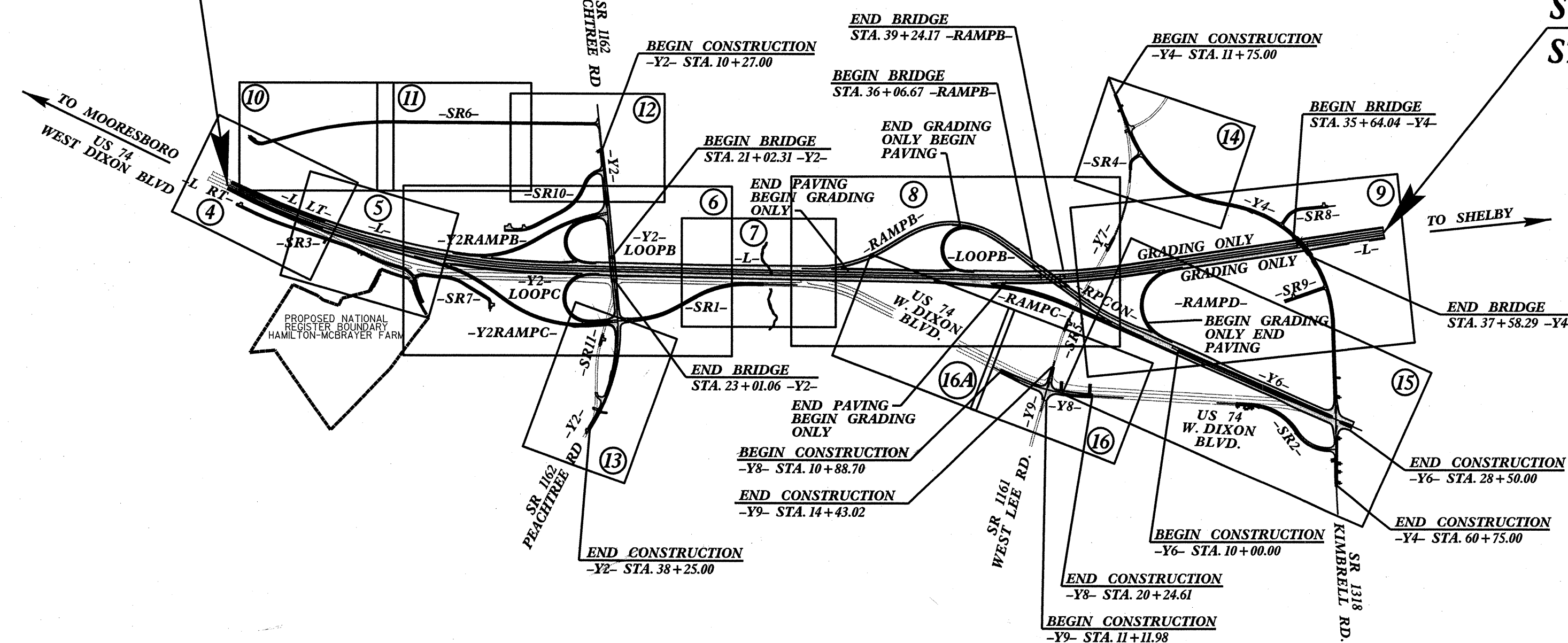


CONTRACT: C203026

VICINITY MAP

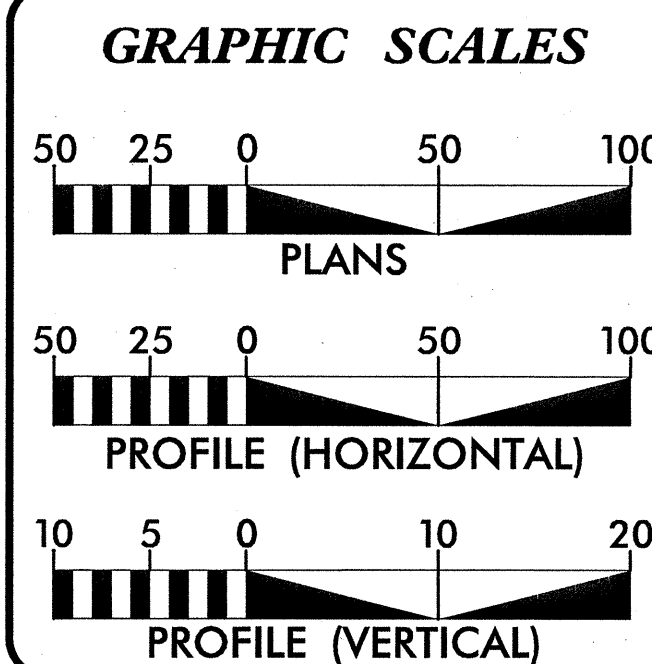
CLEVELAND COUNTY

-L- STA. 5+03.30 BEGIN TIP PROJECT R-2707AA



STA. 119+00.00 -L- END TIP PROJECT R-2707AA
STA. 119+00.00 -L- BEG. TIP PROJECT R-2707AB

**THIS IS A FULL CONTROLLED-ACCESS PROJECT
WITH ACCESS BEING LIMITED TO INTERCHANGES**

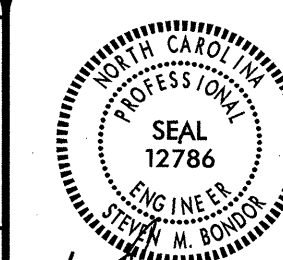


ADT 2012 = 37,655
ADT 2035 = 54,360
DHV = 12 %
D = 60 %
T = 14 % *
V = 70 MPH
* TTST 8% DUAL 6%
FUNC CLASS = FREEWAY
STATEWIDE TIER DESIGN

LENGTH OF ROADWAY TIP PROJECT R-2707AA = 2.158 miles
TOTAL LENGTH TIP PROJECT R-2707AA = 2.158 miles

<i>Prepared In The Office of:</i>  ARCADIS C & M of North Carolina, Inc. WWW.ARCADIS-US.COM 801 Corporate Center Raleigh, NC 27601-5073 Tel: 919/854-1282 Fax: 919/854-5448 NC License No. C-1869		 GREENHORNE & O'MARA CONSULTING ENGINEERS 5565 CENTERVIEW DRIVE, SUITE 107 RALEIGH, NC 27606 (919) 851-1919 FAX (919) 851-4393 LICENSE # F-148
<i>for the North Carolina Department of Transportation</i>		
2012 STANDARD SPECIFICATIONS	ARCADIS CONTACT	
RIGHT OF WAY DATE: <u>JUNE 30, 2010</u>	STEVE SMALLWOOD, P.E. PROJECT ENGINEER	
LETTING DATE: <u>MAY 21, 2013</u>	NC DOT CONTACT: BRENDA MOORE, P.E.	

HYDRAULICS ENGINEER



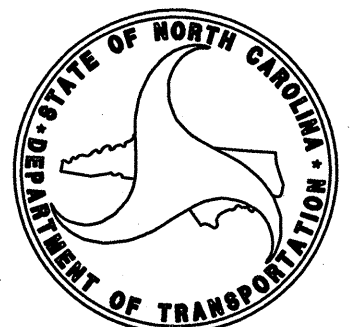
3-18-13
SIGNATURE:



**ROADWAY DESIGN
ENGINEER**

Professional Engineer Seal for Stephen T. Smallwood, No. 022037, State of Texas, Mechanical Engineering.

SEAL NOT VALID UNLESS SIGNED AND DATED _____ *P.E.*
SIGNATURE: _____



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-17-12

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-H	SURVEY CONTROL SHEETS
1-I	CENTERLINE COORDINATE LIST
2 THRU 2-G	PAVEMENT SCHEDULE, WEDGING DETAIL, AND TYPICAL SECTIONS
2-H THRU 2-I	SHEAR POINT DIAGRAM
2-J	INTERSECTION DETAILS
2-K THRU 2-M	STANDARD TEMPORARY WALL
2-N	STANDARD REINFORCED SOIL SLOPE DETAIL
2-O	DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX
2-P	DETAIL OF TRAFFIC BEARING JUNCTION BOX
2-Q	DETAIL FOR TEMPORARY STEEL COVER
3	SUMMARY OF QUANTITIES
3-A THRU 3-H	SUMMARY OF DRAINAGE QUANTITIES
3-I	SUMMARY OF GUARDRAIL
3-J	SUMMARY OF PAVEMENT REMOVAL, WOVEN WIRE, AND CABLE GUIDERAIL
3-K	EARTHWORK SUMMARY
3-L	PARCEL INDEX SHEET
3-M	SUMMARY OF BRIDGE WAITING PERIODS
4 THRU 16A	PLAN SHEETS
17 THRU 40	PROFILE SHEETS
TMP-1 THRU TMP-40	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-14	PAVEMENT MARKING PLANS
EC-1 THRU EC-33	EROSION CONTROL PLANS
RF-1	REFORESTATION PLAN
SIGN-1 THRU SIGN-13	SIGNING PLANS
SIG-1 THRU SIG-4	SIGNAL PLANS
UC-1 THRU UC-21	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-17	UTILITIES BY OTHERS PLANS
X-INDEX	CROSS SECTION INDEX
X-1A THRU X-1D	CROSS SECTION SUMMARY SHEETS
X-1 THRU X-201	CROSS SECTIONS
C-1 THRU C-7	CULVERT PLANS
S-1 THRU S-96	STRUCTURE PLANS
W-1 THRU W-4	RETAINING WALL

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
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.02	Guide for Grading Subgrade - Secondary and Local
225.03	Deceleration and Acceleration Lanes
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
225.09	Guide for Shoulder and Ditch Transition at Grade Separations
240.01	Guide for Berm Ditch Construction
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
610.03	Guide for Paving shoulders Under Bridges - Method III
654.01	Pavement Repairs
665.01	Asphalt Shoulders - Milled Rumble Strips
DIVISION 8 - INCIDENTALS	
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
838.80	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
840.04	Concrete Open Throat Catch Basin - 12" thru 48" Pipe
840.05	Brick Open Throat Catch Basin - 12" thru 48" Pipe
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
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide 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
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.33	Angled Vane Grates and Frames
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
840.41	Spring Box - Concrete or Brick
840.45	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
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.04	Street Turnout
850.10	Guide for Berm Drainage Outlet - 15" and 18" Pipe
850.11	Guide for Berm Drainage Outlet - 24" and 30" Pipe
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
854.01	Double Faced Concrete Barrier - Types I, II, III & IV
854.04	Concrete Median Barrier - Precast Permanent
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
865.01	Cable Guiderail
866.02	Woven Wire Fence - with Wood Post
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

GENERAL NOTES: 2012 SPECIFICATIONS

EFFECTIVE: 01-17-12
REVISED: 11-01-11

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. 225.04 AND 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 & 560.02.

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".

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

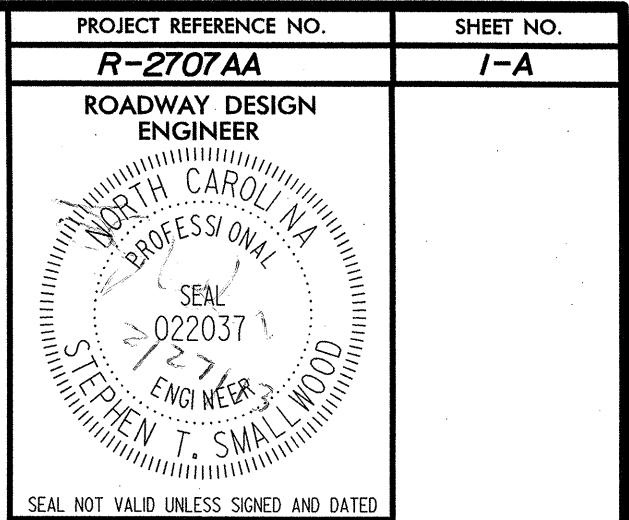
UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE AT&T, CITY OF SHELBY(GAS), CLEVELAND COUNTY SANITARY DISTRICT(WATER) UTILITIES, CITY OF LATTIMORE PUBLIC, DUKE POWER, TIME WARNER CABLE TV.

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.



12/05/11

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	○
Property Corner	-----
Property Monument	□
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	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----
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	○
Well	○
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	-----

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	-----
Buffer Zone 1	-----
Buffer Zone 2	-----
Flow Arrow	-----
Disappearing Stream	-----
Spring	○
Wetland	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite R/W Marker	-----
Existing Control of Access	-----
Proposed Control of Access Line with Concrete C/A Marker	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----
Proposed Permanent Easement with Iron Pin and Cap Marker	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	-----
Pavement Removal	-----

VEGETATION:

Single Tree	-----
Single Shrub	-----
Hedge	-----
Woods Line	-----

Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

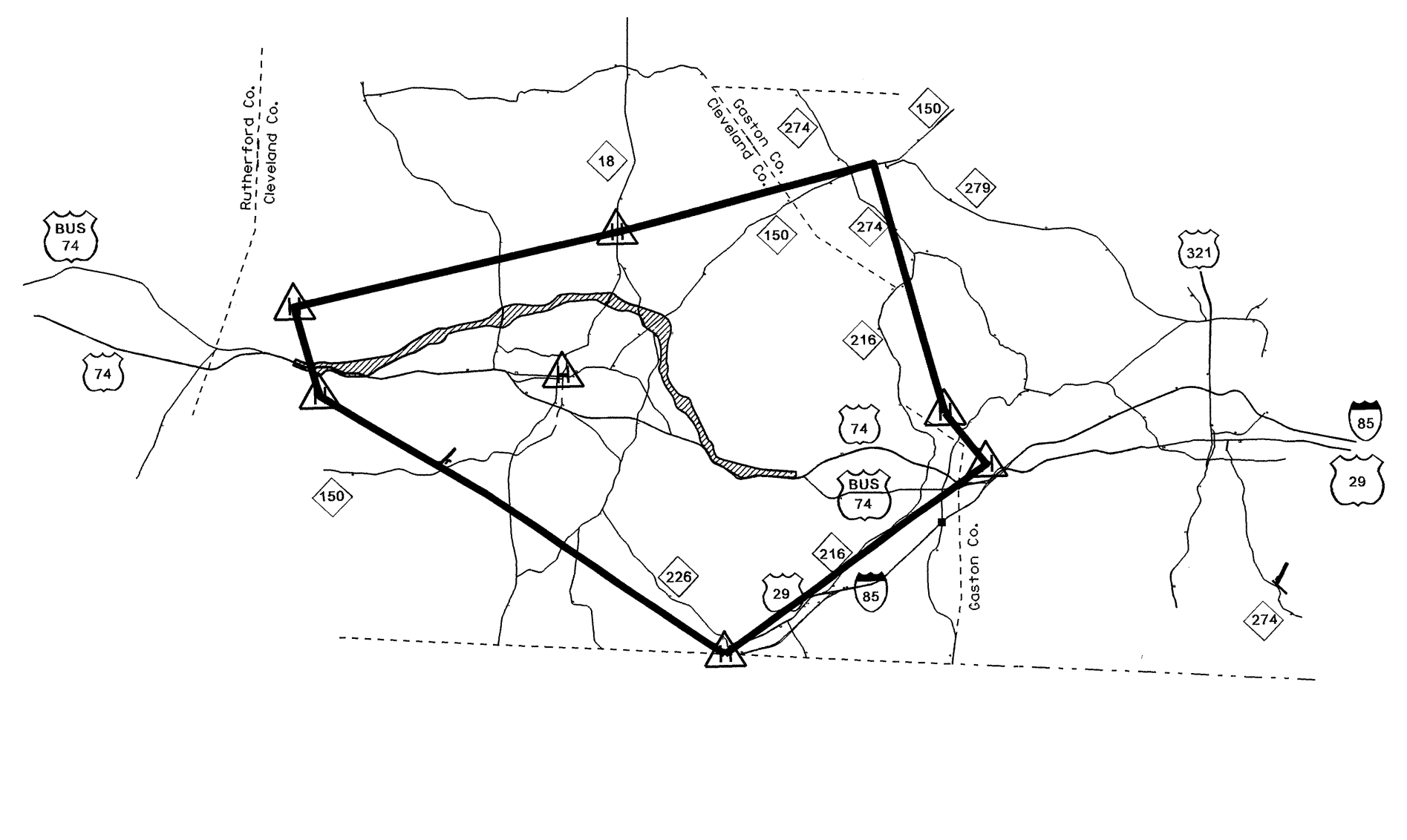
MISCELLANEOUS:

Utility Pole	-----
Utility Pole with Base	-----
Utility Located Object	-----
Utility Traffic Signal Box	-----
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	-----
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	-----
End of Information	-----

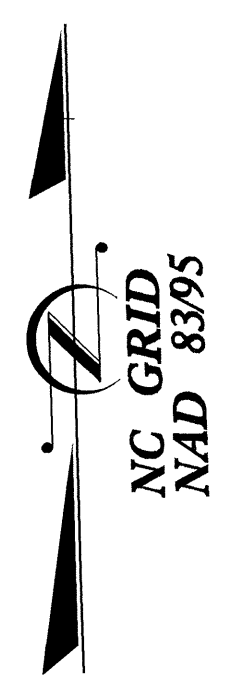
1/24/13

PROJECT REFERENCE NO.	SHEET NO.
R-2707AA	1-C
Location and Surveys	

SURVEY CONTROL SHEET



GPS NETWORK
NOT TO SCALE



NOTES

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/95 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAYBE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
2. 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:
R2707A-LS-GPSCALIB-100701.PDF
R2707A-LS-WGS84-100701.TXT
R2707A-LS-LOCAL-100701.TXT
R2707A-LS-CONTROL-100701.TXT
THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

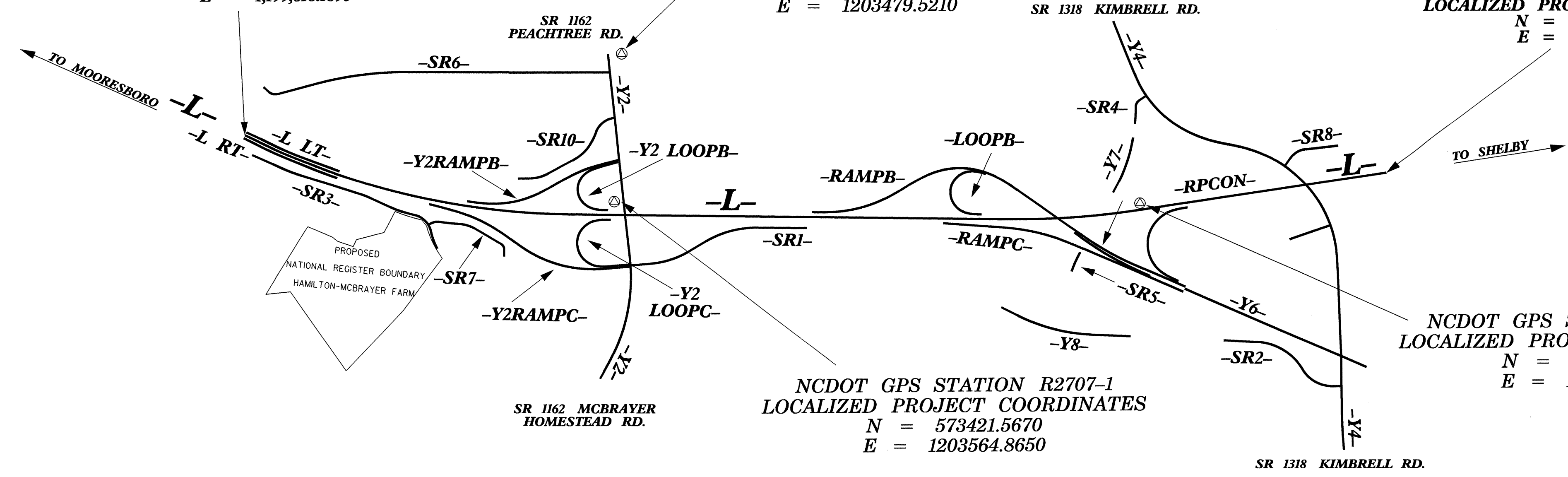
-L-STA 5+03.30 BEGIN STATE PROJECT 34497.1.2 R2707AA
LOCALIZED PROJECT COORDINATES
N = 574,383.2782
E = 1,199,818.1890

NCDOT GPS STATION R2707-2
LOCALIZED PROJECT COORDINATES
N = 574596.5150
E = 1203479.5210

-L-STA 119+00.00 END STATE PROJECT 34497.1.2 R2707AA
-L- STA 119+00.00 BEG. STATE PROJECT 34497.1.2 R2707AB
LOCALIZED PROJECT COORDINATES
N = 573,936.1353
E = 1,211,057.3639

NCDOT GPS STATION R2707-31
LOCALIZED PROJECT COORDINATES
N = 573379.9860
E = 1208167.8730

NCDOT GPS STATION R2707-1
LOCALIZED PROJECT COORDINATES
N = 573421.5670
E = 1203564.8650



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "M 77"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 573127.522(±) EASTING: 124297.658(±)
ELEVATION: 852.279' (±)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99984410
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"M 77" TO -L- L STATION 5+03.30 IS
N 75 36 14 W 3868.1352'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED UTILIZING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION.
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES

NOTE: DRAWING NOT TO SCALE

11-FEB-2013 07:42 R2707AA-1s-1a.dgn
R:\Roadway\Projects\2707\11-FEB-2013 07:42 R2707AA-1s-1a.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2707AA	1-D
LOCATION AND SURVEYS	

SURVEY CONTROL SHEET

GPS CALIBRATION REPORT
GPS CALIBRATION REPORT PROJECT : R2707AA

TIP NUMBER R2707AA
USER NAME RDWOODS DATE & TIME 9:23:27 AM 6/29/2010
COORDINATE SYSTEM SITE(AT GROUND) ZONE NORTH CAROLINA 3200
HORIZONTAL DATUM NAD 83 (CONUS)
VERTICAL DATUM NAVD 88 GEOID MODEL G99NC
COORDINATE UNITS US SURVEY FEET
DISTANCE UNITS US SURVEY FEET
HEIGHT UNITS US SURVEY FEET

LOCAL SITE INFORMATION
LOCALIZED AROUND M-77

LATITUDE 35° 17'53.47519"N
LONGITUDE 81° 32'14.87784"W
SITE SCALE FACTOR 1.0001559240
HEIGHT 747.565SFT

THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION USES A LOCALIZED COORDINATE SYSTEM WHICH IS VERY SIMILAR TO NORTH CAROLINA ZONE 3200 FROM WHICH IT IS DERIVED. PLEASE TAKE CARE IN UTILIZING THESE COORDINATES TO ELIMINATE CONFUSION OF THE TWO SYSTEMS. THIS FILE IS TO AID IN THE USE OF REAL TIME KINEMATIC (RTK) GPS DURING CONSTRUCTION LAYOUT.

DATUM TRANSFORMATION PARAMETERS
DATUM TRANSFORMATION COMPUTATION NOT REQUESTED

UPDATED DEFAULT PROJECTION (TRANSVERSE MERCATOR) DEFINITION
UPDATED DEFAULT PROJECTION NOT REQUESTED

HORIZONTAL ADJUSTMENT PARAMETERS
NORTHING COORDINATE OF ROTATION CENTER 564891.530SFT
EASTING COORDINATE OF ROTATION CENTER 1248940.722SFT
ROTATION ABOUT THE CENTER POINT 0+00'00"
TRANSLATION NORTH -1.241SFT
TRANSLATION EAST 0.938SFT
SCALE FACTOR 1.00015517

VERTICAL ADJUSTMENT PARAMETERS
NORTHING COORDINATE OF ORIGIN POINT 568742.403SFT
EASTING COORDINATE OF ORIGIN POINT 1203773.275SFT
VERTICAL SEPARATION AT ORIGIN 0.211SFT
SLOPE NORTH 5.123PPM
SLOPE EAST -1.547PPM

GEOID MODEL DEFINITION
G99NC

RESIDUAL DIFFERENCES BETWEEN GPS (WGS84) AND LOCAL COORDINATES
SUMMARY

	ERROR	ROOT MEAN SQUARE	POINT
MAXIMUM HORIZONTAL	0.005SFT	0.005	GPS15
VERTICAL	0.005SFT	0.005	MCBRAYER
THREE-DIMENL	0.007SFT	0.012	MCBRAYER

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "M 77"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 573127.522(±) EASTING: 124297.658(±)
ELEVATION: 852.279' (±)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99984410
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "M 77" TO -L- L STATION 5+03.30 IS
N 75° 36' 14" W 3868.1352'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

WGS84 Coordinates

Point MCBRAYER
Latitude 35° 16'59.95696"N
Longitude 81° 40'06.15783"W
Height 751.773sft

Point LATT-2
Latitude 35° 19'02.46223"N
Longitude 81° 39'42.94665"W
Height 820.821sft

Point GPS4
Latitude 35° 18'17.64678"N
Longitude 81° 37'04.79740"W
Height 770.106sft

Point M77
Latitude 35° 17'53.47450"N
Longitude 81° 32'14.87790"W
Height 747.535sft

Point WALLACE
Latitude 35° 21'21.03039"N
Longitude 81° 30'27.11508"W
Height 863.861sft

Point GPS15
Latitude 35° 18'48.68592"N
Longitude 81° 29'24.43979"W
Height 832.090sft

Point 2JSI3
Latitude 35° 14'52.39137"N
Longitude 81° 25'26.08075"W
Height 770.050sft

Point GPS23
Latitude 35° 14'49.16395"N
Longitude 81° 25'35.37802"W
Height 763.346sft

Point R26254
Latitude 35° 13'23.79431"N
Longitude 81° 23'00.98772"W
Height 846.141sft

Point W200
Latitude 35° 10'05.36224"N
Longitude 81° 27'02.08704"W
Height 776.498sft

Point Residuals

Calculated point

Easting 1203773.275sft
Elevation 856.819sft
Horz error 0.035sft
Vert error 0.045sft
3D error 0.057sft

Northing 581073.131sft
Easting 1206029.125sft
Elevation 925.966sft
Horz error 0.009sft
Vert error 0.004sft
3D error 0.010sft

Northing 576194.767sft
Easting 1219011.564sft
Elevation 875.093sft
Horz error 0.024sft
Vert error 0.017sft
3D error 0.029sft

Northing 573127.494sft
Easting 1242971.651sft
Elevation 852.249sft
Horz error 0.029sft
Vert error 0.030sft
3D error 0.042sft

Northing 593880.476sft
Easting 1252431.750sft
Elevation 968.736sft
Horz error 0.018sft
Vert error 0.001sft
3D error 0.018sft

Northing 578350.583sft
Easting 1257235.473sft
Elevation 936.723sft
Horz error 0.050sft
Vert error 0.024sft
3D error 0.056sft

Northing 553976.489sft
Easting 1276400.935sft
Elevation 874.121sft
Horz error 0.021sft
Vert error 0.044sft
3D error 0.049sft

Northing 553669.095sft
Easting 1275622.024sft
Elevation 867.424sft
Horz error 0.017sft
Vert error 0.007sft
3D error 0.018sft

Northing 544729.486sft
Easting 1288217.128sft
Elevation 949.783sft
Horz error 0.031sft
Vert error 0.017sft
3D error 0.036sft

Northing 525158.972sft
Easting 1267723.676sft
Elevation 880.183sft
Horz error 0.036sft
Vert error 0.039sft
3D error 0.053sft

Local

Point McBrayer Local
Northing 568742.428sft
Easting 1203773.299sft
Elevation 856.774sft
Utilized Horz and Vert
Quality Survey quality

Point LATT-2 Local
Northing 581073.122sft
Easting 1206029.126sft
Elevation 925.970sft
Utilized Horz and Vert
Quality Survey quality

Point R2707-4 Local
Northing 576194.769sft
Easting 1219011.540sft
Elevation 875.110sft
Utilized Horz and Vert
Quality Survey quality

Point M77 Local
Northing 573127.522sft
Easting 1242971.658sft
Elevation 852.279sft
Utilized Horz and Vert
Quality Survey quality

Point WALLACE Local
Northing 593880.490sft
Easting 1252431.739sft
Elevation 968.735sft
Utilized Horz and Vert
Quality Survey quality

Point R2707-15 Local
Northing 578350.547sft
Easting 1257235.438sft
Elevation 936.747sft
Utilized Horz and Vert
Quality Survey quality

Point 2-JS-13 Local
Northing 553976.474sft
Easting 1276400.950sft
Elevation 874.077sft
Utilized Horz and Vert
Quality Survey quality

Point R2707-23 Local
Northing 553669.094sft
Easting 1275622.041sft
Elevation 867.417sft
Utilized Horz and Vert
Quality Survey quality

Point R2625-4 Local
Northing 544729.474sft
Easting 1288217.099sft
Elevation 949.766sft
Utilized Horz and Vert
Quality Survey quality

Point W200 Local
Northing 525158.975sft
Easting 1267723.712sft
Elevation 880.222sft
Utilized Horz and Vert
Quality Survey quality

NOTES

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THE FILES TO BE FOUND ARE AS FOLLOWS:

R2707A_LLS_OPSCALIB-100701.PDF
R2707A_LLS_WGS84-100701.TXT
R2707A_LLS_LOCAL-100701.TXT
R2707A_LLS_CONTROL-100701.TXT

THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
R-2707AA	I-E
Location and Surveys	

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "M 77"

WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 573127.522(ft) EASTING: 124297.658(ft)
ELEVATION: 852.279'(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99984410

THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"M 77" TO -L- L STATION 5+03.30 IS
N 75 36 14 W 3868.1352'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
51		BL-51	574330.0960	1199951.0580	777.82	6+46.09	9.65 LT
52		BL-52	573787.7590	1201029.3960	840.29	18+41.60	102.14 RT
53		BL-53	573539.9250	1201703.5230	863.31	25+41.98	181.21 RT
54		BL-54	573528.5710	1202429.1060	867.46	32+48.73	87.92 RT
OPS1	R2707-1	= BL-1	573421.5670	1203564.8650	857.78	43+80.14	152.12 RT
55		BL-55	573484.3420	1204642.2090	815.49	54+56.10	68.91 RT
56		BL-56	573481.7304	1206193.1674	869.44	70+06.83	42.09 RT
57		BL-57	573448.2746	1207572.8073	904.02	83+85.43	52.32 RT
58		BL-58	573345.4930	1207880.5420	910.16	86+85.84	163.89 RT
OPS31	R2707-31	= BL-3	573379.9860	1208167.8730	903.36	89+69.03	148.70 RT
59		BL-59	573674.8680	1209275.1970	900.41	100+98.79	2.65 RT
60		BL-60	573747.8850	1210159.0270	896.86	109+83.94	57.30 RT
61		BL-61	574007.8410	1211439.9910	884.96	122+88.96	16.02 LT
62		BL-62	574196.6720	1211949.1260	856.00	128+19.93	129.78 LT
63		BL-63	574117.4520	1212359.8770	863.93	132+15.05	7.60 RT
64		BL-64	574165.7160	1212705.1130	865.49	135+63.64	9.41 RT
65		BL-65	574311.9220	1213654.1150	839.65	145+23.34	12.28 RT
66		BL-66	574536.0740	1214854.5830	769.85	157+29.50	126.46 RT
67		BL-67	574774.0100	1215824.1240	829.63	166+85.29	305.06 RT
68		BL-68	575199.5170	1216535.5970	814.52	174+90.11	299.85 RT
69		BL-69	575543.4290	1217484.3040	833.90	184+75.79	516.09 RT
70		BL-70	575899.9230	1218150.9200	848.57	192+77.03	545.30 RT
OPS4	R2707-4	= BL-4	576194.7690	1219011.5400	875.11	202+59.67	621.30 RT
71		BL-71	576719.3775	1219753.9080	846.57	211+55.67	346.13 RT
72		BL-72	576680.3044	1220309.0066	838.40	216+75.12	545.72 RT
73		BL-73	576872.7786	1220584.3134	812.27	219+94.66	442.10 RT

BY	POINT	DESC.	NORTH	EAST	ELEVATION	SR3 STATION	OFFSET
184	BY184	= BL-53	573539.9250	1201703.5230	863.31	20+61.05	102.57 LT
185	BY-185		573149.7890	1201741.2030	849.14	OUTSIDE PROJECT LIMITS	

BY1	POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
187	BY1-187		573881.1120	1203503.7520	866.48	18+92.39	21.02 RT
186	BY1-186	= R2707-1	573421.5670	1203564.8650	857.78	23+55.68	4.46 RT

BY2	POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
188	BY2-188	= R2707-1	573421.5670	1203564.8650	857.78	23+55.68	4.46 RT
189	BY2-189		572653.5030	1203419.2600	835.16	31+59.00	153.82 RT
190	BY2-190		572001.6760	1203339.5730	829.78	38+21.31	22.69 LT

BY3	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
191	BY3-191		574306.3750	1208596.4200	902.60	95+17.72	719.78 LT
192	BY3-192	= R2707-31	573379.9860	1208167.8730	903.36	89+69.03	148.70 RT
193	BY3-193		572864.1070	1207894.4440	896.50	86+77.18	645.39 RT

BY4	POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
194	BY4-194	= BL-60	573747.8850	1210159.0270	896.86	36+32.25	126.41 RT
195	BY4-195		572968.0350	1210559.6090	887.32	45+74.91	8.36 RT
196	BY4-196		572250.1070	1210605.8100	872.91	52+93.92	15.51 LT
197	BY4-197		571473.0730	1210583.4530	870.98	60+70.07	14.94 RT

BY5	POINT	DESC.	NORTH	EAST	ELEVATION	Y5 STATION	OFFSET
198	BY5-198		577349.0600	1218681.4870	889.61	11+13.94	20.52 RT
199	BY5-199		576630.4710	1218866.3930	873.82	18+55.90	13.26 RT
220	BY5-220	= R2707-4	576194.7690	1219011.5400	875.11	23+13.69	23.22 LT

BM1 ELEVATION = 780.10
N 574452 E 1199980
L STATION 6+19.00 132 LEFT
RR SPIKE IN 18 INCH OAK

BM2 ELEVATION = 866.06
N 573685 E 1201854
L STATION 26+61.00 11 RIGHT
RR SPIKE IN 30 INCH OAK

BM3 ELEVATION = 832.22
N 572054 E 1203304
L STATION 41+46.00 1524 RIGHT
RR SPIKE IN 18 INCH MAPLE

BM4 ELEVATION = 908.06
N 573223 E 1207632
L STATION 84+41.00 278 RIGHT
RR SPIKE IN 28 INCH OAK

BM5 ELEVATION = 908.12
N 574478 E 1208631
L STATION 95+76.00 885 LEFT
RR SPIKE IN 28 INCH OAK

NOTES:

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THE FILES TO BE FOUND ARE AS FOLLOWS:
R2707A_LS_GPSCALIB_100701.PDF
R2707A_LS_WGS84_100701.TXT
R2707A_LS_LOCAL_100701.TXT
R2707A_LS_CONTROL_100701.TXT

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SURVEY CONTROL SHEET
DESIGN ALIGNMENTS

FINAL

PROJECT REFERENCE NO.	SHEET NO.
R-2707AA	1-F
Location and Surveys	

L			
TYPE	STATION	NORTH	EAST
POT	5+03.30	574383.2782	1199818.1890
PC	7+08.20	574294.4894	1200002.8534
PT	37+98.46	573584.6946	1202986.1720
PC	81+73.98	573501.6647	1207360.9053
PT	94+13.31	573579.0588	1208596.4465
TS	148+35.20	574357.6165	1213962.1485
SC	151+35.20	574405.1838	1214258.3255
CS	164+69.59	574911.1673	1215483.2444
ST	167+69.59	575086.4879	1215726.6497
TS	176+68.62	575622.9243	1216448.1023
SC	179+68.62	575800.0677	1216690.2096
CS	198+96.74	576666.6065	1218404.7363
ST	201+96.74	576756.4817	1218690.9498
POT	290+24.47	579336.3265	1227133.2915

LLT			
TYPE	STATION	NORTH	EAST
POT	5+07.02	574412.1178	1199832.0554
PC	6+64.05	574344.0725	1199973.5771
PT	15+00.00	574024.2877	1200745.4793

LRT			
TYPE	STATION	NORTH	EAST
POT	4+99.54	574354.4387	1199804.3226
PC	7+64.78	574239.5038	1200043.3659
PT	15+00.00	573958.2531	1200722.2536

Y2			
TYPE	STATION	NORTH	EAST
POT	6+00.00	575169.5135	1203400.1613
TS	25+50.75	573227.8328	1203588.0977
SC	27+50.75	573028.4543	1203603.4568
CS	35+99.52	572207.2740	1203426.7352
ST	37+99.52	572031.8637	1203330.7200
POT	38+74.02	571967.2347	1203293.6788

Y2LOOPB			
TYPE	STATION	NORTH	EAST
TS	10+00.00	573624.1199	1203385.7192
SC	12+00.00	573660.5583	1203191.3181
CS	15+73.81	573980.0739	1203153.6673
ST	17+73.81	574060.7020	1203334.2736
POT	19+48.36	574104.4907	1203503.2455

Y2LOOPC			
TYPE	STATION	NORTH	EAST
TS	10+00.00	573529.5900	1203412.7485
SC	12+00.00	573504.7228	1203215.9890
CS	17+44.81	573078.8278	1203229.5008
ST	19+44.81	573065.5542	1203426.3809
POT	21+19.81	573079.1407	1203600.8527

Y2RAMPB			
TYPE	STATION	NORTH	EAST
CS	10+00.00	573719.3663	1201998.1380
SC	12+50.00	573693.2934	1202246.5541
CS	16+56.95	573768.8534	1202643.5778
SRS	19+06.95	573883.0823	1202865.7601
SC	21+06.95	573977.6682	1203041.9287
CS	22+75.11	574040.7941	1203197.6843
ST	24+75.11	574095.5486	1203389.9960
POT	25+90.11	574124.3976	1203501.3187

Y2RAMP C			
TYPE	STATION	NORTH	EAST
POT	10+00.00	573693.1190	1201623.8162
TS	11+45.00	573654.7531	1201763.6485
SC	13+95.00	573581.4865	1202002.5789
CS	16+56.32	573467.8933	1202237.4973
SRS	19+06.32	573326.1131	1202443.2984
SC	21+06.32	573212.3573	1202607.7214
CS	27+59.19	573035.6085	1203227.8741
ST	29+59.19	573045.5892	1203427.5631
POT	31+34.19	573059.1758	1203602.0349

Y4			
TYPE	STATION	NORTH	EAST
POT	9+99.19	575445.6750	1208379.8506
TS	14+66.68	575011.1239	1208552.2208
SC	16+66.68	574827.6023	1208631.5332
CS	25+65.27	574268.8226	1209303.3382
SRS	27+65.27	574224.2669	1209498.2366
SC	29+65.27	574180.2008	1209693.2584
CS	43+79.60	573163.1992	1210556.3468
ST	45+79.60	572963.0072	1210568.1079
POT	54+19.60	572124.0129	1210594.2120
PC	58+95.46	571648.1463	1210595.2283
PT	62+03.69	571340.1018	1210604.5521
POT	63+43.44	571200.5855	1210612.7065

Y6			
TYPE	STATION	NORTH	EAST
POT	10+00.00	572798.0607	1209059.7298
POT	29+50.00	572013.8165	1210845.0761

Y7			
TYPE	STATION	NORTH	EAST
POT	10+00.00	573758.2002	1208362.2505
PC	11+26.78	573870.1963	1208421.6660
PCC	11+76.18	573914.3885	1208443.7297
PT	15+21.36	574240.7822	1208553.7752
POT	15+78.19	574296.3400	1208565.7338

Y8			
TYPE	STATION	NORTH	EAST
POT	10+00.00	572635.5438	1207249.6050
PC	11+84.75	572551.4964	1207414.1293
PT	19+38.02	572357.9131	1208136.3596
POT	23+25.80	572337.9628	1208523.6318

Y9			
TYPE	STATION	NORTH	EAST
POT	10+00.00	572204.1469	1207720.4375
POT	15+05.42	572691.0557	1207855.9830

RAMPB			
TYPE	STATION	NORTH	EAST
TS	11+22.45	573585.9611	1205396.2538
SC	13+72.45	573589.2276	1205646.1297
CS	18+55.39	573714.0248	1206109.7955
SRS	21+05.39	573836.6234	1206327.5528
SC	23+55.39	573954.7577	1206547.5728
CS	30+43.39	573927.1315	1207213.9978
ST	32+93.39	573791.1923	1207423.4853
TS	39+93.39	573380.1024	1207990.0584
SC	41+93.39	573264.6625	1208153.3641
CS	45+70.63	573077.1168	1208480.3217
ST	47+70.63	572994.4321	1208662.4161
POT	52+13.37	572816.3719	1209067.7734

RAMPC			
TYPE	STATION	NORTH	EAST
POT	10+00.00	573467.4626	1206686.1586
TS	14+66.22	573430.1753	1207150.8836
SC	17+16.22	573405.2446	1207399.5978
CS	21+67.26	573295.1882	1207836.1123
ST	24+17.26	573199.2200	1208066.9161
POT	34+87.58	572768.7627	1209046.8602

RAMPD			
TYPE	STATION	NORTH	EAST
TS	10+00.00	573604.0436	1209095.9469
SC	12+00.00	573556.8175	1208902.3485
CS	19+04.26	572970.8681	1208822.8211
ST	21+04.26	572873.7491	1208996.8284

RAMPCON			
TYPE	STATION	NORTH	EAST
POT	10+00.00	573360.6770	1207975.9639
TS	10+70.83	573319.0827	1208033.2901
SC	12+20.83	573232.0091	1208155.4251
CS	17+12.20	572987.7934	1208581.1782
ST	18+62.20	572926.3263	1208718.0012

LOOPB			
TYPE	STATION	NORTH	EAST
TS	10+00.00	573554.2843	1207065.2656
SC	12+00.00	573589.2242	1206870.3813
CS	16+99.78	573976.5872	1206914.8624
SC	18+99.78	573958.1805	1207110.9168

DW1			
TYPE	STATION	NORTH	EAST
POT	10+00.00	572172.9612	1203496.2518
POT	10+81.61	572185.2195	1203415.5716

SR1			
TYPE	STATION	NORTH	EAST
POT	10+00.00	573069.1596	1203601.4672
PC	11+90.00	573083.9107	1203790.8937
PT	15+92.27	573202.2578	1204171.8615
PC	17+92.27	573302.4448	1204344.9585
PT	23+35.74	573436.7833	1204864.6837
POT	28+15.84	573427.7620	1205344.7035

SR2			
TYPE	STATION	NORTH	EAST
POT	10+00.00	572287.5460	1209438.7280
PC	13+31.85	572269.1611	1209770.0727
PRC	18+71.36	572000.1590	1210212.9039
PT	22+34.83	571828.4392	1210514.8431
POT	23+14.83	571828.6100	1210594.8429

SR3			
TYPE	STATION	NORTH	EAST
POT	1+79.43	574196.7164	1199885.4314
PC	4+05.45	574099.3104	1200089.3902
PT	7+28.25	573979.3639	1200388.8380
PC	13+12.86	573797.4505	1200944.4177
PT	14+26.07	573755.5552	1201049.5158
PC	16+35.18	573666.0691	1201238.5049
PT	17+86.84	573612.9937	1201380.3868
PC	19+06.84	573580.5573	1201495.9199
PRC	21+27.85	573426.1727	1201638.1831
PT	23+16.09	573249.5115	1201701.1002

SR4			
TYPE	STATION	NORTH	EAST
PC	8+75.00	574433.2579	1208585.3858
PRC	10+43.94	574601.9153	1208593.6896
PT	11+17.80	574664.5292	1208626.9785
POT	12+04.21	574712.5841	1208698.7909

SR5			
TYPE	STATION	NORTH	EAST
PC	10+00.00	572978.0479	1207947.9725
PT	12+04.62	573164.6520	1208031.4790

SR6			
TYPE	STATION	NORTH	EAST
POT	10+00.00	574862.9126	1200005.0805
PC	10+70.99	574814.5175	1200057.0157
PT	11+71.52	574790.9170	1200150.4349
PC	15+53.33	574887.3075	1200519.8732
PT	24+74.15	575000.5729	1201431.0228
POT	44+61.21	574984.9365	1203418.0266

SR7			
TYPE	STATION	NORTH	EAST
POT	10+00.00	573487.4774	1201615.3664
PC	10+18.61	573496.7175	1201631.5202
PRC	11+19.95	573514.6914	1201729.3059
PRC	13+09.47	573494.0731	1201917.6303
PT	14+79.45	573443.5439	1202078.1825
PC	17+79.17	573287.4630	1202334.0539
PT	18+30.53	573244.5704	1202358.0156
POT	19+08.50	573166.5966	1202357.6922

SR8			
TYPE	STATION	NORTH	EAST
POT	10+00.00	574006.2936	1210056.5931
PC	10+99.99	574087.9598	1210114.2873
PT	12+72.06	574171.6504	1210258.5861
POT	15+26.77	574195.9112	1210512.1349

SR9			
TYPE	STATION	NORTH	EAST
POT	10+00.00	573415.8983	1210499.1534
POT	14+26.08	573277.5297	1210096.1664

SR10			
TYPE	STATION	NORTH	EAST
POT	10+00.00	573948.1436	1202500.7004
PC	11+10.62	573947.3382	1202611.3189
PT	13+08.25	573993.7903	1

SURVEY CONTROL SHEET
RIGHT OF WAY

- FINAL -

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
L	5+07.70	-130.00	574498.5303	1199878.4912
L	5+07.70	-100.00	574471.4932	1199865.4914
L	6+50.21	100.00	574229.4925	1199907.2616
L	7+08.20	-130.00	574411.6502	1200059.1857
L	10+60.00	105.00	574053.1095	1200282.6868
L	15+00.00	87.00	573909.1989	1200705.0002
L	19+45.00	85.00	573774.9099	1201134.7557
L	24+17.06	-130.00	573869.9565	1201643.1967
L	27+32.24	-137.00	573818.7330	1201948.3174
L	45+50.00	-150.00	573720.4063	1203740.4280
L	56+00.00	79.00	573471.5227	1204785.8934
L	62+08.08	-150.00	573688.9426	1205398.2083
L	62+90.00	79.00	573458.4293	1205475.7692
L	69+16.05	170.00	573355.5658	1206099.9755
L	75+00.00	170.00	573344.4847	1206683.8245
L	91+07.13	-130.00	573670.5078	1208279.1663
L	91+81.95	-130.00	573678.4876	1208352.2690
L	94+13.31	-130.00	573707.7116	1208577.7792
L	108+00.00	-130.00	573906.8333	1209950.0964
L	110+61.00	135.00	573682.0580	1210246.4442
L	112+00.00	-145.00	573979.1160	1210343.7971
L	112+75.00	125.00	573722.6837	1210456.7905
L	116+00.00	145.00	573749.5595	1210781.2943
L	116+00.00	125.00	573769.3522	1210778.4224
L	117+72.00	145.00	573774.2578	1210951.5118
L	117+72.00	125.00	573794.0506	1210948.6399

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
RAMPB	13+72.45	-140.00	573728.8109	1205635.3357
RAMPB	18+55.39	-140.00	573840.1684	1206049.0682
RAMPB	21+05.39	-130.00	573947.8020	1206260.1784
RAMPB	23+10.00	-105.00	574031.4415	1206461.3058
RAMPB	28+40.00	-105.00	574098.1355	1207045.6825
RAMPB	30+43.39	-105.00	574020.6779	1207261.6850
RAMPB	32+93.39	-100.00	573872.1338	1207482.2089
RAMPB	36+25.00	-105.00	573681.4357	1207753.5472

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
RAMPC	14+66.22	100.00	573330.4955	1207142.8873
RAMPC	17+16.22	95.00	573311.1687	1207386.3800
RAMPC	21+67.26	95.00	573206.0909	1207803.1474
RAMPC	23+65.88	85.00	573141.9370	1207985.8646
RAMPC	24+26.17	85.00	573117.8123	1208040.8922

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
RAMPD	10+00.00	-88.00	573516.9556	1209108.5833
RAMPD	12+00.00	-75.00	573488.6391	1208933.6007
RAMPD	19+04.26	-75.00	573028.2503	1208871.1149

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y2	6+50.00	30.00	575116.8559	1203375.1178
Y2	9+00.00	70.00	574864.1652	1203359.3890
Y2	10+00.00	-70.00	574778.1180	1203508.3719
Y2	10+00.00	-30.00	574774.2644	1203468.5580
Y2	11+25.00	70.00	574640.2118	1203381.0656
Y2	13+50.00	80.00	574415.2949	1203392.7887
Y2	15+00.00	90.00	574265.0293	1203397.2863
Y2	15+70.00	-70.00	574210.7693	1203563.2859
Y2	20+00.00	-140.00	573789.5133	1203674.3866
Y2	23+95.88	-100.00	573391.6234	1203672.7117
Y2	26+25.00	-100.00	573162.7409	1203694.6605
Y2	28+50.00	-125.00	572926.6377	1203729.2711
Y2	30+25.00	110.00	572768.3268	1203482.5222
Y2	31+45.01	131.74	572661.7163	1203443.4277
Y2	31+47.20	146.63	572662.6268	1203428.4285
Y2	33+25.00	-80.00	572438.1981	1203605.0958
Y2	33+25.00	-125.00	572424.8944	1203648.0843
Y2	34+00.00	-80.00	572363.7154	1203580.2324
Y2	34+00.00	87.25	572420.1592	1203422.7958
Y2	35+75.00	-80.00	572194.7148	1203509.6326
Y2	37+42.43	61.26	572111.6501	1203305.7397
Y2	37+43.70	32.29	572096.2649	1203330.3194
Y2	38+25.00	-29.81	571994.9359	1203343.9173
Y2	38+25.00	-80.00	571969.9799	1203387.4601
Y2	38+60.00	60.00	572009.2296	1203248.5916
Y2	38+60.00	29.53	571994.0776	1203275.0286

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y2RAMPB	12+50.00	-110.00	573803.2804	1202248.2491
Y2RAMPB	16+56.95	-110.00	573870.5287	1202601.6001
Y2RAMPB	16+66.19	-110.00	573873.7091	1202609.2035
Y2RAMPB	19+06.95	-70.00	573943.9485	1202831.1868
Y2RAMPB	22+75.11	-80.00	574116.6062	1203172.1397

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y2RAMPC	10+20.00	75.00	573615.5001	1201623.2590
Y2RAMPC	13+00.00	60.00	573554.7534	1201894.7859
Y2RAMPC	15+50.00	60.00	573465.8351	1202117.4555
Y2RAMPC	18+85.00	60.00	573290.3236	1202390.6434
Y2RAMPC	20+30.00	73.84	573193.1186	1202502.0198
Y2RAMPC	21+06.32	85.00	573139.8784	1202563.3165
Y2RAMPC	27+59.19	85.00	572950.6099	1203227.3966
Y2RAMPC	29+50.00	101.59	572943.5894	1203426.2697
Y2RAMPC	30+25.00	110.00	572941.0305	1203501.7139

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y4	11+75.00	-20.00	575289.6261	1208463.2653
Y4	11+75.00	40.00	575267.5032	1208407.4928
Y4	11+75.00	-40.00	575297.0004	1208481.8562
Y4	11+75.00	20.00	575274.8775	1208426.0836
Y4	14+66.68	-40.00	575025.8725	1208589.4025
Y4	15+02.56	-70.00	575003.7839	1208630.4755
Y4	15+22.70	40.13	574944.0349	1208535.8007
Y4	15+63.96	-70.00	574948.1646	1208653.2333
Y4	16+66.68	-70.00	574859.2129	1208693.9893
Y4	19+00.00	70.00	574588.0654	1208703.7019
Y4	25+65.27	70.00	574201.6533	1209283.6332
Y4	25+65.27	-70.00	574335.9919	1209323.0431
Y4	27+65.27	70.00	574155.5861	1209484.7107
Y4	27+65.27	-70.00	574292.9477	1209511.7625
Y4	29+67.19	-100.00	574275.7968	1209722.6756
Y4	29+67.19	80.00	574102.7759	1209673.0395
Y4	32+35.00	-100.00	574165.4645	1209990.3544
Y4	33+00.00	80.00	573977.0741	1209956.0035
Y4	35+00.00	-100.00	574000.6415	1210224.6957
Y4	37+20.00	75.00	573643.4288	1210304.7535
Y4	38+53.00	-70.00	573693.5237	1210444.7390
Y4	40+00.00	75.00	573495.9424	1210386.4294
Y4	42+50.00	75.00	573274.3564	1210461.4820
Y4	43+79.60	-70.00	573171.1908	1210625.8891
Y4	43+79.60	75.00	573154.6368	1210481.8372
Y4	45+79.60	60.00	572961.7426	1210508.1368
Y4	51+64.00	60.00	572377.6213	1210526.2980
Y4	52+50.00	-60.00	572295.3920	1210648.9126
Y4	55+69.78	-65.00	571973.9668	1210659.5326
Y4	56+50.00	90.00	571893.4177	1210504.7043
Y4	58+95.46	-65.00	571648.2851	1210660.2282
Y4	58+95.46	65.00	571648.0075	1210530.2285
Y4	60+75.00	65.00	571466.3813	1210533.5920
Y4	60+75.00	21.90	571467.8852	1210576.6686
Y4	60+75.00	-65.00	571470.9171	1210663.5128

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y6	10+00.00	-130.00	572917.0837	1209112.0128
Y6	10+00.00	105.00	572701.9266	1209017.5013
Y6	10+00.00	117.00	572690.9399	1209012.6752
Y6	17+83.15	107.45	572384.7203	1209733.5391
Y6	24+63.00	-130.00	572328.6996	1210451.4802
Y6	26+00.00	110.00	572053.8665	1210480.3899
Y6	27+50.00	-100.00	572185.8080	1210702.1813
Y6	28+07.35	-100.00	572162.7439	1210754.6872
Y6	28+08.83	-76.09	572140.2530	1210746.4270

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y7	10+00.00	-29.97	573772.2458	1208335.7751
Y7	10+00.00	-60.00	573786.3192	1208309.2474
Y7	11+25.00	-60.00	573896.7423	1208367.8285
Y7	11+25.00	-29.47	573882.4352	1208394.7967

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
SR1	12+75.00	80.00	573015.6816	1203888.9047
SR1	12+75.00	-80.00	573173.3163	1203861.4949
SR1	15+92.27	80.00	573133.0190	1204211.9363
SR1	17+92.27	80.00	573233.2060	1204385.0332
SR1	18+92.59	-32.00	573377.4274	1204420.9877
SR1	23+35.74	80.00	573356.7974	1204863.1805
SR1	23+35.74	85.00	573351.7983	1204863.0865
SR1	28+15.84	85.00	573342.7770	1205343.1063
SR1	28+15.84	72.12	573355.6590	1205343.3484

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
SR2	13+35.85	50.63	572218.3962	1209770.8894
SR2	13+36.04	65.00	572204.0425	1209770.1562
SR2	18+71.36	65.00	571967.0500	1210156.9682
SR2	21+91.87	65.00	571766.4524	1210464.1696
SR2	22+49.83	85.00	571743.4714	1210530.0286

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
SR3	1+85.00	40.00	574158.2199	1199873.2218
SR3	2+78.45	60.00	574099.9014	1199948.9265
SR3	4+05.45	60.00	574045.1680	1200063.5330
SR3	7+28.25	60.00	573922.3427	1200370.1676
SR3	10+30.00	60.00	573828.4471	1200656.9332
SR3	13+12.86	60.58	573739.8789	1200925.5670
SR3	21+21.26	-80.00	573450.4731	1201714.8014
SR3	23+16.09	-23.83	573260.7753	1201722.1038
SR3	23+16.09	-40.00	573268.4159	1201736.3511

ROW MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
SR4	10+00.00	20.00	574557.5025	1208613.2441

ROW MARKER - IRON PIN

SURVEY CONTROL SHEET
PERMANENT EASEMENTS

- FINAL -

PROJECT REFERENCE NO.	SHEET NO.
R-2707AA	1-H
Location and Surveys	

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
L	91+23.76	-153.21	573695.2968	1208292.9594
L	112+65.00	-145.00	573988.4497	1210408.1234

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y2	28+80.00	-125.00	572894.4463	1203728.3200

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y2RAMPB	11+10.00	-125.00	573827.7385	1202122.1788
Y2RAMPB	11+10.00	-107.02	573809.8880	1202119.9958
Y2RAMPB	11+80.00	-130.00	573826.2386	1202186.6419
Y2RAMPB	11+80.00	-110.24	573806.5327	1202185.1219
Y2RAMPB	15+71.00	-110.00	573844.4090	1202529.7251
Y2RAMPB	15+95.00	-110.00	573851.0791	1202550.0164
Y2RAMPB	16+08.00	-192.00	573932.1296	1202533.3929
Y2RAMPB	16+30.00	-185.00	573931.7449	1202552.5648

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y2RAMPC	19+65.00	122.84	573191.9525	1202418.7341
Y2RAMPC	21+06.32	115.00	573114.2976	1202547.6441
Y2RAMPC	26+90.00	115.00	572923.2213	1203151.4621
Y2RAMPC	26+90.00	105.00	572933.2013	1203152.0945
Y2RAMPC	29+39.74	130.00	572914.4678	1203418.1654

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y4	11+20.00	40.00	575318.6281	1208387.2135
Y4	11+20.00	20.00	575326.0024	1208405.8043
Y4	11+30.00	-70.00	575349.8913	1208493.1503
Y4	11+30.00	-20.00	575331.4555	1208446.6732
Y4	15+63.17	-85.00	574954.6958	1208666.7583
Y4	16+66.68	-85.00	574865.9866	1208707.3728
Y4	34+80.00	-110.74	574023.0157	1210215.3108
Y4	39+00.00	-95.00	573662.9947	1210491.8091
Y4	39+00.00	-70.00	573650.7013	1210470.0404
Y4	58+95.46	90.00	571647.9582	1210505.2285
Y4	60+75.00	90.00	571465.5091	1210508.6072

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y6	17+00.00	-150.00	572653.8714	1209760.9498
Y6	17+00.00	-130.00	572635.5602	1209752.9063
Y6	17+28.00	-150.00	572642.6105	1209786.5856
Y6	17+71.00	-150.00	572625.3169	1209825.9548
Y6	18+95.00	-318.00	572729.2615	1210007.0501
Y6	19+18.00	-296.00	572699.8691	1210019.2602
Y6	20+71.32	-150.00	572504.5363	1210100.9142

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y7	12+25.00	45.00	573941.1305	1208505.0765
Y7	12+25.00	30.00	573947.0590	1208491.2988
Y7	14+00.00	55.00	574107.4674	1208576.2241
Y7	15+58.27	19.93	574272.6726	1208581.0230
Y7	15+70.18	55.00	574276.9371	1208617.8171

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
RAMPB	30+00.00	-100.09	574037.2841	1207215.3761
RAMPB	30+00.00	-170.00	574101.2010	1207243.7045
RAMPB	30+35.00	-170.00	574083.1625	1207282.1137
RAMPB	35+85.60	-104.41	573704.0929	1207721.3093

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
RAMPC	23+40.00	86.85	573150.4412	1207961.6438
RAMPC	23+40.00	230.00	573019.0561	1207904.8195
RAMPC	23+65.48	230.00	573009.1878	1207927.5325

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
SR1	12+80.00	110.00	572987.1016	1203899.5695
SR1	15+92.27	110.00	573107.0545	1204226.9643
SR1	17+92.27	110.00	573207.2414	1204400.0613
SR1	23+35.74	110.00	573326.8027	1204862.6167
SR1	26+32.12	110.00	573321.2335	1205158.9501

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
SR2	22+26.00	76.09	571752.4626	1210504.2618

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
SR3	21+52.82	-77.10	573419.4815	1201718.4729

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
SR4	9+20.68	20.00	574477.2934	1208609.3390
SR4	9+23.49	35.00	574479.0513	1208624.5065
SR4	10+05.35	35.00	574562.6100	1208628.3607

PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
SR6	11+40.00	65.00	574722.9747	1200115.2929
SR6	11+60.00	65.00	574724.2918	1200148.2116
SR6	15+53.33	60.00	574829.2510	1200535.0208
SR6	17+39.27	-65.00	574993.1271	1200687.9066
SR6	17+39.27	-30.00	574958.8394	1200694.9318
SR6	19+00.00	-65.00	575022.2947	1200848.9870
SR6	19+00.00	-30.00	574987.7207	1200854.4309
SR6	19+20.00	30.00	574931.4790	1200883.3591
SR6	19+20.00	65.00	574896.8744	1200888.6053
SR6	27+20.00	30.00	574968.6392	1201676.6338
SR6	27+20.00	90.00	574908.6410	1201676.1617
SR6	29+00.00	-30.00	575027.2209	1201857.1004
SR6	29+00.00	-65.00	575062.2198	1201857.3758
SR6	31+40.00	30.00	574965.3342	1202096.6208
SR6	31+40.00	90.00	574905.3360	1202096.1487
SR6	32+00.00	-30.00	575024.8602	1202157.0911
SR6	32+00.00	-65.00	575059.8591	1202157.3665
SR6	33+00.00	-30.00	575024.0732	1202257.0880
SR6	33+00.00	-50.00	575044.0726	1202257.2454
SR6	35+00.00	-30.00	575022.4994	1202457.0818
SR6	35+00.00	-50.00	575042.4988	1202457.2392
SR6	36+60.00	30.00	574961.2422	1202616.6047
SR6	36+60.00	50.00	574941.2429	1202616.4473
SR6	37+20.00	-50.00	575040.7676	1202677.2324
SR6	37+20.00	-30.00	575020.7682	1202677.0750
SR6	38+20.00	-50.00	575039.9807	1202777.2293
SR6	38+20.00	-30.00	575019.9813	1202777.0719
SR6	41+00.00	30.00	574957.7799	1203056.5911
SR6	41+00.00	50.00	574937.7805	1203056.4337

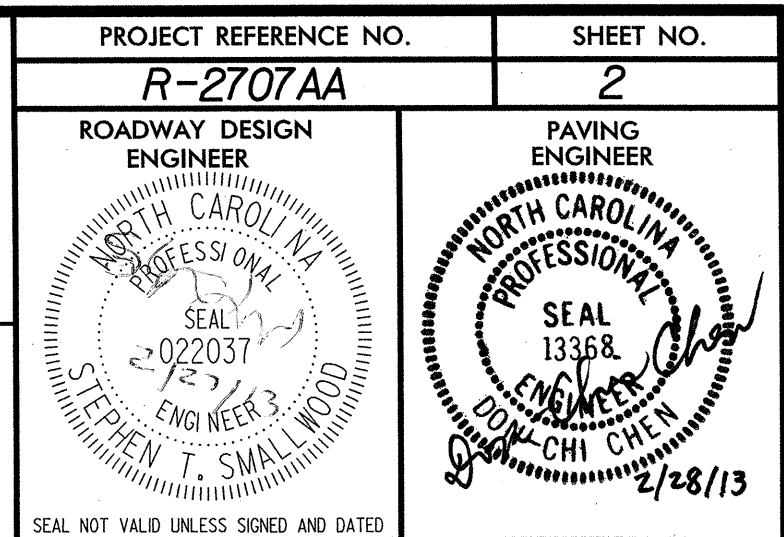
PERMANENT EASEMENT MARKER - IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
SR7	12+65.00	95.00	573402.6567	1201865.2985
SR7	14+75.00	58.79	573395.2648	1202044.3946

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "M 77"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 573127.522(++) EASTING: 124297.658(++)
ELEVATION: 852.279' (++)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99984410
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "M 77" TO -L- L STATION 5+03.30 IS
N 75 36 14 W 3868.1352'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Point #	Chain	Station	Northing (Y)	Easting (X)
1	L	6+00.00	574341.3735	1199905.3431
2	L	7+00.00	574298.0409	1199995.4668
3	L	8+00.00	574255.2369	1200085.8419
4	L	9+00.00	574213.6879	1200176.8008
5	L	10+00.00	574173.4062	1200268.3280
6	L	11+00.00	574134.3996	1200360.4058
7	L	12+00.00	574096.6756	1200453.0165
8	L	13+00.00	574060.2414	1200546.1421
9	L	14+00.00	574025.1040	1200639.7648
10	L	15+00.00	573991.2704	1200733.8665
11	L	16+00.00	573958.7469	1200828.4290
12	L	17+00.00	573927.5399	1200923.4340
13	L	18+00.00	573897.6554	1201018.8633
14	L	19+00.00	573869.0992	1201114.6985
15	L	20+00.00	573841.8766	1201210.9210
16	L	21+00.00	573815.9931	1201307.5124
17	L	22+00.00	573791.4536	1201404.4538
18	L	23+00.00	573768.2629	1201501.7268
19	L	24+00.00	573746.4253	1201599.3124
20	L	25+00.00	573725.9451	1201697.1920
21	L	26+00.00	573706.8264	1201795.3465
22	L	27+00.00	573689.0726	1201893.7571
23	L	28+00.00	573672.6874	1201992.4048
24	L	29+00.00	573657.6738	1202091.2705
25	L	30+00.00	573644.0347	1202190.3352
26	L	31+00.00	573631.7728	1202289.5798
27	L	32+00.00	573620.8905	1202388.9851
28	L	33+00.00	573611.3898	1202488.5319
29	L	34+00.00	573603.2725	1202588.2011
30	L	35+00.00	573596.5403	1202687.9734
31	L	36+00.00	573591.1944	1202787.8296
32	L	37+00.00	573587.2359	1202887.7505
33	L	38+00.00	573584.6653	1202987.7166
34	L	39+00.00	573582.7677	1203087.6986
35	L	40+00.00	573580.8701	1203187.6806
36	L	41+00.00	573578.9725	1203287.6626
37	L	42+00.00	573577.0749	1203387.6446
38	L	43+00.00	573575.1773	1203487.6266
39	L	44+00.00	573573.2797	1203587.6086
40	L	45+00.00	573571.3821	1203687.5906
41	L	46+00.00	573569.4845	1203787.5726
42	L	47+00.00	573567.5869	1203887.5546
43	L	48+00.00	573565.6893	1203987.5366
44	L	49+00.00	573563.7917	1204087.5185
45	L	50+00.00	573561.8941	1204187.5005
46	L	51+00.00	573559.9965	1204287.4825
47	L	52+00.00	573558.0989	1204387.4645
48	L	53+00.00	573556.2013	1204487.4465
49	L	54+00.00	573554.3037	1204587.4285
50	L	55+00.00	573552.4061	1204687.4105
51	L	56+00.00	573550.5085	1204787.3925
52	L	57+00.00	573548.6109	1204887.3745
53	L	58+00.00	573546.7133	1204987.3565
54	L	59+00.00	573544.8157	1205087.3385
55	L	60+00.00	573542.9181	1205187.3205
56	L	61+00.00	573541.0205	1205287.3025
57	L	62+00.00	573539.1229	1205387.2845
58	L	63+00.00	573537.2253	1205487.2665
59	L	64+00.00	573535.3277	1205587.2485
60	L	65+00.00	573533.4301	1205687.2304
61	L	66+00.00	573531.5325	1205787.2124
62	L	67+00.00	573529.6349	1205887.1944
63	L	68+00.00	573527.7373	1205987.1764
64	L	69+00.00	573525.8397	1206087.1584
65	L	70+00.00	573523.9421	1206187.1404
66	L	71+00.00	573522.0445	1206287.1224
67	L	72+00.00	573520.1469	1206387.1044
68	L	73+00.00	573518.2493	1206487.0864
69	L	74+00.00	573516.3517	1206587.0684
70	L	75+00.00	573514.4541	1206687.0504
71	L	76+00.00	573512.5565	1206787.0324
72	L	77+00.00	573510.6589	1206887.0144
73	L	78+00.00	573508.7613	1206986.9964
74	L	79+00.00	573506.8637	1207086.9784
75	L	80+00.00	573504.9661	1207186.9604
76	L	81+00.00	573503.0685	1207286.9424
77	L	82+00.00	573501.2154	1207386.9251
78	L	83+00.00	573500.3181	1207486.9204
79	L	84+00.00	573500.7364	1207586.9188
80	L	85+00.00	573502.4705	1207686.9030
81	L	86+00.00	573505.5200	1207786.8558
82	L	87+00.00	573509.8843	1207886.7598

Point #	Chain	Station	Northing (Y)	Easting (X)
83	L	88+00.00	573515.5628	1207986.5977
84	L	89+00.00	573522.5544	1208086.3523
85	L	90+00.00	573530.8578	1208186.0062
86	L	91+00.00	573540.4718	1208285.5423
87	L	92+00.00	573551.3946	1208384.9432
88	L	93+00.00	573563.6243	1208484.1919
89	L	94+00.00	573577.1588	1208583.2710
90	L	95+00.00	573591.5068	1208682.2363
91	L	96+00.00	573605.8663	1208781.2000
92	L	97+00.00	573620.2259	1208880.1636
93	L	98+00.00	573634.5854	1208979.1273
94	L	99+00.00	573648.9449	1209078.0909
95	L	100+00.00	573663.3044	1209177.0546
96	L	101+00.00	573677.6639	1209276.0182
97	L	102+00.00	573692.0235	1209374.9819
98	L	103+00.00	573706.3830	1209473.9455
99	L	104+00.00	573720.7425	1209572.9092
100	L	105+00.00	573735.1020	1209671.8728
101	L	106+00.00	573749.4615	1209770.8365
102	L	107+00.00	573763.8211	1209869.8001
103	L	108+00.00	573778.1806	1209968.7638
104	L	109+00.00	573792.5401	1210067.7274
105	L	110+00.00	573806.8996	1210166.6911
106	L	111+00.00	573821.2592	1210265.6547
107	L	112+00.00	573835.6187	1210364.6184
108	L	113+00.00	573849.9782	1210463.5820
109	L	114+00.00	573864.3377	1210562.5457
110	L	115+00.00	573878.6972	1210661.5093
111	L	116+00.00	573893.0568	1210760.4730
112	L	117+00.00	573907.4163	1210859.4366
113	L	118+00.00	573921.7758	1210958.4003
114	L	119+00.00	573936.1353	1211057.3639

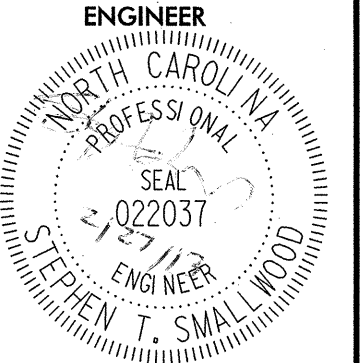
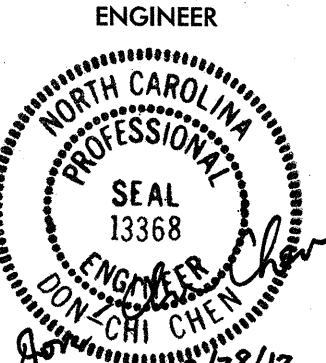


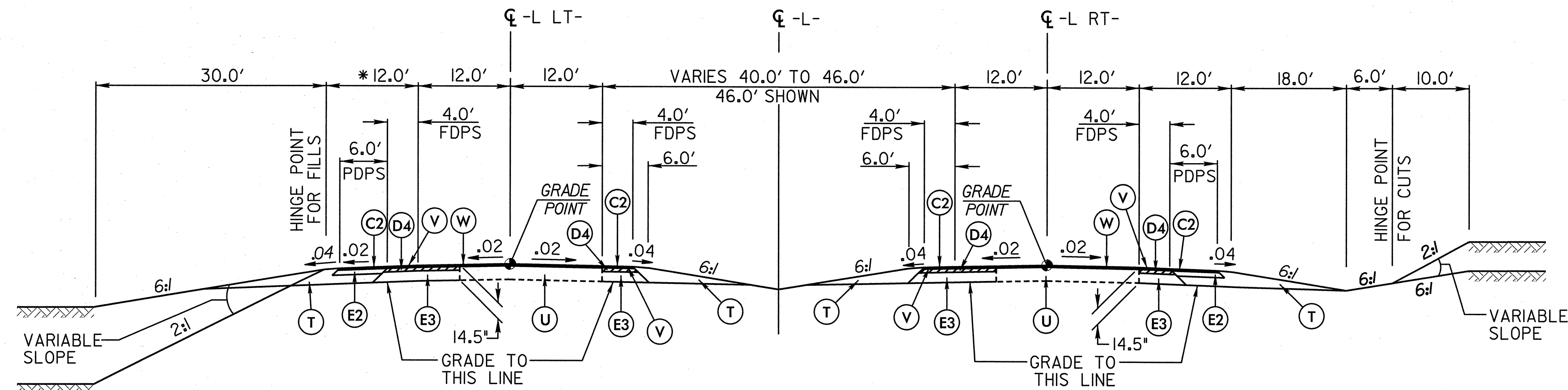
Note: Pavement Edge Slopes are 1:1 Unless Shown Otherwise

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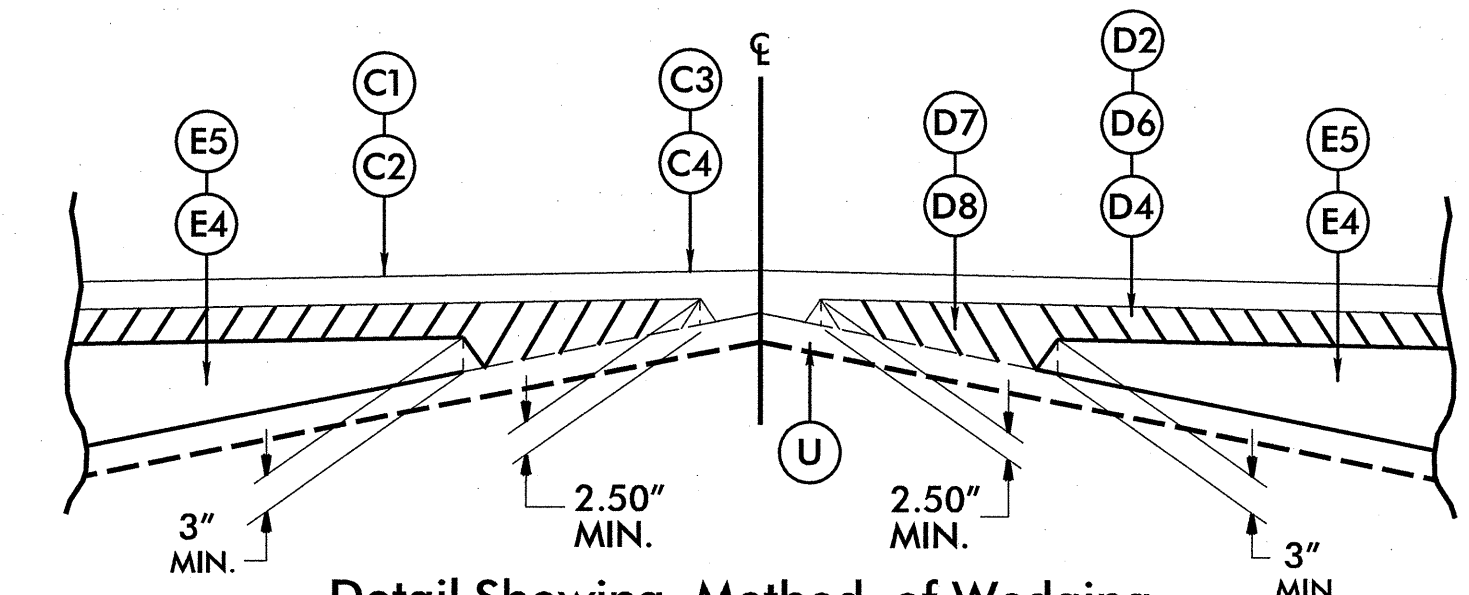
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PROJECT REFERENCE NO. R-2707AA		SHEET NO. 2-A
ROADWAY DESIGN ENGINEER  STEPHEN T. SMALLWOOD SEAL 13368 2/28/13	PAVING ENGINEER  STEPHEN T. SMALLWOOD SEAL 13368 2/28/13	

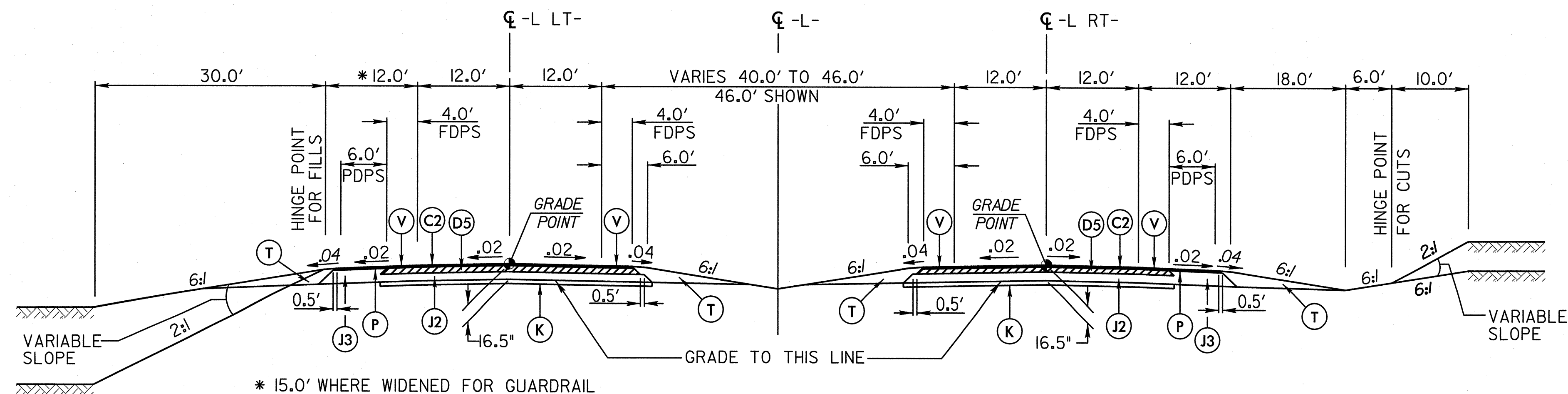


* 15.0' WHERE WIDENED FOR GUARDRAIL

TYPICAL SECTION NO. 1
USE TYPICAL SECTION #1:
FROM -L- STA. 05+03.30 TO STA. 12+50.00

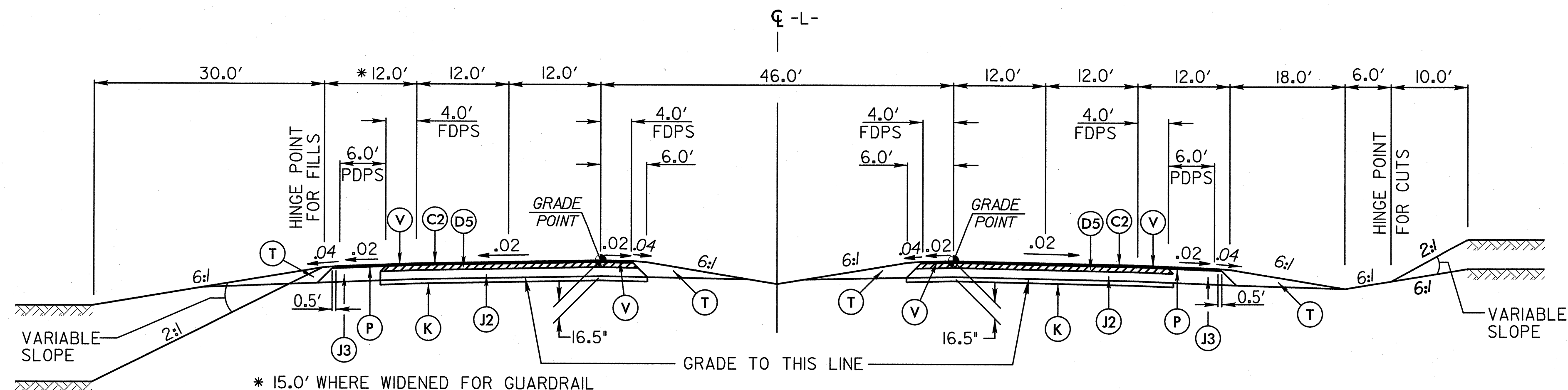


NOTE: THERE WILL BE NO INTERMEDIATE COURSE ON
TYPICAL SECTIONS 8, 20, & 24.



* 15.0' WHERE WIDENED FOR GUARDRAIL

TYPICAL SECTION NO. 2
USE TYPICAL SECTION #2:
FROM -L- STA. 12+50.00 TO STA. 15+00.00



* 15.0' WHERE WIDENED FOR GUARDRAIL

TYPICAL SECTION NO. 3
USE TYPICAL SECTION #3:
FROM -L- STA. 15+00.00 TO STA. 66+60.00 (WBL)
FROM -L- STA. 15+00.00 TO STA. 82+00.00 (EBL)

CODE	PAVEMENT SCHEDULE
C1	3.0" ASPHALT, TYPE S9.5B
C2	3.0" ASPHALT, TYPE S9.5C
C3	VAR. DEPTH ASPHALT, TYPE S9.5B
C4	VAR. DEPTH ASPHALT, TYPE S9.5C
D1	2.5" ASPHALT, TYPE I19.0B
D2	3.0" ASPHALT, TYPE I19.0B
D3	4.0" ASPHALT, TYPE I19.0B
D4	3.0" ASPHALT, TYPE I19.0C
D5	3.5" ASPHALT, TYPE I19.0C
D6	4.0" ASPHALT, TYPE I19.0C
D7	VAR. DEPTH ASPHALT, TYPE I19.0B
D8	VAR. DEPTH ASPHALT, TYPE I19.0C
E1	4.0" ASPHALT, TYPE B25.0B
E2	5.0" ASPHALT, TYPE B25.0C
E3	8.5" ASPHALT, TYPE B25.0C
E4	VAR. DEPTH ASPHALT, TYPE B25.0C
E5	VAR. DEPTH ASPHALT, TYPE B25.0B
J1	8.0" AGGREGATE BASE COURSE
J2	10.0" AGGREGATE BASE COURSE
J3	VAR. AGGREGATE BASE COURSE
K	CEMENT LIME STABILIZATION
P	PRIME COAT
R	2'-6" CONCRETE CURB AND GUTTER
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	RUMBLE STRIPS
W	VARIABLE DEPTH ASPHALT PAVEMENT

Note: Pavement Edge Slopes are 1:1 Unless Shown Otherwise

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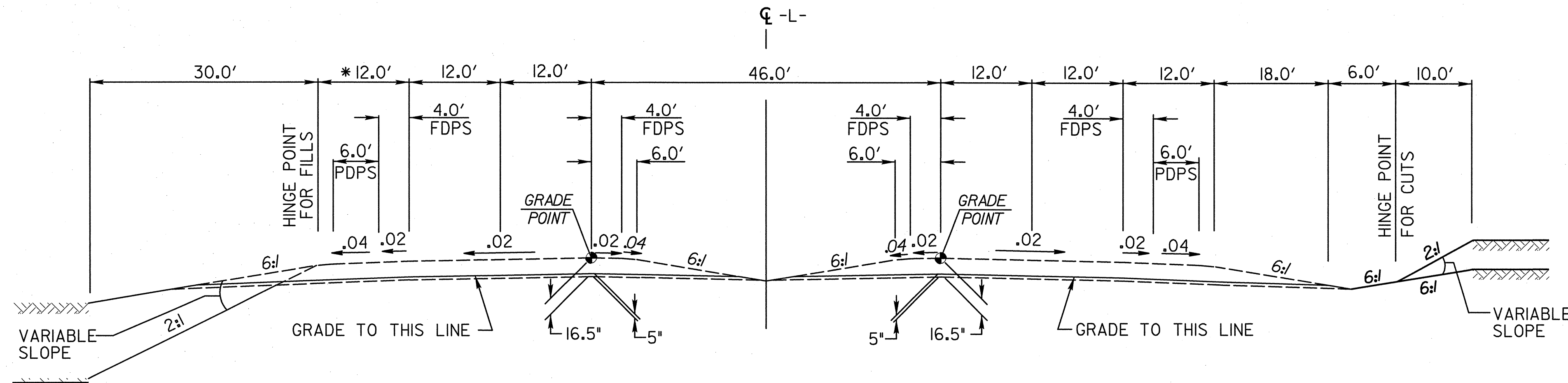
PROJECT REFERENCE NO.
R-2707AA

SHEET NO.
2-B

ROADWAY DESIGN
ENGINEER
SEAL
022037
NORTH CAROLINA
PROFESSIONAL
ENGINEER
SMALLWOOD
STEPHEN T.

PAVING
ENGINEER
SEAL
13368
NORTH CAROLINA
PROFESSIONAL
ENGINEER
CHEN
JIAN-CHI

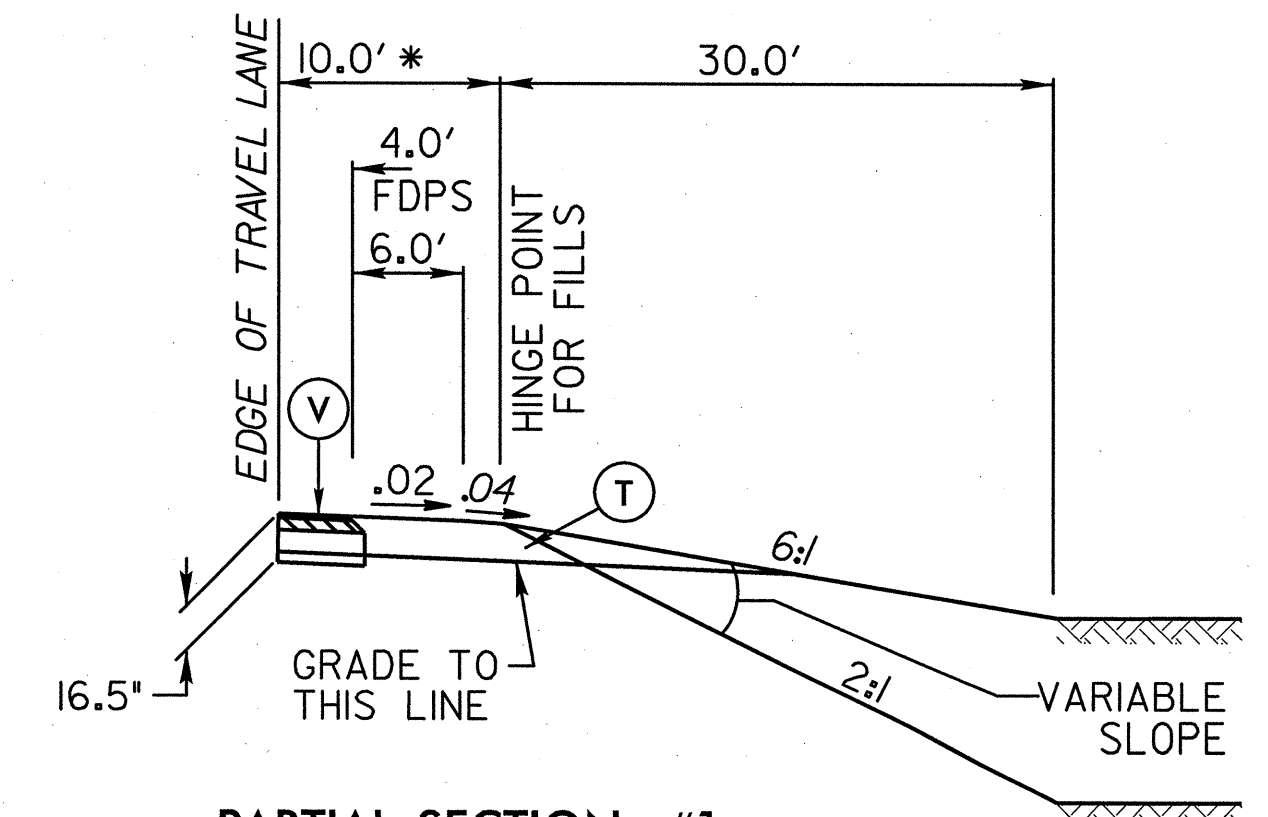
SEAL NOT VALID UNLESS SIGNED AND DATED



TYPICAL SECTION NO. 4

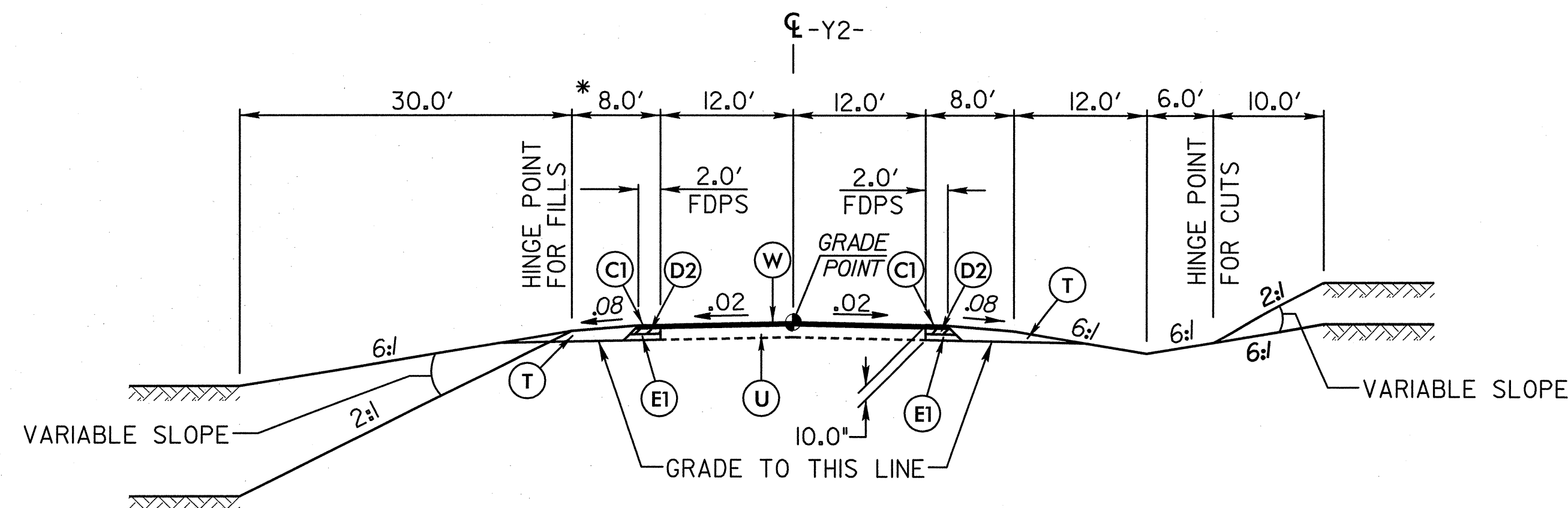
USE TYPICAL SECTION #4:
FROM -L- STA. 66+60.00 TO STA. 119+00.00 (WBL)
FROM -L- STA. 82+00.00 TO STA. 119+00.00 (EBL)

* 13.0' WHERE WIDENED FOR GUARDRAIL



PARTIAL SECTION #1
USE IN CONJUNCTION WITH TYPICAL NO. 3

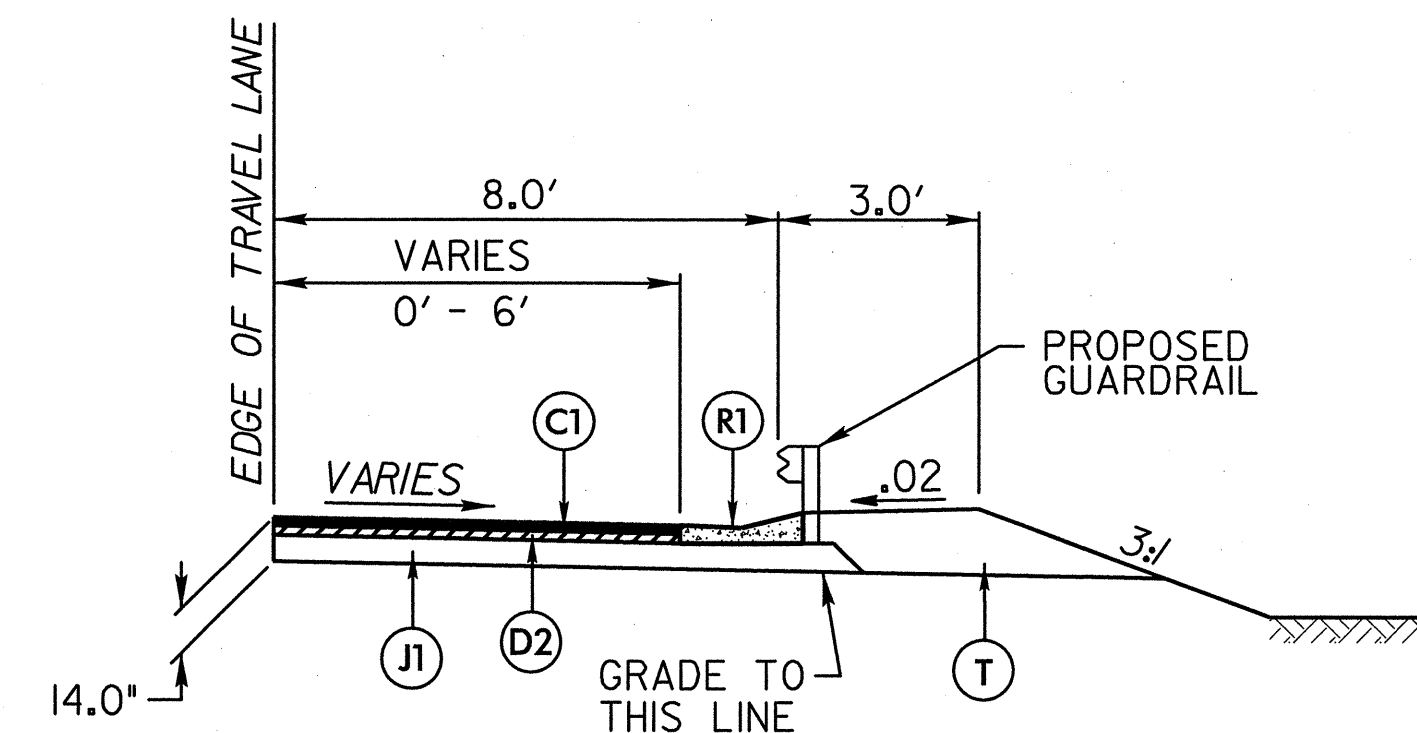
FROM STA. -L- 57+50 LT. TO STA. -L- 61+57.98 LT.



* 11.0' WHERE WIDENED FOR GUARDRAIL

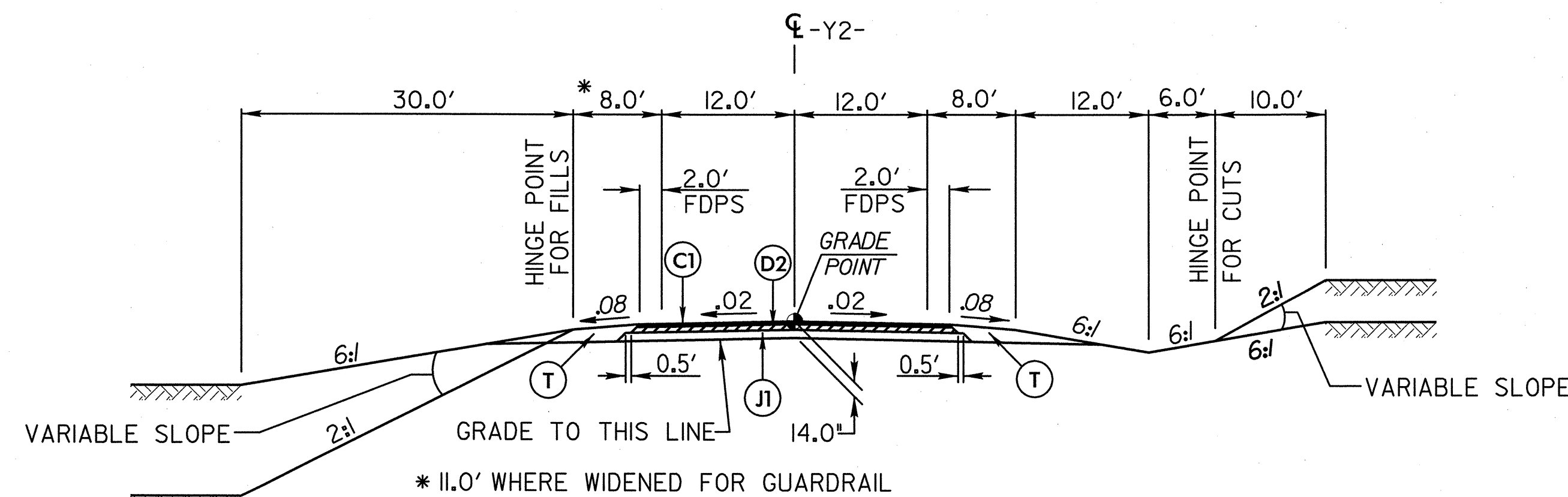
TYPICAL SECTION NO. 5

USE TYPICAL SECTION #5:
FROM STA. -Y2- 10+27.00 TO STA. 13+50.00
FROM STA. -Y2- 36+50.00 TO STA. 38+25.00



**DETAIL OF PAVEMENT WIDENING AT
SHOULDER BERM GUTTER**

FROM STA. -Y2- 20+00 LT. TO STA. -Y2- 20+78 LT.
FROM STA. -Y2- 23+25 RT. TO STA. -Y2- 26+17 RT.
FROM STA. -Y2- 28+50 RT. TO STA. -Y2- 32+02 RT.



* 11.0' WHERE WIDENED FOR GUARDRAIL

TYPICAL SECTION NO. 6

USE TYPICAL SECTION #6:
FROM STA. -Y2- 13+50.00 TO STA. 21+02.31 (BRIDGE)
FROM STA. -Y2- 23+01.06 (BRIDGE) TO STA. 36+50.00

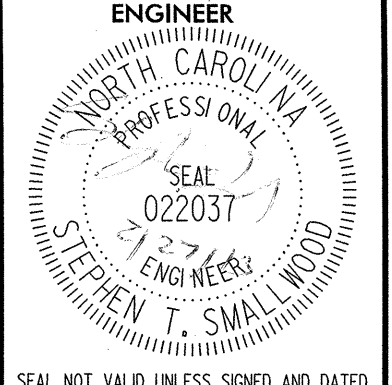
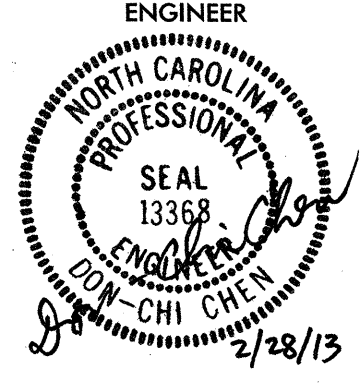
CODE	PAVEMENT SCHEDULE
C1	3.0" ASPHALT, TYPE S9.5B
C2	3.0" ASPHALT, TYPE S9.5C
C3	VAR. DEPTH ASPHALT, TYPE S9.5B
C4	VAR. DEPTH ASPHALT, TYPE S9.5C
D1	2.5" ASPHALT, TYPE I19.0B
D2	3.0" ASPHALT, TYPE I19.0B
D3	4.0" ASPHALT, TYPE I19.0B
D4	3.0" ASPHALT, TYPE I19.0C
D5	3.5" ASPHALT, TYPE I19.0C
D6	4.0" ASPHALT, TYPE I19.0C
D7	VAR. DEPTH ASPHALT, TYPE I19.0B
D8	VAR. DEPTH ASPHALT, TYPE I19.0C
E1	4.0" ASPHALT, TYPE B25.0B
E2	5.0" ASPHALT, TYPE B25.0C
E3	8.5" ASPHALT, TYPE B25.0C
E4	VAR. DEPTH ASPHALT, TYPE B25.0C
E5	VAR. DEPTH ASPHALT, TYPE B25.0B
J1	8.0" AGGREGATE BASE COURSE
J2	10.0" AGGREGATE BASE COURSE
J3	VAR. AGGREGATE BASE COURSE
K	CEMENT LIME STABILIZATION
P	PRIME COAT
R	2'-6" CONCRETE CURB AND GUTTER
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	RUMBLE STRIPS
W	VARIABLE DEPTH ASPHALT PAVEMENT

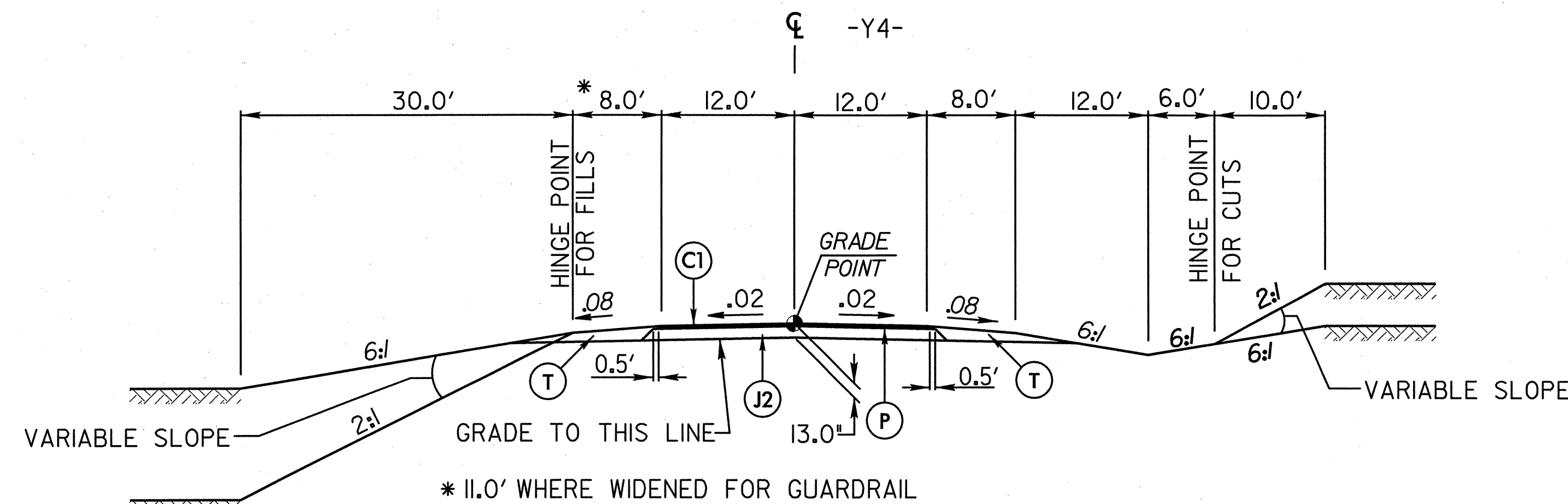
Note: Pavement Edge Slopes are 1:1 Unless Shown Otherwise

6/2/99



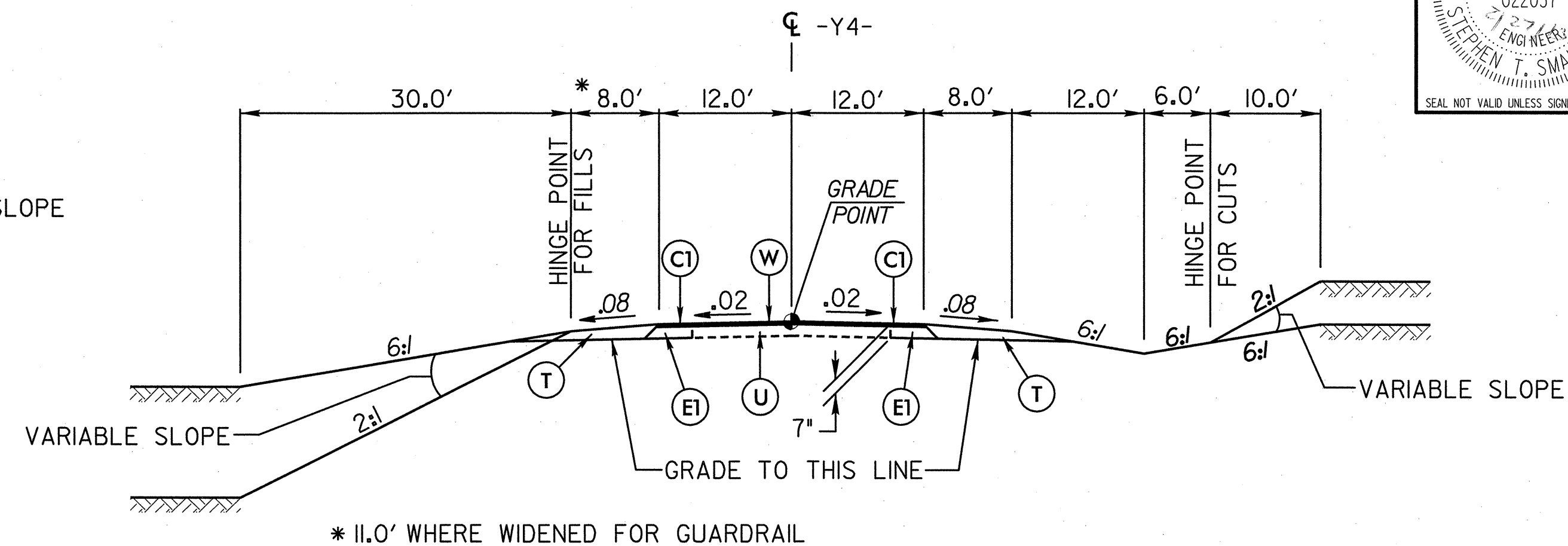
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PROJECT REFERENCE NO. R-2707AA		SHEET NO. 2-C
ROADWAY DESIGN ENGINEER  STEPHEN T. SMALLWOOD	PAVING ENGINEER  DUN-CHI CHEN 2/28/13	
SEAL NOT VALID UNLESS SIGNED AND DATED		



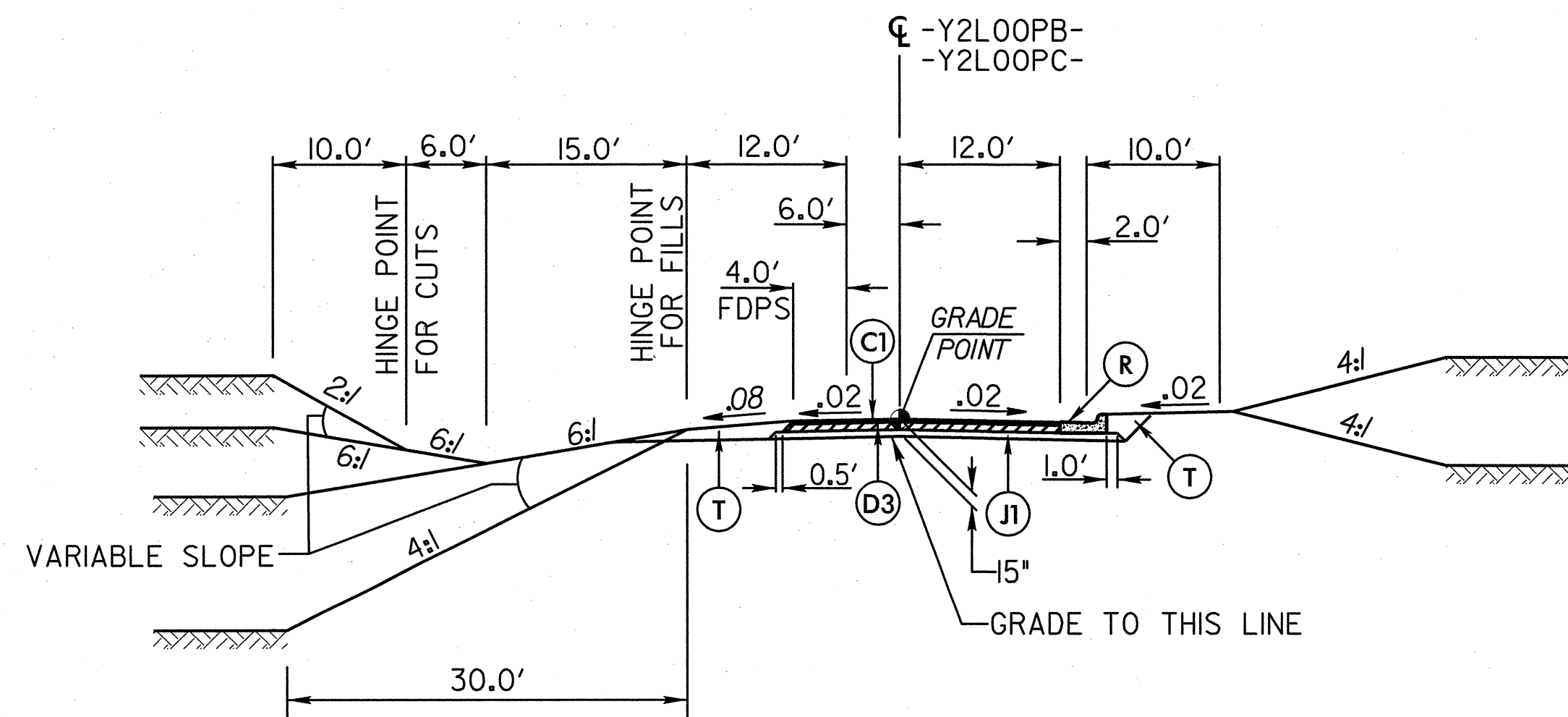
TYPICAL SECTION NO. 7

USE TYPICAL SECTION #7:
FROM STA. -Y4- 14+70.00 TO STA. 35+64.04 (BRIDGE)
FROM STA. -Y4- 37+58.29 (BRIDGE) TO STA. 42+50.00
FROM STA. -Y4- 54+67.70 TO STA. 60+75.00



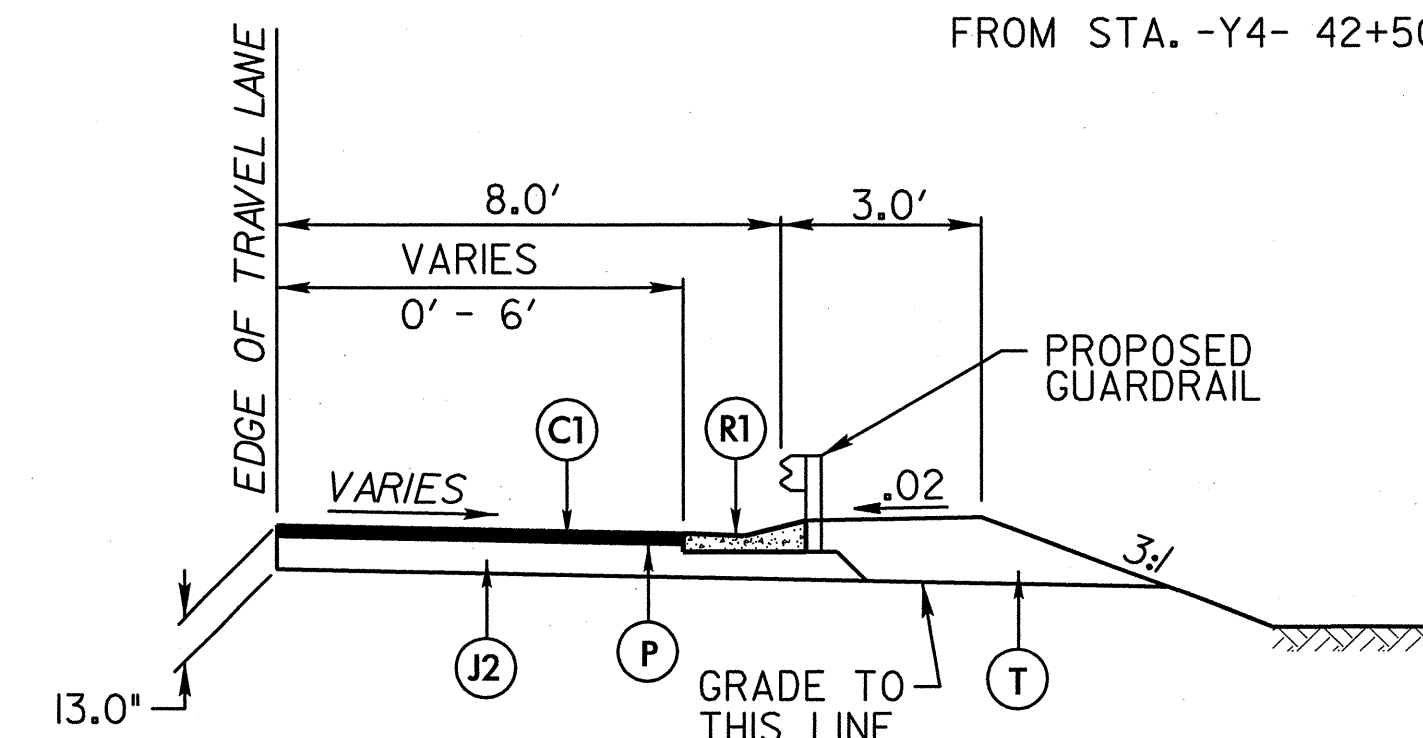
TYPICAL SECTION NO. 8

USE TYPICAL SECTION #8:
FROM STA. -Y4- 11+75.00 TO STA. 14+70.00
FROM STA. -Y4- 42+50.00 TO STA. 54+67.70



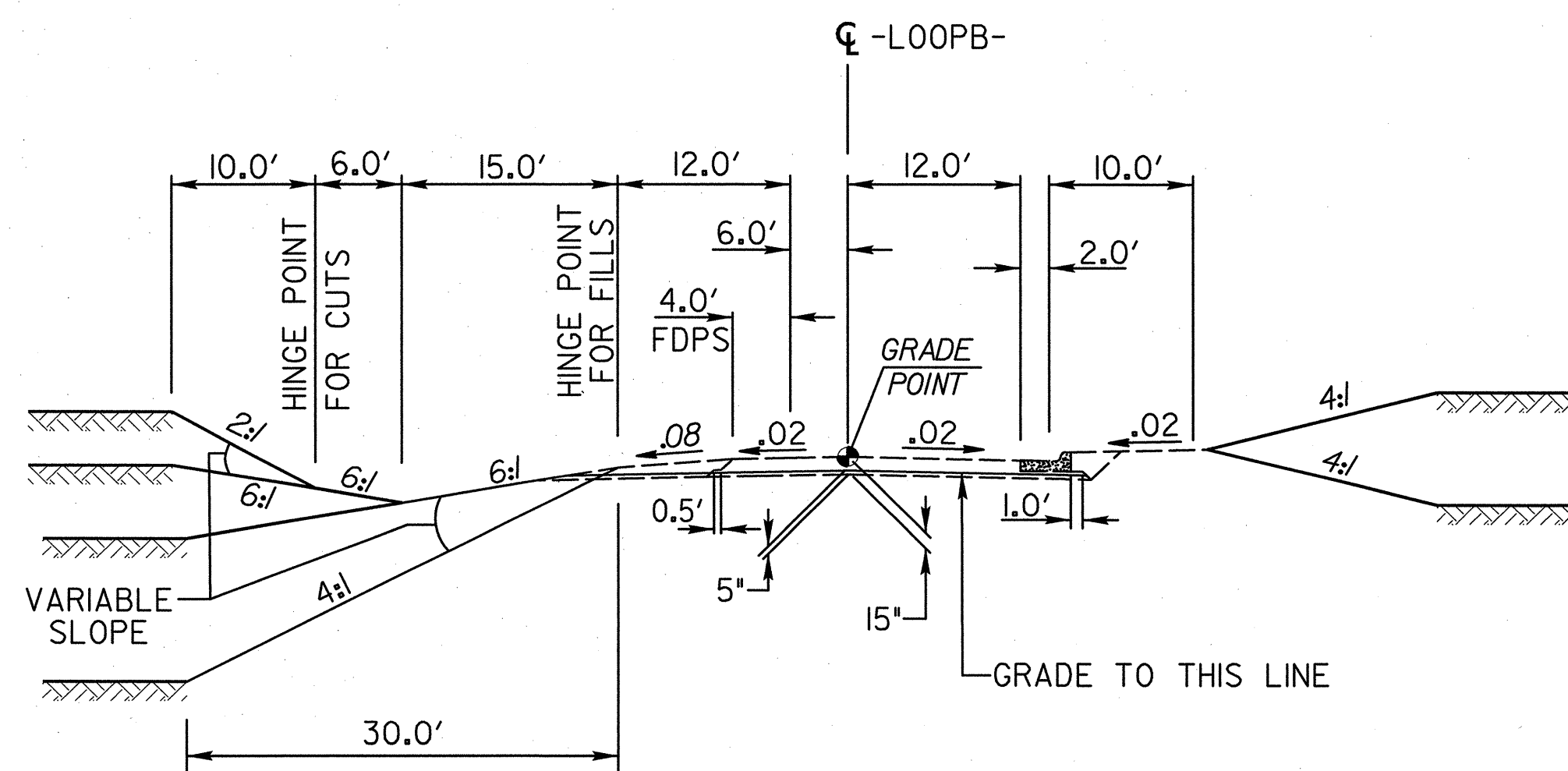
TYPICAL SECTION NO. 9

USE TYPICAL SECTION #9:
FROM STA. -Y2LOOPB- 10+00.00 TO STA. 19+48.36
FROM STA. -Y2LOOPC- 10+00.00 TO STA. 21+19.81



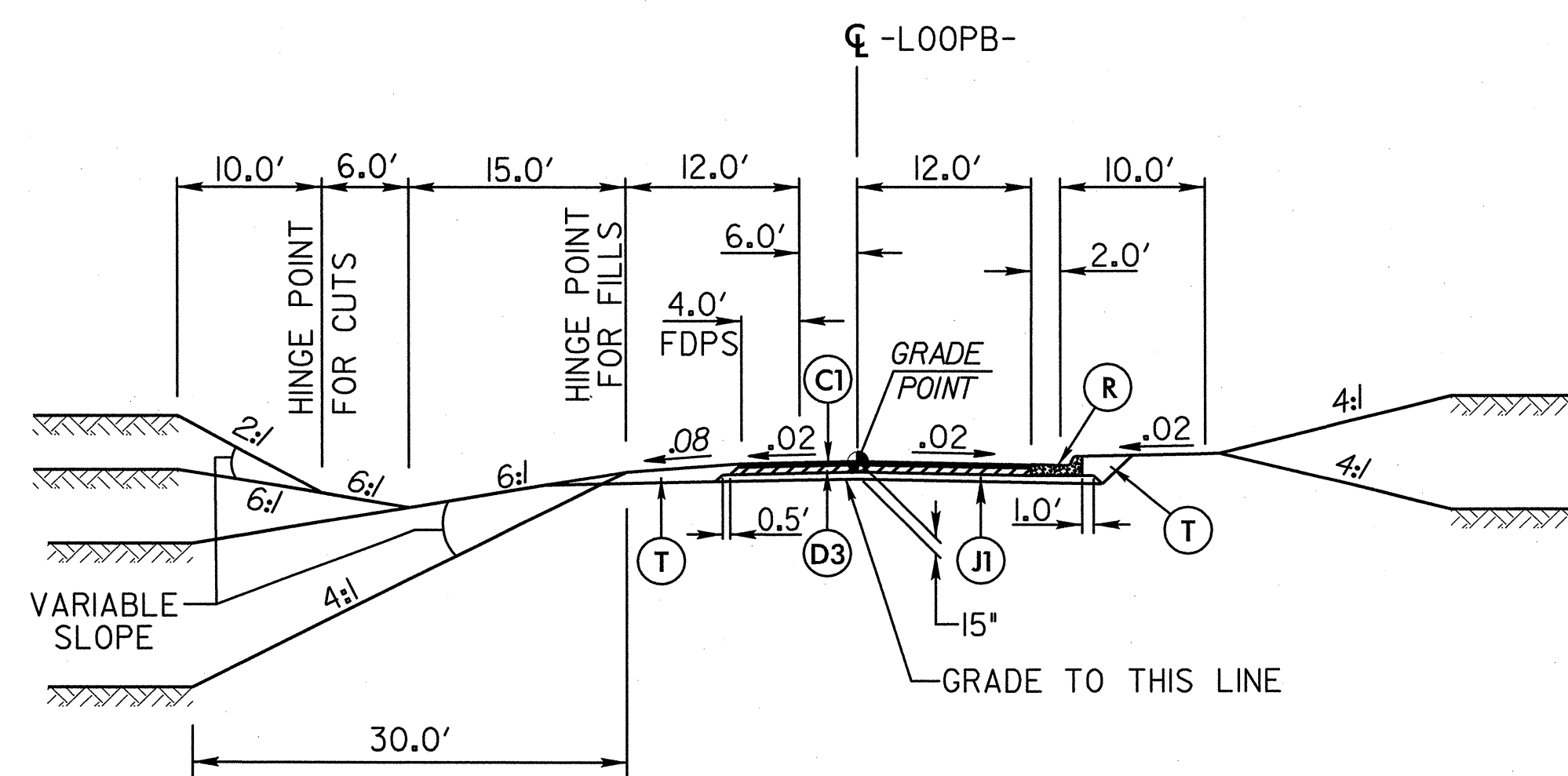
**DETAIL OF PAVEMENT WIDENING AT
SHOULDER BERM GUTTER**

FROM STA. -Y4- 30+64 RT. TO STA. -Y4- 35+39 RT.
FROM STA. -Y4- 37+65 RT. TO STA. -Y4- 38+31 RT.



TYPICAL SECTION NO. 10

USE TYPICAL SECTION #10:
FROM STA. -LOOPB- 10+00.00 TO STA. 17+24.03



TYPICAL SECTION NO. 11

USE TYPICAL SECTION #11:
FROM STA. -LOOPB- 17+24.03 TO STA. 18+99.78

CODE	PAVEMENT SCHEDULE
C1	3.0" ASPHALT, TYPE S9.5B
C2	3.0" ASPHALT, TYPE S9.5C
C3	VAR. DEPTH ASPHALT, TYPE S9.5B
C4	VAR. DEPTH ASPHALT, TYPE S9.5C
D1	2.5" ASPHALT, TYPE I19.0B
D2	3.0" ASPHALT, TYPE I19.0B
D3	4.0" ASPHALT, TYPE I19.0B
D4	3.0" ASPHALT, TYPE I19.0C
D5	3.5" ASPHALT, TYPE I19.0C
D6	4.0" ASPHALT, TYPE I19.0C
D7	VAR. DEPTH ASPHALT, TYPE I19.0B
D8	VAR. DEPTH ASPHALT, TYPE I19.0C
E1	4.0" ASPHALT, TYPE B25.0B
E2	5.0" ASPHALT, TYPE B25.0C
E3	8.5" ASPHALT, TYPE B25.0C
E4	VAR. DEPTH ASPHALT, TYPE B25.0C
E5	VAR. DEPTH ASPHALT, TYPE B25.0B
J1	8.0" AGGREGATE BASE COURSE
J2	10.0" AGGREGATE BASE COURSE
J3	VAR. AGGREGATE BASE COURSE
K	CEMENT LIME STABILIZATION
P	PRIME COAT
R	2'-6" CONCRETE CURB AND GUTTER
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	RUMBLE STRIPS
W	VARIABLE DEPTH ASPHALT PAVEMENT

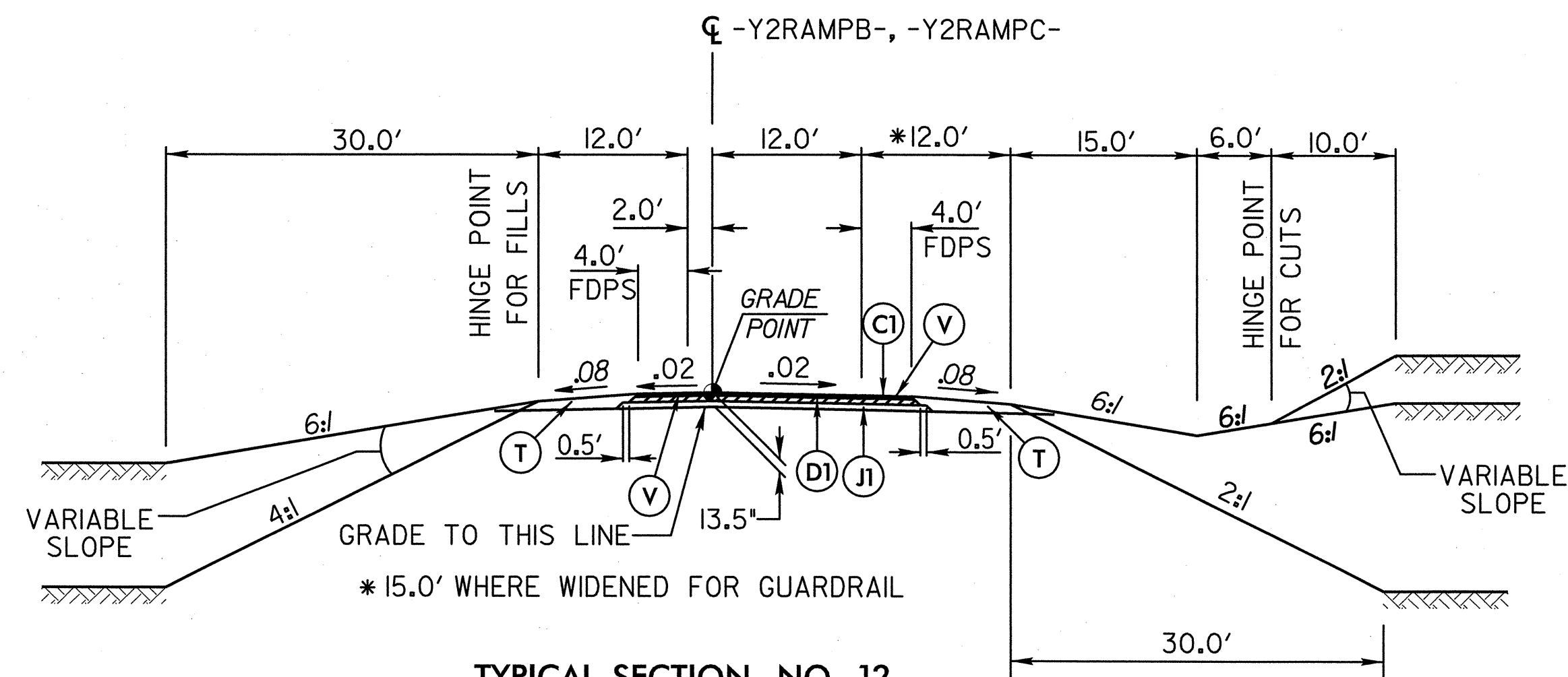
Note: Pavement Edge Slopes are 1:1 Unless Shown Otherwise

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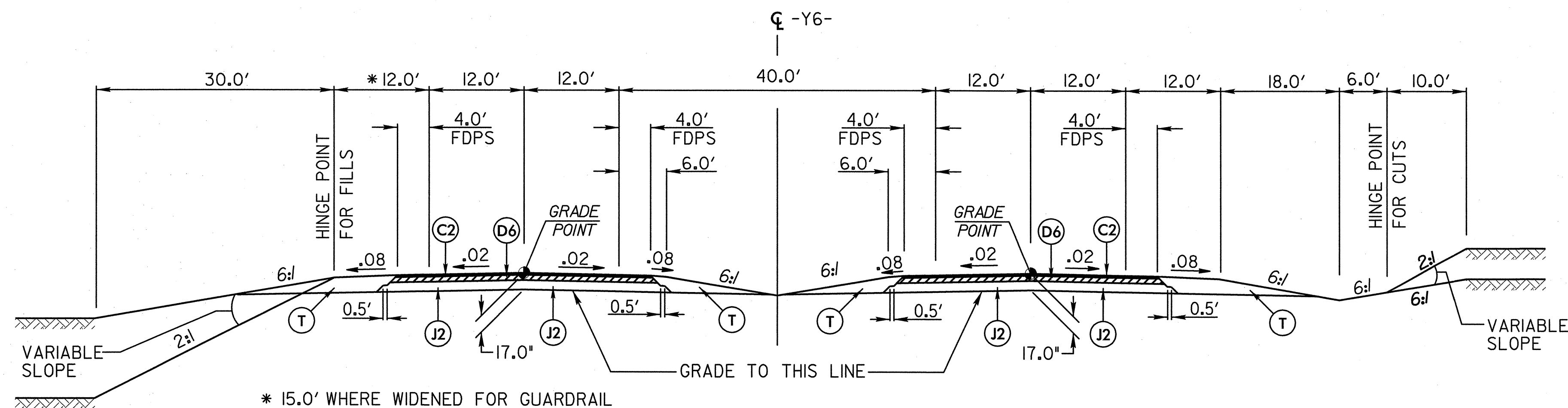
PROJECT REFERENCE NO. R-2707AA		SHEET NO. 2-D	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 022037 STEPHEN T. SMALL WOOD		PAVING ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 13368 DON CHI CHEN 2/28/13	
SEAL NOT VALID UNLESS SIGNED AND DATED			



NOTE: SLOPES WITHIN INTERCHANGE WILL BE 4:1 OR FLATTER. 6:1 SLOPES WILL BE USED IN THE GORE AREAS WHERE FEASIBLE.

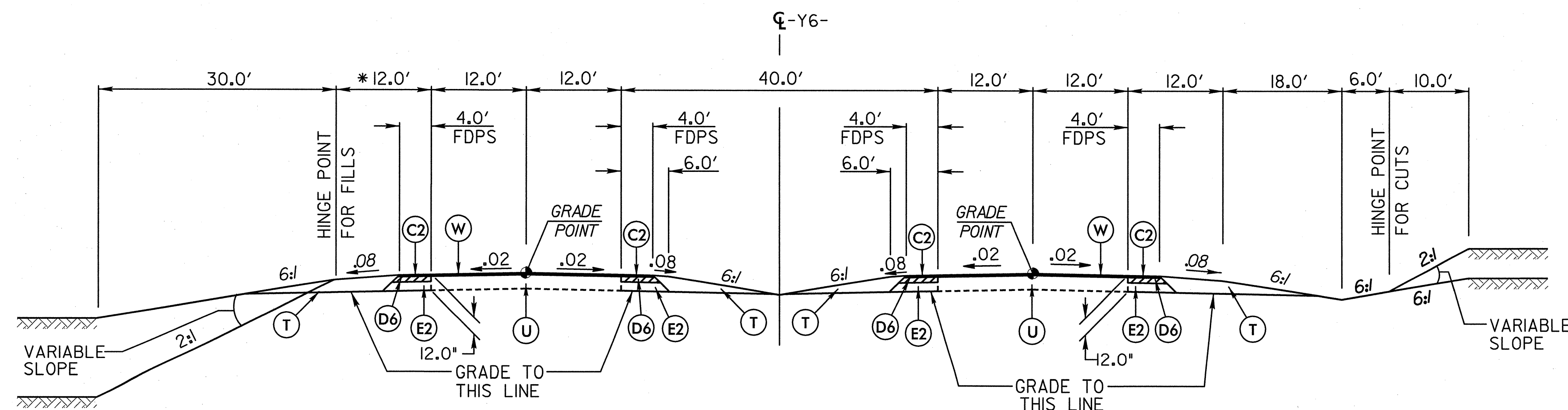
TYPICAL SECTION NO. 12

USE TYPICAL SECTION #12:
FROM STA. -Y2RAMPB- 10+00.00 TO STA. 25+90.11
FROM STA. -Y2RAMP- 10+00.00 TO STA. 31+34.19



TYPICAL SECTION NO. 13

USE TYPICAL SECTION #13:
FROM -Y6- STA. 10+00.00 TO STA. 25+50.00



TYPICAL SECTION NO. 14

USE TYPICAL SECTION #14:
FROM -Y6- STA. 25+50.00 TO STA. 28+50.00

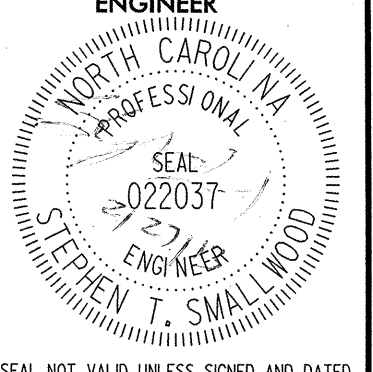
CODE	PAVEMENT SCHEDULE
C1	3.0" ASPHALT, TYPE S9.5B
C2	3.0" ASPHALT, TYPE S9.5C
C3	VAR. DEPTH ASPHALT, TYPE S9.5B
C4	VAR. DEPTH ASPHALT, TYPE S9.5C
D1	2.5" ASPHALT, TYPE I19.0B
D2	3.0" ASPHALT, TYPE I19.0B
D3	4.0" ASPHALT, TYPE I19.0B
D4	3.0" ASPHALT, TYPE I19.0C
D5	3.5" ASPHALT, TYPE I19.0C
D6	4.0" ASPHALT, TYPE I19.0C
D7	VAR. DEPTH ASPHALT, TYPE I19.0B
D8	VAR. DEPTH ASPHALT, TYPE I19.0C
E1	4.0" ASPHALT, TYPE B25.0B
E2	5.0" ASPHALT, TYPE B25.0C
E3	8.5" ASPHALT, TYPE B25.0C
E4	VAR. DEPTH ASPHALT, TYPE B25.0C
E5	VAR. DEPTH ASPHALT, TYPE B25.0B
J1	8.0" AGGREGATE BASE COURSE
J2	10.0" AGGREGATE BASE COURSE
J3	VAR. AGGREGATE BASE COURSE
K	CEMENT LIME STABILIZATION
P	PRIME COAT
R	2'-6" CONCRETE CURB AND GUTTER
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT

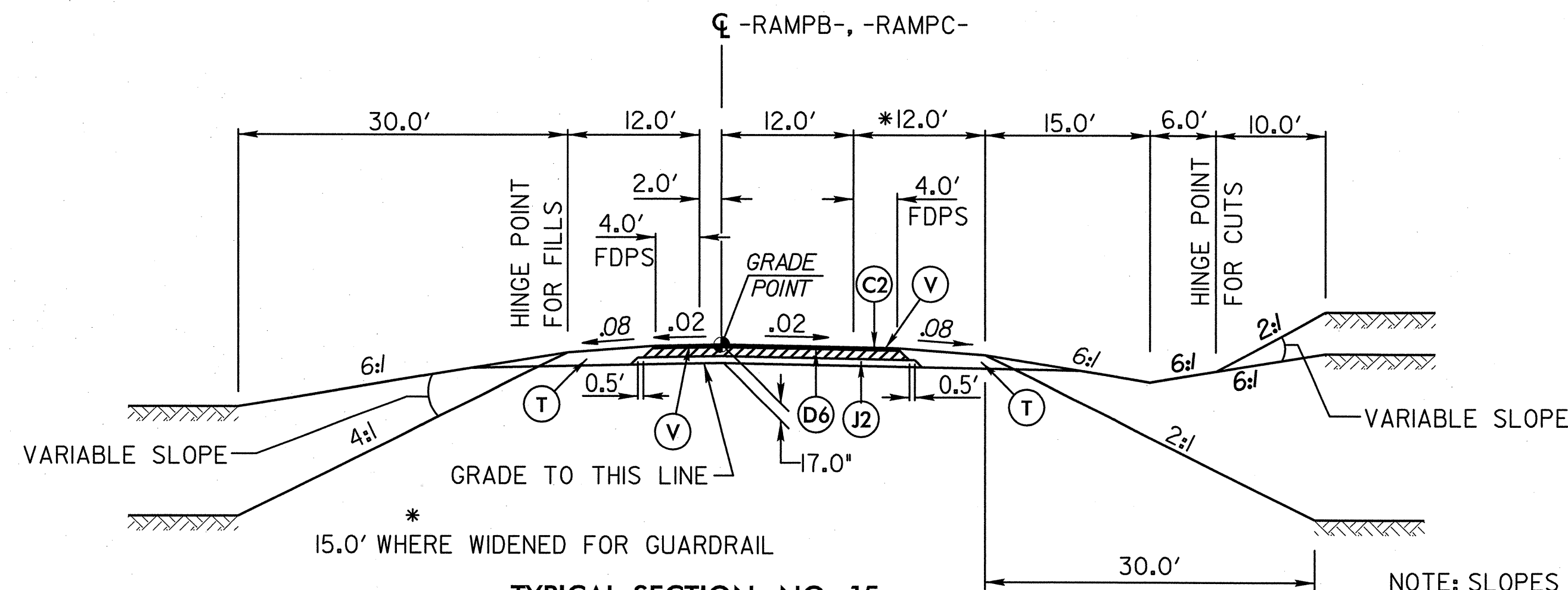
Note: Pavement Edge Slopes are 1:1 Unless Shown Otherwise

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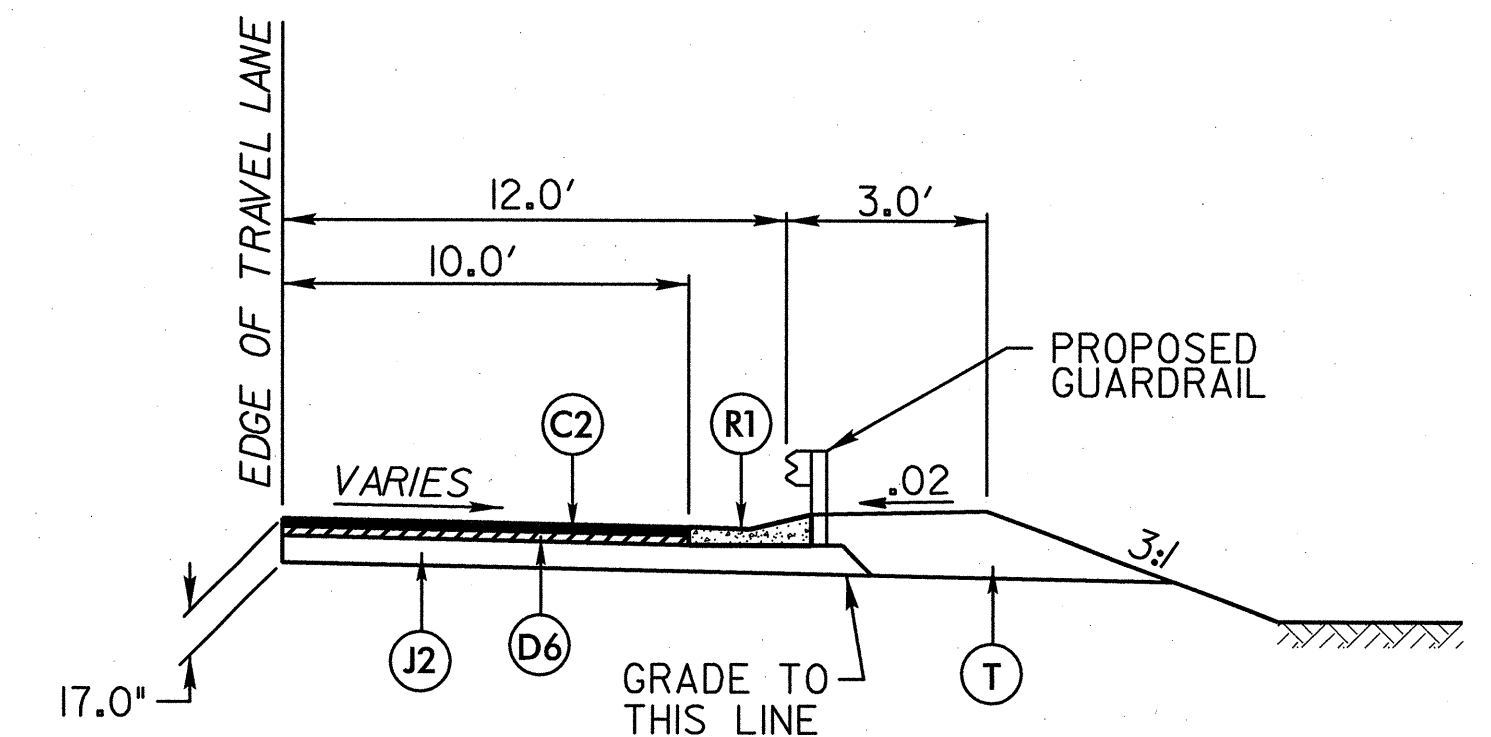
PROJECT REFERENCE NO. R-2707AA		SHEET NO. 2-E
ROADWAY DESIGN ENGINEER 	PAVING ENGINEER 	
SEAL NOT VALID UNLESS SIGNED AND DATED 2/28/13		



TYPICAL SECTION NO. 15

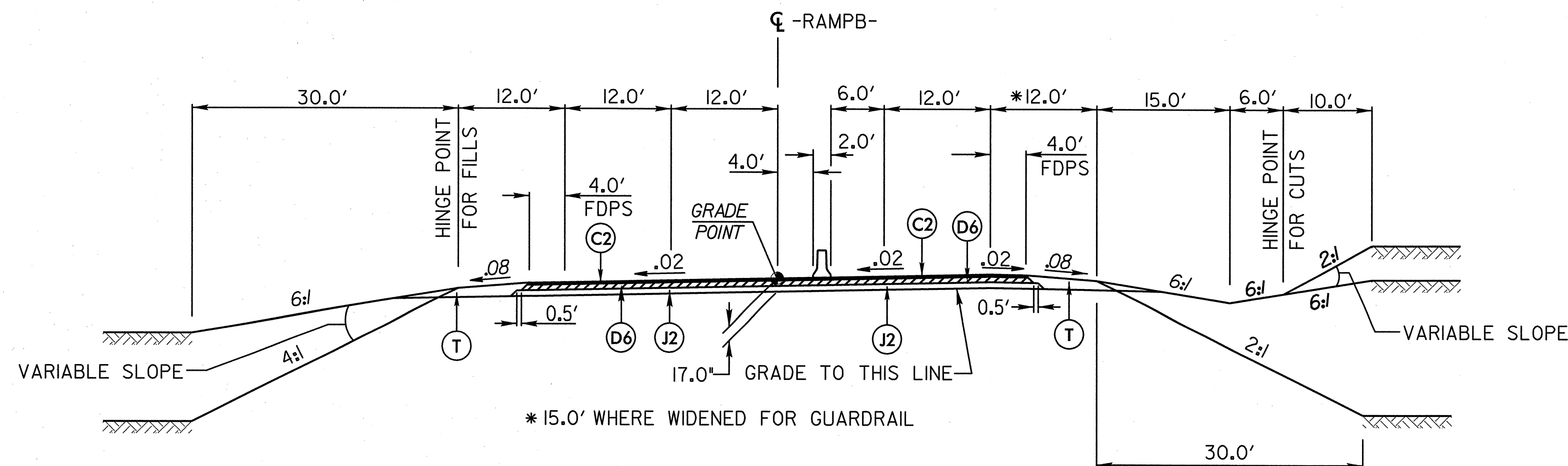
USE TYPICAL SECTION #15:
FROM STA. -RAMPB- 11+22.45 TO STA. 21+61.81
FROM STA. -RAMPB- 51+49.07 TO STA. 52+13.37
FROM STA. -RAMPC- 10+00.00 TO STA. 34+87.58

NOTE: SLOPES WITHIN INTERCHANGE
WILL BE 4:1 OR FLATTER. 6:1 SLOPES
WILL BE USED IN THE GORE AREAS
WHERE FEASIBLE.



**DETAIL OF PAVEMENT WIDENING AT
SHOULDER BERM GUTTER**

FROM STA. -RAMPB- 33+75 LT. TO STA. -RAMPB- 36+37 LT.
FROM STA. -RAMPB- 39+80 LT. TO STA. -RAMPB- 42+00 LT.



TYPICAL SECTION NO. 16

USE TYPICAL SECTION #16:
FROM STA. -RAMPB- 21+61.81 TO STA. 36+06.67 (BRIDGE)
FROM STA. -RAMPB- 39+24.17 (BRIDGE) TO STA. 51+49.07

NOTE: SLOPES WITHIN INTERCHANGE
WILL BE 4:1 OR FLATTER. 6:1 SLOPES
WILL BE USED IN THE GORE AREAS
WHERE FEASIBLE.

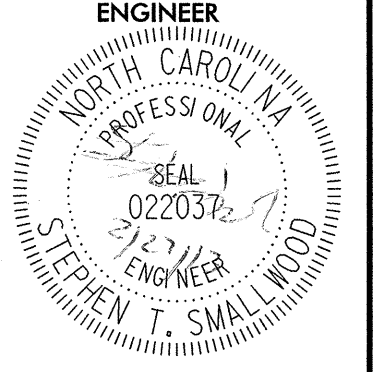
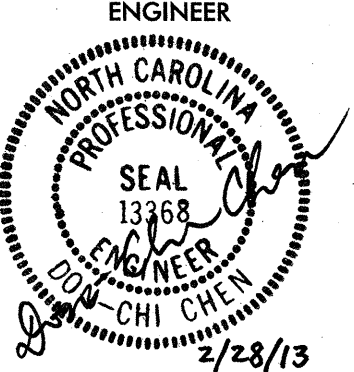
CODE	PAVEMENT SCHEDULE
C1	3.0" ASPHALT, TYPE S9.5B
C2	3.0" ASPHALT, TYPE S9.5C
C3	VAR. DEPTH ASPHALT, TYPE S9.5B
C4	VAR. DEPTH ASPHALT, TYPE S9.5C
D1	2.5" ASPHALT, TYPE I19.0B
D2	3.0" ASPHALT, TYPE I19.0B
D3	4.0" ASPHALT, TYPE I19.0B
D4	3.0" ASPHALT, TYPE I19.0C
D5	3.5" ASPHALT, TYPE I19.0C
D6	4.0" ASPHALT, TYPE I19.0C
D7	VAR. DEPTH ASPHALT, TYPE I19.0B
D8	VAR. DEPTH ASPHALT, TYPE I19.0C
E1	4.0" ASPHALT, TYPE B25.0B
E2	5.0" ASPHALT, TYPE B25.0C
E3	8.5" ASPHALT, TYPE B25.0C
E4	VAR. DEPTH ASPHALT, TYPE B25.0C
E5	VAR. DEPTH ASPHALT, TYPE B25.0B
J1	8.0" AGGREGATE BASE COURSE
J2	10.0" AGGREGATE BASE COURSE
J3	VAR. AGGREGATE BASE COURSE
K	CEMENT LIME STABILIZATION
P	PRIME COAT
R	2'-6" CONCRETE CURB AND GUTTER
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	RUMBLE STRIPS
W	VARIABLE DEPTH ASPHALT PAVEMENT

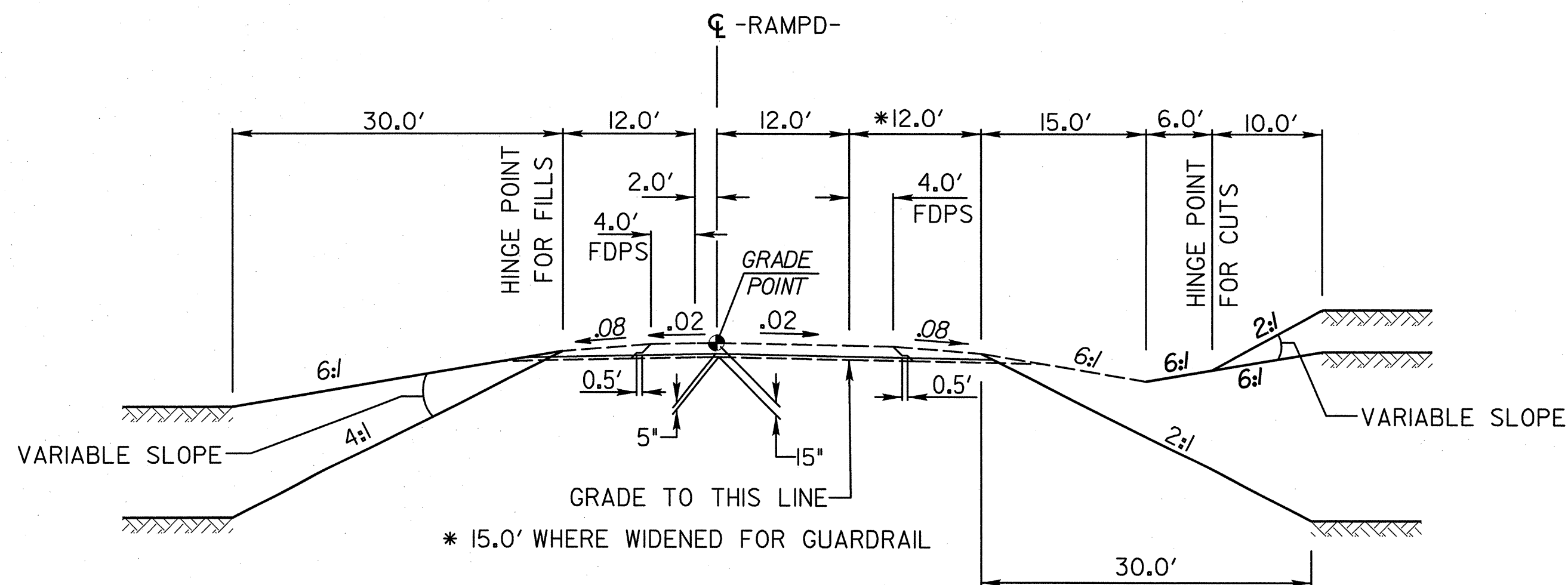
Note: Pavement Edge Slopes are 1:1 Unless Shown Otherwise

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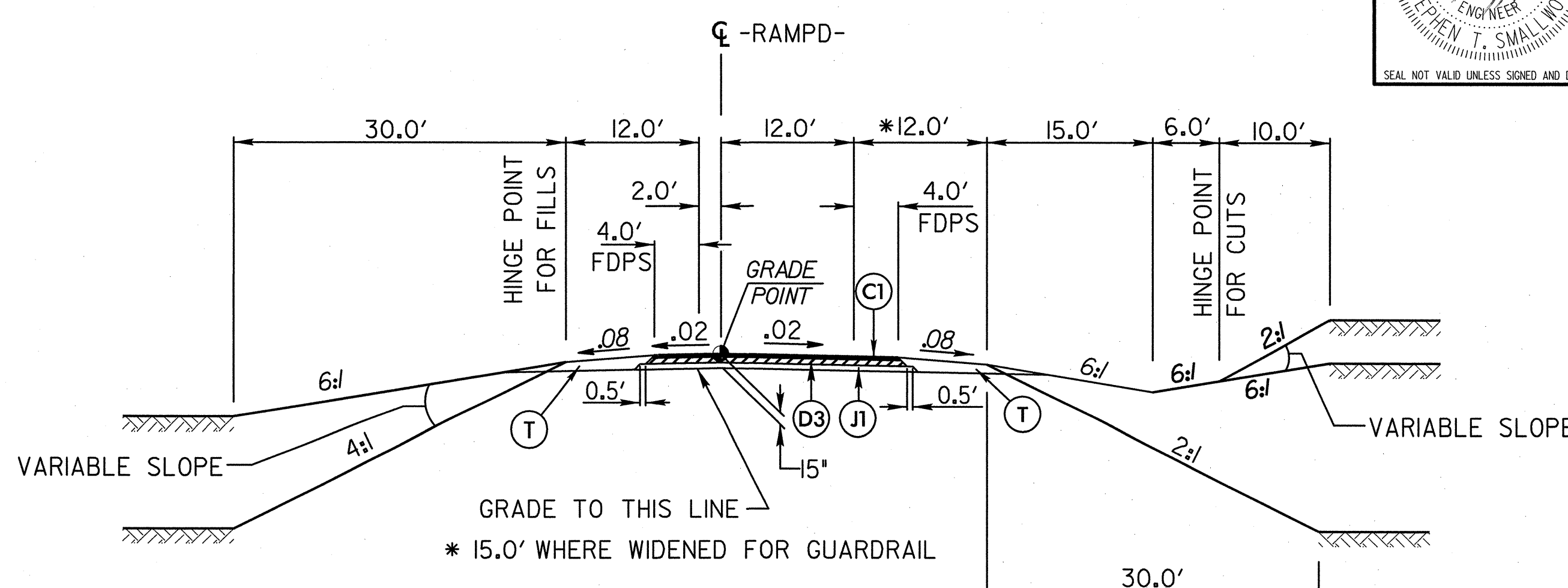
PROJECT REFERENCE NO. R-2707AA		SHEET NO. 2-F
ROADWAY DESIGN ENGINEER 	PAVING ENGINEER 	
SEAL NOT VALID UNLESS SIGNED AND DATED		



TYPICAL SECTION NO. 17

USE TYPICAL SECTION #17:
FROM STA. -RAMPD- 10+00.00 TO STA. 17+88.46

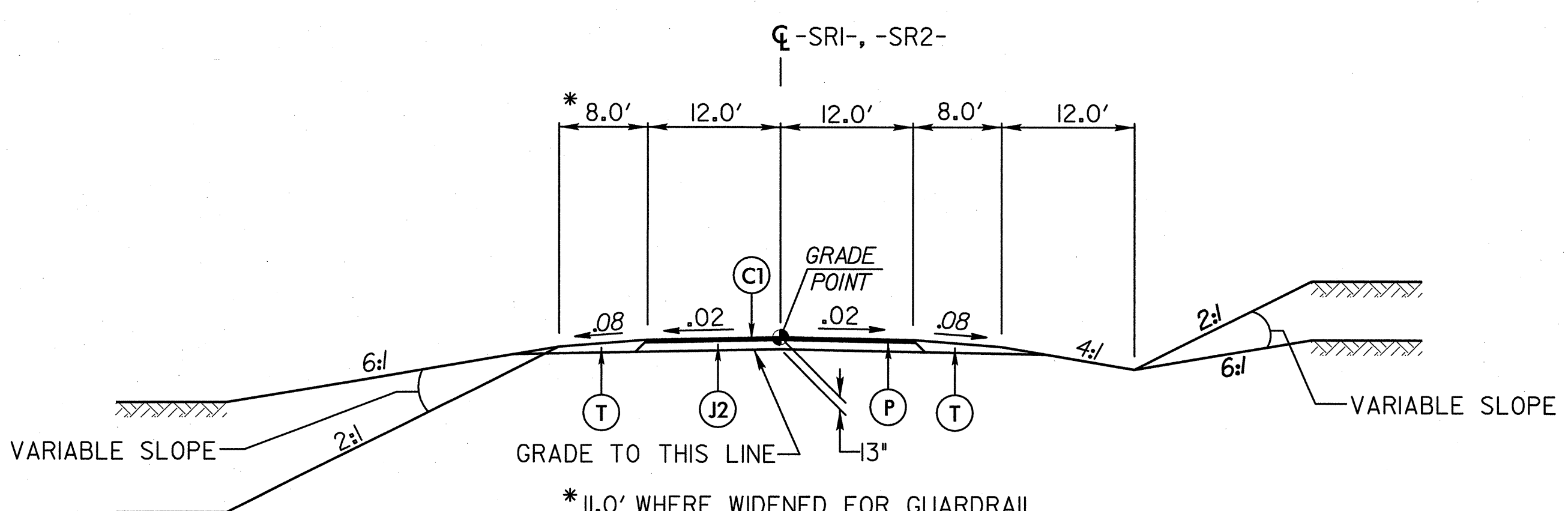
NOTE: SLOPES WITHIN INTERCHANGE
WILL BE 4:1 OR FLATTER. 6:1 SLOPES
WILL BE USED IN THE GORE AREAS
WHERE FEASIBLE.



TYPICAL SECTION NO. 18

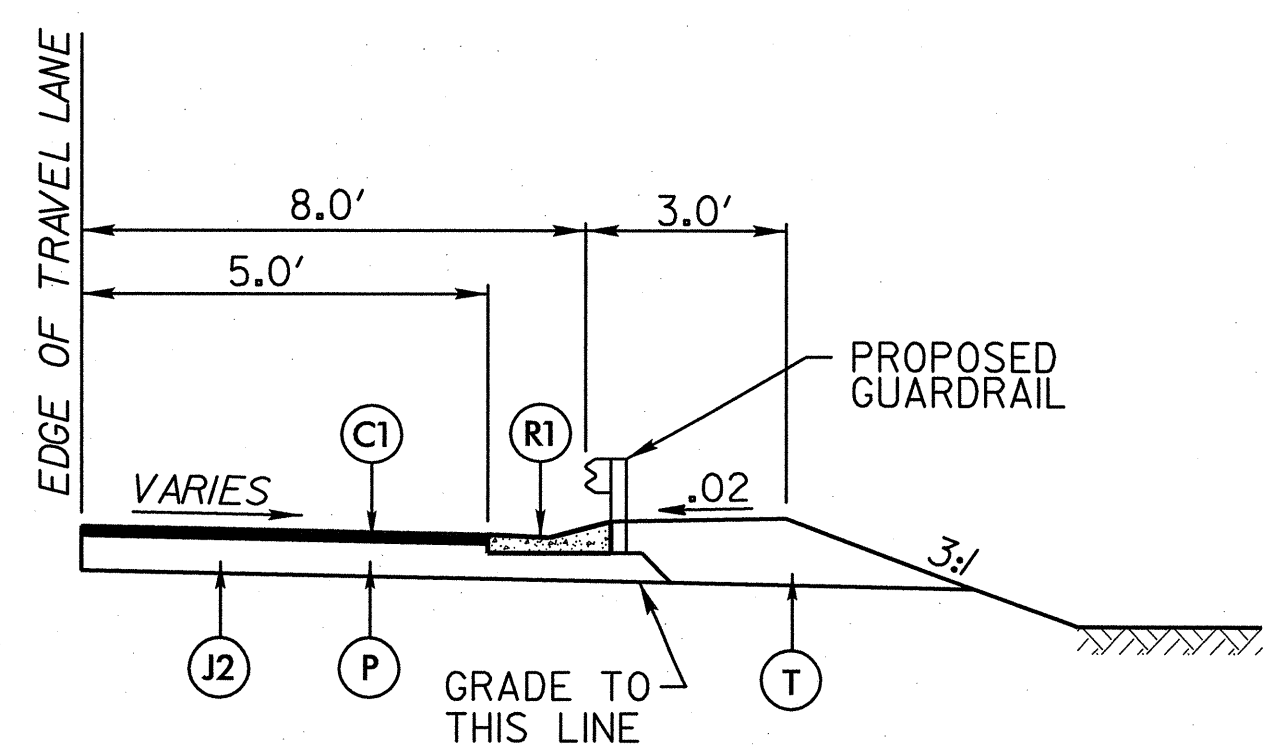
USE TYPICAL SECTION #18:
FROM STA. -RAMPD- 17+88.46 TO STA. 21+04.26

NOTE: SLOPES WITHIN INTERCHANGE
WILL BE 4:1 OR FLATTER. 6:1 SLOPES
WILL BE USED IN THE GORE AREAS
WHERE FEASIBLE.



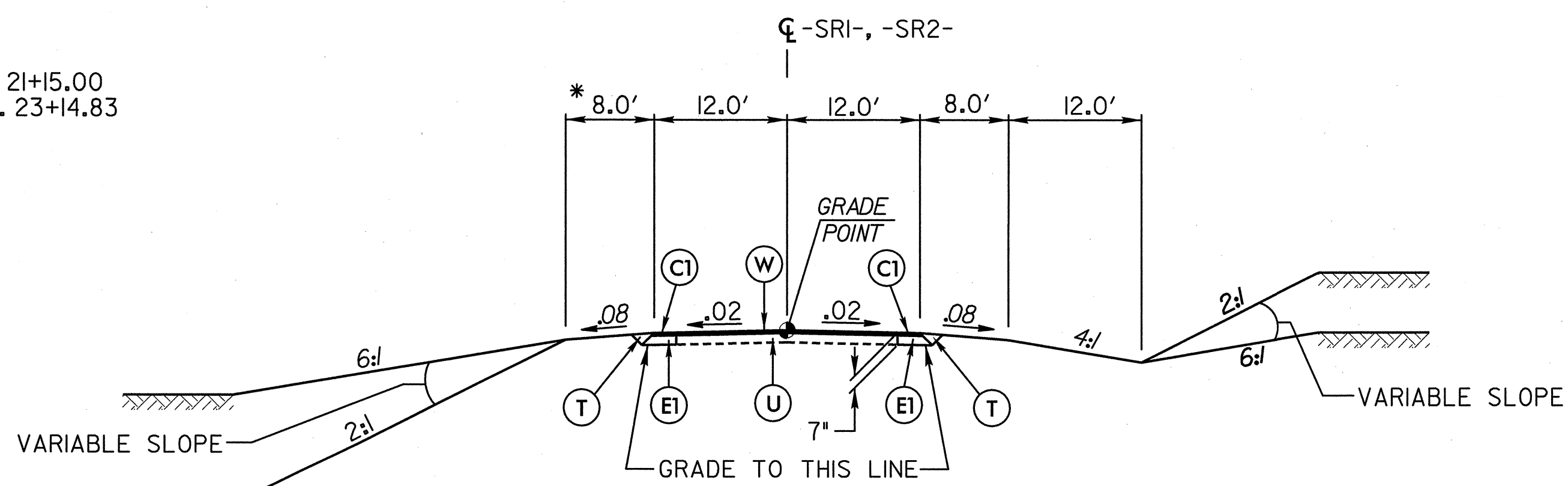
TYPICAL SECTION NO. 19

USE TYPICAL SECTION #19:
FROM STA. -SRI- 10+00.00 TO STA. 21+15.00
FROM STA. -SR2- 15+00.00 TO STA. 23+14.83



**DETAIL OF PAVEMENT WIDENING AT
SHOULDER BERM GUTTER**

FROM STA. -SR2- 13+85 RT. TO STA. -SR2- 19+00 RT.



TYPICAL SECTION NO. 20

USE TYPICAL SECTION #20:
FROM STA. -SRI- 21+15.00 TO STA. 24+85.74
FROM STA. -SR2- 11+87.85 TO STA. 15+00.00

CODE	PAVEMENT SCHEDULE
C1	3.0" ASPHALT, TYPE S9.5B
C2	3.0" ASPHALT, TYPE S9.5C
C3	VAR. DEPTH ASPHALT, TYPE S9.5B
C4	VAR. DEPTH ASPHALT, TYPE S9.5C
D1	2.5" ASPHALT, TYPE I19.0B
D2	3.0" ASPHALT, TYPE I19.0B
D3	4.0" ASPHALT, TYPE I19.0B
D4	3.0" ASPHALT, TYPE I19.0C
D5	3.5" ASPHALT, TYPE I19.0C
D6	4.0" ASPHALT, TYPE I19.0C
D7	VAR. DEPTH ASPHALT, TYPE I19.0B
D8	VAR. DEPTH ASPHALT, TYPE I19.0C
E1	4.0" ASPHALT, TYPE B25.0B
E2	5.0" ASPHALT, TYPE B25.0C
E3	8.5" ASPHALT, TYPE B25.0C
E4	VAR. DEPTH ASPHALT, TYPE B25.0C
E5	VAR. DEPTH ASPHALT, TYPE B25.0B
J1	8.0" AGGREGATE BASE COURSE
J2	10.0" AGGREGATE BASE COURSE
J3	VAR. AGGREGATE BASE COURSE
K	CEMENT LIME STABILIZATION
P	PRIME COAT
R	2'-6" CONCRETE CURB AND GUTTER
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT

Note: Pavement Edge Slopes are 1:1 Unless Shown Otherwise

SHEAR POINT DIAGRAM

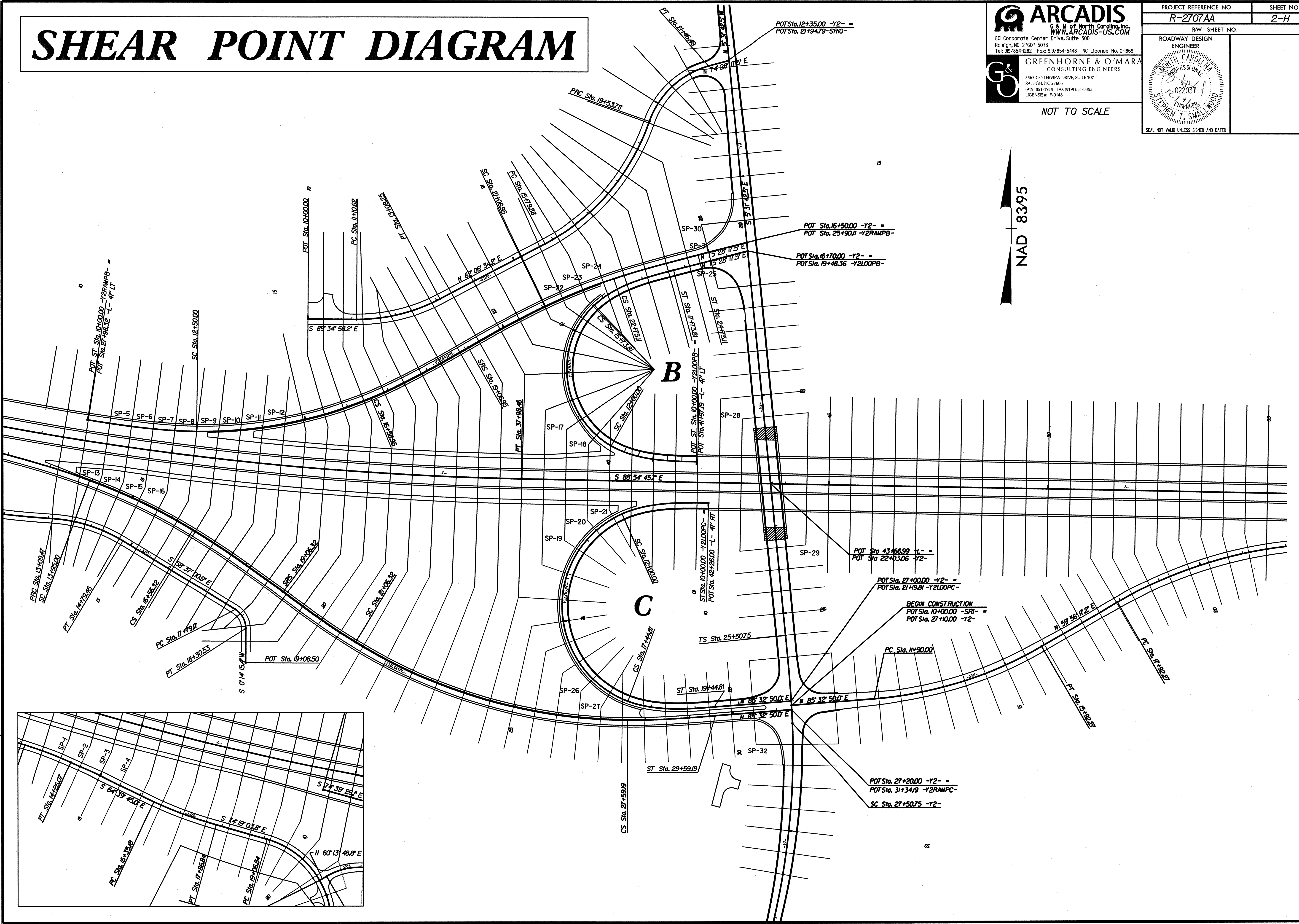
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CONSULTING ENGINEERS
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NC 27606
(919) 851-1919 FAX (919) 851-8393
LICENSE # F-0148

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2707AA	2-H
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	
SEAL 022037-1 NORTH CAROLINA PROFESSIONAL ENGINEER STEPHEN T. SMALLWOOD	
SEAL NOT VALID UNLESS SIGNED AND DATED	

NAD 8395



REVISIONS

ARCADIS G&M
PROJECT NO. R-2707AA
FILE NO. 2707AA-2-H

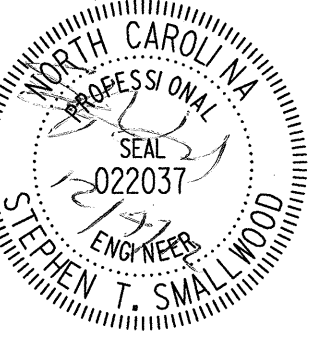
SHEAR POINT DIAGRAM

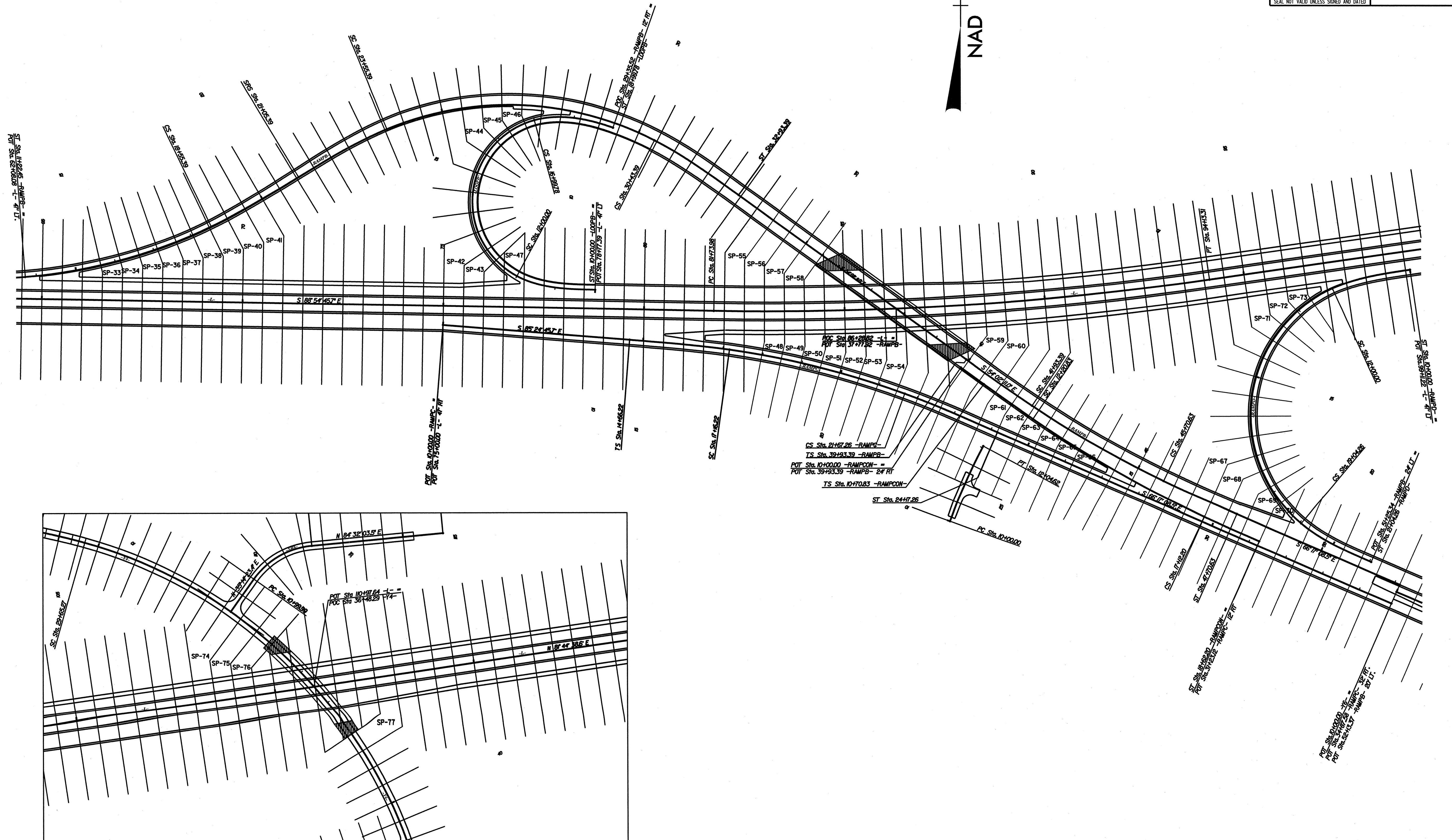
NAD 8395

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(919) 851-1919 FAX (919) 851-8393
LICENSE # F-0148

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2707AA	2-1
ROADWAY DESIGN ENGINEER  SEAL 022037 STEPHEN T. SMALLWOOD ENGINEER	
SEAL NOT VALID UNLESS SIGNED AND DATED	



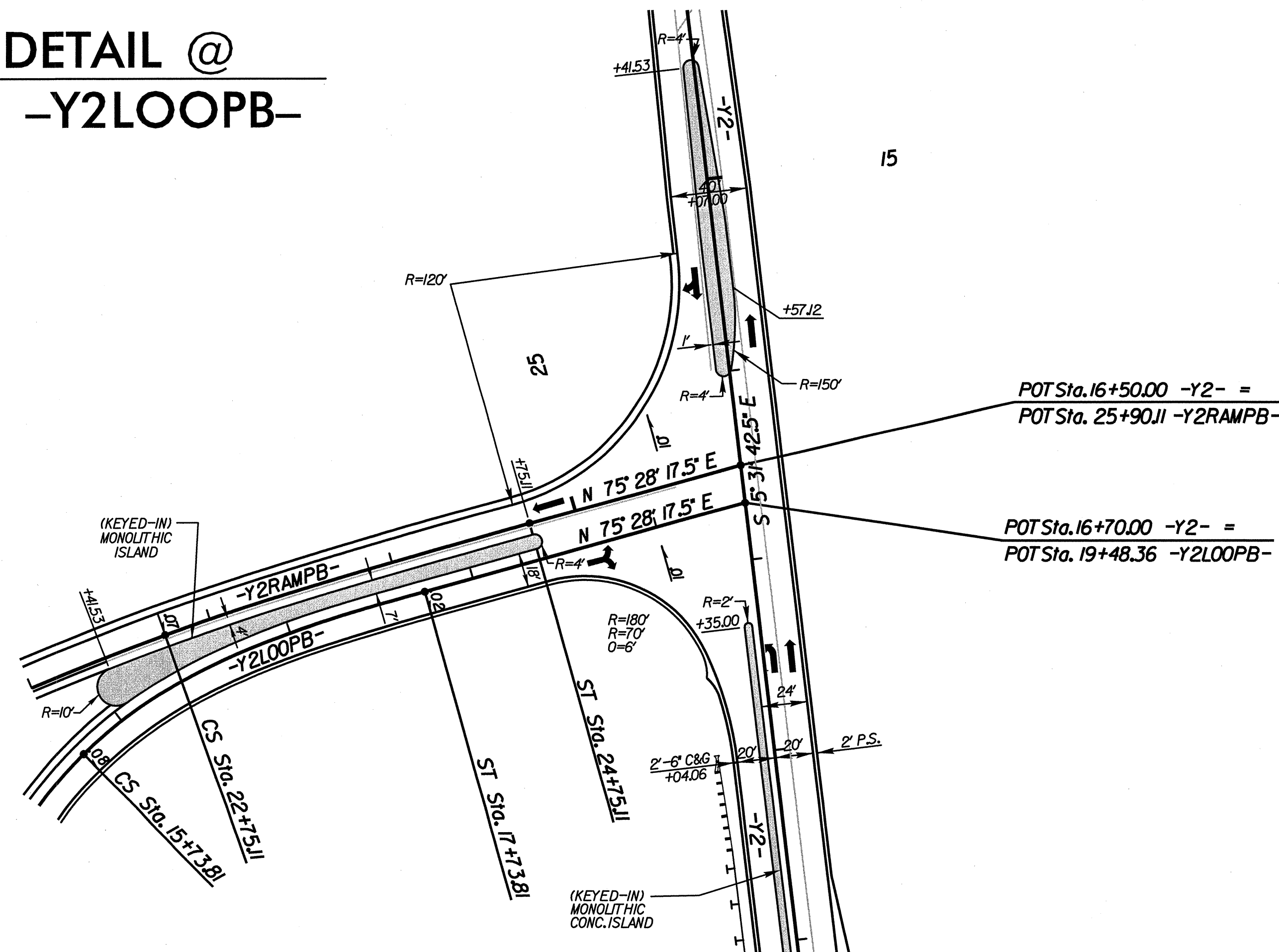
REVISIONS

INTERSECTION DETAIL @ -Y2, -Y2RAMPB- & -Y2LOOPB-

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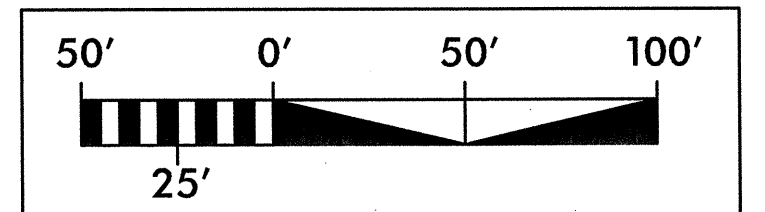
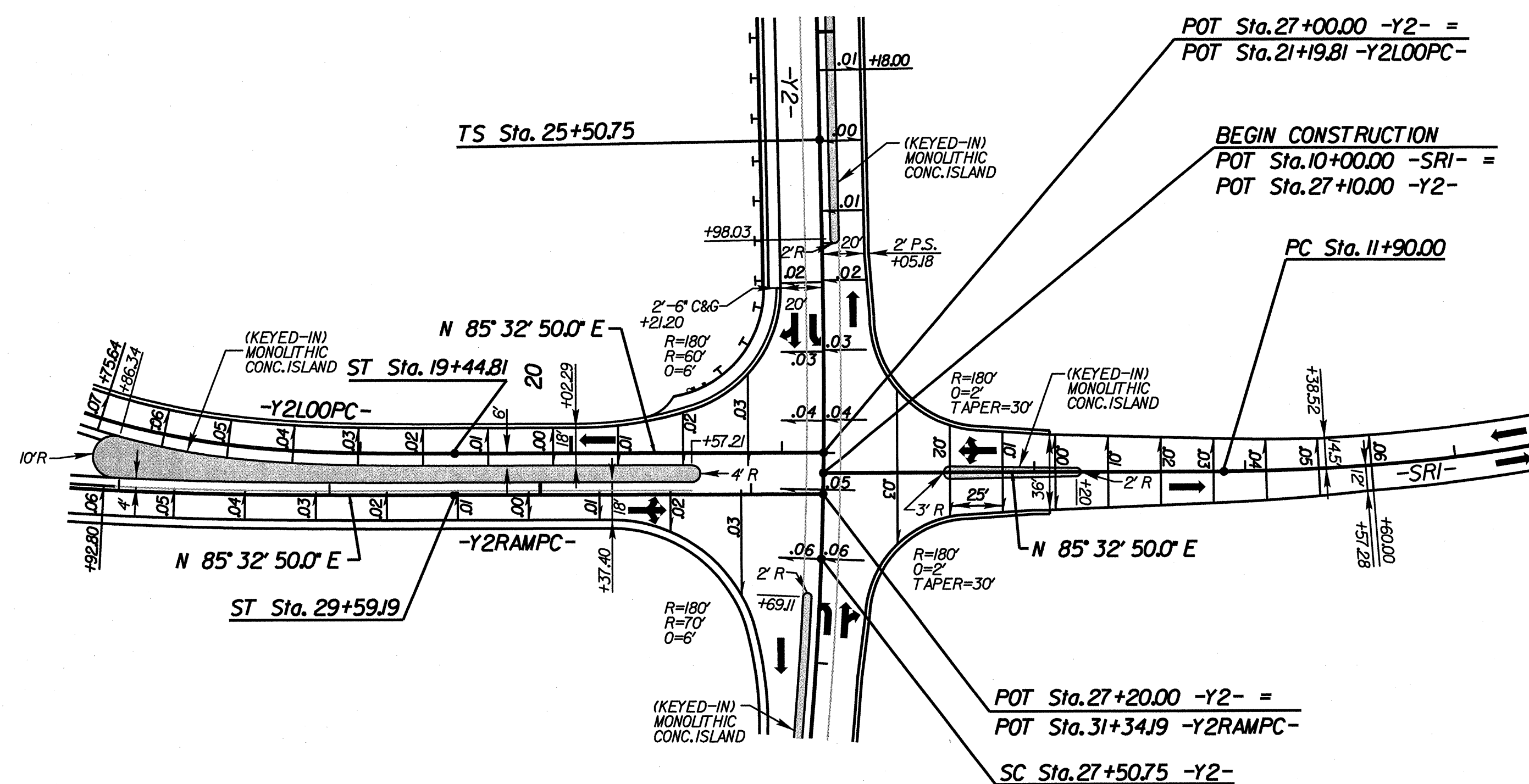
PROJECT REFERENCE NO.	SHEET NO.
R-2707AA	2-J
ROADWAY DESIGN ENGINEER	PAVING ENGINEER
SEAL 022037 STEPHEN T. SMALLWOOD	
SEAL NOT VALID UNLESS SIGNED AND DATED	

NC GRID NAD 83/95



SEE SHEET 6 FOR -Y2-, -Y2RAMPB & -Y2LOOPB-

INTERSECTION DETAIL @ -Y2, -Y2RAMPC- & -Y2LOOPC-



SEE SHEET 6 FOR -Y2-, -Y2RAMPC & -Y2LOOPC-

GEOTECHNICAL
ENGINEER

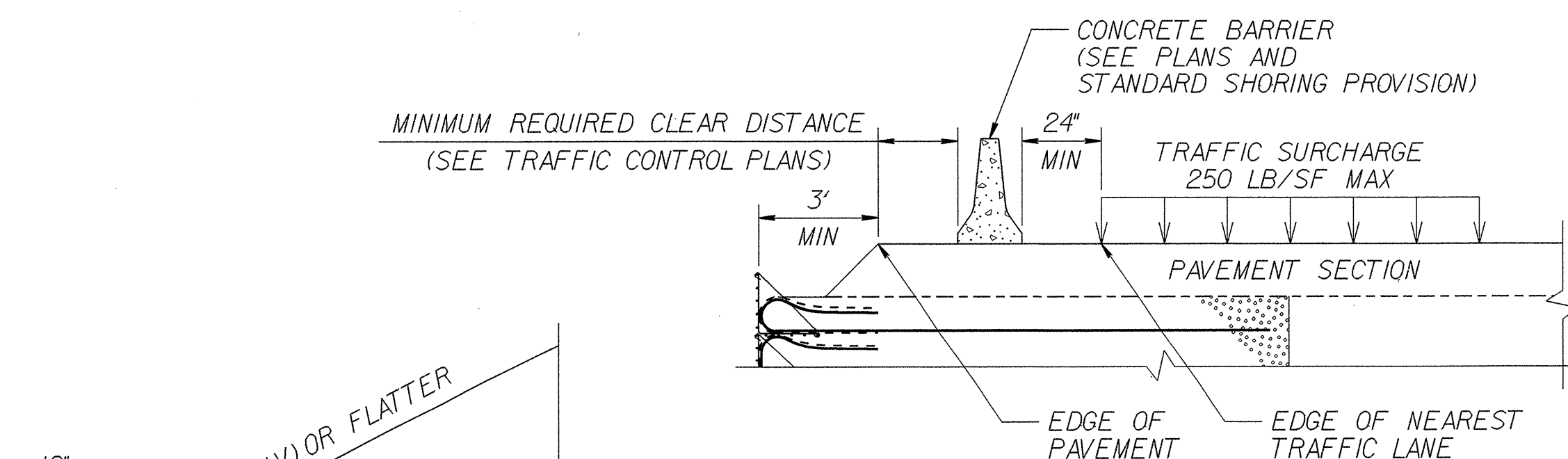
ENGINEER

ENGINEER

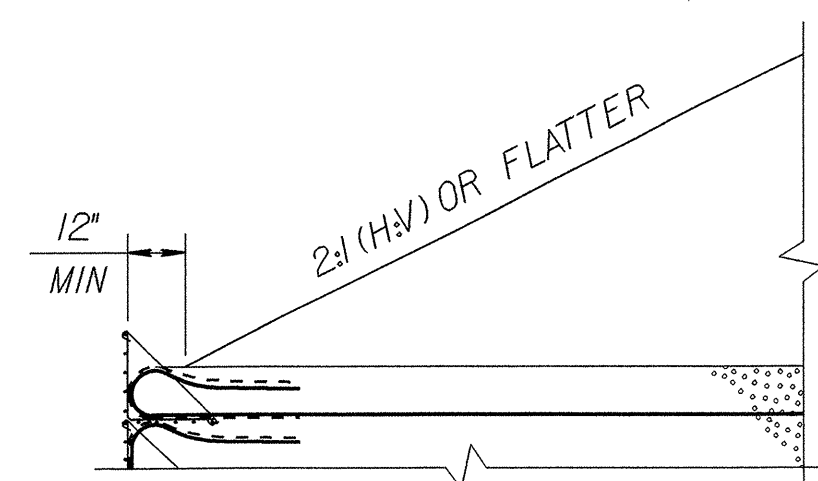


scott a. hidden 8/10/12

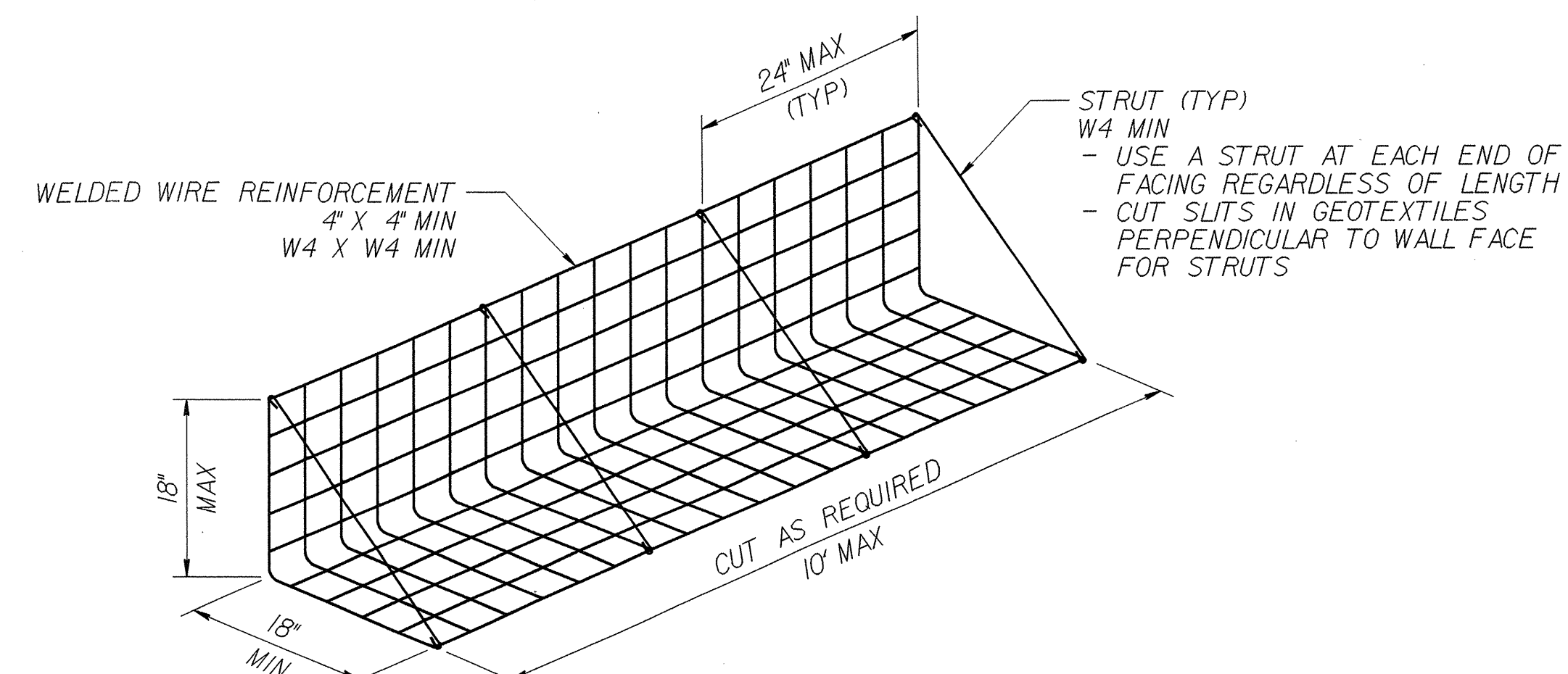
SIGNATURE _____



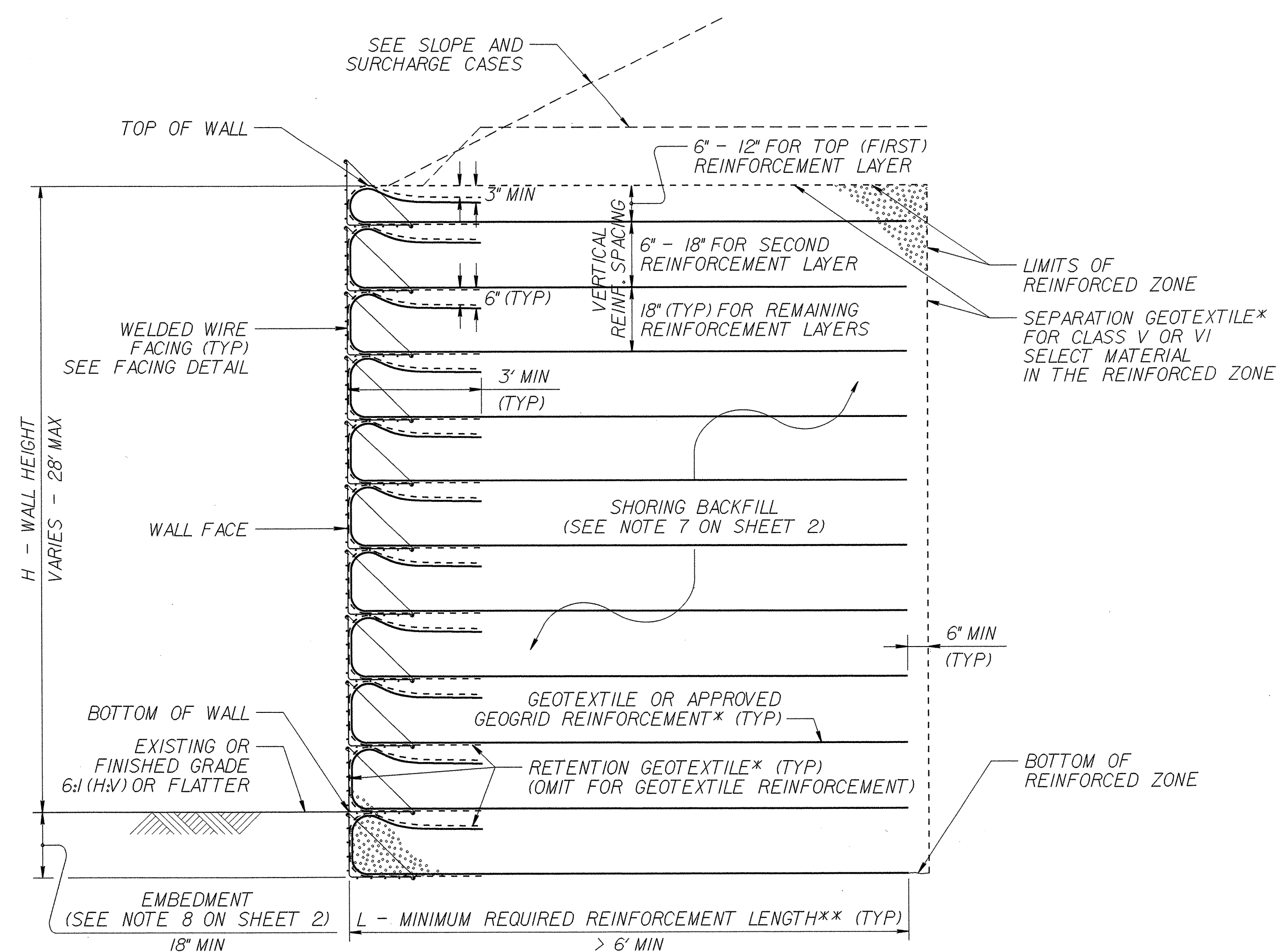
SURCHARGE CASE



SLOPE CASE



FACING DETAIL

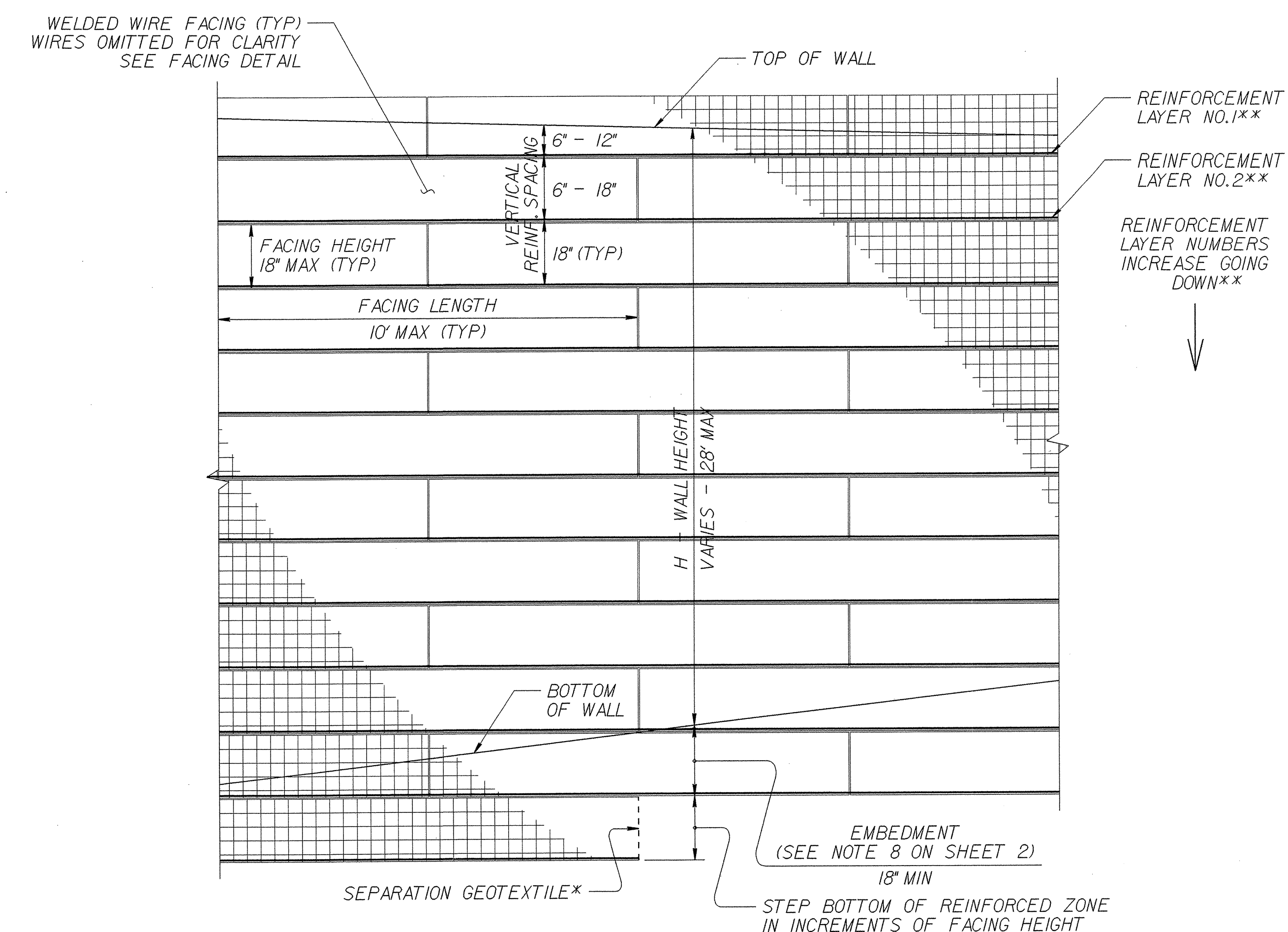


STANDARD TEMPORARY WALL

(FOR STANDARD TEMPORARY WALLS ON STRUCTURES,
SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)

***SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.**

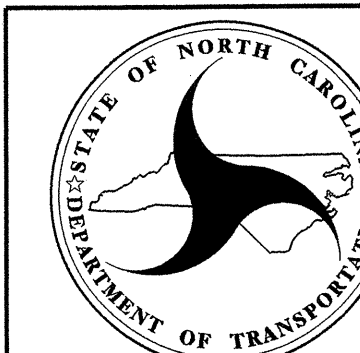
****SEE REINFORCEMENT TABLES ON SHEET 3.**



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

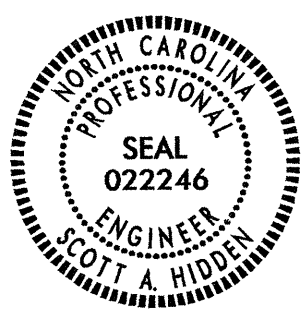
STANDARD DRAWING NO. 1801.02

STANDARD
TEMPORARY WALL
Sheet 1 of 3

DATE: 11-20-12

PROJECT REFERENCE NO.
R-2901AA

SHEET
2-M

GEOTECHNICAL ENGINEER

Scott A. Hadden 8/10/12

ENGINEER

WALL HEIGHT (H) + EMBEDMENT (FT)	NUMBER OF REINFORCEMENT LAYERS*
2.5 - 4	3
4 - 5.5	4
5.5 - 7	5
7 - 8.5	6
8.5 - 10	7
10 - 11.5	8
11.5 - 13	9
13 - 14.5	10
14.5 - 16	11
16 - 17.5	12
17.5 - 19	13
19 - 20.5	14
20.5 - 22	15
22 - 23.5	16
23.5 - 25	17
25 - 26.5	18
26.5 - 28	19
28 - 29.5	20

*BASED ON VERTICAL REINFORCEMENT SPACING SHOWN ON SHEET 1.

SLOPE OR SURCHARGE CASE	GROUNDWATER DEPTH BELOW BOTTOM OF REINFORCED ZONE (SEE NOTE 6 ON SHEET 2) (FT)	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)	H - WALL HEIGHT (FT)																									
			< 4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
SLOPE CASE	> 0	CLASS II, TYPE I, CLASS III, CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	8	9	11	12	13	13	14	15	16	17	18	19	20	21	22	23	24	24	25	26	27	27	
SURCHARGE CASE	> 0 TO 7 FOR H < 20' > 0 TO 10 FOR H ≥ 20'	ALL SHORING BACKFILL TYPES	6	7	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	17	17	18	19	19	20	21	22	
	> 7 FOR H < 20' > 10 FOR H ≥ 20'	A-2-4 SOIL	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	
		CLASS II, TYPE I OR CLASS III SELECT MATERIAL	6	6	7	7	8	8	9	10	10	11	11	12	12	13	14	15	15	16	16	17	17	18	18	19	20	
		CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	7	7	8	8	9	9	10	10	11	12	13	13	14	14	15	15	16	17	17	18	19	19	

L - MINIMUM REQUIRED REINFORCEMENT LENGTH (FT)
(FOR ALL REINFORCEMENT TYPES)

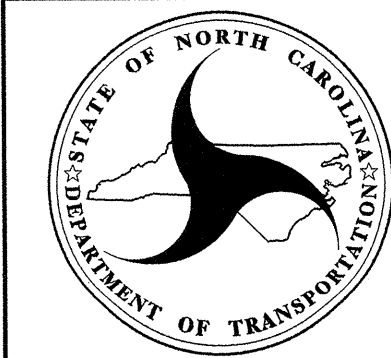
REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL	A-2-4 SOIL	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL
1	2400	2400	2400	2400	2400
2	2400	2400	2400	2400	2400
3	2400	2400	2400	2400	2400
4	2400	2400	2500	2400	2400
5	2500	2400	3000	2400	2400
6	3000	2400	3500	2800	2400
7	3500	2700	4000	3200	2600
8	4000	3100	4500	3600	2900
9	4500	3500	5000	4000	3200
10	5000	3900	5500	4400	3500
11	5500	4300	6000	4800	3800
12	6000	4700	6500	5200	4100
13	6500	5100	7000	5600	4400
14	7000	5400	7500	6000	4700
15	7500	5800	8000	6400	5000
16	8000	6200	8500	6800	5300
17	8500	6600	9000	7200	5600
18	9000	7000	9500	7600	5900
19	9500	7400	10000	8000	6200
20	10000	7800	10500	8400	6500

GEOTEXTILE REINFORCEMENT
ULTIMATE TENSILE STRENGTH (LB/FT)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL	A-2-4 SOIL	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL
1	240	200	340	290	240
2	380	310	520	430	350
3	530	420	700	570	460
4	690	550	870	720	570
5	860	690	1050	860	680
6	1030	830	1220	1000	790
7	1200	970	1400	1150	900
8	1370	1110	1580	1290	1010
9	1550	1240	1750	1430	1120
10	1720	1380	1930	1580	1230
11	1890	1520	2100	1720	1340
12	2060	1660	2280	1860	1450
13	2240	1800	2450	2010	1560
14	2410	1940	2630	2150	1670
15	2580	2080	2800	2290	1780
16	2750	2220	2980	2440	1890
17	2930	2360	3160	2580	2000
18	3100	2500	3330	2720	2110
19	3270	2640	3510	2860	2220
20	3440	2780	3690	3000	2330

GEOGRID REINFORCEMENT
SHORT-TERM DESIGN STRENGTH (LB/FT)
(SEE NOTE 10 ON SHEET 2.)

MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD
(SEE NOTE 9 ON SHEET 2.)
*SEE PARTIAL ELEVATION ON SHEET 1
FOR REINFORCEMENT LAYER NUMBERING.



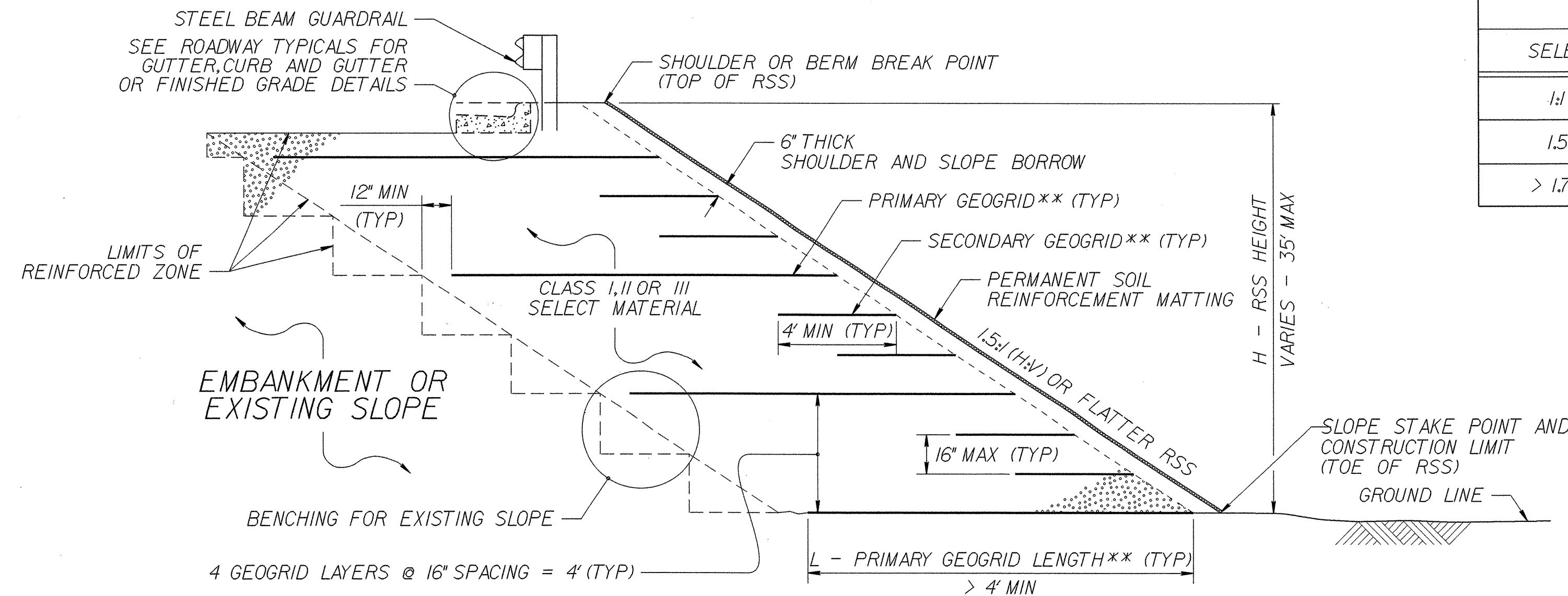
GEOTECHNICAL
ENGINEERING UNIT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

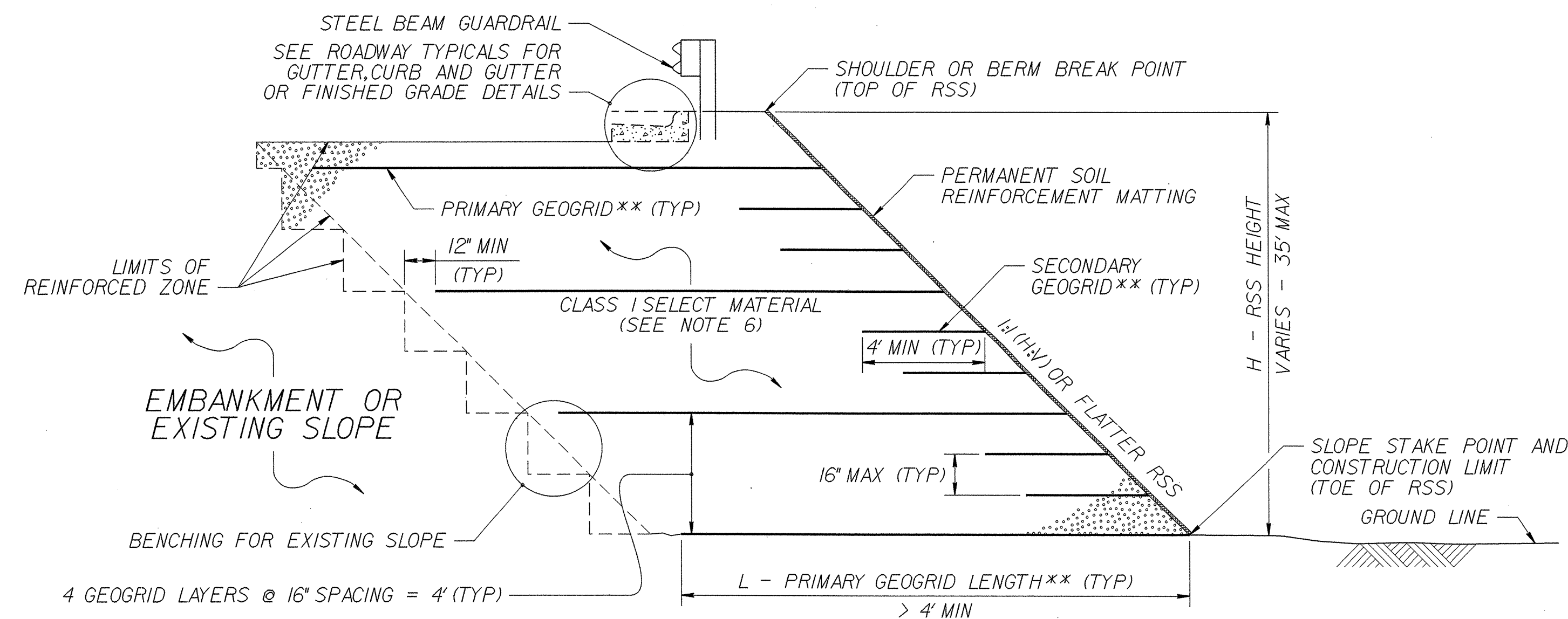
STANDARD DRAWING NO. 1801.02

STANDARD
TEMPORARY WALL
Sheet 3 of 3

DATE: 11-20-12



STANDARD RSS WITH SELECT MATERIAL THAT DOES NOT MEET ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS
****SEE TABLES AND GEOGRID PLACEMENT DETAILS.**



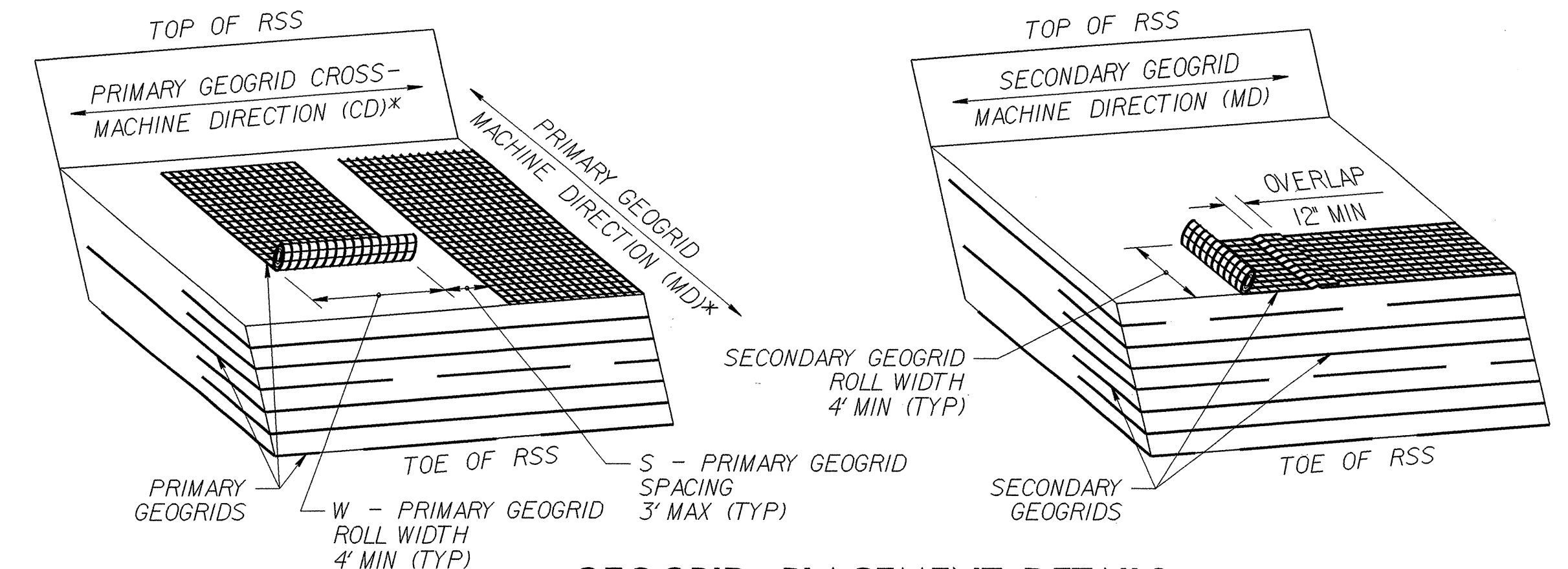
STANDARD RSS WITH SELECT MATERIAL THAT MEETS ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS
****SEE TABLES AND GEOGRID PLACEMENT DETAILS.**

GEOGRID TYPE, DIRECTION	H (FT)	0 - < 10		10 - 20		> 20 - 35	
	SELECT MATERIAL CLASS	I	II OR III	I	II OR III	I	II OR III
PRIMARY GEOGRID, MD (SUBSTITUTE SECONDARY GEOGRID FOR PRIMARY GEOGRID FOR 2:1 (H:V) OR FLATTER RSS)	1:1 TO < 1.5:1 (H:V) RSS	600	SEE NOTE 6	1200	SEE NOTE 6	2100	SEE NOTE 6
	1.5:1 TO 1.75:1 (H:V) RSS	500	500	800	500	1100	700
	> 1.75:1 TO < 2:1 (H:V) RSS	500	500	600	500	800	500
SECONDARY GEOGRID, CD	1:1 (H:V) OR FLATTER RSS	200					

LTDS - MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH (LB/FT)
 (LTDS IS BASED ON 100% COVERAGE FOR PRIMARY GEOGRID.
 SEE NOTE 9 FOR LESS THAN 100% COVERAGE.)

H (FT)	0 - < 10		10 - 20		> 20 - 35	
SELECT MATERIAL CLASS	I	II OR III	I	II OR III	I	II OR III
1:1 TO < 1.5:1 (H:V) RSS	1.25	SEE NOTE 6	1.15	SEE NOTE 6	1.05	SEE NOTE 6
1.5:1 TO 1.75:1 (H:V) RSS	1.20	1.05	1.10	1.00	1.00	0.95
> 1.75:1 TO < 2:1 (H:V) RSS	1.15	0.80	1.05	0.75	0.95	0.70

L/H RATIO (L > 4' MIN)
 (IF L ≤ 4', USE SECONDARY GEOGRID INSTEAD OF PRIMARY GEOGRID.)



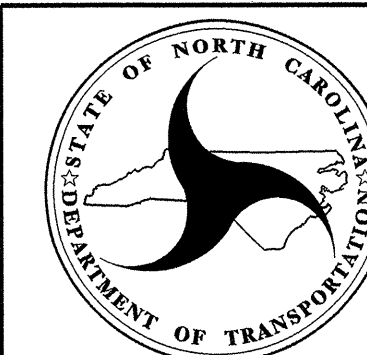
GEOGRID PLACEMENT DETAILS
 (% COVERAGE = $\frac{W}{W+S} \times 100 \geq 75\%$)
***SEE NOTES 8 AND 9.**

NOTES:

- SEE ROADWAY PLANS AND SUMMARY SHEETS FOR REINFORCED SOIL SLOPE (RSS) LOCATIONS.
- FOR STANDARD REINFORCED SOIL SLOPES, SEE REINFORCED SOIL SLOPES PROVISION. FOR PERMANENT SOIL REINFORCEMENT MATTING, SEE PERMANENT SOIL REINFORCEMENT MAT PROVISION. FOR STEEL BEAM GUARDRAIL, SEE SECTION 862 OF THE STANDARD SPECIFICATIONS.
- STANDARD RSS 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 RSS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE TOE OF RSS.
- DO NOT USE STANDARD RSS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW RSS.
- FOR 1:1 TO < 1.5:1 (H:V) RSS, USE CLASS I SELECT MATERIAL IN THE REINFORCED ZONE THAT MEETS ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS EXCEPT FOR SELECT MATERIAL THAT MEETS AASHTO M 145 FOR SOIL CLASSIFICATIONS A-4 AND A-5. DO NOT USE A-4 OR A-5 SOIL OR CLASS II OR III SELECT MATERIAL FOR 1:1 TO < 1.5:1 (H:V) RSS.
- GEOGRIDS ARE APPROVED FOR LONG-TERM DESIGN STRENGTHS FOR A 75-YEAR DESIGN LIFE IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) BASED ON MATERIAL TYPE. FOR DETAILS OF APPROVED GEOGRIDS AND LONG-TERM DESIGN STRENGTHS, SEE www.ncdot.org/doh/operations/materials/soils/gep.html. DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SELECT MATERIAL AS FOLLOWS:

MATERIAL TYPE	SELECT MATERIAL
BORROW	CLASS I SELECT MATERIAL
FINE AGGREGATE	CLASS II OR III SELECT MATERIAL

- DO NOT OVERLAP PRIMARY GEOGRIDS IN THE MD SO OVERLAPS ARE PARALLEL TO THE TOE OF RSS. POLYOLEFIN (e.g., HDPE OR PP) GEOGRIDS MAY BE SPliced ONCE PER PRIMARY GEOGRID LENGTH IN ACCORDANCE WITH THE GEOGRID MANUFACTURER'S INSTRUCTIONS. USE POLYOLEFIN GEOGRID PIECES AT LEAST 4' LONG. DO NOT SPlice POLYESTER TYPE (PET) GEOGRIDS.
- FOR PRIMARY GEOGRIDS WITH 100% COVERAGE, PLACE PRIMARY GEOGRIDS SO GEOGRIDS ARE ADJACENT TO EACH OTHER IN THE CD. FOR PRIMARY GEOGRIDS WITH 75% TO LESS THAN 100% COVERAGE,
 MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH = LTDS BASED ON 100% COVERAGE $\times (W + S) / W$
 SEE TABLE FOR LTDS BASED ON 100% COVERAGE AND GEOGRID PLACEMENT DETAILS FOR PRIMARY GEOGRID ROLL WIDTH (W) AND SPACING (S). FOR PRIMARY GEOGRIDS WITH LESS THAN 100% COVERAGE, STAGGER PRIMARY GEOGRIDS SO GEOGRIDS ARE CENTERED OVER GAPS IN THE PRIMARY GEOGRID LAYER BELOW. DO NOT USE LESS THAN 75% COVERAGE FOR PRIMARY GEOGRIDS.
- DO NOT PLACE PRIMARY GEOGRIDS UNTIL EXCAVATION DIMENSIONS AND IN-SITU MATERIAL ARE APPROVED.



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STANDARD DRAWING NO. 1803.01

STANDARD REINFORCED SOIL SLOPE (RSS)

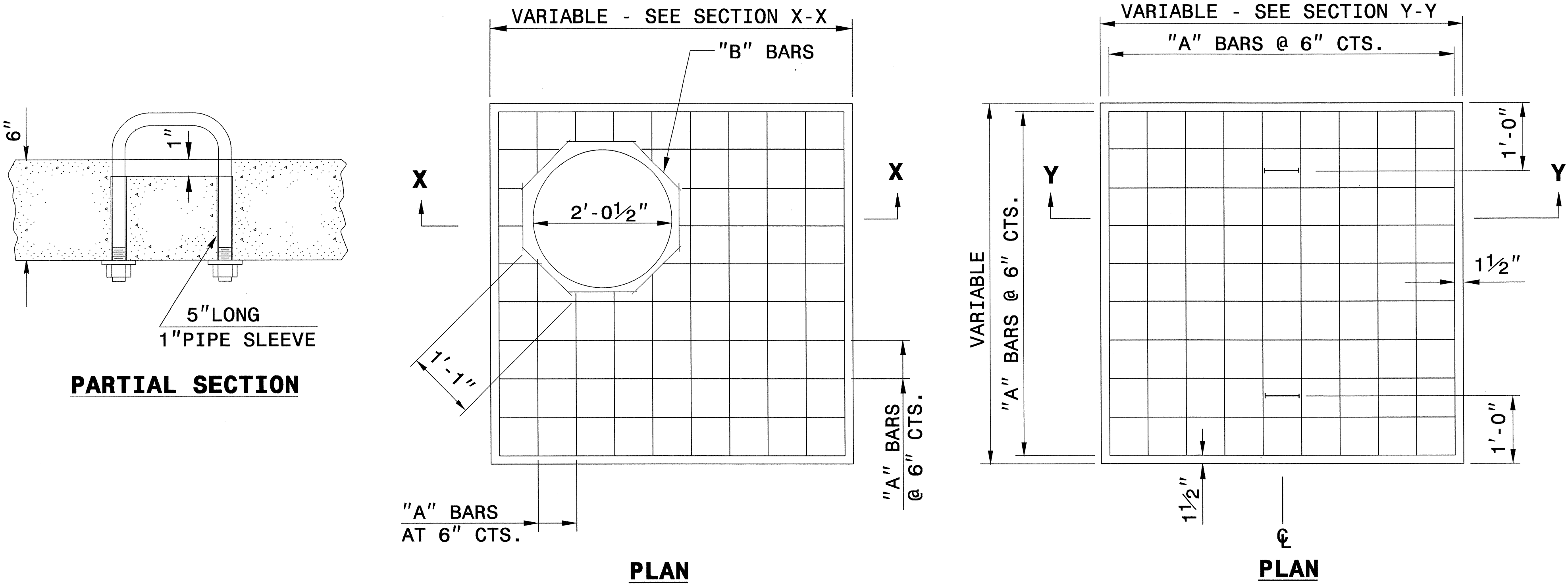
DATE: 11-20-12

GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

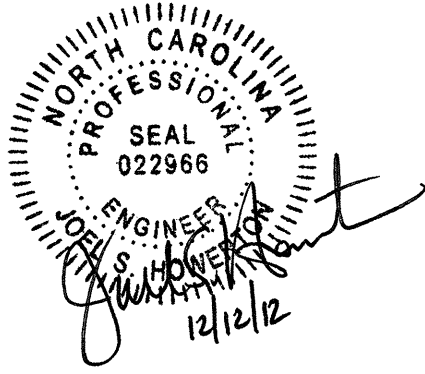
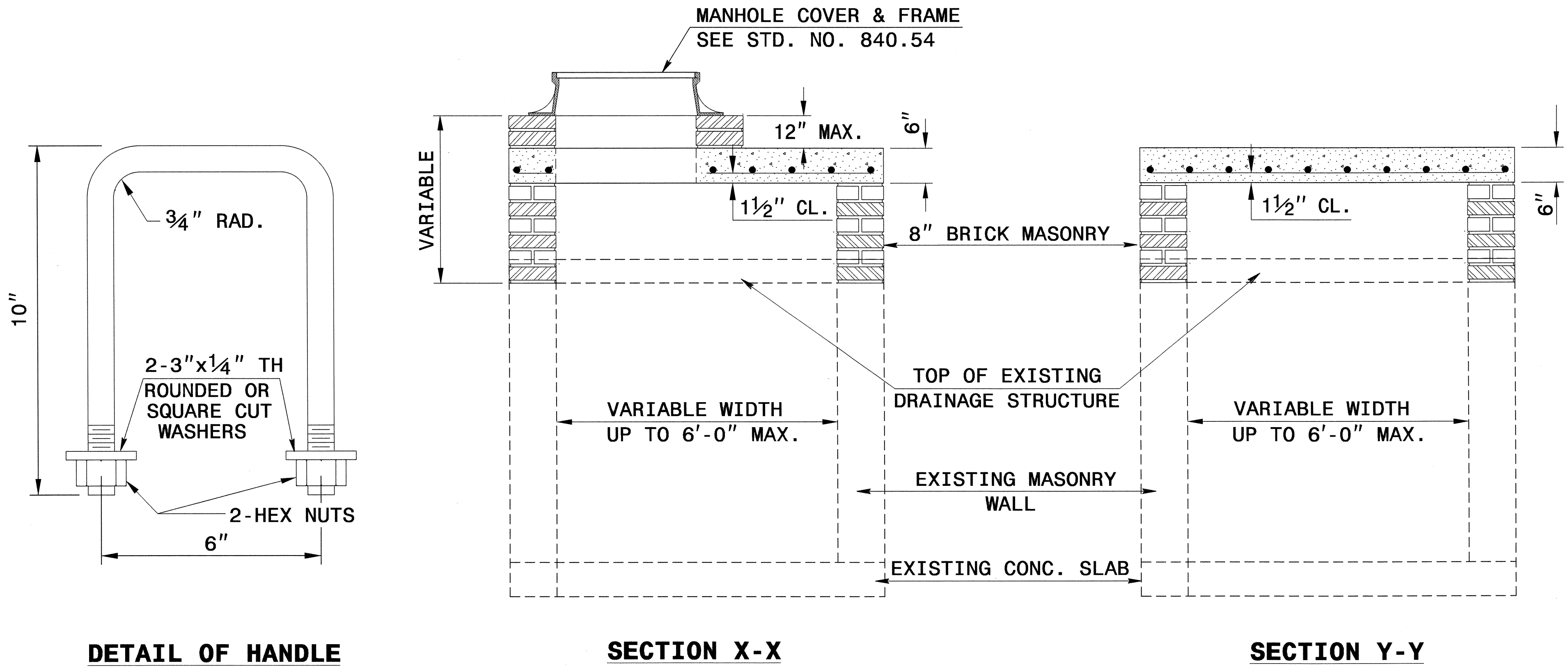
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.



BILL OF MATERIALS

REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.4326 *
BRICK MASONRY PER FT HT (MIN)				.4111

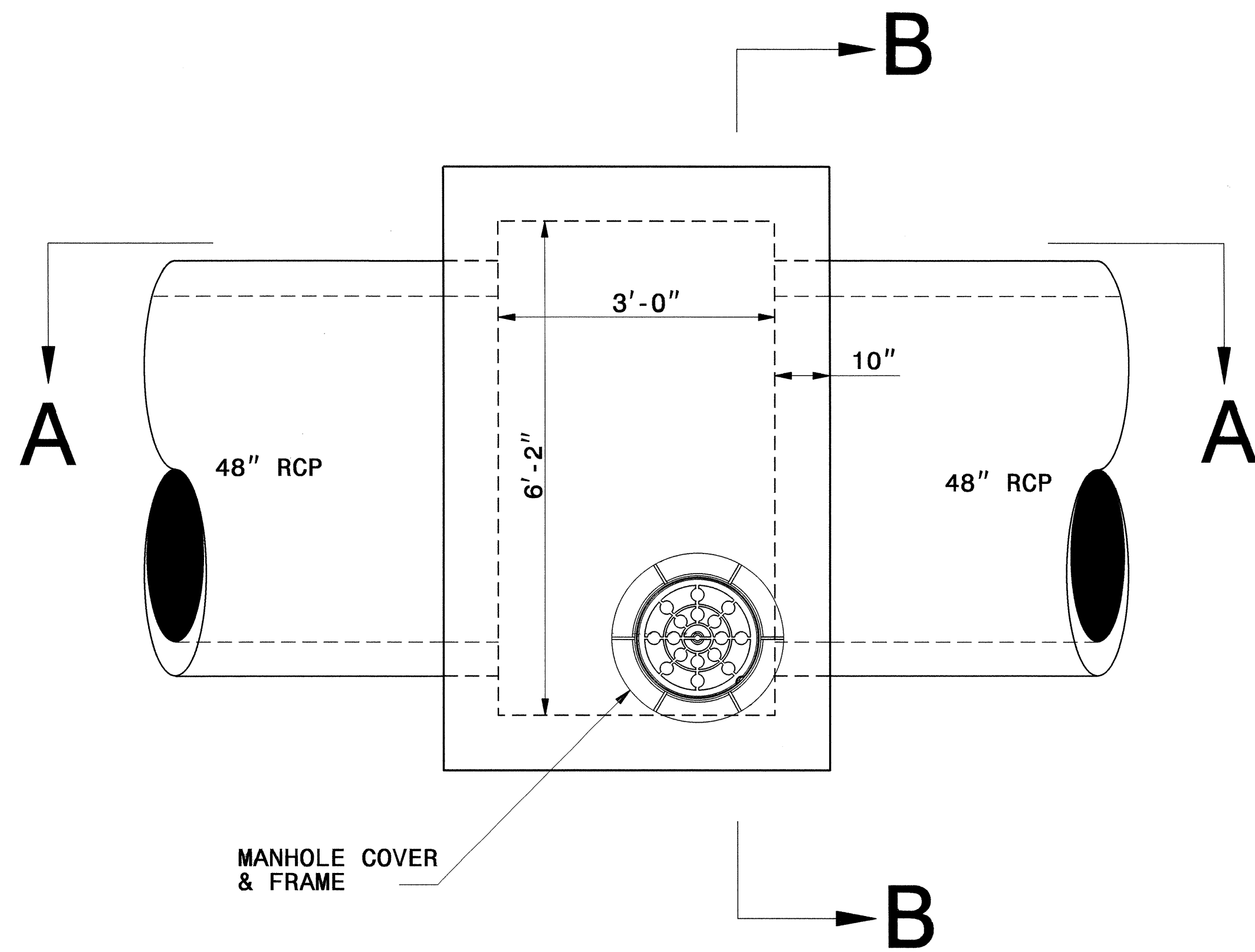
* NOTE:
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.



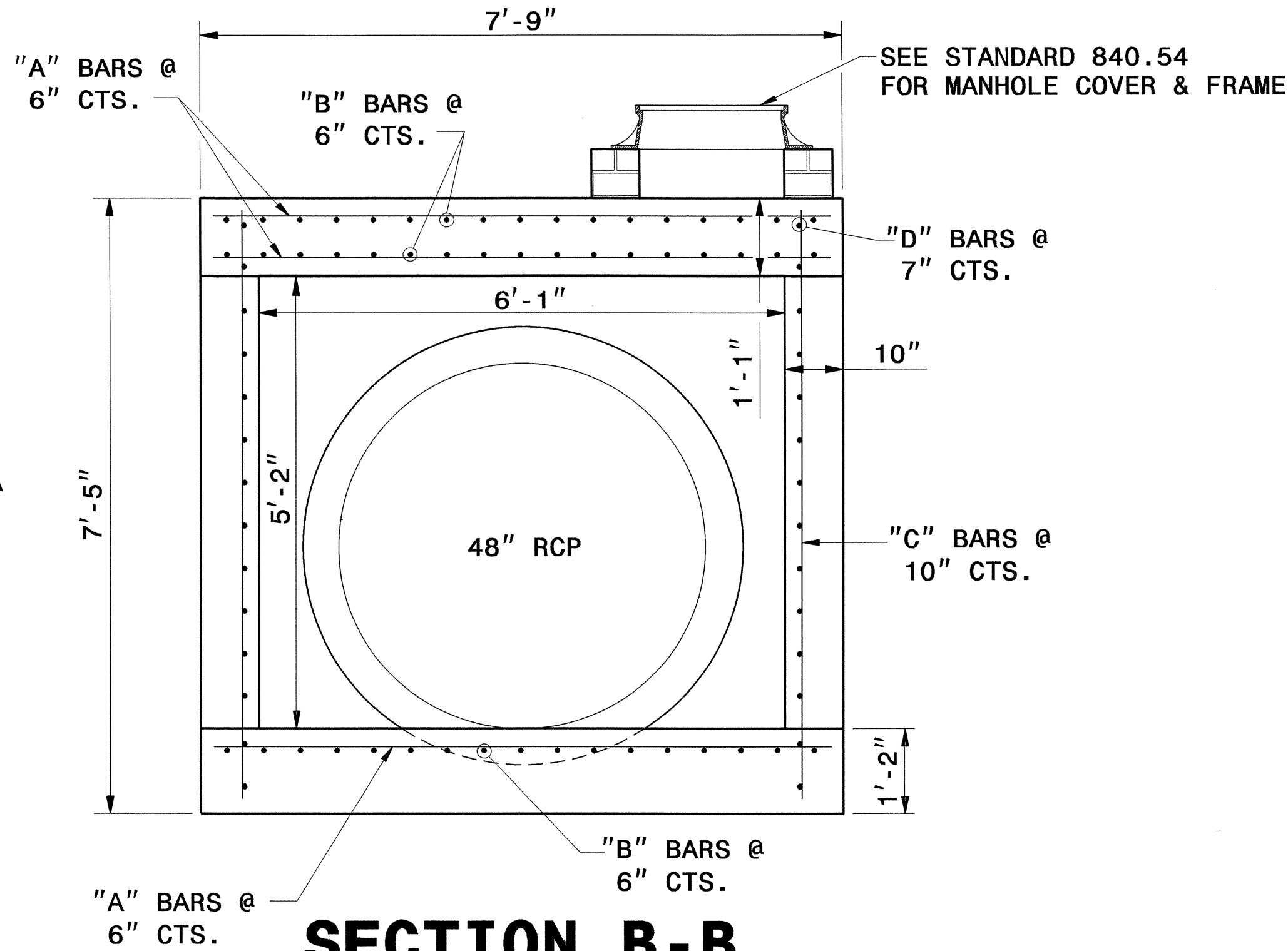
CONTRACT STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

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

ORIGINAL BY: T.S.S. DATE: NOV. 1997
MODIFIED BY: T.S.S. DATE: FEB. 2000
CHECKED BY: [Signature] DATE: 10/29/12
FILE SPEC: [Path]



PLAN



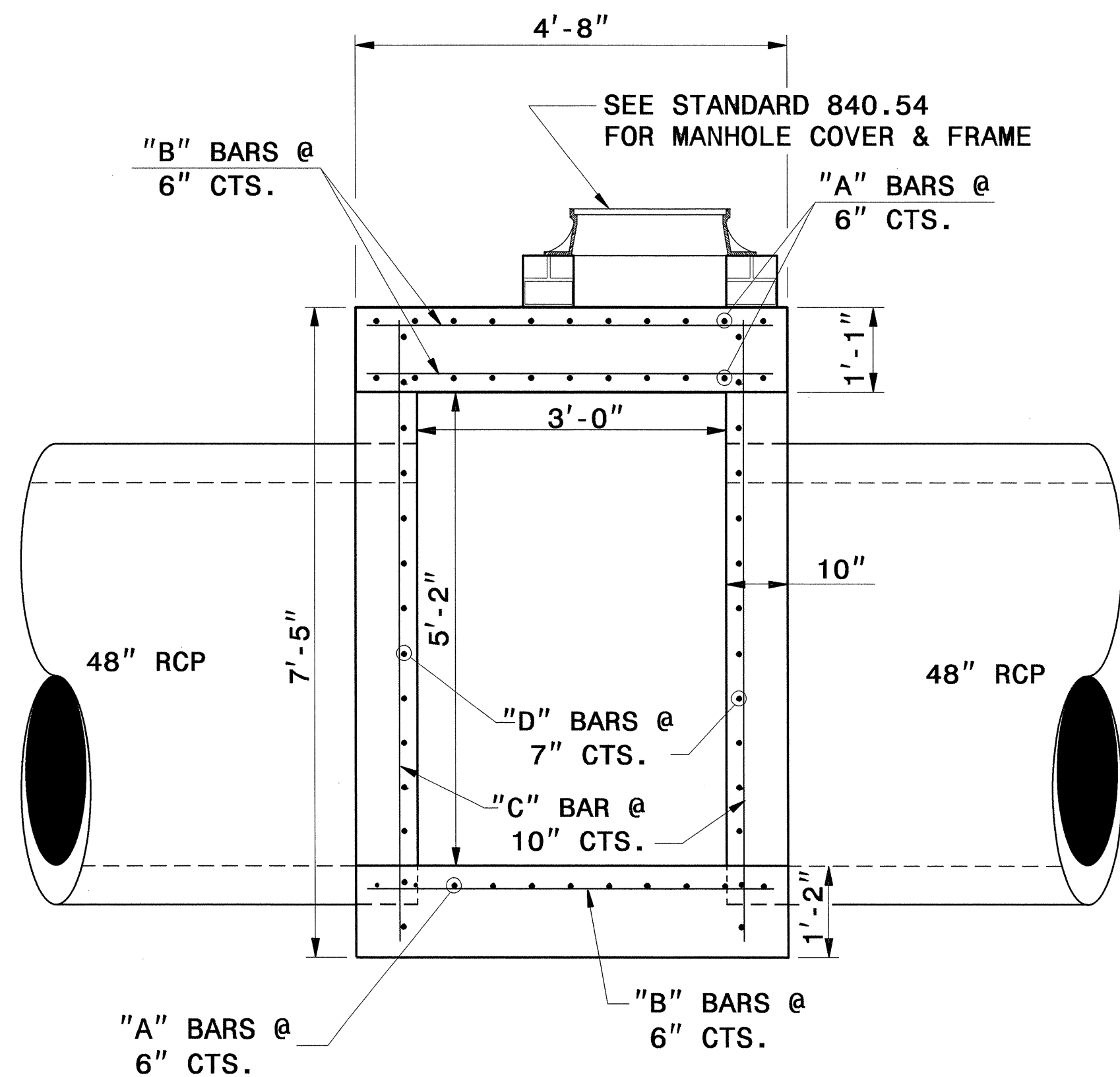
SECTION B-B

BILL OF MATERIALS				
BAR	QTY	SIZE	LENGTH	WEIGHT
A	27	#5	7'-5"	209
B	45	#5	4'-4"	203
C	28	#5	7'-1"	207
D	24	#6	7'-5"	267
D1	24	#6	4'-3"	153
TOTAL REINF. STEEL (LBS.)				6.0
TOTAL CONC. - CU.YDS.				1039

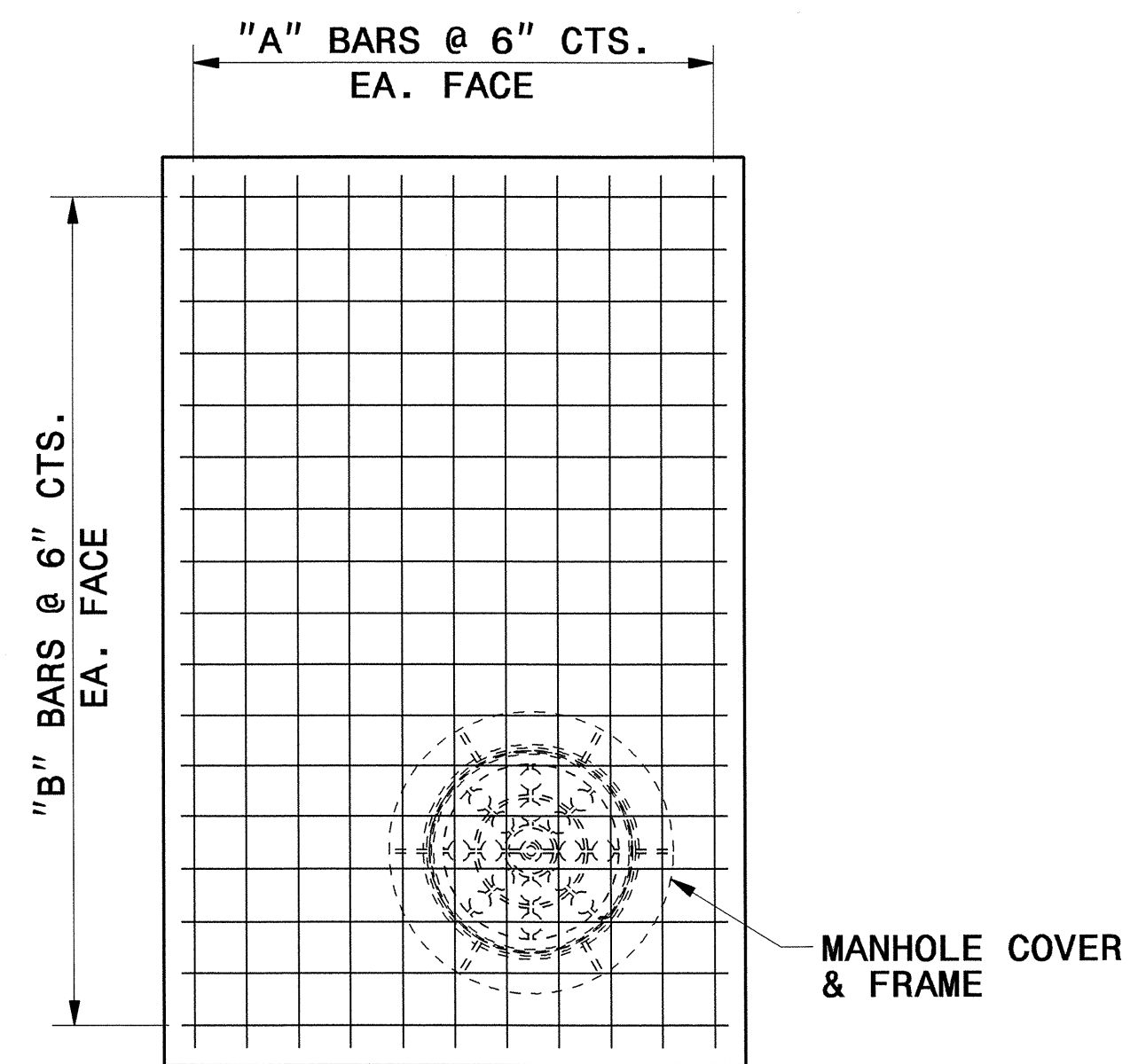
NO DEDUCTIONS HAVE BEEN MADE TO ACCOMMODATE PIPES.

NOTES:

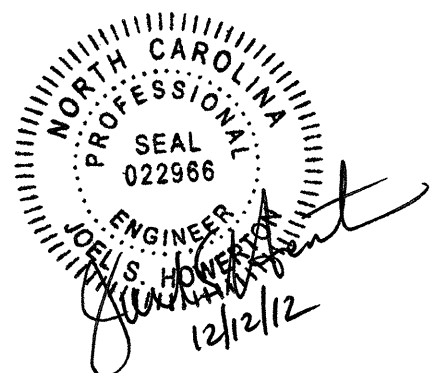
1. PAY FOR QUANTITIES AT THE UNIT PRICE BID PER EACH.
2. USE CLASS "B" CONCRETE THROUGHOUT.
3. CONSTRUCT CONCRETE BOX IN ACCORDANCE WITH SECTION 825 OF THE STANDARD SPECIFICATIONS.
4. CONSTRUCT BOTTOM SLAB WITH FORMS.
5. ADJUST LENGTH OF STEEL BARS AS NEEDED TO COMPENSATE FOR PIPES.
6. CONFORM REINFORCING STEEL TO ASTM A 615, GRADE 400.
7. CUT OR BEND STEEL BARS AS NEEDED TO PROVIDE 2" CLEARANCE AROUND PIPES OR AS DIRECTED BY THE ENGINEER.



SECTION A-A



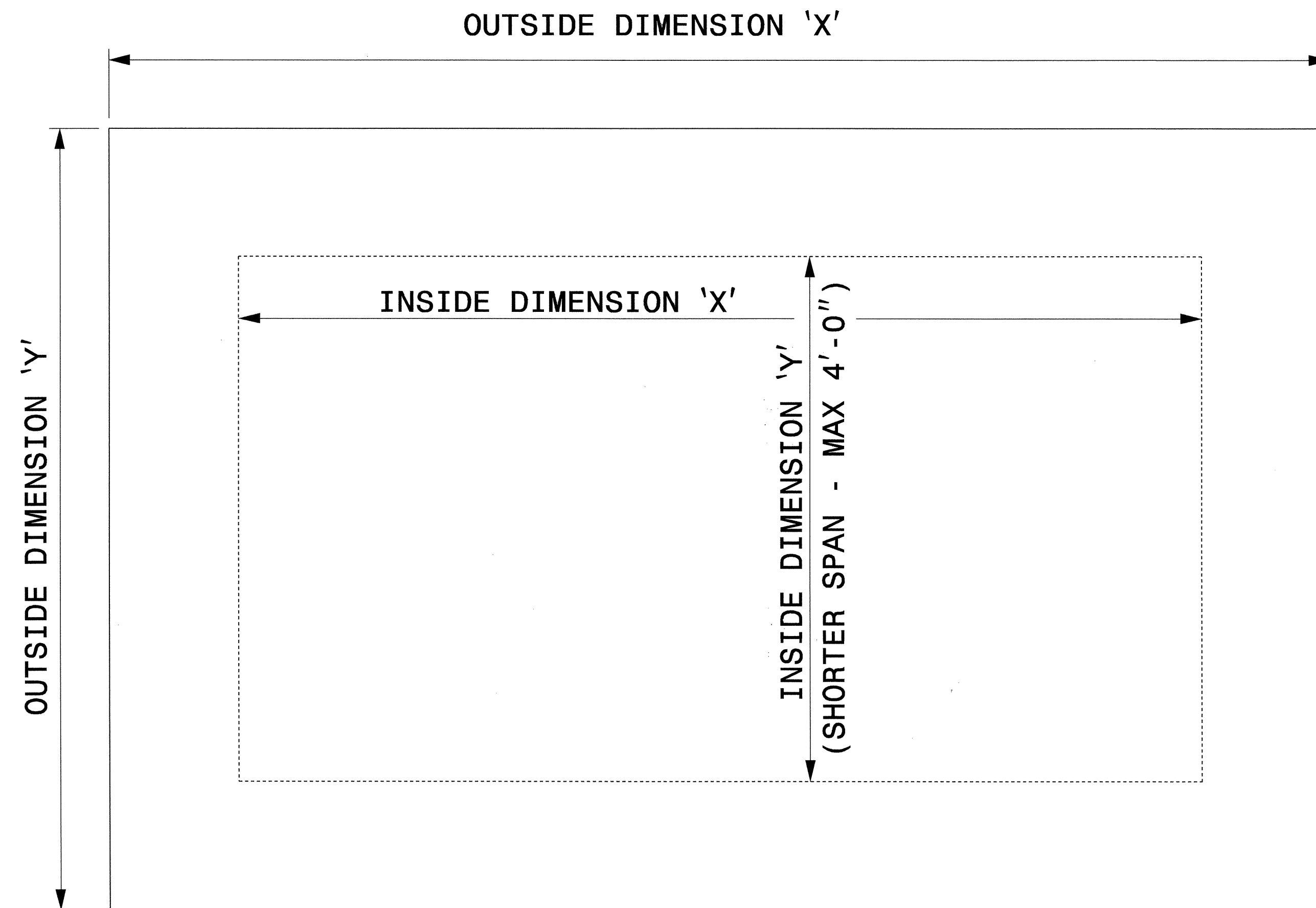
TOP SLAB



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Office 919-707-6950 FAX 919-250-4119

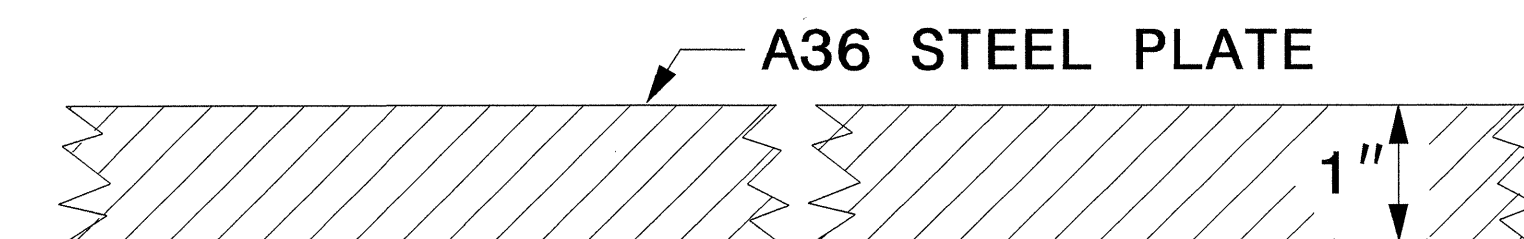
TRAFFIC BEARING
JUNCTION BOX

ORIGINAL BY: rnbritt DATE: 10-11-04
MODIFIED BY: T. Spill DATE: 5-9-05
CHECKED BY: J. Spill DATE: 10/29/12
FILE SPEC.: g:\details\stand\tbij48rcp.dgn



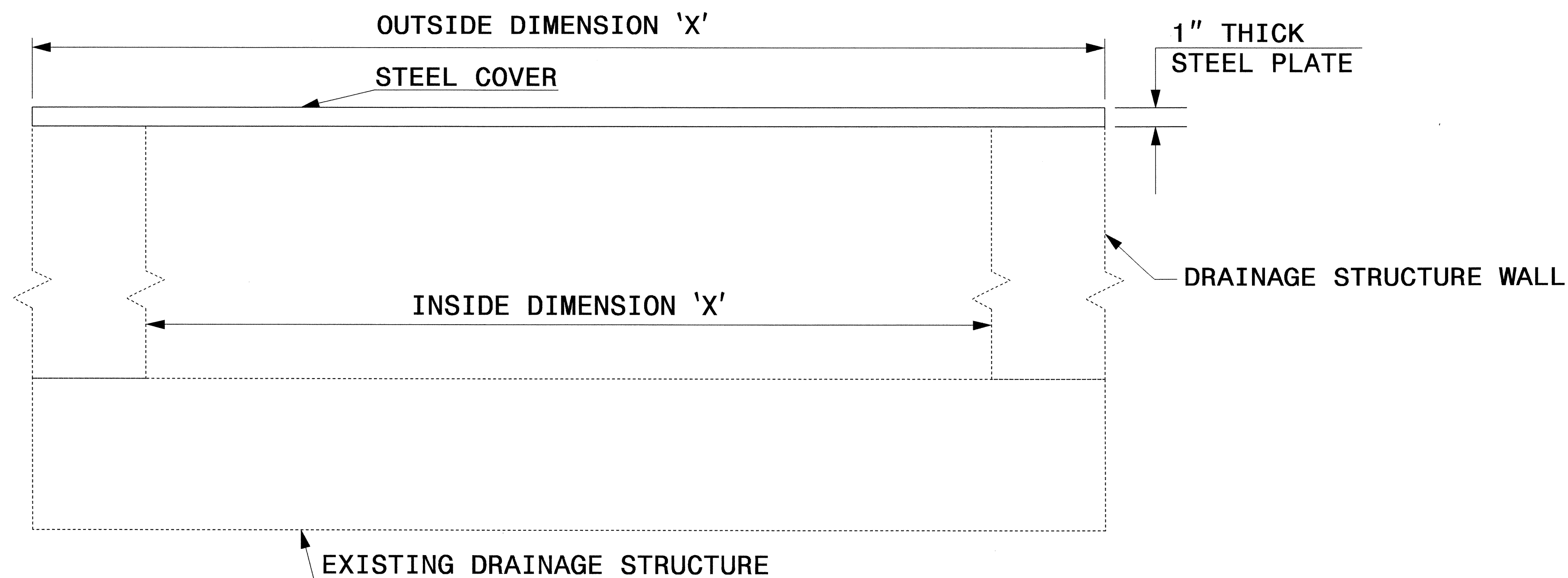
GENERAL NOTES:

- USE GRADE A36 STEEL
- STEEL COVERS ARE FOR TEMPORARY USE DURING PHASE CONSTRUCTION.
- FILL SHALL BE PLACED DIRECTLY OVER THE STEEL PLATES.
- SEE ROADWAY PLANS AND PROVISIONS FOR LOCATIONS
- QUANTITIES TO BE PAID FOR AT THE UNIT PRICE BID PER EACH.

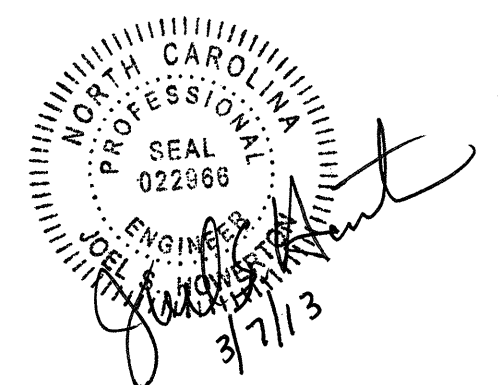


SECTION VIEW OF STEEL TOP PLATE

PLAN VIEWS



ELEVATION VIEWS



CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE	
ORIGINAL BY: E.E. WARD	DATE: 2-2-98
MODIFIED BY: J. E. Ward	DATE: 3/5/13
CHECKED BY: J. E. Ward	DATE: 3/5/13
FILE SPEC.: c:\usr\details\metric\stand\stlcvr2.dgn	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203026

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0001000000-E	200	Lump Sum		CLEARING & GRUBBING .. ACRE(S)
0008000000-E	200	2	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0015000000-N	205	27	EA	SEALING ABANDONED WELLS
0022000000-E	225	820,000	CY	UNCLASSIFIED EXCAVATION
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (22+03.36-Y2-)
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (36+48.29-Y4-)
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (37+77.92-RAMP B-)
0036000000-E	225	11,525	CY	UNDERCUT EXCAVATION
0134000000-E	240	1,670	CY	DRAINAGE DITCH EXCAVATION
0141000000-E	240	770	LF	BERM DITCH CONSTRUCTION
0156000000-E	250	56,000	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT
0177000000-E	250	7,700	SY	BREAKING OF EXISTING ASPHALT PAVEMENT
0192000000-N	260	40	HR	PROOF ROLLING
0195000000-E	265	4,500	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	11,300	SY	GEOTEXTILE FOR SOIL STABILIZA-TION
0199000000-E	SP	2,355	SF	TEMPORARY SHORING
0225000000-E	SP	900	SY	REINFORCED SOIL SLOPES
0318000000-E	300	2,310	TON	FOUNDATION CONDITIONING MATE-RIAL, MINOR STRUCTURES
0320000000-E	300	8,970	SY	FOUNDATION CONDITIONING GEO-TEXTILE
0343000000-E	310	80	LF	15" SIDE DRAIN PIPE
0344000000-E	310	1,240	LF	18" SIDE DRAIN PIPE
0345000000-E	310	684	LF	24" SIDE DRAIN PIPE
0366000000-E	310	1,000	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E	310	3,748	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E	310	3,684	LF	24" RC PIPE CULVERTS, CLASS III
0384000000-E	310	1,972	LF	30" RC PIPE CULVERTS, CLASS III
0390000000-E	310	1,440	LF	36" RC PIPE CULVERTS, CLASS III
0396000000-E	310	684	LF	42" RC PIPE CULVERTS, CLASS III
0402000000-E	310	168	LF	48" RC PIPE CULVERTS, CLASS III
0448300000-E	310	152	LF	18" RC PIPE CULVERTS, CLASS IV
0448600000-E	310	536	LF	36" RC PIPE CULVERTS, CLASS IV
0570000000-E	310	16	LF	6" CS PIPE CULVERTS, 0.064" THICK (SPRING BOX)
0576000000-E	310	120	LF	*** CS PIPE CULVERTS, ***** THICK (48", 0.109")
0582000000-E	310	464	LF	15" CS PIPE CULVERTS, 0.064" THICK
0588000000-E	310	560	LF	18" CS PIPE CULVERTS, 0.064" THICK
0594000000-E	310	156	LF	24" CS PIPE CULVERTS, 0.064" THICK
0636000000-E	310	6	EA	*** CS PIPE ELBOWS, ***** THICK (15", 0.064")
0636000000-E	310	6	EA	*** CS PIPE ELBOWS, ***** THICK (18", 0.064")
0636000000-E	310	1	EA	*** CS PIPE ELBOWS, ***** THICK (24", 0.064")
0636000000-E	310	1	EA	*** CS PIPE ELBOWS, ***** THICK (48", 0.109")
0995000000-E	340	5,628	LF	PIPE REMOVAL
1011000000-N	500	Lump Sum		FINE GRADING

ItemNumber	Sec #	Quantity	Unit	Description
1044000000-E	501	67,920	SY	LIME TREATED SOIL (SLURRY METHOD)
1066000000-E	501	680	TON	LIME FOR LIME TREATED SOIL
1077000000-E	SP	10	TON	#57 STONE
1099500000-E	505	2,000	CY	SHALLOW UNDERCUT
1099700000-E	505	4,500	TON	CLASS IV SUBGRADE STABILIZA-TION
1110000000-E	510	250	TON	STABILIZER AGGREGATE
1115000000-E	SP	67,000	SY	GEOTEXTILE FOR PAVEMENT STA-BILIZATION
1121000000-E	520	84,000	TON	AGGREGATE BASE COURSE
1176000000-E	542	101,870	SY	SOIL CEMENT BASE
1187000000-E	542	2,810	TON	PORTLAND CEMENT FOR SOIL CE-MENT BASE
1198000000-E	542	2,130	TON	AGGREGATE FOR SOIL CEMENT BASE
1209000000-E	543	25,380	GAL	ASPHALT CURING SEAL
1220000000-E	545	500	TON	INCIDENTAL STONE BASE
1231000000-E	560	30,460	CY	SHOULDER BORROW
1275000000-E	600	1,423	GAL	PRIME COAT
1489000000-E	610	2,350	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1491000000-E	610	2,200	TON	ASPHALT CONC BASE COURSE, TYPE B25.0C
1498000000-E	610	5,000	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0B
1503000000-E	610	22,000	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0C
1519000000-E	610	12,750	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1523000000-E	610	18,900	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5C
1575000000-E	620	3,380	TON	ASPHALT BINDER FOR PLANT MIX
1693000000-E	654	500	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
1840000000-E	665	26,180	LF	MILLED RUMBLE STRIPS (ASPHALT CONCRETE)
2022000000-E	815	672	CY	SUBDRAIN EXCAVATION
2033000000-E	815	336	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	2,000	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	815	4	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	24	LF	6" OUTLET PIPE
2143000000-E	818	10	TON	BLOTTING SAND
2190000000-N	828	25	EA	TEMPORARY STEEL PLATE COVERS FOR MASONRY DRAINAGE STRUCTURE
2209000000-E	838	32	CY	ENDWALLS
2253000000-E	840	2	CY	PIPE COLLARS
2264000000-E	840	1	CY	PIPE PLUGS
2275000000-E	SP	35	CY	FLOWABLE FILL
2286000000-N	840	110	EA	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	106	LF	MASONRY DRAINAGE STRUCTURES
2363000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840, ***** (840.33)
2364000000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.16
2364200000-N	840	19	EA	FRAME WITH TWO GRATES, STD 840.20
2365000000-N	840	40	EA	FRAME WITH TWO GRATES, STD 840.22
2374000000-N	840	3	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
2374000000-N	840	3	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
2374000000-N	840	1	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
2396000000-N	840	9	EA	FRAME WITH COVER, STD 840.54
2451000000-N	852	1	EA	CONCRETE TRANSITIONAL SECTION FOR DROP INLET
2549000000-E	846	2,050	LF	2'-6" CONCRETE CURB & GUTTER

ItemNumber	Sec #	Quantity	Unit	Description
2556000000-E	846	2,175	LF	SHOULDER BERM GUTTER
2647000000-E	852	1,270	SY	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)
2703000000-E	854	2,150	LF	CONCRETE BARRIER, TYPE ***** (III)
2724000000-E	857	250	LF	PRECAST REINFORCED CONCRETE BARRIER, SINGLE FACED
2905000000-N	859	6	EA	CONVERT EXISTING DROP INLET TO JUNCTION BOX
3000000000-N	SP	5	EA	IMPACT ATTENUATOR UNIT, TYPE 350
3030000000-E	862	14,500	LF	STEEL BM GUARDRAIL
3045000000-E	862	425	LF	STEEL BM GUARDRAIL, SHOP CURVED
3105000000-N	862	8	EA	STEEL BM GUARDRAIL TERMINAL SECTIONS
3150000000-N	862	10	EA	ADDITIONAL GUARDRAIL POSTS
3195000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
3210000000-N	862	6	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1
3270000000-N	SP	28	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3285000000-N	SP	2	EA	GUARDRAIL ANCHOR UNITS, TYPE M-350
3317000000-N	862	12	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3319000000-N	862	3	EA	GUARDRAIL ANCHOR UNITS, TYPE B-83
3360000000-E	863	2,290	LF	REMOVE EXISTING GUARDRAIL
3389200000-E	865	4,690	LF	CABLE GUIDERAIL
3389600000-N	865	6	EA	CABLE GUIDERAIL ANCHOR UNITS
3503000000-E	866	28,790	LF	WOVEN WIRE FENCE, 47" FABRIC
3509000000-E	866	1,830	EA	4" TIMBER FENCE POSTS, 7'-6" LONG
3515000000-E	866	430	EA	5" TIMBER FENCE POSTS, 8'-0" LONG
3557000000-E	866	1,000	LF	ADDITIONAL BARBED WIRE
3628000000-E	876	530	TON	RIP RAP, CLASS I
3635000000-E	876	145	TON	RIP RAP, CLASS II
3649000000-E	876	1,304	TON	RIP RAP, CLASS B
3656000000-E	876	7,110	SY	GEOTEXTILE FOR DRAINAGE
3659000000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
4048000000-E	902	6	CY	REINFORCED CONCRETE SIGN FOUN-DATIONS
4054000000-E	902	1	CY	PLAIN CONCRETE SIGN FOUNDA-TIONS
4057000000-E	SP	84	CY	OVERHEAD FOOTING
4060000000-E	903	5,902	LB	SUPPORTS, BREAKAWAY STEEL BEAM
4072000000-E	903	1,852	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4078000000-E	903	4	EA	SUPPORTS, 2-LB STEEL U-CHANNEL
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUC-TURE AT STA ***** (24+67-L-)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUC-TURE AT STA ***** (40+00-RAMP B-)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUC-TURE AT STA ***** (43+20-L-)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUC-TURE AT STA ***** (44+50-L-)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUC-TURE AT STA ***** (62+00-L-)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUC-TURE AT STA ***** (74+50-L-)
4082100000-N	SP	Lump Sum		SUPPORTS, OVERHEAD SIGN STRUC-TURE AT STA ***** (78+00-L-)
4096000000-N	904	10	EA	SIGN ERECTION, TYPE D
4102000000-N	904	93	EA	SIGN ERECTION, TYPE E
4108000000-N	904	10	EA	SIGN ERECTION, TYPE F

STATE OF NORTH CAROLINA
SUMMARY OF QUANTITIES

PROJECT REFERENCE No.	SHEET No.
R-2707AA	3(2 of 2)

ItemNumber	Sec #	Quantity	Unit	Description
411000000-N	904	6	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A)
411000000-N	904	5	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (B)
411400000-N	904	4	EA	SIGN ERECTION, MILEMARKERS
415500000-N	907	60	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
440000000-E	1110	738	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	672	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	493	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
441500000-N	1115	5	EA	FLASHING ARROW BOARD
442000000-N	1120	6	EA	PORTABLE CHANGEABLE MESSAGE SIGN
443000000-N	1130	1,000	EA	DRUMS
443500000-N	1135	150	EA	CONES
444500000-E	1145	528	LF	BARRICADES (TYPE III)
445000000-N	1150	7,680	HR	FLAGGER
448000000-N	1165	4	EA	TMA
450700000-E	1170	416	LF	WATER FILLED BARRIER
451000000-N	SP	80	HR	LAW ENFORCEMENT
452000000-N	1266	31	EA	TUBULAR MARKERS (FIXED)
465000000-N	1251	506	EA	TEMPORARY RAISED PAVEMENT MARKERS
469500000-E	1205	417	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
470000000-E	1205	3,439	LF	THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS)
471000000-E	1205	543	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
472500000-E	1205	36	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
481000000-E	1205	45,504	LF	PAINT PAVEMENT MARKING LINES (4")
481500000-E	1205	64,168	LF	PAINT PAVEMENT MARKING LINES (6")
482000000-E	1205	47	LF	PAINT PAVEMENT MARKING LINES (8")
482500000-E	1205	1,370	LF	PAINT PAVEMENT MARKING LINES (12")
483500000-E	1205	95	LF	PAINT PAVEMENT MARKING LINES (24")
484500000-N	1205	12	EA	PAINT PAVEMENT MARKING SYMBOL
484700000-E	1205	69,815	LF	POLYUREA PAVEMENT MARKING LINES (4", *****) (HIGHLY REFLECTIVE ELEMENTS)
484710000-E	1205	59,723	LF	POLYUREA PAVEMENT MARKING LINES (6", *****) (HIGHLY REFLECTIVE ELEMENTS)
484712000-E	1205	4,400	LF	POLYUREA PAVEMENT MARKING LINES (12", *****) (HIGHLY REFLECTIVE ELEMENTS)
485000000-E	1205	18,625	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
490000000-N	1251	50	EA	PERMANENT RAISED PAVEMENT MARKERS
490500000-N	1253	973	EA	SNOWPLOWABLE PAVEMENT MARKERS
491500000-E	1264	9	EA	7' U-CHANNEL POSTS
493500000-N	1267	76	EA	FLEXIBLE DELINEATORS (CRYSTAL)
494000000-N	1267	50	EA	FLEXIBLE DELINEATORS (YELLOW)
494500000-N	1267	5	EA	FLEXIBLE DELINEATORS (CRYSTAL & RED)
495500000-N	1264	9	EA	OBJECT MARKERS (END OF ROAD)
532560000-E	1510	4,633	LF	6" WATER LINE
532580000-E	1510	3,603	LF	8" WATER LINE
532620000-E	1510	1,232	LF	12" WATER LINE
554000000-E	1515	8	EA	6" VALVE
554600000-E	1515	2	EA	8" VALVE
555800000-E	1515	1	EA	12" VALVE
560600000-E	1515	1	EA	2" BLOW OFF
564800000-N	1515	14	EA	RELOCATE WATER METER

ItemNumber	Sec #	Quantity	Unit	Description
567200000-N	1515	4	EA	RELOCATE FIRE HYDRANT
580000000-E	1530	1,860	LF	ABANDON 6" UTILITY PIPE
580100000-E	1530	1,520	LF	ABANDON 8" UTILITY PIPE
581500000-N	1530	21	EA	REMOVE WATER METER
581550000-N	1530	1	EA	REMOVE FIRE HYDRANT
583560000-E	1540	1,614	LF	12" ENCASEMENT PIPE
583570000-E	1540	216	LF	16" ENCASEMENT PIPE
583600000-E	1540	76	LF	24" ENCASEMENT PIPE
587170000-E	1550	296	LF	TRENCHLESS INSTALLATION OF 12" IN SOIL
587171000-E	1550	296	LF	TRENCHLESS INSTALLATION OF 12" NOT IN SOIL
587220000-E	1550	38	LF	TRENCHLESS INSTALLATION OF 24" IN SOIL
587221000-E	1550	38	LF	TRENCHLESS INSTALLATION OF 24" NOT IN SOIL
588200000-N	SP	1	EA	GENERIC UTILITY ITEM 6" PLUG VALVE
600000000-E	1605	42,000	LF	TEMPORARY SILT FENCE
600600000-E	1610	7,300	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	14,275	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	8,915	TON	SEDIMENT CONTROL STONE
601500000-E	1615	135	ACR	TEMPORARY MULCHING
601800000-E	1620	5,250	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	22.5	TON	FERTILIZER FOR TEMPORARY SEED-ING
602400000-E	1622	16,000	LF	TEMPORARY SLOPE DRAINS
602900000-E	SP	500	LF	SAFETY FENCE
603000000-E	1630	53,420	CY	SILT EXCAVATION
603600000-E	1631	110,000	SY	MATting FOR EROSION CONTROL
603700000-E	SP	4,650	SY	COIR FIBER MAT
603800000-E	SP	25,874	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	4,300	LF	1/4" HARDWARE CLOTH
604500000-E	SP	285	LF	*** TEMPORARY PIPE (18")
604600000-E	1636	20	LF	TEMPORARY PIPE FOR STREAM CROSSING
606900000-E	1638	150	CY	STILLING BASINS
607101000-E	SP	24,500	LF	WATTLE
607102000-E	SP	19,000	LB	POLYACRYLAMIDE (PAM)
607103000-E	1640	15,100	LF	COIR FIBER BAFFLE
607105000-E	SP	54	EA	*** SKIMMER (1-1/2")
607105000-E	SP	4	EA	*** SKIMMER (2")
607105000-E	SP	3	EA	*** SKIMMER (2-1/2")
608400000-E	1660	195	ACR	SEEDING & MULCHING
608700000-E	1660	102	ACR	MOWING
609000000-E	1661	1,850	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	6.75	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	3,650	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	109	TON	FERTILIZER TOPDRESSING
611100000-E	SP	120	LF	IMPERVIOUS DIKE
611450000-N	1667	120	MHR	SPECIALIZED HAND MOWING
611700000-N	SP	150	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	12.5	ACR	REFORESTATION
706000000-E	1705	5,100	LF	SIGNAL CABLE
710800000-E	1705	8	EA	VEHICLE SIGNAL HEAD (12", 1 SECTION)
712000000-E	1705	11	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
713200000-E	1705	1	EA	VEHICLE SIGNAL HEAD (12", 4 SECTION)

ItemNumber	Sec #	Quantity	Unit	Description
726400000-E	1710	610	LF	MESSANGER CABLE (3/8")
730000000-E	1715	1,400	LF	UNPAVED TRENCHING (***** (1, 2"))
732400000-N	1716	8	EA	JUNCTION BOX (STANDARD SIZE)
736000000-N	1720	4	EA	WOOD POLE
737200000-N	1721	8	EA	GUY ASSEMBLY
740800000-E	1722	1	EA	1" RISER WITH WEATHERHEAD
742000000-E	1722	8	EA	2" RISER WITH WEATHERHEAD
744400000-E	1725	1,140	LF	INDUCTIVE LOOP SAWCUT
745600000-E	1726	3,310	LF	LEAD-IN CABLE (***** (14-2))
763600000-N	1745	10	EA	SIGN FOR SIGNALS
768400000-N	1750	1	EA	SIGNAL CABINET FOUNDATION
775600000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
778000000-N	1751	6	EA	DETECTOR CARD (TYPE 2070L)
790100000-N	1753	1	EA	CABINET BASE EXTENDER
794800000-N	1757	1	EA	TRAFFIC SIGNAL REMOVAL

PROJECT NO.	SHEET NO.
R-2707AA	3-A

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

[illegible]

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 48 INCHES & UNDER)

[illegible]

CHECKED BY: STS

DATE: 12/3/2012

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

-C

[illegible]

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

[illegible]

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 48 INCHES & UNDER)

[illegible]

NOTED-BEARDZ

COMPUTED BY: DAP

CHECKED BY: STS

DATE: 4/27/2012

DATE: 12/3/2012

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-2707AA	3-H

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 48 INCHES & UNDER)

STATION	LOCATION (LT, RT, OR CL)		STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC)										C.S. PIPE						R.C. PIPE CLASS III						R.C. PIPE CLASS IV						ENDWALLS		QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')		FRAME, GRATES, AND HOOD STANDARD 840.03		CONCRETE TRANSITIONAL SECTION		PIPE REMOVAL LIN. FT.		REMARKS		ABBREVIATIONS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
									8"	12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	.064	.064	.064	.079	.079	.109	.109	12"	15"	18"	24"	30"	36"	42"	48"															12"	15"	18"	24"	30"	36"	42"	48"																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
									SIZE	THICKNESS OR GAUGE	FROM	TO																		R.C.P.	C.S.P.	PER EACH (Ø THRU 5.0')	5.0" THRU 10.0'	A	B	CU. YARDS	R.C.P.	C.S.P.	E	F	G	TYPE OF GRATE	DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND TWO GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	TRAFFIC BEARING JUNCTION BOX (SEE DETAIL SHEET 2-P)	OPEN THROAT CB STD. 840.04	MANHOLE FRAME AND COVER STD. 840.54	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	FLOWABLE FILL CY.	CONVERT EXIST. D.I TO JB	ANGLED/VANE GRATES AND FRAME STD. 840.33	6" CS SPRING BOX PIPE	TEMPORARY STEEL COVER (SEE DETAIL SHEET 2-Q)	* FUTURE GRATE	SPRING BOX STD. 840.41	C.S. PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

RD24454;

GUARDRAIL SUMMARY

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

RD24454;

COMPUTED BY: DAP	DATE: 5/3/2012
CHECKED BY: STS	DATE: 6/1/2012

PROJECT NO.	SHEET NO.
R-2707AA	3-J

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EXISTING ASPHALT
PAVEMENT REMOVAL

LINE	Station	Station	LOC LT/RT/CL	YD ²	Note
-L-	8+35	28+50	RT.	11,515	
-L-	28+50	44+65	RT.	11,875	
-L-	44+65	65+90	RT.	12,225	
-Y2-	25+90		RT.	15	
-Y2-	28+25		RT.	20	
-Y2-	34+85	37+30	RT.	130	
-L-/-Y8-	65+90	15+75	RT./LT.	7,640	
-Y8-/-Y6-	15+75	20+25	LT.	7,835	
-Y6-	19+85	21+75	RT.	625	
-Y6-	24+00	25+25	RT./LT.	1,010	
-SR5-	11+25		CL.	130	
-L-	90+50		CL.	1,430	
-Y4-	13+75	18+15	RT.	750	
-Y4-	36+00	38+75	RT.	610	
-Y4-	42+00	42+50	RT.	90	
TOTAL				55,900	
SAY				56,000	

SUMMARY OF SHOULDER BERM GUTTER

LINE	STATION	STATION	LOC	LENGTH
-Y2-	23+25	23+55	LT.	30
-Y2-	23+25	26+17	RT.	292
-Y2-	28+50	32+02	RT.	352
-SR1-	28+36	28+06	LT.	470
RAMPB	33+75	36+37	LT.	262
RAMPB	39+80	42+00	LT.	220
-Y4-	30+64	35+39	RT.	475
-Y4-	37+65	38+31	RT.	66
		TOTAL		2,167
		SAY		2,175

SUMMARY OF CABLE GUIDERAIL

LINE	STATION	STATION	LOC	LENGTH	ANCHOR
-L-	8+95	21+56	CL	1,261	2
-L-	25+30	41+05	CL	1,575	2
-L-	46+25	66+25	CL	2,000	2
		TOTAL		4,836.00	6
		DEDUCTION FOR ANCHORS		-150.00	
		GRAND TOTAL		4,686.00	
		SAY		4,690	6

SUMMARY OF BREAKING OF ASPHALT
PAVEMENT

LINE	Station	Station	LOC LT/RT/CL	YD*	Note
-L-	34+25	40+65	RT.	1,060	
-Y2-	14+00	20+80	CL.	1675	
-Y2-	23+40	25+80	CL.	1110	
-Y2-	26+10	27+90	CL.	400	
-RAMPB-	41+35		CL.	455	
-Y4-	38+75	42+00	CL.	535	
-Y6-	20+10	24+00	CL.	2390	
TOTAL				7,625	
SAY				7,700	

SUMMARY OF WOVEN WIRE FENCE

Station to Station	LOC LT OR RT	A FABRIC L.F.	B END BRACE	C CORNER BRACE	D LINE BRACE	E 4" POSTS	F 5" POSTS
-L- 5+15 TO -Y2- 13+50	LT.	3,960	2	2	13	256	49
-Y2- 10+00 TO -L- 58+12	LT.	2375	2	2	8	151	34
-L- 58+37 TO -RAMPB- 36+06.6	LT.	3,020	2	2	10	194	40
-L- 85+73 TO -L- 110+15	LT.	2,435	2	1	8	157	31
-Y4- 35+64.04 TO -L- 119+00	LT.	1,000	2	2	3	61	19
-L- 5+03 TO -Y2- 34+00	RT.	4,615	2	4	16	295	64
-Y2- 28+50 TO -Y2- 34+00	LT.	635	2	2	2	37	16
-Y2- 26+25 TO -Y4- 56+50	LT.	5976	2	4	25	376	91
-Y6- 25+11 TO -Y4- 37+58.29	RT.	3925	2	3	13	252	52
-Y4- 37+58.29 TO -L- 119+00	RT.	840	2	5	3	45	28
	TOTAL:	28,781	20	27	101	1824	424
	SAY:	28,790				1830	430

STATION	STATION	TOTAL EXCAV. (UNCL.)	UNDERCUT EXCAV.	EMB. +	BORROW	TOTAL WASTE
SUMMARY #1						
-L- Left 5 + 50.00	32 + 50.00	34,315		11,582	0	22,733
-L- Right 20 + 00.00	32 + 50.00	16,616		1,450	0	15,166
TOTAL SUMMARY #1		50,931		13,032	0	37,899
SUMMARY #2						
-L- Left 32 + 50.00	62 + 00.00	35,261	2,025	29,115	0	8,171
-Y2- 10 + 50.00	21 + 02.31 (Bridge)	2,052		25,895	23,843	0
-Y2RAMPB- 14 + 95.00	25 + 50.00	20,584		3,287	0	17,297
-Y2LOOPB- 12 + 41.21	15 + 70.00	4,222		8	0	4,214
-SR10- 10 + 80.00	21 + 00.00	19,088		0	0	19,088
TOTAL SUMMARY #2		81,207	2,025	58,305	23,843	48,770
SUMMARY #3						
-SR6- 10 + 00.00	27 + 00.00	4,599		6,156	1,557	0
-SR6- 27 + 00.00	44 + 00.00	1,079		9,624	8,545	0
TOTAL SUMMARY #3		5,678		15,780	10,102	0
SUMMARY #4						
-L- Right 5 + 50.00	20 + 00.00	13,131		1,964	0	11,167
-SR3- 14 + 00.22	22 + 99.13	777		585	0	192
-SR7- 10 + 53.91	18 + 60.00	634		1,938	1,304	0
TOTAL SUMMARY #4		14,542		4,487	1,304	11,359
SUMMARY #5						
-Y2- 23 + 01.06 (Bridge)	38 + 00.00	343		103,086	102,743	0
-Y2LOOFC- 12 + 21.00	17 + 00.00	172		1,533	1,361	0
-Y2RAMPC- 14 + 17.48	30 + 46.74	9,473		25,538	16,065	0
-SR1- 10 + 50.00	21 + 14.00	571		51,844	51,273	0
-SR11- 10 + 13.65	11 + 11.06	1		31	30	0
TOTAL SUMMARY #5		10,560		182,032	171,472	0
SUMMARY #6						
-L- Right 32 + 50.00	62 + 00.00	17,167		26,842	9,675	0
TOTAL SUMMARY #6		17,167		26,842	9,675	0
SUMMARY #7						
-L- Left 62 + 00.00	90 + 50.00	205,679		279	0	205,400
-L- Right 62 + 00.00	90 + 50.00	225,637		782	0	224,855
-RAMPB- 15 + 63.00	36 + 06.67 (Bridge)	100,571		48,765	0	51,806
-RAMPB- (Bridge) 39 + 24.17	41 + 50.00	607		8,387	7,780	0

STATION	STATION	TOTAL EXCAV. (UNCL.)	UNDERCUT EXCAV.	EMB. +	BORROW	TOTAL WASTE
-LOOPB- 12 + 65.00	16 + 75.00	9,519		389	0	9,130
-RAMPC- 17 + 97.98	24 + 00.00	18,172		906	0	17,266
TOTAL SUMMARY #7		560,185		59,508	7,780	508,457
SUMMARY #8						
-L- Left 90 + 50.00	119 + 00.00	26,384		23,416	0	2,968
-L- Right 90 + 50.00	119 + 00.00	17,794		39,743	21,949	0
-RAMPD- 12 + 60.00	18 + 33.00	0		15,939	15,939	0
-RAMPC- 24 + 00.00	26 + 19.43	0		7,787	7,787	0
-RAMPB- 41 + 50.00	51 + 50.00	946		85,922	84,976	0
-Y6- 10 + 00.00	28 + 50.00	44,669		21,070	0	23,599
-SR9- 10 + 50.00	14 + 00.00	184		1,291	1,107	0
-SR8- 10 + 50.00	15 + 00.00	28		22,016	21,988	0
-SR4- 10 + 00.00	11 + 50.00	115		246	131	0
-SR5- 10 + 50.00	11 + 00.00	43		0	0	43
-Y7- 10 + 50.00	11 + 00.00	20		147	127	0
-Y4- 12 + 00.00	35 + 64.04 (Bridge)	1,200		100,278	99,078	0
-Y4- (Bridge) 37 + 58.29	60 + 50.00	6,479		9,912	3,433	0
TOTAL SUMMARY #8		97,862		327,767	256,515	26,610
SUMMARY #9						
-SR2- 12 + 00.00	22 + 50.00	3,140		10,342	7,202	0
TOTAL SUMMARY #9		3,140		10,342	7,202	0
SUMMARY #10						
-Y8- 16 + 50.00	19 + 00.00	379		0	0	379
TOTAL SUMMARY #10		379		0	0	379
SUBTOTAL SUMMARIES 1,2,3,4,5,6,7,8,9, & 10		841,651	2,025	698,095	487,893	633,474
TOTALS		841,651		698,095	487,893	633,474
LOSS DUE TO CLEARING & GRUBBING		-30,000				-30,000
ROCK WASTE TO REPLACE BORROW					-4,865	-4,865
ADJUST FOR ROCK WASTE				-912	-912	
ADDITIONAL UNDERCUT			9,500	10,925	10,925	9,500
WASTE TO REPLACE BORROW					-491,825	-491,825
ADJUSTMENT FOR ROCK SWELL				-1,216	-1,216	
GRAND TOTALS		811,651	11,525	706,892		116,284
SAY		820,000				

Estimated Shallow Undercut = 2,000 CY
Estimated Shoulder Borrow = 30,460 CY
Estimated DDE = 1,670 CY
Pavement Structure Volume -L- = 3,360 CY.

PARCEL INDEX SHEET

[illegible]

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
L	168+50	169+50	LT/RT		200
L	208+50	215+00	LT/RT		1300
CONTINGENCY					500
				TOTAL LF:	2000

*UD = Underdrain
*BD = Blind Drain
*SD = Subsurface Drain

SUMMARY OF
BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS
Station 21+01.31 -Y2-	EB 1	1 mo
Station 23+02.06 -Y2-	EB 2	3 mo
Station 35+64.04 -Y4-	EB 1	3 mo
Station 37+58.29 -Y4-	EB 2	3 mo
Station 156+47.10 -L-	EB 1	3 mo
Station 159+03.90 -L-	EB 2	3 mo
Station 156+48.88 -L-	EB 1	3 mo
Station 159+02.18 -L-	EB 2	3 mo

SUMMARY OF
SETTLEMENT GAUGES

Gauge No.	LINE	Approx. Station	Approx. Offset
		TOTAL GAUGES (EACH):	

SUMMARY OF ROCK PLATING

LINE	Beginning Slope	Approx. Station	Ending Slope	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	SY
							TOTAL SY:	0

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

SUMMARY OF
EMBANKMENT WAITING PERIODS

LINE	Station	Station	MONTHS

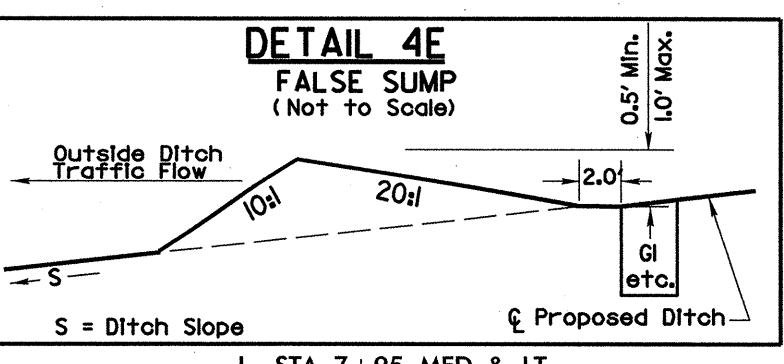
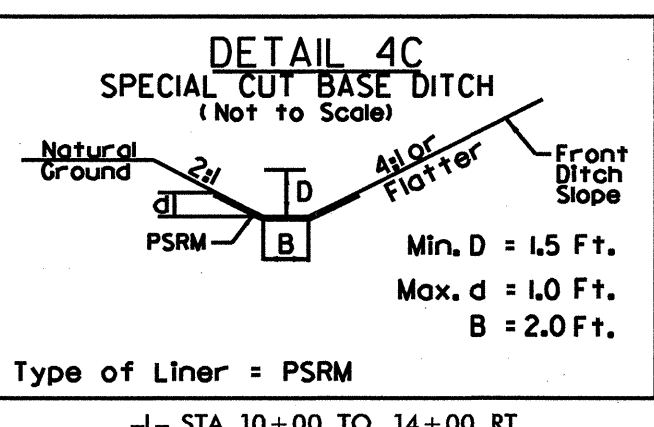
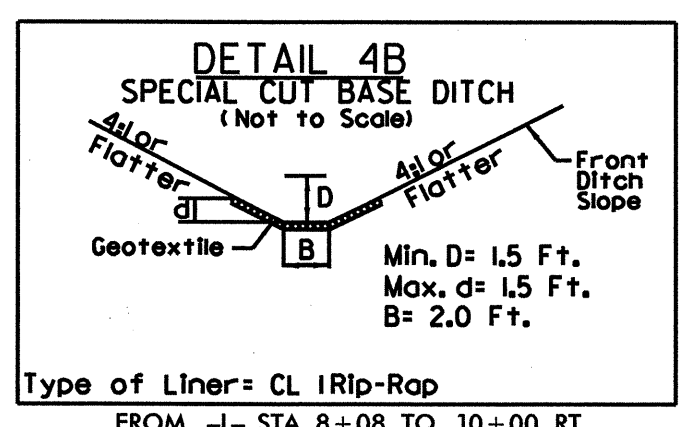
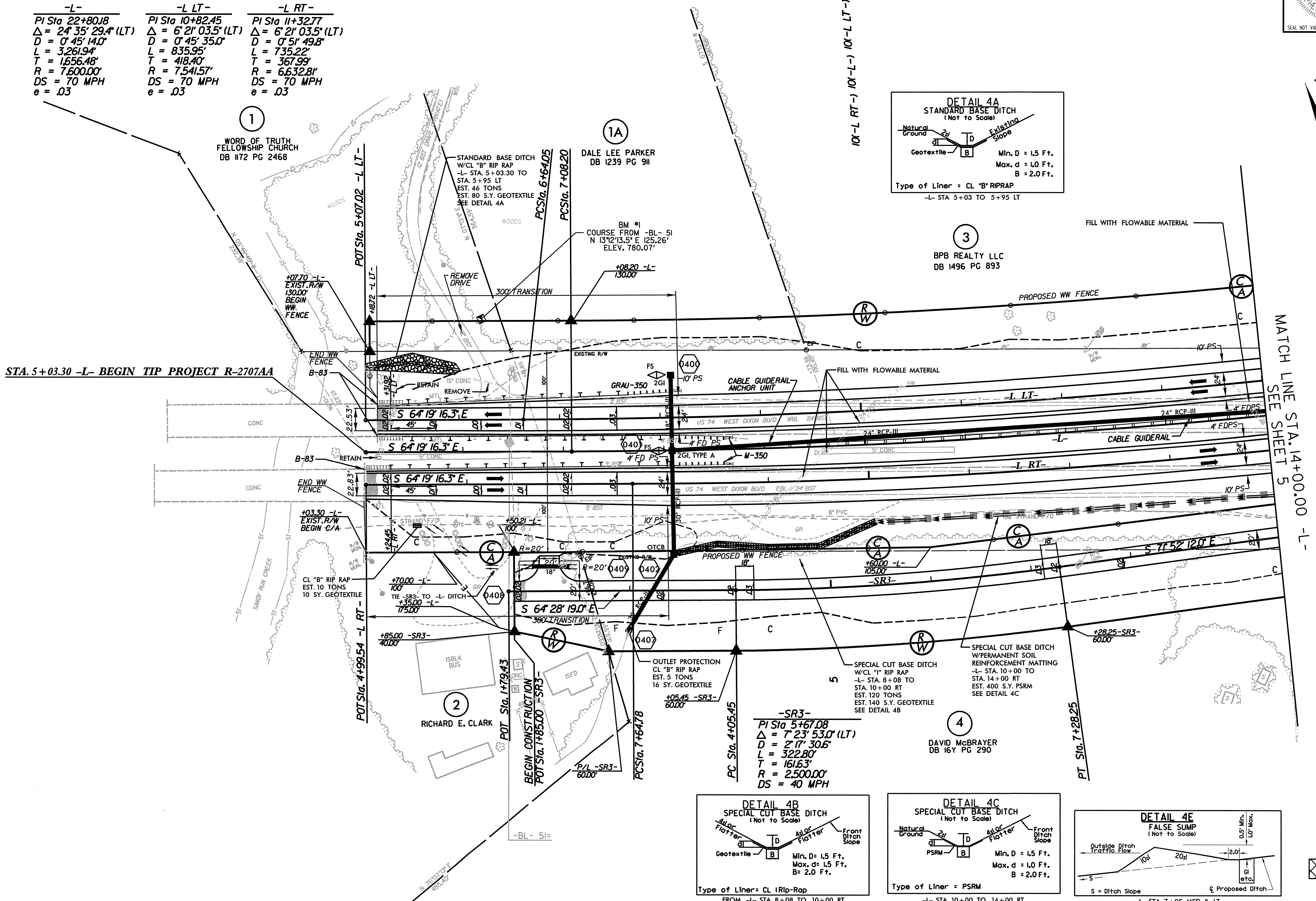
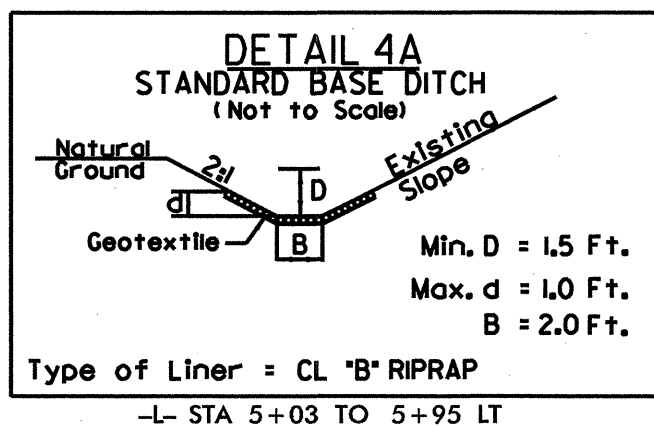
SUMMARY OF SURCHARGES
AND SURCHARGE WAITING PERIODS

LINE	Station	Station	Surcharge Height	MONTHS

SUMMARY OF REINFORCED SOIL SLOPES (RSS)

LINE	Beginning Slope	Approx. Station	Ending Slope	Approx. Station	Location LT/RT	SY
L	2:1	58+00	6:1	62+00	LT	900
					TOTAL SY:	900

-L- PI Sta 22+80.8 $\Delta = 24' 35" 29.4" (LT)$ $D = 0' 45" 14.0"$ $L = 3,261.94'$ $T = 1,656.48'$ $R = 7,600.00'$ $DS = 70 MPH$ $e = .03$	-L LT- PI Sta 10+82.45 $\Delta = 6' 21' 03.5" (LT)$ $D = 0' 45' 35.0"$ $L = 835.95'$ $T = 418.40'$ $R = 7,541.57'$ $DS = 70 MPH$ $e = .03$	-L RT- PI Sta 11+32.77 $\Delta = 6' 21' 03.5" (LT)$ $D = 0' 51' 49.8"$ $L = 735.22'$ $T = 367.99'$ $R = 6,632.81'$ $DS = 70 MPH$ $e = .03$
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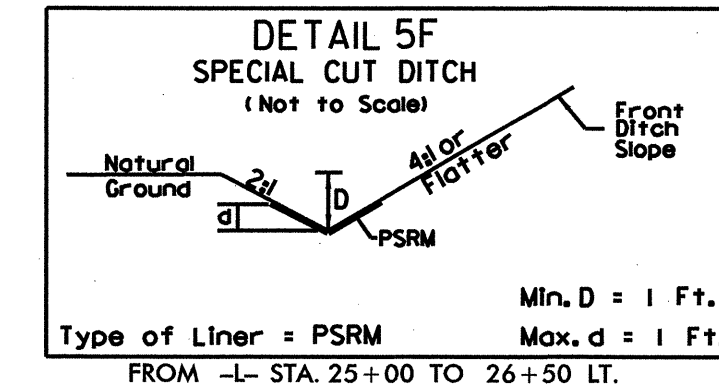
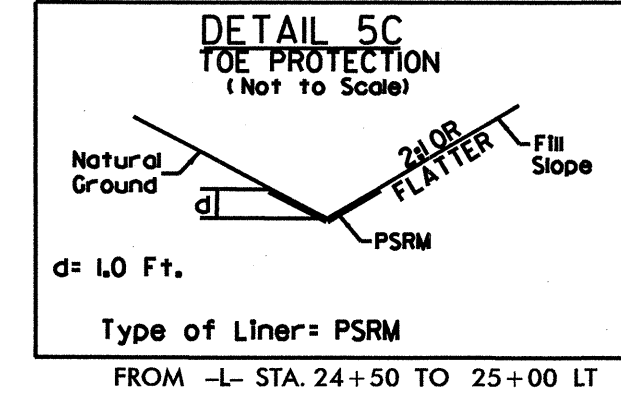
PAVEMENT OBLITERATION

SEE SHEET 17 FOR -L LT- AND -L RT- PROFILES.
SEE SHEET 36 FOR -SR3- PROFILE.

-L-
 PI Sta 22+77.49
 $\Delta = 24' 35" 29.4" (LT)$
 $D = 0' 47" 44.8"$
 $L = 3,090.26'$
 $T = 1,569.29'$
 $R = 7,200.00'$
 $DS = 70 MPH$
 $e = .03$

-Y2RAMPC-					
PI Sta 13+11.74 $\Theta s = 5' 06" 56.5"$ $Ls = 250.00'$ $LT = 166.74'$ $ST = 83.40'$	PI Sta 15+26.04 $\Delta = 10' 41" 40.8" (RT)$ $D = 4' 05" 33.2"$ $L = 261.32'$ $T = 131.04'$ $R = 1,400.00'$ $DS = 60 MPH$ $e = .08$	PI Sta 17+39.72 $\Theta s = 5' 06" 56.5"$ $Ls = 250.00'$ $LT = 166.74'$ $ST = 83.40'$	PI Sta 20+39.70 $\Theta s = 4' 46" 28.7"$ $D = 4' 46" 28.7"$ $L = 652.87'$ $T = 334.73'$ $R = 1,200.00'$ $DS = 50 MPH$ $e = .07$	PI Sta 24+41.05 $\Delta = 31' 10" 20.2" (LT)$ $D = 4' 46" 28.7"$ $L = 200.00'$ $LT = 133.38'$ $ST = 66.71'$	PI Sta 28+25.90 $\Theta s = 4' 46" 28.7"$ $Ls = 200.00'$ $LT = 133.38'$ $ST = 66.71'$

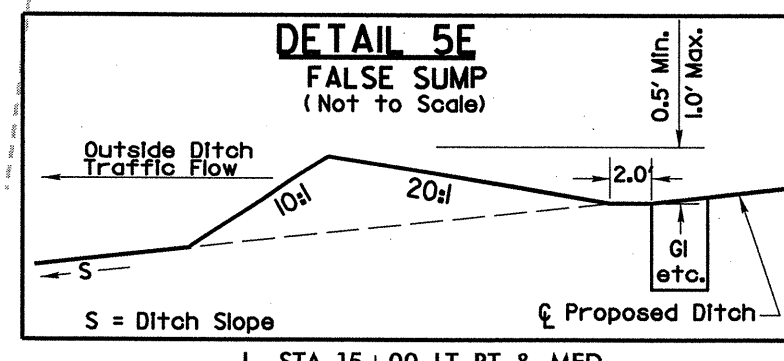
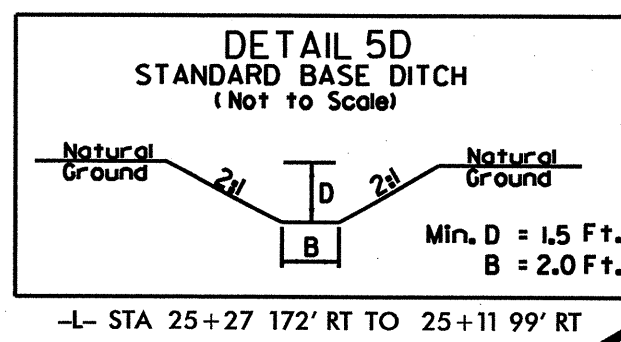
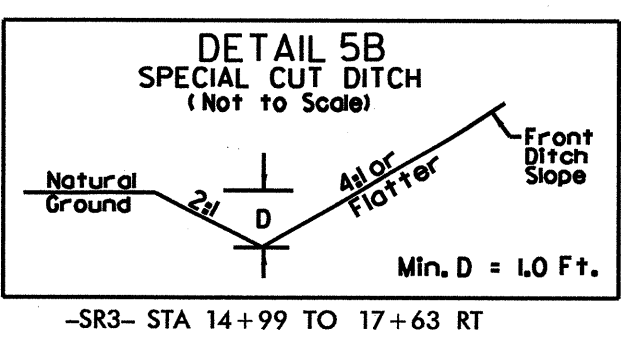
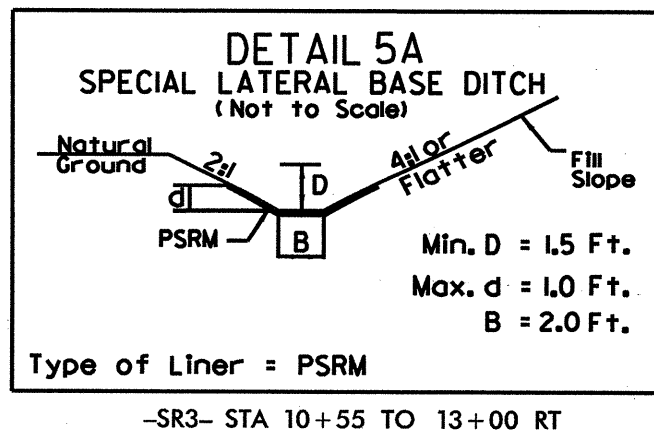
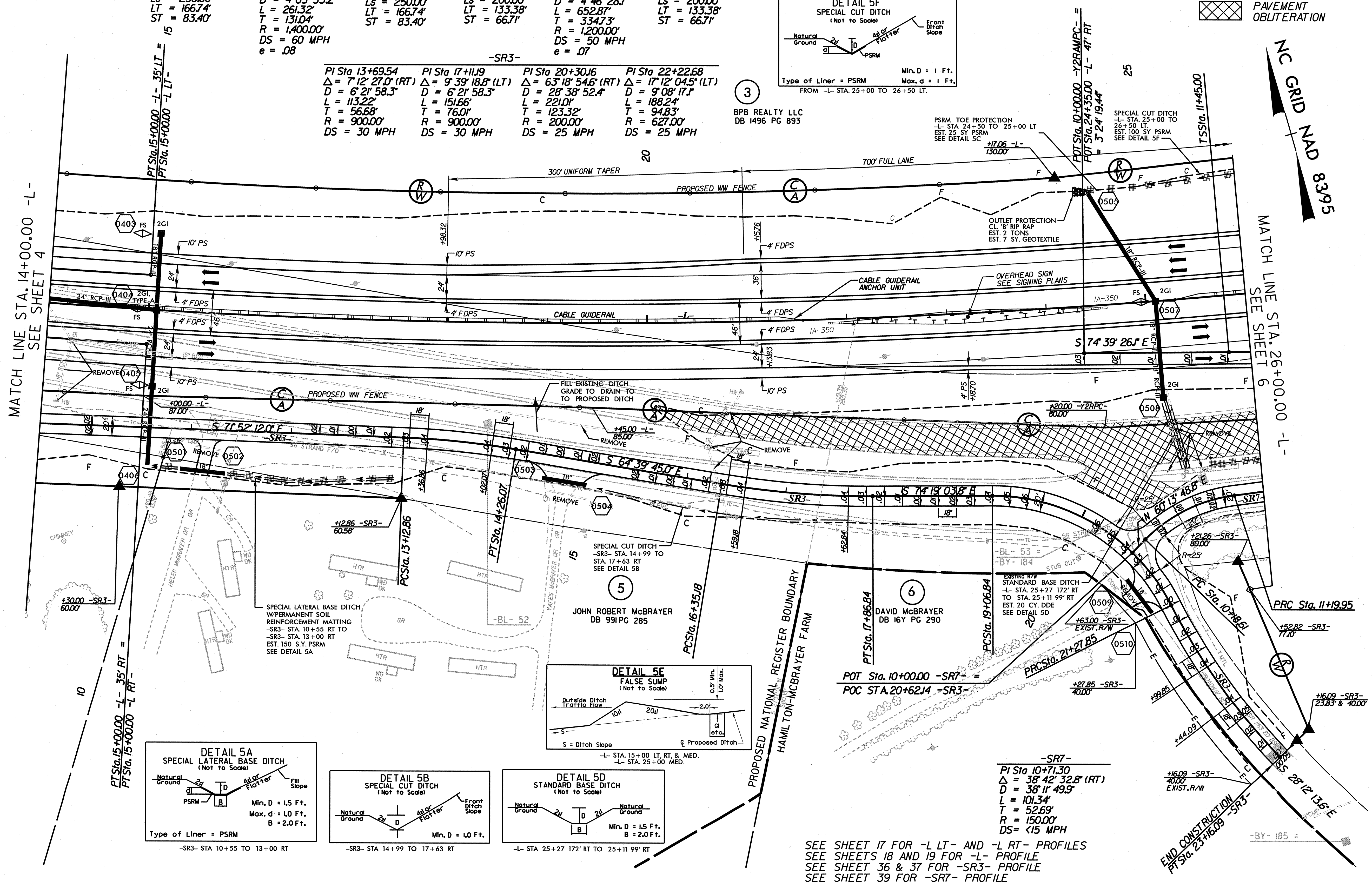
-SR3-			
PI Sta 13+69.54 $\Delta = 7' 12" 27.0" (RT)$ $D = 6' 21" 58.3"$ $L = 113.22'$ $T = 56.68'$ $R = 900.00'$ $DS = 30 MPH$	PI Sta 17+11.19 $\Delta = 9' 39" 18.8" (LT)$ $D = 6' 21" 58.3"$ $L = 151.66'$ $T = 76.01'$ $R = 900.00'$ $DS = 30 MPH$	PI Sta 20+30.16 $\Delta = 63' 18" 54.6" (RT)$ $D = 28' 38" 52.4"$ $L = 221.01'$ $T = 123.32'$ $R = 200.00'$ $DS = 25 MPH$	PI Sta 22+22.68 $\Delta = 17' 12" 04.5" (LT)$ $D = 9' 08" 17.1"$ $L = 188.24'$ $T = 94.83'$ $R = 627.00'$ $DS = 25 MPH$



MATCH LINE STA. 14+00.00 -L-
SEE SHEET 4

MATCH LINE STA. 26+00.00 -L-
SEE SHEET 6

NC GRID NAD 83/95



SEE SHEET 17 FOR -L LT- AND -L RT- PROFILES
 SEE SHEETS 18 AND 19 FOR -L- PROFILE
 SEE SHEET 36 & 37 FOR -SR3- PROFILE
 SEE SHEET 39 FOR -SR7- PROFILE

END CONSTRUCTION
 PI Sta. 23+16.09 -SR3-

PI Sta 22+77.45 Δ = 24' 39" 25.4' (LT) D = 0' 47" 44.9" L = 3020.25' T = 1569.25' R = 1200.00' DS = 70 MPH e = .03	PI Sta 13+94.55 Δ = 25' 36" 32.8' (LT) D = 0' 52' 58.1" L = 3020.25' T = 1569.25' R = 1200.00' DS = 70 MPH e = .03	PI Sta 20+70.89 Δ = 3' 08" 18.8' (RT) D = 28' 38" 52.4" L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 16+73.52 Δ = 28' 38" 52.4" D = 28' 38" 52.4" L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 11+35.12 Δ = 28' 38" 52.4" D = 28' 38" 52.4" L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 14+56.33 Δ = 17' 41" 40.9' (LT) D = 0' 52' 58.1" L = 3020.25' T = 1569.25' R = 1200.00' DS = 70 MPH e = .03	PI Sta 17+40.41 Δ = 23' 08" 59.9' (LT) D = 0' 52' 58.1" L = 3020.25' T = 1569.25' R = 1200.00' DS = 70 MPH e = .03	PI Sta 20+40.32 Δ = 3' 08" 18.8' (RT) D = 28' 38" 52.4" L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 21+93.13 Δ = 3' 08" 18.8' (RT) D = 28' 38" 52.4" L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 23+44.81 Δ = 4' 09" 33.2' (RT) D = 4' 09" 33.2' (RT) L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08
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PI Sta 12+11.49 Δ = 28' 38" 52.4' (LT) D = 28' 38" 52.4' (LT) L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 17+40.41 Δ = 23' 08" 59.9' (LT) D = 0' 52' 58.1" L = 3020.25' T = 1569.25' R = 1200.00' DS = 70 MPH e = .03	PI Sta 20+40.32 Δ = 3' 08" 18.8' (RT) D = 28' 38" 52.4" L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 21+93.13 Δ = 3' 08" 18.8' (RT) D = 28' 38" 52.4" L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 23+44.81 Δ = 4' 09" 33.2' (RT) D = 4' 09" 33.2' (RT) L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08
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PI Sta 12+11.49 Δ = 28' 38" 52.4' (LT) D = 28' 38" 52.4' (LT) L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 17+40.41 Δ = 23' 08" 59.9' (LT) D = 0' 52' 58.1" L = 3020.25' T = 1569.25' R = 1200.00' DS = 70 MPH e = .03	PI Sta 20+40.32 Δ = 3' 08" 18.8' (RT) D = 28' 38" 52.4" L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 21+93.13 Δ = 3' 08" 18.8' (RT) D = 28' 38" 52.4" L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 23+44.81 Δ = 4' 09" 33.2' (RT) D = 4' 09" 33.2' (RT) L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08
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PI Sta 12+11.49 Δ = 28' 38" 52.4' (LT) D = 28' 38" 52.4' (LT) L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 17+40.41 Δ = 23' 08" 59.9' (LT) D = 0' 52' 58.1" L = 3020.25' T = 1569.25' R = 1200.00' DS = 70 MPH e = .03	PI Sta 20+40.32 Δ = 3' 08" 18.8' (RT) D = 28' 38" 52.4" L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 21+93.13 Δ = 3' 08" 18.8' (RT) D = 28' 38" 52.4" L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08	PI Sta 23+44.81 Δ = 4' 09" 33.2' (RT) D = 4' 09" 33.2' (RT) L = 2000.00' T = 133.36' ST = 66.69' DS = 60 MPH e = .08
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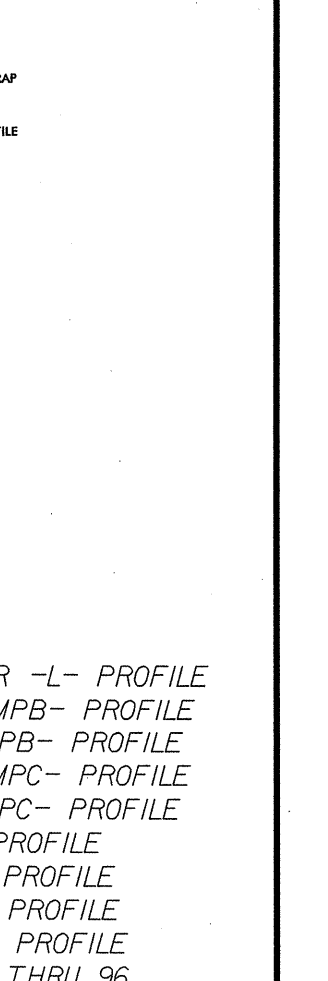
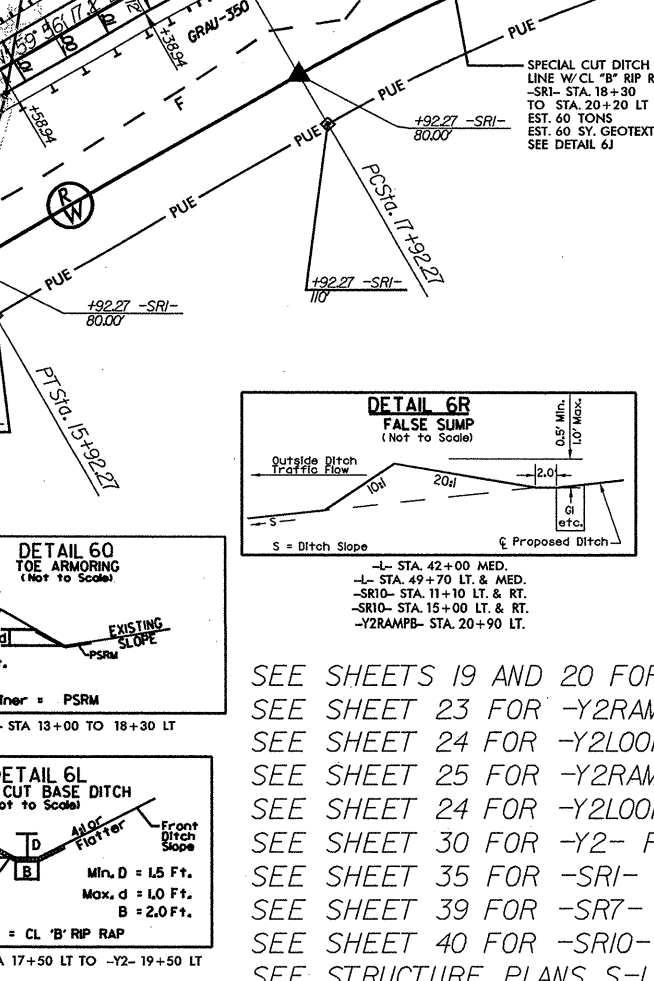
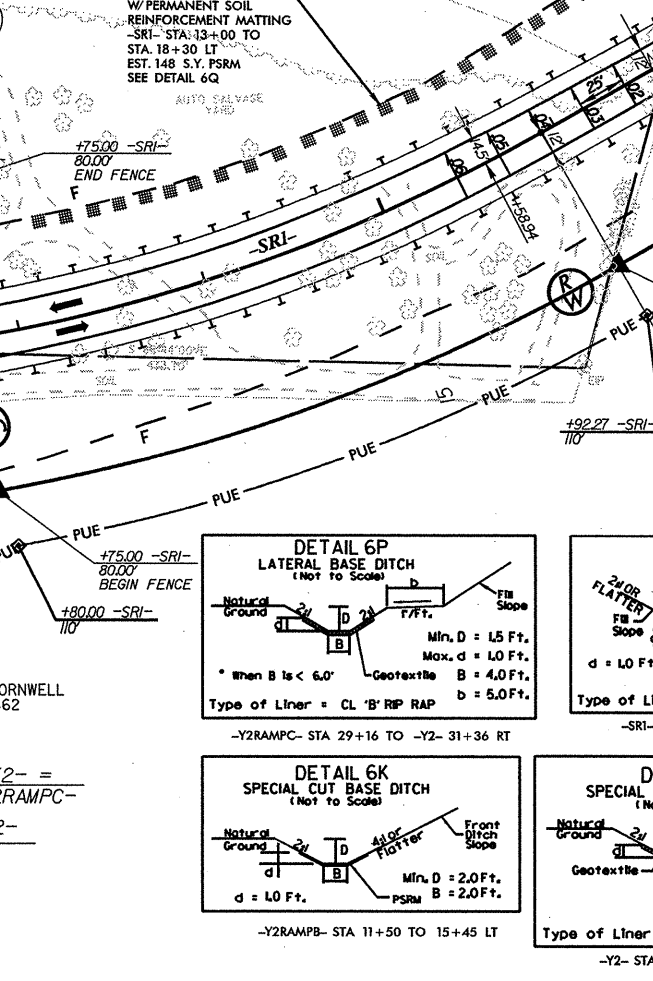
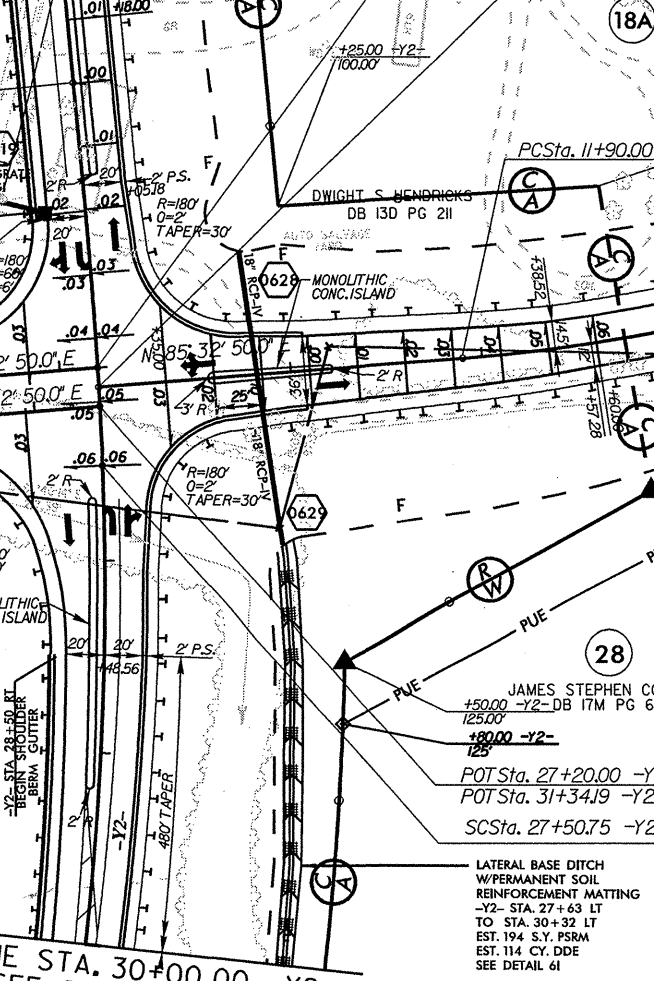
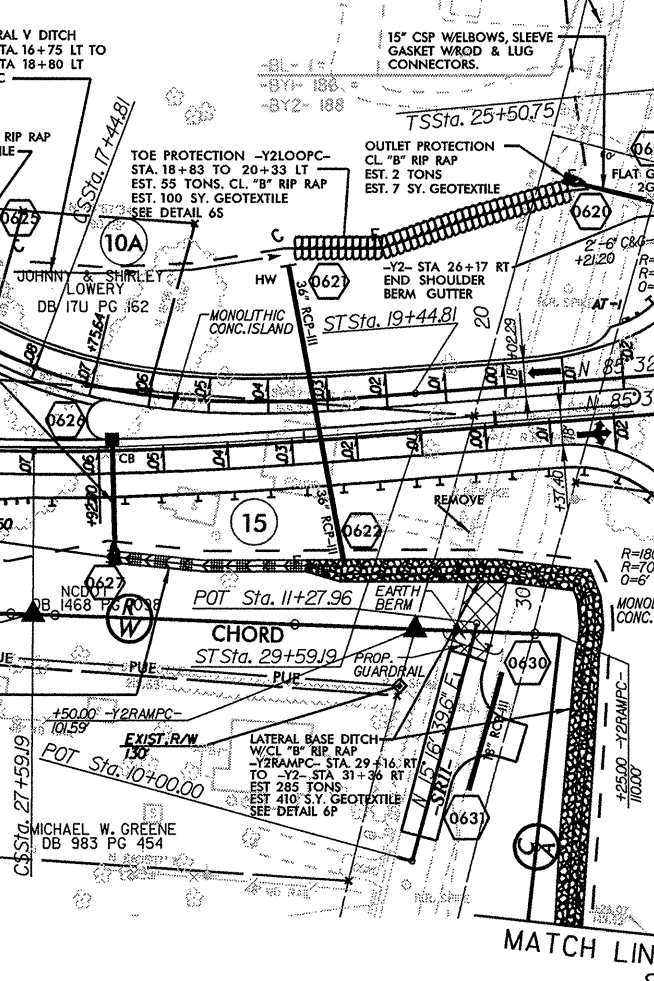
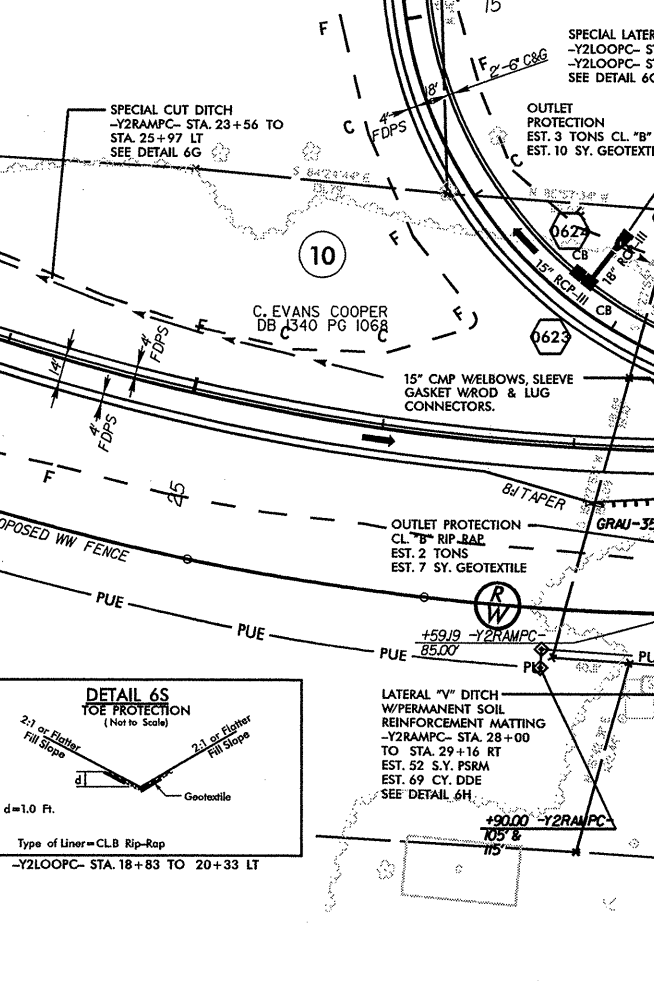
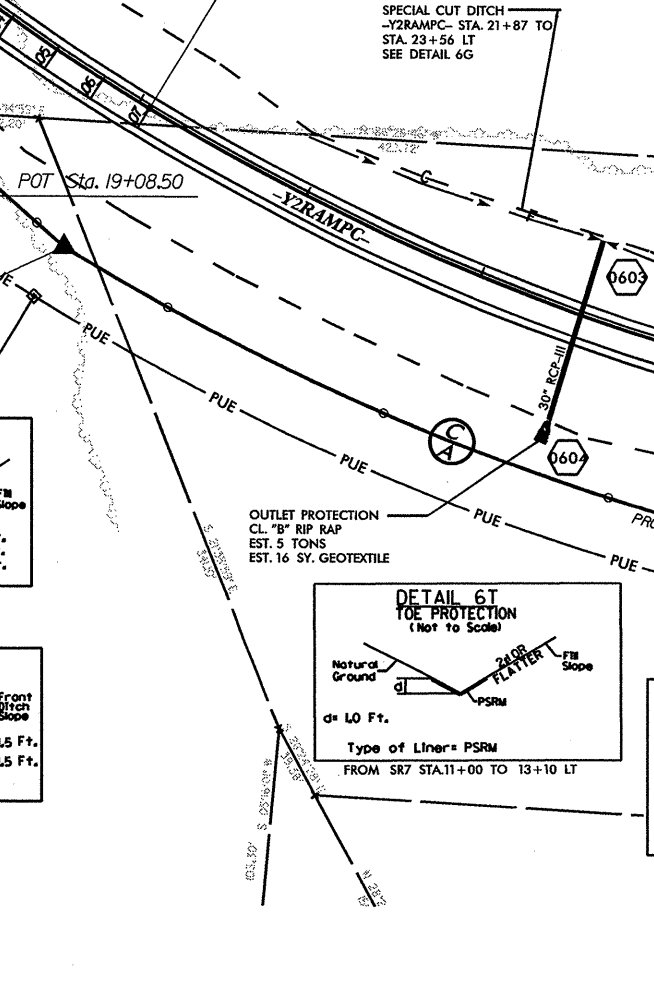
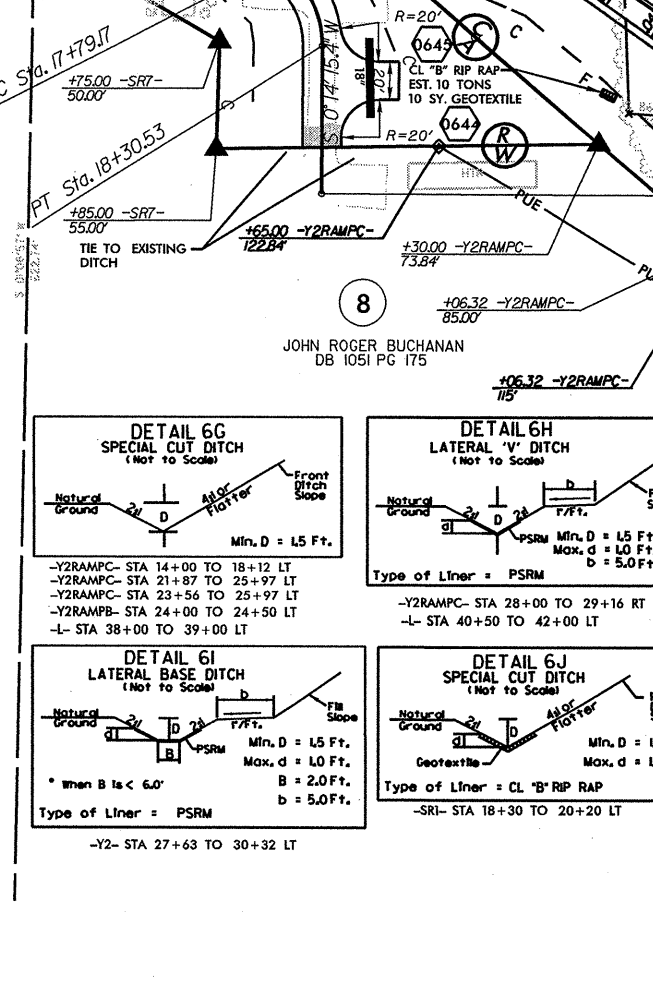
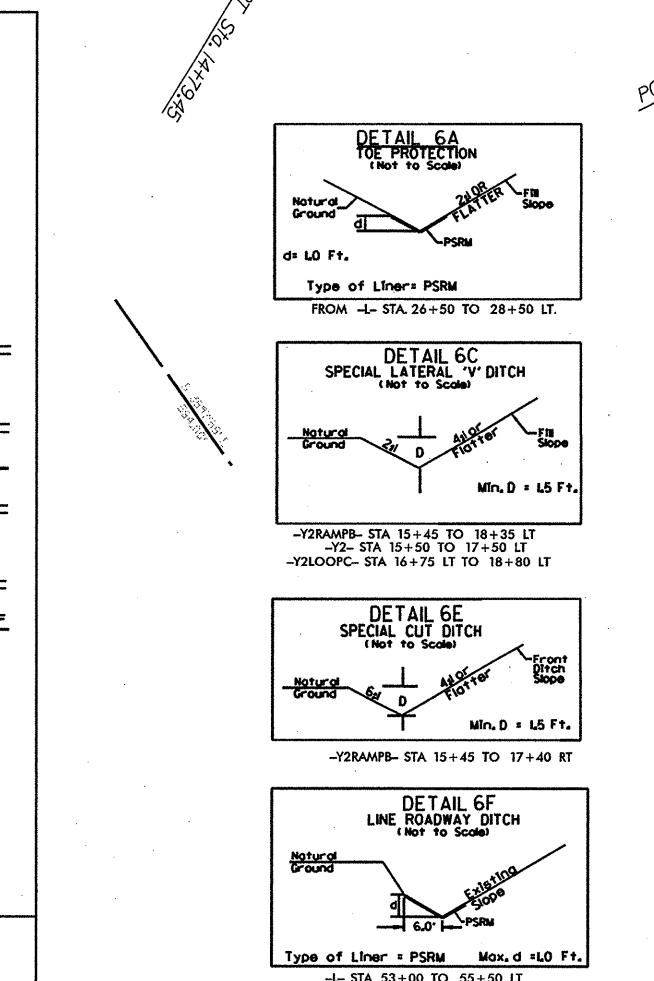
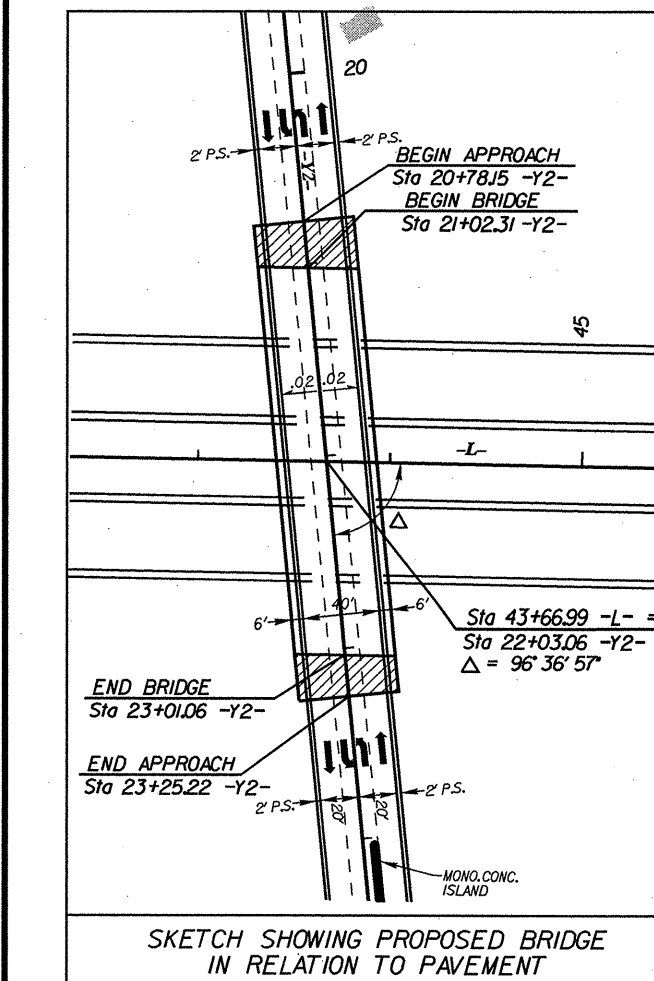
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10000 N. RAYMOND AVE.
SUITE 200
DURHAM, NC 27704
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www.gom.com

PROJECT REFERENCE NO. R-2707AA	SHEET NO. 6
ROADWAY DESIGN ENGINEER STEPHEN T. SMALLWOOD	HYDRAULICS ENGINEER STEVEN M. BONOMO

SEAL 022037
SEAL 12786
SEAL NOT VALID UNLESS SIGNED AND DATED



SEE SHEETS 19 AND 20 FOR -L- PROFILE
SEE SHEET 23 FOR -Y2RAMPB- PROFILE
SEE SHEET 24 FOR -Y2LOOPEB- PROFILE
SEE SHEET 25 FOR -Y2RAMPB- PROFILE
SEE SHEET 24 FOR -Y2LOOPEB- PROFILE
SEE SHEET 30 FOR -Y2- PROFILE
SEE SHEET 35 FOR -SRI- PROFILE
SEE SHEET 39 FOR -SRI- PROFILE
SEE SHEET 40 FOR -SRI- PROFILE
SEE SHEET 2-J FOR INTERSECTION DETAIL

NC GRID NAD 8395

REVISIONS

DETAIL 7A
LATERAL BASE DITCH
(Not to Scale)

Natural Ground

2:1

$\frac{D}{B}$

$\frac{b}{1.5:1}$

Fill Slope

Min. D = 2.0 Ft.

Max. d = 2.0 Ft.

B = 6.0 Ft.

b = 5.0 Ft.

Geotextile

*When B is $\geq 6.0'$
Std. No. 868.01

Type of Liner = CL "T" RIPRAP

DETAIL 7B
LINE EXISTING DITCH
(Not to Scale)

Natural Ground

d

Geotextile

Natural Ground

Max. d = 10 Ft.

Type of Liner = CL "B" RIP RAP

-SR1- STA 23+56 TO 25+43 RT

DETAIL 7E
FALSE SUMP
 (Not to Scale)

Outside Ditch Traffic Flow

10ft

20ft

2.0'

0.5' MIN.
1.0' MAX.

S = Ditch Slope

Proposed Ditch

STA. 55+78 RT. LT. & MED.

DETAIL 7C
LINE EXISTING DITCH
 (Not to Scale)

Natural Ground

d

Geotextile

Max. d = 2.0 Ft.

Type of Liner = CL "I" RIP RAP

DETAIL 7C
RIP RAP AT EMBANKMENT
(Not to Scale)

Ditch Grade

1.5'

1.5'

5'

Type of Liner = CL. 'R' RIP RAP

-L- STA 58+34 L.T.

28
JAMES STEPHEN CORNWELL
DB 17M PG 662

RIPRAP AT EMBANKMENT
-L- STA. 58+34 LT
EST. 10 TONS
CL. "1" RIP RAP
SEE DETAIL 7G

JAMES STEPHEN CORNWELL
DB 94E PG 665

MATCH LINE STA. 54+00.00 - L -
SEE SHEET 6

MATCH LINE STA. 62+00.00 - L -
SEE SHEET 8

-SRI-	
PI Sta 13+94.55	PI Sta 20+70.89
$\Delta = 25^{\circ} 36' 32.8" (LT)$	$\Delta = 31^{\circ} 08' 18.8" (RT)$
$D = 6^{\circ} 21' 58.3"$	$D = 5^{\circ} 43' 46.5"$
$L = 402.27'$	$L = 543.47'$
$T = 204.55'$	$T = 278.63'$
$R = 900.00'$	$R = 1,000.00'$
$DS = 50 \text{ MPH}$	$DS = 50 \text{ MPH}$

DETAIL 7D
LINE ROADWAY DITCH
(Not to Scale)

Natural Ground

Existing Slope

PSRM

6.0'

d

Type of Liner = PSRM

Max. d = 1.0 Ft.

-L- STA 53+00 TO 55+50 LT

STANDARD REINFORCED SOIL
SLOPE DETAIL SEE DETAIL 2-N —

— LATERAL "BASE" DITCH
W/CL "I" RIP RAP
-L- STA. 58+34
TO STA. 59+28 LT
EST. 75 TONS
EST. 145 S.Y. GEOTEXTI
EST. 106 CY. DDE
SEE DETAIL 7A

PTS (28)
JAMES STEPHEN CORNWELL
DB 17M BC 662

CHARLES CORNWELL
DB 94E PG 665

SEE SHEET 20 FOR -L- PROFILE
SEE SHEET 35 FOR -SRI- PROFILE
SEE CULVERT PLANS C-1 THRU C-7

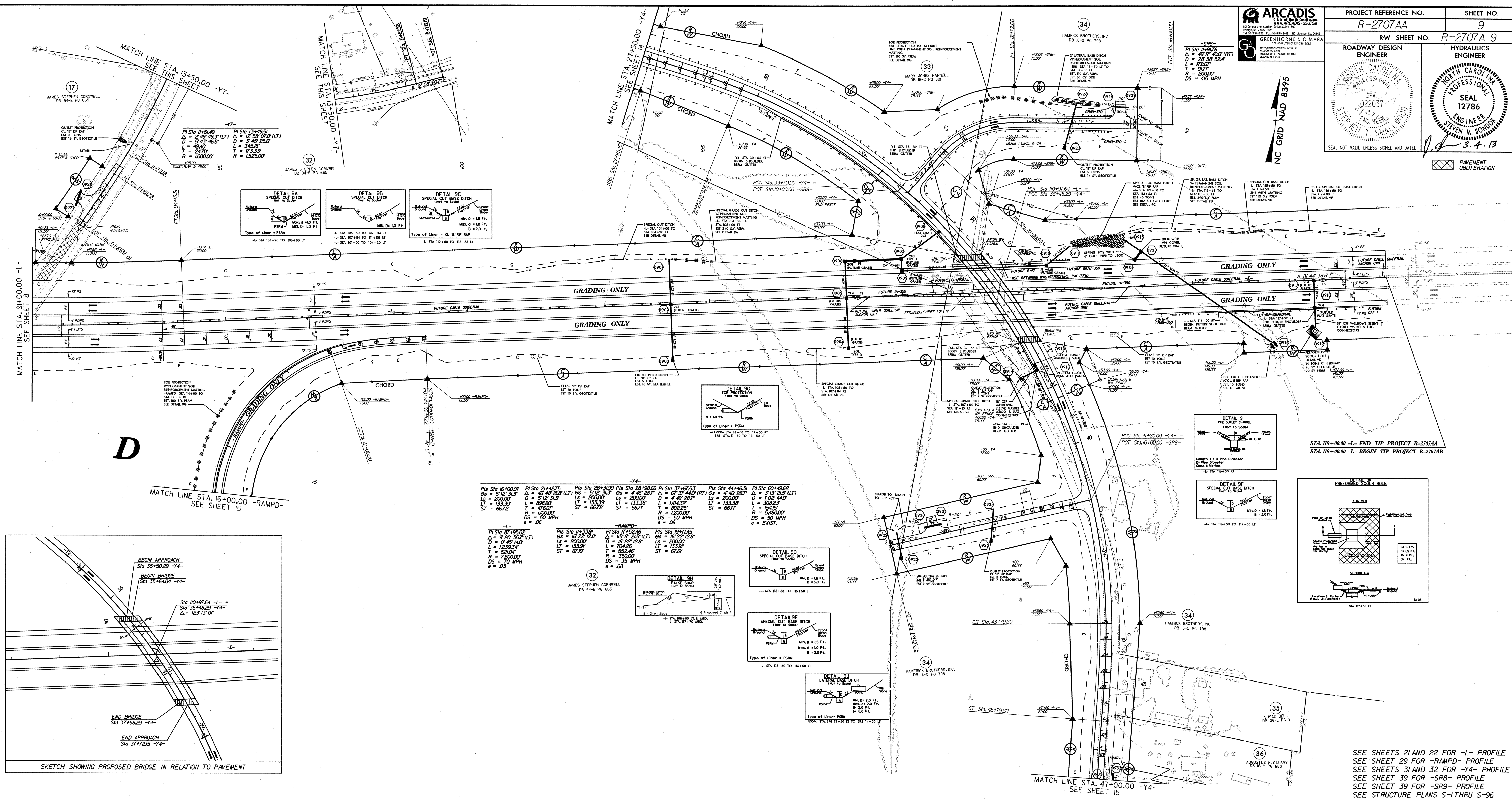
 **ARCADIS**
G & M of North Carolina, Inc.
WWW.ARCADIS-US.COM
801 Corporate Center Drive, Suite 300
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CONSULTING ENGINEERS
5565 CENTERVIEW DRIVE, SUITE 107
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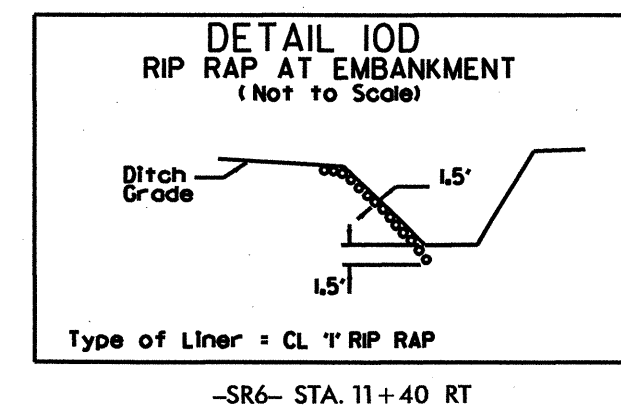
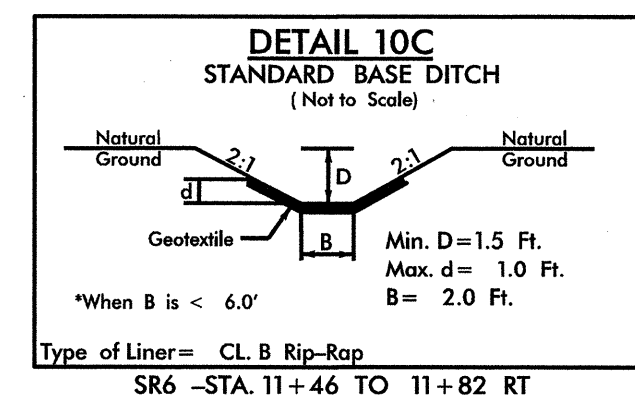
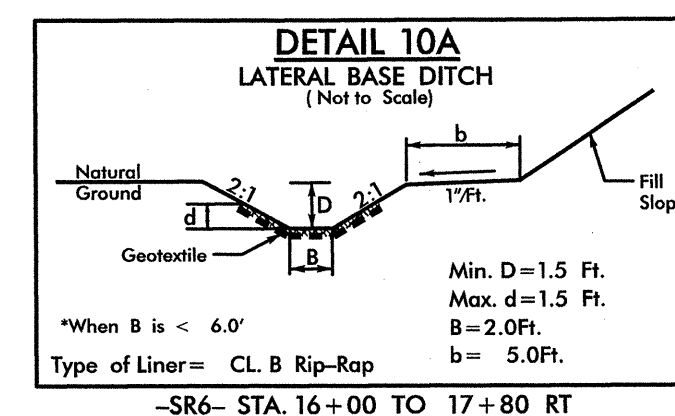
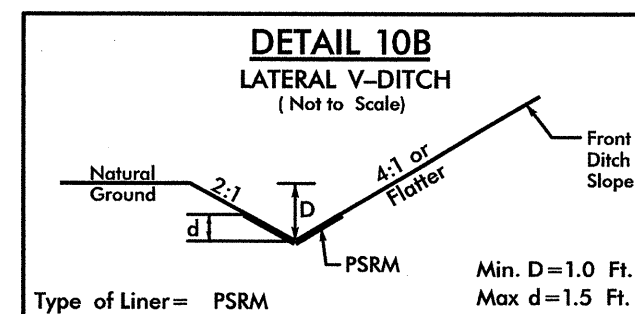
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R-2707AA		7	
RW SHEET NO.		R-2707A 7	
ROADWAY DESIGN ENGINEER 		HYDRAULICS ENGINEER 	
 3.4.13			
SEAL NOT VALID UNLESS SIGNED AND DATED			



PAVEMENT
OBLITERATION



SEE SHEETS 21 AND 22 FOR -L- PROFILE
SEE SHEET 29 FOR -RAMPD- PROFILE
SEE SHEETS 31 AND 32 FOR -Y4- PROFILE
SEE SHEET 39 FOR -SR8- PROFILE
SEE SHEET 39 FOR -SR9- PROFILE
SEE STRUCTURE PLANS S-1 THRU S-96

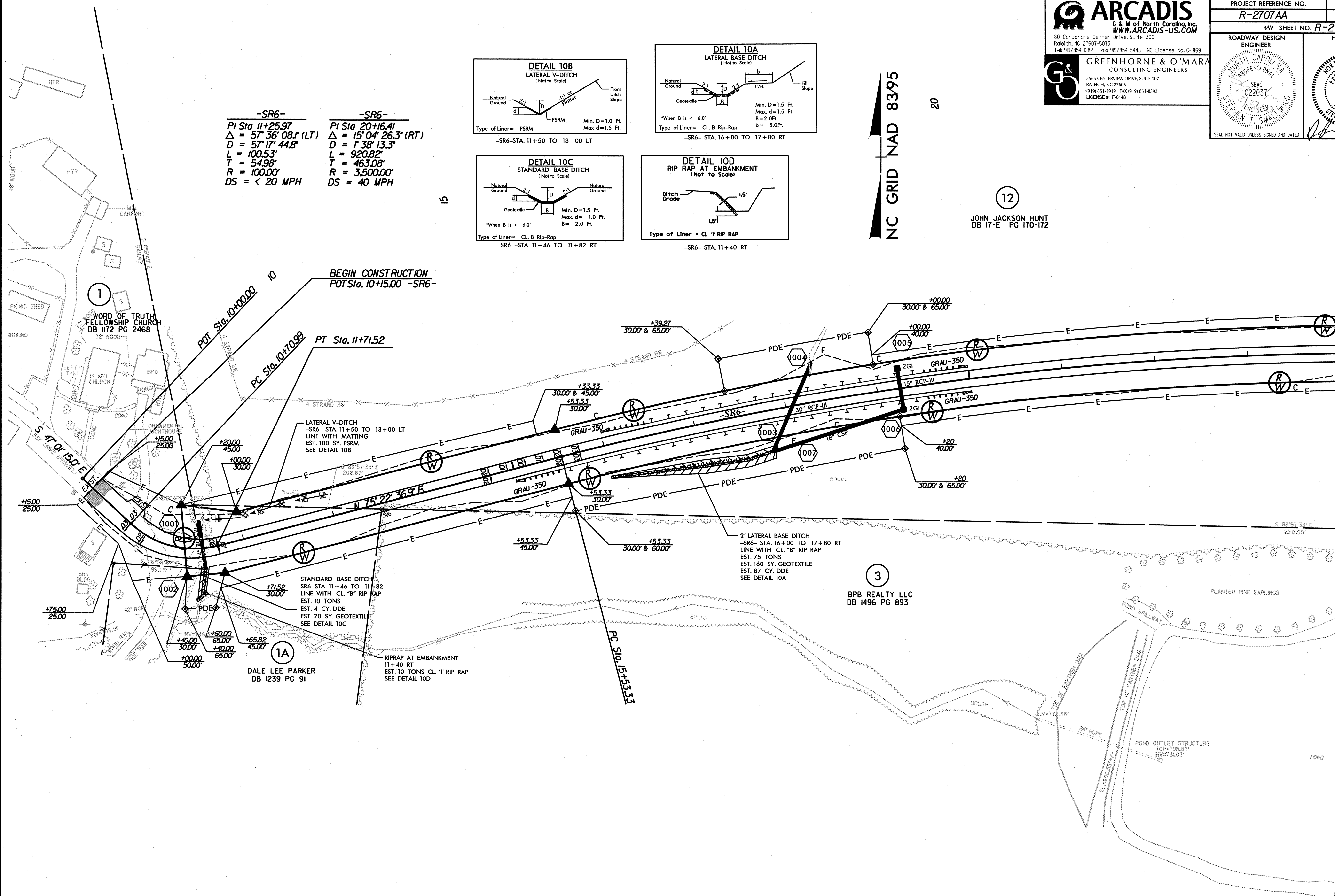


-SR6- PI Sta 11+25.97 $\Delta = 57^\circ 36' 08.1" (LT)$ D = 57' 17" 44.8" L = 100.53' T = 54.98' R = 100.00' DS = < 20 MPH	-SR6- PI Sta 20+16.41 $\Delta = 15^\circ 04' 26.3" (RT)$ D = 1' 38" 13.3" L = 920.82' T = 463.08' R = 3,500.00' DS = 40 MPH
---	---

NC GRID NAD 8395

12
JOHN JACKSON HUNT
DB 17-E PG 170-172

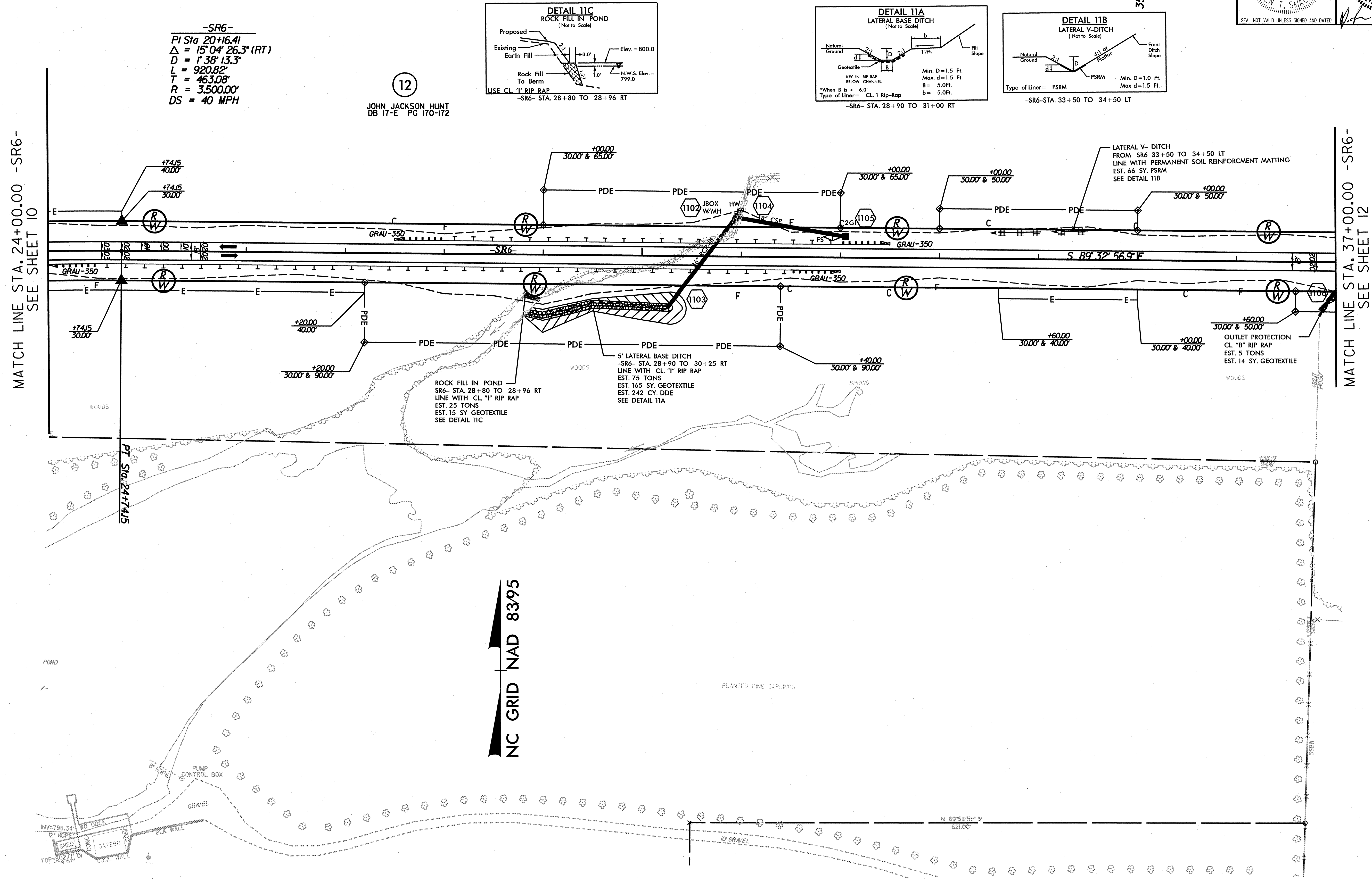
MATCH LINE STA. 24+00.00 -SR6-
SEE SHEET 11



ARCADIS
C & M of North Carolina, Inc.
www.ARCADIS-US.COM
801 Corporate Center
Raleigh, NC 27607-5013
Tel: 919/854-1282 Fax: 919/854-5448 NC License No. C-1869

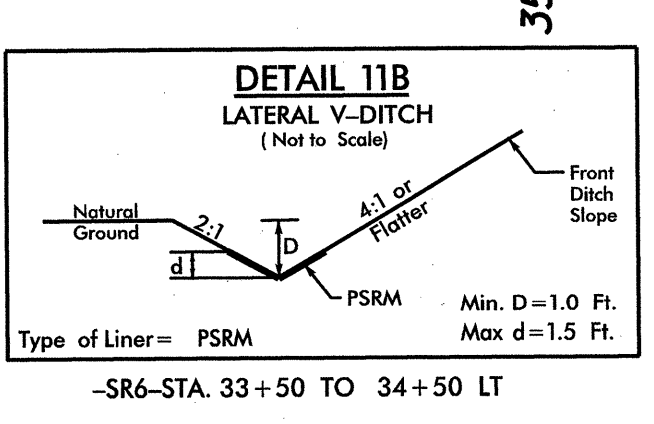
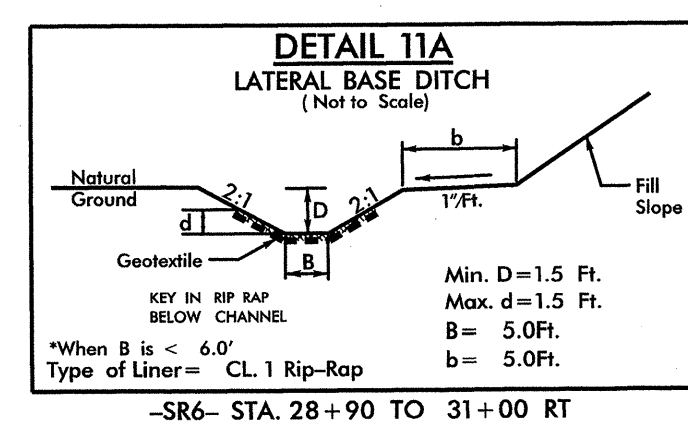
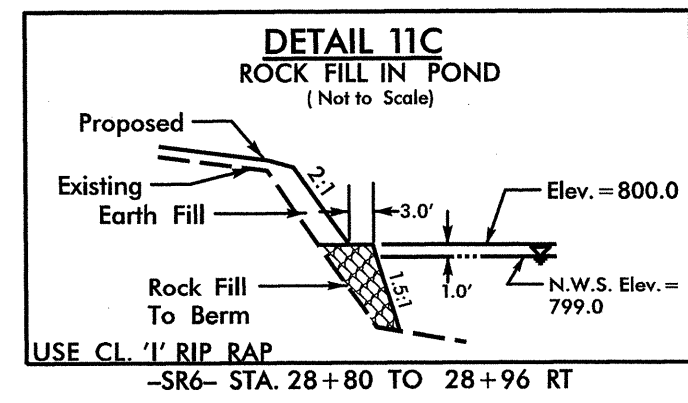
GREENHORNE & O'MARA
CONSULTING ENGINEERS
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NC 27606
(919) 851-1919 FAX (919) 851-8393
LICENSE # F-0148

PROJECT REFERENCE NO. R-2707AA		SHEET NO. 11
RW SHEET NO. R-2707A 24		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
SEAL NOT VALID UNLESS SIGNED AND DATED 3.4.13		



-SR6-
 PI Sta 20+16.41
 $\Delta = 15^{\circ}04'26.3''$ (RT)
 $D = 1^{\circ}38'13.3''$
 $L = 920.82'$
 $T = 463.08'$
 $R = 3,500.00'$
 $DS = 40$ MPH

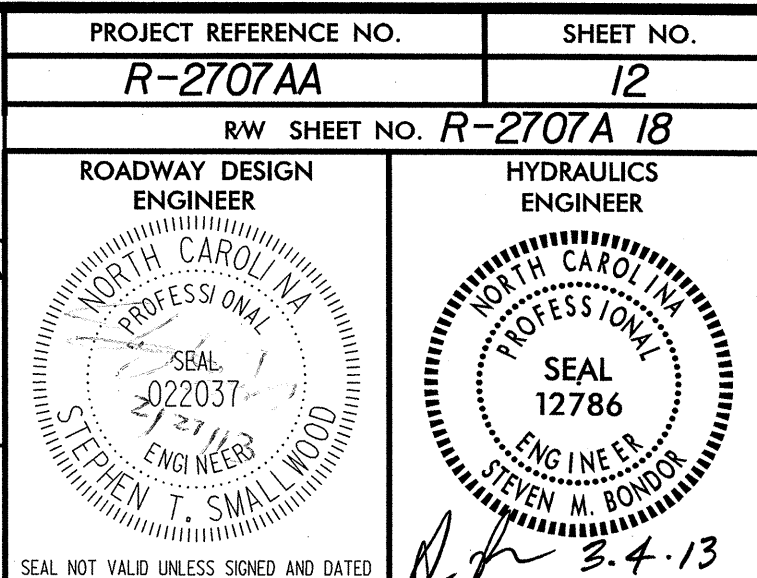
12
 JOHN JACKSON HUNT
 DB 17-E PG 170-172



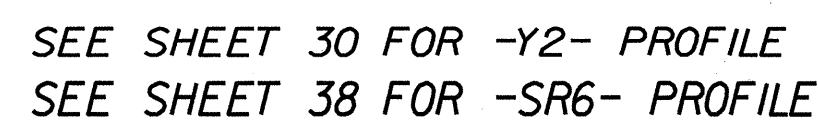
NC GRID NAD 83/95

SEE SHEET 38 FOR -SR6- PROFILE

ARCADIS CAM
 Date: 04/11/13
 Time: 10:00 AM
 File: 041113_01.dwg



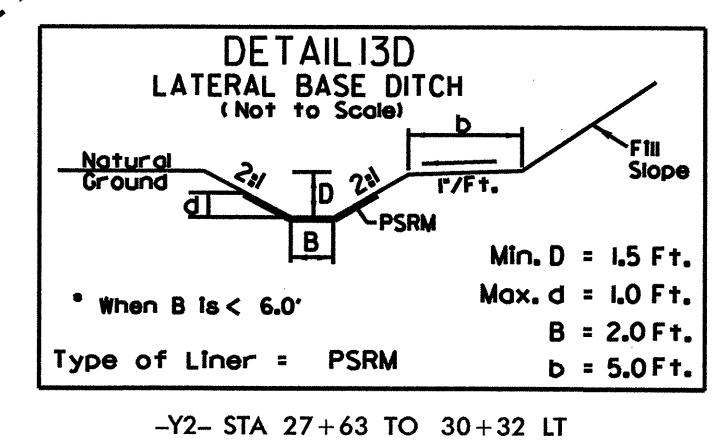
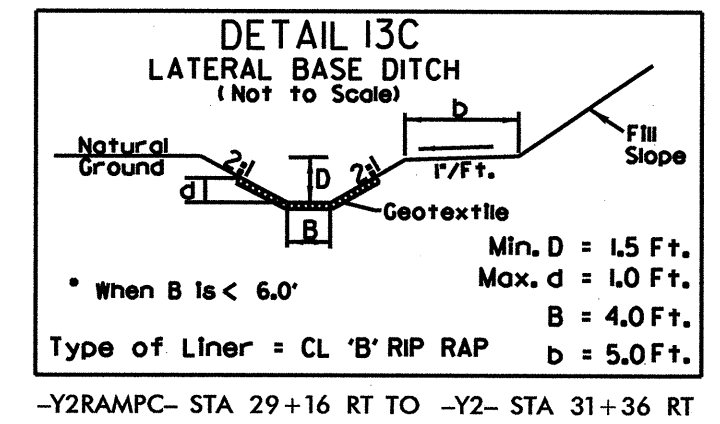
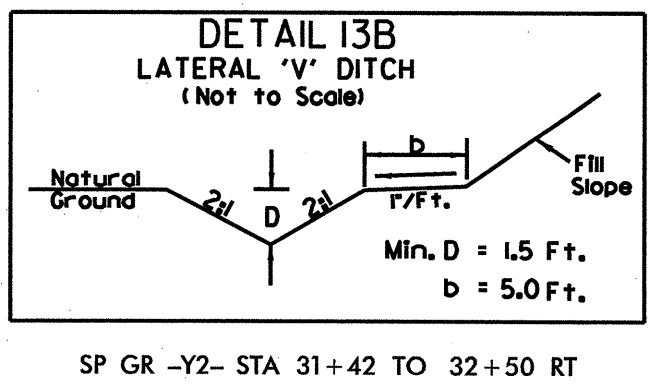
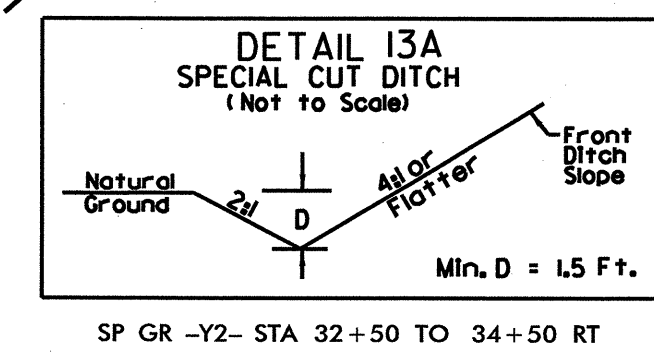
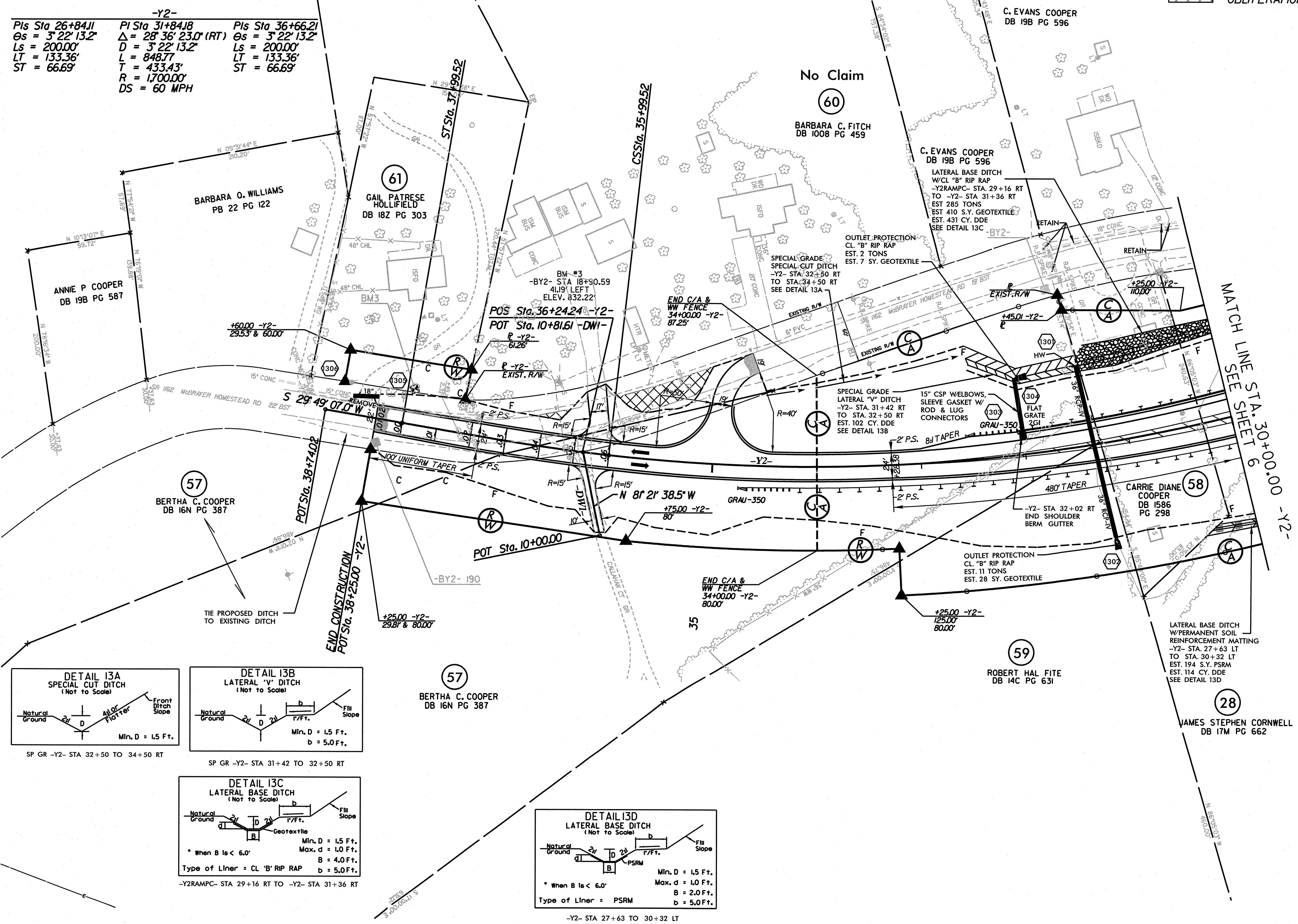
NC GRID NAD 83/95



ARCADIS G&M
Date: \$DATE\$
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Time: \$TIME\$

**PAVEMENT
OBLITERATION**

NC GRID NAD 8395

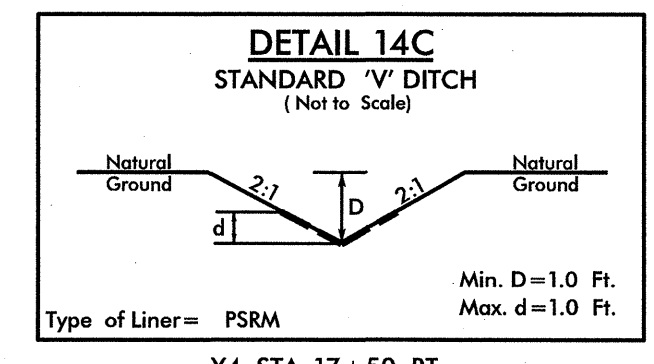
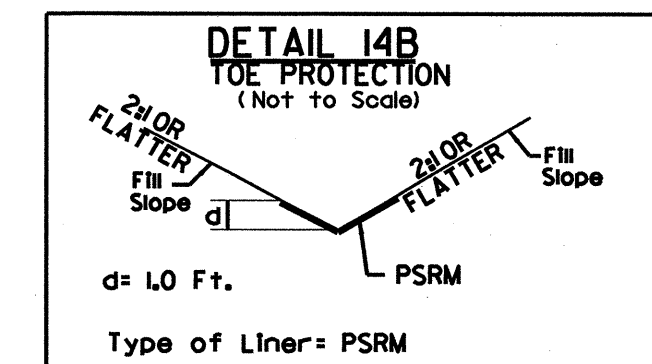
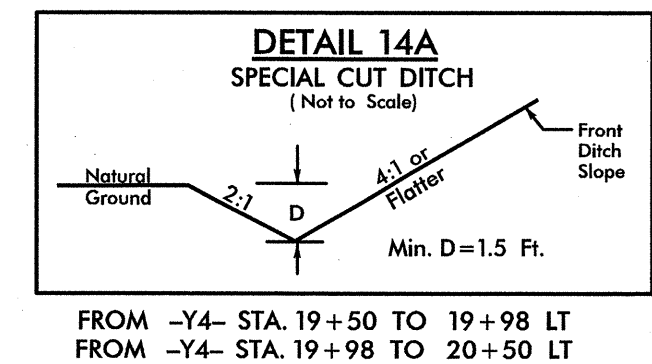


SEE SHEET 30 & 31 FOR -Y2- PROFILE

 **PAVEMENT
OBLITERATION**

-Y4-					
Pls Sta 16+00.07	Pls Sta 21+42.75	Pls Sta 26+31.99	Pls Sta 28+98.66	Pls Sta 37+67.53	Pls Sta 44+46.31
Δs = 5'12" 31.3"	Δ = 46'48" 18.8" (LT)	Δs = 5'12" 31.3"	Δs = 4'46" 28.7"	Δ = 67'31" 44.0" (RT)	Δs = 4'46" 28.7"
Ls = 200.00'	D = 5'12" 31.3"	Ls = 200.00'	Ls = 200.00'	D = 4'46" 28.7"	Ls = 200.00'
LT = 133.39'	L = 898.60'	LT = 133.39'	LT = 133.38'	L = 1,414.32'	LT = 133.38'
ST = 66.72'	T = 476.07'	ST = 66.72'	ST = 66.71'	T = 802.25'	ST = 66.71'
	R = 1,000.00'			R = 1,200.00'	
	DS = 50 MPH			DS = 50 MPH	
	e = .06			e = .06	

-SR4-	
Pls Sta 10+21.97	Pls Sta 10+84.18
Δ = 1'34" 42.4" (LT)	Δ = 56'25" 34.5" (RT)
D = 3'35" 32.0"	D = 76'23" 39.7"
L = 43.94'	L = 73.86'
T = 21.97'	T = 40.24'
R = 1,595.00'	R = 75.00'
DS = <15 MPH	DS = <15 MPH



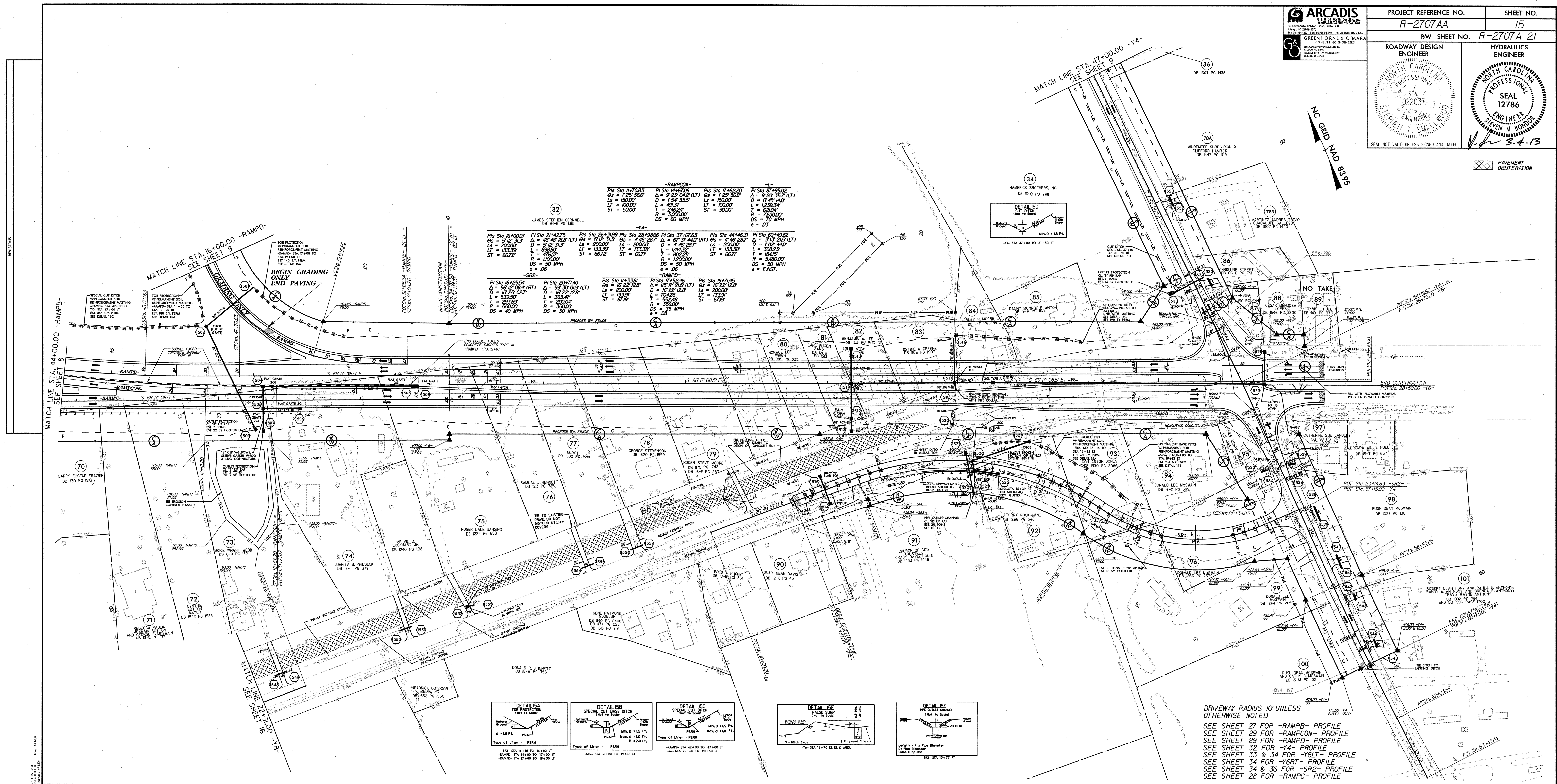
NC GRID NAD 8395

MATCH LINE
STA. 27+50.00 -Y4-
SEE SHEET 9

SEE SHEET 31 FOR -Y4- PROFILE
SEE SHEET 37 FOR -SR4- PROFILE

REVISIONS

ARCADIS G&M
DATE: 04/15/05
TIME: 4:15 PM
FILE: R-2707AA-14



NC GRID NAD 8395

MATCH LINE SEE SHEET 16A

POT Sta. 10+00.00

PC Sta. 11+84.75

BEGIN PAVING
-Y8- Sta. 10+88.70

15 POT Sta. 15+05.42
END PAVING
-Y9- Sta. 14+43.02

RETAIN EXISTING DRAINAGE SYSTEM
POT STA. 15+75.40 -Y8-
POT STA. 12+16.79 -Y9- R=60'

REMOVE CONCRETE APRON

CONVERT DI TO JBOX W/MH COVER

-Y8-
PI Sta. 15+67.04
 $\Delta = 24' 06" 40.6" (LT)$
 $D = 3' 12" 03.2"$
 $L = 753.27'$
 $T = 382.29'$
 $R = 1,790.00'$

10 POT Sta. 10+00.00

LARRY EUGENE FRAZIER
DB 1130 PG 1910

JAMES D. BOWEN
DB 1227 PG 1663

MICHAEL D. HARRILL
DB 6-H PG 566

MICHAEL D. HARRILL
DB 14-Z PG 796

MICHAEL D. HARRILL
DB 14-Z PG 796

71 REBECCA PAULIN
MCSWAIN SUTTON
AND GEORGE E. MCSWAIN
DB 19-E PG 717

72 CYNTHIA SUTTON
MEYER
DB 1542 PG 1525

MARY HELEN CABANESS
DB 1170 PG 882

AREY OIL COMPANY #113
DB 1131 PG 392

BILLY D. BLANTON
DB 1121 PG 955

BEGIN PAVING
-Y9- Sta. 11+11.98

END PAVING
-Y8- Sta. 20+24.16

MATCH LINE SEE SHEET 15

-Y8-

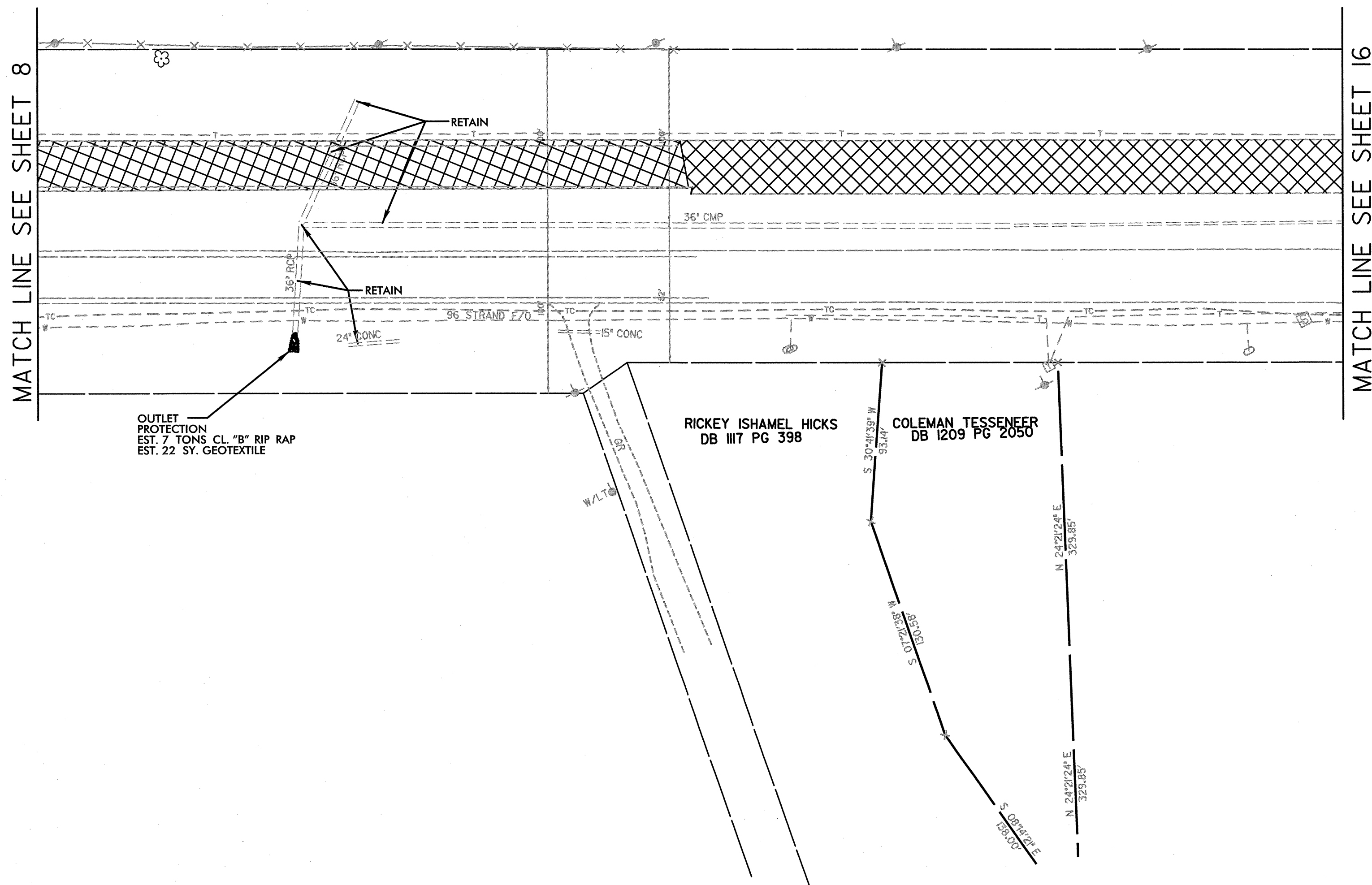
DRIVEWAY RADIUS 10' UNLESS OTHERWISE NOTED
SEE SHEET 40 FOR -Y8- PROFILE

PAVEMENT OBLITERATION

REVISIONS

REVISIONS

ARCADIS G&M
DATE: 12/5/12
FILE: 12-5-12

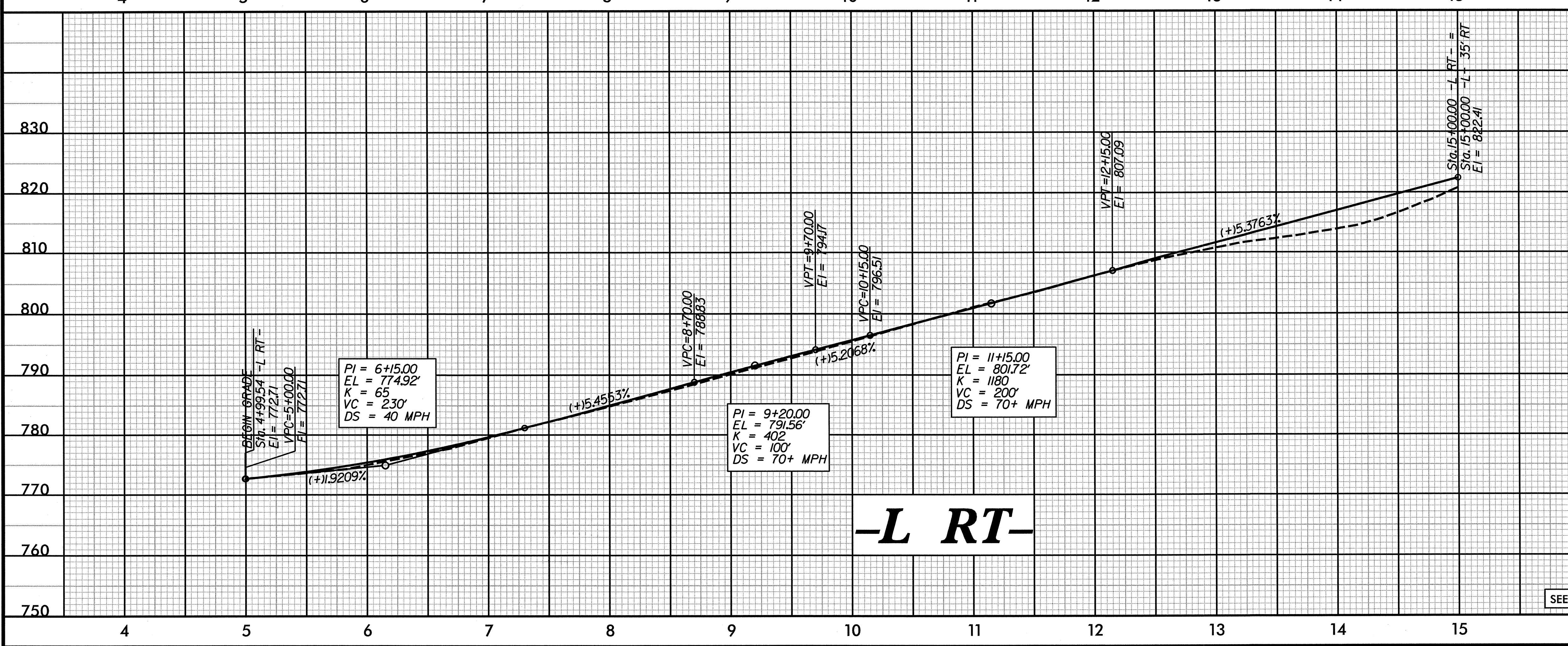
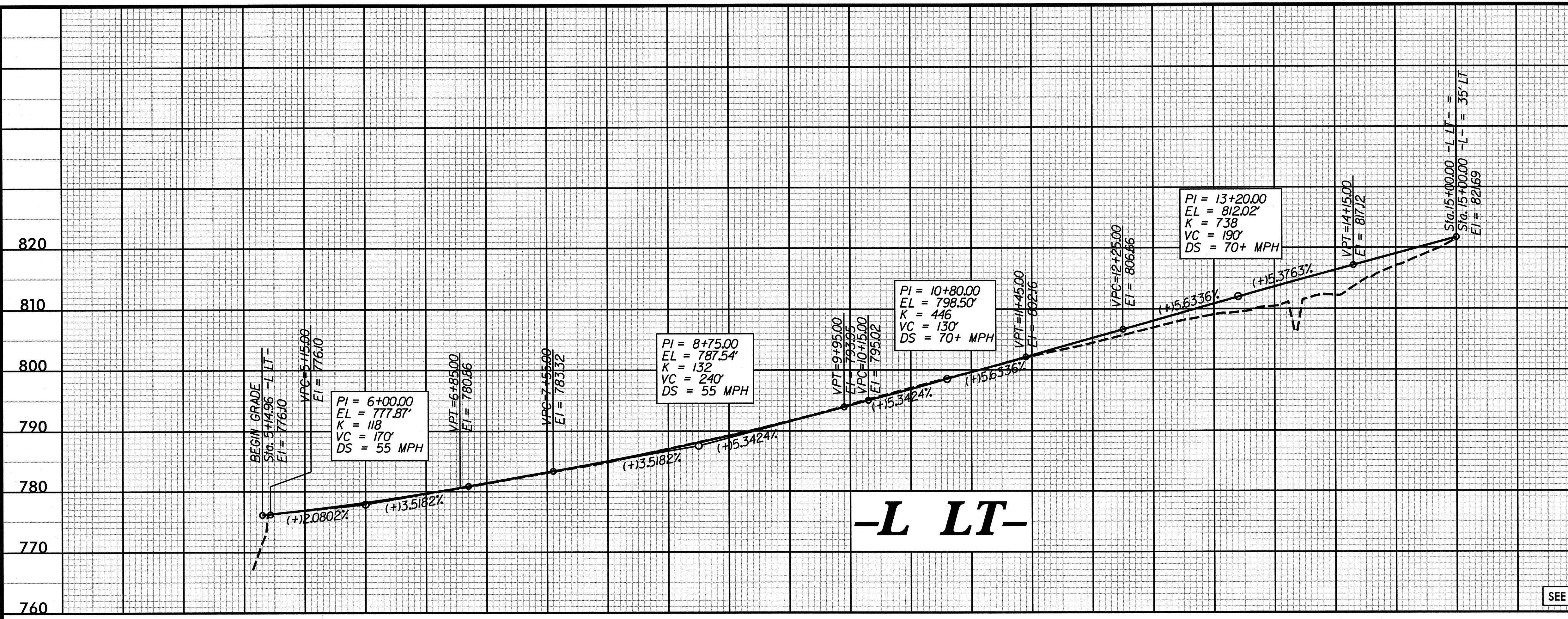


NC GRID NAD 83/95

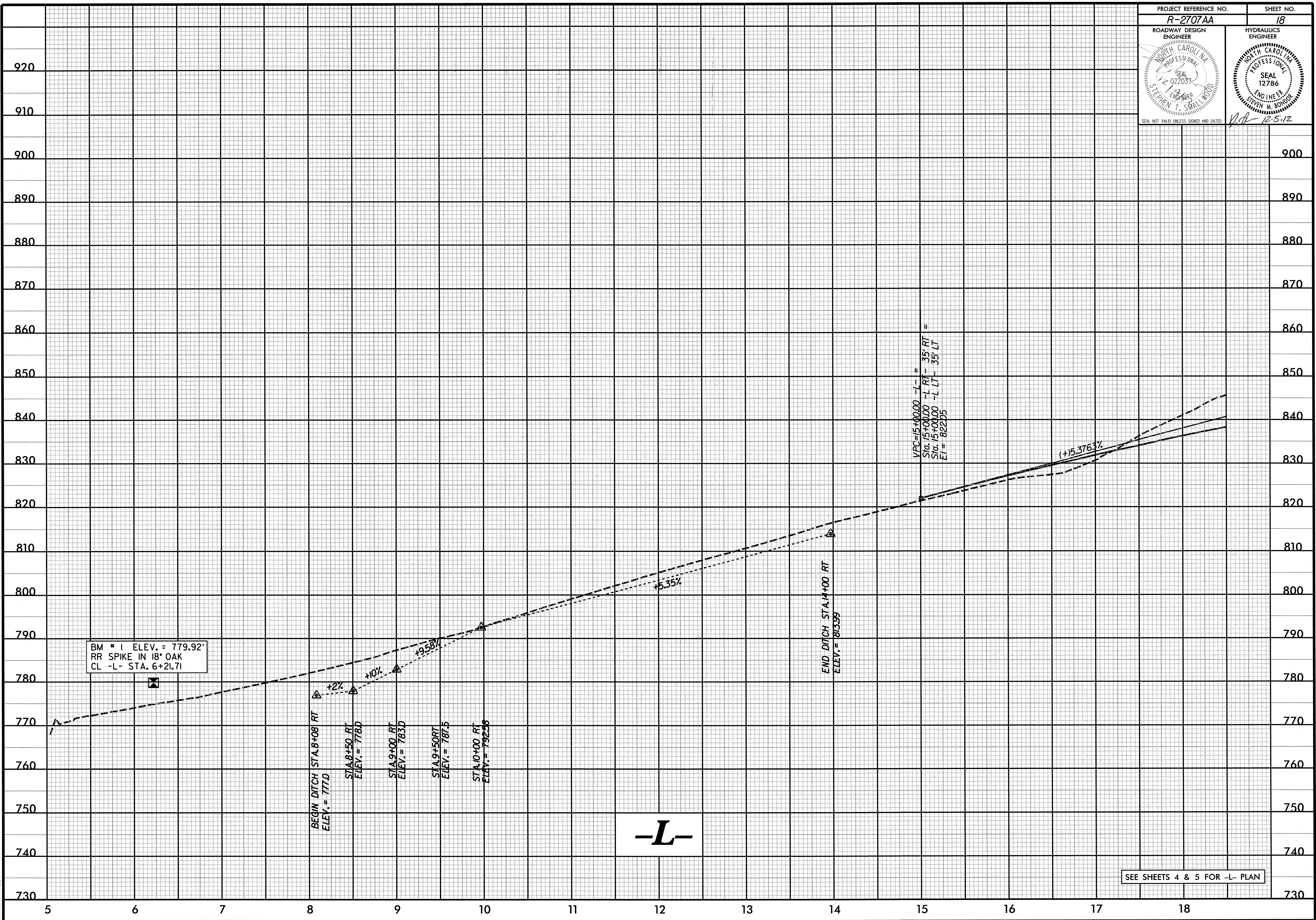
ARCADIS
G & M of North Carolina, Inc.
801 Corporate Center Drive, Suite 300
Raleigh, NC 27607-5073
Tel: 919/854-1282 Fax: 919/854-5448 NC License No. C-1869
GREENHORNE & O'MARA
CONSULTING ENGINEERS
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NC 27606
(919) 851-1919 FAX (919) 851-8393
LICENSE #: F-0148

PROJECT REFERENCE NO.	SHEET NO.
R-2707AA	16A
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 12786 STEVEN W. BONDOR
SEAL 022037 STEVEN T. SKILLGORD	SEAL 12786 STEVEN W. BONDOR

PAVEMENT OBLITERATION

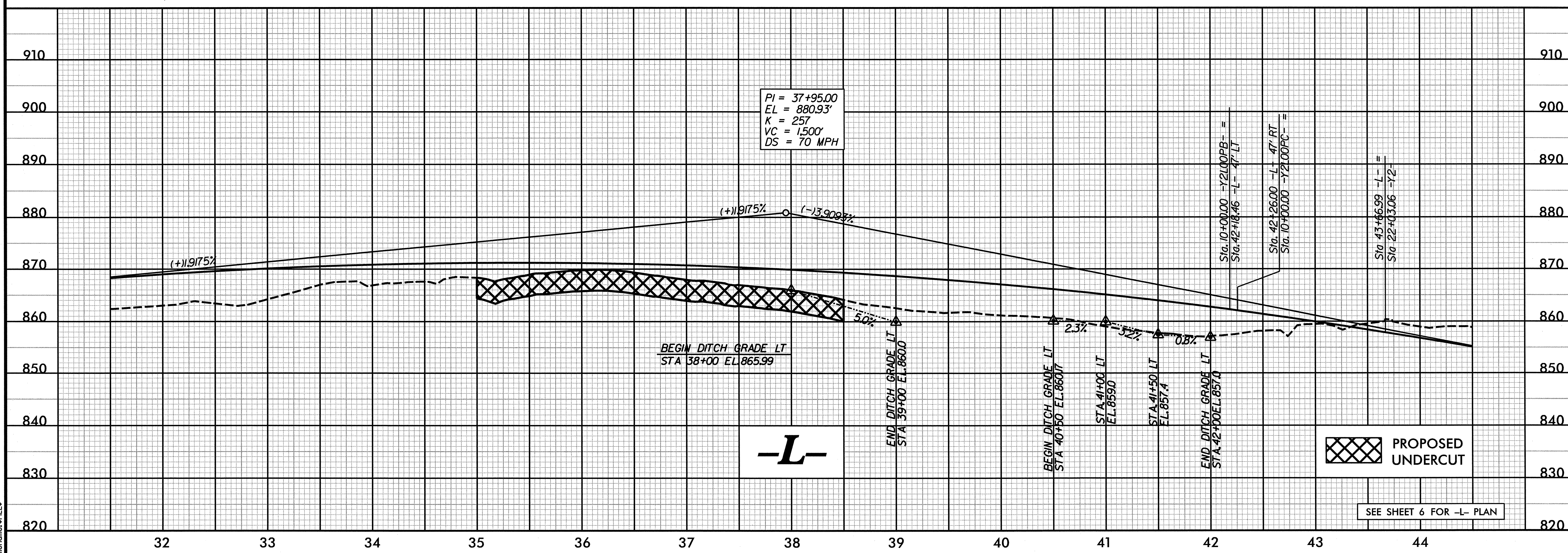
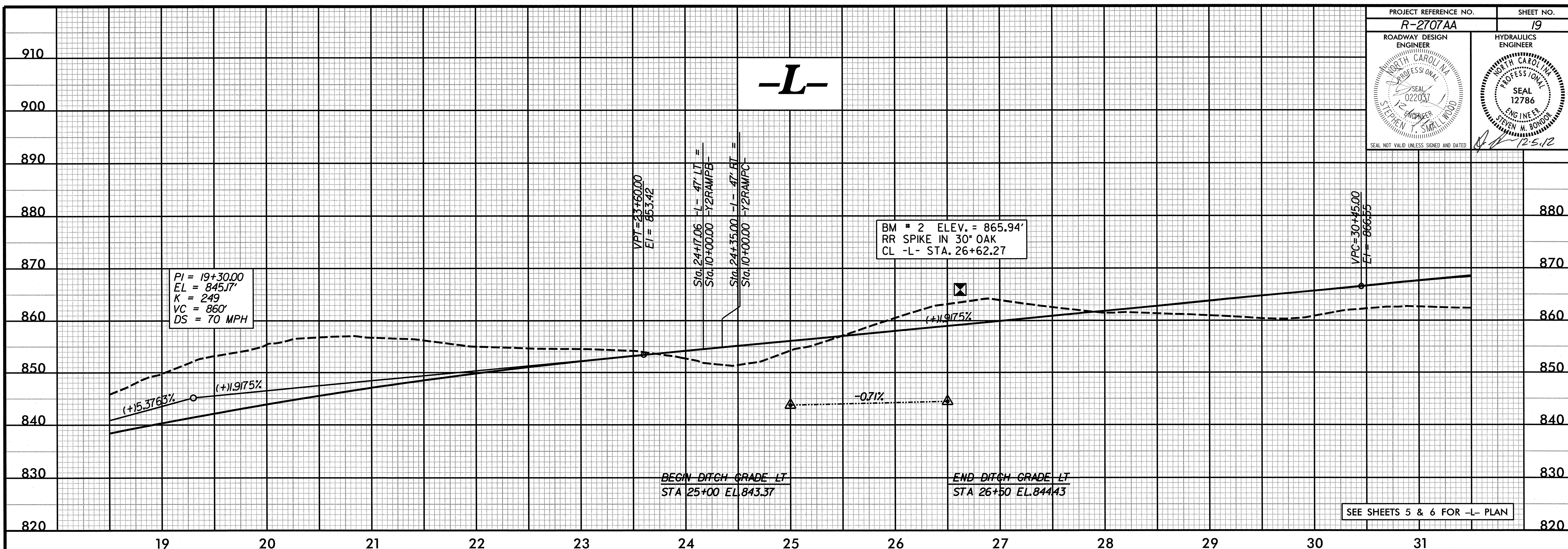


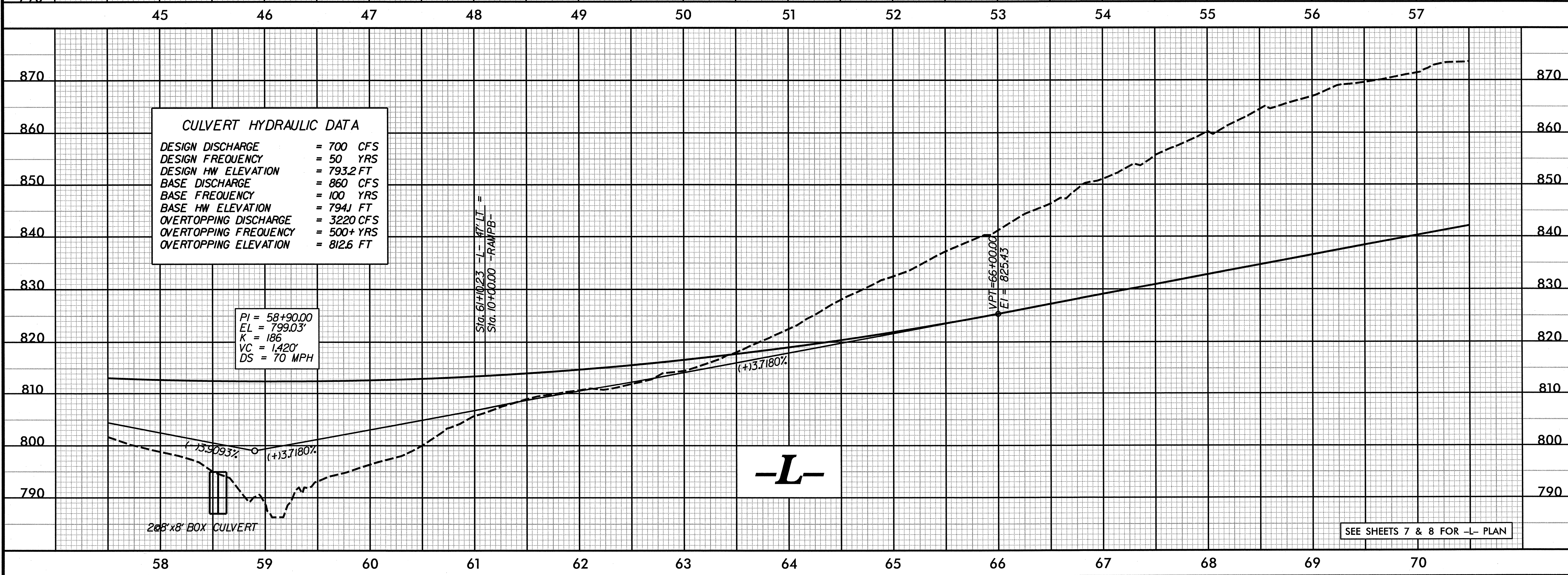
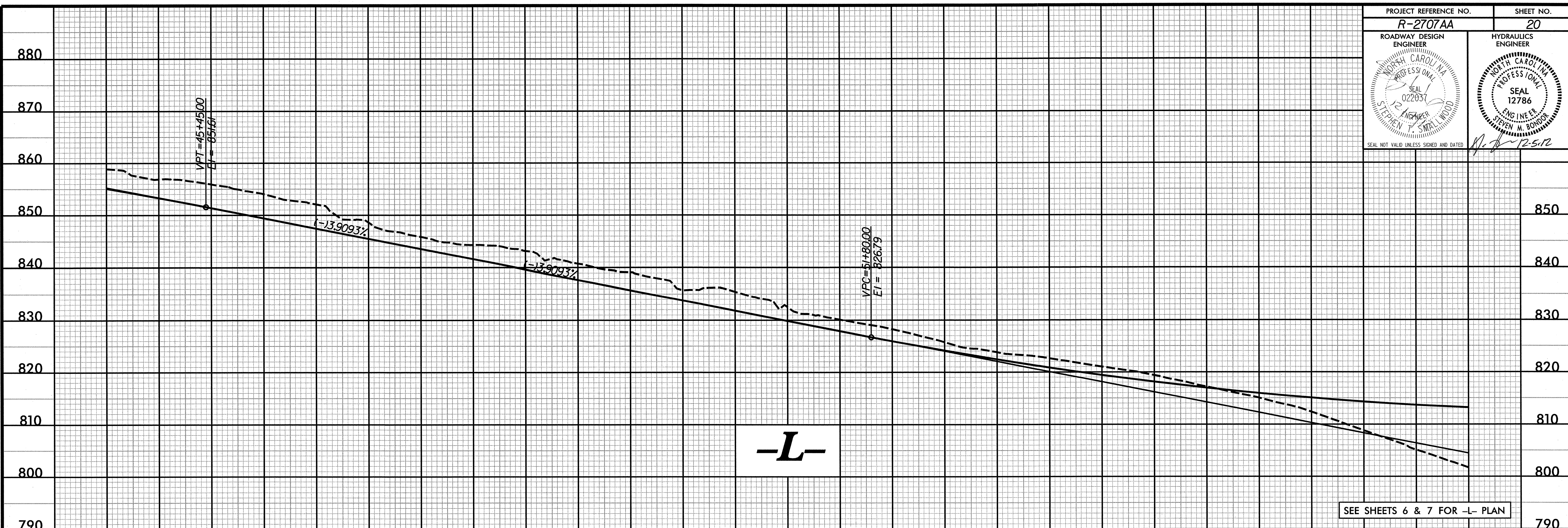
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Date: 01/11/12
Time: 01:18 PM
Filename: 12-01-12-01

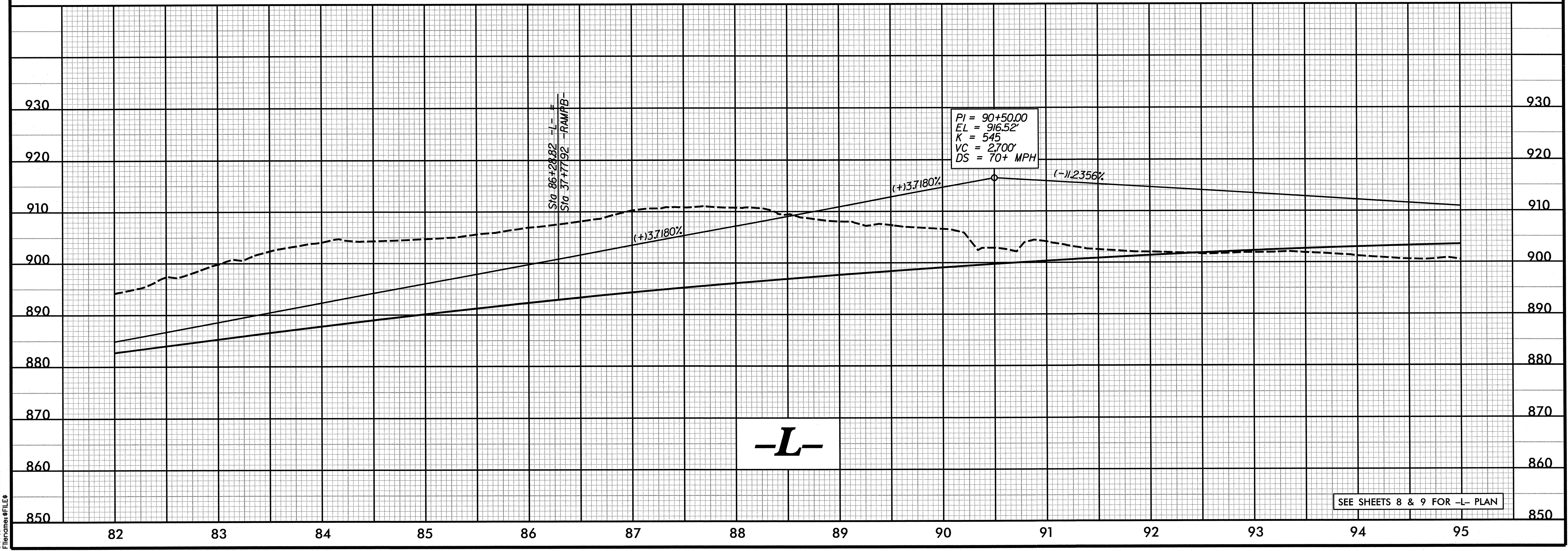
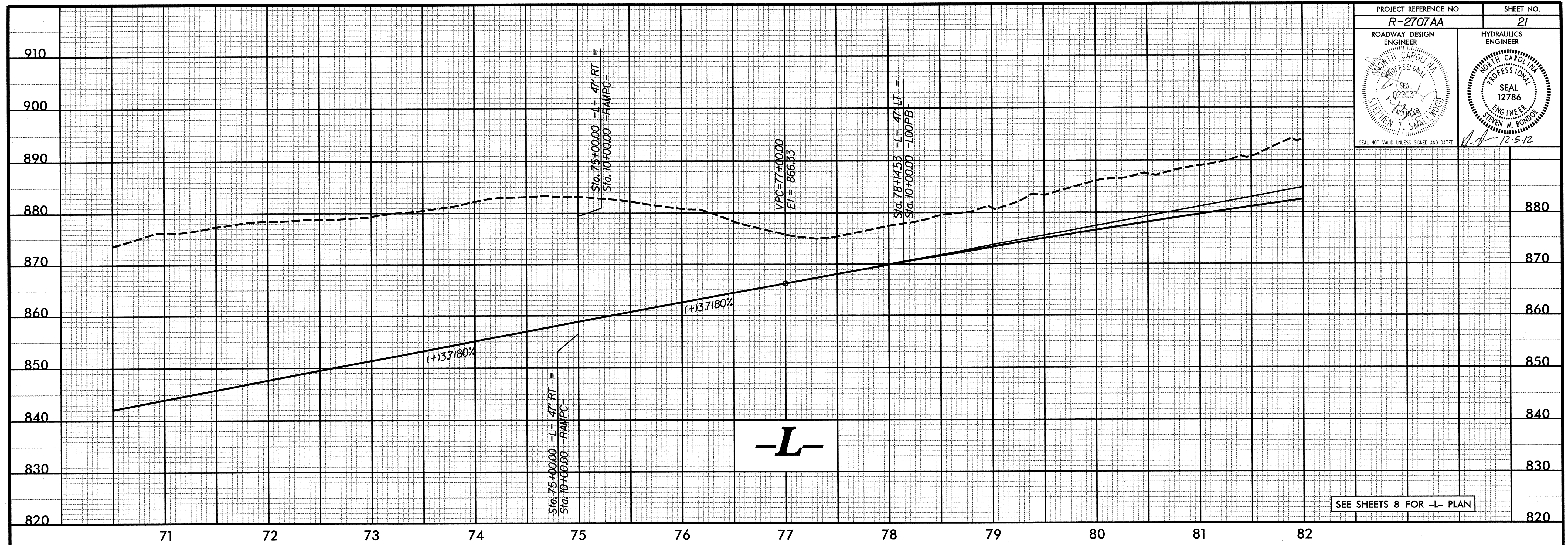


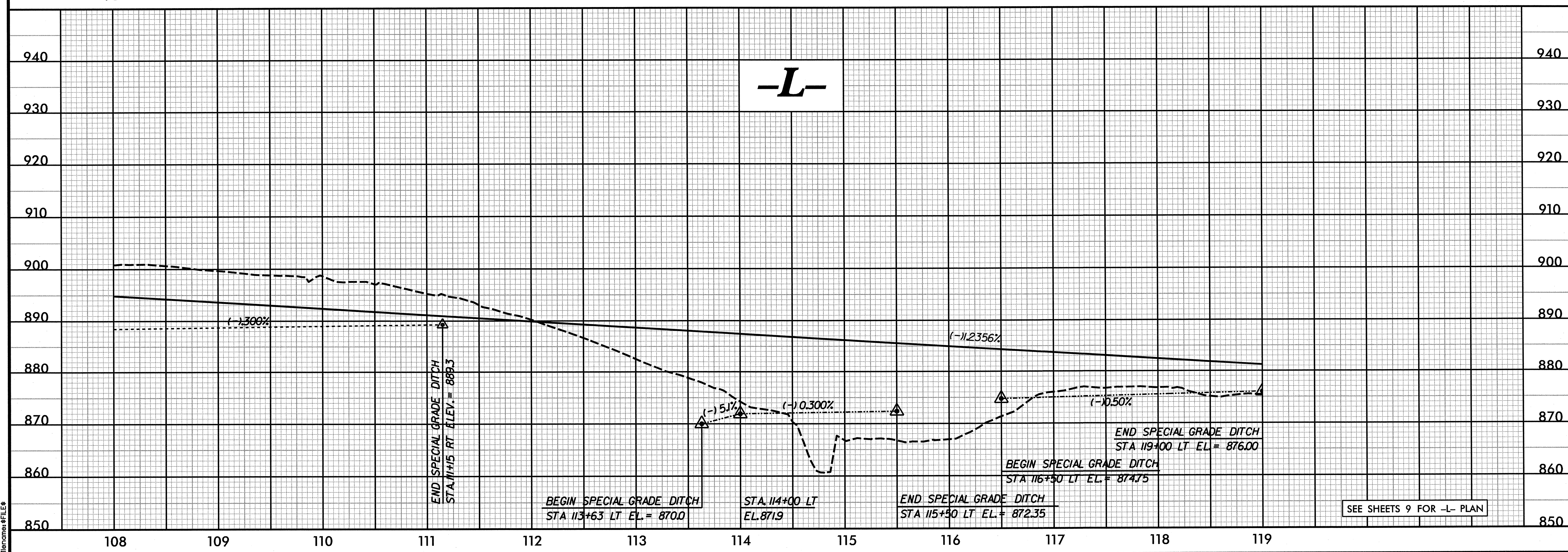
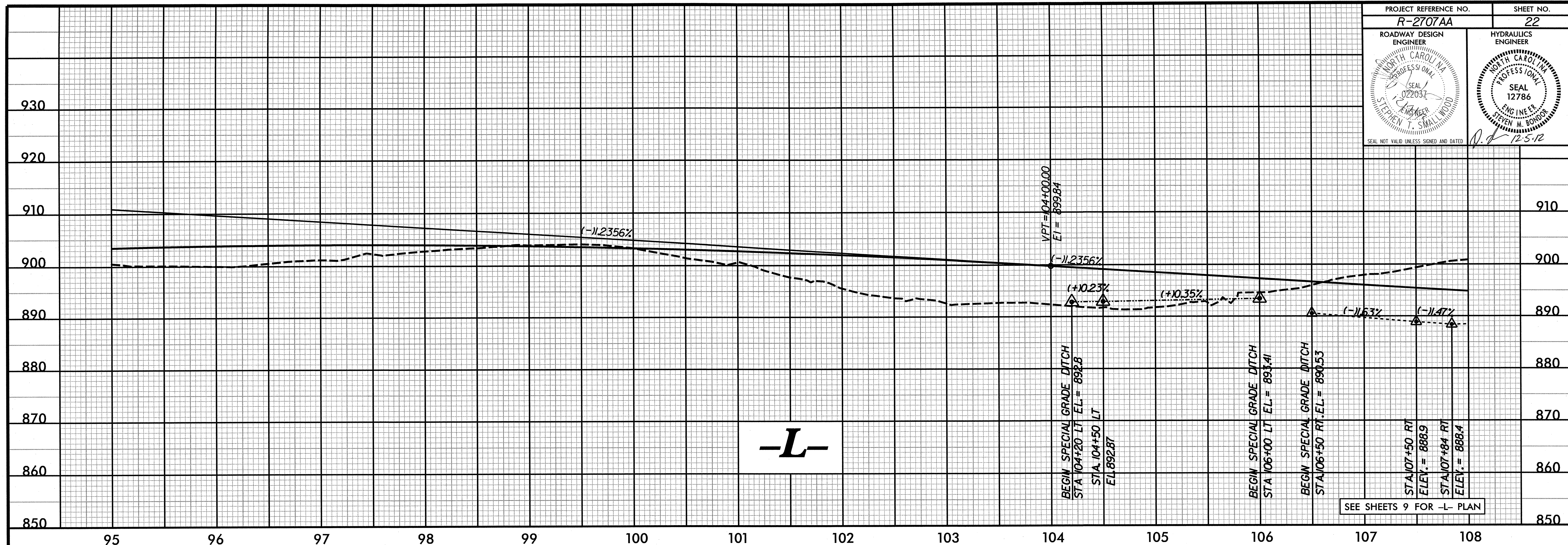
PROJECT REFERENCE NO. R-2707AA		SHEET NO. 18	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 122037 STEVEN T. SMALL WOOD		HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 12786 STEVEN M. BONDY	
SEAL NOT VALID UNLESS SIGNED AND DATED		12/5/12	

SEE SHEETS 4 & 5 FOR -L- PLAN

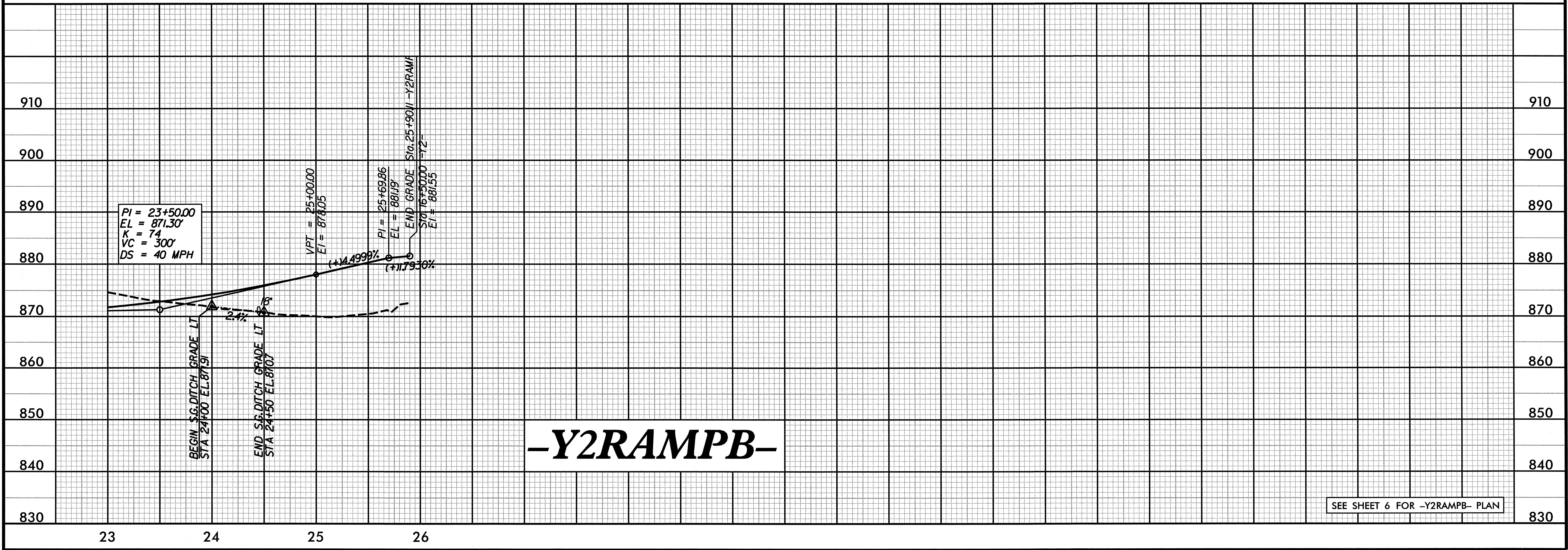
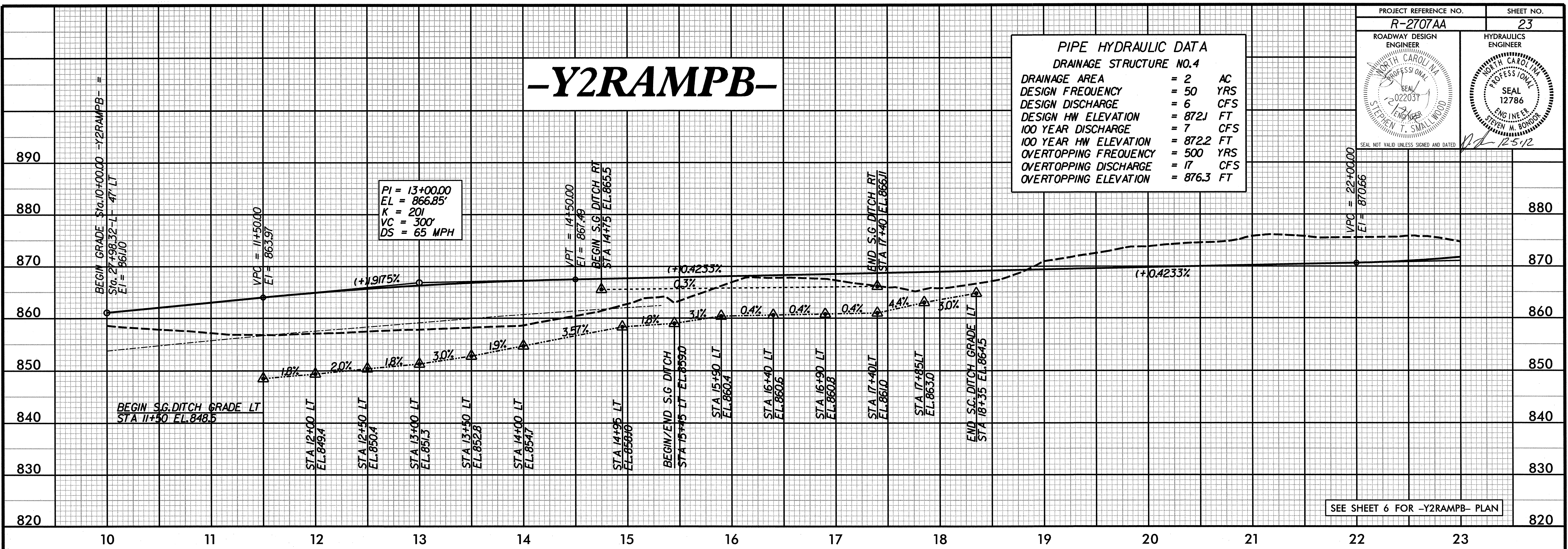


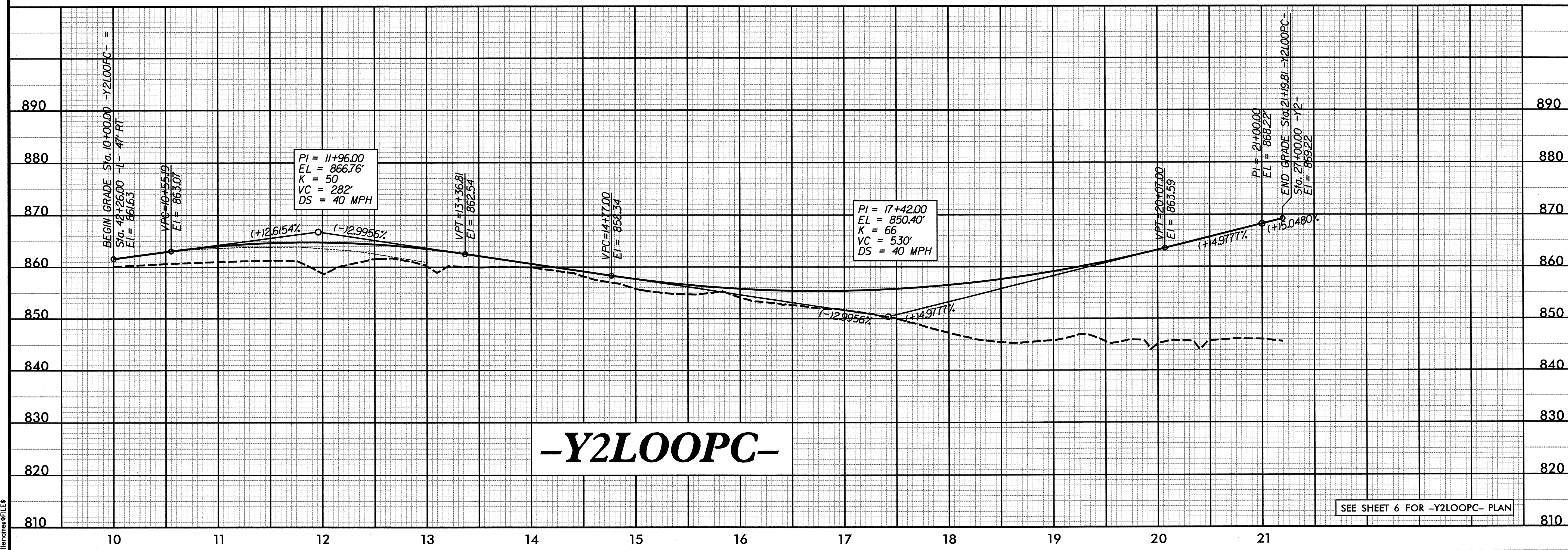
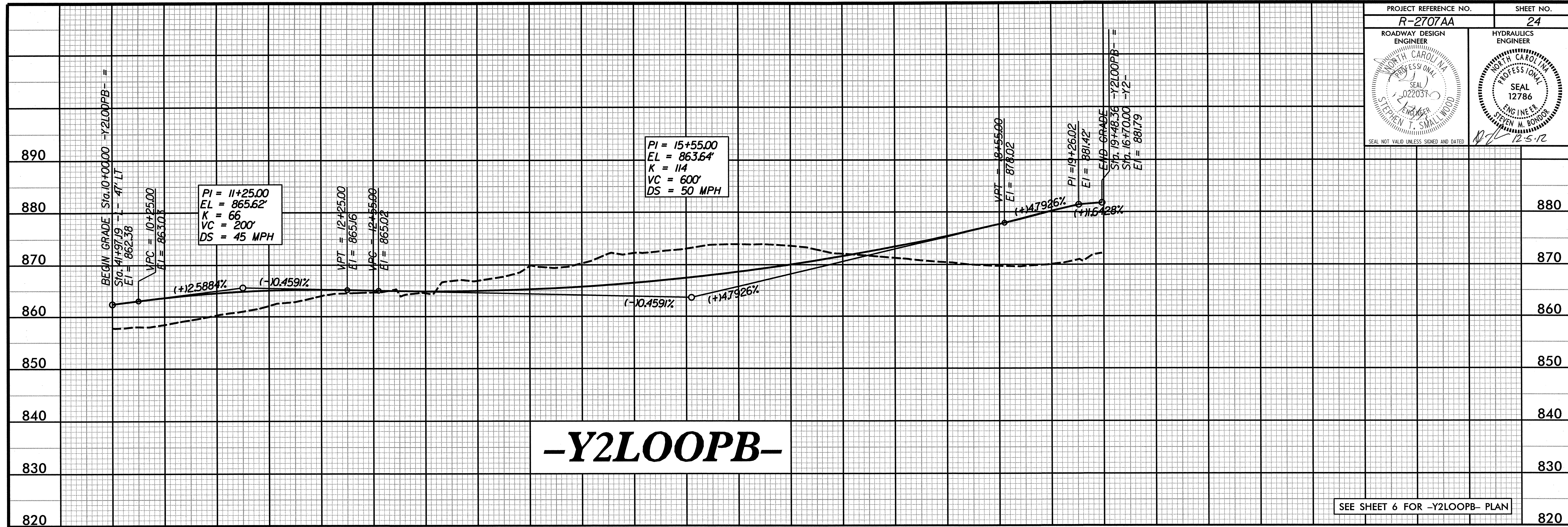




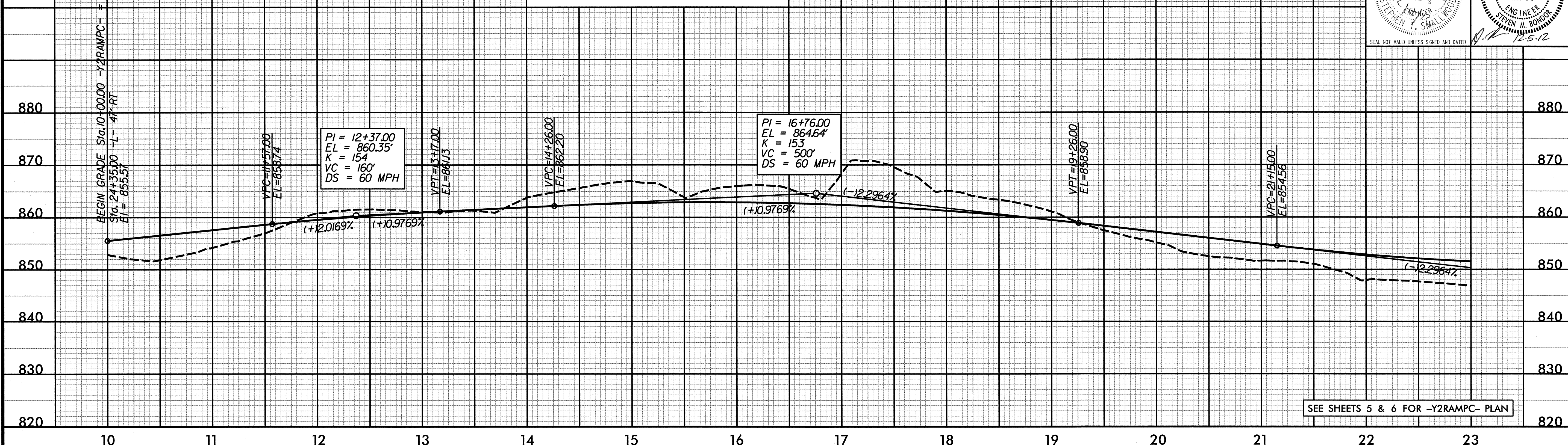


PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.4	
DRAINAGE AREA	= 2 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 6 CFS
DESIGN HW ELEVATION	= 872J FT
100 YEAR DISCHARGE	= 7 CFS
100 YEAR HW ELEVATION	= 872.2 FT
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING DISCHARGE	= 17 CFS
OVERTOPPING ELEVATION	= 876.3 FT

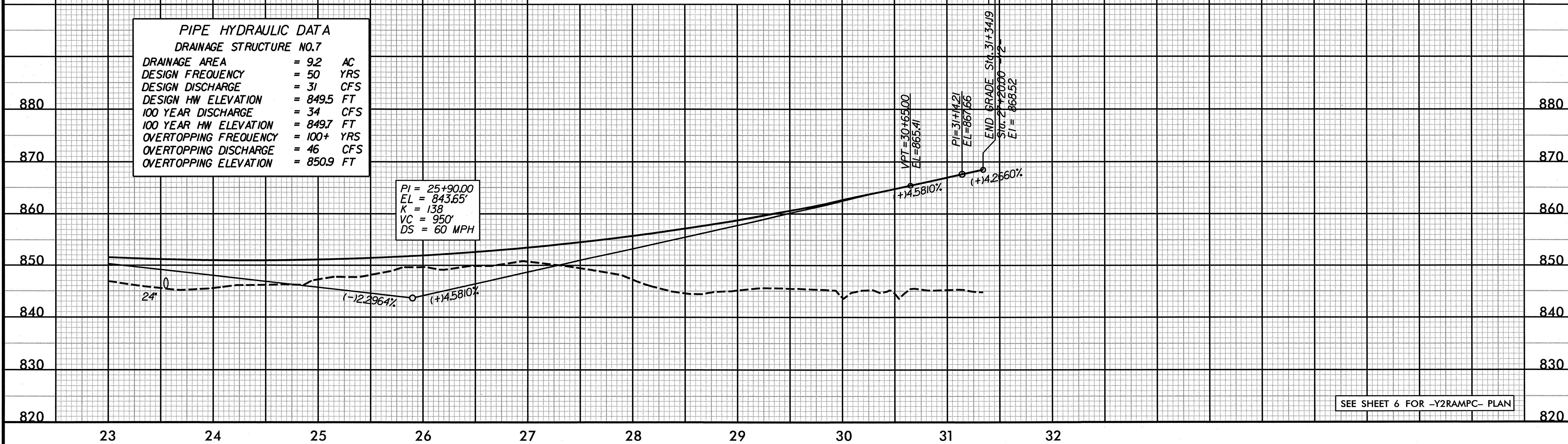




-Y2RAMPC-

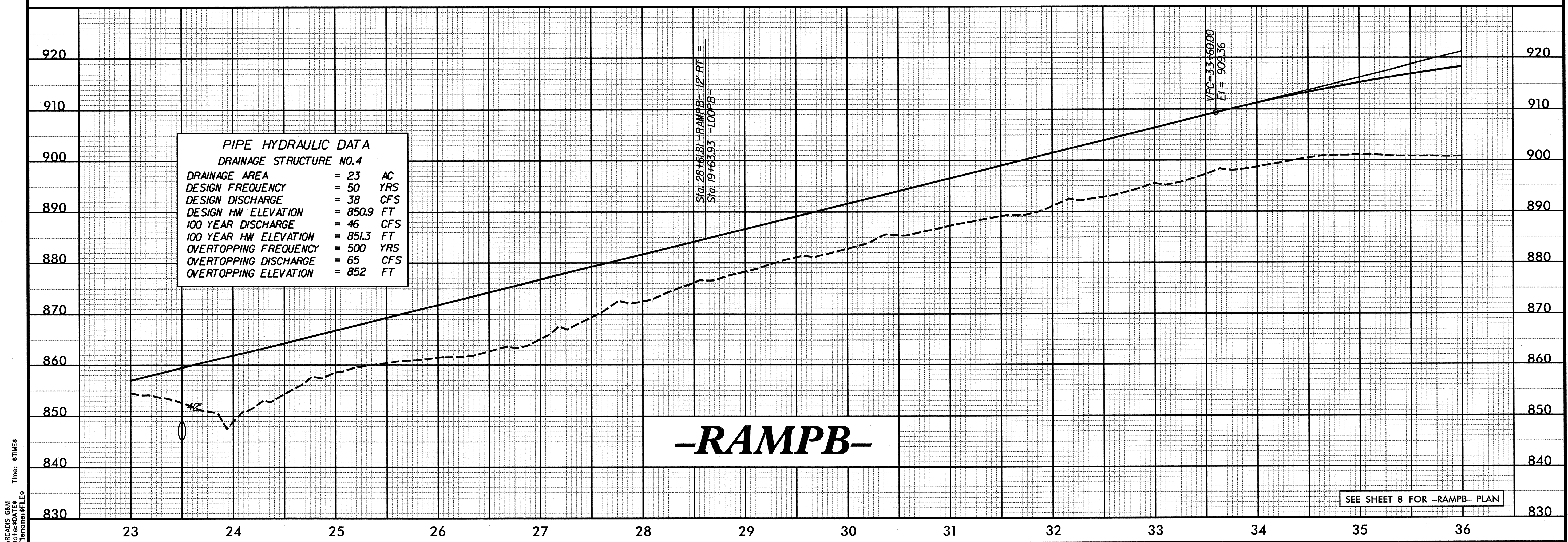
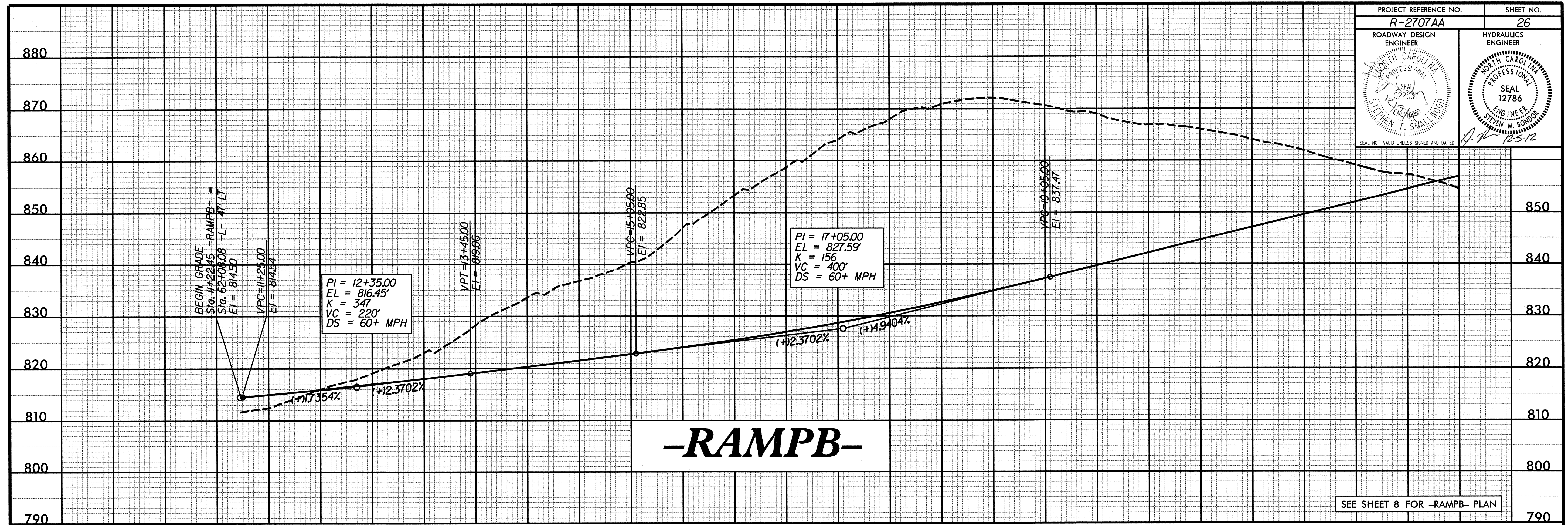


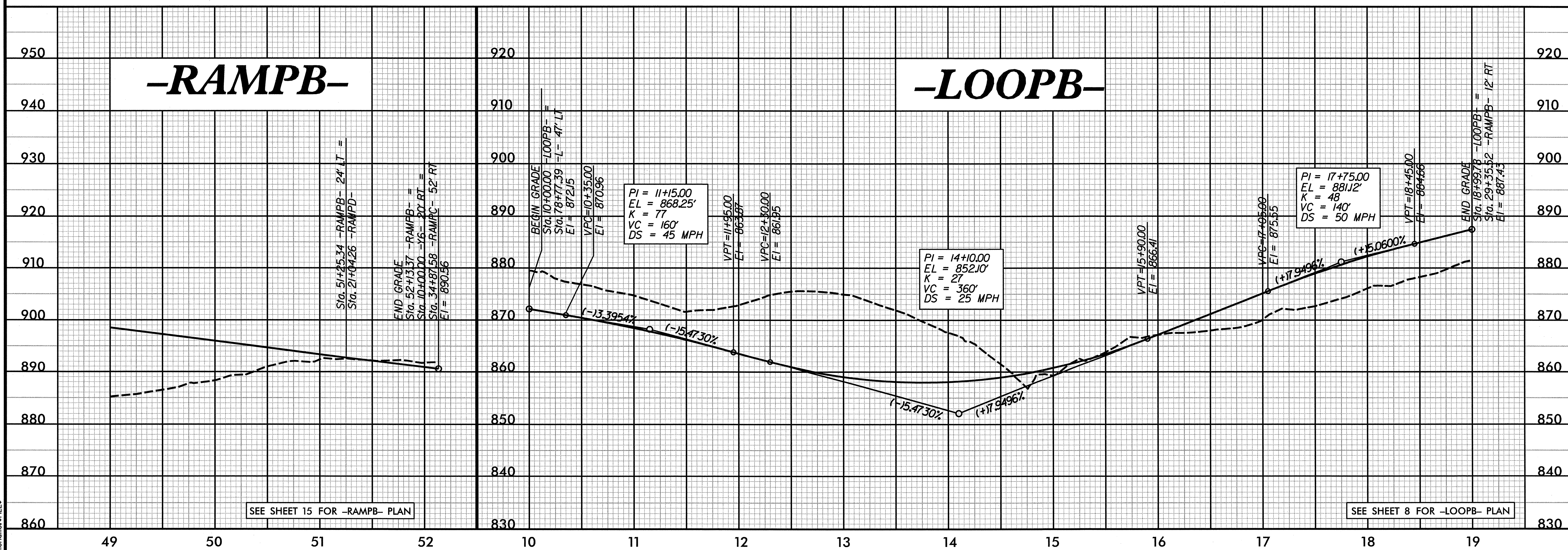
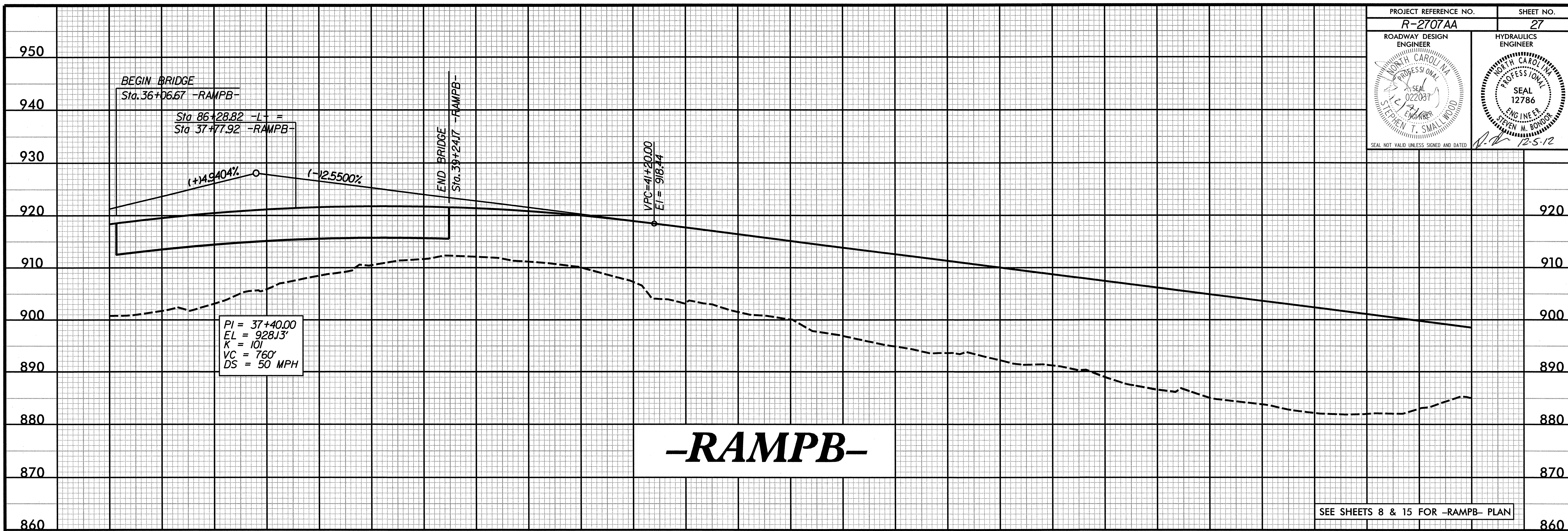
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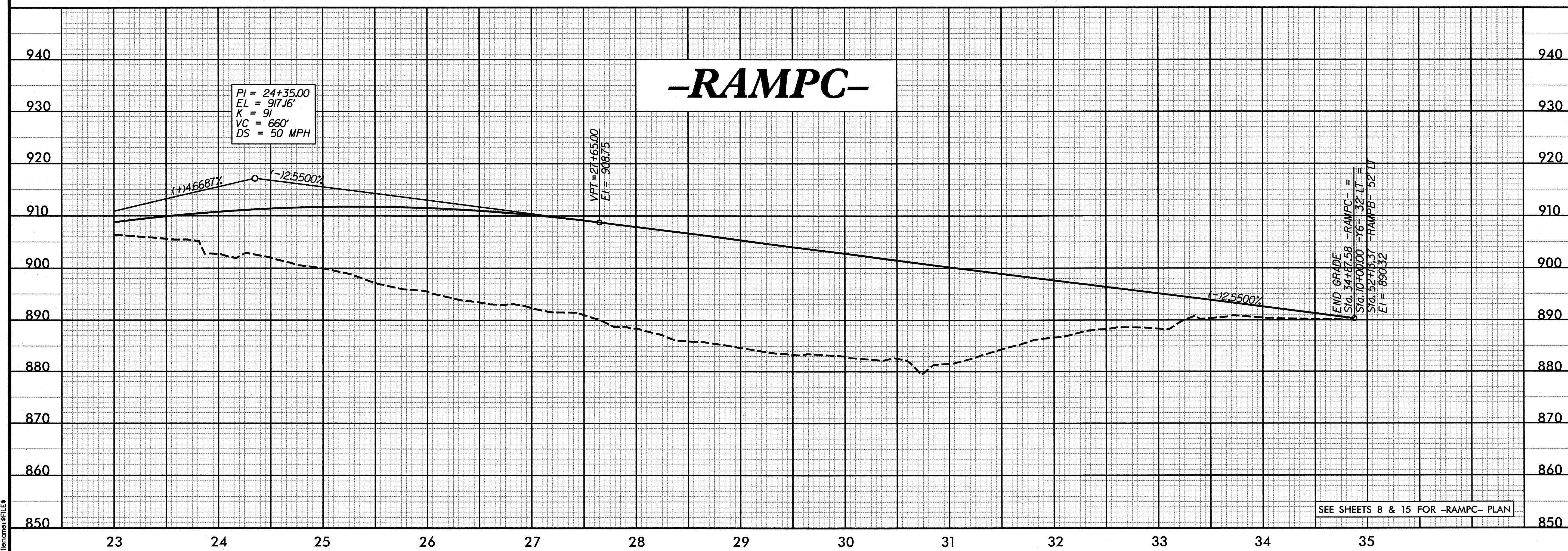
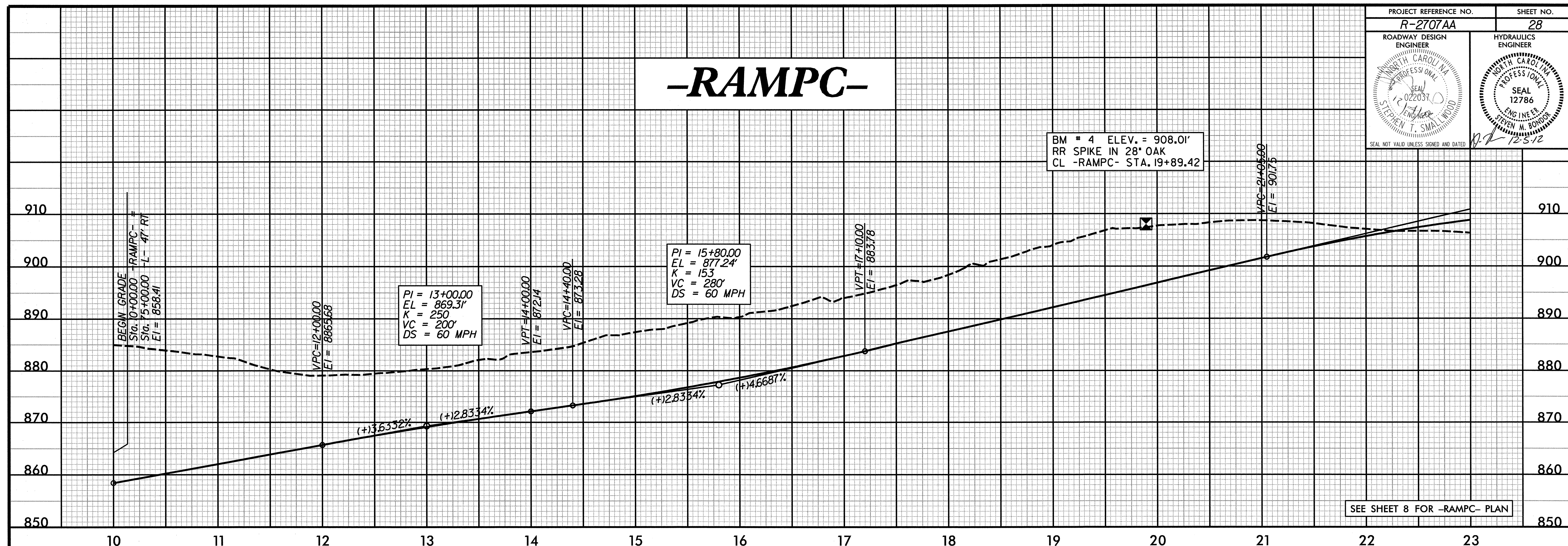


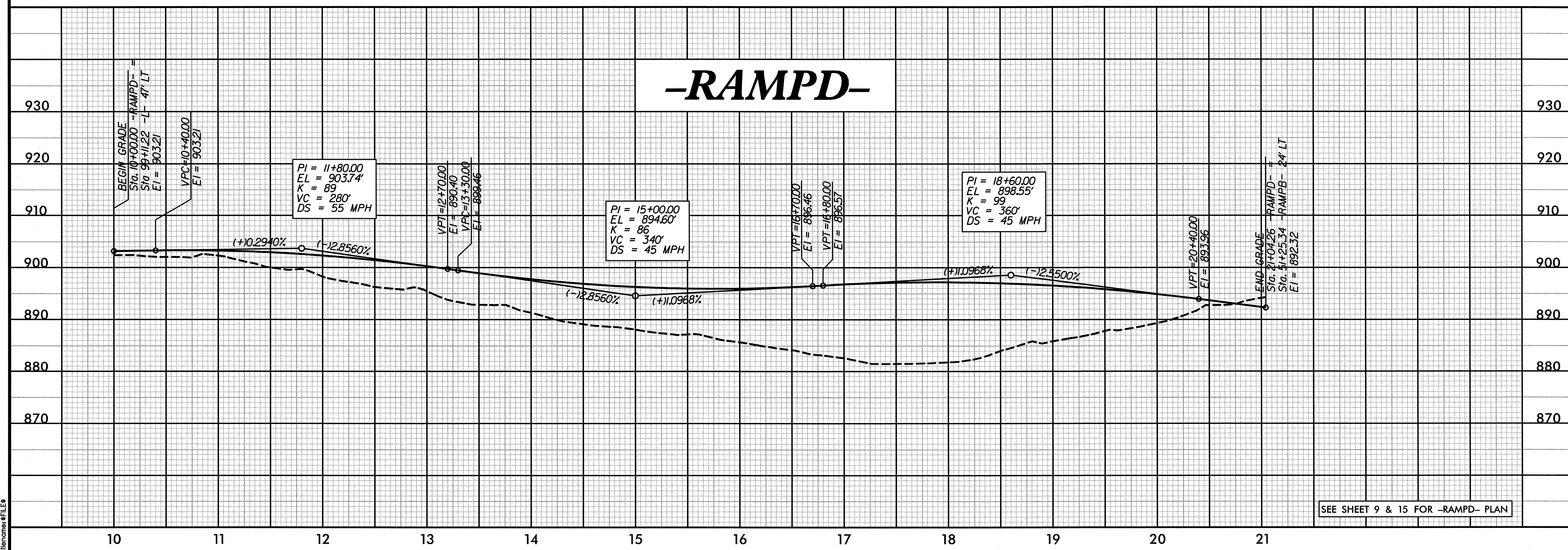
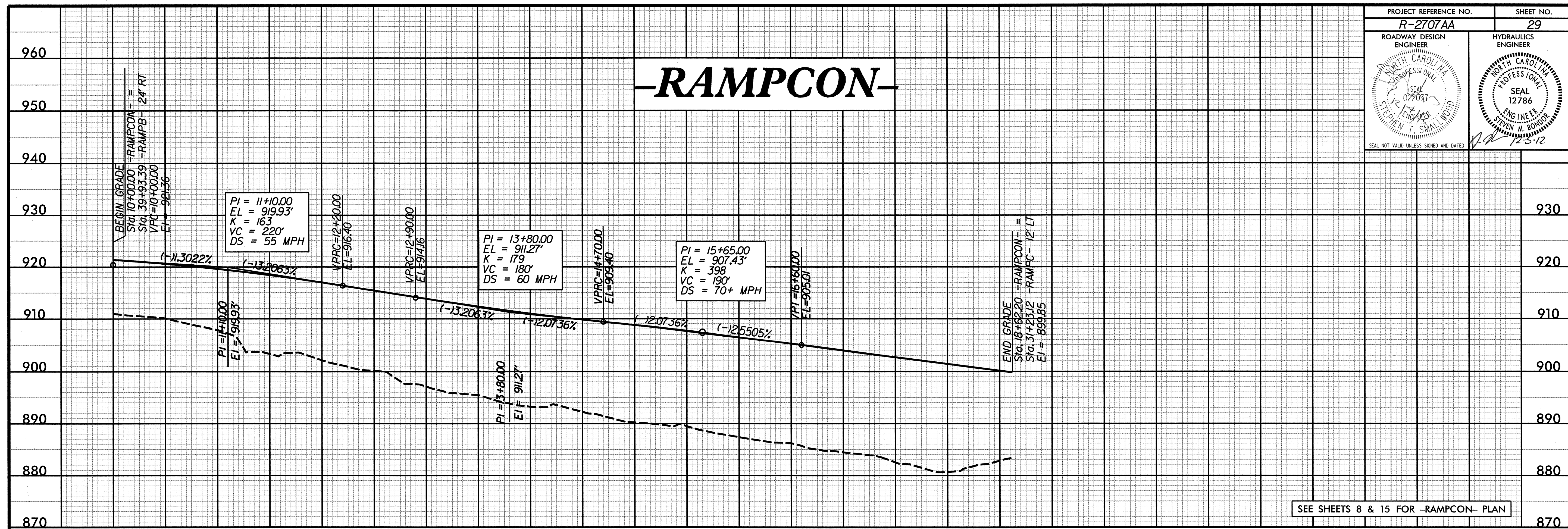
PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.7	
DRAINAGE AREA	= 92 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 31 CFS
DESIGN HW ELEVATION	= 849.5 FT
100 YEAR DISCHARGE	= 34 CFS
100 YEAR HW ELEVATION	= 849.7 FT
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING DISCHARGE	= 46 CFS
OVERTOPPING ELEVATION	= 850.9 FT

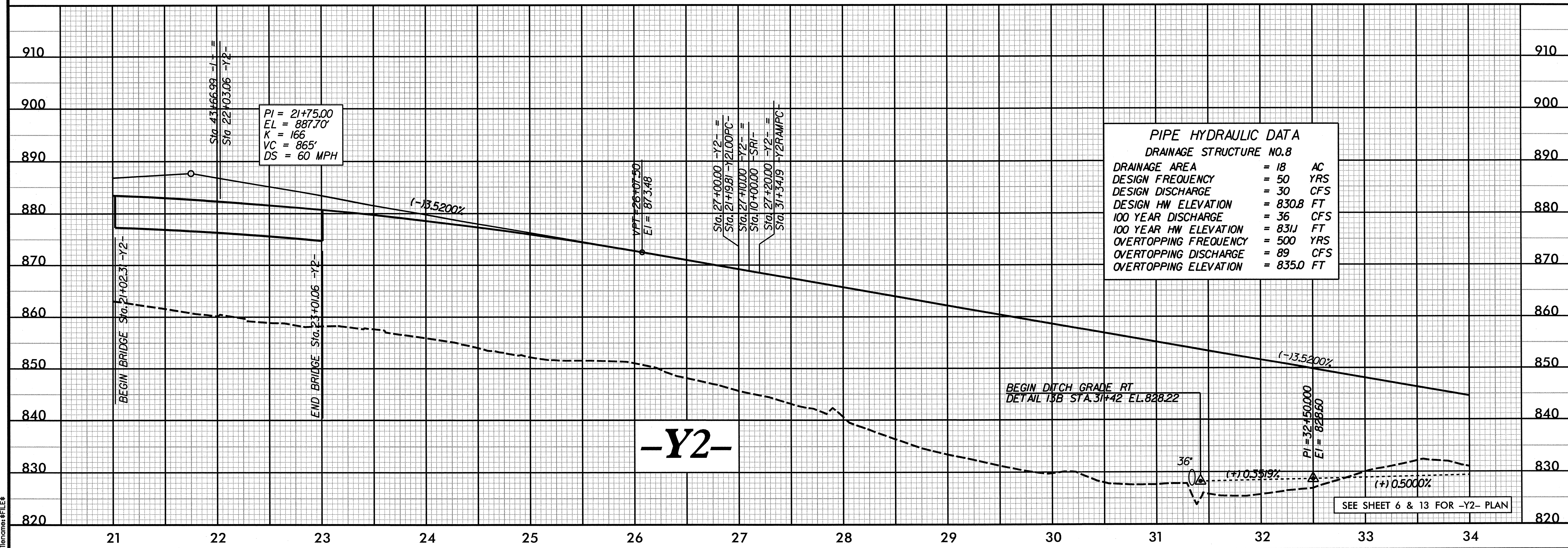
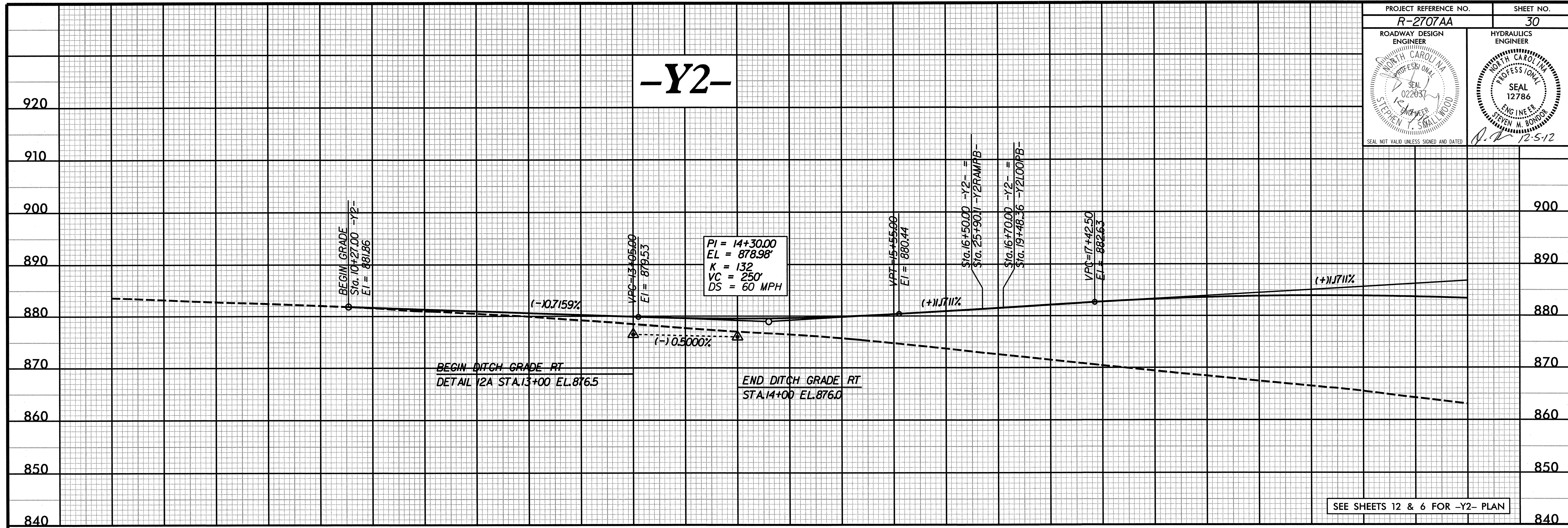
PI = 25+90.00
EL = 843.65'
K = 138
VC = 950'
DS = 60 MPH

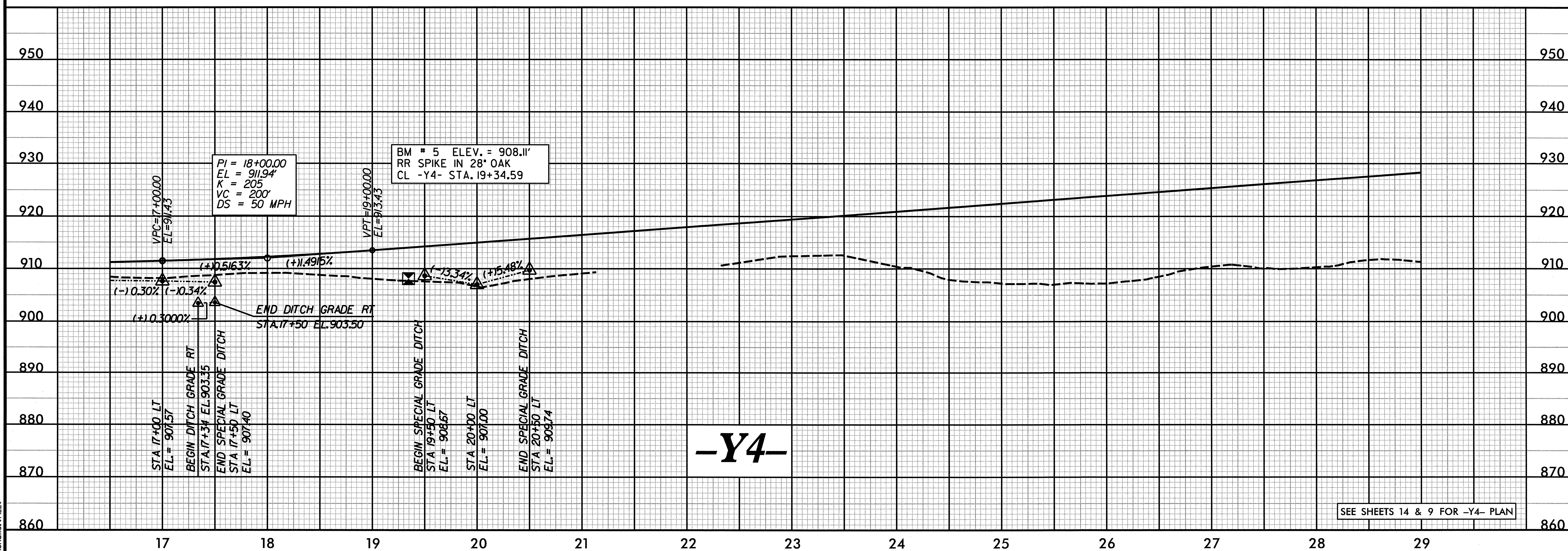
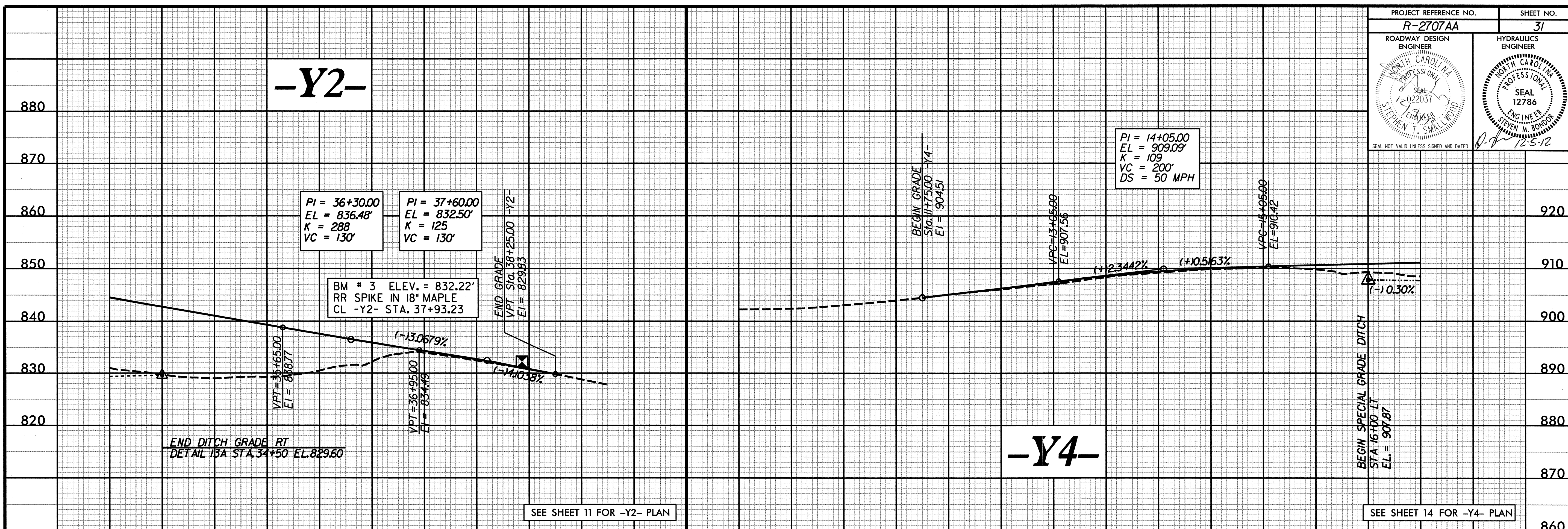


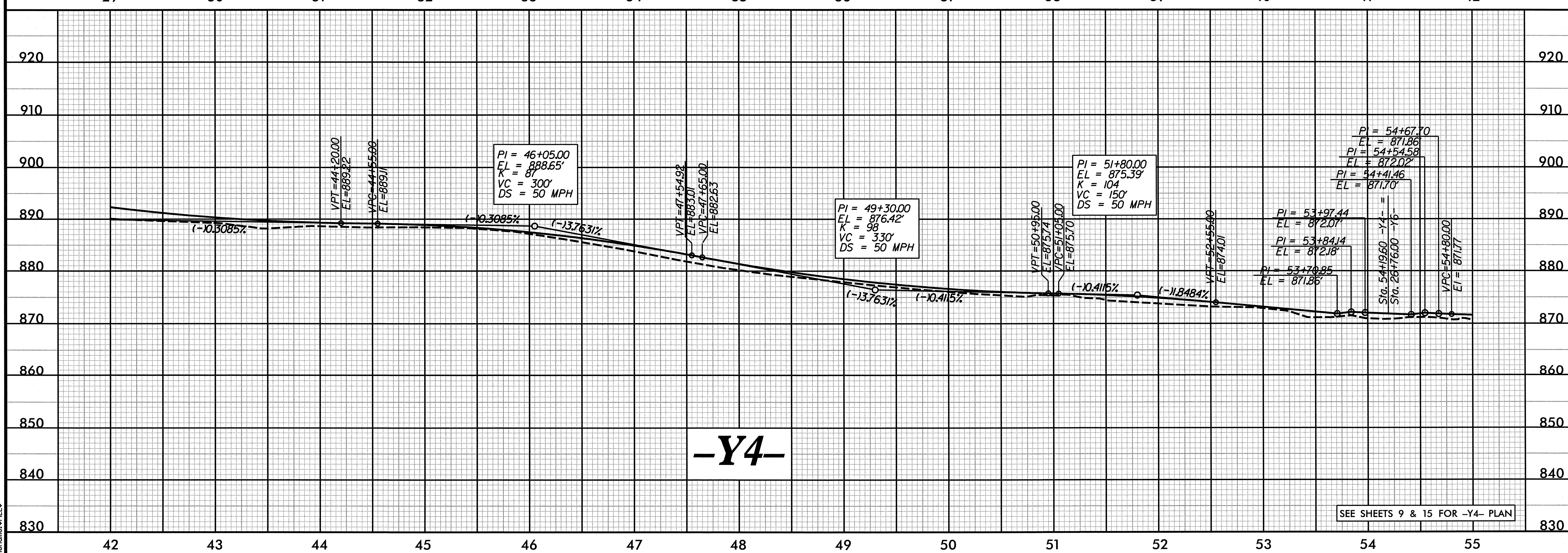
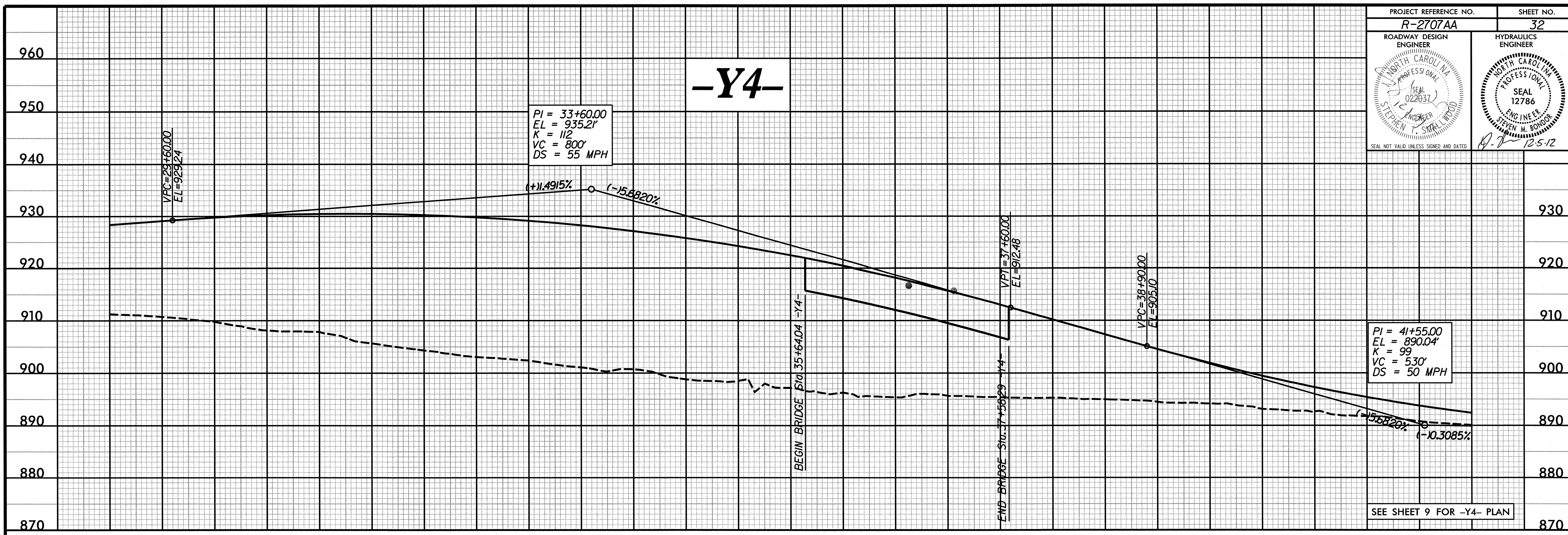


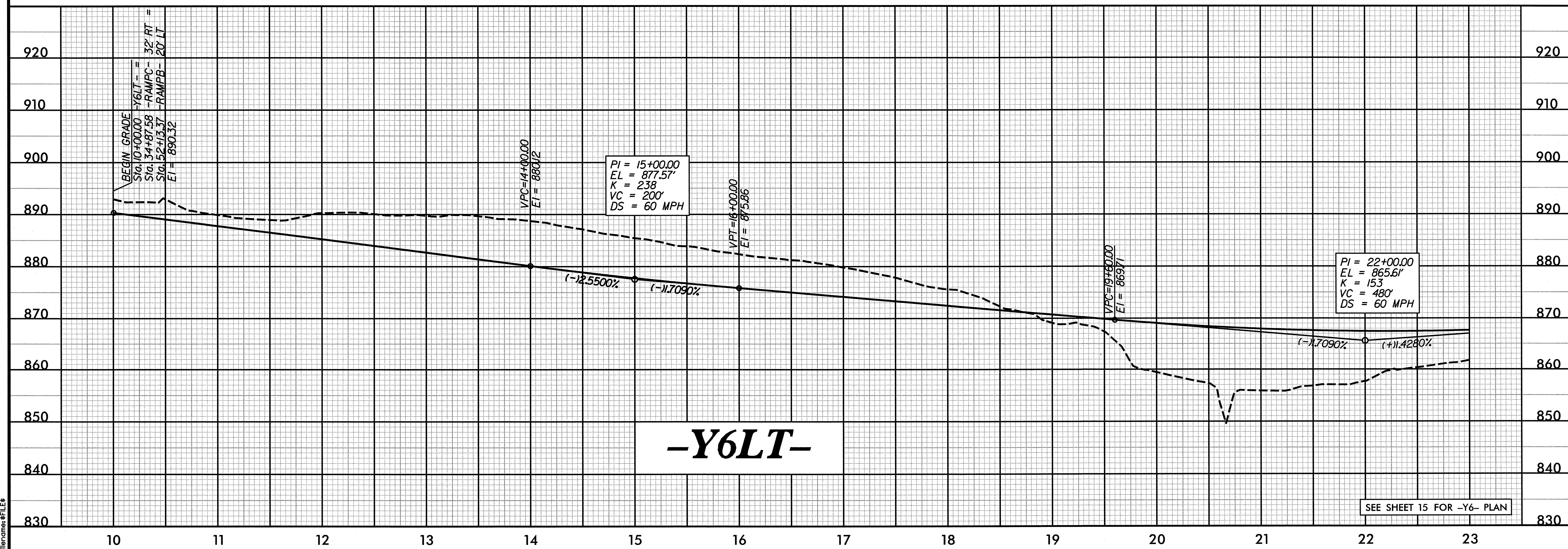
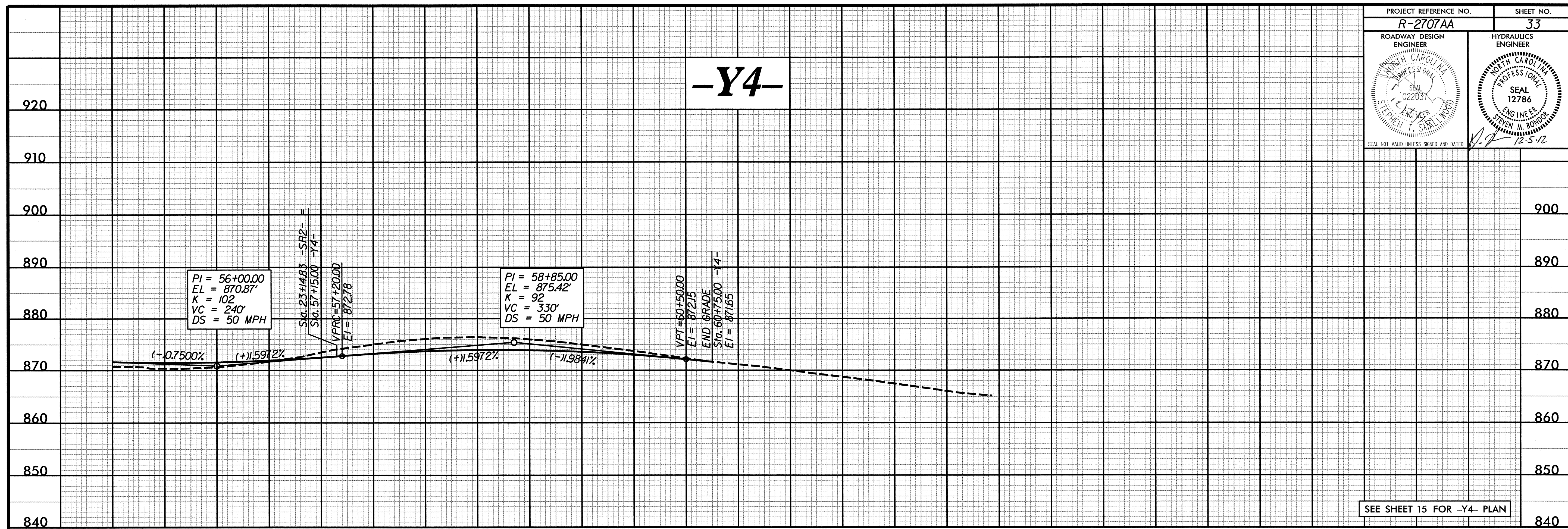






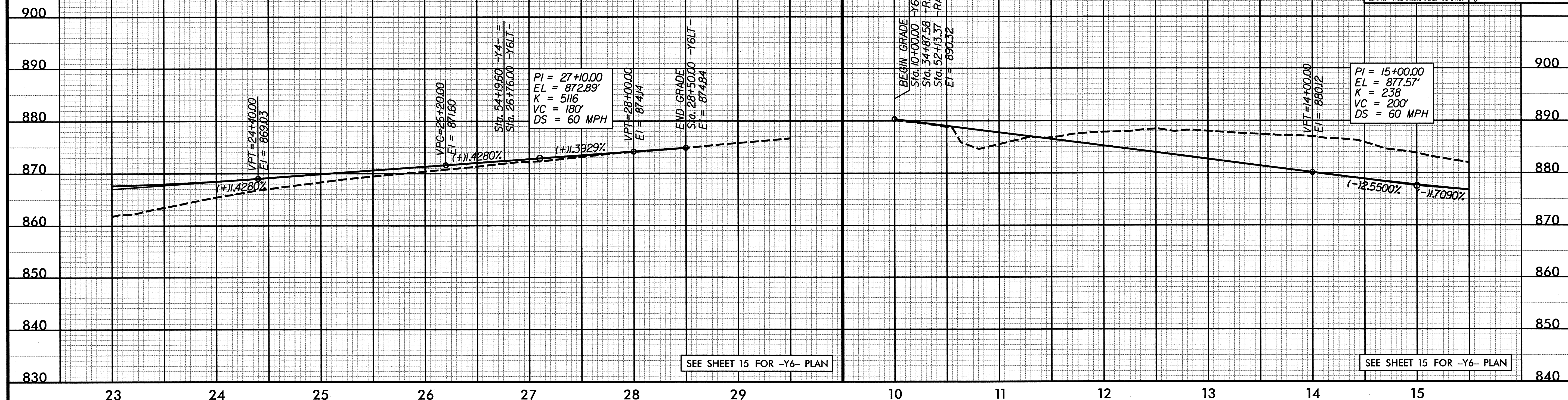




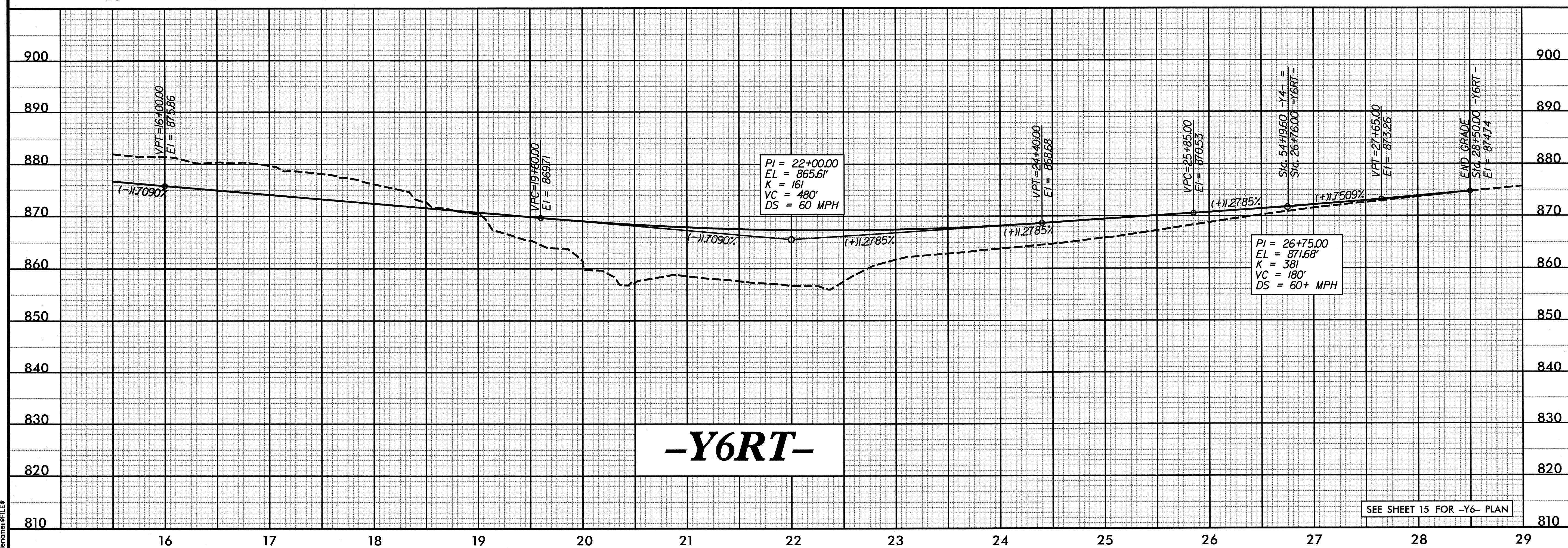


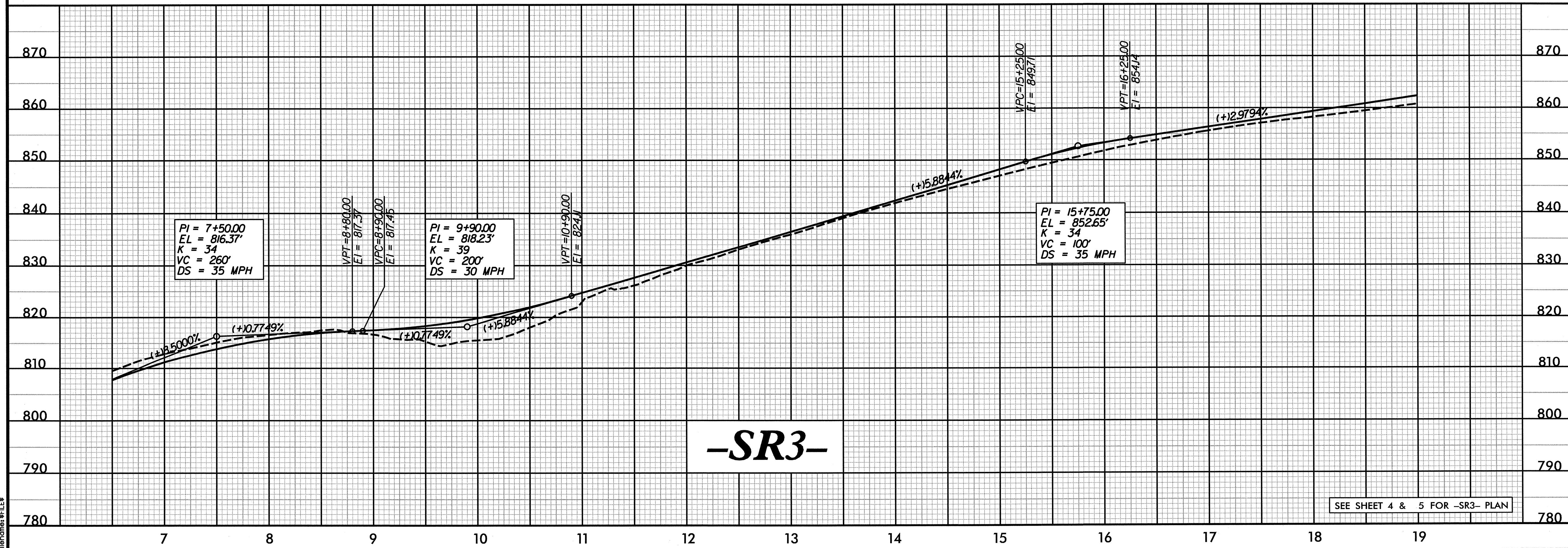
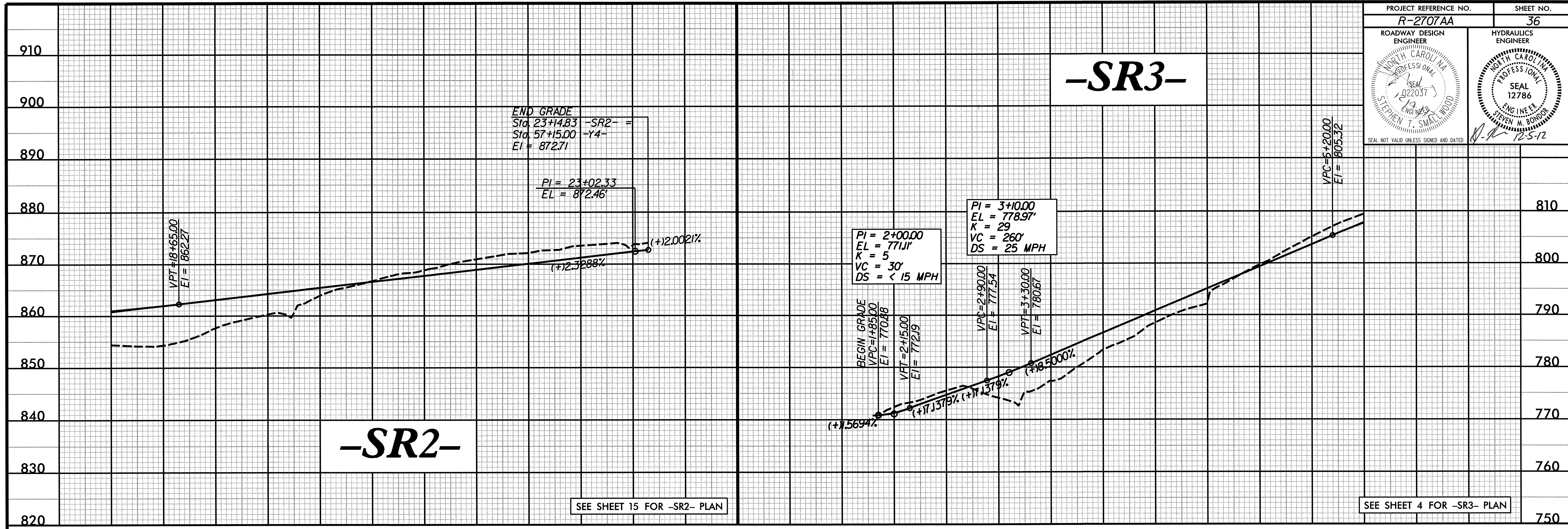
-Y6LT-

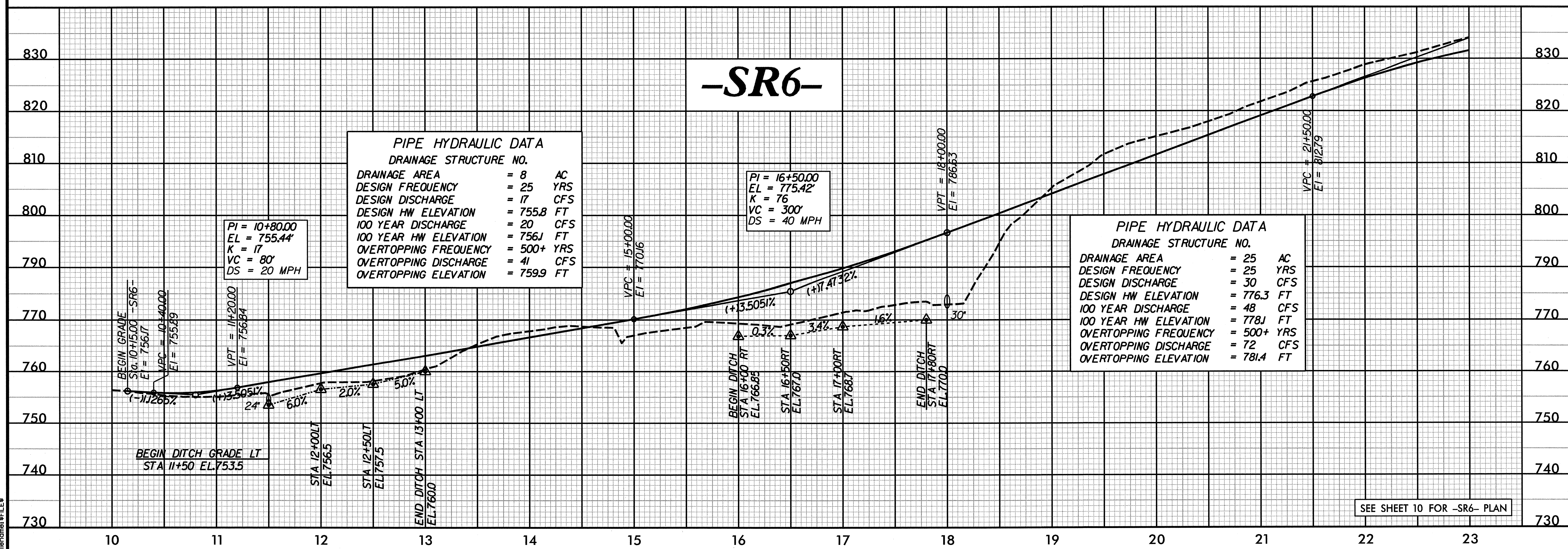
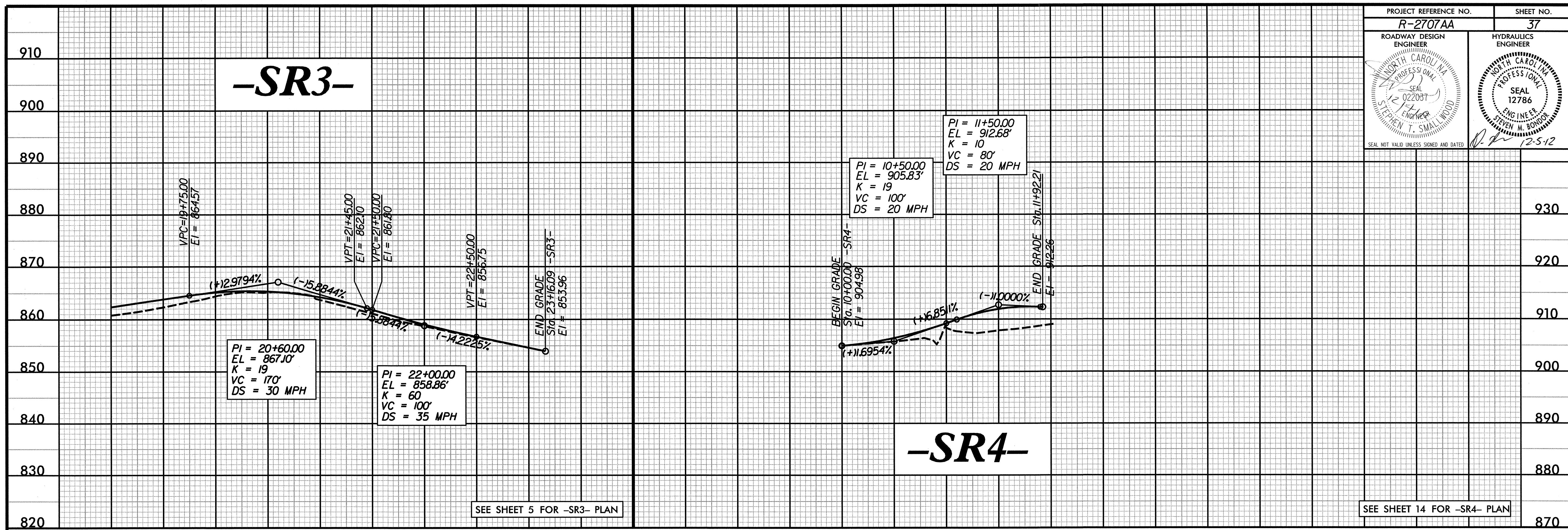
-Y6RT-



-Y6RT-







ARCADIS G&M
DATE: 04/24/12
FILE: SR6-11.DWG

