

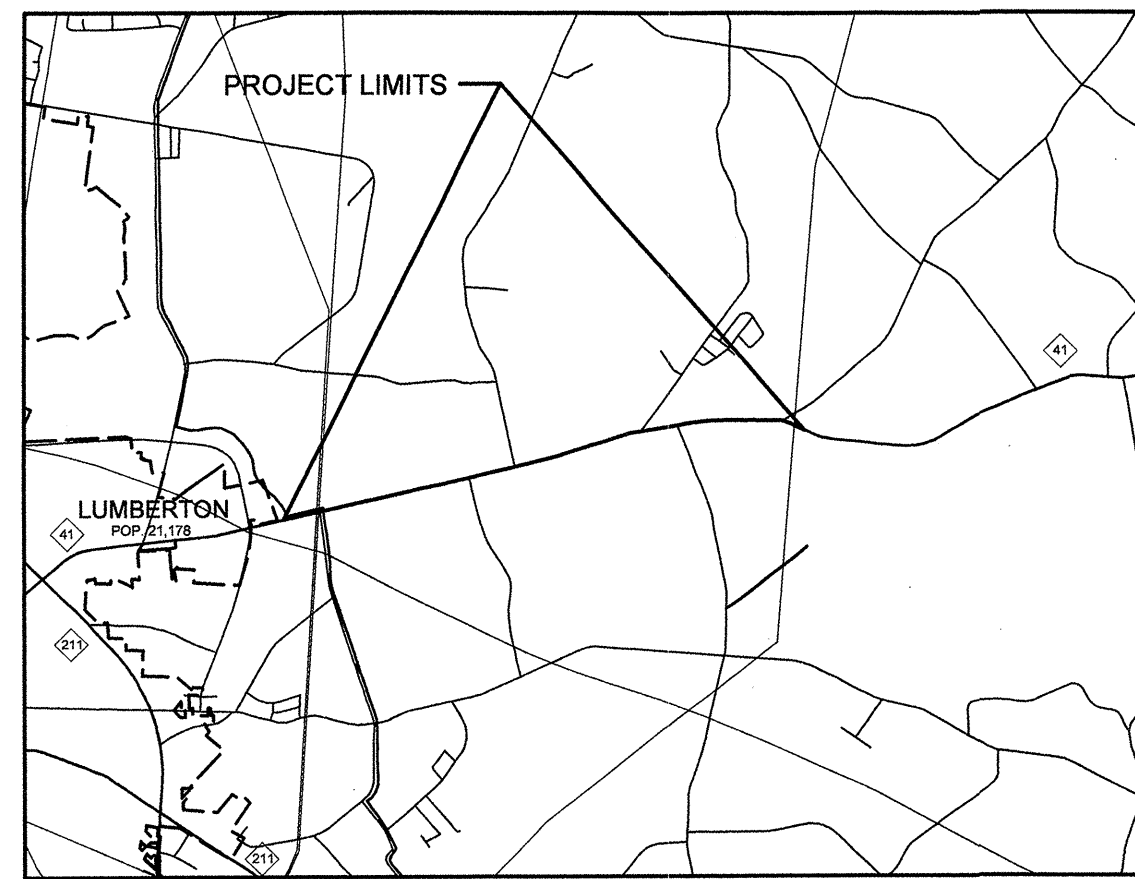
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5017	1	98
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
37987		P.E., R / W, UTIL.	
41519.3.1		CONSTRUCTION	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

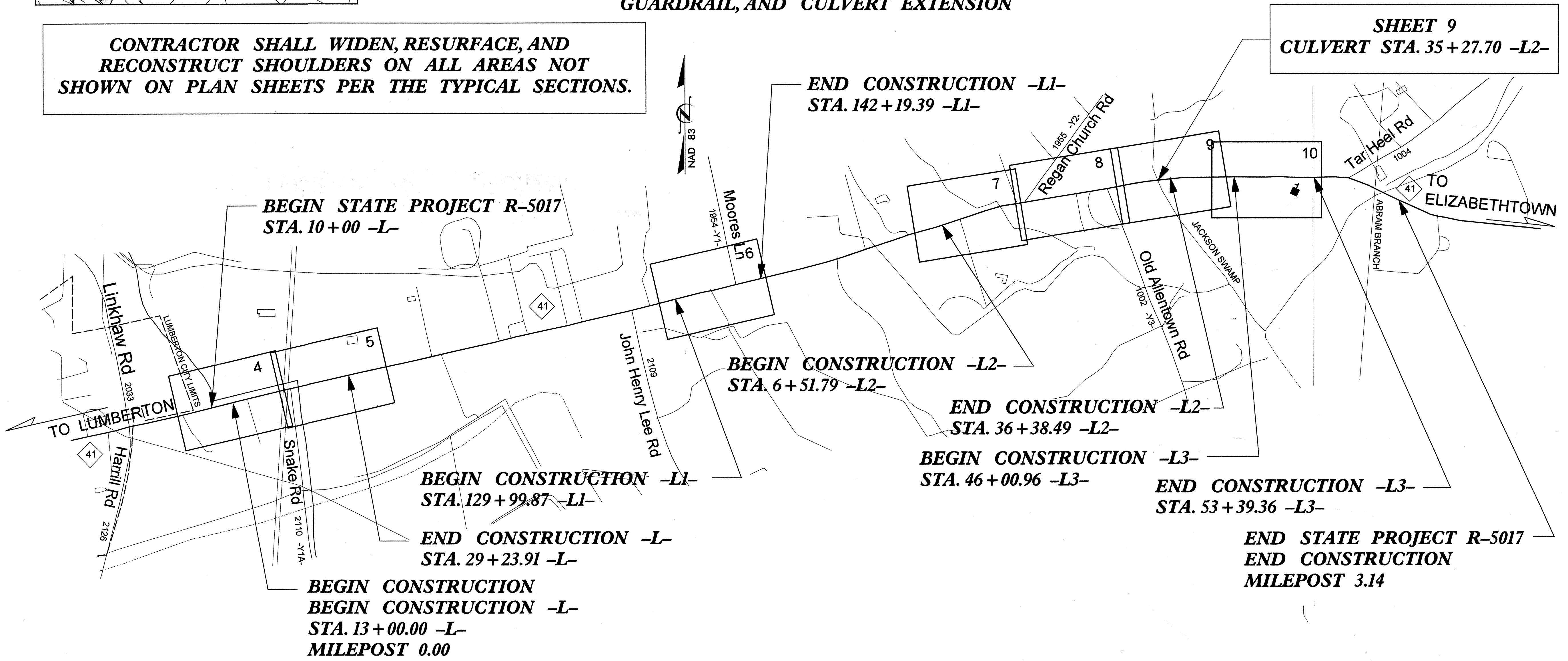
ROBESON COUNTY

LOCATION: NC 41 FROM EXISTING THREE-LANE SECTION 0.16 MI WEST OF SR 2110 (SNAKE RD)
TO MILEPOST 3.14, 0.14 MI EAST OF SR 1004 (TAR HEEL RD)

TYPE OF WORK: GRADING, WIDENING, PAVING, DRAINAGE,
GUARDRAIL, AND CULVERT EXTENSION



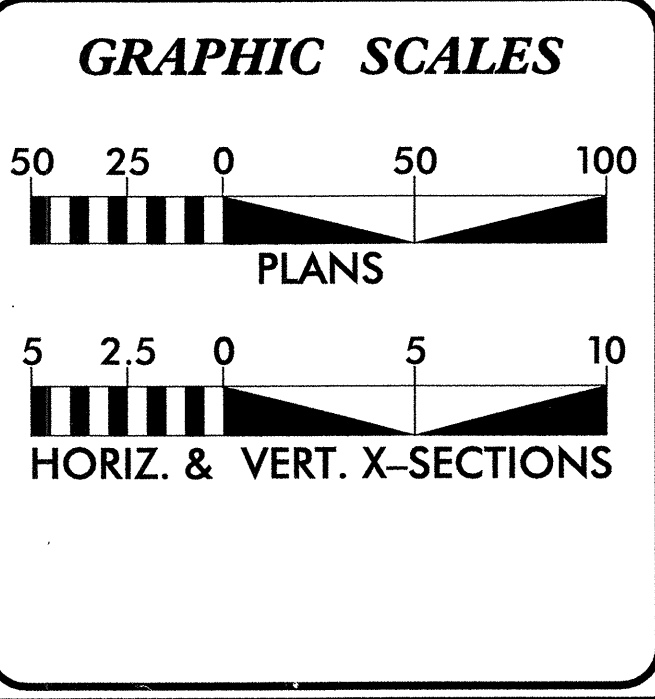
CONTRACTOR SHALL WIDEN, RESURFACE, AND RECONSTRUCT SHOULDERS ON ALL AREAS NOT SHOWN ON PLAN SHEETS PER THE TYPICAL SECTIONS.



TIP PROJECT: R-5017

CONTRACT: C201802

CONTRACT: C201802



DESIGN DATA

ADT 2006 = 13,000
V = 60 MPH

PROJECT LENGTH

LENGTH OF ROADWAY STATE PROJECT R-5017 = 3.14 MI.
TOTAL LENGTH STATE PROJECT R-5017 = 3.14 MI.

HDR Prepared By:
HDR Engineering, Inc.
of the Carolinas
128 S. Tryon Street, Suite 1400 • Charlotte, N.C. 28202

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
08 / 01 / 06

LETTING DATE:
1 / 15 / 08

LISA M. PODESZWA, PE
PROJECT ENGINEER

DAVID H. KERNS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: Lisa M. Podszwa P.E. 11/2/08

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER P.E.

10/30/2007 10:36:14 AM C:\pwworking\tpa\dms\150\NC41_Tile_V8.dgn

PROJECT REFERENCE NO. R-5017	SHEET NO. 1-A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PROJECT: R-5017
ROBESON COUNTY

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

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS
1-B	CONVENTIONAL SYMBOLS
2 THRU 2-A	PAVEMENT SCHEDULE, WEDGING DETAIL, AND TYPICAL SECTIONS
2-B	ANCHORAGE FOR FRAMES
3	SUMMARY OF QUANTITIES
3-A THRU 3-B	DRAINAGE SUMMARY
3-C	EARTHWORK AND GUARDRAIL SUMMARIES
3-D	PARCEL INDEX SHEET
4 THRU 10	PLAN SHEETS
TCP-1 THRU TCP-7	TRAFFIC CONTROL PLANS
PM-1 THRU PM-9	PAVEMENT MARKING PLANS
EC-1 THRU EC-8	EROSION CONTROL PLANS
UC-1 THRU UC-9	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-6	UTILITIES BY OTHERS PLANS
C-1 THRU C-4	CULVERT PLANS
SN	STRUCTURE GENERAL NOTES
X-1 THRU X-36	CROSS SECTIONS

GRADING

THE GRADE SHOWN ON THE CROSS-SECTIONS DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. 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 STD. NO. 225.04 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.

SHORING

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

GUARDRAIL:

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

SUBSURFACE PLANS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE ROBESON COUNTY PUBLIC WORKS, TIME WARNER CABLE, AND EASTERN NORTH CAROLINA NATURAL GAS.

RELOCATE ALL EXISTING WATER METERS OUT OF PROPOSED DITCH AS DIRECTED BY THE ENGINEER.

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.

2006 ROADWAY STANDARD DRAWINGS

EFF. 07-18-06

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
DIVISION 2 - EARTHWORK	
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
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
838.01	Concrete Endwall for Single & Double pipe culverts - 15" thru 48" pipe 90° skew
840.00	Concrete Base Pad for Drainage Structures
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
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
852.01	Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

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3/17/2007 3:16:20 PM C:\Users\jacob.teanaka\Documents\715017.RD\TSH\IR\Symbols.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

*S.U.E = SUBSURFACE UTILITY ENGINEER

CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

Edge of Pavement	-----
Curb	-----
Prop. Slope Stakes Cut	-----C-----
Prop. Slope Stakes Fill	-----F-----
Prop. Woven Wire Fence	-----○-----
Prop. Chain Link Fence	-----□-----
Prop. Barbed Wire Fence	-----◇-----
Prop. Wheelchair Ramp	-----WCR-----
Curb Cut for Future Wheelchair Ramp	-----CCFR-----
Exist. Guardrail	-----T-----
Prop. Guardrail	-----T-----
Equality Symbol	-----⊕-----
Pavement Removal	-----X-----

RIGHT OF WAY

Baseline Control Point	-----◆-----
Existing Right of Way Marker	-----△-----
Exist. Right of Way Line w/Marker	-----△-----
Prop. Right of Way Line with Proposed	-----▲-----
RW Marker (Iron Pin & Cap)	-----▲-----
Prop. Right of Way Line with Proposed	-----▲-----
(Concrete or Granite) RW Marker	-----⊙-----
Exist. Control of Access Line	-----⊙-----
Prop. Control of Access Line	-----⊙-----
Exist. Easement Line	-----E-----
Prop. Temp. Construction Easement Line	-----E-----
Prop. Temp. Drainage Easement Line	-----TDE-----
Prop. Perm. Drainage Easement Line	-----PDE-----

HYDROLOGY

Stream or Body of Water	-----
River Basin Buffer	-----BZ-----
Flow Arrow	-----→-----
Disappearing Stream	-----Y-----
Spring	-----○-----
Swamp Marsh	-----↓-----
Shoreline	-----
Falls, Rapids	-----+
Prop Lateral, Tail, Head Ditches	-----<-----

STRUCTURES

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

MINOR	
Head & End Wall	-----CONC HW-----
Pipe Culvert	-----=-----
Footbridge	----->-----
Drainage Boxes	-----□ CB-----
Paved Ditch Gutter	-----

UTILITIES

Exist. Pole	-----●-----
Exist. Power Pole	-----○-----
Prop. Power Pole	-----○-----
Exist. Telephone Pole	-----○-----
Prop. Telephone Pole	-----○-----
Exist. Joint Use Pole	-----●-----
Prop. Joint Use Pole	-----●-----
Telephone Pedestal	-----T-----
UG Telephone Cable Hand Hold	-----T-----
Cable TV Pedestal	-----C-----
UG TV Cable Hand Hold	-----C-----
UG Power Cable Hand Hold	-----P-----
Hydrant	-----⊕-----
Satellite Dish	-----⊕-----
Exist. Water Valve	-----⊕-----
Sewer Clean Out	-----⊕-----
Power Manhole	-----P-----
Telephone Booth	-----T-----
Cellular Telephone Tower	-----●-----
Water Manhole	-----W-----
Light Pole	-----○-----
H-Frame Pole	-----○-----
Power Line Tower	-----⊕-----
Pole with Base	-----□-----
Gas Valve	-----◇-----
Gas Meter	-----◇-----
Telephone Manhole	-----T-----
Power Transformer	-----⊕-----
Sanitary Sewer Manhole	-----⊕-----
Storm Sewer Manhole	-----⊕-----
Tank; Water, Gas, Oil	-----○-----
Water Tank With Legs	-----○-----
Traffic Signal Junction Box	-----S-----
Fiber Optic Splice Box	-----F-----
Television or Radio Tower	-----⊕-----
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	-----TS-----

Recorded Water Line	-----W-----
Designated Water Line (S.U.E.*)	-----W-----
Sanitary Sewer	-----SS-----
Recorded Sanitary Sewer Force Main	-----FSS-----
Designated Sanitary Sewer Force Main(S.U.E.*)	-----FSS-----
Recorded Gas Line	-----G-----
Designated Gas Line (S.U.E.*)	-----G-----
Storm Sewer	-----S-----
Recorded Power Line	-----P-----
Designated Power Line (S.U.E.*)	-----P-----
Recorded Telephone Cable	-----T-----
Designated Telephone Cable (S.U.E.*)	-----T-----
Recorded U/G Telephone Conduit	-----TC-----
Designated U/G Telephone Conduit (S.U.E.*)	-----TC-----
Unknown Utility (S.U.E.*)	-----PUTL-----
Recorded Television Cable	-----TV-----
Designated Television Cable (S.U.E.*)	-----TV-----
Recorded Fiber Optics Cable	-----FO-----
Designated Fiber Optics Cable (S.U.E.*)	-----FO-----
Exist. Water Meter	-----○-----
UG Test Hole (S.U.E.*)	-----⊕-----
Abandoned According to U/G Record	-----ATTUR-----
End of Information	-----E.O.I-----

BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	-----PL-----
Exist. Iron Pin	-----⊕-----
Property Corner	-----+-----
Property Monument	-----ECM-----
Property Number	-----123-----
Parcel Number	-----6-----
Fence Line	-----X-----
Existing Wetland Boundaries	-----WW & ISBW-----
High Quality Wetland Boundary	-----HLB-----
Medium Quality Wetland Boundaries	-----MQ WLB-----
Low Quality Wetland Boundaries	-----LQ WLB-----
Proposed Wetland Boundaries	-----WLB-----
Existing Endangered Animal Boundaries	-----EAB-----
Existing Endangered Plant Boundaries	-----EPB-----

BUILDINGS & OTHER CULTURE

Buildings	-----
Foundations	-----
Area Outline	-----
Gate	-----
Gas Pump Vent or U/G Tank Cap	-----
Church	-----
School	-----
Park	-----
Cemetery	-----
Dam	-----
Sign	-----
Well	-----
Small Mine	-----
Swimming Pool	-----

TOPOGRAPHY

Loose Surface	-----
Hard Surface	-----
Change in Road Surface	-----
Curb	-----
Right of Way Symbol	-----R/W-----
Guard Post	-----⊕ GP-----
Paved Walk	-----
Bridge	-----
Box Culvert or Tunnel	-----
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	-----

VEGETATION

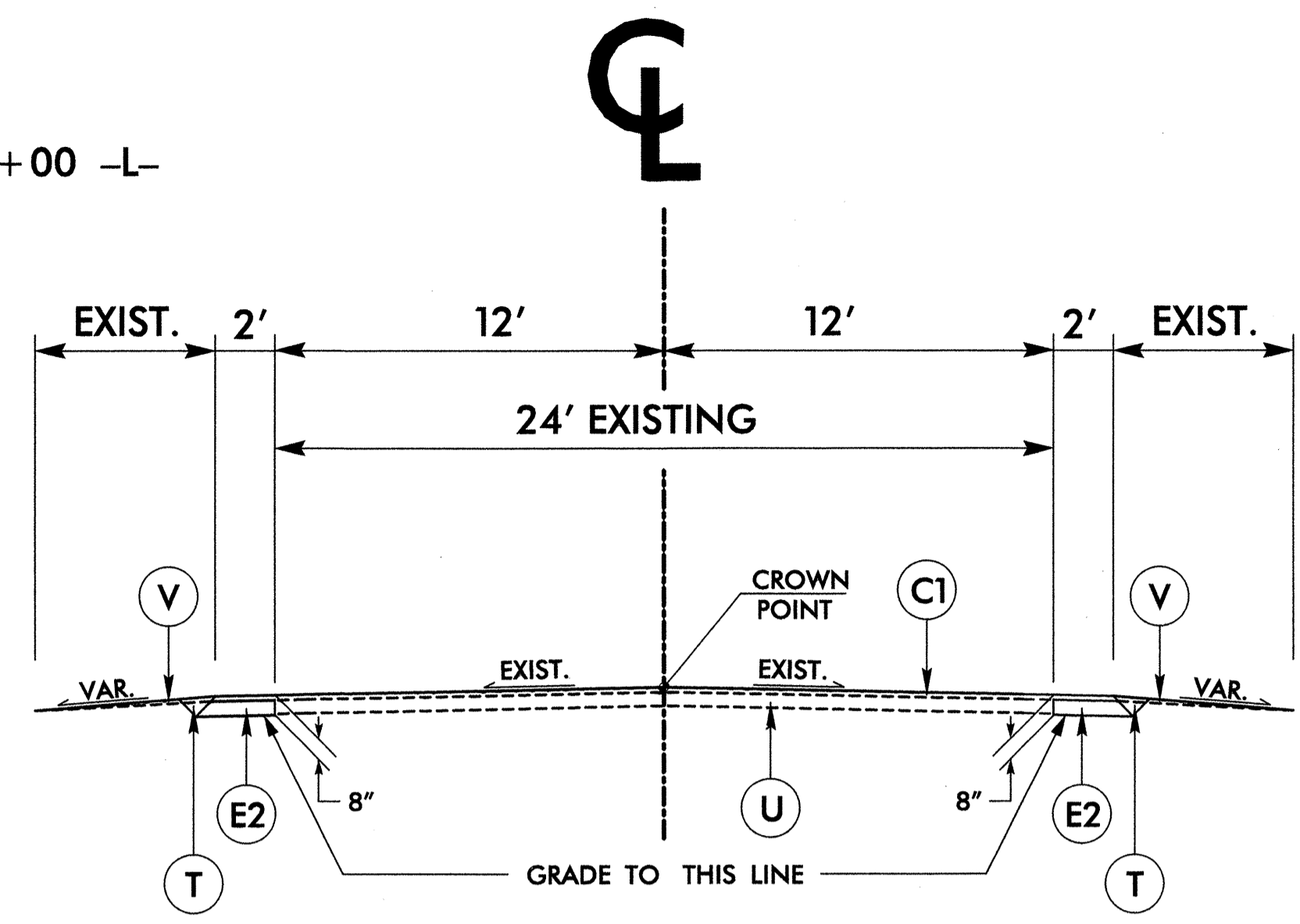
Single Tree	-----
Single Shrub	-----
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

RAILROADS

Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----

C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
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 LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 684 LBS. PER SQ. YD.
E3	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 5.5" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	SHOULDER RECONSTRUCTION.

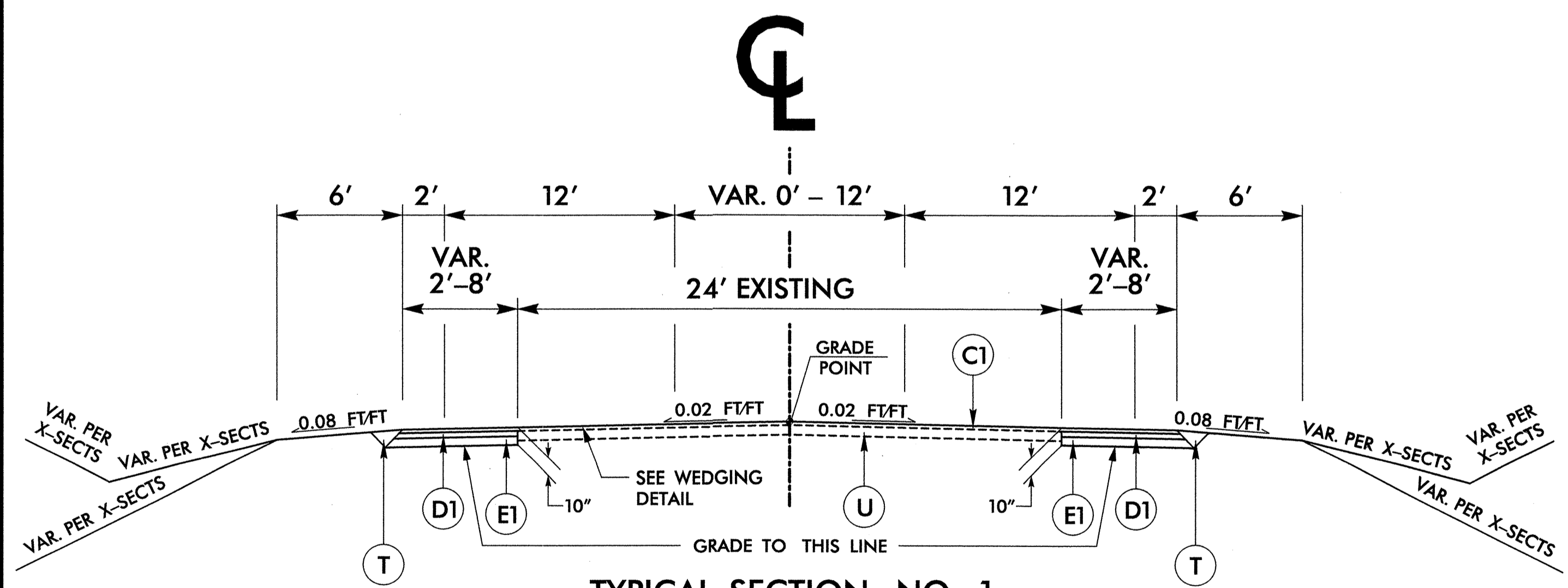
NOTE:
MILEPOST (MP) BEGINS AT 13+00 -L-



TYPICAL SECTION NO. 2

USE FROM - L - STA. 29+23.91 TO -L1- STA. 129+99.87
 USE FROM - L1 - STA. 142+19.39 TO -L2- STA. 6+51.79
 USE FROM - L2 - STA. 36+38.49 TO -L3- STA. 46+00.96

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



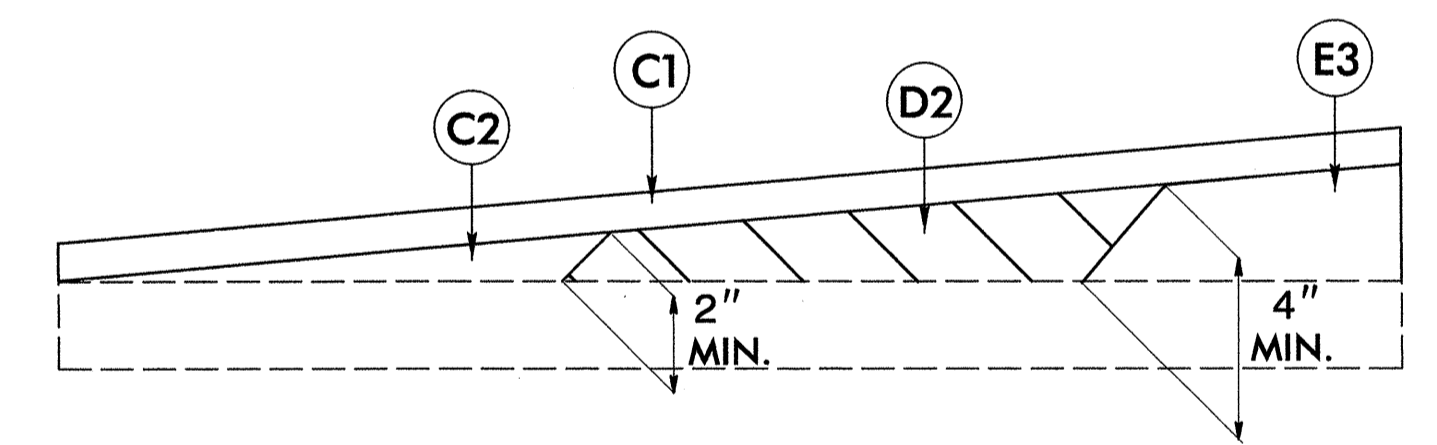
TYPICAL SECTION NO. 1

USE FROM - L - STA. 14+00.00 TO 29+23.91
 USE FROM - L1 - STA. 129+99.87 TO 142+19.39
 USE FROM - L2 - STA. 6+51.79 TO 36+38.49

USE PAVEMENT SCHEDULE FOR WIDENING -Y2- AS SHOWN ON PLANS

NOTE:
WIDEN VAR. 0'-2' EACH SIDE TO ACCOMODATE 100' TAPER FOR 2' PAVED SHOULDER FROM - L - STA. 13+00.00 TO 14+00.00

TOTAL SHOULDER WIDTH SHALL BE 11' (INCLUDING 2' PAVED SHOULDER) AT LOCATIONS WHERE GUARDRAIL IS INSTALLED



WEDGING DETAIL

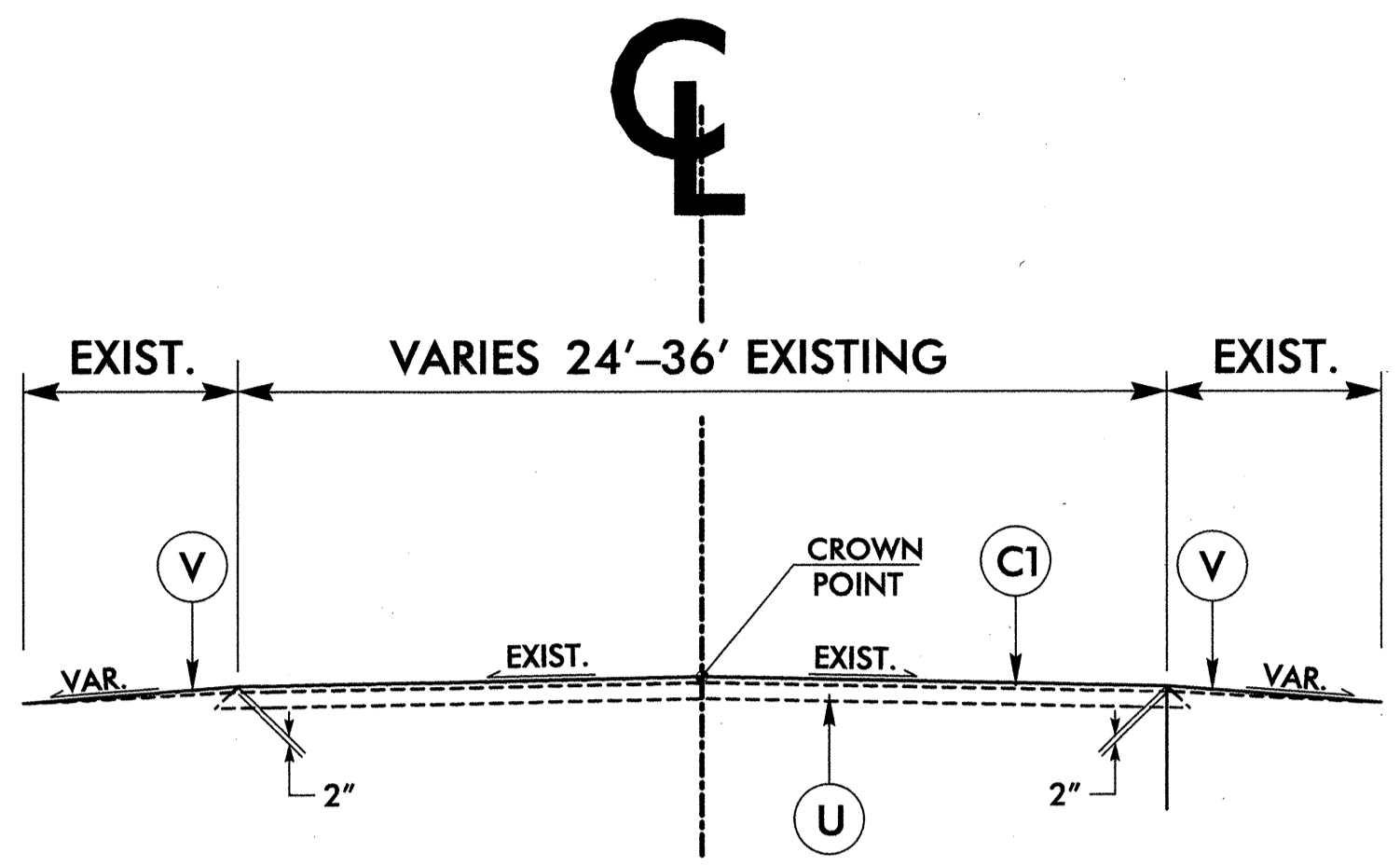
USE TO CORRECT SUPERELEVATION ON CURVE LOCATED FROM MP 1.5 TO MP 1.6 AS DIRECTED BY THE ENGINEER:

$e = 0.026$
 RUNOFF = 66'

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 TPA\Drawings\7150A.NC41_Typical_Section.dwg

C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
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 LESS THAN 1 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
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T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	SHOULDER RECONSTRUCTION.

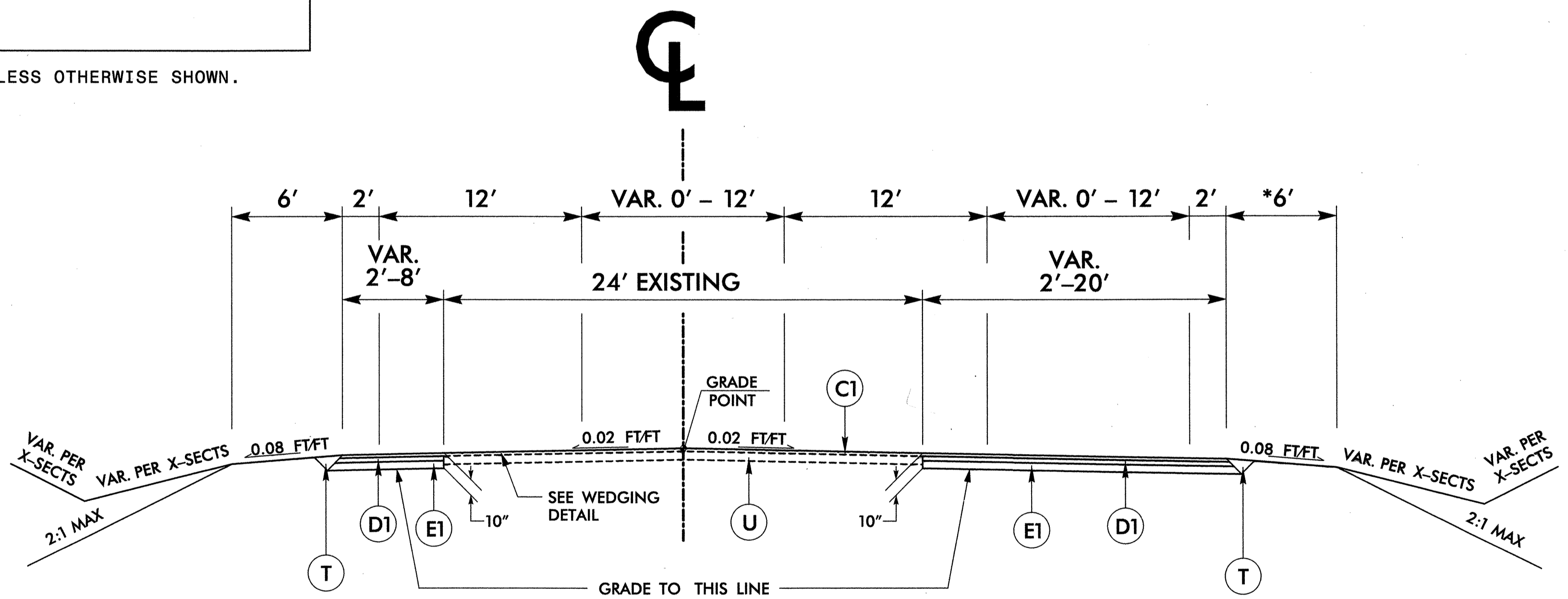
NOTE:
MILEPOST (MP) BEGINS AT 13+00 -L-



TYPICAL SECTION NO. 4

USE FROM - L3 - 53+39.36 TO MP 3.14

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



TYPICAL SECTION NO. 3

USE FROM -L3- STA. 46+00.96 - 53+39.96

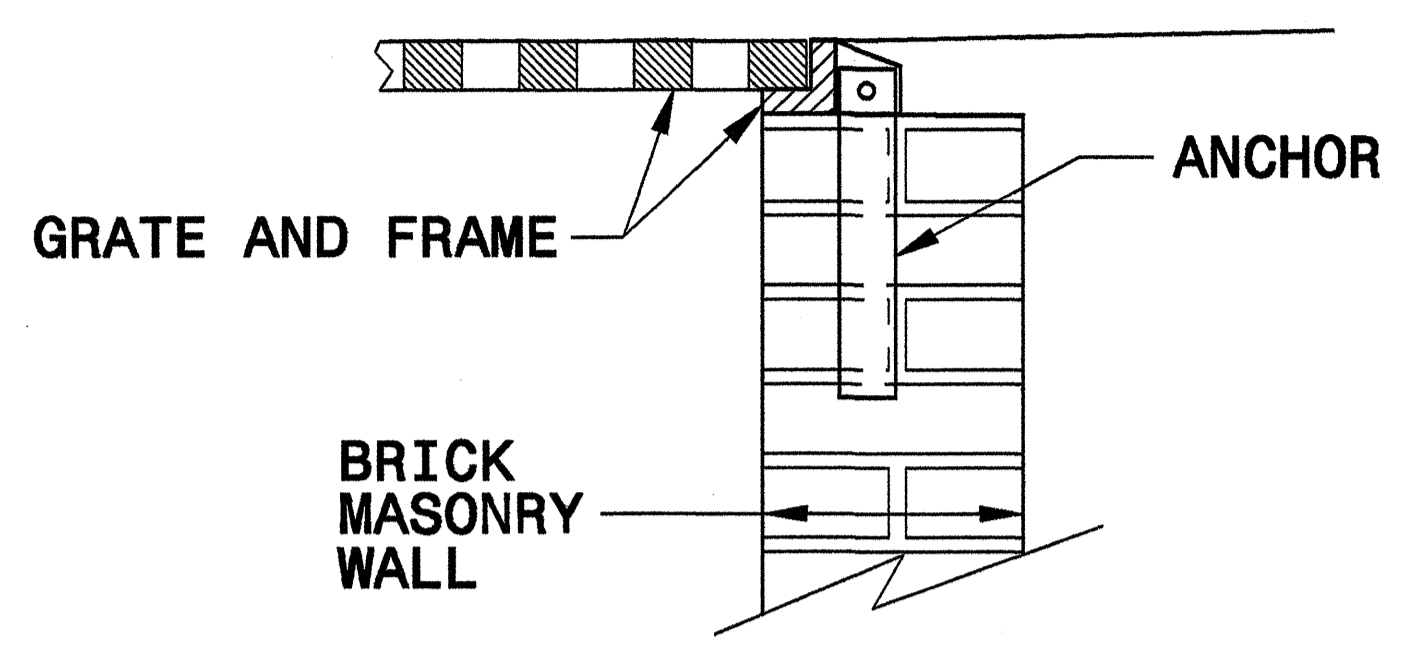
* TOTAL SHOULDER WIDTH (INCLUDING 2' PAVED SHOULDER) SHALL VARY FROM 8' TO 11' FROM -L3- STATION 50+25.00 TO 53+31.25 RT. IN ORDER TO TIE A 2:1 FILL SLOPE INTO EXISTING DITCH OFF RIGHT-OF-WAY. SEE CROSS-SECTIONS.

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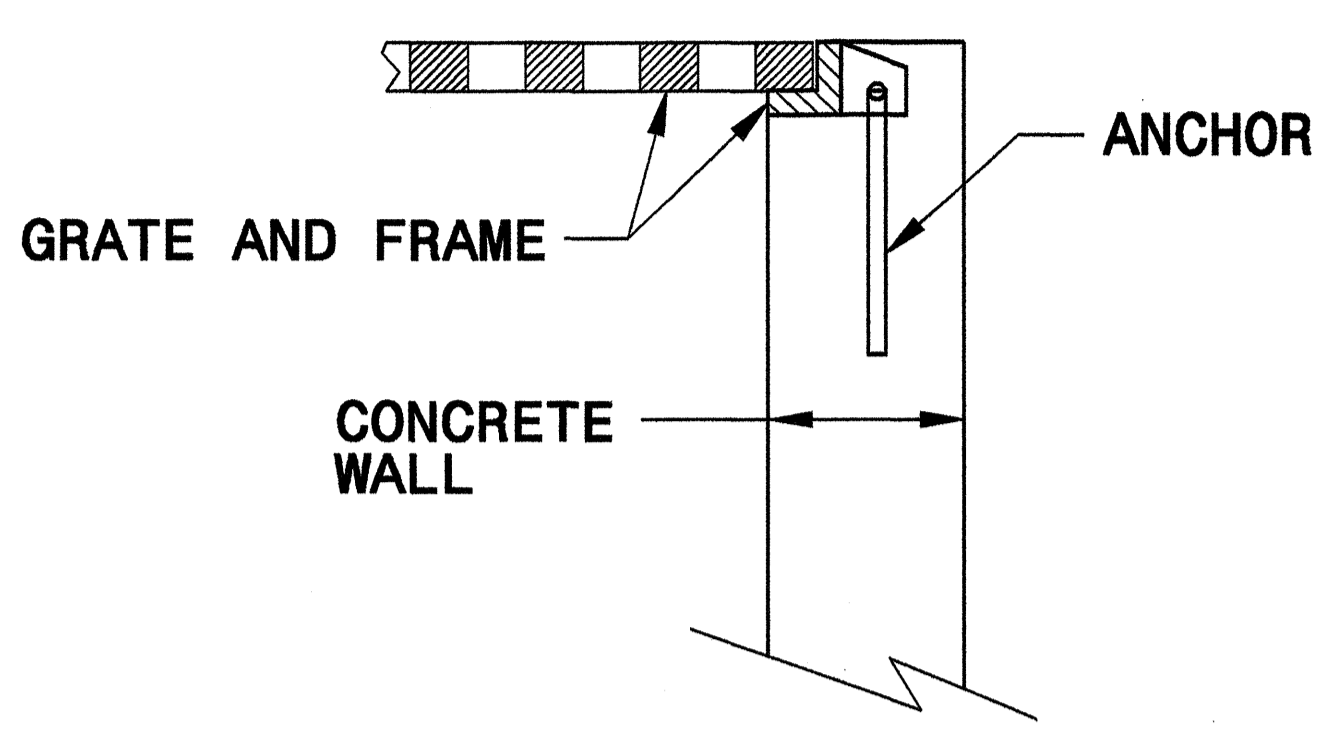
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

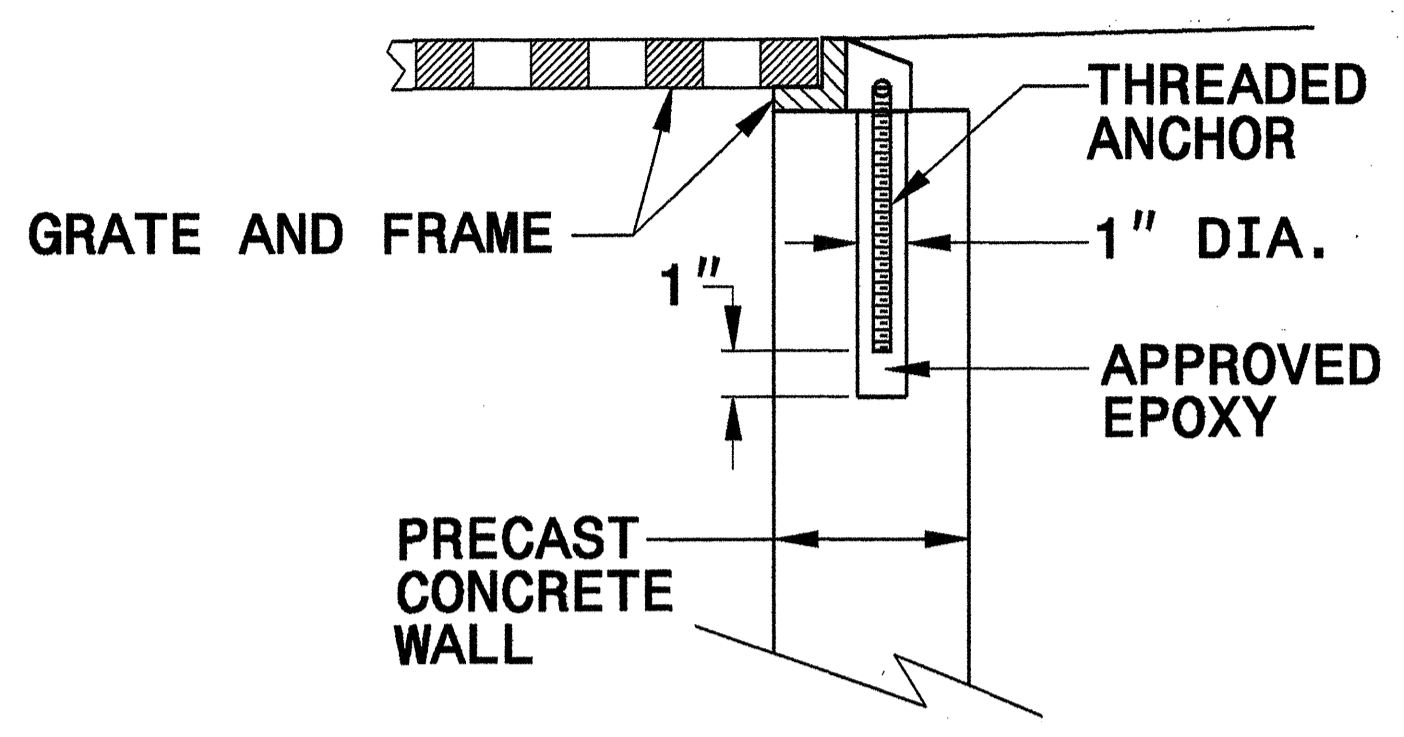
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



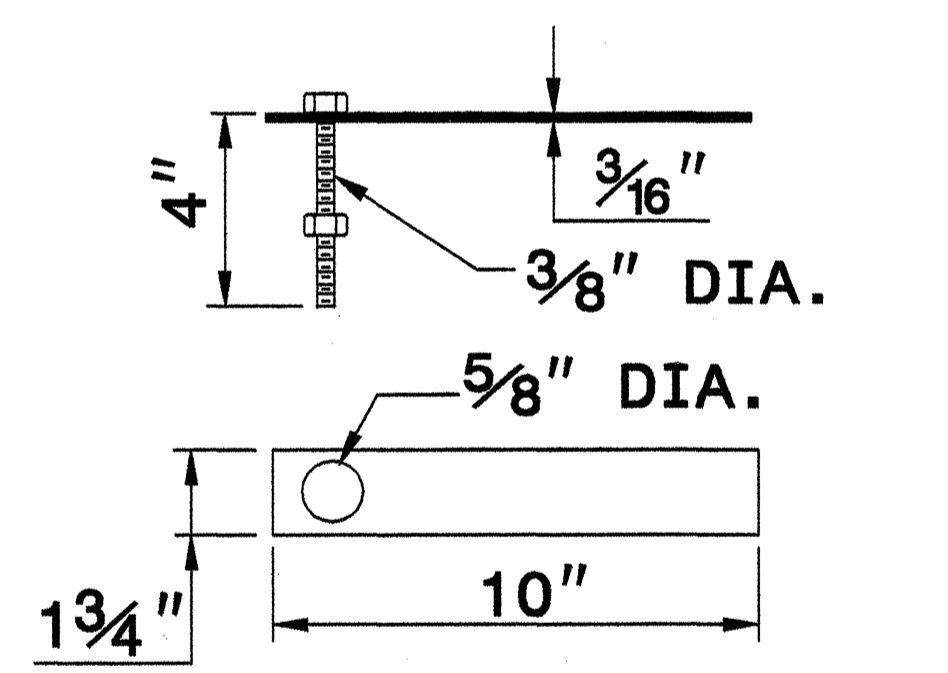
CONCRETE CONSTRUCTION



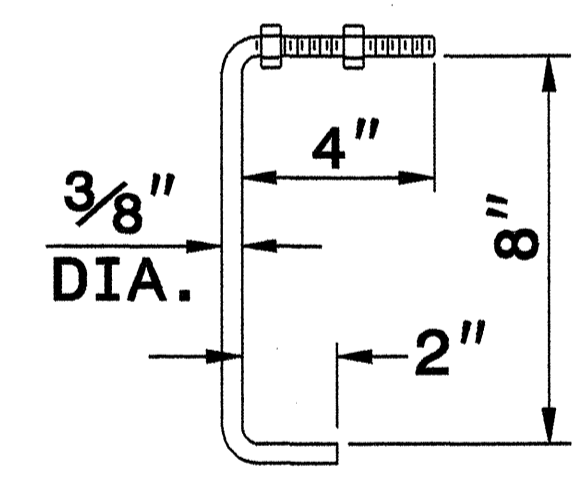
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

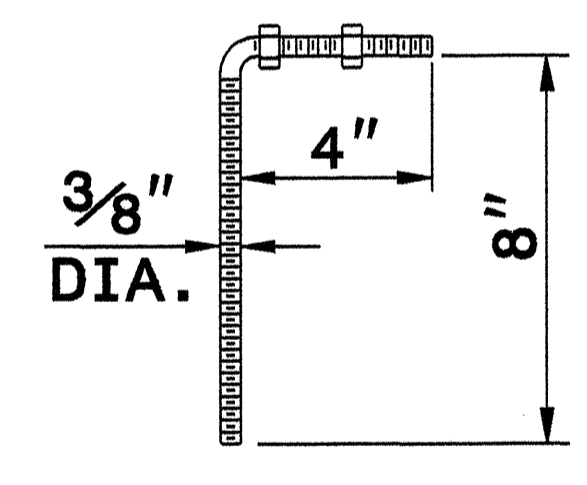
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



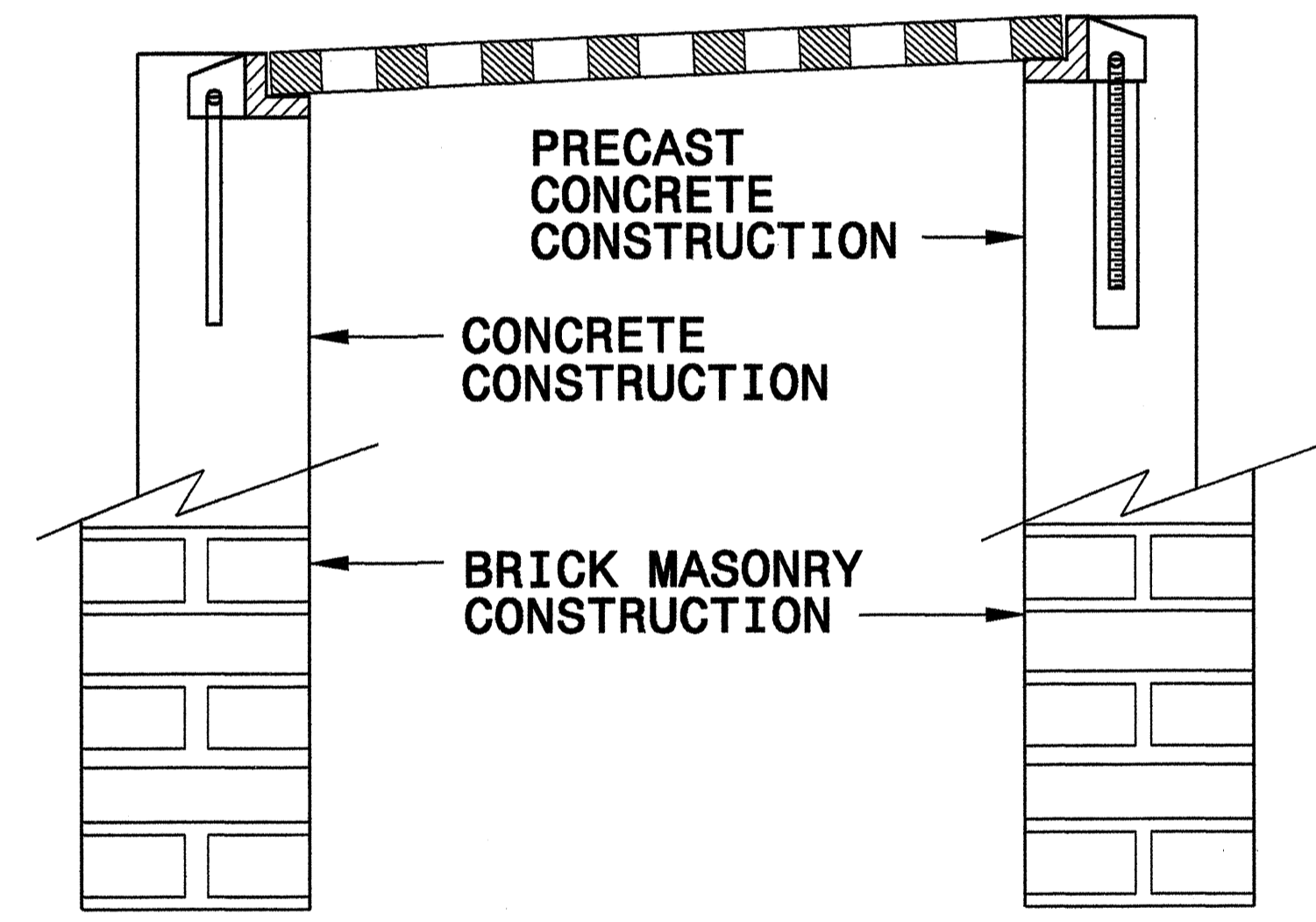
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR
3/8" DIA. BENT BAR



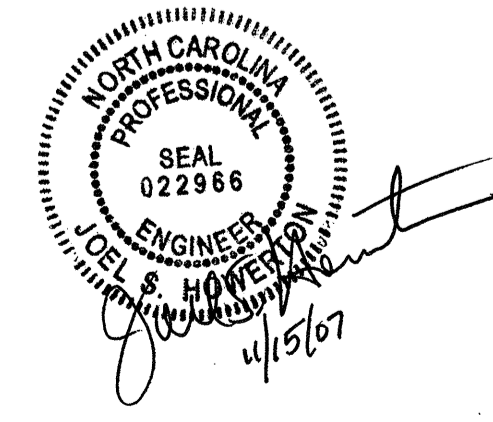
FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

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\Standard\stds\stds\06' Std to Special Details\eroward\stds\06' Std to Special Details\840D25 Anchorage for Frames\0840d25.dgn eroward AT PS222293



**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 EARTHWORK IN CUBIC YARDS


LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
13+00 -L- TO 28+50 -L-	3,241		4,016	775	0
130+00 -L1- TO 142+20 -L1-	4,462		2,294	0	2,168
CURVE FROM MP 1.5 TO MP 1.6	105		280	175	0
6+50 -L2- TO 36+00 -L2-	3,390		5,041	1,651	0
REALIGNMENT OF -Y2-	330		113	0	217
UNDERCUT FOR CULVERT EXTENSION		35			35
46+00 -L3- TO 54+00 -L3-	292		1,083	791	0
TOTAL	11,820	35	12,827	3,392	2,420
LOSS DUE TO CLEARING AND GRUBBING	-600			600	
WASTE IN LIEU OF BORROW				-2,385	-2,385
EST. ADDITIONAL UNDERCUT EXCAVATION		500	625	625	500
PROJECT TOTALS	11,220	535	13,452	2,232	535
REPLACE TOPSOIL ON BORROW FITS				112	
GRAND TOTALS	11,220	535		2,344	
SAY	11,220	535		2,350	

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

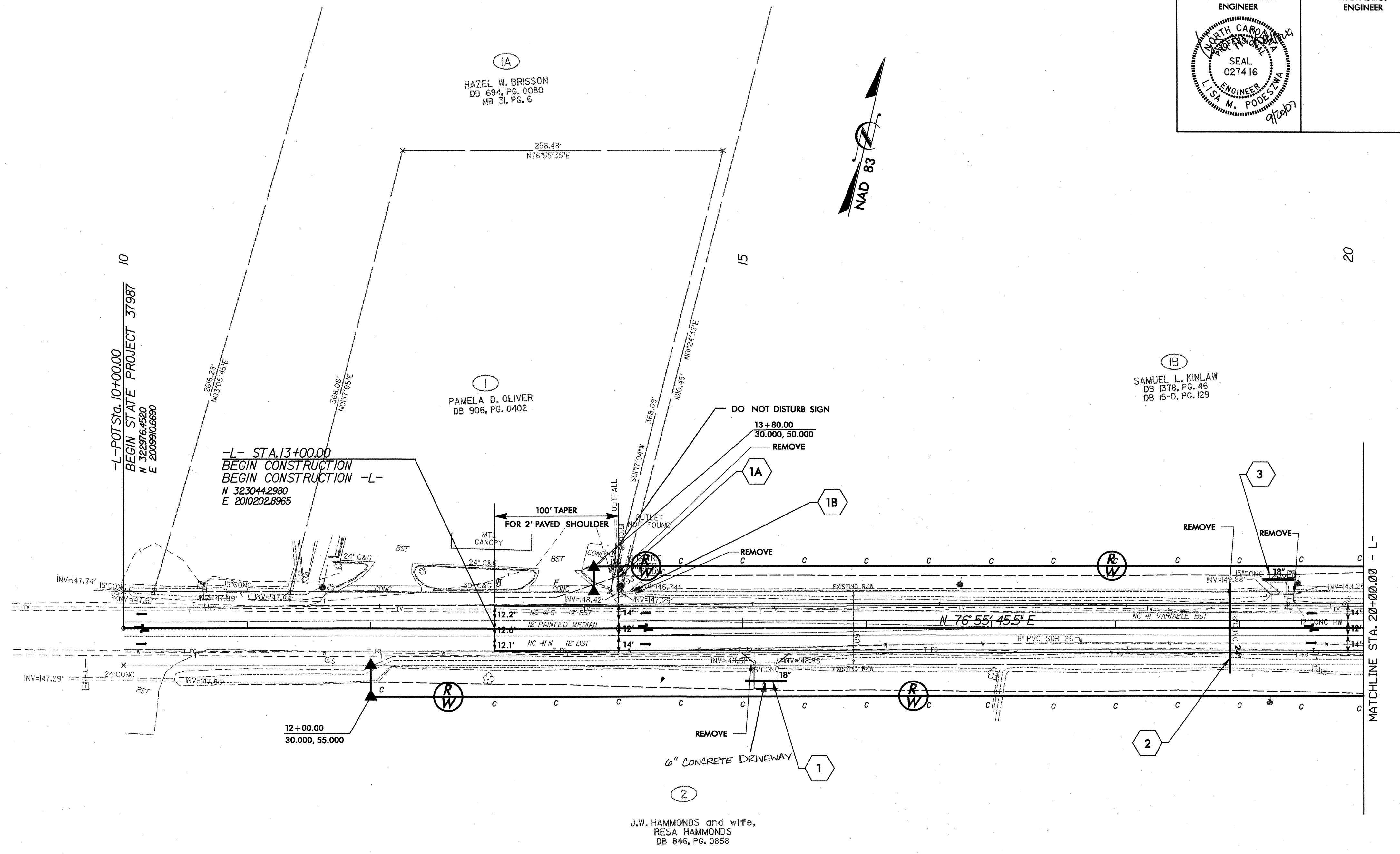
GUARDRAIL SUMMARY

SURVEY LINE	REG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS										IMPACT ATTENUATOR TYPE 350			SINGLE FACED CONCRETE BARRIERS	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS																						
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	XI MOD	XI	GRAU 350	TL-2	XIII	CAT-1	VI MOD	BIC	III	EA	G	NG																													
-L2-	32+65.33	34+27.83	LT	362.5			35+36.23	35+19.28	8	11																					2																					USE STANDARD DRAWING NO. 862.01 (SHEET 9 OF 11) FOR PLACEMENT AT CULVERT	
-L2-	33+02.69	36+27.69	RT	325			35+19.15	35+36.21	8	11																					2																		USE STANDARD DRAWING NO. 862.01 (SHEET 9 OF 11) FOR PLACEMENT AT CULVERT				
-L3-	50+25.00	53+31.25	RT	306.25			APPROX. 51+25	APPROX. 53+25	5 - 8	8 - 11																																											
			SUBTOTAL	993.75																																																	
			LESS DEDUCTIONS																																																		
					2-25' CLEAR SPANS @ 100' =	200																																															
			LESS ANCHOR DEDUCTIONS																																																		
			GRAU 350		5 @ 50.0' =	250																																															
			CAT-1		1 @ 6.25' =	6.25																																															
			TOTAL			537.5																																															
			(5 ADDITIONAL GUARDRAIL POSTS)																																																		

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 C:\pwworking\tpa\im\118100\41 Combo Summary.dgn

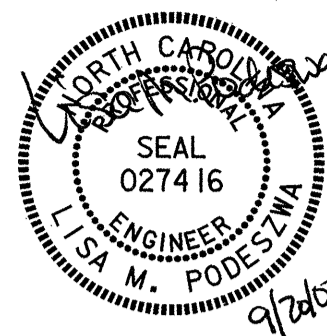
PROJECT REFERENCE NO. R-5017	SHEET NO. 4
R/W SHEET NO. 4	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

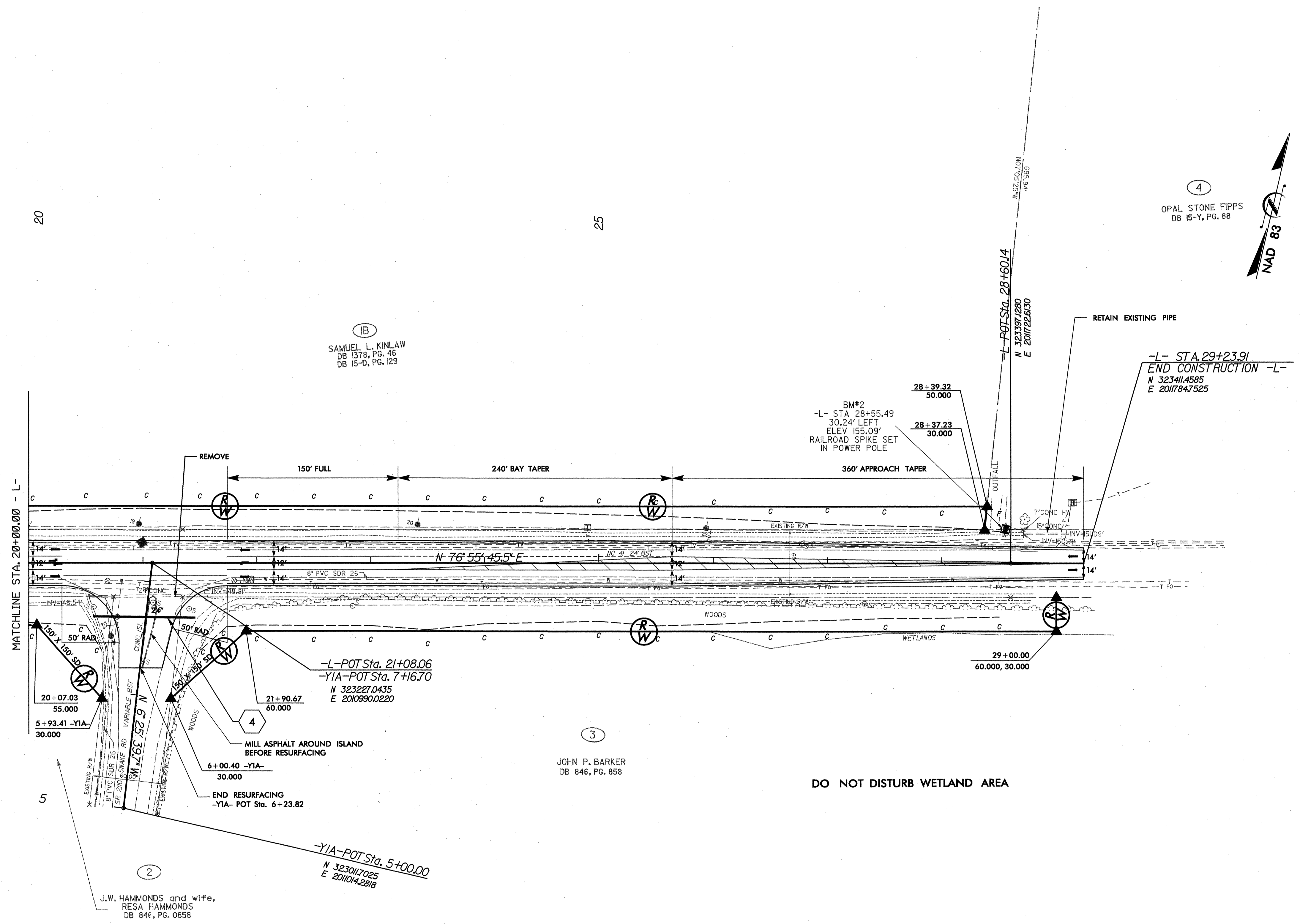
DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCSS FOR MONUMENT "COX" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 326119.367(FI) EASTING: 2023359.356(FI) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999281 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "COX" TO L- STATION IS ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88



8/17/99

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PROJECT REFERENCE NO. R-5017	SHEET NO. 5
R/W SHEET NO. 5	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER



20

25

4
OPAL STONE FIPPS
DB 15-Y, PG. 88

1B
SAMUEL L. KINLAW
DB 1378, PG. 46
DB 15-D, PG. 123

BM#2
-L- STA 28+55.49
30.24' LEFT
ELEV 155.09'
RAILROAD SPIKE SET
IN POWER POLE

-L- STA 29+23.91
END CONSTRUCTION -L-
N 323411.4585
E 2011784.7525

-L- POT Sta. 21+08.06
-YIA- POT Sta. 7+16.70
N 323227.0435
E 2010990.0220

3
JOHN P. BARKER
DB 846, PG. 858

DO NOT DISTURB WETLAND AREA

-YIA- POT Sta. 5+00.00
N 323011.7025
E 201014.2818

2
J.W. HAMMONDS and wife,
RESA HAMMONDS
DB 846, PG. 0858

4
MILL ASPHALT AROUND ISLAND
BEFORE RESURFACING

END RESURFACING
-YIA- POT Sta. 6+23.82

21+90.67
60.000

6+00.40 -YIA-
30.000

MATCHLINE STA. 20+00.00 -L-

MSZ ECOLON
746.965
-L- POT Sta. 28+60.14
N 323397.1280
E 2011722650

RETAIN EXISTING PIPE



8/17/99

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM ESTABLISHED BY A THREE RECEIVER STATIC GPS SYSTEM FROM NCGS MONUMENT "COX" HAVING NAD83 COORDINATES OF N 326,119.367', E 2,023,359.350', AND AN NGVD29 ELEVATION OF 143.92'.

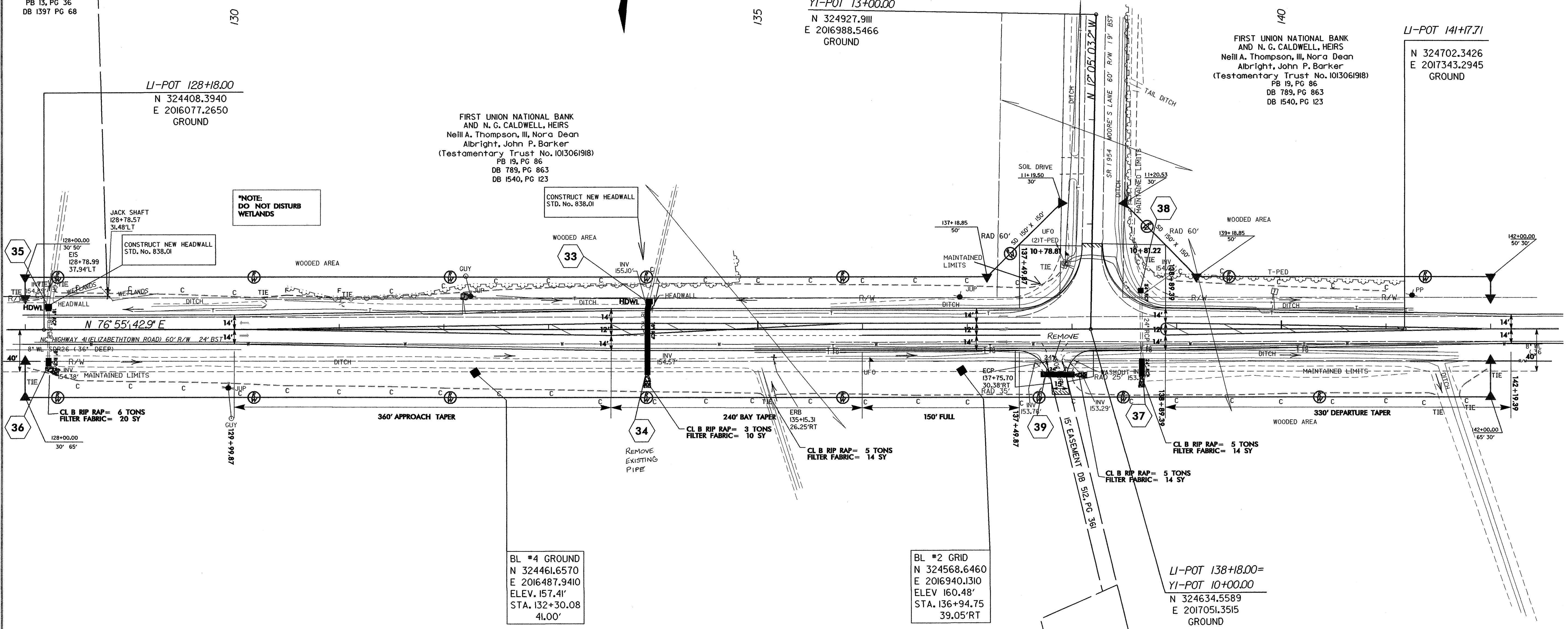
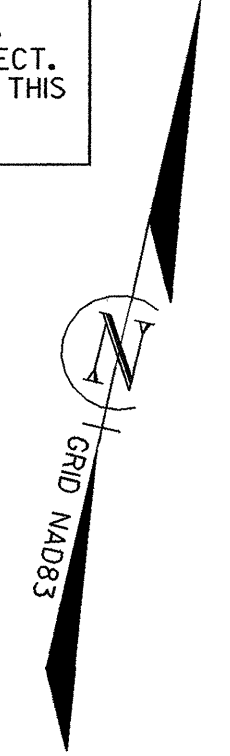
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GRID TO GROUND) IS 0.99992654.

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES.

***NOTE:**
 DATUM INFORMATION FOR THIS SECTION IS DIFFERENT THEN THE REST OF THE PROJECT. ONLY USE THIS DATUM INFORMATION FOR THIS SECTION

TOPOGRAPHICAL SURVEY PROVIDED BY:
 MICHAEL TATE, PROFESSIONAL LAND SURVEYOR
 3521 CLINTON ROAD, FAYETTEVILLE, N.C. 28301
 PH: 910-483-7387

CHERYL ANN THOMAS
 PB 13, PG 36
 DB 1397 PG 68



***NOTE:**
 DO NOT DISTURB WETLANDS

CONSTRUCT NEW HEADWALL
 STD. No. 838.01

JACK SHAFT
 128+78.57
 3L48'LT
 CONSTRUCT NEW HEADWALL
 STD. No. 838.01

FIRST UNION NATIONAL BANK
 AND N. G. CALDWELL, HEIRS
 Neill A. Thompson, III, Nora Dean
 Albright, John P. Barker
 (Testamentary Trust No. 1013061918)
 PB 19, PG 86
 DB 789, PG 863
 DB 1540, PG 123

FIRST UNION NATIONAL BANK
 AND N. G. CALDWELL, HEIRS
 Neill A. Thompson, III, Nora Dean
 Albright, John P. Barker
 (Testamentary Trust No. 1013061918)
 PB 19, PG 86
 DB 789, PG 863
 DB 1540, PG 123

LI-POT 141+17.71
 N 324702.3426
 E 2017343.2945
 GROUND

YI-POT 13+00.00
 N 324927.9111
 E 2016988.5466
 GROUND

LI-POT 128+18.00
 N 324408.3940
 E 2016077.2650
 GROUND

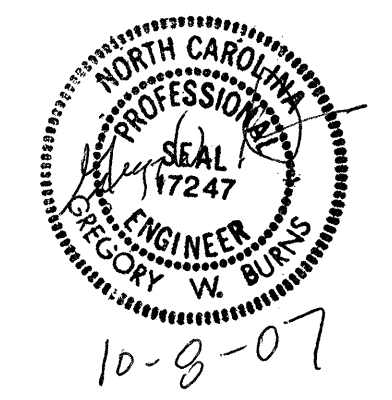
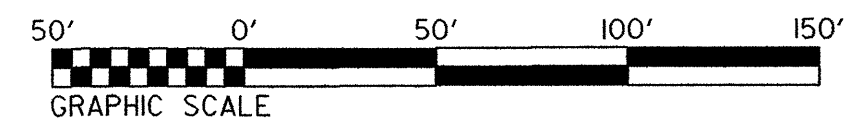
BL #4 GROUND
 N 324461.6570
 E 2016487.9410
 ELEV. 157.41'
 STA. 132+30.08
 41.00'

BL #2 GRID
 N 324568.6460
 E 2016940.1310
 ELEV. 160.48'
 STA. 136+94.75
 39.05'RT

LI-POT 138+18.00=
 YI-POT 10+00.00
 N 324634.5589
 E 2017051.3515
 GROUND

***NOTE:**
 DO NOT DISTURB CEMETARY

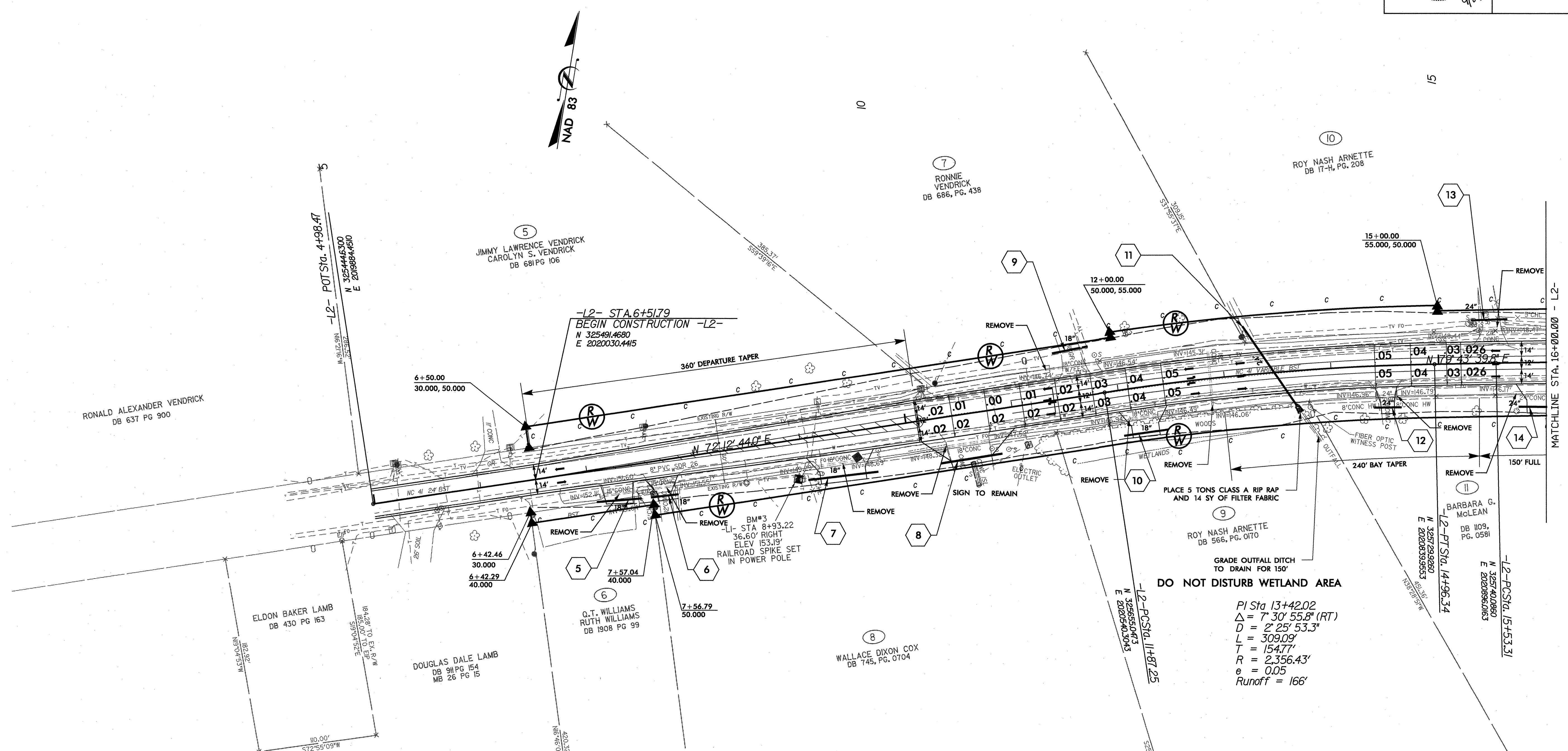
(CEMETARY)
 TRUSTEES OF THE PLEASANT
 MEADOWS BAPTIST CHURCH
 DB 512 PG 361



8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-5017	7
R/W SHEET NO. 6	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



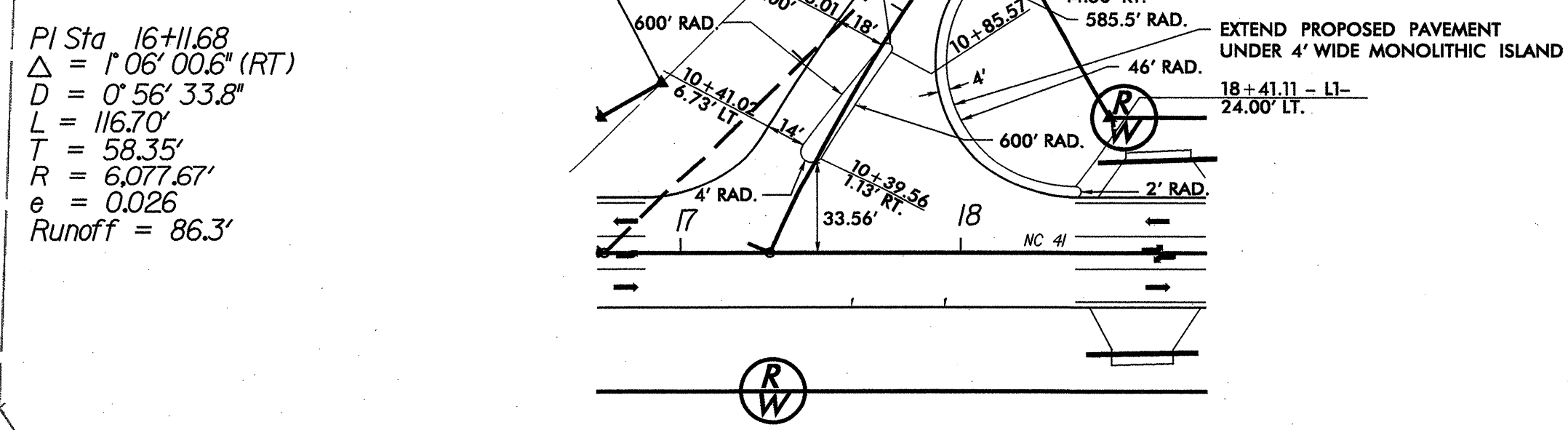
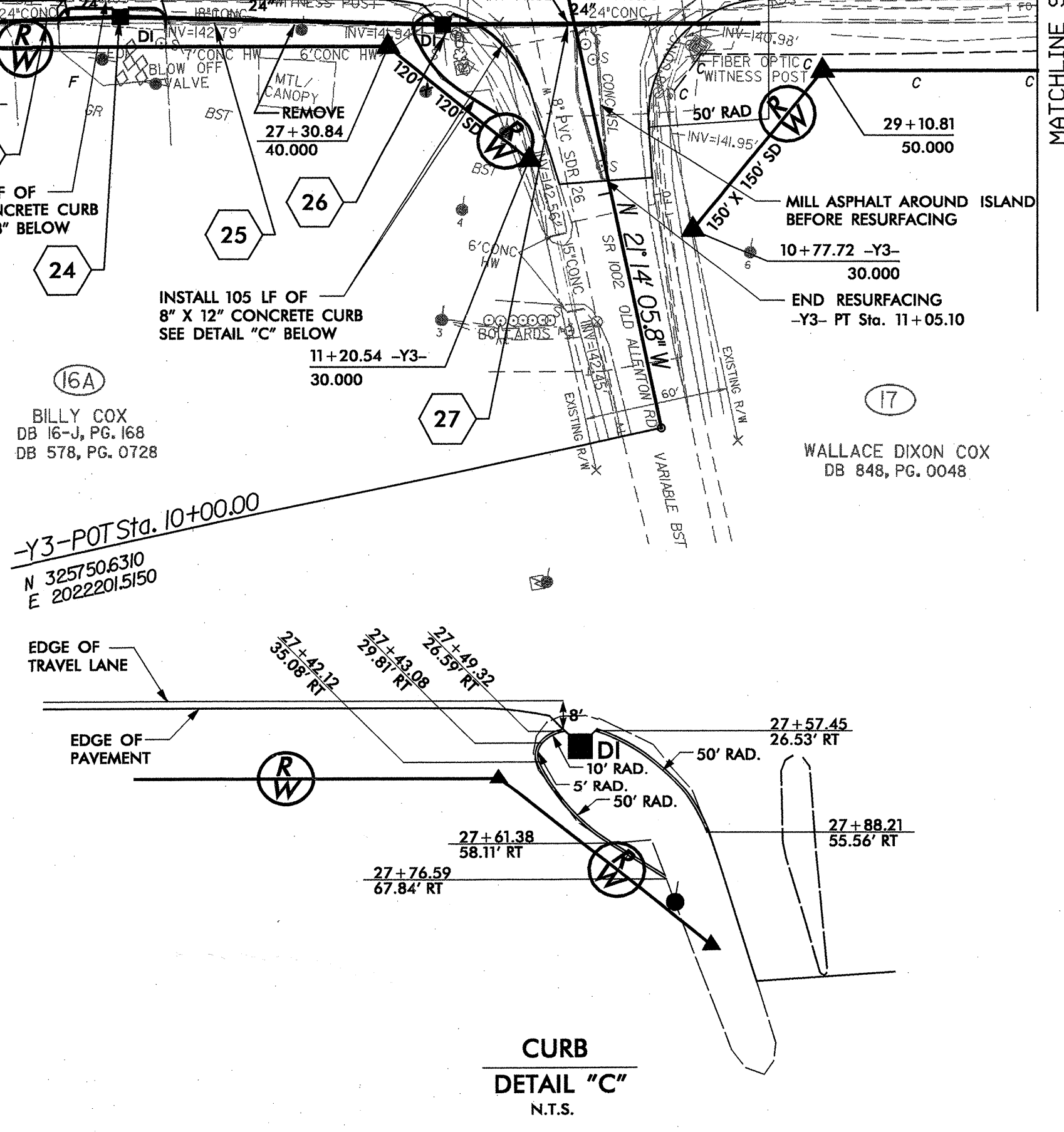
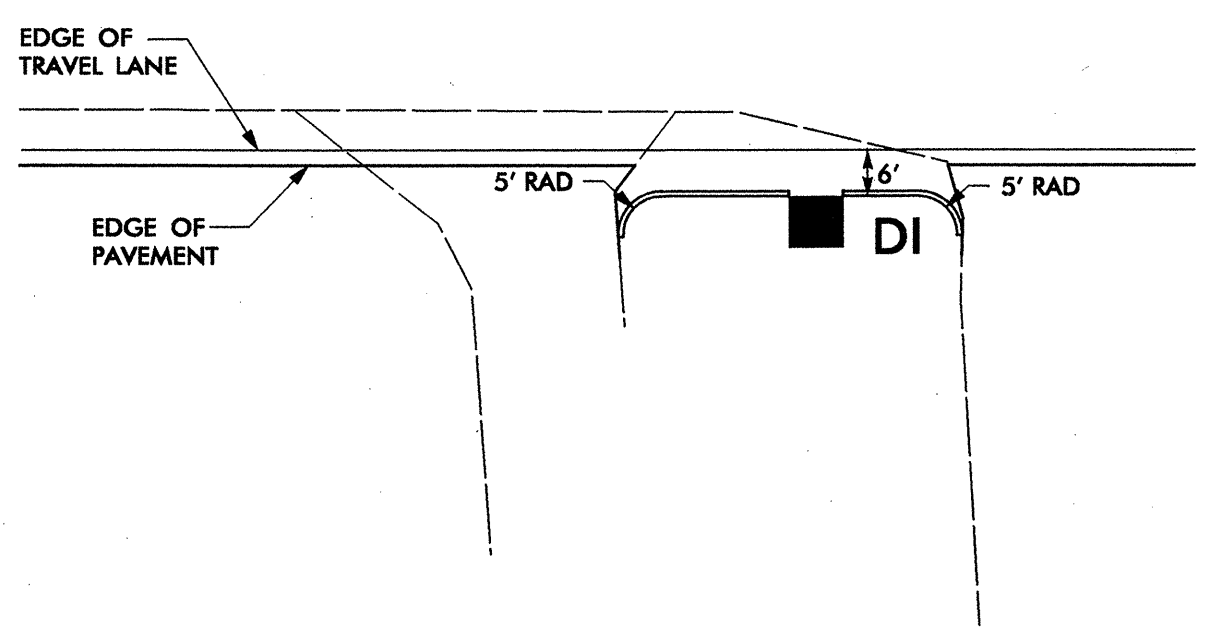
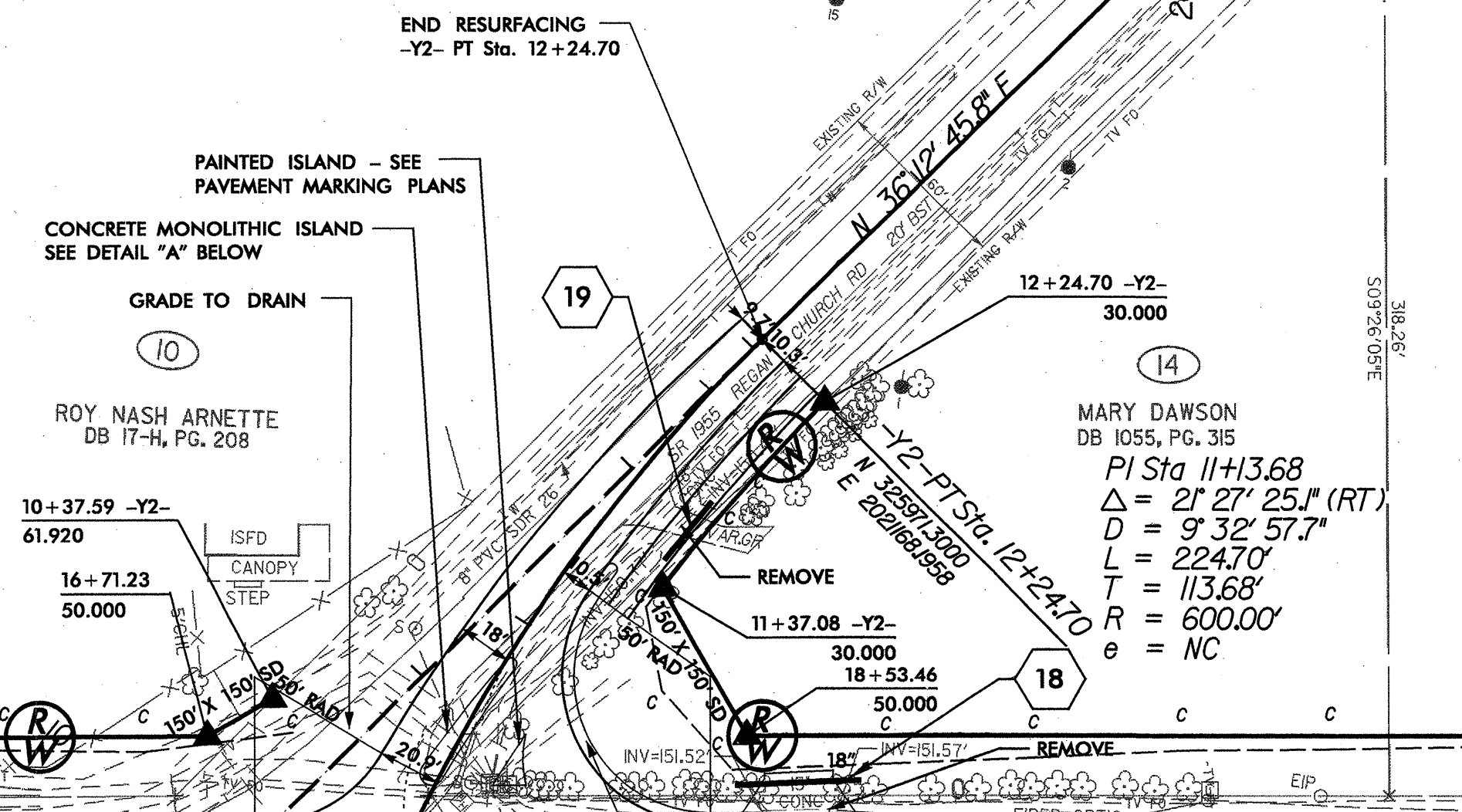
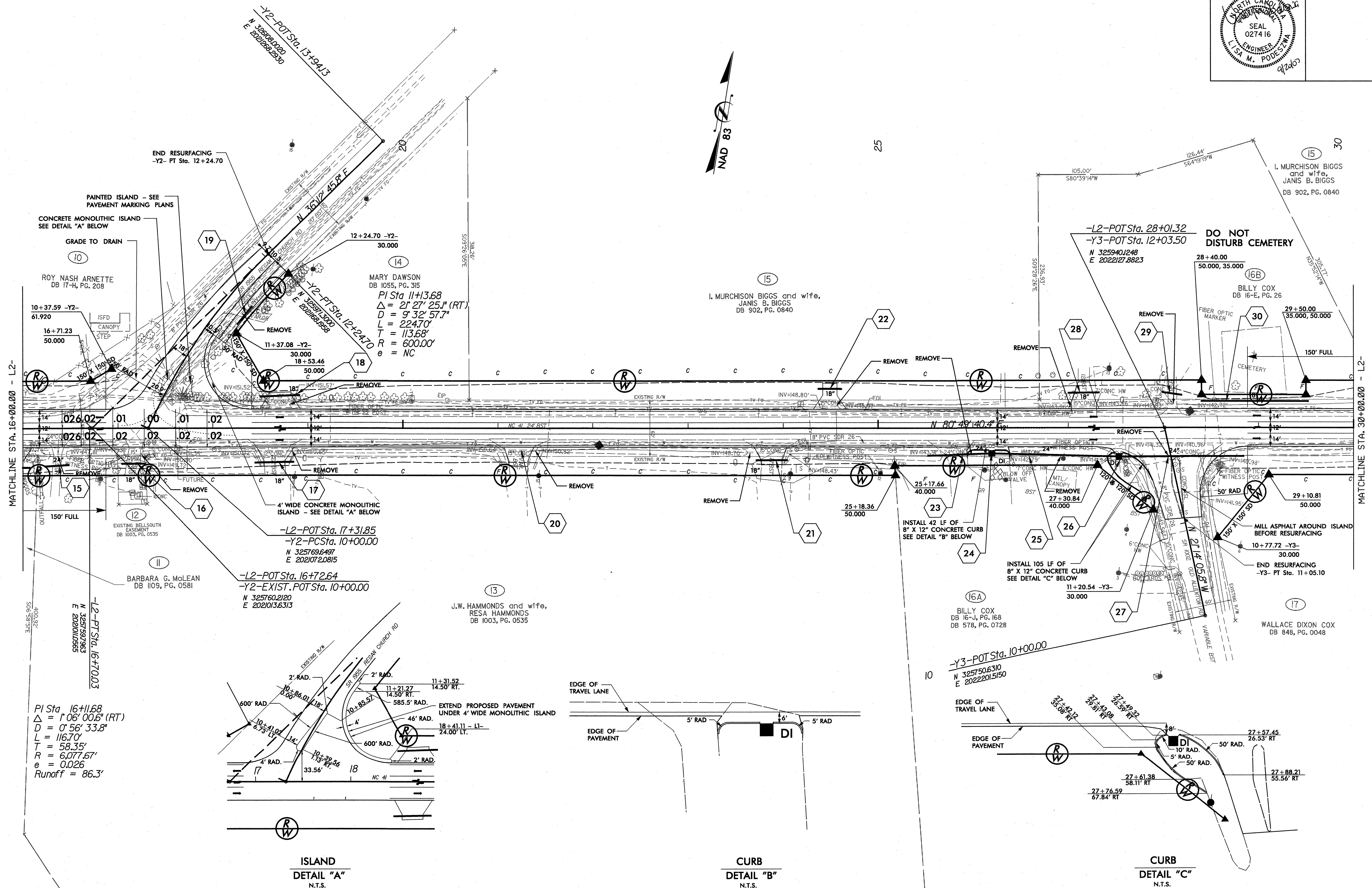
GRADE OUTFALL DITCH TO DRAIN FOR 150'

DO NOT DISTURB WETLAND AREA

$Pi Sta 13+42.02$
 $\Delta = 7' 30' 55.8'' (RT)$
 $D = 2' 25' 53.3''$
 $L = 309.09'$
 $T = 154.77'$
 $R = 2,356.43'$
 $e = 0.05$
 $Runoff = 166'$

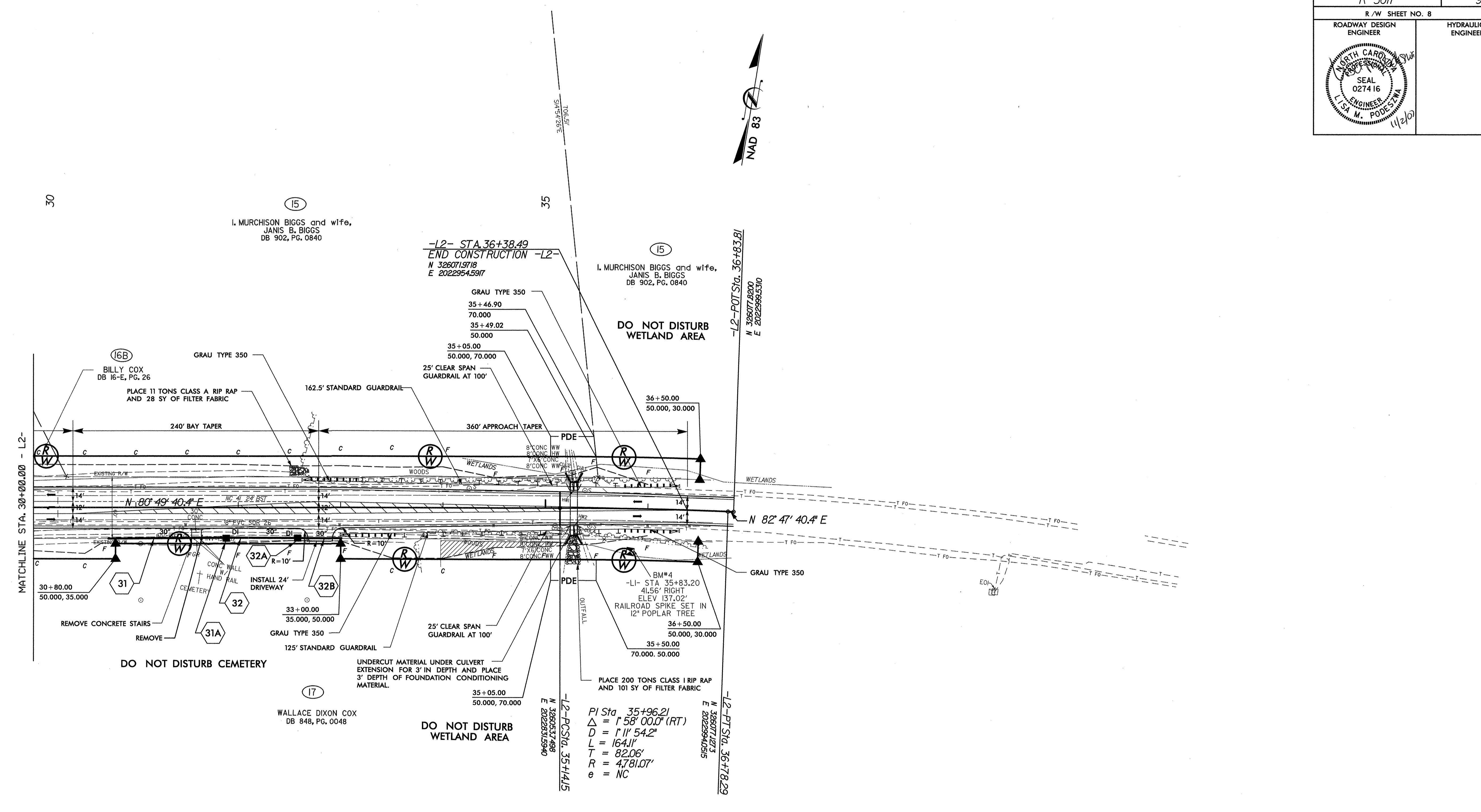
6" CONCRETE DRIVEWAYS			
LINE	STATION	SIDE	AREA (SY)
-L2-	07+26	RT	57
-L2-	07+68	RT	44
-L2-	09+32	RT	140
-L2-	10+56	RT	145
-L2-	12+21	RT	91
-L2-	14+50	RT	41
-L2-	15+92	RT	72
-L2-	24+50	LT	63

9/19/2001
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8/17/99

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CULVERT #1
ONE BARREL

	NORTH	EAST	ELEV.
CUL1	326073.71	2022845.72	129.41
CUL2	326072.63	2022838.80	129.41
CE1	326073.51	2022842.24	135.38
HW1	326073.25	2022842.53	137.22
CUL3	326038.59	2022844.19	129.17
CUL4	326039.78	2022851.09	129.17
CE2	326038.93	2022848.29	134.97
HW2	326039.17	2022848.30	136.98

8/17/99
 11/2/2007 AM
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I. M. BIGGS AND WIFE, JANIS B. BIGGS
DB 902, PG 840

-L3- STA 46+00.96
BEGIN CONSTRUCTION -L3-

-L3- STA 53+39.96
END CONSTRUCTION -L3-

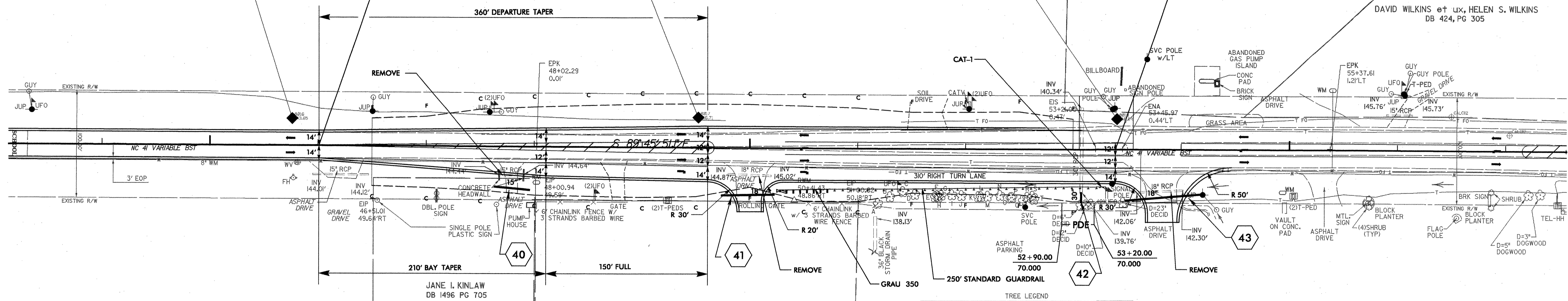
BL #8016 NAVD 88
N 326121.8288
E 2023891.2125
ELEV. 143.65'
STA. 45+76.23
24.98'LT
GROUND

BL #8017 NAVD 88
N 326123.1337
E 2024267.0625
ELEV. 146.71'
STA. 49+52.07
27.83'
GROUND

BL # 8018 NAVD 88
N 326121.9345
E 2024655.7605
ELEV. 146.89'
STA. 53+40.77
28.23'
GROUND

UNITED FAITH TABERNACLE HOLINESS CHURCH, INC.
DB 1221, PG 680

DAVID WILKINS et ux, HELEN S. WILKINS
DB 424, PG 305



JANE I. KINLAW
DB 1496 PG 705

ROBESON COUNTY BOARD OF EDUCATION
DB 526 PG 166

ROBESON COUNTY BOARD OF EDUCATION
NONE AVAILABLE

WATER LINE INFORMATION WAS OBTAINED BY DRAWINGS RECEIVED FROM HENRY HARRIS, ROBESON COUNTY PUBLIC UTILITIES, 176 LEGEND LUMBERTON, NC 28358

TREE LEGEND

*A	D=14"	DECID	*K	D=10"	EVGRN
*B	D=7"	DECID	*L	D=16"	EVGRN
*C	D=13"	EVGRN	*M	D=8"	DECID
*D	D=13"	EVGRN	*N	D=13"	EVGRN
*E	D=13"	EVGRN	*O	D=8"	DECID
*F	D=8"	EVGRN	*P	D=8"	DECID
*G	D=13"	DECID	*Q	D=14"	DECID
*H	D=8"	EVGRN	*R	D=6"	EVGRN
*I	D=16"	EVGRN	*S	D=12"	EVGRN
*J	D=16"	EVGRN	*T	D=12"	DECID

8/17/09

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