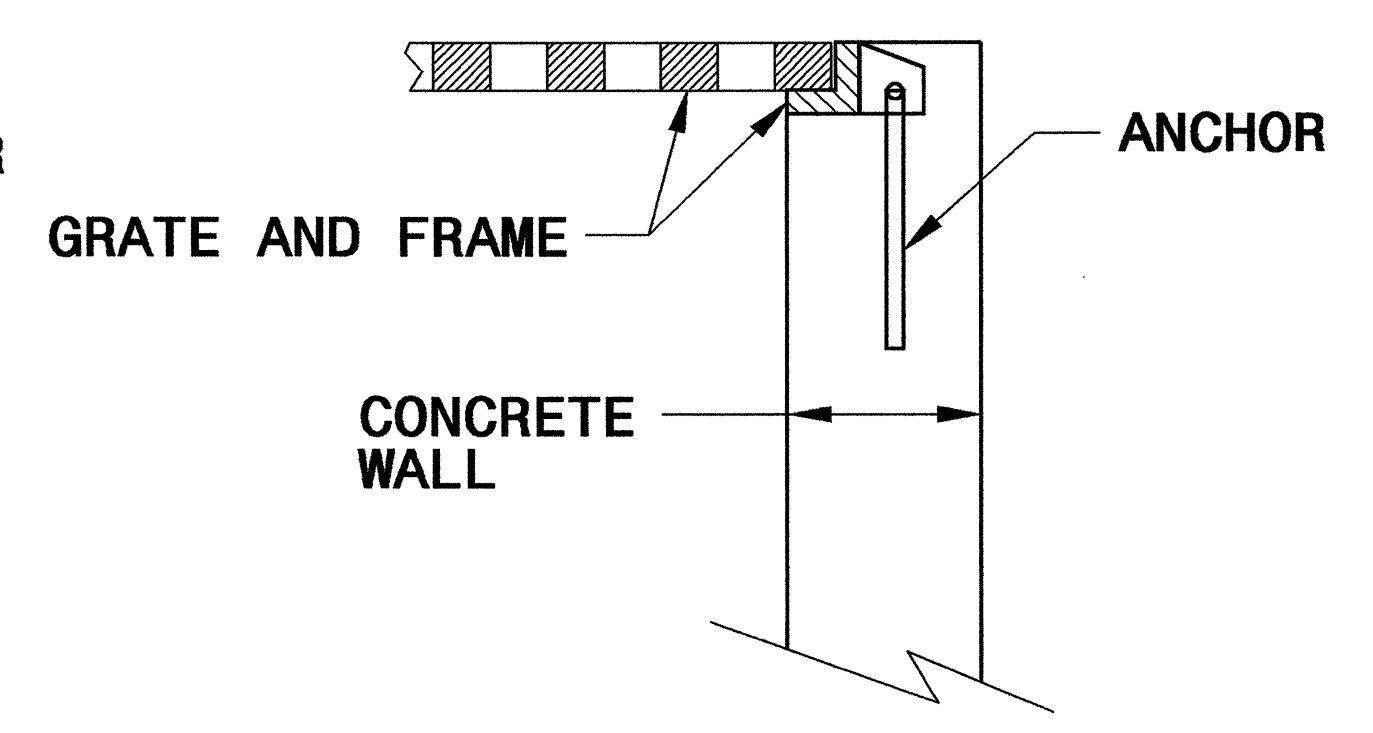
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

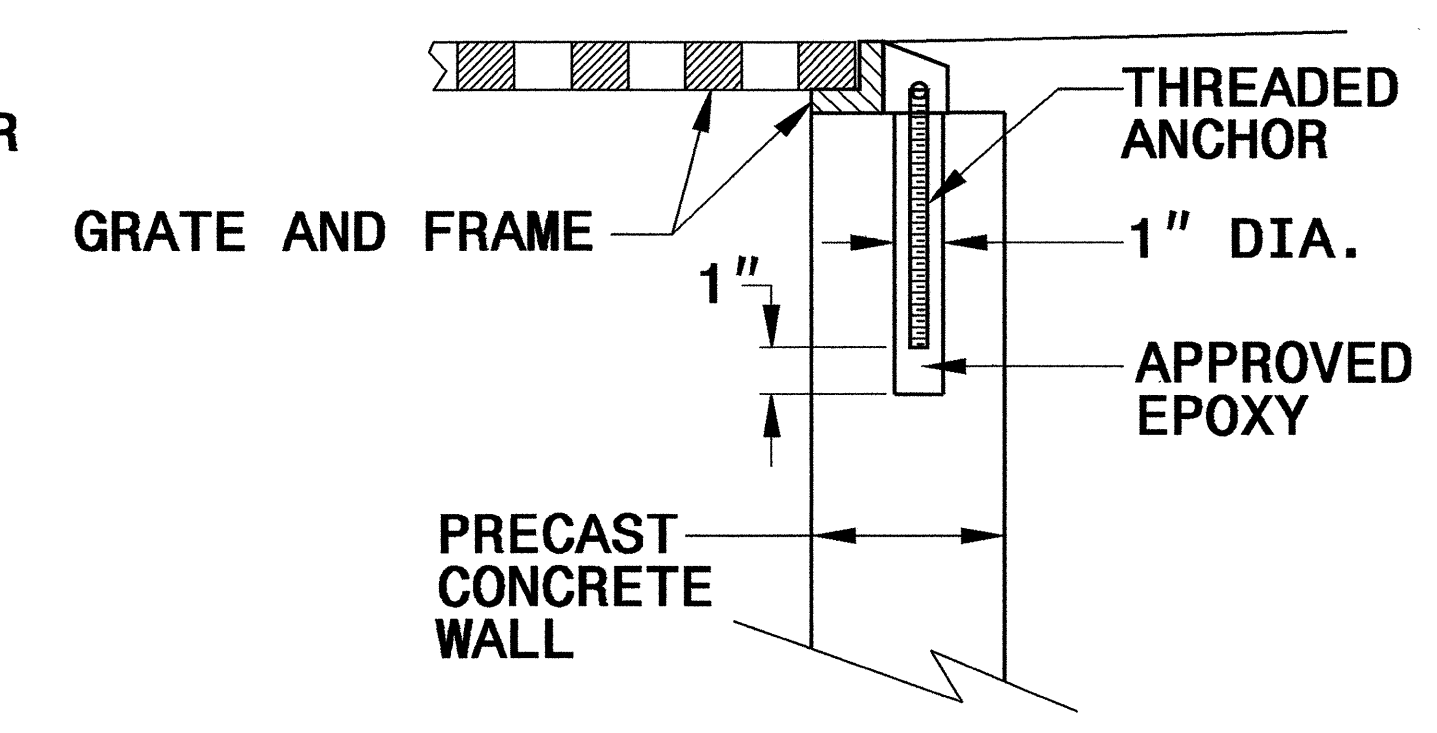
SHEET 1 OF 1  
**840D25**



**BRICK MASONRY CONSTRUCTION**



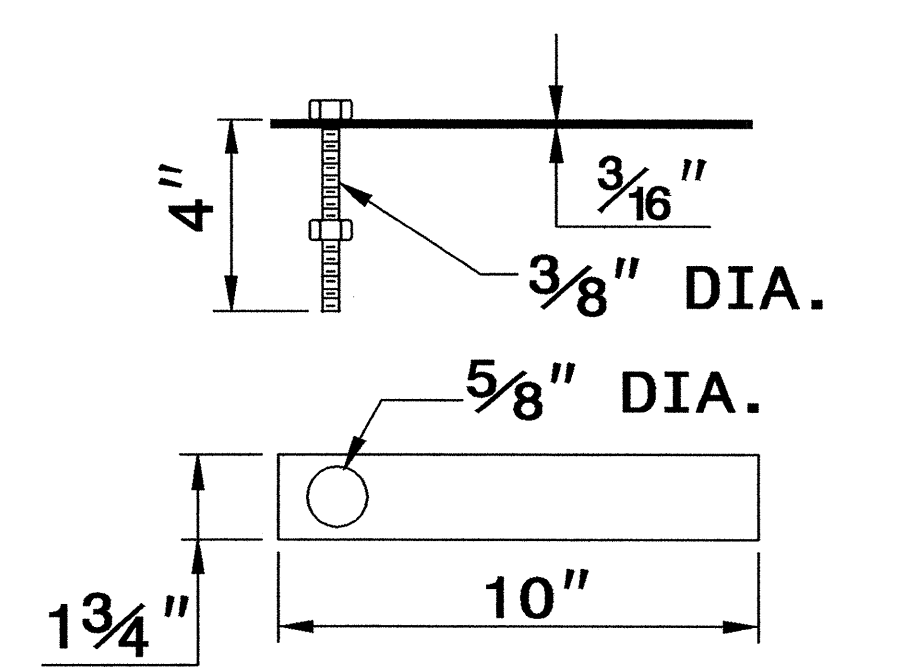
**CONCRETE CONSTRUCTION**



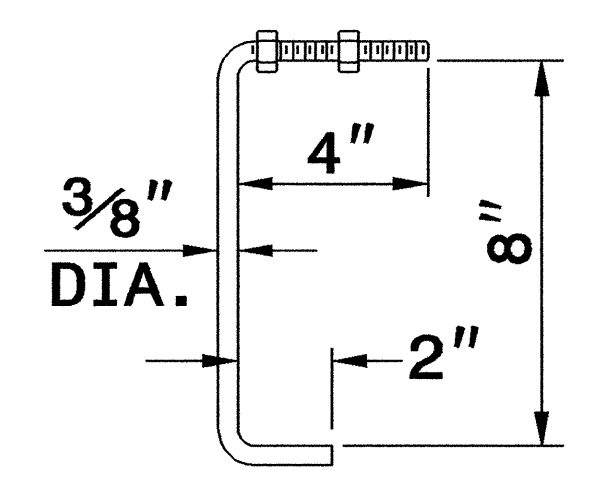
**PRECAST CONCRETE CONSTRUCTION**

**DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET**

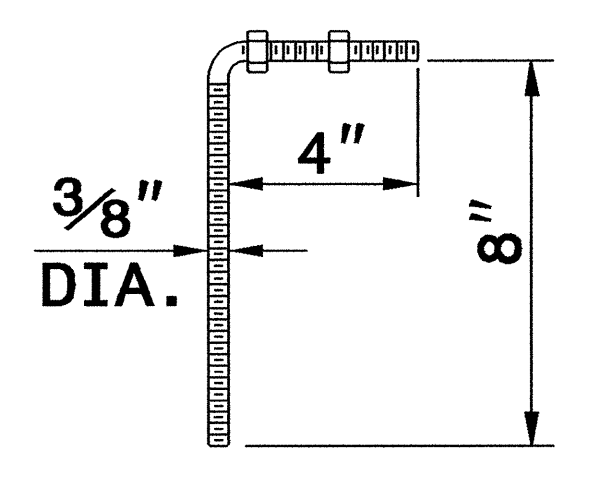
**NOTE:**  
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



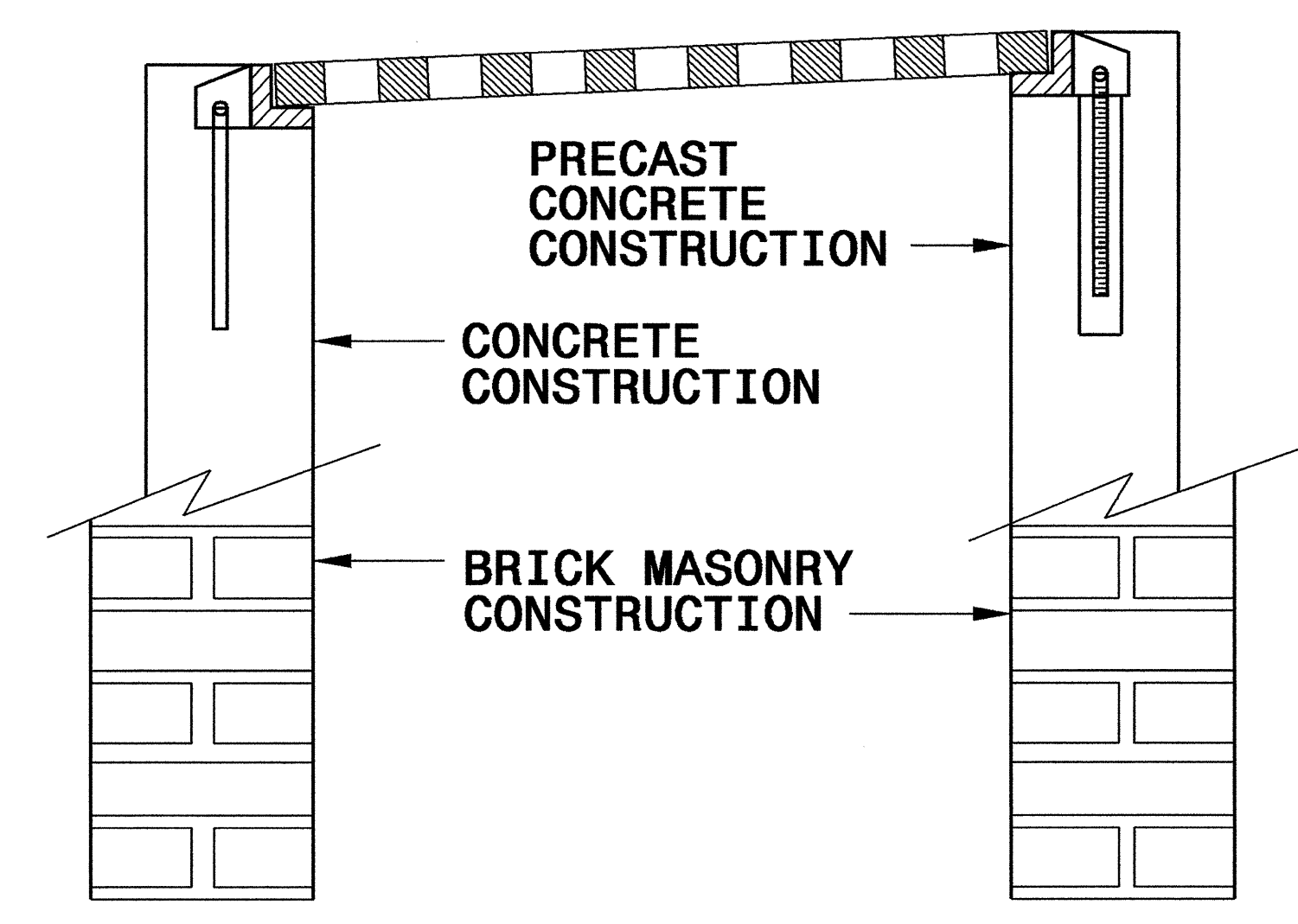
**MASONRY ANCHOR**  
3/8" DIA. BOLT WITH PLATE



**CONCRETE ANCHOR**  
3/8" DIA. BENT BAR



**PRECAST CONCRETE ANCHOR**  
3/8" DIA. BENT BAR



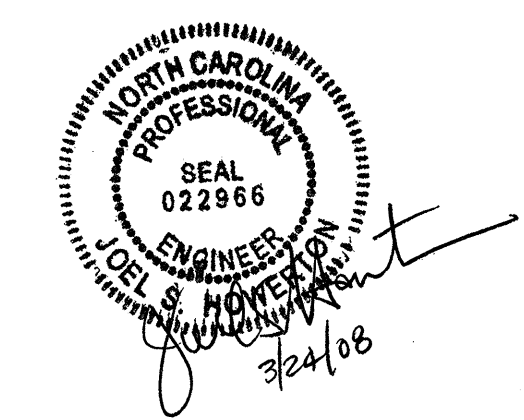
**FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS**

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

ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840D25**

27-SEP-2006 08:59  
S:\contracts\840D25\Special Details\enward\stds\06\stds to Special Details\840D25 Anchorage for Frames\0840d25.dgn  
Printed At: P0222233



**PROJECT SERVICES UNIT  
STANDARDS AND SPECIAL DESIGN**  
Office 919-250-4128 FAX 919-250-4119

**SEE PLATE FOR TITLE**

ORIGINAL BY: 2006 STD 840.25 DATE: 07/18/06  
 MODIFIED BY: E.E. WARD DATE: 9/25/06  
 CHECKED BY: DATE:  
 FILE SPEC.:



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**SUMMARY OF QUANTITIES**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202016

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	2253000000-E	840	3	CY	PIPE COLLARS	4685000000-E	1205	16,200	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING	2286000000-N	840	4	EA	MASONRY DRAINAGE STRUCTURES	4686000000-E	1205	19,101	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
0043000000-N	226	Lump Sum		GRADING	2364000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.16	4695000000-E	1205	235	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING	2374000000-N	840	1	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	4710000000-E	1205	189	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
0057000000-E	226	100	CY	UNDERCUT EXCAVATION	2556000000-E	846	640	LF	SHOULDER BERM GUTTER	4725000000-E	1205	31	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
0134000000-E	240	700	CY	DRAINAGE DITCH EXCAVATION	2612000000-E	848	115	SY	6" CONCRETE DRIVEWAY	4810000000-E	1205	21,480	LF	PAINT PAVEMENT MARKING LINES (4")
0141000000-E	240	600	LF	BERM DITCH CONSTRUCTION	3030000000-E	862	600	LF	STEEL BM GUARDRAIL	4905000000-N	1253	322	EA	SNOWPLOWABLE PAVEMENT MARKERS
0318000000-E	300	80	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	6000000000-E	1605	4,440	LF	TEMPORARY SILT FENCE
0343000000-E	310	284	LF	15" SIDE DRAIN PIPE	3180000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (BP-III)	6006000000-E	1610	385	TON	STONE FOR EROSION CONTROL, CLASS A
0344000000-E	310	212	LF	18" SIDE DRAIN PIPE	3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	6009000000-E	1610	1,250	TON	STONE FOR EROSION CONTROL, CLASS B
0366000000-E	310	76	LF	15" RC PIPE CULVERTS, CLASS III	3503000000-E	866	2,000	LF	WOVEN WIRE FENCE, 47" FABRIC	6012000000-E	1610	430	TON	SEDIMENT CONTROL STONE
0372000000-E	310	176	LF	18" RC PIPE CULVERTS, CLASS III	3509000000-E	866	100	EA	4" TIMBER FENCE POSTS, 7'-6" LONG	6015000000-E	1615	9.5	ACR	TEMPORARY MULCHING
0995000000-E	340	20	LF	PIPE REMOVAL	3515000000-E	866	90	EA	5" TIMBER FENCE POSTS, 8'-0" LONG	6018000000-E	1620	350	LB	SEED FOR TEMPORARY SEEDING
1220000000-E	545	300	TON	INCIDENTAL STONE BASE	3557000000-E	866	2,100	LF	ADDITIONAL BARBED WIRE	6021000000-E	1620	2.5	TON	FERTILIZER FOR TEMPORARY SEEDING
1330000000-E	607	100	SY	INCIDENTAL MILLING	3563000000-E	SP	2,100	LF	TEMP *** WOVEN WIRE FENCE, COMPLETE W/POSTS (47")	6024000000-E	1622	260	LF	TEMPORARY SLOPE DRAINS
1491000000-E	610	5,830	TON	ASPHALT CONC BASE COURSE, TYPE B25.0C	3649000000-E	876	1,530	TON	RIP RAP, CLASS B	6027000000-N	1622	4	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
1503000000-E	610	4,810	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I119.0C	3656000000-E	876	2,405	SY	FILTER FABRIC FOR DRAINAGE	6029000000-E	SP	340	LF	SAFETY FENCE
1523000000-E	610	2,690	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	4400000000-E	1110	675	SF	WORK ZONE SIGNS (STATIONARY)	6030000000-E	1630	3,200	CY	SILT EXCAVATION
1560000000-E	620	480	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	4405000000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)	6036000000-E	1631	10,790	SY	MATting FOR EROSION CONTROL
1565000000-E	620	165	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 70-22	4410000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	6037000000-E	SP	25	SY	COIR FIBER MAT
1693000000-E	654	20	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR	4430000000-N	1130	150	EA	DRUMS	6042000000-E	1632	100	LF	1/4" HARDWARE CLOTH
1704000000-E	SP	100	TON	PATCHING EXISTING PAVEMENT	4445000000-E	1145	48	LF	BARRICADES (TYPE III)	6071030000-E	SP	470	LF	COIR FIBER BAFFLES
2154000000-N	820	4	EA	METAL FUNNELS	4455000000-N	1150	30	MD	FLAGGER	6071050000-E	SP	2	EA	*** SKIMMER (1-1/2")
2165000000-E	820	200	LF	12" FUNNEL DRAIN PIPE	4650000000-N	1251	30	EA	TEMPORARY RAISED PAVEMENT MARKERS	6071050000-E	SP	2	EA	*** SKIMMER (2")
2176000000-E	820	4	EA	12" FUNNEL DRAIN PIPE ELBOWS						6084000000-E	1660	10	ACR	SEEDING & MULCHING
										6087000000-E	1660	6	ACR	MOWING
										6090000000-E	1661	100	LB	SEED FOR REPAIR SEEDING
										6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
										6096000000-E	1662	250	LB	SEED FOR SUPPLEMENTAL SEEDING
										6108000000-E	1665	7	TON	FERTILIZER TOPDRESSING
										6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
										6117000000-N	SP	27	EA	RESPONSE FOR EROSION CONTROL

5/28/09

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12/06/07  
 COMPUTED BY: BKS DATE: 01/22  
 CHECKED BY: REH DATE: 01/22

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. R-4911 SHEET NO. 3B

**SUMMARY OF EARTHWORK**

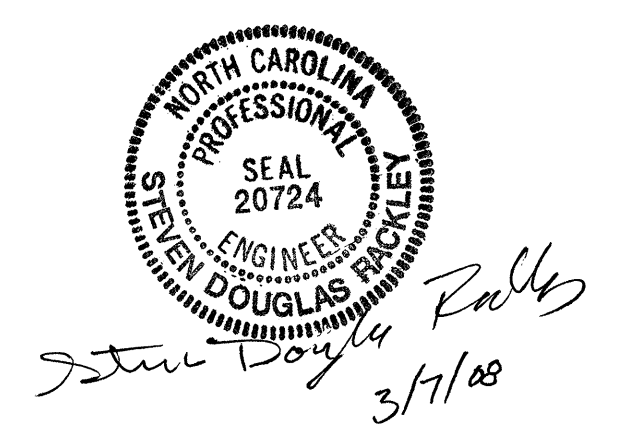
STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 20+00	66+00	14318	4321		9175
	BEGIN BRIDGE				
-L- 69+50	97+00	2898	3820	922	
	END BRIDGE				
-RAMP- 10+00	14+00	83	209	126	
SUBTOTALS:		17299	8350	1048	10097
PROJECT TOTALS:		17299	8350	1048	10097
LOSS DUE TO CLEARING & GRUBBING		- 865			- 865
WASTE IN LIEU OF BARROW				-1048	-1048
GRAND TOTALS:		16434	8350		8184
SAY:		16600			

Shoulder Borrow - 840 cu

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, 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."

**PAVEMENT REMOVAL SUMMARY**

SURVEY LINE	STATION	STATION	LOCATION LTRV/CL	YD <sup>2</sup>
-L-	24+44	48+18	LT	2,600
-L-	64+50	66+25	CL	415
-L-	69+05	70+50	CL	778
TOTAL:				3,793
SAY:				3,795



**SHOULDER BERM GUTTER SUMMARY**

SURVEY LINE	STATION	STATION	LENGTH
-L- LT	64+50	66+25	175 LF
-L- RT	64+50	66+25	175 LF
-L- LT	69+05	70+50	145 LF
-L- RT	69+05	70+50	145 LF
TOTAL:			640 LF
SAY:			640 LF

**GUARDRAIL SUMMARY**

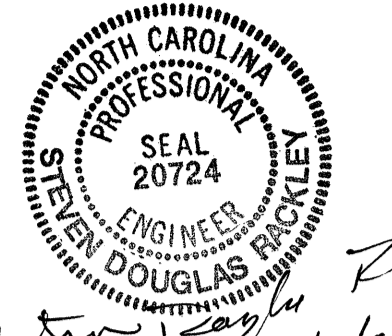
"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.  
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.  
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.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

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	BP-III	XI	GRAU 350	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG										
-L-	64+25	66+25	RT	200			66+25		6	9	50		6		1		1																			SEE SHEETS 2B FOR BP-III ANCHOR DETAILS
-L-	63+50	66+25	LT	275				66+25	6	9		50	6	1		1																		SEE SHEETS 2B FOR BP-III ANCHOR DETAILS		
-L-	69+05	71+00	RT	200				69+05	6	9		50	6	1		1																		SEE SHEETS 2B FOR BP-III ANCHOR DETAILS		
-L-	69+05	71+00	LT	200				69+05	6	9		50	6	1		1																		SEE SHEETS 2B FOR BP-III ANCHOR DETAILS		
TOTAL				875					6	9					4		4																			
PROJECT TOTAL =				875.0'	-	275.0'	=	600.0'																												

LESS ANCHOR DEDUCTIONS  
 GRAU-350 4 @ 50.0' = 200.0'  
 BP-III 4 @ 18.75' = 75.0'  
 ADDITIONAL POSTS = 5

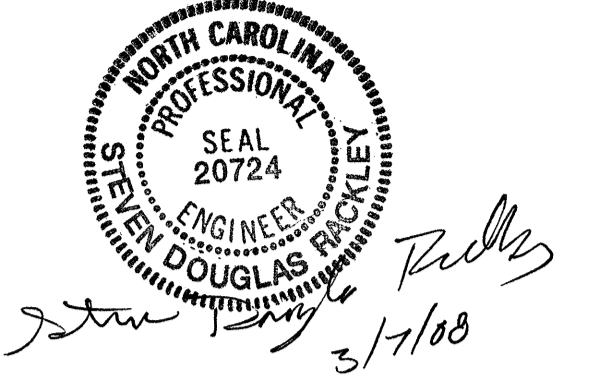
## RIGHT OF WAY AREA DATA SHEET

PARCEL NO.	PROPERTY OWNERS NAME	* TOTAL ACREAGE	NEW R / W	AREA REMAINING RIGHT	AREA REMAINING LEFT	PDE	TCE
1	REBECCA HELTON & SCOTT NEWTON	0.90			0.90		
2	TIMOTHY & ROBIN WHITENER	0.90			0.90		2,097 SF
3	DALE & ROBIN BUCHNAN	2.79			2.79		3,563 SF
4	VICKY LEE JONES	0.46			0.46		
5	DAWN SECRIST	0.46			0.46		
6	JAMES ROSS JR.	0.46			0.46		
7	J.P. MORGAN CHASE BANK TRUSTEE	0.46			0.46		
8	GREGORY SHOOK	0.46			0.46		
9	BILLY WEAVER	2.93			2.93		
10	VONG YANG & XE VANG	4.76			4.76		
11	MARTIN SILVA	0.94			0.94		
12	MARTIN SILVA	3.49			3.49		
13	DENNIS & KAREN MORGAN	4.23			4.23		
14	ROBERT & CAROLYN CANIPE	4.29			4.29		
15	CITY OF NEWTON	96.22			96.22	1,582 SF	11,866 SF
16	JOHNNY & EUNICE PUNCH	22.60	0.57		22.03	3,277 SF	26,413 SF
17	DOROTHY OSWALT	24.98	0.66	0.13	24.19		10,673 SF
18	SOUTHFORK PROPERTIES LLC	18.07	0.23		17.90		10,764 SF
19	RALPH & KATHERINE MITCHEM	3.82		3.82			3,921 SF
20	JOHNNY & EUNICE PUNCH	63.77	0.91	62.86		2,667 SF	27,704 SF
21	OAKWOOD FARM LLC	108.96	0.49	108.47			13,908 SF
22	ROBERT SHUFORD III	47.61	0.12	47.49			37,193 SF
23	CATAWBA LAND CONSERVANCY	66.22	0.26	65.96			
24	CITY OF NEWTON	0.16		0.16		1,256 SF	
25	EARL & ELAINE HARRIS	6.94		6.94			9,536 SF
26	JAMES & DEBORAH SMITH	1.12		1.12			2,138 SF
27	DOUGLAS & SUSAN PUNCH	3.60		3.60			3,466 SF
28	DOROTHY OSWALT	0.82		0.82			
29	LOUISE EVANS	0.74		0.74			
30	NCDOT	0.31		0.31			

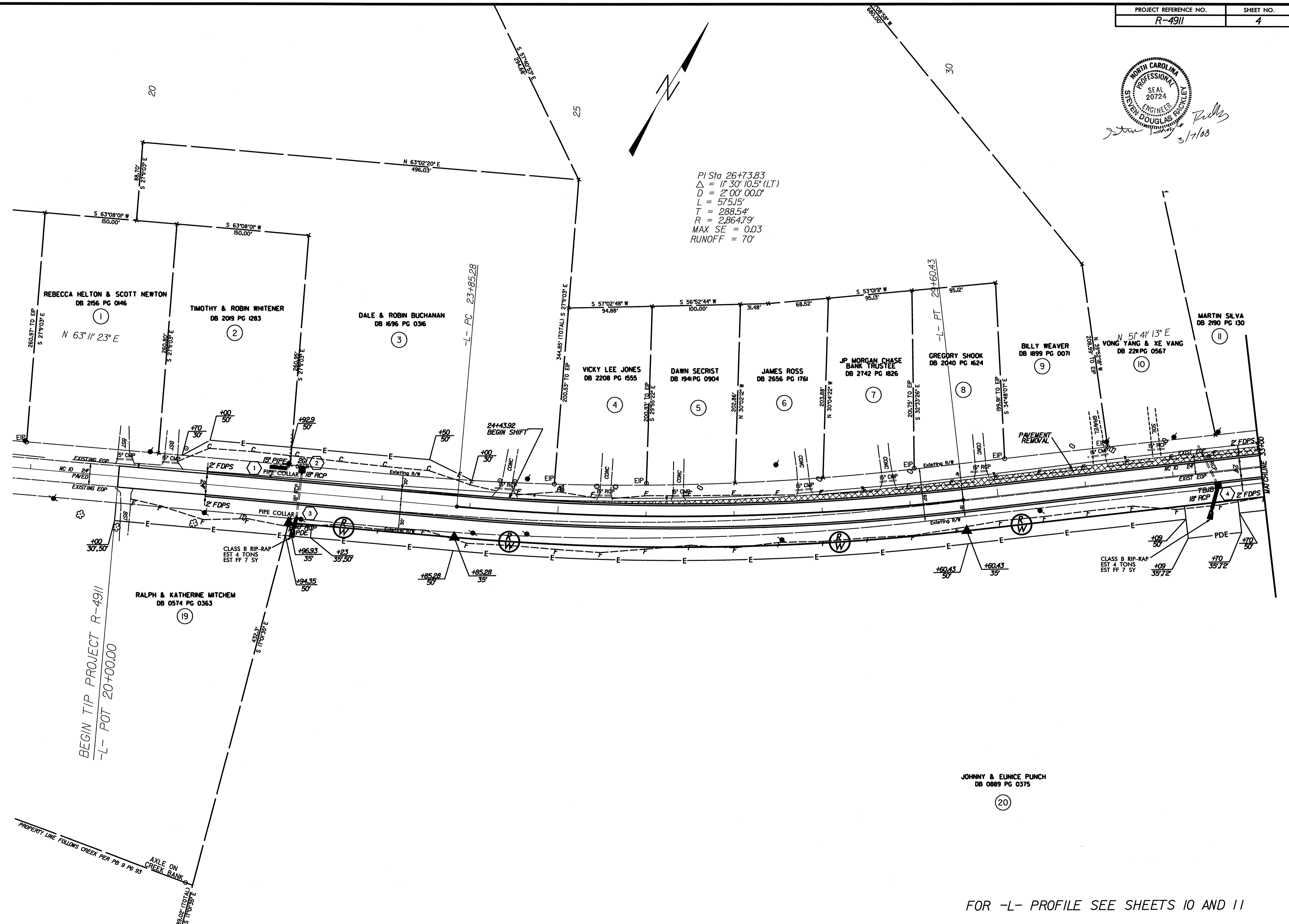
  
*Douglas Ruckley*  
 2/11/08

\* NOTE: TOTAL ACREAGE TAKEN FROM CATAWBA COUNTY TAX RECORDS

5/14/08  
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PI Sta 26+73.83  
 $\Delta = 17^{\circ}30'10.5''$  (LT)  
 $D = 2^{\circ}00'00.0''$   
 $L = 575.15'$   
 $T = 288.54'$   
 $R = 2,864.79'$   
 $MAX SE = 0.03$   
 $RUNOFF = 70'$



BEGIN TIP PROJECT R-4911  
 -L- POT 20+00.00

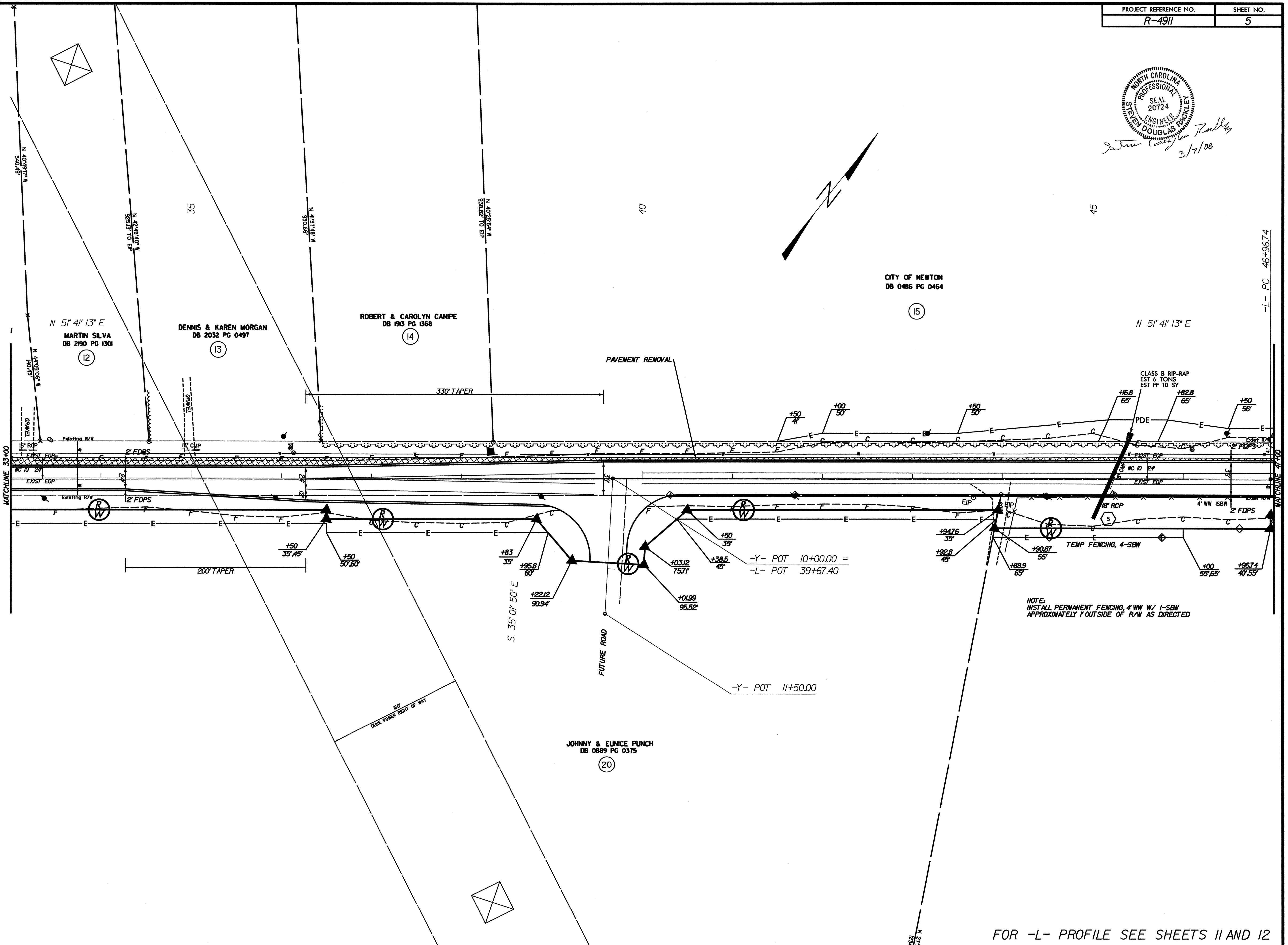
JOHNNY & EUNICE PUNCH  
 DB 0889 PG 0375


FOR -L- PROFILE SEE SHEETS 10 AND 11

8/17/99  
 \*\*\*\*\*  
 CONDITIONS  
 \*\*\*\*\*



*Steven Douglas Barkley*  
3/7/08




  
 Steven Douglas Pickett
   
 4/2/02

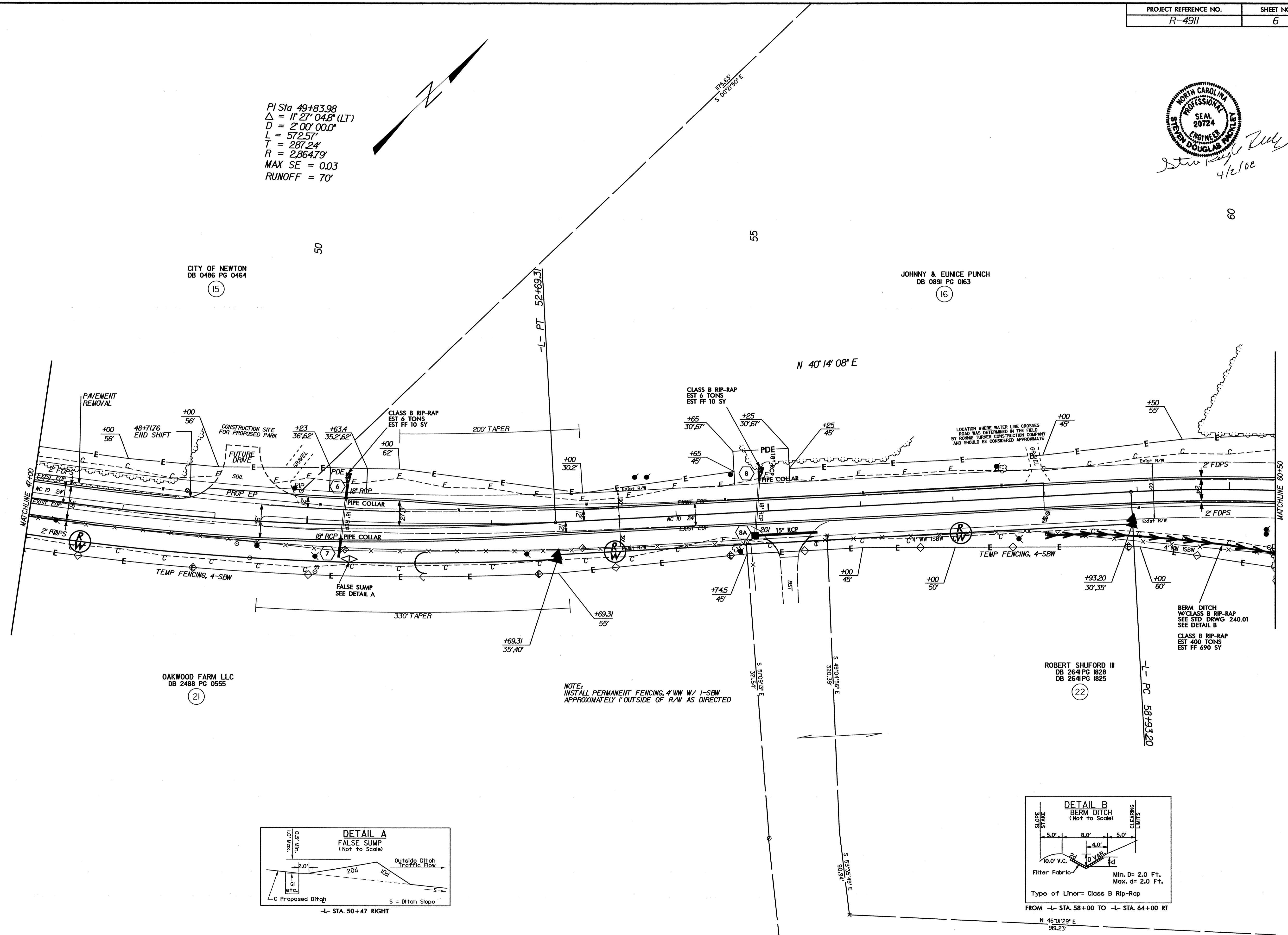
PI Sta 49+83.98  
 $\Delta = 1' 27'' 04.8''$  (LT)  
 $D = 2' 00'' 00.0''$   
 $L = 572.57'$   
 $T = 287.24'$   
 $R = 2,864.79'$   
 $MAX SE = 0.03$   
 $RUNOFF = 70'$

CITY OF NEWTON  
DB 0486 PG 0464

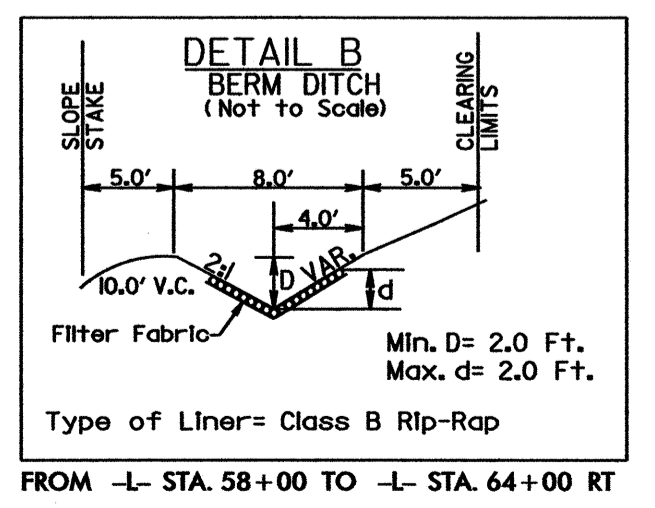
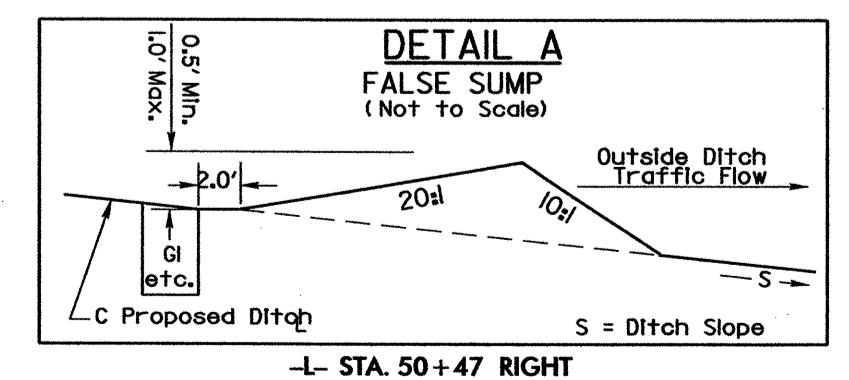
JOHNNY & EUNICE PUNCH  
DB 0891 PG 0163

OAKWOOD FARM LLC  
DB 2488 PG 0555

ROBERT SHUFORD III  
DB 2641 PG 1828  
DB 2641 PG 1825



NOTE:  
INSTALL PERMANENT FENCING, 4" WW W/ 1-SBW  
APPROXIMATELY 1' OUTSIDE OF R/W AS DIRECTED



FOR -L- PROFILE SEE SHEETS 12 AND 13

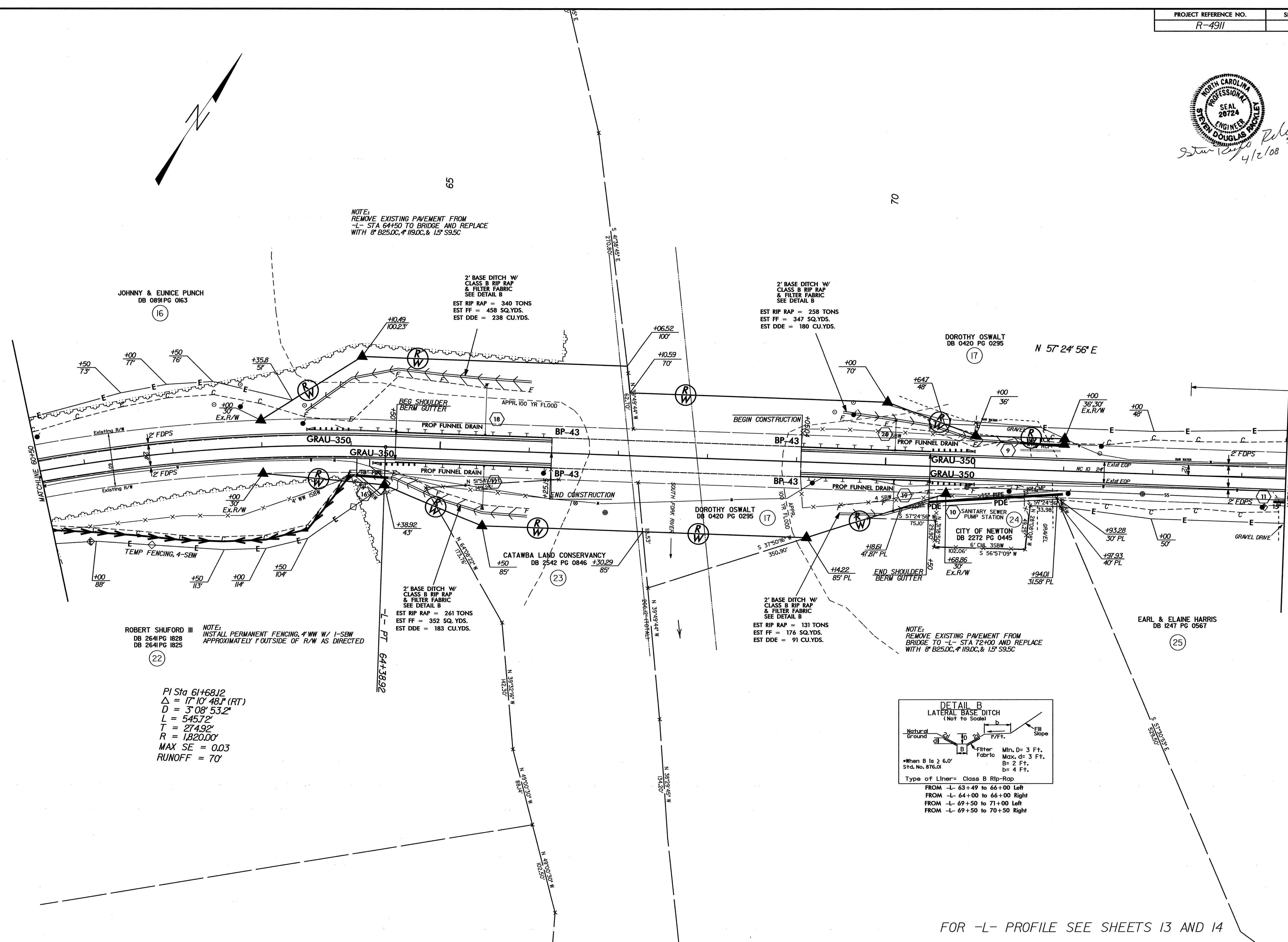
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 psowell



Steven Douglas Ryley  
4/2/08

NOTE:  
REMOVE EXISTING PAVEMENT FROM  
-L- STA 64+50 TO BRIDGE AND REPLACE  
WITH 8" B25.0C, 4" I19.0C, & 15" S9.5C



JOHNNY & EUNICE PUNCH  
DB 0891 PG 0163 (16)

65

70

2' BASE DITCH W/  
CLASS B RIP RAP  
& FILTER FABRIC  
SEE DETAIL B  
EST RIP RAP = 340 TONS  
EST FF = 458 SQ.YDS.  
EST DDE = 238 CU.YDS.

2' BASE DITCH W/  
CLASS B RIP RAP  
& FILTER FABRIC  
SEE DETAIL B  
EST RIP RAP = 258 TONS  
EST FF = 347 SQ.YDS.  
EST DDE = 180 CU.YDS.

DOROTHY OSWALT  
DB 0420 PG 0295 (17)

N 57° 24' 56" E

ROBERT SHUFORD III  
DB 2641 PG 1828  
DB 2641 PG 1825 (22)

NOTE:  
INSTALL PERMANENT FENCING, 4" WW W/ 1-SBW  
APPROXIMATELY 1' OUTSIDE OF R/W AS DIRECTED

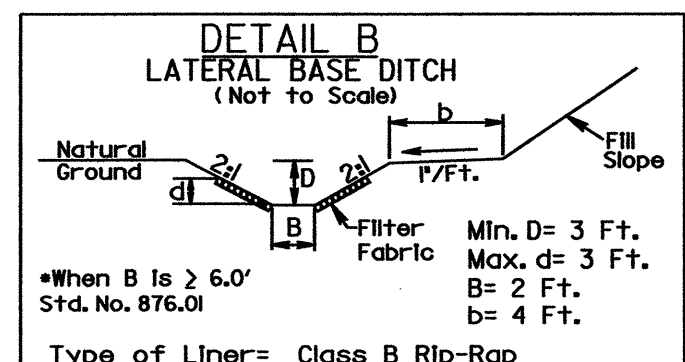
2' BASE DITCH W/  
CLASS B RIP RAP  
& FILTER FABRIC  
SEE DETAIL B  
EST RIP RAP = 261 TONS  
EST FF = 352 SQ.YDS.  
EST DDE = 183 CU.YDS.

2' BASE DITCH W/  
CLASS B RIP RAP  
& FILTER FABRIC  
SEE DETAIL B  
EST RIP RAP = 131 TONS  
EST FF = 176 SQ.YDS.  
EST DDE = 91 CU.YDS.

NOTE:  
REMOVE EXISTING PAVEMENT FROM  
BRIDGE TO -L- STA 72+00 AND REPLACE  
WITH 8" B25.0C, 4" I19.0C, & 15" S9.5C

EARL & ELAINE HARRIS  
DB 1247 PG 0567 (25)

PI Sta 61+68.12  
Δ = 17' 10" 48.1 (RT)  
D = 3' 08" 53.2"  
L = 545.72'  
T = 274.92'  
R = 1,820.00'  
MAX SE = 0.03  
RUNOFF = 70'



Type of Liner = Class B Rip-Rap  
FROM -L- 63+49 to 66+00 Left  
FROM -L- 64+00 to 66+00 Right  
FROM -L- 69+50 to 71+00 Left  
FROM -L- 69+50 to 70+50 Right

FOR -L- PROFILE SEE SHEETS 13 AND 14

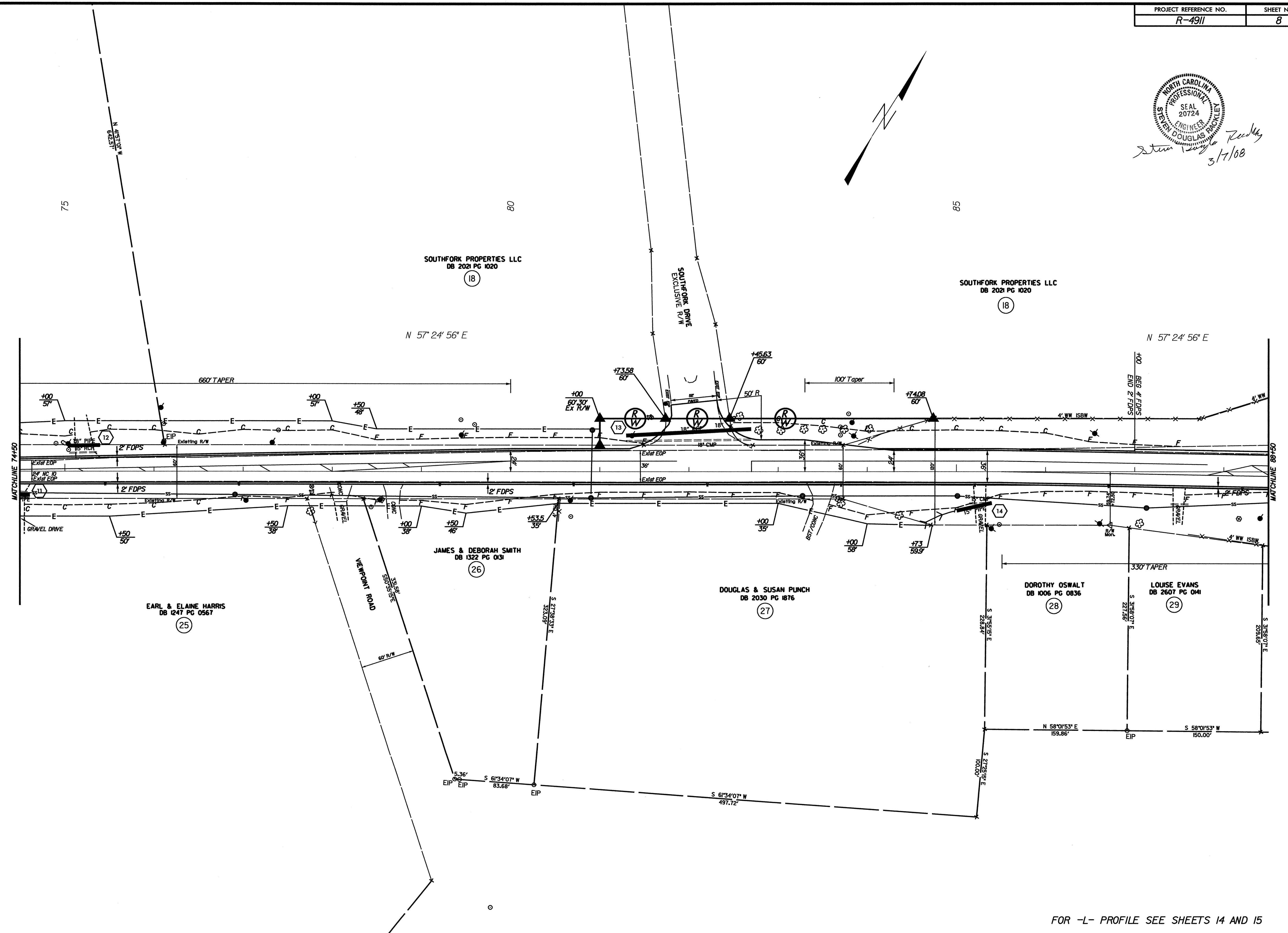
8/17/99

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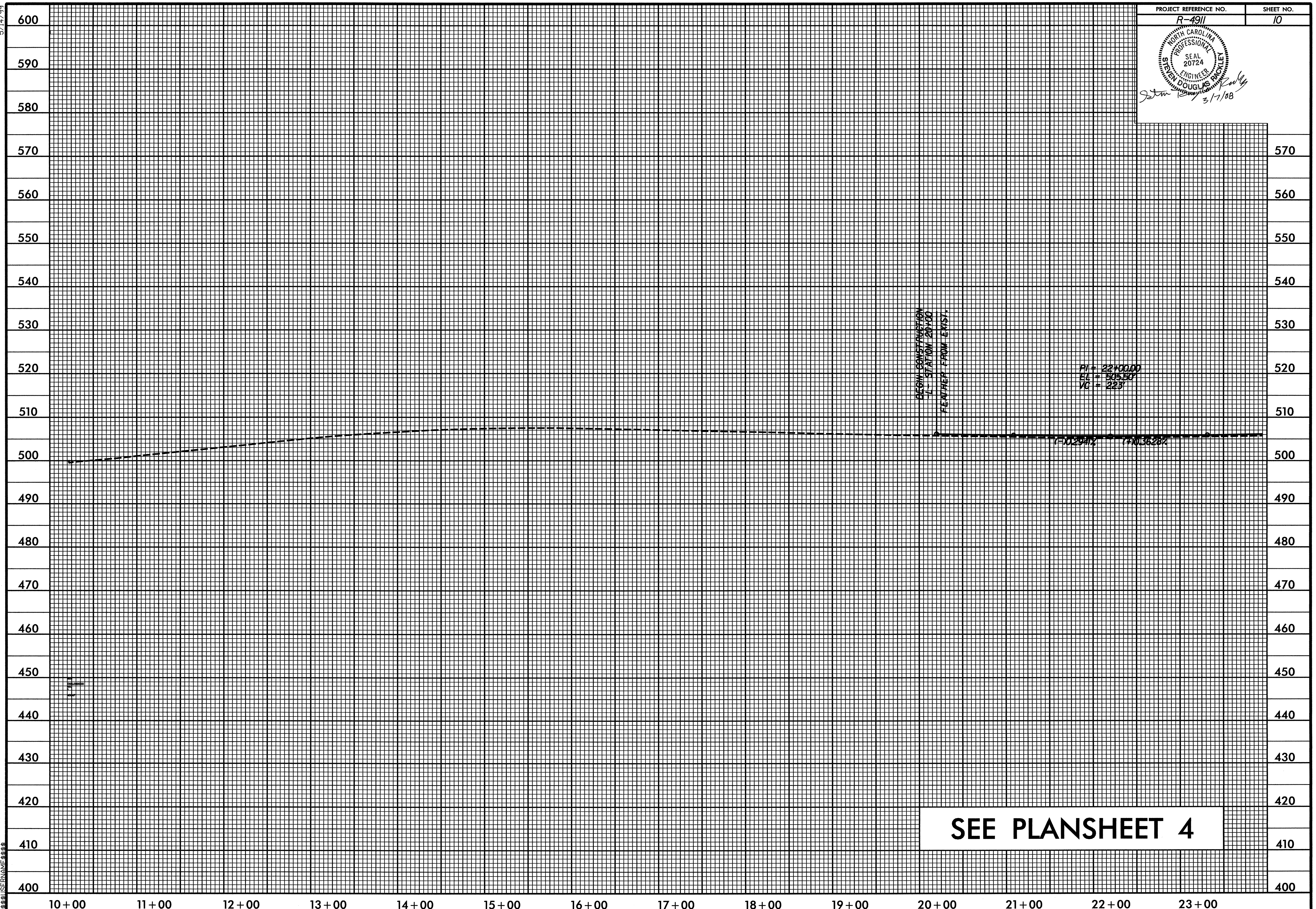
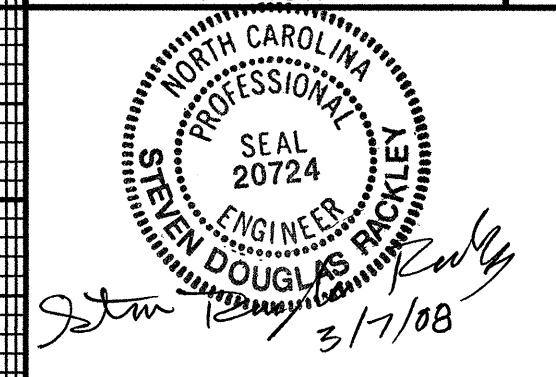
Steven Douglas Reedy  
3/7/08

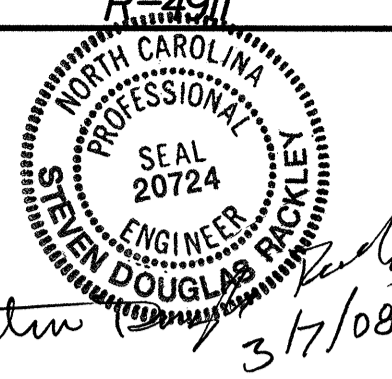


FOR -L- PROFILE SEE SHEETS 14 AND 15



5/14/99





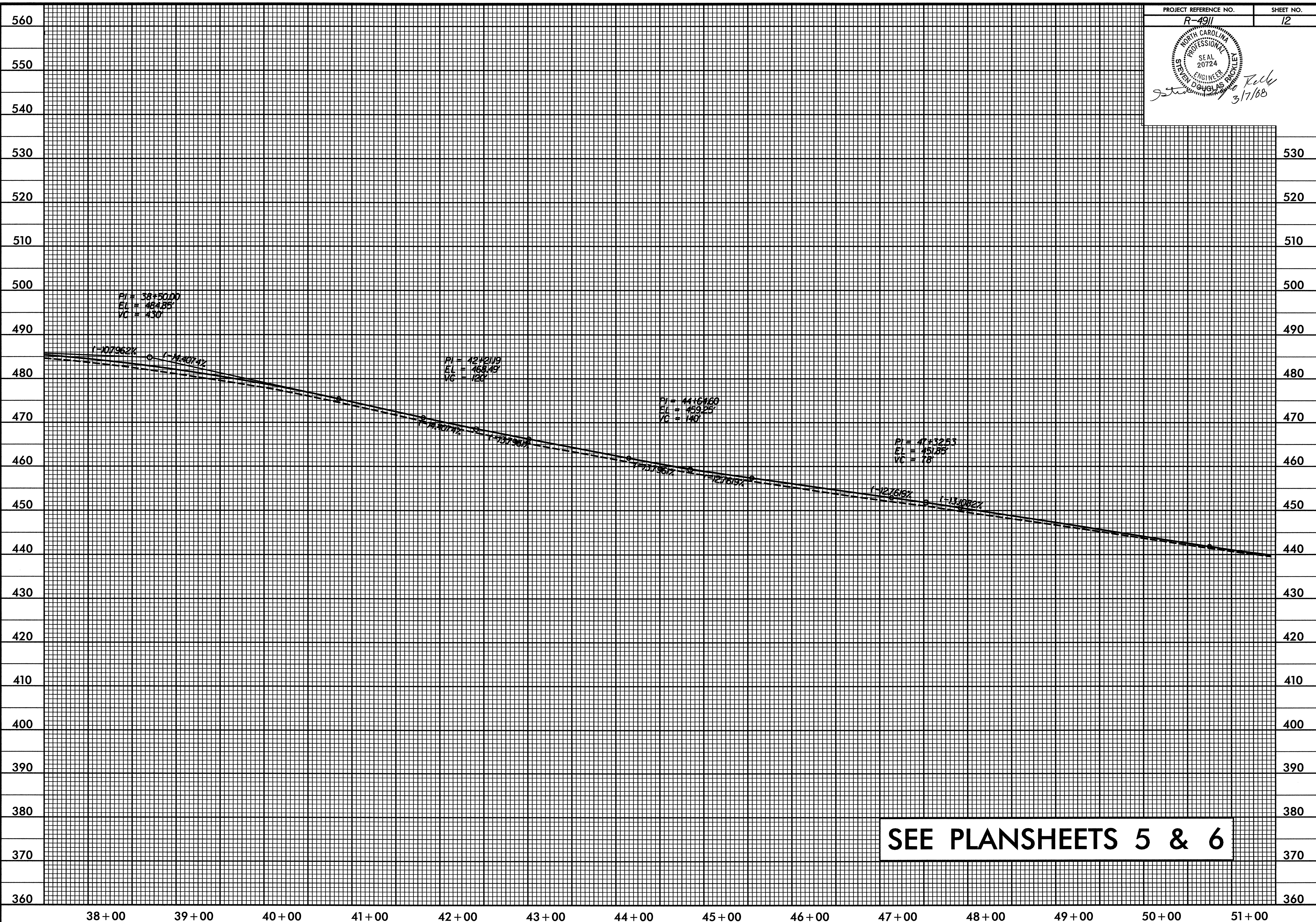
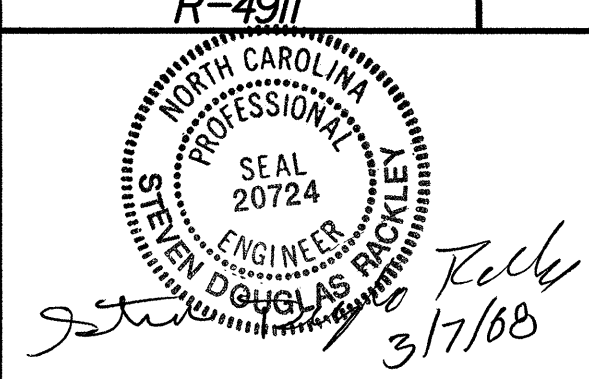
5/14/09



SEE PLANSHEETS 4 & 5

5/14/09  
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5/14/99

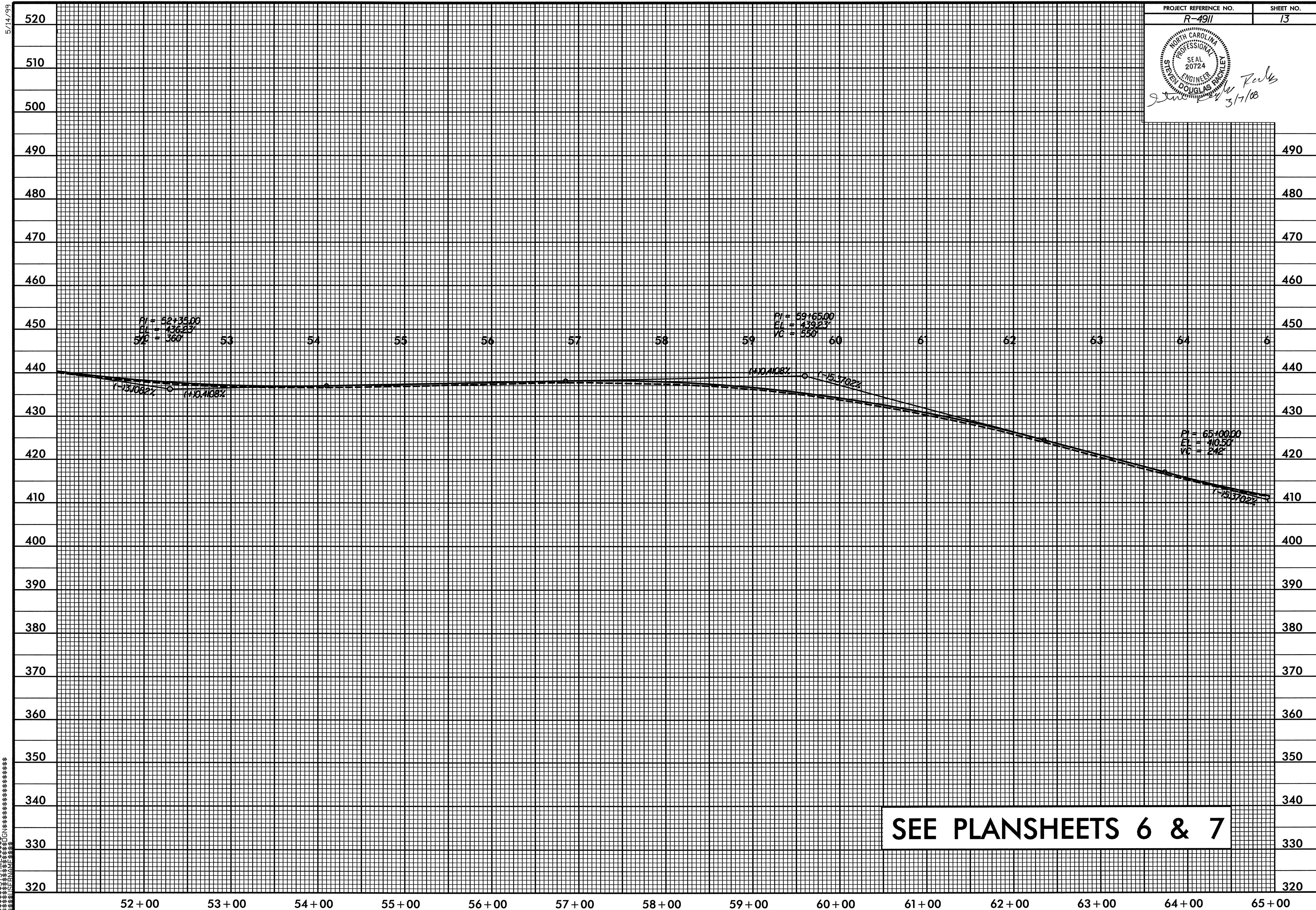


SEE PLANSHEETS 5 & 6



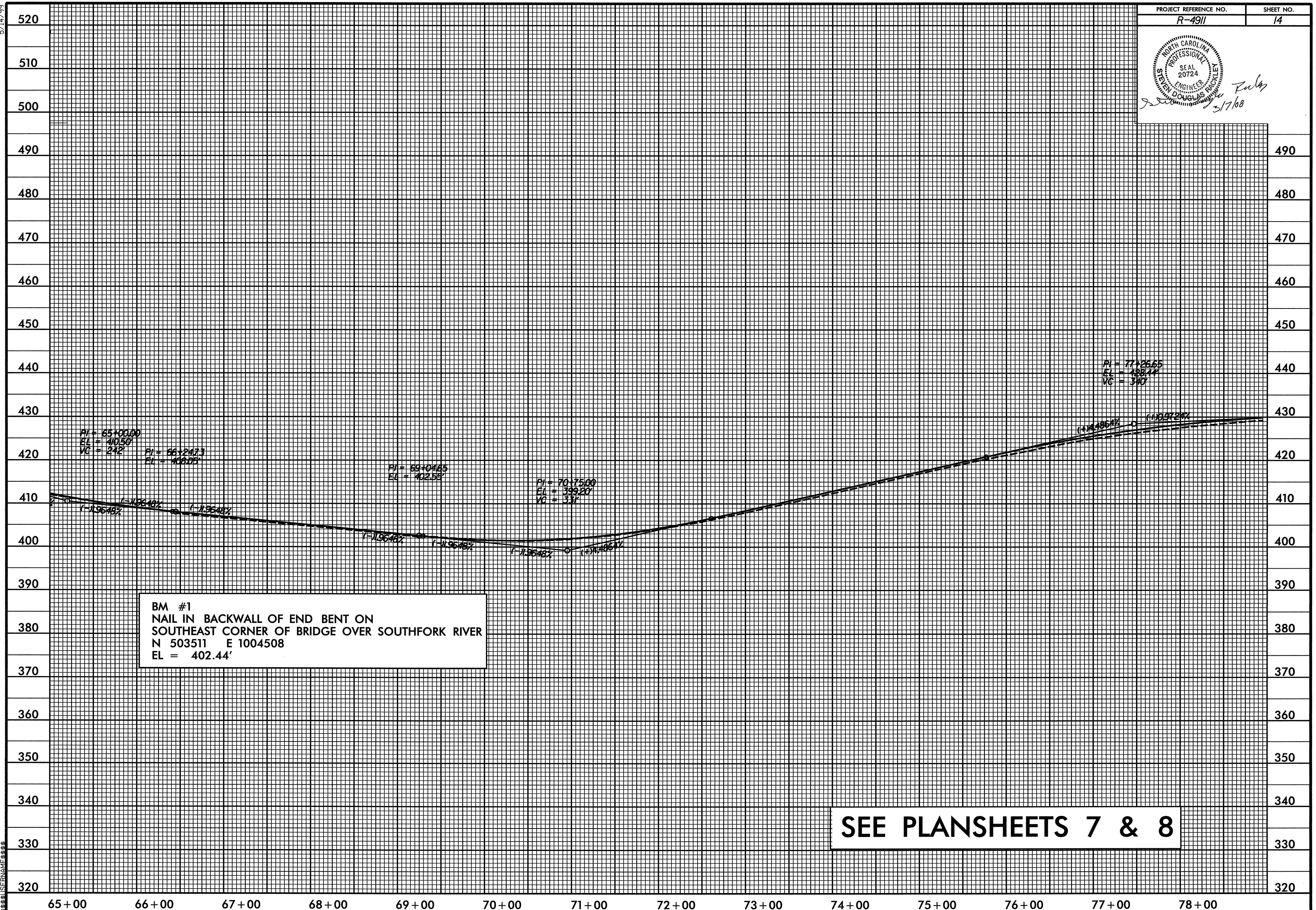
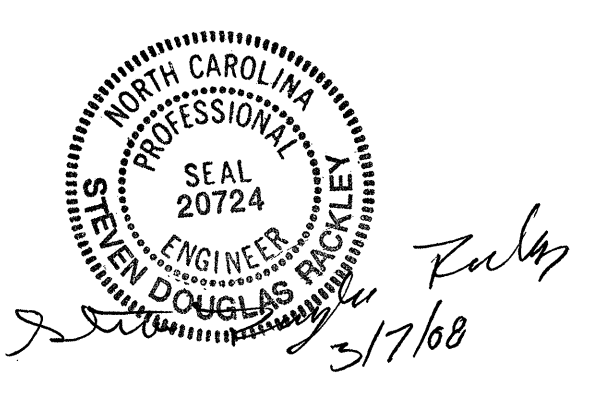
*Gene Frickley*  
3/1/08

5/14/09



SEE PLANSHEETS 6 & 7

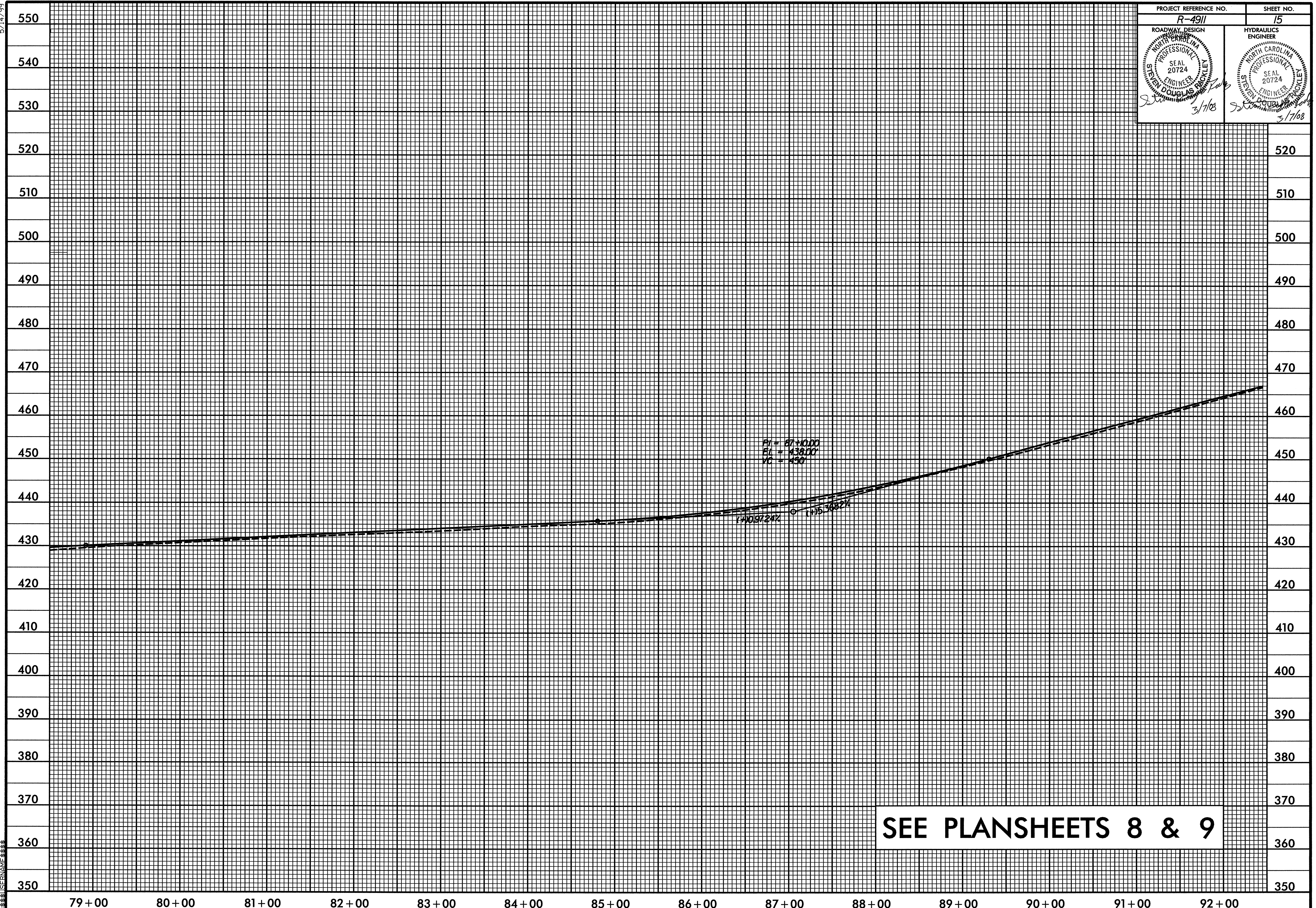
5/14/99



BM #1  
 NAIL IN BACKWALL OF END BENT ON  
 SOUTHEAST CORNER OF BRIDGE OVER SOUTHFORK RIVER  
 N 503511 E 1004508  
 EL = 402.44'

SEE PLANSHEETS 7 & 8

PROJECT REFERENCE NO. <i>R-4911</i>	SHEET NO. <i>15</i>
ROADWAY DESIGN NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20724 <i>STEVEN DOUGLAS BRIDGES</i>	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20724 <i>STEVEN DOUGLAS BRIDGES</i>
<i>3/1/08</i>	<i>3/1/08</i>



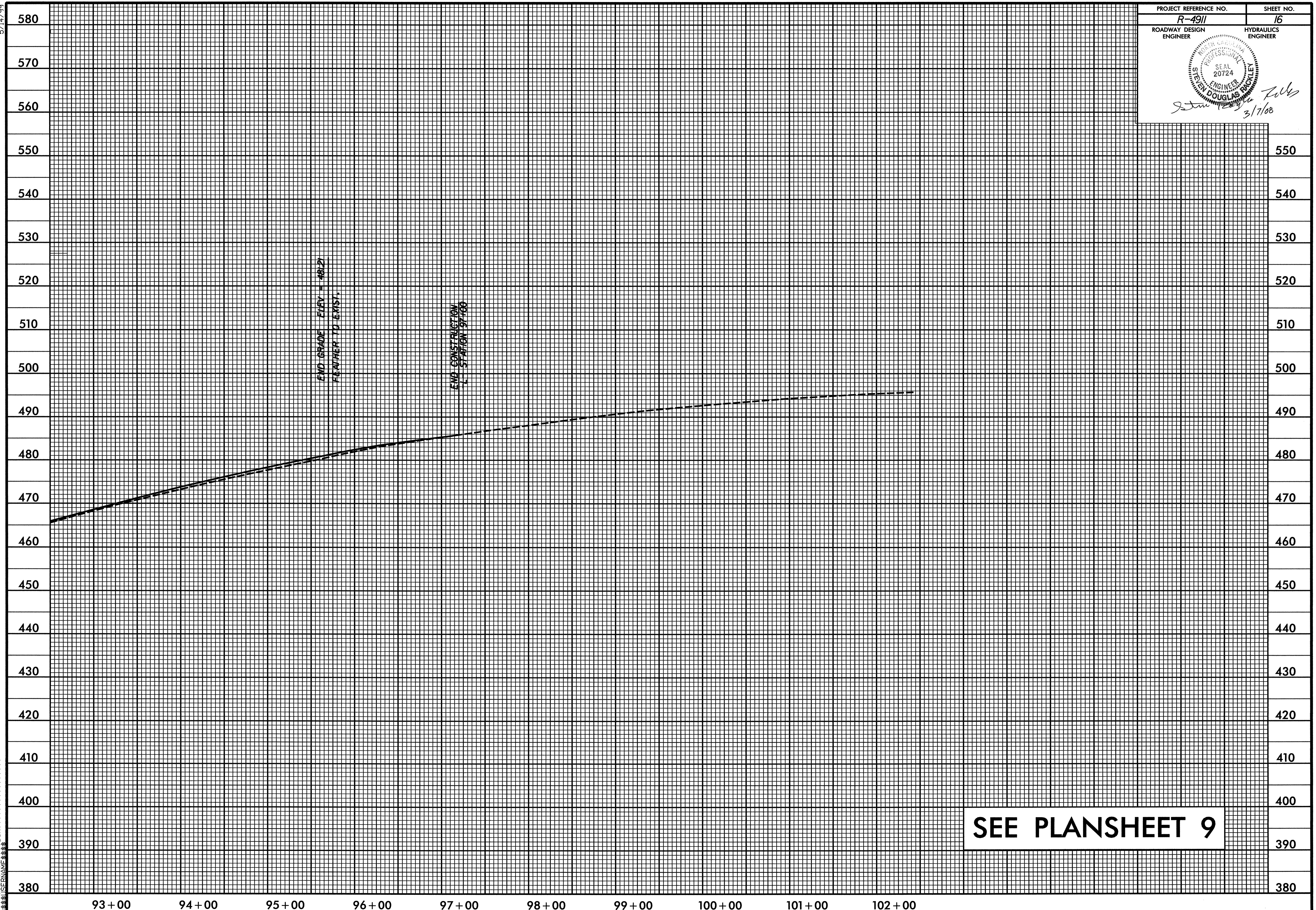
**SEE PLANSHEETS 8 & 9**

5/14/99



5/14/99

PROJECT REFERENCE NO. <i>R-4911</i>	SHEET NO. <i>16</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<i>John [unclear]</i> <i>3/7/08</i>	



**SEE PLANSHEET 9**