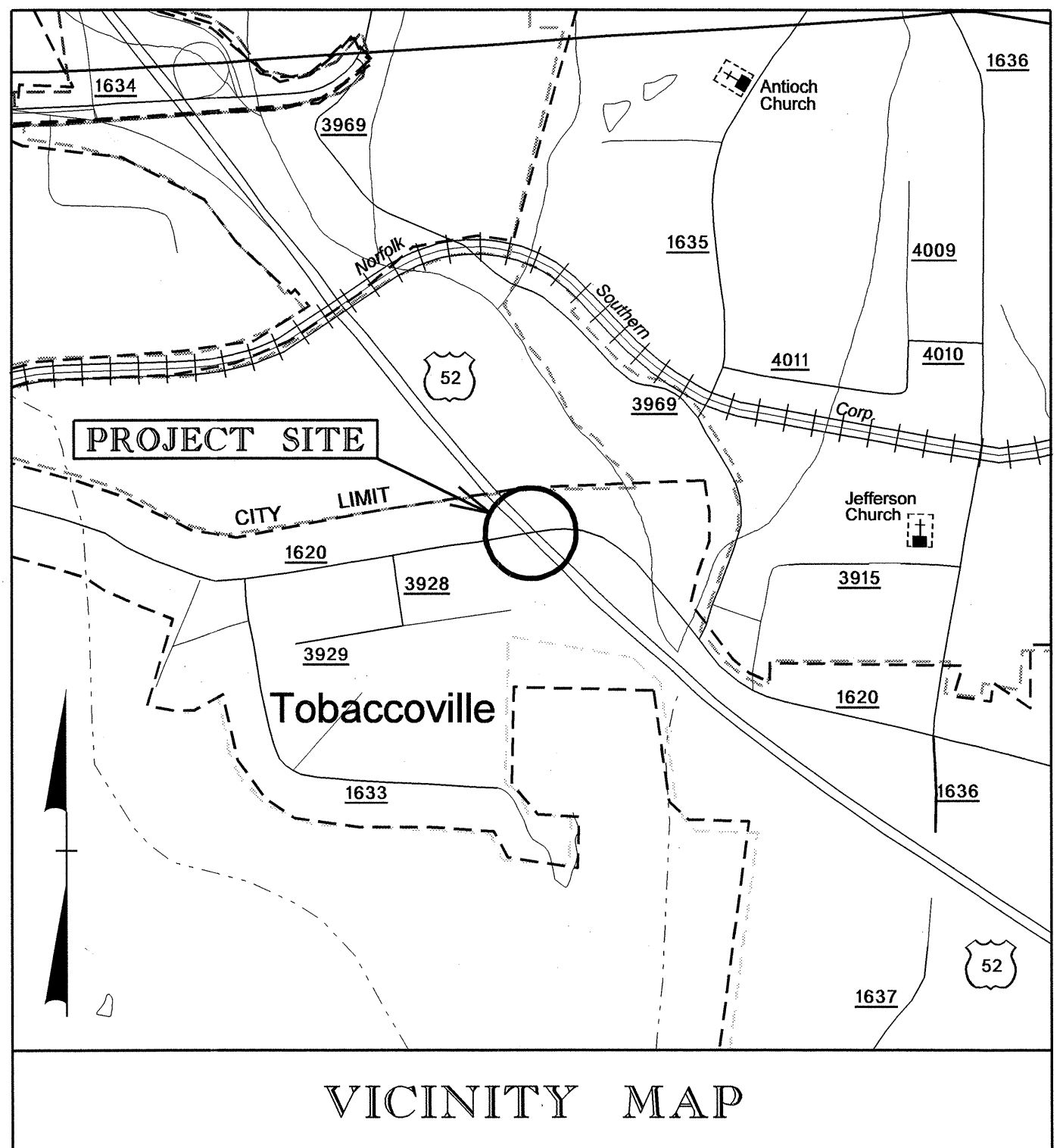


09/208/99

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

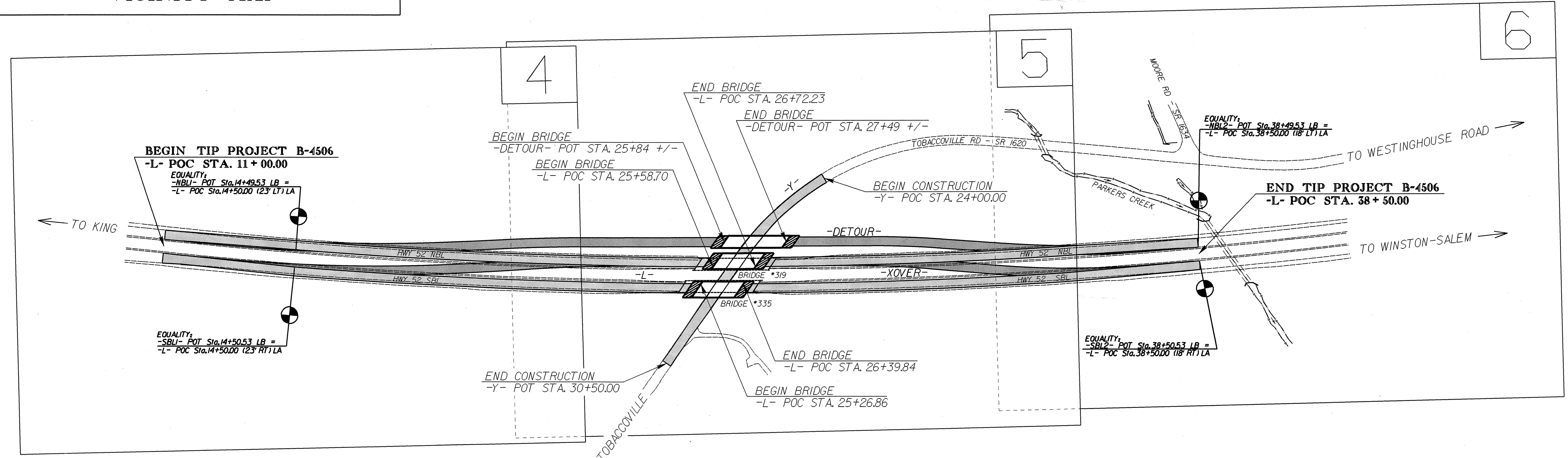
LOCATION: BRIDGES NO. 319 & NO. 335 ON US 52
OVER SR 1620 (TOBACCOVILLE RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURES

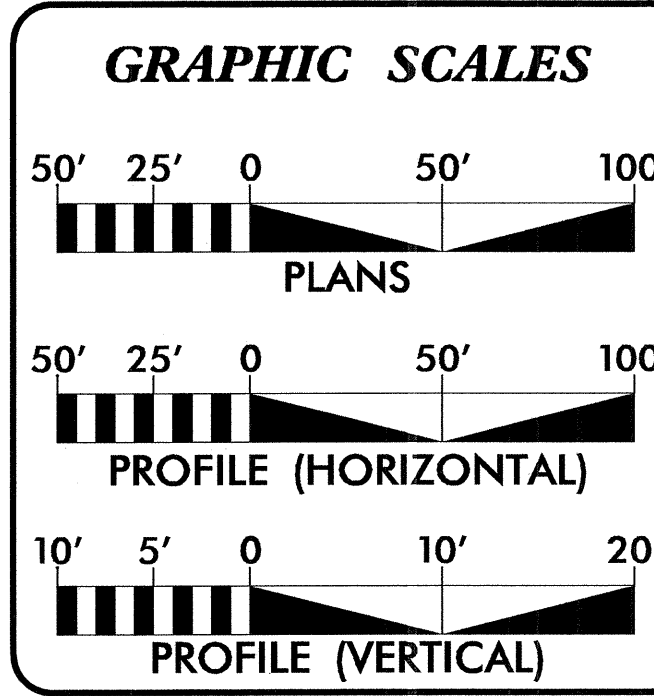
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4506	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38395.1.1	BRNHS-52(24)	PE	
38395.2.1	BRNHS-52(24)	RW & UTIL.	
38395.3.1	BRNHS-0052(24)	CONST.	

TIP PROJECT: B-4506

CONTRACT: C202812



NOTE: THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.



DESIGN DATA

ADT 2012 =	65,400
ADT 2032 =	109,400
DHV =	10 %
D =	60 %
T =	16 % *
V =	70 MPH
V (DETOUR) =	55 MPH
* TTST 10 %	DUAL 6 %
STATEWIDE TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4506 =	0.499 MI.
LENGTH STRUCTURE TIP PROJECT B-4506 =	0.022 MI.
TOTAL LENGTH OF TIP PROJECT B-4506 =	0.521 MI.

Prepared in the Office of:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	APRIL 15, 2011
LETTING DATE:	APRIL 17, 2012
	REKHA PATEL, P.E. PROJECT ENGINEER
	MICHAEL W. LITTLE, P.E. PROJECT DESIGN ENGINEER

HYDRAULICS

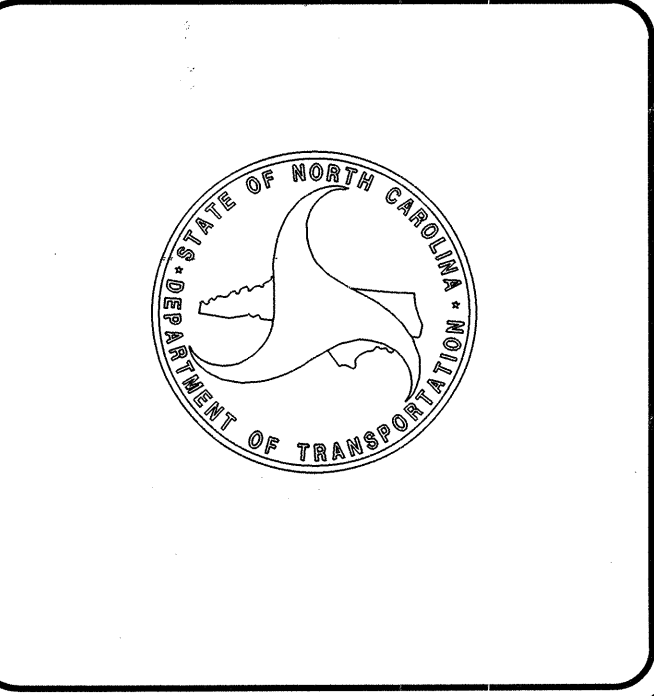
PAUL ATKINSON
SEAL 19680
2/3/12
ENGINEER

SIGNATURE: _____

ROADWAY DESIGN ENGINEER

MICHAEL W. LITTLE
SEAL 22661
ENGINEER

SIGNATURE: *Michael W. Little*



20-JAN-2012 08:52
r:\roadway\proj\b4506_rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

INDEX OF SHEETS SHEET SHEET NUMBER SHEET 1 TITLE SHEET 1-A INDEX OF SHEETS, GENERAL NOTES AND LIST OF STANDARD DRAWINGS 1-B CONVENTIONAL SYMBOLS 1-C SURVEY CONTROL SHEET 1-D RIGHT-OF-WAY COORDINATE SHEET 2 THRU 2-C TYPICAL SECTIONS 2-D DRAINAGE DETAILS 2-E DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX (MANHOLE OPTIONAL) 2-F DETAIL TO CONVERT EXISTING CATCH BASIN OR JUNCTION BOX TO DROP INLET 2-G DETAIL OF EXISTING FOOTING 3 SUMMARY OF QUANTITIES 3-A THRU 3-B LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER) 3-C SUMMARIES OF GUARDRAIL AND TEMPORARY GUARDRAIL 3-D SUMMARIES SHOULDER BERM GUTTER, 2'-6" CURB AND GUTTER AND CABLE GUIDERAIL 3-E SUMMARY OF PAVEMENT REMOVAL 3-F SUMMARY OF EARTHWORK 3-G PARCEL INDEX SHEET 4 THRU 9 PLAN SHEETS 10 THRU 16 PROFILE SHEETS TMP-1 THRU TMP-21 TRANSPORTATION MANAGEMENT PLANS PMP-1 THRU PMP-2 PAVEMENT MARKING PLANS EC-1 THRU EC-15 EROSION CONTROL PLANS SIGN-1 THRU SIGN-5 SIGNING PLANS UC-1 THRU UC-3 UTILITY CONSTRUCTION PLANS UD-1 THRU UD-2 UTILITIES BY OTHERS PLANS XS-INDEX CROSS-SECTION INDEX SHEET X-1A THRU X-1B CROSS-SECTION SUMMARY SHEET X-1 THRU X-36 CROSS-SECTIONS S-1 THRU S-52 STRUCTURE PLANS

GENERAL NOTES: 2012 SPECIFICATIONS EFFECTIVE: 01-17-12 REVISED: 08/31/11 GRADING AND SURFACING OR RESURFACING AND WIDENING: THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN. CLEARING: CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III. SUPERELEVATION: ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. SHOULDER CONSTRUCTION: ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01 AND NO. 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 WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7. 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 DUKE - POWER AT&T - TELEPHONE, WINDSTREAM TELEPHONE, PIEDMONT NATURAL GAS ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS. RIGHT-OF-WAY MARKERS: ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

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 225.04 Method of Obtaining Superelevation - Two Lane Pavement 225.05 Method of Obtaining Superelevation - Divided Highways 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 654.01 Pavement Repairs 665.01 Asphalt Shoulders - Milled Rumble Strips DIVISION 7 - CONCRETE PAVEMENTS AND SHOULDERS 700.01 Concrete Pavement Joints - Construction and Contraction Joints 700.03 Dowel Assembly 700.04 Concrete Pavement Header Board 700.05 Tying Proposed Pavement to Existing 710.01 Concrete Pavement - Station Marking DIVISION 8 - INCIDENTALS 806.01 Concrete Right-of-Way Marker 806.02 Granite Right-of-Way Marker 815.03 Pipe Underdrain and Blind Drain 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 840.17 Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe 840.18 Concrete Grated Drop Inlet Type 'B' - 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 840.31 Concrete Junction Box - 12" thru 66" Pipe 840.32 Brick Junction Box - 12" thru 66" Pipe 840.45 Precast Drainage Structure 840.52 Precast Manhole - 4', 5' and 6' Diameter 840.53 Precast Manhole with Masonry Base - 12" thru 42" Pipe 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 850.01 Concrete Paved Ditches 850.10 Guide for Berm Drainage Outlet - 15" and 18" Pipe 850.11 Guide for Berm Drainage Outlet - 24" and 30" Pipe 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



Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	⊗
Property Monument	□ ECM
Parcel/Sequence Number	⑩ 23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	WLB
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB
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	⊙ W
Small Mine	⊗
Foundation	□
Area Outline	□
Cemetery	⊕
Building	□
School	⊕
Church	⊕
Dam	⊕

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	WLB
Proposed Lateral, Tail, Head Ditch	-----
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 RW Marker	⊕
Proposed Control of Access Line with Concrete CA 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 Drainage / Utility Easement	DUE
Proposed Permanent Utility Easement	PUE
Proposed Temporary Utility Easement	TUE
Proposed Aerial Utility Easement	AUE
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Curb Ramp	CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊗
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	S

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

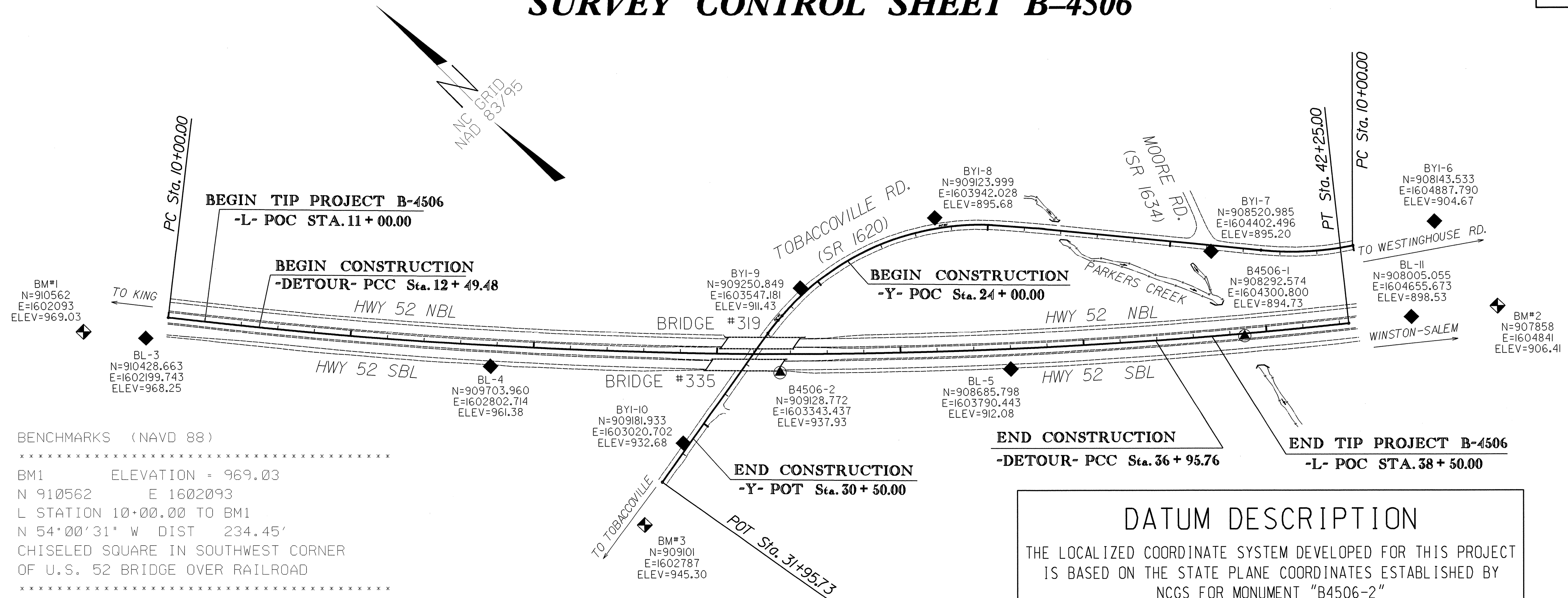
SANITARY SEWER:

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

MISCELLANEOUS:

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

SURVEY CONTROL SHEET B-4506



BENCHMARKS (NAVD 88)

BM1 ELEVATION = 969.03

N 910562 E 1602093

L STATION 10+00.00 TO BM1

N 54°00'31" W DIST 234.45'

CHISELED SQUARE IN SOUTHWEST CORNER

OF U.S. 52 BRIDGE OVER RAILROAD

BM2 ELEVATION = 906.41

N 907858 E 1604841

L STATION 42+25.00 TO BM2

S 51°10'47" E DIST 408.29'

RAILROAD SPIKE IN SEAM OF PAVED CONCRETE

DITCH IN MEDIAN OF U.S. 52

BM3 ELEVATION = 945.30

N 909101 E 1602787

L STATION 23+14.00 472 RIGHT

NORTHERN MOST BOLT ON A FIRE HYDRANT

SOUTH OF EDGE OF PAVEMENT OF KING/

TOBACCOVILLE ROAD.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B4506-2"

WITH NAD 83/95 STATE PLANE GRID COORDINATES OF

NORTHING: 909128.772(±) EASTING: 1603343.437(±)

ELEVATION: 937.93(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99998189

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4506-2" TO -L- STATION 10+00 IS

N 39°18'24.0" W 1674.02'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES

VERTICAL DATUM USED IS NAVD 88

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4506_LS_CONTROL.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.*
- ▲ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
- NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3	BL-3		910428.6630	1602199.7430	968.25	OUTSIDE PROJECT LIMITS	
4	BL-4		909703.9600	1602802.7140	961.38	18+84.70	56.28 RT
2	B4506-2		909128.7720	1603343.4370	937.93	26+71.30	50.13 RT
5	BL-5		908685.7980	1603790.4430	912.08	32+98.38	53.93 RT
1	B4506-1		908292.5740	1604300.8000	894.73	39+39.60	6.17 RT
11	BL-11		908005.0550	1604655.6730	898.53	OUTSIDE PROJECT LIMITS	

BY1	POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
6	BY1-6		908143.5330	1604887.7900	904.67	OUTSIDE PROJECT LIMITS	
7	BY1-7		908520.9850	1604402.4960	895.20	13+87.17	16.56 LT
8	BY1-8		909123.9990	1603942.0280	895.68	21+40.23	29.29 RT
9	BY1-9		909250.8490	1603547.1810	911.43	25+47.36	16.57 RT
10	BY1-10		909181.9330	1603020.7020	932.68	30+75.78	15.01 RT

NOTE: DRAWING NOT TO SCALE

09-JAN-2012 09:55
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RIGHT-OF-WAY SHEET B-4506

PROJECT REFERENCE NO.	SHEET NO.
B-4506	10
Location and Surveys	

DESIGN ALIGNMENTS

L			
TYPE	STATION	NORTH	EAST
PC	10+00.00	910424.0732	1602282.9938
PT	42+25.00	908113.7498	1604523.3916

NBL1			
TYPE	STATION	NORTH	EAST
POT	10+00.00	910356.6704	1602359.1037
POT	13+49.51	910086.9448	1602581.3770

ROW MARKER CONCRETE OR GRANITE-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	22+50.00	-170.00	909584.5666	1603214.2053
L	20+50.00	-130.00	909704.0999	1603051.4793
L	32+57.00	-128.94	908847.3166	1603885.6116
L	13+50.00	150.00	910055.1606	1602383.8751
L	14+40.00	129.60	909997.7052	1602457.1778
L	26+05.27	129.48	909121.0454	1603240.2305
L	32+57.00	-175.00	908880.8331	1603917.2054

Y			
TYPE	STATION	NORTH	EAST
PC	10+00.00	908255.5763	1604684.3704
PT	12+51.68	908425.4514	1604499.9928
PC	18+42.34	908886.9707	1604131.3629
PT	18+71.53	908909.5092	1604112.8155
PC	19+84.64	908995.7899	1604039.6754
PCC	20+23.07	909024.1159	1604013.7291
PT	26+35.70	909233.6182	1603458.0005
PC	26+51.94	909232.4866	1603441.8084
PT	26+96.87	909227.3461	1603397.1887
POT	31+95.73	909148.0493	1602904.6665

NBL2			
TYPE	STATION	NORTH	EAST
POT	10+00.00	908405.9120	1604214.3726
POT	13+49.54	908175.1081	1604476.8721

ROW MARKER CONCRETE OR GRANITE-E				
ALIGN	STATION	OFFSET	NORTH	EAST
Y	25+76.21	30.00	909265.2797	1603517.8639
Y	25+01.00	-30.00	909200.4920	1603588.8847
Y	30+50.00	-30.00	909141.5953	1603053.3129
Y	30+50.00	-40.00	909131.7224	1603054.9024

SBL1			
TYPE	STATION	NORTH	EAST
POT	10+00.00	910334.2588	1602330.5050
POT	13+50.53	910057.6970	1602545.8726

SBL2			
TYPE	STATION	NORTH	EAST
POT	10+00.00	908371.2702	1604184.1080
POT	13+50.53	908147.9471	1604454.2862

NOTES:

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

THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4506_LS_CONTROL.TXT

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

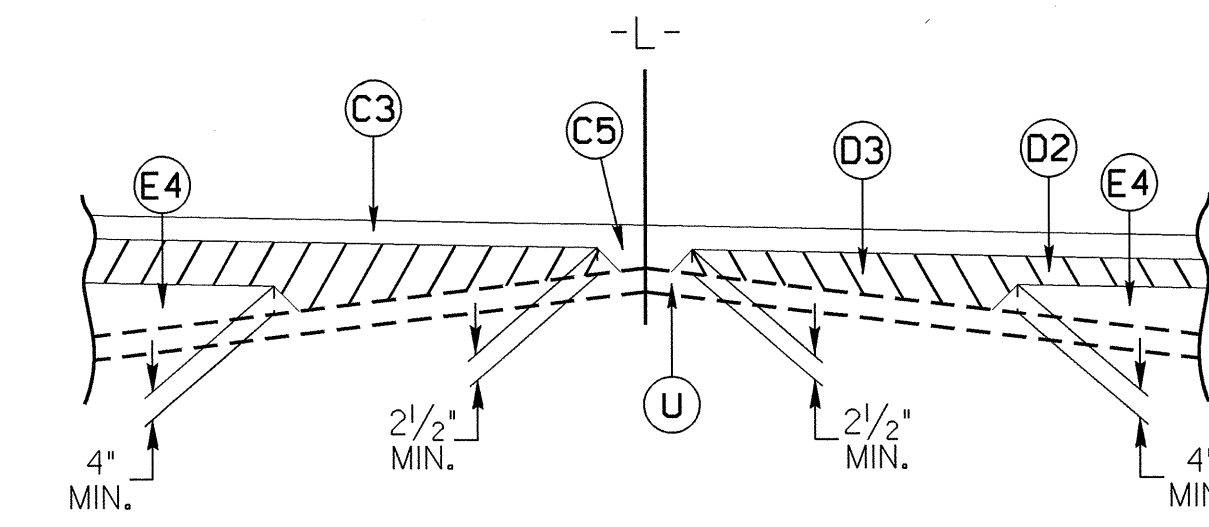
▲ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B4506-2" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
 NORTHING: 909128.772(ft) EASTING: 1603343.437(ft)
 ELEVATION: 937.93'(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99998189
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4506-2" TO -L- STATION 10+00.00 IS
 N 39° 18' 24" W 1674.02
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

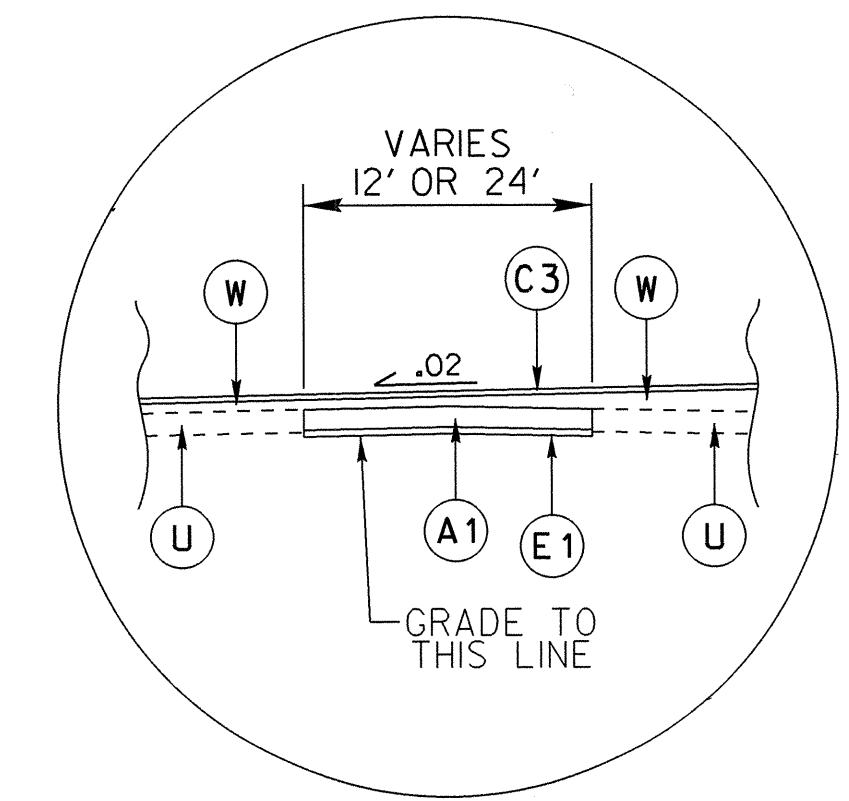
PAVEMENT SCHEDULE

A1	9" JOINTED PORTLAND CEMENT CONCRETE PAVEMENT (WITH DOWELS)	E3	PROP. APPROX. 16" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 608 LBS. PER SQ. YD. IN EACH OF THREE LAYERS
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 4" OR GREATER THAN 5 1/2" IN DEPTH.
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.	R1	SHOULDER BERM GUTTER
C3	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R2	2'-6" CONCRETE CURB AND GUTTER
C4	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	T	EARTH MATERIAL
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" OR GREATER THAN 2" IN DEPTH.	U	EXISTING PAVEMENT
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	V1	MILLED ASPHALT PAVEMENT, 0" TO 1.5" DEPTH
D2	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	V2	MILLED ASPHALT PAVEMENT, 1.5" DEPTH
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" OR GREATER THAN 4" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	Y	PROPOSED MILLED RUMBLE STRIPS
E2	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.		



DETAIL SHOWING METHOD OF WEDGING

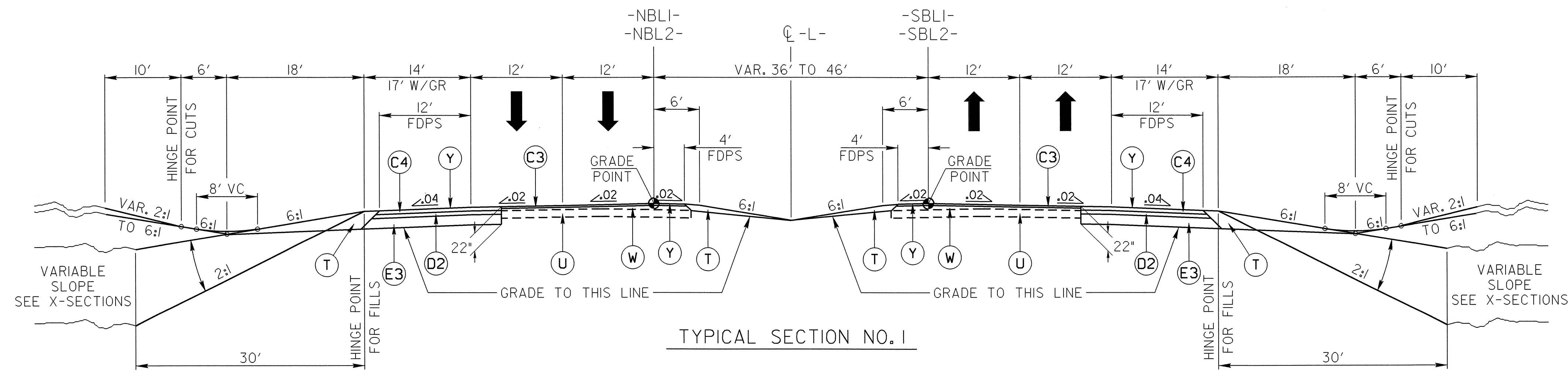
NOTE: USE DETAIL FOR RIGHT OF CHAIN -L- REVERSE FOR LEFT OF CHAIN -L-



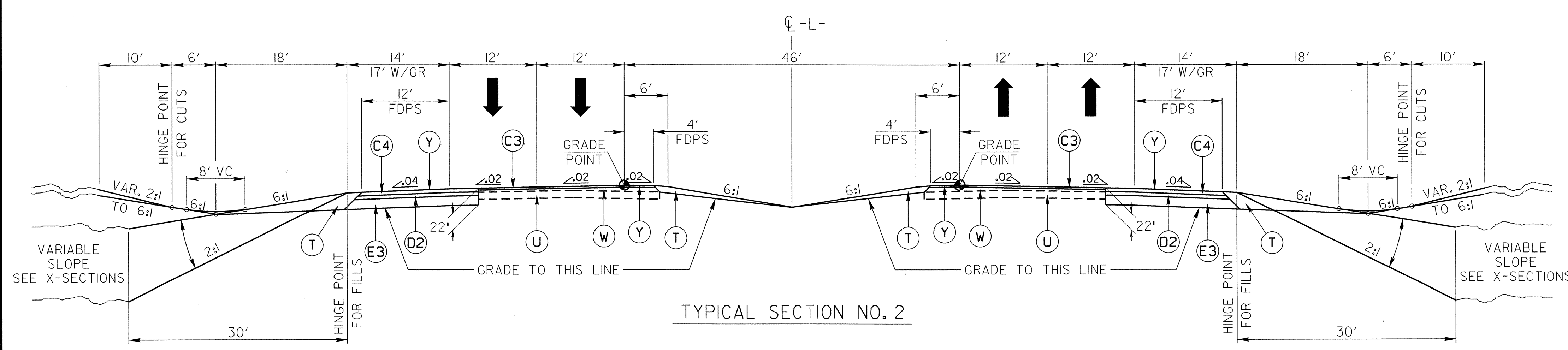
INSET 'B'

USE INSET 'B' FOR:
Use with Typical Section No. 2
NOTE: SEE TRANSPORTATION MANAGEMENT PLANS FOR LOCATION.

NOTES: SEE TRAFFIC CONTROL PLANS CONCERNING PAVED SHOULDER CONSTRUCTION.
REMOVE EXISTING PAVED SHOULDER WHERE PROPOSED CONSTRUCTION WILL SUPPORT TRAFFIC.
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 1



TYPICAL SECTION NO. 2

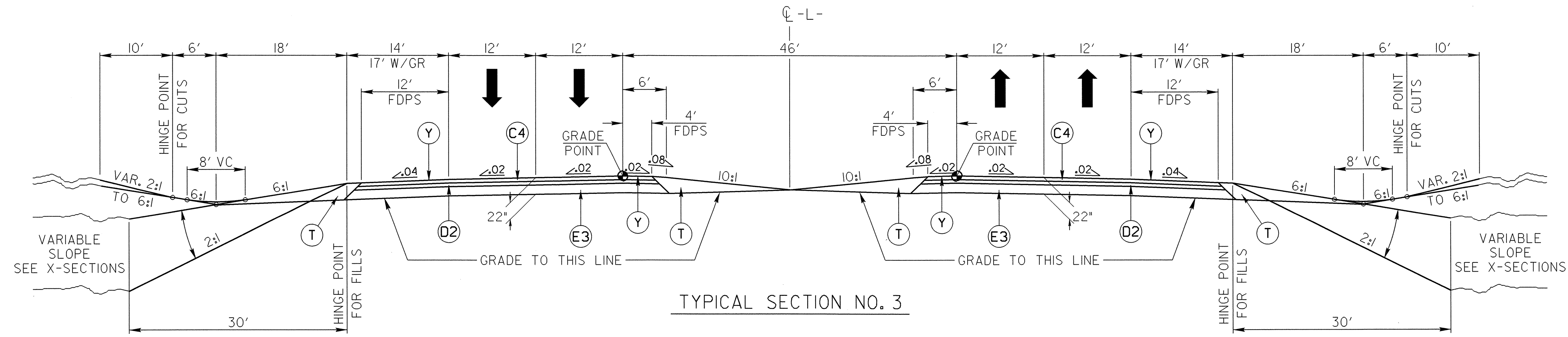
USE TYPICAL SECTION NO. 1 FOR:
-L- STA. 11+50.00 TO -L- STA. 14+50.00
-L- STA. 35+00.00 TO -L- STA. 38+00.00

NOTES:
TRANSITION FROM EXISTING TO T.S. NO. 1
-NBL1- STA. 11+00.00 TO -NBL1- STA. 11+49.53
-SBL1- STA. 11+00.00 TO -SBL1- STA. 11+50.53
TRANSITION FROM T.S. NO. 1 TO EXISTING
-NBL2- STA. 38+00.00 TO -NBL2- STA. 38+49.53
-SBL2- STA. 38+00.00 TO -SBL2- STA. 38+50.53
ROTATE SUPERELEVATION ABOUT TRANSITION CROWN LINE (SEE PLANS) TO MATCH EXISTING CROWN POINT
-NBL1- STA. 11+00.00 TO -NBL1- STA. 12+20.00
-SBL1- STA. 11+00.00 TO -SBL1- STA. 12+20.00
-NBL2- STA. 37+30.00 TO -NBL2- STA. 38+49.53
-SBL2- STA. 37+30.00 TO -SBL2- STA. 38+50.53
MILLING ASPHALT PAVEMENT, VARIABLE DEPTH REQUIRED TO REMOVE EXCESSIVE DETOUR AND CROSS OVER SUPERELEVATION PAVEMENT BEFORE FINAL PAVING
-L- STA. 11+00.00 TO -L- STA. 14+50.00
USE INSET 'A' FOR: (SEE SHEET 2-A)
-SBL2- STA. 35+00.00 (RT.) TO -SBL2- STA. 38+50.53 (RT.)
-NBL2- STA. 35+00.00 (LT.) TO -NBL2- STA. 38+49.53 (LT.)

USE TYPICAL SECTION NO. 2 FOR:
-L- STA. 14+50.00 TO -L- STA. 24+60.00
-L- STA. 27+40.00 TO -L- STA. 35+00.00

NOTE:
MILLING ASPHALT PAVEMENT, VARIABLE DEPTH REQUIRED TO REMOVE EXCESSIVE DETOUR AND CROSS OVER SUPERELEVATION PAVEMENT BEFORE FINAL PAVING
-L- STA. 19+50.00 TO -L- STA. 24+60.00 (LT.)
-L- STA. 27+50.00 TO -L- STA. 31+00.00 (LT.)

USE INSET 'A' FOR: (SEE SHEET 2-A)
-L- STA. 22+52.00 (RT.) TO -L- STA. 24+75.00 (RT.)
-L- STA. 27+25.00 (LT.) TO -L- STA. 35+00.00 (LT.)
-L- STA. 32+75.00 (RT.) TO -L- STA. 35+00.00 (RT.)
USE INSET 'B' FOR:
-L- STA. 17+50.00 (LT.) TO -L- STA. 19+50.00 (LT.)
-L- STA. 31+76.00 (LT.) TO -L- STA. 33+50.00 (LT.)

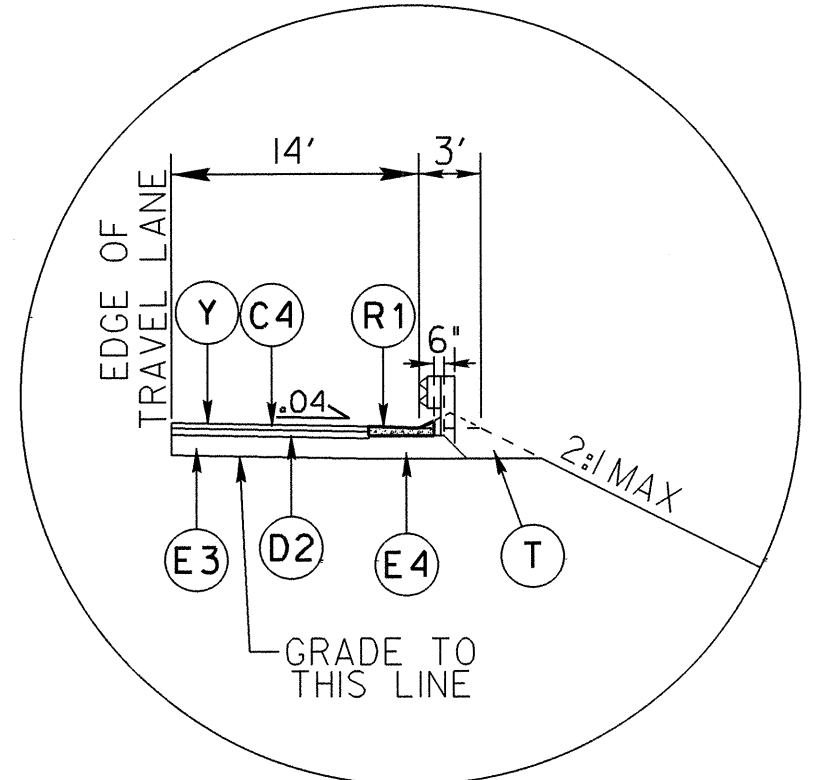
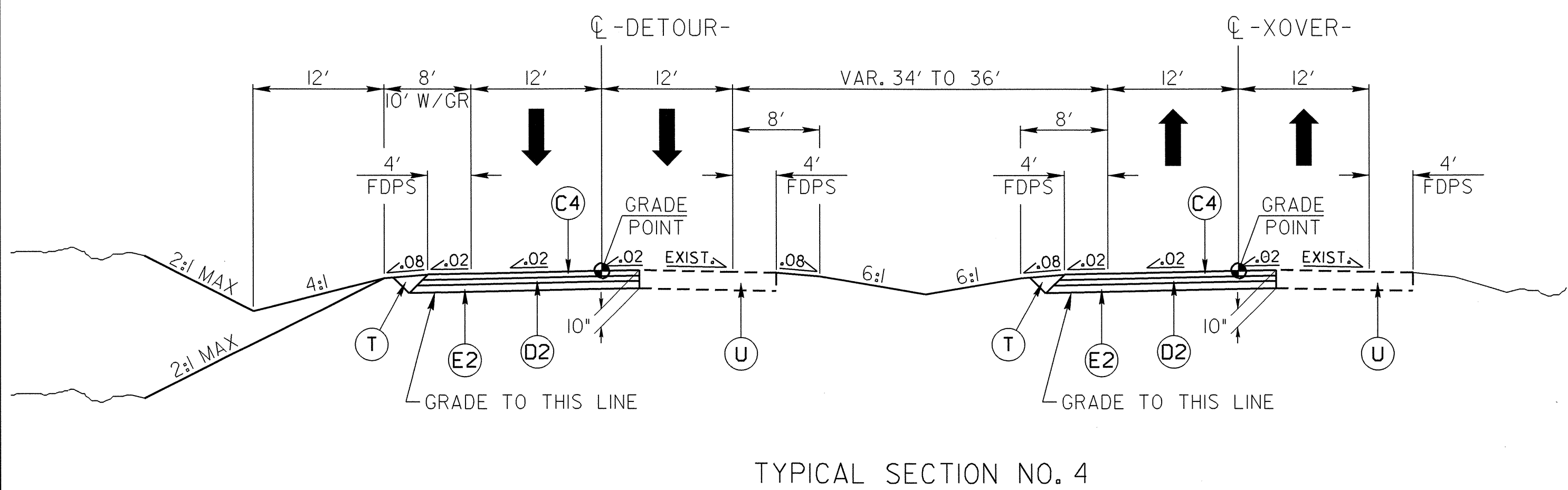


USE TYPICAL SECTION NO. 3 FOR:
 -L- STA. 24+60.00 TO -L- STA. 25+26.86 (BEGIN BRIDGE)
 -L- STA. 26+72.23 (END BRIDGE) TO -L- STA. 27+40.00

NOTE:
 MILLING ASPHALT PAVEMENT, VARIABLE DEPTH REQUIRED TO REMOVE EXCESSIVE DETOUR AND CROSS OVER SUPERELEVATION PAVEMENT BEFORE FINAL PAVING
 -L- STA. 24+60.00 TO -L- STA. 25+00.00 (L.T.)

USE INSET 'A' FOR:
 -L- STA. 24+75.00 (RT.) TO -L- STA. 24+78.70 (RT.)
 -L- STA. 26+38.29 (RT.) TO -L- STA. 26+67.00 (RT.)
 -L- STA. 25+31.00 (LT.) TO -L- STA. 25+60.11 (LT.)
 -L- STA. 27+21.66 (LT.) TO -L- STA. 27+25.00 (LT.)

C3	1 1/2" S9.5C
C4	3" S9.5C
D2	3" I19.0C
E2	4" B25.0C
E3	16" B25.0C
E4	VARIABLE DEPTH B25.0C
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)
Y	PROP. MILLED RUMBLE STRIPS

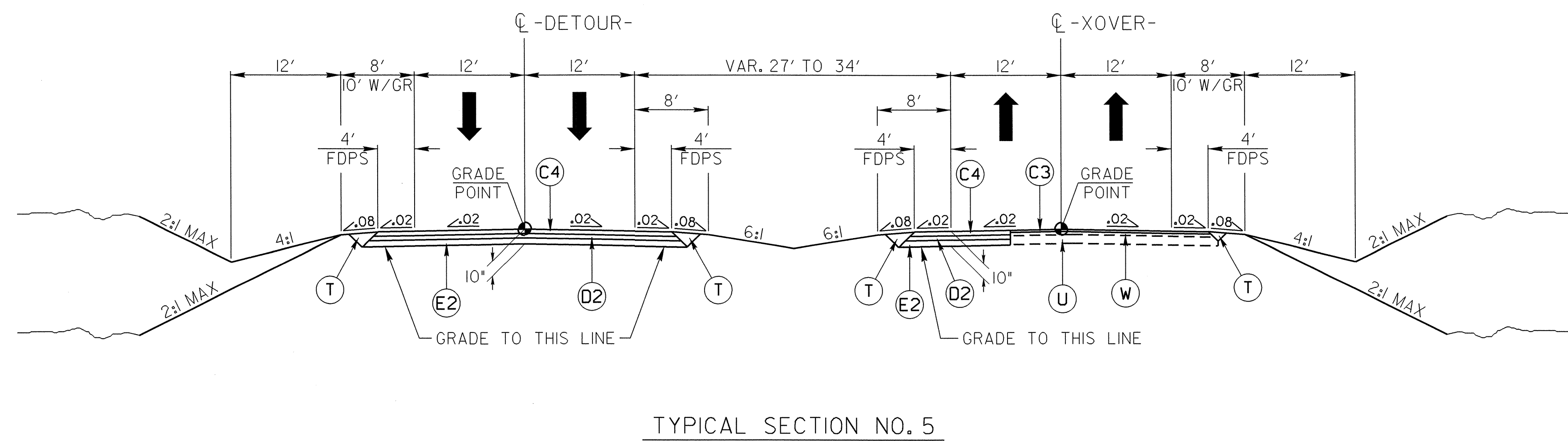


INSET 'A'

USE INSET 'A' FOR:
 Use with Typical Section No. 1
 Use with Typical Section No. 2
 Use with Typical Section No. 3

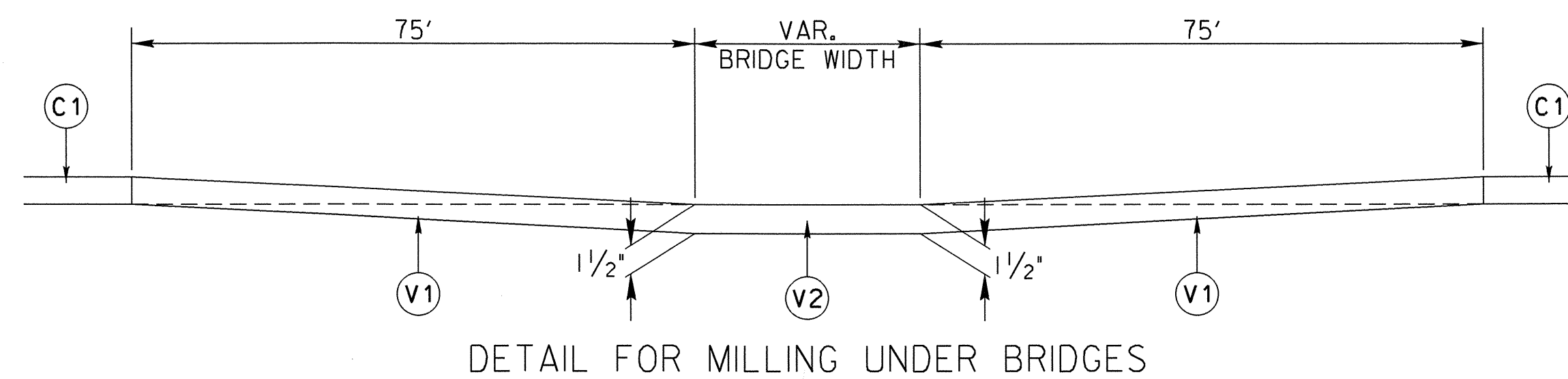
USE TYPICAL SECTION NO. 4 FOR:
 -DETOUR- STA. 16+57.15 TO -DETOUR- STA. 18+20.31
 -DETOUR- STA. 33+20.94 TO -DETOUR- STA. 34+32.64
 -XOVER- STA. 16+53.68 TO -XOVER- STA. 18+15.00
 -XOVER- STA. 33+28.94 TO -XOVER- STA. 34+39.81

NOTES:
 TRANSITION FROM EXISTING TO T.S. NO. 4
 -DETOUR- STA. 12+49.48 TO -DETOUR- STA. 16+57.15
 -XOVER- STA. 12+50.52 TO -XOVER- STA. 16+53.68
 TRANSITION FROM T.S. NO. 4 TO EXISTING
 -DETOUR- STA. 34+32.64 TO -DETOUR- STA. 36+95.76
 -XOVER- STA. 34+39.81 TO -XOVER- STA. 37+07.75



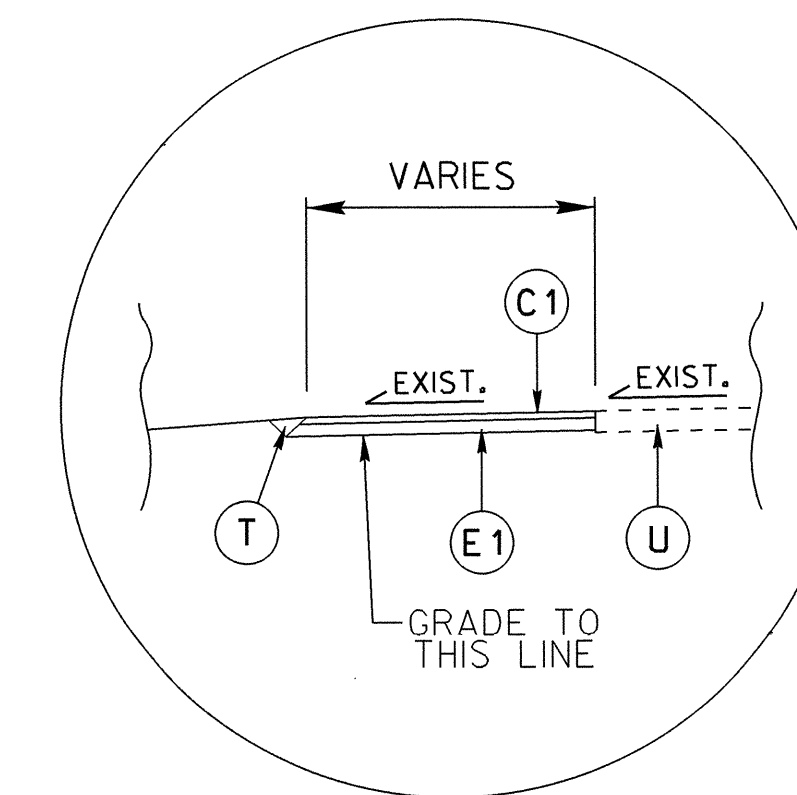
USE TYPICAL SECTION NO. 5 FOR:
 -DETOUR- STA. 18+20.31 TO -DETOUR- STA. 25+84 +/- (BEGIN BRIDGE)
 -DETOUR- STA. 27+49 +/- (END BRIDGE) TO -DETOUR- STA. 33+20.94
 -XOVER- STA. 18+15.00 TO -XOVER- STA. 25+69.63 (BEGIN BRIDGE)
 -XOVER- STA. 26+83.11 (END BRIDGE) TO -XOVER- STA. 33+28.94

C1	1 1/2" S9.5B
C2	3" S9.5B
D1	2 1/2" I19.0B
E1	4" B25.0B
R2	2'-6" C&G
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	0' TO 1.5' MILLED ASPHALT PAVEMENT
V2	1.5' MILLED ASPHALT PAVEMENT



DETAIL FOR MILLING UNDER BRIDGES

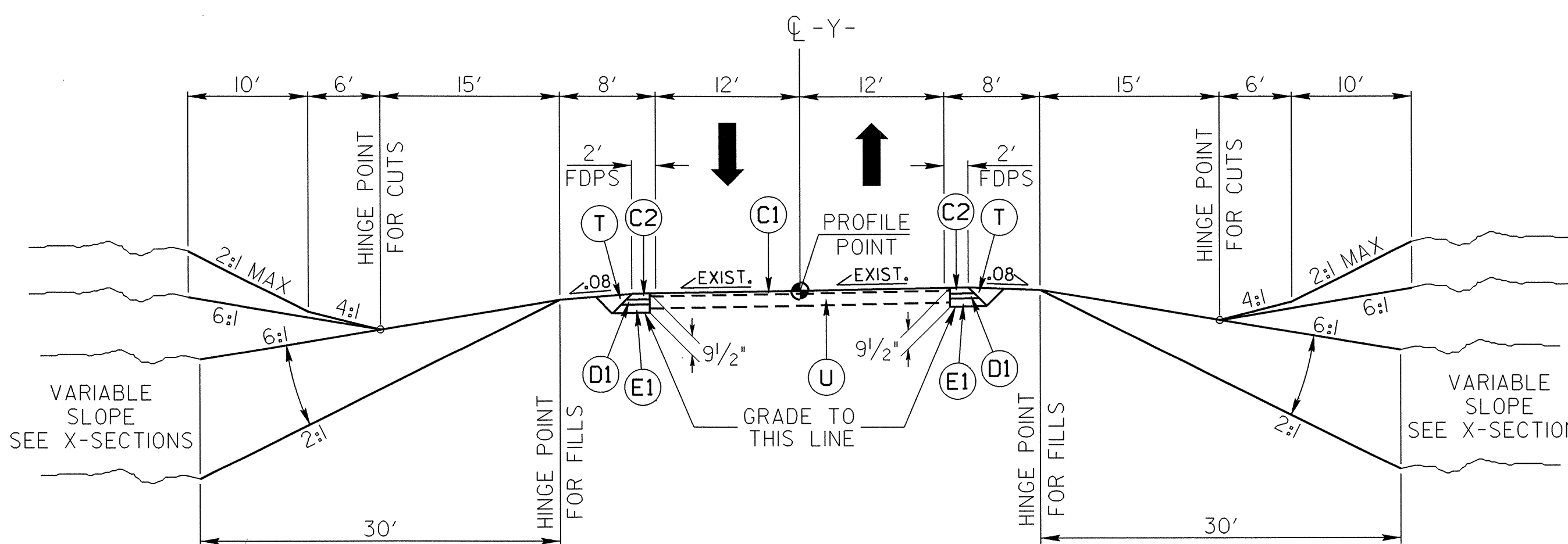
USE DETAIL
-Y- STA. 25+45 TO -Y- STA. 29+25
NOTE: MILL AT A RATE OF 1" PER 50'



INSET 'C'

USE INSET 'C' FOR:
Use with Typical Section No. 7

NOTES:
TEMPORARY PAVEMENT IS USED FOR CONSTRUCTION AND WILL NOT BE USED
IN AREAS SUBJECT TO TRAFFIC
SEE TRANSPORTATION MANAGEMENT PLANS FOR LOCATION

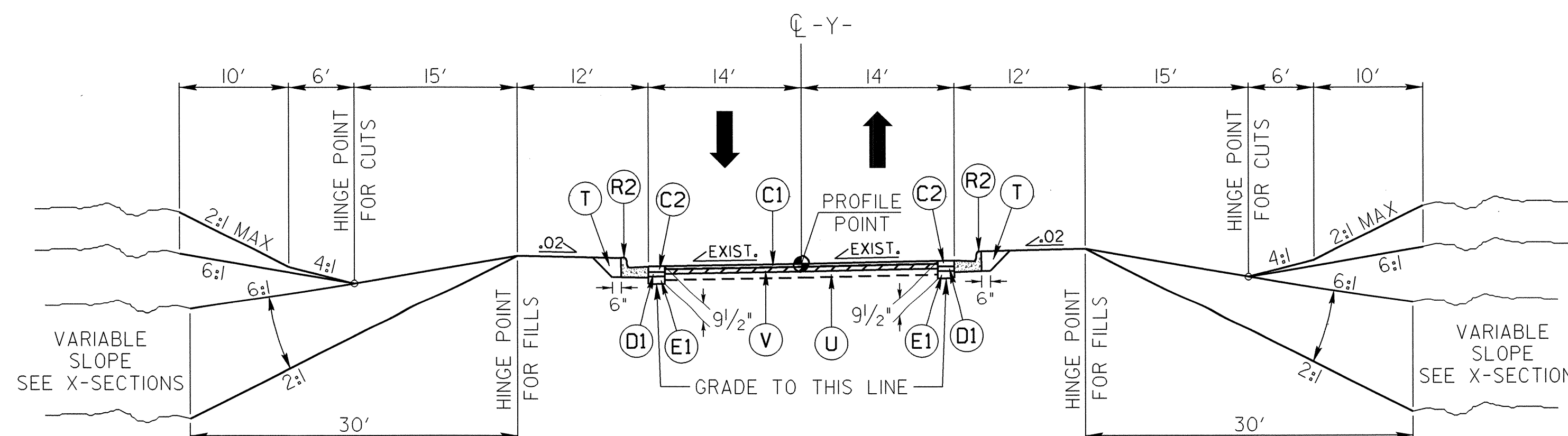


TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6 FOR:

-Y- STA. 24+30.00 TO -Y- STA. 25+65.00
-Y- STA. 29+65.00 TO -Y- STA. 30+20.00

NOTES:
TRANSITION FROM EXISTING TO T.S. NO. 6
-Y- STA. 24+00.00 TO -Y- STA. 24+30.00
TRANSITION FROM T.S. NO. 6 TO EXISTING
-Y- STA. 30+20.00 TO -Y- STA. 30+50.00
SEE DETAIL FOR MILLING UNDER BRIDGES
-Y- STA. 25+45.00 TO -Y- STA. 25+65.00



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7 FOR:

-Y- STA. 26+65.00 TO -Y- STA. 28+65.00

NOTES:
TRANSITION FROM T.S. NO. 6 TO T.S. NO. 7
-Y- STA. 25+65.00 TO -Y- STA. 26+65.00
TRANSITION FROM T.S. NO. 7 TO T.S. NO. 6
-Y- STA. 28+65.00 TO -Y- STA. 29+65.00
SEE DETAIL FOR MILLING UNDER BRIDGES
-Y- STA. 25+65.00 TO -Y- STA. 29+25.00

USE INSET 'C' FOR:

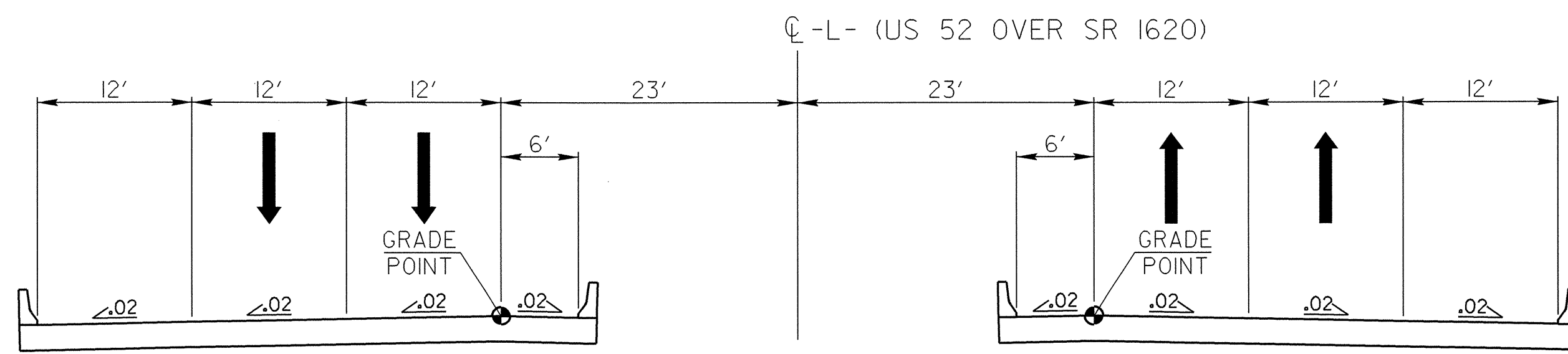
-Y- STA. 25+60+/- (RT.) TO -Y- STA. 29+30+/- (RT.)
-Y- STA. 25+00+/- (LT.) TO -Y- STA. 29+00+/- (LT.)

NOTE:
SEE TRANSPORTATION MANAGEMENT PLANS FOR LOCATIONS

STRUCTURE TYPICAL SECTIONS

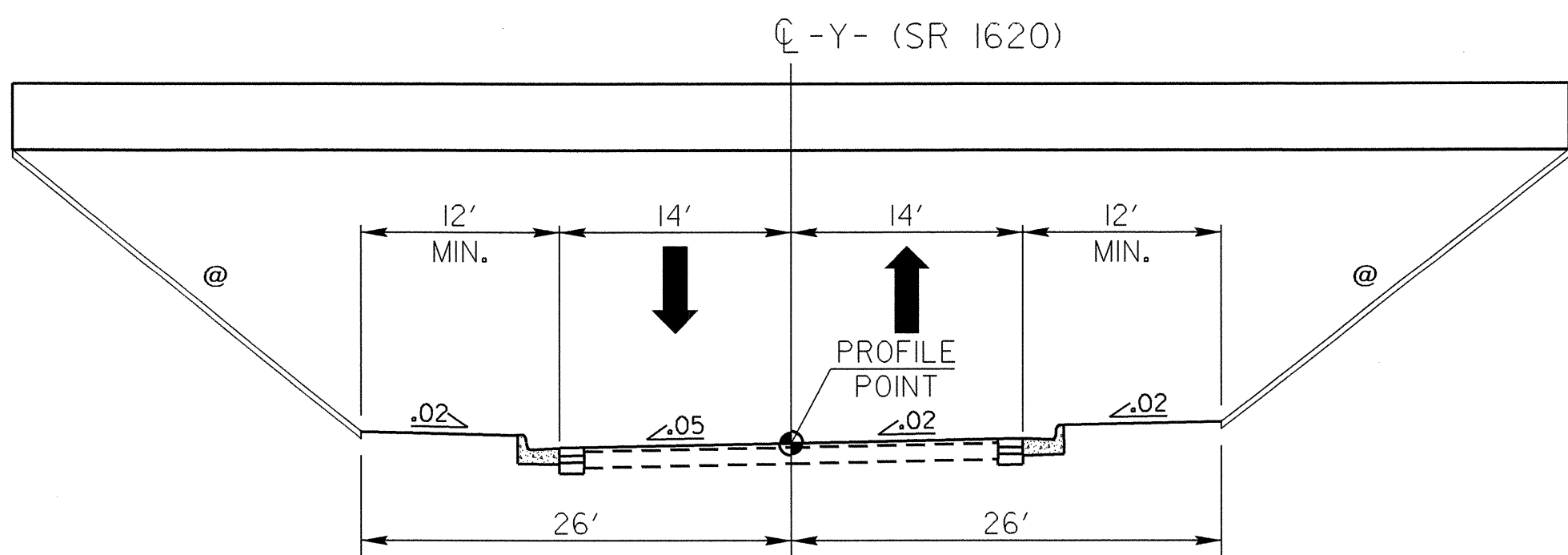
-L- DESIGN DATA	
ADT 2012 =	65,400
ADT 2032 =	109,400
D =	60%
DHV =	10%
TTST =	10%
DUAL =	6%
V =	70 mph
FUNCT. CLASS =	FREEWAY

-Y- DESIGN DATA	
ADT 2012 =	3,050
ADT 2032 =	5,875
V =	50 mph
FUNCT. CLASS =	COLLECTOR

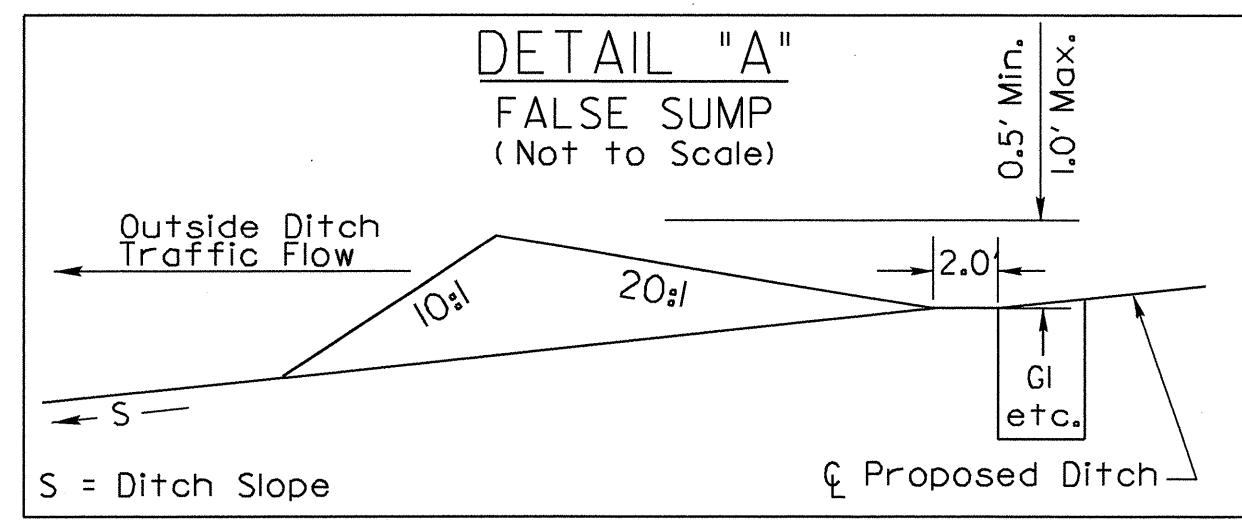


TYPICAL SECTION ON STRUCTURE

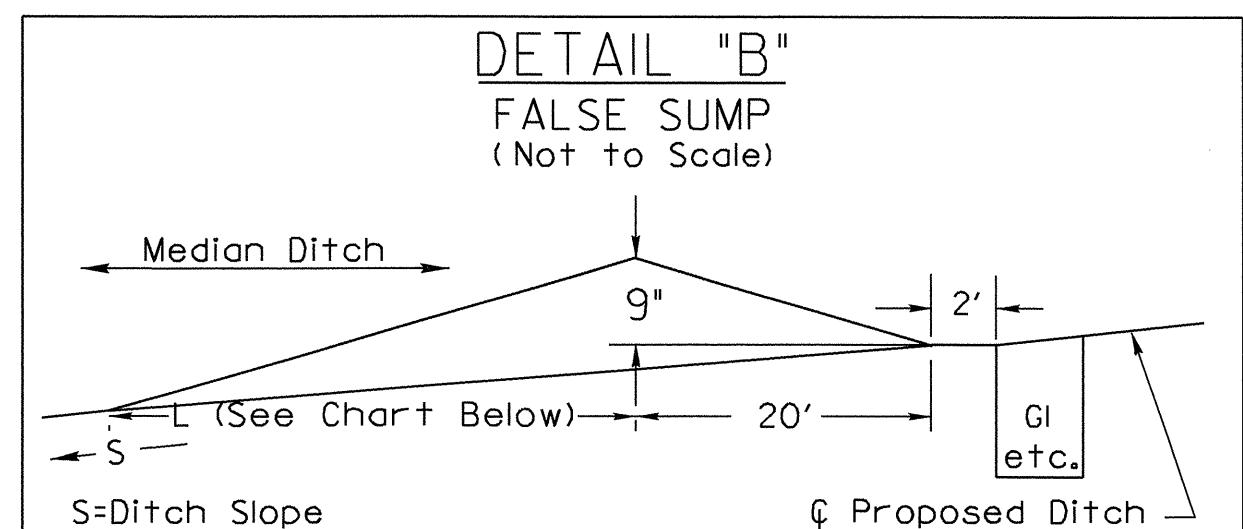
DESIGN DATA
MINIMUM VERTICAL CLEARANCE = 15'-0"
MILL & RESURFACE 1½" OF EXISTING PAVEMENT ALONG SR 1620 AS NEEDED FOR MIN. VERTICAL CLEARANCE WITH FUTURE PAVEMENT LAYERS
@ SLOPES DETERMINED BY GEOTECHNICAL ENGINEERING UNIT



TYPICAL SECTION ON ROADWAY UNDER STRUCTURE

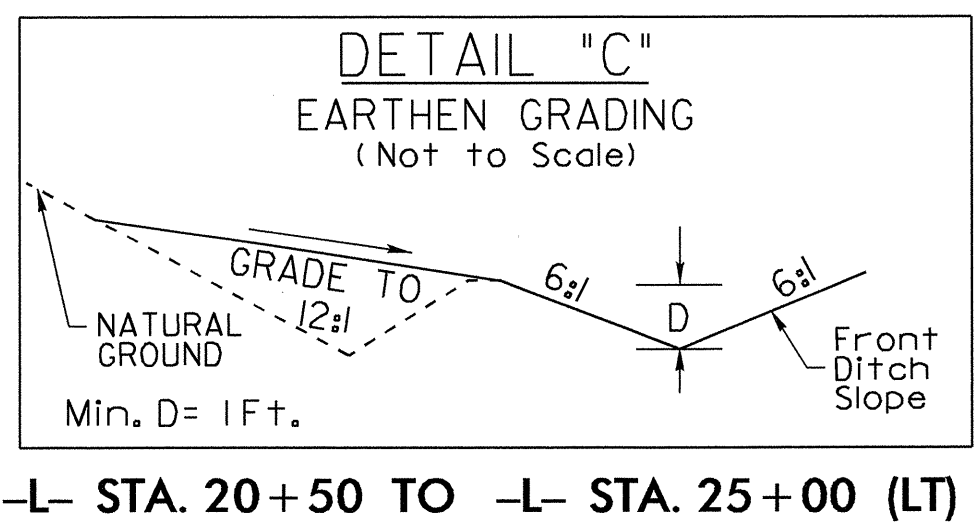


- L- STA. 13+91 (RT)
- L- STA. 18+40 (RT)
- L- STA. 20+53 (RT)
- L- STA. 22+54 (RT)
- L- STA. 29+89 (RT)
- L- STA. 33+59 (RT)
- Y- STA. 25+46 (LT)

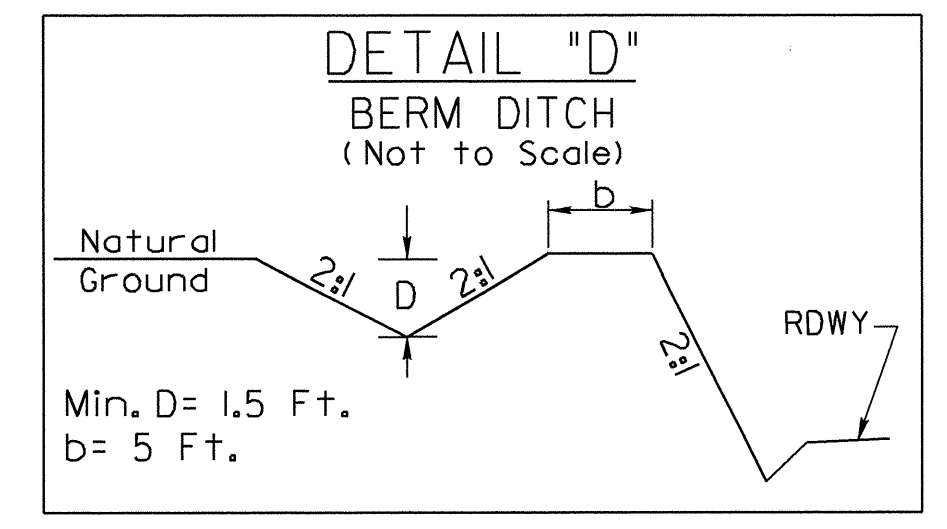


Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

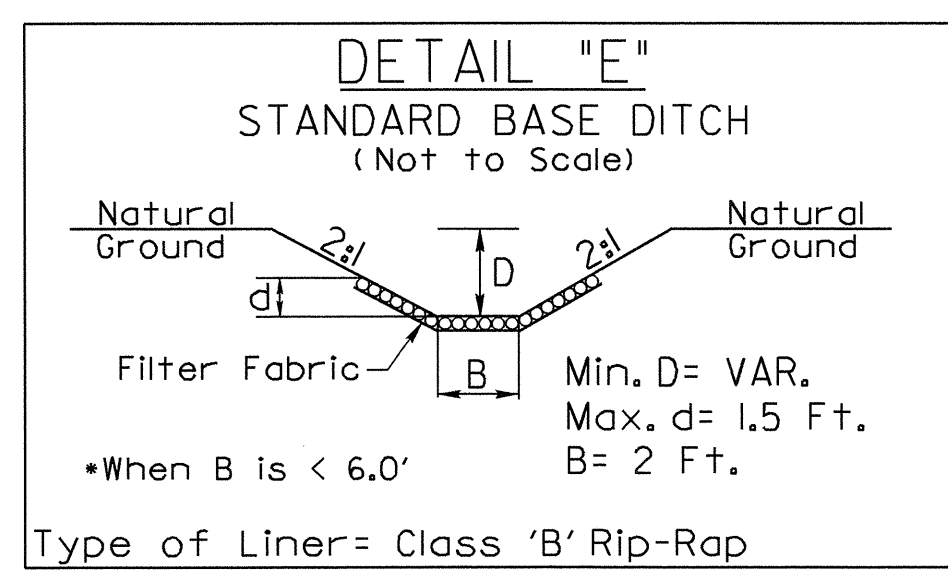
- L- STA. 13+91 (MED)
- L- STA. 18+40 (MED)
- L- STA. 22+54 (MED)
- L- STA. 25+04 (MED)
- L- STA. 28+04 (MED)
- L- STA. 30+51 (MED)
- L- STA. 33+77 (MED)



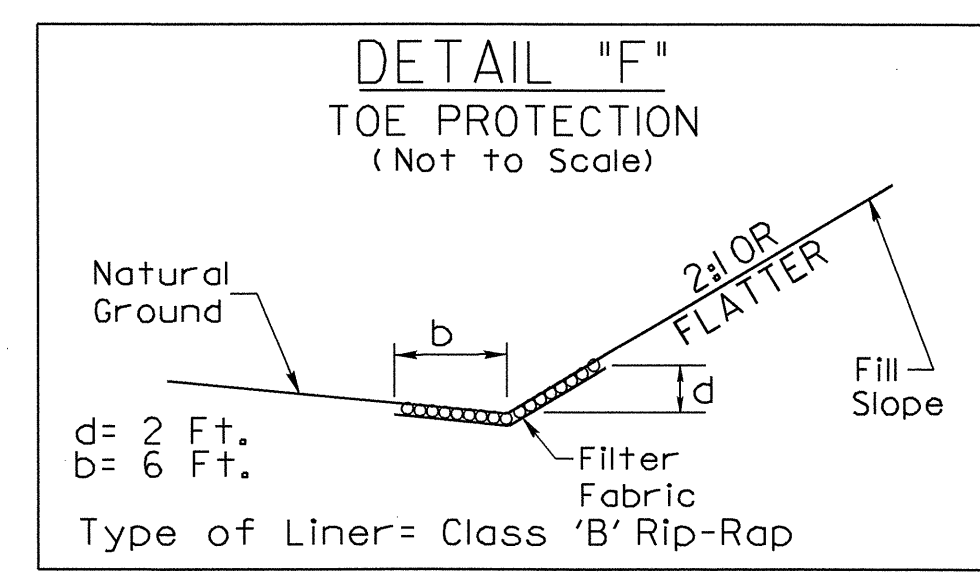
-L- STA. 20+50 TO -L- STA. 25+00 (LT)



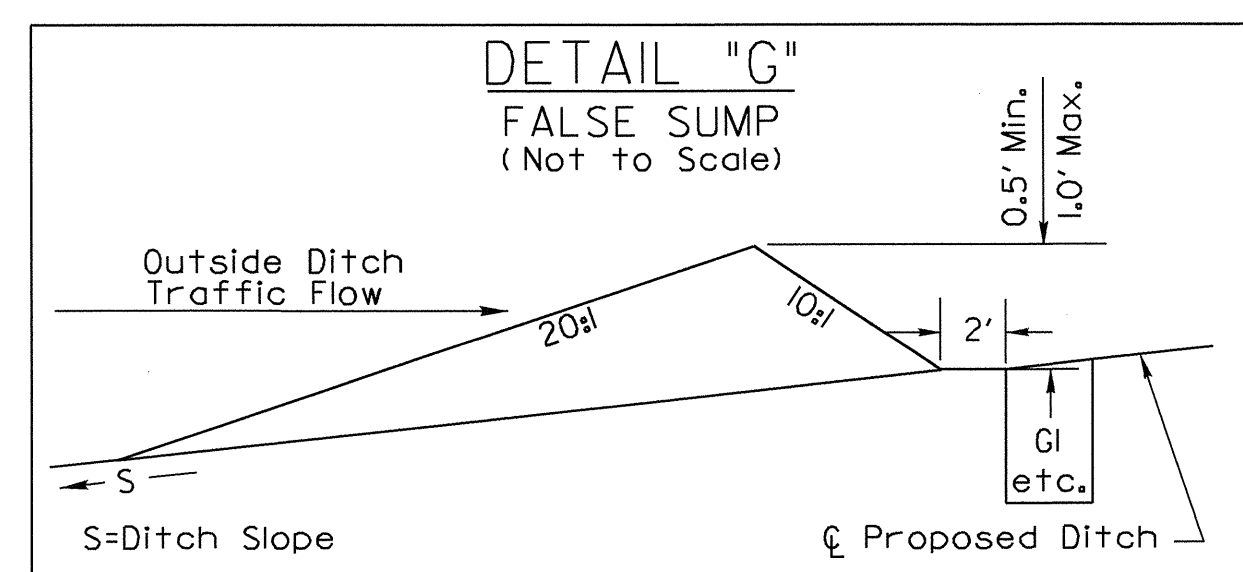
-L- STA. 15+00 TO -L- STA. 18+25 (RT)



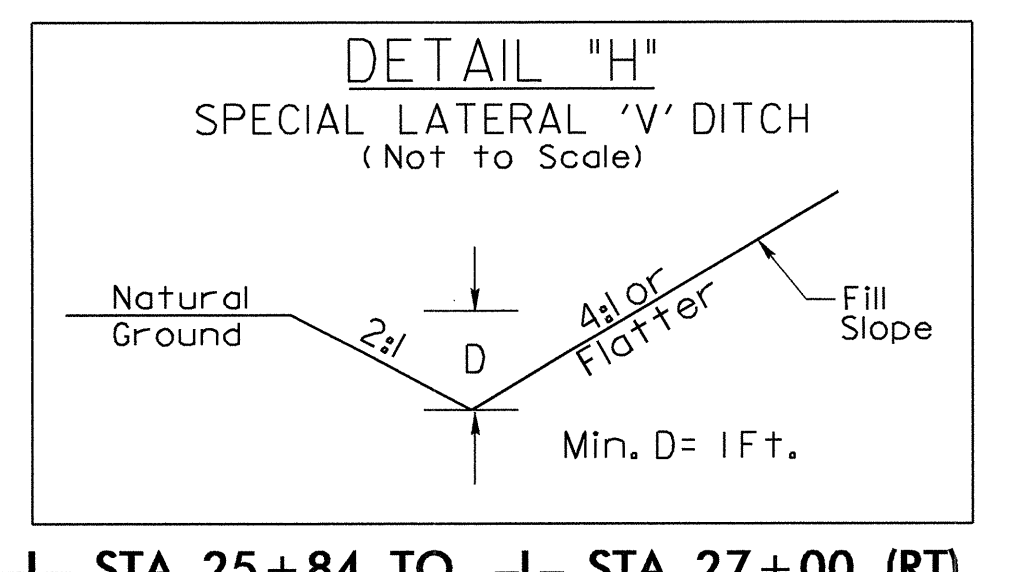
-L- STA. 31+61 TO -L- STA. 32+47 (LT)



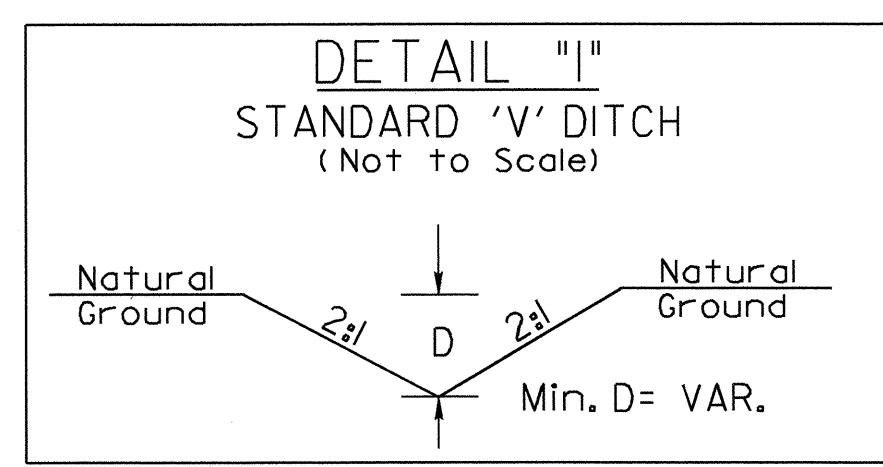
-L- STA. 33+68 TO -L- STA. 35+80 (RT)



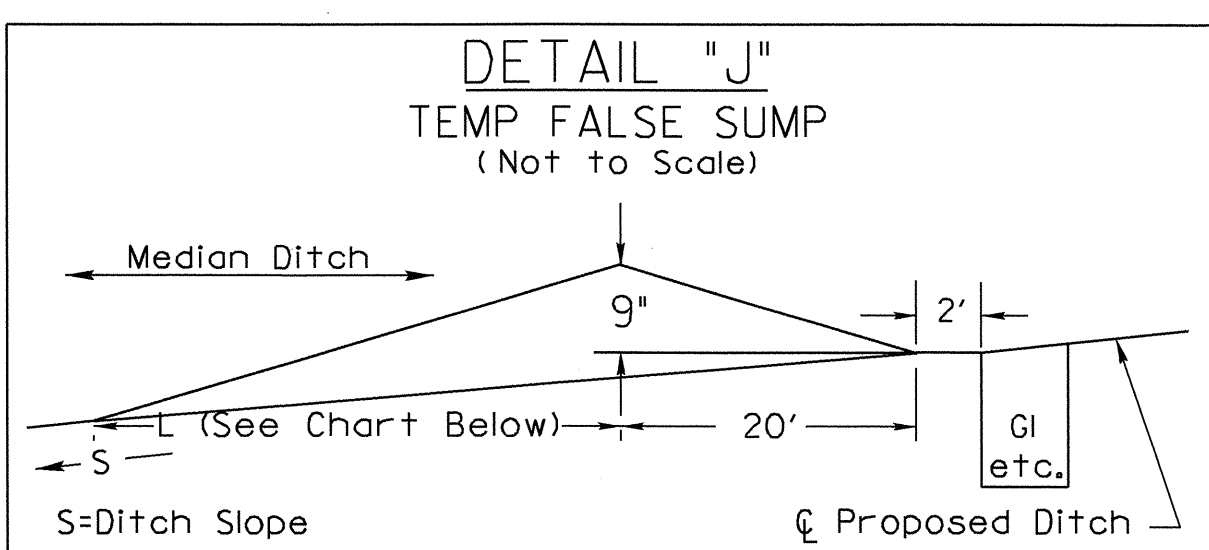
-L- STA. 25+54 (LT)



-L- STA. 25+84 TO -L- STA. 27+00 (RT)

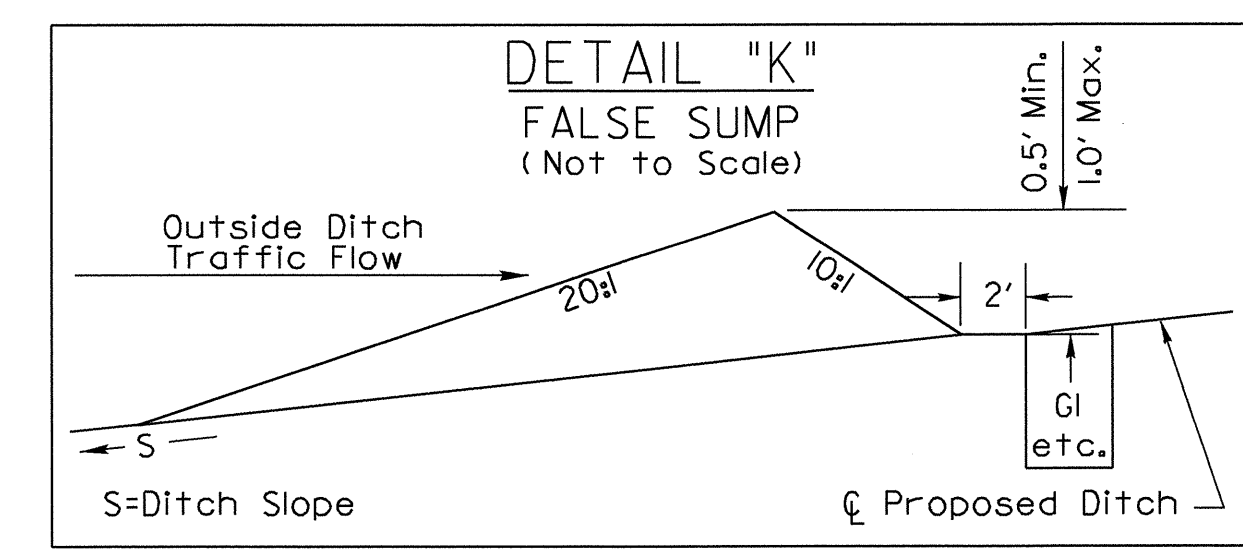


-L- STA. 36+78 (LT)

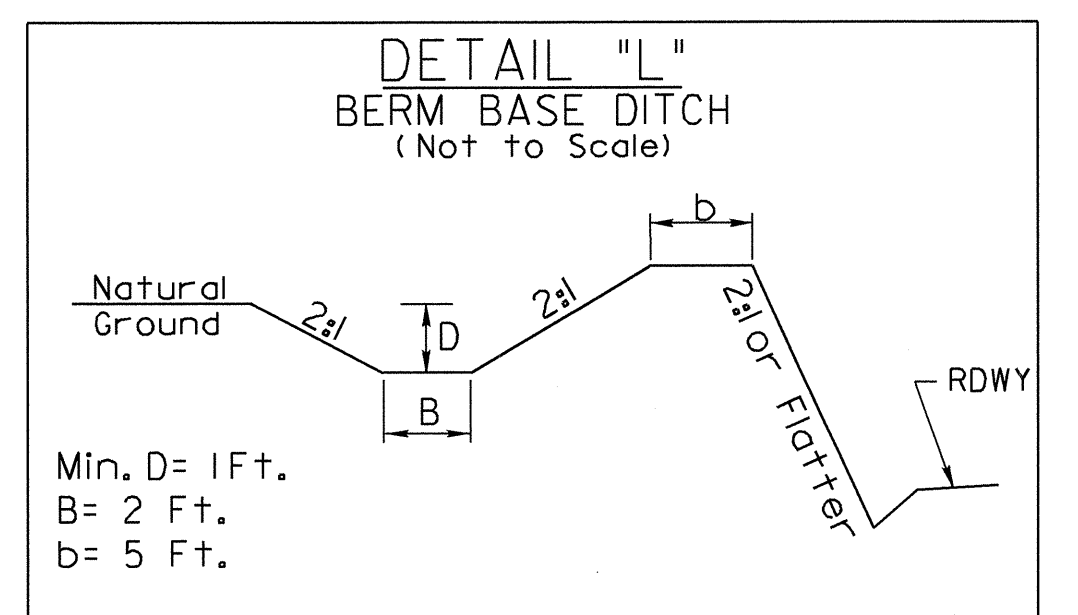


Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

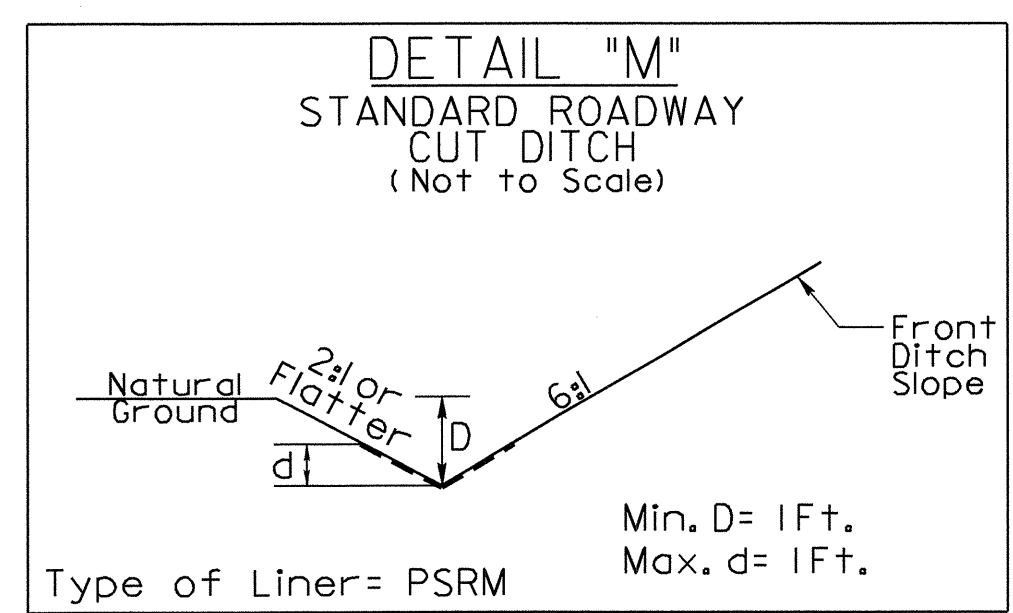
- DETOUR- STA. 13+67 (MED)
- DETOUR- STA. 25+02 (MED)
- DETOUR- STA. 31+12 (MED)



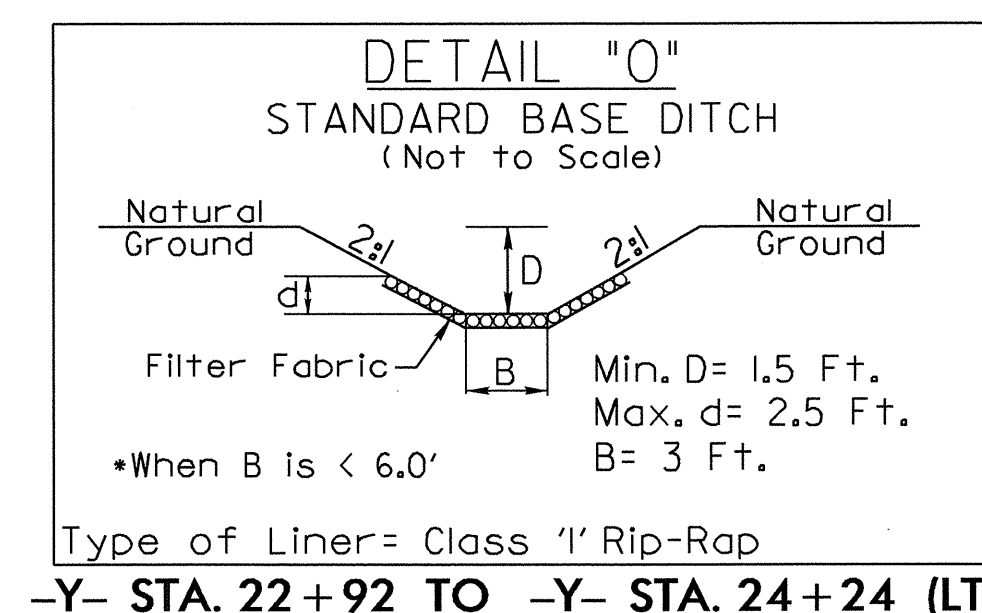
- DETOUR- STA. 25+51 (LT)
- Y- STA. 25+96 (RT)
- Y- STA. 29+46 (RT)



-Y- STA. 29+12 TO -Y- STA. 30+12 (RT)

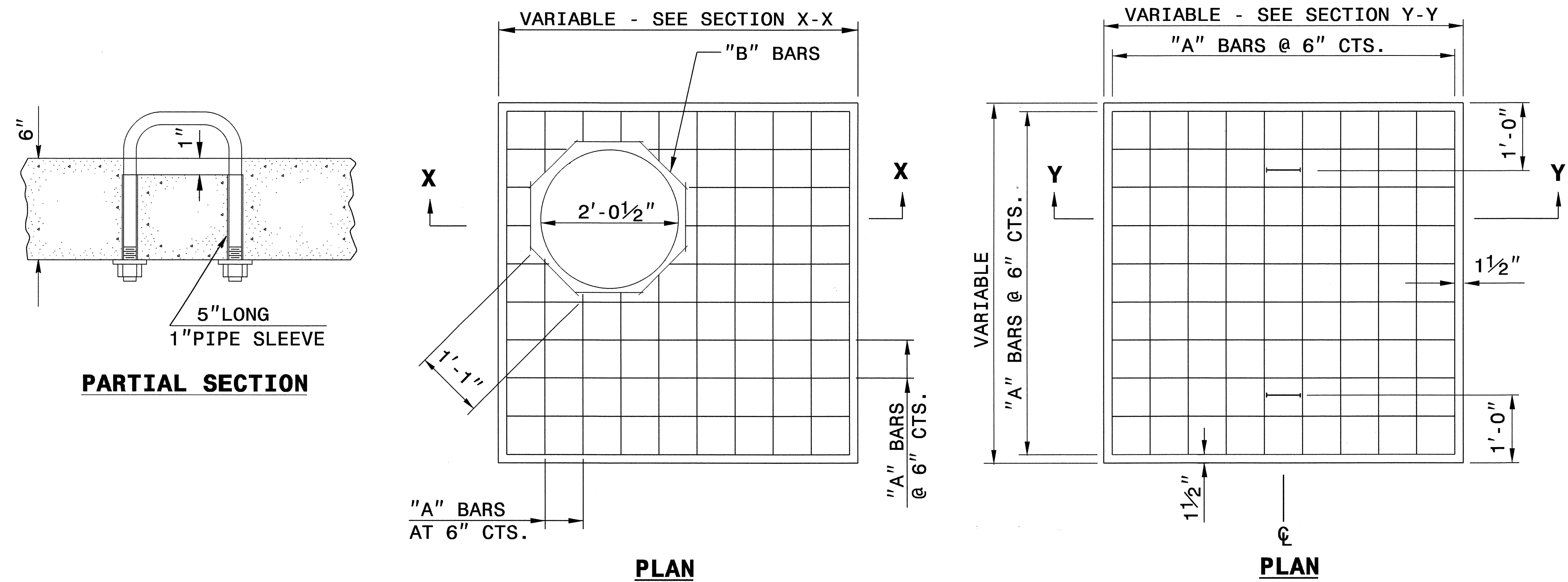


-Y- STA. 29+52 TO -Y- STA. 30+50 (LT)



-Y- STA. 22+92 TO -Y- STA. 24+24 (LT)

00 JAN-2012 05:55 6_rdy_drainage_details_2d.dgn
 1:1:30 2012/01/10 11:33



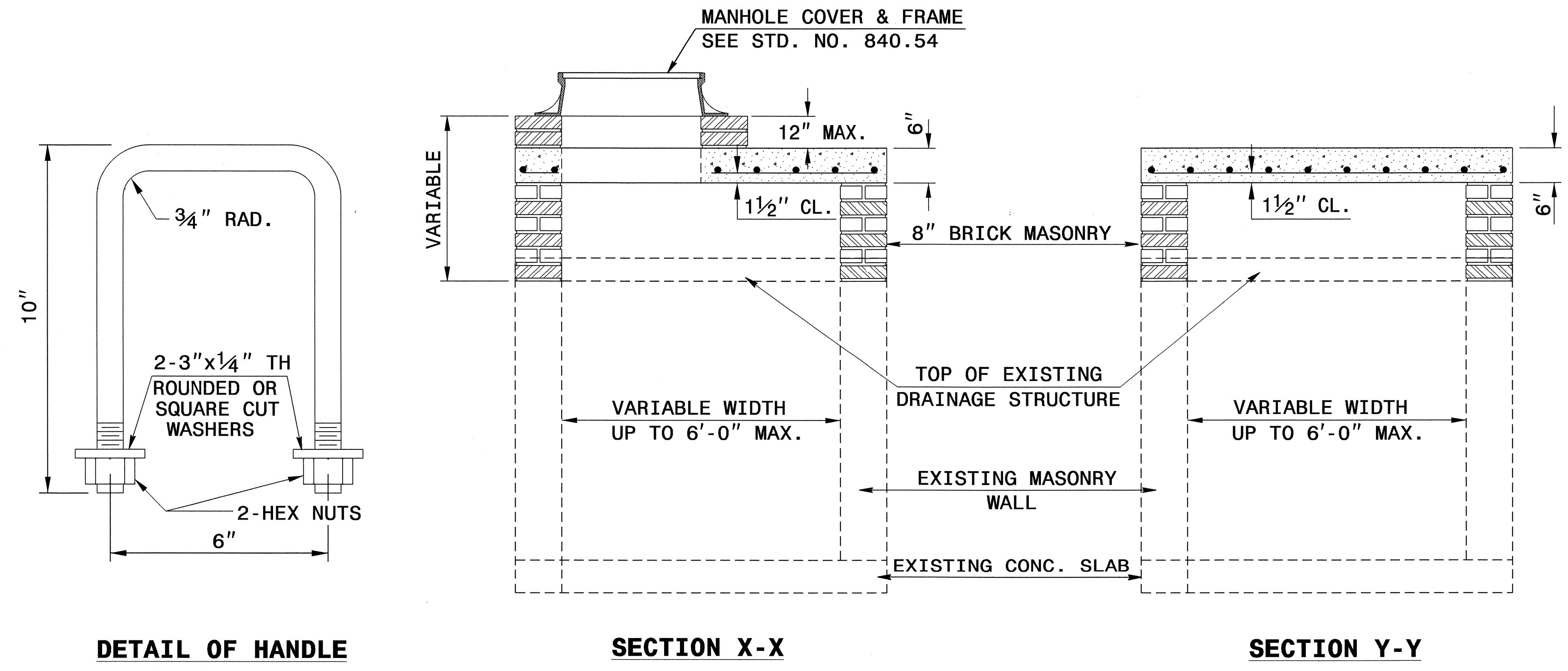
GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

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

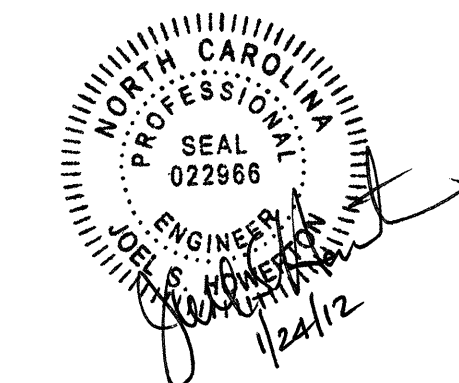
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

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.

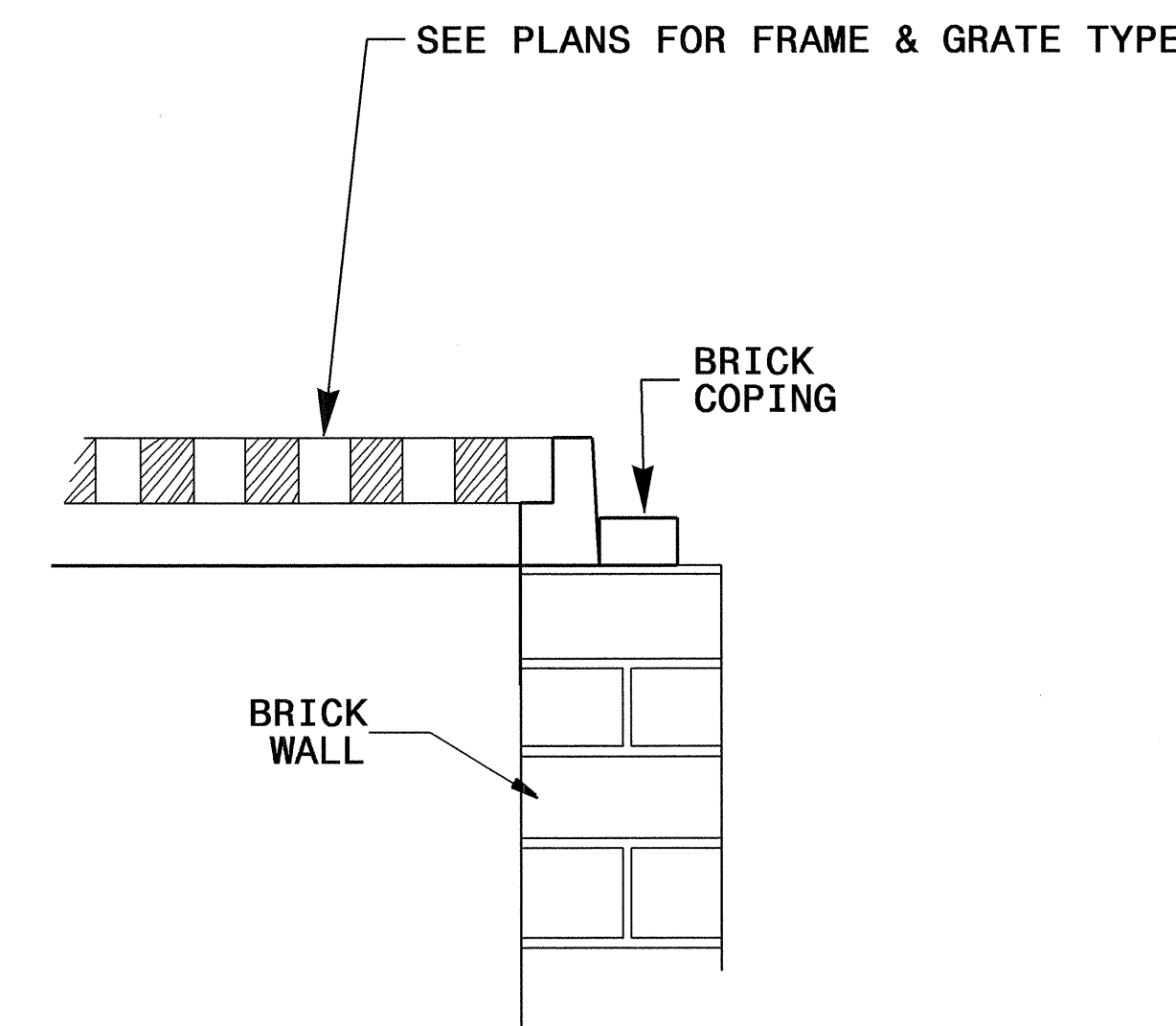
C:\JAN-2002\10451\contracts\Special Details\usr\details\stand\boxtojbse.dgn
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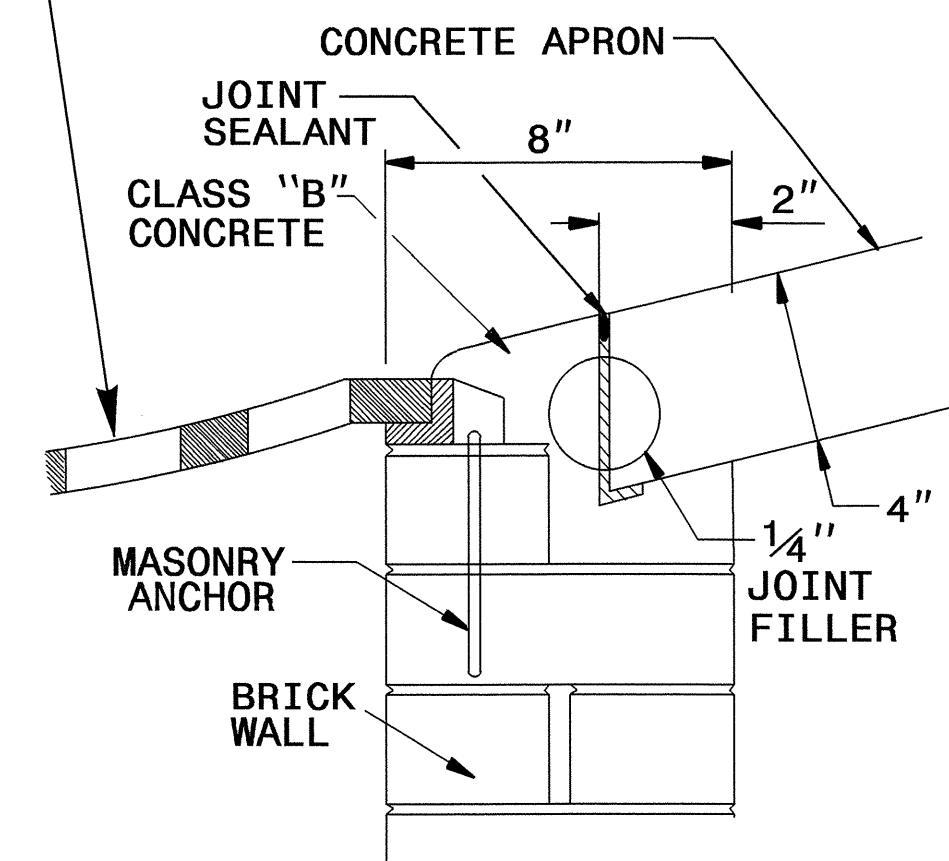
CONTRACT STANDARDS AND DEVELOPMENT UNIT
 Office 919-707-6950 FAX 919-250-4119

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: DATE:
 FILE SPEC.: ds174:/usr/details/stand/boxtojbse.dgn



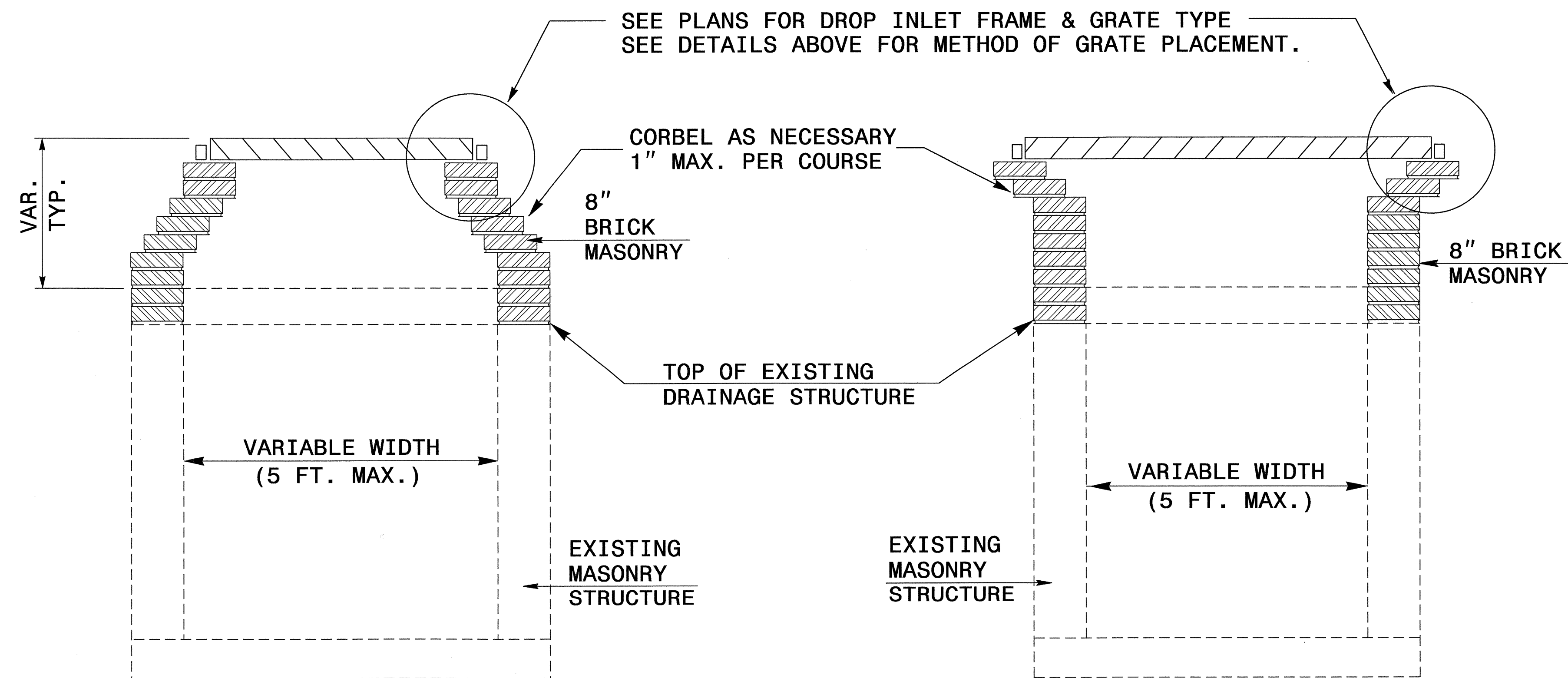
GRATE PLACEMENT DETAIL
FOR DROP INLETS



GRATE PLACEMENT DETAIL
FOR GRATED DROP INLETS

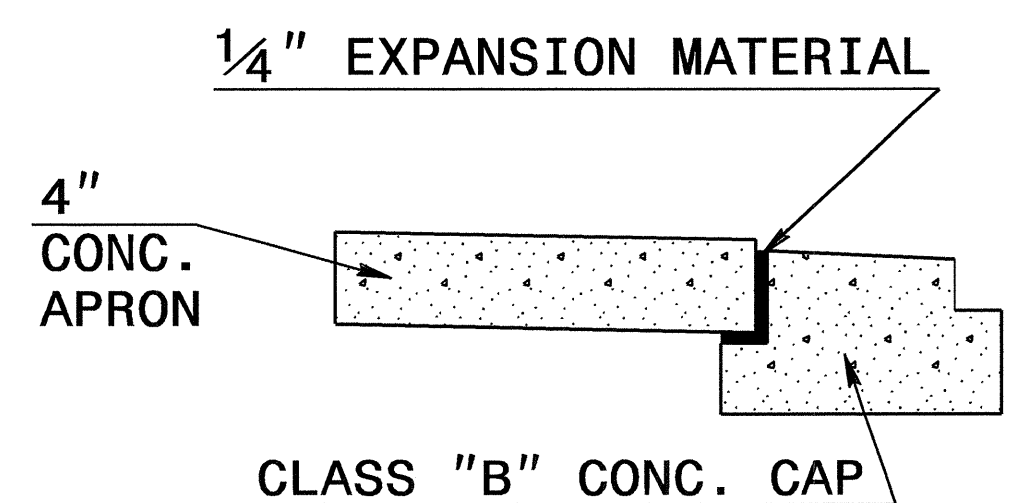
GENERAL NOTES:

- CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.
- USE CLASS B CONCRETE.
- THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.
- JUMBO CONCRETE BRICK WILL BE PERMITTED. 4" CONCRETE BRICK OR 8" SOLID CONCRETE BLOCK ARE REQUIRED FOR DRAINAGE STRUCTURE.
- INCLUDE 18" CONCRETE APRON IN UNIT PRICE BID PER EACH, CONVERT EXISTING CATCH BASIN TO DROP INLET.
- SPECIAL DESIGN IS REQUIRED FOR USE UNDER PAVEMENT.
- CONFIRM DIMENSIONS ON EACH INDIVIDUAL FRAME & GRATE PROPOSAL.
- SEE STD. DRAWING 840.25 FOR MASONRY ANCHORAGE.

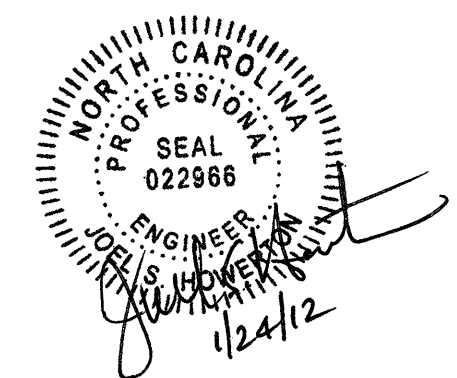


TYPICAL SECTION

TYPICAL SECTION



EXPANSION JOINT DETAIL



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

DETAIL TO CONVERT EXISTING CATCH BASIN OR JUNCTION BOX TO DROP INLET

ORIGINAL BY: T.S.S. DATE: NOV. 1997
 MODIFIED BY: T.S.S./ DATE: FEB. 2000
 CHECKED BY: [Signature] DATE: 1/13/12
 FILE SPEC.: s:\user\details\stand\cbtod102.dgn

I:\JAN-2012-08\08 Special Details\Howerton\Convert CB or JB to DI.dgn
 8:38:58 AM 1/13/12

DETAIL OF EXISTING FOOTING

-Y- PT Sta. 26+96.87

-L- POC Sta. 25+98.15 =
 -Y- POT Sta. 27+66.66
 $\Delta = 55^\circ 05' 01.7''$ (LT)

BEGIN SBG -L- STA. 25+31 (LT)

RETAIN SYSTEM FROM DETOUR

footer top elev = 912 +/-
 (from gen. draw. 1960)
 FS SEE DETAIL "B"

Do not know the specific location of the footers but this indicates their possibly known extent

existing bridge footer 8.5' wide

span 65.5' wide (ex. bridge spans 3 @ 65.5')

footer top elev = 917 +/-
 (from gen. draw. 1960)

END SBG -L- STA. 26+67 (RT)

TIE BERM DITCH TO SPECIAL LATERAL 'V' DITCH

SPECIAL LATERAL 'V' DITCH SEE DETAIL "H"

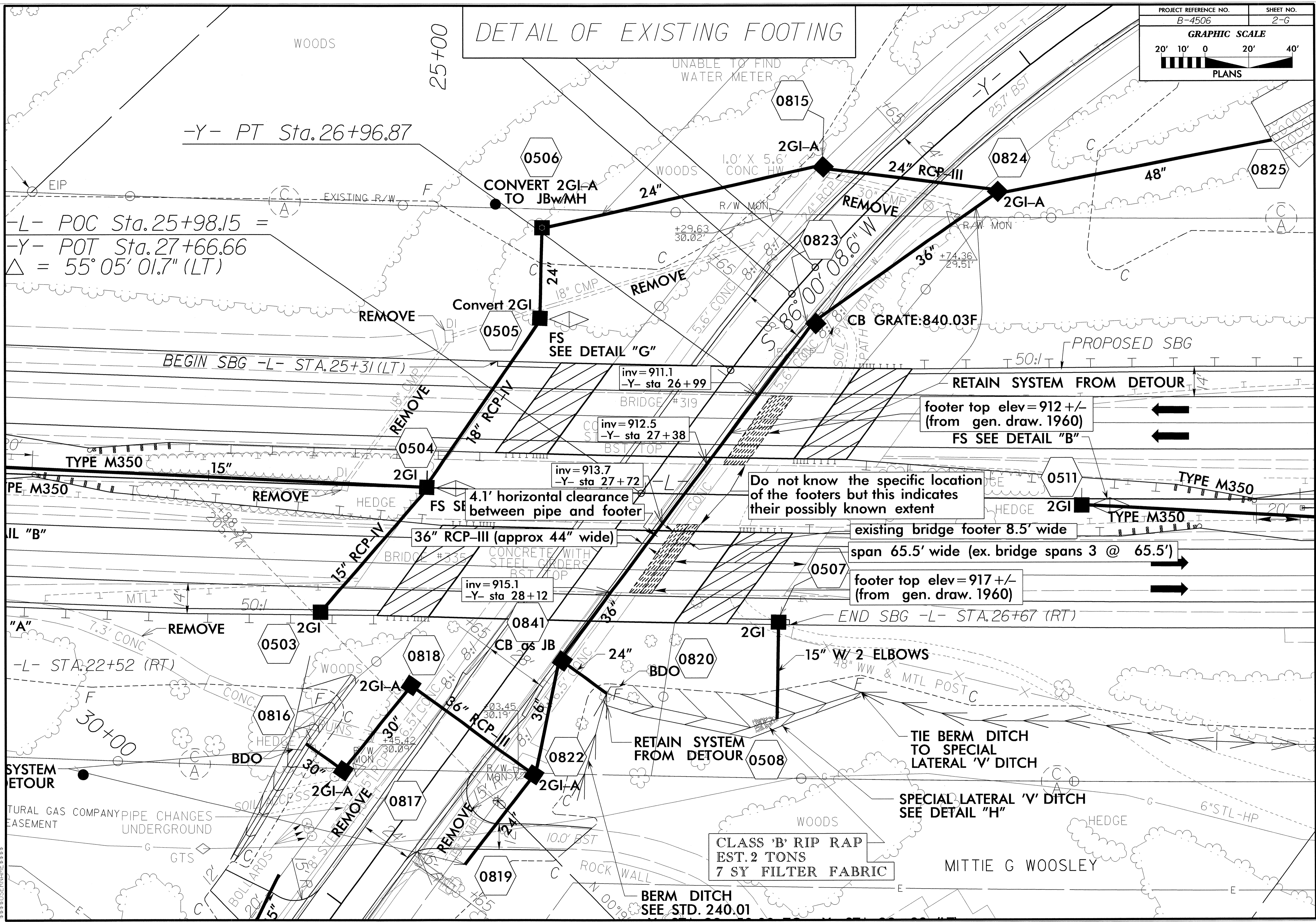
CLASS 'B' RIP RAP EST. 2 TONS
 7 SY FILTER FABRIC

BERM DITCH SEE STD. 240.01

MITTIE G WOOSLEY

NATURAL GAS COMPANY PIPE CHANGES UNDERGROUND EASEMENT

20-JAN-2012 12:04
 R:\Roadwork\Projects\B-4506_rdy-det.tol_2G.dgn
 \$\$\$USERNAME\$\$\$



**SUMMARY OF SHOULDER BERM GUTTER
 IN FEET**

BEGIN STATION	END STATION	LOCATION	LENGTH
-L- STA. 22+52.00	-L- STA. 24+78.70	RT.	226.70
-L- STA. 25+31.00	-L- STA. 25+58.48	LT.	27.48
-L- STA. 26+38.29	-L- STA. 26+67.00	RT.	28.71
-L- STA. 27+21.66	-L- STA. 38+50.00	LT.	1,128.34
-L- STA. 32+75.00	-L- STA. 38+50.00	RT.	575.00
TOTAL			1,986.23
SAY			2,000.00

**SUMMARY OF 2'-6" CURB AND GUTTER
 IN FEET**

BEGIN STATION	END STATION	LOCATION	LENGTH
-Y- STA. 26+49.00	-Y- STA. 28+81.00	LT.	232.00
-Y- STA. 26+49.00	-Y- STA. 28+81.00	RT.	232.00
TOTAL			464.00
SAY			500.00

DOUBLE FACED CABLE GUIDERAIL SUMMARY

BEGIN STATION	END STATION	LOCATION	LENGTH (FEET)	TERMINAL ANCHORS (EA)	INTERMEDIATE ANCHORS (EA)
-L- STA. 14+50.00	-L- STA. 22+98.64	MEDIAN	848.64	2	0
-L- STA. 29+00.38	-L- STA. 37+67.50	MEDIAN	867.12	2	0
SUBTOTAL			1,715.76	4	0
LESS TERMINAL ANCHORS			4@25ft = -100		
TOTAL			1,615.76	4	0
SAY			1,650.00		

SUMMARY OF PAVEMENT REMOVAL IN SQUARE YARDS

BEGIN STATION	END STATION	LOCATION	ASPHALT REMOVAL	CONCRETE REMOVAL
MAINLINE CONCRETE TRAVEL LANE REMOVAL				
-L- STA. 17+50.00	-L- STA. 19+50.00	LT		307.00
-L- STA. 31+76.00	-L- STA. 33+50.00	LT		258.00
MAINLINE PAVED SHOULDER REMOVAL				
-L- STA. 11+00.00	-L- STA. 25+30.62	LT	1,446.00	
-L- STA. 27+25.10	-L- STA. 38+50.00	LT	1,065.00	
-L- STA. 11+00.00	-L- STA. 25+12.45	LT MED	537.00	
-L- STA. 27+08.25	-L- STA. 38+50.00	LT MED	424.00	
-L- STA. 11+00.00	-L- STA. 24+87.32	RT MED	534.00	
-L- STA. 26+82.40	-L- STA. 38+50.00	RT MED	412.00	
-L- STA. 11+00.00	-L- STA. 24+71.02	RT	1,520.00	
-L- STA. 26+65.48	-L- STA. 38+50.00	RT	1,329.00	
DETOUR PAVEMENT REMOVAL				
-DETOUR- STA. 13+29.61	-DETOUR- STA. 25+70.62		3,243.00	
-DETOUR- STA. 27+62.76	-DETOUR- STA. 36+95.76		2,765.00	
-XOVER- STA. 12+49.48	-XOVER- STA. 23+30.00		1,665.00	
-XOVER- STA. 29+40.00	-XOVER- STA. 37+08.00		1,176.00	
TOTAL			16,116.00	565.00
SAY			17,000.00	600.00

NOTE: Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".

SUMMARY OF EARTHWORK
 IN CUBIC YARDS

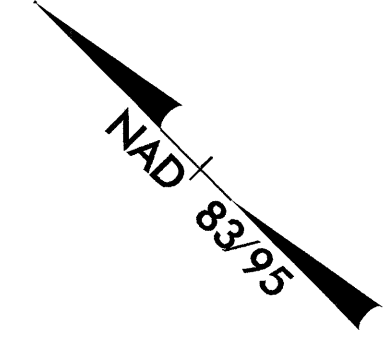
LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- (DET) STA. 12+50.00 TO -L- (DET) STA. 25+96.00	9,217		2,495		6,722
-L- (XOVER) STA. 12+50.00 TO -L- (XOVER) STA. 25+81.00	271		2,566	2,295	
SUBTOTAL 1	9,488		5,061	2,295	6,722
-L- (DET) STA. 27+25.00 TO -L- (DET) STA. 37+00.00	204		15,500	15,296	
-L- (XOVER) STA. 26+85.00 TO -L- (XOVER) STA. 37+00.00	323		1,438	1,115	
SUBTOTAL 2	527		16,938	16,411	
SUBTOTAL - DETOUR & XOVER	10,015		21,999	18,706	6,722
LOSS DUE TO CLEARING & GRUBBING	-2,035			2,035	
WASTE IN LIEU OF BORROW				-6,722	-6,722
TOTAL - DETOUR & XOVER	7,980		21,999	14,019	0
-L- (MED) STA. 11+00.00 TO -L- (MED) STA. 25+58.70	1,867		710		1,157
-L- (RIGHT) STA. 11+00.00 TO -L- (RIGHT) STA. 25+58.70	10,159		1,824		8,335
SUBTOTAL 3	12,026		2,534		9,492
-L- (MED) STA. 26+39.84 TO -L- (MED) STA. 38+50.00	1,523		623		900
-L- (RIGHT) STA. 26+26.00 TO -L- (RIGHT) STA. 38+50.00	3,138		1,979		1,159
SUBTOTAL 4	4,661		2,602		2,059
-Y- STA. 24+00 TO -Y- STA. 30+50	1,750		3,308	1,558	
SUBTOTAL 5	1,750		3,308	1,558	
FINAL DESIGN SUBTOTAL	18,437		8,444	1,558	11,551
WASTE IN LIEU OF BORROW				-1,558	-1,558
FINAL DESIGN TOTAL	18,437		8,444	0	9,993
-L- (LEFT) STA. 11+00.00 TO -L- (LEFT) STA. 25+58.00	5,542		1,378		4,164
SUBTOTAL 6	5,542		1,378		4,164
-L- (LEFT) STA. 26+72.07 TO -L- (LEFT) STA. 38+50.00	4,574		1,220		3,354
SUBTOTAL 7	4,574		1,220		3,354
DETOUR REMOVAL TOTAL	10,116		2,598		7,518
PROJECT SUBTOTAL	36,533		33,041	14,019	17,511
MATERIAL FOR SHOULDER CONSTRUCTION			7,800	7,800	
WASTE IN LIEU OF BORROW (SHOULDER)				-7,800	-7,800
PROJECT TOTAL	36,533		40,841	14,019	9,711
EST. 5% TO REPLACE TOPSOIL ON BORROW PIT				701	
GRAND TOTAL	36,533			14,720	
SAY	37,000 CY			15,000 CY	

EST. DDE = 200 CY
 EST. SHALLOW UNDERCUT = 1,000 CY
 EST. UNDERCUT = 1,000 CY

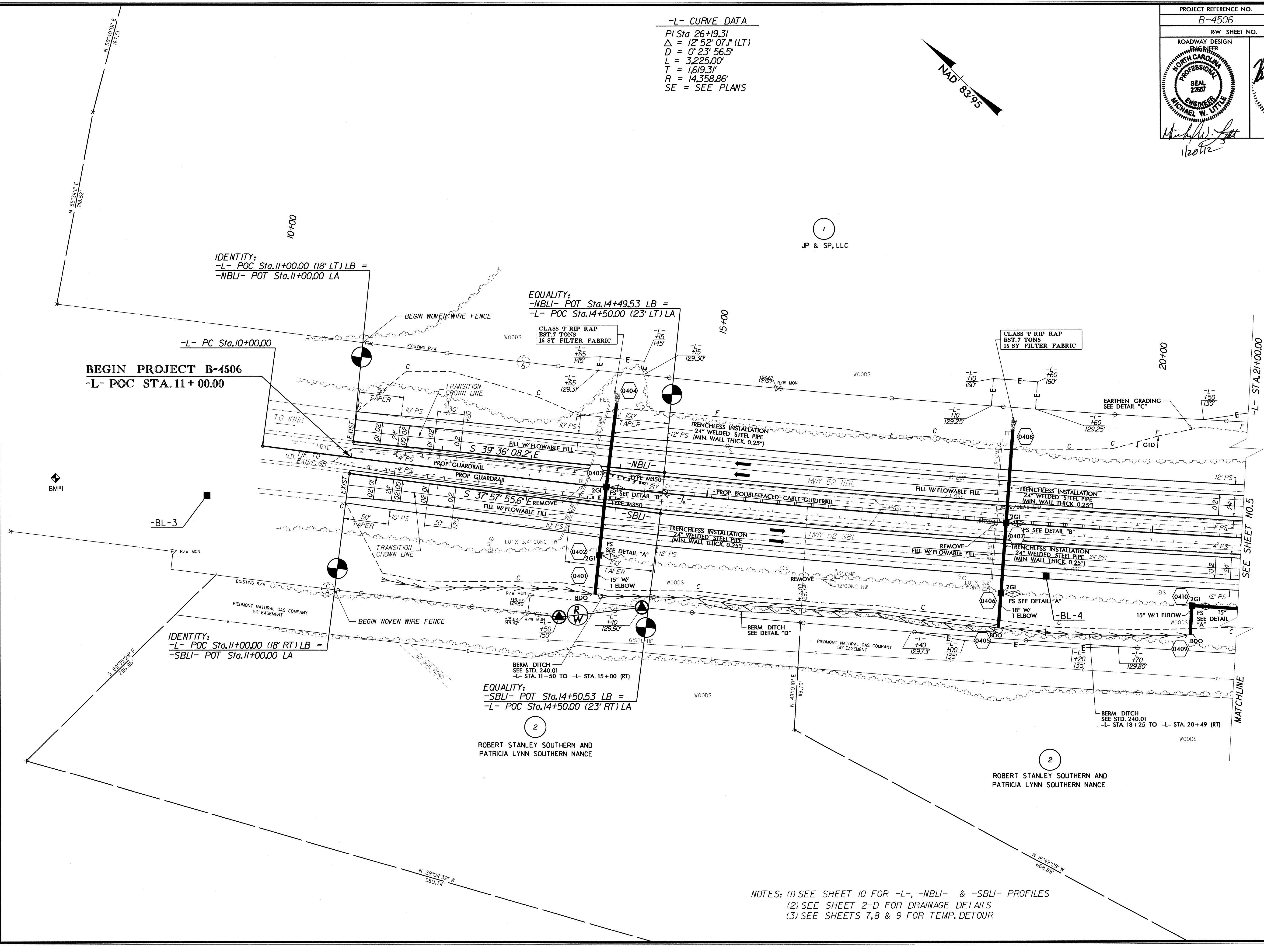
NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

NOTE: Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".

-L- CURVE DATA
 PI Sta 26+19.31
 $\Delta = 12^\circ 52' 07.1" (LT)$
 $D = 0^\circ 23' 56.5"$
 $L = 3,225.00'$
 $T = 1,619.31'$
 $R = 14,358.86'$
 SE = SEE PLANS



REVISIONS



IDENTITY:
 -L- POC Sta.11+00.00 (18' LT) LB =
 -NBLI- POT Sta.11+00.00 LA

EQUALITY:
 -NBLI- POT Sta.14+49.53 LB =
 -L- POC Sta.14+50.00 (23' LT) LA

BEGIN PROJECT B-4506
 -L- POC STA.11+00.00

IDENTITY:
 -L- POC Sta.11+00.00 (18' RT) LB =
 -SBLI- POT Sta.11+00.00 LA

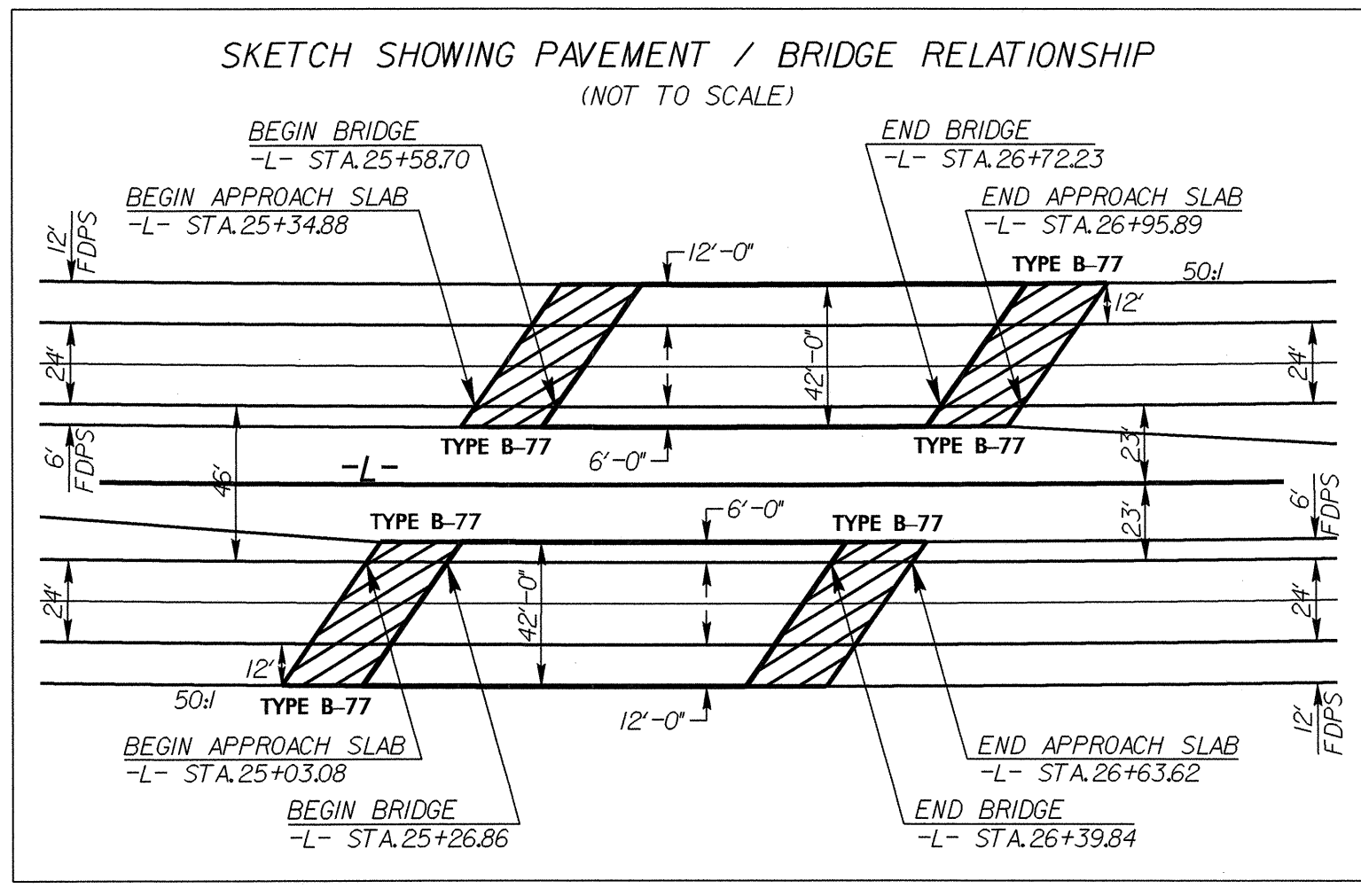
EQUALITY:
 -SBLI- POT Sta.14+50.53 LB =
 -L- POC Sta.14+50.00 (23' RT) LA

ROBERT STANLEY SOUTHERN AND
 PATRICIA LYNN SOUTHERN NANCE

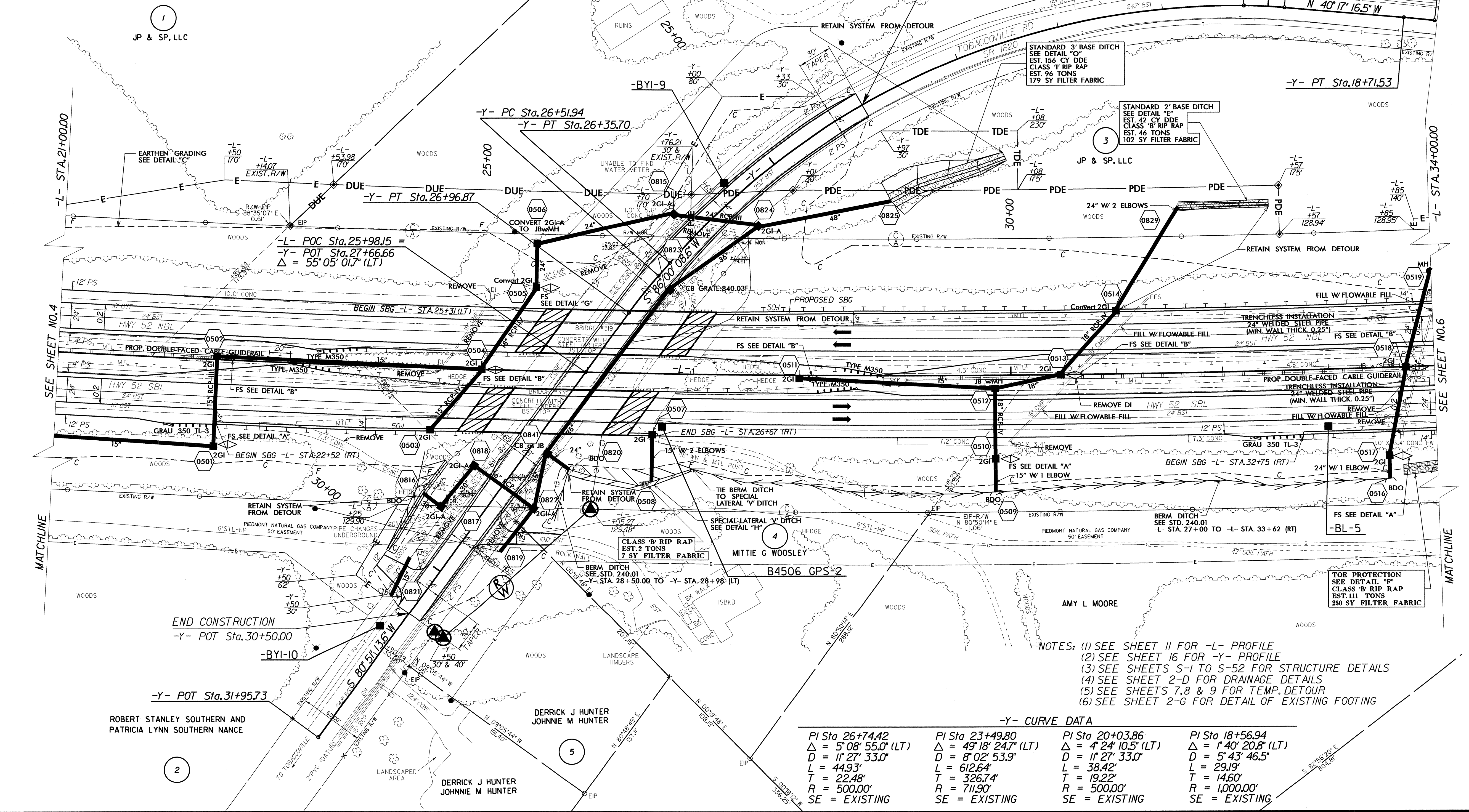
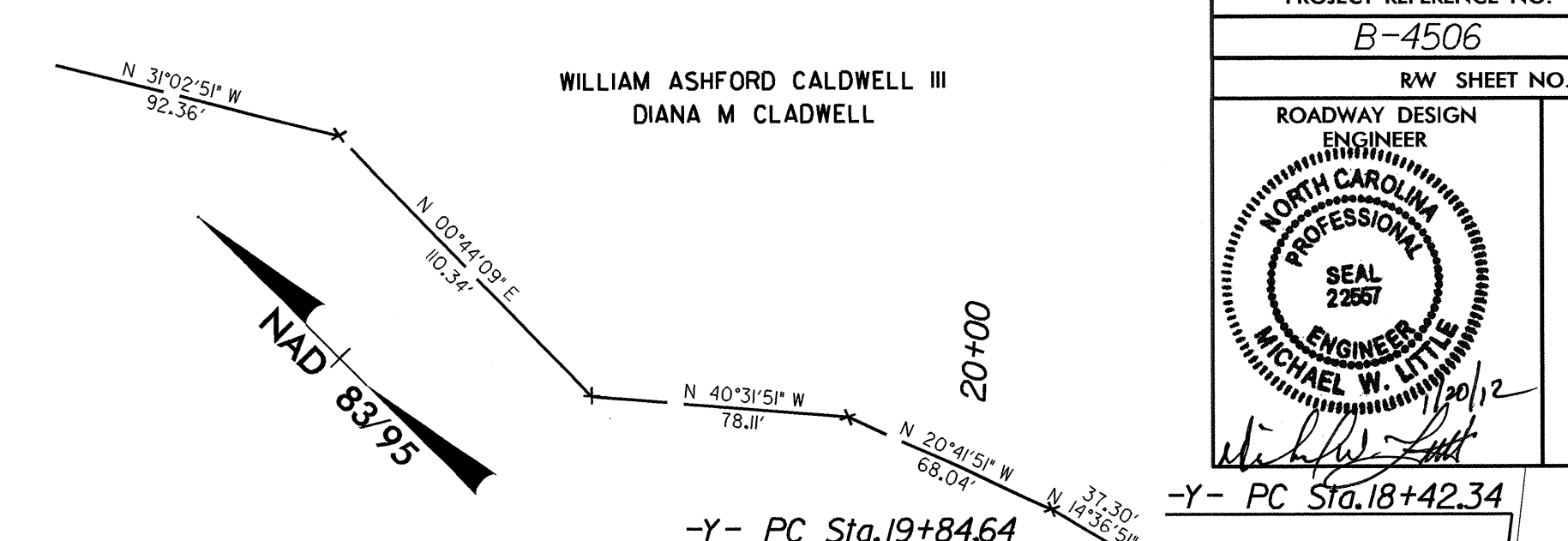
ROBERT STANLEY SOUTHERN AND
 PATRICIA LYNN SOUTHERN NANCE

NOTES: (1) SEE SHEET 10 FOR -L-, -NBLI- & -SBLI- PROFILES
 (2) SEE SHEET 2-D FOR DRAINAGE DETAILS
 (3) SEE SHEETS 7, 8 & 9 FOR TEMP. DETOUR

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 \$\$\$DSTERNAME\$\$\$



-L- CURVE DATA
 PI Sta 26+19.31
 $\Delta = 12^\circ 52' 07.1''$ (LT)
 $D = 0^\circ 23' 56.5''$
 $L = 3,225.00'$
 $T = 1,619.31'$
 $R = 14,358.86'$
 $SE = .02$



NOTES:
 (1) SEE SHEET 11 FOR -L- PROFILE
 (2) SEE SHEET 16 FOR -Y- PROFILE
 (3) SEE SHEETS S-1 TO S-52 FOR STRUCTURE DETAILS
 (4) SEE SHEET 2-D FOR DRAINAGE DETAILS
 (5) SEE SHEETS 7, 8 & 9 FOR TEMP. DETOUR
 (6) SEE SHEET 2-G FOR DETAIL OF EXISTING FOOTING

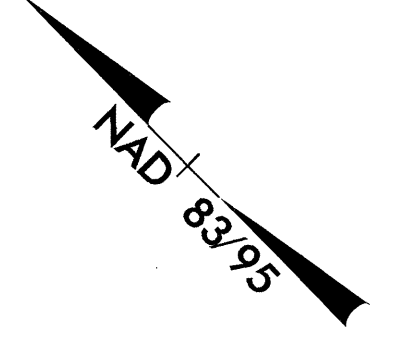
-Y- CURVE DATA

PI Sta 26+74.42 $\Delta = 5^\circ 08' 55.0''$ (LT) $D = 1^\circ 27' 33.0''$ $L = 44.93'$ $T = 22.48'$ $R = 500.00'$ SE = EXISTING	PI Sta 23+49.80 $\Delta = 49^\circ 18' 24.7''$ (LT) $D = 8^\circ 02' 53.9''$ $L = 612.64'$ $T = 326.74'$ $R = 711.90'$ SE = EXISTING	PI Sta 20+03.86 $\Delta = 4^\circ 24' 10.5''$ (LT) $D = 1^\circ 27' 33.0''$ $L = 38.42'$ $T = 19.22'$ $R = 500.00'$ SE = EXISTING	PI Sta 18+56.94 $\Delta = 1^\circ 40' 20.8''$ (LT) $D = 5^\circ 43' 46.5''$ $L = 29.19'$ $T = 14.60'$ $R = 1,000.00'$ SE = EXISTING
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REVISIONS

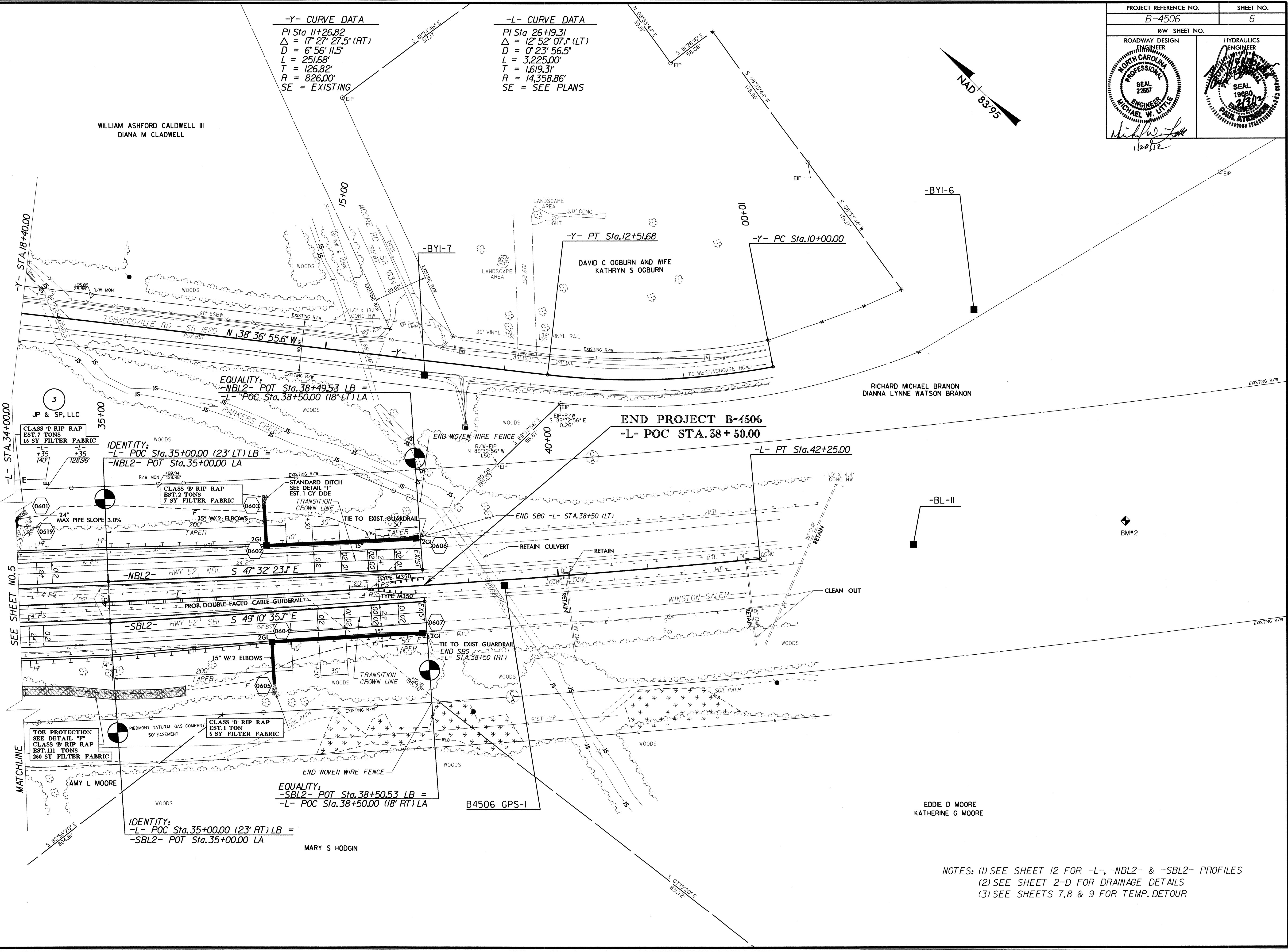
20-JAN-2012 12:03
 C:\road\proj\p4506_r.dwg_pah5.dgn
 \$\$\$\$USERNAME\$\$\$\$

PROJECT REFERENCE NO. B-4506	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22661 MICHAEL W. LITTLE 1/20/12	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 19860 PAUL ATENBERG



-Y- CURVE DATA
 PI Sta. 11+26.82
 $\Delta = 17^\circ 27' 27.5''$ (RT)
 $D = 6^\circ 56' 11.5''$
 $L = 251.68'$
 $T = 126.82'$
 $R = 826.00'$
 SE = EXISTING

-L- CURVE DATA
 PI Sta. 26+19.31
 $\Delta = 12^\circ 52' 07.1''$ (LT)
 $D = 0^\circ 23' 56.5''$
 $L = 3,225.00'$
 $T = 1,619.31'$
 $R = 14,358.86'$
 SE = SEE PLANS



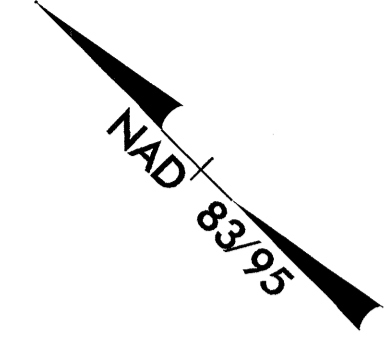
REVISIONS

SEE SHEET NO. 5

MATCHLINE

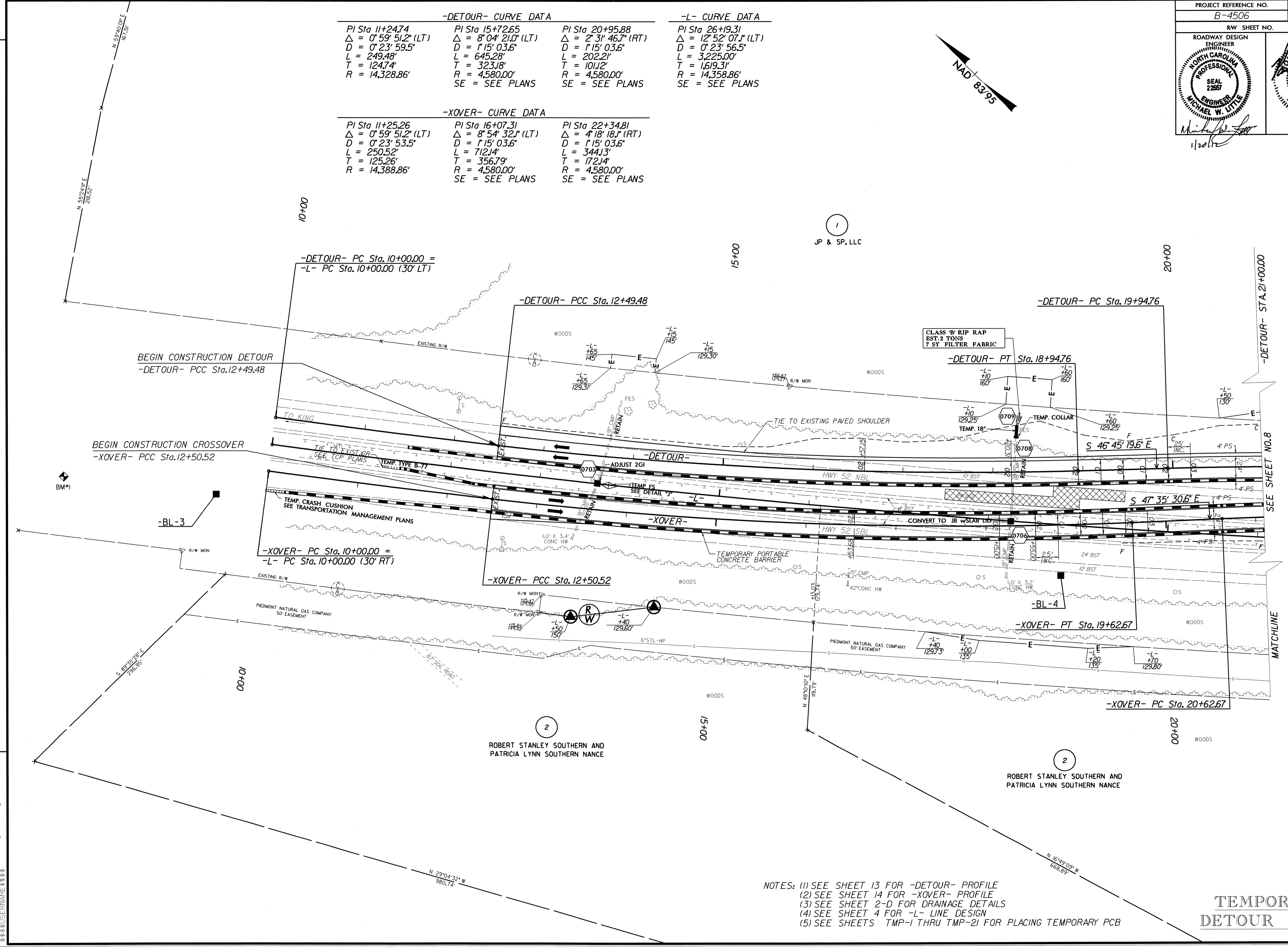
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NOTES: (1) SEE SHEET 12 FOR -L-, -NBL2- & -SBL2- PROFILES
 (2) SEE SHEET 2-D FOR DRAINAGE DETAILS
 (3) SEE SHEETS 7, 8 & 9 FOR TEMP. DETOUR



-DETOUR- CURVE DATA			-L- CURVE DATA		
PI Sta 11+24.74	PI Sta 15+72.65	PI Sta 20+95.88	PI Sta 26+19.31		
$\Delta = 0^\circ 59' 51.2''$ (LT)	$\Delta = 8^\circ 04' 21.0''$ (LT)	$\Delta = 2^\circ 31' 46.7''$ (RT)	$\Delta = 12^\circ 52' 07.1''$ (LT)		
D = 0' 23' 59.5"	D = 1' 15' 03.6"	D = 1' 15' 03.6"	D = 0' 23' 56.5"		
L = 249.48'	L = 645.28'	L = 202.21'	L = 3,225.00'		
T = 124.74'	T = 323.18'	T = 101.12'	T = 1,619.31'		
R = 14,328.86'	R = 4,580.00'	R = 4,580.00'	R = 14,358.86'		
SE = SEE PLANS			SE = SEE PLANS		

-XOVER- CURVE DATA		
PI Sta 11+25.26	PI Sta 16+07.31	PI Sta 22+34.81
$\Delta = 0^\circ 59' 51.2''$ (LT)	$\Delta = 8^\circ 54' 32.1''$ (LT)	$\Delta = 4^\circ 18' 18.1''$ (RT)
D = 0' 23' 53.5"	D = 1' 15' 03.6"	D = 1' 15' 03.6"
L = 250.52'	L = 712.14'	L = 344.13'
T = 125.26'	T = 356.79'	T = 172.14'
R = 14,388.86'	R = 4,580.00'	R = 4,580.00'
SE = SEE PLANS		

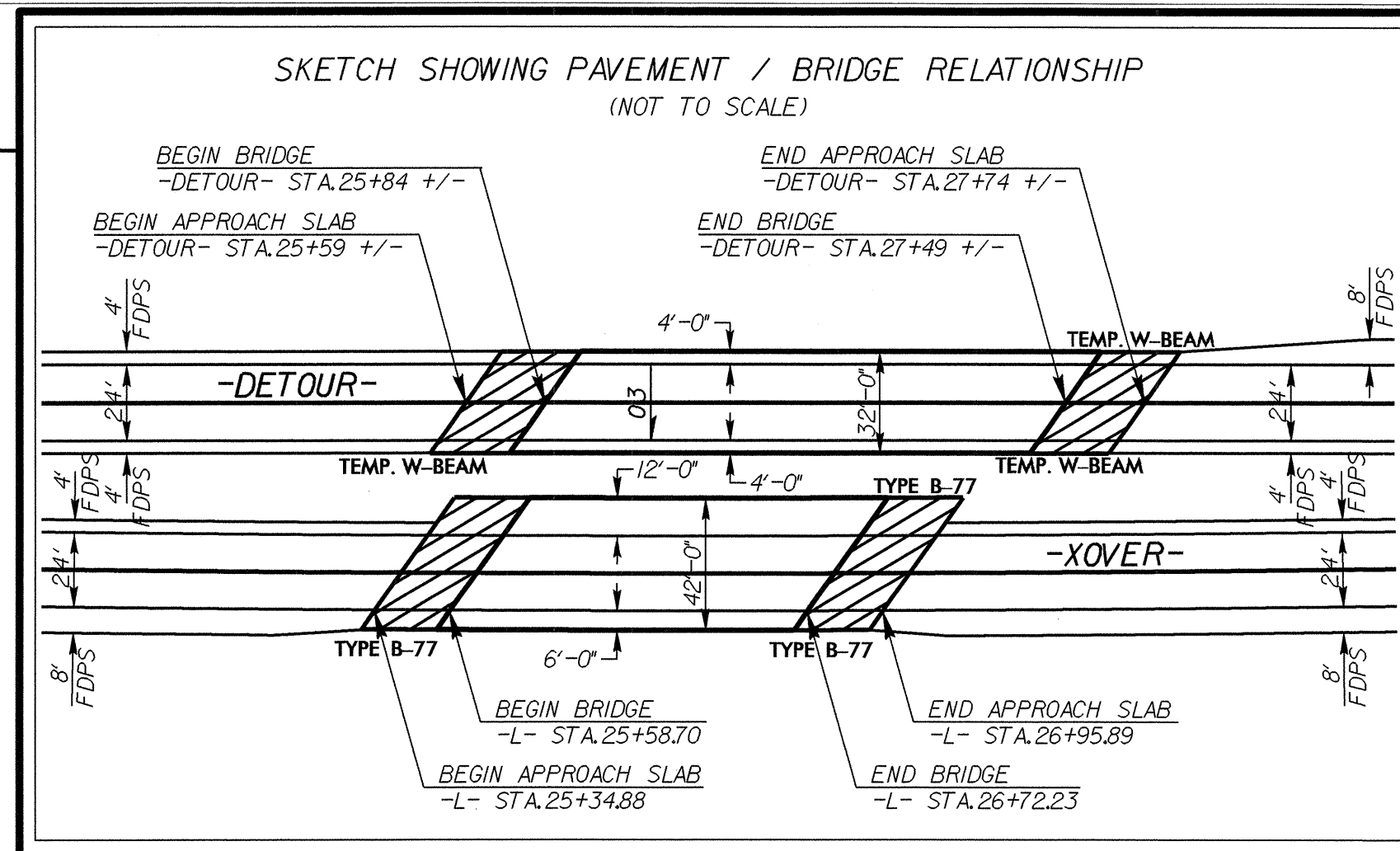


REVISIONS

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 \$\$\$\$REVISIONS\$\$\$\$

- NOTES: (1) SEE SHEET 13 FOR -DETOUR- PROFILE
 (2) SEE SHEET 14 FOR -XOVER- PROFILE
 (3) SEE SHEET 2-D FOR DRAINAGE DETAILS
 (4) SEE SHEET 4 FOR -L- LINE DESIGN
 (5) SEE SHEETS TMP-1 THRU TMP-21 FOR PLACING TEMPORARY PCB

TEMPORARY
DETOUR SHEET

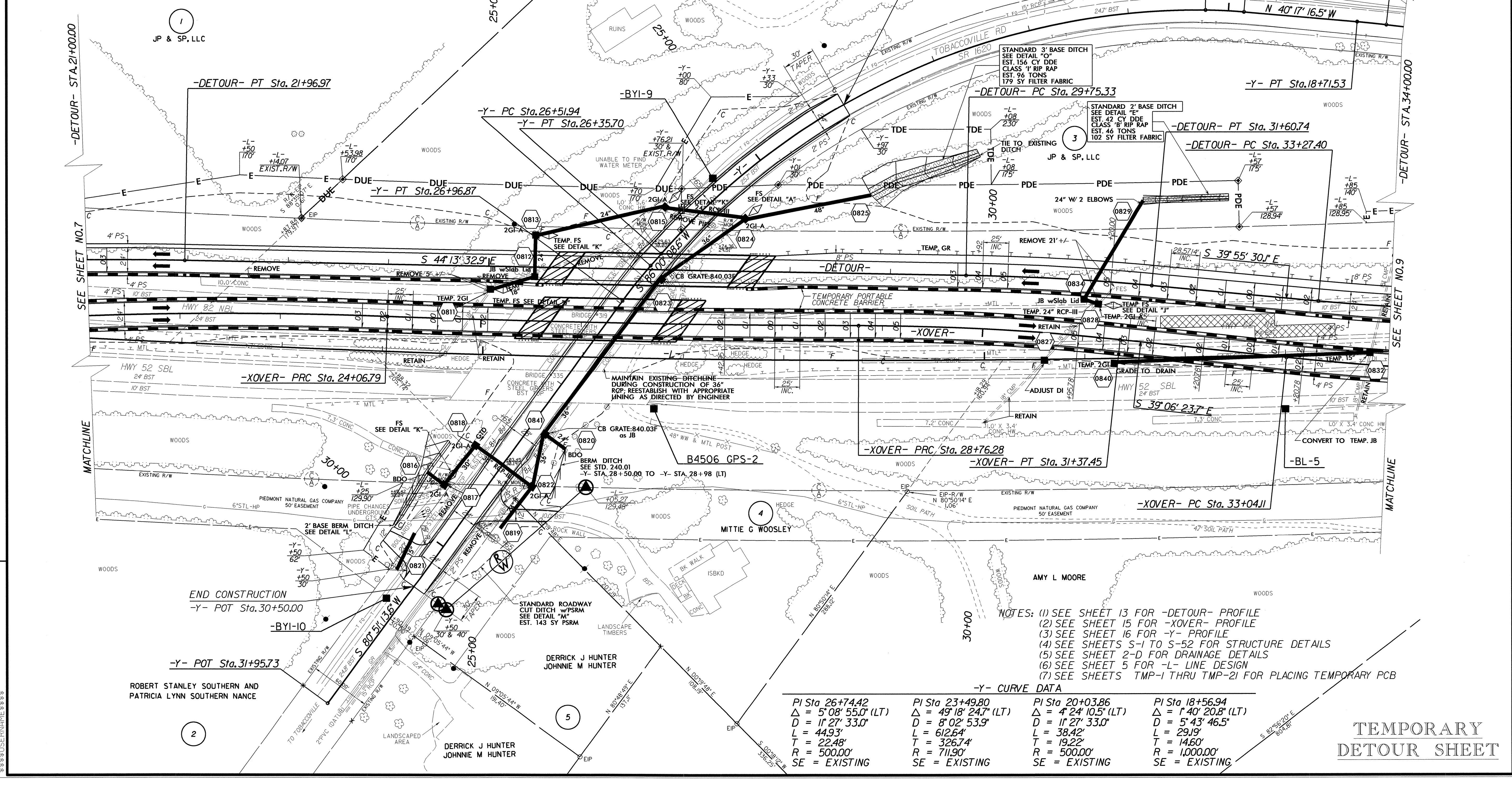
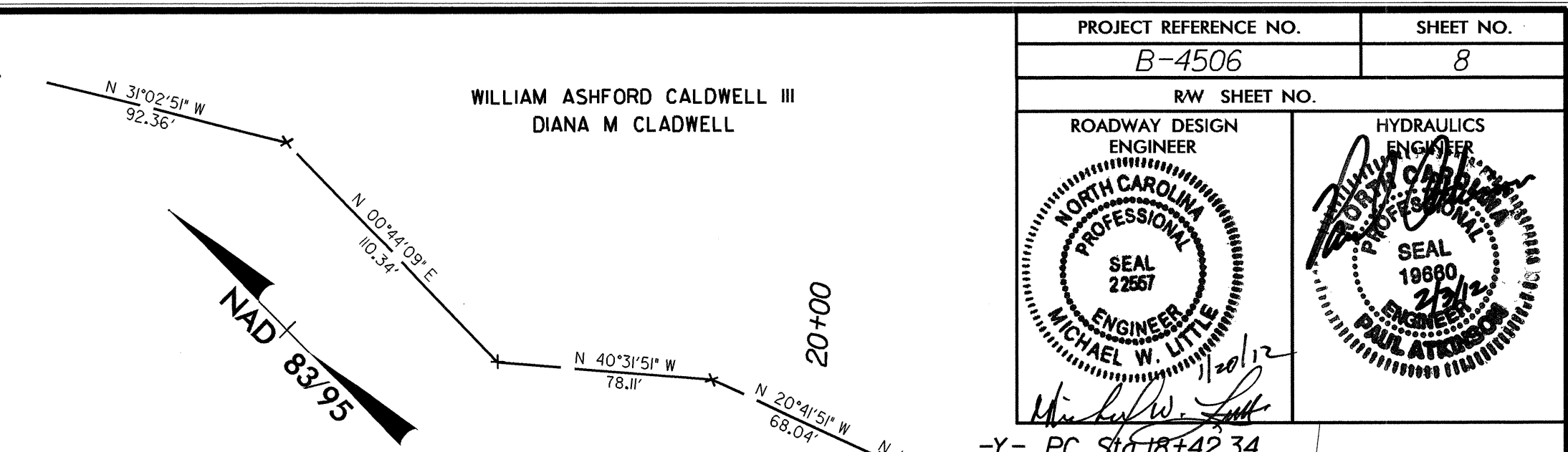


-DETOUR- CURVE DATA

PI Sta	PI Sta	PI Sta	PI Sta
20+95.88	30+68.08	35+11.92	26+19.31
$\Delta = 2' 31' 46.7''$ (RT)	$\Delta = 4' 18' 02.7''$ (RT)	$\Delta = 8' 32' 40.4''$ (LT)	$\Delta = 12' 52' 07.1''$ (LT)
$D = 1' 15' 03.6''$	$D = 2' 19' 10.8''$	$D = 2' 19' 10.8''$	$D = 0' 23' 56.5''$
$L = 202.21'$	$L = 185.40'$	$L = 368.35'$	$L = 3,225.00'$
$T = 101.12'$	$T = 92.75'$	$T = 184.52'$	$T = 1,619.31'$
$R = 4,580.00'$	$R = 2,470.00'$	$R = 2,470.00'$	$R = 14,358.86'$
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = .02

-XOVER- CURVE DATA

PI Sta	PI Sta	PI Sta	PI Sta
22+34.81	26+41.56	30+06.99	35+06.38
$\Delta = 4' 18' 18.1''$ (RT)	$\Delta = 1' 52' 40.7''$ (LT)	$\Delta = 6' 03' 29.5''$ (RT)	$\Delta = 9' 21' 46.8''$ (LT)
$D = 1' 15' 03.6''$	$D = 0' 24' 00.0''$	$D = 2' 19' 10.8''$	$D = 2' 19' 10.8''$
$L = 344.13'$	$L = 469.49'$	$L = 261.17'$	$L = 403.64'$
$T = 172.14'$	$T = 234.76'$	$T = 130.71'$	$T = 202.27'$
$R = 4,580.00'$	$R = 14,323.86'$	$R = 2,470.00'$	$R = 2,470.00'$
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS



-Y- CURVE DATA

PI Sta	PI Sta	PI Sta	PI Sta
26+74.42	23+49.80	20+03.86	18+56.94
$\Delta = 5' 08' 55.0''$ (LT)	$\Delta = 49' 18' 24.7''$ (LT)	$\Delta = 4' 24' 10.5''$ (LT)	$\Delta = 1' 40' 20.8''$ (LT)
$D = 11' 27' 33.0''$	$D = 8' 02' 53.9''$	$D = 11' 27' 33.0''$	$D = 5' 43' 46.5''$
$L = 44.93'$	$L = 612.64'$	$L = 38.42'$	$L = 29.19'$
$T = 22.48'$	$T = 326.74'$	$T = 19.22'$	$T = 14.60'$
$R = 500.00'$	$R = 711.90'$	$R = 500.00'$	$R = 1,000.00'$
SE = EXISTING	SE = EXISTING	SE = EXISTING	SE = EXISTING

- NOTES: (1) SEE SHEET 13 FOR -DETOUR- PROFILE
(2) SEE SHEET 15 FOR -XOVER- PROFILE
(3) SEE SHEET 16 FOR -Y- PROFILE
(4) SEE SHEETS S-1 TO S-52 FOR STRUCTURE DETAILS
(5) SEE SHEET 2-D FOR DRAINAGE DETAILS
(6) SEE SHEET 5 FOR -L- LINE DESIGN
(7) SEE SHEETS TMP-1 THRU TMP-21 FOR PLACING TEMPORARY PCB

TEMPORARY
DETOUR SHEET

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\$\$\$\$\$USER\$NAME\$\$\$\$\$

-Y- CURVE DATA

PI Sta 11+26.82
 $\Delta = 17^{\circ} 27' 27.5"$ (RT)
 D = 6' 56" 11.5"
 L = 251.68'
 T = 126.82'
 R = 826.00'
 SE = EXISTING

-L- CURVE DATA

PI Sta 26+19.31
 $\Delta = 12^{\circ} 52' 07.1"$ (LT)
 D = 0' 23' 56.5"
 L = 3,225.00'
 T = 1,619.31'
 R = 14,358.86'
 SE = SEE PLANS

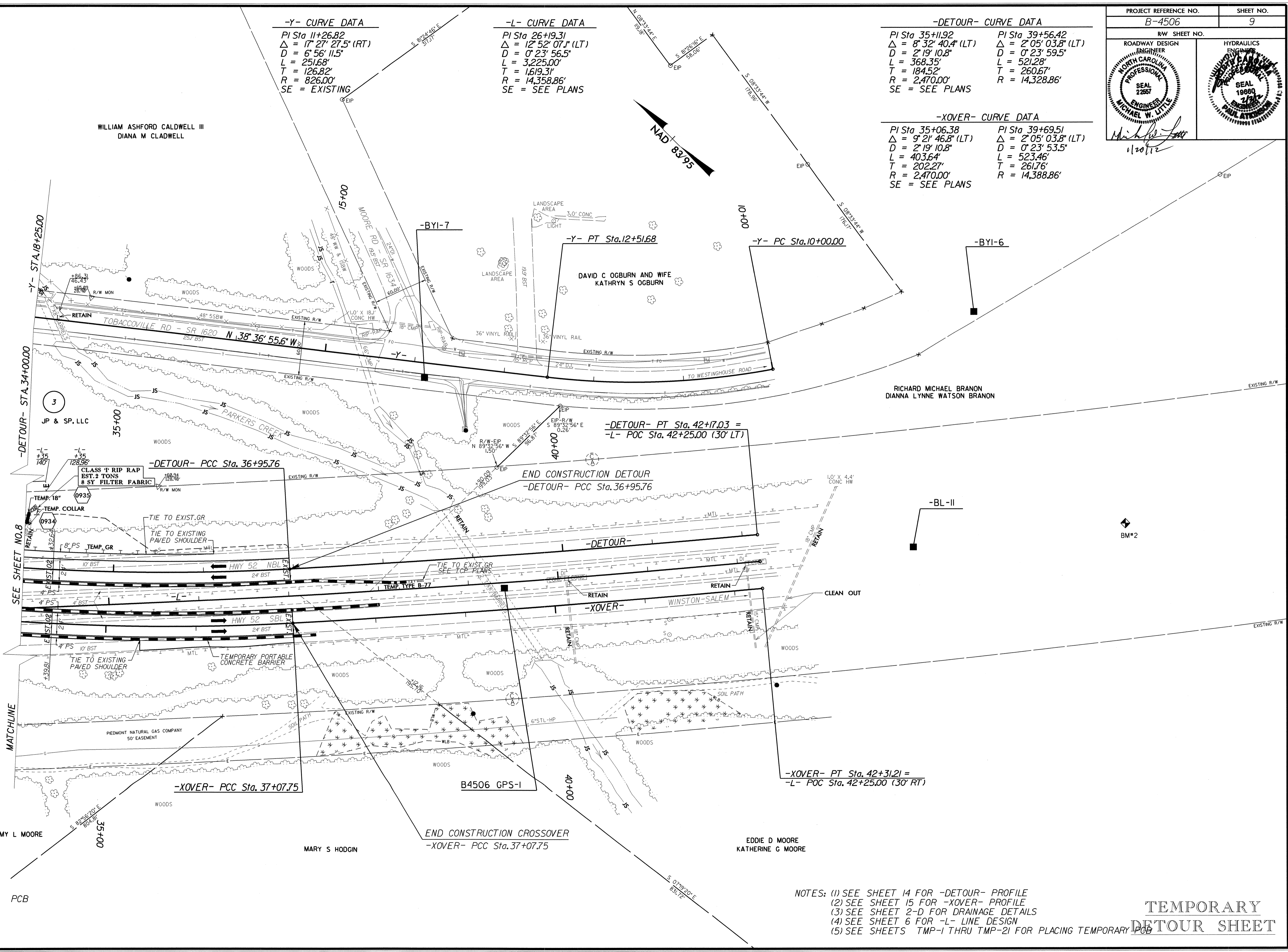
-DETOUR- CURVE DATA

PI Sta 35+11.92 $\Delta = 8^{\circ} 32' 40.4"$ (LT) D = 2' 19' 10.8" L = 368.35' T = 184.52' R = 2,470.00'	PI Sta 39+56.42 $\Delta = 2^{\circ} 05' 03.8"$ (LT) D = 0' 23' 59.5" L = 521.28' T = 260.67' R = 14,328.86'
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-XOVER- CURVE DATA

PI Sta 35+06.38 $\Delta = 9^{\circ} 21' 46.8"$ (LT) D = 2' 19' 10.8" L = 403.64' T = 202.27' R = 2,470.00'	PI Sta 39+69.51 $\Delta = 2^{\circ} 05' 03.8"$ (LT) D = 0' 23' 53.5" L = 523.46' T = 261.76' R = 14,388.86'
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REVISIONS

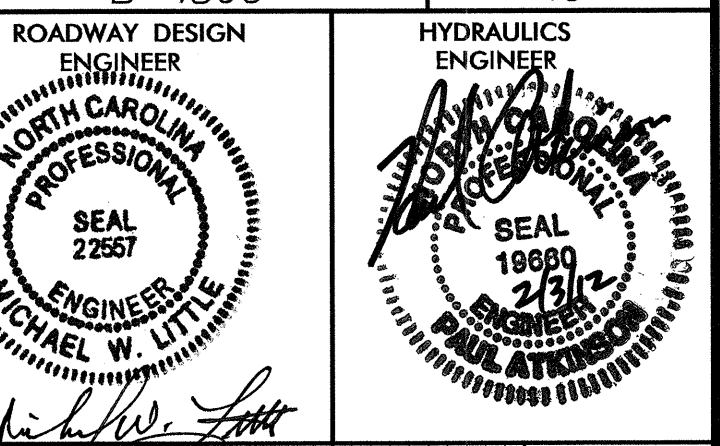


18-JAN-2012 07:17 N:\4506.rdy_psh9.dgn
 USER:AME

NOTES: (1) SEE SHEET 14 FOR -DETOUR- PROFILE
 (2) SEE SHEET 15 FOR -XOVER- PROFILE
 (3) SEE SHEET 2-D FOR DRAINAGE DETAILS
 (4) SEE SHEET 6 FOR -L- LINE DESIGN
 (5) SEE SHEETS TMP-1 THRU TMP-21 FOR PLACING TEMPORARY PCC

**TEMPORARY
DETOUR SHEET**

5/14/99



PIPE HYDRAULIC DATA

DRAINAGE AREA	= 3.07 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 12 CFS
DESIGN HW ELEVATION	= 958.3 FT
100 YEAR DISCHARGE	= 12 CFS
100 YEAR HW ELEVATION	= 958.3 FT
OVERTOPPING FREQUENCY	= 500 + YRS
OVERTOPPING DISCHARGE	= 14 CFS+
OVERTOPPING ELEVATION	= 960.44 FT

IDENTITY:
 -L- POC STA. 11+00.00 (18' LT) LB =
 EXISTING EL = 965.87'
 -NBLI- POT STA. 11+00.00 LA
 EXISTING EL = 967.94'

-NBLI-

PIPE HYDRAULIC DATA

DRAINAGE AREA	= 1.94 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 8.8 CFS
DESIGN HW ELEVATION	= 961.0 FT
100 YEAR DISCHARGE	= 9.3 CFS
100 YEAR HW ELEVATION	= 961.1 FT
OVERTOPPING FREQUENCY	= 500 + YRS
OVERTOPPING DISCHARGE	= 10.3 CFS+
OVERTOPPING ELEVATION	= 963.49 FT

EQUALITY:
 -NBLI- POT STA. 14+49.53 LB =
 EL = 966.73'
 -L- POC STA. 14+50.00 (23' LT) LA
 EL = 966.73'

-L-

-L-

-L-

PI = 20+50.00
 EL = 964.33'
 VC = 94'
 K = 247

IDENTITY:
 -L- POC STA. 11+00.00 (18' RT) LB =
 EXISTING EL = 965.87'
 -SBLI- POT STA. 11+00.00 LA
 EXISTING EL = 967.94'

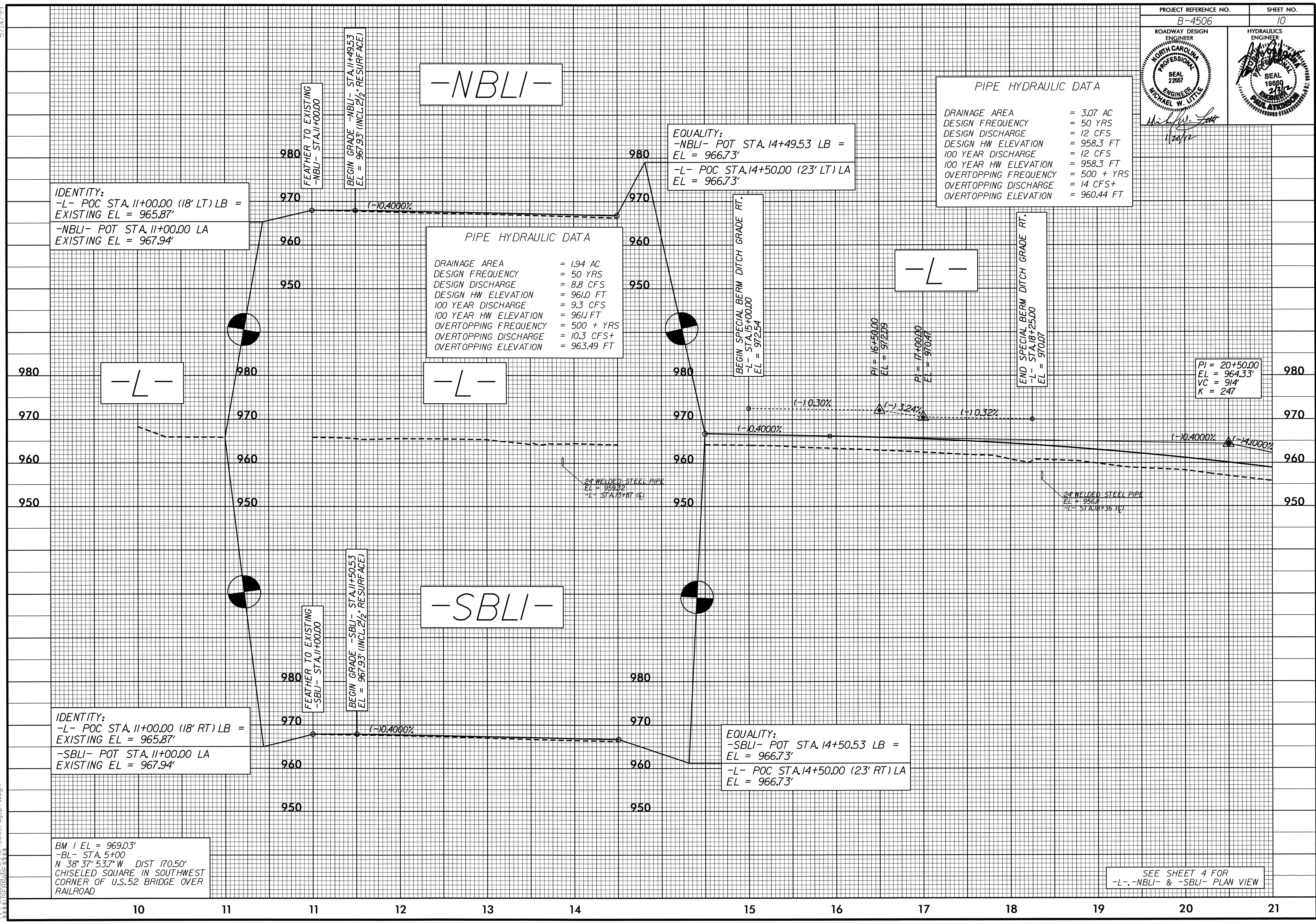
-SBLI-

EQUALITY:
 -SBLI- POT STA. 14+50.53 LB =
 EL = 966.73'
 -L- POC STA. 14+50.00 (23' RT) LA
 EL = 966.73'

BM 1 EL = 969.03'
 -BL- STA. 5+00
 N 38° 37' 53.7" W DIST 170.50'
 CHISELED SQUARE IN SOUTHWEST
 CORNER OF U.S. 52 BRIDGE OVER
 RAILROAD

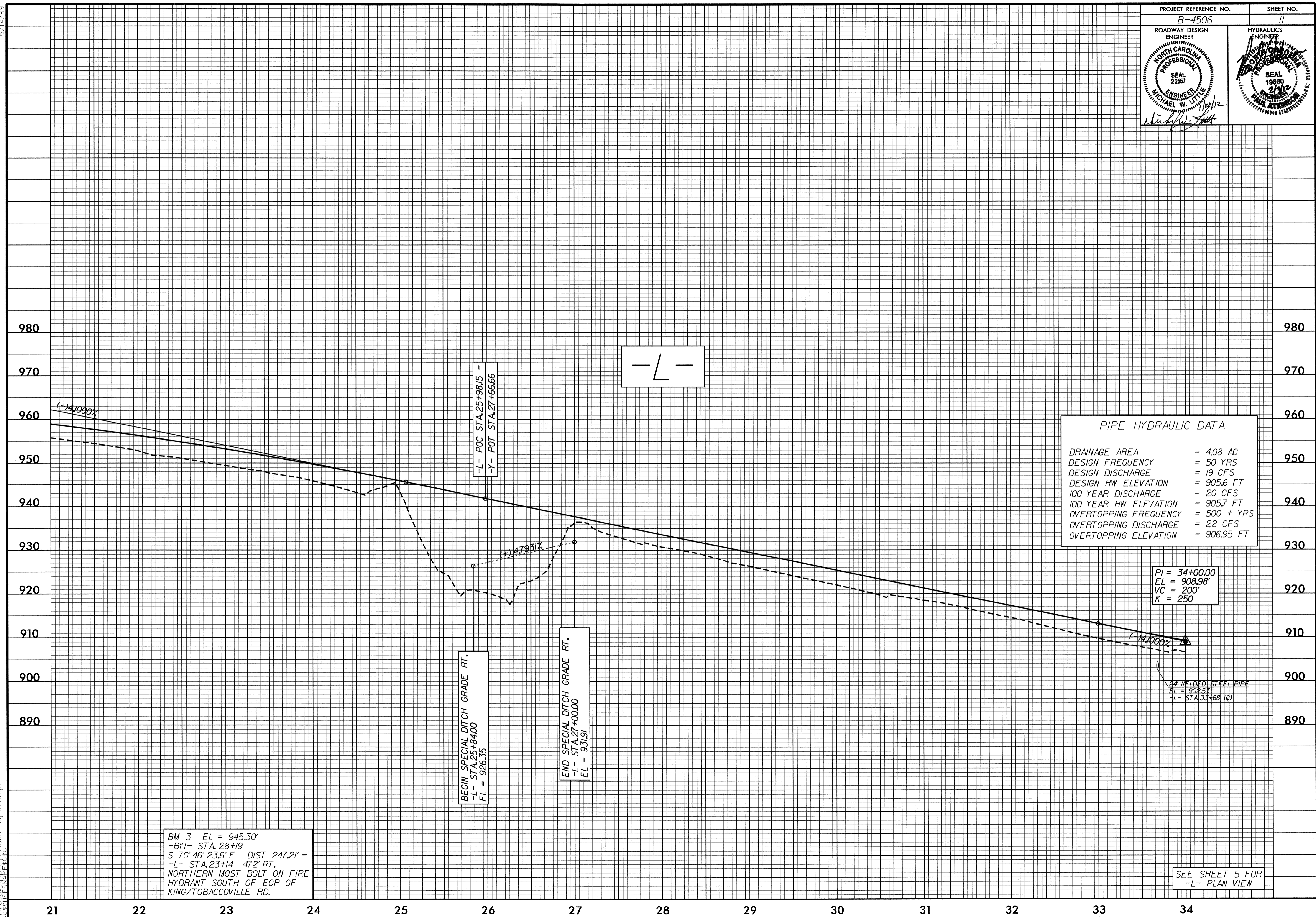
SEE SHEET 4 FOR
 -L-, -NBLI- & -SBLI- PLAN VIEW

18-JAN-2002 07:17 144506.rdy.plt.dgn



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PROJECT REFERENCE NO. B-4506	SHEET NO. 11
ROADWAY DESIGN ENGINEER MICHAEL W. LITTLE NORTH CAROLINA PROFESSIONAL SEAL 22657	HYDRAULICS ENGINEER PAUL ATKINSON NORTH CAROLINA PROFESSIONAL SEAL 19880



DRAINAGE AREA	= 4.08 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 19 CFS
DESIGN HW ELEVATION	= 905.6 FT
100 YEAR DISCHARGE	= 20 CFS
100 YEAR HW ELEVATION	= 905.7 FT
OVERTOPPING FREQUENCY	= 500 + YRS
OVERTOPPING DISCHARGE	= 22 CFS
OVERTOPPING ELEVATION	= 906.95 FT

PI = 34+00.00
 EL = 908.98'
 VC = 200'
 K = 250

-L- POC STA. 25+98.15 =
 -Y- POT STA. 27+66.66

BEGIN SPECIAL DITCH GRADE RT.
 -L- STA. 25+84.00
 EL = 926.35

END SPECIAL DITCH GRADE RT.
 -L- STA. 27+00.00
 EL = 931.91

24" WELDED STEEL PIPE
 EL = 902.53
 -L- STA. 33+68.40

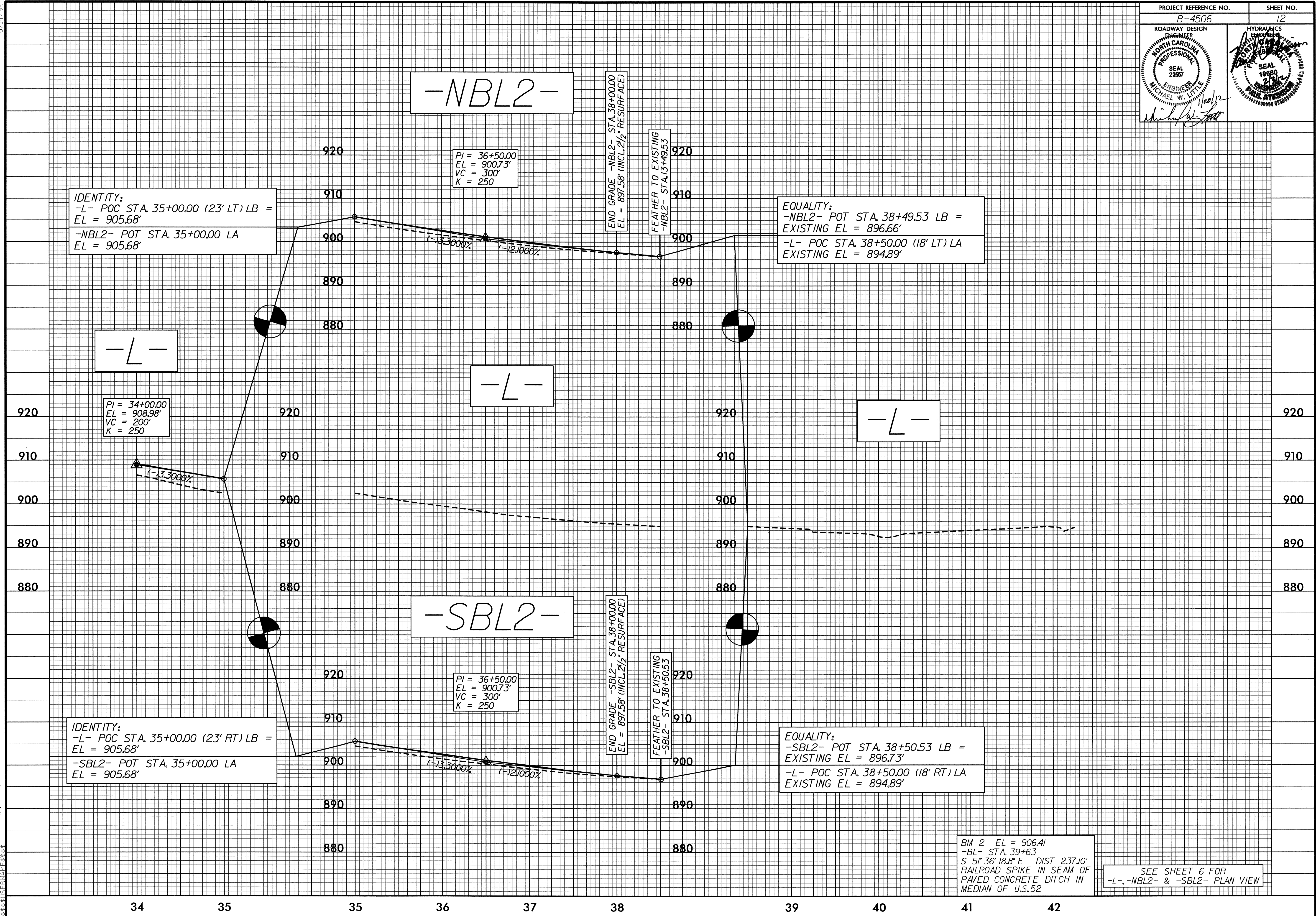
BM 3 EL = 945.30'
 -BYI- STA. 28+19
 S 70° 46' 23.6" E DIST 247.2' =
 -L- STA. 23+14 472' RT.
 NORTHERN MOST BOLT ON FIRE
 HYDRANT SOUTH OF EOP OF
 KING/TOBACCOVILLE RD.

SEE SHEET 5 FOR
 -L- PLAN VIEW

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PROJECT REFERENCE NO. B-4506	SHEET NO. 12
ROADWAY DESIGN NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22661 MICHAEL W. LITTLE	HYDRAULICS NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 1989 PAUL A. TRAVIS



IDENTITY:
-L- POC STA. 35+00.00 (23' LT) LB = EL = 905.68'
-NBL2- POT STA. 35+00.00 LA EL = 905.68'

-L-

PI = 34+00.00
EL = 908.98'
VC = 200'
K = 250

-L-

-L-

-SBL2-

IDENTITY:
-L- POC STA. 35+00.00 (23' RT) LB = EL = 905.68'
-SBL2- POT STA. 35+00.00 LA EL = 905.68'

PI = 36+50.00
EL = 900.73'
VC = 300'
K = 250

END GRADE -SBL2- STA. 38+00.00
EL = 897.58' (INCL. 2 1/2" RESURFACE)

FEATHER TO EXISTING
-SBL2- STA. 38+50.53

EQUALITY:
-SBL2- POT STA. 38+50.53 LB = EXISTING EL = 896.73'
-L- POC STA. 38+50.00 (18' RT) LA EXISTING EL = 894.89'

BM 2 EL = 906.41
-BL- STA. 39+63
S 51° 36' 18.8" E DIST 237.10'
RAILROAD SPIKE IN SEAM OF
PAVED CONCRETE DITCH IN
MEDIAN OF U.S. 52

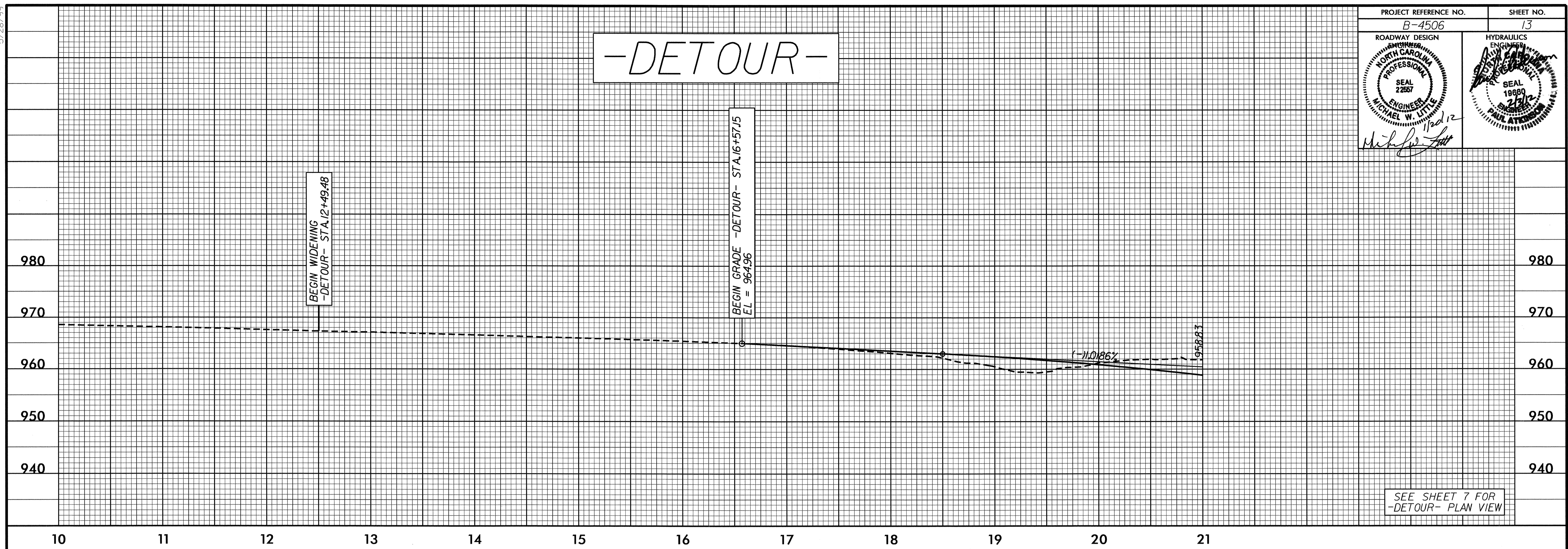
SEE SHEET 6 FOR
-L-, -NBL2- & -SBL2- PLAN VIEW

09-JAN-2012 09:54:45 06_rdy_pf1.dgn

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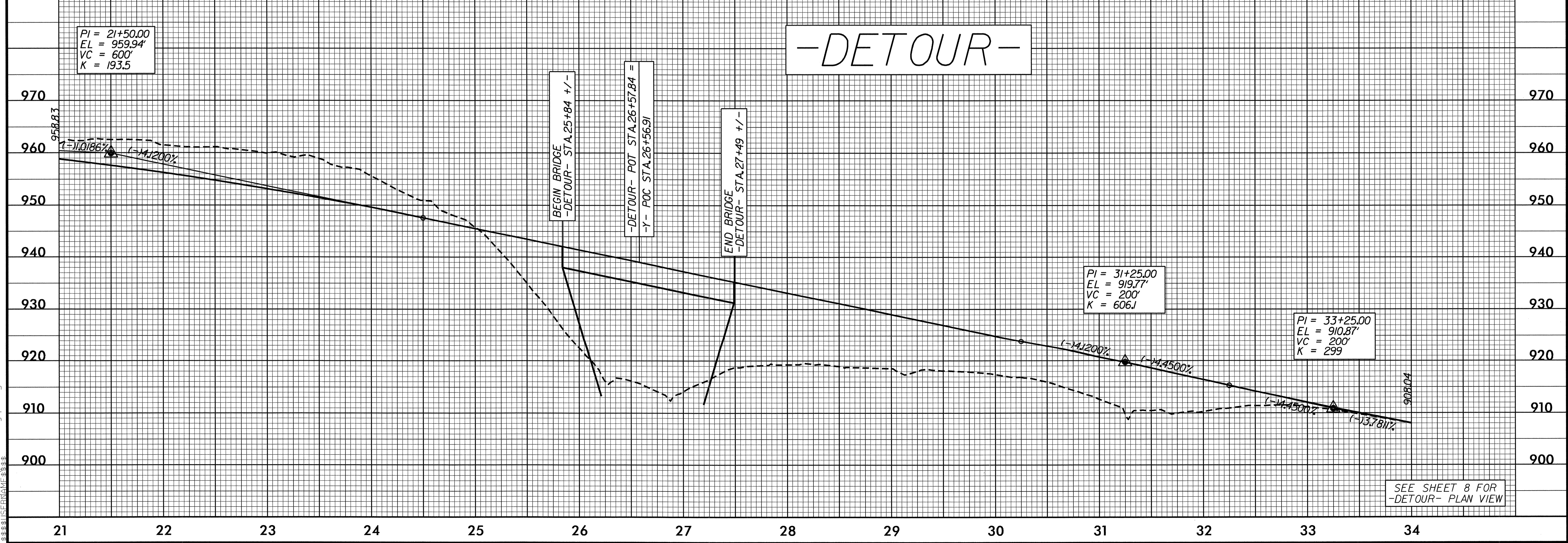
PROJECT REFERENCE NO. B-4506	SHEET NO. 13
ROADWAY DESIGN ENGINEER MICHAEL W. LITTLE PROFESSIONAL SEAL 2257	HYDRAULICS ENGINEER PAUL ATWOOD PROFESSIONAL SEAL 1860

-DETOUR-



SEE SHEET 7 FOR
-DETOUR- PLAN VIEW

-DETOUR-



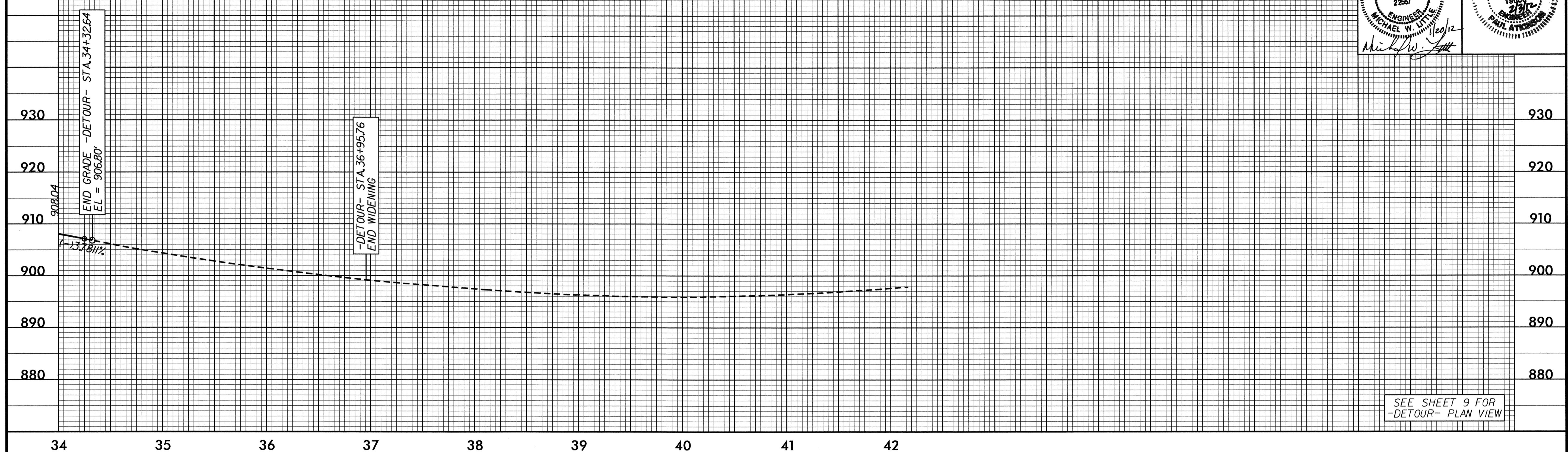
SEE SHEET 8 FOR
-DETOUR- PLAN VIEW

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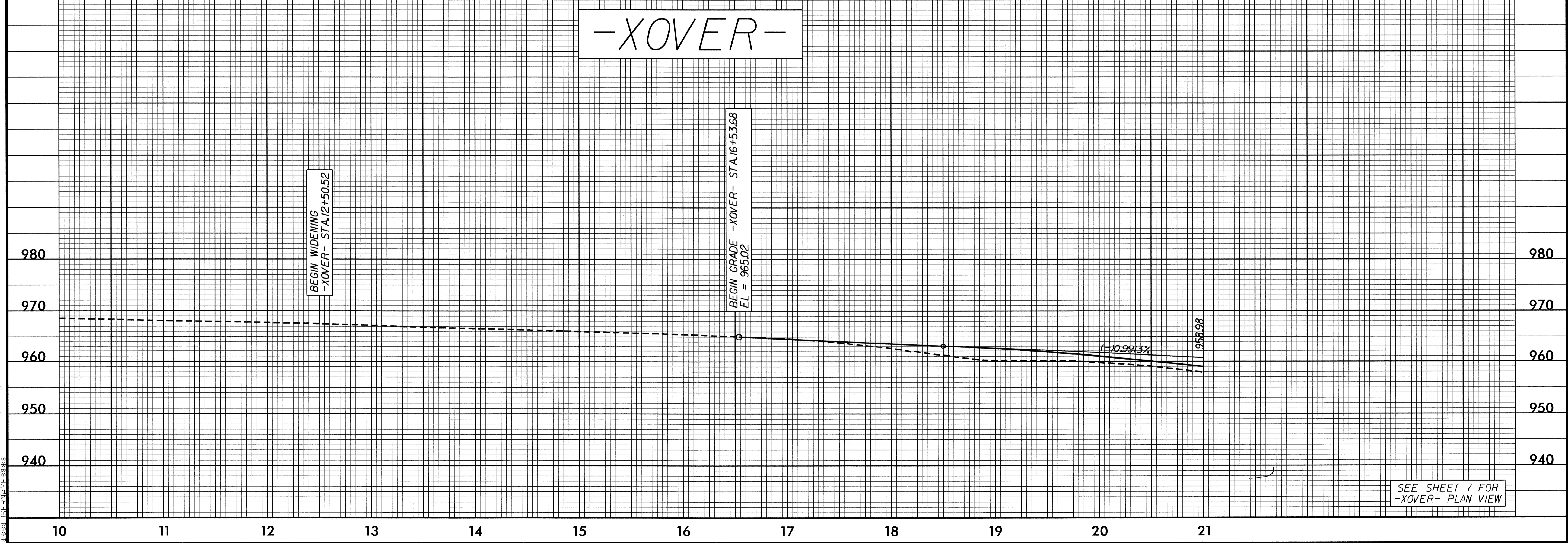
PROJECT REFERENCE NO. B-4506	SHEET NO. 14
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 2257 MICHAEL W. LITTLE 1/20/12	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 1988 2132 PAUL ATKINSON

-DETOUR-



SEE SHEET 9 FOR
-DETOUR- PLAN VIEW

-XOVER-

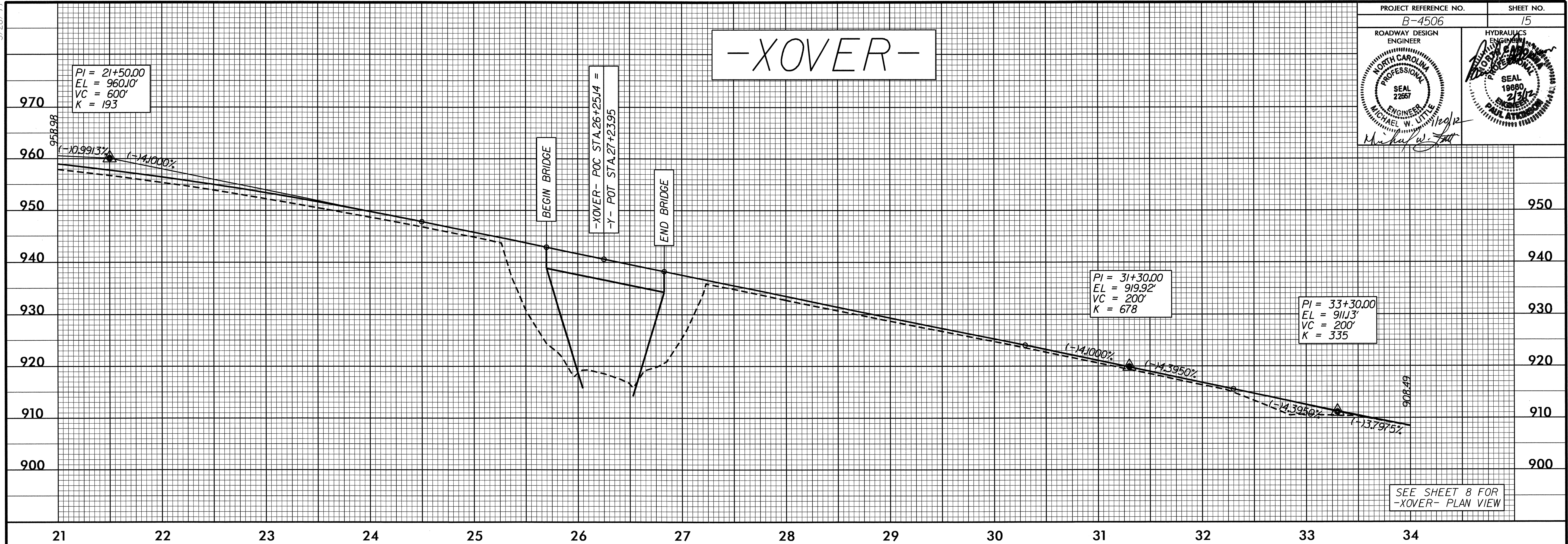


SEE SHEET 7 FOR
-XOVER- PLAN VIEW

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C:\PROJECTS\B-4506-rdy-pfl.dgn
16:38:01 PLOT

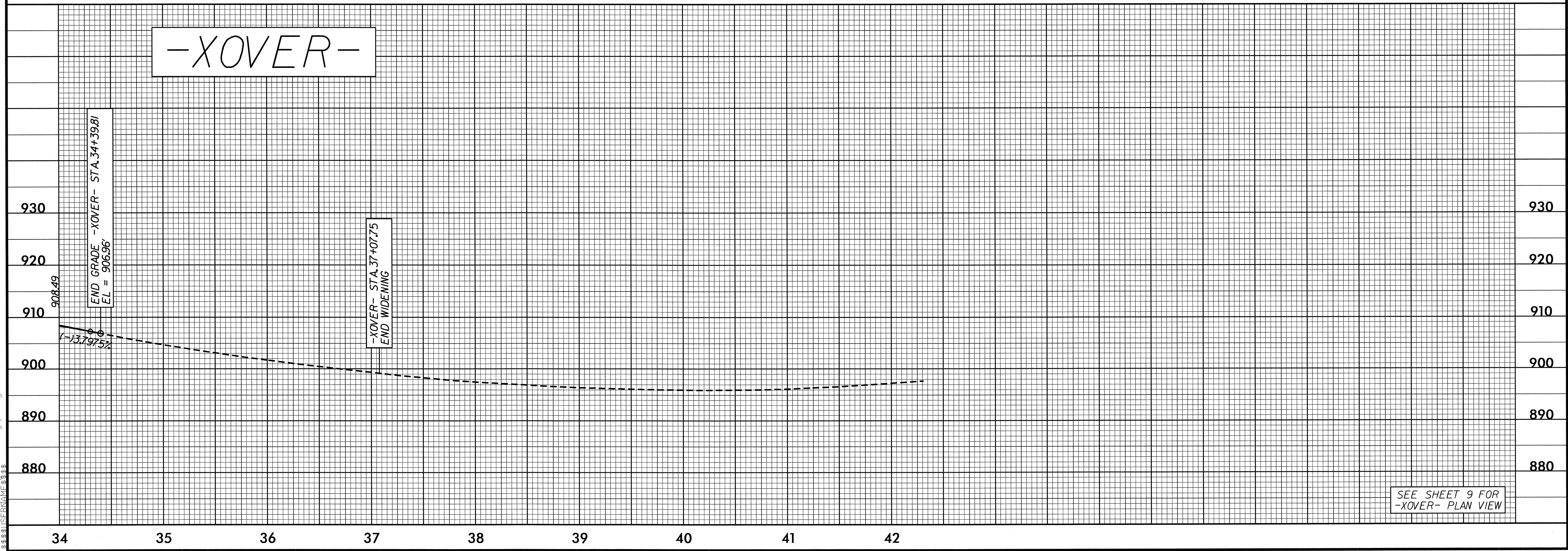
5/28/99

PROJECT REFERENCE NO. B-4506	SHEET NO. 15
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22651 MICHAEL W. LITTLE	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18680 PAUL A. TRIMBLE



SEE SHEET 8 FOR -XOVER- PLAN VIEW

-XOVER-



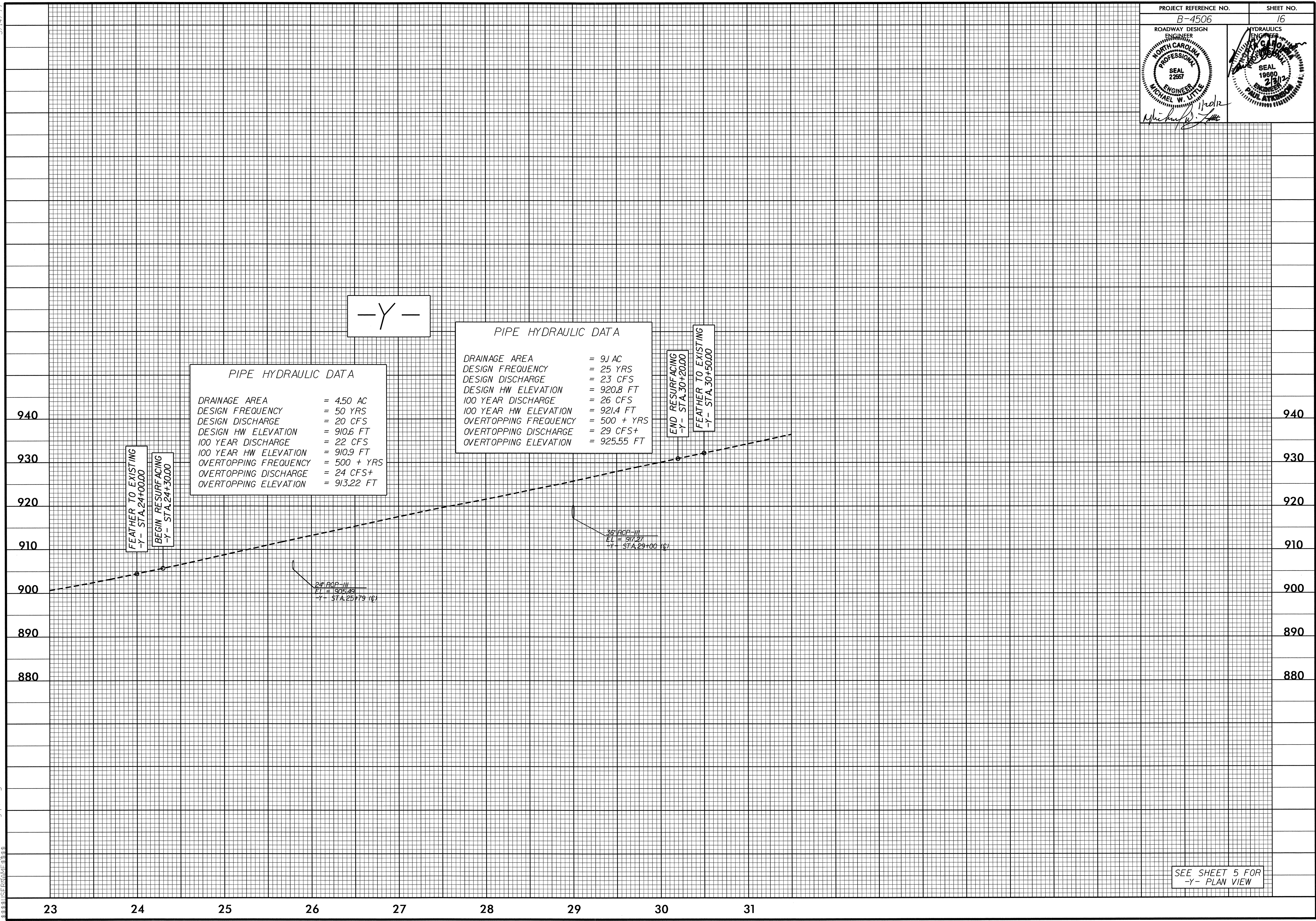
SEE SHEET 9 FOR -XOVER- PLAN VIEW

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PROJECT REFERENCE NO. B-4506	SHEET NO. 16
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22851 MICHAEL W. LITTLE	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 19680 21312 PAUL ATANCIU

Michael W. Little 1/2012



-Y-

PIPE HYDRAULIC DATA

DRAINAGE AREA = 4.50 AC
 DESIGN FREQUENCY = 50 YRS
 DESIGN DISCHARGE = 20 CFS
 DESIGN HW ELEVATION = 910.6 FT
 100 YEAR DISCHARGE = 22 CFS
 100 YEAR HW ELEVATION = 910.9 FT
 OVERTOPPING FREQUENCY = 500 + YRS
 OVERTOPPING DISCHARGE = 24 CFS+
 OVERTOPPING ELEVATION = 913.22 FT

PIPE HYDRAULIC DATA

DRAINAGE AREA = 9J AC
 DESIGN FREQUENCY = 25 YRS
 DESIGN DISCHARGE = 23 CFS
 DESIGN HW ELEVATION = 920.8 FT
 100 YEAR DISCHARGE = 26 CFS
 100 YEAR HW ELEVATION = 921.4 FT
 OVERTOPPING FREQUENCY = 500 + YRS
 OVERTOPPING DISCHARGE = 29 CFS+
 OVERTOPPING ELEVATION = 925.55 FT

FEATHER TO EXISTING
-Y- STA. 24+00.00

BEGIN RESURFACING
-Y- STA. 24+30.00

END RESURFACING
-Y- STA. 30+20.00

FEATHER TO EXISTING
-Y- STA. 30+50.00

24" RCP-III
EI = 905.49
-Y- STA. 25+79 (C)

36" RCP-III
EI = 917.27
-Y- STA. 29+00 (C)

SEE SHEET 5 FOR
-Y- PLAN VIEW

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