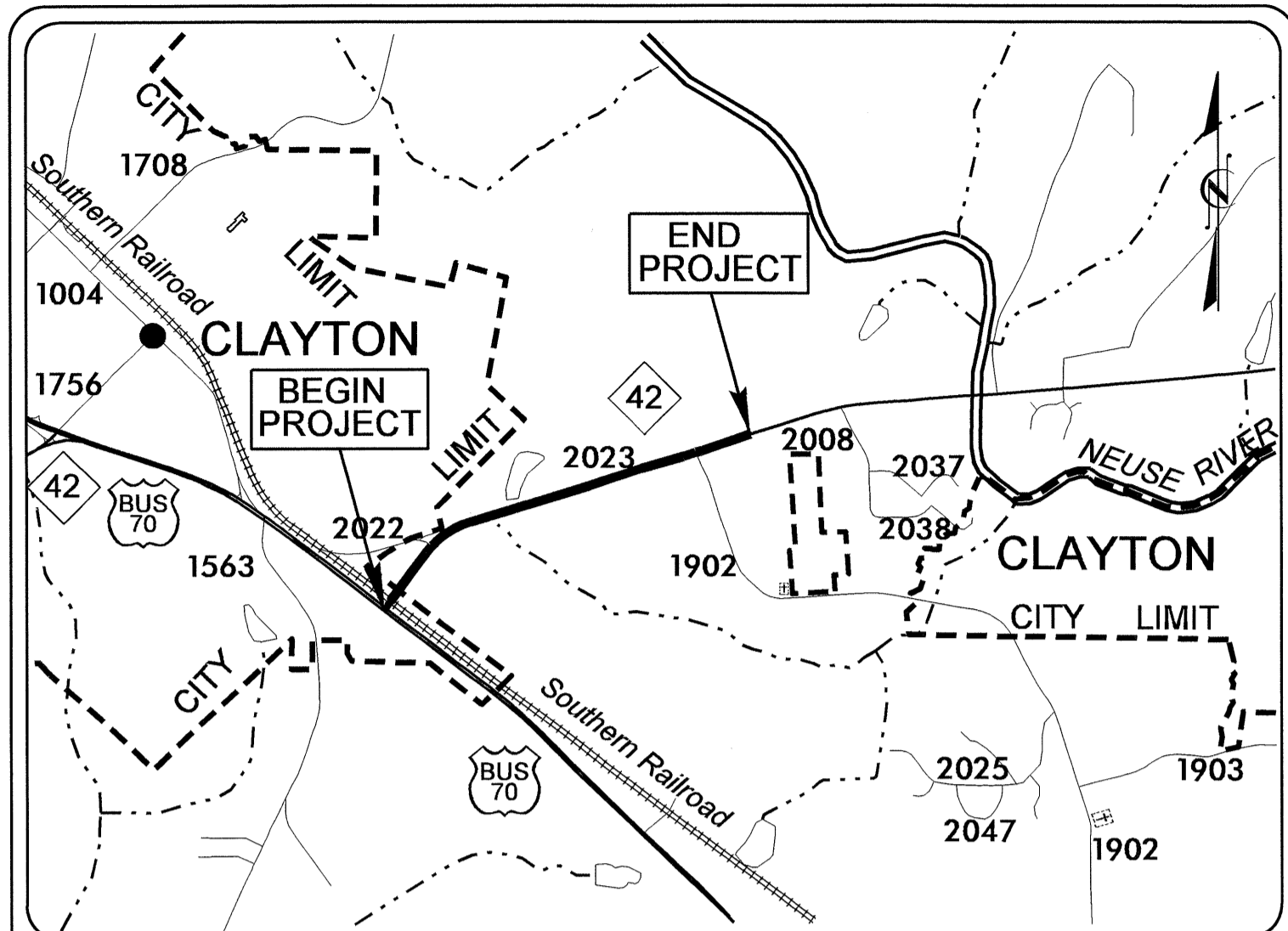


TIP PROJECT: R-3825A

CONTRACT: C202786

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP
NOT TO SCALE

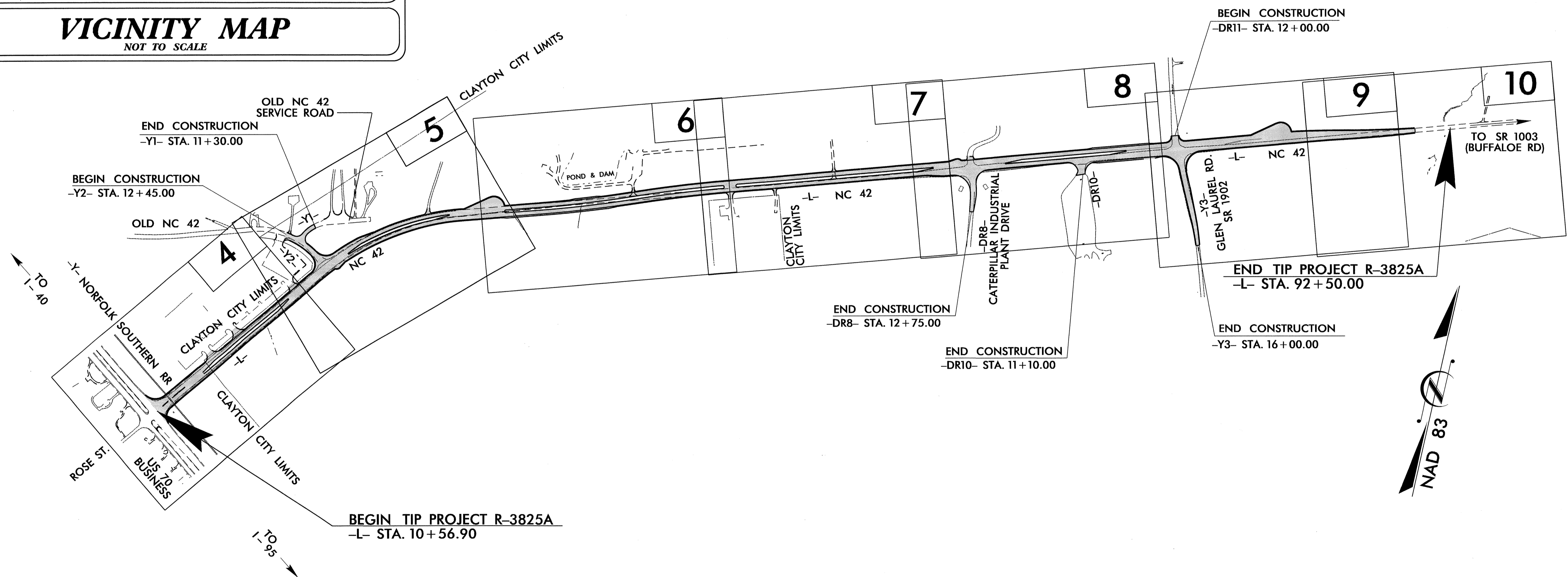
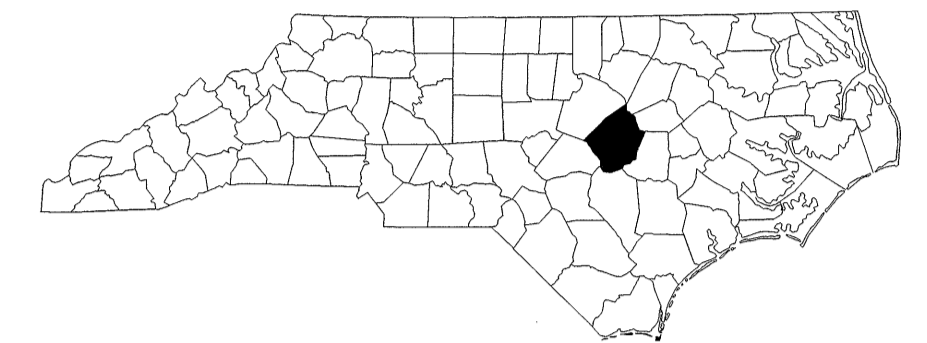
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

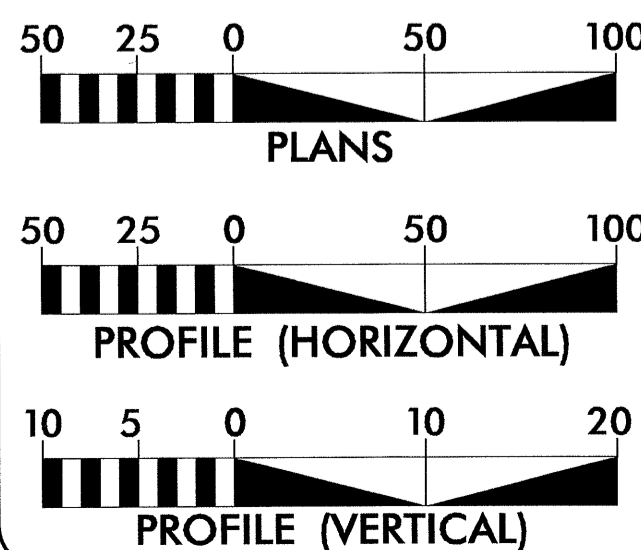
**LOCATION: NC 42 FROM US 70 IN CLAYTON TO
0.31 MI EAST OF SR 1902 (GLEN LAUREL RD)**

TYPE OF WORK: GRADING, PAVING, WIDENING, DRAINAGE AND SIGNALS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3825A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34552.1.1	STP-42(4)	P.E.	
34552.2.2	STP-42(4)	RW & UTILITIES	
34552.3.2	STP-0042(18)	CONST.	



GRAPHIC SCALES



DESIGN DATA

ADT 2012 = 21,500
ADT 2032 = 32,500
DHV = 10 %
D = 60 %
T = 6 % *
V = 50 MPH
* (TTST 2 % + DUAL 4 %)
FUNC. CLASS = RURAL MAJOR COLLECTOR REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3825A = 1.552 MILES
TOTAL LENGTH OF TIP PROJECT R-3825A = 1.552 MILES

Prepared in the Office of:

DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., Raleigh, NC 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 29, 2008

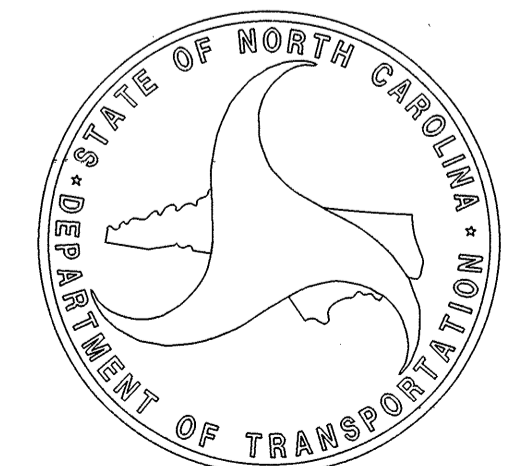
LETTING DATE:
MARCH 20, 2012

GARY LOVERING, PE
PROJECT ENGINEER

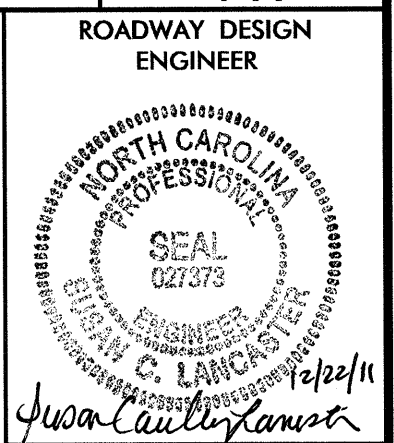
SUSAN C. LANCASTER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

Signature: [Signature]
SEAL 19880
ROADWAY DESIGN ENGINEER
Signature: [Signature]
SEAL 027373
SUSAN C. LANCASTER
ENGINEER



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



INDEX OF SHEETS

1	TITLE SHEET
1-A	"INDEX OF SHEETS, GENERAL NOTES AND LIST OF STANDARDS"
1-B	CONVENTIONAL SYMBOLS
1-C THROUGH 1-E	SURVEY CONTROL SHEETS
2 THROUGH 2-D	"PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS "
2-E	DRAINAGE DETAILS
2-F	"DETAIL OF 1' 6" TO 2' 9" CURB AND GUTTER TRANSITION SECTION"
2-G	STANDARD TEMPORARY SHORING
2-H THROUGH 2-J	STANDARD TEMPORARY WALL
3 (2 SHEETS)	SUMMARY OF QUANTITIES
3-A THROUGH 3-B	SUMMARY OF DRAINAGE QUANTITIES
3-C	"SUMMARY OF EARTHWORK, REMOVAL OF EXISTING ASPHALT PAVEMENT, SHOULDER BERM GUTTER, 2'-9" CURB AND GUTTER, 1'-6" CURB AND GUTTER, AND GUARDRAIL SUMMARY"
3-D	PARCEL INDEX SHEET
4 THROUGH 10	PLAN SHEETS
11 THROUGH 14	PROFILE SHEETS
TMP-1 THROUGH TMP-21	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THROUGH PMP-8	PAVEMENT MARKING PLANS
EC-1 THROUGH EC-17	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THROUGH SIGN-9	SIGNING PLANS
SIG-1 THROUGH SIG-34	SIGNAL PLANS
UC-1 THROUGH UC-10	UTILITY CONSTRUCTION PLANS
UO-1 THROUGH UO-8	UTILITIES BY OTHER PLANS
X-1	CROSS-SECTION INDEX
X-1A	CROSS-SECTION SUMMARY SHEETS
X-2 THROUGH X-43	CROSS-SECTIONS

GENERAL NOTES:

2012 SPECIFICATIONS

EFFECTIVE: 01-17-12
REVISED: 08/31/11

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.05 AND 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.

BERM DITCHES:

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

UNDERDRAINS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE Power-Progress Energy ;
Power, Water, and Sewer-Town of Clayton ; Phone-Century Link ; CATV-Time Warner Cable;
Gas-Piedmont Natural Gas ; Water- Johnston County Public Utilities
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 CONTRACT.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
225.06	Method of Grading Sight Distance at Intersections
240.01	Guide for Berm Ditch Construction
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
806.03	Concrete Control of Access Marker
815.03	Pipe Underdrain and Blind Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
838.33	Reinforced Concrete Endwall - for Single 66" 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
838.63	Reinforced Brick Endwall - for Single 66" 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
840.14	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
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
850.01	Concrete Paved Ditches
850.10	Guide for Berm Drainage Outlet - 15" and 18" Pipe
852.01	Concrete Islands
852.04	Method for Placement of Drop Inlets in Grassed Median - Using 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
852.10	Median Construction - with Curb and Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

04/16/11

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	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
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-
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	▭
Area Outline	▭
Cemetery	⊕
Building	▭
School	▭
Church	▭
Dam	▭

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	-JS-
Buffer Zone 1	-BZ 1-
Buffer Zone 2	-BZ 2-
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	⊥
Proposed Lateral, Tail, Head Ditch	▭
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	▨
Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

VEGETATION:

Orchard	☼ ☼ ☼ ☼
Vineyard	▭ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	▭ CONC
Bridge Wing Wall, Head Wall and End Wall	▭ CONC WW
MINOR:	
Head and End Wall	▭ CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	▭ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ S
Storm Sewer	-S-

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

TV Satellite Dish	☼
TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	○
Recorded U/G TV Cable	-TV-
Designated U/G TV Cable (S.U.E.*)	-TV-
Recorded U/G Fiber Optic Cable	-TV FO-
Designated U/G Fiber Optic Cable (S.U.E.*)	-TV FO-

GAS:

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

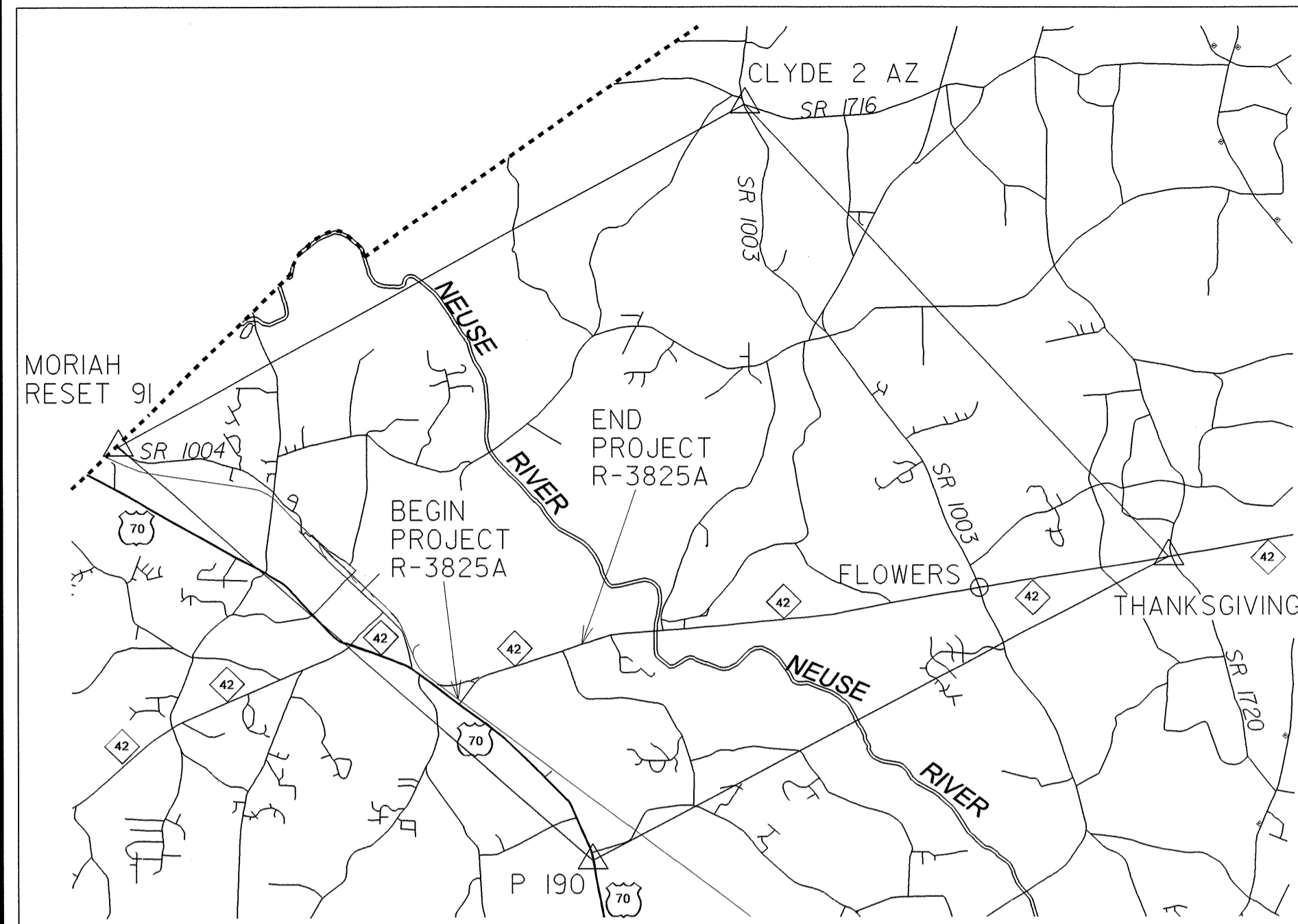
SANITARY SEWER:

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

MISCELLANEOUS:

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

SURVEY CONTROL SHEET R-3825A



OUTER CONTROL NETWORK VICINITY MAP

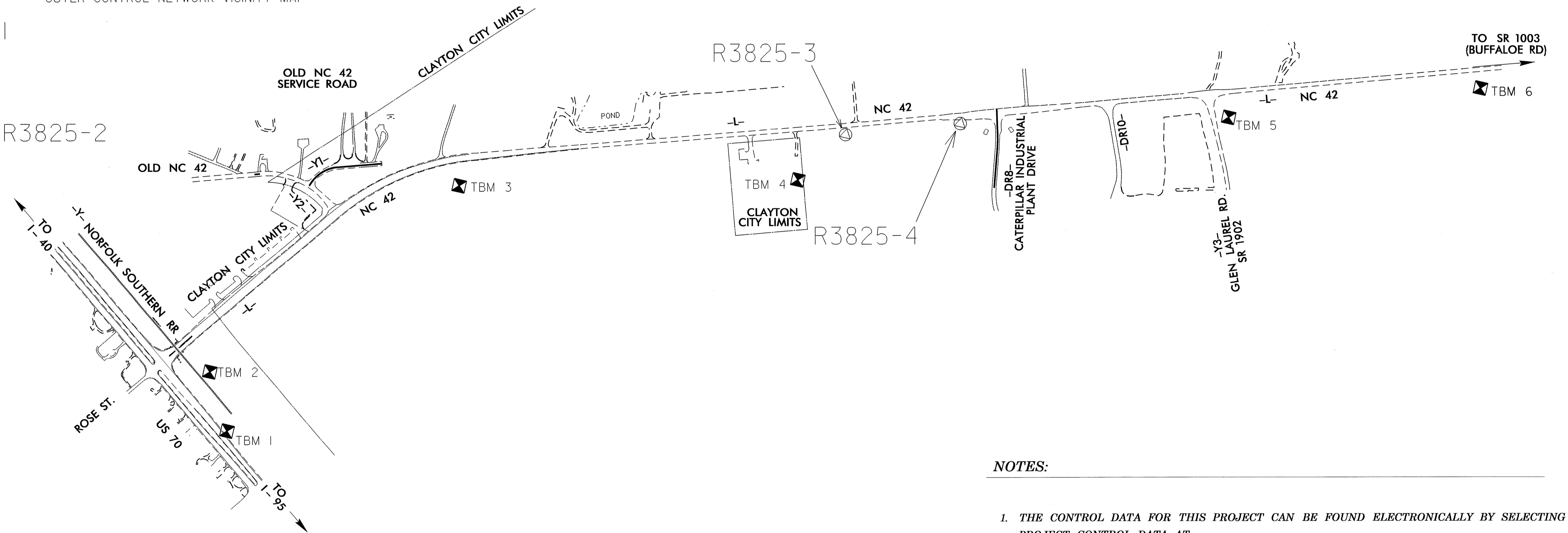


R3825-1

R3825-2

R3825-3

R3825-4




NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
 R3825A_LS_CONTROL_070917.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.
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R3825-12"
 WITH NAD 83 STATE PLANE GRID COORDINATES OF
 NORTHING: 694313.7327(ft) EASTING: 2196583.8253(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999889488
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R3825-12" TO -L- STATION 10+00.00 IS
 S 76°44'37.6" W 31,714.93'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NGVD 29

NOTE: DRAWING NOT TO SCALE

6/2/99

05-DEC-2010 07:53
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 \$\$\$\$USERNAME\$\$\$\$

SURVEY CONTROL SHEET R-3825A

PROJECT REFERENCE NO.	SHEET NO.
R-3825A	1-D
Location and Surveys	

CONTROL DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		RBL-1	687064.4492	2165805.6781	331.81	10+73.71	59.28 RT
2		RBL-2	687869.9163	2166275.3464	326.31	19+99.59	50.82 LT
3		RBL-3	688484.7758	2166821.8244	335.24	28+09.11	58.54 LT
39		RBL-39	688812.9651	2167658.9857	316.55	36+95.77	45.05 LT
6		BL-6	688944.0345	2168245.9429	318.43	42+93.85	23.94 RT
7		BL-7	689163.9336	2168957.1193	331.78	50+40.46	50.52 RT
53		R3825-3	689263.9068	2169370.0541	328.94	54+64.39	78.70 RT
38		RBL-38	689476.6203	2170017.0439	326.46	61+45.30	69.36 RT
8		RBL-8	689719.6206	2170736.6739	321.42	69+04.48	56.56 RT
9		RBL-9	690002.1505	2171427.7976	315.20	76+48.79	2.38 LT
10		BL-10	690149.3169	2172028.7702	299.52	82+66.38	39.98 RT
11		BL-11	690354.9803	2172680.7784	264.77	89+50.36	19.57 RT
12		BL-12	690602.5536	2173450.2472	253.10	OUTSIDE PROJECT LIMITS	

BY	POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
15015		BY-1	687713.7205	2164963.2472	320.26	OUTSIDE PROJECT LIMITS	
15016		BL-1	687079.9134	2165803.8421	331.50	12+76.06	76.53 RT
15017		BY-2	686481.1639	2166547.0856	325.32	OUTSIDE PROJECT LIMITS	

BY2	POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
68		BY2-1	688267.7900	2165946.2030	330.88	OUTSIDE PROJECT LIMITS	
67		BY2-2	688298.4060	2166396.4350	335.15	13+61.19	31.98 LT
A103		BL-3	688484.7758	2166821.8244	335.24	OUTSIDE PROJECT LIMITS	

BY5	POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
209		RBL-9	690002.1500	2171427.7970	315.20	10+04.28	47.31 LT
201		BY5-1	689693.4250	2171541.7530	312.90	13+31.86	15.86 LT
202		BY5-2	689345.5100	2171651.0240	299.00	OUTSIDE PROJECT LIMITS	
203		BY5-3	688816.1270	2171822.1240	270.52	OUTSIDE PROJECT LIMITS	
204		BY5-4	688164.7730	2172049.8280	258.26	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA

TBM1 ELEVATION = 335.24
N 686770 E 2166202
BY STATION 20+57 8 LEFT
CHISELED "X" ON TOP CORNER OF HEAD-
WALL OF 54" RCP.
TBM-1

TBM2 ELEVATION = 331.65
N 687084 E 2166028
BL STATION 6+29 182 RIGHT
RR SPIKE IN BASE OF 24" PINE
TBM-2

TBM3 ELEVATION = 328.04
N 688472 E 2167220
BL STATION 26+21 157 RIGHT
RR SPIKE IN BASE OF 12" PINE
TBM-3

TBM4 ELEVATION = 339.39
N 688945 E 2169154
BL STATION 46+40 259 RIGHT
RR SPIKE IN BASE OF 26" OAK
TBM-4


TBM5 ELEVATION = 320.77
N 689857 E 2171546
BL STATION 71+92 169 RIGHT
RR SPIKE IN BASE OF 20" PINE
TBM-5

TBM6 ELEVATION = 252.90
N 690348 E 2172953
BL STATION 86+14 90 RIGHT
RR SPIKE IN BASE OF 26" MAPLE
TBM-6

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
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PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

DATUM DESCRIPTION

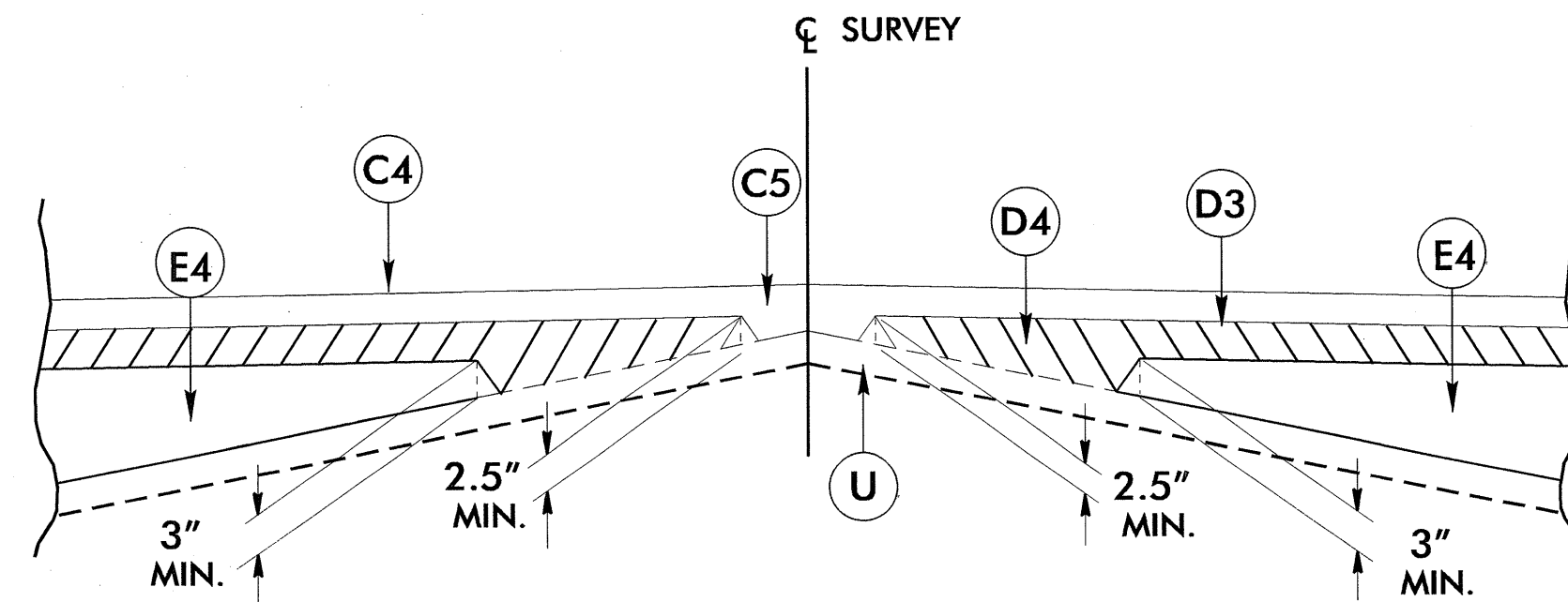
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THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999889488
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R3825-12" TO -L- STATION 10+56.90 IS
S 76°48'34.4" W 31,671.18'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

6/2/99

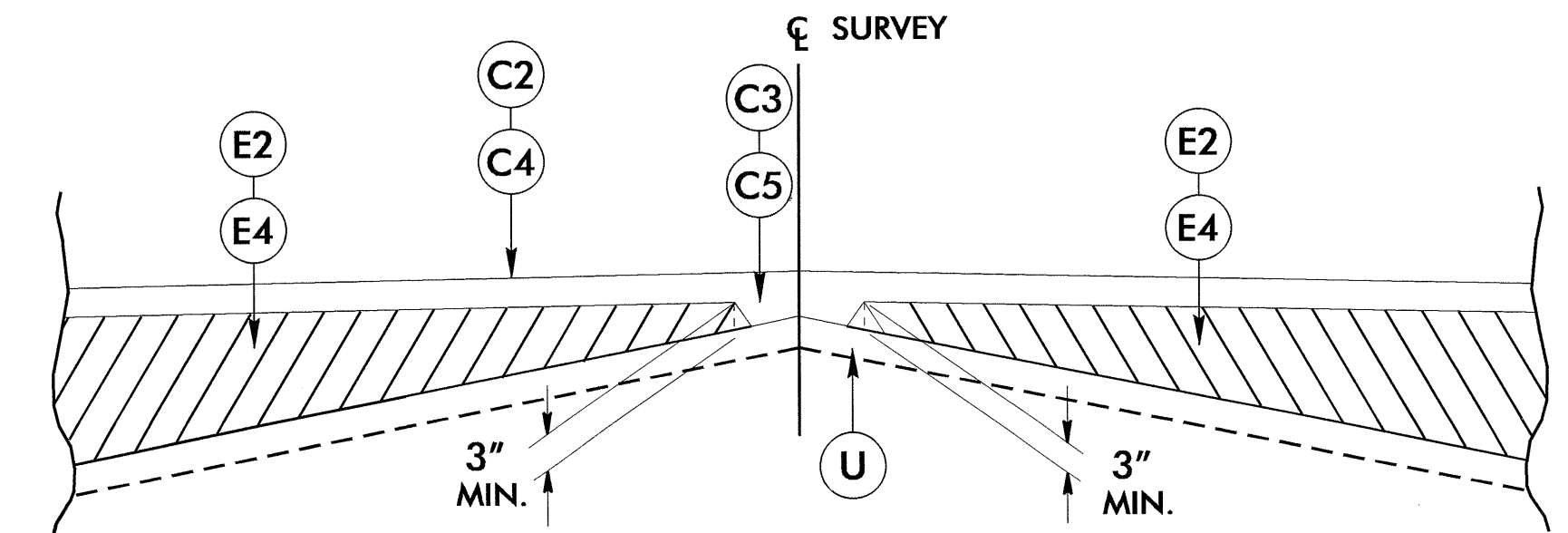
**PAVEMENT SCHEDULE
FINAL PAVEMENT DESIGN**

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
C4	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
D3	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D4	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	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 5½" IN DEPTH.
E3	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	1'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING NO. 1)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING NO. 2)
W3	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING NO. 3)

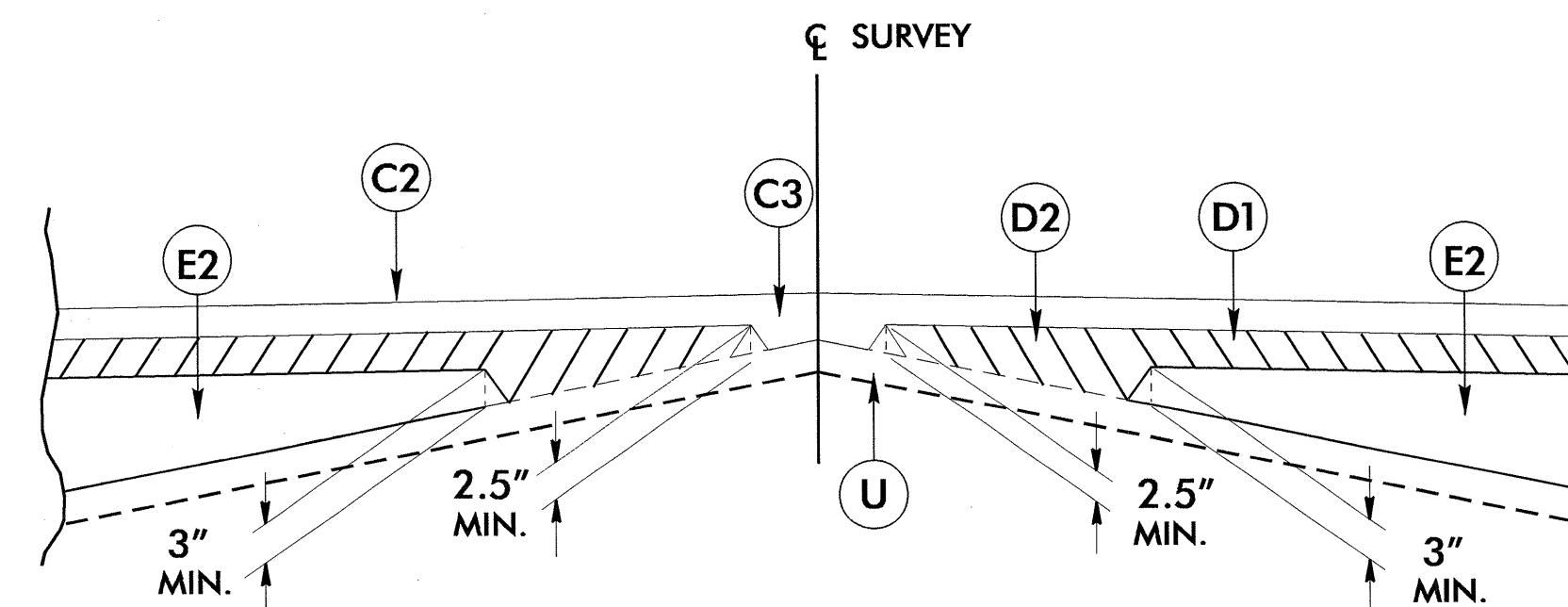
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



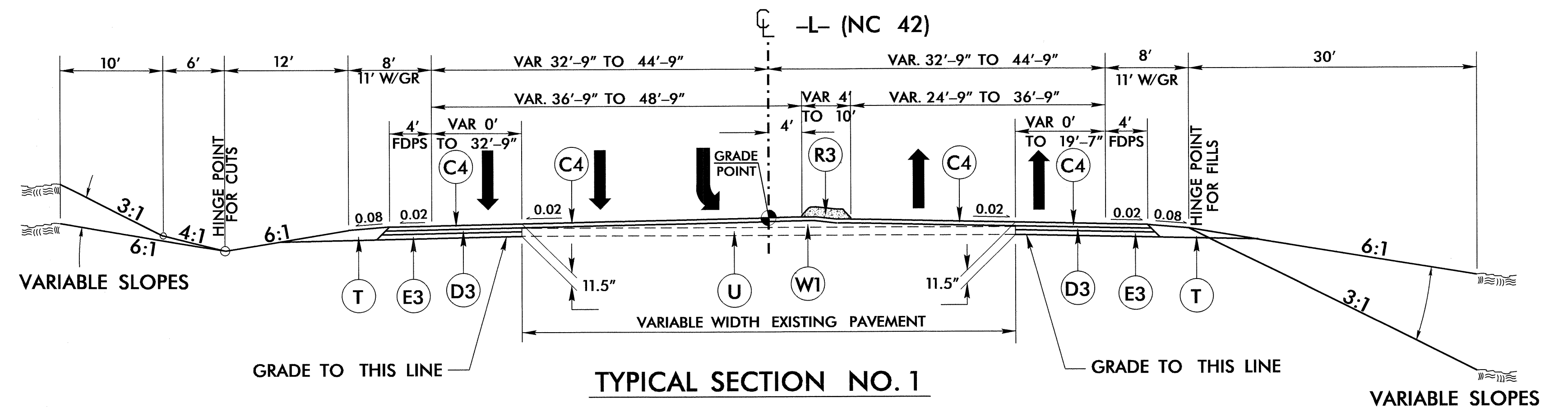
Detail Showing Method of Wedging No. 1



Detail Showing Method of Wedging No. 3



Detail Showing Method of Wedging No. 2



TYPICAL SECTION NO. 1

- USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:
- L- STA. 10+56.90 TO STA. 14+18.00*
 - L- STA. 21+02.00 TO STA. 23+52.00 (REVERSED)
 - L- STA. 23+52.00 TO STA. 25+50.00*
 - L- STA. 32+10.00 TO STA. 35+40.00 (REVERSED)
 - L- STA. 61+35.00 TO STA. 62+85.00 (REVERSED)
 - L- STA. 62+85.00 TO STA. 65+65.00*
 - L- STA. 80+00.00 TO STA. 82+15.00 (REVERSED)

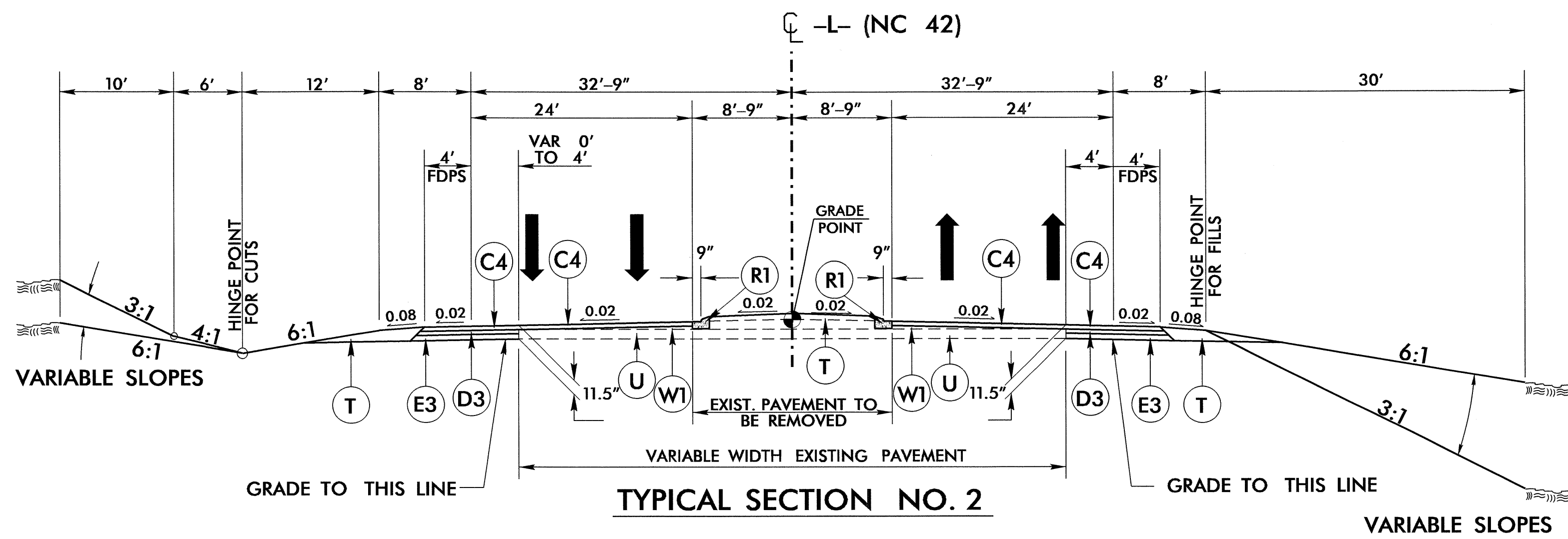
- * NO ISLANDS AT THE FOLLOWING LOCATIONS:
- L- STA. 10+56.90 TO STA. 11+18.00
 - L- STA. 11+48.45 TO STA. 11+74.45
 - L- STA. 23+52.00 TO STA. 24+52.00
 - L- STA. 34+60.00 TO STA. 35+40.00
 - L- STA. 62+85.00 TO STA. 64+15.00

NOTES:
1) PAVE TO FACE OF GUARDRAIL AS SHOWN ON PLANS.

PROJECT REFERENCE NO. R-3825A	SHEET NO. 2
ROADWAY DESIGN ENGINEER SUSAN C. LANCASTER SEAL 027373	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON SEAL 22896

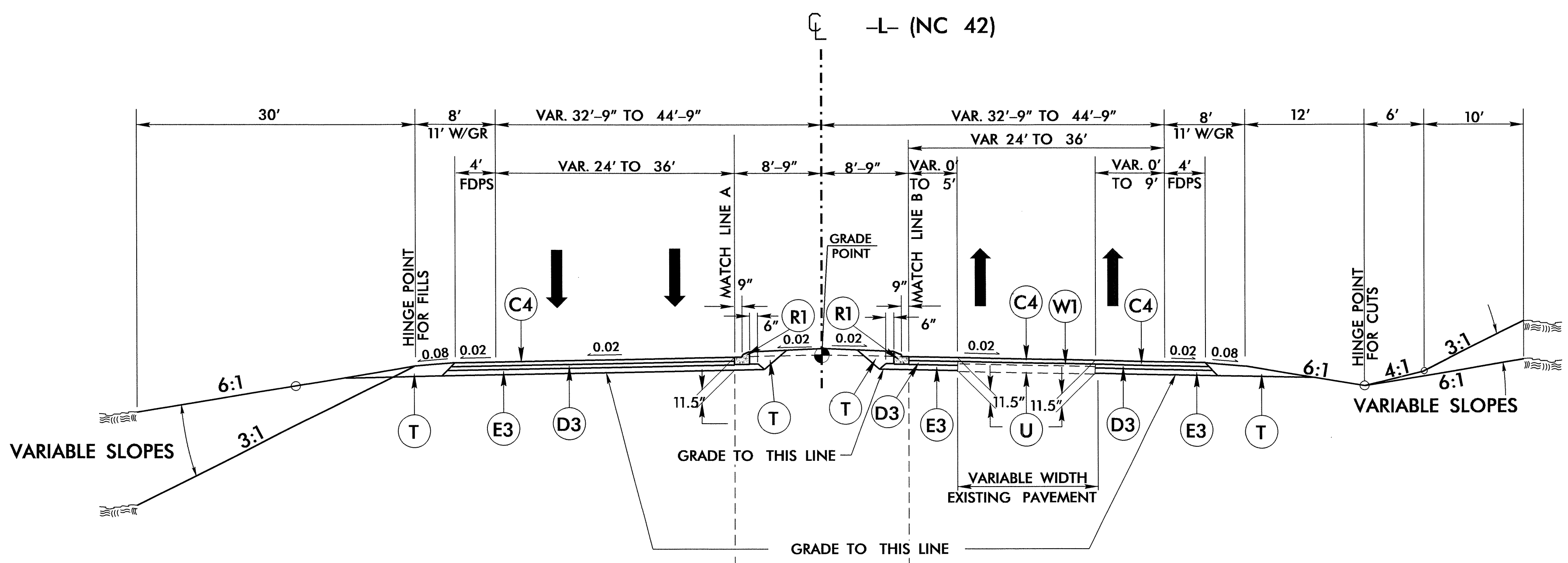
19-DEC-2011 13:25
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PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
C4	3" S9.5C
C5	VAR. S9.5C
D1	2½" I19.0B
D2	VAR. I19.0B
D3	4" I19.0C
D4	VAR. I19.0C
E1	4" B25.0B
E2	VAR. B25.0B
E3	4.5" B25.0C
E4	VAR. B25.0C
R1	1'-6" C & G
R2	2'-9" C & G
R3	5" CONC. ISLAND
U	EXISTING PAVEMENT
T	EARTH MATERIAL
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2
W3	WEDGING DETAIL No. 3



TYPICAL SECTION NO. 2

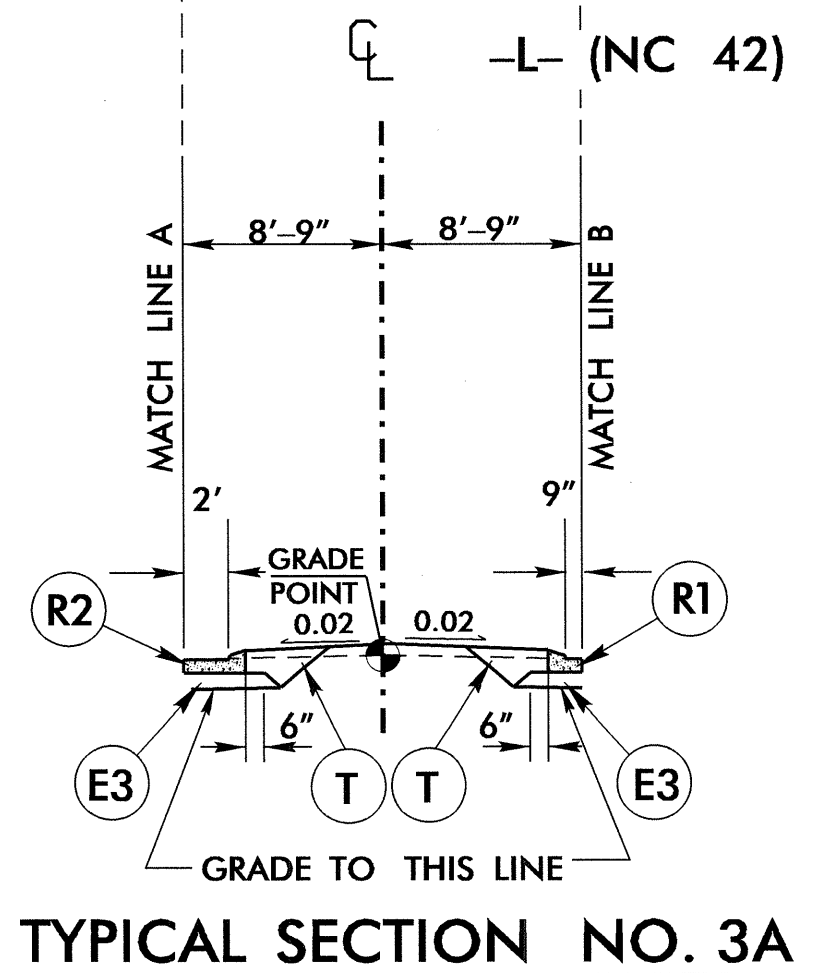
USE TYPICAL SECTION NO.2
AT THE FOLLOWING LOCATION:
-L- STA. 14+18.00 TO STA. 21+02.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO.3
AT THE FOLLOWING LOCATIONS:
-L- STA. 25+50.00 TO STA. 32+10.00 (REVERSED)
-L- STA. 35+40.00 TO STA. 38+50.00 (REVERSED)
-L- STA. 43+00.00 TO STA. 61+35.00*
-L- STA. 65+65.00 TO STA. 69+50.00

* NO MEDIAN AT THE FOLLOWING LOCATION:
-L- STA. 48+70.00 TO STA. 49+40.00



TYPICAL SECTION NO. 3A

USE TYPICAL SECTION NO.3A IN
CONJUNCTION WITH TYPICAL SECTION
NO. 3 AT THE FOLLOWING LOCATION:
-L- STA. 25+50.00 TO STA. 32+10.00*

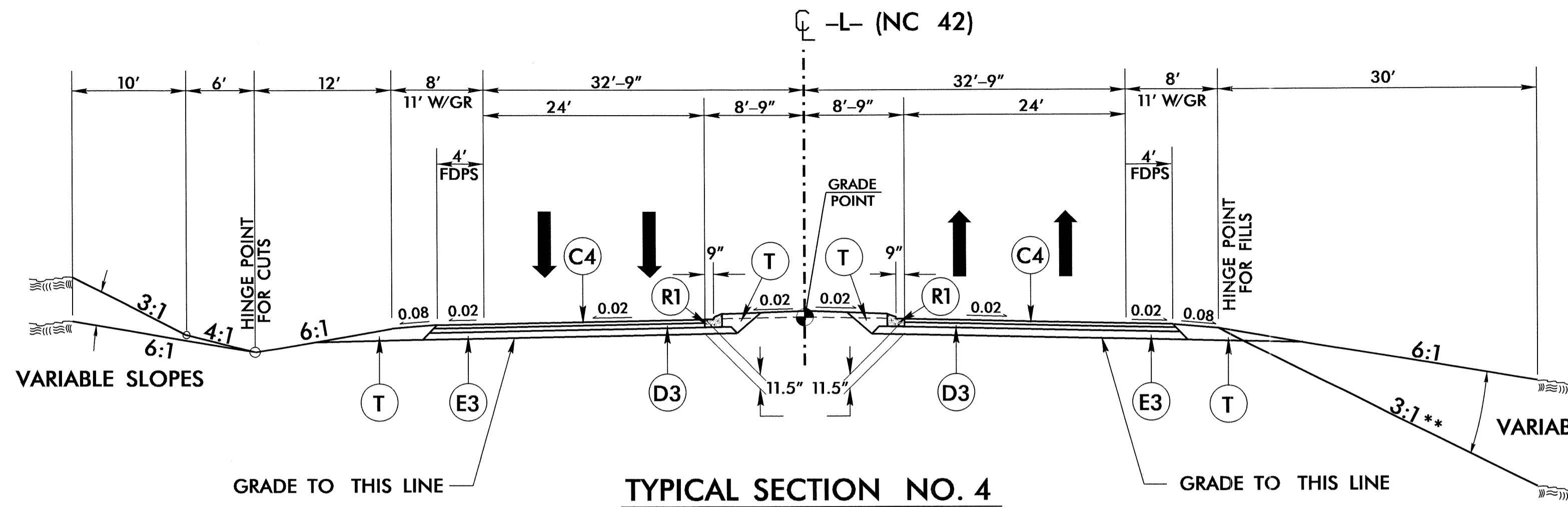
*50' TRANSITION BETWEEN 1'-6" CURB AND 2'-9" CURB
-L- STA. 25+50.00
-L- STA. 31+60.00

NOTES:
1) PAVE TO FACE OF GUARDRAIL
AS SHOWN ON PLANS.

PROJECT REFERENCE NO. R-3825A	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 027373 SUN C. LANCASTER 12/23/11	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22898 CLARK S. MORRISON 12/23/11

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\\p01\projects\3825a\rdj\tyj\p.dgn

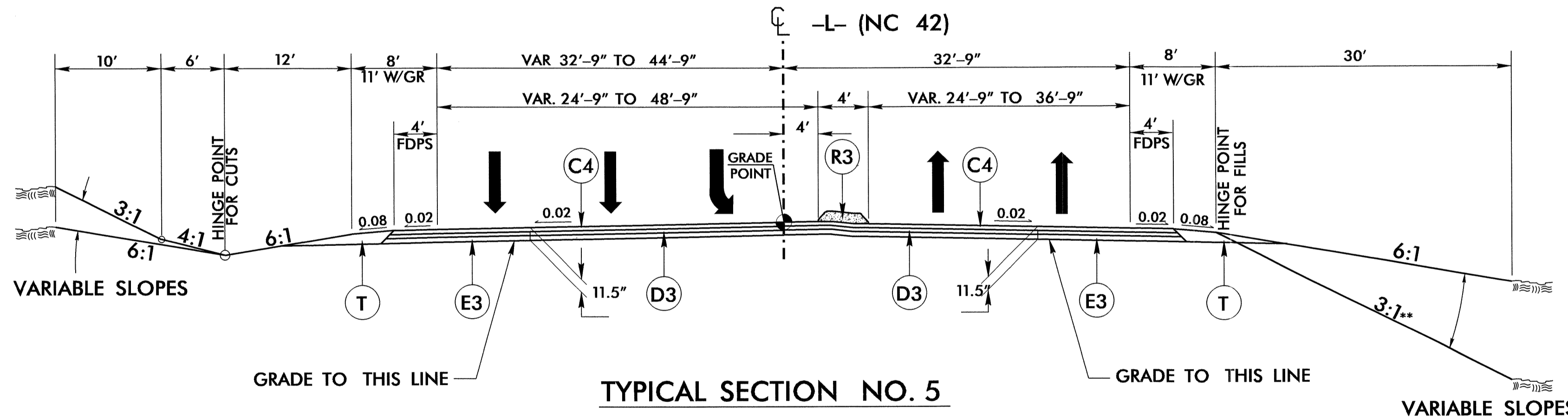
PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
C4	3" S9.5C
C5	VAR. S9.5C
D1	2½" I19.0B
D2	VAR. I19.0B
D3	4" I19.0C
D4	VAR. I19.0C
E1	4" B25.0B
E2	VAR. B25.0B
E3	4.5" B25.0C
E4	VAR. B25.0C
R1	1'-6" C & G
R2	2'-9" C & G
R3	5" CONC. ISLAND
U	EXISTING PAVEMENT
T	EARTH MATERIAL
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2
W3	WEDGING DETAIL No. 3



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO.4
AT THE FOLLOWING LOCATION:
-L- STA. 38+50.00 TO STA. 43+00.00
-L- STA. 69+50.00 TO STA. 73+00.00

** 2:1 WITH PSRM AT THE FOLLOWING LOCATIONS:
-L- STA. 40+00.00 (LT) TO 41+00.00 (LT)
-L- STA. 72+50.00 (RT) TO 73+00.00 (RT)



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO.5
AT THE FOLLOWING LOCATION:
-L- STA. 73+00.00 TO STA. 76+78.00 (REVERSED)
-L- STA. 76+78.00 TO STA. 80+00.00*

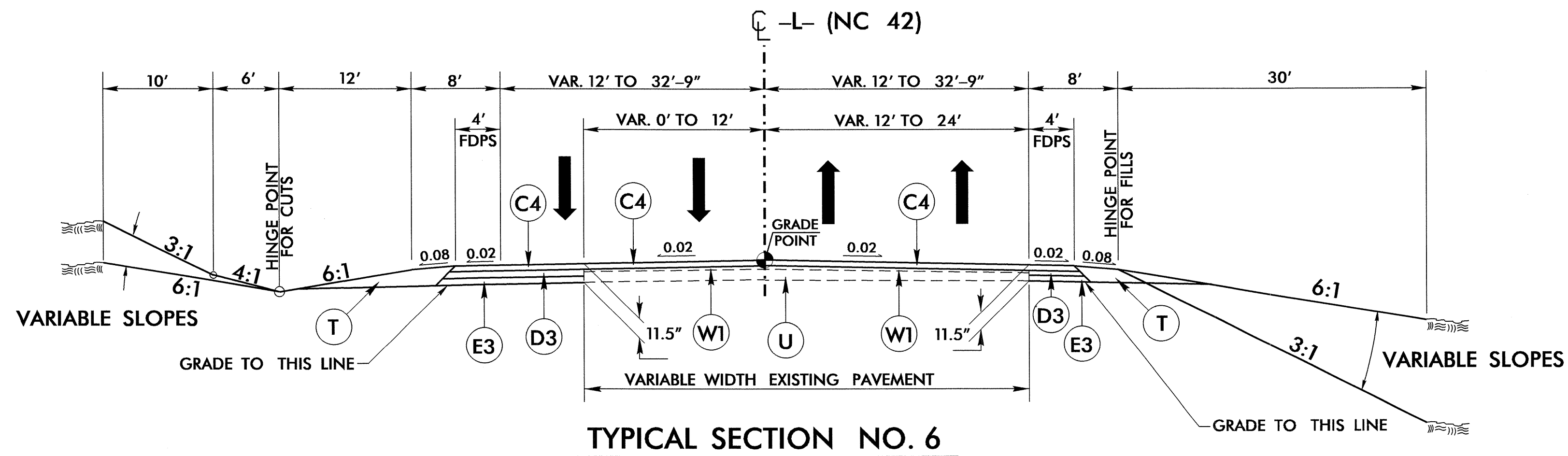
* NO ISLANDS AT THE FOLLOWING LOCATIONS:
-L- STA. 75+45.00 TO STA. 76+78.00

** 2:1 WITH PSRM AT THE FOLLOWING LOCATIONS:
-L- STA. 73+00.00 (RT) TO 73+50.00 (RT)

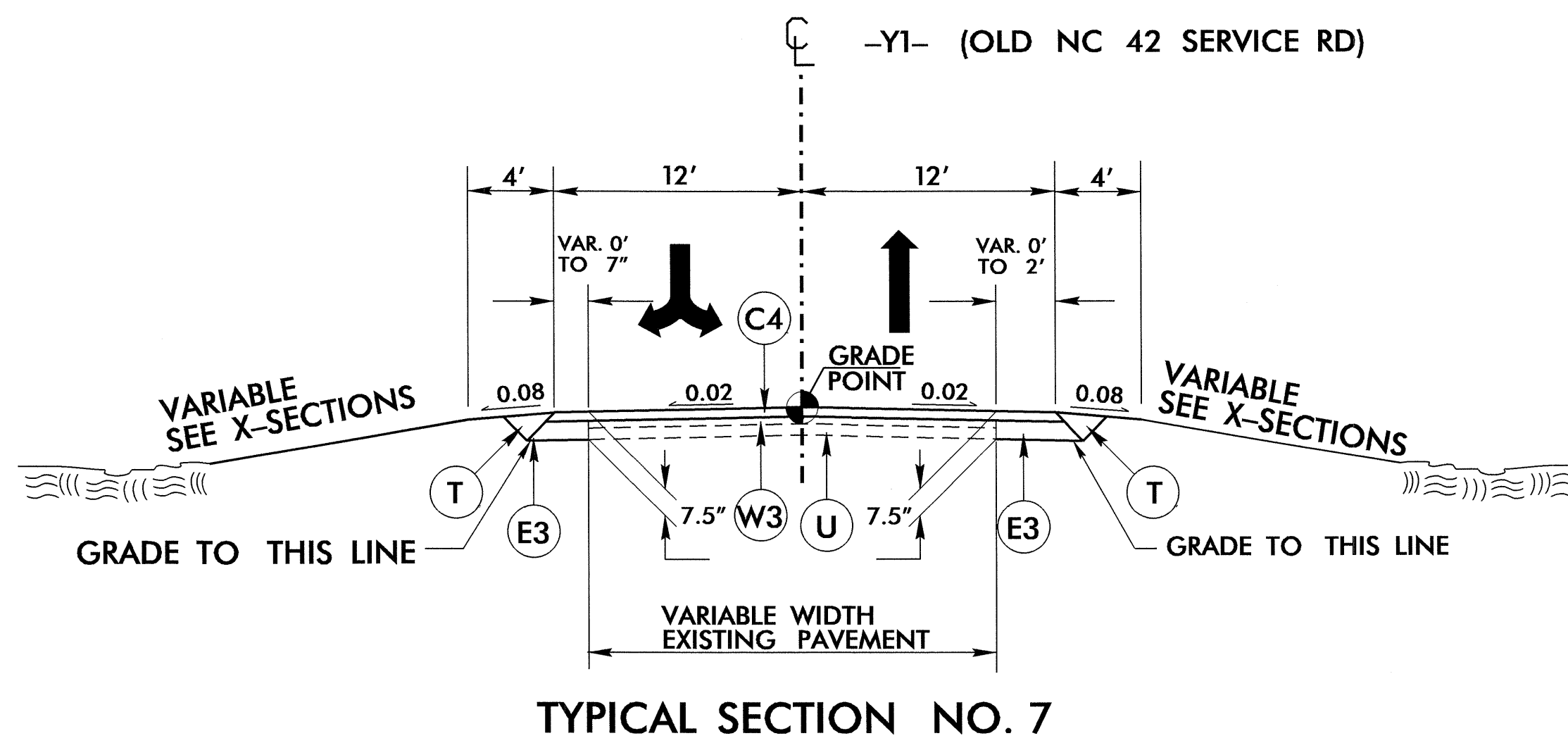
NOTES:
1) PAVE TO FACE OF GUARDRAIL AS SHOWN ON PLANS.
2) USE TEMPORARY PAVEMENT DESIGN OF 3.0" S9.5C AND 4.0" B25.0C FROM -L- STA. 38+50.00 TO 41+90.00 SEE SHEET TMP-6 FOR LOCATIONS

PROJECT REFERENCE NO. R-3825A	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 027373 SUSAN C. LANCASTER	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22898 CLARK S. MORRISON

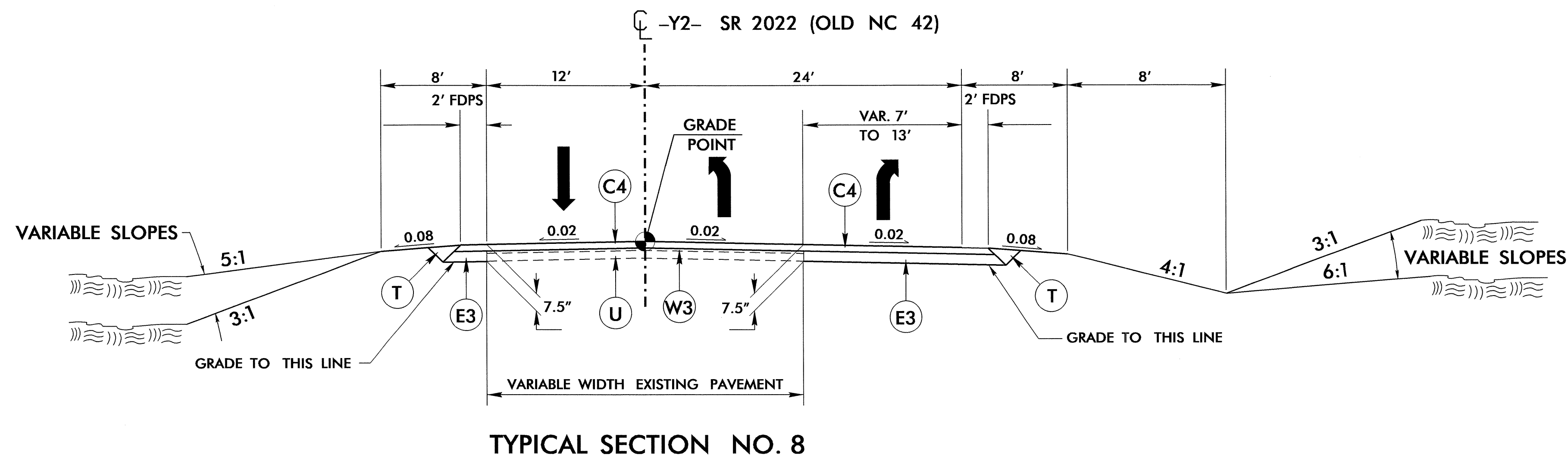
PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
C4	3" S9.5C
C5	VAR. S9.5C
D1	2½" I19.0B
D2	VAR. I19.0B
D3	4" I19.0C
D4	VAR. I19.0C
E1	4" B25.0B
E2	VAR. B25.0B
E3	4.5" B25.0C
E4	VAR. B25.0C
R1	1'-6" C & G
R2	2'-9" C & G
R3	5" CONC. ISLAND
U	EXISTING PAVEMENT
T	EARTH MATERIAL
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2
W3	WEDGING DETAIL No. 3



USE TYPICAL SECTION NO.6
AT THE FOLLOWING LOCATION:
-L- STA. 82+15.00 TO STA. 90+37.55



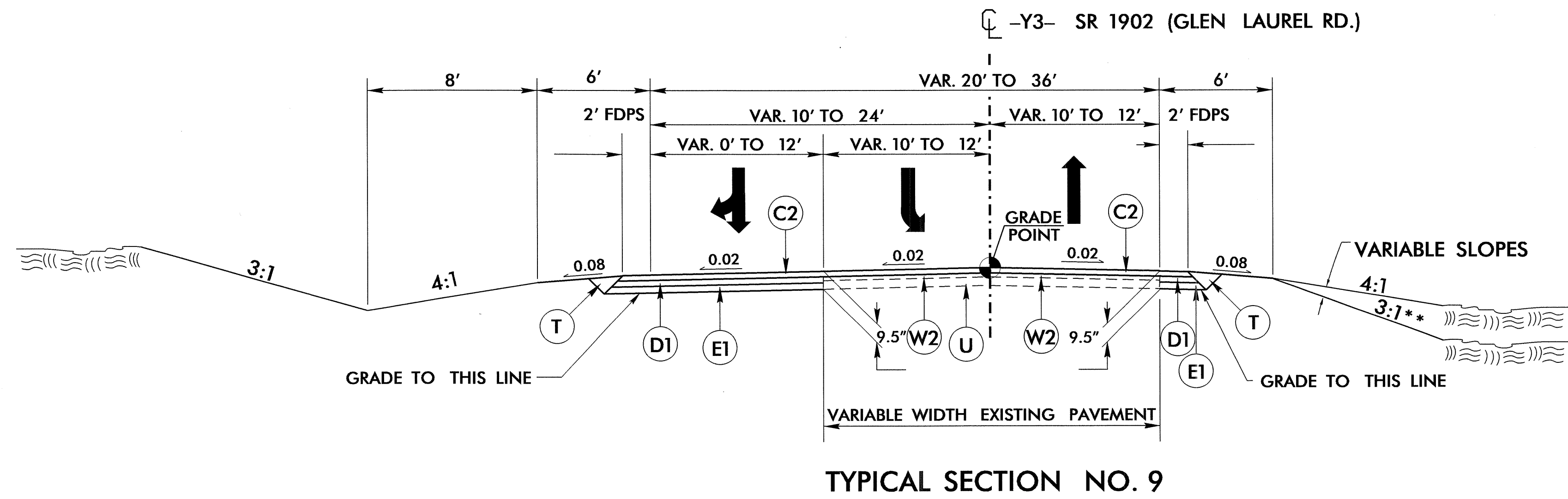
USE TYPICAL SECTION NO.7
AT THE FOLLOWING LOCATION:
-Y1- STA. 10+12.00 TO STA. 11+30.00



USE TYPICAL SECTION NO.8
AT THE FOLLOWING LOCATION:
-Y2- STA. 12+45.00 TO STA. 15+34.76

PROJECT REFERENCE NO. R-3825A	SHEET NO. 2-C
ROADWAY DESIGN ENGINEER SUSAN C. LANCASTER SEAL 027373	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON SEAL 22898

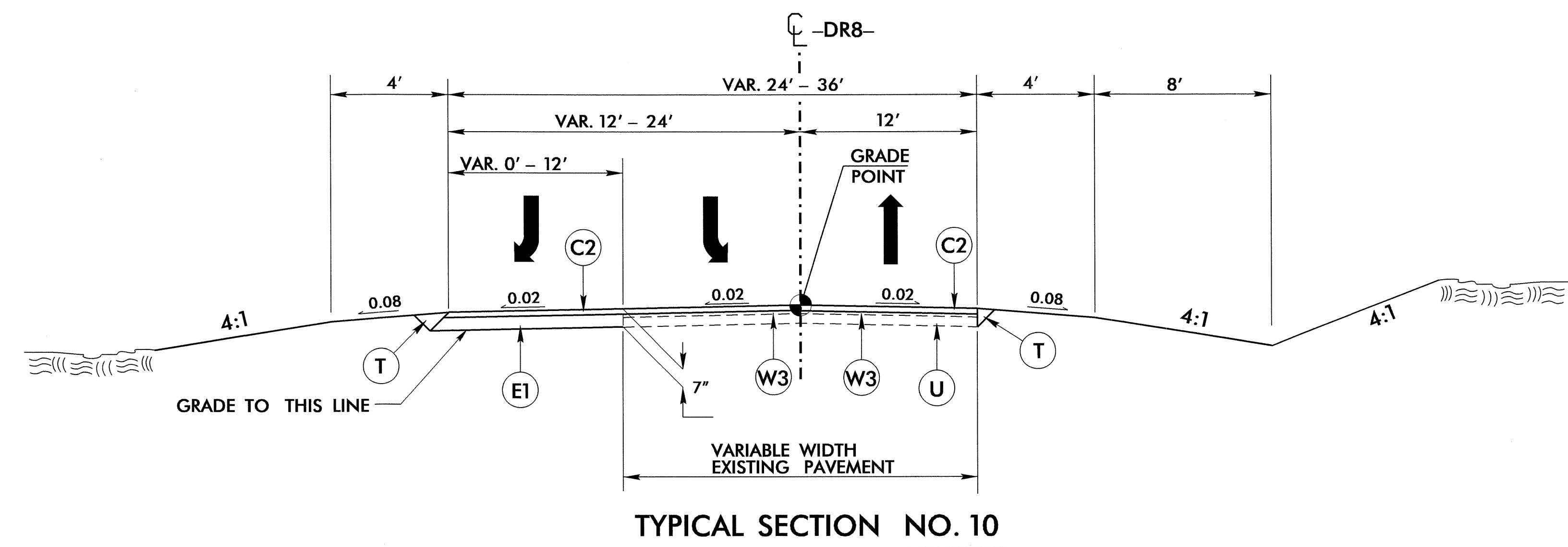
PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
C4	3" S9.5C
C5	VAR. S9.5C
D1	2½" I19.0B
D2	VAR. I19.0B
D3	4" I19.0C
D4	VAR. I19.0C
E1	4" B25.0B
E2	VAR. B25.0B
E3	4.5" B25.0C
E4	VAR. B25.0C
R1	1'-6" C & G
R2	2'-9" C & G
R3	5" CONC. ISLAND
U	EXISTING PAVEMENT
T	EARTH MATERIAL
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2
W3	WEDGING DETAIL No. 3



TYPICAL SECTION NO. 9

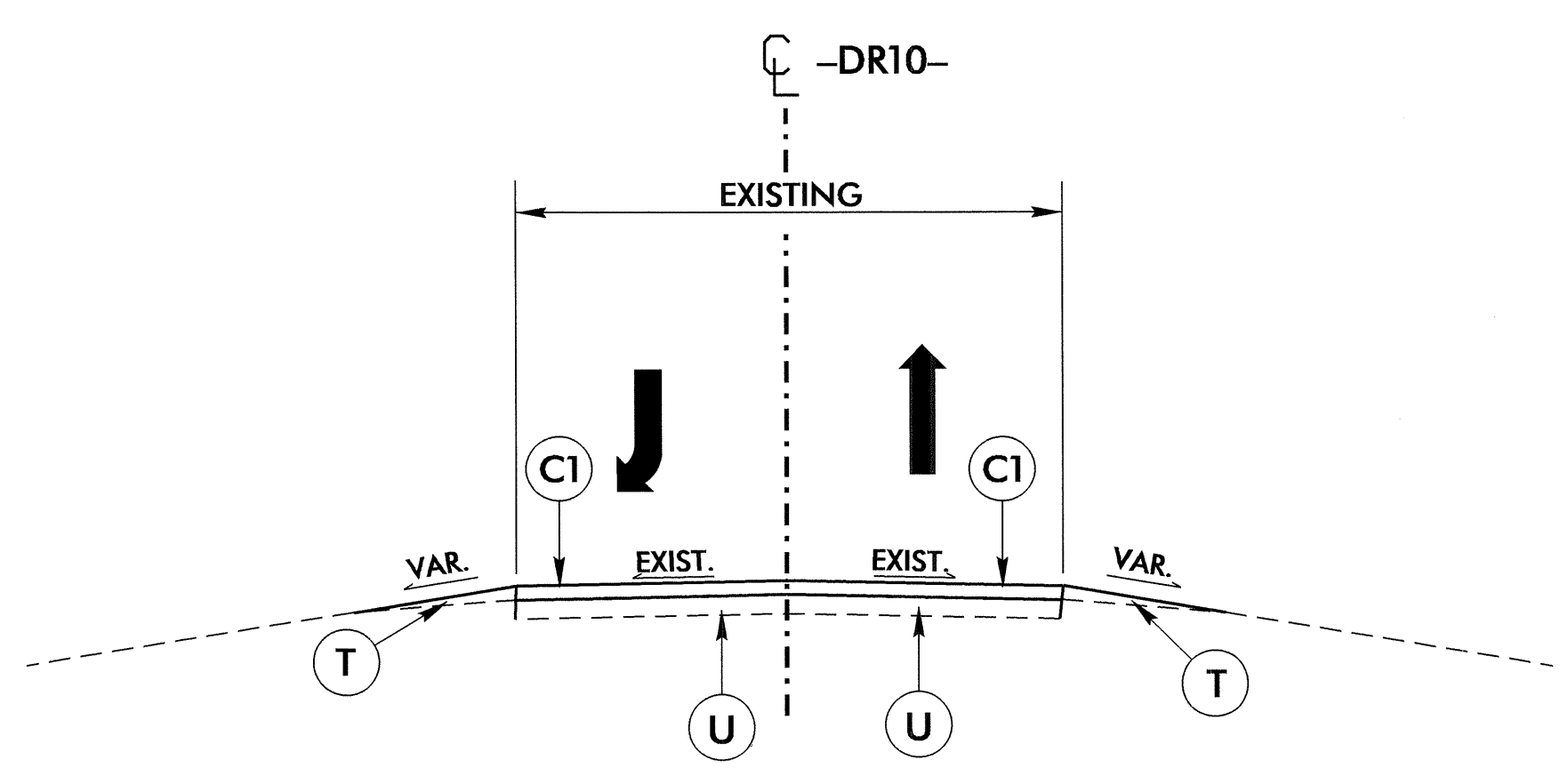
USE TYPICAL SECTION NO.9
AT THE FOLLOWING LOCATION:
-Y3- STA. 10+33.07 TO STA. 16+00.00

** 2:1 WITH PSRM AT THE FOLLOWING LOCATIONS:
-Y3- STA. 11+00.00 (RT) TO STA. 15+00.00 (RT)



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO.10
AT THE FOLLOWING LOCATION:
-DR8- STA. 10+32.79 TO STA. 12+75.00



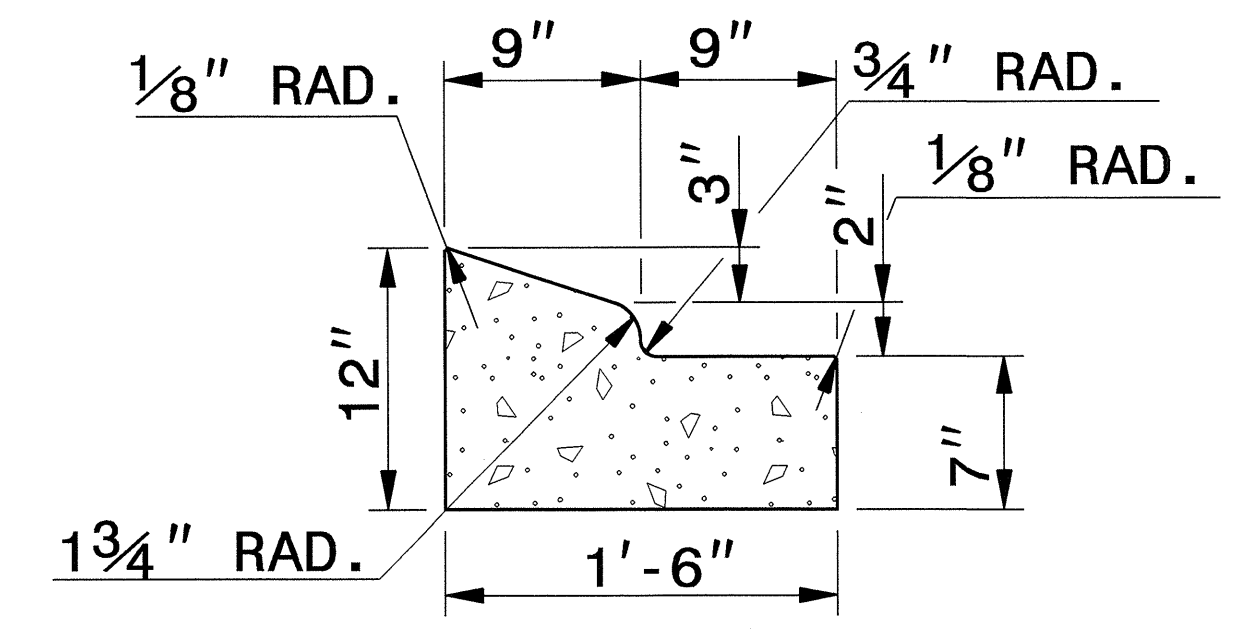
TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO.11
AT THE FOLLOWING LOCATION:
-DR10- STA. 10+32.85 TO STA. 11+10.00

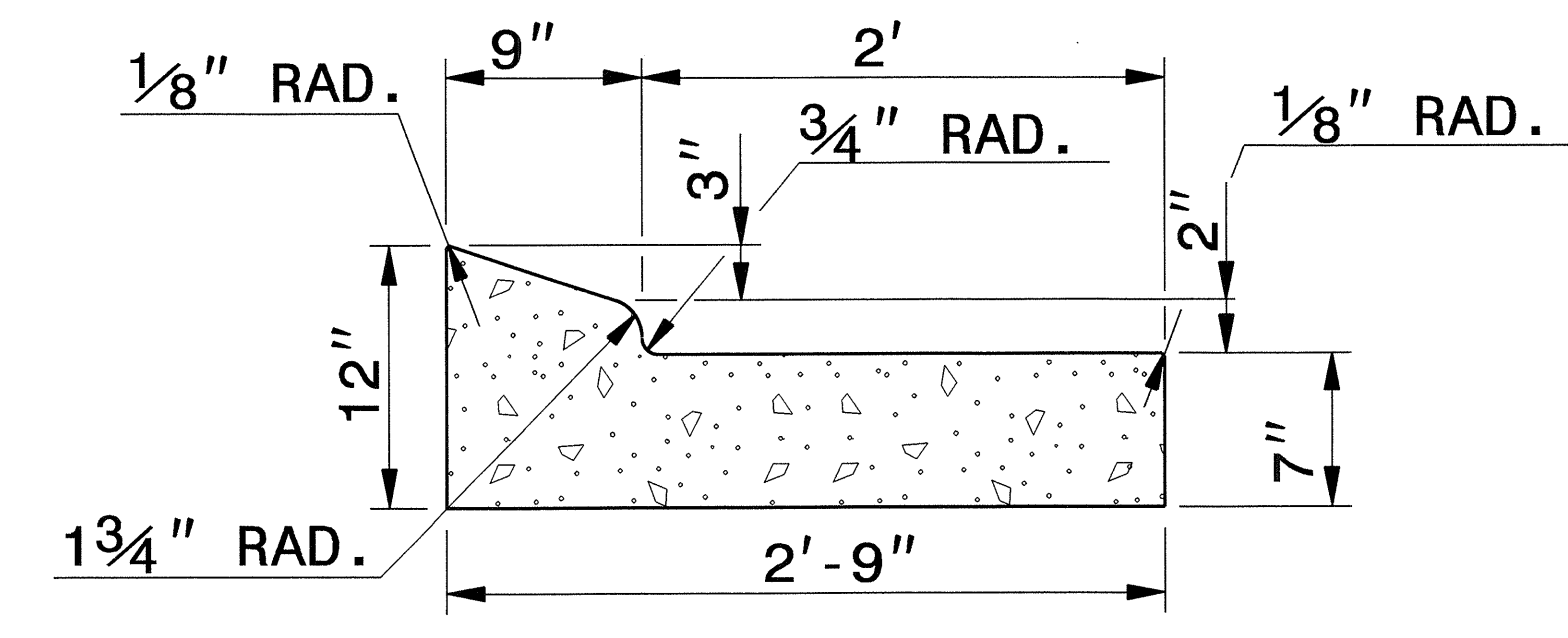
PROJECT REFERENCE NO. R-3825A	SHEET NO. 2-D
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027373 JULIAN C. LANCASTER 12/23/11	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22896 CLARK S. MORRISON 12/23/11

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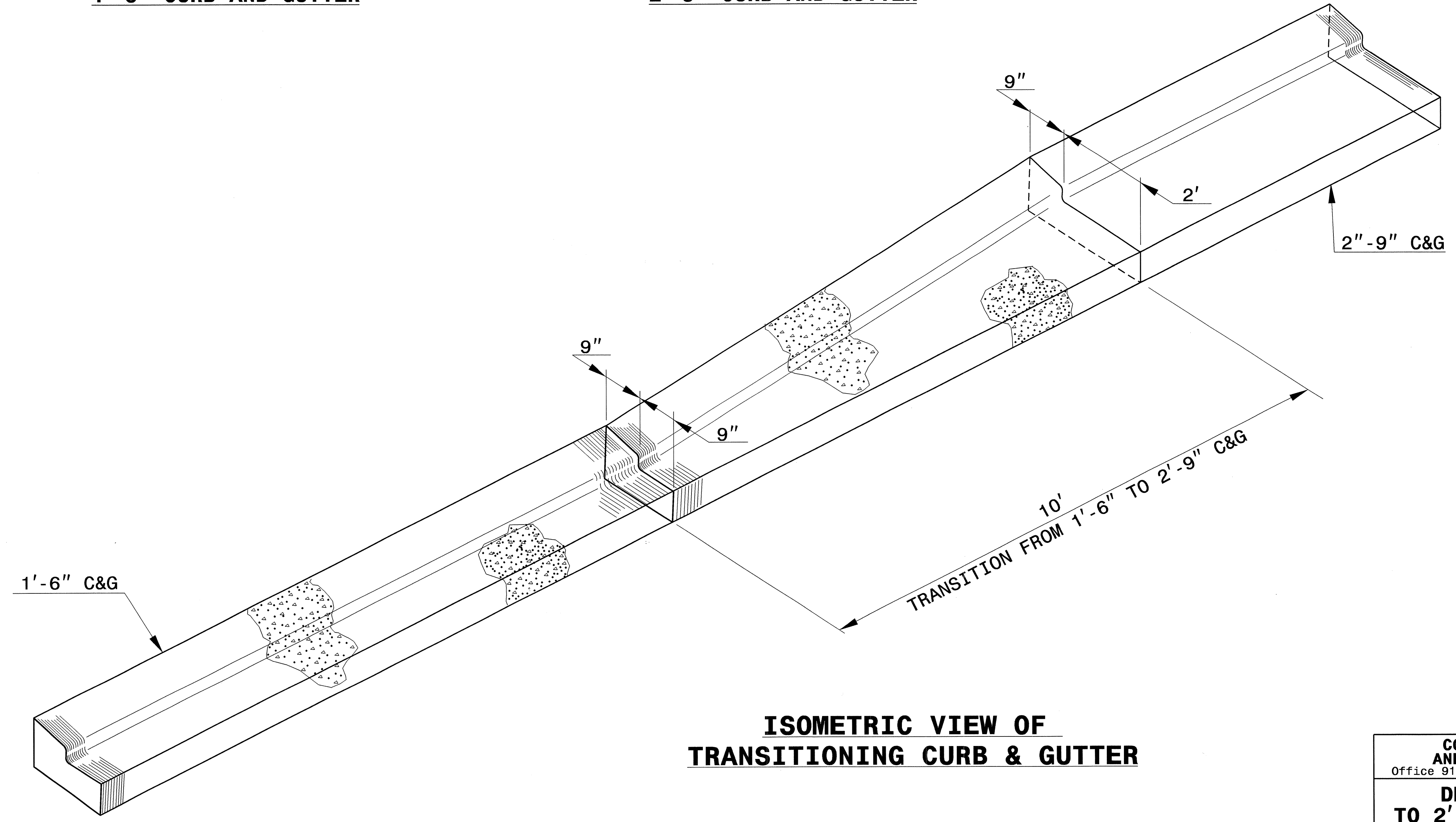
NOTE: SEE STD. DWG. 846.01 FOR ADDITIONAL CURB AND GUTTER INFORMATION.
SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



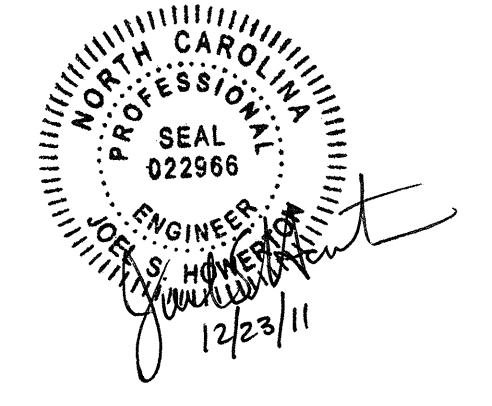
1'-6" CURB AND GUTTER



2'-9" CURB AND GUTTER



**ISOMETRIC VIEW OF
TRANSITIONING CURB & GUTTER**



CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
DETAIL OF 1'-6" TO 2'-9" CURB & GUTTER TRANSITION SECTION	
ORIGINAL BY: T.S. SPELL	DATE: NOV. 26, 2001
MODIFIED BY: T.S. SPELL	DATE: FEB. 12, 2007
CHECKED BY: <i>[Signature]</i>	DATE: 12/5/11
FILE SPEC.: us/eric/details/stand/cgtransit.dgn	

05-DEC-2011 07:39
 S:\Contracts\Contractors\Special Details\ericward\usr\details\stand\c&g transition sections.dgn
 \$\$\$USERHME\$\$\$



Scott A. Nielsen 11/18/11
SIGNATURE DATE

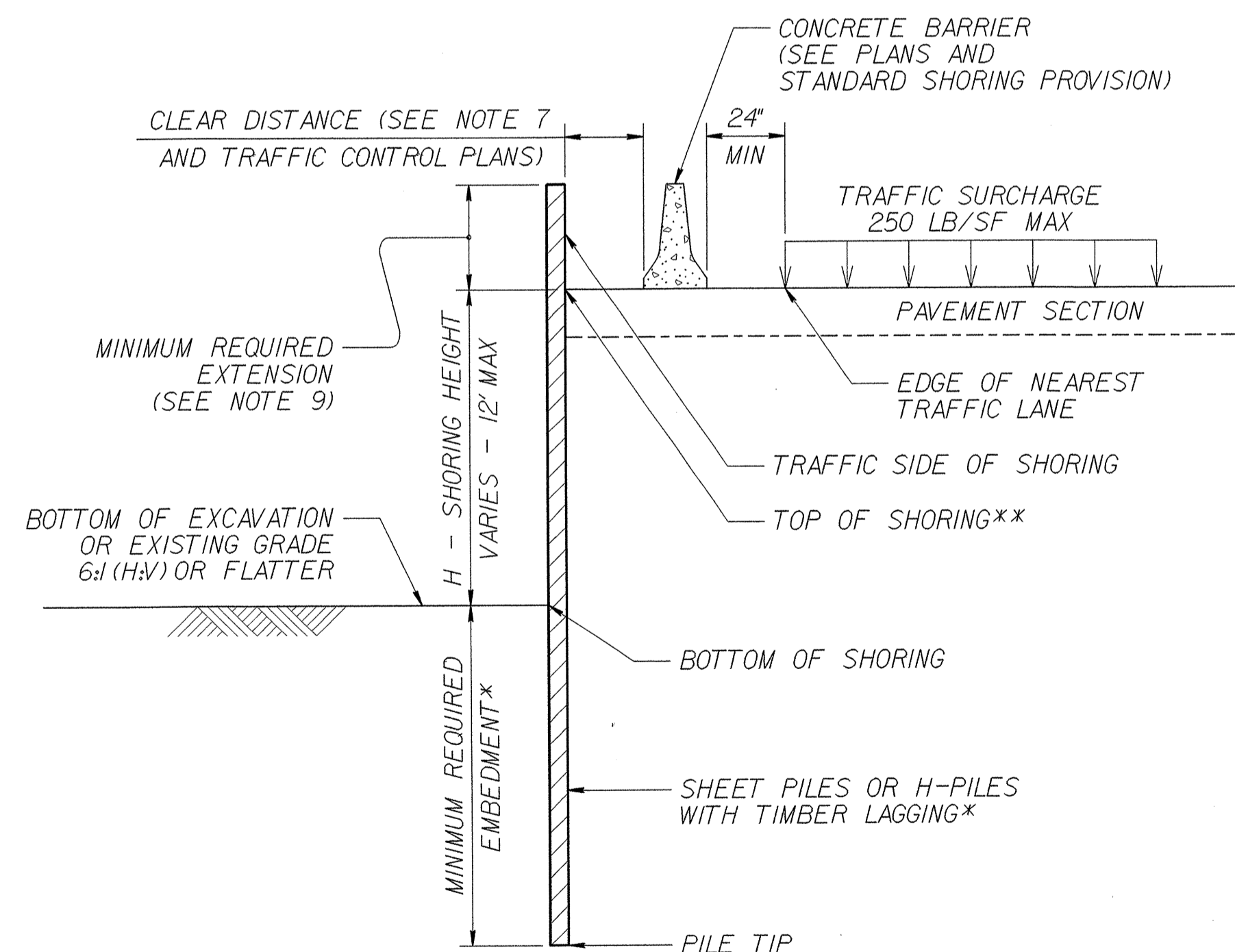
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)		
		HP 10x42	HP 12x53	HP 14x73	HP 10x42	HP 12x53	HP 14x73				
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5	
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5	

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

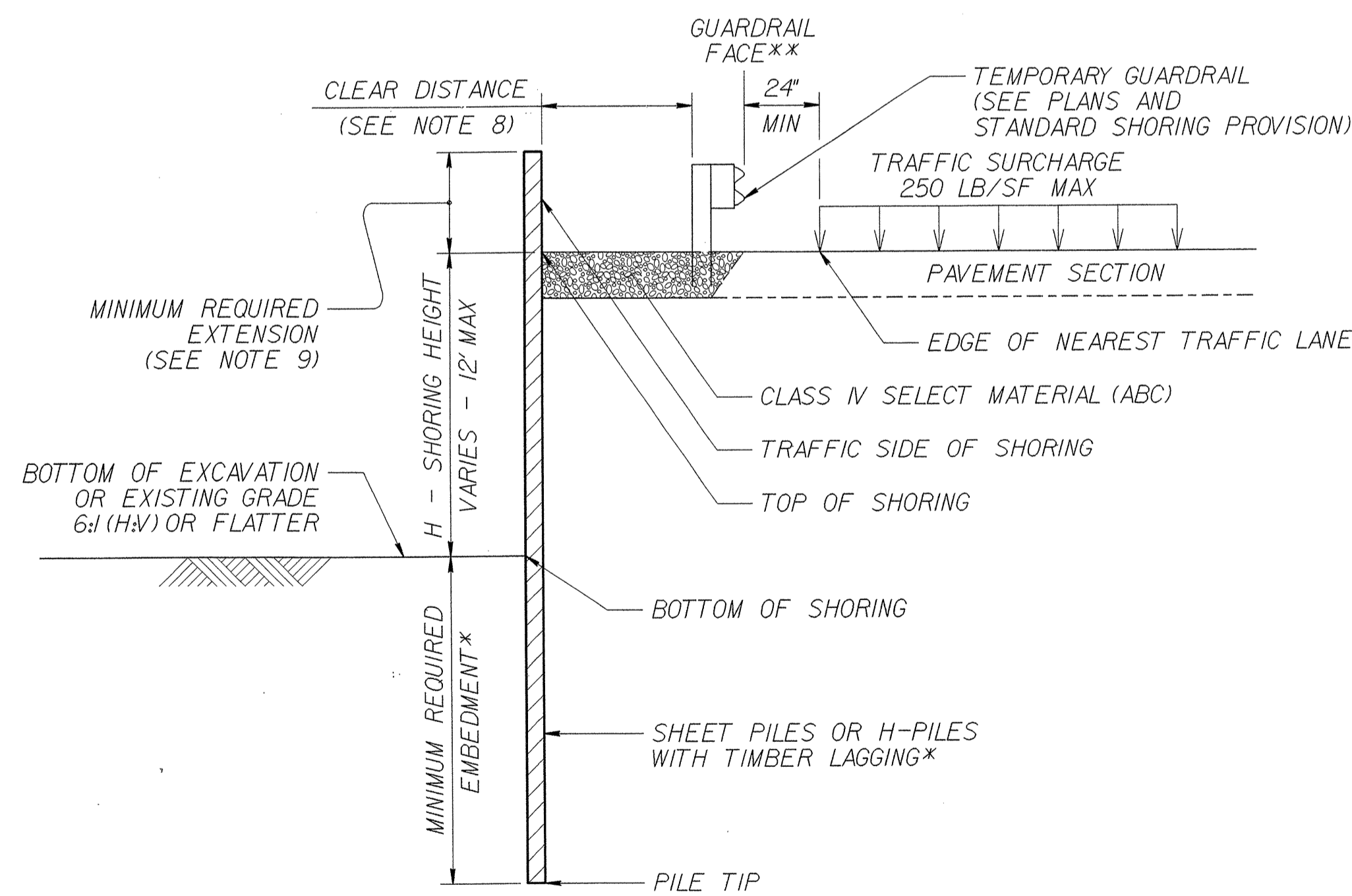
***DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".**

NOTES:

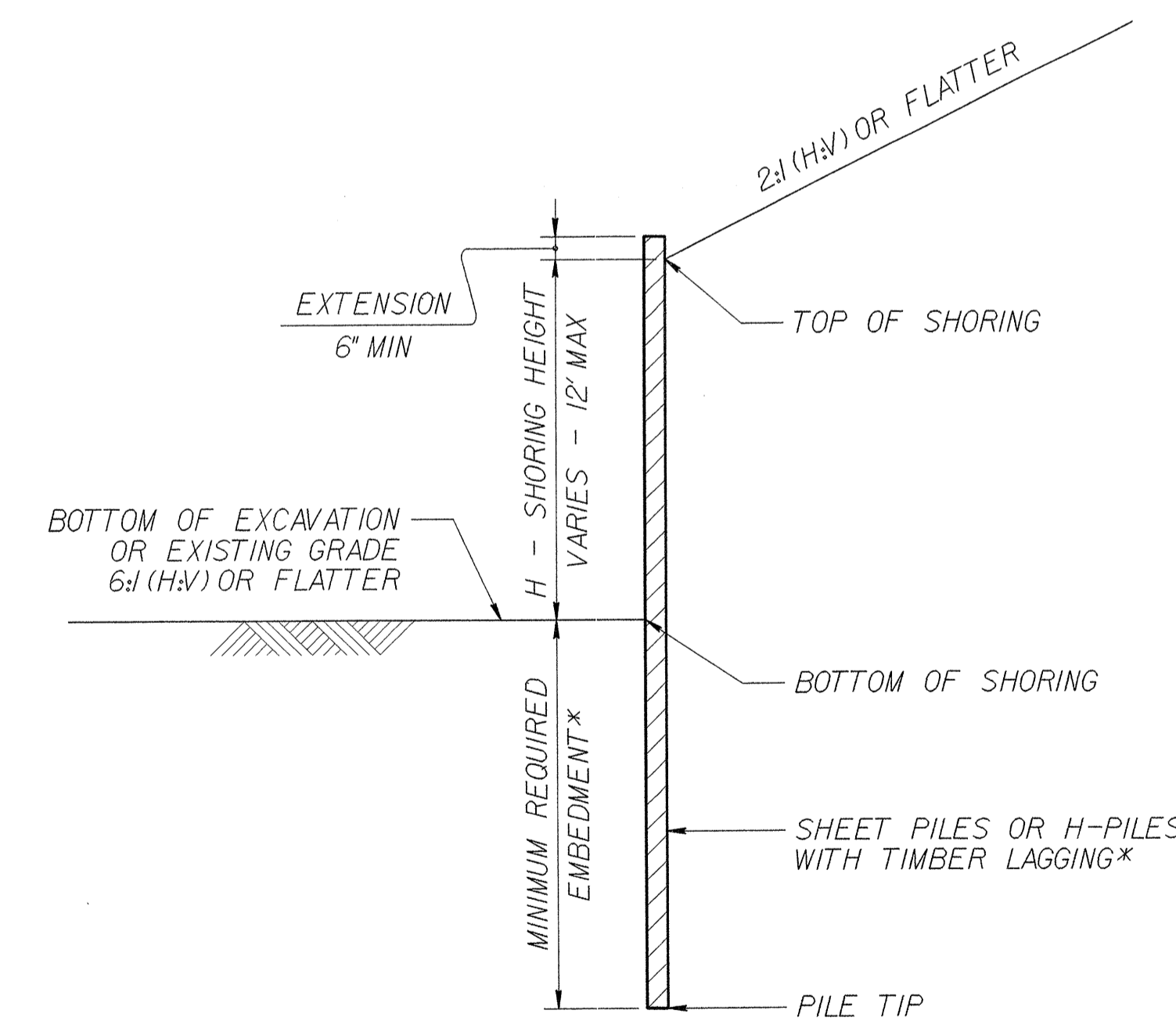
- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ LB/CF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ LB/SF
- DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EXTENSION IS 6' FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32' FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
- SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM.
- CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.



CONCRETE BARRIER
**TOP OF SHORING =
EDGE OF PAVEMENT

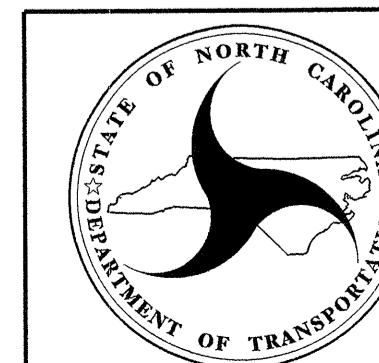


TEMPORARY GUARDRAIL
**GUARDRAIL FACE =
EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING (SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING (SURCHARGE CASE)
*SEE TABLE ABOVE.



GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 1-17-12

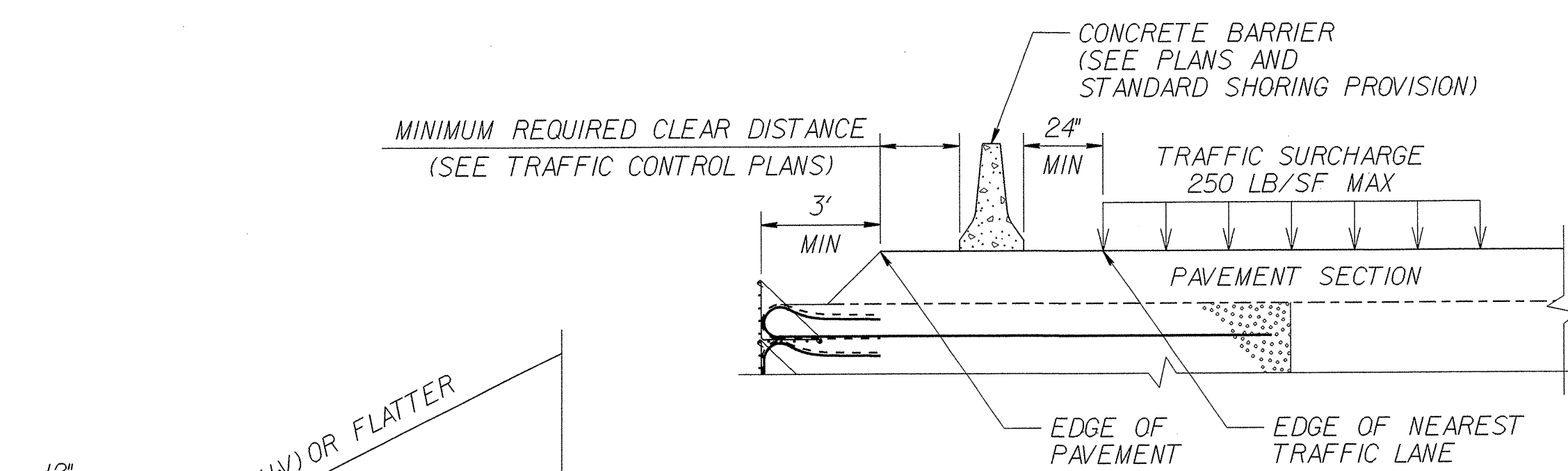
GEOTECHNICAL ENGINEER

ENGINEER



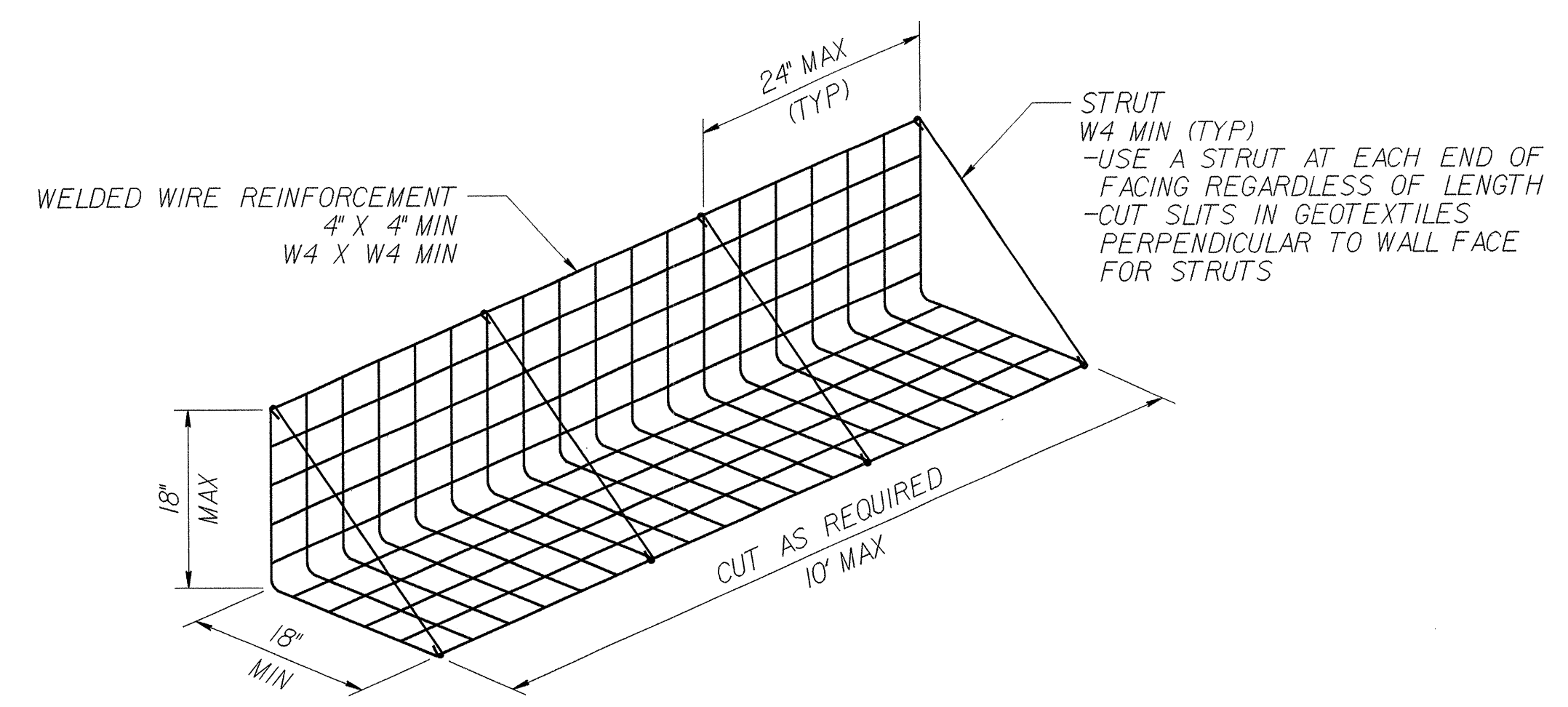
Scott A. Hadden 11/19/11
SIGNATURE DATE

SIGNATURE DATE

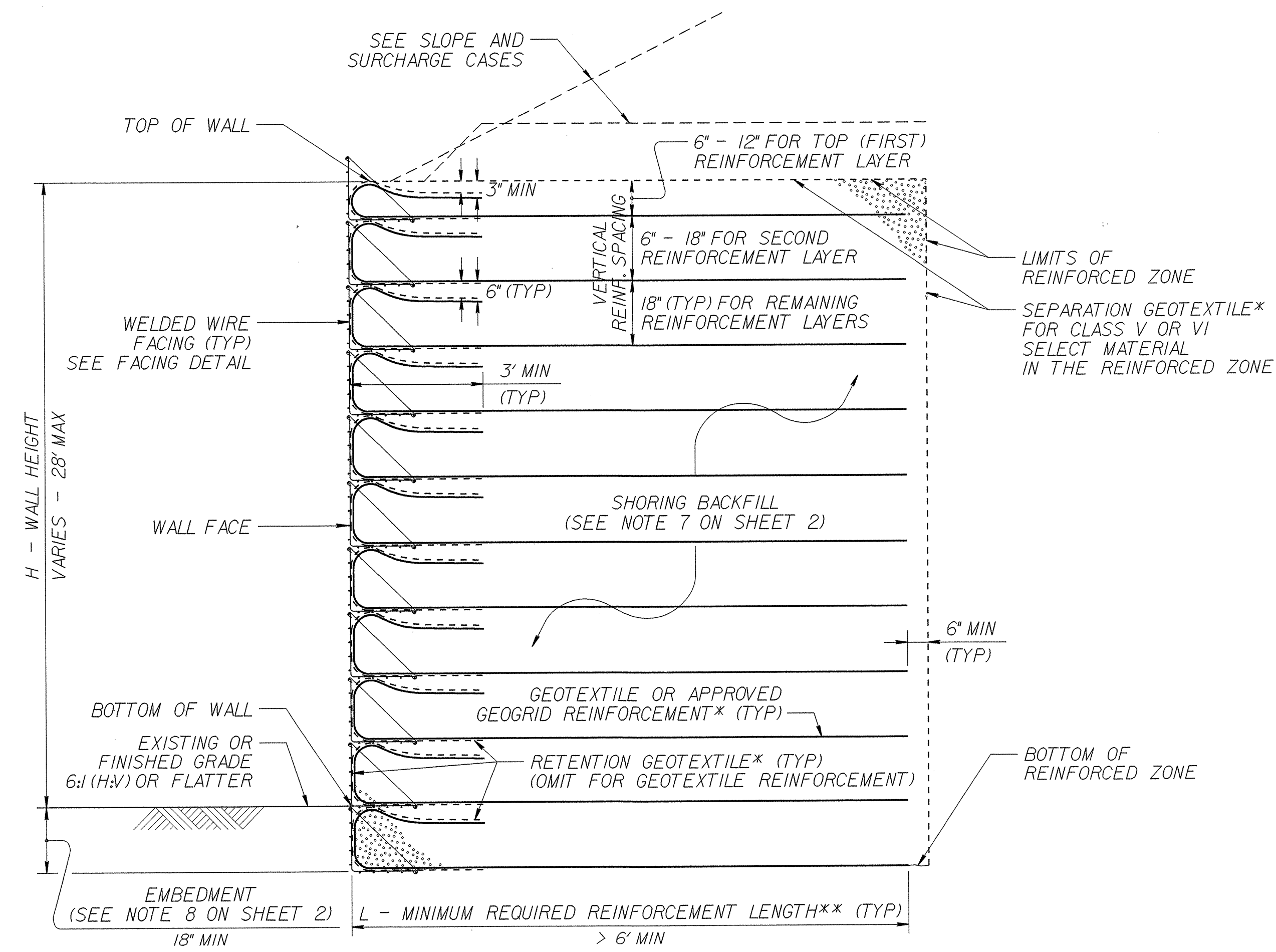


SURCHARGE CASE

SLOPE CASE

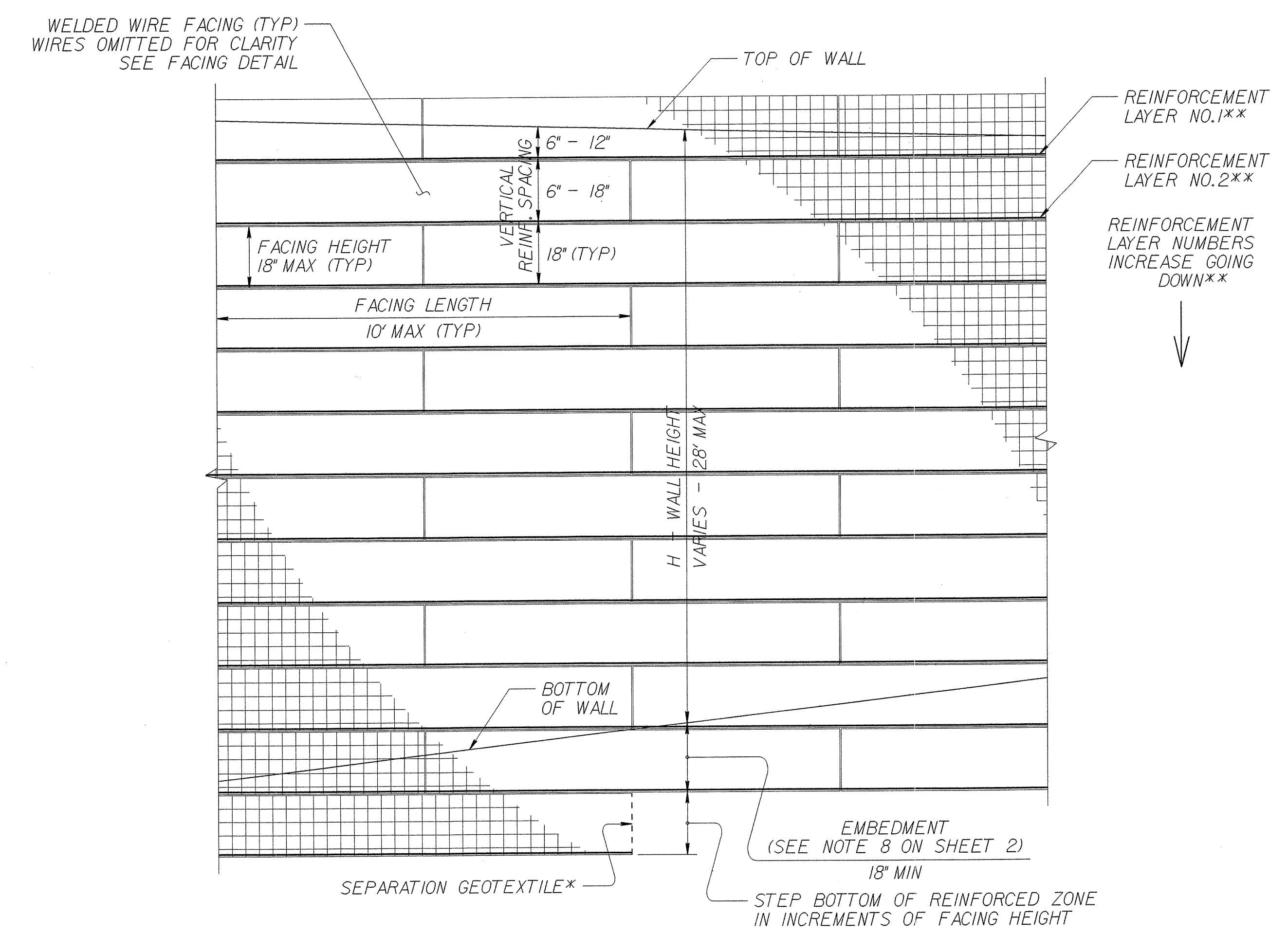


FACING DETAIL



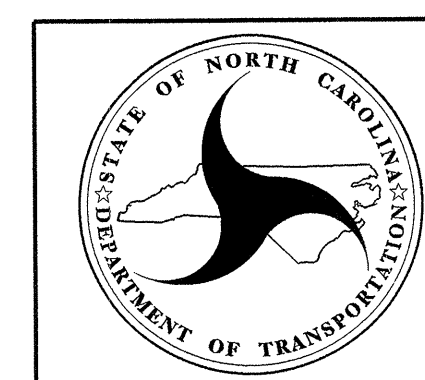
STANDARD TEMPORARY WALL

(FOR STANDARD TEMPORARY WALLS ON STRUCTURES, SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)
*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
**SEE REINFORCEMENT TABLES ON SHEET 3.



STANDARD TEMPORARY WALL - PARTIAL ELEVATION

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
**SEE REINFORCEMENT TABLES ON SHEET 3.

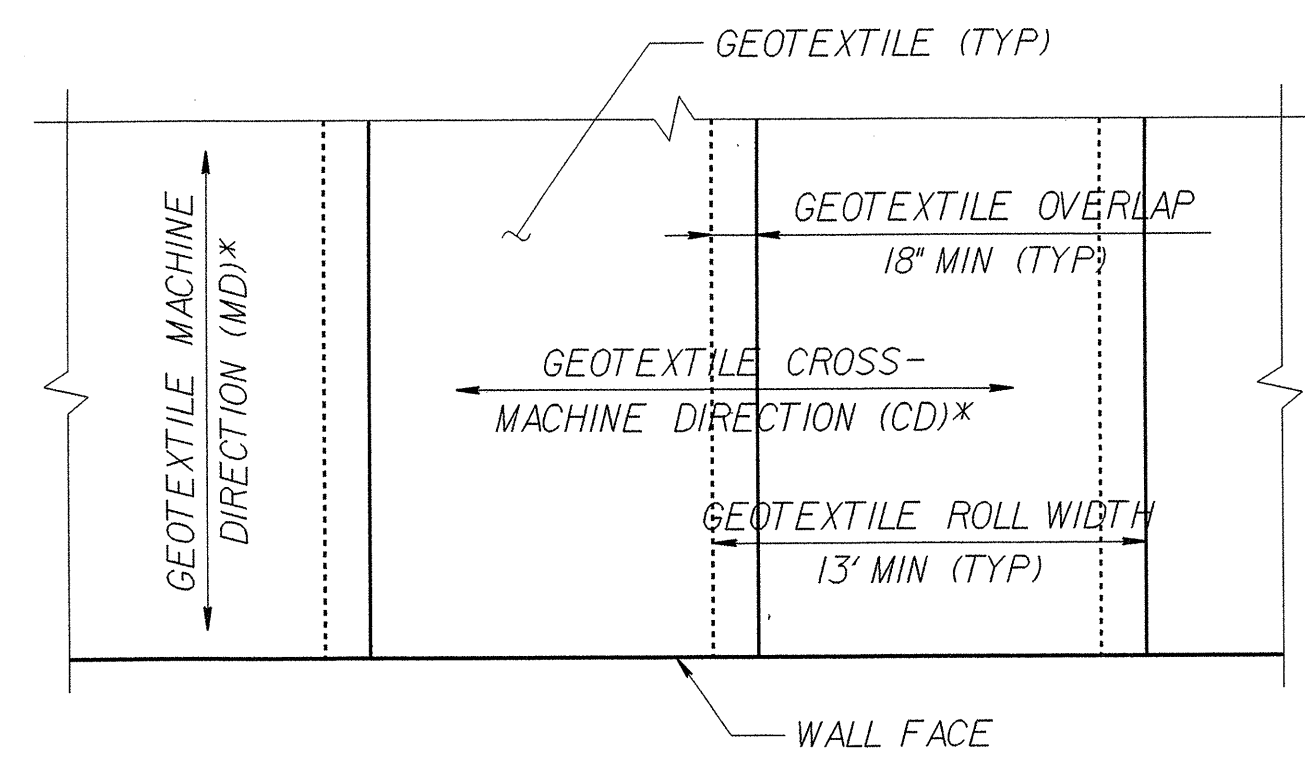


GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

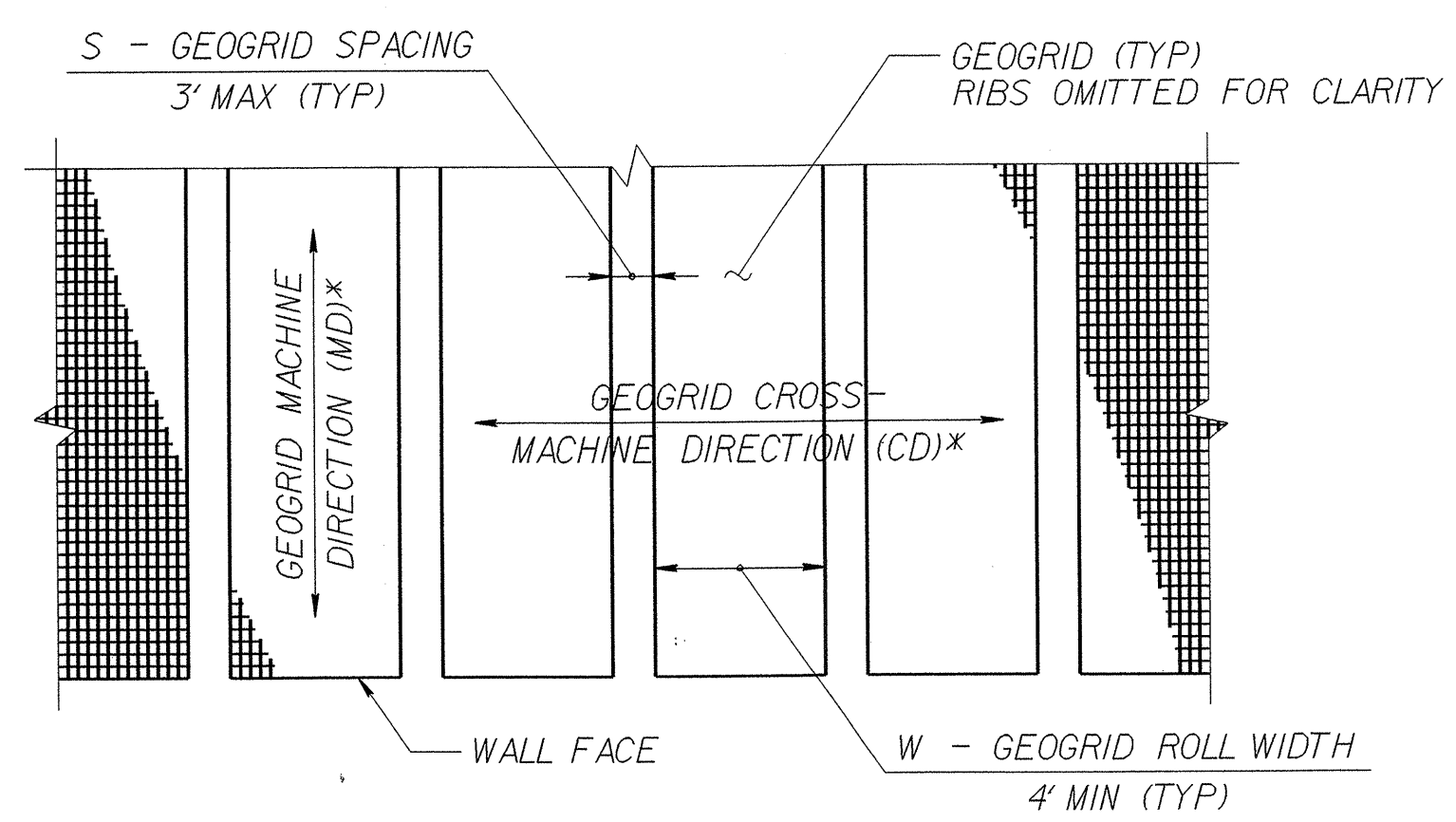
STANDARD DRAWING NO. 1801.02

STANDARD TEMPORARY WALL
Sheet 1 of 3

DATE: 1-17-12

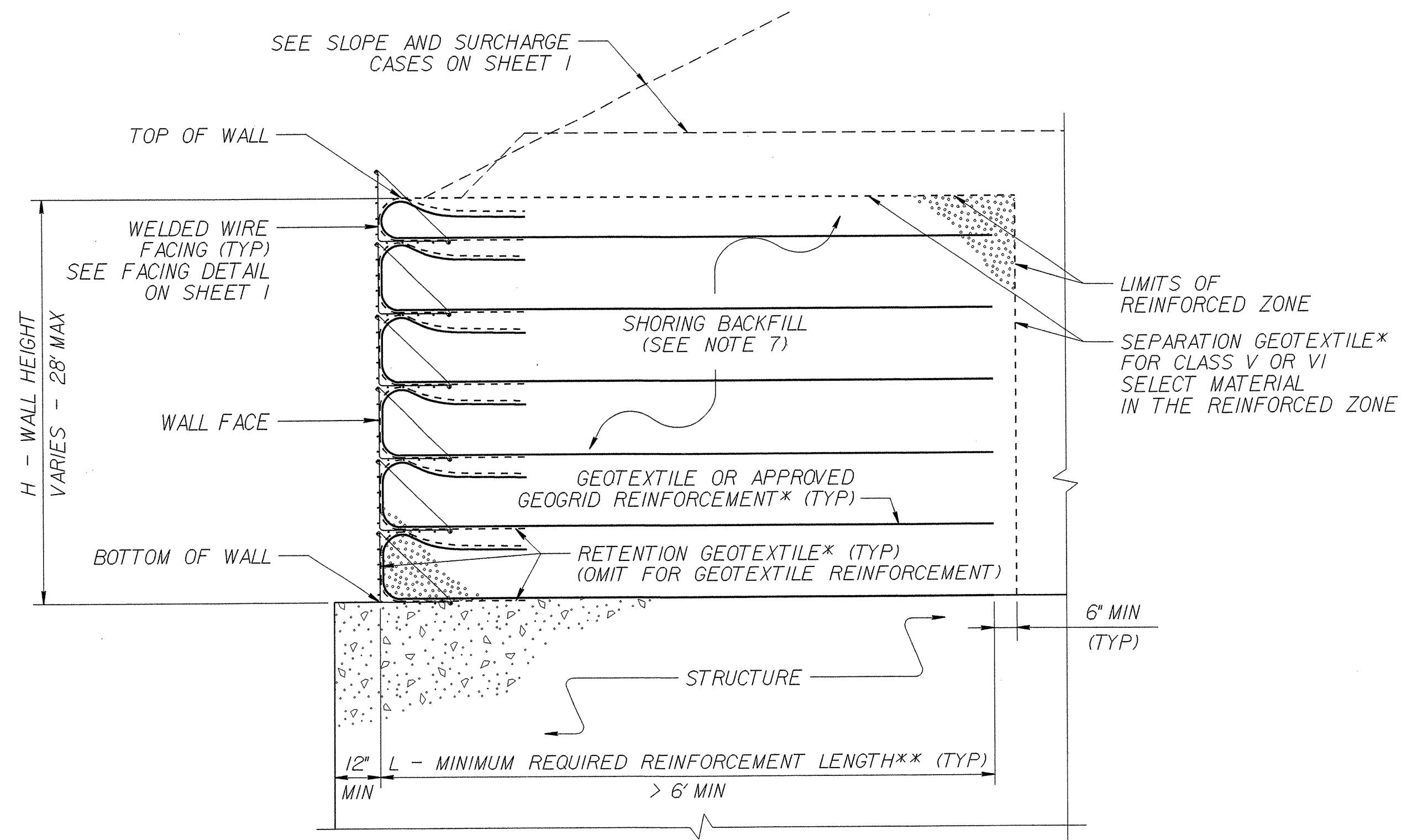


GEOTEXTILE PLACEMENT
(100% COVERAGE MIN FOR GEOTEXTILE REINFORCEMENT)



GEOGRID PLACEMENT
(80% COVERAGE MIN FOR GEOGRID REINFORCEMENT - $\frac{W}{W+S} \times 100 \geq 80\%$, SEE NOTE 11)

GEOSYNTHETIC PLACEMENT DETAILS
(PLAN VIEW)
*SEE NOTE 12.



TEMPORARY WALL ON STRUCTURE DETAIL
*SEE GEOSYNTHETIC PLACEMENT DETAILS.
**SEE REINFORCEMENT TABLES ON SHEET 3.

NOTES:

- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY WALLS AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY WALLS, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY WALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ LB/CF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ LB/SF
- DO NOT USE STANDARD TEMPORARY WALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW TEMPORARY WALLS.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, ASSUME GROUNDWATER DEPTH IS LESS THAN 7' BELOW BOTTOM OF REINFORCED ZONE. DO NOT USE STANDARD TEMPORARY WALLS IF GROUNDWATER IS ABOVE BOTTOM OF REINFORCED ZONE.
- DO NOT USE A-2-4 SOIL FOR STANDARD TEMPORARY WALLS AROUND CULVERTS OR IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS FOR SLOPE CASES. DO NOT USE CLASS VI SELECT MATERIAL IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS WITH GEOTEXTILE REINFORCEMENT.
- EMBEDMENT IS NOT REQUIRED FOR STANDARD TEMPORARY WALLS ON STRUCTURES OR ROCK AS DETERMINED BY THE ENGINEER.
- DO NOT USE MORE THAN 4 DIFFERENT REINFORCEMENT STRENGTHS FOR EACH STANDARD TEMPORARY WALL.
- GEOGRIDS ARE APPROVED FOR SHORT-TERM DESIGN STRENGTHS FOR A 3-YEAR DESIGN LIFE IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) BASED ON MATERIAL TYPE. FOR DETAILS OF APPROVED GEOGRIDS AND SHORT-TERM DESIGN STRENGTHS, SEE www.ncdot.org/doh/operations/materials/soils/gep.html DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SHORING BACKFILL AS FOLLOWS:

MATERIAL TYPE	SHORING BACKFILL
BORROW	A-2-4 SOIL
FINE AGGREGATE	CLASS II, TYPE I OR CLASS III SELECT MATERIAL
COARSE AGGREGATE	CLASS V OR VI SELECT MATERIAL

- FOR GEOGRID REINFORCEMENT WITH LESS THAN 100% COVERAGE, STAGGER REINFORCEMENT SO GEOGRIDS ARE CENTERED OVER GAPS IN THE REINFORCEMENT LAYER BELOW.
- AT THE CONTRACTOR'S OPTION, REINFORCEMENT MAY BE INSTALLED WITH THE MD PARALLEL TO THE WALL FACE IF BOTH THE FOLLOWING CONDITIONS OCCUR:
- W (REINFORCEMENT ROLL WIDTH) $\geq L$ (MINIMUM REQUIRED REINFORCEMENT LENGTH) + 4.5' AND
- REINFORCEMENT STRENGTH IN CD \geq MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD.
- SUBMIT A "STANDARD TEMPORARY WALL SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY WALL CONSTRUCTION.
- DO NOT PLACE SHORING BACKFILL OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
- FOR STANDARD TEMPORARY WALLS WITH PILE FOUNDATIONS IN THE REINFORCED ZONE, DRIVE PILES THROUGH REINFORCEMENT AFTER CONSTRUCTING TEMPORARY WALLS.
- DO NOT SPLICE OR OVERLAP REINFORCEMENT SO SEAMS ARE PARALLEL TO THE WALL FACE.
- CONTACT THE ENGINEER WHEN EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT.
- FOR STANDARD TEMPORARY WALLS WITH INTERIOR ANGLES LESS THAN 90 DEGREES, WRAP GEOSYNTHETICS AT ACUTE CORNERS AS DIRECTED BY THE ENGINEER.
- FOR STANDARD TEMPORARY WALLS WITH TOP OF WALL WITHIN 5' OF FINISHED GRADE, REMOVE TOP FACING AND INCORPORATE TOP REINFORCEMENT LAYER INTO FILL WHEN PLACING FILL IN FRONT OF WALL.

SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description
6117000000-N	SP	75	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.5	ACR	REFORESTATION
7060000000-E	1705	6,942	LF	SIGNAL CABLE
7120000000-E	1705	56	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7132000000-E	1705	8	EA	VEHICLE SIGNAL HEAD (12", 4 SECTION)
7204000000-N	1705	2	EA	LOUVER
7264000000-E	1710	3,010	LF	MESSENGER CABLE (3/8")
7300000000-E	1715	2,270	LF	UNPAVED TRENCHING (***** (1, 2')
7300100000-E	1715	2,460	LF	UNPAVED TRENCHING FOR TEMP- ORARY LEAD-IN
7324000000-N	1716	23	EA	JUNCTION BOX (STANDARD SIZE)
7360000000-N	1720	8	EA	WOOD POLE
7372000000-N	1721	22	EA	GUY ASSEMBLY
7408000000-E	1722	2	EA	1" RISER WITH WEATHERHEAD
7420000000-E	1722	5	EA	2" RISER WITH WEATHERHEAD
7444000000-E	1725	6,482	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	15,717	LF	LEAD-IN CABLE (***** (14-2)
7576000000-N	SP	12	EA	METAL STRAIN SIGNAL POLE
7613000000-N	SP	12	EA	SOIL TEST
7614100000-E	SP	84	CY	DRILLED PIER FOUNDATION
7636000000-N	1745	20	EA	SIGN FOR SIGNALS
7684000000-N	1750	2	EA	SIGNAL CABINET FOUNDATION
7756000000-N	1751	2	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
7768000000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, POLE MOUNTED)
7780000000-N	1751	12	EA	DETECTOR CARD (TYPE 2070L)
7901000000-N	1753	2	EA	CABINET BASE EXTENDER

COMPUTED BY: SAT DATE: 8/4/2011
 CHECKED BY: DDK DATE: 8/4/2011

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

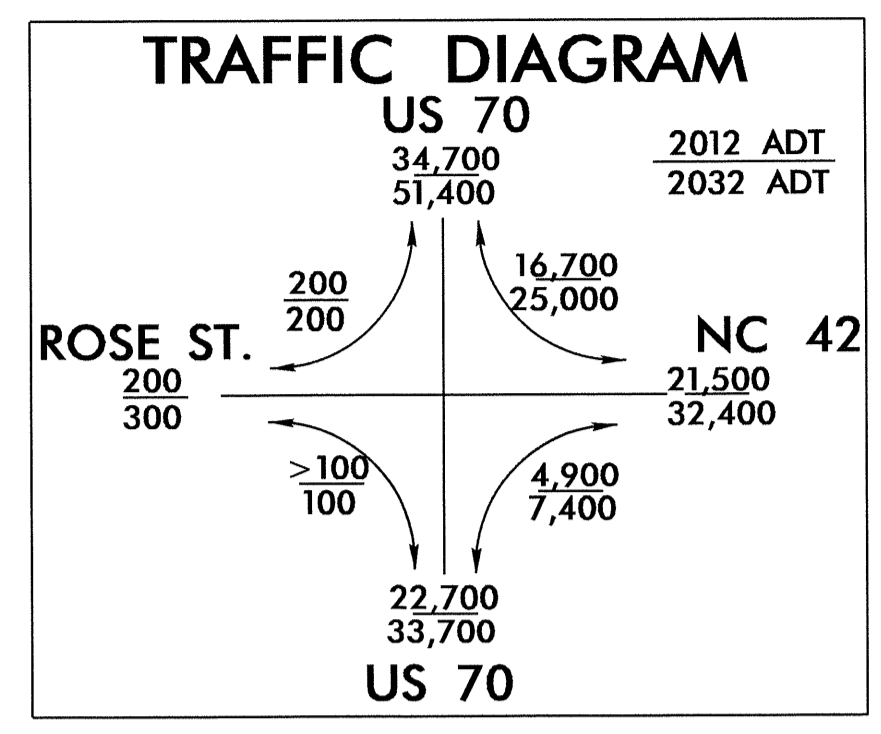
PROJECT NO. R-3825A SHEET NO. 3-B

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

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

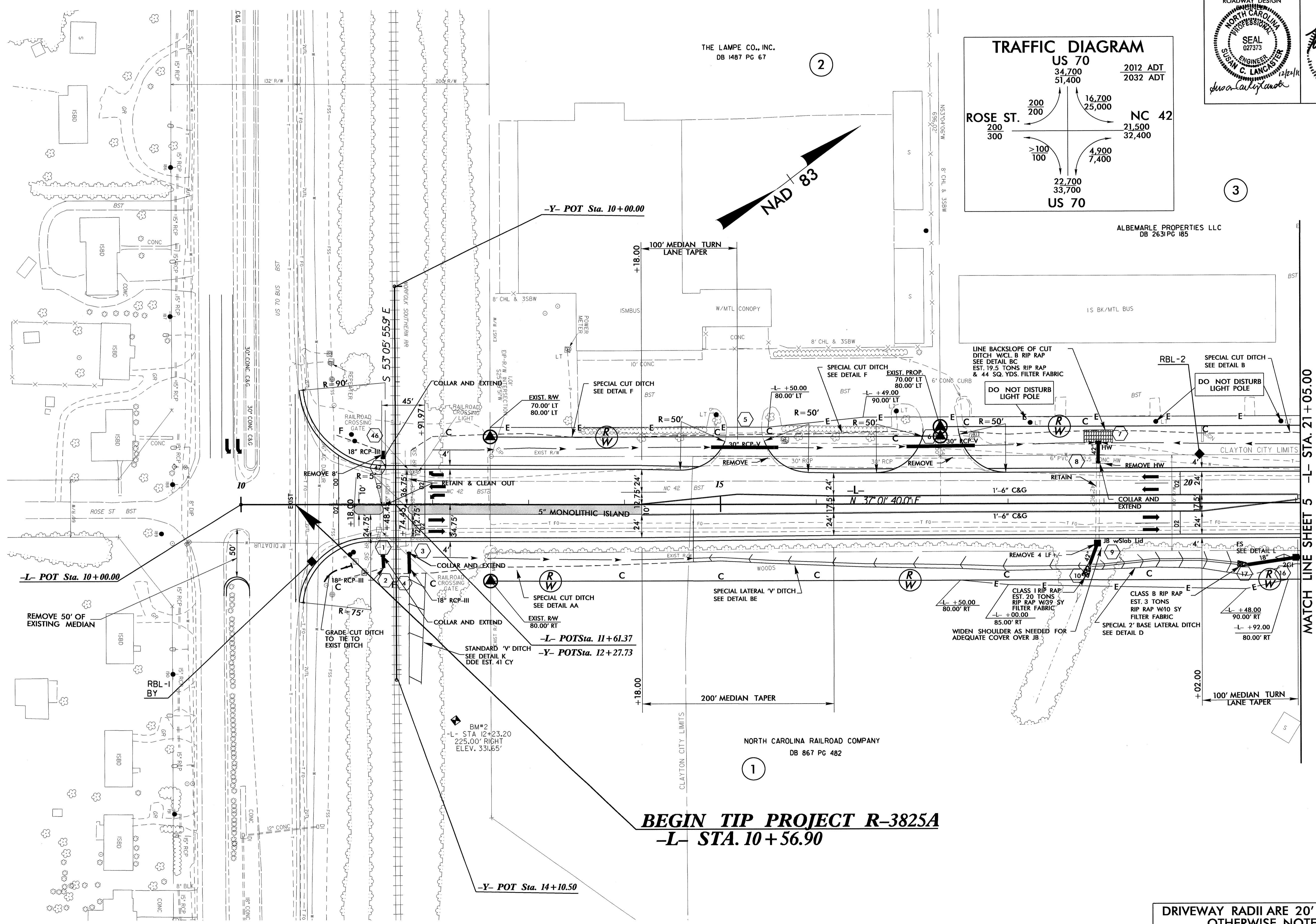
SHEET NO.	STATION	LOCATION (L, RT, OR CL)	STRUCTURE NO.	TOP ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS V R.C. PIPE (UNLESS NOTED OTHERWISE)						BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)						STRUCTURAL PLATE PIPE						REINFORCED ENDWALLS		FRAMES, GRATES & HOOD STANDARD 840.03	CONCRETE TRANSITIONAL SECTION		REFIN. CONC. FLARED END SECTIONS NO. & SIZE	CORR. STEEL FLARED END SECTIONS NO. & SIZE	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN. FT.	ABBREVIATIONS	
							54"	60"	66"	72"	78"	84"	54"	60"	66"	72"	60"	66"	72"	WITH R.C. - C.Y.	WITH C.S. - C.Y.	MASONRY DRAINAGE STRUCTURES CUBIC YARDS	C.B. STD. 840.01 OR 840.02	TYPE OF GRATE	DROP INLET	CATCH BASIN		JUNCTION BOX	TRAFFIC BEARING								
							THICKNESS OR GAUGE	FROM	TO	THICKNESS OR GAUGE	FROM	TO	THICKNESS OR GAUGE	FROM	TO	THICKNESS OR GAUGE	FROM	TO	THICKNESS OR GAUGE	FROM	TO	FROM	TO	E	F	G		REMARKS									
6	-L- 35+76	LT	24																																60	REMOVE 24" RCP	
6	-L-		24	25	310.17	309.77																												20	REMOVE 12" RCP		
6	-L- 40+07	LT	26																																		
6	-L-	LT	26	27	309.07	308.68																														43	REMOVE DI & 24" RCP
6	-L- 40+04	LT																																		22	REMOVE 5" CORRUGATED PLASTIC PIPE
SHEET TOTALS							132	120										11.9																	0	145	

RD252845



ALBEMARLE PROPERTIES LLC
DB 263 PG 85

THE LAMPE CO., INC.
DB 1487 PG 67



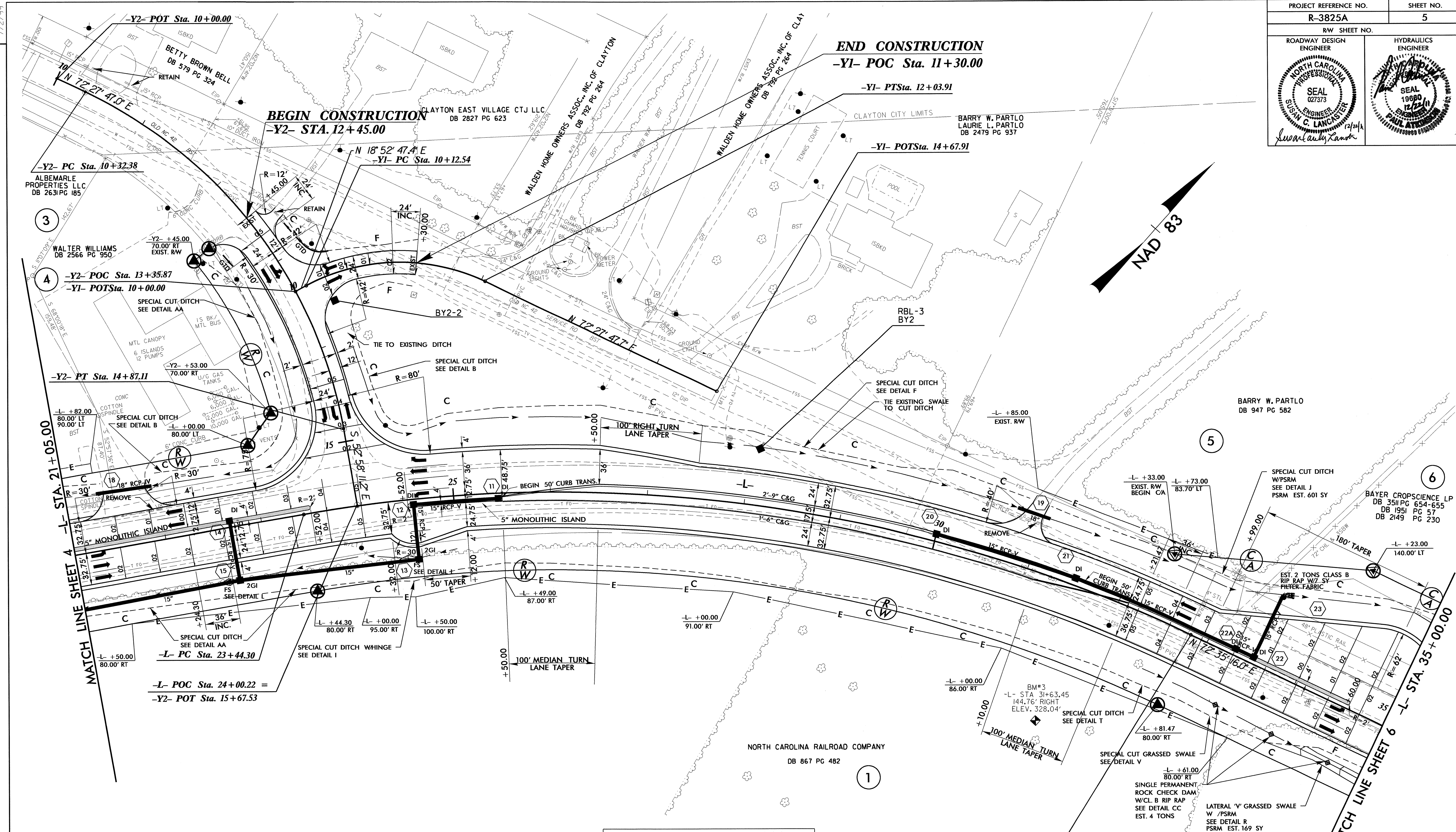
MATCH LINE SHEET 5 -L- STA. 21 + 05.00

BEGIN TIP PROJECT R-3825A
-L- STA. 10 + 56.90

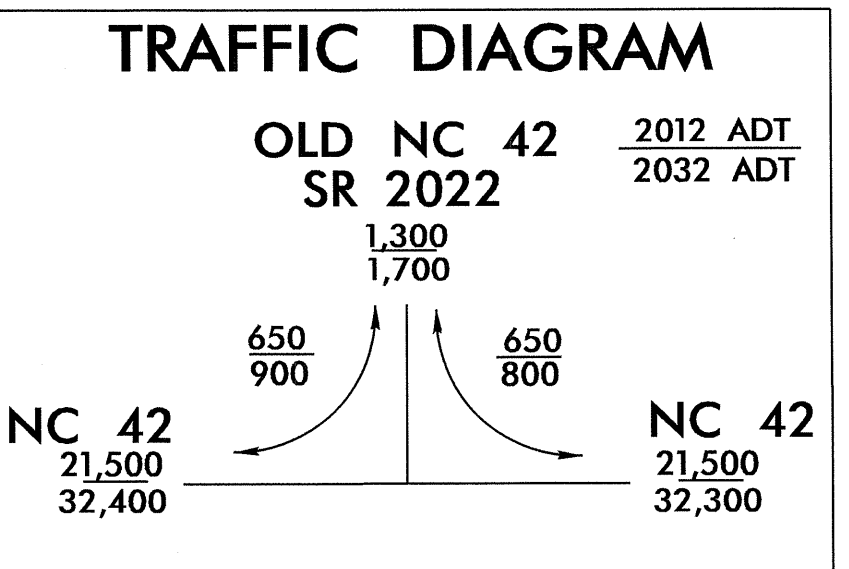
DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED
FOR -L- PROFILE SEE SHEET 11

7/22/99

22-DEC-2011 14:35
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SUSANLANC@GMAIL.COM



-L-	-Y2-	-Y1-
PI Sta 28+28.53	PI Sta 12+78.64	PI Sta 11+15.87
$\Delta = 35^\circ 33' 36.0''$ (RT)	$\Delta = 54^\circ 34' 01.8''$ (RT)	$\Delta = 53^\circ 35' 00.3''$ (RT)
$D = 3^\circ 47' 39.9''$	$D = 12^\circ 00' 00.0''$	$D = 28^\circ 00' 00.0''$
$L = 937.17'$	$L = 454.73'$	$L = 191.37'$
$T = 484.23'$	$T = 246.26'$	$T = 103.33'$
$R = 1,510.00'$	$R = 477.46'$	$R = 204.63'$
$SE = 0.05$	$SE = 0.05$	$SE = \text{SEE PLANS}$
$INC = 36'$	$INC = 24'$	$INC = 24'$
$RUNOFF = 180'$	$RUNOFF = \text{SEE PLANS}$	$RUNOFF = \text{SEE PLANS}$



DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHEET 11

FOR -Y1- PROFILE SEE SHEET 14

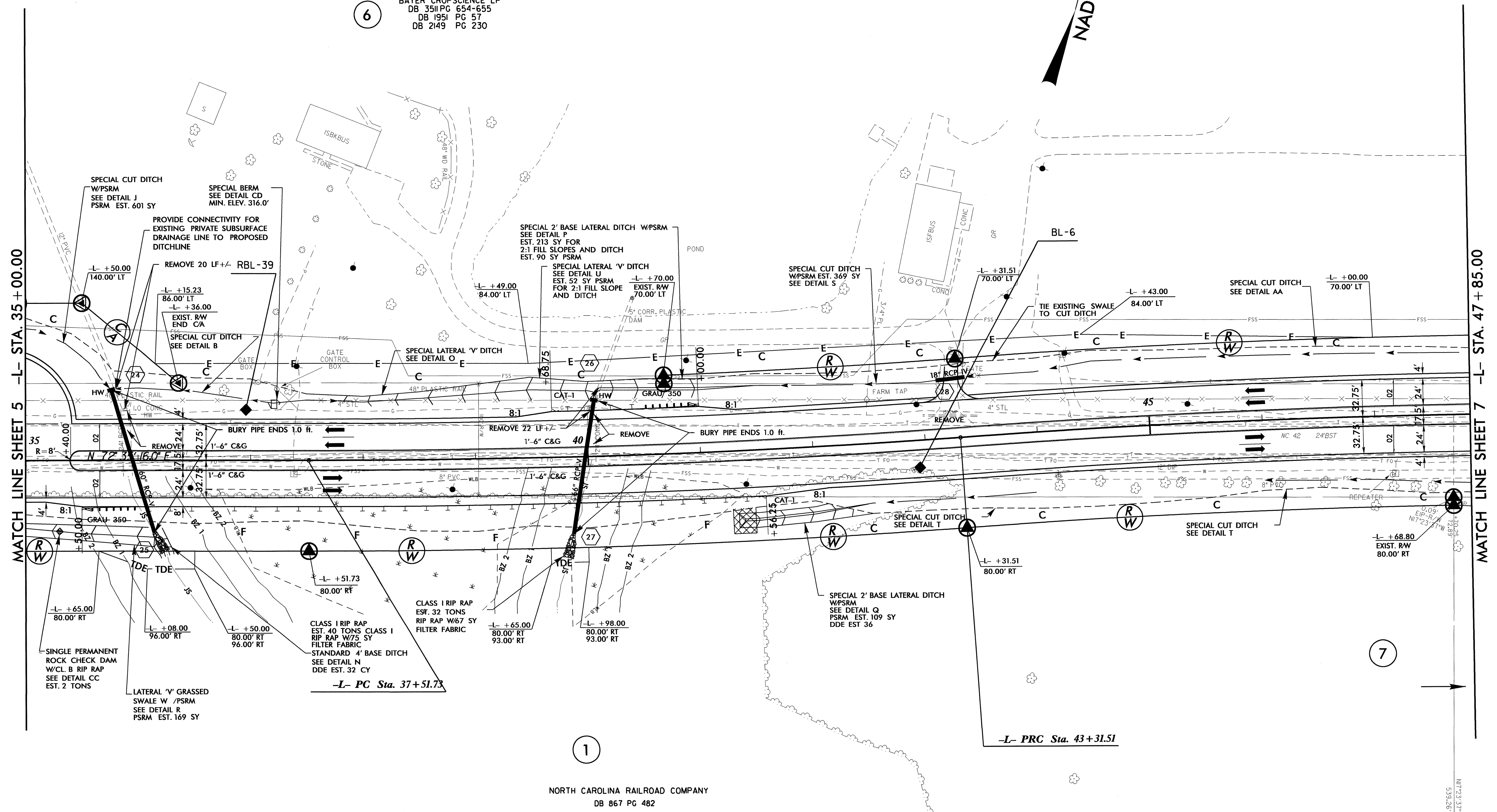
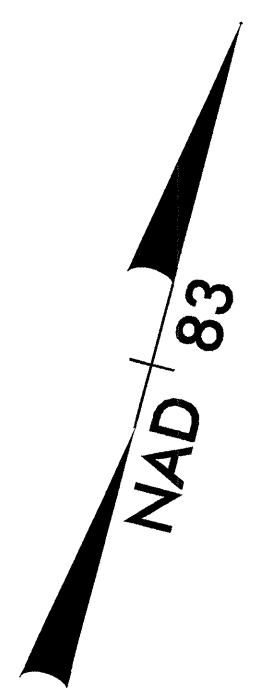
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7/2/99

PROJECT REFERENCE NO. R-3825A	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 027373 STEPHEN C. LANGCASTER	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 19680 PAUL A. TRIMMER

6 BAYER CROPSCIENCE LP
DB 3511 PG 654-655
DB 1951 PG 57
DB 2149 PG 230



MATCH LINE SHEET 5 -L- STA. 35+00.00

MATCH LINE SHEET 7 -L- STA. 47+85.00

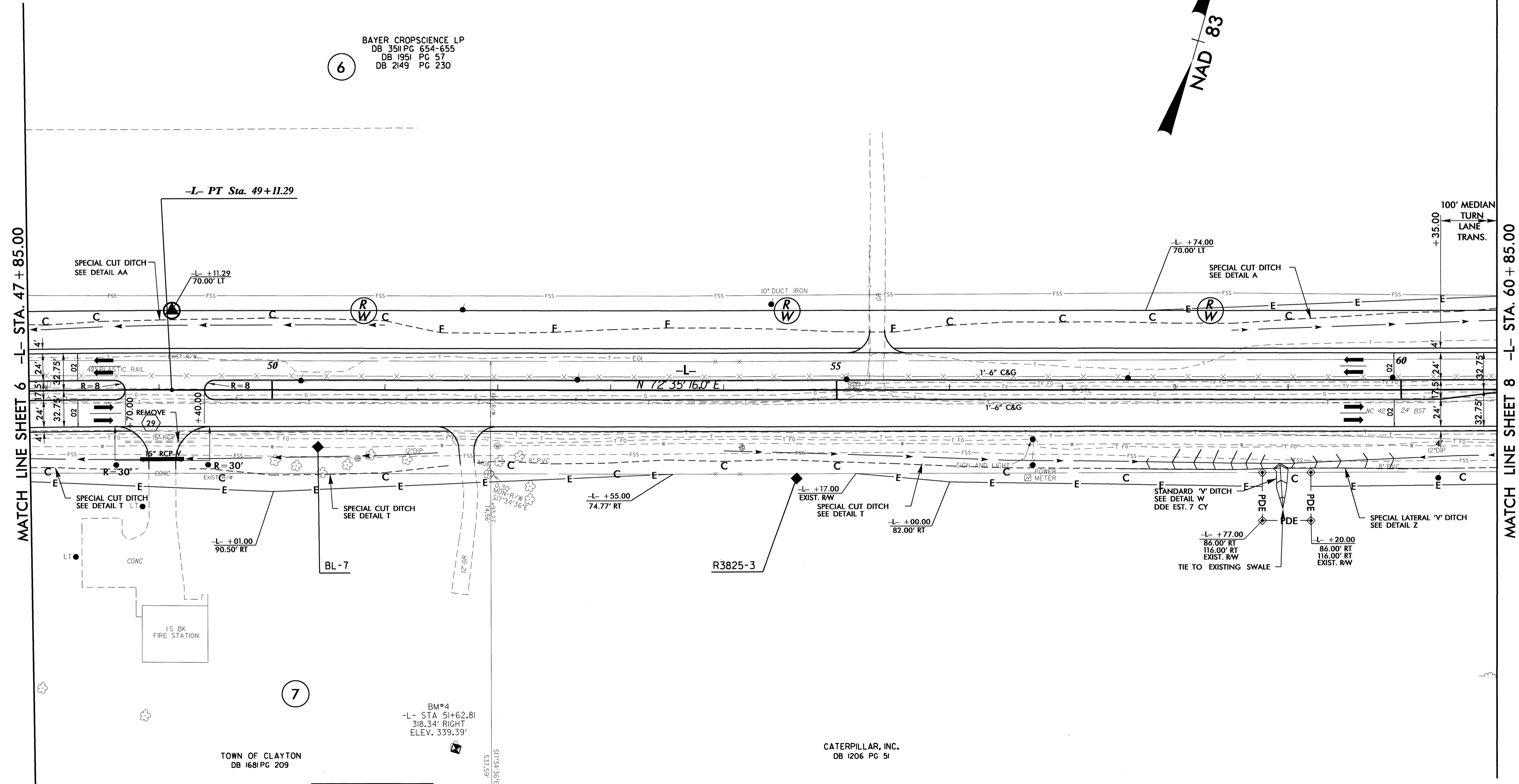
1 NORTH CAROLINA RAILROAD COMPANY
DB 867 PG 482

-L-	
PI Sta 40+41.74	PI Sta 46+21.53
$\Delta = 4' 09'' 08.6'' (LT)$	$\Delta = 4' 09'' 08.6'' (RT)$
$D = 0' 42'' 58.3''$	$D = 0' 42'' 58.3''$
$L = 579.78'$	$L = 579.78'$
$T = 290.02'$	$T = 290.02'$
$R = 8,000.00'$	$R = 8,000.00'$
SE = NC	SE = NC

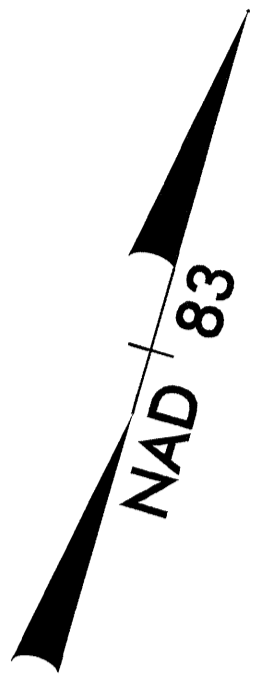
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FOR -L- PROFILE SEE SHEETS 11 & 12

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\$\$\$\$USERNAME\$\$\$\$

CLAYTON CITY LIMITS



6
BAYER CROPSCIENCE LP
DB 3511 PG 654-655
DB 1951 PG 57
DB 2149 PG 230



MATCH LINE SHEET 6 -L- STA. 47 + 85.00

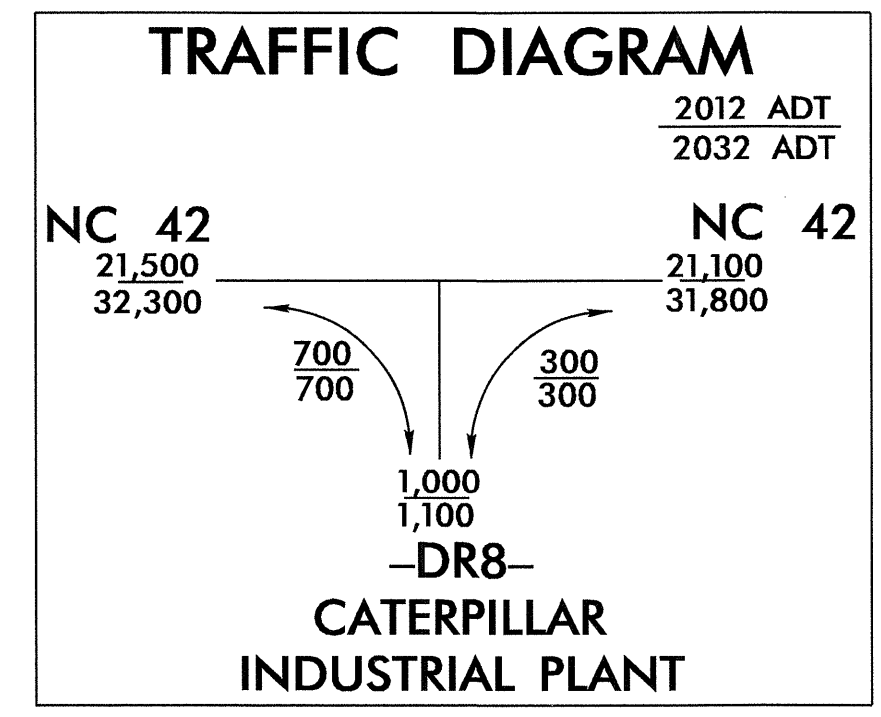
MATCH LINE SHEET 8 -L- STA. 60 + 85.00

-L-
PI Sta 46+21.53
 $\Delta = 4^{\circ}09'08.6''$ (RT)
 $D = 0^{\circ}42'58.3''$
 $L = 579.78'$
 $T = 290.02'$
 $R = 8,000.00'$
SE = NC

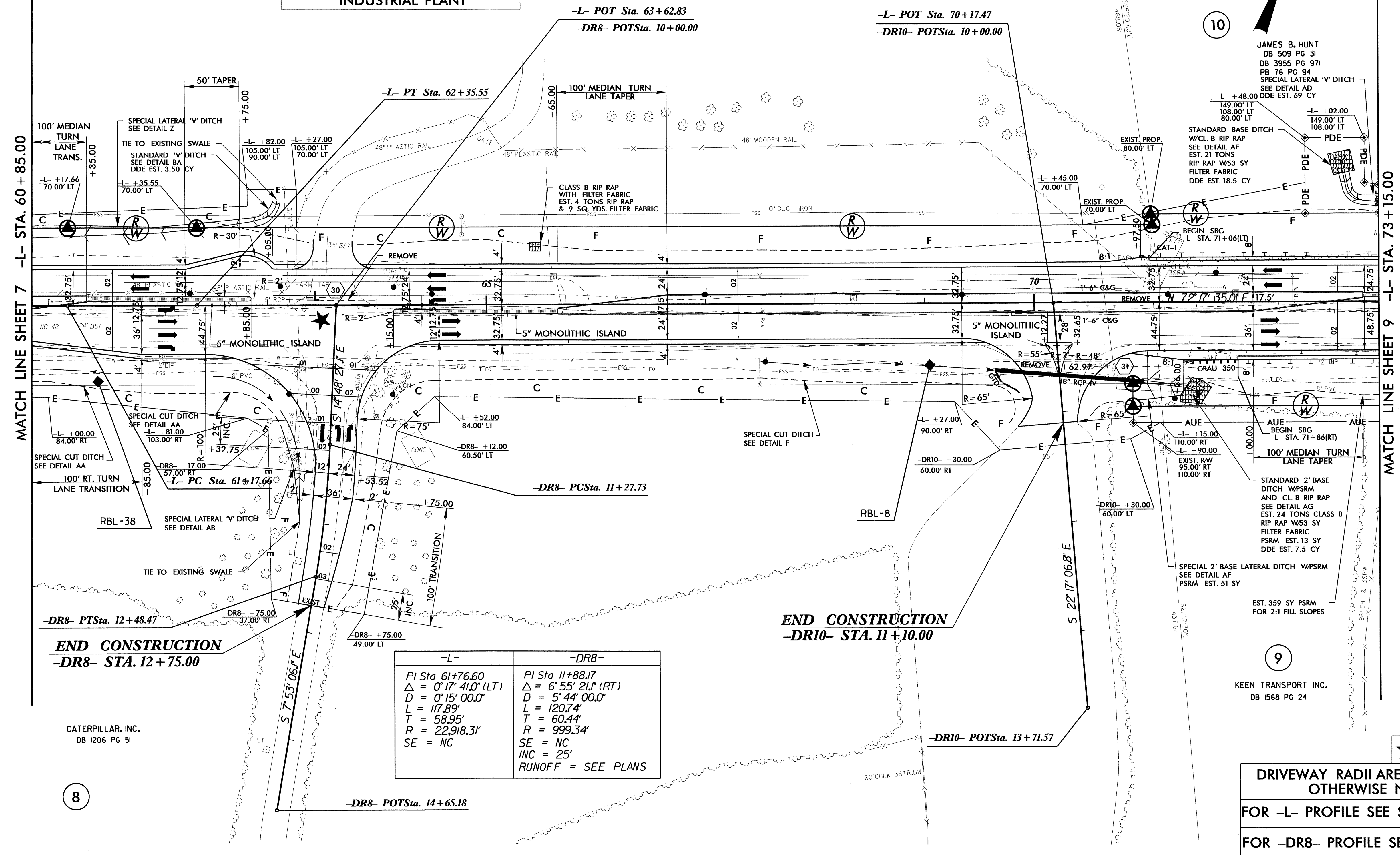
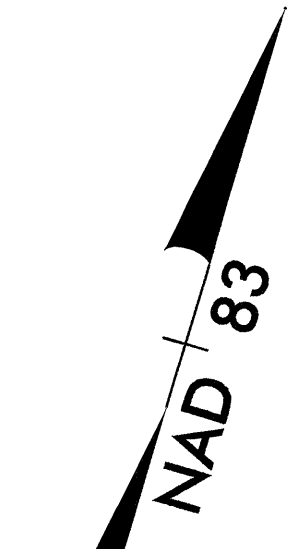
DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED
FOR -L- PROFILE SEE SHEET 12

7/2/99

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6
BAYER CROPSCIENCE LP
DB 3511 PG 654-655
DB 1951 PG 57
DB 2149 PG 230



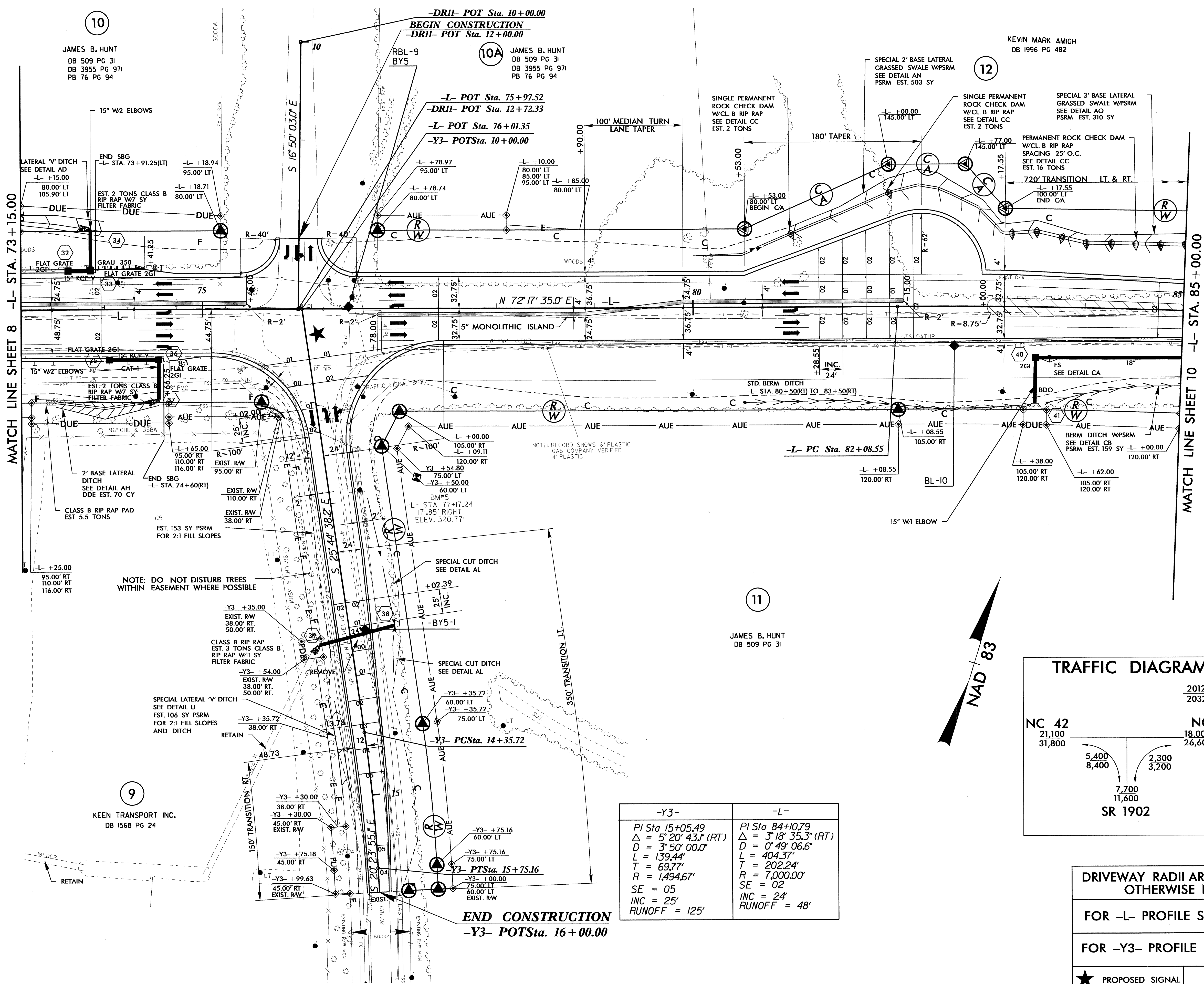
-L-	-DR8-
PI Sta 61+76.60	PI Sta 11+88.17
$\Delta = 0' 17' 41.0''$ (LT)	$\Delta = 6' 55' 21.1''$ (RT)
$D = 0' 15' 00.0''$	$D = 5' 44' 00.0''$
$L = 117.89'$	$L = 120.74'$
$T = 58.95'$	$T = 60.44'$
$R = 22,918.31'$	$R = 999.34'$
SE = NC	SE = NC
	INC = 25'
	RUNOFF = SEE PLANS

★ PROPOSED SIGNAL

DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED
FOR -L- PROFILE SEE SHEETS 12 & 13
FOR -DR8- PROFILE SEE SHEET 14

7/27/99

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SUSAN C. LANCASTER



10
JAMES B. HUNT
DB 509 PG 31
DB 3955 PG 971
PB 76 PG 94

10A
JAMES B. HUNT
DB 509 PG 31
DB 3955 PG 971
PB 76 PG 94

KEVIN MARK AMIGH
DB 1996 PG 482

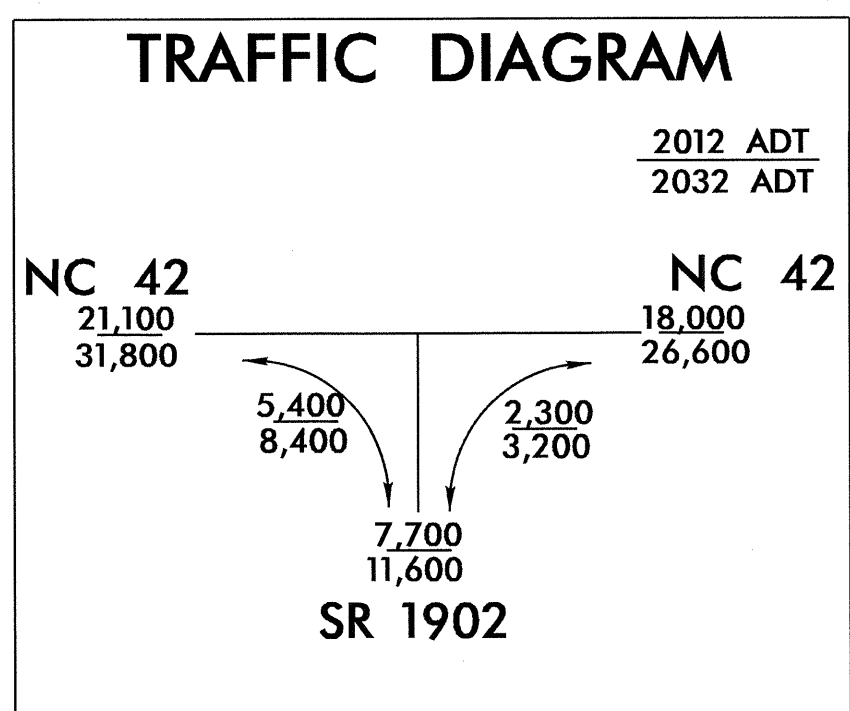
MATCH LINE SHEET 8 -L- STA. 73+15.00

MATCH LINE SHEET 10 -L- STA. 85+00.00

NOTE: DO NOT DISTURB TREES WITHIN EASEMENT WHERE POSSIBLE

NOTE: RECORD SHOWS 6" PLASTIC GAS COMPANY VERIFIED 4" PLASTIC

-Y3-	-L-
PI Sta 15+05.49	PI Sta 84+10.79
$\Delta = 5^{\circ} 20' 43.1''$ (RT)	$\Delta = 3^{\circ} 18' 35.3''$ (RT)
$D = 3^{\circ} 50' 00.0''$	$D = 0^{\circ} 49' 06.6''$
$L = 139.44'$	$L = 404.37'$
$T = 69.77'$	$T = 202.24'$
$R = 1,494.67'$	$R = 7,000.00'$
SE = 05	SE = 02
INC = 25'	INC = 24'
RUNOFF = 125'	RUNOFF = 48'



DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHEET 13

FOR -Y3- PROFILE SEE SHEET 14

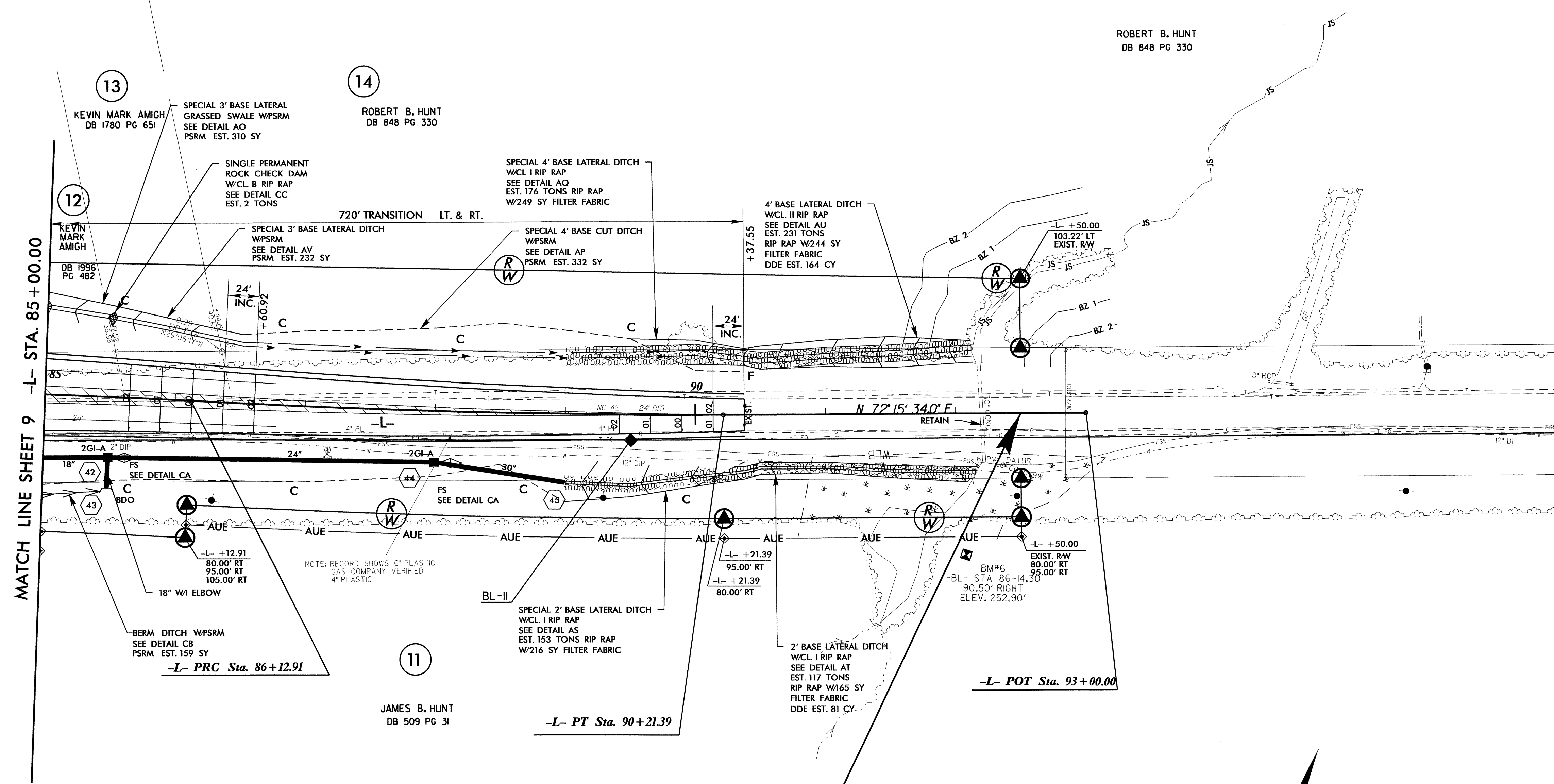
★ PROPOSED SIGNAL

7/2/09

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7/2/99

PROJECT REFERENCE NO. R-3825A	SHEET NO. 10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER KEVIN MARK AMIGH DB 1780 PG 651	HYDRAULICS ENGINEER PAUL ATYAN DB 1980 PG 330



ROBERT B. HUNT
DB 848 PG 330

13
KEVIN MARK AMIGH
DB 1780 PG 651

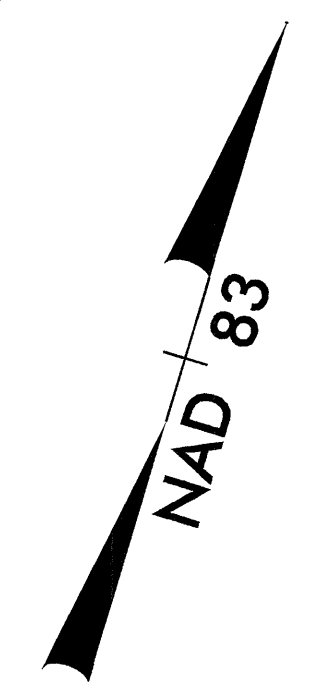
14
ROBERT B. HUNT
DB 848 PG 330

12
KEVIN MARK AMIGH
DB 1996 PG 482

11
JAMES B. HUNT
DB 509 PG 31

END TIP PROJECT R-3825A
-L- POT STA. 92+50.00

-L-
PI Sta 88+17.21
$\Delta = 3' 20' 36.3" (LT)$
$D = 0' 49' 06.6"$
$L = 408.48'$
$T = 204.30'$
$R = 7,000.00'$
SE = 02
INC = 24'
RUNOFF = 48'

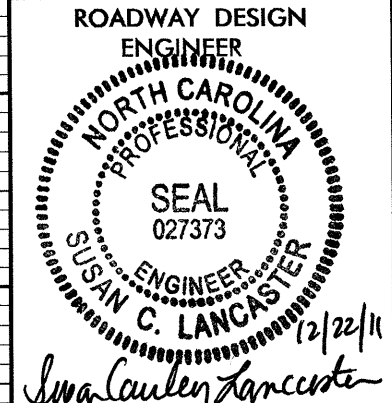
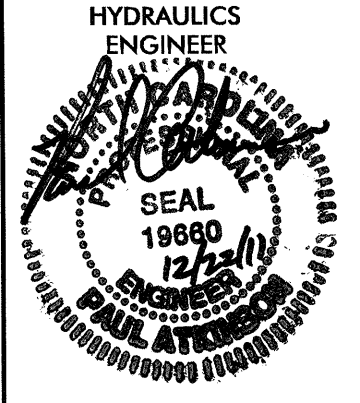


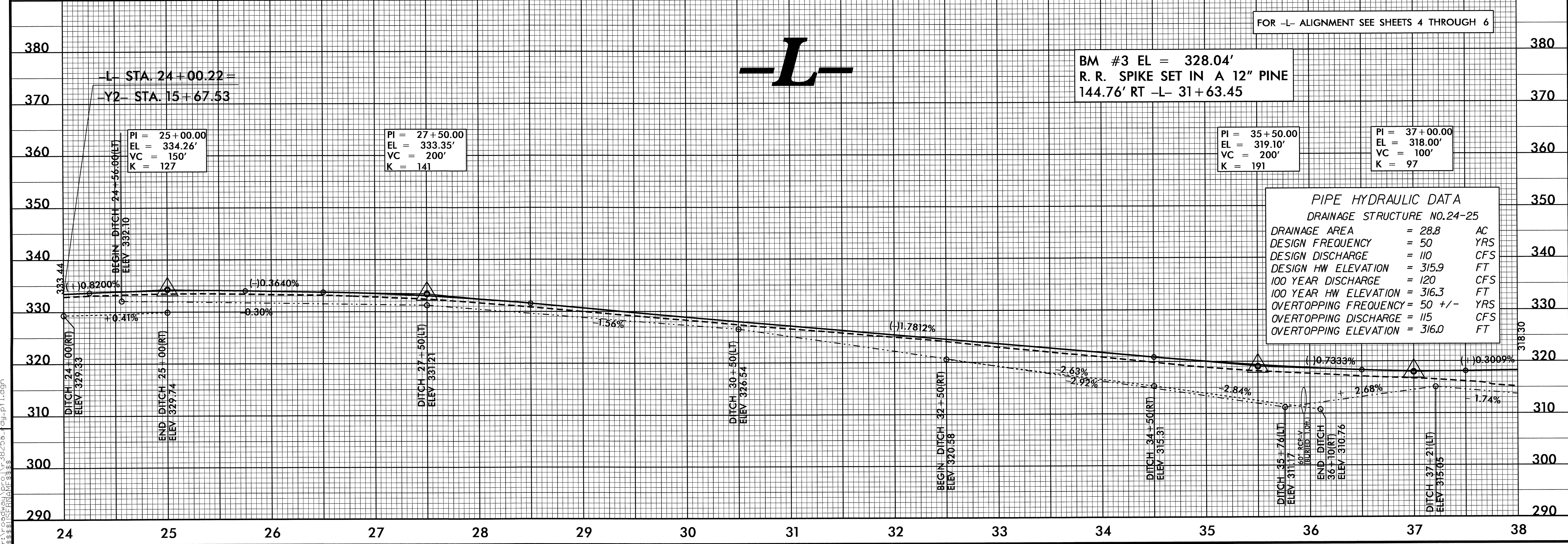
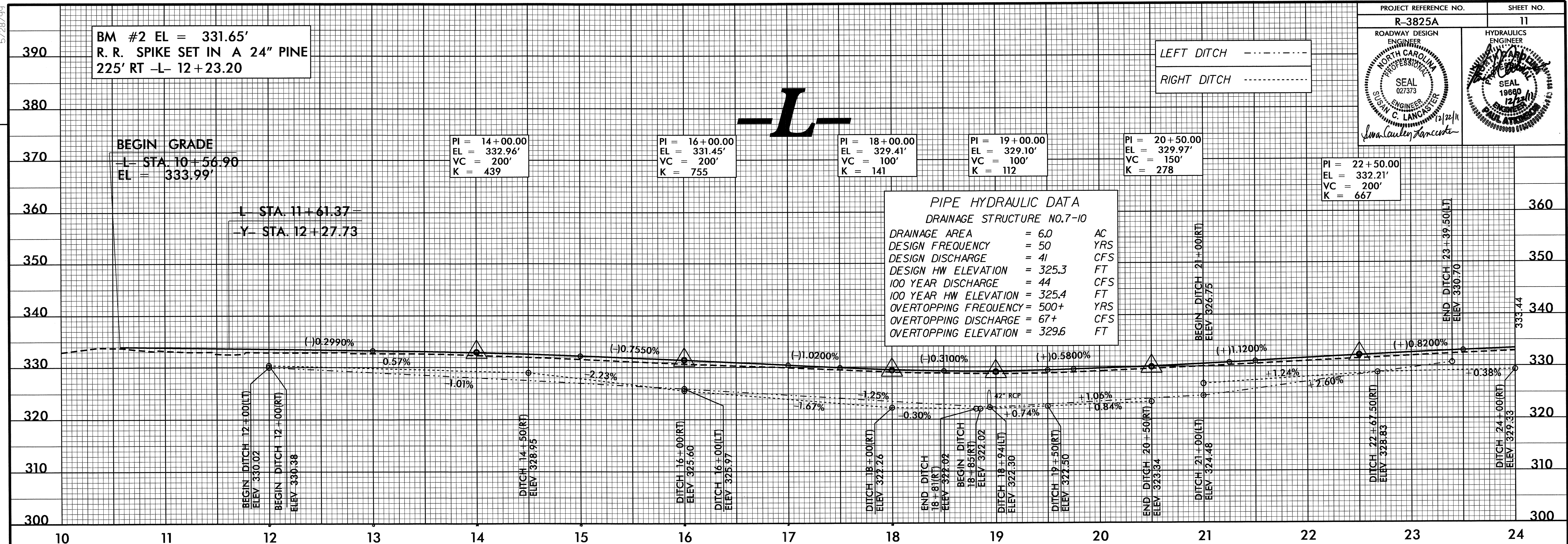
DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED
 FOR -L- PROFILE SEE SHEET 13

REVISIONS

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5/28/99

PROJECT REFERENCE NO. R-3825A	SHEET NO. 11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	



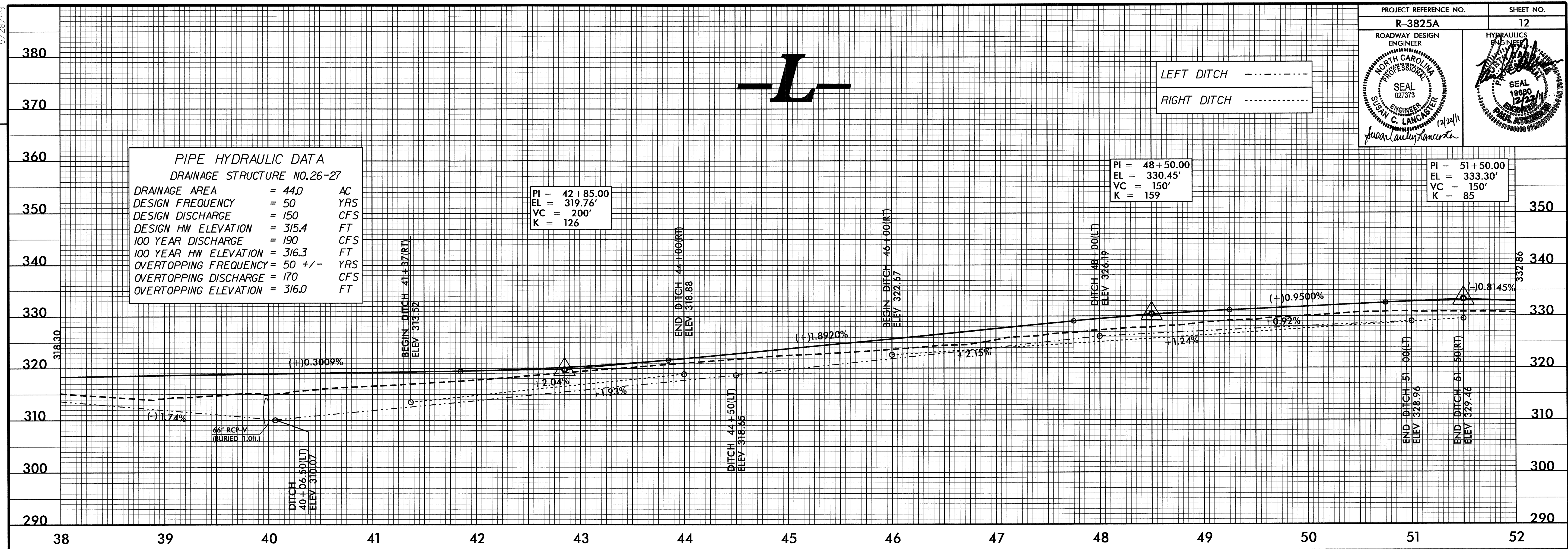
REVISIONS

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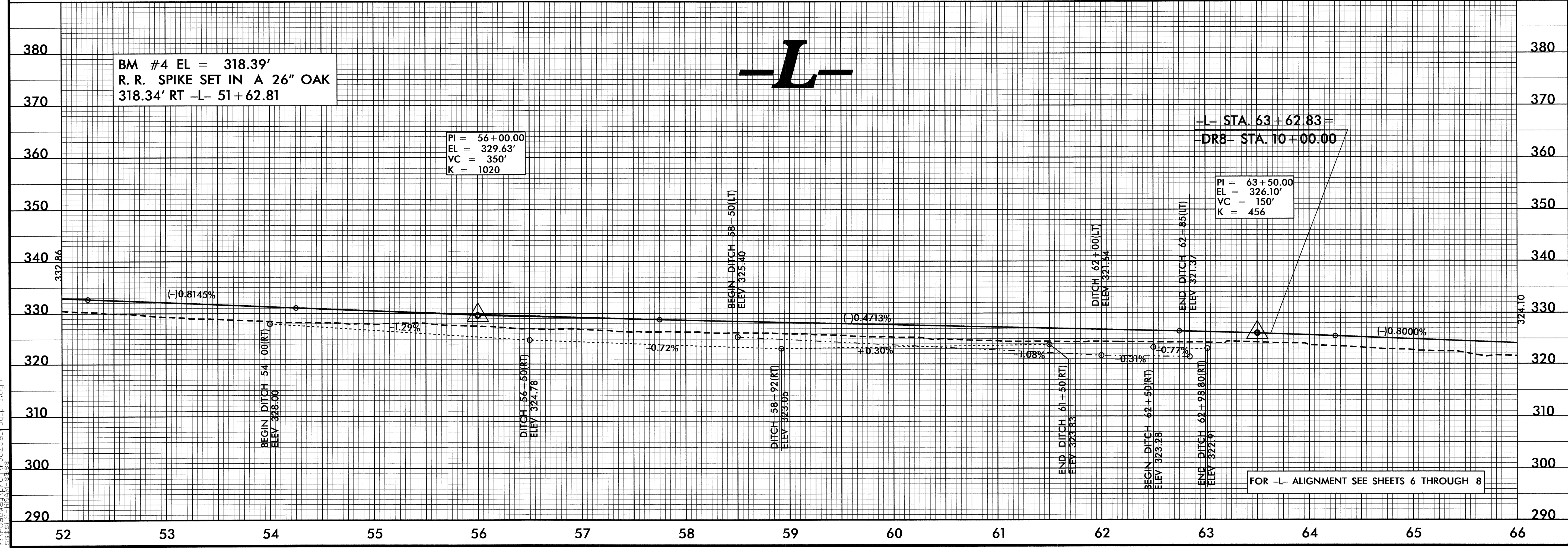
5/28/99

PROJECT REFERENCE NO. R-3825A	SHEET NO. 12
ROADWAY DESIGN ENGINEER SUSAN C. LANGSTON 12/22/11	HYDRAULICS ENGINEER PAUL A. LANGSTON 12/22/11

PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.26-27	
DRAINAGE AREA	= 44.0 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 150 CFS
DESIGN HW ELEVATION	= 315.4 FT
100 YEAR DISCHARGE	= 190 CFS
100 YEAR HW ELEVATION	= 316.3 FT
OVERTOPPING FREQUENCY	= 50 +/- YRS
OVERTOPPING DISCHARGE	= 170 CFS
OVERTOPPING ELEVATION	= 316.0 FT



BM #4 EL = 318.39'
R. R. SPIKE SET IN A 26" OAK
318.34' RT -L- 51+62.81



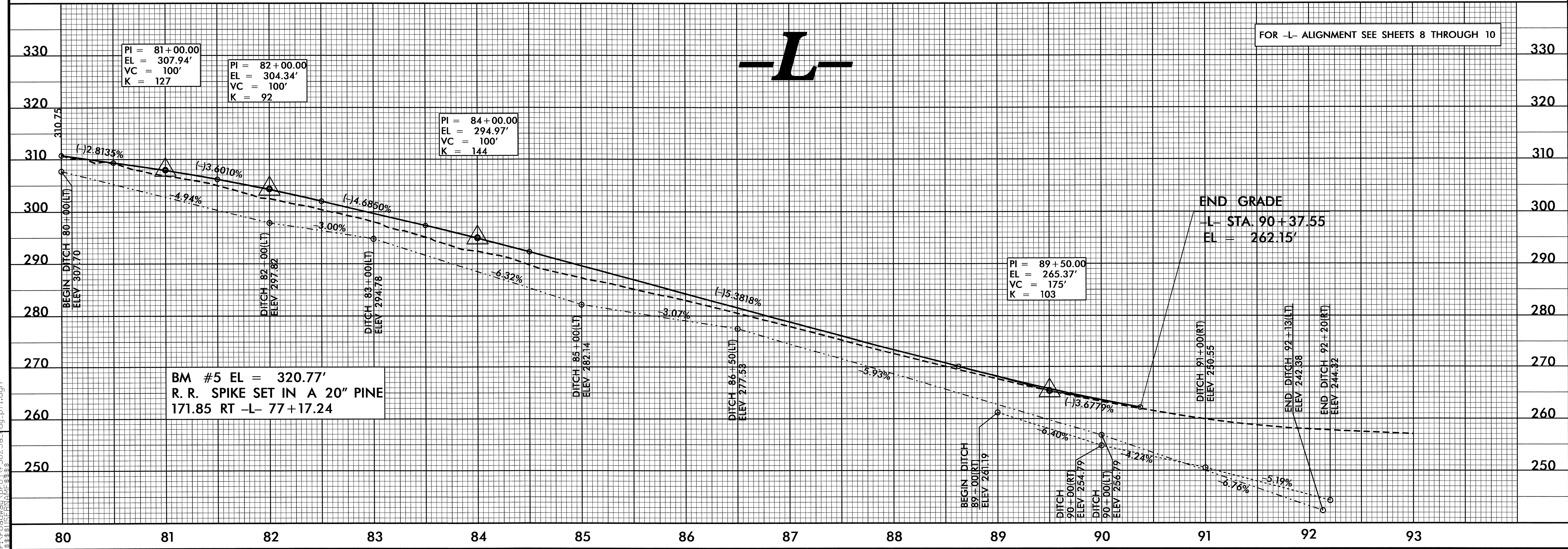
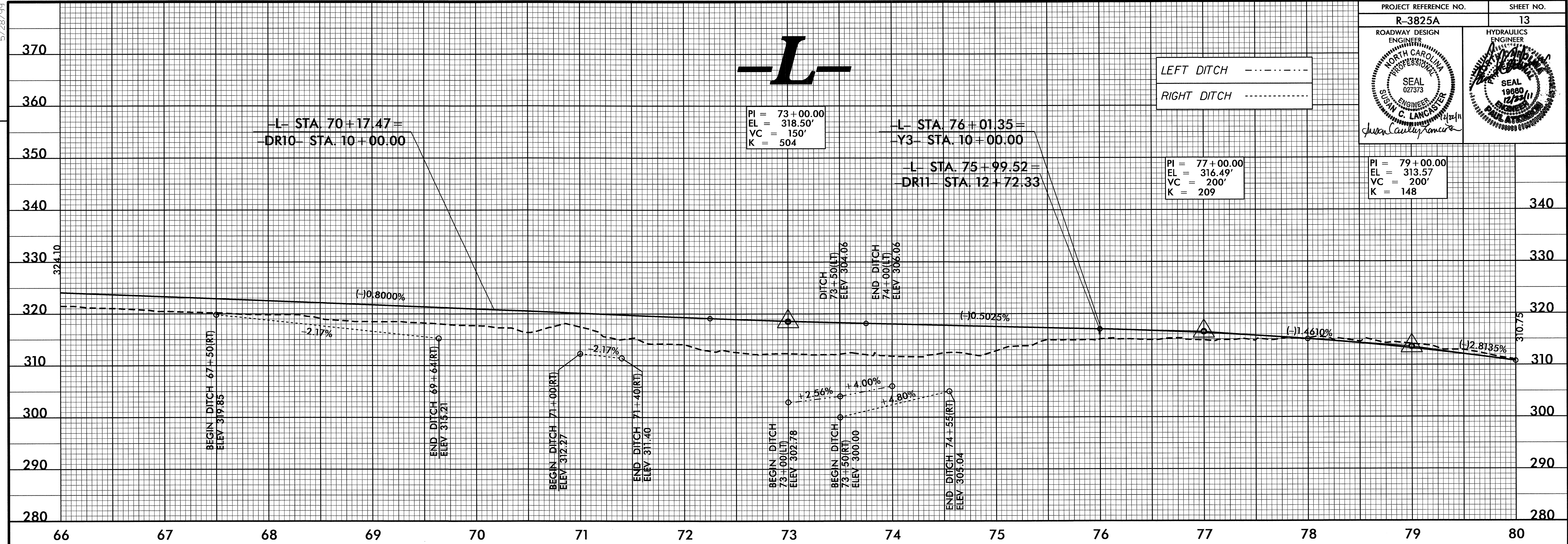
FOR -L- ALIGNMENT SEE SHEETS 6 THROUGH 8

REVISIONS

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PROJECT REFERENCE NO. R-3825A	SHEET NO. 13
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 027373 SUSAN C. LANCASTER	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 19889 12/21/91 PAUL ATWOOD

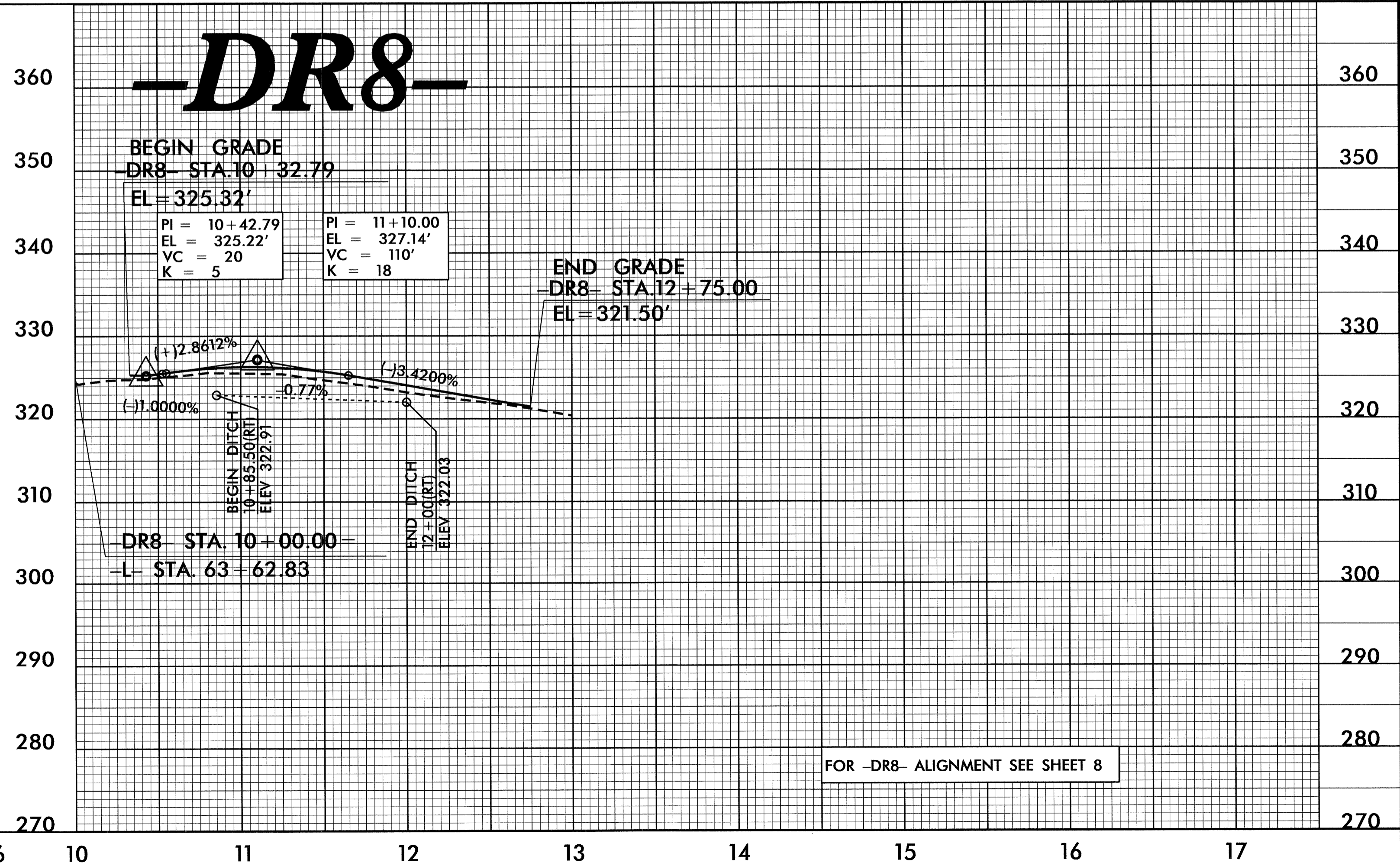
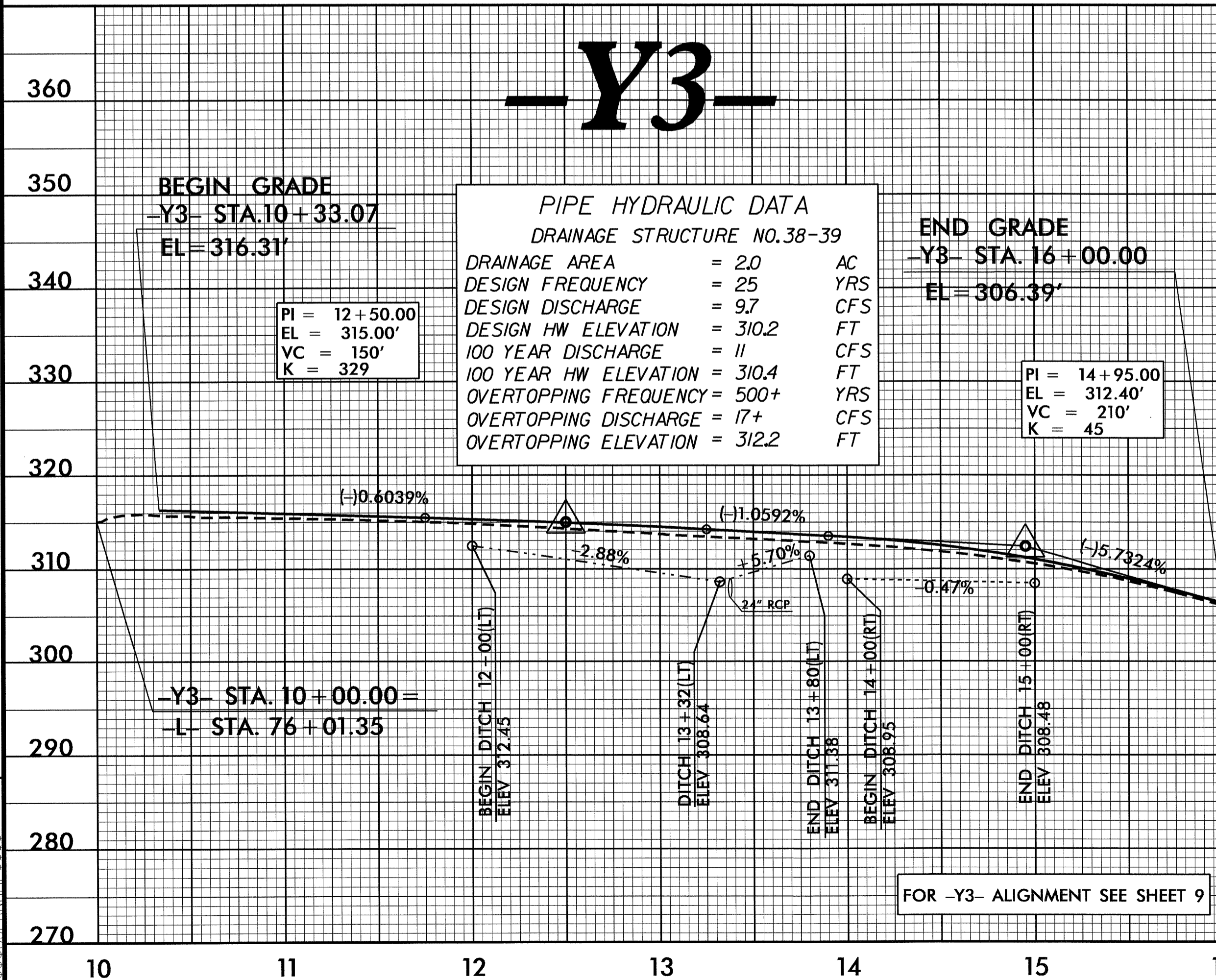
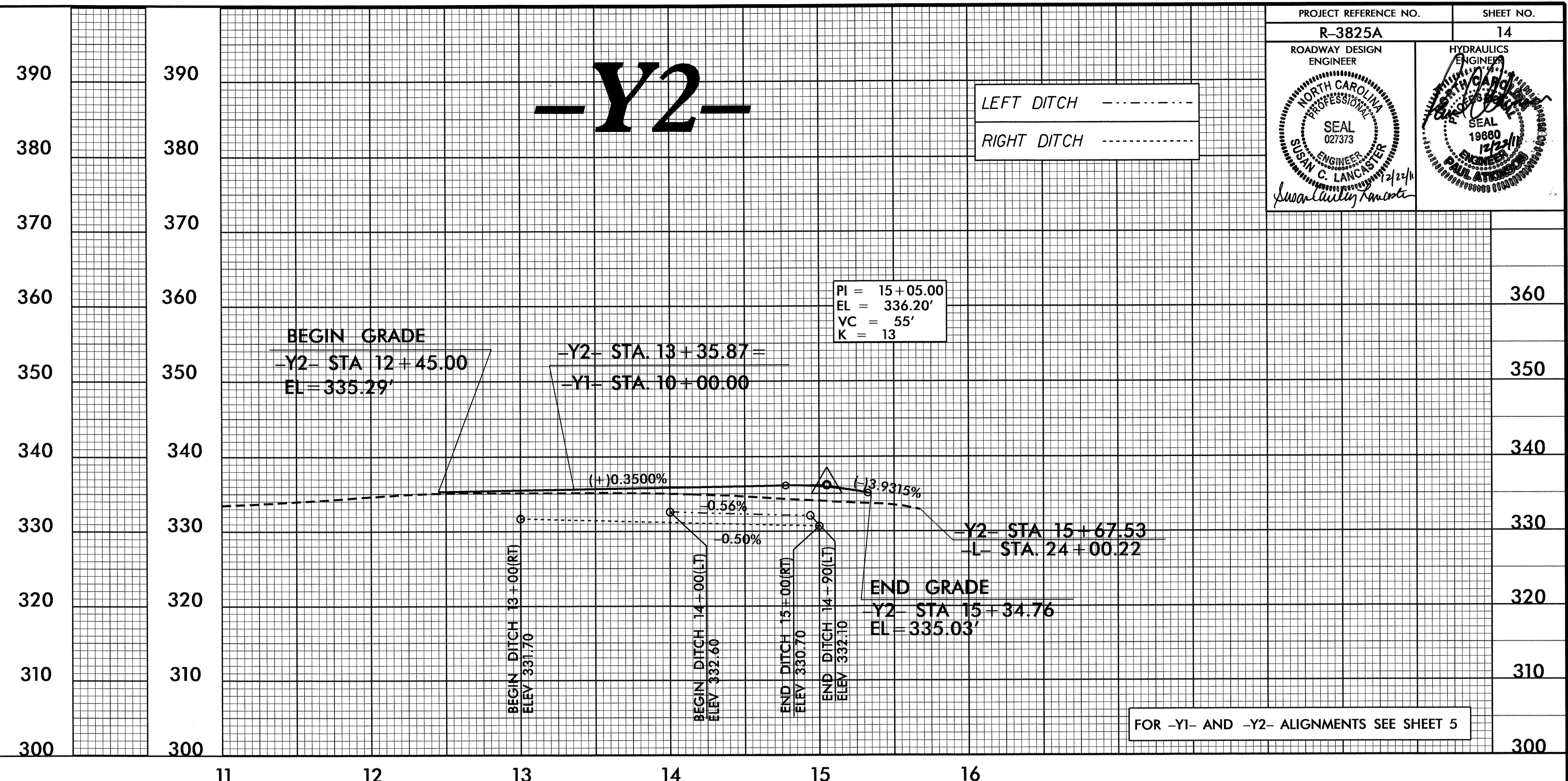
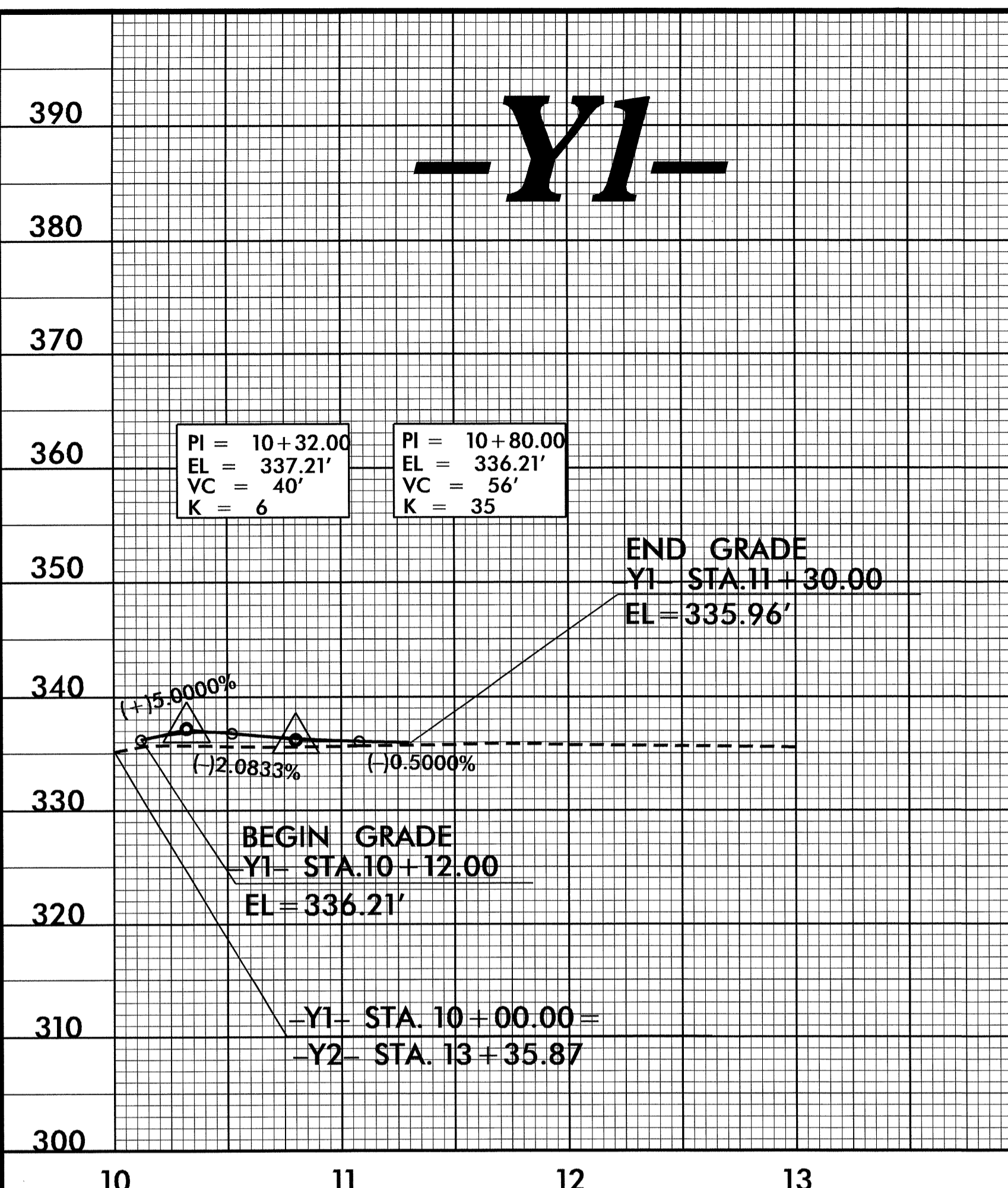


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PROJECT REFERENCE NO. R-3825A	SHEET NO. 14
ROADWAY DESIGN ENGINEER SUSAN C. LANCASTER SEAL 027373	HYDRAULICS ENGINEER PAUL A. BARNETT SEAL 19880



REVISIONS

22-DEC-2011 14:35
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