

09/08/99

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3432	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
35501.1.1		P.E.	
35501.2.1		R.W. UTL.	
35501.3.D1		CONST.	

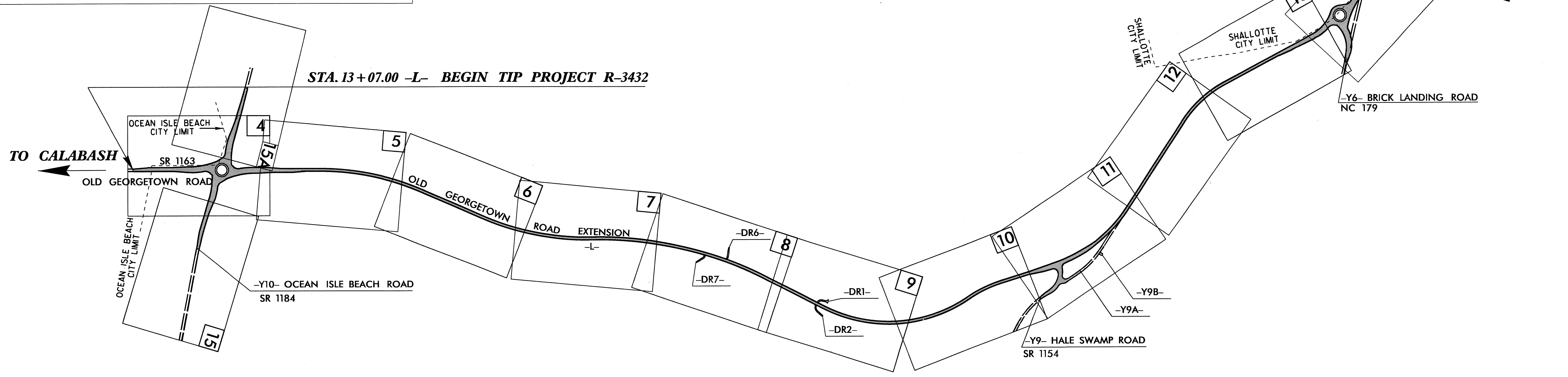
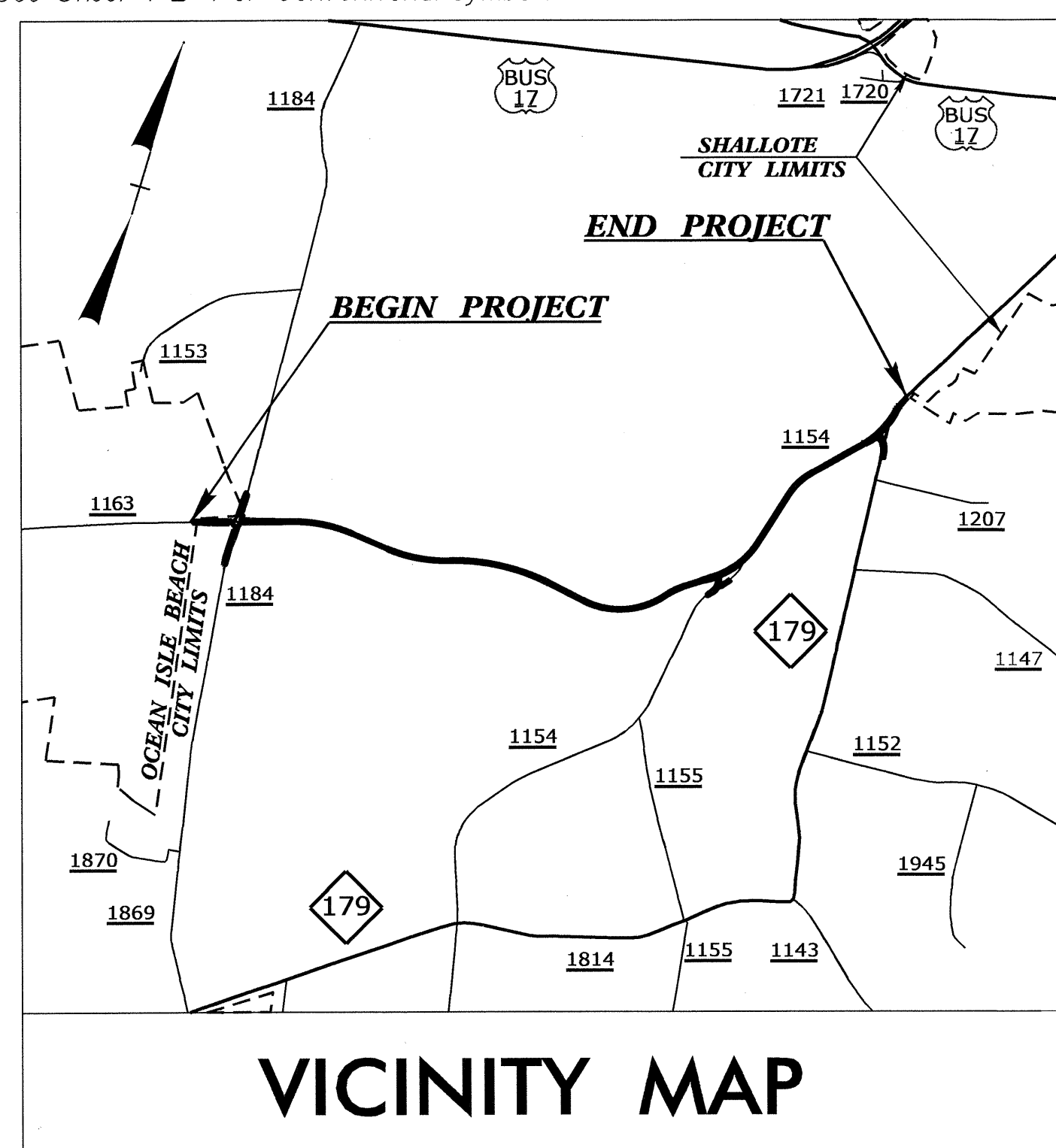
BRUNSWICK COUNTY

LOCATION: SR 1163 (OLD GEORGETOWN ROAD EXTENSION) FROM SR 1184 (OCEAN ISLE BEACH ROAD) TO NC 179

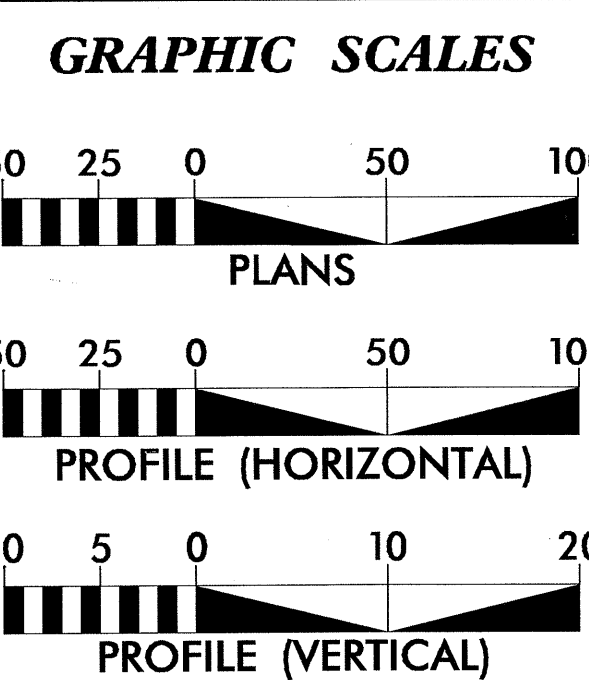
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND WIDENING

TIP PROJECT: R-3432

CONTRACT: C203163



THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.



DESIGN DATA

ADT 2013 =	7,312
ADT 2033 =	12,592
DHV =	55 %
D =	13 %
T =	3 % *
V =	60 MPH

* (TTST 1 % + DUAL 2 %)
FUNC. CLASS. = COLLECTOR
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3432	=	2.859 MILES
TOTAL LENGTH TIP PROJECT R-3432	=	2.859 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 29, 2011

LETTING DATE:
DECEMBER 17, 2013

G. E. BREW, PE
PROJECT ENGINEER

THAD F. DUNCAN, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

PAUL ATKINSON
SEAL 19230
10/14/13
SIGNATURE: PAUL ATKINSON P.E.

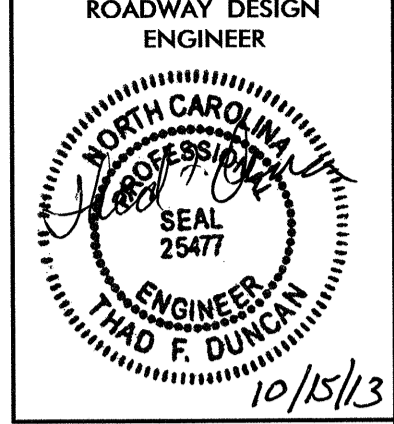
ROADWAY DESIGN ENGINEER

THAD F. DUNCAN
SEAL 25477
10/14/13
SIGNATURE: Thad F. Duncan P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

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INDEX OF SHEETS

SHEET NUMBER	SHEET
1	Title Sheet
1-A	Index of Sheets, General Notes and List of Standards
1-B	Conventional Symbols
1-C THROUGH 1-E	Survey Control Sheets
1-F	Centerline Coordinate List
2 THROUGH 2-B	Pavement Schedule, Typical Sections, and Wedging Details
2-C THROUGH 2-D	Roundabout Details
2-E	Log Sill Detail
2-F THROUGH 2-G	Ditch Details
2-H THROUGH 2-I	Detail For Endwalls
2-J	Rock Embankment Detail
3	Summary of Quantities
3-A THROUGH 3-B	Summary of Drainage Quantities
3-C	Earthwork Summary, Guardrail Summary, and Pavement Removal Summary.
3-D	Parcel Index Sheets
4 THROUGH 15A	Plan Sheets
16 THROUGH 23	Profile Sheets
TMP-1 THROUGH TMP-19	Transportation Management Plans
PMP-1 THROUGH PMP-8	Pavement Marking Plans
EC-1 THROUGH EC-32	Erosion Control Plans
RF-1 THROUGH RF-3	Reforestation Plans
SIGN-1 THROUGH SIGN-11	Signing Plans
UC-1 THROUGH UC-17	Utility Construction Plans
UO-1,UO-4 THROUGH UO-15	Utilities by Others Plans
X-1A	Cross Section Index Summary
X-1B THROUGH X-1C	Cross Section Summary Sheets
X-1 THROUGH X-69	Cross Sections

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

EFF. 01-17-2012
REV. 10-30-2012

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. 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

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.

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.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

1. Atlantic Telephone Membership Corporation
2. Brunswick Electric Membership Corporation
3. Brunswick County (water lines)

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

RIGHT-OF-WAY MARKERS:
ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Super-elevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Super-elevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.03	Concrete Control of Access Marker
815.03	Pipe Underdrain and Blind Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.21	Reinforced Concrete Endwall - for Single 54" Pipe 90 Skew
838.39	Reinforced Concrete Endwall - for Single 72" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.69	Reinforced Brick Endwall - for Single 72" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
852.01	Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
866.02	Woven Wire Fence - with Wood Post
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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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	○ EIP
Property Corner	✕
Property Monument	□ ECM
Parcel/Sequence Number	⑩③
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	○
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

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

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
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 C/A Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----
Proposed Permanent Easement with Iron Pin and Cap Marker	-----

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

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

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

SURVEY CONTROL SHEET R-3432

BASELINE CONTROL

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
R343219	R3432-19 GPS MON	65132.2496	2168602.9700	48.44	OUTSIDE PROJECT LIMITS	
BL10	BL-10 REBAR & C	65363.3257	2167392.9669	49.06	17+49.48	23.51 LT
R343218	R3432-18 GPS MON	65575.6013	2167833.1219	51.33	22+32.31	98.83 LT
BL11	BL-11 REBAR & C	65559.5801	2168110.5509	51.10	24+93.13	2.93 LT
BL12	BL-12 REBAR & C	65777.6350	2168815.3009	50.20	32+30.83	6.94 LT
BL13	BL-13 REBAR & C	65892.9552	2169372.0152	51.37	37+99.24	4.93 LT
BL14	BL-14 REBAR & C	65884.5075	2169939.4769	51.24	43+67.57	3.37 RT
BL15	BL-15 REBAR & C	65802.3917	2170656.7570	51.07	50+89.57	2.13 RT
BL16	BL-16 REBAR & C	65795.5860	2171264.9487	51.63	56+97.97	7.53 RT
BL17	BL-17 REBAR & C	65920.8782	2171825.6878	52.42	62+72.32	4.74 RT
BL18	BL-18 REBAR & C	66089.0637	2172533.3561	52.90	70+00.71	5.09 LT
BL19	BL-19 REBAR & C	66103.7867	2173074.6716	50.67	75+42.79	9.28 RT
BL24	BL-24 REBAR & C	66504.3375	2176425.4289	47.01	110+01.51	368.34 RT
BL25	BL-25 REBAR & C	67188.1966	2178959.1114	49.40	117+91.00	160.01 RT
BL26	BL-26 REBAR & C	67802.3944	2177144.1465	49.68	123+85.96	16.53 RT
BL27	BL-27 REBAR & C	68397.0397	2177316.1497	50.09	130+04.43	15.70 RT
BL28	BL-28 REBAR & C	69170.9548	2177537.5420	49.18	138+06.85	22.35 LT
BL29	BL-29 REBAR & C	69952.4629	2178314.8530	49.64	149+06.83	16.15 RT
BL30	BL-30 REBAR & C	70627.7519	2178844.8735	49.55	157+61.93	41.84 RT
BL31	BL-31 REBAR & C	71067.6362	2178964.9461	48.31	162+15.62	22.70 RT
R34323	R3432-3 GPS MON	71388.9193	2179138.6121	50.04	OUTSIDE PROJECT LIMITS	

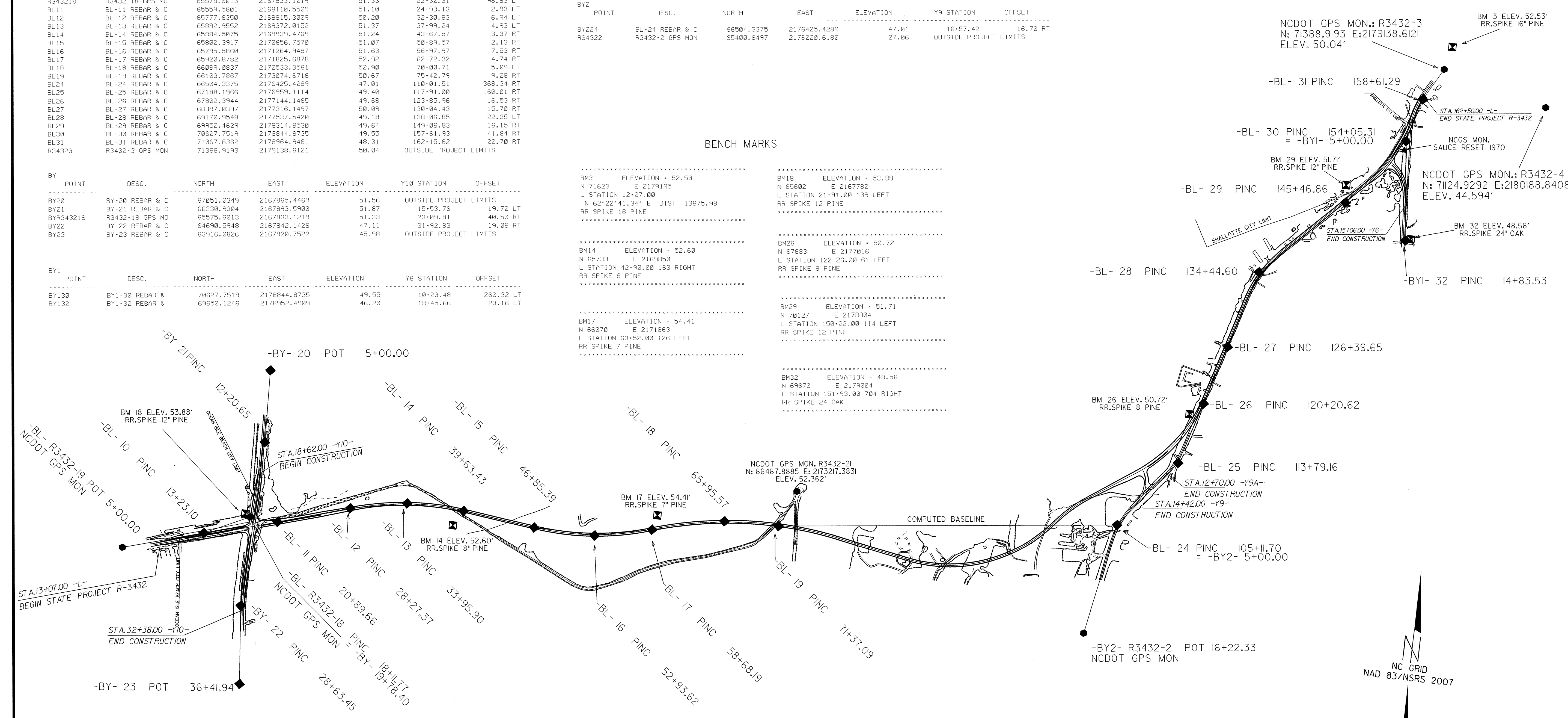
BY POINT	DESC.	NORTH	EAST	ELEVATION	Y10 STATION	OFFSET
BY20	BY-20 REBAR & C	67851.0349	2167865.4469	51.56	OUTSIDE PROJECT LIMITS	
BY21	BY-21 REBAR & C	66330.9304	2167893.5900	51.87	15+53.76	19.72 LT
BYR343218	R3432-18 GPS MON	65575.6013	2167833.1219	51.33	23+09.81	40.50 RT
BY22	BY-22 REBAR & C	64690.5948	2167842.1426	47.11	31+92.83	19.06 RT
BY23	BY-23 REBAR & C	63916.0826	2167920.7522	45.98	OUTSIDE PROJECT LIMITS	

BY1 POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
BY130	BY1-30 REBAR &	70627.7519	2178844.8735	49.55	10+23.48	260.32 LT
BY132	BY1-32 REBAR &	69650.1246	2178952.4909	46.20	18+45.66	23.16 LT

BY2 POINT	DESC.	NORTH	EAST	ELEVATION	Y9 STATION	OFFSET
BY224	BL-24 REBAR & C	66504.3375	2176425.4289	47.01	16+57.42	16.70 RT
R34322	R3432-2 GPS MON	65400.8497	2176220.6180	27.06	OUTSIDE PROJECT LIMITS	

BENCH MARKS

BM3 ELEVATION = 52.53 N 71623 E 2179195 L STATION 12+27.00 RR SPIKE 16 PINE	BM18 ELEVATION = 53.88 N 65602 E 2167782 L STATION 21+91.00 139 LEFT RR SPIKE 12 PINE
BM14 ELEVATION = 52.60 N 65733 E 2169850 L STATION 42+90.00 163 RIGHT RR SPIKE 8 PINE	BM26 ELEVATION = 50.72 N 67683 E 2177816 L STATION 122+26.00 61 LEFT RR SPIKE 8 PINE
BM17 ELEVATION = 54.41 N 66070 E 2171863 L STATION 63+52.00 126 LEFT RR SPIKE 7 PINE	BM29 ELEVATION = 51.71 N 70127 E 2178304 L STATION 150+22.00 114 LEFT RR SPIKE 12 PINE
BM18 ELEVATION = 52.53 N 71623 E 2179195 L STATION 12+27.00 RR SPIKE 16 PINE	BM32 ELEVATION = 48.56 N 69670 E 2179004 L STATION 151+93.00 704 RIGHT RR SPIKE 24 OAK



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:
R3432_LS_CONTROL_100818.TXT

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

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

NCGS MON.: ISLEPORT
 N: 57242.7560 E: 2169936.9460
 ELEV. 31.923'

NOTE: DRAWING NOT TO SCALE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NC GS FOR MONUMENT "ISLEPORT"

WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
 NORTHING: 57,242.756(ft) EASTING: 2,169,936.946(ft)
 ELEVATION: 31.92(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000139439

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "ISLEPORT" TO -L- STATION 13+07.00 IS
 N 20°22'45" W 8,501.714

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

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SURVEY CONTROL SHEET R-3432

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+07.00	-142.00	65348.2185	2166935.1501
L	20+41.00	43.20	65384.1432	2167691.3012
L	21+25.00	-205.00	65646.0406	2167699.6074
L	100+14.00	-145.00	66279.7405	2175398.3606
L	100+14.00	-100.00	66242.3762	2175423.4386
L	100+81.00	-145.00	66314.5804	2175447.8444
L	100+81.00	-100.00	66278.3731	2175474.5658
L	124+25.00	70.00	67824.8156	2177207.1502
L	126+50.00	80.00	68038.6965	2177279.4599
L	132+55.00	90.00	68617.1059	2177457.1327
L	132+55.00	80.00	68619.8839	2177447.5263
L	135+17.20	90.00	68868.9841	2177529.9702
L	135+73.00	-100.00	68979.4601	2177365.6087
L	135+73.00	-70.00	68969.7845	2177394.0056
L	136+00.00	-70.00	68996.7381	2177403.5321
L	136+00.00	-100.00	69007.0555	2177375.3620
L	136+90.00	90.00	69018.6750	2177585.3089
L	136+90.00	70.00	69026.9525	2177567.1023
L	137+30.00	70.00	69060.9556	2177583.2566
L	137+30.00	90.00	69052.0708	2177601.1748
L	137+58.00	-100.00	69163.5084	2177444.7547
L	137+58.00	-70.00	69149.5526	2177471.3110
L	137+85.00	-95.00	69186.8350	2177463.0353
L	137+85.00	-65.24	69172.3951	2177489.0611
L	140+62.05	-60.92	69406.2946	2177662.3681
L	140+68.18	-90.00	69430.7518	2177645.3368
L	140+90.00	-65.29	69430.7872	2177679.2615
L	140+95.00	-95.00	69455.2140	2177661.5211
L	141+15.99	90.00	69340.6696	2177808.3006
L	143+35.00	70.00	69509.7779	2177948.9029
L	143+35.00	90.00	69495.6458	2177963.0552
L	144+00.00	90.00	69541.6407	2178008.9842
L	144+00.00	68.36	69556.9342	2177993.6688
L	147+34.00	70.00	69792.1153	2178230.8366
L	150+00.00	80.00	69973.2742	2178425.8685
L	151+42.91	81.90	70073.0513	2178528.1930
L	151+86.07	62.53	70117.2870	2178544.9844
L	152+75.00	-91.00	70286.0520	2178492.7888
L	154+95.00	-180.00	70495.8706	2178534.3445
L	155+85.00	-180.00	70563.1641	2178570.4514
L	156+85.00	-110.00	70620.9823	2178674.6248
L	158+09.00	-105.00	70726.5907	2178727.0382
L	158+23.00	133.00	70653.7823	2178954.0660
L	158+30.00	140.00	70658.6102	2178963.3707
L	158+40.00	-143.00	70766.0328	2178701.3636
L	158+42.00	126.00	70675.9685	2178954.8460
L	158+50.00	81.78	70699.0932	2178916.1631
L	158+92.00	-150.00	70811.4532	2178709.4162
L	159+38.00	85.00	70779.6911	2178945.1453
L	159+50.00	82.00	70801.1312	2178947.8683
L	159+58.00	74.77	70811.1994	2178943.0151
L	161+64.00	-106.00	71064.2436	2178825.6684
L	161+64.00	-78.00	71054.7089	2178851.9950
L	162+73.00	-78.00	71161.9494	2178896.4877
L	162+82.00	-240.00	71240.5874	2178754.4885
L	163+00.00	-105.00	71199.8785	2178884.8399
L	163+00.00	-255.00	71266.7074	2178750.5495
L	164+00.00	-96.00	71288.4942	2178943.3898

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y6	11+31.00	102.38	70265.3432	2178725.3944
Y6	11+86.81	88.30	70242.1914	2178762.5093
Y6	12+26.05	79.93	70220.8883	2178785.6558
Y6	14+76.00	-120.00	70025.0617	2179026.2957
Y6	17+22.00	-29.74	69773.9526	2178951.4114
Y6	17+52.00	90.00	69736.6086	2178833.7580
Y6	17+60.00	30.32	69732.3130	2178893.8194
Y6	17+72.00	93.00	69716.4614	2178832.0000
Y6	17+81.00	30.35	69711.3513	2178895.0868

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y9	12+98.00	-90.00	66755.3552	2176708.6465
Y9	13+00.00	65.34	66833.0526	2176574.1241
Y9	13+55.00	50.00	66787.8672	2176558.9673
Y9	13+60.00	115.00	66825.6413	2176505.7922
Y9	13+80.00	90.00	66792.6592	2176511.0433
Y9	15+00.00	-30.00	66622.5450	2176537.5618
Y9	15+00.00	-62.00	66605.7699	2176564.8124

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y9A	10+54.00	103.00	66812.6853	2176758.2787
Y9A	10+85.00	86.00	66870.5859	2176807.8981
Y9A	10+50.00	84.00	66825.9714	2176742.1634
Y9A	15+26.00	62.00	67273.7692	2177038.2404
Y9A	12+76.00	60.00	67037.7873	2176912.6755

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y10	14+42.00	67.00	66439.1744	2167802.5200
Y10	14+42.00	50.00	66439.8468	2167819.5067
Y10	14+47.00	117.00	66432.2007	2167752.7569
Y10	14+48.00	-50.00	66437.8068	2167919.6657
Y10	14+48.00	-89.00	66439.3494	2167958.6352
Y10	14+52.00	67.00	66429.1823	2167802.9155
Y10	14+72.00	-88.00	66415.3287	2167958.5853
Y10	14+72.00	-49.98	66413.8247	2167920.5911
Y10	21+47.00	-151.00	65732.6681	2168029.3606
Y10	21+65.00	-159.00	65714.4388	2168036.8235
Y10	21+71.00	-100.16	65710.1857	2167977.8307
Y10	21+91.00	-104.87	65690.0550	2167981.9430
Y10	28+88.00	-138.00	64992.3791	2167994.4005
Y10	28+88.00	-81.94	64994.0408	2167938.3666
Y10	29+39.00	175.00	64948.3341	2167680.2583
Y10	29+39.00	185.00	64948.4969	2167670.2597
Y10	29+60.00	173.00	64926.1681	2167681.9703
Y10	29+60.00	185.00	64926.2847	2167669.9709
Y10	29+78.00	-78.91	64906.1643	2167933.7513
Y10	29+78.00	-138.00	64905.9225	2167992.8367
Y10	33+11.00	-109.00	64584.8985	2167979.2437
Y10	33+16.00	-49.94	64574.1074	2167920.9763
Y10	33+32.00	-111.00	64564.9345	2167983.3230
Y10	33+37.00	-50.00	64553.5283	2167923.1984
Y10	33+40.00	100.00	64534.4423	2167774.3874
Y10	33+40.00	54.77	64539.2985	2167819.3604

L

TYPE	STATION	NORTH	EAST
POT	12+27.25	65189.1790	2166900.0716
PC	32+81.06	65785.5801	2168865.3834
PT	43+97.80	65884.5284	2169969.8696
PC	50+84.88	65805.0509	2170652.3407
PRC	62+63.78	65922.7268	2171816.0939
PT	81+57.28	66053.1433	2173685.7327
PC	88+60.03	65928.5764	2174377.3491
PRC	104+51.23	66452.1089	2175801.8275
PT	108+77.12	66738.5161	2176115.0924
PC	114+00.86	67033.6720	2176547.7461
PT	124+36.79	67856.1000	2177143.3793
PC	135+17.20	68893.9857	2177443.5126
PT	141+15.99	69404.2637	2177744.6155
PC	151+92.26	70165.8489	2178505.1116
PT	156+09.77	70506.4839	2178742.8119
PC	157+39.78	70624.4513	2178797.4626
PRC	160+03.27	70873.7966	2178880.9582
PT	163+68.34	71213.3740	2179011.0304
POT	164+18.18	71256.6475	2179035.7607

Y6

TYPE	STATION	NORTH	EAST
POT	10+00.00	70413.7537	2178694.8037
PC	10+24.23	70401.6799	2178715.8124
PT	13+90.53	70102.9493	2178901.2420
POT	18+69.92	69624.4748	2178930.8751

Y9

TYPE	STATION	NORTH	EAST
POT	10+00.00	67081.2256	2176613.5534
PC	10+01.07	67080.3785	2176614.2033
PRC	13+43.58	66764.1796	2176604.5318
PT	18+70.13	66293.7740	2176383.1295
POT	22+22.95	65945.7006	2176325.4557

Y9A

TYPE	STATION	NORTH	EAST
POT	10+00.00	66905.2333	2176664.8005
PC	10+24.40	66902.9915	2176689.1021
PT	10+81.94	66923.9090	2176740.3556
PC	12+15.87	67026.0140	2176827.0292
PT	15+67.72	67333.7192	2176992.2024
POT	17+37.99	67497.2951	2177039.4970

Y10

TYPE	STATION	NORTH	EAST
POT	12+78.95	66604.7469	2167863.0184
PC	17+00.46	66183.5698	2167879.6904
PT	20+46.51	65837.5863	2167881.4057
PC	28+96.23	64988.2479	2167856.2173
PT	33+35.30	64549.8508	2167873.3049
POT	34+27.36	64458.3230	2167883.1880

NOTE: DRAWING NOT TO SCALE

6/2/99

SURVEY CONTROL SHEET R-3432

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	25+71.26	-79.03	65655.0865	2168163.2228
L	36+60.00	-205.74	66073.3097	2169202.6467
L	107+74.22	-120.00	66771.9226	2175957.8865
L	108+02.20	-94.69	66770.2332	2175997.0843
L	108+30.50	-91.98	66785.9862	2176022.8208
L	108+32.59	-120.00	66809.9587	2176008.1475
L	137+65.00	-70.00	69156.1034	2177474.7781
L	14+95.00	-67.00	65331.0431	2167136.8281
L	89+10.00	110.00	65811.6917	2174410.7873
L	14+95.00	-45.00	65309.9911	2167143.2166
L	13+07.00	-45.00	65255.3983	2166963.3177
L	20+25.00	40.00	65382.5591	2167675.0614
L	138+65.00	-50.00	69236.4826	2177545.2466
L	135+17.20	70.00	68874.5400	2177510.7574
L	135+17.20	-70.00	68913.4314	2177376.2678
L	158+75.00	-70.00	70772.1373	2178780.7743
L	152+75.00	-60.00	70265.7242	2178516.1935
L	20+85.00	-135.00	65567.4415	2167681.6582
L	164+00.00	-30.00	71255.7464	2179000.6923
L	163+47.00	29.81	71180.4252	2179026.7540
L	163+25.00	-50.00	71198.5730	2178945.9299
L	163+47.00	49.04	71171.1842	2179043.6191
L	162+70.00	-60.00	71151.4436	2178911.4444
L	162+15.00	50.00	71056.6883	2178989.9613
L	160+60.00	65.00	70912.2260	2178957.0479
L	160+25.00	-75.00	70912.1381	2178812.7185
L	159+20.00	80.00	70770.7820	2178937.4010
L	157+93.67	86.43	70641.1010	2178898.9828
L	156+85.00	-75.00	70606.2699	2178706.3824
L	155+85.00	-140.00	70545.5981	2178606.3880
L	154+95.00	-140.00	70475.6396	2178568.8511
L	154+00.00	85.00	70276.1802	2178708.0217
L	151+92.26	-55.00	70204.7109	2178466.1918
L	150+00.00	60.00	69987.4062	2178411.7162
L	146+20.00	-70.00	69810.3715	2178051.2183
L	147+35.00	50.00	69806.9549	2178217.3909
L	143+70.00	70.00	69534.5443	2177973.6339
L	141+15.99	70.00	69354.8017	2177794.1483
L	141+15.99	-70.00	69453.7257	2177695.0826
L	132+55.00	70.00	68622.6618	2177437.9199
L	132+55.00	60.00	68625.4398	2177428.3135
L	134+50.00	-60.00	68846.1001	2177367.2068
L	134+50.00	-70.00	68848.8781	2177357.6004
L	126+50.00	60.00	68044.2525	2177260.2471
L	127+70.00	-60.00	68192.8648	2177178.3058
L	127+70.00	-75.00	68197.0317	2177163.8962
L	124+36.79	-75.00	67876.9347	2177071.3313
L	120+47.15	83.11	67457.1578	2177059.2433
L	121+00.00	-80.00	67584.5148	2176944.4627
L	117+50.00	-110.00	67336.1933	2176729.4926
L	113+85.00	110.00	66933.8655	2176596.6357
L	114+00.86	-110.00	67124.5409	2176485.7555
L	108+77.12	110.00	66647.6472	2176177.0830
L	108+77.12	-120.00	66837.6458	2176047.4662
L	108+77.12	-110.00	66829.3850	2176053.1017
L	104+51.23	110.00	66382.2403	2175886.7885
L	104+51.23	-100.00	66515.6260	2175724.5903
L	104+51.23	-120.00	66528.3261	2175709.1401
L	88+90.00	-100.00	66022.3096	2174422.6541
L	88+85.00	-110.00	66032.9223	2174419.6554
L	89+10.00	120.00	65801.7965	2174409.3436
L	87+40.00	75.00	65876.0399	2174245.9282
L	87+30.00	-80.00	66030.3579	2174263.5614
L	81+57.28	75.00	65979.3309	2173672.4384
L	81+57.28	-75.00	66126.9556	2173699.0270
L	81+57.28	-80.00	66131.8764	2173699.9133
L	62+63.78	75.00	65851.4750	2171839.5071
L	62+63.78	-75.00	65993.9786	2171792.6806
L	50+84.88	-75.00	65879.5475	2170661.0163
L	50+84.88	80.00	65725.5880	2170643.0868
L	50+84.88	75.00	65730.5544	2170643.6652
L	43+97.80	80.00	65805.0655	2169960.6157
L	43+97.80	75.00	65810.0319	2169961.1940
L	43+97.80	-75.00	65959.0250	2169978.5451
L	32+81.06	75.00	65713.8119	2168887.1624
L	36+60.00	-75.00	65944.1427	2169222.8713
L	25+75.00	75.00	65508.7804	2168211.5250
L	24+00.00	-80.00	65606.2835	2167999.0559
L	20+75.00	50.00	65387.5094	2167725.8107

L	20+20.00	-85.00	65500.7208	2167633.9784
L	19+05.00	55.00	65333.3590	2167564.5881
L	17+50.00	40.00	65302.7026	2167411.9114
L	15+05.00	60.00	65212.4195	2167183.2764
L	13+07.00	40.00	65174.0610	2166988.0006
L	13+07.00	30.00	65183.6301	2166985.0967
L	13+07.00	-29.96	65241.0076	2166967.6847

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y6	13+50.00	60.00	70132.9698	2178837.4102
Y6	15+56.00	-45.00	69940.5786	2178956.3843
Y6	13+50.00	-75.00	70155.9561	2178970.4389
Y6	12+60.00	-56.64	70251.9216	2178922.5129
Y6	15+56.00	45.00	69935.0154	2178866.5564
Y6	15+56.00	30.02	69935.9414	2178881.5078
Y6	15+56.00	-29.98	69939.6502	2178941.3932
Y6	12+10.00	80.00	70231.7362	2178779.2700

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y9	13+45.00	50.00	66795.8555	2176565.8180
Y9	14+42.00	50.00	66715.4573	2176502.9906
Y9	14+42.00	-50.00	66657.9626	2176584.8097
Y9	12+95.00	-70.00	66768.8409	2176693.3559
Y9	14+42.00	-30.00	66669.4615	2176568.4459
Y9	14+42.00	30.00	66703.9584	2176519.3544

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y9A	12+75.00	40.00	67048.7515	2176895.9151
Y9A	12+75.00	29.50	67054.9626	2176887.4474
Y9A	10+85.00	65.00	66884.1760	2176791.8885

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y10	26+85.00	105.00	65202.4932	2167757.5249
Y10	25+35.00	-90.00	65346.6468	2167956.8858
Y10	22+55.00	90.00	65631.8596	2167785.2650
Y10	20+95.00	100.00	65792.0857	2167780.0124
Y10	20+00.00	-60.00	65882.8647	2167942.5559
Y10	29+45.00	120.00	64941.2144	2167735.1555
Y10	32+86.29	-49.63	64603.1856	2167917.8386
Y10	33+88.00	50.00	64492.0875	2167829.2515
Y10	15+00.00	50.12	66381.8876	2167821.6848
Y10	19+75.00	-45.45	65908.3840	2167928.4574

NOTE: DRAWING NOT TO SCALE

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CENTERLINE COORDINATE LIST

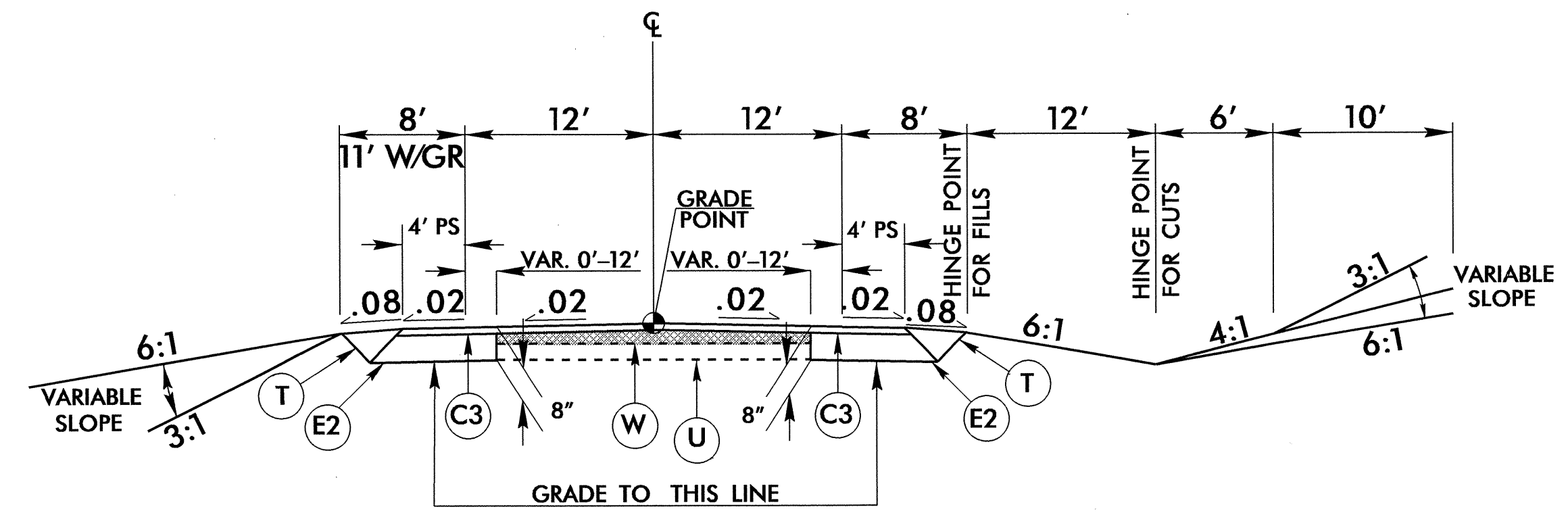
Point #	Chain	Station	Northing (Y)	Easting (X)	Point #	Chain	Station	Northing (Y)	Easting (X)	Point #	Chain	Station	Northing (Y)	Easting (X)	Point #	Chain	Station	Northing (Y)	Easting (X)	Point #	Chain	Station	Northing (Y)	Easting (X)	
1	L	13+00.00	65210.3047	2166969.6867	83	L	95+00.00	65950.8808	2175012.0872																
2	L	14+00.00	65239.3434	2167065.3777	84	L	96+00.00	65978.6825	2175108.1255																
3	L	15+00.00	65268.3821	2167161.0686	85	L	97+00.00	66012.8203	2175202.0984																
4	L	16+00.00	65297.4209	2167256.7595	86	L	98+00.00	66053.1424	2175293.5884																
5	L	17+00.00	65326.4596	2167352.4504	87	L	99+00.00	66099.4698	2175382.1891																
6	L	18+00.00	65355.4984	2167448.1413	88	L	100+00.00	66151.5966	2175467.5067																
7	L	19+00.00	65384.5371	2167543.8323	89	L	101+00.00	66209.2912	2175549.1622																
8	L	20+00.00	65413.5758	2167639.5232	90	L	102+00.00	66272.2974	2175626.7929																
9	L	21+00.00	65442.6146	2167735.2141	91	L	103+00.00	66340.3351	2175700.0538																
10	L	22+00.00	65471.6533	2167830.9050	92	L	104+00.00	66413.1021	2175788.6195																
11	L	23+00.00	65500.6920	2167926.5959	93	L	105+00.00	66489.2681	2175833.4100																
12	L	24+00.00	65529.7308	2168022.2868	94	L	106+00.00	66562.1476	2175901.8562																
13	L	25+00.00	65558.7695	2168117.9778	95	L	107+00.00	66630.3054	2175975.0054																
14	L	26+00.00	65587.8082	2168213.6687	96	L	108+00.00	66693.4388	2176052.5327																
15	L	27+00.00	65616.8470	2168309.3596	97	L	109+00.00	66751.4120	2176133.9958																
16	L	28+00.00	65645.8857	2168405.0505	98	L	110+00.00	66807.7672	2176216.6039																
17	L	29+00.00	65674.9244	2168500.7414	99	L	111+00.00	66864.1223	2176299.2120																
18	L	30+00.00	65703.9632	2168596.4324	100	L	112+00.00	66920.4774	2176381.8201																
19	L	31+00.00	65733.0019	2168692.1233	101	L	113+00.00	66976.8326	2176464.4282																
20	L	32+00.00	65762.0406	2168787.8142	102	L	114+00.00	67033.1877	2176547.0363																
21	L	33+00.00	65791.0162	2168883.5241	103	L	115+00.00	67092.2077	2176627.7391																
22	L	34+00.00	65817.6191	2168979.9148	104	L	116+00.00	67156.4726	2176704.3310																
23	L	35+00.00	65840.6611	2169077.2181	105	L	117+00.00	67225.6970	2176776.4716																
24	L	36+00.00	65860.1110	2169175.3027	106	L	118+00.00	67299.5735	2176843.8405																
25	L	37+00.00	65875.9424	2169274.0358	107	L	119+00.00	67377.7738	2176906.1382																
26	L	38+00.00	65888.1341	2169373.2842	108	L	120+00.00	67459.9506	2176963.0880																
27	L	39+00.00	65896.6696	2169472.9136	109	L	121+00.00	67545.7386	2177014.4370																
28	L	40+00.00	65901.5372	2169572.7894	110	L	122+00.00	67634.7567	2177059.9569																
29	L	41+00.00	65902.7305	2169672.7767	111	L	123+00.00	67726.6096	2177099.4455																
30	L	42+00.00	65900.2479	2169772.7402	112	L	124+00.00	67820.8890	2177132.7275																
31	L	43+00.00	65894.0925	2169872.5449	113	L	125+00.00	67916.8242	2177160.9394																
32	L	44+00.00	65884.2738	2169972.0561	114	L	126+00.00	68012.8882	2177188.7189																
33	L	45+00.00	65872.7064	2170071.3848	115	L	127+00.00	68108.9522	2177216.4985																
34	L	46+00.00	65861.1391	2170170.7135	116	L	128+00.00	68205.0162	2177244.2780																
35	L	47+00.00	65849.5717	2170270.0423	117	L	129+00.00	68301.0802	2177272.0576																
36	L	48+00.00	65838.0043	2170369.3710	118	L	130+00.00	68397.1443	2177299.8372																
37	L	49+00.00	65826.4369	2170468.6997	119	L	131+00.00	68493.2083	2177327.6167																
38	L	50+00.00	65814.8696	2170568.0285	120	L	132+00.00	68589.2723	2177355.3963																
39	L	51+00.00	65803.3439	2170667.3620	121	L	133+00.00	68685.3363	2177383.1759																
40	L	52+00.00	65794.1581	2170766.9335	122	L	134+00.00	68781.4003	2177410.9554																
41	L	53+00.00	65788.6384	2170866.7754	123	L	135+00.00	68877.4644	2177438.7350																
42	L	54+00.00	65786.7923	2170966.7528	124	L	136+00.00	68972.6643	2177469.2622																
43	L	55+00.00	65788.6222	2171066.7304	125	L	137+00.00	69065.0098	2177507.5560																
44	L	56+00.00	65794.1257	2171166.6732	126	L	138+00.00	69153.8153	2177553.4657																
45	L	57+00.00	65803.2954	2171266.1462	127	L	139+00.00	69238.4541	2177606.6672																
46	L	58+00.00	65816.1188	2171366.3149	128	L	140+00.00	69318.3287	2177666.7852																
47	L	59+00.00	65832.5786	2171463.9453	129	L	141+00.00	69392.8754	2177733.3952																
48	L	60+00.00	65852.6526	2171561.9040	130	L	142+00.00	69463.7122	2177803.9789																
49	L	61+00.00	65876.3136	2171659.0587	131	L	143+00.00	69534.4735	2177874.6390																
50	L	62+00.00	65903.5298	2171755.2780	132	L	144+00.00	69605.2347	2177945.2991																
51	L	63+00.00	65933.8720	2171850.5613	133	L	145+00.00	69675.9960	2178015.9591																
52	L	64+00.00	65962.9367	2171946.2414	134	L	146+00.00	69746.7572	2178086.6192																
53	L	65+00.00	65989.4870	2172042.6494	135	L	147+00.00	69817.5185	2178157.2793																
54	L	66+00.00	66013.5047	2172139.7194	136	L	148+00.00	69888.2798	2178227.9393																
55	L	67+00.00	66034.9734	2172237.3848	137	L	149+00.00	69959.0410	2178298.5994																
56	L	68+00.00	66053.8783	2172335.5786	138	L	150+00.00	70029.8023	2178369.2594																
57	L	69+00.00	66070.2065	2172434.2337	139	L	151+00.00	70100.5635	2178439.9195																
58	L	70+00.00	66083.9469	2172533.2823	140	L	152+00.00	70171.3425	2178510.5617																
59	L	71+00.00	66095.0899	2172632.6567	141	L	153+00.00	70245.4258	2178577.6869																
60	L	72+00.00	66103.6280	2172732.2886	142	L	154+00.00	70324.8817	2178638.3571																
61	L	73+00.00	66109.5553	2172832.1099	143	L	155+00.00	70409.1496	2178692.1440																
62	L	74+00.00	66112.8677	2172932.0522	144	L	156+00.00	70497.6348	2178738.6682																
63	L	75+00.00	66113.5630	2173032.0469	145	L	157+00.00	70588.3539	2178780.7398																
64	L	76+00.00	66111.6407	2173132.0256	146	L	158+00.00	70679.7070	2178821.3821																
65	L	77+00.00	66107.1021	2173231.9197	147	L	159+00.00	70773.9141	2178854.8355																

6/2/99

PROJECT REFERENCE NO. R-3432	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAYMENT DESIGN ENGINEER

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
A	PROP. 7" CONCRETE TRUCK APRON WITH 4X4 W3.5XW3.5 WIRE MESH
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C3	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.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 5.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E3	PROP. APPROX. 5.5" 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.
J1	PROP. 8" AGGREGATE BASE COURSE.
P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
R1	1'-6" CONCRETE CURB AND GUTTER.
R2	8"x 18" CONCRETE CURB.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2 & 2A)

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

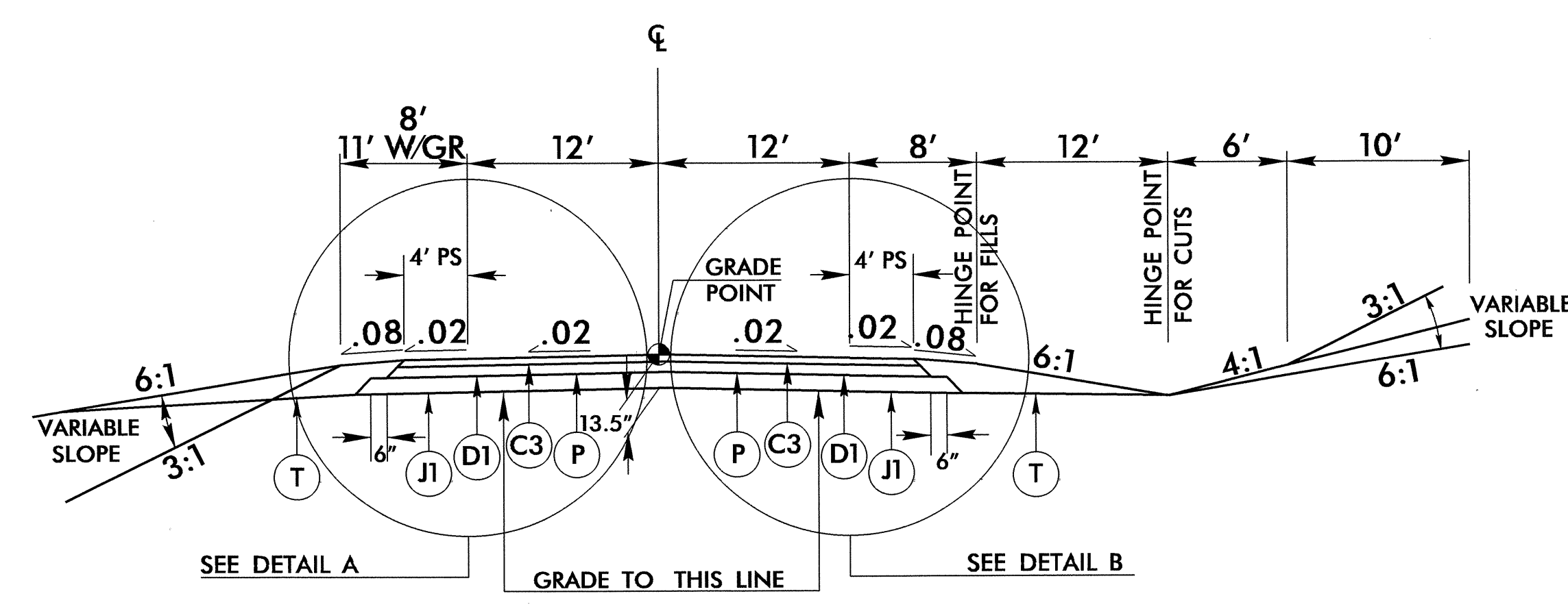


TYPICAL SECTION NO. 1

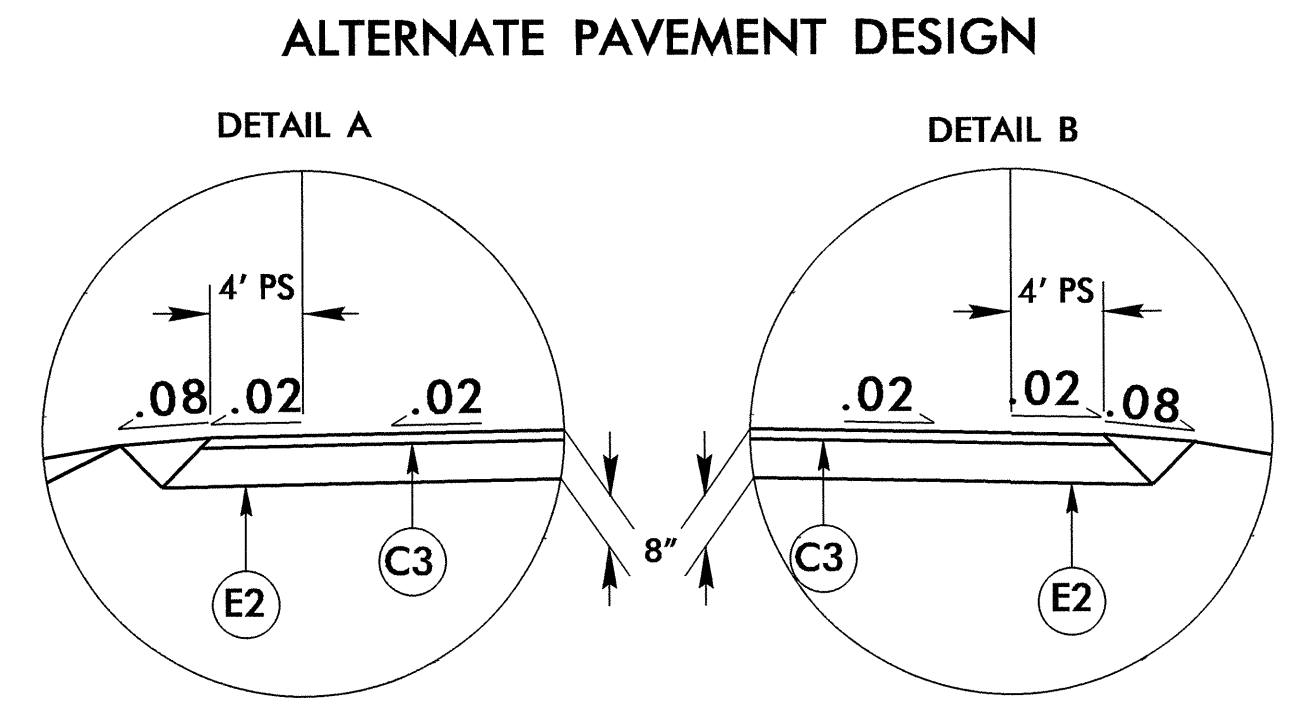
USE TYPICAL SECTION NO. 1
 -L- STA. 13+07.00 TO -L- STA. 21+39.61
 -L- STA. 121+67.33 TO -L- STA. 154+29.55
 -L- STA. 156+35.60 TO -L- STA. 162+50.00

NOTE: NO PROFILE AVAILABLE, RESURFACE AT MIN. DEPTH

-L- STA. 162+50.00 TO -L- STA. 164+00.00
 -Y10- STA. 32+38.00 TO -Y10- STA. 33+88.00

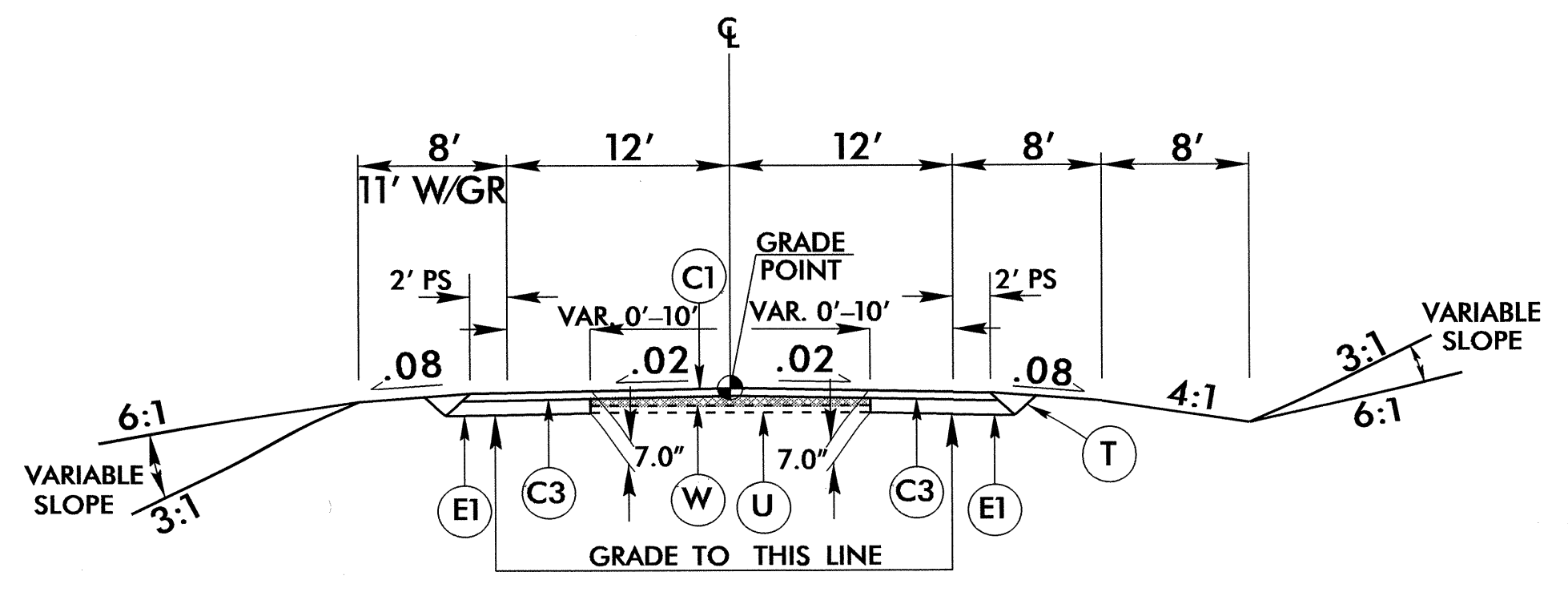


TYPICAL SECTION NO. 2



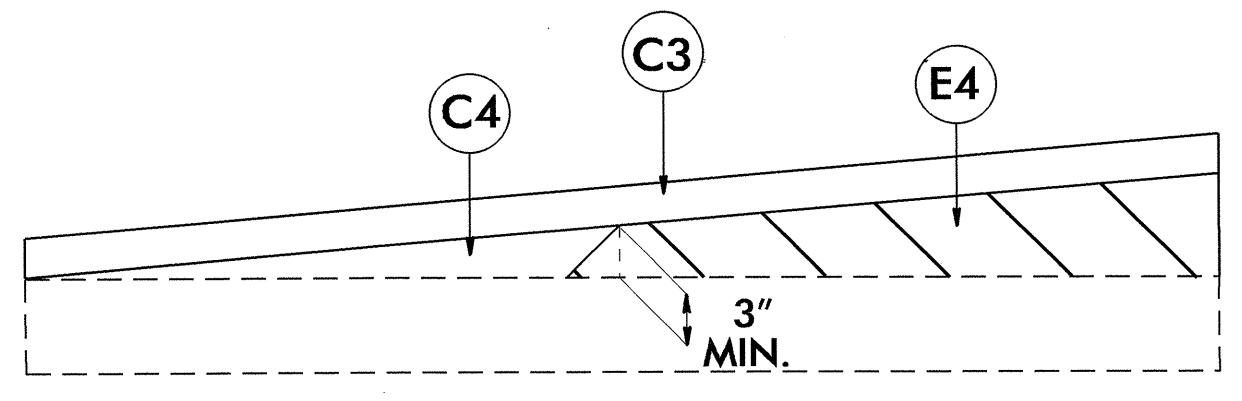
ALTERNATE PAVEMENT DESIGN

USE TYPICAL SECTION NO. 2
 -L- STA. 23+45.61 TO -L- STA. 121+67.33

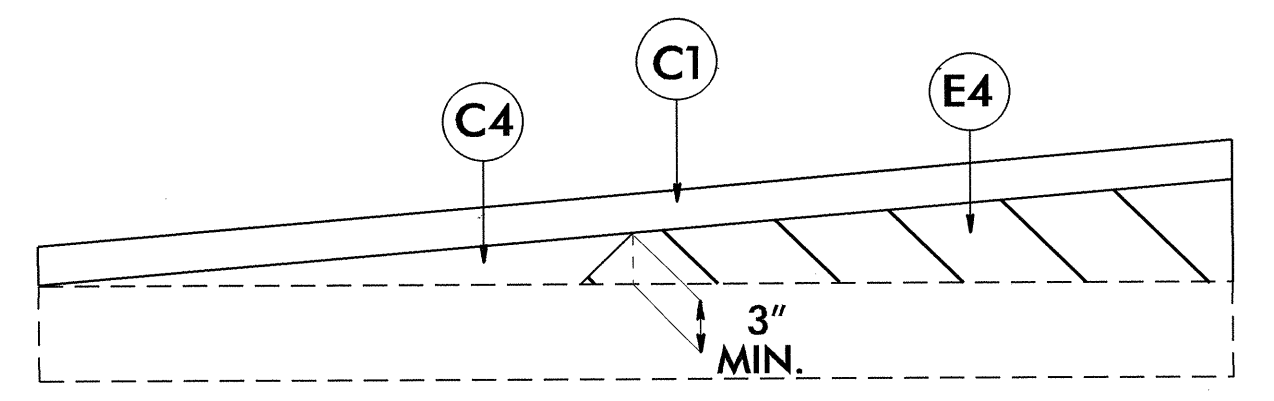


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
 -Y9- STA. 10+20.00 TO -Y9- STA. 14+42.00



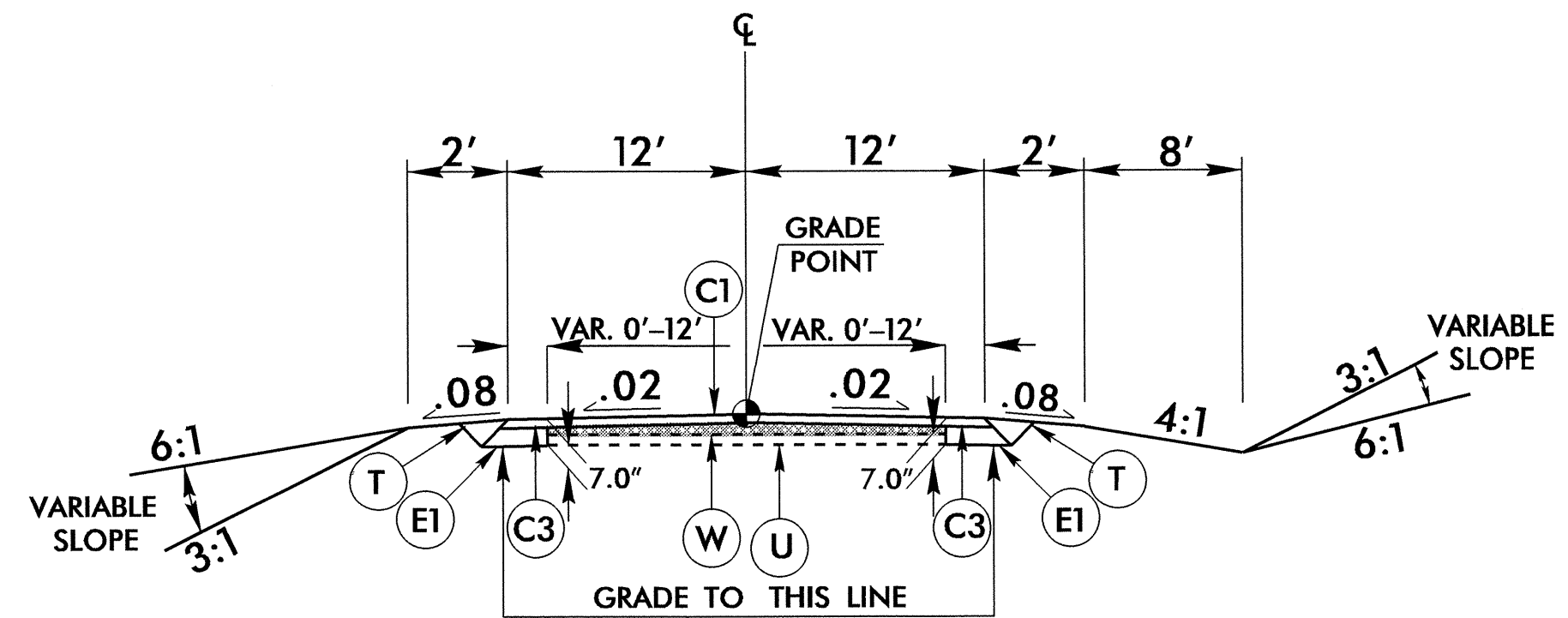
Wedging Detail For Resurfacing
Use With Typical Section No. 1



Wedging Detail For Resurfacing
Use with Typical Section No. 3

30-SEP-2013 11:51 P:\Roadway\Proj\N-3432.rdy-tp.dgn

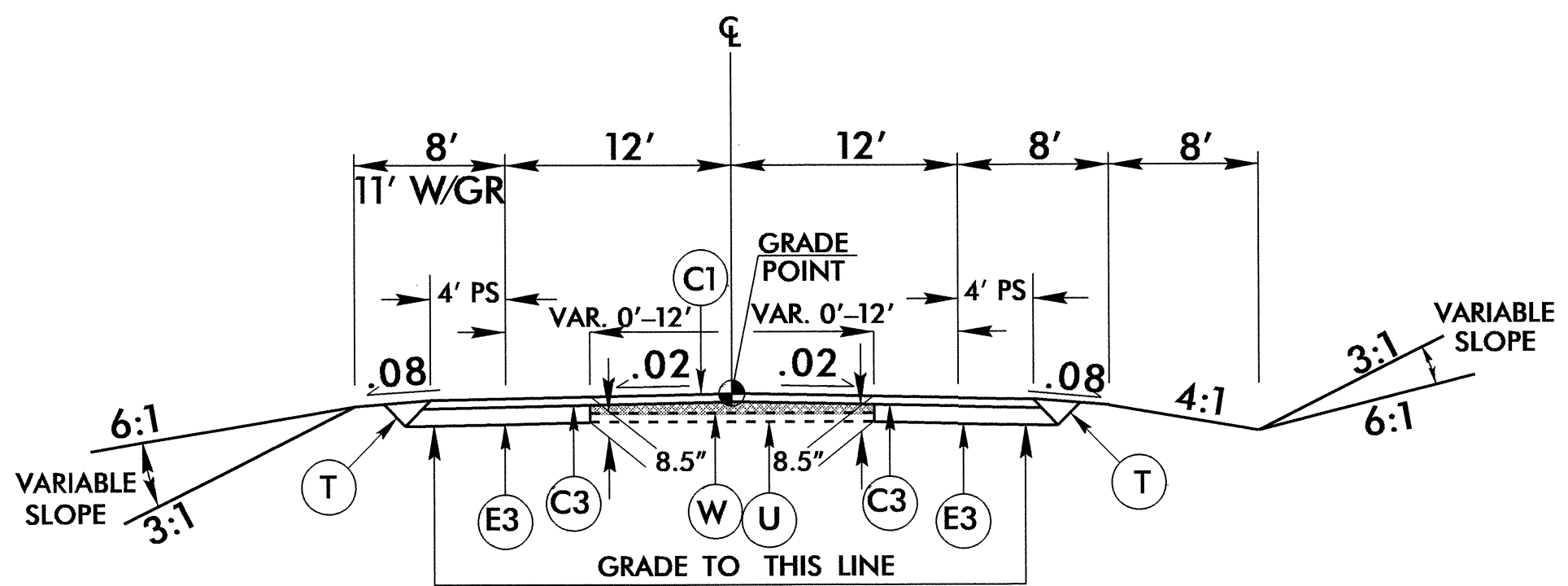
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.5" S9.5B
C3	3" S9.5B
C4	VAR. S9.5B
E1	4.0" B25.0B
E2	5.0" B25.0B
E3	5.5" B25.0B
E4	VAR. B25.0B
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

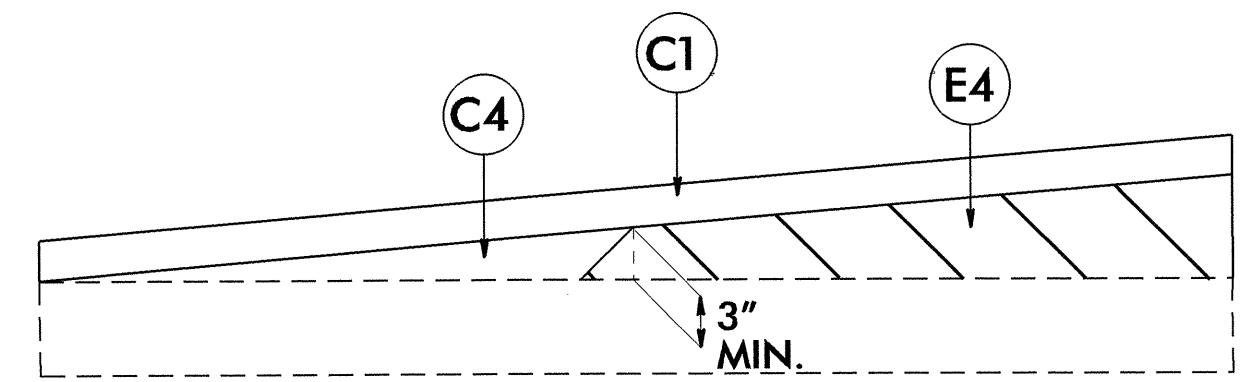
-Y9A- STA. 10+24.00 TO -Y9A- STA. 12+70.00
-Y9B- STA. 10+09.46 TO -Y9B- STA. 10+44.46



TYPICAL SECTION NO. 5

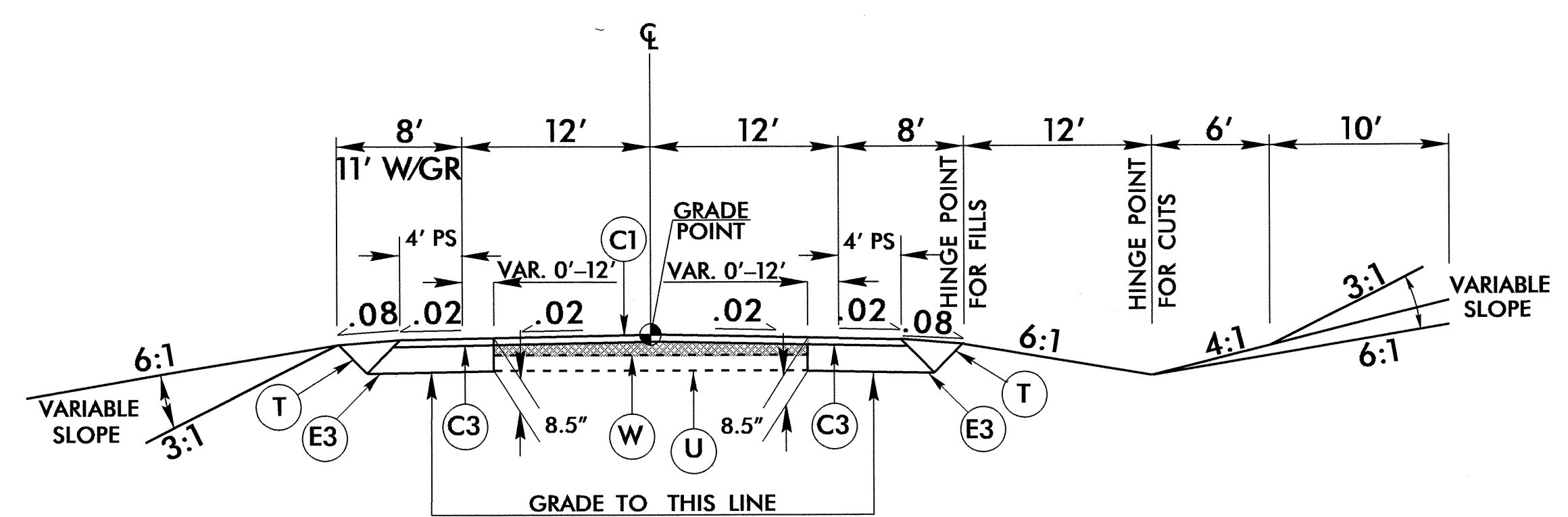
USE TYPICAL SECTION NO. 5

-Y6- STA. 10+97.24 TO -Y6- STA. 15+56.00



Wedging Detail For Resurfacing

Use with Typical Section No. 4, No. 5 & No. 6

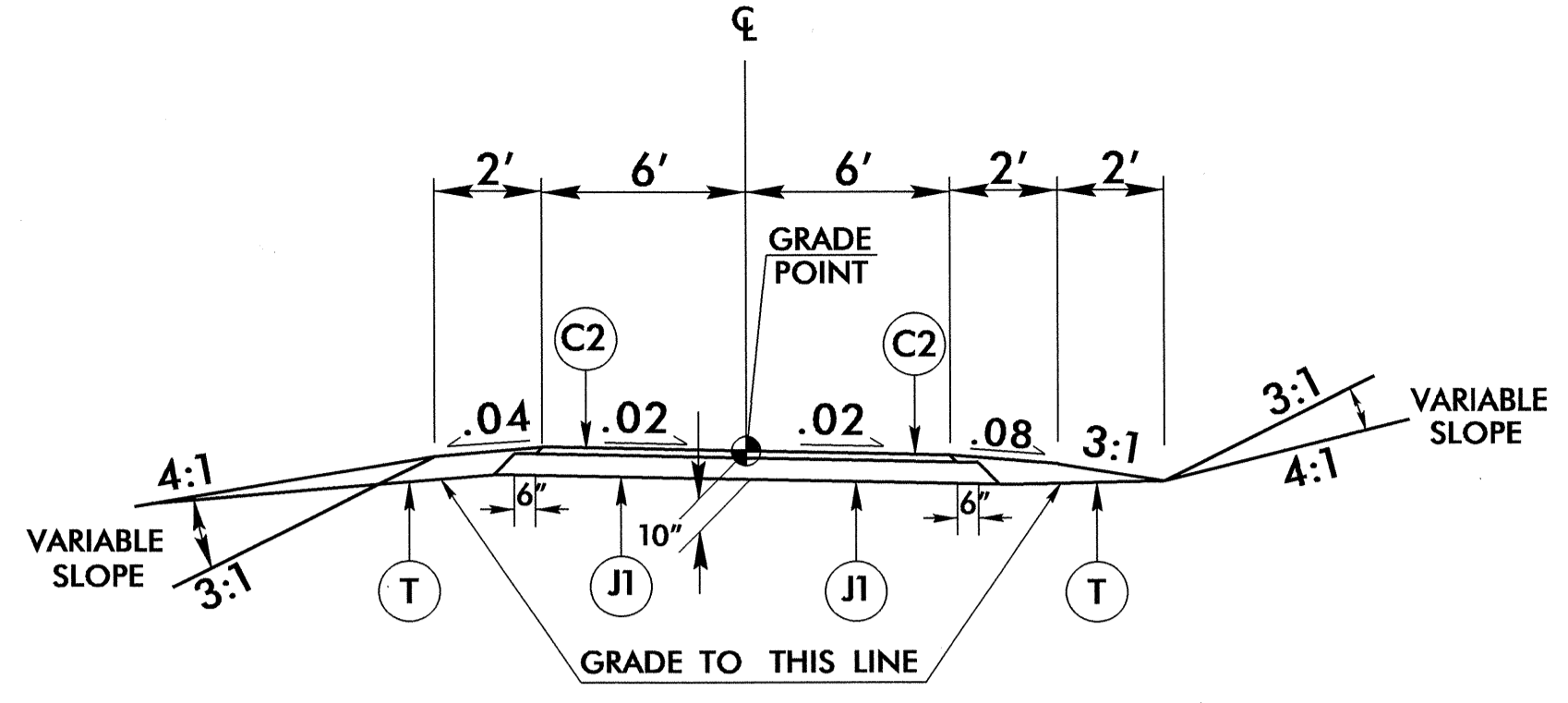


TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

-Y10- STA. 15+00.00 TO -Y10- STA. 22+97.27
-Y10- STA. 25+03.26 TO -Y10- STA. 32+38.00

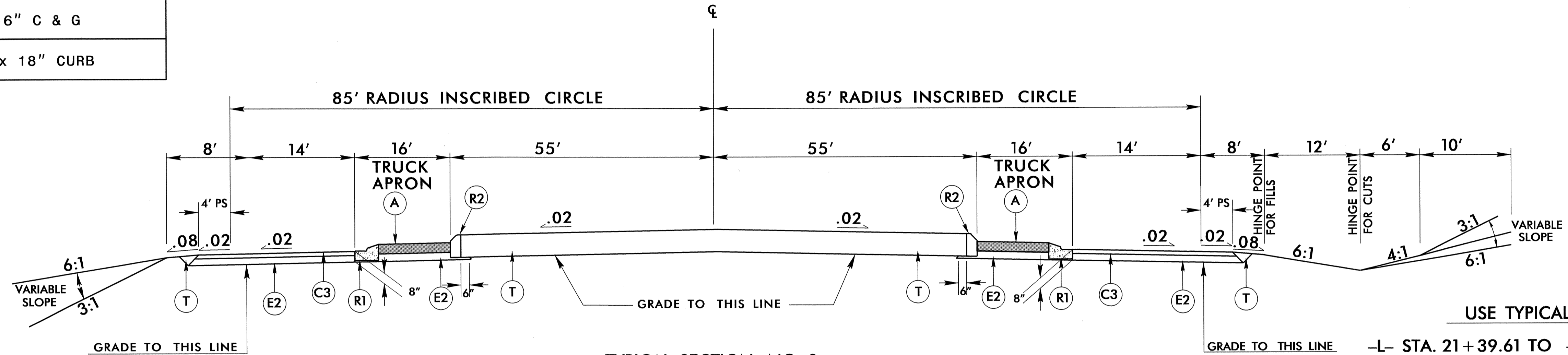
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
A	7" CONCRETE W/4X4 W3.5XW3.5 WIRE MESH
C2	2" S9.5B
C3	3" S9.5B
D1	2.5" I19.0B
E2	5" B25.0B
J1	8" ABC
T	EARTH MATERIAL
R1	1'-6" C & G
R2	8" x 18" CURB



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7

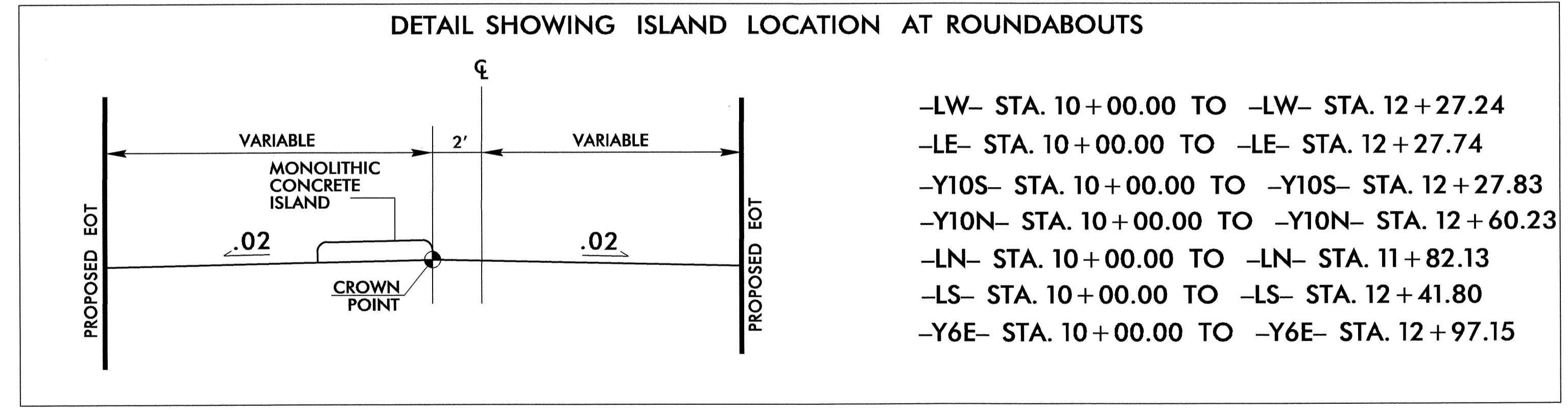
- DR1- STA. 10+00.00 TO -DR1- STA. 11+21.34
- DR2- STA. 10+16.04 TO -DR2- STA. 11+63.32
- DR6- STA. 10+00.00 TO -DR6- STA. 11+30.89
- DR7- STA. 10+16.00 TO -DR7- STA. 11+40.00



TYPICAL SECTION NO. 8

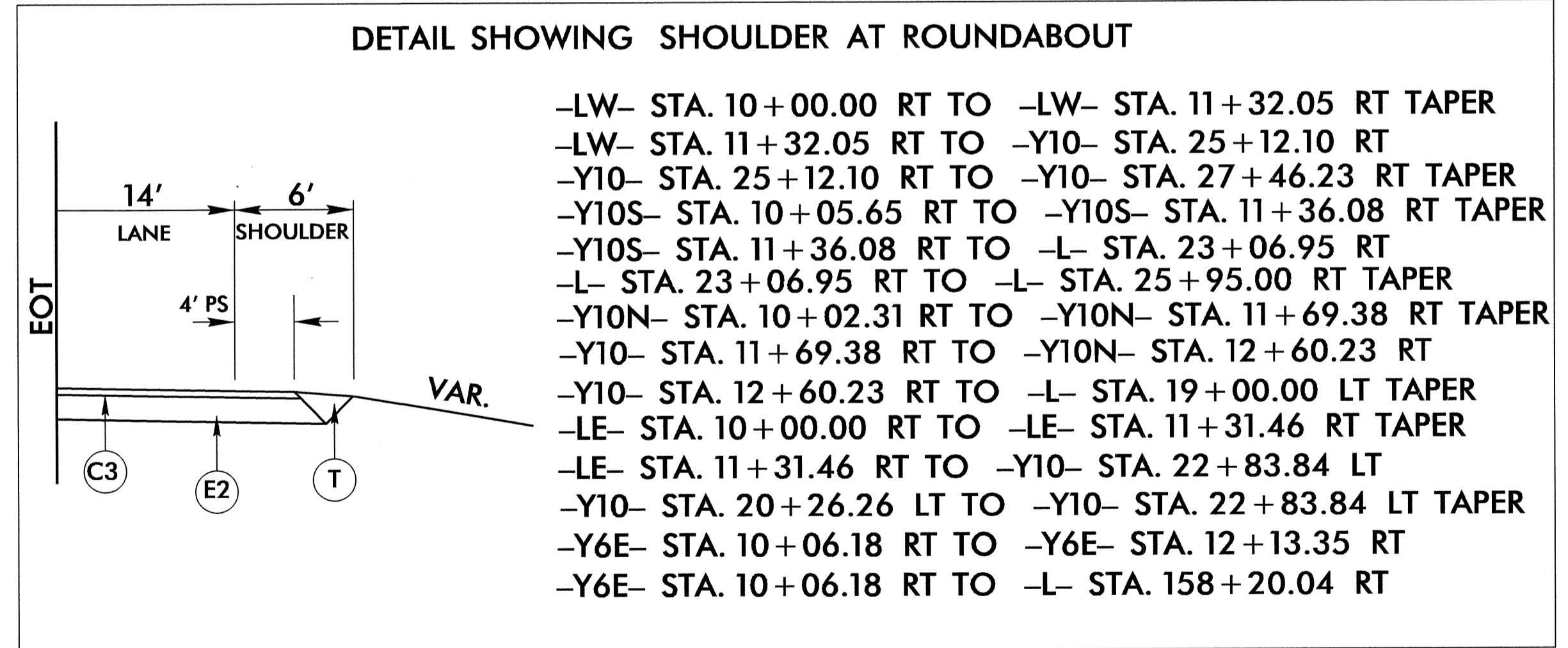
USE TYPICAL SECTION NO. 8

- L- STA. 21+39.61 TO -L- STA. 23+45.61
- L- STA. 154+29.55 TO -L- STA. 156+35.60



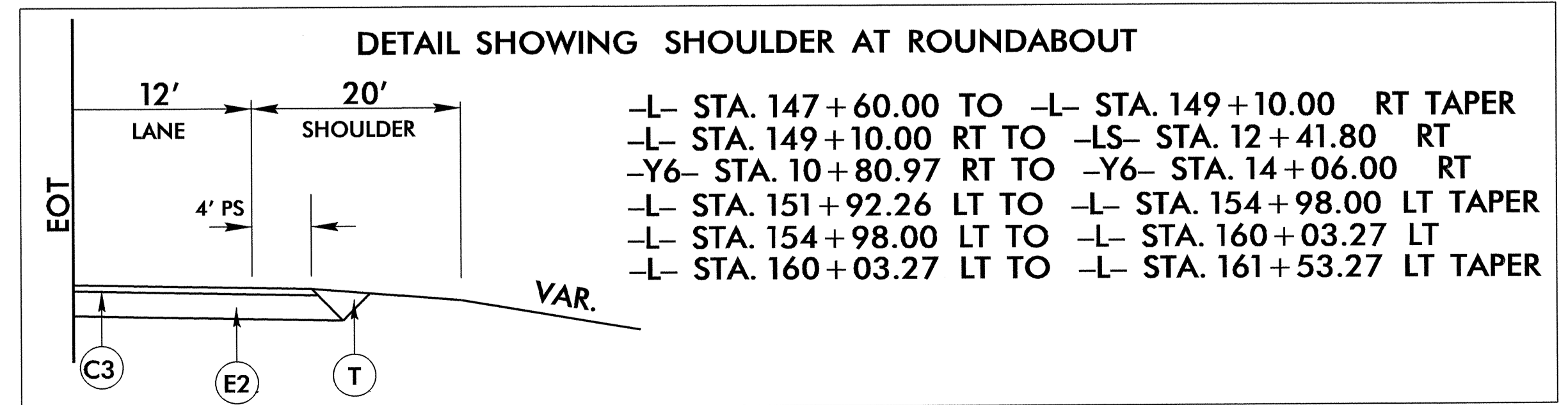
SEE ROUNDABOUT DETAILS ON SHEETS 2-C & 2-D

- LW- STA. 10+00.00 TO -LW- STA. 12+27.24
- LE- STA. 10+00.00 TO -LE- STA. 12+27.74
- Y10S- STA. 10+00.00 TO -Y10S- STA. 12+27.83
- Y10N- STA. 10+00.00 TO -Y10N- STA. 12+60.23
- LN- STA. 10+00.00 TO -LN- STA. 11+82.13
- LS- STA. 10+00.00 TO -LS- STA. 12+41.80
- Y6E- STA. 10+00.00 TO -Y6E- STA. 12+97.15



DETAIL SHOWING SHOULDER AT ROUNDABOUT

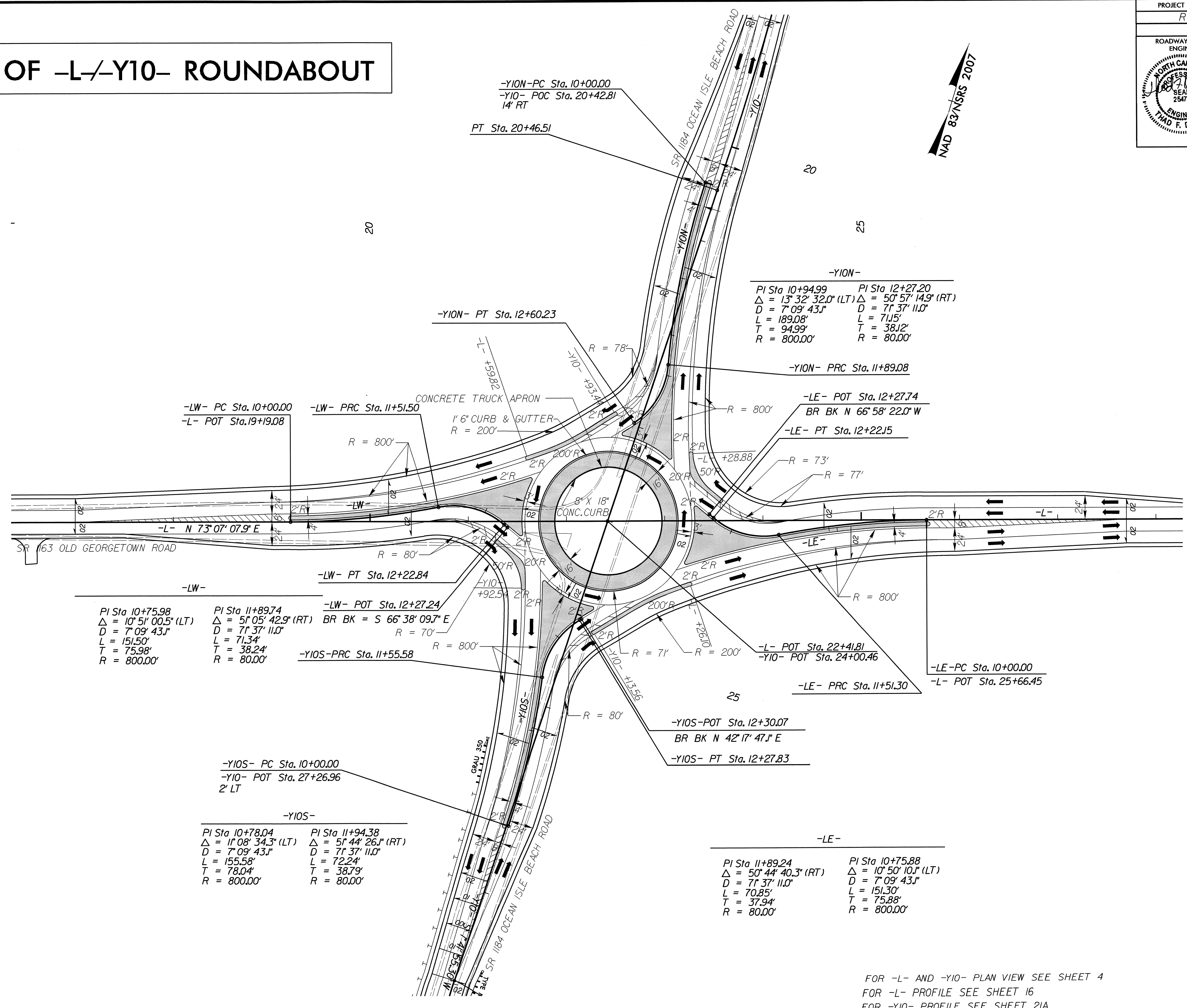
- LW- STA. 10+00.00 RT TO -LW- STA. 11+32.05 RT TAPER
- LW- STA. 11+32.05 RT TO -Y10- STA. 25+12.10 RT
- Y10- STA. 25+12.10 RT TO -Y10- STA. 27+46.23 RT TAPER
- Y10S- STA. 10+05.65 RT TO -Y10S- STA. 11+36.08 RT TAPER
- Y10S- STA. 11+36.08 RT TO -L- STA. 23+06.95 RT
- L- STA. 23+06.95 RT TO -L- STA. 25+95.00 RT TAPER
- Y10N- STA. 10+02.31 RT TO -Y10N- STA. 11+69.38 RT TAPER
- Y10- STA. 11+69.38 RT TO -Y10N- STA. 12+60.23 RT
- Y10- STA. 12+60.23 RT TO -L- STA. 19+00.00 LT TAPER
- LE- STA. 10+00.00 RT TO -LE- STA. 11+31.46 RT TAPER
- LE- STA. 11+31.46 RT TO -Y10- STA. 22+83.84 LT
- Y10- STA. 20+26.26 LT TO -Y10- STA. 22+83.84 LT TAPER
- Y6E- STA. 10+06.18 RT TO -Y6E- STA. 12+13.35 RT
- Y6E- STA. 10+06.18 RT TO -L- STA. 158+20.04 RT



DETAIL SHOWING SHOULDER AT ROUNDABOUT

- L- STA. 147+60.00 TO -L- STA. 149+10.00 RT TAPER
- L- STA. 149+10.00 RT TO -LS- STA. 12+41.80 RT
- Y6- STA. 10+80.97 RT TO -Y6- STA. 14+06.00 RT
- L- STA. 151+92.26 LT TO -L- STA. 154+98.00 LT TAPER
- L- STA. 154+98.00 LT TO -L- STA. 160+03.27 LT
- L- STA. 160+03.27 LT TO -L- STA. 161+53.27 LT TAPER

DETAIL OF -L/-Y10- ROUNDABOUT



-Y10-

PI Sta 10+94.99	PI Sta 12+27.20
$\Delta = 13^{\circ} 32' 32.0''$ (LT)	$\Delta = 50^{\circ} 57' 14.9''$ (RT)
D = 7' 09' 43.1"	D = 7' 37' 11.0"
L = 189.08'	L = 71.15'
T = 94.99'	T = 38.12'
R = 800.00'	R = 80.00'

-LW-

PI Sta 10+75.98	PI Sta 11+89.74
$\Delta = 10^{\circ} 51' 00.5''$ (LT)	$\Delta = 51^{\circ} 05' 42.9''$ (RT)
D = 7' 09' 43.1"	D = 7' 37' 11.0"
L = 151.50'	L = 71.34'
T = 75.98'	T = 38.24'
R = 800.00'	R = 80.00'

-Y10S-

PI Sta 10+78.04	PI Sta 11+94.38
$\Delta = 11^{\circ} 08' 34.3''$ (LT)	$\Delta = 51^{\circ} 44' 26.1''$ (RT)
D = 7' 09' 43.1"	D = 7' 37' 11.0"
L = 155.58'	L = 72.24'
T = 78.04'	T = 38.79'
R = 800.00'	R = 80.00'

-LE-

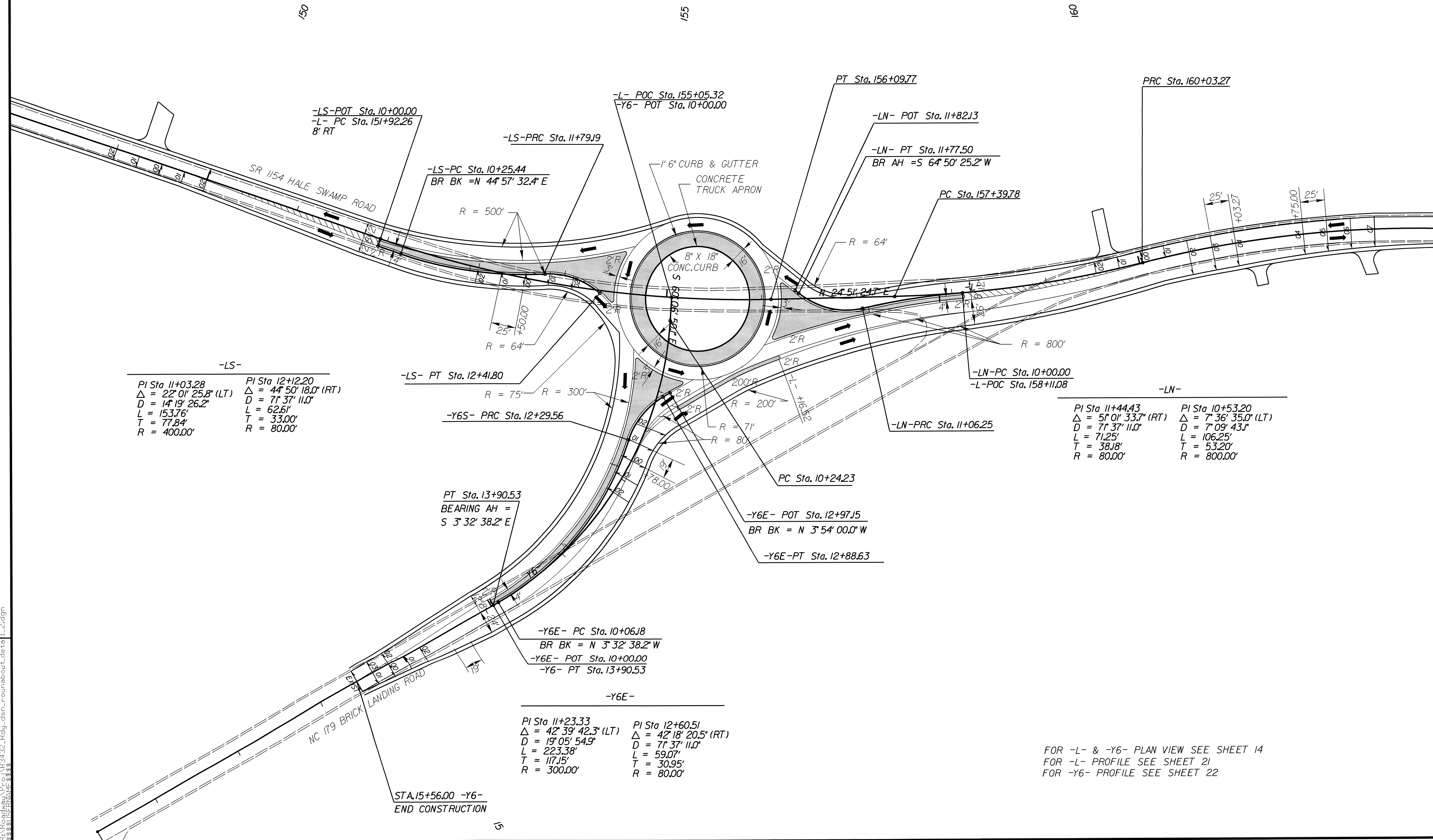
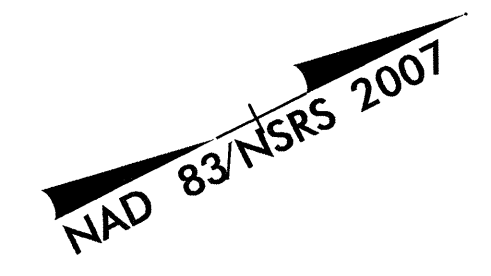
PI Sta 11+89.24	PI Sta 10+75.88
$\Delta = 50^{\circ} 44' 40.3''$ (RT)	$\Delta = 10^{\circ} 50' 10.1''$ (LT)
D = 7' 37' 11.0"	D = 7' 09' 43.1"
L = 70.85'	L = 151.30'
T = 37.94'	T = 75.88'
R = 80.00'	R = 800.00'

FOR -L- AND -Y10- PLAN VIEW SEE SHEET 4
 FOR -L- PROFILE SEE SHEET 16
 FOR -Y10- PROFILE SEE SHEET 21A

REVISIONS

8/17/99
 08 SEP 2013 09:36
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 \$\$\$\$

DETAIL OF -L/-Y6- ROUNDABOUT



-LS-

PI Sta 11+03.28	PI Sta 12+12.20
$\Delta = 22^\circ 0' 25.8" (LT)$	$\Delta = 44^\circ 50' 18.0" (RT)$
D = 14' 19" 26.2"	D = 71' 37" 11.0"
L = 153.76'	L = 62.61'
T = 77.84'	T = 33.00'
R = 400.00'	R = 80.00'

-LN-

PI Sta 11+44.43	PI Sta 10+53.20
$\Delta = 51^\circ 0' 33.7" (RT)$	$\Delta = 7^\circ 36' 35.0" (LT)$
D = 71' 37" 11.0"	D = 7' 09" 43.1"
L = 71.25'	L = 106.25'
T = 38.18'	T = 53.20'
R = 80.00'	R = 800.00'

-Y6E-

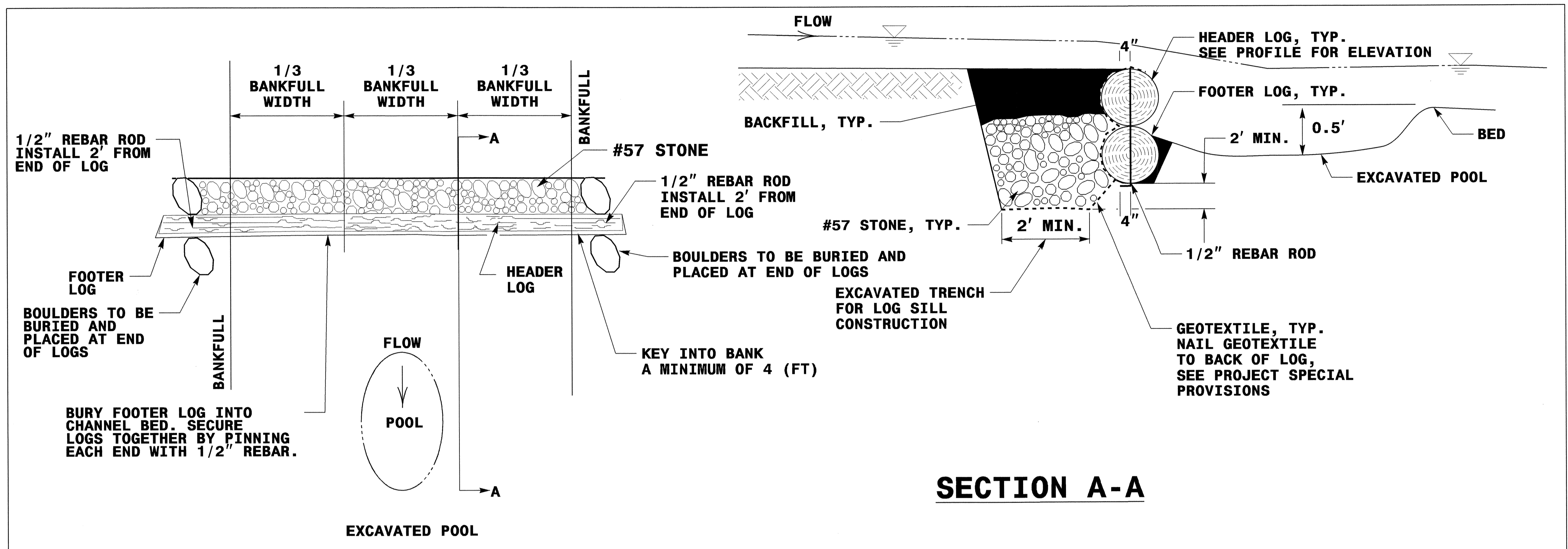
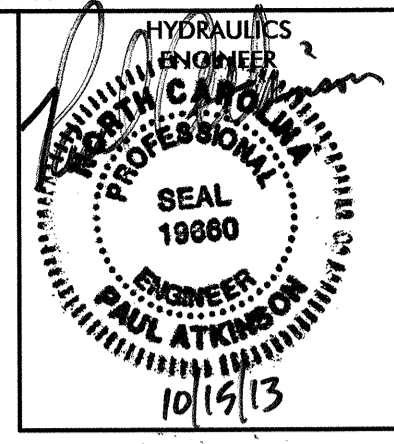
PI Sta 11+23.33	PI Sta 12+60.51
$\Delta = 42^\circ 39' 42.3" (LT)$	$\Delta = 42^\circ 18' 20.5" (RT)$
D = 19' 05" 54.9"	D = 71' 37" 11.0"
L = 223.38'	L = 59.07'
T = 117.15'	T = 30.95'
R = 300.00'	R = 80.00'

FOR -L- & -Y6- PLAN VIEW SEE SHEET 14
 FOR -L- PROFILE SEE SHEET 21
 FOR -Y6- PROFILE SEE SHEET 22

REVISIONS

8/17/99

09-SEP-2013 09:36
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 \$\$\$\$15PRM\$\$\$

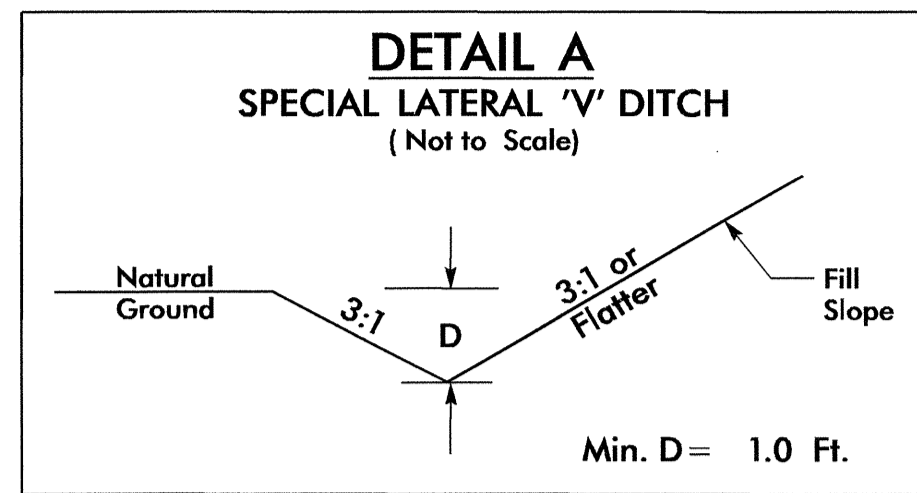
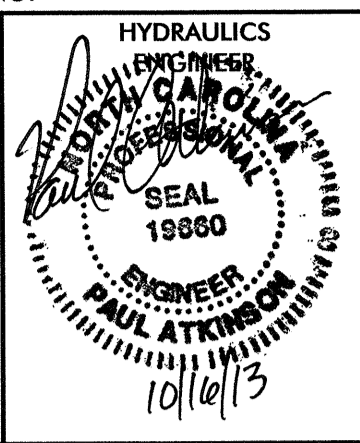


BOULDER DIMENSIONS (FT)		
HEIGHT	LENGTH	WIDTH
3	2	2

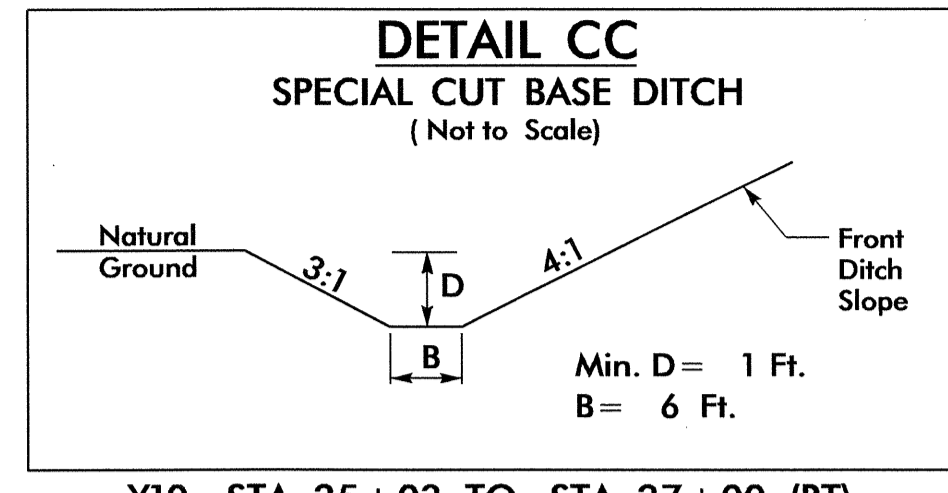
- NOTES:**
- 1) DO NOT EXCAVATE POOL TOO CLOSE TO FOOTER LOG.
 - 2) CLASS "A" STONE CAN BE USED TO REDUCE VOIDS BETWEEN HEADERS AND FOOTERS.
 - 3) COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.

LOG SILL DETAIL
NOT TO SCALE

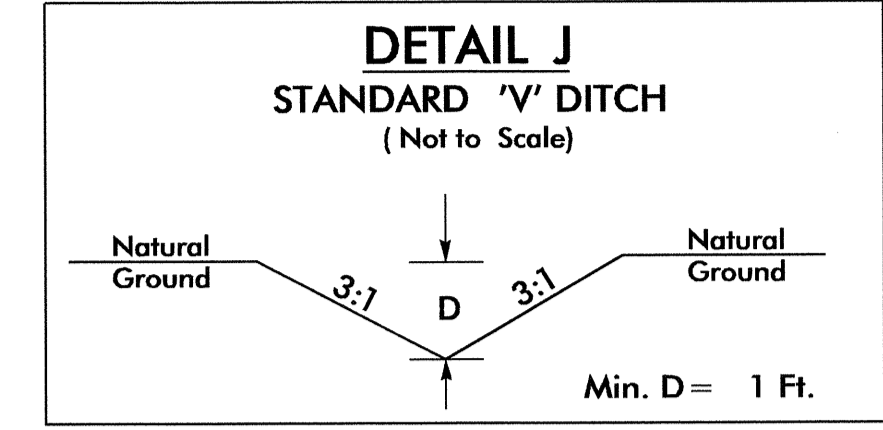
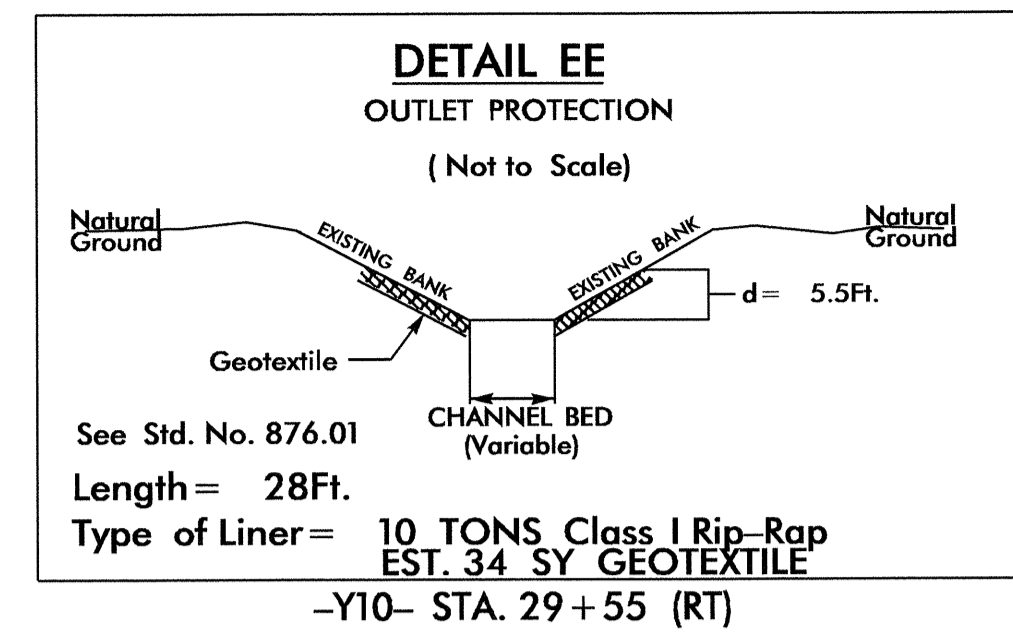
12/15/05
15-OCT-2013 08:34 log_sill_detail_2k.dgn



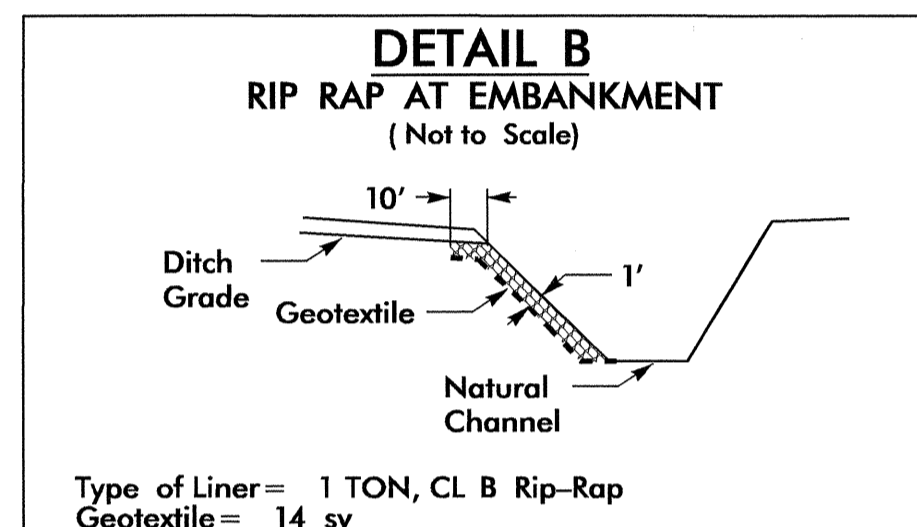
- L- STA. 13+07 TO STA. 14+87 (RT)
- L- STA. 15+31 TO STA. 18+50 (RT)
- Y10- STA. 27+00 TO STA. 29+28 (LT)
- Y10- STA. 29+39 TO STA. 30+50 (LT)
- Y10- STA. 29+62 TO STA. 33+88 (RT)



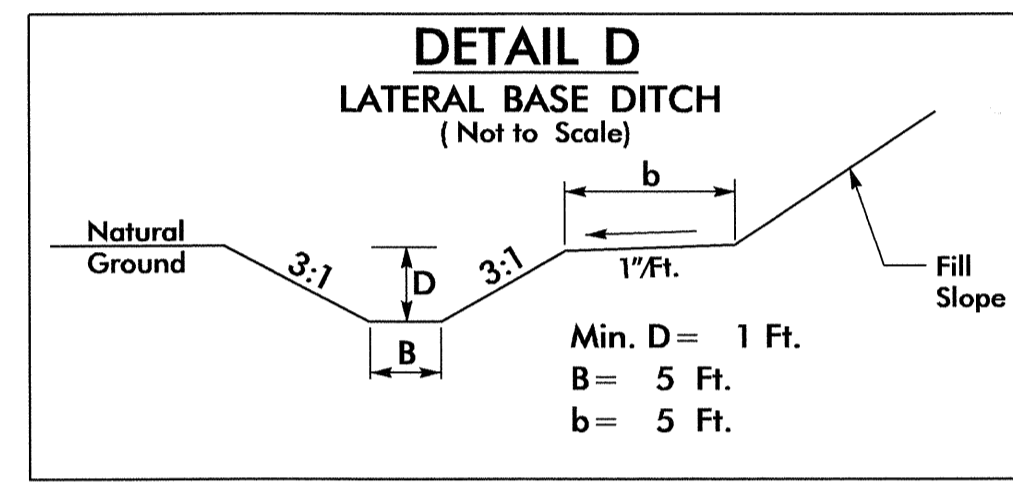
- Y10- STA. 25+03 TO STA. 27+00 (RT)
- L- STA. 107+00 TO 108+50 (LT)



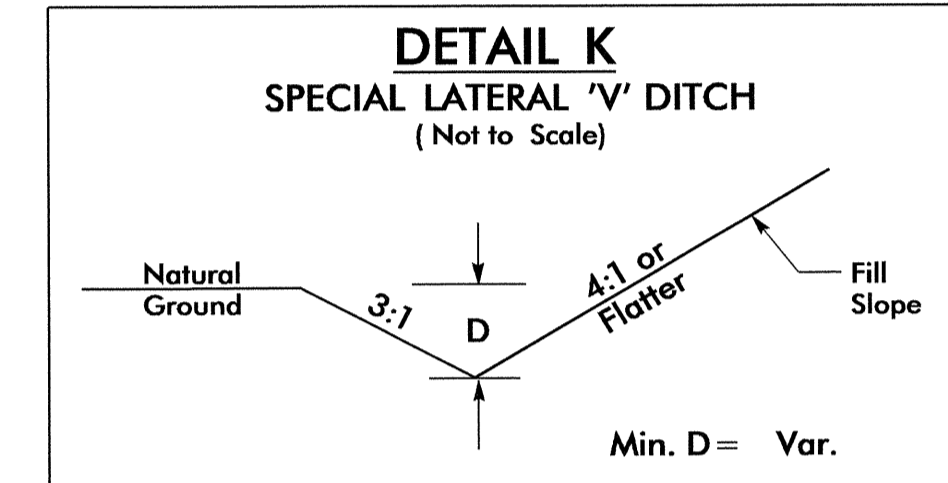
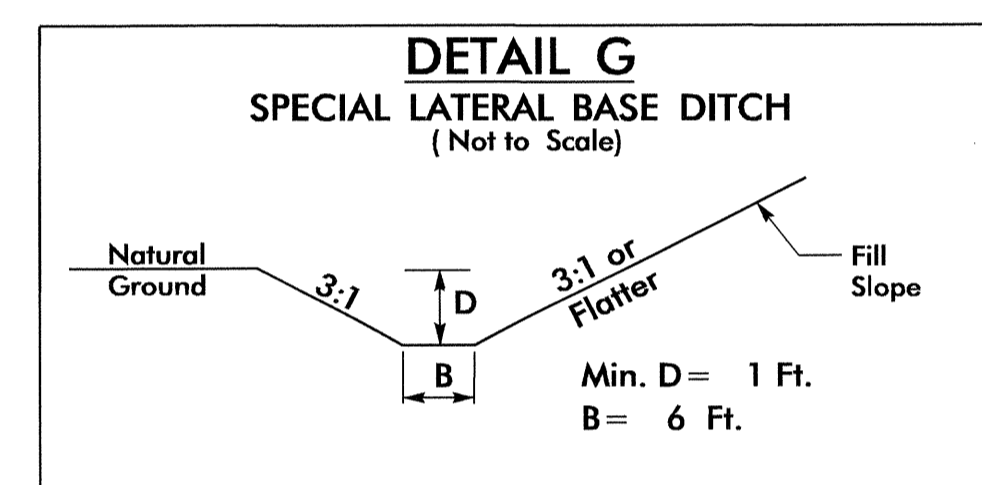
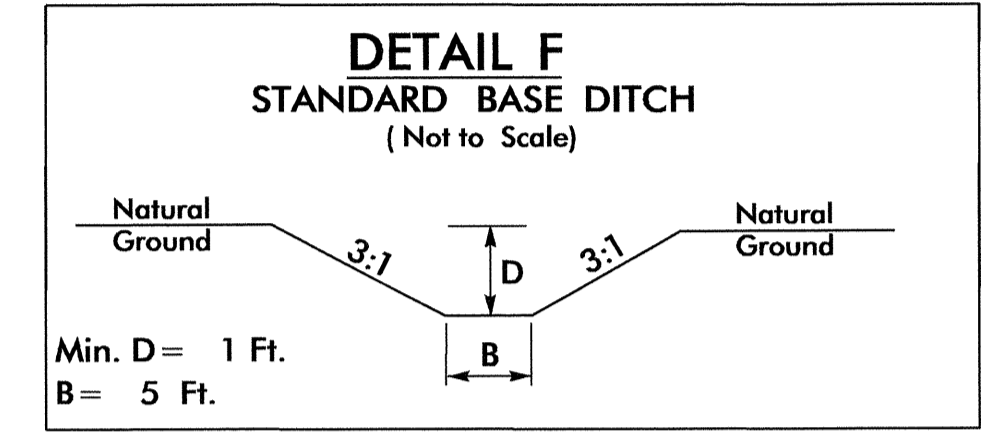
- L- STA. 27+28 TO STA. 28+00 (LT)
- EST. 9.4 CY DDE
- SLOPE = 0.0085



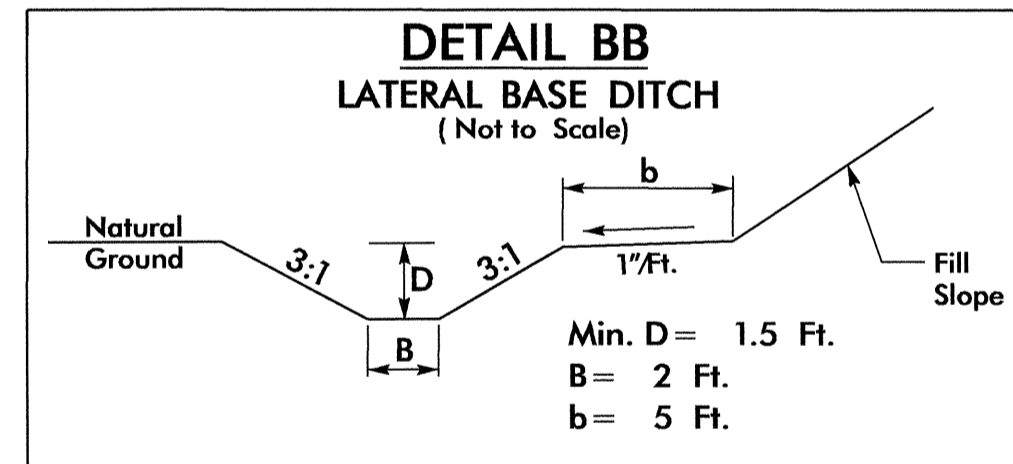
- L- STA. 14+77 TO STA. 15+06 (RT)
- L- STA. 15+11 TO STA. 15+41 (RT)
- L- STA. 93+10 TO STA. 93+27 (LT)
- Y10- STA. 29+30 TO STA. 29+40 (LT)
- Y10- STA. 29+75 TO STA. 29+85 (LT)
- Y10- STA. 29+57 TO STA. 29+73 (RT)



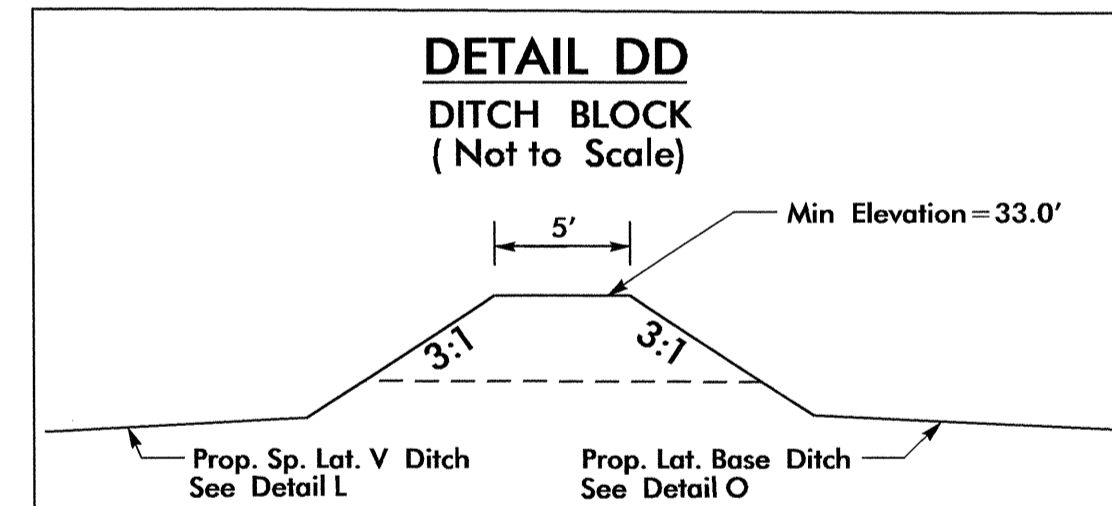
- L- STA. 105+50 TO STA. 111+20 (RT)



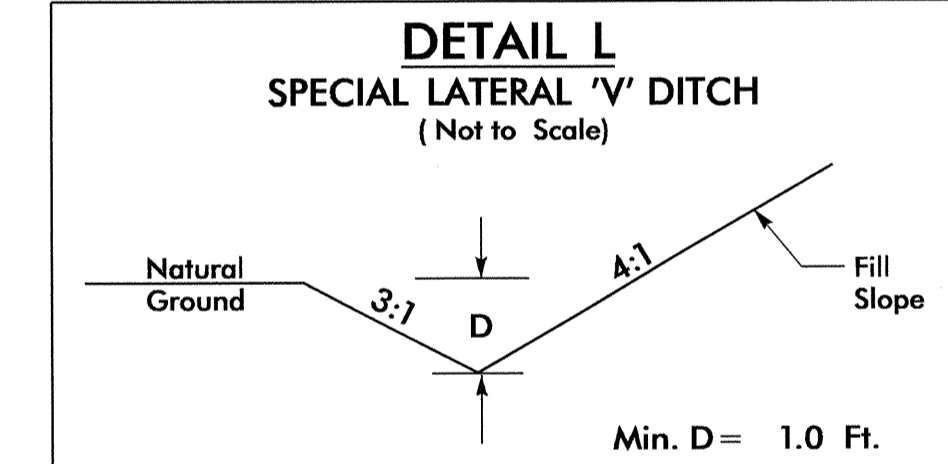
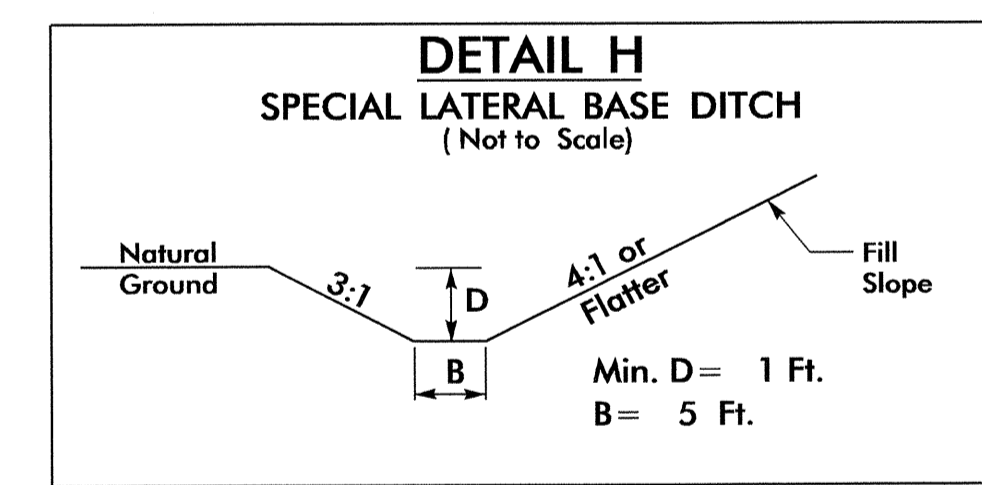
- L- STA. 40+82 TO STA. 41+47 (LT)



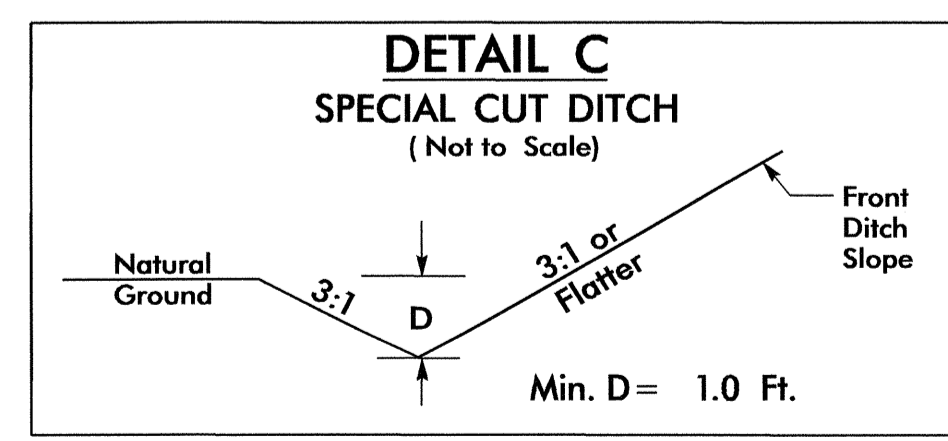
- L- STA. 16+07 TO STA. 20+50 (LT)



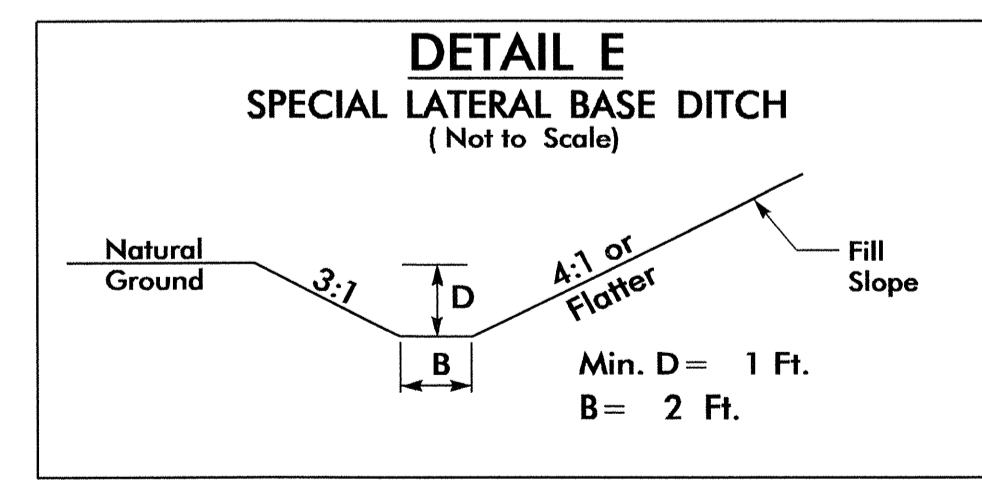
- L- STA. 100+38 TO STA. 100+63 (LT)



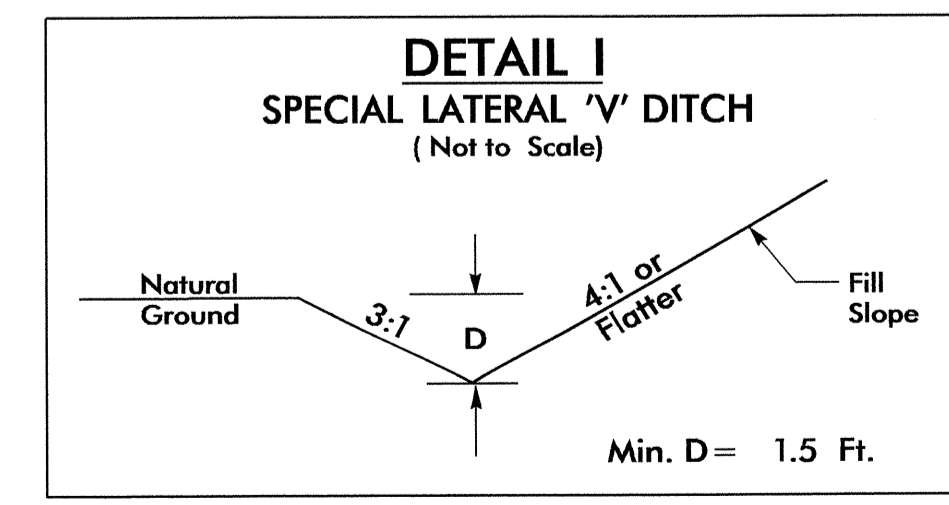
- L- STA. 41+50 TO STA. 45+00 (RT)
- L- STA. 81+00 TO STA. 86+00 (RT)
- L- STA. 88+50 TO STA. 99+50 (RT)
- L- STA. 93+14 TO STA. 99+09 (LT)
- L- STA. 99+34 TO STA. 100+38 (LT)
- L- STA. 115+46 TO STA. 119+00 (RT)
- Y9- STA. 11+11 TO STA. 13+12 (RT)
- Y9- STA. 10+49 TO STA. 11+21 (LT)
- Y9- STA. 11+88 TO STA. 12+37 (LT)
- Y9A- STA. 10+82 TO STA. 12+70 (RT)



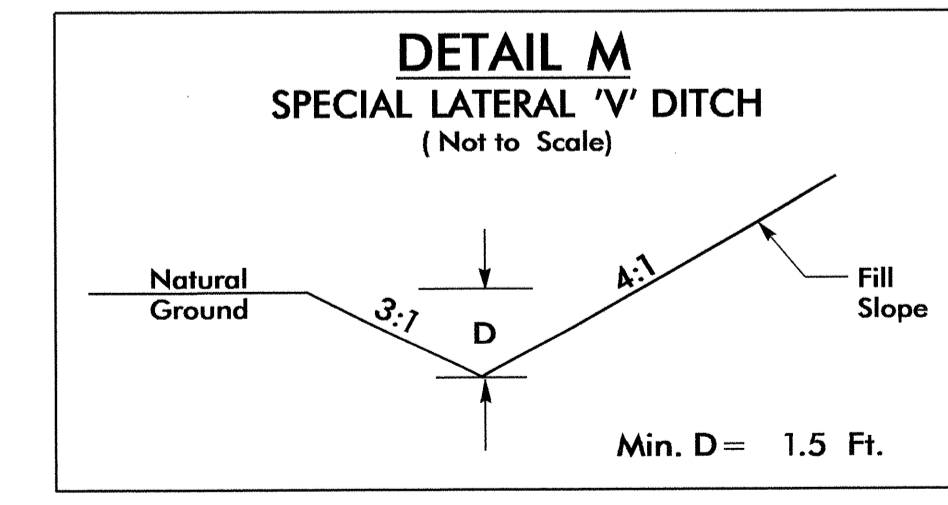
- L- STA. 18+50 TO STA. 21+00 RT
- L- STA. 24+00 TO STA. 26+50 RT



- Y10- STA. 15+00 TO STA. 20+47 (RT)

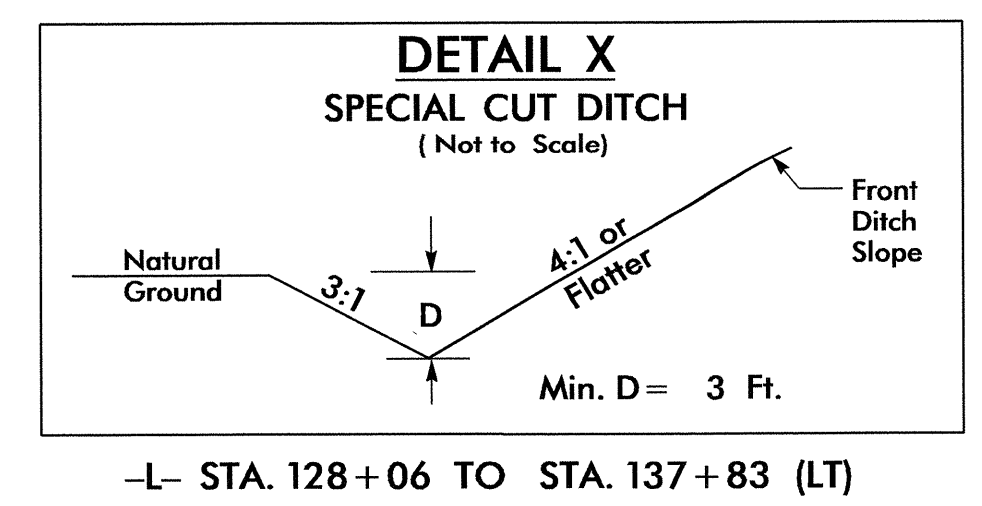
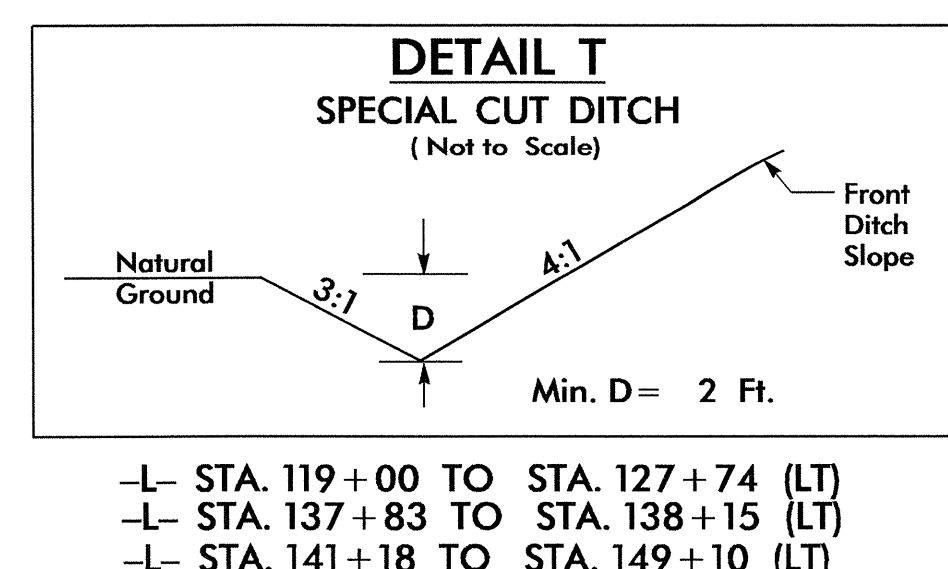
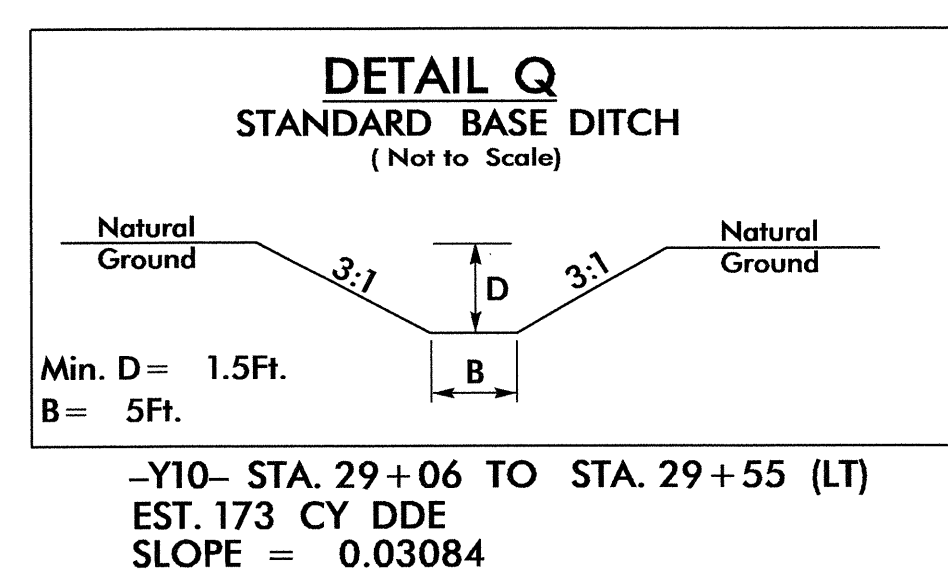
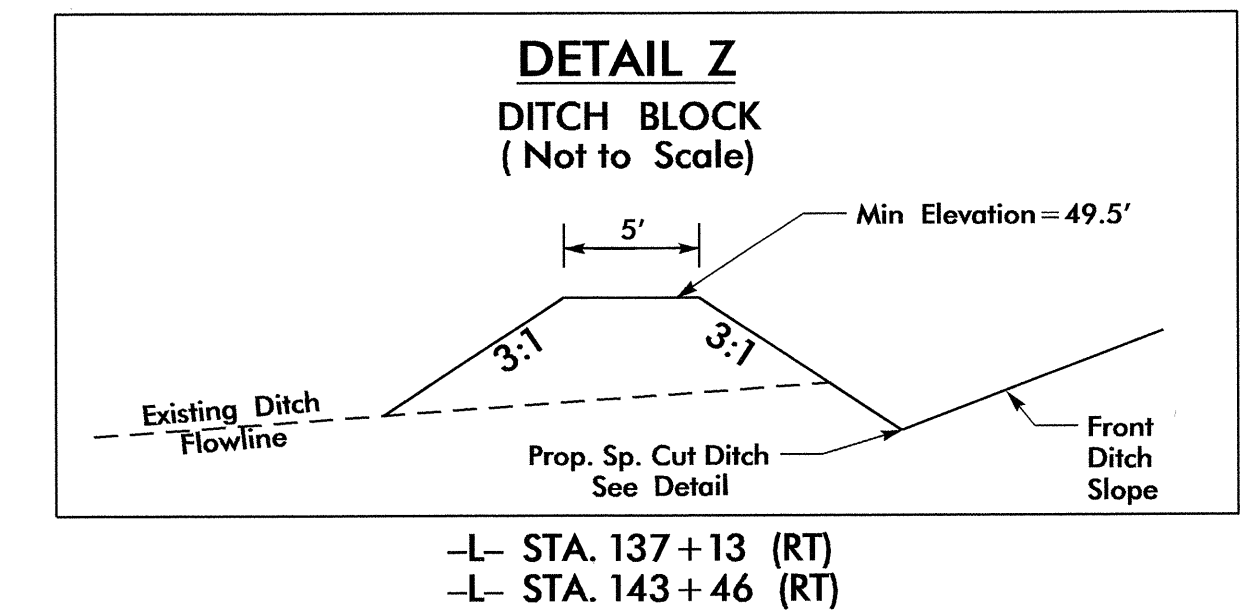
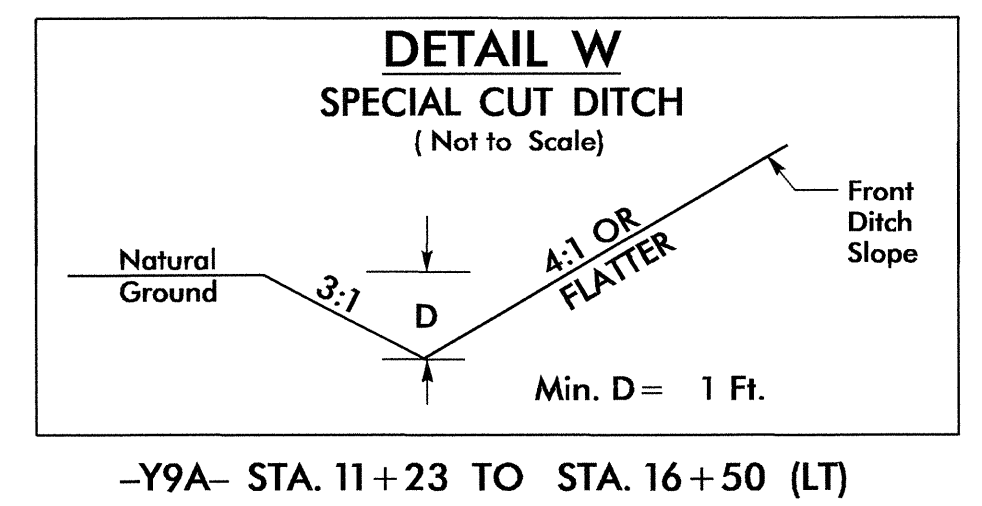
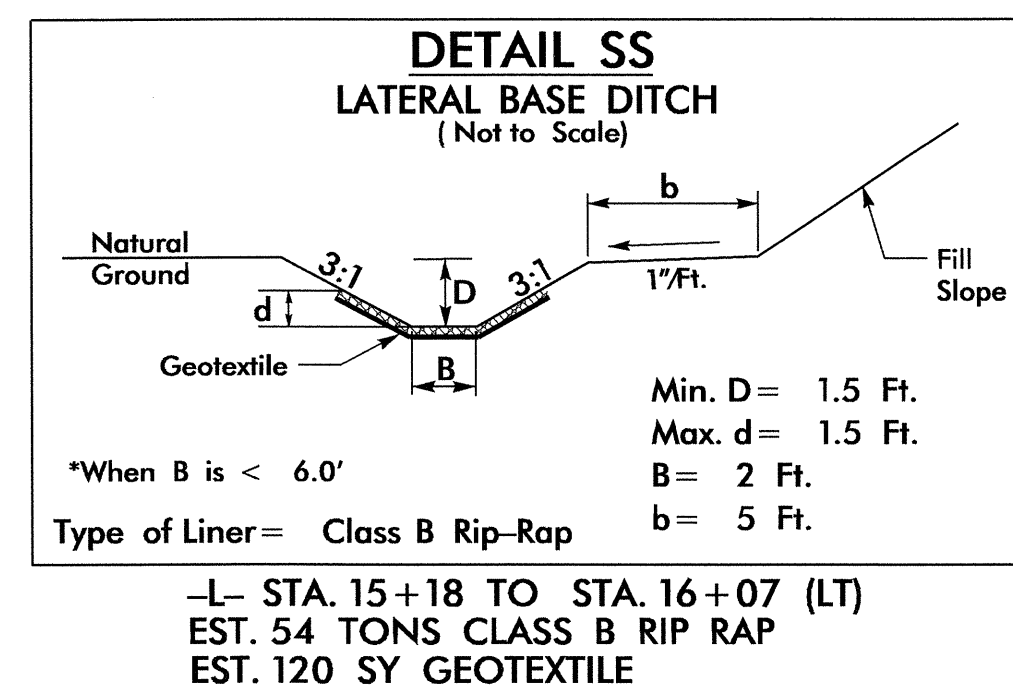
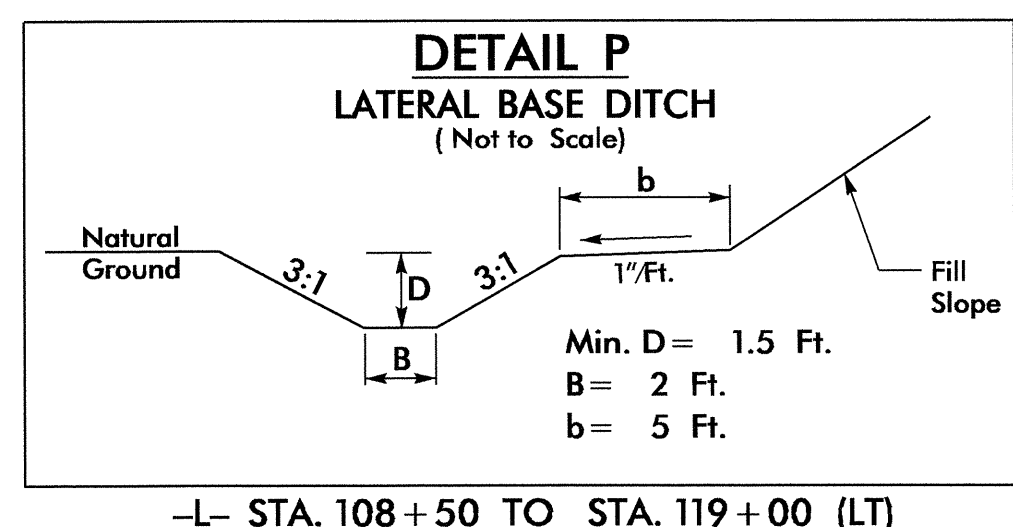
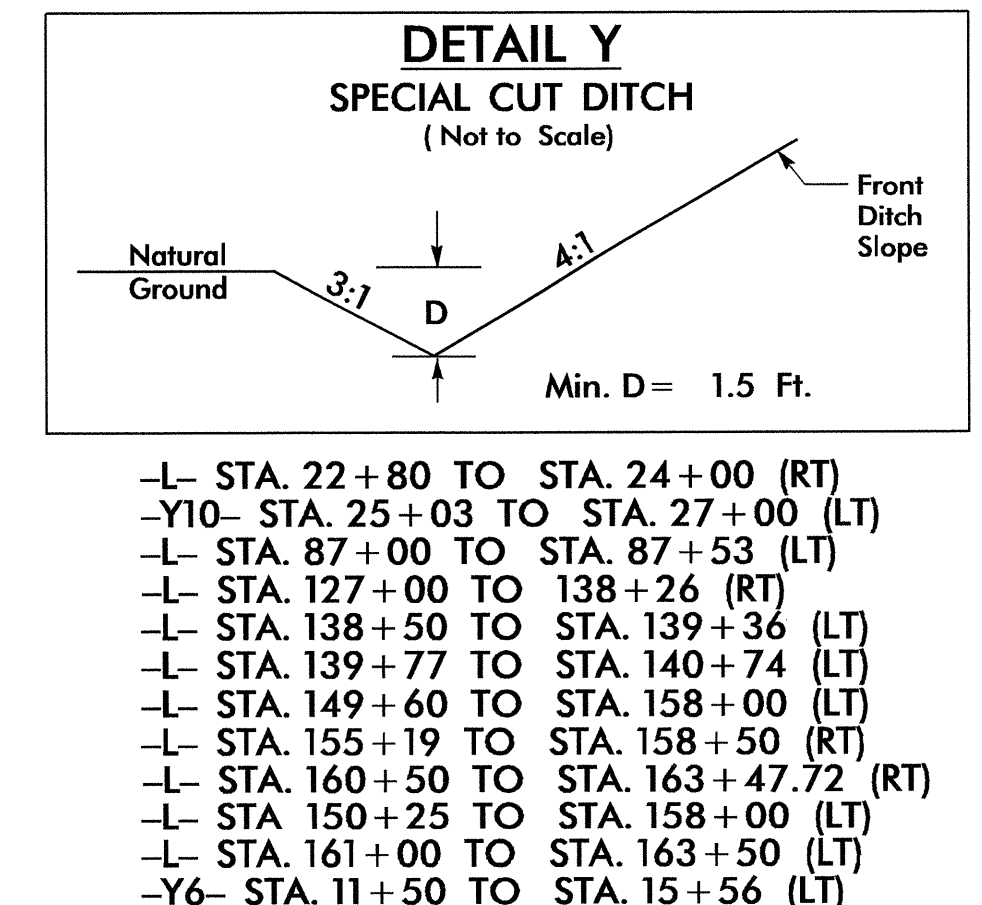
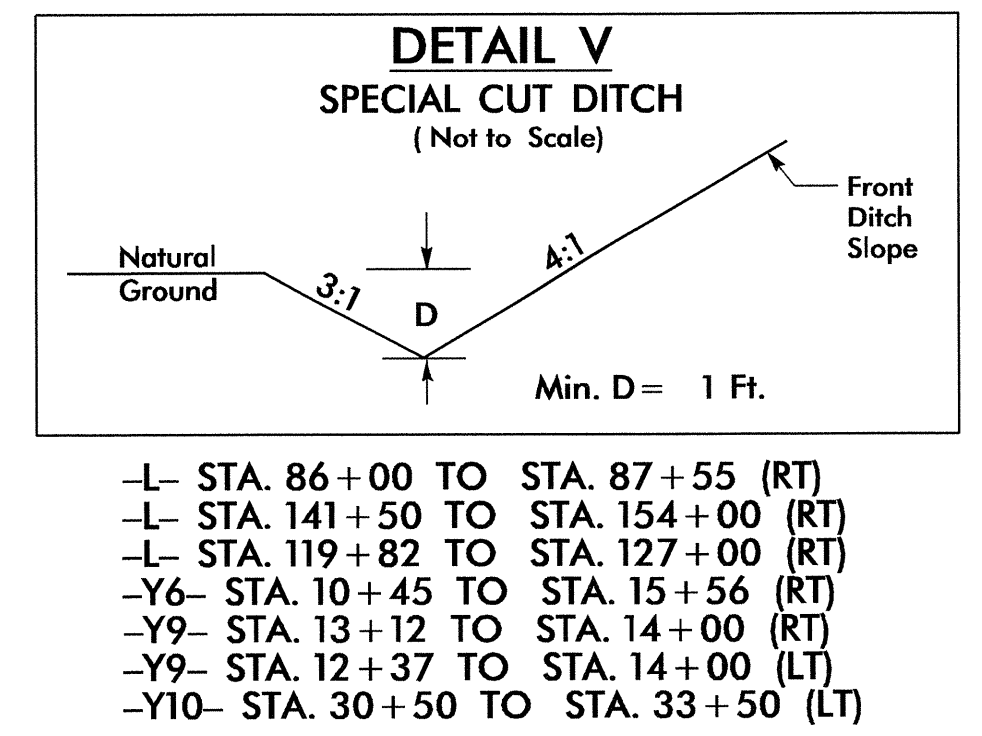
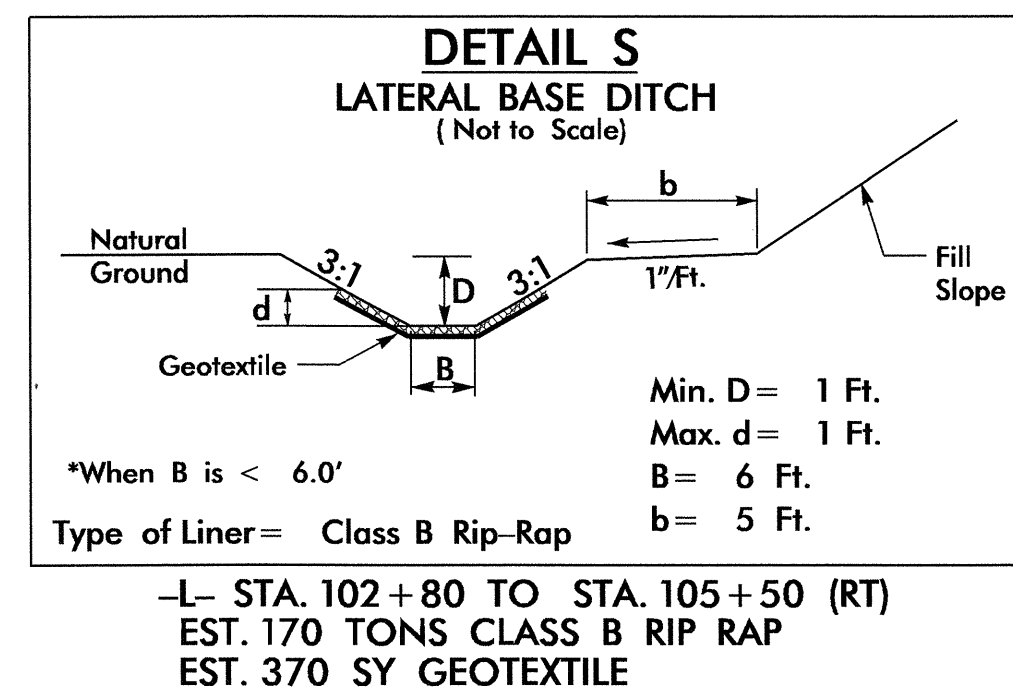
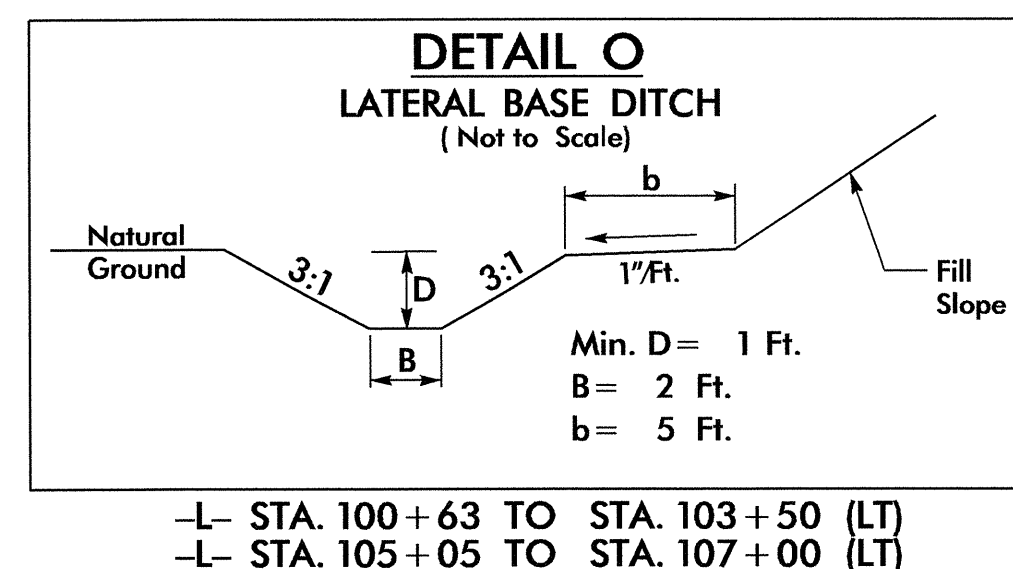
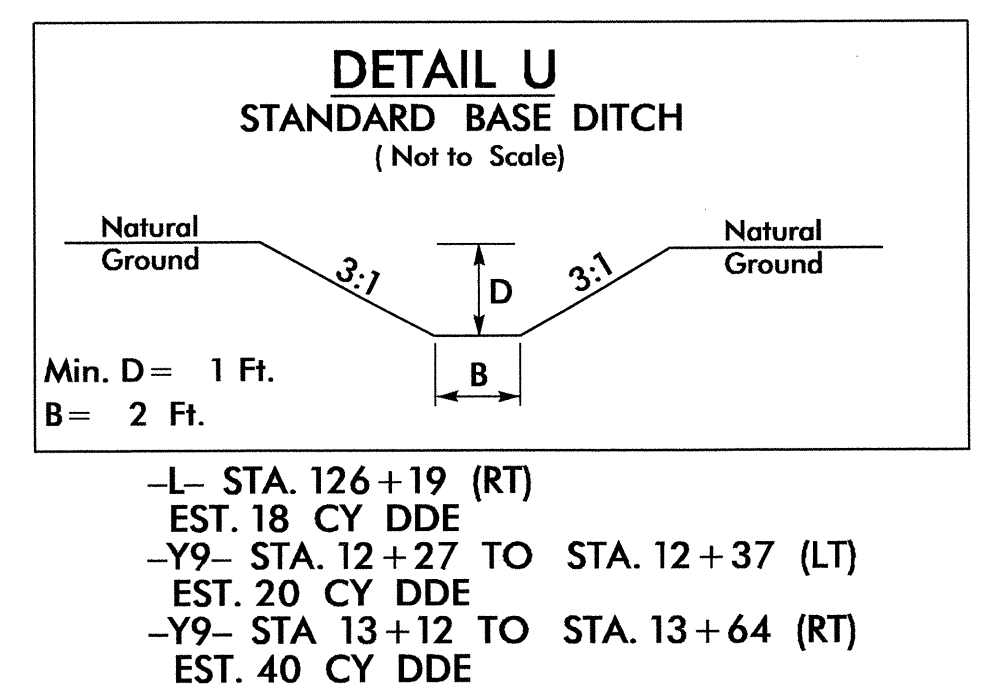
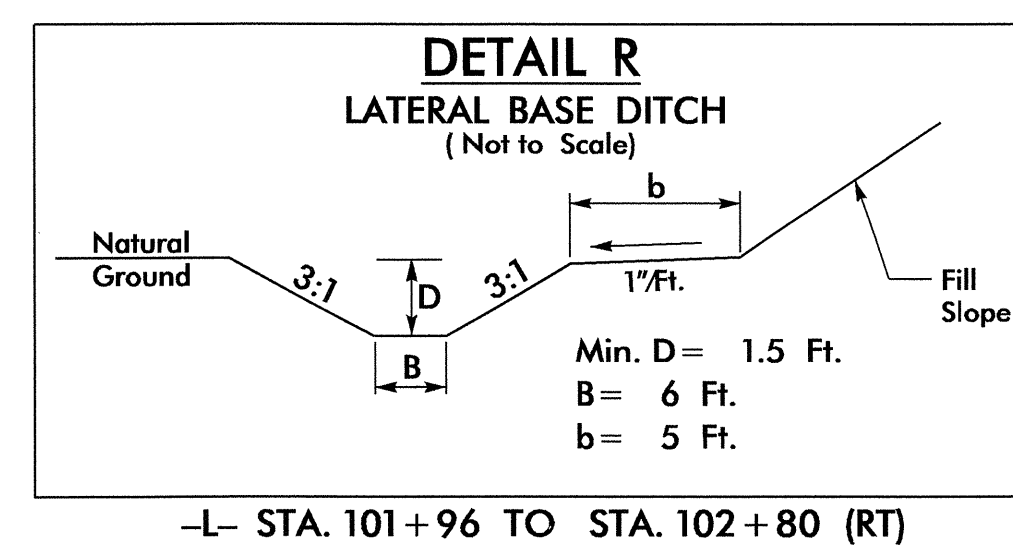
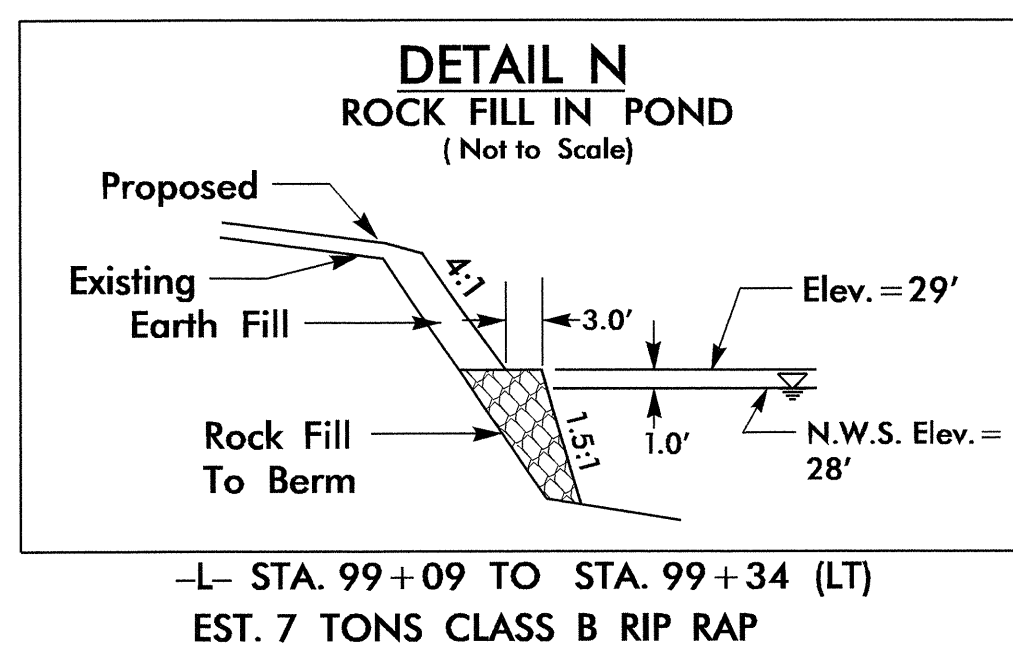


- L- STA. 24+00 TO STA. 28+50 (LT)

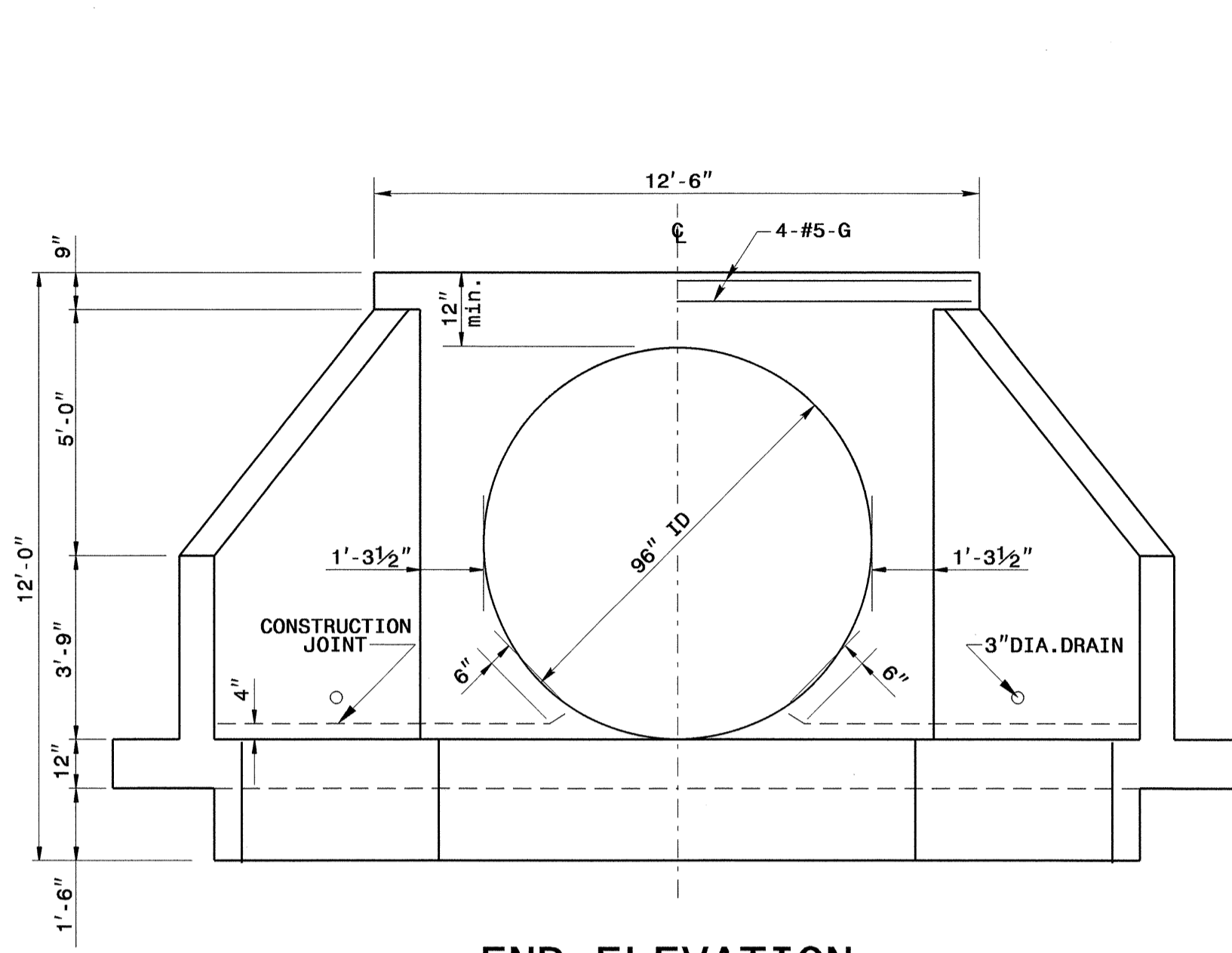
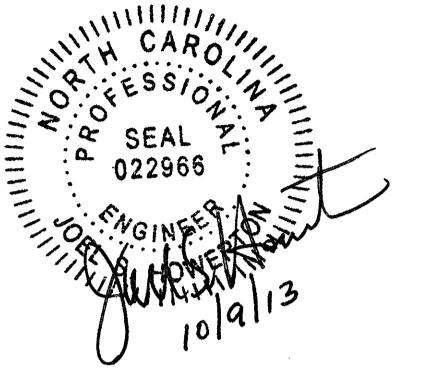


- L- STA. 49+26 TO STA. 57+50 (LT)
- L- STA. 82+50 TO STA. 87+00 (LT)
- L- STA. 88+50 TO STA. 93+04 (LT)
- L- STA. 138+26 TO STA. 141+50 (RT)
- L- STA. 158+50 TO STA. 160+50 (RT)
- L- STA. 158+00 TO STA. 161+00 (LT)

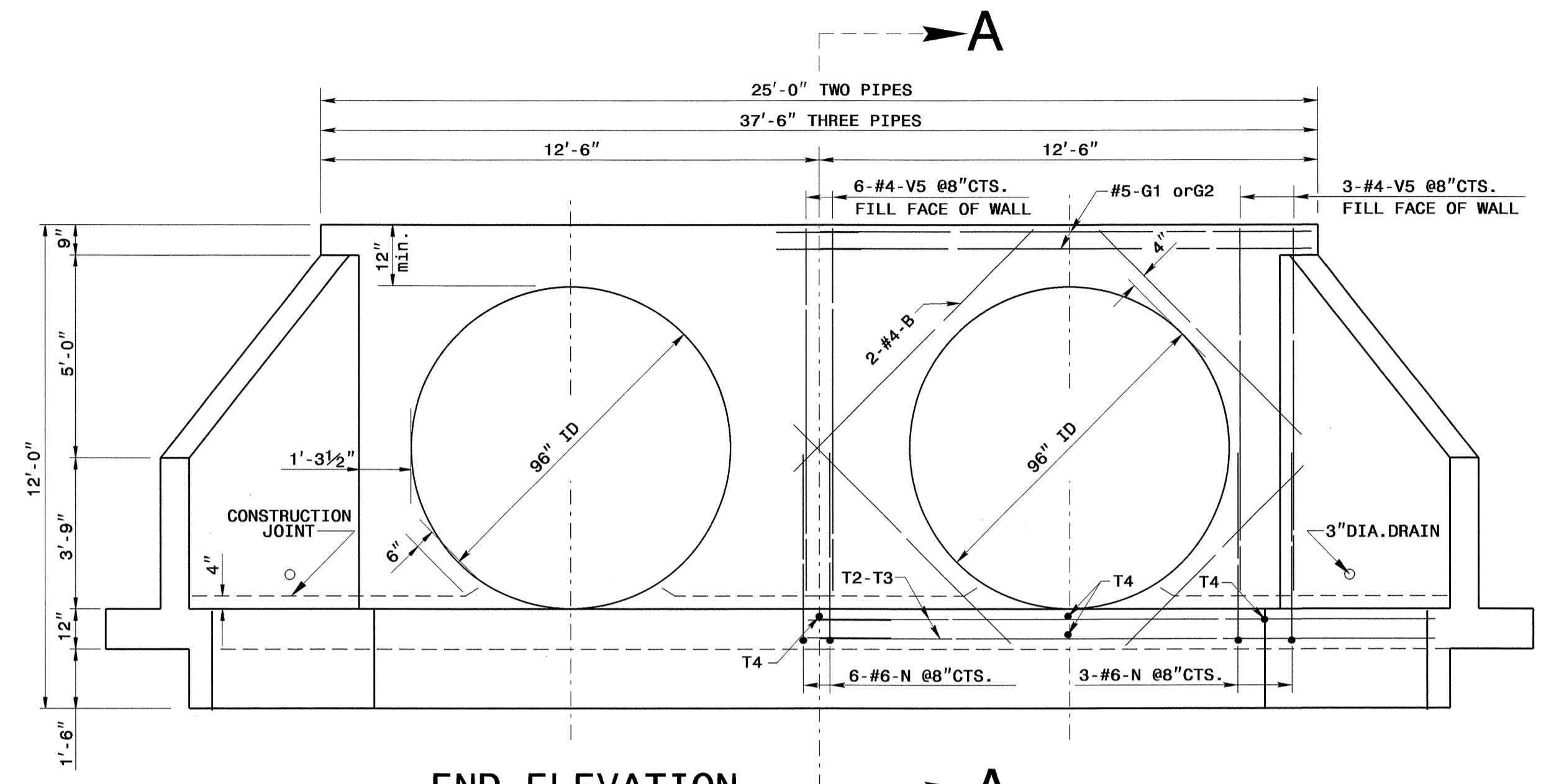
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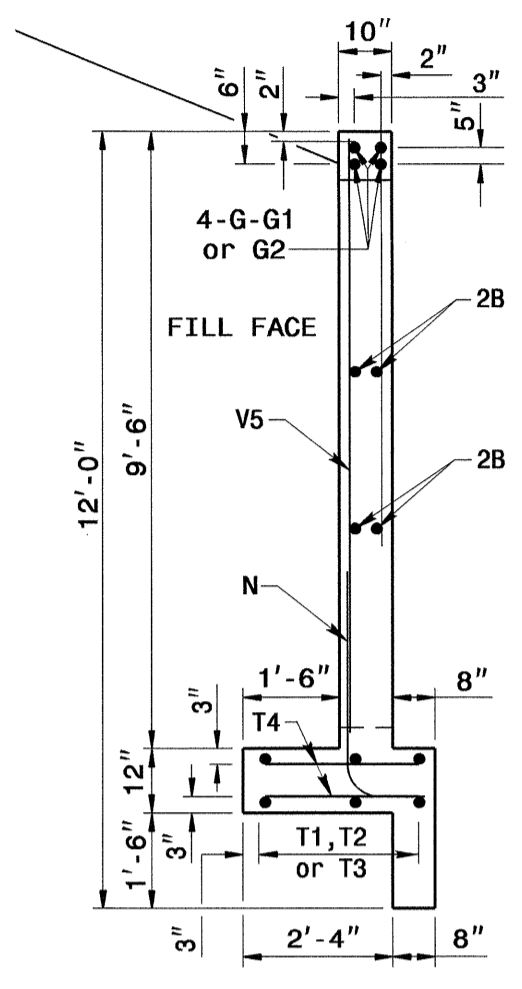
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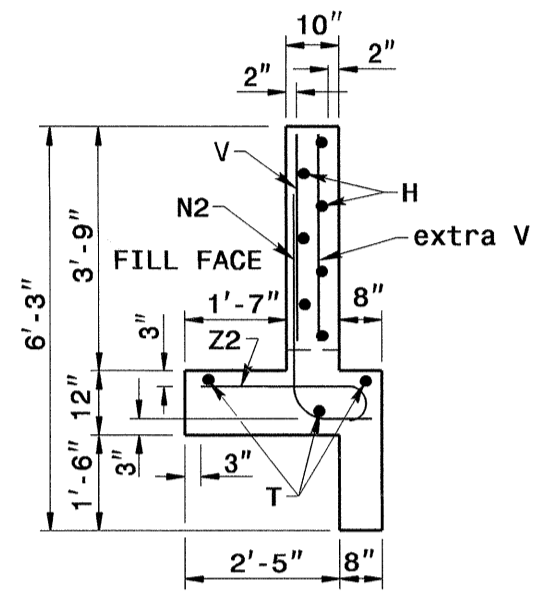
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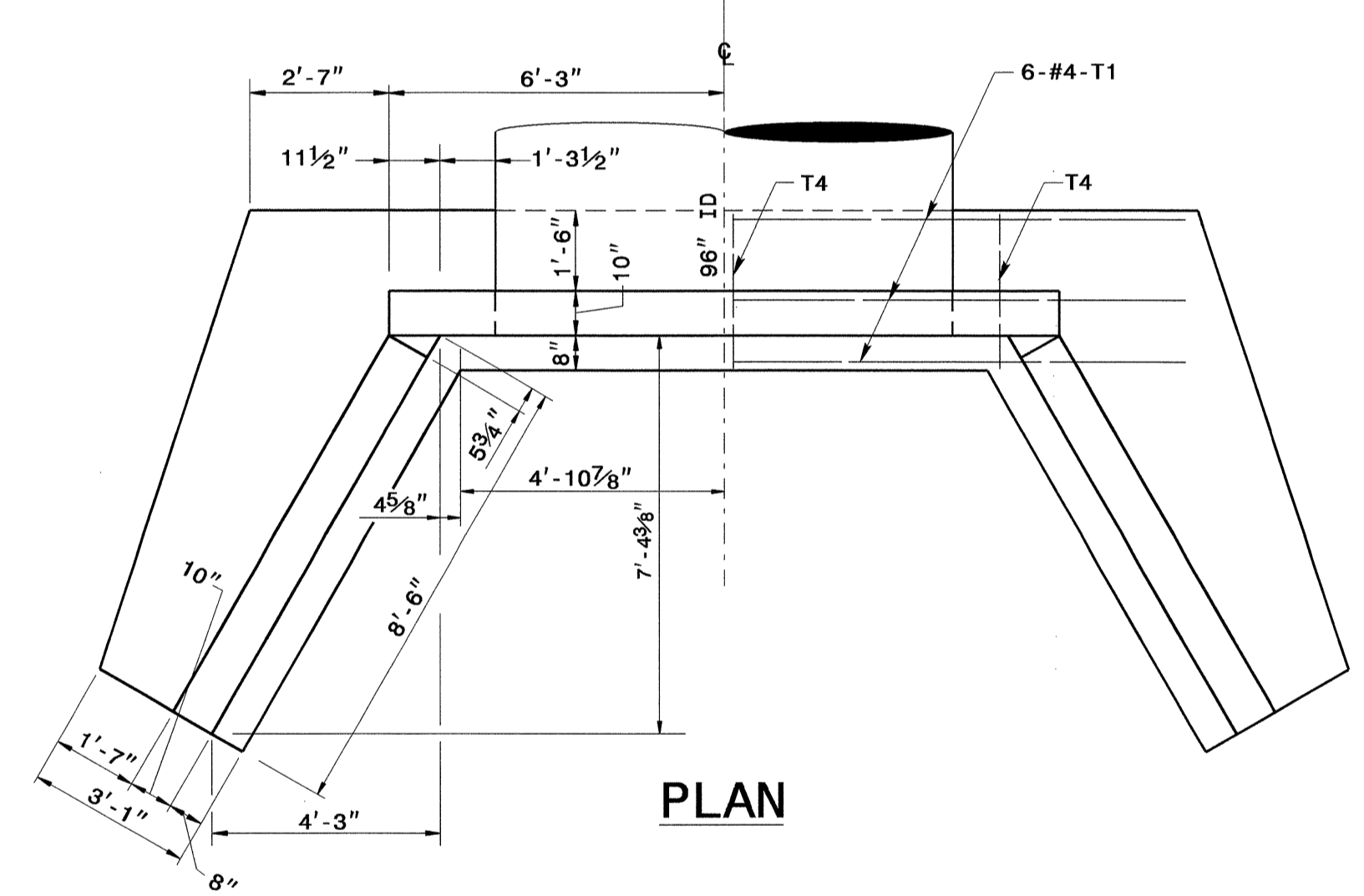
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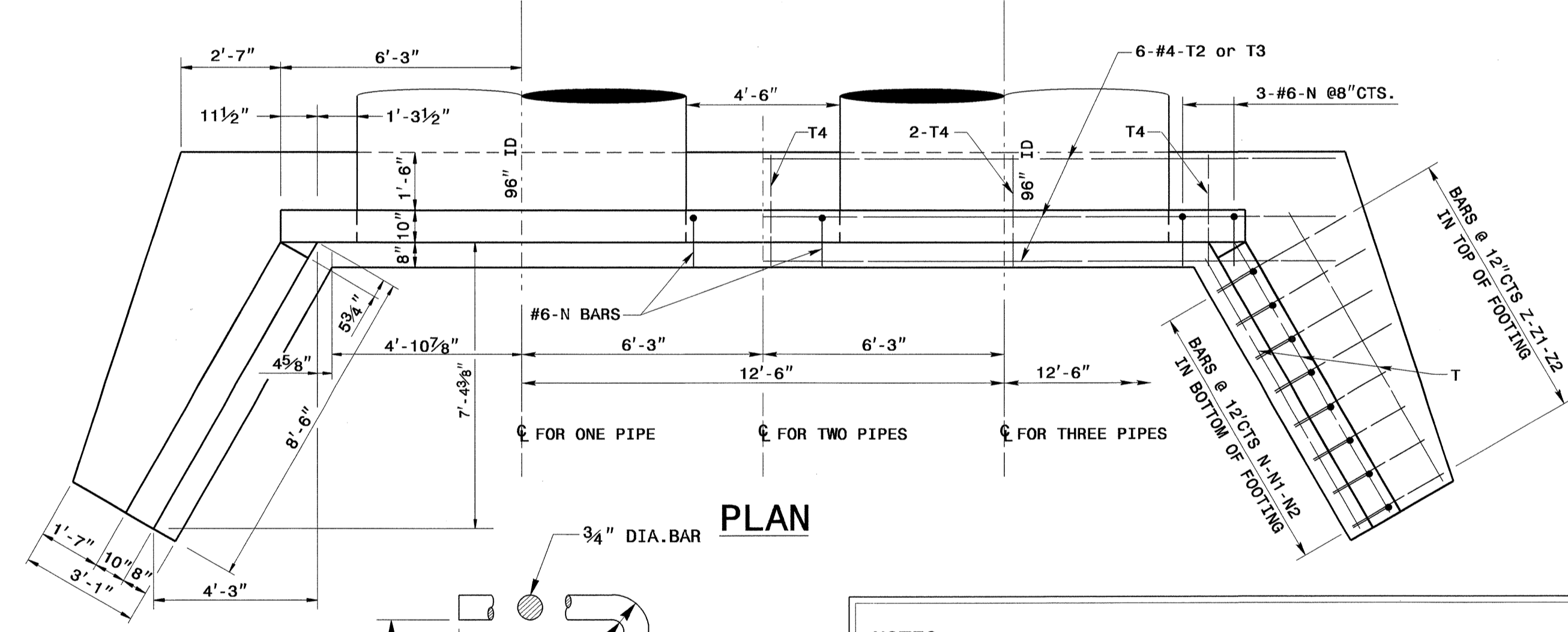
SECTION A-A



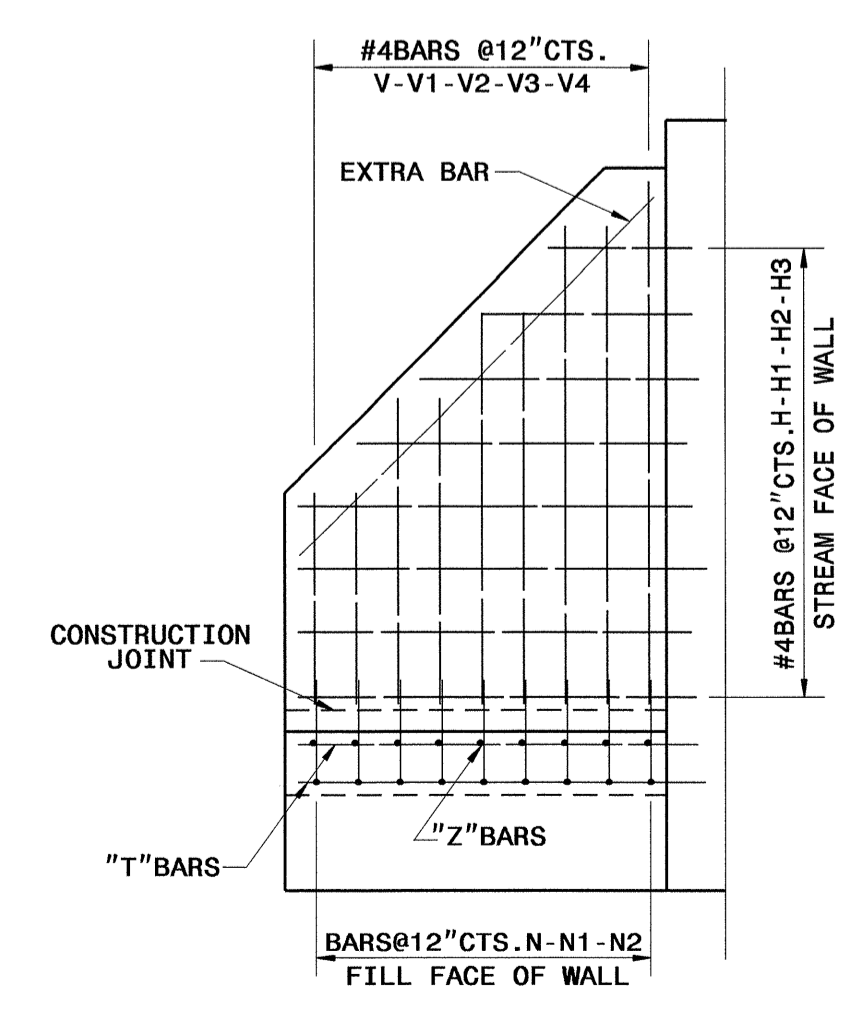
END OF WING



PLAN

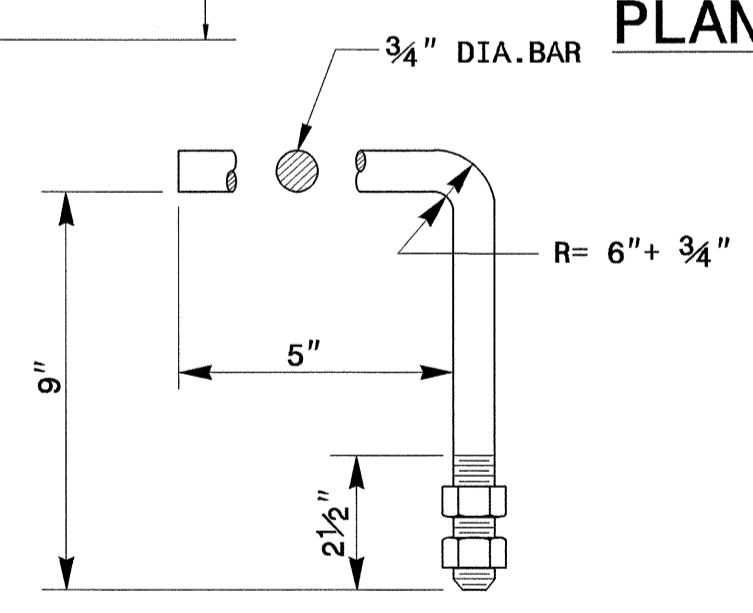


PLAN

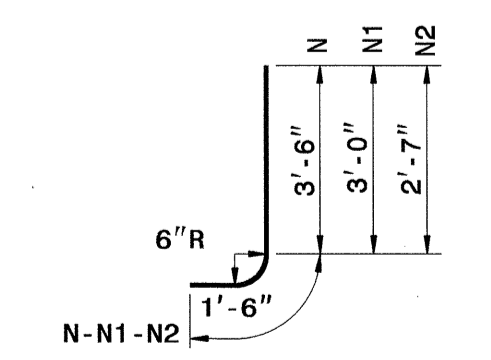


ELEVATION OF WING

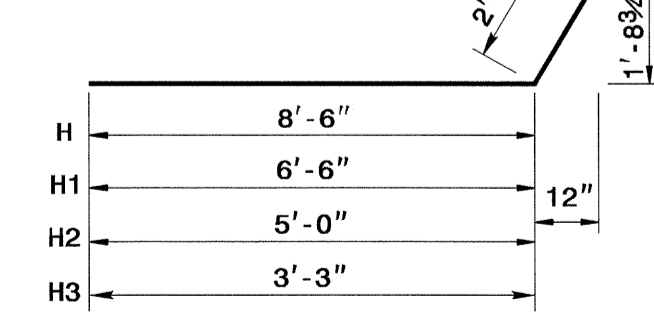
NOTE: CONSTRUCT HOOK BOLTS (ANCHORS) AT 24" CTS. ALONG THE CIRCUMFERENCE OF THE 96" CSPA. EMBED THE HOOK BOLTS 6" IN DEPTH. THE GALVANIZED 3/4" DIA. HOOK BOLTS MUST MEET ASTM A-307 OR ASTM A-836. BOTH BOLTS AND NUTS MUST BE IN ACCORDANCE WITH ASTM A-153 FOR GALVANIZING.



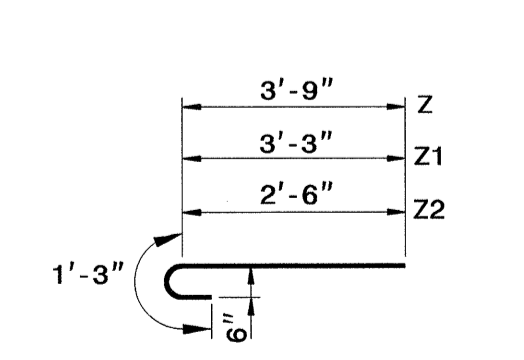
HOOK BOLT



BARS N-N1-N2



BARS H-H1-H2-H3



BARS Z-Z1-Z2

NOTES:
 ALL CONCRETE TO BE CLASS "A".
 ALL REINFORCING STEEL SHALL BE ASTM A615-GRADE 60.
 ALL REINFORCING STEEL SHALL BE DEFORMED BARS. WHERE SPLICING OF REINFORCEMENT IS NECESSARY, BARS ARE TO BE LAPPED 45 DIAMETERS. ALL DIMENSIONS RELATIVE TO REINFORCEMENT ARE TO CENTERS OF BARS.
 THE FOOTING, CURTAIN WALL AND 4 IN. OF WALL ARE TO BE POURED IN ONE OPERATION ALLOWING NO TIME FOR INITIAL SET TO TAKE PLACE BETWEEN THEM. THE REMAINING WALL SHALL THEN BE POURED IN ONE OPERATION.
 ALL EXPOSED CORNERS ARE TO BE CHAMFERED 1 IN.
 3 IN. DIAMETER DRAINS SHALL BE PLACED IN WALL AS SHOWN AND BE 6 IN. ABOVE NORMAL FLOW LINE.
 ALL MATERIAL AND WORKMANSHIP AS PER N.C. DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
 THE EXTRA BARS ARE PROVIDED FOR HOLDING REINFORCING STEEL IN CORRECT POSITION IN WING.

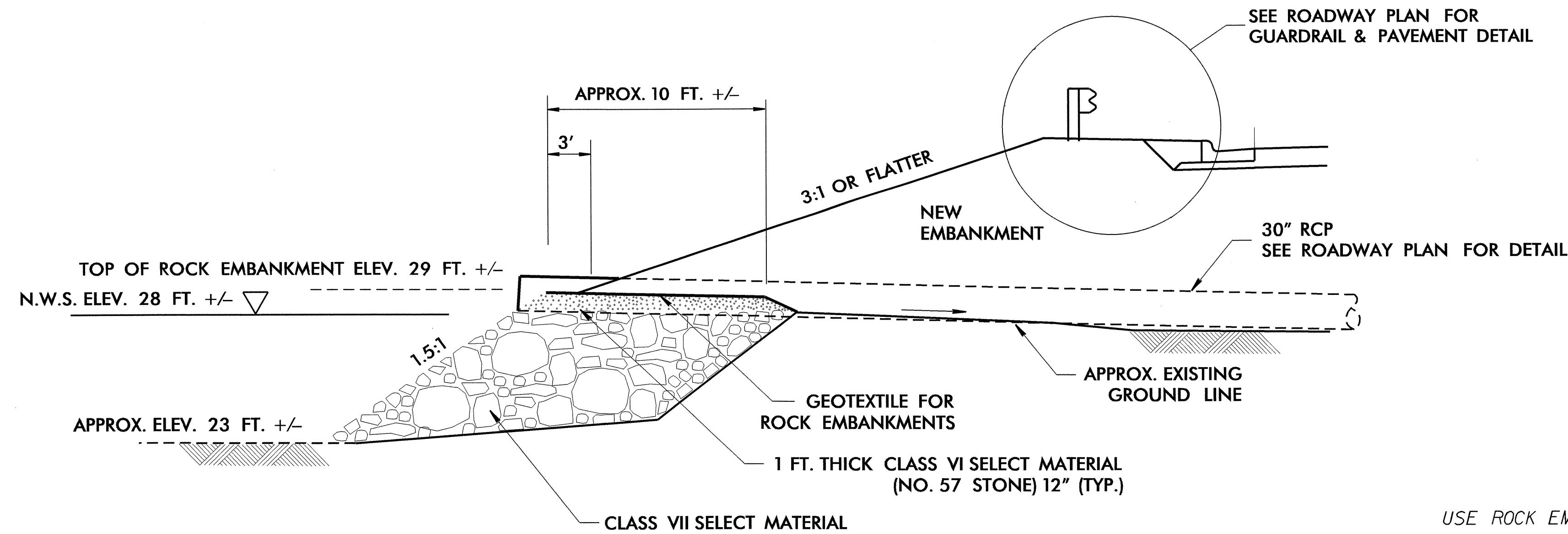
BILL OF MATERIALS FOR ONE ENDWALL							
BAR	SIZE	LENGTH	QTY	WEIGHT	1 PIPE	2 PIPES	3 PIPES
B	4	6'-6"	8	35	16	69	104
G	5	12'-3"	4	51	--	--	--
G1	5	13'-6"	--	--	8	113	--
G2	5	19'-9"	--	--	--	--	8 165
H	4	10'-6"	12	84	12	84	12 84
H1	4	8'-6"	4	23	4	23	4 23
H2	4	7'-0"	2	9	2	9	2 9
H3	4	5'-3"	4	14	4	14	4 14
N	6	5'-0"	12	90	18	135	24 180
N1	5	4'-6"	4	19	4	19	4 19
N2	4	4'-1"	8	22	8	22	8 22
T	4	8'-6"	6	34	6	34	6 34
T1	4	17'-4"	6	69	--	--	--
T2	4	16'-0"	--	--	12	128	--
T3	4	22'-3"	--	--	--	--	12 178
T4	4	2'-9"	4	7	7	13	10 18
V	4	8'-0"	4	11	4	11	4 11
V1	4	7'-0"	4	19	4	19	4 19
V2	4	5'-6"	6	22	6	22	6 22
V3	4	4'-6"	4	12	4	12	4 12
V4	4	3'-3"	6	13	6	13	6 13
V5	4	9'-0"	6	36	12	72	18 108
Z	6	5'-0"	6	45	6	45	6 45
Z1	5	4'-6"	4	19	4	19	4 19
Z2	4	3'-9"	8	20	8	20	8 20
REINF. STEEL (lbs.)				654	896	1119	
CLASS "A" CONC (cu. yds.)				10.1	13.9	17.6	

* NO DEDUCTIONS HAVE BEEN MADE FOR PIPES

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

REINFORCED CONCRETE ENDWALL
 FOR
 96IN. DIAMETER PIPE - 90° SKEW

ORIGINAL BY: DATE: 12-07-06
 MODIFIED BY: rnbritt DATE: 9/5/13
 CHECKED BY: DATE: 9/5/13
 FILE SPEC: 96inDia180sk.dgn



ROCK EMBANKMENTS DETAILS

(FROM STA. 90+09 +/- TO 90+34 +/- -L-, LEFT)
N.T.S

USE ROCK EMBANKMENTS AT FOLLOWING LOCATIONS:

LOCATION NO.	APPROX. BEGIN STA.	APPROX. END STA.	LOCATION
1	99+09 +/- -L-	99+34 +/- -L-	LEFT

CONSTRUCT ROCK EMBANKMENTS TO THE ELEVATION 29 FT AS SHOWN IN THE ROCK EMBANKMENTS DETAILS, ACCORDING TO THE ROCK EMBANKMENTS SPECIAL PROVISION.

CLASS VII SELECT MATERIAL SHALL MEET THE GRADATION REQUIREMENTS AS INDICATED IN SECTION 1016 OF THE STANDARD SPECIFICATIONS WITH THE EXCEPTION THAT THE MAXIMUM DIAMETER OF THE ROCK DOES NOT EXCEED TWO FEET.

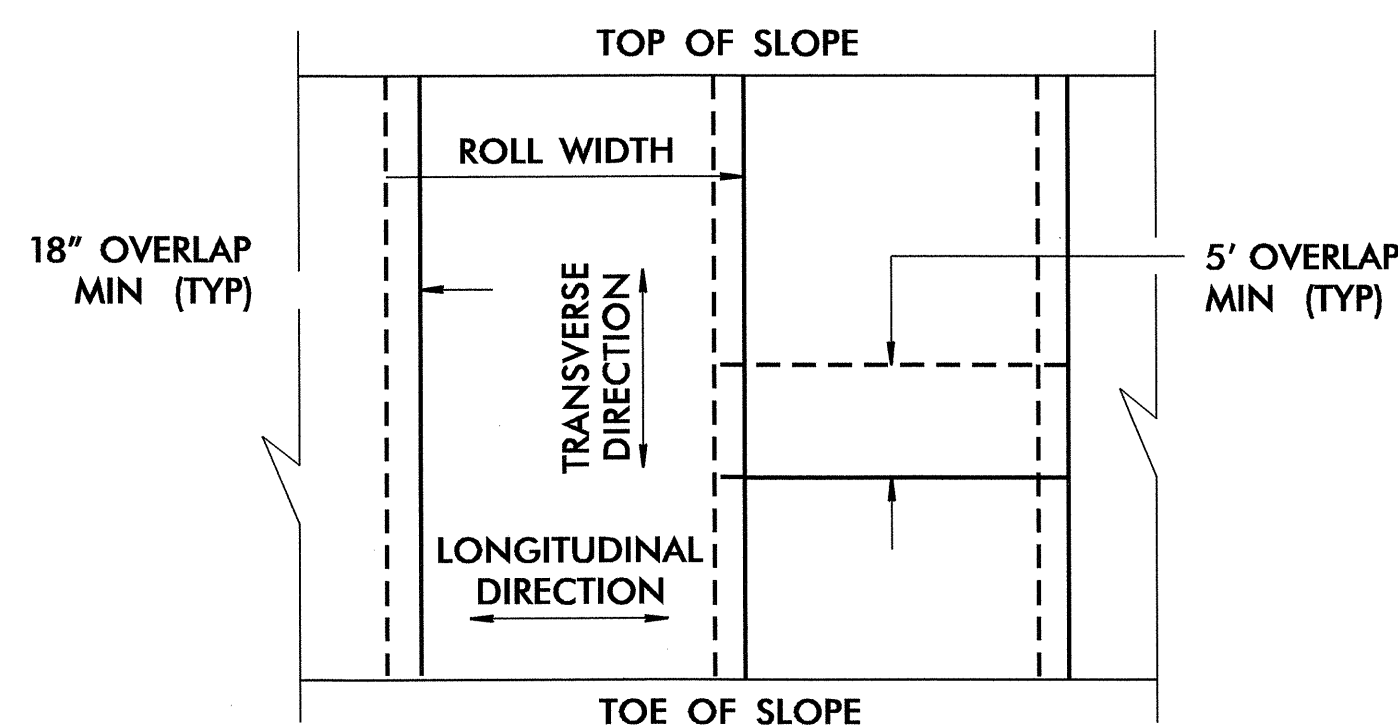
FOR ROCK EMBANKMENTS, SEE ROCK EMBANKMENTS SPECIAL PROVISION.

ESTIMATED MATERIAL QUANTITIES FOR ROCK EMBANKMENT

ROCK EMBANKMENTS (SELECT MATERIAL, CLASS VII) = 70 TONS

*57 STONE (SELECT MATERIAL, CLASS VI) = 30 TONS

GEOTEXTILE FOR ROCK EMBANKMENTS = 30 SY



GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)

PROJECT NO.: R-3432
BRUNSWICK COUNTY

STATION: SEE TABLE

SHEET 1 OF 1

PREPARED BY: THEIN T. ZAN DATE: 09/2012
REVIEWED BY: JAMES R. BATTS DATE: 09/2012

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACT OFFICE

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ROCK EMBANKMENTS DETAILS

REVISIONS				
NO.	BY	DATE	NO.	DATE
1			3	
2			4	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203163

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0015000000-N	205	3	EA	SEALING ABANDONED WELLS
0050000000-E	226	3	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	3,950	CY	UNDERCUT EXCAVATION
0063000000-N	SP	Lump Sum		GRADING
0134000000-E	240	12,519	CY	DRAINAGE DITCH EXCAVATION
0192000000-N	260	12	HR	PROOF ROLLING
0195000000-E	265	3,000	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	3,000	SY	GEOTEXTILE FOR SOIL STABILIZATION
0220000000-E	SP	70	TON	ROCK EMBANKMENTS
0222000000-E	SP	30	SY	GEOTEXTILE FOR ROCK EMBANKMENTS
0318000000-E	300	350	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	1,100	SY	FOUNDATION CONDITIONING GEOTEXTILE
0335200000-E	305	394	LF	15" DRAINAGE PIPE
0335300000-E	305	484	LF	18" DRAINAGE PIPE
0372000000-E	310	92	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E	310	44	LF	24" RC PIPE CULVERTS, CLASS III
0384000000-E	310	428	LF	30" RC PIPE CULVERTS, CLASS III
0390000000-E	310	32	LF	36" RC PIPE CULVERTS, CLASS III
0402000000-E	310	164	LF	48" RC PIPE CULVERTS, CLASS III
0546000000-E	310	148	LF	*** CAA PIPE CULVERTS, ***** THICK (72", 0.135")
0546000000-E	310	720	LF	*** CAA PIPE CULVERTS, ***** THICK (84", 0.135")

ItemNumber	Sec #	Quantity	Unit	Description
3656000000-E	876	6,880	SY	GEOTEXTILE FOR DRAINAGE
4072000000-E	903	1,215	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4096000000-N	904	9	EA	SIGN ERECTION, TYPE D
4102000000-N	904	67	EA	SIGN ERECTION, TYPE E
4108000000-N	904	6	EA	SIGN ERECTION, TYPE F
4116100000-N	904	1	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (E)
4155000000-N	907	9	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4400000000-E	1110	1,973	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	352	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	510	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4420000000-N	1120	3	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4430000000-N	1130	200	EA	DRUMS
4435000000-N	1135	50	EA	CONES
4445000000-E	1145	296	LF	BARRICADES (TYPE III)
4450000000-N	1150	3,480	HR	FLAGGER
4510000000-N	SP	80	HR	LAW ENFORCEMENT
4516000000-N	1180	121	EA	SKINNY DRUM
4650000000-N	1251	441	EA	TEMPORARY RAISED PAVEMENT MARKERS
4685000000-E	1205	40,240	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	40,264	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4695000000-E	1205	5,468	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
4702000000-E	1205	126	LF	THERMOPLASTIC PAVEMENT MARKING LINES (12", 120 MILS)
4710000000-E	1205	48	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
4725000000-E	1205	65	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)

SUMMARY OF QUANTITIES - R-3432

ItemNumber	Sec #	Quantity	Unit	Description
0546000000-E	310	132	LF	*** CAA PIPE CULVERTS, ***** THICK (96", 0.135")
0987000000-E	310	92	LF	GENERIC PIPE ITEM 15" RCP CLASS V
0987000000-E	310	112	LF	GENERIC PIPE ITEM 18" RCP CLASS V
0987000000-E	310	124	LF	GENERIC PIPE ITEM 30" RCP CLASS V
0987000000-E	310	116	LF	GENERIC PIPE ITEM 54" RCP CLASS V
0987000000-E	310	108	LF	GENERIC PIPE ITEM 72" RCP CLASS V
0995000000-E	340	641	LF	PIPE REMOVAL
0996000000-N	350	3	EA	PIPE CLEAN-OUT
1077000000-E	SP	85	TON	#57 STONE
1099500000-E	505	500	CY	SHALLOW UNDERCUT
1099700000-E	505	950	TON	CLASS IV SUBGRADE STABILIZATION
1111000000-E	SP	5,000	TON	CLASS IV AGGREGATE STABILIZATION
1220000000-E	545	500	TON	INCIDENTAL STONE BASE
1330000000-E	607	475	SY	INCIDENTAL MILLING
1519000000-E	610	22,150	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1693000000-E	654	500	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
1880000000-E	SP	250	TON	GENERIC PAVING ITEM PATCHING EXISTING PAVEMENT (MILL)
2020000000-N	806	14	EA	CONTROL OF ACCESS MARKERS
2022000000-E	815	560	CY	SUBDRAIN EXCAVATION
2033000000-E	815	420	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	2,500	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	815	5	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	30	LF	6" OUTLET PIPE
2209000000-E	838	9.4	CY	ENDWALLS

ItemNumber	Sec #	Quantity	Unit	Description
4810000000-E	1205	173,929	LF	PAINT PAVEMENT MARKING LINES (4")
4820000000-E	1205	6,567	LF	PAINT PAVEMENT MARKING LINES (8")
4825000000-E	1205	245	LF	PAINT PAVEMENT MARKING LINES (12")
4835000000-E	1205	212	LF	PAINT PAVEMENT MARKING LINES (24")
4840000000-N	1205	60	EA	PAINT PAVEMENT MARKING CHARACTER
4845000000-N	1205	118	EA	PAINT PAVEMENT MARKING SYMBOL
4870000000-E	1205	20	LF	REMOVAL OF PAVEMENT MARKING LINES (24")
4900000000-N	1251	989	EA	PERMANENT RAISED PAVEMENT MARKERS
4915000000-E	1264	3	EA	7' U-CHANNEL POSTS
4955000000-N	1264	3	EA	OBJECT MARKERS (END OF ROAD)
5326200000-E	1510	1,557	LF	12" WATER LINE
5326600000-E	1510	972	LF	16" WATER LINE
5558000000-E	1515	3	EA	12" VALVE
5558600000-E	1515	1	EA	16" VALVE
5648000000-N	1515	1	EA	RELOCATE WATER METER
5649000000-N	1515	1	EA	RECONNECT WATER METER
5672000000-N	1515	2	EA	RELOCATE FIRE HYDRANT
5804000000-E	1530	1,436	LF	ABANDON 12" UTILITY PIPE
5810000000-E	1530	958	LF	ABANDON 16" UTILITY PIPE
5871900000-E	1550	107	LF	TRENCHLESS INSTALLATION OF 16" IN SOIL
5871910000-E	1550	46	LF	TRENCHLESS INSTALLATION OF 16" NOT IN SOIL
6000000000-E	1605	12,000	LF	TEMPORARY SILT FENCE
6006000000-E	1610	1,000	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	2,000	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	1,000	TON	SEDIMENT CONTROL STONE

ItemNumber	Sec #	Quantity	Unit	Description
2220000000-E	838	53	CY	REINFORCED ENDWALLS
2253000000-E	840	0.764	CY	PIPE COLLARS
2264000000-E	840	2	CY	PIPE PLUGS
2286000000-N	840	6	EA	MASONRY DRAINAGE STRUCTURES
2366000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.24
2367000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
2396000000-N	840	1	EA	FRAME WITH COVER, STD 840.54
2535000000-E	846	690	LF	***X*** CONCRETE CURB (8" X 18")
2542000000-E	846	900	LF	1'-6" CONCRETE CURB & GUTTER
2655000000-E	852	2,040	SY	5' MONOLITHIC CONCRETE ISLANDS (KEYED IN)
2738000000-E	SP	1,330	SY	GENERIC PAVING ITEM 7" CONCRETE TRUCK APRON
2830000000-N	858	1	EA	ADJUSTMENT OF MANHOLES
2845000000-N	858	3	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES
3030000000-E	862	1,787.5	LF	STEEL BM GUARDRAIL
3105000000-N	862	2	EA	STEEL BM GUARDRAIL TERMINAL SECTIONS
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3270000000-N	SP	7	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3285000000-N	SP	1	EA	GUARDRAIL ANCHOR UNITS, TYPE M-350
3503000000-E	866	28,820	LF	WOVEN WIRE FENCE, 47" FABRIC
3509000000-E	866	1,750	EA	4" TIMBER FENCE POSTS, 7'-6" LONG
3515000000-E	866	570	EA	5" TIMBER FENCE POSTS, 8'-0" LONG
3628000000-E	876	400	TON	RP RAP, CLASS I
3642000000-E	876	30	TON	RP RAP, CLASS A
3649000000-E	876	295	TON	RP RAP, CLASS B
3651000000-E	SP	15	TON	BOULDERS

ItemNumber	Sec #	Quantity	Unit	Description
6015000000-E	1615	75	ACR	TEMPORARY MULCHING
6018000000-E	1620	2,350	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	10.25	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	2,000	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	2,100	LF	SAFETY FENCE
6030000000-E	1630	10,000	CY	SILT EXCAVATION
6036000000-E	1631	21,000	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	800	SY	COIR FIBER MAT
6038000000-E	SP	1,000	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	750	LF	1/4" HARDWARE CLOTH
6043000000-E	SP	800	SY	LOW PERMEABILITY GEOTEXTILE
6045000000-E	SP	125	LF	*** TEMPORARY PIPE (24")
6046000000-E	1636	60	LF	TEMPORARY PIPE FOR STREAM CROSSING
6070000000-N	1639	16	EA	SPECIAL STILLING BASINS
6071012000-E	SP	450	LF	COIR FIBER WATTLE
6071020000-E	SP	525	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	3,000	LF	COIR FIBER BAFFLE
6071050000-E	SP	18	EA	*** SKIMMER (1-1/2")
6071050000-E	SP	1	EA	*** SKIMMER (2")
6084000000-E	1660	70	ACR	SEEDING & MULCHING
6087000000-E	1660	50	ACR	MOWING
6090000000-E	1661	900	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	3	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	1,725	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	50	TON	FERTILIZER TOPDRESSING
6111000000-E	SP	775	LF	IMPERVIOUS DIKE

ItemNumber	Sec #	Quantity	Unit	Description
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	100	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	12	ACR	REFORESTATION
6126000000-E	SP	0.14	ACR	STREAMBANK REFORESTATION
6132000000-N	SP	6	EA	GENERIC EROSION CONTROL ITEM LOG
6135000000-E	SP	10	ACR	GENERIC EROSION CONTROL ITEM COMPOST BLANKET

***** BEGIN SCHEDULE AA *****				
***** (2 ALTERNATES) *****				
0106000000-E	230	205,600	CY	BORROW EXCAVATION
AA1				
1121000000-E	520	20,225	TON	AGGREGATE BASE COURSE
AA1				
1275000000-E	600	988.75	GAL	PRIME COAT
AA1				
1489000000-E	610	6,900	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
AA1				
1498000000-E	610	5,730	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE H9.0B
AA1				
1575000000-E	620	1,910	TON	ASPHALT BINDER FOR PLANT MIX
AA1				
*** OR ***				
0106000000-E	230	221,900	CY	BORROW EXCAVATION
AA2				
1121000000-E	520	1,025	TON	AGGREGATE BASE COURSE
AA2				
1489000000-E	610	18,430	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
AA2				
1575000000-E	620	2,140	TON	ASPHALT BINDER FOR PLANT MIX
AA2				
***** END SCHEDULE AA *****				

10

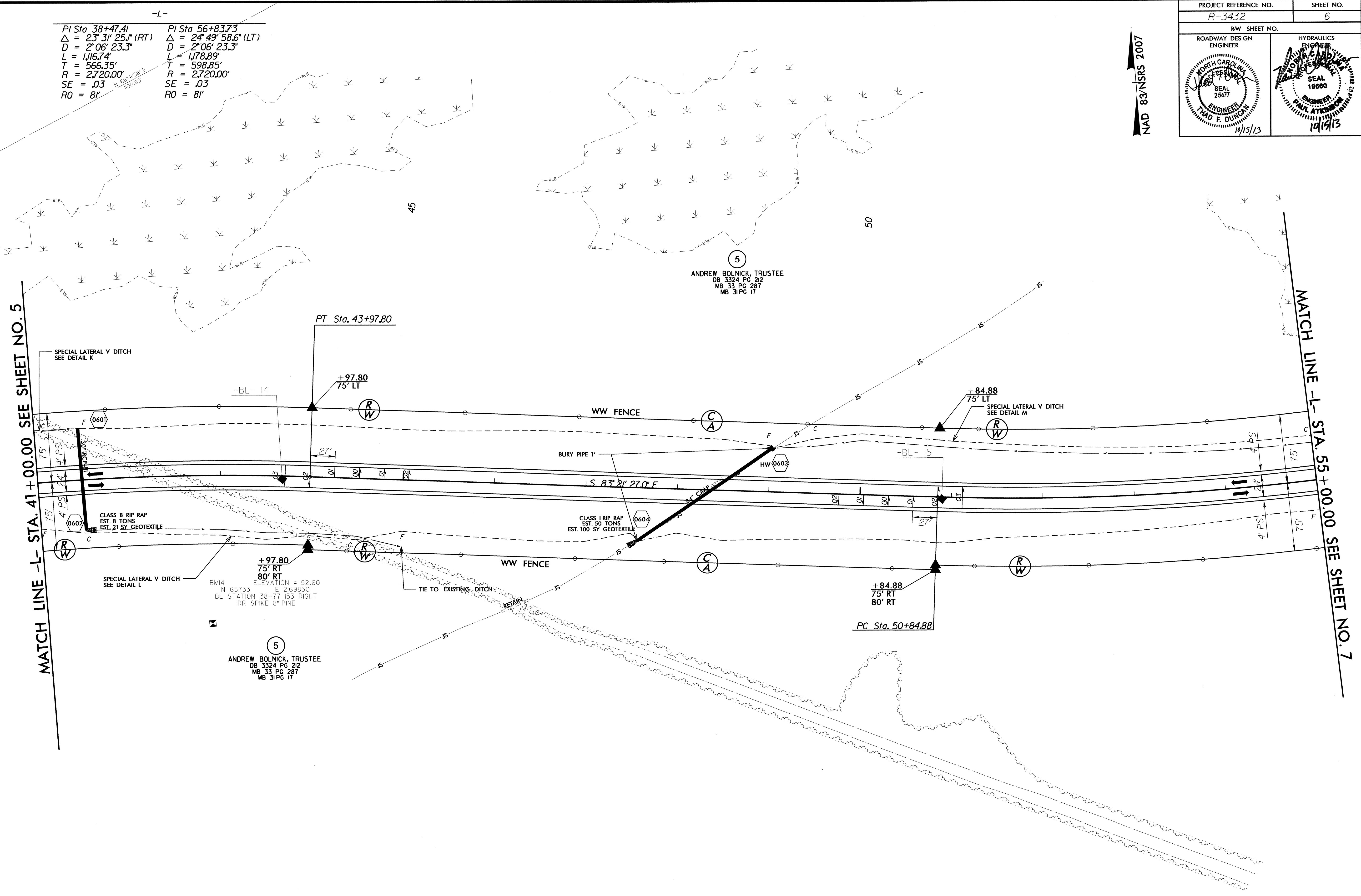
8/17/99

-L-

PI Sta 38+47.41	PI Sta 56+83.73
$\Delta = 23^\circ 31' 25.1''$ (RT)	$\Delta = 24^\circ 49' 58.6''$ (LT)
D = 2'06" 23.3"	D = 2'06" 23.3"
L = 1,116.74'	L = 1,178.89'
T = 566.35'	T = 598.85'
R = 2,720.00'	R = 2,720.00'
SE = .03	SE = .03
RO = 8'	RO = 8'

PROJECT REFERENCE NO. R-3432	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25477 HAD F. DUNCAN 10/15/13	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19880 PAUL ATKINSON 10/19/13

NAD 83/NRS 2007



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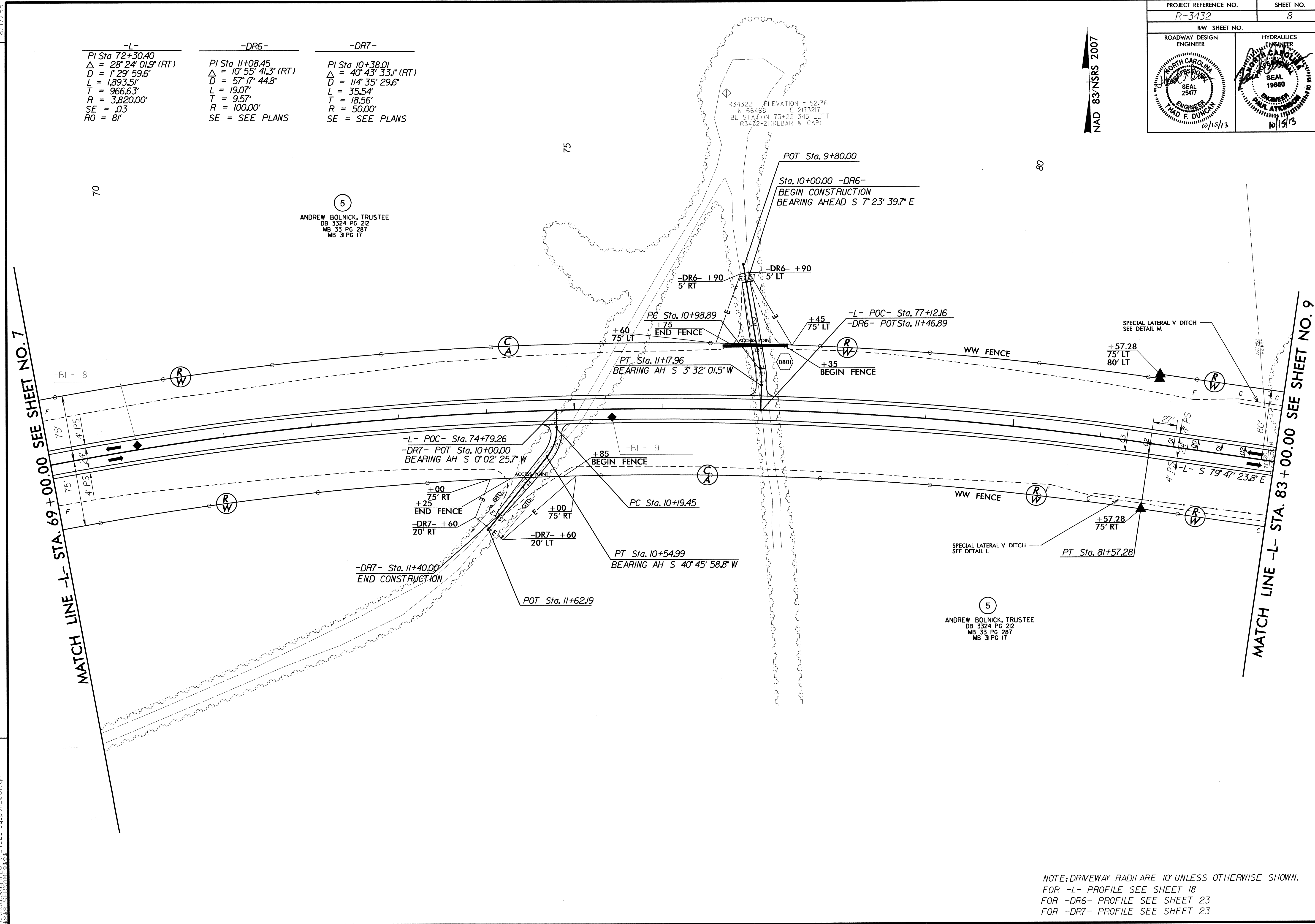
FOR -L- PROFILE SEE SHEET 17

NAD 83/NSRS 2007

-L-	-DR6-	-DR7-
PI Sta 72+30.40	PI Sta 11+08.45	PI Sta 10+38.01
$\Delta = 28^\circ 24' 01.9" (RT)$	$\Delta = 10^\circ 55' 41.3" (RT)$	$\Delta = 40^\circ 43' 33.1" (RT)$
D = 1,893.51'	D = 57' 17" 44.8"	D = 114' 35" 29.6"
L = 966.63'	L = 19.07'	L = 35.54'
T = 3,820.00'	T = 9.57'	T = 18.56'
SE = .03	R = 100.00'	R = 50.00'
RO = 81'	SE = SEE PLANS	SE = SEE PLANS

MATCH LINE -L- STA. 69+00.00 SEE SHEET NO. 7

MATCH LINE -L- STA. 83+00.00 SEE SHEET NO. 9



5
ANDREW BOLNICK, TRUSTEE
DB 3324 PG 212
MB 33 PG 287
MB 31 PG 17

5
ANDREW BOLNICK, TRUSTEE
DB 3324 PG 212
MB 33 PG 287
MB 31 PG 17

NOTE: DRIVEWAY RADII ARE 10' UNLESS OTHERWISE SHOWN.
FOR -L- PROFILE SEE SHEET 18
FOR -DR6- PROFILE SEE SHEET 23
FOR -DR7- PROFILE SEE SHEET 23

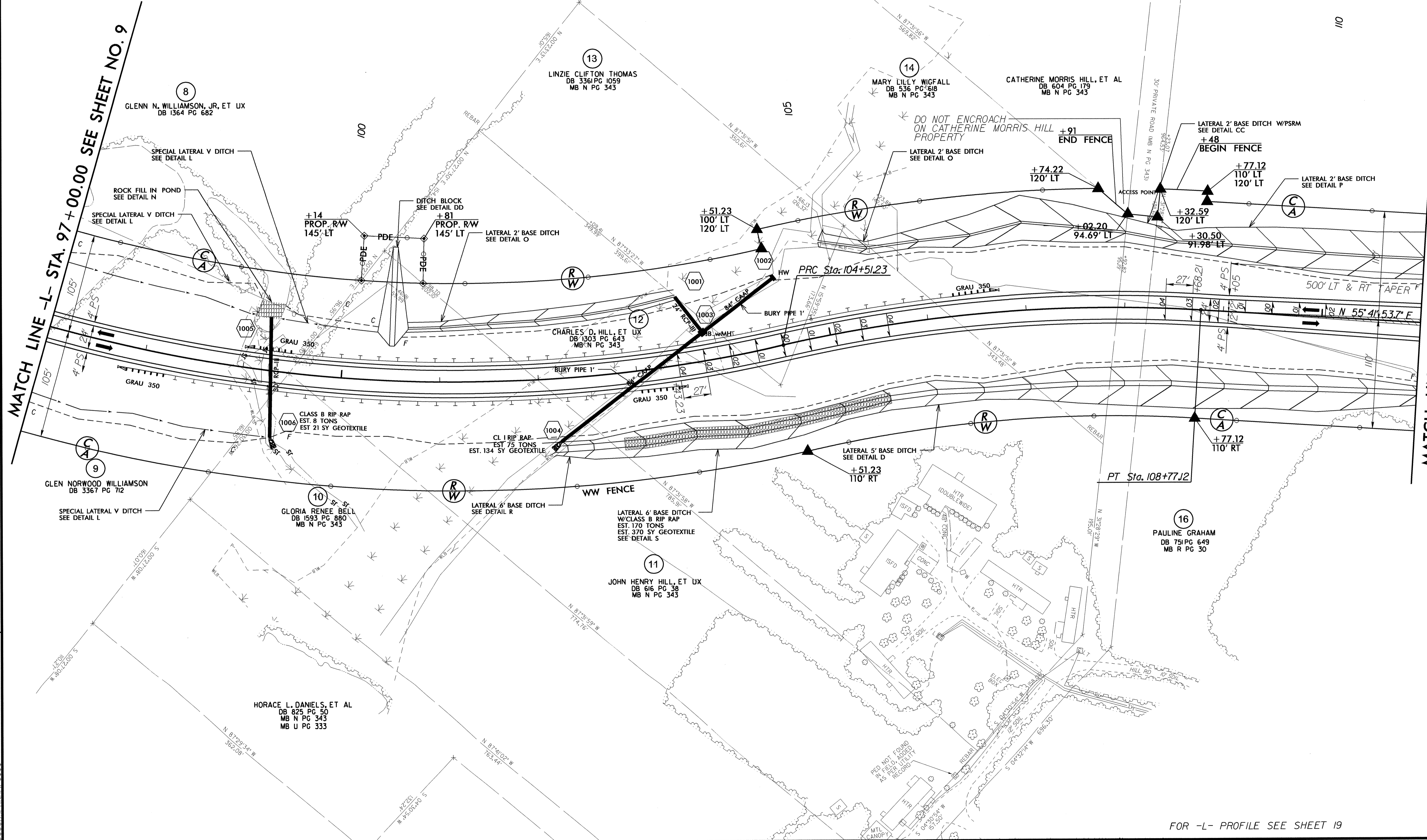
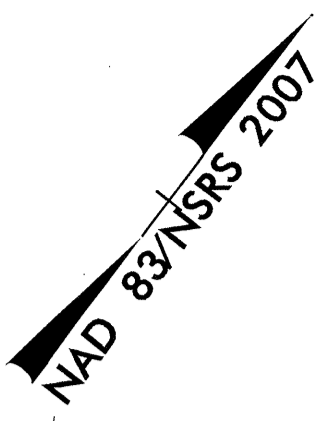
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REVISIONS

8.17/99

-L-

PI Sta 97+39.71	PI Sta 106+65.62
$\Delta = 60^{\circ} 46' 46.1" (LT)$	$\Delta = 16^{\circ} 16' 03.6" (RT)$
$D = 3' 49' 11.0"$	$D = 3' 49' 11.0"$
$L = 1,591.20'$	$L = 425.89'$
$T = 879.68'$	$T = 214.39'$
$R = 1,500.00'$	$R = 1,500.00'$
$SE = .04$	$SE = .04$
$RO = 108'$	$RO = 108'$



MATCH LINE -L- STA. 97+00.00 SEE SHEET NO. 9

MATCH LINE -L- STA. 111+00.00 SEE SHEET NO. 11

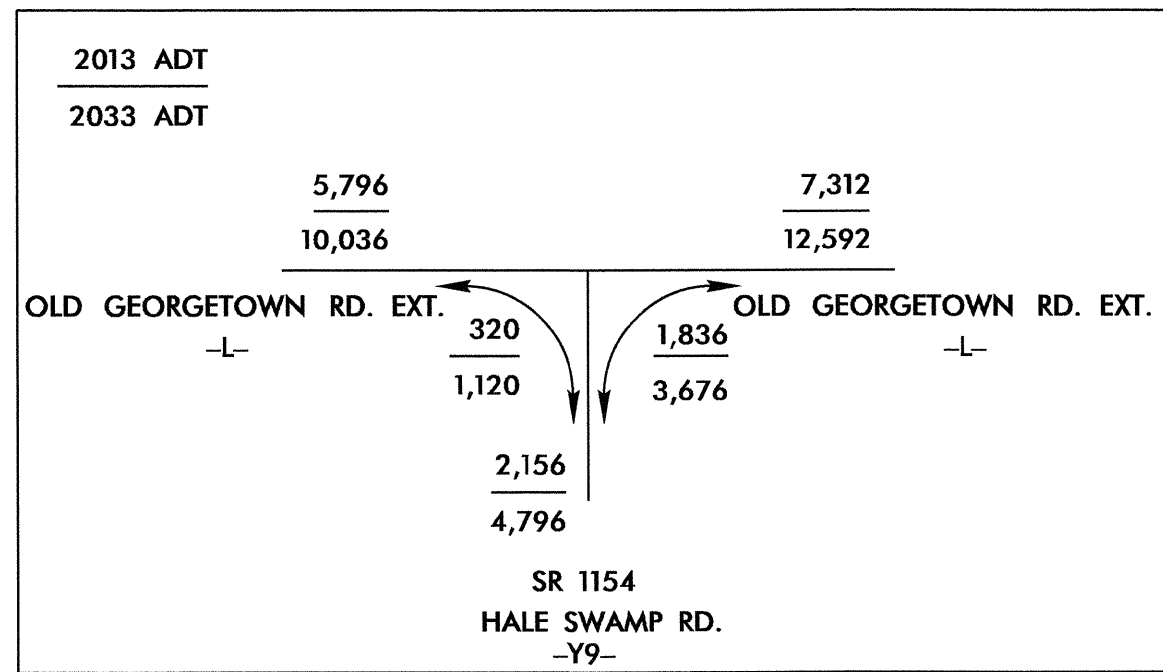
REVISIONS

8/17/99

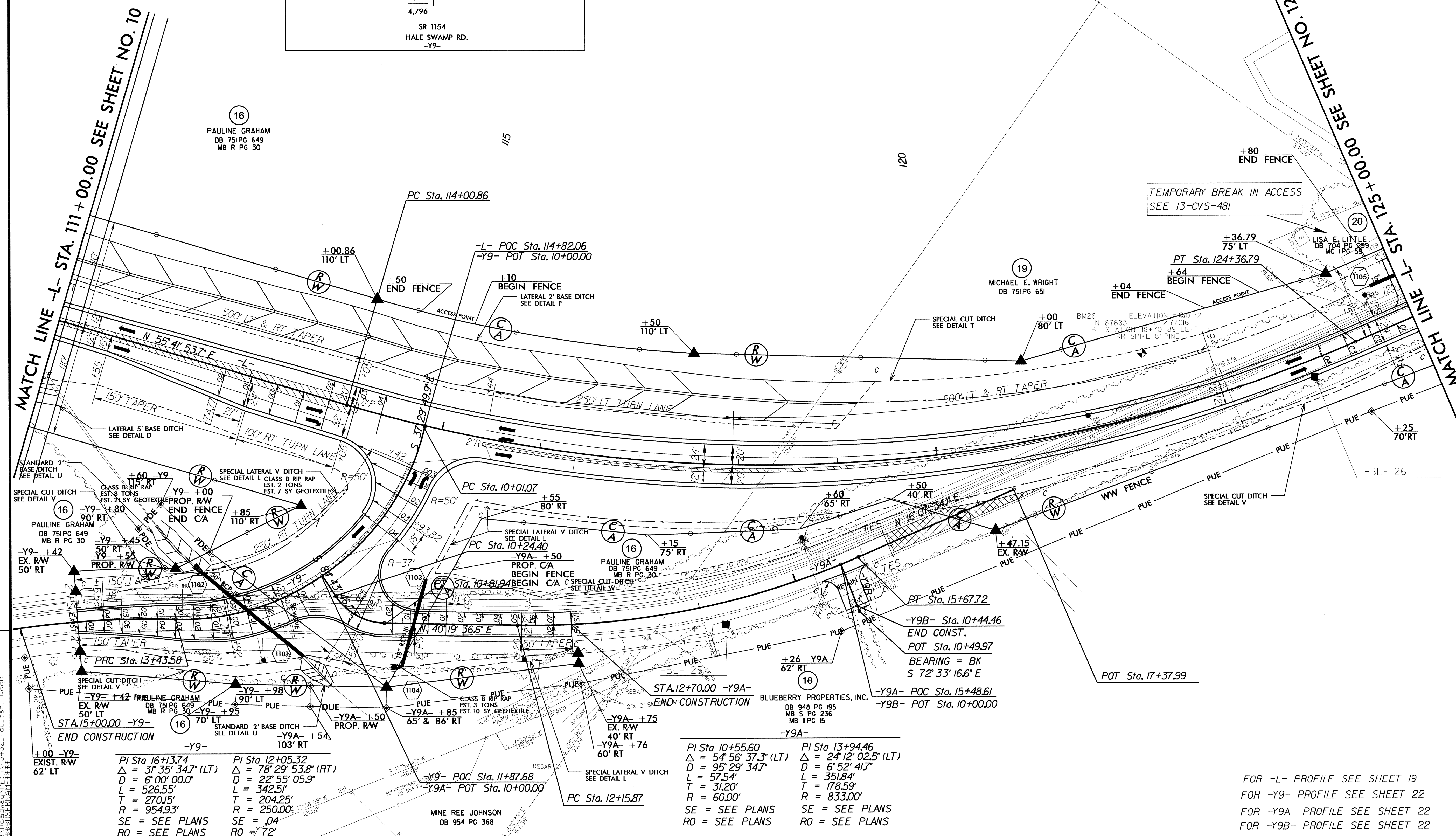
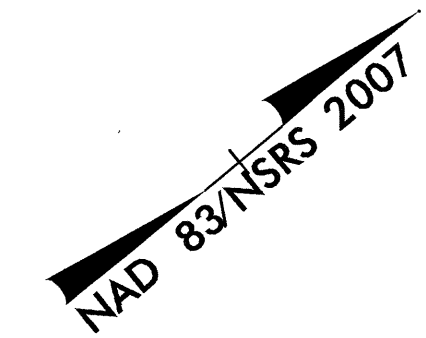
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FOR -L- PROFILE SEE SHEET 19

-L-
 PI Sta 119+40.44
 $\Delta = 39^\circ 34' 10.4" (LT)$
 $D = 3^\circ 49' 11.0"$
 $L = 1,035.93'$
 $T = 539.58'$
 $R = 1,500.00'$
 $SE = .04$
 $RO = 108'$



SHEFFIELD SEAFOOD & GROCERY, INC.
 DB 1503 PG 859
 MB R PG 90



PI Sta 16+13.74
 $\Delta = 31^\circ 35' 34.7" (LT)$
 $D = 6^\circ 00' 00.0"$
 $L = 526.55'$
 $T = 270.15'$
 $R = 954.93'$
 $SE = SEE PLANS$
 $RO = SEE PLANS$

PI Sta 12+05.32
 $\Delta = 78^\circ 29' 53.8" (RT)$
 $D = 22^\circ 55' 05.9"$
 $L = 342.51'$
 $T = 204.25'$
 $R = 250.00'$
 $SE = .04$
 $RO = 72'$

PI Sta 10+55.60
 $\Delta = 54^\circ 56' 37.3" (LT)$
 $D = 95^\circ 29' 34.7"$
 $L = 57.54'$
 $T = 31.20'$
 $R = 60.00'$
 $SE = SEE PLANS$
 $RO = SEE PLANS$

PI Sta 13+94.46
 $\Delta = 24^\circ 12' 02.5" (LT)$
 $D = 6^\circ 52' 41.7"$
 $L = 351.84'$
 $T = 178.59'$
 $R = 833.00'$
 $SE = SEE PLANS$
 $RO = SEE PLANS$

FOR -L- PROFILE SEE SHEET 19
 FOR -Y9- PROFILE SEE SHEET 22
 FOR -Y9A- PROFILE SEE SHEET 22
 FOR -Y9B- PROFILE SEE SHEET 22

8/17/99
 REVISIONS
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 SHEET 11 OF 11

NAD 83/NSRS 2007

-L-
 PI Sta 138+23.07
 $\Delta = 28^{\circ} 49' 49.1''$ (RT)
 $D = 4' 48' 53.2''$
 $L = 598.79'$
 $T = 305.88'$
 $R = 1,190.00'$
 $SE = .04$
 $RO = 100'$

MATCH LINE -L- STA. 125 + 00.00 SEE SHEET NO. 11

MATCH LINE -L- STA. 139 + 00.00 SEE SHEET NO. 13

8/17/99

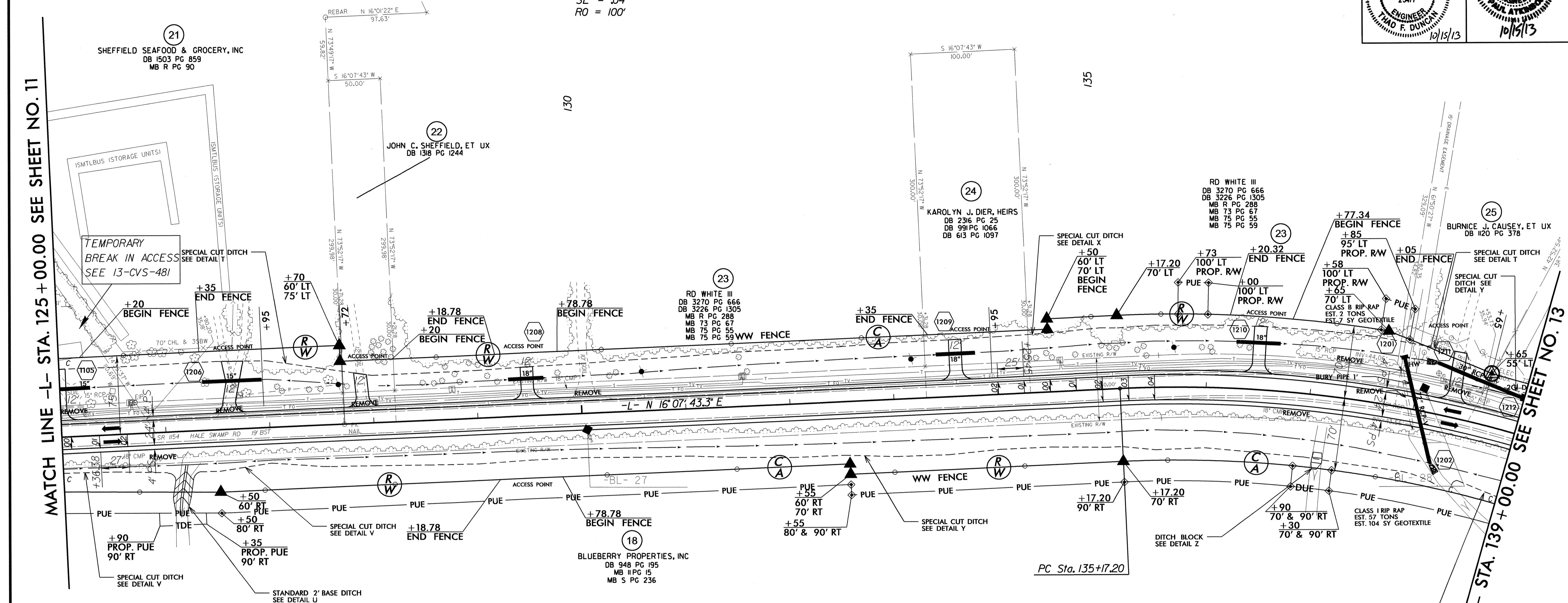
(21) SHEFFIELD SEAFOOD & GROCERY, INC
 DB 1503 PG 859
 MB R PG 90

(22) JOHN C. SHEFFIELD, ET UX
 DB 1318 PG 1244

(24) KAROLYN J. DIER, HEIRS
 DB 2316 PG 25
 DB 991 PG 1066
 DB 613 PG 1097

(23) RD WHITE III
 DB 3270 PG 666
 DB 3226 PG 1305
 MB R PG 288
 MB 73 PG 67
 MB 75 PG 55
 MB 75 PG 59 WW FENCE

(25) BURNCIE, J. CAUSEY, ET UX
 DB 1120 PG 378



PC Sta. 135+17.20

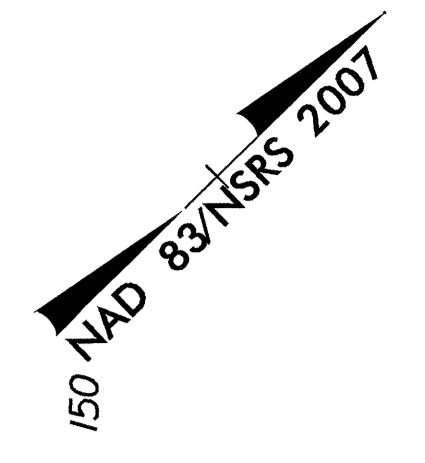
REVISIONS

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NOTE: DRIVEWAY RADII ARE 10' UNLESS OTHERWISE SHOWN.
 FOR -L- PROFILE SEE SHEET 20

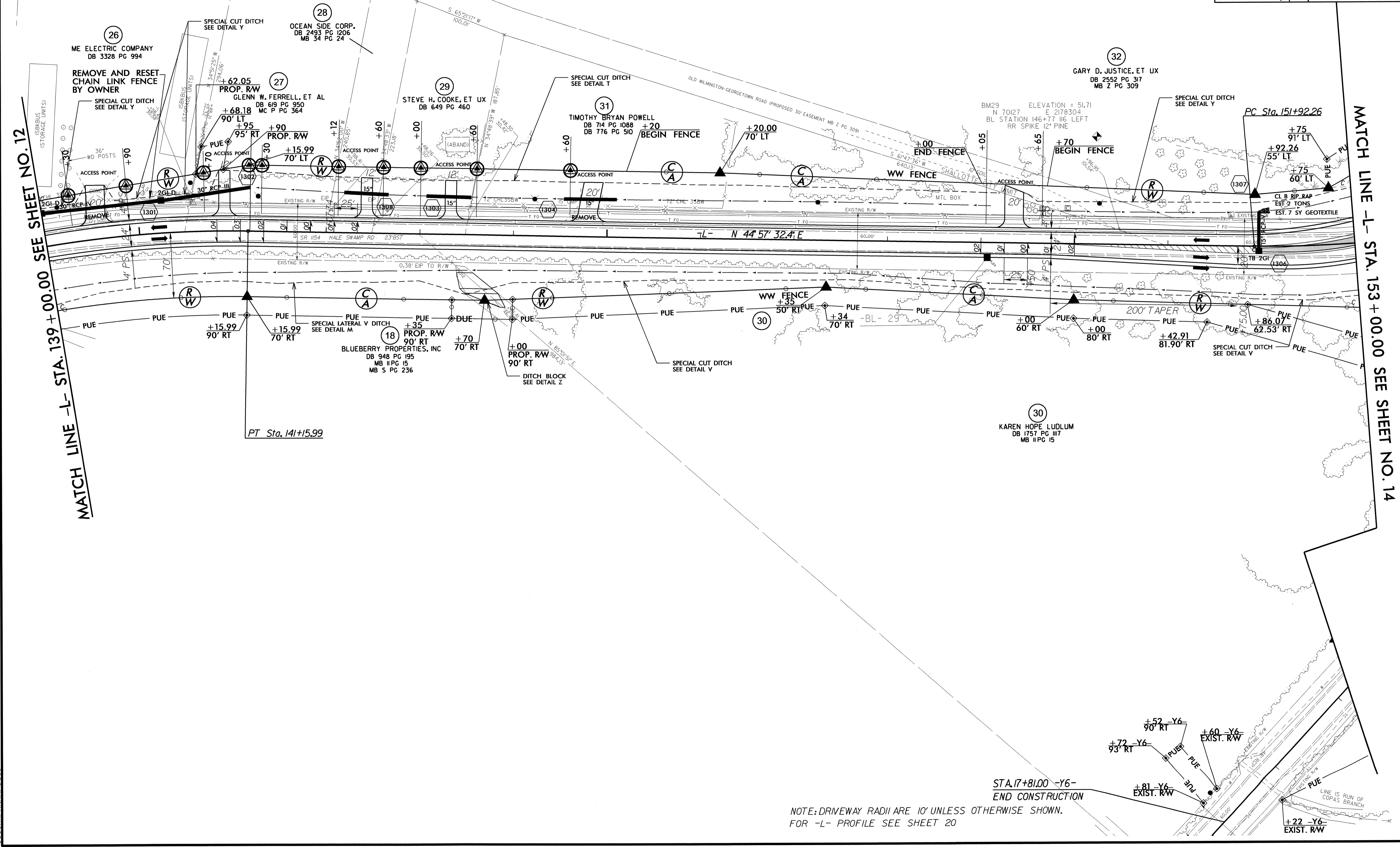
8/17/99

PROJECT REFERENCE NO. R-3432	SHEET NO. 13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER THAD F. DUNCAN 10/15/13	HYDRAULICS ENGINEER PAUL ATTWOOD 10/15/13



-L-

PI Sta 138+23.07 Δ = 28° 49' 49" (RT) D = 4' 48" 53.2" L = 598.79' T = 305.88' R = 1,190.00' SE = .04 RO = 100'	PI Sta 154+03.18 Δ = 20° 06' 07.7" (LT) D = 4' 48" 53.2" L = 417.5' T = 210.92' R = 1,190.00' SE = .04 RO = 100'
--	---



MATCH LINE -L- STA. 139 + 00.00 SEE SHEET NO. 12

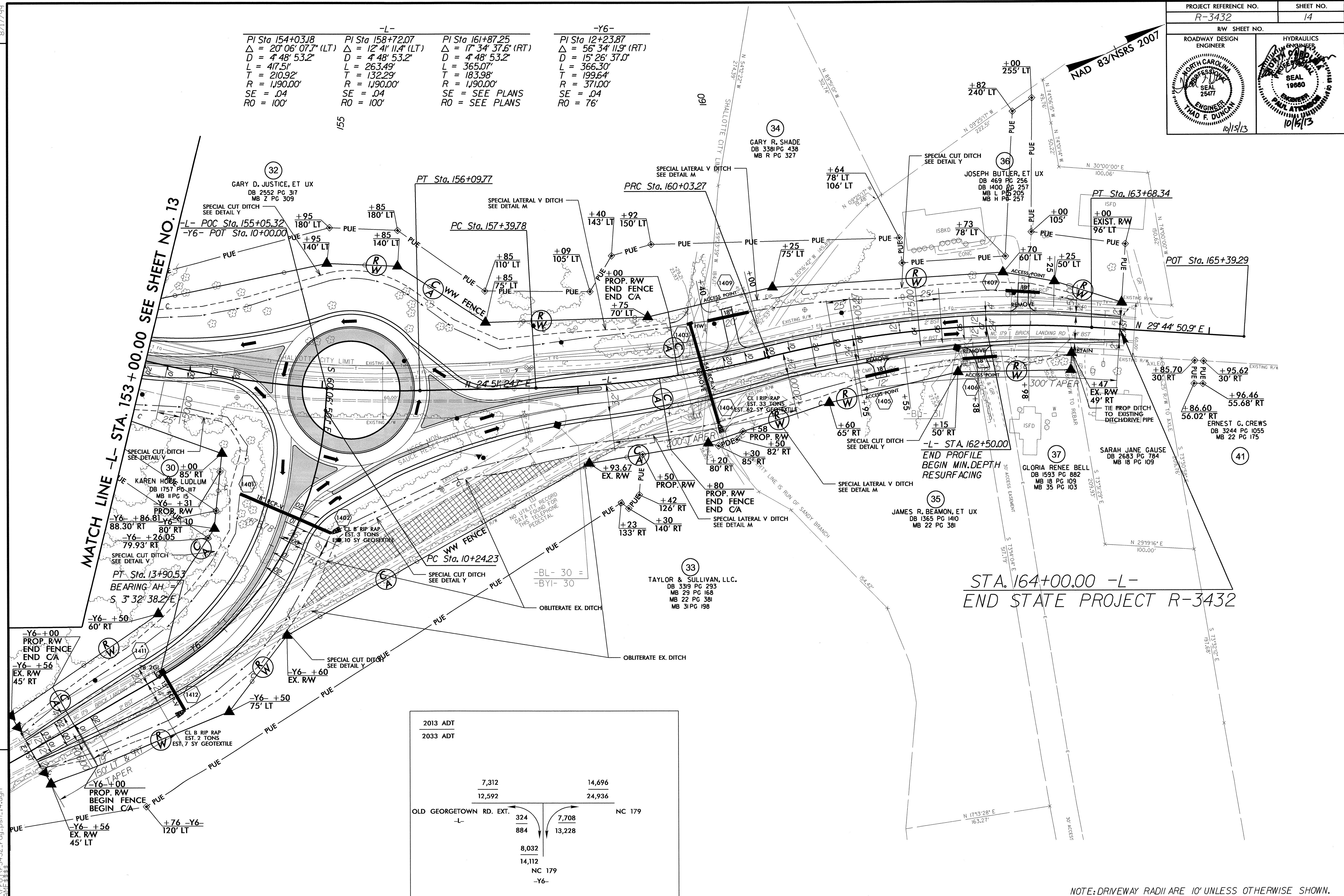
MATCH LINE -L- STA. 153 + 00.00 SEE SHEET NO. 14

STA. 17+81.00 -Y6-
END CONSTRUCTION

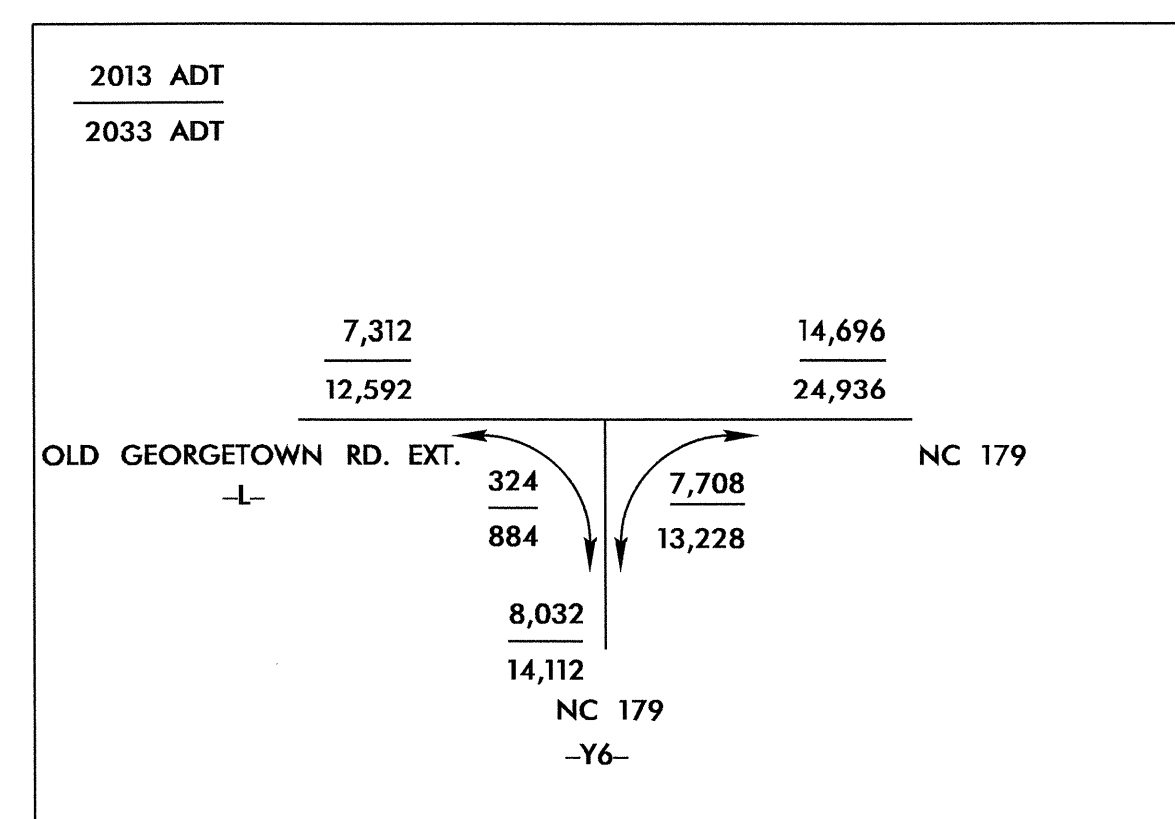
NOTE: DRIVEWAY RADII ARE 10' UNLESS OTHERWISE SHOWN.
FOR -L- PROFILE SEE SHEET 20

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THAD F. DUNCAN

-L-		-Y6-	
PI Sta 154+03.18	PI Sta 158+72.07	PI Sta 161+87.25	PI Sta 12+23.87
$\Delta = 20' 06' 07.7''$ (LT)	$\Delta = 12' 41' 11.4''$ (LT)	$\Delta = 17' 34' 37.6''$ (RT)	$\Delta = 56' 34' 11.9''$ (RT)
$D = 4' 48' 53.2''$	$D = 4' 48' 53.2''$	$D = 4' 48' 53.2''$	$D = 15' 26' 37.0''$
$L = 417.51'$	$L = 263.49'$	$L = 365.07'$	$L = 366.30'$
$T = 210.92'$	$T = 132.29'$	$T = 183.98'$	$T = 199.64'$
$R = 1,190.00'$	$R = 1,190.00'$	$R = 1,190.00'$	$R = 371.00'$
$SE = .04$	$SE = .04$	$SE = \text{SEE PLANS}$	$SE = .04$
$RO = 100'$	$RO = 100'$	$RO = \text{SEE PLANS}$	$RO = 76'$



REVISIONS



TAYLOR & SULLIVAN, LLC.
DR 3419 PG 243

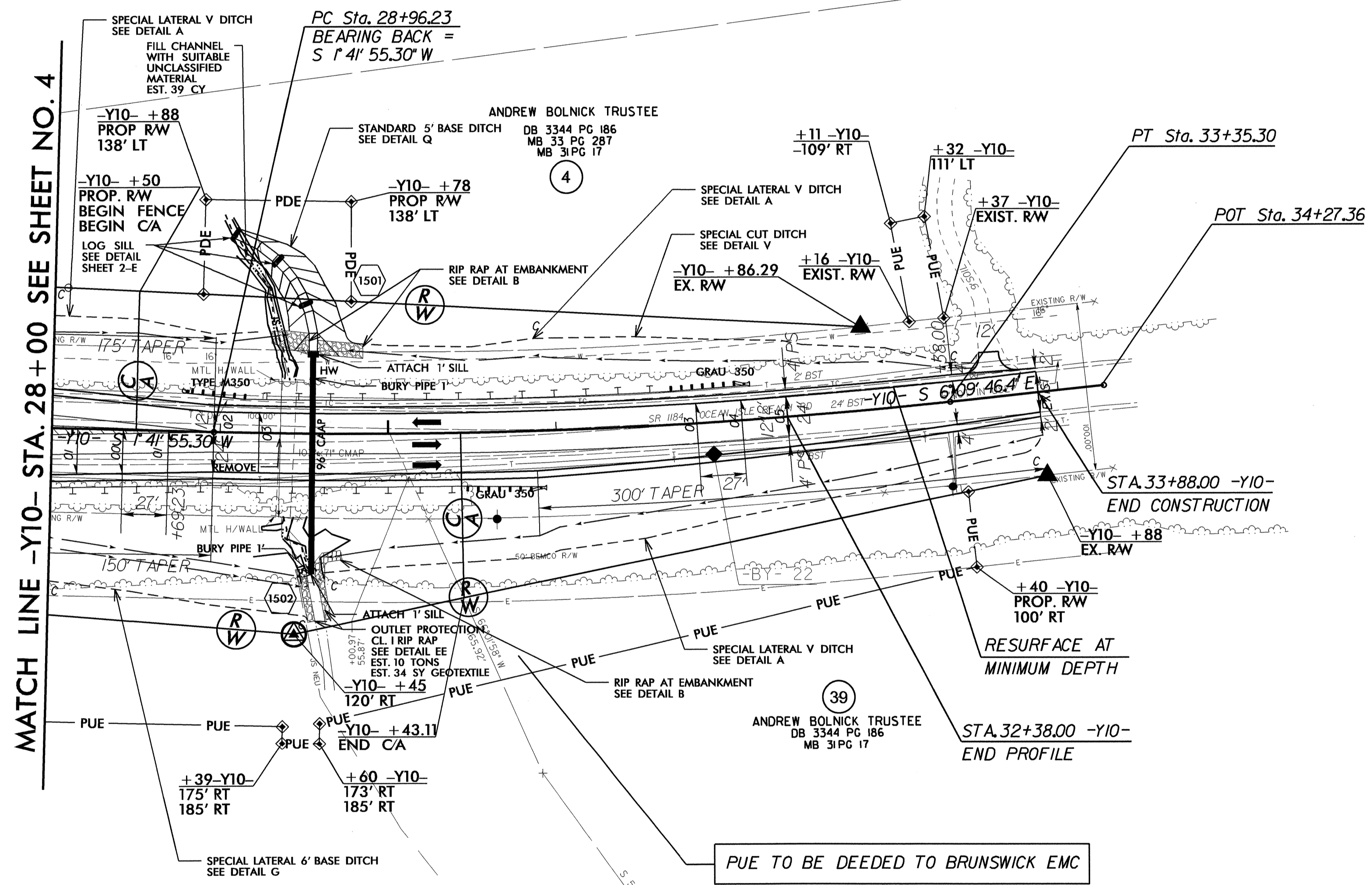
NOTE: DRIVEWAY RADII ARE 10' UNLESS OTHERWISE SHOWN.
FOR -L- PROFILE SEE SHEET 21
FOR -Y6- PROFILE SEE SHEET 22
SEE SHEET 2-D FOR ROUNDABOUT DETAIL

8/17/99
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 TAYLOR & SULLIVAN, LLC.

PROJECT REFERENCE NO. R-3432	SHEET NO. 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA SEAL 25477 MAD F. DUNCAIN 10/15/13	HYDRAULICS ENGINEER NORTH CAROLINA SEAL 19660 PAUL ATKINSON 10/15/13

NAD 83/NSRS 2007

-Y10-
 PI Sta 31+16.11
 $\Delta = 7^{\circ} 51' 41.7" (LT)$
 $D = 1^{\circ} 47' 25.8"$
 $L = 439.07'$
 $T = 219.88'$
 $R = 3,200.00'$
 $SE = .03$
 $RO = 81'$



MATCH LINE -Y10- STA. 28+00 SEE SHEET NO. 4

REVISIONS

PUE TO BE DEEDED TO BRUNSWICK EMC

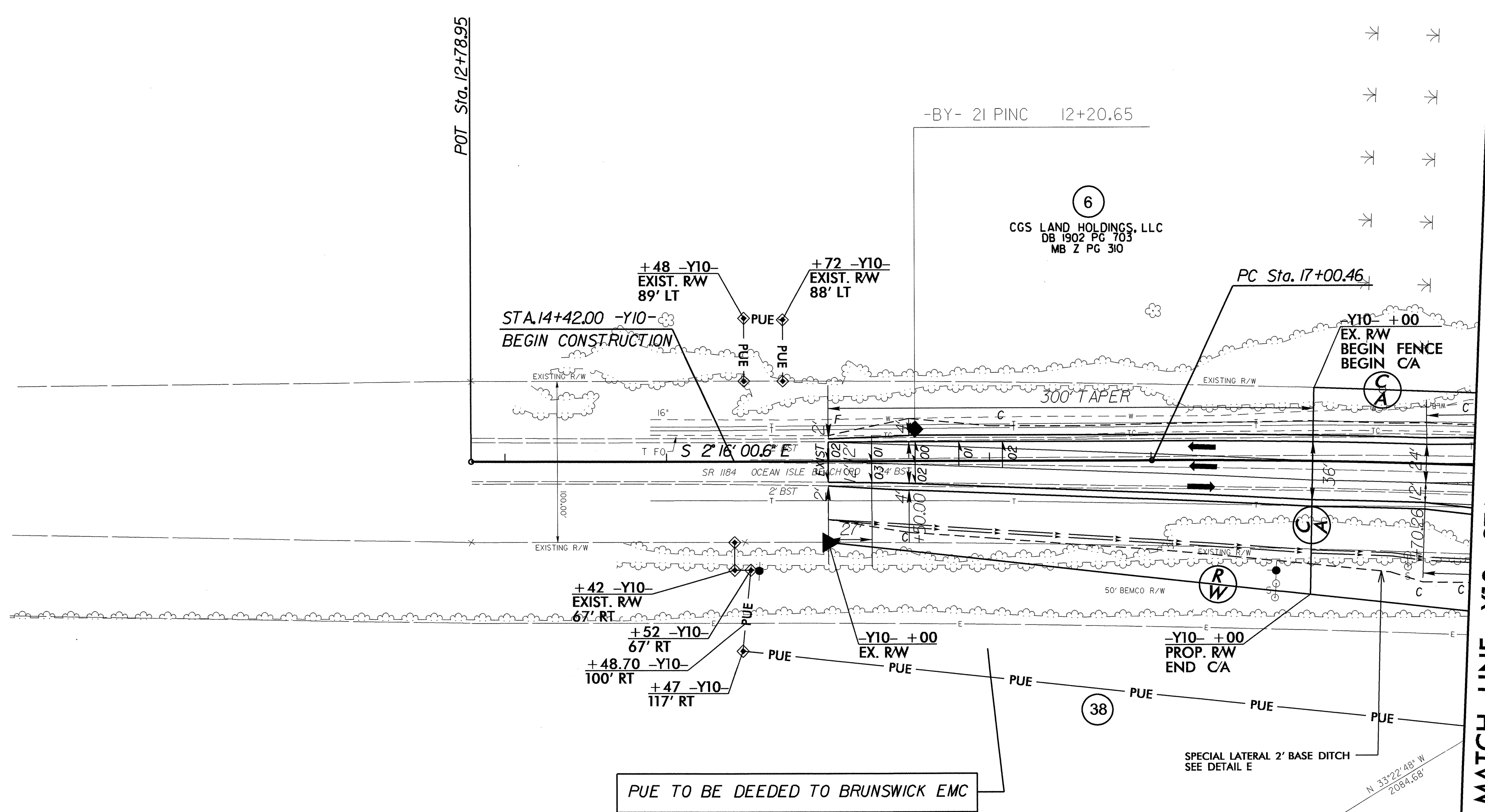
FOR -Y10- PROFILE SEE SHEET 21A

8/17/99

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NAD 83/NSRS 2007

-Y10-
 PI Sta 18+73.55
 $\Delta = 3^{\circ} 57' 55.9''$ (RT)
 $D = 1' 08'' 45.3''$
 $L = 346.06'$
 $T = 173.10'$
 $R = 5,000.00'$
 $SE = .04$
 $RO = 108'$



MATCH LINE -Y10- STA. 19 + 00 SEE SHEET NO. 4

REVISIONS

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5/28/99

PROJECT REFERENCE NO. R-3432	SHEET NO. 17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PIPE HYDRAULIC DATA
DRAINAGE STR. NO. 0601/0602

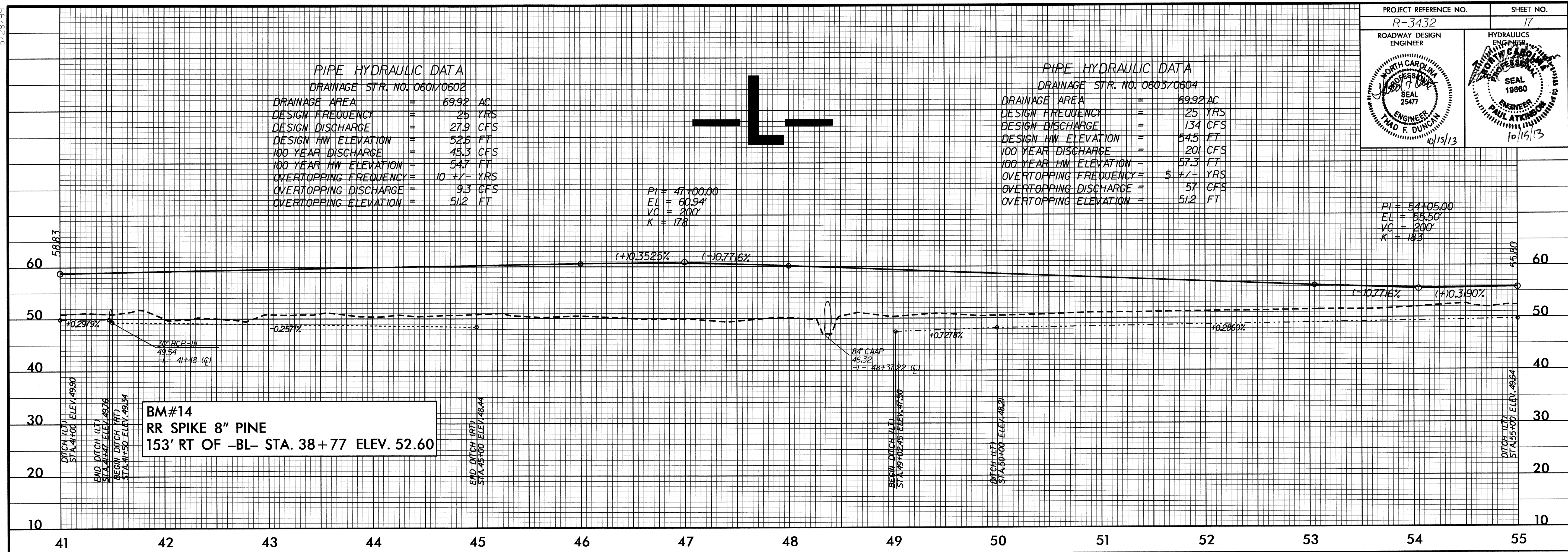
DRAINAGE AREA = 69.92 AC
DESIGN FREQUENCY = 25 YRS
DESIGN DISCHARGE = 27.9 CFS
DESIGN HW ELEVATION = 52.6 FT
100 YEAR DISCHARGE = 45.3 CFS
100 YEAR HW ELEVATION = 54.7 FT
OVERTOPPING FREQUENCY = 10 +/- YRS
OVERTOPPING DISCHARGE = 9.3 CFS
OVERTOPPING ELEVATION = 51.2 FT

PIPE HYDRAULIC DATA
DRAINAGE STR. NO. 0603/0604

DRAINAGE AREA = 69.92 AC
DESIGN FREQUENCY = 25 YRS
DESIGN DISCHARGE = 134 CFS
DESIGN HW ELEVATION = 54.5 FT
100 YEAR DISCHARGE = 201 CFS
100 YEAR HW ELEVATION = 57.3 FT
OVERTOPPING FREQUENCY = 5 +/- YRS
OVERTOPPING DISCHARGE = 57 CFS
OVERTOPPING ELEVATION = 51.2 FT

PI = 47+00.00
EL = 60.94'
VC = 200'
K = 178

PI = 54+05.00
EL = 55.50'
VC = 200'
K = 183



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5/28/99

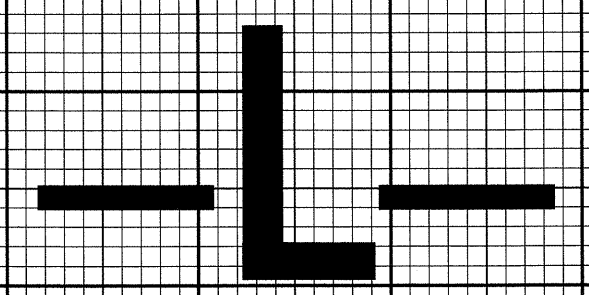
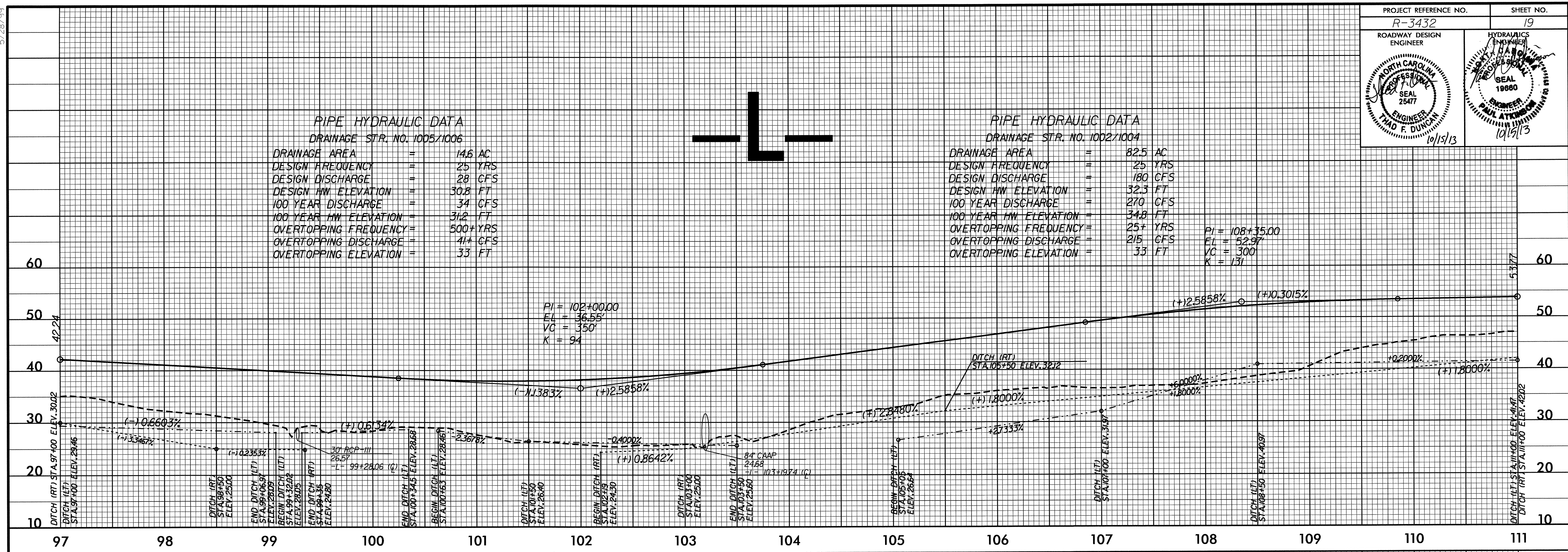
PIPE HYDRAULIC DATA
DRAINAGE STR. NO. 1005/1006

DRAINAGE AREA = 14.6 AC
 DESIGN FREQUENCY = 25 YRS
 DESIGN DISCHARGE = 28 CFS
 DESIGN HW ELEVATION = 30.8 FT
 100 YEAR DISCHARGE = 34 CFS
 100 YEAR HW ELEVATION = 31.2 FT
 OVERTOPPING FREQUENCY = 500+ YRS
 OVERTOPPING DISCHARGE = 41+ CFS
 OVERTOPPING ELEVATION = 33 FT

PIPE HYDRAULIC DATA
DRAINAGE STR. NO. 1002/1004

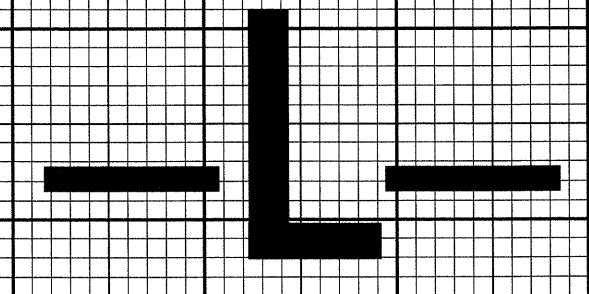
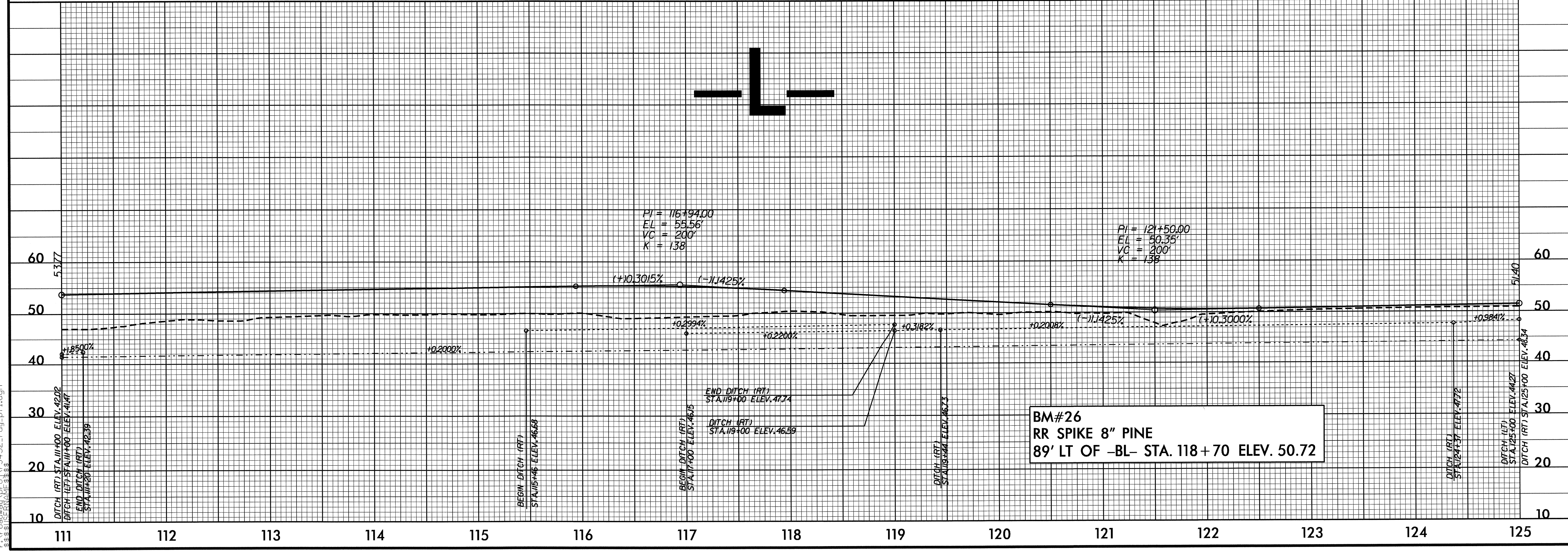
DRAINAGE AREA = 82.5 AC
 DESIGN FREQUENCY = 25 YRS
 DESIGN DISCHARGE = 180 CFS
 DESIGN HW ELEVATION = 32.3 FT
 100 YEAR DISCHARGE = 270 CFS
 100 YEAR HW ELEVATION = 34.8 FT
 OVERTOPPING FREQUENCY = 25+ YRS
 OVERTOPPING DISCHARGE = 215 CFS
 OVERTOPPING ELEVATION = 35 FT

PI = 108+35.00
 EL = 52.97'
 VC = 300'
 K = 131



PI = 116+94.00
 EL = 55.56'
 VC = 200'
 K = 138

PI = 121+50.00
 EL = 50.35'
 VC = 200'
 K = 138



BM#26
 RR SPIKE 8" PINE
 89' LT OF -BL- STA. 118+70 ELEV. 50.72

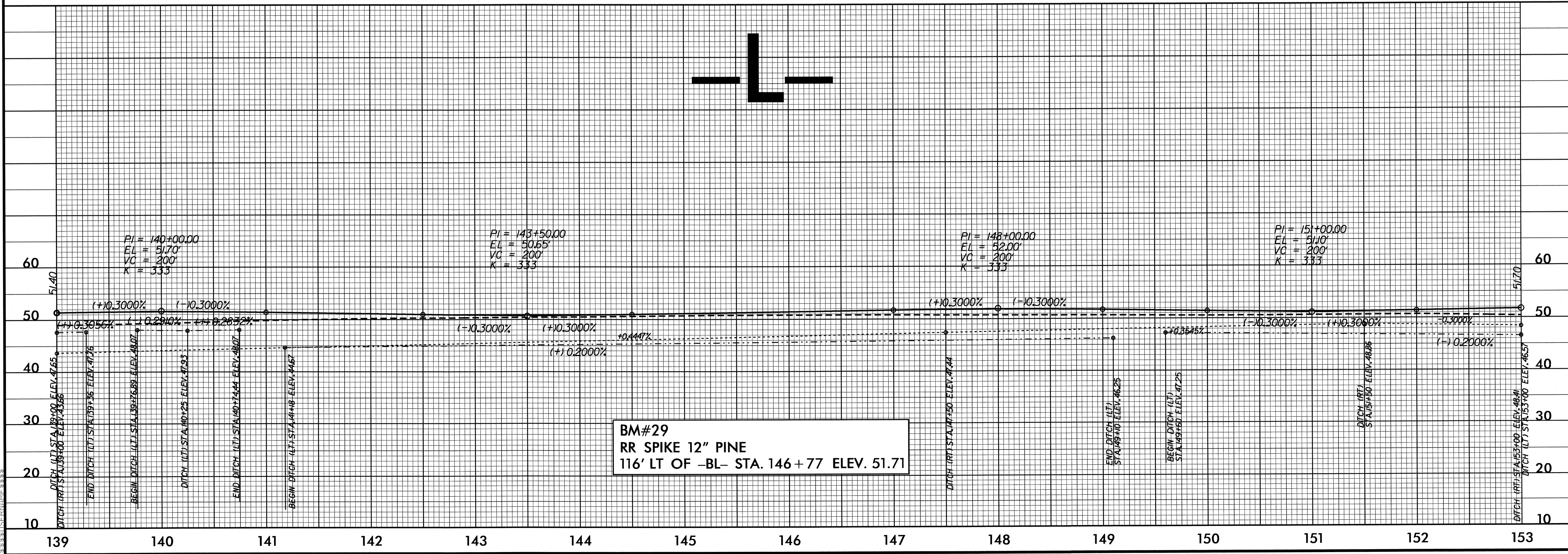
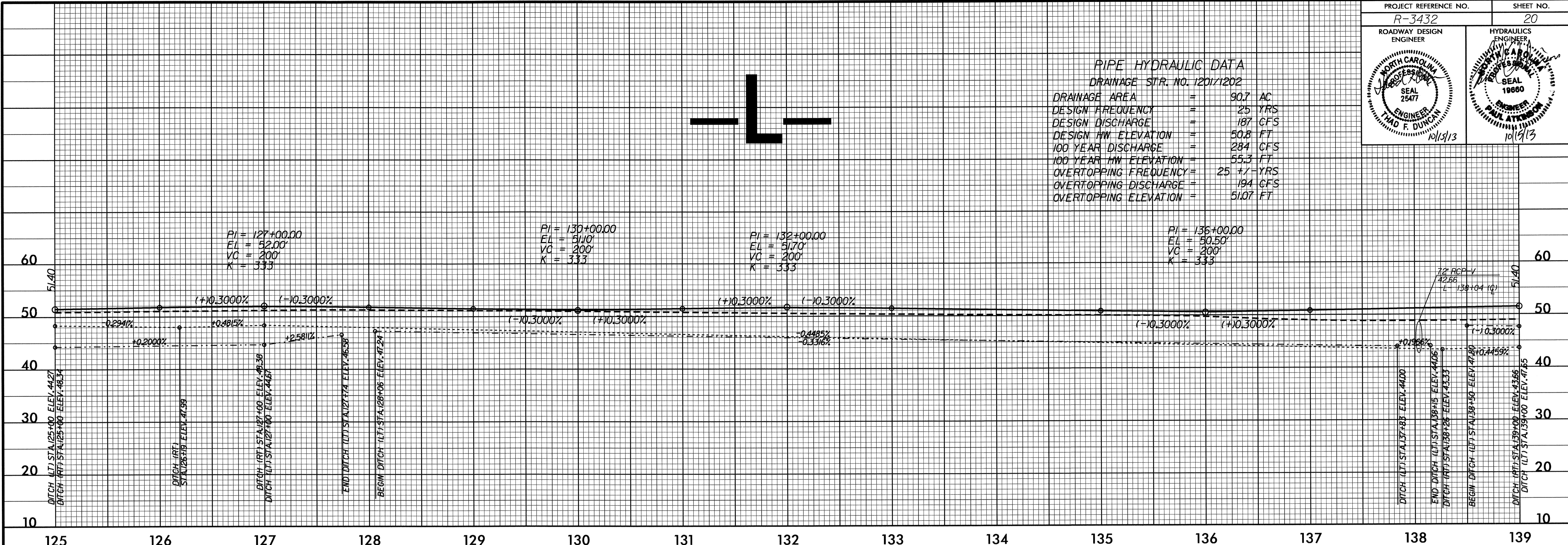
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5/28/99

PROJECT REFERENCE NO. R-3432	SHEET NO. 20
ROADWAY DESIGN ENGINEER PAUL ATKINSON	HYDRAULICS ENGINEER PAUL ATKINSON

PIPE HYDRAULIC DATA
DRAINAGE STR. NO. 1201/1202

DRAINAGE AREA = 90.7 AC
DESIGN FREQUENCY = 25 YRS
DESIGN DISCHARGE = 187 CFS
DESIGN HW ELEVATION = 50.8 FT
100 YEAR DISCHARGE = 284 CFS
100 YEAR HW ELEVATION = 55.3 FT
OVERTOPPING FREQUENCY = 25 +/- YRS
OVERTOPPING DISCHARGE = 194 CFS
OVERTOPPING ELEVATION = 51.07 FT



BM#29
RR SPIKE 12" PINE
116' LT OF -BL- STA. 146+77 ELEV. 51.71

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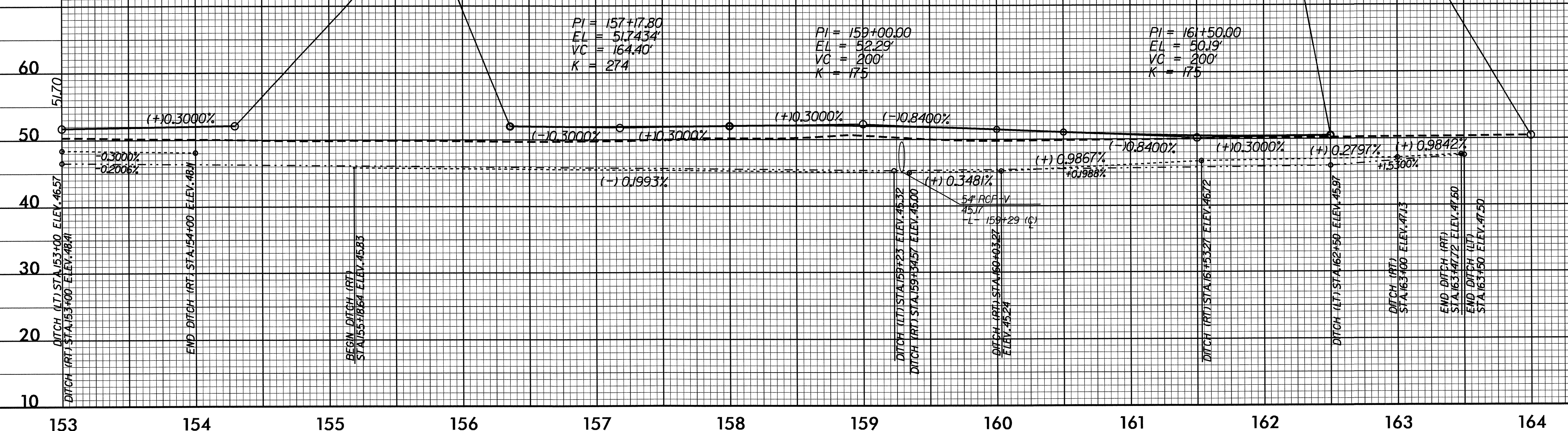
PROJECT REFERENCE NO. R-3432	SHEET NO. 21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

END GRADE STA. 154+29.55
EL = 52.0886'

BEGIN GRADE STA. 156+35.60
EL = 51.99'

END GRADE STA. 162+50.00
EL = 50.49'
BEGIN RESURFACING
AT MINIMUM DEPTH

END RESURFACING
AT MINIMUM DEPTH
STA. 164+00.00



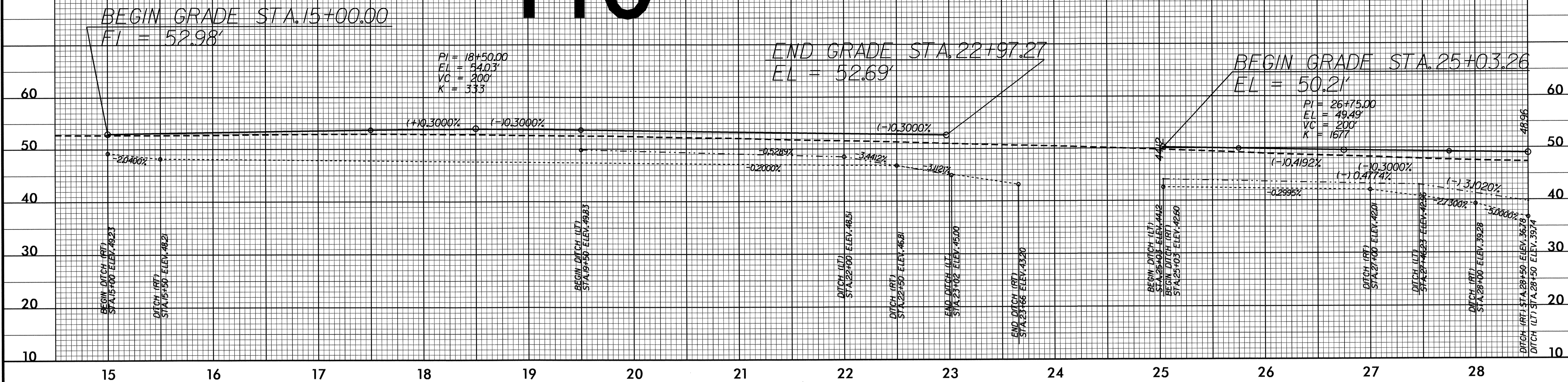
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DRAINAGE STR. NO. 1403/1404

DRAINAGE AREA	=	35.4 AC
DESIGN FREQUENCY	=	25 YRS
DESIGN DISCHARGE	=	110 CFS
DESIGN HW ELEVATION	=	50.1 FT
100 YEAR DISCHARGE	=	170 CFS
100 YEAR HW ELEVATION	=	52.2 FT
OVERTOPPING FREQUENCY	=	25 +/- YRS
OVERTOPPING DISCHARGE	=	126 CFS
OVERTOPPING ELEVATION	=	50.6 FT

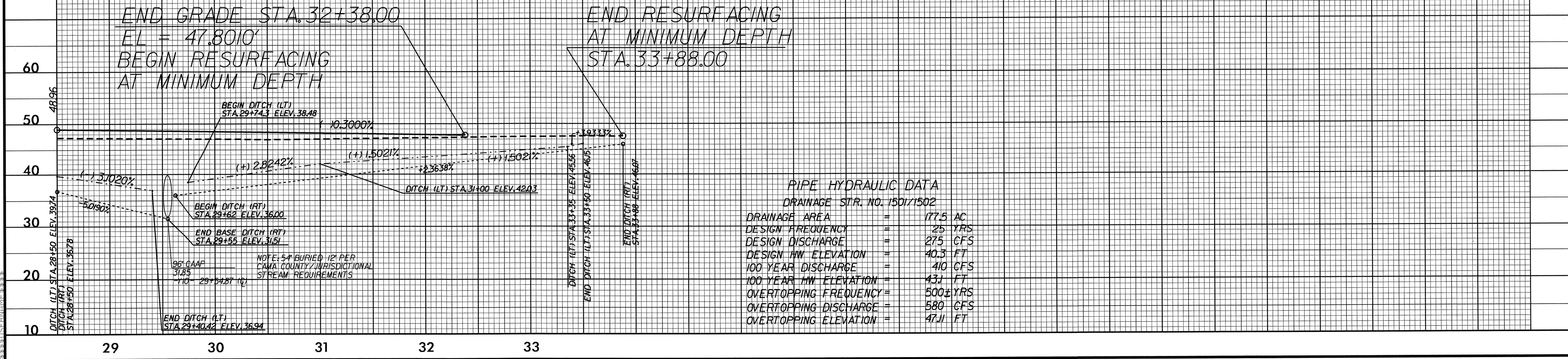
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-Y10-



-Y10-



PIPE HYDRAULIC DATA
DRAINAGE STR. NO. 1501/1502

DRAINAGE AREA	=	177.5 AC
DESIGN FREQUENCY	=	25 YRS
DESIGN DISCHARGE	=	275 CFS
DESIGN HW ELEVATION	=	40.3 FT
100 YEAR DISCHARGE	=	410 CFS
100 YEAR HW ELEVATION	=	43.1 FT
OVERTOPPING FREQUENCY	=	500± YRS
OVERTOPPING DISCHARGE	=	580 CFS
OVERTOPPING ELEVATION	=	47.11 FT

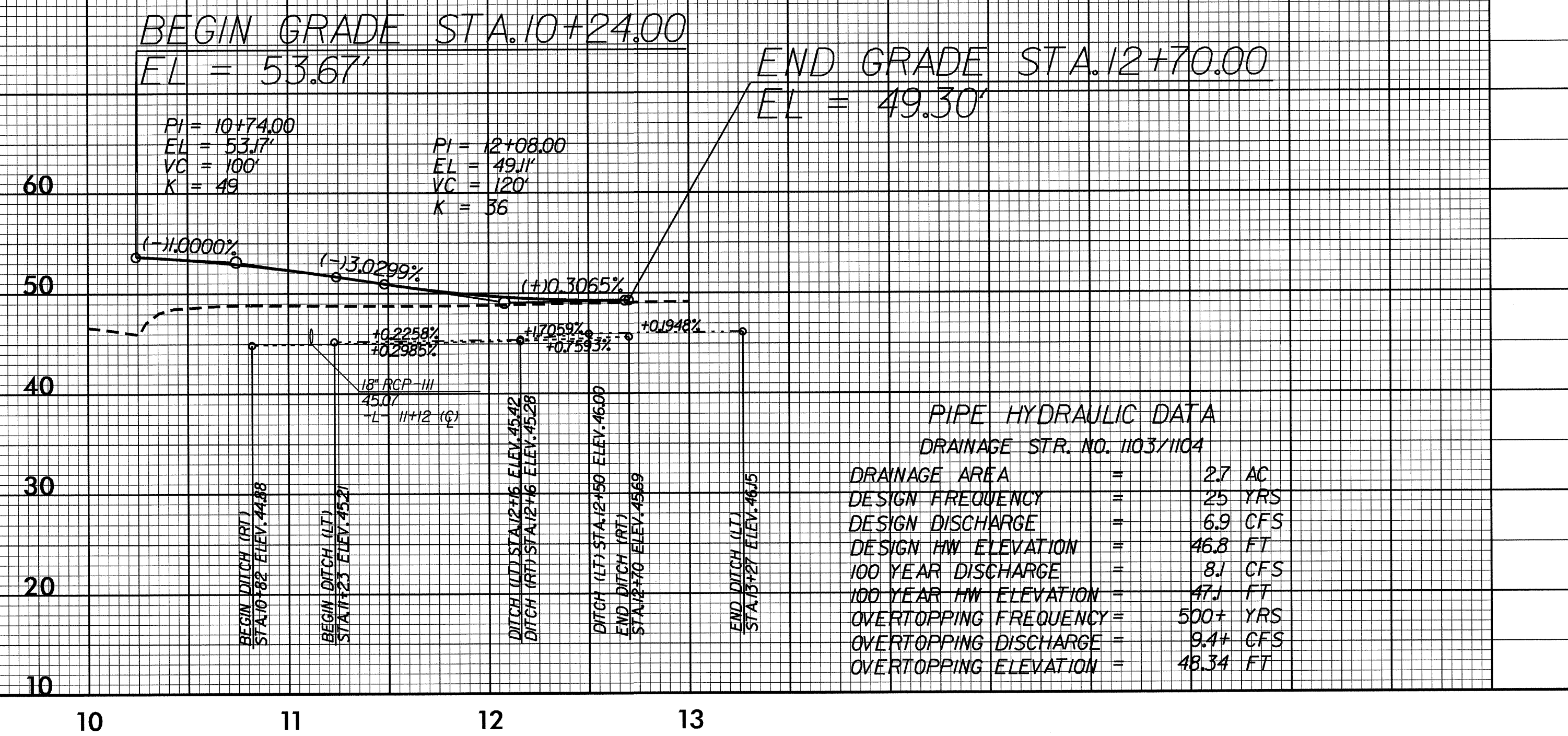
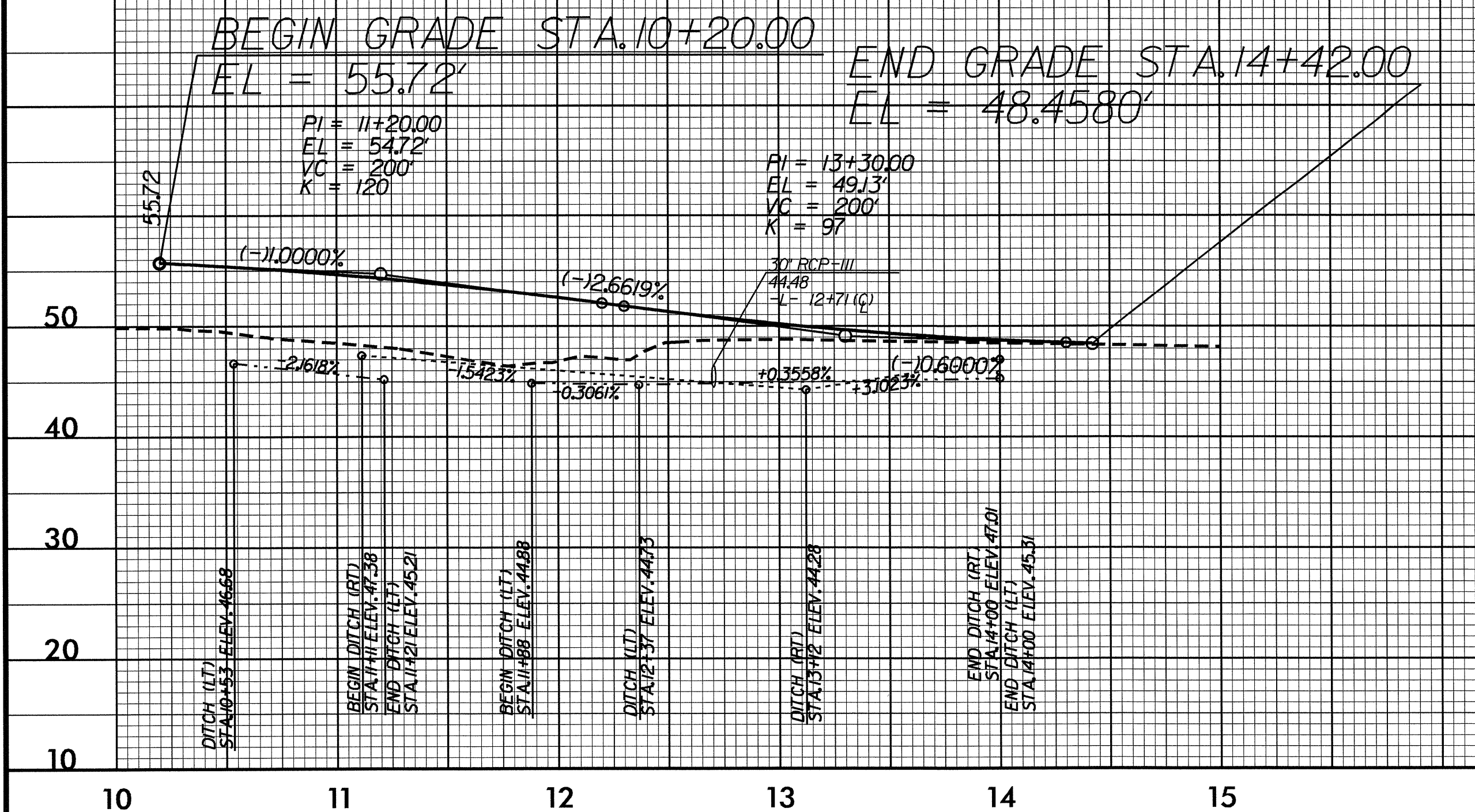
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PIPE HYDRAULIC DATA
DRAINAGE STR. NO. 1101/1102

DRAINAGE AREA = 7.64 AC
DESIGN FREQUENCY = 25 YRS
DESIGN DISCHARGE = 19 CFS
DESIGN HW ELEVATION = 46.9 FT
100 YEAR DISCHARGE = 23 CFS
100 YEAR HW ELEVATION = 47.2 FT
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 26+ CFS
OVERTOPPING ELEVATION = 47.5 FT

-Y9-

-Y9A-



PIPE HYDRAULIC DATA
DRAINAGE STR. NO. 1103/1104

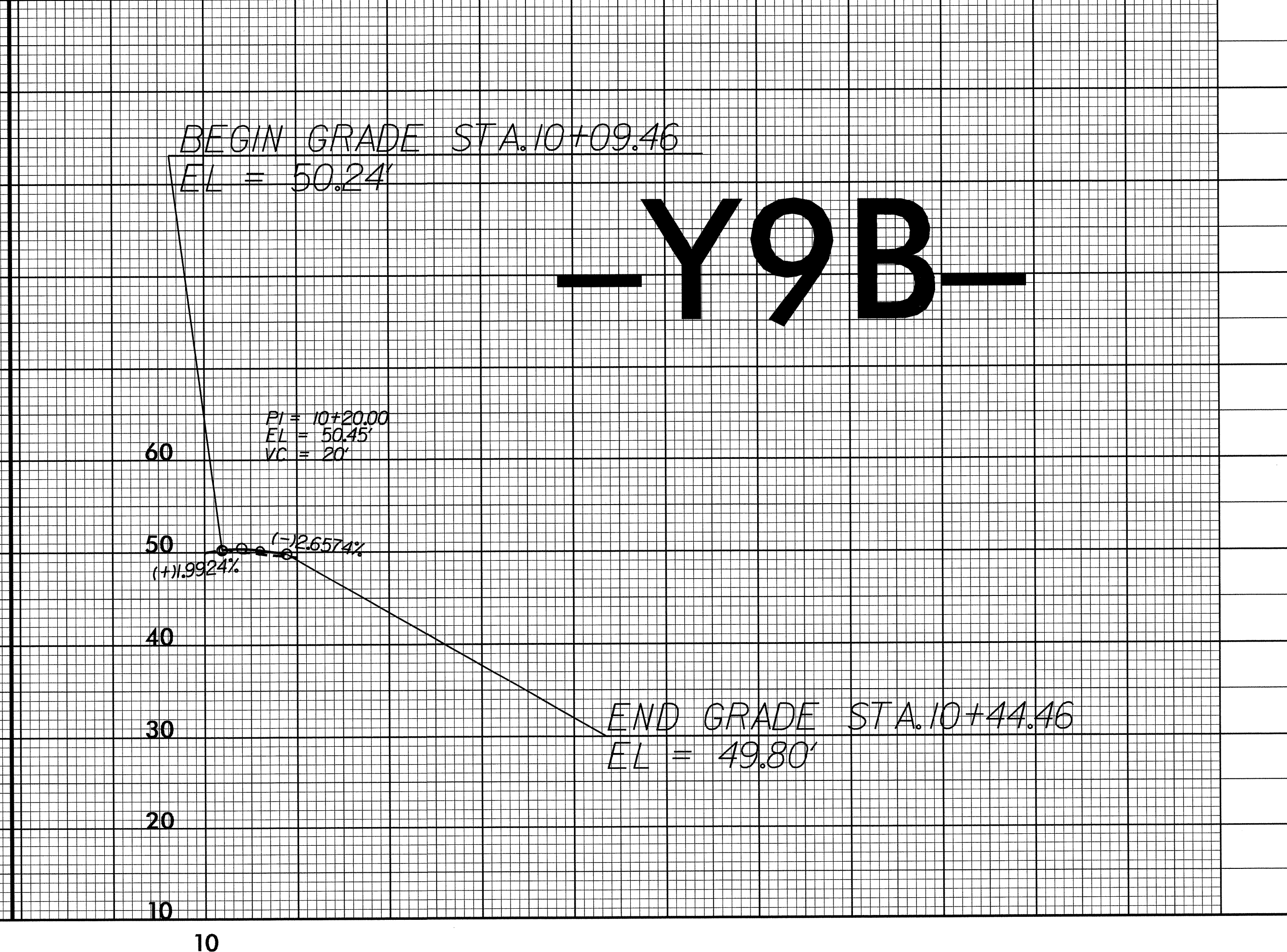
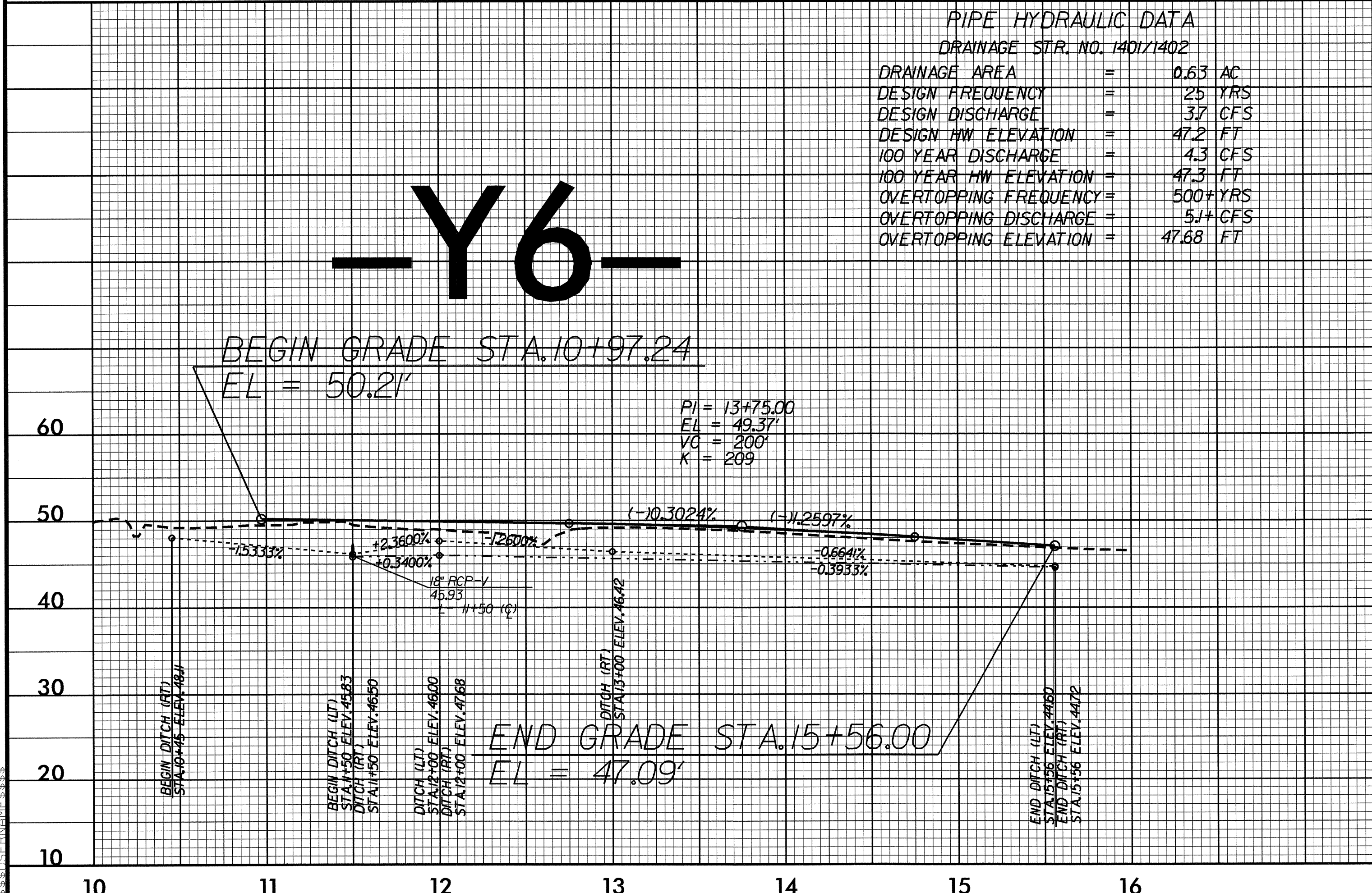
DRAINAGE AREA = 27 AC
DESIGN FREQUENCY = 25 YRS
DESIGN DISCHARGE = 6.9 CFS
DESIGN HW ELEVATION = 46.8 FT
100 YEAR DISCHARGE = 8.1 CFS
100 YEAR HW ELEVATION = 47.1 FT
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 9.4+ CFS
OVERTOPPING ELEVATION = 48.34 FT

PIPE HYDRAULIC DATA
DRAINAGE STR. NO. 1401/1402

DRAINAGE AREA = 0.63 AC
DESIGN FREQUENCY = 25 YRS
DESIGN DISCHARGE = 3.7 CFS
DESIGN HW ELEVATION = 47.2 FT
100 YEAR DISCHARGE = 4.3 CFS
100 YEAR HW ELEVATION = 47.3 FT
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 5.1+ CFS
OVERTOPPING ELEVATION = 47.68 FT

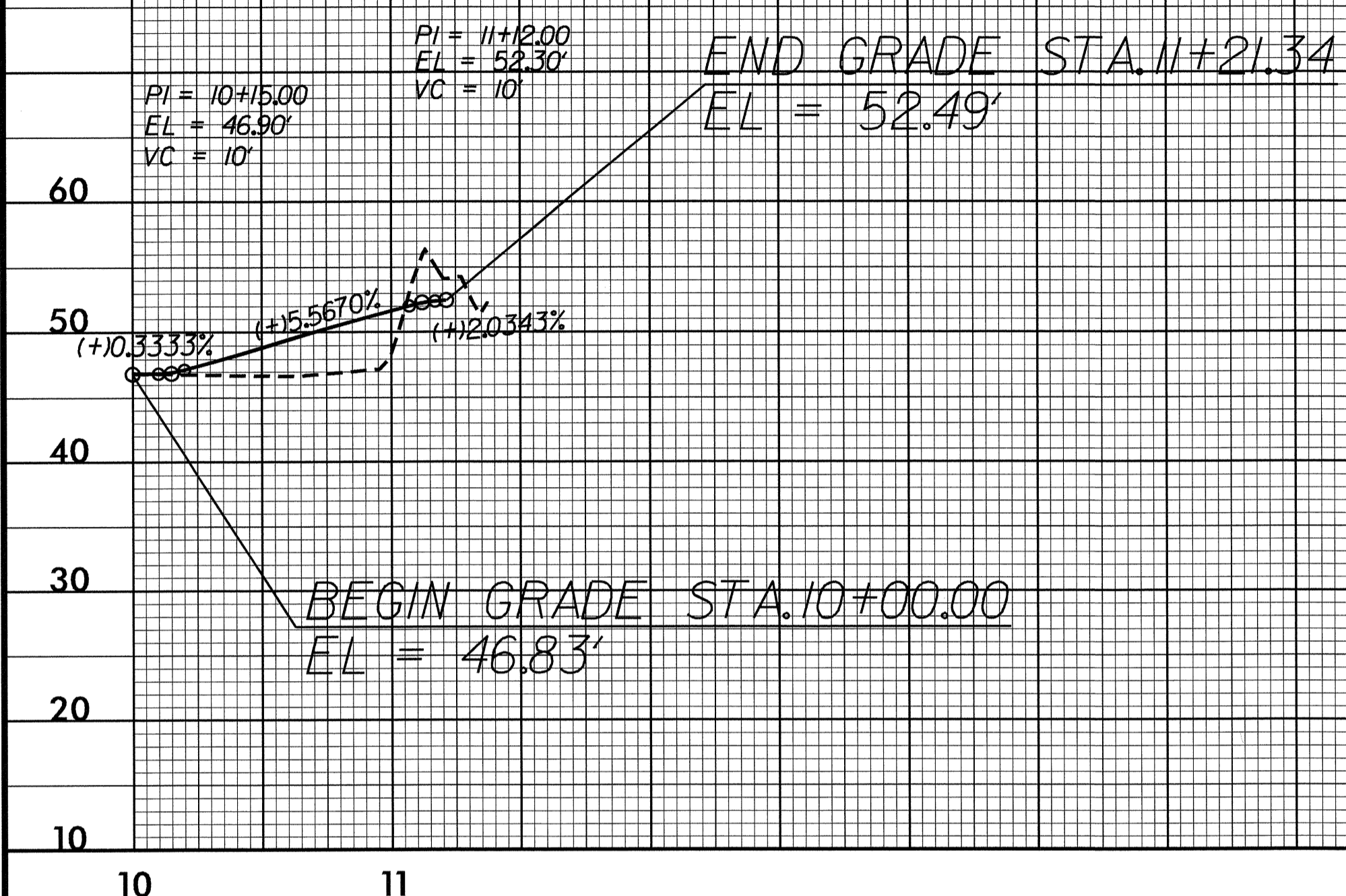
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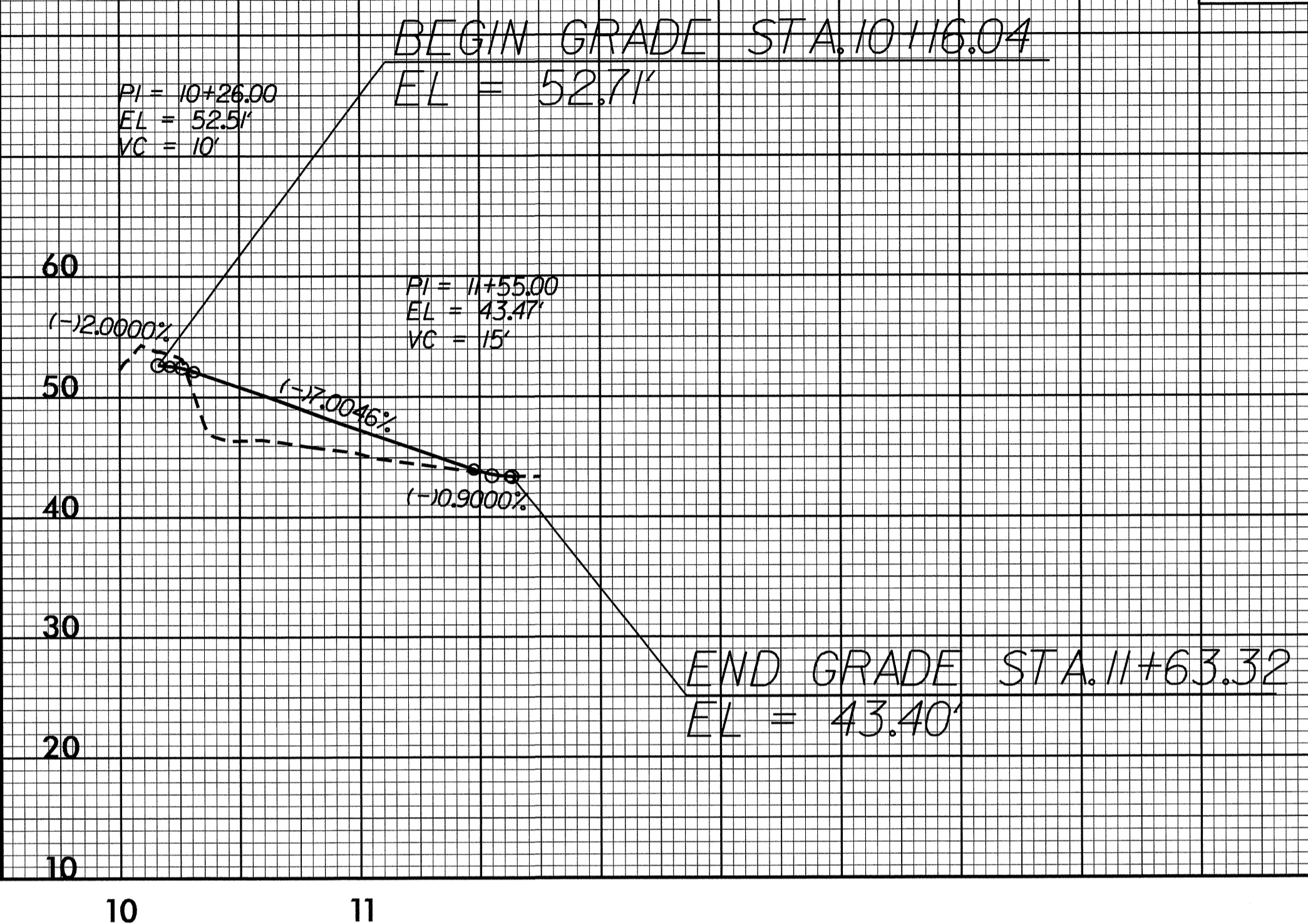


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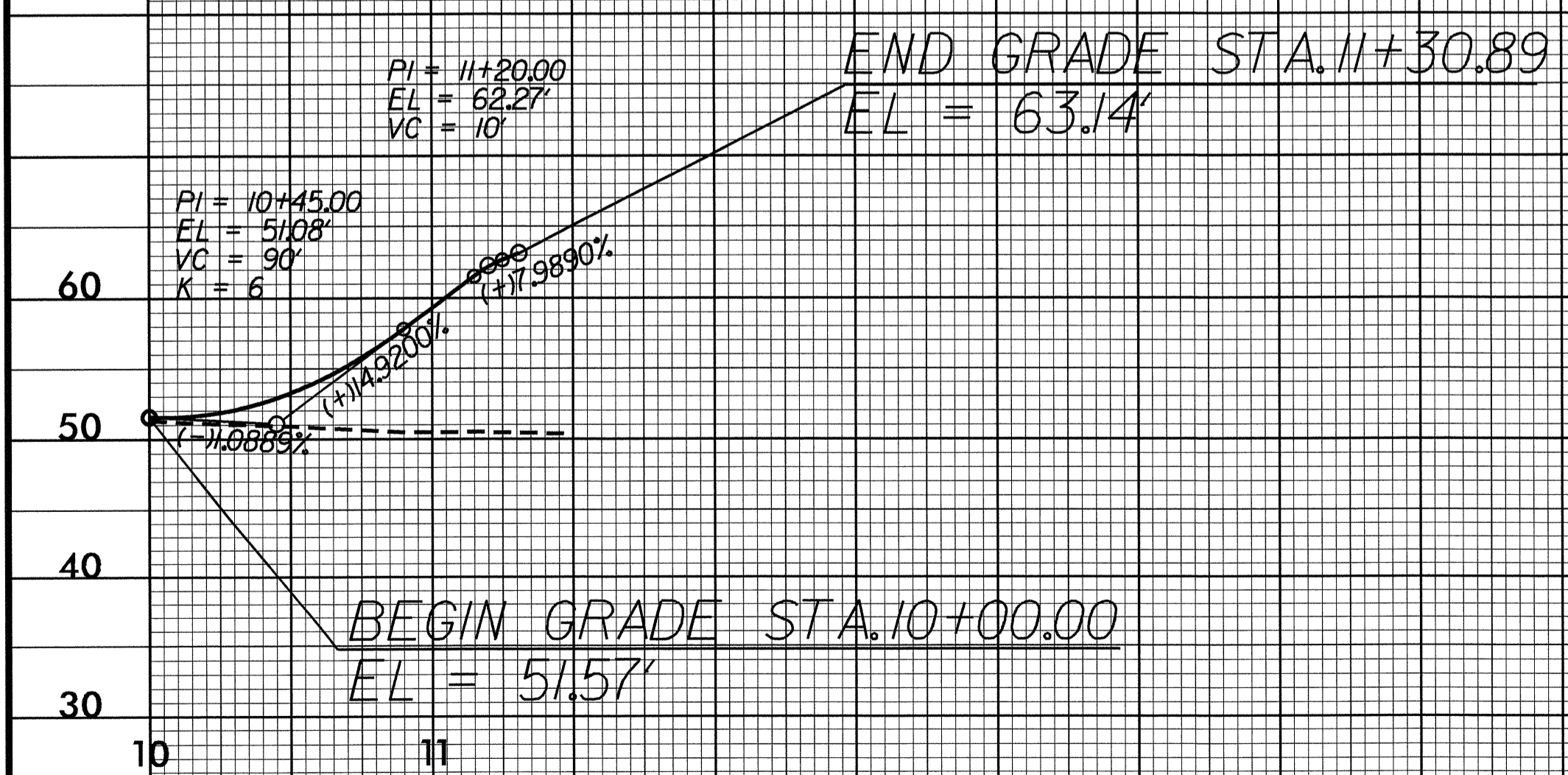
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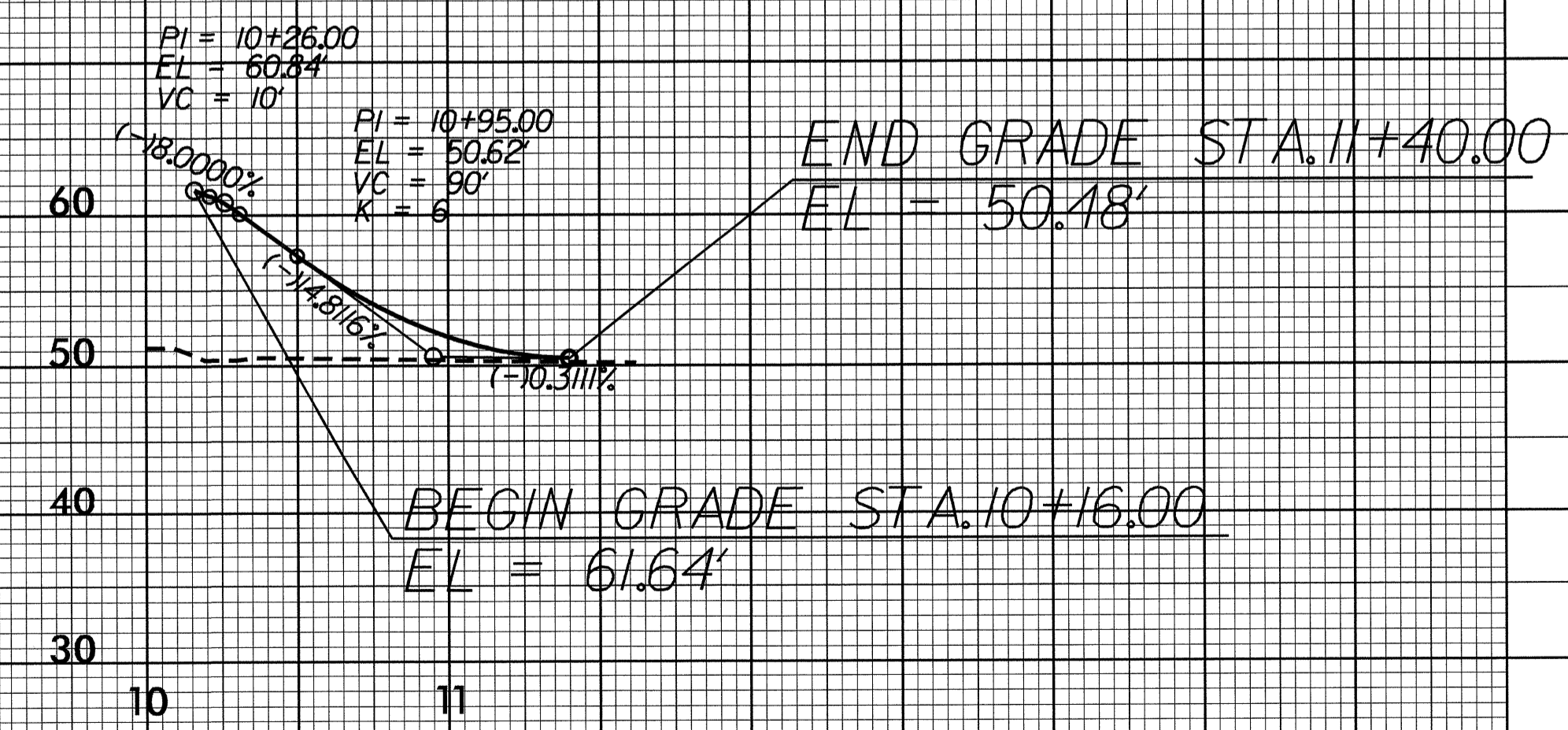
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-DR6-



-DR7-



PROJECT REFERENCE NO. R-3432	SHEET NO. 23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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