

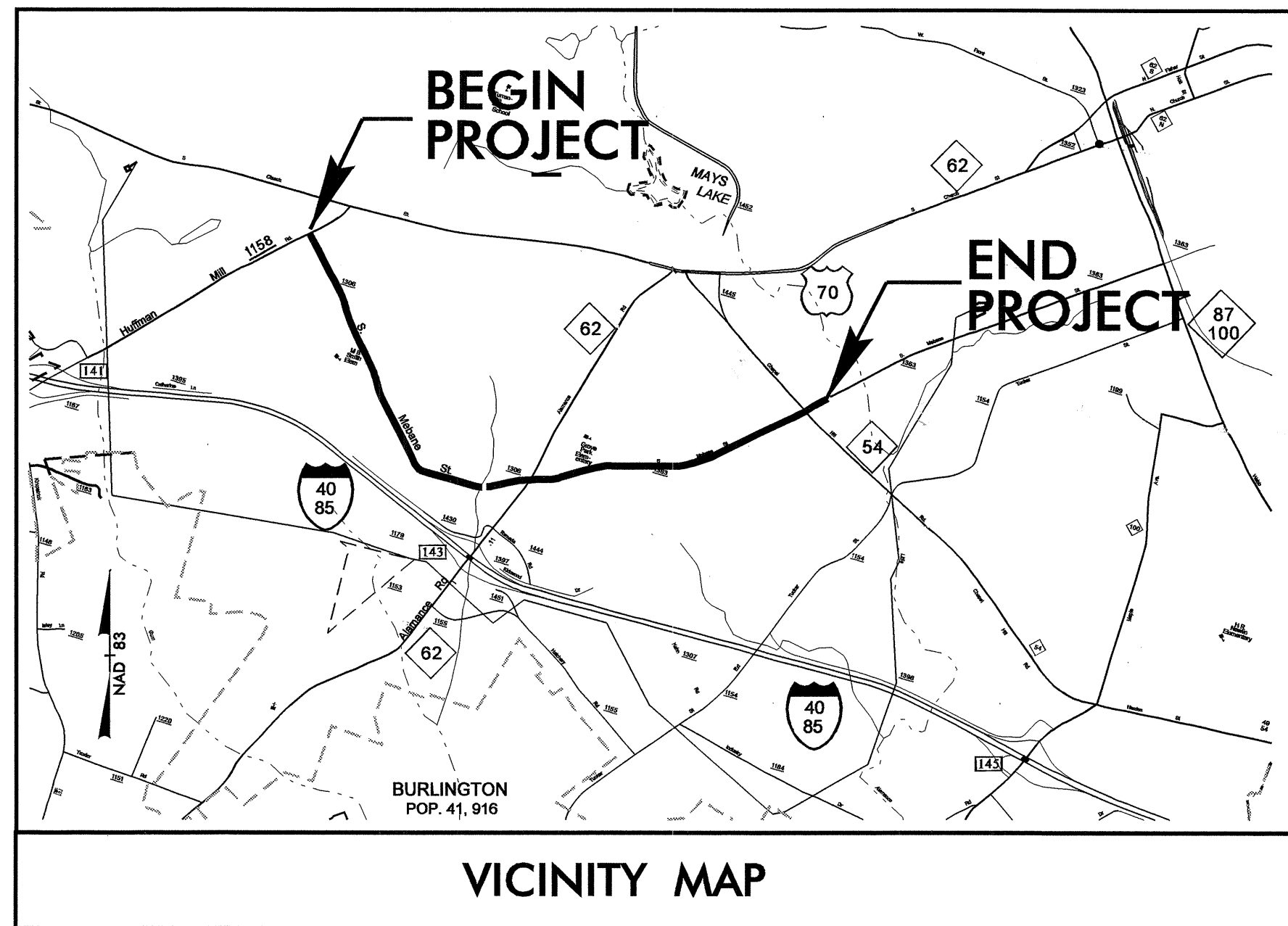
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**ALAMANCE COUNTY**

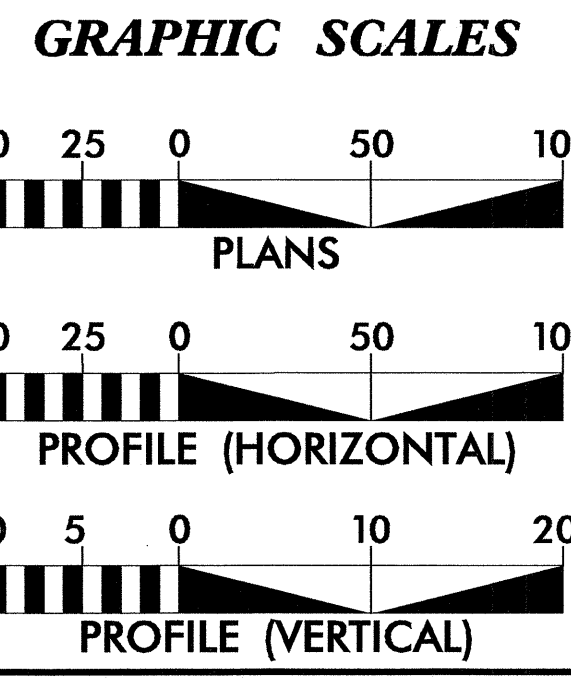
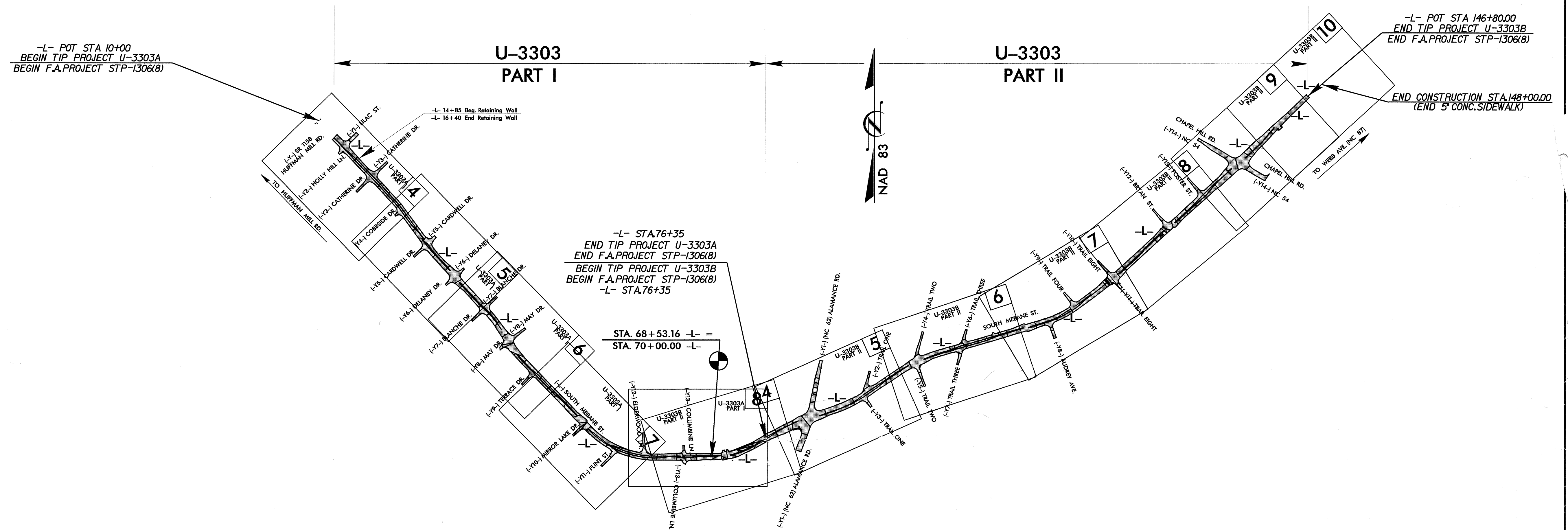
**LOCATION: BURLINGTON - SR 1306 (SOUTH MEBANE ST.)  
FROM SR 1158 (HUFFMAN MILL RD.)  
TO NC 54 (CHAPEL HILL RD.)**

**TYPE OF WORK: GRADING, DRAINAGE, WIDENING, PAVING,  
CURB & GUTTER, SIDEWALK, SIGNALS, SIGNING  
AND RETAINING WALL**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3303	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34911.1.1	STP-1306(8)	U-3303A (P.E.)	
34911.1.1	STP-1306(8)	U-3303B (P.E.)	
34911.2.3	STP-1306(15)	U-3303A (R/W)	
34911.2.3	STP-1306(15)	U-3303B (R/W)	
34911.3.2.ST1		U-3303 (CONST.)	



**CONTRACT: C201966 TIP PROJECT: U-3303**



**DESIGN DATA**

ADT 2009 =	23,560
ADT 2025 =	33,100
DHV =	10 %
D =	55 %
T =	3 % *
V =	40 MPH
* TTST 2%	DUAL 1%

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT U-3303 =	2.563 MI
LENGTH STRUCTURE TIP PROJECT U-3303 =	NA
TOTAL LENGTH TIP PROJECT U-3303 =	2.563 MI

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
January 19, 2007

**LETTING DATE:**  
March 17, 2009

**JIMMY GOODNIGHT, PE**  
PROJECT ENGINEER

**TIM GOINS**  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_

**ROADWAY DESIGN ENGINEER**

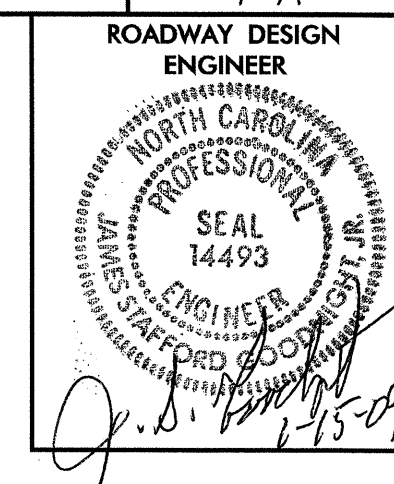
SIGNATURE: *James S. Goodnight* 12-23-08

Professional Engineer Seal for James S. Goodnight, No. 14493, State of North Carolina.

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

Professional Engineer Seal for Art McMillan, No. 14493, State of North Carolina.

**Art McMillan P.E.**  
STATE HIGHWAY DESIGN ENGINEER



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

INDEX OF SHEETS

GENERAL NOTES

LIST OF STANDARDS

U-3303

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
2	CONVENTIONAL SYMBOLS
3	SUMMARY OF QUANTITIES
<b>PART 1 U-3303A</b>	
1	TITLE SHEET
1C THRU 1D	SURVEY CONTROL SHEETS
2 THRU 2B	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2C THRU 2J	INTERSECTION DETAILS
2K	DETAIL OF ANCHORAGE FOR FRAMES
2L	DETAIL OF SPECIAL CATCH BASIN
2M	DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO TRAFFIC BEARING JUNCTION BOX
2N	RETAINING WALL NO.1 PLAN & DETAILS
3-A THRU 3-J	SUMMARY OF DRAINAGE QUANTITIES
3-K THRU 3-L	SUMMARY OF EARTHWORK AND ASPHALT PAVEMENT REMOVAL
3-M	PARCEL INDEX SHEET
4 THRU 9	PLAN SHEET
10 THRU 14	PROFILE SHEET
TCP-1 THRU TCP- 26	TRAFFIC CONTROL PLANS
SD-1	SPECIAL SIGN DETAIL
PM-1 THRU PM- 10	PAVEMENT MARKING PLANS
EC-1 THRU EC- 15	EROSION CONTROL PLANS
SIG-1 THRU SIG- 13	SIGNING PLANS
SIG-1 THRU SIG- 63	SIGNAL PLANS
U-1 THRU UC-13	UTILITIES PLANS
U-1 THRU UO-7	
X-1 THRU X-53	CROSS-SECTIONS

SHEET NUMBER	SHEET
1	TITLE SHEET
1C THRU 1D	SURVEY CONTROL SHEETS
2 THRU 2E	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2F THRU 2K	INTERSECTION DETAILS
2L	DETAIL OF ANCHORAGE FOR FRAMES
3A THRU 3K	SUMMARY OF DRAINAGE QUANTITIES
3-L	SUMMARY OF EARTHWORK AND ASPHALT PAVEMENT REMOVAL
3-M	PARCEL INDEX SHEET
4 THRU 10	PLAN SHEET
11 THRU 16	PROFILE SHEET
EC-1 THRU EC- 17	EROSION CONTROL PLANS
UC-1 THRU UC-14	UTILITIES PLANS
UO-1 THRU UO-8	
X-1 THRU X-61	CROSS-SECTIONS

GENERAL NOTES: 2006 SPECIFICATIONS EFFECTIVE: 07-18-06 REVISED: 07-30-08

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 II.

SUPERELEVATION: ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STDs. NO. 225.04 AND NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. 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.

UNDERDRAINS: UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS: DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT: STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

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

UTILITIES: UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY- POWER AT&T - TELEPHONE, TIME WARNER - CABLE TV PIEDMONT NATURAL GAS CITY OF BURLINGTON - TRAFFIC CABLE (AERIAL), WATER & SEWER ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

WHEELCHAIR RAMPS: WHEELCHAIR RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. THE CONSTRUCTION OF ALL WHEELCHAIR RAMPS SHALL BE IN ACCORDANCE WITH STD. NO. 848.06

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:

STD.NO.	TITLE
<b>DIVISION 2 - EARTHWORK</b>	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
<b>DIVISION 3 - PIPE CULVERTS</b>	
300.01	Method of Pipe Installation - Method 'A'
310.02	Parallel Pipe End Section - Precast Concrete Section for 15" to 24" Pipe
310.04	Parallel Pipe End Section - Prefabricated Steel Section for 15" to 24" Pipe
310.10	Driveway Pipe Construction
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
<b>DIVISION 6 - ASPHALT BASES AND PAVEMENTS</b>	
654.01	Pavement Repairs
<b>DIVISION 8 - INCIDENTALS</b>	
815.03	Pipe Underdrain and Blind Drain
838.11	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.57	Reinforced Brick Endwall - for Single 60" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.22	Frames and Wide Slot Sag Grates
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.03	Driveway Turnout - Drop Curb Type
848.04	Street Turnout
848.05	Wheelchair Ramp - Curb Cut
852.01	Concrete Islands
852.04	Method for Placement of Drop Inlets in Grassed Median - Using 1'-6" Curb and Gutter
852.05	Median Curb for Catch Basin - for Use with 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
852.10	Median Construction - with Curb and Gutter
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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

8/17/99

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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	○ <sub>EP</sub>
Property Corner	-----
Property Monument	□ <sub>ECM</sub>
Parcel/Sequence Number	(23)
Existing Fence Line	-x-x-x-
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	○ <sub>S</sub>
Well	○ <sub>W</sub>
Small Mine	⋈
Foundation	□
Area Outline	□
Cemetery	□ <sub>†</sub>
Building	□
School	□ <sub>↑</sub>
Church	□ <sub>+</sub>
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	-----
False Sump	-----

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ <sub>MILEPOST 35</sub>
Switch	□ <sub>SWITCH</sub>
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	○ <sub>CA</sub>
Proposed Control of Access	○ <sub>CA</sub>
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	○ <sub>WCR</sub>
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	□ <sub>Vineyard</sub>

### 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	□ <sub>CB</sub>
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ <sub>S</sub>
Storm Sewer	-----

### UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○ <sub>P</sub>
Power Line Tower	□
Power Transformer	□
U/G Power Cable Hand Hole	□ <sub>PH</sub>
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	○ <sub>T</sub>
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	○
U/G Telephone Cable Hand Hole	□ <sub>PH</sub>
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	○ <sub>W</sub>
Water Meter	○
Water Valve	⊗
Water Hydrant	○ <sub>+</sub>
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	⊗
U/G TV Cable Hand Hole	□ <sub>PH</sub>
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	○ <sub>SS</sub>
Sanitary Sewer Cleanout	○ <sub>+</sub>
U/G 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	-----
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.

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201966

Item Number	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
001000000-E	200	Lump Sum		CLEARING & GRUBBING ... ACRE(S)
008000000-E	200	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
002200000-E	225	29,400	CY	UNCLASSIFIED EXCAVATION
003600000-E	225	19,770	CY	UNDERCUT EXCAVATION
008000000-E	SP	13,525	TON	CLASS IV SUBGRADE STABILIZATION
010600000-E	230	56,500	CY	BORROW EXCAVATION
015600000-E	250	51,200	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT
019500000-E	265	3,500	CY	SELECT GRANULAR MATERIAL
019600000-E	270	24,300	SY	FABRIC FOR SOIL STABILIZATION
031800000-E	300	3,125	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
034200000-E	310	88	LF	*** SIDE DRAIN PIPE (12")
034300000-E	310	424	LF	15" SIDE DRAIN PIPE
034400000-E	310	28	LF	18" SIDE DRAIN PIPE
036000000-E	310	24	LF	12" RC PIPE CULVERTS, CLASS III
036600000-E	310	10,508	LF	15" RC PIPE CULVERTS, CLASS III
037200000-E	310	3,372	LF	18" RC PIPE CULVERTS, CLASS III
037800000-E	310	5,092	LF	24" RC PIPE CULVERTS, CLASS III
038400000-E	310	5,492	LF	30" RC PIPE CULVERTS, CLASS III
039000000-E	310	1,096	LF	36" RC PIPE CULVERTS, CLASS III
039600000-E	310	1,064	LF	42" RC PIPE CULVERTS, CLASS III
041400000-E	310	400	LF	60" RC PIPE CULVERTS, CLASS III
042000000-E	310	12	LF	66" RC PIPE CULVERTS, CLASS III
045300000-E	310	3	EA	*** PIPE END SECTION (18")
045300000-E	310	3	EA	*** PIPE END SECTION (24")
063600000-E	310	1	EA	*** CS PIPE ELBOWS, ***** THICK (36", 0.079")
099500000-E	340	7,389	LF	PIPE REMOVAL
101100000-N	500	Lump Sum		FINE GRADING
111000000-E	510	1,000	TON	STABILIZER AGGREGATE
129700000-E	607	2,450	SY	MILLING ASPHALT PAVEMENT, **** DEPTH (2-1/2")
148900000-E	610	35,338	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
149800000-E	610	24,738	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
151900000-E	610	21,682	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
156000000-E	620	3,990	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
169300000-E	654	150	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
202200000-E	815	224	CY	SUBDRAIN EXCAVATION
203300000-E	815	168	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	1,000	LF	6" PERFORATED SUBDRAIN PIPE
205500000-E	815	30	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
206600000-N	815	2	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
207700000-E	815	12	LF	6" OUTLET PIPE (SUBDRAINS)
220900000-E	838	9	CY	ENDWALLS
222000000-E	838	5.6	CY	REINFORCED ENDWALLS
225300000-E	840	7.23	CY	PIPE COLLARS
226400000-E	840	0.32	CY	PIPE PLUGS
228600000-N	840	337	EA	MASONRY DRAINAGE STRUCTURES
229700000-E	840	27.7	CY	MASONRY DRAINAGE STRUCTURES

## SUMMARY OF QUANTITIES

Item Number	Sec #	Quantity	Unit	Description
230800000-E	840	145	LF	MASONRY DRAINAGE STRUCTURES
236400000-N	840	73	EA	FRAME WITH TWO GRATES, STD 840.16
236500000-N	840	21	EA	FRAME WITH TWO GRATES, STD 840.22
236700000-N	840	6	EA	FRAME WITH TWO GRATES, STD 840.29
237400000-N	840	15	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
237400000-N	840	102	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
237400000-N	840	109	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
239600000-N	840	16	EA	FRAME WITH COVER, STD 840.54
244000000-N	852	43	EA	CONCRETE TRANSITIONAL SECTION FOR CATCH BASIN
245100000-N	852	6	EA	CONCRETE TRANSITIONAL SECTION FOR DROP INLETS
254200000-E	846	20,910	LF	1'-6" CONCRETE CURB & GUTTER
254900000-E	846	28,290	LF	2'-6" CONCRETE CURB & GUTTER
259100000-E	848	14,090	SY	4" CONCRETE SIDEWALK
260500000-N	848	148	EA	CONCRETE WHEELCHAIR RAMPS
261200000-E	848	2,117	SY	6" CONCRETE DRIVEWAY
264700000-E	852	840	SY	5' MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)
280000000-N	858	3	EA	ADJUSTMENT OF CATCH BASINS
283000000-N	858	60	EA	ADJUSTMENT OF MANHOLES
284500000-N	858	31	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES
299500000-N	SP	1	EA	GENERIC DRAINAGE ITEM CONVERT EXISTING CB TO TBB WITH MANHOLE COVER
299500000-N	SP	1	EA	GENERIC DRAINAGE ITEM CONVERT EXISTING MH TO TBB WITH MANHOLE COVER
362800000-E	876	40	TON	RIP RAP, CLASS I

Item Number	Sec #	Quantity	Unit	Description
364900000-E	876	11	TON	RIP RAP, CLASS B
365600000-E	876	1,478	SY	FILTER FABRIC FOR DRAINAGE
404800000-E	902	1	CY	REINFORCED CONCRETE SIGN FOUNDATIONS
406000000-E	903	198	LB	SUPPORTS, BREAKAWAY STEEL BEAM
407200000-E	903	3,062	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
410200000-N	904	208	EA	SIGN ERECTION, TYPE E
410800000-N	904	12	EA	SIGN ERECTION, TYPE F
411000000-N	904	1	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (B)
411610000-N	904	3	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (E)
415500000-N	907	70	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
419200000-N	907	3	EA	DISPOSAL OF SUPPORT, U-CHANNEL
440000000-E	1110	1,740	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	580	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	1,400	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
441500000-N	1115	1	EA	FLASHING ARROW PANELS, TYPE C
442000000-N	1120	6	EA	CHANGEABLE MESSAGE SIGN
442200000-N	1120	84	DAY	CHANGEABLE MESSAGE SIGN (SHORT TERM)
443000000-N	1130	850	EA	DRUMS
443500000-N	1135	100	EA	CONES
444500000-E	1145	672	LF	BARRICADES (TYPE III)
445500000-N	1150	210	MD	FLAGGER
451000000-N	SP	268	HR	POLICE
451600000-N	1180	100	EA	SKINNY DRUM
465000000-N	1251	430	EA	TEMPORARY RAISED PAVEMENT MARKERS
468500000-E	1205	10,000	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
468600000-E	1205	29,930	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
469500000-E	1205	11,400	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
469700000-E	1205	4,460	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 120 MILS)
471000000-E	1205	2,000	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
472100000-E	1205	28	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)
472500000-E	1205	242	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
481000000-E	1205	102,110	LF	PAINT PAVEMENT MARKING LINES (4")
482000000-E	1205	16,260	LF	PAINT PAVEMENT MARKING LINES (8")
483500000-E	1205	7,000	LF	PAINT PAVEMENT MARKING LINES (24")
484000000-N	1205	84	EA	PAINT PAVEMENT MARKING CHARACTER
484500000-N	1205	687	EA	PAINT PAVEMENT MARKING SYMBOL
490000000-N	1251	1,960	EA	PERMANENT RAISED PAVEMENT MARKERS
531900000-E	1505	34	CY	CLASS B CONCRETE FOR ENCASEING UTILITY LINES
532560000-E	1510	2,671	LF	6" WATER LINE
532580000-E	1510	4,397	LF	8" WATER LINE
532620000-E	1510	353	LF	12" WATER LINE
532660000-E	1510	3,544	LF	16" WATER LINE
554000000-E	1515	15	EA	6" VALVE
554600000-E	1515	11	EA	8" VALVE
555800000-E	1515	2	EA	12" VALVE
555860000-E	1515	8	EA	16" VALVE
558910000-E	1515	7	EA	1" AIR RELEASE VALVE
564800000-N	1515	85	EA	RELOCATE WATER METER
564900000-N	1515	85	EA	RECONNECT WATER METER

STATE OF NORTH CAROLINA  
SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description
567200000-N	1515	23	EA	RELOCATE FIRE HYDRANT
569130000-E	1520	1,415	LF	8" SANITARY GRAVITY SEWER
577500000-E	1525	11	EA	4' DIA UTILITY MANHOLE
578100000-E	1525	44	LF	UTILITY MANHOLE WALL, 4' DIA
580000000-E	1530	1,165	LF	ABANDON 6" UTILITY PIPE
580100000-E	1530	4,779	LF	ABANDON 8" UTILITY PIPE
580400000-E	1530	295	LF	ABANDON 12" UTILITY PIPE
581000000-E	1530	3,384	LF	ABANDON 16" UTILITY PIPE
582800000-N	1530	7	EA	REMOVE UTILITY MANHOLE
600000000-E	1605	14,850	LF	TEMPORARY SILT FENCE
600600000-E	1610	3,300	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	2,675	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	3,980	TON	SEDIMENT CONTROL STONE
601500000-E	1615	30	ACR	TEMPORARY MULCHING
601800000-E	1620	800	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	5	TON	FERTILIZER FOR TEMPORARY SEEDING
602900000-E	SP	1,500	LF	SAFETY FENCE
603000000-E	1630	8,100	CY	SILT EXCAVATION
603600000-E	1631	22,900	SY	MATTING FOR EROSION CONTROL
603700000-E	SP	35	SY	COIR FIBER MAT
603800000-E	SP	2,248	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	5,300	LF	1/4" HARDWARE CLOTH
607101000-E	SP	125	LF	WATTLE
607102000-E	SP	42	LB	POLYACRYLAMIDE (PAM)
607103000-E	SP	800	LF	COIR FIBER BAFFLES
607105000-E	SP	5	EA	*** SKIMMER (1-1/2")
608400000-E	1660	45	ACR	SEEDING & MULCHING

ItemNumber	Sec #	Quantity	Unit	Description
608700000-E	1660	22.5	ACR	MOWING
609000000-E	1661	300	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	1	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	650	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	17.75	TON	FERTILIZER TOPDRESSING
611400000-N	SP	10	HR	SPECIALIZED HAND MOWING
611700000-N	SP	27	EA	RESPONSE FOR EROSION CONTROL
700000000-E	1705	49	EA	PEDESTRIAN SIGNAL HEAD (**, ** SECTION) (16" W/COUNTDOWN, 1)
706000000-E	1705	23,130	LF	SIGNAL CABLE
712000000-E	1705	85	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
713200000-E	1705	12	EA	VEHICLE SIGNAL HEAD (12", 4 SECTION)
714400000-E	1705	32	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
725200000-E	1710	13,350	LF	MESSENGER CABLE (1/4")
726400000-E	1710	5,790	LF	MESSENGER CABLE (3/8")
727900000-E	1715	125	LF	TRACER WIRE
728800000-E	1715	330	LF	PAVED TRENCHING (***** (1, 2")
730000000-E	1715	5,255	LF	UNPAVED TRENCHING (***** (1, 2")
732400000-N	1716	30	EA	JUNCTION BOX (STANDARD SIZE)
734800000-N	1716	12	EA	JUNCTION BOX (OVER-SIZED, HEAVY DUTY)
736000000-N	1720	18	EA	WOOD POLE
737200000-N	1721	44	EA	GUY ASSEMBLY
740800000-E	1722	6	EA	1" RISER WITH WEATHERHEAD
742000000-E	1722	17	EA	2" RISER WITH WEATHERHEAD
743200000-E	1722	5	EA	2" RISER WITH HEAT SHRINK TUBING
744400000-E	1725	22,010	LF	INDUCTIVE LOOP SAWCUT

ItemNumber	Sec #	Quantity	Unit	Description
745600000-E	1726	41,850	LF	LEAD-IN CABLE (***** (14-2)
751600000-E	1730	2,050	LF	COMMUNICATIONS CABLE (**FIBER) (12)
751600000-E	1730	15,460	LF	COMMUNICATIONS CABLE (**FIBER) (36)
752800000-E	1730	1,210	LF	DROP CABLE
754000000-N	1731	7	EA	SPLICE ENCLOSURE
755200000-N	1731	6	EA	INTERCONNECT CENTER
756400000-N	1732	6	EA	FIBER-OPTIC TRANSCEIVER, DROP & REPEAT
756600000-N	1733	12	EA	DELINEATOR MARKER
756800000-N	SP	1	EA	FURNISH FIBER-OPTIC RESTORATION KIT
757400000-N	SP	1	EA	FURNISH FIBER-OPTIC TRANSCEIVER
757600000-N	SP	24	EA	METAL STRAIN SIGNAL POLE
761300000-N	SP	24	EA	SOIL TEST
761410000-E	SP	144	CY	DRILLED PIER FOUNDATION
762400000-N	1743	3	EA	SIGNAL PEDESTAL WITH FOUNDATION
763600000-N	1745	22	EA	SIGN FOR SIGNALS
768400000-N	1750	6	EA	SIGNAL CABINET FOUNDATION
775600000-N	1751	6	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
778000000-N	1751	62	EA	DETECTOR CARD (TYPE 2070L)
790100000-N	1753	6	EA	CABINET BASE EXTENDER
880100000-E	SP	860	SF	MSE RETAINING WALLS

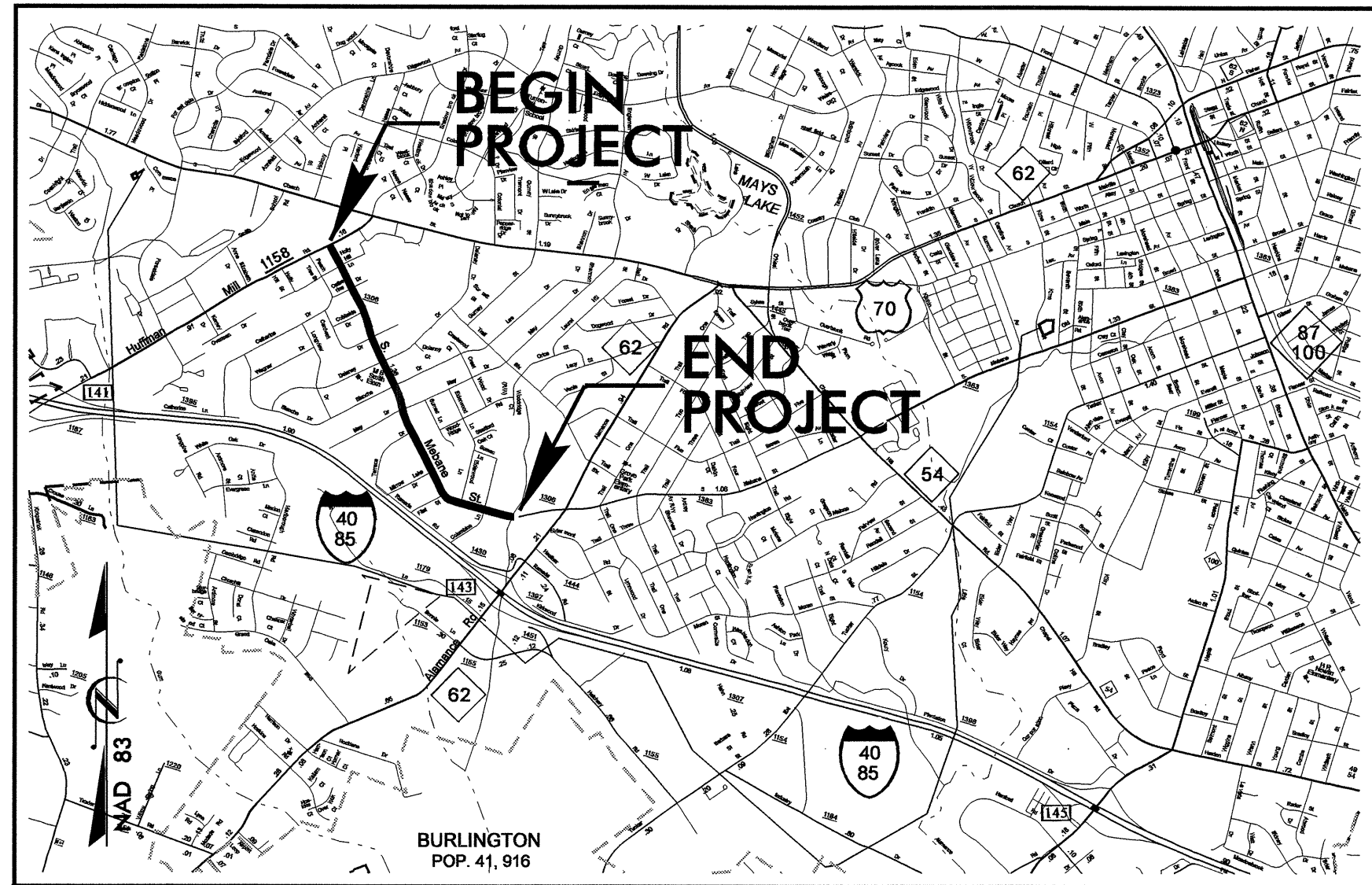
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3303A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34911.1.1	STP-1306(8)	P.E.	
34911.2.3	STP-1306(15)	RW	
34911.3.2	STP-1306(15)	CONSTR.	

# ALAMANCE COUNTY

**LOCATION: BURLINGTON - SR 1306 (SOUTH MEBANE ST.)  
FROM SR 1158 (HUFFMAN MILL RD.)  
TO NC 62 (ALAMANCE RD.)**

**TYPE OF WORK: GRADING, DRAINAGE, WIDENING, PAVING,  
CURB & GUTTER, SIDEWALK, SIGNALS,  
SIGNING AND RETAINING WALL**

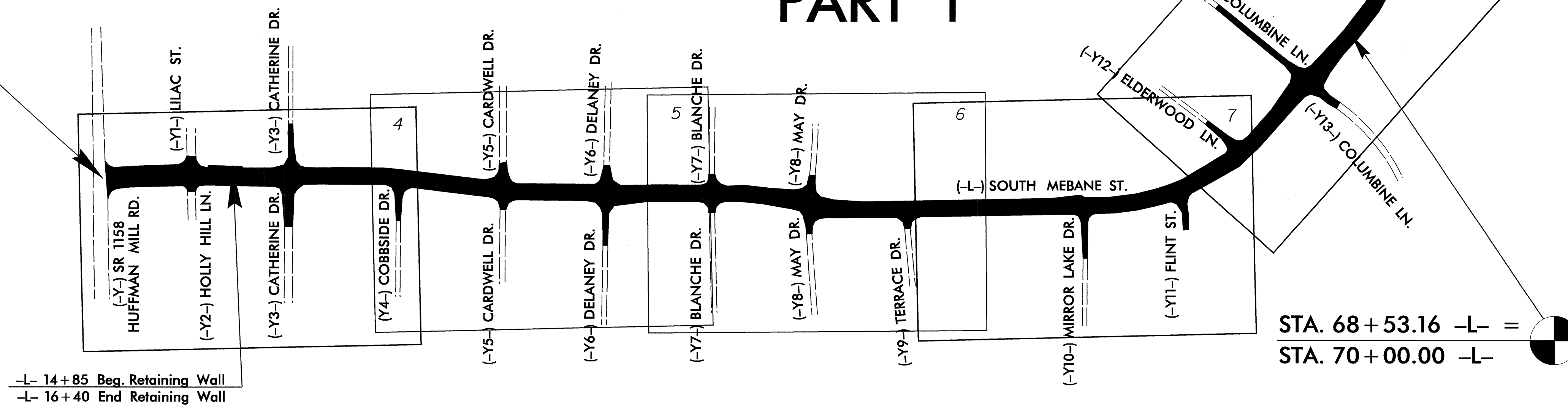


VICINITY MAP

STA. 76+35 -L- END TIP PROJECT U-3303A

STA. 10+00 -L- BEGIN TIP PROJECT U-3303A

## PART 1

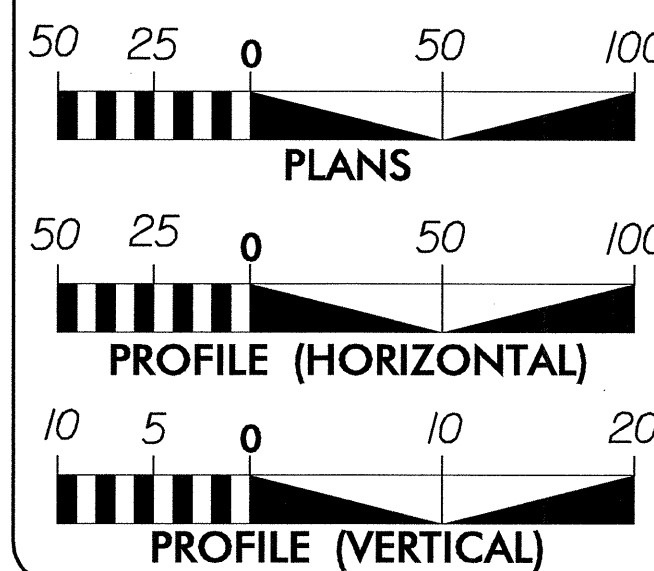


TIP PROJECT: U-3303A

CONTRACT: C201966

22-DEC-2008 11:03  
r:\p09dway\proj\3303a\_rdy\_tsh\_050126.rsh  
\$\$\$\$\$USERNAME\$\$\$\$\$

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2009 = 23,560  
ADT 2025 = 33,100  
DHV = 10 %  
D = 55 %  
T = 3 % \*  
V = 40 MPH  
\* TTST 2% DUAL 1%

**PROJECT LENGTH**

LENGTH ROADWAY F.A.PROJECT STP-1306(8) = 1.229 MI  
TOTAL LENGTH STATE PROJECT 34911JJ = 1.229 MI

Prepared In the Office of:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., NC, 27610

2006 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
January 19, 2007

**LETTING DATE:**  
March 17, 2009

**JIMMY GOODNIGHT**  
PROJECT ENGINEER

**TIM GOINS**  
PROJECT DESIGN ENGINEER

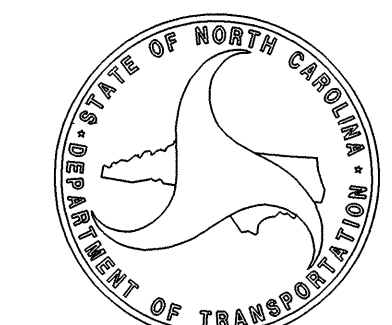
**HYDRAULICS ENGINEER**

*Andrew Burnett*  
SIGNATURE: 2/2/09  
NORTH CAROLINA PROFESSIONAL SEAL 023090  
ENGINEER  
ANDREW B. BURNETT

**ROADWAY DESIGN ENGINEER**

*J. J. Goodnight*  
SIGNATURE: 12-21-08  
NORTH CAROLINA PROFESSIONAL SEAL 14493  
ENGINEER  
JAMES SAFERD GOODNIGHT, JR.

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**



STATE HIGHWAY DESIGN ENGINEER

# SURVEY CONTROL SHEET U-3303A

PROJECT REFERENCE NO. <b>U-3303A</b>	SHEET NO. <b>IC</b>
Location and Surveys	

**STA. 10+00 -L- BEGIN TIP PROJECT U-3303A**

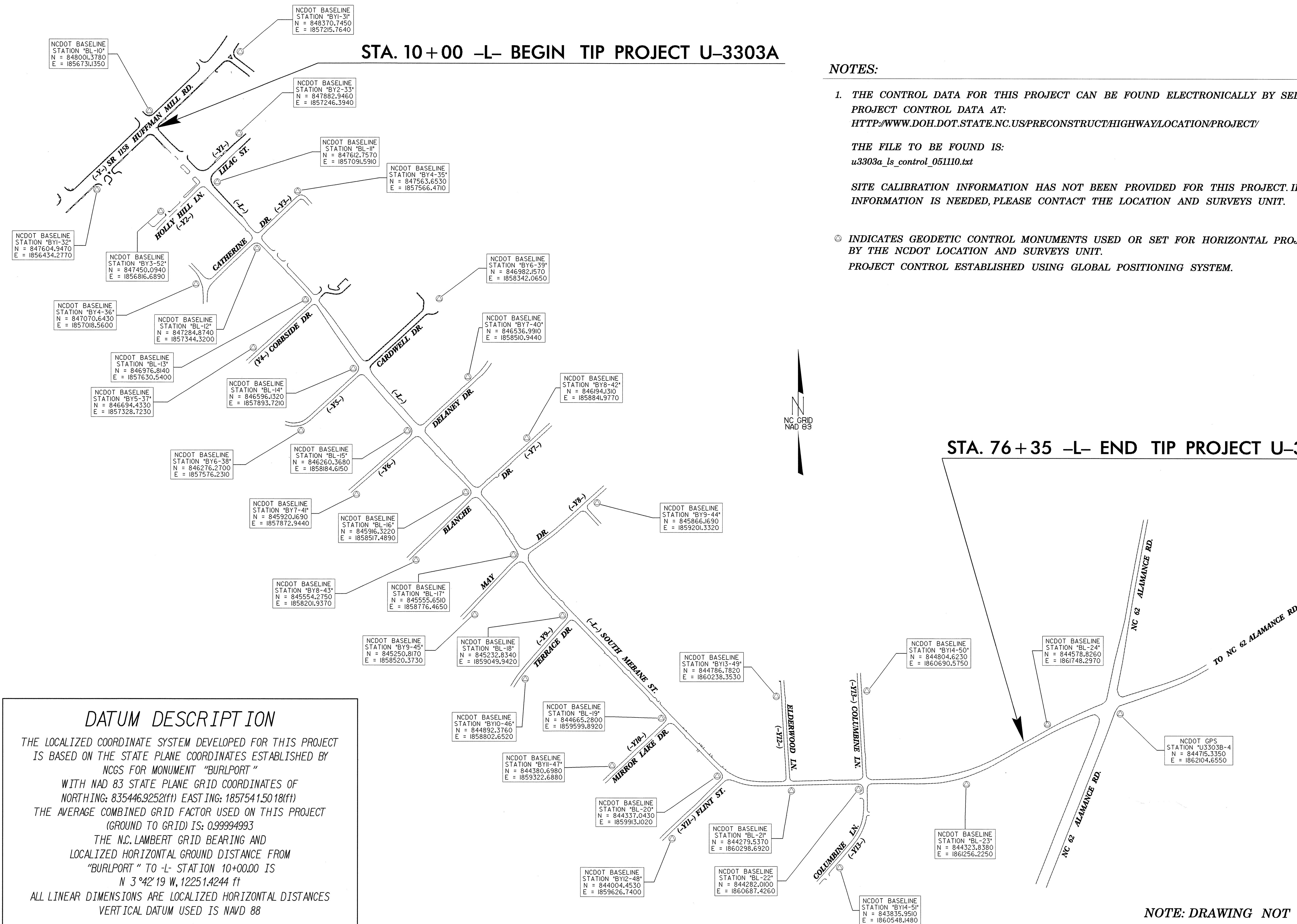
**NOTES:**

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)

THE FILE TO BE FOUND IS:  
*u3303a\_ls\_control\_051110.txt*

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

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.  
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.



**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "BURLPORT" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 835446.9252(ft) EASTING: 1857541.5018(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99994993 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BURLPORT" TO -L- STATION 10+00.00 IS  
N 3°42'19" W, 12251.4244 ft  
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
VERTICAL DATUM USED IS NAVD 88

**NOTE: DRAWING NOT TO SCALE**

6/2/99  
 26-NOV-2008 10:55  
 P:\PROJECTS\U3303A\U3303A-1s\_1c\_051110.dgn  
 \$\$\$\$USERRM\$\$\$

# SURVEY CONTROL SHEET U-3303A

PROJECT REFERENCE NO.	SHEET NO.
<b>U-3303A</b>	<b>ID</b>
Location and Surveys	

## BASELINE DATA

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
10	BL-10	848001.3780	1856731.1350	677.93	OUTSIDE PROJECT LIMITS	
11	BL-11	847612.7570	1857091.5910	689.24	14+86.35	23.00 LT
12	BL-12	847284.8740	1857344.3200	689.69	18+98.31	17.80 RT
13	BL-13	846976.8140	1857630.5400	678.67	23+20.69	14.65 RT
14	BL-14	846596.1320	1857893.7210	663.50	27+83.57	25.58 RT
15	BL-15	846260.3680	1858184.6150	653.45	32+25.20	26.98 RT
16	BL-16	845916.3220	1858517.4890	641.81	37+03.79	15.92 RT
17	BL-17	845555.6510	1858776.4650	632.26	41+52.46	28.07 RT
112	BY14-51	845414.7701	1858895.8134	UNKNOWN	43+34.85	9.25 RT
18	BL-18	845232.8340	1859049.9420	633.21	45+72.11	20.08 RT
19	BL-19	844665.2800	1859599.8920	655.74	53+62.39	16.64 RT
20	BL-20	844337.0430	1859913.1020	650.63	57+95.67	80.66 RT
21	BL-21	844279.5370	1860298.6920	638.40	61+64.21	28.71 RT
22	BL-22	844282.0100	1860687.4260	623.21	65+50.23	23.18 RT
113	BY14-51	844323.0651	1861232.1150	UNKNOWN	72+40.22	17.24 RT
23	BL-23	844323.9380	1861256.2250	615.26	72+63.43	22.05 RT
24	BL-24	844578.8260	1861748.2970	636.32	OUTSIDE PROJECT LIMITS	
25	U3303B-4	844715.3350	1862104.6550	633.20	OUTSIDE PROJECT LIMITS	

BY1 POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
31	BY1-31	848370.7450	1857215.7640	680.71	OUTSIDE PROJECT LIMITS	
210	U3303B-1	848001.3780	1856731.1350	677.93	15+69.61	43.68 RT
32	BY1-32	847604.9470	1856434.2770	679.80	20+57.99	38.59 LT

BY2 POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
33	BY2-33	847882.9460	1857246.3940	684.51	11+86.21	20.02 RT
111	U3303B-2	847612.7570	1857091.5910	689.24	14+84.93	67.91 LT

BY3 POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
211	U3303B-2	847612.7570	1857091.5910	689.24	OUTSIDE PROJECT LIMITS	
52	BY3-52	847450.0940	1856816.6890	689.47	12+88.50	21.37 RT

BY4 POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
35	BY4-35	847563.6530	1857566.4710	685.74	OUTSIDE PROJECT LIMITS	
212	BL-12	847284.8740	1857344.3200	689.69	12+91.14	36.84 LT
36	BY4-36	847070.6430	1857018.5600	681.96	16+74.43	34.58 RT

BY5 POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
213	BL-13	846976.8140	1857630.5400	678.67	10+12.87	16.51 RT
37	BY5-37	846694.4330	1857328.7230	672.80	14+26.18	14.46 RT

BY6 POINT	DESC.	NORTH	EAST	ELEVATION	Y5 STATION	OFFSET
39	BY6-39	846982.1570	1858342.0650	680.77	OUTSIDE PROJECT LIMITS	
214	BL-14	846596.1320	1857893.7210	663.50	14+82.76	22.14 RT
38	BY6-38	846276.2700	1857576.2310	655.36	19+29.01	13.37 LT

## BENCHMARK DATA

.....  
 BM1 ELEVATION = 658.47  
 N 846397 E 1857330  
 Y13 STATION 18+81 4107 RIGHT  
 RR SPIKE SET IN POWER POLE  
 .....  
 BM2 ELEVATION = 640.53  
 N 843919 E 1859476  
 Y13 STATION 20+61  
 N 84° 54' 31.1" W DIST 1048.47  
 RR SPIKE SET IN POWER POLE  
 .....

BY7 POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
40	BY7-40	846536.9910	1858510.9440	658.15	10+62.96	19.31 RT
215	BL-15	846260.3680	1858184.6150	653.45	14+91.32	37.44 RT
41	BY7-41	845920.1690	1857872.9440	649.72	19+50.02	12.26 LT

BY8 POINT	DESC.	NORTH	EAST	ELEVATION	Y7 STATION	OFFSET
42	BY8-42	846194.1310	1858041.9770	642.54	10+96.37	12.11 RT
216	BL-16	845916.3220	1858517.4890	641.81	15+22.48	26.13 RT
43	BY8-43	845554.2750	1858201.9370	645.45	20+01.14	13.06 LT

BY9 POINT	DESC.	NORTH	EAST	ELEVATION	Y8 STATION	OFFSET
44	BY9-44	845866.1690	1859201.3320	645.33	10+75.25	13.21 LT
217	BL-17	845555.6510	1858776.4650	632.26	16+00.18	16.67 RT
45	BY9-45	845250.8170	1858520.3730	641.19	19+96.12	11.19 LT

BY10 POINT	DESC.	NORTH	EAST	ELEVATION	Y9 STATION	OFFSET
218	BL-18	845232.8340	1859049.9420	633.21	10+18.21	25.69 RT
46	BY10-46	844892.3760	1858802.6520	628.74	14+38.31	12.10 LT

BY11 POINT	DESC.	NORTH	EAST	ELEVATION	Y10 STATION	OFFSET
219	BL-19	844665.2800	1859599.8920	655.74	10+16.65	26.38 RT
47	BY11-47	844380.6980	1859322.6880	656.39	14+13.71	13.02 RT

BY12 POINT	DESC.	NORTH	EAST	ELEVATION	Y11 STATION	OFFSET
220	BL-20	844337.0430	1859913.1020	650.63	10+86.78	21.06 RT
48	BY12-48	844004.4530	1859626.7400	641.32	15+25.89	18.92 LT

BY13 POINT	DESC.	NORTH	EAST	ELEVATION	Y12 STATION	OFFSET
49	BY13-49	844786.7820	1860238.3530	658.97	OUTSIDE PROJECT LIMITS	
221	BL-21	844279.5370	1860298.6920	638.40	OUTSIDE PROJECT LIMITS	

BY14 POINT	DESC.	NORTH	EAST	ELEVATION	Y13 STATION	OFFSET
50	BY14-50	844804.6230	1860690.5750	649.95	10+21.50	13.57 LT
222	BL-22	844282.0100	1860687.4260	623.21	15+43.77	20.11 RT
51	BY14-51	843835.9510	1860548.1480	638.53	20+35.54	14.57 LT

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "BURLPORT" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 835446.9252(ft) EASTING: 1857541.5018(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99994993 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BURLPORT" TO L- STATION 10+00.00 IS N 3°42'19 W, 12251.4244 ft ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

### NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)  
 THE FILE TO BE FOUND IS:  
u3303a\_ls\_control\_051110.txt
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.



6/2/99

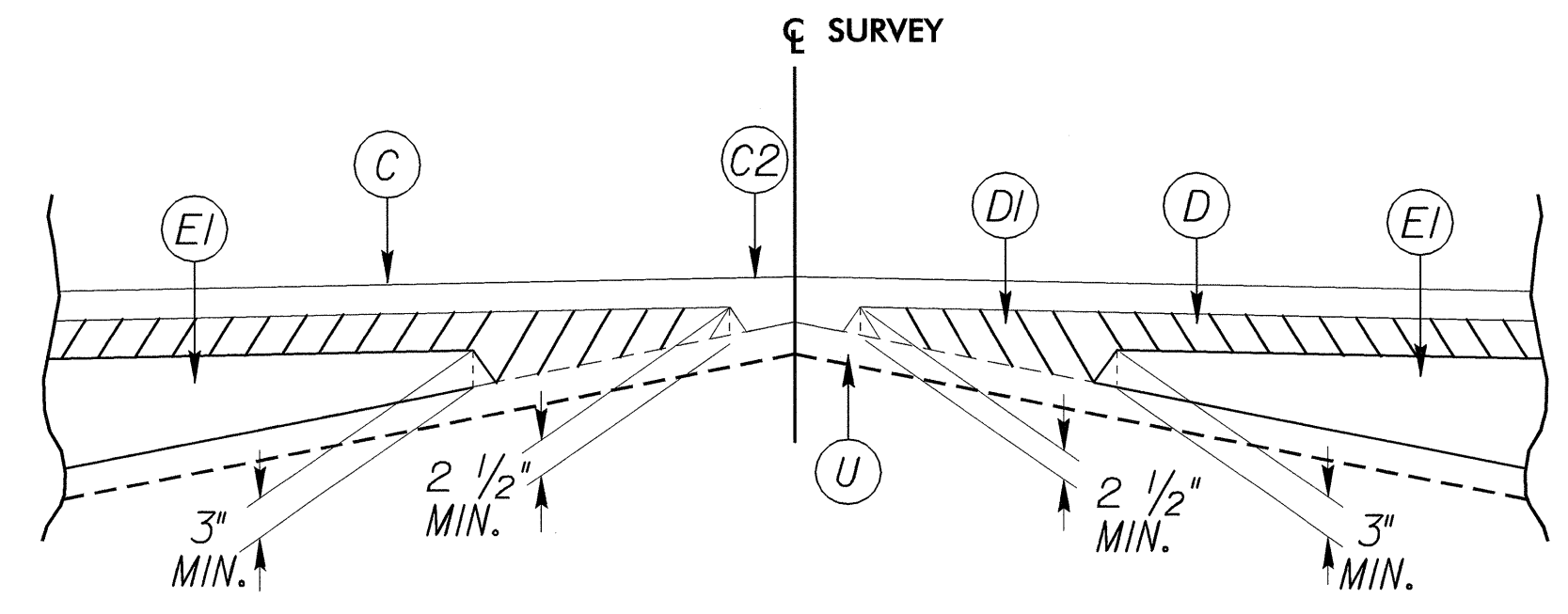
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PROJECT REFERENCE NO. U-3303A	SHEET NO. 2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 

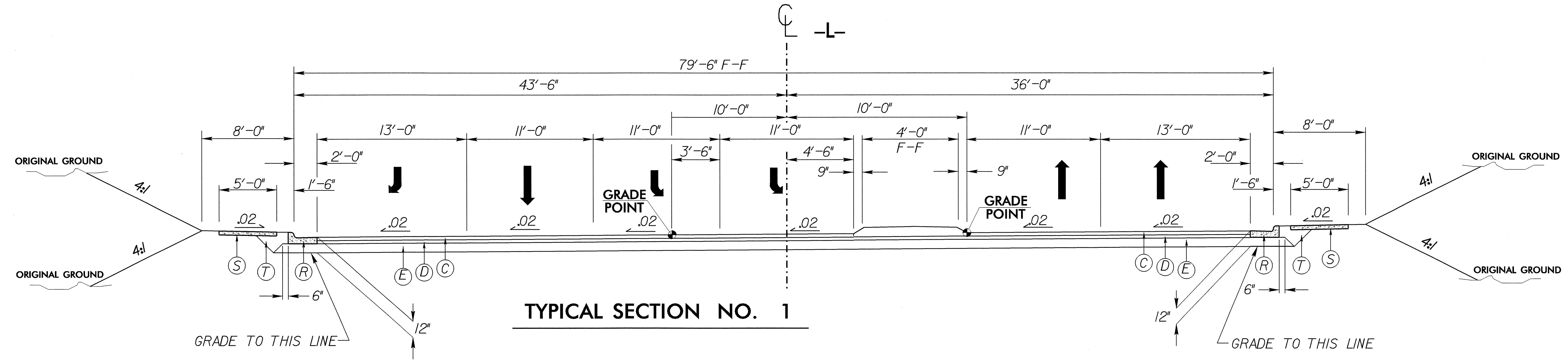
## PAVEMENT SCHEDULE

<b>C</b>	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.	<b>R</b>	2'-6" CONCRETE CURB AND GUTTER.
<b>C1</b>	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	<b>R1</b>	1'-6" CONCRETE CURB AND GUTTER.
<b>C2</b>	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	<b>S</b>	4" CONCRETE SIDEWALK.
<b>D</b>	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	<b>T</b>	EARTH MATERIAL.
<b>D1</b>	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 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	<b>U</b>	EXISTING PAVEMENT.
<b>E</b>	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	<b>W</b>	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2 )
<b>E1</b>	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.		

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

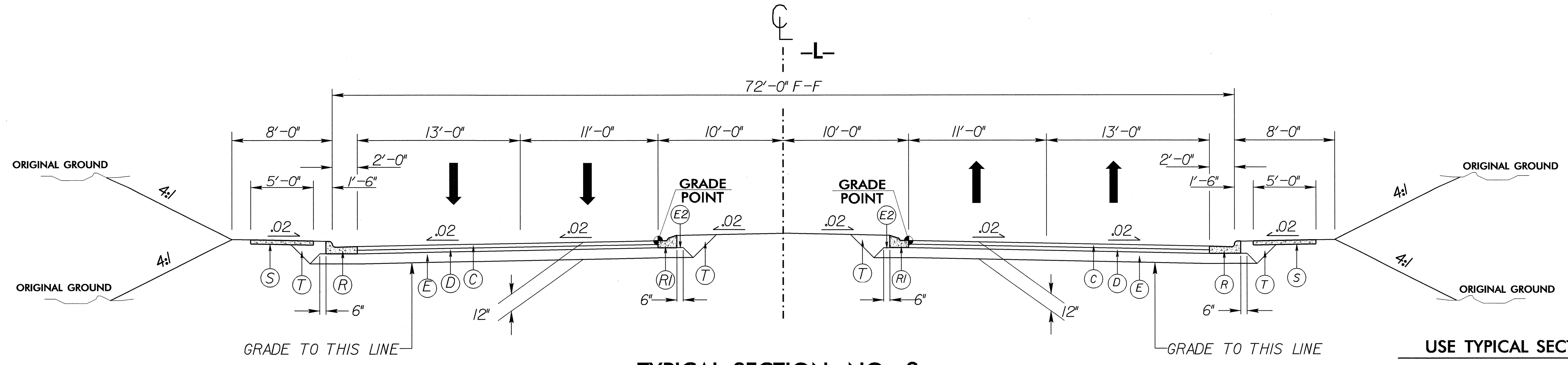


**DETAIL SHOWING METHOD OF WEDGING**



**TYPICAL SECTION NO. 1**

**USE TYPICAL SECTION NO. 1**  
 -L- STA. 10+50.00 +/- TO -L- STA. 14+50.00



**TYPICAL SECTION NO. 2**

**USE TYPICAL SECTION NO. 2**  
 -L- STA. 14+50.00 TO -L- STA. 76+35.00

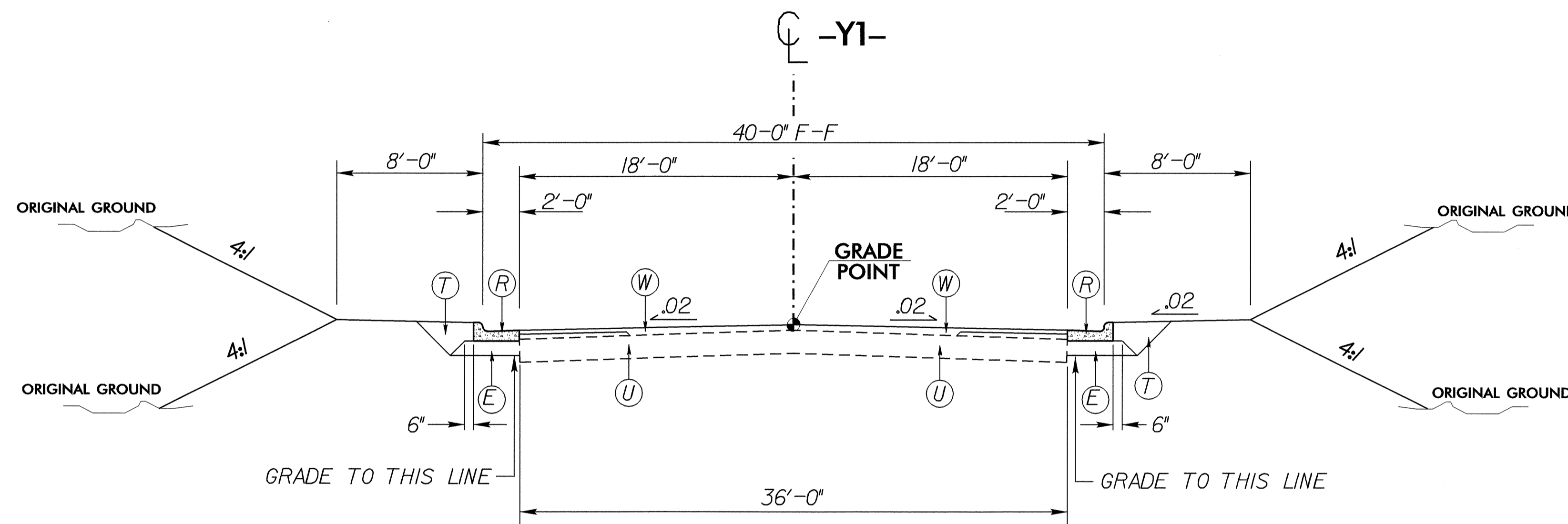
6/2/99  
22-DEC-2008 10:05  
K:\ROADWAY\PROJ\U3303A\RDY\_TUP\_050125.TUP  
\$\$\$\$\$USERNAME\$\$\$\$\$

# PAVEMENT SCHEDULE

C	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.	R	2'-6" CONCRETE CURB AND GUTTER.
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	1'-6" CONCRETE CURB AND GUTTER.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	S	4" CONCRETE SIDEWALK.
D	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
D1	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 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	U	EXISTING PAVEMENT.
E	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2 )
E1	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.		

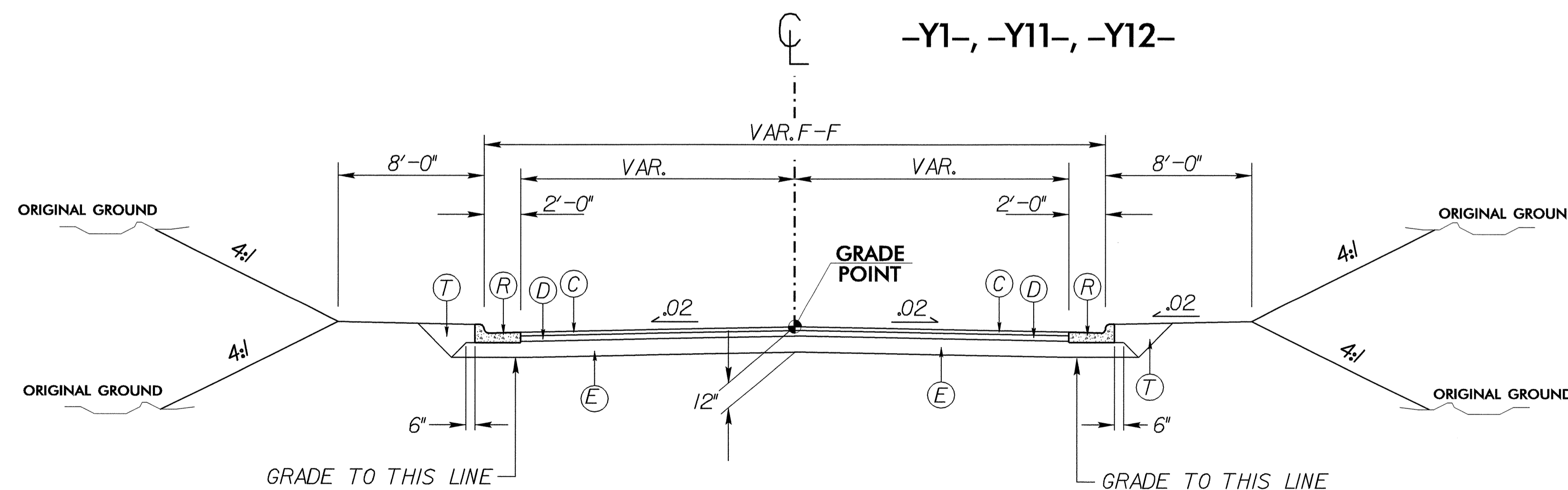
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.

PROJECT REFERENCE NO. U-3303A	SHEET NO. 2A
ROADWAY DESIGN ENGINEER SEAL 14493 JAMES STAFFORD GOODRIGHT	PAVEMENT DESIGN ENGINEER SEAL 22896 CLARK S. MORRISON



**TYPICAL SECTION NO. 3**

**USE TYPICAL SECTION NO. 3**  
-Y1- STA. 13+01.96 TO -Y1- STA. 13+80.00



**TYPICAL SECTION NO. 4**

**USE TYPICAL SECTION NO. 4**  
-Y1- STA. 13+80.00 TO -Y1- STA. 14+67.39  
-Y11- STA. 10+34.04 TO -Y11- STA. 10+90.00  
-Y12- STA. 11+96.33 TO -Y12- STA. 14+16.33

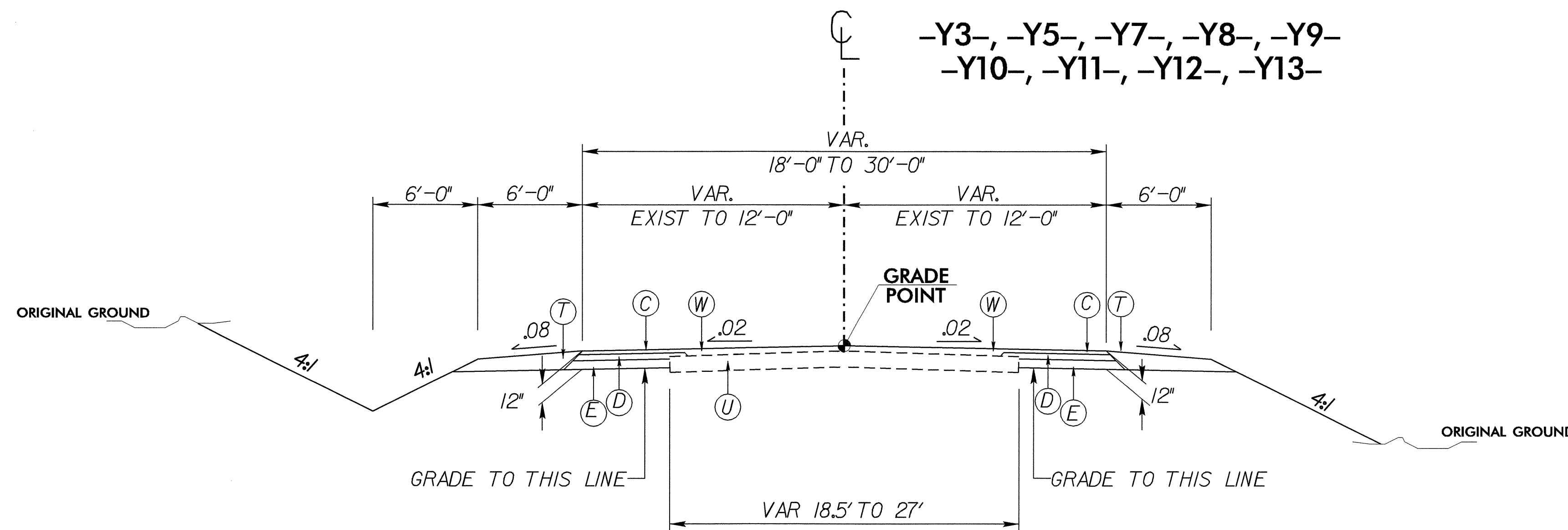
6.2.99

# PAVEMENT SCHEDULE

C	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.	R	2'-6" CONCRETE CURB AND GUTTER.
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	1'-6" CONCRETE CURB AND GUTTER.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	S	4" CONCRETE SIDEWALK.
D	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
D1	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 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	U	EXISTING PAVEMENT.
E	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2 )
E1	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.		

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

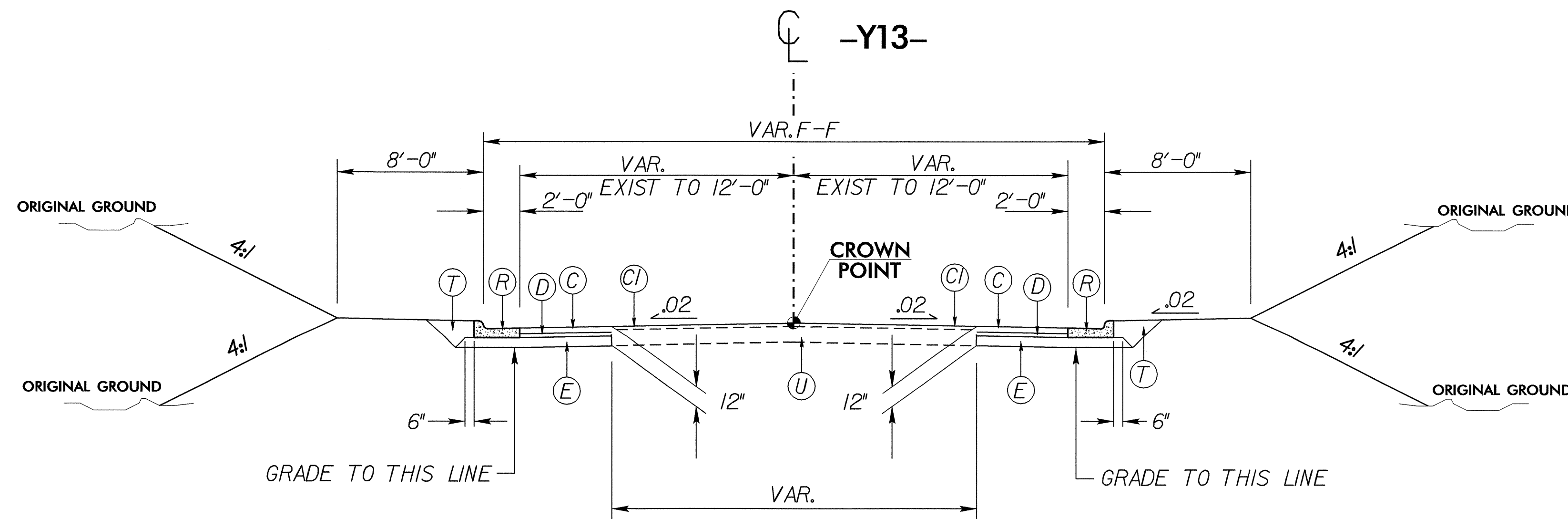
PROJECT REFERENCE NO. U-3303A	SHEET NO. 2B
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

- Y3- STA. 10+41.95 TO -Y3- STA. 15+03.98
- Y5- STA. 14+93.77 TO -Y5- STA. 16+50.43
- Y7- STA. 13+23.17 TO -Y7- STA. 14+73.25
- Y7- STA. 15+41.26 TO -Y7- STA. 16+92.60
- Y8- STA. 13+50.00 TO -Y8- STA. 15+39.99
- Y8- STA. 16+08.39 TO -Y8- STA. 18+41.90
- Y9- STA. 10+34.10 TO -Y9- STA. 11+88.90
- Y10- STA. 10+34.00 TO -Y10- STA. 11+73.00
- Y11- STA. 10+90.00 TO -Y11- STA. 12+52.17
- Y12- STA. 11+96.33 TO -Y12- STA. 14+16.33
- Y13- STA. 15+54.92 TO -Y13- STA. 17+66.13



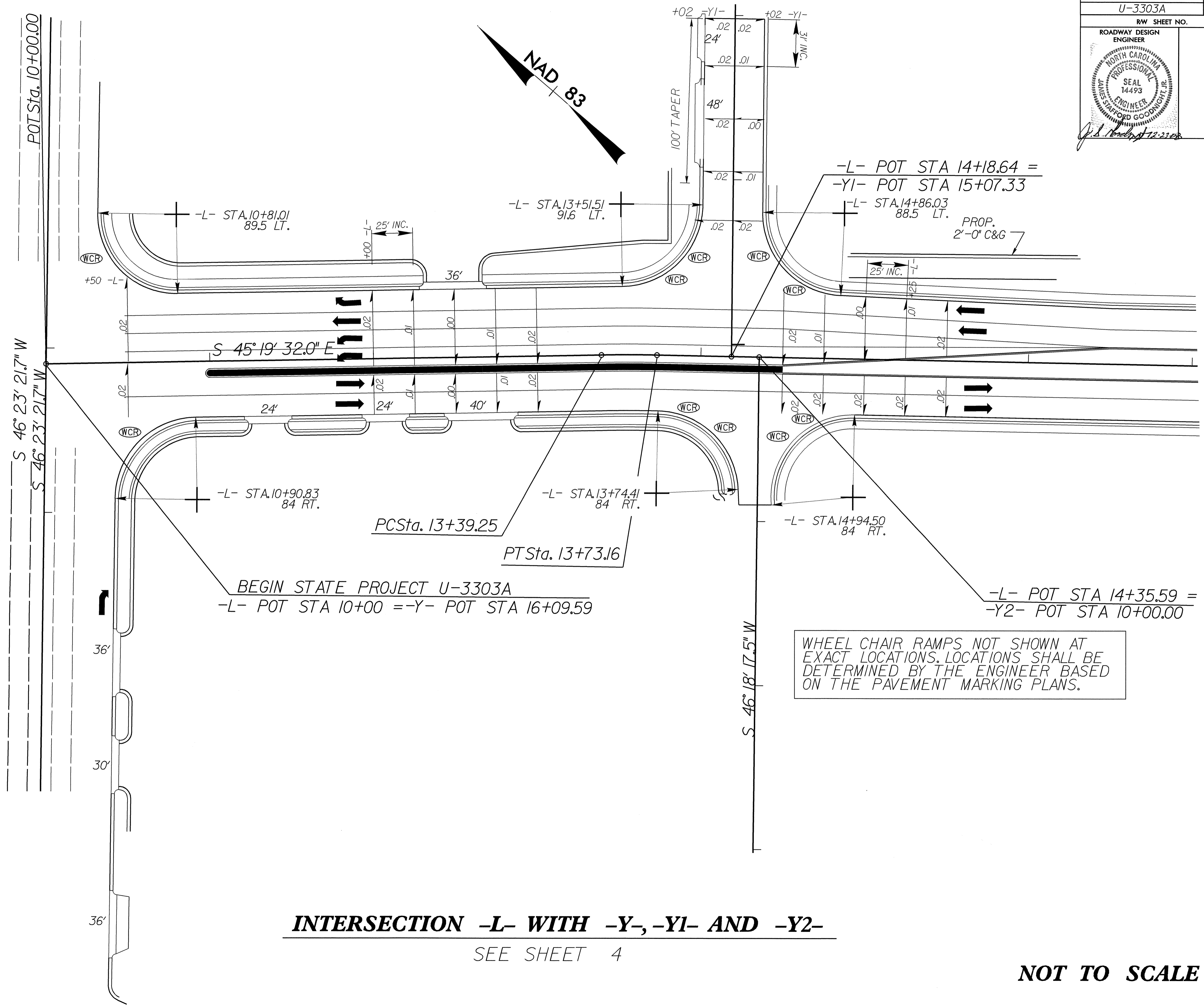
TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

- Y13- STA. 13+94.42 TO -Y13- STA. 14+86.86

22-DEC-2008 10:06 P:\projects\2008\U-3303A\rdj-tjp-050125-tjp \*\*\*SUBMITTAL\*\*\*

PROJECT REFERENCE NO. U-3303A	SHEET NO. 2-C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 14493 JAMES STAFFORD GOODWRIGHT, JR.	HYDRAULICS ENGINEER



-L- POT STA 14+18.64 =  
-Y1- POT STA 15+07.33

BEGIN STATE PROJECT U-3303A  
-L- POT STA 10+00 = -Y- POT STA 16+09.59

-L- POT STA 14+35.59 =  
-Y2- POT STA 10+00.00

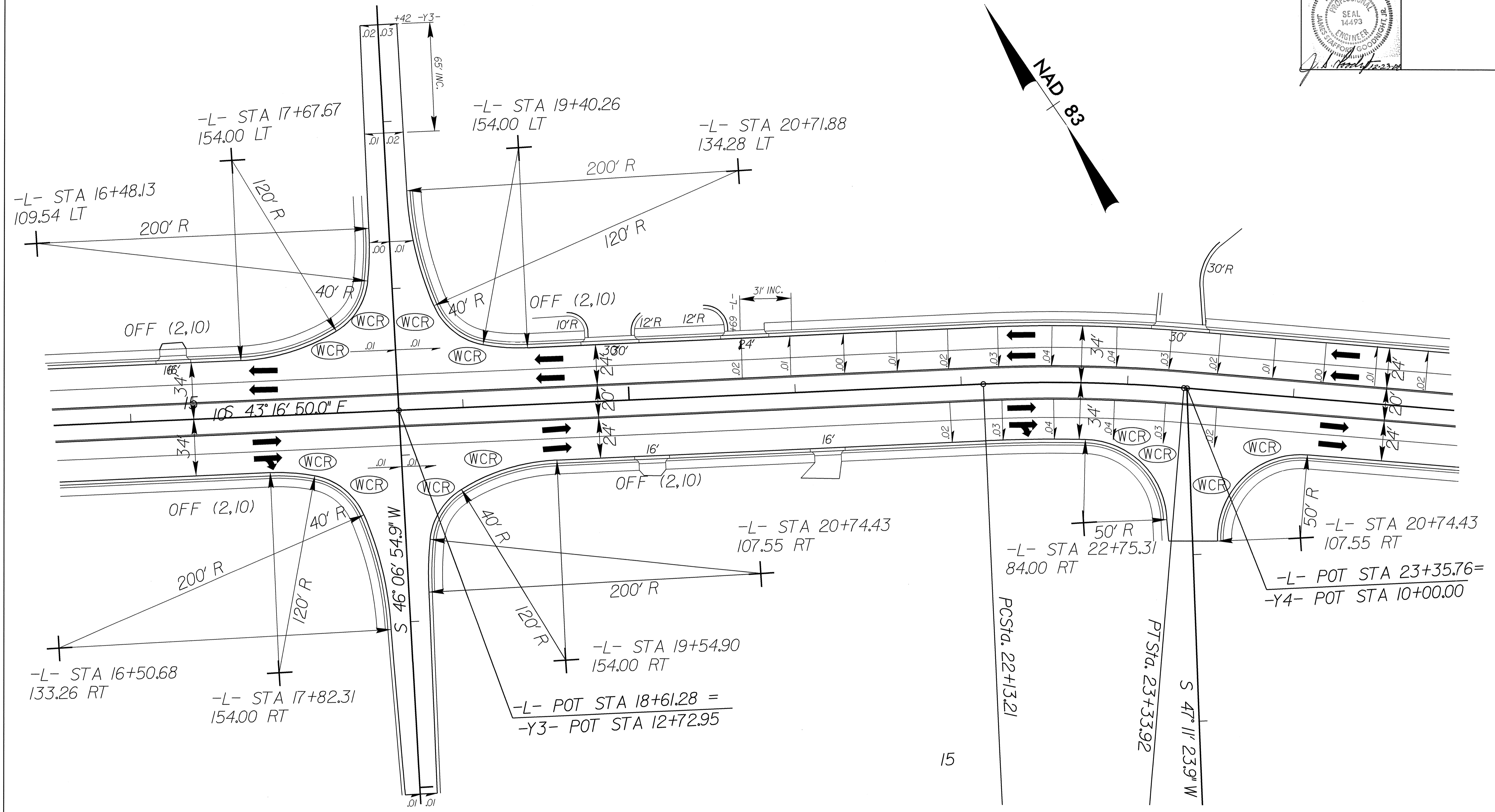
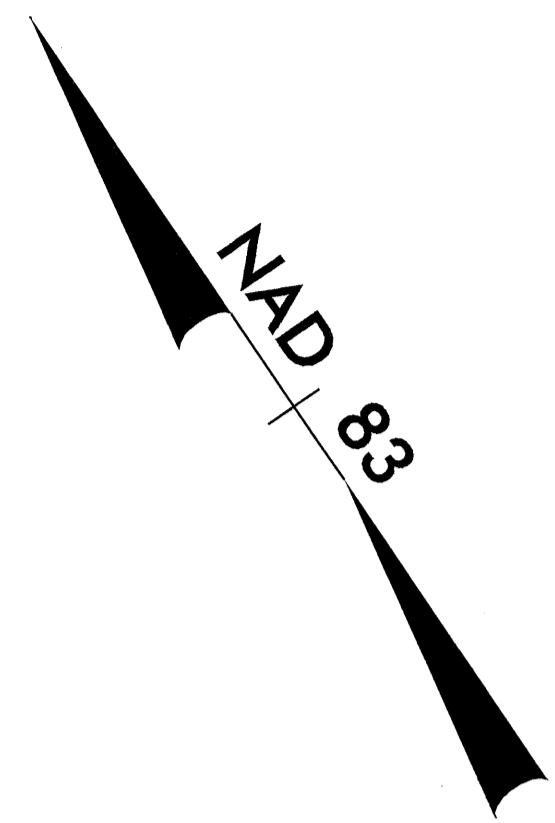
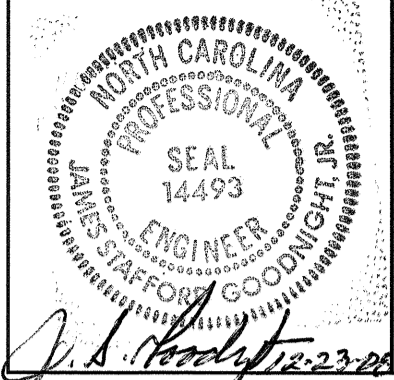
WHEEL CHAIR RAMPS NOT SHOWN AT EXACT LOCATIONS. LOCATIONS SHALL BE DETERMINED BY THE ENGINEER BASED ON THE PAVEMENT MARKING PLANS.

**INTERSECTION -L- WITH -Y-, -Y1- AND -Y2-**  
SEE SHEET 4

**NOT TO SCALE**

5/14/99  
17-DEC-2008 07:55  
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PROJECT REFERENCE NO. U-3303A	SHEET NO. 2-D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



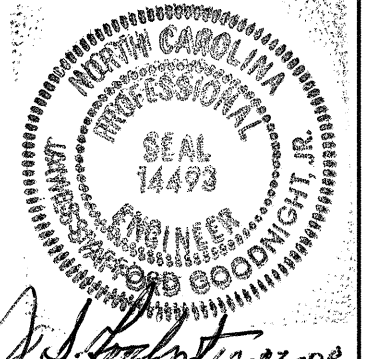
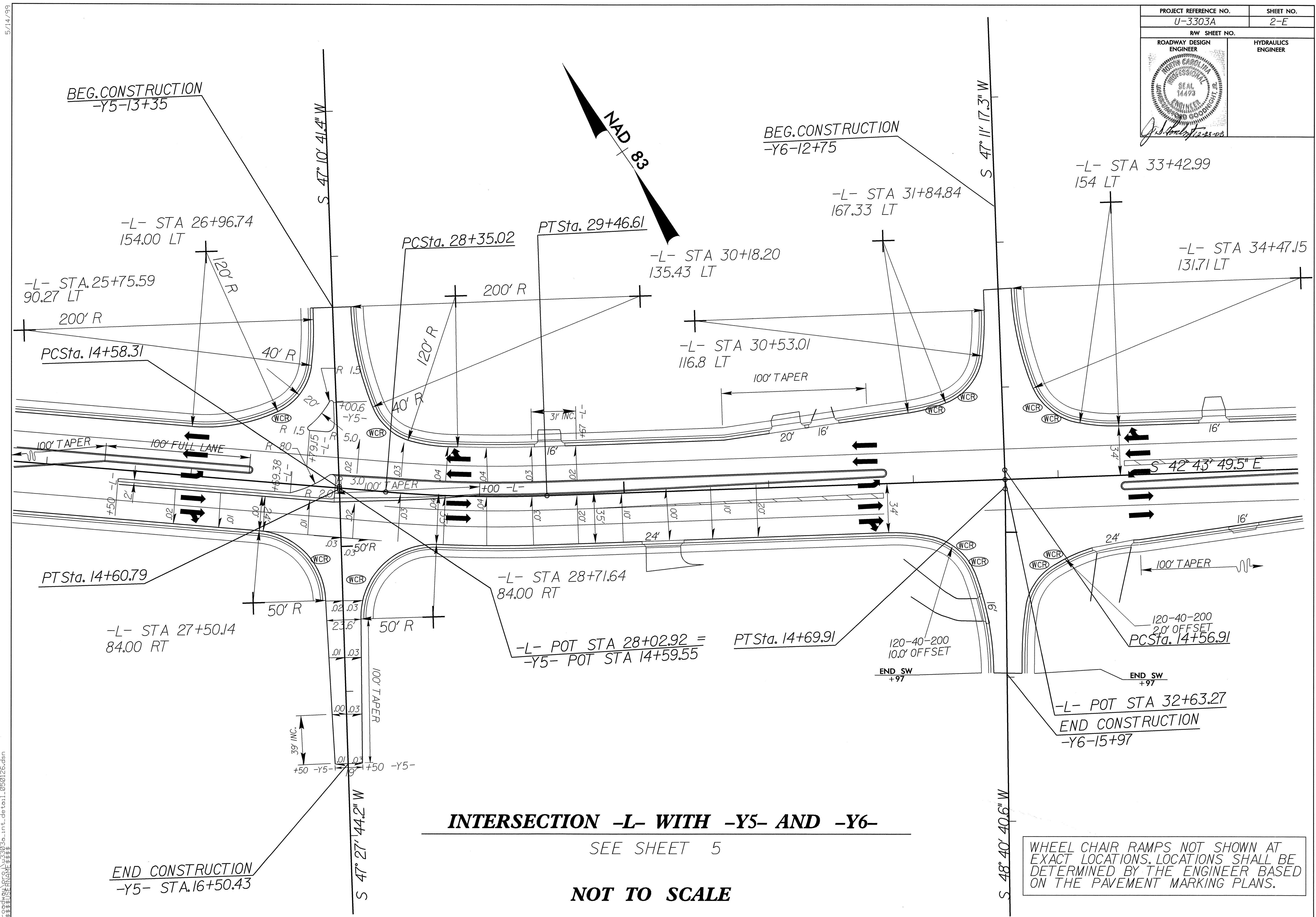
**INTERSECTION -L- WITH -Y3- AND -Y4-**  
SEE SHEET 4

**NOT TO SCALE**

WHEEL CHAIR RAMPS NOT SHOWN AT EXACT LOCATIONS. LOCATIONS SHALL BE DETERMINED BY THE ENGINEER BASED ON THE PAVEMENT MARKING PLANS.

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PROJECT REFERENCE NO. U-3303A	SHEET NO. 2-E
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

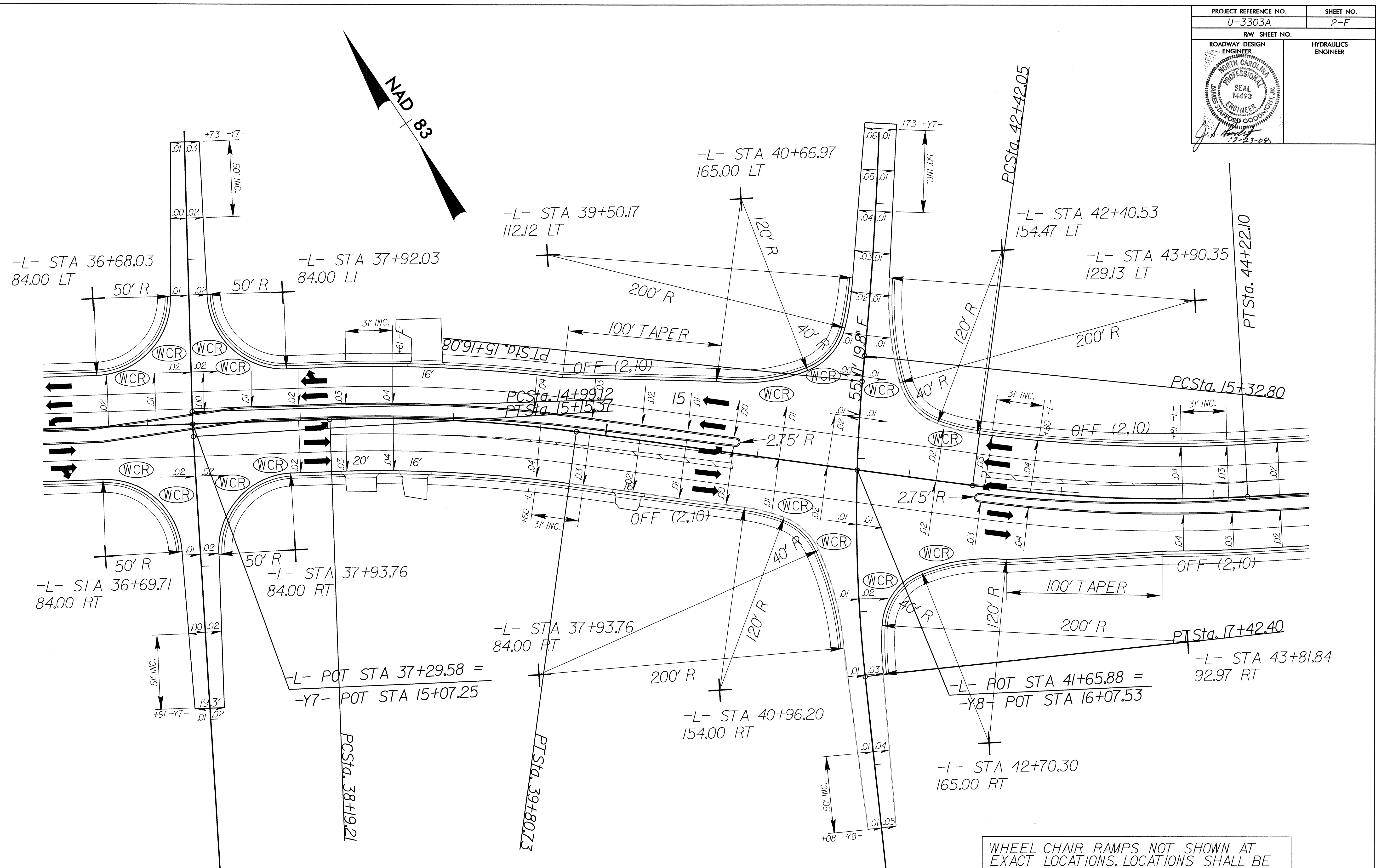



**INTERSECTION -L- WITH -Y5- AND -Y6-**  
 SEE SHEET 5  
**NOT TO SCALE**

WHEEL CHAIR RAMPS NOT SHOWN AT EXACT LOCATIONS. LOCATIONS SHALL BE DETERMINED BY THE ENGINEER BASED ON THE PAVEMENT MARKING PLANS.

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PROJECT REFERENCE NO. U-3303A	SHEET NO. 2-F
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14493 J. J. [Signature] 12-23-08	HYDRAULICS ENGINEER



**INTERSECTION -L- WITH -Y7- AND -Y8-**


SEE SHEET 6

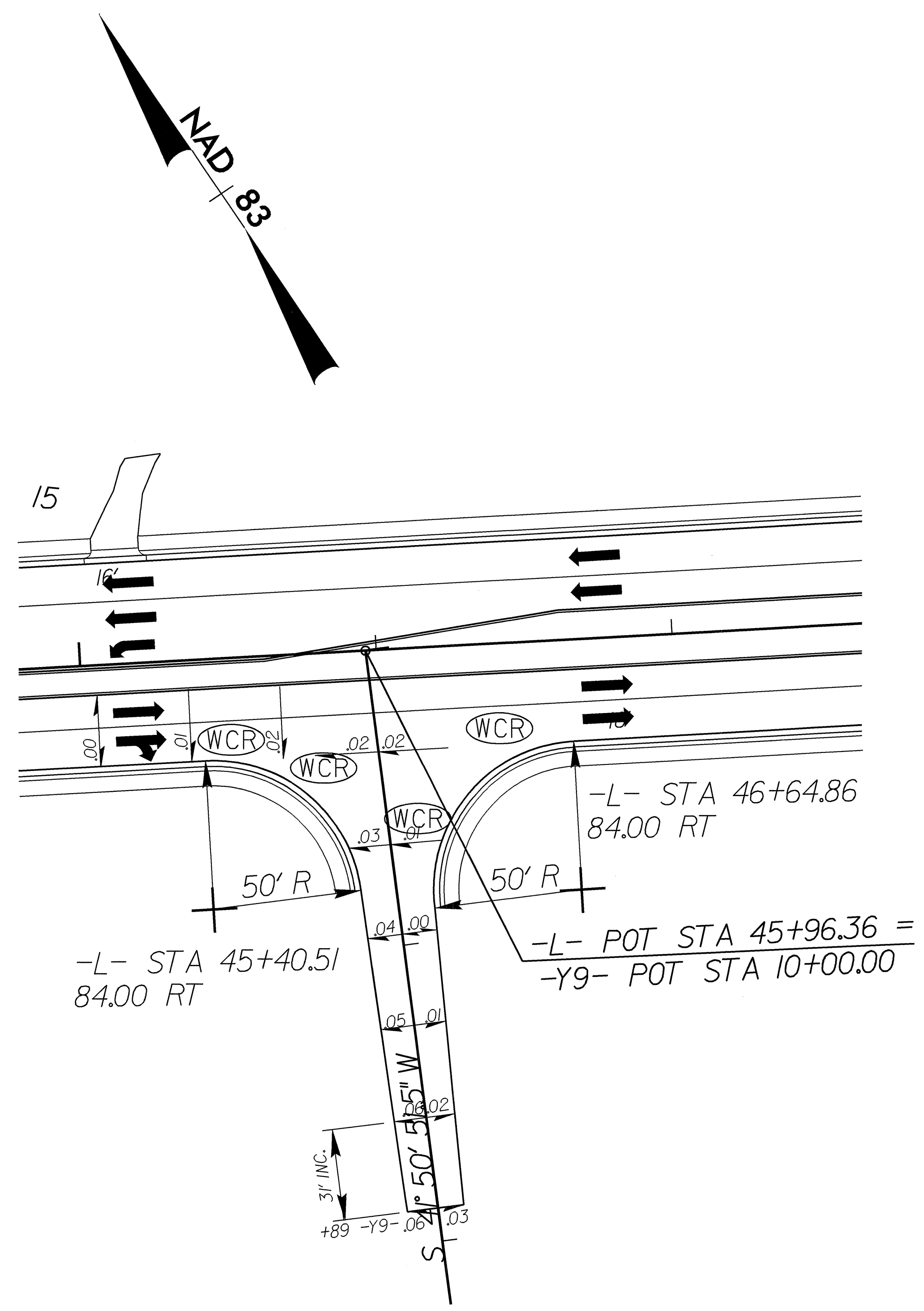
WHEEL CHAIR RAMPS NOT SHOWN AT EXACT LOCATIONS. LOCATIONS SHALL BE DETERMINED BY THE ENGINEER BASED ON THE PAVEMENT MARKING PLANS.

**NOT TO SCALE**

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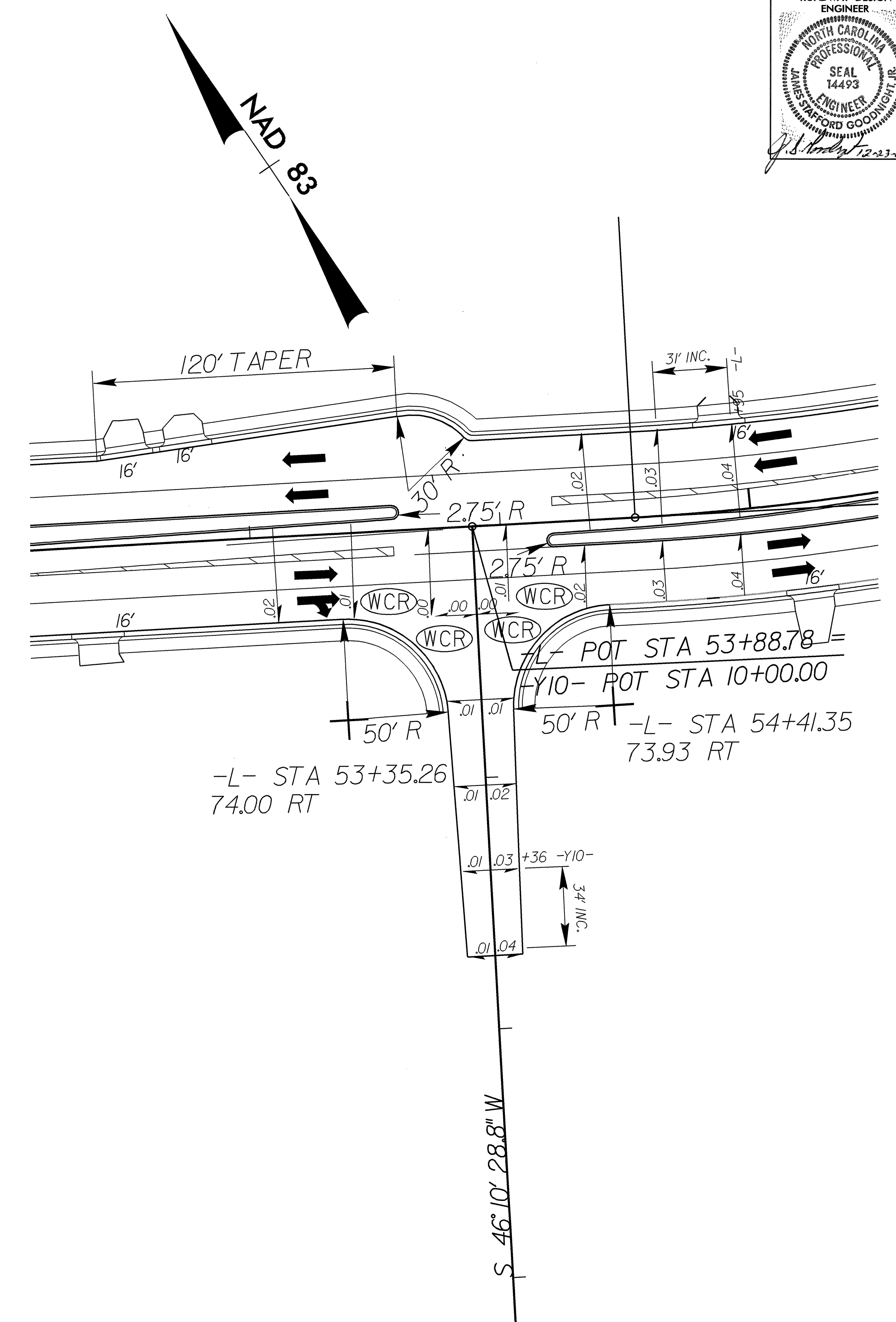
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PROJECT REFERENCE NO. U-3303A	SHEET NO. 2-6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER



WHEEL CHAIR RAMPS NOT SHOWN AT EXACT LOCATIONS. LOCATIONS SHALL BE DETERMINED BY THE ENGINEER BASED ON THE PAVEMENT MARKING PLANS.

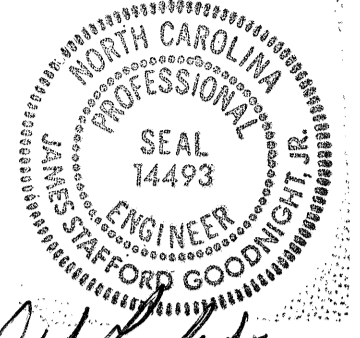
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 NOT TO SCALE SEE SHEET 6

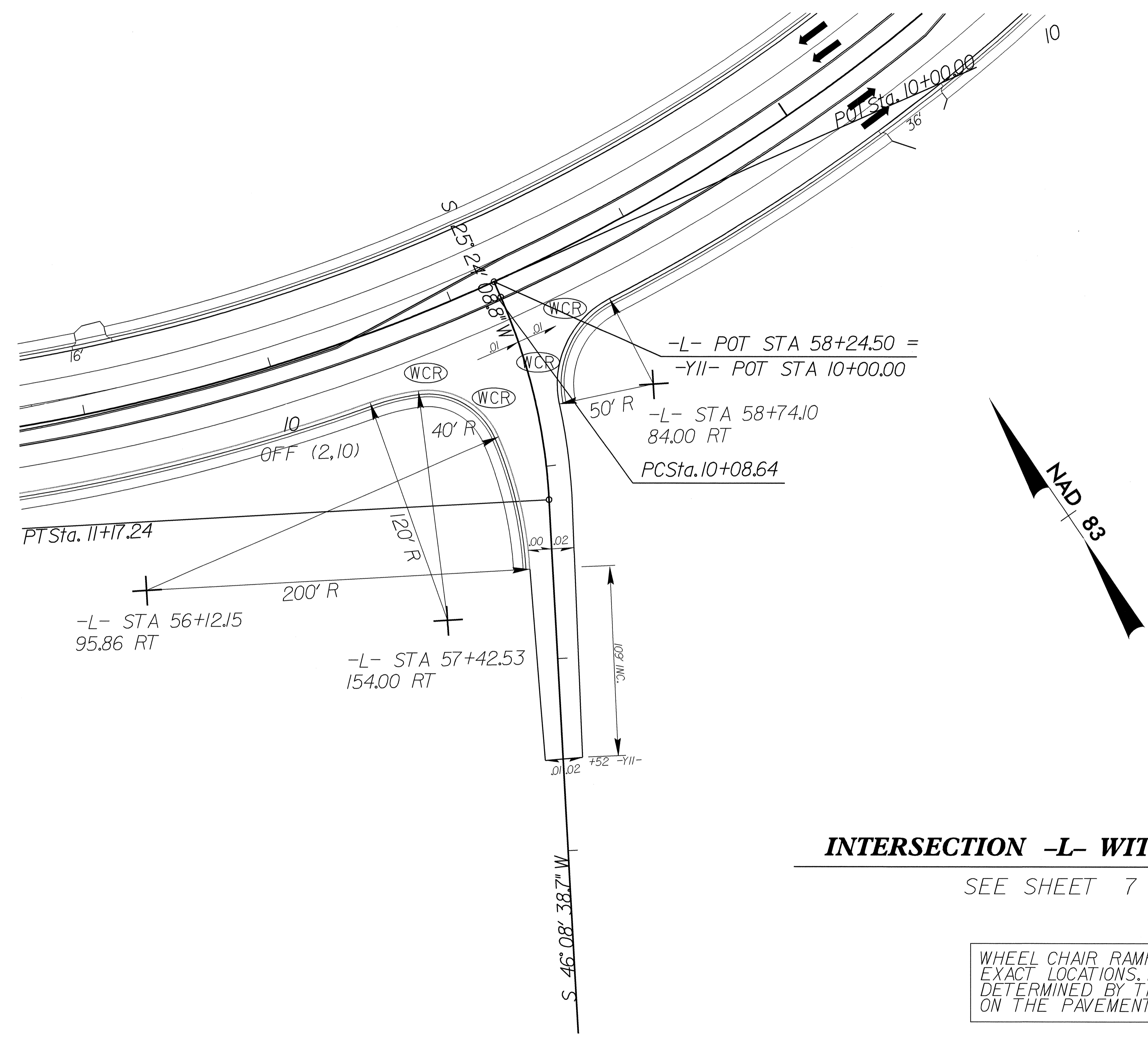


**INTERSECTION -L- WITH -Y10-**  
 NOT TO SCALE SEE SHEET 7



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PROJECT REFERENCE NO. U-3303A	SHEET NO. 2-H
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
<i>J.S. Goodnight, Jr.</i>	

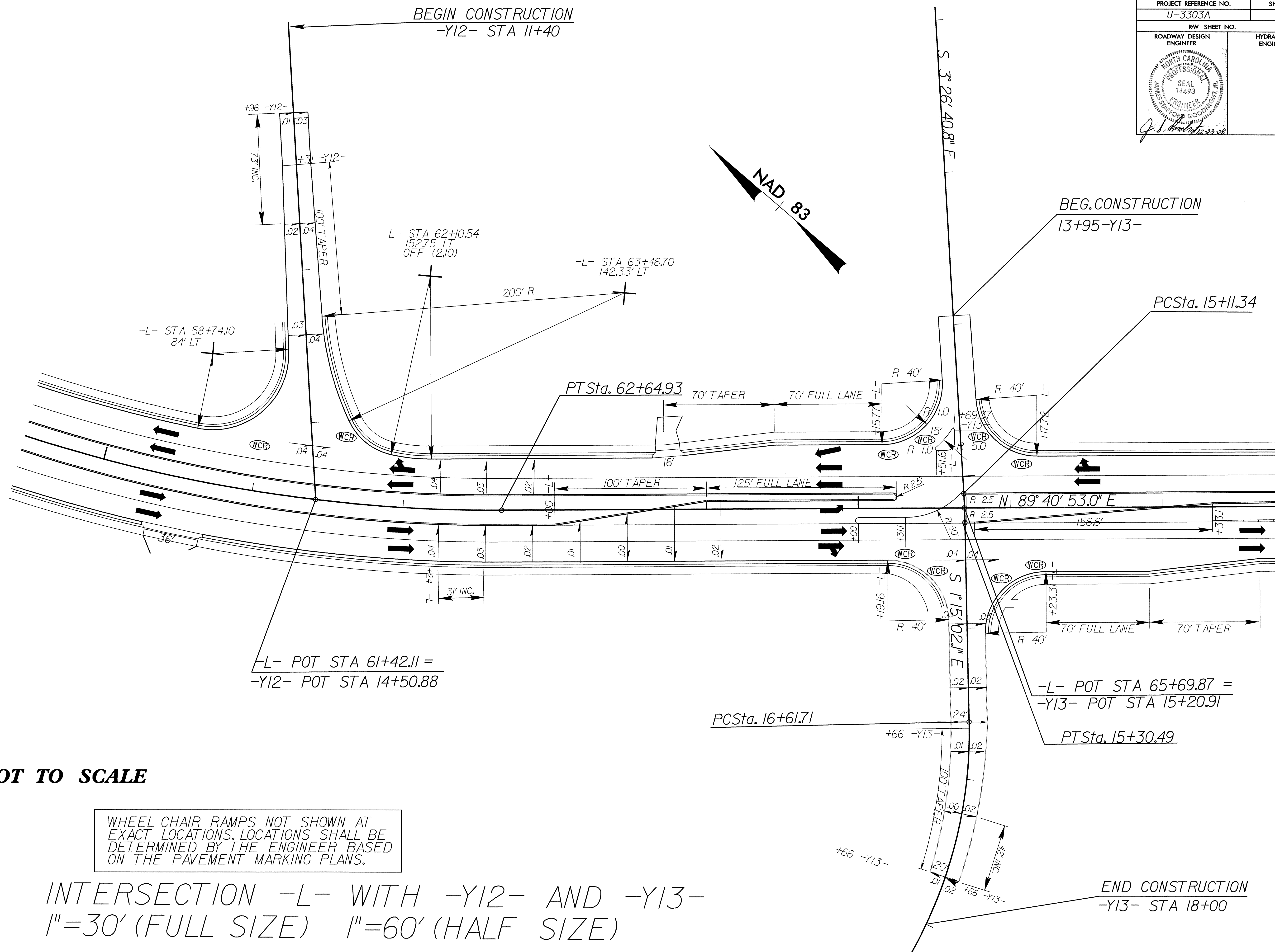


**INTERSECTION -L- WITH -YII-**  
SEE SHEET 7

WHEEL CHAIR RAMPS NOT SHOWN AT EXACT LOCATIONS. LOCATIONS SHALL BE DETERMINED BY THE ENGINEER BASED ON THE PAVEMENT MARKING PLANS.

**NOT TO SCALE**

PROJECT REFERENCE NO. U-3303A	SHEET NO. 2-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**NOT TO SCALE**

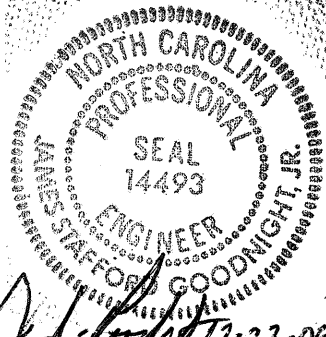
WHEEL CHAIR RAMPS NOT SHOWN AT EXACT LOCATIONS. LOCATIONS SHALL BE DETERMINED BY THE ENGINEER BASED ON THE PAVEMENT MARKING PLANS.

INTERSECTION -L- WITH -Y12- AND -Y13-  
 1"=30' (FULL SIZE) 1"=60' (HALF SIZE)

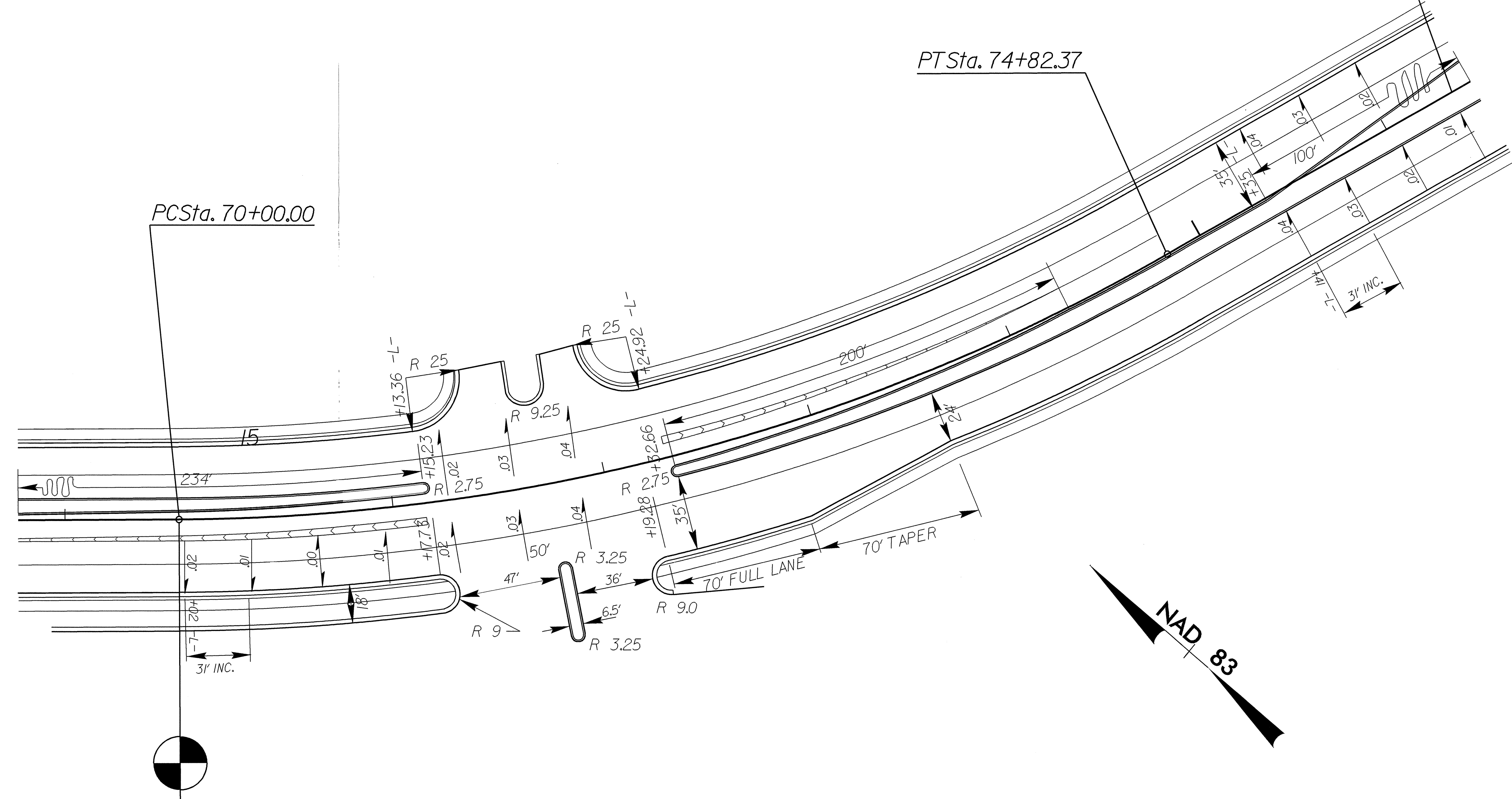
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5/14/99

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17-DEC-2008 08:04

PROJECT REFERENCE NO. U-3303A	SHEET NO. 2-J
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	

-L- STA.76+35  
 END STATE PROJECT U-3303A  
 TIE TO EXIST.U-3303B



EQUATION:  
 -L- Sta 68+53.16 BK =  
 -L- Sta 70+00.00 AH

INTERSECTION -L- WITH SHOPPING CENTER  
 1"=30' (FULL SIZE) 1"=60' (HALF SIZE)

WHEEL CHAIR RAMPS NOT SHOWN AT EXACT LOCATIONS. LOCATIONS SHALL BE DETERMINED BY THE ENGINEER BASED ON THE PAVEMENT MARKING PLANS.

**NOT TO SCALE**

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

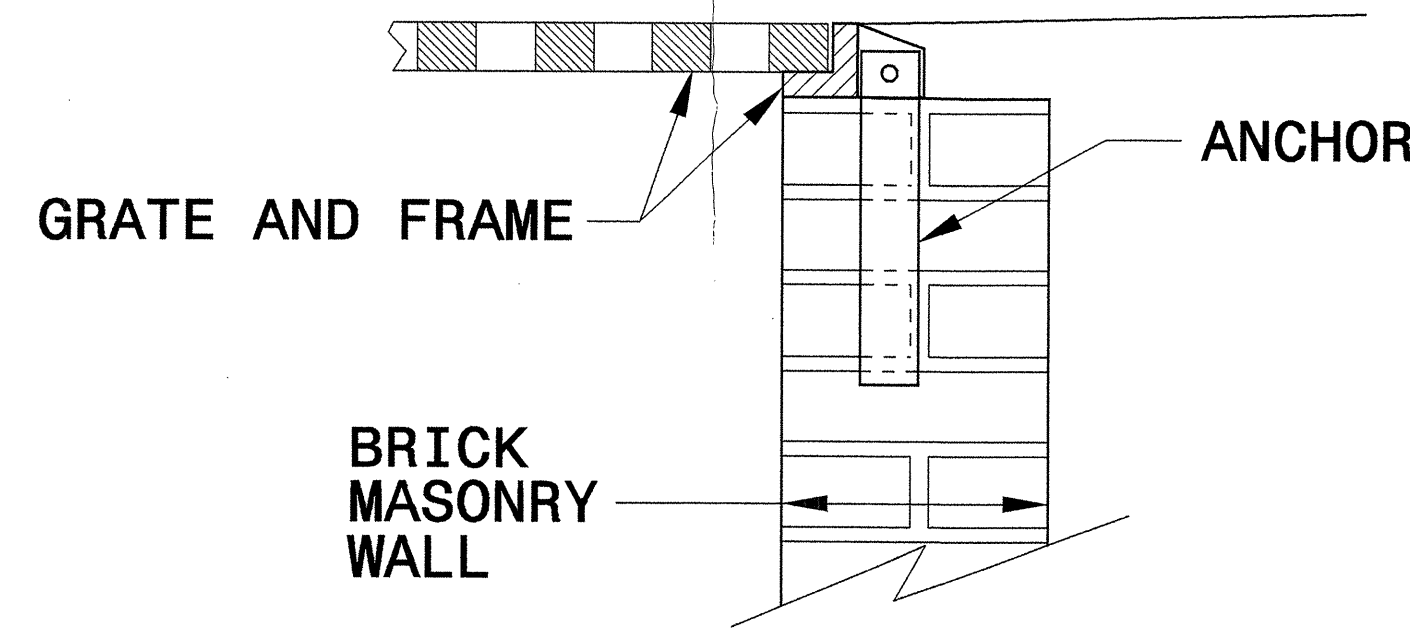
ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840D25**

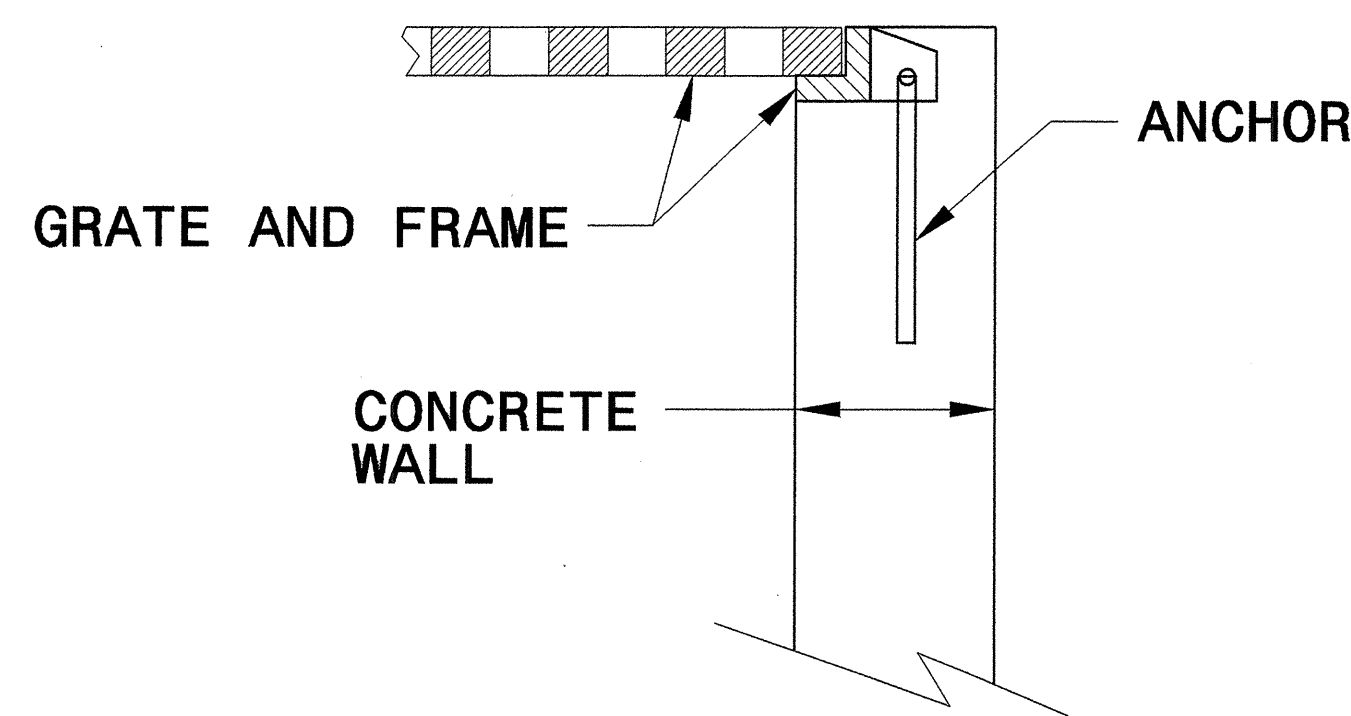
STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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

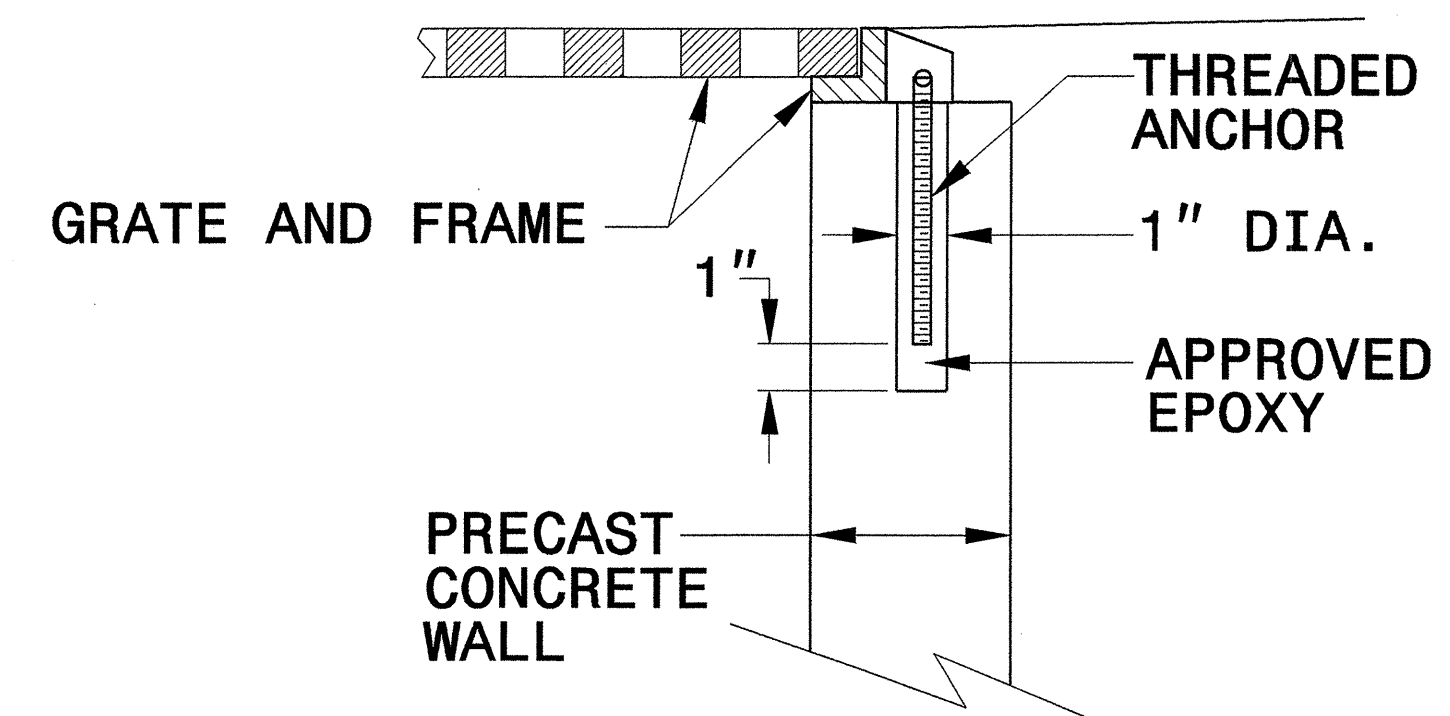
SHEET 1 OF 1  
**840D25**



**BRICK MASONRY  
CONSTRUCTION**



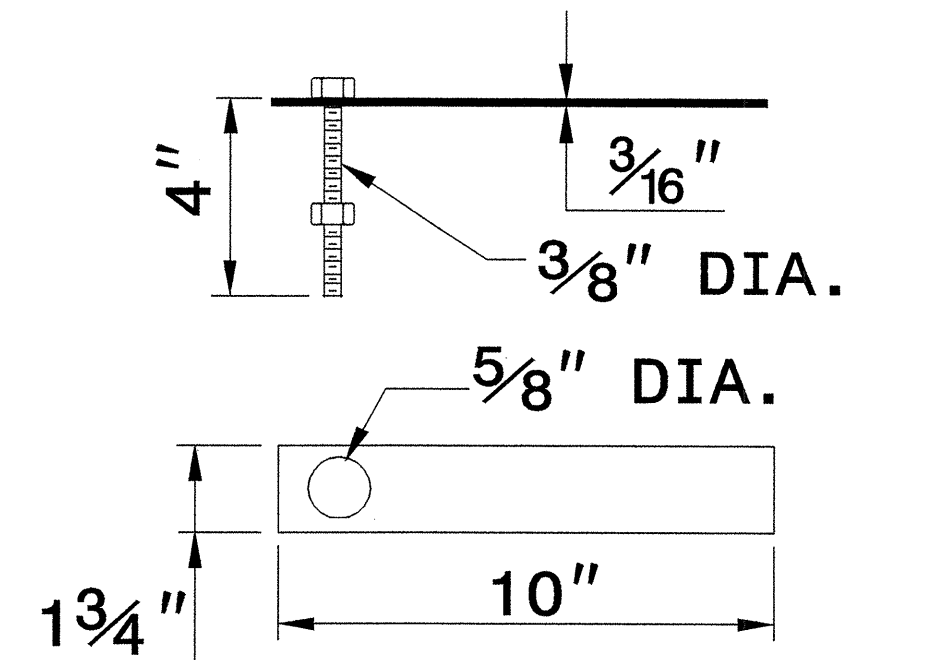
**CONCRETE  
CONSTRUCTION**



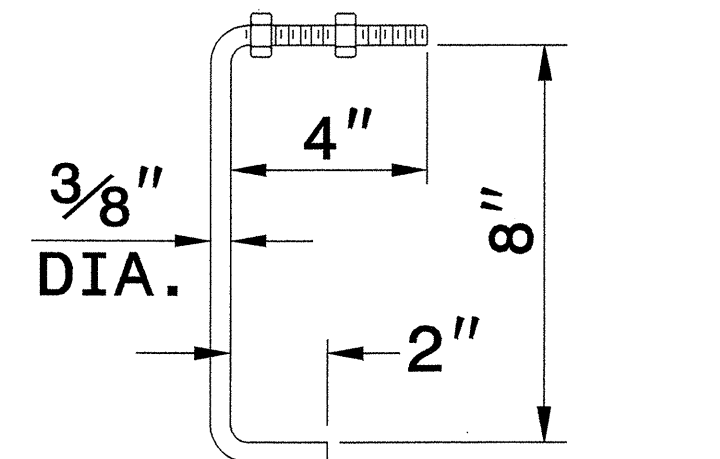
**PRECAST CONCRETE  
CONSTRUCTION**

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

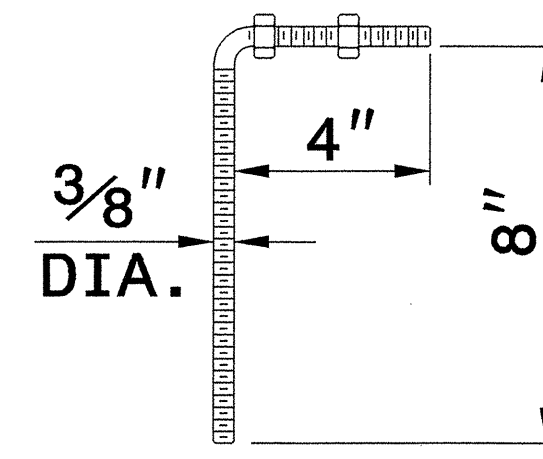
NOTE:  
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL  
OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



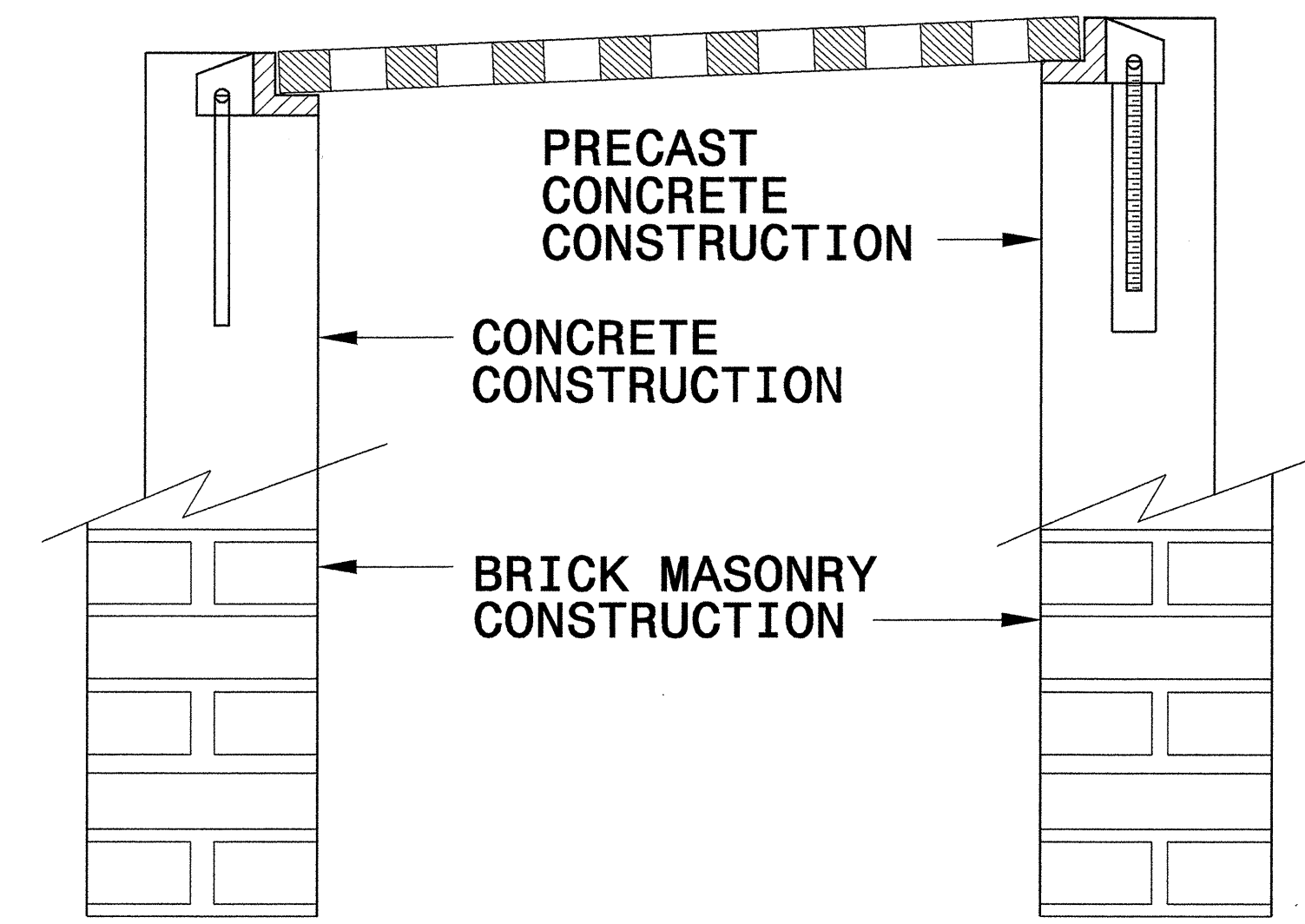
**MASONRY ANCHOR**  
3/8" DIA. BOLT WITH PLATE



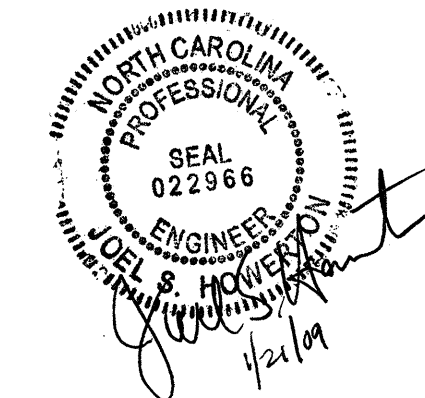
**CONCRETE ANCHOR**  
3/8" DIA. BENT BAR



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



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



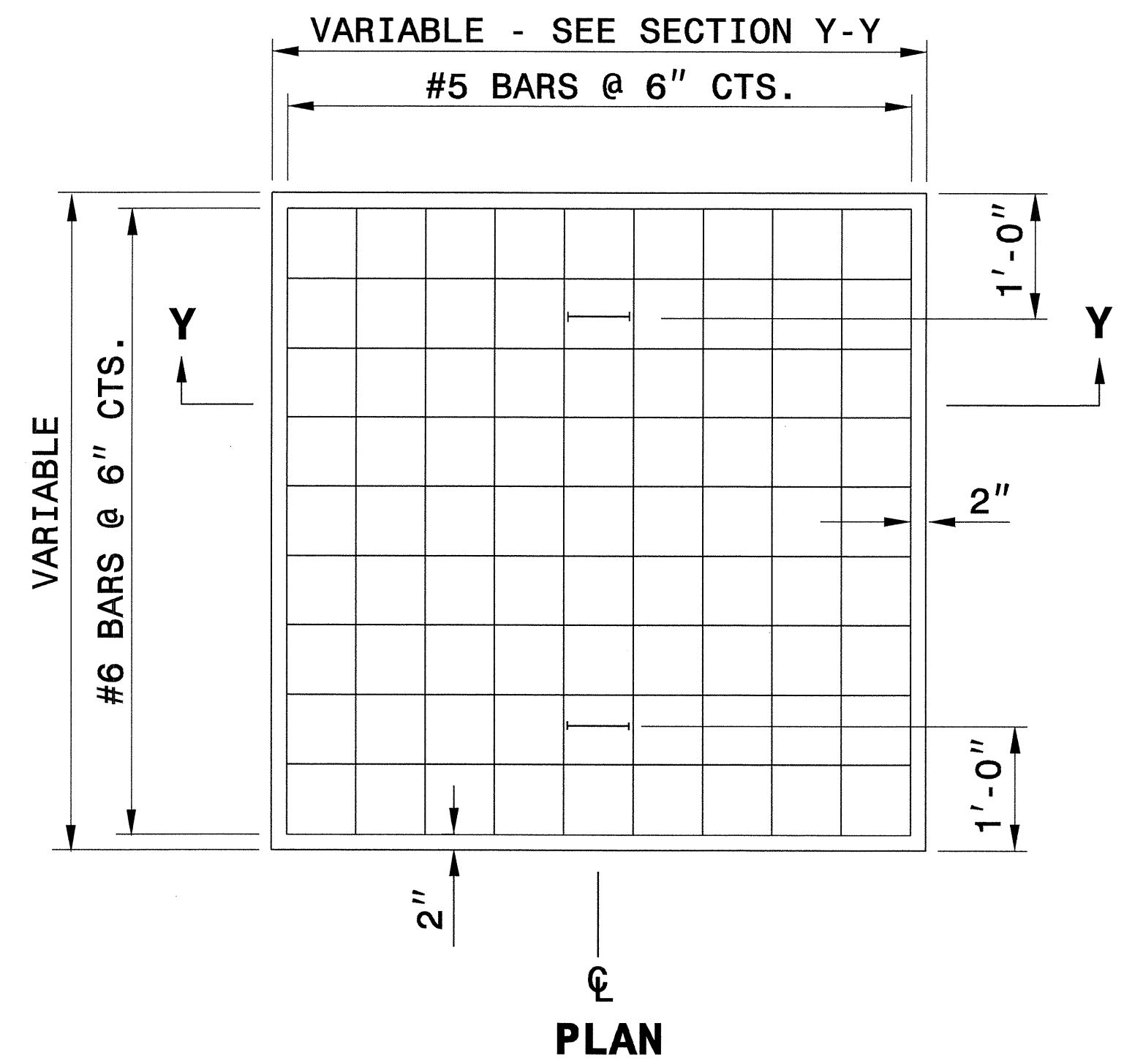
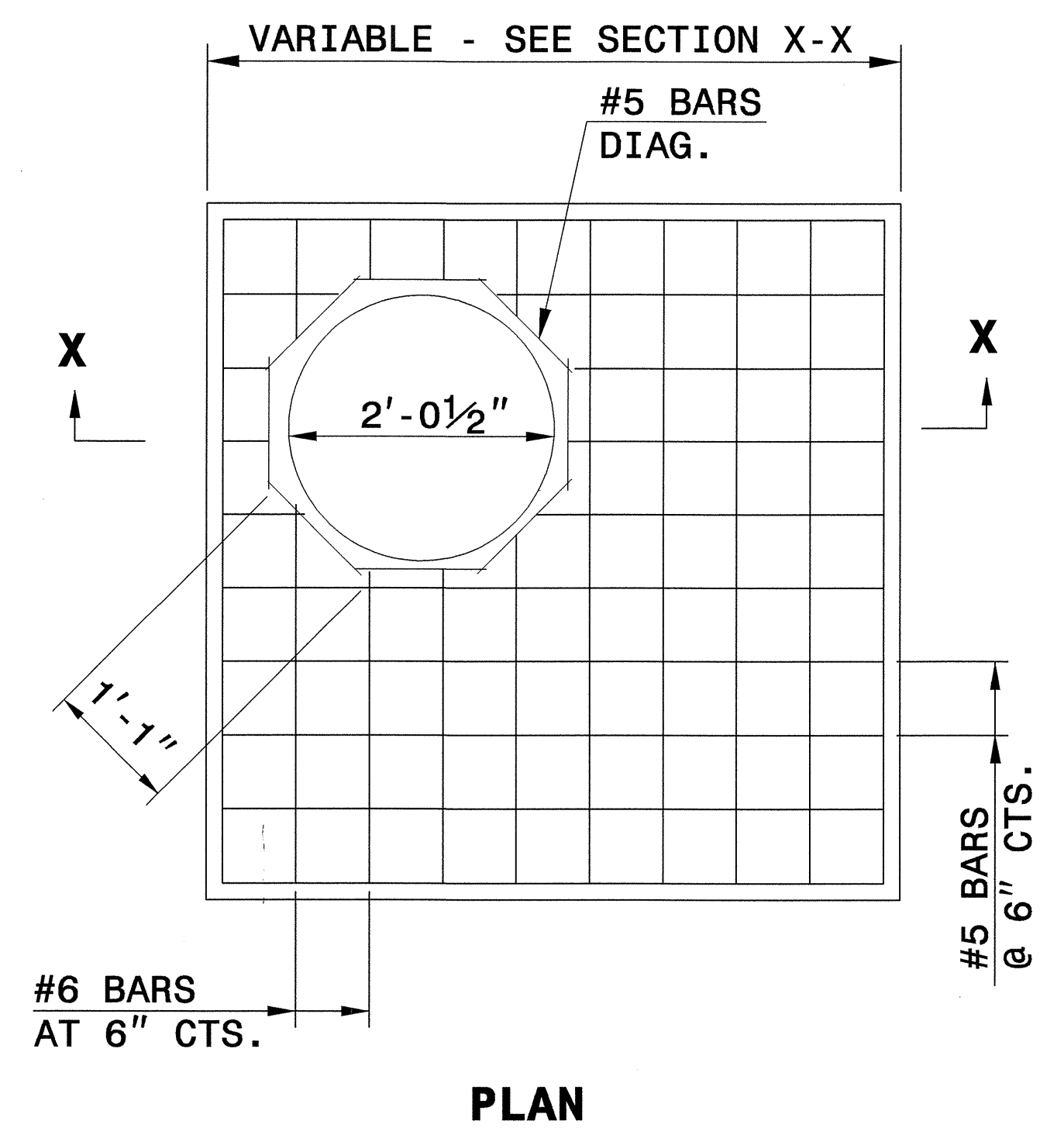
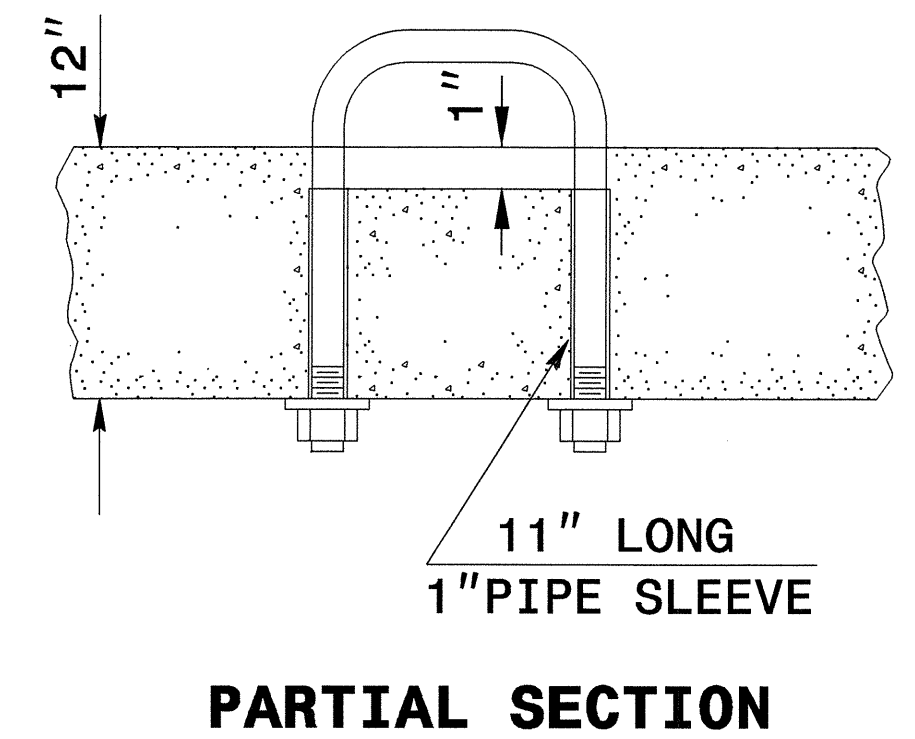
PROJECT SERVICES UNIT  
STANDARDS AND SPECIAL DESIGN  
Office 919-250-4128 FAX 919-250-4119

**SEE PLATE FOR TITLE**

ORIGINAL BY: 2006 STD 840.25 DATE: 07/18/06  
 MODIFIED BY: E.F. WARD DATE: 9/25/06  
 CHECKED BY: JWS DATE: 11/3/08  
 FILE SPEC.: J

\*\*\*\*\*CUSTOMER USE ONLY\*\*\*\*\*

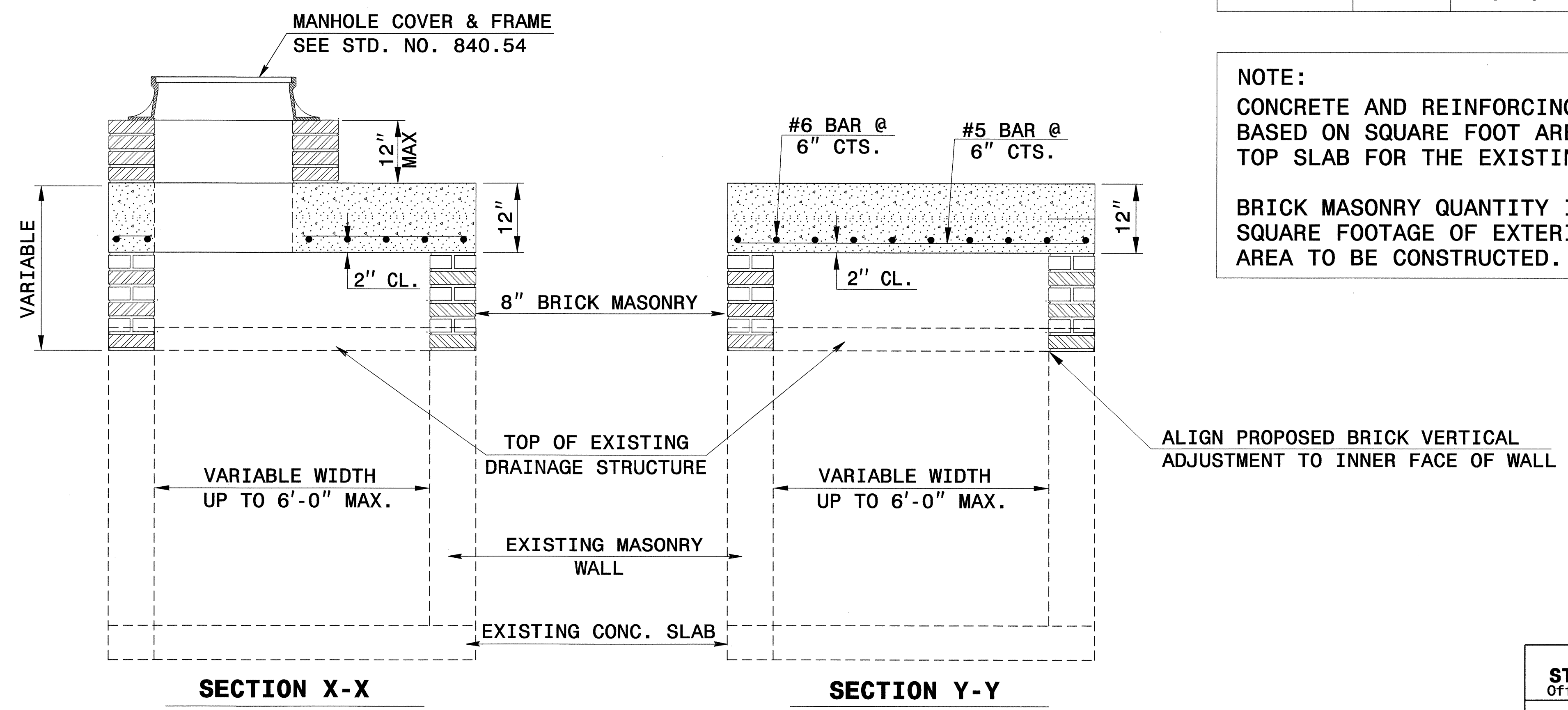
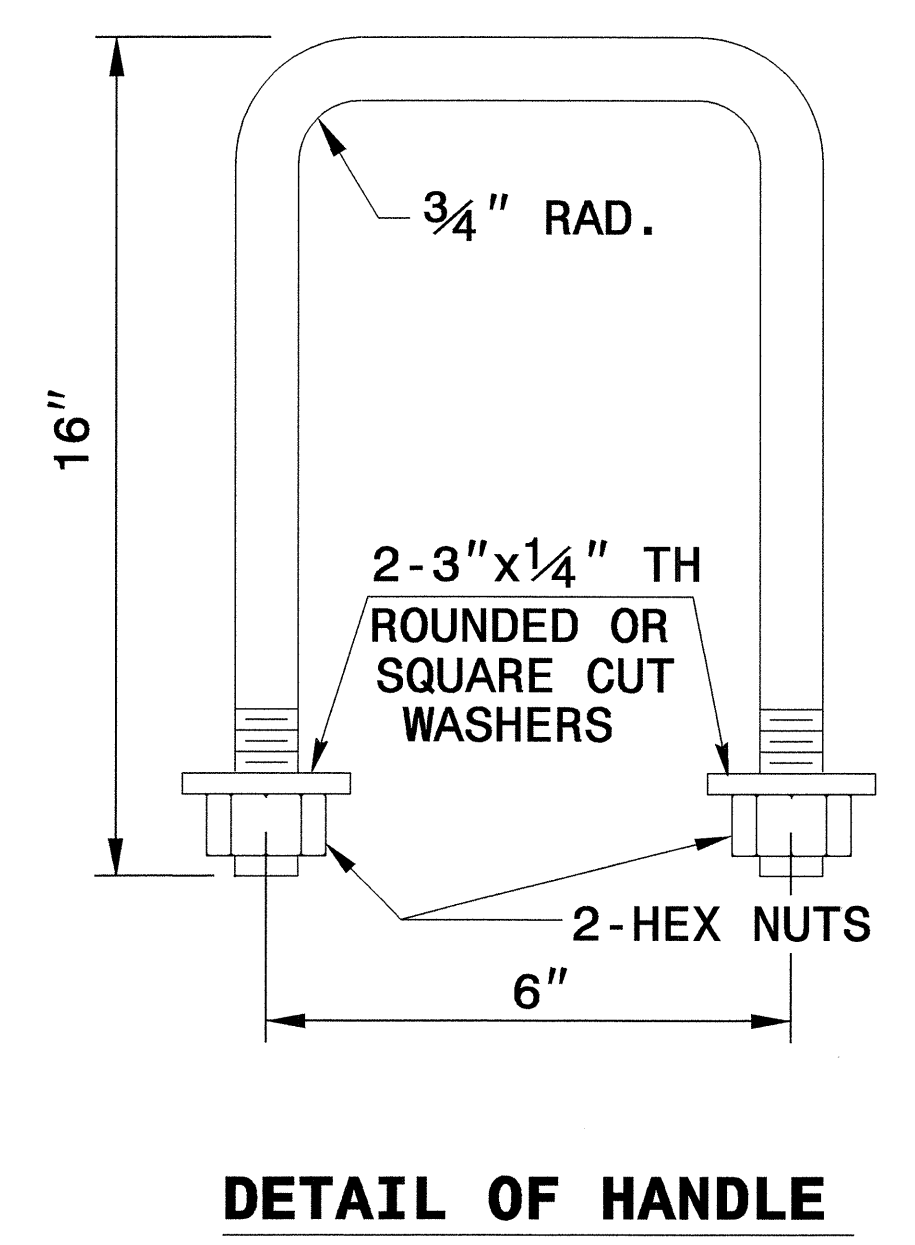




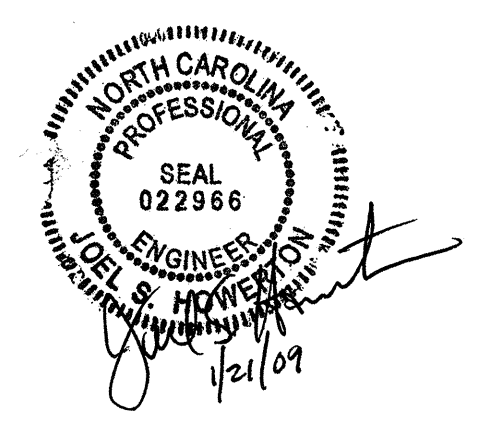
GENERAL NOTES:  
CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.  
FIELD VERIFY THE DIMENSIONS FOR THE EXISTING BOXES.

**BILL OF MATERIALS**

MASONRY			
TOP SLAB CONCRETE CLASS "A"		.037YDS <sup>3</sup>	PER FT <sup>2</sup>
BRICK MASONRY		.025YDS <sup>3</sup>	PER FT <sup>2</sup>
REINFORCING STEEL		7.64LBS	PER FT <sup>2</sup>
MANHOLE OPTION QUANTITIES			
SIZE	QTY.	LENGTH	REINF. STEEL LBS.
#5 DIAG.	8	1'-1"	9.04



NOTE:  
CONCRETE AND REINFORCING STEEL QUANTITIES BASED ON SQUARE FOOT AREA OF THE PROPOSED TOP SLAB FOR THE EXISTING DRAINAGE STRUCTURE.  
BRICK MASONRY QUANTITY IS BASED ON THE TOTAL SQUARE FOOTAGE OF EXTERIOR WALL SURFACE AREA TO BE CONSTRUCTED.



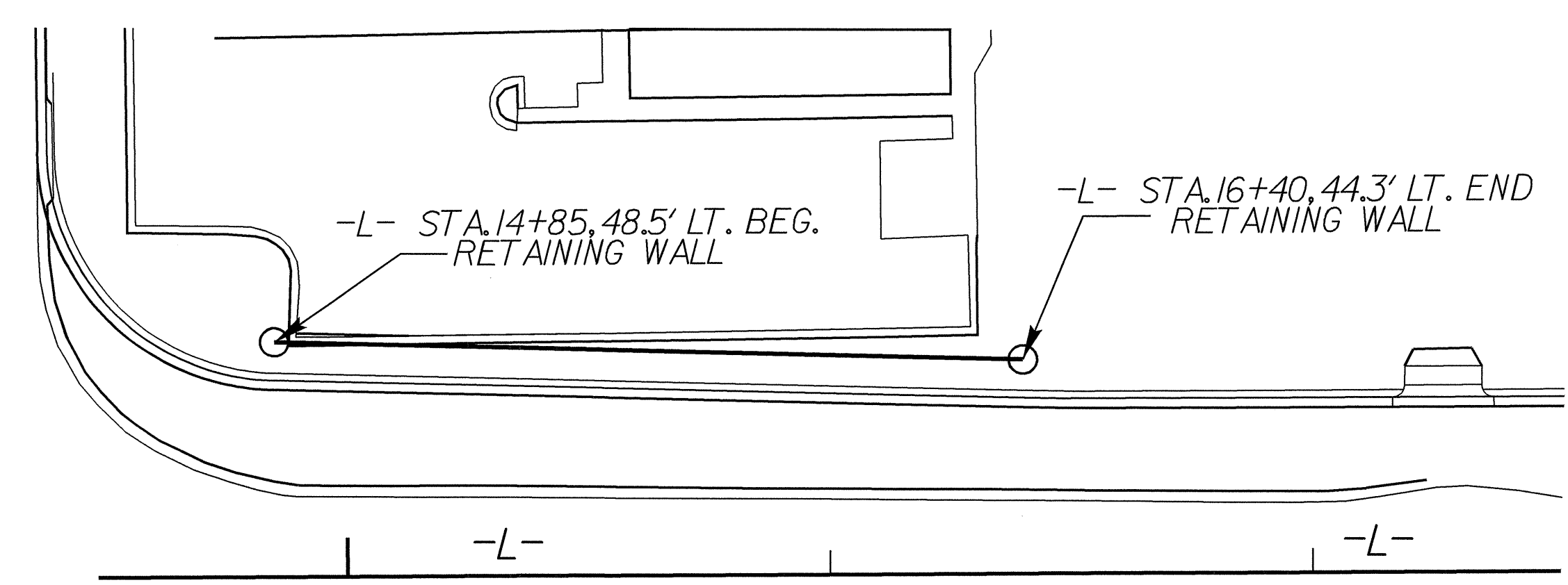
**PROJECT SERVICES UNIT  
STANDARDS AND SPECIAL DESIGN**  
Office 919-250-4128 FAX 919-250-4119

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

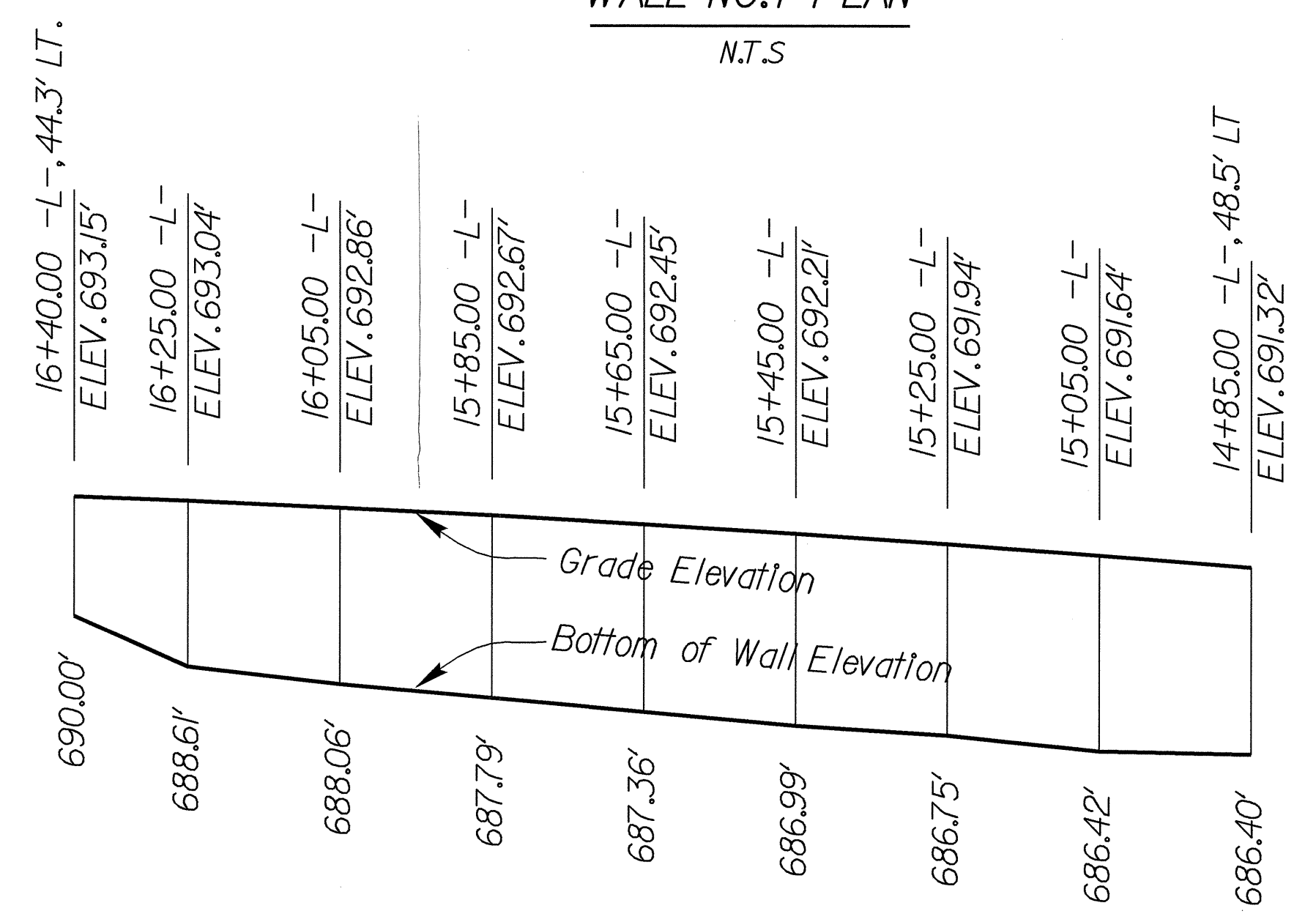
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MODIFIED BY: E.E.W. DATE: NOV. 2001  
CHECKED BY: *[Signature]* DATE: 12/23/08  
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5/14/99  
SYSTEMS  
DESIGN  
SUBMITTALS

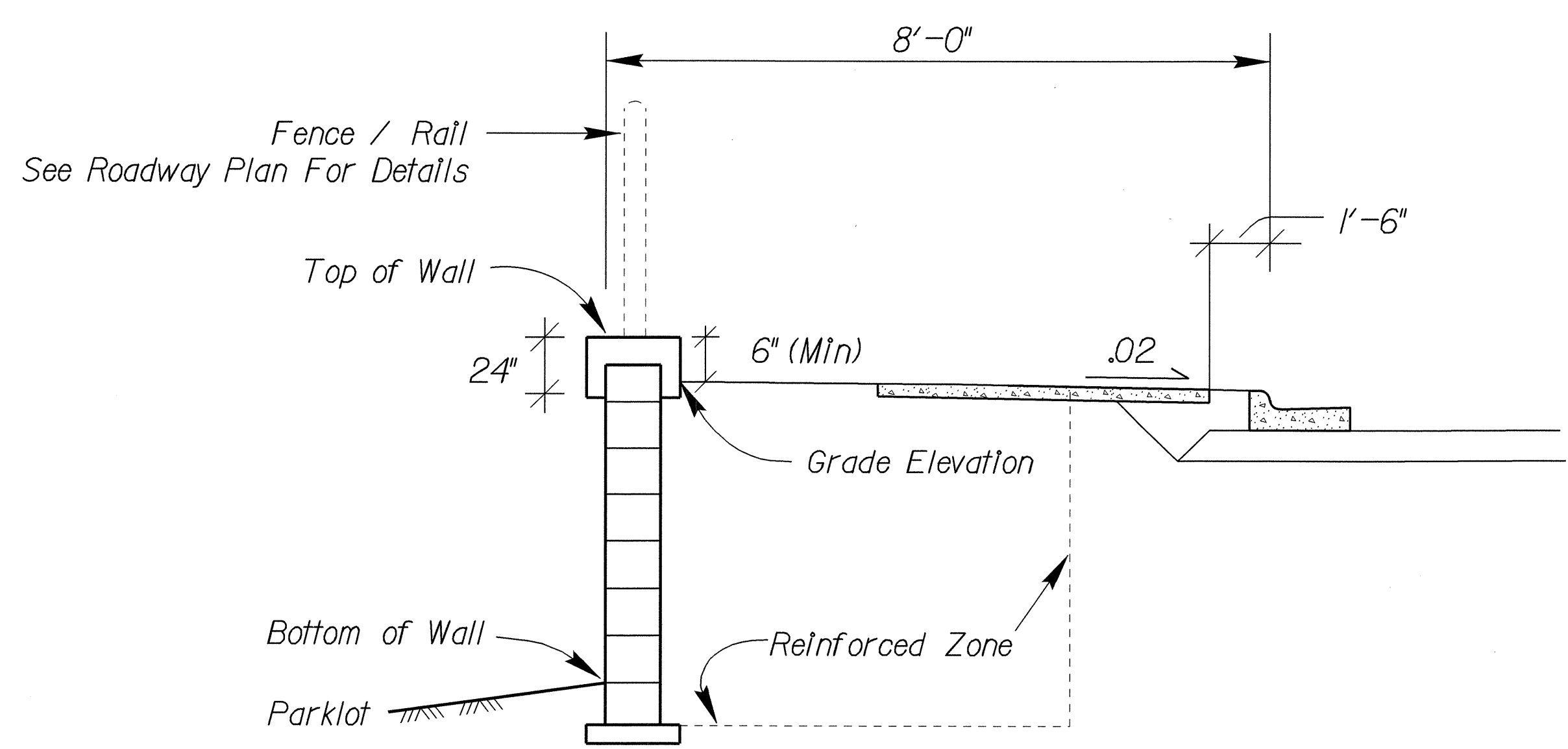
NAD 83/NSRS 2007



WALL NO. 1 PLAN  
N.T.S.



WALL NO. 1 PROFILE  
N.T.S.



TYPICAL WALL SECTION  
N.T.S.

GEOTECHNICAL ENGINEER

ENGINEER

SEAL 30943

1/21/09

SIGNATURE DATE

NOTES

FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISIONS.

USE AN MSE WALL SYSTEM WITH SEGMENTAL RETAINING WALL UNITS FOR RETAINING WALL NO. 1.

CAST-IN-PLACE CONCRETE COPING IS REQUIRED FOR RETAINING WALL NO. 1.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO. 1, SURVEY EXISTING GROUND ELEVATIONS SHOWN ON THE WALL PROFILE VIEW (WALL ENVELOPE) AND SUBMIT A REVISED WALL ENVELOPE FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THIS ENVELOPE IS ACCEPTED.

DESIGN RETAINING WALL NO. 1 FOR A WALL HEIGHT EQUAL TO THE DESIGN HEIGHT (DIFFERENCE BETWEEN GRADE ELEVATION AND BOTTOM OF WALL ELEVATION) PLUS EMBEDMENT (DIFFERENCE BETWEEN BOTTOM OF WALL ELEVATION AND TOP OF LEVELING PAD ELEVATION).

A FENCE OR HAND RAIL IS REQUIRED ON TOP OF THE RETAINING WALL NO. 1. USE SLEEVES IN ACCORDANCE WITH SECTION 866 OF THE STANDARD SPECIFICATIONS FOR POSTS OR SUBMIT POST ANCHOR PLATE DETAILS TO THE ENGINEER FOR APPROVAL.

- DESIGN RETAINING WALL NO. 1 FOR THE FOLLOWING:
- 1) MINIMUM SERVICE LIFE = 75 YEARS
  - 2) ALLOWABLE BEARING CAPACITY = 1500 PSF
  - 3) WALL BACKFILL MATERIAL PARAMETERS:

MATERIAL STANDARD SIZE NO. (IN ACCORDANCE WITH SECTIONS 1005 AND 1014 OF THE STANDARD SPECIFICATIONS)	UNIT WEIGHT (γ) PCF	FRICTION ANGLE (φ) DEGREES	COHESION (c) PCF
2S AND 2MS	125	34	0
57, 67 AND 78M	110	38	0

4) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT (γ) PCF	FRICTION ANGLE (φ) DEGREES	COHESION (c) PCF
RETAINED AND RANDOM BACKFILL	120	30	0
FOUNDATION	120	0	750

DESIGN RETAINING WALL NO. 1 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 1.

DO NOT PLACE LEVELING PAD CONCRETE, WALL BACKFILL OR FIRST REINFORCEMENT LAYER FOR RETAINING WALL NO. 1 UNTIL OBTAINING APPROVAL OF THE EXCAVATION DEPTH AND FOUNDATION MATERIAL.

ESTIMATED AVERAGE WALL AREA	
MSE RETAINING WALL NO. 1	860 SQ. FT.

PROJECT NO.: U-3303A

CUMBERLAND COUNTY

STATION: 15+00.00 -L-

GEOTECHNICAL ENGINEERING UNIT

■ EASTERN REGIONAL OFFICE

□ WESTERN REGIONAL OFFICE

□ CONTRACT OFFICE

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

RETAINING WALL NO. 1  
PLAN & DETAILS

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO. 2N  
TOTAL SHEETS

















STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

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

Table with columns: STATION, LOCATION (L, RT, or CI), STRUCTURE NO., TOP ELEVATION, INVERT ELEVATION, SLOPE CRITICAL, CLASS III R.C. PIPE, BITUMINOUS COATED C.S. PIPE TYPE B, CLASS III R.C. PIPE OR ALUMINIZED C.S. PIPE, ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME GRATES AND HOOD STANDARD 840.03, CONCRETE TRANSITIONAL SECTION, TYPE OF GRATE, CATCH BASIN, DROP INLET, D.I. STD. 840.14, D.I. FRAME WITH TWO GRATES, ADJUST EXISTING STRUCTURE, G.D.I. (N.S.) FRAME WITH GRATE, G.D.I. TYPE 'A' STD. 840.17, G.D.I. TYPE 'B' STD. 840.18, G.D.I. TYPE 'D' STD. 840.19, G.D.I. FRAME WITH GRATE STD. 840.22, T.B.D.I. STD. 840.35, J.B. STD. 840.31, T.B.J.B. STD. 840.34, M.H. FRAME & COVER STD. 840.54, 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.F.T., REMARKS, and ABBREVIATIONS (C.B., N.D.I., D.I., G.D.I., J.B., M.H., T.B.D.I., T.B.J.B.).

06-JAN-2009 14:40  
C:\WORK\PROJECTS\U3303\sum.dgn







**SUMMARY OF EARTHWORK**  
 IN CUBIC YARDS

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

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- 10+00 to 40+00 (Left)	3329	1272	5642	3743	2702
-Y1- 13+40 to 14+54.83	42		346	304	0
-Y3- 10+41.95 to 13+07.00	493		22	0	471
-Y7- 13+23.17 to 14+73.25	207		59	0	148
<b>TOTAL SUMMARY NO. 1</b>	<b>4071</b>	<b>1272</b>	<b>6069</b>	<b>4047</b>	<b>3321</b>
-L- 40+50 to 70+50 (Left)	3422	1496	6050	4091	2959
-Y8- 13+50 to 15+39.99	335		25	0	310
-Y12- 11+96.33 to 14+16.33	1438		1	0	1437
<b>TOTAL SUMMARY NO. 2</b>	<b>5195</b>	<b>1496</b>	<b>6076</b>	<b>4091</b>	<b>4706</b>
-L- 71+00 to 76+00 (Left)	357	0	733	376	0
<b>TOTAL SUMMARY NO. 3</b>	<b>357</b>	<b>0</b>	<b>733</b>	<b>376</b>	<b>0</b>
-L- 10+00 to 40+00 (Right)	3224	1594	4949	3617	3486
-Y3- 14+50.00 to 15+03.98	492		7	0	485
-Y5- 14+93.77 to 16+50.43	344		8	0	336
-Y7- 15+41.26 to 16+92.60	323		43	0	280
<b>TOTAL SUMMARY NO. 4</b>	<b>4383</b>	<b>1594</b>	<b>5007</b>	<b>3617</b>	<b>4587</b>
-L- 40+50 to 70+50 (Right)	1588	869	10000	9234	1691
-Y8- 16+08.39 to 18+41.90	592		37		555
-Y9- 10+34.10 to 11+88.90	160		104		56
-Y10- 10+34 to 11+73	314		8		306
-Y11- 10+34.04 to 12+52.17	442		6		436
-Y13- 15+54.92 to 17+66.13	295		77		218
<b>TOTAL SUMMARY NO. 5</b>	<b>3391</b>	<b>869</b>	<b>10232</b>	<b>9234</b>	<b>3262</b>
-L- 71+00 to 76+00 (RT)	342	0	1086	744	0
<b>TOTAL SUMMARY NO. 6</b>	<b>342</b>	<b>0</b>	<b>1086</b>	<b>744</b>	<b>0</b>
<b>SUMMARY TOTALS</b>	<b>17739</b>	<b>5231</b>	<b>29203</b>	<b>22109</b>	<b>15876</b>

**PAVEMENT REMOVAL SUMMARY**

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD <sup>2</sup>
-L-	10+50.00	23+59.00	CL	5414.22
-L-	23+59.00	26+96.00	LT	477.67
-L-	23+59.00	26+96.00	RT	606.67
-L-	26+96.00	33+64.00	CL	3781.22
-L-	33+64.00	36+39.00	LT	570.56
-L-	33+64.00	36+39.00	RT	446.44
-L-	36+39.00	57+67.00	CL	7018.00
-L-	58+40.00	67+50.00	CL	2822.22
			-L- TOTAL	21137.00
-Y1-	13+40.00	14+67.39	LT	526.44
-Y3-	10+41.95	12+38.95	LT	488.78
-Y3-	13+07.00	15+03.98	RT	439.78
-Y5-	14+93.77	16+50.43	RT	334.44
-Y7-	13+23.17	14+73.25	LT	343.67
-Y7-	15+41.26	16+92.60	RT	331.89
-Y8-	13+50.00	15+39.99	LT	445.33
-Y8-	16+08.39	18+41.90	RT	497.11
-Y9-	10+34.10	11+88.90	CL	338.00
-Y10-	10+34.00	11+73.00	CL	307.44
-Y11-	10+49.00	12+52.17	CL	561.44
-Y12-	11+96.33	14+16.33	CL	462.89
-Y13-	15+54.92	17+66.13	CL	492.44
			-Y- TOTAL	5569.67
			<b>TOTAL</b>	<b>26706.67</b>
U-3303A PROJECT TOTAL SAY:				26,710
U-3303B PROJECT TOTAL:				24,490
<b>COMBINED PROJECT TOTAL:</b>				<b>51,200</b>

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF EARTHWORK**  
 IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
PROJECT U-3303A TOTAL	17739	5231	29203	22109	15876
PROJECT U-3303B TOTAL	14052	12039	41490	33741	18342
PROJECT U-3303A /U-3303B TOTAL	31791	17270	70693	55850	34218
LOSS DUE TO CLEARING & GRUBBING	-2550			2550	
ADDITIONAL UNDERCUT EXCAVATION		2500	3000	3000	2500
EST. SHOULDER MATERIAL			1634	1634	
EARTH WASTE TO REPLACE BORROW				-9469	-9469
PROJECT U-3303A /U-3303B TOTAL	29241	19770	75327	53565	27249
EST. FOR REPL. OF TOPSOIL ON BORROW PITS				2678	
PROJECT U-3303 GRAND TOTAL	29241			56243	
SAY	29400			56500	

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

**STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS**

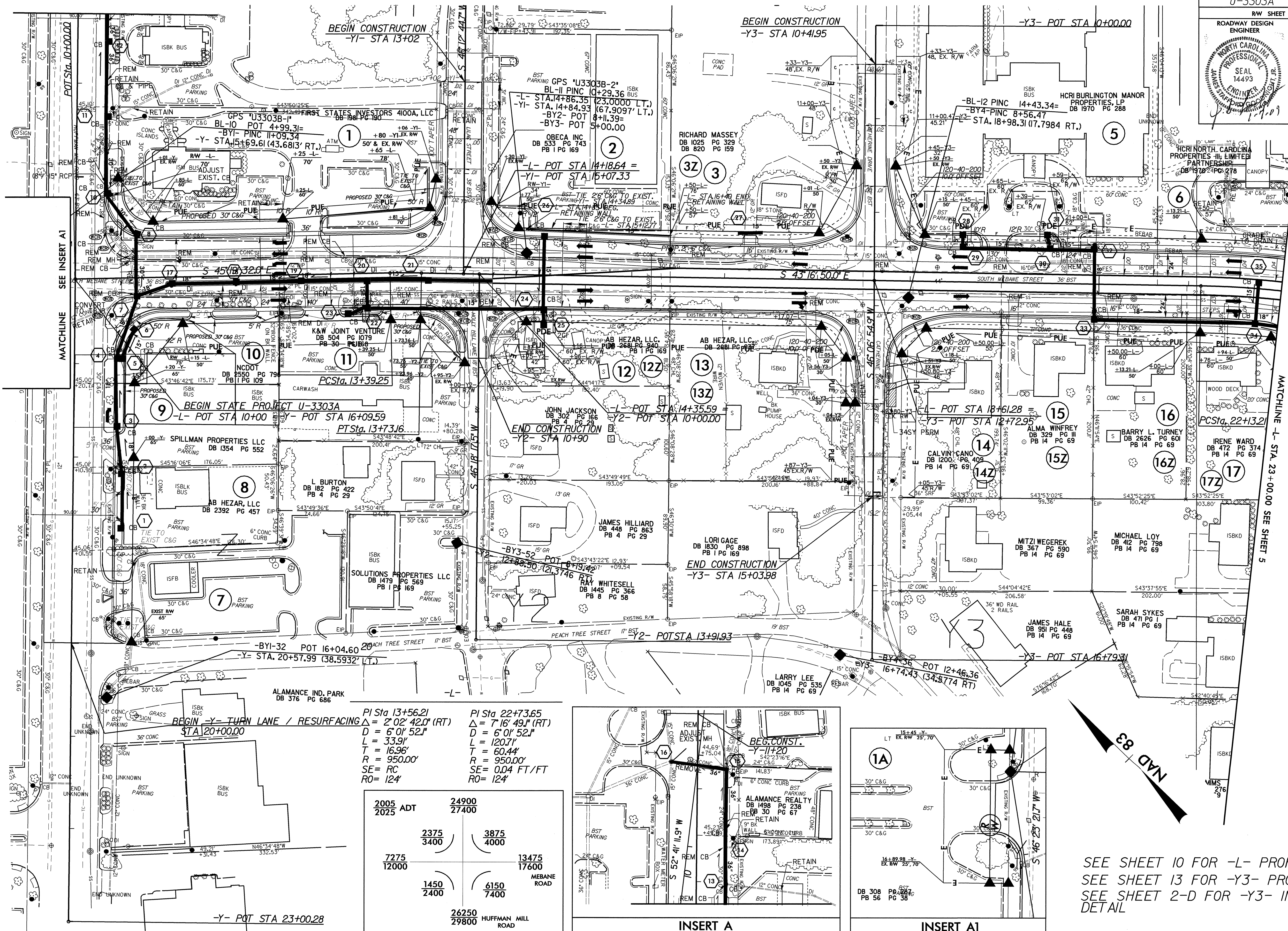
**PARCEL INDEX SHEET**

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	FIRST STATES INVESTORS 4100A, LLC
2	4	OBECA INC
3	4	RICHARD MASSEY
5	4	HCRI BURLINGTON MANOR PROPERTIES, LP
6	4&5	HCRI NORTH CAROLINA PROPERTIES III, LIMITED PARTNERSHIP
8	4	AB HEZAR, LLC
9	4	SPILLMAN PROPERTIES LLC
10	4	NCDOT
11	4	K&W JOINT VENTURE
12	4	AB HEZAR, LLC.
13	4	AB HEZAR, LLC.
14	4	CALVIN CANO
15	4	ALMA WINFREY
16	4	BARRY L. TURNEY
17	4&5	IRENE WARD
18	5	PEC FAMILY LMTD PTNRSHIP 201
19	5	DO VAN TRIEU
20	5	BETTY DUNN
21	5	TU VO
22	5	WILLIAM PHILLIPS
23	5	DAN JACKSON
24	5	ROSSER CLAPP
25	5	MIKE LONG
26	5	STANLEY M. YOUNG ET AL
27	5	CARL HANSEN
28	5	NCDOT
28A	5	LOUIS JONES
29	5	HAROLD FOGLEMAN
32	5	GEORGE KANDOUNAS
33	5	M FINCHER
34	5&6	BONNIE GARRETT
35	5	W.R. STAFFORD
36	6	JOHN ROBERTSON
37	6	M AMJAD BHATTI
38	6	DOUGLAS DIAAB
39	6	SHARON GEDDIS
40	6	WAYNETTE BRIDGES
41	6	BRENDA FARMER
42	6	JULIAN BARHAM REVOCABLE TRUST
43	6	MARILYN WILLIAMS
44	6	MARIA VALEZ DE LOURDES SOUSA SERRAO, ET AL
45	6	RALPH FAUCETTE
46	6	NCDOT
47	6	W RUDD
48	6	MARION HOWE
50	7	MILDRED NEESE
51	7	ELIAS MOZLOOM ET. AL
52	7	JACK GARNER
52	7	VERA PICKARD
54	7	WILLIAM SPRAGUE
55	7	JASON T. GOLDEN
59	7	NANCY P. MILES
60	7	RICHARD SEAN HERINGTON KATHRYN J. MARTIN
61	7	JAMES SCOTT
62	7	ROGER SHIELDS
63	7	BUEL PATILLO
64	7	JOHN STUART
65	7	VIRGINIA GOODSON
66	7	MARTIN MITCHELL
67	7	LOGAN T. YOUNGBLOOD

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
67	7	FINLEY M. YOUNGBLOOD
69	7	CAROLINA HOSIERY MILLS INC.
70	7	BILLY HUGHES
71	8	DEBOER & GABRIEL BUILDERS, INC.
72	8	NCDOT
73	8	EVELYN WALKER
74	8	KEYSTONE GROUP INC
75	8	ERNEST & MAURICE KOURY
75	8	ERNEST & MAURICE KOURY
76	8	ANNIE KORNEGAY
77	8	VIRGINIA BETH ELDER ELLINGTON, ET AL
901	7	LOIS LACKEY
902	7	CARL FUQUAY
902	7&8	CARL FUQUAY

8/17/99

PROJECT REFERENCE NO. U-3303A		SHEET NO. 4	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		NORTH CAROLINA PROFESSIONAL SEAL 14493	
NORTH CAROLINA PROFESSIONAL SEAL 14493		NORTH CAROLINA PROFESSIONAL SEAL 023090	



REVISIONS

MATCHLINE SEE INSERT A1

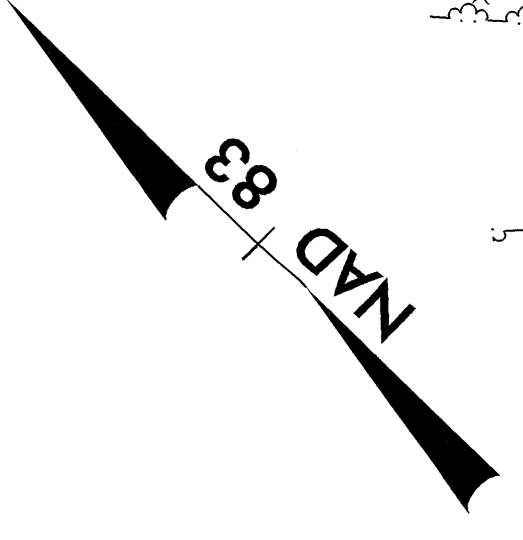
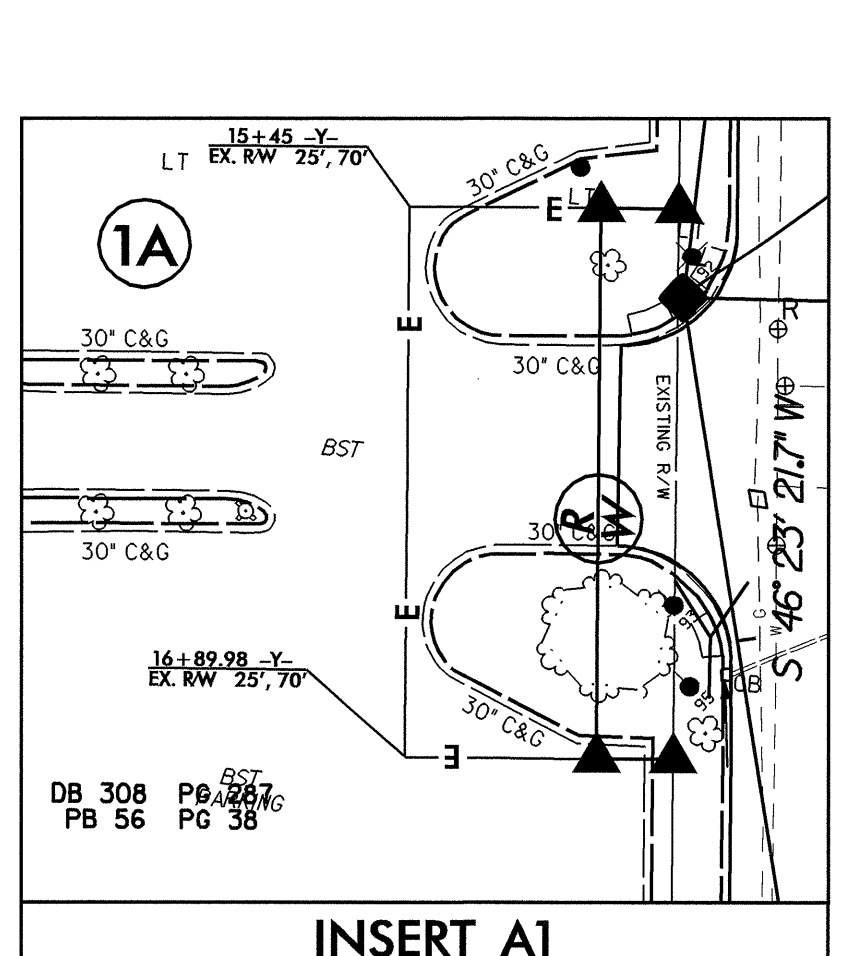
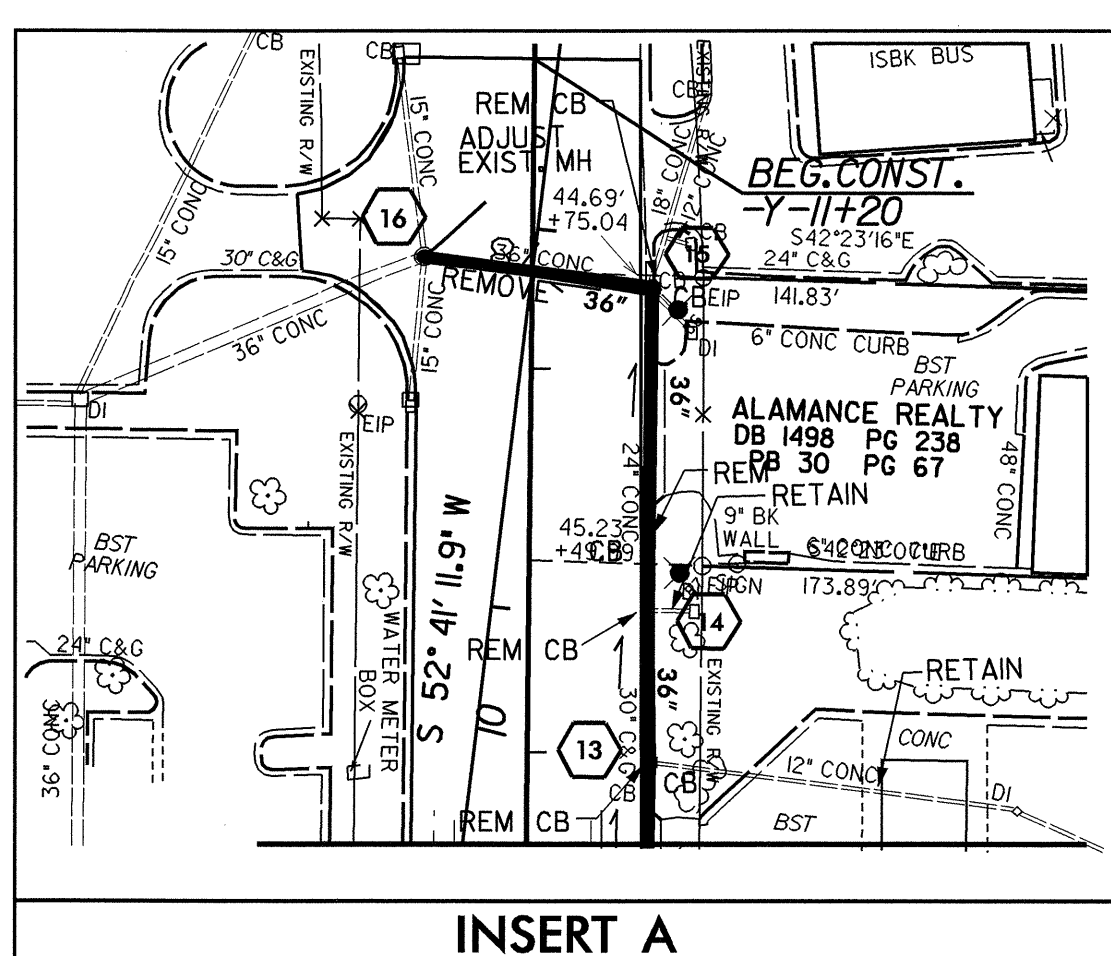
MATCHLINE -L- STA. 23+00.00 SEE SHEET 5

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 $D = 6'01'52''$   
 $L = 33.91'$   
 $T = 16.96'$   
 $R = 950.00'$   
 $SE = RC$   
 $RO = 124'$

PI Sta 22+73.65  $\Delta = 7'16'49''$  (RT)  
 $D = 6'01'52''$   
 $L = 120.71'$   
 $T = 60.44'$   
 $R = 950.00'$   
 $SE = 0.04$  FT/FT  
 $RO = 124'$

2005 ADT	24900
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2375	3875
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7275	13475
12000	17600
1450	6150
2400	7400
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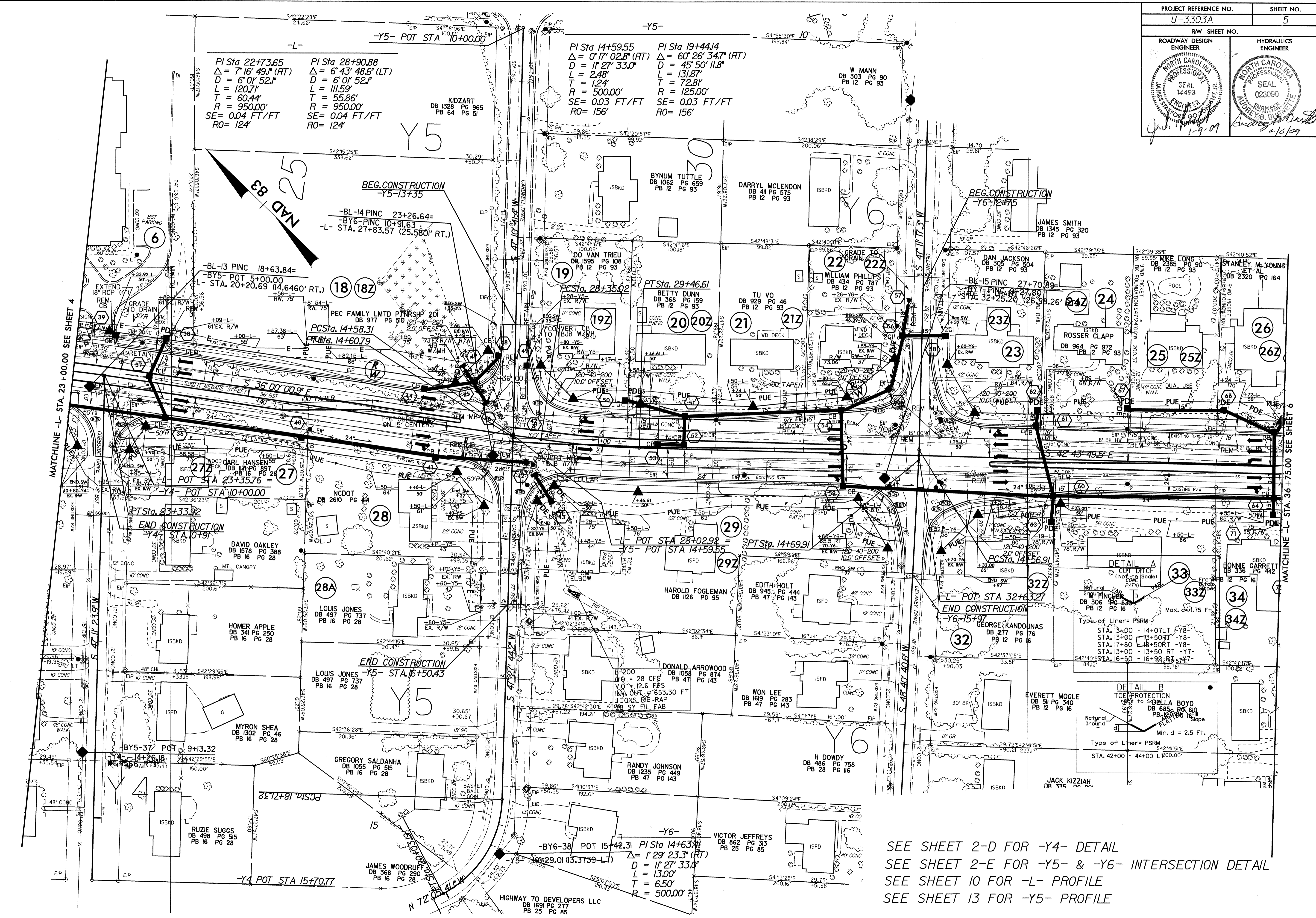
HUFFMAN MILL ROAD



SEE SHEET 10 FOR -L- PROFILE  
 SEE SHEET 13 FOR -Y3- PROFILE  
 SEE SHEET 2-D FOR -Y3- INTERSECTION DETAIL

07-JAN-2009 15:09  
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PROJECT REFERENCE NO. U-3303A		SHEET NO. 5	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		NORTH CAROLINA PROFESSIONAL SEAL 14493	
NORTH CAROLINA PROFESSIONAL SEAL 14493		NORTH CAROLINA PROFESSIONAL SEAL 023090	



REVISIONS

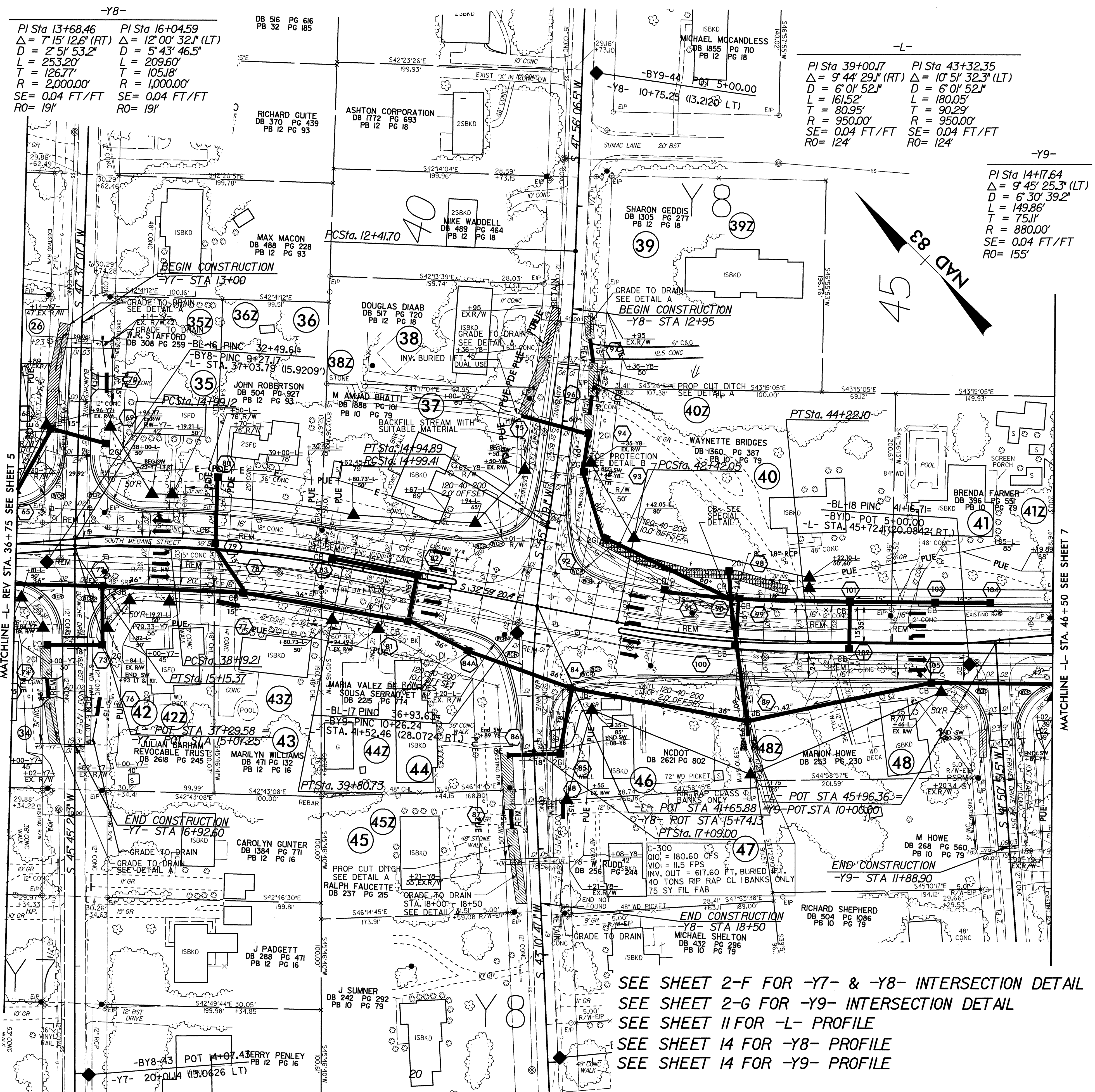
MATCHLINE -L- STA. 23+00.00 SEE SHEET 4

MATCHLINE -L- STA. 36+75.00 SEE SHEET 6

SEE SHEET 2-D FOR -Y4- DETAIL  
 SEE SHEET 2-E FOR -Y5- & -Y6- INTERSECTION DETAIL  
 SEE SHEET 10 FOR -L- PROFILE  
 SEE SHEET 13 FOR -Y5- PROFILE

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PROJECT REFERENCE NO. U-3303A		SHEET NO. 6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



-Y8-

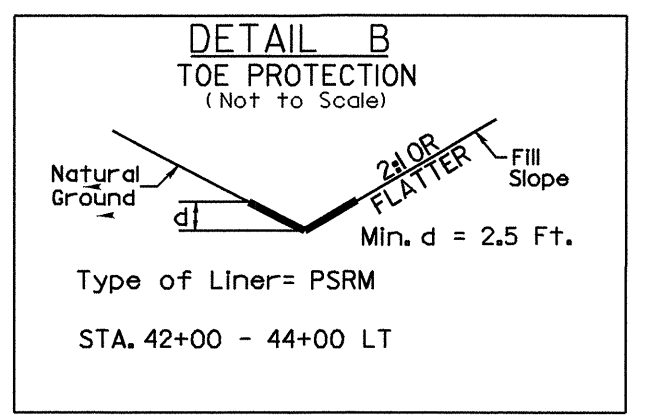
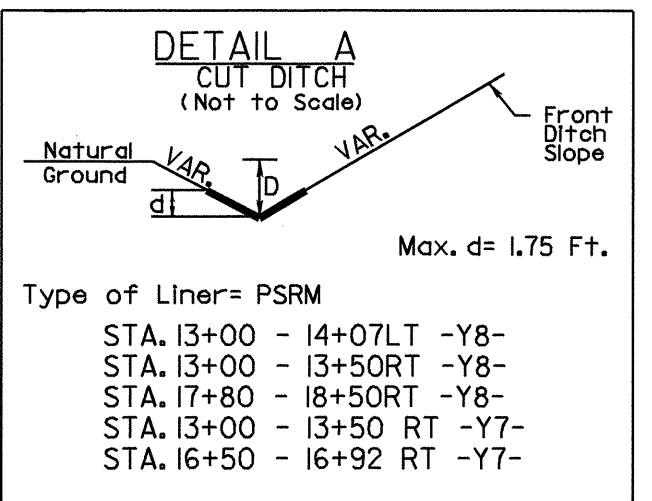
PI Sta 13+68.46	PI Sta 16+04.59
$\Delta = 7' 15'' 12.6'' (RT)$	$\Delta = 12' 00'' 32.1'' (LT)$
$D = 2' 51'' 53.2''$	$D = 5' 43'' 46.5''$
$L = 253.20'$	$L = 209.60'$
$T = 126.77'$	$T = 105.18'$
$R = 2,000.00'$	$R = 1,000.00'$
$SE = 0.04 \text{ FT/FT}$	$SE = 0.04 \text{ FT/FT}$
$RO = 19'$	$RO = 19'$

-L-

PI Sta 39+00.17	PI Sta 43+32.35
$\Delta = 9' 44'' 29.1'' (RT)$	$\Delta = 10' 51'' 32.3'' (LT)$
$D = 6' 01'' 52.1''$	$D = 6' 01'' 52.1''$
$L = 161.52'$	$L = 180.05'$
$T = 80.95'$	$T = 90.29'$
$R = 950.00'$	$R = 950.00'$
$SE = 0.04 \text{ FT/FT}$	$SE = 0.04 \text{ FT/FT}$
$RO = 124'$	$RO = 124'$

-Y9-

PI Sta 14+17.64
$\Delta = 9' 45'' 25.3'' (LT)$
$D = 6' 30'' 39.2''$
$L = 149.86'$
$T = 75.11'$
$R = 880.00'$
$SE = 0.04 \text{ FT/FT}$
$RO = 155'$



-Y7-

PI Sta 15+07.25
$\Delta = 1' 51'' 45.8'' (LT)$
$D = 11' 27'' 33.0''$
$L = 16.26'$
$T = 8.13'$
$R = 500.00'$
$SE = 0.02 \text{ FT/FT}$
$RO = 152'$

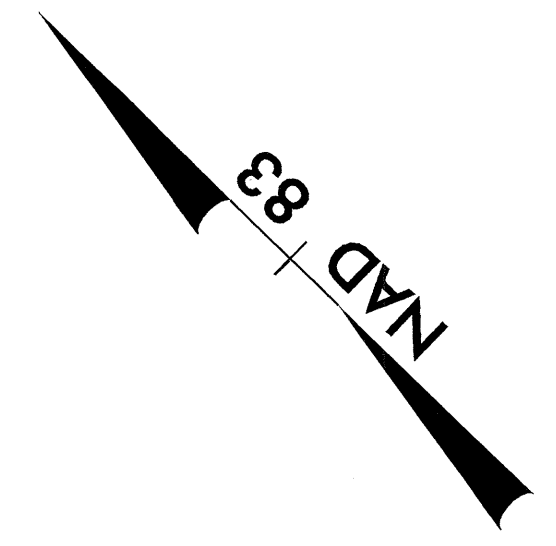
SEE SHEET 2-F FOR -Y7- & -Y8- INTERSECTION DETAIL  
 SEE SHEET 2-G FOR -Y9- INTERSECTION DETAIL  
 SEE SHEET 11 FOR -L- PROFILE  
 SEE SHEET 14 FOR -Y8- PROFILE  
 SEE SHEET 14 FOR -Y9- PROFILE

REVISIONS

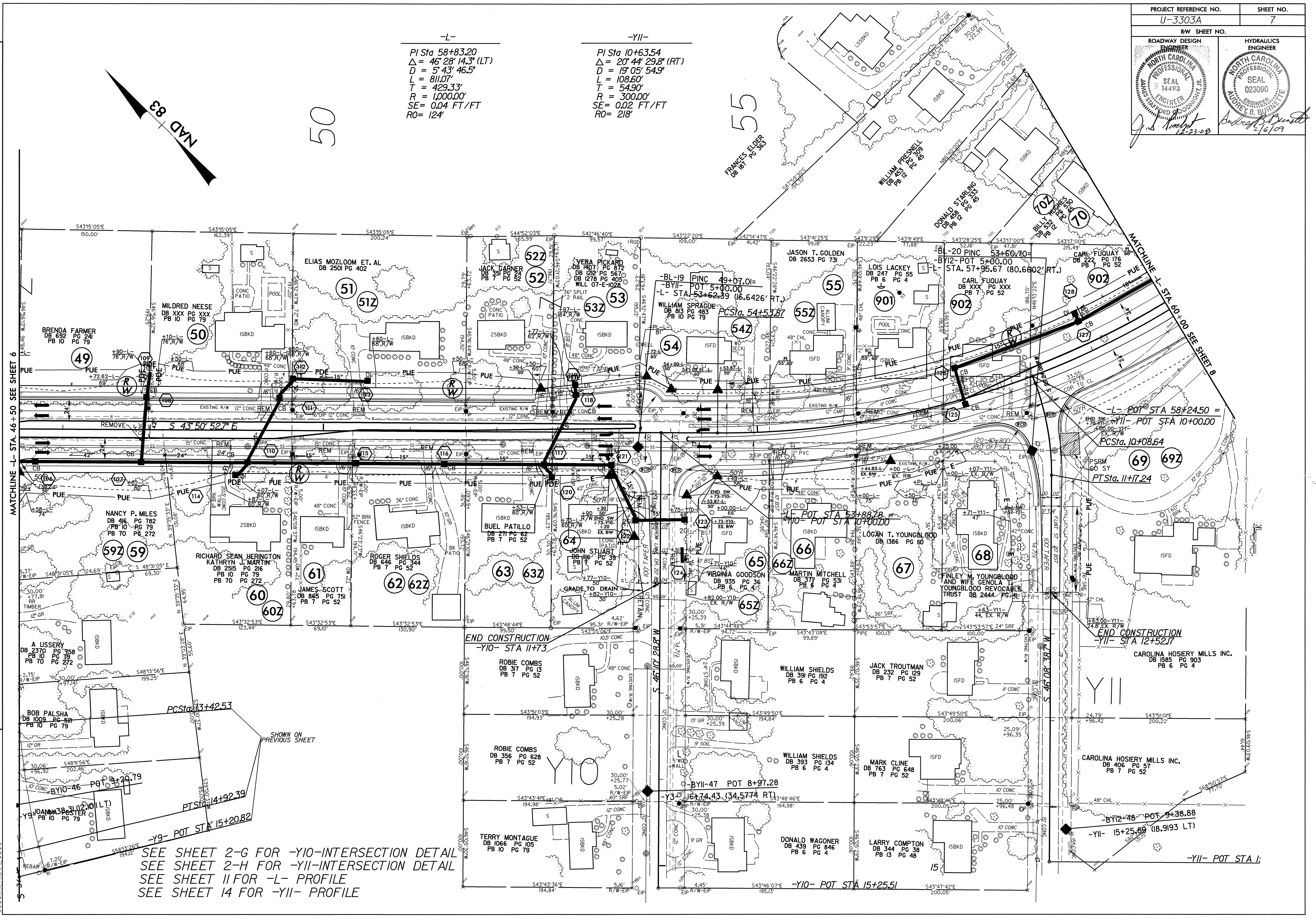
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-L-  
 Pj Sta 58+83.20  
 $\Delta = 46^\circ 28' 14.3" (LT)$   
 $D = 5' 43' 46.5"$   
 $L = 811.07'$   
 $T = 429.33'$   
 $R = 1,000.00'$   
 $SE = 0.02 FT/FT$   
 $RO = 124'$

-YII-  
 Pj Sta 10+63.54  
 $\Delta = 20^\circ 44' 29.8" (RT)$   
 $D = 19' 05' 54.9"$   
 $L = 108.60'$   
 $T = 54.90'$   
 $R = 300.00'$   
 $SE = 0.02 FT/FT$   
 $RO = 218'$



8/17/09



REVISIONS

SEE SHEET 2-G FOR -YIO-INTERSECTION DETAIL  
 SEE SHEET 2-H FOR -YII-INTERSECTION DETAIL  
 SEE SHEET 11 FOR -L- PROFILE  
 SEE SHEET 14 FOR -YII- PROFILE

02-DEC-2008 14:25  
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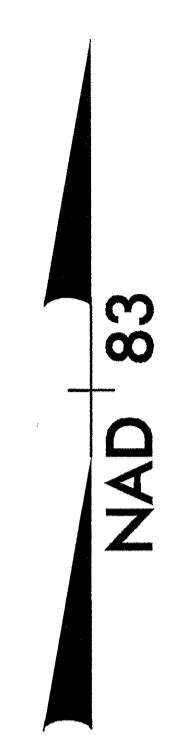


-L-

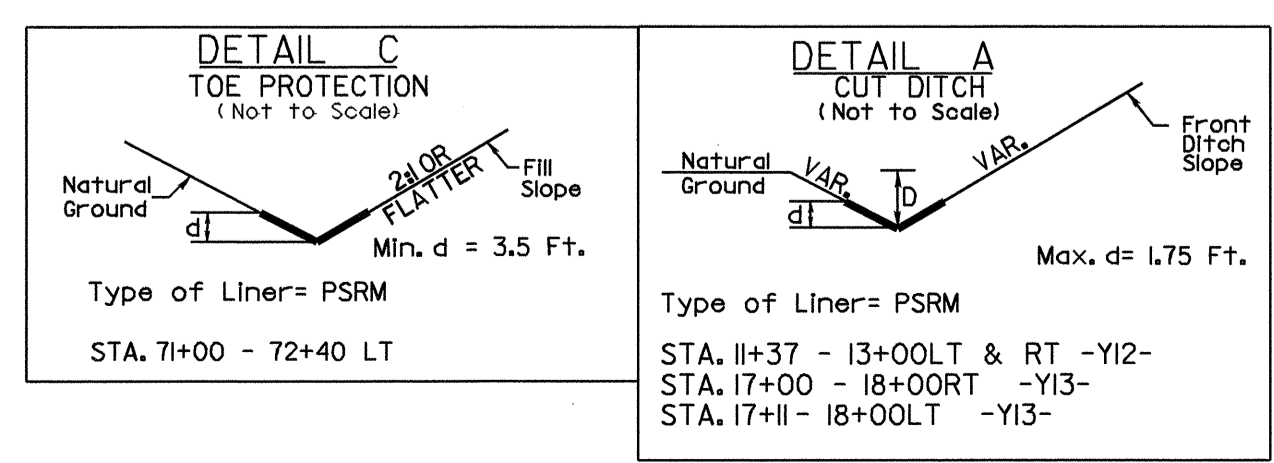
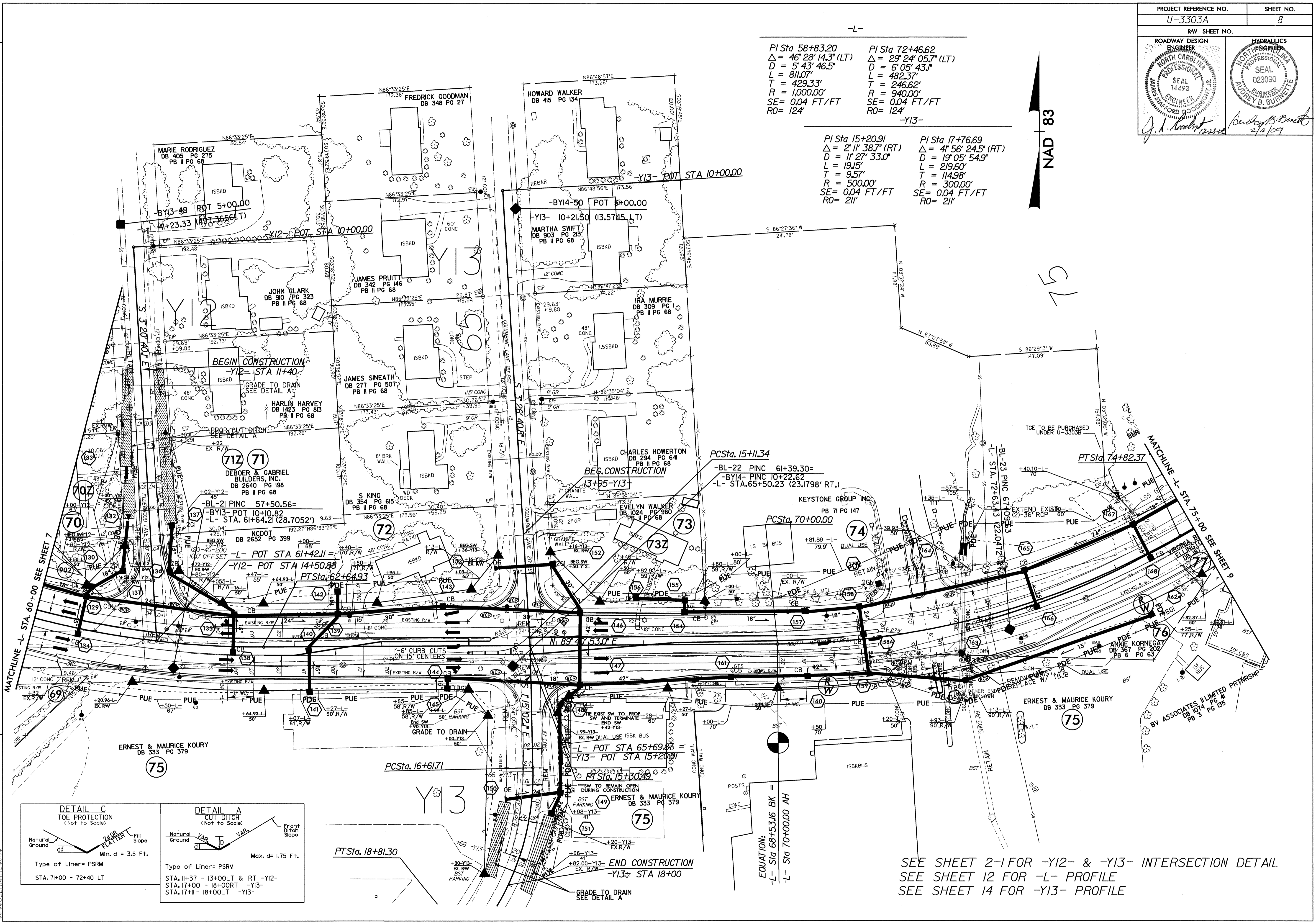
PI Sta 58+83.20 Δ = 46° 28' 14.3" (LT) D = 5' 43' 46.5" L = 811.07' T = 429.33' R = 1,000.00' SE = 0.04 FT/FT RO = 124'	PI Sta 72+46.62 Δ = 29° 24' 05.7" (LT) D = 6' 05' 43.1" L = 482.37' T = 246.62' R = 940.00' SE = 0.04 FT/FT RO = 124'
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-Y13-

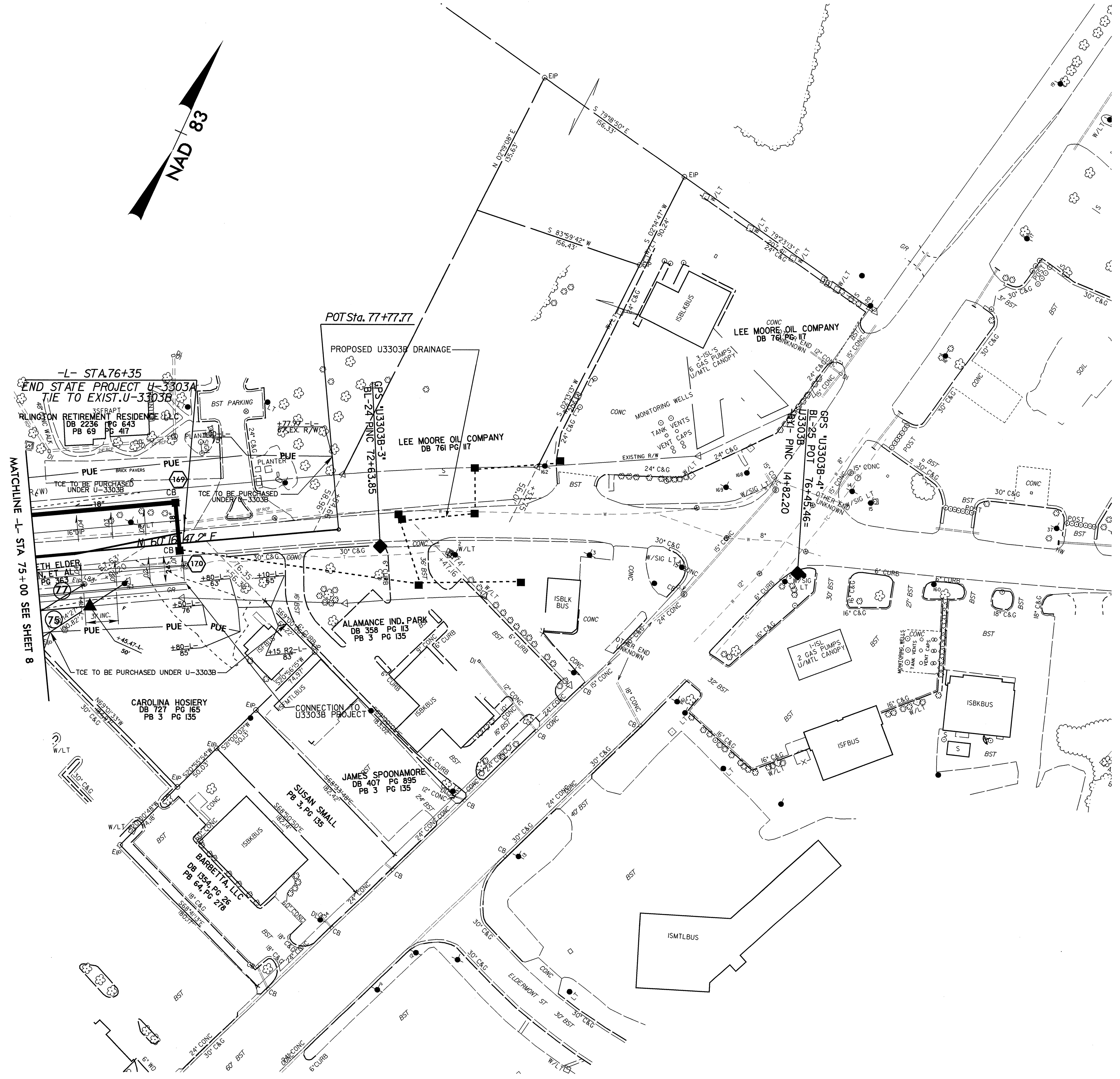
PI Sta 15+20.91 Δ = 2° 11' 38.7" (RT) D = 11' 27' 33.0" L = 19.15' T = 9.57' R = 500.00' SE = 0.04 FT/FT RO = 211'	PI Sta 17+76.69 Δ = 41° 56' 24.5" (RT) D = 19' 05' 54.9" L = 219.60' T = 114.98' R = 300.00' SE = 0.04 FT/FT RO = 211'
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8/17/99  
 REVISIONS  
 02-DEC-2008 14426  
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SEE SHEET 2-1 FOR -Y12- & -Y13- INTERSECTION DETAIL  
 SEE SHEET 12 FOR -L- PROFILE  
 SEE SHEET 14 FOR -Y13- PROFILE



REVISIONS

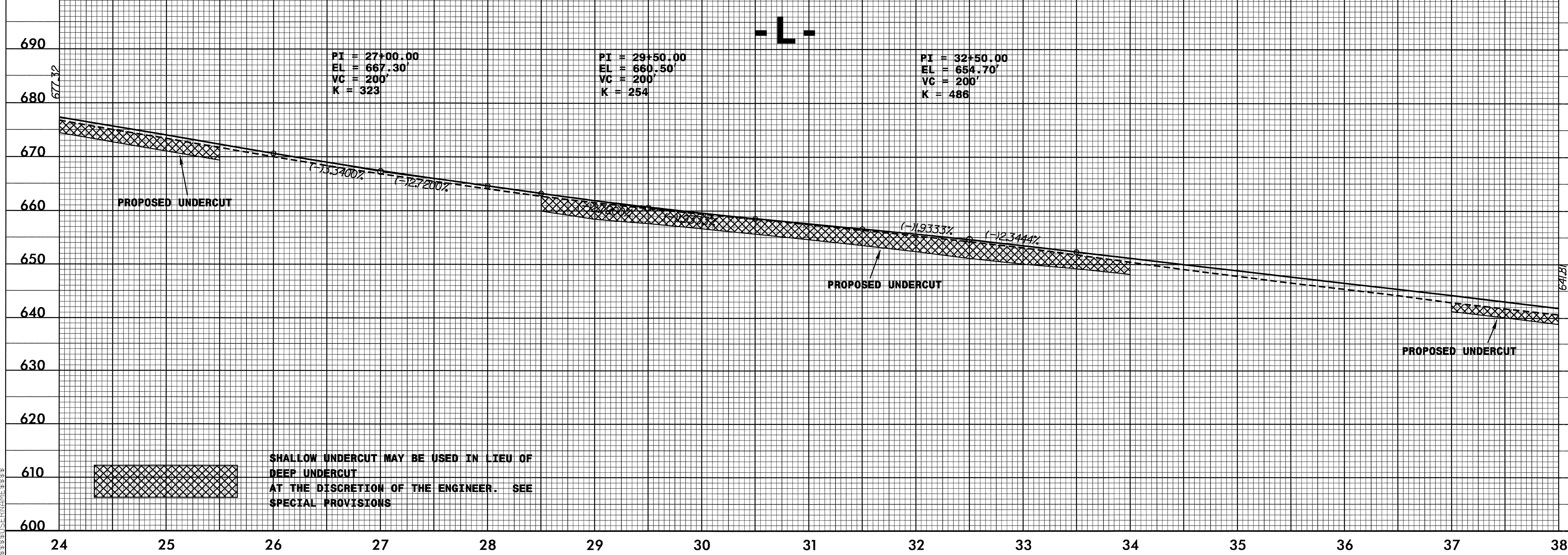
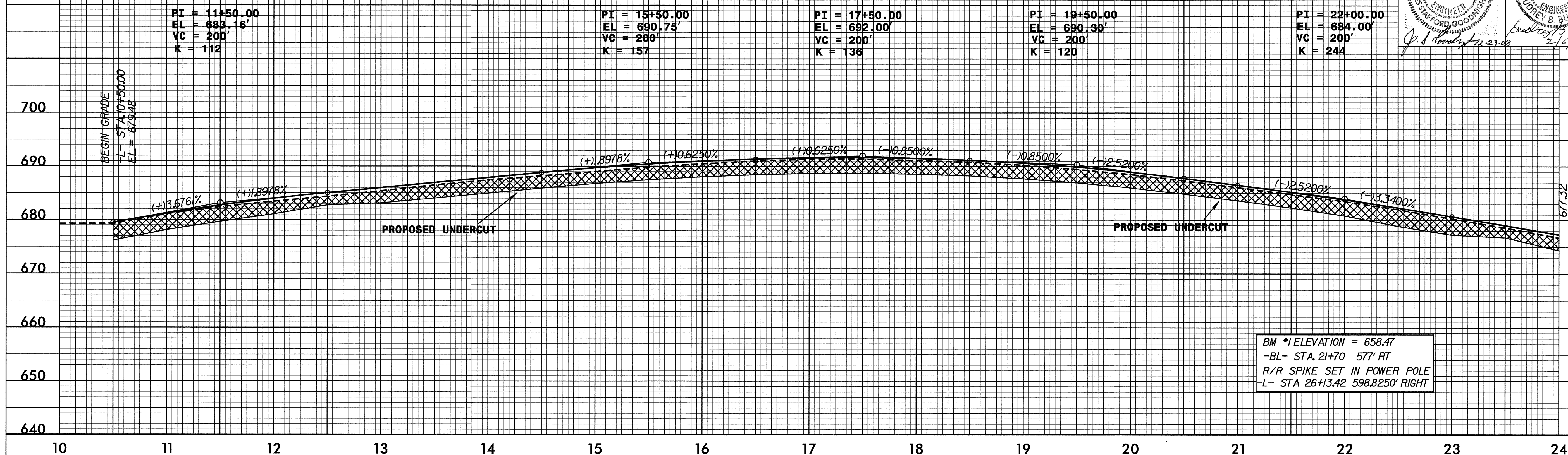
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5/28/99

PROJECT REFERENCE NO. U-3303A	SHEET NO. 10
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14493	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 023090 AUDREY B. BURDETTE

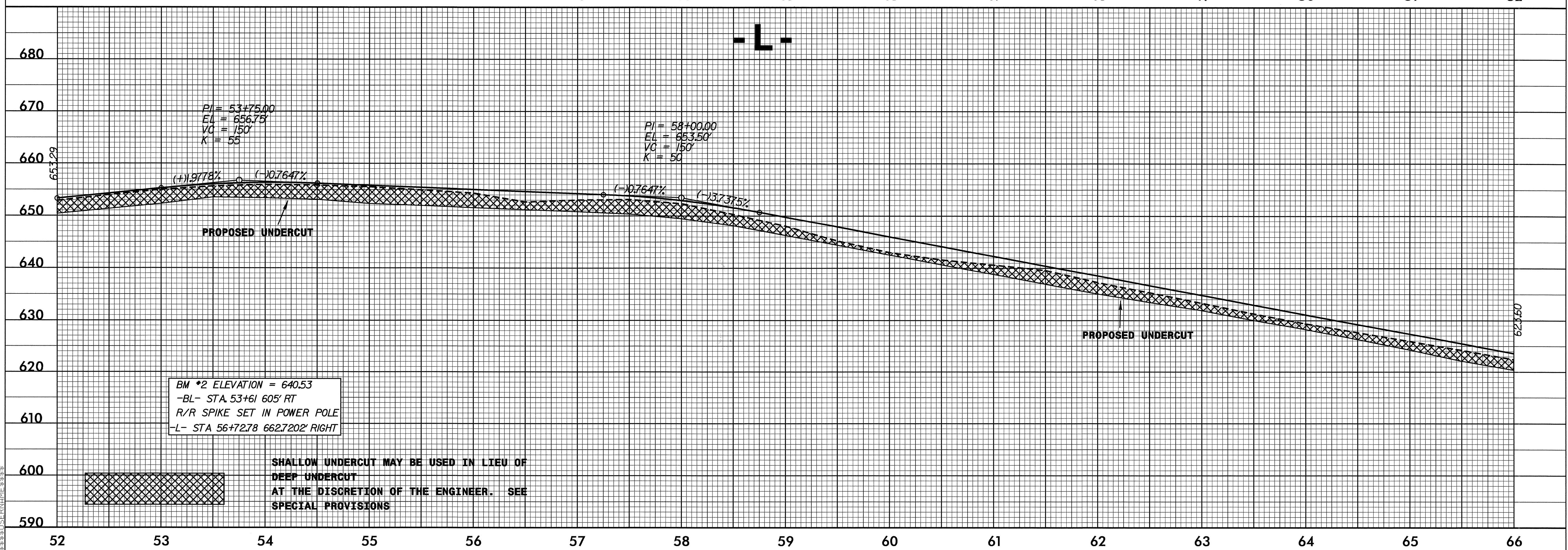
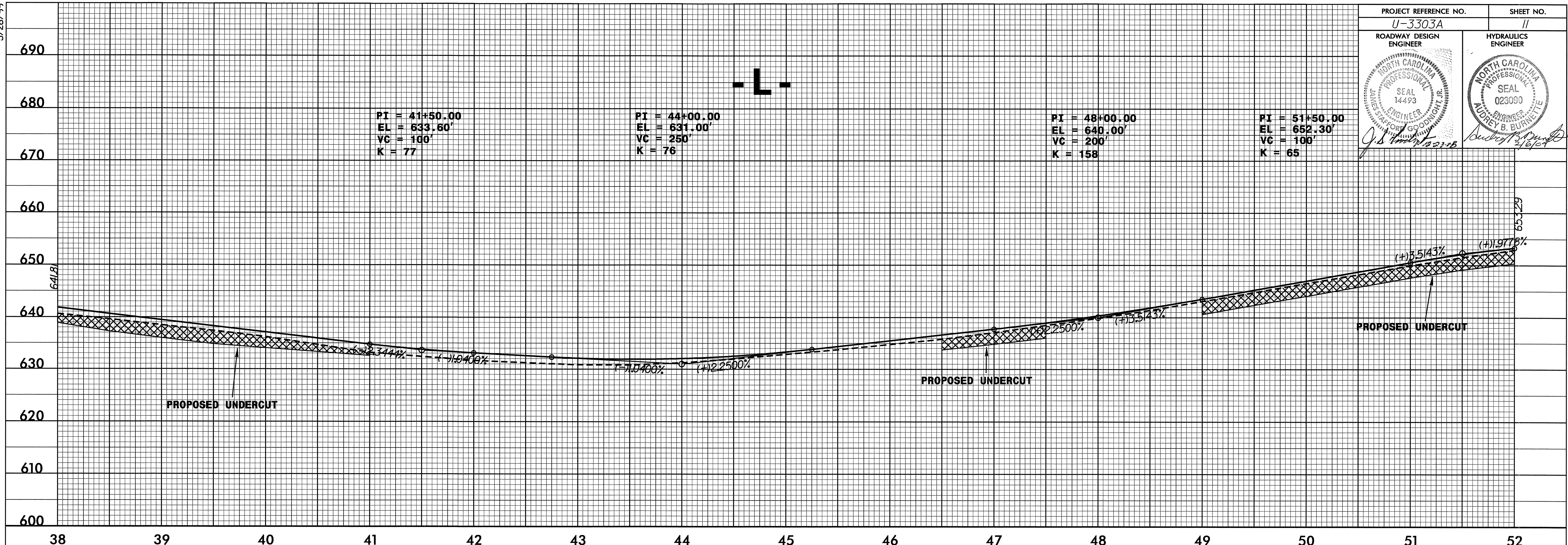
*J. S. Wood* 11-23-08  
*Audrey B. Burdette* 2/16/09



22-DEC-2008 11:35 U:\330303a\_rdy.pfl.dgn

5/28/99

PROJECT REFERENCE NO. U-3303A	SHEET NO. 11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



BM \*2 ELEVATION = 640.53  
 -BL- STA. 53+61 605' RT  
 R/R SPIKE SET IN POWER POLE  
 -L- STA 56+72.78 662.7202' RIGHT

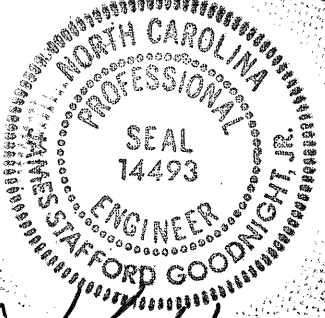
SHALLOW UNDERCUT MAY BE USED IN LIEU OF DEEP UNDERCUT AT THE DISCRETION OF THE ENGINEER. SEE SPECIAL PROVISIONS

22-DEC-2008 11:36 u3303a\_rdy.pfl.dgn

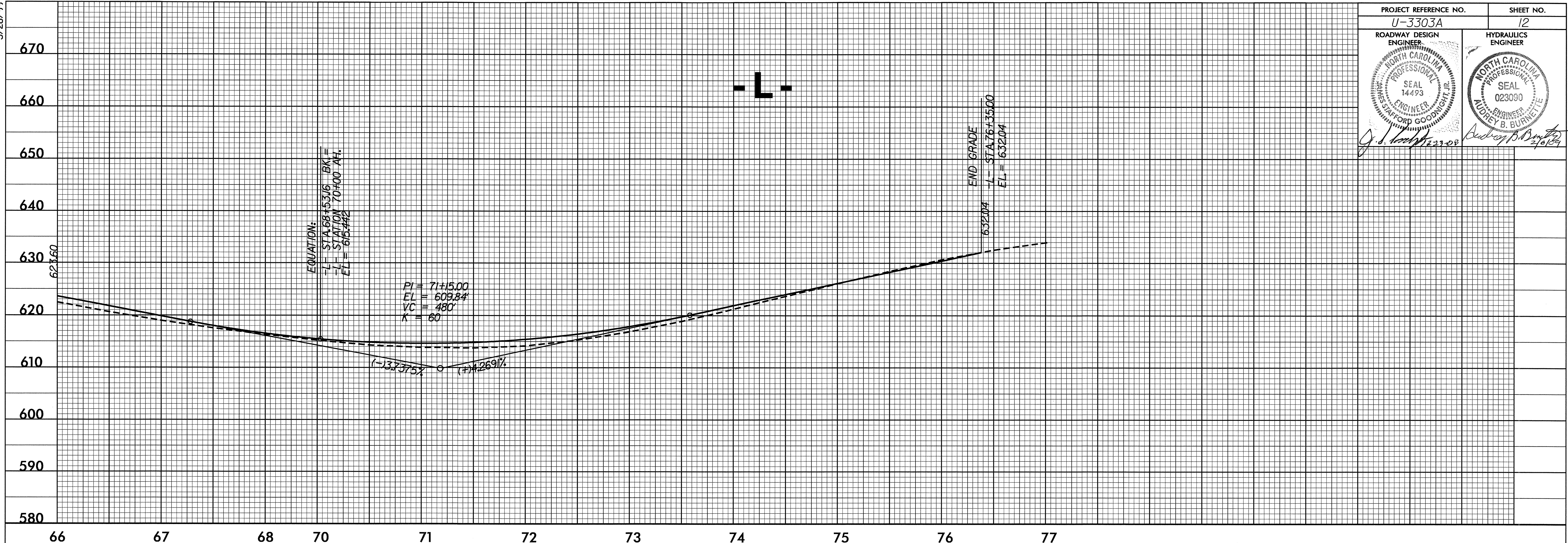
5/28/99

ROADWAY DESIGN

HYDRAULICS



*J.S. Goonright, Jr.* 2/23/99  
*Audrey B. Burnette* 2/10/99



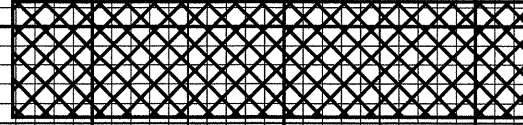
- L -

EQUATION:  
 L= STA 68+5.316 - BK= L= STA 70+00 - AK= EL= 615.442

PI = 71+5.00  
 EL = 609.84'  
 VC = 480'  
 K = 60

(-13.7375%)      (+4.2691%)

END GRADE  
 632.04' - L - STA 76+35.00  
 EL = 632.04

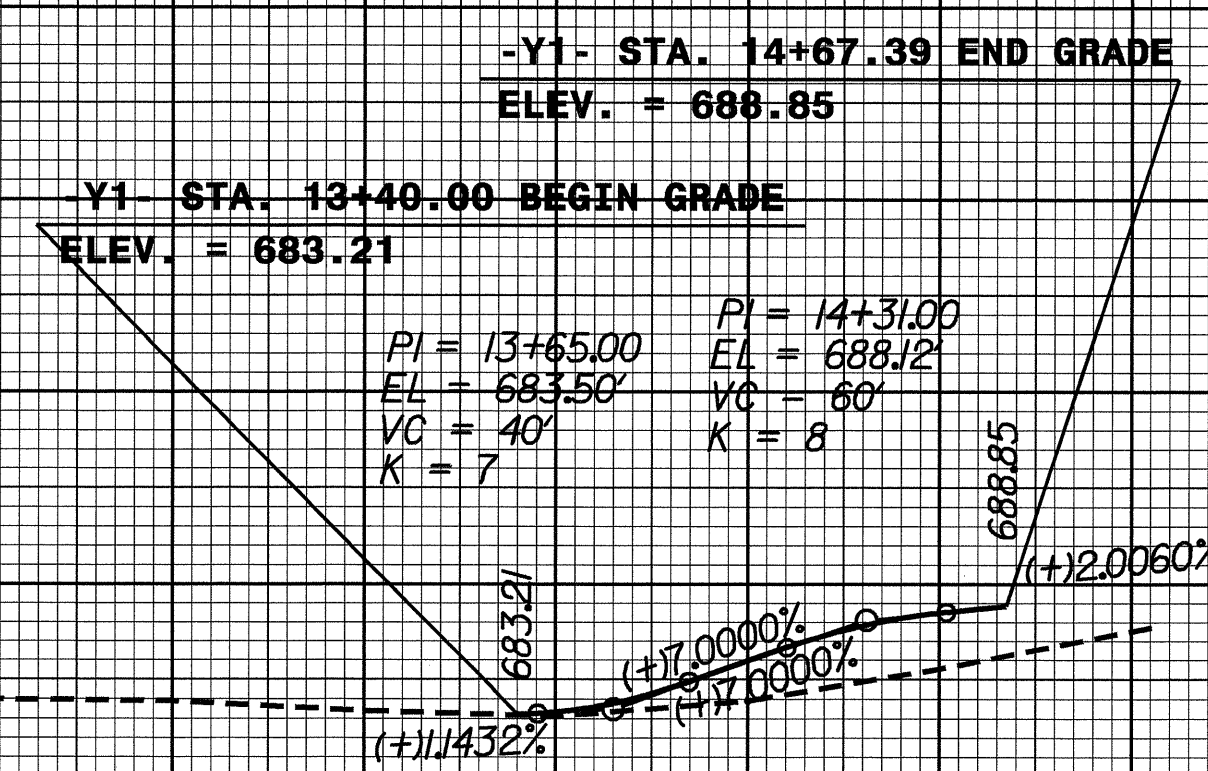


SHALLOW UNDERCUT MAY BE USED IN LIEU OF DEEP UNDERCUT AT THE DISCRETION OF THE ENGINEER. SEE SPECIAL PROVISIONS

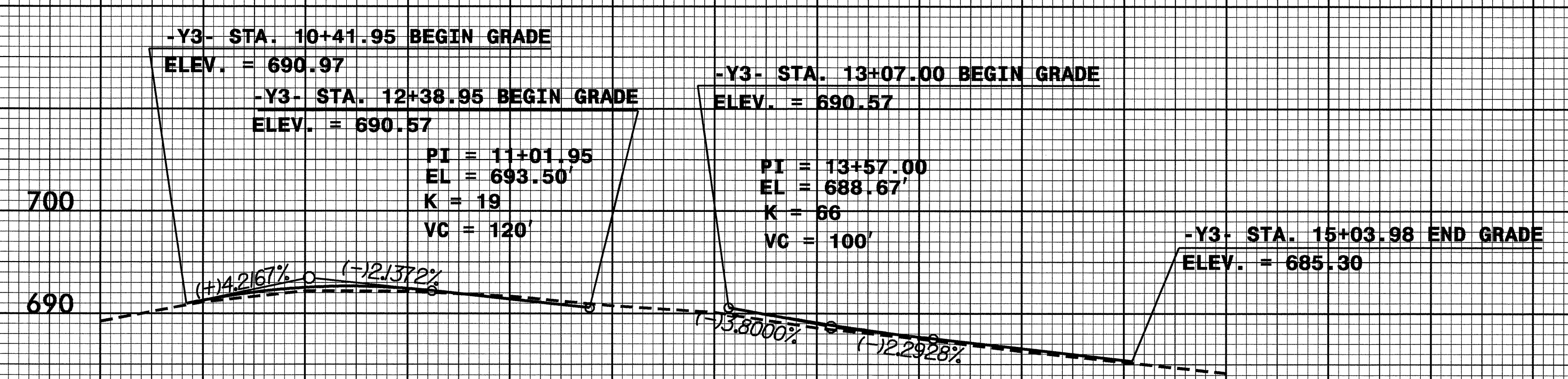
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PROJECT REFERENCE NO. U-3303A	SHEET NO. 13

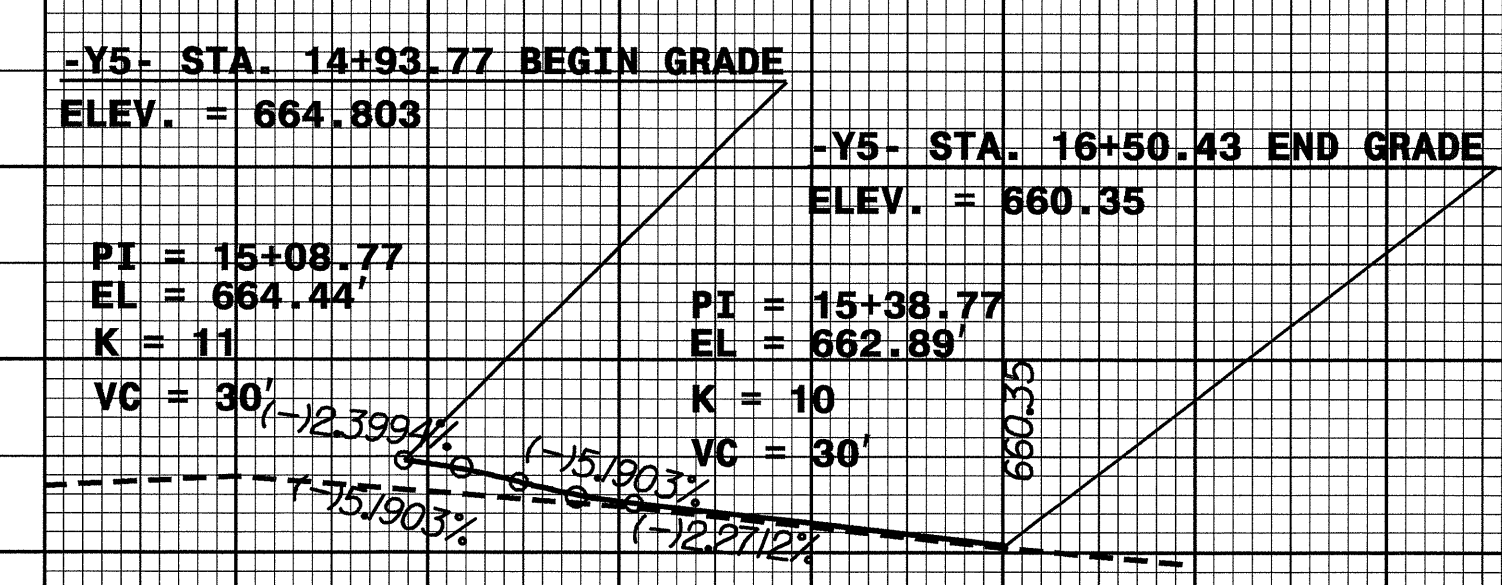
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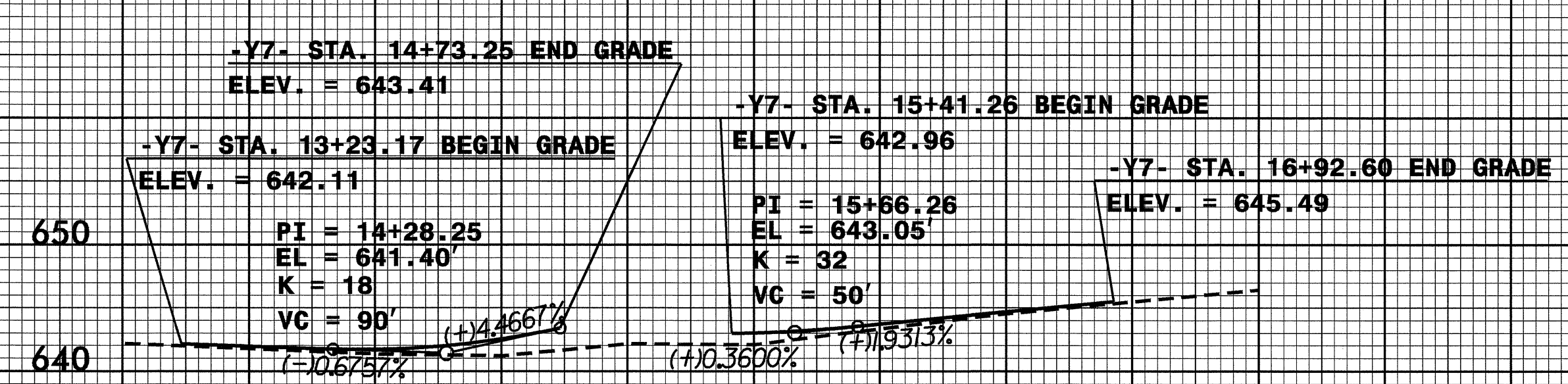
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# -Y5-



# -Y7-



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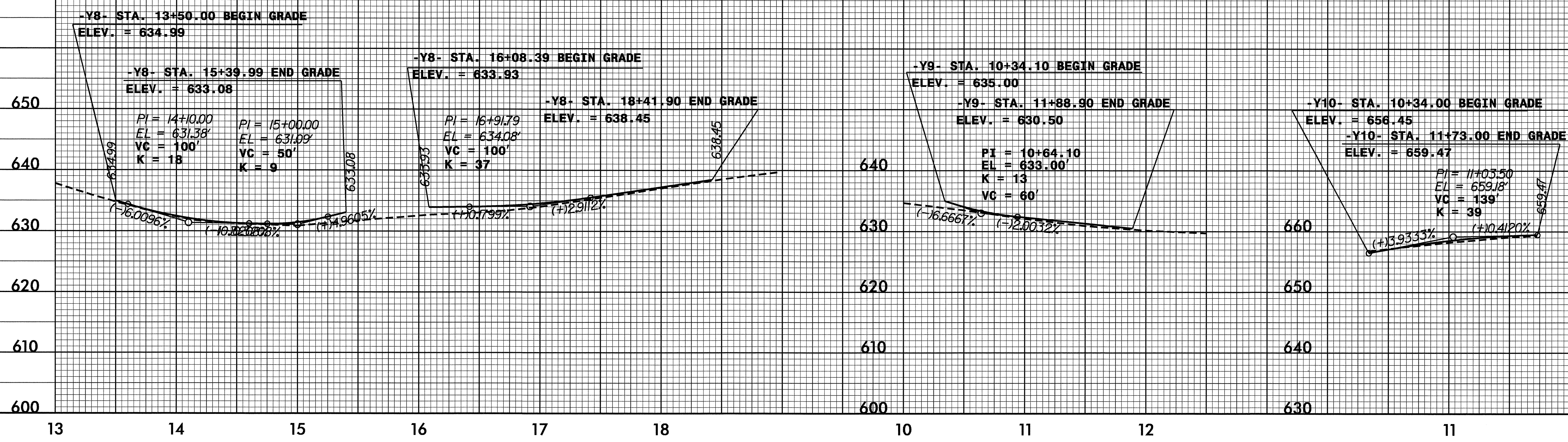
5/28/99

PROJECT REFERENCE NO. U-3303A	SHEET NO. 14
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14493 JAMES STAFFORD GOODNIGHT, JR.	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 023090 AUDREY B. BURNETTE
<i>J. J. [Signature]</i> 12-23-00	<i>Audrey B. [Signature]</i> 2/6/09

# -Y8-

# -Y9-

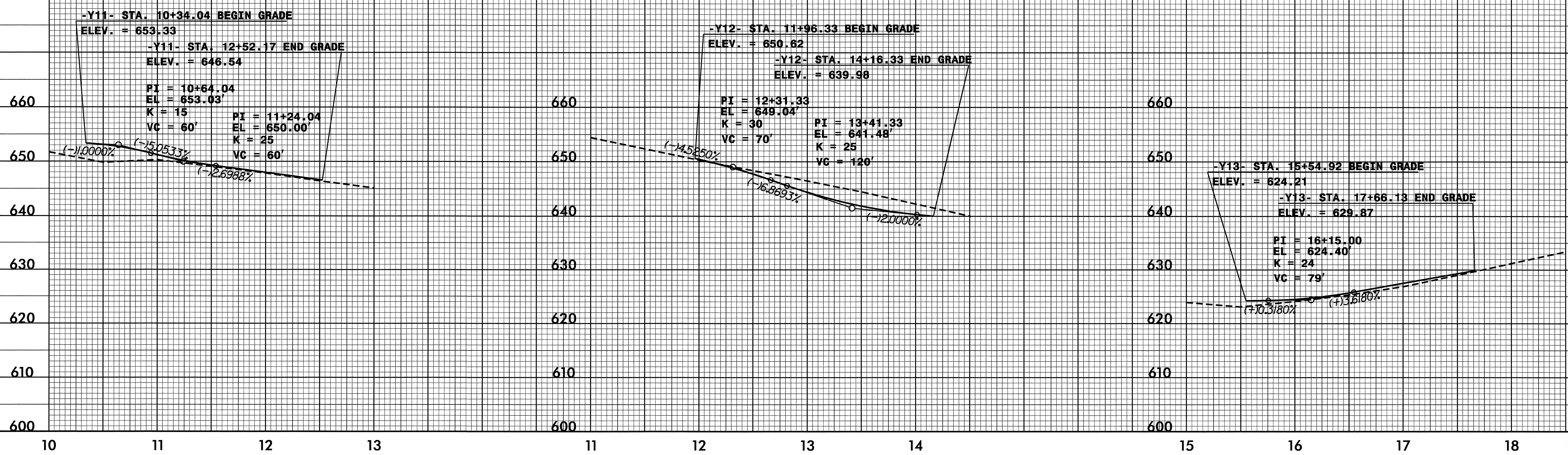
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# -Y12-

# -Y13-



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