

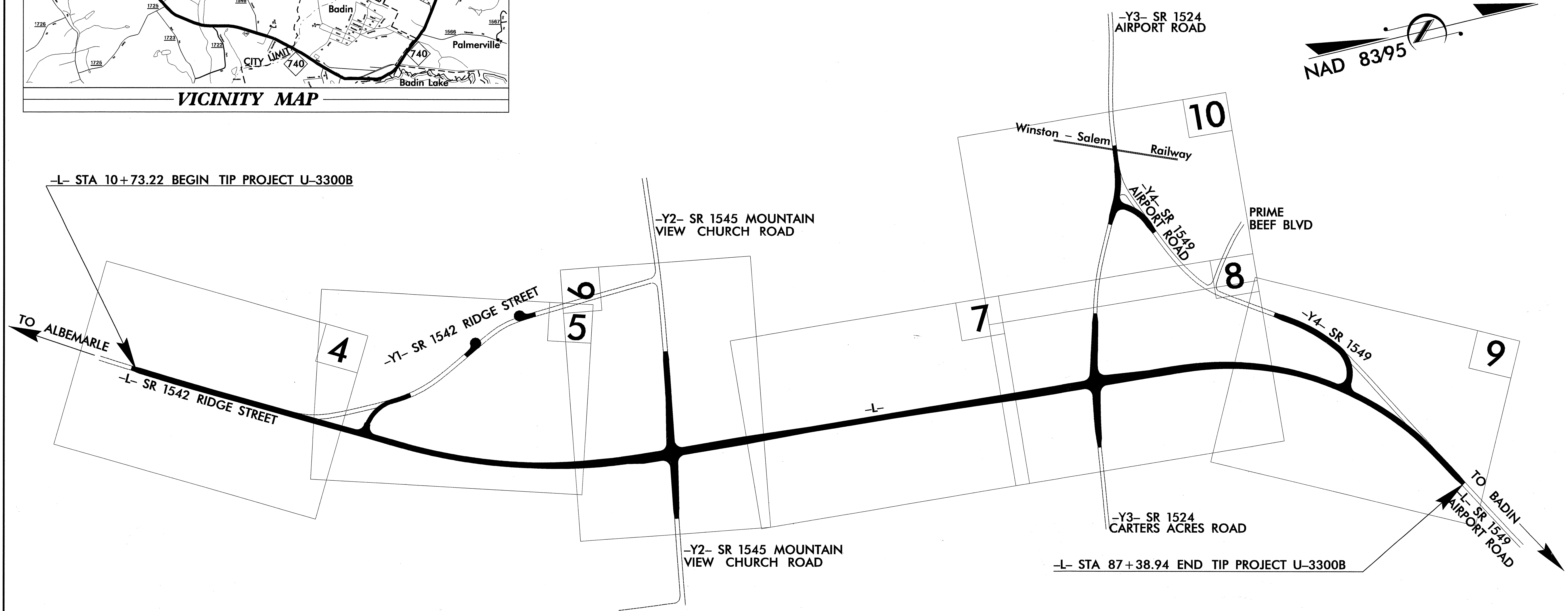
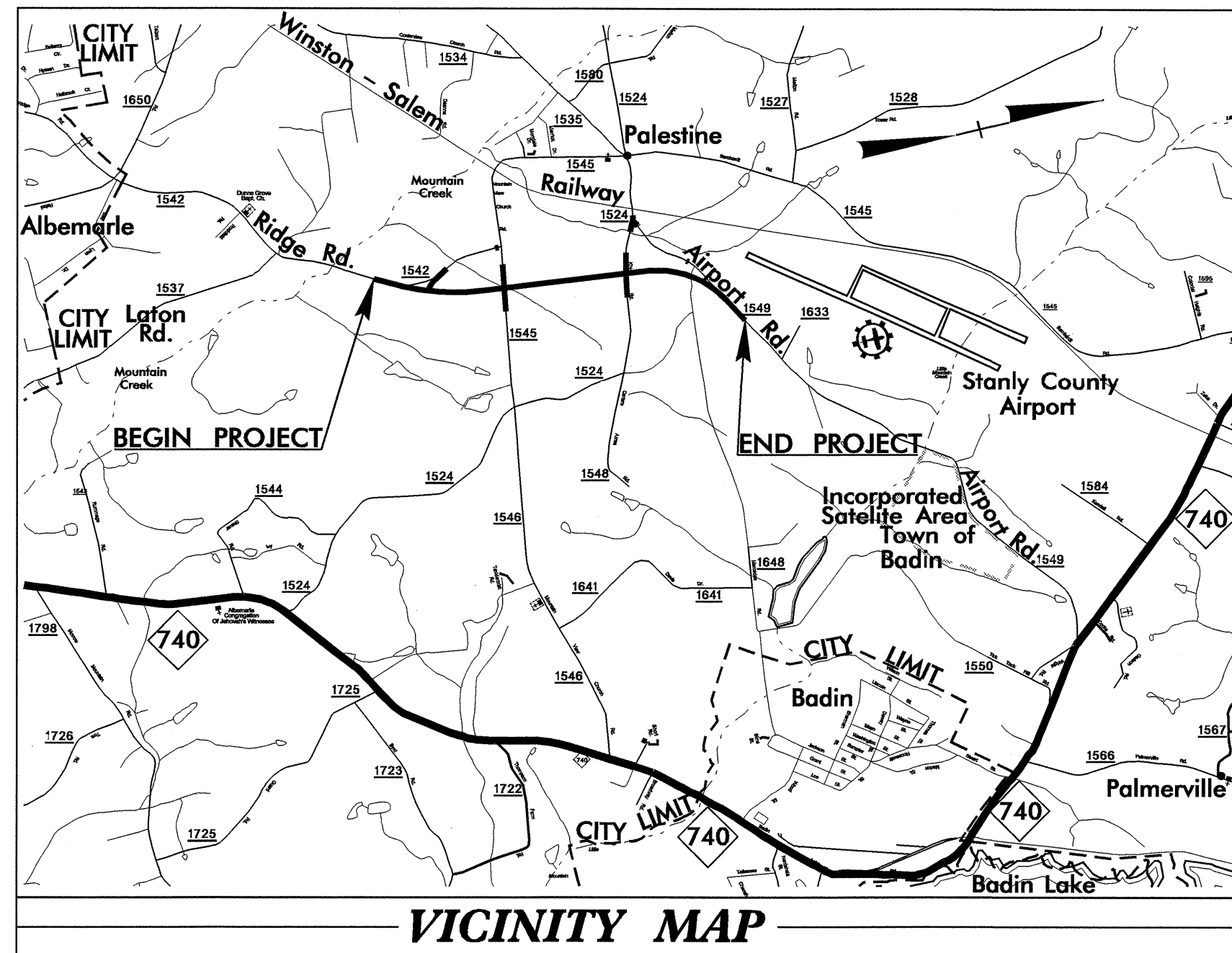
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STANLY COUNTY

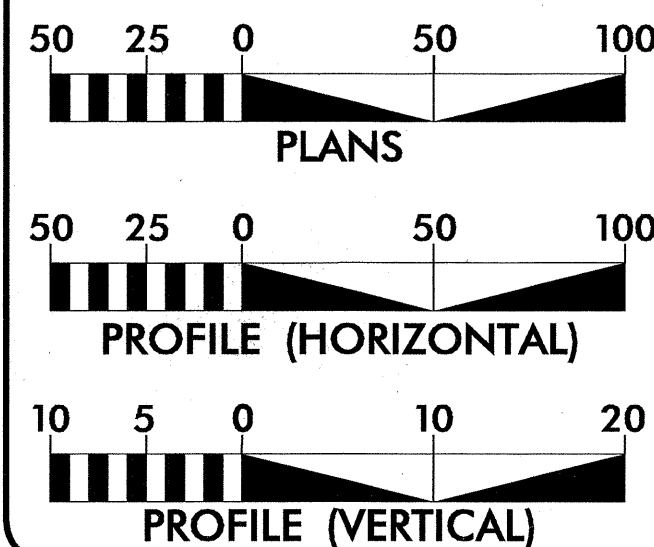
**LOCATION: ALBEMARLE - SR 1542 (RIDGE STREET EXTENSION)
FROM EXISTING RIDGE STREET TO AIRPORT ROAD
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERTS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3300B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34908.1.1	STP-1542(2)	P.E.	
34908.3.2	STP-1542(5)	R / W, UTIL.	
34908.2.ST1		CONST.	



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT

GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 4640
ADT 2028 = 10240
DHV = 55 %
D = 12 %
T = 11 % *
V = 60 MPH
* TTST 5% DUAL 6%
FUNC. CLASS COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3300B = 1.452 mi.
TOTAL LENGTH TIP PROJECT U-3300B = 1.452 mi.

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 28, 2007

LETTING DATE:
March 17, 2009

JIMMY GOODNIGHT
PROJECT ENGINEER

MARK HUSSEY
PROJECT DESIGN ENGINEER

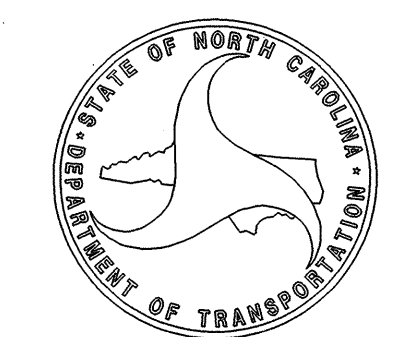
HYDRAULICS ENGINEER

Professional Engineer Seal for Jimmy Goodnight, No. 14482, State of North Carolina. Signature: Jimmy Goodnight, dated 12/3/08.

ROADWAY DESIGN ENGINEER

Professional Engineer Seal for Mark Hussey, No. 14493, State of North Carolina. Signature: Mark Hussey, dated 12-22-08.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



Professional Engineer Seal for James W. Miller, No. 14493, State of North Carolina. Signature: James W. Miller.

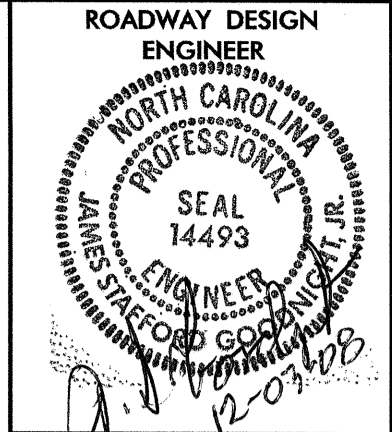
TIP PROJECT: U-3300B

CONTRACT: C202065

26-NOV-2008 09:42
c:\pwworking\proj\1542\3300b_rdy_tsh.dgn
\$\$\$\$\$USERNAM\$\$\$\$\$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. SHEET NO.
U-3300B 1-A



INDEX OF SHEETS

2006 ROADWAY ENGLISH STANDARD DRAWINGS

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

GENERAL NOTES:

2006 SPECIFICATIONS

EFFECTIVE: 07-18-06
REVISED: 07-30-08

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

SHEET NUMBER	DESCRIPTION	STD.NO.	TITLE
1	TITLE SHEET	DIVISION 2 - EARTHWORK	
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS	200.03	Method of Clearing - Method III
		225.02	Guide for Grading Subgrade - Secondary and Local
		225.04	Method of Obtaining Superelevation - Two Lane Pavement
1-B	CONVENTIONAL SYMBOLS	DIVISION 3 - PIPE CULVERTS	
1-C THRU 1-E	SURVEY CONTROL SHEETS	300.01	Method of Pipe Installation - Method 'A'
1-F	CENTERLINE COORDINATE LIST	310.03	Cross Pipe End Section - Precast Concrete Section for 18" to 30" Pipe
2 THRU 2-D	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS	310.10	Driveway Pipe Construction
2-E	DETAIL ANCHORAGE OF FRAMES	DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
3	SUMMARY OF QUANTITIES	560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
3-A AND 3-B	SUMMARY OF DRAINAGE QUANTITIES GUARDRAIL, EARTHWORK, AND ASPHALT PAVEMENT REMOVAL	DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
3-C	PARCEL INDEX SHEET	654.01	Pavement Repairs
4 THRU 10	PLAN SHEETS	DIVISION 8 - INCIDENTALS	
11 THRU 16	PROFILE SHEETS	840.00	Concrete Base Pad for Drainage Structures
TCP-1 THRU TCP-9A	TRAFFIC CONTROL PLANS	840.15	Brick Drop Inlet - 12" thru 30" Pipe
PMP-1 THRU PMP-8	PAVEMENT MARKING PLANS	840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
EC-1 THRU EC-20	EROSION CONTROL PLANS	840.24	Frames and Narrow Slot Sag Grates
RF-1 THRU RF-2	REFORESTATION PLANS	840.45	Precast Drainage Structure
SIGN-1 THRU SIGN-8	SIGNING PLANS	840.66	Drainage Structure Steps
SD-1 THRU SD-3	SPECIAL DETOUR SIGN DESIGN	840.72	Pipe Collar
UC-1 THRU UC-5	UTILITY CONSTRUCTION PLANS	862.01	Guardrail Placement
UO-1 THRU UO-7	UTILITIES BY OTHERS	862.02	Guardrail Installation
X-1	CROSS SECTION INDEX	876.02	Guide for Rip Rap at Pipe Outlets
X-1A	EARTHWORK VOLUME SUMMARY		
X-2 THRU X-47	CROSS-SECTIONS		
C-1 THRU C-9	CULVERT PLANS		

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 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

GUARDRAIL:

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

TEMPORARY SHORING:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE CITY OF ALBERMARLE, STANLY COUNTY AND CONCORD TELEPHONE

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

8/17/99

10/25/05

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	EDM
Parcel/Sequence Number	(123)
Existing Fence Line	---x---x---
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---MLB---
Proposed Wetland Boundary	MLB
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	---C---
Proposed Slope Stakes Fill	---F---
Proposed Wheel Chair Ramp	WCR
Curb Cut for Future Wheel Chair Ramp	CCFR
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	Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	PH
H-Frame Pole	●
Recorded U/G Power Line	-----
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	PH
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	A/G Water

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
U/G TV Cable Hand Hole	PH
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	A/G Gas

SANITARY SEWER:

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

MISCELLANEOUS:

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

SURVEY CONTROL SHEET U-3300B

GPS Calibration Report

Project : u3300b_ctr1sheets
 TIP Number U-3300 B
 User name dstaples Date & Time 2:59:38 PM 5/8/2006
 Coordinate System US State Plane 1983 Zone North Carolina 3200
 Horizontal Datum NAD 1983/95 (Conus)
 Vertical Datum NAVD 88 Geoid Model Geoid03 (Conus) NC Sub Grid
 Coordinate Units US survey feet
 Distance Units US survey feet
 Height Units US survey feet

LOCAL SITE INFORMATION
 Localized around 6A6 C
 Latitude N/A
 Longitude N/A
 Site Scale Factor N/A
 Height N/A

Datum Transformation Parameters

Method Three Parameter
 Translation along x axis 13.728sft
 Translation along y axis -80.177sft
 Translation along z axis 57.042sft

Updated Default Projection (Transverse Mercator) Definition

Updated default projection not requested

Horizontal Adjustment Parameters

Northing coordinate of rotation center 602043.900sft
 Easting coordinate of rotation center 1655847.056sft
 Rotation about the center point 0°00'00"
 Translation north 0.045sft
 Translation east 0.163sft
 Scale factor 1.00015228

Vertical Adjustment Parameters

Northing coordinate of origin point 605977.602sft
 Easting coordinate of origin point 1656086.195sft
 Vertical separation at origin -0.086sft
 Slope north -1.046ppm
 Slope east 0.249ppm

Geoid Model Definition

Geoid03 (Conus) NC Sub Grid

Residual Differences Between GPS (WGS84) And Local Coordinates

Summary

	Maximum error	Root Mean Square error	Point
Horizontal	0.016sft	0.002	V 49 GPS
Vertical	0.026sft	0.005	U3300B-6 GPS
Three-dimensional	0.027sft	0.005	U3300B-6 GPS

Point Residuals

WGS84 Coordinates	Calculated point FOR DISPLAY ONLY	Local Coordinates
Point 6A6 C GPS Latitude 35°24'34.33818"N Longitude 80°09'15.25166"W Height 503.608sft	Northing 605977.602sft Easting 1656086.195sft Elevation 602.947sft Horz error 0.010sft Vert error 0.024sft 3D error 0.026sft	Point 6A6 C Northing 605977.598sft Easting 1656086.186sft Elevation 602.971sft Utilized Horz and Vert Survey quality

Point AOUADALE GPS Latitude 35°13'57.16645"N Longitude 80°12'47.03686"W Height 468.825sft	Northing 541765.494sft Easting 1637768.577sft Elevation 568.432sft Horz error 0.011sft Vert error ? 3D error 0.011sft	Point AOUADALE Northing 541765.498sft Easting 1637768.587sft Elevation 568.631sft Utilized Horizontal Survey quality
--	--	--

Point KLOPMAN GPS Latitude 35°35'57.26327"N Longitude 80°02'01.51583"W Height 456.891sft	Northing 674633.090sft Easting 1692707.819sft Elevation 556.096sft Horz error 0.001sft Vert error ? 3D error 0.001sft	Point KLOPMAN Northing 674633.090sft Easting 1692707.819sft Elevation 556.200sft Utilized Horizontal Survey quality
---	--	---

Point PEE DEE 2 GPS Latitude 35°15'31.92111"N Longitude 80°01'57.47147"W Height 337.815sft	Northing 550736.196sft Easting 1691752.996sft Elevation 437.801sft Horz error 0.010sft Vert error ? 3D error 0.010sft	Point PEE DEE 2 Northing 550736.193sft Easting 1691753.006sft Elevation 437.939sft Utilized Horizontal Survey quality
---	--	---

Point V 49 GPS Latitude 35°30'01.74841"N Longitude 80°18'53.30876"W Height 625.781sft	Northing 639675.904sft Easting 1608676.724sft Elevation 725.445sft Horz error 0.016sft Vert error ? 3D error 0.016sft	Point V 49 Northing 639675.916sft Easting 1608676.735sft Elevation 725.612sft Utilized Horizontal Survey quality
--	--	--

Point U3300B-1 GPS Latitude 35°23'05.19516"N Longitude 80°09'48.22799"W Height 466.215sft	Northing 596996.490sft Easting 1653250.963sft Elevation 565.577sft Horz error 0.002sft Vert error 0.007sft 3D error 0.007sft	Point U3300B-1 Northing 596996.491sft Easting 1653250.961sft Elevation 565.570sft Utilized Horz and Vert Survey quality
--	---	---

Point U3300B-2 GPS Latitude 35°23'20.54014"N Longitude 80°09'39.02177"W Height 455.932sft	Northing 598539.047sft Easting 1654031.379sft Elevation 555.289sft Horz error 0.003sft Vert error 0.001sft 3D error 0.003sft	Point U3300B-2 Northing 598539.045sft Easting 1654031.380sft Elevation 555.290sft Utilized Horz and Vert Survey quality
--	---	---

Point U3300B-3 GPS Latitude 35°23'45.05735"N Longitude 80°09'15.79103"W Height 504.090sft	Northing 600995.477sft Easting 1655983.604sft Elevation 603.443sft Horz error 0.006sft Vert error 0.013sft 3D error 0.015sft	Point U3300B-3 Northing 600995.475sft Easting 1655983.599sft Elevation 603.430sft Utilized Horz and Vert Survey quality
--	---	---

Point U3300B-4 GPS Latitude 35°23'48.03603"N Longitude 80°09'37.09894"W Height 484.442sft	Northing 601317.210sft Easting 1654223.076sft Elevation 583.788sft Horz error 0.005sft Vert error 0.022sft 3D error 0.022sft	Point U3300B-4 Northing 601317.208sft Easting 1654223.071sft Elevation 583.810sft Utilized Horz and Vert Survey quality
--	---	---

Point U3300B-5 GPS Latitude 35°24'25.69379"N Longitude 80°09'33.30690"W Height 488.474sft	Northing 605121.008sft Easting 1654581.474sft Elevation 587.809sft Horz error 0.006sft Vert error ? 3D error 0.006sft	Point U3300B-5 Northing 605121.006sft Easting 1654581.469sft Elevation 587.949sft Utilized Horizontal Survey quality
--	--	--

Point U3300B-6 GPS Latitude 35°24'41.64251"N Longitude 80°09'25.37802"W Height 504.592sft	Northing 606725.882sft Easting 1655256.599sft Elevation 603.926sft Horz error 0.005sft Vert error 0.026sft 3D error 0.027sft	Point U3300B-6 Northing 606725.879sft Easting 1655256.594sft Elevation 603.900sft Utilized Horz and Vert Survey quality
--	---	---

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 8395 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 MAY BE 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.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:

U3300B_LS_GPSCALIB_060505.HTML
 U3300B_LS_WGS84_060505.TXT
 U3300B_LS_LOCAL_060505.TXT
 U3300B_LS_CONTROL_060505.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.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "6A6 C"
 WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
 NORTHING: 605977.598(ft) EASTING: 1656086.186(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998525
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "6A6 C" TO -L- STATION 10+00.00 IS
 S 15°47'12.4" W 7973.7369 (ft)
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

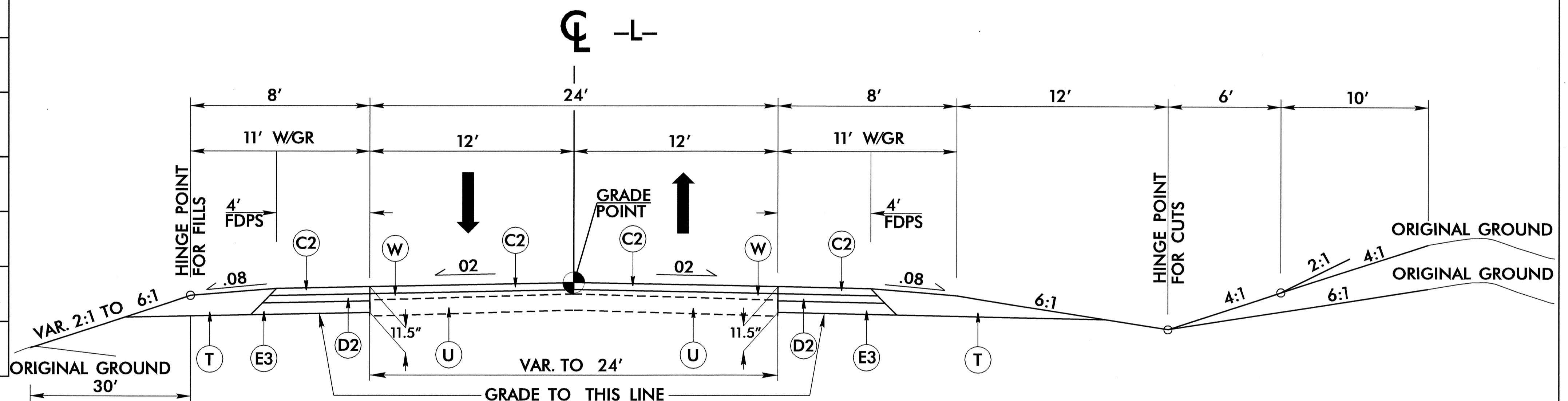
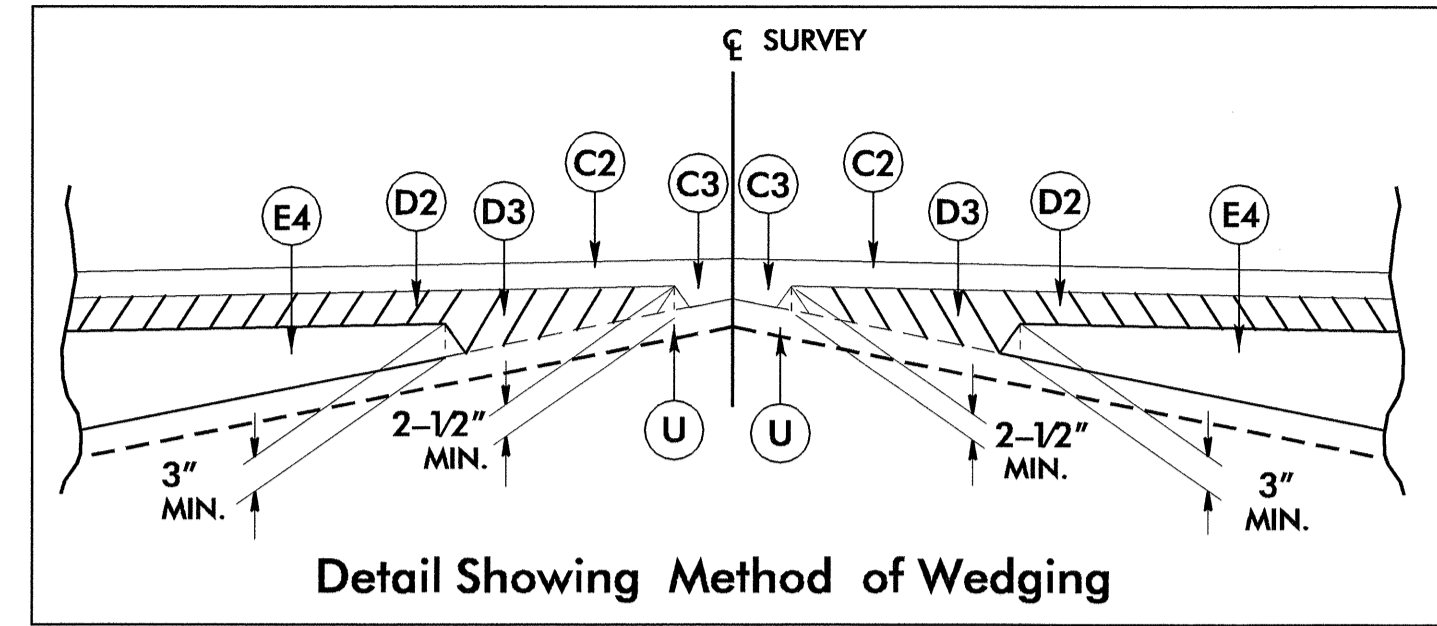
8/17/99

PAVEMENT SCHEDULE

C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E3	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
J	PROP. 8" AGGREGATE BASE COURSE.
K	SUBGRADE TO BE TREATED WITH LIME TO A DEPTH OF 8" AT A RATE OF 20 LBS. PER SQ. YD. AS DIRECTED BY THE ENGINEER. OR SUBGRADE TO BE TREATED WITH CEMENT TO A DEPTH OF 7" AT A RATE OF 55 LBS. PER SQ. YD. AS DIRECTED BY THE ENGINEER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

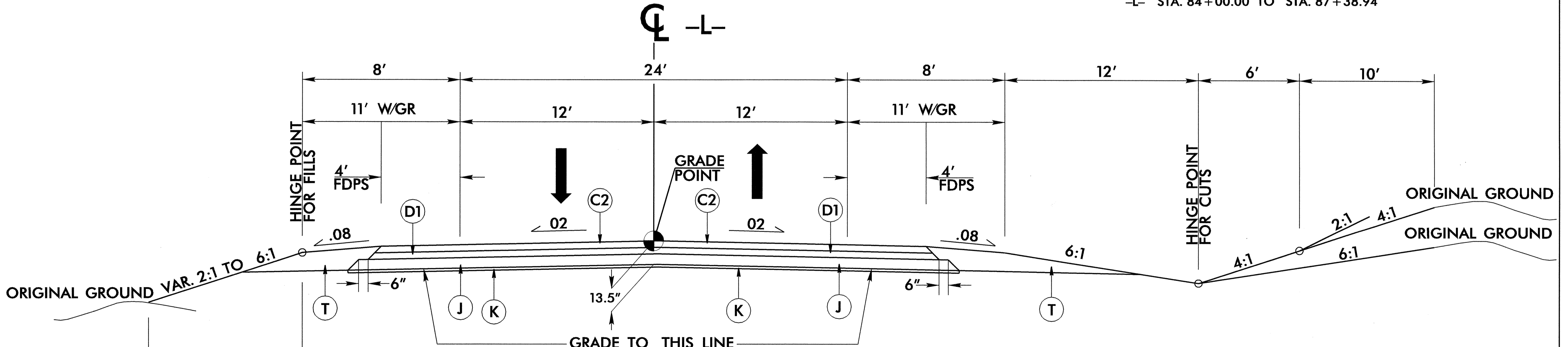
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

PROJECT REFERENCE NO. U-3300B	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14493 JAMES STAFFORD JOHNSON	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22896 CLARK S. MORRISON



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
-L- STA. 10+73.22 TO STA. 17+50.00
-L- STA. 84+00.00 TO STA. 87+38.94



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L- STA. 17+50.00 TO STA. 84+00.00

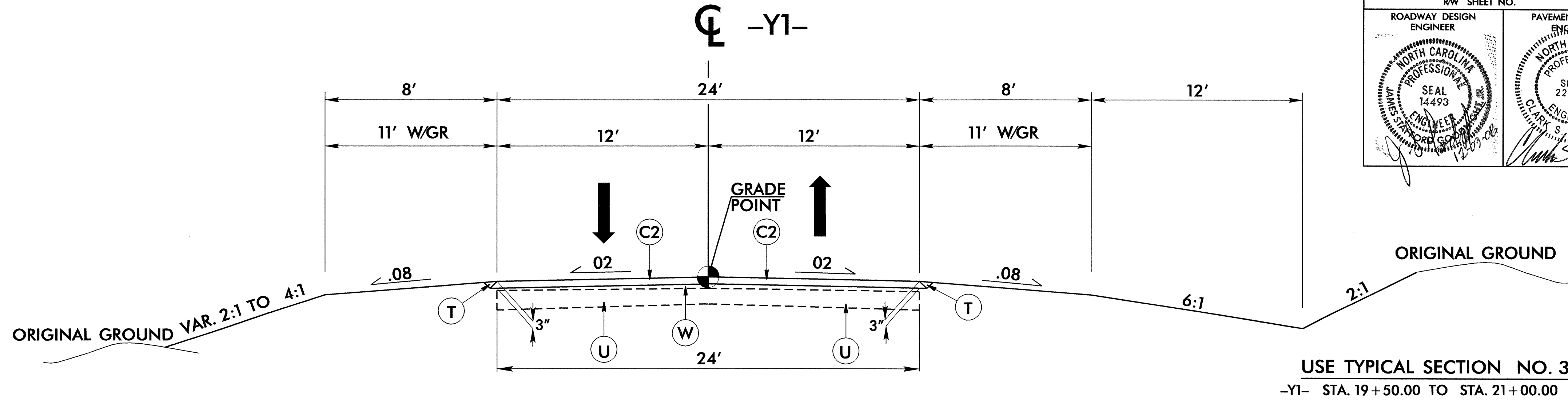
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8/17/99

PAVEMENT SCHEDULE	
C1	2" SURFACE COURSE TYPE S9.5B
C2	3" SURFACE COURSE TYPE S9.5B
C3	VAR. DEPTH SURFACE COURSE TYPE S9.5B
D1	2½" INTERMEDIATE COURSE TYPE I19.0B
D2	3" INTERMEDIATE COURSE TYPE I19.0B
D3	VAR. DEPTH INTERMEDIATE COURSE TYPE I19.0 B
E1	PROP. APPROX. 4" BASE COURSE TYPE B25.0B
E2	PROP. APPROX. 4½" BASE COURSE TYPE B25.0B
E3	PROP. APPROX. 5½" BASE COURSE TYPE B25.0B
E4	VAR. DEPTH BASE COURSE TYPE B25.0B
J	PROP. 8" AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING
W	VARIABLE DEPTH WEDGING

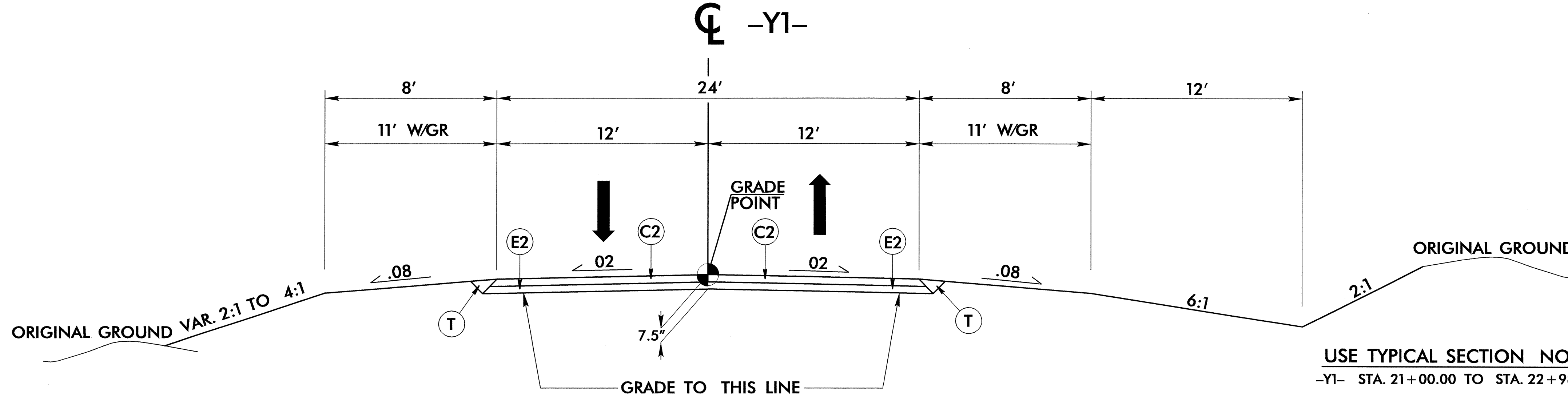
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

PROJECT REFERENCE NO. U-3300B	SHEET NO. 2-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER



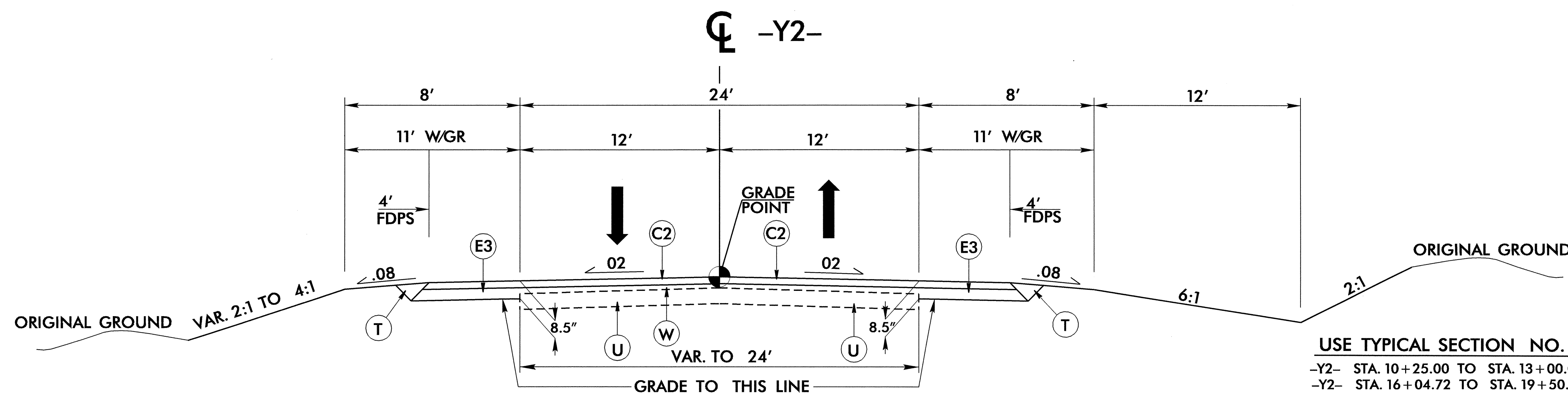
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-Y1- STA. 19+50.00 TO STA. 21+00.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
-Y1- STA. 21+00.00 TO STA. 22+98.60



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
-Y2- STA. 10+25.00 TO STA. 13+00.00
-Y2- STA. 16+04.72 TO STA. 19+50.00

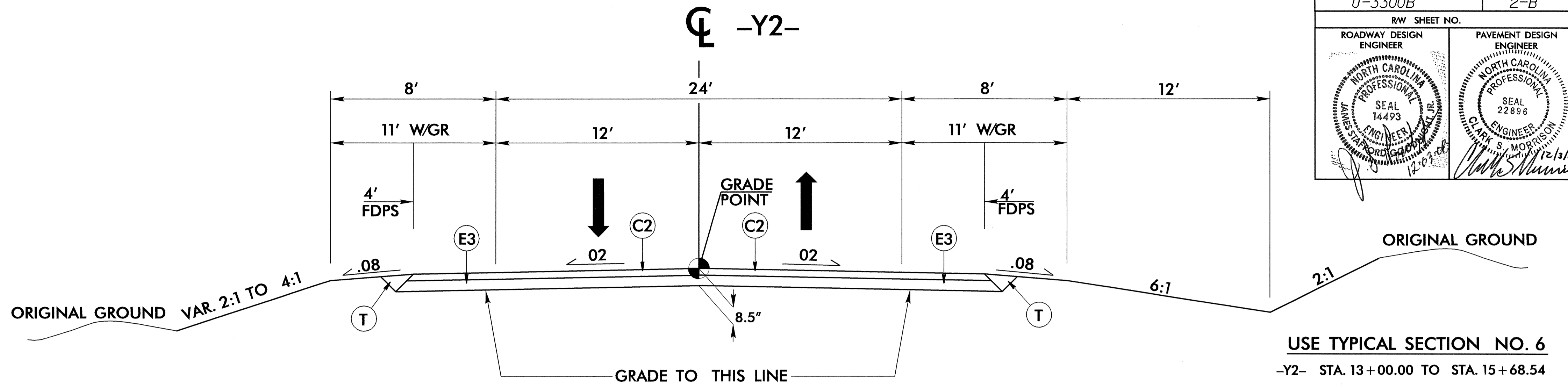
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8/17/99

PAVEMENT SCHEDULE	
C1	2" SURFACE COURSE TYPE S9.5B
C2	3" SURFACE COURSE TYPE S9.5B
C3	VAR. DEPTH SURFACE COURSE TYPE S9.5B
D1	2½" INTERMEDIATE COURSE TYPE I19.0B
D2	3" INTERMEDIATE COURSE TYPE I19.0B
D3	VAR. DEPTH INTERMEDIATE COURSE TYPE I19.0 B
E1	PROP. APPROX. 4" BASE COURSE TYPE B25.0B
E2	PROP. APPROX. 4½" BASE COURSE TYPE B25.0B
E3	PROP. APPROX. 5½" BASE COURSE TYPE B25.0B
E4	VAR. DEPTH BASE COURSE TYPE B25.0B
J	PROP. 8" AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING
W	VARIABLE DEPTH WEDGING

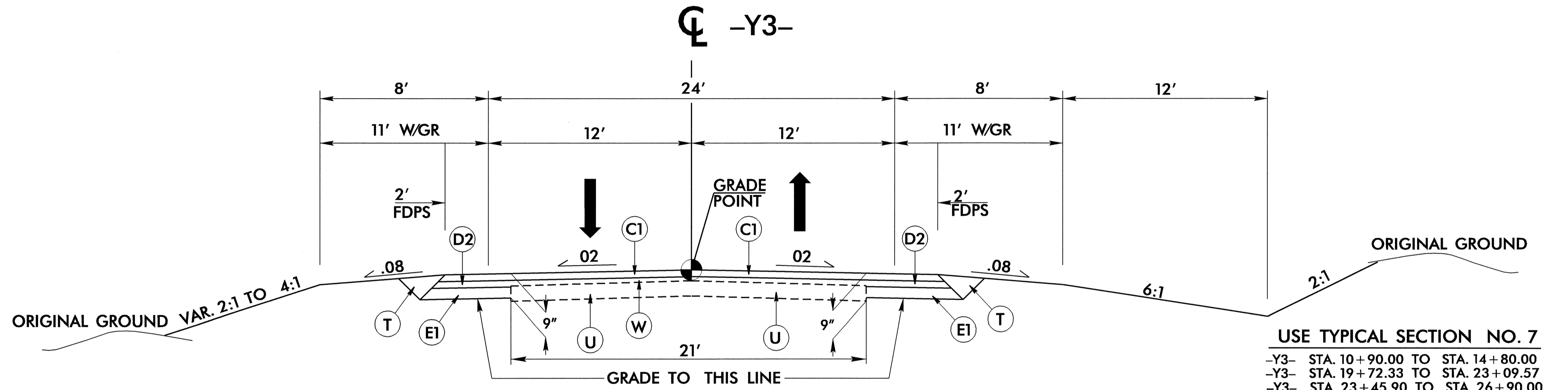
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

PROJECT REFERENCE NO. U-3300B	SHEET NO. 2-B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14493 12/07/08	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22896 12/13/08



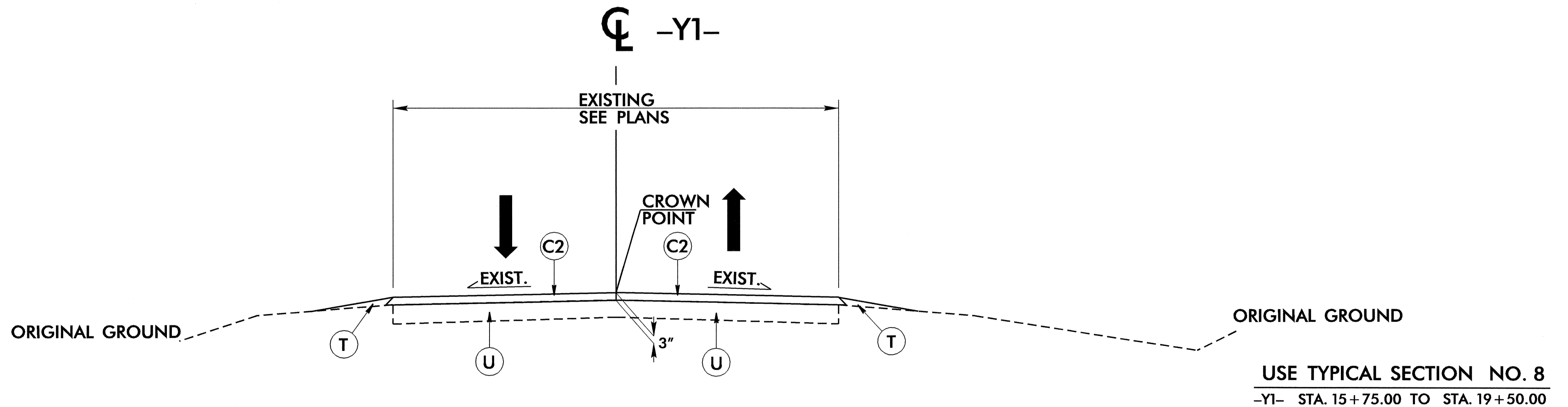
TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
-Y2- STA. 13+00.00 TO STA. 15+68.54



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7
-Y3- STA. 10+90.00 TO STA. 14+80.00
-Y3- STA. 19+72.33 TO STA. 23+09.57
-Y3- STA. 23+45.90 TO STA. 26+90.00



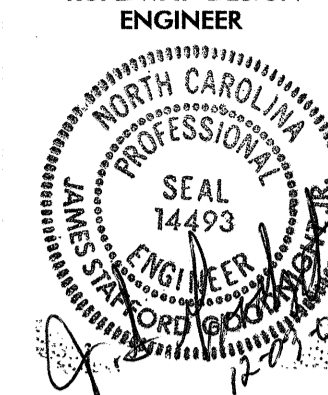
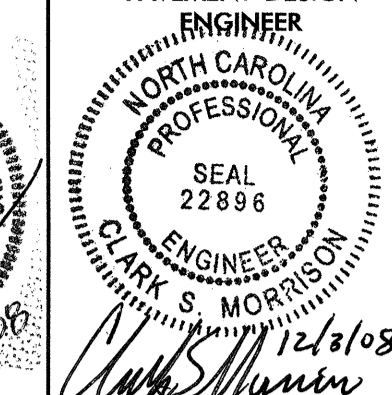
TYPICAL SECTION NO. 8

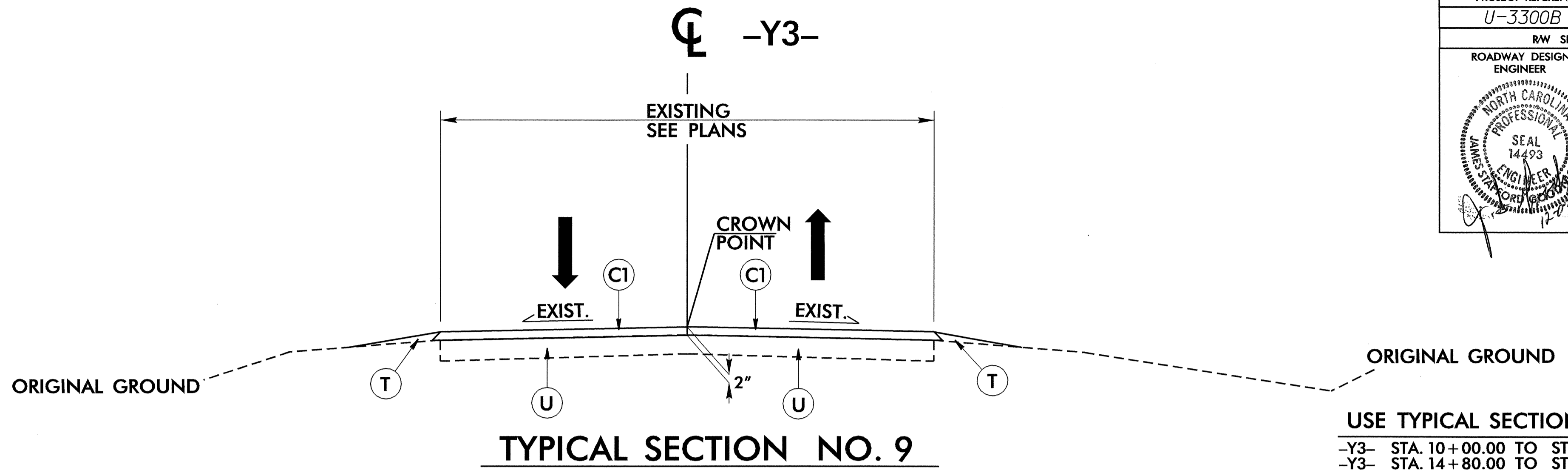
USE TYPICAL SECTION NO. 8
-Y1- STA. 15+75.00 TO STA. 19+50.00

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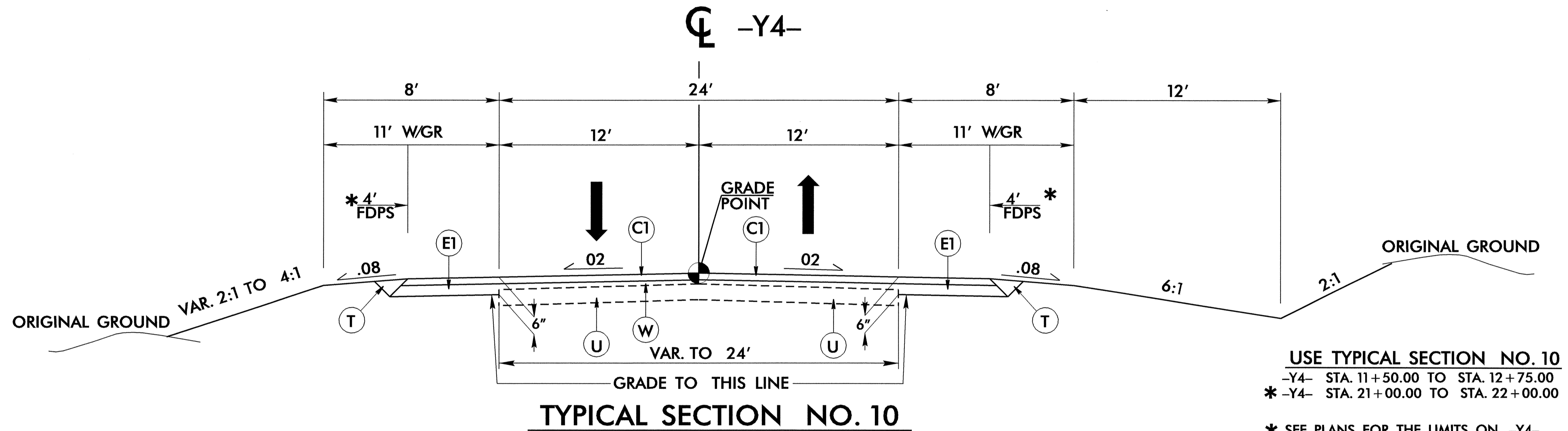
PAVEMENT SCHEDULE	
C1	2" SURFACE COURSE TYPE S9.5B
C2	3" SURFACE COURSE TYPE S9.5B
C3	VAR. DEPTH SURFACE COURSE TYPE S9.5B
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D3	VAR. DEPTH INTERMEDIATE COURSE TYPE I19.0 B
E1	PROP. APPROX. 4" BASE COURSE TYPE B25.0B
E2	PROP. APPROX. 4½" BASE COURSE TYPE B25.0B
E3	PROP. APPROX. 5½" BASE COURSE TYPE B25.0B
E4	VAR. DEPTH BASE COURSE TYPE B25.0B
J	PROP. 8" AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING
W	VARIABLE DEPTH WEDGING

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

PROJECT REFERENCE NO. U-3300B	SHEET NO. 2-C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 

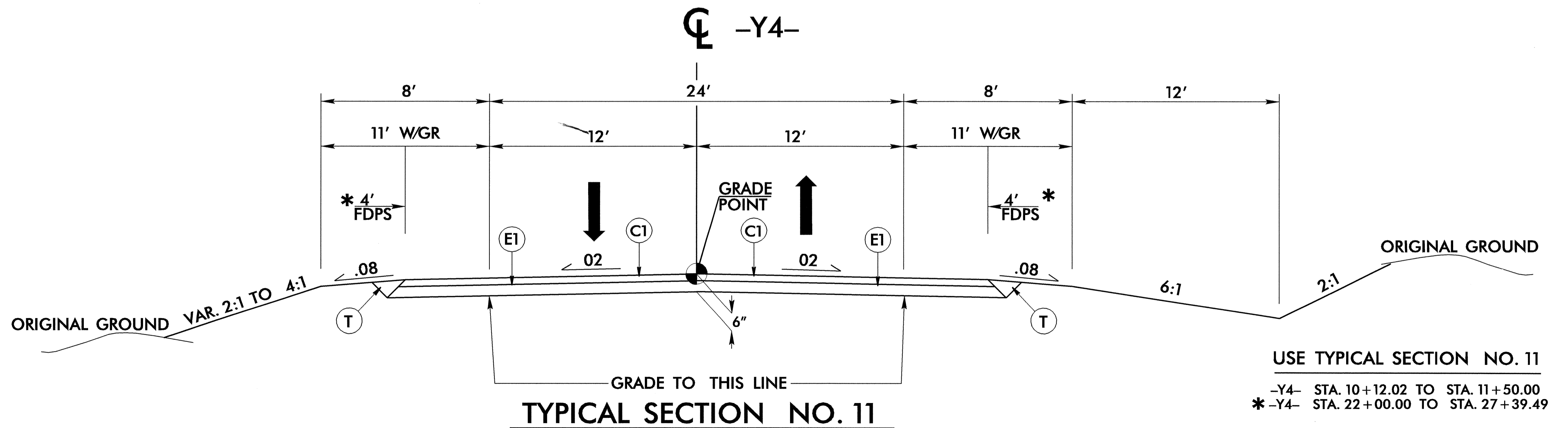


USE TYPICAL SECTION NO. 9
 -Y3- STA. 10+00.00 TO STA. 10+90.00
 -Y3- STA. 14+80.00 TO STA. 19+72.33



USE TYPICAL SECTION NO. 10
 -Y4- STA. 11+50.00 TO STA. 12+75.00
 * -Y4- STA. 21+00.00 TO STA. 22+00.00

* SEE PLANS FOR THE LIMITS ON -Y4- FOR THE USE THE 4' PAVED SHOULDER



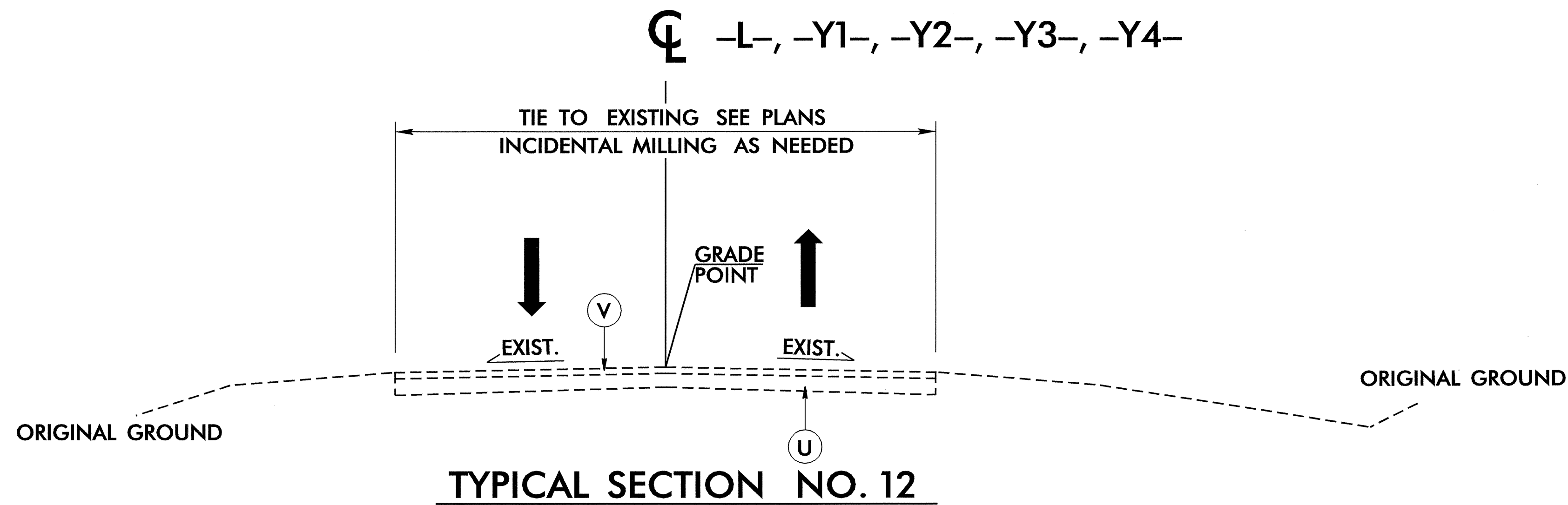
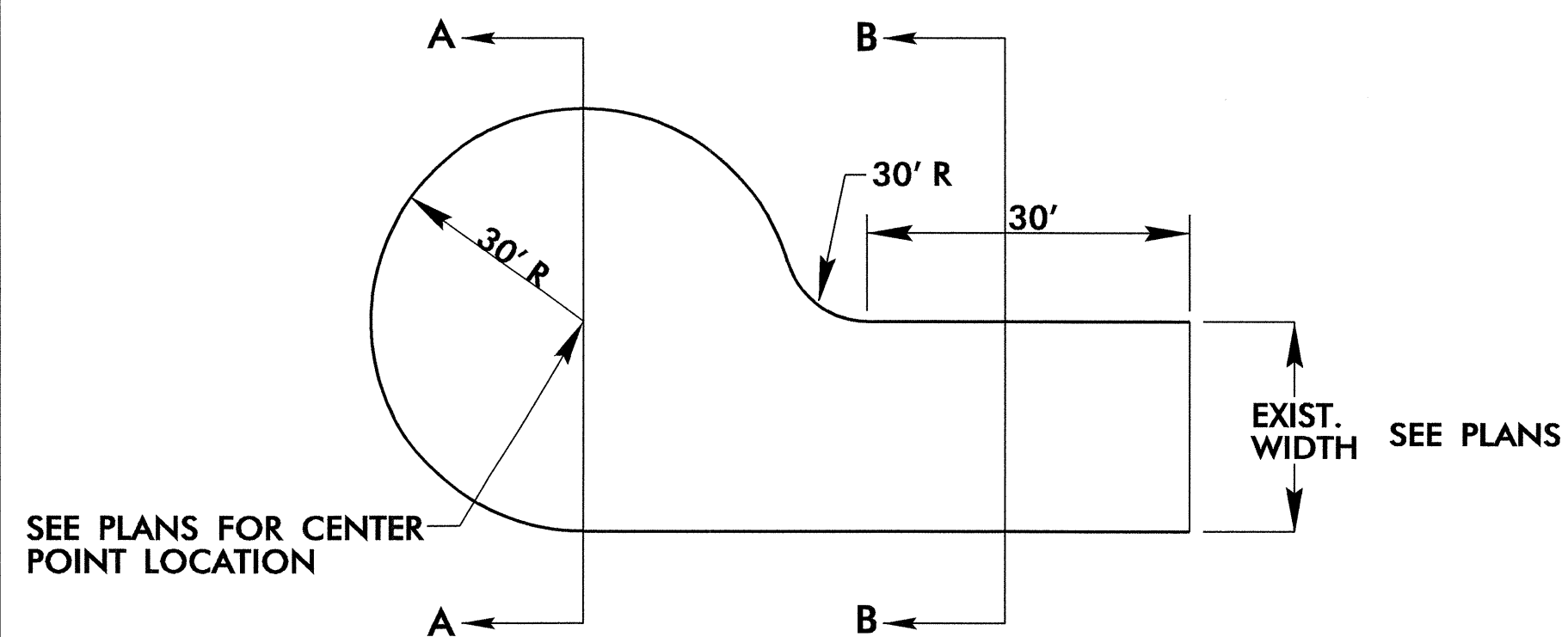
USE TYPICAL SECTION NO. 11
 -Y4- STA. 10+12.02 TO STA. 11+50.00
 * -Y4- STA. 22+00.00 TO STA. 27+39.49

* SEE PLANS FOR THE LIMITS ON -Y4- FOR THE USE THE 4' PAVED SHOULDER

PAVEMENT SCHEDULE	
C1	2" SURFACE COURSE TYPE S9.5B
C2	3" SURFACE COURSE TYPE S9.5B
C3	VAR. DEPTH SURFACE COURSE TYPE S9.5B
D1	2½" INTERMEDIATE COURSE TYPE I19.0B
D2	3" INTERMEDIATE COURSE TYPE I19.0B
D3	VAR. DEPTH INTERMEDIATE COURSE TYPE I19.0 B
E1	PROP. APPROX. 4" BASE COURSE TYPE B25.0B
E2	PROP. APPROX. 4½" BASE COURSE TYPE B25.0B
E3	PROP. APPROX. 5½" BASE COURSE TYPE B25.0B
E4	VAR. DEPTH BASE COURSE TYPE B25.0B
J	PROP. 8" AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING
W	VARIABLE DEPTH WEDGING

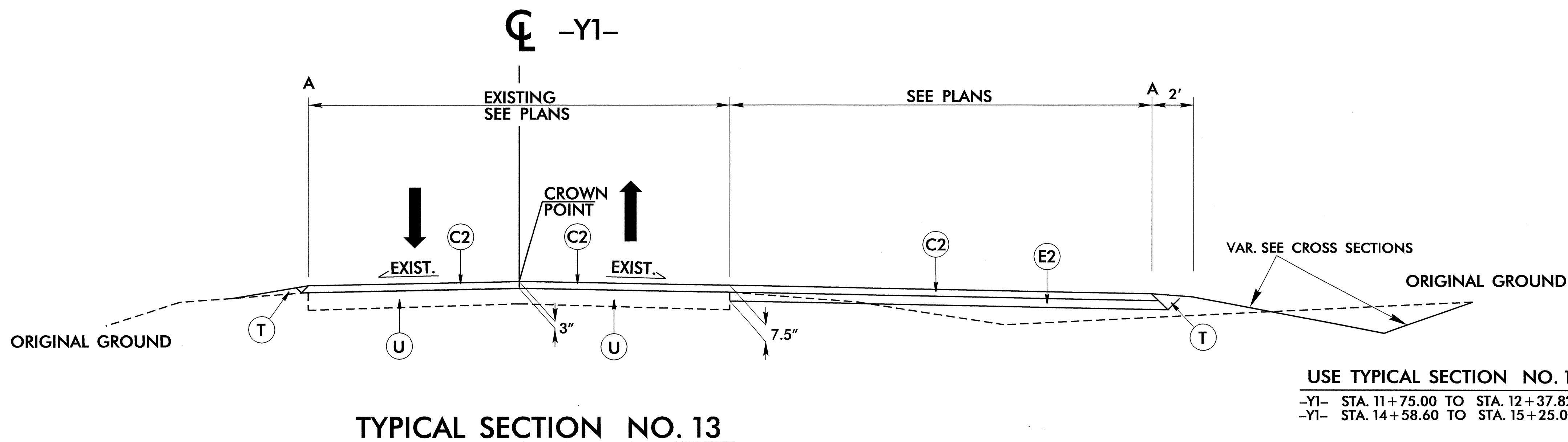
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

DETAIL OF CUL-DE-SAC



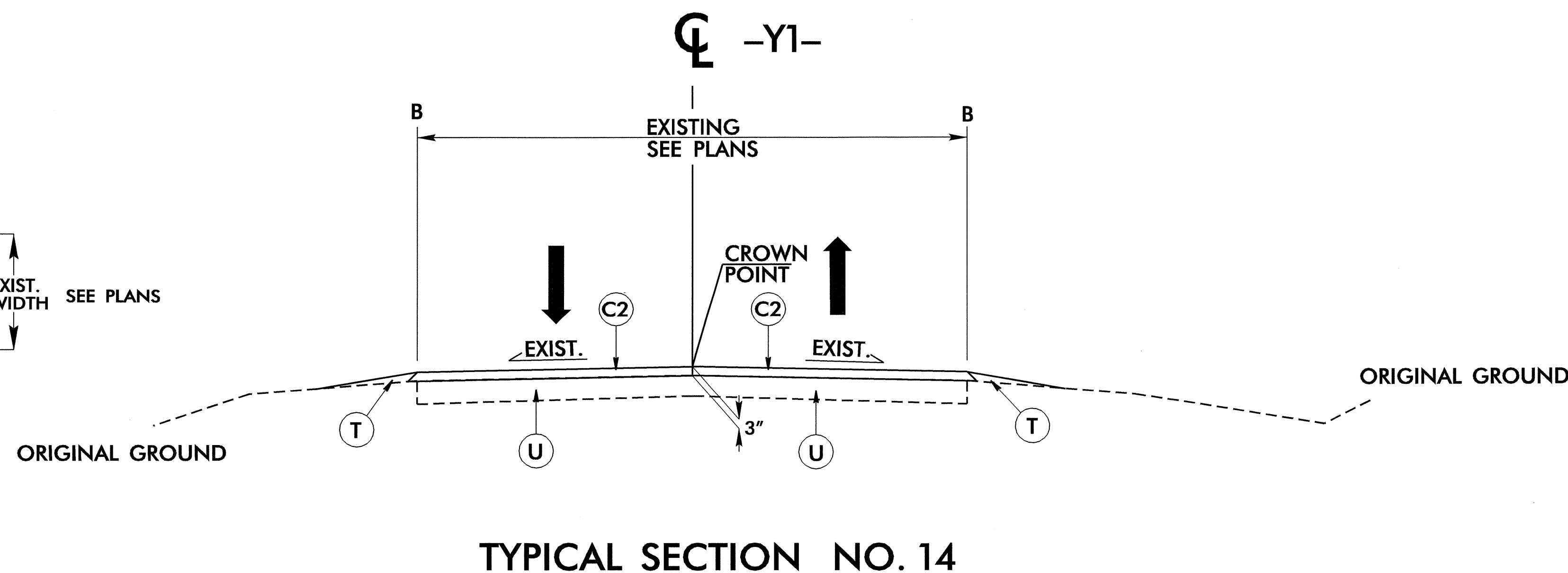
USE TYPICAL SECTION NO. 12

- L- STA. 10+73.22 TO STA. 11+23.22
- L- STA. 86+88.94 TO STA. 87+38.94
- Y1- STA. 11+25.00 TO STA. 11+75.00
- Y2- STA. 10+25.00 TO STA. 10+75.00
- Y2- STA. 19+00.00 TO STA. 19+50.00
- Y3- STA. 10+00.00 TO STA. 10+50.00
- Y3- STA. 26+40.00 TO STA. 26+90.00
- Y4- STA. 12+25.00 TO STA. 12+75.00
- Y4- STA. 21+00.00 TO STA. 21+50.00



USE TYPICAL SECTION NO. 13

- Y1- STA. 11+75.00 TO STA. 12+37.82
- Y1- STA. 14+58.60 TO STA. 15+25.00



USE TYPICAL SECTION NO. 14

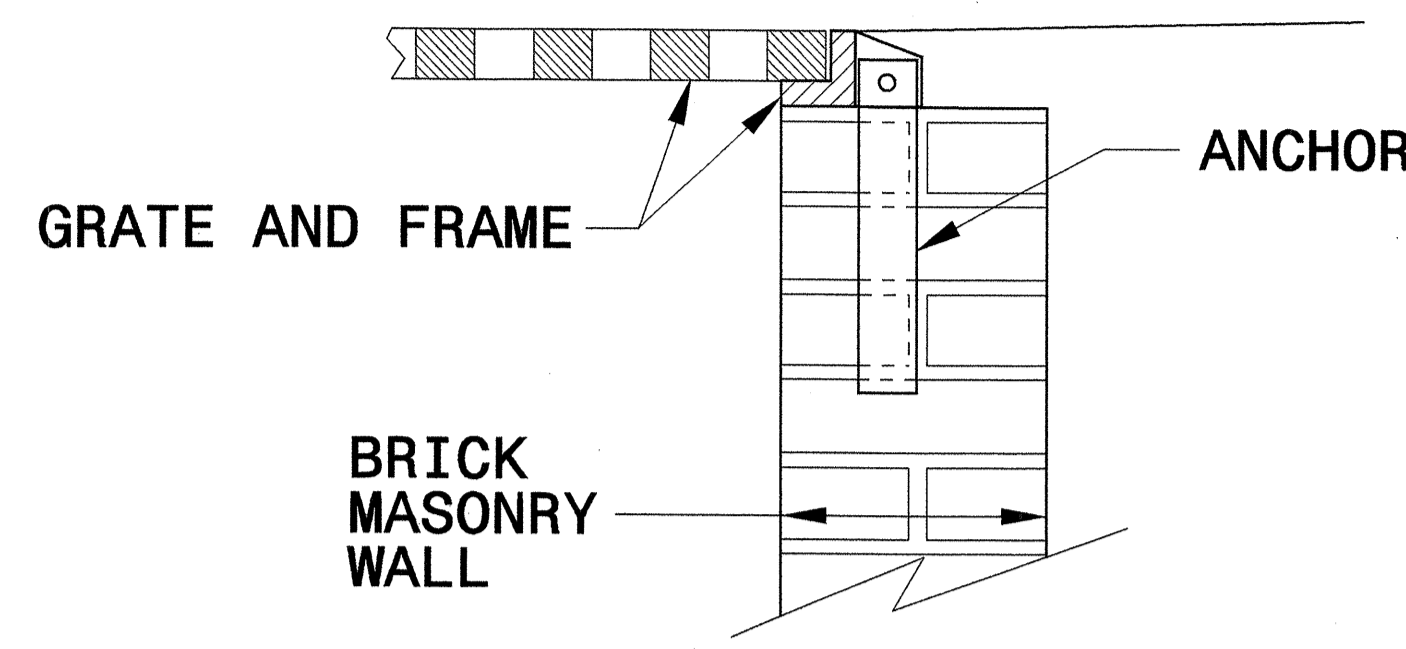
- Y1- STA. 11+25.00 TO STA. 11+75.00
- Y1- STA. 15+25.00 TO STA. 15+75.00

PROJECT REFERENCE NO. U-3300B	SHEET NO. 2-D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER

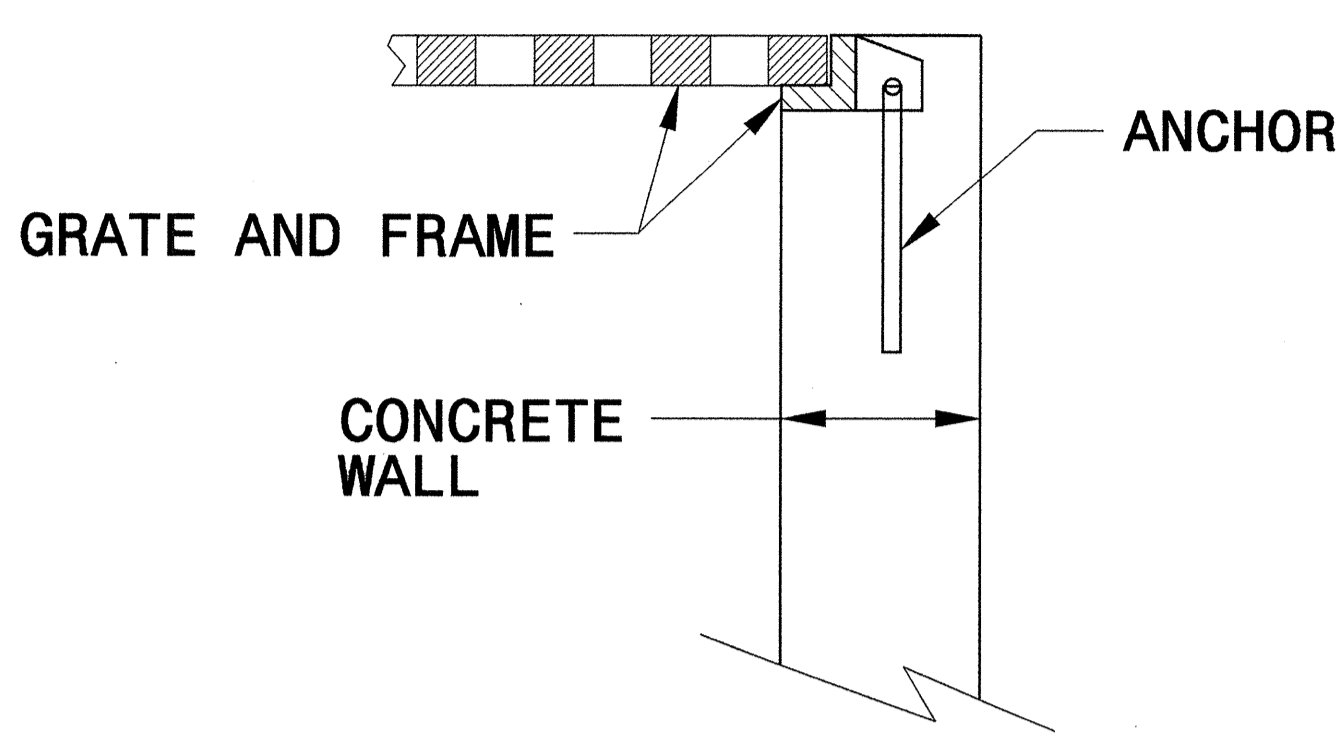
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

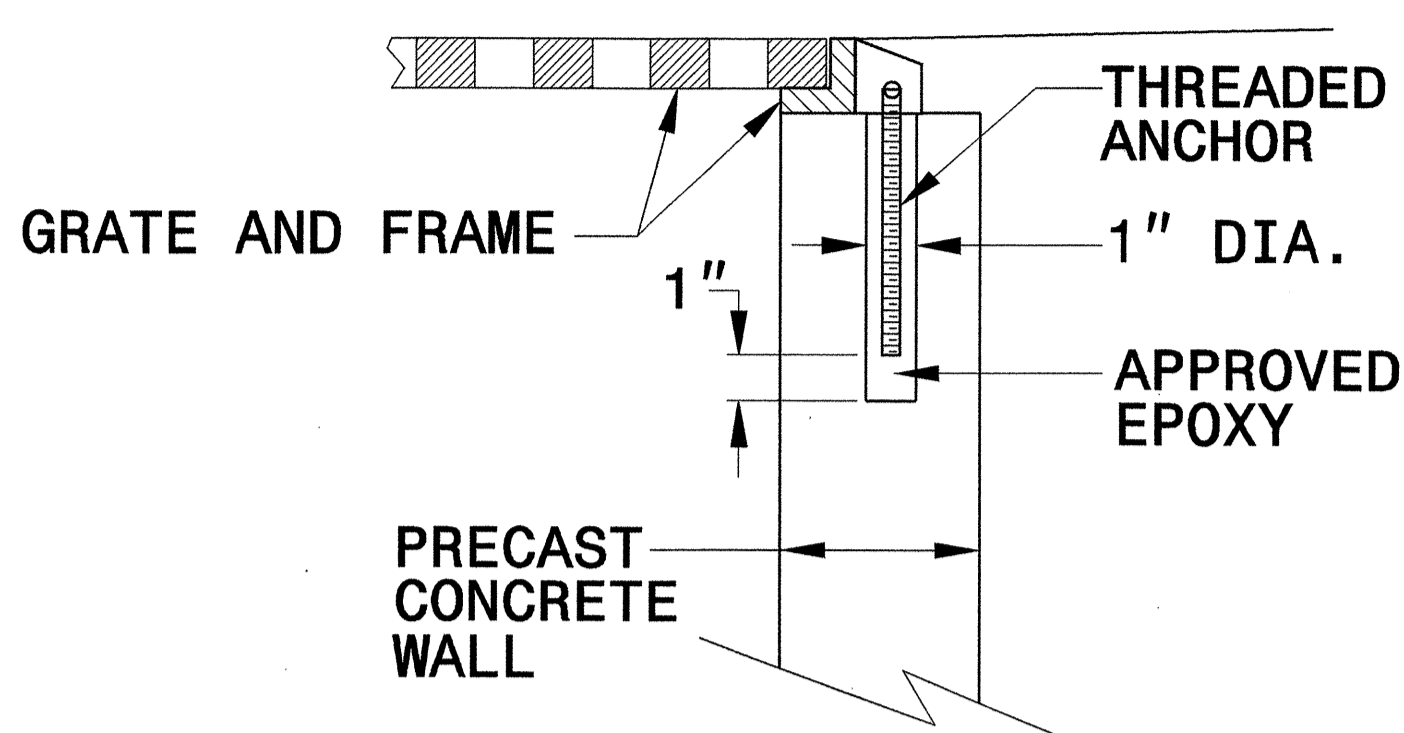
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



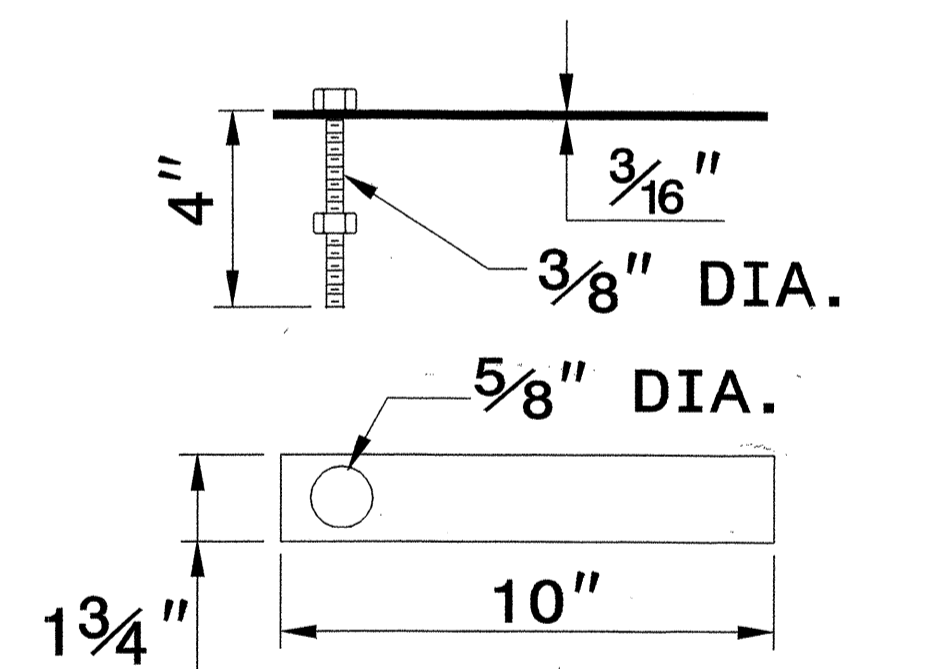
CONCRETE CONSTRUCTION



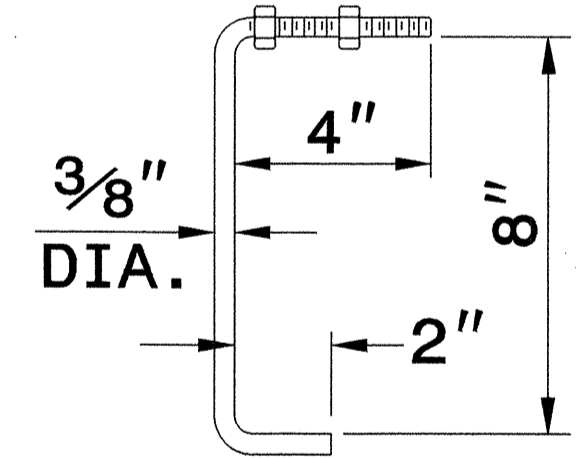
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

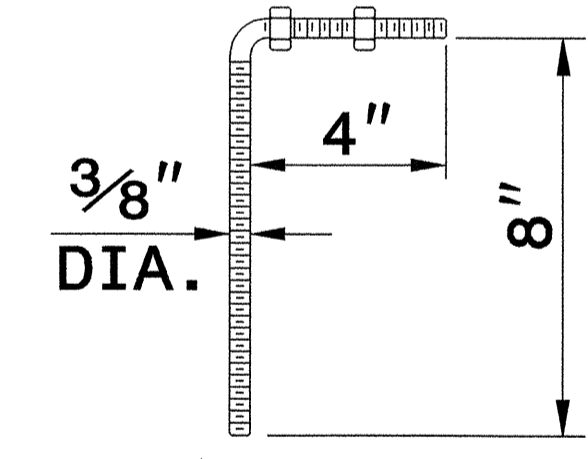
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



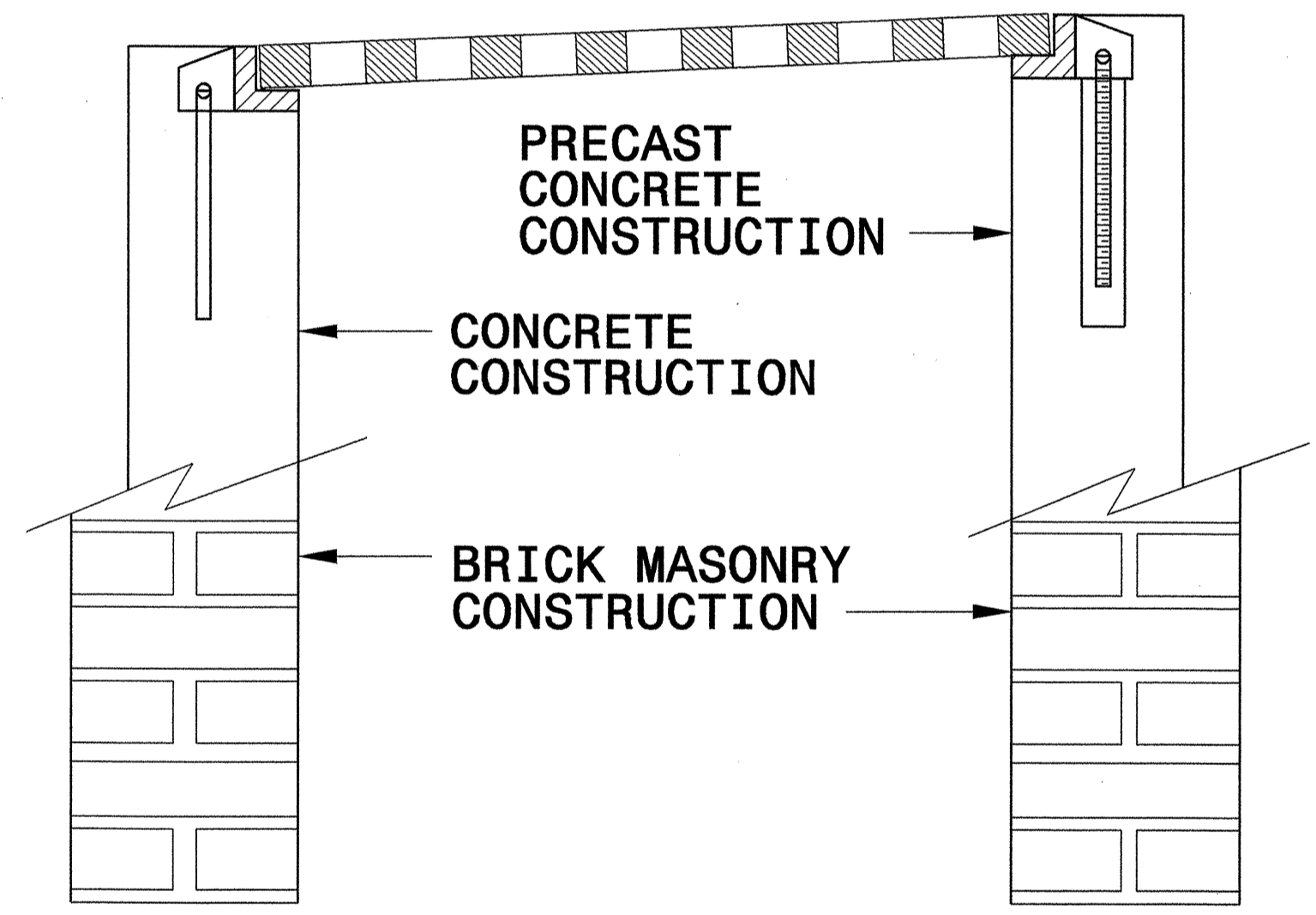
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR
3/8" DIA. BENT BAR



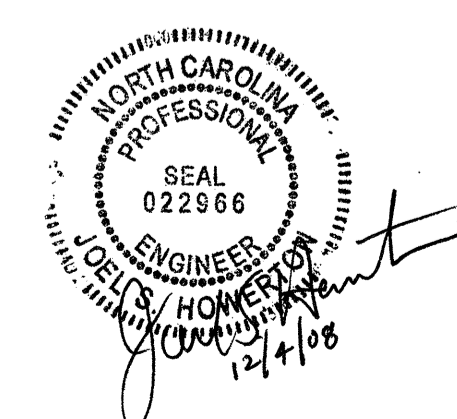
FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

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

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

SHEET 1 OF 1
840D25

STANDARD DRAWING SYSTEM
PLATE 840D25
DATE 9/25/06
BY E.E. WARD
CHECKED BY
FILE SPEC.



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

SEE PLATE FOR TITLE

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202065

SUMMARY OF QUANTITIES

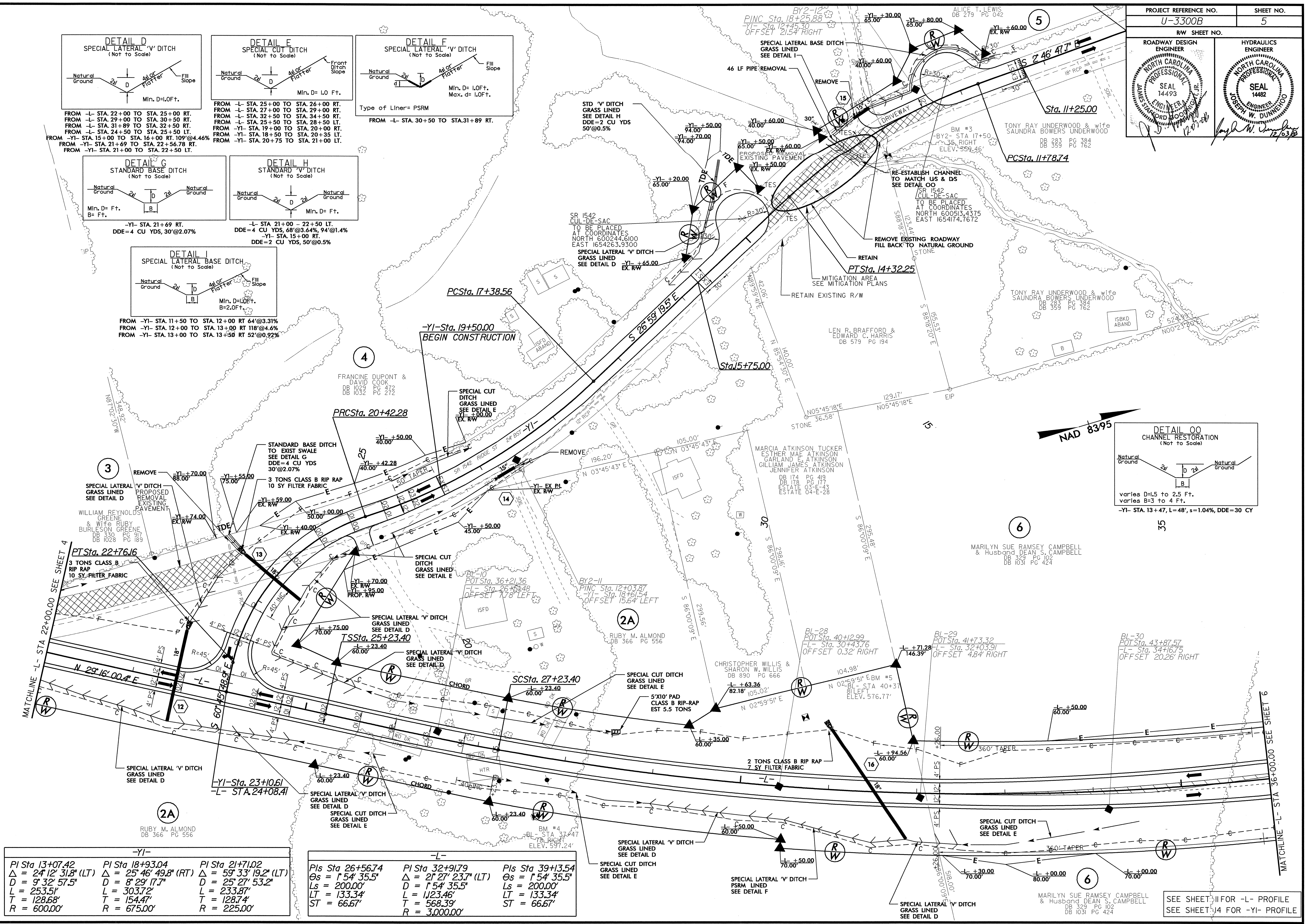
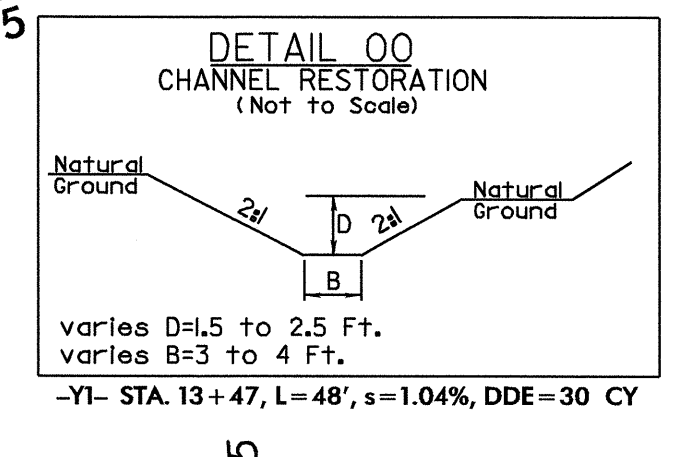
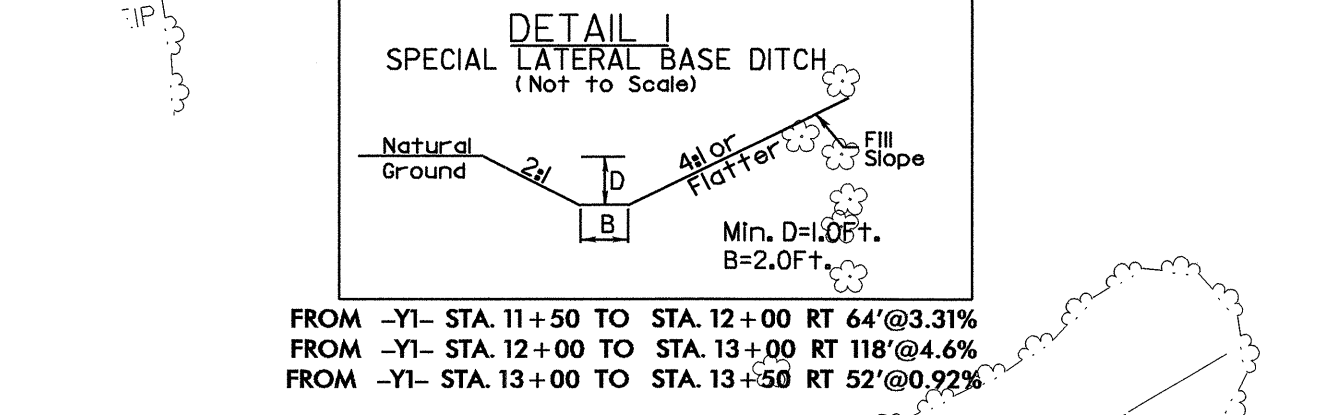
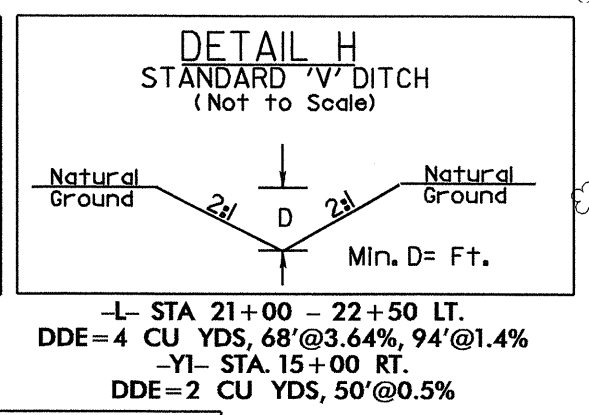
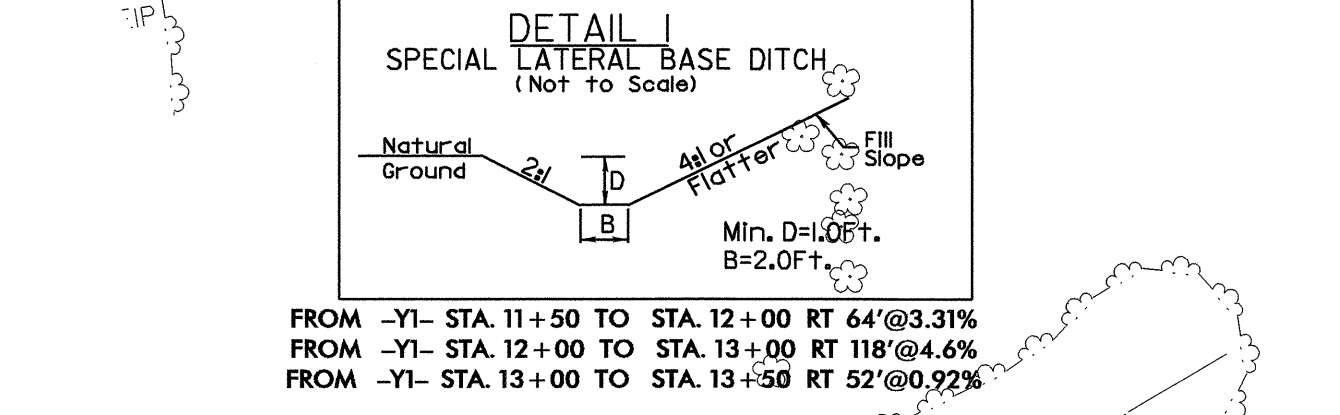
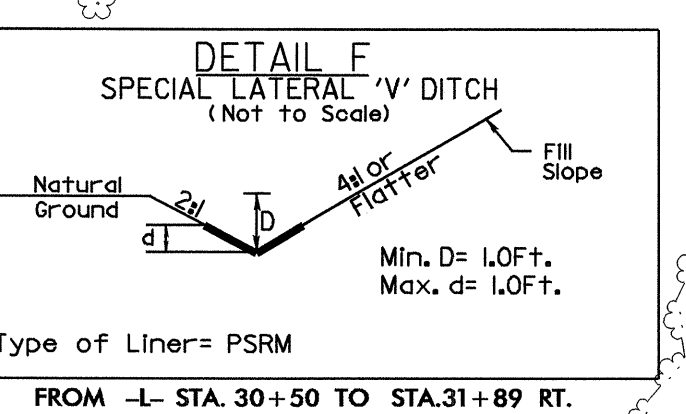
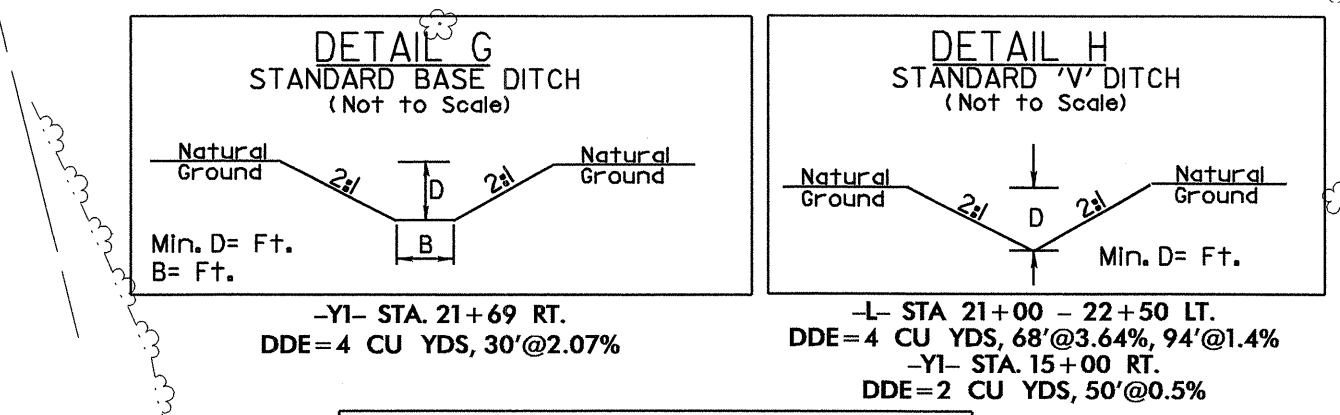
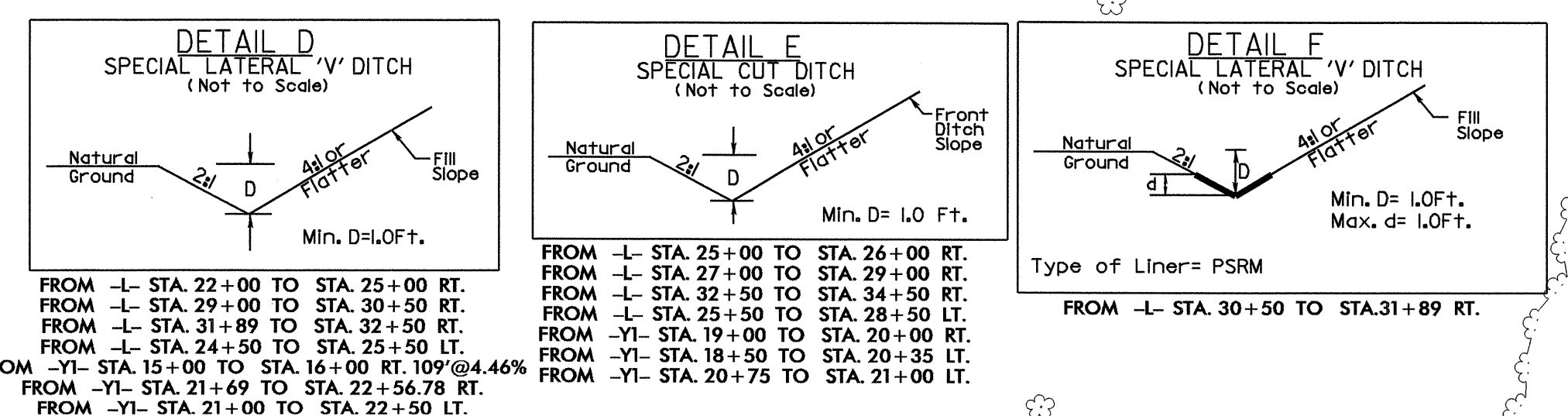
ItemNumber	Sec #	Quantity	Unit	Description
000010000-N	800	Lump Sum		MOBILIZATION
004300000-N	226	Lump Sum		GRADING
005000000-E	226	2	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
005700000-E	226	7,000	CY	UNDERCUT EXCAVATION
008000000-E	SP	1,890	TON	CLASS IV SUBGRADE STABILIZATION
013400000-E	240	220	CY	DRAINAGE DITCH EXCAVATION
019200000-N	260	10	HR	PROOF ROLLING
019500000-E	265	1,250	CY	SELECT GRANULAR MATERIAL
019600000-E	270	4,250	SY	FABRIC FOR SOIL STABILIZATION
031800000-E	300	415	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
034300000-E	310	272	LF	15" SIDE DRAIN PIPE
034400000-E	310	68	LF	18" SIDE DRAIN PIPE
037200000-E	310	448	LF	18" RC PIPE CULVERTS, CLASS III
037800000-E	310	420	LF	24" RC PIPE CULVERTS, CLASS III
038400000-E	310	232	LF	30" RC PIPE CULVERTS, CLASS III
039000000-E	310	96	LF	36" RC PIPE CULVERTS, CLASS III
040200000-E	310	1,072	LF	48" RC PIPE CULVERTS, CLASS III
099500000-E	340	632	LF	PIPE REMOVAL
104400000-E	501	15,750	SY	LIME TREATED SOIL (SLURRY METHOD)
106600000-E	501	160	TON	LIME FOR LIME TREATED SOIL
111000000-E	510	500	TON	STABILIZER AGGREGATE
112100000-E	520	14,500	TON	AGGREGATE BASE COURSE
117600000-E	542	15,750	SY	SOIL CEMENT BASE
118700000-E	542	434	TON	PORTLAND CEMENT FOR SOIL CEMENT BASE
122000000-E	545	1,500	TON	INCIDENTAL STONE BASE
133000000-E	607	1,200	SY	INCIDENTAL MILLING
148900000-E	610	3,640	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
149800000-E	610	5,610	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
151900000-E	610	7,760	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
156000000-E	620	890	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
169300000-E	654	100	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
214300000-E	818	15	TON	BLOTTING SAND
222000000-E	838	16	CY	REINFORCED ENDWALLS
225300000-E	840	1	CY	PIPE COLLARS
228600000-N	840	1	EA	MASONRY DRAINAGE STRUCTURES
236600000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.24
303000000-E	862	1,518	LF	STEEL BM GUARDRAIL
304500000-E	862	128	LF	STEEL BM GUARDRAIL, SHOP CURVED
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
318000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (TES)
327000000-N	SP	6	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
362800000-E	876	230	TON	RIP RAP, CLASS I
364900000-E	876	125	TON	RIP RAP, CLASS B
365600000-E	876	3,530	SY	FILTER FABRIC FOR DRAINAGE
365900000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
407200000-E	903	613	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
410200000-N	904	57	EA	SIGN ERECTION, TYPE E
415500000-N	907	22	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
440000000-E	1110	1,534	SF	WORK ZONE SIGNS (STATIONARY)

ItemNumber	Sec #	Quantity	Unit	Description
440500000-E	1110	384	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	194	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
443500000-N	1135	300	EA	CONES
444500000-E	1145	400	LF	BARRICADES (TYPE III)
445500000-N	1150	120	MD	FLAGGER
468500000-E	1205	24,000	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
468600000-E	1205	29,850	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
469500000-E	1205	300	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
470500000-E	1205	240	LF	THERMOPLASTIC PAVEMENT MARKING LINES (16", 120 MILS)
471000000-E	1205	310	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
472100000-E	1205	4	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)
472500000-E	1205	31	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
481000000-E	1205	107,691	LF	PAINT PAVEMENT MARKING LINES (4")
482000000-E	1205	600	LF	PAINT PAVEMENT MARKING LINES (8")
483500000-E	1205	620	LF	PAINT PAVEMENT MARKING LINES (24")
484500000-N	1205	62	EA	PAINT PAVEMENT MARKING SYMBOL
490500000-N	1253	238	EA	SNOWPLOWABLE PAVEMENT MARKERS
491500000-E	1264	6	EA	7' U-CHANNEL POSTS
495500000-N	1264	6	EA	OBJECT MARKERS (END OF ROAD)
532620000-E	1510	1,530	LF	12" WATER LINE
567200000-N	1515	1	EA	RELOCATE FIRE HYDRANT
569100000-E	1520	238	LF	*** SANITARY GRAVITY SEWER (15")
569160000-E	1520	131	LF	16" SANITARY GRAVITY SEWER
570920000-E	1520	330	LF	4" FORCE MAIN SEWER

ItemNumber	Sec #	Quantity	Unit	Description
577500000-E	1525	3	EA	4' DIA UTILITY MANHOLE
578100000-E	1525	17	LF	UTILITY MANHOLE WALL, 4' DIA
579800000-E	1530	350	LF	ABANDON *** UTILITY PIPE (15")
580400000-E	1530	1,470	LF	ABANDON 12" UTILITY PIPE
581600000-N	1530	2	EA	ABANDON UTILITY MANHOLE
600000000-E	1605	8,100	LF	TEMPORARY SILT FENCE
600600000-E	1610	1,400	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	1,950	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	570	TON	SEDIMENT CONTROL STONE
601500000-E	1615	73	ACR	TEMPORARY MULCHING
601800000-E	1620	1,400	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	7.25	TON	FERTILIZER FOR TEMPORARY SEEDING
602400000-E	1622	850	LF	TEMPORARY SLOPE DRAINS
602700000-N	1622	7	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
602900000-E	SP	100	LF	SAFETY FENCE
603000000-E	1630	6,725	CY	SILT EXCAVATION
603600000-E	1631	21,420	SY	MATting FOR EROSION CONTROL
603700000-E	SP	120	SY	COIR FIBER MAT
603800000-E	SP	3,945	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	175	LF	1/4" HARDWARE CLOTH
604500000-E	SP	20	LF	*** TEMPORARY PIPE (24")
606900000-E	1638	460	CY	STILLING BASINS
607103000-E	SP	1,175	LF	COIR FIBER BAFFLES
607105000-E	SP	18	EA	*** SKIMMER (1-1/2")
608400000-E	1660	76.5	ACR	SEEDING & MULCHING
608700000-E	1660	45	ACR	MOWING
609000000-E	1661	650	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	1.5	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	900	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	27	TON	FERTILIZER TOPDRESSING
611100000-E	SP	110	LF	IMPERVIOUS DIKE
611400000-N	SP	5	HR	SPECIALIZED HAND MOWING
611700000-N	SP	36	EA	RESPONSE FOR EROSION CONTROL
612000000-E	SP	50	CY	CULVERT DIVERSION CHANNEL
612600000-E	SP	0.12	ACR	STREAMBANK REFORESTATION

***** BEGIN SCHEDULE AA *****				
***** (3 ALTERNATES) *****				
036600000-E	310	144	LF	15" RC PIPE CULVERTS, CLASS III
AA1				
*** OR ***				
053600000-E	SP	144	LF	*** HDPE PIPE CULVERTS (15")
AA2				
*** OR ***				
054000000-E	SP	144	LF	*** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, **** THICK (15", 0.064")
AA3				
***** END SCHEDULE AA *****				

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 5/28/09



-YI-		
PI Sta 13+07.42 Δ = 24° 12' 31.8" (LT) D = 9' 32' 57.5" L = 253.51' T = 128.68' R = 600.00'	PI Sta 18+93.04 Δ = 25° 46' 49.8" (RT) D = 8' 29' 17.7" L = 303.72' T = 154.47' R = 675.00'	PI Sta 21+71.02 Δ = 59° 33' 19.2" (LT) D = 25' 27' 53.2" L = 233.87' T = 128.74' R = 225.00'

-L-		
PIs Sta 26+56.74 Os = 1° 54' 35.5" Ls = 200.00' LT = 133.34' ST = 66.67'	PI Sta 32+91.79 Δ = 21° 27' 23.7" (LT) D = 1° 54' 35.5" L = 123.46' T = 568.39' R = 3,000.00'	PIs Sta 39+13.54 Os = 1° 54' 35.5" Ls = 200.00' LT = 133.34' ST = 66.67'

SEE SHEET 11 FOR -L- PROFILE
SEE SHEET 14 FOR -YI- PROFILE

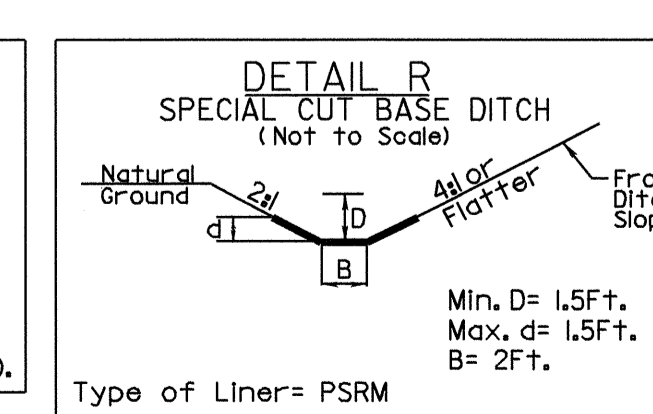
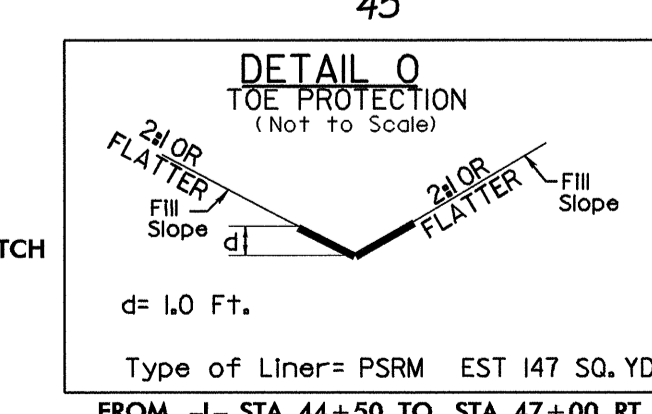
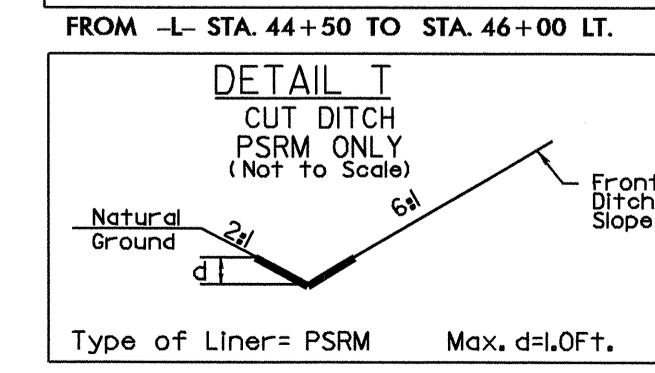
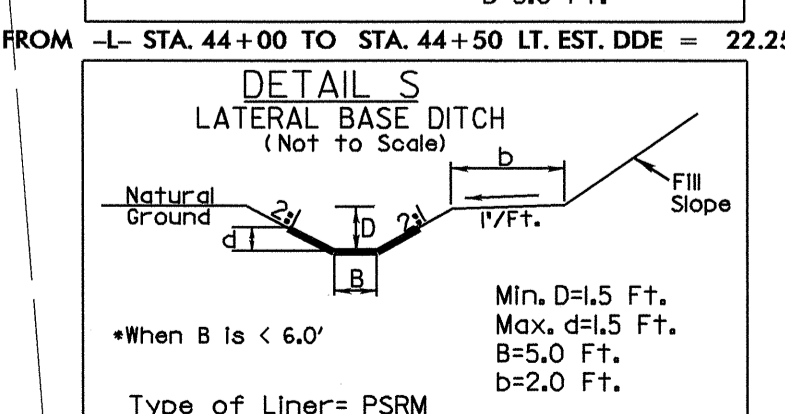
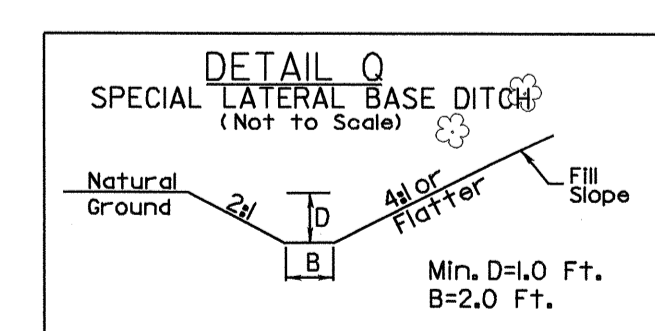
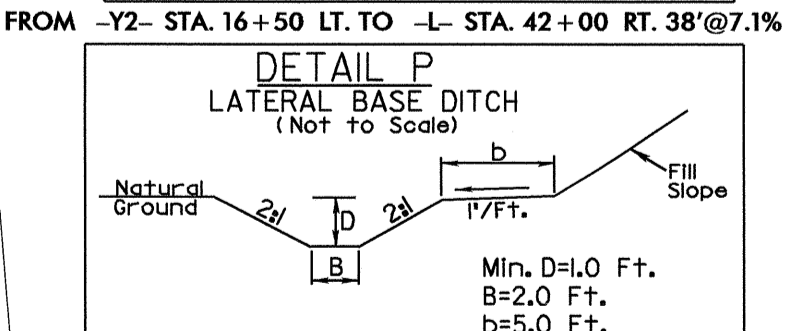
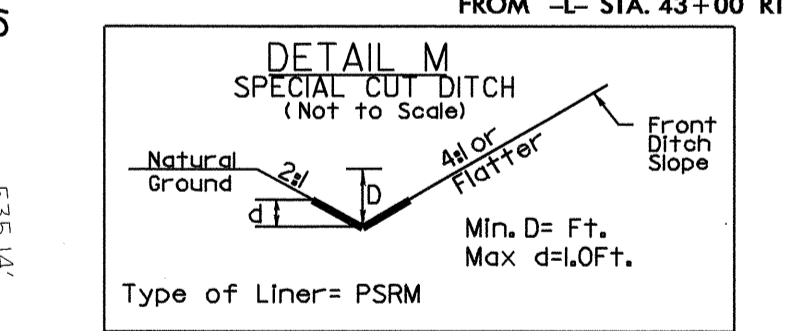
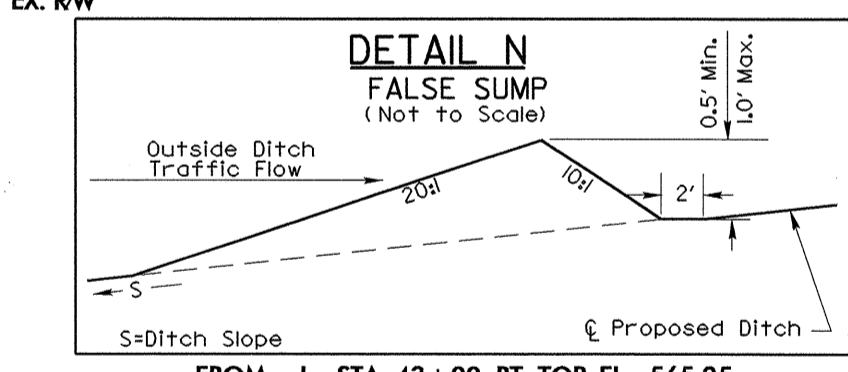
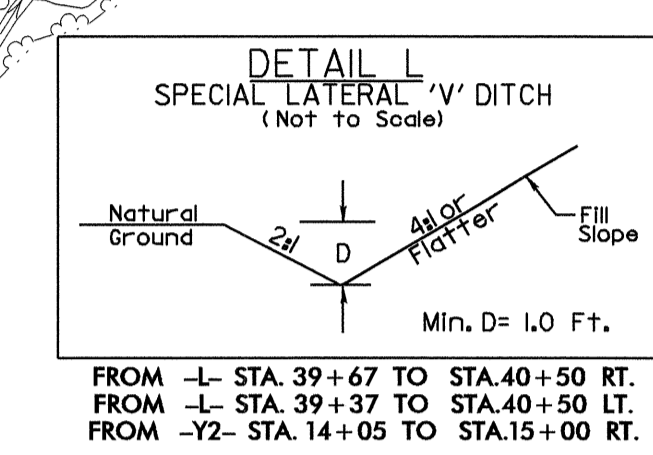
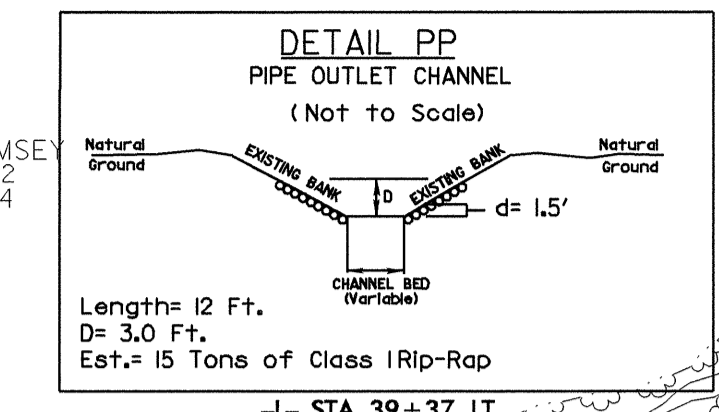
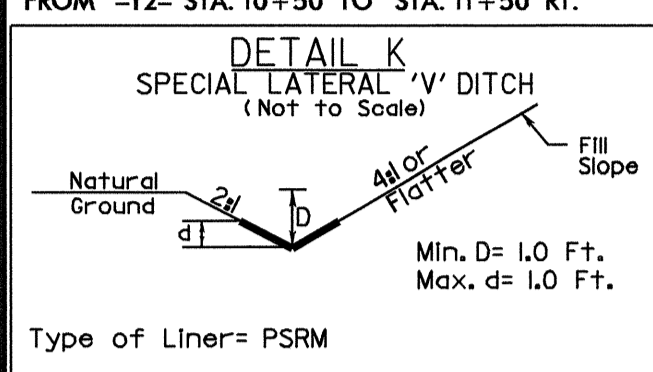
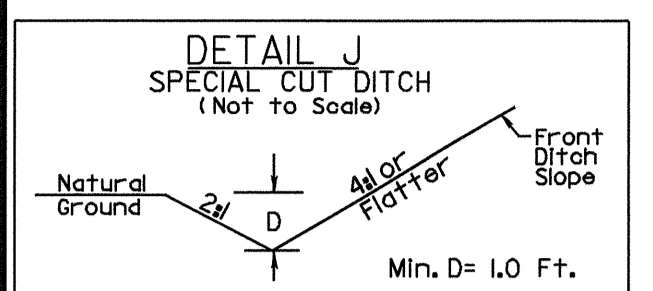
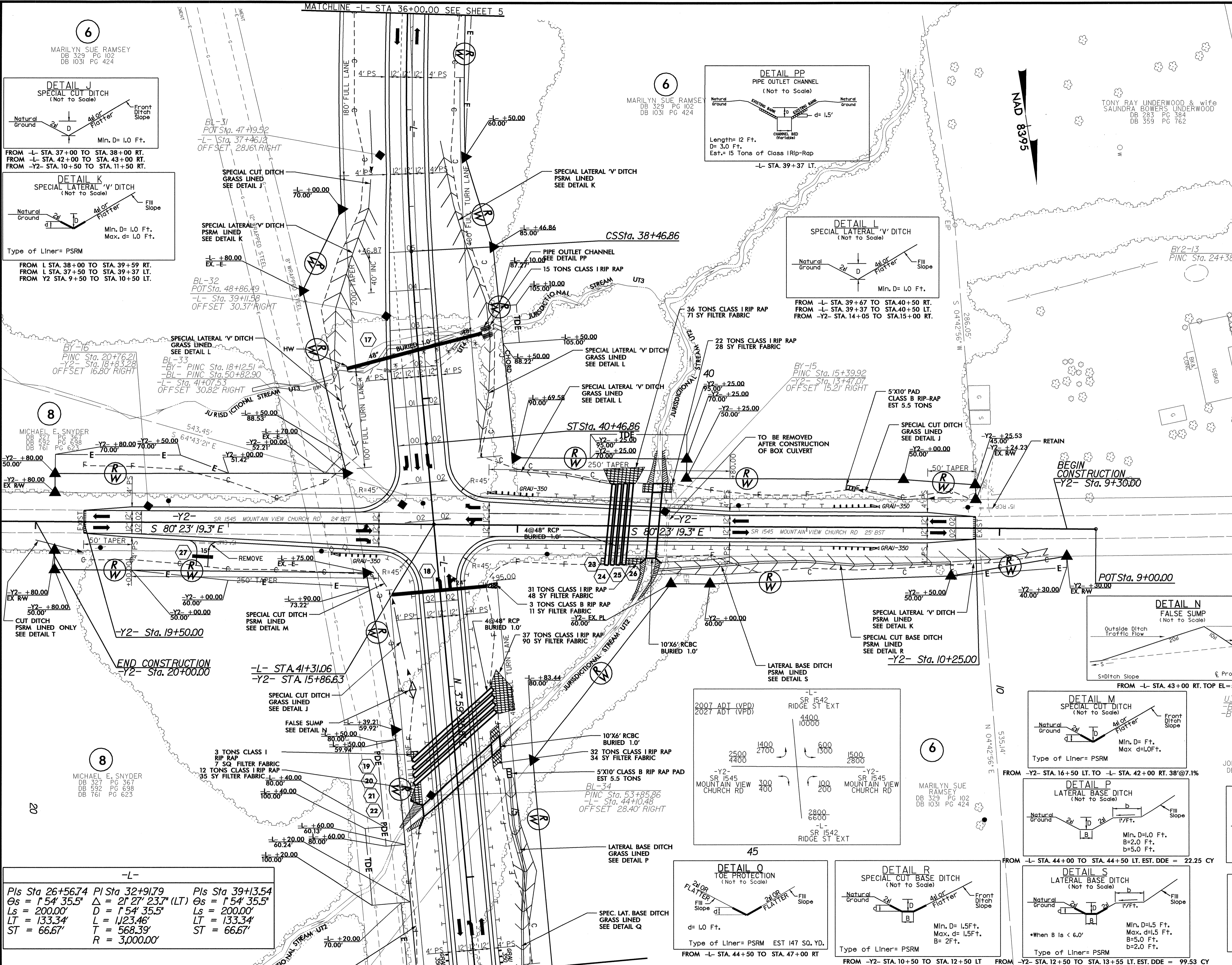
REVISIONS

8/17/95

03-DEC-2008 09h
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TONY RAY UNDERWOOD & wife
SAUNDRA BOWERS UNDERWOOD
DB 283 PG 384
DB 359 PG 762

BARRY FRANKLIN COOPER
DB 551 PG 621



-L-

Pls Sta 26+56.74	Pls Sta 32+91.79	Pls Sta 39+13.54
Os = 1'54" 35.5"	Δ = 2' 27" 23.7" (LT)	Os = 1'54" 35.5"
Ls = 200.00'	D = 1'54" 35.5"	Ls = 200.00'
LT = 133.34'	T = 1423.46'	LT = 133.34'
ST = 66.67'	L = 568.39'	ST = 66.67'
	R = 3,000.00'	

REVISIONS

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8/17/09

SEE SHEET 11 AND 12 FOR -L- PROFILE
SEE SHEET 14 FOR -Y2- PROFILE
SEE SHEET C1 THRU C9 FOR CULVERT PLANS

GUS SCHAD
DB 848 PG 640

GUS SCHAD
DB 848 PG 640

BL-39
PINC Sta. 67+84.89
-L- Sta. 58+09.39
OFFSET 16.31' RIGHT

BL-38
PINC Sta. 65+68.37
-L- Sta. 55+92.88
OFFSET 17.20' RIGHT

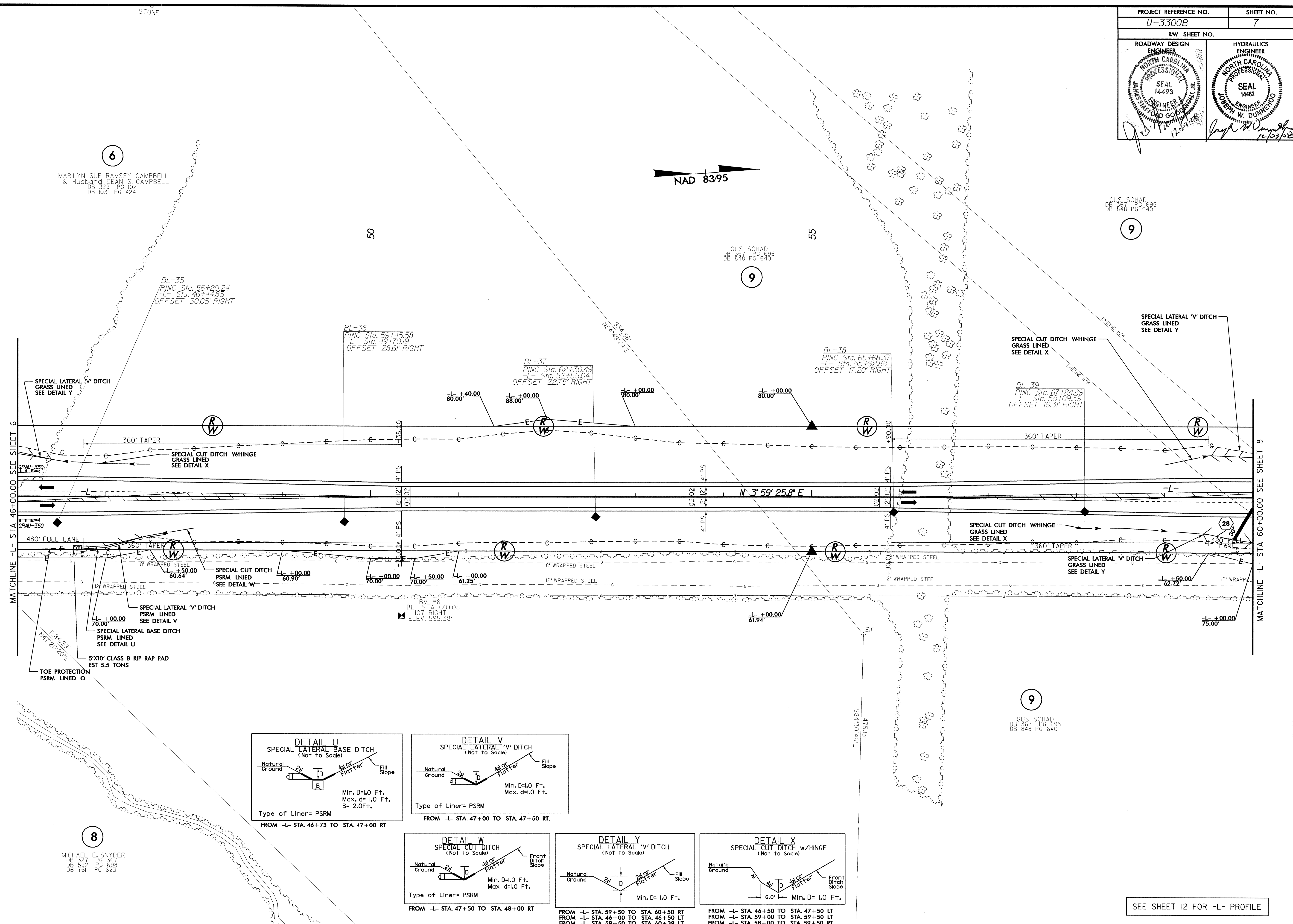
BL-37
PINC Sta. 62+30.49
-L- Sta. 52+55.04
OFFSET 22.75' RIGHT

BL-36
PINC Sta. 59+45.58
-L- Sta. 49+70.19
OFFSET 28.61' RIGHT

BL-35
PINC Sta. 56+20.24
-L- Sta. 46+44.85
OFFSET 30.05' RIGHT

MARILYN SUE RAMSEY CAMPBELL
& Husband DEAN S. CAMPBELL
DB 323 PG 102
DB 1031 PG 424

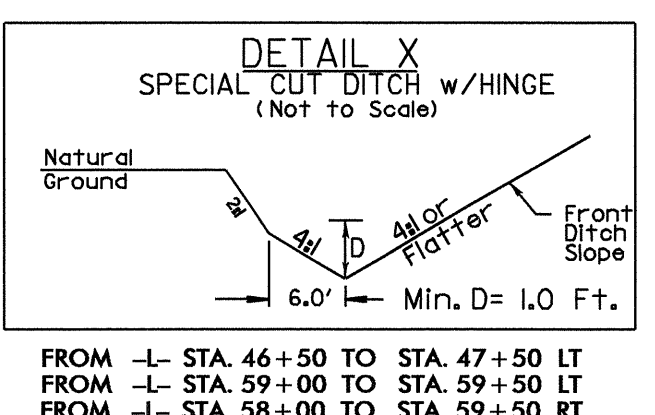
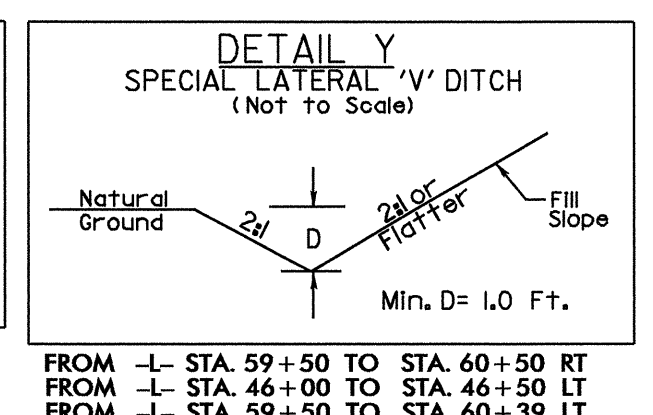
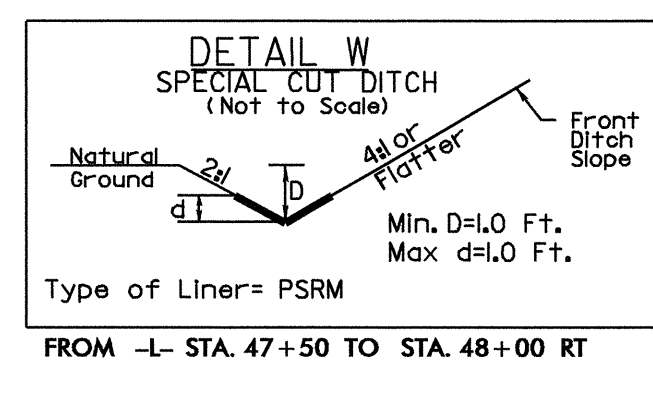
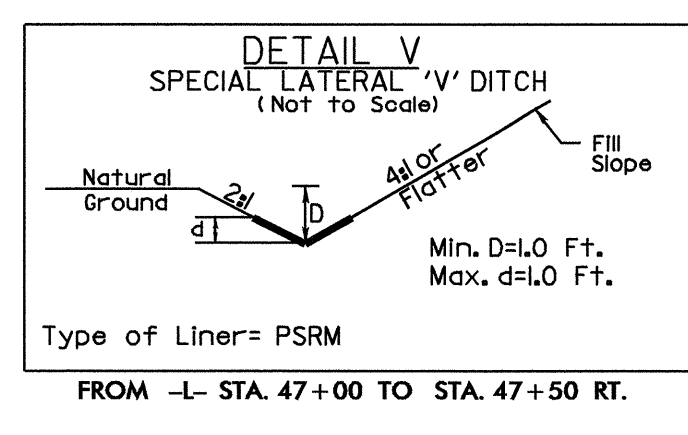
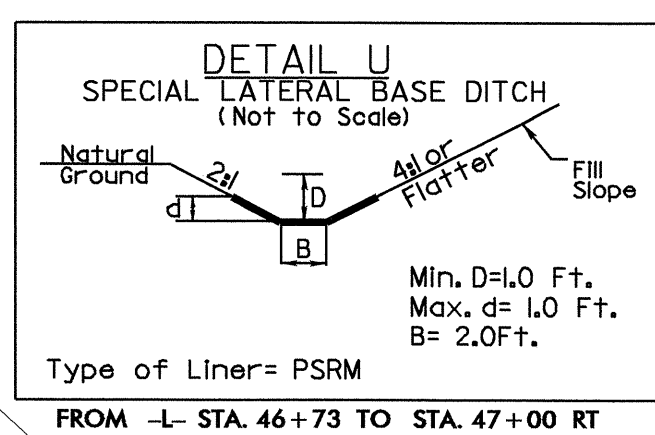
NAD 8395



REVISIONS

MATCHLINE -L- STA. 46+00.00 SEE SHEET 6

MATCHLINE -L- STA. 60+00.00 SEE SHEET 8

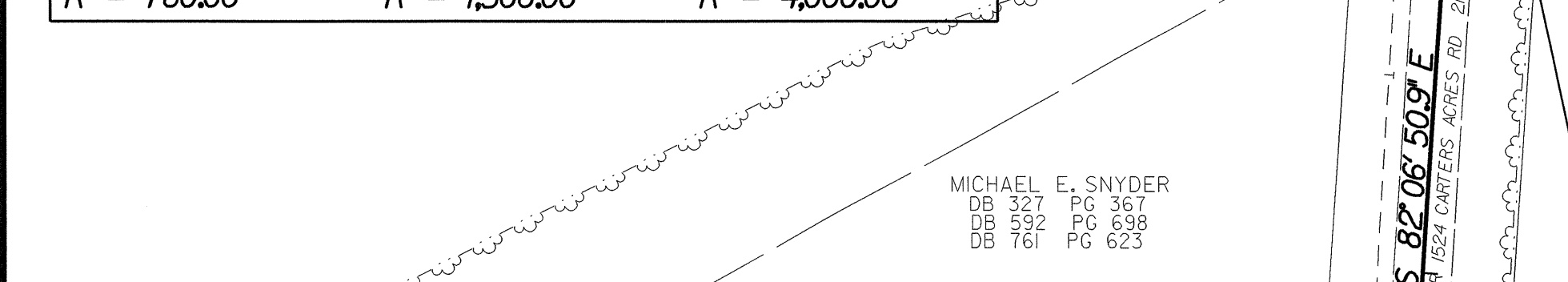
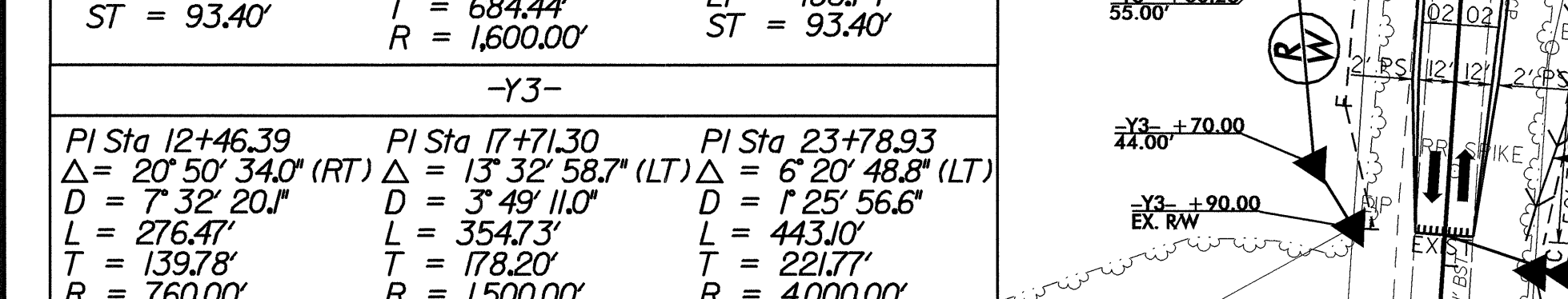
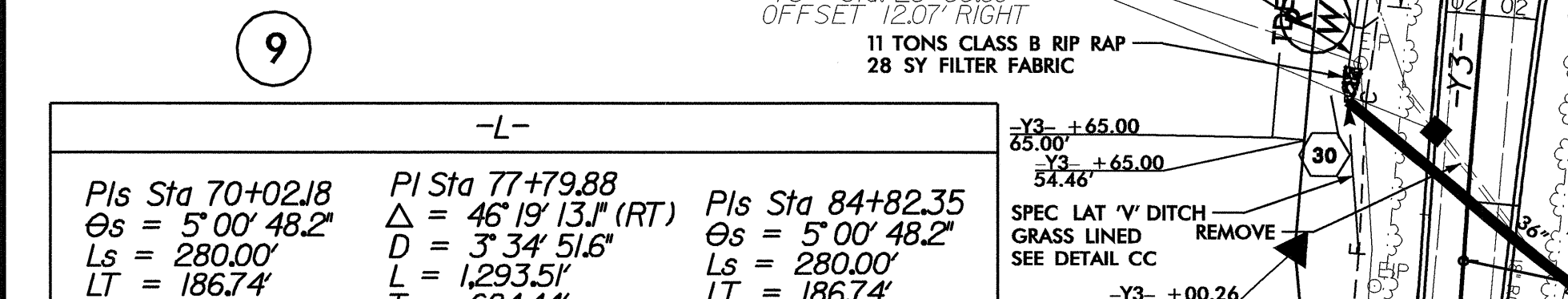
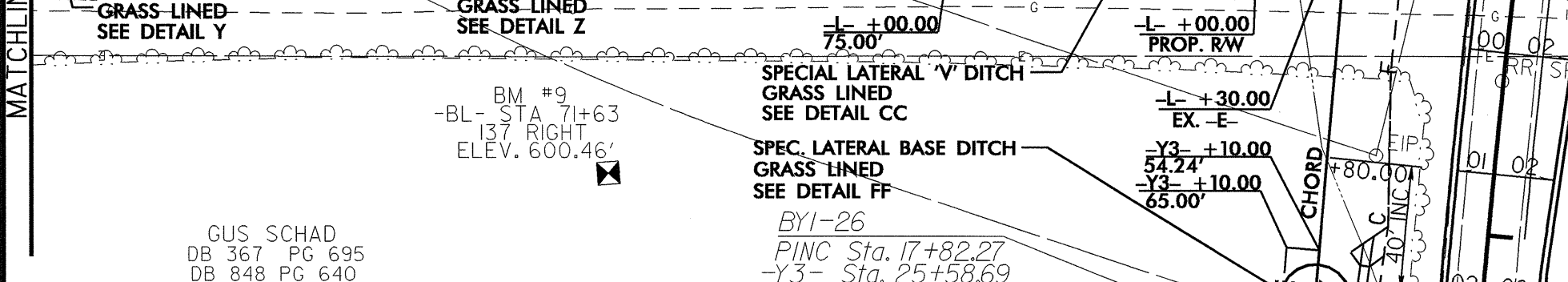
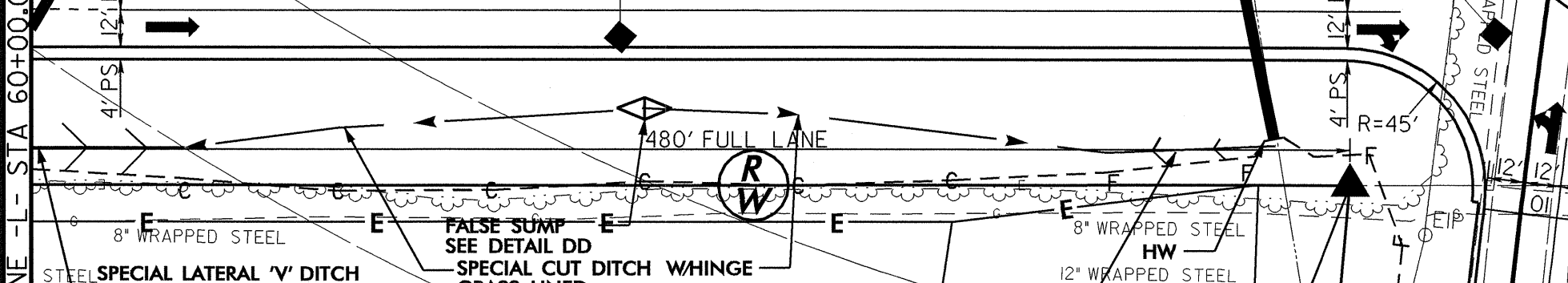
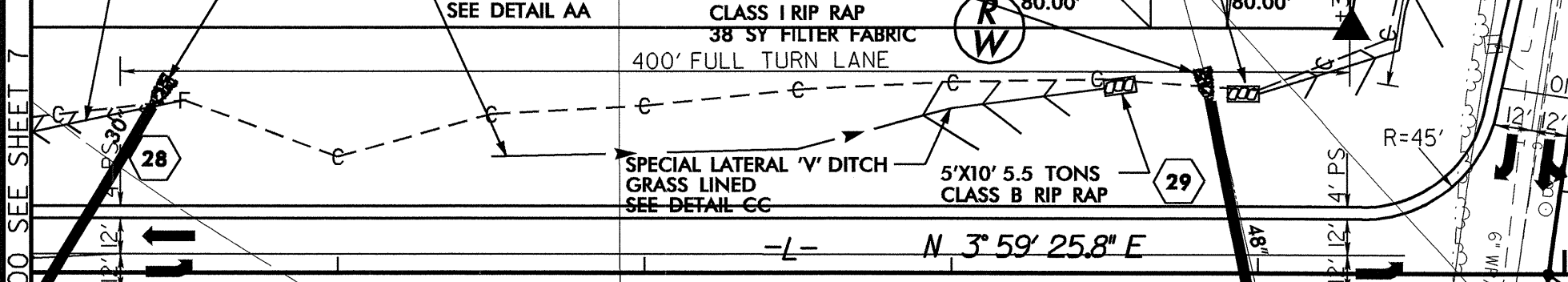
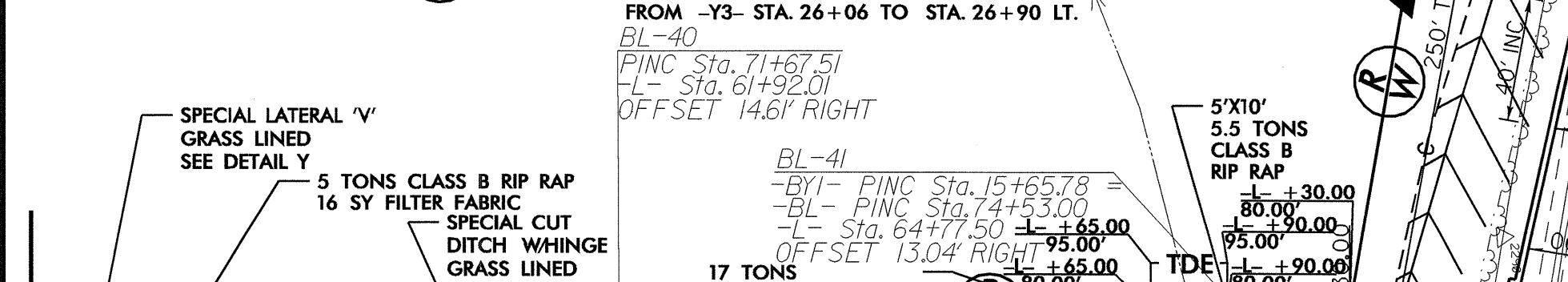
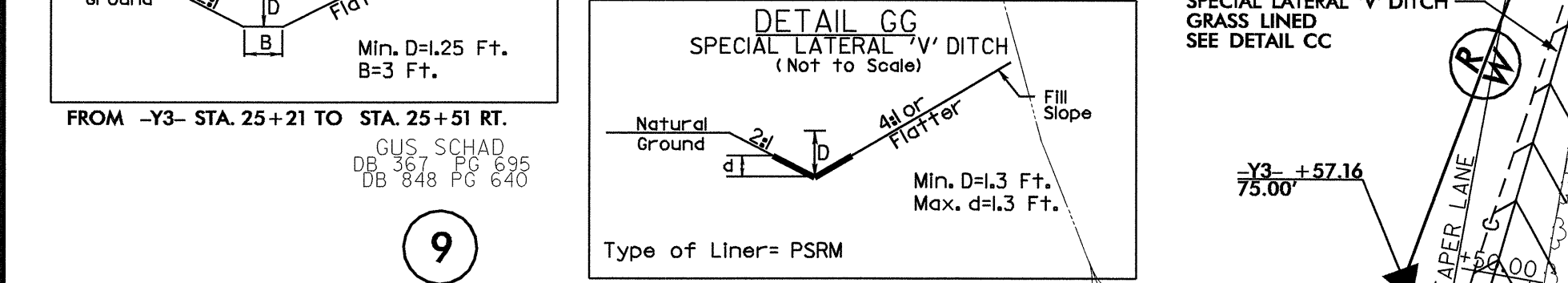
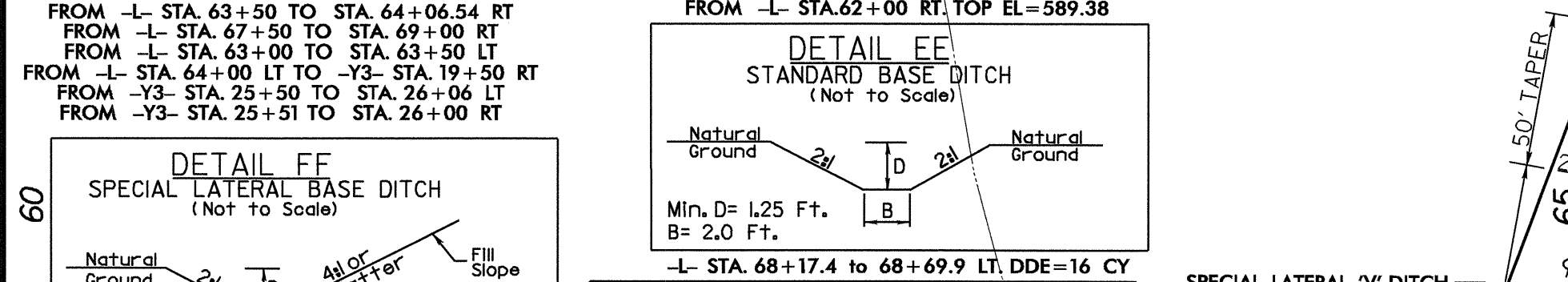
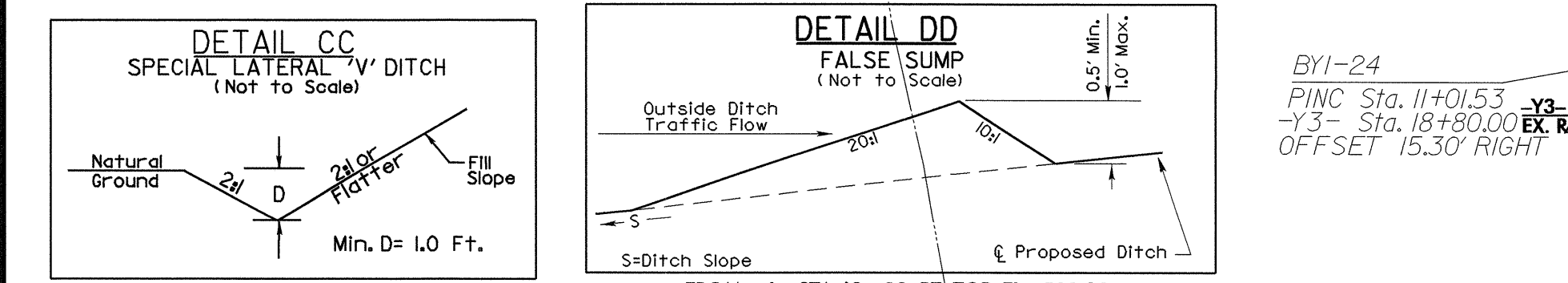
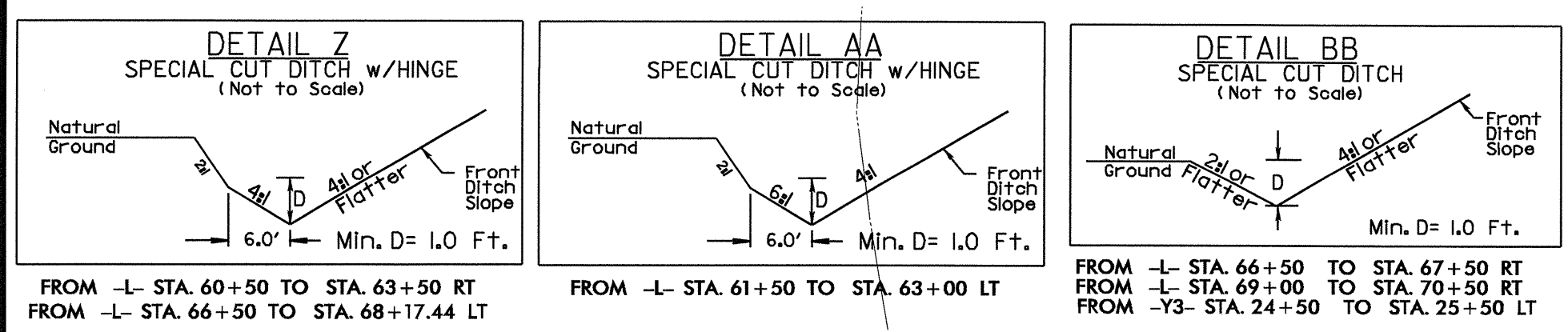


SEE SHEET 12 FOR -L- PROFILE

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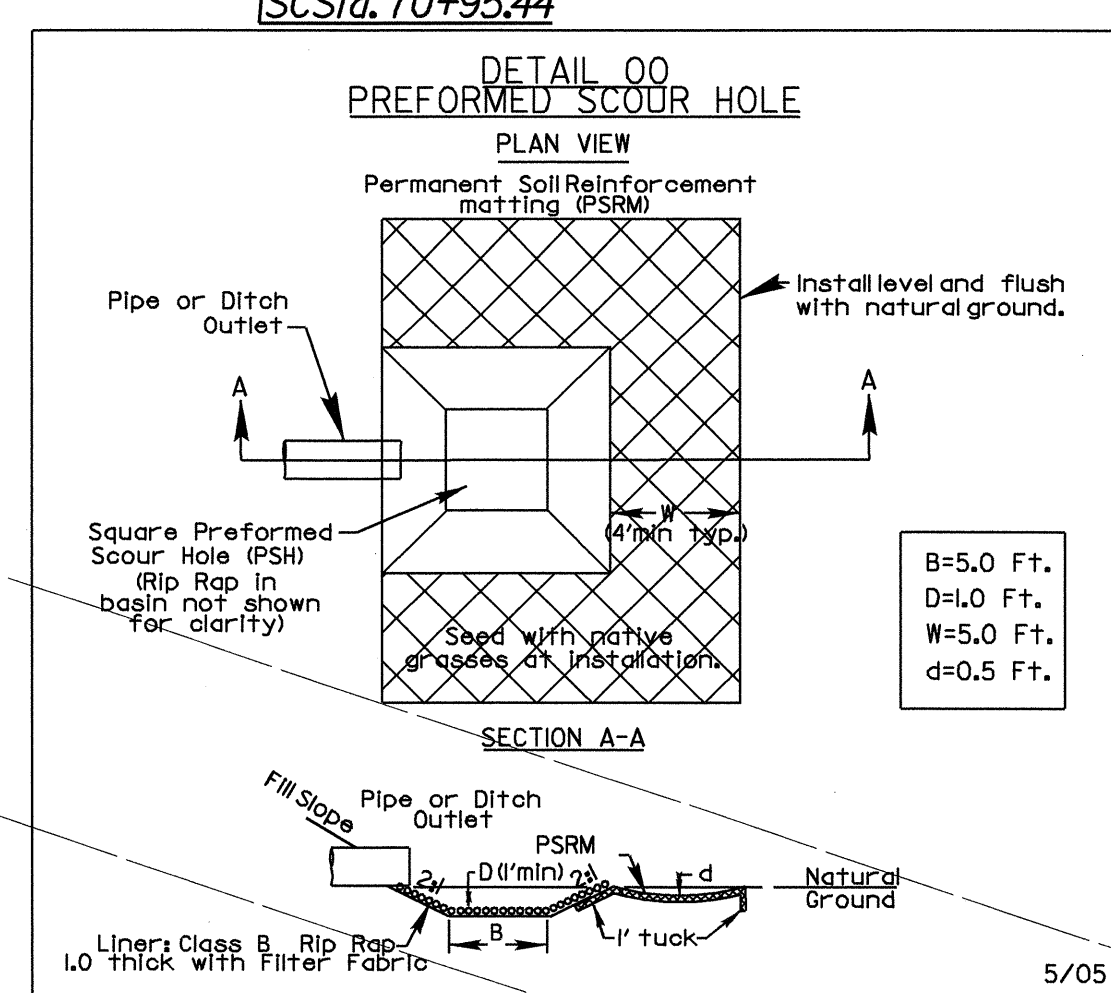
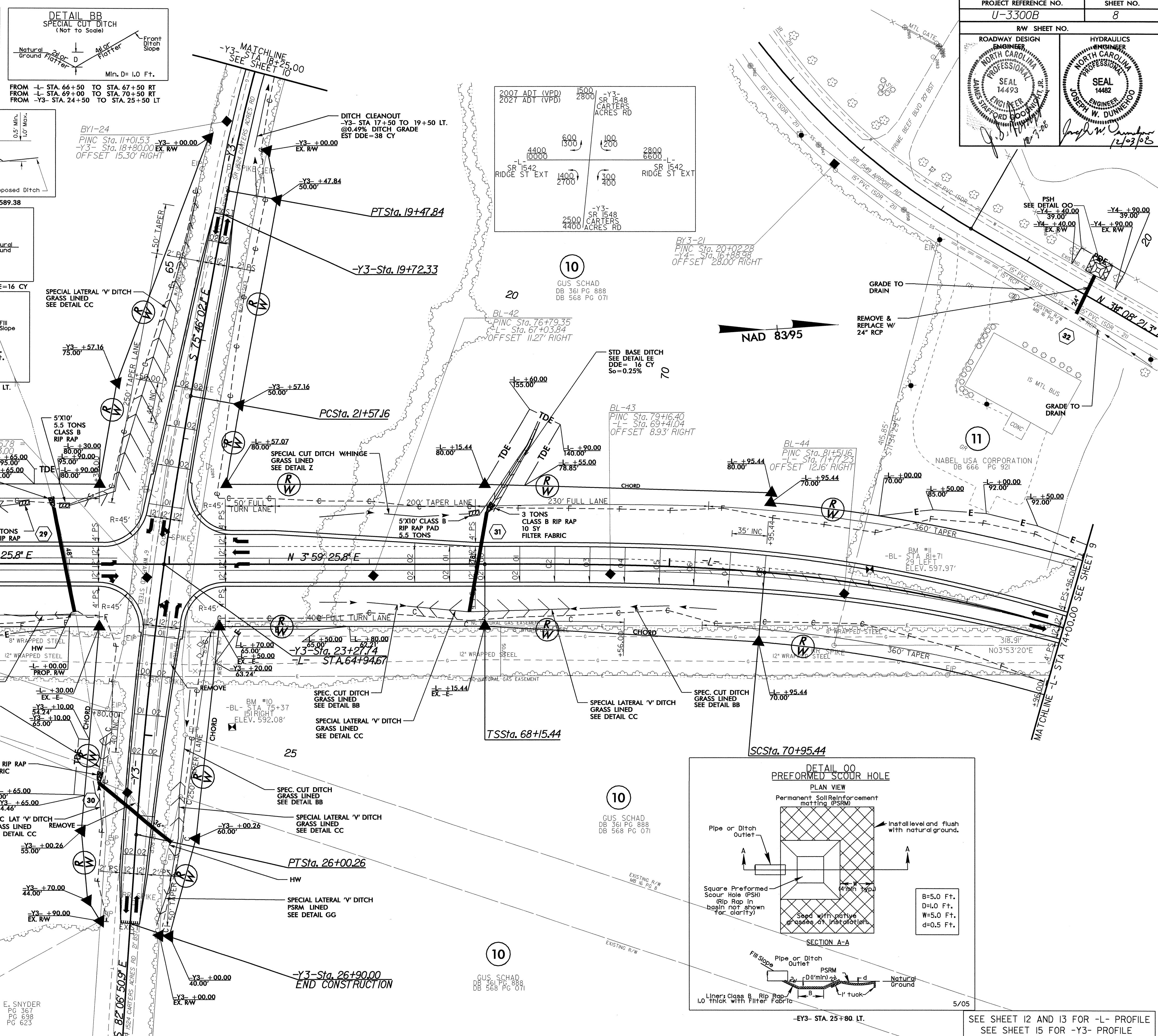
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MICHAEL E. SNYDER
DB 657 PG 383
DB 657 PG 383
DB 761 PG 623



-L-		
Pls Sta 70+02.18	Pi Sta 77+79.88	Pis Sta 84+82.35
Os = 5' 00' 48.2"	Δ = 45' 19' 13.1" (RT)	Os = 5' 00' 48.2"
Ls = 280.00'	D = 3' 34' 51.6"	Ls = 280.00'
LT = 186.74'	L = 1,293.51'	LT = 186.74'
ST = 93.40'	T = 684.44'	ST = 93.40'
R = 1,600.00'		
-Y3-		
Pi Sta 12+46.39	Pi Sta 17+71.30	Pi Sta 23+78.93
Δ = 20' 50' 34.0" (RT)	Δ = 13' 32' 58.7" (LT)	Δ = 6' 20' 48.8" (LT)
D = 7' 32' 20.1"	D = 3' 49' 11.0"	D = 1' 25' 56.6"
L = 276.47'	L = 354.73'	L = 443.10'
T = 139.78'	T = 178.20'	T = 221.77'
R = 760.00'	R = 1,500.00'	R = 4,000.00'

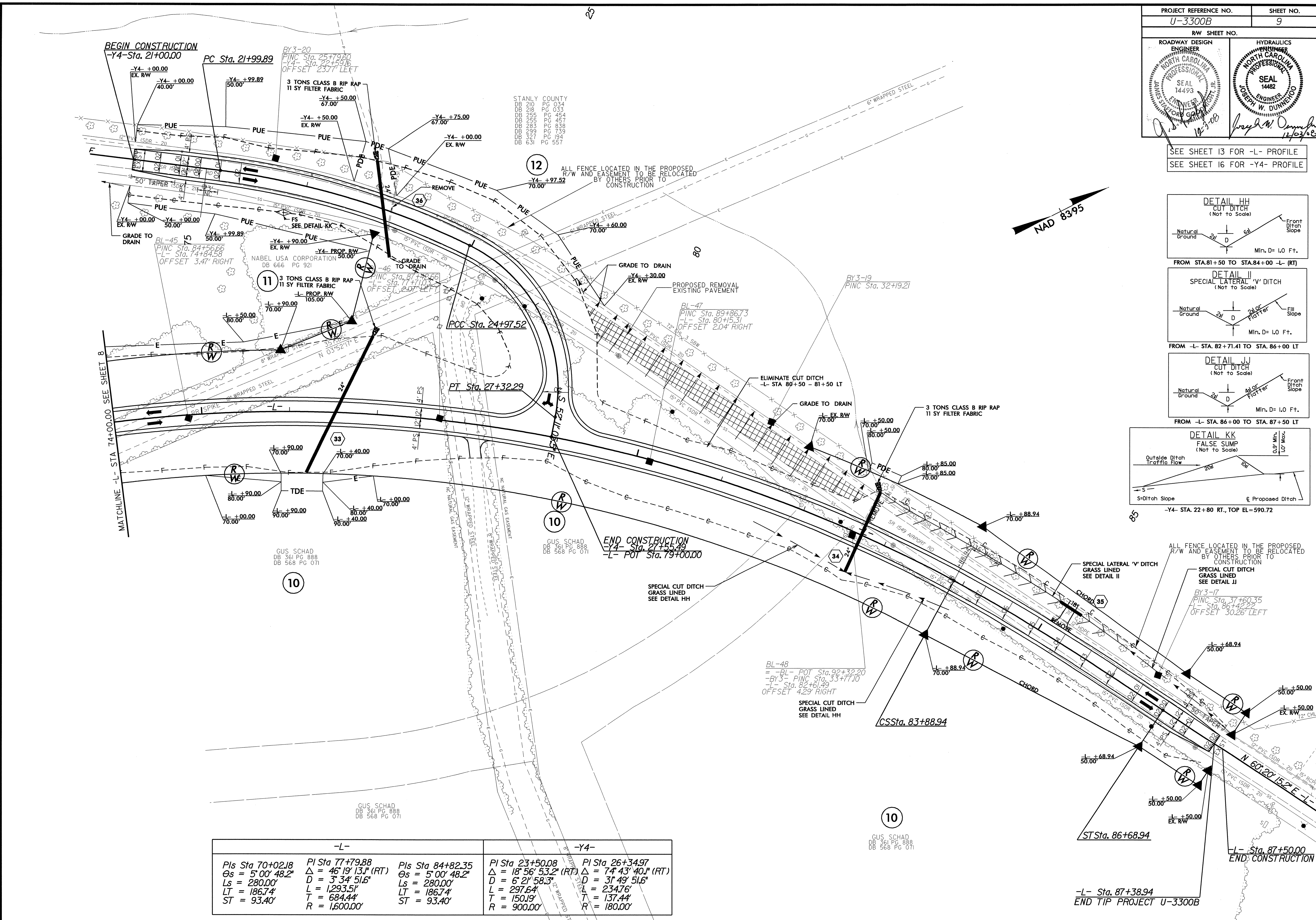
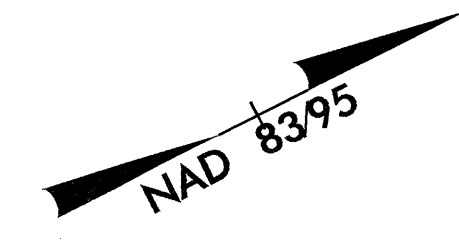
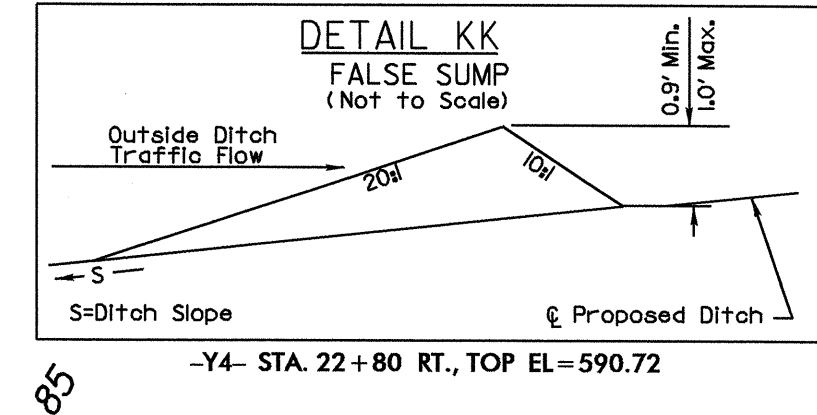
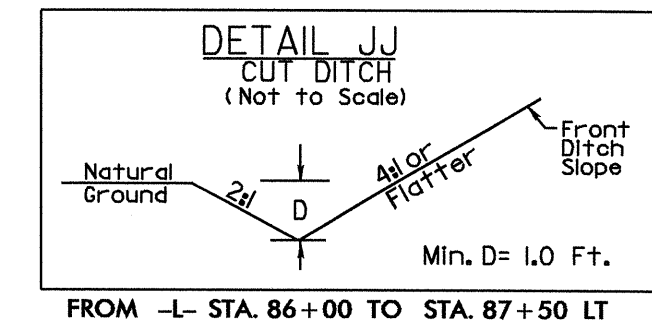
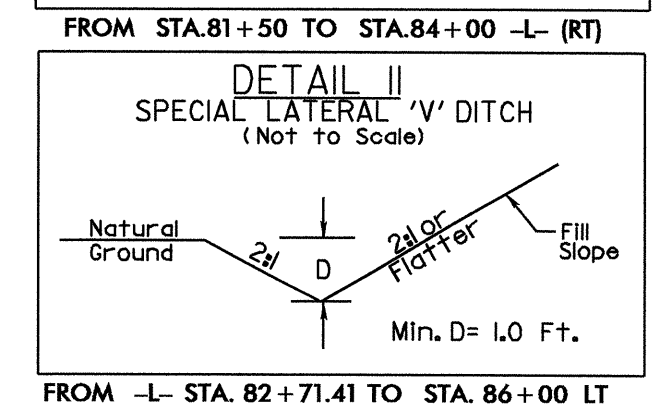
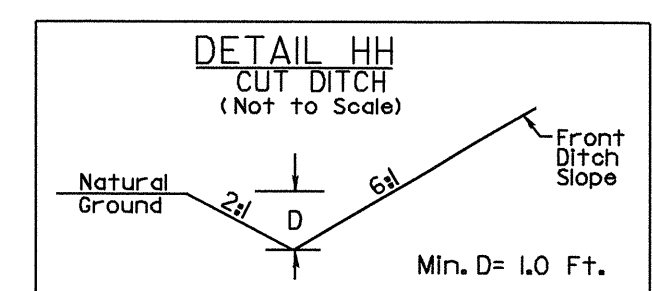
-L-		
Pls Sta 70+02.18	Pi Sta 77+79.88	Pis Sta 84+82.35
Os = 5' 00' 48.2"	Δ = 45' 19' 13.1" (RT)	Os = 5' 00' 48.2"
Ls = 280.00'	D = 3' 34' 51.6"	Ls = 280.00'
LT = 186.74'	L = 1,293.51'	LT = 186.74'
ST = 93.40'	T = 684.44'	ST = 93.40'
R = 1,600.00'		
-Y3-		
Pi Sta 12+46.39	Pi Sta 17+71.30	Pi Sta 23+78.93
Δ = 20' 50' 34.0" (RT)	Δ = 13' 32' 58.7" (LT)	Δ = 6' 20' 48.8" (LT)
D = 7' 32' 20.1"	D = 3' 49' 11.0"	D = 1' 25' 56.6"
L = 276.47'	L = 354.73'	L = 443.10'
T = 139.78'	T = 178.20'	T = 221.77'
R = 760.00'	R = 1,500.00'	R = 4,000.00'



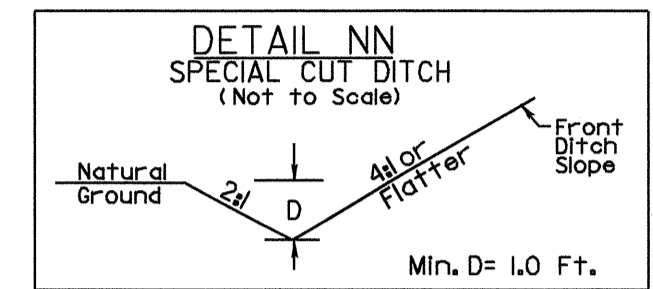
SEE SHEET 12 AND 13 FOR -L- PROFILE
 SEE SHEET 15 FOR -Y3- PROFILE

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 REVISIONS
 03-DEC-2008 09h2
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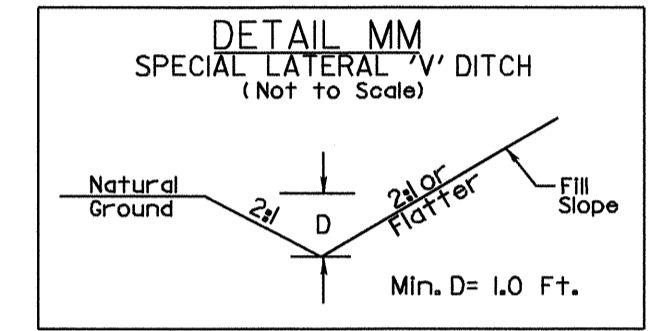
SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 16 FOR -Y4- PROFILE



SEE SHEET 15 FOR -Y3- PROFILE
SEE SHEET 16 FOR -Y4- PROFILE



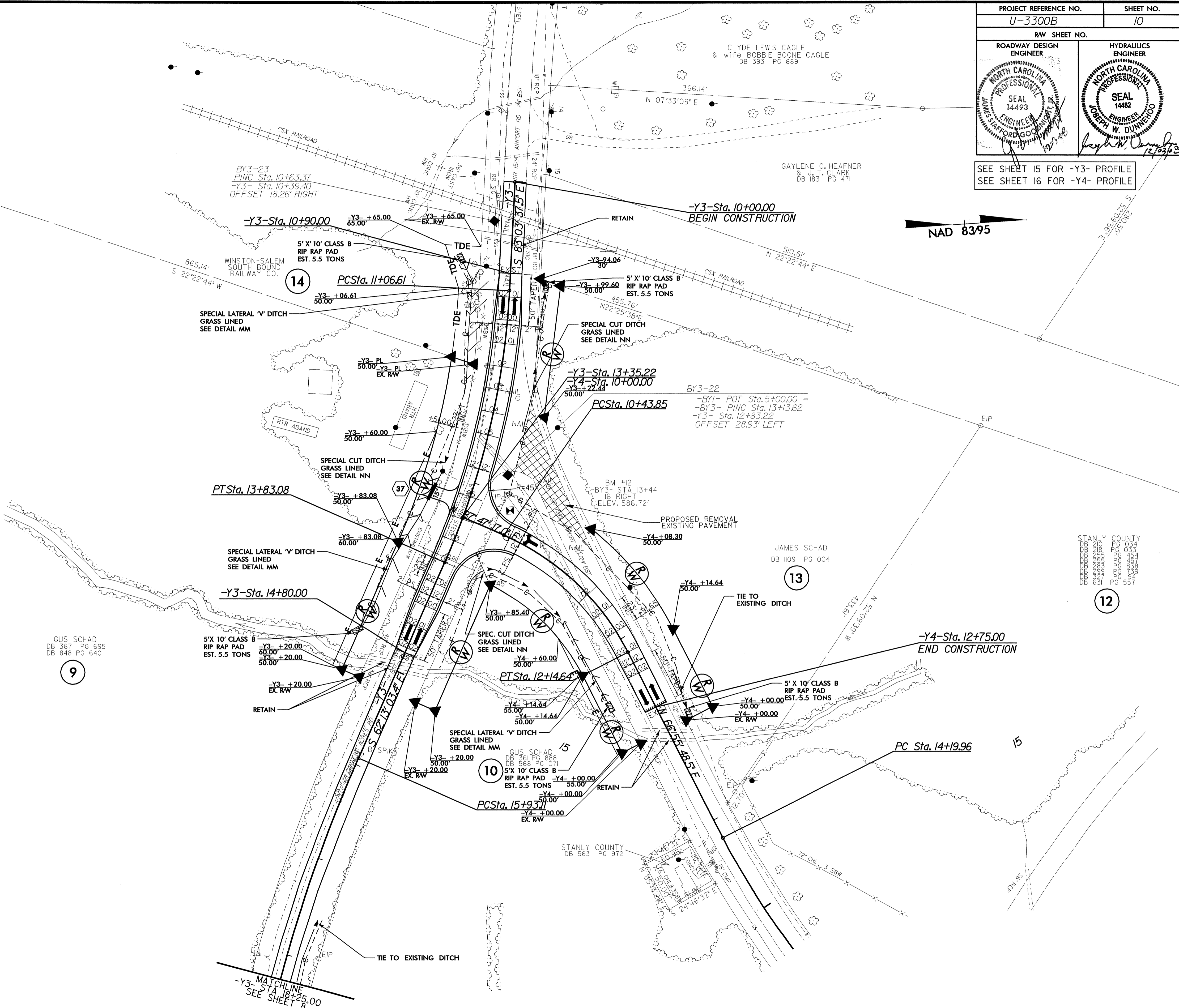
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FROM -Y3- STA. 14+00 LT. TO -Y4- STA. 11+50 RT.
FROM -Y3- STA. 12+50 TO STA. 13+50 RT.



FROM -Y3- STA. 10+76 TO STA. 12+00 RT.
FROM -Y3- STA. 13+50 TO STA. 14+74 RT.
FROM -Y4- STA. 11+50 TO STA. 12+50 RT.

-Y3-	
PI Sta 12+46.39	PI Sta 17+71.30
$\Delta = 20' 50' 34.0''$ (RT)	$\Delta = 13' 32' 58.7''$ (LT)
D = 7' 32' 20.1"	D = 3' 49' 11.0"
L = 276.47'	L = 354.73'
T = 139.78'	T = 178.20'
R = 760.00'	R = 1,500.00'

-Y3-	-Y4-
PI Sta 23+78.93	PI Sta 11+32.73
$\Delta = 6' 20' 48.8''$ (LT)	$\Delta = 39' 08' 31.5''$ (RT)
D = 1' 25' 56.6"	D = 22' 55' 05.9"
L = 443.10'	L = 170.79'
T = 221.77'	T = 88.88'
R = 4,000.00'	R = 250.00'



REVISIONS

8/17/09

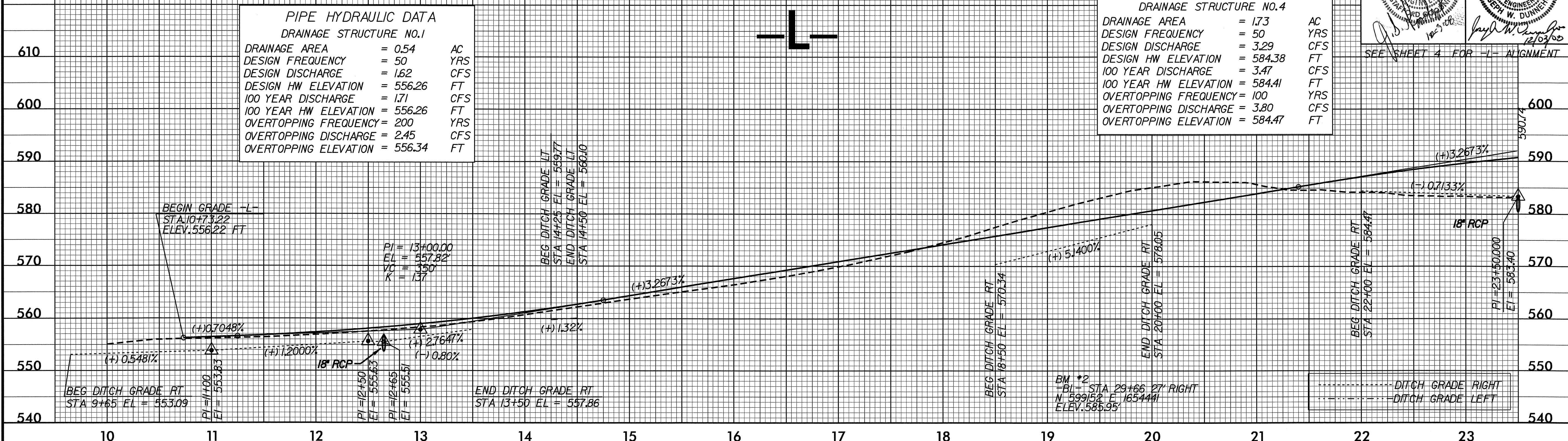
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PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.1

DRAINAGE AREA	= 0.54	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 1.62	CFS
DESIGN HW ELEVATION	= 556.26	FT
100 YEAR DISCHARGE	= 1.71	CFS
100 YEAR HW ELEVATION	= 556.26	FT
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING DISCHARGE	= 2.45	CFS
OVERTOPPING ELEVATION	= 556.34	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.4

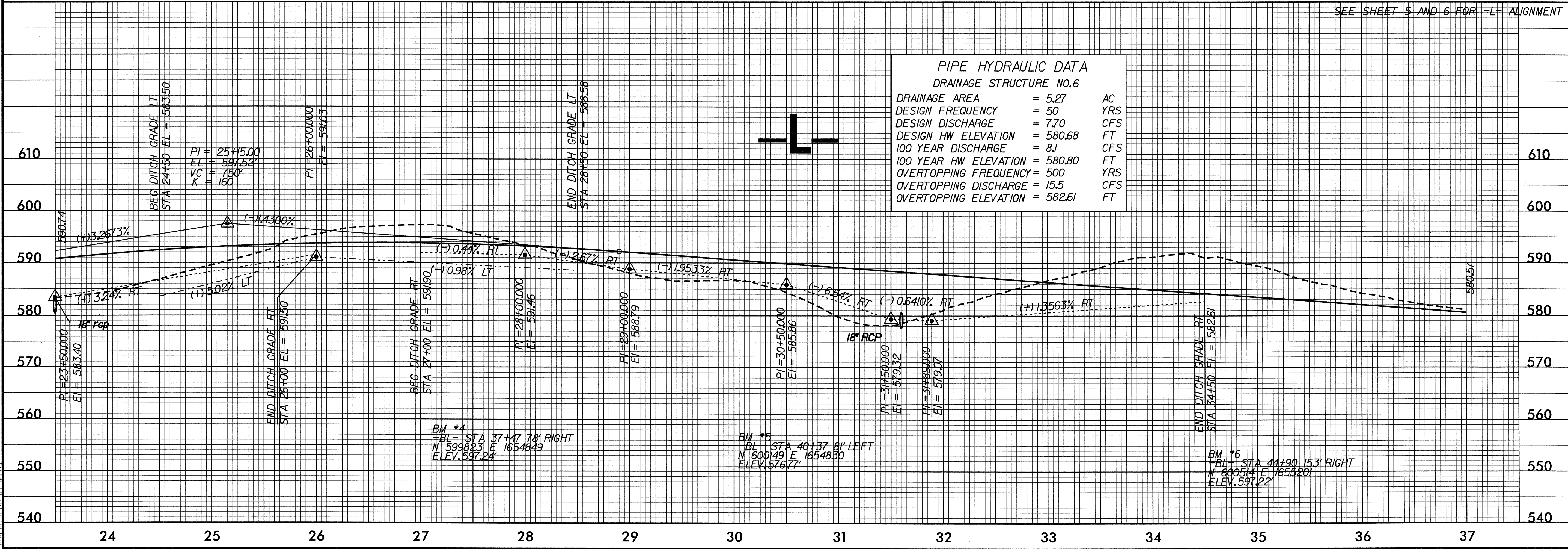
DRAINAGE AREA	= 1.73	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.29	CFS
DESIGN HW ELEVATION	= 584.38	FT
100 YEAR DISCHARGE	= 3.47	CFS
100 YEAR HW ELEVATION	= 584.41	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 3.80	CFS
OVERTOPPING ELEVATION	= 584.47	FT



SEE SHEET 5 AND 6 FOR -L- ALIGNMENT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.6

DRAINAGE AREA	= 5.27	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 7.70	CFS
DESIGN HW ELEVATION	= 580.68	FT
100 YEAR DISCHARGE	= 8.1	CFS
100 YEAR HW ELEVATION	= 580.80	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 15.5	CFS
OVERTOPPING ELEVATION	= 582.61	FT



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.7

DRAINAGE AREA	= 23.05	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 64.75	CFS
DESIGN HW ELEVATION	= 568.91	FT
100 YEAR DISCHARGE	= 75.3	CFS
100 YEAR HW ELEVATION	= 569.47	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 150	CFS
OVERTOPPING ELEVATION	= 576.45	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.8

DRAINAGE AREA	= 2.99	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 14	CFS
DESIGN HW ELEVATION	= 574.63	FT
100 YEAR DISCHARGE	= 15	CFS
100 YEAR HW ELEVATION	= 574.73	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 25	CFS
OVERTOPPING ELEVATION	= 576.23	FT

CULVERT HYDRAULIC DATA

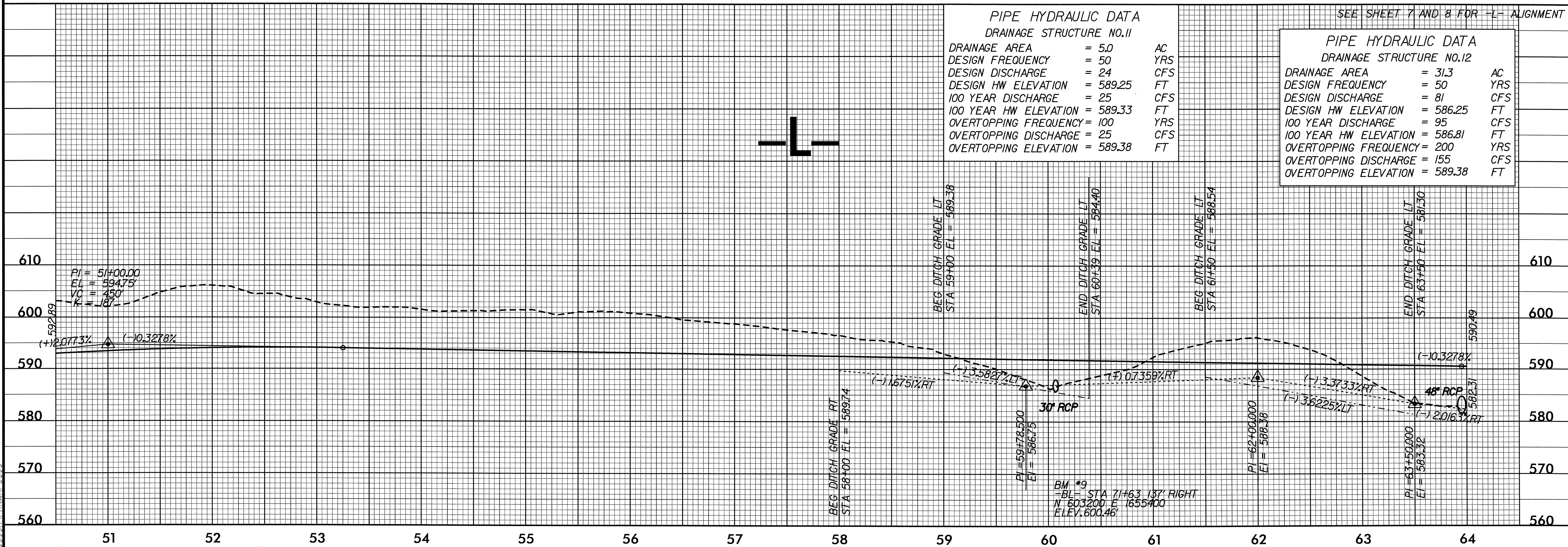
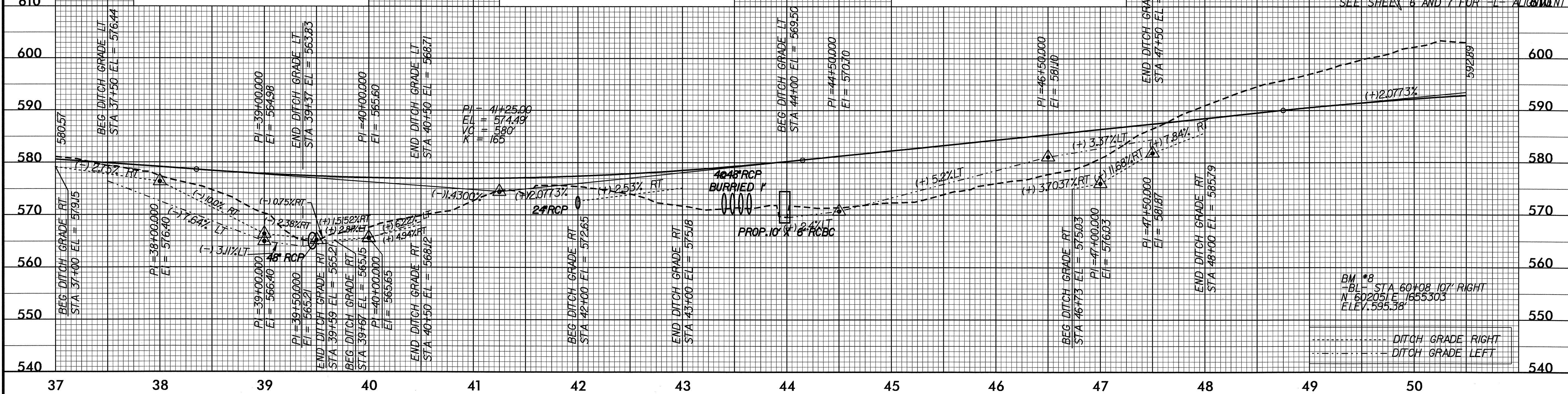
DESIGN DISCHARGE	= 310	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 574.10	FT
BASE DISCHARGE	= 360	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 574.30	FT
OVERTOPPING DISCHARGE	= 750	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 576.25	FT

PROJECT REFERENCE NO. U-3300B SHEET NO. 12

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 14493
JAMES T. FORD

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 14482
JOSEPH W. DUNNELOO

SEE SHEETS 6 AND 7 FOR -L- ALIGNMENT



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.11

DRAINAGE AREA	= 5.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 24	CFS
DESIGN HW ELEVATION	= 589.25	FT
100 YEAR DISCHARGE	= 25	CFS
100 YEAR HW ELEVATION	= 589.33	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 25	CFS
OVERTOPPING ELEVATION	= 589.38	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.12

DRAINAGE AREA	= 31.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 81	CFS
DESIGN HW ELEVATION	= 586.25	FT
100 YEAR DISCHARGE	= 95	CFS
100 YEAR HW ELEVATION	= 586.81	FT
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING DISCHARGE	= 155	CFS
OVERTOPPING ELEVATION	= 589.38	FT

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PIPE HYDRAULIC DATA DRAINAGE STRUCTURE NO.14

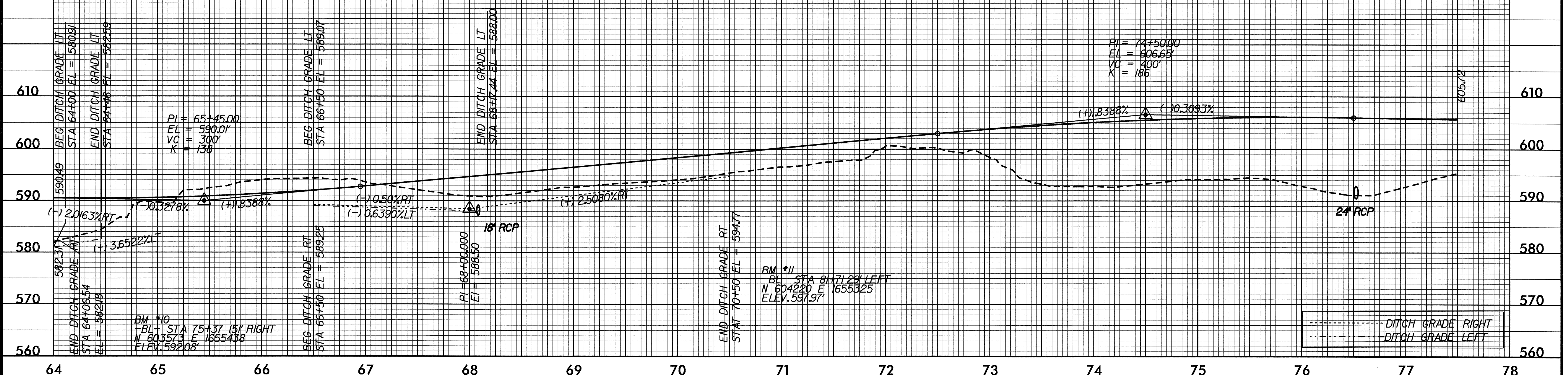
DRAINAGE AREA	= 2.69	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 8.2	CFS
DESIGN HW ELEVATION	= 590.24	FT
100 YEAR DISCHARGE	= 8.8	CFS
100 YEAR HW ELEVATION	= 590.4	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 14.2	CFS
OVERTOPPING ELEVATION	= 592.26	FT

PIPE HYDRAULIC DATA DRAINAGE STRUCTURE NO.15

DRAINAGE AREA	= 5.26	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17	CFS
DESIGN HW ELEVATION	= 593.93	FT
100 YEAR DISCHARGE	= 18	CFS
100 YEAR HW ELEVATION	= 594.03	FT
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING DISCHARGE	= 27	CFS
OVERTOPPING ELEVATION	= 595.33	FT

PROJECT REFERENCE NO.	U-3300B	SHEET NO.	13
ROADWAY DESIGN ENGINEER			
HYDRAULICS ENGINEER			

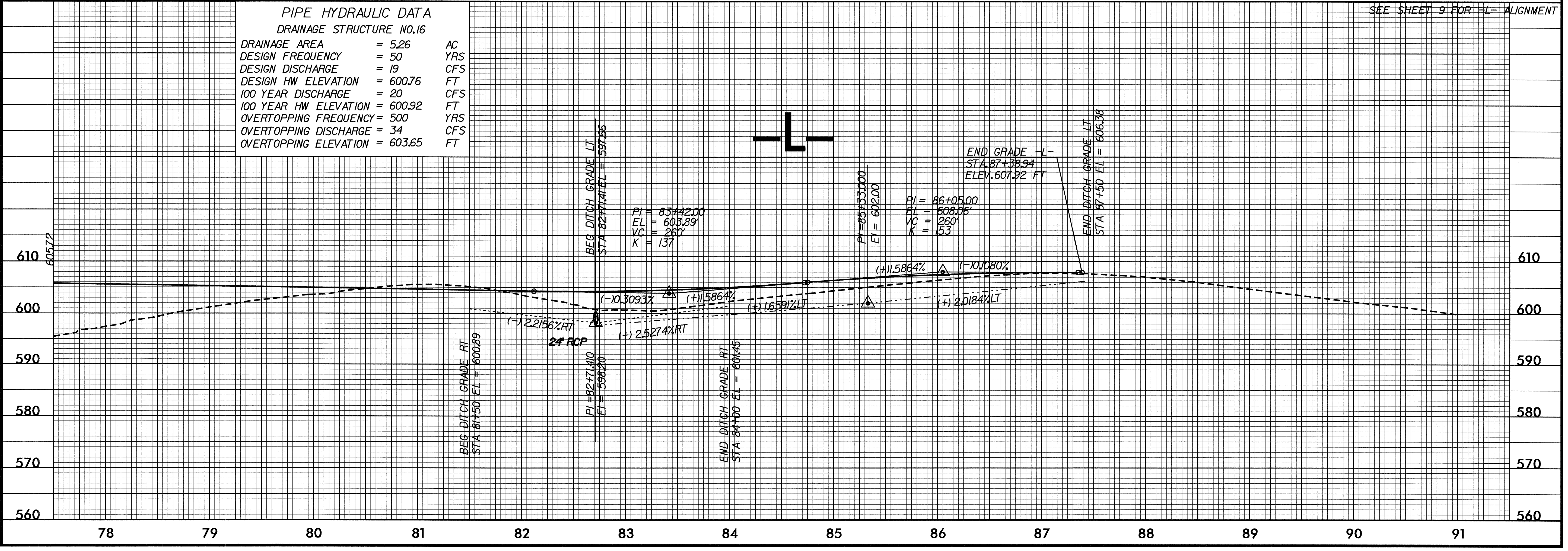
SEE SHEET 8 AND 9 FOR -L- ALIGNMENT



PIPE HYDRAULIC DATA DRAINAGE STRUCTURE NO.16

DRAINAGE AREA	= 5.26	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 19	CFS
DESIGN HW ELEVATION	= 600.76	FT
100 YEAR DISCHARGE	= 20	CFS
100 YEAR HW ELEVATION	= 600.92	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 34	CFS
OVERTOPPING ELEVATION	= 603.65	FT

SEE SHEET 9 FOR -L- ALIGNMENT

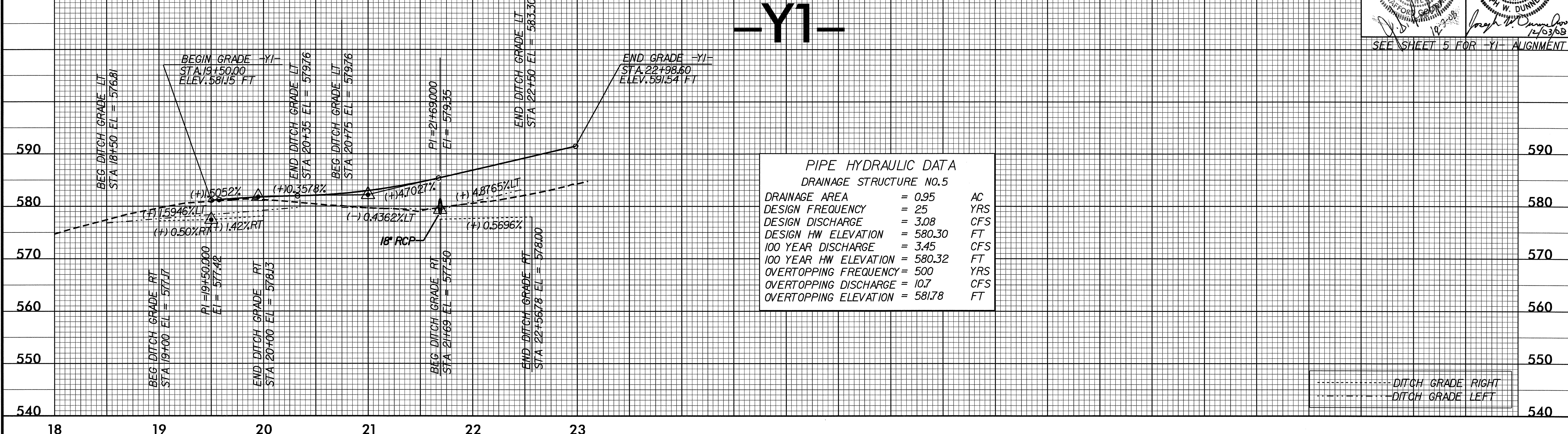


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BM #3
BY 2 - STA 17+50.35 RIGHT
N 600424 E 1654242
ELEV. 559.46'

PI = 19+95.00
EL = 581.82'
VC = 75'
K = 65

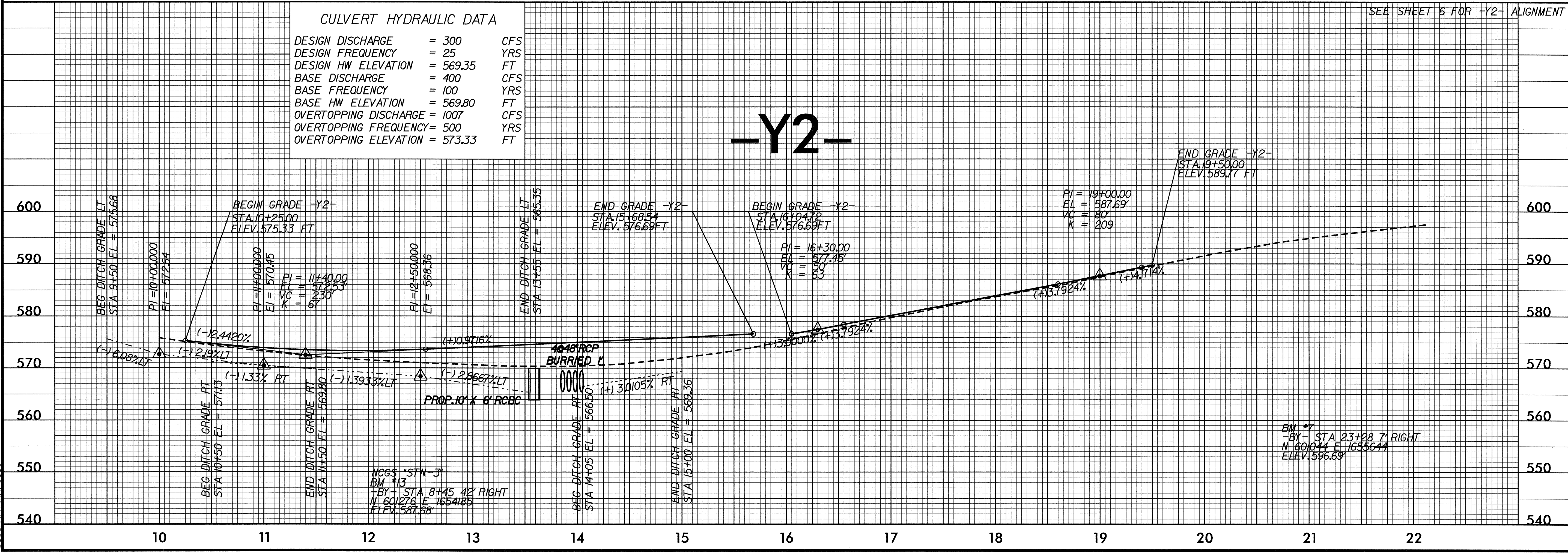
PI = 21+00.00
EL = 582.20'
VC = 135'
K = 31



----- DITCH GRADE RIGHT
----- DITCH GRADE LEFT

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 300	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 569.35	FT
BASE DISCHARGE	= 400	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 569.80	FT
OVERTOPPING DISCHARGE	= 1007	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 573.33	FT



BM #7
BY - STA 23+28.71 RIGHT
N 601044 E 1655644
ELEV. 596.69'

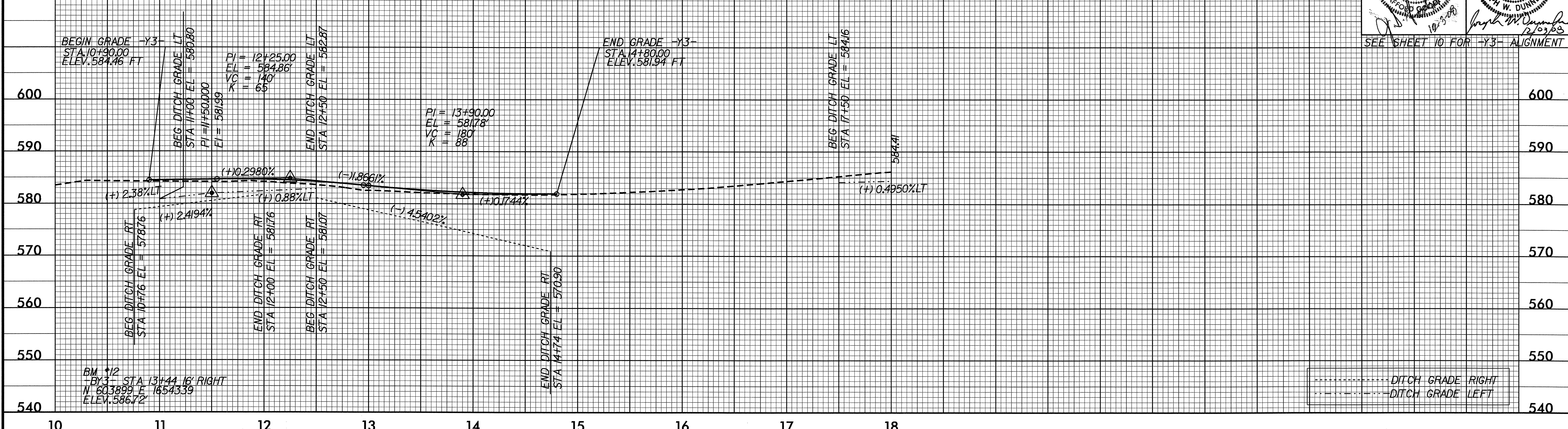
SEE SHEET 6 FOR -Y2- ALIGNMENT

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PROJECT REFERENCE NO. U-3300B	SHEET NO. 15
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14493 JAMES STAFFORD SMITH	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14482 JOSEPH W. DUNNELOO
SEE SHEET 10 FOR -Y3- ALIGNMENT	

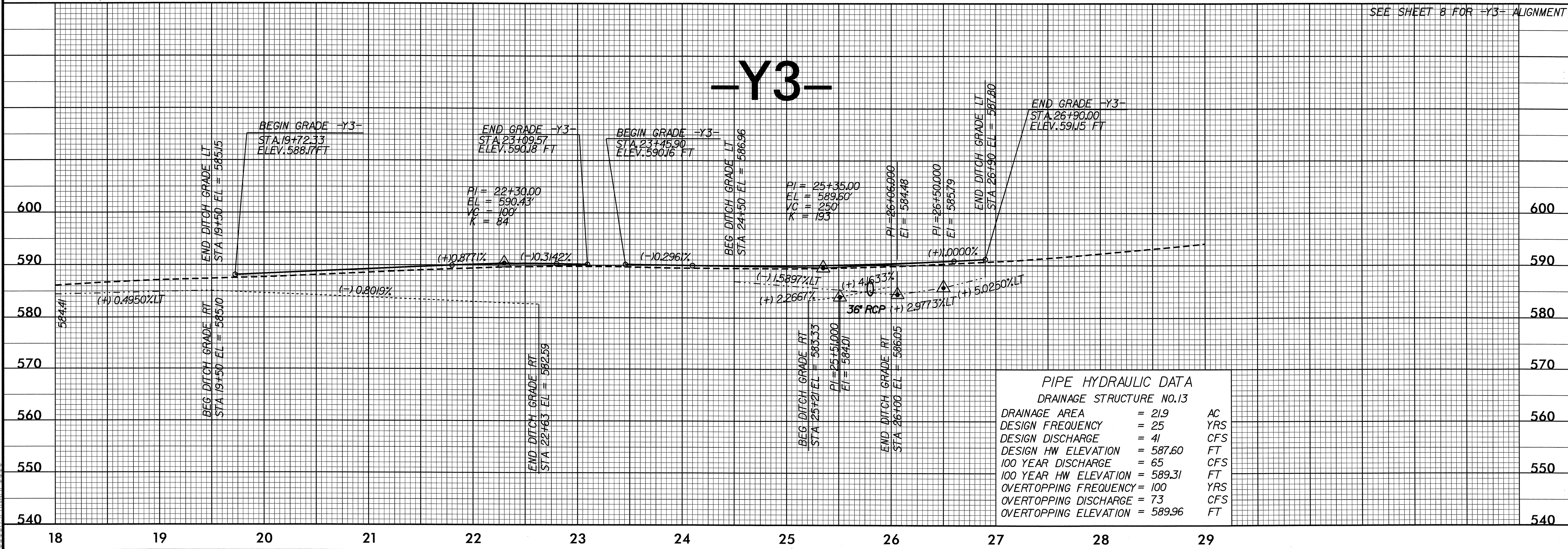
-Y3-



----- DITCH GRADE RIGHT
 ----- DITCH GRADE LEFT

SEE SHEET 8 FOR -Y3- ALIGNMENT

-Y3-



PIPE HYDRAULIC DATA DRAINAGE STRUCTURE NO.13		
DRAINAGE AREA	= 21.9	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 41	CFS
DESIGN HW ELEVATION	= 587.60	FT
100 YEAR DISCHARGE	= 65	CFS
100 YEAR HW ELEVATION	= 589.31	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 73	CFS
OVERTOPPING ELEVATION	= 589.96	FT

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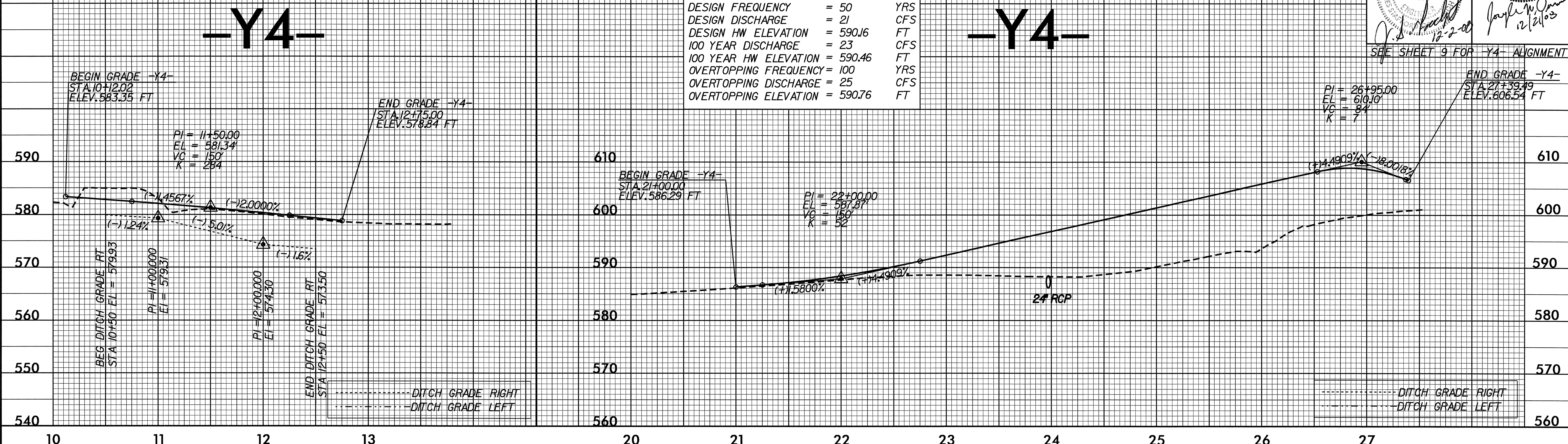
SEE SHEET 10 FOR -Y4- ALIGNMENT

PROJECT REFERENCE NO. U-3300B	SHEET NO. 16
ROADWAY DESIGN ENGINEER	SEAL 14482 JOSEPH W. DUNNELOO

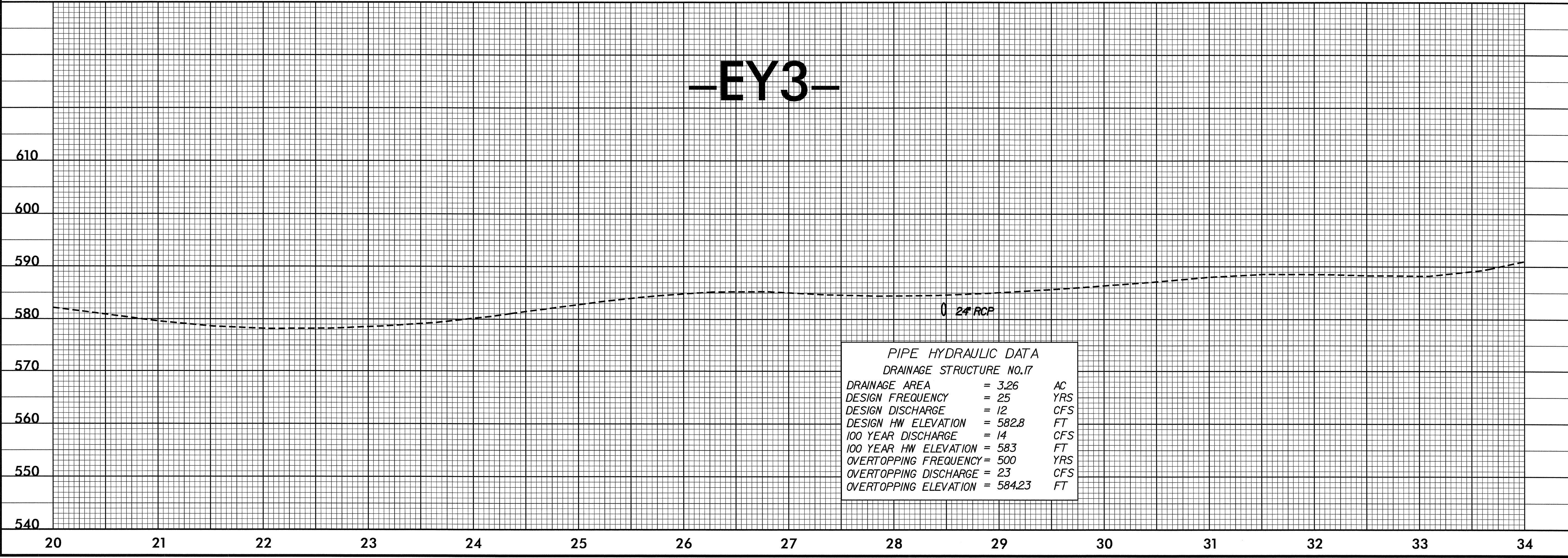
12-2-00

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.36

DRAINAGE AREA	= 6.99	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 21	CFS
DESIGN HW ELEVATION	= 590.16	FT
100 YEAR DISCHARGE	= 23	CFS
100 YEAR HW ELEVATION	= 590.46	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 25	CFS
OVERTOPPING ELEVATION	= 590.76	FT



-EY3-



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.17

DRAINAGE AREA	= 3.26	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 12	CFS
DESIGN HW ELEVATION	= 582.8	FT
100 YEAR DISCHARGE	= 14	CFS
100 YEAR HW ELEVATION	= 583	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 23	CFS
OVERTOPPING ELEVATION	= 584.23	FT

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