

HENRY COUNTY HEN-6-11.42 HEN-24-9.61 FR-73 (42)	OHIO FHWA REGION 5 FEDERAL PROJECT	1 77
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STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
HEN-6-11.42
HEN-24-9.61
PART I
CITY OF NAPOLEON
NAPOLEON & LIBERTY TOWNSHIP
HENRY COUNTY

LIMITED ACCESS
This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by action of the Director in accordance with the provisions of section 5511.02 of the Revised Code of Ohio.

FOR PART II ~ SEE HEN-6-14.20 Except The Traffic Control Which Is Included In PART I

1985 SPECIFICATIONS
The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require closing of the highway to traffic and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

USR-6 DESIGN DESIGNATION 1985 ADT = 6820 2005 ADT = 8190 DHV = 900 D = 55% T = 35% V = 70 MPH	USR-24 DESIGN DESIGNATION 1985 ADT = 4220 2005 ADT = 5060 DHV = 500 D = 55% T = 32% V = 70 MPH
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CONVENTIONAL SIGNS

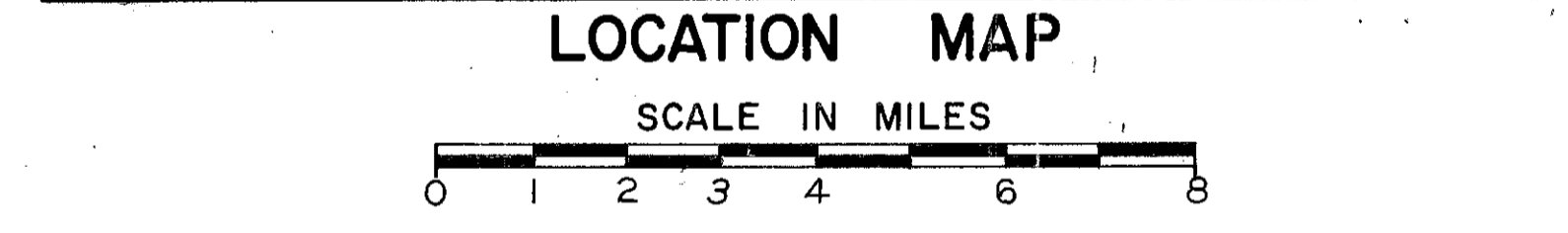
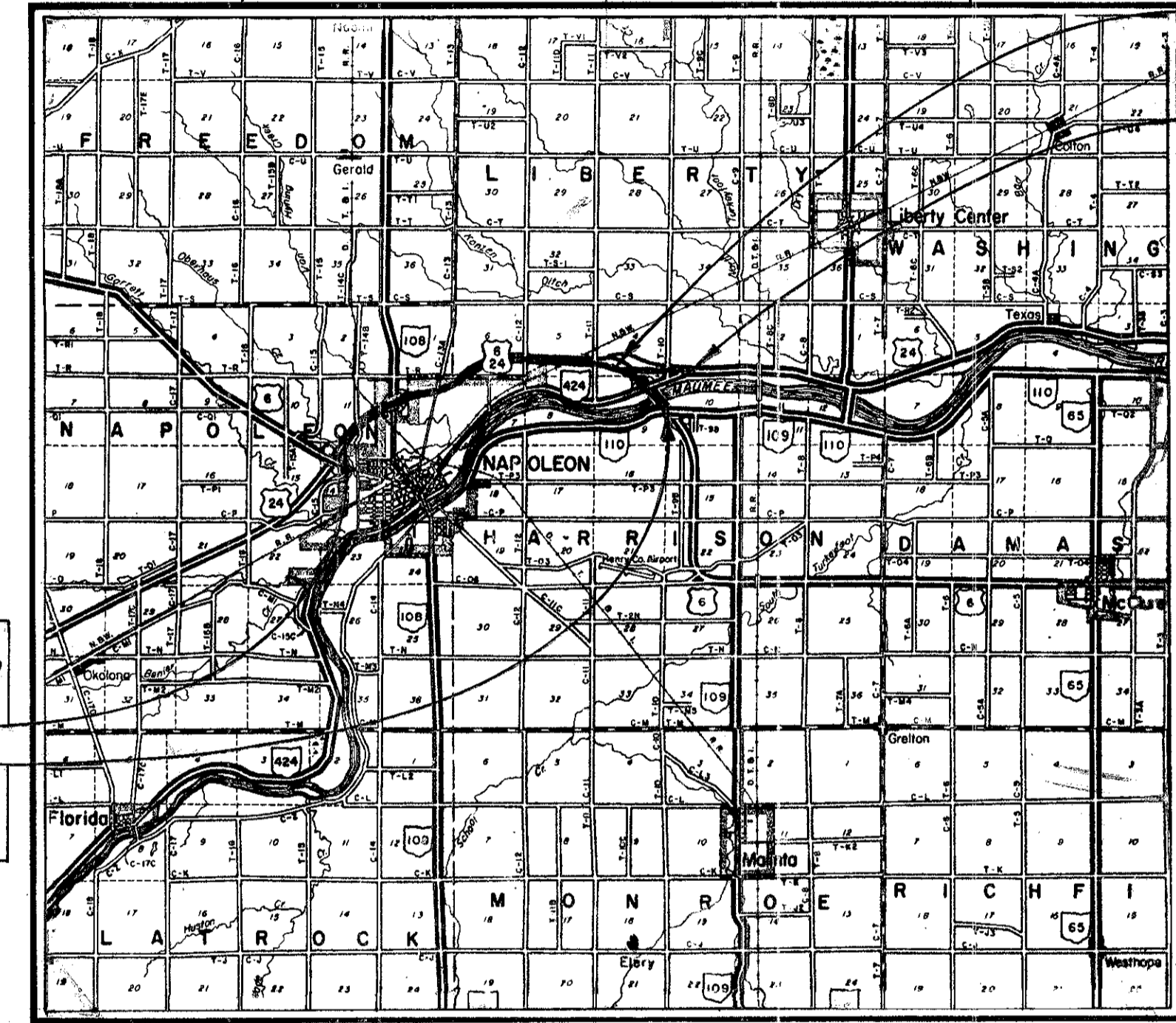
County Line _____	Limited Access (only) _____ LA _____
Township Line _____	Right of Way (only) _____ RW _____
Section Line _____	Limited Access & Right of Way _____ LA & RW _____
Corporation Line _____ or _____	Existing Right of Way _____
Fence Line (existing) -x-x- (proposed) -x-x-	Property Line (in existing fence) -x-x-
Center Line _____ 352 _____ 353 _____	Railroad _____ or _____
Trees (to be removed) (to be removed)	Guardrail (existing) -o-o- (proposed) -o-o-
Utility Poles: Telephone ϕ , Power ϕ , Light ϕ .	

INDEX OF SHEETS

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TRAFFIC CONTROL	46-66
MAINTENANCE OF TRAFFIC SUPPLEMENTAL SHEETS	67-77
HEN 6-14.20	PART II
Sht. No. 25 not used	

LINE DATA

USR-6 BEGIN WORK STA. 597+00.00 BEGIN PROJECT STA. 600+00.00 SUSPEND PROJECT STA. 603+02.52 RESUME PROJECT STA. 604+32.11 SUSPEND PROJECT STA. 643+23.30 RESUME PROJECT STA. 644+75.80 SUSPEND PROJECT STA. 654+60.61 RESUME PROJECT STA. 656+53.78 SUSPEND PROJECT STA. 666+31.97 RESUME PROJECT STA. 667+68.03 SUSPEND PROJECT STA. 791+54.68 RESUME PROJECT STA. 791+75.71 End Project Sta. 865+64.75 End Work Sta. 881+00.00 Length of Project = 25,932.47 Lin. Ft. or 4.911 Miles Length of Work = 28,400.00 Lin. Ft. or 5.379 Miles	USR-24 BEGIN WORK STA. 507+64.59 BEGIN PROJECT STA. 507+64.59 SUSPEND PROJECT STA. 517+42.20 RESUME PROJECT STA. 519+66.66 END PROJECT STA. 580+53.68 STATION EQUATION: STA. 580+53.68 BACK = STA. 785+63.35 AHEAD END WORK STA. 788+63.35 LENGTH PROJECT 7064.63 LIN. FT. = 1.338 MI. LENGTH WORK 7364.63 LIN. FT. = 1.395 MI. TOTAL PROJECT 29432.47 L.F. = 4.911 MI. 7064.63 L.F. = 1.338 MI. 32997.10 L.F. = 6.249 MI. TOTAL WORK 28400.00 L.F. = 5.379 MI. 7364.63 L.F. = 1.395 MI. 35764.63 L.F. = 6.774 MI.
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Portion to be improved _____
State & Federal Routes _____
Other Roads _____

SCALES
Plan _____
Profile: Horizontal _____, Vertical _____
Cross Section: Horizontal _____, Vertical _____

BEGIN PROJECT STA. 507+64.59
HEN-24-9.61
END PROJECT STA. 580+53.68
HEN-24-9.61

BEGIN PROJECT STA. 600+00.00
HEN-6-11.42
END PROJECT STA. 865+64.75
HEN-6-11.42

PARTS I & II SUPPLEMENTAL SPECIFICATIONS

847	10-17-83
848	10-2-85
947	10-17-83
932	3-25-85

Approved R.J. Olman
Date 4-21-85 District Deputy Director of Transportation

Approved Walter J. Gusting
Date 6-10-85 Engineer, Bureau of Bridges and Structural Design

Approved Wayne H. Kauble
Date 10-2-85 Chief Engineer, Planning And Design

Approved Waven J. Smith
Date 10-2-85 Director, Department of Transportation

UNDERGROUND UTILITIES
48 HOURS
BEFORE YOU DIG
CALL ... 800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

Plan Prepared By:
DISTRICT NO. 7
OHIO DEPARTMENT OF
TRANSPORTATION

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS (PARTS I AND II)

BP-3	12-6-76	CB-8	11-10-83			TC-35.10	8-29-84	TC-21.20	1-20-84
BP-4	1-11-85	BP-13	1-11-85			TC-41.20	3-26-79	TC-21.40	3-1-79
BP-5	1-11-85	I-3C & D	4-1-80	DBR-2-73	4-10-73	TC-41.50	3-26-79	TC-22.10	3-1-79
GR-1	1-11-85	HW4B	4-1-80			TC-42.20	3-26-79	TC-22.20	3-1-79
GR-2B	2-5-82	MC-1	6-13-69			TC-52.10	4-3-79	TC-41.10	8-29-84
GR-3	1-21-85	MC-4	7-26-76	MH-1	12-18-84	TC-52.20	4-3-79	TC-51.10	1-20-84
GR-3A	2-5-82	MC-9	1-30-84	MH-3	12-18-84	TC-71.10	4-9-79	TC-51.11	1-20-84
GR-4	2-5-82	MC-9A	1-11-85	MH-5	6-12-75	TC-72.20	2-26-82		
GR-4A	1-30-84	MC-11	8-1-78			TC-42.10	8-19-77		
GR-5	2-5-82	HW-4A	4-1-80	AS-1-81	11-27-81	TC-7.65	3-1-79		
GR-6	2-5-82					TC-12.30	1-20-84		
GR-6A	2-5-82					TC-21.10	1-20-84		

Project: HEN-6-11.42 HEN-24-9.61
Date of Letting 19____ Contract No. _____
LD0300 Rev. 11-1-78

SEAL

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED:
DIVISION ADMINISTRATOR DATE

FHWA REGION	STATE	PROJECT
5	OHIO	

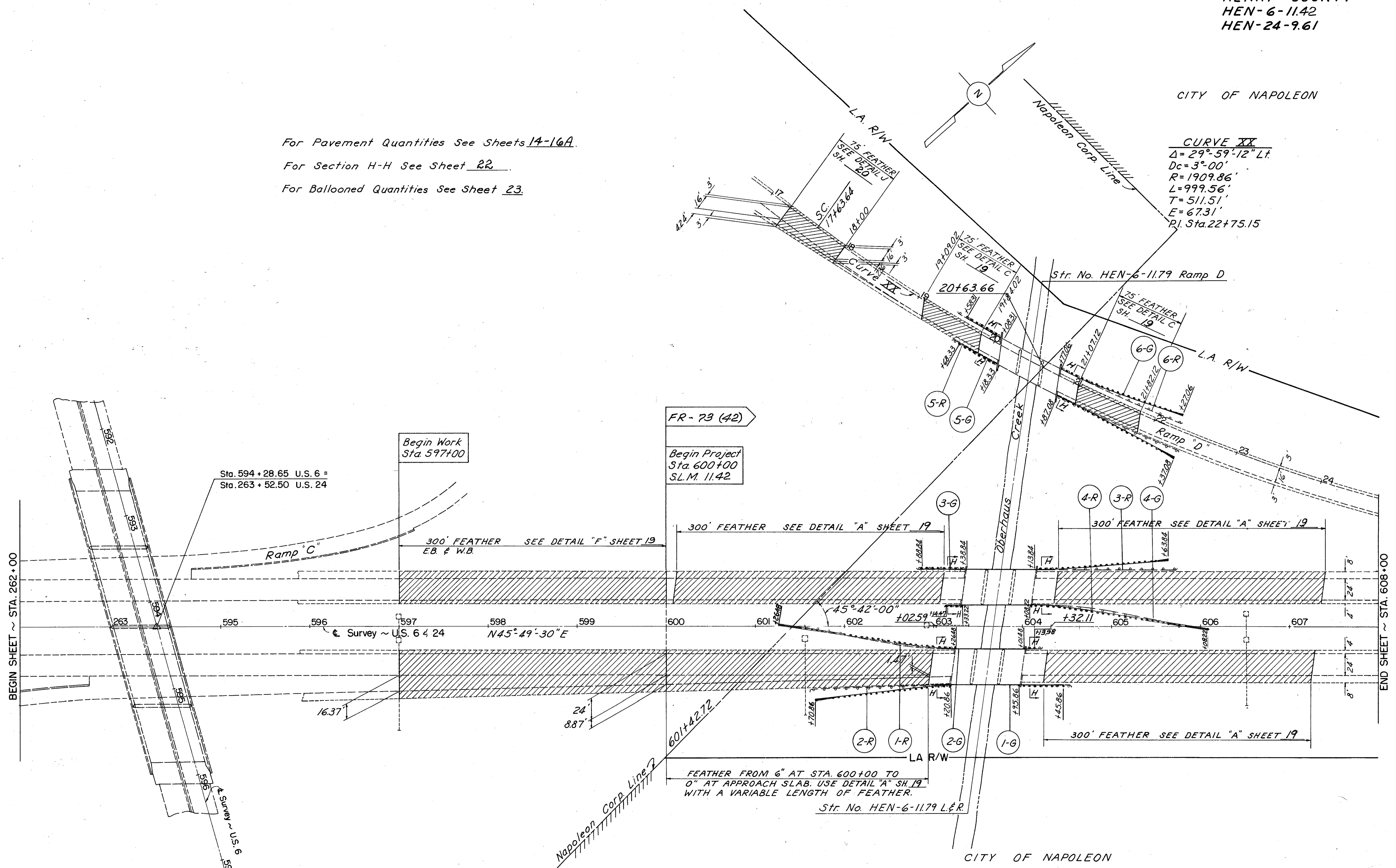
26
77

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CITY OF NAPOLEON

For Pavement Quantities See Sheets 14-16A.
For Section H-H See Sheet 22.
For Ballooned Quantities See Sheet 23.

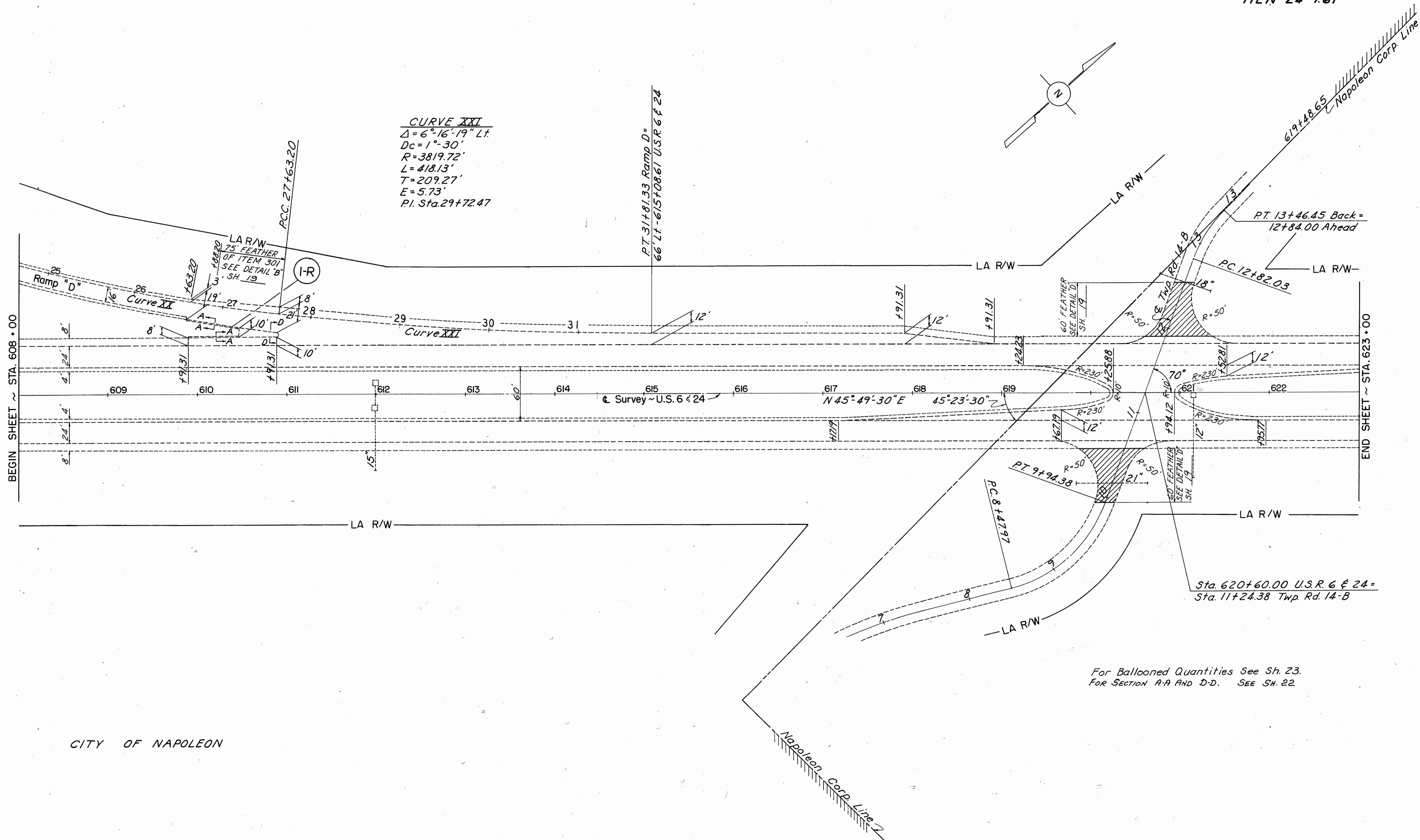
CURVE XX
 $\Delta = 29^{\circ}59'12''$ Lt.
 $Dc = 3^{\circ}00'$
 $R = 1909.86'$
 $L = 999.56'$
 $T = 511.51'$
 $E = 67.31'$
 P.I. Sta. 22+75.15



FHWA REGION	STATE	PROJECT
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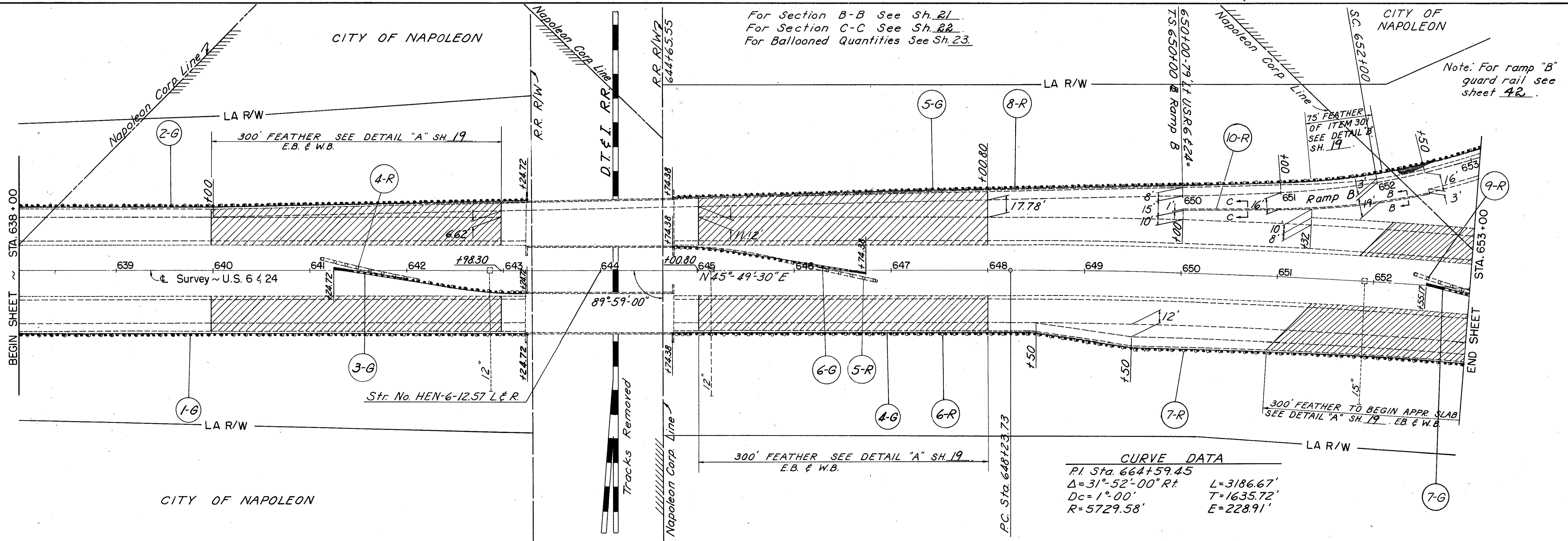
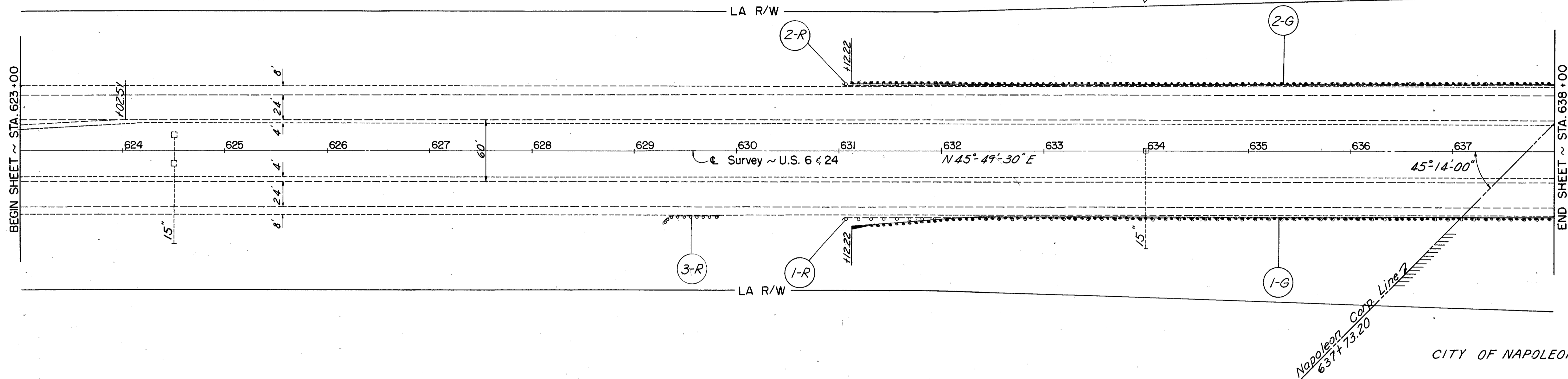
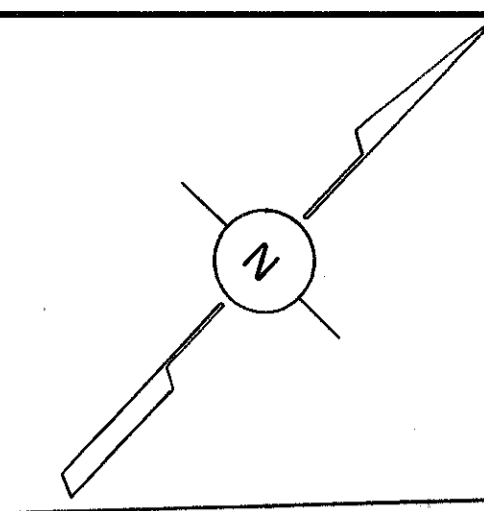


CITY OF NAPOLEON

For Ballooned Quantities See Sh. 23.
For SECTION A-A AND D-D. SEE SH. 22.

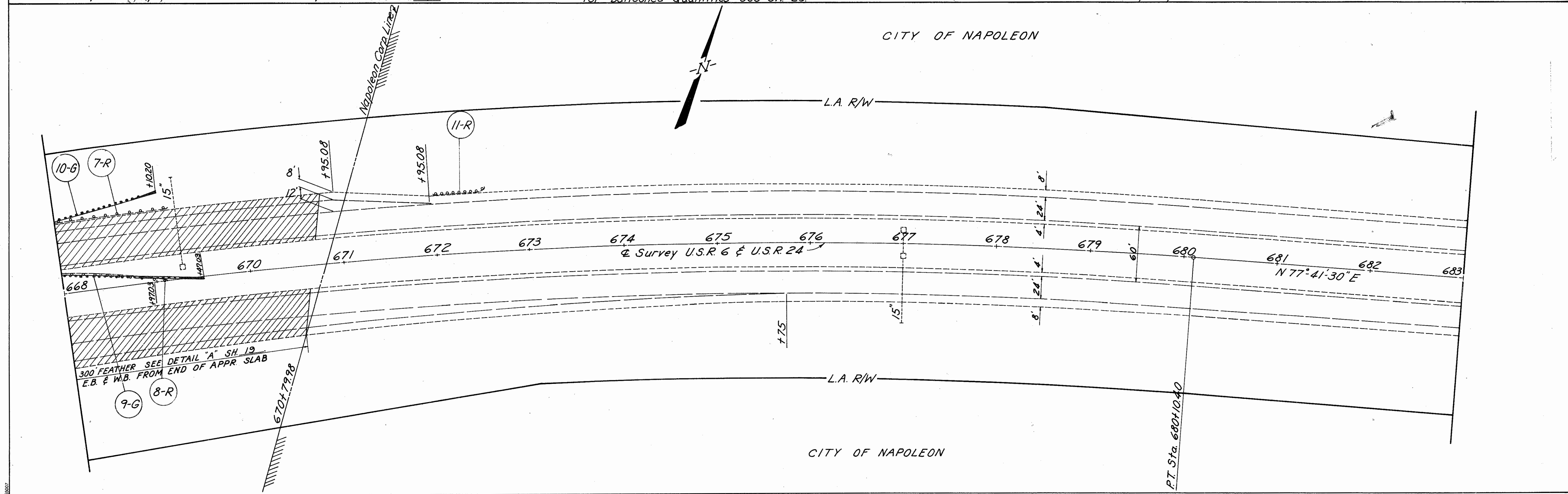
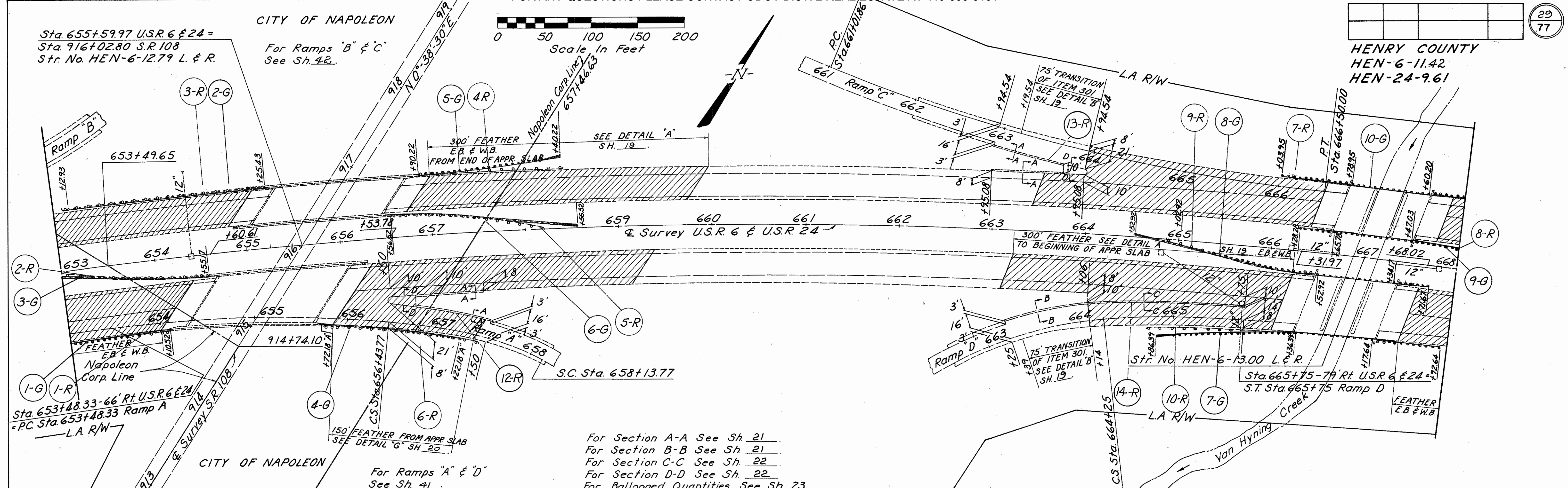
FHWA REGION	STATE	PROJECT
5	OHIO	

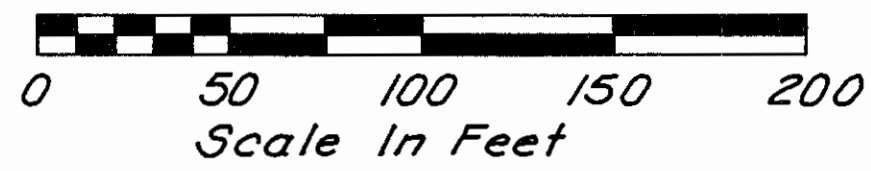
HENRY COUNTY
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CURVE DATA

P.I. Sta. 664+59.45	L=3186.67'
$\Delta=31^{\circ}52'00''$ Rt	T=1635.72'
Dc=1°00'	E=228.91'
R=5729.58'	





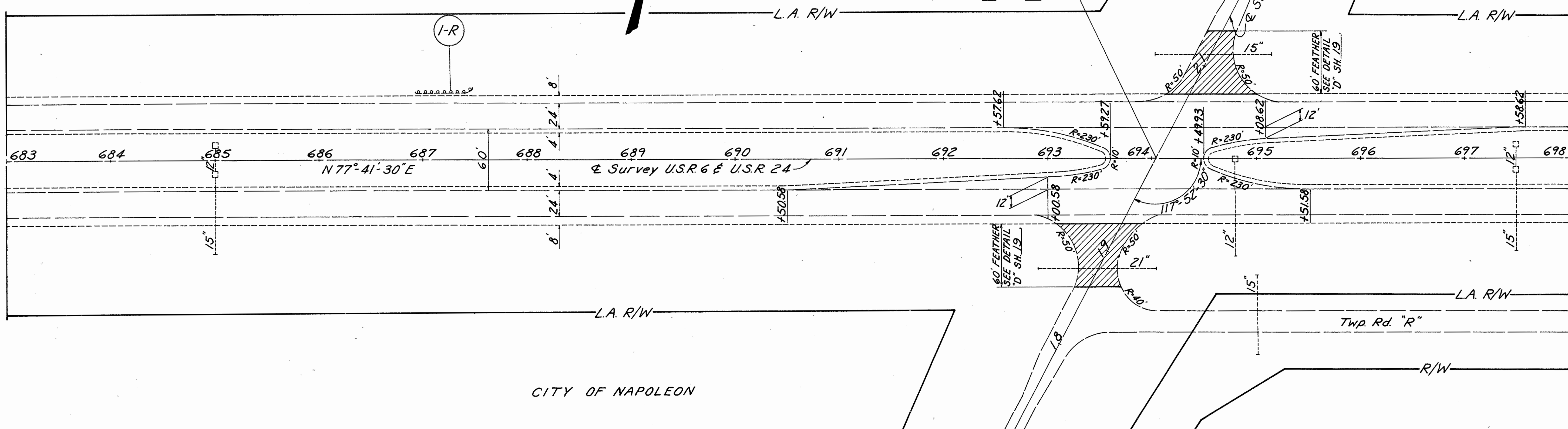
CITY OF NAPOLEON

Sta. 694+04.60 U.S.R. 6 & 24 =
Sta. 20+00 Co. Rd. 13-A
MEDIAN X-OVER AND APPROACH QUANTITIES
ARE INCLUDED IN MAIN LINE PAYMENT
CALCULATIONS. SEE SHEET NOS 14 THRU 17.

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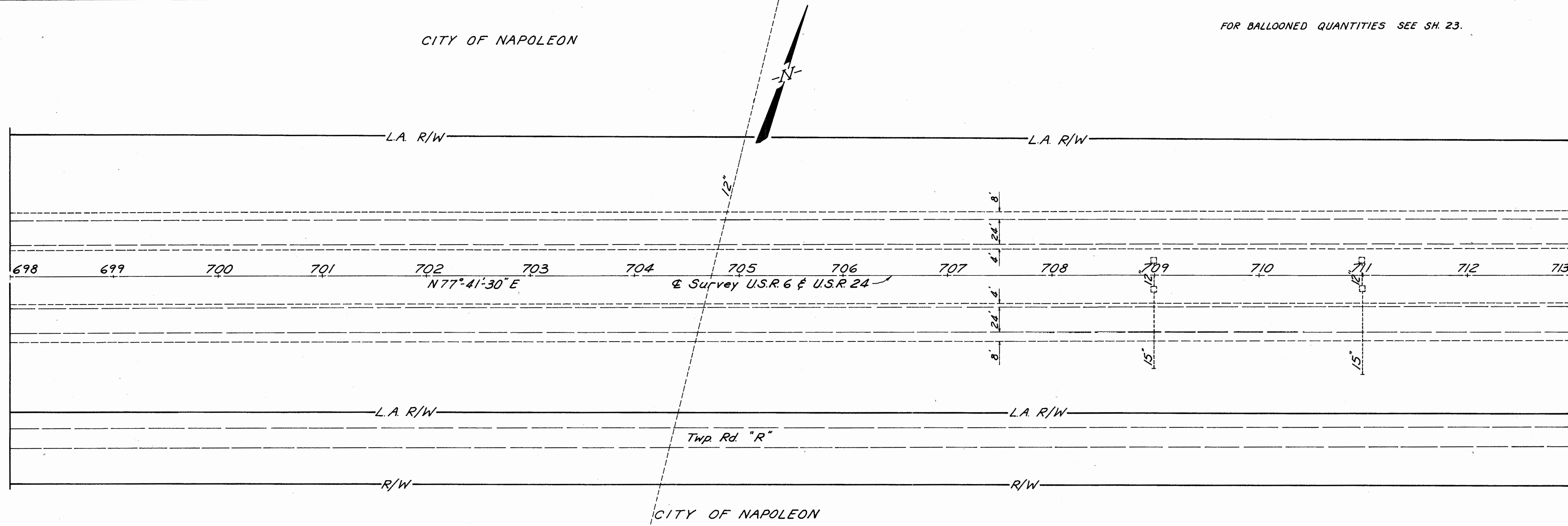
30
77

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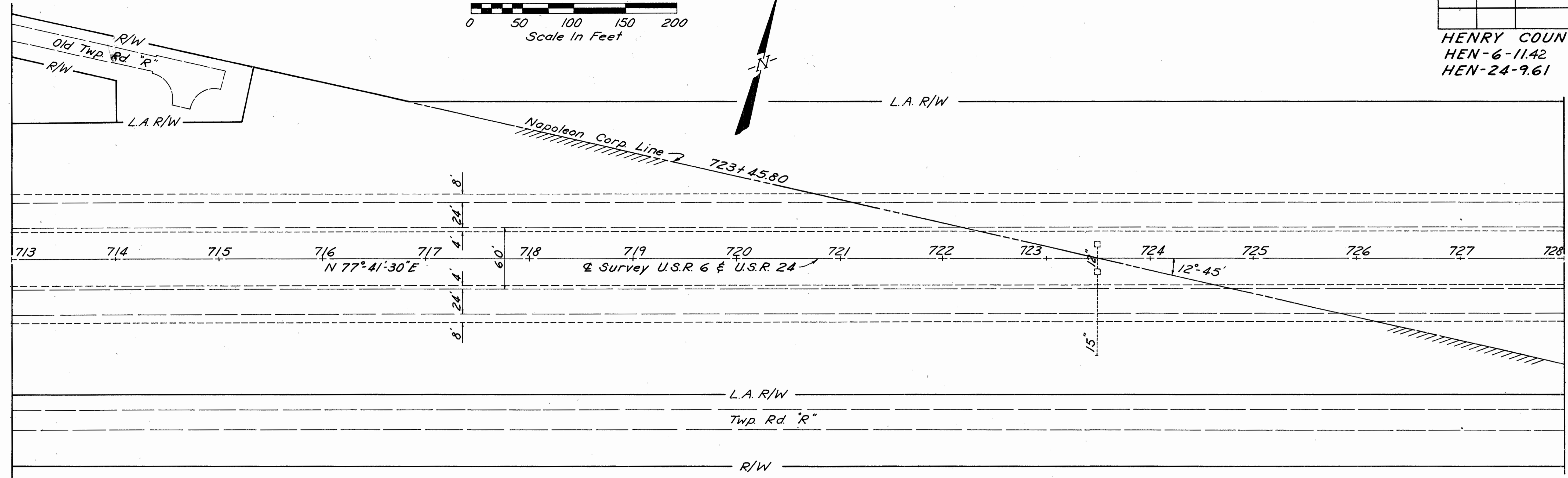
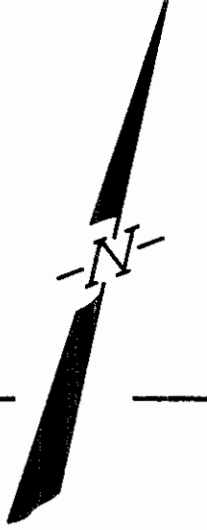
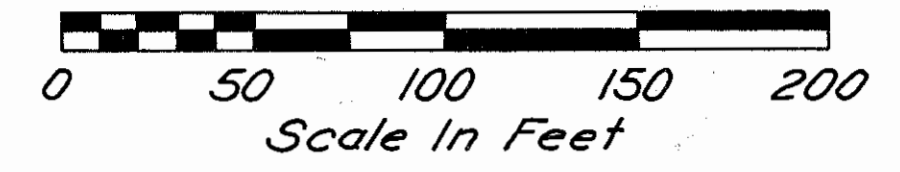
CITY OF NAPOLEON

FOR BALLOONED QUANTITIES SEE SH. 23.

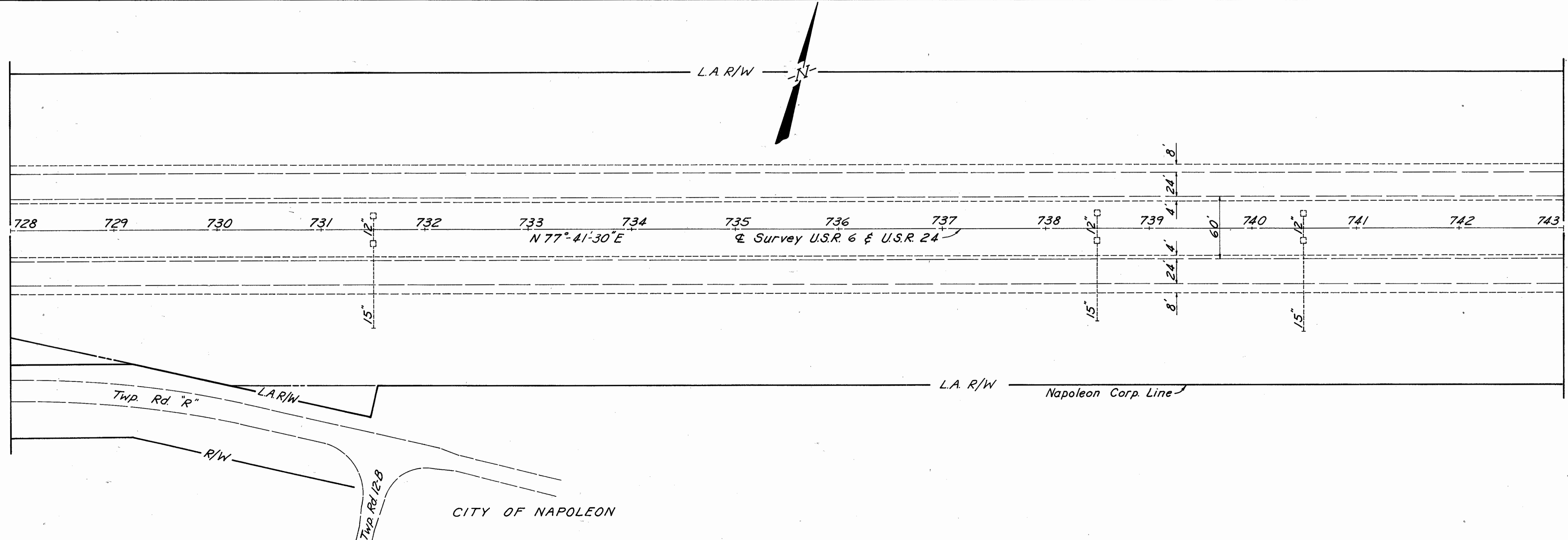


CITY OF NAPOLEON

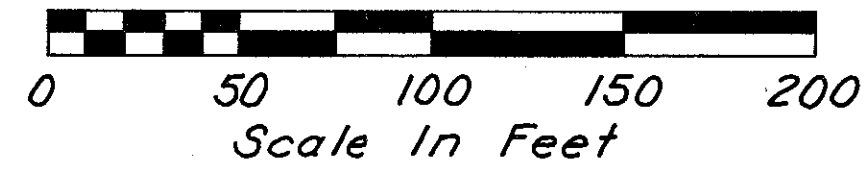
HENRY COUNTY
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CITY OF NAPOLEON



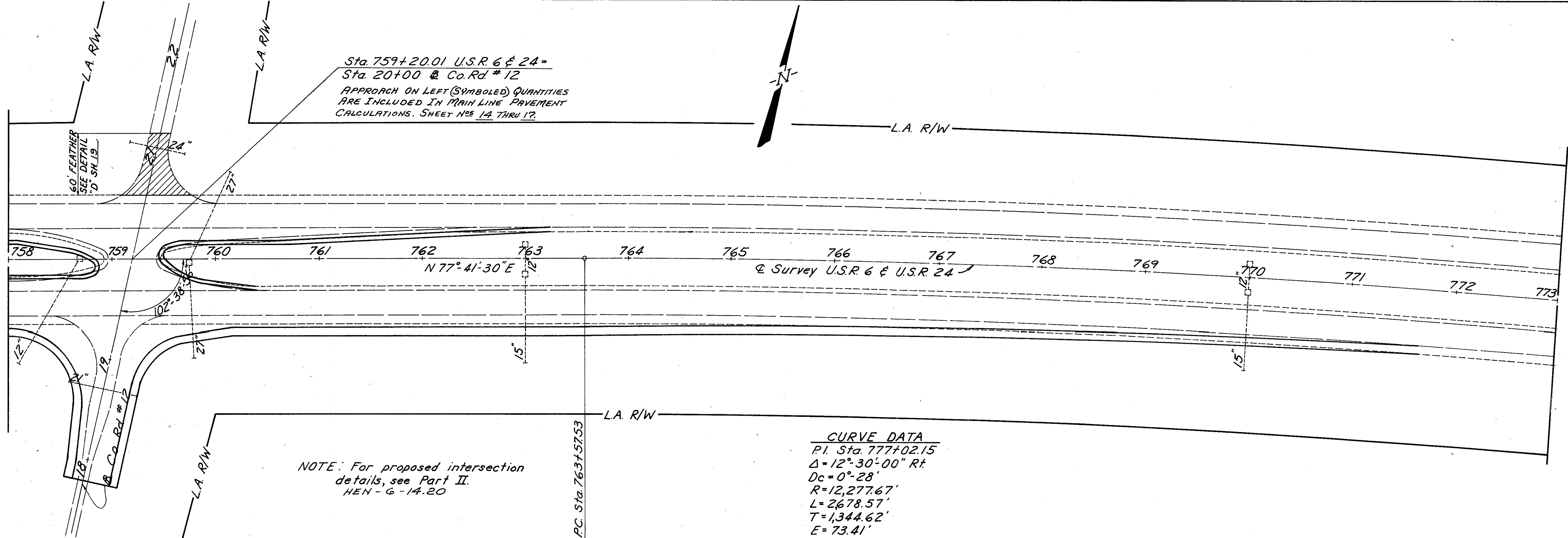
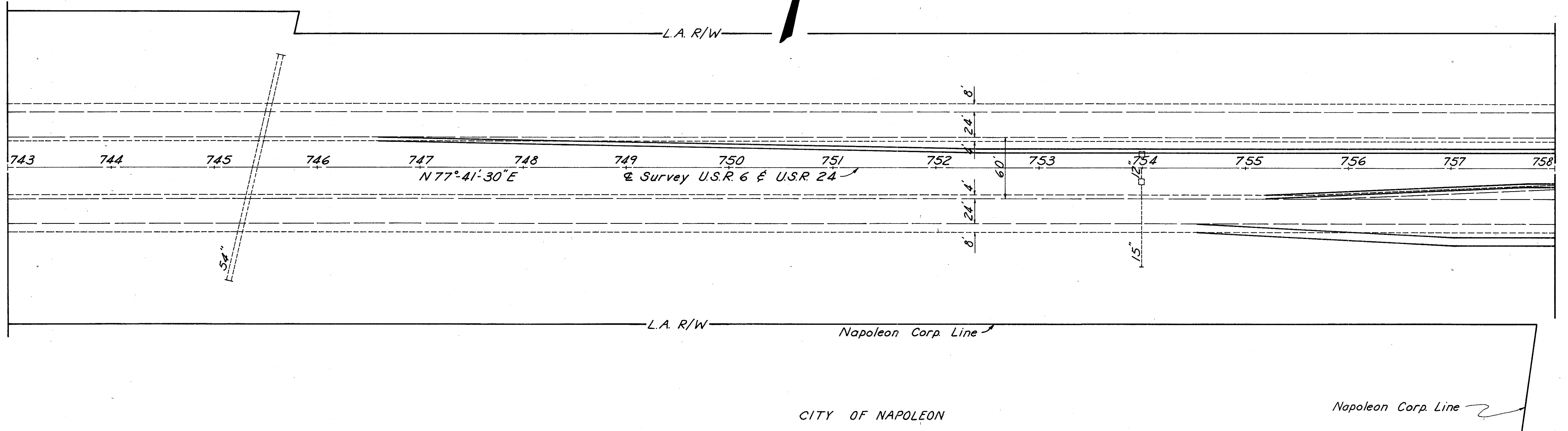
CITY OF NAPOLEON

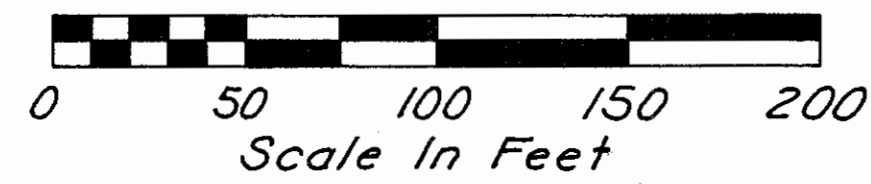


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32
77

HENRY COUNTY
HEN-6-11.42
HEN-24-9.61

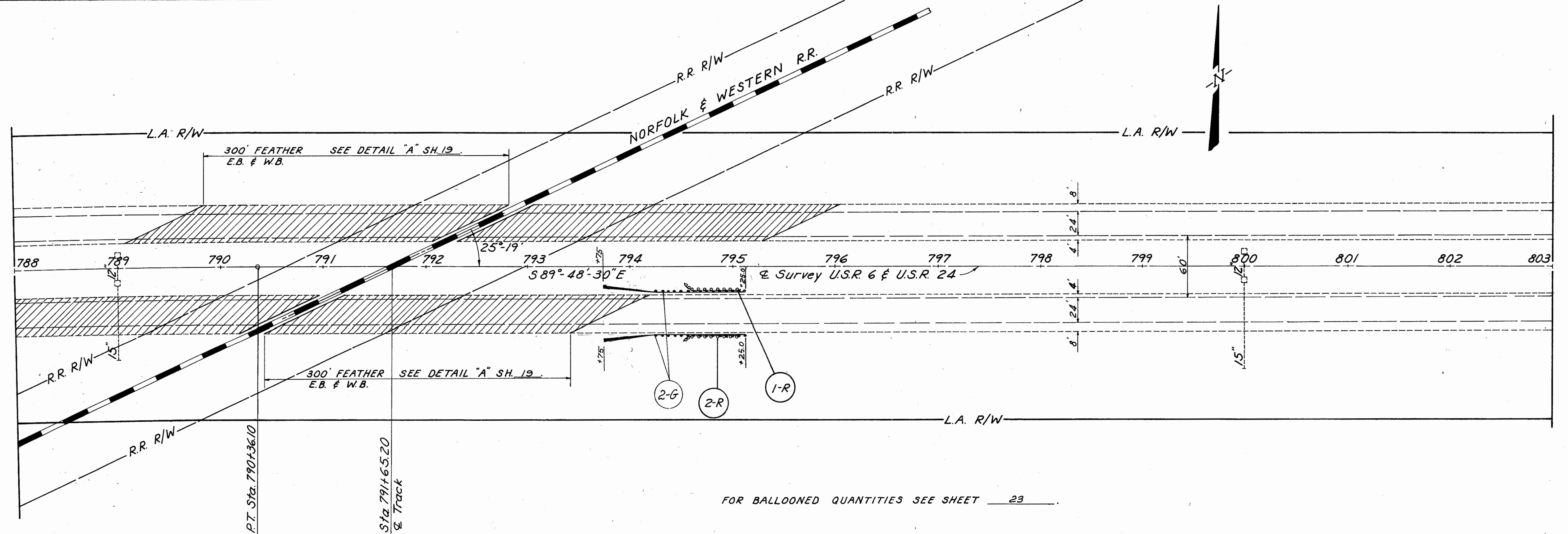
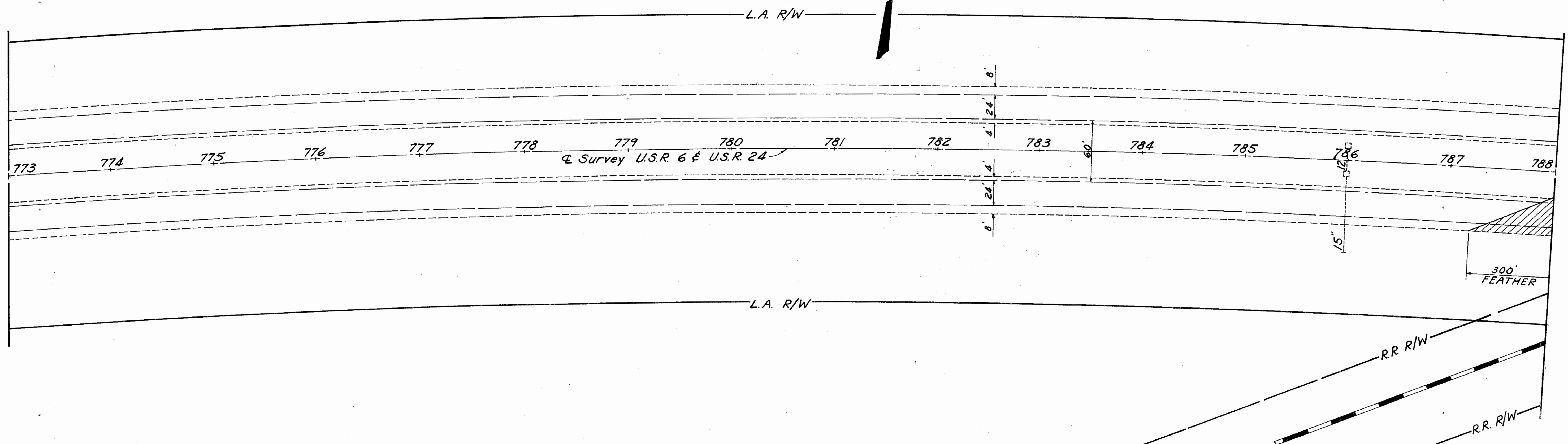




CURVE DATA
P.I. Sta. 777+02.15
 $\Delta = 12^\circ 30' 00''$ Rt.
 $D_c = 0' - 28'$
 $R = 12,277.67'$
 $L = 2,678.57'$
 $T = 1,344.62'$
 $E = 73.41'$

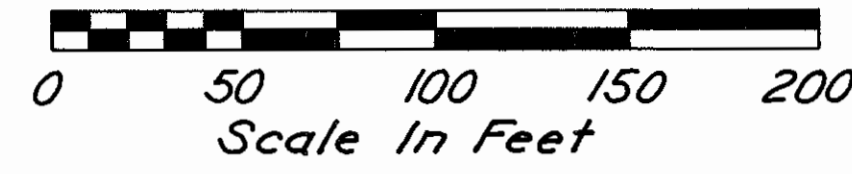
HENRY COUNTY
HEN-6-11.42
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33
77



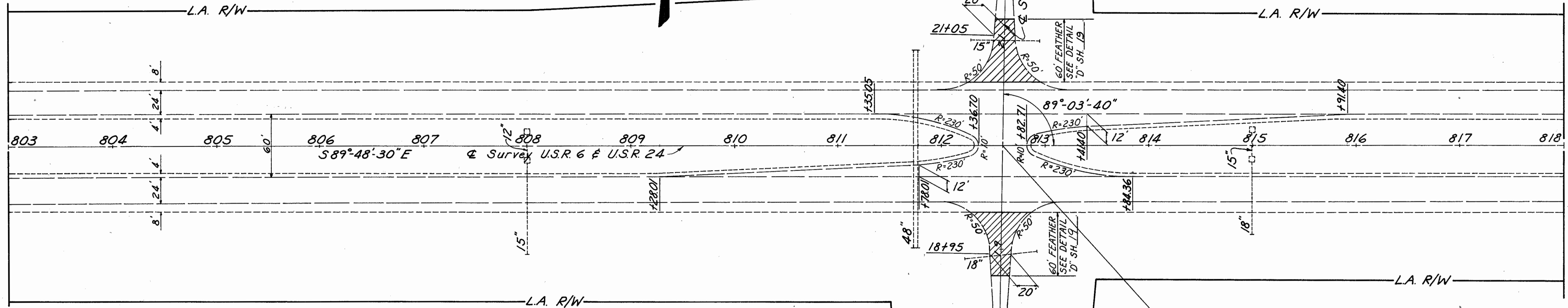
FOR BALLOONED QUANTITIES SEE SHEET 23

STA. 773+00 TO STA. 803+00 U.S.R. 6 & U.S.R. 24

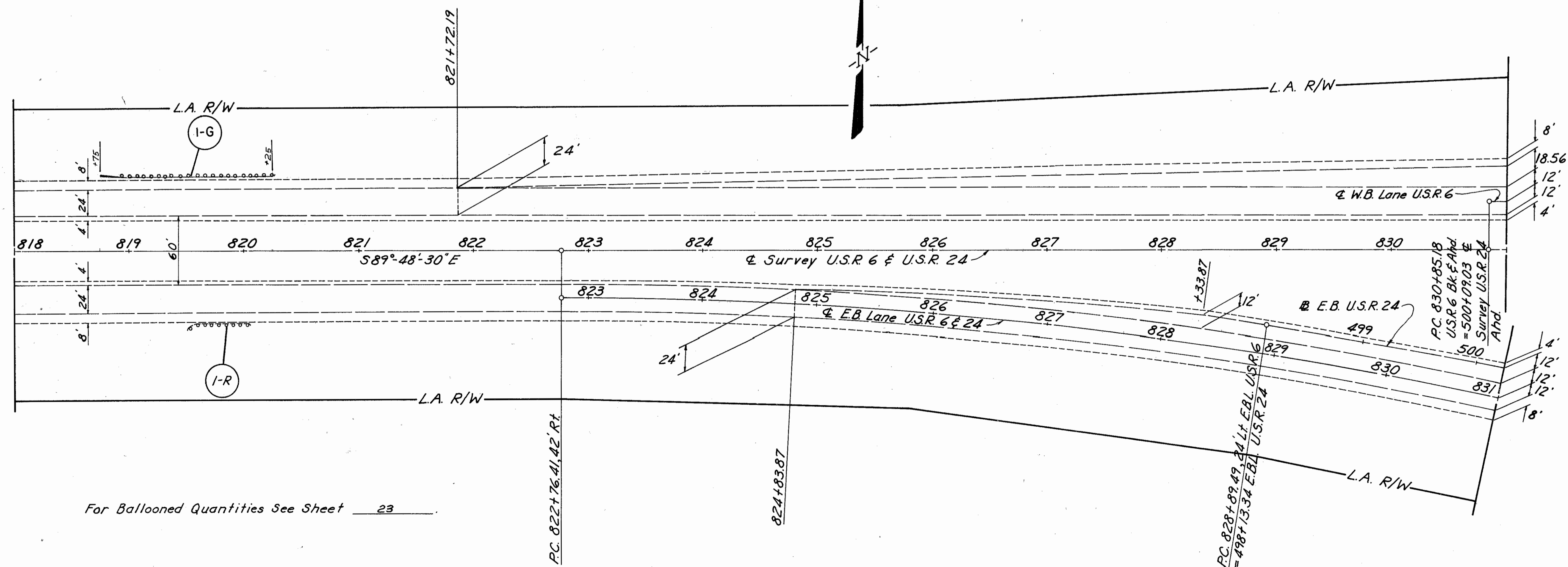


HENRY COUNTY
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HEN-24-9.61

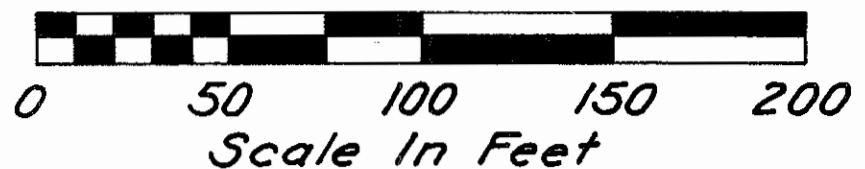
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77



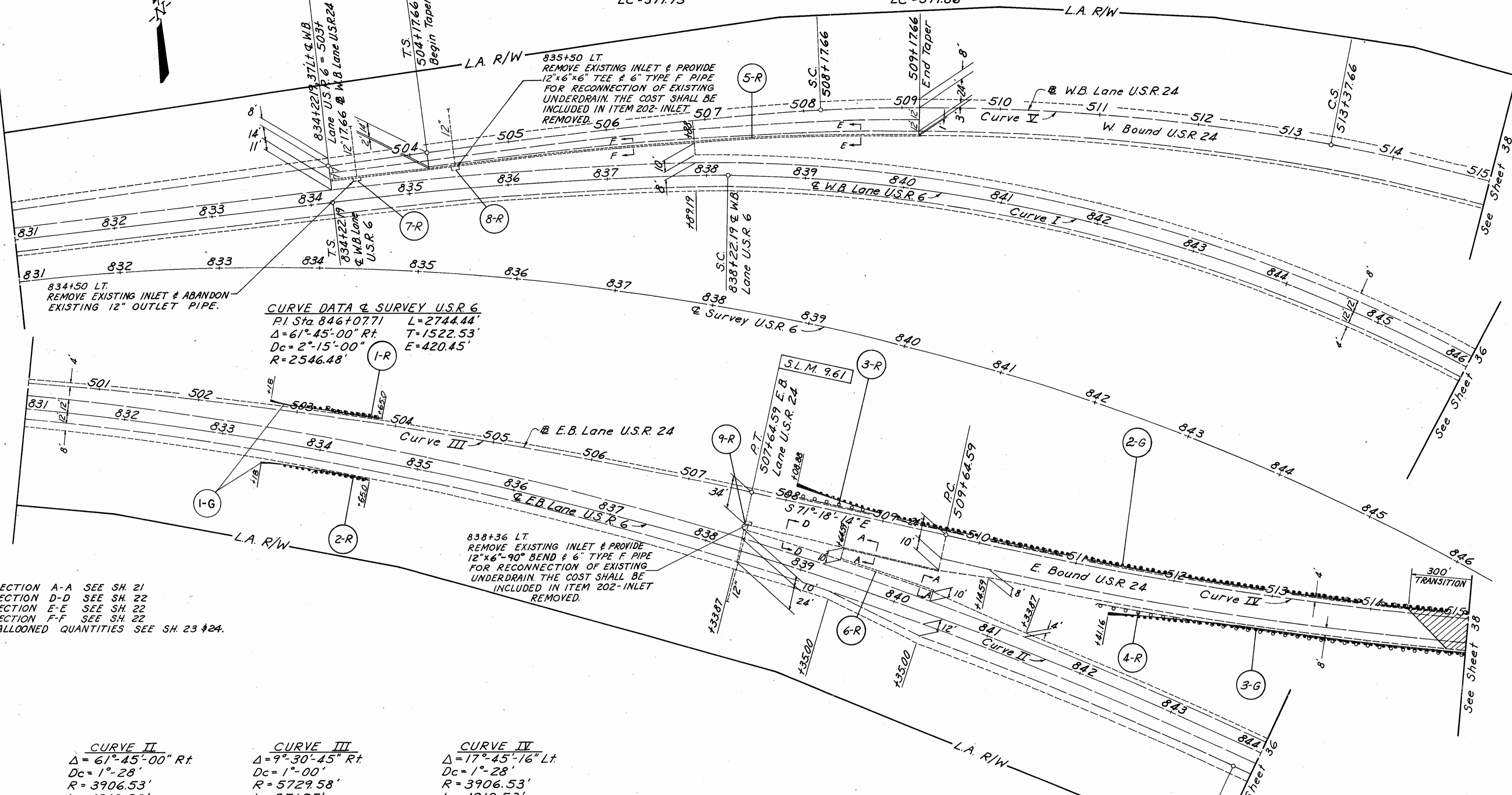
Sta. 812+59.70 U.S.R. 6 & 24 =
Sta. 20+00 Twp. Rd. 11
MEDIAN X-OVER AND APPROACH QUANTITIES
ARE INCLUDED IN MAIN LINE PAVEMENT
CALCULATIONS. SHEET NOS 14 THRU 12.



For Ballooned Quantities See Sheet 23



CURVE I		CURVE II	
$\Delta = 61^{\circ}45'00''$ Rt	$\theta_s = 7^{\circ}00'00''$	$\Delta = 23^{\circ}00'00''$ Rt	$\theta_s = 5^{\circ}00'00''$
$D_c = 3^{\circ}30'00''$	$P = 4.07'$	$D_c = 2^{\circ}30'00''$	$P = 2.91'$
$R = 1637.02'$	$K = 199.90'$	$R = 2291.83'$	$K = 199.95'$
$L_c = 1364.29'$	$X_c = 399.40'$	$L_c = 520.00'$	$X_c = 399.70'$
$L_s = 400.00'$	$Y_c = 16.27'$	$L_s = 400.00'$	$Y_c = 11.63'$
$T_s = 1181.12'$	$LT = 266.88'$	$T_s = 666.82'$	$LT = 266.77'$
$E_s = 275.02'$	$ST = 133.52'$	$E_s = 49.90'$	$ST = 133.43'$
	$LC = 399.73'$		$LC = 399.86'$

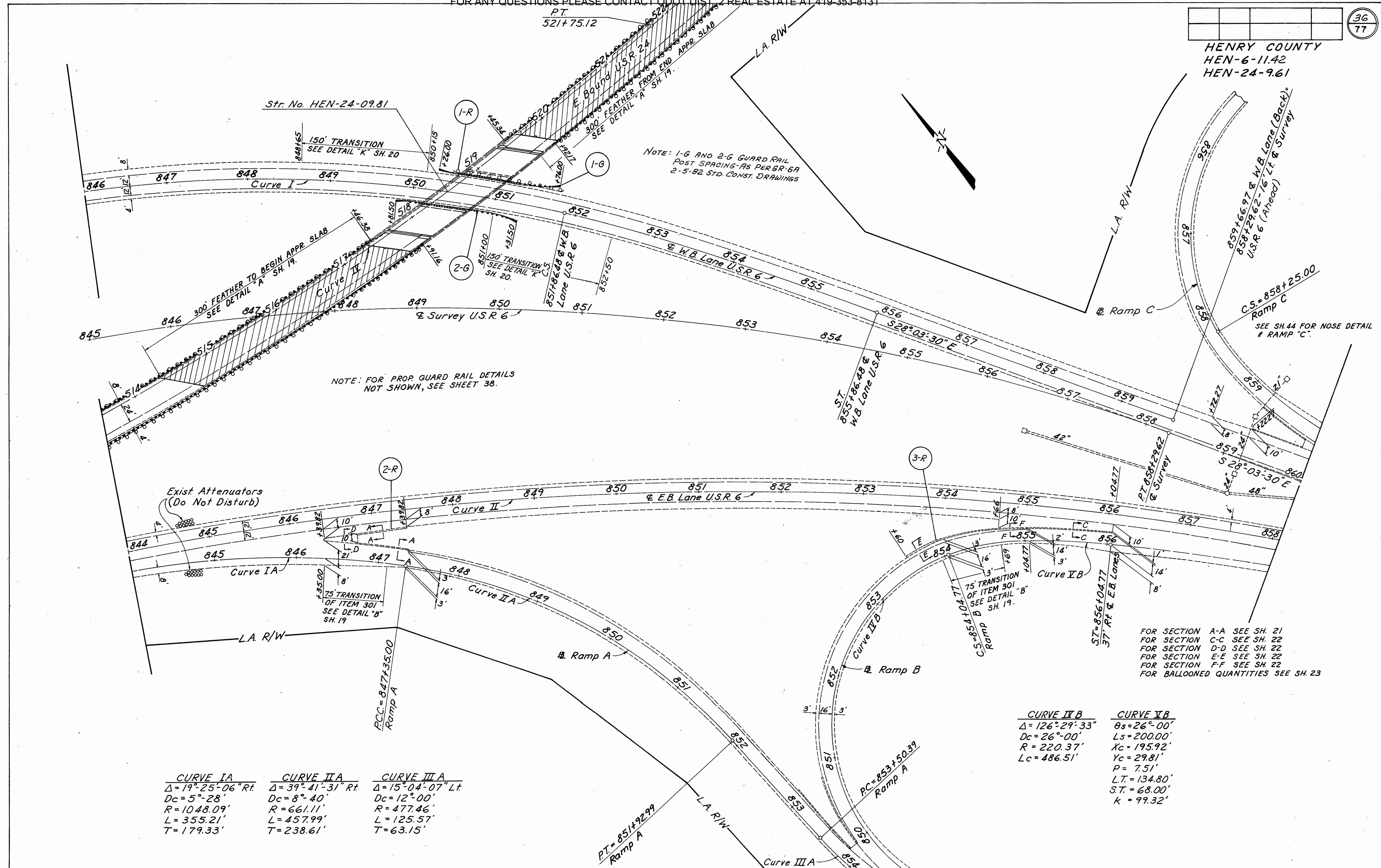


CURVE DATA & SURVEY U.S.R. 6
 P.I. Sta. 846+07.71 L=2744.44'
 $\Delta = 61^{\circ}45'00''$ Rt T=1522.53'
 $D_c = 2^{\circ}15'00''$ E=420.45'
 $R = 2546.48'$

FOR SECTION A-A SEE SH. 21
 FOR SECTION D-D SEE SH. 22
 FOR SECTION E-E SEE SH. 22
 FOR SECTION F-F SEE SH. 22
 FOR BALLOONED QUANTITIES SEE SH. 23 & 24.

CURVE II	CURVE III	CURVE IV
$\Delta = 61^{\circ}45'00''$ Rt	$\Delta = 9^{\circ}30'45''$ Rt	$\Delta = 17^{\circ}45'16''$ Lt
$D_c = 1^{\circ}28'$	$D_c = 1^{\circ}00'$	$D_c = 1^{\circ}28'$
$R = 3906.53'$	$R = 5729.58'$	$R = 3906.53'$
$L = 4210.23'$	$L = 951.25'$	$L = 1210.53'$
$T = 2335.70'$	$T = 476.72'$	$T = 610.16'$
$E = 645.00'$	$E = 19.80'$	$E = 47.36'$

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NOTE: 1-G AND 2-G GUARD RAIL
POST SPACING AS PER GR-6A
2-5-82 STD. CONST. DRAWINGS

NOTE: FOR PROP GUARD RAIL DETAILS
NOT SHOWN, SEE SHEET 38.

FOR SECTION A-A SEE SH. 21
FOR SECTION C-C SEE SH. 22
FOR SECTION D-D SEE SH. 22
FOR SECTION E-E SEE SH. 22
FOR SECTION F-F SEE SH. 22
FOR BALLOONED QUANTITIES SEE SH. 23

CURVE IA	CURVE IIA	CURVE IIIA
$\Delta = 19^\circ 25' 06''$ Rt.	$\Delta = 39^\circ 41' 31''$ Rt.	$\Delta = 15^\circ 04' 07''$ Lt.
$Dc = 5^\circ 28'$	$Dc = 8^\circ 40'$	$Dc = 12^\circ 00'$
$R = 1048.09'$	$R = 661.11'$	$R = 477.46'$
$L = 355.21'$	$L = 457.99'$	$L = 125.57'$
$T = 179.33'$	$T = 238.61'$	$T = 63.15'$

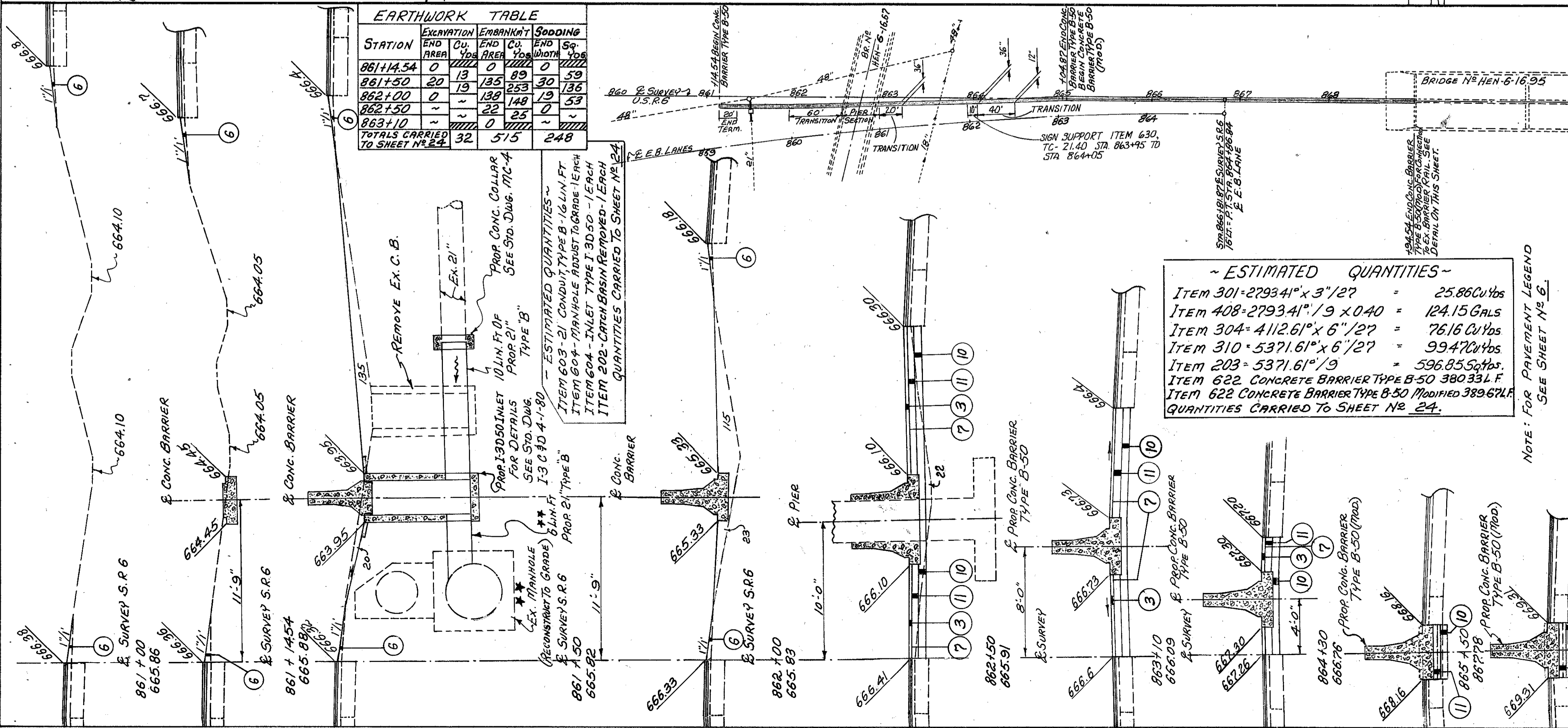
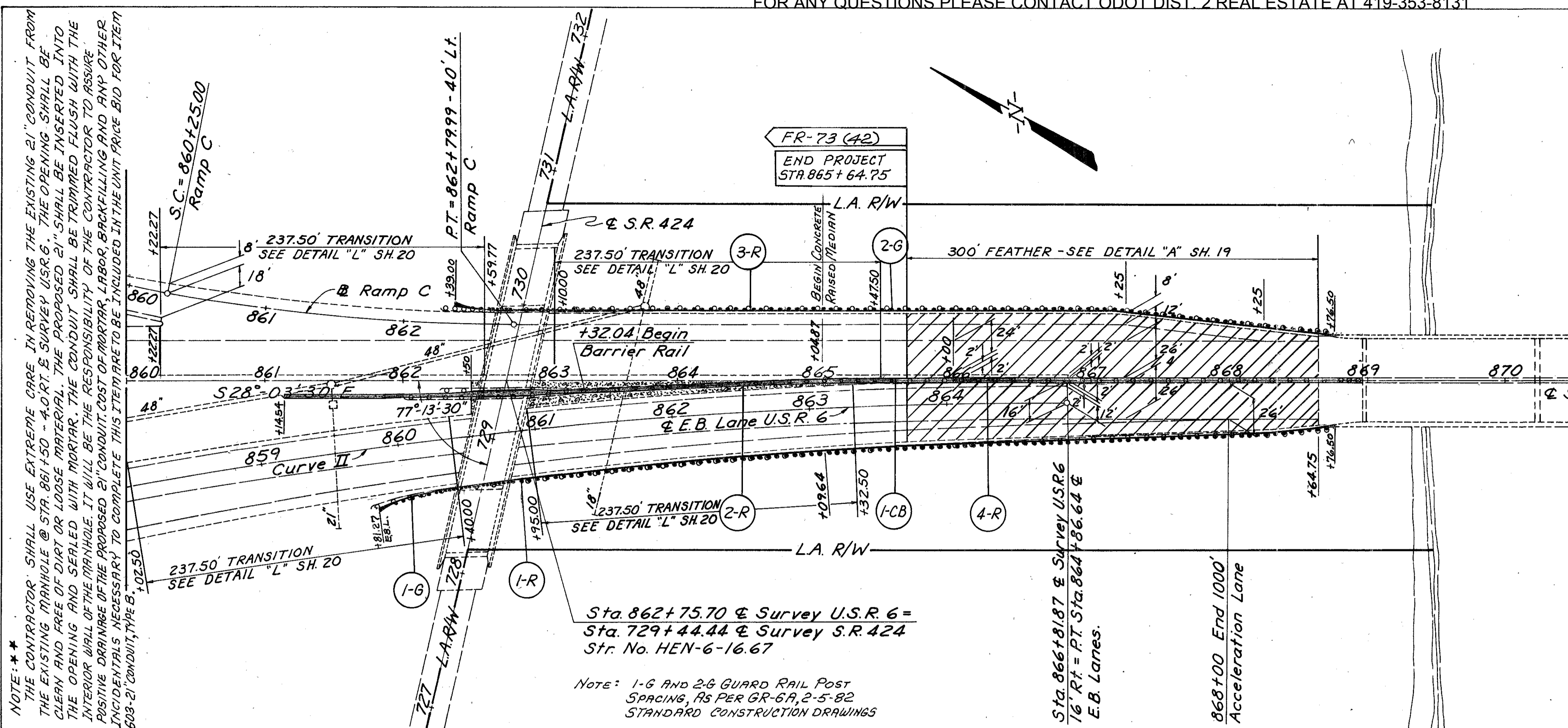
CURVE IIB	CURVE IIB
$\Delta = 126^\circ 29' 33''$	$\theta_s = 26^\circ 00'$
$Dc = 26^\circ 00'$	$L_s = 200.00'$
$R = 220.37'$	$Xc = 195.92'$
$Lc = 486.51'$	$Yc = 29.81'$
	$P = 7.51'$
	$L.T. = 134.80'$
	$S.T. = 68.00'$
	$k = 99.32'$

CALC BY *RM*
 DATE 11-84
 CHD BY *RM*
 DATE 11-84

37	77
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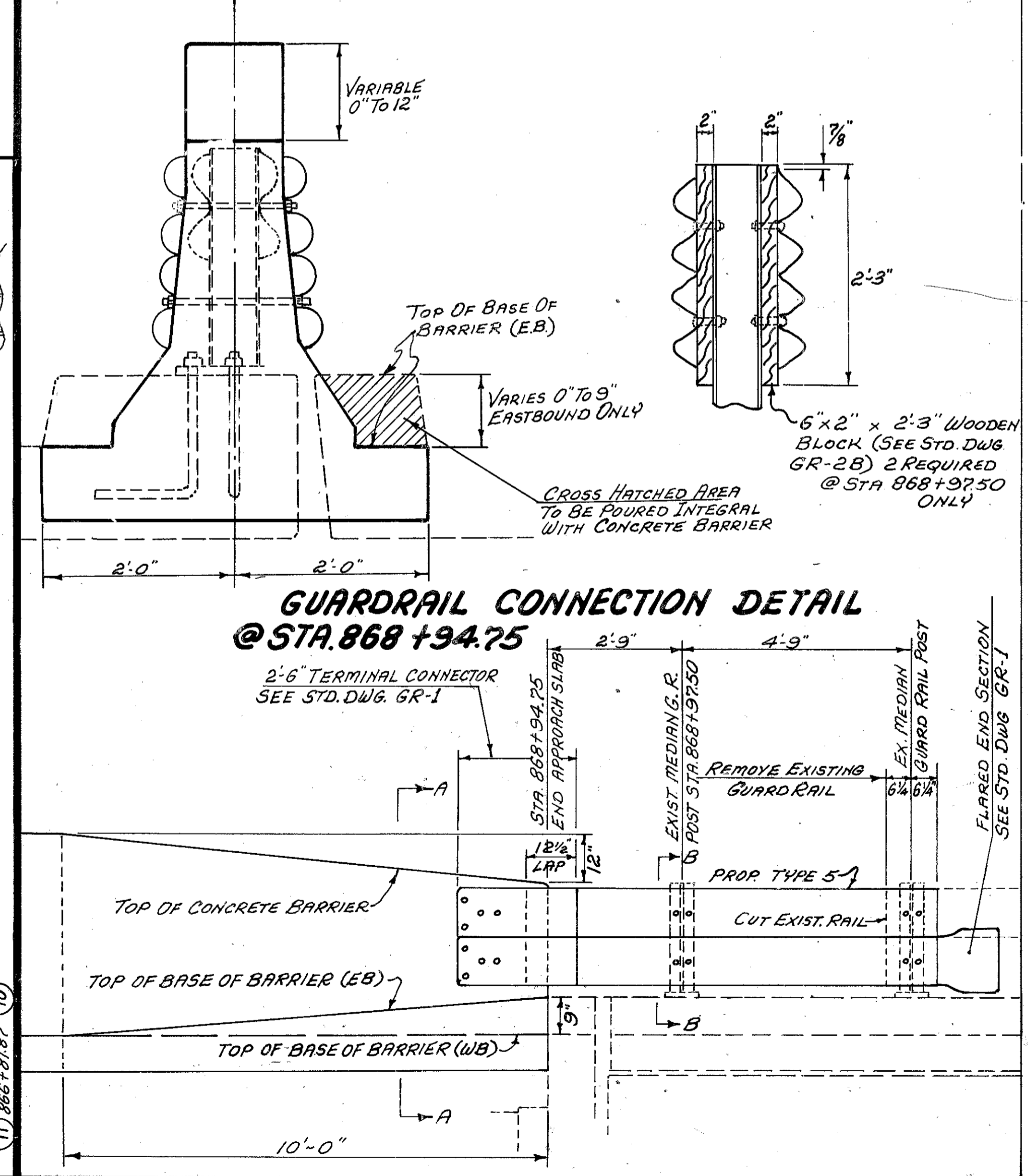
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END WORK STA. 881+00



THIS CONNECTION SHALL BE MADE WITH A 8'-6 1/4" LENGTH OF GALVANIZED BARRIER GUARDRAIL, TYPE 5 AND WITH A 8'-6 1/4" LENGTH OF WHEEL GUARD WITH SLOTTED EXPANSION GALVANIZED TERMINAL CONNECTORS, AS PER GR-3, (SEE SECTION A-A - CONCRETE INSERT ANCHOR ASSEMBLY), AND GALVANIZED FLARED END SECTION, AS PER GR-1. THE TERMINAL CONNECTORS SHALL BE ATTACHED TO THE CONCRETE BARRIER WITH FOUR (4) 7/8" x 15" AND FOUR (4) 7/8" x 18" HEX HEAD GALVANIZED BOLTS, NUTS AND WASHERS. PAYMENT FOR THE TYPE 5 GUARD RAIL, TERMINAL CONNECTORS, FLARED END, DRILLING HOLES, SPACER BLOCKS, GALVANIZED STEEL BOLTS, NUTS, WASHERS, LABOR AND ANY OTHER INCIDENTAL ITEMS NECESSARY TO COMPLETE THIS CONNECTION, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 622, CONCRETE BARRIER, TYPE B-50, MODIFIED, AS PER PLAN.

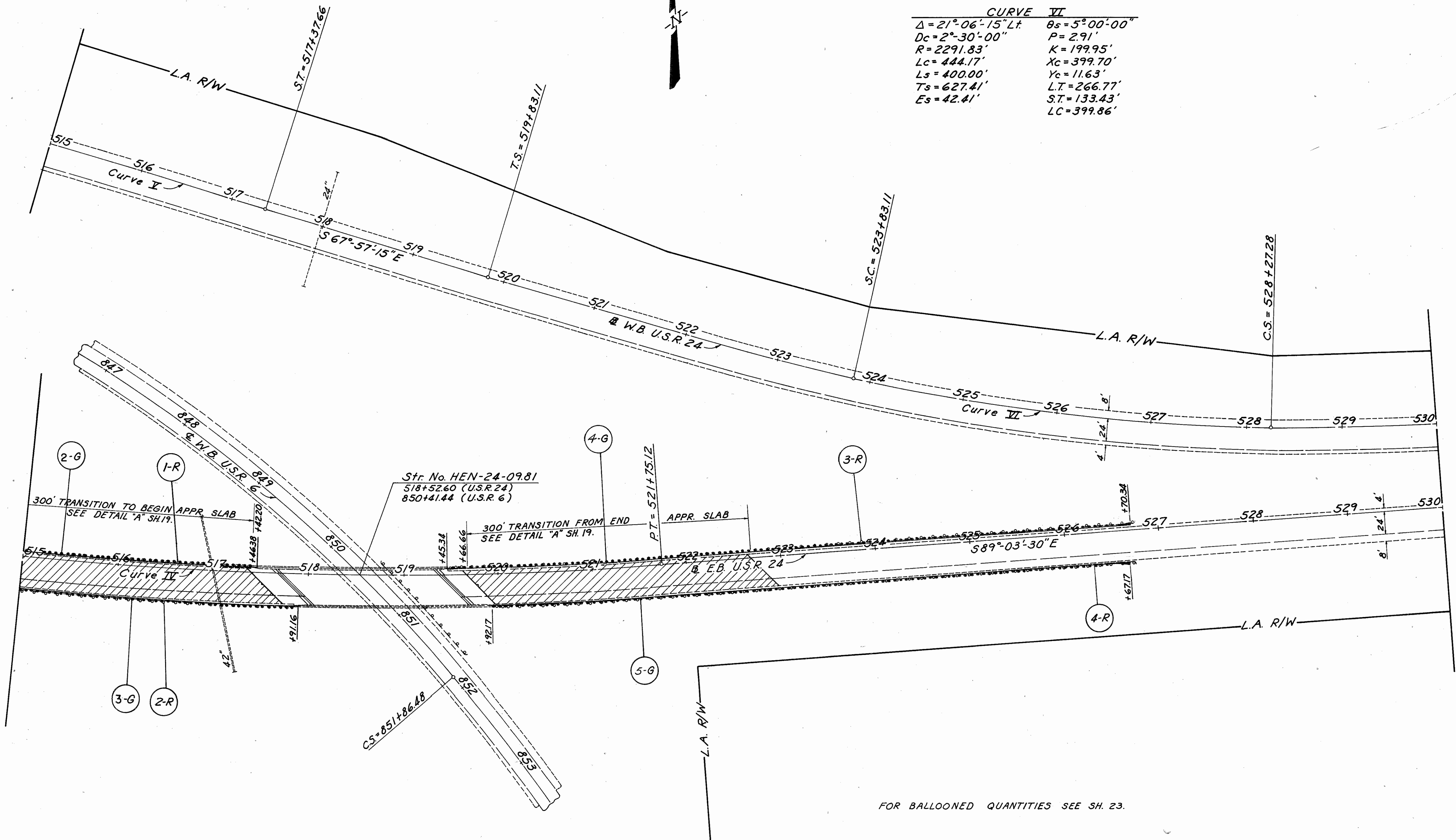
~ SECTION AA ~
~ SECTION BB ~



STA. 860+00 TO STA. 875+00 U.S.R. 6

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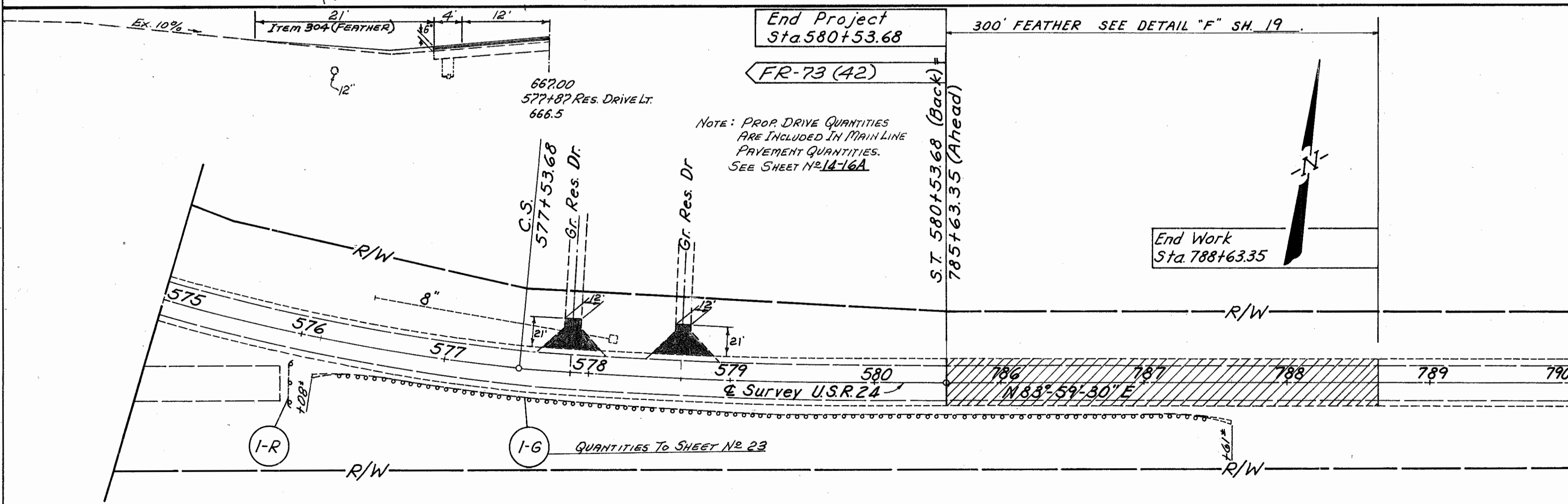
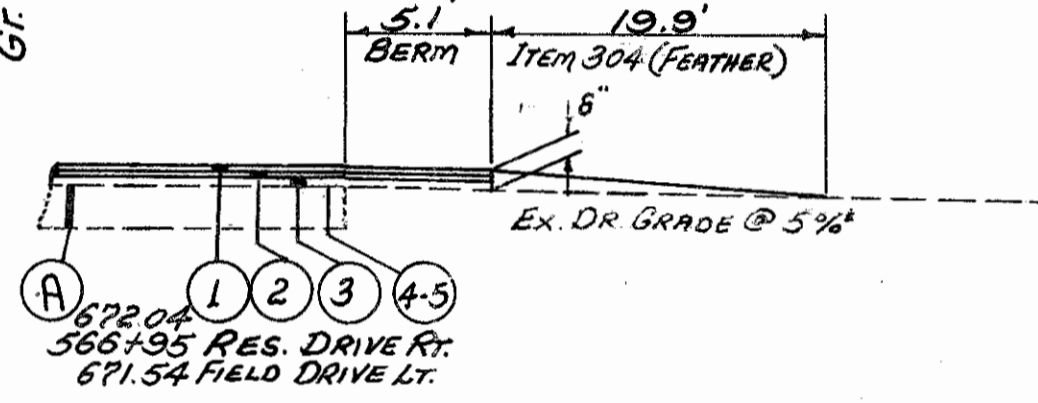
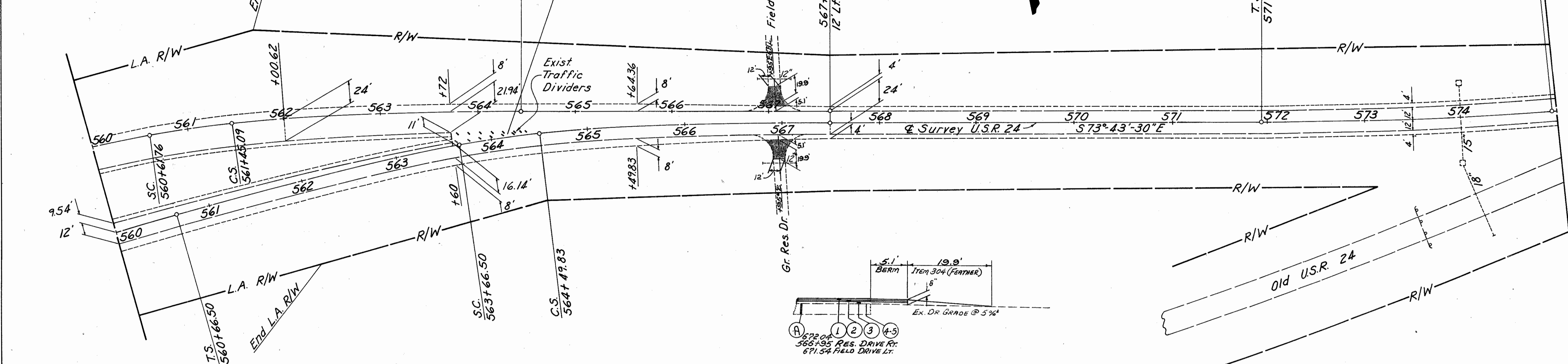
CURVE VI	
$\Delta = 21^{\circ}06'15''$ Lt.	$\theta_s = 5^{\circ}00'00''$
$D_c = 2^{\circ}30'00''$	$P = 2.91'$
$R = 2291.83'$	$K = 199.95'$
$L_c = 444.17'$	$X_c = 399.70'$
$L_s = 400.00'$	$Y_c = 11.63'$
$T_s = 627.41'$	$L.T. = 266.77'$
$E_s = 42.41'$	$S.T. = 133.43'$
	$LC = 399.86'$



FOR BALLOONED QUANTITIES SEE SH. 23.

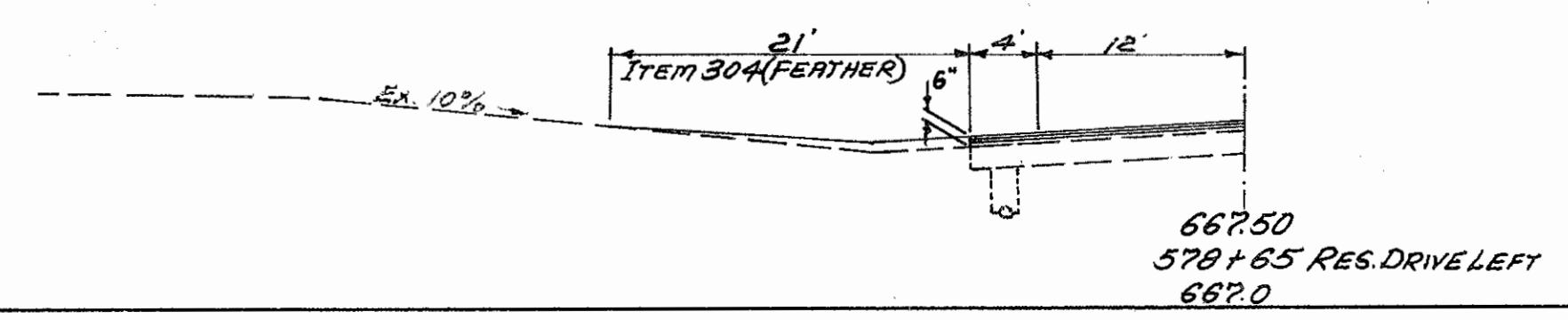
CURVE DATA
 EB Lane Pl. Sta. 564+09.62
 WB Lane Pl. Sta. 561+04.88
 $\Delta = 15^\circ 20' 00''$ Rt. $\theta s = 6^\circ 00' 00''$
 $Dc = 4'-00'$ $p = 2.62'$
 $R = 1432.39'$ $k = 149.95'$
 $Lc = 83.33'$ $Xc = 299.67'$
 $Ls = 300.00'$ $Yc = 10.46'$
 $Ts = 343.12'$ $LT = 200.11'$
 $Es = 15.57'$ $ST = 100.10'$
 $LC = 299.85'$

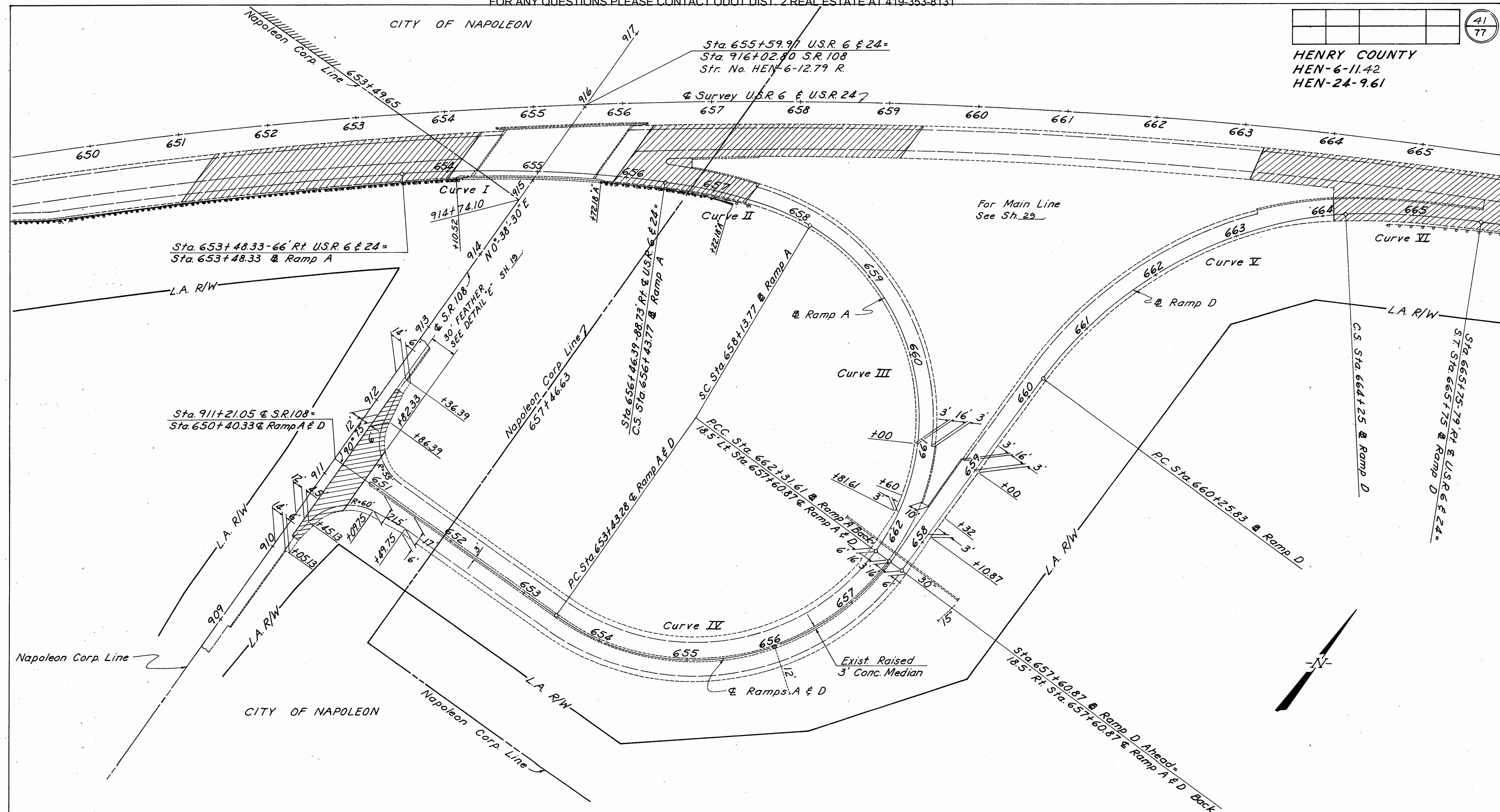
NOTE:
 PROP. DRIVE QUANTITIES ARE
 INCLUDED IN MAIN LINE
 PAVEMENT QUANTITIES
 SEE SHEET N^o 14-16A



NOTE:
 PROP. DRIVE QUANTITIES
 ARE INCLUDED IN MAIN LINE
 PAVEMENT QUANTITIES.
 SEE SHEET N^o 14-16A

CURVE DATA
 Pl. Sta. 576+29.17 $\theta s = 6^\circ 00' 00''$
 $\Delta = 22^\circ 17' 00''$ Lt. $p = 2.62'$
 $Dc = 4'-00'$ $k = 149.95'$
 $R = 1432.39'$ $Xc = 299.67'$
 $Lc = 257.08'$ $Yc = 10.46'$
 $Ls = 300.00'$ $LT = 200.11'$
 $Ts = 432.57'$ $ST = 100.10'$
 $Es = 30.21'$ $LC = 299.85'$





CURVE I	CURVE II	CURVE III	CURVE IV	CURVE V	CURVE VI
$\Delta = 11^{\circ} 49' 04''$ Rt.	$\Delta s = 22^{\circ} 52' 50''$ Rt.	$\Delta = 95^{\circ} 45' 46''$ Rt.	$\Delta = 89^{\circ} 06' 35''$ Lt.	$\Delta = 50^{\circ} 49' 27''$ Rt.	$\Delta s = 9^{\circ} 32' 57''$ Rt.
$Dc = 4^{\circ} 00'$	$Ls = 170.00'$	$Dc = 22^{\circ} 55' 06''$	$Dc = 21^{\circ} 20' 21''$	$Dc = 12^{\circ} 43' 57''$	$Ls = 150.00'$
$R = 1432.40'$	$Pa = 3.96'$	$R = 250.00'$	$R = 268.50'$	$R = 450.00'$	$P = 2.08'$
$L = 295.44'$	$T1 = 106.17'$	$L = 417.84'$	$L = 417.59'$	$L = 399.17'$	$K = 74.93'$
$T = 148.25'$	$T2 = 66.12'$	$T = 276.50'$	$T = 264.36'$	$T = 213.79'$	$Xc = 149.59'$
$E = 7.65'$		$E = 122.76'$	$E = 108.30'$	$E = 48.20'$	$Yc = 8.32'$
					$L.T. = 100.14'$
					$S.T. = 50.13'$
					$L.C. = 149.82'$

S.R. 108 INTERCHANGE RAMPS "A" & "D" U.S.R. 6 & U.S.R. 24

CITY OF NAPOLEON

HENRY COUNTY
HEN-6-11.42
HEN-24-9.61

CURVE VII
 $\Delta s = 8^{\circ}00'00''$ Lt.
 $Ls = 200.00'$
 $P = 2.33'$
 $K = 99.93'$
 $Xc = 199.61'$
 $Yc = 9.30'$
 $L.T. = 133.47'$
 $S.T. = 66.79'$
 $L.C. = 199.83'$
 $P.I. Sta. 651+33.47$

CURVE VIII
 $\Delta = 20^{\circ}21'47''$ Lt.
 $Dc = 8^{\circ}00'$
 $R = 716.20'$
 $L = 254.54'$
 $T = 128.63'$
 $E = 11.46'$
 $P.I. Sta. 653+28.63$

CURVE IX
 $\Delta = 54^{\circ}27'06''$ Rt.
 $Dc = 38^{\circ}11'50''$
 $R = 150.00'$
 $L = 142.55'$
 $T = 77.18'$
 $E = 18.69'$
 $P.I. Sta. 657+26.73$

CURVE X
 $\Delta = 16^{\circ}26'39''$ Lt.
 $Dc = 3^{\circ}00'$
 $R = 1909.86'$
 $L = 548.14'$
 $T = 275.96'$
 $E = 19.83'$
 $P.I. Sta. 663+77.82$

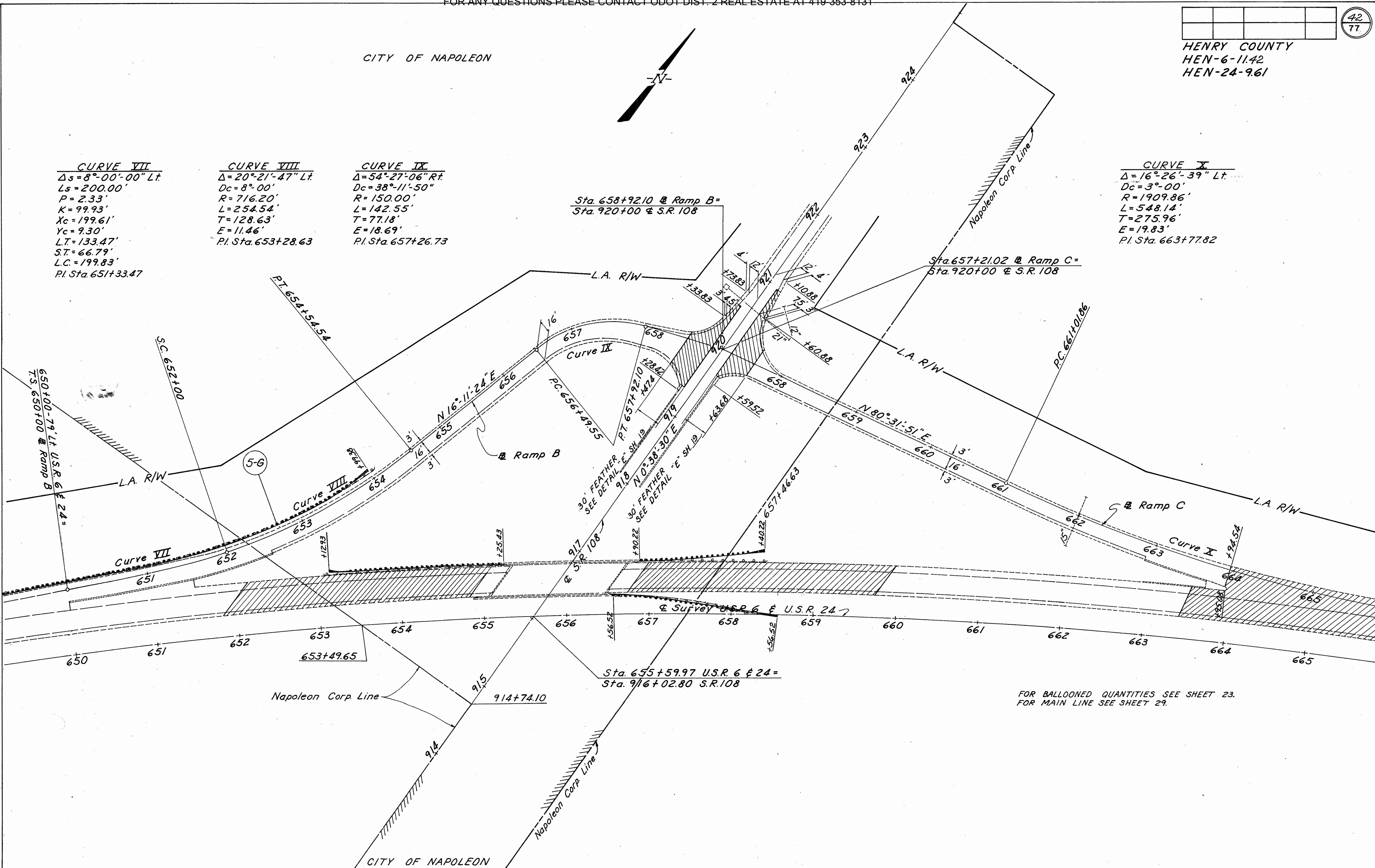
Sta. 658+92.10 @ Ramp B =
Sta. 920+00 @ S.R. 108

Sta. 657+21.02 @ Ramp C =
Sta. 920+00 @ S.R. 108

L.A. R/W

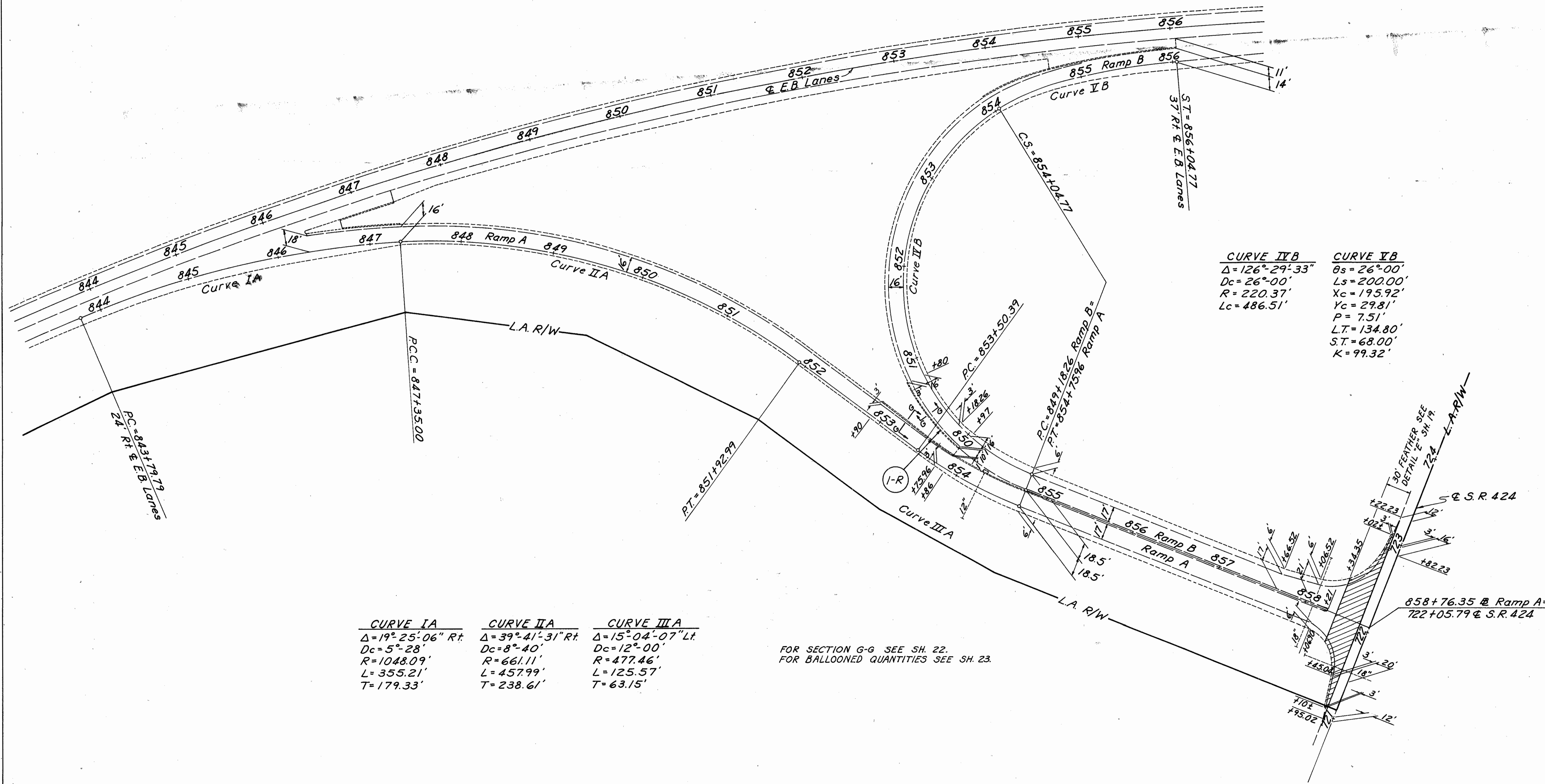
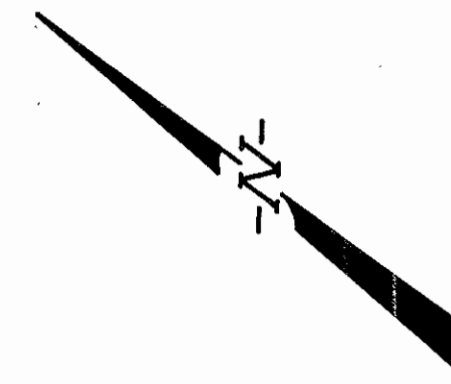
L.A. R/W

L.A. R/W



Sta. 655+59.97 U.S.R. 6 & 24 =
Sta. 916+02.80 S.R. 108

FOR BALLOONED QUANTITIES SEE SHEET 23.
FOR MAIN LINE SEE SHEET 29.

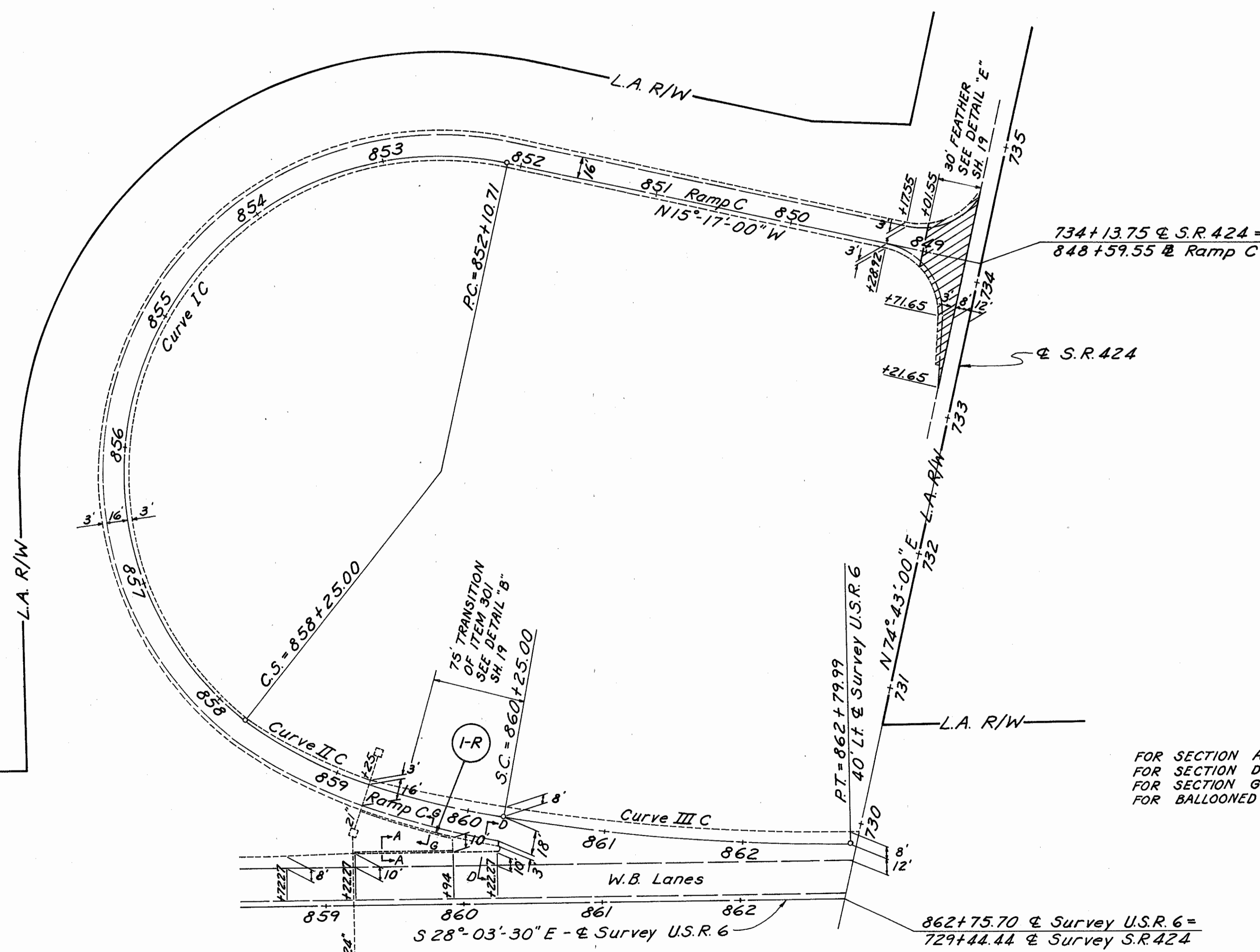


CURVE IVB	CURVE VB
$\Delta = 126^{\circ}29'33''$	$\theta_s = 26^{\circ}00'$
$D_c = 26^{\circ}00'$	$L_s = 200.00'$
$R = 220.37'$	$X_c = 195.92'$
$L_c = 486.51'$	$Y_c = 29.81'$
	$P = 7.51'$
	$LT = 134.80'$
	$ST = 68.00'$
	$K = 99.32'$

CURVE IA	CURVE IIA	CURVE IIIA
$\Delta = 19^{\circ}25'06''$ Rt.	$\Delta = 39^{\circ}41'31''$ Rt.	$\Delta = 15^{\circ}04'07''$ Lt.
$D_c = 5^{\circ}28'$	$D_c = 8^{\circ}40'$	$D_c = 12^{\circ}00'$
$R = 1048.09'$	$R = 661.11'$	$R = 477.46'$
$L = 355.21'$	$L = 457.99'$	$L = 125.57'$
$T = 179.33'$	$T = 238.61'$	$T = 63.15'$

FOR SECTION G-G SEE SH. 22.
FOR BALLOONED QUANTITIES SEE SH. 23.

CURVE I C	CURVE II C	CURVE III C
$\Delta = 153^{\circ} 34' 31''$	$\Delta = 29^{\circ} 00'$	$\Delta = 10^{\circ} 11' 59''$
$Dc = 25^{\circ} 00'$	$Ls = 200'$	$Dc = 4^{\circ} 00'$
$R = 229.18'$	$P = 6.08'$	$R = 1432.39'$
$Lc = 614.29'$	$T_1 = 126.55'$	$Lc = 254.99'$
$T = 976.18'$	$T_2 = 77.82'$	$T = 127.83'$
$PI = 861+86.88$	$D_1 = 4^{\circ} 00'$	$PI = 861+52.83$
	$D_2 = 25^{\circ} 00'$	
	$PI = 859+02.82$	



FOR SECTION A-A SEE SH. 21
FOR SECTION D-D SEE SH. 22
FOR SECTION G-G SEE SH. 23
FOR BALLOONED QUANTITIES SEE SH. 23